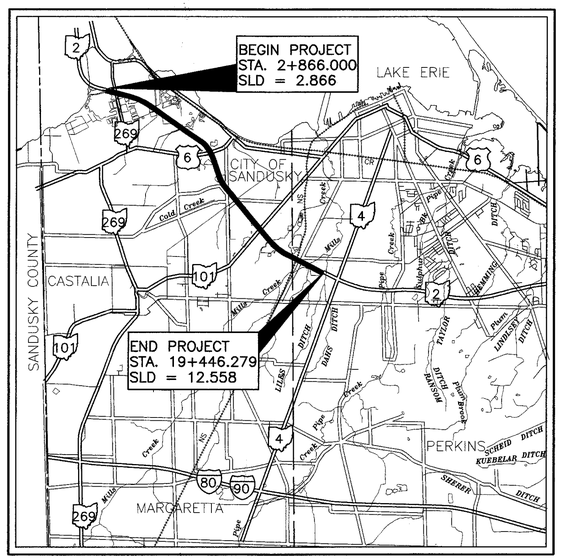


LOCATION MAP

LATITUDE: N41°27'30" LONGITUDE: W82°49'00"

SCALE IN KILOMETERS

2 0 2 4

N

PORTIONS TO BE IMPROVED _____

STATE & FEDERAL ROUTES _____

OTHER ROADS _____

FOR DESIGN DESIGNATION & DESIGN EXCEPTIONS – SEE SHEET 2

UNDERGROUND UTILITIES

Two Working Days

BEFORE YOU DIG

Call 800–362–2764 (Toll free)

OHIO UTILITIES PROTECTION SERVICE

NON–MEMBERS

MUST BE CALLED DIRECTLY

PLAN PREPARED BY:

R.D. Zande & Associates, Inc.
1237 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486–4383

Brian M Hagarty 11/13/98

REGISTERED ENGINEER DATE

STATE OF OHIO — BRIAN HAGERTY E-61558 REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S SEAL

STATE OF OHIO — DAVID C. MOLLENSHOTT E-50210 REGISTERED PROFESSIONAL ENGINEER

David C. Mollenshott 11-23-98

D-3 ODOT. REVISIONS TO SR 269, SR 101 & McCartney Rd. Bridges.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
ERI-2-2.866
CITY OF SANDUSKY
MARGARETTA TOWNSHIP
PERKINS TOWNSHIP
ERIE COUNTY

INDEX OF SHEETS

metric units

PROJECT DESCRIPTION

REHABILITATION OF 9.69 km OF EXISTING PAVEMENT AND SHOULDERS OF S.R. 2 AND INTERCHANGE RAMPS INCLUDING THREE OVERPASS ROADS AND BRIDGES: S.R. 269, McCARTNEY ROAD, AND S.R. 101, AND THE REHABILITATION OF BRIDGES ON S.R. 2 OVER U.S.R. 6, OVER COLD CREEK, OVER BARDSHAR ROAD, OVER HOMEGARDNER ROAD, OVER N & S RR AND OLD RAILROAD ROAD, AND OVER MILLS CREEK.

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 REVISED CODE OF OHIO.

1997 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.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT FOR McCARTNEY ROAD, AND RAMPS B & D AT U.S. 6 AS NOTED ON SHEET 24, AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

UNDER AUTHORITY OF SECTION 4511.21 DIVISION (I) OF THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.

SPECIAL PROVISIONS
WATERWAY PERMIT N WP#3 DATED: 1–28–98
SUBGRADE INVESTIGATION FOR ERI-2-2.866 DATED: 11-20-98

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

BP–2.4M	10–28–94	GR–3.5M	10–21–97	TC–65.12M	11–01–95	MT–98.14M	06–24–93	
BP–2.5M	04–08–97	GR–3.6M	10–21–97	TC–71.10M	9–1–93	MT–98.15M	06–24–93	
BP–3.1M	10–28–94	GR–4.2M	10–21–97	TC–72.20M	09–01–93	MT–98.16M	06–24–93	
BP–5.1M	10–28–94	GR–5.1M	04–21–95	AS–1–81M	10–25–94	MT–98.17M	04–25–94	
BP–9.1M	12–18–96	GR–5.2M	11–30–94	BR–1M	12–15–94	MT–98.19M	03–01–96	
BP–9.2M	12–18–96	GR–5.3M	11–30–94	TC–72.20M	9–1–93	MT–99.20M	01–30–95	
CB–2.3M	07–12–95	GR–6.1M	01–03–96			MT–101.20M	03–01–96	
CB–3.1M	07–12–95	RM–4.2M	10–21–97	RB–1–55M	10–25–94	MT–101.60M	04–25–94	
HW–2.2M	07–12–95	RM–4.3M	10–21–97	EXJ–4–87M	02–18–97	MT–105.10M	04–25–94	
F–1.1M	04–08–97	RM–4.4M	10–21–97			MT–105.11M	04–25–94	
F–2.1M	04–08–97	RM–4.5M	10–21–97	PCB–91M	03–20–95	MT–95.32M	4–25–94	
F–3.1M	04–21–95	I–2.2M	09–06–95	MT–35.10M	01–30–95	MT–96.10M	1–30–95	
F–3.3M	04–21–95	GR–4.3M	10–21–97	MT–35.11M	01–30–95	MT–96.21M	1–30–95	
F–3.4M	04–08–97	DM–1.1M	10–21–97	MT–95.30M	04–25–94			
GR–1.1M	10–21–97			MT–95.31M	04–25–94	DM–4.2M	6–30–95	
GR–1.2M	01–03–96	HL–50.11M	03–31–95	MT–95.40M	04–25–94	DM–4.3M	6–30–95	
GR–1.3M	11–30–94	TC–21.41M	02–01–94	MT–95.81M	04–25–94	DM–4.4M	6–30–95	
GR–2.1M	04–14–98	TC–61.10M	03–31–94	MT–97.10M	04–25–94			
GR–3.1M	10–21–97	TC–65.10M	11–01–95	MT–98.12M	06–24–93	BP–2.1M	4–8–97	
GR–3.2M	10–21–97	TC–65.11M	11–01–95	MT–98.13M	06–24–93	BP–2.2M	10–21–97	

SUPPLEMENTAL SPECIFICATIONS

806	09–09–97
843	05–05–98
814	06–02–98
844	05–05–98
815	05–30–96
846	09–09–97
855	06–30–98
863	09–09–97
904	05–05–98
905	04–01–98
906	05–05–98
910	04–21–97
932	10–02–96
954	09–09–97

APPROVED *Mary Ellen Kinbacher*
DATE 11-20-98 DISTRICT DEPUTY DIRECTOR

APPROVED *Jerry Wray*
DATE 12-14-98 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. NH – 73 (89)

PID NO. 11377

CONSTRUCTION PROJECT NO. ERI-2-2.866

RAILROAD INVOLVEMENT NORFOLK & SOUTHERN R.R.

1/327

ERI-2-2.866
990148
DIST. 03

03-17-99
PID# 11377

sht02 P:\3907\DWG\HWY\PLAN_3907T01.dwg NOV 16, 1998 TIME: 9:52 AM

metric units

CALCULATED OAH
CHECKED MRD

DESIGN DESIGNATION (ERI-2-2.866)

OPENING DAY A.D.T. (1998)_____ 14030
DESIGN YEAR A.D.T. (2018)_____ 22450
D.H.V (2018)_____ 2694
DIRECTIONAL DISTRIBUTION_____ 60%
TRUCKS (24 HOURS B&C)_____ 24%
DESIGN SPEED_____ 110 km/h
LEGAL SPEED_____ 65 MPH
DESIGN FUNCTIONAL CLASSIFICATION_____ RURAL FREEWAY

DESIGN EXCEPTIONS – NONE

DESIGN DESIGNATION (U.S. - 6)

OPENING DAY A.D.T. (1998)_____ 7500
DESIGN YEAR A.D.T. (2018)_____ 11,800
D.H.V (2018)_____ 1400
DIRECTIONAL DISTRIBUTION_____ 60%
TRUCKS (24 HOURS B&C)_____ 4%
DESIGN SPEED_____ 80 km/h
LEGAL SPEED_____ 50 MPH
DESIGN FUNCTIONAL CLASSIFICATION_____ URBAN PRINCIPAL ARTERIAL

DESIGN EXCEPTIONS

DESIGN FEATURES		SHEET NO
HORIZONTAL CLEARANCE	APPROVED: 12-3-98	13

DESIGN DESIGNATION (McCARTNEY ROAD)

OPENING DAY A.D.T. (1998)_____ 190
DESIGN YEAR A.D.T. (2018)_____ 280
D.H.V (2018)_____ 28
DIRECTIONAL DISTRIBUTION_____ 60%
TRUCKS (24 HOURS B&C)_____ 3%
DESIGN SPEED_____ 80 km/h
LEGAL SPEED_____ 45 MPH
DESIGN FUNCTIONAL CLASSIFICATION_____ RURAL LOCAL

DESIGN EXCEPTIONS

DESIGN FEATURES		SHEET NO
SAFETY UPGRADE OF EXISTING PARAPETS	APPROVED: 12-3-98	165

DESIGN DESIGNATION (S.R. - 269)

OPENING DAY A.D.T. (1998)_____ 2180
DESIGN YEAR A.D.T. (2018)_____ 3480
D.H.V (2018)_____ 400
DIRECTIONAL DISTRIBUTION_____ 60%
TRUCKS (24 HOURS B&C)_____ 5%
DESIGN SPEED_____ 90 km/h
LEGAL SPEED_____ 55 MPH
DESIGN FUNCTIONAL CLASSIFICATION_____ RURAL MAJOR COLLECTOR

DESIGN EXCEPTIONS

DESIGN FEATURES		SHEET NO
SAFETY UPGRADE OF EXISTING PARAPETS	APPROVED: 12-3-98	158

DESIGN DESIGNATION (S.R. - 101)

OPENING DAY A.D.T. (1998)_____ 11540
DESIGN YEAR A.D.T. (2018)_____ 18460
D.H.V (2018)_____ 2216
DIRECTIONAL DISTRIBUTION_____ 60%
TRUCKS (24 HOURS B&C)_____ 10%
DESIGN SPEED_____ 90 km/h
LEGAL SPEED_____ 55 MPH
DESIGN FUNCTIONAL CLASSIFICATION_____ RURAL MAJOR COLLECTOR

DESIGN EXCEPTIONS

DESIGN FEATURES		SHEET NO
SAFETY UPGRADE OF EXISTING PARAPETS	APPROVED: 12-3-98	258

DESIGN DESIGNATIONS / EXCEPTIONS

ERI-2-2.866

BEGIN PROJECT
STA. 2+866.000
SLD 2.866
NH-73 (89)

END WORK
STA. 0+799.860

SFN: 2204053
ERI-2-03041

PC STA 0+023.540
PT STA 0+062.768
PC STA 0+148.822
CS STA 0+226.950
SC STA 0+287.610
PT STA 0+425.706

PT STA 0+258.178
PC STA 0+152.400

RAMP C
RAMP B
RAMP A
RAMP D

S76°19'00"E

2438mm CONC.
1067mm CONC.

℄ WESTBOUND S.R. 2
℄ SURVEY & EASTBOUND S.R. 2
℄ SURVEY & CONST. S.R. 2

914mm CONC.
2438mm CONC.
914mm CONC.

STA. 5+642.308 S.R. 2 =
STA. 0+609.601 McCARTNEY RD.

STA. 5+140.462
MEDIAN CROSS OVER

SC STA 0+722.630
TS STA 0+661.670

END WORK
STA. 0+760.000

CS STA 0+847.102
ST STA 0+908.062
TS STA 0+940.094
SC STA 1+001.054
CS STA 1+038.667
ST STA 1+099.627

MARGARETTA TWP.
CITY OF SANDUSKY

℄ CONST. McCARTNEY RD.

610mm CONC.
1372mm CONC.

S60°18'12"W
PC STA 0+398.864
PT STA 0+517.228

SFN: 2200155
ERI-2-05616

S54°41'48"E
STA. 6+073.154

BEGIN WORK
STA. 0+428.190

MATCH LINE STA. 6+400, SEE THIS SHEET

PC STA 0+199.059
PT STA 0+268.968
PC STA 0+359.917
PT STA 0+397.274

℄ CONST. S.R. 2
℄ CONST. S.R. 269
S76°19'00"E

BEGIN WORK
STA. 2+629.500

BEGIN WORK
STA. 0+674.818

STA. 3+042.512 S.R. 2 =
STA. 0+737.339 S.R. 269

℄ CONSTRUCTION S.R. 2
℄ SURVEY S.R. 2
S76°19'00"E

STA. 3+493.795 W.L.
Li. 187.795 m
STA. 3+493.282 E.B.

PC STA 3+506.243
PC STA 3+493.282 E.B.

PT. STA. 4+384.883, W.B. (BACK)=
STA. 4+386.495
16.459 m LT. M.L. (AHEAD)

S 54°41'48" E

PT. STA. 4+271.644 E.B.
STA. 4+309.737, EB. (BACK)=
STA. 4+319.049
16.459 m RT. M.L. (AHEAD)

FOR CURVE DATA SEE SHEET NO. 4
FOR CENTERLINE REFERENCES, SEE SHEET NO. 5

SCALE IN METERS
0 100 200
1:5000

metric units

SCHEMATIC PLAN
STA. 2+600.000 TO STA. 16+400.000

ERI-2-2.866

3
327

MATCH LINE STA. 6+400, SEE THIS SHEET

PC STA 0+000.000
SC STA 0+217.557
TS STA 0+156.597
PT STA 0+238.753

SC STA 0+090.823
TS STA 0+151.783
CS STA 0+241.103
ST STA 0+302.063
PC STA 0+340.779

END WORK
STA. 0+220.000

PT STA 0+438.712

SFN. 2200244 & 2200279
ERI-2-06920 L.&R.

CS STA 0+514.860
ST STA 0+575.820

COLD CREEK

PT STA 14+041.876

END WORK
STA. 0+577.500

1524 mm CONC.

PC STA 14+659.575

CITY OF SANDUSKY
MARGARETTA TWP.

S.F.N. 2200333 & 2200368
ERI-2-08336 L&R

HOMEGARDNER RD.

BARDSHAR RD.

SC STA 0+160.960
TS STA 0+100.000

CS STA 0+267.640
ST STA 0+328.600

TS STA 0+460.107
SC STA 0+521.067
CS STA 0+588.271
ST STA 0+649.231

S.F.N.: 2200309
ERI-2-0700S

S19°13'06"E

STA. 14+681.913

S.F.N. 2200392 & 2200422
ERI-2-08642 L&R

S40°13'30"E

MATCH LINE STA. 16+400, SEE SHEET 4

END WORK
STA. 0+293.402

BEGIN WORK
STA. 0+100.000

SANDUSKY ROAD (U.S. 6)

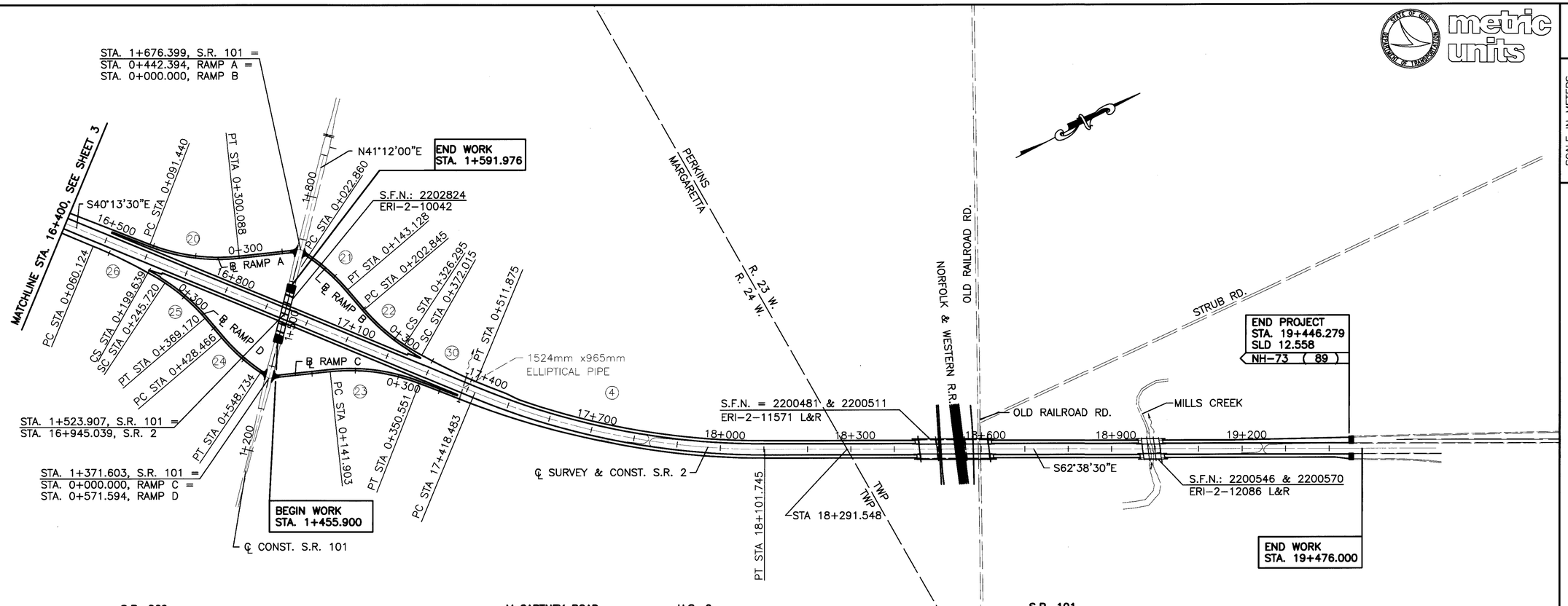
PT STA 15+096.168

END STAGE 1
BEGIN STAGE 2

STA. 16+280.00
MEDIAN CROSS OVER

* P.C. STA. 6+413.889 BACK = P.C. STA. 13+300.033 AHEAD

deck2 P:\3907\DWG\HWY\PLAN\ 3907SC01.dwg NOV 11, 1998 TIME 7:35 AM



S.R. 2

CURVE DATA (1) – S.R.2
P.I. STA. 3+887.153
Δ = 21°37'12"RT
T = 393.861 m
R = 2062.735 m
L = 778.352 m
E = 37.265 m
emax = 0.031

CURVE DATA (2) – S.R. 2
P.I. STA. 13+683.437
Δ = 35° 41' 48" RT
T = 383.404 m
R = 1190.713 m
L = 741.843 m
E = 60.205 m
emax = 0.048

CURVE DATA (3) – S.R. 2
P.I. STA. 14+880.351
Δ = 21° 00' 30" LT
T = 220.775 m
R = 1190.713 m
L = 436.593 m
E = 20.295 m
emax = 0.048

CURVE DATA (4) – S.R. 2
P.I. STA. 17+764.540
Δ = 22° 25' 00" LT
T = 346.057 m
R = 1746.380 m
L = 683.262 m
E = 33.957 m
emax = 0.048

S.R. 269

CURVE DATA (5) – RAMP A
@ S.R. 269
P.I. STA. 0+234.315
Δ = 18°20'55" RT
T = 35.256 m
R = 218.298 m
L = 69.909 m
E = 2.829 m
emax = 0.083

CURVE DATA (6) – RAMP A
@ S.R. 269
P.I. STA. 0+379.462
Δ = 41° 40' 35" LT
T = 19.551 m
R = 51.365 m
L = 37.362 m
E = 3.595 m
emax = 0.042

CURVE DATA (7) – RAMP B
@ S.R. 269
P.I. = STA 0+205.879
Δ = 20°49'21" LT
T = 53.479 m
R = 291.063 m
L = 105.778 m
E = 4.872 m
emax = 0.063

CURVE DATA (8) – RAMP C
@ S.R. 269
P.I. STA. 0+044.166
Δ = 43° 45' 26" RT
T = 20.626 m
R = 51.365 m
L = 39.228 m
E = 3.987 m
emax = 0.042

CURVE DATA (9) – RAMP C
@ S.R. 269
P.I. STA. 0+188.153
Δ = 20° 25' 38" LT
T = 39.331 m
R = 218.298 m
L = 77.828 m
E = 3.515 m
emax = 0.083
Ls = 60.960 m
θs = 9° 30' 00"
P = 0.576 m
emax = 0.083

CURVE DATA (27) – RAMP C
@ S.R. 269
P.I. STA 0+356.739
Δ = 06°47'46" LT
T = 69.129 m
R = 1164.253 m
L = 138.096 m
E = 2.050 m
emax = 0.042

CURVE DATA (10) – RAMP D
@ S.R. 269
P.I. STA. 0+213.304
Δ = 20°24'11"RT
T = 52.378 m
R = 291.063 m
L = 103.647 m
E = 4.675 m
Ls = 60.960 m
θs = 6° 00' 00"
LT = 40.663 m
ST = 20.342 m
emax = 0.063

McCARTNEY ROAD

CURVE DATA (11)
P.I. STA. 0+458.188
Δ = 09° 42' 30" LT
T = 59.324 m
R = 698.551 m
L = 118.364 m
E = 2.514 m
emax = 0.026

CURVE DATA (12)
P.I. STA. = 797.681
Δ = 44° 55' 16" RT
T = 65.633 m
R = 158.762 m
L = 124.472 m
E = 13.032 m
Ls = 60.960 m
θs = 11° 00' 00"
LT = 40.719 m
ST = 20.392 m
Ts = 136.011 m
emax = 0.083 m

U.S. 6

CURVE DATA (13) – RAMP A
@ U.S. 6
P.I. STA. 0+199.792
Δ = 23° 26' 36" LT
T = 45.294 m
R = 218.298 m
L = 89.320 m
E = 4.649 m
emax = 0.083
Ls = 60.960 m
θs = 8° 00' 00" LT.
LT = 40.682 m
ST = 20.358 m

CURVE DATA (14) – RAMP A
@ U.S. 6
P.I. STA. 0+396.567
Δ = 68° 33' 46" RT
T = 55.788 m
R = 81.839 m
L = 97.932 m
E = 17.206 m
emax = 0.083

CURVE DATA (15) – RAMP B
@ U.S. 6
P.I. STA. 0+297.368
Δ = 92° 39' 07" RT
T = 79.811 m
R = 76.200 m
L = 123.222 m
E = 34.146 m
emax = 0.083

CURVE DATA (16) – RAMP B
@ U.S. 6
P.I. STA. 0+504.121
Δ = 62° 19' 51" RT
T = 46.086 m
R = 76.200 m
L = 82.897 m
E = 12.852 m
emax = 0.083
Ls = 60.960 m
θs = 22° 55' 06" RT.
LT = 40.987 m
ST = 20.635 m

CURVE DATA (17) – RAMP C
@ U.S. 6
P.I. STA. = 0+121.079
Δ = 23° 29' 57" RT
T = 121.079 m
R = 582.126 m
L = 238.753 m
E = 12.458 m
emax = 0.032

CURVE DATA (18) – RAMP D
@ U.S. 6
P.I. STA. 0+221.821
Δ = 35° 00' 00" RT
T = 55.063 m
R = 174.638 m
L = 106.680 m
E = 8.475 m
Ls = 60.960 m
θs = 10° 00' 00" RT.
LT = 40.706 m
ST = 20.379 m
emax = 0.06

CURVE DATA (19) – RAMP D
@ U.S. 6
P.I. STA. 0+643.992
Δ = 13° 13' 45" RT
T = 33.752 m
R = 291.063 m
L = 67.204 m
E = 1.950 m
Ls = 60.960 m
θs = 6° 00' 00" RT.
LT = 40.663 m
ST = 20.342 m
emax = 0.083

CURVE DATA (28) – RAMP B
@ U.S. 6
P.I. STA. 0+392.723
Δ = 68° 33' 46" RT
T = 51.944 m
R = 76.200 m
L = 91.185 m
E = 16.020 m
emax = 0.083

S.R. 101

CURVE DATA (30) – RAMP B
@ S.R. 101
P.I. STA. 0+442.200
Δ = 06° 51' 57" LT
T = 69.842 m
R = 1164.253 m
L = 139.516 m
E = 2.093 m
emax = 0.042

CURVE DATA (20) – RAMP A
@ S.R. 101
P.I. STA. 0+197.796
Δ = 27° 22' 54" LT
T = 106.356 m
R = 436.595 m
L = 208.648 m
E = 12.768 m
emax = 0.042

CURVE DATA (21) – RAMP B
@ S.R. 101
P.I. STA. 0+083.377
Δ = 15° 47' 00" RT
T = 60.517 m
R = 436.595 m
L = 120.268 m
E = 4.174 m
emax = 0.0156

CURVE DATA (22) – RAMP B
@ S.R. 101
P.I. STA. 0+264.985
Δ = 16° 12' 03" LT
T = 62.140 m
R = 436.595 m
L = 123.450 m
E = 4.400 m
emax = 0.042
Ls = 45.720 m
θs = 4° 07' 30" LT.
LT = 26.332 m
ST = 19.413 m

CURVE DATA (23) – RAMP C
@ S.R. 101
P.I. STA. 0+248.259
Δ = 27° 22' 54" RT.
T = 106.356 m
R = 436.595 m
L = 208.648 m
E = 12.768 m
emax = 0.042

CURVE DATA (24) – RAMP D
@ S.R. 101
P.I. STA. 0+488.984
Δ = 15° 47' 00" LT
T = 60.517 m
R = 436.595 m
L = 120.268 m
E = 4.174 m
emax = 0.016

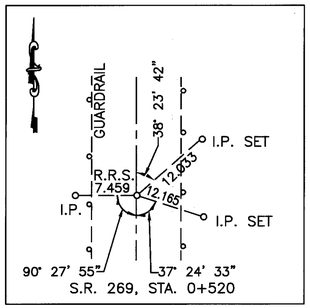
CURVE DATA (25) – RAMP D
@ S.R. 101
P.I. STA. 0+307.499
Δ = 16° 12' 03" RT
T = 62.140 m
R = 436.595 m
L = 123.450 m
E = 4.400 m
Ls = 45.720 m
θs = 4° 07' 30"
LT = 26.332 m
ST = 19.413 m
emax = 0.016

CURVE DATA (26) – RAMP D
@ S.R. 101
P.I. STA. 0+129.965
Δ = 06° 51' 57" RT
T = 69.842 m
R = 1164.253 m
L = 139.516 m
E = 2.093 m
emax = 0.042

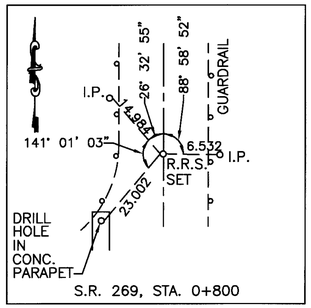
SCHEMATIC PLAN
STA. 16+400.000 TO STA. 19+500.000

ERI-2-2.866

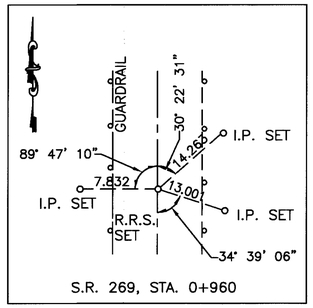
REFERENCE POINTS



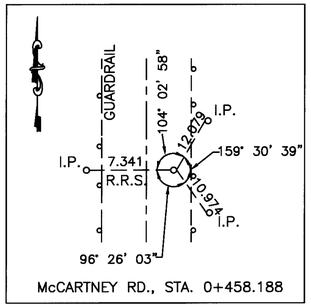
S.R. 269, STA. 0+520



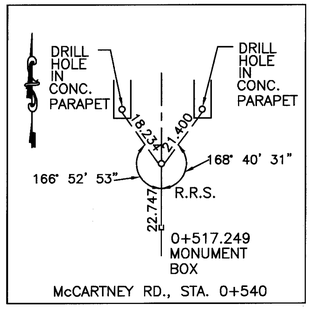
S.R. 269, STA. 0+800



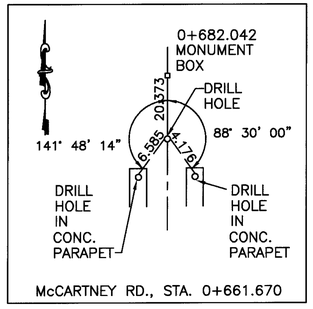
S.R. 269, STA. 0+960



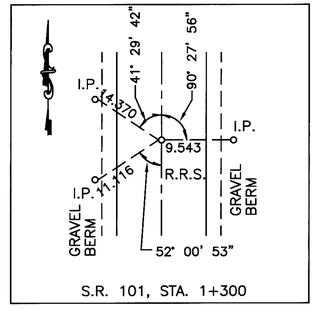
McCARTNEY RD., STA. 0+458.188



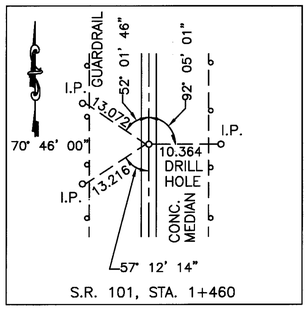
McCARTNEY RD., STA. 0+540



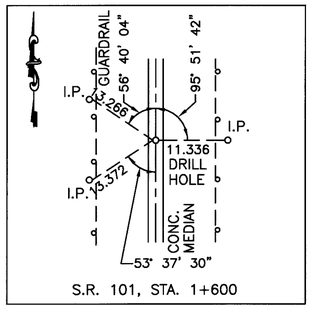
McCARTNEY RD., STA. 0+661.670



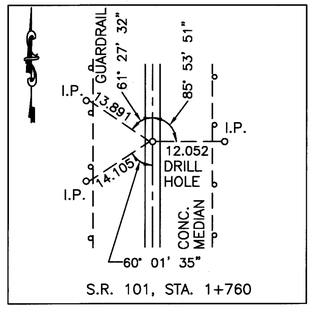
S.R. 101, STA. 1+300



S.R. 101, STA. 1+460



S.R. 101, STA. 1+600



S.R. 101, STA. 1+760

THE FOLLOWING RECORD PLAN MONUMENTS (ERI–2–4.02 & ERI–6–3.80) WERE USED TO ESTABLISH STATIONING FOR MAINLINE AND RAMP STATIONING

STRUCTURE	RECORD PLAN STATION	PROJECT STATION
ERI–2–06920 L & R – S.R. 2 OVER U.S. 6 ERI–2–070005 – RAMP D OVER COLD CREEK	13+533.147 (444+00.00) 14+041.875 (460+69.05)	13+533.161 14+041.876
ERI–2–08336 L & R – S.R. 2 OVER BARDSHAR	15+096.168 (495+28.01) 15+361.951 (504+00.00)	15+096.168 15+361.945
ERI–2–08642 L & R – S. R. 2 OVER HOMEGARDNER AND ABANDONED RAILROAD	15+666.751 (514+00.00)	15+666.773
ERI–2–11571 L & R – S.R. 2 OVER N & W RAILWAY CO. & OLD RAILROAD ROAD	18+409.957 (604+00.00) 18+629.413 (611+20.00)	18+410.139 18+629.596
ERI–2–12086 L & R – S.R. 2 OVER MILLS CREEK	18+928.118 (621+00.00)	18+928.143

BENCHMARKS

BM #1 – SW CORNER OF CONCRETE BASE FOR LIGHT POLE. APPROXIMATE STA. 3+252, 28.3 m LT. 176.332

BM #2 – TOP SE BOLT AT BASE OF STEEL SIGN POST. APPROXIMATE STA. 3+510, 2.0 m N OF N GUARDRAIL N SIDE OF SR 2. 177.069

BM #3 – CHISELED SQUARE IN W SIDE OF CURB INLET AT S EDGE WESTBOUND LANE. APPROXIMATE STA. 3+820, S TOP CURB. 177.429

BM #4 – TOP SE BOLT AT BASE OF STEEL SIGN POST. APPROXIMATE STA. 4+220, 2.0 m BEHIND GUARDRAIL. 177.243

BM #5 – NW BOLT W END OF GUARDRAIL. APPROXIMATE STA. 4+285, 4.267 m S OF S E/P. 176.957

BM #6 – NE BOLT AT BASE OF STEEL SIGN POST. APPROXIMATE STA. 4+658, 25.3 m RT. 176.618

BM #7 – ODOT MONUMENT IN W SIDE HEADWALL (ERI–002–3.08). APPROXIMATE STA. 4+957, 32.5 m LT. 175.039

BM #8 – PK NAIL IN S SIDE OF S POLE FOR SIGN. APPROXIMATE STA. 5+180, 27.5 m LT. 176.798

BM #9 – CHISELED SQUARE IN NW CORNER HEADWALL. APPROXIMATE STA. 5+578, 31.4 m LT. 175.213

BM #10 – CHISELED SQUARE IN NE CORNER HEADWALL. APPROXIMATE STA. 5+770, 27.5 m LT. 175.798

BM #11 – ODOT MONUMENT IN SE CORNER CONCRETE AT CATCH BASIN (ERI–002–3.76). APPROXIMATE STA. 6+053, 38.0 m LT. 175.018

BM #12 – CHISELED SQUARE IN NW CORNER HEADWALL. APPROXIMATE STA. 6+187, 30.5 m LT. 176.544

BM #13 – ODOT MONUMENT IN W SIDE HEADWALL (ERI–002–4.03). APPROXIMATE STA. 13+380, 38.0 m LT. 177.104

BM #14 – CHISELED SQUARE IN NE CORNER HEADWALL. APPROXIMATE STA. 13+514, 39.0 m RT. 177.285

BM #15 – SW BOLT AT W END OF GUARDRAIL. APPROXIMATE STA. 13+572, 24.994 m RT. 180.374

BM #16 – NW BOLT IN N END OF GUARDRAIL 15.0 m W C/L US 6, 15.0 m S OF EXIT RAMP. 179.270

BM #17 – ODOT MONUMENT IN W SIDE HEADWALL (ERI–002–4.57) APPROXIMATE STA. 14+232, 30.5 m LT. 179.257

BM #18 – CHISELED SQUARE IN SE CORNER HEADWALL. APPROXIMATE STA. 14+507, 30.5 m LT. 180.242

BM #19 – SE BOLT AT BASE OF STEEL SIGN POST. APPROXIMATE STA. 14+677 24.5 m LT. 180.461

BM #20 – ODOT MONUMENT ON W SIDE HEADWALL (ERI–002–4.93). APPROXIMATE STA. 14+810, 30.5 m LT. 181.086

BM #21 – NW BOLT W END OF GUARDRAIL. APPROXIMATE STA. 14+958, 23.2 m RT. 185.086

BM #22 – NE BOLT AT BASE OF STEEL SIGN POST. APPROXIMATE STA. 15+360, 25.3 m RT. 190.407

BM #23 – N BOLT W END OF GUARDRAIL. APPROXIMATE STA. 15+450, 3.352 m LT. 191.837

BM #24 – NE BOLT AT BASE OF STEEL SIGN POST. APPROXIMATE STA. 15+838, 24.5 m RT. 186.006

BM #25 – ODOT MONUMENT IN E SIDE HEADWALL ERI–002–5.66). APPROXIMATE STA. 15+985, 29.0 m RT. 183.469

BM #26 – CHISELED SQUARE ON NE CORNER HEADWALL. APPROXIMATE STA. 16+290, 30.0 m RT. 184.244

BM #27 – CHISELED SQUARE ON NE CORNER HEADWALL. APPROXIMATE STA. 16+620, 38.7 m RT. 185.320

BM #28 – CHISELED SQUARE ON S EDGE CONCRETE OF EASTBOUND LANES AT STAMP IN CONCRETE STA. 557+00. APPROXIMATE STA. 16+977 187.801

BM #29 – CHISELED SQUARE ON S EDGE CONCRETE OF EASTBOUND LANES AT STAMP IN CONCRETE STA. 565+00. APPROXIMATE STA. 17+221 188.395

BM #30 – CHISELED SQUARE ON CONCRETE CURB APPROXIMATELY 3 m W OF E END AT END OF EASTBOUND ENTRANCE RAMP FROM SR 101. APPROXIMATE STA. 17+379, 22.250 m RT. 188.359

BM #31 – CHISELED SQUARE AT S EDGE OF CONCRETE OF EASTBOUND LANES AT STAMP IN CONCRETE STA. 579+00. APPROXIMATE STA. 17+348 189.069

BM #32 – ODOT MONUMENT E SIDE HEADWALL (ERI–002–6.80). APPROXIMATE STA. 17+833, 30.175 m RT. 188.336

BM #33 – ODOT MONUMENT IN HEADWALL (ERI–002–6.99). APPROXIMATE STA. 18+135, 30.5 m RT. 191.718

BM #34 – NE BOLT AT BASE OF STEEL SIGN POST. APPROXIMATE STA. 18+397, 24.5 m RT. 199.454

BM #35 – N BOLT AT E END OF GUARDRAIL. APPROXIMATE STA. 18+706, 2.743 m RT. 198.823

BM #36 – N BOLT AT W END OF GUARDRAIL. APPROXIMATE STA. 18+886, 3.048 m LT. 193.775

BM #37 – NE BOLT AT BASE OF STEEL SIGN POST. APPROXIMATE STA. 19+070, 25.3 m RT. 189.106

BM #38 – CHISELED SQUARE IN S EDGE OF CONCRETE OF EASTBOUND LANES AT STAMP IN CONCRETE STA. 633+00. APPROXIMATE STA. 19+294 188.477

BM #39 – NW BOLT AT BASE OF STEEL SIGN POST. APPROXIMATE STA. 19+475, 30.5 m RT. 187.631

sheet2 P:\3907\DWG\HWY\PLAN\ 3907CR01.dwg NOV 16, 1998 TIME: 1:35 PM

metric units

CALCULATED TCM
CHECKED TJS

CENTERLINE REFERENCES AND BENCHMARKS

ERI-2-2.866

S.R. 269 INTERCHANGE EXISTING VERTICAL INFORMATION (DESIGN SPEED = 50 km/h)

PI #	PI STA.	PI ELEV.	VCL	G1	G2	K (ACTUAL)	REQUIRED SSD (MINIMUM) (m)	REQUIRED SSD (PREFERED) (m)	PROVIDED SSD (m)	ACTUAL SPEED (kph)	DESIGN EXCEPTION	COMMENTS
RAMP A												
1	0+405.385	181.636	15.24	2.0	0.50	10.16	56	62	142.37	93.18	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
RAMP B												
1	0+231.648	176.632	60.960	−1.2	2.5	16.48	56	62	89.12	67.12	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
2	0+396.241	180.147	15.24	2.5	1.49	15.09	56	62	207.74	120	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
RAMP C												
1	0+015.24	180.869	15.24	−0.50	−1.87	6.43	56	62	127.53	85.88	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
2	0+251.46	176.449	76.20	−1.87	0.26	35.77	56	62	374.00	120	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
RAMP D												
1	0+015.24	180.899	15.24	−1.40	−2.32	16.57	56	62	227.32	120	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
2	0+224.028	176.053	60.96	−2.32	0.88	19.05	56	62	109.34	76.67	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT

S.R. 101 INTERCHANGE EXISTING VERTICAL INFORMATION (DESIGN SPEED = 50 km/h)

RAMP A												
1	0+243.84	187.269	91.44	0.28	3.12	32.20	56	62	175.09	105.77	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
2	0+381.00	191.549	91.44	3.12	0.32	32.66	56	62	117.91	81.95	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
RAMP B												
1	0+060.96	191.50	91.440	−0.40	−3.32	31.32	56	62	114.94	80.47	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
2	0+182.880	187.452	91.44	−3.32	0.40	24.58	56	62	117.30	81.65	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
RAMP C												
1	0+060.96	191.506	91.44	−0.40	−2.72	39.41	56	62	132.84	88.42	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
2	0+182.880	188.190	91.44	−2.72	0.40	29.31	56	62	148.65	95.16	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
RAMP D												
1	0+182.88	187.367	91.44	0.28	3.40	29.31	56	62	148.65	95.16	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
2	0+304.801	191.512	91.44	3.40	0.36	49.70	56	62	MAX	120	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT

metric units

CALCULATED OAH
CHECKED MRD

U.S. 6 INTERCHANGE EXISTING VERTICAL INFORMATION (DESIGN SPEED = 50 km/h)

PI #	PI STA.	PI ELEV.	VCL	G1	G2	K (ACTUAL)	REQUIRED SSD (MINIMUM) (m)	REQUIRED SSD (PREFERED) (m)	PROVIDED SSD (m)	ACTUAL SPEED (kph)	DESIGN EXCEPTION	COMMENTS
RAMP A												
1	0+137.16	180.372	91.44	0.64	2.48	49.70	56	62	1612.50	120	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
2	0+274.321	183.773	121.920	2.48	−3.12	21.77	56	62	93.81	69.91	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
3	0+388.621	180.207	91.44	−3.12	−.48	34.64	56	62	204.16	120	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
RAMP B												
1	0+205.74	185.834	91.44	−0.76	−3.36	35.17	56	62	123.46	84.73	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
2	0+388.621	180.207	91.44	−3.12	−.48	34.64	56	62	204.16	120	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
3	0+457.200	179.464	31.48	−.52	.08	50.80	56	62	MAX	120	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
RAMP C												
1	0+076.2	180.110	91.440	1.24	−.28	60.16	56	62	178.70	107.35	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
RAMP D												
1	0+045.72	179.113	30.48	0.80	0.40	76.20	56	62	520.55	120	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
2	0+076.20	179.235	30.48	0.40	1.52	27.21	56	62	MAX	120	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT, EXCEEDS PREFERRED SSD
3	0+171.450	180.683	30.48	1.52	0.0	20.05	56	62	148.22	95.05	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT
4	0+396.241	180.683	30.48	0.0	0.3	101.60	56	62	MAX	120	NO	PROFILE GRADE AT RIGHT EDGE OF PAVEMENT, EXCEEDS PREFERRED SSD

VERTICAL INFORMATION

ERI-2-2.866

UTILITY SCHEMATIC PLAN

ERI – 2 – 2.866

CITY OF SANDUSKY
MARGARETTA TOWNSHIP
T. 6 N., R. 24 W.
ERIE COUNTY

metric units

SCALE IN METERS 0 100 200 1:5000

(S)(W) ERIE COUNTY ENGINEER
P.O. BOX 370
554 RIVER RD.
HURON, OH. 44839
(419) 433–7303

(E) OHIO EDISON
6326 LAKE AVENUE
ELYRIA, OH. 44035–4034
(216) 324–0207

(S1)(W1) CITY OF SANDUSKY
222 MEIGS ST.
SANDUSKY, OH. 44870
(419) 627–5861

(C) ERIE COUNTY CABLE
105 W. SHORELINE DR.
SANDUSKY, OH 44870
(419) 627–1360

(T) AMERITECH
121 N. HURON ST.
TOLEDO, OH. 43604
(419) 245–7860

(G) COLUMBIA GAS OF OHIO
2110 CALDWELL ST.
SANDUSKY, OH. 44870
(419) 625–4534

NOTE: UNDERGROUND UTILITIES -- THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 O.R.C.

BEGIN PROJECT STA. 2+866.000 SLD 2.866 NH-73 (89)

END WORK STA. 0+900.000

SFN: 2204053
ERI-2-03041

℄ RAMP C

℄ RAMP B

℄ RAMP A

℄ RAMP D

℄ CONST. S.R. 2

℄ CONST. S.R. 269

S76°19'00"E

12.47 kV
24' (7.3m)

BEGIN WORK STA. 2+629.500

BEGIN WORK STA. 0+560.000

BEGIN WORK STA. 0+003.600

STA. 3+042.512 S.R. 2 =
STA. 0+737.339 S.R. 269

℄ SURVEY & CONST. S.R. 2

138 kV
24' (7.3 m)

S54°41'48"E

END WORK STA. 0+780.000

STA. 5+642.308 S.R. 2 =
STA. 0+609.601 McCARTNEY RD.

℄ CONST. McCARTNEY RD.

MARGARETTA TOWNSHIP
CITY OF SANDUSKY

SFN: 2200155
ERI-2-05616
S60°18'12"W

12.47 kV DISTRIBUTION
32' (9.7 m) CLEARANCE

BEGIN WORK STA. 0+428.190

MATCH LINE STA. 6+400 SEE THIS SHEET

UTILITY SCHEMATIC PLAN

ERI – 2 – 2.866

CITY OF SANDUSKY
MARGARETTA TOWNSHIP
T. 6 N., R. 24 W.
ERIE COUNTY

END WORK STA. 0+525.000

SFN. 2200244 & 2200279
ERI-2-06920 L&R

℄ RAMP A

℄ RAMP B

℄ RAMP "C"

℄ RAMP D

END WORK STA. 0+577.500

138 kV TRANSMISSION
27' (8.2 m) CLEARANCE

S19°13'06"E

℄ SURVEY & CONST. S.R. 2

CITY OF SANDUSKY
MARGARETTA TOWNSHIP

BARDSHAR RD.

HOMEGARDNER RD.

S.F.N. 2200333 & 2200368
ERI-2-08336 L&R

S.F.N. 2200392 & 2200422
ERI-2-08642 L&R

S40°13'30"E

END WORK STA. 0+293.402

BEGIN WORK STA. 0+100.000

SANDUSKY ROAD (U.S.R. 6)

S.F.N.: 2200309
ERI-2-07000S

12.47 kV DISTRIBUTION
31' (9.4 m) CLEARANCE

NO TRACKS

NO UTILITIES ABOVE GROUND

MATCH LINE STA. 16+400 SEE SHEET 9

MATCH LINE STA. 6+400 SEE THIS SHEET

UTILITY SCHEMATIC PLAN
STA. 2+600.000 TO STA. 16+400.000

ERI-2-2.866

8
327

deck2 P:\3907\DWG\HWY\PLAN\ 3907UT01.dwg NOV 11, 1998 TIME: 8:06 AM

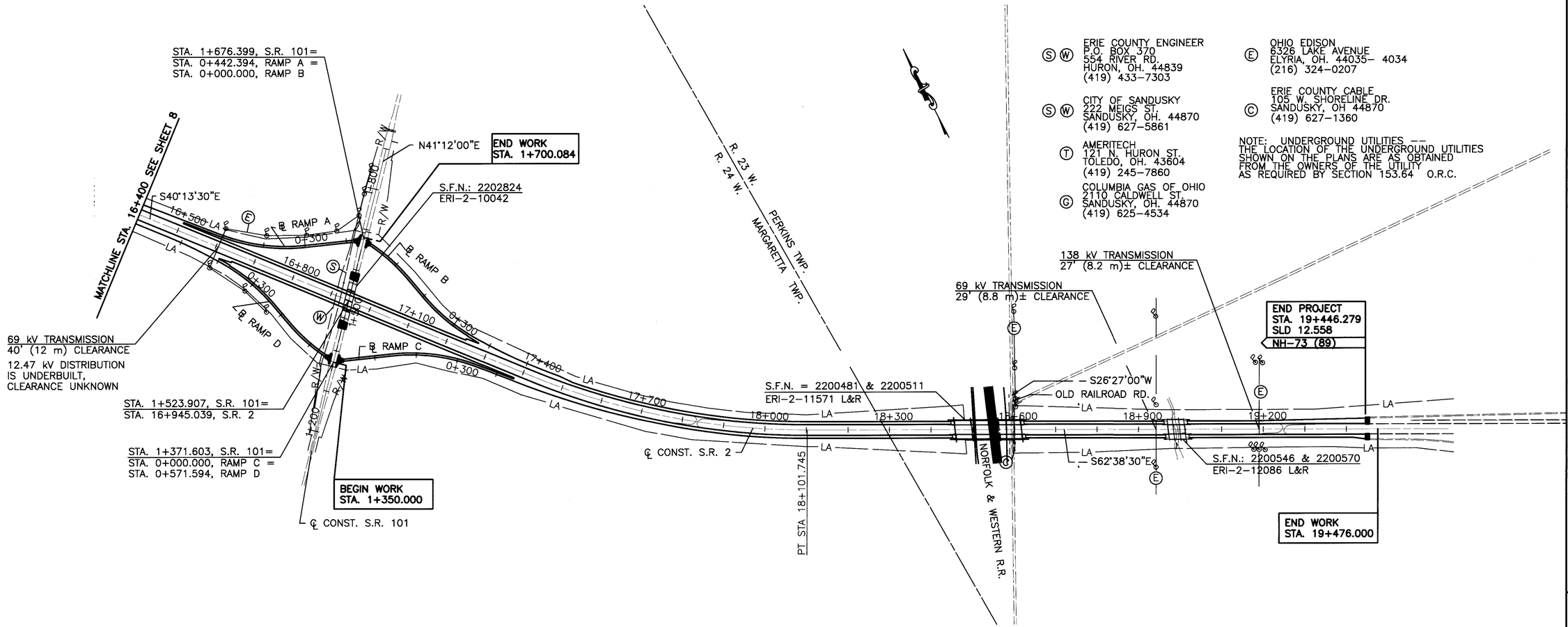
UTILITY SCHEMATIC PLAN

ERI – 2 – 2.866

MARGARETTA & PERKINS TOWNSHIPS
T. 6 N., R. 24 W. & R. 23 W.
ERIE COUNTY

metric units

SCALE IN METERS
0 100 200
1:5000



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(216) 324–0207

Ⓒ ERIE COUNTY CABLE
105 W. SHORELINE DR.
SANDUSKY, OH 44870
(419) 627–1360

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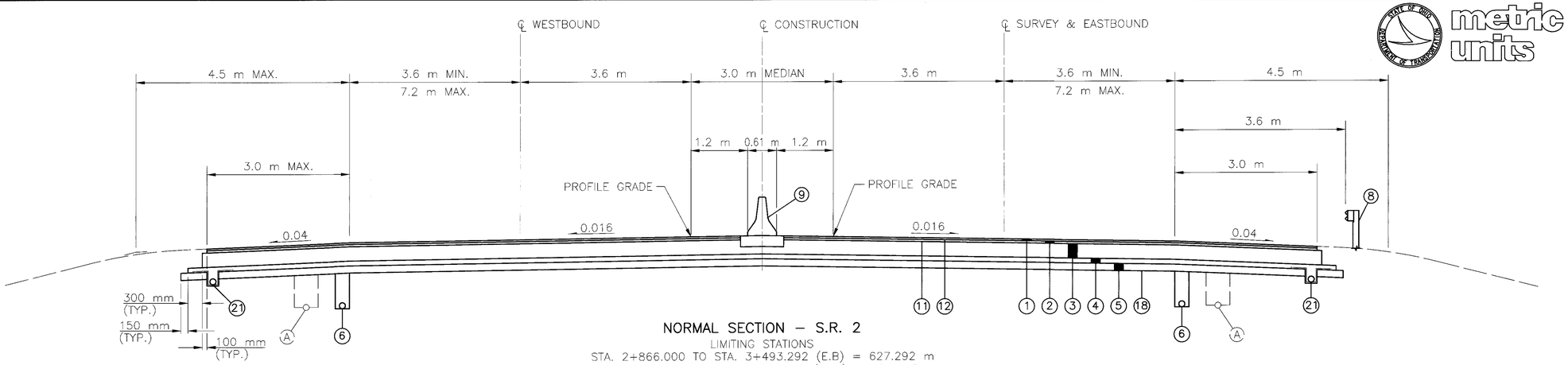
UTILITY SCHEMATIC PLAN
STA. 16+400.000 TO STA. 19+500.000

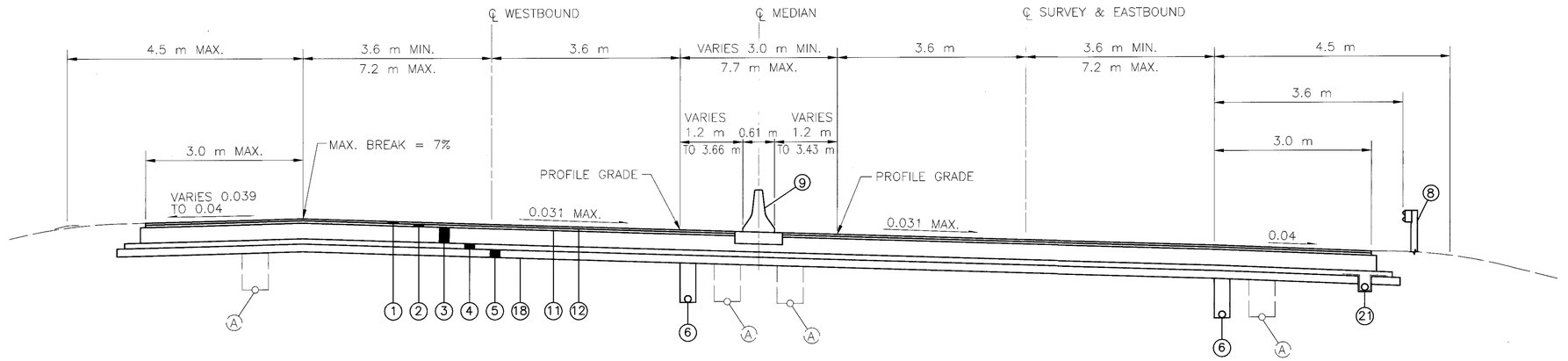
ERI-2-2.866



NORMAL SECTION – S.R. 2

LIMITING STATIONS
STA. 2+866.000 TO STA. 3+493.292 (E.B) = 627.292 m
STA. 2+866.000 TO STA. 3+506.243 (W.B.) = 639.243 m

NOTE: NO DEDUCTION WILL BE MADE FOR ITEM 304 WHERE (21) IS PLACED.



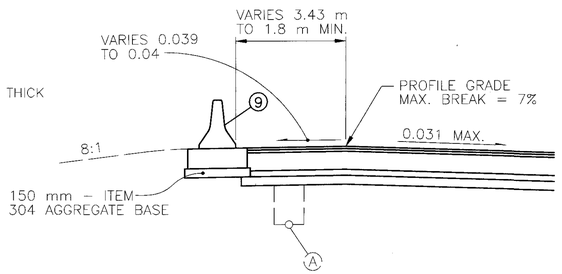
SUPERELEVATED SECTION – S.R. 2

LIMITING STATIONS
STA. 3+493.292 TO STA. 3+821.358 (E.B.) = 328.066 m
STA. 3+505.243 TO STA. 3+823.154 (W.B.) = 317.911 m

LEGEND

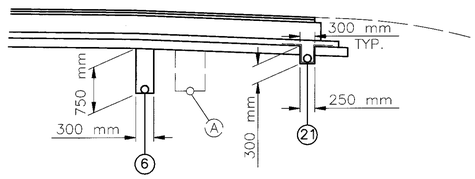
1. ITEM 446 – 38mm ASPHALT CONCRETE SURFACE COURSE, TYPE 1H
2. ITEM 446 – 45mm ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64–28
3. ITEM 302 – 300 mm BITUMINOUS AGGREGATE BASE, PG 64–22
4. ITEM 855 – 100 mm ASPHALT TREATED FREE DRAINING BASE
5. ITEM 304 – 150 mm AGGREGATE BASE
6. ITEM 605 – 150 mm SHALLOW PIPE UNDERDRAIN, 707.15
7. ITEM 659 – SEEDING AND MULCHING (SEE GENERAL NOTES)
8. ITEM 606 – GUARDRAIL, TYPE 5
9. ITEM 622 – TYPE A CONCRETE BARRIER, 813 mm
10. ITEM 203 – EMBANKMENT
11. ITEM 407 – TACK COAT (SEE GENERAL NOTE)
12. ITEM 407 – TACK COAT FOR INTERMEDIATE COURSE (SEE GENERAL NOTE)
13. ITEM 622 – TYPE D CONCRETE BARRIER
14A. ITEM 615 – TEMPORARY PAVEMENT, AS PER PLAN A (SEE SHEET 18 FOR PAVEMENT BUILDUP)
14B. ITEM 615 – TEMPORARY PAVEMENT, AS PER PLAN B (SEE SHEET 13 FOR PAVEMENT BUILDUP)
15. ITEM 448 – 38mm ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64–22
16. ITEM 611 – REINFORCED CONCRETE APPROACH SLAB (T=380MM)
17. ITEM 304 – 150mm AGGREGATE BASE
18. ITEM 203 – SUBGRADE STABILIZATION
19. ITEM 609 – CURB, TYPE 2A (COST INCLUDED IN ITEM 611)
20. ITEM 617 – COMPACTED AGGREGATE, TYPE A
21. ITEM 605 – 100 mm SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP, AS PER PLAN

(A) EX. 152 mm± CLASS I–3 PIPE
(B) EX. SUBBASE (VARIABLE THICKNESS)
(C) EX. POROUS BASE COURSE (VARIABLE THICKNESS)
(D) EX. 76 mm± WATERPROOFED AGGREGATE BASE COURSE
(E) EX. REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT 225mm THICK



BARRIER SECTION – S.R. 2

LIMITING STATIONS
STA. 3+821.358 TO STA. 3+951.084 (E.B.) = 129.726 m



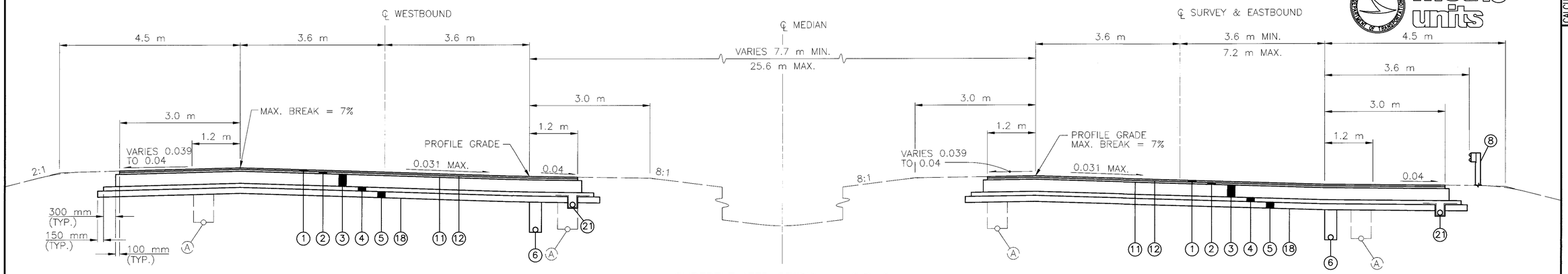
UNDERDRAIN DETAIL

metric units

CALCULATED TCM
CHECKED BMH

TYPICAL SECTIONS – S.R. 2

ERI-2-2.866



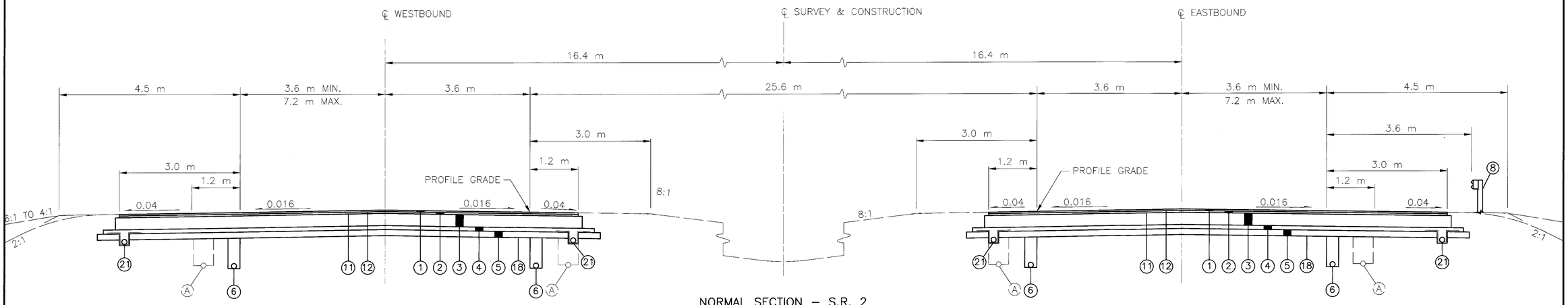
SUPERELEVATED SECTION – S.R. 2

LIMITING STATIONS

STA. 3+821.358 TO STA. 4+271.644 (E.B.) = 450.286 m

STA. 3+823.154 TO STA. 4+384.883 BACK (W.B.) = 561.724 m

THESE TYPICAL SECTIONS SHOW THE GENERAL PAVEMENT WIDTHS AND BUILD–UPS. THE LIMITS OF THE TAPERS AND FEATHERINGS ARE SHOWN IN MORE DETAIL ON THE PLAN SHEETS.



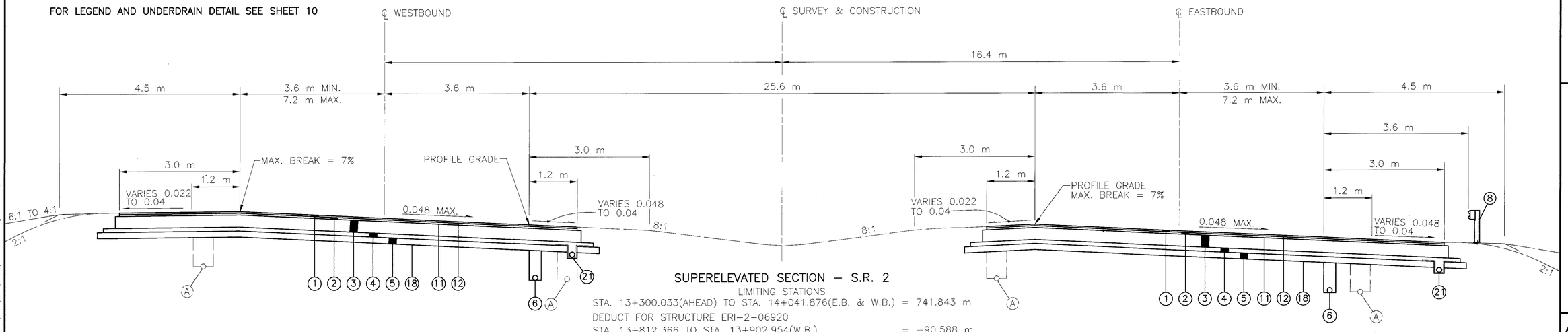
NORMAL SECTION – S.R. 2

LIMITING STATIONS

STA. 4+271.644 TO STA. 6+413.889 BACK (E.B.) = 2142.245 m

STA. 4+386.495 AHEAD TO STA. 6+413.889 BACK (W.B.) = 2027.394 m

FOR LEGEND AND UNDERDRAIN DETAIL SEE SHEET 10



SUPERELEVATED SECTION – S.R. 2

LIMITING STATIONS

STA. 13+300.033(AHEAD) TO STA. 14+041.876(E.B. & W.B.) = 741.843 m

DEDUCT FOR STRUCTURE ERI–2–06920

STA. 13+812.366 TO STA. 13+902.954(W.B.) = −90.588 m

STA. 13+806.240 TO STA. 13+898.937(E.B.) = −92.697 m

TOTAL LENGTH = 649.146 m

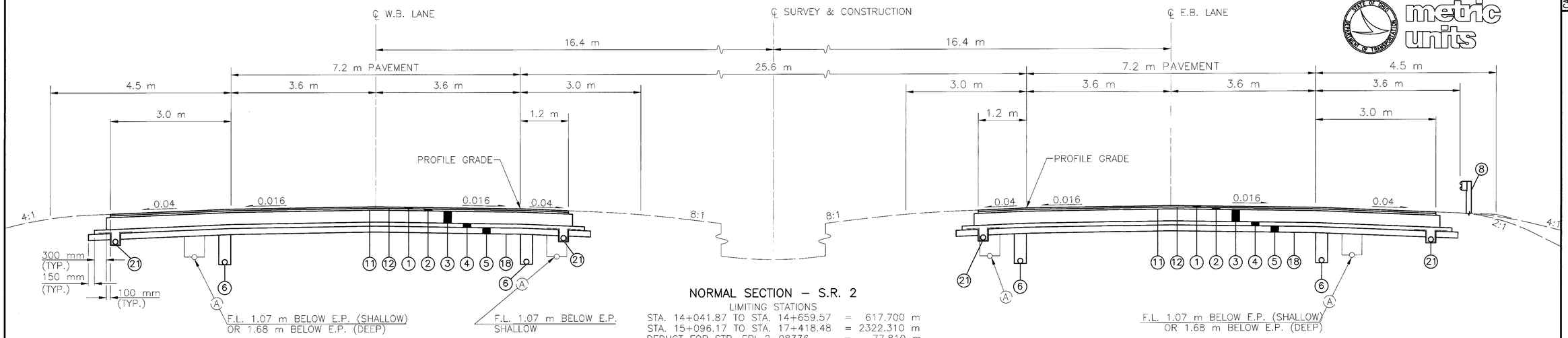
STATION EQUATION 6+413.889 BACK = 13+300.033 AHEAD

metric units

CALCULATED TCM
CHECKED BMH

TYPICAL SECTIONS – S.R. 2

ERI-2-2.866

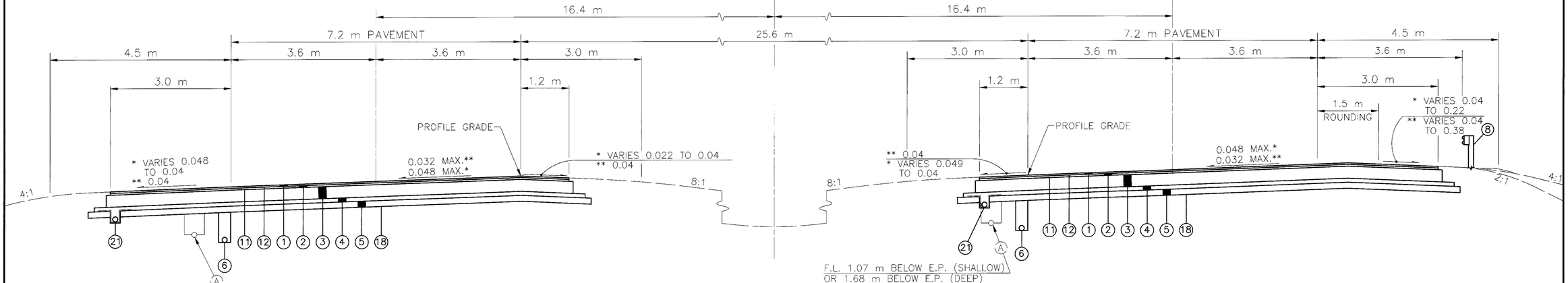


THESE TYPICAL SECTIONS SHOW THE GENERAL PAVEMENT WIDTHS AND BUILD-UPS. THE LIMITS OF THE TAPERS AND FEATHERINGS ARE SHOWN IN MORE DETAIL ON THE PLAN SHEETS.

NORMAL SECTION – S.R. 2

LIMITING STATIONS

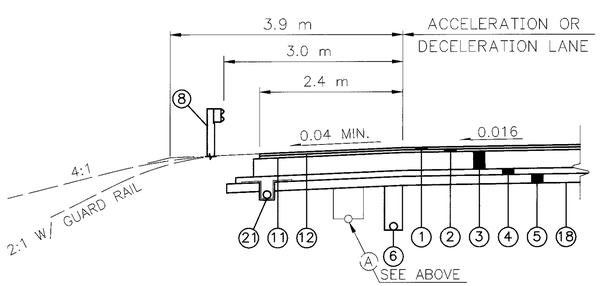
STA. 14+041.87 TO STA. 14+659.57	=	617.700 m
STA. 15+096.17 TO STA. 17+418.48	=	2322.310 m
DEDUCT FOR STR. ERI-2-08336	=	−77.810 m
DEDUCT FOR STR. ERI-2-08642	=	−104.112 m
STA. 18+101.75 TO STA. 19+446.279	=	1344.250 m
DEDUCT FOR STR. ERI-2-11571	=	−175.740 m
DEDUCT FOR STR. ERI-2-12086	=	−56.206 m
TOTAL LENGTH	=	3870.392 m



SUPERELEVATED SECTION – S.R. 2

LIMITING STATIONS

* STA. 14+659.57 TO STA. 15+096.17	=	436.60 m
** STA. 17+418.48 TO STA. 18+101.75	=	683.27 m
TOTAL LENGTH	=	1119.87 m



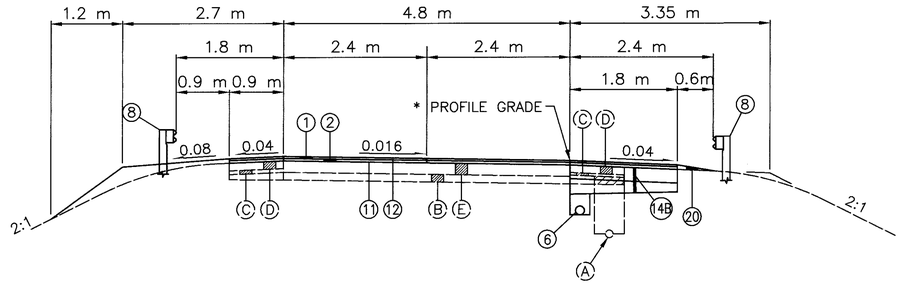
TYPICAL SECTION FOR ACCELERATION & DECELERATION LANES

FOR LEGEND AND UNDERDRAIN DETAIL SEE SHEET 10

CALCULATED TCM
CHECKED BMH

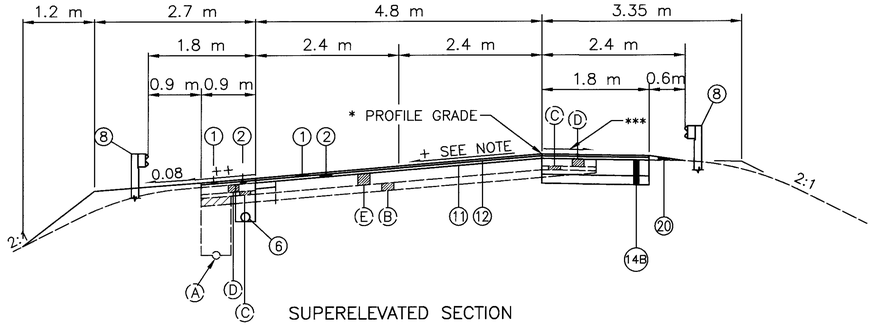
TYPICAL SECTIONS - S.R. 2

ERI-2-2.866



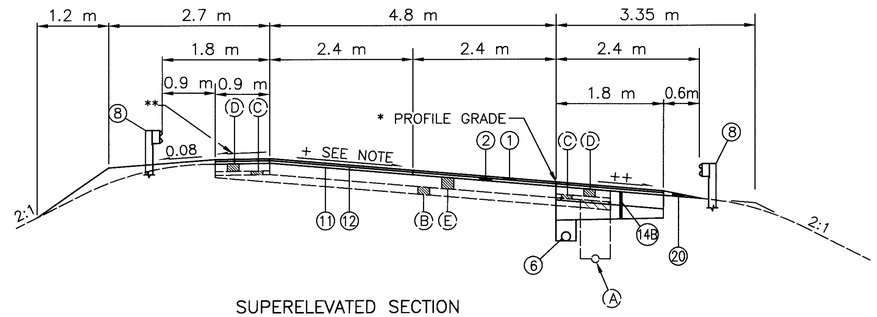
NORMAL SECTION

RAMPS C, & D @ S.R. 269 INTERCHANGE
RAMPS A, B, C & D @ U.S. 6 INTERCHANGE
RAMPS A, B, C & D @ S.R. 101 INTERCHANGE



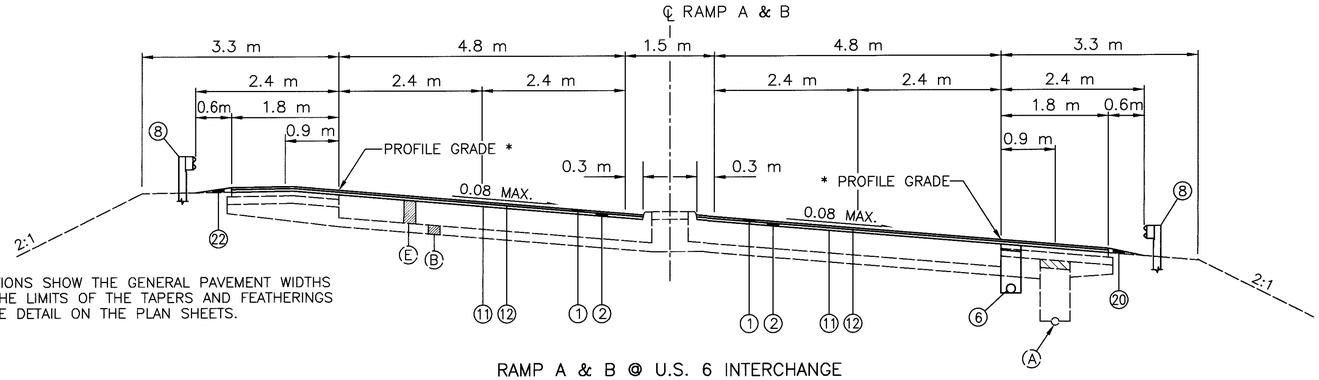
SUPERELEVATED SECTION

RAMPS C @ S.R. 269 INTERCHANGE
RAMP A @ U.S. 6 INTERCHANGE
RAMPS B & D @ S.R. 101 INTERCHANGE



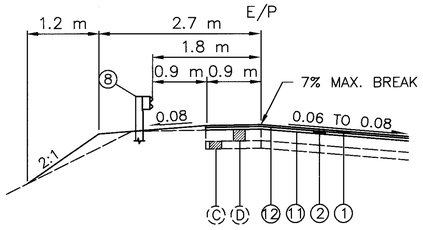
SUPERELEVATED SECTION

RAMPS C & D @ S.R. 269 INTERCHANGE
RAMPS A, B, C & D @ U.S. 6 INTERCHANGE
RAMPS A, B, C & D @ S.R. 101 INTERCHANGE

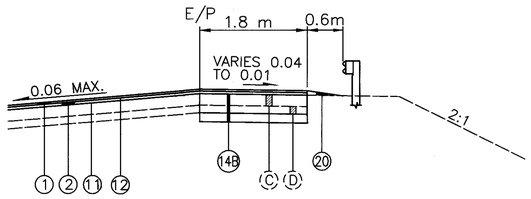


RAMP A & B @ U.S. 6 INTERCHANGE

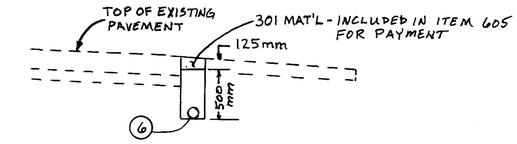
THESE TYPICAL SECTIONS SHOW THE GENERAL PAVEMENT WIDTHS AND BUILD-UPS. THE LIMITS OF THE TAPERS AND FEATHERINGS ARE SHOWN IN MORE DETAIL ON THE PLAN SHEETS.



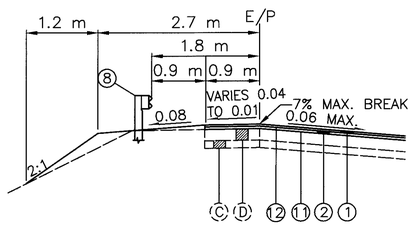
DETAIL A



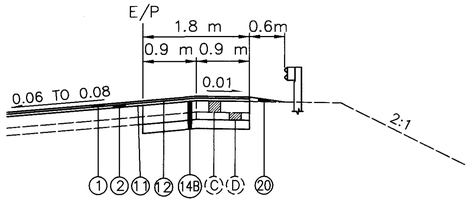
DETAIL B



UNDERDRAIN DETAIL - RAMPS

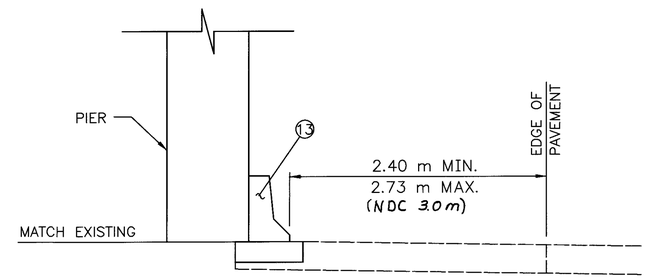


DETAIL A



DETAIL B

* PROFILE GRADE ON RIGHT SIDE OF DIRECTION OF TRAVEL
** SEE DETAIL A AT LEFT
*** SEE DETAIL B AT LEFT
\+ SEE SHEET 4 FOR SUPERELEVATION RATES
++ SAME AS PAVEMENT SLOPE OR 0.04 WHICHEVER IS GREATER



DETAIL
U.S. 6 BARRIER OFFSET

FOR LEGEND AND UNDERDRAIN DETAIL SEE SHEET 10

metric units

CALCULATED TCM
CHECKED BMH

TYPICAL SECTIONS - INTERCHANGE RAMPS

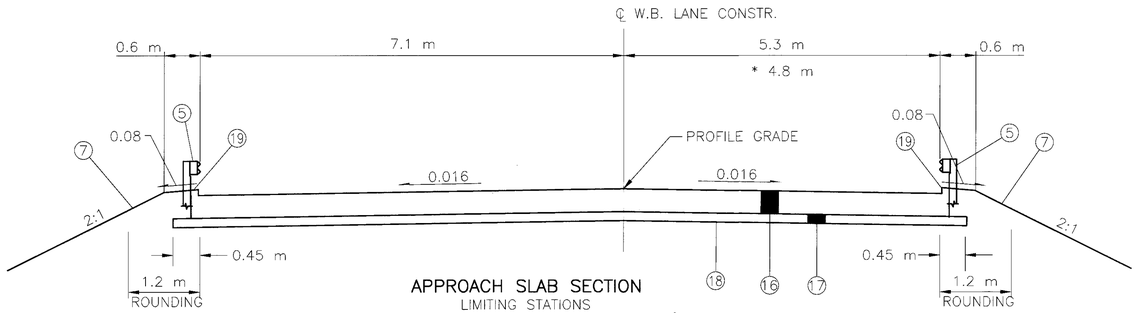
ERI-2-2.866

metric units

CALCULATED OAH
CHECKED MRD

TYPICAL SECTIONS - APPROACH SLABS

ERI-2-2.866



APPROACH SLAB SECTION

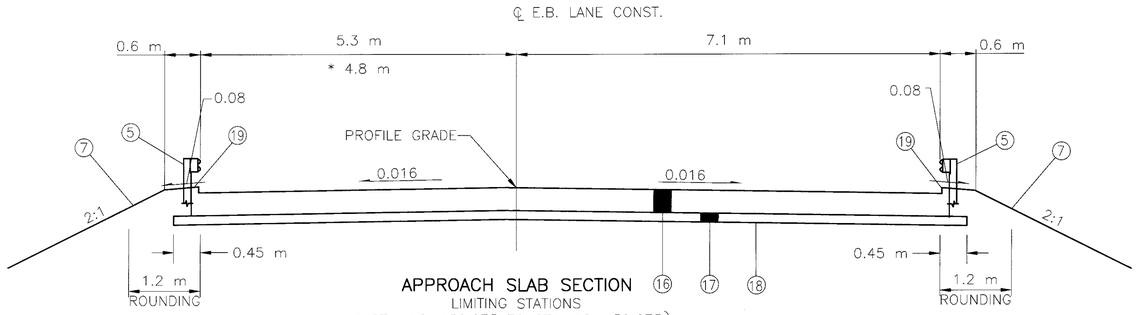
LIMITING STATIONS

* STA. 18+448.033 TO STA. 18+455.633 } SR2 OVER OLD RAILROAD ROAD (AS PER PLAN)
* STA. 18+616.173 TO STA. 18+623.773 }

* STA. 18+961.391 TO STA. 18+968.991 } SR2 OVER MILLS CREEK
* STA. 19+009.998 TO STA. 19+017.598 }

STA. 15+530.921 TO STA. 15+538.521 } SR2 OVER HOMEGARDNER ROAD
STA. 15+627.411 TO STA. 15+635.011 }

STA. 15+180.496 TO STA. 15+188.096 } SR2 OVER BARDSHAR ROAD
STA. 15+250.705 TO STA. 15+258.305 }



APPROACH SLAB SECTION

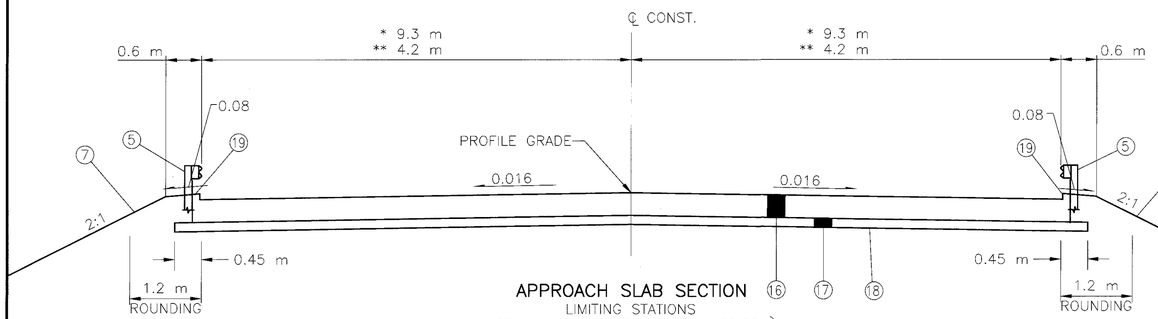
LIMITING STATIONS

* STA. 18+452.075 TO STA. 18+459.675 } SR2 OVER OLD RAILROAD ROAD (AS PER PLAN)
* STA. 18+620.215 TO STA. 18+627.815 }

* STA. 18+965.434 TO STA. 18+973.034 } SR2 OVER MILLS CREEK
* STA. 19+014.040 TO STA. 19+021.640 }

STA. 15+528.848 TO STA. 15+536.448 } SR2 OVER HOMEGARDNER ROAD
STA. 15+625.360 TO STA. 15+632.960 }

STA. 15+221.695 TO STA. 15+229.295 } SR2 OVER BARDSHAR ROAD
STA. 15+291.904 TO STA. 15+299.504 }

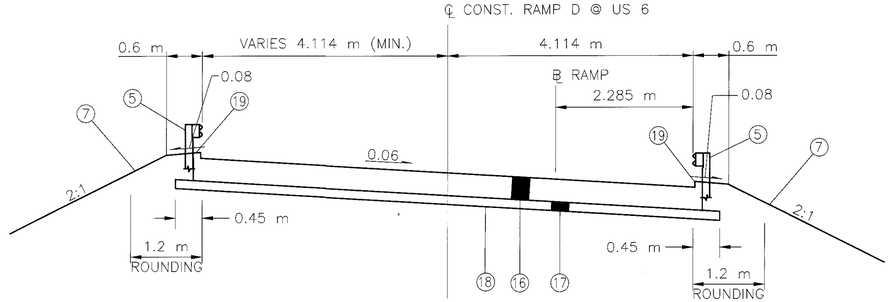


APPROACH SLAB SECTION

LIMITING STATIONS

* STA. 1+472.787 TO STA. 1+480.387 } SR 101
* STA. 1+567.426 TO STA. 1+575.026 }

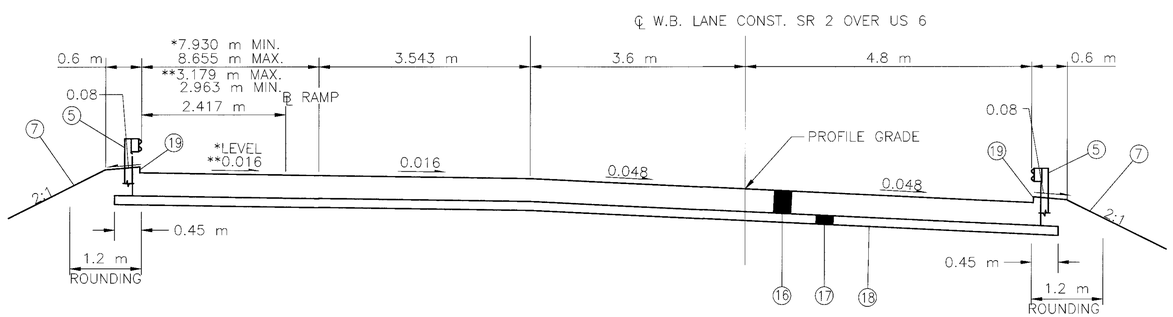
** STA. 0+554.611 TO STA. 0+562.211 } McCARTNEY ROAD
** STA. 0+656.992 TO STA. 0+664.592 }



APPROACH SLAB SECTION

LIMITING STATIONS

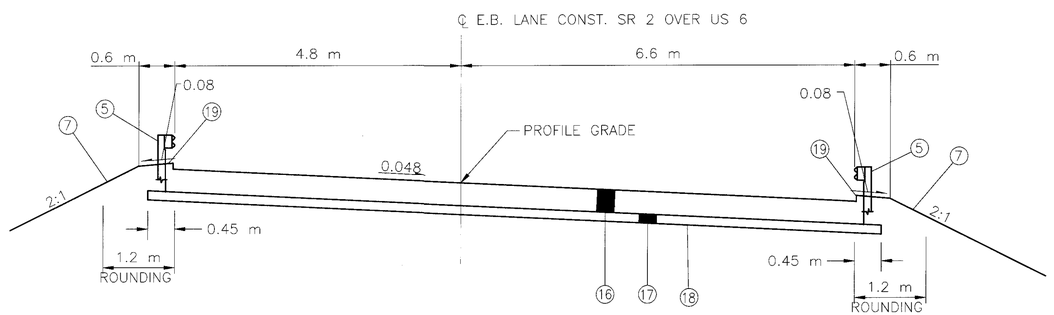
STA. 0+222.135 TO STA. 0+229.735 } AS PER PLAN
STA. 0+255.326 TO STA. 0+262.926 }



APPROACH SLAB SECTION

LIMITING STATIONS

* STA. 13+812.366 TO STA. 13+819.966 } AS PER PLAN
** STA. 13+895.354 TO STA. 13+902.954 }



APPROACH SLAB SECTION

LIMITING STATIONS

STA. 13+806.240 TO STA. 13+813.840 } AS PER PLAN
STA. 13+891.337 TO STA. 13+898.937 }

FOR LEGEND SEE SHEET 10

THESE TYPICAL SECTIONS SHOW THE GENERAL PAVEMENT WIDTHS AND BUILD-UPS. THE LIMITS OF THE TAPERS AND FEATHERINGS ARE SHOWN IN MORE DETAIL ON THE PLAN SHEETS.

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS–SECTIONS EVEN THOUGH OTHERWISE SHOWN.

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

ERIE COUNTY SANITARY ENGINEER
P.O. BOX 370
554 RIVER RD.
HURON, OH. 44839
(419) 433–7303

CITY OF SANDUSKY
222 MEIGS ST.
SANDUSKY, OH. 44870
(419) 627–5861

AMERITECH
121 N. HURON ST., ROOM 207
TOLEDO, OH. 43604
(419) 245–7304

COLUMBIA GAS OF OHIO
2110 CALDWELL ST.
SANDUSKY, OH. 44870
(419) 625–4534

OHIO EDISON
6326 LAKE AVENUE
ELYRIA, OH. 44035–4034
(216) 324–0207

ERIE COUNTY CABLE
105 W. SHORELINE DR.
SANDUSKY, OH 44870
(419) 627–1360

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED AS DIRECTED BY THE ENGINEER UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON N.G.S. DATUM (N.A.V.D. 88)

ITEM 203 – PROOF ROLLING

AN ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN PROVIDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

ITEM 203 – PROOF ROLLING 100 HR.

PROFILE GRADE TRANSITIONS AT BRIDGES

TO ASSURE A SMOOTH TRANSITION BETWEEN APPROACH ROADWAY PAVEMENT AND PROPOSED BRIDGE DECK ELEVATIONS ON S.R. 2, A VERTICAL TAPER NO STEEPER THAN 300 TO 1 (300:1) SHALL BE USED. A 100 METER TRANSITION SECTION IS DESIGNATED IN THE PLAN FOR THIS PURPOSE. THE CONTRACTOR SHALL PROVIDE A SMOOTH, LINEAR TRANSITION FROM THE PROPOSED PAVEMENT TO THE PROPOSED APPROACH SLAB ELEVATION IN THIS 100 METER LENGTH.

PROFILE AND ALIGNMENT S.R. 2

THE PROPOSED PAVEMENT SHALL FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT EXCEPT FOR PROFILE GRADE TRANSITIONS AT BRIDGES. (PREVIOUS CONSTRUCTION PLANS, PROJECT NO. ERI–2–1.80, ERI–2–4.02 AND ERI–6–3.80, SHOWING THE ORIGINAL ALIGNMENT AND PROFILE, ARE AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 3 OFFICE.)

CONNECTION TO EXISTING PIPE

WHERE THE PLANS PROVIDE FOR PROPOSED CONDUIT TO BE CONNECTED TO, OR TO CROSS EITHER OVER OR UNDER AN EXISTING SEWER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE, BOTH AS TO LINE AND GRADE, BEFORE HE STARTS TO LAY THE PROPOSED CONDUIT.

CONNECTIONS OF EXISTING CONDUITS TO RECONSTRUCTED CATCH BASINS

IF ANY EXISTING CONDUITS ARE DAMAGED OR IF ANY EXTRA CONDUIT IS REQUIRED TO EXTEND CONDUITS TO THE PROPOSED INLETS, THE FOLLOWING ESTIMATED QUANTITIES OF CONDUIT SHALL BE USED AS DIRECTED BY THE ENGINEER.

ITEM 603 – 150 mm CONDUIT TYPE E	50 METER
ITEM 603 – 150 mm CONDUIT TYPE F, 707.45	50 METER
ITEM 603 – 375 mm CONDUIT TYPE C, 706.02	50 METER
ITEM 603 – 450 mm CONDUIT TYPE C, 706.02	50 METER

ITEM 202 – CURB REMOVED

THIS WORK SHALL CONSIST OF SAW CUTTING IN A LONGITUDINAL DIRECTION ALONG THE EXISTING GORE. THE COMPLETED SAW CUT SHALL ALLOW THE CONTRACTOR TO REMOVE THE EXISTING CURB LEAVING A SMOOTH VERTICAL FACE. PAYMENT FOR THE ABOVE PAVEMENT SAWING SHALL BE INCLUDED IN THE ITEM 202 CURB REMOVED.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED TO FILL THE VOID CREATED BY THE REMOVAL OF THE PACER CURB:

ITEM 301 – BITUMINOUS AGGREGATE BASE, PG64–22 100 CU. METER

BOTH OF THESE ITEMS SHALL BE COMPLETED PRIOR TO PHASE I CONSTRUCTION.

ITEM 604 – CATCH BASIN RECONSTRUCTED TO GRADE, AS PER PLAN

THE CONTRACTOR SHALL REGRADE THE DITCH AND RECONSTRUCT APRONS AND CATCH BASINS TO GRADE AS CALLED OUT IN THE PLAN ACCORDING TO STD DWG CB–3.1M AND AS DIRECTED BY THE ENGINEER. EROSION CONTROL SHALL BE PROVIDED WHERE GRADING WORK IS DONE. PAYMENT FOR THE ABOVE WORK AS DESCRIBED SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 604 CATCH BASIN RECONSTRUCTED TO GRADE, AS PER PLAN.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 511 – CLASS C CONCRETE, MISC: FOR APRONS	50 CU. METER
ITEM 602 – BRICK MASONRY	50 CU. METER
ITEM 602 – BLOCK MASONRY	50 CU. METER
ITEM 667 – SEEDING AND JUTE MATTING	500 SQ. METER

ITEM 611 – REINFORCED CONCRETE APPROACH SLAB T = 380mm, AS PER PLAN:

THE APPROACH SLABS OF THE FOLLOWING STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS SHOWN ON SHEETS 199, 217 & 302, MISCELLANEOUS DETAILS.

ERI–2–07000S (0435)
ERI–2–06920 (0694)
ERI–2–11571 (0719)

ITEM 606 – BRIDGE TERMINAL ASSEMBLY,TYPE 1, AS PER PLAN:

THIS WORK SHALL INCLUDE CONSTRUCTING THE BRIDGE TERMINAL ASSEMBLY IN GUARDRAIL RUN 2–GR, SHEET 118 IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING GR–3.1M., EXCEPT THAT THE ASSEMBLY SHALL BE CONSTRUCTED WITH A 19.28 m RADIUS.

ALL LABOR AND MATERIALS FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 606 – BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN.

SUBBASE/SUBGRADE FAILURES

DURING THE FULL DEPTH PAVEMENT REPLACEMENT OPERATIONS, IF THE ENGINEER DETERMINES THE SUBBASE OR SUBGRADE HAS FAILED OR IS PUMPING AFTER THE REMOVAL OF THE RIGID PAVEMENT, HE SHALL DIRECT THE CONTRACTOR TO EXCAVATE THE UNSUITABLE MATERIAL AND REPLACE IT WITH ITEM 304 AGGREGATE BASE. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY AND SHALL INCLUDE PAYMENT FOR ALL EQUIPMENT, MATERIALS, AND LABOR NECESSARY TO PERFORM THE OPERATIONS OUTLINED ABOVE:

ITEM – 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	100 CU. METER
ITEM – 304 AGGREGATE BASE	100 CU. METER

REMOVAL OF MEDIAN CROSSOVERS

THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF MEDIAN CROSSOVERS AT STATIONS 14+802.955, 17+835.000 AND 19+248.158.

THIS WORK SHALL INCLUDE ALL NECESSARY LABOR, EQUIPMENT AND MATERIALS TO REMOVE SIGNS, AND MEDIAN CROSSOVERS, INCLUDING RE–GRADING AND SEEDING. THIS WORK SHALL BE AS DIRECTED BY THE ENGINEER.

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THIS PURPOSE:

ITEM 203 – EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	450 CU. METER
ITEM 630 – REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	6 EACH
ITEM 630 – REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	12 EACH
ITEM 659 – SEEDING AND MULCHING	1200 SQ. METER

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING GR–1.1M (AASHTO M 180). PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

LOCATION OF GUARDRAIL

THE LOCATIONS OF GUARDRAIL RUNS, AS SHOWN IN THESE PLANS, ARE SUBJECT TO ADJUSTMENT PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

GUARDRAIL REPLACEMENT

NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR THE ACTUAL TIME NECESSARY TO REMOVE GRADE AND REINSTALL GUARDRAIL IN A CONTINUOUS OPERATION. THE REMOVAL OF ALL GUARDRAIL SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER. NO GUARDRAIL SHALL BE REMOVED UNTIL THE REPLACEMENT MATERIAL IS ON THE SITE, READY FOR INSTALLATION. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER WORK SUSPENDED ON THIS PROJECT UNTIL SUCH A TIME THAT THE ENGINEER IS ASSURED OF SAID COMPLIANCE.

metric units

ITEM 202 – GUARDRAIL REMOVED

THE EXISTING GUARDRAIL AND MEDIAN BARRIER GUARDRAIL DESIGNATED FOR REMOVAL SHALL BE DISMANTLED AND ALL RAIL ELEMENTS, POSTS, BOLTS, AND MISCELLANEOUS MATERIALS SHALL BE DISPOSED OF BY THE CONTRACTOR. ALL POST HOLES SHALL BE CAREFULLY FILLED AND COMPACTED.

PAYMENT FOR ALL THE ABOVE SHALL BE AT THE UNIT PRICE BID FOR ITEM 202 GUARDRAIL REMOVED.

ITEM 606 – ANCHOR ASSEMBLY, TYPE B–98

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING AN SRT–350, GUARDRAIL END TERMINAL AS MANUFACTURED BY SYRO INC., 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330.545.4373).

THE LENGTH OF THE SRT–350 SYSTEM IS CONSIDERED TO BE 11.43 M, INCLUSIVE OF THREE 3.81 M LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE–APPROVED SHOP DRAWINGS:

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SS425M	SLOTTED RAIL TERMINAL SRT–350 POST LAYOUT AND ERECTION DETAILS (12.5, 9 POST)	6/21/97	3/6/98

GRADING SHALL BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING GR–4.3M.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE B–98, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 606 – ANCHOR ASSEMBLY, TYPE: E–98

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS.

1) THE ET–2000 (1997) MANUFACTURED BY SYRO, INC., 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330.545.4373).

THE LENGTH OF THE ET–2000 (1997) SYSTEM IS CONSIDERED TO BE 15.24 M, INCLUSIVE OF TWO 7.62 M LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE–APPROVED SHOP DRAWINGS:

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SS265M	ET–2000 (1997) PLAN, ELEVATION & SECTIONS	6/20/97	3/6/98

2) THE SKT–350 MANUFACTURED BY ROAD SYSTEMS, INC., 7631 NEW CASTLE DRIVE, FRANKFORT, IL 60423 (TELEPHONE: 815.464.5917).

THE LENGTH OF THE SKT–350 SYSTEM IS CONSIDERED TO BE 15.24 M, INCLUSIVE OF FOUR 3.81 M LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE–APPROVED SHOP DRAWINGS:

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SKT–4M	SEQUENTIAL KINKING TERMINAL (SKT–350) ASSEMBLY WITH 4 FOUNDATION TUBES	12/11/97	3/6/98

A TYPE C DELINEATOR SHALL BE INSTALLED AT THE HEAD OF ALL TYPE E–98 UNITS LOCATED ON THE RIGHT SIDE OF THE THROUGH ROADWAY. A TYPE D DELINEATOR SHALL BE INSTALLED AT THE HEAD OF ALL TYPE E–98 UNITS LOCATED ON THE LEFT SIDE OF THE THROUGH ROADWAY. DELINEATORS SHALL COMPLY WITH STANDARD TRAFFIC DRAWING TC–61.10M.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE E–98, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, DELINEATORS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

CALCULATED TCM CHECKED TJS

GENERAL NOTES

ERI–2–2.866

metric units

CALCULATED TCM
CHECKED BMH

GENERAL NOTES

WORK ON RAILROAD PROPERTY

FOR WORK ON OR OVER RAILROAD PROPERTY THE CONTRACTOR SHALL FOLLOW SPECIAL CLAUSES IN THE PROPOSAL AND BRIDGE ERI-2-11571 GENERAL NOTES, SHEET 281.

ITEM 207 - TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES;

ITEM 207 - TEMPORARY SEEDING AND MULCHING	9860 SQ. METER
ITEM 207 - FILTER FABRIC FENCE	2100 METER
ITEM 207 - STRAW OR HAY BALES	900 EACH
ITEM 601 - ROCK CHANNEL PROTECTION, TYPE C W/ FILTER	60 CU. METER
ITEM 659 - REPAIR SEEDING AND MULCHING	2465 SQ. METER
ITEM 659 - COMMERCIAL FERTILIZER	2320 KILOGRAM
ITEM 659 - WATER	100 CU. METER

ITEM 201 - CLEARING AND GRUBBING, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 201, ALL VEGETATION MECHANICALLY REMOVED BY CUTTING OR MOWING SHALL HAVE A CUT STUMP TREATMENT APPLIED TO EACH INDIVIDUAL REMAINING STUMP WITHIN TWO (2) HOURS OF CUTTING. CARE SHALL BE EXERCISED TO APPLY TREATMENT ONLY TO INDIVIDUAL STUMPS SO AS NOT TO HARM OTHER VEGETATION. THE CUT STUMP TREATMENT SHALL BE GARLON 4 OR PATHFINDER 11RTU OR EQUAL APPLIED IN ACCORDANCE WITH LABEL DIRECTIONS. APPLICATORS OF THE CUT STUMP TREATMENT SHALL BE CURRENTLY LISCENSED OHIO COMMERCIAL APPLICATORS IN THE APPROPRIATE CATEGORY. EVIDENCE OF VALID LICENSES SHALL BE PROVIDED TO THE ENGINEER FOR VERIFICATION. THIS PROJECT CONTAINS LARGE AMOUNTS OF DENSE GROWTH INCLUDING TREES OVER 300mm IN DIAMETER. THE BID PRICE FOR THIS ITEM SHALL INCLUDE REMOVAL OF ALL TREES AND STUMPS NECESSARY TO COMPLETE THE WORK AND AS DIRECTED BY THE ENGINEER.

ITEM 407 - TACK COAT

THE RATE OF APPLICATION OF THE 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. AREAS OF TACK COAT STRIPPED BY CONSTRUCTION EQUIPMENT SHALL BE RECOATED PRIOR TO PLACING ASPHALT CONCRETE. PLAN AREAS INDICATE AN APPLICATION RATE OF 0.36 LITERS PER SQUARE METER OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE

PRIOR TO PLACING THE SURFACE COURSE ON THE NEW INTERMEDIATE COURSE, AN ADDITIONAL APPLICATION OF TACK COAT IS REQUIRED AT AN AVERAGE RATE OF APPLICATION OF 0.14 LITERS PER SQUARE METER FOR ESTIMATING PURPOSES ONLY.

FENCE REMOVAL AND REPLACEMENT

THE CONTRACTOR SHALL REMOVE AND REPLACE THE EXISTING RIGHT OF WAY FENCE AS SHOWN ON THE PLAN IN ACCORDANCE WITH ITEM 202, ITEM 607 AND THE APPROPRIATE STANDARD CONSTRUCTION DRAWINGS. THE INTENT OF THE PLAN IS TO CONSTRUCT THE NEW FENCE IN THE SAME LOCATION AS THE EXISTING FENCE. HOWEVER, THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING FENCE LOCATIONS, AND IT WILL BE THE CONTRACTORS RESPONSIBILITY TO INSURE THAT THE PROPOSED FENCE MEETS TODAYS STANDARDS REGARDING FENCE REPLACEMENT AT STREAMS AND CULVERTS.

TO REESTABLISH THE EXISTING FENCE LOCATION, BEFORE REMOVING THE EXISTING FENCE, THE CONTRACTOR SHALL CAREFULLY REFERENCE THE EXISTING ALIGNMENT INCLUDING ALL HORIZONTAL DEFLECTIONS, END POST ASSEMBLIES, INTERMEDIATE ANCHOR POST ASSEMBLIES, CORNER POST ASSEMBLIES AND GATES.

THE EXISTING FENCE, INCLUDING ASEMBLIES, SHALL THEN BE REMOVED IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 202. TREES AND BRUSH IN THE FENCE ALIGNMENT SHALL BE CLEARED TO A DISTANCE NOT TO EXCEED 0.6 METERS FOR TYPE 47 FENCE AND 0.3 METER FOR TYPE CL FENCE BEHIND AND A SUFFICIENT DISTANCE IN FRONT TO ADEQUATELY WORK IN ERECTING THE NEW FENCE. TREE REMOVAL WILL BE IN ACCORDANCE WITH ITEM 201 - CLEARING AND GRUBBING, AS PER PLAN. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL MATERIALS OFF THE PROJECT LIMITS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETELY REMOVE THE CORNER, END OR ANCHOR POST ASSEMBLIES INCLUDING THE CONCRETE ENCASEMENT. EXISTING METAL LINE POSTS SHALL BE REMOVED OR DRIVEN A MINIMUM OF 150 mm BELOW THE EXISTING GROUND. PAYMENT FOR PERFORMING THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202 - FENCE REMOVED.

NEW FENCE SHALL THEN BE ERECTED ON THE SAME ALIGNMENT AS THE EXISTING FENCE. FENCE GROUNDING, WHEN NEEDED FOR OVERHEAD ELECTRIC LINES, WILL BE IN ACCORDANCE WITH HL-50.11M. PAYMENT FOR PERFORMING THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 625 - GROUND ROD. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS WORK:

ITEM 625 - GROUND ROD 30 EACH

ANY AREAS DISTURBED BY THE CONTRACTORS OPERATION SHALL BE REPAIRED AND SEEDED ACCORDING TO ITEM 659. IN ADDITION TO THE QUANTITIES ALREADY INCLUDED IN THE PLAN, THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR FENCE CONSTRUCTION:

ITEM 659 - SEEDING AND MULCHING	19,000 SQ. METER
ITEM 601 - ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	50 CU. METER

COOPERATION BETWEEN CONTRACTORS

THE CONTRACTOR IS ADVISED OF THE PRESENCE OF OTHER CONSTRUCTION CONTRACTS WITHIN OR IN THE VICINITY OF THE WORK LIMITS OF THIS PROJECT. THESE CONTRACTS INCLUDE A MOWING CONTRACT WHICH STARTS AT S.R. 269 AND PROCEEDS EAST TO U.S.R. 6, AS WELL AS ERI-2-12.558. THESE PROJECTS MAY BE UNDER CONSTRUCTION AT THE SAME TIME AND CMS 105.07, COOPERATION BETWEEN CONTRACTORS, IS REQUIRED.

ASBESTOS NOTIFICATION

AN ASBESTOS SURVEY OF THE BRIDGES SCHEDULED FOR DEMOLITION OR RENOVATION WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THE BRIDGES. THESE BRIDGES ARE: ERI-2-6920, ERI-2-7000S, ERI-2-8336, ERI-2-8642, ERI-2-11571, AND ERI-2-12086.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORM, PARTIALLY COMPLETED AND SIGNED BY THE BRIDGE OWNER, WILL BE PROVIDED TO THE SUCCESSFUL BIDDER AT THE PRECONSTRUCTION MEETING. THE CONTRACTOR SHALL COMPLETE THE FORM AND RETURN IT TO THE DISTRICT CONSTRUCTION ENGINEER. THE COMPLETION OF THIS FORM MAY BE PERFORMED AT THE PRECONSTRUCTION MEETING. THE DISTRICT CONSTRUCTION ENGINEER SHALL SUBMIT IT TO OEPA DISTRICT OFFICE AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF THE DEMOLITION OF THE BRIDGE. THE DISTRICT CONSTRUCTION ENGINEER SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE CONTRACTOR. THE CONTRACTOR SHALL NOT COMMENCE DEMOLITION OF THE STRUCTURE UNTIL THE ABOVE REQUIREMENTS ARE MET.

INFORMATION REQUIRED ON THE FORM WILL INCLUDE:

- THE CONTRACTOR'S NAME AND ADDRESS.
- THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE RENOVATION.
- A DESCRIPTION OF THE PLANNED RENOVATION WORK AND THE METHOD(S) TO BE USED.

A COPY OF THE OEPA FORM IS AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 3 OFFICE, 906 N. CLARK STREET, ASHLAND, OHIO, 44805.

THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE BID ITEM 202 STRUCTURE REMOVED.

ITEM 203 - LINEAR GRADING

THE FOLLOWING QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER TO RESTORE THE CROSS-SLOPE ON THE EXISTING GRADED SHOULDER (MAXIMUM OF 0.08 m/m), TO PROVIDE LATERAL SUPPORT FOR THE EXISTING PAVED SHOULDER AND TO INSURE A SMOOTH DRAINABLE SURFACE FREE OF ALL IRREGULARITIES. EXCESS EXCAVATION RESULTING FROM RESHAPING SHOULDERS SHALL BE DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT FOR RESHAPING GRADED SHOULDERS AS DESCRIBED SHALL BE INCLUDED IN THE CONTRACT PRICE PER METER FOR ITEM 203 - LINEAR GRADING.

ITEM 203 - LINEAR GRADING 19370 METER

ITEM 659 - SEEDING AND MULCHING

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR ITEM 659, SEEDING AND MULCHING, ARE BASED ON THESE LIMITS.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 659 - SEEDING AND MULCHING 29100 SQ. METER

ITEM SPECIAL - PRESSURE RELIEF JOINT.

A PRESSURE RELIEF JOINT SHALL BE PLACED AT THE FIRST TRANSVERSE JOINT BEYOND EACH APPROACH SLAB AT RAMP D OVER COLD CREEK (U.S. 6 INTERCHANGE), AS PER THE DETAILS IN THE PLAN. SEE SHEET 136. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL - PRESSURE RELIEF JOINT (8.33+5.47) = 14 METER

PAYMENT FOR THE ABOVE SHALL BE AT THE UNIT PRICE BID PER METER FOR "ITEM SPECIAL, PRESSURE RELIEF JOINT" WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ASBESTOS CERTIFICATION (NOT REQUIRED)

DUE TO THE PROPOSED WORK TO THE EXISTING STRUCTURES, THE CONTRACTOR AND THE STATE ARE NOT REQUIRED TO COMPLETE AN ASBESTOS CERTIFICATION FORM FOR THE FOLLOWING STRUCTURES: ERI-2-03041 (SR 269), ERI-2-05616 (McCARTNEY ROAD), AND ERI-2-10042 (SR 101).

ERI-2-2.866

SURVEY DISC ON STRUCTURE
THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST ONE (1) WEEK IN ADVANCE OF POURING THE CONCRETE FOR COMPLETION OF THE HEADWALL/ABUTMENT. THE ENGINEER WILL PROVIDE THE CONTRACTOR ONE (1) SURVEY DISC FOR EACH STRUCTURE (OBTAINED FROM THE DISTRICT SURVEYOR) WHICH THE CONTRACTOR SHALL PLACE IN THE SURFACE OF THE FRESH CONCRETE. THE LOCATION OF THE DISC SHALL BE ON THE HEADWALL/ABUTMENT, AND ON A FLAT, HORIZONTAL SURFACE BEYOND THE EDGE OF DECK AND GUARDRAIL OR PARAPET. THE BENCHMARK SHALL BE ACCESSIBLE TO A SURVEYOR'S ROD WITHOUT ANY OBSTRUCTIONS. COST OF THIS WORK IS CONSIDERED INCIDENTAL TO THE CONCRETE BID ITEM.

THE FOLLOWING STRUCTURES APPLY:
ERI-2-06920 L/R ERI-2-08336 L/R ERI-2-08642 L/R ERI-2-11571 L/R ERI-2-12086 L/R

ENVIRONMENTAL COMMITMENTS:

STREAM CHANNEL EXCAVATION

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT ANY INCIDENTAL DISCHARGES ASSOCIATED WITH THE EXCAVATION AND HAULING OF MATERIAL FROM THE STREAM CHANNEL. THIS PERTAINS TO ANY EXCAVATION OPERATIONS SUCH AS, FOUNDATION PIER OR ABUTMENT EXCAVATION, CHANNEL CLEAN OUT, EXCAVATION FOR ROCK CHANNEL PROTECTION AND REMOVAL OF ANY TEMPORARY FILL ASSOCIATED WITH CONSTRUCTION OPERATIONS.

DEMOLITION DEBRIS

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO AVOID AND/OR LIMIT DEMOLITION DEBRIS FROM ENTERING THE STREAM. ANY MATERIAL THAT DOES FALL INTO THE STREAM SHALL BE REMOVED AS SOON AS POSSIBLE.

INSTREAM WORK

INSTREAM WORK WILL BE LIMITED WHERE PRACTICABLE AND ONLY CLEAN NON-ERODIBLE MATERIAL WILL BE USED FOR FORDS OR COFFERDAMS. THIS TEMPORARY PLACED MATERIAL WILL BE REMOVED AND THE STREAM BOTTOM RESTORED TO NEAR NATURAL CONDITIONS WHEN THE WORK IS COMPLETED.

ITEM 203 - ROADWAY MISC.: SUBGRADE STABILIZATION

DESCRIPTION:
THE SUBGRADE WITHIN THE LIMITS OF THE PAVEMENT RECONSTRUCTION FOR ERI -2-2.866 IS TO BE STABILIZED USING A MODIFIER CONSISTING OF HYDRATED LIME OR A MIXTURE OF QUICKLIME AND FLY ASH. THE CONTRACTOR MAY PROPOSE THE USE OF EITHER OF THESE MODIFIERS. HOWEVER, THE FINAL ACCEPTANCE OF THE PROPOSED MODIFIER FOR USE ON THIS PROJECT REMAINS AT THE DISCRETION OF THE ENGINEER. AS PART OF THE BASIS FOR ACCEPTANCE OF THE PROPOSED MODIFIER, THE CONTRACTOR SHALL SUBMIT, NO LESS THAN 45 CALENDAR DAYS PRIOR TO COMMENCEMENT OF THE FIELD WORK FOR THIS PROJECT, THE RESULTS OF A COMPREHENSIVE LABORATORY TESTING PROGRAM AFFIRMING THE EFFECTIVENESS OF THE PROPOSED MODIFIER IN ACHIEVING THE REQUESTED MINIMUM SUBGRADE SUPPORT CRITERIA FOR THIS PROJECT. IT IS IMPERATIVE THAT THE LABORATORY TESTING PROGRAM INCORPORATE SAMPLES OF THE PROPOSED MODIFIER OBTAINED FROM THE IDENTICAL SOURCES THAT WILL SUPPLY THE MODIFIER DURING THE SUBSEQUENT ENTIRE CONSTRUCTION ACTIVITY.

MATERIALS:
PRIOR TO INITIATING THE LABORATORY TESTING PROGRAM, THE CONTRACTOR SHALL SUBMIT THE RESULTS OF A CHEMICAL ANALYSIS OF THE PROPOSED MODIFIER(S) WHICH ADDRESS, AT THE VERY LEAST, THE APPLICABLE SPECIFICATION(S) LISTED BELOW:

LIME (HYDRATED)	ASTM C25, C977
LIME (QUICKLIME)	ASTM C25, C821, C977
FLY ASH	ASTM C593

GENERAL:
THIS WORK SHALL NOT BE PERFORMED WHEN THE GROUND OR MATERIALS ARE FROZEN. THE ENGINEER SHALL BE CONSULTED AS TO THE ACCEPTABILITY OF THE GROUND OR WEATHER CONDITIONS PRIOR TO COMMENCEMENT OF THE WORK.

SAMPLING PROCEDURES FOR PRECONSTRUCTION LABORATORY TESTING:
THE LABORATORY TESTING PROGRAM SHALL BE CONDUCTED WITH SAMPLES OF THE ANTICIPATED SUBGRADE SOILS PROCURED FROM LOCATIONS APPROVED BY THE ENGINEER ALONG THE ENTIRE LENGTH OF THE PROJECT. THE TOTAL NUMBER OF SOIL SUBGRADE SAMPLES PROCURED AND USED AS PART OF THE LABORATORY TESTING PROGRAM MUST BE SUFFICIENT IN NUMBER TO PROPERLY REPRESENT THE ENTIRE RANGE OF SOIL TYPES, AS CLASSIFIED UNDER THE ODOT SOIL CLASSIFICATION SYSTEM, ENCOUNTERED ON THE PROJECT, AS REPORTED IN THE SPECIAL PROVISIONS "SUBGRADE INVESTIGATION FOR ERI-2-2.866", DATED NOVEMBER 20, 1998 AND PREPARED BY BBC&M ENGINEERING, INC. THE ENGINEER SHALL BE CONSULTED AS TO THE ADEQUACY OF THE SUBGRADE SAMPLING PROGRAM PRIOR TO INITIATING THE FIELD SAMPLING WORK. PRIOR TO INITIATING ANY FIELD ACTIVITIES FOR THIS PROJECT SUCH AS SUBGRADE SAMPLING, SUCH FIELD ACTIVITIES MUST BE COORDINATED WITH THE ENGINEER TO ASSURE COMPLIANCE WITH ALL APPLICABLE GUIDELINES AND REQUIREMENTS.

AN ANALYSIS OF THE INFORMATION OBTAINED DURING THE SUBGRADE EVALUATION INDICATES THAT THE PROJECT LENGTH MAY BE DIVIDED INTO FOUR GENERALIZED SOIL SAMPLING ZONES BASED ON EXISTING SUBGRADE SOIL TYPE AS FOLLOWS:

1. FROM STA. 2+900 TO STA. 15+000, THE MAJORITY OF SUBGRADE SAMPLES TESTED WERE CLASSIFIED AS A-7-6 WITH GROUP INDEX VALUES RANGING FROM 13 TO 20.
2.
3. FROM STA. 15+000 TO STA. 17+100, THE MAJORITY OF SUBGRADE SAMPLES TESTED WERE CLASSIFIED AS A-6a AND A-6b.
4. FROM STA. 17+100 TO STA. 18+300, THE SUBGRADE SAMPLES TESTED WERE CLASSIFIED AS A-4a AND A-6a.
5. FROM STA. 18+300 TO STA. 19+500, THE SUBGRADE SAMPLES TESTED WERE CLASSIFIED AS A-6b AND A-7-6.

BASED ON THE ABOVE INFORMATION, AS WELL AS THE DESIRE TO TEST MULTIPLE SAMPLES OF SIMILAR SOILS TYPES, IT IS RECOMMENDED THAT SUBGRADE SAMPLES BE OBTAINED AT LOCATIONS SHOWN IN THE FOLLOWING TABLE:

SAMPLE #	STATION	ANTICIPATED SUBGRADE TYPE
1	3+300	A-7-6
2	4+200	A-7-6
3	5+100	A-7-6
4	5+900	A-7-6
5	13+700	A-7-6
6	14+550	A-7-6
7	15+500	A-6b
8	16+300	A-6a
9	16+900	A-6a
10	17+300	A-6a
11	17+700	A-4a
12	18+700	A-6b
13	19+400	A-7-6

SAMPLES 1-6 HAVE BEEN EVENLY SPACED TO PROVIDE A STATISTICAL SAMPLING OF THE A-7-6 MATERIAL AT THE WESTERN END OF THE PROJECT. IN CONTRAST, ALL OTHER SAMPLE LOCATIONS ARE SPECIFICALLY SELECTED TO OBTAIN SOIL OF THE TYPE ANTICIPATED.

AT EACH LOCATION, SUFFICIENT SAMPLE SHALL BE OBTAINED TO ALLOW FOR A COMPLETE TEST SERIES. THIS WILL LIKELY REQUIRE AT LEAST A 68-KG (150-LB) BULK SAMPLE AT EACH LOCATION. THE SAMPLES SHOULD BE OBTAINED FROM THE SHOULDER PORTION OF THE ROADWAY, JUST BELOW ANY GRANULAR SUBBASE. ALL SAMPLING AND ROADWAY REPAIR SHOULD BE PERFORMED IN ACCORDANCE WITH ODOT REQUIREMENTS.

ALL LABORATORY TESTING SHALL BE PERFORMED BY A GEOTECHNICAL ENGINEERING CONSULTANT PREQUALIFIED WITH ODOT TO PERFORM GEOTECHNICAL ENGINEERING AND LABORATORY TESTING SERVICES (AASHTO CERTIFIED) AND EXPERIENCED WITH THE PROCEDURES ASSOCIATED WITH MIXING, CURING AND TESTING SOIL/MODIFIER MIXTURES.

THE LABORATORY PROCEDURES FOR TESTING OF SOIL MIXED WITH LIME OR QUICKLIME/FLY ASH SHALL GENERALLY FOLLOW THE GUIDELINES PUT FORTH BY AASHTO AND, AT THE LEAST, ADDRESS TESTING TO MEASURE THE MOISTURE-DENSITY RELATIONS, THE UNCONFINED COMPRESSIVE STRENGTH AND THE CALIFORNIA BEARING RATIO FOR BOTH THE REMOLDED SOIL, AS WELL AS THE CURED SOIL/MODIFIER MIXTURE. LABORATORY TESTING PROCEDURES ASSOCIATED WITH MODIFIERS INCORPORATING A COMBINATION OF QUICKLIME/FLY ASH SHALL FOLLOW THE GUIDELINES PUT FORTH IN THE AASHTO/AGC/ARTBA JOINT COMMITTEE TASK FORCE 28 REPORT, GUIDELINES AND GUIDE SPECIFICATIONS FOR "USING POZZOLANIC STABILIZED MIXTURE (BASE COURSE OR SUBBASE) AND FLY ASH FOR IN-PLACE SUBGRADE SOIL MODIFICATION". LABORATORY TESTING PROCEDURES ASSOCIATED WITH MODIFIERS OF HYDRATED LIME SHALL FOLLOW THE GUIDELINES PUT FORTH IN AASHTO T-220, "DETERMINATION OF THE STRENGTH OF SOIL-LIME MIXTURES", AND ASTM D 3668, "STANDARD TEST FOR BEARING RATIO OF LABORATORY COMPACTED SOIL-LIME MIXES". THE TEST RESULTS MUST INDICATE THAT THE MEASURED LABORATORY STRENGTHS AND BEARING RATIO FOR THE PROPOSED COMPACTED SOIL/MODIFIER MIXTURE EXCEEDS THE MINIMUM DESIGN REQUIREMENTS FOR SUBGRADE IMPROVEMENT ON THIS PROJECT.

EQUIPMENT LISTS AND PROCEDURES:
THE CONTRACTOR MUST PROVIDE EQUIPMENT LISTS AND PROCEDURES DETAILING THE PROPOSED WORK PROCESS, WITH SPECIFIC EMPHASIS ON THE EQUIPMENT/PROCEDURES FOR SPREADING AND MIXING THE SELECTED MODIFIER. CONSIDERATIONS ASSOCIATED WITH ENVIRONMENTAL ISSUES OF HANDLING AND SPREADING THE MODIFIER AS WELL AS THE EFFECTIVENESS OF ADEQUATELY AND UNIFORMLY MIXING THE SUBGRADE SOIL AND MODIFIER TO THE COMPLETE DESIGN DEPTH OF IMPROVEMENT MUST BE SPECIFICALLY ADDRESSED. THE USE OF A ROTARY-TYPE MIXING UNIT OR RECLAIMER/STABILIZER UNIT INCORPORATING SUCH MIXING ACTION IS ESSENTIAL TO THE SUCCESS OF THE STABILIZATION. THE ENGINEER RESERVES THE RIGHT TO ACCEPT THE PROPOSED PROCEDURES OR REQUEST REASONABLE MODIFICATIONS.

metric units

DESIGN:
THE DESIGN DEPTH OF SOIL STABILIZATION FOR THIS PROJECT IS 300 MM.

IN GENERAL, THE STABILIZATION CONSTRUCTION UTILIZING HYDRATED LIME SHALL FOLLOW THE GUIDELINES PUT FORTH IN NATIONAL LIME ASSOCIATION BULLETIN 326, LIME STABILIZATION CONSTRUCTION MANUAL. SUCH PROCEDURES REQUIRE A PRELIMINARY CURE PERIOD OF NO LESS THAN 48 TO 72 HOURS FOLLOWING LIME/SOIL MIXING AND WATERING TO PERMIT BREAK DOWN (MELLOWING) OF THE CLAY CLODS PRIOR TO FINAL MIXING, COMPACTION AND CURING. FOLLOWING MELLOWING AND FINAL MIXING, THE LIME/SOIL MIXTURE SHOULD BE COMPACTED TO A DRY UNIT WEIGHT OF NO LESS THAN 98% OF THE MAXIMUM DRY UNIT WEIGHT FOR THE LIME/SOIL MIXTURE AS DEFINED BY THE AASHTO T-220 PROCEDURES OR ASTM D698 (STANDARD PROCTOR COMPACTION TEST). DURING FINAL CURING OF THE COMPACTED STABILIZED SUBGRADE, ALL TRAFFIC SHALL BE RESTRICTED FROM THE SUBGRADE AREAS.

IN GENERAL, THE STABILIZATION CONSTRUCTION UTILIZING QUICKLIME AND FLY ASH SHALL FOLLOW THE GUIDELINES PUT FORTH IN AASHTO/AGC/ARTBA TASK FORCE 28 REPORT, GUIDELINES AND GUIDE SPECIFICATIONS FOR "USING POZZOLANIC STABILIZED MIXTURE (BASE COURSE OR SUBBASE) AND FLY ASH FOR IN-PLACE SUBGRADE SOIL MODIFICATION . FOLLOWING WATERING AND ADEQUATE MIXING OF THE SOIL AND MODIFIERS, THE QUICKLIME/FLY ASH/SOIL MIXTURE SHOULD BE PROMPTLY COMPACTED TO A DRY UNIT WEIGHT OF NO LESS THAN 98% OF THE MAXIMUM DRY UNIT WEIGHT FOR THE QUICKLIME/FLY ASH/SOIL MIXTURE AS DEFINED BY THE ASTM D698 (STANDARD PROCTOR COMPACTION TEST) LABORATORY PROCEDURES. DURING FINAL CURING OF THE COMPACTED STABILIZED SUBGRADE, ALL TRAFFIC SHALL BE RESTRICTED FROM THE SUBGRADE AREAS.

COMPACTION:
DURING THE COMPACTION PHASE OF THE STABILIZATION CONSTRUCTION PROCESS, THE DRY UNIT WEIGHT OF THE STABILIZED SOIL SHALL BE MEASURED USING A POSITIVE-DISPLACEMENT TEST METHOD SUCH AS ASTM D2167, "STANDARD TEST METHOD FOR DENSITY OF SOIL IN-PLACE BY THE RUBBER-BALLOON METHOD", OR ASTM D2937, "STANDARD TEST METHOD FOR DENSITY OF SOIL IN-PLACE BY THE DRIVE-CYLINDER METHOD". ADDITIONAL TESTING OF THE STABILIZED AND CURED SUBGRADE TO ASSURE THE ATTAINMENT OF THE MINIMUM REQUIRED SUPPORT CRITERIA MAY BE REQUESTED BY THE ENGINEER AND MAY INCLUDE, AMONG OTHER REQUESTS, PERFORMANCE OF IN-PLACE CBR TESTING CONDUCTED IN GENERAL ACCORDANCE WITH ASTM D4429, "STANDARD TEST METHOD FOR CBR (CALIFORNIA BEARING RATIO) - SOILS IN PLACE". THE MINIMUM ACCEPTABLE CBR VALUE IS 7.

FINAL ACCEPTANCE OF THE STABILIZED AND CURED SUBGRADE SHALL INCLUDE PROOF ROLLING, TO BE CONDUCTED IN ACCORDANCE WITH THE PROCEDURES SET FORTH IN SECTION 13, "TEST ROLLING SUBGRADE" OF THE ODOT MANUAL OF PROCEDURES FOR EARTHWORK.

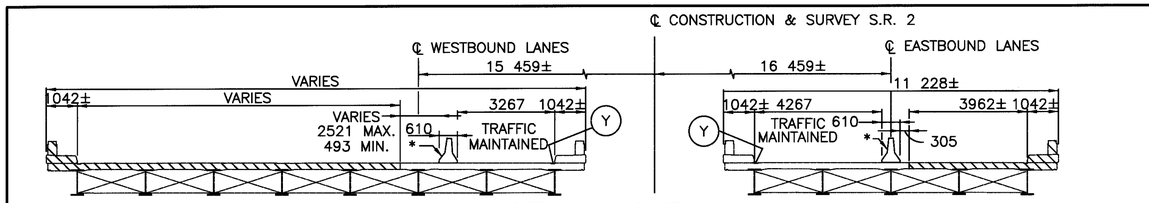
METHOD OF MEASUREMENT:
THE QUANTITY OF THIS ITEM SHALL BE MEASURED BY THE SQUARE METER COMPLETED AND ACCEPTED IN PLACE.

BASIS OF PAYMENT:
THIS ITEM SHALL INCLUDE FULL COMPENSATION FOR FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, TESTING AND INCIDENTALS AND INCLUDING ALL WORK NECESSARY TO MEET THE REQUIREMENTS STATED IN THE ABOVE NOTES. THE ACCEPTED QUANTITIES SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE METER OF ITEM 203–ROADWAY, MISC.: SUBGRADE STABILIZATION UTILIZING LIME OR QUICK LIME/FLYASH STABILIZATION, AS PER PLAN.

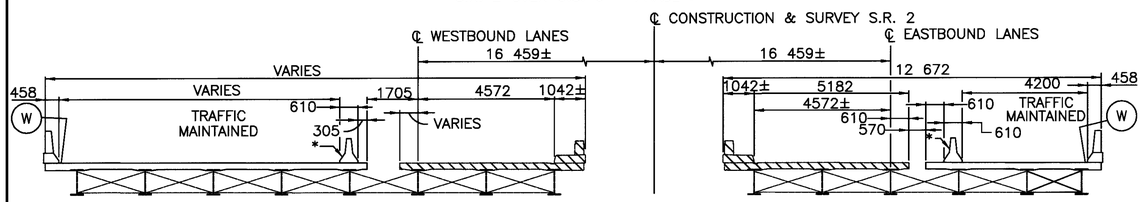
calculated · checked

GENERAL NOTES

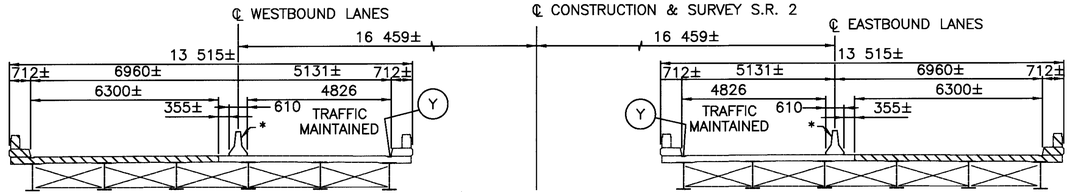
ERI-2-2.866



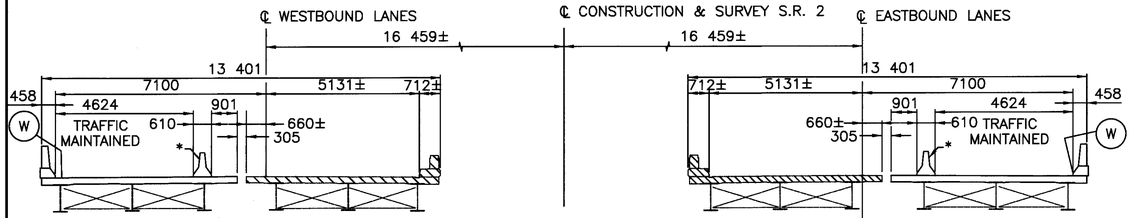
S.R. 2 OVER U.S. 6 – PHASE I



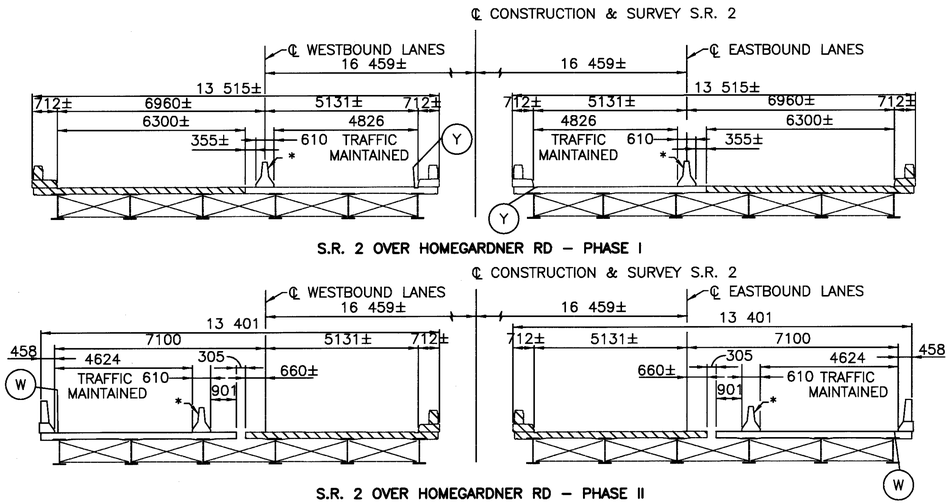
S.R. 2 OVER U.S. 6 – PHASE II



S.R. 2 OVER BARDSHAR RD – PHASE I

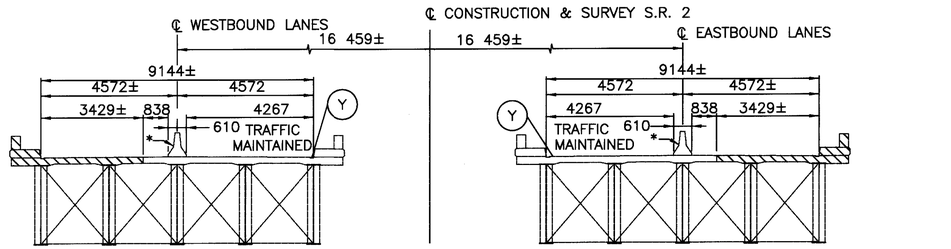


S.R. 2 OVER BARDSHAR RD – PHASE II

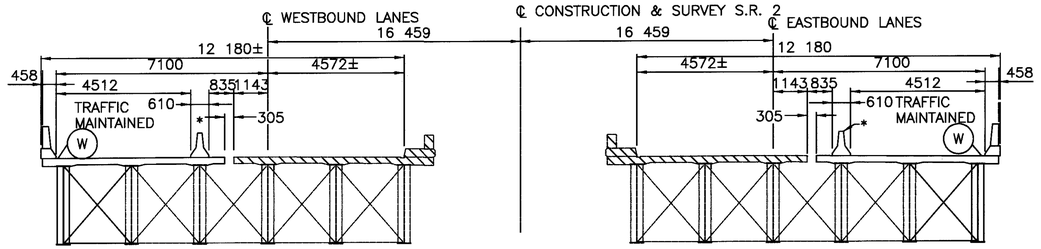


S.R. 2 OVER HOMEGARDNER RD – PHASE I

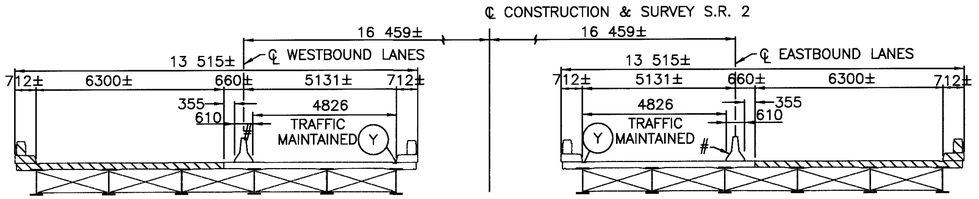
S.R. 2 OVER HOMEGARDNER RD – PHASE II



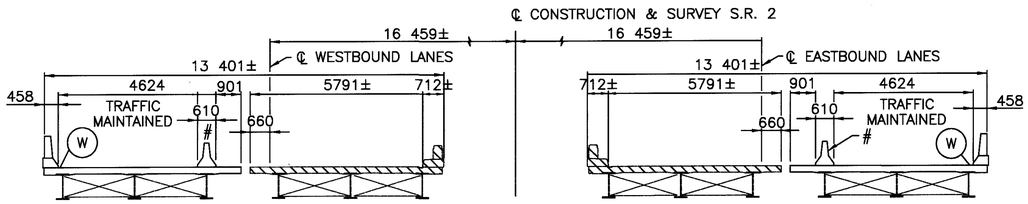
S.R. 2 OVER OLD RAILROAD RD – PHASE I



S.R. 2 OVER OLD RAILROAD RD – PHASE II



S.R. 2 OVER MILLS CREEK – PHASE I



S.R. 2 OVER MILLS CREEK – PHASE II

LEGEND

- (CA) 150mm ITEM 304 COMPACTED AGGREGATE
- (TP) 1.2m TEMPORARY PAVEMENT, AS PER PLAN "A" (CONSTRUCTED PRIOR TO PHASE 1)
- (DY) TEMPORARY CENTER LINE, DOUBLE YELLOW
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW

- PORTION OF STRUCTURE TO BE REMOVED DURING EACH PHASE
- * PORTABLE CONCRETE BARRIER, 813 mm, BRIDGE MOUNTED, ANCHORED. SHALL BE SECURED TO THE BRIDGE DECK WITH 2 ANCHORS PER SEGMENT MINIMUM.
- # PORTABLE CONCRETE BARRIER, 813 mm, BRIDGE MOUNTED, UNANCHORED

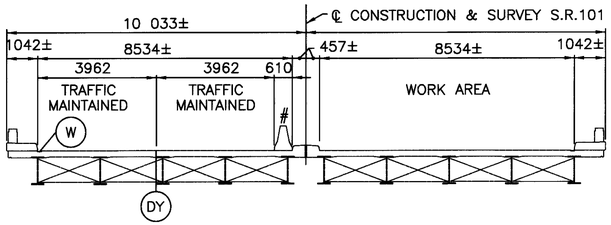
ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED

metric units

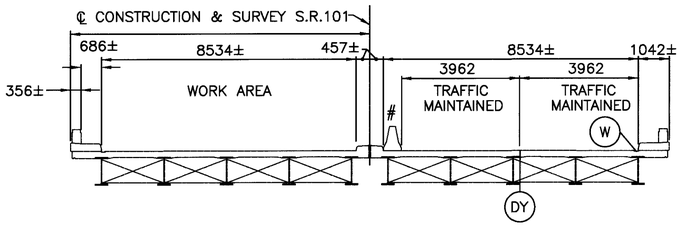
CALCULATED DJR
CHECKED TJS

MAINTENANCE OF TRAFFIC
BRIDGE PHASING TYPICAL SECTIONS

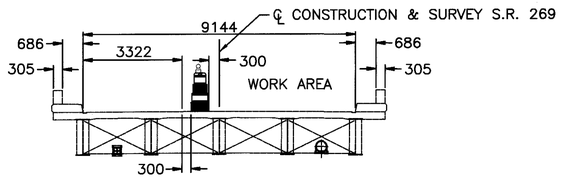
ER-2-2.866



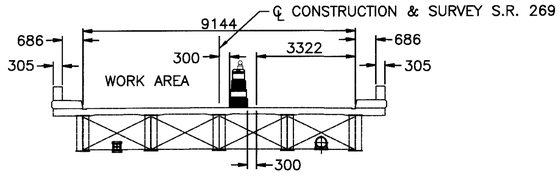
S.R. 101 OVER S.R. 2 – PHASE I



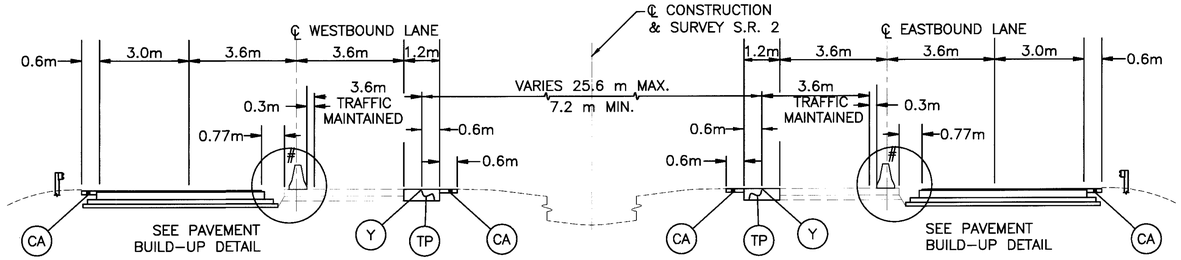
S.R. 101 OVER S.R. 2 – PHASE II



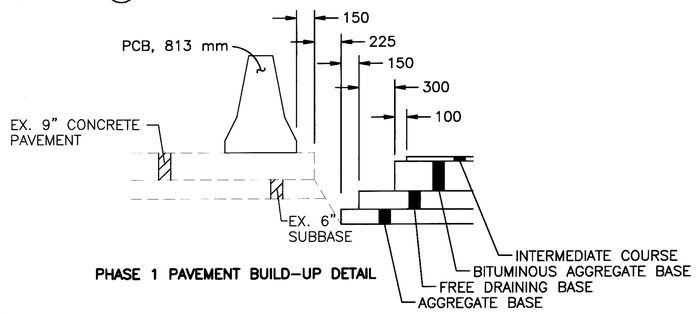
S.R. 269 OVER S.R. 2 – PHASE I



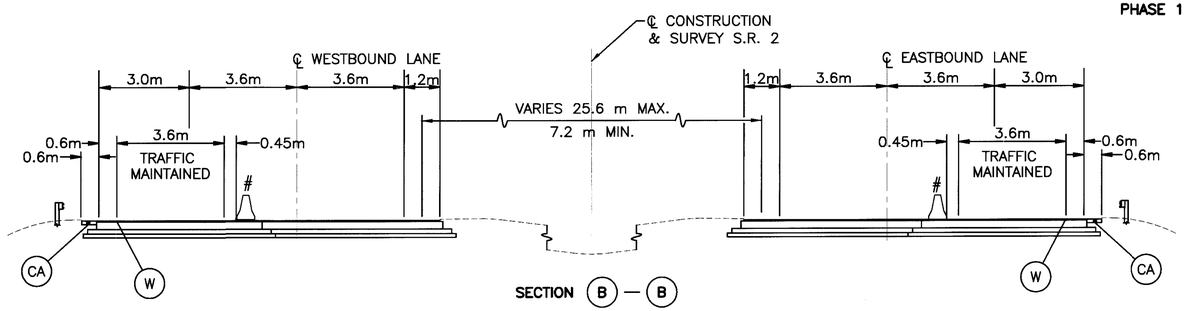
S.R. 269 OVER S.R. 2 – PHASE II



SECTION (A) — (A)
MAINTENANCE OF TRAFFIC TREATMENT – PHASE I S.R. 2
LIMITING STATIONS
STAGE 1
STA. 15+418 TO STA. 19+448 (EB)
STA. 15+419 TO STA. 19+445 (WB)
STAGE 2
STA. 3+824.23 TO STA. 15+454.40 (EB)
STA. 3+826.20 TO STA. 15+539 (WB)



PHASE 1 PAVEMENT BUILD–UP DETAIL



SECTION (B) — (B)
MAINTENANCE OF TRAFFIC TREATMENT – PHASE II S.R. 2
LIMITING STATIONS
STAGE 1
STA. 15+418 TO STA. 19+446.279

STAGE 2
STA. 3+824.23 TO STA. 15+420 (EB)
STA. 3+826.20 TO STA. 15+420 (WB)

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED

FOR LEGEND SEE SHEET 17

metric units

CALCULATED DJR
CHECKED TJS

MAINTENANCE OF TRAFFIC
BRIDGE PHASING TYPICAL SECTIONS

ERI-2-2.866

metric units

CALCULATED DJR
CHECKED TJS

ITEM 614, MAINTAINING TRAFFIC

GENERAL

ALL EXISTING LANES EXCEPT THOSE INDICATED IN STAGE 1W SHALL BE OPEN TO TRAFFIC BETWEEN NOVEMBER 15 AND MARCH 15. NOVEMBER 15 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH CMS 108.07 FOR EACH CALENDER DAY THAT ALL LANES ARE NOT OPEN AND AVAILABLE TO TRAFFIC.

TRAFFIC SHALL BE MAINTAINED AS PER THE SPECIFICATIONS, MAINTENANCE OF TRAFFIC STANDARD DRAWINGS, PLAN DETAILS, AND AS OUTLINED IN THE CONSTRUCTION AND MAINTENANCE OPERATIONS SECTION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION WITH THE LATEST REVISIONS. PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN. IN ADDITION, THE CONTRACTOR SHALL SUBMIT IN WRITING, A SCHEDULE OF OPERATIONS TO THE DIRECTOR AND RECEIVE APPROVAL BEFORE WORK IS STARTED ON THE PROJECT. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL INFORM THE LOCAL STATE HIGHWAY PATROL OF THE SCHEDULE OF OPERATIONS FOR THE MAINTENANCE OF TRAFFIC, AND OF ANY CHANGES TO THE SCHEDULE THEREAFTER.

THE FOLLOWING QUANTITIES ARE INCLUDED IN THE GENERAL SUMMARY FOR MAINTAINING TRAFFIC, AS DIRECTED BY THE ENGINEER:

ITEM 614 – BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	200 CU. METER
ITEM 616 – WATER	10 CU. METER
ITEM 616 – CALCIUM CHLORIDE	2 METRIC TON

THE CONTRACTOR SHALL ARRANGE HIS OPERATIONS SO AS TO PREVENT ANY INTERFERENCE TO THE CONTINUOUS FLOW OF TRAFFIC.

SIGNS NOT IN USE SHALL BE ADEQUATELY COVERED OR REMOVED.

THE USE OF THE BERM TO MAINTAIN TRAFFIC IS PROHIBITED, EXCEPT WHERE SPECIFIED IN THE PLANS.

NO TRAFFIC SHALL BE PERMITTED ON EXISTING PAVED SHOULDERS UNTIL THE PAVEMENT WORK THAT IS CALLED FOR IN THESE PLANS HAS BEEN COMPLETED.

ALL WORK VEHICLES LICENSED TO OPERATE ON THE HIGHWAY, INCLUDING MATERIAL TRUCKS, SHALL BE EQUIPPED WITH A FLASHING, ROTATING OR OSCILATING AMBER LIGHT VISIBLE TO ALL DIRECTIONS OF TRAFFIC A MINIMUM OF 400 METERS IN BRIGHT SUNLIGHT, AND SHALL BE OPERATED WITH LIGHTED HEAD AND TAIL LAMPS. THE AMBER LIGHT SHALL BE IN OPERATION AT ALL TIMES WITHIN THE WORK ZONE AND WHILE TRAVELLING TO AND FROM THE WORK ZONE WHENEVER THE VEHICLE SPEED IS BELOW 65 KPH. VEHICLE HAZARD LAMPS DO NOT SATISFY THIS REQUIREMENT. ALL OTHER EQUIPMENT SHALL BE EQUIPPED WITH A FLASHING, ROTATING OR OSCILLATING AMBER LIGHT VISIBLE TO ALL DIRECTIONS OF TRAFFIC A MINIMUM OF 400 METERS IN BRIGHT SUNLIGHT. THE AMBER LIGHT SHALL BE IN OPERATION WHILE THE EQUIPMENT IS WITHIN THE WORK ZONE.

BEFORE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAMES AND TELEPHONE NUMBERS OF A PERSON OR PERSONS WHO CAN BE CONTACTED 24 HOURS A DAY BY THE OHIO DEPARTMENT OF TRANSPORTATION AND ALL INTERESTED POLICE AGENCIES. THIS PERSON OR PERSONS SHALL BE RESPONSIBLE FOR REPLACING NECESSARY TRAFFIC CONTROL DEVICES.

RAMP WORK RESTRICTIONS

THERE WILL BE HOLIDAY RESTRICTIONS FOR RAMP WORK. ALL RAMPS SHALL NOT BE CLOSED OR UNDER CONSTRUCTION DURING THE FOLLOWING HOLIDAYS: MEMORIAL DAY, FOURTH OF JULY, AND LABOR DAY. THE PERIOD OF TIME THAT THE RAMPS ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF THE WEEK	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00 NOON FRIDAY THROUGH 12:00 NOON MONDAY
MONDAY	12:00 NOON FRIDAY THROUGH 12:00 NOON TUESDAY
TUESDAY	12:00 NOON MONDAY THROUGH 12:00 NOON WEDNESDAY
WEDNESDAY	12:00 NOON TUESDAY THROUGH 12:00 NOON THURSDAY
THURSDAY	12:00 NOON WEDNESDAY THROUGH 12:00 NOON MONDAY
FRIDAY	12:00 NOON THURSDAY THROUGH 12:00 NOON MONDAY
SATURDAY	12:00 NOON FRIDAY THROUGH 12:00 NOON MONDAY

THERE SHALL NOT BE ANY EXTENSIONS DUE TO MATERIAL DELAYS WHATSOEVER.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH CMS 108.07.

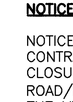
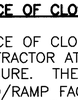
STATE ROUTE 2:

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION ON STATE ROUTE 2 SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT, PAVED BERMS, THE COMPLETED PAVEMENT AND BERMS, AND 615 TEMPORARY PAVEMENT. LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

STATE ROUTE 269:

A MINIMUM OF ONE LANE OF TRAFFIC SHALL BE MAINTATINED AT ALL TIMES ON STATE ROUTE 269. ONE LANE–TWO WAY OPERATION SHALL BE MAINTAINED AS PER STANDARD DRAWINGS MT–96.10M AND MT–96.21M. THE PHASING AND *LANE* WIDTHS SHALL BE AS SHOWN ON SHEET 18.

THE WORK LIMIT SHALL BE DEFINED AS BEGINNING 1.0 m PRIOR TO THE BEGIN APPROACH SLAB ENDING 1.0 m AFTER THE END APPROACH SLAB. SIGNAL PHASING SHALL BE AS FOLLOWS:

INTERVAL	1	2	3	4	5	6
						
DURATION	21	21	3	21	21	3

ANY INCREASE IN THE LENGTH OF THE WORK ZONE SHALL REQUIRE AN INCREASE IN THE DURATION OF INTERVALS 1 AND 4.

ALL WORK SHALL BE COMPLETED IN 45 CONSECUTIVE DAYS. LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH CMS 108.07 FOR EACH CALENDER DAY THAT LANE RESTRICTIONS EXIST PAST THE SPECIFIED LIMIT. ALL COSTS SHALL BE INCLUDED IN ITEM 614, MAINTAINING TRAFFIC.

McCARTNEY ROAD:

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES ON McCARTNEY ROAD, EXCEPT FOR A PERIOD NOT TO EXCEED 45 CONSECUTIVE CALENDAR DAYS, WHEN THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEET 24. LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH 108.07 FOR EACH CALENDAR DAY THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.

BARDSHAR ROAD, HOMEGARDNER ROAD AND OLD RAILROAD ROAD:

A MINIMUM OF ONE LANE SHALL BE MAINTAINED AT ALL TIMES WITH FLAGGERS, AS PER STANDARD DRAWING MT–97.10M ON BARDSHAR ROAD, HOMEGARDNER ROAD AND OLD RAILROAD ROAD, EXCEPT FOR SHORT PERIODS FOR SETTING BEAMS, AS SHOWN ON SHEET 22.

U.S. ROUTE 6:

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES ON U.S. ROUTE 6 BY USE OF EXISTING PAVEMENT, EXCEPT FOR SHORT PERIODS FOR SETTING BEAMS. SEE SHEET 21 FOR ADDITIONAL NOTES.

U.S. ROUTE 101:

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES ON U.S. ROUTE 101 BY USE OF EXISTING PAVEMENT, THE COMPLETED PAVEMENT, 615 TEMPORARY PAVEMENT AND 622 PORTABLE CONCRETE BARRIERS. ALL WORK SHALL BE COMPLETED IN 60 CONSECUTIVE DAYS. LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH CMS 108.07 FOR EACH DAY THAT LANE RESTRICTIONS EXIST PAST THE SPECIFIED LIMIT.

NOTICE OF CLOSURE SIGNS

NOTICE OF CLOSURE SIGNS, AS DETAILED IN THESE PLANS, SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED ROAD OR RAMP CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE. THE SIGNS MAY BE ERECTED ANYWHERE ON RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

OVERNIGHT TRENCH CLOSING

THE BASE WIDENING SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 127 MILLIMETERS BELOW THE EXISTING PAVEMENT BY THE END OF EACH WORK DAY. NO TRENCH SHALL BE LEFT OPEN OVERNIGHT EXCEPT FOR A SHORT LENGTH (7.5 METERS OR LESS) OF A WORK SECTION AT THE END OF THE TRENCH. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED BASE WIDENING SHALL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER.

GUARDRAIL REPLACEMENT

NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR THE ACTUAL TIME NECESSARY TO REMOVE THE EXISTING GUARDRAIL, PREPARE THE SITE, AND INSTALL NEW GUARDRAIL IN A CONTINUOUS OPERATION. THE REMOVAL OF ALL GUARDRAIL SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER. NO GUARDRAIL SHALL BE REMOVED UNTIL THE REPLACEMENT MATERIAL IS ON THE SITE, READY FOR INSTALLATION. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER WORK SUSPENDED UNTIL SUCH TIME AS THE ENGINEER IS ASSURED OF COMPLIANCE.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR

IN ADDITION TO THE REQUIREMENTS OF 614 AND THE LATEST EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD), A UNIFORMED LAW ENFORCEMENT OFFICER (AND OFFICIAL PATROL CAR WITH WORKING TOP MOUNTED EMERGENCY FLASHING LIGHTS) SHALL BE PROVIDED FOR CONTROLLING TRAFFIC FOR THE FOLLOWING TASKS:

FOR LANE CLOSURES: DURING INITIAL SET–UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED.

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

DURING HIGH TOURIST TRAFFIC TIMES (GENERALLY FRIDAYS, SATURDAYS AND SUNDAYS DURING THE SUMMER MONTHS). DURING THIS TIME, THREE OFFICERS IN PATROL CARS, INCLUDING ONE SUPERVISOR, SHALL PATROL THE CONSTRUCTION AREA. THE ASSIGNMENT OF THESE OFFICERS WILL BE MADE EXCLUSIVELY BY THE POST COMMANDER.

LAW ENFORCEMENT OFFICERS (L.E.O.'S) SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED. THE L.E.O.'S ARE CONSIDERED TO BE EMPLOYED BY THE CONTRACTOR AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACTIONS. ALTHOUGH THEY ARE EMPLOYED BY THE CONTRACTOR, THE PROJECT ENGINEER SHALL HAVE CONTROL OVER THEIR PLACEMENT. THE OFFICIAL PATROL CAR SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED BY THE OHIO REVISED CODE.

THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES WITH:

OHIO STATE HIGHWAY PATROL
511 FREEMONT ROAD
SANDUSKY, OHIO 44870
(419) 734–1952

LAW ENFORCEMENT OFFICERS WITH PATROL CAR REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614–LAW ENFORCEMENT OFFICER WITH PATROL CAR. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614 – LAW ENFORCEMENT OFFICER WITH PATROL CAR	2400 HOURS

THE HOURS PAID SHALL INCLUDE MINIMUM SHOW–UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED. THESE HOURS INCLUDE THOSE FROM SHEET 21.

IF THE CONTRACTOR WISHES TO UTILIZE L.E.O.'S FOR FLAGGING AND TRAFFIC CONTROL OTHER THAN FOR THAT REQUIRED IN THESE PLANS, HE MAY DO SO AT HIS OWN EXPENSE. PAYMENT FOR THE EXCESS ABOVE THE CONTRACT REQUIREMENTS WILL BE INCLUDED UNDER ITEM 614 MAINTAINING TRAFFIC.

ITEM 622, PORTABLE CONCRETE BARRIER

ALL APPROACH SECTIONS OF PORTABLE CONCRETE BARRIERS SHALL BE PROTECTED WITH A TAPERED BARRIER SECTION UNLESS OTHERWISE SPECIFIED.

IT IS ANTICIPATED THAT THE SAME BARRIER WILL BE USED IN VARIOUS PHASES OF CONSTRUCTION. MOVEMENT OF THE CONCRETE BARRIER BETWEEN PHASES SHALL BE ACCOMPLISHED IN ONE WORKING DAY. FLAGGERS SHALL BE UTILIZED FOR PROTECTION OF VEHICULAR TRAFFIC UNTIL MOVEMENT OF THE BARRIER IS COMPLETE.

ALL COSTS INVOLVED IN REMOVING AND REINSTALLING THE CONCRETE BARRIER WILL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 622, PORTABLE CONCRETE BARRIER.

ITEM 622, PORTABLE CONCRETE BARRIER, 813 mm, BRIDGE MOUNTED, AS PER PLAN

AT THE COMPLETION OF WORK, THE PORTABLE CONCRETE BARRIER (PCB) UNDER THIS PAY ITEM SHALL BECOME THE PROPERTY OF THE OHIO DEPARTMENT OF TRANSPORTATION (ODOT). THE CONTRACTOR SHALL REMOVE THE PCB FROM THE PROJECT, TRANSPORT IT TO ODOT'S ERIE COUNTY GARAGE IN MILAN, UNLOAD AND STACK IT FOR STORAGE IN THE AREA DESIGNATED BY THE COUNTY MANAGER. THE CONTRACTOR SHALL NOTIFY THE COUNTY MANAGER (419–499–2351) A MINIMUM OF SEVEN (7) DAYS PRIOR TO DELIVERING THE PCB.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE CONTRACT UNIT PRICE PER METER FOR ITEM 622, "PORTABLE CONCRETE BARRIER, 813 mm, BRIDGE MOUNTED, AS PER PLAN", AND SHALL INCLUDE FURNISHING, MAINTAINING, REMOVING, TRANSPORTING, UNLOADING AND STACKING THE PCB AT THE ODOT FACILITY.

ITEM 614, TEMPORARY IMPACT ATTENUATOR, G.R.E.A.T. TYPE

THIS WORK SHALL CONSIST OF FURNISHING IMPACT ATTENUATORS AS REQUIRED IN THE PLANS. THIS ITEM SHALL INCLUDE ALL RELATED HARDWARE, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER TO CONSTRUCT COMPLETE AND FUNCTIONAL G.R.E.A.T. IMPACT ATTENUATOR SYSTEMS. THE ATTENUATOR SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND AT THE LOCATIONS SHOWN ON THE PLANS. THE IMPACT ATTENUATOR SHALL BE MANUFACTURED BY THE ENERGY ABSORPTION SYSTEMS, INC., ONE EAST WACKER DRIVE, CHICAGO, ILLINOIS 60601. TELEPHONE: (312) 467–6750.

THE CONTRACTOR HAS THE OPTION OF USING A QUADGUARDcz SYSTEM WHICH IS MANUFACTURED BY THE SAME COMPANY. THE MANUFACTURER SHALL PROVIDE THE MODEL NECESSARY FOR THE CONDITIONS SET FORTH IN THESE PLANS.

MAINTENANCE OF TRAFFIC GENERAL NOTES

ERI-2-2.866

ITEM 614, TEMPORARY IMPACT ATTENUATOR, G.R.E.A.T. TYPE (CONT.)

THE NOSE COVER OF THE ATTENUATOR SHALL MEET THE REQUIREMENTS OF STANDARD DRAWING MT-95.81M.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING, REPAIRING, AND OTHERWISE RESTORING THE IMPACT ATTENUATOR IN ACCORDANCE WITH THE MANUFACTURER'S MAINTENANCE INSTRUCTIONS WHILE IT IS IN USE ON THE PROJECT. SUCH REPAIRS SHALL BE PERFORMED WITHIN 24 HOURS OF THE INCIDENT WHICH CAUSED DAMAGE TO THE PROJECT. IN ADDITION TO ANY EXTRA UNITS SUPPLIED FOR THIS PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING ALL NECESSARY MATERIALS, LABOR AND EQUIPMENT REQUIRED TO PERFORM THE ABOVE DESCRIBED RESTORATION OF THE ATTENUATOR.

AN ESTIMATED QUANTITY AS LISTED BELOW SHALL BE USED AS DIRECTED BY THE ENGINEER FOR USE IN THE ABOVE MENTIONED RESTORATION ONLY WHEN IT IS DECIDED THAT MINOR OR MAJOR REPAIRS CANNOT BE PERFORMED IN A SAFE AND TIMELY MANNER:

ITEM 614 – TEMPORARY IMPACT ATTENUATOR (REPLACEMENT), G.R.E.A.T. TYPE, MODEL NO. 200200NF6GCZ 2 EACH

FOR LOCATIONS OF THE ATTENUATORS SEE PLAN SHEETS 26–28, 35, 42, 45, 47, 54 AND 56. THESE TEMPORARY LOCATED ATTENUATORS SHALL BE BID PER EACH PER THE FOLLOWING PAY ITEM DESCRIPTION:

ITEM 614 – TEMPORARY IMPACT ATTENUATOR, G.R.E.A.T. TYPE, MODEL NO. 200200NF6GCZ, BIDIRECTIONAL

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR EACH, ITEM 614, TEMPORARY IMPACT ATTENUATOR AND SHALL BE CONSIDERED FULL PAYMENT FOR FURNISHING, INSTALLING AT THE SPECIFIED LOCATIONS, RESTORATION AFTER EACH VEHICLE IMPACT, INCLUDING ALL LABOR, TOOLS, EQUIPMENT AND MISCELLANEOUS HARDWARE AND MATERIALS NECESSARY TO COMPLETE THESE ITEMS OF WORK.

ONE (1) REPLACEMENT ATTENUATOR SHALL BE STOCKED AT ALL TIMES BY THE CONTRACTOR FOR IMMEDIATE REPLACEMENT ON THE PROJECT.

ITEM SPECIAL, REPLACEMENT SIGN

FLAT SHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT SIGNS SHALL BE NEW. OTHER MATERIALS MAY BE IN USED BUT GOOD CONDITION SUBJECT TO APPROVAL BY THE ENGINEER.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE CONTRACT PRICE PER SQUARE METER FOR ITEM SPECIAL, REPLACEMENT SIGN, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF DAMAGED SIGNS, HARDWARE AND SUPPORTS, AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC.

AN ESTIMATED QUANTITY OF 40 SQUARE METERS HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ITEM SPECIAL, REPLACEMENT DRUM

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER, REPLACEMENT DRUMS SHALL BE NEW.

PAYMENT FOR THE NEW DRUMS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM SPECIAL, REPLACEMENT DRUM, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM, AND PROVIDING AND MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUM.

AN ESTIMATED QUANTITY OF 200 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

COVERING OF SIGNS

WHERE THE PLANS CALL FOR A PERMANENT SIGN TO BE COVERED, THE CONTRACTOR SHALL DO SO IN SUCH A MANNER AS TO AVOID DAMAGING THE PERMANENT SIGN WHEN THE COVER IS REMOVED. THE COVER SHALL BE TOTALLY OPAQUE. THE USE OF ADHESIVE TAPE APPLIED DIRECTLY TO A SIGN FACE IS STRICTLY PROHIBITED.

ITEM 614, WORK ZONE SPEED LIMIT SIGN

THE CONTRACTOR SHALL ERECT A WORK ZONE SPEED LIMIT SIGN IN ADVANCE OF ANY LANE RESTRICTION EXPECTED TO LAST AT LEAST 30 DAYS, OR AS DIRECTED BY THE ENGINEER. THE SIGN SHALL BE MOUNTED ON BOTH SIDES OF DIVIDED HIGHWAYS, 150 METERS IN ADVANCE OF THE LANE REDUCTION TAPER. THE SIGN SHALL BE MOUNTED ON THE RIGHT SIDE, 75 METERS IN ADVANCE OF THE LANE REDUCTION TAPER ON UNDIVIDED HIGHWAYS. THE SIGN SHALL BE REPEATED, ON THE SIDE NEAREST TRAFFIC, EVERY 1600 METERS FOR 55 MPH ZONES. THESE SIGNS SHALL ALSO BE ERECTED IMMEDIATELY AFTER EACH OPEN ENTRANCE RAMP WITHIN THE ZONE. A SIGN TO INDICATE THE RESUMPTION STATUTORY SPEED LIMIT SHALL BE ERECTED AT THE END OF ANY REDUCED SPEED ZONE. THIS SIGN SHALL BE AN R-8A.

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED BUT GOOD CONDITION PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE REFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF 730.19 AND U.S. DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL SPECIFICATION FOR TYPE III-C SHEETING, FP-85. WORK ZONE SPEED LIMIT SIGNS SHALL BE MOUNTED ON TWO (2) ITEM 630 GROUND MOUNTED SUPPORTS, NO. 3 POSTS.

WORK ZONE SPEED LIMIT SIGNS AND SUPPORTS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGNS AND NECESSARY SUPPORTS. IF A SIGN AND SUPPORT COMBINATION IS REMOVED AND RE-ERECTED AT ANOTHER LOCATION WITHIN THE PROJECT DUE TO CHANGES IN THE SPEED ZONE DIRECTED BY THE ENGINEER, IT SHALL BE CONSIDERED ANOTHER UNIT.

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE IN PLACE, WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING, ERECTING, MAINTAINING, COVERING DURING SUSPENSION OF WORK, AND REMOVING THE SIGNS AND SUPPORTS.

ITEM 614 – WORK ZONE SPEED LIMIT SIGN 55 EACH

ITEM 614, DOUBLED FINES IN WORK ZONE SIGN

THIS ITEM SHALL CONSIST OF FURNISHING, ERECTING, MAINTAINING, AND/OR REPLACING AS NECESSARY AND SUBSEQUENTLY REMOVING R-180-48 (CONSTRUCTION ZONE-FINES DOUBLED) SIGNS BY THE CONTRACTOR AS DETAILED BELOW.

THESE SIGNS MAY BE ERECTED FOR CONSTRUCTION ZONES ONLY IF THE PLANNED WORK LENGTH IS AT LEAST ONE HALF MILE LONG AND THE WORK WILL LAST FOR AT LEAST 30 DAYS. A CONSTRUCTION ZONE SHALL BE AS DEFINED AS THAT LANE OR PORTION OF STREET OR HIGHWAY WITHIN WHICH LANE, BERM, OR SHOULDER CONSTRUCTION, RECONSTRUCTION, RESURFACING, OR ANY OTHER WORK OF A REPAIR OR MAINTENANCE NATURE, INCLUDING PUBLIC UTILITY WORK, IS BEING CONDUCTED, COMMENCING WITH THE POINT WHERE THE FIRST WORKER OR PIECE OF EQUIPMENT IS LOCATED AND ENDING WHERE THE LAST WORKER OR PIECE OF EQUIPMENT IS LOCATED.

THE WORK LENGTH IS DEFINED AS THE LENGTH OF ROADWAY DIRECTLY AND INDIRECTLY AFFECTED BY CONSTRUCTION ACTIVITIES INCLUDING THE TRANSITION AREA (WHERE REDIRECTION OF THE DRIVERS NORMAL PATH OCCURS) THE ACTIVITY AREA (WHICH INCLUDES THE CONSTRUCTION ZONE AND ANY BUFFERS) AND THE TERMINATION AREA (WHERE TRAFFIC IS RETURNED TO ITS NORMAL PATH), BUT NOT INCLUDING THE ADVANCE WARNING SIGN AREA.

WHERE WORKERS AND CONSTRUCTION EQUIPMENT ARE BEYOND THE TRAFFIC LANES AND PAVED SHOULDER, THE SIGNS SHALL NOT BE PROVIDED. ALSO, IF CONSTRUCTION ACTIVITY AFFECTS ONLY ONE DIRECTIONAL ROADWAY OF A DIVIDED HIGHWAY WITH A BARRIER OR WIDE MEDIAN, SIGNS SHALL NOT BE ERECTED FOR TRAFFIC ON THE OPPOSING DIRECTIONAL ROADWAY OR RAMP.

THE SIGNS SHALL BE MOUNTED ON BOTH SIDES (DUAL) OF A DIRECTIONAL ROADWAY OF A DIVIDED HIGHWAY, AND ONLY ON THE RIGHT SIDE OF RAMPS. THE FIRST SIGNS SHALL BE PLACED BETWEEN THE ROAD CONSTRUCTION AHEAD (OW-128) SIGN AND THE NEXT SIGN IN THE SEQUENCE. ADDITIONAL SIGNS ARE REQUIRED FOR LONG CONSTRUCTION ZONES OR WHERE RAMPS JUNCTION WITHIN THE CONSTRUCTION PROJECT WORK LIMITS. SIGNS SHALL BE ERECTED ON EACH ENTRANCE RAMP, AND AT LEAST ONCE EVERY TWO MILES THROUGH THE CONSTRUCTION WORK LIMITS. SIGNS SHALL BE MOUNTED AT THE APPROPRIATE OFFSETS AND ELEVATIONS AS PRESCRIBED BY THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THEY SHALL BE MOUNTED ON SUPPORTS MEETING CURRENT SAFETY CRITERIA.

SIGNS SHALL BE COVERED OR REMOVED WHEN A CONSTRUCTION ZONE IS DISCONTINUED FOR A PERIOD OF 30 DAYS OR MORE.

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE IN PLACE, WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING, ERECTING, MAINTAINING, COVERING DURING SUSPENSION OF WORK, AND REMOVING THE SIGNS AND SUPPORTS.

ITEM 614 – DOUBLED FINES IN WORK ZONE SIGN 16 EACH

DESIGNATED LOCAL MAINTENANCE ROUTES

A LOCAL MAINTENANCE ROUTE, OTHER THAN THE OFFICIAL SIGNED ODOT DETOUR ROUTE, WILL BE DESIGNATED BY AGREEMENT BETWEEN ODOT AND LOCAL GOVERNMENTAL AGENCIES PRIOR TO THE HIGHWAY CLOSURE. DURING THE TIME THAT TRAFFIC IS DETOURED, THE CONTRACTOR SHALL MAINTAIN THIS ROUTE IN A CONDITION WHICH IS REASONABLY SMOOTH AND FREE FROM HOLES, RUTS, RIDGES, BUMPS, DUST AND STANDING WATER. ONCE THE DETOUR IS REMOVED AND TRAFFIC RETURNED TO ITS NORMAL PATTERN, THE DESIGNATED LOCAL MAINTENANCE ROUTE SHALL BE RESTORED TO A CONDITION THAT IS EQUIVALENT TO THAT WHICH EXISTED PRIOR TO ITS USE FOR THIS PURPOSE. ALL SUCH WORK SHALL BE PERFORMED WHEN AND AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER TO MAINTAIN AND SUBSEQUENTLY RESTORE THE DESIGNATED LOCAL MAINTENANCE ROUTE:

ITEM 253 – PAVEMENT REPAIR (100mm AVE. THICKNESS) 19 CU. METER
ITEM 614 – BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC 19 CU. METER

ITEM 615, TEMPORARY PAVEMENT AS PER PLAN "A"

TEMPORARY PAVEMENT AS PER PLAN, "A", SHALL BE CONSTRUCTED, AND SUBSEQUENTLY REMOVED, AS SHOWN IN THE PLANS, UNLESS OTHERWISE SPECIFIED. THE BUILD UP FOR TEMPORARY PAVEMENT, AS PER PLAN, "A" IS AS FOLLOWS:

32 mm – 448 ASPHALT CONCRETE, PG64-22
228 mm – 301 BITUMINOUS AGGREGATE BASE, PG64-22
150 mm – 304 AGGREGATE BASE

448, 301, 304, SUBGRADE COMPACTION, SAWCUTS, EXCAVATION AND EMBANKMENT INVOLVED IN THE CONSTRUCTION OF TEMPORARY PAVEMENT SHALL BE PAID FOR UNDER ITEM 615-TEMPORARY PAVEMENT AS PER PLAN "A". THE TEMPORARY PAVEMENT SHALL BE CONSTRUCTED AS SHOWN ON SHEET 18.

ITEM 615, TEMPORARY PAVEMENT AS PER PLAN "B"

TEMPORARY PAVEMENT AS PER PLAN, "B", SHALL BE CONSTRUCTED, AND SUBSEQUENTLY REMOVED, AS SHOWN IN THE PLANS, UNLESS OTHERWISE SPECIFIED. THE BUILD UP FOR TEMPORARY PAVEMENT, AS PER PLAN, "B" IS AS FOLLOWS:

228 mm – 301 BITUMINOUS AGGREGATE BASE, PG64-22
150 mm – 304 AGGREGATE BASE

301, 304, SUBGRADE COMPACTION, SAWCUTS, EXCAVATION AND EMBANKMENT INVOLVED IN THE CONSTRUCTION OF TEMPORARY PAVEMENT SHALL BE PAID FOR UNDER ITEM 615-TEMPORARY PAVEMENT AS PER PLAN "B". THE TEMPORARY PAVEMENT SHALL BE CONSTRUCTED AS SHOWN ON SHEET 13.

ITEM 614, BARRIER REFLECTORS

REFLECTORS AND THEIR MOUNTING SHALL CONFORM TO CONSTRUCTION MATERIAL SPECIFICATIONS 626 EXCEPT THAT SPACING SHALL BE AS SHOWN ON THE PLAN.

REPLACEMENT OF DAMAGED GUARDRAIL

IF, DURING THE CONSTRUCTION OF THE PROJECT, THE EXISTING GUARDRAIL IS DAMAGED BY THE TRAVELING PUBLIC, THE CONTRACTOR SHALL REPAIR THE DAMAGED SECTIONS AS DIRECTED BY THE ENGINEER. THE FOLLOWING QUANTITIES ARE PROVIDED FOR SUCH OCCURRENCES:

ITEM 202 – GUARDRAIL REMOVED 2,600 METERS
ITEM 606 – GUARDRAIL, TYPE 5 1,500 METERS
ITEM 606 – ANCHOR ASSEMBLY, TYPE B-98 10 EACH

SALVAGEABLE GUARDRAIL MAY BE REUSED IF IT IS DETERMINED BY THE ENGINEER TO BE IN GOOD CONDITION. ANY GRADING NECESSARY TO RESTORE THE DAMAGED AREA BACK TO THE PRE-EXISTING CONDITION SHALL BE CONSIDERED INCIDENTAL IN THE COST OF ITEM 606.

THE REMOVAL AND DISPOSAL OF THE DAMAGED GUARDRAIL AND ANCHOR ASSEMBLIES SHALL BE PERFORMED BY THE METER MEASUREMENT AND INCLUDED IN ITEM 202 GUARDRAIL REMOVED.

QUANTITIES NOT USED FOR THE INTENDED PURPOSE SHALL BE NONPERFORMED.

THE 606 ITEMS IN THIS NOTE ARE INTENDED TO BE USED ONLY DURING THE MAINTENANCE OF TRAFFIC PHASES OF THIS PROJECT. THEY ARE NOT TO BE CONSIDERED AS A PERMANENT INSTALLATION.

WORKSITE TRAFFIC SUPERVISOR

THE CONTRACTOR SHALL EMPLOY A **PROFESSIONAL** WORKSITE TRAFFIC SUPERVISOR (WTS) FOR THE PURPOSE OF MONITORING THE TRAFFIC CONTROL PLAN (TCP). THE WORKSITE TRAFFIC SUPERVISOR SHALL HAVE EXPERIENCE OR TRAINING IN PROJECT SUPERVISION AND TRAFFIC CONTROL COMMENSURATE WITH THE RESPONSIBILITIES OF MANAGING THE PROJECT TRAFFIC CONTROL AND COORDINATING WITH THE MOTORIST INFORMATION SYSTEM OUTSIDE THE PROJECT LIMITS. THE GOALS OF THE WORKSITE TRAFFIC SUPERVISOR'S POSITION ARE TO MINIMIZE TRAFFIC CONGESTION AND MAXIMIZE PROJECT SAFETY AND EFFICIENCY. THE CONTRACTOR SHALL SUBMIT TO THE DIRECTOR (ENGINEER OF CONSTRUCTION) FOR APPROVAL A RESUME OF THE EXPERIENCE, TRAINING AND EDUCATION OF THE PERSON PROPOSED FOR WORKSITE TRAFFIC SUPERVISOR. PROJECT WORK SHALL NOT BEGIN WITHOUT AN APPROVED WORKSITE TRAFFIC SUPERVISOR. THE WTS SHALL BE PRESENT WHEN THE CONTRACTOR INSTALLS A TRAFFIC RESTRICTION, LANE CLOSURE ETC. THE WTS SHALL REVIEW THE TRAFFIC CONTROL PATTERN UPON COMPLETION OF THE INSTALLATION BOTH DURING THE DAY AND AT NIGHT FOR ASSURANCE OF CONTRACT COMPLIANCE. THE WTS SHALL MAKE RECOMMENDATIONS TO MODIFY THE TCP FOR BETTER/SAFER TRAFFIC FLOW. THESE RECOMMENDATIONS SHALL BE MADE IN WRITING TO THE DIRECTOR. NO CHANGES TO THE TRAFFIC CONTROL PLAN SHALL BE MADE UNTIL APPROVAL IS OBTAINED FROM THE DIRECTOR IN WRITING.

EACH DAY, THE WORKSITE TRAFFIC SUPERVISOR SHALL REVIEW THE PROJECT'S TRAFFIC CONTROL. A MINIMUM OF TWO REVIEWS EACH WEEK SHALL BE PERFORMED AT NIGHT. THE FOLLOWING ITEMS SHALL BE INCLUDED IN EACH REVIEW: TRAFFIC CONTROL DEVICE CONDITION, PLACEMENT, VISIBILITY; TRAFFIC FLOW CONDITIONS, INCIDENTS, CONGESTION POINTS, DELAYS; ADEQUACY OF ADVANCED INFORMATIONAL SIGNS BEYOND THE PROJECT LIMITS; INTERACTION OF WORK VEHICLES AND TRAFFIC; EVIDENCE OF ACCIDENTS; PROPER STORAGE OF MATERIALS AND EQUIPMENT; CONFORMANCE WITH TCP; ADEQUACY OF TCP; CONFLICTING OR NON-PERFORMING PAVEMENT MARKINGS. THE WTS SHALL NOTE ANY TRAFFIC CONTROL DEFICIENCIES. DEFICIENT OR IMPROPERLY PLACED TRAFFIC CONTROL DEVICES SHALL BE CORRECTED. THE WORKSITE TRAFFIC SUPERVISOR SHALL HAVE NECESSARY AUTHORITY TO IMMEDIATELY PERFORM THIS CORRECTIVE WORK. DAILY, A RECORD OF REVIEW SHALL BE GIVEN TO THE PROJECT ENGINEER IN WRITING AND SHALL INCLUDE A RECORD OF DEFICIENCIES AND RESOLUTION OF THE DEFICIENCIES.

FAILURE OF THE CONTRACTOR TO COMPLY WITH ANY OF THE ABOVE SHALL CONSTITUTE CAUSE FOR THE PROJECT ENGINEER TO SUSPEND ALL WORK UNTIL ALL CORRECTIONS ARE MADE.

PAYMENT FOR FURNISHING THE WORKSITE TRAFFIC SUPERVISOR SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR THE ITEM 614 MAINTAINING TRAFFIC.

TEMPOARY PAVEMENT MARKINGS, 740.06, TYPE I

ALL TEMPORARY PAVEMENT MARKINGS THAT ARE TO BE PLACED ON PERMANENT SURFACES SHALL MEET ALL THE REQUIREMENTS OF CMS 614.10 AND 740.06 TYPE I.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
metric units

CALCULATED DJR | CHECKED TJS

MAINTENANCE OF TRAFFIC GENERAL NOTES

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MAINTENANCE OF TRAFFIC SCHEME

THE MAINTENANCE OF TRAFFIC SHOWN IN THESE PLANS ARE TO BE CONSIDERED AS CONCEPTUAL. THE CONTRACTOR SHALL SCHEDULE THEIR WORK AND METHODS IN ORDER TO MEET THE INTENT OF THE PLANS. THE PAVEMENT SURFACES TO BE USED BY THE TRAVELING PUBLIC SHALL BE ABLE TO DRAIN FREELY. ALL COSTS TO MAINTAIN THE ROADWAY AS PER THE CONSTRUCTION AND MATERIALS SPECIFICATIONS AND THE PLANS SHALL BE INCLUDED IN ITEM 614 LUMP SUM MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED.

SEQUENCE OF CONSTRUCTION

STAGE 1 – STA. 15+420 TO STA. 19+476

PRIOR TO PHASE I, THE CONTRACTOR SHALL CONSTRUCT A 1.2m TEMPORARY PAVEMENT ALONG THE EXISTING INSIDE EDGE OF PAVEMENT, AS SHOWN IN THE PLANS. ITEMS 202, CURB REMOVED & 301 PER THE GENERAL NOTE ON SHEET 15 SHALL ALSO BE COMPLETED PRIOR TO PHASE I.

PHASE I

1. THE CONTRACTOR SHALL PERFORM ALL WORK ON THE EASTBOUND AND WESTBOUND OUTSIDE LANES AND SHOULDERS.

2. THE CONTRACTOR SHALL PERFORM PART–WIDTH CONSTRUCTION ON THE OUTSIDE HALF OF BRIDGES 0866 OVER HOMEGARDNER, 1160 OVER OLD RAILROAD ROAD AND 1211 OVER MILLS CREEK, USING BRIDGE MOUNTED PORTABLE CONCRETE BARRIERS.

3. TRAFFIC SHALL BE MAINTAINED ON 3.6m MINIMUM LANES ON THE INSIDE EXISTING PAVEMENT AND BRIDGES.

PRIOR TO WORK PERFORMED ON RAMPS THE CONTRACTOR SHALL REMOVE ANY PACER CURBS OR GORE ISLANDS.

PHASE I – R1

1. THE CONTRACTOR SHALL PERFORM ALL WORK ON THE RIGHT SIDE OF ALL RAMPS AT S.R. 101 WHILE MAINTAINING TRAFFIC ON A 3.0m LANE ON THE INSIDE EXISTING PAVEMENT.

PHASE I – R2

1. THE CONTRACTOR SHALL PERFORM ALL WORK ON THE LEFT SIDE OF ALL RAMPS AT S.R. 101, WHILE MAINTAINING TRAFFIC ON A 3.6m LANE ON THE FINISHED RIGHT SIDE PAVEMENT AND NEW SHOULDER.

ALL RAMP WORK SHALL BE COMPLETED PRIOR TO PHASE II CONSTRUCTION.

PHASE II

1. THE CONTRACTOR SHALL PERFORM ALL WORK ON THE EASTBOUND AND WESTBOUND INSIDE LANES, SHOULDERS AND MEDIAN.

2. THE CONTRACTOR SHALL PERFORM PART–WIDTH CONSTRUCTION ON THE INSIDE HALF OF BRIDGES 0866 OVER HOMEGARDNER, 1160 OVER OLD RAILROAD ROAD AND 1211 OVER MILLS CREEK USING BRIDGE MOUNTED PORTABLE CONCRETE BARRIERS. THIS PCB SHALL BE ANCHORED USING PARTIALLY EMBEDDED RESIN ANCHORS, AS PER STANDARD DRAWING PCB–91M.

3. TRAFFIC SHALL BE MAINTAINED ON 3.6m LANES ON THE OUTSIDE FINISHED PAVEMENT, BRIDGES AND TEMPORARY PAVEMENT.

4. THE CONTRACTOR SHALL PLACE ALL ASPHALT PAVEMENT SURFACE COURSE AND PERMANENT PAVEMENT MARKINGS FROM STA. 15+420 TO STA. 19+476 PRIOR TO COMMENCING WORK ON STAGE 1W. THIS WORK SHALL BE PERFORMED UNDER TRAFFIC AS SHOWN ON SHEET 23.

STAGE 1W – U.S. 6 RAMPS B AND D

PRIOR TO PHASE I, THE CONTRACTOR SHALL CONSTRUCT A 1.2m TEMPORARY PAVEMENT ALONG THE EXISTING INSIDE EDGE OF PAVEMENT, AS SHOWN IN THE PLANS.

PHASE I

U.S. 6 RAMPS B AND D SHALL BE CLOSED DURING PHASE I.

1. THE CONTRACTOR SHALL PERFORM ALL WORK ON U.S. 6 RAMPS B AND D, INCLUDING THE RAMP D BRIDGE OVER COLD CREEK, AND THE OUTSIDE WESTBOUND LANES OF S.R. 2 FROM STA. 13+705 TO STA. 14+042.

2. THE CONTRACTOR SHALL PERFORM PART–WIDTH CONSTRUCTION ON THE OUTSIDE HALF OF BRIDGE 0694 OVER U.S. 6 (WESTBOUND ONLY) USING BRIDGE MOUNTED PORTABLE CONCRETE BARRIER.

3. TRAFFIC SHALL BE MAINTAINED ON 3.6m MINIMUM LANES ON THE INSIDE EXISTING PAVEMENT, BRIDGES AND TEMPORARY PAVEMENT.

PHASE II

1. THE CONTRACTOR SHALL PERFORM ALL WORK ON THE INSIDE WESTBOUND LANES OF S.R. 2 FROM STA. 13+705 TO STA. 14+042.

2. THE CONTRACTOR SHALL PERFORM PART–WIDTH CONSTRUCTION ON THE INSIDE HALF OF BRIDGE 0694 OVER U.S. 6 (WESTBOUND ONLY) USING BRIDGE MOUNTED PORTABLE CONCRETE BARRIER. THIS PCB SHALL BE ANCHORED USING PARTIALLY EMBEDDED RESIN ANCHORS AS PER STANDARD DRAWING PCB–91M.

3. TRAFFIC SHALL BE MAINTAINED ON 3.6m LANES ON THE OUTSIDE FINISHED PAVEMENT AND BRIDGES.

4. THE CONTRACTOR SHALL PLACE ALL ASPHALT PAVEMENT SURFACE COURSE ON WESTBOUND S.R. 2 FROM STA. 13+705 TO STA. 14+042, AND ON RAMPS B AND D PRIOR TO COMMENCING WORK ON STAGE 2. IN ADDITION, PERMANENT PAVEMENT MARKINGS SHALL BE PLACED ON RAMPS B AND D PRIOR TO STAGE 2. THIS WORK SHALL BE PERFORMED UNDER TRAFFIC AS SHOWN ON SHEET 23.

U.S. 6 RAMP B SHALL NOT BE CLOSED FOR MORE THAN 90 DAYS. U.S. 6 RAMP D SHALL NOT BE CLOSED FOR MORE THAN 90 DAYS. ALL STAGE 1W WORK SHALL BE PERFORMED BETWEEN SEPTEMBER 7, 1999 AND MAY 26, 2000. SHALL THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH CMS 108.07.

STAGE 2 – STA. 2+280.40 TO STA. 15+420

PRIOR TO PHASE I, THE CONTRACTOR SHALL CONSTRUCT A 1.2m TEMPORARY PAVEMENT ALONG THE EXISTING INSIDE EDGE OF PAVEMENT, EXCEPT IN AREAS WHERE THERE IS MEDIAN BARRIER GUARDRAIL. IN THE AREA OF THE BARRIER, 0.9m TEMPORARY PAVEMENT SHALL BE CONSTRUCTED, AS SHOWN IN THE PLANS. ITEMS 202, CURB REMOVED & 301 PER THE GENERAL NOTE ON SHEET 15 SHALL ALSO BE COMPLETED PRIOR TO PHASE I. IN ADDITION, THE CONTRACTOR SHALL ENSURE THAT ALL CATCH BASINS IN THE MEDIAN GUARDRAIL SECTION HAVE BEEN CLEANED AND ARE HYDRAULICALLY OPERATIONAL.

PHASE I

1. THE CONTRACTOR SHALL PERFORM ALL WORK ON THE EASTBOUND AND WESTBOUND OUTSIDE LANES AND SHOULDERS.

2. THE CONTRACTOR SHALL PERFORM PART–WIDTH CONSTRUCTION ON THE OUTSIDE HALF OF BRIDGES 0694 OVER U.S. 6 (EASTBOUND ONLY) AND 0835 OVER BARDSHAR USING BRIDGE MOUNTED PORTABLE CONCRETE BARRIERS.

3. TRAFFIC SHALL BE MAINTAINED ON 3.6m MINIMUM LANES ON THE INSIDE EXISTING PAVEMENT AND BRIDGES.

PRIOR TO WORK PERFORMED ON RAMPS THE CONTRACTOR SHALL REMOVE ANY PACER CURBS OR GORE ISLANDS.

PHASE I – R1

1. THE CONTRACTOR SHALL PERFORM ALL WORK ON THE RIGHT SIDE LANES AND SHOULDERS OF RAMPS C AND D AT S.R. 269, AND RAMPS A AND C AT U.S. 6, WHILE MAINTAINING TRAFFIC ON A 3.0m LANE ON THE EXISTING PAVEMENT.

PHASE I – R2

1. THE CONTRACTOR SHALL PERFORM ALL WORK ON THE LEFT SIDE LANES AND SHOULDERS OF RAMPS C AND D AT S.R. 269, AND RAMPS A AND C AT U.S. 6, WHILE MAINTAINING TRAFFIC ON A 3.6m LANE OF FINISHED RIGHT SIDE PAVEMENT AND NEW SHOULDERS.

ALL RAMP WORK SHALL BE COMPLETED PRIOR TO PHASE II CONSTRUCTION.

PHASE II

1. THE CONTRACTOR SHALL PERFORM ALL WORK ON THE EASTBOUND AND WESTBOUND INSIDE LANES AND MEDIAN.

2. THE CONTRACTOR SHALL PERFORM PART–WIDTH CONSTRUCTION ON THE INSIDE HALF OF BRIDGES 0694 OVER U.S. 6 (EASTBOUND ONLY) AND 0835 OVER BARDSHAR USING BRIDGE MOUNTED PORTABLE CONCRETE BARRIERS. THIS PCB SHALL BE ANCHORED USING PARTIALLY EMBEDDED RESIN ANCHORS, AS PER STANDARD DRAWING PCB–91M.

3. TRAFFIC SHALL BE MAINTAINED ON 3.6m LANES ON THE OUTSIDE FINISHED PAVEMENT, BRIDGES AND TEMPORARY PAVEMENT.

4. THE CONTRACTOR SHALL PLACE ALL ASPHALT PAVEMENT SURFACE COURSE AND PERMANENT PAVEMENT MARKINGS FROM STA. 2+280.40 TO STA. 15+420. THIS WORK SHALL BE PERFORMED UNDER TRAFFIC AS SHOWN ON SHEET 23.

TEMPORARY LANE LINES SHALL BE PLACED AT THE END OF PAVING OPERATIONS EACH DAY. THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS PURPOSE:

ITEM 614 – TEMPORARY LANE LINE, CLASS II	12.5 KM
ITEM 614 – WORK ZONE MARKING SIGN	10 EACH

RAMP CLOSURES

THE CONTRACTOR SHALL NOTIFY THE DISTRICT ROADWAY SERVICES MANAGER (LARRY STORMER 419–281–0513) A MINIMUM OF ONE WEEK IN ADVANCE OF THE ANTICIPATED RAMP CLOSURES. THE STATE SHALL PROVIDE AND ERECT THE PERTINENT SIGNS.

metric units

CALCULATED DJR
CHECKED TJS

TEMPORARY CLOSURES ON U.S. 6

TEMPORARY CLOSURES ON U.S. 6 AT S.R. 2 IS REQUIRED TO AVOID PERFORMING WORK OVER TRAVELED LANES DURING THE ERECTION OF PROPOSED STRUCTURAL STEEL. SUCH CLOSURES SHALL BE LIMITED TO WITHIN THE HOURS OF 9:00 P.M. TO 5:00 A.M. TRAFFIC NEED ONLY BE STOPPED DURING THE ACTUAL ATTACHMENT, LIFTING, AND HANDLING OF THE BEAMS OVER THE TRAVEL LANES AND AT NO TIME SHALL ANY ONE CLOSURE EXCEED FIFTEEN (15) MINUTES. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC.

ADVANCE NOTICE: ONE PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) IN EACH DIRECTION SHALL BE PROVIDED FOR SEVEN (7) DAYS IN ADVANCE OF THE CLOSURE DATE TO PROVIDE ADVANCE NOTICE OF THE TEMPORARY CLOSURE. THESE SIGNS ARE TO BE LOCATED AT AN APPROVED LOCATION NEAR THE CLOSURE SITE.

CLOSURE NOTICE: ONE PCMS IN EACH DIRECTION SHALL BE PROVIDED THE DAY OF THE CLOSURE TO PROVIDE SPECIFIC CLOSURE INFORMATION. THE ADVANCE NOTICE PCMS MAY BE RELOCATED TO PERFORM THIS FUNCTION. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN APPROVED PCMS APPROXIMATELY 150 METERS IN ADVANCE OF THE CLOSURE, IN EACH DIRECTION, TO ADVISE TRAFFIC OF A POTENTIAL STOP CONDITION AND CONSTRUCTION DELAY. SEE SHEET 22 (SHORT DURATION CLOSING OF RURAL DIVIDED HIGHWAY).

RAMPS: TWO ROAD CONSTRUCTION AHEAD SIGNS SHALL BE PLACED ON RAMP C AT STATION 0+230.

ON U.S. 6: THE STOP SIGNS SHALL BE LOCATED A MINIMUM OF 15 METERS FROM THE WORK AREA. ONE PCMS SHALL BE PLACED TO THE NORTH OF RAMP D. THE OTHER PCMS SHALL BE PLACED TO THE NORTH OF RAMPS A/B2. ONE PREPARE TO STOP SIGN SHALL BE LOCATED APPROXIMATELY ACROSS FROM STATION 0+520 ON RAMP B1. ONE ROAD CONSTRUCTION AHEAD SIGN SHALL BE PLACED TO THE NORTH OF RAMPS A/B2. TO THE SOUTH OF THE STRUCTURE, ONE PREPARE TO STOP SIGN AND ONE ROAD CONSTRUCTION AHEAD SIGN SHALL BE SPACED 60 METERS FROM THE STOP SIGN AND FROM EACH OTHER. ONLY TWO PATROL CARS ARE REQUIRED FOR EACH DIRECTION AT THE STOP SIGNS.

THE LOCATIONS OF ALL SIGNS AND PCMS UNITS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

THE MESSAGE CONTENT SHALL BE APPROVED BY THE ENGINEER.

THE COST OF THE ABOVE WORK INCLUDING PROVIDING, ERECTING, MAINTAINING AND REMOVING THE PCMS SHALL BE CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

AN ESTIMATED QUANTITY OF 16 HOURS OF ITEM 614 LAW ENFORCEMENT OFFICER WITH PATROL CAR IS PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER. *THE QUANTITY IS INCLUDED WITH THAT ON SHEET 19.*

TEMPORARY CLOSURES ON OLD RAILROAD ROAD

TEMPORARY CLOSURES ON THE OLD RAILROAD ROAD AT S.R. 2 IS REQUIRED TO AVOID PERFORMING WORK OVER TRAVELED LANES DURING THE ERECTION OF PROPOSED STRUCTURAL STEEL. SUCH CLOSURES SHALL BE LIMITED TO WITHIN THE HOURS OF 9:00 P.M. TO 5:00 A.M. TRAFFIC NEED ONLY BE STOPPED DURING THE ACTUAL ATTACHMENT, LIFTING, AND HANDLING OF THE BEAMS OVER THE TRAVEL LANES AND AT NO TIME SHALL ANY ONE CLOSURE EXCEED FIFTEEN (15) MINUTES. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC.

CLOSURE NOTICE: THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN ADVANCED WARNING SIGNS APPROXIMATELY 150 METERS IN ADVANCE OF THE CLOSURE, IN EACH DIRECTION, TO ADVISE TRAFFIC OF A POTENTIAL STOP CONDITION AND CONSTRUCTION DELAY. SEE SHEET 22 (SHORT DURATION CLOSING OF RURAL DIVIDED HIGHWAY).

ON OLD RAILROAD ROAD: THE STOP SIGNS SHALL BE LOCATED A MINIMUM OF 15 METERS FROM THE WORK AREA. TO BOTH THE NORTH AND SOUTH OF THE STRUCTURE, ONE PREPARE TO STOP SIGN AND ONE ROAD CONSTRUCTION AHEAD SIGN SHALL BE SPACED 60 METERS FROM THE STOP SIGN AND FROM EACH OTHER. ONLY TWO PATROL CARS ARE REQUIRED FOR EACH DIRECTION AT THE STOP SIGNS.

THE LOCATIONS OF ALL SIGNS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

THE COST OF THE ABOVE WORK SHALL BE CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

AN ESTIMATED QUANTITY OF 32 HOURS OF ITEM 614 LAW ENFORCEMENT OFFICER WITH PATROL CAR IS PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER. *THE QUANTITY IS INCLUDED WITH THAT ON SHEET 19.*

ITEM SPECIAL, EMERGENCY PULL OFF

DURING EACH PHASE OF STAGE 2, THE CONTRACTOR SHALL PROVIDE ONE EMERGENCY PULL OFF IN EACH DIRECTION. THESE PULL OFFS SHALL BE LOCATED JUST WEST OF McCARTNEY ROAD AT STATION 5+500±. *FOR DETAIL SEE SHEET 136.*

EACH PULL OFF SHALL BE CONSTRUCTED OF 150 mm THICK ITEM 304, AND SHALL BE DELINEATED BY A SINGLE R–70 ("EMERGENCY STOPPING ONLY") SIGN ON TWO (2) NO. 2 POSTS. *AN ESTIMATED QUANTITY OF 4 EACH HAS BEEN PROVIDED.*

PAYMENT FOR EACH PULL OFF, COMPLETE IN PLACE, WILL BE MADE AT THE CONTRACT UNIT PRICE FOR ITEM SPECIAL, "MISC.: EMERGENCY PULL OFF". PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING AND MAINTAINING EACH PULL OFF.

MAINTENANCE OF TRAFFIC GENERAL NOTES

ERI-2-2.866

ITEM 614--VEHICLE ASSISTANCE

THE CONTRACTOR SHALL PROVIDE A VEHICLE WITH OPERATOR ABLE TO ASSIST OR REMOVE DISABLED VEHICLES FROM THE TRAVELED LANE TO RE-ESTABLISH FREE FLOWING TRAFFIC WHILE SR 2 IS LIMITED TO ONE LANE IN EACH DIRECTION. THE EXCEPTION IS TRAFFIC ACCIDENTS WHICH ARE NOT TO BE MOVED WITHOUT DIRECTION OF THE OHIO STATE HIGHWAY PATROL.

THE RESPONSE TIME SHOULD BE WITHIN TEN MINUTES OF THE VEHICLE BEING REPORTED AS DISABLED. THE INTENT IS TO PERFORM THIS WORK IN A VERY SHORT TIME PERIOD TO AVOID TRAFFIC FROM BACKING UP.

THE HOURS FOR THIS VEHICLE WITH OPERATOR ARE:

8:00 AM TO 12 NOON	MONDAY THRU FRIDAY #
9:00 AM TO 9:00 PM	SATURDAY AND SUNDAY #

FROM MAY 15 THRU SEPTEMBER 15.

THE VEHICLE SHALL BE EQUIPPED WITH AT LEAST THE FOLLOWING: FUEL CANS OF GAS AND DIESEL, FLARES, CONES, JUMPER CABLES, AMBER LIGHTS, CELL PHONE (TO RECEIVE TROUBLE CALLS AND TO CALL TOW VEHICLES).

THE CONTRACTOR IS NOT TO REMOVE THE VEHICLE EXCEPT TO THE SHOULDER OR OFF THE TRAVELED LANE. COMMERCIAL TOW OPERATORS ARE TO BE CONTACTED TO REMOVE THE DISABLED VEHICLE FROM THE ROADWAY.

ANY DAMAGE DONE TO DISABLED VEHICLES SHALL BE BORNE BY THE CONTRACTOR (THE STATE SHALL BE HELD HARMLESS).

ALL COSTS ASSOCIATED WITH THE REQUIREMENTS MENTIONED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614--MAINTAINING TRAFFIC, MISC.: VEHICLE ASSISTANCE.

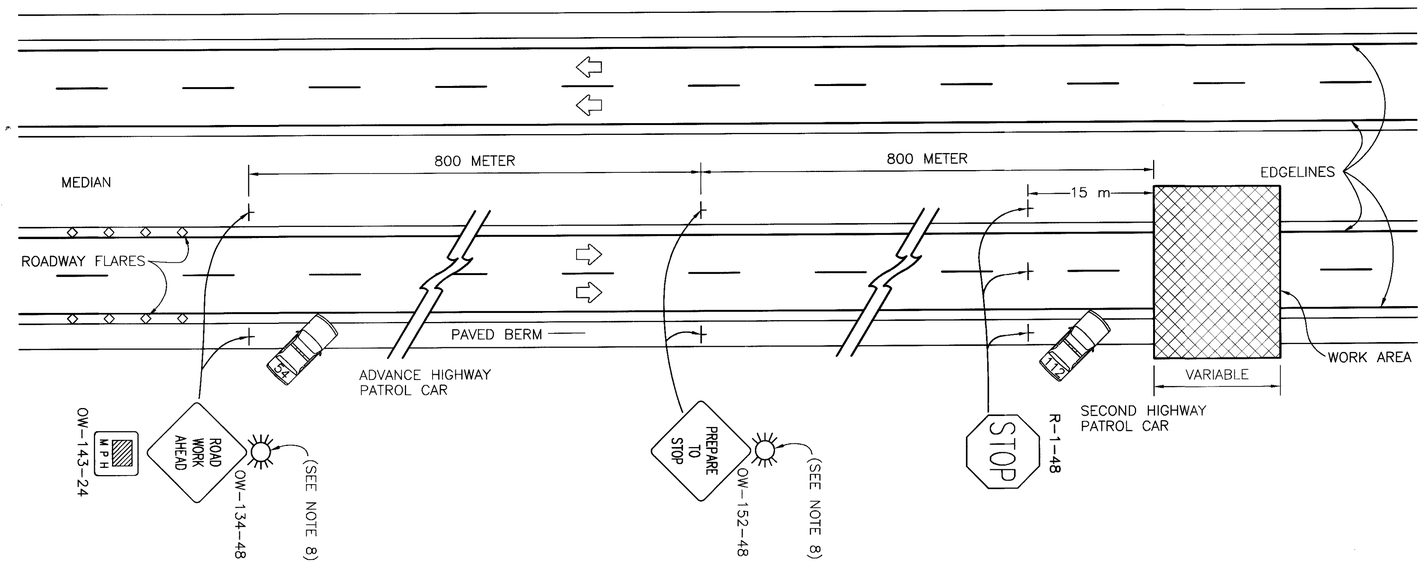
metric units

calculated

checked

MAINTENANCE OF TRAFFIC GENERAL NOTES

ERI-2-2.866



GENERAL NOTES

1. THIS TYPE OF HIGHWAY CLOSURE SHALL ONLY BE USED FOR EMERGENCIES OR FOR CONSTRUCTION OPERATIONS WHEN THE DURATION OF THE CLOSURE WILL NOT EXCEED 15 MINUTES. AFTER THE RURAL DIVIDED HIGHWAY HAS BEEN CLOSED AND REOPENED VIA THIS PROCEDURE A MINIMUM PERIOD OF 30 MINUTES SHALL ELAPSE BEFORE ANOTHER SHORT DURATION CLOSURE, EXCEPT WITH THE APPROVAL OF THE ENGINEER.

2. AT LEAST TWO PATROLMEN AND TWO PATROL CARS SHALL BE PROVIDED ON EACH APPROACH TO THE CLOSURE. EACH PATROL CAR SHALL HAVE A ROOF MOUNTED ROTATING RED LIGHT OR A LIGHT BAR.

3. A MINIMUM OF FOUR FLARES SHALL BE BURNING CONTINUOUSLY ON EACH SIDE OF THE ROADWAY IN ADVANCE OF THE "OW-134-48" SIGN DURING THE TIME THAT TRAFFIC IS STOPPED ON THE RURAL DIVIDED HIGHWAY.

4. ROAD CLOSURES ARE NOT PERMITTED ON HOLIDAYS, WEEKENDS, OR BETWEEN THE HOURS OF 6 AM TO 9 AM, 11 AM TO 1 PM AND 3 PM TO 6 PM ON MONDAY THROUGH FRIDAY, EXCEPT BY PERMISSION OF THE ENGINEER.

5. THE ADVANCE PATROL CAR AND THE "OW-134-48", "OW-143-24", AND "OW-152-48" SIGNS SHALL BE MOVED BACK AS REQUIRED BY THE QUEUING OF STOPPED VEHICLES. NEW FLARES SHALL BE PLACED WHENEVER THE ADVANCE PATROL CAR IS REQUIRED TO RELOCATE.

6. TRAFFIC CONTROL FOR CLOSURE SHALL BE ACCOMPLISHED IN THE FOLLOWING ORDER:

A. ADVANCE PATROL CAR, LIGHTS AND FLASHER ON; AT LEAST FOUR FLARES BURNING ON EACH SIDE OF THE ROADWAY.

B. "OW-134-48" AND "OW-143-24" SIGNS ERECTED.

C. "OW-152-48" SIGNS ERECTED.

D. SECOND PATROL CAR, LIGHTS AND FLASHERS ON.

E. "R-1-48" SIGNS ERECTED BY FLAG MEN WITH FLARE OR FLAG USED TO STOP TRAFFIC. THE ORDER OF ERECTION SHALL BE TOWARD THE MEDIAN SHOULDER IN THE FOLLOWING ORDER: RIGHT SHOULDER, THEN CENTER, THEN MEDIAN SHOULDER.

7. TRAFFIC CONTROL SHALL BE REMOVED IN THE FOLLOWING ORDER:

A. WITH TRAFFIC STOPPED ONE MAN WITH A FLARE OR FLAG SHOULD HOLD TRAFFIC AND OTHER FLAG MAN SHALL REMOVE THE "R-1-48" SIGNS TOWARD THE RIGHT SHOULDER IN THE FOLLOWING ORDER: MEDIAN, THEN CENTER, THE SIGN ON THE RIGHT SHOULDER.

B. AFTER ALL STOPPED VEHICLES HAVE STARTED MOVING, THE "OW-152-48" SIGNS SHALL BE REMOVED. THESE SIGNS MAY BE COVERED IF REUSE IS IMMINENT.

C. AFTER ALL CARS HAVE RESUMED APPROXIMATELY NORMAL SPEED, THE "OW-134-48" AND "OW-143-24" SIGNS SHALL BE REMOVED. THESE SIGNS MAY BE COVERED IF REUSE IS IMMIMENT.

D. LIGHTS AND FLASHERS SHALL BE TURNED OFF ON BOTH PATROL CARS.

E. REMOVE ALL ROADWAY FLARES IF THEY ARE STILL BURNING.

8. UNILLUMINATED SECTIONS OF RURAL DIVIDED HIGHWAYS SHOULD NOT BE CLOSED DURING HOURS OF DARKNESS EXCEPT FOR EMERGENCIES OR WITH THE APPROVAL OF THE ENGINEER. WHEN A RURAL DIVIDED HIGHWAY MUST BE CLOSED DURING HOURS OF DARKNESS, A TYPE B HIGH INTENSITY FLASHING BARRICADE WARNING LIGHT SHALL BE USED ON EACH OW-134 AND OW-152 SIGN.

9. IF AN ENTRANCE RAMP IS LOCATED BETWEEN THE OW-134 AND R-1 SIGNS, THE "OW-134-48". "OW-143-24", AND THE "OW-152-48" SIGNS SHALL ALSO BE ERECTED ON THE RAMP SHOULDER.

metric units

CALCULATED DJR
CHECKED TJS

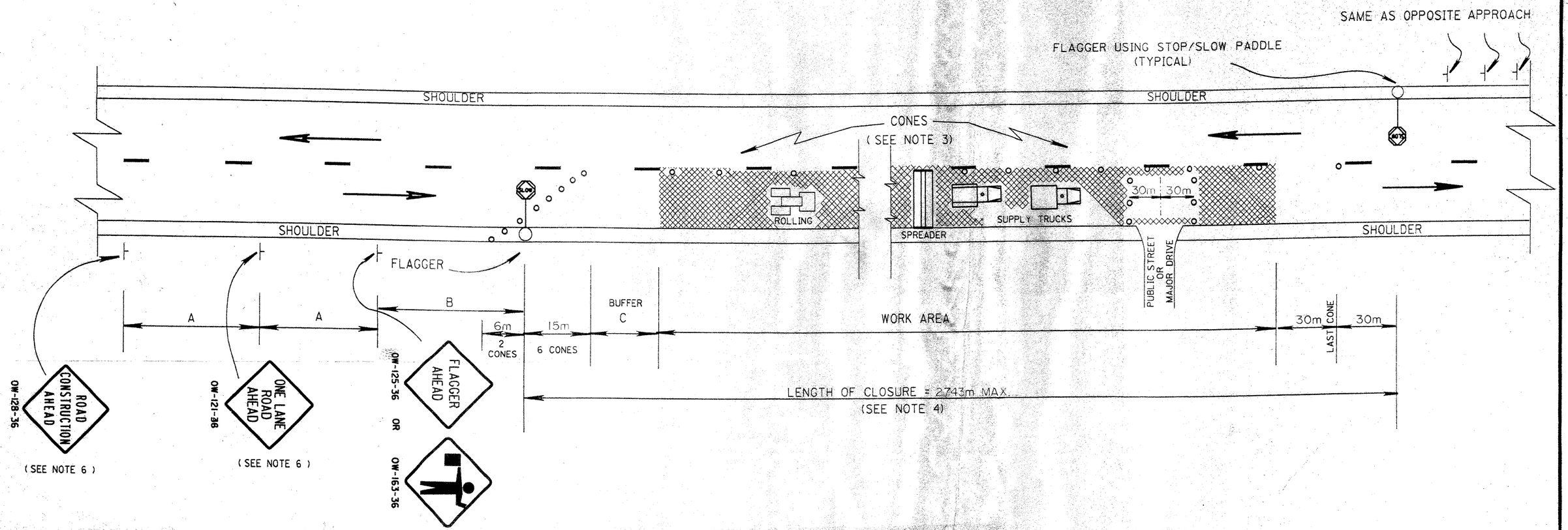
SHORT DURATION CLOSING OF RURAL DIVIDED HIGHWAY

ERI-2-2.866

7E-1

CALC BY DATE		OHIO	23 327
CHKD BY DATE		FHWA REGION 5	

ERI-2-2.866



(SEE NOTE 6)

(SEE NOTE 6)

GENERAL NOTES:

1. THE LOCATION OF THE ADVANCE WARNING SIGNS SHOULD ONLY BE ADJUSTED TO PROVIDE FOR ADEQUATE SIGHT DISTANCE FOR THE EXISTING VERTICAL AND HORIZONTAL ROADWAY ALIGNMENT.

2. FLAGGERS, ONE FOR EACH DIRECTION SHALL BE USED TO CONTROL TRAFFIC CONTINUOUSLY FOR AS LONG AS A ONE LANE OPERATION IS IN EFFECT. THE FLAGGERS SHALL BE ABLE TO COMMUNICATE WITH EACH OTHER AT ALL TIMES.

3. CONES ON THE TAPERS SHALL BE SPACED AT 3m CENTER TO CENTER. CONES SHALL BE SPACED AT 61m CENTER TO CENTER PARALLEL TO THE CENTER LANE BUT 300 TO 600 MILLIMETERS. WITHIN THE CLOSED LANE. CONES MAY BE TEMPORARY MOVED OFF THE ROAD IN THE IMMEDIATE VICINITY OF THE SUPPLY TRUCKS, PAVING SPREADER OR ROLLERS BUT SHALL BE IMMEDIATELY REPLACED WHEN THAT ACTIVITY HAS PASSED BY THE CONE LOCATION. CONES SHALL HAVE A MINIMUM HEIGHT OF 700 MILLIMETERS AND SHALL BE STABILIZED TO PREVENT THEM FROM BLOWING OVER. CLOSURES AT NIGHT SHALL USE DRUMS RATHER THAN CONES.

4. IT IS REQUIRED THAT THE LENGTH OF CLOSURE BE KEPT TO A MINIMUM AT ALL TIMES, AS DIRECTED BY THE ENGINEER.

   WHEN THE AMBIENT TEMPERATURE EXCEEDS 27 DEGREES C, THE ENGINEER MAY INCREASE THE LENGTH OF CLOSURE TO ALLOW FOR SUFFICIENT COOLING OF NEW PAVEMENT.

   THE ENGINEER MAY SHORTEN THE MAXIMUM ALLOWABLE LENGTH OF CLOSURE TO RELIEVE EXCESSIVE TRAFFIC BACKUPS OR TO IMPROVE TRAFFIC OPERATION.

   ALL TRAFFIC CONTROL SIGNS, CONES (OR DRUMS), AND THE FLAGGER SHALL BE MOVED FORWARD AS A GROUP BEFORE THE CLOSURE REACHES THE MAXIMUM ALLOWABLE LENGTH. ONLY ONE SIDE OF THE ROAD SHALL BE CLOSED AT ANY TIME.

5. WITHIN THE LENGTH OF CLOSURE, PROVISIONS SHALL BE MADE TO CONTROL TRAFFIC ENTERING FROM INTERSECTING STREETS AND

   MAJOR DRIVES AS NECESSARY TO PREVENT WRONG WAY MOVEMENTS AND TO KEEP VEHICLES OFF OF NEW PAVEMENT NOT READY FOR TRAFFIC. AS A MINIMUM, THE CONTRACTOR SHALL:

   A) PROVIDE AN ADDITIONAL FLAGGER AT EVERY PUBLIC STREET INTERSECTION AND MAJOR DRIVEWAY AND -

   B) PLACE A ROW OF 3 CONES ACROSS THE CLOSED LANE APPROXIMATELY 30m ON EACH SIDE OF AN INTERSECTION.

   C) ADDITIONAL ROWS OF 3 CONES EACH SHALL BE PLACED ACROSS THE CLOSED LANE AT A MAXIMUM SPACING OF 305m BETWEEN ROWS OF CONES.

   ROWS OF CONES MAY BE MOVED OFF THE ROAD TO ALLOW PASSAGE OF ROLLERS, PAVING SPREADER OR SUPPLY TRUCKS BUT SHALL BE MOVED BACK ONTO THE ROAD WHEN THE ACTIVITY HAS PASSED.

6. THE TYPE A FLASHING WARNING LIGHTS ARE REQUIRED ON THE 'ROAD CONSTRUCTION AHEAD' (OW-128) AND THE 'ONE LANE ROAD AHEAD' (OW-121) SIGNS WHENEVER A NIGHT LANE CLOSURE IS NECESSARY.

7. TYPE C STEADY BURNING WARNING LIGHTS SHALL BE ERECTED ON EACH DRUM FOR NIGHT LANE CLOSURES.

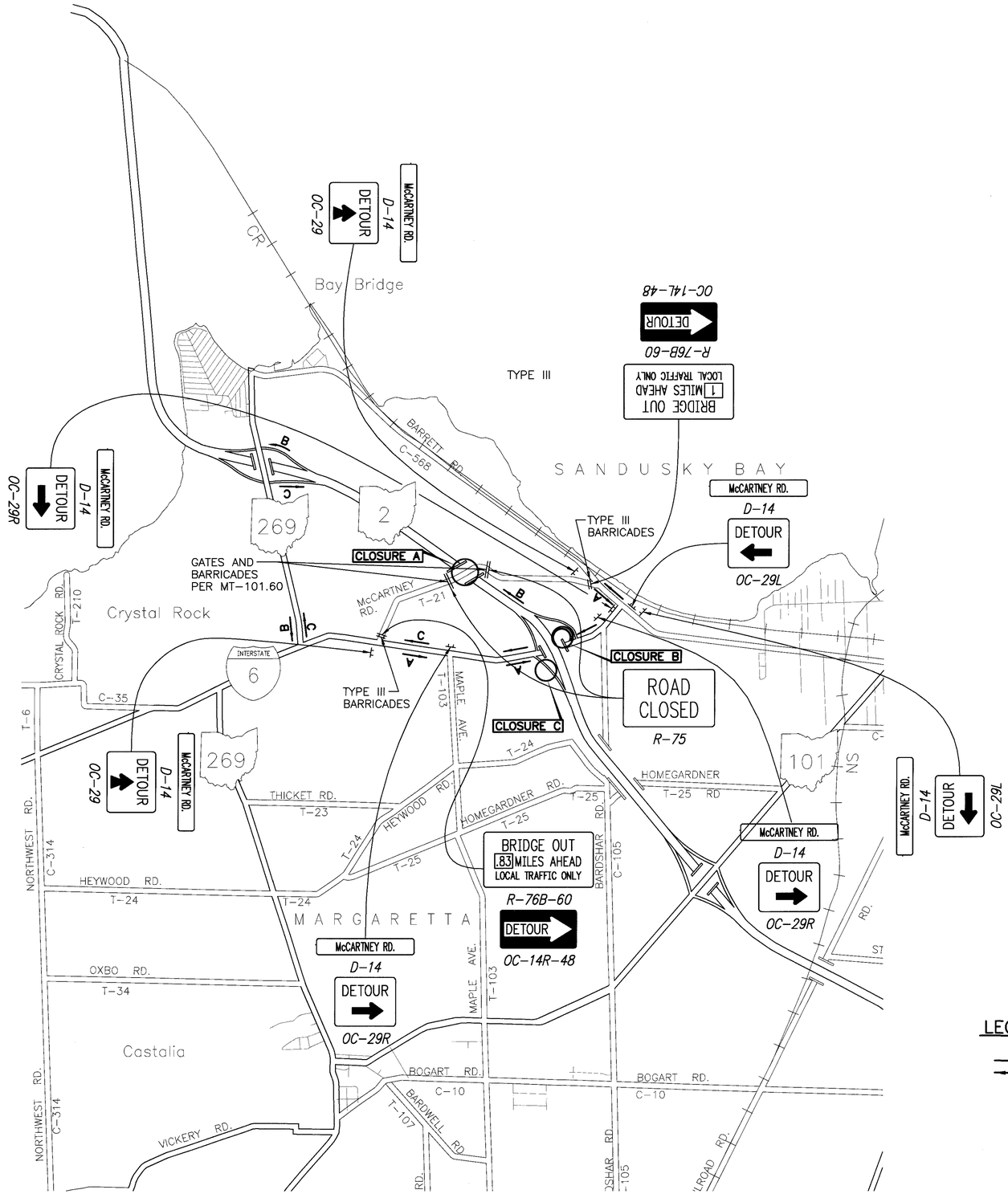
8. ADEQUATE AREA ILLUMINATION OF EACH FLAGGER STATION SHALL BE PROVIDED AT NIGHT BY USING 150 WATT MINIMUM HIGH PRESSURE SODIUM LUMINAIRES OR 250 WATT MINIMUM MERCURY LUMINAIRES. LUMINAIRES SHALL BE LOCATED ADJACENT TO ONE FLAGGER STATION FOR EACH DIRECTION OF TRAFFIC.

   ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF OMUTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

DISTANCE	A	B	C
URBAN	61	107	30
RURAL	152	198	61

REVISED BY:	DATE:
2097IIFED	DATE 04/05/89
FLAGGER CLOSING 1 LANE OF A 2 LANE HIGHWAY FOR PAVING OPERATIONS WITH CONES	
PLAN INSERT SHEET	

WCC



CLOSURE A – McCARTNEY ROAD (SIGNING SHOWN)
CLOSURE B – U.S. 6 RAMP B
CLOSURE C – U.S. 6 RAMP D

LEGEND:

DETOUR

metric units

SCALE IN METERS
NOT TO SCALE

CALCULATED DJR
CHECKED BMH

MAINTENANCE OF TRAFFIC
DETOUR MAP

ERI-2-2.866

metric units

CALCULATED DJR | CHECKED TJS

STATION TO STATION		SHEET NO.	SIDE	614												615		622			
				TEMPORARY EDGE LINE, CLASS 1, WHITE	TEMPORARY EDGE LINE, CLASS 1, YELLOW	TEMPORARY CENTER LINE, CLASS 1, DOUBLE YELLOW	TEMPORARY CHANNELIZING LINE, CLASS 1	TEMPORARY GORE MARKINGS CLASS 2	TEMPORARY EDGE LINE, CLASS 1, YELLOW, 740.06, TYPE I	TEMPORARY EDGE LINE, CLASS 1, WHITE, 740.06, TYPE I	TEMPORARY CENTER LINE, CLASS 1, DOUBLE YELLOW, 740.06, TYPE I	BARRIER REFLECTOR, TYPE B (7.6 m SPACING)	OBJECT MARKERS (7.6 m SPACING)	TEMPORARY IMPACT ATTENUATOR	REMOVE AND REPLACE IMPACT ATTENUATOR	TEMPORARY PAVEMENT, AS PER PLAN "A"	TEMPORARY PAVEMENT, AS PER PLAN "B"	PORTABLE CONCRETE BARRIER, 813mm	PORTABLE CONCRETE BARRIER, 813mm, BRIDGE MOUNTED ANCHORED	PORTABLE CONCRETE BARRIER, 813mm, BRIDGE MOUNTED UNANCHORED	PORTABLE CONCRETE BARRIER, 813mm, BRIDGE MOUNTED ANCHORED, A.P.P.
				KILOMETER	KILOMETER	KILOMETER	METER	METER	KILOMETER	KILOMETER	KILOMETER	EACH	EACH	EACH	EACH	SQ. M.	SQ. M.	METER	METER	METER	METER
S.R. 101																					
PRIOR TO PHASE I																					
1+391	1+474	26	LT													199					
1+576	1+657	26	LT													195					
SUBTOTAL																**394**					
PHASE I																					
1+200	1+367	26	LT, RT, CL							0.167	0.167										
1+391	1+657	26	LT, RT, CL	0.272		0.136				0.260	0.130	20	40	2				140			
1+674	2+000	26	LT, RT, CL								0.326										
2+000	2+372	26	RT						0.615												
SUBTOTAL PHASE I				**0.272**		**0.136**			**0.615**	**0.427**	**0.623**	**20**	**40**	**2**				**140**			
PHASE II																					
1+200	1+367	27	CL								0.167										
1+392	1+661	27	LT, RT, CL							0.538	0.269	20	40		2			140			
1+392	1+472	27	RT													192					
1+574	1+656	27	RT													197					
1+679	2+240	27	LT, RT, CL							0.622	0.323					180					
SUBTOTAL PHASE II										**1.160**	**0.759**	**20**	**40**		**2**	**569**		**140**			
S.R. 2																					
PRIOR TO PHASE I																					
15+292	19+484.079	28–33	EB&WB													9186					
SUBTOTAL																**9186**					
STAGE 1 – PHASE I																					
15+027.400	19+953.904	28–34	EB&WB	1.125	8.025		452	160	0.261	0.798		1081	1081	1		528	2931	7565	498	84	
R2		56	RAMPS									543	543	2				4004			
SUBTOTAL PHASE I				**1.125**	**8.025**		**452**	**160**	**0.261**	**0.798**		**1629**	**1629**	**3**		**528**	**2931**	**11569**	**498**	**84**	
STAGE 1 – PHASE II																					
14+917	19+948	35–39	EB&WB	7.173					0.756	0.453		1093	1093		1			7690		87	507
SUBTOTAL PHASE II				**7.173**					**0.756**	**0.453**		**1093**	**1093**		**1**			**7690**		**87**	**507**
PRIOR TO PHASE I																					
13+680	14+580	40	EB&WB													1476					
SUBTOTAL																**1476**					
STAGE 1W – PHASE I																					
13+700	14+548	40	EB&WB		0.506				0.512	0.830		127	127					867	75		
SUBTOTAL PHASE I					**0.506**				**0.512**	**0.830**		**127**	**127**					**867**	**75**		
STAGE 1W – PHASE II																					
13+534	14+572	41	EB&WB	0.082					0.512	0.439		60	60					369	75		
SUBTOTAL PHASE II				**0.082**					**0.512**	**0.439**		**60**	**60**					**369**	**75**		
PRIOR TO PHASE I																					
2+522.200	6+413.889	42–44	EB&WB													8287					
13+300.033	15+420	44–47	EB&WB													3145					
SUBTOTAL																**11432**					
STAGE 2 – PHASE I																					
2+295.400	6+413.889	42–44	EB&WB	0.813	7.485		226	80	0.197	0.365		954	954	1			1251	7203			
13+300.033	15+827.600	44–48	EB&WB	0.762	4.282		226	144	0.158	0.265		502	502	2			3302	3573	201		
R2		56	RAMPS									663	663	2				4902			
SUBTOTAL PHASE I				**1.575**	**11.767**		**452**	**224**	**0.355**	**0.630**		**2119**	**2119**	**5**			**4553**	**15678**	**201**		
STAGE 2 – PHASE II																					
2+382.200	6+413.889	49–51	EB&WB	6.430					0.378	0.152		957	957					7255			
13+300.033	15+923	51–54	EB&WB	3.294					0.378	0.408		572	572		1			4140	101		103
SUBTOTAL PHASE II				**9.724**					**0.756**	**0.560**		**1529**	**1529**		**1**			**11395**	**101**		**103**
				19.951	**20.298**				**3.767**	**5.297**									950	171	
TOTAL CARRIED TO GENERAL SUMMARY				**40.249**		**0.136**	**904**	**384**	**9.064**		**1.382**	**6597**	**6637**	**10**	**4**	**23585**	**7484**	**47848**	**1121**		**610**

MAINTENANCE OF TRAFFIC
SUB-SUMMARY

ERI-2-2.866

FOR QUANTITIES SEE SHEET 25

FOR BRIDGE PHASED CONSTRUCTION TYPICALS, SEE SHEET 18

metric units

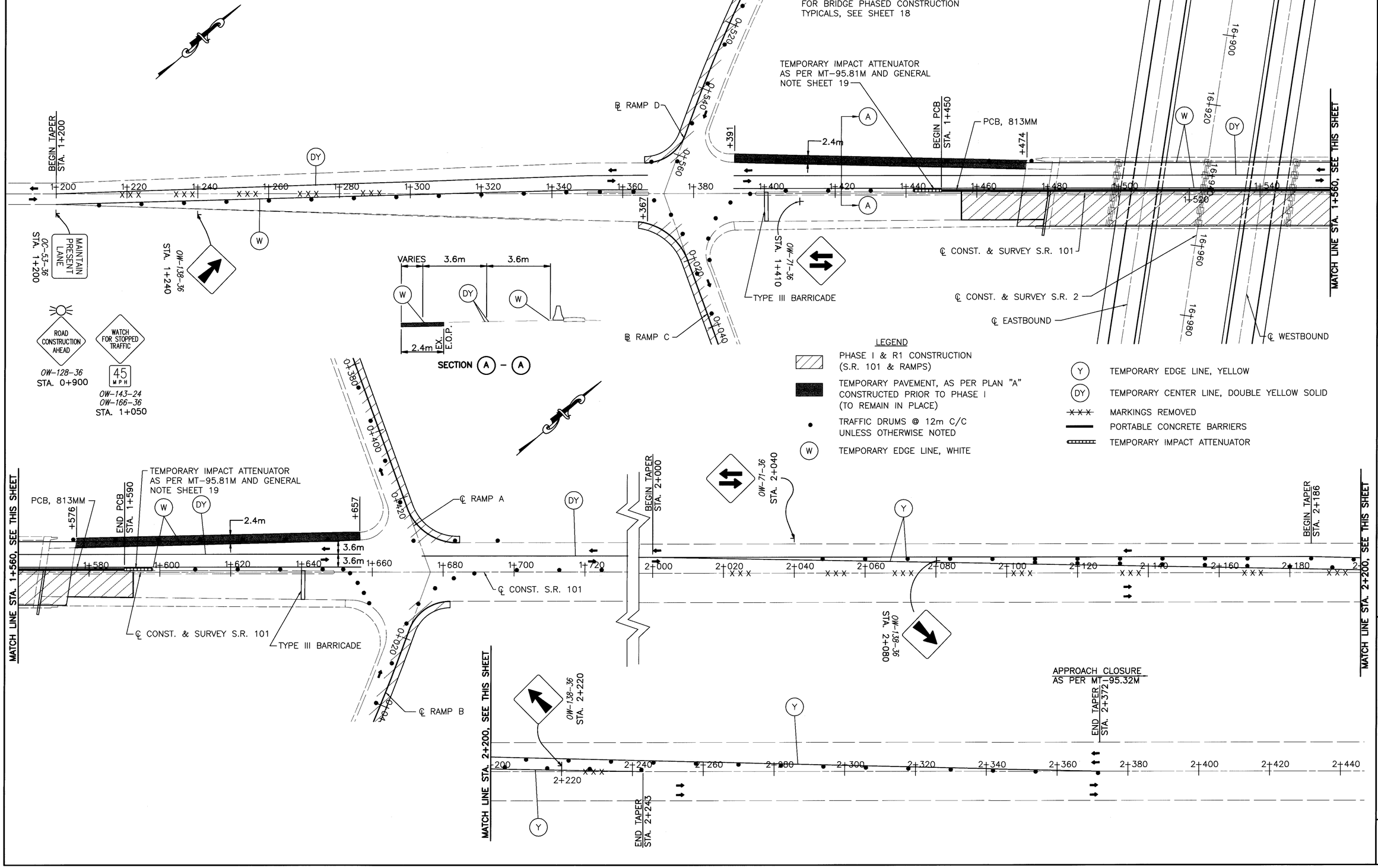
STATE OF OHIO DEPARTMENT OF TRANSPORTATION

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC
S.R. 101 - PHASE I

ERI-2-2.866



LEGEND

- PHASE I & R1 CONSTRUCTION (S.R. 101 & RAMPS)
- TEMPORARY PAVEMENT, AS PER PLAN "A" CONSTRUCTED PRIOR TO PHASE I (TO REMAIN IN PLACE)
- TRAFFIC DRUMS @ 12m C/C UNLESS OTHERWISE NOTED
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- (DY) TEMPORARY CENTER LINE, DOUBLE YELLOW SOLID
- XXX MARKINGS REMOVED
- PORTABLE CONCRETE BARRIERS
- TEMPORARY IMPACT ATTENUATOR

metric units

FOR QUANTITIES SEE SHEET 25

FOR BRIDGE PHASED CONSTRUCTION TYPICALS, SEE SHEET 18

BEGIN TAPER STA. 1+200

OW-138-36 STA. 1+240

℄ CONST. & SURVEY S.R. 101

BEGIN DRUMS STA. 1+70

℄ RAMP D

OW-71-36 STA. 1+410

TYPE III BARRICADE

℄ CONST. & SURVEY S.R. 101

1+180 1+200 1+220 1+240 1+260 1+280 1+300 1+320 1+340 1+360 1+380 1+400 1+420 1+440 1+460 1+480 1+500

0+520

0+540

3.6m
3.6m

+367

+392

+472

2.4m

BEGIN PCB STA. 1+450

℄ EASTBOUND

MATCH LINE STA. 1+520, SEE THIS SHEET

17+000

OC-53-36 STA. 1+200

MAINTAIN PRESENT LANE

ROAD CONSTRUCTION AHEAD

OW-128-36 STA. 0+900

WATCH FOR STOPPED TRAFFIC

45 MPH

OW-143-24
OW-166-36
STA. 1+050

LEGEND

PHASE II & R2 CONSTRUCTION (S.R. 2 , S.R. 101 & RAMPS)

TEMPORARY PAVEMENT, AS PER PLAN "A" CONSTRUCTED DURING PHASE I, (TO REMAIN IN PLACE)

TRAFFIC DRUMS @ 12m C/C UNLESS OTHERWISE NOTED

(W) TEMPORARY EDGE LINE, WHITE

(Y) TEMPORARY EDGE LINE, YELLOW

(DY) TEMPORARY CENTER LINE, DOUBLE YELLOW SOLID

MARKINGS REMOVED

PORTABLE CONCRETE BARRIERS

TEMPORARY IMPACT ATTENUATOR

℄ RAMP C

0+020

0+040

0+060

TEMPORARY IMPACT ATTENUATOR AS PER MT-95.81 M AND GENERAL NOTE SHEET 19

3.6m 3.6m VARIES

EX. E.O.P.

2.4m

SECTION (A) – (A)

16+900

16+920

16+940

16+960

MATCH LINE STA. 1+520, SEE THIS SHEET

FOR BRIDGE PHASED CONSTRUCTION TYPICALS, SEE SHEET 18

TYPE III BARRICADE

℄ RAMP A

0+400

0+420

BEGIN TAPER STA. 1+700

OW-71-36 STA. 2+040

END TAPER STA. 2+002

OW-138-36 STA. 2+220

END TAPER STA. 2+240

1+540 1+560 1+580 1+600 1+620 1+640 1+660 1+680 1+700 1+720 1+740 1+760 1+780 1+800 2+000 2+200 2+220 2+240

℄ CONST. & SURVEY S.R. 101

3.6m
3.6m

+574

END PCB STA. 1+590

2.4m

+656

+682

2.0m

+772

℄ RAMP B

0+020

0+040

TEMPORARY IMPACT ATTENUATOR AS PER MT-95.81M AND GENERAL NOTE SHEET 19

℄ CONST. & SURVEY S.R. 101

℄ WESTBOUND

℄ CONST. & SURVEY S.R. 2

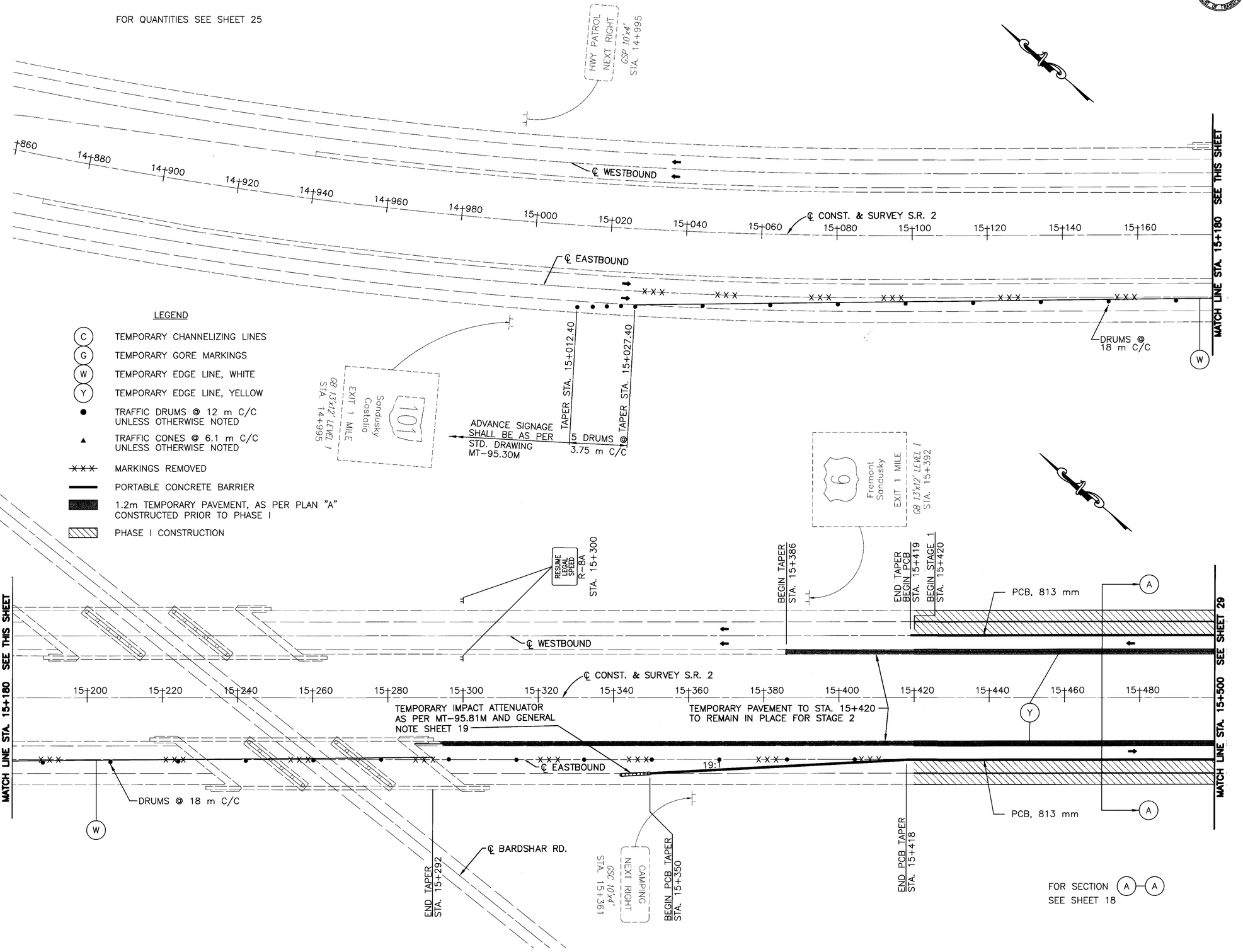
SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC
S.R. 101 - PHASE II

ERI-2-2.866

FOR QUANTITIES SEE SHEET 25



LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- ━━ PORTABLE CONCRETE BARRIER
- 1.2m TEMPORARY PAVEMENT, AS PER PLAN "A" CONSTRUCTED PRIOR TO PHASE I
- PHASE I CONSTRUCTION

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 1 - PHASE I
STA. 14+880 TO STA. 15+500

ERI-2-2.866

metric units

PCB, 813 mm BRIDGE MOUNTED, ANCHORED

FOR QUANTITIES SEE SHEET 25

SPEED LIMIT 65 MPH
55 VEHICLES OVER 4 TONS EMPTY, NON-COMM BUSES
R-9-84
STA. 15+696

BEGIN ANCHORED PCB STA. 15+539

END ANCHORED PCB STA. 15+626

PCB, 813 mm

℄ WESTBOUND

3.6 m LANE

MATCH LINE STA. 15+500 SEE SHEET 28

Y

15+520 15+540 15+560 15+580 15+600 15+620 15+640 15+660 15+680 15+700 15+720 15+740

℄ CONST. & SURVEY S.R. 2

3.6 m LANE

℄ EASTBOUND

PCB, 813 mm

℄ HOMEGARDNER RD.

BEGIN ANCHORED PCB STA. 15+538

END ANCHORED PCB STA. 15+625

FOR BRIDGE PHASED CONSTRUCTION TYPICALS, SEE SHEET 17

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- 1.2m TEMPORARY PAVEMENT, AS PER PLAN "A" CONSTRUCTED PRIOR TO PHASE I
- PHASE I CONSTRUCTION

WEST
M-40-36

2
M-2-36-2
STA. 16+001

A

3.6 m LANE

16+000 16+020 16+040 16+060

Y

3.6 m LANE

MATCH LINE STA. 16+080 SEE THIS SHEET

FOR SECTION A—A SEE SHEET 18

WORKZONE SPEED LIMIT 55
R-10
48x60
BLACK/WHITE
STA. 16+095

PCB, 813 mm

3.6 m LANE

MATCH LINE STA. 16+080 SEE THIS SHEET

16+100 16+120 16+140 16+160 16+180 16+200 16+220 16+240 16+260 16+280 16+300 16+320 16+340 16+360 16+380 16+400 16+420 16+440

℄ CONST. & SURVEY S.R. 2

3.6 m LANE

℄ EASTBOUND

PCB, 813 mm

BEGIN TAPER STA. 16+353

℄ WESTBOUND

RAMP TRAFFIC CONTROL TREATMENT AS PER STD DWG. MT-98.16M

W

0+020 0+040

BEGIN TAPER STA. 16+423

W

MATCH LINE STA. 16+460 SEE SHEET 30

GF 13'x12' LEVEL 1
STA. 16+376

101
Sandusky
Castalia

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 1 - PHASE I
STA. 15+500 TO STA. 16+460

ERI-2-2.866

deck2 P:\3907\DWG\HWY\PLAN\maintenance\stage-2_phase-1_EZSP11A.dwg NOV 05, 1998 TIME: 10:08 AM

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR
CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 1 - PHASE I
STA. 16+460 TO STA. 17+220

ERI-2-2.866

30
327

FOR QUANTITIES SEE SHEET 25

MATCH LINE STA. 16+460 SEE SHEET 29

MATCH LINE STA. 16+840 SEE THIS SHEET

MATCH LINE STA. 16+840 SEE THIS SHEET

MATCH LINE STA. 17+220 SEE SHEET 31

DRUMS @ 12 m C/C FOR RAMP TREATMENT SEE SHEETS 55 & 56

RAMP TRAFFIC CONTROL TREATMENT AS PER STD DWG. MT-98.16M

TAPER STA. 16+548

END PCB TAPER STA. 0+122

℄ RAMP A

CONCRETE CURB REMOVED PRIOR TO PHASE I

0+020 0+040 0+060 0+080 0+100 0+120 0+140 0+160 0+180 0+200 0+220

16:1

3.0 m

TRAFFIC CONES @ 18 m C/C

PCB, 813 mm

℄ WESTBOUND

3.6 m LANE

BEGIN PCB STA. 16+630

16+480 16+500 16+520 16+540 16+560 16+580 16+600 16+620 16+640 16+660 16+680 16+700 16+720 16+740 16+760 16+780 16+800 16+820

℄ CONST. & SURVEY S.R. 2

STA. 15+588
BEGIN DRUMS @ 6.1 m C/C

CONCRETE CURB REMOVED PRIOR TO PHASE I

3.6 m LANE

℄ EASTBOUND

16:1

PCB, 813 mm

0+040 0+060 0+080 0+100 0+120 0+140 0+160 0+180 0+200 0+220 0+240 0+260 0+280 0+300 0+320 0+340 0+360

BEGIN TAPER STA. 16+522

RAMP TRAFFIC CONTROL TREATMENT AS PER STD DWG. MT-98.13M

END TAPER STA. 16+621

℄ RAMP D

BEGIN PCB TAPER STA. 16+648

3.0 m

M-2-36-2 STA. 16+699

2

EAST

M-39-36

END PCB TAPER
END DRUMS
@ 6.1 m C/C
STA. 16+753

FOR SECTION A—A SEE SHEET 18

DRUMS @ 12 m C/C FOR RAMP TREATMENT SEE SHEETS 55 & 56

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- 1.2m TEMPORARY PAVEMENT, AS PER PLAN "A" CONSTRUCTED PRIOR TO PHASE I
- PHASE I CONSTRUCTION

℄ CONST. S.R. 101

1+560 1+540 1+520 1+500 1+480 1+460

PCB, 813 mm

℄ WESTBOUND

3.6 m LANE

BEGIN PCB TAPER
BEGIN DRUMS
@ 6.1 m C/C
STA. 17+137

16:1

16+860 16+880 16+900 16+920 16+940 16+960 16+980 17+000 17+020 17+040 17+060 17+080 17+100 17+120 17+140 17+160 17+180 17+200

℄ CONST. & SURVEY S.R. 2

3.6 m LANE

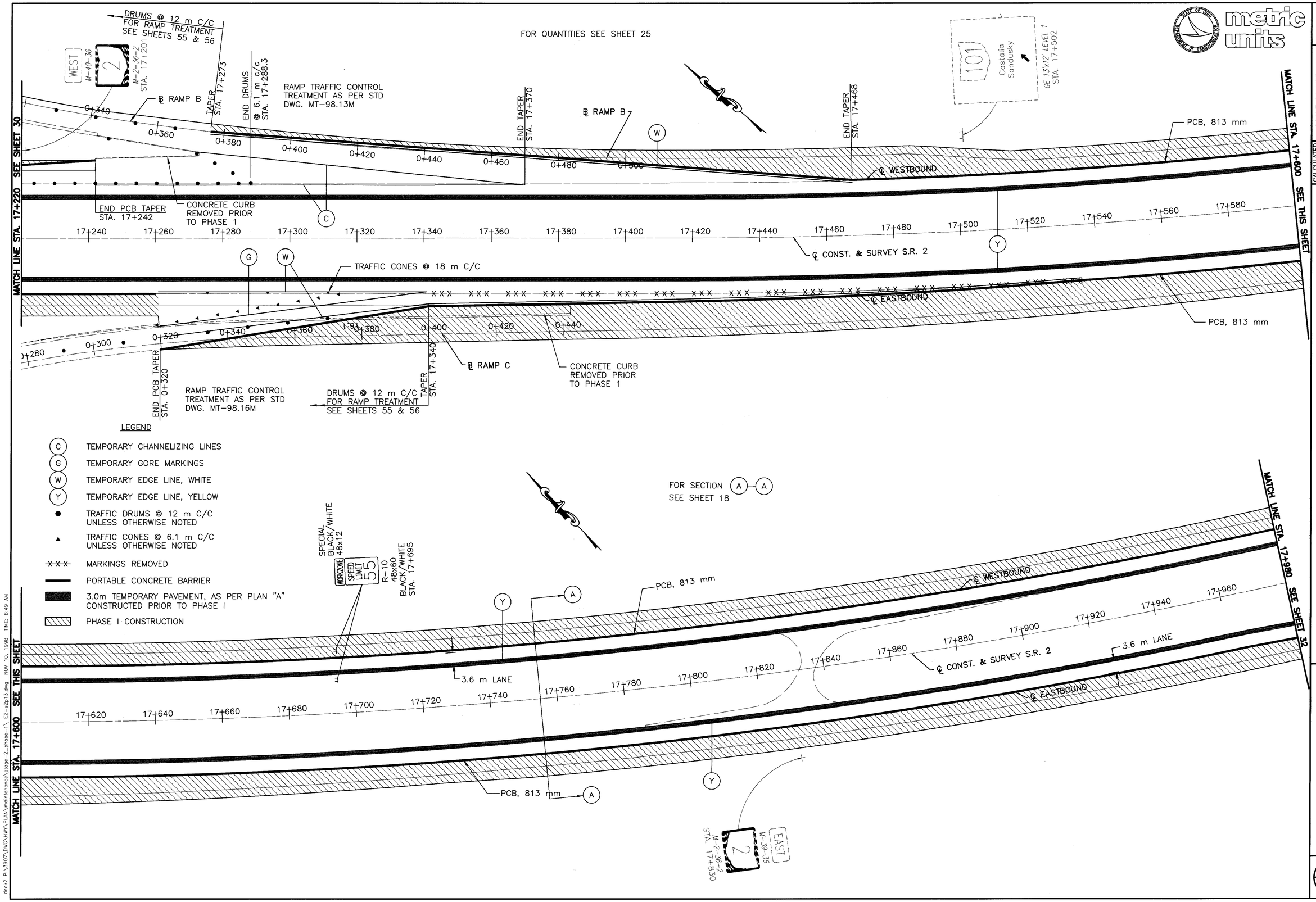
℄ EASTBOUND

PCB, 813 mm

0+160 0+180 0+200 0+220 0+240 0+260 0+280 0+300

℄ RAMP C

wes32 P:\38977\DWG\WPLAN\maintenance\stage-2_phase-1\ E2-S2P12.dwg NOV 11, 1998 TIME: 10:38 AM



metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 1 - PHASE I
STA. 17+220 TO STA. 17+980

ERI-2-2.866

FOR QUANTITIES SEE SHEET 25

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED OAH CHECKED TJS

MATCH LINE STA. 17+980 SEE SHEET 31

MATCH LINE STA. 18+360 SEE THIS SHEET

SPEED LIMIT 65 MPH
55 VEHICLES OVER 4 TONS, UNLADEN MAX. GVWR 80KG
R-9-84
STA. 17+982

SPEED LIMIT 65 MPH
55 VEHICLES OVER 4 TONS, UNLADEN MAX. GVWR 80KG
R-9-84
STA. 17+987

101
Castalia
Sandusky
NEXT RIGHT
GB 13'x12' LEVEL 1
STA. 18+142

CAMPING
NEXT RIGHT
GSC 10'x4'
STA. 18+325

4
Sandusky
Bucyrus
EXIT 1 MILE
GB 13'x12' LEVEL 1
STA. 18+150

PCB, 813 mm

℄ WESTBOUND

℄ EASTBOUND

3.6 m LANE

18+000 18+020 18+040 18+060 18+080 18+100 18+120 18+140 18+160 18+180 18+200 18+220 18+240 18+260 18+280 18+300 18+320 18+340

℄ CONST. & SURVEY S.R. 2

WORK ZONE SPEED LIMIT 55
R-10
48x60
BLACK/WHITE
STA. 18+012

SPECIAL
BLACK/
WHITE
48x12

FOR SECTION A—A
SEE SHEET 18

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- 1.2m TEMPORARY PAVEMENT, AS PER PLAN "A" CONSTRUCTED PRIOR TO PHASE I
- PHASE I CONSTRUCTION

FOR BRIDGE PHASED CONSTRUCTION TYPICALS, SEE SHEET 17

BEGIN ANCHORED PCB STA. 18+455

END ANCHORED PCB STA. 18+617

PCB, 813 mm BRIDGE MOUNTED, ANCHORED

℄ OLD RAILROAD RD.

MATCH LINE STA. 18+360 SEE THIS SHEET

MATCH LINE STA. 18+740 SEE SHEET 33

3.6 m LANE

18+380 18+400 18+420 18+440 18+460 18+480 18+500 18+520 18+540 18+560 18+580 18+600 18+620 18+640 18+660 18+680 18+700 18+720

ORIG. ℄ NORFOLK & SOUTHERN R.R.

℄ CONST. & SURVEY S.R. 2

BEGIN ANCHORED PCB STA. 18+458

END ANCHORED PCB STA. 18+620

Hospital
NEXT RIGHT
GSH 10'x4'
STA. 18+615

MAINTENANCE OF TRAFFIC - STAGE 1 - PHASE I
STA. 17+980 TO STA. 18+740

ERI-2-2.866

32
327

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- 1.2m TEMPORARY PAVEMENT, AS PER PLAN "A" CONSTRUCTED PRIOR TO PHASE I
- PHASE I CONSTRUCTION

FOR QUANTITIES SEE SHEET 25

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

FOR BRIDGE PHASED CONSTRUCTION TYPICALS, SEE SHEET 17

MATCH LINE STA. 18+740 SEE SHEET 32

MATCH LINE STA. 19+120 SEE THIS SHEET

101 Castalia Sandusky EXIT 1 MILE GB 13'x12' LEVEL 1 STA. 18+869

WEST M-40-36 2 M-2-36-2 STA. 19+049

PCB, 813 mm, BRIDGE MOUNTED, UNANCHORED

PCB, 813 mm

℄ WESTBOUND

3.6 m LANE

18+760 18+780 18+800 18+820 18+840 18+860 18+880 18+900 18+920 18+940 18+960 18+980 19+000 19+020 19+040 19+060 19+080 19+100

3.6 m LANE

℄ CONST. & SURVEY S.R. 2

℄ EASTBOUND

PCB, 813 mm

PCB, 813 mm, BRIDGE MOUNTED, UNANCHORED

4 Sandusky Bucyrus NEXT RIGHT GB 13'x12' LEVEL 1 STA. 18+805

FOR SECTION (A)—(A) SEE SHEET 18

Sandusky Speedway NEXT RIGHT GCP 11'x17' LEVEL II STA. 19+072

SPECIAL BLACK/WHITE 48x12 STA. 18+295

WORK ZONE SPEED LIMIT 55

R-10 48x60 BLACK/WHITE STA. 18+295

END PROJECT STA. 19+446.279 SLD 12.558 NH-73 (89)

BEGIN TAPER STA. 19+445

END TAPER STA. 19+484.079

END TAPER STA. 19+480.40

MATCH LINE STA. 19+120 SEE THIS SHEET

MATCH LINE STA. 19+500 SEE SHEET 34

19+140 19+160 19+180 19+200 19+220 19+240 19+260 19+280 19+300 19+320 19+340 19+360 19+380 19+400 19+420 19+440 19+460 19+480

3.6 m LANE

℄ CONST. & SURVEY S.R. 2

℄ CONST & SURVEY S.R. 2

℄ WESTBOUND

℄ EASTBOUND

PCB, 813 mm

PCB, 813 mm

END PCB BEGIN TAPER STA. 19+448

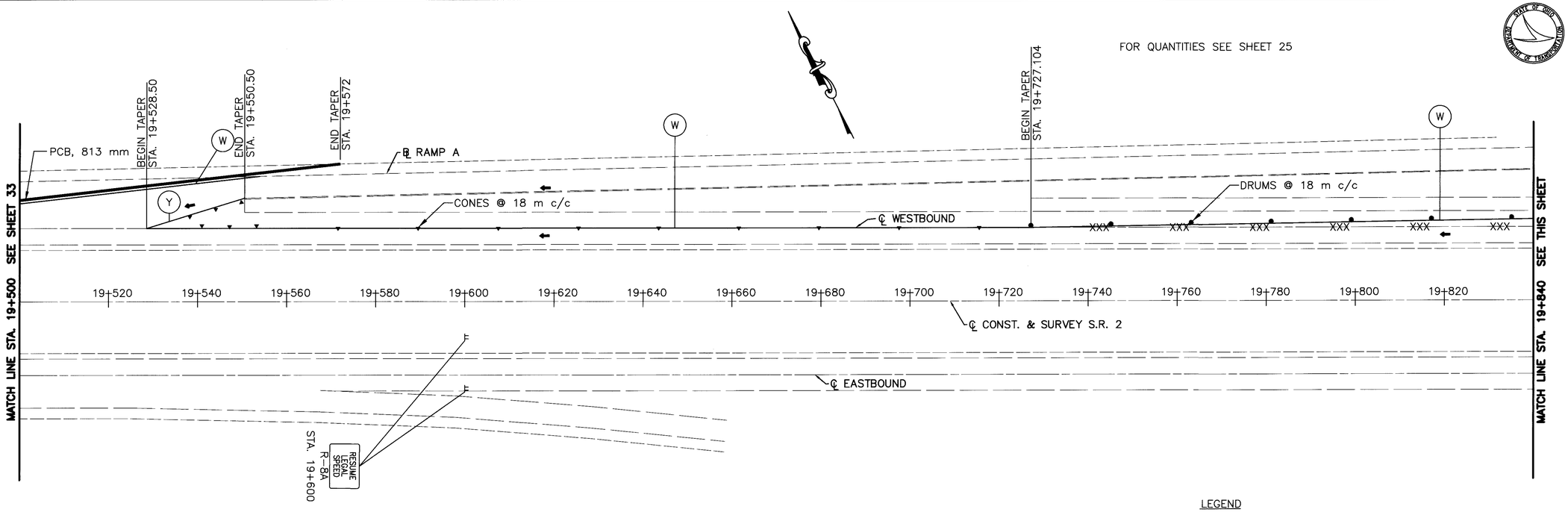
4 Sandusky Bucyrus GE 13'x12' LEVEL 1 STA. 19+472

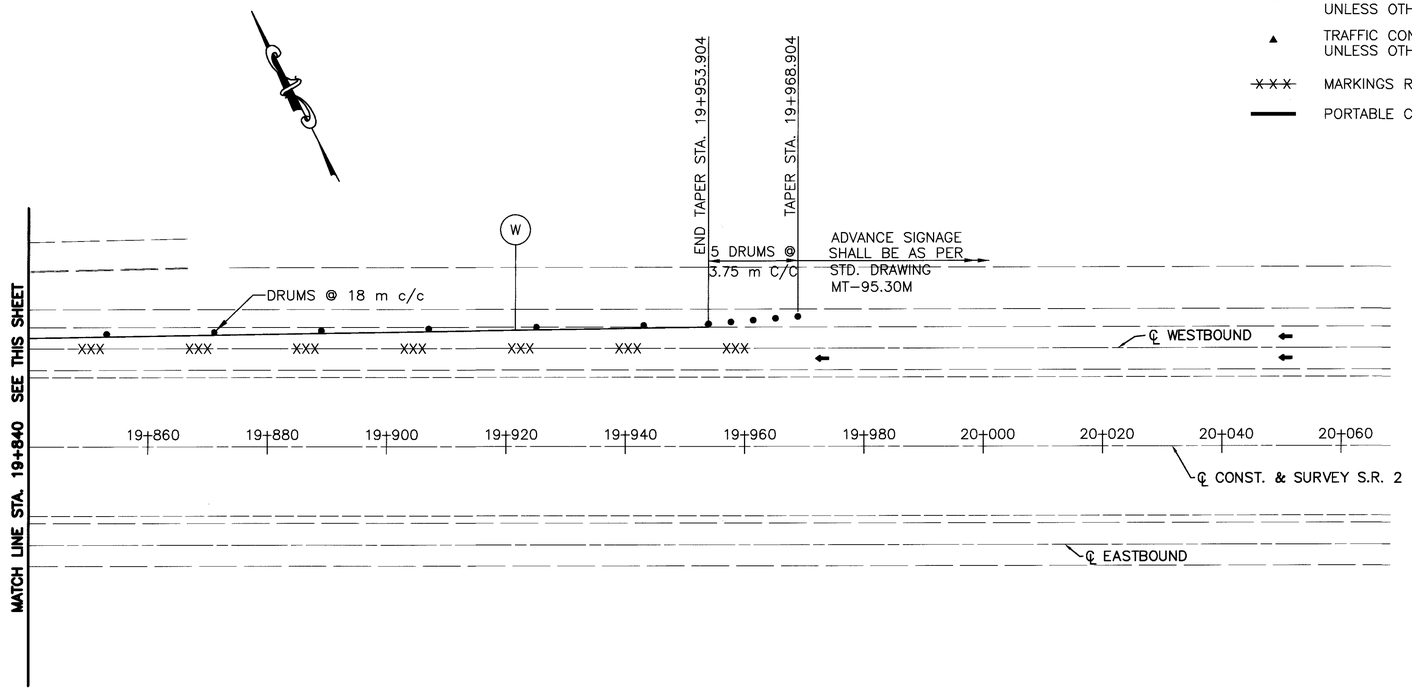
MAINTENANCE OF TRAFFIC - STAGE 1 - PHASE I STA. 18+740 TO STA. 19+500

ERI-2-2.866

wots2 P:\3907\DWG\HWY\PLAN\maintenance\stage-2_phase-1\ E2-42p15.dwg NOV 11, 1998 TIME: 10:51 AM

FOR QUANTITIES SEE SHEET 25





LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ~~XXX~~ MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 1 - PHASE I
STA. 18+500 TO STA. 20+000

ERI-2-2.866

34
327

FOR QUANTITIES SEE SHEET 25

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR
CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 1 - PHASE II
STA. 15+080 TO STA. 15+460

ERI-2-2.866

35
327

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- PHASE II CONSTRUCTION

MATCH LINE STA. 15+080 SEE THIS SHEET

14+760 14+780 14+800 14+820 14+840 14+860 14+880 14+900 14+920 14+940 14+960 14+980 15+000 15+020 15+040 15+060

℄ WESTBOUND

℄ CONST. & SURVEY S.R. 2

℄ EASTBOUND

HWY PATROL NEXT RIGHT
GSP 10'x4'
STA. 14+995

EAST M-36-36
M-2-36-2
STA. 14+843

DRUMS @ 18 m C/C

BEGIN TAPER STA. 14+917

TAPER STA. 14+902

ADVANCE SIGNAGE SHALL BE AS PER STD. DRAWING MT-95.30M

5 DRUMS @ 3.75 m C/C

Sandusky Castalia EXIT 1 MILE
GB 13'x12' LEVEL 1
STA. 14+995

101

Fremont Sandusky EXIT 1 MILE
GB 13'x12' LEVEL 1
STA. 15+392

6

℄ BARDSHAR RD.

BEGIN TAPER STA. 15+288.40

RESUME LEGAL SPEED R-8A

PLACED IN PHASE 1

END TAPER BEGIN PCB STA. 15+418

PCB, 813 mm

℄ WESTBOUND

℄ CONST. & SURVEY S.R. 2

15+100 15+120 15+140 15+160 15+180 15+200 15+220 15+240 15+260 15+280 15+300 15+320 15+340 15+360 15+380 15+400 15+420 15+440

TEMPORARY IMPACT ATTENUATOR AS PER MT-95.81M AND GENERAL NOTE SHEET 19

19:1

℄ EASTBOUND

PCB, 813 mm

MATCH LINE STA. 15+460 SEE SHEET 36

BEGIN TAPER STA. 15+143

DRUMS @ 18 m C/C

END TAPER STA. 15+295

BEGIN PCB TAPER STA. 15+318

END PCB TAPER STA. 15+418

BEGIN STAGE 1 STA. 15+420

CAMPING NEXT RIGHT
GSC 10'x4'
STA. 15+361

FOR SECTION (B)—(B) SEE SHEET 18

FOR QUANTITIES SEE SHEET 25

℄ HOMEGARDNER RD.

BEGIN ANCHORED PCB STA. 15+538

END ANCHORED PCB STA. 15+628

PCB, 813 mm BRIDGE MOUNTED, ANCHORED

PCB, 813 mm

℄ WESTBOUND

SPEED LIMIT 65 MPH

55 VEHICLES OVER NEXT 5 KM/H NON-COMM (USS3) R-9-84 STA. 15+696

WORKZONE SPEED LIMIT 55 R-10 48x60 BLACK/WHITE STA. 15+736

MATCH LINE STA. 15+460 SEE SHEET 35

15+480 15+500 15+520 15+540 15+560 15+580 15+600 15+620 15+640 15+660 15+680 15+700 15+720 15+740 15+760 15+780 15+800 15+820

℄ CONST. & SURVEY S.R. 2

MATCH LINE STA. 15+840 SEE THIS SHEET

BEGIN ANCHORED PCB STA. 15+535

END ANCHORED PCB STA. 15+625

PCB, 813 mm BRIDGE MOUNTED, ANCHORED

℄ EASTBOUND

PCB, 813 mm

101 Sandusky Castalia NEXT RIGHT GB 13'x12' LEVEL 1 STA. 15+838

FOR BRIDGE PHASED CONSTRUCTION TYPICALS, SEE SHEET 17

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ✕✕✕ MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- PHASE II CONSTRUCTION

FOR SECTION (B)—(B) SEE SHEET 18

WEST M-40-36 2 M-2-36-2 STA. 16+001

℄ WESTBOUND

PCB, 813 mm

MATCH LINE STA. 15+840 SEE THIS SHEET

15+860 15+880 15+900 15+920 15+940 15+960 15+980 16+000 16+020 16+040 16+060 16+080 16+100 16+120 16+140 17+720 17+740 17+760

℄ CONST. & SURVEY S.R. 2

℄ EASTBOUND

PCB, 813 mm

MATCH LINE STA. 17+780 SEE SHEET 37

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 1 - PHASE II STA. 15+460 TO STA. 17+780

ERI-2-2.866

FOR QUANTITIES SEE SHEET 25

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 1 - PHASE II
STA. 17+780 TO STA. 18+520

ERI-2-2.866

37/327

MATCH LINE STA. 17+780 SEE SHEET 36

MATCH LINE STA. 18+140 SEE THIS SHEET

¢ WESTBOUND

¢ CONST. & SURVEY S.R. 2

¢ EASTBOUND

3.6 m LANE

PCB, 813 mm

17+800 17+820 17+840 17+860 17+880 17+900 17+920 17+940 17+960 17+980 18+000 18+020 18+040 18+060 18+080 18+100 18+120

SPEED LIMIT 65 MPH
55 VEHICLES OVER NON-COMM BUSES
R-9-84
STA. 17+982

SPEED LIMIT 65 MPH
55 VEHICLES OVER NON-COMM BUSES
R-9-84
STA. 17+987

R-10 48x60 BLACK/WHITE
STA. 17+900

WORK ZONE SPEED LIMIT 55
SPECIAL BLACK/WHITE 48x12

FOR SECTION B—B SEE SHEET 18

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- PHASE II CONSTRUCTION

EAST 2 M-2-36.22 M-39-36 STA. 17+830

101 Castalia Sandusky NEXT RIGHT
GB 13'x12' LEVEL 1
STA. 18+142

4 Sandusky Bucyrus EXIT 1 MILE
GB 13'x12' LEVEL 1
STA. 18+150

CAMPING NEXT RIGHT
GSC 10'x4'
STA. 18+325

FOR BRIDGE PHASED CONSTRUCTION TYPICALS, SEE SHEET 17

BEGIN ANCHORED PCB STA. 18+454

PCB, 813 mm BRIDGE MOUNTED, ANCHORED

BEGIN ANCHORED PCB STA. 18+457

PCB, 813 mm BRIDGE MOUNTED, ANCHORED

MATCH LINE STA. 18+520 SEE SHEET 38

18+160 18+180 18+200 18+220 18+240 18+260 18+280 18+300 18+320 18+340 18+360 18+380 18+400 18+420 18+440 18+460 18+480 18+500

FOR QUANTITIES SEE SHEET 25

metric units

℄ OLD RAILROAD RD.

END ANCHORED PCB STA. 18+616

PCB, 813 mm BRIDGE MOUNTED, ANCHORED

101 Castalia Sandusky EXIT 1 MILE
GB 13'x12' LEVEL 1 STA. 18+869

MATCH LINE STA. 18+520 SEE SHEET 37

18+540 18+560 18+580 18+600 18+620 18+640 18+660 18+680 18+700 18+720 18+740 18+760 18+780 18+800 18+820 18+840 18+860 18+880

ORIG. ℄ NORFOLK & SOUTHERN R.R.

℄ CONST. & SURVEY S.R. 2

3.6 m Lane

℄ WESTBOUND

PCB, 813 mm

MATCH LINE STA. 18+900 SEE THIS SHEET

℄ EASTBOUND

PCB, 813 mm BRIDGE MOUNTED, ANCHORED

END ANCHORED PCB STA. 18+622

Hospital NEXT RIGHT
GSH 10'x4' STA. 18+615

4 Sandusky Bucyrus NEXT RIGHT
GB 13'x12' LEVEL 1 STA. 18+805

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- PHASE II CONSTRUCTION

FOR BRIDGE PHASED CONSTRUCTION TYPICALS, SEE SHEET 17

SPECIAL BLACK/WHITE 48x12

WORK ZONE SPEED LIMIT 55

R-10 48x60 BLACK/WHITE STA. 18+936

WEST M-40-36

2 M-2-36-2 STA. 19+049

PCB, 813 mm BRIDGE MOUNTED, UNANCHORED

MATCH LINE STA. 18+900 SEE THIS SHEET

18+920 18+940 18+960 18+980 19+000 19+020 19+040 19+060 19+080 19+100 19+120 19+140 19+160 19+180 19+200 19+220 19+240 19+260

3.6 m Lane

PCB, 813 mm

℄ WESTBOUND

℄ CONST. & SURVEY S.R. 2

3.6 m Lane

PCB, 813 mm

℄ EASTBOUND

PCB, 813 mm BRIDGE MOUNTED, UNANCHORED

MATCH LINE STA. 19+280 SEE SHEET 39

Sandusky Speedway NEXT RIGHT
GCP 11'x17' LEVEL II STA. 19+072

FOR SECTION (B)—(B) SEE SHEET 18

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 1 - PHASE II
STA. 18+520 TO STA. 19+280

ERI-2-2.866

38 / 327

wc1s2 P:\3907\DWG\HWY\PLAN\maintenance\stage-2_phase-2\ E2-s2p26.dwg NOV 11, 1998 TIME: 10:56 AM

FOR QUANTITIES SEE SHEET 25

END PROJECT
STA. 19+446.279
SLK 12.558
NH-73 (89)

BEGIN TAPER STA. 19+447

STA. 19+551

END PCB
BEGIN TAPER
STA. 19+570

℄ RAMP A

PCB, 813 mm

℄ WESTBOUND

19:1

SEE SHEET 38

MATCH LINE STA. 19+280

19+300 19+320 19+340 19+360 19+380 19+400 19+420 19+440 19+460 19+480 19+500 19+520 19+540 19+560 19+580 19+600

SEE THIS SHEET

MATCH LINE STA. 19+620

℄ CONST. & SURVEY S.R. 2

3.6 m Lane

℄ EASTBOUND

PCB, 813 mm

END PCB
STA. 19+450

GE 13X12 LEVEL 1
STA. 19+472

4
Sandusky
Bucyrus

PLACED IN PHASE 1

RESUME
ILLEGAL
SPEED
R-8A

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- XXX MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- 3.0m TEMPORARY PAVEMENT, AS PER PLAN "A" CONSTRUCTED PRIOR TO PHASE II
- PHASE II CONSTRUCTION

STA. 19+727

℄ WESTBOUND

MATCH LINE STA. 19+620

SEE THIS SHEET

19+640 19+660 19+680 19+700 19+720 19+740 19+760 19+780 19+800 19+820

℄ CONST. & SURVEY S.R. 2

℄ EASTBOUND

END TAPER STA. 19+948

TAPER STA. 19+965

5 DRUMS @ 3.75 m C/C

ADVANCE SIGNAGE SHALL BE AS PER STD. DRAWING MT-95.30M

DRUMS @ 18 m C/C

19+880 19+900 19+920 19+940 19+960 19+980 20+000

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR
CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 1 - PHASE II
STA. 19+280 TO STA. 20+000

ERI-2-2.866

39
327

deck2 P:\3907\DWG\HWY\PLAN\maintenance\stage-2_phase-2\ E2-s2pz7.dwg NOV 10, 1998 TIME: 11:31 AM

RAMP B CLOSED DURING PHASE I
OPENED PRIOR TO WORK ON
McCARTNEY RD. FOR SIGNING AND
ADDITIONAL NOTES, SEE STD. DWG.
MT-98.19M.

℄ RAMP B

EXIT 30 MPH W-97-48 STA. 13+776

WEST M-40-36 2 M-2-36-2 STA. 13+715

BEGIN PCB STA. 13+700

+705

GATES AND BARRACADES
AS PER STD. DWG.
MT-101.60M

BEGIN ANCHORED PCB STA. 13+820

END ANCHORED PCB STA. 13+895

℄ U.S. 6

PCB, 813 mm BRIDGE MOUNTED ANCHORED

FOR QUANTITIES SEE SHEET 25

FOR BRIDGE PHASED CONSTRUCTION
TYPICALS, SEE SHEET 17

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED TJS CHECKED BMH

0+240 0+220 0+200 0+180 0+160 0+140 0+120 0+100 0+080 0+060 0+040 0+020

PCB, 813mm

℄ WESTBOUND

3.6 m LANE

680 13+700 13+720 13+740 13+760 13+780 13+800 13+820 13+840 13+860 13+880 13+900 13+920 13+940 13+960 13+980 14+000 14+020

℄ CONST. & SURVEY S.R. 2

℄ EASTBOUND

MATCH LINE STA. 14+040 SEE BELOW

ADVANCE SIGNAGE SHALL BE AS PER STD. DRAWING MT-95.30M

5 DRUMS @ 3.75 m c/c

TAPER STA. 13+769

BEGIN TAPER STA. 13+784

48x60 BLACK/WHITE STA. 13+980

SPECIAL BLACK/WHITE 48x12 WORK ZONE SPEED LIMIT 55

END TAPER STA. 14+036

LEGEND

- C — TEMPORARY CHANNELIZING LINES
- G — TEMPORARY GORE MARKINGS
- W — TEMPORARY EDGE LINE, WHITE
- Y — TEMPORARY EDGE LINE, YELLOW
- ● — TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ — TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× — MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- 1.2m TEMPORARY PAVEMENT, AS PER PLAN "A" CONSTRUCTED PRIOR TO PHASE I (TO REMAIN IN PLACE THROUGH STAGE 2)
- PHASE I CONSTRUCTION

6 Sandusky Fremont

OE 13'x12' LEVEL 1 STA. 14+050

FOR SECTION A—A SEE SHEET 19

BEGIN PCB TAPER STA. 14+045

+042

MATCH LINE STA. 14+040 SEE ABOVE

PCB, 813 mm

℄ WESTBOUND

END PCB TAPER BEGIN TAPER STA. 14+168

+220

19:1

DRUMS @ 18 m c/c

14+060 14+080 14+100 14+120 14+140 14+160 14+180 14+200 14+220 14+240 14+260

END TAPER STA. 14+206

℄ CONST. & SURVEY S.R. 2

℄ EASTBOUND

PCB, 813 mm

END TAPER BEGIN PCB TAPER STA. 14+074

0+500 0+520 0+540 0+560 0+580 0+600 0+620 0+640 0+660

℄ RAMP D

END PCB TAPER STA. 14+200

RAMP D CLOSED
DURING PHASE I

TAPER STA. 14+458.80

TAPER STA. 14+473.80

5 DRUMS @ 3.75 m c/c ADVANCE SIGNAGE SHALL BE AS PER STD. DRAWING MT-95.30M

℄ WESTBOUND

14+460 14+480 14+500 14+520 14+540 14+560

3.6 m LANE

℄ CONST. & SURVEY S.R. 2

℄ EASTBOUND

+546 END PCB STA. 14+548

MAINTENANCE OF TRAFFIC - STAGE 1W - PHASE I
STA. 13+700 TO STA. 14+400

ERI-2-2.866

FOR QUANTITIES SEE SHEET 25

℄ RAMP A

℄ RAMP B

EXIT 30 MPH W-97-48 STA. 13+776

FOR BRIDGE PHASED CONSTRUCTION TYPICALS, SEE SHEET 17

metric units

℄ U.S. 6

END TAPER BEGIN PCB STA. 13+700

WEST M-40-36

2 M-2-36-2 STA. 13+715

BEGIN ANCHORED PCB STA. 13+820

END ANCHORED PCB STA. 13+895

BEGIN TAPER STA. 13+534

℄ CONST. & SURVEY S.R. 2

℄ WESTBOUND

℄ EASTBOUND

MATCH LINE STA. 13+960 SEE BELOW

6 Sandusky Fremont

QE 13'x12' LEVEL 1 STA. 14+050

+042 BEGIN PCB TAPER STA. 14+045

END PCB TAPER BEGIN TAPER STA. 14+144

END TAPER STA. 14+310.20

TAPER STA. 14+557

TAPER STA. 14+572

3.6 m LANE

19:1

MATCH LINE STA. 13+960 SEE ABOVE

℄ RAMP D

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- XXX MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- PHASE II CONSTRUCTION

5 DRUMS @ 3.75 m c/c ADVANCE SIGNAGE SHALL BE AS PER STD. DRAWING MT-95.30M

SCALE IN METERS 0 10 20 1:500

CALCULATED TJS CHECKED BMH

MAINTENANCE OF TRAFFIC - STAGE 1W - PHASE II
STA. 13+700 TO STA. 14+400

ERI-2-2.866

41
327

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FOR QUANTITIES SEE SHEET 25

metric units

END CONSTRUCTION OC-8-60 STA. 2+691

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MATCH LINE STA. 2+700 SEE THIS SHEET

2+240 2+260 2+280 2+300 2+320 2+340 2+440 2+460 2+480 2+500 2+520 2+540 2+560 2+580 2+600 2+620 2+640 2+660 2+680

℄ SURVEY S.R. 2

2+522

DRUMS @ 18 m c/c

TAPER STA. 2+280.4

BEGIN TAPER STA. 2+295.4

END TAPER STA. 2+560
BEGIN TAPER
BEGIN DRUMS @ 6.1 m

END TAPER STA. 2+660
END DRUMS @ 6.1 m

ADVANCE SIGNAGE SHALL BE AS PER STD. DRAWING MT-95.30M

5 DRUMS @ 3.75 m C/C

℄ CONSTRUCTION & SURVEY S.R. 2

VARIES 3.0 m MIN. 7.62 m MAX.

℄ WESTBOUND LANE ℄ EASTBOUND LANE

0.6m 3.0m 3.6m 3.6m 0.9m 0.9m 3.6m 3.6m 3.0m 0.6m

3.6m TRAFFIC MAINTAINED 3.6m TRAFFIC MAINTAINED

0.30m 0.77m± 0.77m± 0.30m

COMPACTED AGGREGATE

TEMPORARY PAVEMENT, AS PER PLAN "A", CONSTRUCTED PRIOR TO PHASE I

FOR PAVEMENT BUILD-UP DETAIL SEE SHEET 18

COMPACTED AGGREGATE

GE 13x12 LEVEL 1 STA. 2+603

269 Bay View Castalia

SECTION (A)—(A)

MAINTENANCE OF TRAFFIC TREATMENT — PHASE I S.R. 2

LIMITING STATIONS
STA. 2+522.20 TO STA. 3+080 (EB)
STA. 2+809.60 TO STA. 3+080 (WB)

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- 0.9m TEMPORARY PAVEMENT, AS PER PLAN "A" CONSTRUCTED PRIOR TO PHASE I
- PHASE I CONSTRUCTION

0+260 ℄ RAMP B 0+240 0+220 0+200 0+180 0+160

RESUME LEGAL SPEED R-8A STA. 2+740

BEGIN PROJECT STA. 2+866.000 SLD 2.866 NH-73 (89)

BEGIN TAPER STA. 2+809.60

END TAPER BEGIN PCB STA. 2+842

SPECIAL BLACK/WHITE 48x12

WORK ZONE SPEED LIMIT 55 R-10 48x60

BLACK/WHITE STA. 2+907

PCB, 813 mm

℄ CONST. & SURVEY S.R. 269

STA. 3+042.512 S.R. 2 =
STA 0+737.339 S.R. 269

3.6 m LANE

2+720 2+740 2+760 2+780 2+800 2+820 2+840 2+860 2+880 2+900 2+920 2+940 2+960 2+980 3+000 3+020 3+040 3+060

℄ CONST. & SURVEY S.R. 2

TYPE III BARRICADE

3.6 m LANE

PCB, 813 mm

MATCH LINE STA. 2+700 SEE THIS SHEET

MATCH LINE STA. 3+080, SEE SHEET 43

BEGIN PCB STA. 2+740

2+791

DRUMS @ 6.1 m c/c

RAMP TRAFFIC CONTROL TREATMENT AS PER STD. DRAWING MT-98.13M

END TAPER STA. 2+845

TEMPORARY IMPACT ATTENUATOR SEE SHEET 19 FOR NOTE

OM-9-9-48 EXIT

℄ RAMP A 0+200 0+220 0+240 0+260 0+280

M-2-36-2 STA. 2+925

2 EAST M-39-36

0+800 0+780 0+760 0+740 0+720 0+700 0+680

MAINTENANCE OF TRAFFIC - STAGE 2 - PHASE I
STA. 2+240 TO STA. 3+080

ERI-2-2.866

42
327

wds2 P:\3907\DWG\WRY\PLAN\maintenance\stage-1_phase-1\ E2-S1P11.dwg NOV 11, 1998 TIME: 1:14 PM

FOR QUANTITIES SEE SHEET 25

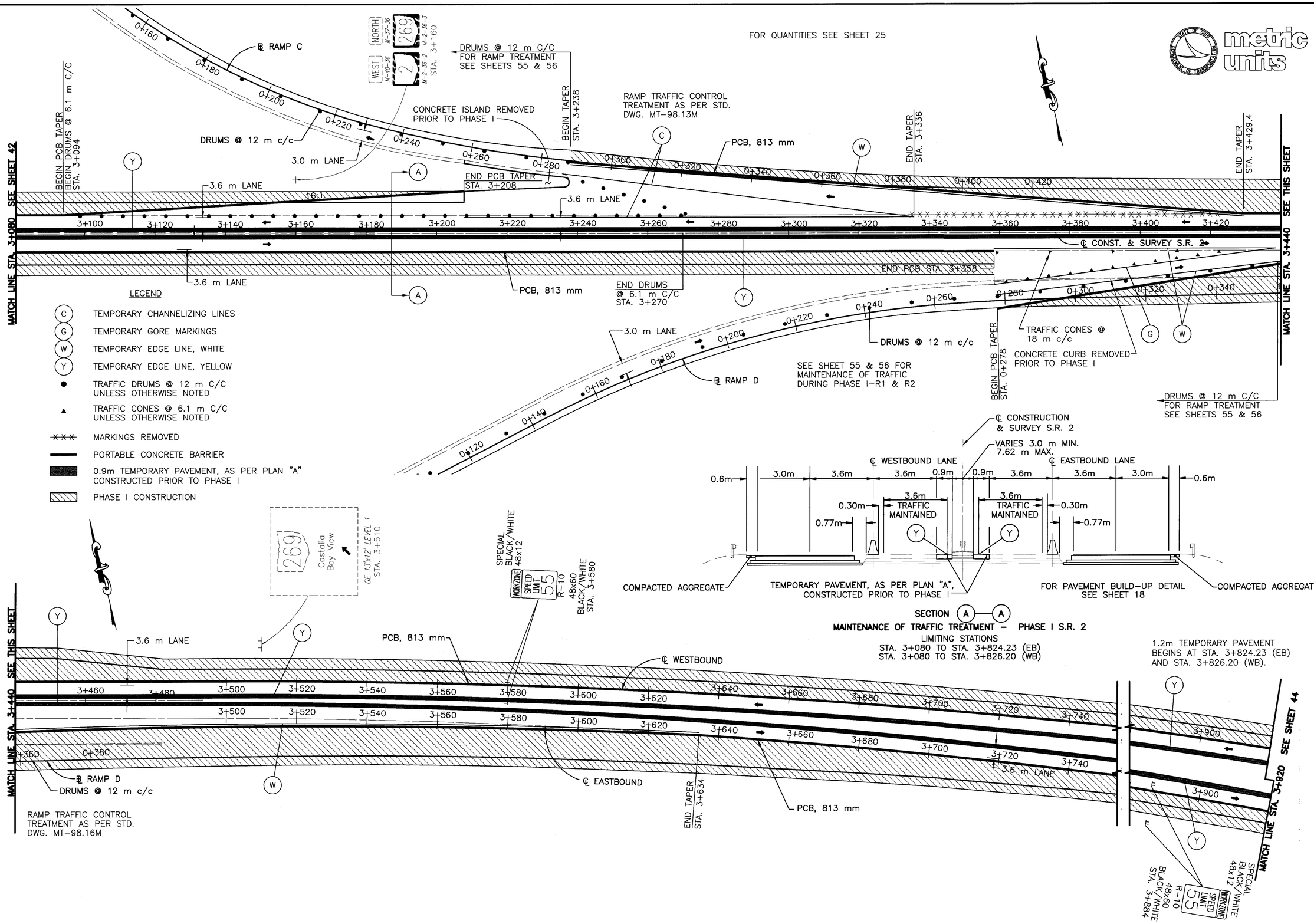
metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED D.R
CHECKED T.S

MAINTENANCE OF TRAFFIC - STAGE 2 - PHASE I
STA. 3+080 TO STA. 3+920

ERI-2-2.866



FOR QUANTITIES SEE SHEET 25

metric units

MATCH LINE STA. 3+920 SEE SHEET 43

BEGIN TAPER STA. 6+146

SPECIAL BLACK/WHITE 48x12

WORKZONE SPEED LIMIT 55

48x60 BLACK/WHITE STA. 6+140

PCB, 813 mm

℄ WESTBOUND

3.6 m LANE

3+940

6+140 6+160 6+180 6+200 6+220 6+240 6+260 6+280 6+300 6+320 6+340 6+360 6+380 6+400 13+320 13+340

℄ CONST. & SURVEY S.R. 2

℄ EASTBOUND

TAPER STA. 13+356

MATCH LINE STA. 13+360 SEE THIS SHEET

Cedar Point NEXT RIGHT GCP 13'x5' LEVEL II STA. 6+159

FOR SECTION (A)—(A) SEE SHEET 18

GE 13'x12' LEVEL 1 STA. 6+385

Sandusky Fremont 6

P.C. STA. 6+413.889 BACK = P.C. STA. 13+300.033 AHEAD

BEGIN TAPER STA. 13+320.5

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- 1.2m TEMPORARY PAVEMENT, AS PER PLAN "A" CONSTRUCTED PRIOR TO PHASE I
- PHASE I CONSTRUCTION

DRUMS @ 12 m C/C FOR RAMP TREATMENT SEE SHEETS 55 & 56

TAPER STA. 13+436

END PCB TAPER STA. 0+069

CONCRETE CURB REMOVED PRIOR TO PHASE 1

℄ RAMP A

16:1

0+020 0+040 0+060 0+080 0+100 0+120 0+140 0+160 0+180 0+200 0+220

3.0 m LANE

RAMP TRAFFIC CONTROL TREATMENT AS PER STD. DRAWING MT-98.16M

PCB, 813 mm

TRAFFIC CONES @ 18 m c/c

END PCB TAPER STA. 13+520

PCB, 813 mm

℄ WESTBOUND

MATCH LINE STA. 13+360 SEE THIS SHEET

13+380 13+400 13+420 13+440 13+460 13+480 13+500 13+520 13+540 13+560 13+580 13+600 13+620 13+640 13+660 13+680

℄ CONST. & SURVEY S.R. 2

DRUMS @ 6.1 m C/C

℄ EASTBOUND

END PCB TAPER STA. 13+544

MATCH LINE STA. 13+700 SEE SHEET 45

PCB, 813 mm

BEGIN TAPER STA. 13+417

REMOVE CONCRETE CURB PRIOR TO PHASE I

END PCB & TAPER STA. 13+515.456

0+020 0+040 0+060 0+080 0+100 0+120

3.0 m LANE

END PCB TAPER STA. 13+659

RAMP TRAFFIC CONTROL TREATMENT AS PER STD. DRAWING MT-98.13M

2 M-2-36-2 STA. 13+593

[EAST] M-39-36

℄ RAMP C

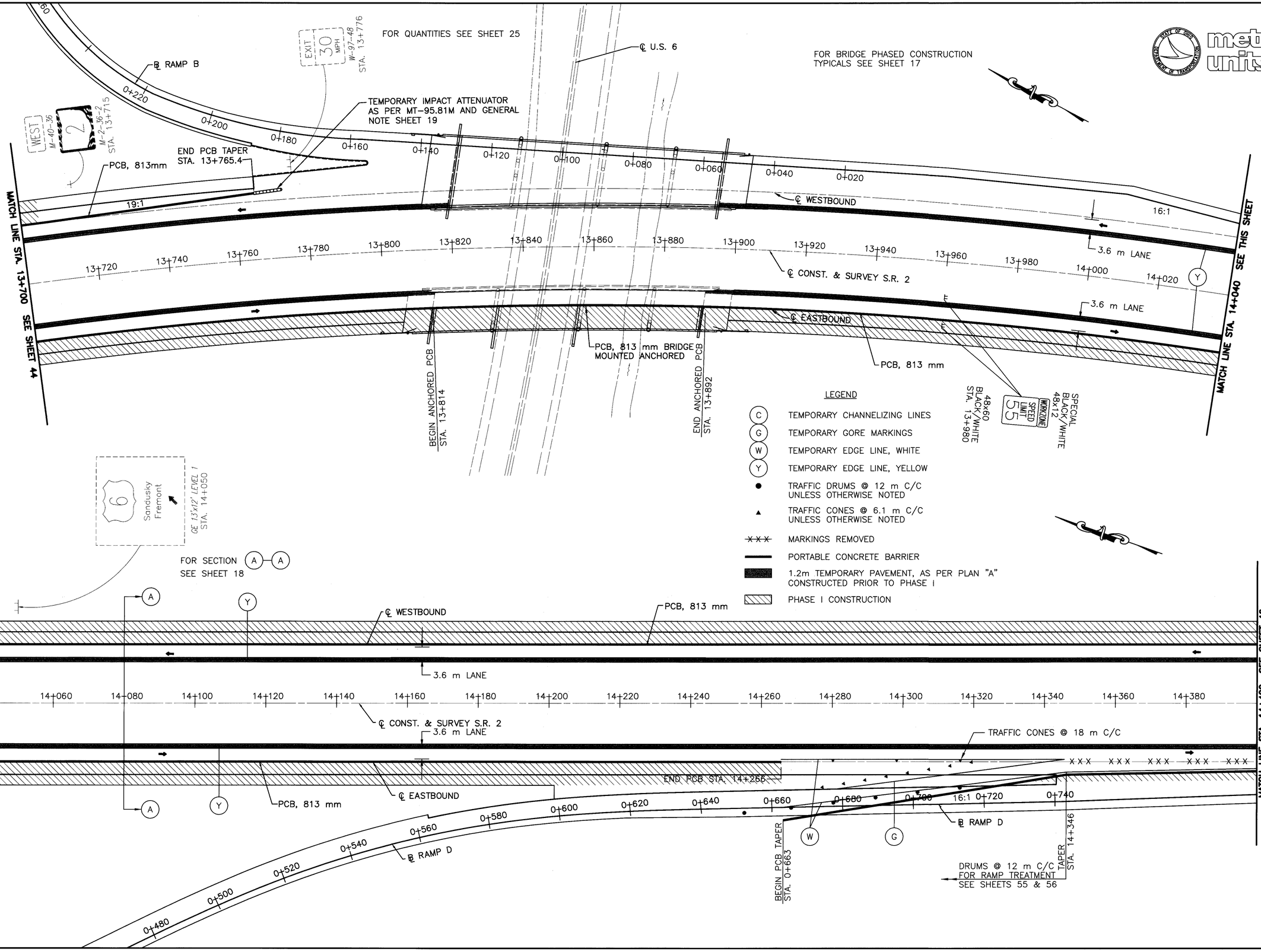
DRUMS @ 12 m C/C FOR RAMP TREATMENT SEE SHEETS 55 & 56

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 2 - PHASE I
STA. 3+920 TO STA. 13+700

ERI-2-2.866



metric units

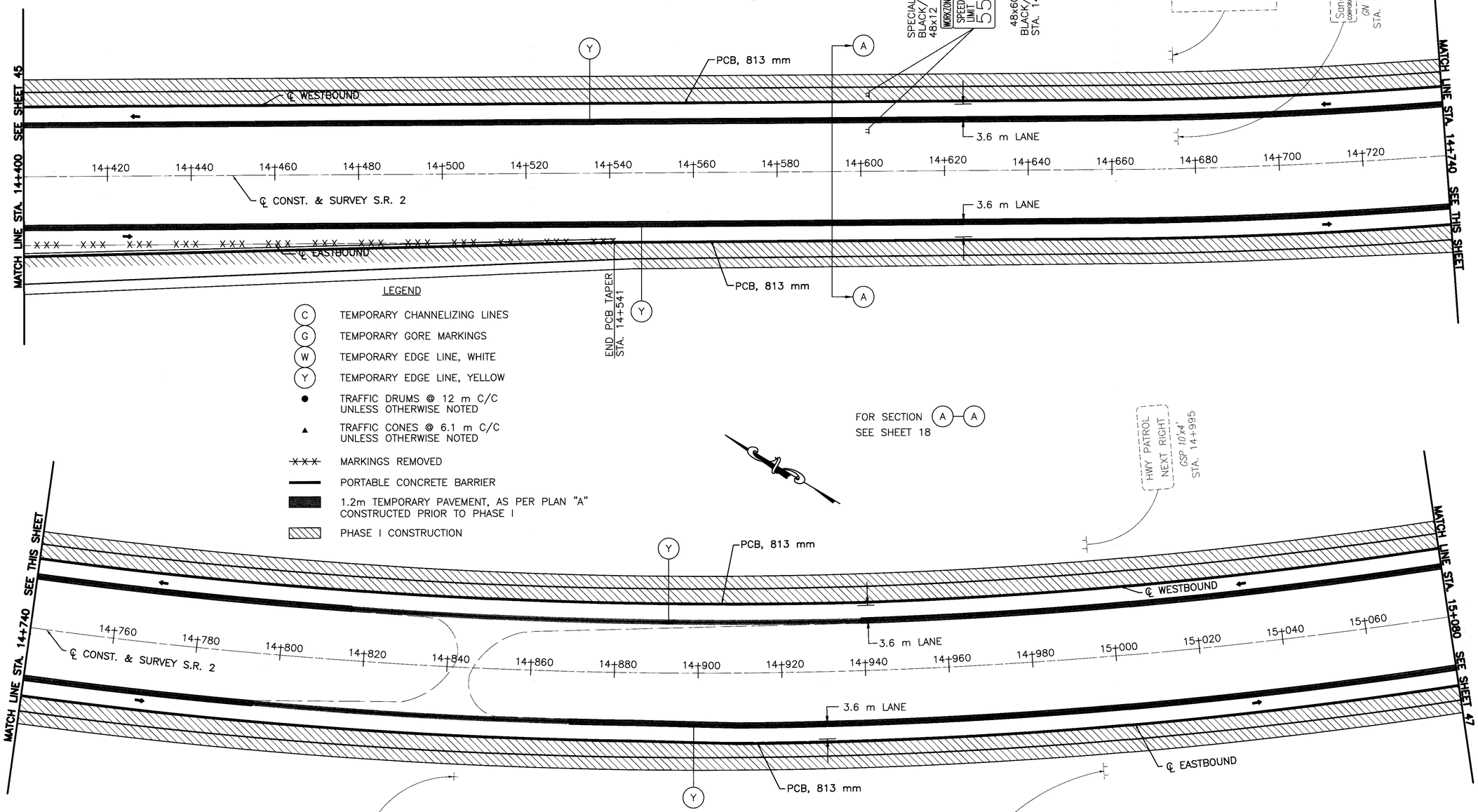
SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 2 - PHASE I
STA. 13+700 TO STA. 14+400

ERI-2-2.866

FOR QUANTITIES SEE SHEET 25



LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- 1.2m TEMPORARY PAVEMENT, AS PER PLAN "A" CONSTRUCTED PRIOR TO PHASE I
- PHASE I CONSTRUCTION

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 2 - PHASE I
STA. 14+400 TO STA. 15+080

ERI-2-2.866

46 327

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FOR QUANTITIES SEE SHEET 25

metric units

FOR BRIDGE PHASED CONSTRUCTION TYPICALS SEE SHEET 17

FOR SECTION A–A SEE SHEET 18

MATCH LINE STA. 15+080 SEE SHEET 46

MATCH LINE STA. 15+380 SEE THIS SHEET

℄ BARDSHAR RD.

BEGIN ANCHORED PCB STA. 15+185

END ANCHORED PCB STA. 15+248

PCB, 813mm BRIDGE MOUNTED AHCHORED

PCB, 813 mm

RESUME LEGAL SPEED R-8A

PLACED IN PHASE 1

END PCB TAPER STA. 15+369

℄ WESTBOUND

3.6 m LANE

℄ CONST. & SURVEY S.R. 2

15+100 15+120 15+140 15+160 15+180 15+200 15+220 15+240 15+260 15+280 15+300 15+320 15+340 15+360

3.6 m LANE

3.6 m LANE

℄ EASTBOUND

PCB, 813 mm

BEGIN ANCHORED PCB STA. 15+233

PCB, 813mm BRIDGE MOUNTED AHCHORED

END ANCHORED PCB STA. 15+293

CAMPING NEXT RIGHT GSC 10'x4' STA. 15+361

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- 1.2m TEMPORARY PAVEMENT, AS PER PLAN "A" CONSTRUCTED PRIOR TO PHASE I
- PHASE I CONSTRUCTION

6 Fremont Sandusky EXIT 1 MILE

GB 13'x12' LEVEL I STA. 15+392

BEGIN PCB TAPER STA. 15+422

PCB, 813 mm

19:1

END PCB TAPER STA. 15+487

BEGIN TAPER STA. 15+548

END TAPER STA. 15+585.80

W

DRUMS @ 18 m c/c

℄ WESTBOUND

3.6 m LANE

℄ CONST. & SURVEY S.R. 2

15+400 15+420 15+440 15+460 15+480 15+500 15+520 15+540 15+560 15+580 15+600 15+620 15+640 15+660

TEMPORARY IMPACT ATTENUATOR AS PER MT-95.81M AND GENERAL NOTE SHEET 19

3.6 m LANE

℄ EASTBOUND

MATCH LINE STA. 15+380 SEE THIS SHEET

MATCH LINE STA. 15+680 SEE SHEET 48

END STAGE 2 BEGIN TAPER STA. 15+422

END TAPER STA. 15+454.40

RESUME LEGAL SPEED R-8A STA. 15+520

℄ HOMEGARDNER RD.

END CONSTRUCTION OC-8-60 STA. 15+640

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 2 - PHASE I
STA. 15+080 TO STA. 15+680

ERI-2-2.866

47
327

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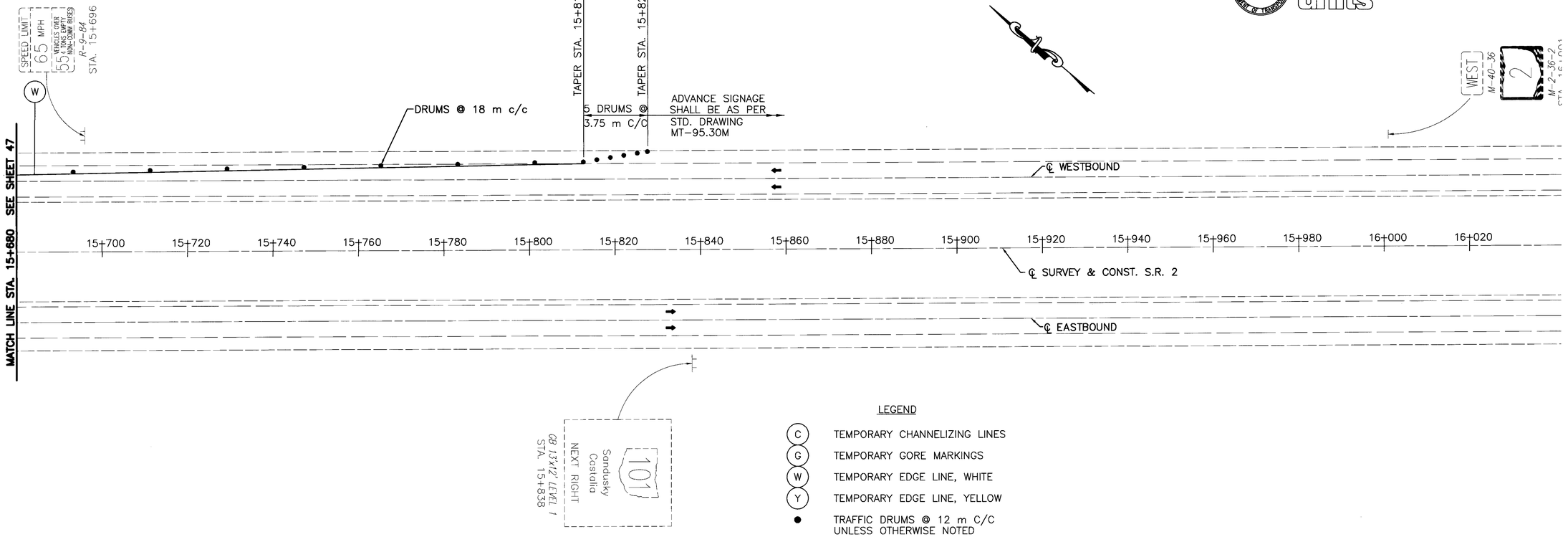
FOR QUANTITIES SEE SHEET 25



LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- ━━ PORTABLE CONCRETE BARRIER

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 2 - PHASE I
STA. 15+680 TO STA. 16+020

ERI-2-2.866

48
327

FOR QUANTITIES SEE SHEET 25

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

END CONSTRUCTION OC-8-60 STA. 2+691

EX. BOX BEAM GUARDRAIL

5 DRUMS @ 3.75 m C/C

TAPER STA. 2+608.244

TAPER STA. 2+623.244

℄ CONST. & SURVEY S.R. 2

2+320 2+340 2+360 2+380 2+400 2+420 2+440 2+460 2+480 2+500 2+520 2+540 2+560 2+580 2+600 2+620 2+640 2+660 2+680

TAPER STA. 2+367.20

TAPER STA. 2+382.20

ADVANCE SIGNAGE SHALL BE AS PER STD. DRAWING MT-95.30M

5 DRUMS @ 3.75 m C/C

3.6 m LANE

DRUMS @ 18 m c/c

MATCH LINE STA. 2+700 SEE THIS SHEET

Y

℄ CONSTRUCTION & SURVEY S.R. 2

VARIES 3.0 m MIN. 7.62 m MAX.

℄ WESTBOUND LANE

℄ EASTBOUND LANE

3.0m 3.6m 3.6m 3.6m 3.6m 3.0m

0.6m 0.6m 3.6m TRAFFIC MAINTAINED 0.45m

0.45m 3.6m TRAFFIC MAINTAINED 0.6m 0.6m

W W

SECTION (B) — (B)

MAINTENANCE OF TRAFFIC TREATMENT – PHASE II S.R. 2

LIMITING STATIONS
STA. 2+841.544 TO STA. 3+080 (EB)
STA. 2+843.244 TO STA. 3+080 (WB)

GE 13'x12' LEVEL 1 STA. 2+603

269 Bay View Costcla

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- PHASE II CONSTRUCTION

0+260 0+240 0+220 0+200 0+180 0+160 ℄ RAMP B

RESUME LEGAL SPEED R-8A

PLACED IN PHASE 1

BEGIN TAPER STA. 2+713.644

BEGIN PROJECT STA. 2+866.000 SLD 2.866 NH-73 (89)

BEGIN PCB END TAPER STA. 2+843.244

SPECIAL BLACK/WHITE 48x12 WORKZONE SPEED LIMIT 55

R-10 48x60 BLACK/WHITE STA. 2+907

PCB, 813 mm

3.6 m LANE

2+720 2+740 2+760 2+780 2+800 2+820 2+840 2+860 2+880 2+900 2+920 2+940 2+960 2+980 3+000 3+020 3+040 3+060

℄ CONST. & SURVEY S.R. 2

DRUMS @ 18 m c/c

MATCH LINE STA. 3+080, SEE SHEET 50

BEGIN PCB TAPER STA. 2+718.544

END TAPER STA. 2+760.20

END PCB TAPER STA. 2+841.544

℄ RAMP A

0+200 0+220 0+240 0+260

EXIT OW-96-48

R-10 48x60 BLACK/WHITE STA. 2+880

SPECIAL BLACK/WHITE 48x12 WORKZONE SPEED LIMIT 55

2 M-2-36-2 STA. 2+925

EAST M-39-36

0+800 0+780 0+760 0+740 0+720 0+700 0+680 0+660 ℄ RAMP C

MAINTENANCE OF TRAFFIC - STAGE 2 - PHASE II
STA. 2+180 TO STA. 3+080

ERI-2-2.866

FOR QUANTITIES SEE SHEET 25

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

℄ RAMP C

NORTH M-37-36 269

WEST M-40-36 2 M-2-36-2 M-2-36-3

STA. 3+160

0+160 0+180 0+200 0+220 0+240 0+260 0+280 0+300 0+320 0+340 0+360 0+380 0+400 0+420

PCB, 813 mm

3.6 m LANE

℄ WESTBOUND

MATCH LINE STA. 3+080 SEE SHEET 49

3+100 3+120 3+140 3+160 3+180 3+200 3+220 3+260 3+280 3+300 3+320 3+340 3+360 3+380 3+400 3+420

MATCH LINE STA. 3+440 SEE THIS SHEET

3.6 m LANE

PCB, 813 mm

℄ EASTBOUND

℄ CONST. & SURVEY S.R. 2

0+140 0+160 0+180 0+200 0+220 0+240 0+260 0+280 0+300 0+320 0+340

3.6 m LANE

℄ RAMP D

℄ CONSTRUCTION & SURVEY S.R. 2

VARIES 3.0 m MIN. 7.62 m MAX.

℄ WESTBOUND LANE ℄ EASTBOUND LANE

3.0m 3.6m 3.6m 3.6m 3.6m 3.0m

0.6m 0.6m 3.6m TRAFFIC MAINTAINED 0.45m 0.45m 3.6m TRAFFIC MAINTAINED 0.6m 0.6m

SECTION (B) — (B)

TRAFFIC CONTROL TREATMENT – PHASE II S.R. 2

LIMITING STATIONS

STA. 3+080 TO STA. 3+824.23 (EB)

STA. 3+080 TO STA. 3+826.20 (WB)

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- PHASE II CONSTRUCTION

269 Costalia Bay View

GE 13'x12' LEVEL 1 STA. 3+510

MATCH LINE STA. 3+440 SEE THIS SHEET

3+460 3+480 3+500 3+520 3+540 3+580 3+600 3+620 3+640 3+660 3+680 3+700

0+360 0+380

3.6 m LANE

℄ WESTBOUND

PCB, 813 mm

℄ EASTBOUND

PCB, 813 mm

℄ WESTBOUND

4+260 4+280 4+300

℄ EASTBOUND

4+260 4+280 4+300 4+320

MATCH LINE STA. 4+340 SEE SHEET 51

SPEED LIMIT 65 MPH 55 WHEN WET R-9-84

STA. 4+298

STA. 4+309.737 BACK 16.459 m LT =
STA. 4+319.049 AHEAD

MAINTENANCE OF TRAFFIC – STAGE 2 – PHASE II
STA. 3+080 TO STA. 4+340

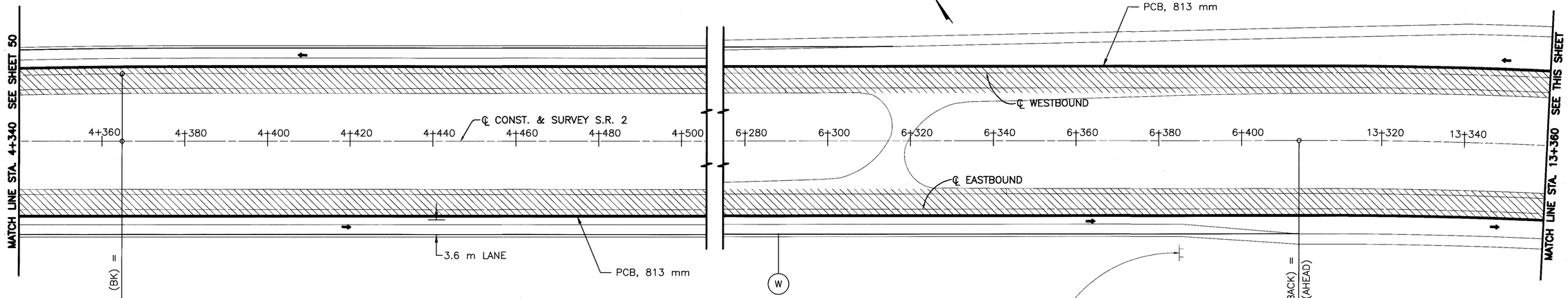
ERI-2-2.866

50
327

wats2 P:\390\DWG\HWY PLAN\maintenance\stage1_phase-2\ E2_S1P22.dwg NOV 11, 1998 TIME: 2:49 PM

FOR QUANTITIES SEE SHEET 25

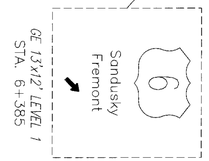
metric units



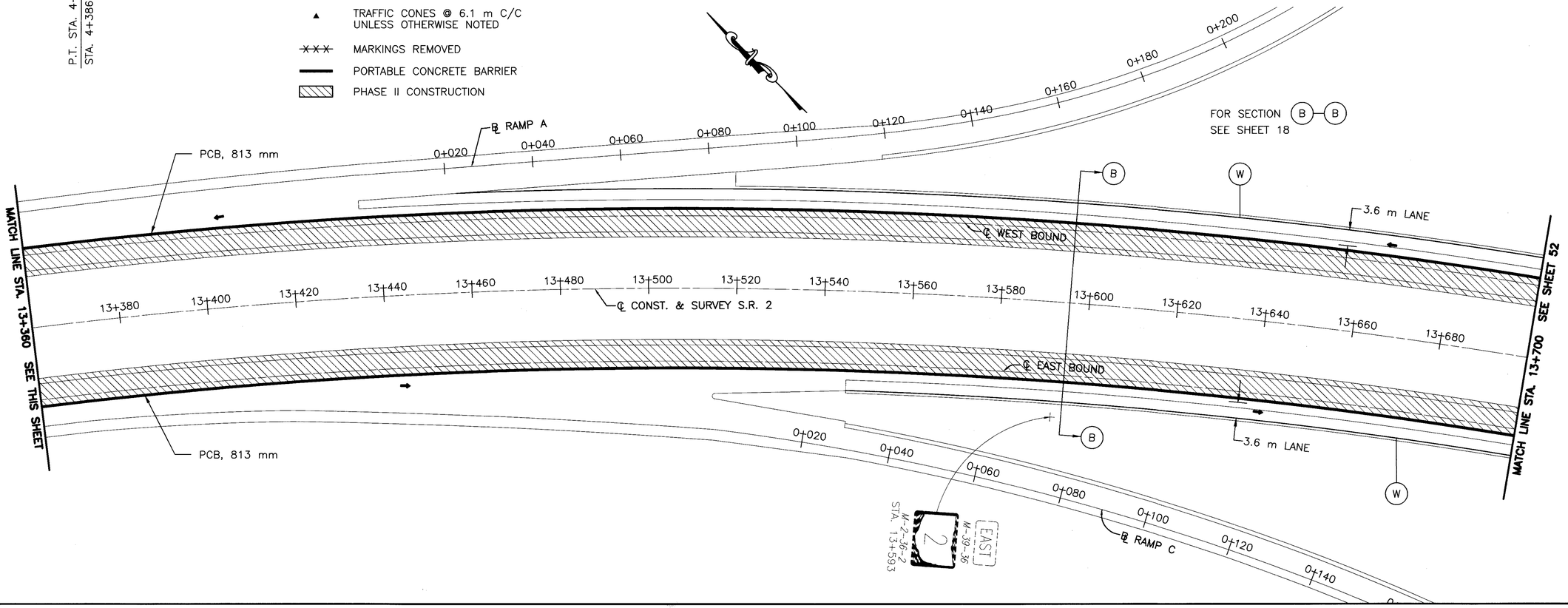
P.T. STA. 4+384.883, 16.459m LT. WB (BK) =
STA. 4+386.495 (AHD)

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- PHASE II CONSTRUCTION



STA. 6+413.889 (BACK) =
STA. 13+300.033 (AHEAD)



SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 2 - PHASE II
STA. 4+340 TO STA. 13+700

ERI-2-2.866

51
327

FOR QUANTITIES SEE SHEET 25

FOR BRIDGE PHASED CONSTRUCTION TYPICALS, SEE SHEET 17

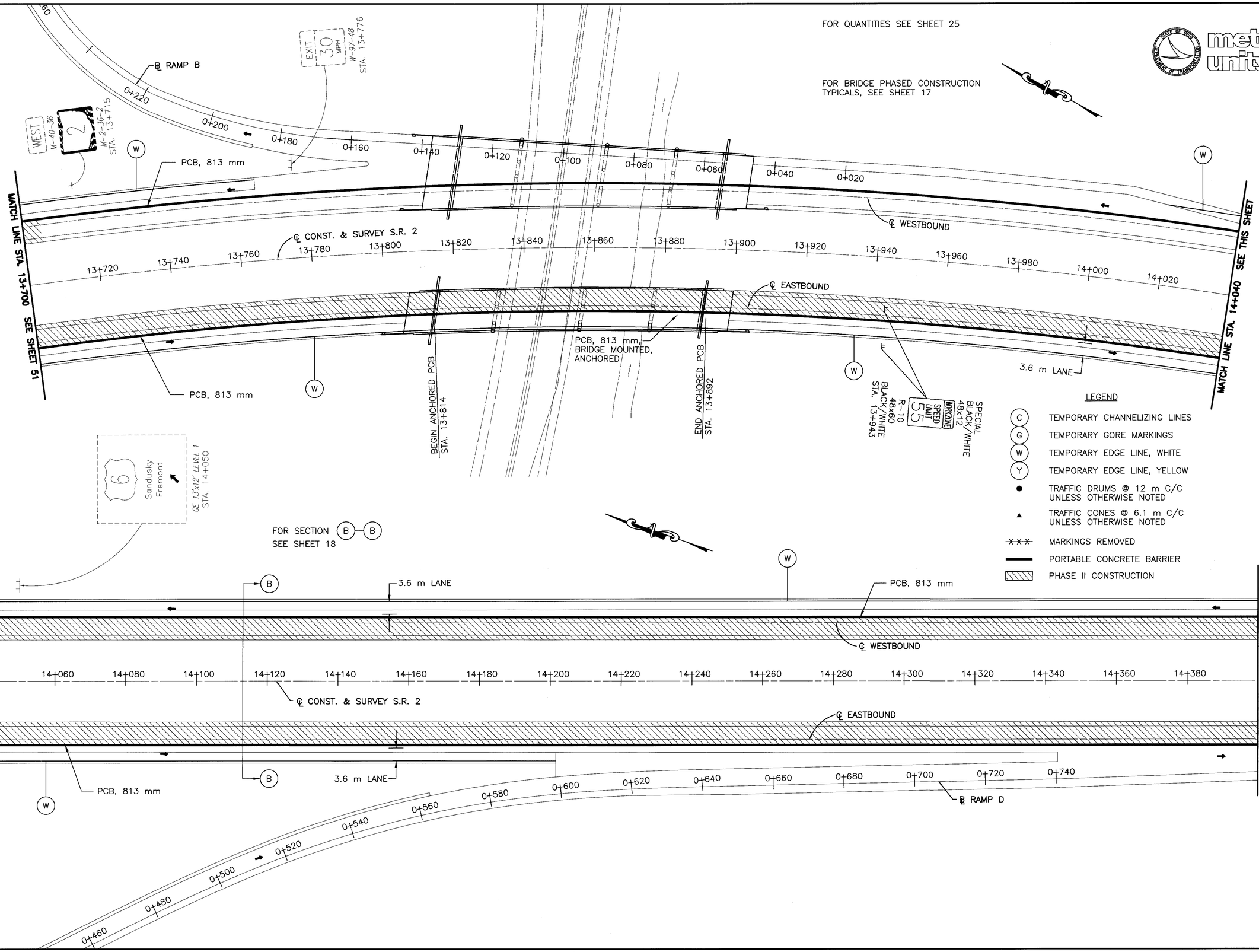
metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 2 - PHASE II STA. 13+700 TO STA. 14+400

ERI-2-2.866

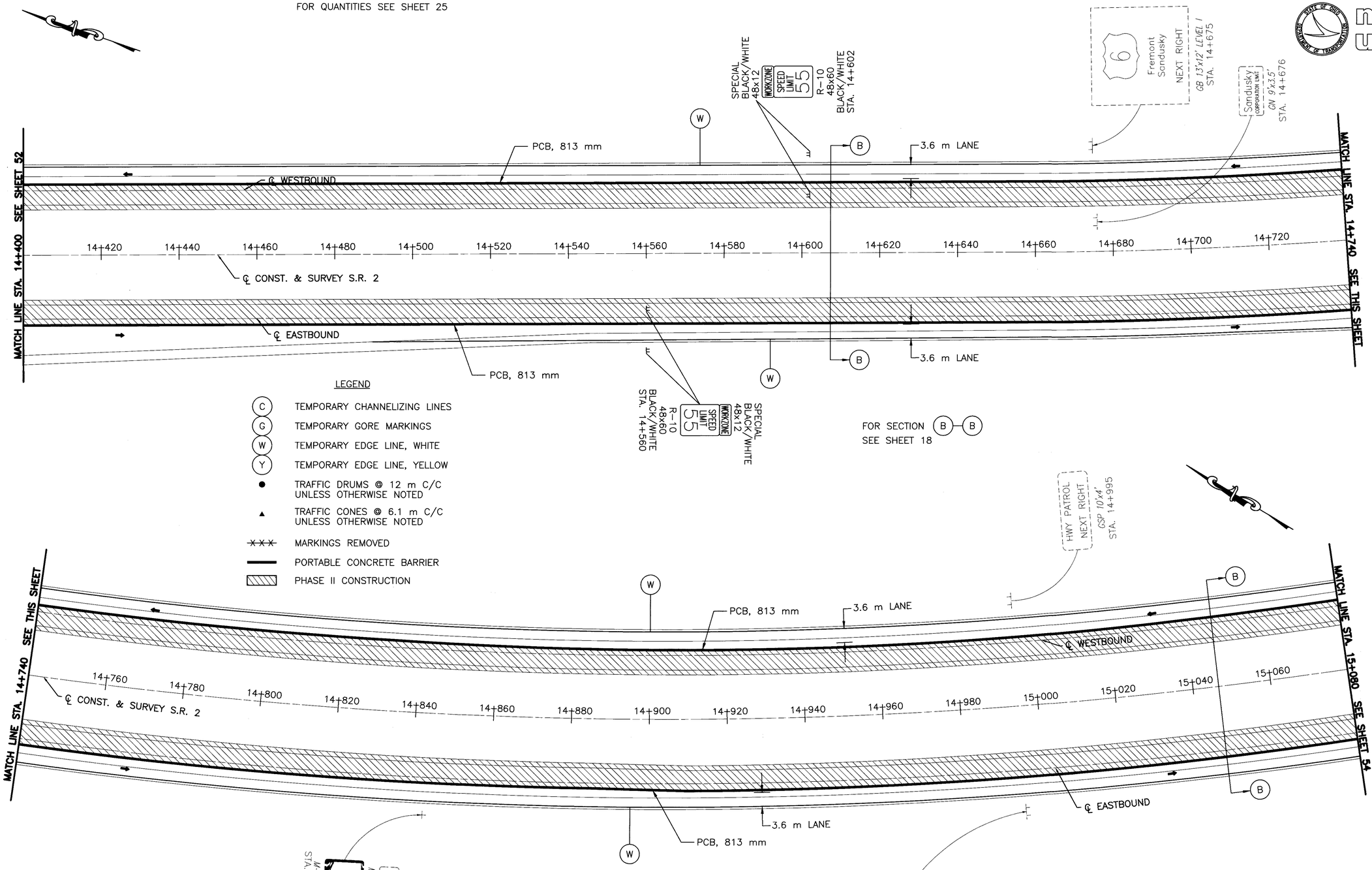


LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ××× MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- PHASE II CONSTRUCTION

FOR QUANTITIES SEE SHEET 25

metric units



LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- ~~×××~~ MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- PHASE II CONSTRUCTION

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 2 - PHASE II STA. 14+400 TO STA. 15+080

ERI-2-2.866

53 327

FOR QUANTITIES SEE SHEET 25

FOR BRIDGE PHASED CONSTRUCTION
TYPICALS, SEE SHEET 17

metric units

MATCH LINE STA. 15+080 SEE SHEET 53

MATCH LINE STA. 15+440 SEE THIS SHEET

℄ BARDSHAR RD.

BEGIN ANCHORED PCB STA. 15+185

END ANCHORED PCB STA. 15+248

PCB, 813 mm

℄ WESTBOUND

℄ CONST. & SURVEY S.R. 2

15+100 15+120 15+140 15+160 15+180 15+200 15+220 15+240 15+260 15+280 15+300 15+320 15+340 15+360 15+380 15+400 15+420

℄ EASTBOUND

Fremont Sandusky EXIT 1 MILE

BEGIN PCB TAPER GB 13'x12' LEVEL 1 STA. 15+392

BEGIN PCB TAPER STA. 15+422

FOR SECTION B—B SEE SHEET 18

PCB, 813 mm

BEGIN ANCHORED PCB STA. 15+233

END ANCHORED PCB STA. 15+296

CAMPING NEXT RIGHT GSC 10'x4' STA. 15+361

END STAGE 2 STA. 15+420

END PCB BEGIN TAPER STA. 15+422

LEGEND

- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- (W) TEMPORARY EDGE LINE, WHITE
- (Y) TEMPORARY EDGE LINE, YELLOW
- ● TRAFFIC DRUMS @ 12 m C/C UNLESS OTHERWISE NOTED
- ▲ TRAFFIC CONES @ 6.1 m C/C UNLESS OTHERWISE NOTED
- XXX MARKINGS REMOVED
- PORTABLE CONCRETE BARRIER
- PHASE II CONSTRUCTION

TEMPORARY IMPACT ATTENUATOR AS PER MT-95.81M AND GENERAL NOTE SHEET 19

END PCB TAPER STA. 15+521.6

END PCB TAPER BEGIN TAPER STA. 15+545

DRUMS @ 18 m c/c

19:1

PCB, 813 mm

SPEED LIMIT 65 MPH 55 VEHICLES OVER 3 AXLES AND NON-COMM BUSES R-9-84 STA. 15+696

END TAPER STA. 15+696.20

DRUMS @ 18 m c/c

END TAPER STA. 15+923

5 DRUMS @ 3.75 m C/C

TAPER STA. 15+938

ADVANCE SIGNAGE SHALL BE AS PER STD. DRAWING MT-95.30M

℄ WESTBOUND

15+460 15+480 15+500 15+520 15+540 15+560 15+580 15+600 15+620 15+640 15+660 15+680 15+700 15+720 15+900 15+920 15+940 15+960

℄ CONST. & SURVEY S.R. 2

℄ EASTBOUND

RESUME LEGAL SPEED R-8A STA. 15+520

℄ HOMEGARDNER RD.

END TAPER STA. 15+551.60

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC - STAGE 2 - PHASE II
STA. 15+080 TO STA. 15+960

ERI-2-2.866

54
327

deck2 P:\3907\CWS\MW\PLAN\maintenance\stage1_phase-2\ E2-S1P26.dwg NOV 09, 1998 TIME: 3:22 PM

metric units

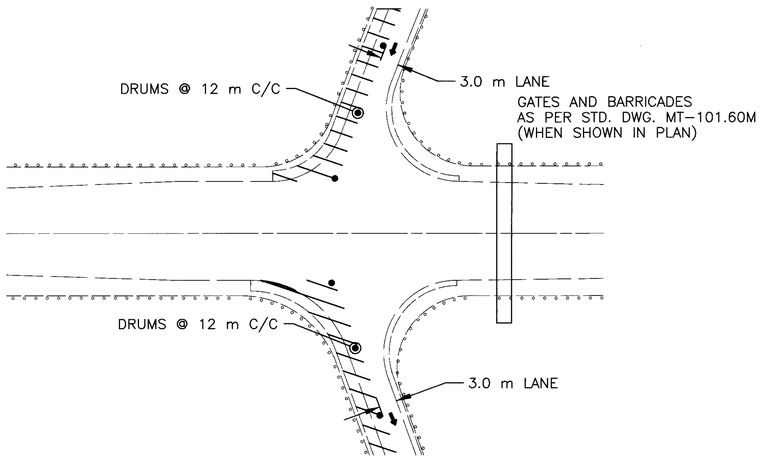
SCALE IN METERS 0 10 20 1:500

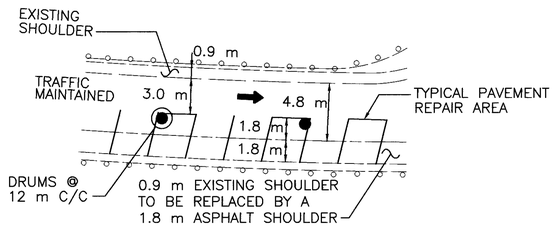
CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC
RAMP DETAILS

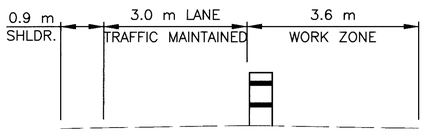
ERI-2-2.866

RAMP PHASE R1





(FOR RAMP SHOULDER BUILDUP, SEE TYPICAL ON SHEET 13)



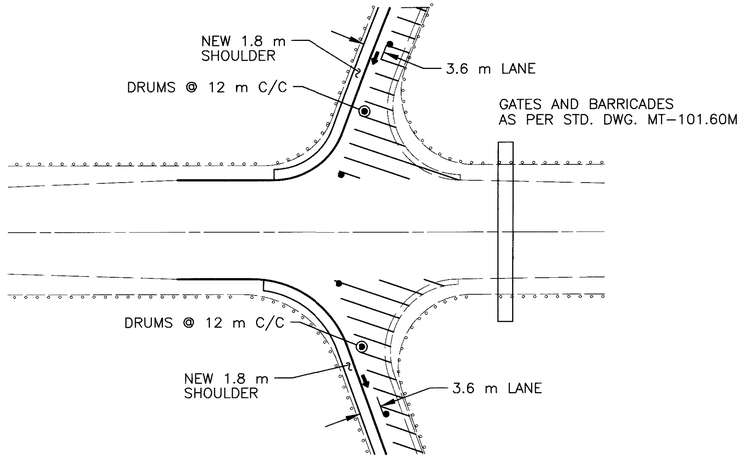
ALL RAMPS SHALL BE MAINTAINED AS SHOWN ABOVE WHILE THE PROPOSED PAVEMENT REPAIRS AND ASPHALT SHOULDERS ARE BEING CONSTRUCTED

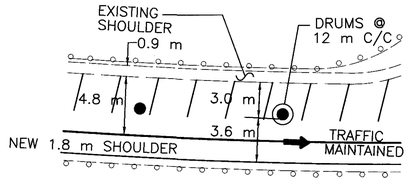
THE EXISTING OUTSIDE SHOULDER SHALL BE WIDENED PRIOR TO BEGINNING PHASE "R2". THE CONTRACTOR SHALL AVOID SAWING INTO THE NEW ASPHALT SHOULDERS.

EXCAVATION FOR THE PROPOSED ASPHALT RAMP SHOULDERS SHALL BE ADEQUATELY MAINTAINED AND PROTECTED AT ALL TIMES WITH DRUMS. THE PLACEMENT OF THE PROPOSED ASPHALTIC PAVEMENT SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND THE EXCAVATION OPERATIONS. THE LENGTH OF EXCAVATION OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO THE APPROVAL OF THE ENGINEER. NO EXCAVATION SHALL BE LEFT OPEN OVERNIGHT. IN CASE OF EMERGENCY, THE OPEN EXCAVATION SHALL BE BACKFILLED OR PROTECTED AS DIRECTED BY THE ENGINEER.

FOR LEGEND SEE SHEET 56

RAMP PHASE R2

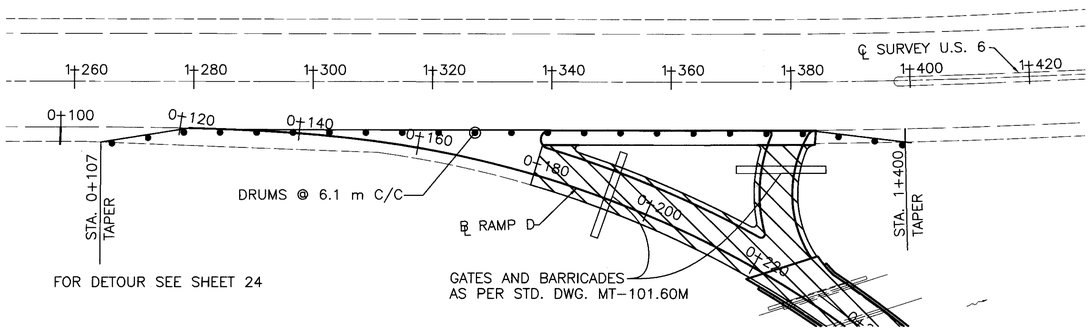




(FOR RAMP SHOULDER BUILDUP, SEE TYPICAL ON SHEET 13)

U.S. 6 – RAMP D

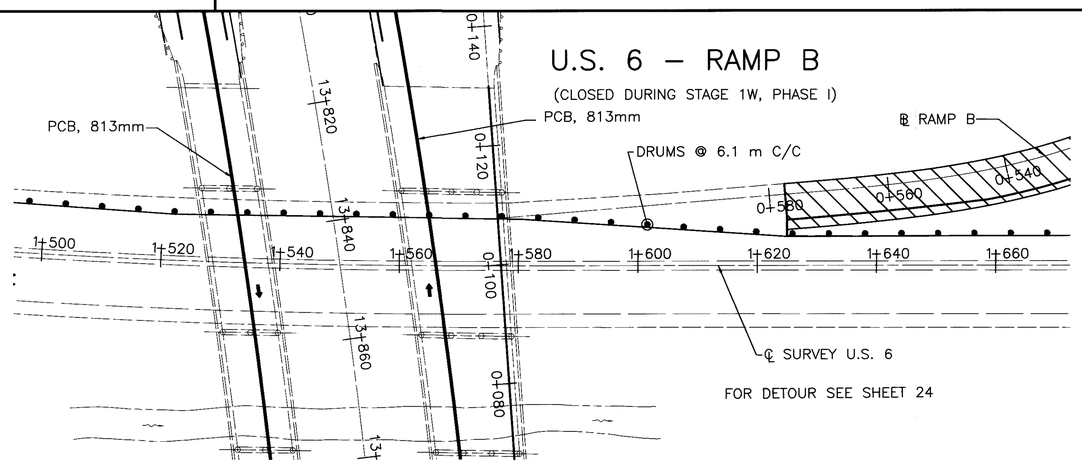
(CLOSED DURING STAGE 1W, PHASE I)



FOR DETOUR SEE SHEET 24

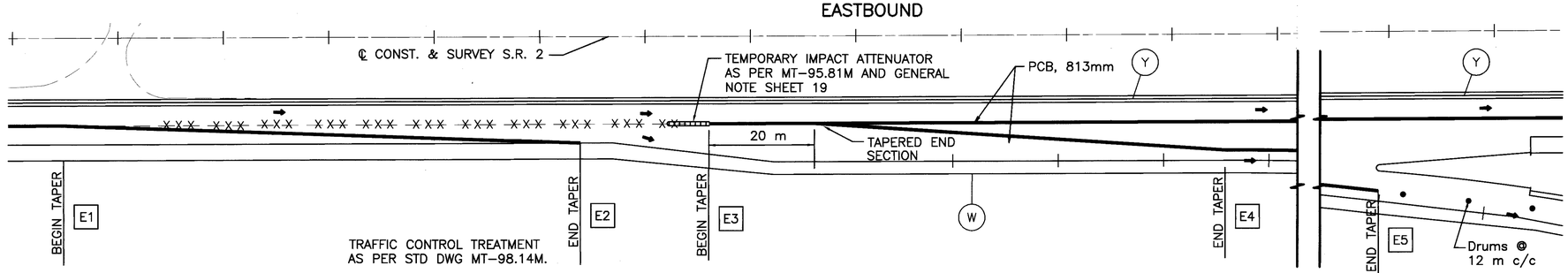
U.S. 6 – RAMP B

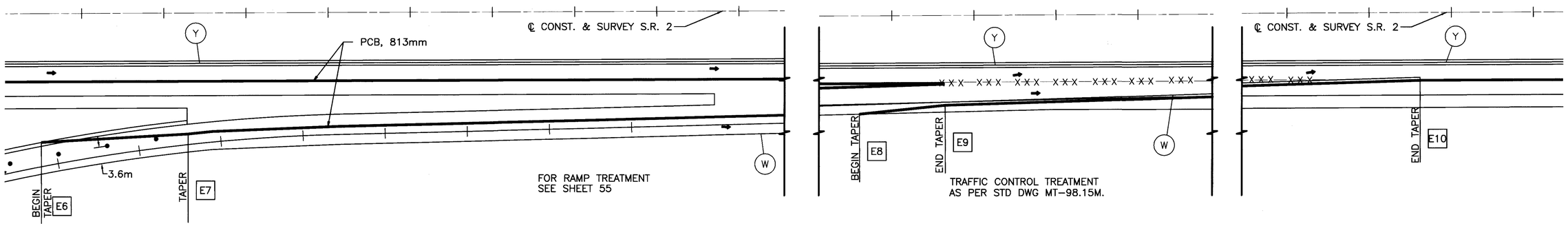
(CLOSED DURING STAGE 1W, PHASE I)



FOR DETOUR SEE SHEET 24

EASTBOUND





LEGEND

- (W) TEMPORARY EDGELINE, WHITE
- (Y) TEMPORARY EDGELINE, YELLOW
- (DY) TEMPORARY CENTERLINE, DOUBLE YELLOW
- (C) TEMPORARY CHANNELIZING LINES
- (G) TEMPORARY GORE MARKINGS
- PHASE R2 & STAGE 1W CONSTRUCTION
- PORTABLE CONCRETE BARRIER
- TRAFFIC DRUM
- MARKINGS REMOVED

S.R. 269

RAMP D STATION		RAMP C STATION	
E6	0+217	W6	0+287
E7	0+277	W7	3+366
E8	3+800	W8	3+444
E9	3+821	W9	3+488
E10	4+021	W10	3+586

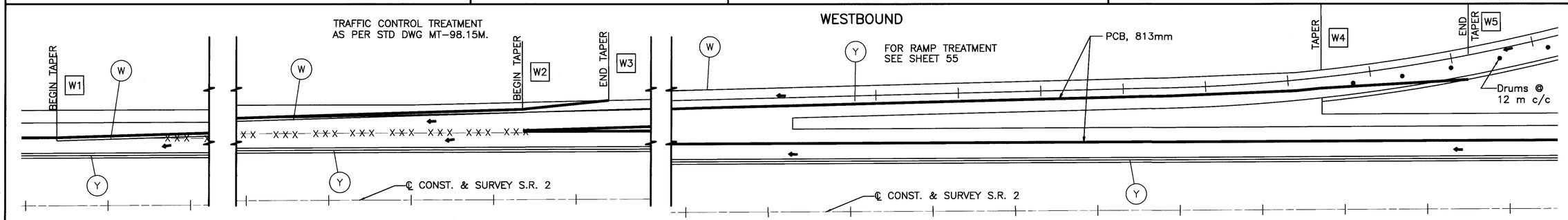
U.S. 6

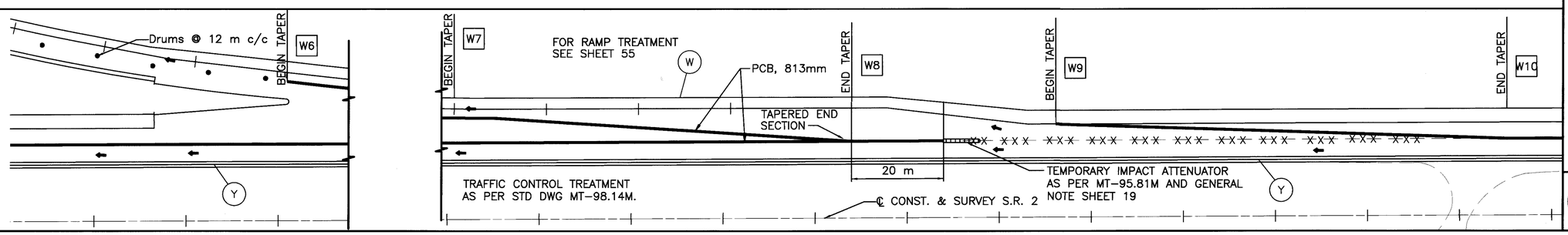
RAMP C STATION		RAMP A STATION		RAMP D STATION	
E1	6+305	W1	5+885	E6	0+539
E2	6+403	W2	6+086	E7	0+599
E3	13+333	W3	6+110	E8	14+579
E4	13+412	W4	0+086	E9	14+600
E5	13+515	W5	0+146	E10	14+800

S.R. 101

RAMP D STATION		RAMP A STATION		RAMP C STATION		RAMP B STATION	
E1	16+270	W1	15+967	E6	0+260	W6	17+273
E2	16+368	W2	16+168	E7	0+320	W7	17+400
E3	16+412	W3	16+189	E8	17+831	W8	17+478
E4	16+489	W4	0+122	E9	17+852	W9	17+522
E5	16+620	W5	0+182	E10	18+053	W10	17+621

WESTBOUND





metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED DJR CHECKED TJS

MAINTENANCE OF TRAFFIC
RAMP DETAILS - PHASE I - R2

ERI-2-2.866

w:\dot2 P:\3907\DWG\WWY\PLAN\maintenance\ E2-P102.dwg NOV 11, 1998 TIME: 5:59 PM

metric units

CALCULATED TJS
CHECKED BMH

SHEET NUMBERS													FUNDING							
15	16	60	67	81	82	87	88	97	98	99	118	123	100% STATE	N.H.	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHT. NO.
																			ROADWAY	
	LUMP													LUMP	201	11001	LUMP		CLEARING AND GRUBBING, AS PER PLAN	16
		1670												1670	202	22900	1670	SQ METER	APPROACH SLAB REMOVED	
		139600												139600	202	23000	139600	SQ METER	PAVEMENT REMOVED	
		3520												3520	202	23500	3520	SQ METER	WEARING COURSE REMOVED	
		1196												1196	202	30500	1196	METER	CONCRETE MEDIAN REMOVED	
		143												143	202	30600	143	SQ METER	CONCRETE MEDIAN REMOVED	
		1236												1236	202	32000	1236	METER	CURB REMOVED	
		6												6	202	35100	6	METER	PIPE REMOVED 600 mm AND UNDER	
		10616												10616	202	38000	10616	METER	GUARDRAIL REMOVED	15
		951												951	202	38300	951	METER	GUARDRAIL REMOVED, BARRIER DESIGN	15
		811												811	202	54100	811	EACH	RAISED PAVEMENT MARKER REMOVED FOR STORAGE	
		8												8	202	58100	8	EACH	CATCH BASIN REMOVED	
		3												3	202	58200	3	EACH	INLET REMOVED	
		16171												16171	202	75000	16171	METER	FENCE REMOVED	16
550		144000												144550	203	12000	144550	CU METER	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	15
				752		56	260	723	83		5			1879	203	20000	1879	CU METER	EMBANKMENT	
100														100	203	45000	100	HOUR	PROOF ROLLING	15
	19370	126												19496	203	60100	19496	METER	LINEAR GRADING	16
		245710												245710	203	98100	245710	SQ METER	ROADWAY MISC.: SUBGRADE STABILIZATION UTILIZING LIME OR QUICKLIME/FLY ASH STABILIZATION, AS PER PLAN	16A
		9798.623												9798.623	606	13000	9798.623	METER	GUARDRAIL, TYPE 5	
		20.995												20.995	606	13050	20.995	METER	GUARDRAIL, TYPE 5A	
		9.525												9.525	606	15500	9.525	METER	GUARDRAIL, BARRIER DESIGN, TYPE 5	
		39												39	606	22000	39	EACH	ANCHOR ASSEMBLY, TYPE B-98	15
		8												8	606	22010	8	EACH	ANCHOR ASSEMBLY, TYPE E-98	15
		36												36	606	26500	36	EACH	ANCHOR ASSEMBLY, TYPE T	
		4												4	606	32500	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE F	
		28												28	606	35000	28	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
		1												1	606	35001	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN	15
		1												1	606	35004	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN	
		17												17	606	35100	17	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
		16171												16171	607	15000	16171	METER	FENCE, TYPE 47	16
		1285												1285	622	23300	1285	METER	CONCRETE BARRIER, TYPE A	
		8												8	622	23302	8	METER	CONCRETE BARRIER, TYPE A, REINFORCED	
		194.68												194.68	622	24000	194.68	METER	CONCRETE BARRIER, TYPE D	
	30													30	625	32000	30	EACH	GROUND ROD	16
		387												387	626	00100	387	EACH	BARRIER REFLECTOR, TYPE A	
		174												174	626	00200	174	EACH	BARRIER REFLECTOR, TYPE B	
		1												1	630	84100	1	EACH	BARRIER WALL ASSEMBLY, TYPE TC-21.41M, DESIGN 1	
																			EROSION CONTROL	
	9860		1700											11560	207	10000	11560	SQ METER	TEMPORARY SEEDING AND MULCHING	16
	2100		2000											4100	207	30000	4100	METER	FILTER FABRIC FENCE	16
	900		1000											1900	207	70000	1900	EACH	STRAW OR HAY BALES	16
					446	1238	966	1058						3708	601	20000	3708	SQ METER	CRUSHED AGGREGATE SLOPE PROTECTION	
	50													50	601	32100	50	CU METER	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	16
	60		75		194	14	14	14	516	7	59	14		967	601	32200	967	CU METER	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	16
1200	48100													49300	659	10000	49300	SQ METER	SEEDING AND MULCHING	15,16
	2465		500											2965	659	14000	2965	SQ METER	REPAIR SEEDING AND MULCHING	16
	2320		25											2345	659	20000	2345	KILOGRAM	COMMERCIAL FERTILIZER	16
	100													100	659	35000	100	CU METER	WATER	16
500														500	667	10000	500	SQ METER	SEEDING & JUTE MATTING	15

GENERAL SUMMARY

ERI-2-2.866

shko2 P:\3907\DWG\HWY\PLAN\ 3907GS02.dwg NOV 16, 1998 TIME: 9:49 AM

metric units

SHEET NUMBERS																																														FUNDING		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHT. NO.
15	16				65			69	70	71	72	74	75	76	77	79	80	82	84	85	87	88	89	91	93	94	95	96	97	98	99		118		123	126		127	128		129	130	140	141	142	100% STATE	N.H.						
																																																				DRAINAGE	
50																																															50	511	51100	50	CU METER	CLASS C CONCRETE, MISC.: FOR APRONS	15
50																																															50	602	10000	50	CU METER	BRICK MASONRY	15
50																																															50	602	15000	50	CU METER	BLOCK MASONRY	15
																		0.7			0.9	0.9							0.9	0.5	0.5		0.5		0.9												5.8	602	20000	5.8	CU METER	CONCRETE MASONRY	
																																									122	88					210	603	00900	210	METER	150 mm CONDUIT, TYPE B	
50																																															50	603	01400	50	METER	150 mm CONDUIT, TYPE E	15
50												10	6																												615	689					1370	603	01500	1370	METER	150 mm CONDUIT, TYPE F, 707.45	15
																					36	24																									60	603	04400	60	METER	300 mm CONDUIT, TYPE B	
																					48	50								58																	156	603	05200	156	METER	300 mm CONDUIT, TYPE F	
									4	3								72			24	23							46		23																195	603	05900	195	METER	375 mm CONDUIT, TYPE B	
50																		47																													97	603	06100	97	METER	375 mm CONDUIT, TYPE C, 706.02	15
																		49			32	43							102		23		14		58												321	603	06700	321	METER	375 mm CONDUIT, TYPE F	
50																																															50	603	07600	50	METER	450 mm CONDUIT, TYPE C, 706.02	15
													1	1			1		1	1			1		1	1	1																				9	604	01200	9	EACH	CATCH BASIN NO. 4	
																		5			8	8							8	4	4		2		4												43	604	02000	43	EACH	CATCH BASIN NO. 6	
								1									2							2	2																						7	604	09000	7	EACH	CATCH BASIN ADJUSTED TO GRADE	
											1	2			2	1					1			1				1		1																	10	604	09501	10	EACH	CATCH BASIN RECONSTRUCTED TO GRADE, AS PER PLAN	15
									2	1																																					3	604	15000	3	EACH	INLET NO. 3C, TYPE A	
																																									47	63					110	604	36600	110	EACH	PRECAST REINFORCED CONCRETE OUTLET	
																																									15093	14710					29803	605	05111	29803	METER	100 mm SHALLOW PIPE UNDERDRAIN	18
																																																				WITH FABRIC WRAP, AS PER PLAN	
																																									16121	18185					34306	605	11100	34306	METER	150 mm SHALLOW PIPE UNDERDRAIN, 707.15	17
																																																				PAVEMENT	
																																						856	908								1764	255	10000	1764	SQ METER	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C	
																																						951	1008								1959	255	20000	1959	METER	FULL DEPTH PAVEMENT SAWING	
100																																															100	301	46000	100	CU METER	BITUMINOUS AGGREGATE BASE, PG64-22	15
					67880																																										67880	302	46000	67880	CU METER	BITUMINOUS AGGREGATE BASE, PG64-22	
100					36920																																										37020	304	20000	37020	CU METER	AGGREGATE BASE	15
					91970																																										91970	407	10000	91970	LITER	TACK COAT	16
					35640																																										35640	407	14000	35640	LITER	TACK COAT FOR INTERMEDIATE COURSE	16
																																						1487	1578								3065	413	14000	3065	METER	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS	
					11420																																										11420	446	46040	11420	CU METER	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28	
					9660																																										9660	446	50000	9660	CU METER	ASPHALT CONCRETE SURFACE COURSE, TYPE 1H	
					50																																										50	448	47020	50	CU METER	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	
	14																																														14	SPECIAL	45134000	14	METER	PRESSURE RELIEF JOINT	16
																		20			88	34							52	45			12		25	26											302	609	26000	302	METER	CURB, TYPE 6	
					1700																																										1700	611	25000	1700	SQ METER	REINFORCED CONCRETE APPROACH SLAB (T=380 mm)	
					760																																										760	611	25001	760	SQ METER	REINFORCED CONCRETE APPROACH SLAB (T=380 mm), AS PER PLAN	15
					880																																										880	617	10100	880	CU METER	COMPACTED AGGREGATE, TYPE A	
					70																																										70	617	25000	70	CU METER	WATER	
					236860																																										236860	855	10000	236860	SQ METER	100 mm ASPHALT TREATED FREE DRAINING BASE	
																																																				TRAFFIC CONTROL	
																																													36868		36868	618	40100	36868	METER	RUMBLE STRIPS, TYPE 2 (ASPHALT)	
																																													278		278	620	10500	278	EACH	DELINEATOR, TYPE C, DESIGN 2, POST MOUNTED	
																																													6		6	620	11000	6	EACH	DELINEATOR, TYPE C, BRACKET MOUNTED	
																																													84		84	620	15500	84	EACH	DELINEATOR, TYPE D, DESIGN 2, POST MOUNTED	
																																											300				300	620	31200	300	EACH	DELINEATOR REMOVED FOR DISPOSAL	140
																																													997		997	621	00200	997	EACH	RAISED PAVEMENT MARKER, INSTALLATION ONLY	140
																																													997		997	621	00300	997	EACH	PRISMATIC RETROREFLECTOR	
6																																															6	630	84900	6	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	15
12																																															12	630	86002	12	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	15
																																												51.26			51.26	642	00102	51.26	KILOMETER	EDGE LINE, TYPE 2	
																																												21.97			21.97	642	00202	21.97	KILOMETER	LANE LINE, TYPE 2	
																																												1.14			1.14	642	00302	1.14	KILOMETER	CENTER LINE, TYPE 2	
																																												1576			1576	644	00400	1576	METER	CHANNELIZING LINE	
																																												70			70	644	00500	70	METER	STOP LINE	
																																												692			692	644	00700	692	METER	TRANSVERSE LINE	

CALCULATED TJS
CHECKED BMH

GENERAL SUMMARY

ERI-2-2.866

shko2 P:\3907\DWG\HWY\PLAN\ 3907GS03.dwg NOV 13, 1998 TIME: 10:56 AM

metric units

SHEET NUMBERS				FUNDING							
19	20	21	25	100% STATE	N.H.	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHT. NO.
										STRUCTURES OVER 6 METERS	
										FOR STRUCTURE ERI-2-03041 (0189) GENERAL SUMMARY	160
										FOR STRUCTURE ERI-2-05616 (0349) GENERAL SUMMARY	167
										FOR STRUCTURE ERI-2-06920 L&R (0430) GENERAL SUMMARY	181
										FOR STRUCTURE ERI-2-07000S (0435) GENERAL SUMMARY	211
										FOR STRUCTURE ERI-2-08336 L&R (0518) GENERAL SUMMARY	223
										FOR STRUCTURE ERI-2-08642 L&R (0537) GENERAL SUMMARY	242
										FOR STRUCTURE ERI-2-10042 (0624) GENERAL SUMMARY	260
										FOR STRUCTURE ERI-2-11571 L&R (0719) GENERAL SUMMARY	282
										FOR STRUCTURE ERI-2-12086 L&R (0751) GENERAL SUMMARY	307
										MAINTENANCE OF TRAFFIC	
	2600				2600	202	38000	2600	METER	GUARDRAIL REMOVED	
	1500				1500	606	13000	1500	METER	GUARDRAIL, TYPE 5	
	10				10	606	22000	10	EACH	ANCHOR ASSEMBLY, TYPE B-98	15
	19				19	253	02000	19	CU.METER	PAVEMENT REPAIR	
2400					2400	614	11100	2400	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	19
			10		10	614	12350	10	EACH	TEMPORARY IMPACT ATTENUATOR, G.R.E.A.T. TYPE, MODEL NO. 200200NF6GCZ, BIDIRECTIONAL	19,20
	2				2	614	12360	2	EACH	TEMPORARY IMPACT ATTENUATOR, (REPLACEMENT), G.R.E.A.T. TYPE, MODEL NO. 200200NF6GCZ	20
			4		4	614	12370	4	EACH	REMOVE AND REPLACE TEMPORARY IMPACT ATTENUATOR	
		10			10	614	12460	10	EACH	WORK ZONE MARKING SIGN	21
	55				55	614	12470	55	EACH	WORK ZONE SPEED LIMIT SIGN	20
	16				16	614	12480	16	EACH	DOUBLED FINES IN WORK ZONE SIGN	20
	40				40	SPECIAL	61412500	40	SQ METER	REPLACEMENT SIGN	20
	200				200	SPECIAL	61412600	200	EACH	REPLACEMENT DRUM	20
200	19				219	614	13000	219	CU METER	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	19,20
			6597		6597	614	13300	6597	EACH	BARRIER REFLECTOR, TYPE B	
			6637		6637	614	13350	6637	EACH	OBJECT MARKER	
		12.500			12.500	614	20400	12.500	KILOMETER	TEMPORARY LANE LINE, CLASS II	21
					LUMP	614	18002	LUMP		MAINTAINING TRAFFIC, MISC.: VEHICLE ASSISTANCE	21A
			0.136		0.136	614	21000	0.136	KILOMETER	TEMPORARY CENTER LINE, CLASS I	
			1.382		1.382	614	21200	1.382	KILOMETER	TEMPORARY CENTER LINE, CLASS I, 740.06, TYPE I	20
			40.249		40.249	614	22000	40.249	KILOMETER	TEMPORARY EDGE LINE, CLASS I	
			9.064		9.064	614	22200	9.064	METER	TEMPORARY EDGE LINE, CLASS I, 740.06, TYPE I	20
			904		904	614	23000	904	METER	TEMPORARY CHANNELIZING LINE, CLASS I	
			384		384	614	28000	384	METER	TEMPORARY GORE MARKING, CLASS II	
			23585		23585	615	35001	23585	SQ METER	TEMPORARY PAVEMENT, AS PER PLAN, "A"	20
			7484		7484	615	35001	7484	SQ METER	TEMPORARY PAVEMENT, AS PER PLAN, "B"	20
10					10	616	10000	10	CU METER	WATER	19
2					2	616	20000	2	METRIC TON	CALCIUM CHLORIDE	19
			47848		47848	622	40020	47848	METER	PORTABLE CONCRETE BARRIER, 813 mm	
			1121		1121	622	40040	1121	METER	PORTABLE CONCRETE BARRIER, 813 mm, BRIDGE MOUNTED	
			610	610		622	40041	610	METER	PORTABLE CONCRETE BARRIER, 813 mm, BRIDGE MOUNTED, AS PER PLAN	19
		4			4	SPECIAL	69098000	4	EACH	MISC.: EMERGENCY PULL OFF	21
					LUMP	614	11000	LUMP		MAINTAINING TRAFFIC	
					LUMP	623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
					LUMP	624	10000	LUMP		MOBILIZATION	
					18	806	16020	18	MONTH	FIELD OFFICE, TYPE C	

CALCULATED TJS
CHECKED BMH

GENERAL SUMMARY

ERI-2-2.866

59
327

shko2 P:\3907\DWG\HWY\PLAN\ 3907GS04.dwg NOV 12, 1998 TIME: 2:00 PM

metric units

CALCULATED TJS
CHECKED BMH

ROADWAY SUBSUMMARY

SHEET NUMBERS																								ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
65		68	69	70	71	72	73	74	75	76	77	78	79	80	82	83	84	85	86	87	88	89						
															331					223	223		202	22900	777	SQ METER	APPROACH SLAB REMOVED
139600																							202	23000	139600	SQ METER	PAVEMENT REMOVED
3520																							202	23500	3520	SQ METER	WEARING COURSE REMOVED
		291	320	320	265																		202	30500	1196	METER	CONCRETE MEDIAN REMOVED
			42											24	30								202	30600	96	SQ METER	CONCRETE MEDIAN REMOVED
			62	153										216	63	109	44						202	32000	647	METER	CURB REMOVED
				4	2																		202	35100	6	METER	PIPE REMOVED 600 MM AND UNDER
			518.91	705.52	147.50	201.61	418.86	158.35	120.47		241.16			296.88	689.35	201.65			396.36	562.09	632.84	172.84	202	38000	6464.39	METER	GUARDRAIL REMOVED
		291	320	320	20																		202	38300	951	METER	GUARDRAIL REMOVED, BARRIER DESIGN
		6	28	26	26	27	26	28	26	26	28	26	28	28	25	26	28	22	22	23	28	28	202	54100	531	EACH	RAISED PAVEMENT MARKER REMOVED FOR STORAGE
									1	1							1	1				1	202	58100	5	EACH	CATCH BASIN REMOVED
				2	1																		202	58200	3	EACH	INLET REMOVED
144000																							203	12000	144000	CU METER	EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION
					55	71																	203	60100	126	METER	LINEAR GRADING
245710																							203	98100	245710	SQ METER	ROADWAY MISC.: SUBGRADE STABILIZATION UTILIZING LIME OR QUICKLIME/ FLY ASH STABILIZATION, M15C.
			449.73	702.22	642.50	207.30	384.81	127.22	97.57		201.93			282.21	686.152	281.475			365.52	543.846	595.77	166.035	606	13000	5734.288	METER	GUARDRAIL, TYPE 5
			20.995																				606	13050	20.995	METER	GUARDRAIL, TYPE 5A
		9.525																					606	15500	9.525	METER	GUARDRAIL, BARRIER DESIGN, TYPE 5
			3			1	2	2	2		4			1	6	1			2	1	2	1	606	22000	28	EACH	ANCHOR ASSEMBLY, TYPE B-98
			2	1		1	2	3	1		4			3		1			1			1	606	26500	20	EACH	ANCHOR ASSEMBLY, TYPE T
			1								2				6					4	4		606	35000	17	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1
		1																					606	35004	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN
			1								2				2					2	2		606	35100	9	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2
		276	320	308	310	71																	622	23300	1285	METER	CONCRETE BARRIER, TYPE A
		8																					622	23302	8	METER	CONCRETE BARRIER, TYPE A, REINFORCED
			22								15.68				120								622	24000	157.68	METER	CONCRETE BARRIER, TYPE D
		2	17	28	10	8	13	7	6		12			14	29	6			15	22	26	6	626	00100	221	EACH	BARRIER REFLECTOR, TYPE A
		18	23	20	21	5					2				24					7	14		626	00200	134	EACH	BARRIER REFLECTOR, TYPE B
					1																		630	84100	1	EACH	BARRIER WALL ASSEMBLY, TYPE TC-21.41M, DESIGN 1

SHEET NUMBERS																									ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
90	91	92	93	94	95	96	97	98	99	100	117	118	119	120					122		123		126		131				
							223	223				79								122		246			202	22900	893	SQ METER	APPROACH SLAB REMOVED
	22		25																					202	30600	47	SQ METER	CONCRETE MEDIAN REMOVED
	231		219	14							125													202	32000	589	METER	CURB REMOVED
		251.49				446.35	461.17	693.35	221.11		365.52	60.96	237.44	437.57					381.21	229.43		365.98		202	38000	4151.58	METER	GUARDRAIL REMOVED
26	28	26	26	28	27	27	28	26	28	10														202	54100	280	EACH	RAISED PAVEMENT MARKER REMOVED FOR STORAGE
			1	1	1																			202	58100	3	EACH	CATCH BASIN REMOVED
																							16171	202	75000	16171	METER	FENCE REMOVED
		80.01	73.67	25.25		434.82	465.303	642.11	195.862		342.26	87.63	238.81	342.50					381.21	393.28		361.64		606	13000	4064.335	METER	GUARDRAIL, TYPE 5
		2	1			1	1	2	2		1	1												606	22000	11	EACH	ANCHOR ASSEMBLY, TYPE B-98
											1		2	2						3				606	22010	8	EACH	ANCHOR ASSEMBLY, TYPE E-98
		2		1		1			1		2	3		2						2		2		606	26500	16	EACH	ANCHOR ASSEMBLY, TYPE T
																				4				606	32500	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE F
		2					4	4				1												606	35000	11	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1
												1												606	35001	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN
		2					2	1	1			2												606	35100	8	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2
																							16171	607	15000	16171	METER	FENCE, TYPE 47
		37																						622	24000	37	METER	CONCRETE BARRIER, TYPE D
		6	3	1		16	21	25	10		16	7	8	13					12	14		14		626	00100	166	EACH	BARRIER REFLECTOR, TYPE A
		2					21	6				4								7				626	00200	40	EACH	BARRIER REFLECTOR, TYPE B

ERI-2-2.866

Notes: ENTER 1 FOR THE WIDTH WHEN THE AREA IS CADD MEASURED. OL = OVERLAY : FD = FULL DEPTH : TRANS = TRANSITION

							0.30 m				0.15 m		0.15 m				0.36L/m^2		0.14L/m^2		0.038 m		0.045 m		0.038 m		0.15 m		0.15 m			
							ITEM 202		ITEM 203		ITEM 302		ITEM 304		ITEM 304		ITEM 855		ITEM 407		ITEM 407		ITEM 446		ITEM 446		ITEM 448		ITEM 611		ITEM 611		ITEM 617	ITEM 617
			LENGTH			W	COURSE	W	SUBGRADE	W	BIT. AGG.	W	AGGREGATE	W	AGGREGATE	W	FREE DRAIN	W	TACK	W	INTER. TACK	W	SUR. ASP.	W	INT. ASP.	W	SUR. ASP.	W	REIN. APP.	W	REIN. APP.	W	COM. AGG.	WATER
				SIDE	NOTE		REMOVED		STAB. A.P.P.		BASE		BASE		BASE		BASE		COAT		COAT		CONCRETE		CONCRETE		TYPE 1		SLAB		SLAB (A.P.P.)		TYPE A	
STATION	TO	STATION	(m)			(m)	(Sq. m.)	(m)	(Sq. m.)	(m)	(Cu. m.)	(m)	(Cu. m.)	(m)	(Cu. m.)	(m)	(Sq. m.)	(m)	(Liter)	(m)	(Liter)	(m)	(Cu. m.)	(m)	(Cu. m.)	(m)	(Cu. m.)	(m)	(Sq. m.)	(m)	(Sq. m.)	(m)	(Cu. m.)	(Cu. m.)
SR 2 - MAINLINE																																		
FEATHER AREA																																		
(INCLUDING SHOULDERS)																																		
2+856.000		2+866.000	10.000	LT&RT		22.5	225.00											22.5	81.00			22.5	8.55										
2+866.000		4+384.883	1518.883	LT				7.2	10935.96	7.2	3280.79	7.2	1640.39			7.2	10935.96	7.2	3936.94	7.2	1531.03	7.2	415.57	7.2	492.12									
2+866.000		4+309.737	1443.737	RT				7.2	10394.91	7.2	3118.47	7.2	1559.24			7.2	10394.91	7.2	3742.17	7.2	1455.29	7.2	395.01	7.2	467.77									
4+386.495		6+413.889	2027.394	LT				7.2	14597.24	7.2	4379.17	7.2	2189.59			7.2	14597.24	7.2	5255.01	7.2	2043.61	7.2	554.69	7.2	656.88									
4+319.049		6+415.891	2096.842	RT				7.2	15097.26	7.2	4529.18	7.2	2264.59			7.2	15097.26	7.2	5435.01	7.2	2113.62	7.2	573.70	7.2	679.38									
13+300.033		13+812.366	512.333	LT				7.2	3688.80	7.2	1106.64	7.2	553.32			7.2	3688.80	7.2	1327.97	7.2	516.43	7.2	140.17	7.2	166.00									
13+302.005		13+806.240	504.235	RT				7.2	3630.49	7.2	1089.15	7.2	544.57			7.2	3630.49	7.2	1306.98	7.2	508.27	7.2	137.96	7.2	163.37									
13+806.240		13+813.840	7.600	RT				12.3	93.48					12.3	14.02														11.4	86.64				
13+891.337		13+898.937	7.600	RT				12.3	93.48					12.3	14.02														11.4	86.64				
13+812.366		13+819.966	7.600	LT				21.1	160.36					21.1	24.05																20.2	153.79		
13+895.354		13+902.954	7.600	LT				15.9	120.84					15.9	18.13																15.0	114.27		
13+902.954		15+180.496	1277.542	LT				7.2	9198.30	7.2	2759.49	7.2	1379.75			7.2	9198.30	7.2	3311.39	7.2	1287.76	7.2	349.54	7.2	413.92									
13+898.937		15+221.695	1322.758	RT				7.2	9523.86	7.2	2857.16	7.2	1428.58			7.2	9523.86	7.2	3428.59	7.2	1333.34	7.2	361.91	7.2	428.57									
15+180.496		15+188.096	7.600	LT				13.3	101.08					13.3	15.16														12.4	94.24				
15+250.705		15+258.305	7.600	LT				13.3	101.08					13.3	15.16														12.4	94.24				
15+221.695		15+229.295	7.600	RT				13.3	101.08					13.3	15.16														12.4	94.24				
15+291.904		15+299.504	7.600	RT				13.3	101.08					13.3	15.16														12.4	94.24				
15+258.305		15+530.921	272.616	LT				7.2	1962.84	7.2	588.85	7.2	294.43			7.2	1962.84	7.2	706.62	7.2	274.80	7.2	74.59	7.2	88.33									
15+299.504		15+528.848	229.344	RT				7.2	1651.28	7.2	495.38	7.2	247.69			7.2	1651.28	7.2	594.46	7.2	231.18	7.2	62.75	7.2	74.31									
15+530.921		15+538.521	7.600	LT				13.3	101.08					13.3	15.16														12.4	94.24				
15+627.411		15+635.011	7.600	LT				13.3	101.08					13.3	15.16														12.4	94.24				
15+528.848		15+536.448	7.600	RT				13.3	101.08					13.3	15.16														12.4	94.24				
15+625.360		15+632.960	7.600	RT				13.3	101.08					13.3	15.16														12.4	94.24				
15+635.011		18+448.033	2813.022	LT				7.2	20253.76	7.2	6076.13	7.2	3038.06			7.2	20253.76	7.2	7291.35	7.2	2835.53	7.2	769.64	7.2	911.42									
15+632.960		18+452.075	2819.115	RT				7.2	20297.63	7.2	6089.29	7.2	3044.64			7.2	20297.63	7.2	7307.15	7.2	2841.67	7.2	771.31	7.2	913.39									
18+448.033		18+455.633	7.600	LT				12.8	97.28					12.8	14.59																11.9	90.44		
18+616.173		18+623.773	7.600	LT				12.8	97.28					12.8	14.59																11.9	90.44		
18+452.075		18+459.675	7.600	RT				12.8	97.28					12.8	14.59																11.9	90.44		
18+620.215		18+627.815	7.600	RT				12.8	97.28					12.8	14.59																11.9	90.44		
18+623.773		18+961.391	337.618	LT				7.2	2430.85	7.2	729.25	7.2	364.63			7.2	2430.85	7.2	875.11	7.2	340.32	7.2	92.37	7.2	109.39									
18+627.815		18+965.434	337.619	RT				7.2	2430.86	7.2	729.26	7.2	364.63			7.2	2430.86	7.2	875.11	7.2	340.32	7.2	92.37	7.2	109.39									
18+961.391		18+968.991	7.600	LT				12.8	97.28					12.8	14.59														11.9	90.44				
19+009.998		19+017.598	7.600	LT				12.8	97.28					12.8	14.59														11.9	90.44				
18+965.434		18+973.034	7.600	RT				12.8	97.28					12.8	14.59														11.9	90.44				
19+014.040		19+021.640	7.600	RT				12.8	97.28					12.8	14.59														11.9	90.44				
19+017.598		19+184.754	167.156	LT				7.2	1203.52	7.2	361.06	7.2	180.53			7.2	1203.52	7.2	433.27	7.2	168.49	7.2	45.73	7.2	54.16									
19+184.754		19+446.279	261.525	LT	TRANS			10.1	2641.40	10.1	792.42	10.1	396.21			10.1	2641.40	10.1	950.90	10.1	369.80	10.1	100.37	10.1	118.86									
19+021.640		19+415.799	394.159	RT				7.2	2837.94	7.2	851.38	7.2	425.69			7.2	2837.94	7.2	1021.66	7.2	397.31	7.2	107.84	7.2	127.71									
19+415.799		19+446.279	30.480	RT	TRANS			9.0	274.32	9.0	82.30	9.0	41.15			9.0	274.32	9.0	98.76	9.0	38.40	9.0	10.42	9.0	12.34									
FEATHER AREA																																		
(INCLUDING SHOULDERS)																																		
19+446.279		19+456.279	10.000			30.9	309.00											30.9	111.24			30.9	11.74										
OUTSIDE SHOULDERS																																		
2+866.000		3+207.410	341.410	LT				3.6	1229.08	3.1	317.51	3.6	184.36			3.4	1160.79	3.0	368.72	3.0	143.39	3.0	38.92	3.0	46.09							0.6	7.78	0.58
3+207.410		3+237.890	30.480	LT				4.2	128.02	3.7	33.83	4.2	19.20			4.0	121.92	3.6	39.50	3.6	15.36	3.6	4.17	3.6	4.94							0.6	0.69	0.05
2+866.000		3+336.950	470.950	RT				3.6	1695.42	3.1	437.98	3.6	254.31			3.4	1601.23	3.0	508.63	3.0	197.80	3.0	53.69	3.0	63.58							0.6	10.74	0.80
0+287.610		0+425.706	138.096	LT				3.0	414.29	2.5	103.57	3.0	62.14			2.8	386.67	2.4	119.31	2.4	46.40	2.4	12.59	2.4	14.91							0.6	3.15	0.23
3+375.660		3+451.867	76.207	LT				3.0	228.62	2.5	57.16	3.0	34.29			2.8	213.38	2.4	65.84	2.4	25.61	2.4	6.95	2.4	8.23							0.6	1.74	0.13
3+451.867		3+482.347	30.480	LT				3.3	100.58	2.8	25.60	3.3	15.09			3.1	94.49	2.7	29.63	2.7	11.52	2.7	3.13	2.7	3.70							0.6	0.69	0.05
3+482.347		4+384.883	902.536	LT				3.6	3249.13	3.1	839.36	3.6	487.37			3.4	3068.62	3.0	974.74	3.0	379.07	3.0	102.89	3.0	121.84							0.6	20.58	1.53
3+481.954		3+817.236	335.282	RT				3.0	1005.85	2.5	251.46	3.0	150.88			2.8	938.79	2.4	289.68	2.4	112.65	2.4	30.58	2.4	36.21							0.6	7.64	0.57
3+817.236		3+847.715	30.479	RT				3.3	100.58	2.8	25.60	3.3	15.09			3.1	94.48	2.7	29.63	2.7	11.52	2.7	3.13	2.7	3.70							0.6	0.69	0.05
3+847.715		4+309.737	462.022	RT				3.6	1663.28	3.1	429.68	3.6	249.49			3.4	1570.87	3.0	498.98	3.0	194.05	3.0	52.67	3.0	62.37							0.6	10.53	0.78
4+386.495		6+183.615	1797.120	LT				3.6	6469.63	3.1	1671.32	3.6	970.44			3.4	6110.21	3.0	1940.89	3.0	754.79	3.0	204.87	3.0	242.61							0.6	40.97	3.04
6+183.615		6+214.094	30.479	LT				3.3	100.58	2.8	25.60	3.3	15.09			3.1	94.48	2.7	29.63	2.7	11.52	2.7	3.13	2.7	3.70							0.6	0.69	0.05
6+214.094		6+413.889	199.795	LT				3.0	599.39	2.5	149.85	3.0	89.91			2.8	559.43	2.4	172.62	2.4	67.13	2.4	18.22	2.4	21.58							0.6	4.56	0.34
4+319.049		6+385.423	2066.374	RT				3.6	7438.95	3.1	1921.73	3.6	1115.84			3.4	7025.67	3.0	2231.68	3.0	867.88	3.0	235.57	3.0	278.96							0.6	47.11	3.50
6+385.423		6+415.891	30.468	RT				3.3	100.54	2.8	25.59	3.3	15.08			3.1	94.45	2.7	29.61	2.7	11.52	2.7	3.13	2.7	3.70							0.6	0.69	0.05
13+302.005		13+515.234	210.000	RT				3.0	630.00	2.5	157.50	3.0	94.50			2.8	588.00	2.4	181.44	2.4	70.56	2.4	19.15	2.4	22.68							0.6	4.79	0.36
13+300.033		13+435.345	135.312	LT				3.0	405.94	2.5	101.48	3.0	60.89			2.8	378.87	2.4	116.91	2.4	45.46	2.4	12.34	2.4	14.61							0.6	3.09	0.23
13+520.000		13+764.972	244.972	LT				3.6	881.90	3.1	227.82	3.6	132.28			3.4	832.90	3.0	264.57	3.0	102.89	3.0	27.93	3.0	33.07							0.6	5.59	0.41
13+764.972		13+795.452	30.480	LT				4.2	128.02	3.7	33.83	4.2	19.20			4.0	121.92	3.6	39.50	3.6	15.36	3.6	4.17	3.6	4.94							0.6	0.69	0.05
13+795.452		13+815.000	19.548	LT				3.0	58.64	2.5	14.66	3.0	8.80			2.8	54.73	2.4	16.89	2.4	6.57	2.4	1.78	2.4	2.11							0.6	0.45	0.03
13+516.081		13+546.561	30.480	RT				4.2	128.02	3.7	33.83	4.2	19.20			4.0	121.92	3.6	39.50	3.6	15.36	3.6	4.17	3.6	4.94							0.6	0.69	0.05
13+546.561		13+805.500	258.939	RT				3.6	932.18	3.1	240.81	3.6	139.83			3.4	880.39	3.0	279.65	3.0	108.75	3.0	29.52	3.0	34.96							0.6	5.90	0.44
13+898.500		14+201.500	303.000	RT				3.6	1090.80	3.1	281.79	3.6	163.62			3.4	1030.20	3.0	327.24	3.0	127.26	3.0	34.54	3.0	40.91							0.6	6.91	0.51
13+904.000		14+009.605	105.605	LT				3.0	316.81	2.5	79.20	3.0	47.52			2.8	295.69	2.4	91.24	2.4	35.48	2.4	9.63	2.4	11.41							0.6	2.41	0.18
14+009.605		14+040.085	30.480	LT				3.3	100.58	2.8	25.60	3.3	15.09			3.1	94.49	2.7	29.63	2.7	11.52	2.7	3.13	2.7	3.70							0.6	0.69	0.05
TOTALS THIS SHEET							534.00		164 303.09		47 427.73		24 337.20		308.22		160 585.81		56 806.35		22 016.59		5996.23		7076.76				1288.96		629.82		189.46	14.07

CALCULATED MSS
CHECKED BMH

PAVEMENT CALCULATIONS

ERI-2-2.866

			Notes:	ENTER 1 FOR THE WIDTH WHEN THE AREA IS CADD MEASURED.										OL = OVERLAY : FD = FULL DEPTH : TRANS = TRANSITION																				
											0.30 m		0.15 m		0.15 m				0.36L/m^2		0.14L/m^2		0.038 m		0.045 m		0.038 m		0.15 m		0.15 m			
							ITEM 202		ITEM 203		ITEM 302		ITEM 304		ITEM 304		ITEM 855		ITEM 407		ITEM 407		ITEM 446		ITEM 446		ITEM 448		ITEM 611		ITEM 611		ITEM 617	ITEM 617
			LENGTH			W	COURSE	W	SUBGRADE	W	BIT. AGG.	W	AGGREGATE	W	AGGREGATE	W	FREE DRAIN	W	TACK	W	INTER. TACK	W	SUR. ASP.	W	INT. ASP.	W	SUR. ASP.	W	REIN. APP.	W	REIN. APP.	W	COM. AGG.	WATER
				SIDE	NOTE		REMOVED		STAB. A.P.P.		BASE		BASE		BASE		BASE		COAT		COAT		CONCRETE		CONCRETE		TYPE 1		SLAB		SLAB (A.P.P.)		TYPE A	
STATION	TO	STATION	(m)			(m)	(Sq. m.)	(m)	(Sq. m.)	(m)	(Cu. m.)	(m)	(Cu. m.)	(m)	(Cu. m.)	(m)	(Sq. m.)	(m)	(Liter)	(m)	(Liter)	(m)	(Cu. m.)	(m)	(Cu. m.)	(m)	(Cu. m.)	(m)	(Sq. m.)	(m)	(Sq. m.)	(m)	(Cu. m.)	(Cu. m.)
14+040.085		15+140.560	1100.475	LT				3.6	3961.71	3.1	1023.44	3.6	594.26			3.4	3741.62	3.0	1188.51	3.0	462.20	3.0	125.45	3.0	148.56							0.6	25.09	1.86
15+140.560		15+165.000	24.440	LT				3.9	95.32	3.4	24.93	3.9	14.30			3.7	90.43	3.3	29.03	3.3	11.29	3.3	3.06	3.3	3.63							0.6	0.56	0.04
15+165.000		15+174.000	9.000	LT				4.1	36.90	3.6	9.72	4.1	5.54			3.9	35.10	3.5	11.34	3.5	4.41	3.5	1.20	3.5	1.42							0.6	0.21	0.02
14+343.700		14+678.981	335.281	RT				3.0	1005.84	2.5	251.46	3.0	150.88			2.8	938.79	2.4	289.68	2.4	112.65	2.4	30.58	2.4	36.21							0.6	7.64	0.57
14+678.981		14+709.461	30.480	RT				3.3	100.58	2.8	25.60	3.3	15.09			3.1	94.49	2.7	29.63	2.7	11.52	2.7	3.13	2.7	3.70							0.6	0.69	0.05
14+709.461		15+182.000	472.539	RT				3.6	1701.14	3.1	439.46	3.6	255.17			3.4	1606.63	3.0	510.34	3.0	198.47	3.0	53.87	3.0	63.79							0.6	10.77	0.80
15+182.000		15+206.000	24.000	RT				3.9	93.60	3.4	24.48	3.9	14.04			3.7	88.80	3.3	28.51	3.3	11.09	3.3	3.01	3.3	3.56							0.6	0.55	0.04
15+206.000		15+228.000	22.000	RT				4.1	90.20	3.6	23.76	4.1	13.53			3.9	85.80	3.5	27.72	3.5	10.78	3.5	2.93	3.5	3.47							0.6	0.50	0.04
15+251.500		15+279.700	28.200	LT				3.9	109.98	3.4	28.76	3.9	16.50			3.7	104.34	3.3	33.50	3.3	13.03	3.3	3.54	3.3	4.19							0.6	0.64	0.05
15+279.700		15+507.500	227.800	LT				3.6	820.08	3.1	211.85	3.6	123.01			3.4	774.52	3.0	246.02	3.0	95.68	3.0	25.97	3.0	30.75							0.6	5.19	0.39
15+507.500		15+530.920	23.420	LT				3.9	91.34	3.4	23.89	3.9	13.70			3.7	86.65	3.3	27.82	3.3	10.82	3.3	2.94	3.3	3.48							0.6	0.53	0.04
15+305.500		15+333.254	27.754	RT				3.9	108.24	3.4	28.31	3.9	16.24			3.7	102.69	3.3	32.97	3.3	12.82	3.3	3.48	3.3	4.12							0.6	0.63	0.05
15+333.254		15+507.500	174.246	RT				3.6	627.29	3.1	162.05	3.6	94.09			3.4	592.44	3.0	188.19	3.0	73.18	3.0	19.86	3.0	23.52							0.6	3.97	0.30
15+507.500		15+528.850	21.350	RT				3.9	83.27	3.4	21.78	3.9	12.49			3.7	79.00	3.3	25.36	3.3	9.86	3.3	2.68	3.3	3.17							0.6	0.49	0.04
15+635.010		15+655.639	20.629	LT				3.9	80.45	3.4	21.04	3.9	12.07			3.7	76.33	3.3	24.51	3.3	9.53	3.3	2.59	3.3	3.06							0.6	0.47	0.03
15+655.639		16+140.418	484.779	LT				3.6	1745.20	3.1	450.84	3.6	261.78			3.4	1648.25	3.0	523.56	3.0	203.61	3.0	55.26	3.0	65.45							0.6	11.05	0.82
16+140.418		16+170.898	30.480	LT				3.3	100.58	2.8	25.60	3.3	15.09			3.1	94.49	2.7	29.63	2.7	11.52	2.7	3.13	2.7	3.70							0.6	0.69	0.05
16+170.898		16+506.178	335.280	LT				3.0	1005.84	2.5	251.46	3.0	150.88			2.8	938.78	2.4	289.68	2.4	112.65	2.4	30.58	2.4	36.21							0.6	7.64	0.57
15+632.960		15+654.520	21.560	RT				3.9	84.08	3.4	21.99	3.9	12.61			3.7	79.77	3.3	25.61	3.3	9.96	3.3	2.70	3.3	3.20							0.6	0.49	0.04
15+654.520		16+373.889	719.369	RT				3.6	2589.73	3.1	669.01	3.6	388.46			3.4	2445.85	3.0	776.92	3.0	302.13	3.0	82.01	3.0	97.11							0.6	16.40	1.22
16+373.889		16+404.369	30.480	RT				3.3	100.58	2.8	25.60	3.3	15.09			3.1	94.49	2.7	29.63	2.7	11.52	2.7	3.13	2.7	3.70							0.6	0.69	0.05
16+404.369		16+617.980	213.611	RT				3.0	640.83	2.5	160.21	3.0	96.12			2.8	598.11	2.4	184.56	2.4	71.77	2.4	19.48	2.4	23.07							0.6	4.87	0.36
16+617.980		16+648.456	30.476	RT				4.2	128.00	3.7	33.83	4.2	19.20			4.0	121.90	3.6	39.50	3.6	15.36	3.6	4.17	3.6	4.94							0.6	0.69	0.05
16+628.669		17+241.900	613.231	LT				3.6	2207.63	3.1	570.30	3.6	331.14			3.4	2084.99	3.0	662.29	3.0	257.56	3.0	69.91	3.0	82.79							0.6	13.98	1.04
17+241.900		17+272.413	30.513	LT				4.2	128.15	3.7	33.87	4.2	19.22			4.0	122.05	3.6	39.54	3.6	15.38	3.6	4.17	3.6	4.94							0.6	0.70	0.05
16+648.456		17+260.820	612.364	RT				3.6	2204.51	3.1	569.50	3.6	330.68			3.4	2082.04	3.0	661.35	3.0	257.19	3.0	69.81	3.0	82.67							0.6	13.96	1.04
17+272.413		17+485.774	213.361	LT				3.0	640.08	2.5	160.02	3.0	96.01			2.8	597.41	2.4	184.34	2.4	71.69	2.4	19.46	2.4	23.04							0.6	4.86	0.36
17+485.774		17+516.254	30.480	LT				3.3	100.58	2.8	25.60	3.3	15.09			3.1	94.49	2.7	29.63	2.7	11.52	2.7	3.13	2.7	3.70							0.6	0.69	0.05
17+383.516		17+718.762	335.246	RT				3.0	1005.74	2.5	251.43	3.0	150.86			2.8	938.69	2.4	289.65	2.4	112.64	2.4	30.57	2.4	36.21							0.6	7.64	0.57
17+718.762		17+749.277	30.515	RT				3.3	100.70	2.8	25.63	3.3	15.10			3.1	94.60	2.7	29.66	2.7	11.53	2.7	3.13	2.7	3.71							0.6	0.70	0.05
17+516.254		18+421.900	905.646	LT				3.6	3260.33	3.1	842.25	3.6	489.05			3.4	3079.20	3.0	978.10	3.0	380.37	3.0	103.24	3.0	122.26							0.6	20.65	1.53
18+421.900		18+447.584	25.684	LT				3.9	100.17	3.4	26.20	3.9	15.03			3.7	95.03	3.3	30.51	3.3	11.87	3.3	3.22	3.3	3.81							0.6	0.59	0.04
17+749.277		18+427.700	678.423	RT				3.6	2442.32	3.1	630.93	3.6	366.35			3.4	2306.64	3.0	732.70	3.0	284.94	3.0	77.34	3.0	91.59							0.6	15.47	1.15
18+427.700		18+452.509	24.809	RT				3.9	96.76	3.4	25.31	3.9	14.51			3.7	91.79	3.3	29.47	3.3	11.46	3.3	3.11	3.3	3.68							0.6	0.57	0.04
18+623.000		18+648.200	25.200	LT				3.9	98.28	3.4	25.70	3.9	14.74			3.7	93.24	3.3	29.94	3.3	11.64	3.3	3.16	3.3	3.74							0.6	0.57	0.04
18+648.200		18+930.897	282.697	LT				3.6	1017.71	3.1	262.91	3.6	152.66			3.4	961.17	3.0	305.31	3.0	118.73	3.0	32.23	3.0	38.16							0.6	6.45	0.48
18+930.897		18+960.920	30.023	LT				3.9	117.09	3.4	30.62	3.9	17.56			3.7	111.09	3.3	35.67	3.3	13.87	3.3	3.76	3.3	4.46							0.6	0.68	0.05
18+628.280		18+654.000	25.720	RT				3.9	100.31	3.4	26.23	3.9	15.05			3.7	95.16	3.3	30.56	3.3	11.88	3.3	3.23	3.3	3.82							0.6	0.59	0.04
18+654.000		18+935.153	281.153	RT				3.6	1012.15	3.1	261.47	3.6	151.82			3.4	955.92	3.0	303.65	3.0	118.08	3.0	32.05	3.0	37.96							0.6	6.41	0.48
18+935.153		18+965.880	30.727	RT				3.9	119.84	3.4	31.34	3.9	17.98			3.7	113.69	3.3	36.50	3.3	14.20	3.3	3.85	3.3	4.56							0.6	0.70	0.05
19+017.000		19+041.970	24.970	LT				3.9	97.38	3.4	25.47	3.9	14.61			3.7	92.39	3.3	29.66	3.3	11.54	3.3	3.13	3.3	3.71							0.6	0.57	0.04
19+041.970		19+184.754	142.784	LT				3.6	514.02	3.1	132.79	3.6	77.10			3.4	485.47	3.0	154.21	3.0	59.97	3.0	16.28	3.0	19.28							0.6	3.26	0.24
19+184.754		19+215.233	30.479	LT				3.3	100.58	2.8	25.60	3.3	15.09			3.1	94.48	2.7	29.63	2.7	11.52	2.7	3.13	2.7	3.70							0.6	0.69	0.05
19+215.233		19+446.279	231.046	LT				3.0	693.14	2.5	173.28	3.0	103.97			2.8	646.93	2.4	199.62	2.4	77.63	2.4	21.07	2.4	24.95							0.6	5.27	0.39
19+022.500		19+046.200	23.700	RT				3.9	92.43	3.4	24.17	3.9	13.86			3.7	87.69	3.3	28.16	3.3	10.95	3.3	2.97	3.3	3.52							0.6	0.54	0.04
19+046.200		19+415.799	369.599	RT				3.6	1330.56	3.1	343.73	3.6	199.58			3.4	1256.64	3.0	399.17	3.0	155.23	3.0	42.13	3.0	49.90							0.6	8.43	0.63
19+415.799		19+446.279	30.480	RT				3.3	100.58	2.8	25.60	3.3	15.09			3.1	94.49	2.7	29.63	2.7	11.52	2.7	3.13	2.7	3.70							0.6	0.69	0.05
INSIDE SHOULDERS																																			
2+866.000		3+506.243	640.243	LT				1.5	960.36	1.5	288.11	1.5	144.05			1.5	960.36	1.0	230.49	1.0	89.63	1.0	24.33	1.0	28.81									
2+866.000		3+493.292	627.292	RT				1.5	940.94	1.5	282.28	1.5	141.14			1.5	940.94	1.0	225.83	1.0	87.82	1.0	23.84	1.0	28.23									
3+506.243		3+823.154	316.911	LT				2.7	855.66	2.7	256.70	2.7	128.35			2.7	855.66	2.2	250.99	2.2	97.61	2.2	26.49	2.2	31.37									
3+493.292		3+821.358	328.066	RT				2.7	885.78	2.7	265.73	2.7	132.87			2.7	885.78	2.1	248.02	2.1	96.45	2.1	26.18	2.1	31.00									
3+821.358		3+861.309	39.951	RT				2.5	99.88	2.5	29.96	2.5	14.98	1.0	5.99	2.5	99.88	2.5	35.96	2.5	13.98	2.5	3.80	2.5	4.49							0.6	0.91	0.07
3+861.309		3+951.084	89.775	RT				1.7	152.62	1.7	45.79	1.7	22.89	1.0	13.47	1.7	152.62	1.7	54.94	1.7	21.37	1.7	5.80	1.7	6.87							0.6	2.05	0.15
3+823.154		4+384.883	561.729	LT				1.8	1011.11	1.3	219.07	1.8	151.67			1.6	898.77	1.2	242.67	1.2	94.37	1.2	25.61	1.2	30.33							0.6	12.81	0.95
3+951.084		4+309.737	358.653	RT				1.8	645.58	1.3	139.87	1.8	96.84			1.6	573.84	1.2	154.94	1.2	60.25	1.2	16.35	1.2	19.37							0.6	8.18	0.61
4+386.495		6+413.889	2027.394	LT				1.8	3649.31	1.3	790.68	1.8	547.40			1.6	3243.83	1.2	875.83	1.2	340.60	1.2	92.45	1.2	109.48							0.6	46.22	3.43
4+319.049		6+413.889	2094.840	RT				1.8	3770.71	1.3	816.99	1.8	565.61			1.6	3351.74	1.2	904.97	1.2	351.93	1.2	95.52	1.2	113.12							0.6	47.76	3.55
13+300.033		13+811.500	511.467	LT				1.8	920.64	1.3	199.47	1.8	138.10			1.6	818.35	1.2	220.95	1.2	85.93	1.2	23.32	1.2	27.62							0.6	11.66	0.87
13+300.033		13+807.000	506.967	RT				1.8	912.54	1.3	197.72	1.8	136.88			1.6	811.15	1.2	219.01	1.2	85.17	1.2	23.12	1.2	27.38							0.6	11.56	0.86
13+902.500		15+140.560	1238.060	LT				1.8	2228.51	1.3	482.84	1.8	334.28			1.6	1980.90	1.2	534.84	1.2	207.99	1.2	56.46	1.2	66.86							0.6	28.23	2.10
15+140.560		15+165.000	24.440	LT				2.0	48.88	1.5	11.00	2.0	7.33			1.8	43.99	1.4	12.32	1.4	4.79	1.4	1.30	1.4	1.54							0.6	0.56	0.04
15+165.000		15+186.000	21.000	LT				2.3	48.30	1.8	11.34	2.3	7.25			2.1	44.10	1.7	12.85	1.7	5.00	1.7	1.36	1.7	1.61							0.6	0.48	0.04
13+899.500		15+182.000	1282.500	RT				1.5	1923.75	1.3	500.18	1.8	346.28			1.6	2052.00	1.2	554.04	1.2	215.46	1.2	58.48	1.2	69.26							0.6	29.24	2.17
15+182.000		15+206.000	24.000	RT				2.0	48.00	1.5	10.80	2.0	7.20			1.8	43.20	1.4	12.10	1.4	4.70	1.4	1.28	1.4	1.51							0.6	0.55	0.04
15+206.000		15+216.500	10.500	RT				2.3	24.15	1.8	5.67	2.3	3.62			2.1	22.05	1.7	6.43	1.7	2.50	1.7	0.68	1.7	0.80							0.6	0.24	0.02
15+263.500		15+296.677	33.177	LT				2.0	66.35	1.5	14.93	2.0	9.95			1.8	59.72	1.4	16.72	1.4	6.50	1.4	1.77	1.4	2.09							0.6	0.76	0.06
15+296.677		15+507.500	210.823	LT				1.8	379.48	1.3	82.22	1.8	56.92			1.6	337.32	1.2	91.08	1.2	35.42	1.2	9.61	1.2	11.38							0.6	4.81	0.36
15+507.500		15+530.921	23.421	LT				2.0	46.84	1.5	10.54	2.0	7.03			1.8	42.16	1.4	11.80	1.4	4.59	1.4	1.25	1.4	1.48							0.6	0.53	0.04
15+294.000		15+323.151	29.151	RT				2.0	58.30	1.5	13.12	2.0	8.75			1.8	52.47	1.4	14.69	1.4	5.71	1.4	1.55	1.4	1.84							0.6	0.66	0.05
15+323.151		15+507.500	184.349	RT				1.8	331.83	1.3	71.90	1.8	49.77			1.6	294.96	1.2	79.64	1.2	30.97	1.2	8.41	1.2	9.95							0.6	4.20	0.31
TOTALS THIS SHEET										53 091.34		13 255.93		8021.45		19.46		49 760.35		14 882.28		5787.50		1570.92		1860.26								426.52	31.69

CALCULATED MSS
CHECKED BMH

PAVEMENT CALCULATIONS

ERI-2-2.866

wats2 P:\3907\DWG\HWY\PLAN\ 3907PC02.dwg NOV 11, 1998 TIME: 6:16 PM

Notes: ENTER 1 FOR THE WIDTH WHEN THE AREA IS CADD MEASURED.

OL = OVERLAY : FD = FULL DEPTH : TRANS = TRANSITION

							ITEM 202		ITEM 203		0.30 m ITEM 302		0.15 m ITEM 304		0.15 m ITEM 304		ITEM 855		0.36L/m^2 ITEM 407		0.14L/m^2 ITEM 407		0.038 m ITEM 446		0.045 m ITEM 446		0.038 m ITEM 448		0.15 m ITEM 611		0.15 m ITEM 611		ITEM 617	ITEM 617
			LENGTH			W	COURSE	W	SUBGRADE	W	BIT. AGG.	W	AGGREGATE	W	AGGREGATE	W	FREE DRAIN	W	TACK	W	INTER. TACK	W	SUR. ASP.	W	INT. ASP.	W	SUR. ASP.	W	REIN. APP.	W	REIN. APP.	W	COM. AGG.	WATER
				SIDE	NOTE		REMOVED		STAB. A.P.P.		BASE		BASE		BASE		BASE		COAT		COAT		CONCRETE		CONCRETE		TYPE 1		SLAB		SLAB (A.P.P.)		TYPE A	
STATION	TO	STATION	(m)			(m)	(Sq. m.)	(m)	(Sq. m.)	(m)	(Cu. m.)	(m)	(Cu. m.)	(m)	(Cu. m.)	(m)	(Sq. m.)	(m)	(Liter)	(m)	(Liter)	(m)	(Cu. m.)	(m)	(Cu. m.)	(m)	(Cu. m.)	(m)	(Sq. m.)	(m)	(Sq. m.)	(m)	(Cu. m.)	(Cu. m.)
15+507.500		15+529.300	21.800	RT				2.0	43.60	1.5	9.81	2.0	6.54			1.8	39.24	1.4	10.99	1.4	4.27	1.4	1.16	1.4	1.37							0.6	0.50	0.04
15+634.400		15+658.700	24.300	LT				2.0	48.60	1.5	10.94	2.0	7.29			1.8	43.74	1.4	12.25	1.4	4.76	1.4	1.29	1.4	1.53							0.6	0.55	0.04
15+658.700		18+448.500	2789.800	LT				1.8	5021.64	1.3	1088.02	1.8	753.25			1.6	4463.68	1.2	1205.19	1.2	468.69	1.2	127.21	1.2	150.65							0.6	63.61	4.72
15+632.960		15+654.520	21.560	RT				2.0	43.12	1.5	9.70	2.0	6.47			1.8	38.81	1.4	10.87	1.4	4.23	1.4	1.15	1.4	1.36							0.6	0.49	0.04
15+654.520		18+451.500	2796.980	RT				1.8	5034.56	1.3	1090.82	1.8	755.18			1.6	4475.17	1.2	1208.30	1.2	469.89	1.2	127.54	1.2	151.04							0.6	63.77	4.74
18+624.300		18+930.897	306.597	LT				1.8	551.87	1.3	119.57	1.8	82.78			1.6	490.56	1.2	132.45	1.2	51.51	1.2	13.98	1.2	16.56							0.6	6.99	0.52
18+930.897		18+962.000	31.103	LT				2.0	62.21	1.5	14.00	2.0	9.33			1.8	55.99	1.4	15.68	1.4	6.10	1.4	1.65	1.4	1.96							0.6	0.71	0.05
18+627.400		18+935.153	307.753	RT				1.8	553.96	1.3	120.02	1.8	83.09			1.6	492.40	1.2	132.95	1.2	51.70	1.2	14.03	1.2	16.62							0.6	7.02	0.52
18+935.153		18+965.000	29.847	RT				2.0	59.69	1.5	13.43	2.0	8.95			1.8	53.72	1.4	15.04	1.4	5.85	1.4	1.59	1.4	1.88							0.6	0.68	0.05
19+018.000		19+041.970	23.970	LT				2.0	47.94	1.5	10.79	2.0	7.19			1.8	43.15	1.4	12.08	1.4	4.70	1.4	1.28	1.4	1.51							0.6	0.55	0.04
19+041.970		19+446.279	404.309	LT				1.8	727.76	1.3	157.68	1.8	109.16			1.6	646.89	1.2	174.66	1.2	67.92	1.2	18.44	1.2	21.83							0.6	9.22	0.68
19+021.000		19+046.200	25.200	RT				2.0	50.40	1.5	11.34	2.0	7.56			1.8	45.36	1.4	12.70	1.4	4.94	1.4	1.34	1.4	1.59							0.6	0.57	0.04
19+046.200		19+446.279	400.079	RT				1.8	720.14	1.3	156.03	1.8	108.02			1.6	640.13	1.2	172.83	1.2	67.21	1.2	18.24	1.2	21.60							0.6	9.12	0.68
CROSSOVER AREAS																																				
(3 EA @ 415 SQ. M)																																				
CADD MEASURED AREA =			1245.000					1.0	1245.00	1.0	373.50	1.0	186.75			1.0	1245.00	1.0	448.20	1.0	174.30	1.0	47.31	1.0	56.03									
NOSE AREAS																																				
CADD MEASURED AREA =			117.400					1.0	117.40	1.0	35.22	1.0	17.61			1.0	117.40	1.0	42.26	1.0	16.44	1.0	4.46	1.0	5.28									
SR 269 - INTERCHANGE																																				
0+674.818		0+692.373	17.555																																	
CADD MEASURED AREA =			184.160			1.0	184.16											1.0	66.30							1.0	7.00								
0+782.304		0+799.870	17.566																																	
CADD MEASURED AREA =			184.130			1.0	184.13											1.0	66.29							1.0	7.00								
RAMP C																																				
0+004.000		0+023.540	19.540																														0.6	0.45	0.03
CADD MEASURED AREA =			301.468		OL	1.0	301.47											1.0	108.53	1.0	42.21	1.0	11.46	1.0	13.57										
0+026.000		0+226.650	200.650		OL													7.5	541.76	7.5	210.68	7.5	57.19	7.5	67.72							0.6	4.57	0.34
0+226.650		0+287.610	60.960		OL													7.8	171.18	7.8	66.57	7.8	18.07	7.8	21.40							0.6	1.39	0.10
DECEL LANE TO RAMP C																																				
0+287.610		0+425.706	138.096																																	
3+375.660		3+482.347	106.687																																	
CADD MEASURED AREA =			308.997		FD			1.0	309.00	1.0	92.70	1.0	46.35			1.0	309.00	1.0	111.24	1.0	43.26	1.0	11.74	1.0	13.90									
RAMP D																																				
0+004.500		0+020.000	15.500																														0.6	0.35	0.03
CADD MEASURED AREA =			426.017		OL	1.0	426.02											1.0	153.37	1.0	59.64	1.0	16.19	1.0	19.17										
0+020.000		0+036.000	16.000		OL													9.0	51.84	9.0	20.16	9.0	5.47	9.0	6.48							0.6	0.36	0.03
0+036.000		0+247.480	211.480		OL													7.5	571.00	7.5	222.05	7.5	60.27	7.5	71.37							0.6	4.82	0.36
0+247.480		0+399.879	152.399																														0.6	3.47	0.26
CADD MEASURED AREA =			746.222		OL													1.0	268.64	1.0	104.47	1.0	28.36	1.0	33.58										
GORE AREA																																				
3+336.950		3+481.954	145.004																																	
CADD MEASURED AREA =			637.161		FD			1.0	637.16	1.0	191.15	1.0	95.57			1.0	637.16	1.0	229.38	1.0	89.20	1.0	24.21	1.0	28.67										
ACCEL LANE FROM RAMP D																																				
3+481.954		3+847.715	365.761																																	
CADD MEASURED AREA =			1420.308		FD			1.0	1420.31	1.0	426.09	1.0	213.05			1.0	1420.31	1.0	511.31	1.0	198.84	1.0	53.97	1.0	63.91										
US 6 - INTERCHANGE																																				
RAMP A																																				
ACCEL LANE FROM RAMP A																																				
6+183.615		6+413.889	230.274																																	
13+300.033		13+435.345	135.312																																	
CADD MEASURED AREA =			1412.076		FD			1.0	1412.08	1.0	423.62	1.0	211.81			1.0	1412.08	1.0	508.35	1.0	197.69	1.0	53.66	1.0	63.54										
GORE AREA																																				
13+435.345		13+520.000	84.655																																	
CADD MEASURED AREA =			306.012		FD			1.0	306.01	1.0	91.80	1.0	45.90			1.0	306.01	1.0	110.16	1.0	42.84	1.0	11.63	1.0	13.77										
0		0+121.302	121.302																														0.6	2.77	0.21
CADD MEASURED AREA =			981.750		OL													1.0	353.43	1.0	137.45	1.0	37.31	1.0	44.18										
0+121.302		0+340.779	219.477		OL													7.5	592.59	7.5	230.45	7.5	62.55	7.5	74.07							0.6	5.00	0.37
0+340.779		0+475.000	134.221		OL													6.9	333.40	6.9	129.66	6.9	35.19	6.9	41.68							0.6	3.06	0.23
0+475.000		0+516.000	41.000	LT	OL													6.9	101.84	6.9	39.61	6.9	10.75	6.9	12.73							0.6	0.93	0.07
0+475.000		0+516.000	41.000	RT	OL													6.9	101.84	6.9	39.61	6.9	10.75	6.9	12.73							0.6	0.93	0.07
0+516.000		0+526.000	10.000	RT/LT																														0.6	0.23	0.02
CADD MEASURED AREA =			226.627		OL	1.0	226.63											1.0	81.59	1.0	31.73	1.0	8.61	1.0	10.20										
RAMP C																																				
DECEL LANE TO RAMP C																																				
6+385.423		6+415.891	30.468																																	
13+302.005		13+515.234	213.229																																	
CADD MEASURED AREA =			1166.685		FD			1.0	1166.69	1.0	350.01	1.0	175.00			1.0	1166.69	1.0	420.01	1.0	163.34	1.0	44.33	1.0	52.50										
0		0+030.479	30.479																														0.6	0.69	0.05
CADD MEASURED AREA =			194.919		OL											1.0	194.92	1.0	70.17	1.0	27.29	1.0	7.41	1.0	8.77										
0+030.479		0+283.500	253.021		OL													7.5	683.16	7.5	265.67	7.5	72.11	7.5	85.39							0.6	5.77	0.43
0+283.500		0+293.500	10.000																														0.6	0.23	0.02
TOTALS THIS SHEET							1322.41		19 579.14		4796.24		2936.85				18 337.41		9813.83		3764.93		1021.90		1210.14		14.00						198.80	14.78

CALCULATED MSS
CHECKED BMH

PAVEMENT CALCULATIONS

ERI-2-866

CALCULATED MSS
CHECKED BMH

PAVEMENT CALCULATIONS

ERI-2-2.866

			Notes:	ENTER 1 FOR THE WIDTH WHEN THE AREA IS CADD MEASURED.										OL = OVERLAY : FD = FULL DEPTH : TRANS = TRANSITION																				
STATION	TO	STATION	LENGTH (m)	SIDE	NOTE	W (m)	ITEM 202 COURSE REMOVED (Sq. m.)	W (m)	ITEM 203 SUBGRADE STAB. A.P.P. (Sq. m.)	W (m)	0.30 m ITEM 302 BIT. AGG. BASE (Cu. m.)	W (m)	0.15 m ITEM 304 AGGREGATE BASE (Cu. m.)	W (m)	0.15 m ITEM 304 AGGREGATE BASE (Cu. m.)	W (m)	ITEM 855 FREE DRAIN BASE (Sq. m.)	W (m)	0.36L/m^2 ITEM 407 TACK COAT (Liter)	W (m)	0.14L/m^2 ITEM 407 INTER. TACK COAT (Liter)	W (m)	0.038 m ITEM 446 SUR. ASP. CONCRETE (Cu. m.)	W (m)	0.045 m ITEM 446 INT. ASP. CONCRETE (Cu. m.)	W (m)	0.038 m ITEM 448 SUR. ASP. TYPE 1 (Cu. m.)	W (m)	0.15 m ITEM 611 REIN. APP. SLAB (Sq. m.)	W (m)	0.15 m ITEM 611 REIN. APP. SLAB (A.P.P.) (Sq. m.)	W (m)	ITEM 617 COM. AGG. TYPE A (Cu. m.)	ITEM 617 WATER (Cu. m.)
CADD MEASURED AREA =			175.590		OL	1.0	175.59									1.0	175.59	1.0	63.21	1.0	24.58	1.0	6.67	1.0	7.90									
RAMP B																																		
DECEL LANE TO RAMP B																																		
13+796.245		13+814.900	18.655																															
13+903.452		14+040.085	136.633																															
CADD MEASURED AREA =			627.137		FD			1.0	627.14	1.0	188.14	1.0	94.07			1.0	627.14	1.0	225.77	1.0	87.80	1.0	23.83	1.0	28.22									
0+156.597		0+187.076	30.479																													0.6	0.69	0.05
CADD MEASURED AREA =			316.993		OL													1.0	114.12	1.0	44.38	1.0	12.05	1.0	14.26									
0+187.076		0+340.779	153.703		OL													7.5	415.00	7.5	161.39	7.5	43.81	7.5	51.87							0.6	3.50	0.26
0+340.779		0+443.000	102.221		OL													6.9	253.92	6.9	98.75	6.9	26.80	6.9	31.74							0.6	2.33	0.17
0+460.000		0+567.500	107.500		OL													7.5	290.25	7.5	112.88	7.5	30.64	7.5	36.28							0.6	2.45	0.18
0+567.500		0+577.500	10.000																													0.6	0.23	0.02
CADD MEASURED AREA =			60.650		OL	1.0	60.65											1.0	21.83	1.0	8.49	1.0	2.30	1.0	2.73									
RAMP D																																		
0+180.000		0+222.135	42.135																													0.6	0.96	0.07
CADD MEASURED AREA =			466.950		OL													1.0	168.10	1.0	65.37	1.0	17.74	1.0	21.01									
0+222.135		0+229.735	7.600					9.1	69.16					9.1	10.37															8.2	62.32			
0+255.326		0+262.926	7.600					9.1	69.16					9.1	10.37															8.2	62.32			
0+262.926		0+287.000	24.074																													0.6	0.55	0.04
CADD MEASURED AREA =			176.940		OL													1.0	63.70	1.0	24.77	1.0	6.72	1.0	7.96									
0+287.000		0+618.750	331.750		OL													7.5	895.73	7.5	348.34	7.5	94.55	7.5	111.97							0.6	7.56	0.56
0+618.750		0+649.230	30.480		OL													7.8	85.59	7.8	33.28	7.8	9.03	7.8	10.70							0.6	0.69	0.05
0+649.230		0+740.670	91.440		OL													8.1	266.64	8.1	103.69	8.1	28.15	8.1	33.33							0.6	2.08	0.15
GORE AREA																																		
14+201.500		14+343.700	142.200																															
CADD MEASURED AREA =			612.760		FD			1.0	612.76	1.0	183.83	1.0	91.91			1.0	612.76	1.0	220.59	1.0	85.79	1.0	23.28	1.0	27.57									
ACCEL LANE FROM RAMP D																																		
14+343.700		14+709.461	365.761																															
CADD MEASURED AREA =			1414.946		FD			1.0	1414.95	1.0	424.48	1.0	212.24			1.0	1414.95	1.0	509.38	1.0	198.09	1.0	53.77	1.0	63.67									
SR 101 - INTERCHANGE																																		
1+455.746		1+472.787	17.041																															
CADD MEASURED AREA =			316.200			1.0	316.20											1.0	113.83	1.0	44.27					1.0	12.02							
1+472.787		1+480.387	7.600					19.5	148.20					19.5	22.23													18.6	141.36					
1+567.426		1+575.026	7.600					19.5	148.20					19.5	22.23													18.6	141.36					
1+575.026		1+592.058	17.032																															
CADD MEASURED AREA =			320.850			1.0	320.85											1.0	115.51	1.0	44.92					1.0	12.19							
RAMP A																																		
ACCEL LANE FROM RAMP A																																		
16+140.418		16+506.178	365.760																															
CADD MEASURED AREA =			1414.916		FD			1.0	1414.92	1.0	424.47	1.0	212.24			1.0	1414.92	1.0	509.37	1.0	198.09	1.0	53.77	1.0	63.67									
GORE AREA																																		
16+506.178		16+628.669	121.919																															
CADD MEASURED AREA =			487.676		FD													1.0	175.56	1.0	68.27	1.0	18.53	1.0	21.95									
0		0+091.440	91.440		OL													8.1	266.64	8.1	103.69	8.1	28.15	8.1	33.33							0.6	2.08	0.15
0+091.440		0+121.919	30.479		OL													7.8	85.59	7.8	33.28	7.8	9.03	7.8	10.70							0.6	0.69	0.05
0+121.919		0+420.000	298.081		OL													7.5	804.82	7.5	312.99	7.5	84.95	7.5	100.60							0.6	6.80	0.50
0+420.000		0+433.500	13.500																													0.6	0.31	0.02
CADD MEASURED AREA =			168.550		OL	1.0	168.55											1.0	60.68	1.0	23.60	1.0	6.40	1.0	7.58									
RAMP D																																		
DECEL LANE TO RAMP D																																		
16+373.889		16+617.980	244.091																															
CADD MEASURED AREA =			1231.337		FD			1.0	1231.34	1.0	369.40	1.0	184.70			1.0	1231.34	1.0	443.28	1.0	172.39	1.0	46.79	1.0	55.41									
0+200.000		0+230.118	30.118		OL													7.8	84.57	7.8	32.89	7.8	8.93	7.8	10.57							0.6	0.69	0.05
0+230.118		0+548.734	318.616		OL													7.5	860.26	7.5	334.55	7.5	90.81	7.5	107.53							0.6	7.26	0.54
0+548.734		0+562.500	13.766															7.5	37.17	7.5	14.45	7.5	3.92	7.5	4.65							0.6	0.31	0.02
CADD MEASURED AREA =			155.633		OL			1.0	155.63									1.0	56.03	1.0	21.79	1.0	5.91	1.0	7.00									
RAMP B																																		
0+009.000		0+019.000	10.000																													0.6	0.23	0.02
CADD MEASURED AREA =			127.315		OL	1.0	127.32																											
0+019.000		0+341.535	322.535		OL													7.5	870.84	7.5	338.66	7.5	91.92	7.5	108.86							0.6	7.35	0.55
0+341.535		0+372.015	30.480		OL													7.8	85.59	7.8	33.28	7.8	9.03	7.8	10.70							0.6	0.69	0.05
DECEL LANE TO RAMP B																																		
17+272.413		17+516.254	243.841																															
CADD MEASURED AREA =			909.012		FD			1.0	909.01	1.0	272.70	1.0	136.35			1.0	909.01	1.0	327.24	1.0	127.26	1.0	34.54	1.0	40.91									
RAMP C																																		
0+008.500		0+023.000	14.500																													0.6	0.33	0.02
CADD MEASURED AREA =			189.746		OL	1.0	189.75											1.0	68.31	1.0	26.56	1.0	7.21	1.0	8.54									
0+023.000		0+320.072	297.072		OL													7.5	802.09	7.5	311.93	7.5	84.67	7.5	100.26							0.6	6.77	0.50
0+320.072		0+350.551	30.479		OL													7.8	85.59	7.8	33.28	7.8	9.03	7.8	10.70							0.6	0.69	0.05
0+350.551		0+441.990	91.439		OL													8.1	266.64	8.1	103.69	8.1	28.14	8.1	33.33							0.6	2.08	0.15
TOTALS THIS SHEET							1358.91		6800.47		1863.02		931.51		65.20		6385.71		9713.44		3777.44		1001.07		1185.50		24.21		282.72		124.64		57.32	4.22

wats2 P:\3907\DWG\HWY\PLAN\ 3907PC04.dwg NOV 11, 1998 TIME: 6:32 PM

Notes: ENTER 1 FOR THE WIDTH WHEN THE AREA IS CADD MEASURED. | OL = OVERLAY : FD = FULL DEPTH : TRANS = TRANSITION

STATION	TO	STATION	LENGTH (m)	SIDE	NOTE	W (m)	ITEM 202 COURSE REMOVED (Sq. m.)	W (m)	ITEM 203 SUBGRADE STAB. A.P.P. (Sq. m.)	W (m)	0.30 m ITEM 302 BIT. AGG. BASE (Cu. m.)	W (m)	0.15 m ITEM 304 AGGREGATE BASE (Cu. m.)	W (m)	0.15 m ITEM 304 AGGREGATE BASE (Cu. m.)	W (m)	ITEM 855 FREE DRAIN BASE (Sq. m.)	W (m)	0.36L/m^2 ITEM 407 TACK COAT (Liter)	W (m)	0.14L/m^2 ITEM 407 INTER. TACK COAT (Liter)	W (m)	0.038 m ITEM 446 SUR. ASP. CONCRETE (Cu. m.)	W (m)	0.045 m ITEM 446 INT. ASP. CONCRETE (Cu. m.)	W (m)	0.038 m ITEM 448 SUR. ASP. TYPE 1 (Cu. m.)	W (m)	0.15 m ITEM 611 REIN. APP. SLAB (Sq. m.)	W (m)	0.15 m ITEM 611 REIN. APP. SLAB (A.P.P.) (Sq. m.)	W (m)	ITEM 617 COM. AGG. TYPE A (Cu. m.)	ITEM 617 WATER (Cu. m.)
GORE AREA																																						
17+260.824		17+383.516	122.692																																			
CADD MEASURED AREA =			509.020		FD			1.0	509.02	1.0	152.71	1.0	76.35			1.0	509.02	1.0	183.25	1.0	71.26	1.0	19.34	1.0	22.91												
ACCEL LANE FROM RAMP C																																						
17+383.516		17+749.277	365.761																																			
CADD MEASURED AREA =			1276.702		FD			1.0	1276.70	1.0	383.01	1.0	191.51			1.0	1276.70	1.0	459.61	1.0	178.74	1.0	48.51	1.0	57.45												
McCARTNEY ROAD																																						
0+537.023		0+554.611	17.588																																			
CADD MEASURED AREA =			147.000			1.0	147.00											1.0	52.92	1.0	20.58					1.0	5.59									
0+554.611		0+562.211	7.600					9.3	70.68					9.3	10.60													8.4	63.84							
0+656.992		0+664.592	7.600					9.3	70.68					9.3	10.60													8.4	63.84							
0+664.592		0+682.385	17.793																																			
CADD MEASURED AREA =			149.100			1.0	149.10											1.0	53.68	1.0	20.87					1.0	5.67									
							———		———		———		———		———		———		———		———		———		———		———		———		———		———		———		———
TOTALS FROM THIS SHEET							296.10		1927.08		535.72		267.86		21.20		1785.72		749.46		291.45		67.85		80.36		11.26		127.68						
TOTALS FROM SHEET 61							534.00		164 303.09		47 427.73		24 337.20		308.22		160 585.81		56 806.35		22 016.59		5996.23		7076.76				1288.96		629.82		189.46	14.07
TOTALS FROM SHEET 62									53 091.34		13 255.93		8021.45		19.46		49 760.35		14 882.28		5787.50		1570.92		1860.26								426.52	31.69
TOTALS FROM SHEET 63							1322.41		19 579.14		4796.24		2936.85				18 337.41		9813.83		3764.93		1021.90		1210.14		14.00						198.80	14.78
TOTALS FROM SHEET 64							1358.91		6800.47		1863.02		931.51		65.20		6385.71		9713.44		3777.44		1001.07		1185.50		24.21		282.72		124.64		57.32	4.22
							———						———		———		———		———		———		———		———		———		———		———		———		———	———
TOTALS CARRIED TO GENERAL SUMMARY							3520		245710		67880		36920				236860		91970		35640		9660		11420		50		1700		760		880	70

ITEM 202, PAVEMENT REMOVED:

{(STA. 19+446.279 - STA. 13+300.033) + (STA. 6+413.889 - STA. 2+866)} * 7.2m * 2

= (6146.246+3547.889) * 14.4
=9694.135 * 14.4
= 139 600 Sq. m

ITEM 203, EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION

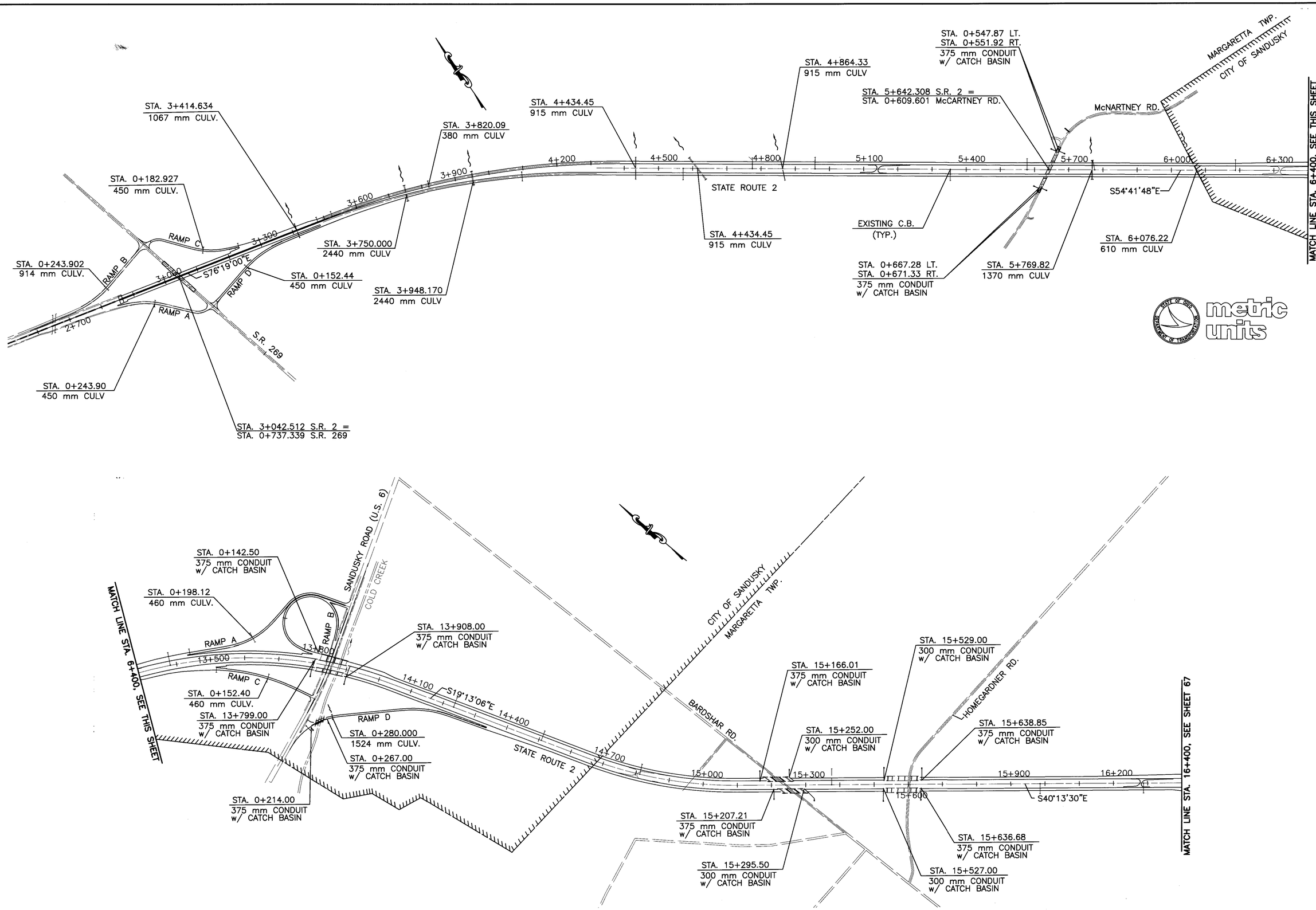
[{(STA. 19+446.279 - STA. 13+300.033) + (STA. 6+413.889 - STA. 3+825)} * 4 *0.550 m] + [(STA. 3+825 - STA. 2+866) * 2 *0.550 m]
+ (245 710 * 0.633 m) - (139 600 * 0.229 m)

= [4(8735.135) + 2(959)] *0.550 + 155 534.43 - 31 968.4
=(0.550 * 36 858.54) + 123 566.03
= 20 272.197 + 123 566.03
= 144 000 Cu. m

CALCULATED MSS
CHECKED BMH

PAVEMENT CALCULATIONS

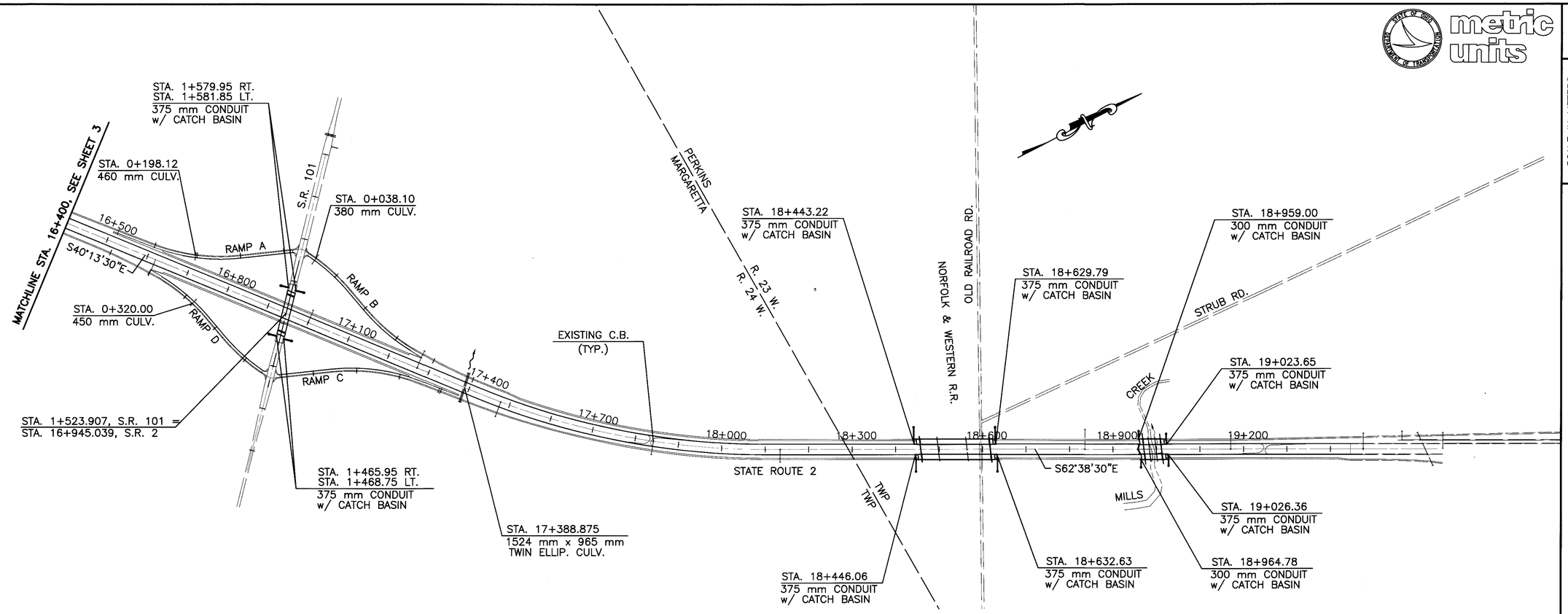
ERI-2-2.866



SCALE IN METERS
0 100 200
1:5000

STORM WATER POLLUTION PREVENTION PLAN
STA. 2+600.000 TO STA. 16+400.000

ERI-2-2.866



metric units

SCALE IN METERS
0 100 200
1:5000

STORM WATER POLLUTION PREVENTION PLAN
STA. 16+400.000 TO STA. 19+500.000

ERI-2-2.866

PROJECT DATA

TOTAL AREA (RIGHT–OF–WAY)	115 HECTACRES
AREA TO UNDERGO EXCAVATION, FILLING OR GRADING	25 HECTACRES
RUNOFF COEFFICIENT FOR PRE–CONSTRUCTION SITE	0.35
RUNOFF COEFFICIENT FOR POST CONSTRUCTION SITE	0.36
SOIL DATA	SEE INFORMATION AVAILABLE AT ODOT DISTRICE 3 OFFICES
IMMEDIATE RECEIVING WATERS	COLD CREEK MILLS CREEK
SUBSEQUENT RECEIVING WATER	LAKE ERIE

ESTIMATED QUANTITIES

	207				601	659		
	FILTER FABRIC FENCE	STRAW OR HAY BALES	TEMPORARY SEEDING AND MULCHING		ROCK CHANNEL PROTECTION, TYPE C (WITH FILTER)	REPAIR SEEDING AND MULCHING	COMMERCIAL FERTILIZER	
	METER	EACH	SQ. METER		CU. METER	SQ. METER	KG	
	QUANTITIES TO BE USED AS DETERMINED BY THE ENGINEER							
TOTAL	2000	1000	1700		75	500	25	

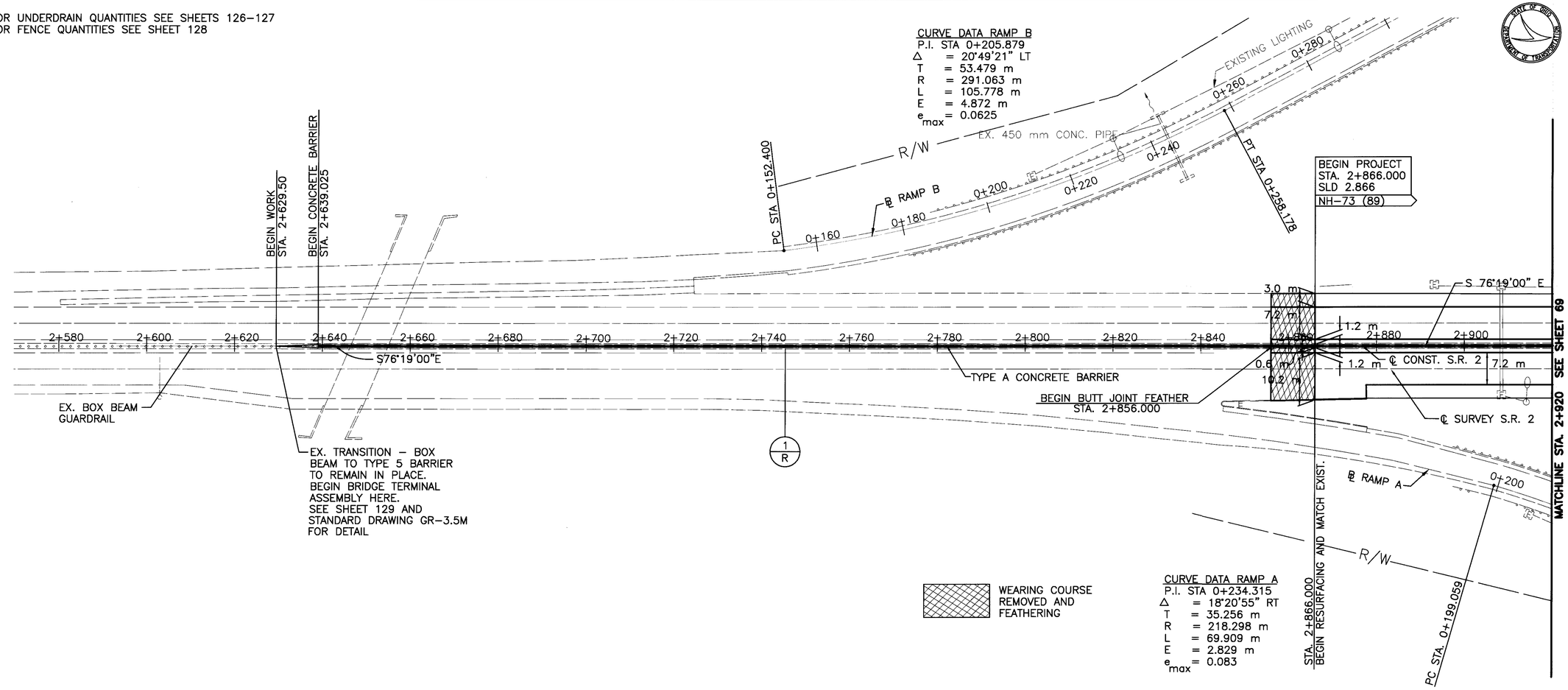
PROJECT DESCRIPTION
THE PROJECTS CONSISTS OF THE REPAVING AND REHABILITATION OF APPROXIMATELY 16.6 KILOMETERS OF FOUR–LANE, DIVIDED, LIMITED ACCESS, RURAL EXPRESSWAY ON EXISTING ALIGNMENT ON EXISTING BASE IN NORTHERN ERIE COUNTY JUST SOUTH OF SANDUSKY AND HURON. THE WORK ALSO ENTAILS FENCING, BRIDGE REHABILITATION, GUARDRAIL RECONSTRUCTION, AND LIMITED DRAINAGE AND DITCH RESTORATION. THE HIGHWAY HAS AN EAST–WEST ORIENTATION BEGINNING 177 METERS WEST OF SR#269 AND ENDING 585 METERS WEST OF SR#4. THE PROJECT ENCOUNTERS INTERCHANGES AT SR#269, US#6 AND SR#101.

USGS QUADRANGLE MAPS: CASTALIA, OHIO AND SANDUSKY, OHIO

BEGIN PROJECT: STA. 2+866.000
END PROJECT: STA. 19+446.279

GEODETIC LOCATION:
LATITUDE 41°25'41"N
LONGITUDE 82°46'11"W

FOR UNDERDRAIN QUANTITIES SEE SHEETS 126–127
FOR FENCE QUANTITIES SEE SHEET 128



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 CONCRETE MEDIAN REMOVED METER	202 GUARDRAIL REMOVED, BARRIER DESIGN METER	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE EACH	606 GUARDRAIL, BARRIER DESIGN TYPE 5 METER	606 BRIDGE TERMINAL ASSEMBLY TYPE I, BARRIER DESIGN EACH	622 CONCRETE BARRIER TYPE A METER	622 CONCRETE BARRIER TYPE A, REINF. METER	626 BARRIER REFLECTOR TYPE A EACH	626 BARRIER REFLECTOR TYPE B EACH
1–R	2+629.50 TO 2+920.00	MED.	291	291	6	9.525	1	276	8	2	18
Totals to General Summary			291	291	6	9.525	1	276	8	2	18

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

metric units

SCALE IN METERS 0 10 20 1:500

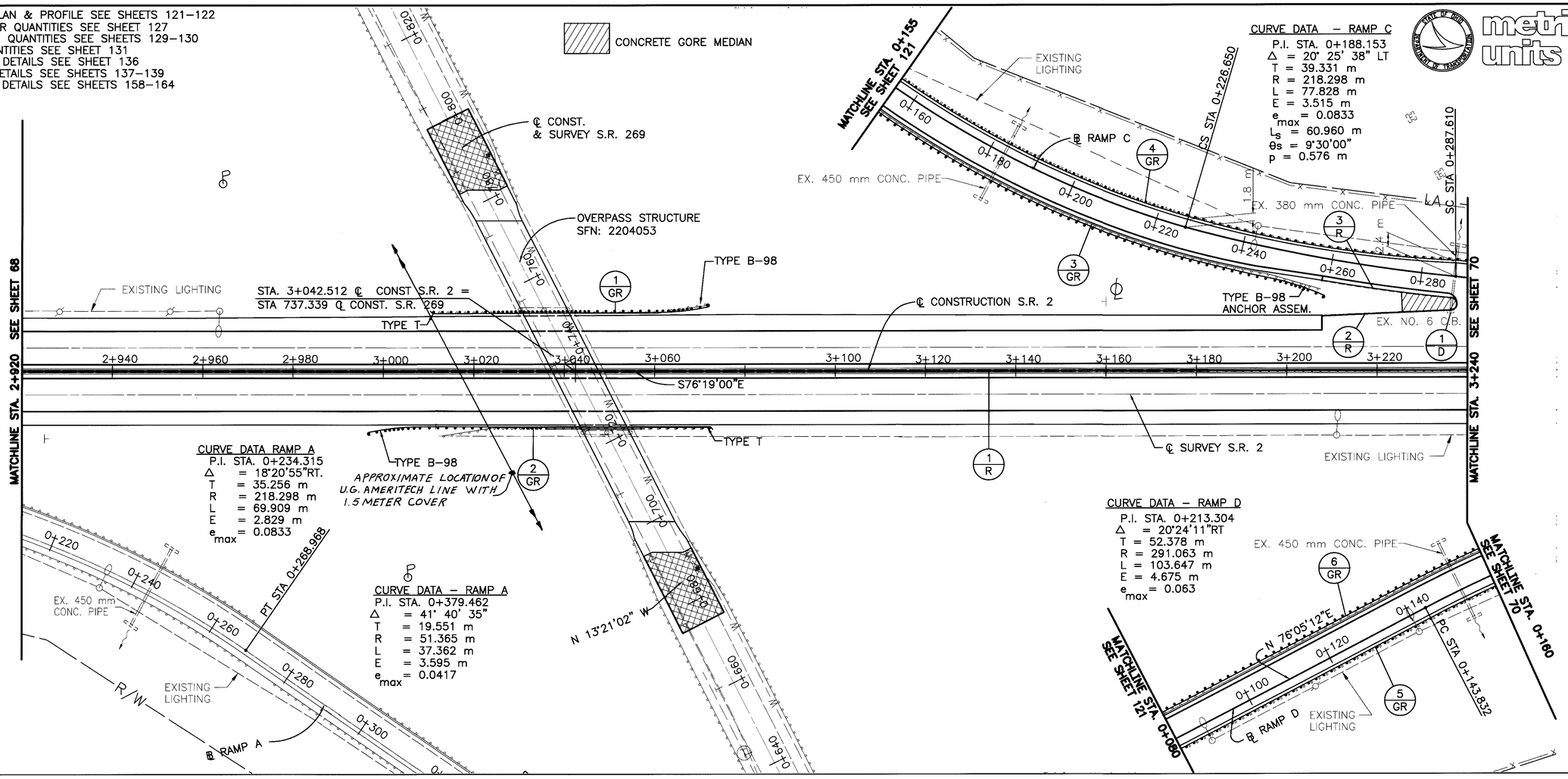
CALCULATED TCM CHECKED BMH

PLAN SHEET – S.R. 2
STA. 2+600 TO STA. 2+920

ERI-2-2.866

68
327

FOR S.R. 269 PLAN & PROFILE SEE SHEETS 121–122
FOR JOINT REPAIR QUANTITIES SEE SHEET 127
FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131
FOR GORE AREA DETAILS SEE SHEET 136
FOR DRAINAGE DETAILS SEE SHEETS 137–139
FOR STRUCTURE DETAILS SEE SHEETS 158–164



ESTIMATED QUANTITIES

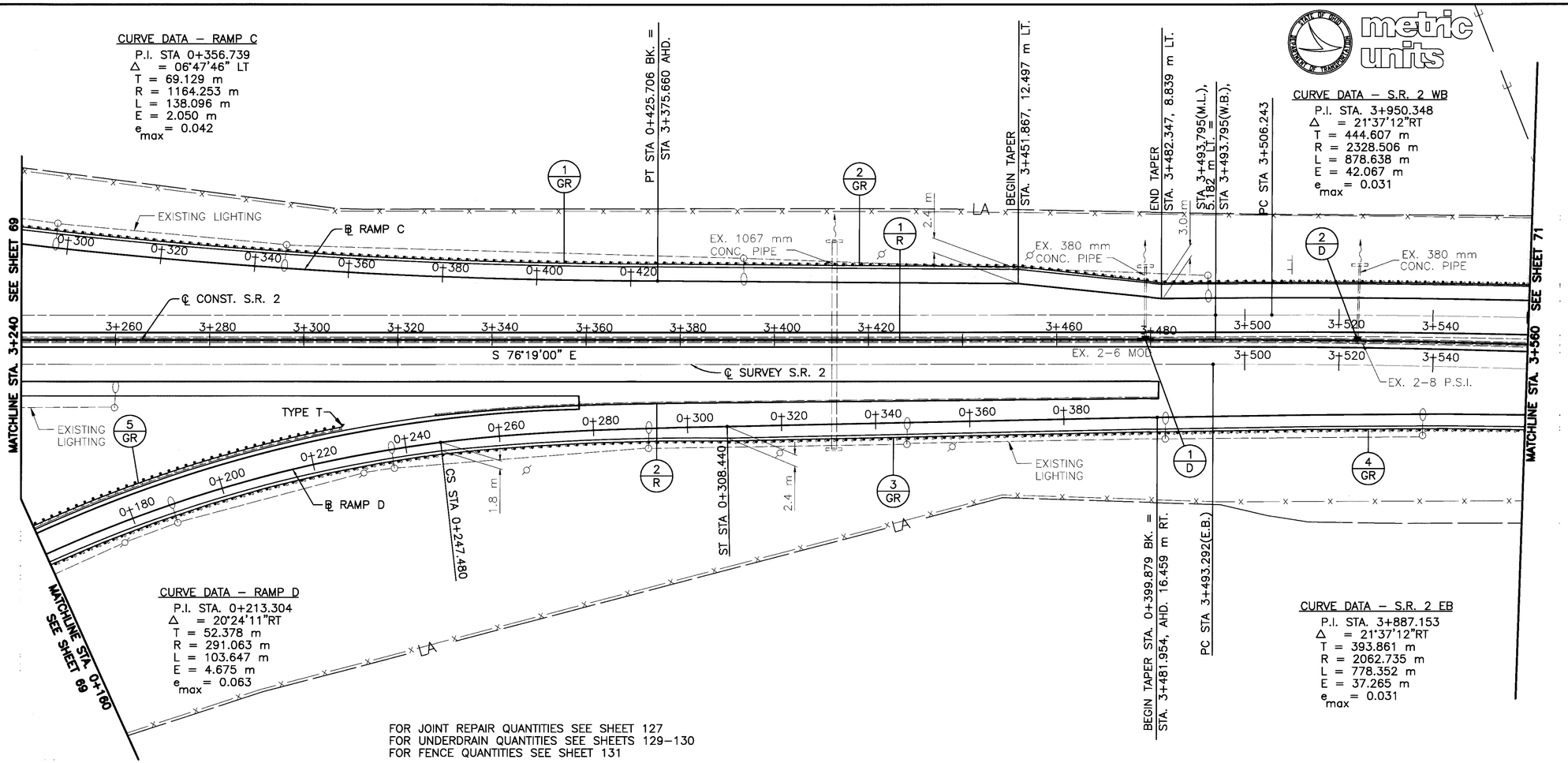
REF. NO.	STATION TO STATION	SIDE	202 CONCRETE MEDIAN REMOVED	202 CONCRETE MEDIAN REMOVED	202 CURB REMOVED	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED, BARRIER DESIGN	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE	604 CATCH BASIN ADJUSTED TO GRADE	606 GUARDRAIL TYPE 5A	606 ANCHOR ASSEMBLY TYPE B-98	606 ANCHOR ASSEMBLY TYPE T	606 GUARDRAIL TYPE 5	606 BRIDGE TERMINAL ASSEMBLY TYPE 1	606 BRIDGE TERMINAL ASSEMBLY TYPE 2	622 CONCRETE BARRIER TYPE A	622 CONCRETE BARRIER TYPE D	626 BARRIER REFLECTOR TYPE A	626 BARRIER REFLECTOR TYPE B
			METER	SQ. METER	METER	METER	EACH	METER	EACH	METER	EACH	EACH	METER	EACH	EACH	METER	METER	EACH	EACH
1–R	2+920.00 TO 3+240.00	MED.	320				320	28								320			22
2–R	3+205.90 TO 3+237.00	LT.		42	31														
3–R	0+257.20C TO 0+287.60C	RT.			31														
1–D	3+236.9	LT.							1										
1–GR	3+011.00 TO 3+072.00	LT.				61.22				20.995	1	1	24.725					1	
2–GR	2+996.80 TO 3+072.44	RT.				59.07					1	1	40.005	1	1		21.74	3	1
3–GR	0+155.00C TO 0+257.20C	RT.				103.62					1		90					3	
4–GR	0+155.00C TO 0+290.00C	LT.				135							135					4	
5–GR	0+080.00D TO 0+160.00D	RT.				80							80					3	
6–GR	0+080.00D TO 0+160.00D	LT.				80							80					3	
Totals to General Summary			320	42	62	518.91	320	28	1	20.995	3	2	449.73	1	1	320	22	17	23

SCALE IN METERS 0 10 20 1:500
CALCULATED JH CHECKED BMH

PLAN SHEET - S.R. 2
STA. 2+920 TO STA. 3+240

ERI-2-2.866

69
327



FOR JOINT REPAIR QUANTITIES SEE SHEET 127
FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 CONCRETE MEDIAN REMOVED	202 CURB REMOVED	202 PIPE REMOVED 600 mm & UNDER	202 GUARDRAIL REMOVED, BARRIER DESIGN	202 GUARDRAIL REMOVED	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE	202 INLET REMOVED	603 375 mm CONDUIT TYPE B	604 INLET NO. 3C TYPE A	606 ANCHOR ASSEMBLY TYPE T	606 GUARDRAIL TYPE 5	622 CONCRETE BARRIER TYPE A	626 BARRIER REFLECTOR TYPE A	626 BARRIER REFLECTOR TYPE B
			METER	METER	METER	METER	METER	EACH	EACH	METER	EACH	EACH	METER	METER	EACH	EACH
1–R	3+240.00 TO 3+560.00	MED.	320			320		26						308		20
2–R	0+247.48D TO 0+399.88D	LT.		153												
1–D	3+478.88	MED.			2				1	2	1					
2–D	3+523.95	MED.			2				1	2	1					
1–GR	0+290.00C TO 0+425.71C	LT.					135						135		5	
2–GR	3+375.66 TO 3+560.00	LT.					185						185		6	
3–GR	0+160.00D TO 0+399.88D	RT.					240						240		12	
4–GR	3+481.95 TO 3+560.00	RT.					78						78		3	
5–GR	0+160.00 TO 0+228.03	LT.					67.52					1	64.22		2	
Totals to General Summary			320	153	4	320	705.52	26	2	4	2	1	702.22	308	28	20

REF. NO.	STATION TO STATION	SIDE

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

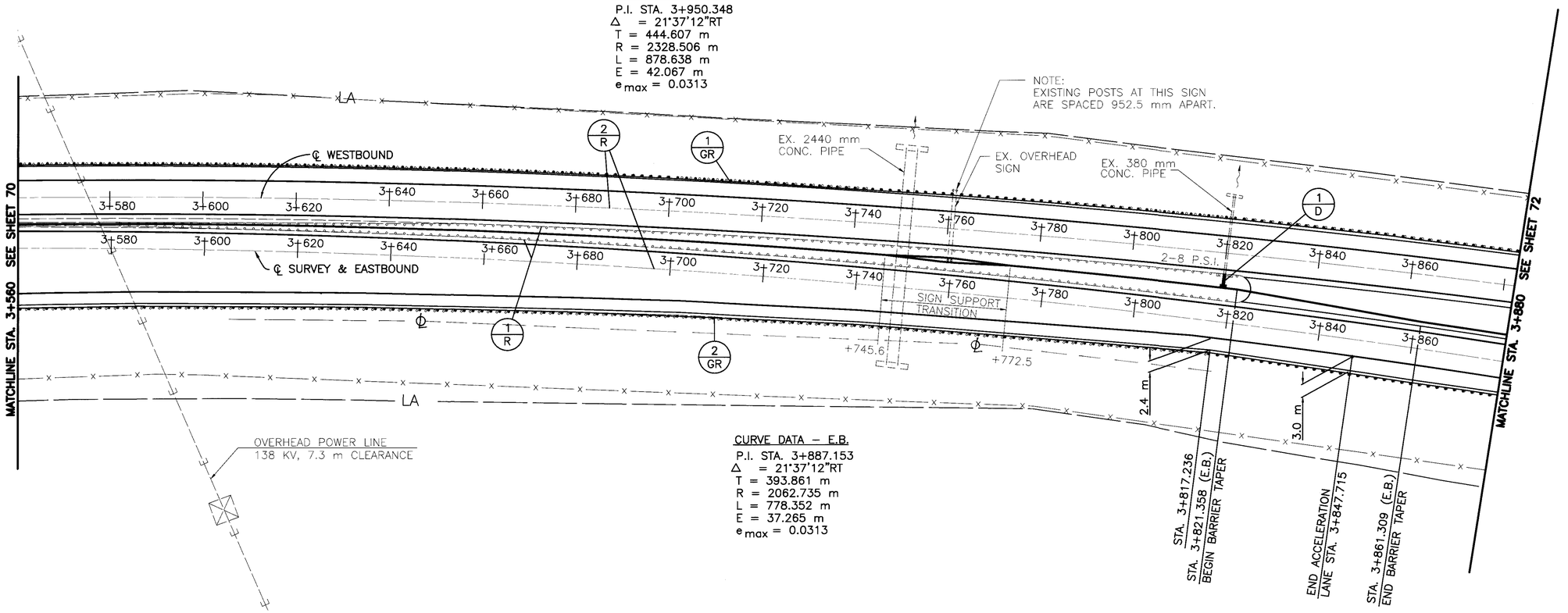
PLAN SHEET – S.R. 2
STA. 3+240 TO STA. 3+560

ERI-2-2.866

70
327

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131
FOR MEDIAN GRADING DETAIL SEE SHEET 136

metric units



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 CONCRETE MEDIAN REMOVED	202 PIPE REMOVED 600 mm & UNDER	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED, BARRIER DESIGN	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE	202 INLET REMOVED	203 LINEAR GRADING	603 375 mm CONDUIT TYPE B	604 INLET NO. 3C TYPE A	606 GUARDRAIL TYPE 5	622 CONCRETE BARRIER TYPE A	626 BARRIER REFLECTOR TYPE A	626 BARRIER REFLECTOR TYPE B	630 BARRIER WALL ASSEMBLY TYPE TC–21.41M DESIGN 1
			METER	METER	METER	METER	EACH	EACH	METER	METER	EACH	METER	METER	EACH	EACH	EACH
1–R	3+560.00 TO 3+880.00(E.B.)	MED.	265		505	20			55				310		21	1
2–R	3+560.00 TO 3+880.00(E.B.)	RT&LT					26									
1–D	3+820.09	MED.		2				1		3	1					
1–GR	3+560.00 TO 3+882.5(W.B.)	LT.			322.5							322.5				
2–GR	3+560.00 TO 3+880.0(E.B.)	RT.			320							320		10		
Totals to General Summary			265	2	1147.5	20	26	1	55	3	1	642.5	310	10	21	1

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

PLAN SHEET – S.R. 2
STA. 3+560 TO STA. 3+880

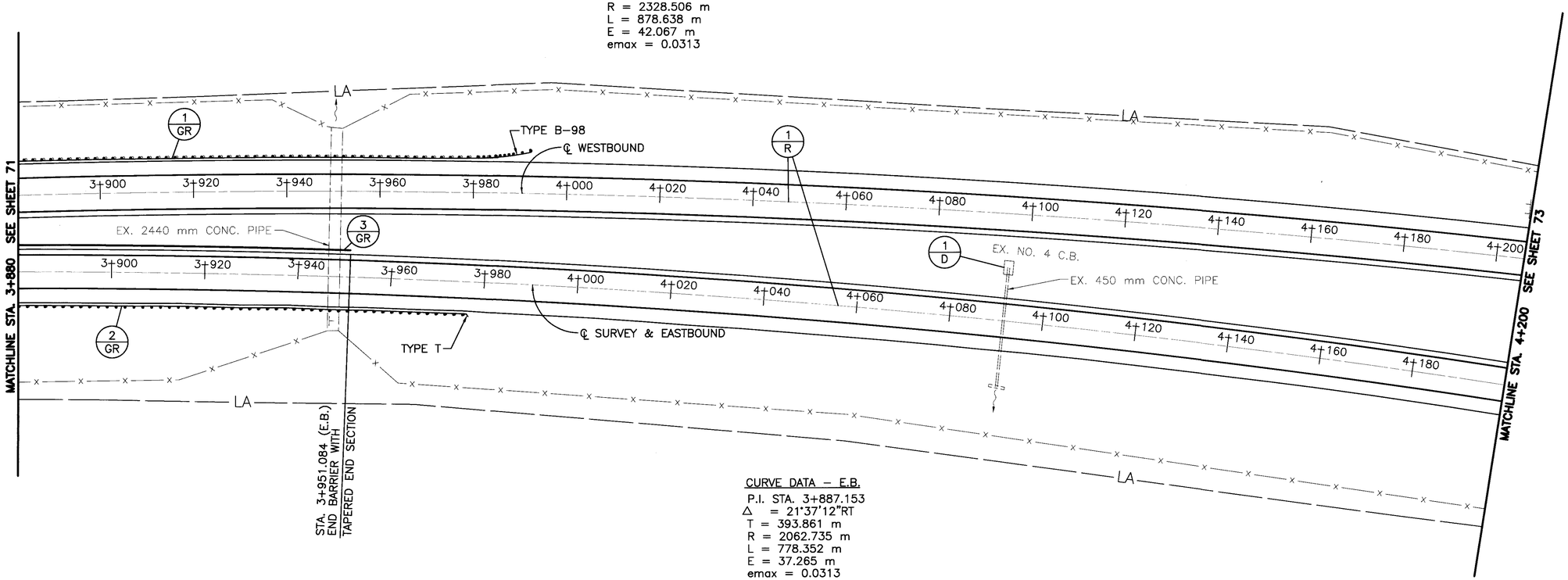
ERI-2-2.866

71
327

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131
FOR MEDIAN GRADING DETAIL SEE SHEET 136

metric units

CURVE DATA – W.B.
P.I. STA. 3+950.348
Δ = 21°37'12"RT
T = 444.607 m
R = 2328.506 m
L = 878.638 m
E = 42.067 m
emax = 0.0313



CURVE DATA – E.B.
P.I. STA. 3+887.153
Δ = 21°37'12"RT
T = 393.861 m
R = 2062.735 m
L = 778.352 m
E = 37.265 m
emax = 0.0313

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE (EACH)	202 GUARDRAIL REMOVED (METER)	203 LINEAR GRADING (METER)	604 CATCH BASIN RECONST. TO GRADE AS PER PLAN (EACH)	606 ANCHOR ASSEMBLY TYPE B–98 (EACH)	606 GUARDRAIL TYPE 5 (METER)	606 ANCHOR ASSEMBLY TYPE T (EACH)	622 CONCRETE BARRIER TYPE A (METER)	626 BARRIER REFLECTOR TYPE A (EACH)	626 BARRIER REFLECTOR TYPE B (EACH)			
1–R	3+880.00 TO 4+200.00	RT&LT	27												
1–D	4+095.69	MED.				1									
1–GR	3+882.50 TO 3+992.6(W.B.)	LT.		105.19			1	110.1			4				
2–GR	3+880.00 TO 3+977.2(E.B.)	RT.		96.42				97.2	1		4				
3–GR	3+880.00 TO 3+951.1(E.B.)	LT.			71					71		5			
Totals to General Summary			27	201.61	71	1	1	207.3	1	71	8	5			

REF. NO.	STATION TO STATION	SIDE								
Totals to General Summary										

PLAN SHEET – S.R. 2
STA. 3+880 TO STA. 4+200

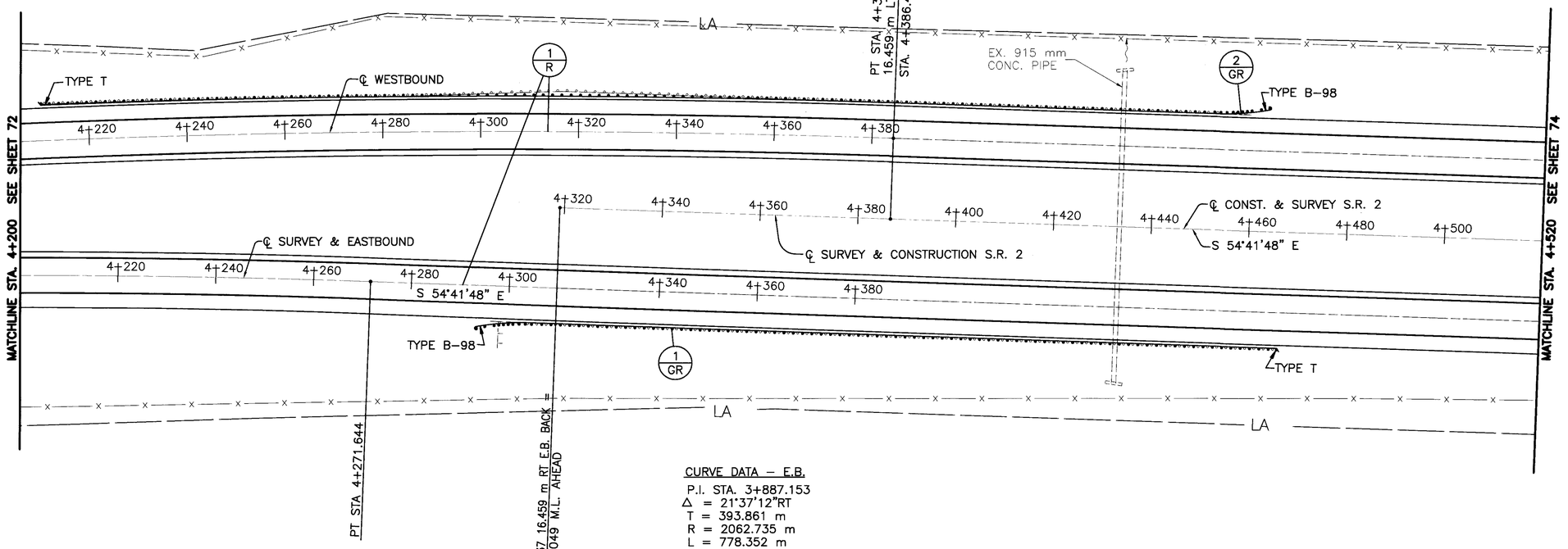
SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

ERI-2-2.866

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131

CURVE DATA – W.B.
P.I. STA. 3+950.348
Δ = 21°37'12"RT
T = 444.607 m
R = 2328.506 m
L = 878.638 m
E = 42.067 m
emax = 0.0313



CURVE DATA – E.B.
P.I. STA. 3+887.153
Δ = 21°37'12"RT
T = 393.861 m
R = 2062.735 m
L = 778.352 m
E = 37.265 m
emax = 0.0313

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE (EACH)	202 GUARDRAIL REMOVED (METER)	606 GUARDRAIL TYPE 5 (METER)	606 ANCHOR ASSEMBLY TYPE B–98 (EACH)	606 ANCHOR ASSEMBLY TYPE–T (EACH)	626 BARRIER REFLECTOR TYPE A (EACH)
1–R	4+200.00 TO 4+520.00	RT&LT	26					
1–GR	4+293.49 TO 4+466.23	RT.		160.88	148.59	1	1	5
2–GR	4+210.85 TO 4+463.43	LT.		257.98	236.22	1	1	8
Totals to General Summary			26	418.86	384.81	2	2	13

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

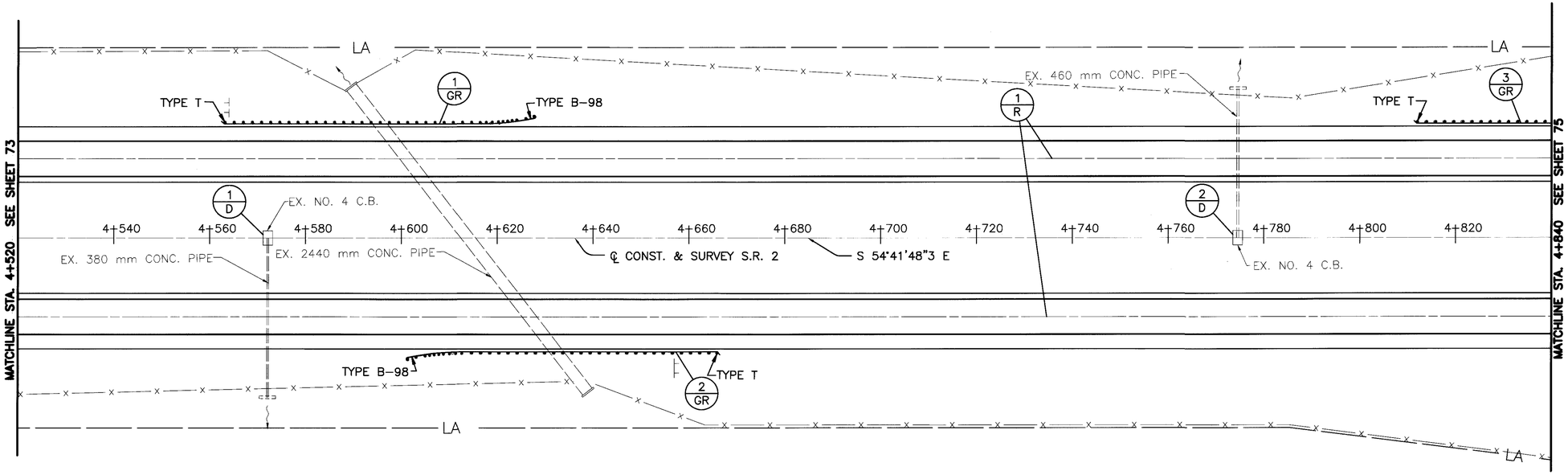
PLAN SHEET – S.R. 2
STA. 4+200 TO STA. 4+520

ER-2-2.866

73
327

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131

metric units



* 707.45 NON–PERFORATED, ASTM D 3034 TYPE PS46 OR SDR35

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE (EACH)	202 GUARDRAIL REMOVED (METER)	603 100 mm CONDUIT TYPE F * (METER)	604 CATCH BASIN RECONST. TO GRADE AS PER PLAN (EACH)		606 GUARDRAIL TYPE 5 (METER)	606 ANCHOR ASSEMBLY TYPE B–98 (EACH)	606 ANCHOR ASSEMBLY TYPE–T (EACH)		626 BARRIER REFLECTOR TYPE A (EACH)			
1–R	4+520.00 TO 4+840.00	RT&LT	28												
1–D	4+572.16	MED.				1									
2–D	4+774.54	MED.			10	1									
1–GR	4+563.01 TO 4+627.70	LT.		65.12				49.53	1	1		3			
2–GR	4+601.34 TO 4+666.04	RT.		65.07				49.53	1	1		3			
3–GR	4+811.84 TO 4+840.00	LT.		28.16				28.16		1		1			
Totals to General Summary			28	158.35	10	2		127.22	2	3		7			

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

PLAN SHEET – S.R. 2
STA. 4+520 TO STA. 4+840

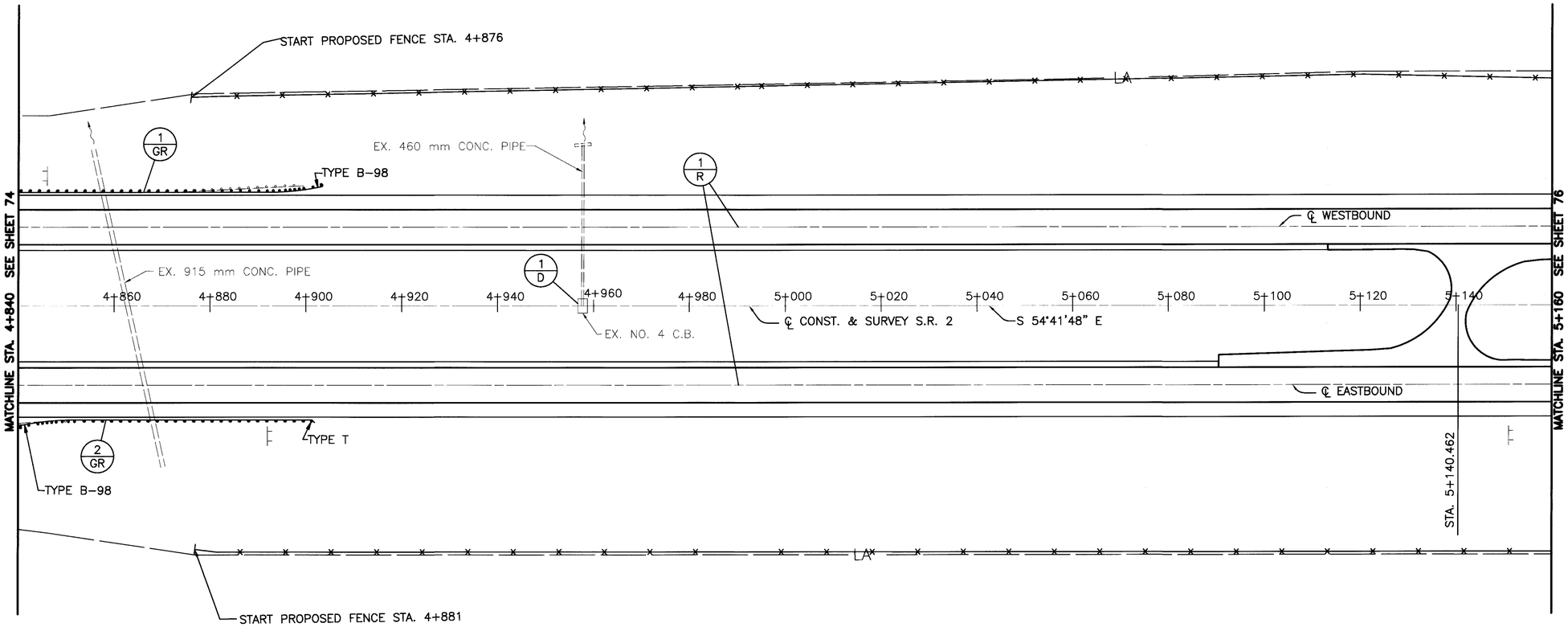
ERI-2-2.866

74
327

deck2 P:\3907\DWG\HWY\PLAN\plan and profile\ 3907RP07.dwg OCT 19, 1998 TIME: 2:10 PM

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131

metric units



ESTIMATED QUANTITIES

* 707.45 NON.PERFORATED, ASTM D 3034 TYPE PS46 OR SDR35

REF. NO.	STATION TO STATION	SIDE	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE (EACH)	202 CATCH BASIN REMOVED (EACH)	202 GUARDRAIL REMOVED (METER)	603 100 mm CONDUIT TYPE F * (METER)	604 CATCH BASIN, NO. 4 (EACH)	606 GUARDRAIL TYPE 5 (METER)	606 ANCHOR ASSEMBLY TYPE B–98 (EACH)	606 ANCHOR ASSEMBLY TYPE T (EACH)	626 BARRIER REFLECTOR TYPE A (EACH)
1–R	4+840.00 TO 5+160.00	RT&LT	26								
1–D	4+957.73	MED.		1		6	1				
1–GR	4+840.00 TO 4+903.19	LT.			59.45			51.85	1		3
2–GR	4+840.22 TO 4+901.34	RT.			61.02			45.72	1	1	3
Totals to General Summary			26	1	120.47	6	1	97.57	2	1	6

SCALE IN METERS 0 10 20 1:500

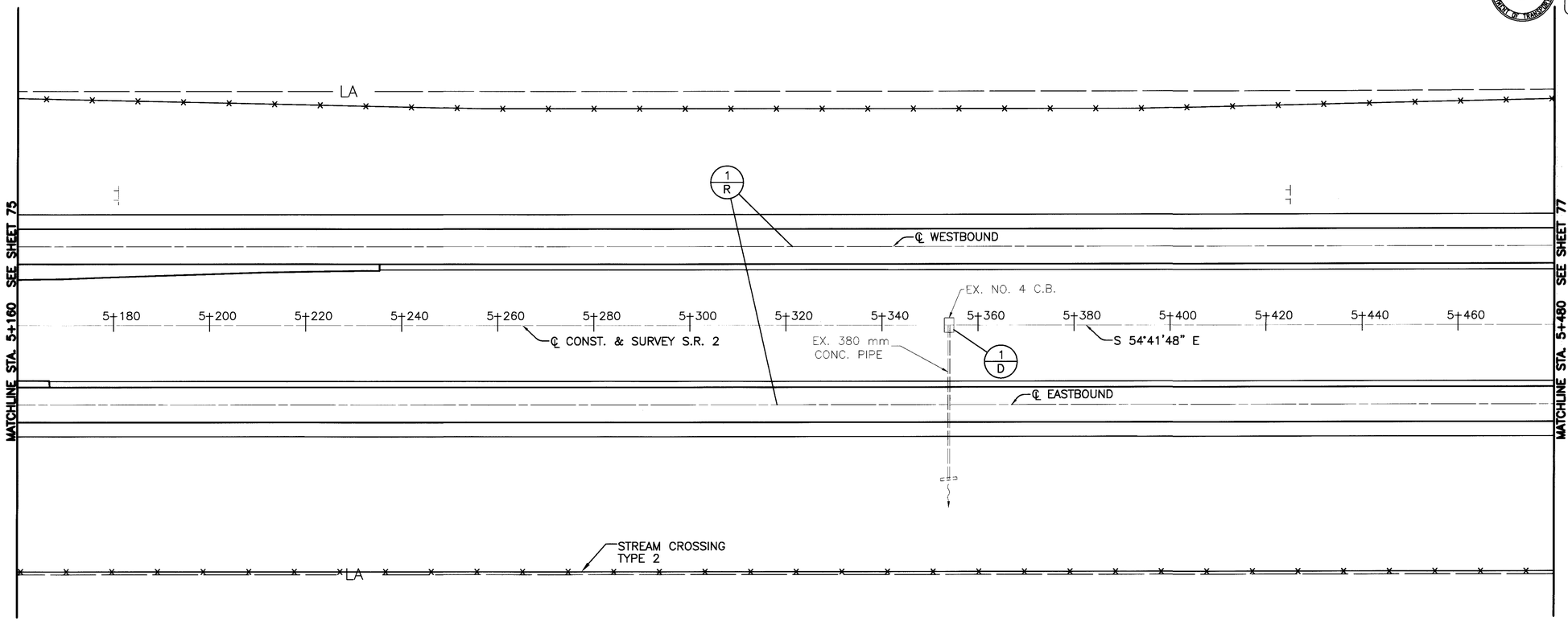
CALCULATED TCM CHECKED BMH

PLAN SHEET – S.R. 2
STA. 4+840 TO STA. 5+160

ERI-2-2.866

75
327

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE	202 CATCH BASIN REMOVED	604 CATCH BASIN NO. 4
			EACH	EACH	EACH
1–R	5+160.00 TO 5+480.00	RT&LT	26		
1–D	5+353.97	MED.		1	1
Totals to General Summary			26	1	1

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

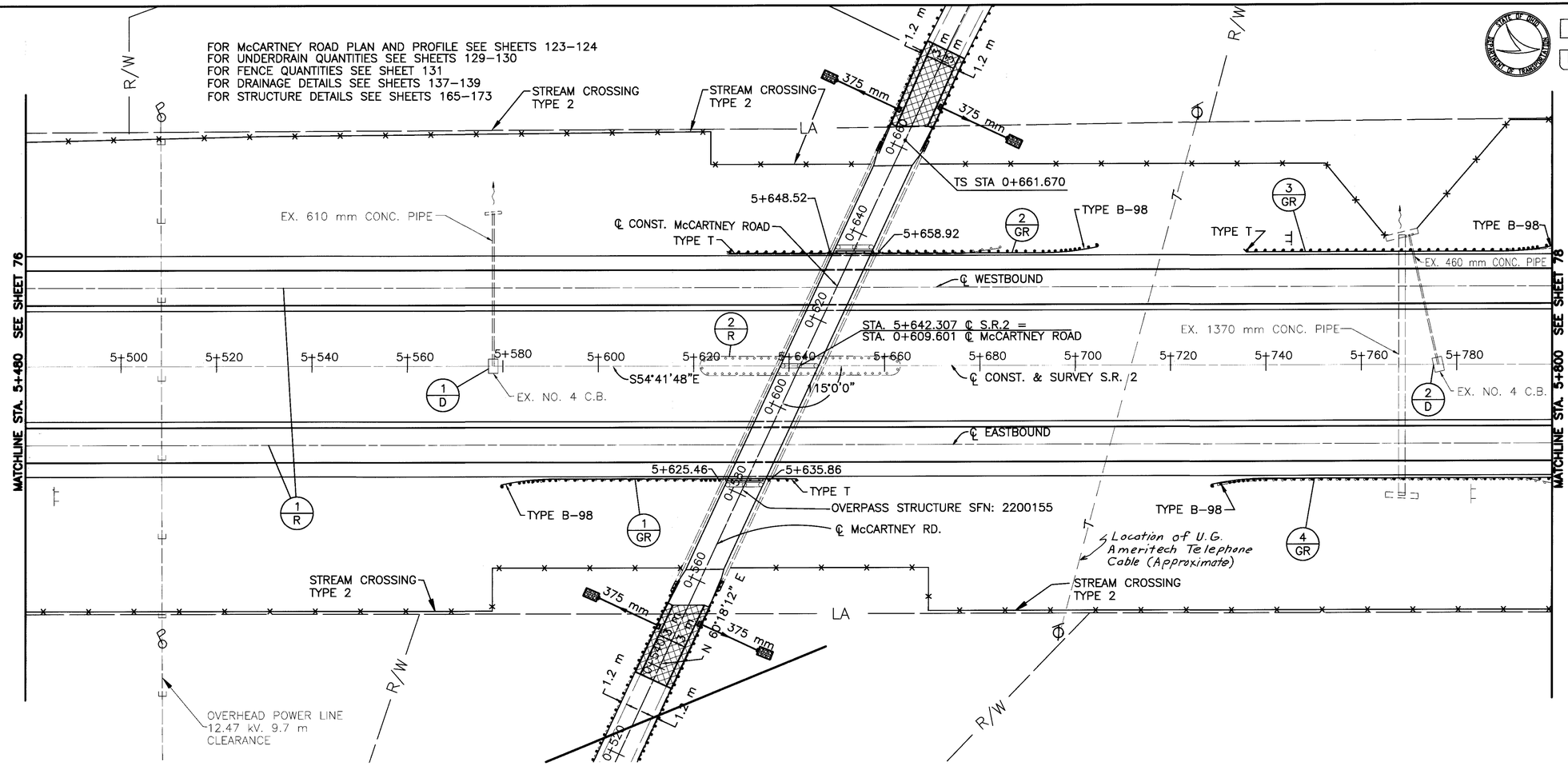
metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

PLAN SHEET – S.R. 2
STA. 5+160 TO STA. 5+480

ERI-2-2.866



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE (EACH)	202 GUARDRAIL REMOVED (METER)	604 CATCH BASIN RECONST. TO GRADE AS PER PLAN (EACH)	606 ANCHOR ASSEMBLY TYPE T (EACH)	606 GUARDRAIL TYPE 5 (METER)	606 TYPE B–98 ANCHOR ASSEMBLY (EACH)	606 BRIDGE TERMINAL ASSEMBLY TYPE 1 (EACH)	606 BRIDGE TERMINAL ASSEMBLY TYPE 2 (EACH)	622 CONCRETE BARRIER TYPE D (METER)	622 BARRIER REFLECTOR TYPE A (EACH)	622 BARRIER REFLECTOR TYPE B (EACH)
1–R	5+480.00 TO 5+800.00	RT&LT	28										
2–R		MED.		991									
1–D	5+578.00	MED.			1								
2–D	5+776.10	MED.			1								
1–GR	5+579.84 TO 5+641.57	RT.		53.35		1	40.005	1	1	1	7.84	3	1
2–GR	5+627.56 TO 5+704.56	LT.		57.15		1	55.245	1	1	1	7.84	3	1
3–GR	5+735.73 TO 5+800.00	LT.		65.30		1	49.53	1				3	
4–GR	5+735.73 TO 5+800.00	RT.		65.36		1	57.15	1				3	
Totals to General Summary			28	241.16		4	201.93	4	2	2	15.68	12	2

metric units

SCALE IN METERS 0 10 20 1:500

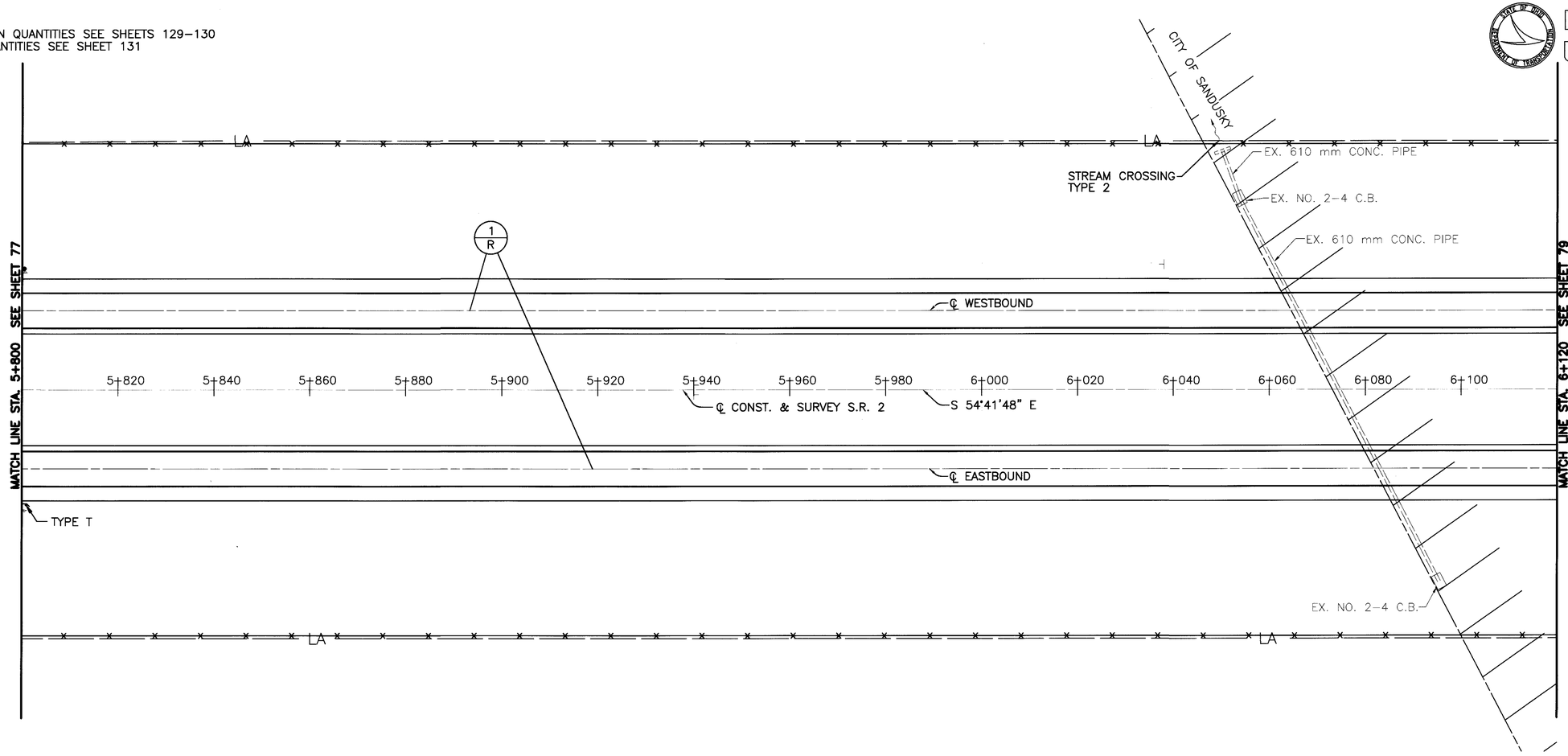
CALCULATED TCM CHECKED BMH

PLAN SHEET – S.R. 2
STA. 5+480 TO STA. 5+800

ERI-2-2.866

77 / 327

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE EACH
1–R	5+800.00 TO 6+120.00	RT&LT	26
Totals to General Summary			26

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

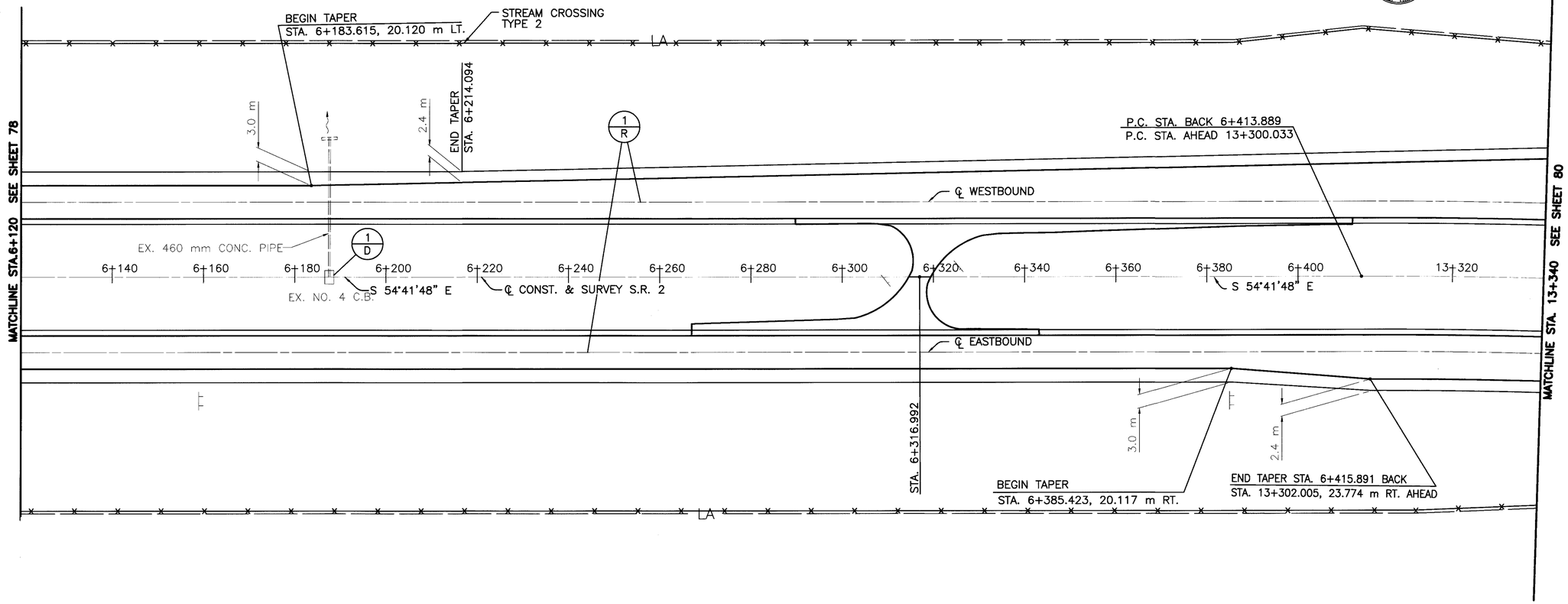
PLAN SHEET - S.R. 2
STA. 5+800 TO STA. 6+120

ERI-2-2.866

78
327

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131

metric units



ESTIMATED QUANTITIES

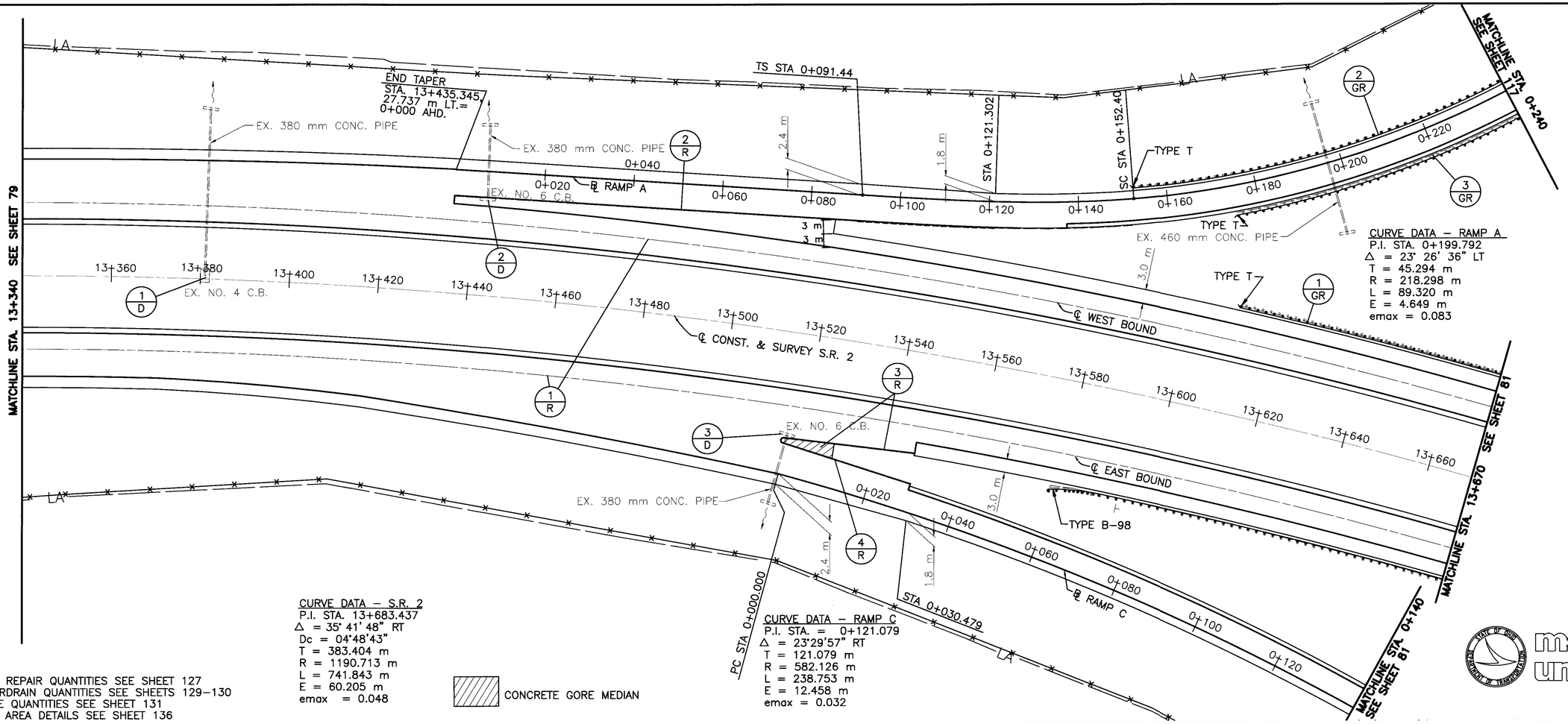
REF. NO.	STATION TO STATION	SIDE	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE (EACH)			604 CATCH BASIN RECONST. TO GRADE AS PER PLAN (EACH)									REF. NO.	STATION TO STATION	SIDE								
1–R	6+120.00 TO 13+340.00	RT&LT	28																					
1–D	6+187.60	MED.				1																		
Totals to General Summary			28			1									Totals to General Summary									

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

PLAN SHEET - S.R. 2
STA. 6+120 TO STA. 13+340

ER-2-2.866



FOR JOINT REPAIR QUANTITIES SEE SHEET 127
FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131
FOR GORE AREA DETAILS SEE SHEET 136

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 CONCRETE MEDIAN REMOVED	202 CURB REMOVED	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE	202 GUARDRAIL REMOVED	604 CATCH BASIN ADJUSTED TO GRADE	604 CATCH BASIN, NO. 4	606 GUARDRAIL TYPE 5	606 ANCHOR ASSEMBLY TYPE B–98	606 ANCHOR ASSEMBLY TYPE T	626 BARRIER REFLECTOR TYPE A
			SQ METER	METER	EACH	METER	EACH	EACH	METER	EACH	EACH	EACH
1–R	13+340.00 TO 13+670.00	RT&LT			28							
2–R	0+000.0 A TO 0+152.40 A	RT		153								
3–R	13+515.44 TO 13+546.53	RT	24	32								
4–R	0.000.0 C TO 0+030.48 C	LT		31								
1–D	13+381.01	MED.						1				
2–D	0+007.62 A	RT.					1					
3–D	13+515.91	RT.					1					
1–GR	13+610.84 TO 13+670.0	LT.				60.61			55.35		1	3
2–GR	0+152.40 A TO 0+240.0 A	LT.				86.43			83.79		1	4
3–GR	0+174.50 A TO 0+240.0 A	RT.				67.11			61.69		1	3
4–GR	13+577.19 TO 13+670.0	RT.				82.73			81.38	1		4
Totals to General Summary			24	216	28	296.88	2	1	282.21	1	3	14

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

PLAN SHEET – S.R. 2
STA. 13+340 TO STA. 13+670

ERI-2-2.866

80
327

FOR ESTIMATED QUANTITIES SEE SHEET 82
FOR JOINT REPAIR QUANTITIES SEE SHEET 127
FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131
FOR GORE AREA DETAILS SEE SHEET 136
FOR DRAINAGE DETAILS SEE SHEETS 137–139
FOR STRUCTURE DETAILS SEE SHEETS 178–208

CONCRETE GORE MEDIAN

PROFILE GRADE TRANSITION. FOR NOTE SEE SHEET 15.

A QUANTITY OF 752 CU. M. ITEM 203 – EMBANKMENT HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR BRIDGE ABUTMENT SLOPES

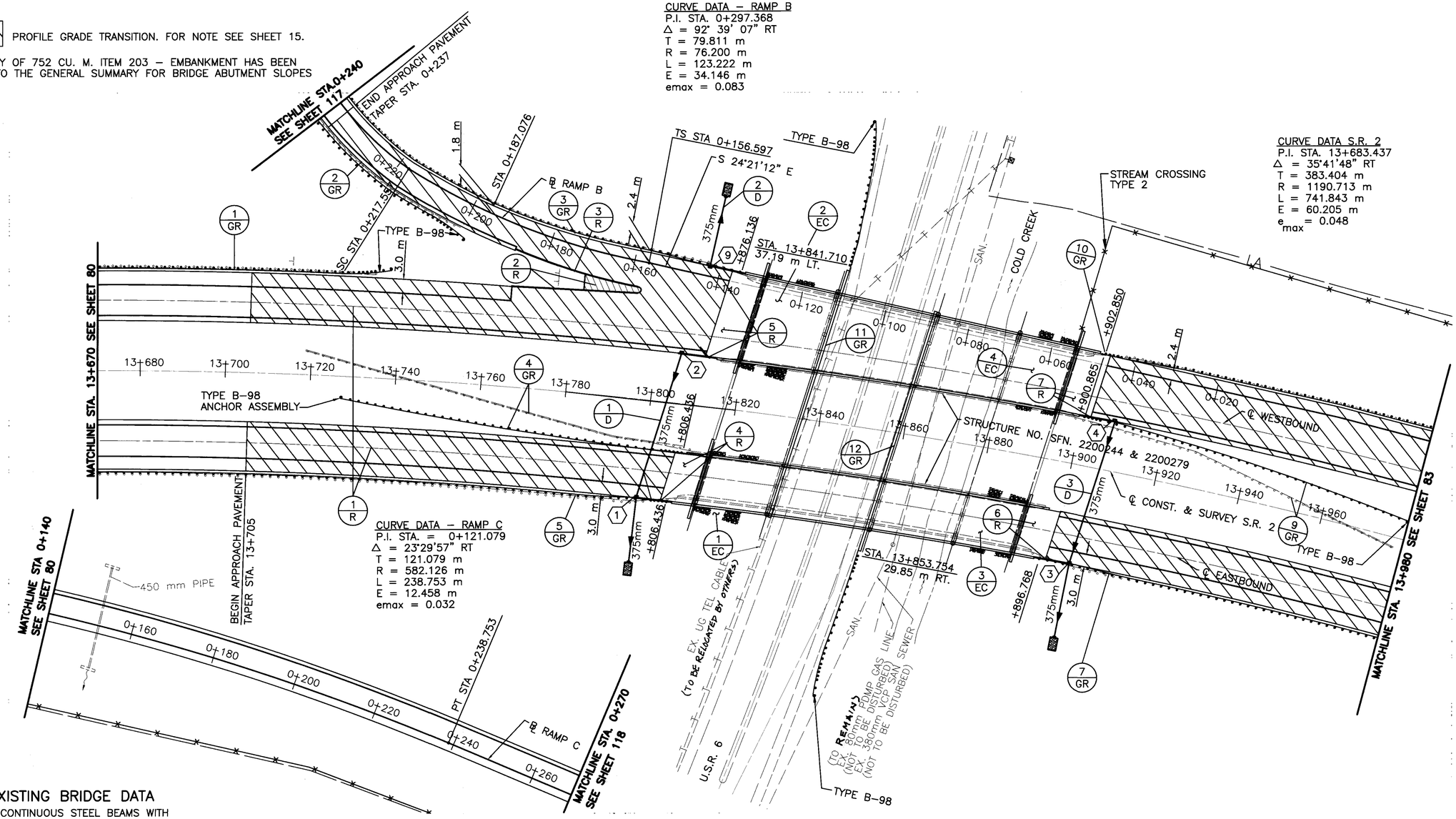
metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

CURVE DATA – RAMP B
P.I. STA. 0+297.368
Δ = 92° 39' 07" RT
T = 79.811 m
R = 76.200 m
L = 123.222 m
E = 34.146 m
emax = 0.083

CURVE DATA S.R. 2
P.I. STA. 13+683.437
Δ = 35°41'48" RT
T = 383.404 m
R = 1190.713 m
L = 741.843 m
E = 60.205 m
e_{max} = 0.048



CURVE DATA – RAMP C
P.I. STA. = 0+121.079
Δ = 23°29'57" RT
T = 121.079 m
R = 582.126 m
L = 238.753 m
E = 12.458 m
emax = 0.032

EXISTING BRIDGE DATA

TYPE: 4 SPAN CONTINUOUS STEEL BEAMS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 17 069 mm±, 24 384 mm±, 19 812 mm±, 13 716 mm±, C/C BEARINGS, LEFT & RIGHT BRIDGES
ROADWAY: VARIABLE – LEFT BRIDGE, 9144 mm F/F OF 686 mm SAFETY CURBS–RIGHT BRIDGE
LOADING: CF–400(57)
WEARING SURFACE: 25 mm± MONOLITHIC CONCRETE
ALIGNMENT: 1°–28'–0"± CURVE RIGHT, EXCEPT NORTH CURB OF LEFT BRIDGE WHICH IS PARALLEL TO EXIT RAMP
SKEW: 8°–36'–11"± L.F.
APPROACH SLABS: AS–1–54 (7620± mm LONG)
CROWN: ±0.0156
DATE BUILT: 1961
STRUCTURE FILE NUMBER: 2200244 (L) & 2200279 (R)

PROPOSED STRUCTURE MODIFICATION

TYPE: 4 SPAN CONTINUOUS STEEL BEAMS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 17 069 mm±, 24 384 mm±, 19 812 mm±, 13 716 mm± C/C BEARINGS, LEFT & RIGHT BRIDGES
ROADWAY: 11 400 TOE/TOE OF PARAPET RIGHT BRIDGE, VARIABLE LEFT BRIDGE
LOADING: MS18 & ALT. MILITARY LOADING
WEARING SURFACE: 25 mm MONOLITHIC CONCRETE
ALIGNMENT: 1°–28'–0"± CURVE RIGHT, EXCEPT NORTH CURB OF LEFT BRIDGE WHICH IS PARALLEL TO EXIT RAMP
SKEW: 8°–36'–11"± L.F.
APPROACH SLABS: AS–1–81M (7600 mm LONG)
SUPERELEVATION: 0.048 MAX.

BENCH MARK TOP OF IRON PIN BEING 27 METERS ± RIGHT OF CENTERLINE STATION 13+546 ± ELEV. = 179.749	BENCH MARK TOP OF IRON PIN BEING 0.4 METERS ± LEFT OF CENTERLINE STATION 13+813 ± ELEV. = 185.653
BENCH MARK TOP OF IRON PIN BEING 78 METERS ± LEFT OF CENTERLINE STATION 13+645 ± ELEV. = 182.054	BENCH MARK TOP OF IRON PIN BEING 57 METERS ± RIGHT OF CENTERLINE STATION 13+823 ± ELEV. = 178.783

PLAN SHEET – S.R. 2
STA. 13+670 TO STA. 13+980

ERI-2-2.866

81
327

wdgz: P:\3907\DWG\HWY\PLAN\plan and profile\ 3907RP14.dwg DEC 03, 1998 TIME: 12:22 PM

metric units

CALCULATED OAH
CHECKED TCM

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202					601		602	603			604	606				609	622	626	
			APPROACH SLAB REMOVED	CONC. MEDIAN REMOVED	CURB REMOVED	RAISED PAVEMENT MARKER REMOVED FOR STORAGE	GUARDRAIL REMOVED	CRUSHED AGGREGATE SLOPE PROTECT.	ROCK CHANNEL PROTECTION TYPE C W/FILTER	CONCRETE MASONRY	375 MM CONDUIT TYPE B	375 MM CONDUIT TYPE C, 706.02	375 MM CONDUIT TYPE F	CATCH BASIN NO. 6	GUARDRAIL TYPE 5	ANCHOR ASSEMBLY TYPE B-98	BRIDGE TERMINAL ASSEMBLY TYPE I	BRIDGE TERMINAL ASSEMBLY TYPE 2	CURB TYPE 6	CONCRETE BARRIER TYPE D	BARRIER REFLECTOR TYPE A	BARRIER REFLECTOR TYPE B
			SQ. METER	SQ. METER	METER	EACH	METER	SQ. METER	CU. METER	CU. METER	METER	METER	METER	EACH	METER	EACH	EACH	EACH	METER	METER	EACH	EACH
1-EC	13+812.00 TO 13+827.00	RT.						171														
2-EC	13+820.00 TO 13+835.00	LT.						275														
3-EC	13+880.00 TO 13+891.00	RT.							102.6													
4-EC	13+884.00 TO 13+897.00	LT.							81.0													
1-D	13+799.00 TO 13+806.00	RT.&LT.							3.4	0.22	36	24	15	2								
2-D	0+142.50 B	RT.							3.4	0.22			16.5	1								
3-D	13+904.00 TO 13+908.00	RT.&LT.							3.4	0.22	36	23	17	2								
1-GR	13+670.00 TO 13+734.29	LT.					65.28								58.95	1					3	
2-GR	0+198.77 B TO 0+240.00 B	LT.					42.21								29.80	1					2	
3-GR	0+133.48 B TO 0+240.00 B	RT.					105.00								106.52			1			3	4
4-GR	13+727.40 TO 13+810.79	RT.					93.80								71.338	1	1				3	4
5-GR	13+783.15 TO 13+808.52	RT.					136.30								133.885		1				4	4
7-GR	13+894.75 TO 13+980.00	RT.					83.96								85.86			1			3	
9-GR	13+899.13 TO 13+981.05	LT.					81.24								70.479	1	1				4	4
10-GR	13+900.85 TO 13+980.00	LT.					81.56								79.79		1				3	
11-GR	13+831.66 TO 13+842.55	RT.&LT.													24.765	1	1			60.69	2	4
12-GR	13+848.43 TO 13+862.46	RT.&LT.													24.765	1	1			58.76	2	4
1-R	13+670.00 TO 13+980.00	RT.&LT.				25																
2-R	13+764.94 TO 13+796.03	LT.		30	31.70																	
3-R	0+156.60B TO 0+187.08B	LT.			31.40																	
4-R	13+806.24 TO 13+813.84	RT.	55.77																6.5			
5-R	13+805.87 TO 13+819.97	LT.	130.77																13			
6-R	13+891.34 TO 13+904.97	RT.	55.77																6.5			
7-R	13+895.35 TO 13+908.77	LT.	88.21																6.5			
Totals to General Summary			331	30	63	25	689.35	446	194	0.7	72	47	49	5	686.152	6	6	2	20	120	29	24

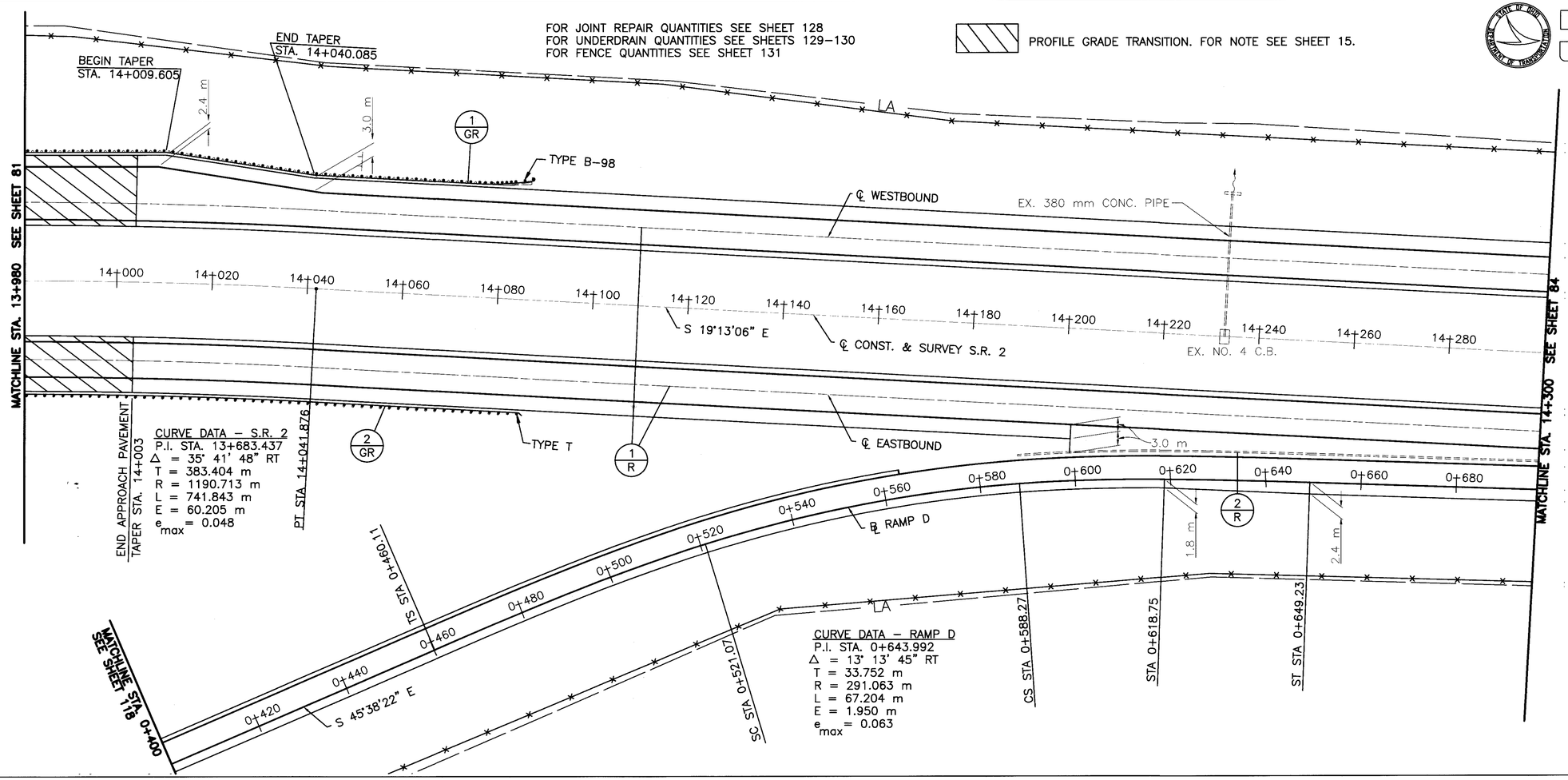
ESTIMATED QUANTITIES
STA. 13+670 TO STA. 13+980

ERI-2-2.866

FOR JOINT REPAIR QUANTITIES SEE SHEET 128
FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131

PROFILE GRADE TRANSITION. FOR NOTE SEE SHEET 15.

metric units



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 CURB REMOVED	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE	202 GUARDRAIL REMOVED	606 ANCHOR ASSEMBLY TYPE B-98	606 ANCHOR ASSEMBLY TYPE T	606 GUARDRAIL TYPE 5		626 BARRIER REFLECTOR TYPE A						REF. NO.	STATION TO STATION	SIDE								
			METER	EACH	METER	EACH	EACH	METER		EACH																
1–R	13+980.00 TO 14+300.00	RT&LT		26																						
2–R	0+588.27 D TO 0+697.00 D	LT.	109																							
1–GR	13+980.00 TO 14+086.13	LT.			99.43	1		97.375		3																
2–GR	13+980.00 TO 14+085.67	RT.			102.22		1	184.10		3																
Totals to General Summary			109	26	201.65	1	1	281.475		6						Totals to General Summary										

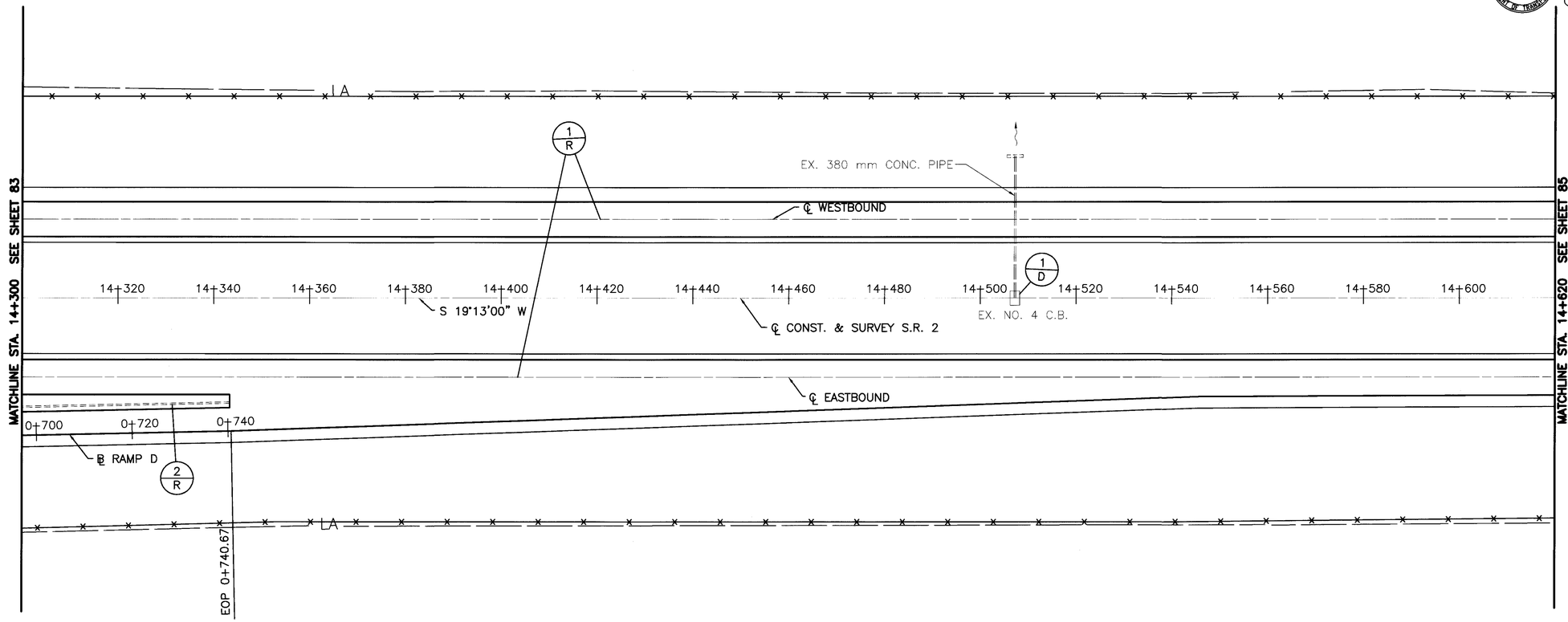
CALCULATED TCM
CHECKED BMH

SCALE IN METERS 0 10 20 1:500

PLAN SHEET – S.R. 2
STA. 13+980 TO STA. 14+300

ERI-2-2.866

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 CURB REMOVED	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE	202 CATCH BASIN, REMOVED	604 CATCH BASIN, NO. 4
			METER	EACH	EACH	EACH
1–R	14+300.00 TO 14+620.00	RT&LT		28		
2–R	0+697.000 TO 0+740.670	LT	43.7			
1–D	14+507.21	MED.			1	1
Subtotals			43.7			
Totals to General Summary			44	28	1	1

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

metric units

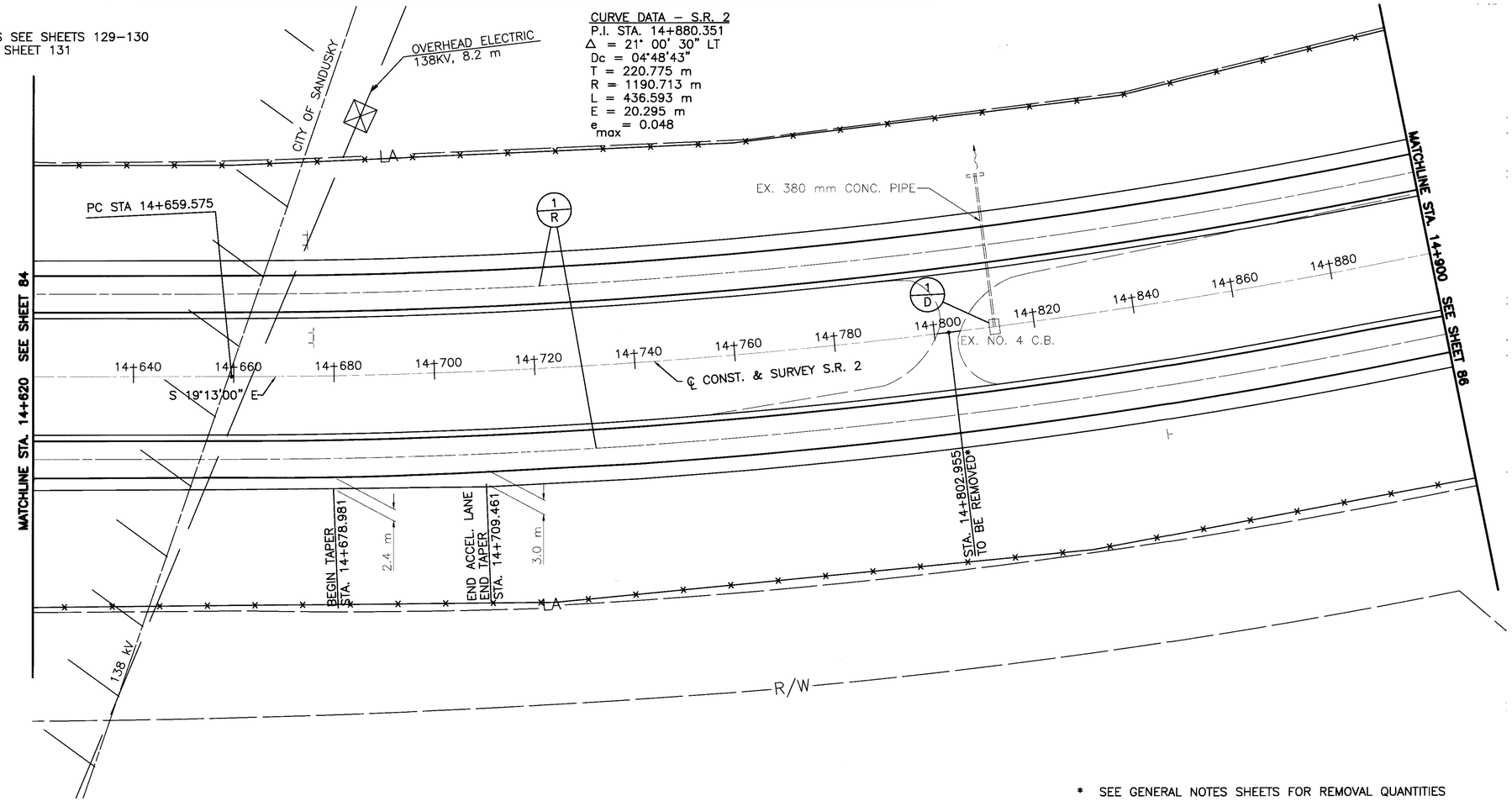
SCALE IN METERS 0 10 20 1:500

CALCULATED TCM
CHECKED BMH

PLAN SHEET – S.R. 2
STA. 14+300 TO STA. 14+620

ERI-2-2.866

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131



* SEE GENERAL NOTES SHEETS FOR REMOVAL QUANTITIES

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE	202 CATCH BASIN, REMOVED	604 CATCH BASIN, NO. 4
			EACH	EACH	EACH
1–R	14+620.00 TO 14+900.00	RT&LT	22		
1–D	14+812.11	MED.		1	1
Totals to General Summary			22	1	1

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM
CHECKED BMH

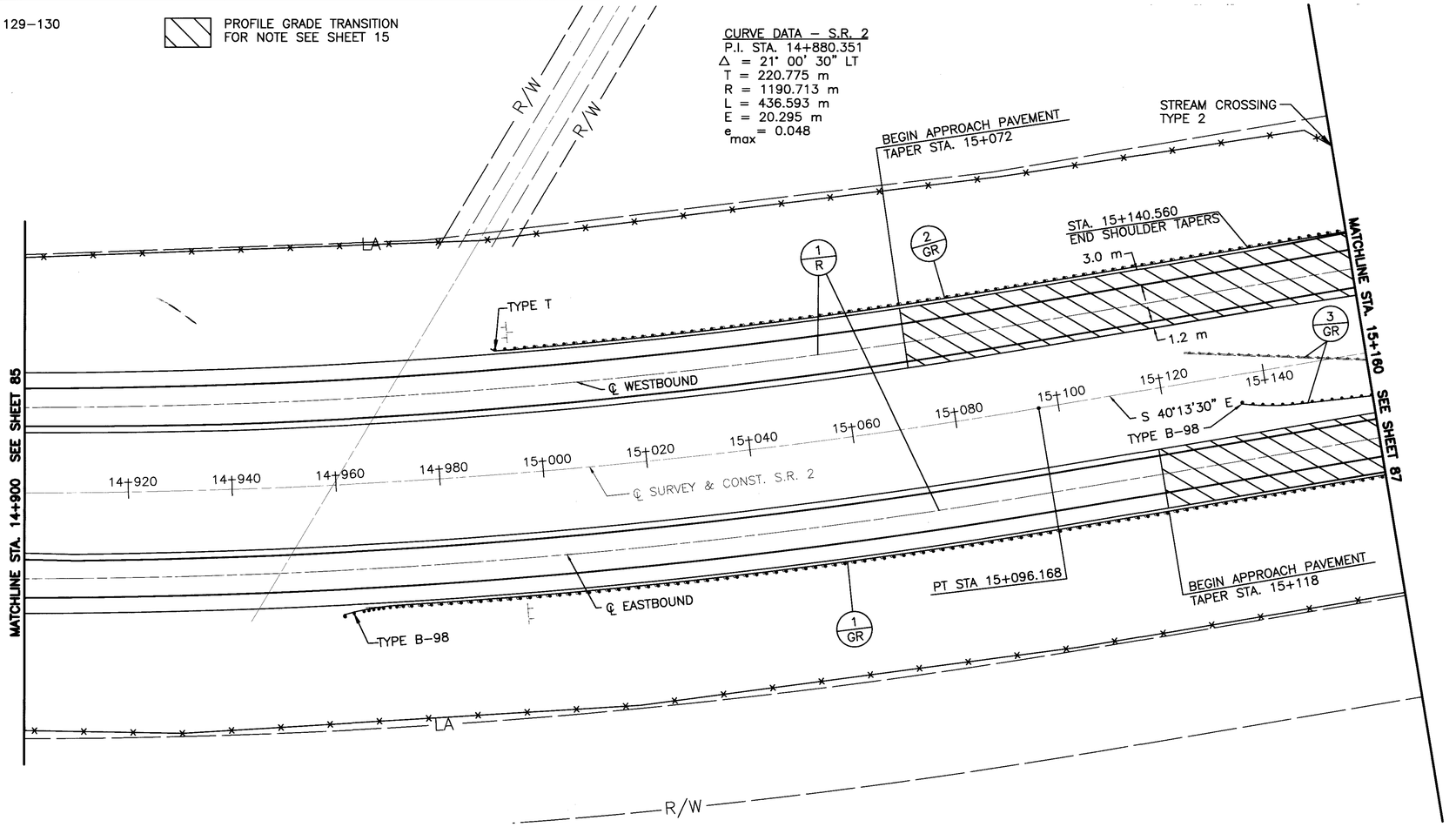
PLAN SHEET – S.R. 2
STA. 14+620 TO STA. 14+900

ERI-2-2.866

85
327

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131

PROFILE GRADE TRANSITION
FOR NOTE SEE SHEET 15



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 GUARDRAIL REMOVED (METER)	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE (EACH)	606 GUARDRAIL TYPE 5 (METER)	606 ANCHOR ASSEMBLY TYPE B–98 (EACH)	606 ANCHOR ASSEMBLY TYPE T (EACH)	626 BARRIER REFLECTOR TYPE A (EACH)
1–R	14+900.00 TO 15+160.00	RT&LT		22				
1–GR	14+960.52 TO 15+160.00	RT.	198.10		188.05	1		7
2–GR	14+992.34 TO 15+160.00	LT.	162.99		163.85		1	6
3–GR	15+134.95 TO 15+160.00	MED.	35.27		13.62	1		2
Totals to General Summary			396.36	22	365.52	2	1	15

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

metric units

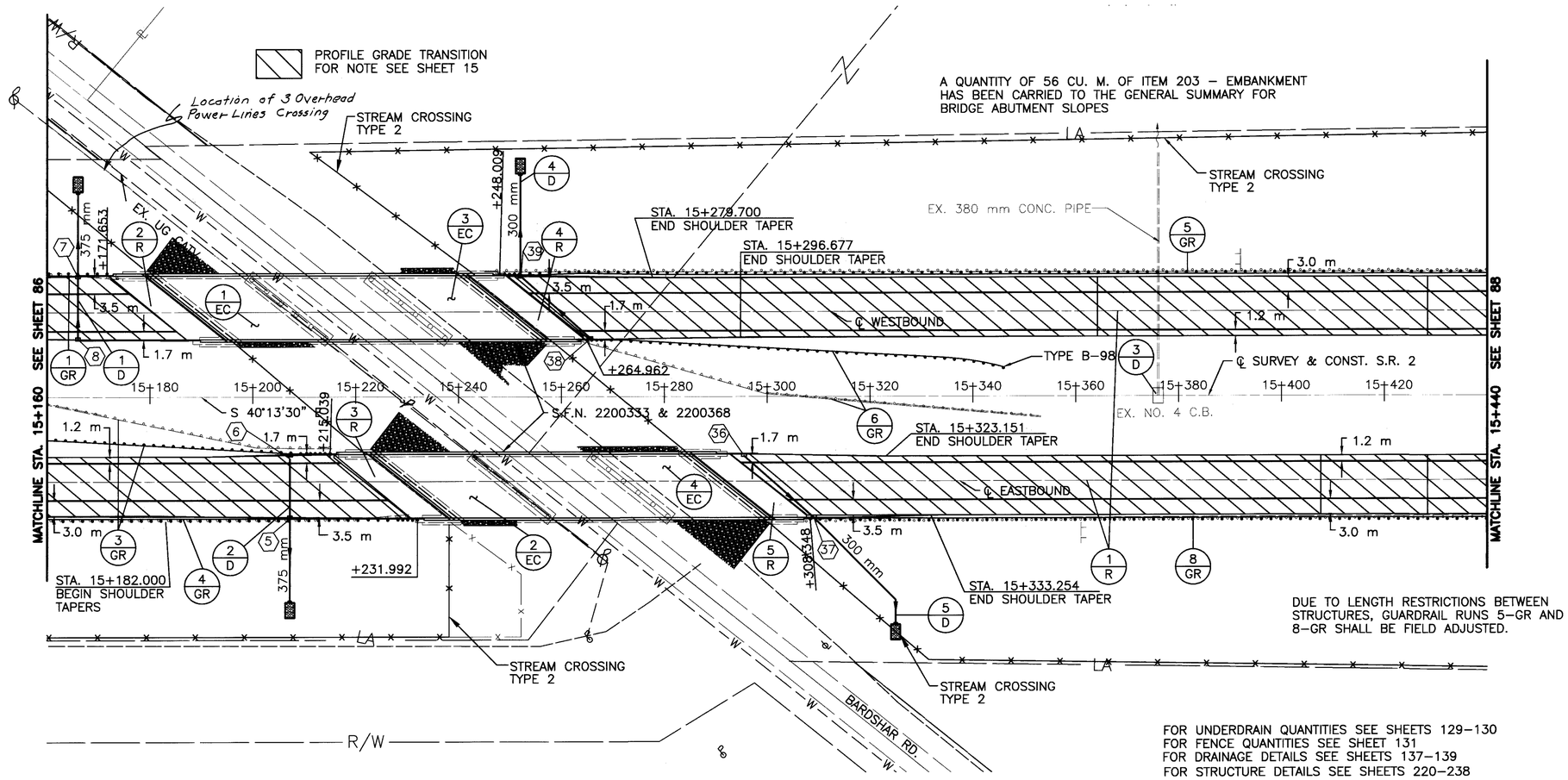
SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

PLAN SHEET – S.R. 2
STA. 14+900 TO STA. 15+160

ERI-2-2.866

86
327



FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131
FOR DRAINAGE DETAILS SEE SHEETS 137–139
FOR STRUCTURE DETAILS SEE SHEETS 220–238

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202			601		602	603				604		606				609	626	
			APPROACH SLAB REMOVED	GUARDRAIL REMOVED	RAISED PAVEMENT MARKER REMOVED FOR STORAGE	CRUSHED AGGREGATE SLOPE PROTECTION	ROCK CHANNEL PROTECTION TYPE C W/FILTER	CONCRETE MASONRY	300 mm CONDUIT TYPE B	300 mm CONDUIT TYPE F	375 mm CONDUIT TYPE B	375 mm CONDUIT TYPE F	CATCH BASIN RECONST. TO GRADE, AS PER PLAN	CATCH BASIN NO. 6	GUARDRAIL TYPE 5	ANCHOR ASSEMBLY TYPE B-98	BRIDGE TERMINAL ASSEMBLY TYPE 1	BRIDGE TERMINAL ASSEMBLY TYPE 2	CURB TYPE 6	BARRIER REFLECTOR TYPE A	BARRIER REFLECTOR TYPE B
			SQ. METER	METER	EACH	SQ. METER	CU. METER	CU. METER	METER	METER	METER	METER	EACH	EACH	METER	EACH	EACH	EACH	METER	EACH	EACH
1–R	15+160.00 TO 15+440.00	RT.&LT.			23																
2–R	15+180.50 TO 15+188.10	LT.	55.77																29		
3–R	15+221.70 TO 15+229.30	RT.	55.77																33		
4–R	15+250.70 TO 15+258.30	LT.	55.77																13		
5–R	15+291.90 TO 15+299.50	RT.	55.77																13		
1–D	15+166.01	LT.					3.4	0.22			12	16		2							
2–D	15+207.21	RT.					3.4	0.22			12	16		2							
3–D	15+376.00	MED.											1								
4–D	15+252.00 TO 15+265.50	LT.					3.4	0.22	18	20				2							
5–D	15+295.50 TO 15+325.00	RT.					3.4	0.22	18	27.1				2							
1–EC	15+181.00 TO 15+211.00	LT.				271															
2–EC	15+222.00 TO 15+248.00	RT.				271															
3–EC	15+229.00 TO 15+257.00	LT.				348															
4–EC	15+264.00 TO 15+300.00	RT.				348															
1–GR	15+160.00 TO 15+174.78	LT.		13.94											11.41			1		2	2
3–GR	15+160.00 TO 15+216.01	RT.		56.23											57.786		1			3	3
4–GR	15+160.00 TO 15+230.98	RT.		70.38											76.745		1			3	2
5–GR	15+246.06 TO 15+440.00	LT.		194.93											193.94		1			6	
6–GR	15+264.01 TO 15+345.70	LT.		92.51											70.485	1	1			4	
8–GR	15+306.52 TO 15+440.00	RT.		134.10											133.48			1		4	
Totals to General Summary			223	562.09	23	1238	14	0.9	36	48	24	32	1	8	543.846	1	4	2	88	22	7

EXISTING BRIDGE DATA

TYPE: 3 SPAN WELDED CONTINUOUS PLATE GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 21 336 mm±, 30 480 mm±, 21 336 mm± c/c BEARINGS
ROADWAY: 9144 mm± F/F OF 686 mm± SAFETY CURBS
LOADING: CF-400(57)
WEARING SURFACE: 25 mm± MONOLITHIC
ALIGNMENT: TANGENT
SKEW: 27° 02' 02"± L.F.
APPROACH SLABS: AS-1-54 (7620 mm± LONG)
CROWN: 0.016±
DATE BUILT: 1964
STRUCTURE FILE NUMBER: 2204053

PROPOSED STRUCTURE MODIFICATION

TYPE: 3 SPAN WELDED CONTINUOUS PLATE GIRDER WITH REINFORCED CONCRETE DECK, ON EXISTING SUBSTRUCTURE
SPANS: 21 336 mm±, 30 480 mm±, 21 336 mm± c/c BEARINGS
ROADWAY: 14 400 mm T/T OF PARAPET
LOADING: MS18 & ALT. MILITARY LOADING
WEARING SURFACE: 25 mm MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
SKEW: 27° 02' 02"± L.F.
APPROACH SLABS: AS-1-81M (7600 mm LONG)
CROWN: 0.016

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

PLAN SHEET - S.R. 2
STA. 15+160 TO STA. 15+440

ERI-2-2.866

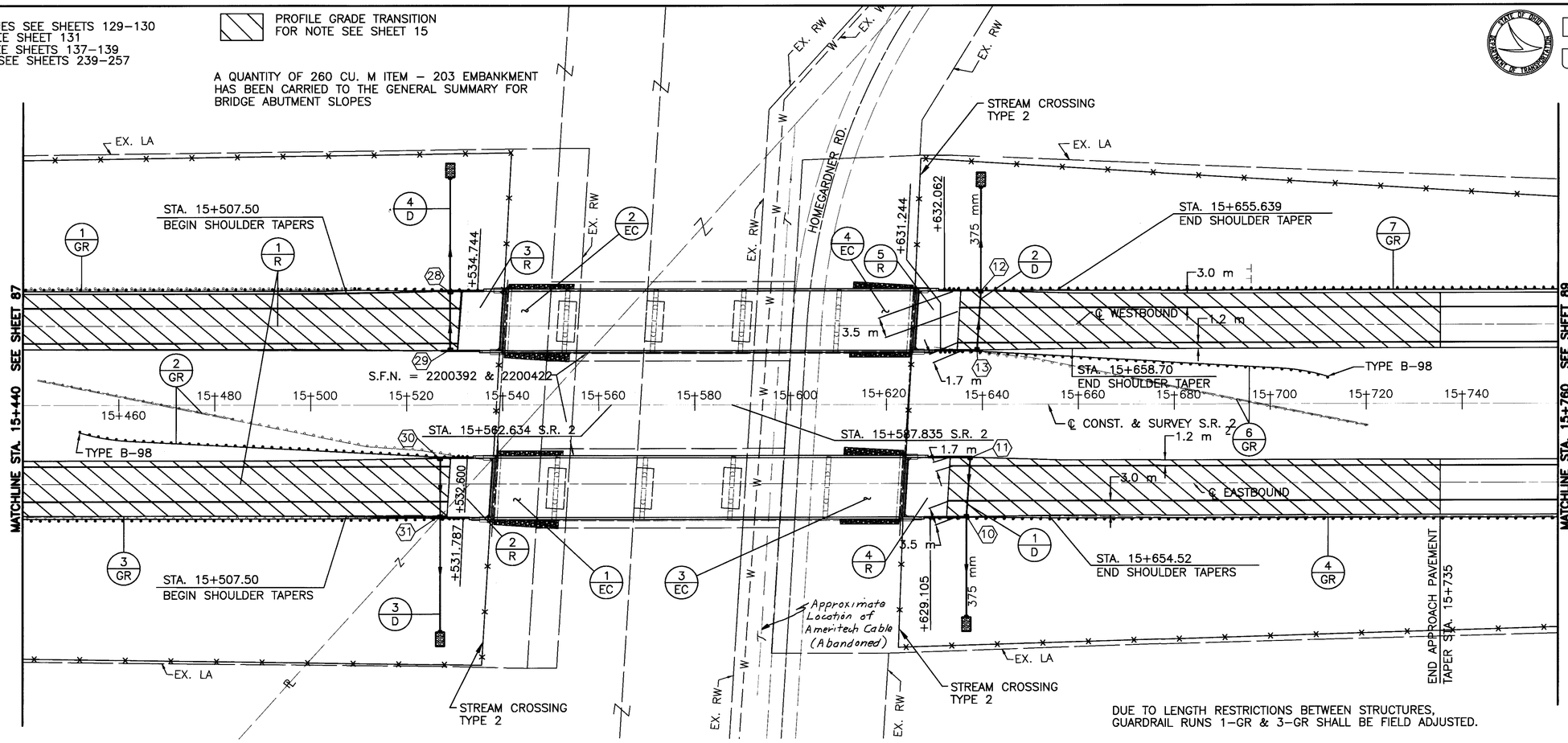
87
327

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131
FOR DRAINAGE DETAILS SEE SHEETS 137–139
FOR STRUCTURE DETAILS SEE SHEETS 239–257

PROFILE GRADE TRANSITION
FOR NOTE SEE SHEET 15

A QUANTITY OF 260 CU. M ITEM – 203 EMBANKMENT HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR BRIDGE ABUTMENT SLOPES

metric units



DUE TO LENGTH RESTRICTIONS BETWEEN STRUCTURES, GUARDRAIL RUNS 1–GR & 3–GR SHALL BE FIELD ADJUSTED.

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 APPROACH SLAB REMOVED		202 GUARDRAIL REMOVED	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE		601 CRUSHED AGGREGATE SLOPE PROTECTION	601 ROCK CHANNEL PROTECTION TYPE C W/FILTER	602 CONCRETE MASONRY	603 300 mm CONDUIT TYPE B	603 300 mm CONDUIT TYPE F	603 375 mm CONDUIT TYPE B	603 375 mm CONDUIT TYPE F	604 CATCH BASIN NO. 6		606 GUARDRAIL TYPE 5	606 ANCHOR ASSEMBLY TYPE B–98	606 BRIDGE TERMINAL ASSEMBLY TYPE 1	606 BRIDGE TERMINAL ASSEMBLY TYPE 2	609 CURB TYPE 6	626 BARRIER REFLECTOR TYPE A	626 BARRIER REFLECTOR TYPE B				
			SQ. METER		METER	EACH		SQ. METER	CU. METER	CU. METER	METER	METER	METER	METER	EACH		METER	EACH	EACH	EACH	METER	EACH	EACH				
1–R	15+440.00 TO 15+760.00	RT.&LT.				28																					
2–R	15+528.85 TO 15+536.45	RT.	55.77																		7.5						
3–R	15+530.92 TO 15+538.52	LT.	55.77																		7.5						
4–R	15+625.36 TO 15+632.96	RT.	55.77																		9.5						
5–R	15+627.41 TO 15+635.01	LT.	55.77																		9.5						
1–D	15+636.68 TO 15+637.45	RT.							3.4	0.22			11.5	21	2												
2–D	15+638.85 TO 15+639.62	LT.							3.4	0.22			11.5	22	2												
3–D	15+527.00	RT.							3.4	0.22	12	25			2												
4–D	15+529.00	LT.							3.4	0.22	12	24.1			2												
1–GR	15+440.00 TO 15+536.63	LT.			95.32												96.63			1		4	3				
2–GR	15+451.945 TO 15+533.87	RT.			91.64												71.465	1	1			4	3				
3–GR	15+440.00 TO 15+533.70	RT.			92.42												93.70		1			4	4				
4–GR	15+627.24 TO 15+760.00	RT.			132.28												132.76			1		5					
6–GR	15+629.99 TO 15+711.97	LT.			91.97												71.415	1	1			4	4				
7–GR	15+630.17 TO 15+760.00	LT.			129.21												129.83		1			5					
1–EC	15+539.00 TO 15+551.00	RT.						247																			
2–EC	15+540.00 TO 15+555.00	LT.						247																			
3–EC	15+608.00 TO 15+619.00	RT.						236																			
4–EC	15+610.00 TO 15+621.00	LT.						236																			
Totals to General Summary			223		632.84	28		966	14	0.9	24	50	23	43	8		595.77	2	4	2	34	26	14				

SCALE IN METERS 0 10 20 1:500

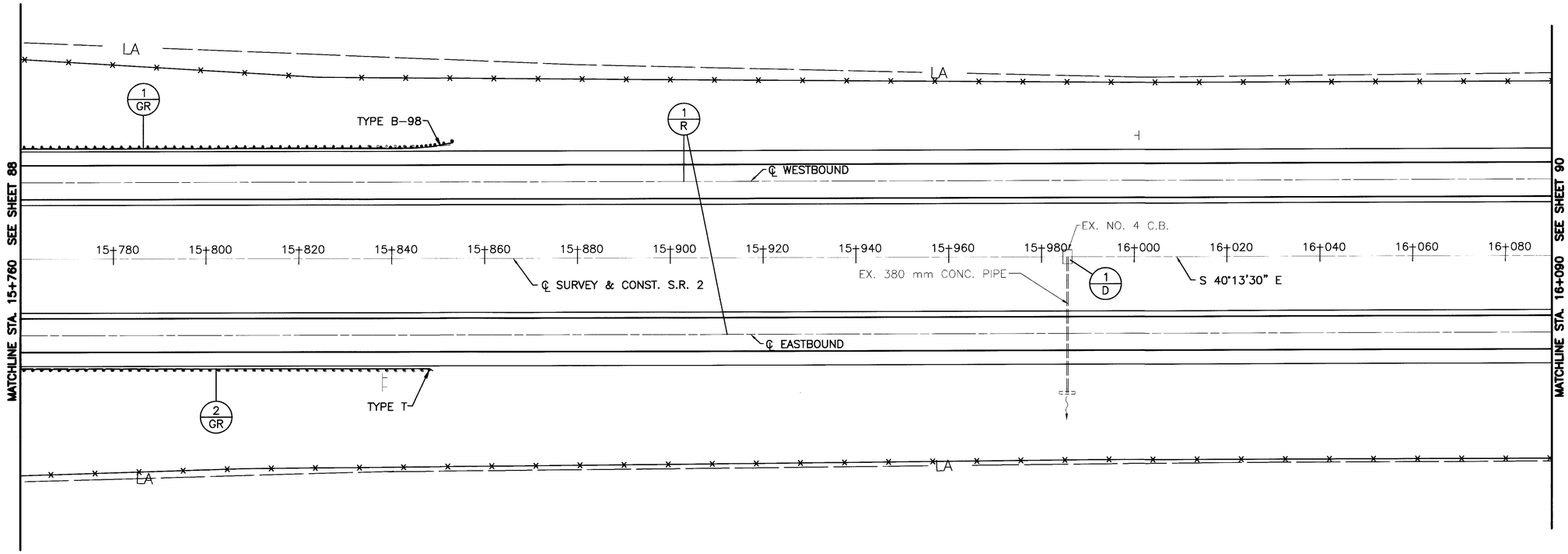
CALCULATED TCM CHECKED BMH

PLAN SHEET – S.R. 2
STA. 15+440 TO STA. 15+760

ERI-2-2.866

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131

metric units



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE EACH	202 CATCH BASIN, REMOVED EACH	202 GUARDRAIL REMOVED METER	604 CATCH BASIN, NO. 4 EACH		606 GUARDRAIL TYPE 5 METER	606 ANCHOR ASSEMBLY TYPE B–98 EACH	606 ANCHOR ASSEMBLY TYPE T EACH		626 BARRIER REFLECTOR TYPE A EACH			
1–R	15+760.00 TO 16+090.00	RT.&LT.	28												
1–D	15+985.62	MED.		1		1									
1–GR	15+760.00 TO 15+852.97	LT.			88.24			81.625	1			3			
2–GR	15+760.00 TO 15+848.22	RT.			84.60			84.41		1		3			
Totals to General Summary			28	1	172.84	1		166.035	1	1		6			

REF. NO.	STATION TO STATION	SIDE								
Totals to General Summary										

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

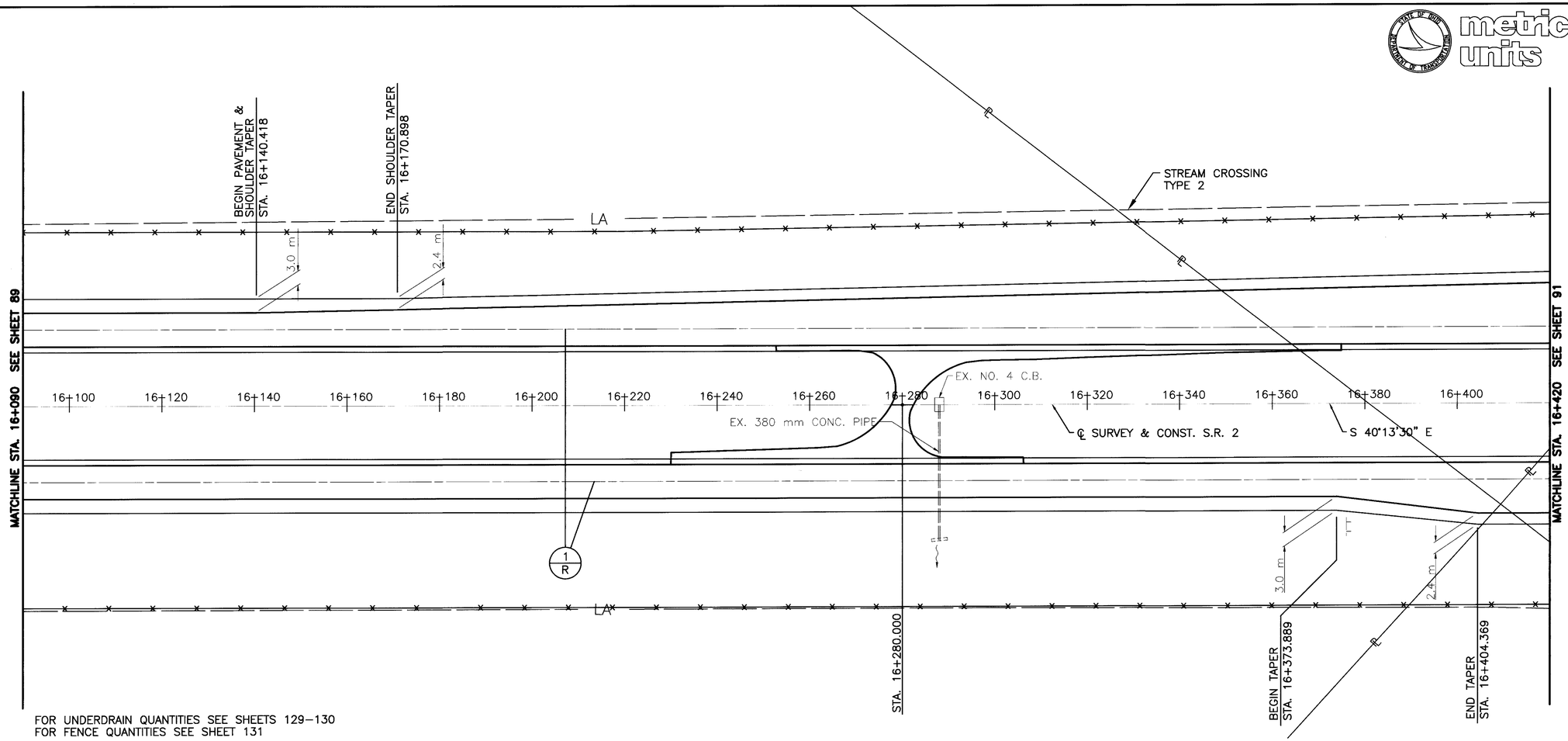
PLAN SHEET – S.R. 2
STA. 15+760 TO STA. 16+090

ERI-2-2.866

89
327

hoga3 \\1237fs01\projects\3907\DWG\HWY\PLAN\plan and profile\ 3907RP21.dwg NOV 12, 1998 TIME: 11:49 AM

metric units



FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE EACH
1–R	16+090.00 TO 16+420.00	RT.&LT.	26
Totals to General Summary			26

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

SCALE IN METERS 0 10 20 1:500

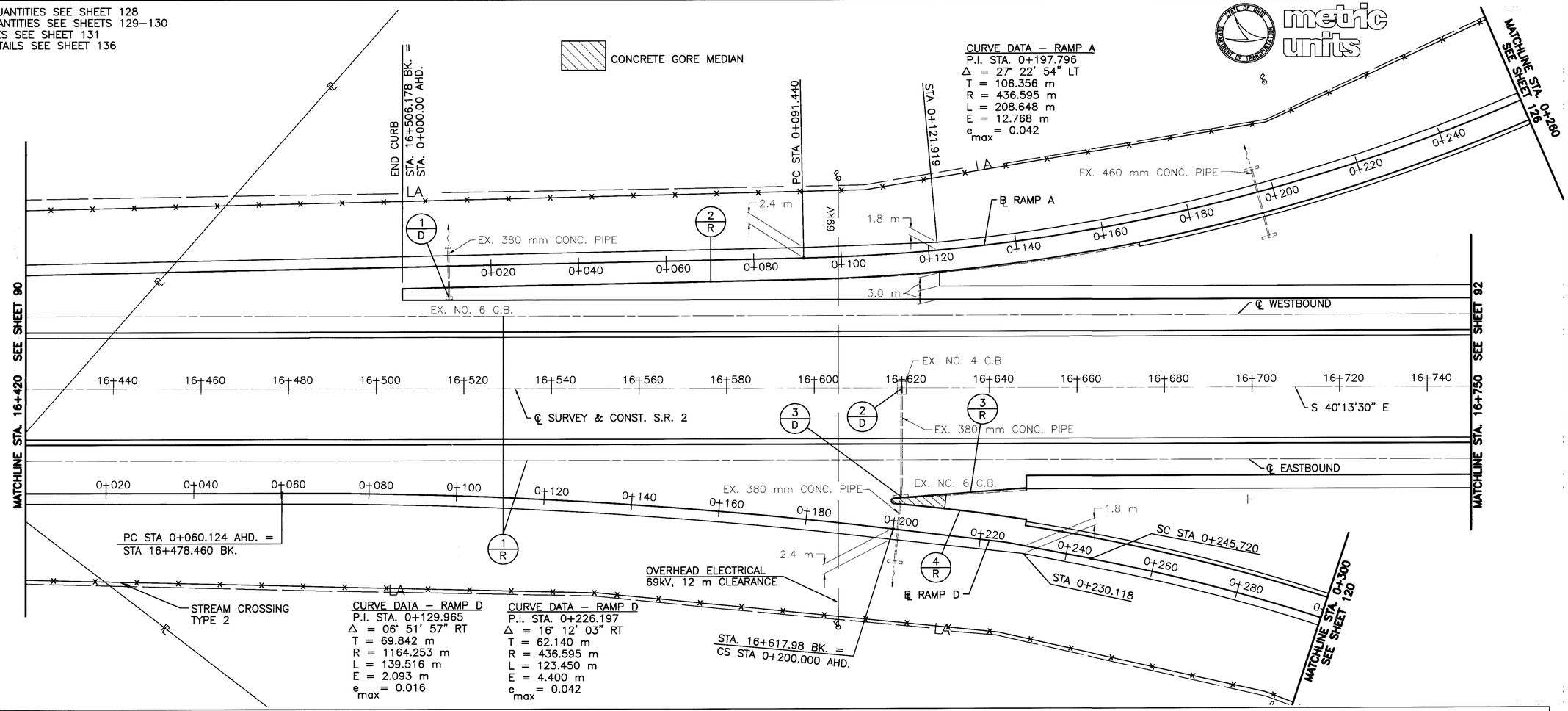
CALCULATED TCM CHECKED BMH

PLAN SHEET - S.R. 2
STA. 16+090 TO STA. 16+420

ER-2-2.866

90
327

FOR JOINT REPAIR QUANTITIES SEE SHEET 128
FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131
FORE GORE AREA DETAILS SEE SHEET 136



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 CONCRETE MEDIAN REMOVED (SQ. METER)	202 CURB REMOVED (METER)	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE (EACH)	604 CATCH BASIN ADJUSTED TO GRADE (EACH)	604 CATCH BASIN RECONST. TO GRADE, AS PER PLAN (EACH)
1–R	16+420.00 TO 16+750.00	RT.&LT.			28		
2–R	0+000.00A TO 0+167.64A	RT.		168.5			
3–R	16+617.98 TO 16+648.46	RT.	22	31.7			
4–R	0+200.00D TO 0+229.57D	LT.		30.5			
1–D	16+516.63	LT.				1	
2–D	16+620.06	MED.					1
3–D	16+620.06	RT.				1	
Totals to General Summary			22	231	28	2	1

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

PLAN SHEET – S.R. 2
STA. 16+420 TO STA. 16+750

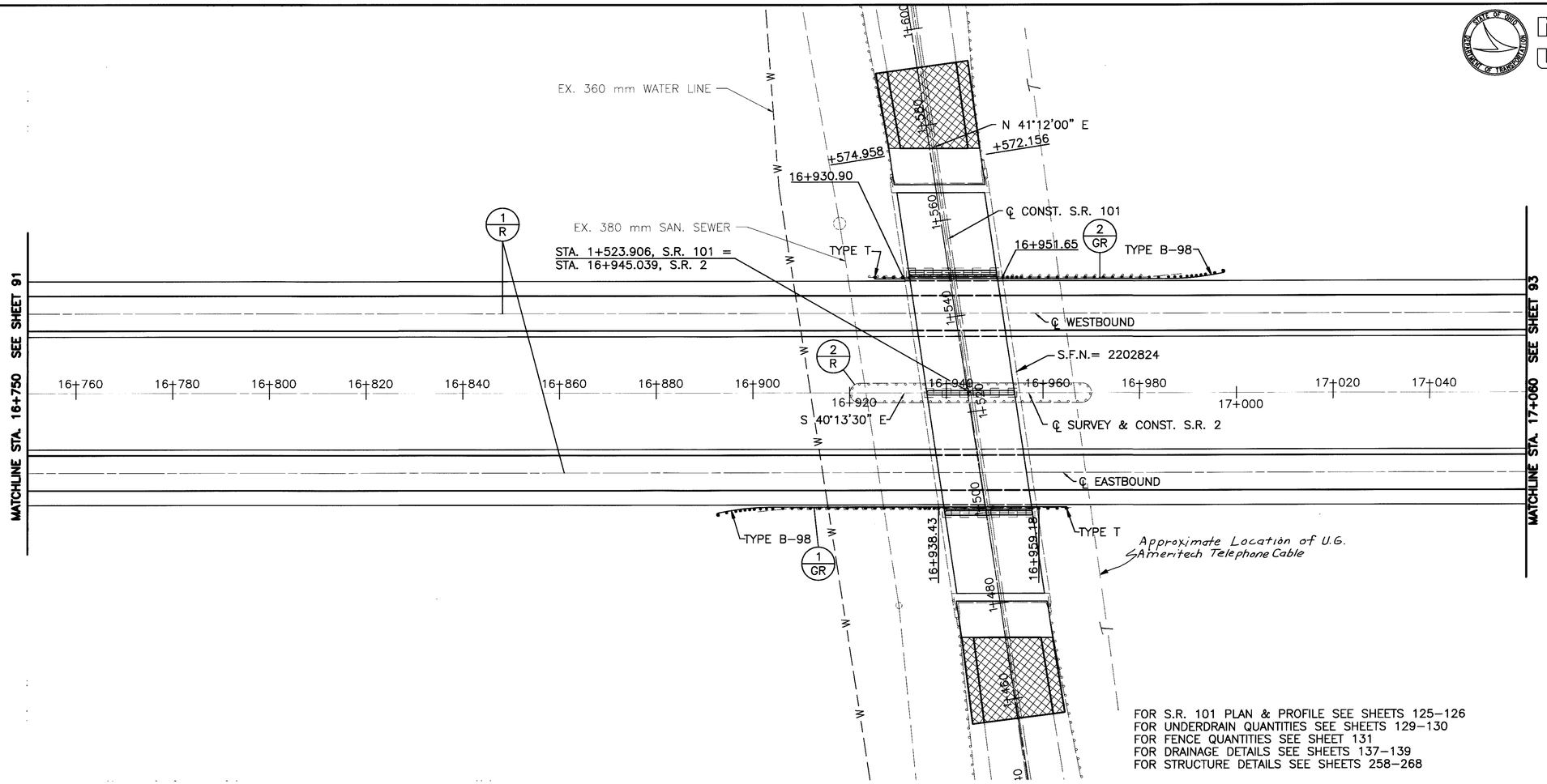
ERI-2-2.866

91
327

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

metric units



FOR S.R. 101 PLAN & PROFILE SEE SHEETS 125–126
FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131
FOR DRAINAGE DETAILS SEE SHEETS 137–139
FOR STRUCTURE DETAILS SEE SHEETS 258–268

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202			606					622					REF. NO.	STATION TO STATION	SIDE									
			RAISED PAVEMENT MARKER REMOVED FOR STORAGE	GUARDRAIL REMOVED FOR STORAGE		ANCHOR ASSEMBLY TYPE T	ANCHOR ASSEMBLY TYPE B-98	GUARDRAIL TYPE 5	BRIDGE TERMINAL ASSEMBLY TYPE 1	BRIDGE TERMINAL ASSEMBLY TYPE 2	CONCRETE BARRIER TYPE D	BARRIER REFLECTOR TYPE A	BARRIER REFLECTOR TYPE B													
			EACH	METER		EACH	EACH	METER	EACH	EACH	METER	EACH	EACH														
1–R	16+750.00 TO 17+060.00	RT.&LT.	26																								
2–R	16+920± TO 16+970±	MED.		121.95																							
1–GR	16+892.80 TO 16+964.89	RT.		64.77		1	1	40.005	1	1	18.19	3	1														
2–GR	16+925.19 TO 16+997.28	LT.		64.77		1	1	40.005	1	1	18.19	3	1														
Totals to General Summary			26	251.49		2	2	80.01	2	2	37	6	2			Totals to General Summary											

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

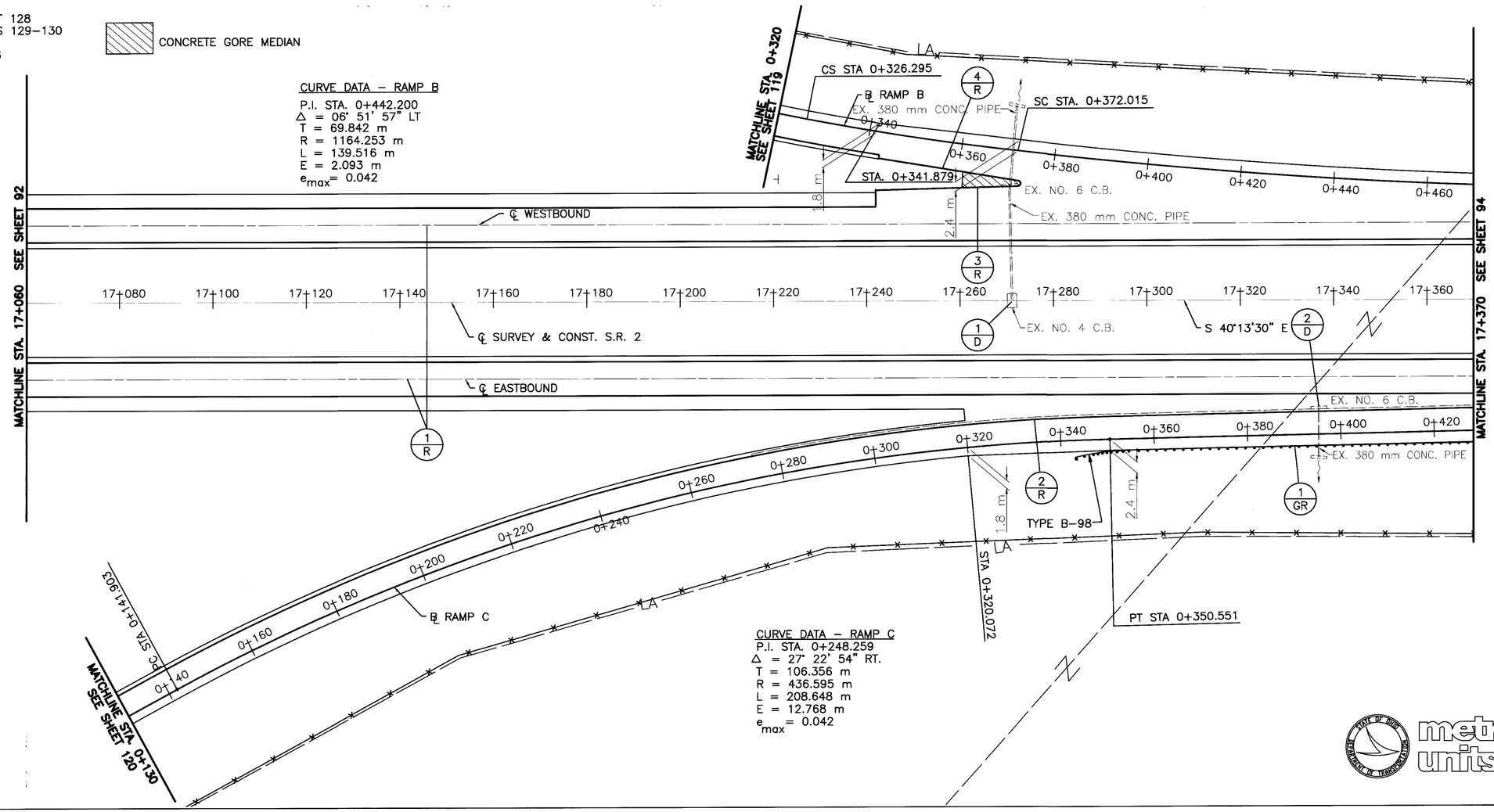
PLAN SHEET – S.R. 2
STA. 16+750 TO STA. 17+060

ERI-2-2.866

92 / 327

FOR JOINT REPAIR QUANTITIES SEE SHEET 128
FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131
FOR GORE AREA DETAILS SEE SHEET 136

CONCRETE GORE MEDIAN



CURVE DATA – RAMP C
P.I. STA. 0+248.259
Δ = 27° 22' 54" RT.
T = 106.356 m
R = 436.595 m
L = 208.648 m
E = 12.768 m
e max = 0.042

metric units

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 CONCRETE MEDIAN REMOVED SQ. METER	202 CURB REMOVED METER	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE EACH	604 CATCH BASIN REMOVED EACH	604 CATCH BASIN ADJUSTED TO GRADE EACH	604 CATCH BASIN, NO. 4 EACH	606 GUARDRAIL TYPE 5 METER	606 ANCHOR ASSEMBLY TYPE B–98 EACH	626 BARRIER REFLECTOR TYPE A EACH
1–R	17+060.00 TO 17+370.00	RT.&LT.			26						
2–R	0+274.32C TO 0+428.50C	LT.		155.5							
3–R	17+241.90 TO 17+272.38	LT.	25	31.7							
4–R	0+342.75B TO 0+372.01B	RT.		31.4							
1–D	17+271.13	MED.				1	1	1			
2–D	17+336.86	RT.					1				
1–GR	17+284.900 TO 17+370.000	RT.							73.67	1	3
Totals to General Summary			25	219	26	1	2	1	73.67	1	3

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

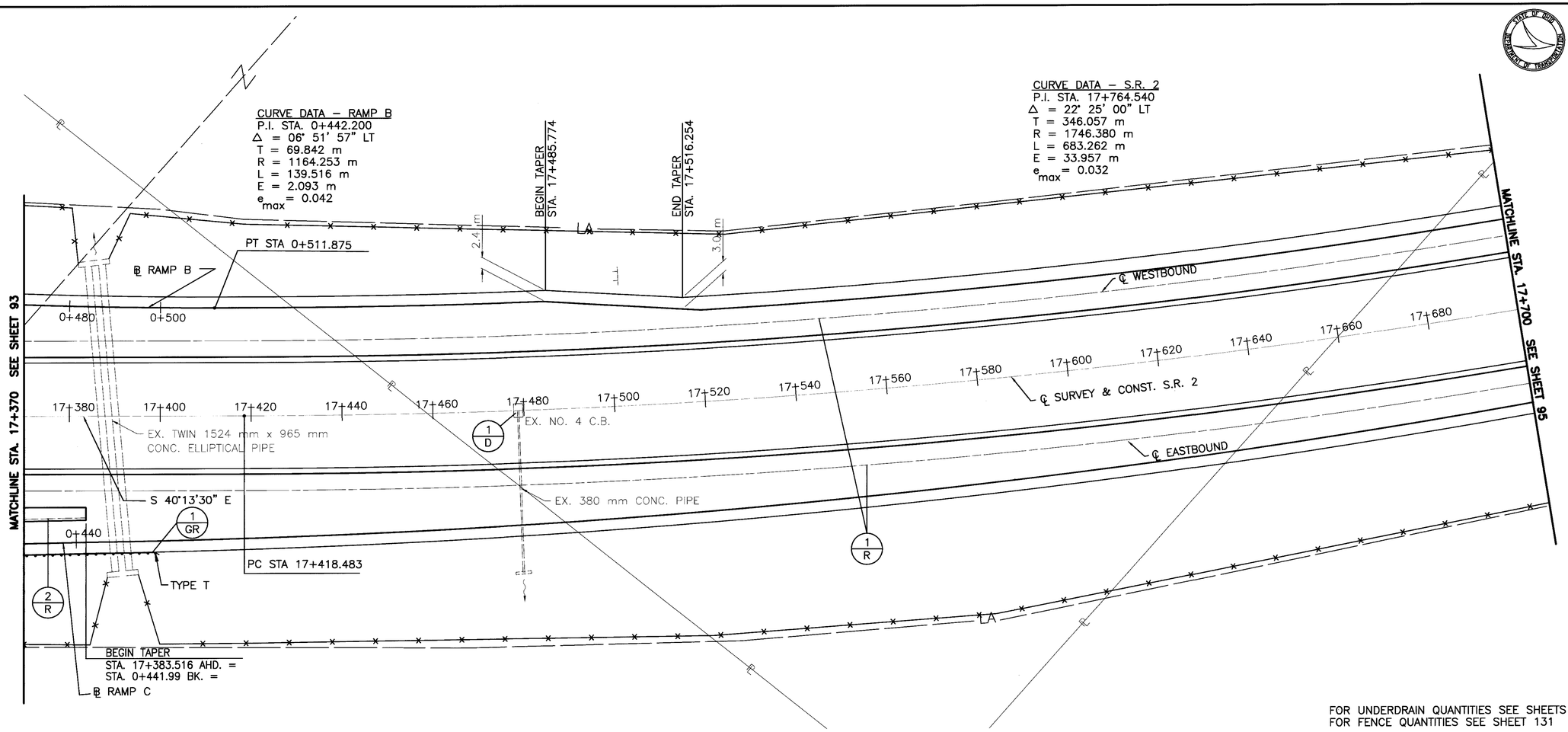
PLAN SHEET – S.R. 2
STA. 17+060 TO STA. 17+370

ERI-2-2.866

93
327

CALCULATED TCM
CHECKED BMH

SCALE IN METERS 0 10 20 1:500



FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 CURB REMOVED (METER)	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE (EACH)	202 CATCH BASIN REMOVED (EACH)	604 CATCH BASIN NO. 4 (EACH)	606 GUARDRAIL TYPE 5 (METER)	606 ANCHOR ASSEMBLY TYPE T (EACH)	626 BARRIER REFLECTOR TYPE A (EACH)
1–R	17+370.00 TO 17+700.00	RT.&LT.		28					
2–R	0+428.50C TO 0+441.99C	LT.	14						
1–D	17+479.52	MED.			1	1			
1–GR	17+370.000 TO 17+399.060	RT.					25.25	1	1
Totals to General Summary			14	28	1	1	25.25	1	1

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

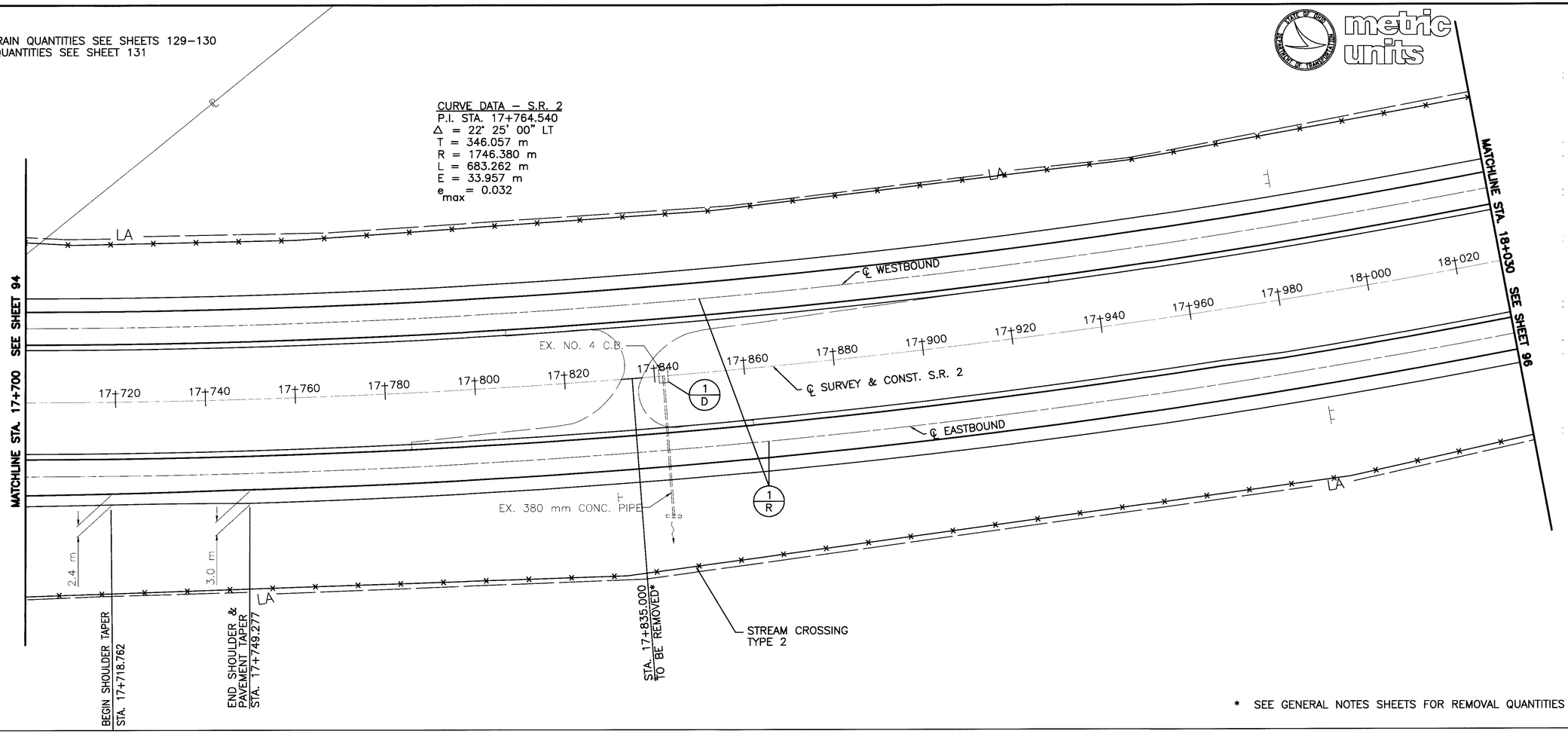
PLAN SHEET – S.R. 2
STA. 17+370 TO STA. 17+700

ERI-2-2.866

94
327

shtoz P:\3907\DWG\HWY\PLAN\plan and profile\ 3907P26.dwg NOV 12, 1998 TIME: 4:56 PM

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131



* SEE GENERAL NOTES SHEETS FOR REMOVAL QUANTITIES

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE	202 CATCH BASIN REMOVED	604 CATCH BASIN, NO. 4
			EACH	EACH	EACH
1–R	17+700.00 TO 18+030.00	RT.&LT.	27		
1–D	17+842.00	MED		1	1
Totals to General Summary			27	1	1

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

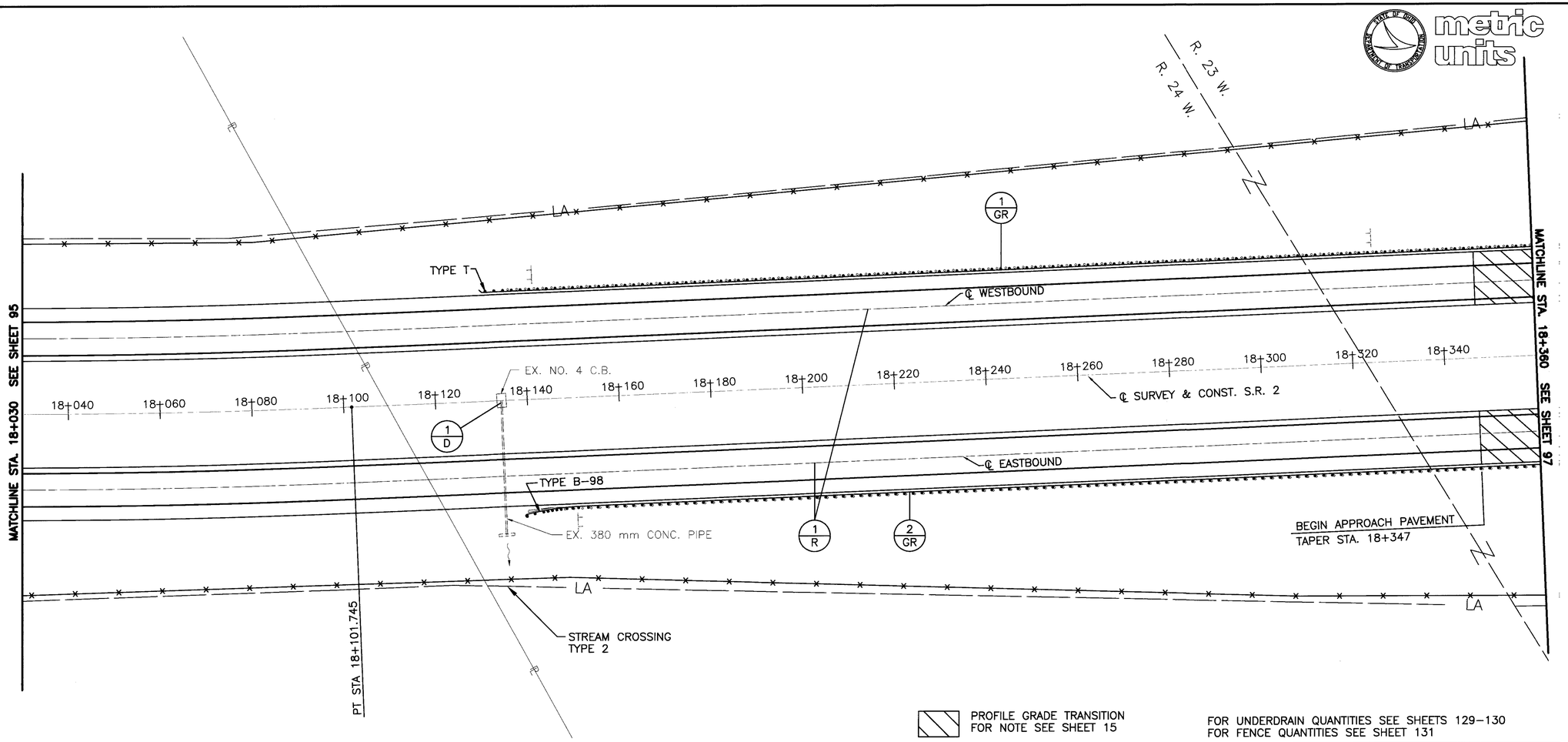
metric units

SCALE IN METERS 0 10 20 1-500

CALCULATED TCM CHECKED BMH

PLAN SHEET – S.R. 2
STA. 17+700 TO STA. 18+030

ERI-2-2.866



PROFILE GRADE TRANSITION
FOR NOTE SEE SHEET 15

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE (EACH)	202 GUARDRAIL REMOVED (METER)	604 CATCH BASIN RECONST. TO GRADE, AS PER PLAN (EACH)		606 GUARDRAIL TYPE 5 (METER)	606 ANCHOR ASSEMBLY TYPE B-98 (EACH)	606 ANCHOR ASSEMBLY TYPE T (EACH)		626 BARRIER REFLECTOR TYPE A (EACH)					REF. NO.	STATION TO STATION	SIDE								
1–R	18+030.00 TO 18+360.00	RT.&LT.	27																						
1–D	18+134.38	MED.			1																				
1–GR	18+131.01 TO 18+360.00	LT.		225.61			225.18		1		8														
2–GR	18+138.93 TO 18+360.00	RT.		220.74			209.64	1			8														
Totals to General Summary			27	446.35	1		434.82	1	1		16					Totals to General Summary									

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM
CHECKED BMH

PLAN SHEET - S.R. 2
STA. 18+030 TO STA. 18+360

ERI-2-2.866

96
327

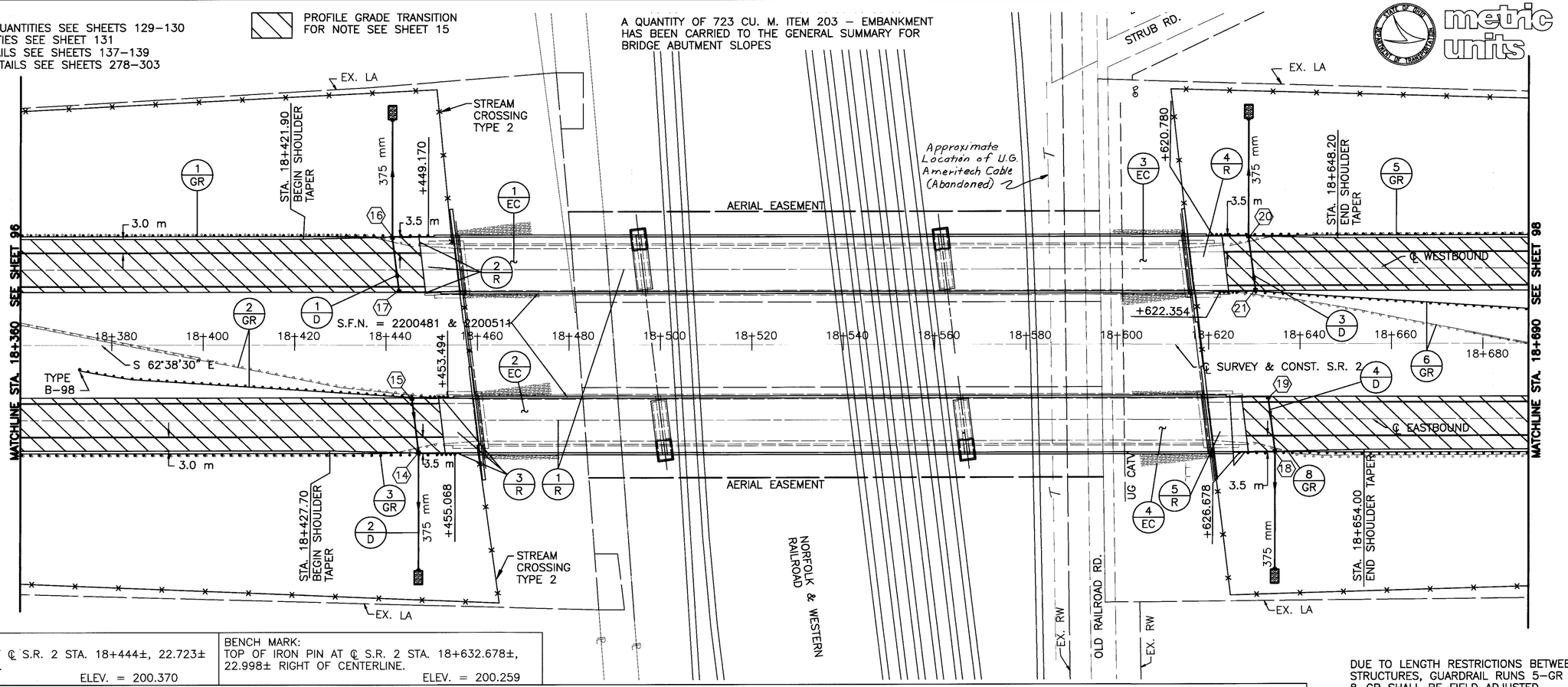
FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131
FOR DRAINAGE DETAILS SEE SHEETS 137–139
FOR STRUCTURE DETAILS SEE SHEETS 278–303

PROFILE GRADE TRANSITION
FOR NOTE SEE SHEET 15

A QUANTITY OF 723 CU. M. ITEM 203 – EMBANKMENT HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR BRIDGE ABUTMENT SLOPES

STATE OF IOWA DEPARTMENT OF TRANSPORTATION

metric units



BENCH MARK:
TOP OF IRON PIN AT ℄ S.R. 2 STA. 18+444±, 22.723± LEFT OF CENTERLINE.
ELEV. = 200.370

BENCH MARK:
TOP OF IRON PIN AT ℄ S.R. 2 STA. 18+632.678±, 22.998± RIGHT OF CENTERLINE.
ELEV. = 200.259

DUE TO LENGTH RESTRICTIONS BETWEEN STRUCTURES, GUARDRAIL RUNS 5–GR AND 8–GR SHALL BE FIELD ADJUSTED.

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 APPROACH SLAB REMOVED	202 GUARDRAIL REMOVED	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE	601 CRUSHED AGGREGATE SLOPE PROTECTION	601 ROCK CHANNEL PROTECTION TYPE C W/FILTER	602 CONCRETE MASONRY	603 375 mm CONDUIT TYPE B	603 375 mm CONDUIT TYPE F	604 CATCH BASIN NO. 6	606 GUARDRAIL TYPE 5	606 ANCHOR ASSEMBLY TYPE B–98	606 BRIDGE TERMINAL ASSEMBLY TYPE 1	606 BRIDGE TERMINAL ASSEMBLY TYPE 2	609 CURB TYPE 6	626 BARRIER REFLECTOR TYPE A	626 BARRIER REFLECTOR TYPE B
			SQ. METER	METER	EACH	SQ. METER	CU. METER	CU. METER	METER	METER	EACH	METER	EACH	EACH	EACH	METER	EACH	EACH
1–R	18+360.00 TO 18+690.00	RT.&LT.			28													
2–R	18+448.03 TO 18+455.63	LT.	55.77													13		
3–R	18+452.08 TO 18+459.68	RT.	55.77													13		
4–R	18+616.17 TO 18+623.77	LT.	55.77													13		
5–R	18+620.22 TO 18+627.82	RT.	55.77													13		
1–D	18+441.76 TO 18+443.22	LT.					3.4	0.22	11.4	25.5	2							
2–D	18+446.06 TO 18+447.53	RT.					3.4	0.22	11.4	25.5	2							
3–D	18+628.33 TO 18+629.79	LT.					3.4	0.22	11.4	25.5	2							
4–D	18+632.63 TO 18+634.09	RT.					3.4	0.22	11.4	25.5	2							
1–GR	18+360.00 TO 18+451.05	LT.		86.29								91.05			1		3	5
2–GR	18+372.90 TO 18+454.86	RT.		91.65								71.323	1	1			5	5
3–GR	18+360.00 TO 18+456.97	RT.		91.50								96.97		1			3	6
5–GR	18+619.53 TO 18+690.00	LT.		65.67								71.11		1			3	
6–GR	18+620.99 TO 18+690.00	LT.		65.40								69.65		1			4	5
8–GR	18+625.41 TO 18+690.00	RT.		60.66								65.20			1		3	
1–EC	18+457.00 TO 18+472.00	LT.				272												
2–EC	18+461.00 TO 18+477.00	RT.				277												
3–EC	18+598.00 TO 18+615.00	LT.				252												
4–EC	18+602.00 TO 18+619.00	RT.				252												
Totals to General Summary			223	461.17	28	1058	14	0.9	46	102	8	465.303	1	4	2	52	21	21

EXISTING BRIDGE DATA

TYPE: 3 SPAN CONTINUOUS WELDED STEEL GIRDERS WITH REINFORCED CONCRETE DECK ON REINFORCED CONCRETE SUPERSTRUCTURES
SPANS: 39 624 mm±, 66 141 mm±, 53 035 mm± c/c BEARINGS
ROADWAY: 9144 mm± F/F OF 686 mm± SAFETY CURBS
LOADING: CF 400 (57)
WEARING SURFACE: 25 mm± MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
SKEW: 7° 00± RT. FWD.
APPROACH SLABS: AS–1–54 (7620 mm± LONG)
CROWN: 0.0156±
DATE BUILT: 1961
STRUCTURE FILE NUMBER: 2200481 & 2200511

PROPOSED STRUCTURE

TYPE: 3 SPAN CONTINUOUS PAINTED PLATE GIRDER (A36M–250 MPa) WITH COMPOSITE REINFORCED CONCRETE DECK, SUPPORTED ON WIDENED EXISTING PIERS AND REHABILITATED STUB ABUTMENTS.
SPANS: 39 624 mm±, 66 141 mm±, 53 035 mm± c/c BEARINGS
ROADWAY: 11 900 mm T/T OF PARAPET
LOADING: MS18 & ALT. MILITARY LOADING (CASE I)
WEARING SURFACE: 25 mm MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
SKEW: 7° 00' ± RT. FWD.
APPROACH SLABS: AS–1–81M (7600 mm LONG)
CROWN: 0.016

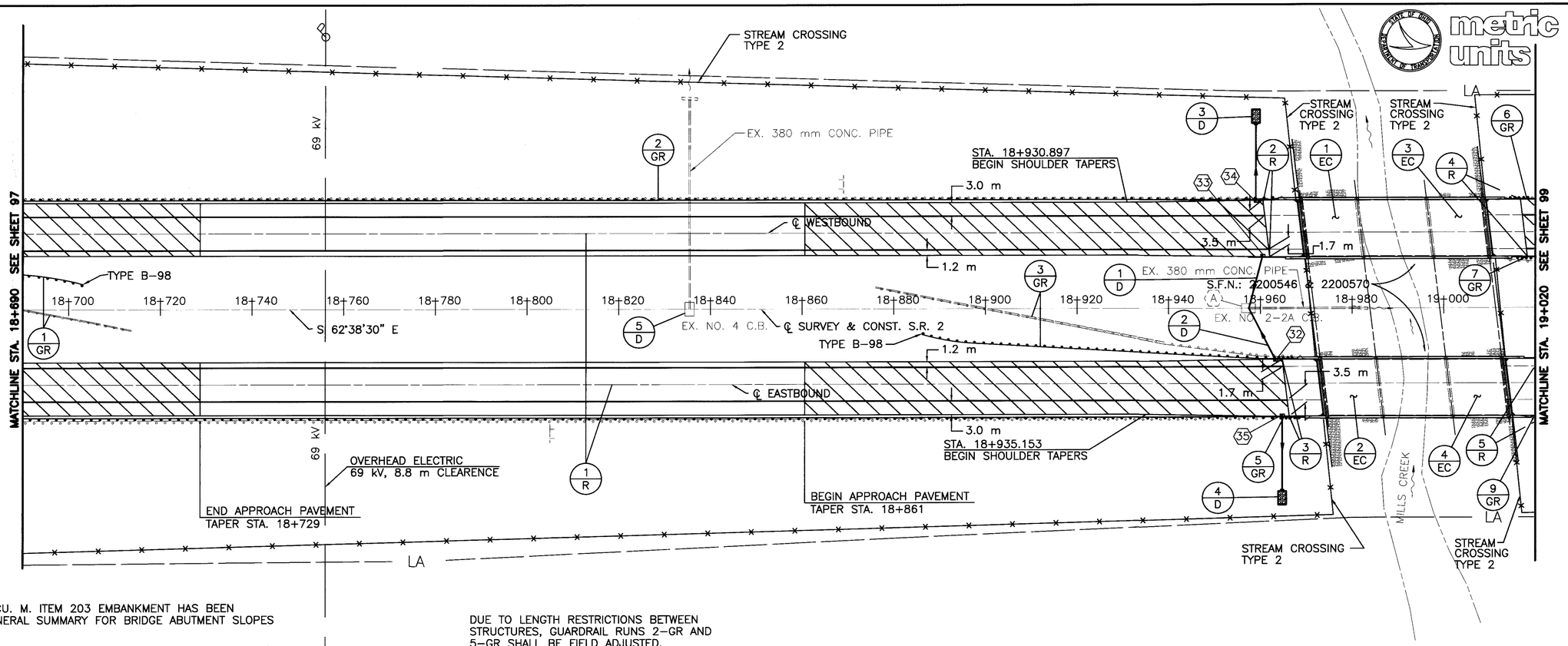
N

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM
CHECKED BMH

PLAN SHEET – S.R. 2
STA. 18+360 TO STA. 18+690

ERI–2–2.866



A QUANTITY OF 83 CU. M. ITEM 203 EMBANKMENT HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR BRIDGE ABUTMENT SLOPES

DUE TO LENGTH RESTRICTIONS BETWEEN STRUCTURES, GUARDRAIL RUNS 2-GR AND 5-GR SHALL BE FIELD ADJUSTED.

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129-130
FOR FENCE QUANTITIES SEE SHEET 131
FOR DRAINAGE DETAILS SEE SHEETS 137-139
FOR STRUCTURE DETAILS SEE SHEETS 304-321

PROFILE GRADE TRANSITION
FOR NOTE SEE SHEET 15

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 APPROACH SLAB REMOVED	202 GUARDRAIL REMOVED	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE	606 GUARDRAIL TYPE 5	606 ANCHOR ASSEMBLY TYPE B-98	606 BRIDGE TERMINAL ASSEMBLY TYPE 1	606 BRIDGE TERMINAL ASSEMBLY TYPE 2	609 CURB TYPE 6	626 BARRIER REFLECTOR TYPE A	626 BARRIER REFLECTOR TYPE B
			SQ. METER	METER	EACH	METER	EACH	EACH	EACH	METER	EACH	EACH
1-R	18+690.00 TO 19+020.00	RT.&LT.			26							
2-R	18+961.39 TO 18+968.99	LT.	55.77							9.3		
3-R	18+965.43 TO 18+973.03	RT.	55.77							9.3		
4-R	19+010.00 TO 19+017.60	LT.	55.77							13		
5-R	19+014.04 TO 19+021.64	RT.	55.77							13		
1-GR	18+690.00 TO 18+702.70	LT.		24.5		1.27	1				1	
2-GR	18+690.00 TO 18+963.89	LT.		275.12		274.50			1		9	2
3-GR	18+886.40 TO 18+968.11	RT.		94.57		71.33	1	1			3	2
5-GR	18+690.00 TO 18+969.77	RT.		280.62		280.41		1			9	2
6-GR	19+013.33 TO 19+020.00	LT.		8.75		7.31		1			1	
7-GR	19+014.85 TO 19+020.00	LT.		6.79		5.79		1			1	
9-GR	19+019.11 TO 19+020.00	RT.		3		1.50					1	
Totals to General Summary			223	693.35	26	642.11	2	4	1	45	25	6

REF. NO.	STATION TO STATION	SIDE	601 ROCK CHANNEL PROTECTION TYPE C W/ FILTER	602 CONCRETE MASONRY	603 300 mm CONDUIT TYPE F	604 CATCH BASIN NO. 6	604 CATCH BASIN RECONST. TO GRADE, AS PER PLAN
			CU. METER	CU. METER	METER	EACH	EACH
1-EC	18+969.00 TO 18+981.00	LT.	135.3				
2-EC	18+973.00 TO 18+986.00	RT.	155.1				
3-EC	18+997.00 TO 19+010.00	LT.	110.7				
4-EC	19+004.00 TO 19+015.00	RT.	108.0				
1-D	18+957.5 TO 18+960.50	LT.			12	1	
2-D	18+957.5 TO 18+963.50	RT.			12.5	1	
3-D	18+959.00	LT.	3.4	0.22	17	1	
4-D	18+964.78	RT.	3.4	0.22	16.5	1	
5-D	18+836	MED.					1
Totals to General Summary			516	0.5	58	4	1

EXISTING BRIDGE DATA

TYPE: 3 SPAN CONTINUOUS STEEL BEAMS WITH REINFORCED CONCRETE DECK ON REINFORCED CONCRETE SUBSTRUCTURE.
SPANS: 12 192 mm±, 15 240 mm±, 12 192 mm± c/c BEARINGS
ROADWAY: 12 088 mm± T/T OF 355 mm± 12 SAFETY CURBS
LOADING: CF 400 (57)
WEARING SURFACE: 25 mm± MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
SKEW: 7°-00'-00"± R.F.
APPROACH SLABS: AS-1-54 (7620 mm± LONG)
CROWN: 0.0156±
DATE BUILT: 1961
STRUCTURE FILE NUMBER: 2200546 & 2200570

PROPOSED STRUCTURE MODIFICATION

TYPE: 3 SPAN CONTINUOUS STEEL BEAMS WITH REINFORCED CONCRETE DECK ON REINFORCED CONCRETE SUBSTRUCTURES.
SPANS: 12 192 mm±, 15 240 mm±, 12 192 mm±
ROADWAY: 12 400 mm T/T OF PARAPETS
LOADING: MS18 & ALT. MILITARY LOADING
WEARING SURFACE:
ALIGNMENT: TANGENT 25 mm MONOLITHIC CONCRETE
SKEW: 7°-00'-00"± R.F.
APPROACH SLABS: AS-1-81M (7600 mm LONG)
CROWN: 0.016

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED JH CHECKED BMH

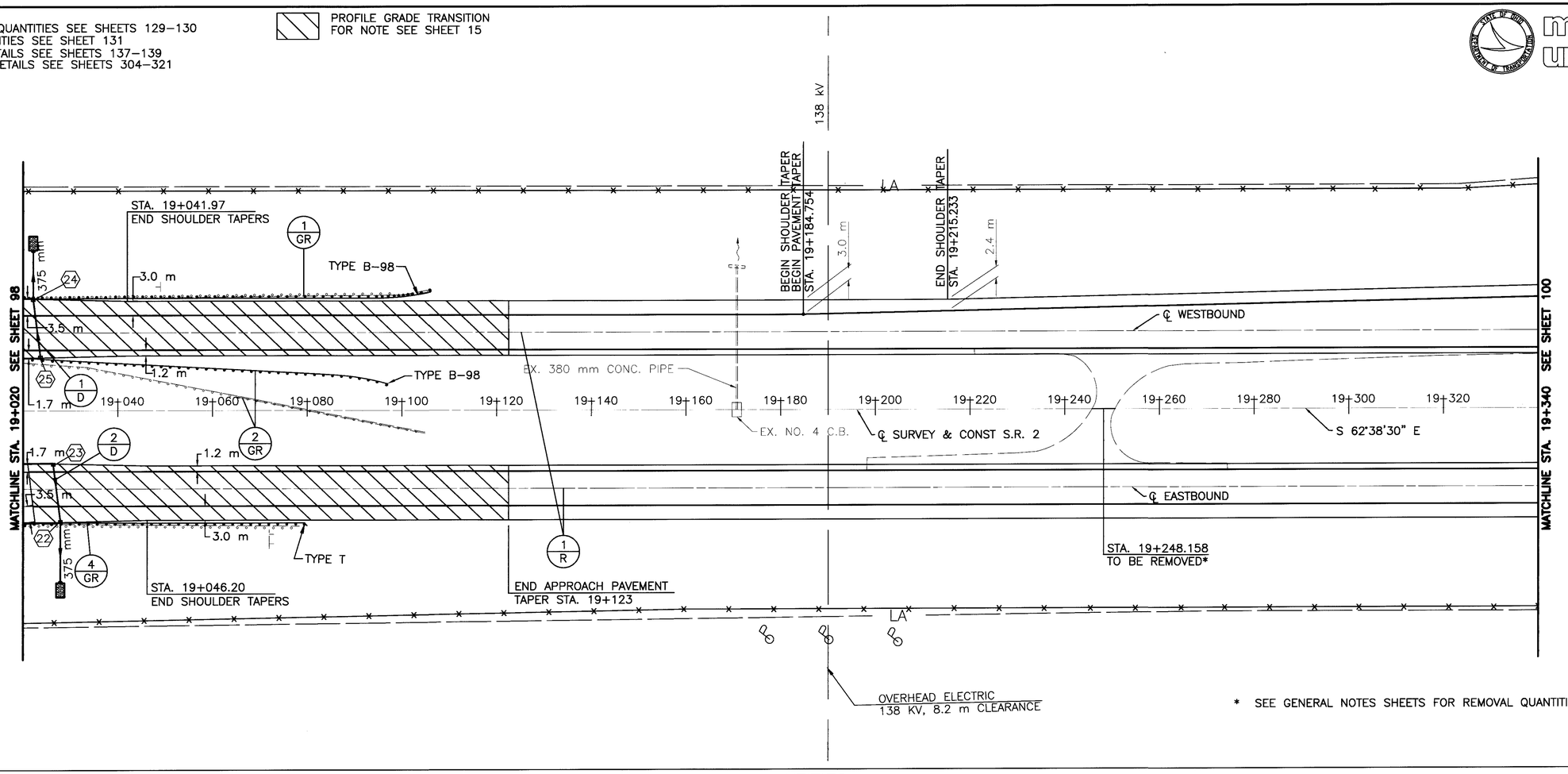
PLAN SHEET - S.R. 2
STA. 18+690 TO STA. 19+020

ERI-2-2.866

98
327

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131
FOR DRAINAGE DETAILS SEE SHEETS 137–139
FOR STRUCTURE DETAILS SEE SHEETS 304–321

PROFILE GRADE TRANSITION
FOR NOTE SEE SHEET 15



* SEE GENERAL NOTES SHEETS FOR REMOVAL QUANTITIES

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE		202 GUARDRAIL REMOVED (METER)	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE (EACH)		601 ROCK CHANNEL PROTECTION TYPE C W/FILTER (CU. METER)	602 CONCRETE MASONRY (CU. METER)	603 375 mm CONDUIT TYPE B (METER)	603 375 mm CONDUIT TYPE F (METER)	604 CATCH BASIN NO. 6 (EACH)	606 GUARDRAIL TYPE 5 (METER)	606 ANCHOR ASSEMBLY TYPE T (EACH)	606 ANCHOR ASSEMBLY TYPE B–98 (EACH)	606 BRIDGE TERMINAL ASSEMBLY TYPE 2 (EACH)	626 BARRIER REFLECTOR TYPE A (EACH)
1–R	19+020.00 TO 19+340.00	RT.&LT.			28											
1–D	19+022.13 TO 19+023.65	LT.					3.4	0.22	11.4	10	2					
2–D	19+026.36 TO 19+027.88	RT.					3.4	0.22	11.4	13	2					
1–GR	19+020.00 TO 19+105.87	LT.		77.37								74.605		1		3
2–GR	19+020.00 TO 19+096.77	LT.		86.23								65.607		1		4
4–GR	19+020.00 TO 19+079.50	RT.		57.51								55.65	1		1	3
Totals to General Summary				221.11	28		7	0.5	23	23	4	195.862	1	2	1	10

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

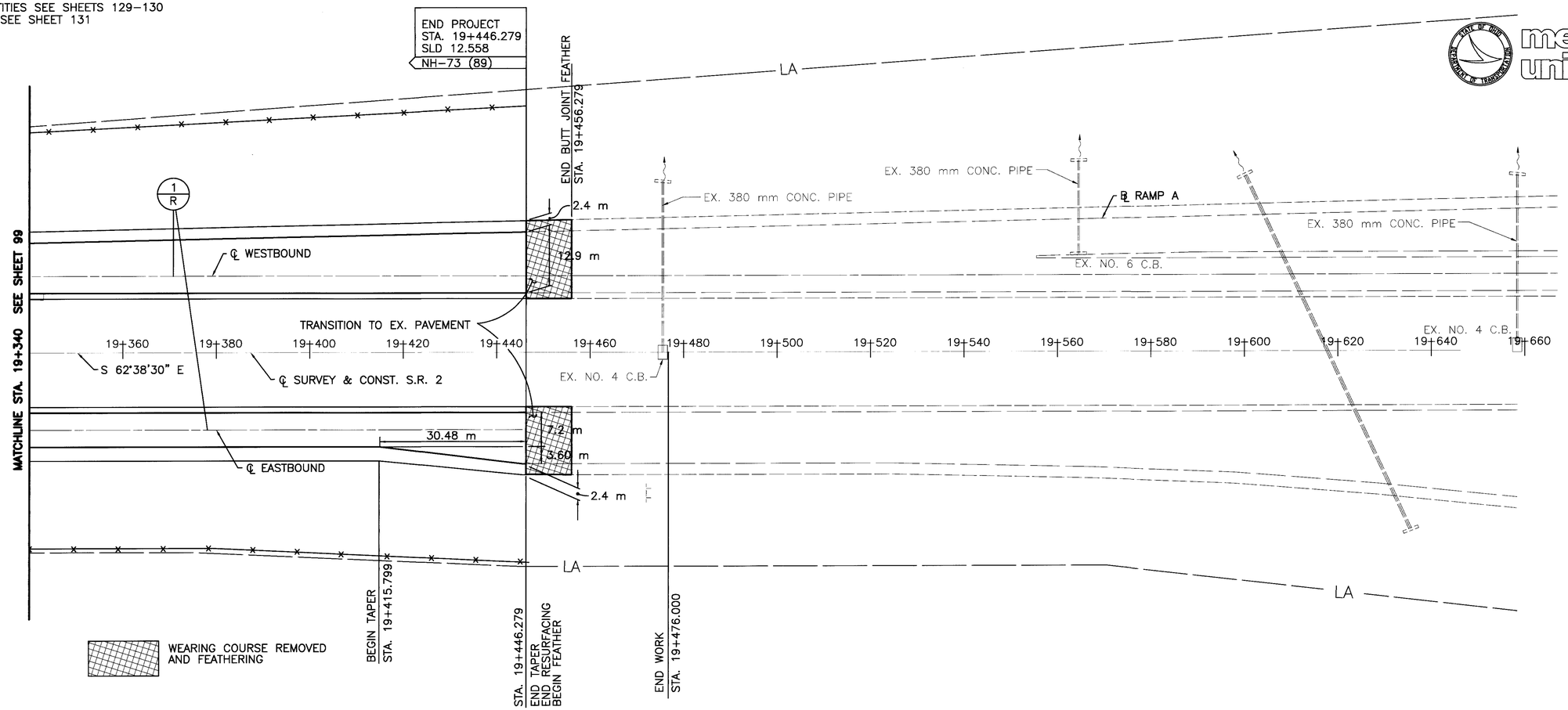
PLAN SHEET - S.R. 2
STA. 19+020 TO STA. 19+340

ERI-2-2.866

99
327

hoga3 \\1237fs01\projects\3907\DWG\HWY\PLAN\plan and profile\ 3907RP31.dwg NOV 12, 1998 TIME: 1:51 PM

FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 RAISED PAVEMENT MARKER REMOVED FOR STORAGE EACH
1–R	19+340.00 TO 19+469.28	RT.&LT.	10
Totals to General Summary			10

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

metric units

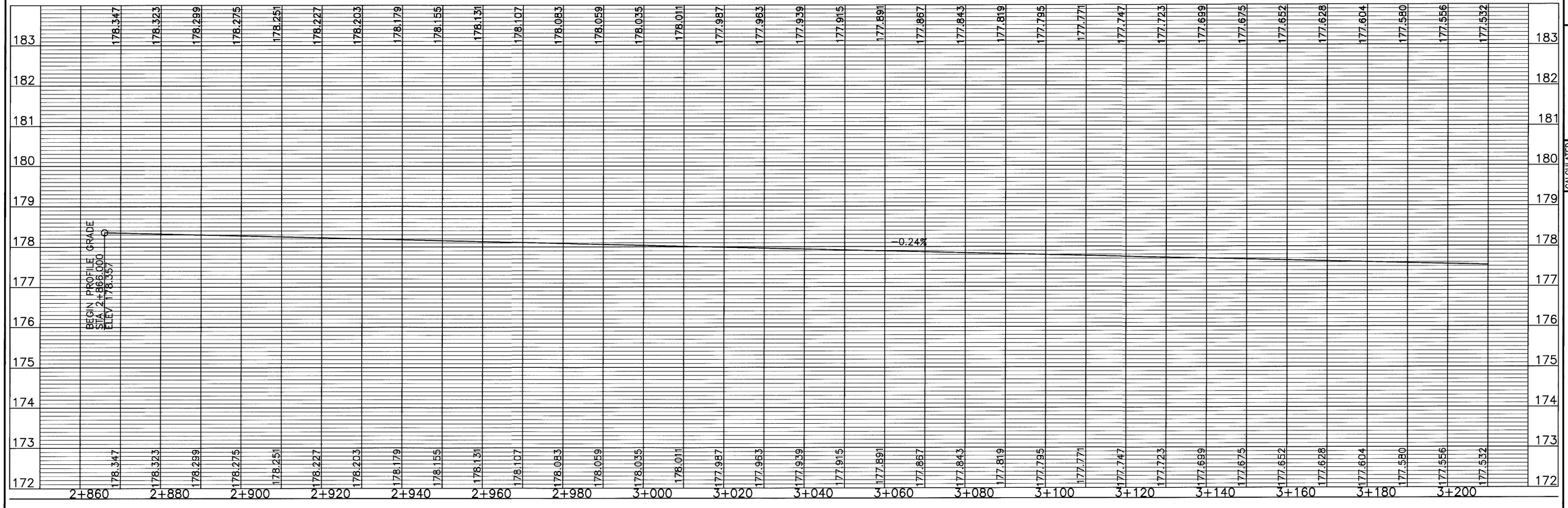
SCALE IN METERS 0 10 20 1:500

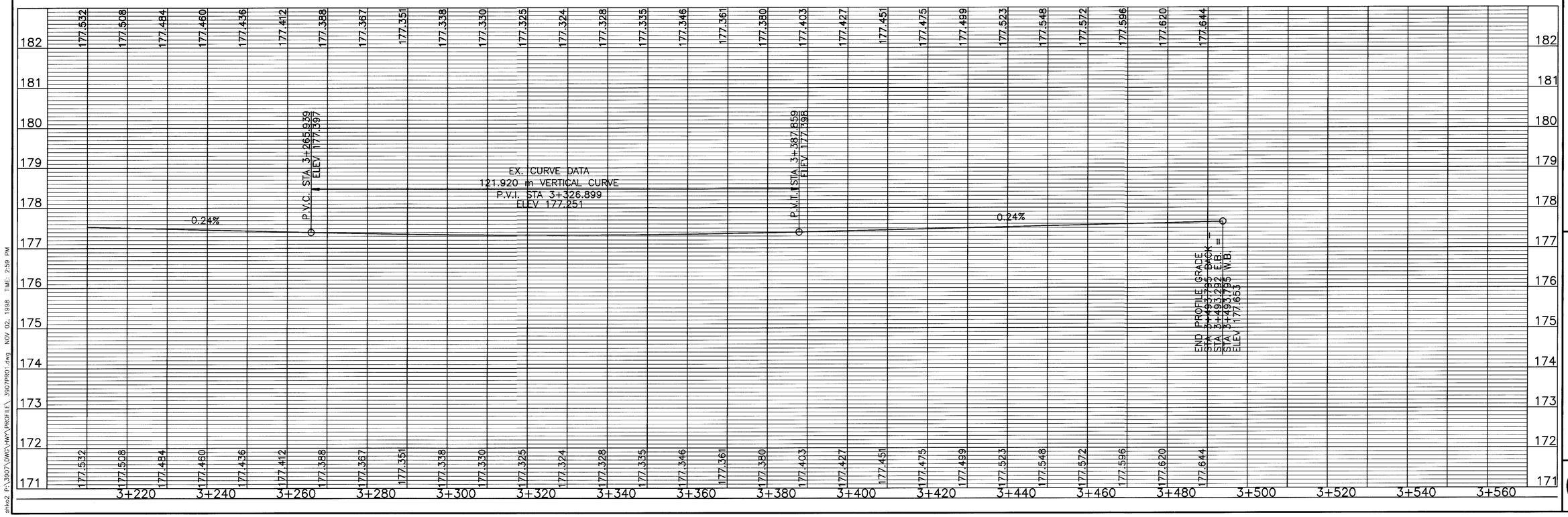
CALCULATED TCM
CHECKED BMH

PLAN SHEET – S.R. 2
STA. 19+340 TO STA. 19+440

ER-2-2.866

100
327





SCALE IN METERS 0 10 20 1:500

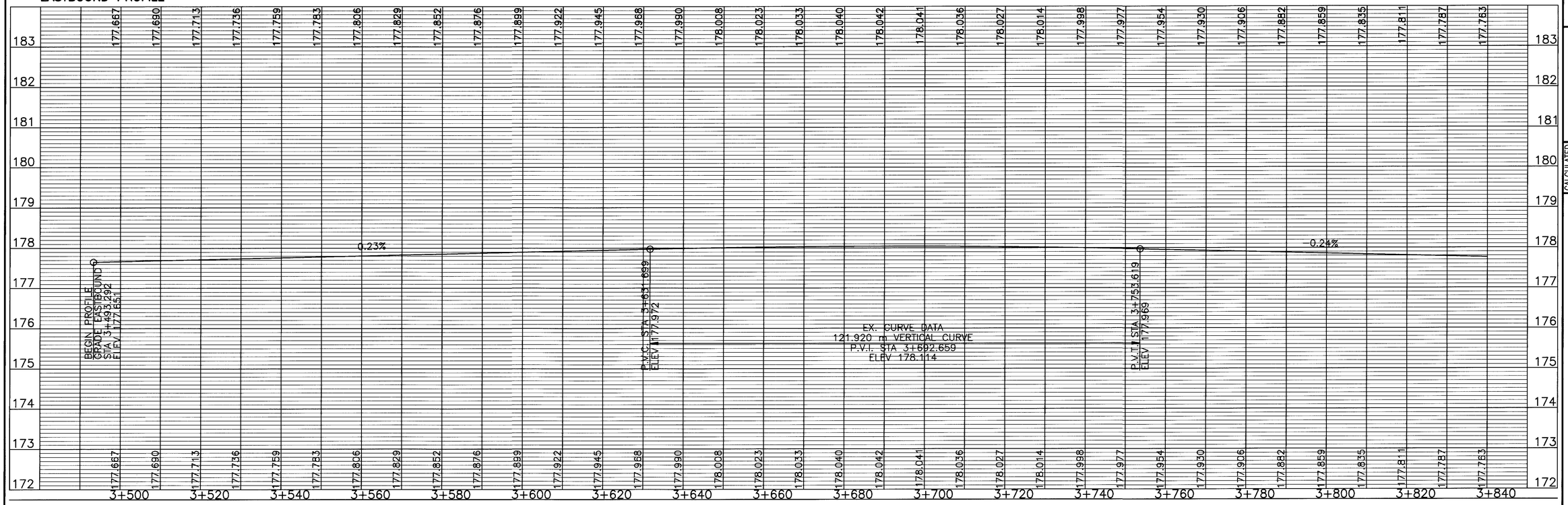
CALCULATED DLW
CHECKED BMH

PROFILE SHEET - S.R. 2
STA. 2+866 TO STA. 3+493.795

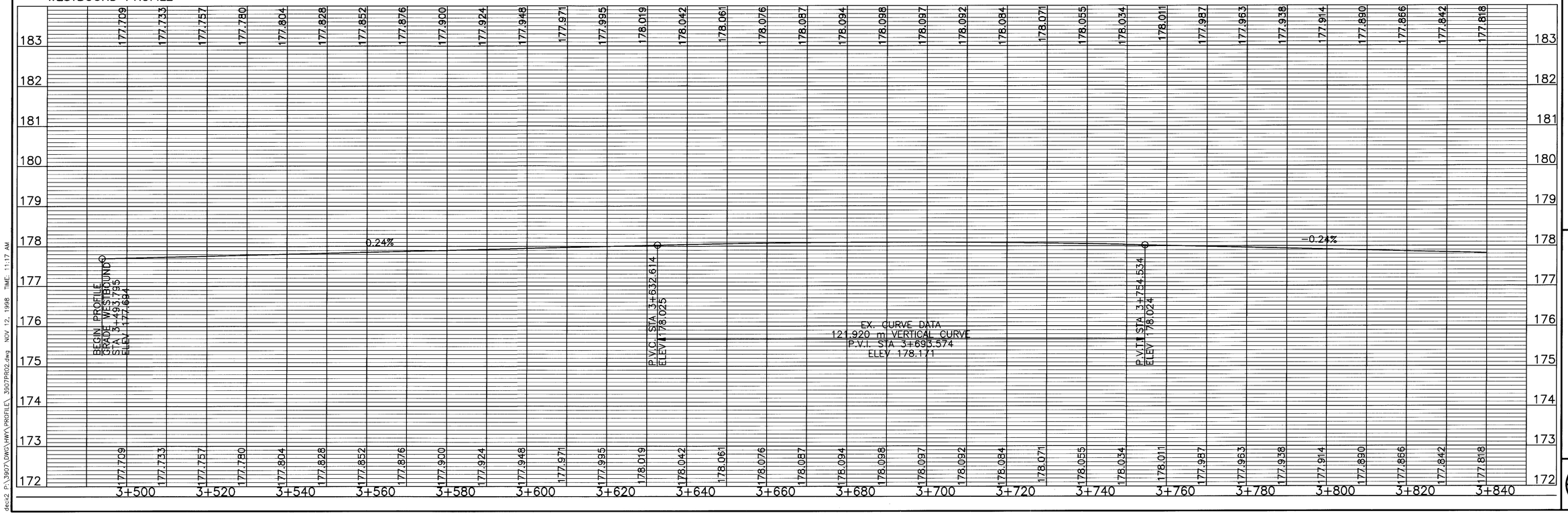
ERI-2-2.866

101
327

EASTBOUND PROFILE



WESTBOUND PROFILE



SCALE IN METERS 0 10 20 1:500

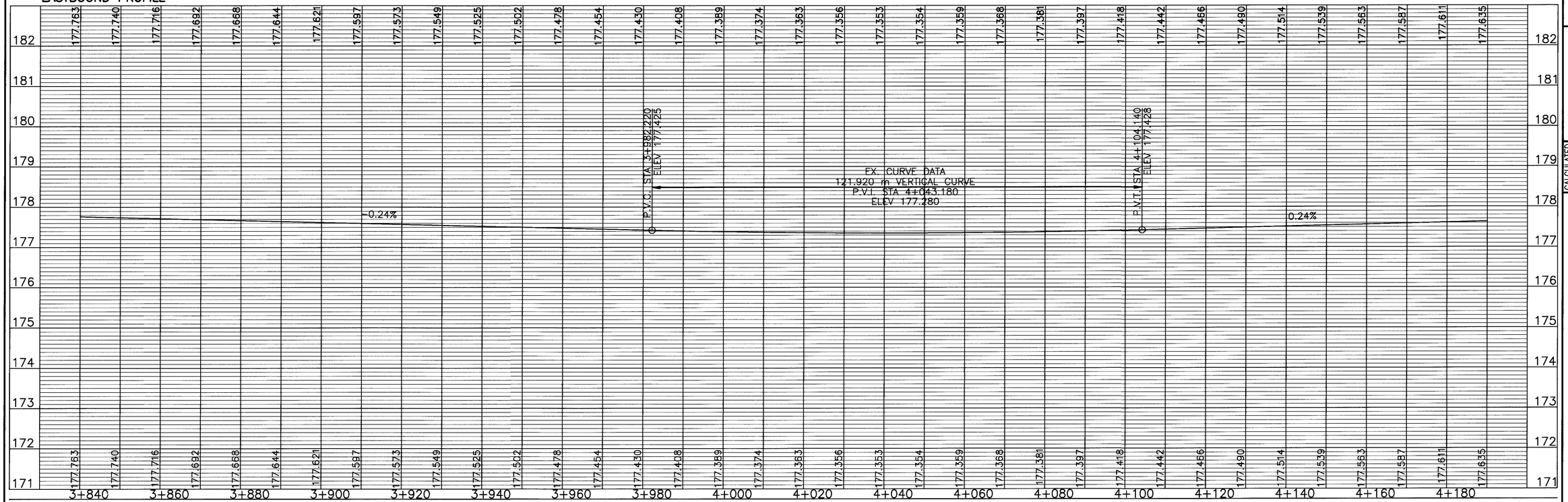
CALCULATED DLW
CHECKED BMH

PROFILE SHEET – S.R. 2

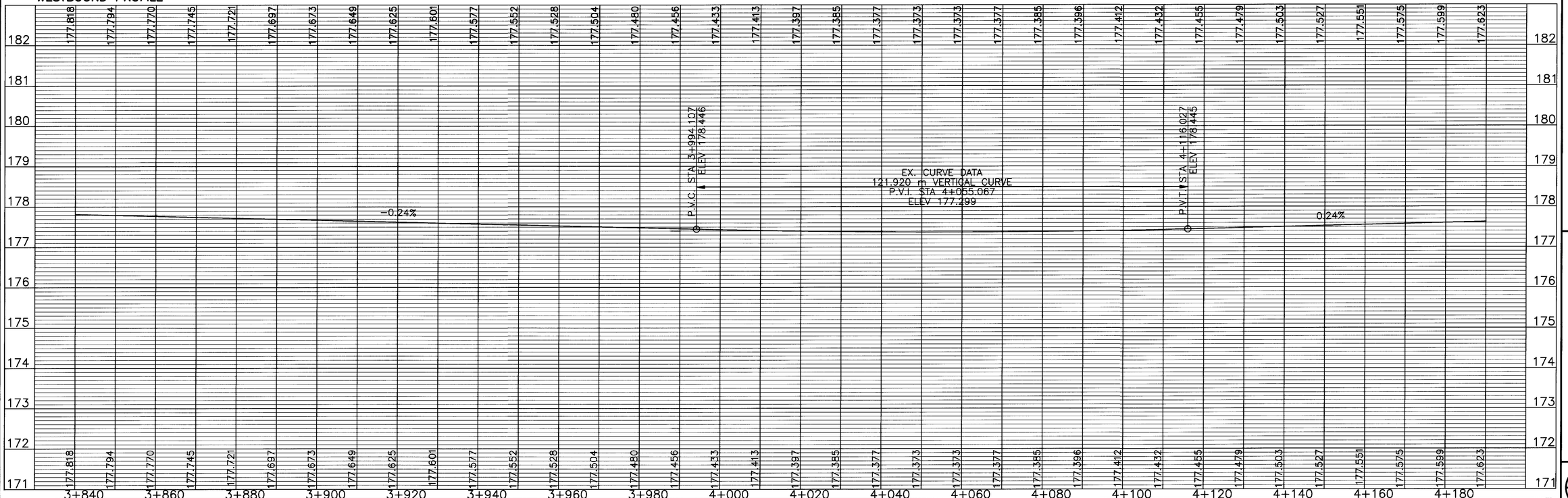
STA. 3+490 TO STA. 3+840 EASTBOUND AND WESTBOUND

ER-2-2.866

EASTBOUND PROFILE



WESTBOUND PROFILE



SCALE IN METERS 0 10 20 1:500

CALCULATED DLW

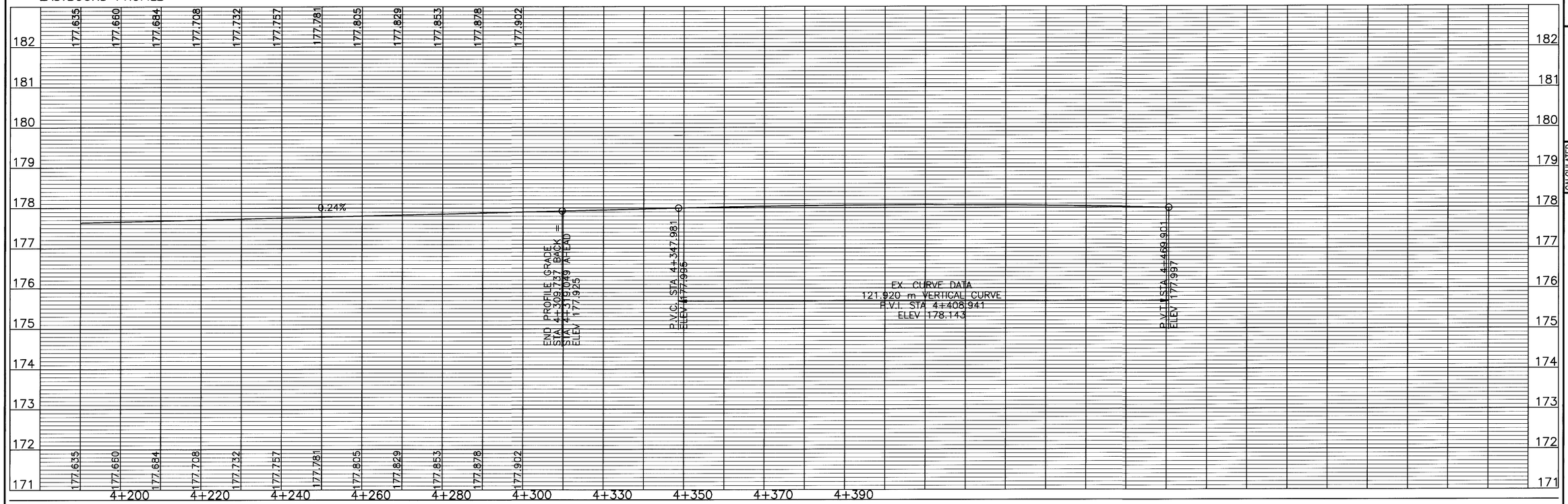
CHECKED BMH

PROFILE SHEET - S.R. 2

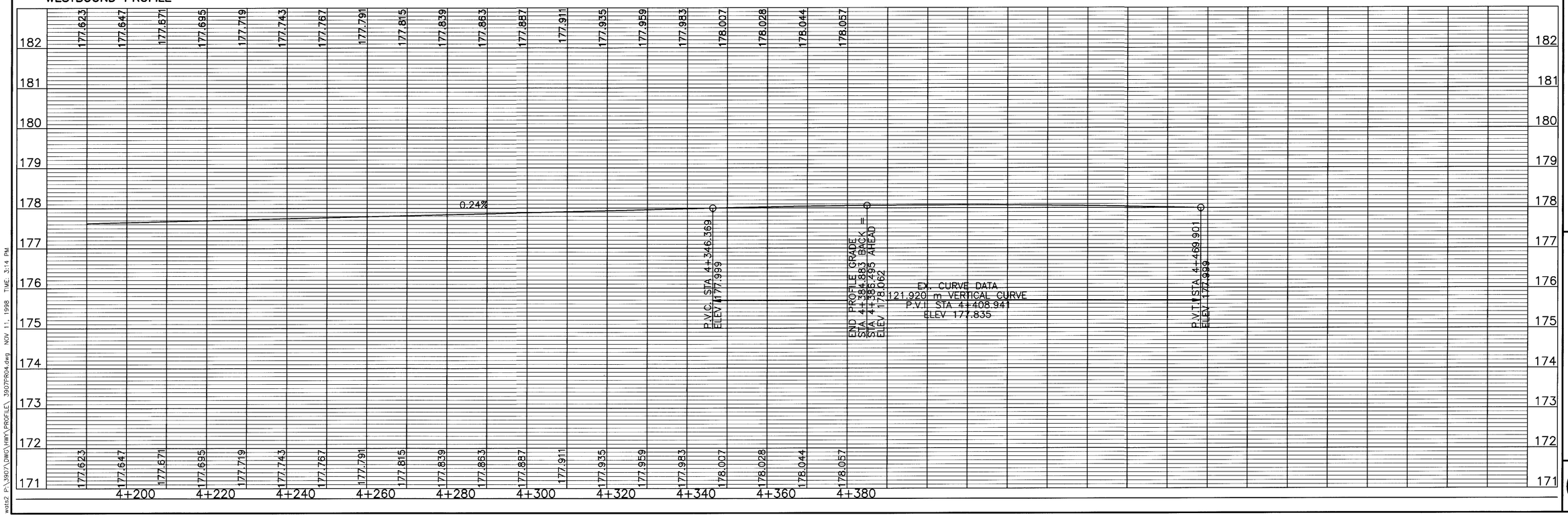
STA. 3+840 TO STA. 4+190 EASTBOUND AND WESTBOUND

ERI-2-2.866

EASTBOUND PROFILE



WESTBOUND PROFILE

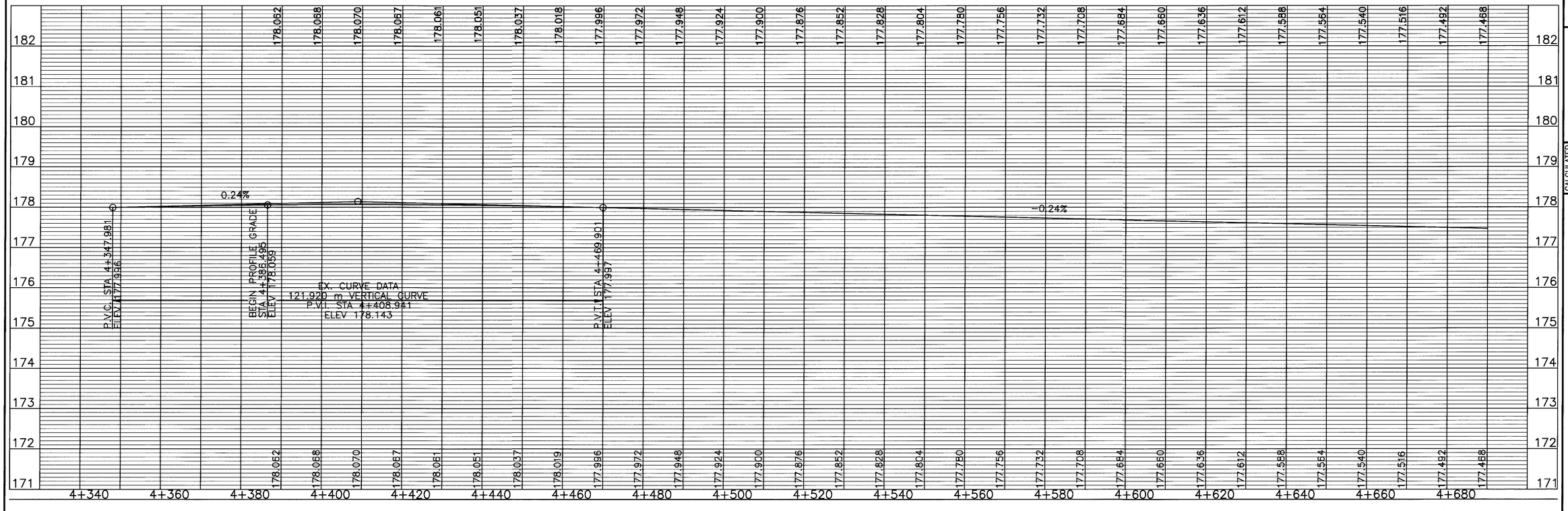


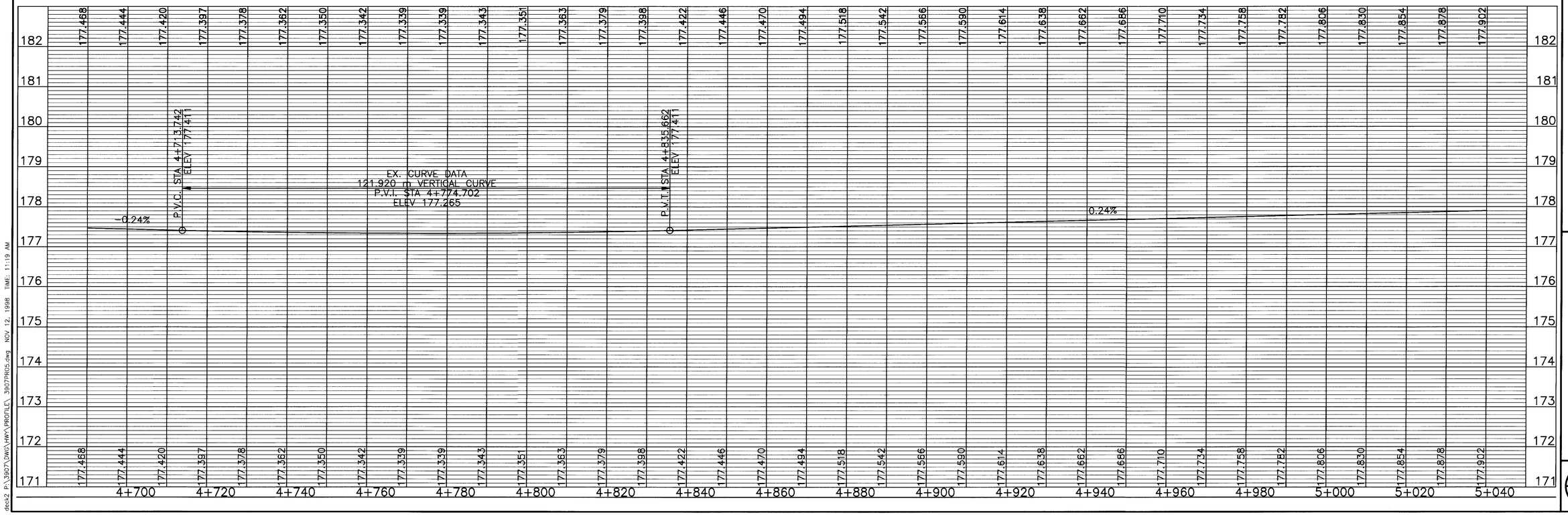
SCALE IN METERS 0 10 20 1:500

CALCULATED DLW
CHECKED BMH

PROFILE SHEET - EASTBOUND S.R. 2 STA. 4+190 TO STA. 4+309.737
AND WESTBOUND S.R. 2 STA. 4+190 TO STA. 4+384.883

ERI-2-2.866



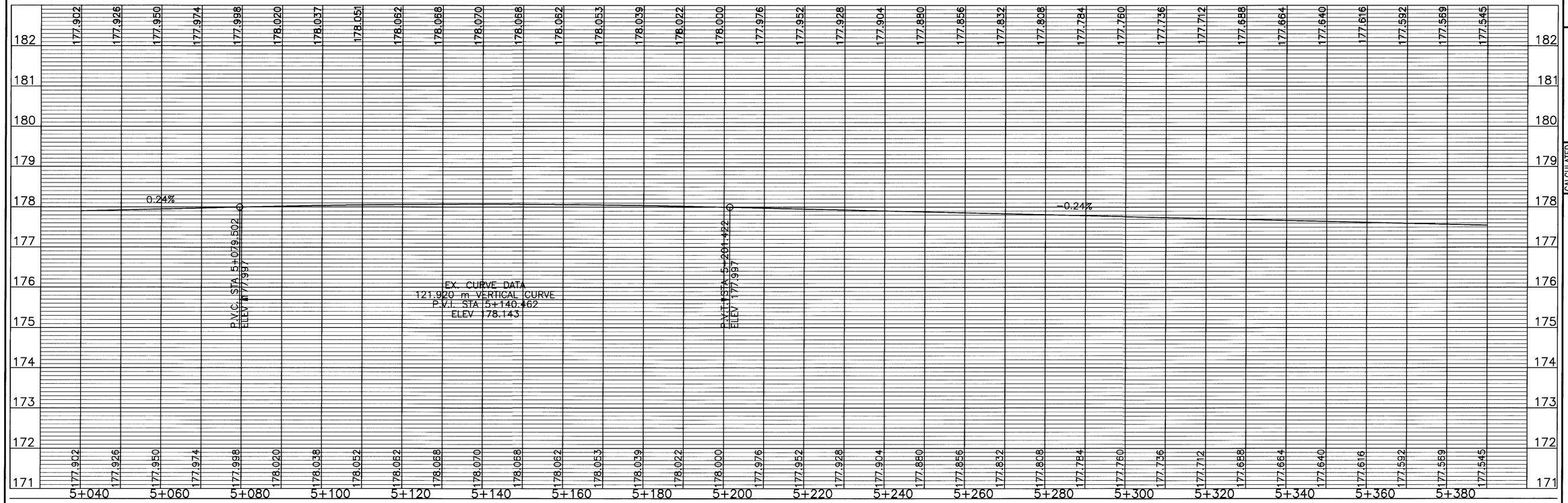


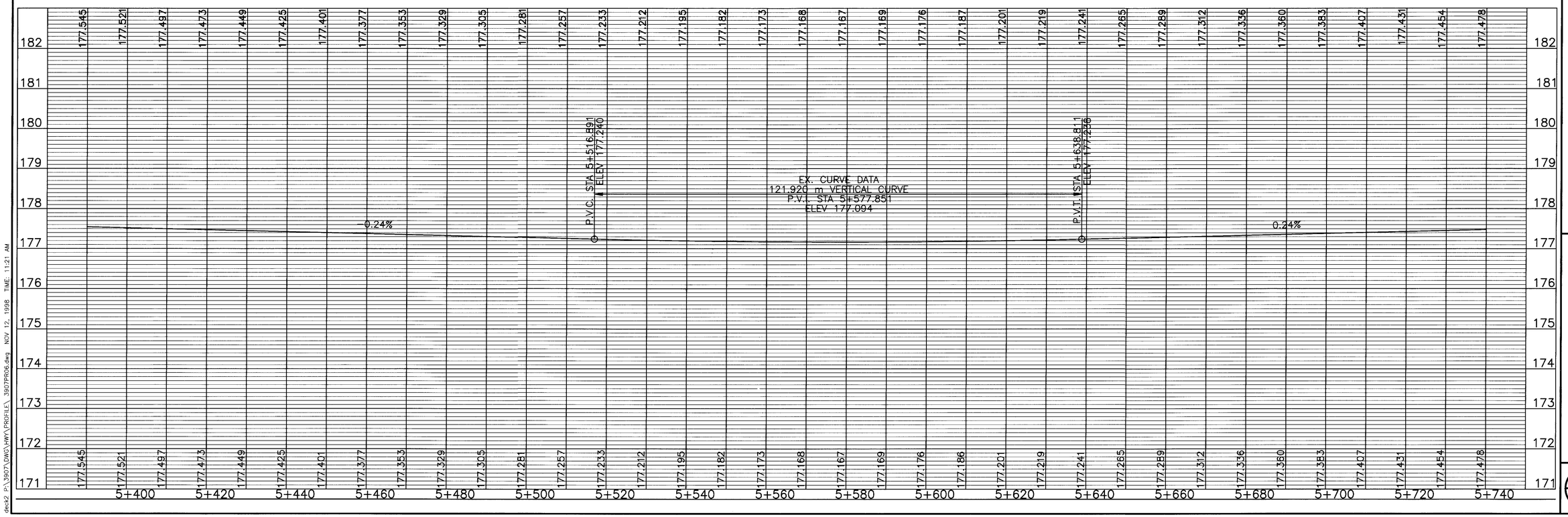
SCALE IN METERS
0 10 20
1:500

CALCULATED DLW
CHECKED BMH

PROFILE SHEET - S.R. 2
STA. 4+386.495 TO STA. 5+040

ERI-2-2.866





SCALE IN METERS
0 10 20
1:500

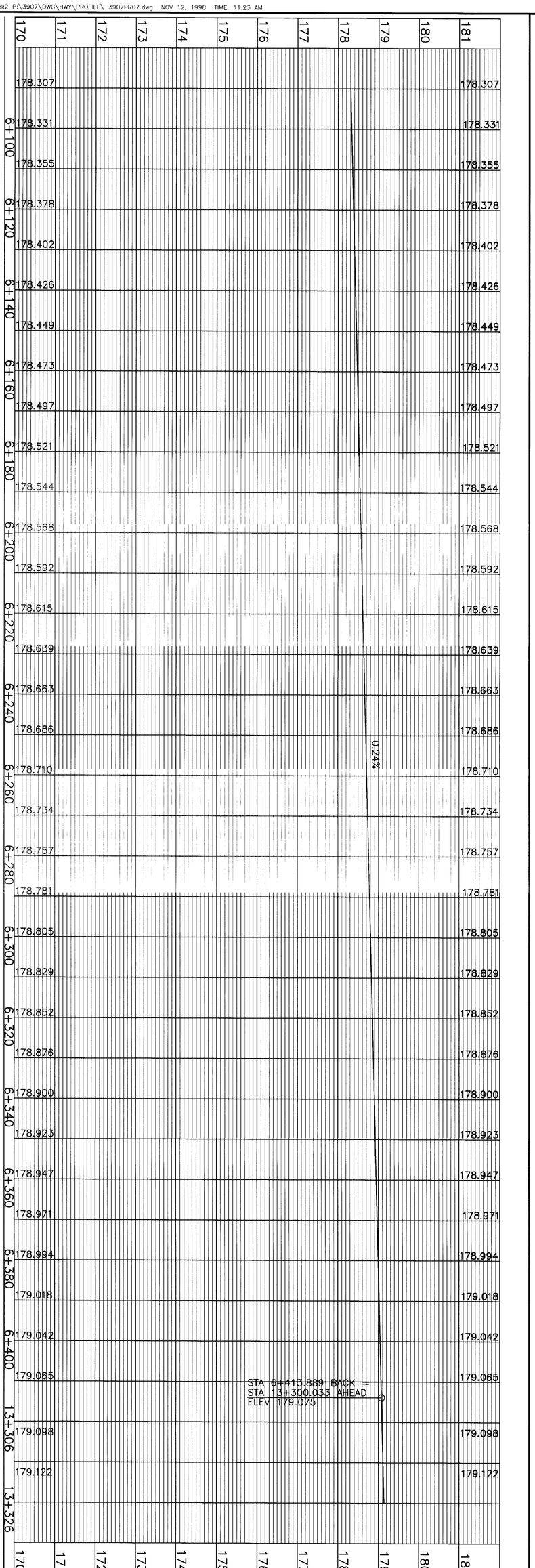
CALCULATED DLW
CHECKED BMH

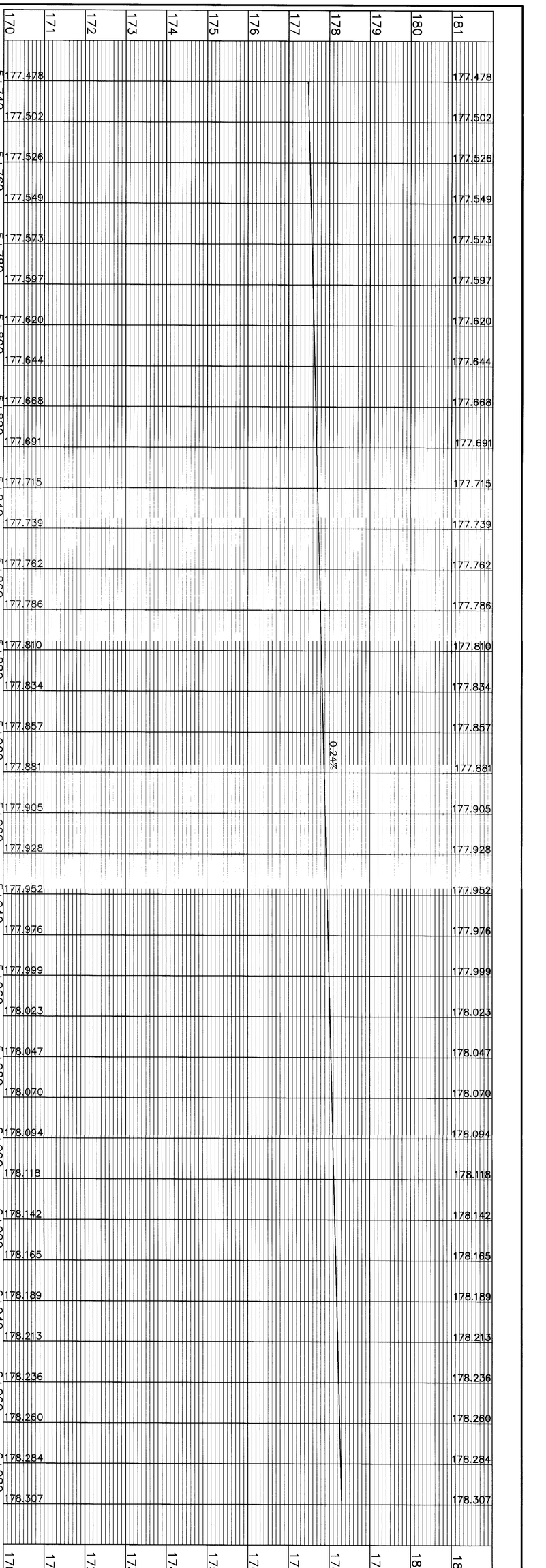
PROFILE SHEET - S.R. 2
STA. 5+040 TO STA. 5+740

ERI-2-2.866

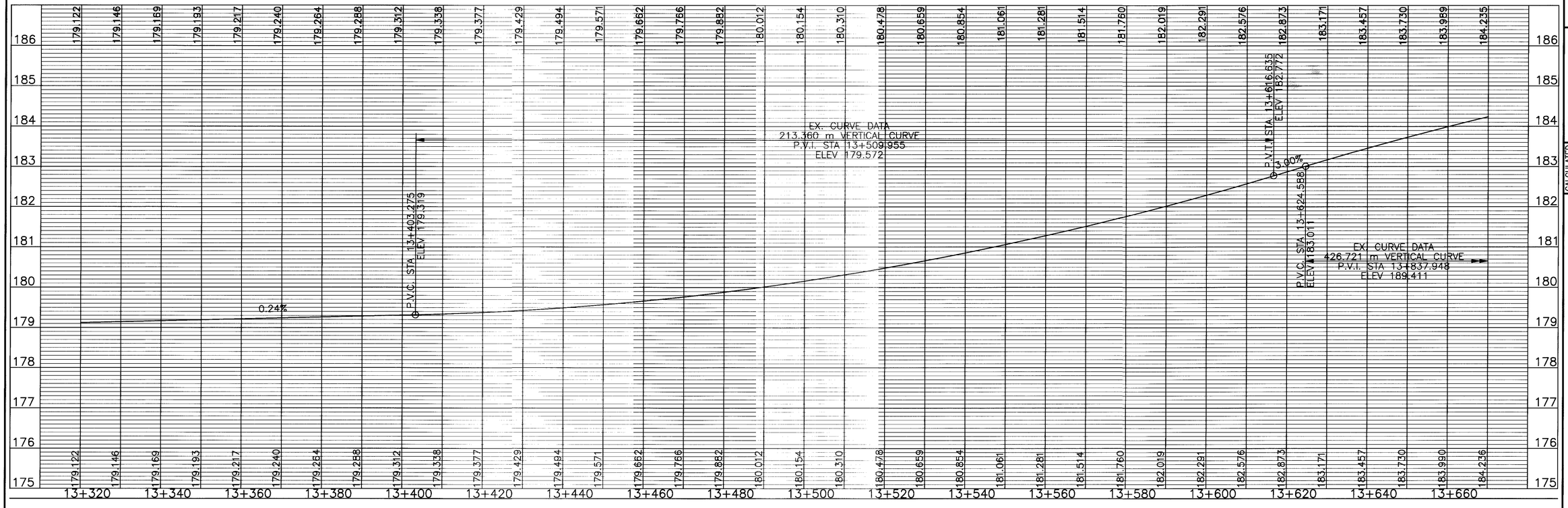
106
327

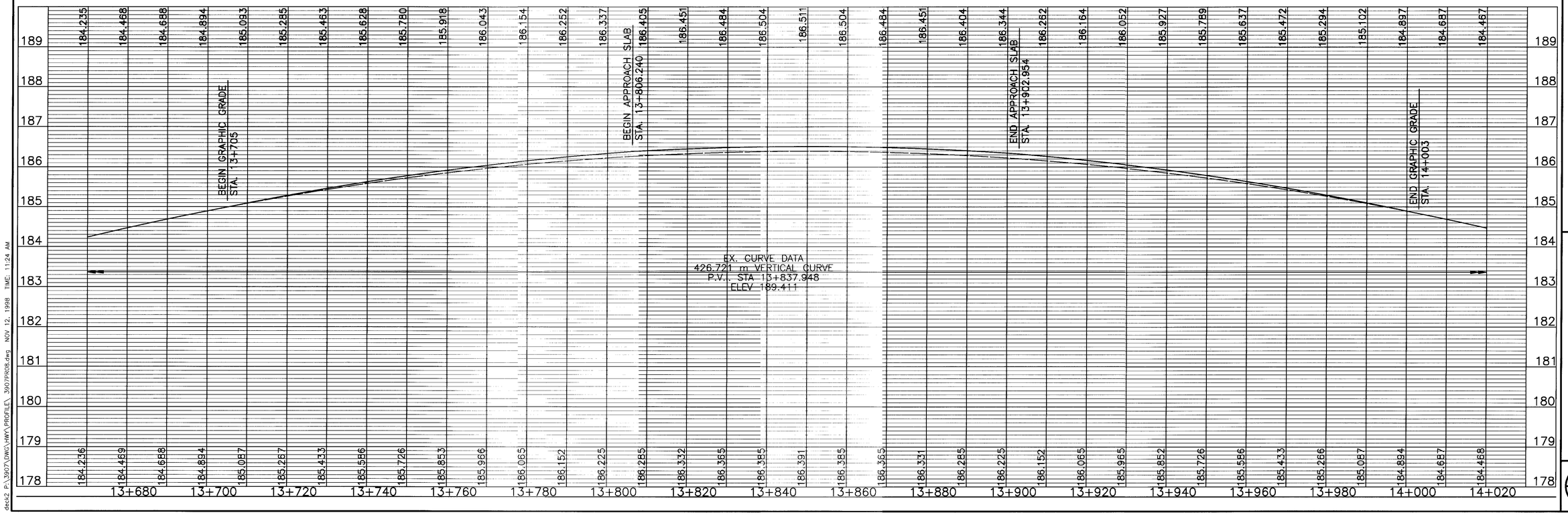
dwk2 P:\3907\DWG\HWY\PROFILE\ 3907PR06.dwg NOV 12, 1998 TIME: 11:21 AM





107 / 327	ERI-2-2.866	PROFILE SHEET - S.R. 2 STA. 5+740 TO STA. 13+326	CALCULATED DLW CHECKED BMH	SCALE IN METERS 0 10 20 1:500



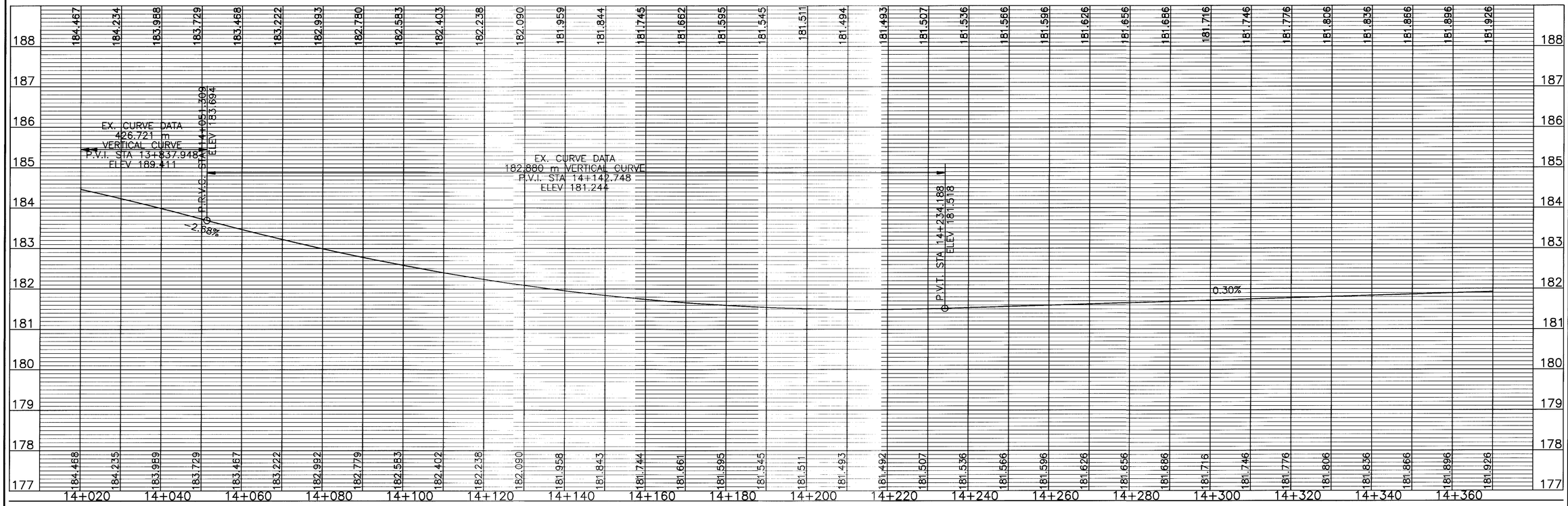


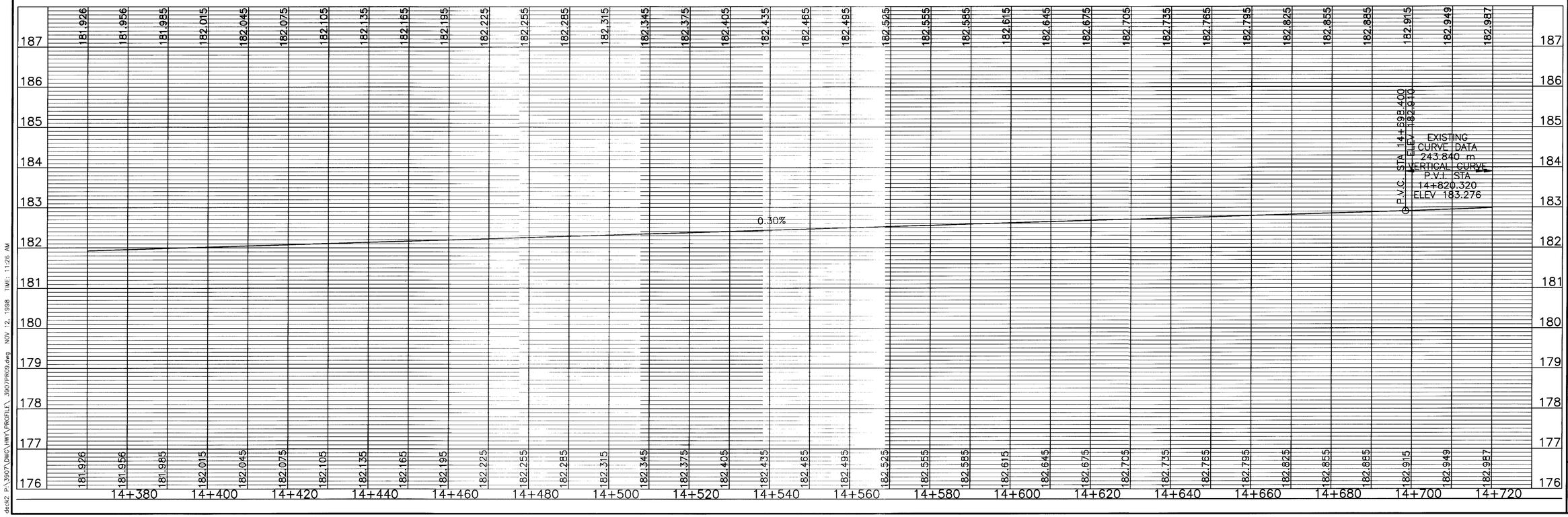
SCALE IN METERS
0 10 20
1:500

CALCULATED DLW
CHECKED BMH

PROFILE SHEET - S.R. 2
STA. 13+326 TO STA. 14+020

ERI-2-2.866





SCALE IN METERS
0 10 20
1:500

CALCULATED DLW
CHECKED BMH

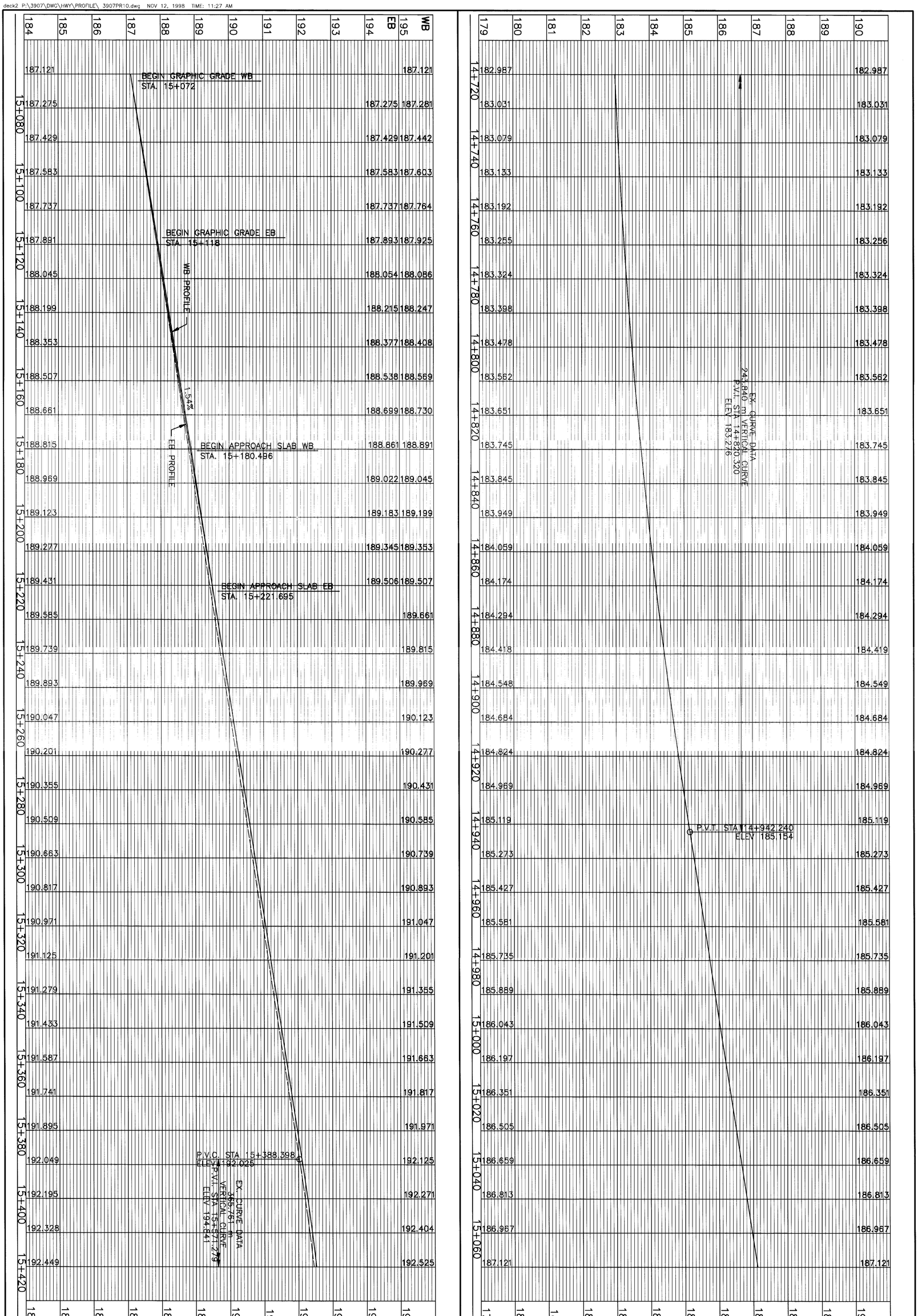
PROFILE SHEET - S.R. 2
STA. 14+020 TO STA. 14+720

ERI-2-2.866

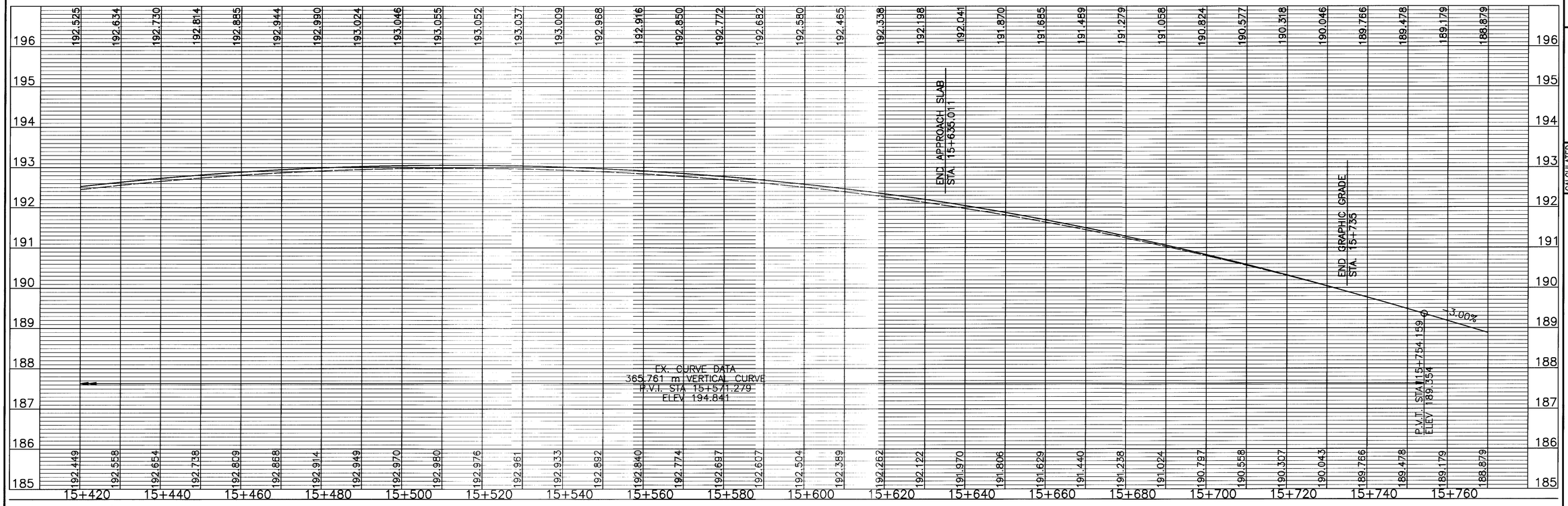
109
327

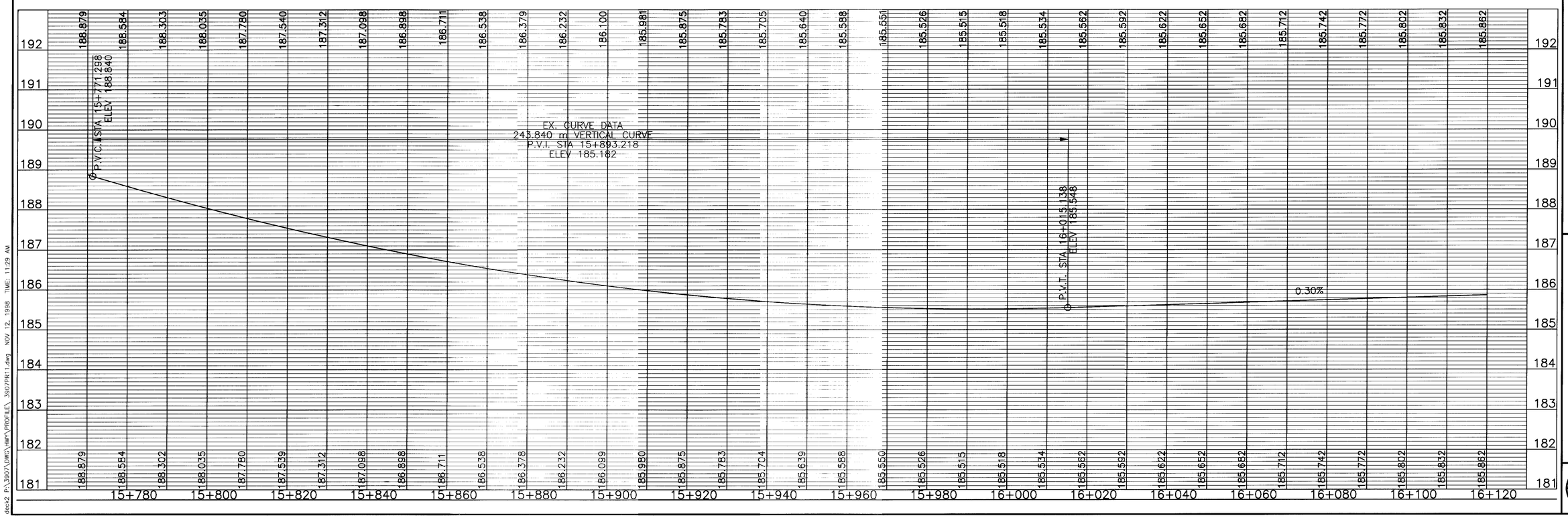
desk2 P:\3907\DWG\HWY\PROFILE\ 3907PRO9.dwg NOV 12, 1998 TIME: 11:26 AM

deck2 P:\3907\DWG\HWY\PROFILE\ 3907PR10.dwg NOV 12, 1998 TIME: 11:27 AM



110/327	ERI-2-2.866	PROFILE SHEET - S.R. 2 STA. 14+720 TO STA. 15+420	CALCULATED DLW CHECKED BMH	SCALE IN METERS 0 10 20 1:500





SCALE IN METERS 0 10 20 1:500

CALCULATED DLW
CHECKED BMH

PROFILE SHEET - S.R. 2
STA. 15+420 TO STA. 16+120

ERI-2-2.866

111
327

dsck2 P:\390Y\DWG\HWY\PROFILE\ 3907PR11.dwg NOV 12, 1998 TIME: 11:29 AM

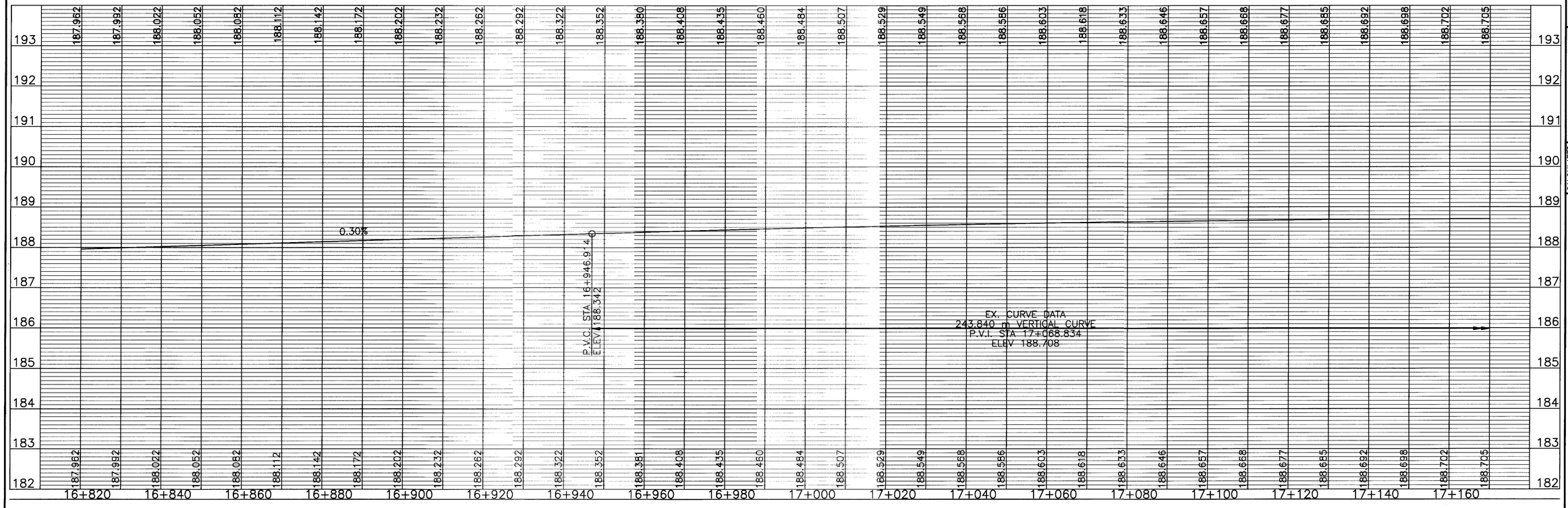
PROFILE SHEET - S.R. 2
STA. 16+120 TO STA. 16+820

SCALE IN METERS
0 10 20
1:500

CALCULATED DLW
CHECKED BMH

ERI-2-2.866

desk2 P:\3907\DWG\VWY\PROFILE\ 3907PR12.dwg NOV 12, 1998 TIME: 11:30 AM

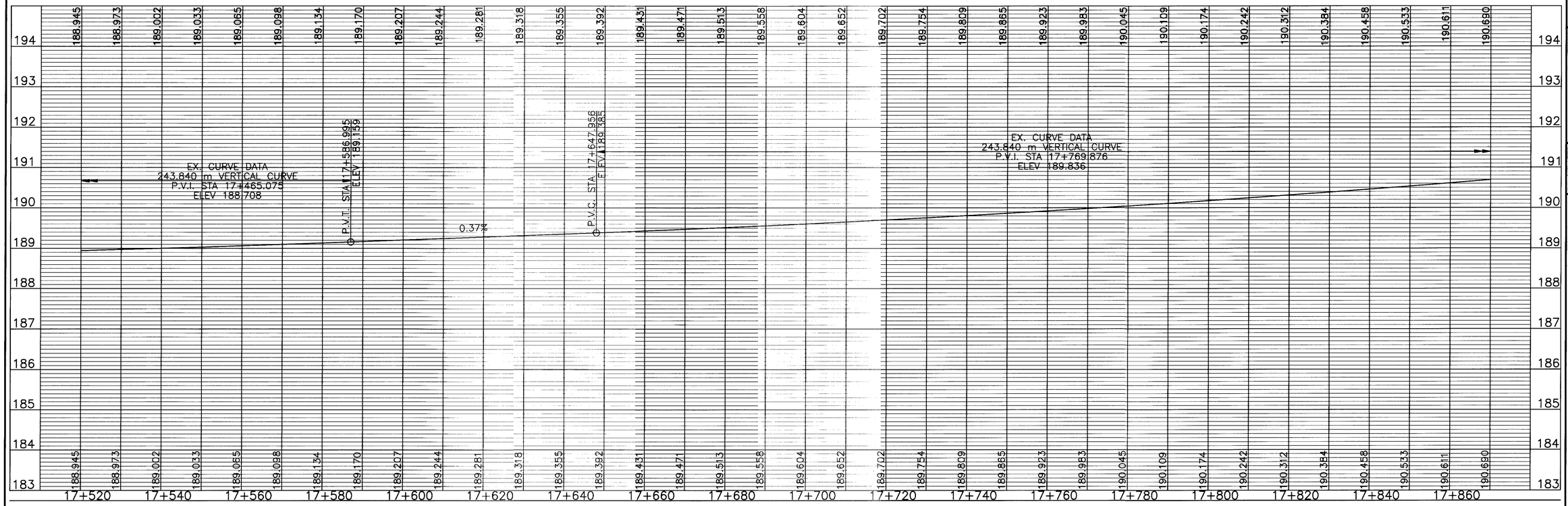


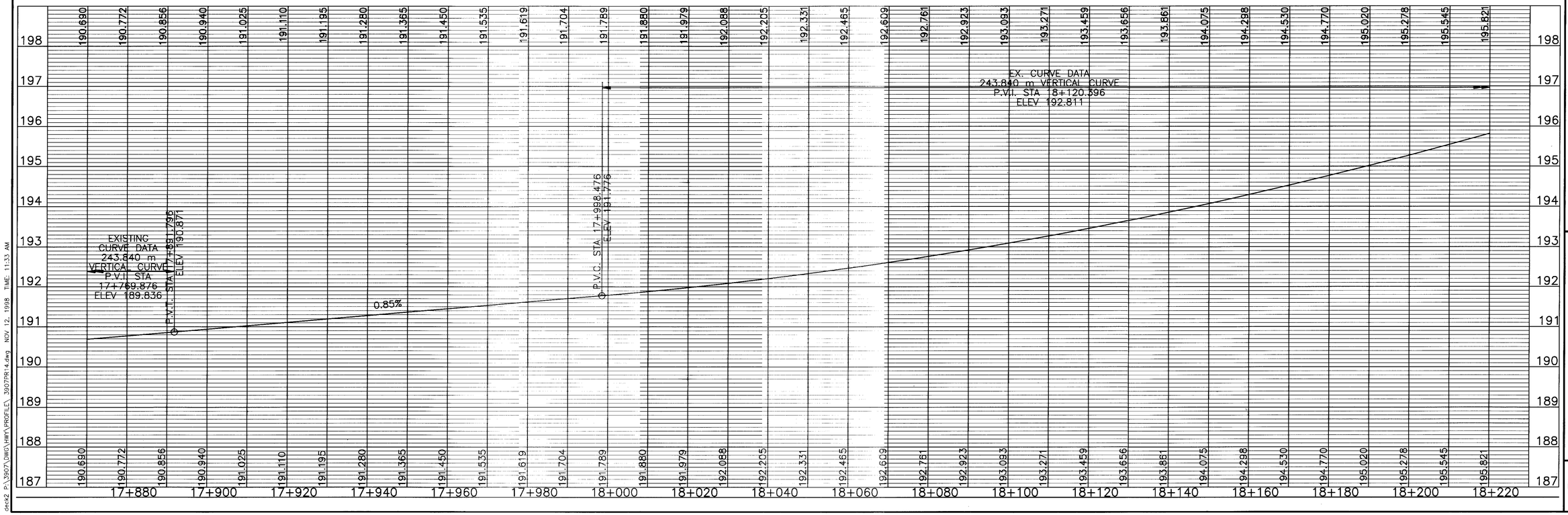
SCALE IN METERS 0 10 20 1:500

CALCULATED DLW
CHECKED BMH

PROFILE SHEET - S.R. 2
STA. 16+820 TO STA. 17+520

ERI-2-2.866





SCALE IN METERS
0 10 20
1:500

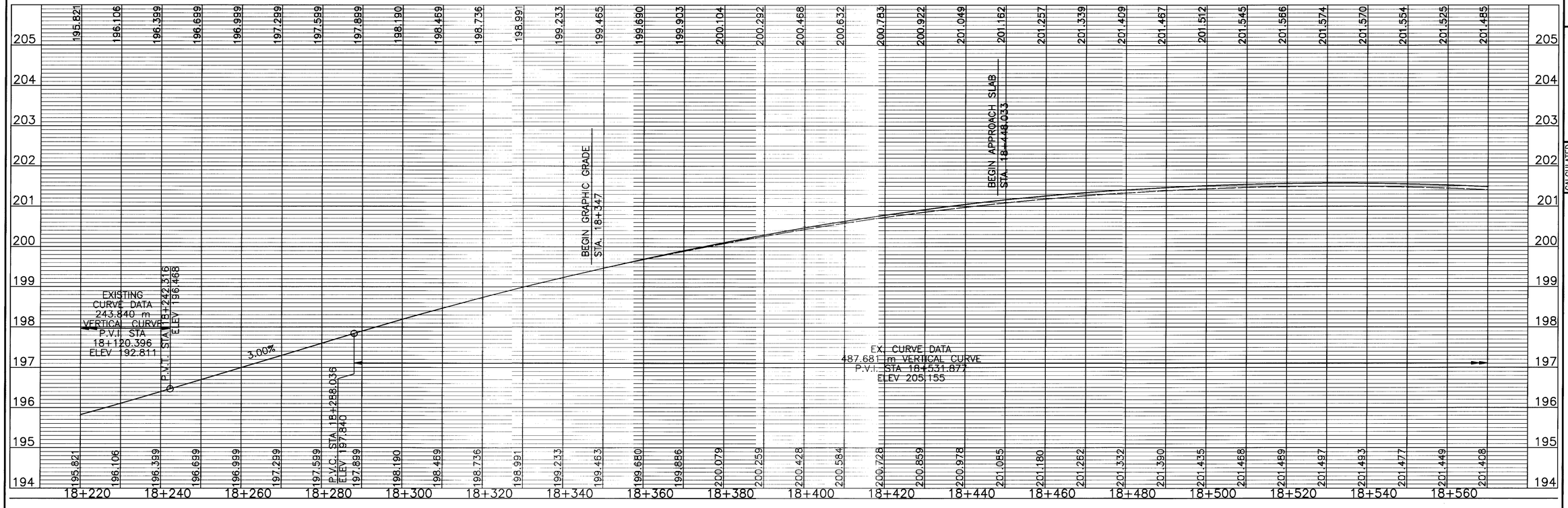
CALCULATED DLW
CHECKED BMH

PROFILE SHEET – S.R. 2
STA. 17+520 TO STA. 18+220

ERI-2-2.866

114
327

dwg=2 P:\3907\DWG\HWY\PROFILE\ 3907PR14.dwg NOV 12, 1998 TIME: 11:33 AM



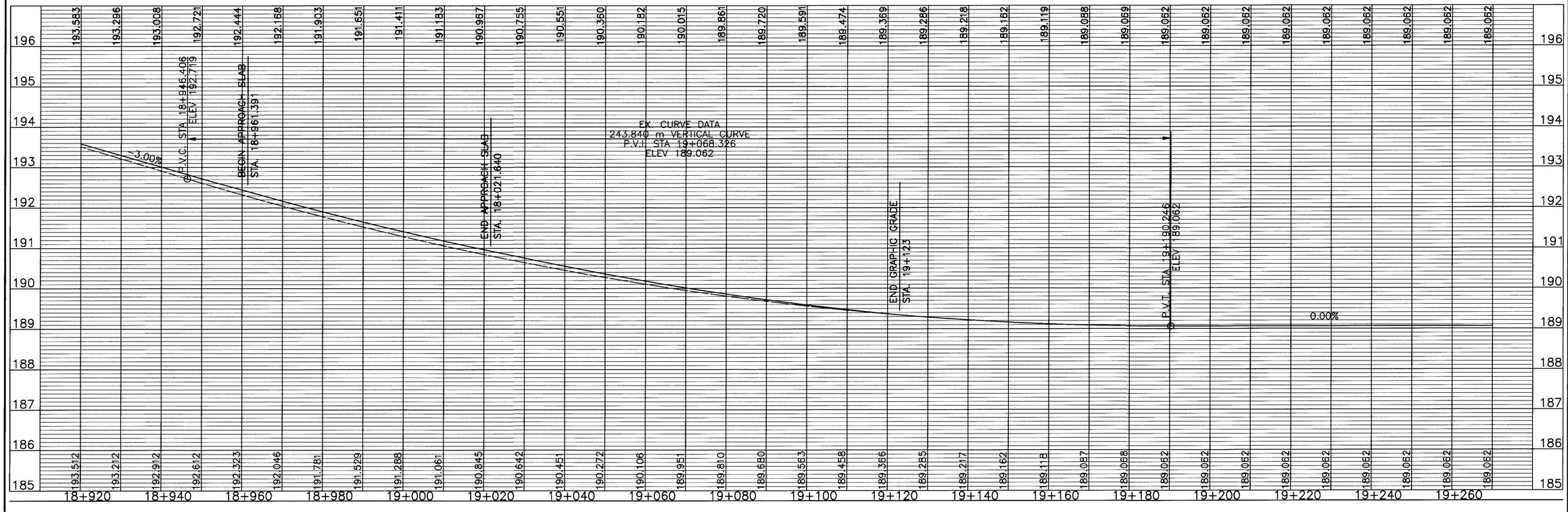
SCALE IN METERS 0 10 20 1:500

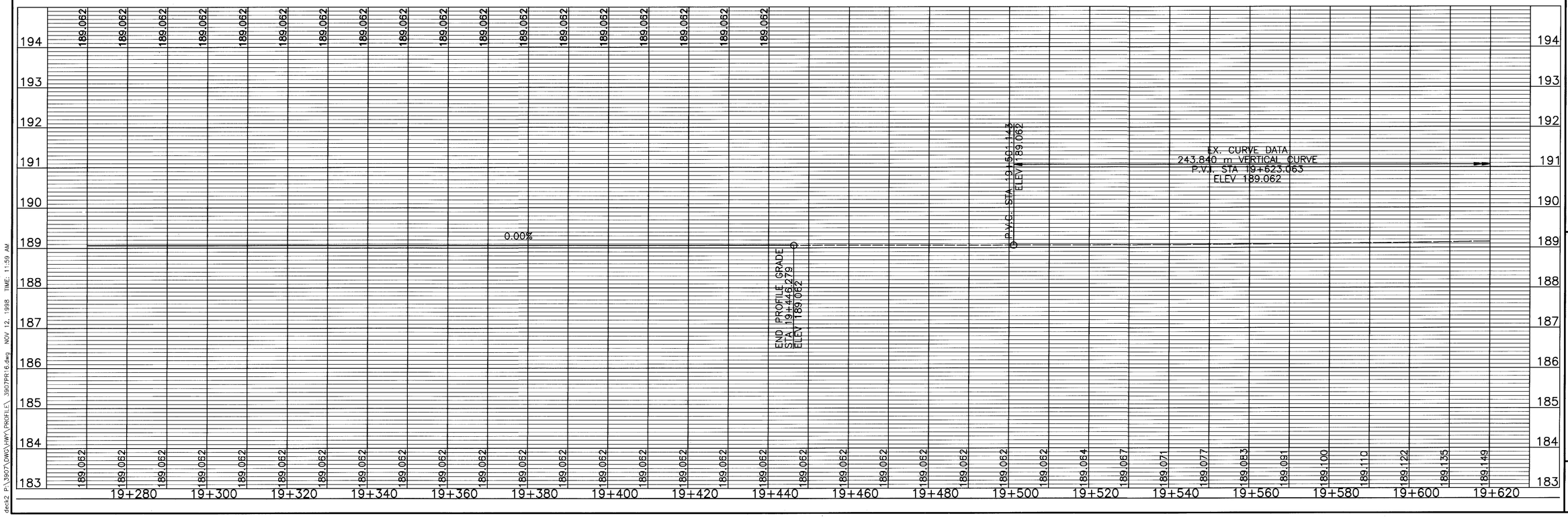
CALCULATED DLW CHECKED BMH

PROFILE SHEET - S.R. 2
STA. 18+220 TO STA. 18+920

ERI-2-2.866

115 / 327





SCALE IN METERS
0 10 20
1:500

CALCULATED DLW
CHECKED BMH

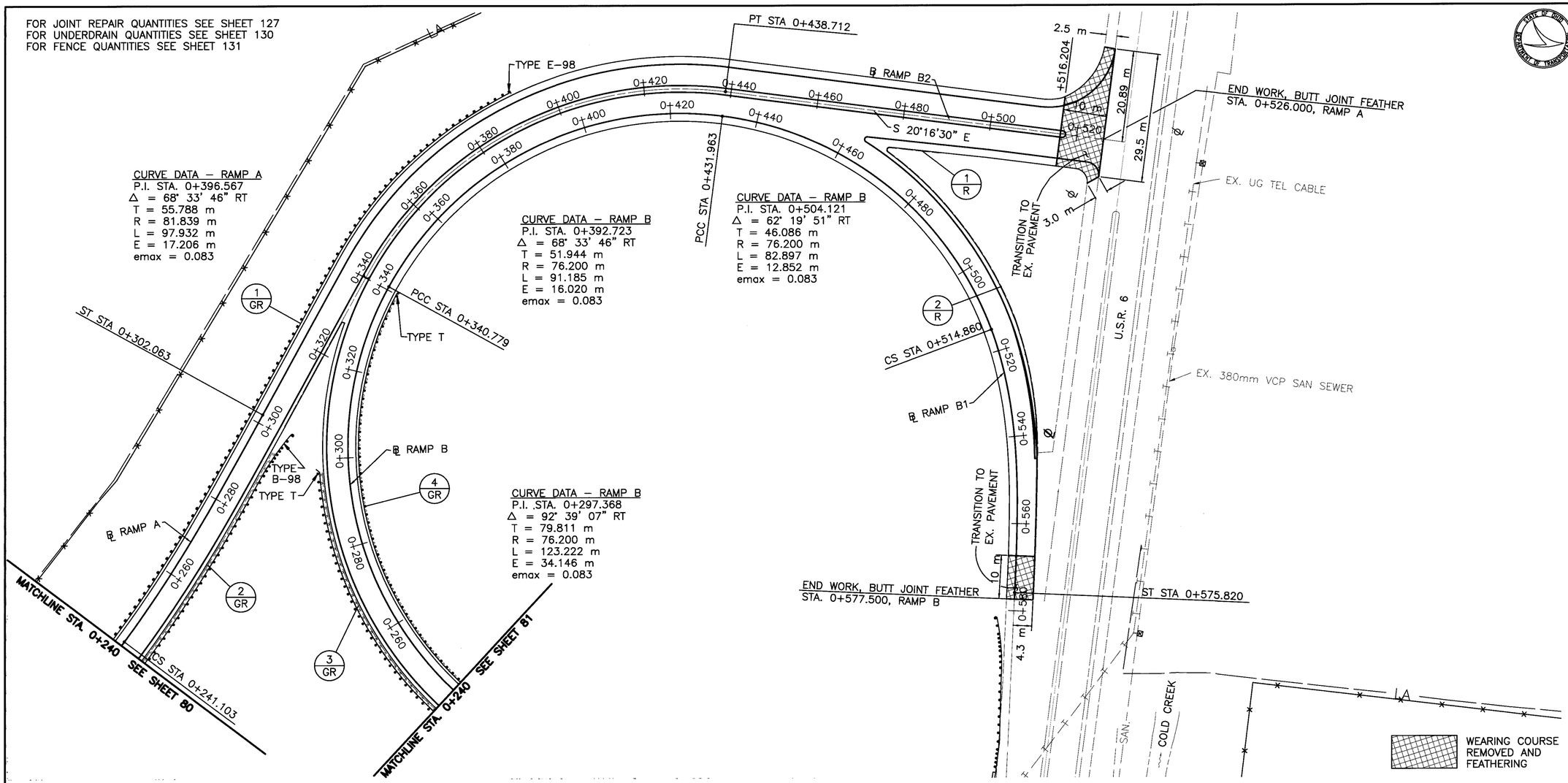
PROFILE SHEET - S.R. 2
STA. 18+920 TO STA. 19+446.279

ERI-2-2.866

116
327

deck2 P:\3907\DWG\HWY\PROFILE_3907PR16.dwg NOV 12, 1998 TIME: 11:59 AM

FOR JOINT REPAIR QUANTITIES SEE SHEET 127
FOR UNDERDRAIN QUANTITIES SEE SHEET 130
FOR FENCE QUANTITIES SEE SHEET 131



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 CURB REMOVED METER	202 GUARDRAIL REMOVED METER	606 GUARDRAIL TYPE 5 METER	606 ANCHOR ASSEMBLY TYPE B-98 EACH	606 ANCHOR ASSEMBLY TYPE T EACH	606 ANCHOR ASSEMBLY TYPE E-98 EACH		626 BARRIER REFLECTOR TYPE A EACH
1–R	0+477.32A TO 0+489.20A	RT.	12							
2–R	0+468.44B TO 0+575.82B	LT.	113							
1–GR	0+240.00A TO 0+391.70A	LT.		149.87	136.65			1		6
2–GR	0+240.00A TO 0+299.61A	RT.		97.58	48.18	1				4
3–GR	0+240.00B TO 0+297.16B	LT.		61.71	57.16		1			3
4–GR	0+240.00B TO 0+340.27B	RT.		56.36	100.27		1			3
Totals to General Summary			125	365.52	342.26	1	2	1		16

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED TCM CHECKED BMH

PLAN SHEET
RAMPS A & B @ U.S. 6

ERI-2-2.866

117
327

wats2 P:\3907\DWGS\HWY\PLAN\plan and profile\ 3907RP42.dwg DEC 03, 1998 TIME: 12:48 PM

FOR JOINT REPAIR QUANTITIES SEE SHEET 128
FOR UNDERDRAIN QUANTITIES SEE SHEET 130
FOR FENCE QUANTITIES SEE SHEET 131
FOR DRAINAGE DETAILS SEE SHEETS 137–139
FOR STRUCTURE DETAILS SEE SHEETS 209–219

A QUANTITY OF 5 CU. M. ITEM 203 – EMBANKMENT HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR BRIDGE ABUTMENT SLOPES REPAIR.

CURVE DATA – U.S. 6
P.I. STA. 1+470.143
Δ = 09° 38' 08" LT.
T = 100.359 m
R = 1190.713 m
L = 200.245 m
E = 4.222 m
e_{max} = 0.025

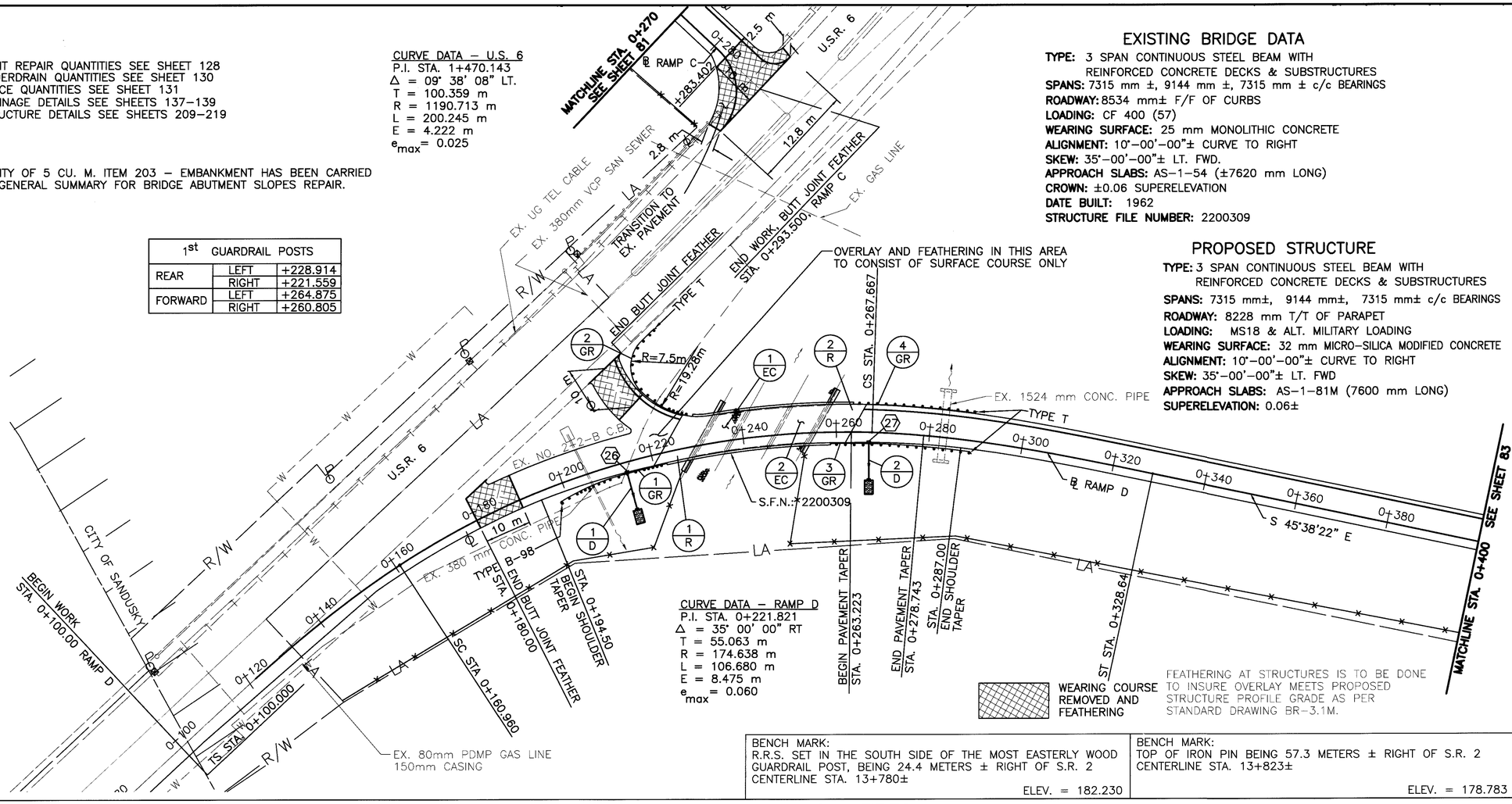
1st GUARDRAIL POSTS		
REAR	LEFT	+228.914
	RIGHT	+221.559
FORWARD	LEFT	+264.875
	RIGHT	+260.805

EXISTING BRIDGE DATA

TYPE: 3 SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECKS & SUBSTRUCTURES
SPANS: 7315 mm ±, 9144 mm ±, 7315 mm ± c/c BEARINGS
ROADWAY: 8534 mm± F/F OF CURBS
LOADING: CF 400 (57)
WEARING SURFACE: 25 mm MONOLITHIC CONCRETE
ALIGNMENT: 10°–00'–00"± CURVE TO RIGHT
SKEW: 35°–00'–00"± LT. FWD.
APPROACH SLABS: AS–1–54 (±7620 mm LONG)
CROWN: ±0.06 SUPERELEVATION
DATE BUILT: 1962
STRUCTURE FILE NUMBER: 2200309

PROPOSED STRUCTURE

TYPE: 3 SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECKS & SUBSTRUCTURES
SPANS: 7315 mm±, 9144 mm±, 7315 mm± c/c BEARINGS
ROADWAY: 8228 mm T/T OF PARAPET
LOADING: MS18 & ALT. MILITARY LOADING
WEARING SURFACE: 32 mm MICRO–SILICA MODIFIED CONCRETE
ALIGNMENT: 10°–00'–00"± CURVE TO RIGHT
SKEW: 35°–00'–00"± LT. FWD
APPROACH SLABS: AS–1–81M (7600 mm LONG)
SUPERELEVATION: 0.06±



CURVE DATA – RAMP D
P.I. STA. 0+221.821
Δ = 35° 00' 00" RT
T = 55.063 m
R = 174.638 m
L = 106.680 m
E = 8.475 m
e_{max} = 0.060

WEARING COURSE REMOVED AND FEATHERING

FEATHERING AT STRUCTURES IS TO BE DONE TO INSURE OVERLAY MEETS PROPOSED STRUCTURE PROFILE GRADE AS PER STANDARD DRAWING BR–3.1M.

BENCH MARK:
R.R.S. SET IN THE SOUTH SIDE OF THE MOST EASTERLY WOOD GUARDRAIL POST, BEING 24.4 METERS ± RIGHT OF S.R. 2 CENTERLINE STA. 13+780±
ELEV. = 182.230

BENCH MARK:
TOP OF IRON PIN BEING 57.3 METERS ± RIGHT OF S.R. 2 CENTERLINE STA. 13+823±
ELEV. = 178.783

* 11.43 m OF SHOP CURVED GUARDRAIL, R=7.5 m, & 13.335 m OF SHOP CURVED GUARDRAIL, R=19.28 m

ESTIMATED QUANTITIES

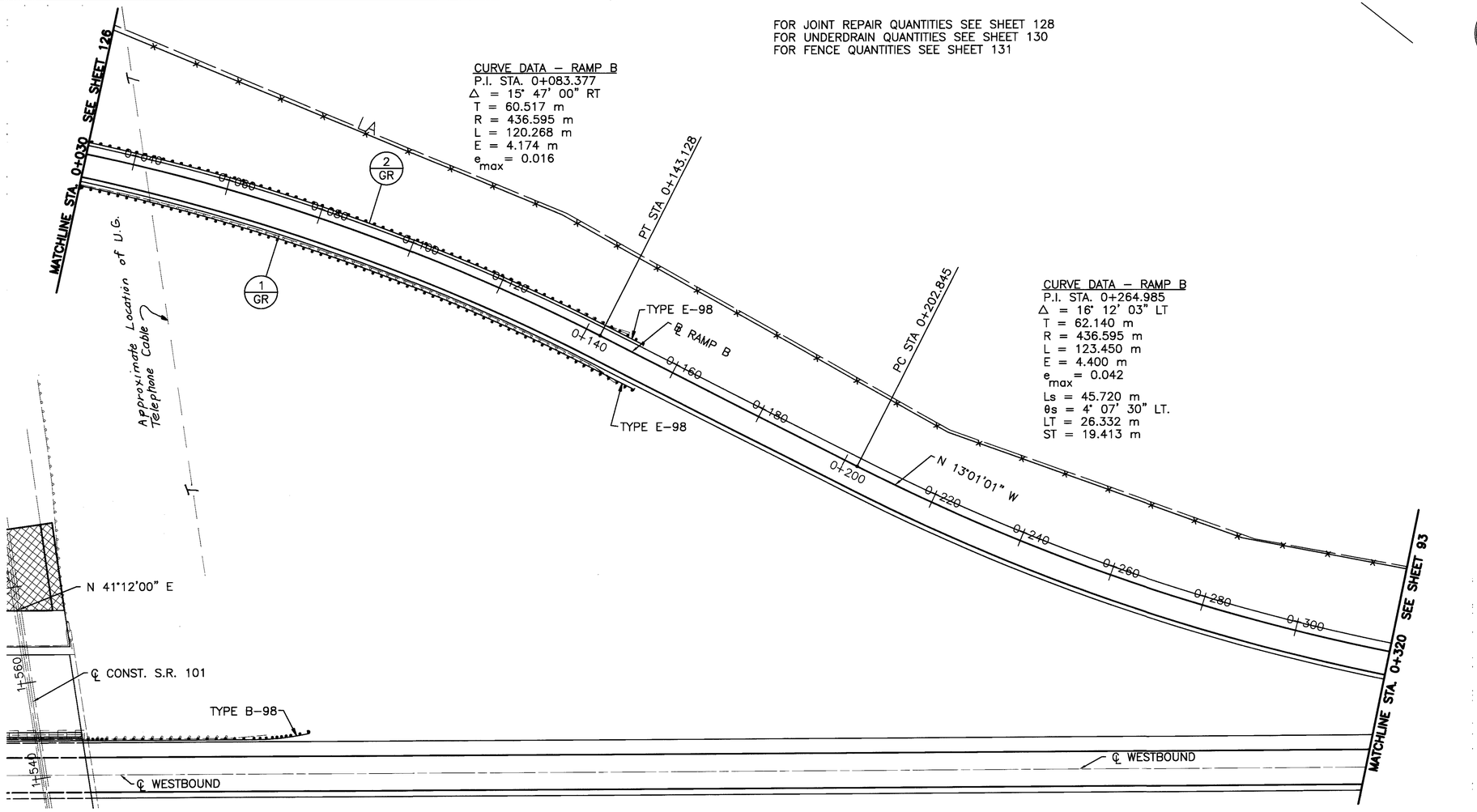
REF. NO.	STATION TO STATION	SIDE	202 APPROACH SLAB REMOVED	202 GUARDRAIL REMOVED	601 ROCK CHANNEL PROTECT. TYPE C W/FILTER	602 CONCRETE MASONRY	603 375 mm CONDUIT TYPE F	604 CATCH BASIN NO. 6	606 GUARDRAIL TYPE 5	606 ANCHOR ASSEMBLY TYPE B–98	606 ANCHOR ASSEMBLY TYPE T	606 BRIDGE TERMINAL ASSEMBLY TYPE 1	606 BRIDGE TERMINAL ASSEMBLY TYPE 2	606 BRIDGE TERMINAL ASSEMBLY TYPE 1 AS PER PLAN	609 CURB TYPE 6	626 BARRIER REFLECTOR TYPE A	626 BARRIER REFLECTOR TYPE B
			SQ. METER	METER	CU. METER	CU. METER	METER	EACH	METER	EACH	EACH	EACH	EACH	EACH	METER	EACH	EACH
1–R	0+221.14 TO 0+229.74	RT.&LT.	42.1												6.5		
2–R	0+255.33 TO 0+262.93	RT.&LT.	37.1												5.5		
1–D	0+214.00	RT.			3.4	0.22	7	1									
2–D	0+267.00	RT.			3.4	0.22	7	1									
1–GR	0+198.44 TO 0+223.21	RT.		15.24					13.335	1		1				1	2
2–GR	0+225.96 TO 0+230.67	LT.		15.24					24.765		1			1		2	2
3–GR	0+257.59 TO 0+289.53	RT.		15.24					26.67		1		1			2	
4–GR	0+262.73 TO 0+287.57	LT.		15.24					22.86		1		1			2	
1–EC	0+228.00 TO 0+238.00	RT.&LT.			38												
2–EC	0+252.00 TO 0+259.00	RT.&LT.			14												
Totals to General Summary			79	60.96	59	0.5	14	2	87.63	1	3	1	2	1	12	7	4

SCALE IN METERS 0 10 20 1:500
CALCULATED TCM CHECKED BHM

PLAN SHEET
RAMP D @ U.S. 6

ERI-2-2.866

FOR JOINT REPAIR QUANTITIES SEE SHEET 128
FOR UNDERDRAIN QUANTITIES SEE SHEET 130
FOR FENCE QUANTITIES SEE SHEET 131



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 GUARDRAIL REMOVED	606 GUARDRAIL TYPE 5	606 ANCHOR ASSEMBLY TYPE E-98	626 BARRIER REFLECTOR TYPE A
			METER	METER	EACH	EACH
1-GR	0+030.00 TO 0+154.42	RT.	123.74	120.61	1	4
2-GR	0+030.00 TO 0+152.01	LT.	113.70	118.20	1	4
Totals to General Summary			237.44	238.81	2	8

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

metric units

SCALE IN METERS 0 10 20 1:500

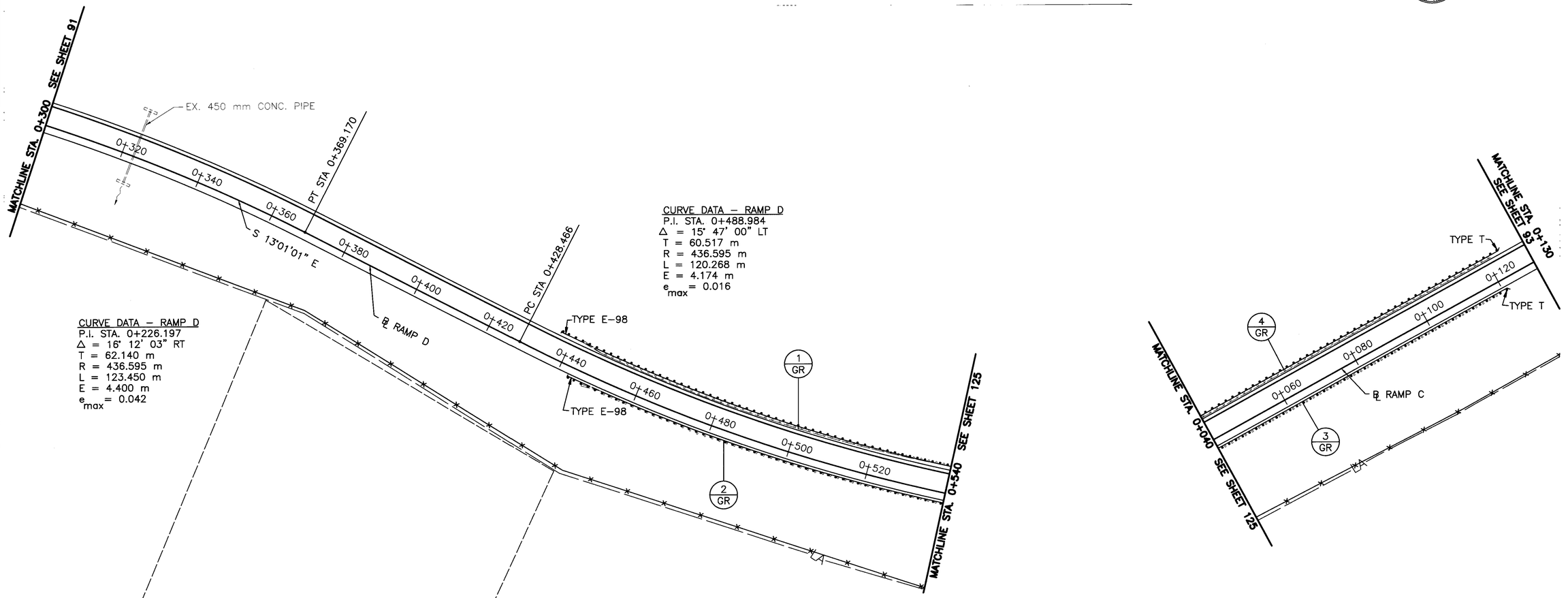
CALCULATED TCM
CHECKED BMH

PLAN SHEET
RAMP B @ S.R. 101

ERI-2-2.866

119
327

FOR JOINT REPAIR QUANTITIES SEE SHEET 128
FOR UNDERDRAIN QUANTITIES SEE SHEET 130
FOR FENCE QUANTITIES SEE SHEET 131



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 GUARDRAIL REMOVED (METER)	606 GUARDRAIL TYPE 5 (METER)	606 ANCHOR ASSEMBLY TYPE E–98 (EACH)	606 ANCHOR ASSEMBLY TYPE T (EACH)	626 BARRIER REFLECTOR TYPE A (EACH)
1–GR	0+436.70D TO 0+540.00D	LT.	147.05	103.30	1		4
2–GR	0+442.66D TO 0+540.00D	RT.	129.73	82.10	1		3
3–GR	0+040.00C TO 0+121.13C	RT.	79.63	77.32		1	3
4–GR	0+040.00C TO 0+123.59C	LT.	81.16	79.78		1	3
Totals to General Summary			437.57	342.50	2	2	13

REF. NO.	STATION TO STATION	SIDE
Totals to General Summary		

metric units

SCALE IN METERS 0 10 20 1:500

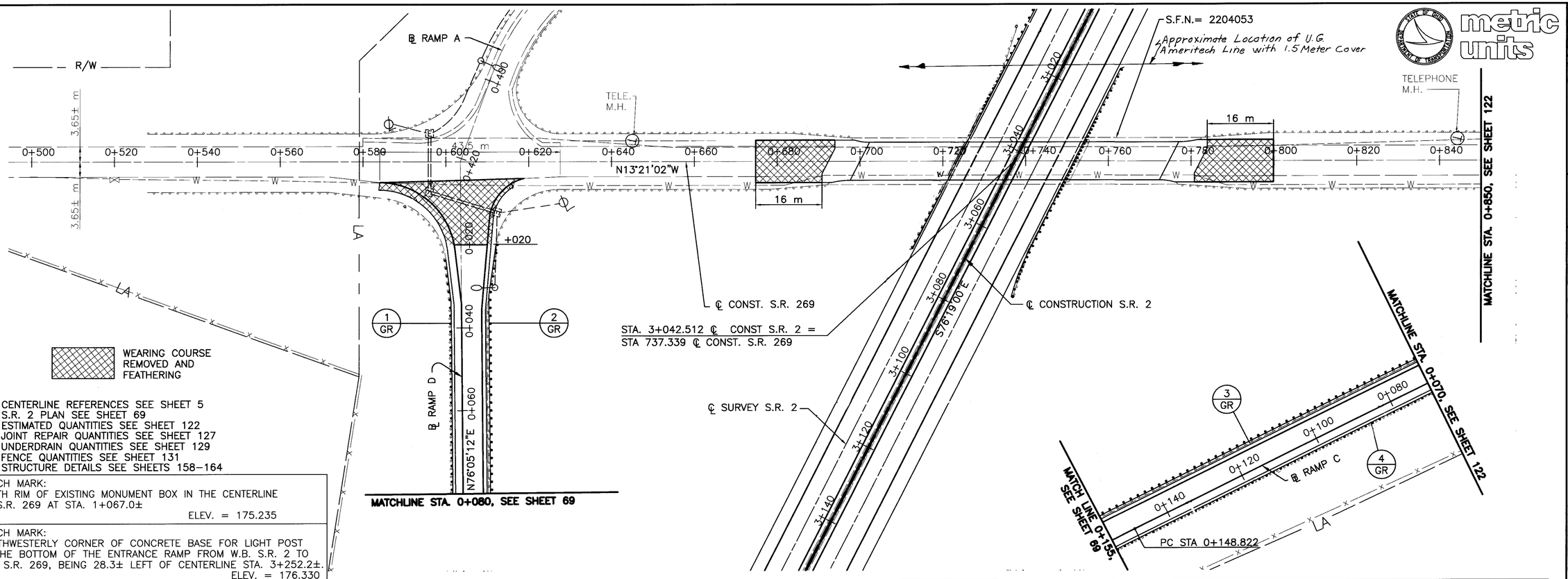
CALCULATED TCM
CHECKED BMH

PLAN SHEET
RAMPS C & D @ S.R. 101

ERI-2-2.866

120
327

wa:s2 P:\3907\DWG\HWY\PLAN\plan and profile\ 3907RP41.dwg NOV 12, 1998 TIME: 7:43 PM



FOR CENTERLINE REFERENCES SEE SHEET 5
FOR S.R. 2 PLAN SEE SHEET 69
FOR ESTIMATED QUANTITIES SEE SHEET 122
FOR JOINT REPAIR QUANTITIES SEE SHEET 127
FOR UNDERDRAIN QUANTITIES SEE SHEET 129
FOR FENCE QUANTITIES SEE SHEET 131
FOR STRUCTURE DETAILS SEE SHEETS 158–164

BENCH MARK:
NORTH RIM OF EXISTING MONUMENT BOX IN THE CENTERLINE OF S.R. 269 AT STA. 1+067.0±
ELEV. = 175.235

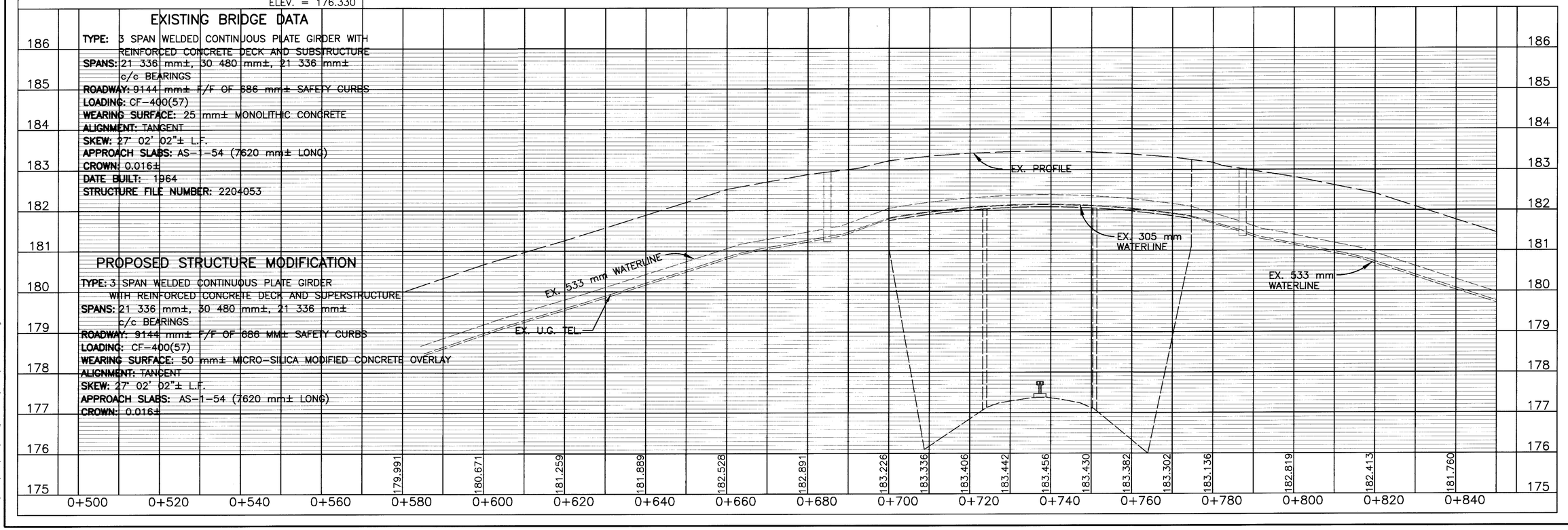
BENCH MARK:
SOUTHWESTERLY CORNER OF CONCRETE BASE FOR LIGHT POST AT THE BOTTOM OF THE ENTRANCE RAMP FROM W.B. S.R. 2 TO N.B. S.R. 269, BEING 28.3± LEFT OF CENTERLINE STA. 3+252.2±.
ELEV. = 176.330

EXISTING BRIDGE DATA

TYPE: 3 SPAN WELDED CONTINUOUS PLATE GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 21 336 mm±, 30 480 mm±, 21 336 mm± c/c BEARINGS
ROADWAY: 9144 mm± F/F OF 686 mm± SAFETY CURBS
LOADING: CF-400(57)
WEARING SURFACE: 25 mm± MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
SKEW: 27° 02' 02"± L.F.
APPROACH SLABS: AS-1-54 (7620 mm± LONG)
CROWN: 0.016±
DATE BUILT: 1964
STRUCTURE FILE NUMBER: 2204053

PROPOSED STRUCTURE MODIFICATION

TYPE: 3 SPAN WELDED CONTINUOUS PLATE GIRDER WITH REINFORCED CONCRETE DECK AND SUPERSTRUCTURE
SPANS: 21 336 mm±, 30 480 mm±, 21 336 mm± c/c BEARINGS
ROADWAY: 9144 mm± F/F OF 686 MM± SAFETY CURBS
LOADING: CF-400(57)
WEARING SURFACE: 50 mm± MICRO-SILICA MODIFIED CONCRETE OVERLAY
ALIGNMENT: TANGENT
SKEW: 27° 02' 02"± L.F.
APPROACH SLABS: AS-1-54 (7620 mm± LONG)
CROWN: 0.016±



SCALE IN METERS 0 10 20 1:500

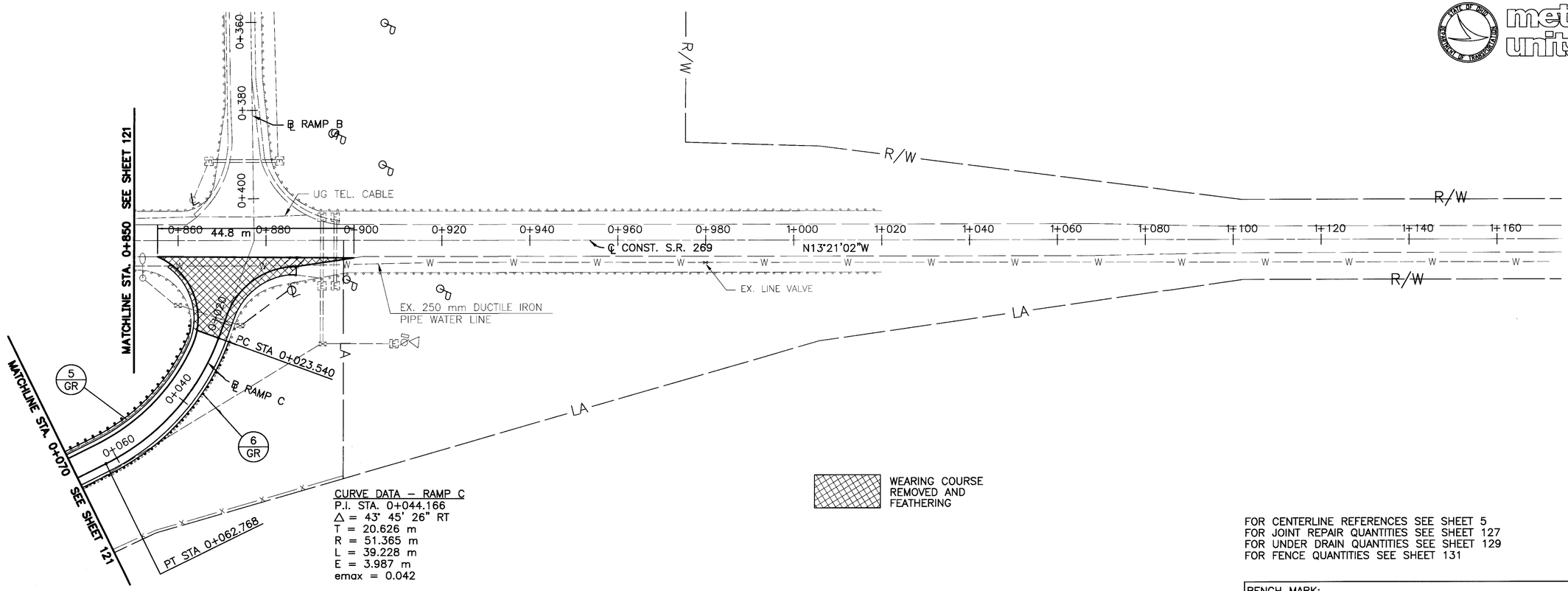
CALCULATED OAH CHECKED TCM

PLAN & PROFILE - S.R. 269
STA. 0+500 TO STA. 0+850

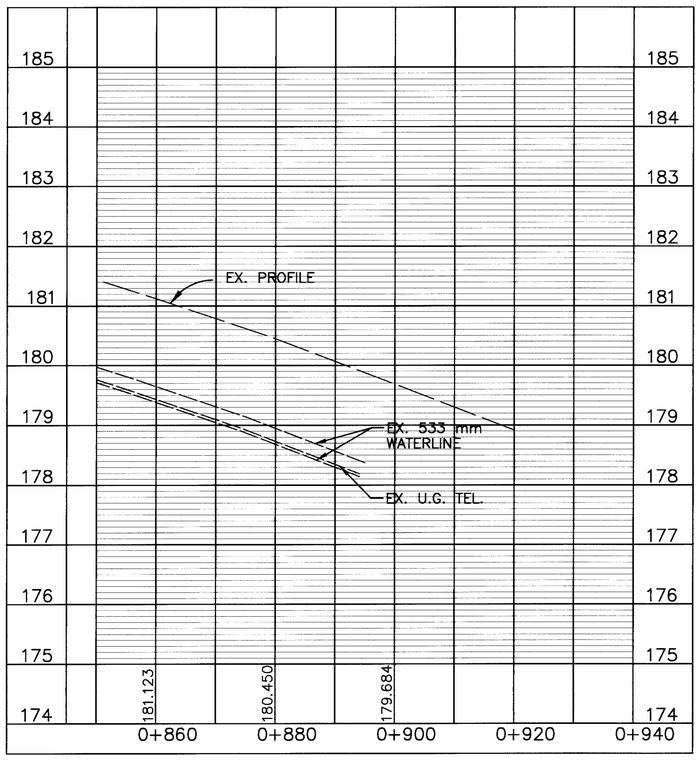
ERI-2-2.866

121/327

wstsz P:\3907\DWG\HWY\PLAN\plan and profile\ 3907RP35.dwg NOV 12, 1998 TIME: 3:54 PM



CURVE DATA – RAMP C
P.I. STA. 0+044.166
△ = 43° 45' 26" RT
T = 20.626 m
R = 51.365 m
L = 39.228 m
E = 3.987 m
emax = 0.042



FOR CENTERLINE REFERENCES SEE SHEET 5
FOR JOINT REPAIR QUANTITIES SEE SHEET 127
FOR UNDER DRAIN QUANTITIES SEE SHEET 129
FOR FENCE QUANTITIES SEE SHEET 131

BENCH MARK:
NORTH RIM OF EXISTING MONUMENT BOX IN THE CENTERLINE OF S.R. 269 AT STA. 1+067.0±
ELEV. = 175.235

BENCH MARK:
SOUTHWESTERLY CORNER OF CONCRETE BASE FOR LIGHT POST AT THE BOTTOM OF THE ENTRANCE RAMP FROM W.B. S.R. 2 TO N.B. S.R. 269, BEING 28.3± LEFT OF CENTERLINE STA. 3+252.2±.
ELEV. = 176.330

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 GUARDRAIL REMOVED METER	606 GUARDRAIL TYPE 5 METER	626 BARRIER REFLECTOR TYPE A EACH
1-GR	0+023.62 D TO 0+080.00 D	RT.	56.38	56.38	2
2-GR	0+020.00 D TO 0+080.00 D	LT.	60	60	2
3-GR	0+070.00 C TO 0+155.00 C	RT.	85	85	3
4-GR	0+070.00 C TO 0+155.00 C	LT.	85	85	3
5-GR	0+021.63 C TO 0+070.00 C	RT.	48.37	48.37	1
6-GR	0+023.54 C TO 0+070.00 C	LT.	46.46	46.46	1
Totals to General Summary			381.21	381.21	12

metric units

SCALE IN METERS 0 10 20 1:500

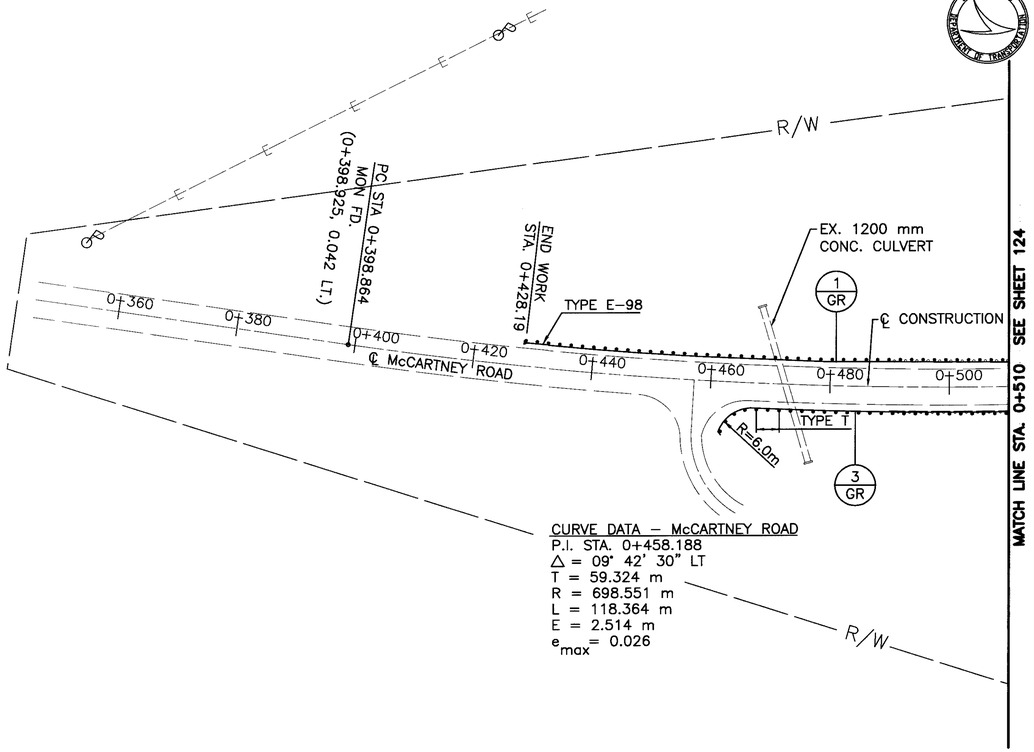
CALCULATED OAH CHECKED TCM

PLAN & PROFILE – S.R. 269
STA. 0+850 TO STA. 1+170

ERI-2-2.866

122
327

FOR CENTERLINE REFERENCES SEE SHEET 5



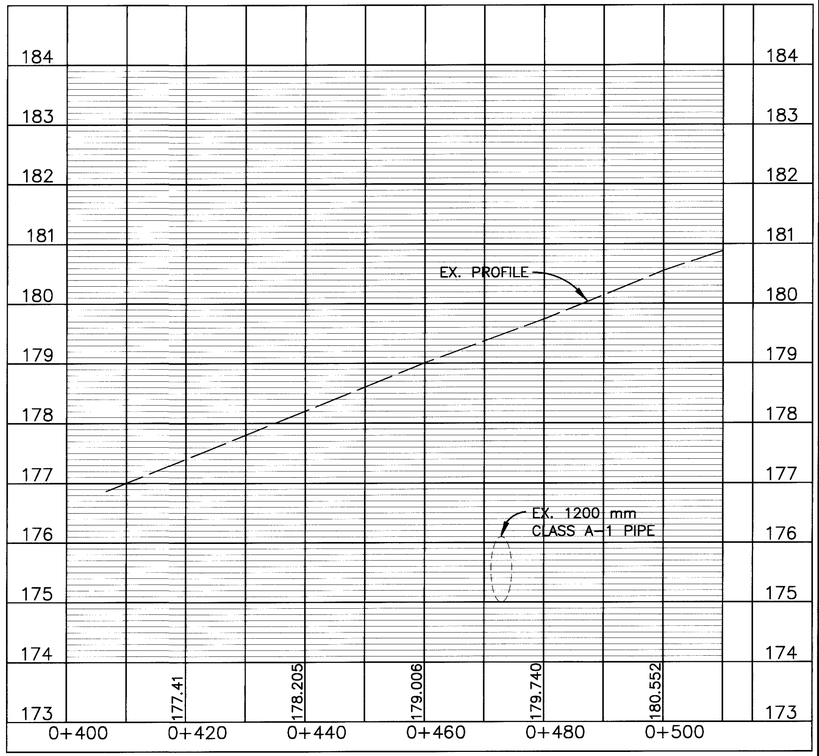
BENCH MARK:
TOP OF SOLID IRON PIN IN CONCRETE MONUMENT IN THE CENTERLINE OF McCARTNEY ROAD AT STA. 0+682±
ELEV. = 181.565

BENCH MARK:
TOP OF PK NAIL BEING 3.1 METERS LEFT OF CENTERLINE STA. 0+560± OF McCARTNEY ROAD.
ELEV. = 182.068

* INCLUDES 11.43 m OF SHOP CURVED GUARDRAIL
** INCLUDES 7.62 m OF SHOP CURVED GUARDRAIL

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 APPROACH SLAB REMOVED	202 GUARDRAIL REMOVED	601 ROCK CHANNEL PROTECTION TYPE C W/FILTER	602 CONCRETE MASONRY	603 375 MM CONDUIT TYPE F	604 CATCH BASIN NO. 6	606 GUARDRAIL TYPE 5	606 ANCHOR ASSEMBLY TYPE T	606 BRIDGE TERMINAL ASSEMBLY TYPE F	606 ANCHOR ASSEMBLY TYPE E-98	609 CURB TYPE 6	626 BARRIER REFLECTOR TYPE A	626 BARRIER REFLECTOR TYPE B
			SQ. METERS	METER	CU. METER	CU. METER	METER	EACH	METER	EACH	EACH	EACH	METER	EACH	EACH
1–R	0+554.61 TO 0+562.21	RT&LT	61										12.5		
2–R	0+656.99 TO 0+664.59	RT&LT	61										12.5		
1–D	0+547.87	LT.			3.4	0.22	14	1							
2–D	0+551.92	RT.			3.4	0.22	13	1							
3–D	0+667.28	LT.			3.4	0.22	15	1							
4–D	0+671.33	RT.			3.4	0.22	16	1							
1–GR	0+428.19 TO 0+510.00	LT.		20					66.57			1		3	
2–GR	0+510.00 TO 0+558.85	LT.		23					48.85		1			1	4
3–GR	0+461.806 TO 0+510.00	RT.		20					56.66**	1				2	
4–GR	0+510.00 TO 0+562.93	RT.		45.88					52.93		1			2	3
5–GR	0+658.48 TO 0+696.440	LT.		16.26					45.72*		1			2	
6–GR	0+662.53 TO 0+760	RT.		55.89					80.62		1	1		2	
7–GR	0+705 TO 0+760	LT.		48.4					41.93*	1		1		2	
Totals to General Summary			122	229.43	14	0.9	58	4	393.28	2	4	3	25	14	7



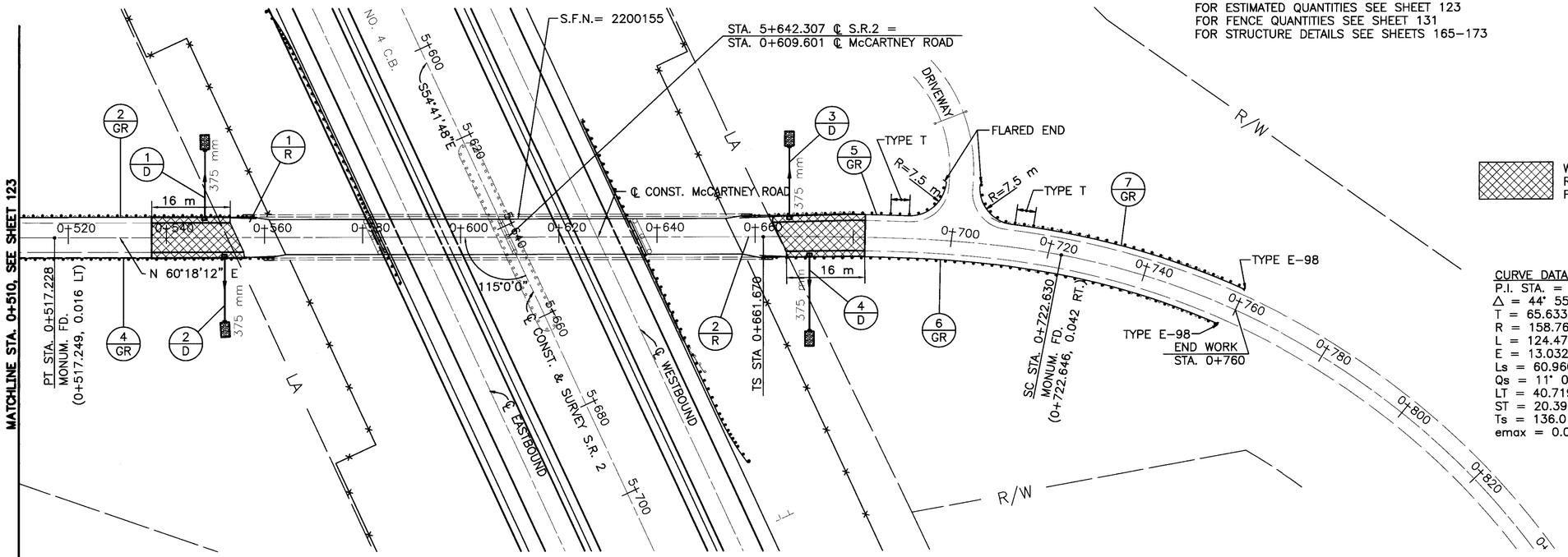
CALCULATED OAH
CHECKED TCM

PLAN & PROFILE - McCARTNEY ROAD
STA. 0+350 TO STA. 0+510

ER-2-2.866

FOR CENTERLINE REFERENCES SEE SHEET 5
FOR S.R. 2 PLAN SEE SHEET 77
FOR ESTIMATED QUANTITIES SEE SHEET 123
FOR FENCE QUANTITIES SEE SHEET 131
FOR STRUCTURE DETAILS SEE SHEETS 165–173

metric units

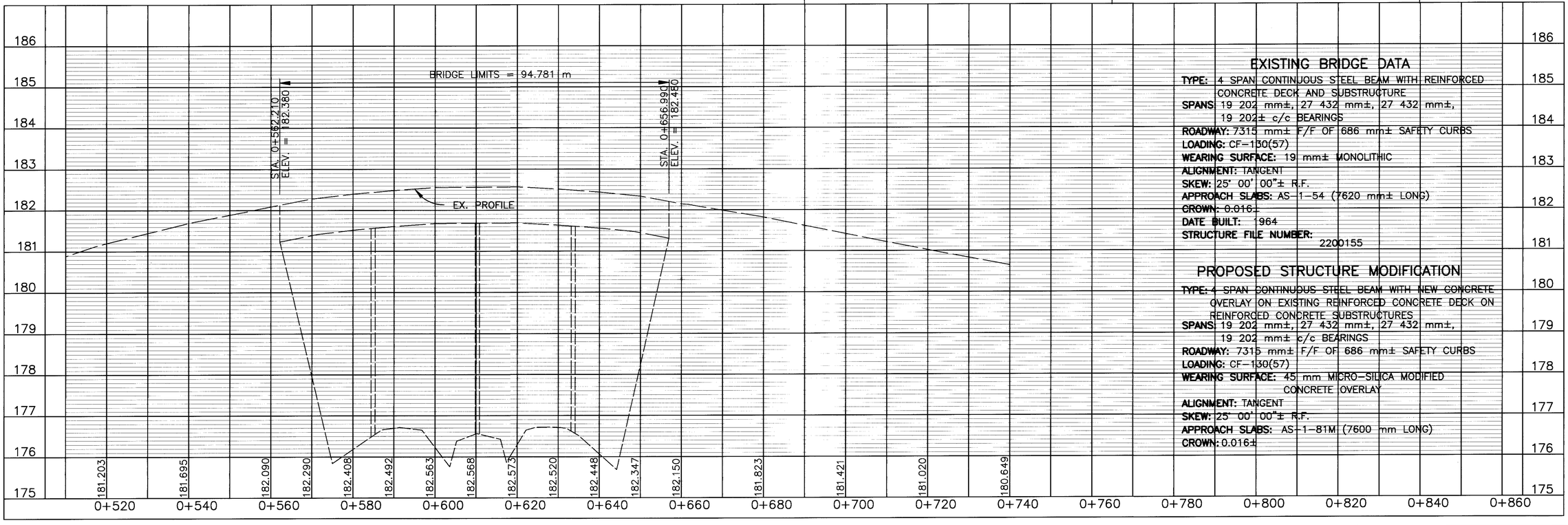


WEARING COURSE REMOVED AND FEATHERING

CURVE DATA – McCARTNEY ROAD
P.I. STA. = 797.681
△ = 44° 55' 16" RT
T = 65.633 m
R = 158.762 m
L = 124.472 m
E = 13.032 m
Ls = 60.960 m
Qs = 11° 00' 00"
LT = 40.719 m
ST = 20.392 m
Ts = 136.011 m
emax = 0.0832 m

BENCH MARK:
TOP OF SOLID IRON PIN IN CONCRETE MONUMENT IN THE CENTERLINE OF McCARTNEY ROAD AT STA. 0+682±
ELEV. = 181.565

BENCH MARK:
TOP OF PK NAIL BEING 3.1 METERS LEFT OF CENTERLINE STA. 0+560± OF McCARTNEY ROAD.
ELEV. = 182.068



EXISTING BRIDGE DATA

TYPE: 4 SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 19 202 mm±, 27 432 mm±, 27 432 mm±, 19 202± c/c BEARINGS
ROADWAY: 7315 mm± F/F OF 686 mm± SAFETY CURBS
LOADING: CF–130(57)
WEARING SURFACE: 19 mm± MONOLITHIC
ALIGNMENT: TANGENT
SKEW: 25° 00' 00"± R.F.
APPROACH SLABS: AS–1–54 (7620 mm± LONG)
CROWN: 0.016±
DATE BUILT: 1964
STRUCTURE FILE NUMBER: 2200155

PROPOSED STRUCTURE MODIFICATION

TYPE: 4 SPAN CONTINUOUS STEEL BEAM WITH NEW CONCRETE OVERLAY ON EXISTING REINFORCED CONCRETE DECK ON REINFORCED CONCRETE SUBSTRUCTURES
SPANS: 19 202 mm±, 27 432 mm±, 27 432 mm±, 19 202 mm± c/c BEARINGS
ROADWAY: 7315 mm± F/F OF 686 mm± SAFETY CURBS
LOADING: CF–130(57)
WEARING SURFACE: 45 mm MICRO–SILICA MODIFIED CONCRETE OVERLAY
ALIGNMENT: TANGENT
SKEW: 25° 00' 00"± R.F.
APPROACH SLABS: AS–1–81M (7600 mm LONG)
CROWN: 0.016±

SCALE IN METERS 0 10 20 1:500
CALCULATED OAH CHECKED TCM

PLAN & PROFILE – McCARTNEY ROAD
STA. 0+510 TO STA. 0+820

ERI-2-2.866

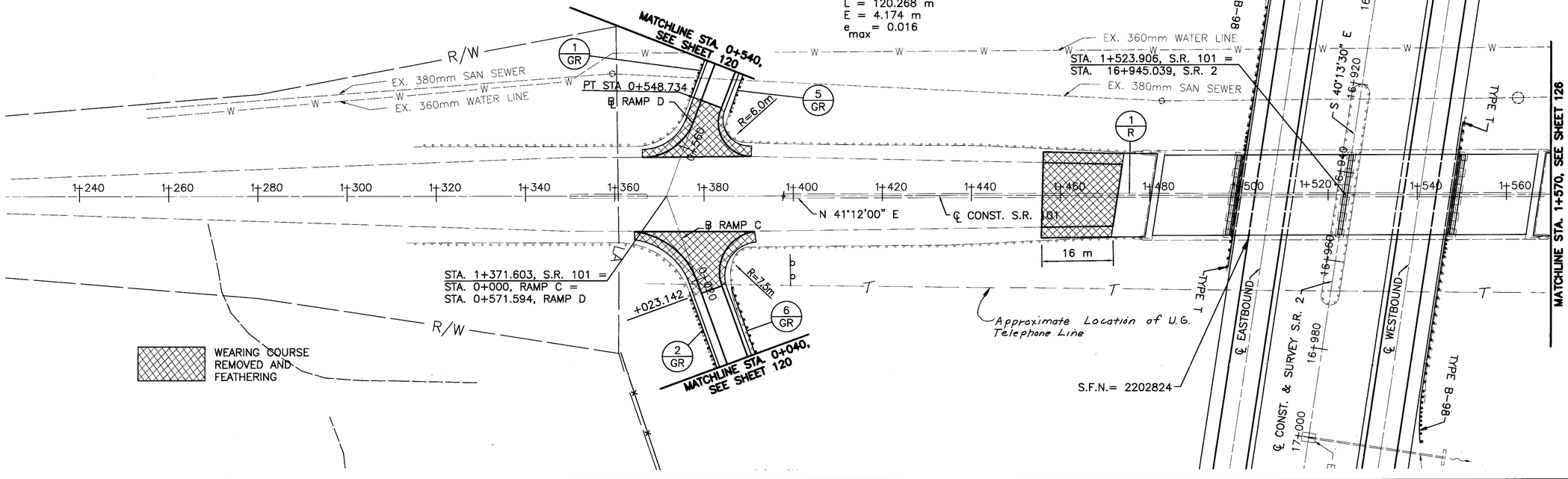
BENCH MARK:
R.R. SPIKE IN CONC. MON. C S. R. 2 AT STA. 16+855.400±, ELEV.=186.289

BENCH MARK:
B.M. #726 ERIE CO. ENG., BRASS PLUG IN THE N. END OF W. CONC. CURBING OF S.R. 2 OVERPASS ALONG S.R. 101, ELEV.=193.637

FOR CENTERLINE REFERENCES SEE SHEET 5
FOR S.R. 2 PLAN SEE SHEET 92
FOR ESTIMATED QUANTITIES SEE SHEET 126
FOR JOINT REPAIR QUANTITIES SEE SHEET 128
FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131
FOR STRUCTURE DETAILS SEE SHEETS 258–268

metric units

CURVE DATA – RAMP D
P.I. STA. 0+488.984
Δ = 15° 47' 00" LT
T = 60.517 m
R = 436.595 m
L = 120.268 m
E = 4.174 m
e_{max} = 0.016



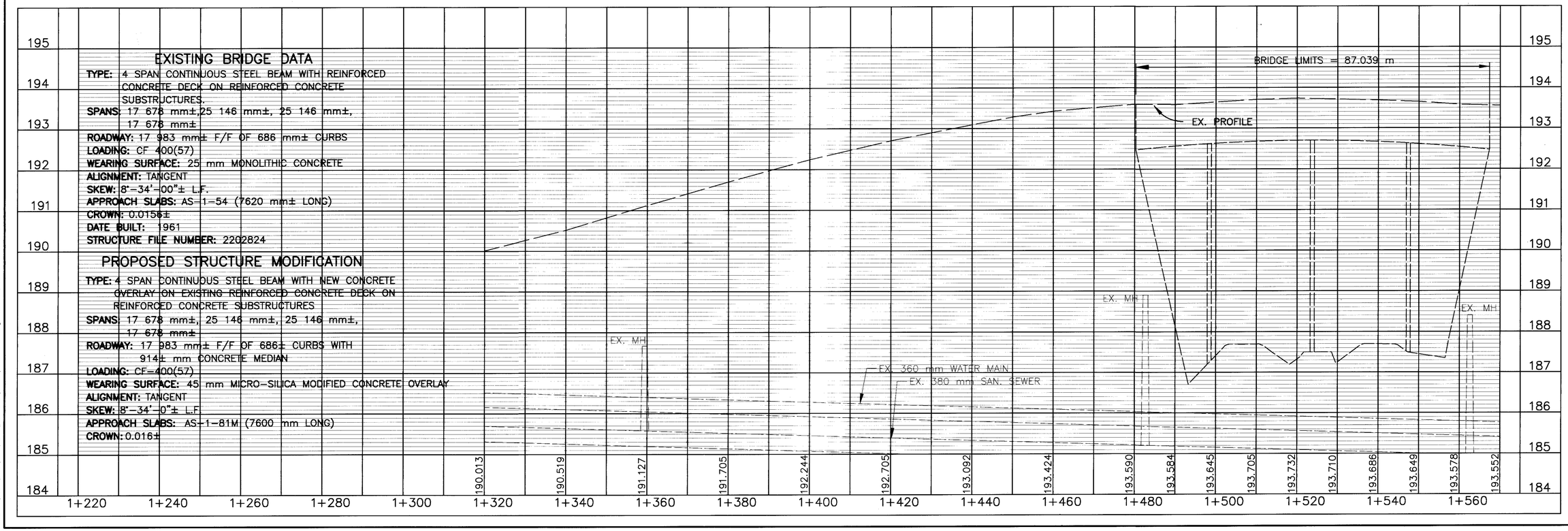
WEARING COURSE REMOVED AND FEATHERING

EXISTING BRIDGE DATA

TYPE: 4 SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK ON REINFORCED CONCRETE SUBSTRUCTURES.
SPANS: 17 678 mm±, 25 146 mm±, 25 146 mm±, 17 678 mm±
ROADWAY: 17 983 mm± F/F OF 686 mm± CURBS
LOADING: CF 400(57)
WEARING SURFACE: 25 mm MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
SKEW: 8°–34'–00"± L.F.
APPROACH SLABS: AS–1–54 (7620 mm± LONG)
CROWN: 0.015±
DATE BUILT: 1961
STRUCTURE FILE NUMBER: 2202824

PROPOSED STRUCTURE MODIFICATION

TYPE: 4 SPAN CONTINUOUS STEEL BEAM WITH NEW CONCRETE OVERLAY ON EXISTING REINFORCED CONCRETE DECK ON REINFORCED CONCRETE SUBSTRUCTURES
SPANS: 17 678 mm±, 25 146 mm±, 25 146 mm±, 17 678 mm±
ROADWAY: 17 983 mm± F/F OF 686± CURBS WITH 914± mm CONCRETE MEDIAN
LOADING: CF–400(57)
WEARING SURFACE: 45 mm MICRO–SILICA MODIFIED CONCRETE OVERLAY
ALIGNMENT: TANGENT
SKEW: 8°–34'–0"± L.F.
APPROACH SLABS: AS–1–81M (7600 mm LONG)
CROWN: 0.016±



SCALE IN METERS 0 10 20 1:500

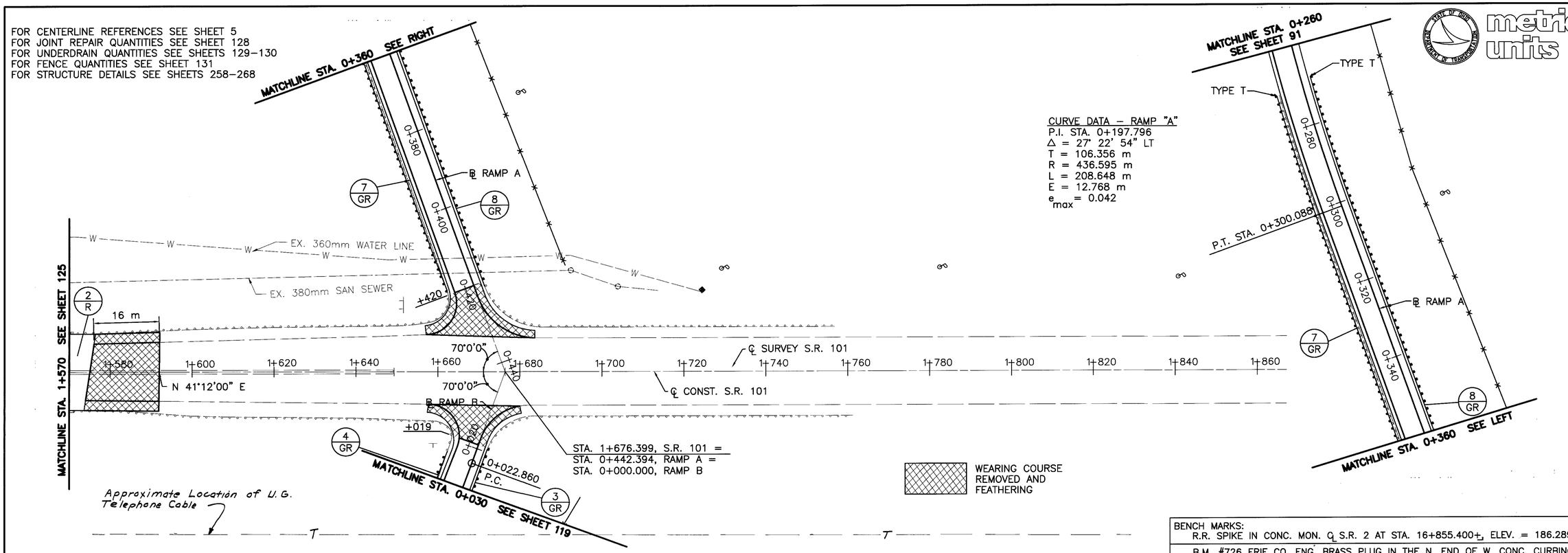
CALCULATED OAH CHECKED TJS

PLAN & PROFILE – S.R. 101
STA. 1+220 TO STA. 1+570

ERI-2-2.866

125/327

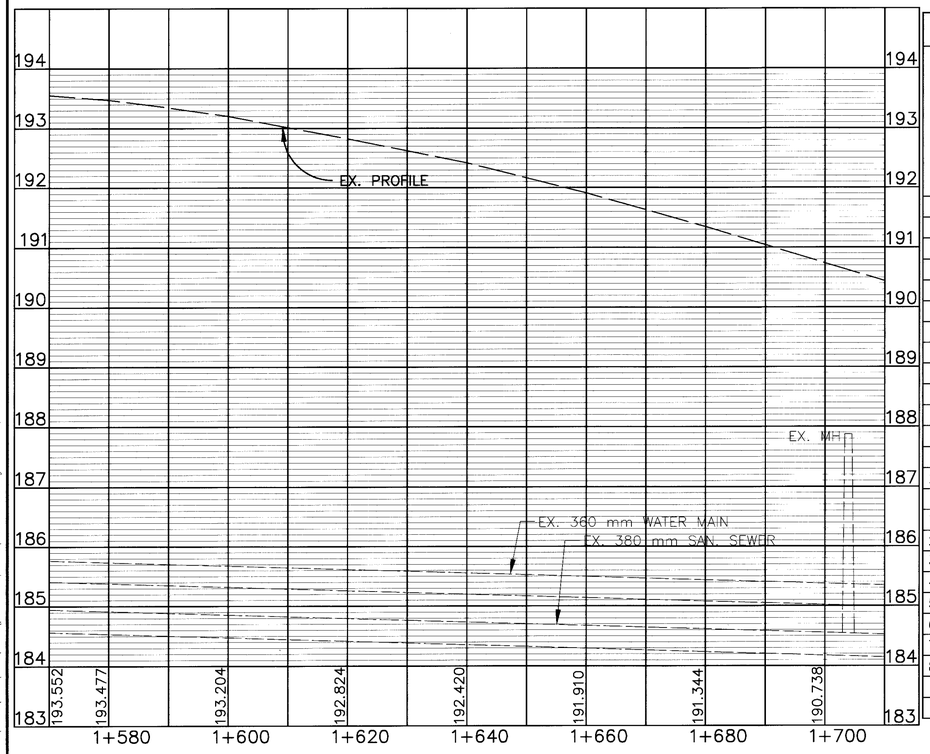
FOR CENTERLINE REFERENCES SEE SHEET 5
FOR JOINT REPAIR QUANTITIES SEE SHEET 128
FOR UNDERDRAIN QUANTITIES SEE SHEETS 129–130
FOR FENCE QUANTITIES SEE SHEET 131
FOR STRUCTURE DETAILS SEE SHEETS 258–268



CURVE DATA – RAMP "A"
P.I. STA. 0+197.796
Δ = 27° 22' 54" LT
T = 106.356 m
R = 436.595 m
L = 208.648 m
E = 12.768 m
e_{max} = 0.042

WEARING COURSE REMOVED AND FEATHERING

BENCH MARKS:
R.R. SPIKE IN CONC. MON. ℄ S.R. 2 AT STA. 16+855.400±, ELEV. = 186.289.
B.M. #726 ERIE CO. ENG. BRASS PLUG IN THE N. END OF W. CONC. CURBING OF S.R. 2 OVERPASS ALONG S.R. 101, ELEV. = 193.637.



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 APPROACH SLAB REMOVED (SQ. METERS)	202 GUARD–RAIL REMOVED (METER)	606 GUARD–RAIL TYPE 5 (METER)	606 ANCHOR ASSMBLY TYPE T (EACH)	609 CURB TYPE 6 (METER)	626 BARRIER REFLECTOR TYPE A (EACH)
1–R	1+472.79 TO 1+480.39	RT&LT	123.1				13	
2–R	1+567.43 TO 1+575.03	RT&LT	123.1				13	
1–D	1+465.95	RT.						
2–D	1+468.75	LT.						
3–D	1+579.95	RT.						
4–D	1+581.85	LT.						
1–EC	1+479.00 TO 1+491.00	RT&LT						
2–EC	0+510.00 TO 0+556.67	RT&LT						
1–GR	0+540.00D TO 0+548.75D	RT.		8.75	8.75			1
2–GR	0+022.07C TO 0+040.00C	RT.		17.93	17.93			1
3–GR	0+019.31B TO 0+030.00B	LT.		10.69	10.69			
4–GR	0+023.04B TO 0+030.00B	RT.		6.96	6.96			
5–GR	0+540.00D TO 0+548.75D	LT.		8.75	8.75			1
6–GR	0+024.53C TO 0+040.00C	LT.		15.47	15.47			1
7–GR	0+270.83A TO 0+418.97A	RT.		148.25	144.33	1		5
8–GR	0+268.52A TO 0+421.09A	LT.		149.18	148.76	1		5
Totals to General Summary			246	365.98	361.64	2	26	14

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED OAH CHECKED BMH

PLAN & PROFILE – S.R. 101
STA. 1+570 TO STA. 1+760

ERI-2-2.866

126
327

STATION TO STATION		LENGTH	NO. JOINTS	CONCRETE PAVEMENT WIDTH	TOTAL JOINT LENGTH	255 FULL DEPTH PAVEMENT SAWING	255 FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT CLASS C	413 SAWING AND SEALING ASPHALT CONCRETE PAVEMENT
S.R. 269 JOINT REPAIR		METER	EACH	METER	METER	METER	SQ. METER	METER
STATION	TYPE							
RAMP C								
0+115.770	CRACK	1.8	1	4.8	4.8	9.6	8.64	15.02
0+134.970	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+203.850	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+222.140	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+259.020	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+277.610	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
RAMP D								
0+120.120	CRACK	1.8	1	4.8	4.8	9.6	8.64	15.02
0+138.100	CRACK	1.8	1	4.8	4.8	9.6	8.64	15.02
0+142.670	CRACK	1.8	1	4.8	4.8	9.6	8.64	15.02
0+153.040	CRACK	1.8	1	4.8	4.8	9.6	8.64	15.02
0+156.690	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+186.560	CRACK	1.8	1	4.8	4.8	9.6	8.64	15.02
0+199.560	CRACK	1.8	1	4.8	4.8	9.6	8.64	15.02
0+212.470	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+230.760	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+249.040	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+266.720	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+288.060	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+302.990	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+338.950	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+357.240	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+369.430	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+381.320	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+393.510	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
U.S. 6 JOINT REPAIR								
RAMP A								
0+010.610	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+028.900	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+047.490	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+065.770	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+084.060	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+102.650	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+120.330	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+138.620	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+156.600	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+174.280	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+192.260	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+209.940	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+227.920	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+245.900	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+264.190	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+282.480	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+300.760	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+318.750	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02

FOR REPAIR DETAILS SEE STANDARD CONSTRUCTION DRAWING BP-2.5M UTILIZING THE TYPE Y AND TYPE T REPAIRS.

STATION LIMITS ARE APPROXIMATE ONLY. EXACT LOCATIONS MAY BE ADJUSTED IN THE FIELD AS CONDITIONS DICTATE PER THE FIELD ENGINEER.

STATION TO STATION		LENGTH	NO. JOINTS	CONCRETE PAVEMENT WIDTH	TOTAL JOINT LENGTH	255 FULL DEPTH PAVEMENT SAWING	255 FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT CLASS C	413 SAWING AND SEALING ASPHALT CONCRETE PAVEMENT
U.S. 6 JOINT REPAIR		METER	EACH	METER	METER	METER	SQ. METER	METER
STATION	TYPE							
RAMP A								
0+337.640	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+357.150	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+376.350	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+396.160	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+415.670	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+435.170	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+453.460	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+471.750	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+490.040	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
RAMP B								
0+166.040	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+183.720	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+201.090	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+218.460	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+238.580	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+255.650	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+273.020	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+279.420	PATCH	1.8	1	4.8	4.8	9.6	8.64	15.02
0+290.090	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+301.970	PATCH	1.8	1	4.8	4.8	9.6	8.64	15.02
0+303.500	PATCH	1.8	1	4.8	4.8	9.6	8.64	15.02
0+307.460	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+312.950	PATCH	1.8	1	4.8	4.8	9.6	8.64	15.02
0+324.530	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+330.320	PATCH	1.8	1	4.8	4.8	9.6	8.64	15.02
0+335.500	PATCH	1.8	1	4.8	4.8	9.6	8.64	15.02
0+341.600	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+347.080	PATCH	1.8	1	4.8	4.8	9.6	8.64	15.02
0+350.740	PATCH	1.8	1	4.8	4.8	9.6	8.64	15.02
0+358.970	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+365.980	PATCH	1.8	1	4.8	4.8	9.6	8.64	15.02
0+376.340	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+393.410	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+410.480	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+427.550	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+443.390	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+461.990	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+479.360	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+496.730	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+514.100	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+530.260	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+548.240	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+559.210	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
RAMP C								
0+015.230	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+024.370	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+042.660	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+060.950	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+079.240	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+097.520	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+116.120	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+134.400	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+152.690	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+170.980	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+189.260	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+207.550	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+225.840	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+244.120	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+262.410	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
TOTALS CARRIED TO GENERAL SUMMARY						951	856	1487

metric units

CALCULATED TCM
CHECKED BMH

JOINT REPAIR QUANTITIES

ERI-2-2.866

STATION TO STATION		LENGTH	NO. JOINTS	CONCRETE PAVEMENT WIDTH	TOTAL JOINT LENGTH	255 FULL DEPTH PAVEMENT SAWING	255 FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT CLASS C	413 SAWING AND SEALING ASPHALT CONCRETE PAVEMENT
U.S. 6 JOINT REPAIR		METER	EACH	METER	METER	METER	SQ. METER	METER
STATION	TYPE							
RAMP D								
0+186.570	PATCH	1.8	1	4.8	4.8	9.6	8.64	15.02
0+201.510	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+213.700	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+218.580	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+258.810	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+279.530	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+295.080	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+313.060	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+349.940	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+368.230	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+386.210	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+404.800	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+423.090	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+441.070	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+459.050	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+477.340	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+495.320	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+513.000	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+530.980	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+548.960	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+566.950	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+584.930	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
S.R. 101 JOINT REPAIR								
RAMP A								
0+135.480	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+153.760	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+169.610	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+187.590	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+205.880	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+224.170	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+242.450	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+260.740	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+278.720	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+297.010	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+315.300	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+333.590	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+351.870	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+370.160	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+388.750	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+407.340	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+422.280	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+429.900	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02

FOR REPAIR DETAILS SEE STANDARD CONSTRUCTION DRAWING BP-2.5M UTILIZING THE TYPE Y AND TYPE T REPAIRS.

STATION TO STATION		LENGTH	NO. JOINTS	CONCRETE PAVEMENT WIDTH	TOTAL JOINT LENGTH	255 FULL DEPTH PAVEMENT SAWING	255 FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT CLASS C	413 SAWING AND SEALING ASPHALT CONCRETE PAVEMENT
S.R. 101 JOINT REPAIR		METER	EACH	METER	METER	METER	SQ. METER	METER
STATION	TYPE							
RAMP B								
0+008.840	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+025.910	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+044.190	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+062.480	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+080.770	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+099.060	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+117.340	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+135.630	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+153.920	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+172.510	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+190.800	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+209.080	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+227.370	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+245.660	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+264.550	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+282.840	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+301.130	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+319.410	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+337.700	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+355.990	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+363.910	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
RAMP C								
0+010.970	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+023.470	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+032.610	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+050.900	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+069.190	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+087.470	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+105.760	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+124.050	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+142.330	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+160.620	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+178.600	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+197.200	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+215.790	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+234.380	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+252.360	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+270.650	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+286.500	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+304.790	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
RAMP D								
0+208.290	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+226.580	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+244.860	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+263.460	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+281.740	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+300.030	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+318.320	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+336.910	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+355.200	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+373.480	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+385.370	PATCH	1.8	1	4.8	4.8	9.6	8.64	15.02
0+391.770	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+410.060	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+428.340	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+431.390	PATCH	1.8	1	4.8	4.8	9.6	8.64	15.02
0+446.630	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+464.920	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+483.210	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+501.490	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+519.480	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+538.070	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+541.420	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+547.210	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+554.530	PATCH	1.8	1	4.8	4.8	9.6	8.64	15.02
0+556.050	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
0+562.760	JOINT	1.8	1	4.8	4.8	9.6	8.64	15.02
TOTAL CARRIED TO GENERAL SUMMARY						1008	908	1578

metric units

CALCULATED TCM
CHECKED BMH

JOINT REPAIR QUANTITIES

ER-2-2.866

metric units

CALCULATED TCM
CHECKED BMH

UNDERDRAIN QUANTITIES

	STATION TO STATION "x" denotes outlet location "*" denotes tie–in S.R.–2 EASTBOUND	MEDIAN UNDERDRAIN		SIDE	OUTLET TO	603 150MM CONDUIT, TYPE F 707.45 NON–PERFORATED ASTM D 3034 TYPE PS 46 OR SDR 35	603 150MM CONDUIT, TYPE B	605 150MM SHALLOW PIPE UNDERDRAIN	605 100MM SHALLOW PIPE UNDERDRAIN **	604 PRECAST REINFORCED CONCRETE OUTLET	BENDS AND BRANCHES FOR INFOR–MATION ONLY
						METER	METER	METER	METER	EA.	EA.
x	4+271.644	4+409.000		O/S	SLOPE		18	137	137	1	1
	4+409.000	4+572.000	x	MED.	C.B.	14		163	163		1
	4+572.000	4+774.700	x	MED.	C.B.	13		203	203		1
x	4+774.700	4+957.730		MED.	C.B.			183	183		
x	4+957.730	5+140.000		MED.	C.B.	13		182	182		1
	5+140.000	5+353.970	x	MED.	C.B.	13		214	214		1
	5+353.970	5+577.850	x	MED.	C.B.	13		224	224		1
x	5+577.850	5+776.100		MED.	C.B.			198	198		
x	5+776.100	5+980.000		MED.	C.B.	13		204	204		1
x	5+980.000	6+187.600		O/S	SLOPE		17	208	208	1	1
x	6+187.600	6+413.889		MED.	C.B.	13		226	226		1
	14+041.870	14+211.228	x	MED.	SLOPE	9		169	169		1
x	14+211.228	14+507.210		MED.	SLOPE			296	296		
x	14+507.210	14+812.110		MED.	C.B.	13		305	305		1
x	14+812.110	15+096.168		MED.	C.B.	11		284	284		1
x	15+096.168	15+215.812		MED.	SLOPE	10		120	120	1	1
x	15+295.700	15+517.250		MED.	SLOPE	20		222	222	1	2
	15+517.250	15+528.848	x	MED.	SLOPE	17		12	12	1	2
	15+632.960	15+810.000	x	MED.	SLOPE	10		177	177	1	1
	15+810.000	15+985.620	x	MED.	C.B.	13		176	176		1
x	15+985.620	16+275.320		MED.	C.B.			290	290		
x	16+275.320	16+460.000		MED.	C.B.	13		185	185		1
x	16+460.000	16+620.000		MED.	SLOPE	10		160	160	1	1
x	16+620.000	16+800.000		MED.	C.B.		13	180	180		1
x	16+800.000	17+000.000		MED.	SLOPE	11		200	200	1	1
x	17+000.000	17+069.000		MED.	C.B.	13		69	69		1
	17+069.000	17+271.130	x	MED.	C.B.		20	202	202		1
x	17+271.130	17+479.520		MED.	C.B.			208	208		
x	17+479.520	17+680.000		MED.	C.B.	13		200	200		1
x	17+680.000	17+829.640		MED.	SLOPE	10		150	150	1	1
x	17+829.640	18+134.380		MED.	C.B.		13	305	305		1
x	18+134.380	18+280.000		MED.	C.B.	13		146	146		1
x	18+280.000	18+451.625		MED.	SLOPE	9		172	172	1	1
	18+627.380	18+835.410	x	MED.	C.B.	13		208	208		1
	18+835.410	18+964.984	x	MED.	SLOPE	15		130	130		1
	19+021.190	19+170.720	x	MED.	C.B.	13		150	150		1
	19+170.720	19+446.279	x	MED.	SLOPE	10		276	276	1	1
	SUB–TOTALS					335	81	7131	7131	11	34

	STATION TO STATION "x" denotes outlet location "*" denotes tie–in S.R.–269, Interchange Ramp D			SIDE	OUTLET TO	603 150MM CONDUIT, TYPE F 707.45 NON–PERFORATED ASTM D 3034 TYPE PS 46 OR SDR 35	605 150MM SHALLOW PIPE UNDERDRAIN	605 100MM SHALLOW PIPE UNDERDRAIN **	604 PRECAST REINFORCED CONCRETE OUTLET	BENDS AND BRANCHES FOR INFOR–MATION ONLY
						METER	METER	METER	EA.	EA.
	0+010.000	0+245.000	x	RT.	SLOPE		235			2
x	0+245.000	0+380.000		RT.	SLOPE		135			2
	Sta. Equation 0+380.000 Ramp D = 3+461.500 S.R. 2									
	S.R.–269, Interchange Ramp C									
	0+020.000	0+281.000	x	LT.	SLOPE	7	261		1	1
	0+281.000	0+377.500	x	LT.	SLOPE	9	97		1	1
	Sta. Equation 0+377.500 Ramp C = 3+326.890 S.R. 2									
	SUB–TOTALS					16	728		2	6

	STATION TO STATION "x" denotes outlet location "*" denotes tie–in S.R.–101			SIDE	OUTLET TO	603 150MM CONDUIT, TYPE F 707.45 NON–PERFORATED ASTM D 3034 TYPE PS 46 OR SDR 35	605 150MM SHALLOW PIPE UNDERDRAIN	605 100MM SHALLOW PIPE UNDERDRAIN **	604 PRECAST REINFORCED CONCRETE OUTLET	BENDS AND BRANCHES FOR INFOR–MATION ONLY
						METER	METER	METER	EA.	EA.
x	1+397.000	1+470.000		RT.	SLOPE	7	73		1	1
x	1+397.000	1+473.000		LT.	SLOPE	8	76		1	1
	1+576.000	1+655.000	x	RT.	SLOPE	9	79		1	1
	1+578.000	1+650.000	x	LT.	SLOPE	9	72		1	1
	SUB–TOTALS					33	300		4	4

	STATION TO STATION "x" denotes outlet location "*" denotes tie–in S.R.–2 EASTBOUND	O/S UNDERDRAIN		SIDE	OUTLET TO	603 150MM CONDUIT, TYPE F 707.45 NON–PERFORATED ASTM D 3034 TYPE PS 46 OR SDR 35	603 150MM CONDUIT, TYPE B	605 150MM SHALLOW PIPE UNDERDRAIN	605 100MM SHALLOW PIPE UNDERDRAIN **	604 PRECAST REINFORCED CONCRETE OUTLET	BENDS AND BRANCHES FOR INFOR–MATION ONLY
						METER	METER	METER	METER	EA.	EA.
	2+866.000	2+953.230	x	O/S	SLOPE	9		87	87	1	1
	2+953.230	3+233.670	x	O/S	SLOPE	11		280	280	1	1
	3+233.670	3+326.890	x	O/S	SLOPE		21	93	93	1	1
x	3+326.890	3+358.400		O/S	SLOPE			32	32		
	Sta. Equation 3+461.500 S.R. 2 = 0+380.000 Ramp D S.R. 269										
*	3+461.500	3+520.450						59	59		
x	3+520.450	3+692.600		O/S	SLOPE	9		172	172	1	1
	3+692.600	3+938.020	x	O/S	SLOPE	8		245	245	1	1
	3+938.020	4+043.180	x	O/S	SLOPE	9		105	105	1	1
x	4+043.180	4+271.644		O/S	SLOPE			228	228		
x	4+271.644	4+409.000		O/S	SLOPE			137	137		2
	4+409.000	4+567.000	x	O/S	SLOPE	10		158	158	1	1
	4+567.000	4+774.700	x	O/S	SLOPE	10		208	208	1	1
x	4+774.700	4+957.730		O/S	SLOPE			183	183		
x	4+957.730	5+140.200		O/S	SLOPE	10		182	182	1	1
	5+140.200	5+350.000	x	O/S	SLOPE	10		210	210	1	1
	5+350.000	5+577.850	x	O/S	SLOPE	10		228	228	1	1
x	5+577.850	5+776.100		O/S	SLOPE			198	198		
x	5+776.100	5+980.000		O/S	SLOPE	7		204	204	1	1
x	5+980.000	6+187.600		O/S	SLOPE			208	208		2
x	6+187.600	6+413.889		O/S	SLOPE	10		226	226	1	1
	Sta. Equation 6+413.889 S.R. 2 = 13+300.033 S.R. 2										
*	13+300.033	13+382.000		O/S	SLOPE			82	82		
x	13+382.000	13+517.500	*	O/S	SLOPE	8		136	136	1	1
	Sta. Equation 13+517.500 S.R. 2 = 0+002.000 Ramp C U.S. 6										
x	13+516.067	13+806.240		O/S	C.B.	3		290	290		1
	13+898.937	14+211.328	x	O/S	SLOPE		20	312	312	1	1
x	14+211.328	14+343.366		O/S	SLOPE			132	132		
	Sta. Equation 14+343.366 S.R. 2 = 0+740.100 Ramp D U.S. 6										
*	14+343.366	14+507.210		O/S	SLOPE			164	164		
x	14+507.210	14+659.575		O/S	SLOPE	8		152	152	1	1
x	15+096.168	15+224.800		O/S	SLOPE	7		129	129	1	1
x	15+307.639	15+517.250		O/S	SLOPE	7		210	210	1	1
	15+517.250	15+528.848	x	O/S	SLOPE	5		12	12	1	1
	15+632.960	15+810.000	x	O/S	SLOPE	6		177	177	1	1
	15+810.000	15+983.000	x	O/S	SLOPE	8		173	173	1	1
x	15+983.000	16+273.000		O/S	SLOPE			290	290		
x	16+273.000	16+460.000		O/S	SLOPE	8		187	187	1	1
x	16+460.000	16+621.000		O/S	SLOPE			161	161		
	Sta. Equation 16+621.000 S.R. 2 = 0+203.000 Ramp D S.R. 101										
x	16+620.000	16+800.000		O/S	C.B.	3		180	180		1
x	16+800.000	17+000.100		O/S	SLOPE	7		200	200	1	1
x	17+000.100	17+069.000		O/S	SLOPE	8		69	69	1	1
	17+069.000	17+271.130	x	MED.	C.B.			202	202		
x	17+271.130	17+383.516		MED.	C.B.			112	112		
	Sta. Equation 17+383.516 S.R. 2 = 0+442.200 Ramp C S.R. 101										
*	17+383.516	17+418.483						35	35		
x	18+101.745	18+280.000		O/S	SLOPE	8		178	178	1	1
x	18+280.000	18+452.509		O/S	SLOPE	6		173	173	1	1
	18+628.278	18+835.410	x	O/S	SLOPE	6		207	207	1	1
	18+835.410	18+965.619	x	O/S	SLOPE	6		130	130	1	1
	19+022.045	19+170.720	x	O/S	SLOPE	8		149	149	1	1
	19+170.720	19+446.279	x	O/S	SLOPE	8		276	276	1	1
	SUB–TOTALS					231	41	7962	7962	30	36
	TOTALS CARRIED TO GENERAL SUMMARY					615	122	16,121	15,093	47	

ADJUSTMENTS FOR CONNECTIONS TO EXISTING OUTLETS MAY BE REQUIRED IN FIELD. STATION LIMITS FOR UNDERDRAINS ARE APPROXIMATE ONLY. EXACT LOCATIONS MAY BE ADJUSTED IN THE FIELD AS EXISTING CONDITIONS DICTATE PER THE FIELD ENGINEER.

** WITH FABRIC WRAP, AS PER PLAN

ERI-2-2.866

metric units

CALCULATED TCM
CHECKED BMH

UNDERDRAIN QUANTITIES

	STATION TO STATION "x" denotes outlet location "*" denotes tie–in S.R.–2 WESTBOUND MEDIAN UNDERDRAIN		SIDE	OUTLET TO	603 150MM CONDUIT, TYPE F 707.45 NON–PERFORATED ASTM D 3034 TYPE PS 46 OR SDR 35	603 150MM CONDUIT, TYPE B	605 150MM SHALLOW PIPE UNDERDRAIN	605 100MM SHALLOW PIPE UNDERDRAIN **	604 PRECAST REINFORCED CONCRETE OUTLET	BENDS AND BRANCHES FOR INFOR–MATION ONLY
					METER	METER	METER	METER	EA.	EA.
x	3+505.240	3+693.510	O\S	SLOPE		21	188		1	1
	3+693.510	3+820.000	x MED.	C.B.	2		126			1
	3+820.000	3+947.160	x O\S	SLOPE		16	127	127	1	1
	3+947.160	4+055.060	x O\S	SLOPE		19	108	108	1	1
	4+055.060	4+272.000	x O\S	SLOPE		15	217	217	1	1
x	4+272.000	4+409.000	O\S	SLOPE			137	137		
	4+409.000	4+567.000	x MED.	C.B.	13		158	158		1
	4+567.000	4+776.700	x MED.	C.B.	13		210	210		1
x	4+776.700	4+957.730	MED.	C.B.			181	181		
x	4+957.730	5+140.100	MED.	C.B.	12		182	182		1
	5+140.100	5+353.970	x MED.	C.B.	13		214	214		1
	5+353.970	5+580.000	x MED.	C.B.	12		226	226		1
x	5+580.000	5+776.100	MED.	C.B.			196	196		
x	5+776.100	5+980.000	MED.	C.B.	13		204	204	1	1
x	5+980.000	6+190.000	O\S	SLOPE		17	210	210	1	1
x	6+190.000	6+413.889 *	MED.	C.B.	13		224	224		1
	Sta. Equation 6+413.889 S.R. 2 = 13+300.033 S.R. 2									
*	13+300.033	13+382.000	MED.	C.B.			82	82		
x	13+382.000	13+580.000	MED.	C.B.			198	198		
x	13+580.000	13+812.366	MED.	SLOPE	9		232	232	1	1
	13+902.954	14+211.328	x MED.	SLOPE	10		308	308	1	1
x	14+211.328	14+510.000	MED.	SLOPE			299	299		
x	14+510.000	14+659.575	MED.	C.B.	12		150	150		1
x	15+096.168	15+187.129	MED.	SLOPE	10		91	91	1	1
x	15+264.963	15+517.250	MED.	SLOPE	12		252	252	1	1
	15+517.250	15+530.921	x MED.	SLOPE	16		14	14	1	1
	15+635.011	15+810.000	x MED.	SLOPE	10		175	175	1	1
	15+810.000	15+985.620	x MED.	C.B.	13		176	176		1
x	15+985.620	16+275.320	MED.	C.B.			290	290		
x	16+275.320	16+460.000	MED.	C.B.	13		185	185		1
x	16+460.000	16+621.000	MED.	SLOPE	10		161	161	1	1
x	16+621.000	16+800.000	MED.	C.B.	13		179	179		1
x	16+800.000	17+002.000	MED.	SLOPE	11		202	202	1	1
x	17+002.000	17+271.130	MED.	C.B.	13		269	269		1
x	17+271.130	17+418.483	MED.	C.B.	13		147	147		1
x	18+101.745	18+280.000	MED.	SLOPE	11		178	178	1	1
x	18+280.000	18+448.482	MED.	SLOPE	9		168	168	1	1
	18+624.237	18+833.000	x MED.	C.B.	13		209	209		1
	18+833.000	18+961.840	x MED.	C.B.	14		129	129		1
	19+018.066	19+168.000	x MED.	C.B.	13		150	150		1
	19+168.000	19+446.279	x MED.	SLOPE	12		278	278	1	1
	SUB–TOTALS				326	88	7431	7117	17	33

	STATION TO STATION "x" denotes outlet location "*" denotes tie–in S.R.–2 WESTBOUND O/S UNDERDRAIN		SIDE	OUTLET TO	603 150MM CONDUIT, TYPE F 707.45 NON–PERFORATED ASTM D 3034 TYPE PS 46 OR SDR 35	605 150MM SHALLOW PIPE UNDERDRAIN	605 100MM SHALLOW PIPE UNDERDRAIN **	604 PRECAST REINFORCED CONCRETE OUTLET	BENDS AND BRANCHES FOR INFOR–MATION ONLY
					METER	METER	METER	EA.	EA.
	2+866.000	2+953.230	x O/S	SLOPE	10	87	87	1	1
	2+953.230	3+263.500	x O/S	C.B.	4	310	310		1
	Sta. Equation 3+326.890 S.R. 2 = 0+377.5 Ramp C S.R. 269								
x	3+326.890	3+505.250	O/S	SLOPE		178	178		2
x	4+384.880	4+409.000	O/S	SLOPE	8	24	24	1	1
	4+409.000	4+572.000	x O/S	SLOPE	7	163	163	1	1
	4+572.000	4+776.700	x O/S	SLOPE	10	205	205	1	1
x	4+776.700	4+957.730	O/S	SLOPE		181	181		
x	4+957.730	5+140.100	O/S	SLOPE	10	182	182	1	1
	5+140.100	5+353.970	x O/S	SLOPE	11	214	214	1	1
	5+353.970	5+580.000	x O/S	SLOPE	9	226	226	1	1
x	5+580.000	5+776.160	O/S	SLOPE		196	196		
x	5+776.160	5+980.000	O/S	SLOPE	7	204	204	1	1
x	5+980.000	6+190.000	O/S	SLOPE		210	210		2
x	6+190.000	6+413.889	O/S	SLOPE	8	224	224	1	1
	14+041.870	14+211.328	x O/S	SLOPE	8	169	169	1	1
x	14+211.328	14+510.000	O/S	SLOPE		299	299		
x	14+510.000	14+813.310	O/S	SLOPE	9	303	303	1	1
x	14+813.310	15+096.168	O/S	SLOPE	8	283	283	1	1
x	15+096.168	15+176.000	O/S	SLOPE	6	80	80	1	1
x	15+254.474	15+517.250	O/S	SLOPE	6	263	263	1	1
	15+517.250	15+530.921	x O/S	SLOPE	6	14	14	1	1
	15+635.011	15+810.000	x O/S	SLOPE	6	175	175	1	1
	15+810.000	15+985.620	x O/S	SLOPE	8	176	176	1	1
x	15+985.620	16+275.320	O/S	SLOPE		290	290		
x	16+275.320	16+506.178	O/S	SLOPE	8	231	231	1	1
	Sta. Equation 16+506.178 S.R. 2 = 0+000.000 Ramp A S.R. 101								
x	16+506.178	16+800.000	O/S	SLOPE	16	294	294	1	1
x	16+800.000	17+002.000	O/S	SLOPE	9	202	202	1	1
x	17+002.000	17+069.000	O/S	SLOPE	8	67	67	1	1
	17+069.000	17+270.500	x O/S	C.B.	3	202	202		1
	Sta. Equation 17+271.13 S.R. 2 = 0+372.358 Ramp B S.R. 101								
x	17+271.130	17+479.520	O/S	SLOPE	6	208	208	1	1
x	17+479.520	17+680.000	O/S	SLOPE	7	200	200	1	1
x	17+680.000	17+829.640	O/S	SLOPE	7	150	150	1	1
x	17+829.640	18+101.745	O/S	SLOPE	8	272	272	1	1
x	18+101.745	18+280.000	O/S	SLOPE	8	178	178	1	1
x	18+280.000	18+447.584	O/S	SLOPE	6	168	168	1	1
	18+623.339	18+833.000	x O/S	SLOPE	6	210	210	1	1
	18+833.000	18+960.205	x O/S	SLOPE	6	127	127	1	1
	19+017.168	19+168.000	x O/S	SLOPE	8	151	151	1	1
	19+168.000	19+446.279	x O/S	SLOPE	8	278	278	1	1
	SUB–TOTALS				253	7593	7593	31	37

	STATION TO STATION "x" denotes outlet location "*" denotes tie–in U.S. 6, Interchange Ramp C		SIDE	OUTLET TO	603 150MM CONDUIT, TYPE F 707.45 NON–PERFORATED ASTM D 3034 TYPE PS 46 OR SDR 35	605 150MM SHALLOW PIPE UNDERDRAIN	605 100MM SHALLOW PIPE UNDERDRAIN **	604 PRECAST REINFORCED CONCRETE OUTLET	BENDS AND BRANCHES FOR INFOR–MATION ONLY
					METER	METER	METER	EA.	EA.
	Sta. Equation 0+002.000 Ramp C = 13+517.500 S.R. 2								
x	0+002.000	0+283.500	RT.	SLOPE	6	282		1	1
	U.S. 6, Interchange Ramp D								
x	0+190.000	0+222.000	x RT.	SLOPE	8	32		1	1
x	0+263.000	0+396.000	RT.	SLOPE	6	133		1	1
x	0+396.000	0+603.314	RT.	SLOPE	6	207		1	1
x	0+603.314	0+740.100 *	RT.	SLOPE		137			
	Sta. Equation 0+740.100 Ramp D = 14+343.366 S.R. 2								
	U.S. 6, Interchange Ramp A								
x	0+000.000	0+274.000	LT.	SLOPE	8	274		1	1
	0+274.000	0+302.063	x LT.	SLOPE	5	28		1	1
	0+302.063	0+340.779	x RT.	SLOPE	13	39		1	1
	U.S. 6, Interchange Ramp B								
	0+137.330	0+340.779	x RT.	SLOPE		203			2
	0+340.779	0+457.200	x RT.	SLOPE	6	116		1	1
x	0+457.200	0+567.000	RT.	SLOPE		110			
	U.S. 6, Interchange Ramp A/B								
	0+470.000	0+518.000	x RT.	SLOPE	6	48		1	1
	SUB–TOTALS				64	1609		9	11

	STATION TO STATION "x" denotes outlet location "*" denotes tie–in S.R. 101, Interchange Ramp D		SIDE	OUTLET TO	603 150MM CONDUIT, TYPE F 707.45 NON–PERFORATED ASTM D 3034 TYPE PS 46 OR SDR 35	603 150 mm CONDUIT TYPE B	605 150MM SHALLOW PIPE UNDERDRAIN	605 100MM SHALLOW PIPE UNDERDRAIN **	604 PRECAST REINFORCED CONCRETE OUTLET	BENDS AND BRANCHES FOR INFOR–MATION ONLY
					METER	METER	METER	METER	EA.	EA.
	Sta. Equation 0+203.000 Ramp D = 16+621.000 S.R. 101									
x	0+203.000	0+425.000	RT.	SLOPE	7		222		1	1
x	0+425.000	0+550.000	LT.	SLOPE	11		125		1	1
	S.R. 101, Interchange Ramp C									
	0+010.000	0+228.600	x RT.	SLOPE	8		219		1	1
x	0+228.600	0+442.200	* RT.	SLOPE			214			
	Sta. Equation 0+442.200 Ramp C = 17+383.516 S.R. 2									
	S.R. 101, Interchange Ramp A									
	Sta. Equation 0+000.000 Ramp A = 16+506.178 S.R. 2									
x	0+000.000	0+200.000	LT.	SLOPE			200			2
x	0+200.000	0+420.000	LT.	SLOPE	7		220		1	1
	S.R. 101, Interchange Ramp B									
	0+020.000	0+156.000	x RT.	SLOPE	7		136		1	1
	0+156.000	0+217.000	x LT.	SLOPE	6		61		1	1
x	0+217.000	0+372.358	LT.	SLOPE			155			
	Sta. Equation 0+372.358 Ramp B = 17+271.130 S.R. 2									
	SUB–TOTALS				46		1552		6	8
	TOTALS CARRIED TO GENERAL SUMMARY				689	88	18,185	14,710	63	

ADJUSTMENTS FOR CONNECTIONS TO EXISTING OUTLETS MAY BE REQUIRED IN FIELD.
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** WITH FABRIC WRAP, AS PER PLAN

ERI-2-2.866

STATION		OFFSET	SIDE	STATION		OFFSET	SIDE	TYPE		607 TYPE 47 FENCE METER	
4+876.800	ML	43.586	LT					47	EPA		
				4+998.720	ML	45.872	LT	47	IAPA		
				5+120.640	ML	48.158	LT	47	IAPA		
				5+256.987	ML	48.158	LT	47	IAPA		
				5+393.334	ML	48.158	LT	47	IAPA		
				5+529.682	ML	48.158	LT	47	IAPA		
				5+578.000	ML	49.000	LT	47	SC		
				5+619.000	ML	49.000	LT	47	SC		
				5+623.560	ML	49.073	LT	47	CPA		
				5+623.560	ML	42.215	LT	47	CPA		
				5+636.000	ML	42.215	LT	47	SC		
				5+657.088	ML	42.215	LT	47	*	784	
4+881.372	ML	51.206	RT					47	EPA		
				5+055.489	ML	51.206	RT	47	IAPA		
				5+280.000	ML	51.206	RT	47	SC		
				5+403.723	ML	51.206	RT	47	IAPA		
				5+570.000	ML	51.206	RT	47	SC		
				5+577.840	ML	51.206	RT	47	CPA		
				5+577.840	ML	42.215	RT	47	CPA		
				5+617.464	ML	42.215	RT	47	*	747	
5+627.827	ML	42.215	RT					47	*		
				5+669.280	ML	42.215	RT	47	CPA		
				5+669.280	ML	51.206	RT	47	CPA		
				5+690.000	ML	51.206	RT	47	SC		
				5+864.352	ML	51.206	RT	47	IAPA		
				6+059.424	ML	51.206	RT	47	IAPA		
				6+254.496	ML	51.206	RT	47	IAPA		
				13+312.212	ML	51.206	RT	47	EPA	807	
5+667.451	ML	42.215	LT						*		
				5+699.760	ML	42.215	LT	47	CPA		
				5+753.000	ML	42.215	LT	47	CPA		
				5+763.768	ML	27.432	LT	47	EPA	104	
5+772.912	ML	27.432	LT						EPA		
				5+791.200	ML	51.206	LT	47	CPA		
				5+989.320	ML	51.206	LT	47	IAPA		
				6+045.000	ML	51.206	LT	47	SC	284	
				6+187.440	ML	52.222	LT	47	IAPA		
				6+215.000	ML	51.206	LT	47	SC		
				6+385.560	ML	53.236	LT	47	IAPA		
				13+300.316	ML	54.254	LT	47	IAPA		
				13+444.487	ML	49.682	LT	47	EPA	520	
13+444.487	ML	49.682	LT						EPA		
				13+563.600	ML	61.874	LT	47	IAPA		
				13+613.810	ML	80.162	LT	47	IAPA		
				13+655.040	ML	118.872	LT	47	IAPA		
				13+715.933	ML	210.965	LT	47	CPA		
				13+761.914	ML	228.906	LT	47	CPA		
				13+828.661	ML	213.792	LT	47	IAPA		
				13+850.463	ML	213.266	LT	47	EPA	518	
13+350.240	ML	49.009	RT						EPA		
				13+411.200	ML	43.586	RT	47	IAPA		
				13+517.880	ML	51.206	RT	47	IAPA		
				13+611.758	ML	67.970	RT	47	IAPA		
				13+724.001	ML	91.897	RT	47	IAPA		
				13+806.166	ML	113.681	RT	47	EPA	438	
13+790.432	ML	258.316	RT						EPA		
				13+828.796	ML	208.497	RT	47	IAPA		
				13+845.529	ML	197.699	RT	47	CPA		
				13+842.288	ML	181.145	RT	47	*		
13+867.034	ML	165.236	RT					47	*	76	
				13+875.291	ML	182.705	RT	47	CPA		
				13+909.844	ML	163.007	RT	47	IAPA		
				14+041.846	ML	110.642	RT	47	IAPA		
				14+142.720	ML	61.874	RT	47	IAPA		
				14+232.362	ML	49.682	RT	47	IAPA		
				14+352.880	ML	46.634	RT	47	IAPA		
				14+537.302	ML	46.634	RT	47	IAPA		
				14+721.724	ML	46.634	RT	47	IAPA		
				14+825.541	ML	46.634	RT	47	IAPA		
				14+929.357	ML	46.634	RT	47	IAPA		
				15+014.448	ML	46.634	RT	47	IAPA		
				15+096.137	ML	46.634	RT	47	IAPA		
				15+238.476	ML	46.634	RT	47	CPA		
				15+238.476	ML	44.000	RT	47	SC		
				15+238.476	ML	24.384	RT	47	*	1,426	

EPA = END POST ASSEMBLY
CPA = CORNER POST ASSEMBLY
IAPA = INTERMEDIATE POST ASSEMBLY
SC = STREAM CROSSING

*STANDARD ABUTMENT CONNECTION
QUANTITIES CARRIED TO GENERAL SUMMARY

STATION		OFFSET	SIDE	STATION		OFFSET	SIDE	TYPE		607 TYPE 47 FENCE METER	
15+195.804	ML	10.973	LT						*		
				15+221.712	ML	10.973	RT	47	*	34	
13+896.000	ML	27.5	LT						*		
				13+897.500	ML	49.000	LT	47	SC		
				13+898.000	ML	57.302	LT	47	CPA		
				13+990.320	ML	51.206	LT	47	IAPA		
				14+041.846	ML	46.634	LT	47	IAPA		
				14+112.240	ML	46.634	LT	47	IAPA		
				14+173.200	ML	42.062	LT	47	IAPA		
				14+335.315	ML	28.042	LT	47	IAPA		
				14+497.430	ML	14.021	LT	47	IAPA		
				14+659.545	ML	42.062	LT	47	EPA	773	
14+659.545	ML	42.062	LT						EPA		
				14+763.332	ML	42.062	LT	47	IAPA		
				14+843.760	ML	42.062	LT	47	IAPA		
				14+991.402	ML	45.110	LT	47	IAPA		
				15+096.137	ML	45.110	LT	47	IAPA		
				15+155.266	ML	44.196	LT	47	CPA		
				15+160.000	ML	44.500	LT	47	SC		
				15+179.040	ML	23.774	LT	47	*	1,300	
15+243.048	ML	23.774	LT						*		
				15+216.00	ML	43.500	LT	47	SC		
				15+211.044	ML	47.549	LT	47	CPA		
				15+376.000	ML	50.000	LT	47	SC		
				15+541.752	ML	52.426	LT	47	CPA		
				15+540.228	ML	23.774	LT	47	*	399	
15+258.288	ML	10.668	LT						*		
				15+284.196	ML	10.668	RT	47	*	34	
15+300.960	ML	23.774	RT						*		
				15+320.000	ML	45.000	RT	47	SC		
				15+331.440	ML	51.206	RT	47	CPA		
				15+433.548	ML	52.730	RT	47	IAPA		
				15+535.656	ML	54.254	RT	47	CPA		
				15+536.000	ML	49.000	RT	47	SC		
				15+537.485	ML	23.774	RT	47	*	276	
15+538.094	ML	10.668	RT						*		
				15+539.314	ML	10.668	LT	47	*	21	
15+623.438	ML	23.774	RT						*		
				15+622.600	ML	46.000	RT	47	SC		
				15+622.524	ML	50.597	RT	47	CPA		
				15+808.147	ML	45.110	RT	47	IAPA		
				15+993.770	ML	43.586	RT	47	IAPA		
				16+179.394	ML	43.586	RT	47	IAPA		
				16+365.017	ML	43.586	RT	47	IAPA		
				16+442.500	ML	44.000	RT	47	SC		
				16+550.640	ML	46.634	RT	47	IAPA		
				16+642.080	ML	55.778	RT	47	IAPA		
				16+703.040	ML	69.494	RT	47	IAPA		
				16+779.240	ML	98.450	RT	47	IAPA		
				16+842.611	ML	138.026	RT	47	IAPA		
				1+360.322	SR101	38.100	LT	47	EPA	1,359	
15+624.048	ML	10.668	RT						*		
				15+625.267	ML	10.668	LT	47	*	21	
15+625.877	ML	23.774	LT						*		
				15+627.000	ML	47.500	LT	47	SC		
				15+627.096	ML	51.206	LT	47	CPA		
				15+823.997	ML	39.014	LT	47	IAPA		
				16+020.898	ML	39.014	LT	47	IAPA		
				16+217.798	ML	37.490	LT	47	IAPA		
				16+334.000	ML	39.000	LT	47	SC		
				16+414.699	ML	40.538	LT	47	IAPA		
				16+611.600	ML	45.110	LT	47	IAPA		
				16+703.040	ML	60.350	LT	47	IAPA		
				16+786.860	ML	98.908	LT	47	IAPA		
				1+691.030	SR101	25.908	LT	47	EPA	1,321	
16+949.907	ML	173.449	LT						EPA		
				17+050.088	ML	131.674	LT	47	IAPA		
				17+129.760	ML	86.258	LT	47	IAPA		
				17+190.720	ML	63.398	LT	47	IAPA		
				17+248.422	ML	52.730	LT	47	IAPA		
				17+380.610	ML	45.720	LT	47	CPA		
				17+381.830	ML	28.956	LT	47	*	473	

metric units

CALCULATED BMH
CHECKED TCM

STATION		OFFSET	SIDE	STATION		OFFSET	SIDE	TYPE		607 TYPE 47 FENCE METER	
17+003.945	ML	155.448	RT						EPA		
				17+152.620	ML	75.590	RT	47	IAPA		
				17+231.645	ML	52.730	RT	47	IAPA		
				17+311.390	ML	49.682	RT	47	IAPA		
				17+384.573	ML	50.292	RT	47	CPA		
				17+388.230	ML	36.576	RT	47	*	418	
17+387.669	ML	34.500	LT						*		
				17+393.412	ML	44.501	LT	47	CPA		
				17+418.448	ML	42.062	LT	47	IAPA		
				17+526.000	ML	36.576	LT	47	IAPA		
				17+711.014	ML	36.576	LT	47	IAPA		
				17+896.027	ML	36.576	LT	47	IAPA		
				18+081.041	ML	36.576	LT	47	IAPA		
				18+266.054	ML	46.177	LT	47	IAPA		
				18+451.068	ML	55.778	LT	47	CPA		
				18+452.500	ML	51.500	LT	47	SC		
				18+454.421	ML	21.946	LT	47	*	1,092	
17+395.412	ML	35.357	RT						*		
				17+399.984	ML	50.292	RT	47	CPA		
				17+542.256	ML	49.000	RT	47	IAPA		
				17+686.528	ML	43.586	RT	47	IAPA		
				17+830.800	ML	43.586	RT	47	IAPA		
				17+842.000	ML	42.000	RT	47	SC		
				17+989.296	ML	41.148	RT	47	IAPA		
				18+134.380	ML	39.014	RT	47	SC		
				18+147.792	ML	39.014	RT	47	IAPA		
				18+306.288	ML	49.987	RT	47	IAPA		
				18+464.784	ML	56.388	RT	47	CPA		
				18+463.000	ML	51.000	RT	47	SC		
				18+459.907	ML	21.946	RT	47	*	1,135	
18+456.859	ML	10.668	LT						*		
				18+459.298	ML	10.668	RT	47	*	21	
18+617.184	ML	10.668	LT						*		
				18+619.622	ML	10.668	RT	47	*	21	
18+615.660	ML	21.336	LT						*		
				18+611.698	ML	55.778	LT	47	CPA		
				18+788.482	ML	50.749	LT	47	IAPA		
				18+837.000	ML	49.500	LT	47	SC		
				18+965.266	ML	45.720	LT	47	CPA		
				18+966.000	ML	43.000	LT	47	SC		
				18+967.704	ML	23.774	LT	47	*	410	
18+620.842	ML	22.860	RT						*		
				18+624.804	ML	54.864	RT	47	CPA		
				18+800.369	ML	49.987	RT	47	IAPA		
				18+975.934	ML	45.110	RT	47	CPA		
				18+975.000	ML	44.000	RT	47	SC		
				18+973.800	ML	24.384	RT	47	*	404	
18+969.838	ML	10.668	LT						*		
				18+971.971	ML	10.668	RT	47	*	21	
19+011.290	ML	10.668	LT						*		
				19+013.424	ML	10.668	RT	47	*	21	
19+009.157	ML	22.860	LT						*		
				19+008.000	ML	44.000	LT	47	SC		
				19+006.718	ML	46.330	LT	47	CPA		
				19+153.226	ML	46.330	LT	47	IAPA		
				19+299.733	ML	46.330	LT	47	IAPA		
				19+446.240	ML	52.730	LT	47	EPA	463	
19+014.948	ML	24.384	RT						*		
				19+016.000	ML	43.000	RT	47	SC		
				19+017.082	ML	44.806	RT	47	CPA		
				19+160.134	ML	44.806	RT	47	IAPA		
				19+303.187	ML	44.806	RT	47	IAPA		
				19+446.240	ML	45.110	RT	47	EPA	450	
									TOTAL =	16,171	
ITEM 202 FENCE REMOVED										16,171	METERS

R/W FENCE QUANTITIES

ERI-2-2.866

R = 2328.506 m		S=0.0313 MAXIMUM SUPERELEVATION FOR 7.2 m=0.225 m					R = 2062.735 m	
		WESTBOUND MAINLINE		WB SPEED		EASTBOUND MAINLINE		EB SPEED
STATION	PROFILE GRADE	℄	OUTER EDGE	CHANGE LANE	PROFILE GRADE	℄	OUTER EDGE	CHANGE LANE
3+398.527	177.424	177.366	177.308	177.253	177.424	177.367	177.308	
3+406.147	177.442	177.384	177.326	177.271	177.442	177.386	177.326	
3+413.767	177.460	177.402	177.344	177.289	177.460	177.404	177.344	
3+421.387	177.478	177.420	177.363	177.308	177.478	177.422	177.363	
3+429.007	177.497	177.439	177.381	177.326	177.509	177.439	177.381	
3+436.627	177.515	177.457	177.399	177.344	177.515	177.457	177.399	
3+444.247	177.533	177.475	177.417	177.363	177.533	177.475	177.417	
3+451.867	177.555	177.506	177.457	177.408	177.552	177.494	177.436	
3+459.487	177.582	177.552	177.521	177.497	177.570	177.512	177.454	
3+467.107	177.613	177.600	177.588	177.277	177.588	177.530	177.472	
3+474.727	177.640	177.649	177.655	177.658	177.606	177.549	177.491	
3+482.347	177.664	177.689	177.716		177.625	177.509	177.509	177.475
3+489.967	177.683	177.728	177.777		177.643	177.527	177.527	177.466
3+497.587	177.701	177.765	177.832		177.658	177.594	177.530	177.430
3+505.207	177.719	177.805	177.890		177.673	177.591	177.512	177.353
3+512.827	177.737	177.841	177.942		177.686	177.588	177.491	177.305
3+520.447	177.756	177.868	177.981		177.701	177.588	177.476	177.259
3+528.067	177.774	177.887	177.999		177.719	177.607	177.494	177.283
3+535.687	177.792	177.905	178.018		177.737	177.625	177.512	177.305
3+543.307	177.811	177.923	178.036		177.451	177.338	177.226	177.329
3+550.927	177.829	177.942	178.054		177.774	177.661	177.549	177.350
3+558.547	177.847	177.960	178.073		177.792	177.680	177.567	177.375
3+566.167	177.865	177.978	178.091		177.811	177.698	177.585	177.399
3+573.787	177.884	177.996	178.109		177.829	177.716	177.604	177.420
3+581.407	177.902	178.015	178.127		177.847	177.735	177.622	177.445
3+589.027	177.920	178.033	178.146		177.865	177.753	177.640	177.469
3+596.647	177.939	178.051	178.164		177.884	177.771	177.658	177.491
3+604.267	177.957	178.070	178.182		177.902	177.789	177.677	177.515
3+611.887	177.975	178.088	178.201		177.920	177.808	177.695	177.530
3+619.507	177.994	178.106	178.219		177.939	177.826	177.713	177.561
3+627.127	178.012	178.124	178.237		177.957	177.844	177.732	177.585
3+634.747	178.030	178.143	178.255		177.975	177.863	177.750	177.606
3+642.367	178.048	178.161	178.274		177.990	177.878	177.765	177.628
3+649.987	178.061	178.173	178.286		178.006	177.893	177.780	177.649
3+657.607	178.073	178.185	178.298		178.018	177.905	177.793	177.664
3+665.227	178.082	178.195	178.307		178.027	177.914	177.802	177.680
3+672.847	178.091	178.204	178.316		178.033	177.920	177.808	177.692
3+680.467	178.094	178.207	178.319		178.039	177.927	177.814	177.701
3+688.087	178.097	178.210	178.323		178.042	177.930	177.817	177.707
3+695.707	178.100	178.213	178.326		178.042	177.930	177.817	177.713
3+703.327	178.097	178.210	178.323		178.039	177.927	177.814	177.716
3+710.947	178.094	178.207	178.319		178.036	177.924	177.811	177.716
3+718.567	178.088	178.201	178.313		178.027	177.914	177.802	177.716
3+726.187	178.079	178.192	178.304		178.018	177.905	177.793	177.710
3+733.807	178.067	178.179	178.292		178.009	177.896	177.783	177.704
3+741.427	178.054	178.167	178.280		177.994	177.881	177.768	177.698
3+749.048	178.039	178.152	178.265		177.978	177.866	177.753	177.686
3+756.668	178.021	178.134	178.246		177.960	177.847	177.735	177.673
3+764.288	178.003	178.115	178.228		177.942	177.829	177.716	177.661
3+771.908	177.984	178.097	178.210		177.923	177.811	177.698	177.646
3+779.528	177.966	178.079	178.191		177.905	177.792	177.680	177.634
3+787.148	177.948	178.060	178.173		177.887	177.774	177.661	177.619
3+794.768	177.933	178.045	178.158		177.869	177.756	177.643	177.606
3+802.388	177.914	178.027	178.140		177.853	177.741	177.628	177.594
3+810.008	177.896	178.009	178.121		177.835	177.722	177.610	177.579
3+817.628	177.878	177.990	178.103		177.817	177.704	177.591	177.567
3+825.248	177.859	177.972	178.085		177.798	177.686	177.573	
3+832.868	177.841	177.954	178.066		177.780	177.667	177.555	
3+840.488	177.823	177.936	178.048		177.762	177.649	177.537	
3+848.108	177.805	177.917	178.030		177.744	177.631	177.518	
3+855.728	177.786	177.899	178.012		177.725	177.613	177.500	
3+863.348	177.768	177.881	177.993		177.707	177.594	177.482	
3+870.968	177.750	177.862	177.975		177.689	177.576	177.463	
3+878.588	177.731	177.844	177.957		177.670	177.558	177.445	
3+886.208	177.713	177.826	177.938		177.652	177.539	177.427	
3+893.828	177.695	177.807	177.920		177.634	177.521	177.408	
3+901.448	177.677	177.789	177.902		177.616	177.503	177.390	
3+909.068	177.658	177.771	177.884		177.597	177.485	177.372	
3+916.688	177.640	177.753	177.865		177.579	177.466	177.354	
3+924.308	177.622	177.734	177.847		177.561	177.448	177.335	
3+931.928	177.603	177.716	177.829		177.542	177.430	177.317	
3+939.548	177.585	177.698	177.810		177.524	177.411	177.299	
3+947.168	177.567	177.679	177.792		177.506	177.393	177.280	
3+954.788	177.549	177.661	177.774		177.488	177.375	177.262	
3+962.408	177.530	177.643	177.756		177.469	177.357	177.244	
3+970.028	177.512	177.625	177.737		177.451	177.338	177.226	
3+977.648	177.494	177.606	177.719		177.436	177.323	177.210	
3+985.268	177.475	177.588	177.701		177.417	177.305	177.192	
3+992.888	177.457	177.570	177.682		177.402	177.290	177.177	
4+000.508	177.439	177.551	177.664		177.387	177.274	177.162	
4+008.128	177.417	177.530	177.643		177.378	177.265	177.152	
4+015.748	177.402	177.515	177.628		177.369	177.256	177.143	
4+023.368	177.393	177.506	177.618		177.360	177.247	177.134	
4+030.988	177.384	177.497	177.609		177.356	177.244	177.131	
4+038.608	177.378	177.490	177.603		177.353	177.241	177.128	
4+046.228	177.375	177.487	177.600		177.353	177.241	177.128	
4+053.848	177.372	177.484	177.597		177.356	177.244	177.131	
4+061.468	177.372	177.484	177.597		177.360	177.247	177.134	

R = 2328.506 m		S=0.0313 MAXIMUM SUPERELEVATION FOR 7.2 m=0.225 m					R = 2062.735 m	
		WESTBOUND MAINLINE		WB SPEED		EASTBOUND MAINLINE		EB SPEED
STATION	PROFILE GRADE	℄	OUTER EDGE	CHANGE LANE	PROFILE GRADE	℄	OUTER EDGE	CHANGE LANE
4+069.088	177.375	177.487	177.600		177.366	177.253	177.140	
4+076.708	177.381	177.494	177.606		177.375	177.262	177.149	
4+084.328	177.390	177.503	177.615		177.387	177.274	177.162	
4+091.948	177.399	177.512	177.625		177.402	177.290	177.177	
4+099.568	177.411	177.524	177.637		177.420	177.308	177.195	
4+107.188	177.427	177.539	177.652		177.439	177.326	177.213	
4+114.808	177.442	177.555	177.667		177.457	177.344	177.232	
4+122.428	177.460	177.573	177.685		177.475	177.363	177.250	
4+130.048	177.478	177.591	177.704		177.494	177.381	177.268	
4+137.668	177.497	177.609	177.722		177.512	177.399	177.287	
4+145.288	177.515	177.628	177.740		177.530	177.418	177.305	
4+152.908	177.533	177.646	177.759		177.549	177.436	177.323	
4+160.528	177.552	177.664	177.777		177.567	177.454	177.341	
4+168.148	177.570	177.683	177.795		177.585	177.472	177.360	
4+175.768	177.588	177.701	177.813		177.603	177.491	177.378	
4+183.388	177.606	177.719	177.832		177.622	177.509	177.396	
4+191.008	177.625	177.737	177.850		177.640	177.527	177.415	
4+198.628	177.643	177.756	177.868		177.658	177.546	177.433	
4+206.248	177.661	177.774	177.887		177.677	177.564	177.451	
4+213.868	177.680	177.792	177.905		177.695	177.582	177.469	
4+221.488	177.698	177.811	177.923		177.713	177.600	177.488	
4+229.108	177.716	177.829	177.942		177.731	177.619	177.506	
4+236.728	177.734	177.847	177.960		177.750	177.637	177.524	
4+244.348	177.753	177.865	177.978		177.768	177.655	177.543	
4+251.969	177.771	177.884	177.996		177.786	177.680	177.570	
4+259.589	177.789	177.902	178.015		177.805	177.716	177.625	
4+267.209	177.808	177.920	178.033		177.823	177.753	177.683	
4+274.829	177.826	177.939	178.051		177.841	177.789	177.734	
4+282.449	177.844	177.957	178.070		177.859	177.829	177.771	
4+290.069	177.862	177.975	178.088		177.878	177.865	177.808	
4+297.689	177.881	177.993	178.106		177.896	177.902	177.844	
4+305.309	177.899	178.012	178.128		177.914	177.939	177.884	
4+312.929	177.917	178.030	178.146		177.933	177.978	177.920	
4+320.549	177.936	178.048	178.164		177.951	178.009	177.951	
4+328.169	177.954	178.067	178.182		177.969	178.027	177.969	
4+335.789	177.972	178.085	178.201		177.987	178.045	177.987	
4+343.409	177.990	178.103	178.219		178.006	178.064	178.006	
4+351.029	178.009	178.122	178.237		178.024	178.082	178.024	
4+358.649	178.027	178.140	178.256		178.042	178.100	178.042	
4+366.269	178.045	178.149	178.256		178.061	178.118	178.061	
4+373.889	178.064	178.149	178.234		178.079	178.137	178.079	
4+381.509	178.082	178.149	178.216		178.073	178.131	178.073	
4+389.129	178.064	178.251	178.173		178.064	178.251	178.064	
4+396.749	178.067	178.254	178.158		178.067	178.254	178.067	
4+404.369	178.070	178.257	178.140		178.070	178.257	178.070	
4+411.989	178.070	178.257	178.122		178.070	178.257	178.070	
4+419.609	178.067	178.254	178.100		178.067	178.254	178.067	
4+427.229	178.064	178.251	178.076		178.064	178.251	178.064	
4+434.849	178.058	178.245	178.058		178.058	178.245	178.058	

CALCULATED MSS
CHECKED BMH

SUPERELEVATION TABLES

ERI-2-2.866

		S=0.0469			R = 1190.713 m			
		MAXIMUM SUPERELEVATION FOR 7.2 m=0.346 m						
		WESTBOUND		WB		EASTBOUND		EB
		MAINLINE		SPEED		MAINLINE		SPEED
STATION	PROFILE	℄	OUTER	CHANGE	PROFILE	℄	OUTER	CHANGE
	GRADE		EDGE	LANE	GRADE		EDGE	LANE
6+187.452	178.557	178.614	178.557	178.557	178.557	178.614	178.557	
6+195.072	178.576	178.632	178.576	178.573	178.576	178.632	178.576	
6+202.692	178.594	178.650	178.594	178.588	178.594	178.650	178.594	
6+210.312	178.612	178.669	178.612	178.603	178.612	178.669	178.612	
6+217.932	178.631	178.687	178.631	178.618	178.631	178.687	178.631	
6+225.552	178.649	178.705	178.649	178.637	178.649	178.705	178.649	
6+233.172	178.667	178.723	178.667	178.652	178.667	178.723	178.667	
6+240.792	178.685	178.742	178.685	178.667	178.685	178.742	178.685	
6+248.413	178.704	178.760	178.704	178.682	178.704	178.760	178.704	
6+256.033	178.722	178.778	178.722	178.698	178.722	178.778	178.722	
6+263.653	178.740	178.797	178.740	178.713	178.740	178.797	178.740	
6+271.273	178.759	178.815	178.759	178.731	178.759	178.815	178.759	
6+278.893	178.777	178.833	178.777	178.746	178.777	178.833	178.777	
6+286.513	178.795	178.851	178.795	178.762	178.795	178.851	178.795	
6+294.133	178.813	178.870	178.813	178.777	178.813	178.870	178.813	
6+301.753	178.832	178.888	178.832	178.792	178.832	178.888	178.832	
6+309.373	178.850	178.906	178.850	178.810	178.850	178.906	178.850	
6+316.993	178.868	178.925	178.868	178.826	178.868	178.925	178.868	
6+324.613	178.887	178.943	178.887	178.841	178.887	178.943	178.887	
6+332.233	178.905	178.961	178.905	178.856	178.905	178.961	178.905	
6+339.853	178.923	178.979	178.923	178.871	178.923	178.979	178.923	
6+347.473	178.941	178.998	178.941	178.890	178.941	178.998	178.941	
6+355.093	178.960	179.016	178.960	178.905	178.960	179.016	178.960	
6+362.713	178.978	179.034	178.993	178.948	178.978	179.034	178.963	
6+370.333	178.996	179.053	179.030	179.005	178.996	179.053	178.963	
6+377.953	179.015	179.071	179.066	179.063	179.015	179.071	178.963	
6+385.573	179.033	179.089	179.106	179.121	179.033	179.089	178.963	178.960
6+393.193	179.051	179.107	179.143	179.182	179.051	179.107	178.960	178.944
6+400.813	179.069	179.126	179.179	179.243	179.069	179.126	178.960	178.932
6+408.433	179.088	179.144	179.231	179.322	179.088	179.144	178.944	178.890
13+302.197	179.106	179.162	179.289	179.408	179.106	179.162	178.923	178.835
13+309.817	179.124	179.181	179.344	179.493	179.124	179.181	178.905	178.795
13+317.437	179.143	179.199	179.402	179.582	179.143	179.199	178.884	178.756
13+325.057	179.161	179.217	179.457	179.673	179.161	179.217	178.865	178.716
13+332.677	179.179	179.235	179.514	179.764	179.179	179.235	178.844	178.679
13+340.297	179.197	179.254	179.542	179.804	179.197	179.254	178.853	178.682
13+347.917	179.216	179.272	179.560	179.831	179.216	179.272	178.871	178.701
13+350.267	179.189	179.362	179.535	179.606	179.188	179.035	178.843	178.661
13+357.887	179.208	179.380	179.553	179.847	179.207	179.053	178.861	178.679
13+365.507	179.226	179.399	179.572	179.835	179.225	179.071	178.879	178.698
13+373.127	179.244	179.417	179.590	179.822	179.243	179.090	178.898	178.716
13+380.747	179.262	179.435	179.608	179.813	179.261	179.108	178.916	178.734
13+388.367	179.281	179.454	179.626	179.801	179.280	179.126	178.934	178.749
13+395.987	179.299	179.472	179.645	179.789	179.298	179.144	178.952	178.762
13+403.607	179.317	179.490	179.663	179.777	179.316	179.163	178.971	178.774
13+411.227	179.339	179.511	179.684	179.767	179.338	179.184	178.992	178.786
13+418.847	179.369	179.542	179.715	179.767	179.368	179.215	179.023	178.804
13+426.467	179.406	179.579	179.751	179.774	179.405	179.251	179.059	178.826
13+434.087	179.451	179.624	179.797	179.798	179.450	179.297	179.105	178.853
13+441.707	179.503	179.676	179.849		179.502	179.349	179.157	178.887
13+449.327	179.564	179.737	179.910		179.563	179.410	179.218	178.926
13+456.947	179.631	179.804	179.977		179.630	179.477	179.285	178.969
13+464.567	179.707	179.880	180.053		179.706	179.553	179.361	179.018
13+472.187	179.790	179.963	180.135		179.789	179.635	179.443	179.073
13+479.807	179.878	180.051	180.224		179.877	179.724	179.532	179.130
13+487.427	179.976	180.149	180.321		179.975	179.821	179.629	179.194
13+495.047	180.082	180.255	180.428		180.081	179.928	179.736	179.268
13+502.667	180.195	180.368	180.541		180.194	180.041	179.849	179.344
13+510.287	180.314	180.487	180.660		180.313	180.159	179.967	179.423
13+517.907	180.442	180.615	180.788		180.441	180.287	180.095	
13+525.527	180.576	180.749	180.922		180.575	180.422	180.230	
13+533.147	180.719	180.892	181.065		180.718	180.565	180.373	
13+540.767	180.869	181.042	181.214		180.868	180.714	180.522	
13+548.387	181.027	181.200	181.373		181.026	180.873	180.681	
13+556.007	181.192	181.365	181.537		181.191	181.037	180.845	
13+563.627	181.366	181.538	181.711		181.365	181.211	181.019	
13+571.247	181.545	181.718	181.891		181.544	181.391	181.199	
13+578.867	181.731	181.904	182.077		181.730	181.577	181.385	
13+586.487	181.926	182.099	182.272		181.925	181.772	181.580	
13+594.107	182.131	182.303	182.476		182.130	181.976	181.784	
13+601.727	182.341	182.514	182.687		182.340	182.186	181.994	
13+609.347	182.557	182.730	182.903		182.556	182.403	182.211	
13+616.967	182.783	182.956	183.129		182.782	182.628	182.436	
13+624.587	183.012	183.184	183.357		183.011	182.857	182.665	
13+632.207	183.237	183.410	183.583		183.236	183.082	182.890	
13+639.827	183.453	183.626	183.799		183.452	183.299	183.107	
13+647.447	183.664	183.837	184.009		183.663	183.509	183.317	
13+655.067	183.865	184.038	184.211		183.864	183.710	183.518	
13+662.687	184.057	184.230	184.403		184.056	183.902	183.710	
13+670.307	184.243	184.416	184.589		184.242	184.088	183.896	
13+677.927	184.423	184.596	184.768		184.422	184.268	184.076	
13+685.547	184.593	184.766	184.939		184.592	184.439	184.247	
13+693.167	184.755	184.928	185.101		184.754	184.600	184.408	
13+700.787	184.910	185.083	185.256		184.909	184.756	184.564	
13+708.407	185.061	185.234	185.407		185.061	184.907	184.715	
13+716.027	185.210	185.383	185.556		185.210	185.056	184.864	
13+723.647	185.351	185.524	185.697		185.351	185.197	185.005	
13+731.267	185.485	185.658	185.831		185.485	185.331	185.139	

		S=0.0469			R = 1190.713 m			
		MAXIMUM SUPERELEVATION FOR 7.2 m=0.346 m						
		WESTBOUND		WB	,	EASTBOUND		EB
		MAINLINE		SPEED		MAINLINE		SPEED
STATION	PROFILE	℄	OUTER	CHANGE	PROFILE	℄	OUTER	CHANGE
	GRADE		EDGE	LANE	GRADE		EDGE	LANE
13+738.887	185.610	185.783	185.956		185.610	185.456	185.264	
13+746.508	185.729	185.902	186.075		185.729	185.575	185.383	
13+754.128	185.838	186.011	186.184		185.838	185.684	185.492	
13+761.748	185.941	186.114	186.287		185.941	185.787	185.595	
13+769.368	186.035	186.208	186.381		186.035	185.881	185.689	
13+776.988	186.122	186.295	186.468		186.122	185.968	185.776	
13+784.608	186.201	186.374	186.547		186.201	186.047	185.855	
13+792.228	186.272	186.445	186.618		186.272	186.118	185.926	
13+799.848	186.336	186.509	186.682		186.336	186.182	185.990	
13+807.468	186.391	186.564	186.737		186.391	186.237	186.045	
13+815.088	186.430	186.603	186.776		186.430	186.276	186.084	
13+822.708	186.462	186.635	186.808		186.462	186.308	186.116	
13+830.328	186.485	186.658	186.831		186.485	186.331	186.139	
13+837.948	186.502	186.675	186.848		186.502	186.348	186.156	
13+845.568	186.510	186.683	186.856		186.510	186.356	186.164	
13+853.188	186.511	186.684	186.857		186.511	186.357	186.165	
13+860.808	186.503	186.676	186.849		186.503	186.349	186.157	
13+868.428	186.489	186.662	186.835		186.489	186.335	186.143	
13+876.048	186.466	186.639	186.812		186.466	186.312	186.120	
13+883.668	186.436	186.609	186.782		186.436	186.282	186.090	
13+891.288	186.397	186.570	186.743		186.397	186.243	186.051	
13+898.908	186.352	186.525	186.698		186.352	186.198	186.006	
13+906.528	186.293	186.466	186.639		186.293	186.139	185.947	
13+914.148	186.223	186.396	186.569		186.223	186.069	185.877	
13+921.768	186.145	186.318	186.491		186.145	185.991	185.799	
13+929.388	186.059	186.232	186.405		186.059	185.905	185.713	
13+937.008	185.966	186.139	186.312		185.966	185.812	185.620	
13+944.628	185.865	186.038	186.211		185.865	185.711	185.519	
13+952.248	185.756	185.929	186.102		185.756	185.602	185.410	
13+959.868	185.639	185.812	185.985		185.639	185.485	185.293	
13+967.488	185.515	185.688	185.861		185.515	185.361	185.169	
13+975.108	185.383	185.556	185.729		185.383	185.229	185.037	
13+982.728	185.243	185.416	185.589		185.243	185.089	184.897	
13+990.348	185.095	185.268	185.441		185.095	184.941	184.749	
13+997.968	184.940	185.113	185.286		184.940	184.786	184.594	
14+005.588	184.778	184.951	185.124		184.778	184.625	184.433	
14+013.208	184.617	184.790	184.962		184.617	184.458	184.300	
14+020.828	184.449	184.606	184.763		184.449	184.309	184.169	
14+028.448	184.272	184.411	184.550		184.272	184.149	184.026	
14+036.068	184.086	184.207	184.327		184.086	183.981	183.876	
14+043.688	183.894	183.997	184.099		183.894	183.806	183.718	
14+051.308	183.693	183.777	183.861		183.693	183.623	183.553	
14+058.928	183.495	183.561	183.626		183.495	183.445	183.388	
14+066.548	183.303	183.359	183.398		183.303	183.289	183.233	
14+074.168	183.123	183.179	183.181		183.123	183.143	183.087	
14+081.788	182.953	183.009	182.989		182.953	183.009	182.953	
14+089.408	182.791	182.847	182.809		182.791	182.847	182.791	
14+097.028	182.639	182.695	182.639		182.639	182.695	182.639	
14+104.648					182.495	182.552	182.495	

CALCULATED MSS
CHECKED BMH

SUPERELEVATION TABLES

ER-2-2.866

		S=0.048			R = 1190.713 m			
		MAXIMUM SUPERELEVATION FOR 7.2 m=0.346 m						
		WESTBOUND		WB		EASTBOUND		EB
		MAINLINE		SPEED		MAINLINE		SPEED
STATION	PROFILE	℄	OUTER	CHANGE	PROFILE	℄	OUTER	CHANGE
	GRADE		EDGE	LANE	GRADE		EDGE	LANE
14+599.949	182.614	182.670	182.614					
14+607.569	182.639	182.695	182.639		182.639	182.695	182.639	182.300
14+615.189	182.660	182.716	182.660		182.660	182.710	182.678	182.657
14+622.809	182.681	182.738	182.681		182.681	182.731	182.718	182.709
14+630.429	182.706	182.719	182.669		182.706	182.756	182.764	182.764
14+638.049	182.730	182.710	182.660		182.730	182.780	182.825	182.840
14+645.669	182.751	182.695	182.645		182.751	182.817	182.883	182.907
14+653.289	182.773	182.703	182.633		182.773	182.857	182.940	182.965
14+660.909	182.797	182.709	182.620		182.797	182.899	183.001	183.029
14+668.529	182.822	182.716	182.611		182.822	182.942	183.062	183.090
14+676.149	182.843	182.719	182.596		182.843	182.982	183.120	183.145
14+683.769	182.864	182.724	182.584		182.864	183.021	183.178	183.200
14+691.389	182.889	182.730	182.572		182.889	183.061	183.253	183.254
14+699.009	182.913	182.740	182.567		182.913	183.086	183.278	183.273
14+706.629	182.937	182.765	182.592		182.937	183.110	183.302	183.288
14+714.249	182.965	182.792	182.619		182.965	183.138	183.330	
14+721.869	182.995	182.822	182.650		182.995	183.168	183.360	
14+729.489	183.029	182.856	182.683		183.029	183.202	183.394	
14+737.109	183.065	182.893	182.720		183.065	183.238	183.430	
14+744.730	183.102	182.929	182.756		183.102	183.275	183.467	
14+752.350	183.145	182.972	182.799		183.145	183.317	183.509	
14+759.970	183.190	183.018	182.845		183.190	183.363	183.555	
14+767.590	183.239	183.066	182.894		183.239	183.412	183.604	
14+775.210	183.291	183.118	182.945		183.291	183.464	183.656	
14+782.830	183.346	183.173	183.000		183.346	183.519	183.711	
14+790.450	183.401	183.228	183.055		183.401	183.573	183.765	
14+798.070	183.462	183.289	183.116		183.462	183.634	183.826	
14+805.690	183.523	183.350	183.177		183.523	183.695	183.887	
14+813.310	183.590	183.417	183.244		183.590	183.762	183.954	
14+820.930	183.660	183.487	183.314		183.660	183.833	184.025	
14+828.550	183.730	183.557	183.384		183.730	183.903	184.095	
14+836.170	183.806	183.633	183.460		183.806	183.979	184.171	
14+843.790	183.882	183.709	183.537		183.882	184.055	184.247	
14+851.410	183.965	183.792	183.619		183.965	184.137	184.329	
14+859.030	184.047	183.874	183.701		184.047	184.220	184.412	
14+866.650	184.135	183.962	183.790		184.135	184.308	184.500	
14+874.270	184.224	184.051	183.878		184.224	184.396	184.588	
14+881.890	184.315	184.142	183.969		184.315	184.488	184.680	
14+889.510	184.413	184.240	184.067		184.413	184.585	184.777	
14+897.130	184.510	184.337	184.165		184.510	184.683	184.875	
14+904.750	184.611	184.438	184.265		184.611	184.784	184.976	
14+912.370	184.714	184.542	184.369		184.714	184.887	185.079	
14+919.990	184.824	184.651	184.478		184.824	184.997	185.189	
14+927.610	184.934	184.761	184.588		184.934	185.107	185.299	
14+935.230	185.047	184.874	184.701		185.047	185.219	185.411	
14+942.850	185.162	184.990	184.817		185.162	185.335	185.527	
14+950.470	185.278	185.105	184.933		185.278	185.451	185.643	
14+958.090	185.397	185.224	185.052		185.397	185.570	185.762	
14+965.710	185.516	185.343	185.170		185.516	185.689	185.881	
14+973.330	185.632	185.459	185.286		185.632	185.805	185.997	
14+980.950	185.748	185.575	185.402		185.748	185.920	186.112	
14+988.570	185.867	185.694	185.521		185.867	186.039	186.231	
14+996.190	185.985	185.813	185.640		185.985	186.158	186.350	
15+003.810	186.101	185.928	185.756		186.101	186.274	186.466	
15+011.430	186.217	186.044	185.871		186.217	186.390	186.582	
15+019.050	186.336	186.163	185.990		186.336	186.509	186.701	
15+026.670	186.455	186.282	186.109		186.455	186.628	186.820	
15+034.290	186.571	186.398	186.225		186.571	186.743	186.935	
15+041.910	186.686	186.514	186.341		186.686	186.859	187.051	
15+049.530	186.805	186.633	186.460		186.805	186.978	187.170	
15+057.150	186.924	186.751	186.579		186.924	187.097	187.289	
15+064.770	187.041	186.882	186.723		187.041	187.216	187.391	
15+072.390	187.158	187.017	186.875		187.158	187.314	187.470	
15+080.010	187.281	187.154	187.028		187.281	187.417	187.552	
15+087.630	187.404	187.294	187.183		187.404	187.519	187.634	
15+095.250	187.526	187.429	187.333		187.526	187.620	187.714	
15+102.870	187.649	187.567	187.485		187.649	187.721	187.793	
15+110.490	187.773	187.705	187.637		187.773	187.829	187.875	
15+118.110	187.894	187.849	187.793		187.894	187.950	187.957	
15+125.730	188.017	187.998	187.942		188.017	188.073	188.037	
15+133.350	188.140	188.196	188.140		188.140	188.196	188.131	
15+140.970	188.262	188.318	188.262		188.262	188.318	188.232	
15+148.590	188.385	188.441	188.385		188.385	188.441	188.332	
15+156.210	188.508	188.564	188.508					

CALCULATED MSS
CHECKED BMH

SUPERELEVATION TABLES

ERI-2-2.866

		S=0.032			R = 1746.380 m			
		MAXIMUM SUPERELEVATION FOR 7.2 m=0.231 m						
		WESTBOUND		WB		EASTBOUND		EB
		MAINLINE		SPEED		MAINLINE		SPEED
STATION	PROFILE	℄	OUTER	CHANGE	PROFILE	℄	OUTER	CHANGE
	GRADE		EDGE	LANE	GRADE		EDGE	LANE
17+373.635	188.713	188.770	188.713	188.646	188.713	188.770	188.713	
17+381.255	188.719	188.776	188.719	188.680	188.719	188.769	188.738	
17+388.875	188.722	188.779	188.722	188.704	188.722	188.772	188.762	185.592
17+396.495	188.729	188.785	188.729	188.729	188.729	188.779	188.787	188.732
17+404.115	188.735	188.751	188.701	188.683	188.735	188.785	188.829	188.854
17+411.735	188.744	188.727	188.677	188.643	188.744	188.808	188.872	188.975
17+419.355	188.753	188.702	188.652	188.604	188.753	188.835	188.918	189.097
17+426.975	188.762	188.695	188.628	188.561	188.762	188.861	188.960	189.186
17+434.595	188.771	188.687	188.604	188.521	188.771	188.889	189.006	189.216
17+442.215	188.783	188.683	188.582	188.482	188.783	188.899	189.014	189.222
17+449.835	188.793	188.677	188.562	188.442	188.793	188.908	189.023	189.232
17+457.455	188.808	188.693	188.577	188.457	188.808	188.923	189.038	189.238
17+465.075	188.820	188.705	188.590	188.470	188.820	188.935	189.050	189.244
17+472.695	188.835	188.720	188.605	188.485	188.835	188.950	189.066	189.256
17+480.315	188.851	188.735	188.620	188.500	188.851	188.966	189.081	189.265
17+487.935	188.866	188.751	188.635	188.524	188.866	188.981	189.096	189.274
17+495.555	188.884	188.769	188.654	188.567	188.884	188.999	189.114	189.286
17+503.175	188.902	188.787	188.672	188.619	188.902	189.018	189.133	189.302
17+510.795	188.921	188.805	188.690	188.665	188.921	189.036	189.151	189.317
17+518.415	188.942	188.827	188.712		188.942	189.057	189.172	189.332
17+526.035	188.960	188.845	188.730		188.960	189.075	189.191	189.344
17+533.655	188.982	188.866	188.751		188.982	189.097	189.212	189.363
17+541.275	189.006	188.891	188.776		189.006	189.121	189.236	189.378
17+548.895	189.027	188.912	188.797		189.027	189.142	189.258	189.396
17+556.515	189.052	188.936	188.821		189.052	189.167	189.282	189.414
17+564.135	189.079	188.964	188.849		189.079	189.194	189.310	189.436
17+571.755	189.103	188.988	188.873		189.103	189.219	189.334	189.457
17+579.375	189.131	189.016	188.901		189.131	189.246	189.361	189.478
17+586.995	189.158	189.043	188.928		189.158	189.274	189.389	189.500
17+594.615	189.186	189.071	188.955		189.186	189.301	189.416	189.524
17+602.235	189.216	189.101	188.986		189.216	189.331	189.447	189.549
17+609.855	189.244	189.129	189.013		189.244	189.359	189.474	189.570
17+617.475	189.241	189.125	189.010		189.241	189.356	189.471	189.594
17+625.095	189.299	189.183	189.068		189.299	189.414	189.529	189.616
17+632.715	189.326	189.211	189.096		189.326	189.441	189.556	189.640
17+640.335	189.356	189.241	189.126		189.356	189.472	189.587	189.664
17+647.955	189.384	189.269	189.154		189.384	189.499	189.614	189.686
17+655.575	189.411	189.296	189.181		189.411	189.527	189.642	189.710
17+663.195	189.442	189.327	189.211		189.442	189.557	189.672	189.737
17+670.815	189.472	189.357	189.242		189.472	189.588	189.703	189.762
17+678.435	189.506	189.391	189.275		189.506	189.621	189.736	189.786
17+686.055	189.539	189.424	189.309		189.539	189.655	189.770	189.817
17+693.675	189.573	189.458	189.342		189.573	189.688	189.803	189.847
17+701.295	189.609	189.494	189.379		189.609	189.725	189.840	189.878
17+708.915	189.646	189.531	189.416		189.646	189.761	189.876	189.908
17+716.535	189.683	189.567	189.452		189.683	189.798	189.913	189.942
17+724.155	189.722	189.607	189.492		189.722	189.837	189.953	189.975
17+731.775	189.762	189.647	189.531		189.762	189.877	189.992	190.012
17+739.396	189.805	189.689	189.574		189.805	189.920	190.035	190.045
17+747.016	189.847	189.732	189.617		189.847	189.962	190.078	190.085
17+754.636	189.890	189.775	189.659		189.890	190.005	190.120	
17+762.256	189.936	189.820	189.705		189.936	190.051	190.166	
17+769.876	189.981	189.866	189.751		189.981	190.097	190.212	
17+777.496	190.027	189.912	189.797		190.027	190.142	190.257	
17+785.116	190.076	189.961	189.845		190.076	190.191	190.306	
17+792.736	190.125	190.009	189.894		190.125	190.240	190.355	
17+800.356	190.176	190.061	189.946		190.176	190.292	190.407	
17+807.976	190.228	190.113	189.998		190.228	190.343	190.459	
17+815.596	190.280	190.165	190.050		190.280	190.395	190.510	
17+823.216	190.332	190.217	190.101		190.332	190.447	190.562	
17+830.836	190.390	190.275	190.159		190.390	190.505	190.620	
17+838.456	190.445	190.329	190.214		190.445	190.560	190.675	
17+846.076	190.503	190.387	190.272		190.503	190.618	190.733	
17+853.696	190.560	190.445	190.330		190.560	190.676	190.791	
17+861.316	190.618	190.503	190.388		190.618	190.734	190.849	
17+868.936	190.679	190.564	190.449		190.679	190.795	190.910	
17+876.556	190.740	190.625	190.510		190.740	190.855	190.971	
17+884.176	190.804	190.689	190.574		190.804	190.919	191.035	
17+891.796	190.868	190.753	190.638		190.868	190.983	191.099	
17+899.416	190.932	190.817	190.702		190.932	191.048	191.163	
17+907.036	190.999	190.884	190.769		190.999	191.115	191.230	
17+914.656	191.063	190.948	190.833		191.063	191.179	191.294	
17+922.276	191.127	191.012	190.897		191.127	191.243	191.358	
17+929.896	191.191	191.076	190.961		191.191	191.307	191.422	
17+937.516	191.255	191.140	191.025		191.255	191.371	191.486	
17+945.136	191.322	191.207	191.092		191.322	191.438	191.553	
17+952.756	191.386	191.271	191.156		191.386	191.502	191.617	
17+960.376	191.450	191.335	191.220		191.450	191.566	191.681	
17+967.996	191.518	191.402	191.287		191.518	191.633	191.748	
17+975.616	191.582	191.466	191.351		191.582	191.697	191.812	
17+983.236	191.646	191.530	191.415		191.646	191.761	191.876	
17+990.856	191.713	191.597	191.482		191.713	191.828	191.943	
17+998.476	191.777	191.661	191.546		191.777	191.892	192.007	
18+006.096	191.844	191.728	191.613		191.844	191.959	192.074	
18+013.716	191.917	191.802	191.686		191.917	192.032	192.147	
18+021.336	191.993	191.878	191.763		191.993	192.108	192.223	
18+028.956	192.075	191.960	191.845		192.075	192.191	192.306	
18+036.576	192.164	192.048	191.933		192.164	192.279	192.394	

		S=0.032			R = 1746.380 m			
		MAXIMUM SUPERELEVATION FOR 7.2 m=0.231 m						
		WESTBOUND		WB		EASTBOUND		EB
		MAINLINE		SPEED		MAINLINE		SPEED
STATION	PROFILE	℄	OUTER	CHANGE	PROFILE	℄	OUTER	CHANGE
	GRADE		EDGE	LANE	GRADE		EDGE	LANE
18+044.196	192.255	192.140	192.025		192.255	192.370	192.486	
18+051.816	192.353	192.237	192.122		192.353	192.468	192.583	
18+059.436	192.456	192.341	192.226		192.456	192.572	192.687	
18+067.056	192.566	192.451	192.336		192.566	192.681	192.796	
18+074.676	192.679	192.578	192.478		192.679	192.794	192.909	
18+082.296	192.798	192.714	192.630		192.798	192.913	193.028	
18+089.916	192.920	192.853	192.785		192.920	193.019	193.118	
18+097.536	193.051	193.000	192.950		193.051	193.133	193.215	
18+105.156	193.182	193.165	193.115		193.182	193.246	193.310	
18+112.776	193.322	193.338	193.288		193.322	193.372	193.416	
18+120.396	193.465	193.521	193.465		193.465	193.515	193.523	
18+128.016	193.615	193.671	193.615		193.615	193.664	193.654	
18+135.636	193.770	193.826	193.770		193.770	193.820	193.788	
18+143.256	193.928	193.985	193.928		193.928	193.521	193.928	

CALCULATED MSS
CHECKED BMH

SUPERELEVATION TABLES

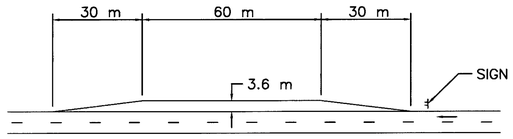
ERI-2-2.866

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

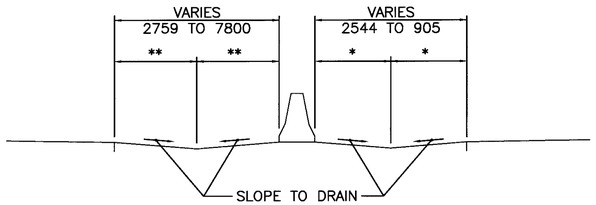
metric units

CALCULATED TCM
CHECKED TJS

EMERGENCY PULL OFF DETAIL
NO SCALE

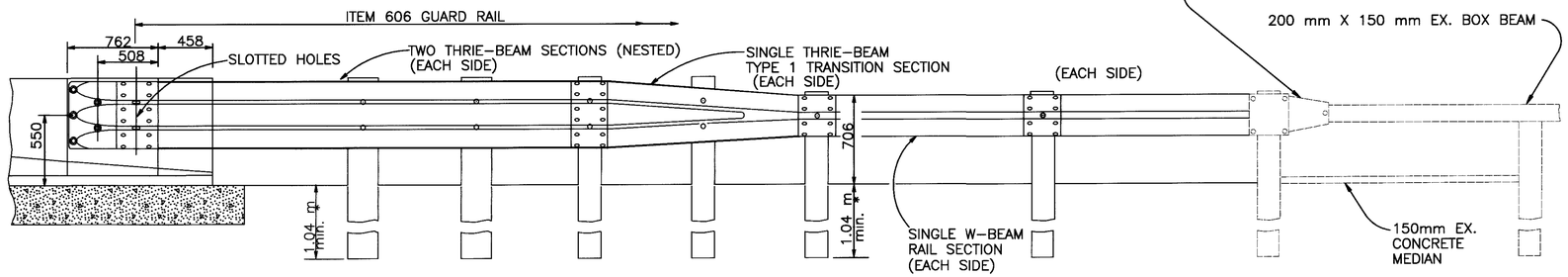


MEDIAN GRADING DETAIL
NO SCALE



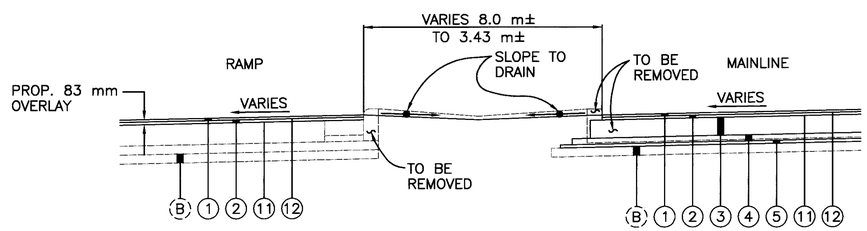
** VARIES 1380 TO 3900 *VARIES 1272 TO 453

MEDIAN BARRIER TRANSITION
NO SCALE



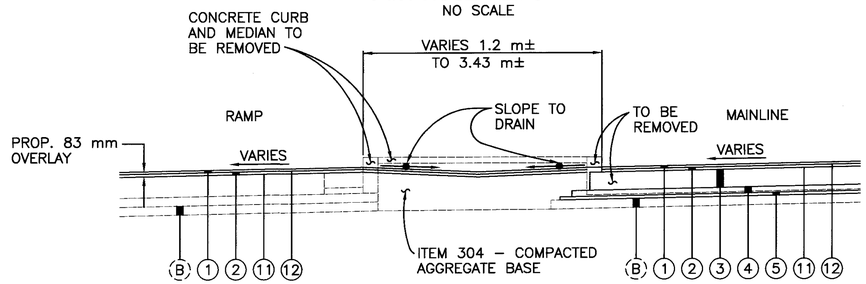
SEE STANDARD DRAWING GR–3.5M FOR ADDITIONAL DETAILS.

GORE REBUILD DETAIL
NO SCALE

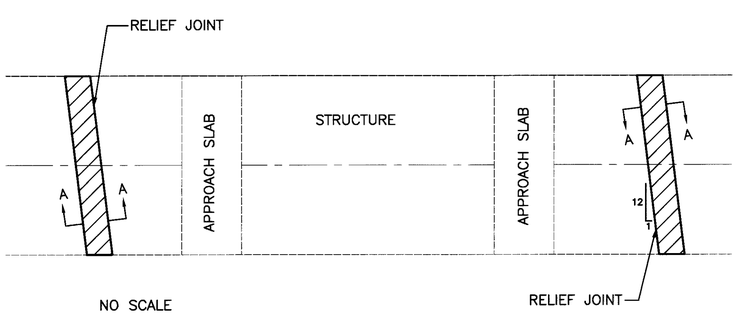


FOR LEGEND, SEE SHEET 10

PAVEMENT REPLACEMENT DETAIL FOR NOSE REMOVAL
NO SCALE

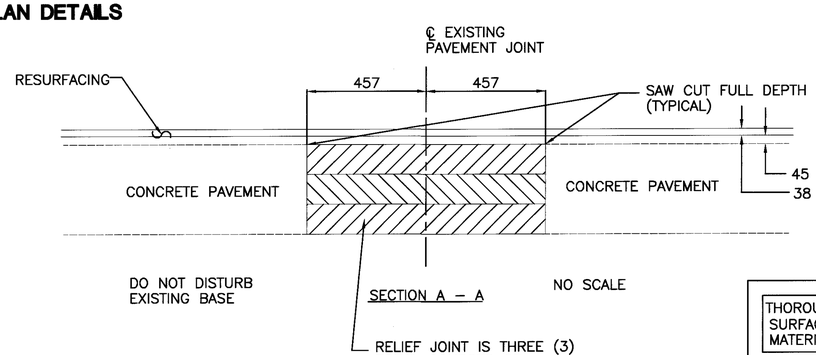


PRESSURE RELIEF JOINTS, AS PER PLAN DETAILS



NO SCALE

PLAN VIEW



SECTION A – A

NO SCALE

THOROUGHLY PAINT ALL EXPOSED SURFACES WITH BITUMINOUS MATERIAL AS PER 401.15

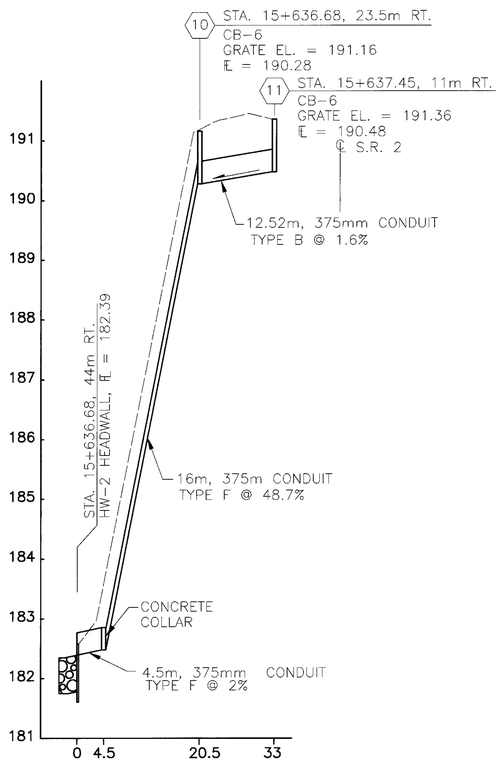
MISCELLANEOUS DETAILS

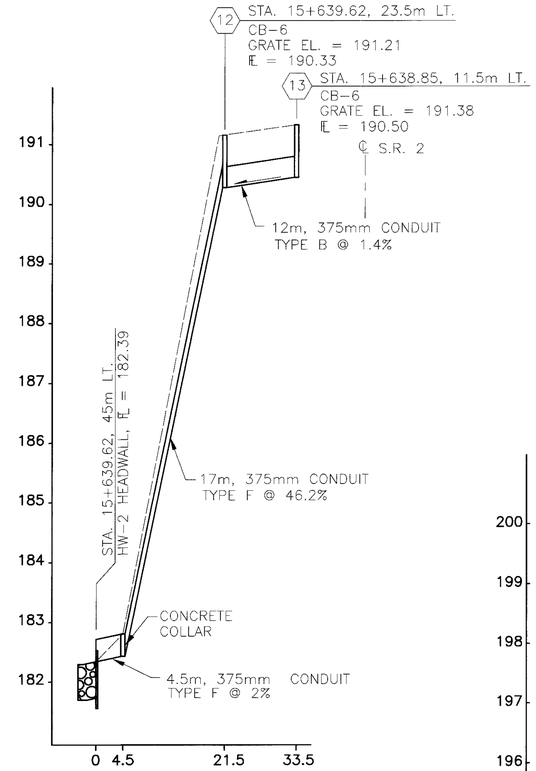
ERI-2-2.866

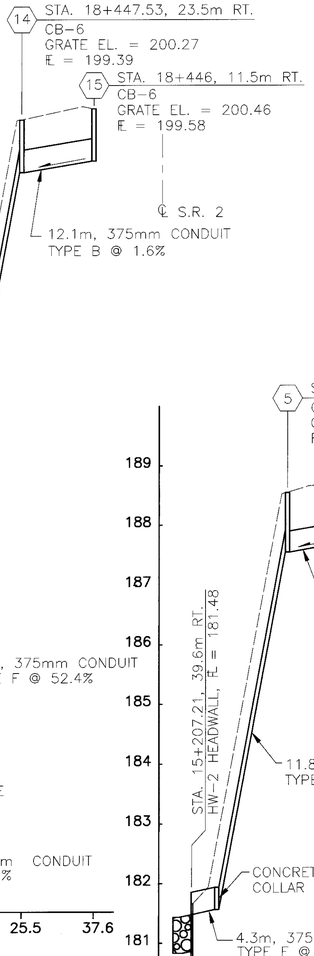
136
327

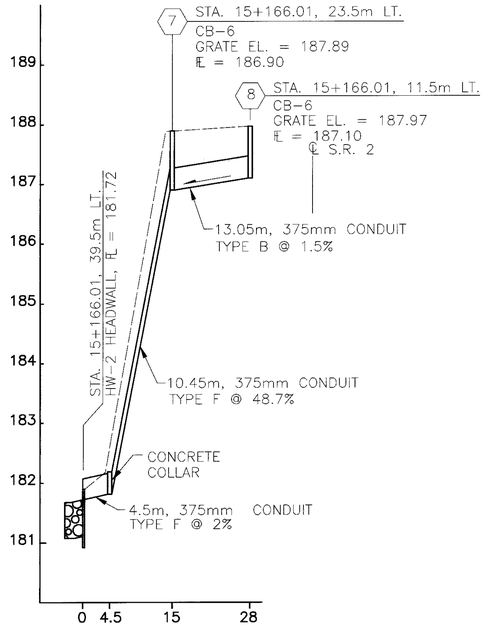
DIMENSION OF THE ROCK CHANNEL PROTECTION
IS 1.8m x 1.8m x 0.457m

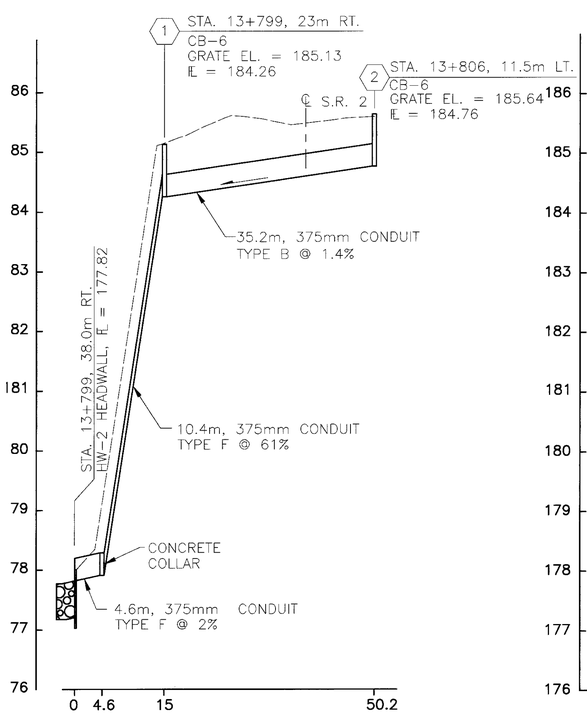
metric units

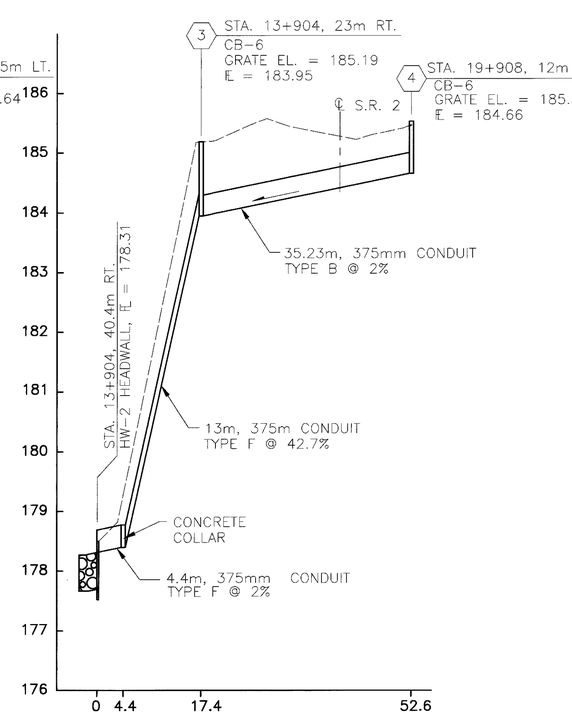


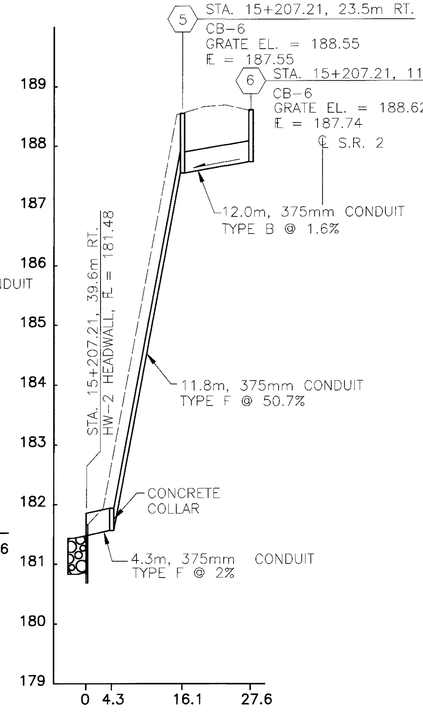


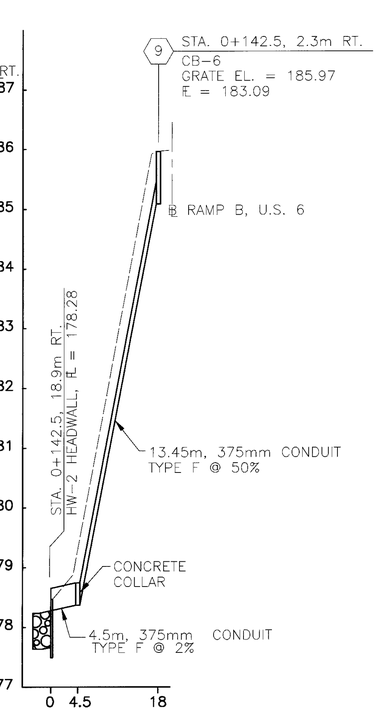












ROCK CHANNEL PROTECTION
TYPE C W/ FILTER

CALCULATED BMH
CHECKED TCM

SCALE IN METERS 0 10 20 HORIZONTAL 1:500

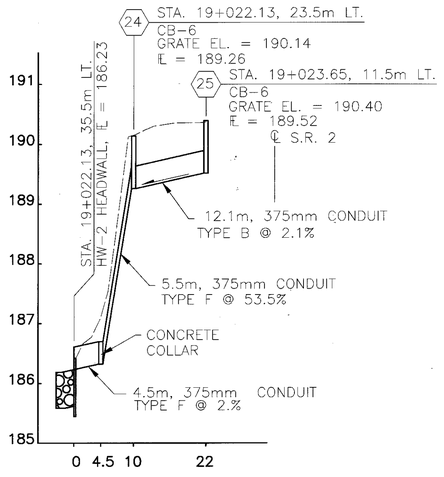
SCALE IN METERS 0 1 2 VERTICAL 1:50

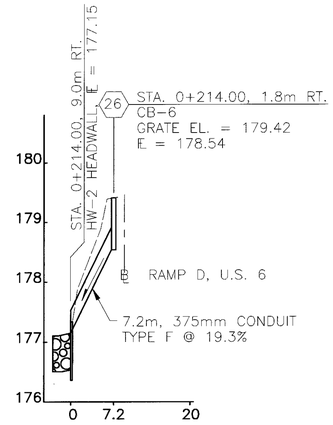
DRAINAGE DETAILS

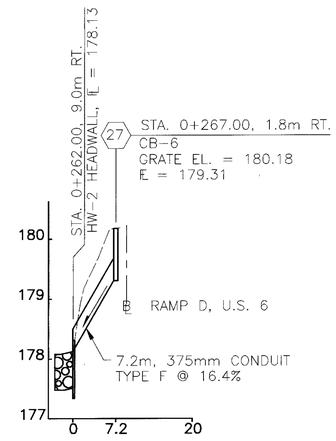
ERI-2-2.866

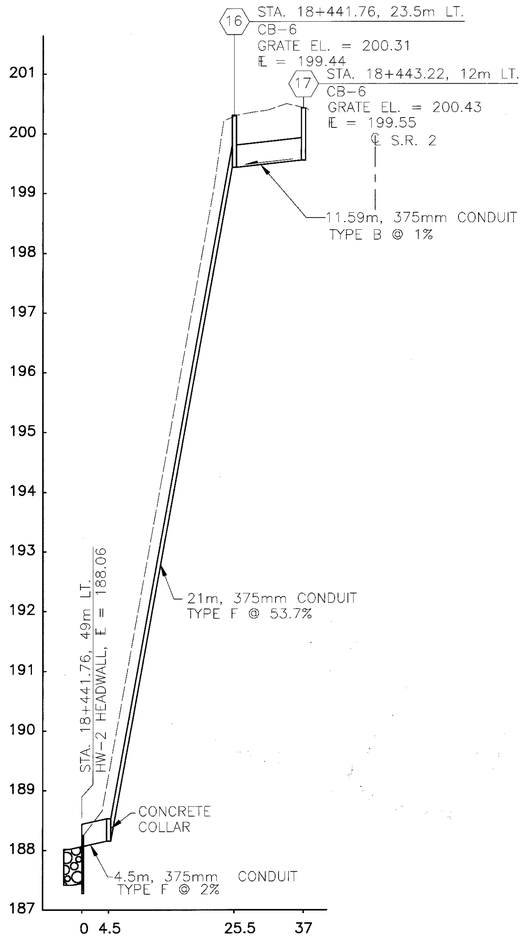
137
327

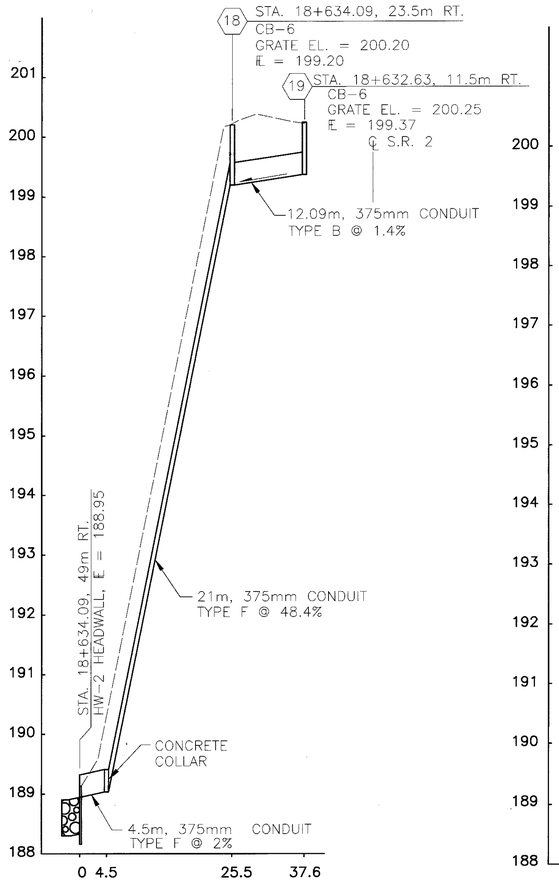
DIMENSIN OF THE ROCK CHANNEL PROTECTION
IS 1.8m x 1.8m x 0.457m

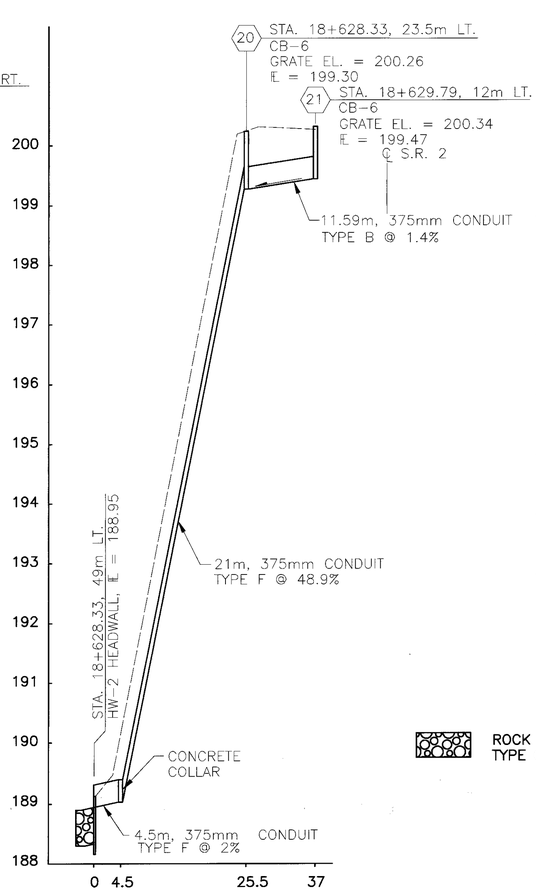


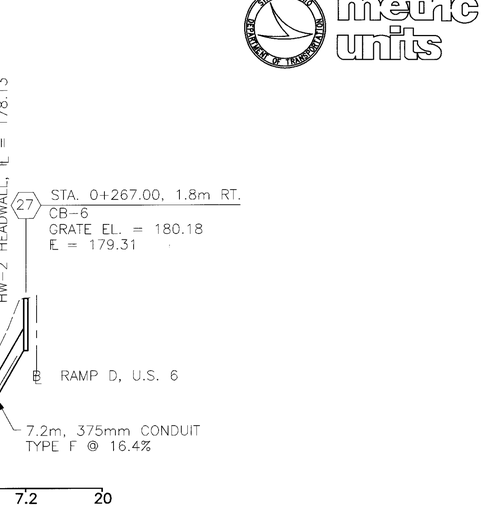












ROCK CHANNEL PROTECTION
TYPE C W/FILTER

metric units

CALCULATED BMH
CHECKED TCM

SCALE IN METERS 0 10 20
HORIZONTAL 1:500

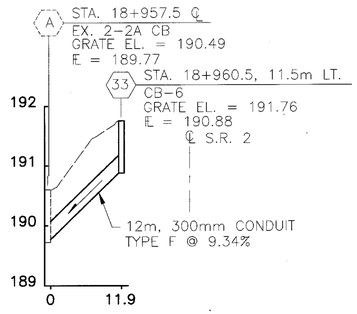
SCALE IN METERS 0 1 2
VERTICAL 1:50

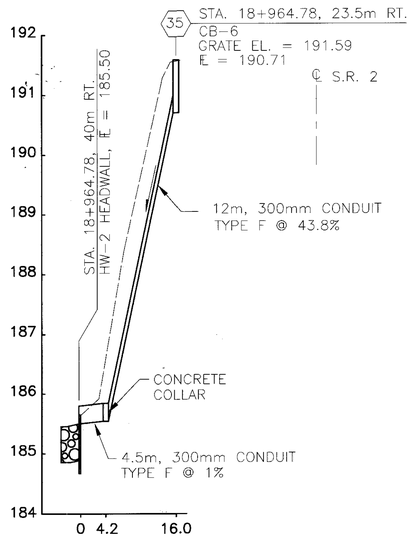
DRAINAGE DETAILS

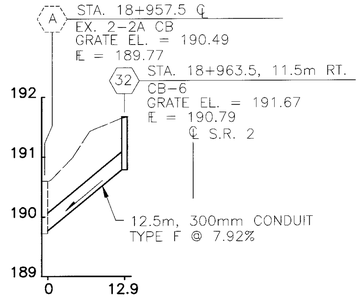
ERI-2-2.866

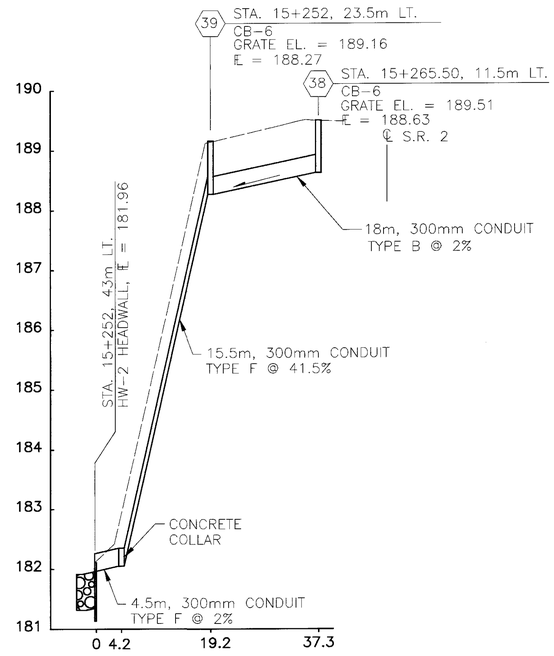
DIMENSION OF THE ROCK CHANNEL PROTECTION
IS 1.8m x 1.8m x 0.457m

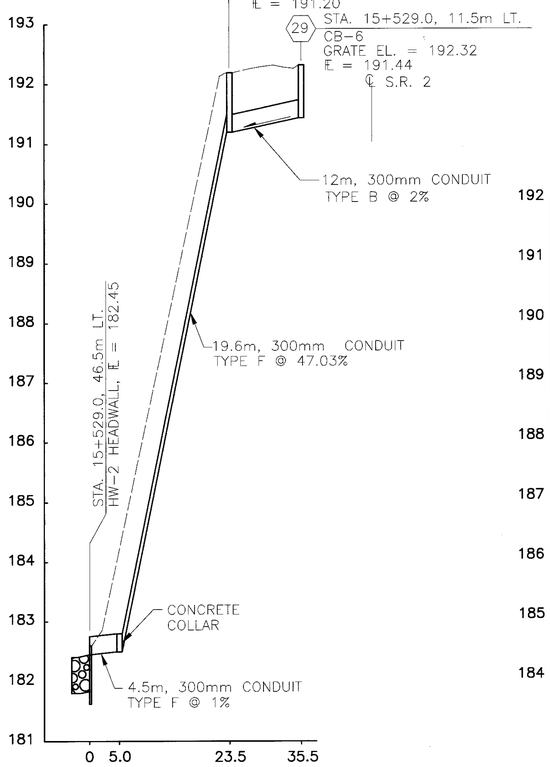
metric units

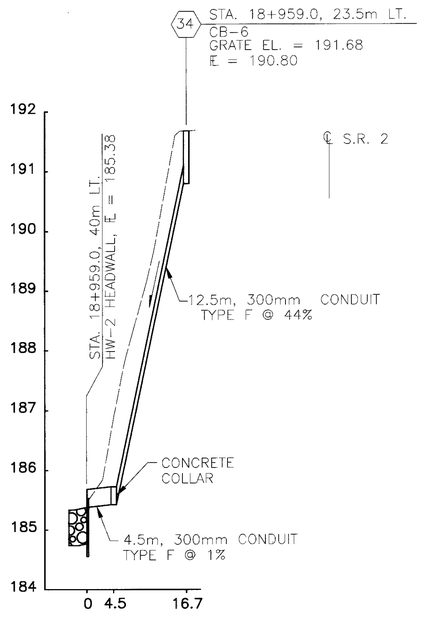


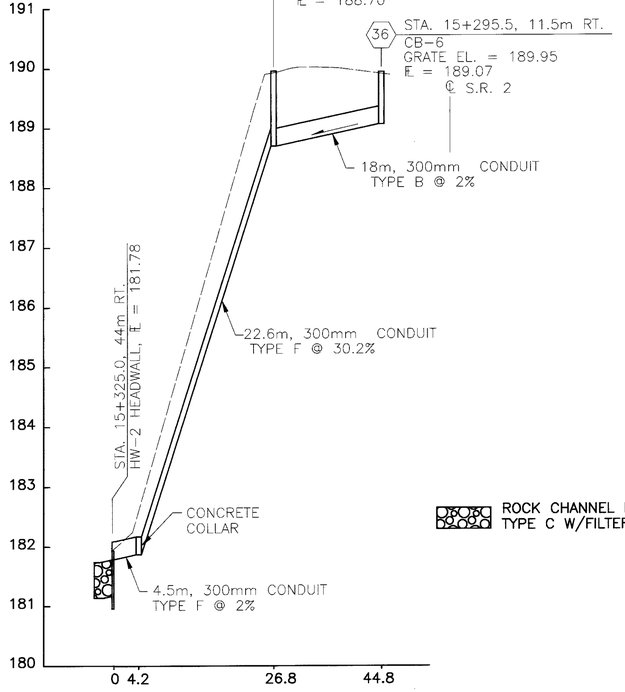












ROCK CHANNEL PROTECTION
TYPE C W/FILTER

CALCULATED BMH CHECKED TCM

SCALE IN METERS 0 10 20 HORIZONTAL 1:500

SCALE IN METERS 0 1 2 VERTICAL 1:50

DRAINAGE DETAILS

ERI-2-2.866

139
327

e:\wa2 P:\13967\DWG\HWW\PLAN\ 13967fd03.dwg NOV 12, 1998 TIME: 12:30 PM

RPM GENERAL NOTES

ITEM 620. DELINEATORS

FLEXIBLE POST DELINEATORS SHALL BE DESIGN 2, TYPE SPECIFIED IN THE PLAN AND PLACED AS PER STANDARD DRAWING TC-61.10M. DELINEATORS SHALL BE USED ALONG STATE ROUTE 2 MAINLINE AS WELL AS ALONG ALL INTERCHANGE RAMPS. MAINLINE DELINEATORS SHALL BE SPACED AT 122m. DELINEATORS ALONG ACCELERATION AND DECELERATION LANES SHALL BE SPACED ACCORDING TO THE RADIUS OF THE RAMP AS SHOWN IN THE PLANS.

ALL EXISTING DELINEATORS SHALL BE REMOVED AND DISPOSED. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 620 DELINEATOR REMOVED FOR DISPOSAL 300 EACH

ITEM 621. RAISED PAVEMENT MARKERS

RAISED PAVEMENT MARKERS SHALL BE PLACED AS PER STANDARD DRAWING TC-65.10M, TC-65.11M, AND TC-65.12M. STATE ROUTE 2 MAINLINE WILL HAVE WHITE ONE-WAY RAISED PAVEMENT MARKERS ALONG THE LANE LINE FOR EASTBOUND AND WESTBOUND LANES AT 36m SPACING. ALL INTERCHANGE RAMPS SHALL HAVE RAISED PAVEMENT MARKERS AS SPECIFIED IN THE STANDARD DRAWINGS. STATE ROUTE 269 AND STATE ROUTE 101 WILL ALSO HAVE RAISED PAVEMENT MARKERS AS PER STANDARD DRAWINGS. ALL EXISTING RAISED PAVEMENT MARKERS SHALL BE REMOVED FOR STORAGE. PAYMENT SHALL BE FOR INSTALLATION ONLY OF ALL RAISED PAVEMENT MARKERS. THE OHIO DEPARTMENT OF TRANSPORTATION (FROM HERE REFERRED TO AS THE DEPARTMENT) SHALL PROVIDE THE RAISED PAVEMENT MARKERS.

MATERIALS SUPPLIED BY THE DEPARTMENT

ALL MATERIALS ARE TO BE CONTRACTOR FURNISHED, EXCEPT THAT THE DEPARTMENT SHALL SUPPLY RAISED PAVEMENT MARKER MATERIALS IN THE QUANTITIES SHOWN HEREIN TO THE CONTRACTOR. PAY ITEMS FOR THE DEPARTMENT SUPPLIED MATERIALS SHALL BE INDICATED AS "INSTALLATION ONLY". THE QUANTITY AND TYPE OF DEPARTMENT SUPPLIED MATERIALS ARE SHOWN ON SHEET 58 OF THIS PLAN.

AT THE PRE-CONSTRUCTION CONFERENCE AN AUTHORIZATION FOR PICK UP FORM WILL BE FURNISHED BY THE DISTRICT CONSTRUCTION ADMINISTRATOR AND THE CONTRACTOR WILL BE INFORMED OF THE LOCATION OF THE DEPARTMENT SUPPLIED MATERIALS TO BE PICKED UP. FOR SOME PROJECTS HAVING QUANTITIES OF LESS THAN 20 RPM'S, THE CONTRACTOR MAY PICK UP RPM MATERIALS AT THE DISTRICT OFFICES. QUANTITIES OVER 20 RPM'S WILL BE PICKED UP AT THE RECYCLER'S CONTRACTOR WAREHOUSE OR AS ARRANGED WITH THE DISTRICT. THE CONTRACTOR SHALL PICK UP DEPARTMENT SUPPLIED MATERIALS AT THE SPECIFIED LOCATION(S) FOR TRANSPORT TO THE WORK SITE OR TO THE CONTRACTORS STORAGE FACILITY. THE RECYCLED RAISED PAVEMENT MARKER (RPM) AUTHORIZATION FORM IS TO BE SIGNED BY THE DISTRICT CONSTRUCTION ENGINEER PRIOR TO PICK UP OF THE RPM'S. THE CONTRACTOR SHALL NOTIFY THE DISTRICT AND/OR THE PARTIES LISTED ON THE AUTHORIZATION FORM IN WRITING AT LEAST FIVE (5) CALENDAR DAYS PRIOR TO PICK UP OF THE DEPARTMENT SUPPLIED MATERIALS. THE CONTRACTOR SHALL STORE THE RPM'S WITHOUT DAMAGE OR CONTAMINATION WITH FOREIGN MATTER. A DEDUCTION IN THE AMOUNT OF THE ACTUAL COST TO THE DEPARTMENT SHALL BE MADE FOR MATERIALS DAMAGED BY THE CONTRACTOR OR FOR CASTINGS RECEIVED BY THE CONTRACTOR WHICH WERE NOT INSTALLED AND WERE NOT RETURNED TO THE DEPARTMENT.

RETURN OF NON-PERFORMED RAISED PAVEMENT MARKER MATERIAL SUPPLIED BY THE DEPARTMENT

RAISED PAVEMENT MARKER MATERIALS SUPPLIED BY THE DEPARTMENT, THAT ARE NON-PERFORMED SHALL BE CAREFULLY REPACKED OR PACKED IN THE BOXES IN THE SAME STYLE AND QUANTITY AS ORIGINALLY RECEIVED FROM THE DEPARTMENT. CASTING STYLES SHALL NOT BE MIXED WITHIN ANY ONE CONTAINER. THE CONTRACTOR SHALL CLEARLY MARK ON THE OUTSIDE OF EACH CONTAINER THE COLOR OF THE PRISMATIC RETRO-REFLECTOR AND THE STYLE OF CASTING. BOXES SHALL BE PLACED ON SKIDS OR PALLETS IN THE SAME STYLE (LOW PROFILE OR CONVENTIONAL, REFLECTORIZED OR NON-REFLECTORIZED) AND NO MORE THAN 420 RPM'S (OR 21 BOXES) ON ONE SKID.

ONLY USE THE BOXES SUPPLIED BY THE RAISED PAVEMENT MARKER RECYCLER. BOXES MUST BE MARKED WITH THE RECYCLER'S PART OR CATALOG NUMBER AND THE PROJECT NUMBER. THE RECYCLER'S CATALOG NUMBERS MAY BE OBTAINED FROM THE OFFICE OF TRAFFIC ENGINEERING IN COLUMBUS, OHIO OR FROM THE RECYCLER. BOXES NOT MARKED WITH THE PROPER RECYCLER'S CATALOG OR PART NUMBERS, AND THE DEPARTMENT'S PROJECT NUMBER WILL NOT BE ACCEPTED AT THE RECYCLER'S WAREHOUSE.

NON-PERFORMED MATERIALS WILL BE RETURNED TO THE LOCATION AS SPECIFIED BY THE DISTRICT CONSTRUCTION ENGINEER WITHIN 30 DAYS OF THE COMPLETION OF THE PROJECT.

THE ABOVE WORK INCLUDING ALL LABOR, EQUIPMENT AND MATERIAL NEEDED TO PERFORM THE WORK SHALL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE PAY ITEM.

IF THE DEPARTMENT HAS TO REPACKAGE THE RPM'S CORRECTLY, THE CONTRACTOR WILL BE ASSESSED THE ACTUAL COST FOR REPACKAGING THE MATERIALS BY THE DEPARTMENT'S FORCES.

LOADING OF THE MATERIALS SUPPLIED BY THE DEPARTMENT AT THE RECYCLER'S WAREHOUSE

TRUCKS SHALL HAVE A LOADING HEIGHT OF 1219 MILLIMETERS AND BE ABLE TO BACK UP FLUSH TO THE LOADING DOCK.

TRUCKS SHALL NOT HAVE ANY OBSTRUCTIONS OR PROTRUSIONS THAT PREVENT THE LOADING BY A STANDARD FORKLIFT OR LIFT TRUCK. SEMI TRUCKS OR 6.1 METER COMMERCIAL TRUCKS ARE THE MOST APPROPRIATE TRUCKS FOR LOADS IN EXCESS OF 4 PALLETS (ONE PALLET = 21 BOXES = 952.5 KILOGRAMS).

STAKE BODY TRUCKS ARE APPROPRIATE TO LOAD LESS LOAD AND THE LOAD CAN BE SAFELY SECURED FOR TRANSPORT BY CHAINING OR STRAPPING DOWN AS NEEDED.

PICKUP TRUCKS ARE APPROPRIATE FOR LOADS OF APPROXIMATELY ONE PALLET, PROVIDED THE PICKUP TRUCK IS RATED FOR THE LOAD AND THE LOAD CAN BE SAFELY SECURED FOR TRANSPORT.

DUMP TRUCKS, TILT BED TRUCKS, AND NON COMMERCIAL MOVING VANS WILL NOT BE LOADED.

THE WAREHOUSE SUPERVISOR WILL REFUSE TO LOAD ANY TRUCK THAT IS UNSAFE TO LOAD OR UNSUITABLE FOR THE LOAD BEING PLACED ON THE TRUCK.

~~ITEM 644. THERMOPLASTIC PAVEMENT MARKING~~

~~THERMOPLASTIC PAVEMENT MARKINGS SHALL BE USED FOR STATE ROUTE 2 AND ALL INTERCHANGE RAMPS (INCLUDING STOP LINES).~~

~~ALL TRAFFIC CONTROL SHALL CONFORM TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.~~

metric units

CALCULATED BMH CHECKED DLW

TRAFFIC CONTROL GENERAL NOTES

ERI-2-2.866

140 / 327

metric units

CALCULATED BMH
CHECKED DLW

STRIPING QUANTITIES

* TYPE 2

STATION			TO	STATION			642							644		
								100 mm CENTERLINE, SOLID DOUBLE YELLOW*		100 mm EDGE LINE, WHITE–*TYPE 2*	100 mm EDGE LINE, YELLOW – *TYPE 2*		100 mm LANE LINE, DASHED – *TYPE 2*	200 mm CHANNELIZING LINE	600 mm TRANSVERSE LINE, WHITE	600 mm STOP LINE
								km		km	km		km	m	m	m
MAINLINE EASTBOUND																
2+629.5	ML	RT	TO	19+480.0	ML	RT							9.96			
2+629.5	ML	RT	TO	19+480.0	ML	RT					9.96					
2+739.0	ML	RT	TO	2+769.6	ML	RT							0.07			
2+769.6	ML	RT	TO	2+877.7	ML	RT								183	74	
2+877.7	ML	RT	TO	3+538.0	EB	RT				0.66						
3+811.7	EB	RT	TO	6+384.8	ML	RT				2.56						
13+403.0	ML	RT	TO	13+422.2	ML	RT							0.07			
13+422.2	ML	RT	TO	13+529.4	ML	RT								107		
13+529.4	ML	RT	TO	14+373.7	ML	RT				0.83						
14+553.0	ML	RT	TO	16+373.9	ML	RT				1.83						
16+467.2	ML	RT	TO	16+530.0	ML	RT							0.06			
16+530.0	ML	RT	TO	16+629.6	ML	RT								100		
16+629.6	ML	RT	TO	17+429.3	ML	RT				0.80						
17+744.5	ML	RT	TO	19+415.0	ML	RT				1.68						
MAINLINE WESTBOUND																
2+837.0	ML	LT	TO	20+017.0	ML	LT					10.30		10.30			
2+837.0	ML	LT	TO	3+225.5	ML	LT				0.39						
3+225.5	ML	LT	TO	3+324.6	ML	LT								100		
3+324.6	ML	LT	TO	3+382.3	ML	LT							0.06			
3+481.1	ML	LT	TO	6+183.7	ML	LT				2.69						
13+361.4	ML	LT	TO	13+785.6	ML	LT				0.42						
13+785.6	ML	LT	TO	13+883.6	ML	LT								98		
13+883.6	ML	LT	TO	13+945.8	ML	LT							0.06			
14+040.1	ML	LT	TO	16+114.7	ML	LT				2.07						
16+457.5	ML	LT	TO	17+264.7	ML	LT				0.81						
17+264.7	ML	LT	TO	17+360.2	ML	LT								96		
17+360.2	ML	LT	TO	17+422.3	ML	LT							0.06			
17+520.2	ML	LT	TO	19+183.4	ML	LT				1.66						
19+487.7	ML	LT	TO	20+017.0	ML	LT				0.53						
SR 269 & RAMPS																
0+576.9	269	L&R	TO	0+903.0	269	L&R		0.33		*0.66*						
0+004.6	C	LT	TO	0+011.5	C	RT										20
0+000.0	C	LT	TO	3+481.1	ML	LT				0.54						
0+010.9	C	RT	TO	0+276.3	C	CL					0.27					
0+276.3	C	RT	TO	0+375.3	C	RT								99	139	
0+003.8	D	LT	TO	3+481.7	ML	RT					0.41					
0+003.4	D	RT	TO	3+811.7	ML	RT				0.74						
3+481.7	ML	RT	TO	3+538.1	ML	RT								56		
3+538.1	ML	RT	TO	3+632.9	ML	RT							0.10			
McCARTNEY ROAD																
0+434.0		L&R	TO	0+740.5		L&R		0.31		*0.61*						
U.S. ROUTE 6 RAMPS																
6+183.6	ML	LT	TO	0+526.2	A2	LT				0.91						
13+302.4	ML	LT	TO	13+361.4	ML	LT							0.06			
13+361.4	ML	LT	TO	13+435.5	ML	LT								75		
13+435.5	ML	LT	TO	0+522.2	A2	LT					0.53					
0+466.2	A2	RT	TO	0+477.2	A2	RT								11		
0+477.2	A2	RT	TO	0+526.2	A2	RT				0.05						
0+522.2	A2	RT	TO	0+522.2	A2	RT										5

* TYPE 2

STATION			TO	STATION			642							644		
								100 mm CENTERLINE, SOLID DOUBLE YELLOW*		100 mm EDGE LINE, WHITE – *TYPE 2*	100 mm EDGE LINE, YELLOW–*TYPE 2*		100 mm LANE LINE, DASHED – *TYPE 2*	200 mm CHANNELIZING LINE	600 mm TRANSVERSE LINE, WHITE	600 mm STOP LINE
								km		km	km		km	m	m	m
0+466.2	A2	LT	TO	0+469.7	B	LT								11		
0+469.7	B	LT	TO	0+597.4	B	LT					0.13					
0+597.4	B	BL	TO	14+040.1	ML	LT				0.69						
0+166.9	B	LT	TO	0+522.2	B	LT					0.38					
0+166.9	B	LT	TO	13+883.6	ML	LT								100	134	
6+384.8	ML	RT	TO	0+293.4	C	BL				0.54						
13+422.2	ML	RT	TO	0+010.9	C	LT								104	163	
0+010.9	C	LT	TO	0+293.4	C	LT					0.29					
0+291.4	C	RT	TO	0+291.4	C	RT										11
0+121.5	D	BL	TO	14+553.0	ML	RT				0.83						
0+169.4	D	LT	TO	0+184.4	D	LT								16		
0+184.4	D	LT	TO	0+212.6	D	LT				0.03						
0+169.4	D	LT	TO	0+185.7	D	LT								17	15	
0+185.7	D	LT	TO	0+220.0	D	LT					0.04					
0+212.6	D	LT	TO	0+220.0	D	LT				0.02						
0+218.1	D	LT	TO	0+740.6	D	LT					0.52					
0+740.6	D	LT	TO	14+373.7	ML	RT								30		
14+373.7	ML	RT	TO	14+424.0	ML	RT							0.05			
S.R. 101 AND RAMPS																
16+114.7	ML	LT	TO	0+437.5	A	LT				0.83						
16+364.0	ML	LT	TO	16+457.5	ML	LT							0.09			
16+457.5	ML	LT	TO	16+506.2	ML	LT								49		
16+506.2	ML	LT	TO	0+424.7	A	RT					0.44					
16+373.9	ML	RT	TO	0+565.3	D	RT				0.61						
16+467.2	ML	RT	TO	16+530.0	ML	RT							0.06			
16+530.0	ML	LT	TO	0+211.1	D	LT								118	46	
0+211.1	D	RT	TO	0+555.4	D	LT					0.34					
0+555.4	LT	D	TO	0+561.8	D	RT										17
1+200.0	SR101	L&R	TO	1+700.0	SR101	L&R				*1.00*						
1+200.0	SR101	CL	TO	1+700.0	SR101	CL		0.50								
1+324.5	SR101	L&R	TO	1+700.0	SR101	L&R							*0.76*			
0+009.8	B	LT	TO	0+015.7	B	RT										17
0+005.5	B	LT	TO	17+520.2	ML	LT				0.62						
0+016.2	B	RT	TO	0+365.8	B	LT					0.35					
0+365.8	B	LT	TO	17+360.2	ML	LT								92	121	
17+360.2	ML	LT	TO	17+422.3	ML	LT							0.06			
0+005.5	C	RT	TO	17+744.5	ML	RT				0.81						
0+016.2	C	LT	TO	0+442.0	C	LT					0.44					
0+442.0	C	LT	TO	17+429.3	ML	RT								46		
17+429.3	ML	RT	TO	17+493.1	ML	RT							0.07			
S.R. 4 RAMPS																
19+183.4	ML	LT	TO	19+555.5	ML	LT				0.37						
19+404.4	ML	LT	TO	19+487.7	ML	LT							0.08			
19+487.7	ML	LT	TO	19+555.5	ML	LT								68		
19+415.0	ML	RT	TO	19+480.0	ML	RT				0.07						
				SUBTOTALS						*24.86*	24.40					
				TOTALS				1.14		*51.26*			21.*97*	1576	692	70

QUANTITIES CARRIED TO GENERAL SUMMARY

ERI-2-2.866

metric units

CALCULATED BMH
CHECKED DLW

RPM & DELINEATOR QUANTITIES

DELINEATORS								620		
STATION			TO	STATION			SPACING	TYPE C DELINEATOR, DESIGN 2 POST MOUNTED	TYPE C DELINEATOR, DESIGN 2 BRACKET MOUNTED	TYPE D DELINEATOR, DESIGN 2 POST MOUNTED
							METERS	EACH	EACH	EACH
MAINLINE EASTBOUND										
2+879.9	ML	RT	TO	3+293.9	ML	RT	122.0	4		
3+934.3	EB	RT	TO	6+262.8	ML	RT	122.0	20		
13+545.7	ML	RT	TO	14+129.6	ML	RT	122.0	6		
14+674.4	ML	RT	TO	16+252.0	ML	RT	122.0	13	1	
16+697.4	ML	RT	TO	17+185.5	ML	RT	122.0	5		
17+832.7	ML	RT	TO	19+293.0	ML	RT	122.0	12	1	
MEDIAN CROSSOVER										
5+140.0	ML									6
16+280.0	ML									6
MAINLINE WESTBOUND										
2+841.8	ML	LT	TO	3+207.8	ML	LT	122.0	4		
3+621.1	WB	LT	TO	6+183.7	ML	LT	122.0	19		
13+544.1	ML	LT	TO	13+765.4	ML	LT	122.0	3		
14+154.0	ML	LT	TO	15+992.7	ML	LT	122.0	15	1	
16+757.9	ML	LT	TO	17+245.0	ML	LT	122.0	5		
17+590.4	ML	LT	TO	19+061.4	ML	LT	122.0	11	2	
SR 269 RAMPS										
0+022.7	C	LT	TO	0+097.3	C	LT	15.2	6		
0+027.9	C	RT	TO	0+062.8	C	RT	15.2			3
0+148.8	C	RT	TO	0+265.9	C	RT	24.4			6
0+226.0	C	LT	TO	3+481.3	WB	LT	61.0	7		
0+143.8	D	LT	TO	0+278.6	D	LT	27.4			5
0+248.9	D	RT	TO	0+351.3	D	RT	27.4	4		
0+351.3	D	RT	TO	3+800.6	EB	RT	122.0	3		
U.S. ROUTE 6 RAMPS										
6+218.2	ML	LT	TO	0+283.4	A1	LT	61.0	11		
0+283.4	A1	LT	TO	0+513.7	A2	LT	15.2	16		
0+097.2	A1	RT	TO	0+281.5	A1	RT	27.4			8
0+482.9	A2	RT	TO	0+511.3	A2	RT	28.4	2		
13+784.6	ML	LT	TO	0+159.2	B	RT	61.0	6		
0+174.4	B	LT	TO	0+312.1	B	LT	15.2			11
0+169.3	B	RT	TO	0+582.1	B	RT	15.2	27		
0+473.8	B	LT	TO	0+532.6	B	LT	61.0	4	1	
6+385.0	ML	RT	TO	0+028.8	C	RT	61.0	6		
0+021.8	C	LT	TO	0+288.8	C	LT	61.0			6
0+149.6	D	RT	TO	0+290.5	D	RT	27.4	6		
0+238.2	D	LT	TO	0+588.3	D	LT	27.4			15
0+422.6	D	RT	TO	14+553.3	D	RT	27.4/61	15		
S.R. 101 RAMPS										
16+114.7	ML	LT	TO	0+143.6	A	LT	61.0	9		
0+132.8	A	RT	TO	0+410.4	A	RT	61.0			6
16+373.4	ML	RT	TO	0+219.4	D	RT	61.0	6		
0+218.1	D	LT	TO	0+398.1	D	LT	61.0			4
0+393.1	D	RT	TO	0+504.2	D	RT	61.0	3		
0+017.0	B	LT	TO	0+184.1	B	LT	61.0	4		
0+166.0	B	RT	TO	0+346.2	B	RT	61.0			4
0+326.4	B	LT	TO	17+520.6	ML	LT	61.0	7		
0+130.0	C	LT	TO	0+309.7	C	LT	61.0			4
0+319.8	C	RT	TO	17+744.6	ML	RT	61.0	9		
S.R. 4 RAMPS										
19+189.5	ML	LT	TO	19+555.4	ML	LT	61.0	7		
19+414.6	ML	RT	TO	19+480.0	ML	RT	61.0	3		
TOTAL				=				278	6	84

RAISED PAVEMENT MARKERS								621			
STATION			TO	STATION			SPACING	1-WAY, WHITE	2-WAY, WHITE/RED	2-WAY, YELLOW/RED	2-WAY, YELLOW/YELLOW
							METERS	EACH	EACH	EACH	EACH
MAINLINE EASTBOUND											
2+629.5	ML	RT	TO	19+480.0	ML	RT	36.0	277			
2+769.6	ML	RT	TO	2+844.7	ML	RT	12.0		13		
13+422.2	ML	RT	TO	13+529.0	ML	RT	12.0		17		
16+530.0	ML	RT	TO	16+629.6	ML	RT	12.0		17		
MAINLINE WESTBOUND											
2+837.0	ML	LT	TO	20+017.0	ML	LT	36.0	287			
3+225.5	ML	LT	TO	3+324.6	ML	LT	12.0		17		
13+785.6	ML	LT	TO	13+883.6	ML	LT	12.0		17		
17+264.7	ML	LT	TO	17+360.2	ML	LT	12.0		17		
SR 269 AND RAMPS											
0+576.9	269	CL	TO	0+903.0	269	CL	24.0				14
0+010.0	C	RT	TO	0+276.3	C	RT	24.0			11	
0+003.8	D	LT	TO	0+400.0	D	RT	24.0			18	
3+481.7	ML	RT	TO	3+538.1	ML	RT	12.0		5		
U.S. ROUTE 6 RAMPS											
13+361.4	ML	LT	TO	13+435.5	ML	LT	12.0		7		
0+000.0	A1	LT	TO	0+522.2	A1	LT	24.0			22	
0+466.2	B2	RT	TO	0+477.2	B2	RT	6.0		5		
0+166.9	B	LT	TO	0+577.0	A2	RT	24.0			17	
0+010.9	C	LT	TO	0+293.4	C	LT	24.0			12	
0+169.4	D	LT	TO	0+185.7	D	LT	8.0		5		
0+185.7	D	LT	TO	0+740.6	D	LT	24.0			25	
0+477.2	B2	LT	TO	0+771.0	D	RT	12.0		3		
0+477.2	B2		TO	0+522.2	B2					3	

RAISED PAVEMENT MARKERS								621			
STATION			TO	STATION			SPACING	1-WAY, WHITE	2-WAY, WHITE/RED	2-WAY, YELLOW/RED	2-WAY, YELLOW/YELLOW
							METERS	EACH	EACH	EACH	EACH
S.R. 101 AND RAMPS											
16+457.5	ML	LT	TO	16+506.2	ML	LT	12.0		5		
0+000.0	A	LT	TO	0+424.7	A	RT	24.0			18	
0+211.1	D	LT	TO	0+555.4	D	LT	24.0			15	
1+200.0	S.R. 101	LT	TO	1+365.9	S.R. 101	LT	24.0		8		
1+200.0	S.R. 101	CL	TO	2+005.2	S.R. 101	CL	24.0				33
1+324.5	S.R. 101	L&R	TO	2+005.2	S.R. 101	L&R	24.0		56		
1+397.1	S.R. 101	LT	TO	1+613.0	S.R. 101	LT	24.0	10			
0+016.2	C	LT	TO	0+442.0	C	LT	24.0			18	
0+442.0	C	LT	TO	0+488.0	C	RT	12.0		4		
0+016.2	B	RT	TO	0+365.8	B	RT	24.0			15	
S.R. 4 RAMPS											
19+487.7	ML	LT	TO	19+555.5	ML	LT	12.0		6		
TOTAL				=				574	202	174	47

ITEM 621 RAISED PAVEMENT CASTING, INSTALLATION ONLY = 997 EACH
ITEM 621 PRISMATIC RETROREFLECTOR = 997 EACH

ITEM 618 RUMBLE STRIPS, TYPE 2 (ASPHALT)

STA. 2+866 TO STA. 3+820 (OUTSIDE SHOULDERS ONLY)
954 METERS x 2 = 1908 METERS

STA. 3+820 TO STA. 19+446 = 15,626 METERS x 4 = 62,504 METERS
SUBTOTAL = 64,412 METERS
− 27,544 METERS DEDUCT (FROM BELOW)
TOTAL = 36,868 METERS

STA. EQUATION 6+413.889 BACK = STA. 13+300.033 AHEAD ~ 6886.144 DEDUCT
6886.144 x 4 = 27,544 METERS DEDUCT

QUANTITIES CARRIED TO GENERAL SUMMARY

ERI-2-2.866

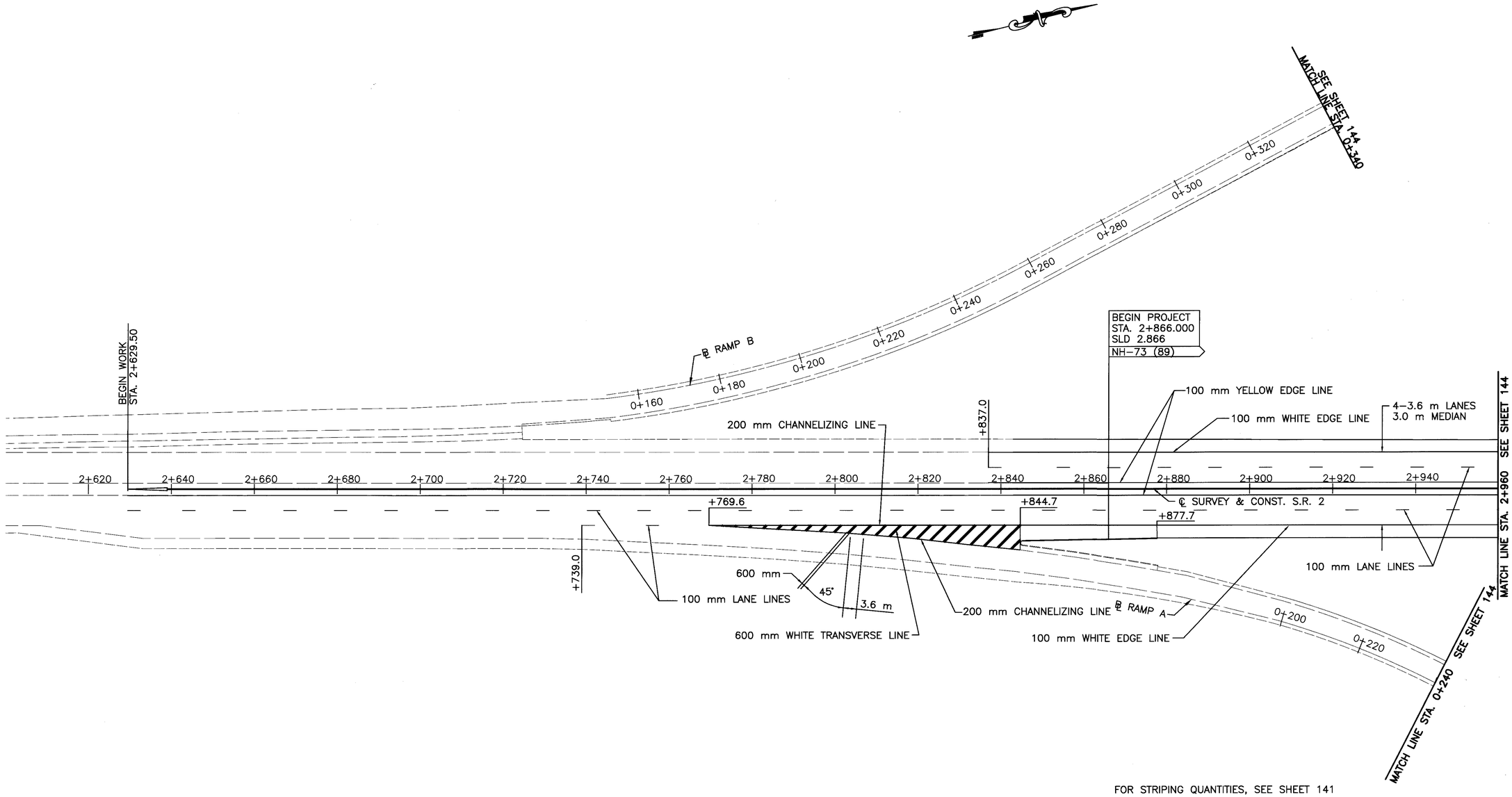
metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED BMH CHECKED DLW

STRIPING PLAN
STA. 2+320 TO STA. 2+960

ERI-2-2.866



FOR STRIPING QUANTITIES, SEE SHEET 141

FOR RPM INSTALLATION AND LAYOUT DETAILS SEE STANDARD DRAWINGS TC-65.10M, TC-65.11M AND TC-65.12M.
FOR PAVEMENT MARKINGS SEE STANDARD DRAWINGS TC-71.10M AND TC-72.20M.

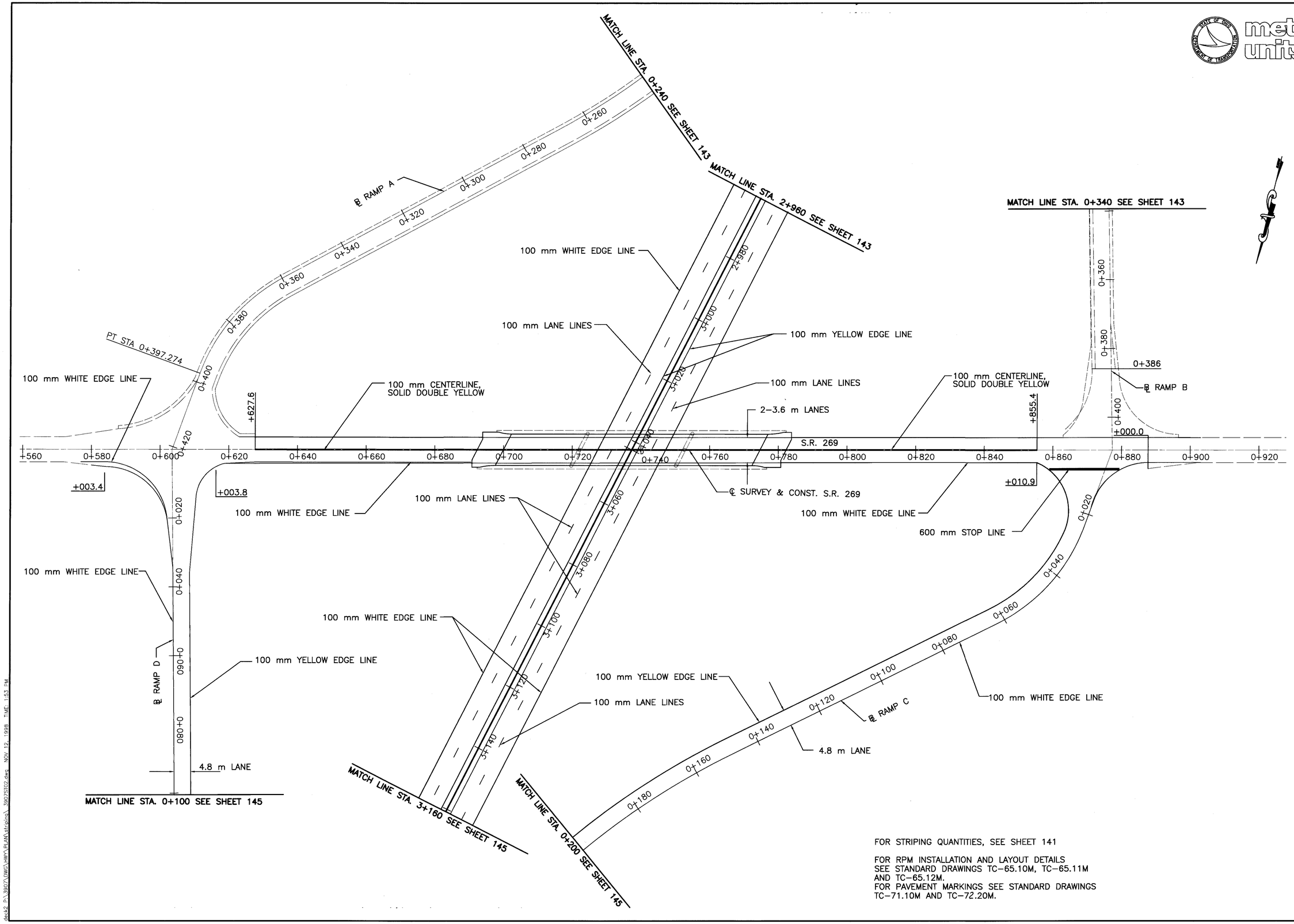
metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED BMH CHECKED DLW

STRIPING PLAN – STA. 2+960 TO STA. 3+160 AND S.R. 269 STA. 0+600 TO STA. 0+900

ERI-2-2.866



FOR STRIPING QUANTITIES, SEE SHEET 141

FOR RPM INSTALLATION AND LAYOUT DETAILS SEE STANDARD DRAWINGS TC–65.10M, TC–65.11M AND TC–65.12M.
FOR PAVEMENT MARKINGS SEE STANDARD DRAWINGS TC–71.10M AND TC–72.20M.

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED BMH CHECKED DLW

MATCH LINE STA. 0+200 SEE SHEET 144

4.8 m LANE

100 mm WHITE EDGE LINE

℄ RAMP C

600 mm WHITE TRANSVERSE LINE

200 mm CHANNELIZING LINES

100 mm LANE LINES

100 mm WHITE EDGE LINE

100 mm YELLOW EDGE LINE

3–3.6 m LANE

MATCH LINE STA. 3+160 SEE SHEET 144

100 mm YELLOW EDGE LINE

600 mm 3.6 m 45°

+276.3

+225.5

+324.6

+375.3

+382.3

+481.1

℄ CONST. S.R. 2

S 76°19'00" E

MATCH LINE STA. 3+500 SEE THIS SHEET

4–3.6 m LANES
3.0 m MEDIAN

100 mm LANE LINES

100 mm YELLOW EDGE LINE

+400.0

200 mm CHANNELIZING LINES

CS STA 0+247.480

100 mm YELLOW EDGE LINE

100 mm LANE LINES

100 mm WHITE EDGE LINE

MATCH LINE STA. 0+100 SEE SHEET 144

N 76°05'12"E

℄ RAMP D

PC STA 0+143.832

4.8 m LANE

100 mm WHITE EDGE LINE

MATCH LINE STA. 3+500 SEE THIS SHEET

+538.1

+632.9

200 mm CHANNELIZING LINES

100 mm LANE LINES

100 mm YELLOW EDGE LINE

100 mm WHITE EDGE LINE

STA. 3+823.154 (W.B.)

2–3.6 m LANES

+811.7

STA. 3+817.236

STA. 3+821.358 (E.B.)

2–3.6 m LANES

ACCELERATION STA. 3+847.715

FOR STRIPING QUANTITIES, SEE SHEET 141

FOR RPM INSTALLATION AND LAYOUT DETAILS SEE STANDARD DRAWINGS TC–65.10M, TC–65.11M AND TC–65.12M.
FOR PAVEMENT MARKINGS SEE STANDARD DRAWINGS TC–71.10M AND TC–72.20M.

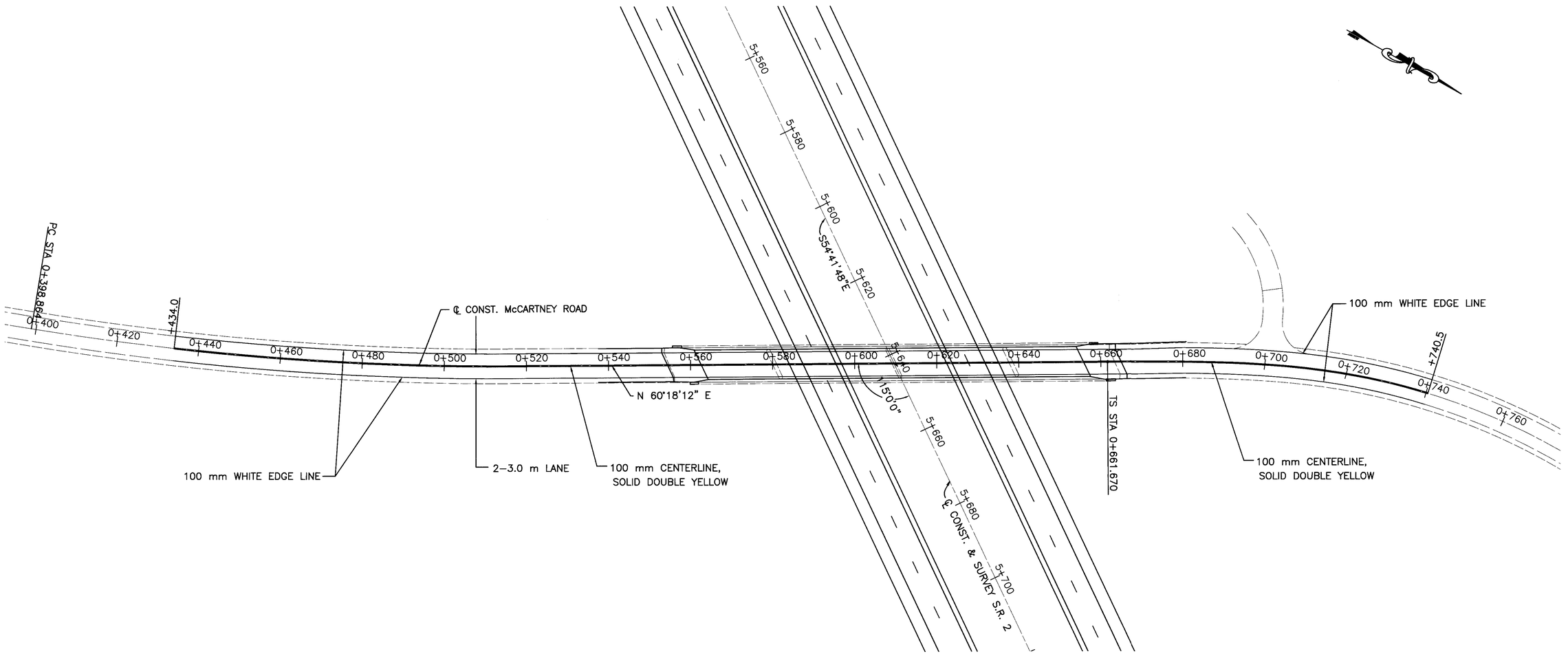
STRIPING PLAN
STA. 3+160 TO STA. 3+840

ERI-2-2.866

145
327

dec-k2 P:\3907\DWGS\HWY\PLAN\striping\ 3907ST03.dwg NOV 12, 1998 TIME: 2:07 PM

metric units



FOR STRIPING QUANTITIES, SEE SHEET 141

FOR RPM INSTALLATION AND LAYOUT DETAILS SEE STANDARD DRAWINGS TC–65.10M, TC–65.11M AND TC–65.12M.
FOR PAVEMENT MARKINGS SEE STANDARD DRAWINGS TC–71.10M AND TC–72.20M.

SCALE IN METERS 0 10 20 1:500

CALCULATED BMH
CHECKED DLW

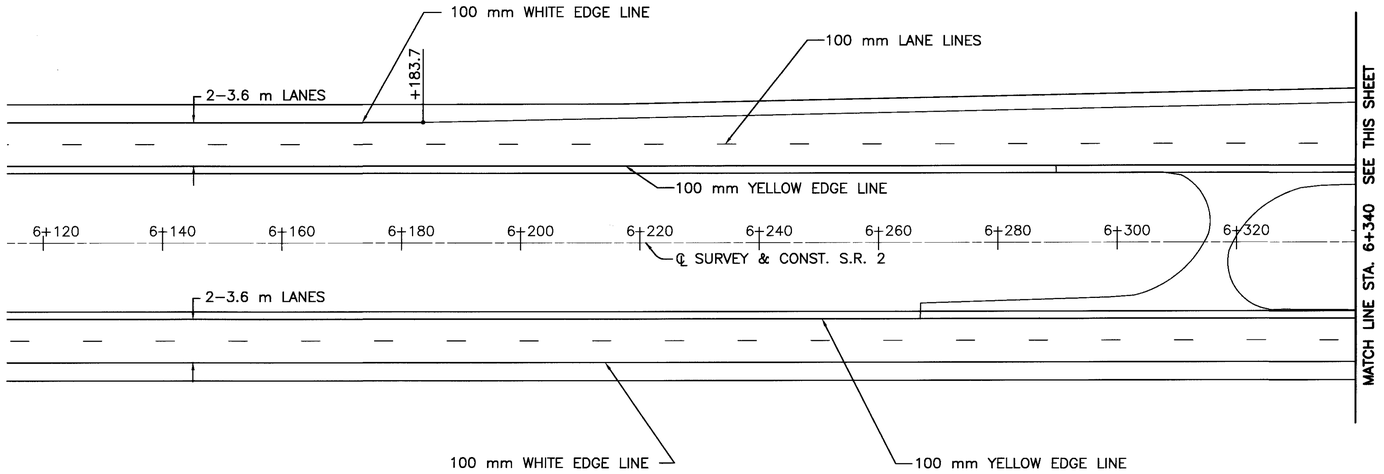
STRIPING PLAN – McCARTNEY ROAD
STA. 0+434 TO STA. 0+740

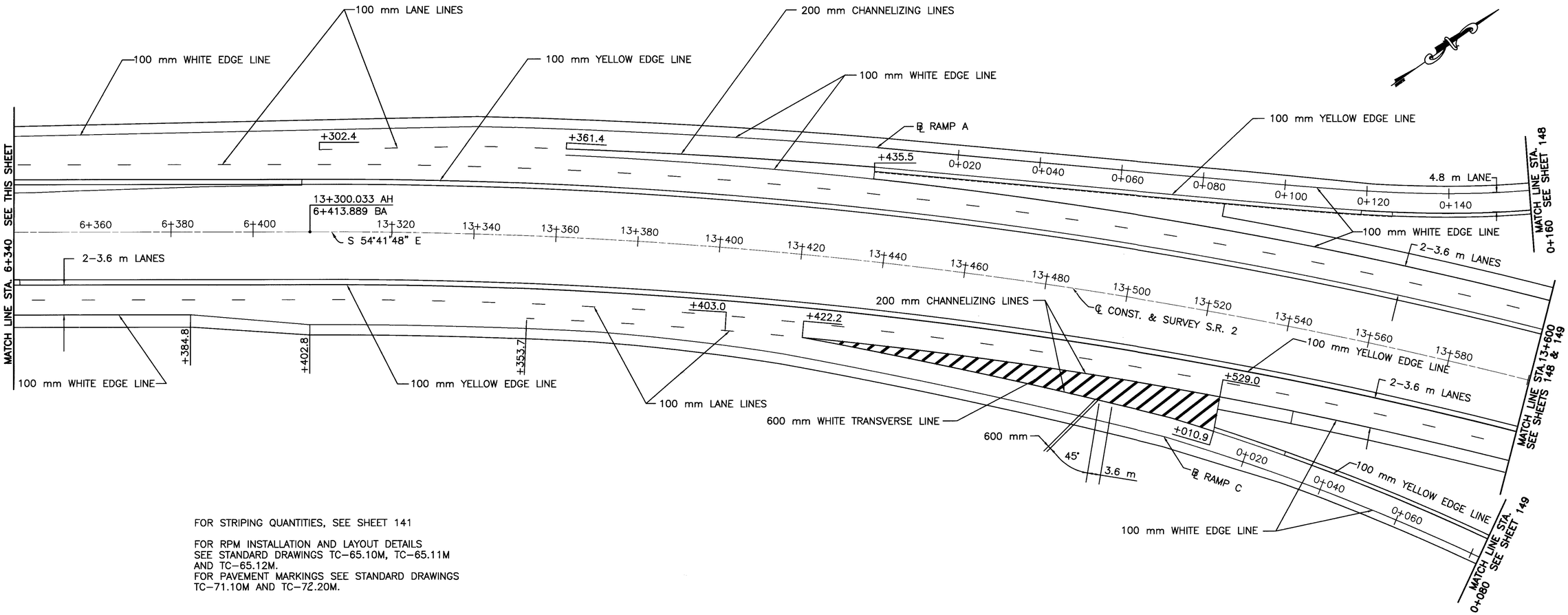
ERI-2-2.866

146
327

deck2 P:\3907\DWG\HWY\PLAN\striping_3907S104.dwg NOV 12, 1998 TIME: 2:12 PM

metric units





FOR STRIPING QUANTITIES, SEE SHEET 141

FOR RPM INSTALLATION AND LAYOUT DETAILS
SEE STANDARD DRAWINGS TC–65.10M, TC–65.11M
AND TC–65.12M.
FOR PAVEMENT MARKINGS SEE STANDARD DRAWINGS
TC–71.10M AND TC–72.20M.

SCALE IN METERS 0 10 20 1:500

CALCULATED BMH
CHECKED DLW

STRIPING PLAN
STA. 5+600 TO STA. 13+600

ERI-2-2.866

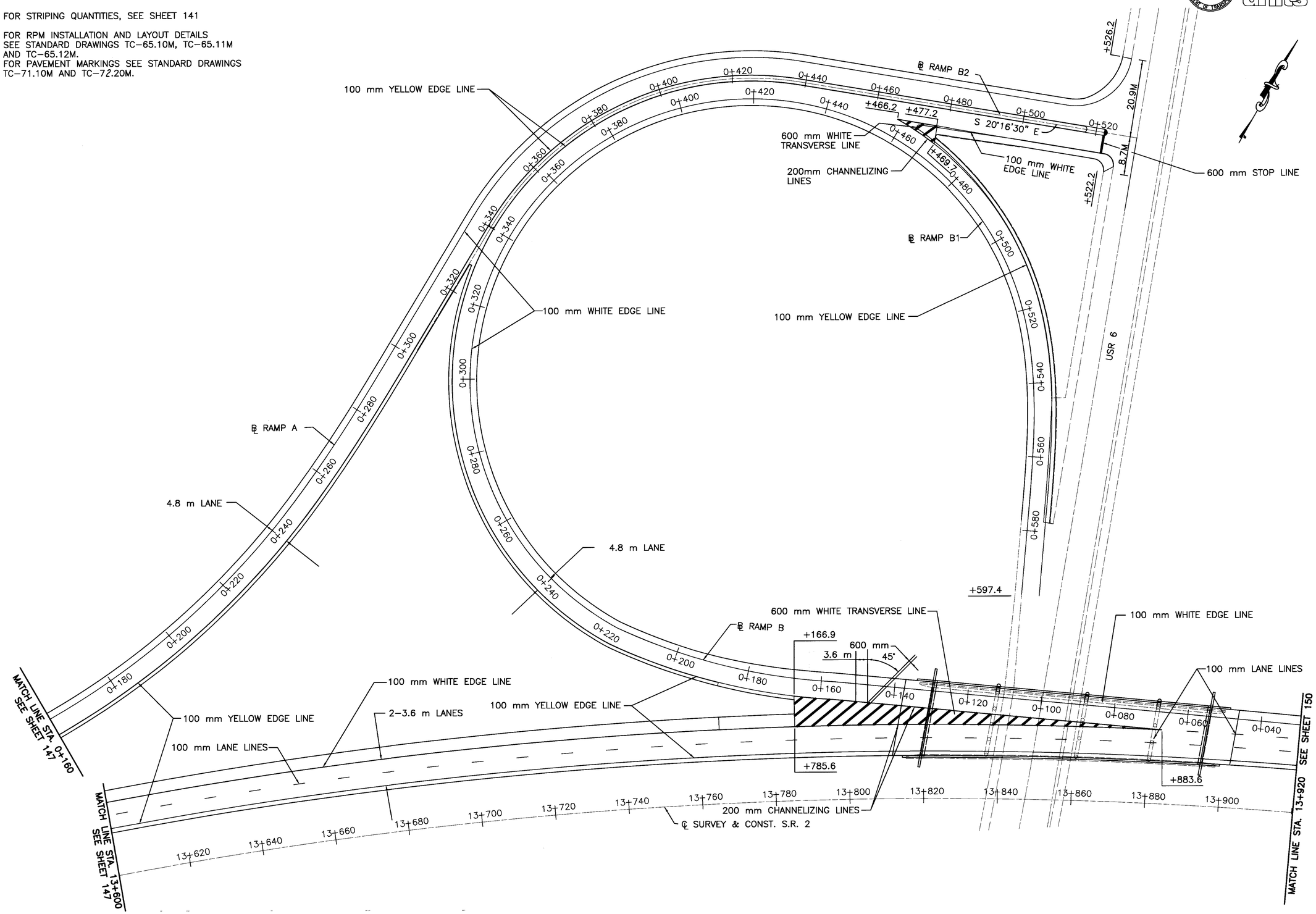
147
327

wcts2 P:\3907\OWC\HWY\PLAN\striping\ 3907ST05.dwg NOV 12, 1998 TIME: 12:46 PM

FOR STRIPING QUANTITIES, SEE SHEET 141

FOR RPM INSTALLATION AND LAYOUT DETAILS
SEE STANDARD DRAWINGS TC-65.10M, TC-65.11M
AND TC-65.12M.
FOR PAVEMENT MARKINGS SEE STANDARD DRAWINGS
TC-71.10M AND TC-72.20M.

metric units



SCALE IN METERS 0 10 20 1:500

CALCULATED BMH CHECKED DLW

STRIPING PLAN
STA. 13+600 TO STA. 13+920

ERI-2-2.866

metric units

MATCH LINE STA. 13+600 SEE SHEET 147

13+620 13+640 13+660 13+680 13+700 13+720 13+740 13+760 13+780 13+800 13+820 13+840 13+860 13+880 13+900

℄ CONST. & SURVEY S.R. 2

MATCH LINE STA. 13+920 SEE SHEET 150

2–3.6 m LANES

100 mm LANE LINES

100 mm WHITE EDGE LINE

100 mm LANE LINES

100 mm WHITE EDGE LINE

MATCH LINE STA.0+080 SEE SHEET 147

4.8 m LANE

100 mm YELLOW EDGE LINE

0+100 0+120 0+140 0+160 0+180 0+200 0+220 0+240 0+260 0+280

℄ RAMP C

USR 6

+293.4

100 mm WHITE EDGE LINE

600 mm STOP LINE

MATCH LINE STA. 0+160 SEE RIGHT

USR 6

0+140 0+120 0+100

℄ RAMP D

+293.4

100 mm YELLOW EDGE LINE

MATCH LINE STA. 0+300 SEE SHEET 150

100 mm WHITE EDGE LINE

N 79°21'36" E

+218.1

0+280 0+260 0+240 0+220 0+200

℄ RAMP D

+220

+212.6
21.8 M LT.

600 mm WHITE TRANSVERSE LINE

+184.4

4.8 m LANE

100 mm WHITE EDGE LINE

100 mm YELLOW EDGE LINE

0+180

+185.7

+169.4

160

200 mm CHANNELIZING LINE

MATCH LINE STA. 0+160 SEE LEFT

FOR STRIPING QUANTITIES, SEE SHEET 141

FOR RPM INSTALLATION AND LAYOUT DETAILS SEE STANDARD DRAWINGS TC–65.10M, TC–65.11M AND TC–65.12M.
FOR PAVEMENT MARKINGS SEE STANDARD DRAWINGS TC–71.10M AND TC–72.20M.

SCALE IN METERS 0 10 20 1:500

CALCULATED BMH CHECKED DLW

STRIPING PLAN
STA. 13+600 TO STA. 13+920

ERI-2-2.866

149
327

wats2 P:\3907\CWO\HWY\PLAN\striping\ 39073107.dwg NOV 12, 1998 TIME: 11:37 AM

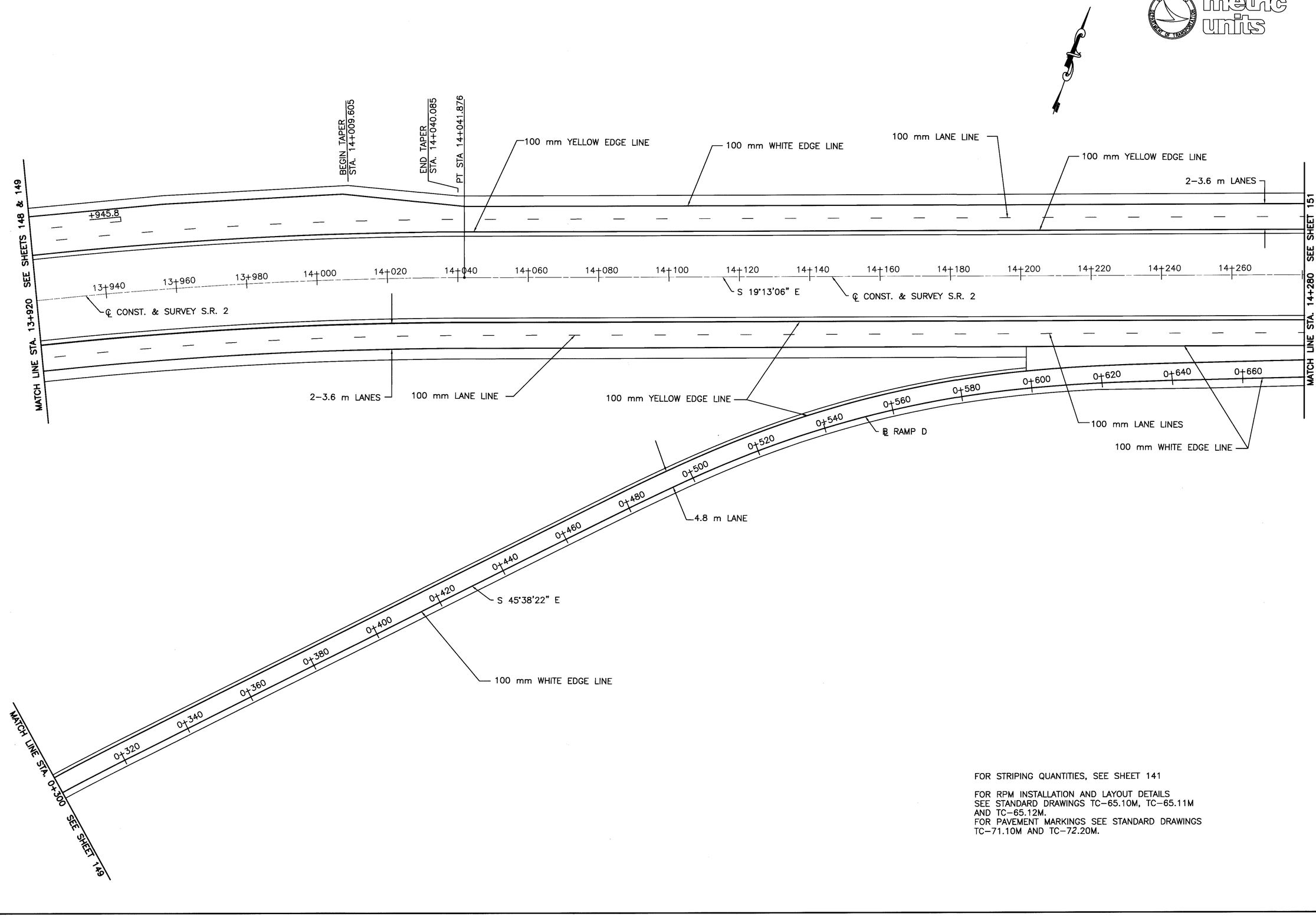
metric units

SCALE IN METERS
0 10 20
1:500

CALCULATED BMH
CHECKED DLW

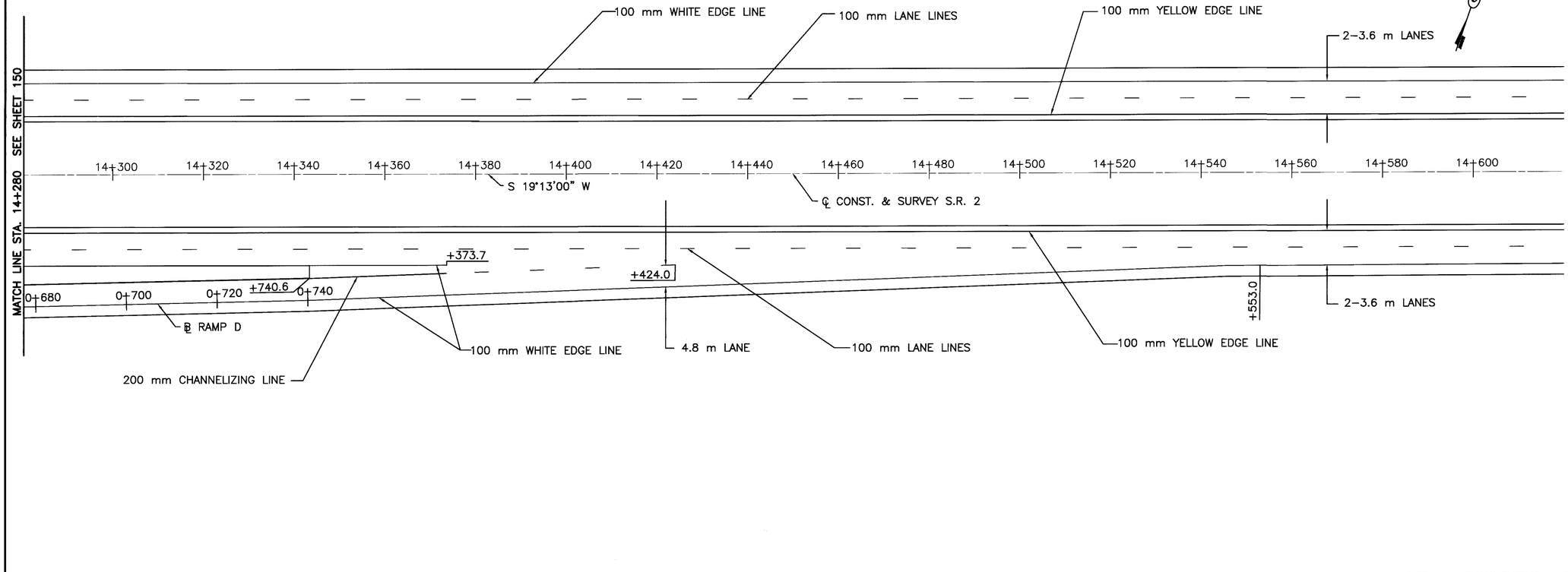
STRIPING PLAN
STA. 13+920 TO STA. 14+280

ERI-2-2.866



FOR STRIPING QUANTITIES, SEE SHEET 141

FOR RPM INSTALLATION AND LAYOUT DETAILS SEE STANDARD DRAWINGS TC–65.10M, TC–65.11M AND TC–65.12M.
FOR PAVEMENT MARKINGS SEE STANDARD DRAWINGS TC–71.10M AND TC–72.20M.



FOR STRIPING QUANTITIES, SEE SHEET 141

FOR RPM INSTALLATION AND LAYOUT DETAILS
SEE STANDARD DRAWINGS TC–65.10M, TC–65.11M
AND TC–65.12M.
FOR PAVEMENT MARKINGS SEE STANDARD DRAWINGS
TC–71.10M AND TC–72.20M.

metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED BMH CHECKED DLW

STRIPING PLAN
STA. 14+280 TO STA. 16+480

ERI-2-2.866

151
327

shks2 P:\3907\DWG\HWY\PLAN\striping\ 3907ST09.dwg NOV 12, 1998 TIME: 1:10 PM

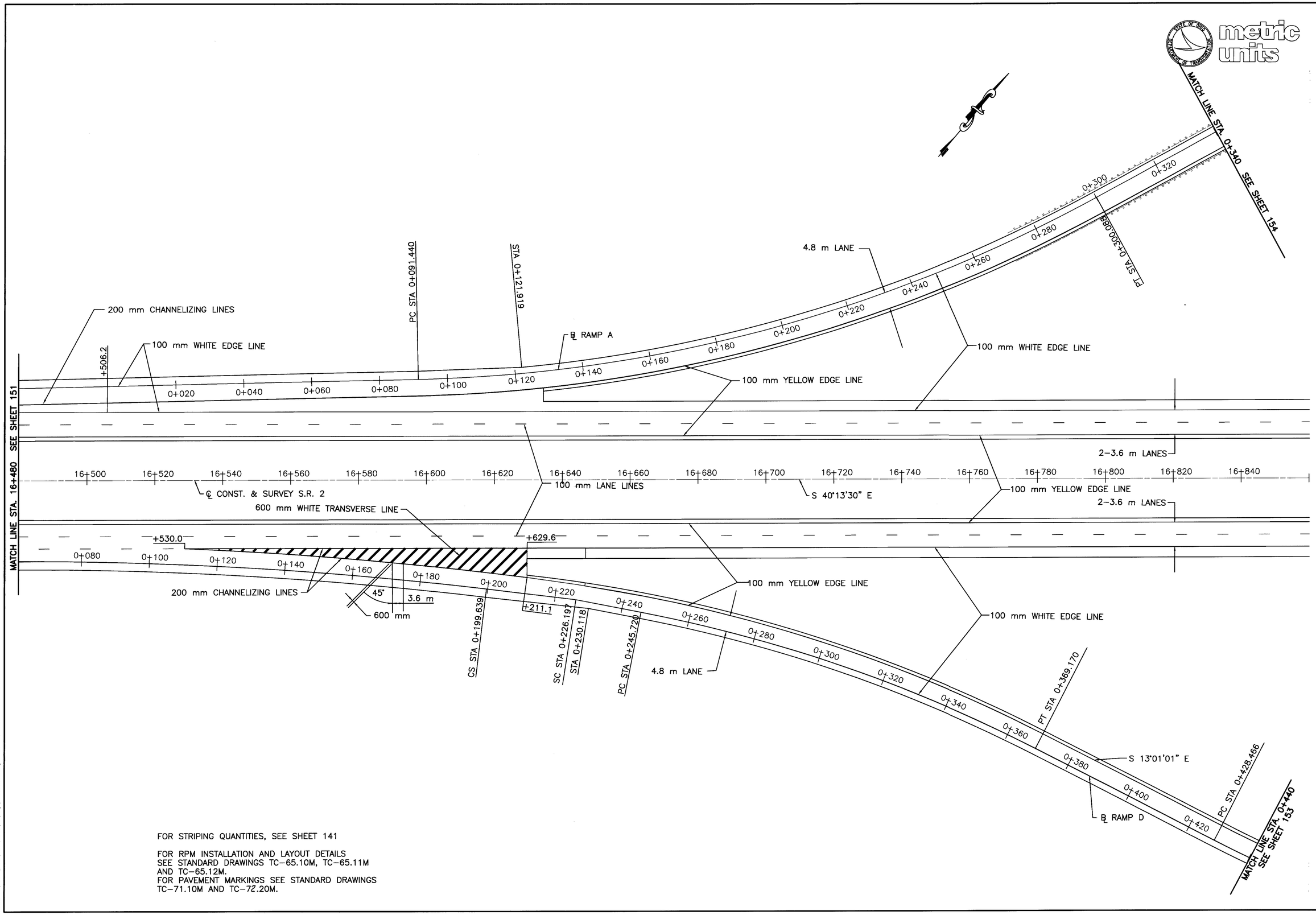
metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED BMH | CHECKED DLW

STRIPING PLAN
STA. 16+480 TO STA. 16+860

ERI-2-2.866



FOR STRIPING QUANTITIES, SEE SHEET 141

FOR RPM INSTALLATION AND LAYOUT DETAILS SEE STANDARD DRAWINGS TC–65.10M, TC–65.11M AND TC–65.12M.
FOR PAVEMENT MARKINGS SEE STANDARD DRAWINGS TC–71.10M AND TC–72.20M.

metric units

MATCH LINE STA. 0+440 SEE SHEET 152

100 mm WHITE EDGE LINE

100 mm YELLOW EDGE LINE

℄ RAMP D

PT STA 0+548.734

100 mm WHITE EDGE LINE

100 mm LANE LINES

600 mm STOP LINE

600 mm TRANSVERSE LINES, YELLOW

100 mm WHITE EDGE LINE

BOP 1+151.531

+200.0

1+160 1+180 1+200 1+220 1+240 1+260 1+280 1+300 1+320 +324.5 1+340 1+360 1+380 +565.3 1+400 +555.4 1+420 1+440 1+460 1+480 1+500 1+520

S.R. 101

3.3m 3.6m 3.6m 3.3m

+005.5

+016.2

N 41°12'00" E

100 mm CENTERLINE, SOLID DOUBLE YELLOW

STA. 1+371.603, S.R. 101 =
STA. 0+000, RAMP C =
STA. 0+571.594, RAMP D

+365.9

+367.1

100 mm CENTERLINE, SOLID DOUBLE YELLOW

100 mm LANE LINES

4–3.6 m LANES

100 mm WHITE EDGE LINE

MATCH LINE STA. 1+520 SEE SHEET 154

℄ CONST. & SURVEY S.R. 2

17+000 17+020 17+040

0+020 0+040 0+060 0+080 0+100 0+120 0+140 0+160 0+180 0+200 0+220 0+240 0+260 0+280 0+300 0+320 0+340 0+360 0+380 0+400 0+420 0+440 0+460 0+480 0+500 0+520 0+540

℄ RAMP C

100 mm WHITE EDGE LINE

100 mm YELLOW EDGE LINE

MATCH LINE STA. 0+080 SEE SHEET 155

FOR STRIPING QUANTITIES, SEE SHEET 141

FOR RPM INSTALLATION AND LAYOUT DETAILS SEE STANDARD DRAWINGS TC–65.10M, TC–65.11M AND TC–65.12M.
FOR PAVEMENT MARKINGS SEE STANDARD DRAWINGS TC–71.10M AND TC–72.20M.

SCALE IN METERS 0 10 20 1:500

CALCULATED BMH
CHECKED DLW

STRIPING PLAN – S.R. 101
STA. 1+200 TO STA. 1+520

ERI-2-2.866

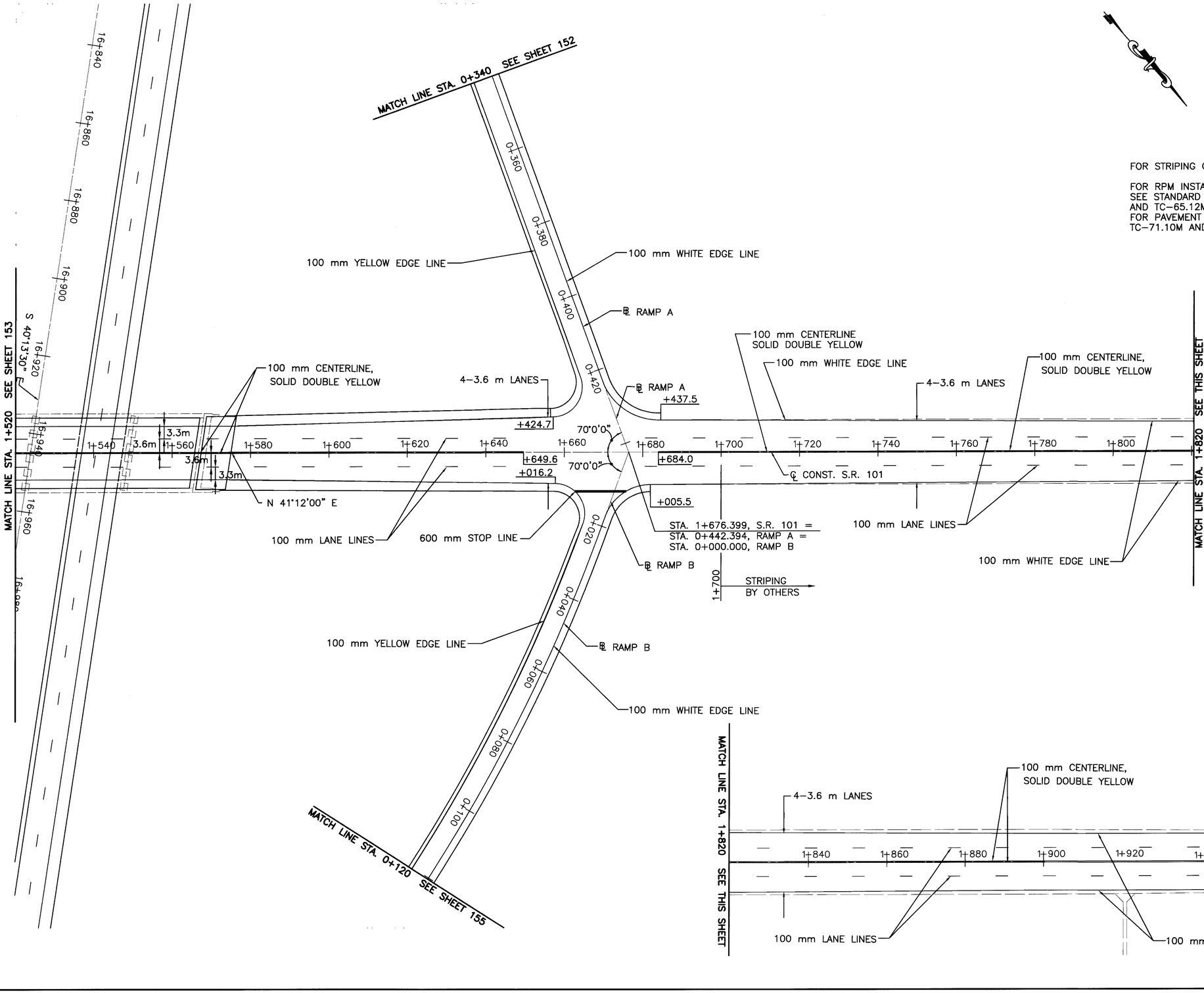
153
327

sheet P:\390\DWG\HWY\PLAN\striping\ 390ST111.dwg NOV. 12, 1998 TIME: 1:16 PM

metric units

FOR STRIPING QUANTITIES, SEE SHEET 141

FOR RPM INSTALLATION AND LAYOUT DETAILS
SEE STANDARD DRAWINGS TC-65.10M, TC-65.11M
AND TC-65.12M.
FOR PAVEMENT MARKINGS SEE STANDARD DRAWINGS
TC-71.10M AND TC-72.20M.



SCALE IN METERS 0 10 20 1:500

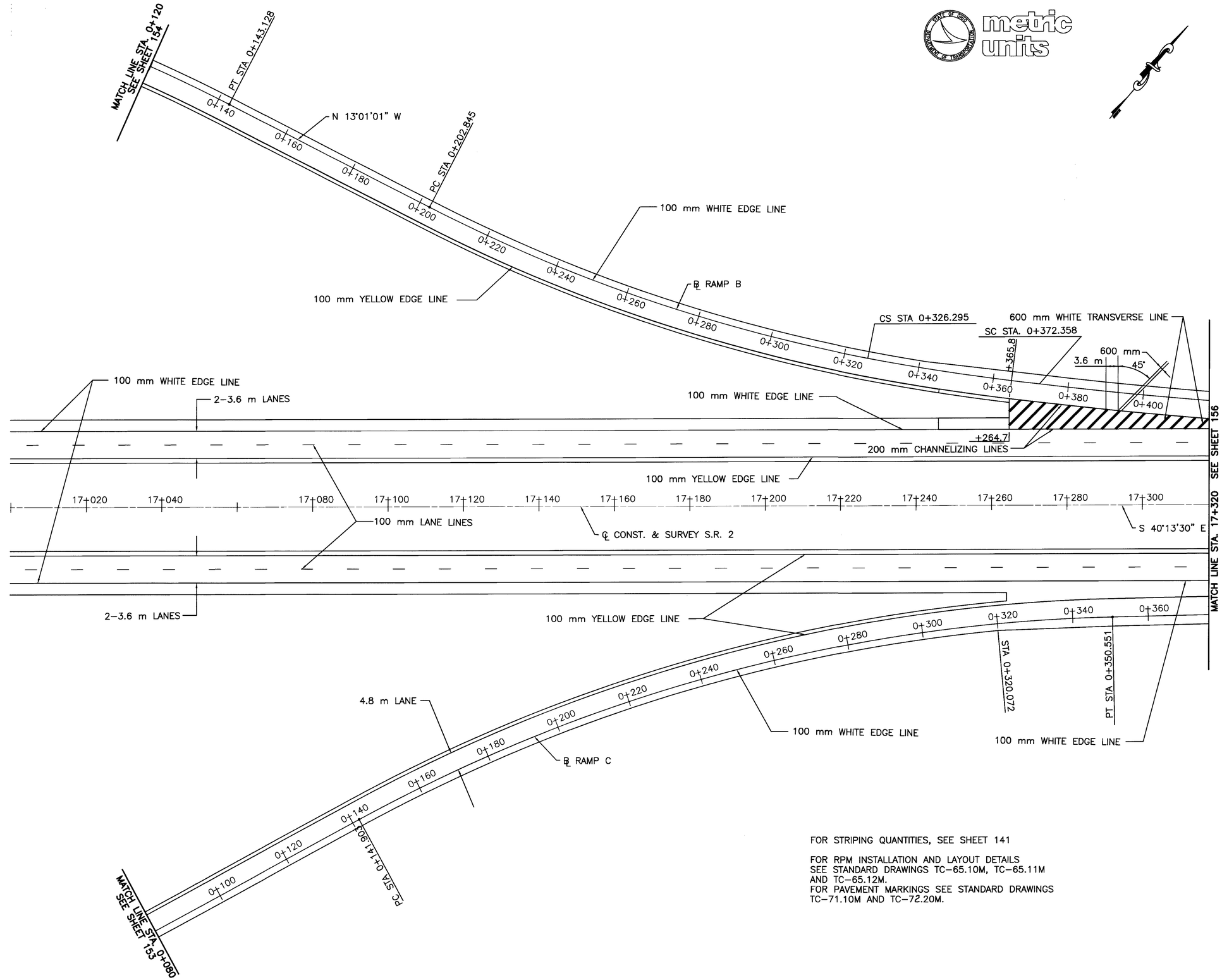
CALCULATED BMH CHECKED DLW

STRIPING PLAN – S.R. 101
STA. 1+520 TO STA. 2+005

ERI-2-2.866

154
327

sheet2 P:\390Y\DWG\HWY\PLAN\striping\ 390ST12.dwg NOV 12, 1998 TIME: 1:27 PM



metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED BMH CHECKED DLW

FOR STRIPING QUANTITIES, SEE SHEET 141

FOR RPM INSTALLATION AND LAYOUT DETAILS
SEE STANDARD DRAWINGS TC–65.10M, TC–65.11M
AND TC–65.12M.
FOR PAVEMENT MARKINGS SEE STANDARD DRAWINGS
TC–71.10M AND TC–72.20M.

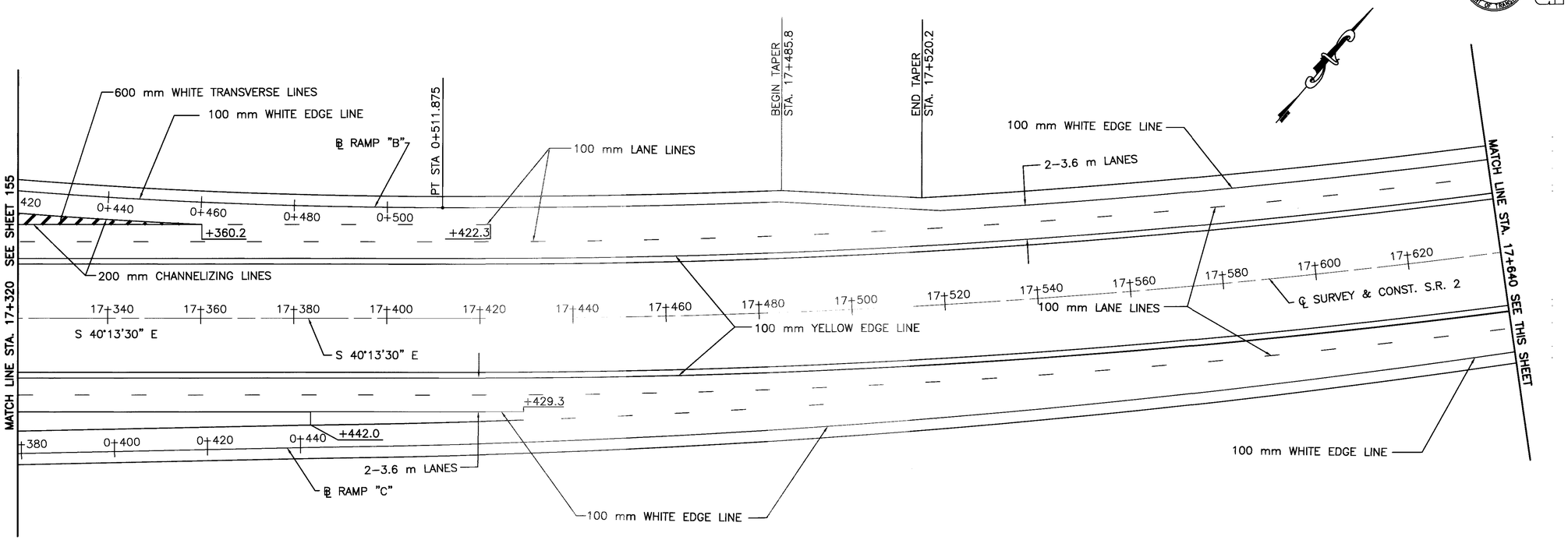
STRIPING PLAN
STA. 17+000 TO STA. 17+320

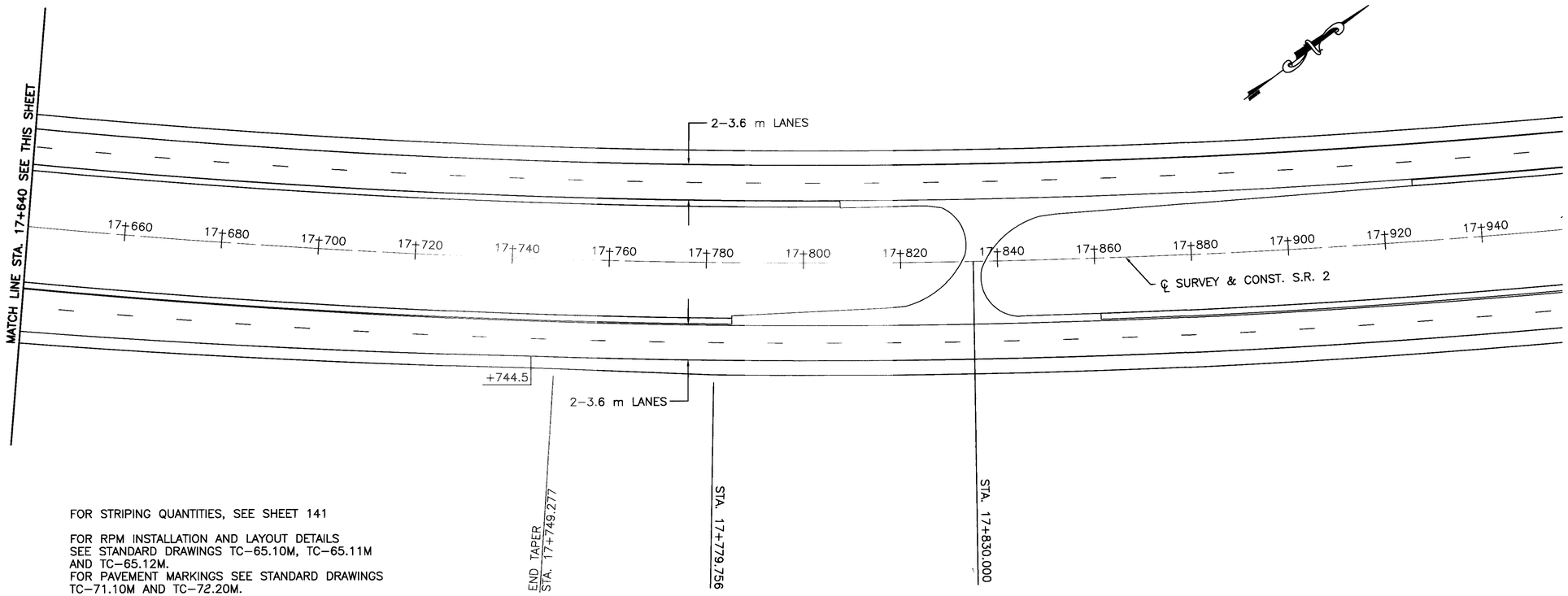
ERI-2-2.866

155
327

sheet2 P:\3907\DWG\HWY\PLAN striping\ 3907ST13.dwg NOV 12, 1998 TIME: 1:28 PM

metric units





FOR STRIPING QUANTITIES, SEE SHEET 141

FOR RPM INSTALLATION AND LAYOUT DETAILS SEE STANDARD DRAWINGS TC–65.10M, TC–65.11M AND TC–65.12M.
FOR PAVEMENT MARKINGS SEE STANDARD DRAWINGS TC–71.10M AND TC–72.20M.

SCALE IN METERS 0 10 20 1:500

CALCULATED BMH CHECKED DLW

STRIPING PLAN
STA. 17+320 TO STA. 17+640

ERI-2-2.866

156
327

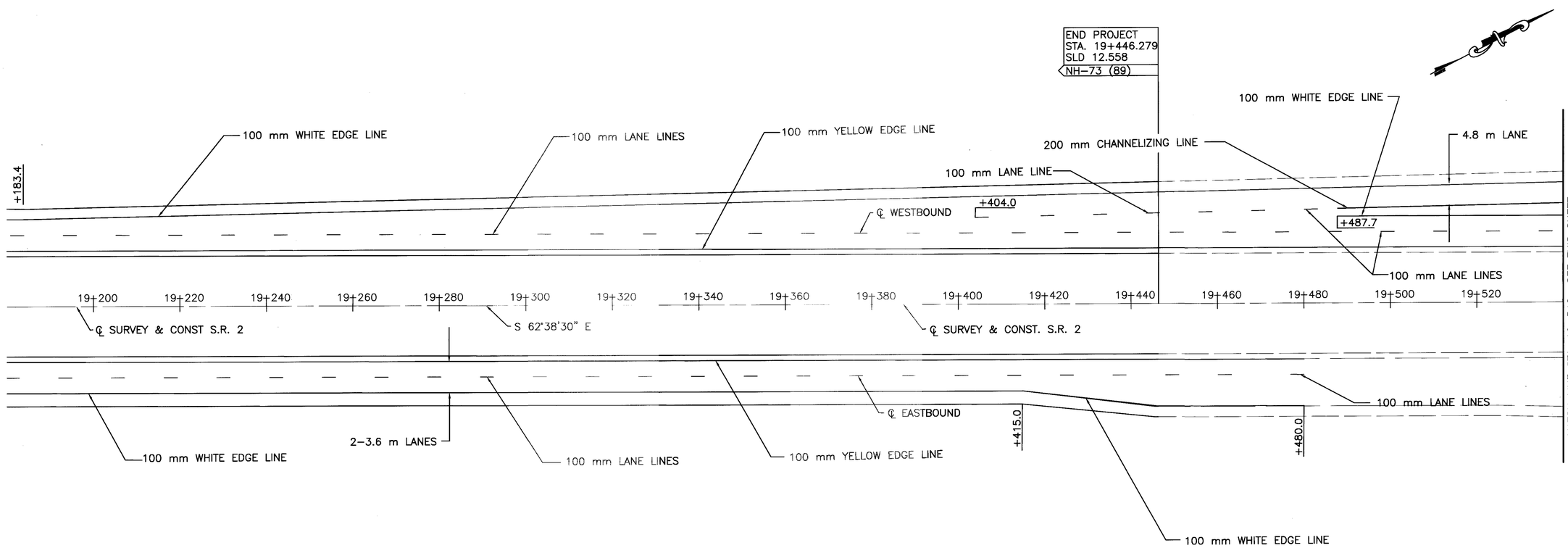
metric units

SCALE IN METERS 0 10 20 1:500

CALCULATED BMH CHECKED DWL

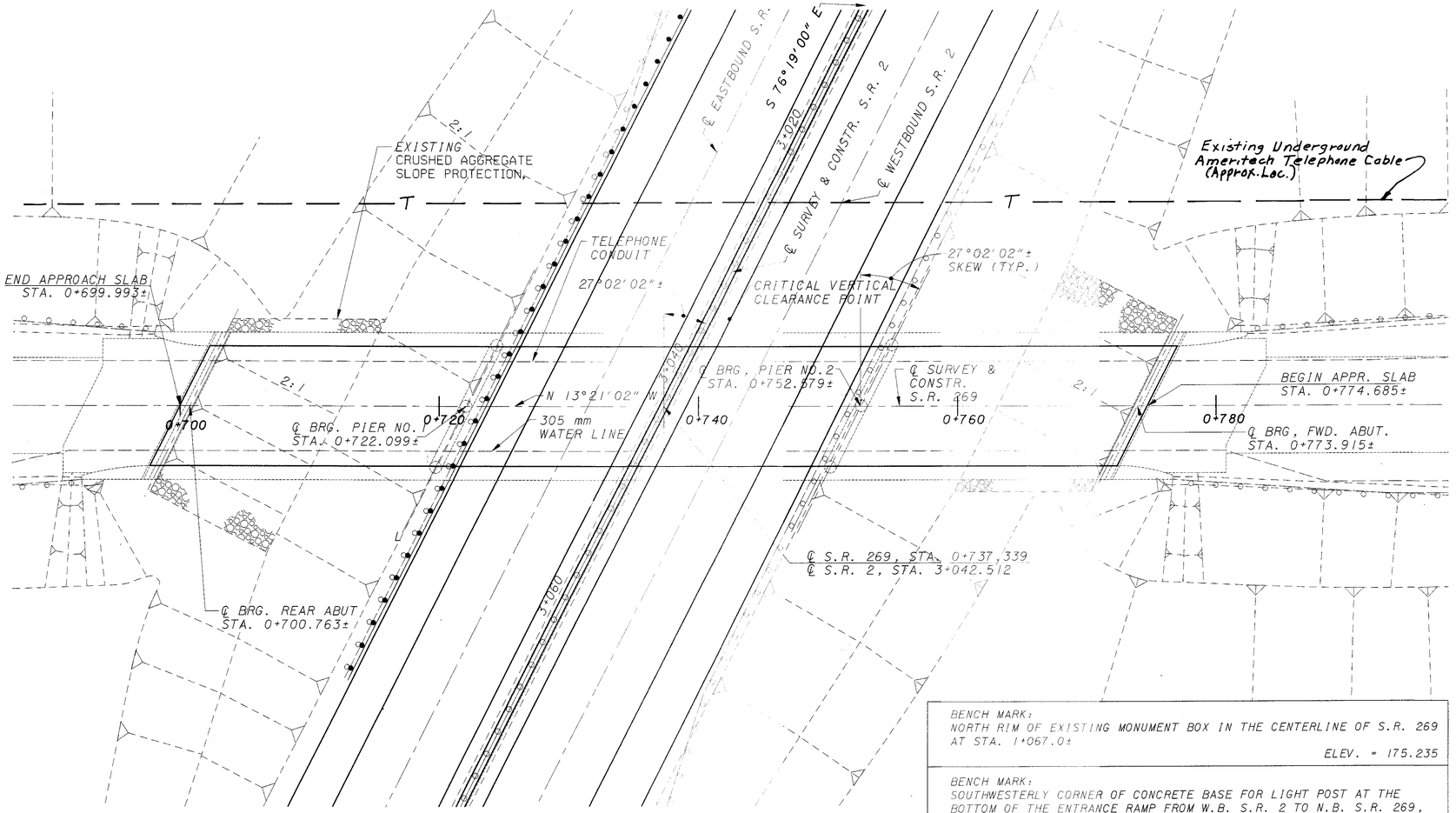
STRIPING PLAN
STA. 19+180 TO STA. 20+017

ERI-2-2.866



FOR STRIPING QUANTITIES, SEE SHEET 141

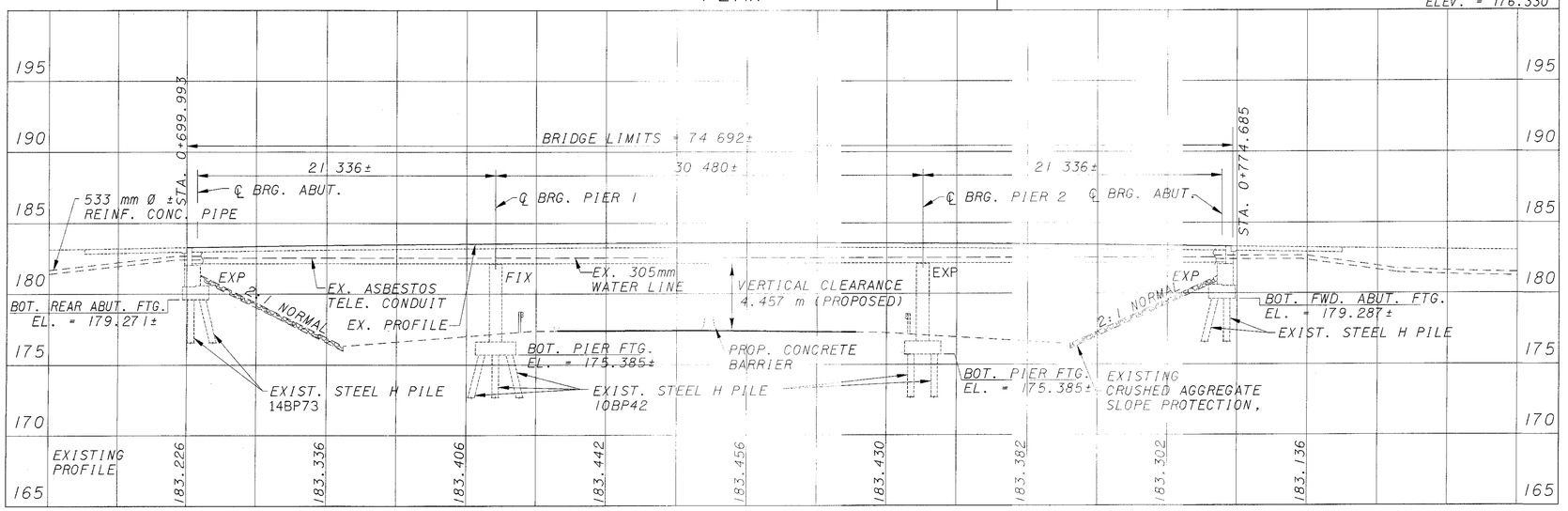
FOR RPM INSTALLATION AND LAYOUT DETAILS SEE STANDARD DRAWINGS TC-65.10M, TC-65.11M AND TC-65.12M.
FOR PAVEMENT MARKINGS SEE STANDARD DRAWINGS TC-71.10M AND TC-72.20M.



PLAN

BENCH MARK:
NORTH RIM OF EXISTING MONUMENT BOX IN THE CENTERLINE OF S.R. 269 AT STA. 1+067.0±
ELEV. = 175.235

BENCH MARK:
SOUTHWESTERLY CORNER OF CONCRETE BASE FOR LIGHT POST AT THE BOTTOM OF THE ENTRANCE RAMP FROM W.B. S.R. 2 TO N.B. S.R. 269, BEING 28.3± LEFT OF CENTERLINE STA. 3+252.2±
ELEV. = 176.330



PROFILE ALONG ℄ SURVEY & CONSTRUCTION S.R. 269

NOTES

RIGHT-OF-WAY LIMITS ARE LOCATED OUTSIDE WORK LIMITS SHOWN IN PLAN VIEW.

ALL DIMENSIONS ARE IN MILLIMETERS, AND ALL STATIONS & ELEVATIONS ARE IN METERS, UNLESS OTHERWISE NOTED.

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO ROADWAY PLAN CROSS-SECTIONS.

EXISTING BRIDGE DATA

TYPE: 3 SPAN WELDED CONTINUOUS PLATE GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE

SPAN: 21 336 mm±, 30 480 mm±, 21 336 mm± C/C BEARINGS

ROADWAY: 9144 mm± F/F OF 686 mm± SAFETY CURBS

LOADING: CF-400(57)

WEARING SURFACE: 32 mm± LATEX MODIFIED CONCRETE OVERLAY

ALIGNMENT: TANGENT

SKEW: 27°02'02"± L.F.

APPROACH SLAB: AS-1-54 (7620 mm± LONG)

CROWN: 0.016±

DATE BUILT: 1964

STRUCTURE FILE NUMBER: 2204053

PROPOSED STRUCTURE MODIFICATION

PROPOSED WORK:

1. PLACE A 50 mm MICRO-SILICA MODIFIED CONCRETE OVERLAY.
2. SEAL CONCRETE SURFACES
3. REPLACE ELASTOMERIC STRIP SEAL

(IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN SEQUENTIAL ORDER AS LISTED).

TYPE: 3 SPAN WELDED CONTINUOUS PLATE GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE

SPAN: 21 336 mm±, 30 480 mm±, 21 336 mm± C/C BEARINGS

ROADWAY: 9144 mm± F/F OF 686 mm± SAFETY CURBS

LOADING: CF-400(57)

WEARING SURFACE: 50 mm± MICRO-SILICA MODIFIED CONCRETE OVERLAY

ALIGNMENT: TANGENT

SKEW: 27°02'02"± L.F.

APPROACH SLAB: AS-1-54 (7620 mm± LONG)

CROWN: 0.016±

LONGITUDE: 82°-49'-06" W

LATITUDE: 41°-27'-35" N

CURRENT AVERAGE DAILY TRAFFIC: 2180 (1998)

DESIGN AVERAGE DAILY TRAFFIC: 3480 (2018)

CURRENT AVERAGE DAILY TRUCK TRAFFIC: 110 (1998)

DESIGN AVERAGE DAILY TRUCK TRAFFIC: 170 (2018)

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

metric units

DESIGN AGENCY DISTRICT THREE

REVIEWED Jim 8/98 DATE

STRUCTURE FILE NUMBER 2204053

DRAWN DPH

REVISED

DESIGNED DPH

CHECKED

ERIE COUNTY
STA. 0+699.993
STA. 0+774.685

SITE PLAN
BRIDGE NO. ERI-2-03041 (0189)
S.R. 269 OVER S.R. 2

ERI-2-2.866

1 / 7

158 / 327

DESIGN FILE: I:\users\darmstro\dgn\22866\0305\3907asp.dgn
WORKSTATION: darmstro DATE: 28 AUG 98

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S):

EXJ-4-87M	DATED	2-18-97

AND TO SUPPLEMENTAL SPECIFICATION(S):

846	DATED	9-9-97
954	DATED	9-9-97

METRIC UNITS:

ALL DIMENSIONS SHOWN ARE MILLIMETERS AND ALL ELEVATIONS AND STATIONS ARE SHOWN IN METERS UNLESS NOTED OTHERWISE.

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, AND THE ODOT BRIDGE DESIGN MANUAL.

DECK PROTECTION METHOD:

50 mm MICRO-SILICA MODIFIED CONCRETE OVERLAY

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTION 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING STRUCTURE PLANS:

THE ORIGINAL DESIGN PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 3 OFFICE, 906 NORTH CLARK ST., ASHLAND, OHIO 44805 (419) 281-0513.

ITEM 202- REMOVAL MISC.: STRIP SEAL:

THIS ITEM SHALL BE USED TO REMOVE THE EXISTING ELASTOMERIC STRIP SEAL AT THE EXPANSION JOINTS INDICATED IN THE PLAN.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 202- REMOVAL MISC.: STRIP SEAL WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM SPECIAL- SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

THE CONCRETE SHALL BE SEALED USING AN EPOXY-URETHANE SYSTEM AT THE LOCATIONS INDICATED IN THE PLAN. THE URETHANE SHALL BE A "BUFF" COLOR MEETING FEDERAL STANDARD NUMBER 37722. SEE PROPOSAL NOTE FOR ADDITIONAL INFORMATION.

ITEM 516- ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS:

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY MATERIALS AND LABOR TO INSTALL A NEW ELASTOMERIC STRIP SEAL IN THE EXISTING STEEL RETAINERS AT THE EXPANSION JOINTS INDICATED IN THE PLANS.

THE INTERNAL PORTION OF THE EXISTING STEEL RETAINERS SHALL BE ABRASIVE BLASTED PRIOR TO INSTALLATION OF THE NEW STRIP SEAL.

THE PROPOSED STRIP SEAL SHALL BE THE SAME SIZE AND TYPE AND SHALL BE FROM THE SAME MANUFACTURER AS THE EXISTING SEAL.

SEE STANDARD DRAWING EXJ-4-87M (SHEET 5/5) FOR ADDITIONAL NOTES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER METER FOR ITEM 516- ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM SPECIAL 519 - PATCHING CONCRETE STRUCTURES

ALL SURFACES TO BE PATCHED AND THE EXPOSED REINFORCING STEEL WITHIN SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING PRIOR TO THE CLEANING SPECIFIED BY 519.04 AND 520.05. CLEANING SHALL PRECEDE APPLICATION OF THE PATCHING MATERIAL OR ERECTION OF THE FORMS BY NOT MORE THAN 24 HOURS. SEE PROPOSAL NOTE FOR ADDITIONAL INFORMATION.

ITEM SPECIAL- MICRO-SILICA MODIFIED CONCRETE OVERLAY (50 mm THICK):

ITEM SPECIAL- MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS):

THESE ITEMS SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

THE COARSE AGGREGATE SHALL BE LIMESTONE.

SEE THE PROPOSAL NOTE (BRIDGE DECK REPAIR AND OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE) FOR DETAILS.

PAYMENT FOR ALL OF ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE METER OR CUBIC METER FOR THE ABOVE ITEMS WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM SPECIAL- BRIDGE DECK GROOVING

THIS ITEM SHALL BE PERFORMED INSTEAD OF TEXTURING THE DECK. SEE THE PROPOSAL NOTE " BRIDGE DECK GROOVING" FOR ADDITIONAL NOTES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE PER SQUARE METER, ITEM SPECIAL- BRIDGE DECK GROOVING.

ABBREVIATIONS

BOT. - BOTTOM
BRG. - BEARING
℄ - CENTERLINE
CONSTR. - CONSTRUCTION
C.P.P. - CORRUGATED PLASTIC PIPE
E.B. - EAST BOUND
E.F. - EACH FACE
EXP. - EXPANSION
ELEV. - ELEVATION
F.A. - FORWARD ABUTMENT
F.F. - FAR FACE
FIX. - FIXED
JT. - JOINT
MIN. - MINIMUM
N.B. - NORTH BOUND
N.F. - NEAR FACE
NO. - NUMBER
O.C. - ON CENTER
OZEU - ORGANIC ZINC EPOXY URETHANE
PL. - PLATE
P.E.J.F. - PREFORMED EXPANSION JOINT FILLER
R - RADIUS
R.A. - REAR ABUTMENT
S.B. - SOUTH BOUND
SER. - SERIES
SPA. - SPACES
STD. - STANDARD
STR. - STRAIGHT
SUBSTR. - SUBSTRUCTURE
TYP. - TYPICAL
U.N.O. - UNLESS NOTED OTHERWISE
W.B. - WESTBOUND

DESIGN AGENCY: DISTRICT THREE
REVIEWED: Dcm DATE: 8/98
STRUCTURE FILE NUMBER: 2204053
DRAWN: DRA REVISED:
DESIGNED: DRA CHECKED: SAK

GENERAL NOTES
BRIDGE NO. ERI-2-03041 (0189)
S.R. 269 OVER S.R. 2

ERI-2-2.866

2 / 7

159
327

DESIGN FILE: i:\users\darmstro\dgn\e22866\0305\390tagnl.dgn
WORKSTATION: darmstro DATE: 28 AUG 98

ESTIMATED QUANTITIES

CALC. BY: D.R.A. DATE: 7/98
CHK. BY: D.C.M DATE: 7/98

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTRUCTURE	GENERAL
202	11300	2	CU METER	PORTIONS OF STRUCTURE REMOVED	2			
202	23500	683	SQ METER	WEARING COURSE REMOVED, CONCRETE			683	
202	98100	2	EACH	REMOVAL MISC.: STRIP SEAL			2	
516	01300	24	METER	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS			24	
516	10000	21	METER	PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL (705.11)	21			
SPECIAL	51267510	156	SQ METER	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		156		
519	11100	6.2	SQ METER	PATCHING CONCRETE STRUCTURES	2.2	4		
SPECIAL	51922006	683	SQ METER	MICRO-SILICA MODIFIED CONCRETE OVERLAY (50 mm THICK)			683	
SPECIAL	51922100	7	CU METER	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)	2		5	
SPECIAL	51922300	LUMP		TEST SLAB				
SPECIAL	85050070	683	SQ METER	BRIDGE DECK GROOVING			683	

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WORKSTATION: darmstro DATE: 24 NOV 98

DESIGN AGENCY
DISTRICT THREE

REVIEWED DATE
STRUCTURE FILE NUMBER 2204053

DRAWN D.R.A.
REVISED

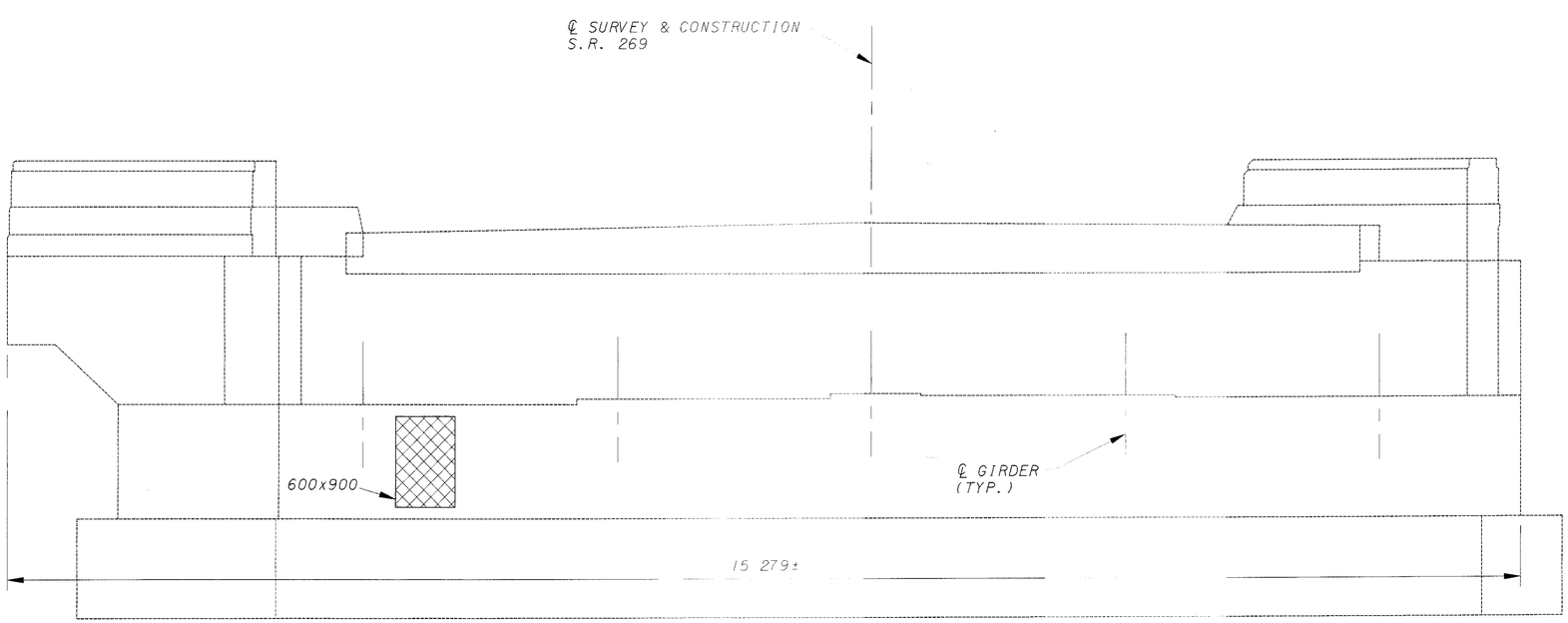
DESIGNED D.R.A.
CHECKED

ESTIMATED QUANTITIES
BRIDGE NO. ERI-2-03041 (0189)
S.R. 269 OVER S.R. 2

ERI-2-2.866

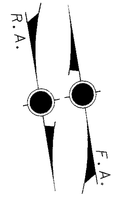
3 / 7

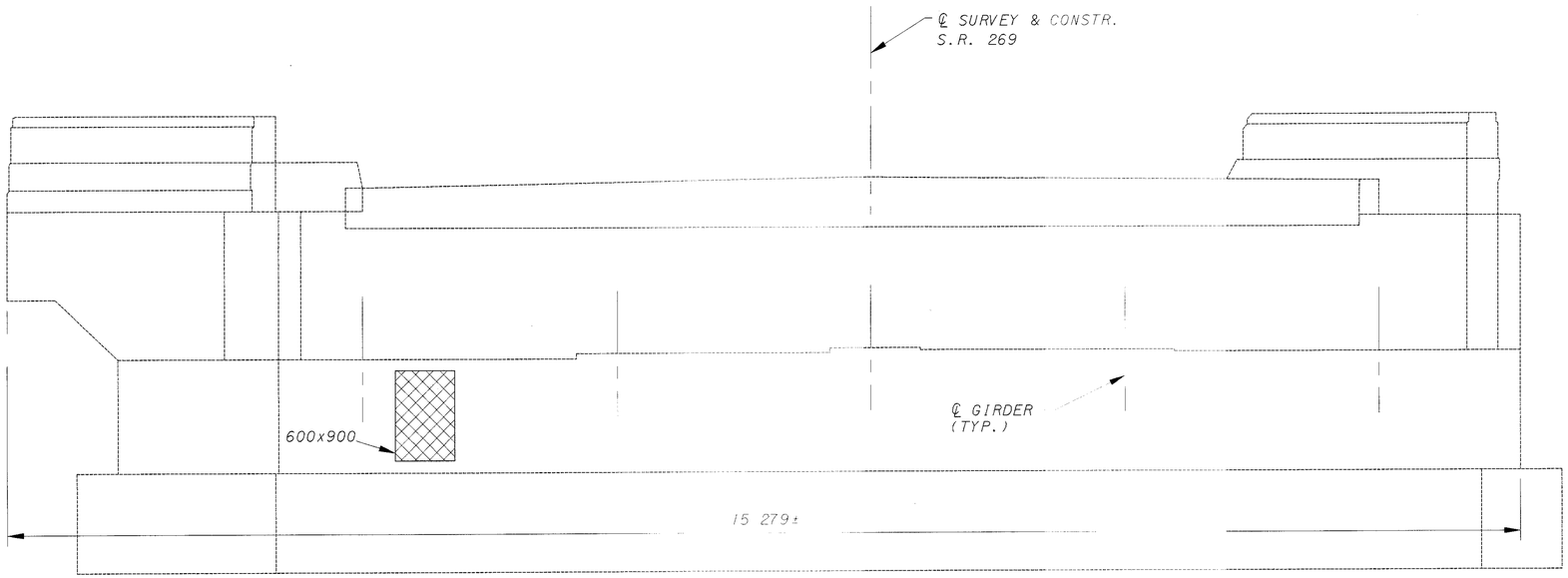
160 / 327



REAR ABUTMENT ELEVATION

(PILES NOT SHOWN)





FORWARD ABUTMENT ELEVATION

(PILES NOT SHOWN)

- INDICATES AREAS TO BE PATCHED AS PER ITEM 519- PATCHING CONCRETE STRUCTURES

SUMMARY OF PATCHING QUANTITIES		
ABUTMENT	MEASURED	ESTIMATED
REAR	0.54 SQ. M.	1.08 SQ. M.
FORWARD	0.54 SQ. M.	1.08 SQ. M.
TOTAL	1.08 SQ. M.	2.2 SQ. M.

DESIGN AGENCY: DISTRICT THREE

REVIEWED: Dcm DATE: 8/98

STRUCTURE FILE NUMBER: 220403

DESIGNED: DRA

DRAWN: DRA

CHECKED: SAL

REVISED:

ABUTMENT PATCHING DETAILS

BRIDGE NO. ERI-2-0304 (0189)

S.R. 269 OVER S.R. 2

ERI-2-2.866

4 / 7

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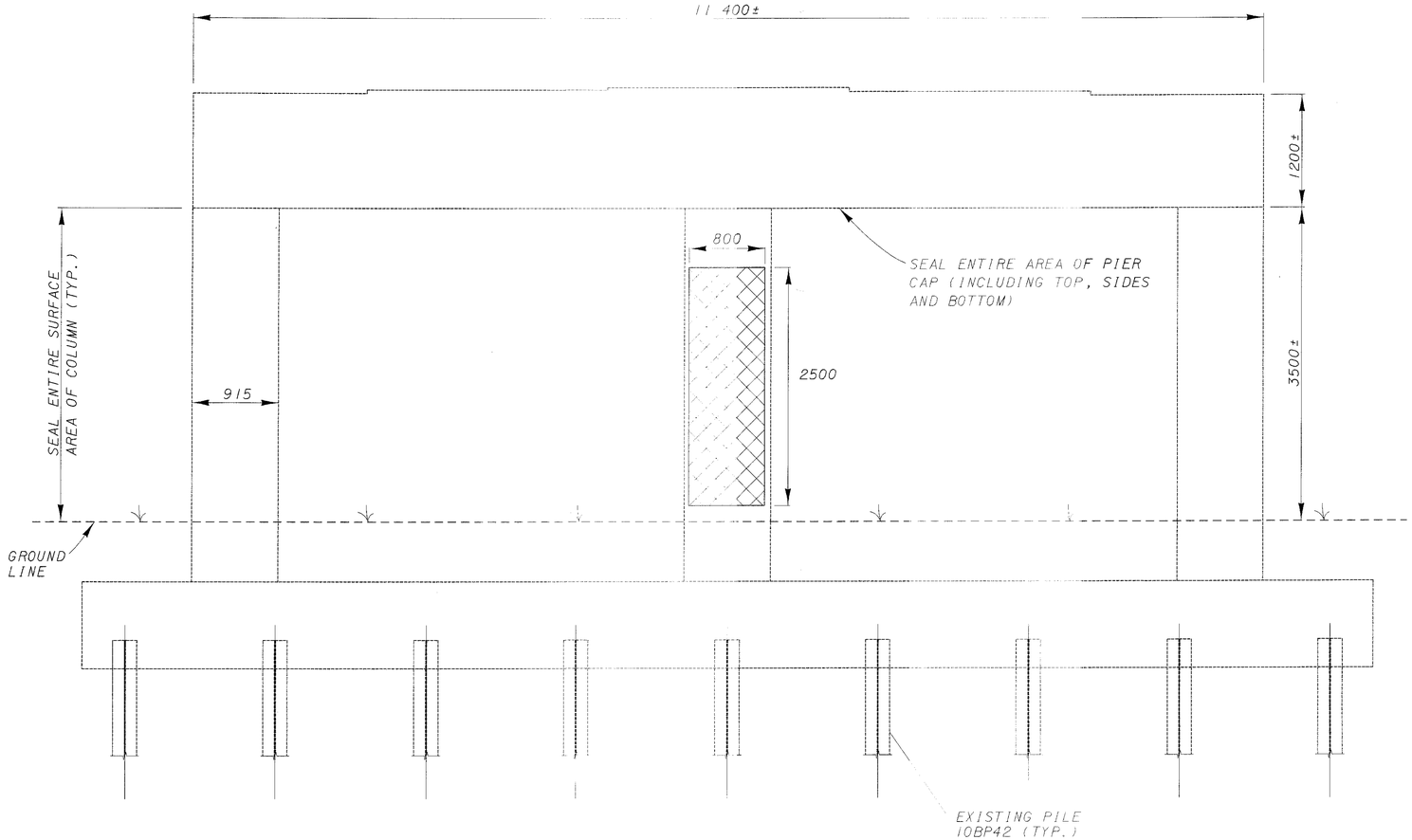
WORKSTATION: darmstro DATE: 01 SEP 98



ELEVATION - TYPICAL PIER

- INDICATES AREA TO BE PATCHED AS PER ITEM 519- PATCHING CONCRETE STRUCTURES (REAR PIER ONLY)

SUMMARY OF PATCHING QUANTITIES		
PIER	MEASURED	ESTIMATED
REAR	2.0 SQ. M.	4.0 SQ. M.
FORWARD	0	0
TOTAL	2.0 SQ. M.	4.0 SQ. M.

DESIGN FILE: i:\users\darmstro\dgn\e22866\0305\3907apd2.dgn
WORKSTATION: darmstro DATE: 01 SEP 98

DESIGNED DMA
DRAWN DMA
REVIEWED DCM 8/98
CHECKED
REVISED
DESIGN AGENCY DISTRICT THREE
STRUCTURE FILE NUMBER 2204053

PIER PATCHING AND SEALING DETAILS
BRIDGE NO. ERI-2-03041 (0189)
S.R. 269 OVER S.R. 2

ERI-2-2.866

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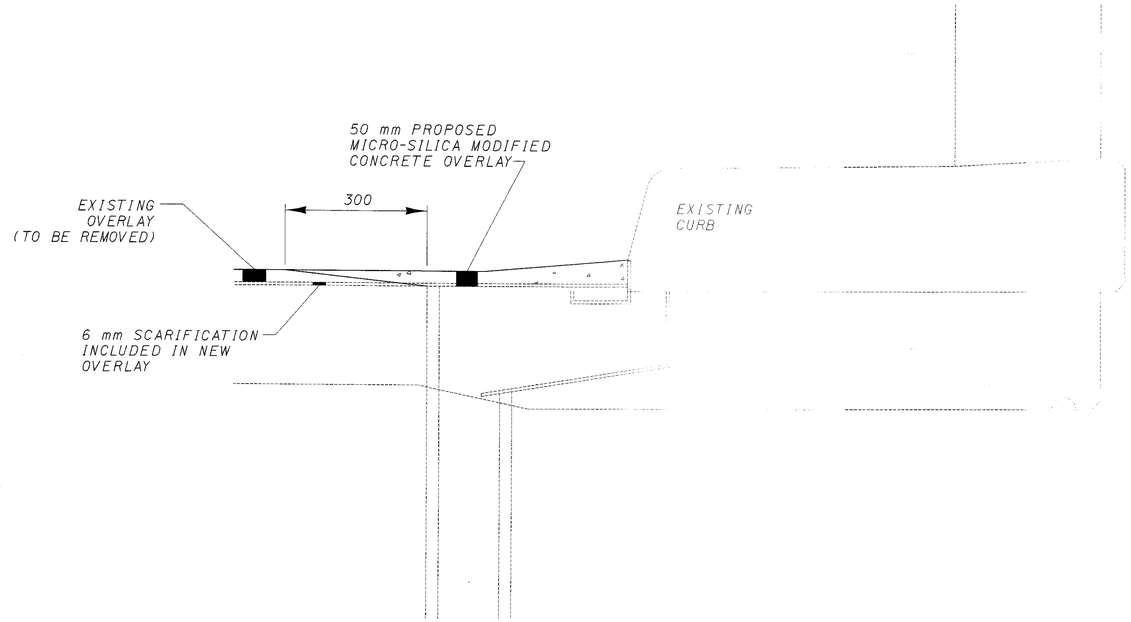
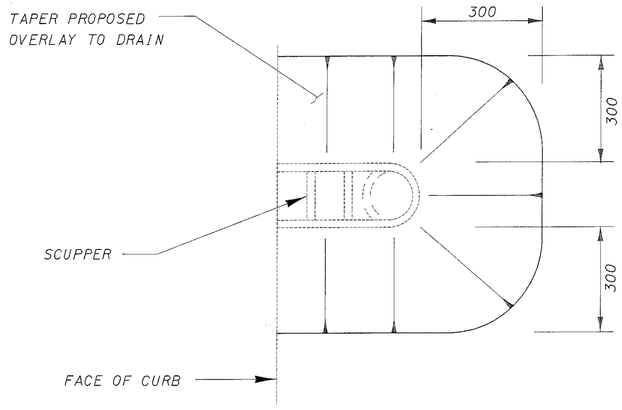
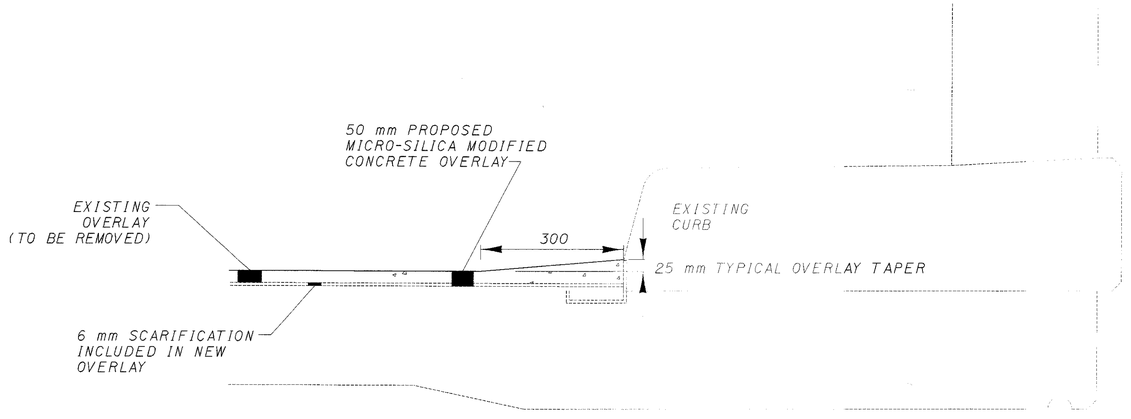


SECTION VIEW AT CURB
(AT SCUPPER)



PARTIAL PLAN
VIEW AT SCUPPER



TYPICAL SECTION
VIEW AT CURB

DESIGN AGENCY
DISTRICT THREE

REVIEWED D.C.M. DATE 8/98
STRUCTURE FILE NUMBER 2204053

DRAWN D.P.H.
REVISED

DESIGNED D.P.H.
CHECKED

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-03041 (0189)
S.R. 269 OVER S.R. 2

ERI-2-2.866

6 / 7

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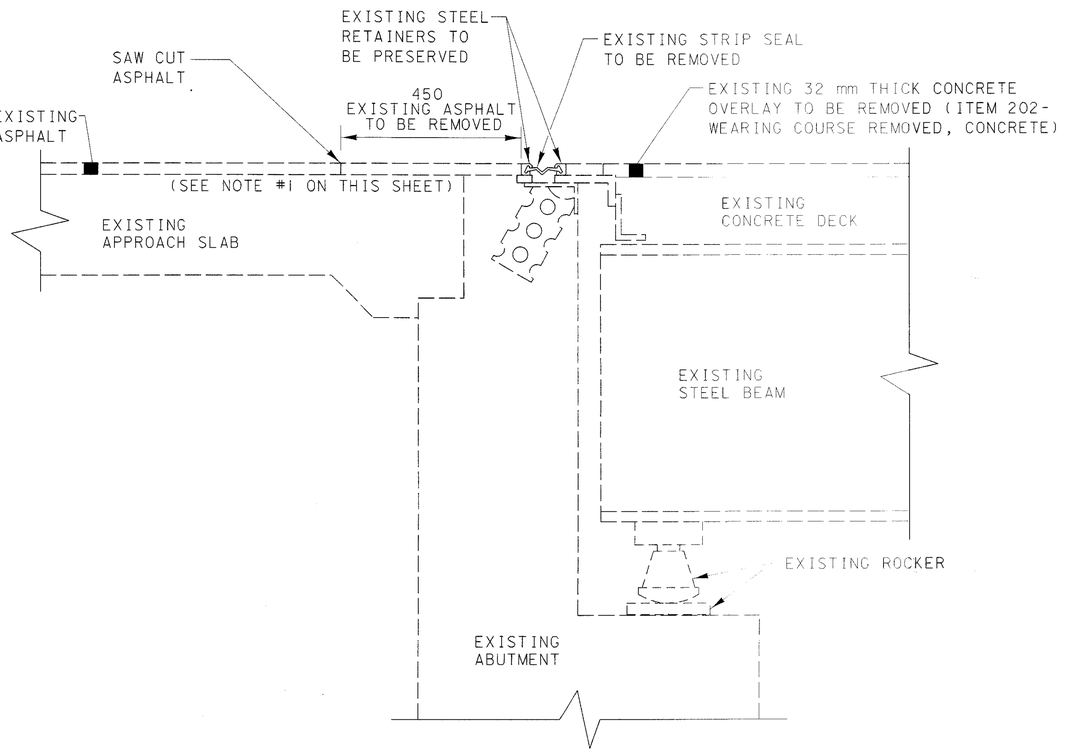
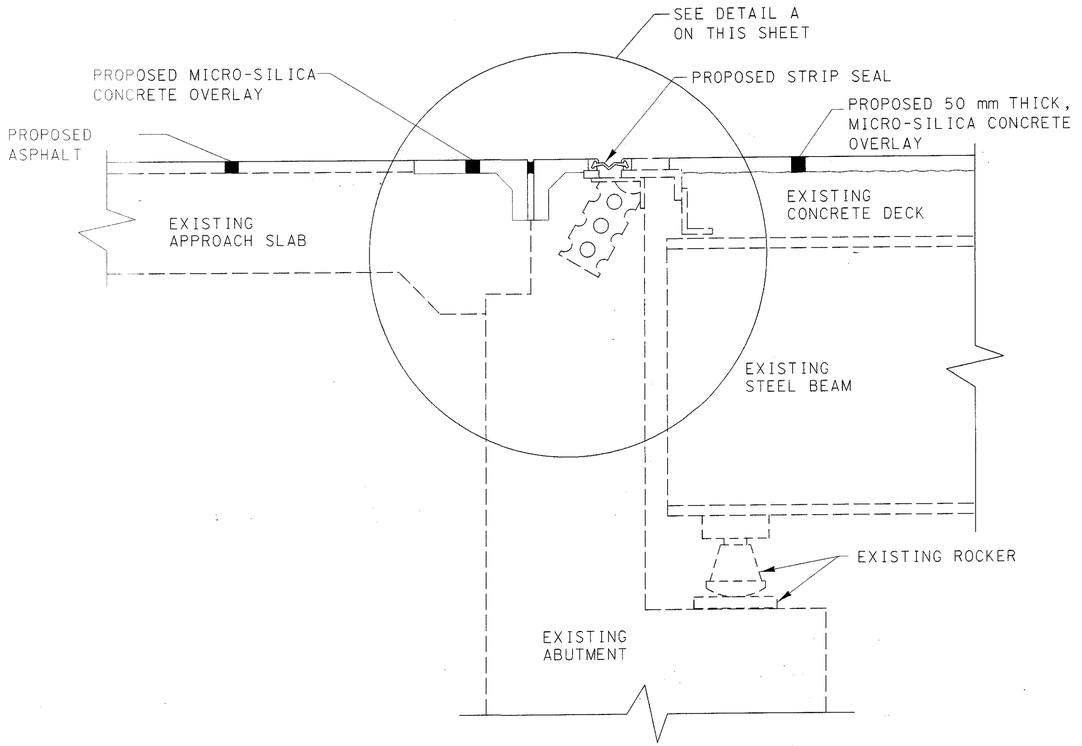
327

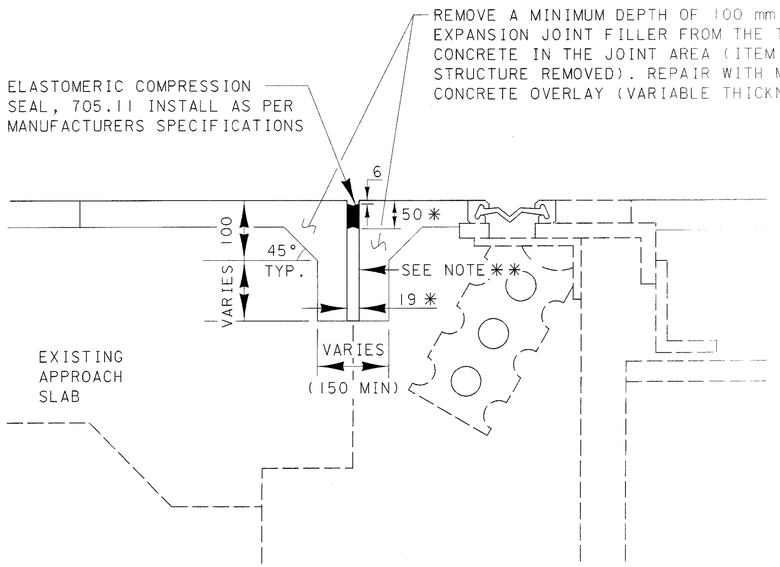
DESIGN FILE: i:\users\darmstro\dgn\e22866\0305\3907bsdl.dgn
WORKSTATION: darmstro DATE: 01 SEP 98



EXISTING SECTION VIEW AT ABUTMENTS



PROPOSED SECTION VIEW AT ABUTMENTS



DETAIL A

NOTE:
THE COMPRESSION SEAL SHALL BE ONE CONTINUOUS PIECE AND SHALL SEAL THE JOINT THE FULL WIDTH OF THE APPROACH SLAB

* DIMENSIONS ARE FOR WATSON BOWMAN ACME INC. WJ-125, STRUCTURAL ACCESSORIES SA1250 OR D.S. BROWN H-1250. USE ANY OF THE ABOVE OR APPROVED EQUAL AS PER 705.11

** GLUE 13 mm EXPANDED POLYSTYRENE BETWEEN TWO PIECES OF 3 mm MASONITE, INSTALL TOTAL DEPTH OF REPAIRED AREA. THE MASONITE AND POLYSTYRENE SHALL BE IN PLACE BEFORE ANY CONCRETE IS PLACED; AND SHALL BE BELOW THE FINAL ROADWAY GRADE TO FACILITATE FINISHING OF THE CONCRETE ON BOTH SIDES OF THE JOINT

IF THE CONCRETE ON BOTH SIDES OF THE JOINT IS NOT FINISHED TO THE SAME HEIGHT, THE JOINT SURFACE SHALL BE GROUND SMOOTH AS DIRECTED BY THE ENGINEER

SAW OUT ENOUGH MASONITE AND POLYSTYRENE TO INSTALL THE COMPRESSION SEAL AFTER THE JOINT HAS BEEN REPAIRED

PAYMENT FOR ALL MATERIALS, EXCEPT CONCRETE, AND LABOR TO REPAIR THE JOINT AS PER DETAILS ON THIS SHEET SHALL BE INCLUDED IN THE UNIT PRICE BID PER METER OF ITEM 516- PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL (705.11)

NOTES:

1) REMOVAL OF THE EXISTING ASPHALT IS INCIDENTAL TO ITEM 202- WEARING COURSE REMOVED, CONCRETE

ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE

DESIGN AGENCY
DISTRICT THREE

DESIGNED	DRAWN	REVIEWED	DATE
CHECKED	REVISED		STRUCTURE FILE NUMBER

STRUCTURE FILE NUMBER 2204053

JOINT DETAILS
BRIDGE NO. ERI-2-03041 (0189)
S.R. 269 OVER S.R. 2

ERI-2-2.866

7 / 7

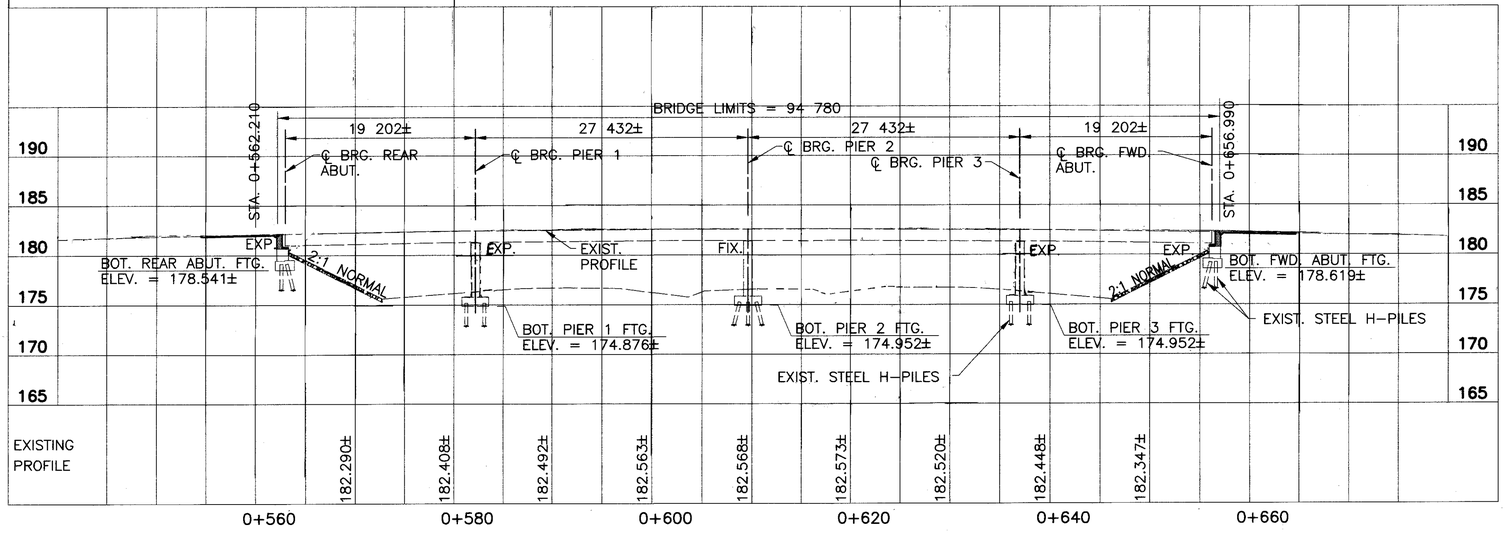
164
327

DESIGN FILE: i:\users\darmstro\dgn\e22866\0305\joint.dgn
WORKSTATION: darmstro DATE: 01 SEP 98

PLAN

BENCH MARK:
TOP OF SOLID IRON PIN IN CONCRETE MONUMENT IN THE CENTERLINE OF McCARTNEY ROAD AT STA. 0+682± ELEV. = 181.565

BENCH MARK:
TOP OF PK NAIL BEING 3.1 METERS LEFT OF CENTERLINE STA. 0+560± OF McCARTNEY ROAD. ELEV. = 182.068



PROFILE ALONG ℄ SURVEY & CONSTRUCTION McCARTNEY ROAD

metric units

NOTES

RIGHT-OF-WAY LIMITS ARE LOCATED OUTSIDE WORK LIMITS SHOWN IN PLAN VIEW.

ALL DIMENSIONS ARE IN MILLIMETERS, AND ALL STATIONS & ELEVATIONS ARE IN METERS *UNLESS NOTED OTHERWISE*

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO ROADWAY PLAN CROSS-SECTIONS.

EXISTING BRIDGE DATA

TYPE: 4 SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 19 202 mm±, 27 432 mm±, 27 432 mm±, 19 202 mm± C/C BEARINGS
ROADWAY: 7315 mm± F/F OF 686 mm± SAFETY CURBS
LOADING: CF-130(57)
WEARING SURFACE: 19 mm± MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
SKEW: 25° 00' 00"± R.F.
APPROACH SLABS: AS-1-54 (7620 mm± LONG)
CROWN: 0.016±
DATE BUILT: 1964
STRUCTURE FILE NUMBER: 2200155

PROPOSED STRUCTURE MODIFICATION

PROPOSED WORK:

1. PROVIDE TEMPORARY JACKING SYSTEM TO RAISE THE SUPERSTRUCTURE TO REPLACE THE EXISTING ABUTMENT BEARING MASONRY PLATES.
2. REPLACE EXISTING APPROACH SLABS AND BACKWALLS.
3. PROVIDE POROUS BACKFILL WITH FILTER FABRIC.
4. INSTALL PROPOSED STRIP SEAL EXPANSION JOINTS.
5. PLACE A 45mm MICRO-SILICA MODIFIED CONCRETE OVERLAY.
6. SEAL CONCRETE PIER COLUMNS.
7. PAINT EXISTING AND PROPOSED STRUCTURAL STEEL.

(IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN SEQUENTIAL ORDER AS LISTED)

TYPE: 4 SPAN CONTINUOUS STEEL BEAM WITH *NEW CONCRETE OVERLAY ON EXISTING REINFORCED CONCRETE DECK ON REINFORCED CONCRETE SUBSTRUCTURES*
SPANS: 19 202 mm±, 27 432 mm±, 27 432 mm±, 19 202 mm± C/C BEARINGS
ROADWAY: *7315* mm± *F/F OF 686 mm±* SAFETY CURBS

WEARING SURFACE: *45* mm MICRO-SILICA MODIFIED CONCRETE OVERLAY
ALIGNMENT: TANGENT
SKEW: 25° 00' 00"± R.F.
APPROACH SLABS: AS-1-81M (7600 mm LONG)
CROWN: 0.016
LONGITUDE: 82°47'28" W **LATITUDE:** 41°26'56" N

CURRENT AVERAGE DAILY TRAFFIC: 190 (1998)
DESIGN AVERAGE DAILY TRAFFIC: 280 (2018)
CURRENT AVERAGE DAILY TRUCK TRAFFIC: 10 (1998)
DESIGN AVERAGE DAILY TRUCK TRAFFIC: 10 (2018)

H.R. Gordon & Associates, Inc.
4427 Reed Road
Columbus, Ohio 43215
Phone: (614) 486-4383

REVIEWED OHK DATE 6/24/97
STRUCTURE FILE NO. 2200155
DRAWN DJD PEVISED
DESIGNED BAG CHECKED KVB

ERIE COUNTY
STA. 0+562.210
STA. 0+656.990

SITE PLAN
BRIDGE NO. ERI-2-0561B (03349)
S.R. 2 UNDER McCARTNEY RD.

ERI-2-2.866

1/9

165/327

C097 P:\3907\DWG\BRIDGE\E-2-0561\PLAN\3907BSP.DWG SEP 19, 1997 TIME 4:06 PM

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S):

AS-1-81M	DATED	10-25-94
EXJ-4-87M	DATED	2-18-97
RB-1-55M	DATED	10-25-94

AND TO SUPPLEMENTAL SPECIFICATION(S):

815	DATED	5-30-96
846	DATED	9-09-97
863	DATED	9-09-97
904	DATED	5-05-98
910	DATED	4-21-97
954	DATED	9-09-97

METRIC UNITS:

ALL DIMENSIONS SHOWN IN THIS PLAN ARE IN MILLIMETERS AND ALL ELEVATIONS AND STATIONS IN METERS UNLESS NOTED OTHERWISE

DESIGN SPECIFICATIONS:

THE MODIFIED PORTION OF THIS STRUCTURE REHABILITATION CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

CONCRETE CLASS S - COMPRESSIVE STRENGTH 31.0 MPA

CONCRETE CLASS C - COMPRESSIVE STRENGTH 27.5 MPA

REINFORCING STEEL - ASTM A615M, A616M, OR A617M
GRADE 420 MINIMUM YIELD STRENGTH 420 MPA.

STRUCTURAL STEEL
A36M - YIELD STRENGTH 250 MPA (UNLESS NOTED OTHERWISE)

DECK PROTECTION METHOD:

45 MM MICRO-SILICA MODIFIED CONCRETE OVERLAY

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTION 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING STRUCTURE PLANS:

THE ORIGINAL DESIGN PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 3 OFFICE, 906 NORTH CLARK ST. ASHLAND, OHIO 44805 (419) 281-0513.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

THIS ITEM OF WORK SHALL BE USED TO REMOVE PORTIONS OF THE SUBSTRUCTURE AND SUPERSTRUCTURE AS DESIGNATED IN THE PLAN. THE CONCRETE SHALL BE REMOVED BY HYDRAULIC SPLITTING METHOD. A LINE OF HOLES SHALL BE DRILLED ALONG THE REMOVAL LINE AND HYDRAULIC SPLITTER USED AS PER THE MANUFACTURER'S RECOMMENDATIONS. 16 AND 7 KILOGRAM JACK HAMMERS SHALL BE USED FOR ANY REQUIRED FINISH WORK. HOE RAMS AND/OR CONCRETE CRUSHERS WILL NOT BE PERMITTED TO DO ANY OF THE WORK. NO SAW CUTTING WILL BE ALLOWED IN AREAS WHERE EXISTING REINFORCING SHALL REMAIN. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL DESIGNATED FOR SALVAGE, IF DAMAGED DURING THE REMOVAL OPERATION DOWELED REINFORCING STEEL MUST BE ADDED AT THE CONTRACTOR'S EXPENSE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC METER FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 25 MM DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

REPLACEMENT OF EXISTING REINFORCING STEEL:

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. COST OF ALL REINFORCING STEEL SHALL BE INCLUDED WITH APPROPRIATE ITEM 511 CONCRETE ITEMS.

ITEM 511 CLASS C CONCRETE, AS PER PLAN:

CLASS C CONCRETE SHALL BE IN ACCORDANCE WITH 511, EXCEPT THAT THE AGGREGATE SHALL BE #8 LIMESTONE.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE THE EXISTING STRUCTURES FOR REPLACEMENT OF THE ABUTMENT MASONRY PLATES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTION JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 25 MM, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING ACTUAL JACKING OPERATIONS. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 6 MM.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 25 MM OR LESS.

IF, DURING THE JACKING OPERATIONS, CRACKING OF CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, THE JACKING OPERATION SHALL IMMEDIATELY CEASE AND APPROVED SUPPORTS SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. ANY BEAMS THAT SEPARATE FROM THE DECK SHALL BE EPOXY INJECTED FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH THE PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS SHALL BE BORNE BY THE CONTRACTOR.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

DESIGN FILE: c:\myfiles\dgn\er12\390?bgnl.dgn
WORKSTATION: eglover DATE: 19 AUG 98

DESIGN AGENCY: DISTRICT THREE

DESIGNED	DRAWN	REVIEWED	DATE
EJG	EJG	dcm	9/98

CHECKED: MRC
REVISED
STRUCTURE FILE NUMBER: 2200155

GENERAL NOTES
BRIDGE NO. ERI-2-0566 (0349)
S.R. 2 UNDER McCARTNEY ROAD

ERI-2-2.866

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GENERAL NOTES CONT.

ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN:

THIS ITEM SHALL BE USED AS PER DETAILS IN THE PLAN. THIS ITEM SHALL INCLUDE THE STEEL RETAINERS, THE ELASTOMERIC STRIP SEALS AND ALL OTHER ITEMS SHOWN IN THE DETAILS. SEE STANDARD DRAWING EXJ-4-87M, SHEET 5, FOR STRIP SEAL DETAILS.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER METER FOR ITEM 516- STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 516 - REFURBISH BEARING DEVICE:

THIS ITEM SHALL BE USED TO REFURBISH THE EXISTING ABUTMENT ROCKER BEARINGS.

THE BOTTOM STEEL PLATE, SHEET LEAD OR PREFORMED BEARING PAD, AND SHIMS SHALL BE REMOVED AND REPLACED WITH NEW ITEMS.

SEE STANDARD DRAWING RB-1-55M FOR DETAILS.
THE EXISTING ROCKER BEARINGS APPEAR TO BE R-450 (CONTRACTOR SHALL VERIFY)

NEW STEEL SHIMS HAVING THE SAME WIDTH AND LENGTH OF THE BOTTOM PLATE SHALL BE USED TO OBTAIN THE PROPER ELEVATION.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 516- REFURBISH BEARING DEVICE WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 518 - POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN:

POROUS BACKFILL SHALL BE NO. 57 GRAVEL.

ITEM 815 - FIELD PAINTING OF EXISTING STEEL:

ALL EXISTING AND NEW STEEL SHALL BE CLEANED AND PAINTED WITH A PRIME, INTERMEDIATE, AND FINISH COAT OF PAINT IN THE FIELD USING SYSTEM OZEU. THE COST OF THIS WORK SHALL BE INCLUDED WITH SEVERAL FIELD PAINTING OF EXISTING STEEL SYSTEM OZEU ITEMS FOR PAYMENT. THE COLOR OF THE FINISH COAT SHALL BE A RED COLOR MEETING FEDERAL STANDARD NUMBER 11136. IN ADDITION TO THE SURFACE AREA OF THE STEEL STRINGERS TO BE PAINTED, AN ADDITIONAL TWENTY FIVE PERCENT OF THIS AMOUNT HAS BEEN ADDED TO THE SQUARE METER TOTALS TO ACCOUNT FOR INCIDENTALS SUCH AS CROSSFRAMES AND BEARINGS. SEE SUPPLEMENTAL SPECIFICATION 815.

ITEM 815 - GRINDING FLANGE EDGES:

GRINDING BOTTOM FLANGES OF EXISTING BEAMS OVER SPANS 2 & 3.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

THE CONCRETE SHALL BE SEALED USING AN EPOXY-URETHANE SYSTEM AT THE LOCATIONS INDICATED IN THE PLAN. THE URETHANE SHALL BE A "BUFF" COLOR MEETING FEDERAL STANDARD NUMBER 37722. SEE PROPOSAL NOTE FOR ADDITIONAL INFORMATION.

ITEM SPECIAL - BRIDGE DECK GROOVING:

THIS ITEM SHALL BE PERFORMED INSTEAD OF TEXTURING THE DECK.
SEE THE PROPOSAL NOTE 'BRIDGE DECK GROOVING' FOR ADDITIONAL NOTES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE PER SQUARE METER, ITEM SPECIAL- BRIDGE DECK GROOVING.

ITEM SPECIAL - MICRO-SILICA MODIFIED CONCRETE OVERLAY (45 MM THICK):

ITEM SPECIAL - MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS):

THESE ITEMS SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

THE COARSE AGGREGATE SHALL BE LIMESTONE.

SEE THE PROPOSAL NOTE (BRIDGE DECK REPAIR AND OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE) FOR DETAILS.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE METER OR CUBIC METER FOR THE ABOVE ITEMS WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM SPECIAL - STRUCTURE, MISC.: GRAFITTI REMOVAL:

ALL GRAFFITI AREAS AS DIRECTED BY THE ENGINEER SHALL BE PREPARED AND SEALED WITH AN EPOXY-URETHANE SEALER MEETING THE PROPOSAL NOTE FOR SEALING OF CONCRETE SURFACES (EPOXY-URETHANE). SEE THE PROPOSAL NOTE FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

THE URETHANE SHALL BE A "BUFF" COLOR MEETING FEDERAL STANDARD NUMBER 37722.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE METER FOR ITEM SPECIAL- STRUCTURE, MISC.: GRAFFITI REMOVAL WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ABBREVIATIONS

ABUT. - ABUTMENT
AVG. - AVERAGE
BOT. - BOTTOM
BRG. - BEARING
℄ - CENTERLINE
CLR. - CLEARANCE
CONSTR. - CONSTRUCTION
CONSTR. JT. - CONSTRUCTION JOINT
E.F. - EACH FACE
EXIST. - EXISTING
EXP. - EXPANSION
ELEV. - ELEVATION
EQ. - EQUAL
F.A. - FORWARD ABUTMENT
F.F. - FAR FACE
FIX. - FIXED
FTG. - FOOTING
FWD. - FORWARD
HMWM - HIGH MOLECULAR WEIGHT METHACRYLATE
JT. - JOINT
MIN. - MINIMUM
N.F. - NEAR FACE
NO. - NUMBER
O.C. - ON CENTER
OZEU - ORGANIC ZINC EPOXY URETHANE
PL. - PLATE
P.E.J.F. - PREFORMED EXPANSION JOINT FILLER
R - RADIUS
R.A. - REAR ABUTMENT
REINF. - REINFORCING
SER. - SERIES
SPA. - SPACES
STA. - STATION
STD. - STANDARD
STR. - STRAIGHT
SUBSTR. - SUBSTRUCTURE
TYP. - TYPICAL
U.N.O. - UNLESS NOTED OTHERWISE
VERT. - VERTICAL

ESTIMATED QUANTITIES

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTS.	PIERS	SUPER STRUCTURE	GENERAL	SHEET NO. FOR AS PER PLAN ITEMS
202	11301	13	CU. METER	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	13				2/9
511	44101	13	CU. METER	CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN	13				2/9
SPECIAL	51267510	174	SQ. METER	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		174			
516	11211	19	METER	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN			19		3/9
516	45304	8	EACH	REFURBISH BEARING DEVICE	8				
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN			LUMP		2/9
518	21231	LUMP		POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	LUMP				3/9
SPECIAL	51922006	693	SQ. METER	MICRO-SILICA MODIFIED CONCRETE OVERLAY (45 MM THICK)			693		
SPECIAL	51922100	15	CU. METER	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)			15		
SPECIAL	51922300	LUMP		TEST SLAB					
SPECIAL	53000600	3	SQ. METER	STRUCTURE, MISC.: GRAFITTI REMOVAL				3	
815	00050	1402	SQ. METER	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU			1402		
815	00056	1402	SQ. METER	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU			1402		
815	00060	1402	SQ. METER	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU			1402		
815	00066	1402	SQ. METER	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU			1402		
815	00504	100	MAN HOUR	GRINDING FINS, TEARS, SLIVERS			100		
815	00508	220	METER	GRINDING FLANGE EDGES			220		
							693		
SPECIAL	85050070	693	SQ. METER	BRIDGE DECK GROOVING			693		

DESIGN AGENCY: DISTRICT THREE
DESIGNED: EJG | DRAWN: EJG | CHECKED: MRC | REVISED: | REVIEWED: DLM | DATE: 9/98
STRUCTURE FILE NUMBER: 2200155

GENERAL NOTES
BRIDGE NO. ERI-2-0566 (0349)
S.R. 2 UNDER McCARTNEY ROAD

ERI-2-2.866

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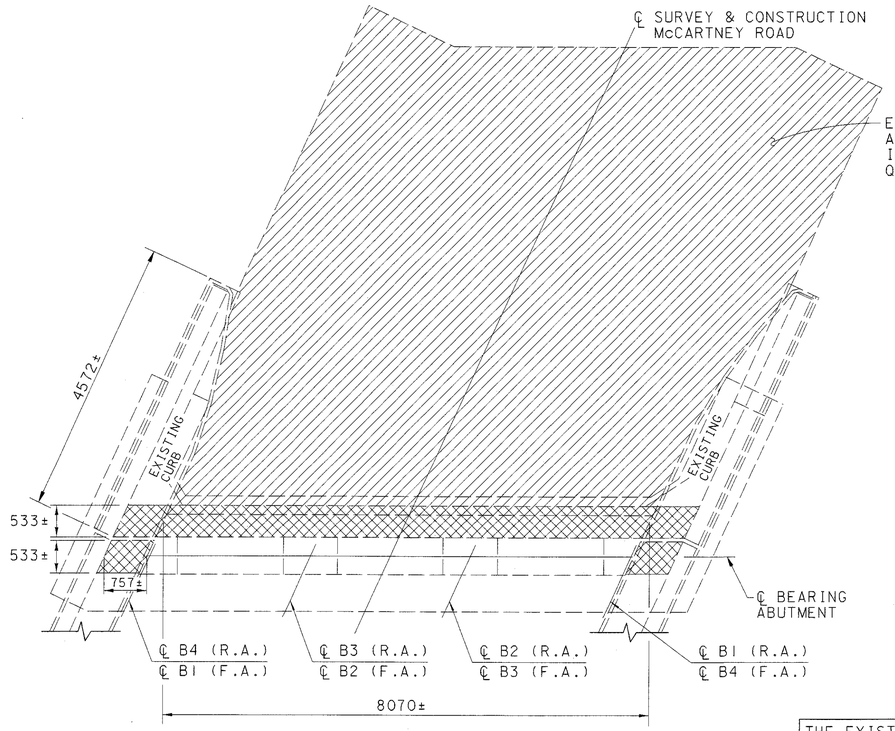
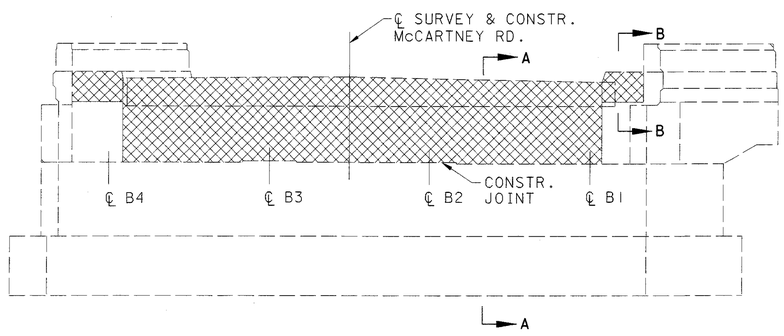
DESIGN FILE: c:\myfiles\dgn\ver12\3907bgnl.dgn
WORKSTATION: eglover DATE: 24 NOV 98

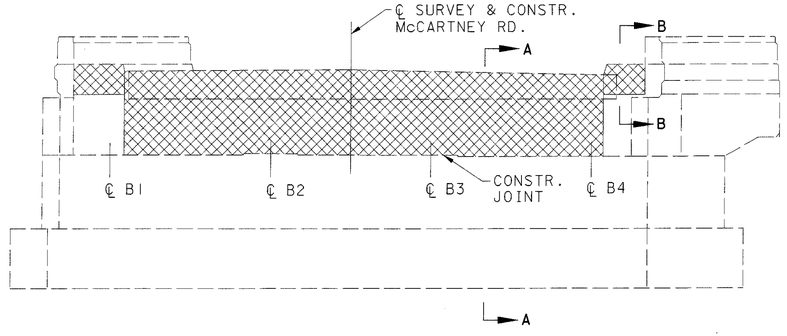


EXISTING ABUTMENT PLAN

THE EXISTING REINFORCING STEEL IS NOT SHOWN



EXISTING REAR ABUTMENT ELEVATION

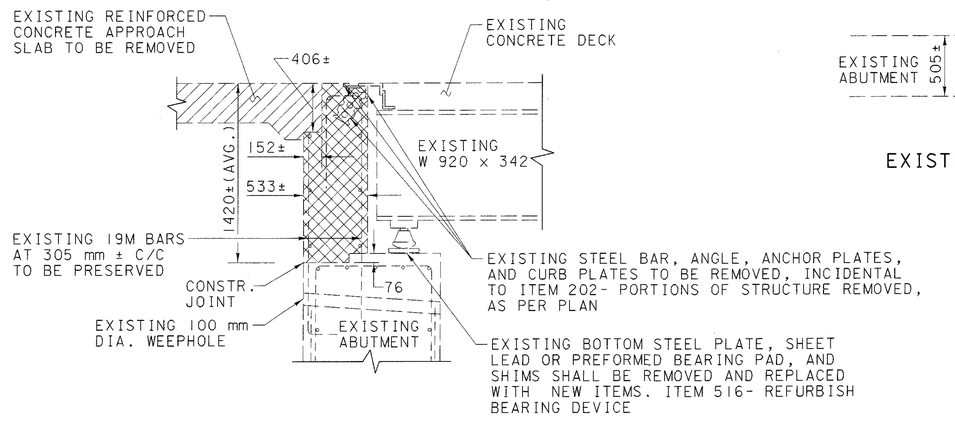


EXISTING FORWARD ABUTMENT ELEVATION

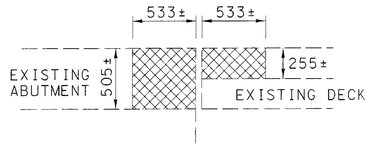
NOTE: THE EXISTING VERTICAL REINFORCING BARS IN THE BACKWALLS AND ALL EXISTING REINFORCING BARS IN THE CURBS SHALL BE PRESERVED. THE BARS SHALL BE TRIMMED ONLY AS REQUIRED TO INCORPORATE THE PROPOSED DETAILS. TRIMMING OF REINFORCING STEEL IS INCIDENTAL TO ITEM 202- PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

EXISTING REINFORCED CONCRETE APPROACH SLABS TO BE REMOVED. INCLUDED WITH THE ROADWAY QUANTITIES FOR PAYMENT

PORTIONS OF ABUTMENTS AND CURBS TO BE REMOVED USING ITEM 202- PORTIONS OF STRUCTURE REMOVED, AS PER PLAN



EXISTING SECTION A-A



EXISTING SECTION B-B

DESIGN AGENCY
DISTRICT THREE

DESIGNED	DRAWN	REVIEWED	DATE
EJG	EJG	Dicm	9/98
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRZ		2200155	

EXISTING ABUTMENT DETAILS
BRIDGE NO. ERI-2-0566 (0349)
S.R. 2 UNDER McCARTNEY ROAD

ERI-2-2.866

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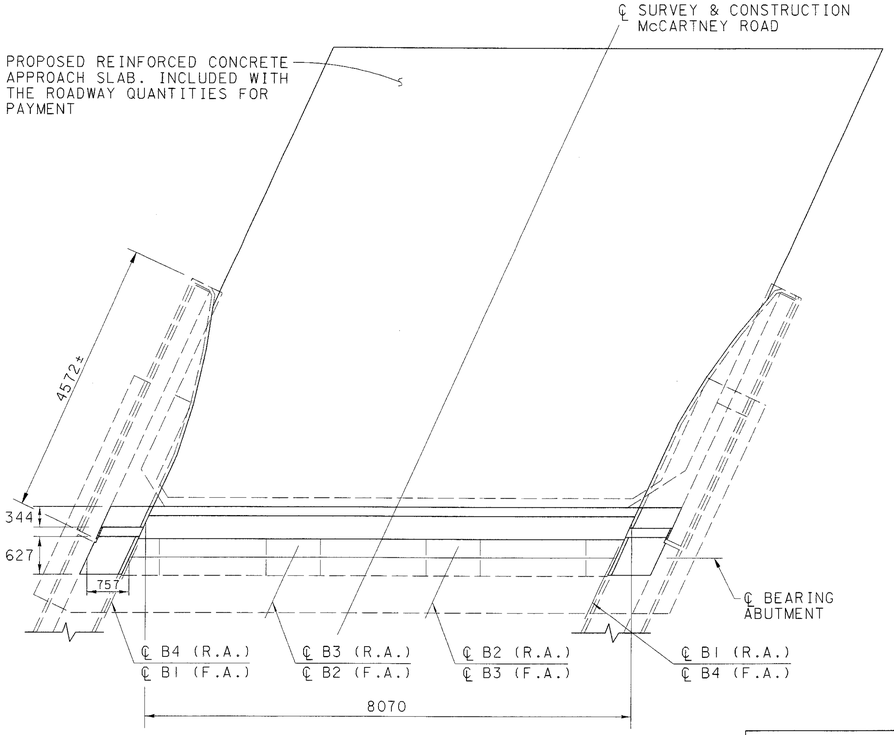
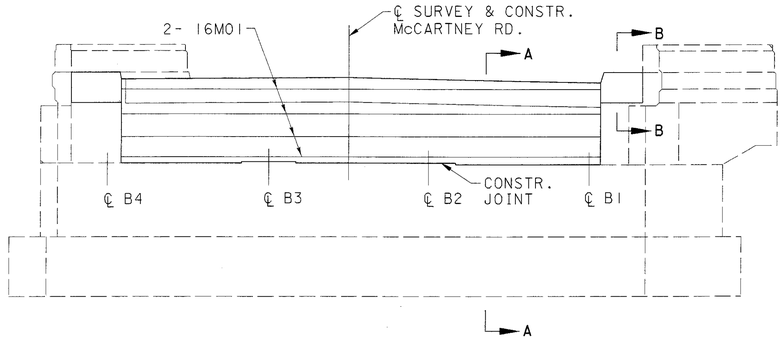
DESIGN FILE: c:\myfiles\dgn\er12\3907barl.dgn
WORKSTATION: eglover DATE: 10 SEP 98

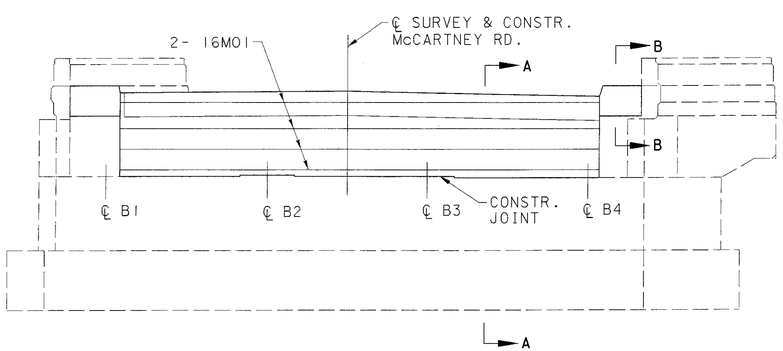


PROPOSED ABUTMENT PLAN

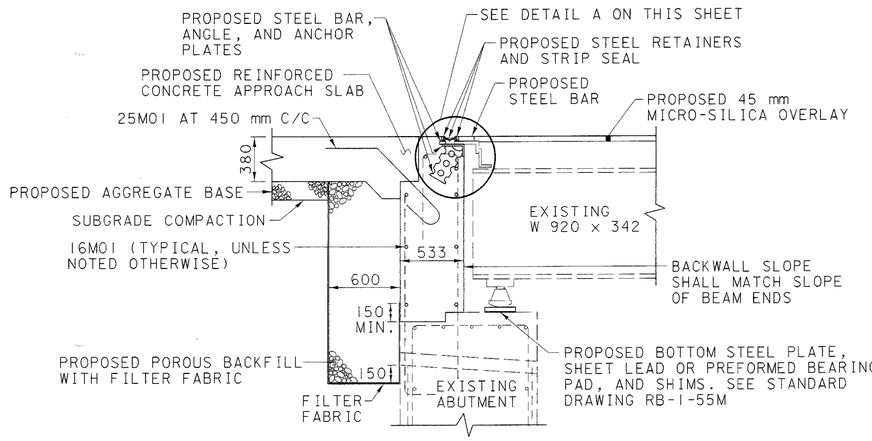
THE EXISTING REINFORCING STEEL IS NOT SHOWN



PROPOSED REAR ABUTMENT ELEVATION



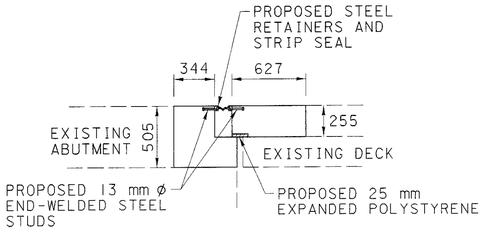
PROPOSED FORWARD ABUTMENT ELEVATION



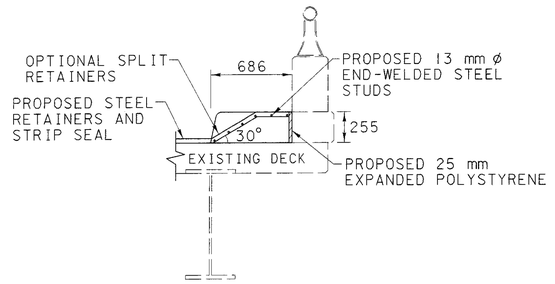
PROPOSED SECTION A-A

⊙ DIMENSION "A"

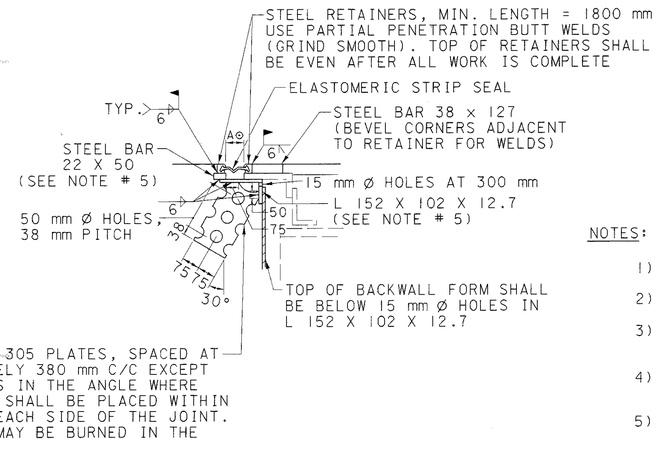
ABUTMENT AMBIENT TEMP. (°C)	DIMENSION "A" FOR REAR AND FORWARD ABUTMENTS
0°	47 mm
5°	45 mm
10°	43 mm
15°	40 mm
20°	38 mm
25°	35 mm
30°	33 mm
35°	30 mm



PROPOSED SECTION B-B



PROPOSED SECTION THROUGH CURB



DETAIL A

NOTES:

1) SEE STANDARD DRAWING AS-1-81M FOR APPROACH SLAB DETAILS
2) FOR APPROACH SLAB TYPICAL SECTION, SEE ROADWAY SHEETS
3) THE BACKWALLS AND CURBS SHALL BE RECONSTRUCTED USING ITEM 511-CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN
4) CONCRETE UNDER JOINT ARMOR SHALL BE HAND PLACED AND VIBRATED TO ACHIEVE SOLID FILLING
5) SECTIONS OF THE STEEL BAR OR ANGLE SHALL BE CONNECTED WITH COMPLETE PENETRATION BUTT WELDS (GRIND SMOOTH)
6) THE ELASTOMERIC JOINT SEAL SIZE SHALL BE 75 mm
7) THE ELASTOMERIC JOINT SEAL SHALL BE FURNISHED IN ONE CONTINUOUS PIECE
8) SEE STANDARD DRAWING EXJ-4-87M, SHEET 5, FOR ADDITIONAL NOTES
9) ALL ITEMS REQUIRED TO CONSTRUCT THE PROPOSED EXPANSION JOINT, AS SHOWN IN THESE DETAILS, SHALL BE INCLUDED IN ITEM 516-STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN

DESIGN AGENCY: DISTRICT THREE

DESIGNED	DRAWN	REVIEWED	DATE
EJG	EJG	Dcm	9/98
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRC		2200155	

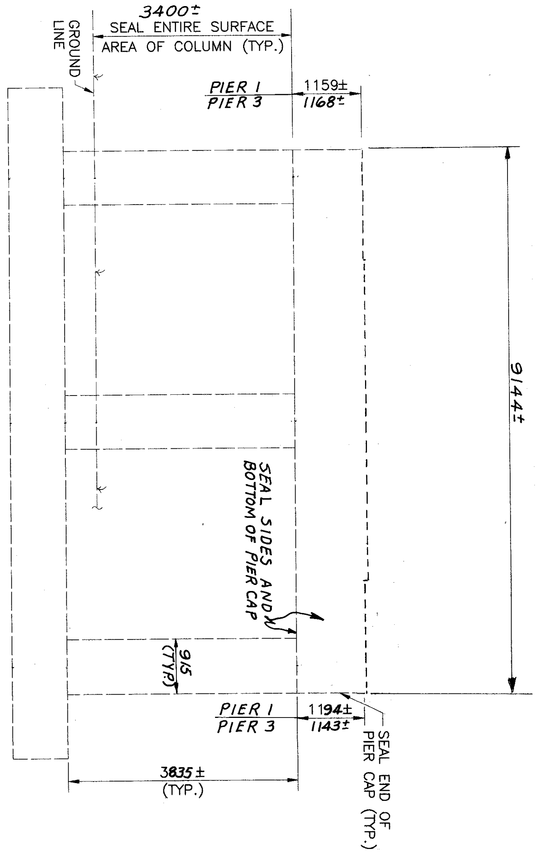
PROPOSED ABUTMENT DETAILS
BRIDGE NO. ERI-2-0561G (0349)
S.R. 2 UNDER McCARTNEY ROAD

ERI-2-2.866

5 / 9

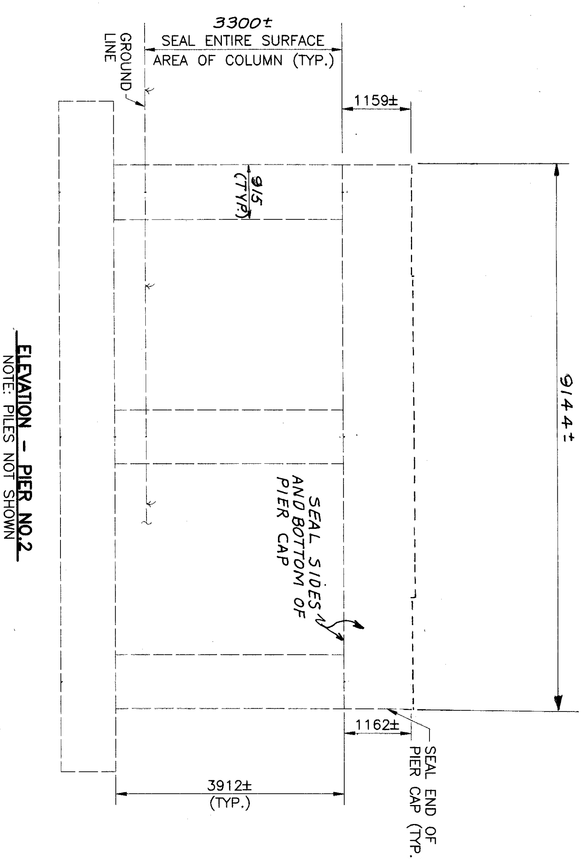
169 / 327

DESIGN FILE: c:\myfiles\dgn\er12\3907barl.dgn
WORKSTATION: eglover DATE: 19 AUG 98



ELEVATION — PIER NO.1 & NO.3
NOTE: PILES NOT SHOWN

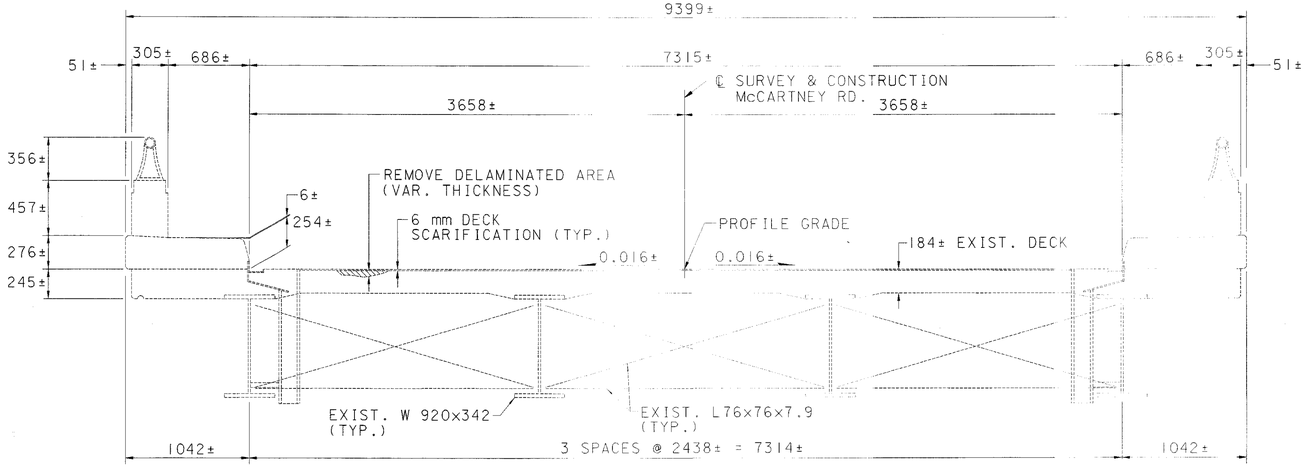
NOTE: THE WIDTH OF THE PIER CAP IS 915 mm (TYP.)



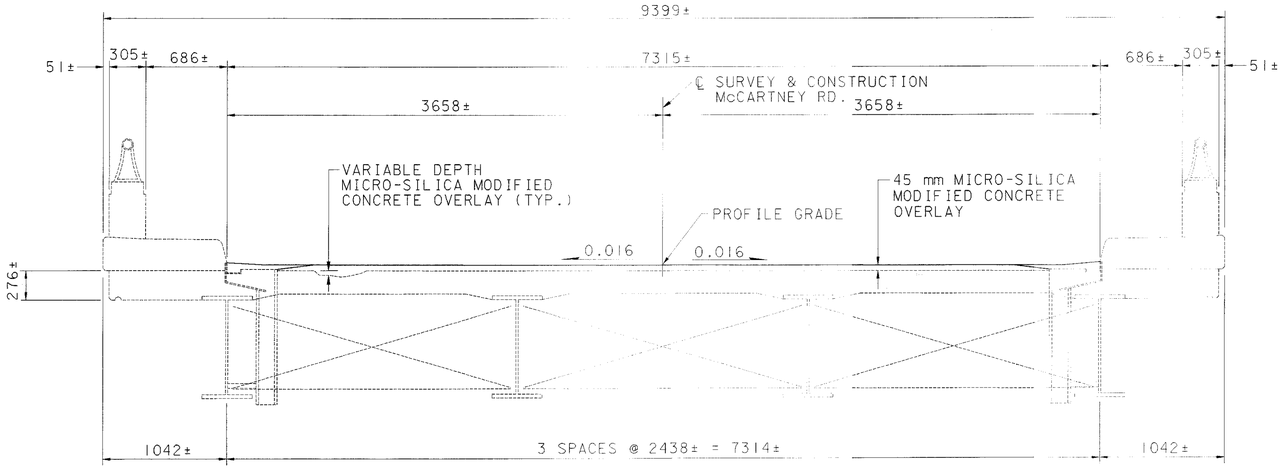
ELEVATION — PIER NO.2
NOTE: PILES NOT SHOWN

170/327	9/9	ERI-2-2.866	PIER SEALING **DETAILS** BRIDGE NO. ERI-2-0561B (0349) S.R. 2 UNDER McCARTNEY ROAD	DESIGNED KVB	DRAWN JLH/DJD	REVIEWED OHK DATE 6/24/97
				CHECKED BAG	REVISED	STRUCTURE FILE NO. 2200155

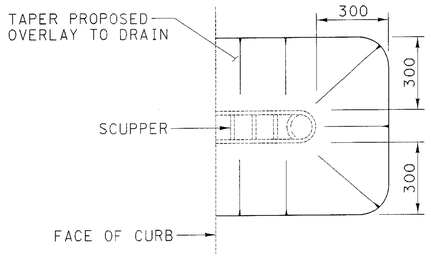
R.D. Zande & Associates, Inc.
1337 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383



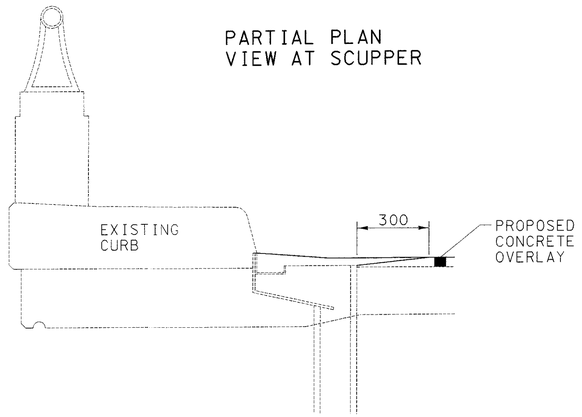
EXISTING TRANSVERSE SECTION



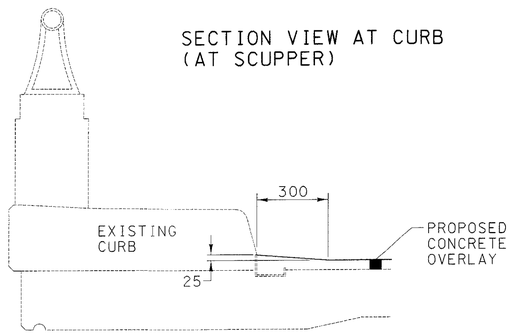
PROPOSED TRANSVERSE SECTION



PARTIAL PLAN
VIEW AT SCUPPER



SECTION VIEW AT CURB
(AT SCUPPER)



TYPICAL SECTION
VIEW AT CURB

DESIGN AGENCY
DISTRICT THREE

DESIGNED	DRAWN	REVIEWED	DATE
CHECKED MRC	REVISED	DLM	8/98

STRUCTURE FILE NUMBER
2200155

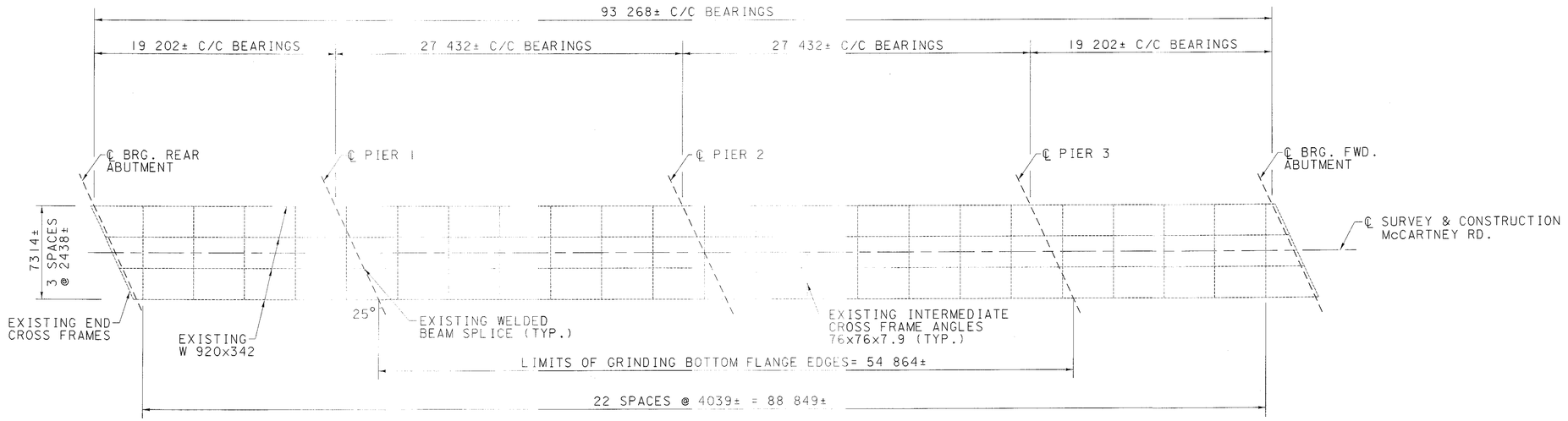
SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-0566 (0349)
S.R. 2 UNDER McCARTNEY ROAD

ERI-2-2.866

7/9

171/327

DESIGN FILE: c:\myfiles\dgn\er12\3907bsdl.dgn
WORKSTATION: eglover DATE: 19 AUG 98



FRAMING PLAN

NOTES:

1) THE STEEL MASONRY PLATES AT THE ABUTMENT BEARINGS SHALL BE REMOVED AND REPLACED WITH NEW STEEL MASONRY PLATES. SEE SHEETS [4/9] AND [5/9]

2) PAINTING OF STEEL: ALL STRUCTURAL STEEL (PROPOSED AND EXISTING) INCLUDING COVER PLATES, CROSS FRAME AND FILLER PLATES SHALL BE PAINTED. SEE GENERAL NOTES, SHEET [3/9] FOR MORE DETAILS

DESIGN AGENCY: DISTRICT THREE

REVIEWED: Dcm DATE: 8/98

STRUCTURE FILE NUMBER: 2200155

DRAWN: EJG REVISED:

DESIGNED: EJG CHECKED: JRC

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-0516 (0349)
S.R. 2 UNDER McCARTNEY ROAD

ERI-2-2.866

8/9

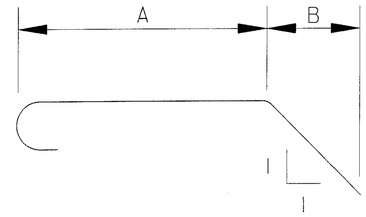
172/327

DESIGN FILE: c:\myfiles\dgn\eri2\3907bsdt.dgn
WORKSTATION: eglover DATE: 19 AUG 98

REINFORCING STEEL LIST

BAR MARK	REAR	FWD.	TOTAL	LENGTH mm	MASS * (Kg)	TYPE	A mm	B mm
16M01	8	8	16	7970	198	STR.		
25M01	17	17	34	1570	212	1	870	305
				TOTAL =	410			

* FOR INFORMATIONAL PURPOSES ONLY



TYPE 1

NOTES:

1) THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST TWO DIGITS INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, A 16M01 IS A "16M" BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED

2) ALL REINFORCEMENT BARS SHALL BE EPOXY COATED. PAYMENT FOR THESE BARS SHALL BE INCLUDED WITH APPROPRIATE CONCRETE ITEMS

3) "STR." IN THE TYPE COLUMN INDICATES STRAIGHT BARS.

4) REFER TO C.M.S. SECTION 509.05 FOR STANDARD BEND DIMENSIONS

DESIGN AGENCY: DISTRICT THREE

DESIGNED EJG | DRAWN EJG | REVIEWED DC-m | DATE 9/98 | CHECKED NRC | REVISED | STRUCTURE FILE NUMBER 2200155

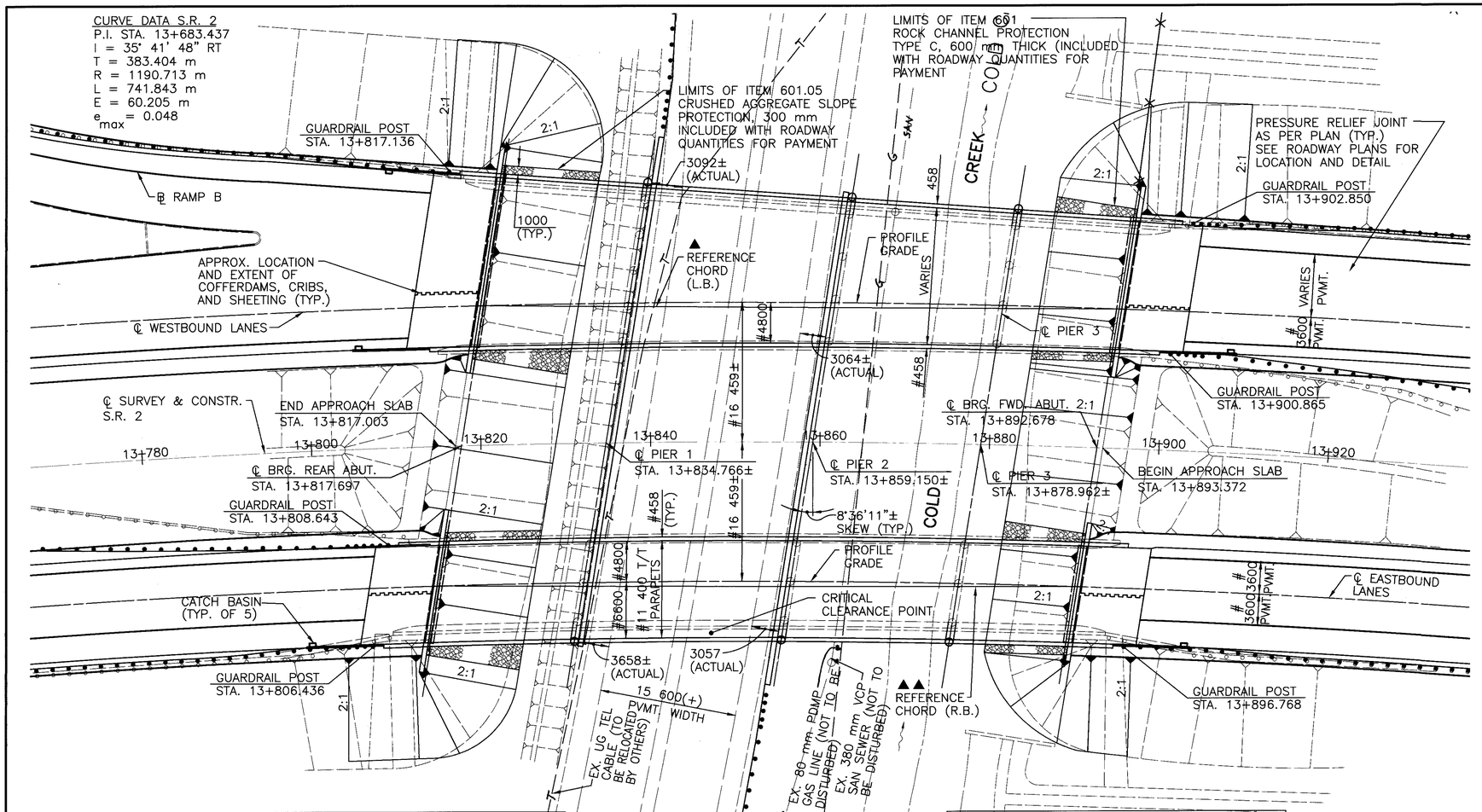
REINFORCING STEEL LIST
BRIDGE NO. ERI-2-05616 (0349)
S.R. 2 UNDER McCARTNEY ROAD

ERI-2-2.866

9/9

173/327

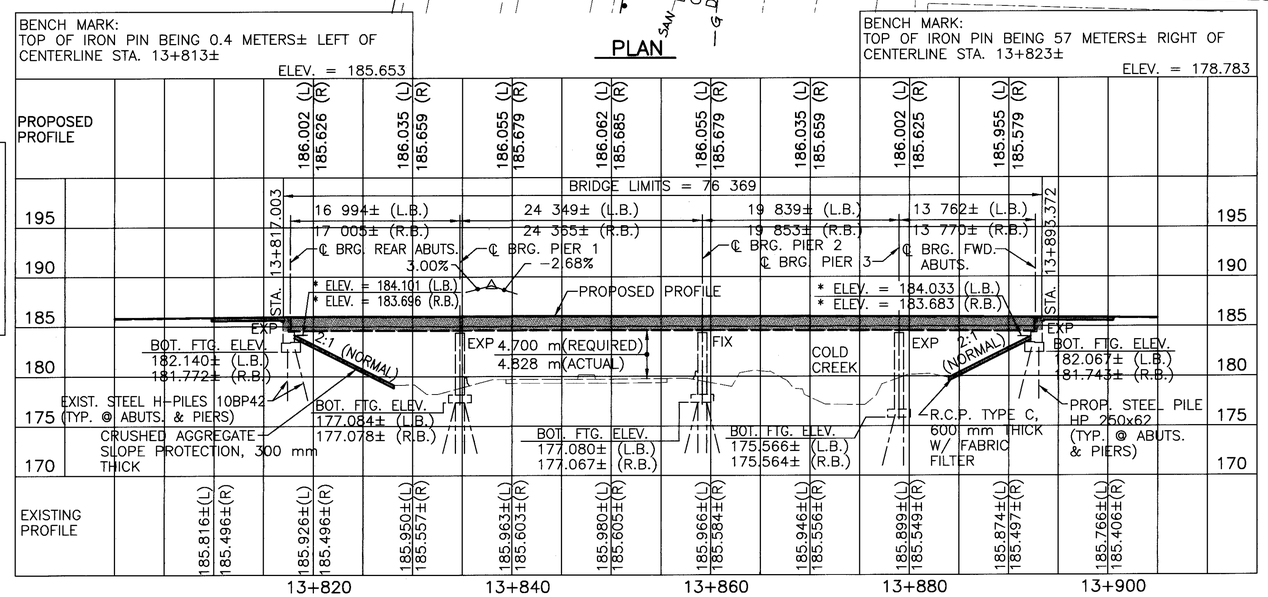
DESIGN FILE: c:\myfiles\dgn\eri2\3907brsl.dgn
WORKSTATION: eglover DATE: 19 AUG 98



PLAN

VERTICAL CURVE DATA

P.V.I. STA. = 13+837.948
P.V.I. ELEV. = 189.082 (L.B.)
= 188.705 (R.B.)
P.V.C. STA. = 13+624.588
P.V.C. ELEV. = 182.681 (L.B.)
= 182.304 (R.B.)
P.V.T. STA. = 14+051.308
P.V.T. ELEV. = 183.364 (L.B.)
= 182.987 (R.B.)
L = 426.721 m



PROFILE ALONG ℄ SURVEY & CONSTRUCTION S.R. 2

metric units

NOTES

THE AVERAGE ESTIMATED PILE PAY LENGTHS ARE 19 m @ REAR ABUTMENT 20 m @ FORWARD ABUTMENT, 14 m @ PIERS 1 & 2, AND 13 m @ PIER 3.

ALL DIMENSIONS ARE IN MILLIMETERS, AND ALL STATIONS & ELEVATIONS ARE IN METERS.

RIGHT-OF-WAY LIMITS ARE LOCATED OUTSIDE WORK LIMITS SHOWN IN PLAN VIEW.

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPE SHALL MATCH EXISTING GRADE. QUANTITIES HAVE BEEN INCLUDED IN THE ROADWAY GENERAL SUMMARY AND SHALL BE USED AS REQUIRED UNDER THE DIRECTION OF THE PROJECT ENGINEER.

▲ REFERENCE CHORD FOR LEFT BRIDGE (N 28°04'44" W) IS A STRAIGHT LINE BETWEEN ℄ ABUTMENT BEARINGS FROM STA. 13+820.734 TO STA. 13+894.668.

▲▲ REFERENCE CHORD FOR RIGHT BRIDGE (N 28°19'27" W) IS A STRAIGHT LINE BETWEEN ℄ ABUTMENT BEARINGS FROM STA. 13+814.574 TO STA. 13+896.632

✱ ELEVATIONS ARE MARKED WITH AN ASTERISK ARE AT THE TOP OF THE SPILL THRU SLOPE AT THE FACE OF ABUTMENT.

DIMENSION MEASURED RADIALLY

EXISTING BRIDGE DATA

TYPE: 4 SPAN CONTINUOUS STEEL BEAMS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 17 069 mm±, 24 384 mm±, 19 812 mm± 13 716 mm±, C/C BEARINGS, LEFT & RIGHT BRIDGES
ROADWAY: VARIABLE – LEFT BRIDGE, 9144 mm F/F OF 686 mm SAFETY CURBS – RIGHT BRIDGE
LOADING: CF-400(57)
WEARING SURFACE: 25 mm± MONOLITHIC CONCRETE
ALIGNMENT: 1°-28'-00"± CURVE RIGHT, EXCEPT NORTH CURB OF LEFT BRIDGE WHICH IS PARALLEL TO EXIT RAMP
SKEW: 8°-36'-11"± L.F.
APPROACH SLABS: AS-1-54 (7620± mm LONG)
CROWN: ±0.0156
DATE BUILT: 1961
STRUCTURE FILE NUMBER: 2200244 (L) & 2200279 (R)

PROPOSED STRUCTURE MODIFICATION

PROPOSED WORK:

1. WIDEN THE SUBSTRUCTURE AND SUPERSTRUCTURE
2. REMOVE AND REPLACE EXISTING BACKWALLS TO BEAM SEATS
3. PROVIDE NEW EXPANSION JOINTS
4. PROVIDE TEMPORARY JACKING SYSTEM TO REPLACE EXISTING ABUTMENT BEARINGS AND PIER BEARINGS
5. ELIMINATE ALL EXISTING SCUPPERS
6. PAINT EXISTING STRUCTURAL STEEL
7. PROVIDE A NEW REINFORCED CONCRETE DECK
8. PROVIDE POROUS BACKFILL WITH FILTER FABRIC
9. INSTALL CATCH BASINS AT BRIDGE CORNERS
10. SEAL CONCRETE SURFACES
11. REPAIR EXISTING SLOPE PROTECTION
12. REPLACE EXISTING APPROACH SLABS
13. INSTALL VANDAL PROTECTION FENCE
14. REPLACE BEARINGS

(IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN SEQUENTIAL ORDER AS LISTED).

TYPE: 4 SPAN CONTINUOUS PAINTED STEEL BEAMS (A36M – 250 MPa) WITH COMPOSITE REINFORCED CONCRETE DECK, SUPPORTED ON WIDENED EXISTING PIERS AND REHABILITATED STUB ABUTMENTS
SPANS: 16 994 mm±, 24 349 mm±, 19 839 mm±, 13 762 mm± C/C BEARINGS ALONG REF. CHORD LEFT BRIDGE 17 005 mm±, 24 365 mm±, 19 853 mm±, 13 770 mm± C/C BEARINGS ALONG REF. CHORD RIGHT BRIDGE
ROADWAY: VARIES FROM 19 808 (R.A.) TO 15 202 (F.A.) TOE/TOE PARAPET (L.B.), 11 400 TOE/TOE PARAPET (R.B.)
LOADING: MS18 & ALT. MILITARY LOADING (CASE I)
WEARING SURFACE: 25 mm MONOLITHIC CONCRETE
ALIGNMENT: 1°-28'-0"± CURVE RIGHT, EXCEPT NORTH CURB OF LEFT BRIDGE WHICH IS PARALLEL TO EXIT RAMP
SKEW: 8°40'23" L.F. (L.B.) & 8°46'31" L.F. (R.B.) SKEW NORMAL TO REF. CHORDS
APPROACH SLABS: AS-1-81M (7600 mm LONG)
SUPERELEVATION: 0.048 MAX.
LONGITUDE: 82°46'46" **LATITUDE:** 41°26'29"

CURRENT AVERAGE DAILY TRAFFIC: 14 030 (1998)
DESIGN AVERAGE DAILY TRAFFIC: 22 450 (2018)
CURRENT AVERAGE DAILY TRUCK TRAFFIC: 3370 (1998)
DESIGN AVERAGE DAILY TRUCK TRAFFIC: 5390 (2018)

R.D. Zanda & Associates, Inc.
1207 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED	DRAWN	REVIEWED	DATE
JAP/FJR	DJD	OHK	9/10/97
CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200244,2200279	

ERIE COUNTY
STA. 13+817.003
STA. 13+893.372

SITE PLAN
BRIDGE NO. ERI-2-0.66/20 L & R (0430)
SR. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

1/31

178/327

hoge3 P:\3907\DWG\BRIDGE\E-2-0694\PLAN\ 3907csb.dwg DEC 03, 1998 TIME: 6:37 PM

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S):

AS–1–81M	DATED	10–25–94
BR–1M	DATED	12–15–94
EXJ–4–87M	DATED	2–18–97
GR–3.1M	DATED	10-21-97
PCB–91M	DATED	3–20–95

AND TO SUPPLEMENTAL SPECIFICATION(S):

843	DATED	5-5-98
815	DATED	5–30–96
844	DATED	5-5-98
954	DATED	9-9-97
863	DATED	9-9-97
910	DATED	4–21–97
846	DATED	9-9-97

METRIC UNITS:

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS, AND ALL ELEVATIONS AND STATIONS IN METERS UNLESS NOTED OTHERWISE.

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

DESIGN LOADING: MS18, CASE I AND THE ALTERNATE MILITARY LOADING.

HIGH PERFORMANCE CONCRETE – COMPRESSIVE STRENGTH 31.0 MPa (SUPERSTRUCTURE)

CONCRETE CLASS C – COMPRESSIVE STRENGTH 27.5 MPa (SUBSTRUCTURE)

REINFORCING STEEL – ASTM A615M, A616M, OR A617M
GRADE 420 MINIMUM YIELD STRENGTH 420 MPa.
SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82M, OR A615M.

STRUCTURAL STEEL
A36M – YIELD STRENGTH 250 MPa

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL.
65 mm CONCRETE COVER.
HIGH PERFORMANCE CONCRETE.

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 25 mm THICK.

UTILITY LINES:

ALL EXPENSE INVOLVED IN RELOCATION (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY(IES). THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTION 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING STRUCTURE PLANS:

THE ORIGINAL DESIGN PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 3 OFFICE, 906 NORTH CLARK ST., ASHLAND, OHIO 44805 (419) 281–0513.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK AND PARAPET)

DESCRIPTION: THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECKS, SAFETY CURBS, PARAPETS, RAILINGS, AND SCUPPERS. CARE SHALL BE TAKEN NOT TO DAMAGE THE STEEL BEAMS DURING THE DECK REMOVAL. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAMS, CONCRETE CRUSHERS AND OTHER SIMILAR TYPE OF IMPACTIVE DEVICES IS NOT PERMITTED.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF THE DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 50 mm OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 50 mm OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 50 mm OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS: CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 16 KILOGRAMS BUT NOT TO EXCEED 41 KILOGRAMS MAY BE USED AT THE APPROVAL OF THE ENGINEER, TO ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS: DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.), CARE SHALL BE TAKEN DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. STRINGERS DAMAGED BY THE CONTRACTOR'S REMOVAL. OPERATIONS SHALL, AT NO COST TO THE PROJECT, BE REPLACED OR REPAIRED. PROPOSED REPAIRS, DEVELOPED BY A REGISTERED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED IN WRITING FOR REVIEW AND APPROVAL BY THE DIRECTOR.

EXTRANEOUS MEMBERS: EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC., AND THE SUPPORT FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES DESIGNATED "TENSION" SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS, BY A REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF THE WORK.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

THIS ITEM OF WORK SHALL BE USED TO REMOVE PORTIONS OF THE SUBSTRUCTURE AS DESIGNATED IN THE PLAN. THE CONCRETE SHALL BE REMOVED BY HYDRAULIC SPLITTING METHOD. A LINE OF HOLES SHALL BE DRILLED ALONG THE REMOVAL LINE AND HYDRAULIC SPLITTER USED AS PER THE MANUFACTURER'S RECOMMENDATIONS. 16 AND 7 KILOGRAM JACK HAMMERS SHALL BE USED FOR ANY REQUIRED FINISH WORK. HOE RAMS AND/OR CONCRETE CRUSHERS WILL NOT BE PERMITTED TO DO ANY OF THE WORK. NO SAW CUTTING WILL BE ALLOWED IN AREAS WHERE EXISTING REINFORCING SHALL REMAIN. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL DESIGNATED FOR SALVAGE, IF DAMAGED DURING THE REMOVAL OPERATION DOWELED REINFORCING STEEL MUST BE ADDED AT THE CONTRACTOR'S EXPENSE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC METER FOR ITEM 202, PORTIONS OF STRUCTURES REMOVED AS PER PLAN SUBSTRUCTURE, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

STRUCTURE REMOVALS OVER WATER

REASONABLE CARE SHALL BE TAKEN BY THE CONTRACTOR TO PREVENT REMOVED MATERIALS FROM FALLING INTO THE WATER. ANY DROPPED MATERIALS SHALL BE IMMEDIATELY RECOVERED AND DISPOSED OF AWAY FROM THE SITE.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 25 mm DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN:

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 MATERIAL AND PLACED IN 150 mm LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04.

PILE DESIGN LOADS (ULTIMATE BEARING VALUE):

THE ULTIMATE BEARING VALUE FOR THE ABUTMENT PILES IS 591 kN PER PILE AND THE BEARING VALUE FOR THE PIER PILES IS 485 kN PER PILE.

REAR ABUTMENT PILES (LEFT/RIGHT BRIDGE):

8 PILES 19 METERS LONG, ESTIMATED LENGTH
8 PILES OF ORDER LENGTH 18.0 METERS LONG
8 PILES OF ORDER LENGTH 2.5 METERS LONG
8 SPLICES

PIERS 1 & 2 PILES (LEFT/RIGHT BRIDGE):

8 PILES 14 METERS LONG, ESTIMATED LENGTH
8 PILES OF ORDER LENGTH, 15.5 METERS LONG
4 SPLICES

PIER 3 PILES (LEFT/RIGHT BRIDGE):

4 PILES 13 METERS LONG, ESTIMATED LENGTH
4 PILES OF ORDER LENGTH, 14.5 METERS LONG
2 SPLICES

FORWARD ABUTMENT PILES (LEFT/RIGHT BRIDGE):

8 PILES 20 METERS LONG, ESTIMATED LENGTH
8 PILES OF ORDER LENGTH, 18.0 METERS LONG
8 PILES OF ORDER LENGTH, 3.5 METERS LONG
8 SPLICES

ITEM 503, COFFERDAMS, CRIBS, AND SHEETING, AS PER PLAN

TEMPORARY SHORING SHALL BE USED TO ACCOMPLISH THE PROPOSED CONSTRUCTION IN PHASES. THE DESIGN OF THE TEMPORARY SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, BE DESIGNED BY A REGISTERED ENGINEER, AND CONFORM WITH 501.05. FOR APPROVAL, FIVE COPIES OF THE DRAWINGS SHALL BE SUBMITTED TO THE DIRECTOR AND CONCURRENTLY, ONE COPY TO THE OFFICE OF STRUCTURAL ENGINEERING. CONSTRUCTION OF THE SHORING SHALL NOT BEGIN UNTIL AFTER WRITTEN APPROVAL HAS BEEN RECIEVED FROM THE DIRECTOR. PORTIONS OF THE TEMPORARY SHORING COMPOSED OF STEEL OR CONCRETE MAY BE LEFT IN PLACE AT THE DISCRETION OF THE ENGINEER. PORTIONS COMPOSED OF OTHER MATERIALS SHALL BE REMOVED PRIOR TO COMPLETION OF THE WORK.

REPLACEMENT OF EXISTING REINFORCING STEEL:

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL.
ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. COST OF ALL REINFORCING STEEL SHALL BE INCLUDED WITH APPROPRIATE ITEM 511 CONCRETE ITEMS.

INSPECTION OF STRUCTURAL STEEL:

THE ENGINEER SHALL VISUALLY INSPECT ALL EXISTING BUTT–WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THAT THEY ARE FREE OF DEFECTS. THE DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS SHALL NOT BE ERECTED UNTIL AFTER THE ENGINEER HAS COMPLETED THIS INSPECTION. THIS INSPECTION SHALL NOT TAKE PLACE UNTIL AFTER THE TOP FLANGES ARE CLEANED AS SPECIFIED IN 511.08, BUT IT SHALL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE COST ASSOCIATED WITH THIS INSPECTION SHALL BE INCLUDED WITH ITEM 511, SUPERSTRUCTURE CONCRETE FOR PAYMENT.

ITEM 511, CLASS C CONCRETE, AS PER PLAN:

CLASS C CONCRETE SHALL BE IN ACCORDANCE WITH 511, EXCEPT THAT THE AGGREGATE SHALL BE #8 LIMESTONE.

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CHECKED	REVISED	STRUCTURE FILE NO	
FJR		2200244, 2200279	

GENERAL NOTES
BRIDGE NO. ERI-2-0820 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

GENERAL NOTES CONT.

ITEM 516. JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTION JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 25 mm, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING ACTUAL JACKING OPERATIONS. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 6 mm.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 25 mm OR LESS.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

ITEM 518 - POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN:

POROUS BACKFILL SHALL BE NO. 57 GRAVEL.

ITEM 815 - FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU:

ALL EXISTING AND NEW STEEL SHALL BE CLEANED AND PAINTED WITH A PRIME, INTERMEDIATE, AND FINISH COAT OF PAINT IN THE FIELD USING SYSTEM OZEU. THE COST OF THIS WORK SHALL BE INCLUDED WITH SEVERAL FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU ITEMS FOR PAYMENT. THE COLOR OF THE FINISH COAT SHALL BE A RED COLOR MEETING FEDERAL STANDARD NUMBER 11136. IN ADDITION, TO THE SURFACE AREA OF THE STEEL STRINGERS TO BE PAINTED, AN ADDITIONAL TWENTY FIVE PERCENT OF THIS AMOUNT HAS BEEN ADDED TO THE SQUARE METER TOTALS TO ACCOUNT FOR INCIDENTALS SUCH AS CROSSFRAMES & BEARINGS. SEE SUPPLEMENTAL SPECIFICATION 815.

ITEM 815 - GRINDING FLANGE EDGES

GRINDING BOTTOM FLANGES OF EXISTING BEAMS OVER SPAN 2.

CONCRETE PARAPETS:

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 25 mm DEEP CONTROL JOINTS SHALL BE SAWED INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAWCUTS SHALL BE PLACED AT LOCATIONS AS DETAILED ON SHEET 27/31. THE USE OF AN EDGE GUIDE, FENCE, OR JIG IS REQUIRED TO INSURE 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 6 mm. THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 25 mm WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E. THE CONTRACTOR SHALL NOTE THAT THE OPTION TO SLIPFORM PARAPET IS NOT ALLOWED.

ABBREVIATIONS

ABUT. - ABUTMENT
AVG. - AVERAGE
BOT. - BOTTOM
BRG. - BEARING
℄ - CENTERLINE
CLR. - CLEARANCE
CONSTR. - CONSTRUCTION
C.P.P. - CORRUGATED PLASTIC PIPE
E.B. - EAST BOUND
E.F. - EACH FACE
EXIST. - EXISTING
EXP. - EXPANSION
ELEV. - ELEVATION
EQ. - EQUAL
F.A. - FORWARD ABUTMENT
F.F. - FAR FACE
FIX. - FIXED
FTG. - FOOTING
FWD. - FORWARD
HMWM - HIGH MOLECULAR WEIGHT METHACRYLATE
JT. - JOINT
L.B. - LEFT BRIDGE
MAX. - MAXIMUM
MIN. - MINIMUM
N.B. - NORTH BOUND
N.F. - NEAR FACE
NO. - NUMBER
PH. - PHASE
PVMT. - PAVEMENT
O.C. - ON CENTER
OZEU - ORGANIC ZINC EPOXY URETHANE
PL. - PLATE
P.E.J.F. - PREFORMED EXPANSION JOINT FILLER
R - RADIUS
R.A. - REAR ABUTMENT
R.B. - RIGHT BRIDGE
RDWY. - ROADWAY
REINF. - REINFORCING
REQ'D - REQUIRED
S.B. - SOUTH BOUND
SER. - SERIES
SPA. - SPACES
STA. - STATION
STD. - STANDARD
STR. - STRAIGHT
SUBSTR. - SUBSTRUCTURE
TYP. - TYPICAL
U.N.O. - UNLESS NOTED OTHERWISE
VERT. - VERTICAL
W.B. - WESTBOUND
W.R.T. - WITH RESPECT TO

ITEM 844 - HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK AND PARAPET

ON THIS PROJECT, THE CONTRACTOR SHALL USE CONCRETE MEETING THE REQUIREMENTS OF THE MIX DESIGN GIVEN IN THE PROPOSAL NOTE FOR MIX 4 (GGBF SLAG + MICROSILICA) FOR THE SUPERSTRUCTURE INSTEAD OF TEXTURING. BRIDGE DECK GROOVING SHALL BE PERFORMED AS PER THE PROPOSAL NOTE. BRIDGE DECK GROOVING SHALL BE PAID FOR SEPARATELY.

CONSTRUCTION SEQUENCE AND MAINTENANCE OF TRAFFIC

SEE SHEETS 5/31 & 6/31 FOR CONSTRUCTION SEQUENCE AND PHASE CONSTRUCTION DETAILS. SEE ROADWAY PLANS FOR ADDITIONAL TRAFFIC NOTES AND DETAILS.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

THE CONCRETE SHALL BE SEALED USING AN EPOXY-URETHANE SYSTEM AT THE LOCATIONS INDICATED IN THE PLAN. THE URETHANE SHALL BE A "BUFF" COLOR MEETING FEDERAL STANDARD NUMBER 37722. SEE PROPOSAL NOTE FOR ADDITIONAL INFORMATION.

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GENERAL NOTES
BRIDGE NO. ERI-2-0920 L & R (0430)
S.R. 2 OVER COLD CREEK

ERI-2-2.866

3/31

180/327

ESTIMATED QUANTITIES

CALC. BY: FJR DATE: 09/08/97
CHK. BY: KVB DATE: 09/11/97

ITEM	ITEM EXT.	TOTAL LEFT BRIDGE	TOTAL RIGHT BRIDGE	UNIT	DESCRIPTION	ABUTMENTS LEFT BRIDGE	ABUTMENTS RIGHT BRIDGE	PIERS LEFT BRIDGE	PIERS RIGHT BRIDGE	SUPERSTRUCTURE LEFT BRIDGE	SUPERSTRUCTURE RIGHT BRIDGE	GENERAL LEFT BRIDGE	GENERAL RIGHT BRIDGE	SHEET NO. FOR AS PER PLAN ITEMS
202	11301	42	32	CU METER	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)	42	32							2/31
202	11201	LUMP	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK AND PARAPET)					LUMP	LUMP			2/31
503	11101	LUMP	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN							LUMP	LUMP	2/31
503	21301	LUMP	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	LUMP	LUMP	LUMP	LUMP					2/31
505	11100	LUMP	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION							LUMP	LUMP	
507	00100	518	518	METER	STEEL PILES HP250X62, FURNISHED	336	336	182	182					
507	00150	476	476	METER	STEEL PILES HP250X62, DRIVEN	312	312	164	164					
507	50500	22	22	EACH	STEEL PILES SPLICES	16	16	6	6					
511	41001	38	28	CU METER	CLASS C CONCRETE, PIER ABOVE FOOTINGS (CAP & COLUMN), AS PER PLAN			38	28					2/31
511	44101	52	42	CU METER	CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN	52	42							2/31
511	46501	39	43	CU METER	CLASS C CONCRETE, FOOTING, AS PER PLAN	27	29	12	14					2/31
~~844~~	48000	350	231	CU METER	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK)					350	231			
~~844~~	48020	54	55	CU METER	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET)					54	55			
~~844~~	49000	LUMP	LUMP		HIGH PERFORMANCE CONCRETE – TRIAL MIX							LUMP	LUMP	
~~844~~	49010	LUMP	LUMP		HIGH PERFORMANCE CONCRETE – TESTING							LUMP	LUMP	
512	44400	2	2	SQ METER	TYPE B WATERPROOFING	2	2							
SPECIAL	51267510	914	790	SQ METER	SEALING OF CONCRETE SURFACES (EPOXY- URETHANE)	146	123	293	192	475	475			
~~863~~	10040	LUMP	LUMP		STRUCTURAL STEEL MEMBERS, LEVEL TWO(2) FABRICATION					LUMP	LUMP			
~~863~~	20000	5,940	4,284	EACH	WELDED STUD SHEAR CONNECTOR					5,940	4,284			
516	11210	37.3	25.1	METER	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL					37.3	25.1			
516	44001	9	6	EACH	ELASTOMERIC BEARING (300X475X42) WITH INTERNAL LAMINATES AND LOAD PLATE (330X505X50) (NEOPRENE), AS PER PLAN			9	6					29/31
516	44001	9	6	EACH	ELASTOMERIC BEARING (300X475X42) WITH INTERNAL LAMINATES AND LOAD PLATE (330X675X50) (NEOPRENE), AS PER PLAN			9	6					29/31
516	44001	9	6	EACH	ELASTOMERIC BEARING (275X425X42) WITH INTERNAL LAMINATES AND LOAD PLATE (305X490X40) (NEOPRENE), AS PER PLAN			9	6					29/31
516	44101	9	6	EACH	ELASTOMERIC BEARING (225X275X65) WITH INTERNAL LAMINATES AND LOAD PLATE (255X340X40) (NEOPRENE), AS PER PLAN	9	6							28/31
516	44101	9	6	EACH	ELASTOMERIC BEARING (225X275X57) WITH INTERNAL LAMINATES AND LOAD PLATE (255X340X40) (NEOPRENE), AS PER PLAN	9	6							28/31
516	47001	LUMP	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN					LUMP	LUMP			3/31
518	21231	LUMP	LUMP		POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	LUMP	LUMP							3/31
518	40000	52	40	METER	150 mm PERFORATED CORRUGATED PLASTIC PIPE	52	40							
518	40010	14	16	METER	150 mm NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	14	16							
843	50000	0.8	0.7	SQ METER	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR	0.8	0.7							
815	00050	2,700	1,835	SQ METER	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU					2,700	1,835			
815	00056	2,700	1,835	SQ METER	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU					2,700	1,835			
815	00060	2,700	1,835	SQ METER	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU					2,700	1,835			
815	00066	2,700	1,835	SQ METER	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU					2,700	1,835			
815	00504	100	100	MAN HOUR	GRINDING FINS, TEARS AND SLIVERS					100	100			
815	00508	779	487	METER	GRINDING FLANGE EDGES					779	487			
SPECIAL	85050070	860	860	SQ. METER	BRIDGE DECK GROOVING					860	860			

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STRUCTURE FILE NO 2200244, 2200279

ESTIMATED QUANTITIES
BRIDGE NO. ERI-2-06920 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

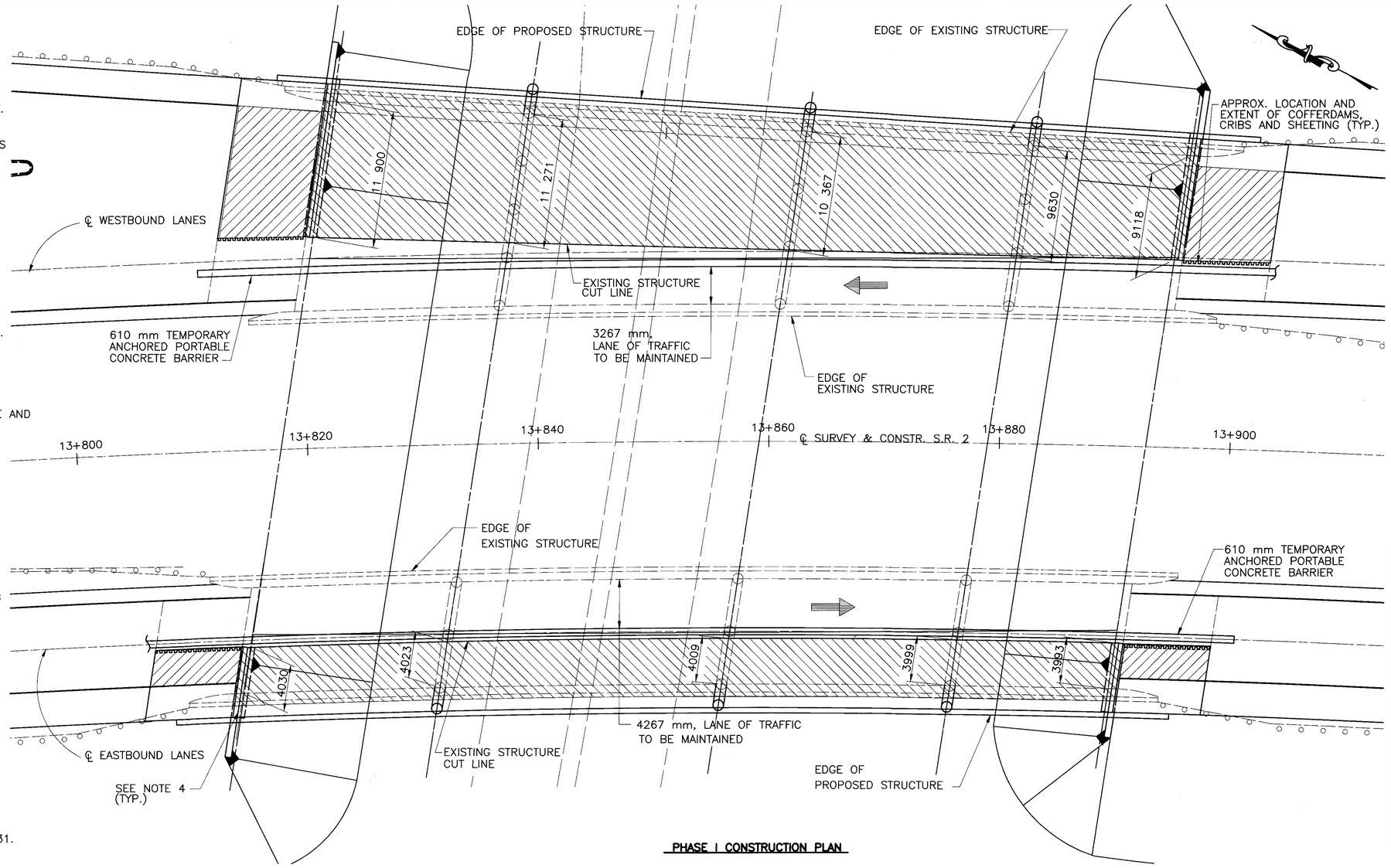
CONSTRUCTION SEQUENCE:

PHASE I

1. INSTALL PORTABLE CONCRETE BARRIERS AND REROUTE TRAFFIC ONTO SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
2. INSTALL PROPOSED PILES AT THE ABUTMENTS AND CONSTRUCT THE ABUTMENT FOOTING EXTENSIONS FOR THE NORTH HALF OF THE LEFT BRIDGE AND THE SOUTH HALF OF THE RIGHT BRIDGE.
3. INSTALL PROPOSED PILES AT THE PIERS AND CONSTRUCT PROPOSED PIER FOOTING EXTENSIONS AND PROPOSED COLUMNS FOR THE NORTH HALF OF THE LEFT BRIDGE AND THE SOUTH HALF OF THE RIGHT BRIDGE.
4. MAINTAIN ONE 4267 mm LANE ON RIGHT BRIDGE AND ONE 3267 mm LANE ON LEFT BRIDGE.
5. REMOVE APPROACH SLAB, DECK SLAB, SAFETY CURB AND PARAPET OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE. IN ADDITON, REMOVE SCUPPERS INCLUDING RELATED DRAINAGE ITEMS AND SUPPORT ARMOR AND EXPANSION ARMOR.
6. PROVIDE TEMPORARY SUPPORT SYSTEMS TO REMOVE BEARINGS FOR THE LEFT FIVE BEAMS OF THE EXISTING LEFT BRIDGE AND THE RIGHT TWO BEAMS OF THE EXISTING RIGHT BRIDGE AT ABUTMENTS AND PIERS AS PER PLAN NOTES AND PROCEDURES.
7. REMOVE PORTIONS OF ABUTMENTS AND WINGWALLS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
8. CONSTRUCT THE REMAINING PORTIONS OF THE ABUTMENTS AND PIER CAPS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
9. INSTALL ELASTOMETRIC BEARINGS AT ABUTMENTS AND PIERS FOR THE LEFT SIX BEAMS OF THE LEFT BRIDGE AND RIGHT THREE BEAMS OF THE RIGHT BRIDGE. REMOVE TEMPORARY SUPPORT SYSTEMS.
10. INSTALL SHEAR CONNECTORS ON EXISTING LEFT FIVE BEAMS OF THE LEFT BRIDGE AND EXISTING RIGHT TWO BEAMS OF THE RIGHT BRIDGE. ERECT PROPOSED EXTERIOR BEAM WITH SHOP WELDED SHEAR CONNECTORS FOR BOTH THE LEFT AND THE RIGHT BRIDGE. PAINT EXISTING AND PROPOSED STRUCTURAL STEEL.
11. CONSTRUCT DECK AND PARAPET OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
12. SEAL CONCRETE SURFACES.
13. COMPLETE DRAINAGE ITEMS AND APPROACH SLAB FOR THE NORTH OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.

NOTES

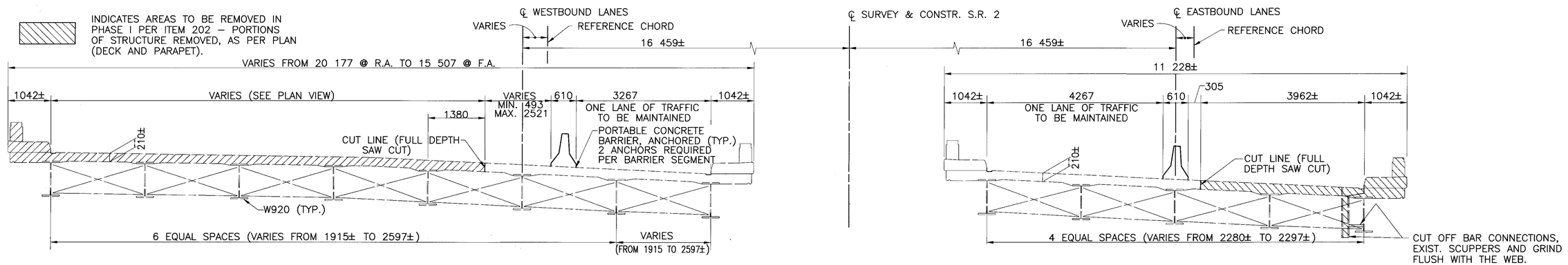
1. PORTABLE CONCRETE BARRIER IS CARRIED IN THE ROADWAY PLANS FOR PAYMENT.
2. FOR MORE MAINTENANCE OF TRAFFIC DETAILS, SEE ROADWAY PLANS.
3. FOR MORE PORTABLE CONCRETE BARRIER DETAILS, SEE STANDARD DRAWING PCB–91M.
4. FOR ABUTMENT REMOVAL DETAILS, SEE SHEETS 7, 8, & 9 OF 31.



PHASE I CONSTRUCTION PLAN

INDICATES LIMITS OF APPROACH SLAB REMOVAL IN PHASE I. INCLUDED WITH ROADWAY QUANTITIES FOR PAYMENT.

INDICATES AREAS TO BE REMOVED IN PHASE I PER ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK AND PARAPET).



PHASE I TRANSVERSE SECTION

NOTE: ALL DIMENSIONS ARE MEASURED RADIALLY.

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PHASE CONSTRUCTION DETAILS
BRIDGE NO. ERI-2-0820 L & R (04300)
SR. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

5 / 31

182 / 327

CONSTRUCTION SEQUENCE:

PHASE II

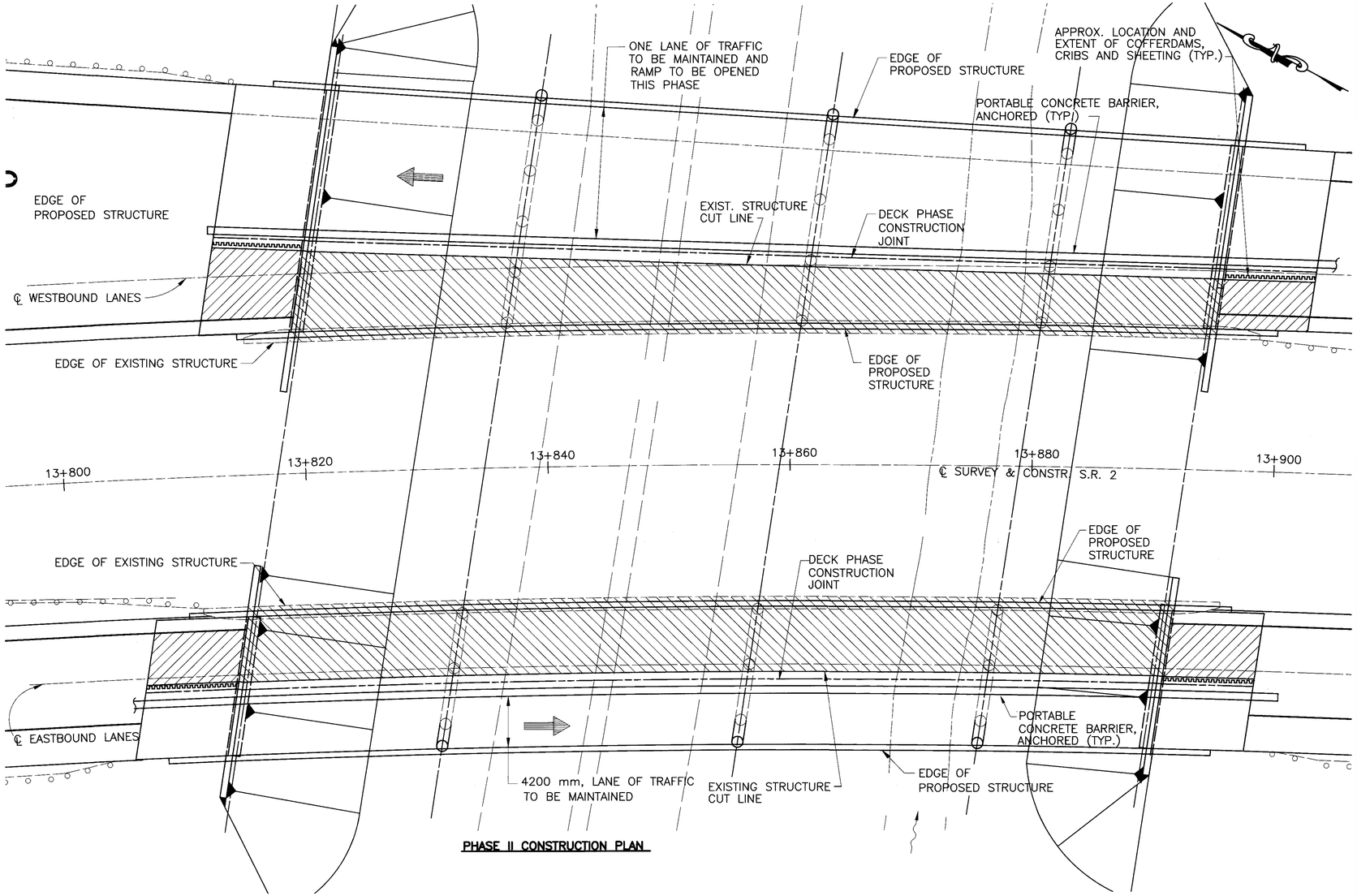
1. RELOCATE PORTABLE CONCRETE BARRIERS AS SHOWN AND MAINTAIN TRAFFIC ONTO NORTH HALF OF EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
2. MAINTAIN ONE 4200 mm LANE ON THE RIGHT BRIDGE AND ONE VARIABLE WIDTH LANE ON THE LEFT BRIDGE.
3. INSTALL PROPOSED PILES AT THE ABUTMENTS AND CONSTRUCT THE ABUTMENT FOOTING EXTENSIONS FOR SOUTH HALF OF THE LEFT BRIDGE AND NORTH HALF OF THE RIGHT BRIDGE.
4. REMOVE REMAINING PORTIONS OF EXISTING APPROACH SLAB, DECK SLAB, SAFETY CURB AND PARAPET OF THE LEFT AND RIGHT BRIDGES. IN ADDITION, REMOVE SCUPPERS INCLUDING RELATED DRAINAGE ITEMS AND SUPPORT ARMOR AND EXPANSION JOINT ARMOR.
5. PROVIDE TEMPORARY SUPPORT SYSTEMS TO REMOVE BEARINGS FOR THE RIGHT THREE BEAMS OF THE EXISTING LEFT BRIDGE AND THE LEFT THREE BEAMS OF THE EXISTING RIGHT BRIDGE AT ABUTMENTS AND PIERS AS PER PLAN NOTES AND PROCEDURES.
6. REMOVE PORTIONS OF ABUTMENTS AND WINGWALLS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
7. CONSTRUCT THE REMAINING PORTIONS OF THE ABUTMENTS AND PIER CAPS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
8. INSTALL ELASTOMETRIC BEARINGS AT ABUTMENTS AND PIERS FOR THE REMAINING EXISTING BEAMS OF BOTH THE BRIDGES. REMOVE TEMPORARY SUPPORT SYSTEMS.
9. INSTALL SHEAR CONNECTORS ON REMAINING EXISTING BEAMS OF BOTH THE BRIDGES.
10. CONSTRUCT THE REMAINING PORTIONS OF THE DECK AND PARAPET OF THE LEFT AND THE RIGHT BRIDGE AND INSTALL VANDAL PROTECTION FENCE FOR BOTH THE LEFT AND RIGHT BRIDGE.
11. SEAL CONCRETE SURFACES.
12. COMPLETE DRAINAGE ITEMS AND APPROACH SLAB FOR THE SOUTH OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
13. COMPLETE SLOPE PROTECTION.
14. INSTALL THE JOINT STRIP SEAL FOR EACH BRIDGE JOINT IN ONE PIECE, AFTER THE SUPERSTRUCTURE IS COMPLETE.

NOTES

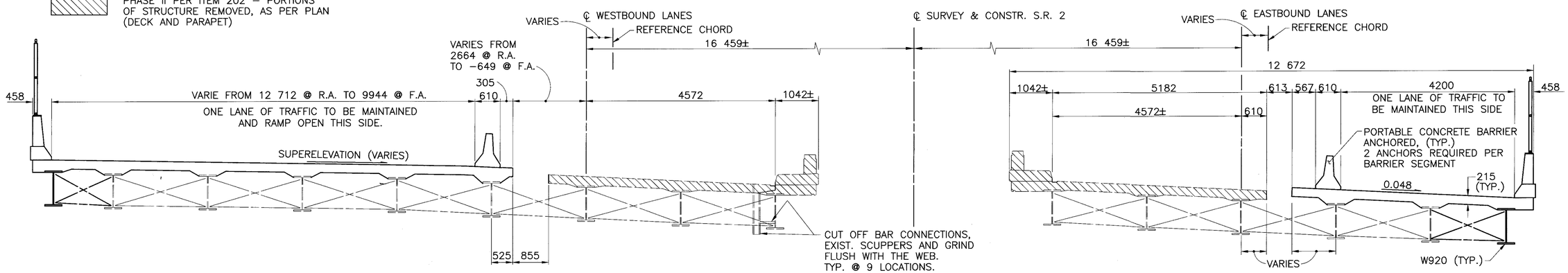
FOR NOTES SEE SHEET 5/31.

INDICATES LIMITS OF APPROACH SLAB REMOVAL IN PHASE II. INCLUDED WITH ROADWAY QUANTITIES FOR PAYMENT.

INDICATES AREAS TO BE REMOVED IN PHASE II PER ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK AND PARAPET)



PHASE II CONSTRUCTION PLAN



PHASE II TRANSVERSE SECTION

NOTE: ALL DIMENSIONS ARE MEASURED RADIALLY.

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1257 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

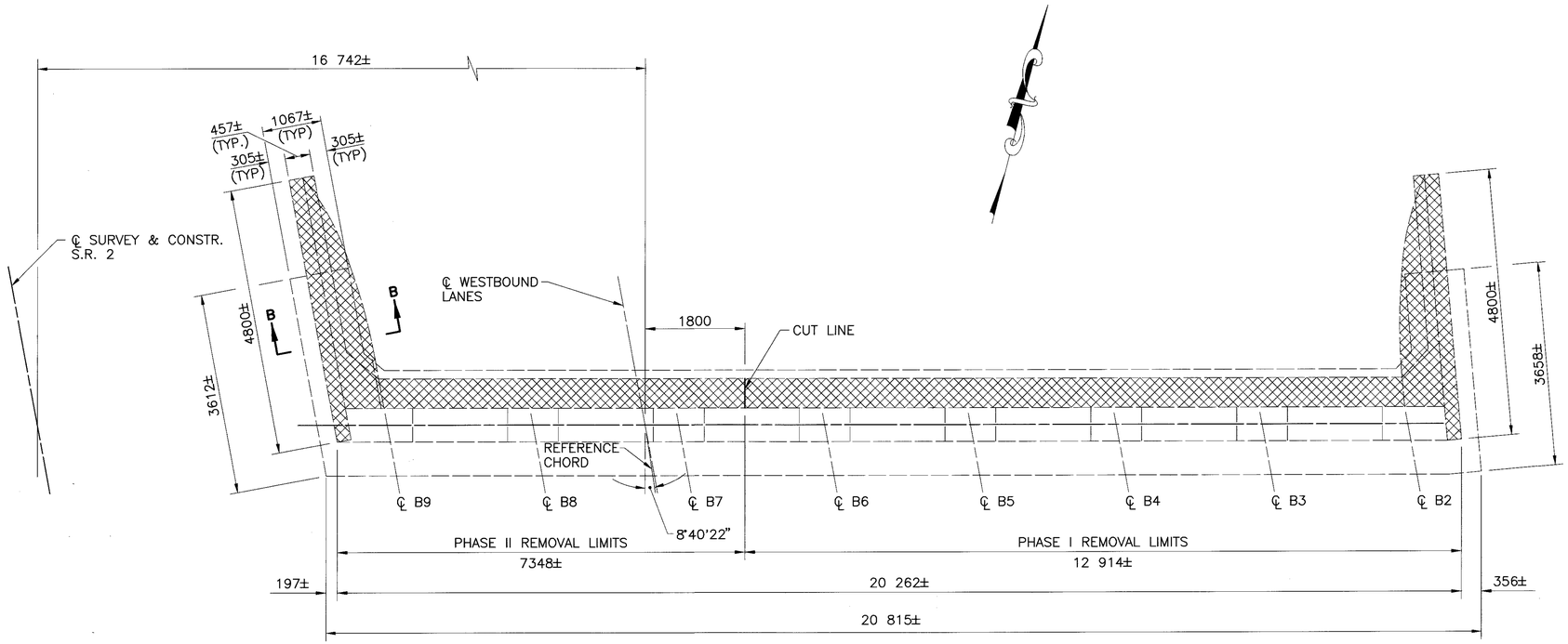
DESIGNED	DRAWN	REVIEWED	DATE
JAP/FJR	MRMK/TLJ	OHK	9/10/97
CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200244, 2200279	

PHASE CONSTRUCTION DETAILS
BRIDGE NO. ERI-2-0692O L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

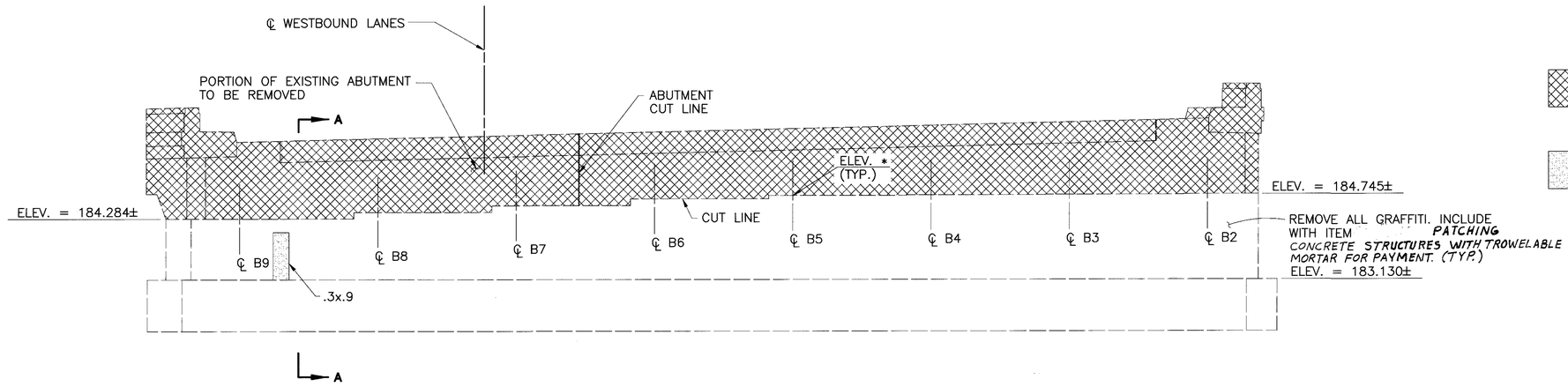
ERI-2-2.866

6/31

183/327



LEFT BRIDGE REAR ABUTMENT PLAN



LEFT BRIDGE REAR ABUTMENT ELEVATION
(PILES NOT SHOWN)

NOTES

1. FOR SECTION B–B AND WINGWALL ELEVATION, SEE SHEET 9/31.
2. FOR SECTION A–A, SEE SHEET 8/31.

SUMMARY OF PATCHING QUANTITIES		
LOCATION	MEASURED	ESTIMATED
LEFT BRIDGE R.A.	0.27 SQ. M.	0.54 SQ. M.
LEFT BRIDGE F.A.	0.15 SQ. M.	0.30 SQ. M.
TOTAL LEFT BRIDGE	0.42 SQ. M.	0.84 SQ. M.
RIGHT BRIDGE R.A.	0.36 SQ. M.	0.72 SQ. M.
RIGHT BRIDGE F.A.	0 SQ. M.	0 SQ. M.
TOTAL RIGHT BRIDGE	0.36 SQ. M.	0.72 SQ. M.

PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN OCTOBER 1997.

INDICATES AREAS TO BE REMOVED AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE.

INDICATES AREAS TO BE PATCHED AS PER ITEM PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR.

* TABLE OF EXISTING BEAM SEAT ELEVATIONS	
B2	184.745±
B3	184.738±
B4	184.730±
B5	184.722±
B6	184.659±
B7	184.533±
B8	184.408±
B9	184.284±

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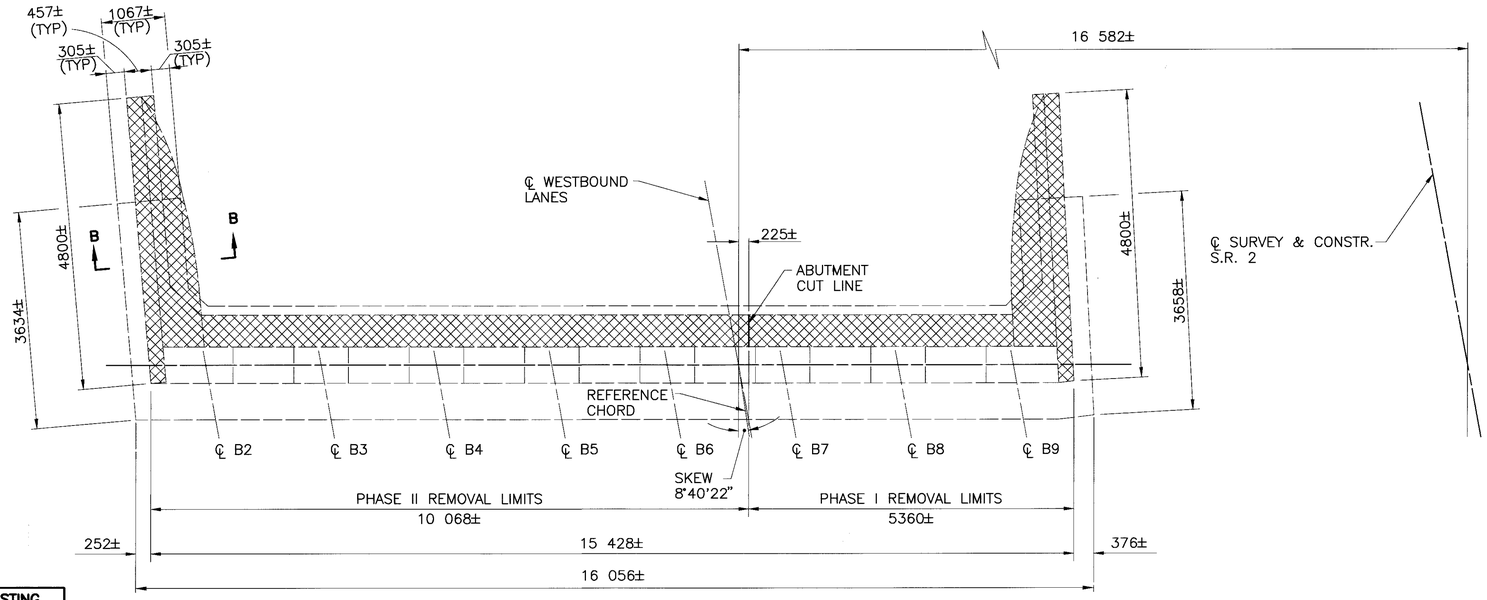
CHECKED KVB | REVISED | STRUCTURE FILE NO 2200244,2200279

EXISTING ABUTMENT REMOVAL DETAILS

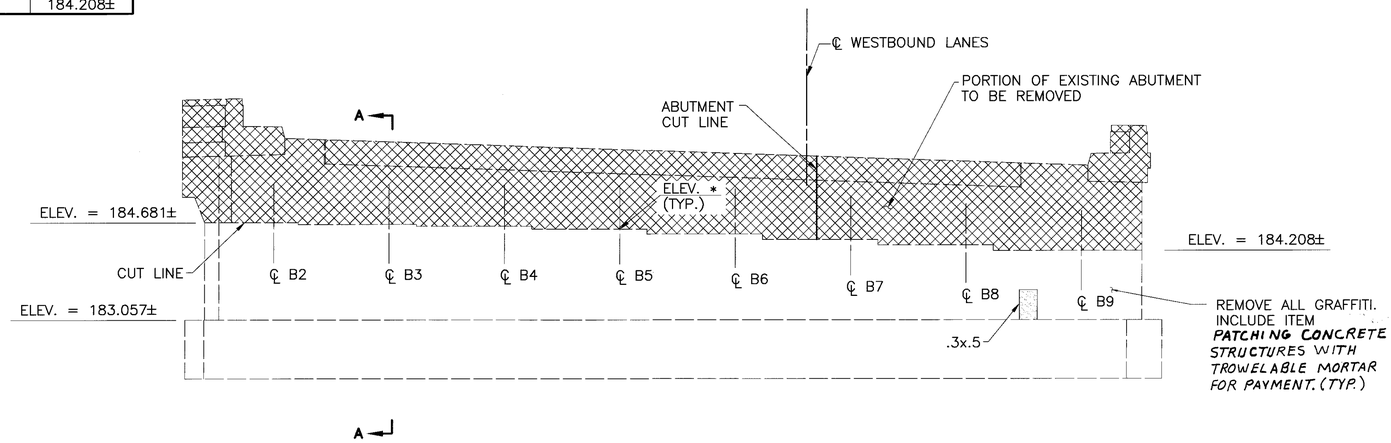
BRIDGE NO. ERI-2-0820 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

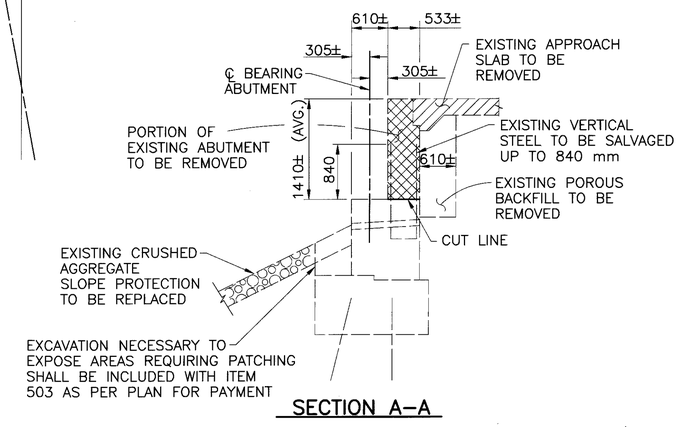


LEFT BRIDGE FORWARD ABUTMENT PLAN

* TABLE OF EXISTING BEAM SEAT ELEVATIONS	
B2	184.681±
B3	184.649±
B4	184.618±
B5	184.572±
B6	184.485±
B7	184.393±
B8	184.302±
B9	184.208±



LEFT BRIDGE FORWARD ABUTMENT ELEVATION
(PILES NOT SHOWN)



SECTION A–A

NOTES

1. FOR SECTION B–B AND WINGWALL ELEVATION, SEE SHEET 9/31.
2. FOR PATCHING QUANTITIES, SEE SHEET 7/31.

INDICATES LIMITS OF APPROACH SLAB REMOVAL. INCLUDED WITH ROADWAY QUANTITIES FOR PAYMENT.

INDICATES AREAS TO BE REMOVED AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE.

INDICATES AREAS TO BE PATCHED AS PER ITEM PATCHING CONCRETE STRUCTURES, WITH TROWELABLE MORTAR.

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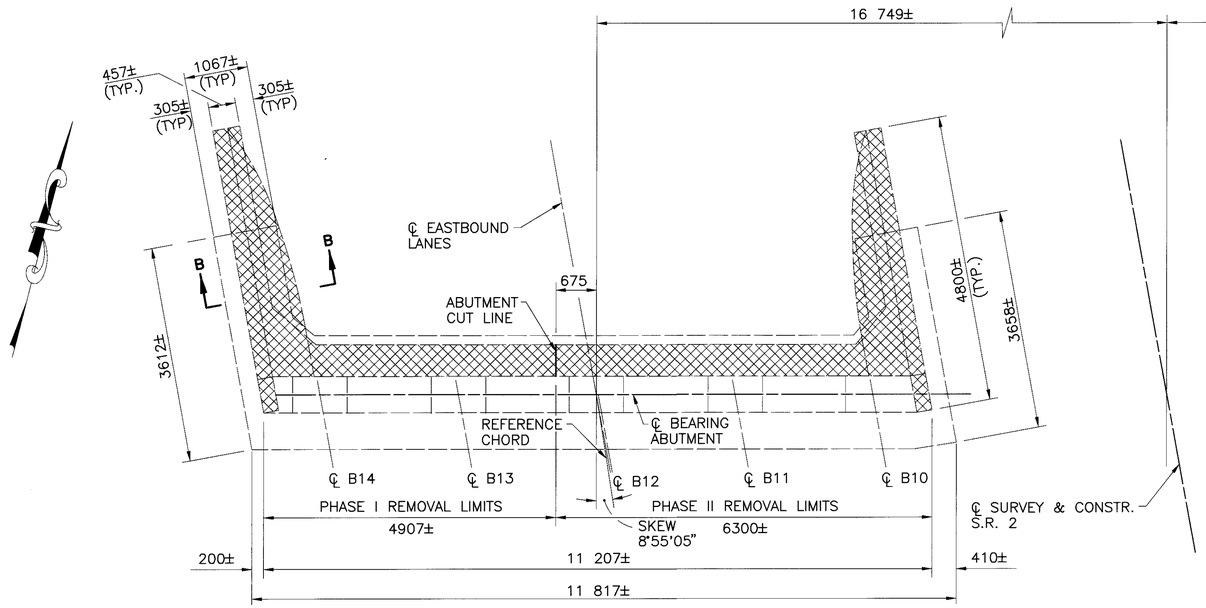
FJR	FJR/TLJ	OHK	9/10/97
CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200244.2200279	

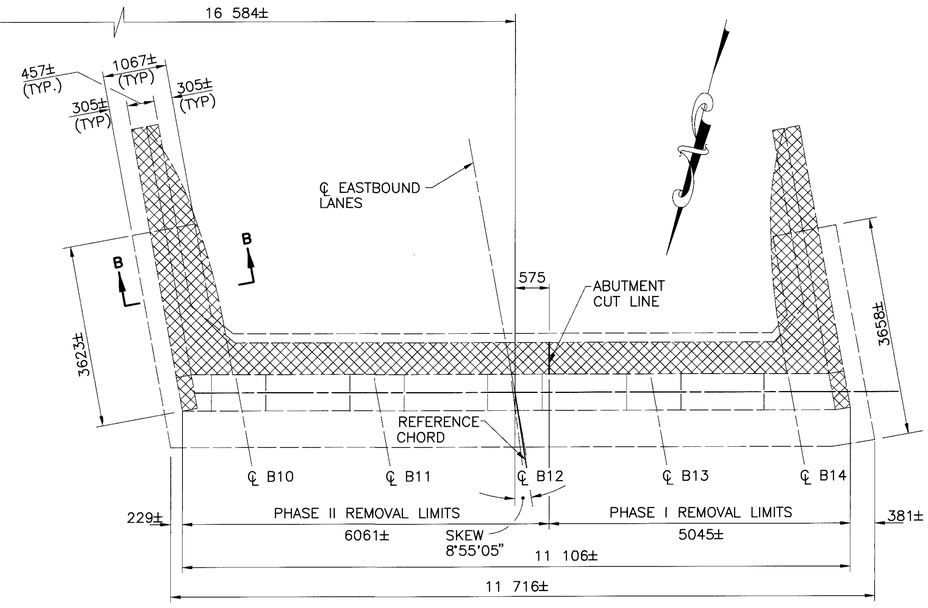
EXISTING ABUTMENT REMOVAL DETAILS

BRIDGE NO. ERI-2-06820 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

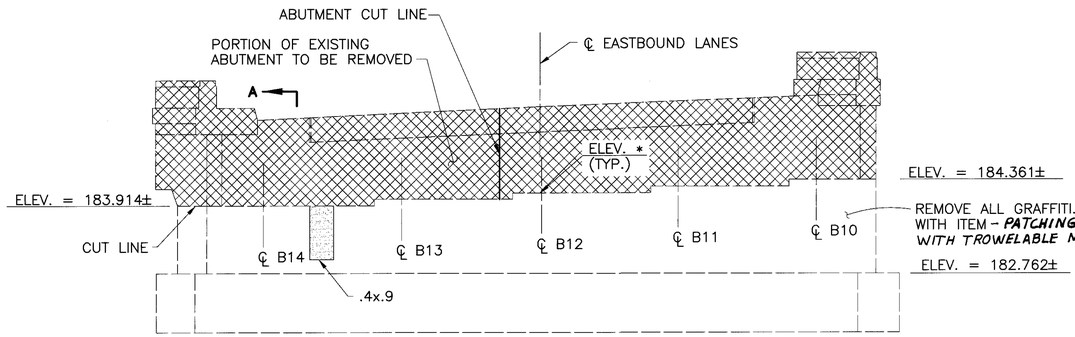
ERI-2-2.866



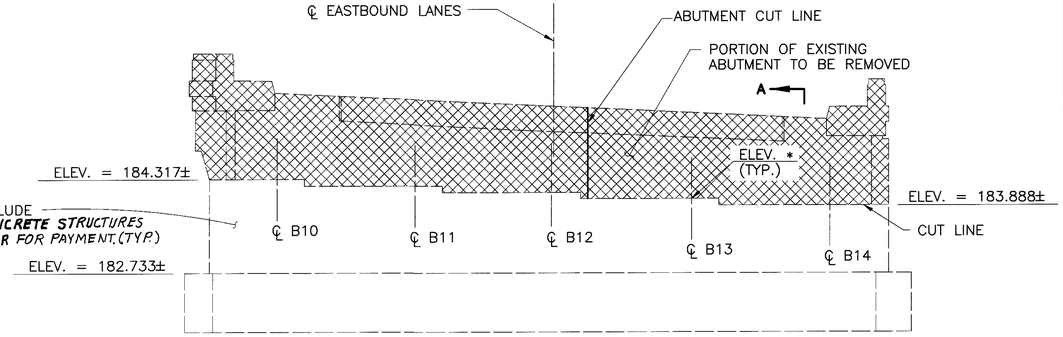
RIGHT BRIDGE REAR ABUTMENT PLAN



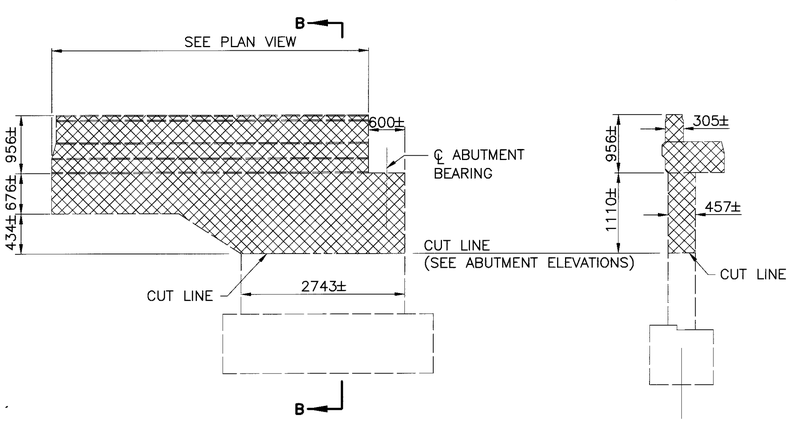
RIGHT BRIDGE FORWARD ABUTMENT PLAN



RIGHT BRIDGE REAR ABUTMENT ELEVATION
(PILES NOT SHOWN)



RIGHT BRIDGE FORWARD ABUTMENT ELEVATION
(PILES NOT SHOWN)



TYPICAL WINGWALL ELEVATION
(PILES NOT SHOWN)

SECTION B–B

NOTES:

1. FOR PATCHING QUANTITIES SEE SHEET 7/31.
2. FOR SECTION A–A SEE SHEET 8/31.

* TABLE OF EXISTING BEAM SEAT ELEVATIONS

BEAM MARK	REAR ABUT.	FORWARD ABUT.
B10	184.361±	184.317±
B11	184.233±	184.210±
B12	184.134±	184.097±
B13	184.016±	183.992±
B14	183.914±	183.888±

INDICATES AREAS TO BE REMOVED AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE.

INDICATES AREAS TO BE PATCHED AS PER ITEM PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR.

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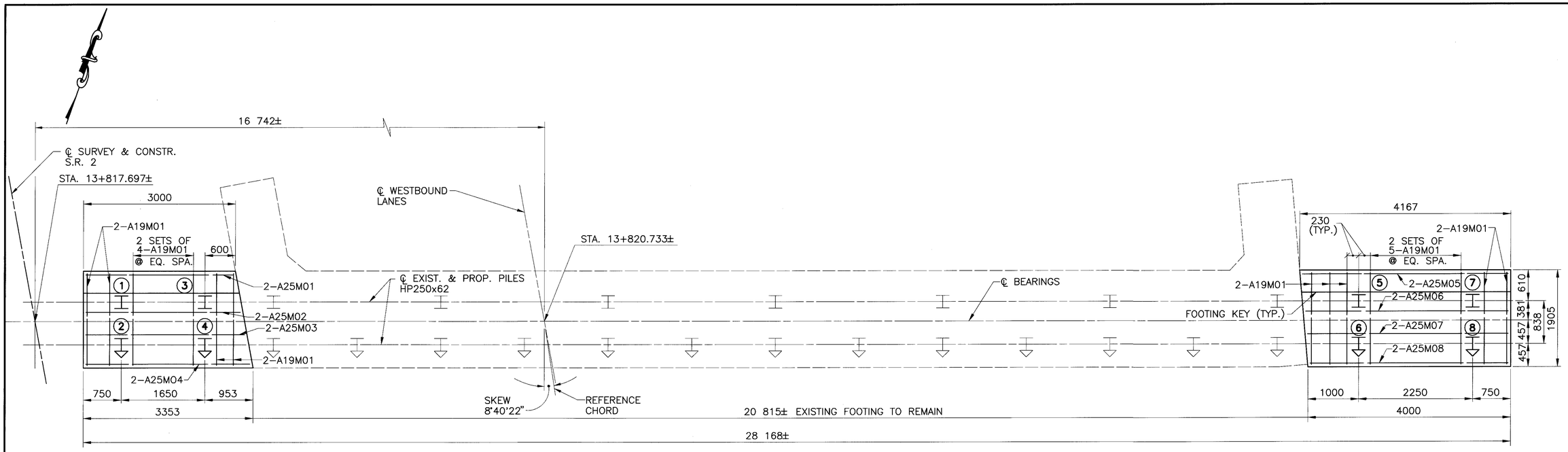
CHECKED	REVISED	STRUCTURE FILE NO.	
KVB		2200244,2200279	

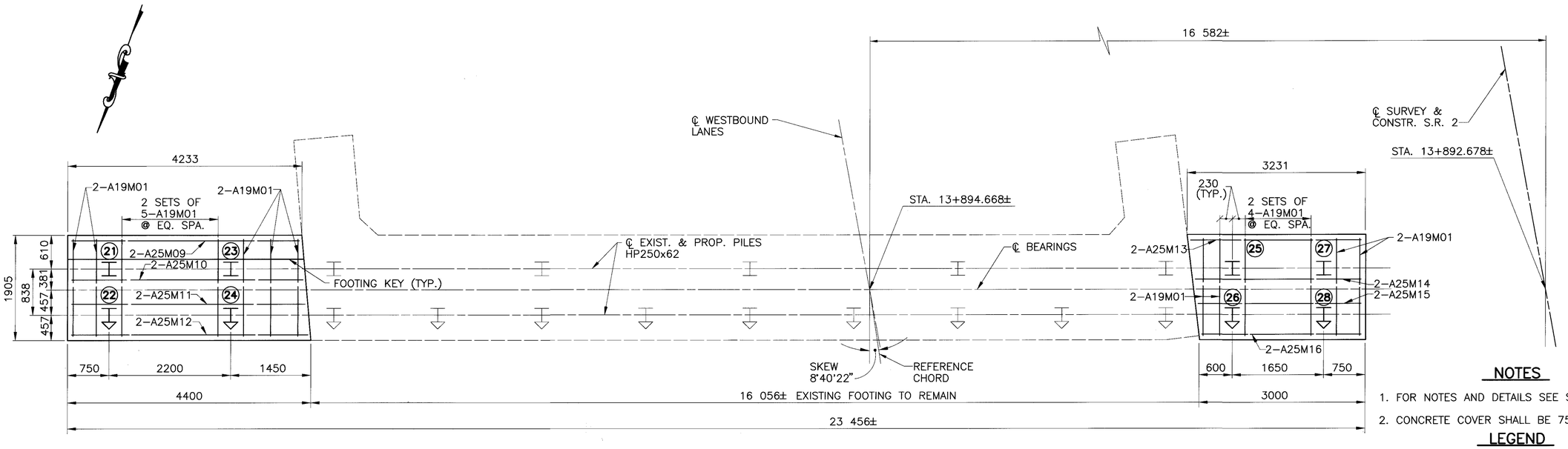
ABUTMENT REMOVAL DETAILS

BRIDGE NO. ERI-2-0892O L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866



LEFT BRIDGE REAR ABUTMENT FOOTING & PILE LAYOUT PLAN



LEFT BRIDGE FORWARD ABUTMENT FOOTING & PILE LAYOUT PLAN

NOTES

1. FOR NOTES AND DETAILS SEE SHEET 16/31.
2. CONCRETE COVER SHALL BE 75 mm CLR. TYP. U.N.O.

LEGEND

- EXISTING 10BP42 PILES VERTICAL
- EXISTING 10BP42 PILES BATTERED 1:4
- PROPOSED HP250X62 VERTICAL
- PROPOSED HP250X62 PILES BATTERED 1:4
- INDICATES PILE NUMBER

R.D. Zande & Associates, Inc.
1559 Dublin Road
Columbus, Ohio 43215
Phone: (614) 488-4383

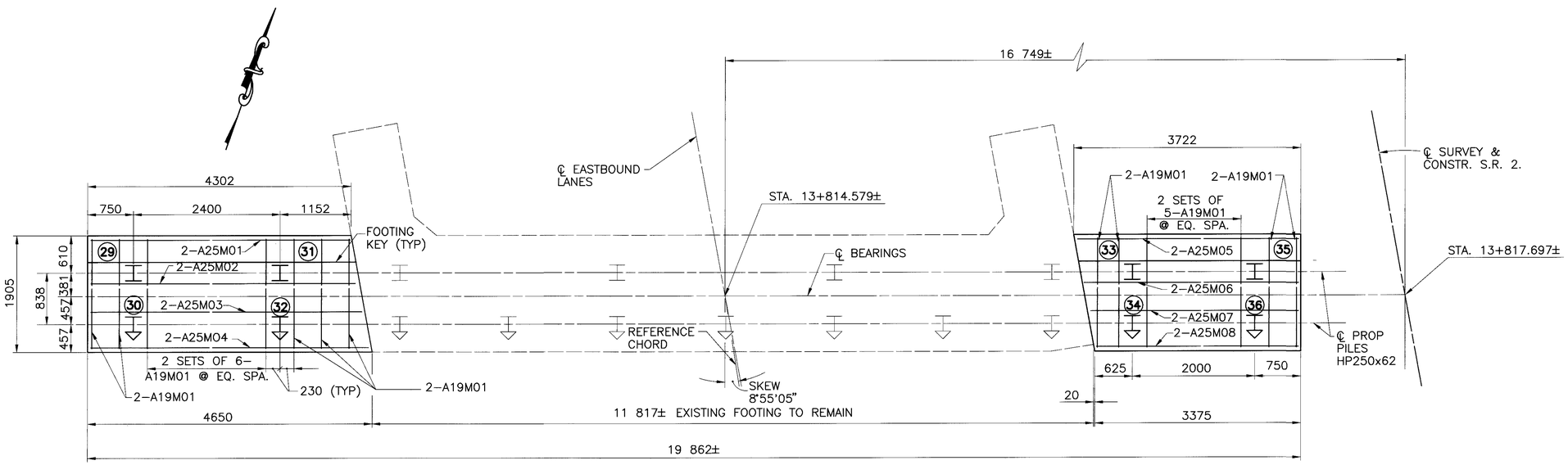
DESIGNED	DRAWN	REVIEWED	DATE
FJR	FJR/TLJ	OHK	9/10/97
CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200244, 2200279	

ABUTMENT FOOTING LAYOUT PLAN
BRIDGE NO. ER-2-0892O L&R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

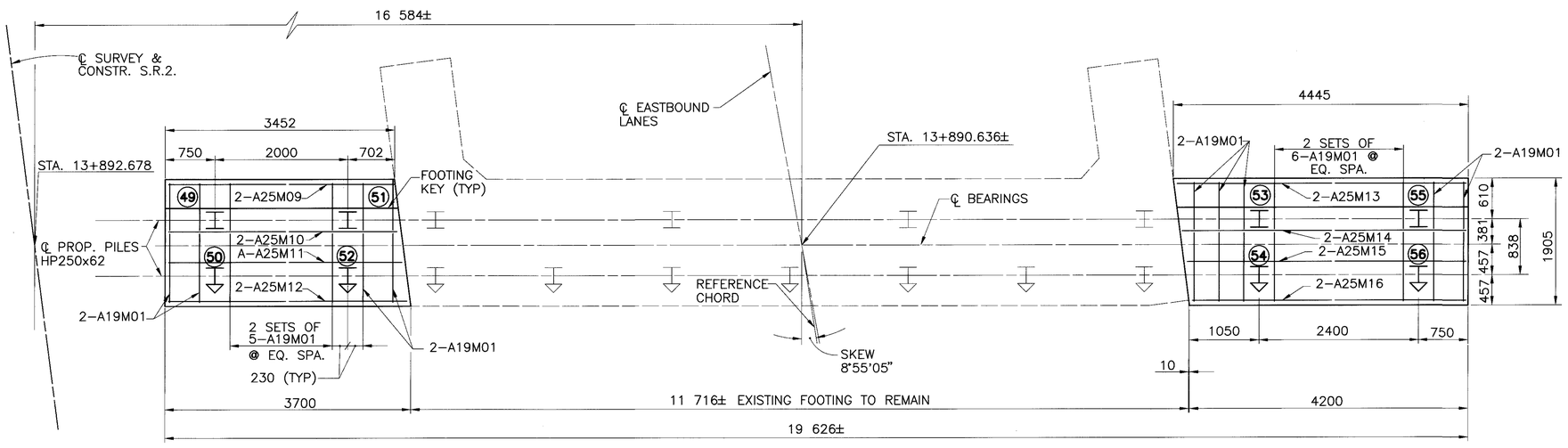
ERI-2-2.866

10/31

187/327



RIGHT BRIDGE REAR ABUTMENT FOOTING & PILE LAYOUT PLAN



RIGHT BRIDGE FORWARD ABUTMENT FOOTING & PILE LAYOUT PLAN

NOTES

1. FOR NOTES AND DETAILS SEE SHEET 16/31.
2. CONCRETE COVER SHALL BE 75 mm CLR. TYP. U.N.O.

LEGEND

- EXISTING 10BP42 PILES VERTICAL
- EXISTING 10BP42 PILES BATTERED 1:4
- PROPOSED HP250X62 PILES VERTICAL
- PROPOSED HP250X62 PILES BATTERED 1:4
- INDICATES PILE NUMBER

R.D. Zande & Associates, Inc.
1267 Dublin Road
Columbus, Ohio 43216
Phone: (614) 488-4383

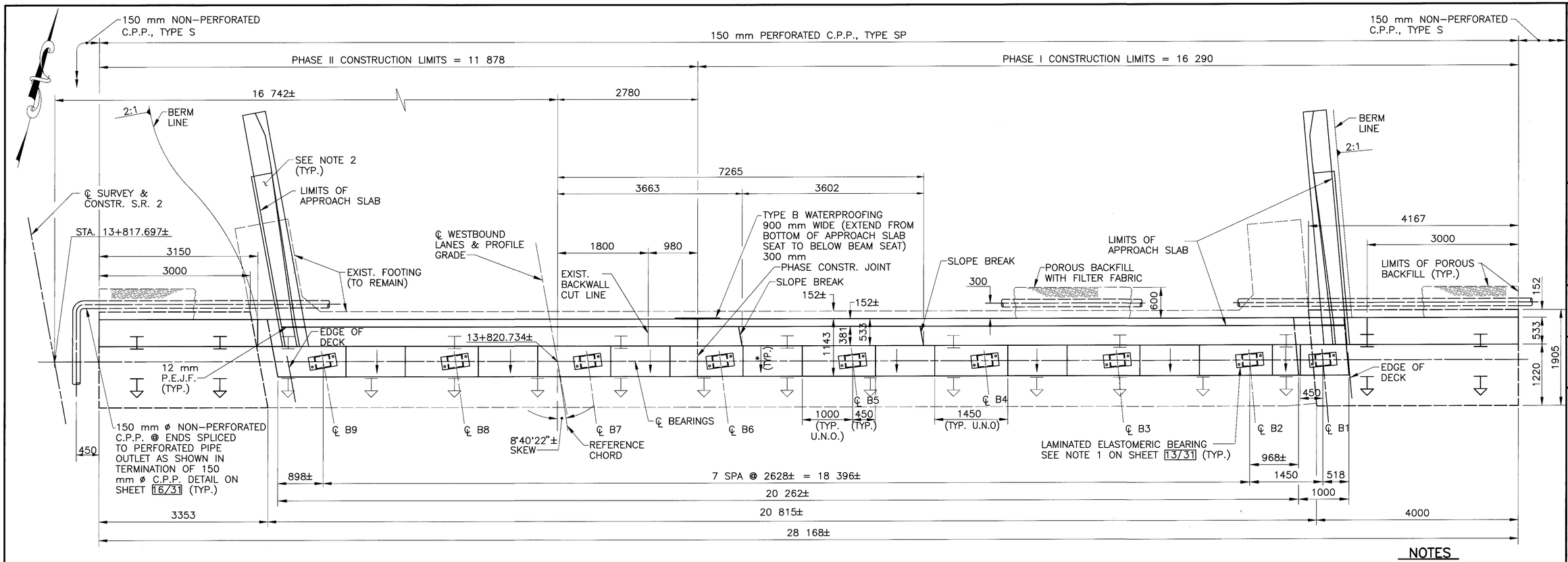
DESIGNED	DRAWN	REVIEWED	DATE
FJR	FJR/TLJ	OHK	9/10/97
CHECKED	REVISED	STRUCTURE FILE NO.	
KVB		2200244, 2200279	

ABUTMENT FOOTING LAYOUT PLAN
BRIDGE NO. ERI-2-0892.20 L&R (0430)
SR 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

11/31

188/327



LEFT BRIDGE – REAR ABUTMENT PLAN

NOTE: SEE SHEET 10/31 FOR PROPOSED PILE LAYOUT AND NUMBERS

** TABLE OF PROPOSED BEAM SEAT ELEVATIONS	
BEAM MK.	SEAT ELEVATION
B1	184.944
B2	184.862
B3	184.855
B4	184.847
B5	184.839
B6	184.776
B7	184.650
B8	184.525
B9	184.401

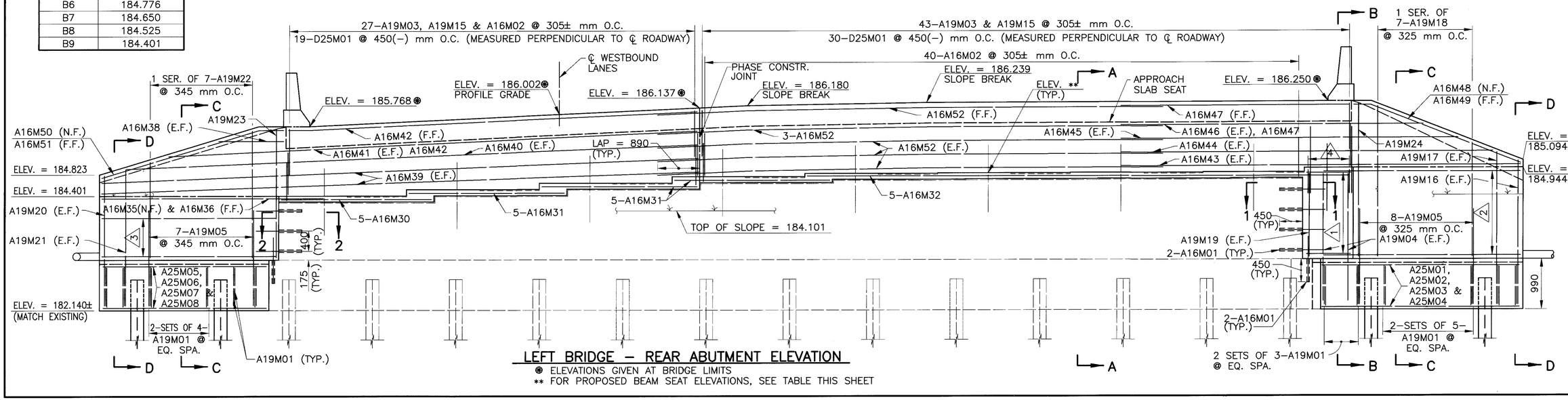
ABUTMENT REINFORCEMENT TABLE	
△1	5–A16M37 @ EQ. SPA. (E.F.)
△2	5–A16M28 (N.F.) & 5–A16M29 (F.F.) @ EQ. SPA.
△3	3–A16M33 (N.F.) & 3–A16M34 (F.F.) @ EQ. SPA.
△4	4–A16M03 & 4–A19M02 @ 300 mm O.C.

NOTES

FOR NOTES, SEE SHEET 13/31. FOR ADDITIONAL NOTES, SECTIONS A–A, B–B, C–C AND D–D, AND VIEWS 1–1 AND 2–2, SEE SHEET 16/31.

* SLOPE 20 mm BETWEEN BRIDGE SEATS

△ RADIAL DIMENSION @ FACE OF BACKWALL



LEFT BRIDGE – REAR ABUTMENT ELEVATION

⊛ ELEVATIONS GIVEN AT BRIDGE LIMITS

** FOR PROPOSED BEAM SEAT ELEVATIONS, SEE TABLE THIS SHEET

R.D. Zande & Associates, Inc.
7251 Dublin Road
Dublin, Ohio 43016
Phone: (614) 889–5383

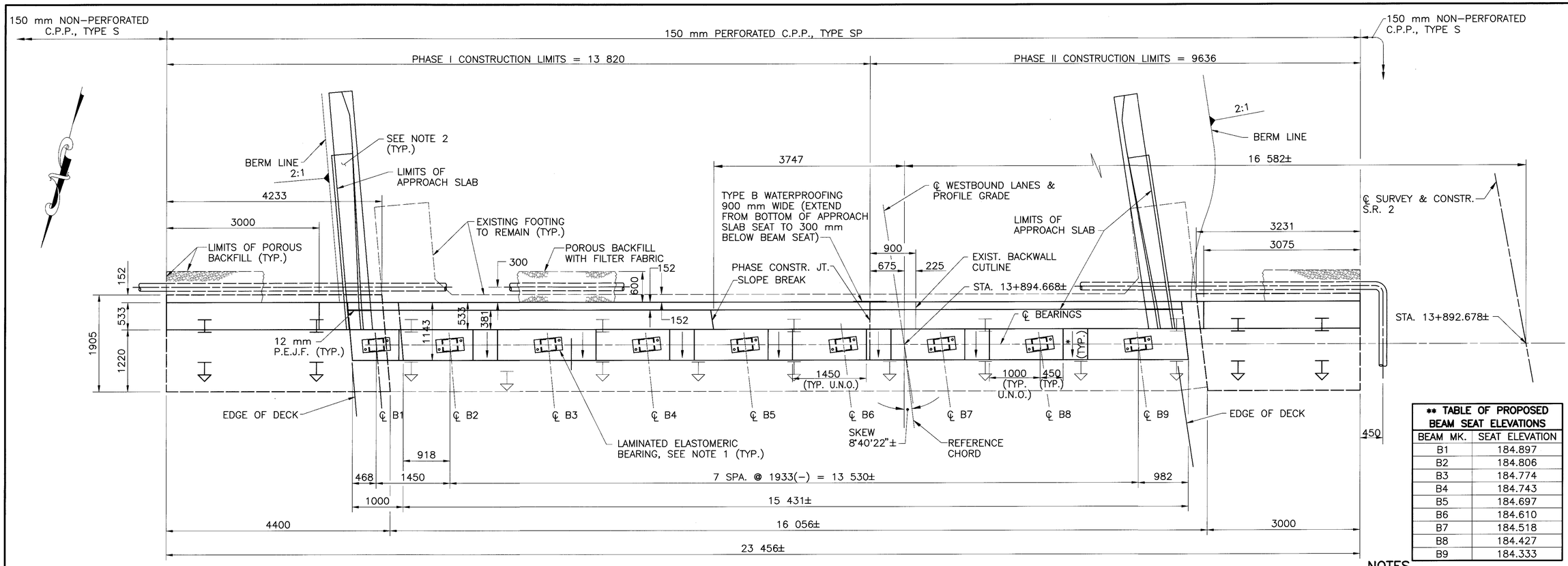
DESIGNED	DRAWN	REVIEWED	DATE
FJR	FJR/TLJ	OHK	9/10/97
CHECKED	REVISED	STRUCTURE FILE NO.	
KVB		2200244, 2200279	

ABUTMENT PLAN & ELEVATION
BRIDGE NO. ERI-2-0820 L & R (0490)
SR. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

12/31

189/327

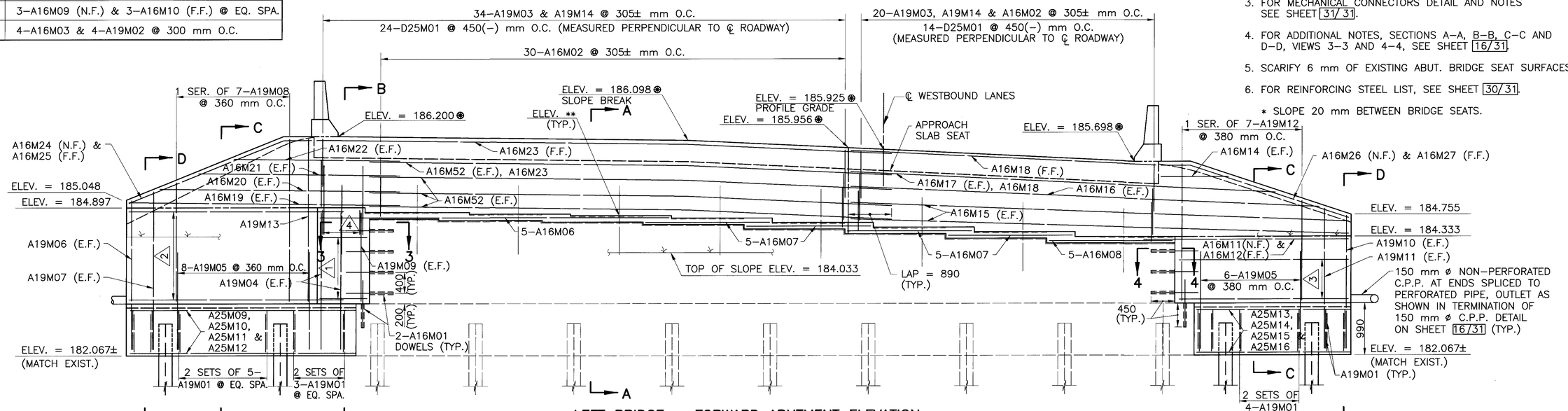


** TABLE OF PROPOSED BEAM SEAT ELEVATIONS	
BEAM MK.	SEAT ELEVATION
B1	184.897
B2	184.806
B3	184.774
B4	184.743
B5	184.697
B6	184.610
B7	184.518
B8	184.427
B9	184.333

LEFT BRIDGE – FORWARD ABUTMENT PLAN

NOTE: SEE SHEET 10/31 FOR PROPOSED PILE LAYOUT AND NUMBERS

ABUTMENT REINFORCEMENT TABLE	
1	4–A16M13 @ EQ. SPA. (E.F.)
2	5–A16M04 (N.F.) & 5–A16M05 (F.F) @ EQ. SPA.
3	3–A16M09 (N.F.) & 3–A16M10 (F.F.) @ EQ. SPA.
4	4–A16M03 & 4–A19M02 @ 300 mm O.C.



LEFT BRIDGE – FORWARD ABUTMENT ELEVATION

⊛ ELEVATIONS GIVEN AT BRIDGE LIMITS
** FOR PROPOSED BEAM SEAT ELEVATIONS, SEE TABLE THIS SHEET

NOTES

1. EXISTING ABUTMENT ROCKER BEARINGS SHALL BE REMOVED AND REPLACED WITH LAMINATED ELASTOMERIC BEARINGS. SEE SHEET 28/31 FOR BEARING DETAILS.
2. FOR PARAPET TRANSITION DETAIL, SEE SHEET 27/31.
3. FOR MECHANICAL CONNECTORS DETAIL AND NOTES SEE SHEET 31/31.
4. FOR ADDITIONAL NOTES, SECTIONS A–A, B–B, C–C AND D–D, VIEWS 3–3 AND 4–4, SEE SHEET 16/31.
5. SCARIFY 6 mm OF EXISTING ABUT. BRIDGE SEAT SURFACES.
6. FOR REINFORCING STEEL LIST, SEE SHEET 30/31.

* SLOPE 20 mm BETWEEN BRIDGE SEATS.

R.D. Zande & Associates, Inc.
1229 Dublin Road
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Phone: (614) 488–4383

DESIGNED FJR | DRAWN FJR/TLJ | CHECKED KVB | REVIEWED OHK | DATE 9/10/97 | REVISED | STRUCTURE FILE NO 2200244, 2200279

ABUTMENT PLAN & ELEVATION

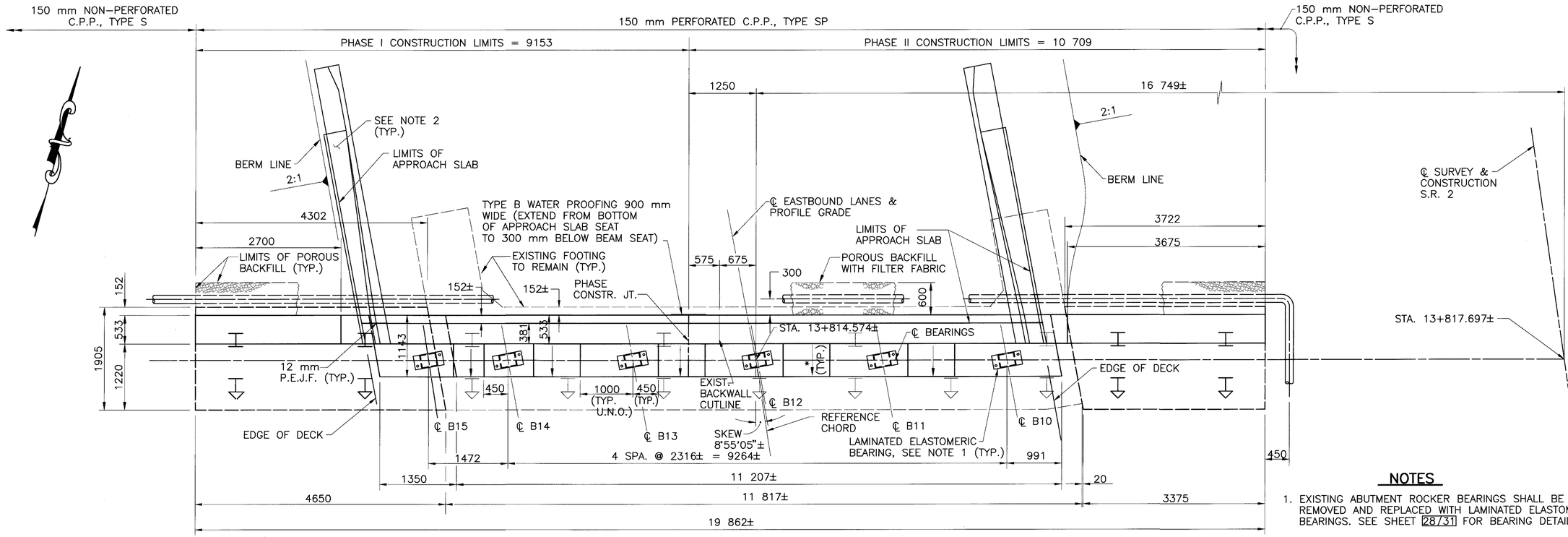
BRIDGE NO. ERI-2-06920 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

13/31

190/327

admin P:\3907\DWG\BRIDGE\LE-2-0694\PLAN\3907CAD2.DWG SEP 11, 1997 TIME: 4:00 PM



NOTES

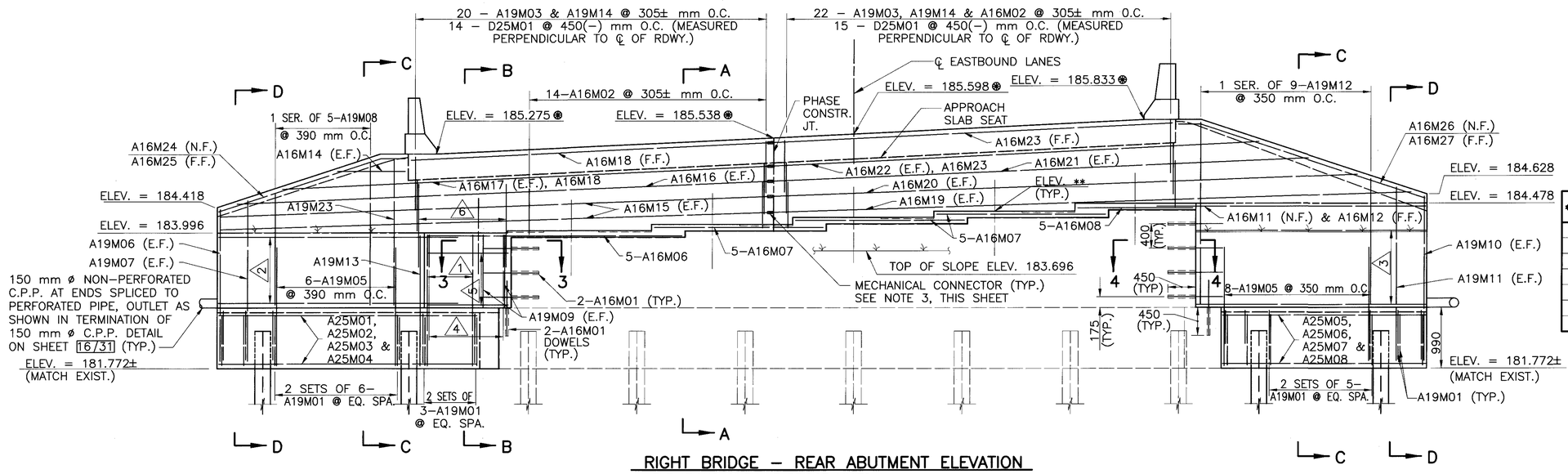
1. EXISTING ABUTMENT ROCKER BEARINGS SHALL BE REMOVED AND REPLACED WITH LAMINATED ELASTOMERIC BEARINGS. SEE SHEET 28/31 FOR BEARING DETAILS.
2. FOR PARAPET TRANSITION DETAIL, SEE SHEET 27/31.
3. FOR MECHANICAL CONNECTORS DETAIL AND NOTES SEE SHEET 31/31.
4. FOR ADDITIONAL NOTES, SECTIONS A–A, B–B, C–C AND D–D, AND VIEWS 3–3 AND 4–4 SEE SHEET 16/31.
5. SCARIFY 6 mm OF EXISTING ABUT. BRIDGE SEAT SURFACES.
6. FOR REINFORCING STEEL LIST, SEE SHEET 31/31.

* SLOPE 20 mm BETWEEN BRIDGE SEATS.

ABUTMENT REINFORCEMENT TABLE	
1	3–A19M04 @ 370 mm O.C. (E.F.)
2	4–A16M04 (N.F.) & 4–A16M05 (F.F) @ EQ. SPA.
3	4–A16M09 (N.F.) & 4–A16M10 (F.F.) @ EQ. SPA.
4	5–A16M03 @ EQ. SPA.
5	3–A16M13 @ EQ. SPA. (E.F.)
6	5–A16M02 @ EQ. SPA.

RIGHT BRIDGE – REAR ABUTMENT PLAN

NOTE: SEE SHEET 11/31 FOR PROPOSED PILE LAYOUT AND NUMBERS



** TABLE OF PROP. BEAM SEAT ELEVATIONS	
BEAM MK.	SEAT ELEVATION
B10	184.478
B11	184.350
B12	184.251
B13	184.133
B14	184.031
B15	183.996

RIGHT BRIDGE – REAR ABUTMENT ELEVATION

⊛ ELEVATIONS GIVEN AT BRIDGE LIMITS
** FOR PROPOSED BEAM SEAT ELEVATIONS, SEE TABLE THIS SHEET

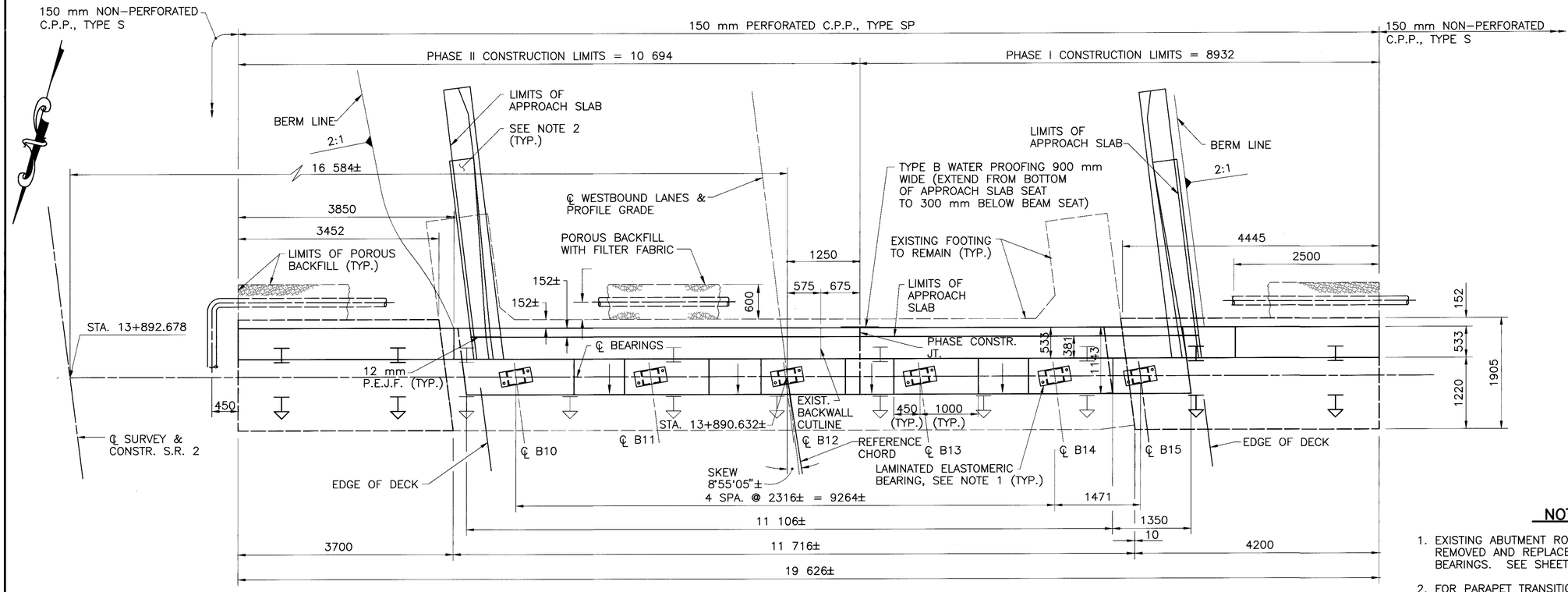
R.D. Zande & Associates, Inc.
1237 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED FJR | DRAWN FJR/TLJ | REVIEWED OHK | DATE 9/10/97
CHECKED KVB | REVISED | STRUCTURE FILE NO 2200244, 2200279

ABUTMENT PLAN & ELEVATION

BRIDGE NO. ERI-2-09920 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866



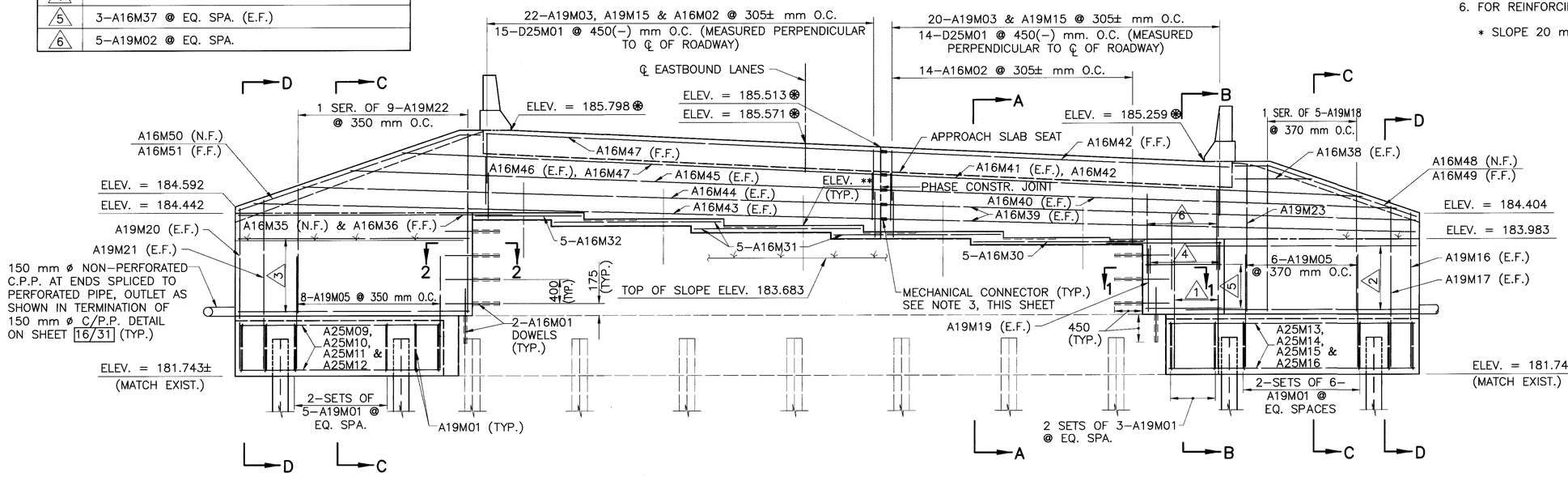
RIGHT BRIDGE – FORWARD ABUTMENT PLAN

ABUTMENT REINFORCEMENT TABLE	
1	3–A19M04 @ 370 mm O.C. (E.F.)
2	4–A16M28 (N.F.) & 4–A16M29 (F.F.) @ EQ. SPA.
3	4–A16M33 (N.F.) & 4–A16M34 (F.F.) @ EQ. SPA.
4	5–A16M03 @ EQ. SPA.
5	3–A16M37 @ EQ. SPA. (E.F.)
6	5–A19M02 @ EQ. SPA.

NOTES

1. EXISTING ABUTMENT ROCKER BEARINGS SHALL BE REMOVED AND REPLACED WITH LAMINATED ELASTOMERIC BEARINGS. SEE SHEET 28/31 FOR BEARING DETAILS.
2. FOR PARAPET TRANSITION DETAIL, SEE SHEET 27/31.
3. FOR MECHANICAL CONNECTORS DETAIL AND NOTES SEE SHEET 31/31.
4. FOR ADDITIONAL NOTES, SECTIONS A–A, B–B, C–C AND D–D, AND VIEWS 1–1 AND 2–2 SEE SHEET 16/31.
5. SCARIFY 6 mm OF EXISTING ABUT. BRIDGE SEAT SURFACES.
6. FOR REINFORCING STEEL LIST, SEE SHEET 31/31.

* SLOPE 20 mm BETWEEN BRIDGE SEATS.



RIGHT BRIDGE – FORWARD ABUTMENT ELEVATION

⊛ ELEVATIONS GIVEN AT BRIDGE LIMITS
** FOR PROPOSED BEAM SEAT ELEVATIONS, SEE TABLE THIS SHEET

** TABLE OF PROP. BEAM SEAT ELEVATIONS	
BEAM MK.	SEAT ELEVATION
B10	184.442
B11	184.335
B12	184.222
B13	184.117
B14	184.013
B15	183.983

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DESIGNED FJR | DRAWN FJR/TLJ | CHECKED KVB | REVIEWED OHK 9/10/97 | REVISED | STRUCTURE FILE NO. 2200244, 2200279

ABUTMENT PLAN & ELEVATIONS
BRIDGE NO. ERI-2-06820 LA R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

15/31

192/327

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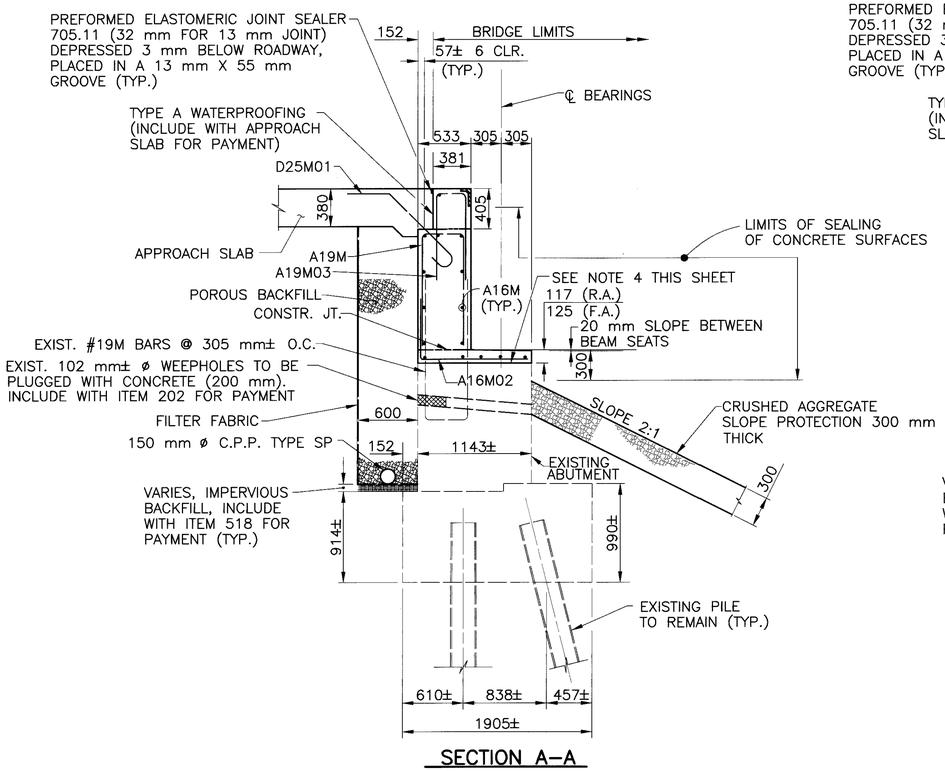
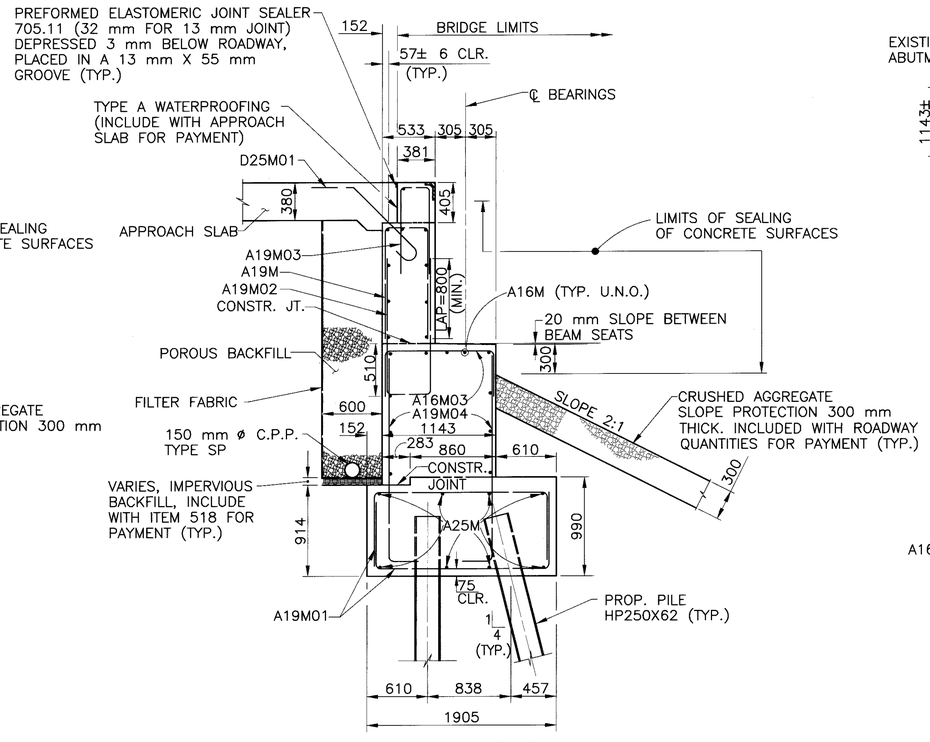
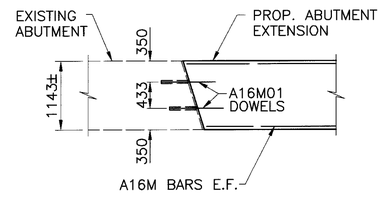


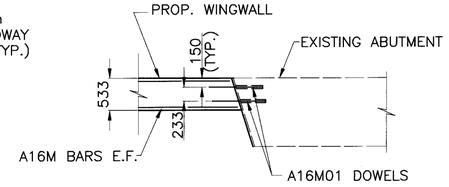
SECTION A–A



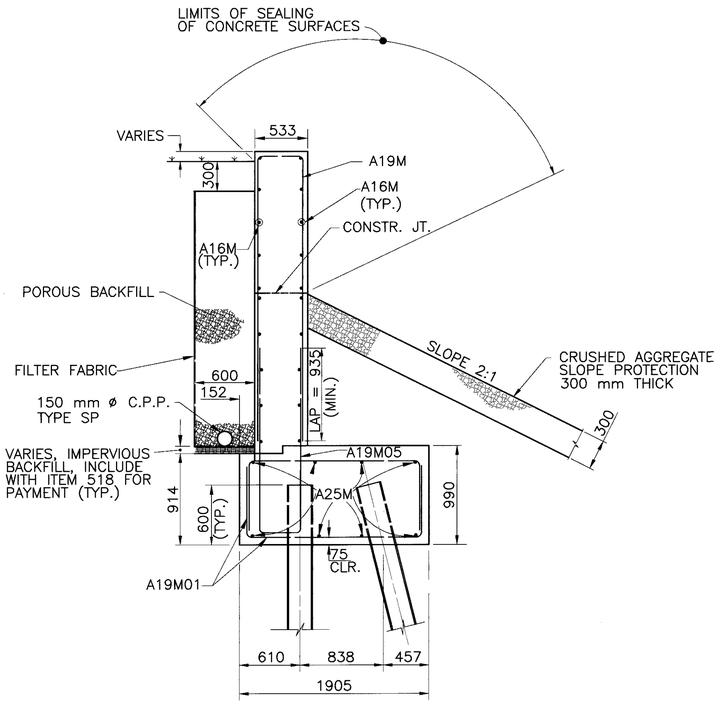
SECTION B–B



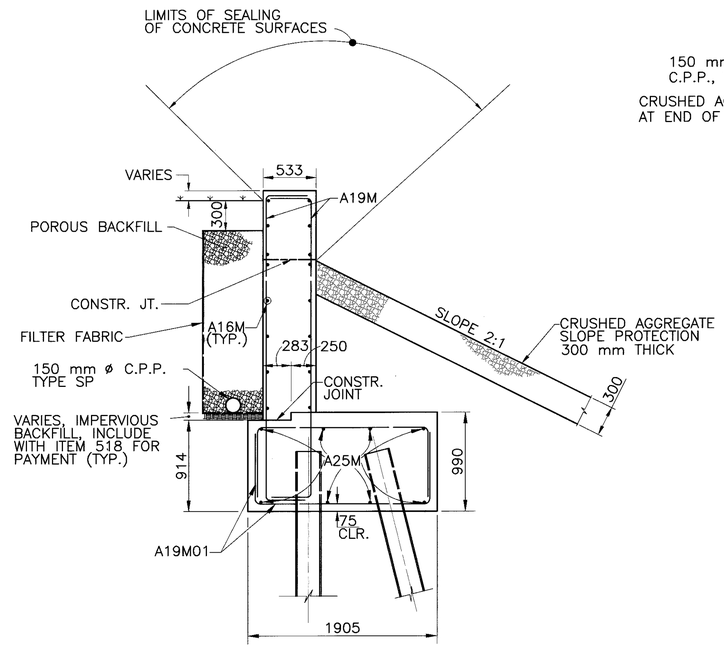
VIEW 1–1 (AS SHOWN)
VIEW 3–3 (OPPOSITE)



VIEW 2–2 (AS SHOWN)
VIEW 4–4 (OPPOSITE)

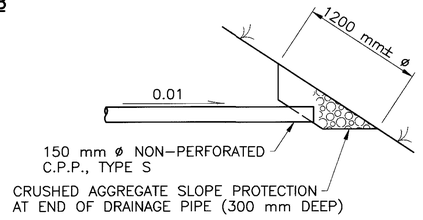


SECTION C–C

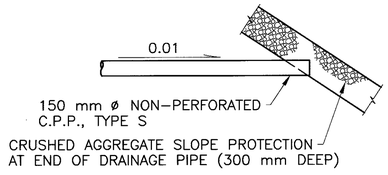


SECTION D–D

NOTE: FOR ADDITIONAL INFORMATION SEE SECTION C–C



@ EARTH SLOPE



@ CRUSHED AGGREGATE SLOPE PROTECTION

TERMINATION OF 150 mm C.P.P. DETAIL

NOTES

1. POROUS BACKFILL WITH FILTER FABRIC, 600 mm THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 300 mm BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS. GEOTEXTILE FABRIC SHALL CONFORM WITH 712.09, TYPE A. GEOTEXTILE SHALL BE INCLUDED WITH ITEM 518 POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN, FOR PAYMENT. POROUS BACKFILL MATERIAL SHALL BE #57 GRAVEL.
2. BACKWALL CONCRETE: IN ADDITIOIN TO THE PROVISIONS OF 511.08, BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.
3. CONCRETE COVER SHALL BE 50 mm CLEAR TYP. U.N.O.
4. SCARIFY 6 mm OF EXISTING ABUTMENT CONCRETE BRIDGE SEAT SURFACES.
5. BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE PROPOSED BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE–SETTING OF BEARING ANCHORS. SEE SHEET 28 OF 31 FOR EXPANSION ANCHOR ROD LOCATIONS.

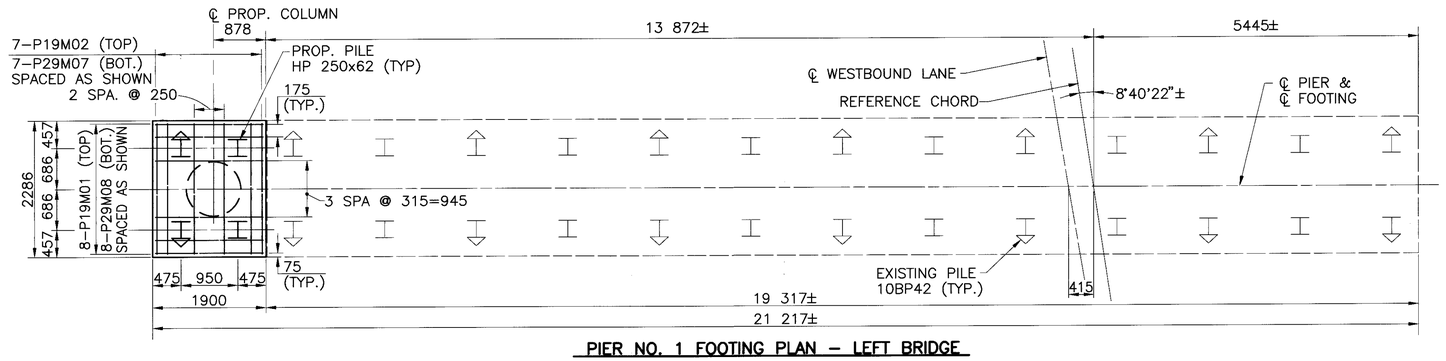
R.D. Zanda & Associates, Inc.
1209 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED FJR | DRAWN FJR/TLJ | CHECKED KVB | REVIEWED OHK | DATE 9/10/97
REVISED | STRUCTURE FILE NO 2200244, 2200279

ABUTMENT DETAILS
BRIDGE NO. ERI-2-06920 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

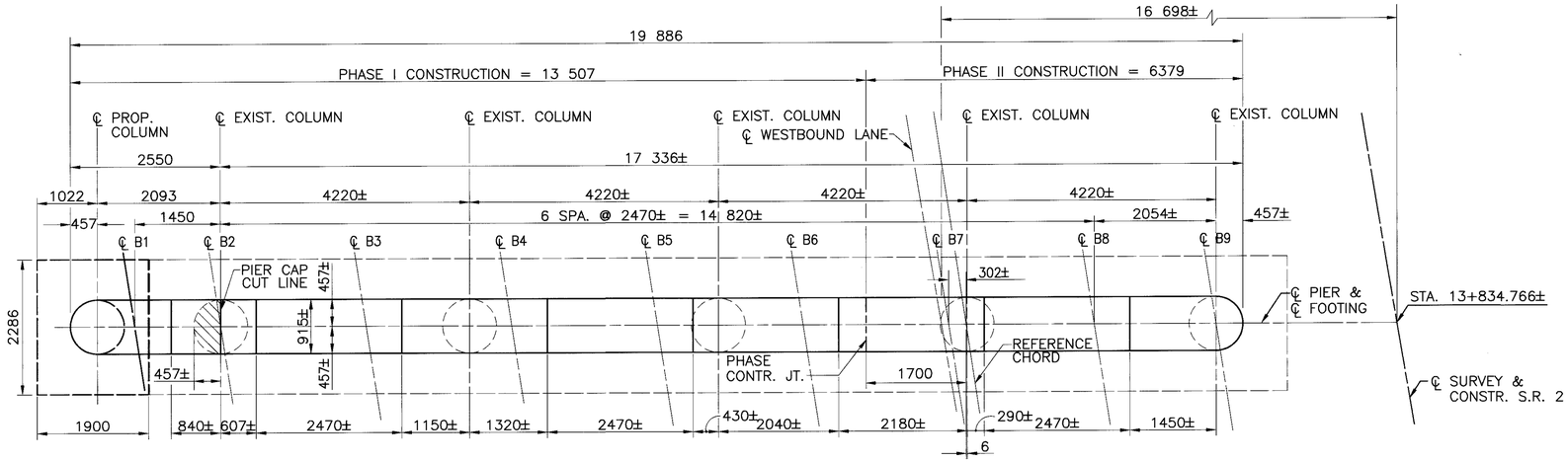
16/31
193/327



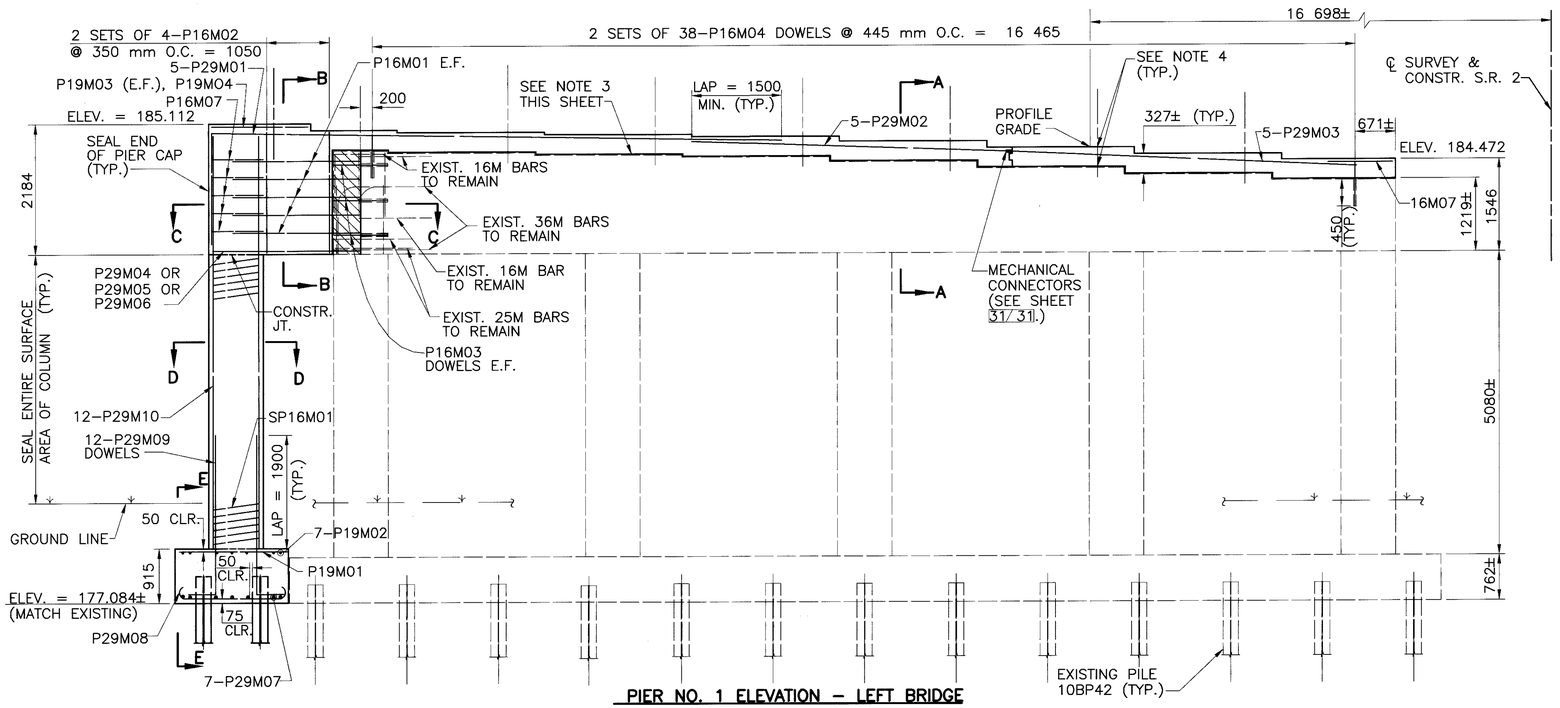
PIER NO. 1 FOOTING PLAN – LEFT BRIDGE

LEFT BRIDGE SEAT ELEVATIONS

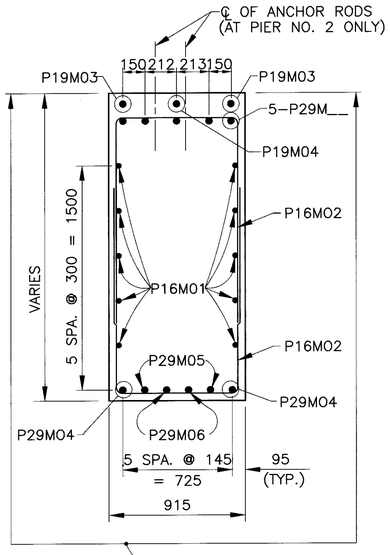
PIER NO.	BEAM MK. / DESC.	B1	B2	B3	B4	B5	B6	B7	B8	B9
1	EXISTING SEAT ELEV.	N/A	184.670±	184.628±	184.586±	184.552±	184.472±	184.341±	184.235±	184.145±
	PROPOSED SEAT ELEV.	185.112	184.997	184.955	184.913	184.879	184.799	184.668	184.562	184.472
2	EXISTING SEAT ELEV.	N/A	184.669±	184.627±	184.595±	184.560±	184.454±	184.360±	184.253±	184.182±
	PROPOSED SEAT ELEV.	185.087	184.964	184.922	184.890	184.855	184.749	184.655	184.548	184.477
3	EXISTING SEAT ELEV.	N/A	184.642±	184.629±	184.599±	184.547±	184.450±	184.360±	184.270±	184.186±
	PROPOSED SEAT ELEV.	185.018	184.903	184.890	184.860	184.808	184.711	184.621	184.531	184.447



PIER NO. 1 PLAN – LEFT BRIDGE



PIER NO. 1 ELEVATION – LEFT BRIDGE



SECTION B–B

NOTES

1. FOR SECTIONS A–A & C–C SEE SHEET 18/31.
2. REMOVE ALL GRAFFITI FROM ALL EXISTING PIER CAP AND PIER COLUMN SURFACES. PAYMENT FOR THIS SHALL BE INCLUDED WITH ITEM PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR.
3. SCARIFY 6 mm OF EXISTING PIER CAP TOP SURFACES.
4. FOR EXISTING AND PROPOSED BRIDGE SEAT ELEVATIONS SEE TABLE THIS SHEET.
5. FOR PILE NUMBERS SEE SHEET 18/31.
6. FOR SECTIONS D–D & E–E SEE SHEET 19/31.

LEGEND

- EXISTING 10BP42 PILES VERTICAL
- EXISTING 10BP42 PILES BATTERED 1:4
- PROPOSED HP250X62 PILES VERTICAL
- PROPOSED HP250X62 PILES BATTERED 1:4
- INDICATES AREAS TO BE REMOVED AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE.

R.D. Zanda & Associates, Inc.
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Columbus, Ohio 43215
Phone: (614) 486-4383

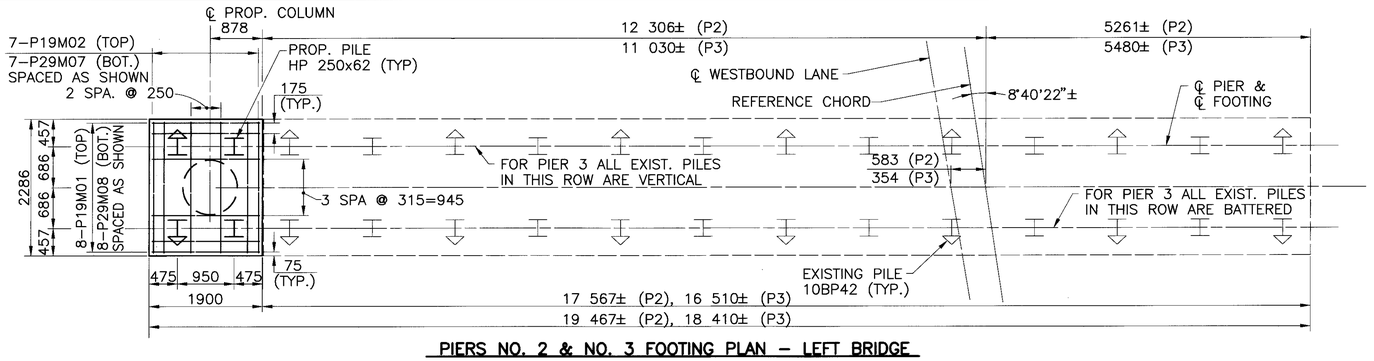
DESIGNED FJR | DRAWN FJR/TLJ | REVIEWED OHK | DATE 9/10/97
CHECKED KVB | REVISED | STRUCTURE FILE NO 2200244,2200279

PIER DETAILS
BRIDGE NO. ERI-2-06920 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

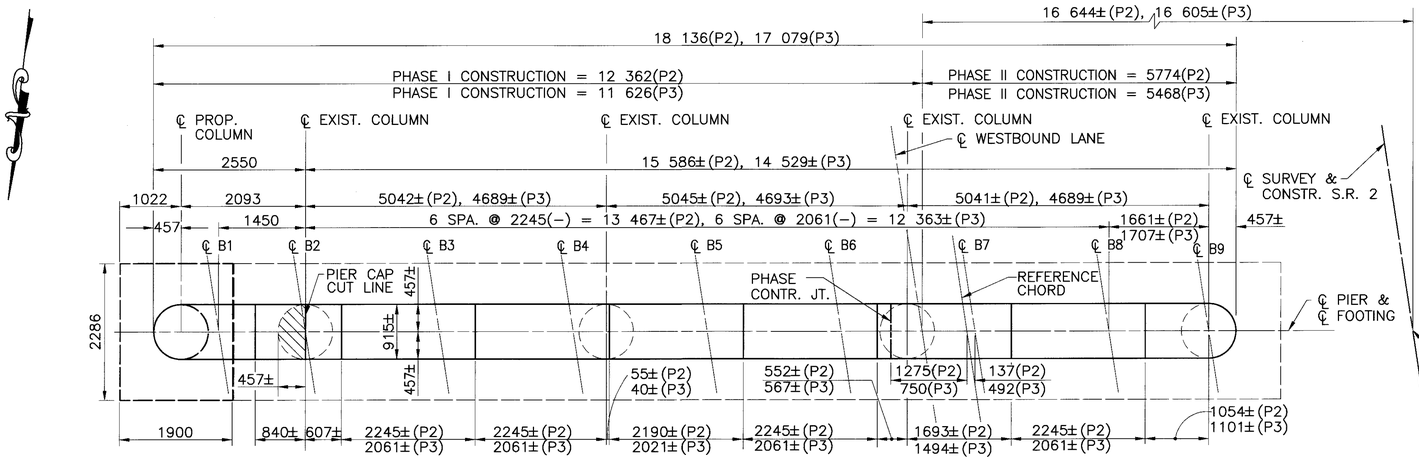
ERI-2-2.866

17/31

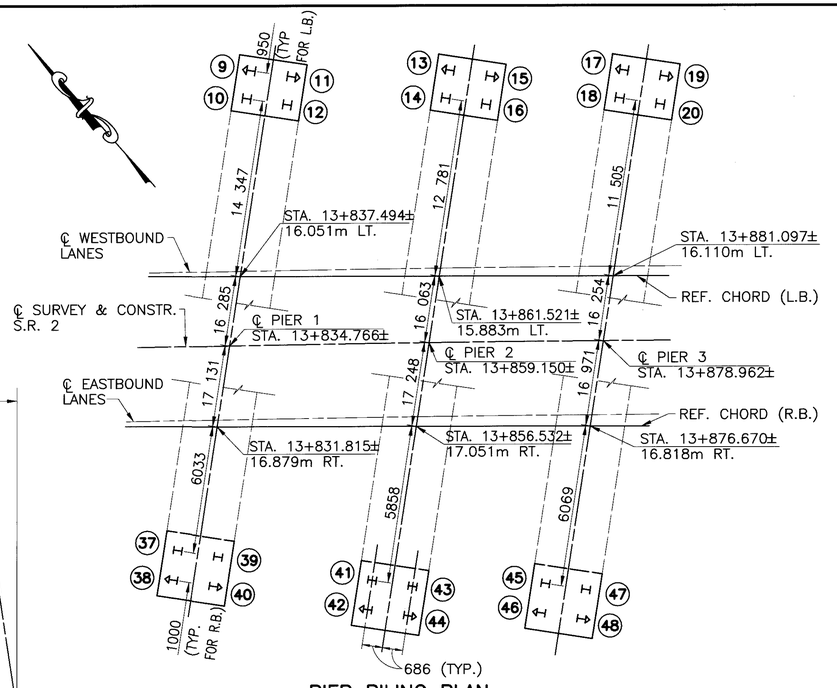
194/327



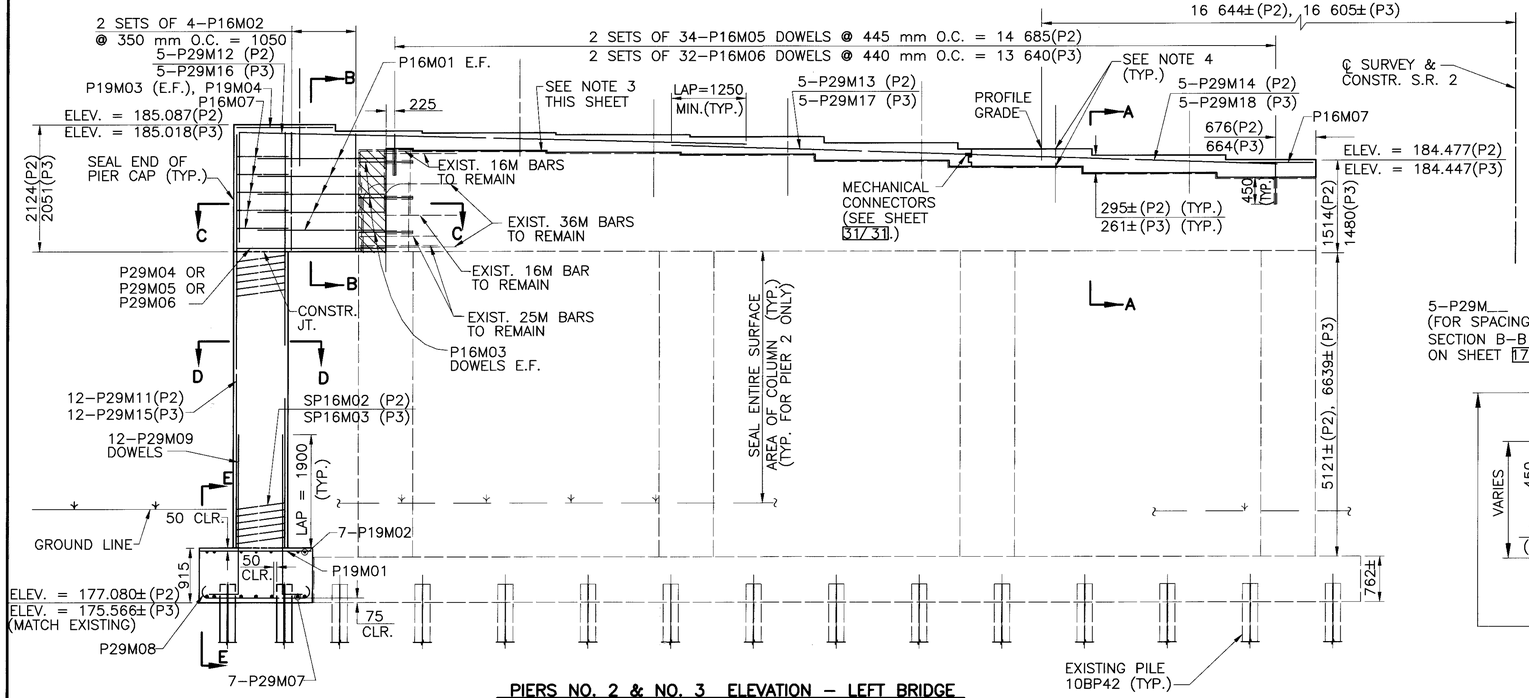
PIERS NO. 2 & NO. 3 FOOTING PLAN – LEFT BRIDGE



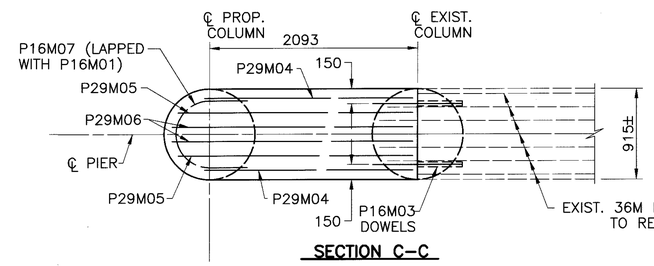
PIERS NO. 2 & NO. 3 PLAN – LEFT BRIDGE



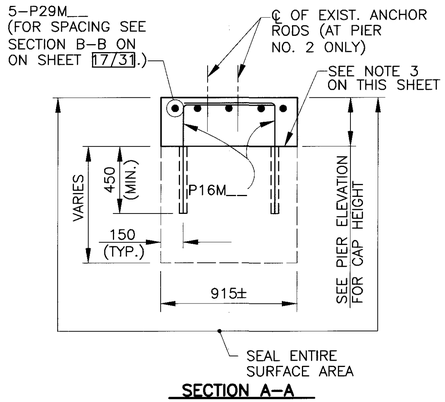
PIER PILING PLAN



PIERS NO. 2 & NO. 3 ELEVATION – LEFT BRIDGE



SECTION C–C



SECTION A–A

NOTES

1. FOR SECTIONS D–D & E–E SEE SHEET 19/31.
2. FOR SECTION B–B & EXISTING AND PROPOSED BRIDGE SEAT ELEVATIONS SEE SHEET 17/31.
3. SCARIFY 6 mm OF EXISTING PIER CAP TOP SURFACES.
4. FOR ADDITIONAL NOTES, SEE SHEET 19/31.

LEGEND

P2	PIER 2
P3	PIER 3
I	EXISTING 10BP42 PILES VERTICAL
I	EXISTING 10BP42 PILES BATTERED 1:4
I	PROPOSED HP250X62 PILES VERTICAL
	INDICATES AREAS TO BE REMOVED AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE.

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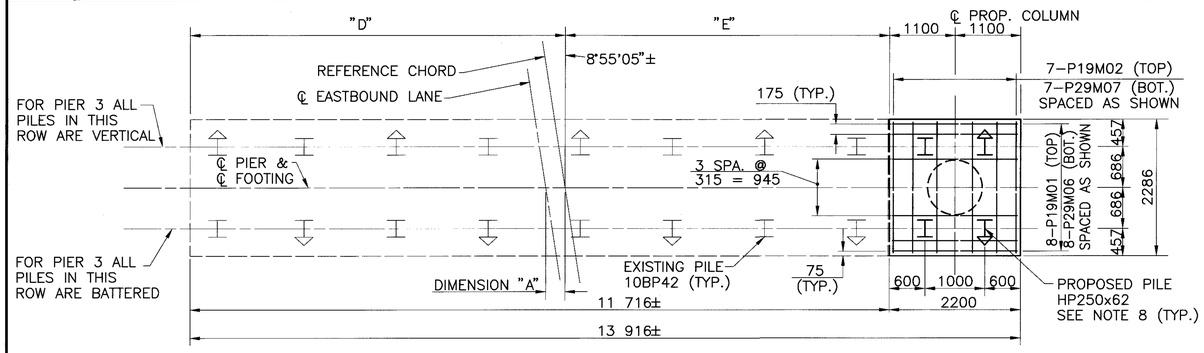
PIER DETAILS
BRIDGE NO. ERI-2-06920 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

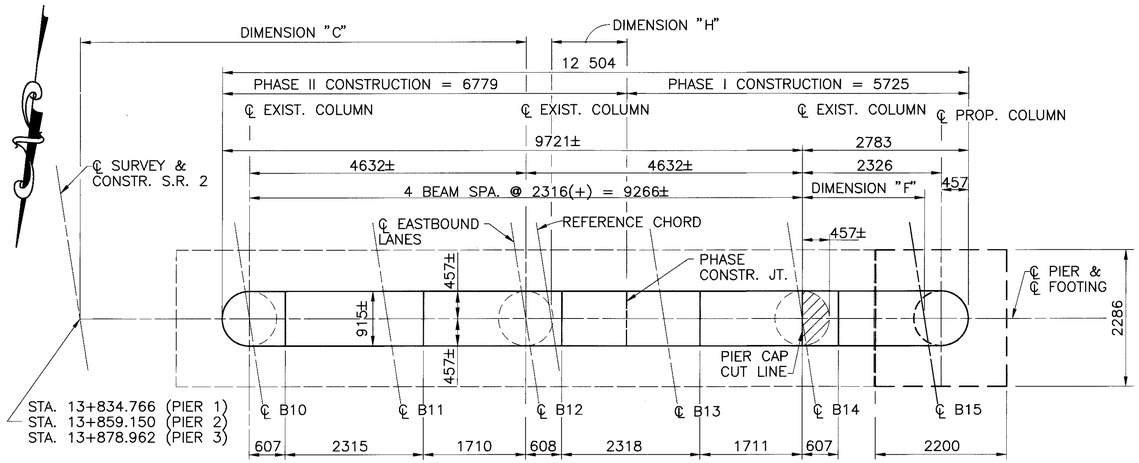
ERI-2-2.866

18/31

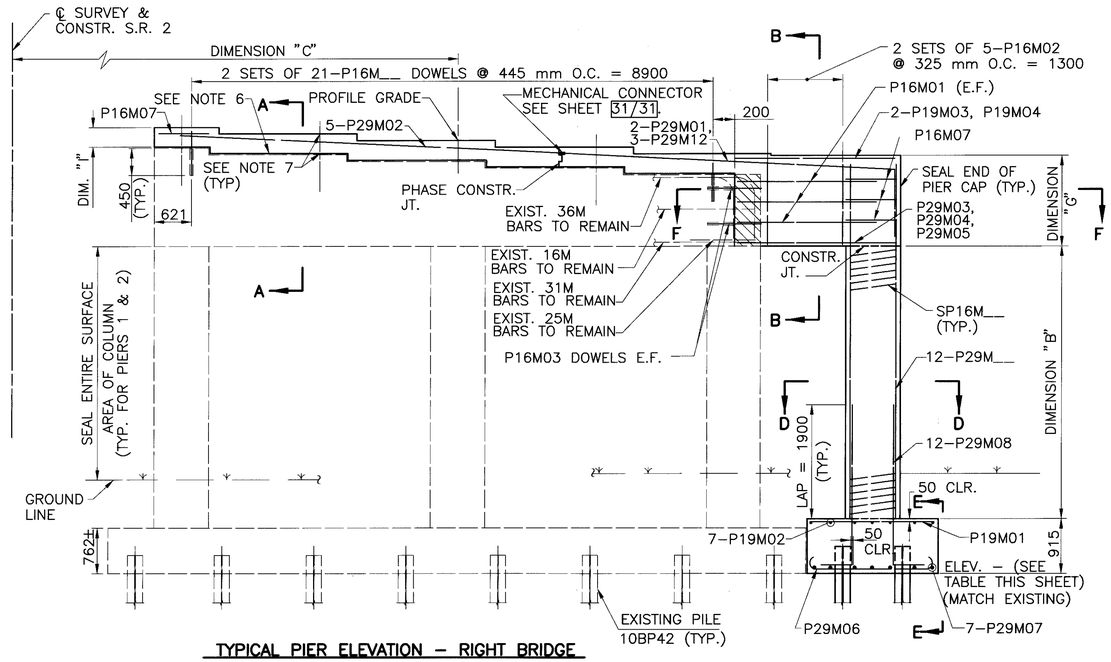
195/327



TYPICAL PIER FOOTING PLAN – RIGHT BRIDGE



TYPICAL PIER PLAN – RIGHT BRIDGE



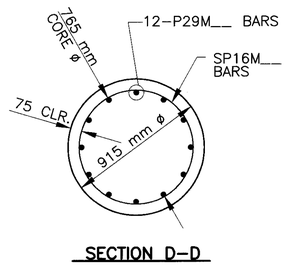
TYPICAL PIER ELEVATION – RIGHT BRIDGE

TABLE OF PIER DATA

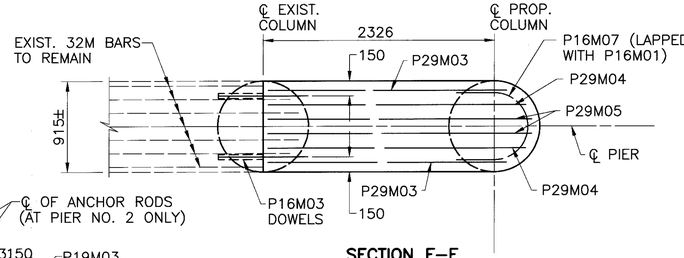
PIER NO.	DIMENSIONS A	B	C	D	E	F	G	H	I	FOOTING ELEV.	BAR MARKS P29M__ BARS	SP16M__ BARS	P16M__ BARS
1	425±	4568	16 705±	6283±	5433±	1867	1516	1265	327±	177.078±	P29M09	SP16M01	P16M04
2	600±	4622	16 649±	6458±	5258±	2041	1493	1090	295±	177.067±	P29M10	SP16M02	P16M05
3	362±	6149	16 609±	6220±	5496±	1802	1443	1328	261±	175.564±	P29M11	SP16M03	P16M06

RIGHT BRIDGE SEAT ELEVATIONS

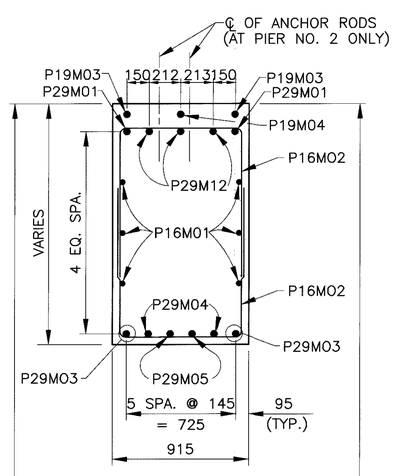
PIER NO.	BEAM MK. / DESC.	B10	B11	B12	B13	B14	B15
1	EXISTING SEAT ELEV.	184.234±	184.110±	184.013±	183.892±	183.780±	N/A
	PROPOSED SEAT ELEV.	184.561	184.437	184.340	184.219	184.107	184.077
2	EXISTING SEAT ELEV.	184.265±	184.158±	184.044±	183.929±	183.823±	N/A
	PROPOSED SEAT ELEV.	184.560	184.453	184.339	184.224	184.118	184.097
3	EXISTING SEAT ELEV.	184.258±	184.171±	184.045±	183.950±	183.847±	N/A
	PROPOSED SEAT ELEV.	184.519	184.432	184.306	184.211	184.108	184.071



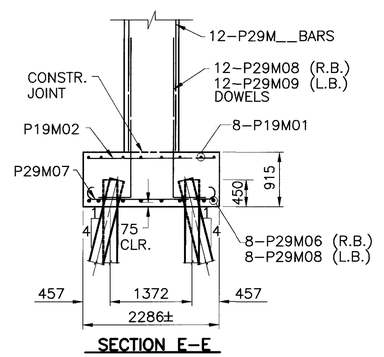
SECTION D–D



SECTION F–F



SECTION B–B



SECTION E–E

NOTES

1. BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE–SETTING OF BEARING ANCHORS.
2. BEARING ANCHORS: AT THE OPTION OF THE CONTRACTOR, BEARING ANCHORS, LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST IN PLACE. SEE SHEET 29/31 FOR PIER 2 BEARING ANCHOR ROD LOCATIONS.
4. FOR SECTION A–A SEE SHEET 18/31.
5. REMOVE ALL GRAFFITI FROM ALL EXISTING PIER CAP AND PIER COLUMN SURFACES. PAYMENT FOR THIS SHALL BE INCLUDED WITH ITEM PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR.
6. SCARIFY 6 mm OF EXISTING PIER CAP SURFACES.
7. FOR EXISTING AND PROPOSED BRIDGE SEAT ELEVATIONS SEE TABLE THIS SHEET.
8. FOR PILE NUMBERS SEE SHEET 18/31.

LEGEND

- EXISTING 10BP42 PILES VERTICAL
- EXISTING 10BP42 PILES BATTERED 1:4
- PROPOSED HP250X62 PILES VERTICAL
- PROPOSED HP250X62 PILES BATTERED 1:4
- INDICATES AREAS TO BE REMOVED AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE.

R.D. Zande & Associates, Inc.
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Columbus, Ohio 43215
Phone: (614) 486-4383

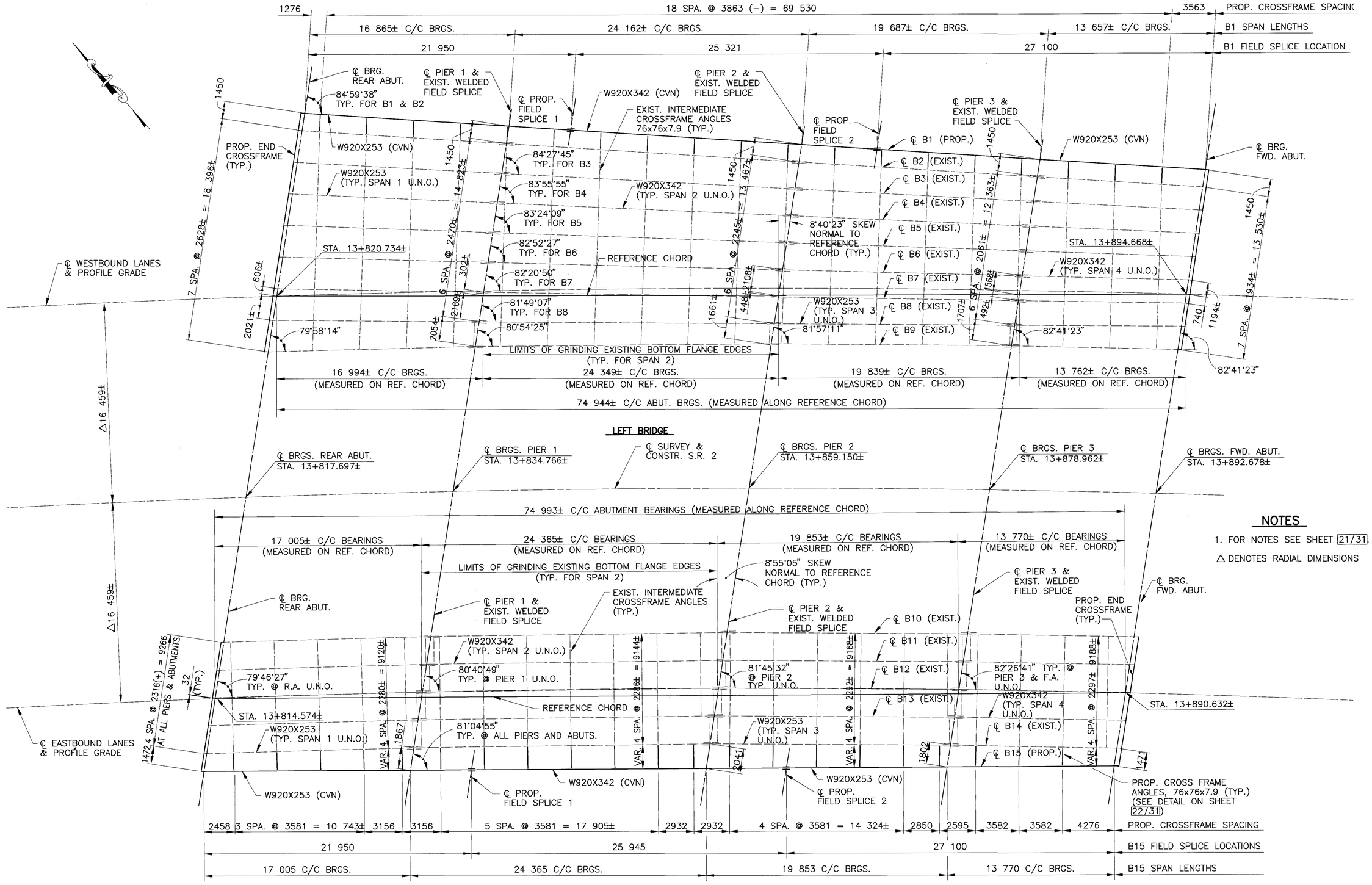
DESIGNED FJR | DRAWN FJR/TLJ | CHECKED KVB | REVIEWED OHK | DATE 9/10/97 | REVISED | STRUCTURE FILE NO 2200244,2200279

PIER DETAILS
BRIDGE NO. ERI-2-06920 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

19/31

196/327



NOTES

1. FOR NOTES SEE SHEET 21/31.

△ DENOTES RADIAL DIMENSIONS

FRAMING PLAN

R.D. Zande & Associates, Inc.
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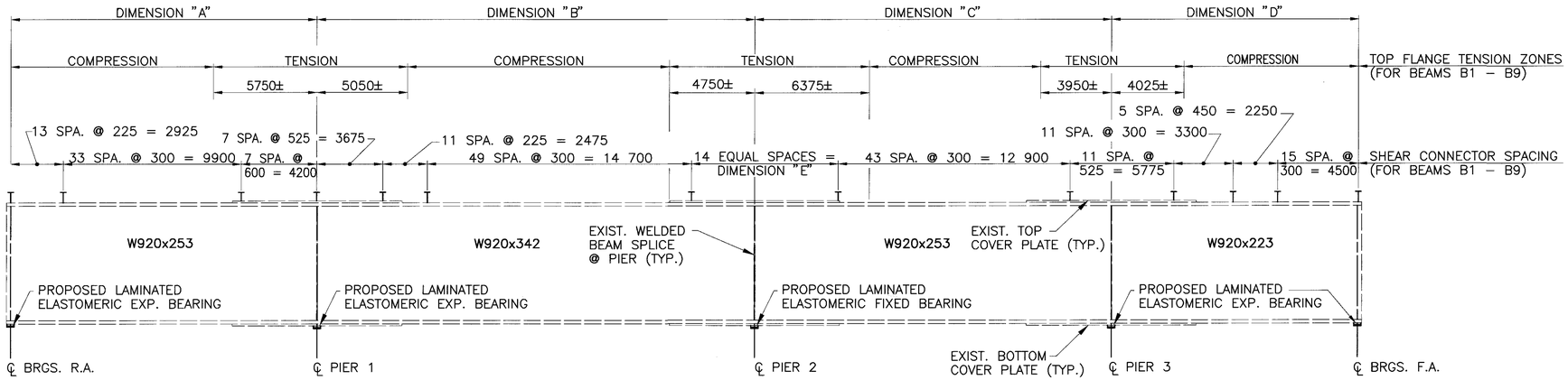
DESIGNED	DRAWN	REVIEWED	DATE
FJR/OHK	FJR/TLJ	OHK	9/10/97
CHECKED	REVISED	STRUCTURE FILE NO.	
KVB		2200244,2200279	

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-06920 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

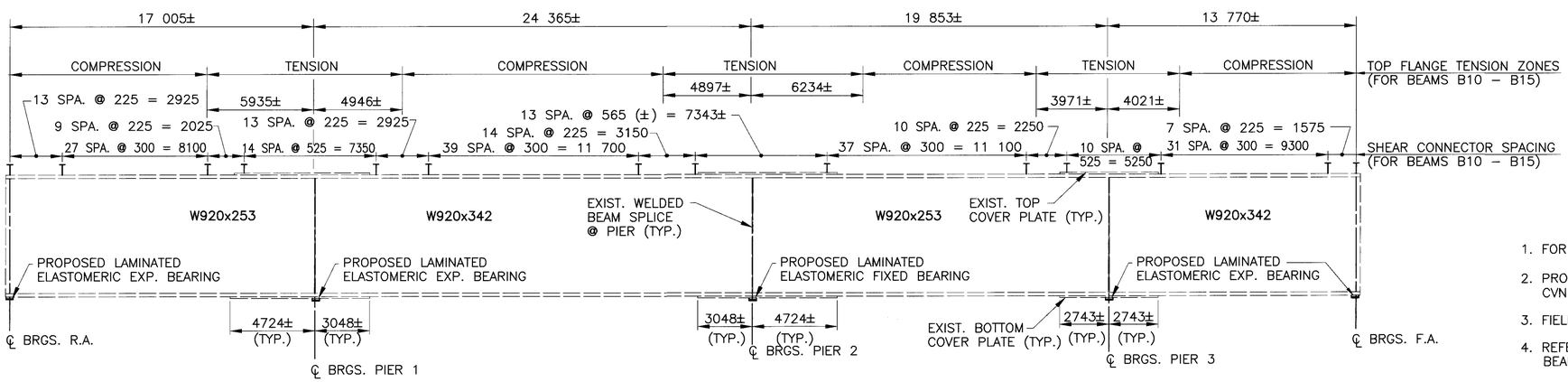
ERI-2-2.866

20/31

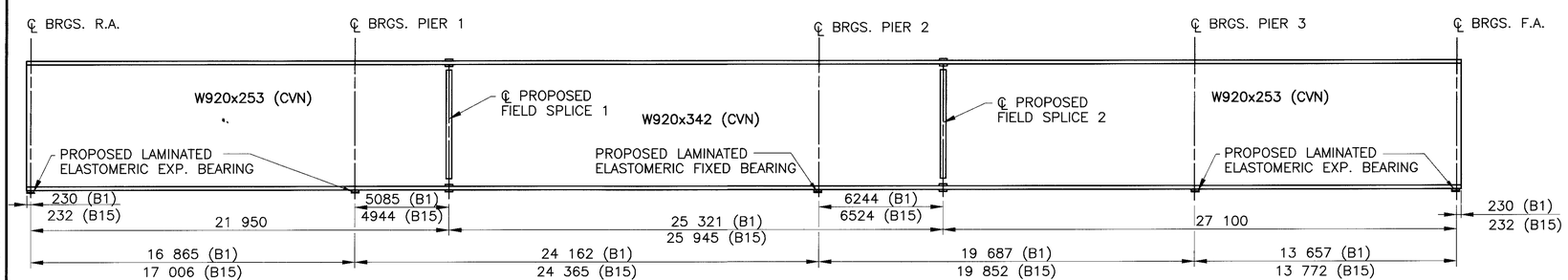
197/327



EXISTING BEAM ELEVATION B2–B9 (LEFT BRIDGE)

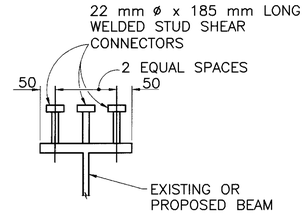


EXISTING BEAM ELEVATION B10–B14 (RIGHT BRIDGE)



PROPOSED BEAM ELEVATION B1 (LEFT BRIDGE) & B15 (RIGHT BRIDGE)

NOTES: FOR BEAM B1 SHEAR CONNECTOR SPACING & TOP FLANGE TENSION ZONES, SEE EXISTING BEAM ELEVATION B2–B9
FOR BEAM B15 SHEAR CONNECTOR SPACING & TOP FLANGE TENSION ZONES, SEE EXISTING BEAM ELEVATION B10–B14



STUD SHEAR CONNECTOR DETAIL

NOTE:
LATERAL AND LONGITUDINAL SPACING OF WELDED STUD SHEAR CONNECTORS MAY BE ALTERED AT FIELD SPLICE LOCATIONS TO AVOID INTERFERENCE WITH FLANGE SPLICE BOLTS PROVIDED THAT AT LEAST THE NUMBER OF STUDS SPECIFIED IN THE BEAM ELEVATION ARE PROVIDED.

DIMENSIONS					
BM. MK.	A	B	C	D	E
B1	16 865	24 162	19 687	13 657	7771
B2	16 865±	24 162±	19 687±	13 657±	7771±
B3	16 879±	24 183±	19 704±	13 669±	7835±
B4	16 895±	24 206±	19 723±	13 682±	7906±
B5	16 913±	24 231±	19 743±	13 696±	8047±
B6	16 931±	24 58±	19 765±	13 711±	8065±
B7	16 952±	24 287±	19 788±	13 728±	8155±
B8	16 973±	24 318±	19 814±	13 745±	8250±
B9	17 065±	24 377±	19 807±	13 715±	8364±

NOTES

1. FOR FRAMING PLAN, SEE SHEET 20/31.
2. PROPOSED STEEL BEAMS AND SPLICE PLATES SHALL BE A–36M STEEL & CVN. ALL CROSSFRAME MEMBERS SHALL BE A–36M STEEL.
3. FIELD SPLICE SHALL BE PER ODOT STANDARD DRAWING BS–1–93M.
4. REFERENCE LINE IS CHORD BETWEEN ℄ OF ABUTMENT BEARINGS AT PROFILE GRADE.
5. FOR INTERMEDIATE CROSSFRAME DETAIL, SEE SHEET 22/31.
6. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
7. HIGH STRENGTH BOLTS SHALL BE 27 mm DIAMETER A–325M UNLESS OTHERWISE NOTED.
8. EXISTING ROCKER BEARINGS AT ABUTMENTS, PIERS 1 AND 3 SHALL BE REMOVED AND REPLACED WITH ELASTOMERIC EXPANSION BEARINGS. EXISTING BOLSTER BEARINGS AT PIER 2 SHALL BE REMOVED AND REPLACED WITH ELASTOMETRIC FIXED BEARINGS. FOR ELASTOMERIC BEARING DETAILS, SEE SHEETS 28/31 AND 29/31.
9. EXISTING END CROSS–FRAMES SHALL BE REMOVED AND REPLACED. THE PROPOSED END CROSS–FRAMES SHALL BE PER ODOT STANDARD DRAWING EXJ–4–87M (SHEET 1/5). *THE COST TO REMOVE THE EXISTING END CROSS-FRAMES SHALL BE INCLUDED IN ITEM 202- PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK & PARAPET)*
10. PAINTING OF STEEL: ALL STRUCTURAL STEEL (PROPOSED AND EXISTING) INCLUDING SPLICE PLATES, COVER PLATES AND CROSS FRAME AND FILLER PLATES SHALL BE PAINTED. SEE GENERAL NOTES SHEET 3/31 FOR MORE DETAILS.
11. ERECTION BOLTS: THE HOLE DIAMETER IN THE CROSS FRAMES AND INTERMEDIATE STIFFENERS SHALL BE 4 mm LARGER THAN THE DIAMETER OF THE ERECTION BOLTS. UNLESS REPLACED BY PERMANENT HIGH STRENGTH BOLTS, ERECTION BOLTS SHALL REMAIN IN PLACE. LOCK WASHERS SHALL BE FURNISHED FOR OTHER THAN FULLY TORQUED, HIGH STRENGTH ERECTION BOLTS. BOLTS SHALL BE FURNISHED AS PART OF ITEM 863.

    IN LIEU OF ERECTION BOLTS AND AT THE OPTION OF THE CONTRACTOR, ALTERNATIVE MEANS OF TEMPORARY BRACING MAY BE USED SUBJECT TO THE APPROVAL OF THE DIRECTOR (501.06).

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DESIGNED FJR/OHK | DRAWN FJR/TLJ | REVIEWED OHK | DATE 9/10/97
CHECKED KVB | REVISED | STRUCTURE FILE NO 2200244,2200279

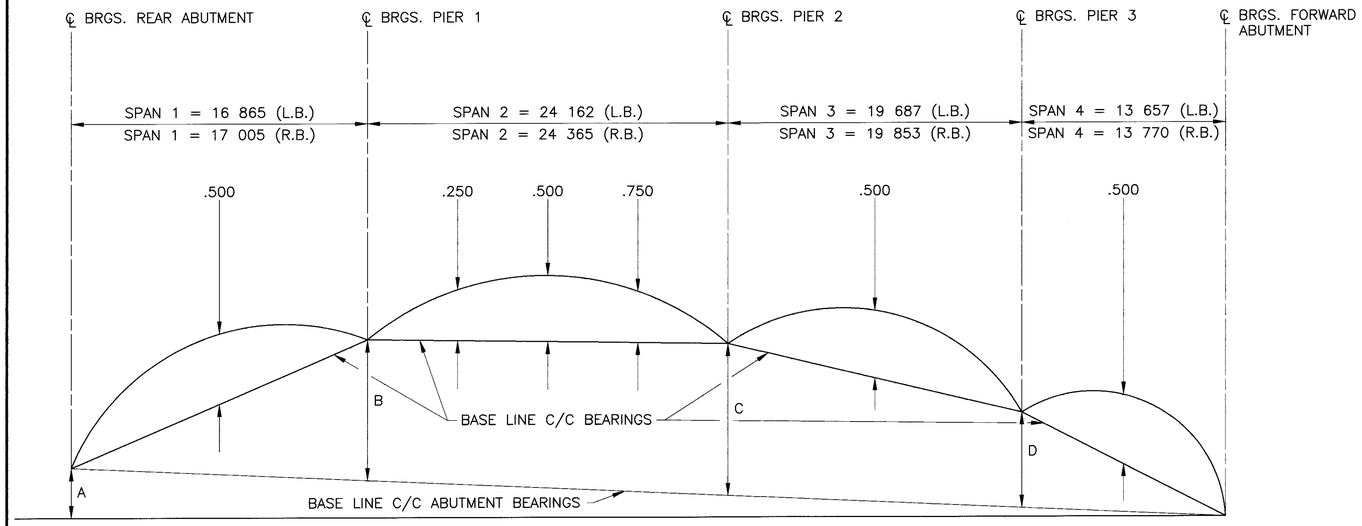
SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-08920 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

21/31

198/327

C097 P:\3807\DWG\BRIDGE\E-2-0694\PLAN\3807CSD2.DWG AUG 14, 1997 TIME 1:44 PM



CAMBER DIAGRAM

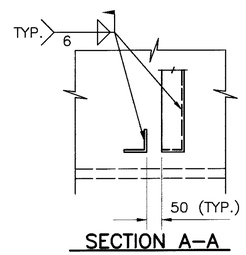
TABLE OF CAMBER DIAGRAM DIMENSIONS				
DIMENSION / BEAM MK.	"A"	"B"	"C"	"D"
B1	52	145	129	68
B15	20	49	66	41

NOTE: DIMENSIONS ARE MEASURED ALONG TOP OF WEB

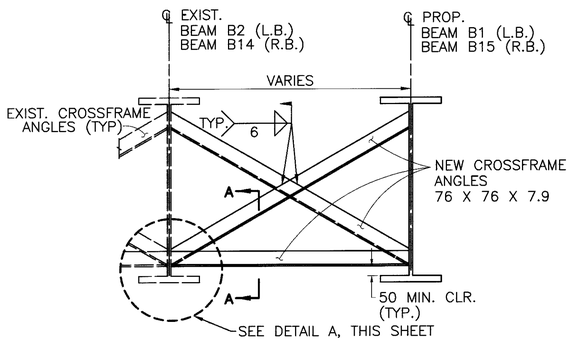
NOTES

1. FOR MORE DETAILS SEE STD. DWG. EXJ–4–87M.
2. STRIP SEAL GLAND SIZE SHALL BE 75 mm FOR BOTH REAR AND FORWARD ABUTMENTS.
3. ELASTOMERIC SEALS: THE JOINT SEAL FOR EACH BRIDGE DECK JOINT SHALL BE FURNISHED IN ONE CONTINUOUS PIECE.

TABLE OF CAMBER & DEFLECTION, mm								
		SPAN 1	SPAN 2			SPAN 3	SPAN 4	
BEAM MK.	LOCATION	.500	.250	.500	.750	.500	.500	
B1	STEEL WEIGHT DEFLECTION	1	3	4	3	1	1	
	REM. DEAD LOAD DEFLECTION	4	6	10	6	3	2	
	VERTICAL CURVE CORRECTION	13	6	8	6	6	3	
	REQUIRED SHOP CAMBER	18	15	22	15	10	6	
B15	STEEL WEIGHT DEFLECTION	1	3	4	3	1	1	
	REM. DEAD LOAD DEFLECTION	6	7	12	7	3	3	
	VERTICAL CURVE CORRECTION	3	5	7	5	5	2	
	REQUIRED SHOP CAMBER	10	15	23	15	9	6	

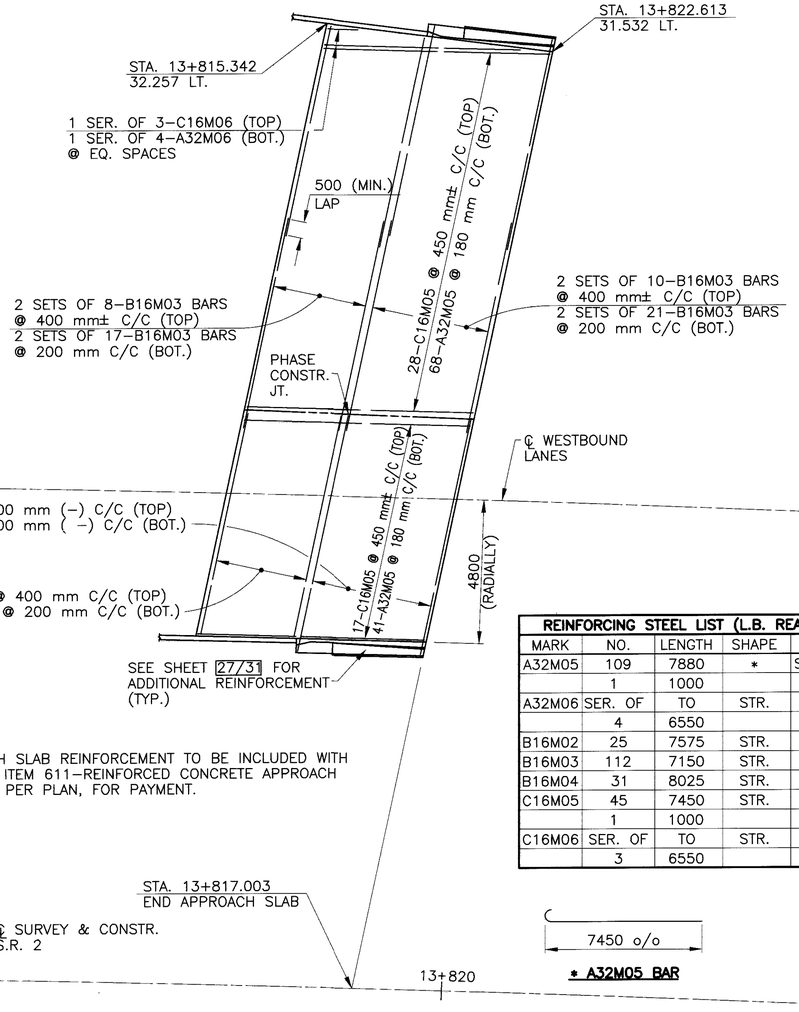


SECTION A–A



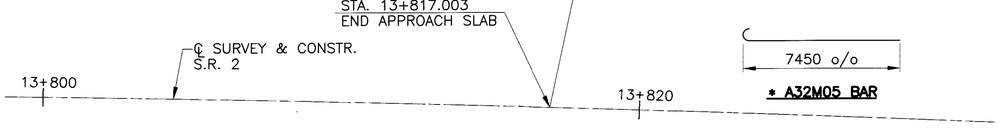
INTERMEDIATE CROSSFRAME DETAIL

(RIGHT BRIDGE AS SHOWN
LEFT BRIDGE OPPOSITE HAND)



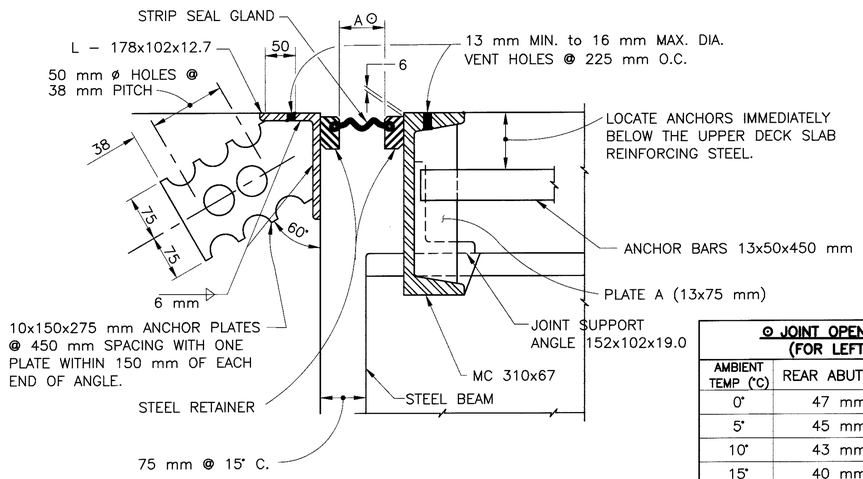
NOTE: APPROACH SLAB REINFORCEMENT TO BE INCLUDED WITH ROADWAY ITEM 611–REINFORCED CONCRETE APPROACH SLAB, AS PER PLAN, FOR PAYMENT.

REINFORCING STEEL LIST (L.B. REAR APPROACH SLAB)				
MARK	NO.	LENGTH	SHAPE	REMARKS
A32M05	109	7880	*	SEE DETAIL THIS SHEET
	1	1000		
A32M06	SER. OF	TO	STR.	1850 INCREMENT
	4	6550		
B16M02	25	7575	STR.	
B16M03	112	7150	STR.	
B16M04	31	8025	STR.	
C16M05	45	7450	STR.	
	1	1000		
C16M06	SER. OF	TO	STR.	2275 INCREMENT
	3	6550		



APPROACH SLAB PLAN

LEFT BRIDGE REAR APPROACH SLAB SHOWN. SEE STD. DWG. AS–1–81M AND SHEET 27/31 FOR DETAILS OF LEFT BRIDGE FORWARD APPROACH SLAB AND RIGHT BRIDGE REAR AND FORWARD APPROACH SLABS.



STRIP SEAL EXPANSION JOINT DETAIL

(FOR LEFT & RIGHT BRIDGE)

⊙ JOINT OPENING TABLE (DIM. "A") (FOR LEFT & RIGHT BRIDGE)		
AMBIENT TEMP (°C)	REAR ABUTMENT	FORWARD ABUTMENT
0°	47 mm	46 mm
5°	45 mm	44 mm
10°	43 mm	43 mm
15°	40 mm	41 mm
20°	38 mm	39 mm
25°	36 mm	37 mm
30°	33 mm	35 mm
35°	31 mm	33 mm

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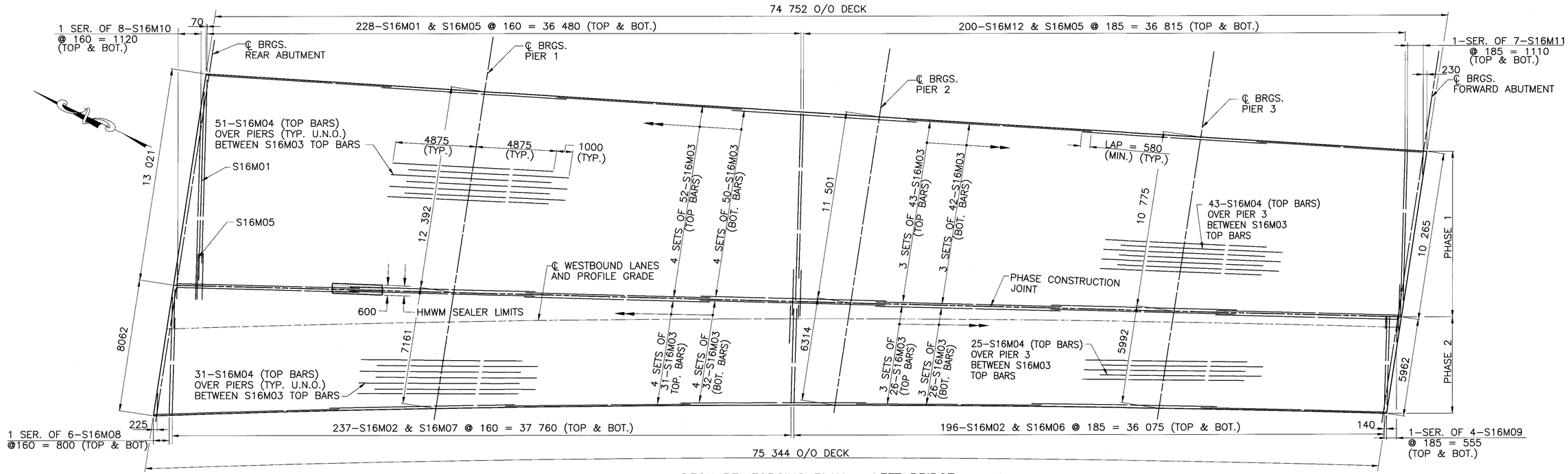
CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200244, 2200279	

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERH-2-06920 L & R (0490)
SR. 2 OVER U.S. 6 & COLD CREEK

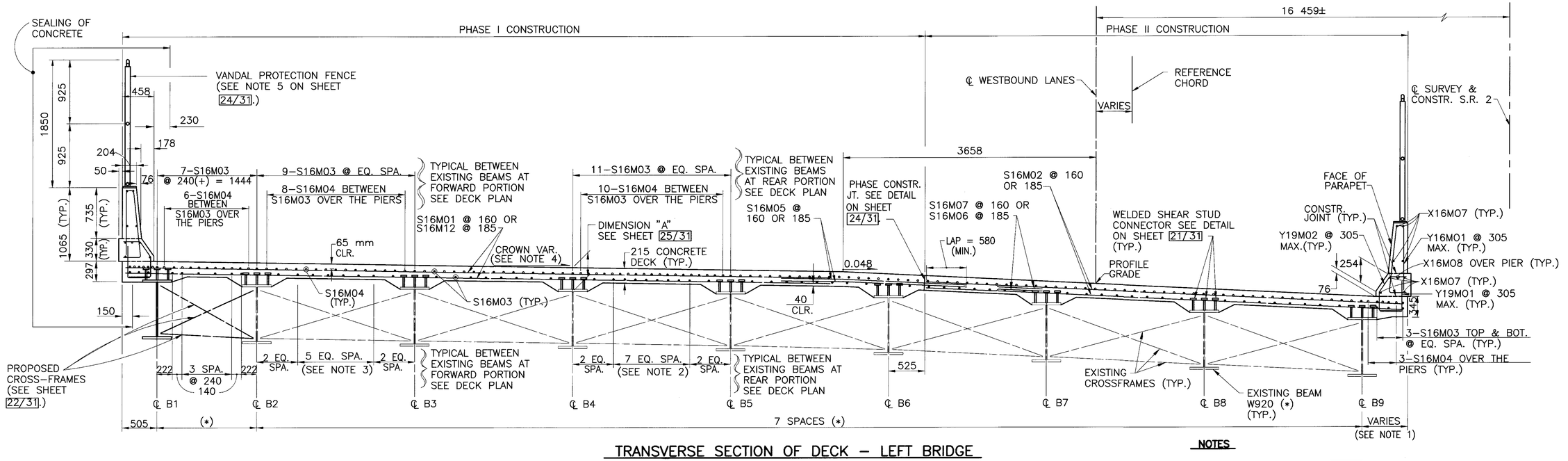
ERH-2-2.866

22/31

199/327



DECK REINFORCING PLAN – LEFT BRIDGE



TRANSVERSE SECTION OF DECK – LEFT BRIDGE

* SEE FRAMING PLAN ON SHEET 20/31 FOR BEAM SPACING AND SIZES

NOTES

1. FOR RIGHT OVERHANG DIMENSION SEE SHEET 25/31.
2. REINFORCING BAR SPACING IN THIS REGION SHALL VARY FROM 7 SPA. @ 185 AT THE REAR ABUTMENT TO 7 SPA. @ 160± AT PIER 2.
3. REINFORCING BAR SPACING IN THIS REGION SHALL VARY FROM 5 SPA. @ 221 AT PIER 2 TO 5 SPA. @ 192 AT FORWARD ABUTMENT.
4. SEE BRIDGE ROADWAY CROWN DETAIL ON SHEET 25/31.
5. FOR ADDITIONAL NOTES SEE SHEET 24/31.

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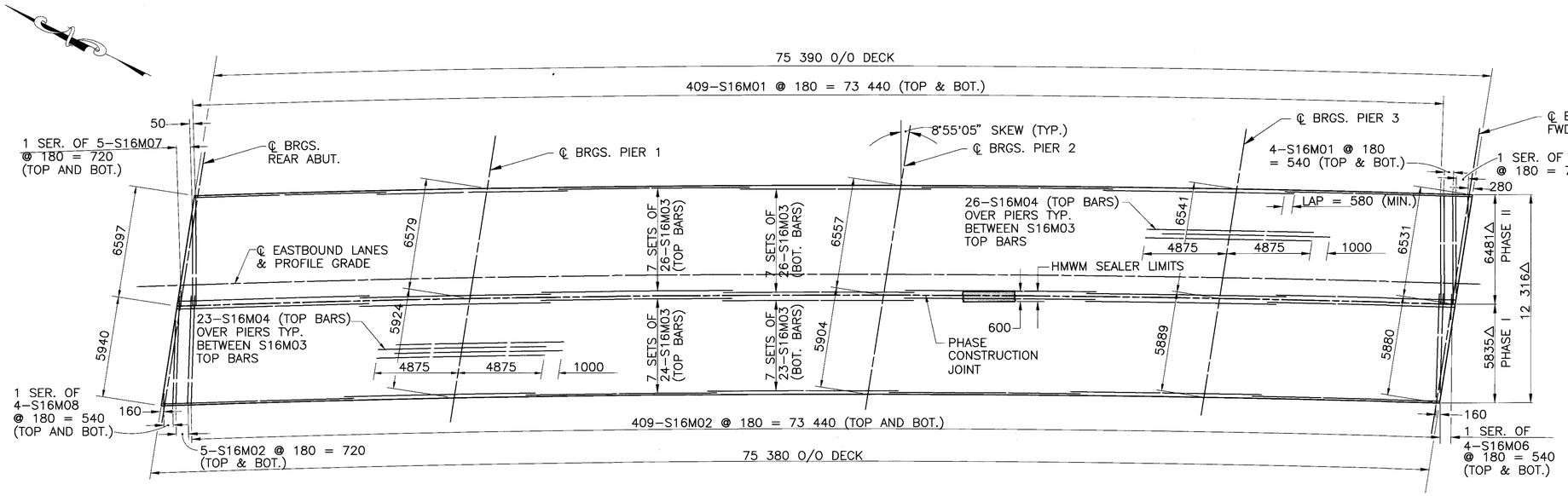
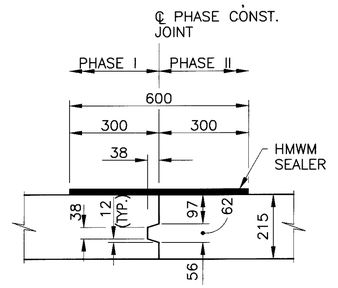
SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-0692D L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866



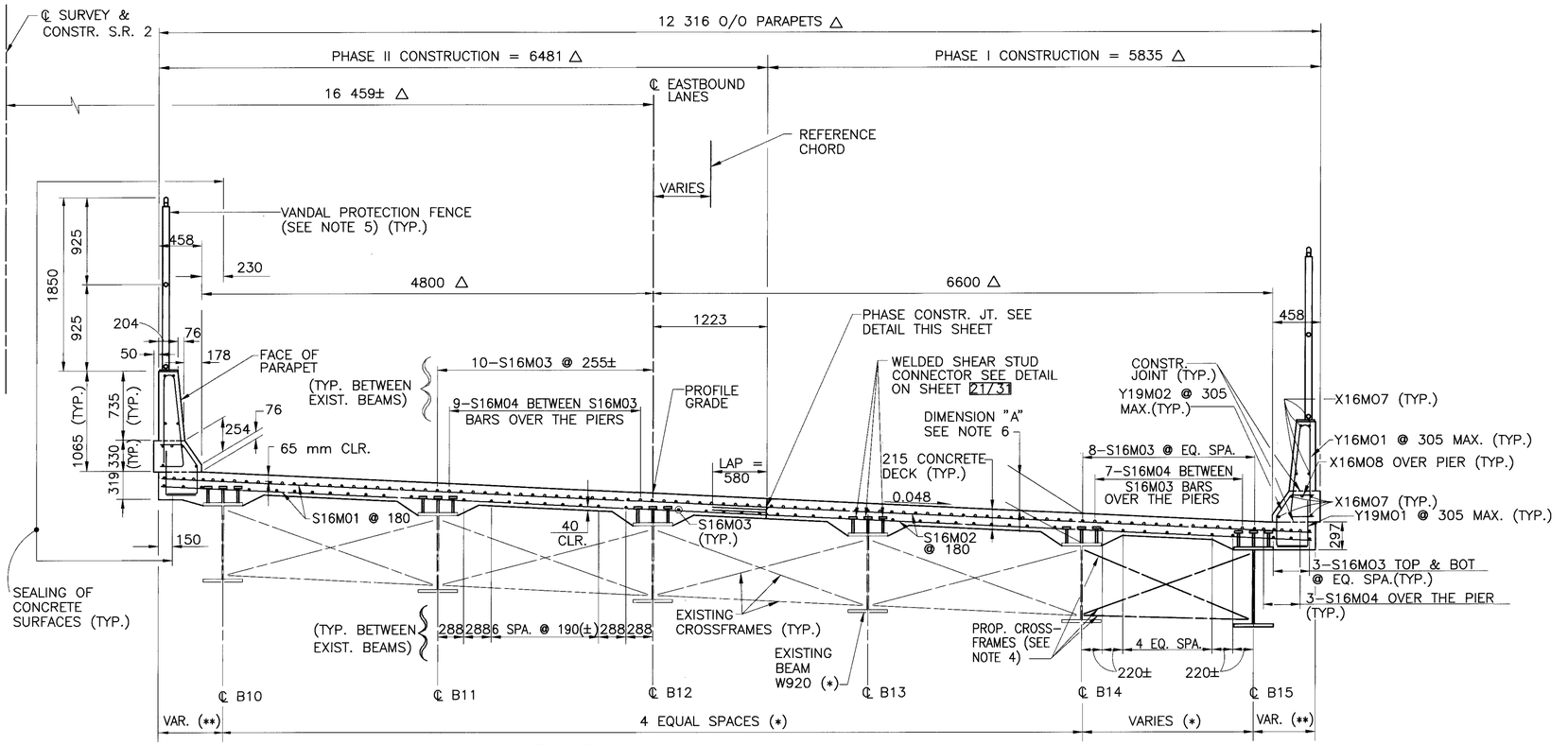
DECK REINFORCING PLAN – RIGHT BRIDGE

PARAPET REINFORCING NOT SHOWN FOR CLARITY



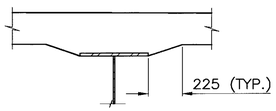
PHASE CONSTRUCTION JOINT DETAIL

NOTE: REBARS ARE NOT SHOWN



TRANSVERSE SECTION – RIGHT BRIDGE

* SEE FRAMING PLAN ON SHEET 20/31 FOR BEAM SPACING AND SIZES
** SEE SHEET 26/31 FOR OVERHANG DIMENSIONS.



HAUNCH DETAIL

ALSO REFER TO NOTE 1, THIS SHEET

NOTES

1. A HAUNCH WIDTH OF 225 mm SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 150 mm AND 300 mm.
2. FOR PHASE CONSTRUCTION DETAILS, SEE SHEETS 5/31 AND 6/31.
3. FOR PARAPET DETAILS SEE SHEET 27/31.
4. SEE SHEET 22/31 FOR CROSSFRAME DETAIL.
5. FOR VANDAL PROTECTION FENCE POST SPACING AND DETAILS, SEE SHEET 27/31.
6. FOR TABLE OF DIMENSION "A" SEE SHEET 26/31. THIS IS THE NOMINAL DIMENSION FROM TOP OF BEAM FLANGE TO TOP OF CONCRETE DECK. THE QUANITITY OF THAT PORTION OF THE DECK CONCRETE OVER BEAMS SHALL BE BASED ON THIS DIMENSION EVEN THOUGH DEVIATION FROM THIS DIMENSION MAY OCCUR BECAUSE THE TOP OF THE BEAM MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISH GRADE.
7. FIELD BEND TRANSVERSE BARS AS NECESSARY TO FIT THE CROWN. INCLUDE WITH ITEM 511 FOR PAYMENT.

△ DENOTES RADIAL DIMENSIONS.

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SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-0892O L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

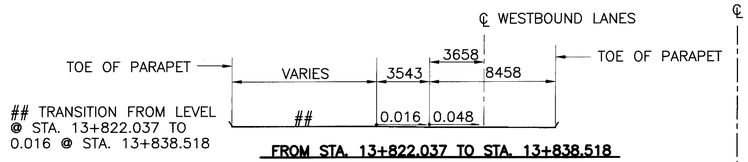
FINAL DECK SCREED ELEVATIONS (LEFT BRIDGE)

SCREED LINE	LOCATION	C.L. BRG. R.A.	SPAN 1	C.L. BRG. PIER 1	SPAN 2			C.L. BRG. PIER 2	SPAN 3	C.L. BRG. PIER 3	SPAN 4	C.L. BRG. F.A.
			0.500		0.250	0.500	0.750		0.500		0.500	
LINE A F/C	STATION	13+823.430	13+831.709	13+839.811	13+845.687	13+851.568	13+857.453	13+863.341	13+872.943	13+882.555	13+889.225	13+895.898
	T/S ELEV.	186.258	186.338	186.389	186.387	186.381	186.372	186.357	186.326	186.283	186.246	186.205
	DEFLECTION	0.000	0.004	0.000	0.006	0.010	0.006	0.000	0.003	0.000	0.002	0.000
	SCREED ELEV.	186.258	186.342	186.389	186.393	186.391	186.378	186.357	186.329	186.283	186.248	186.205
LINE B B1	STATION	13+823.420	13+831.699	13+839.800	13+845.676	13+851.557	13+857.442	13+863.330	13+872.932	13+882.544	13+889.214	13+895.887
	T/S ELEV.	186.257	186.337	186.388	186.386	186.380	186.370	186.356	186.324	186.281	186.245	186.203
	DEFLECTION	0.000	0.004	0.000	0.006	0.010	0.006	0.000	0.003	0.000	0.002	0.000
	SCREED ELEV.	186.257	186.341	186.388	186.392	186.390	186.376	186.356	186.327	186.281	186.247	186.203
LINE C B2	STATION	13+823.165	13+831.454	13+839.564	13+845.448	13+851.335	13+857.227	13+863.122	13+872.735	13+882.358	13+889.036	13+895.718
	T/S ELEV.	186.253	186.322	186.365	186.363	186.357	186.348	186.334	186.302	186.259	186.223	186.181
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.006	0.000	0.003	0.000	0.002	0.000
	SCREED ELEV.	186.253	186.326	186.365	186.369	186.368	186.354	186.334	186.305	186.259	186.225	186.181
LINE D B3	STATION	13+822.705	13+831.024	13+839.163	13+845.067	13+850.975	13+856.887	13+862.800	13+872.444	13+882.095	13+888.792	13+895.492
	T/S ELEV.	186.247	186.297	186.325	186.325	186.320	186.311	186.299	186.269	186.227	186.192	186.152
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.006	0.000	0.003	0.000	0.002	0.000
	SCREED ELEV.	186.247	186.301	186.325	186.331	186.331	186.317	186.299	186.272	186.227	186.194	186.152
LINE E B4	STATION	13+822.242	13+830.592	13+838.761	13+844.686	13+850.614	13+856.545	13+862.477	13+872.151	13+881.831	13+888.547	13+895.265
	T/S ELEV.	186.243	186.273	186.286	186.286	186.283	186.275	186.264	186.235	186.196	186.162	186.123
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.006	0.000	0.003	0.000	0.002	0.000
	SCREED ELEV.	186.243	186.277	186.286	186.292	186.294	186.281	186.264	186.238	186.196	186.164	186.123
LINE F B5	STATION	13+821.777	13+830.159	13+838.357	13+844.302	13+850.251	13+856.201	13+862.153	13+871.857	13+881.566	13+888.301	13+895.038
	T/S ELEV.	186.218	186.236	186.246	186.248	186.246	186.239	186.229	186.195	186.151	186.115	186.076
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.006	0.000	0.003	0.000	0.002	0.000
	SCREED ELEV.	186.218	186.240	186.246	186.254	186.257	186.245	186.229	186.198	186.151	186.117	186.076
LINE G1 SLOPE BRK.	STATION	13+821.397	13+829.887	13+838.174	13+844.174	13+850.168	13+856.158	13+862.142	13+871.886	13+881.619	13+888.363	13+895.103
	T/S ELEV.	186.183	186.210	186.228	186.235	186.237	186.235	186.227	186.205	186.171	186.139	186.102
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.006	0.000	0.003	0.000	0.002	0.000
	SCREED ELEV.	186.183	186.214	186.228	186.241	186.248	186.241	186.227	186.208	186.171	186.141	186.102
LINE H B6	STATION	13+821.311	13+829.723	13+837.951	13+843.918	13+849.886	13+855.857	13+861.828	13+871.562	13+881.300	13+888.054	13+894.809
	T/S ELEV.	186.160	186.165	186.164	186.159	186.151	186.139	186.125	186.094	186.054	186.022	185.985
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.006	0.000	0.003	0.000	0.002	0.000
	SCREED ELEV.	186.160	186.169	186.164	186.165	186.162	186.145	186.125	186.097	186.054	186.024	185.985
LINE I PH. CONST.	STATION	13+821.217	13+829.633	13+837.864	13+843.833	13+849.804	13+855.777	13+861.751	13+871.489	13+881.231	13+887.989	13+894.747
	T/S ELEV.	186.134	186.140	186.138	186.134	186.126	186.114	186.100	186.069	186.029	185.997	185.960
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.006	0.000	0.003	0.000	0.002	0.000
	SCREED ELEV.	186.134	186.144	186.138	186.140	186.137	186.120	186.100	186.072	186.029	185.999	185.960
LINE J B7	STATION	13+820.842	13+829.286	13+837.544	13+843.531	13+849.520	13+855.511	13+861.501	13+871.266	13+881.033	13+887.807	13+894.581
	T/S ELEV.	186.034	186.043	186.046	186.044	186.039	186.031	186.019	185.992	185.957	185.928	185.894
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.006	0.000	0.003	0.000	0.002	0.000
	SCREED ELEV.	186.034	186.047	186.046	186.050	186.050	186.037	186.019	185.995	185.957	185.930	185.894
LINE K P.G.	STATION	13+820.734	13+829.250	13+837.563	13+843.581	13+849.595	13+855.603	13+861.606	13+871.379	13+881.142	13+887.908	13+894.668
	T/S ELEV.	186.005	186.033	186.051	186.059	186.062	186.060	186.053	186.031	185.997	185.966	185.929
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.006	0.000	0.003	0.000	0.002	0.000
	SCREED ELEV.	186.005	186.037	186.051	186.065	186.073	186.066	186.053	186.034	185.997	185.968	185.929
LINE L B8	STATION	13+820.372	13+828.847	13+837.135	13+843.143	13+849.153	13+855.164	13+861.173	13+870.969	13+880.765	13+887.559	13+894.351
	T/S ELEV.	185.908	185.922	185.929	185.930	185.927	185.922	185.913	185.891	185.860	185.834	185.803
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.006	0.000	0.003	0.000	0.002	0.000
	SCREED ELEV.	185.908	185.926	185.929	185.936	185.938	185.928	185.913	185.894	185.860	185.836	185.803
LINE M B9	STATION	13+819.902	13+828.444	13+836.794	13+842.828	13+848.863	13+854.897	13+860.930	13+870.736	13+880.543	13+887.333	13+894.123
	T/S ELEV.	185.783	185.810	185.831	185.837	185.839	185.838	185.834	185.812	185.780	185.749	185.713
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.006	0.000	0.003	0.000	0.002	0.000
	SCREED ELEV.	185.783	185.814	185.831	185.843	185.850	185.844	185.834	185.815	185.780	185.751	185.713
LINE N F/C	STATION	13+819.857	13+828.408	13+836.755	13+842.798	13+848.836	13+854.870	13+860.897	13+870.710	13+880.513	13+887.305	13+894.093
	T/S ELEV.	185.771	185.800	185.820	185.828	185.831	185.830	185.823	185.803	185.769	185.739	185.702
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.006	0.000	0.003	0.000	0.002	0.000
	SCREED ELEV.	185.771	185.804	185.820	185.834	185.842	185.836	185.823	185.806	185.769	185.741	185.702
LINE G2 SLOPE BRK.	STATION	13+821.263	13+821.947	13+830.415								
	T/S ELEV.	186.239	186.242	186.269								
	DEFLECTION	0.000	0.004	0.000								
	SCREED ELEV.	186.239	186.246	186.269								

NOTE:
SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

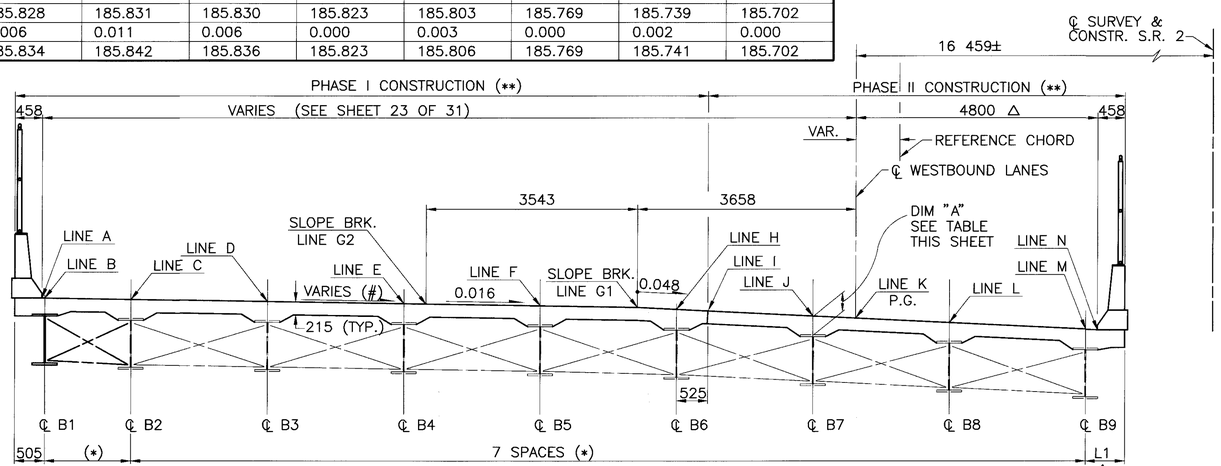
DIMENSION "A"
(TOP OF BEAM/MOMENT PL. TO TOP OF CONCRETE)

BEAM \ LOCATION	R. ABUT.	PIER 1	PIER 2	PIER 3	R. ABUT.
B1	265	265	265	265	265
B2	342	309	316	321	342
B3	342	311	323	302	345
B4	348	314	320	301	347
B5	331	308	320	308	346
B6	336	306	322	308	342
B7	336	319	310	301	343
B8	335	308	311	294	343
B9	334	300	303	298	347



BRIDGE ROADWAY CROWN

OVERHANG DIMENSION	
STATION	L1△
13+820	703
13+825	673
13+830	664
13+835	677
13+840	658
13+845	631
13+850	624
13+855	639
13+860	676
13+865	658
13+870	644
13+875	652
13+880	681
13+885	673
13+890	679



TRANSVERSE SECTION – LEFT BRIDGE

LEGEND

△ RADIAL DIMENSIONS.

(*) SEE FRAMING PLAN ON SHEET 20/31.

(**) SEE TABLE OF BRIDGE WIDTH DIMENSIONS ON SHEET 23/31.

(#) SEE BRIDGE ROADWAY CROWN THIS SHEET.

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OHK	FJR/DJD	OHK	9/10/97
CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200244, 2200279	

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-0892.20 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

25/31

202/327

FINAL DECK SCREED ELEVATIONS (RIGHT BRIDGE)

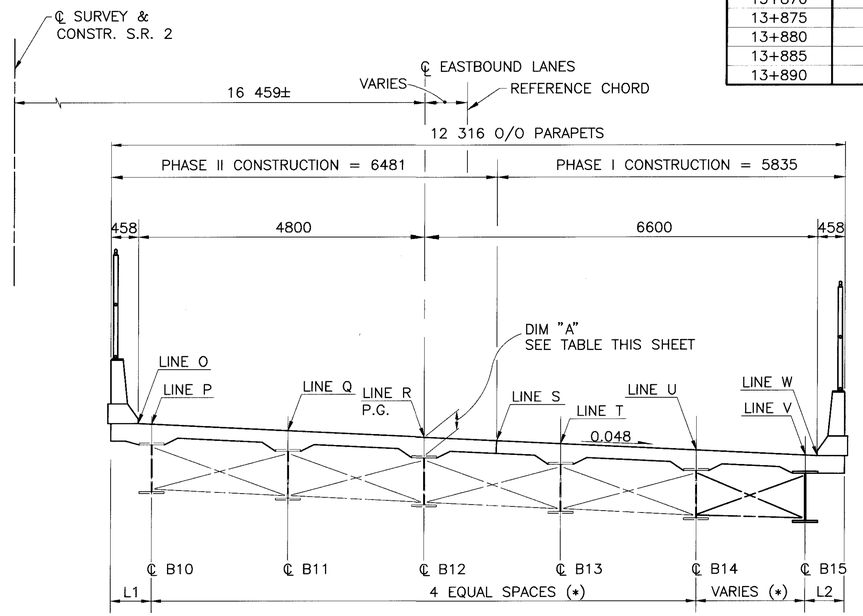
SCREED LINE	LOCATION	C.L. BRG. R.A.	SPAN 1	C.L. BRG. PIER 1	SPAN 2			C.L. BRG. PIER 2	SPAN 3	C.L. BRG. PIER 3	SPAN 4	C.L. BRG. F.A.
			0.500		0.250	0.500	0.750		0.500		0.500	
LINE O F/C	STATION	13+815.494	13+824.220	13+832.737	13+838.903	13+845.064	13+851.219	13+857.368	13+867.380	13+877.380	13+884.310	13+891.234
	T/S ELEV.	185.836	185.871	185.895	185.907	185.914	185.915	185.911	185.895	185.865	185.837	185.802
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.007	0.000	0.003	0.000	0.003	0.000
	SCREED ELEV.	185.836	185.875	185.895	185.913	185.925	185.922	185.911	185.898	185.865	185.840	185.802
LINE P B10	STATION	13+815.452	13+824.173	13+832.695	13+838.855	13+845.016	13+851.176	13+857.334	13+867.343	13+877.352	13+884.283	13+891.213
	T/S ELEV.	185.825	185.859	185.884	185.893	185.899	185.902	185.901	185.883	185.855	185.827	185.794
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.007	0.000	0.003	0.000	0.003	0.000
	SCREED ELEV.	185.825	185.863	185.884	185.899	185.910	185.909	185.901	185.886	185.855	185.830	185.794
LINE Q B11	STATION	13+815.017	13+823.754	13+832.279	13+838.465	13+844.638	13+850.810	13+856.945	13+867.008	13+877.036	13+883.981	13+890.925
	T/S ELEV.	185.714	185.748	185.773	185.783	185.790	185.792	185.791	185.773	185.746	185.718	185.685
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.007	0.000	0.003	0.000	0.003	0.000
	SCREED ELEV.	185.714	185.752	185.773	185.789	185.801	185.799	185.791	185.776	185.746	185.721	185.685
LINE R P.G.	STATION	13+814.574	13+823.336	13+831.890	13+838.082	13+844.268	13+850.450	13+856.625	13+866.678	13+876.720	13+883.678	13+890.632
	T/S ELEV.	185.601	185.637	185.663	185.675	185.683	185.685	185.682	185.666	185.637	185.609	185.575
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.007	0.000	0.003	0.000	0.003	0.000
	SCREED ELEV.	185.601	185.641	185.663	185.681	185.694	185.692	185.682	185.669	185.637	185.612	185.575
LINE S PH. CONST.	STATION	13+814.338	13+823.110	13+831.673	13+837.871	13+844.065	13+850.253	13+856.434	13+866.498	13+876.551	13+883.517	13+890.477
	T/S ELEV.	185.542	185.578	185.604	185.616	185.624	185.626	185.623	185.608	185.579	185.551	185.517
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.007	0.000	0.003	0.000	0.003	0.000
	SCREED ELEV.	185.542	185.582	185.604	185.622	185.635	185.633	185.623	185.611	185.579	185.554	185.517
LINE T B13	STATION	13+814.141	13+822.912	13+831.484	13+837.680	13+843.877	13+850.073	13+856.268	13+866.335	13+876.402	13+883.374	13+890.345
	T/S ELEV.	185.492	185.526	185.552	185.563	185.569	185.573	185.572	185.555	185.528	185.500	185.467
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.007	0.000	0.003	0.000	0.003	0.000
	SCREED ELEV.	185.492	185.530	185.552	185.569	185.580	185.580	185.572	185.558	185.528	185.503	185.467
LINE U B14	STATION	13+813.700	13+822.488	13+831.078	13+837.286	13+843.494	13+849.702	13+855.909	13+865.996	13+876.083	13+883.068	13+890.053
	T/S ELEV.	185.380	185.415	185.442	185.452	185.459	185.463	185.463	185.446	185.419	185.391	185.359
	DEFLECTION	0.000	0.004	0.000	0.006	0.011	0.007	0.000	0.003	0.000	0.003	0.000
	SCREED ELEV.	185.380	185.419	185.442	185.458	185.470	185.470	185.463	185.449	185.419	185.394	185.359
LINE V B15	STATION	13+813.419	13+822.181	13+830.749	13+836.959	13+843.170	13+849.382	13+855.592	13+865.714	13+875.834	13+882.852	13+889.868
	T/S ELEV.	185.309	185.335	185.353	185.362	185.367	185.368	185.366	185.355	185.334	185.314	185.289
	DEFLECTION	0.000	0.006	0.000	0.007	0.012	0.007	0.000	0.003	0.000	0.003	0.000
	SCREED ELEV.	185.309	185.341	185.353	185.369	185.379	185.375	185.366	185.358	185.334	185.317	185.289
LINE W F/C	STATION	13+813.296	13+822.110	13+830.713	13+836.941	13+843.164	13+849.381	13+855.592	13+865.703	13+875.803	13+882.802	13+889.795
	T/S ELEV.	185.278	185.316	185.343	185.357	185.365	185.368	185.366	185.351	185.323	185.296	185.262
	DEFLECTION	0.000	0.006	0.000	0.007	0.012	0.007	0.000	0.003	0.000	0.003	0.000
	SCREED ELEV.	185.278	185.322	185.343	185.364	185.377	185.375	185.366	185.354	185.323	185.299	185.262

NOTE:
SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

TABLE OF OVERHANG DIMENSIONS		
STATION	L1	L2
13+815	670	1042
13+820	703	897
13+825	715	773
13+830	707	670
13+835	714	587
13+840	742	525
13+845	749	483
13+850	736	462
13+855	701	462
13+860	697	482
13+865	715	584
13+870	711	584
13+875	687	666
13+880	671	768
13+885	664	891
13+890	637	1035

DIMENSION "A"
(TOP OF BEAM/MOMENT PL. TO TOP OF CONCRETE)

BEAM \ LOCATION	R. ABUT	PIER 1	PIER 2	PIER 3	F. ABUT
B10	299	264	287	301	319
B11	316	277	284	279	317
B12	302	264	289	296	320
B13	311	274	294	282	317
B14	301	276	291	276	313
B15	265	265	265	265	265



TRANSVERSE SECTION – RIGHT BRIDGE

(*) SEE FRAMING PLAN ON SHEET 20/31.
NOTE: ALL DIMENSIONS ARE MEASURED RADIALLY

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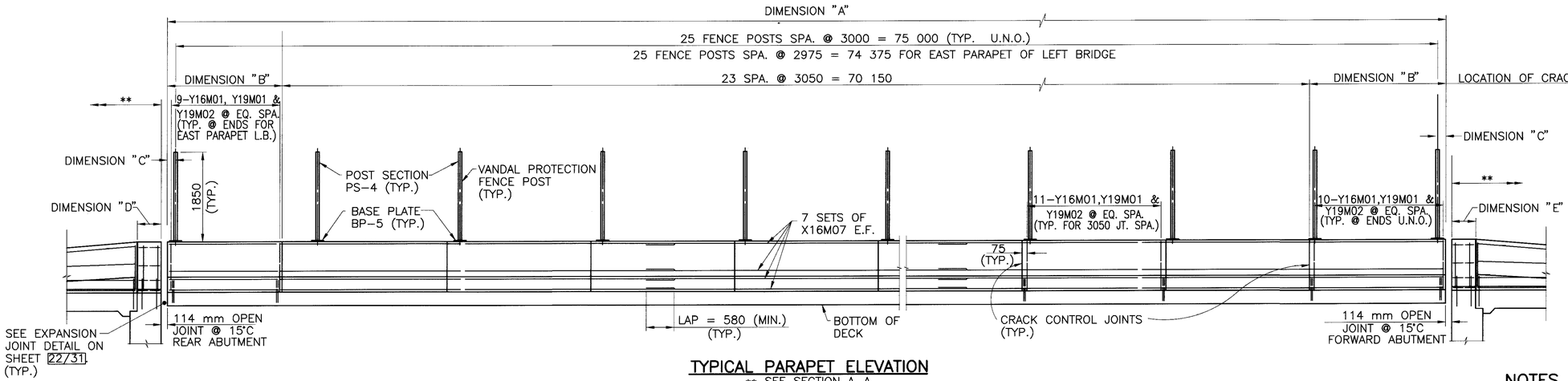
CHECKED	REVISED	STRUCTURE FILE NO.	
KVB		2200244, 2200279	

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-06920 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866



TYPICAL PARAPET ELEVATION

** SEE SECTION A-A

FOR ADDITIONAL PARAPET REINF. OVER PIERS SEE SHEETS 23/31 & 24/31.

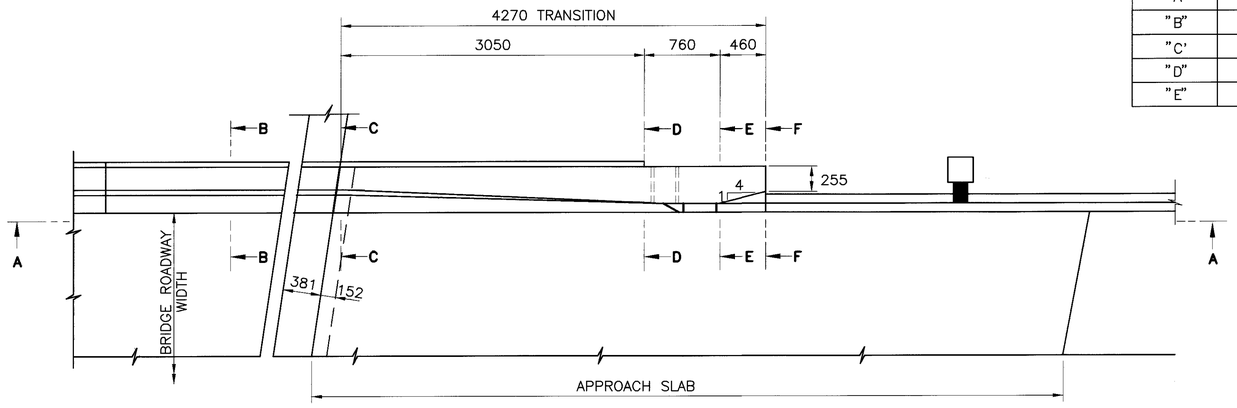
DIMENSION	TABLE OF PARAPET DIMENSIONS			
	LEFT BRIDGE		RIGHT BRIDGE	
	EAST PARAPET	WEST PARAPET	EAST PARAPET	WEST PARAPET
"A"	74 752	75 344	75 390	75 400
"B"	2301	2597	2620	2625
"C'	188	172	195	200
"D"	383	385	388	388
"E"	388	382	384	384

NOTES

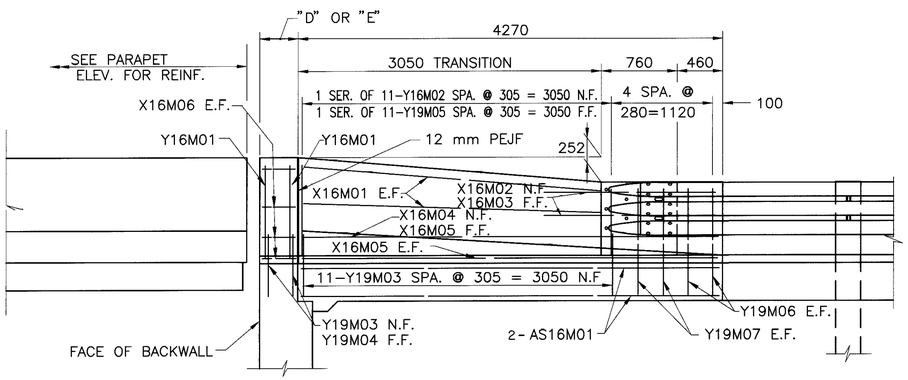
QUANTITIES: OF CONCRETE, REINFORCING STEEL, CRACK CONTROL JOINT SAWCUT AND CAULKING MATERIAL FOR PARAPET ARE INCLUDED WITH APPROPRIATE ITEM UNDER EITHER ABUTMENTS OR SUPERSTRUCTURE FOR PAYMENTS.

FOR BRIDGE TERMINAL ASSEMBLY, SEE STANDARD CONSTRUCTION DRAWING GR-3.1M.

FOR VANDAL PROTECTION FENCE DETAILS SEE ODOT STANDARD DRAWING VPF-1-90M.

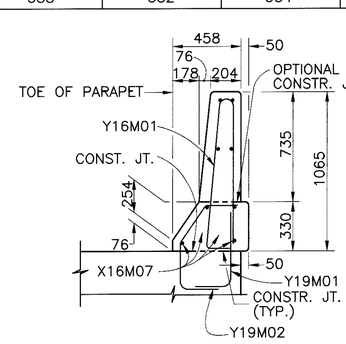


PART PLAN AT ABUTMENT

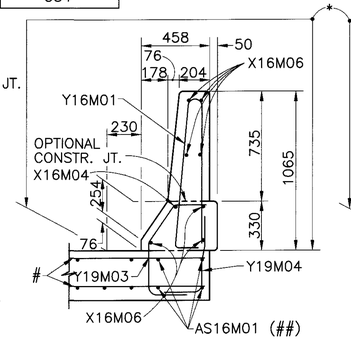


SECTION A-A

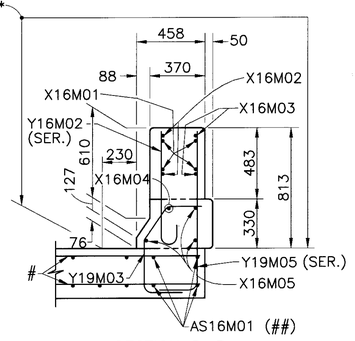
NOTE: BARS X16M02 & X16M04 SHALL BE FIELD BENT TO FIT.



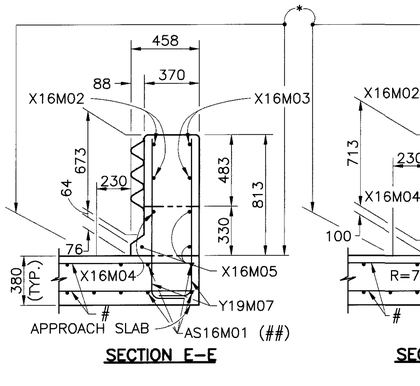
SECTION B-B



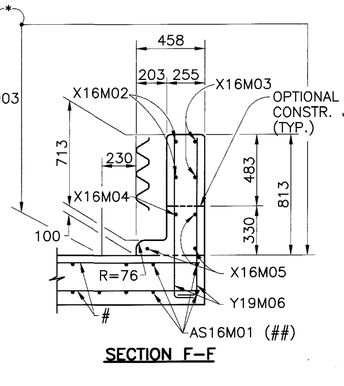
SECTION C-C



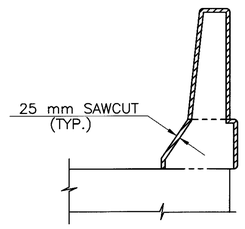
SECTION D-D



SECTION E-E



SECTION F-F



DETAIL A
(SECTION THROUGH SAWCUT)

\# EXTEND APPROACH SLAB TRANSVERSE REINFORCEMENT AS REQUIRED. INCLUDE PAYMENT WITH ROADWAY ITEM 611-REINFORCED CONCRETE APPROACH SLAB, AS PER PLAN.

\## AS16M01 BARS IN APPROACH SLAB BELOW PARAPET SHALL BE 4550 mm LONG. INCLUDE PAYMENT WITH ROADWAY ITEM 611-REINFORCED CONCRETE APPROACH SLAB, AS PER PLAN

* LIMITS OF SEALING OF CONCRETE SURFACES.

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CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200244, 2200279	

PARAPET DETAILS
BRIDGE NO. ERI-2-0820 LAR (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

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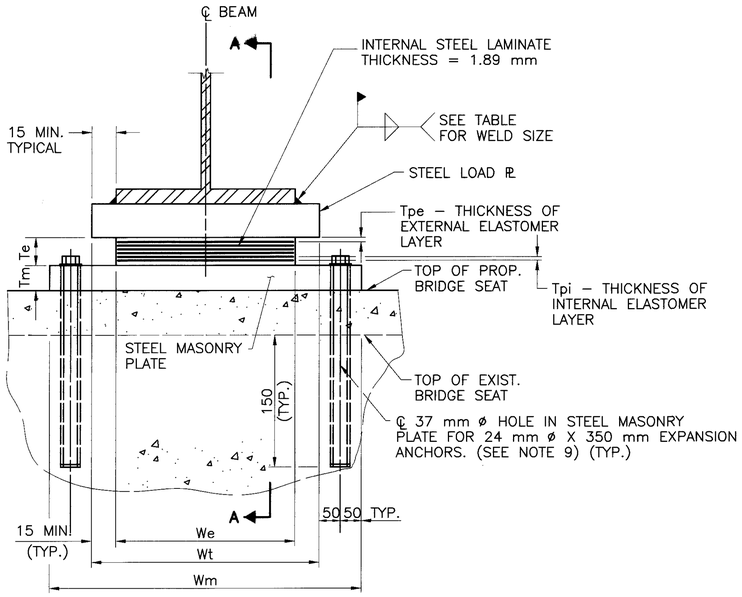
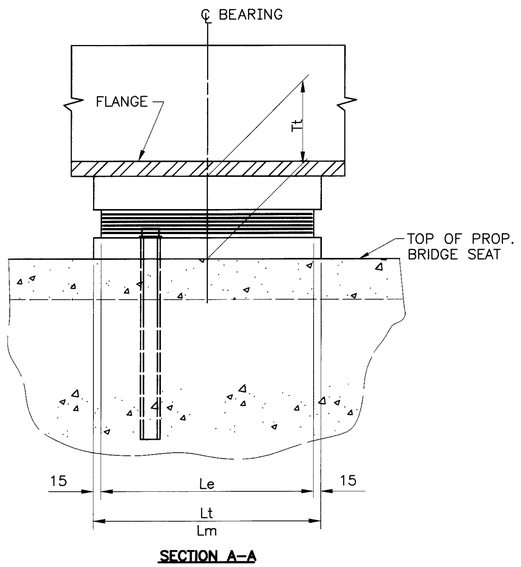




SECTION A–A

LAMINATED ELASTOMERIC BEARING @ ABUTMENTS (LEFT & RIGHT BRIDGE)

NOTES

1 ELASTOMERIC BEARINGS: ELASTOMERIC BEARINGS SHALL COMPLY WITH ITEM 516 AND ARTICLES 18.2.5 THROUGH 18.2.8 OF SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. BEARINGS SHALL BE GRADE 3, 50 DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS CORRESPONDING TO DESIGN METHOD A. TESTING SHALL BE INCLUDED IN THE PRICE BID FOR THE BEARINGS, AS PER PLAN, EACH.

2 WELDING SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 150° C AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

3 BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 27° C OR LOWER THAN 4° C AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 15° C (±) 5° C, THE GIRDERS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 15° C (±) 5° C.

4 THE STEEL LOAD PLATE SHALL BE THE SAME MATERIAL AS THE ATTACHED STRUCTURAL STEEL CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR THE BEARINGS. FIELD COSTS SHALL BE INCLUDED IN THE PRICE BID FOR *PAINTING MAIN STRUCTURAL STEEL*.

5 THE STEEL LOAD PLATE AND MASONRY PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.

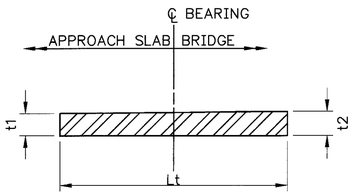
6 TOTAL DESIGN LOAD FOR BEARINGS EQUALS THE SUM OF THE DEAD LOADS AND LIVE LOADS TABULATED IN THE BEARING SCHEDULE.

7 BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS EITHER FIXED OR EXPANSION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516, EACH.

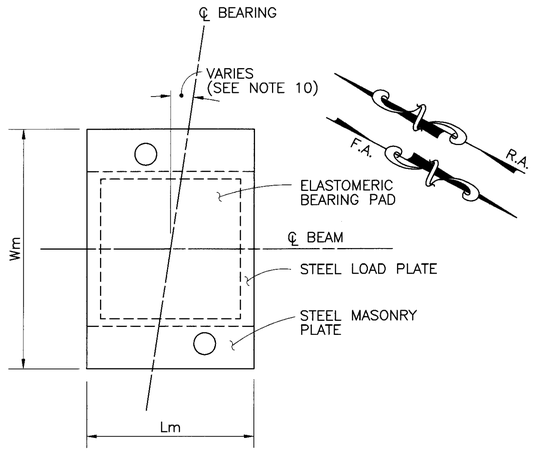
8 THE STEEL MASONRY PLATE AND SHIM PLATE SHALL BE ASTM A36M GRADE 36 STEEL AND SHALL BE PAINTED. FIELD COST FOR PAINTING SHALL BE INCLUDED WITH ITEM 815 FIELD PAINTING OF *EXIST.* STEEL, SYSTEM *O*ZEU.

9 EXPANSION SHIELD ANCHORS CONFORMING TO CMS 712.01 SHALL BE USED. HOLES & GROUTING SHALL COMPLY WITH CMS 510. EITHER CEMENT OR NON–SHRINK, NONMETALLIC GROUT MAY BE USED. INCLUDE DOWEL HOLES, ANCHORS, AND STEEL MASONRY PLATE WITH ITEM 516 FOR PAYMENT. - EXPANSION SHIELD ANCHORS SHALL BE INSTALLED AFTER THE INSTALLATION OF THE BEARING ASSEMBLY.

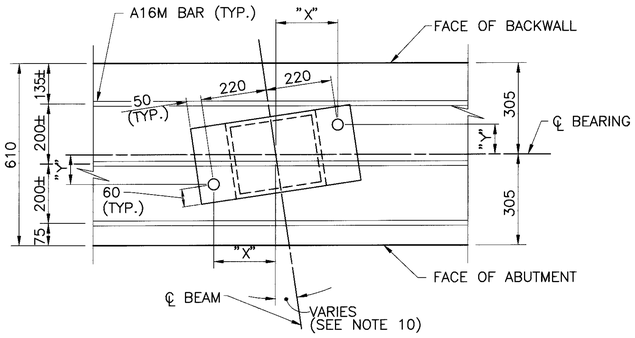
10 FOR SKEW ANGLES, SEE BEARING ANCHOR LAYOUT DATA TABLE THIS SHEET.



DETAIL "A"
STEEL LOAD PLATE



BEARING ORIENTATION PLAN



TYP. ANCHOR ROD LAYOUT

NOTE: EXTREME CARE SHALL BE TAKEN IN DRILLING THE DOWEL HOLES. THE LOCATIONS SHOWN ABOVE ARE BASED ON AVOIDING INTERFERENCE WITH THE EXISTING AND PROPOSED REBARS.

BEARING ANCHOR LAYOUT DATA *

BEAM MK.	REAR ABUTMENT			FORWARD ABUTMENT		
	SKEW	"X"	"Y"	SKEW	"X"	"Y"
B1	5°00'22"	213	86	5°00'22"	213	86
B2	5°00'22"	213	86	5°00'22"	213	86
B3	5°32'15"	212	88	5°32'15"	212	88
B4	6°04'05"	212	90	6°04'05"	212	90
B5	6°35'51"	211	92	6°35'51"	211	92
B6	7°07'33"	210	94	7°07'33"	210	94
B7	7°39'10"	209	96	7°39'10"	209	96
B8	8°10'53"	208	98	8°10'53"	208	98
B9	9°05'35"	207	101	7°18'37"	210	95
B10	10°13'33"	205	105	9°09'51"	206	102
B11	10°13'33"	205	105	9°09'51"	206	102
B12	10°13'33"	205	105	9°09'51"	206	102
B13	10°13'33"	205	105	9°09'51"	206	102
B14	10°13'33"	205	105	9°09'51"	206	102
B15	8°55'05"	209	101	8°55'05"	209	101

* SKEW ANGLE LISTED SHALL BE FIELD VERIFIED PRIOR TO FABRICATION AND INSTALLATIONS.

LAMINATED ELASTOMERIC BEARING SCHEDULE @ ABUTMENTS

BEARING LOCATION	BEARING TYPE	NUMBER REQUIRED			LEFT BRIDGE REACTIONS (kN)			RIGHT BRIDGE REACTIONS (kN)			We (mm)	Le (mm)	Tpi (mm)	NO. OF Tpi'S	Tpe (2 EA.) (mm)	NUMBER OF INTERNAL LAMINATES (1.89 mm)	Te (mm)	STEEL LOAD PLATE				STEEL MASONRY			Tt (mm)	FILLET WELD SIZE (mm)	REMARK
		LEFT BRIDGE	RIGHT BRIDGE	TOTAL	DEAD LOAD	LIVE LOAD	TOTAL LOAD	DEAD LOAD	LIVE LOAD	TOTAL LOAD								Wt (mm)	Lt (mm)	t1 (mm)	t2 (mm)	Wm (mm)	Lm (mm)	Tm (mm)			
REAR ABUT.	EXPANSION	9	6	15	145	215	360	167	215	382	275	225	6	7	4	8	65	340	255	40	40	540	255	25	130	8	SEE NOTE 9
FORWARD ABUT.	EXPANSION	9	6	15	99	204	303	143	204	347	275	225	6	6	4	7	57	340	255	40	40	540	230	25	122	8	SEE NOTE 9

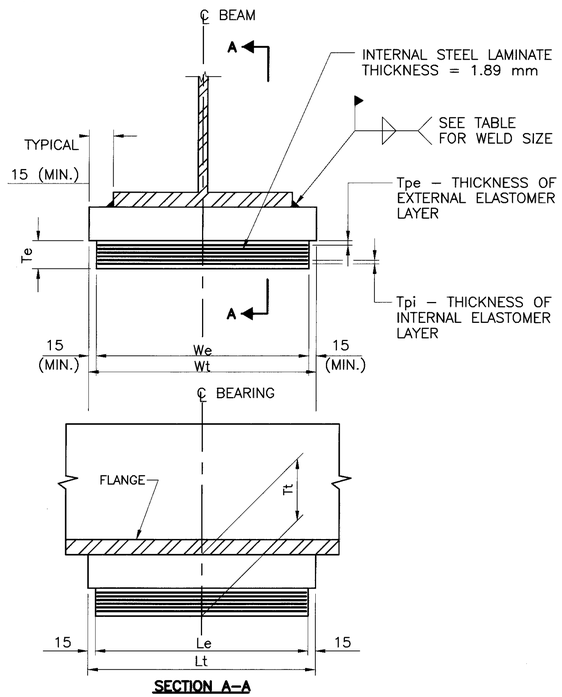
admin P:\3907\DWG\BRIDGE\E-2-0694\PLAN\3907CEB1.DWG AUG 18, 1997 TIME: 10:58 AM

R.D. Zanda & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED KVB | DRAWN JLH/DJD | REVIEWED OHK | DATE 9/10/97
CHECKED FJR | REVISED | STRUCTURE FILE NO 2200244, 2200279

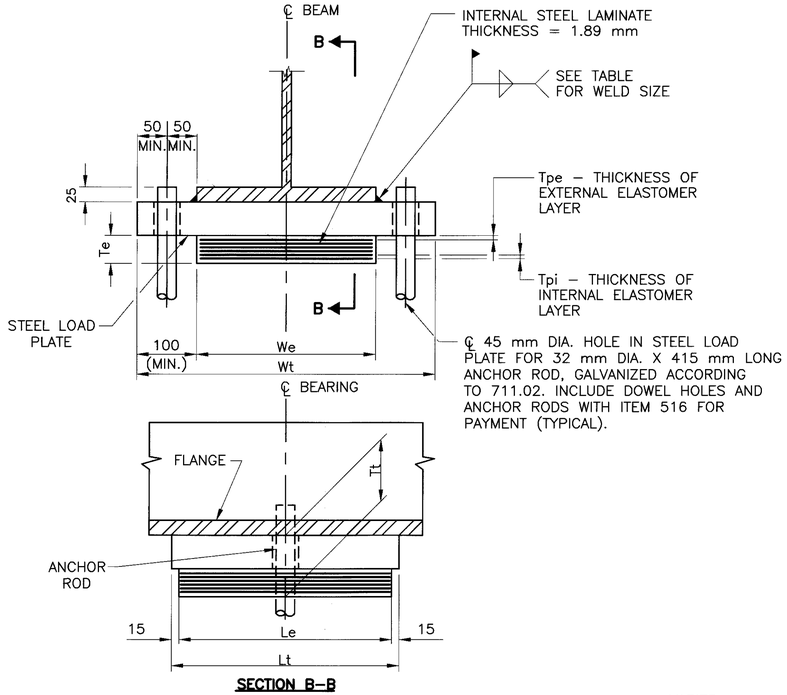
ELASTOMERIC BEARING DETAILS
BRIDGE NO. ERI-2-0920 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866



SECTION A–A

LAMINATED ELASTOMERIC EXPANSION BEARING

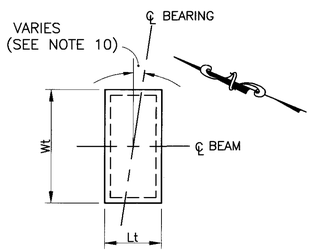


SECTION B–B

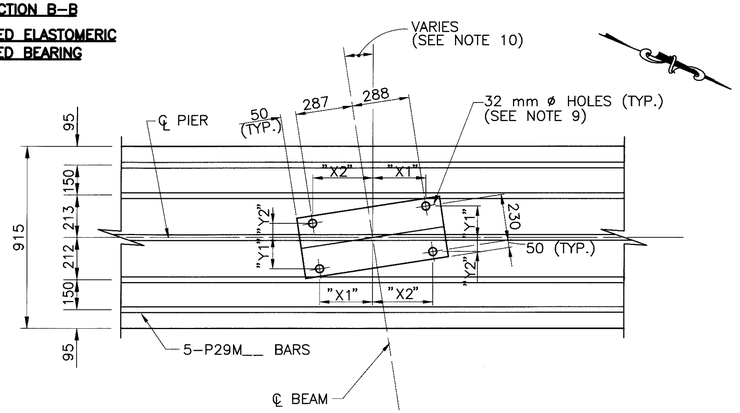
LAMINATED ELASTOMERIC FIXED BEARING

DETAIL "A"

STEEL LOAD PLATE



BEARING ORIENTATION PLAN



BEARING ANCHOR RODS LOCATION

TYPICAL AT PIER NO. 2 ONLY

NOTES

1. ELASTOMERIC BEARINGS: ELASTOMERIC BEARINGS SHALL COMPLY WITH ITEM 516 AND ARTICLES 18.2.5 THROUGH 18.2.8 OF SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. BEARINGS SHALL BE GRADE 3, 50 DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS CORRESPONDING TO DESIGN METHOD A. TESTING SHALL BE INCLUDED IN THE PRICE BID FOR THE BEARINGS, AS PER PLAN, EACH.
2. WELDING SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 150° C AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
3. BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 27° C OR LOWER THAN 4° C AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 15° C (±) 5° C, THE GIRDERS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 15° C (±) 5° C.
4. THE STEEL LOAD PLATE SHALL BE A–36M STEEL, CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR THE BEARINGS. FIELD COSTS SHALL BE INCLUDED IN THE PRICE BID FOR PAINTING MAIN STRUCTURAL STEEL.
5. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
6. TOTAL DESIGN LOAD FOR BEARINGS EQUALS THE SUM OF THE DEAD LOADS AND LIVE LOADS TABULATED IN THE BEARING SCHEDULE.
7. BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS EITHER FIXED OR EXPANSION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516, EACH.
8. BEARING ANCHOR RODS: AT THE OPTION OF THE CONTRACTOR, THE BEARING ANCHOR RODS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST–IN–PLACE. IF ANCHOR RODS ARE NOT CAST–IN–PLACE THEY SHALL BE GROUTED.
9. ANCHOR RODS SHALL BE ASTM A307 STEEL AND SHALL BE GALVANIZED AS PER O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATION 711.02. ANCHORRODS SHALL EXTEND 25 mm ABOVE THE LOAD PLATE (PIER 2 BEARINGS).
10. FOR SKEW ANGLES SEE TABLE THIS SHEET.

LAMINATED ELASTOMERIC BEARING SCHEDULE @ PIERS

BEARING LOCATION	BEARING TYPE	NUMBER REQUIRED			LEFT BRIDGE REACTIONS (kN)			RIGHT BRIDGE REACTIONS (kN)			We (mm)	Le (mm)	Tpi (mm)	NO. OF Tpi'S	Tpe (2 EA.)	NUMBER OF INTERNAL LAMINATES (1.89 mm)	Te (mm)	STEEL LOAD PLATE				Tt (mm)	FILLET WELD SIZE (mm)	REMARKS
		LEFT BRIDGE	RIGHT BRIDGE	TOTAL	DEAD LOAD	LIVE LOAD	TOTAL LOAD	DEAD LOAD	LIVE LOAD	TOTAL LOAD								Wt (mm)	Lt (mm)	t1 (mm)	t2 (mm)			
PIER 1	EXPANSION	9	6	15	589	285	874	686	285	971	475	300	6	4	4	5	42	505	330	50	50	92	8	
PIER 2	FIXED	9	6	15	565	288	853	682	289	971	475	300	6	4	4	5	42	675	330	50	50	92	8	SEE NOTES 8 & 9
PIER 3	EXPANSION	9	6	15	403	251	654	508	251	759	425	275	6	4	4	5	42	490	305	40	40	82	8	

BEARING LAYOUT DATA *

BEAM MK.	SKEW @ PIER 1	SKEW @ PIER 2	SKEW @ PIER 3	ANCHOR DIM. FOR PIER 2 ONLY			
				"X1"	"X2"	"Y1"	"Y2"
B1	5°00'22"	5°00'22"	5°00'22"	277	296	140	90
B2	5°00'22"	5°00'22"	5°00'22"	277	296	140	90
B3	5°32'15"	5°32'15"	5°32'15"	275	297	142	87
B4	6°04'05"	6°04'05"	6°04'05"	274	298	145	84
B5	6°35'51"	6°35'51"	6°35'51"	273	299	147	81
B6	7°07'33"	7°07'33"	7°0733"	271	300	150	78
B7	7°39'10"	7°39'10"	7°39'10"	270	300	152	76
B8	8°10'53"	8°10'53"	8°10'53"	268	301	155	73
B9	9°05'35"	8°02'49"	7°18'37"	269	301	154	74
B10	9°19'11"	8°14'28"	7°33'19"	268	301	155	73
B11	9°19'11"	8°14'28"	7°33'19"	268	301	155	73
B12	9°19'11"	8°14'28"	7°33'19"	268	301	155	73
B13	9°19'11"	8°14'28"	7°33'19"	268	301	155	73
B14	9°19'11"	8°14'28"	7°33'19"	268	301	155	73
B15	8°55'05"	8°55'05"	8°55'05"	266	302	158	69

* SKEW ANGLE LISTED SHALL BE FIELD VERIFIED PRIOR TO FABRICATION AND INSTALLATIONS.

R.D. Zande & Associates, Inc.
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Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED	DRAWN	REVIEWED	DATE
KVB	DJD	OHK	9/10/97
CHECKED	REVISED	STRUCTURE FILE NO	
FJR		2200244, 2200279	

ELASTOMERIC BEARING DETAILS
BRIDGE NO. ERI-2-06920 LAR (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

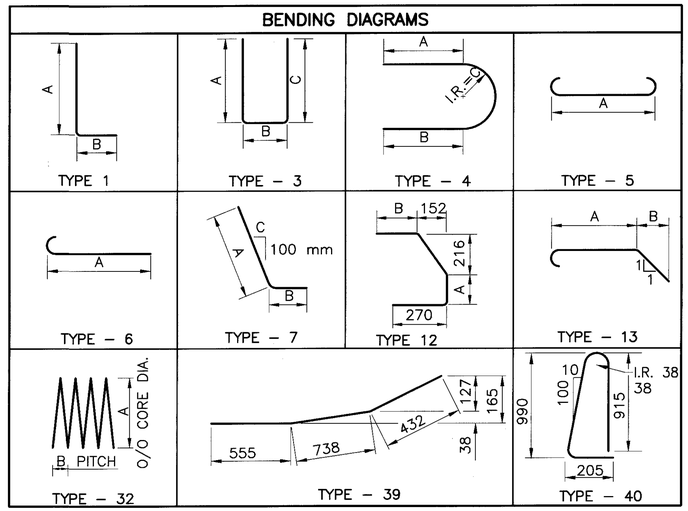
REINFORCING STEEL LIST – LEFT BRIDGE

BAR MARK	REAR	FWRD.	TOTAL	LENGTH mm	WEIGHT (kg)	TYPE	A mm	B mm	C mm	INC. mm
ABUTMENTS										
A16M01	18	18	36	900	50.285	STR.				
A16M02	67	50	117	1753	318.317	1	1043	750		
A16M03	4	4	8	2163	26.856	3	600	1043	600	
A16M04		5	5	4125	32.010	STR.				
A16M05		5	5	4100	31.816	STR.				
A16M06		5	5	6675	51.798	STR.				
A16M07		20	20	2375	73.720	STR.				
A16M08		5	5	2300	17.848	STR.				
A16M09		3	3	3350	15.598	STR.				
A16M10		3	3	3400	15.830	STR.				
A16M11		1	1	3950	6.130	STR.				
A16M12		1	1	4000	6.208	STR.				
A16M13		8	8	900	11.174	STR.				
A16M14		2	2	1275	3.958	STR.				
A16M15		4	4	9525	59.131	STR.				
A16M16		2	2	8975	27.858	STR.				
A16M17		2	2	8150	25.298	STR.				
A16M18		2	2	5225	16.218	STR.				
A16M19		2	2	5175	16.063	STR.				
A16M20		2	2	4600	14.278	STR.				
A16M21		2	2	3850	11.950	STR.				
A16M22		2	2	3175	9.855	STR.				
A16M23		2	2	11000	34.144	STR.				
A16M24		1	1	3725	5.781	7	3200	525	260	
A16M25		1	1	3700	5.742	7	3200	500	260	
A16M26		1	1	3775	5.859	7	3200	575	326	
A16M27		1	1	3825	5.936	7	3200	625	326	
A16M28	5		5	3950	30.652	STR.				
A16M29	5		5	3975	30.846	STR.				
A16M30	5		5	2975	23.086	STR.				
A16M31	15		15	3050	71.004	STR.				
A16M32	5		5	10700	83.032	STR.				
A16M33	3		3	3325	15.481	STR.				
A16M34	3		3	3250	15.132	STR.				
A16M35	1		1	3925	6.092	STR.				
A16M36	1		1	3850	5.975	STR.				
A16M37	5		5	900	6.984	STR.				
A16M38	2		2	1275	3.958	STR.				
A16M39	4		4	11825	73.410	STR.				
A16M40	2		2	11300	35.075	STR.				
A16M41	2		2	10450	32.437	STR.				
A16M42	2		2	8075	25.065	STR.				
A16M43	2		2	7900	24.522	STR.				
A16M44	2		2	7350	22.814	STR.				
A16M45	2		2	6675	20.719	STR.				
A16M46	2		2	5975	18.546	STR.				
A16M47	2		2	4500	13.968	STR.				
A16M48	1		1	3525	5.471	7	3175	350	259	
A16M49	1		1	3550	5.510	7	3175	375	259	
A16M50	1		1	3725	5.781	7	3250	475	317	
A16M51	1		1	3650	5.665	7	3250	400	317	
A16M52	10	8	18	10000	279.360	STR.				
A19M01	36	36	72	3050	490.806	3	700	1750	700	
A19M02	4	4	8	3083	55.124	3	1375	433	1375	
A19M03	70	54	124	1931	535.157	3	875	281	875	
A19M04	4	4	8	2875	51.405	1	2625	300		
A19M05	15	14	29	3933	254.917	3	1800	433	1800	
A19M06		2	2	3600	16.092	3	425	2850	425	
A19M07		2	2	3775	16.874	3	425	3025	425	
		1	1	4883			2275		2275	
A19M08		Ser. Of	Ser. Of	TO	89.067	3	TO	433	TO	135
		7	7	6503			3085		3085	
A19M09		2	2	2000	8.940	1	1750	300		
A19M10		2	2	3300	14.751	3	425	2550	425	
A19M11		2	2	3425	15.310	3	425	2675	425	
		1	1	4133			1900		1900	
A19M12		Ser. Of	Ser. Of	TO	75.456	3	TO	433	TO	115
		7	7	5513			2590		2590	
A19M13		1	1	6503	14.534	3	3085	433	3085	
A19M14		54	54	2083	251.397	3	875	433	875	
A19M15	70		70	1983	310.240	3	825	433	825	
A19M16	2		2	3575	15.980	3	425	2825	425	
A19M17	2		2	3750	16.763	3	425	3000	425	
	1		1	4833			2250		2250	
A19M18	Ser. Of		Ser. Of	TO	86.877	3	TO	433	TO	120
	7		7	6273			2970		2970	
A19M19	2		2	1950	8.717	1	1700	300		
A19M20	2		2	3300	14.751	3	425	2550	425	

BAR MARK	REAR	FWRD.	TOTAL	LENGTH mm	WEIGHT (kg)	TYPE	A mm	B mm	C mm	INC. mm
ABUTMENTS (CONT.)										
A19M21	2		2	3425	15.310	3	425	2675	425	
	1		1	4133			1900		1900	
A19M22	Ser. Of		Ser. Of	TO	74.048	3	TO	433	TO	100
	7		7	5333			2500		2500	
A19M23	1		1	5433	12.143	3	2550	433	2550	
A19M24	1		1	6383	14.266	3	3025	433	3025	
A25M01	2		2	2875	22.845	STR.				
A25M02	2		2	3025	24.037	STR.				
A25M03	2		2	3100	24.633	STR.				
A25M04	2		2	3200	25.427	STR.				
A25M05	2		2	4025	31.983	STR.				
A25M06	2		2	3975	31.585	STR.				
A25M07	2		2	3925	31.188	STR.				
A25M08	2		2	3875	30.791	STR.				
A25M09		2	2	4100	32.579	STR.				
A25M10		2	2	4175	33.175	STR.				
A25M11		2	2	4200	33.373	STR.				
A25M12		2	2	4250	33.771	STR.				
A25M13		2	2	3075	24.434	STR.				
A25M14		2	2	3000	23.838	STR.				
A25M15		2	2	2950	23.441	STR.				
A25M16		2	2	2875	22.845	STR.				
D25M01	49	38	87	1526	627.578	13	830	305		
				TOTAL =	5197					
SUPERSTRUCTURE										
S16M01			229	11400	4051.651	STR.				
S16M02			433	5850	3931.294	STR.				
S16M03			1071	11250	18699.660	STR.				
S16M04			232	9750	3510.624	STR.				
S16M05			429	2775	1847.617	STR.				
S16M06			196	750	228.144	STR.				
S16M07			237	2350	864.386	STR.				
			2	1300						
S16M08			Ser. Of	TO	78.686	STR.				1170
			6	7150						
			2	1550						
S16M09			Ser. Of	TO	42.990	STR.				1275
			4	5375						
			2	2145						
S16M10			Ser. Of	TO	167.554	STR.				1315
			8	11350						
			2	1390						
S16M11			Ser. Of	TO	113.963	STR.				1285
			7	9100						
S16M12			200	10075	3127.280	STR.				
				TOTAL =	36664					
RAILING										
X16M01			16	3050	75.738	STR.				
X16M02			8	1725	21.418	39				
X16M03			8	1725	21.418	STR.				
X16M04			4	4175	25.918	STR.				
X16M05			12	4175	77.755	STR.				
X16M06			32	282	14.005	STR.				
X16M07			112	11250	1955.520	STR.				
X16M08			6	9750	90.792	STR.				
Y16M01			552	2130	1824.780	40				
			4	920			740			
Y16M02			Ser. Of	TO	71.361	6	TO			25
			11	1170			990			
Y19M01			544	755	917.959	1	525	280		
Y19M02			544	1026	1247.452	12	300	230		
Y19M03			52	1106	128.539	12	380	230		
Y19M04			8	830	14.840	1	600	280		
			4	1350			1120			
Y19M05			Ser. Of	TO	145.052	1	TO	280		25
			11	1600			1370			
Y19M06			16	1180	42.197	1	1075	155		
Y19M07			16	1295	46.309	1	1075	270		
				TOTAL =	6721					

	BAR MARK	PIER 1	PIER 2	PIER 3	TOTAL	LENGTH mm	WEIGHT (kg)	TYPE	A mm	B mm	C mm
	PIERS										
	SP16M01	1			1	4975	192.623	32	765	115	
	SP16M02		1		1	5025	194.449	32	765	115	
	SP16M03			1	1	6525	249.223	32	765	115	
	P16M01	10	10	10	30	2075	96.612	STR.			
	P16M02	8	8	8	24	3285	122.360	3	1275	815	1275
	P16M03	6	6	6	18	900	25.142	STR.			
	P16M04	76			76	1285	151.568	1	725	600	
	P16M05		68		68	1260	132.975	1	700	600	
	P16M06			64	64	1220	121.180	1	660	600	
	P16M07	6	6	6	18	2128	59.449	4	450	450	375
	P19M01	8	8	8	24	1750	93.870	STR.			
	P19M02	7	7	7	21	2125	99.737	STR.			
	P19M03	2	2	2	6	1150	15.422	STR.			
	P19M04	1	1	1	3	1600	10.728	STR.			
	P29M01	5			5	11315	286.270	1	9500	1900	
*	P29M02	5			5	5450	137.885	STR.			
	P29M03	5			5	5925	149.902	STR.			
	P29M04	2	2	2	6	2100	63.756	STR.			
	P29M05	2	2	2	6	2350	71.346	STR.			
	P29M06	2	2	2	6	2425	73.623	STR.			
	P29M07	7	7	7	21	2885	306.560	5	2125		
	P29M08	8	8	8	24	2510	304.814	5	1750		
	P29M09	12	12	12	36	3065	558.320	1	2700	450	
	P29M10	12			12	6925	420.486	STR.			
	P29M11		12		12	6900	418.968	STR.			
	P29M12		5		5	10265	259.705	1	8500	1850	
*	P29M13		5		5	5025	127.133	STR.			
	P29M14		5		5	5325	134.723	STR.			
	P29M15			12	12	8325	505.494	STR.			
	P29M16			5	5	10165	257.174	1	8500	1750	
*	P29M17			5	5	4300	108.790	STR.			
	P29M18			5	5	5025	127.133	STR.			
						TOTAL =	5877				
		GRAND TOTAL FOR LEFT BRIDGE = 54,459									

BENDING DIAGRAMS



NOTES

FOR NOTES, SEE SHEET 31/31.

R.D. Zande & Associates, Inc.
1247 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED FJR | DRAWN DJD | REVIEWED OHK | DATE 9/10/97
CHECKED KVB | REVISED | STRUCTURE FILE NO. 2200481, 2200511

REINFORCING STEEL LIST
BRIDGE NO. ER-2-0820 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866

REINFORCING STEEL LIST – RIGHT BRIDGE

	BAR MARK	REAR	FWRD.	TOTAL	LENGTH mm	WEIGHT (kg)	TYPE	A mm	B mm	C mm	INC. mm
	ABUTMENTS										
	A16M01	18	18	36	900	50.285	STR.				
	A16M02	36	36	72	1753	195.887	1	1043	750		
	A16M03	5	5	10	2163	33.570	3	600	1043	600	
	A16M04	4		4	3750	23.280	STR.				
	A16M05	4		4	3675	22.814	STR.				
	A16M06	5		5	4175	32.398	STR.				
	A16M07	15		15	2750	64.020	STR.				
	A16M08	5		5	1675	12.998	STR.				
	A16M09	4		4	3775	23.435	STR.				
	A16M10	4		4	3875	24.056	STR.				
	A16M11	1		1	4500	6.984	STR.				
	A16M12	1		1	4600	7.139	STR.				
	A16M13	6		6	1250	11.640	STR.				
	A16M14	2		2	950	2.949	STR.				
*	A16M15	4		4	9075	56.338	STR.				
*	A16M16	2		2	8800	27.315	STR.				
*	A16M17	2		2	8050	24.987	STR.				
*	A16M18	2		2	5950	18.469	STR.				
	A16M19	2		2	10450	32.437	STR.				
	A16M20	2		2	9575	29.721	STR.				
	A16M21	2		2	8775	27.238	STR.				
	A16M22	2		2	7975	24.754	STR.				
	A16M23	2		2	6550	20.331	STR.				
	A16M24	1		1	3175	4.928	7	2775	400	315	
	A16M25	1		1	3075	4.772	7	2775	315	315	
	A16M26	1		1	4275	6.635	7	3875	400	305	
	A16M27	1		1	4350	6.751	7	3875	475	305	
	A16M28		4	4	3875	24.056	STR.				
	A16M29		4	4	3925	24.366	STR.				
	A16M30		5	5	2800	21.728	STR.				
	A16M31		15	15	2750	64.020	STR.				
	A16M32		5	5	1750	13.580	STR.				
	A16M33		4	4	3750	23.280	STR.				
	A16M34		4	4	3675	22.814	STR.				
	A16M35		1	1	4400	6.829	STR.				
	A16M36		1	1	4325	6.712	STR.				
	A16M37		6	6	1250	11.640	STR.				
	A16M38		2	2	1275	3.958	STR.				
*	A16M39		4	4	8875	55.096	STR.				
*	A16M40		2	2	8550	26.539	STR.				
*	A16M41		2	2	8000	24.832	STR.				
*	A16M42		2	2	5775	17.926	STR.				
	A16M43		2	2	10375	32.204	STR.				
	A16M44		2	2	9575	29.721	STR.				
	A16M45		2	2	8775	27.238	STR.				
	A16M46		2	2	7925	24.599	STR.				
	A16M47		2	2	6550	20.331	STR.				
	A16M48		1	1	3150	4.889	7	2575	575	292	
	A16M49		1	1	3225	5.005	7	2575	625	292	
	A16M50		1	1	4225	6.557	7	3875	325	319	
	A16M51		1	1	4150	6.441	7	3875	275	319	
	A19M01	40	40	80	3050	545.340	3	700	1750	700	
	A19M02	5	5	10	3083	68.905	3	1375	433	1375	
	A19M03	42	42	84	1931	362.526	3	875	281	875	
	A19M04	6	6	12	2300	61.686	1	2050	300		
	A19M05	14	14	28	3933	246.127	3	1800	433	1800	
	A19M06	2		2	3225	14.416	3	425	2475	425	
	A19M07	2		2	3375	15.086	3	425	2625	425	
		1		1	3983			1825		1825	
	A19M08	Ser. Of		Ser. Of	TO	49.874	3	TO	433	TO	150
		5		5	4943			2305		2305	
	A19M09	4		4	1375	12.292	1	1125	300		
	A19M10	2	2	4	3450	30.843	3	425	2700	425	
	A19M11	2	2	4	3600	32.184	3	425	2850	425	
		1		1	4483			2075		2075	
	A19M12	Ser. Of		Ser. Of	TO	108.681	3	TO	433	TO	115
		9		9	6323			2995		2995	
	A19M13	1		1	4433	9.908	3	2050	433	2050	
	A19M14	42		42	1983	186.144	3	825	433	825	
	A19M15		42	42	1883	176.757	3	775	433	775	
	A19M16		2	2	3300	14.751	3	425	2550	425	
	A19M17		2	2	3400	15.198	3	425	2650	425	
			1	1	4183			1925		1925	
	A19M18		Ser. Of	Ser. Of	TO	52.333	3	TO	433	TO	125
			5	5	5183			2425		2425	
	A19M19		2	2	1400	6.258	1	1150	300		
	A19M20		2	2	3400	15.198	3	425	2650	425	

BAR MARK	REAR	FWRD.	TOTAL	LENGTH mm	WEIGHT (kg)	TYPE	A mm	B mm	C mm	INC. mm
ABUTMENTS (CONT.)										
A19M21		2	2	3525	15.757	3	425	2775	425	
		1	1	4433			2050		2050	
A19M22		Ser. Of	Ser. Of	TO	107.676	3	TO	433	TO	115
		9	9	6273			2970		2970	
A19M23	1	1	2	5183	23.168	3	2425	433	2425	
A25M01	2		2	4200	33.373	STR.				
A25M02	2		2	4325	34.366	STR.				
A25M03	2		2	4400	34.962	STR.				
A25M04	2		2	4500	35.757	STR.				
A25M05	2		2	3575	28.407	STR.				
A25M06	2		2	3450	27.414	STR.				
A25M07	2		2	3375	26.818	STR.				
A25M08	2		2	3250	25.825	STR.				
A25M09		2	2	3325	26.420	STR.				
A25M10		2	2	3425	27.215	STR.				
A25M11		2	2	3475	27.612	STR.				
A25M12		2	2	3550	28.208	STR.				
A25M13		2	2	4300	34.168	STR.				
A25M14		2	2	4225	33.572	STR.				
A25M15		2	2	4150	32.976	STR.				
A25M16		2	2	4075	32.380	STR.				
D25M01	29	29	58	1526	351.719	13	830	305		
				TOTAL = 4313						
SUPERSTRUCTURE										
S16M01			413	6425	4118.271	STR.				
S16M02			412	6375	4076.328	STR.				
S16M03			693	11250	12099.780	STR.				
S16M04			147	9750	2224.404	STR.				
			1	1225	1.901	STR.				
S16M05			Ser. Of	TO	27.121	STR.				1135
			5	5765	44.736	STR.				
			1	1600						
S16M06			Ser. Of	TO	22.970	STR.				1400
			4	5800						
			1	900						
S16M07			Ser. Of	TO	24.211	STR.				1110
			5	5340						
			1	650						
S16M08			Ser. Of	TO	17.305	STR.				1425
			4	4925						
				TOTAL = 22657						
RAILING										
X16M01			16	3050	75.738	STR.				
X16M02			8	1725	21.418	39				
X16M03			8	1725	21.418	STR.				
X16M04			4	4175	25.918	STR.				
X16M05			12	4175	77.755	STR.				
X16M06			32	284	14.105	STR.				
X16M07			112	11250	1955.520	STR.				
X16M08			6	9750	90.792	STR.				
Y16M01			554	2130	1831.391	40				
			4	920			740			
Y16M02			Ser. Of	TO	71.361	6	TO			25
			11	1170			990			
Y19M01			546	755	921.334	1	525	280		
Y19M02			546	1026	1252.038	12	300	230		
Y19M03			52	1106	128.539	12	380	230		
Y19M04			8	830	14.840	1	600	280		
			4	1350			1120			
Y19M05			Ser. Of	TO	145.052	1	TO	280		25
			11	1600			1370			
Y19M06			16	1180	42.197	1	1075	155		
Y19M07			16	1295	46.309	1	1075	270		
				TOTAL = 6736						

BAR MARK	PIER 1	PIER 2	PIER 3	TOTAL	LENGTH mm	WEIGHT (kg)	TYPE	A mm	B mm	C mm
PIERS										
SP16M01	1			1	4625	179.842	32	765	115	
SP16M02		1		1	4675	181.668	32	765	115	
SP16M03			1	1	6200	237.355	32	765	115	
P16M01	6	6	6	18	2325	64.951	STR.			
P16M02	10	10	10	30	2435	113.374	3	850	815	850
P16M03	4	4	4	12	900	16.762	STR.			
P16M04	42			42	1285	83.761	1	725	600	
P16M05		42		42	1260	82.132	1	700	600	
P16M06			42	42	1210	78.873	1	650	600	
P16M07	4	4	4	12	2128	39.633	4	450	450	375
P19M01	8	8	8	24	2050	109.962	STR.			
P19M02	7	7	7	21	2125	99.737	STR.			
P19M03	2	2	2	6	2325	31.178	STR.			
P19M04	1	1	1	3	2625	17.601	STR.			
* P29M01	2	2	2	6	6415	194.759	1	5325	1175	
P29M02	5	5	5	15	6275	476.273	STR.			
P29M03	2	2	2	6	2375	72.105	STR.			
P29M04	2	2	2	6	2575	78.177	STR.			
P29M05	2	2	2	6	2625	79.695	STR.			
P29M06	8	8	8	24	2810	341.246	6	2050		
P29M07	7	7	7	21	2885	306.560	6	2125		
P29M08	12	12	12	36	3065	558.320	1	2700	450	
P29M09	12			12	5925	359.766	STR.			
P29M10		12		12	5950	361.284	STR.			
P29M11			12	12	7425	450.846	STR.			
* P29M12	3	3	3	9	6590	300.109	1	5500	1175	
					TOTAL = 4916					
				GRAND TOTAL FOR RIGHT BRIDGE = 38,622						

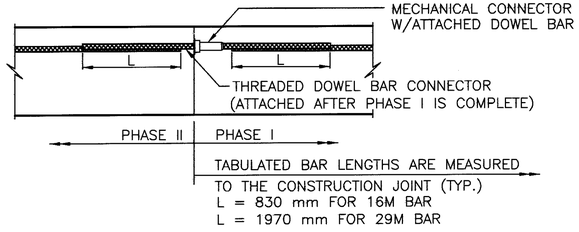
NOTES

1. FOR BAR BENDING DIAGRAMS, SEE SHEET 30/31.
2. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST TWO DIGITS INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A16M01 IS A "16M" BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. I.R. INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.
3. ALL REINFORCING BARS SHALL BE EPOXY COATED. PAYMENT FOR THESE BARS SHALL BE INCLUDED WITH APPROPRIATE CONCRETE ITEMS.
4. "STR." IN THE TYPE COLUMN INDICATES STRAIGHT BARS.
5. REFER TO C.M.S. SECTION 509.05 FOR STANDARD BEND DIMENSIONS.
6. SPACERS:

   CONCRETE SPACERS OR OTHER APPROVED NONCORROSIVE SPACING DEVICES SHALL BE USED AT SUFFICIENT INTERVALS (NEAR THE BOTTOM AND AT INTERVALS NOT EXCEEDING 3050 mm) TO INSURE CONCENTRIC SPACING FOR THE ENTIRE CAGE LENGTH. SPACERS SHALL BE CONSTRUCTED OF APPROVED MATERIAL EQUAL IN QUALITY AND DURABILITY TO THE CONCRETE SPECIFIED IN THE SHAFT. THE SPACERS SHALL HAVE ADEQUATE DIMENSIONS TO ENSURE A MINIMUM 75 mm CLEAR SPACE BETWEEN THE OUTSIDE OF THE REINFORCING CAGE AND THE DESIGN DIMENSION OF THE DRILLED SHAFT OR COLUMN. CYLINDRICAL CONCRETE FEET (BOTTOM SUPPORTS) SHALL BE PROVIDED TO ENSURE THAT THE BOTTOM OF THE CAGE IS MAINTAINED AT THE PROPER DISTANCE ABOVE THE BASE.

6. MECHANICAL CONNECTORS: AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE GIVEN BY THE DIMENSION "L" BELOW. CONNECTORS AND DOWEL BARS SHALL BE EPOXY COATED. COATINGS FOR BOTH CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH 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 WHICH MEETS THE SPECIFICATIONS. CONNECTORS AND DOWEL BAR EXTENSION SHALL CONFORM WITH ITEM 509.

* INDICATES BARS REQUIRING MECHANICAL CONNECTORS. THE LENGTHS SHOWN IN THE TABLE ARE THE NOMINAL LENGTHS MEASURED TO THE CONSTRUCTION JOINT. ADJUSTMENT IN THE LENGTHS OF THE BARS DUE TO MECHANICAL SPLICING SHALL BE MADE PRIOR TO THE FABRICATION.

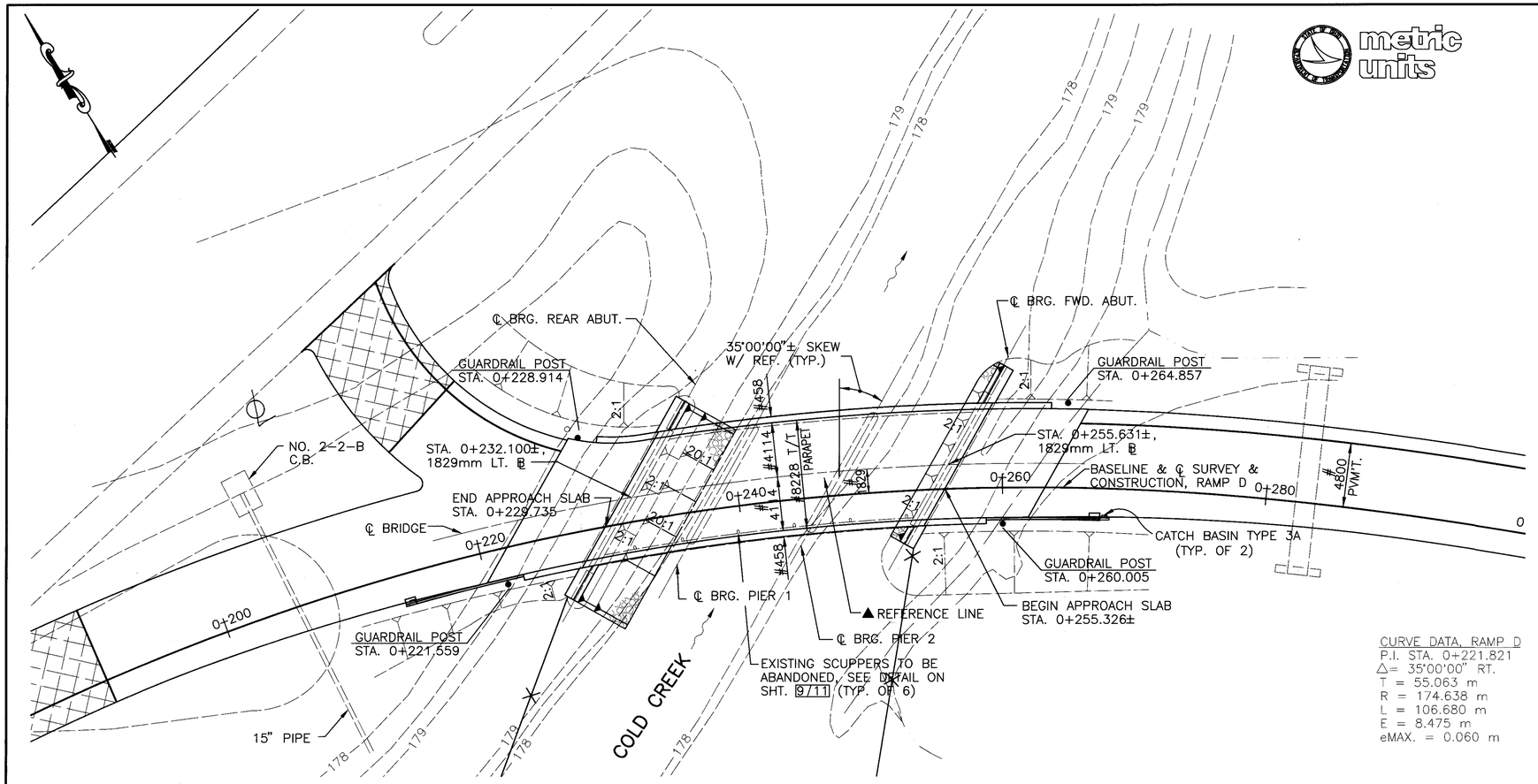


R.D. Zande & Associates, Inc.
1257 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

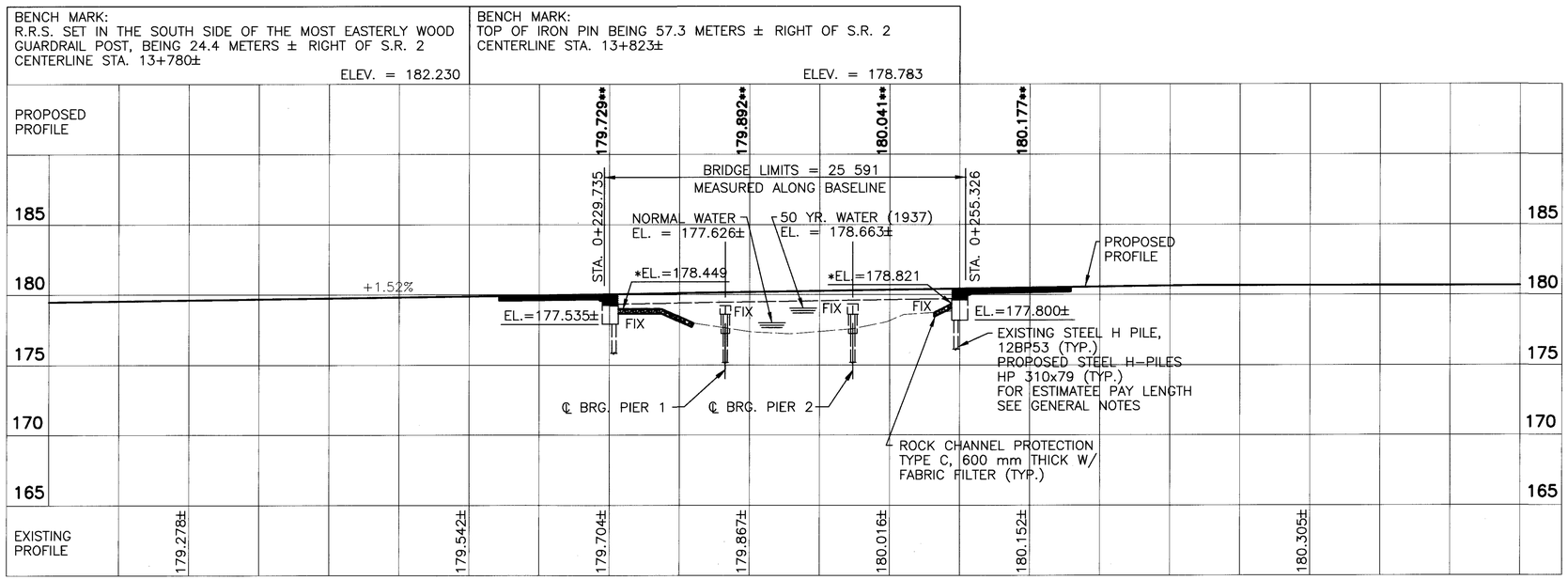
DESIGNED FJR | DRAWN DJD | REVIEWED OHK | DATE 9/10/97
CHECKED KYB | REVISED | STRUCTURE FILE NO 2200244, 2200279

REINFORCING STEEL LIST
BRIDGE NO. ERI-2-06920 L & R (0430)
S.R. 2 OVER U.S. 6 & COLD CREEK

ERI-2-2.866



PLAN



PROFILE ALONG BASELINE RAMP "D"

CURVE DATA, RAMP D
P.I. STA. 0+221.821
△= 35°00'00" RT.
T = 55.063 m
R = 174.638 m
L = 106.680 m
E = 8.475 m
eMAX. = 0.060 m

DRAINAGE DATA

APPARENT DRAINAGE AREA = 10.4 km.^{2}

(COLD CREEK BEGINS AT THE BLUE HOLE IN CASTALIA, OHIO. THE BLUE HOLE IS REPORTED TO BE FED FROM UNDERGROUND SOURCES)

NOTES

ALL DIMENSIONS ARE IN MILLIMETERS, AND ALL STATIONS & ELEVATIONS ARE IN METERS.

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPE SHALL MATCH EXISTING GRADE. QUANTITIES HAVE BEEN INCLUDED IN THE ROADWAY GENERAL SUMMARY AND SHALL BE USED AS REQUIRED UNDER THE DIRECTION OF THE PROJECT ENGINEER.

✳ ELEVATIONS MARKED WITH AN ASTERISK ARE AT THE TOP OF THE SPILL THRU SLOPE AT THE FACE OF ABUTMENT.

✳✳ THE PROPOSED BRIDGE PROFILE ELEVATION IS 0.025 m ABOVE THE EXISTING PROFILE DUE TO MICRO-SILICA OVERLAY.

DIMENSIONS MEASURED RADIALLY

▲ REFERENCE CHORD (N 84°5'51" E±) IS A STRAIGHT LINE BETWEEN ℄ ABUTMENT BEARINGS FROM STA. 0+232.100, 1829 mm LT. TO STA. 0+255.631, 1829 mm LT.

EXISTING BRIDGE DATA

TYPE: 3 SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK & CAPPED PILE SUBSTRUCTURE
SPANS: 7315 mm ±, 9144 mm ±, 7315 mm ± c/c BEARINGS
ROADWAY: 8534 mm± F/F OF PARAPETS
LOADING: CF 400 (57)
WEARING SURFACE: 25 mm MONOLITHIC CONCRETE
ALIGNMENT: 10°00'00"± CURVE TO RIGHT
SKEW: 35°00'00"± LT. FWD.
APPROACH SLABS: AS-1-54 (±7620 mm LONG)
SUPERELEVATION: 0.06±
DATE BUILT: 1962
STRUCTURE FILE NUMBER: 2200309

PROPOSED STRUCTURE

PROPOSED WORK:

1. REPLACE ABUTMENT BACKWALL TO BEAM SEATS, ELIMINATE EXISTING EXPANSION JOINTS AND CONVERT ABUTMENTS TO INTEGRAL
2. REPLACE EXISTING CURB AND PARAPET WITH A CONCRETE DEFLECTOR PARAPET
3. ABANDON ALL EXISTING SCUPPERS
4. PLACE 32 mm MICRO-SILICA MODIFIED CONCRETE OVERLAY
5. PROVIDE POROUS BACKFILL WITH FILTER FABRIC
6. INSTALL CATCH BASINS AT BRIDGE CORNERS
7. SEAL CONCRETE SURFACES
8. REPAIR EXISTING SLOPE PROTECTION
9. REPLACE APPROACH SLABS

(IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN SEQUENTIAL ORDER AS LISTED).

TYPE: 3 SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK ON EXISTING CAPPED PILE PIERS & REHABILITATED INTEGRAL ABUTMENTS
SPANS: 7315 mm±, 9144 mm±, 7315 mm± c/c BEARINGS
ROADWAY: 8228 mm T/T OF PARAPET
LOADING: MS18 (CASE II) & ALT. MILITARY LOADING
WEARING SURFACE: 32 mm MICRO-SILICA MODIFIED CONCRETE
ALIGNMENT: 10°00'00"± CURVE TO RIGHT
SKEW: 35°00'00"± LT. FWD (W/ REFERENCE CHORD)
APPROACH SLABS: AS-1-81M (7600 mm LONG)
SUPERELEVATION: 0.06±
LONGITUDE: 82°46'52" W **LATITUDE:** 41°26'26" N
CURRENT AVERAGE DAILY TRAFFIC: 1220 (1998)
DESIGN AVERAGE DAILY TRAFFIC: 1950 (2018)
CURRENT AVERAGE DAILY TRUCK TRAFFIC: 50 (1998)
DESIGN AVERAGE DAILY TRUCK TRAFFIC: 80 (2018)

R.D. Zanda & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED	DRAWN	REVIEWED	DATE
JAP	DJD	OHK	6-11-97
CHECKED	REVISED	STRUCTURE FILE NO.	
MRMK		2200309	

ERIE COUNTY
STA. 0+229.735
STA. 0+255.326

SITE PLAN
BRIDGE NO. ERI-2-07000S (04385)
RAMP D OVER COLD CREEK

ERI-2-2.866

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S):

AS-1-81M	DATED	10-25-94
BR-1M	DATED	12-15-94
GR-3.1M	DATED	10-21-97

AND TO SUPPLEMENTAL SPECIFICATION(S):

910	DATED	4-21-97
815	DATED	5-30-96
863	DATED	9-9-97
846	DATED	9-9-97
843	DATED	5-5-98

METRIC UNITS:

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS AND ALL ELEVATIONS AND STATIONS IN METERS UNLESS NOTED OTHERWISE.

DESIGN SPECIFICATIONS:

THE MODIFIED PORTION OF THIS STRUCTURE REHABILITATION CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

DESIGN LOADING: MS18, CASE II AND THE ALTERNATE MILITARY LOADING.

CONCRETE CLASS S – COMPRESSIVE STRENGTH 31.0 MPa (SUPERSTRUCTURE)

CONCRETE CLASS C – COMPRESSIVE STRENGTH 27.5 MPa (SUBSTRUCTURE)

REINFORCING STEEL – ASTM A615M, A616M, OR A617M GRADE 420 MINIMUM YIELD STRENGTH 420 MPa.

STRUCTURAL STEEL
A36M – YIELD STRENGTH 250 MPa

DECK PROTECTION METHOD:

32 mm MICRO-SILICA MODIFIED CONCRETE OVERLAY.

UTILITY LINES:

ALL EXPENSE INVOLVED IN RELOCATION (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY(IES). THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTION 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING STRUCTURE PLANS:

THE ORIGINAL DESIGN PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 3 OFFICE, 906 NORTH CLARK ST., ASHLAND, OHIO 44805 (419) 281-0513.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)

THIS ITEM OF WORK SHALL BE USED TO REMOVE THE EXISTING CONCRETE SAFETY CURBS AND PARAPETS, PORTIONS OF DECK END SPANS. THE USE OF EXPLOSIVES, HAEDACHE BALLS, HOE RAMS, CONCRETE CRUSHERS AND OTHER SIMILAR IMPACT DEVICES IS NOT PERMITTED.

BEFORE REMOVAL OF END DAM, CONNECTION TO THE BEAMS SHALL BE CUT OR THE CONCRETE REMOVED AROUND TO PREVENT DAMAGE TO THE BEAMS. REMOVE END CROSSFRAMES AND EXPANSION JOINTS AT EACH ABUTMENT. CUT AND REMOVE SCUPPER DOWNSPOUT PIPE BELOW THE DECK. PROVIDE NECESSARY FILL CONCRETE TO COMPLETE THE ABANDONMENT OF SCUPPERS.

CONCRETE MAY BE REMOVED BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL EDGED TOOLS. THE WEIGHT OF THE HAMMERS SHALL NOT EXCEED 16 KILOGRAMS WITHIN 450 mm OF THE STEEL GIRDERS. OUTSIDE THE 450 mm LIMIT, THE WEIGHT OF THE HAMMERS SHALL NOT EXCEED 41 KILOGRAMS.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE CONTRACT LUMP SUM PRICE BID FOR ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE), WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

THIS ITEM OF WORK SHALL BE USED TO REMOVE PORTIONS OF THE SUBSTRUCTURE AS DESIGNATED IN THE PLAN. THE CONCRETE SHALL BE REMOVED BY HYDRAULIC SPLITTING METHOD. A LINE OF HOLES SHALL BE DRILLED ALONG THE REMOVAL LINE AND HYDRAULIC SPLITTER USED AS PER THE MANUFACTURER'S RECOMMENDATIONS. 16 AND 7 KILOGRAM JACK HAMMERS SHALL BE USED FOR ANY REQUIRED FINISH WORK. HOE RAMS AND/OR CONCRETE CRUSHERS WILL NOT BE PERMITTED TO DO ANY OF THE WORK. NO SAW CUTTING WILL BE ALLOWED IN AREAS WHERE EXISTING REINFORCING SHALL REMAIN. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL DESIGNED FOR SALVAGE, IF DAMAGED DURING THE REMOVAL OPERATION DOWELED REINFORCING STEEL MUST BE ADDED AT THE CONTRACTOR'S EXPENSE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC METER FOR ITEM 202, PORTIONS OF STRUCTURES REMOVED AS PER PLAN (SUBSTRUCTURE), WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

STRUCTURE REMOVALS OVER WATER

REASONABLE CARE SHALL BE TAKEN BY THE CONTRACTOR TO PREVENT REMOVED MATERIALS FROM FALLING INTO THE WATER. ANY DROPPED MATERIALS SHALL BE IMMEDIATELY RECOVERED AND DISPOSED OF AWAY FROM THE SITE.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 25 mm DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN:

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 MATERIAL AND PLACED IN 150 mm LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04.

PILE DESIGN LOADS (ULTIMATE BEARING VALUE):

THE ULTIMATE BEARING VALUE FOR THE ABUTMENT PILES IS 500 kN PER PILE.

ABUTMENT PILES:

4-HP 310 X 79 PILES 14 METERS LONG, ESTIMATED LENGTH
4-HP 310 X 79 PILES OF ORDER LENGTH 15.5 METERS LONG
2 SPLICES

REPLACEMENT OF EXISTING REINFORCING STEEL:

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL.
ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. COST OF ALL REINFORCING STEEL SHALL BE INCLUDED WITH APPROPRIATE ITEM 511 CONCRETE ITEMS.

ITEM 511 CLASS C CONCRETE, AS PER PLAN

ITEM 511 CLASS S CONCRETE, AS PER PLAN:
CLASS C AND CLASS S CONCRETE SHALL BE IN ACCORDANCE WITH 511, EXCEPT THAT THE AGGREGATE SHALL BE #8 LIMESTONE.

ITEM 511, CONCRETE CLASS C, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN:

INSTALL A 900 mm WIDE STRIP, 2.5 mm THICK, GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT AT LOCATIONS SHOWN IN THE PLANS. SECURE THE 900 mm WIDE NEOPRENE 3 mm SHEETING TO THE CONCRETE WITH 32mm X 3mm (LENGTH X SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 25 mm INCH OUTSIDE DIAMETER, 3 mm GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 225 mm. OTHER SIMILAR GALVANIZED DEVICES WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 150 mm (+/-) FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 150 mm (+/-) FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 150 mm CENTER TO CENTER ACROSS THE TOP HALF OF THE NEOPRENE STRIP ON THE SIDE OF THE NEOPRENE STRIP AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHOULD COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAPS IN THE LENGTH OF THE HORIZONTAL STRIPS DUE TO MATERIAL MANUFACTURING SHALL BE AT LEAST ONE FOOT IN LENGTH, IF NOT VULCANIZED OR ADHESIVE, OR 150 mm IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 2.5 mm THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003", BY E.I. DUPONT DE NEMOURS AND COMPANY, INC., "WINGPRENE" BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, mm	D 751	2.5 ± .25
BREAKING STRENGTH, GRAB WXF, N, MIN.	D 751	3130 X 3130
ADHESIVE 25 mm STRIP, 50 mm MIN., N, MIN.	D 751	27
BURST STRENGTH (MULLEN) MPa, MIN.	D 751	9.65
HEAT AGING 70 HOURS T 100° C, 180 BEND WITHOUT CRACKING	D 2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLENESS 1 HOUR AT -40° C, BEND AROUND 6 mm MANDREL	D 2136	NO CRACKING OF COATING

PAYMENT FOR LABOR, MATERIALS AND INSTALLATION OF THESE ITEMS SHALL BE INCLUDED IN ITEM 511 CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN.

ITEM 863 – STRUCTURAL STEEL MEMBERS MISCELLANEOUS LEVEL FABRICATION

STEEL MEMBERS TO BE FABRICATED UNDER THIS ITEM WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. THE CONTRACTOR SHALL MAKE NECESSARY MEASUREMENTS AND PREPARE SKETCHES, DRAWINGS, TABLES, ETC. THE ENGINEER SHALL HAVE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE. TECHNICAL ASSISTANCE WILL BE PROVIDED ON REQUEST BY THE BUREAU OF BRIDGES. MILL TEST REPORTS AND SHIPPING DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INCORPORATING STEEL ITEMS INTO THE WORK, AS REQUIRED BY 501.07. AFTER FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL TO ENSURE THAT THE DRAWINGS DEPICT THE STEEL AS ACTUALLY INCORPORATED INTO THE WORK. THE ENGINEER WILL THEN SEND ONE APPROVED SET TO THE OFFICE OF STRUCTURAL ENGINEERING FOR INFORMATION.

THE FABRICATOR SHALL FURNISH A 35 mm MICROFILM COPY FOR EACH SHOP DRAWING, WHICH SHALL BE MOUNTED ON AN APERTURE CARD AS SPECIFIED IN 501.05.

STEEL MEMBERS INCLUDED IN THIS ITEM ARE MASONRY BEARING PLATES.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTION JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.

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Phone: (614) 486-4383

DESIGNED BAG | DRAWN JLH | CHECKED KVB | REVIEWED OHK | DATE 6/11/97 | STRUCTURE FILE NO. 2200309

GENERAL NOTES
BRIDGE NO. ERI-2-07000B (0436)
RAMP D OVER COLD CREEK

ERI-2-2.866

5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.

6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.

7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.

8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 25 mm, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING ACTUAL JACKING OPERATIONS. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 6 mm.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 25 mm OR LESS.

IF, DURING THE JACKING OPERATIONS, CRACKING OF CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, THE JACKING OPERATION SHALL IMMEDIATELY CEASE AND APPROVED SUPPORTS SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. ANY BEAMS THAT SEPARATE FROM THE DECK SHALL BE EPOXY INJECTED FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH THE PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS SHALL BE BORNE BY THE CONTRACTOR.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

CONCRETE PARAPETS:

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 25 mm DEEP CONTROL JOINTS SHALL BE SAWED INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAWCUTS SHALL BE PLACED AT LOCATIONS AS DETAILED ON SHEET 10 OF 11. THE USE OF AN EDGE GUIDE, FENCE, OR JIG IS REQUIRED TO INSURE 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 6 mm. THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 25 mm WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E. THE CONTRACTOR SHALL NOTE THAT THE OPTION TO SLIPFORM PARAPET IS NOT ALLOWED.

FOR CONSTRUCTION SEQUENCE & ABBREVIATIONS SEE SHEET 3/11.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

THE CONCRETE SHALL BE SEALED USING AN EPOXY-URETHANE SYSTEM AT THE LOCATIONS INDICATED IN THE PLAN. THE URETHANE SHALL BE A "BUFF" COLOR MEETING FEDERAL STANDARD NUMBER 37722. SEE PROPOSAL NOTE FOR ADDITIONAL INFORMATION.

ITEM 518 - POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN:

POROUS BACKFILL SHALL BE NO. 57 GRAVEL

ITEM SPECIAL - BRIDGE DECK REPAIR AND OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE

SEE PROPOSAL NOTE.

CONSTRUCTION SEQUENCE

1. REMOVE APPROACH SLABS, BRIDGE SAFETY CURBS AND PARAPETS, PORTIONS OF DECK END SPANS, END CROSSFRAME ANGLES, AND EXPANSION JOINTS. CUT AND REMOVE SCUPPER DOWNSPOUT PIPE BELOW THE DECK. PROVIDE NECESSARY FILL CONCRETE TO COMPLETE THE ABANDONMENT OF SCUPPERS.
2. JACK SUPERSTRUCTURE AS PER PLAN NOTES AND PROCEDURES.
3. REMOVE PORTIONS OF EXISTING ABUTMENTS AND WINGWALLS.
4. INSTALL PROPOSED PILES AT THE ABUTMENTS AND CONSTRUCT THE FOOTINGS.
5. REMOVE EXISTING BEARING PLATES AND CUT ANCHOR BOLTS ABOVE THE BEAM SEATS AT THE ABUTMENTS. INSTALL NEW BEARING PLATES (MATCH EXISTING SIZE & THICKNESS) AND CONSTRUCT THE INTEGRAL ABUTMENTS AND WINGWALLS.
6. CONSTRUCT PARAPETS AND PORTION OF INTEGRAL ABUTMENTS ABOVE THE CONSTRUCTION JOINT.
7. SCARIFY EXISTING DECK SURFACES 6 mm AND REMOVE DELAMINATED AND SPALLED CONCRETE. APPLY MICRO-SILICA MODIFIED CONCRETE OVERLAY.
8. SEAL CONCRETE SURFACES.
9. COMPLETE DRAINAGE ITEMS, SLOPE PROTECTION WORK AND APPROACH SLABS.

ABBREVIATIONS

BOT. - BOTTOM
BRG. - BEARING
℄ - CENTERLINE
CONSTR. JT. - CONSTRUCTION JOINT
C.P.P. - CORRUGATED PLASTIC PIPE
E.F. - EACH FACE
EXP. - EXPANSION
ELEV. - ELEVATION
F.A. - FORWARD ABUTMENT
F.F. - FAR FACE
FIX. - FIXED
MIN. - MINIMUM
N.F. - NEAR FACE
NO. - NUMBER
O.C. - ON CENTER
OZEU - ORGANIC ZINC EPOXY URETHANE
PL. - PLATE
P.E.J.F. - PREFORMED EXPANSION JOINT FILLER
R - RADIUS
R.A. - REAR ABUTMENT
SER. - SERIES
SPA. - SPACES
STD. - STANDARD
STR. - STRAIGHT
TYP. - TYPICAL
U.N.O. - UNLESS NOTED OTHERWISE

ESTIMATED QUANTITIES

CALC. BY: B.A.G. DATE: 6/10/97
CHK. BY: F.J.R. DATE: 10/3/97

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTS.	PIERS	SUPER STR.	GENERAL	SHEET NO. FOR AS PER PLAN ITEMS
202	11201	LUMP	LUMP	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)			LUMP		2/11
202	11301	19	CU METER	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)	19				2/11
503	21301	LUMP	LUMP	UNCLASSIFIED EXCAVATION, AS PER PLAN	LUMP				2/11
505	11100	LUMP	LUMP	PILE DRIVING EQUIPMENT MOBILIZATION				LUMP	
507	00200	62	METER	STEEL PILES HP 310x79, FURNISHED	62				
507	00250	56	METER	STEEL PILES HP 310x79 DRIVEN	56				
507	50500	2	EACH	STEEL PILE SPLICES	2				
511	31509	45	CU METER	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN			45		2/11
511	44101	6	CU METER	CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN	6				2/11 & 5/11
511	46501	19	CU METER	CLASS C CONCRETE, FOOTING, AS PER PLAN		19			2/11
SPECIAL	51267510	251	SQ METER	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	61		190		
863	10000	LUMP		STRUCTURAL STEEL MEMBERS, MISCELLANEOUS LEVEL FABRICATION			166		
516	13900	3	SQ METER	51 mm PREFORMED EXPANSION JOINT FILLER	3				
516	47001	LUMP	LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN					
518	21231	LUMP		POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	LUMP				3/11
518	40000	33	METER	150 mm PERFORATED CORRUGATED PLASTIC PIPE				33	3/11
518	40010	17	METER	150 mm NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS				17	3/11
843	50000	10.1	SQ METER	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR	10.1				
SPECIAL	51922000	212	SQ METER	MICRO-SILICA MODIFIED CONCRETE OVERLAY (32 mm THICKNESS)			212		
SPECIAL	51922100	2	CU METER	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)			2		
SPECIAL	51922300	LUMP	LUMP	TEST SLAB			LUMP		

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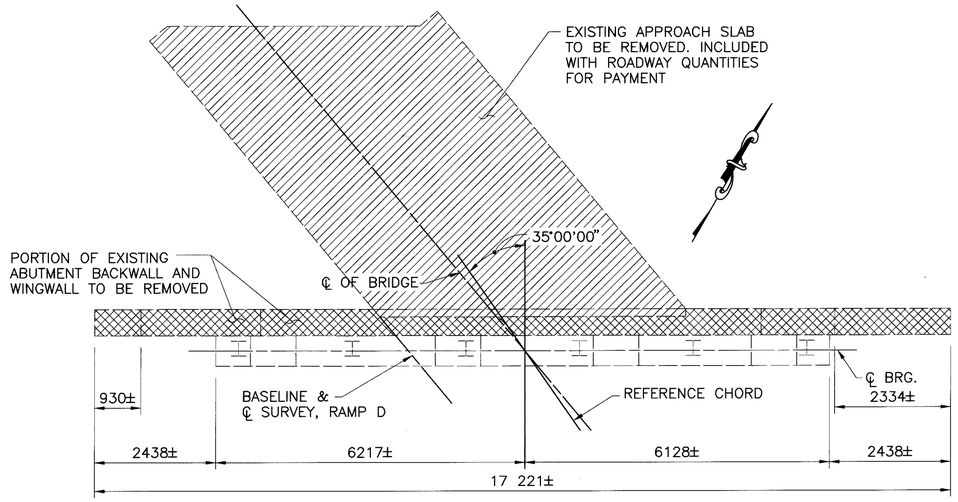
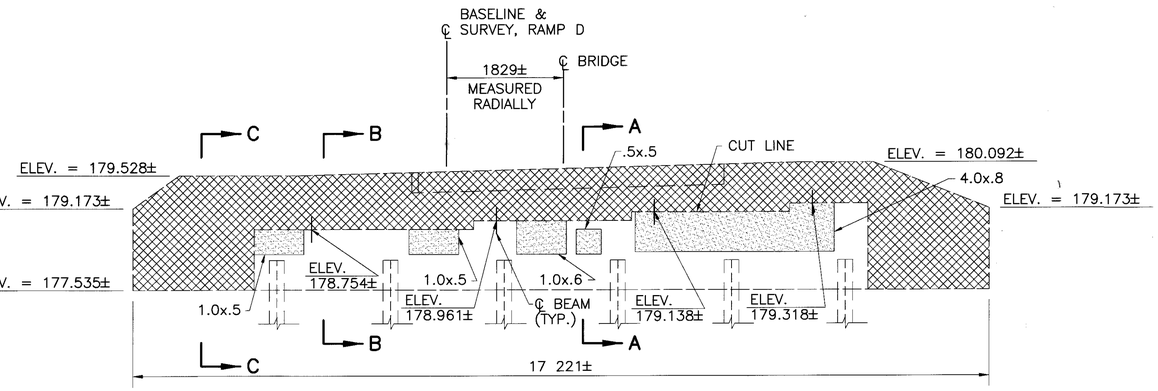
CHECKED	REVISED	STRUCTURE FILE NO	
FJR		2200309	

GENERAL NOTES & ESTIMATED QUANTITIES
BRIDGE NO. ERH-2-07000B (04365)
RAMP D OVER COLD CREEK

ERH-2-2866

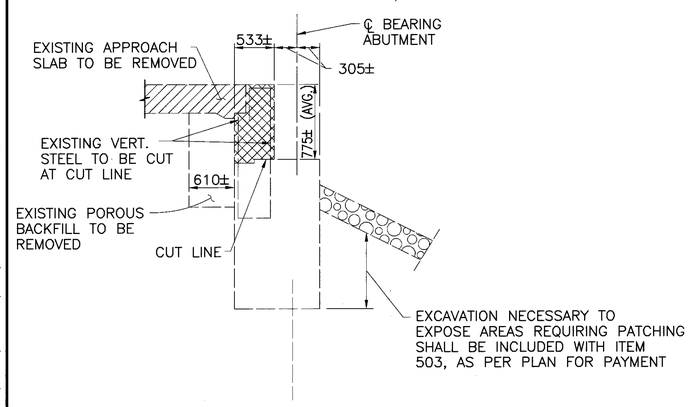


REAR ABUTMENT PLAN

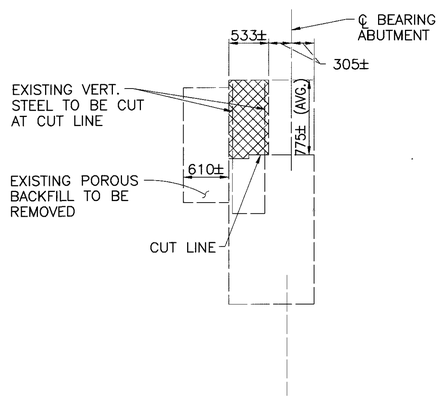


REAR ABUTMENT ELEVATION

NOTE: FOR SECTION C–C, SEE SHEET 5/11.



SECTION A–A



SECTION B–B

INDICATES LIMITS OF APPROACH SLAB REMOVAL INCLUDED WITH ROADWAY QUANTITIES FOR PAYMENT.

INDICATES AREAS TO BE REMOVED AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE.

INDICATES AREAS TO BE PATCHED AS PER ITEM PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR.

PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN OCTOBER, 1997

SUMMARY OF PATCHING QUANTITIES		
ABUTMENT	MEASURED	ESTIMATED
REAR	5.05 SQ. M.	10.1 SQ. M.
FORWARD	0 SQ. M.	0 SQ. M.
TOTAL	5.05 SQ. M.	10.1 SQ. M.

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CHECKED	REVISED	STRUCTURE FILE NO	
KVB/FJR		2200309	

ABUTMENT REMOVAL DETAILS

BRIDGE NO. ERI-2-07000S (0435)
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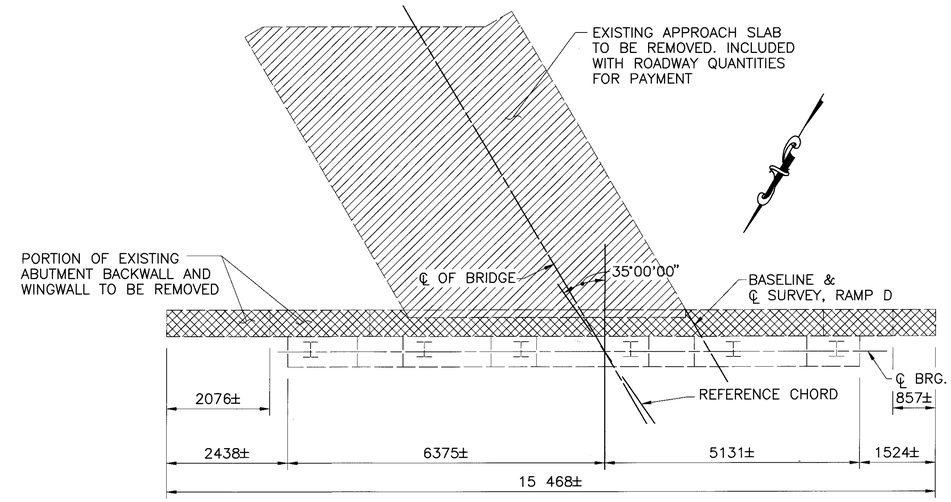
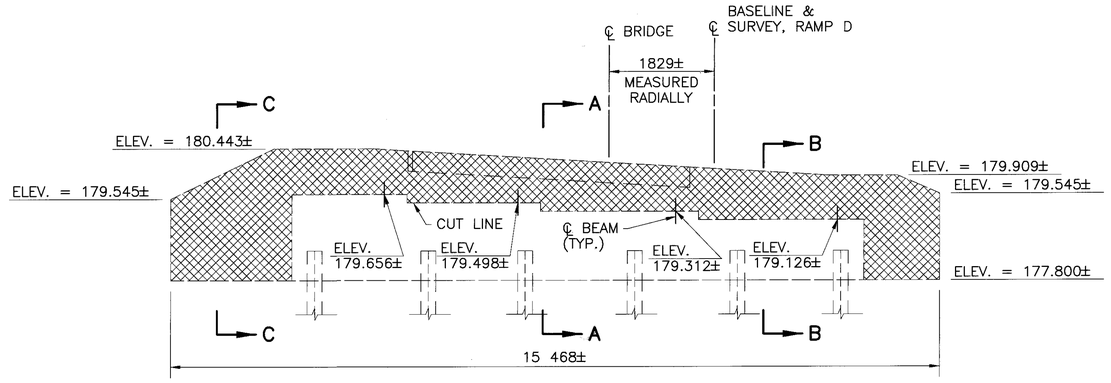
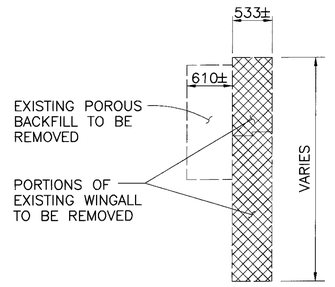


FORWARD ABUTMENT PLAN



FORWARD ABUTMENT ELEVATION



SECTION C–C

INDICATES LIMITS OF APPROACH SLAB REMOVAL INCLUDED WITH ROADWAY QUANTITIES FOR PAYMENT.

INDICATES AREAS TO BE REMOVED AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE

NOTE:
FOR SUMMARY OF PATCHING QUANTITIES AND, SECTIONS A–A AND B–B, SEE SHEET 4/11.

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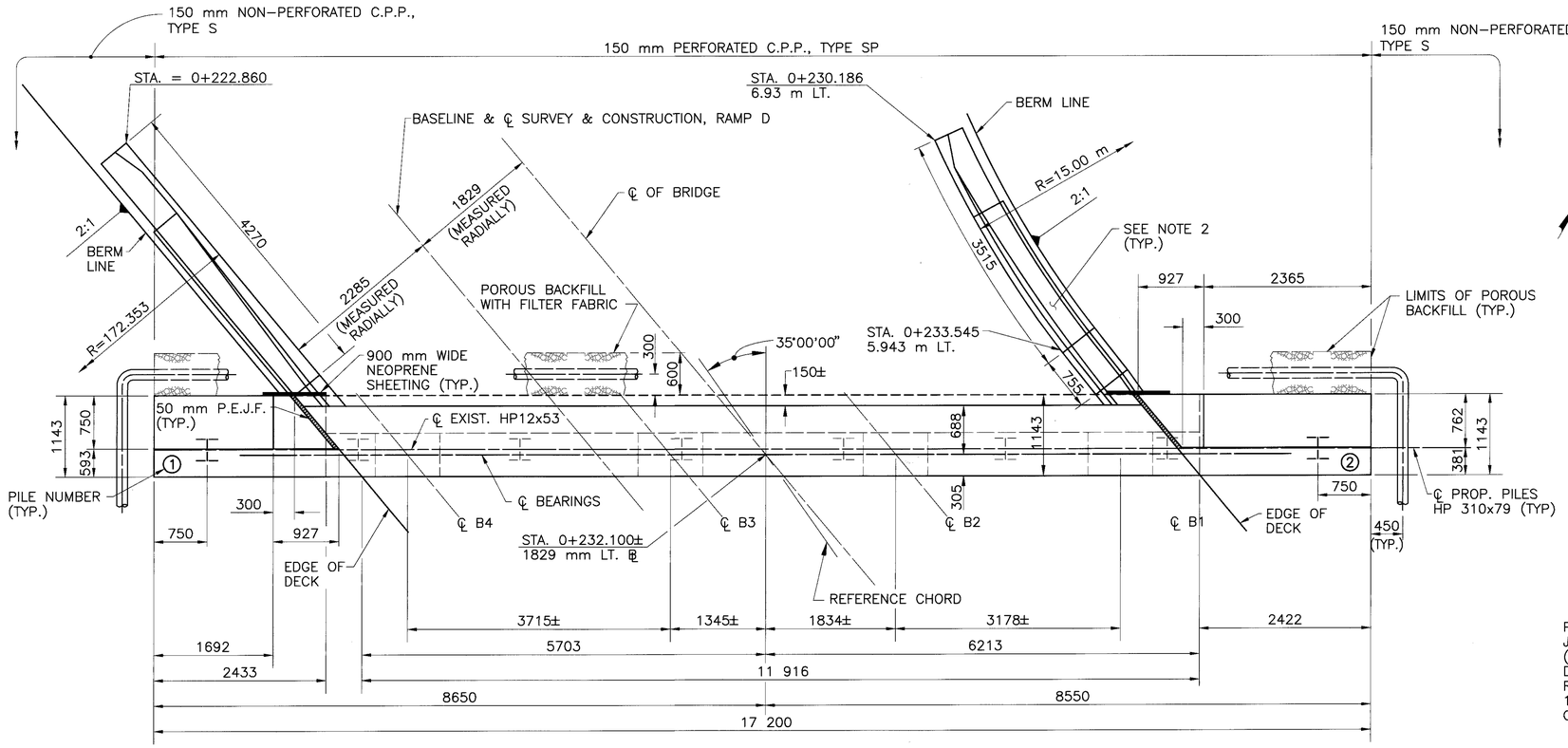
CHECKED	REVISED	STRUCTURE FILE NO	
KVB/FJR		2200309	

ABUTMENT REMOVAL DETAILS
BRIDGE NO. ERI-2-07000S (0436)
RAMP D OVER COLD CREEK

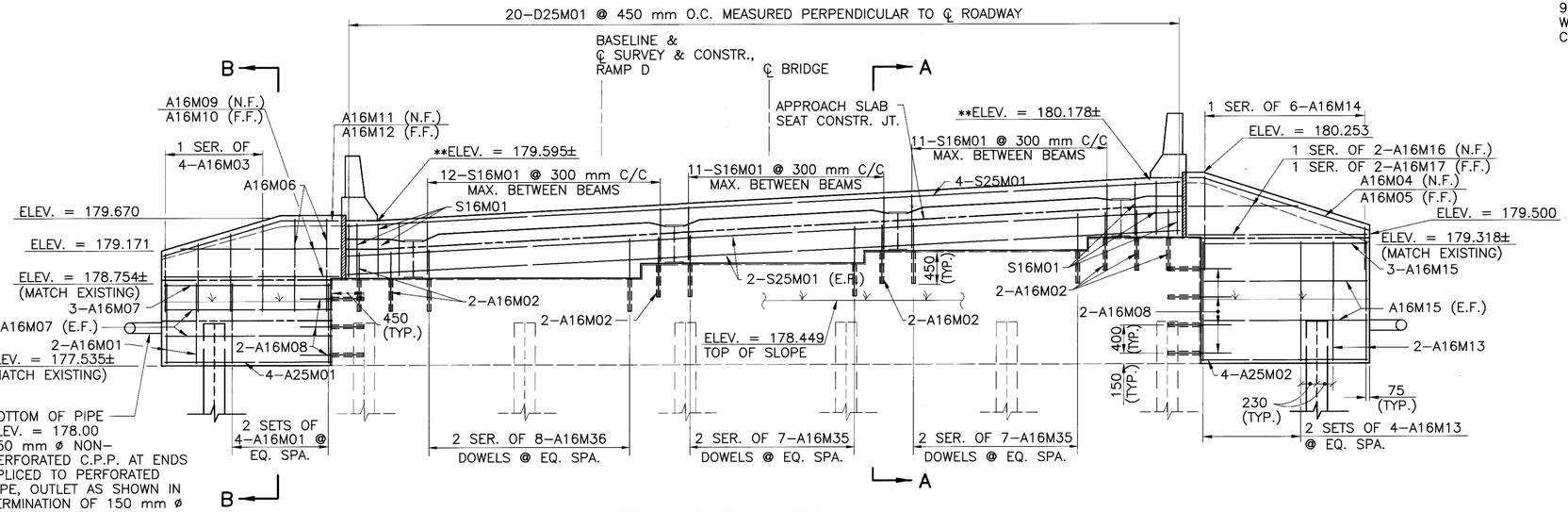
ERI-2-2.866

5/11

213/327



REAR ABUTMENT PLAN

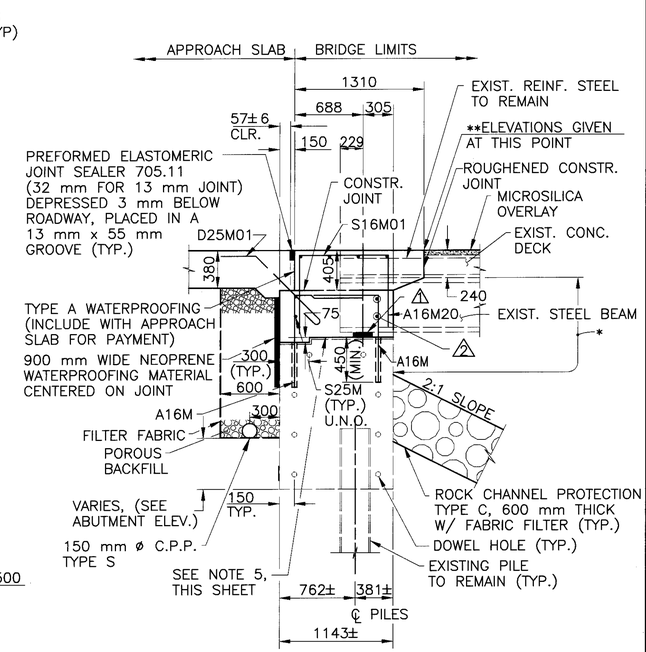


REAR ABUTMENT ELEVATION

** ELEVATIONS GIVEN AT THE CUT LINE ARE 0.025 m HIGHER THAN EXISTING GUTTER ELEVATIONS DUE TO MICRO-SILICA OVERLAY SEE SECTION A-A FOR LOCATION.

NOTES:

1. FOR SECTION B–B, SEE SHEET 6/11 .
2. FOR PARAPET TRANSITION DETAIL, SEE SHEET 10/11 .
3. POROUS BACKFILL WITH FILTER FABRIC, 600 mm THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 300 mm BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS. GEOTEXTILE FABRIC SHALL CONFORM WITH 712.09, TYPE A. GEOTEXTILE IS INCLUDED WITH POROUS BACKFILL, AS PER PLAN FOR PAYMENT. POROUS BACKFILL MATERIAL SHALL BE #57 GRAVEL.
4. CONCRETE AND REINFORCING STEEL ABOVE THE BRIDGE SEAT CONSTRUCTION JOINT INCLUDED WITH SUPERSTRUCTURE CONCRETE & REINFORCING STEEL.
5. SCARIFY 6 mm OF EXISTING CONCRETE SEAT SURFACES.
6. DIAPHRAGM CONCRETE ENCASING THE STRUCTURAL MEMBER SECTIONS SUPPORTED IN INTEGRAL TYPE ABUTMENTS SHALL BE PLACED AT LEAST 48 HOURS BEFORE THE ACTUAL DECK CONCRETE IS PLACED.
7. SEE SHEET 11/11 FOR REINFORCING STEEL LIST.



SECTION A–A

⚠1 REPLACE EXISTING BEARING STEEL PLATES. INCLUDE WITH ITEM 513, 'STRUCTURAL STEEL, FOR REHABILITATION, AS PER PLAN' FOR PAYMENT. SEE DETAIL ON SHEET 9/11.

⚠2 DRILL (2) – 50 mm ø HOLES IN EXIST. STEEL BEAM WEB. INCLUDE WITH ITEM 863, STRUCTURAL STEEL MEMBERS MISCELLANEOUS LEVEL FABRICATION FOR PAYMENT. SEE DETAIL ON SHEET 9/11 FOR LOCATION

* LIMITS OF SEALING CONCRETE SURFACES

R.D. Zande & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone: (614) 488-4383

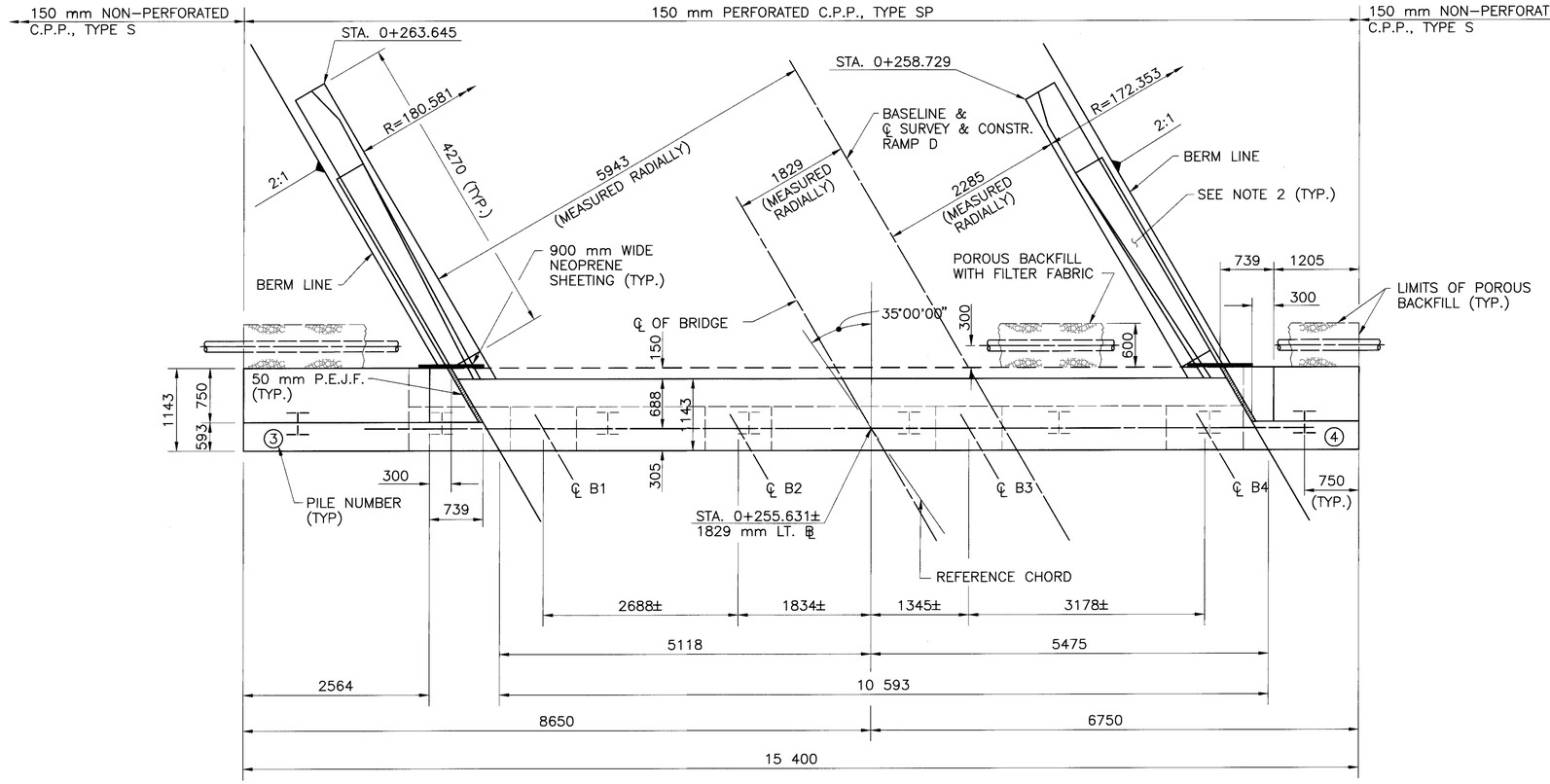
DESIGNED	DRAWN	REVIEWED	DATE
BAG	DJD	OHK	6/11/97
CHECKED	REVISED	STRUCTURE FILE NO	
FJR		2200309	

ABUTMENT DETAILS
BRIDGE NO. ERI-2-07000S (0436)
RAMP D OVER COLD CREEK

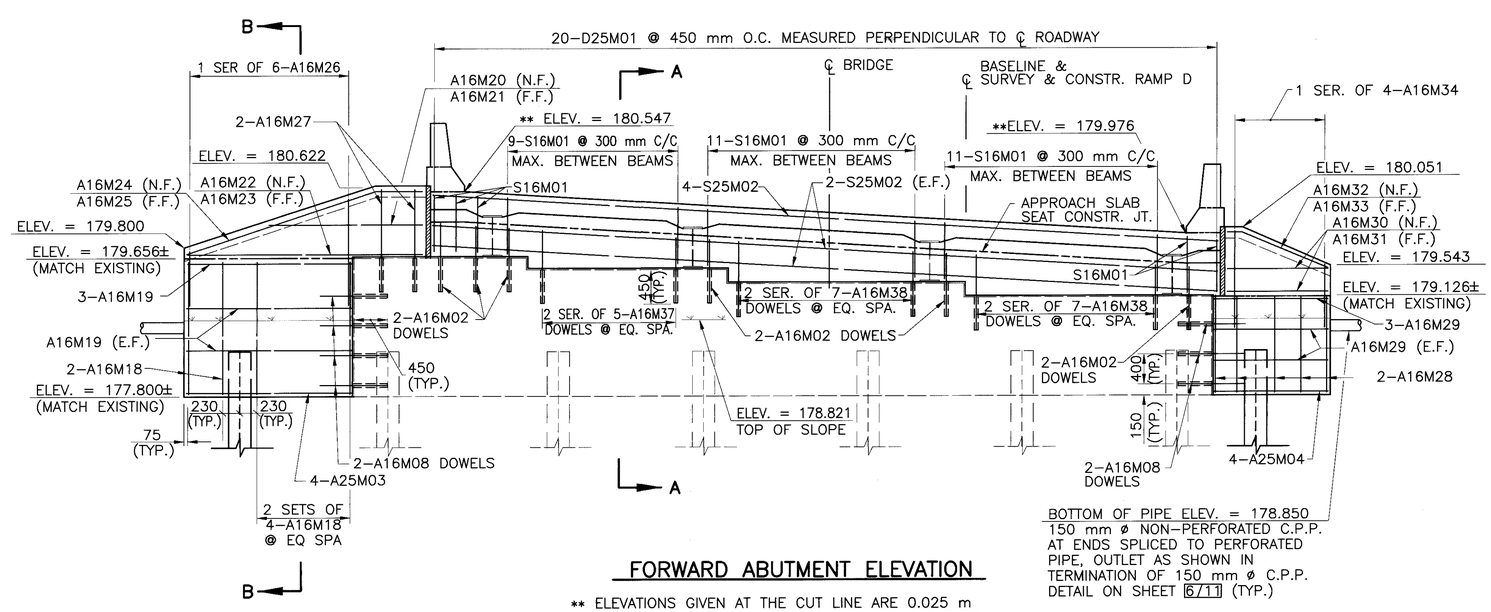
ERI-2-2.866

6/11

214/327

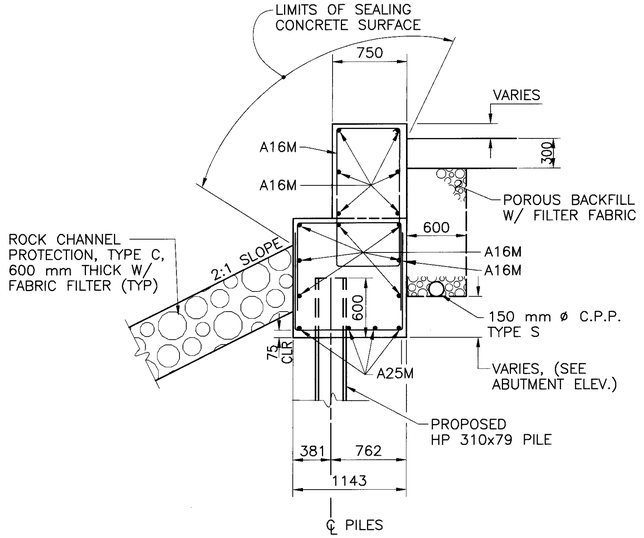


FORWARD ABUTMENT PLAN

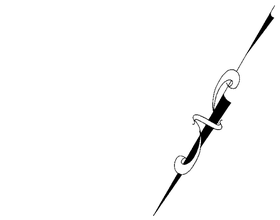


FORWARD ABUTMENT ELEVATION

** ELEVATIONS GIVEN AT THE CUT LINE ARE 0.025 m HIGHER THAN EXISTING GUTTER ELEVATIONS DUE TO MICRO–SILICA OVERLAY. SEE SECTION A–A ON SHT. 5/11 FOR LOCATION.

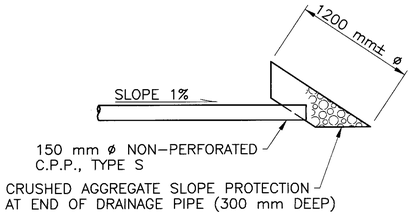


SECTION B–B



NOTES:

1. FOR SECTION A–A, SEE SHEET 5/11 .
2. FOR PARAPET TRANSITION DETAIL, SEE SHEET 10/11 .
3. FOR ADDITIONAL NOTES, SEE SHEET 5/11.



TERMINATION OF 150 mm C.P.P. DETAIL

R.D. Zande & Associates, Inc.
1209 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

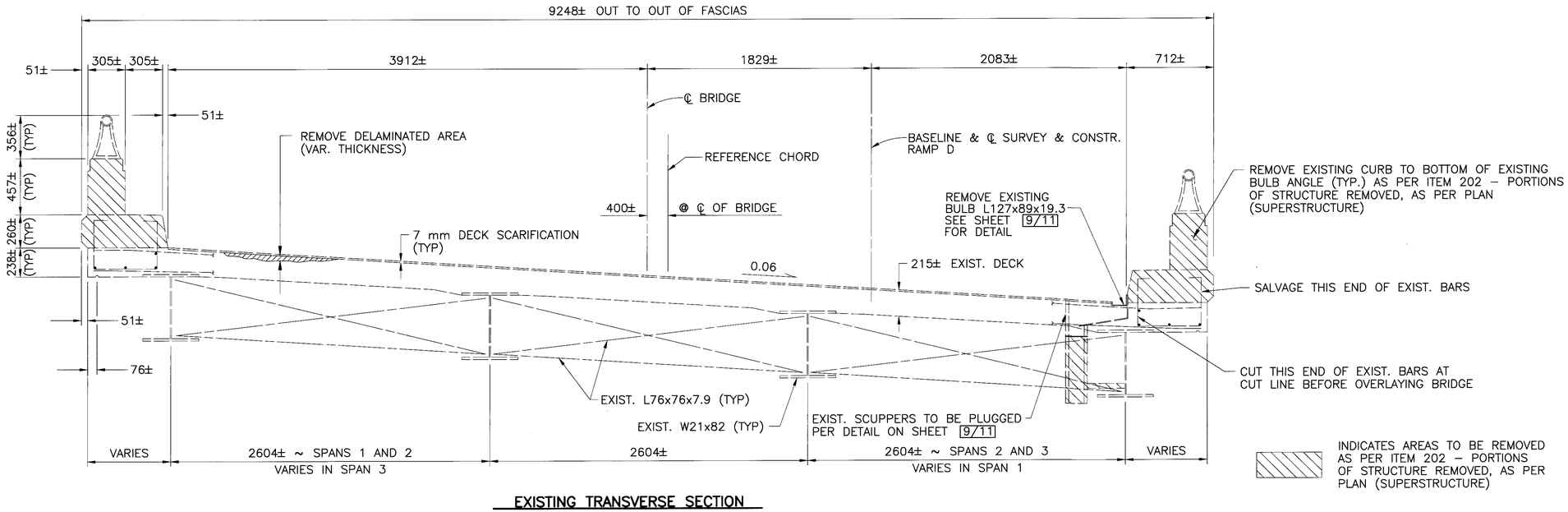
DESIGNED	DRAWN	REVIEWED	DATE
BAG	DJD	OHK	6/11/97
CHECKED	REVISED	STRUCTURE FILE NO.	
FJR		2200309	

ABUTMENT DETAILS
BRIDGE NO. ERI-2-07000S (0435)
RAMP D OVER COLD CREEK

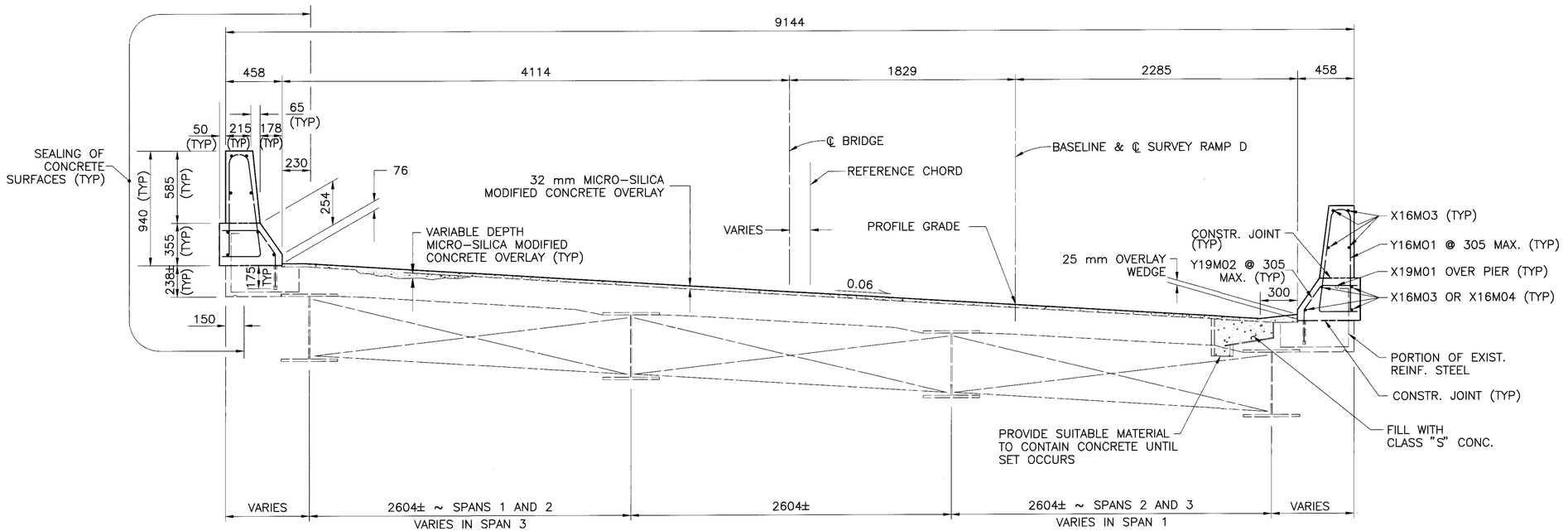
ERI-2-2.866

7/11

215/327



EXISTING TRANSVERSE SECTION



PROPOSED TRANSVERSE SECTION

R.D. Zande & Associates, Inc.
1257 Dublin Road
Columbus, Ohio 43216
Phone: (614) 486-4383

DESIGNED	DRAWN	REVIEWED	DATE
BAG	DJD	OHK	6/11/97
CHECKED	REVISED	STRUCTURE FILE NO	
FJR		2200309	

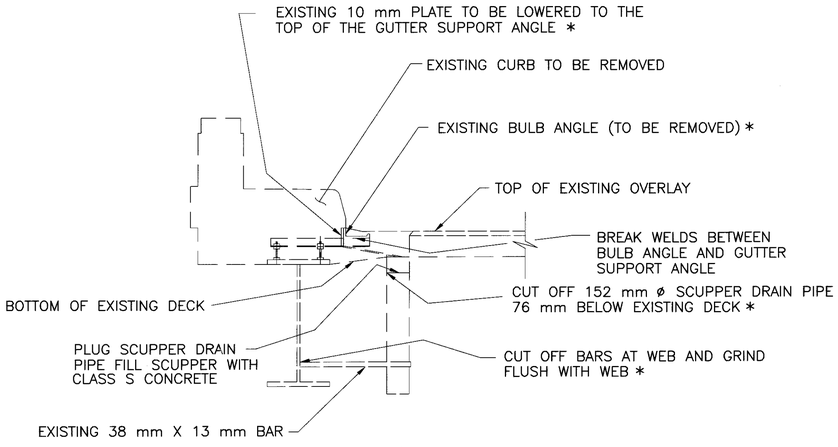
SUPERSTRUCTURE DETAILS

BRIDGE NO. ER-2-07000S (0436)
RAMP D OVER COLD CREEK

ER-2-2.866

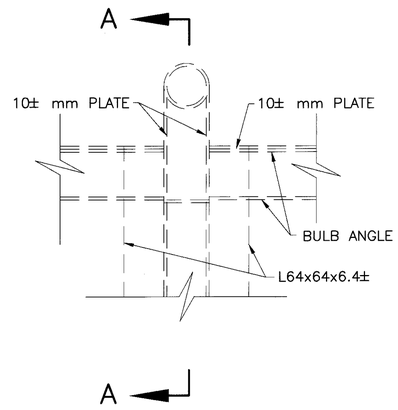
8/11

216/327

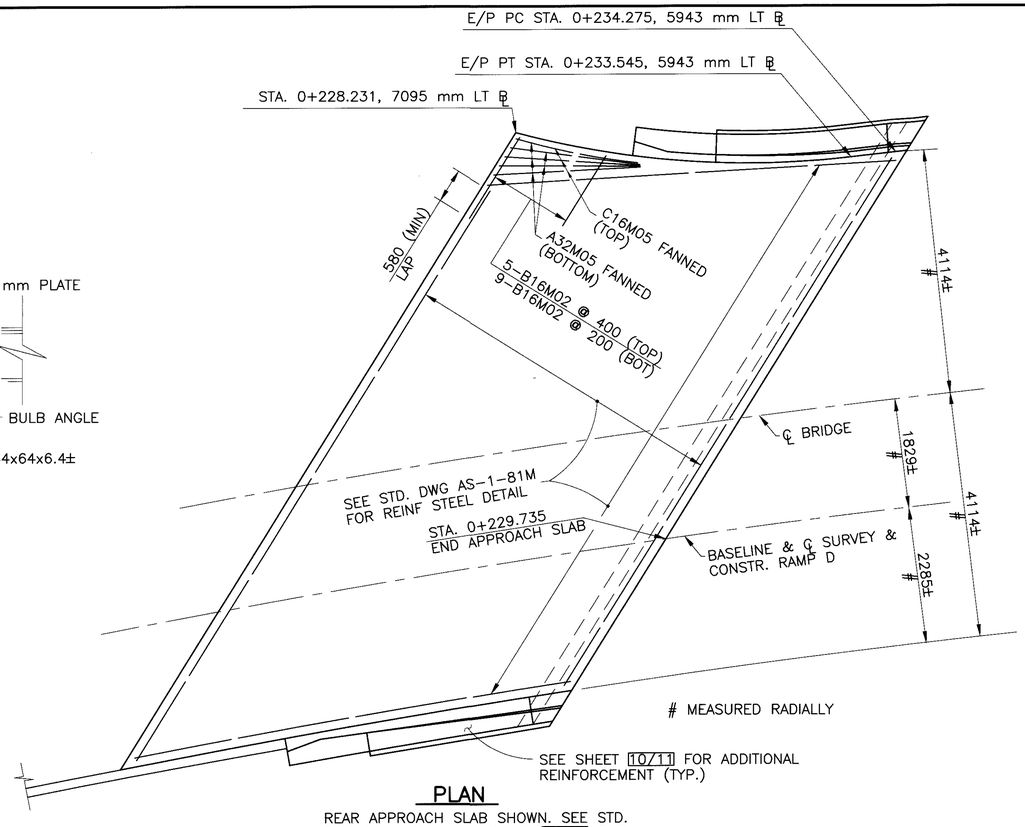


SECTION A–A

* INCLUDE COST IN ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)



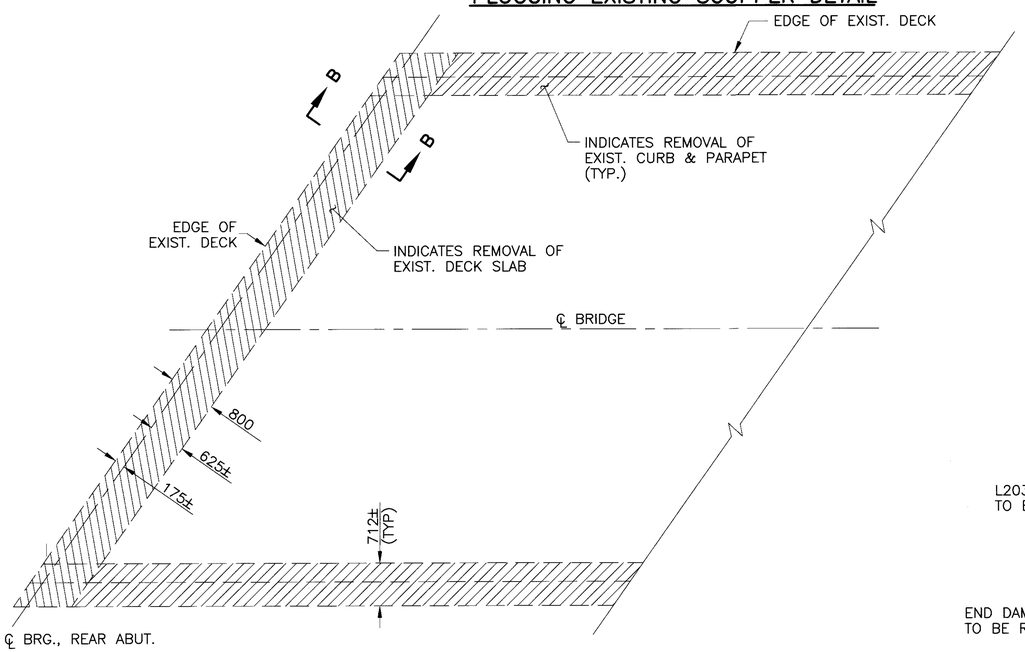
PLAN VIEW OF SCUPPER AND BULB ANGLE



PLAN

REAR APPROACH SLAB SHOWN. SEE STD. DWG AS–1–81M AND SHEET 10/11 FOR DETAILS OF FORWARD APPROACH SLAB

PLUGGING EXISTING SCUPPER DETAIL



SUPERSTRUCTURE REMOVAL PARTIAL PLAN

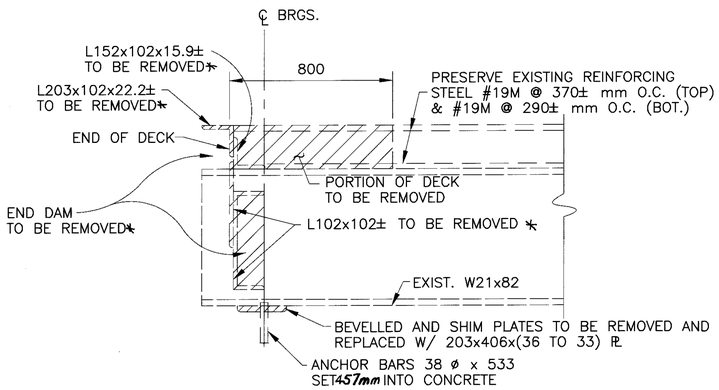
(REAR ABUTMENT SHOWN, FORWARD ABUTMENT SIMILAR)

INDICATES CURB & PARAPET TO BE REMOVED AS PER ITEM 202 – PORTIONS OF STRUCTURE REMOVED AS PER PLAN (SUPERSTRUCTURE)

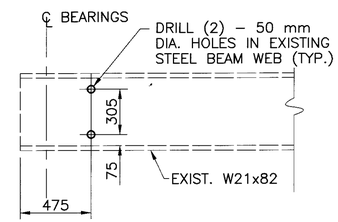
INDICATES AREAS OF DECK SLAB TO BE REMOVED AS PER ITEM 202 – PORTIONS OF STRUCTURE REMOVED AS PER PLAN (SUPERSTRUCTURE)

REINFORCING STEEL LIST **				
MARK	NO.	LENGTH	SHAPE	REMARKS
A32M05	5	2450	STR.	
B16M02	14	1500	STR.	
C16M05	3	2450	STR.	

** ADDITIONAL REINFORCEMENT IN REAR APPROACH SLAB TO BE INCLUDED WITH ITEM 611 – REINFORCED CONCRETE APPROACH SLAB, AS PER PLAN, FOR PAYMENT



SECTION B–B



DETAIL "A"

R.D. Zande & Associates, Inc.
1237 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

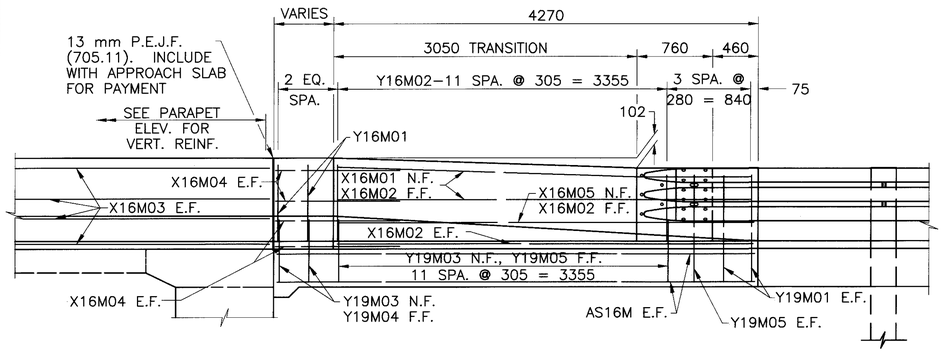
DESIGNED BAG | DRAWN DJD | REVIEWED OHK | DATE 6/11/97
CHECKED FJR | REVISED | STRUCTURE FILE NO. 2200309

MISCELLANEOUS DETAILS
BRIDGE NO. ERI-2-07000S (0435)
RAMP D OVER COLD CREEK

ERI-2-2.866

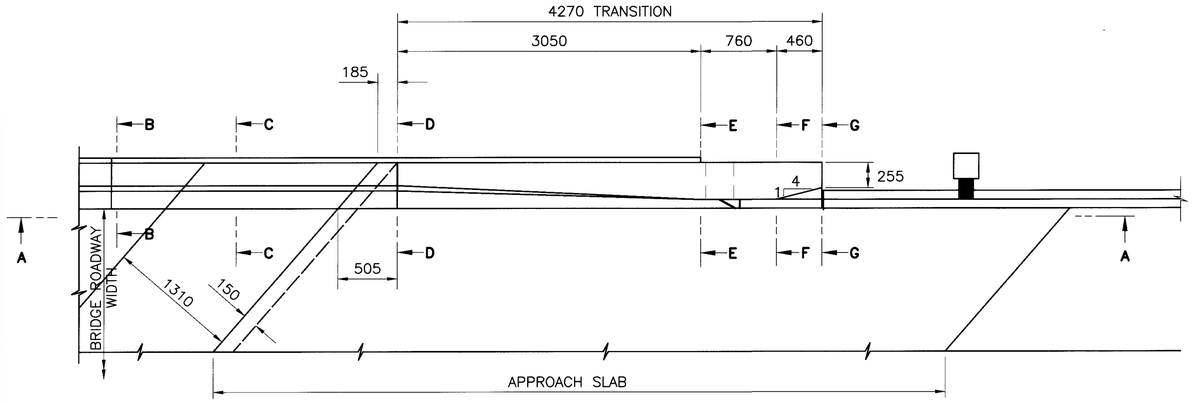
9/11

217/327



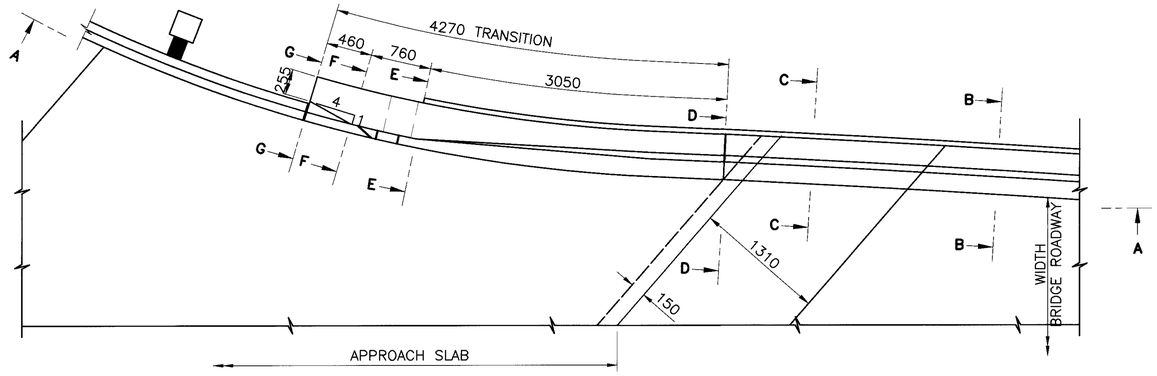
SECTION A–A

NOTE: ALL HORIZONTAL BARS SHALL BE FIELD BENT TO FIT.



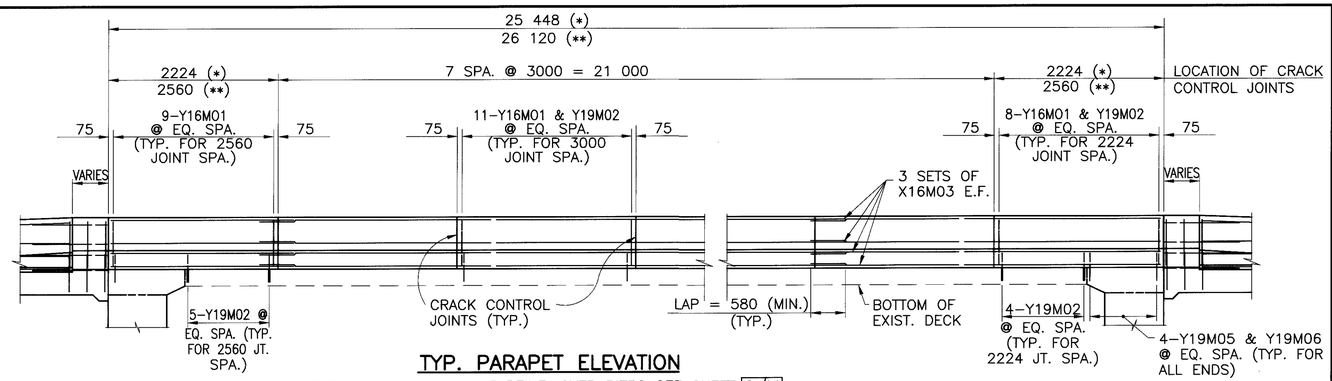
PART PLAN AT ABUTMENT (TYP. U.N.O.)

NOTE: FOR RADIUS AND STATION INFORMATION, SEE SHEETS 5/11 & 6/11



PART PLAN AT ABUTMENT(REAR ABUTMENT LEFT PARAPET)

NOTE: FOR RADIUS AND STATION INFORMATION, SEE SHEET 5/11.



TYP. PARAPET ELEVATION

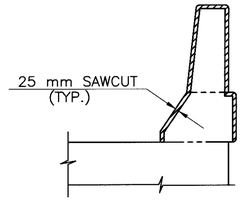
FOR ADDITIONAL PARAPET REINF. OVER PIERS SEE SHEET 8/11.
* – LEFT PARAPET
** – RIGHT PARAPET

NOTES

QUANTITIES OF CONCRETE, REINFORCING STEEL, CONTROL JOINT SAWCUT AND CAULKING MATERIAL FOR PARAPET ARE INCLUDED WITH APPROPRIATE ITEM UNDER EITHER ABUTMENTS OR SUPERSTRUCTURE FOR PAYMENTS.

FOR BRIDGE TERMINAL ASSEMBLY, SEE STANDARD CONSTRUCTION DRAWING GR–3.1M.

LONGITUDINAL STEEL IN PARAPETS SHALL BE FIELD BENT TO FIT AS REQUIRED. COST TO BE INCLUDED WITH ITEM 511 FOR PAYMENT.

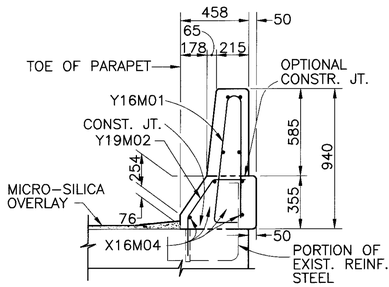


DETAIL A
(SECTION THROUGH SAWCUT)

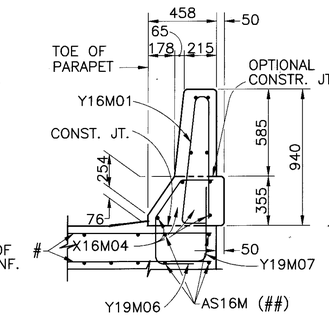
\# EXTEND APPROACH SLAB TRANSVERSE REINFORCEMENT AS REQUIRED. INCLUDE PAYMENT WITH ROADWAY ITEM 611– REINFORCED CONCRETE APPROACH SLAB, AS PER PLAN.

\#\# AS16M BARS IN APPROACH SLAB BELOW PARAPET. INCLUDE PAYMENT WITH ROADWAY ITEM 611– REINFORCED CONCRETE APPROACH SLAB, AS PER PLAN

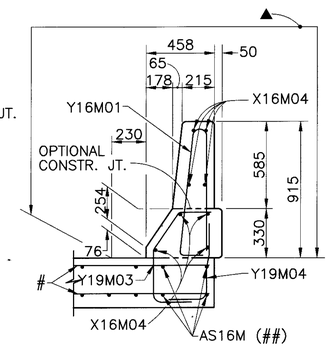
▲ LIMITS OF SEALING OF CONCRETE SURFACES.



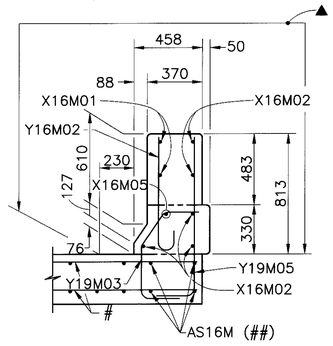
SECTION B–B



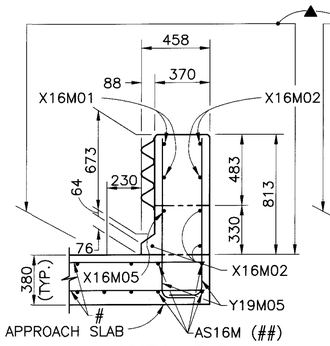
SECTION C–C



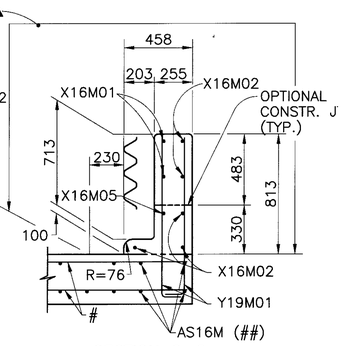
SECTION D–D



SECTION E–E



SECTION F–F



SECTION G–G

R.D. Zanda & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED	DRAWN	REVIEWED	DATE
BAG	DJD	OHK	6/11/97
CHECKED	REVISED	STRUCTURE FILE NO	
FJR		2200309	

PARAPET DETAILS
BRIDGE NO. ER-2-070008 (0435)
RAMP D OVER COLD CREEK

ER-2-2.866

10/11

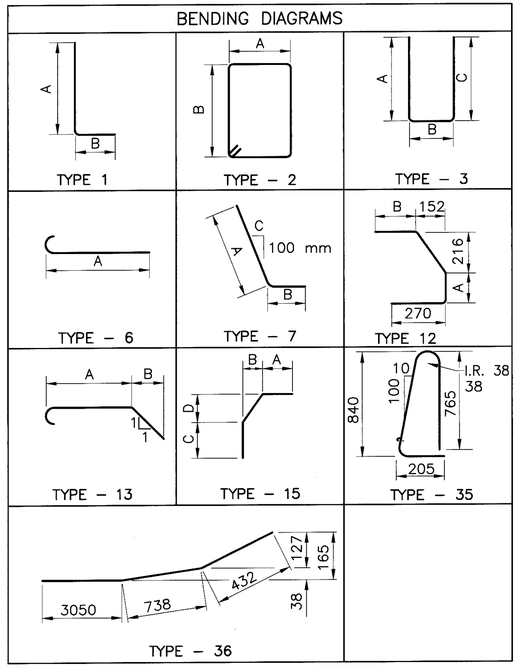
218/327

REINFORCING STEEL LIST

BAR MARK	REAR	FWRD	TOTAL	LENGTH mm	WEIGHT (Kg)	TYPE	A mm	B mm	C mm	D mm	INC. mm
ABUTMENTS											
A16M01	12		12	2460	45.815	3	750	1040	750		
A16M02	14	8	22	1535	52.411	1	850	725			
	1		1	3110				825			
A16M03	Ser. Of		Ser. Of	TO	21.914	2	650	TO			140
	4		4	3950				1245			
A16M04	1		1	2665	4.136	7	2425	250	314		
A16M05	1		1	3290	5.106	7	2425	875	314		
A16M06	2		2	4110	12.757	2	650	1325			
A16M07	7		7	2375	25.802	STR.					
A16M08	14	14	28	900	39.110	STR.					
A16M09	2		2	2500	7.760	STR.					
A16M10	2		2	1900	5.898	STR.					
A16M11	1		1	2565	3.981	7	1700	875	339		
A16M12	1		1	1940	3.011	7	1700	250	339		
A16M13	12		12	4540	84.553	3	1150	1040	1150		
	1		1	2610				575			
A16M14	Ser. Of		Ser. Of	TO	31.288	2	650	TO			150
	6		6	4110				1325			
A16M15	7		7	2350	25.530	STR.					
	1		1	1375							
A16M16	Ser. Of		Ser. Of	TO	6.130	STR.					1200
	2		2	2575							
	1		1	2000							
A16M17	Ser. Of		Ser. Of	TO	8.070	STR.					1200
	2		2	3200							
A16M18		12	12	3310	61.645	3	1175	1040	1175		
A16M19		7	7	2225	24.172	STR.					
A16M20		1	1	1925	2.988	STR.					
A16M21		1	1	1500	2.328	STR.					
A16M22		1	1	3200	4.966	STR.					
A16M23		1	1	2775	4.307	STR.					
A16M24		1	1	3319	5.151	7	2650	679	312		
A16M25		1	1	2890	4.485	7	2650	250	312		
		1	1	2560				550			
A16M26		Ser. Of	Ser. Of	TO	31.288	2	650	TO			160
		6	6	4160				1350			
A16M27		4	4	1935	12.012	1	1350	625			
A16M28		10	10	2760	42.835	3	900	1040	900		
A16M29		7	7	1550	16.839	STR.					
A16M30		2	2	1400	4.346	STR.					
A16M31		2	2	1850	5.742	STR.					
A16M32		1	1	1490	2.312	7	1250	250	237		
A16M33		1	1	1940	3.011	7	1250	700	237		
		1	1	3110				825			
A16M34		Ser. Of	Ser. Of	TO	22.380	2	650	TO			165
		4	4	4100				1320			
	4		4	1555				870			
A16M35	Ser. Of		Ser. Of	TO	70.181	1	TO	725			20
	7		7	1675			990				
	2		2	1560			875				
A16M36	Ser. Of		Ser. Of	TO	40.476	1	TO	725			20
	8		8	1700			1015				
		2	2	1560			875				
A16M37		Ser. Of	Ser. Of	TO	25.049	1	TO	725			27
		5	5	1668			983				
		4	4	1560			875				
A16M38		Ser. Of	Ser. Of	TO	70.790	1	TO	725			23
		7	7	1698			1013				
A25M01	4		4	2375	37.744	STR.					
A25M02	4		4	2350	37.346	STR.					
A25M03		4	4	2225	35.360	STR.					
A25M04		4	4	1550	24.633	STR.					
				TOTAL=	976						

BAR MARK	REAR	FWRD	TOTAL	LENGTH mm	WEIGHT (Kg)	TYPE	A mm	B mm	C mm	D mm	INC. mm
SUPERSTRUCTURE											
S16M01	40	36	76	2410	272.469	3	750	890	750		
S25M01	8		8	11825	375.846	STR.					
S25M02		8	8	10500	333.732	STR.					
D25M01	20	20	40	1621	257.662	13	925	305			
				TOTAL=	1,240						
RAILING											
X16M01			8	4220	52.396	36					
X16M02			20	4220	130.989	STR.					
X16M03			48	9050	674.189	STR.					
X16M04			32	1100	54.630	STR.					
X16M05			4	4220	26.198	STR.					
X19M01			4	3650	32.631	STR.					
Y16M01			196	1825	555.150	35					
Y16M02			48	920	68.536	6	740				
Y19M01			16	1180	42.197	1	1075	155			
Y19M02			172	700	269.094	15	230	152	275	216	
Y19M03			56	799	100.003	12	375	230			
Y19M04			8	830	14.840	1	600	280			
Y19M05			56	1295	162.082	1	1075	270			
Y19M06			16	724	25.890	12	300	230			
Y19M07			16	730	26.104	1	500	280			
				TOTAL=	2,183						
				GRAND TOTAL =	**4,398**						

BENDING DIAGRAMS



NOTES

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST TWO DIGITS INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, A 16M01 IS A "16M" BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED.
2. ALL REINFORCING BARS SHALL BE EPOXY COATED. PAYMENT FOR THESE BARS SHALL BE INCLUDED WITH APPROPRIATE CONCRETE ITEMS.
3. "STR." IN THE TYPE COLUMN INDICATES STRAIGHT BARS.
4. REFER TO C.M.S. SECTION 509.05 FOR STANDARD BEND DIMENSIONS.

R.D. Zande & Associates, Inc.
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DESIGNED	DRAWN	REVIEWED	DATE
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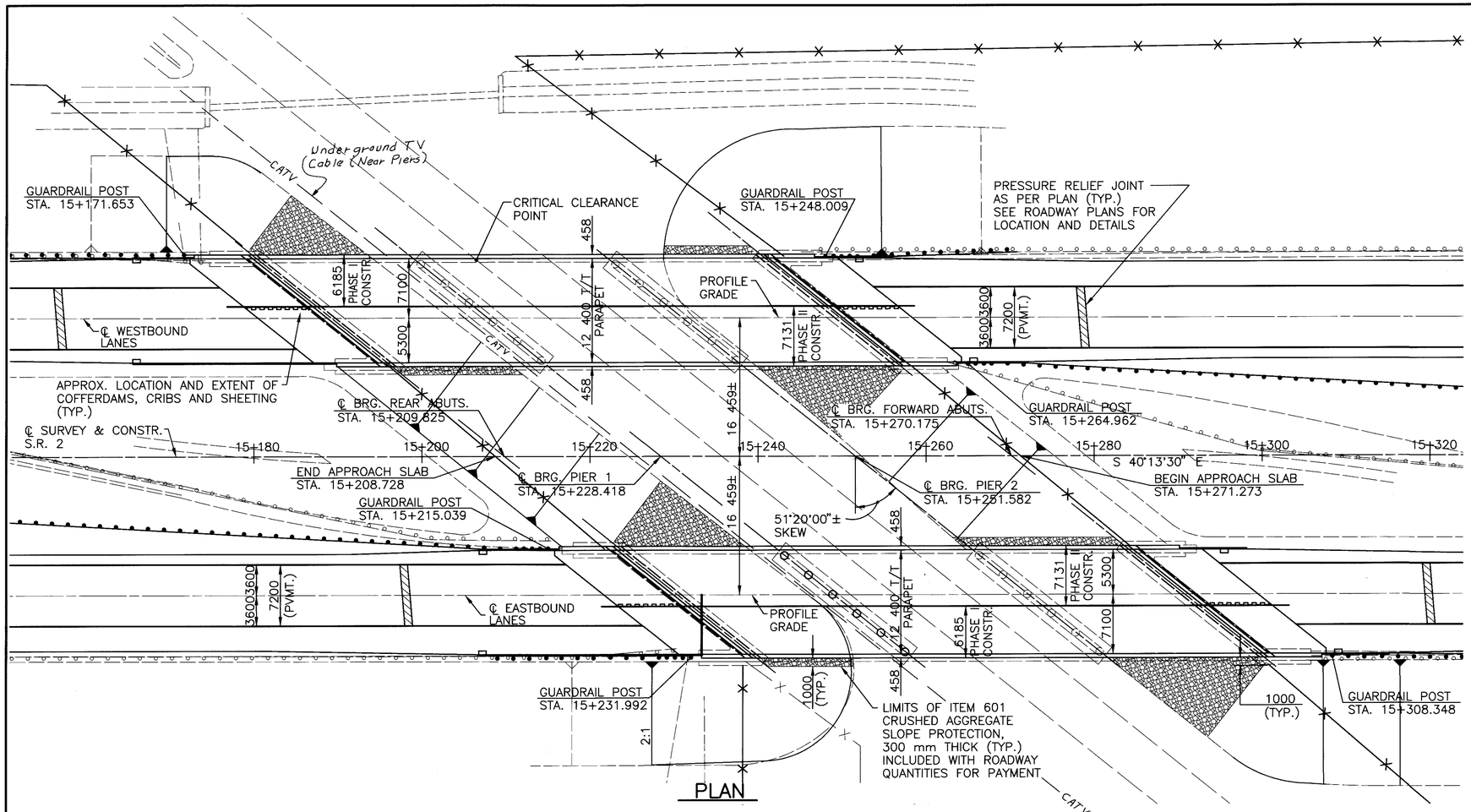
CHECKED	REVISED	STRUCTURE FILE NO	
FJR		2200309	

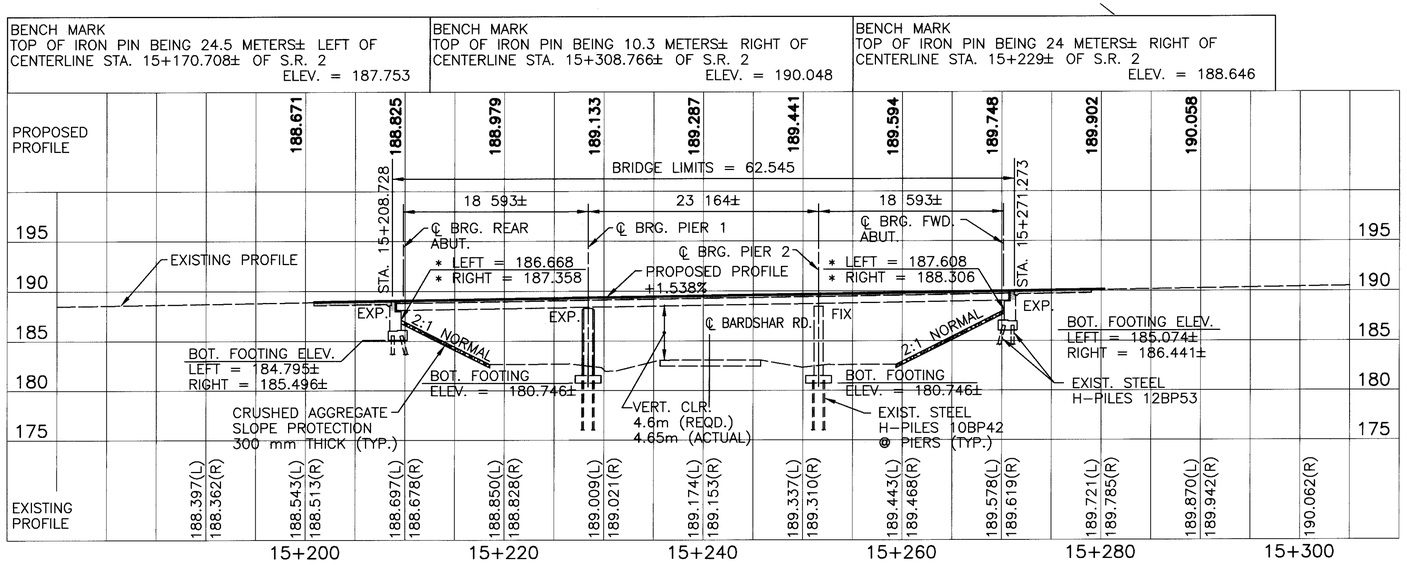
REINFORCING STEEL LIST
BRIDGE NO. ERI-2-07000S (0435)
RAMP D OVER COLD CREEK

ERI-2-2.866

11/11

219
327





PROFILE ALONG ℄ SURVEY & CONSTRUCTION S.R. 2

NOTES

RIGHT–OF–WAY LIMITS ARE LOCATED OUTSIDE WORK LIMITS SHOWN IN PLAN VIEW.

ALL DIMENSIONS ARE IN MILLIMETERS, AND ALL STATIONS & ELEVATIONS ARE IN METERS.

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPE SHALL MATCH EXISTING GRADE. QUANTITIES HAVE BEEN INCLUDED IN THE ROADWAY GENERAL SUMMARY AND SHALL BE USED AS REQUIRED UNDER THE DIRECTION OF THE PROJECT ENGINEER.

* ELEVATIONS MARKED WITH AN ASTERISK ARE AT THE TOP OF THE SPILL THRU SLOPE AT THE FACE OF ABUTMENT.

EXISTING BRIDGE DATA

TYPE: 3 SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK ON REINFORCED CONCRETE SUBSTRUCTURE
SPANS: 18 593 mm±, 23 165 mm±, 18 593 mm± c/c BEARINGS
ROADWAY: 12 090 mm± T/T OF 356 mm± SAFETY CURBS
LOADING: CF–400(57)
WEARING SURFACE: 25 mm± MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
SKEW: 51° 20' 00"± R.F.
APPROACH SLABS: AS–1–54 (7620 mm± LONG)
CROWN: 0.016±
DATE BUILT: 1961
STRUCTURE FILE NUMBER: 2200333 & 2200368

PROPOSED STRUCTURE MODIFICATION

PROPOSED WORK: (FOR LEFT & RIGHT BRIDGES U.N.O.)

1. REMOVE AND REPLACE EXISTING BACKWALLS TO THE BEAM SEATS
2. PROVIDE NEW EXPANSION JOINTS
3. ENCASE ALL SIX COLUMNS OF PIER 1 FOR THE RIGHT BRIDGE.
4. PROVIDE TEMPORARY JACKING SYSTEM FOR THE SUPERSTRUCTURE TO REPLACE EXISTING ABUTMENT BEARINGS
5. ELIMINATE ALL EXISTING SCUPPERS
6. PAINT EXISTING AND NEW STRUCTURAL STEEL
7. PROVIDE NEW REINFORCED CONCRETE DECK
8. PROVIDE POROUS BACKFILL WITH FILTER FABRIC
9. INSTALL CATCH BASINS AT BRIDGE CORNERS
10. SEAL CONCRETE SURFACES
11. REPAIR EXISTING SLOPE PROTECTION
12. REPLACE EXISTING APPROACH SLABS

(IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN SEQUENTIAL ORDER AS LISTED)

TYPE: 3 SPAN CONTINUOUS STEEL BEAM WITH COMPOSITE REINFORCED CONCRETE DECK, ON EXISTING PIERS AND REHABILITATED STUB ABUTMENTS
SPANS: 18 593 mm±, 23 165 mm±, 18 593 mm± c/c BEARINGS
ROADWAY: 12 400 mm T/T OF PARAPET
LOADING: MS18 (CASE 1) & ALT. MILITARY LOADING
WEARING SURFACE: 25 mm MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
SKEW: 51° 20' 00"± R.F.
APPROACH SLABS: AS–1–81M (7600 mm LONG)
CROWN: 0.016
LONGITUDE: 82°46'21" W **LATITUDE:** 41°25'49" N

CURRENT AVERAGE DAILY TRAFFIC: 14 030 (1998)
DESIGN AVERAGE DAILY TRAFFIC: 22 450 (2018)
CURRENT AVERAGE DAILY TRUCK TRAFFIC: 3370 (1998)
DESIGN AVERAGE DAILY TRUCK TRAFFIC: 5390 (2018)

metric units

R.D. Zande & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone: (614) 488-4383

DESIGNED	DRAWN	REVIEWED	DATE
ACT	DJD	OHK	7–31–97
CHECKED	REVISED	STRUCTURE FILE NO	
BAG		2200333, 2200368	

ERIE COUNTY
STA. 15+208.728
STA. 15+271.273

SITE PLAN
BRIDGE NO. ERI-2-08336 L & R (0618)
S.R. 2 OVER BARDSHAR RD.

ERI-2-2.866

J. Bank2 C:\PW\390\7\390750I.DWG DATE: JUL 25, 1996 TIME: 1:21 PM

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S):

AS–1–81M	DATED	10–25–94
BR–1M	DATED	12–15–94
EXJ–4–87M	DATED	2–18–97
GR–3.1M	DATED	10-21-97
PCB–91M	DATED	3–20–95

AND TO SUPPLEMENTAL SPECIFICATION(S):

843	DATED	5-5-98
815	DATED	5–30–96
844	DATED	5-5-98
954	DATED	9-9-97
910	DATED	4–21–97
863	DATED	9-9-97
846	DATED	9-9-97

METRIC UNITS:

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS AND ALL ELEVATIONS AND STATIONS IN METERS UNLESS NOTED OTHERWISE.

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

DESIGN LOADING: MS18, CASE I AND THE ALTERNATE MILITARY LOADING.

HIGH PERFORMANCE CONCRETE – COMPRESSIVE STRENGTH 31.0 MPa (SUPERSTRUCTURE)

CONCRETE CLASS C – COMPRESSIVE STRENGTH 27.5 MPa (SUBSTRUCTURE)

REINFORCING STEEL – ASTM A615M, A616M, OR A617M
GRADE 420 MINIMUM YIELD STRENGTH 420 MPa.
SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82M, OR A615M.

STRUCTURAL STEEL
A36M – YIELD STRENGTH 250 MPa

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL.
65 mm CONCRETE COVER.
HIGH PERFORMANCE CONCRETE.

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 25 mm THICK.

UTILITY LINES:

ALL EXPENSE INVOLVED IN RELOCATION (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY(IES). THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTION 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING STRUCTURE PLANS:

THE ORIGINAL DESIGN PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 3 OFFICE, 906 NORTH CLARK ST., ASHLAND, OHIO 44805 (419) 281–0513.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK AND PARAPET)

DESCRIPTION: THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECKS, SAFETY CURBS, PARAPETS, RAILINGS, AND SCUPPERS. CARE SHALL BE TAKEN NOT TO DAMAGE THE STEEL BEAMS DURING THE DECK REMOVAL. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAMS, CONCRETE CRUSHERS AND OTHER SIMILAR TYPE OF IMPACTIVE DEVICES IS NOT PERMITTED.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF THE DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 50 mm OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 50 mm OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 50 mm OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS: CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 16 KILOGRAMS BUT NOT TO EXCEED 41 KILOGRAMS MAY BE USED AT THE APPROVAL OF THE ENGINEER, TO ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS: DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.), CARE SHALL BE TAKEN DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. STRINGERS DAMAGED BY THE CONTRACTOR'S REMOVAL. OPERATIONS SHALL, AT NO COST TO THE PROJECT, BE REPLACED OR REPAIRED. PROPOSED REPAIRS, DEVELOPED BY A REGISTERED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED IN WRITING FOR REVIEW AND APPROVAL BY THE DIRECTOR.

EXTRANEOUS MEMBERS: EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC., AND THE SUPPORT FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES DESIGNATED "TENSION" SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS, BY A REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF THE WORK.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

THIS ITEM OF WORK SHALL BE USED TO REMOVE PORTIONS OF THE SUBSTRUCTURE AS DESIGNATED IN THE PLAN. THE CONCRETE SHALL BE REMOVED BY HYDRAULIC SPLITTING METHOD. A LINE OF HOLES SHALL BE DRILLED ALONG THE REMOVAL LINE AND HYDRAULIC SPLITTER USED AS PER THE MANUFACTURER'S RECOMMENDATIONS. 16 AND 7 KILOGRAM JACK HAMMERS SHALL BE USED FOR ANY REQUIRED FINISH WORK. HOE RAMS AND/OR CONCRETE CRUSHERS WILL NOT BE PERMITTED TO DO ANY OF THE WORK. NO SAW CUTTING WILL BE ALLOWED IN AREAS WHERE EXISTING REINFORCING SHALL REMAIN. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL DESIGNATED FOR SALVAGE, IF DAMAGED DURING THE REMOVAL OPERATION DOWELED REINFORCING STEEL MUST BE ADDED AT THE CONTRACTOR'S EXPENSE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC METER FOR ITEM 202, PORTIONS OF STRUCTURES REMOVED AS PER PLAN SUBSTRUCTURE, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 25 mm DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN:

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 MATERIAL AND PLACED IN 150 mm LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04.

ITEM 503, COFFERDAMS, CRIBS, AND SHEETING, AS PER PLAN

TEMPORARY SHORING SHALL BE USED TO ACCOMPLISH THE PROPOSED CONSTRUCTION IN PHASES. THE DESIGN OF THE TEMPORARY SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, BE DESIGNED BY A REGISTERED ENGINEER, AND CONFORM WITH 501.05. FOR APPROVAL, FIVE COPIES OF THE DRAWINGS SHALL BE SUBMITTED TO THE DIRECTOR.

CONSTRUCTION OF THE SHORING SHALL NOT BEGIN UNTIL AFTER WRITTEN APPROVAL HAS BEEN RECEIVED FROM THE DIRECTOR. PORTIONS OF THE TEMPORARY SHORING COMPOSED OF STEEL OR CONCRETE MAY BE LEFT IN PLACE AT THE DISCRETION OF THE ENGINEER. PORTIONS COMPOSED OF OTHER MATERIALS SHALL BE REMOVED PRIOR TO COMPLETION OF THE WORK.

ITEM 511, CLASS C CONCRETE, AS PER PLAN:

CLASS C CONCRETE SHALL BE IN ACCORDANCE WITH 511, EXCEPT THAT THE AGGREGATE SHALL BE #8 LIMESTONE.

ITEM 511, CLASS C CONCRETE, MISC.: PIER ENCASEMENT

THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN. THE COARSE AGGREGATE SHALL BE #8 LIMESTONE. CURING SHALL BE IN ACCORDANCE WITH 511.14 TYPE A WATER CURING.

NOT MORE THAN 48 HOURS PRIOR TO PLACING THE CONCRETE, ALL EXISTING SURFACES TO WHICH THE CONCRETE IS TO BOND, INCLUDING EXPOSED REINFORCING AND STRUCTURAL STEEL SHALL BE CLEANED BY ABRASIVE BLASTING. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE, AND OTHER CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

IMMEDIATELY BEFORE THE CONCRETE IS PLACED ALL ADJACENT CONCRETE SURFACES SHALL BE COVERED WITH A THIN LAYER OF BONDING GROUT. THE BONDING GROUT SHALL CONSIST OF EQUAL PARTS BY VOLUME OF PORTLAND CEMENT AND SAND, MIXED WITH ENOUGH WATER TO FORM A SLURRY OF PAINT–LIKE CONSISTENCY WHICH SHALL BE SUCH AS TO ALLOW IT TO BE APPLIED WITH A STIFF BRUSH OR BROOM TO EXISTING CONCRETE SURFACES IN A THIN EVEN COATING THAT WILL NOT RUN OR PUDDLE. THE GROUT SHALL BE APPLIED FOR A SHORT DISTANCE IN ADVANCE OF THE PLACEMENT OF THE CONCRETE AND SHALL NOT BE DRY.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC METER FOR ITEM 511 WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 863 – STRUCTURAL STEEL MEMBERS, MISCELLANEOUS LEVEL FABRICATION

STEEL MEMBERS TO BE FABRICATED UNDER THIS ITEM WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. THE CONTRACTOR SHALL MAKE NECESSARY MEASUREMENTS AND PREPARE SKETCHES, DRAWINGS, TABLES, ETC. THE ENGINEER SHALL HAVE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE. TECHNICAL ASSISTANCE WILL BE PROVIDED ON REQUEST BY THE OFFICE OF STRUCTURAL ENGINEERING. MILL TEST REPORTS AND SHIPPING DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INCORPORATING STEEL ITEMS INTO THE WORK, AS REQUIRED BY 501.07. AFTER FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL TO ENSURE THAT THE DRAWINGS DEPICT THE STEEL AS ACTUALLY INCORPORATED INTO THE WORK. THE ENGINEER WILL THEN SEND ONE APPROVED SET TO THE OFFICE OF STRUCTURAL ENGINEERING FOR INFORMATION.

THE FABRICATOR SHALL FURNISH A 35 mm MICROFILM COPY OF EACH SHOP DRAWING, WHICH SHALL BE MOUNTED ON AN APERTURE CARD AS SPECIFIED IN 501.05.

STEEL MEMBERS INCLUDED IN THIS ITEM INCLUDE CROSSFRAMES, AND SHIM PLATES AT PIER BEARINGS.

R.D. Zanda & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone (614) 488-4383

DESIGNED ACT | DRAWN DJD | REVIEWED OHK | DATE 7-31-97
CHECKED BAG | REVISED | STRUCTURE FILE NO 2200333, 2200368

GENERAL NOTES
BRIDGE NO. ERI-2-08336 L & R (0618)
SR. 2 OVER BARDSHAR RD.

ERI-2-2.866

C099 P:\3907\DWG\BRIDGE\E-2-0835\PLAN\3907EGN1.DWG JUL 21, 1997 TIME: 9:11 AM

GENERAL NOTES CONT.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTION JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 25 mm, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING ACTUAL JACKING OPERATIONS. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 6 mm.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 25 mm OR LESS.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE, AS PER PLAN

SEE NOTES ON BEARING DETAIL SHEETS.

ITEM 518 - POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN:

POROUS BACKFILL SHALL BE NO. 57 *GRAVEL*.

REPLACEMENT OF EXISTING REINFORCING STEEL:

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL.
ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. COST OF ALL REINFORCING STEEL SHALL BE INCLUDED WITH APPROPRIATE ITEM 511 CONCRETE FOR PAYMENT.

INSPECTION OF STRUCTURAL STEEL:

THE ENGINEER SHALL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THAT THEY ARE FREE OF DEFECTS. THE DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS SHALL NOT BE ERECTED UNTIL AFTER THE ENGINEER HAS COMPLETED THIS INSPECTION. THIS INSPECTION SHALL NOT TAKE PLACE UNTIL AFTER THE TOP FLANGES ARE CLEANED AS SPECIFIED IN 511.08, BUT IT SHALL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE COST ASSOCIATED WITH THIS INSPECTION SHALL BE INCLUDED WITH ITEM 511, SUPERSTRUCTURE CONCRETE FOR PAYMENT.

ITEM 815 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL:

ALL EXISTING AND NEW STEEL SHALL BE CLEANED AND PAINTED WITH A PRIME, INTERMEDIATE, AND FINISH COAT OF PAINT USING SYSTEM OZEU. THE COST OF THIS WORK SHALL BE INCLUDED WITH SEVERAL FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU ITEMS FOR PAYMENT. THE COLOR OF THE FINISH COAT SHALL BE RED COLOR MATCHING FEDERAL STANDARD NUMBER 11136. IN ADDITION, TO THE SURFACE AREA OF THE STEEL STRINGERS TO BE PAINTED, AN ADDITIONAL TWENTY FIVE PERCENT OF THIS AMOUNT HAS BEEN ADDED TO THE SQUARE METER TOTALS TO ACCOUNT FOR INCIDENTALS SUCH AS CROSSFRAMES & BEARINGS. SEE SUPPLEMENTAL SPECIFICATION 815.

CONCRETE PARAPETS:

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 25 mm DEEP CONTROL JOINTS SHALL BE SAWED INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAWCUTS SHALL BE PLACED AT LOCATIONS AS DETAILED ON SHEET 17/19. THE USE OF AN EDGE GUIDE, FENCE, OR JIG IS REQUIRED TO INSURE 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 6 mm. THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 25 mm WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E. THE CONTRACTOR SHALL NOTE THAT THE OPTION TO SLIPFORM PARAPET IS NOT ALLOWED.

ITEM 844 - HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK AND PARAPET)

ON THIS PROJECT, THE CONTRACTOR SHALL USE CONCRETE MEETING THE REQUIREMENTS OF THE MIX DESIGN GIVEN IN THE PROPOSAL NOTE FOR MIX 4 (GGBF SLAG + MICROSILICA) FOR THE SUPERSTRUCTURE INSTEAD OF TEXTURING. BRIDGE DECK GROOVING SHALL BE PERFORMED AS PER THE PROPOSAL NOTE. BRIDGE GROOVING SHALL BE PAID FOR SEPARATELY.

CONSTRUCTION SEQUENCE AND MAINTENANCE OF TRAFFIC

SEE SHEET 5/19 FOR CONSTRUCTION SEQUENCE AND PHASE CONSTRUCTION DETAILS. SEE ROADWAY PLANS FOR ADDITIONAL TRAFFIC NOTES AND DETAILS.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES *(EPOXY-URETHANE)*

THE CONCRETE SHALL BE SEALED USING AN EPOXY-URETHANE SYSTEM AT THE LOCATIONS INDICATED IN THE PLAN. THE URETHANE SHALL BE A "BUFF" COLOR MEETING FEDERAL STANDARD NUMBER 37722. SEE PROPOSAL NOTE FOR ADDITIONAL INFORMATION.

ABBREVIATIONS

ABUT. - ABUTMENT
AVG. - AVERAGE
BOT. - BOTTOM
BRG. - BEARING
℄ - CENTERLINE
CLR. - CLEARANCE
CONSTR. - CONSTRUCTION
C.P.P. - CORRUGATED PLASTIC PIPE
E.B. - EAST BOUND
E.F. - EACH FACE
EXIST. - EXISTING
EXP. - EXPANSION
ELEV. - ELEVATION
EQ. - EQUAL
F.A. - FORWARD ABUTMENT
F.F. - FAR FACE
FIX. - FIXED
FTG. - FOOTING
FWD. - FORWARD
HMWM - HIGH MOLECULAR WEIGHT METHACRYLATE
JT. - JOINT
L.B. - LEFT BRIDGE
MAX. - MAXIMUM
MIN. - MINIMUM
N.B. - NORTH BOUND
N.F. - NEAR FACE
NO. - NUMBER
PH. - PHASE
PVMT. - PAVEMENT
O.C. - ON CENTER
OZEU - ORGANIC ZINC EPOXY URETHANE
PL. - PLATE
P.E.J.F. - PREFORMED EXPANSION JOINT FILLER
R - RADIUS
R.A. - REAR ABUTMENT
R.B. - RIGHT BRIDGE
RDWY. - ROADWAY
REINF. - REINFORCING
REQ'D - REQUIRED
S.B. - SOUTH BOUND
SER. - SERIES
SPA. - SPACES
STA. - STATION
STD. - STANDARD
STR. - STRAIGHT
SUBSTR. - SUBSTRUCTURE
TYP. - TYPICAL
U.N.O. - UNLESS NOTED OTHERWISE
VERT. - VERTICAL
W.B. - WESTBOUND
W.R.T. - WITH RESPECT TO

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Phone: (614) 486-4383

DESIGNED	DRAWN	REVIEWED	DATE
ACT	DJD	OHK	7-31-97
CHECKED	REVISED	STRUCTURE FILE NO	
BAG		2200333, 2200368	

GENERAL NOTES
BRIDGE NO. ERI-2-0836.90 L & R (0516)
S.R. 2 OVER BARDSHAR RD.

ERI-2-2.866

ESTIMATED QUANTITIES

CALC. BY: ACT DATE: 7/11/97
CHK. BY: BAG DATE: 7/25/97

ITEM	ITEM EXT.	TOTAL LEFT BRIDGE	TOTAL RIGHT BRIDGE	UNIT	DESCRIPTION	ABUTMENTS LEFT BRIDGE	ABUTMENTS RIGHT BRIDGE	PIERS LEFT BRIDGE	PIERS RIGHT BRIDGE	SUPERSTRUCTURE LEFT BRIDGE	SUPERSTRUCTURE RIGHT BRIDGE	GENERAL LEFT BRIDGE	GENERAL RIGHT BRIDGE	SHEET NO. FOR AS PER PLAN ITEMS
202	11301	48	48	CU METER	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)	48	48							2/19
202	11201	LUMP	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK AND PARAPET)					LUMP	LUMP			2/19
503	11101	LUMP	LUMP		COFFERDAMS, CRIBS & SHEETING, AS PER PLAN							LUMP	LUMP	2/19
503	21301	LUMP	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	LUMP	LUMP							2/19
511	44101	56	56	CU METER	CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN	56	56							2/19
844	48000	191	191	CU METER	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK)					191	191			
844	48020	47	47	CU METER	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET)					47	47			
844	49000	LUMP	LUMP		HIGH PERFORMANCE CONCRETE – TRIAL MIX							LUMP	LUMP	
844	49010	LUMP	LUMP		HIGH PERFORMANCE CONCRETE – TESTING							LUMP	LUMP	
511	51100		18	CU METER	CLASS C CONCRETE, MISC.: PIER ENCASEMENT				18					
512	44400	2	2	SQ METER	TYPE B WATERPROOFING	2	2							
SPECIAL	51267510	1213	1265	SQ METER	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	157	157	294	346	762	762			
863	10000	LUMP	LUMP		STRUCTURAL STEEL MEMBERS, MISCELLANEOUS LEVEL FABRICATION					LUMP	LUMP			
863	20000	3600	3600	EACH	WELDED STUD SHEAR CONNECTOR					3600	3600			
516	11210	42.6	42.6	METER	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL					42.6	42.6			
516	44101	12	12	EACH	ELASTOMERIC BEARING (250x300x69) WITH INTERNAL LAMINATES AND LOAD PLATE (280x340x40 [AVG.]) (NEOPRENE), AS PER PLAN	12	12							3/19
516	47001	LUMP	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN					LUMP	LUMP			3/19
518	21231	LUMP	LUMP		POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	LUMP	LUMP							3/19
518	40000	40	40	METER	150 mm PERFORATED CORRUGATED PLASTIC PIPE	40	40							
518	40010	6	6	METER	150 mm NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	6	6							
843	50000	2.5	15.5	SQ METER	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR	2.5	15.0		.5					
815	00050	1510	1510	SQ METER	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU					1510	1510			
815	00056	1510	1510	SQ METER	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU					1510	1510			
815	00060	1510	1510	SQ METER	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU					1510	1510			
815	00066	1510	1510	SQ METER	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU					1510	1510			
815	00504	100	100	MAN HOUR	GRINDING FINS, TEARS AND SLIVERS					100	100			
815	00508	556	556	METER	GRINDING FLANGE EDGES					556	556			
SPECIAL	85050070	756	756	SQ. METER	BRIDGE DECK GROOVING					756	756			

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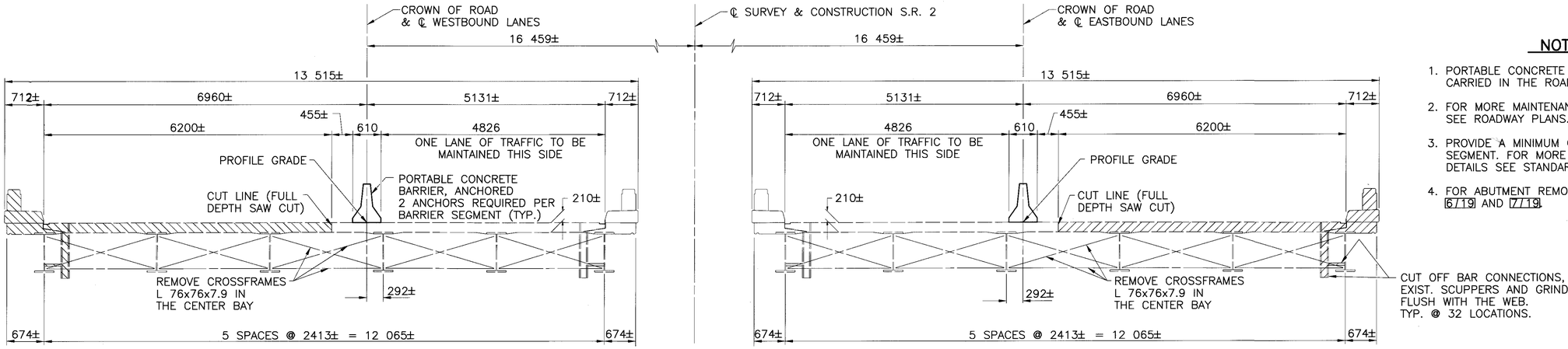
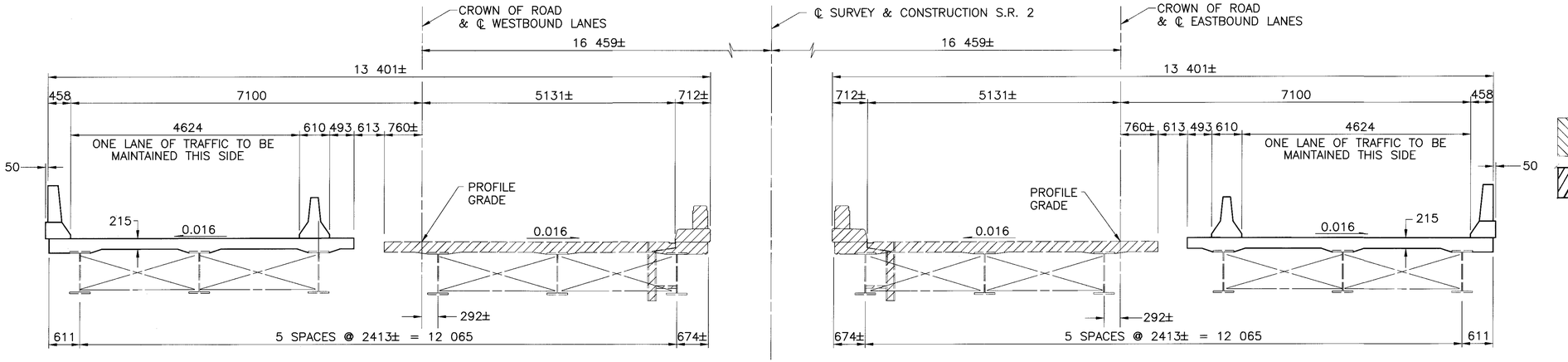
CHECKED	REVISED	STRUCTURE FILE NO	
BAG		2200333, 2200368	

ESTIMATED QUANTITIES
BRIDGE NO. ERI-2-08366 L & R (0618)
S.R. 2 OVER BARDSHAR RD.

ERI-2-2.866



PHASE I TRANSVERSE SECTION



INDICATES AREAS TO BE REMOVED PER ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK AND PARAPET)

NOTES

1. PORTABLE CONCRETE BARRIER IS CARRIED IN THE ROADWAY PLANS FOR PAYMENT.
2. FOR MORE MAINTENANCE OF TRAFFIC DETAILS, SEE ROADWAY PLANS.
3. PROVIDE A MINIMUM OF 2 ANCHORS PER BARRIER SEGMENT. FOR MORE PORTABLE CONCRETE BARRIER DETAILS SEE STANDARD DRAWING PCB–91M.
4. FOR ABUTMENT REMOVAL DETAILS, SEE SHEETS 6719 AND 7719.

CONSTRUCTION SEQUENCE:

PHASE I

1. INSTALL PORTABLE CONCRETE BARRIERS AND REROUTE TRAFFIC ONTO SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
2. MAINTAIN ONE LANE ON EACH OF THE EXISTING BRIDGES.
3. REMOVE APPROACH SLAB, DECK SLAB, SAFETY CURB, AND PARAPET OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE. IN ADDITION, REMOVE SCUPPERS INCLUDING RELATED DRAINAGE ITEMS AND SUPPORT ARMOR AND EXPANSION JOINT ARMOR. REMOVE EXISTING CROSSFRAMES IN THE CENTER BAY. ENCASE ALL SIX COLUMNS OF PIER NO. 1 FOR THE RIGHT BRIDGE ONLY.
4. JACK THE LEFT THREE BEAMS OF THE EXISTING LEFT BRIDGE AND THE RIGHT THREE BEAMS OF THE EXISTING RIGHT BRIDGE AS PER PLAN NOTES AND PROCEDURES.
5. REMOVE PORTIONS OF ABUTMENTS AND WINGWALLS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
6. CONSTRUCT PORTIONS OF ABUTMENTS AND WINGWALLS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
7. INSTALL ELASTOMERIC BEARINGS AT ABUTMENTS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE. INSTALL SHIM PLATES AT PIERS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF EXISTING RIGHT BRIDGE.
8. LOWER THE LEFT THREE BEAMS OF THE EXISTING LEFT BRIDGE AND THE RIGHT THREE BEAMS OF THE EXISTING RIGHT BRIDGE TO THEIR FINAL POSITIONS.
9. INSTALL SHEAR CONNECTORS ON EXISTING BEAMS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE. PAINT EXISTING STRUCTURAL STEEL.

PHASE II TRANSVERSE SECTION

10. CONSTRUCT DECK AND PARAPET OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
11. SEAL CONCRETE SURFACES.
12. COMPLETE DRAINAGE ITEMS AND APPROACH SLAB FOR THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.

PHASE II

1. RELOCATE PORTABLE CONCRETE BARRIERS AS SHOWN AND MAINTAIN TRAFFIC ONTO NORTH HALF OF EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
2. MAINTAIN ONE LANE ON EACH OF THE EXISTING BRIDGES.
3. REMOVE REMAINING PORTIONS OF EXISTING APPROACH SLAB, DECK SLAB, SAFETY CURB AND PARAPET OF THE LEFT AND RIGHT BRIDGES. IN ADDITION, REMOVE SCUPPERS INCLUDING RELATED DRAINAGE ITEMS AND SUPPORT ARMOR AND EXPANSION JOINT ARMOR.
4. JACK THE RIGHT THREE BEAMS OF THE EXISTING LEFT BRIDGE AND THE LEFT THREE BEAMS OF THE EXISTING RIGHT BRIDGE AS PER PLAN NOTES AND PROCEDURES.
5. REMOVE PORTIONS OF ABUTMENTS AND WINGWALLS OF THE NORTH HALF OF THE EXISTING RIGHT BRIDGE AND SOUTH HALF OF THE EXISTING LEFT BRIDGE.
6. CONSTRUCT THE REMAINING PORTIONS OF ABUTMENTS AND WINGWALLS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND THE NORTH HALF OF THE EXISTING RIGHT BRIDGE.
7. INSTALL ELASTOMERIC BEARINGS AT ABUTMENTS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE. INSTALL SHIM PLATES AT PIERS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND THE NORTH HALF OF THE EXISTING RIGHT BRIDGE.
8. LOWER THE RIGHT THREE BEAMS OF THE EXISTING LEFT BRIDGE AND THE LEFT THREE BEAMS OF THE EXISTING RIGHT BRIDGE TO THEIR FINAL POSITIONS.
9. INSTALL SHEAR CONNECTORS ON EXISTING BEAMS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
10. CONSTRUCT THE REMAINING PORTIONS OF DECK AND PARAPET OF THE LEFT AND RIGHT BRIDGE.
11. ERECT PROPOSED CROSSFRAMES IN THE CENTER BAY FOR BOTH THE LEFT AND RIGHT BRIDGES.
12. SEAL CONCRETE SURFACES.
13. COMPLETE DRAINAGE ITEMS AND APPROACH SLAB FOR THE SOUTH OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
14. COMPLETE SLOPE PROTECTION.
15. INSTALL THE JOINT STRIP SEAL FOR EACH BRIDGE JOINT IN ONE PIECE, AFTER THE SUPERSTRUCTURE IS COMPLETE.

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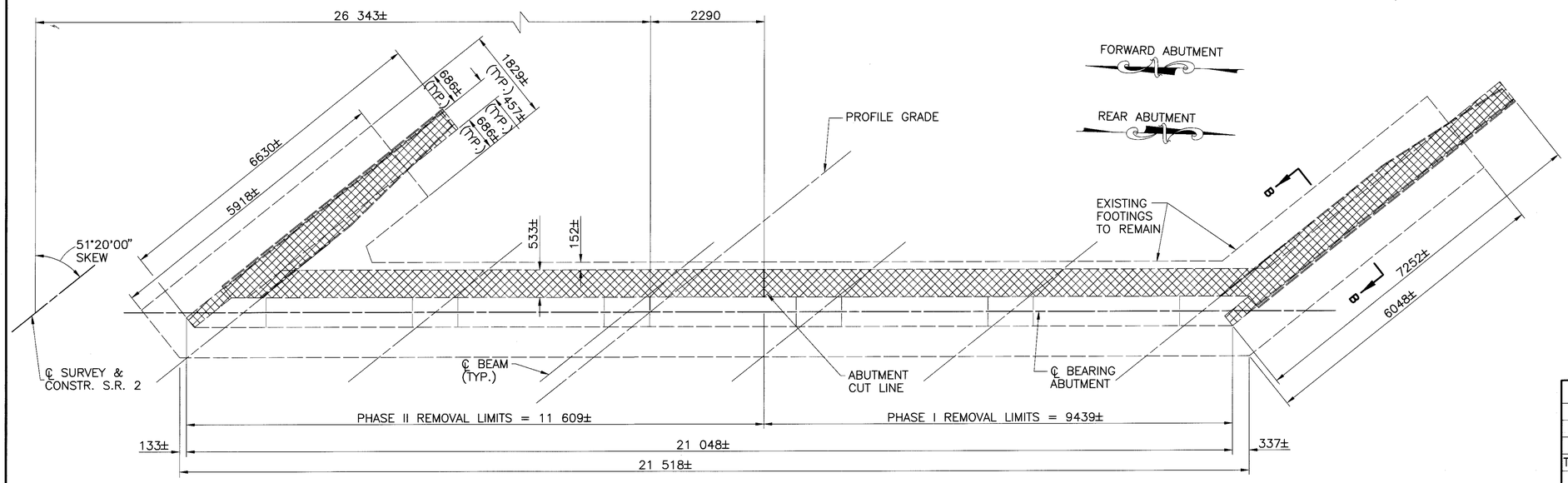
PHASE CONSTRUCTION DETAILS

BRIDGE NO. ERI-2-06366 L & R (0598)
S.R.2 BARDSHAR RD.

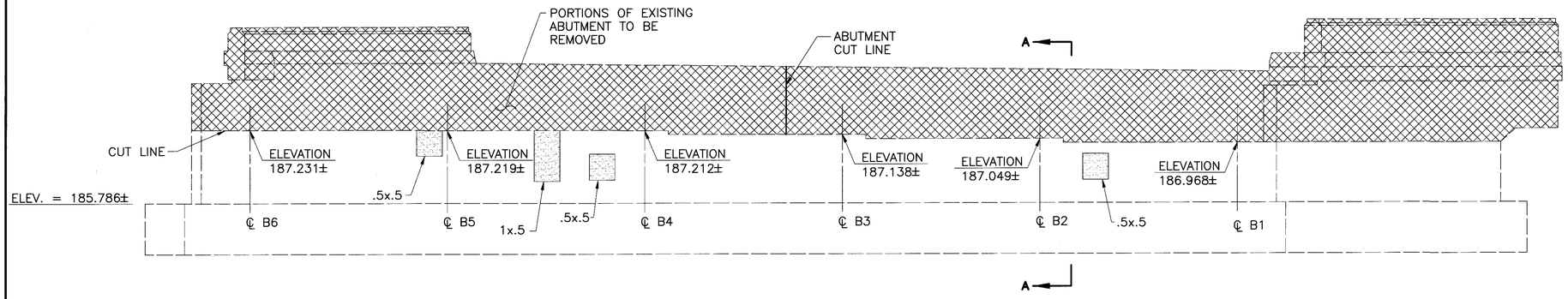
ERI-2-2.866

5 / 19

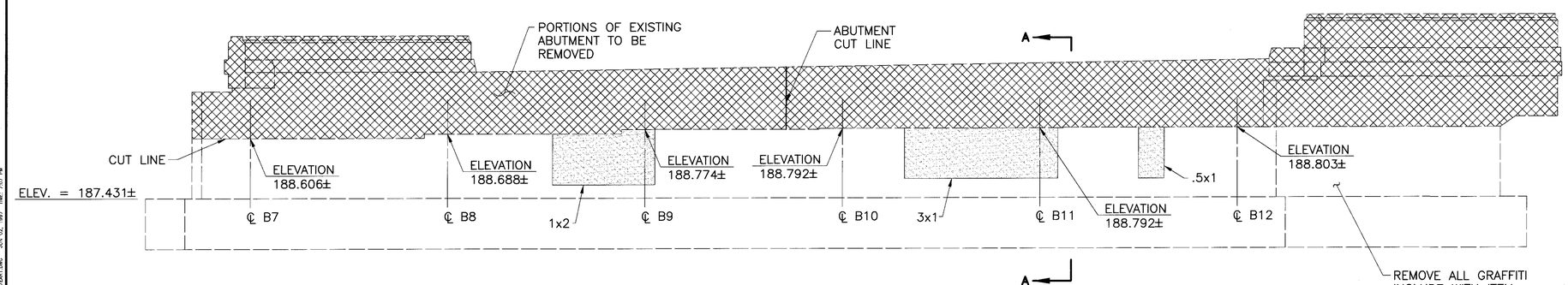
224 / 327



PLAN – LEFT BRIDGE REAR ABUTMENT & RIGHT BRIDGE FORWARD ABUTMENT

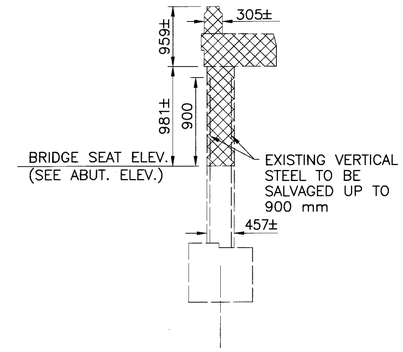


ELEVATION – REAR ABUTMENT LEFT BRIDGE



ELEVATION – FORWARD ABUTMENT RIGHT BRIDGE

REMOVE ALL GRAFFITI INCLUDE WITH ITEM ***PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR FOR PAYMENT.*** (TYP.)

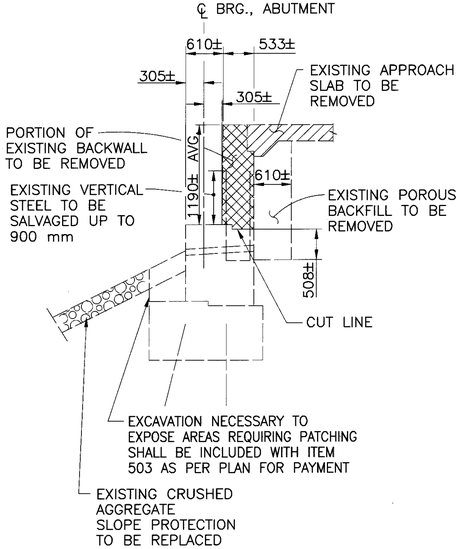


SECTION B–B

NOTE: FOR TYPICAL WINGALL ELEVATION SEE SHEET 7/19.

SUMMARY OF PATCHING QUANTITIES		
LOCATION	MEASURED	ESTIMATED
LEFT BRIDGE R.A.	1.25 SQ. M.	2.5 SQ. M.
LEFT BRIDGE F.A.	0 SQ. M.	0 SQ. M.
TOTAL LEFT BRIDGE	1.25 SQ. M.	2.5 SQ. M.
RIGHT BRIDGE R.A.	2.0 SQ. M.	4.0 SQ. M.
RIGHT BRIDGE F.A.	5.5 SQ. M.	11.0 SQ. M.
TOTAL RIGHT BRIDGE	7.5 SQ. M.	15.0 SQ. M.

PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN OCTOBER 1997.



SECTION A–A

INDICATES AREA OF APPROACH SLAB REMOVAL. INCLUDE WITH ROADWAY QUANTITIES FOR PAYMENT.

INDICATES AREAS TO BE REMOVED AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE.

INDICATES AREAS TO BE PATCHED AS PER ITEM PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR.

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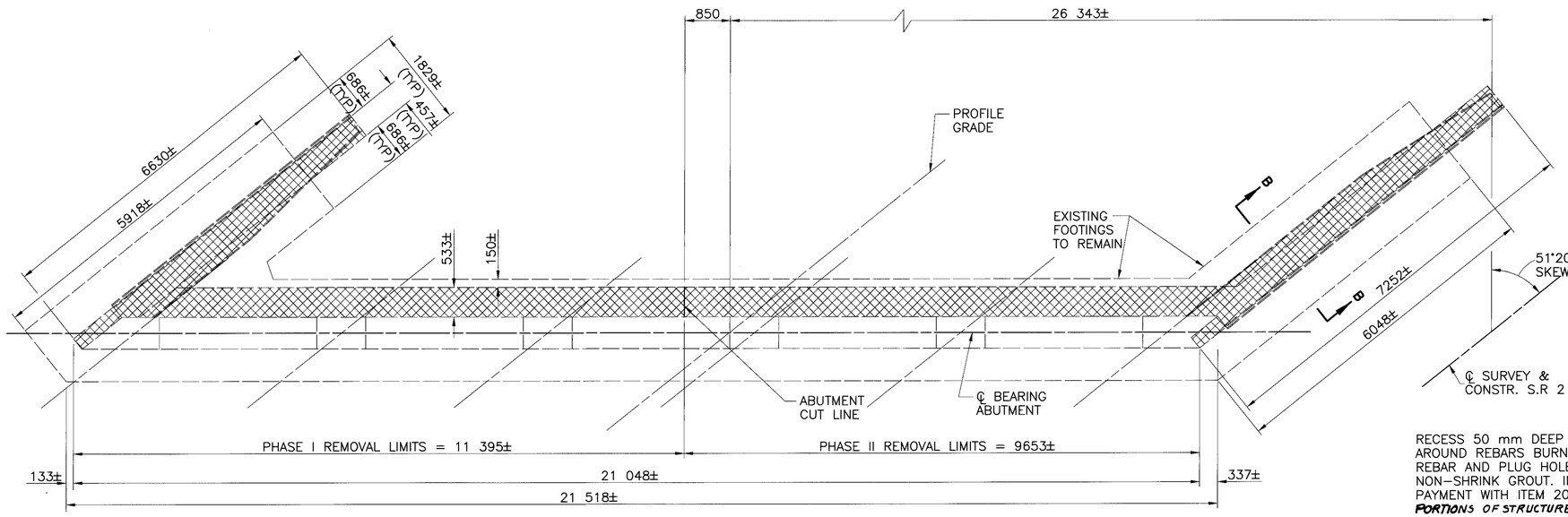
DESIGNED ACT CHECKED BAG
STRUCTURE FILE NO 2200333, 2200368

ABUTMENT REMOVAL DETAILS
BRIDGE NO. ERI-2-08336 L & R (0698)
S.R. 2 OVER BARDSHAR ROAD

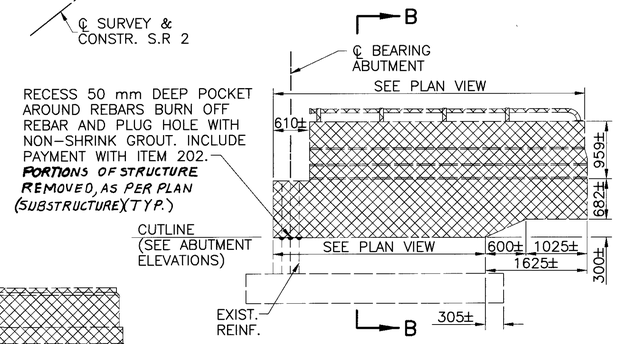
ERI-2-2.866

6/19

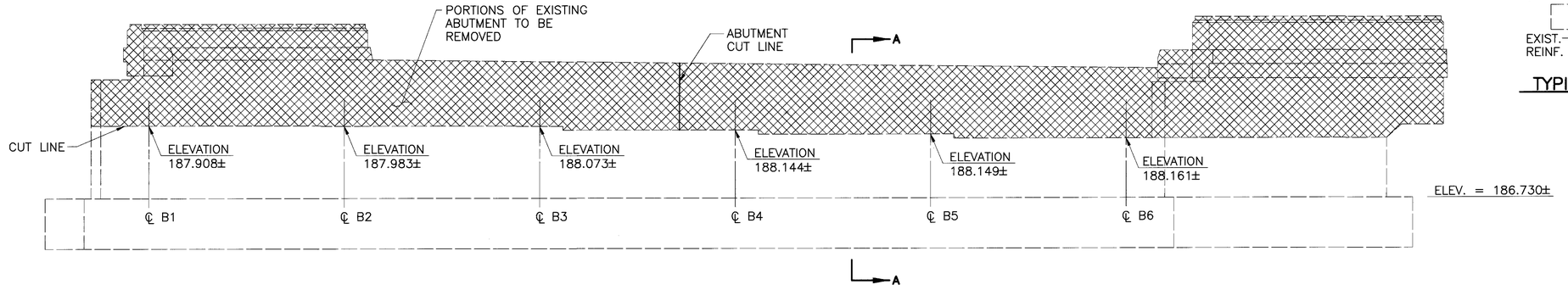
225/327



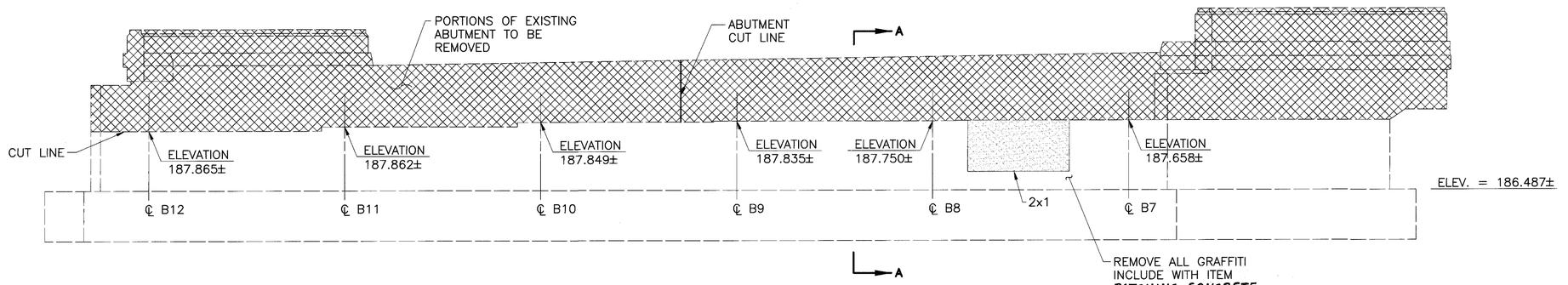
PLAN – LEFT BRIDGE FORWARD ABUTMENT & RIGHT BRIDGE REAR ABUTMENT



TYPICAL WINGWALL ELEVATION
(PILES NOT SHOWN)



ELEVATION – FORWARD ABUTMENT LEFT BRIDGE



ELEVATION – REAR ABUTMENT RIGHT BRIDGE

NOTES

FOR SECTIONS A–A AND B–B AND PATCHING QUANTITIES, SEE SHEET 6/19.

INDICATES AREA OF APPROACH SLAB REMOVAL. INCLUDE WITH ROADWAY QUANTITIES FOR PAYMENT.

INDICATES AREAS TO BE REMOVED AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE.

INDICATES AREAS TO BE PATCHED AS PER ITEM 843 –PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR.

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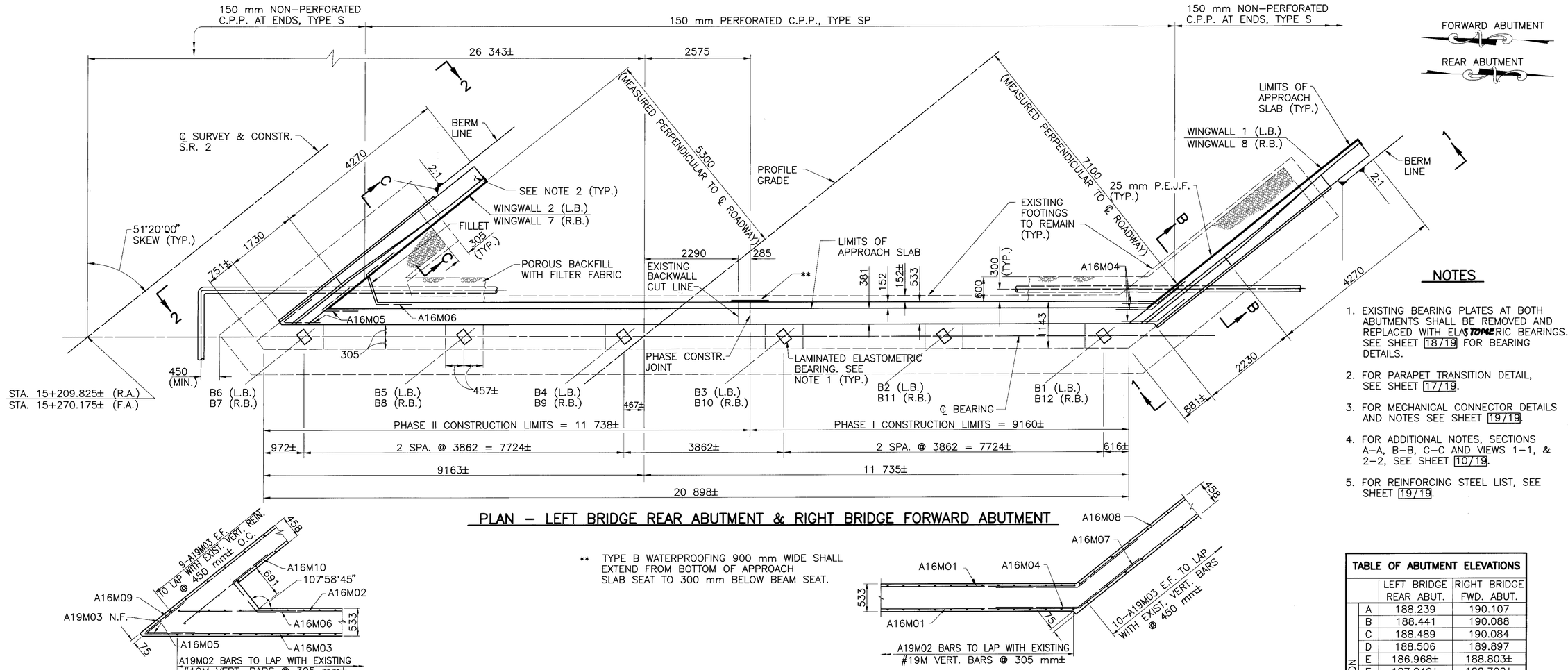
CHECKED	REVISED	STRUCTURE FILE NO	
BAG		2200333, 2200368	

ABUTMENT REMOVAL DETAILS
BRIDGE NO. ERI-2-08336 L & R (0598)
SR. 2 OVER BARDSHAR ROAD

ERI-2-2.866

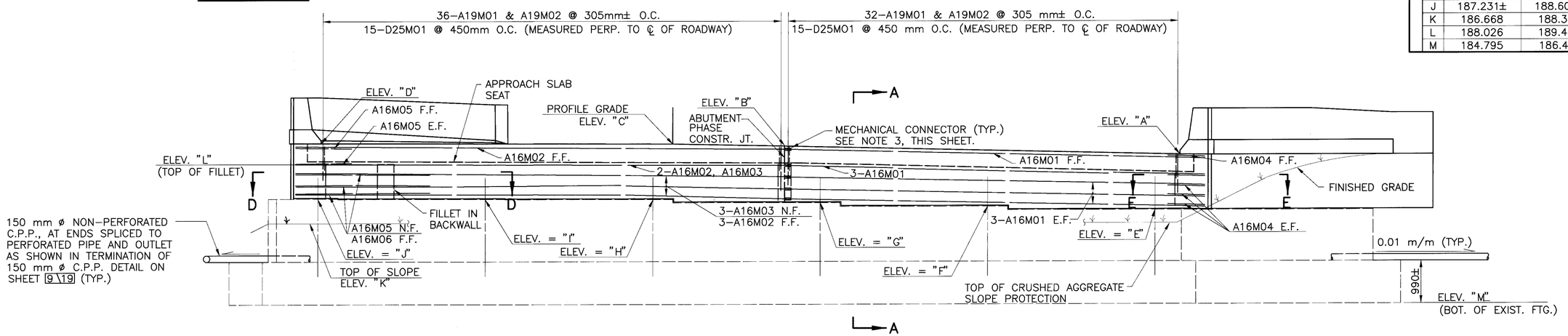


PLAN – LEFT BRIDGE REAR ABUTMENT & RIGHT BRIDGE FORWARD ABUTMENT

** TYPE B WATERPROOFING 900 mm WIDE SHALL EXTEND FROM BOTTOM OF APPROACH SLAB SEAT TO 300 mm BELOW BEAM SEAT.

SECTION D–D

SECTION E–E



ELEVATION – LEFT BRIDGE REAR ABUTMENT & RIGHT BRIDGE FORWARD ABUTMENT

NOTE: ELEVATIONS "A" THRU "D" ARE GIVEN AT BRIDGE LIMITS & "E" THRU "J" ARE GIVEN AT ℄ BEARINGS. SEE TABLE THIS SHEET FOR ABUTMENT ELEVATIONS.

NOTES

1. EXISTING BEARING PLATES AT BOTH ABUTMENTS SHALL BE REMOVED AND REPLACED WITH ELASTOMERIC BEARINGS. SEE SHEET 18/19 FOR BEARING DETAILS.
2. FOR PARAPET TRANSITION DETAIL, SEE SHEET 17/19.
3. FOR MECHANICAL CONNECTOR DETAILS AND NOTES SEE SHEET 19/19.
4. FOR ADDITIONAL NOTES, SECTIONS A–A, B–B, C–C AND VIEWS 1–1, & 2–2, SEE SHEET 10/19.
5. FOR REINFORCING STEEL LIST, SEE SHEET 19/19.

TABLE OF ABUTMENT ELEVATIONS

		LEFT BRIDGE REAR ABUT.	RIGHT BRIDGE FWD. ABUT.
ELEVATION	A	188.239	190.107
	B	188.441	190.088
	C	188.489	190.084
	D	188.506	189.897
	E	186.968±	188.803±
	F	187.049±	188.792±
	G	187.138±	188.792±
	H	187.212±	188.774±
	I	187.219±	188.688±
	J	187.231±	188.606±
	K	186.668	188.306
	L	188.026	189.417
	M	184.795	186.441

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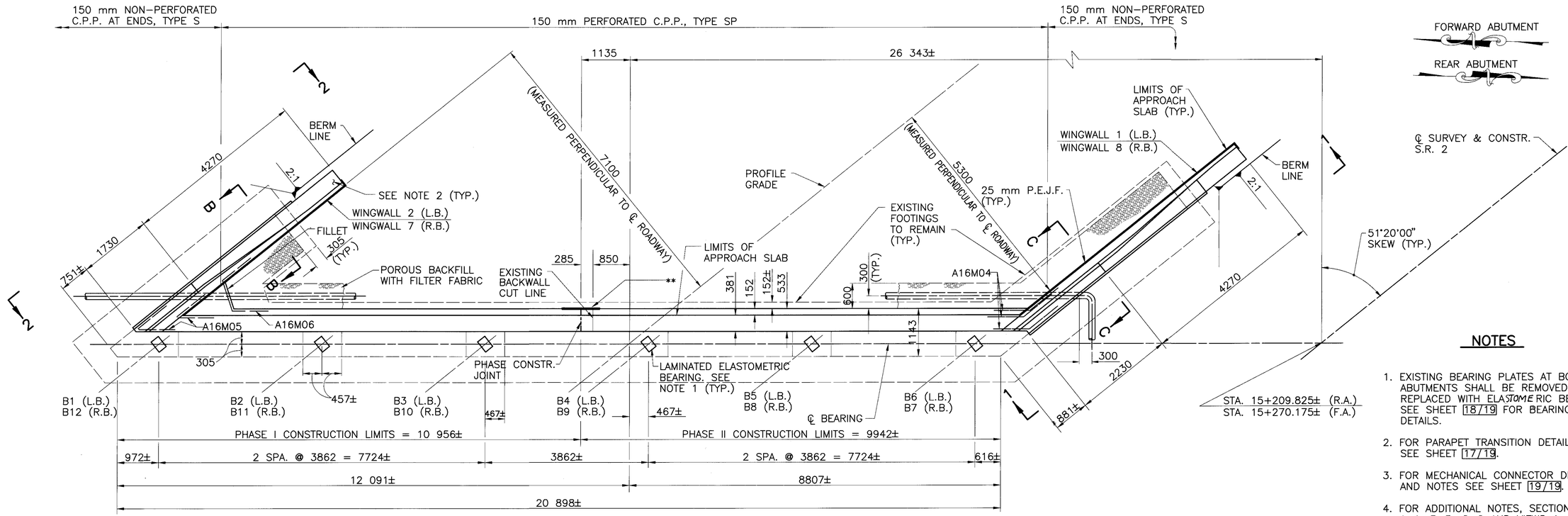
CHECKED	REVISED	STRUCTURE FILE NO.	
BAG		2200333, 2200368	

ABUTMENT DETAILS
BRIDGE NO. ERH-2-08338 L & R (0618)
S.R. 2 OVER BARDSHAR RD.

ERH-2-2.866

8/19

227/327



PLAN – RIGHT BRIDGE REAR ABUTMENT & LEFT BRIDGE FORWARD ABUTMENT

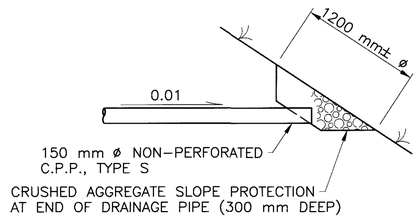
** TYPE B WATERPROOFING 900 mm WIDE SHALL EXTEND FROM BOTTOM OF APPROACH SLAB SEAT TO 300 mm BELOW BEAM SEAT.

TABLE OF ABUTMENT ELEVATIONS

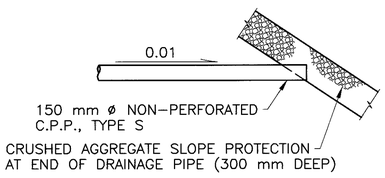
		RIGHT BRIDGE REAR ABUT.	LEFT BRIDGE FWD. ABUT.
ELEVATION	A	189.145	189.201
	B	189.126	189.403
	C	189.122	189.451
	D	188.935	189.468
	E	187.865±	187.908±
	F	187.862±	187.983±
	G	187.849±	188.073±
	H	187.835±	188.144±
	I	187.750±	188.149±
	J	187.658±	188.161±
	K	187.358	187.608
	L	188.665	188.721
	M	185.496	185.740

NOTES

1. EXISTING BEARING PLATES AT BOTH ABUTMENTS SHALL BE REMOVED AND REPLACED WITH ELASTOMERIC BEARINGS. SEE SHEET 18/19 FOR BEARING DETAILS.
2. FOR PARAPET TRANSITION DETAIL, SEE SHEET 17/19.
3. FOR MECHANICAL CONNECTOR DETAILS AND NOTES SEE SHEET 19/19.
4. FOR ADDITIONAL NOTES, SECTIONS A–A, B–B, C–C AND VIEWS 1–1, & 2–2, SEE SHEET 10/19.
5. FOR REINFORCING STEEL LIST, SEE SHEET 19/19.

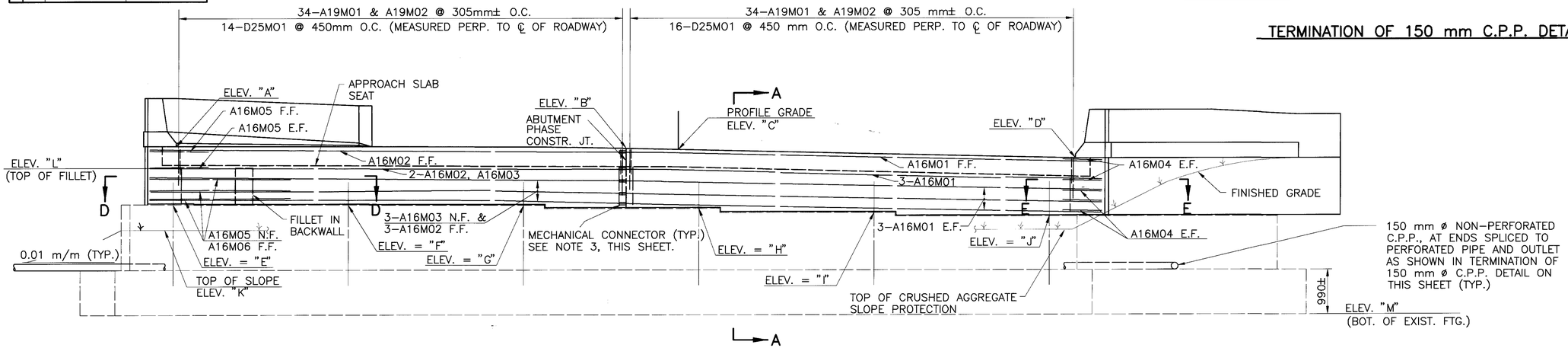


@ EARTH SLOPE



@ CRUSHED AGGREGATE SLOPE PROTECTION

TERMINATION OF 150 mm C.P.P. DETAIL



ELEVATION – RIGHT BRIDGE REAR ABUTMENT & LEFT BRIDGE FORWARD ABUTMENT

NOTE: ELEVATIONS "A" THRU "D" ARE GIVEN AT BRIDGE LIMITS & "E" THRU "J" ARE GIVEN AT ℄ BEARINGS. SEE TABLE THIS SHEET FOR ABUTMENT ELEVATIONS.

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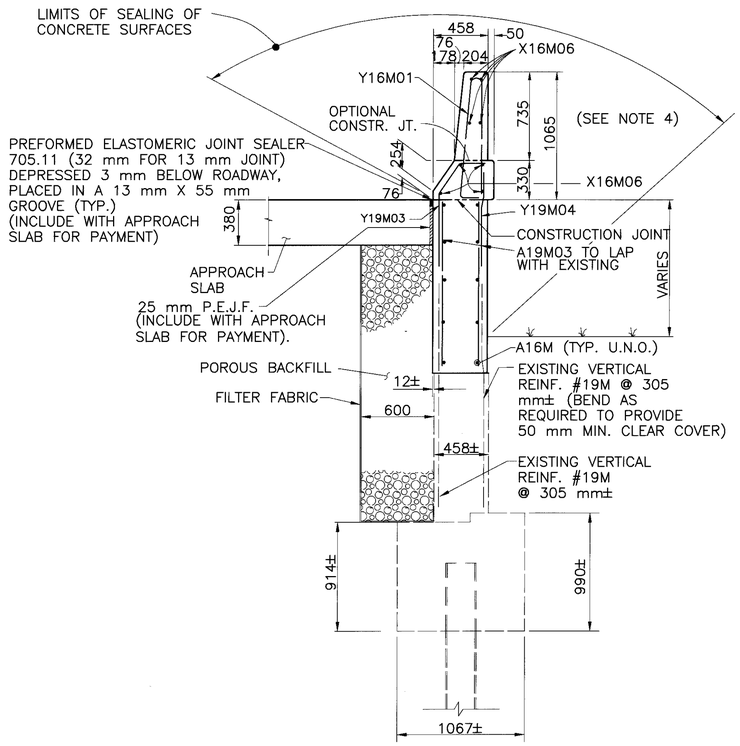
ABUTMENT DETAILS
BRIDGE NO. ERI-2-08336 L & R (0516)
S.R. 2 OVER BARDSHAR RD.

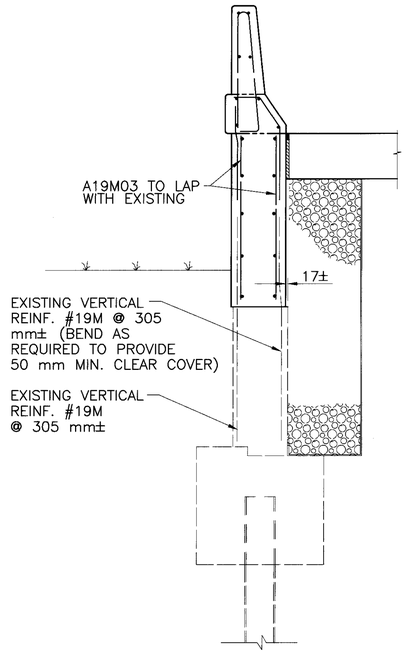
ERI-2-2.866

9/19

228/327

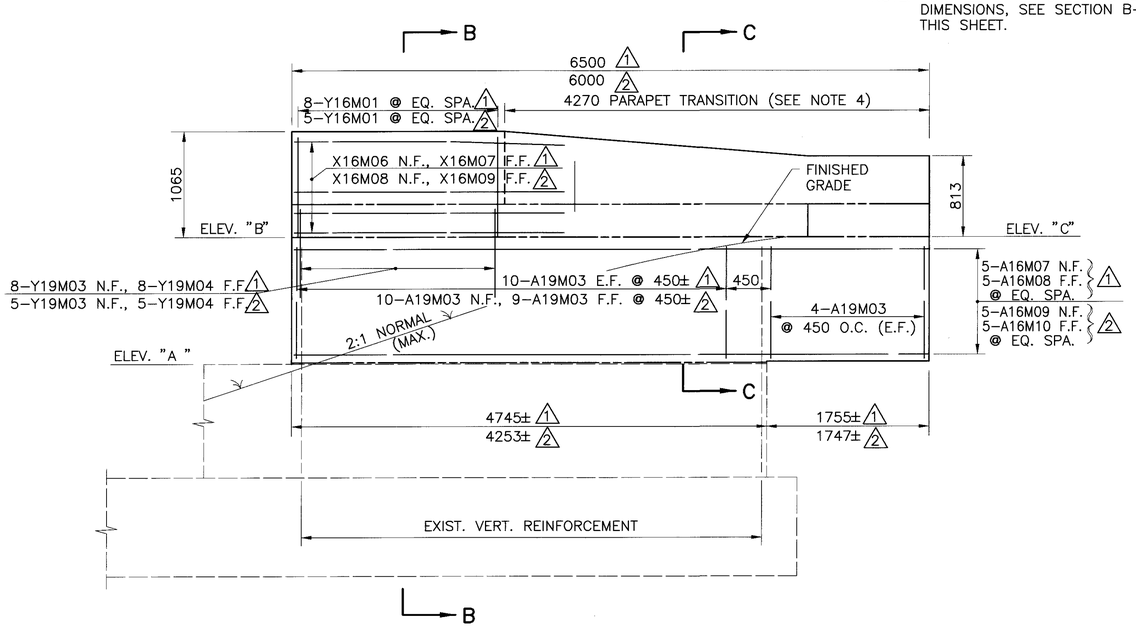


SECTION B–B



SECTION C–C

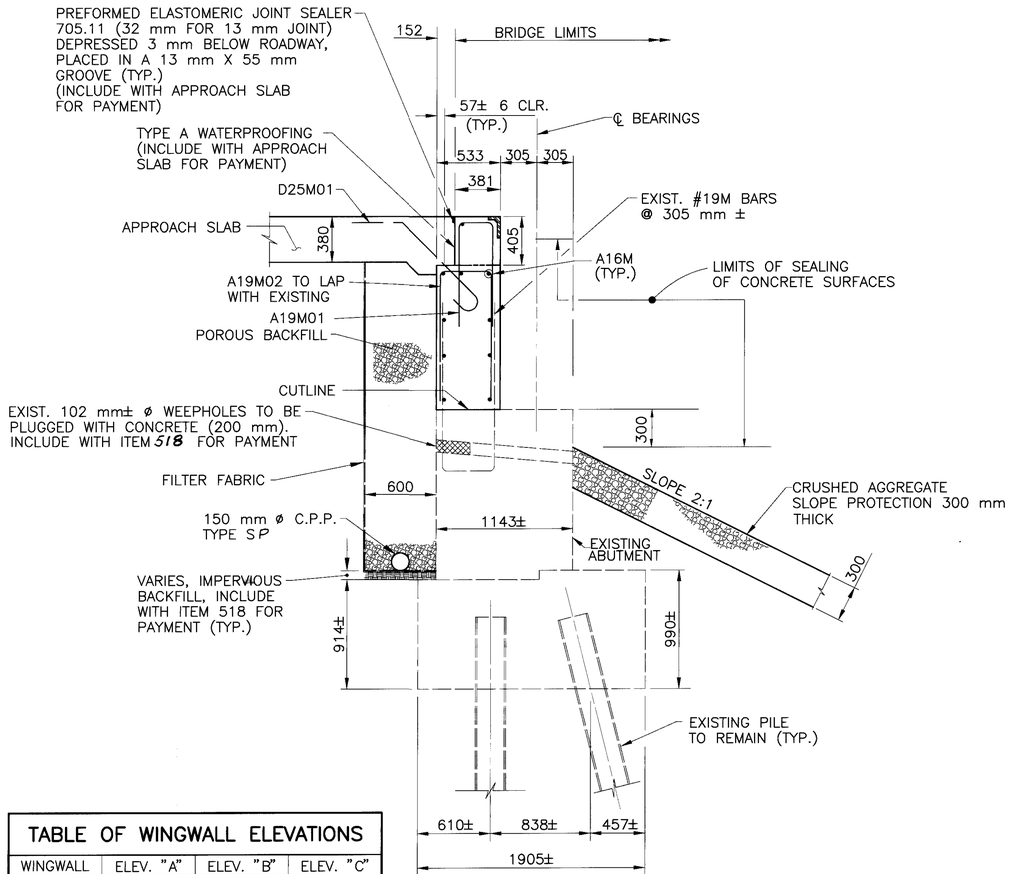
NOTE: FOR ALL OTHER CALLOUTS & DIMENSIONS, SEE SECTION B–B, THIS SHEET.



VIEW 1–1 (AS SHOWN)
VIEW 2–2 (OPPOSITE HAND)

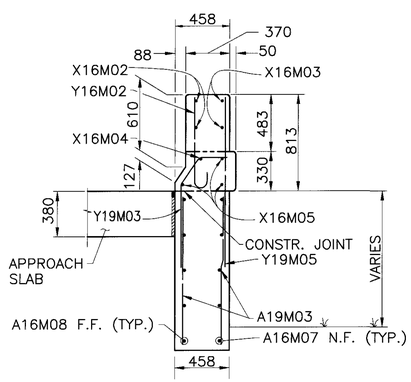
1 WINGWALLS WW1, WW4, WW5 & WW8

2 WINGWALLS WW2, WW3, WW6 & WW7



SECTION A–A

TABLE OF WINGWALL ELEVATIONS			
WINGWALL	ELEV. "A"	ELEV. "B"	ELEV. "C"
WW1	186.968±	188.239	188.139
WW2	187.231±	188.506	188.416
WW3	187.908±	189.201	189.293
WW4	188.161±	189.468	189.568
WW5	187.658±	188.935	188.835
WW6	187.865±	189.145	189.053
WW7	188.606±	189.897	189.989
WW8	188.803±	190.107	190.207



SECTION F–F

NOTES

1. POROUS BACKFILL WITH FILTER FABRIC, 600 mm THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 300 mm BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS. GEOTEXTILE FABRIC SHALL CONFORM WITH 712.09, TYPE A. GEOTEXTILE SHALL BE INCLUDED WITH ITEM 518 POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN, FOR PAYMENT. POROUS BACKFILL MATERIAL SHALL BE #57 GRAVEL.
2. BACKWALL CONCRETE: IN ADDITION TO THE PROVISIONS OF 511.08, BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.
3. CONCRETE COVER SHALL BE 50 mm CLEAR TYP. U.N.O.
4. FOR DEFLECTOR PARAPET TRANSITION DETAIL AND REINFORCEMENT, SEE SHEET 17/19.
5. A19M03 VERT. BARS SHALL LAP WITH EXISTING VERTICAL REINFORCEMENT. SEE SECTIONS D–D & E–E ON SHEET 8/19 FOR REINFORCEMENT PLACEMENT.

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BAG		2200333, 2200368	

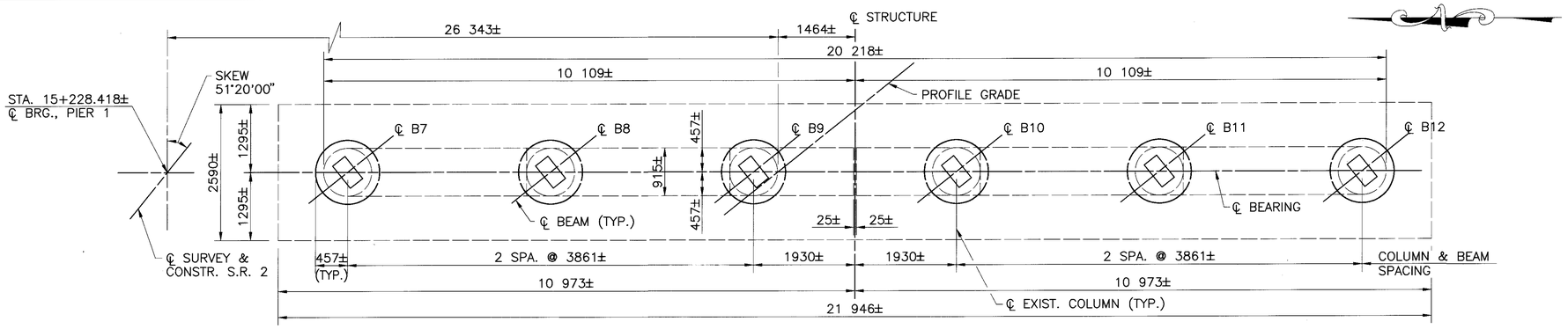
ABUTMENT DETAILS
BRIDGE NO. ERI-2-08336 L & R (0518)
S.R. 2 OVER BARDSHAR RD.

ERI-2-2.866

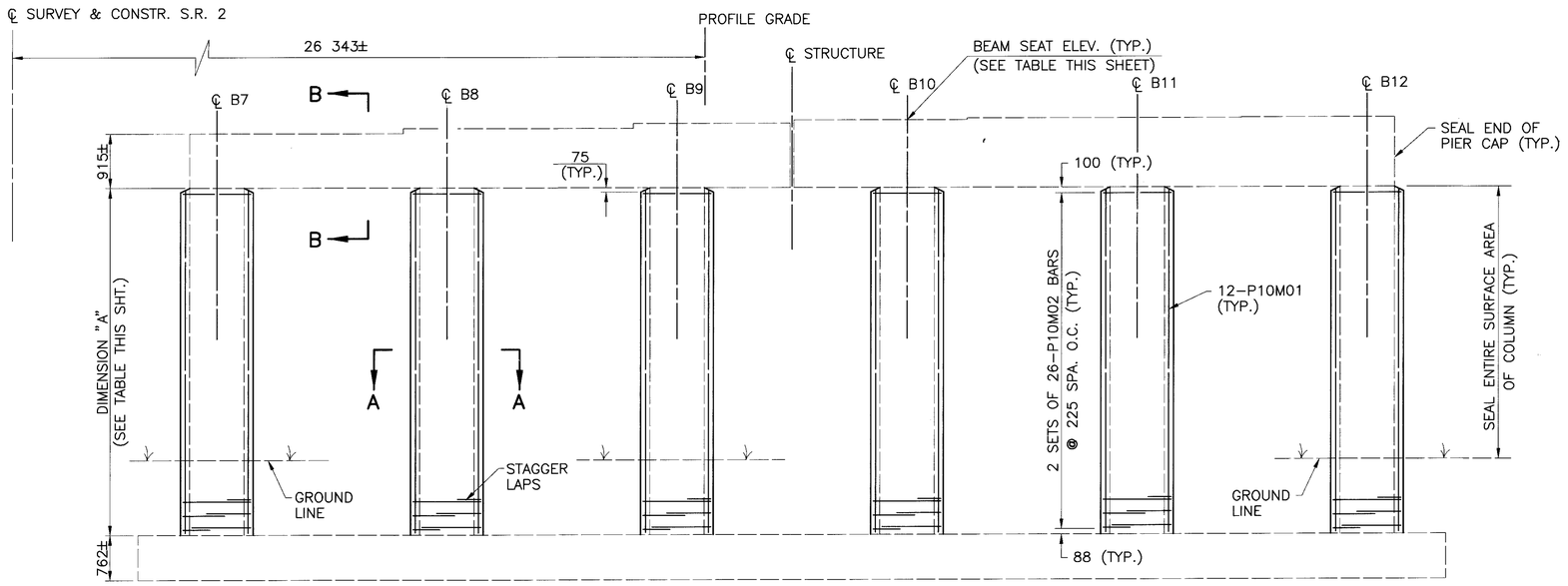
10/19

229/327

c101 P:\3907\DWG\BRIDGE\E-2-0835\PLAN\3907EA03.DWG JUL 15, 1997 TIME: 10:58 AM

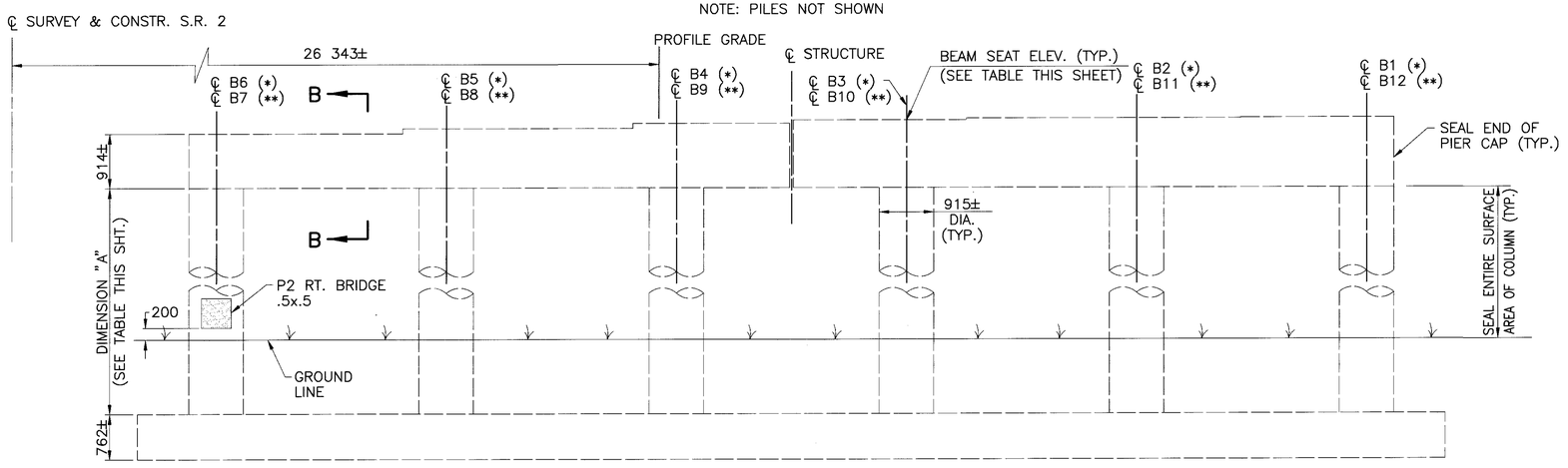


PLAN – PIER NO. 1 (RIGHT BRIDGE)



ELEVATION – PIER NO. 1 (RIGHT BRIDGE)

NOTE: PILES NOT SHOWN



* PIERS 1 & 2 – LEFT BRIDGE
** PIER 2 – RIGHT BRIDGE

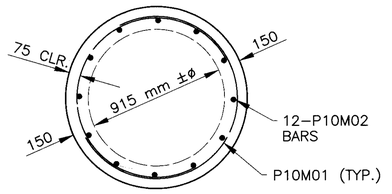
TYPICAL PIER ELEVATION

(PIER NO. 1 – LEFT BRIDGE & PIER NO. 2 – LEFT & RIGHT BRIDGE)

NOTE: PILES NOT SHOWN

EXISTING BRIDGE SEAT ELEVATIONS		
BEAM NO.	PIER NO. 1	PIER NO. 2
B1	187.218±	187.616±
B2	187.310±	187.694±
B3	187.392±	187.782±
B4	187.456±	187.837±
B5	187.485±	187.866±
B6	187.494±	187.879±
B7	187.921±	188.315±
B8	188.001±	188.405±
B9	188.086±	188.488±
B10	188.088±	188.495±
B11	188.115±	188.505±
B12	188.128±	188.522±

TABLE OF DIMENSION "A"		
PIER NO.	LEFT BRIDGE	RIGHT BRIDGE
PIER NO. 1	5115±	5813±
PIER NO. 2	5499±	6194±



SECTION A–A

TYPICAL AT PIER NO. 1 COLUMNS
FOR THE RIGHT BRIDGE

SECTION B–B

SUMMARY OF PATCHING QUANTITIES		
LOCATION	MEASURED	ESTIMATED
LT. BRIDGE P1	0 SQ. M.	0 SQ. M.
LT. BRIDGE P2	0 SQ. M.	0 SQ. M.
LT. BRIDGE P3	0 SQ. M.	0 SQ. M.
TOTAL	0 SQ. M.	0 SQ. M.
RT. BRIDGE P1	0 SQ. M.	0 SQ. M.
RT. BRIDGE P2	0.25 SQ. M.	0.5 SQ. M.
RT. BRIDGE P3	0 SQ. M.	0 SQ. M.
TOTAL	0.25 SQ. M.	0.5 SQ. M.

PHYSICAL INVENTORY OF MEASURED QUANTITES IN DETERIORATION WAS PERFORMED IN OCTOBER 1997.

INDICATES AREAS TO BE PATCHED AS PER ITEM PATCHING CONCRETE STRUCTURES, WITH TROWELABLE MORTAR.

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PIER DETAILS
BRIDGE NO. ERI-2-08336 L & R (0518)
S.R. 2 OVER BARDSHAR RD.

ERI-2-2.866

11-19

230
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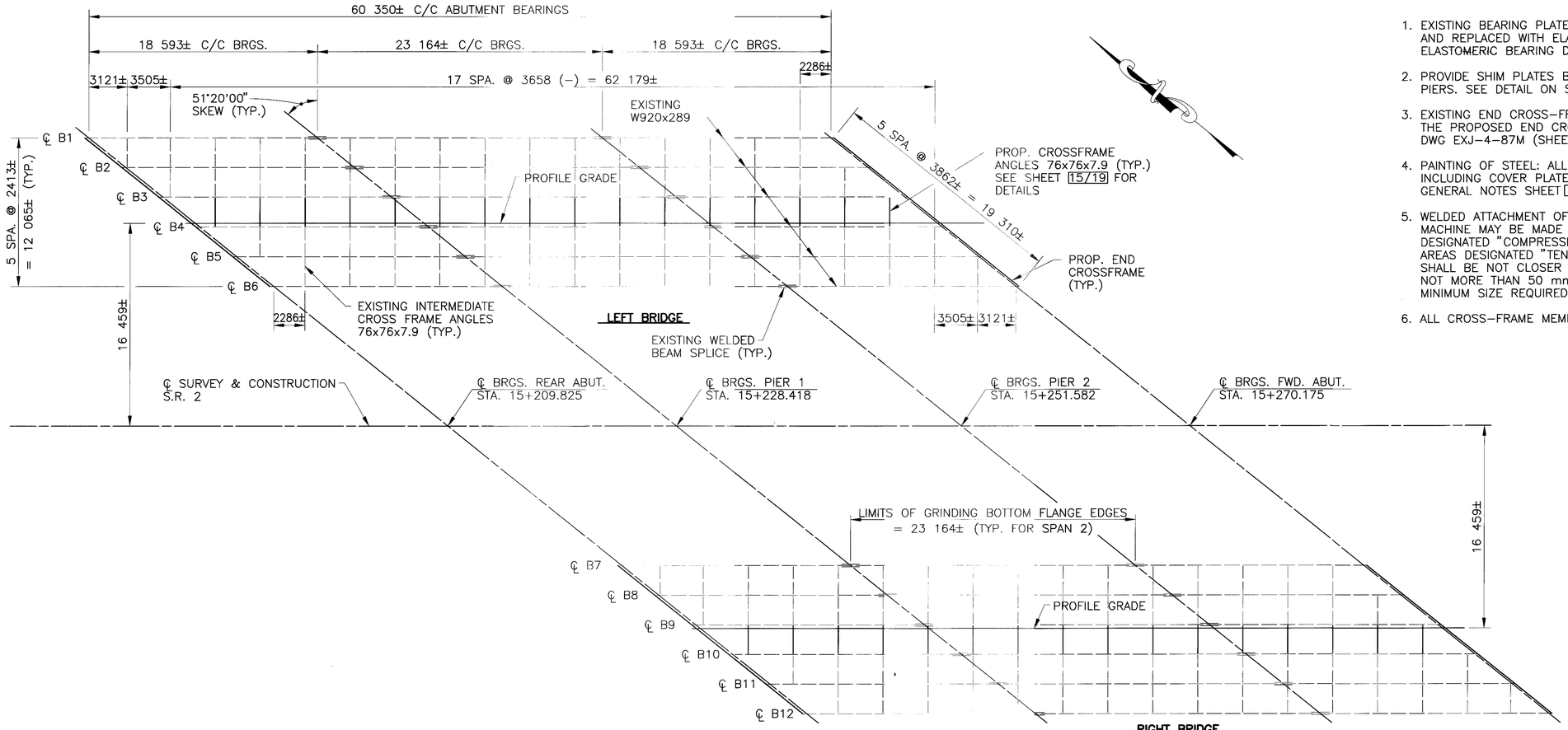
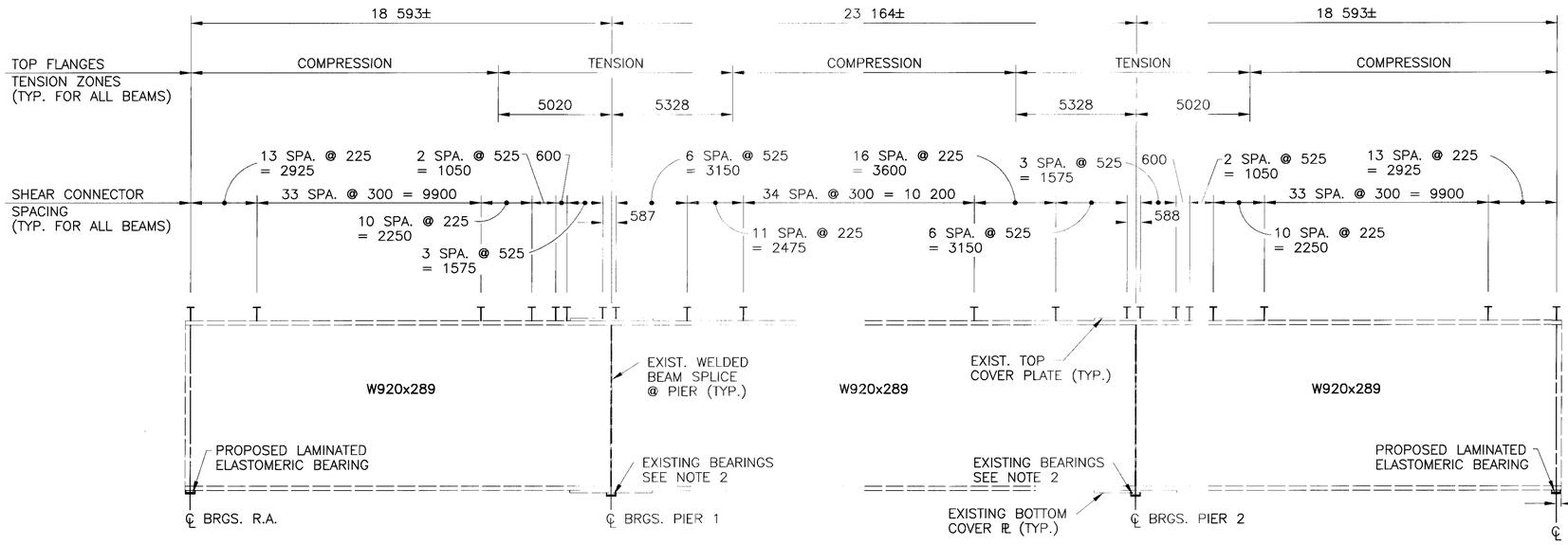


FRAMING PLAN

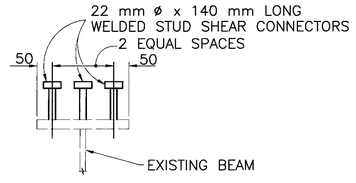
NOTE: SEE LEFT BRIDGE FOR ALL RELEVANT DIMENSIONS AND CALL OUTS.

NOTES

1. EXISTING BEARING PLATES AT BOTH ABUTMENTS SHALL BE REMOVED AND REPLACED WITH ELASTOMERIC EXPANSION BEARINGS. FOR ELASTOMERIC BEARING DETAILS, SEE SHEET 18/19.
2. PROVIDE SHIM PLATES BELOW EXISTING BEARING PLATES AT ALL PIERS. SEE DETAIL ON SHEET 18/19.
3. EXISTING END CROSS–FRAMES SHALL BE REMOVED AND REPLACED. THE PROPOSED END CROSS–FRAMES SHALL BE PER ODOT STD. DWG EXJ–4–87M (SHEET 1/5).
4. PAINTING OF STEEL: ALL STRUCTURAL STEEL (PROPOSED AND EXISTING), INCLUDING COVER PLATES AND CROSS FRAMES SHALL BE PAINTED. SEE GENERAL NOTES SHEET 3/19 FOR MORE DETAILS.
5. WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 25 mm FROM THE EDGE OF FLANGE, BE NOT MORE THAN 50 mm LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.
6. ALL CROSS–FRAME MEMBERS SHALL BE A–36M STEEL.



EXISTING BEAM ELEVATIONS B1 TO B12



STUD SHEAR CONNECTOR DETAIL

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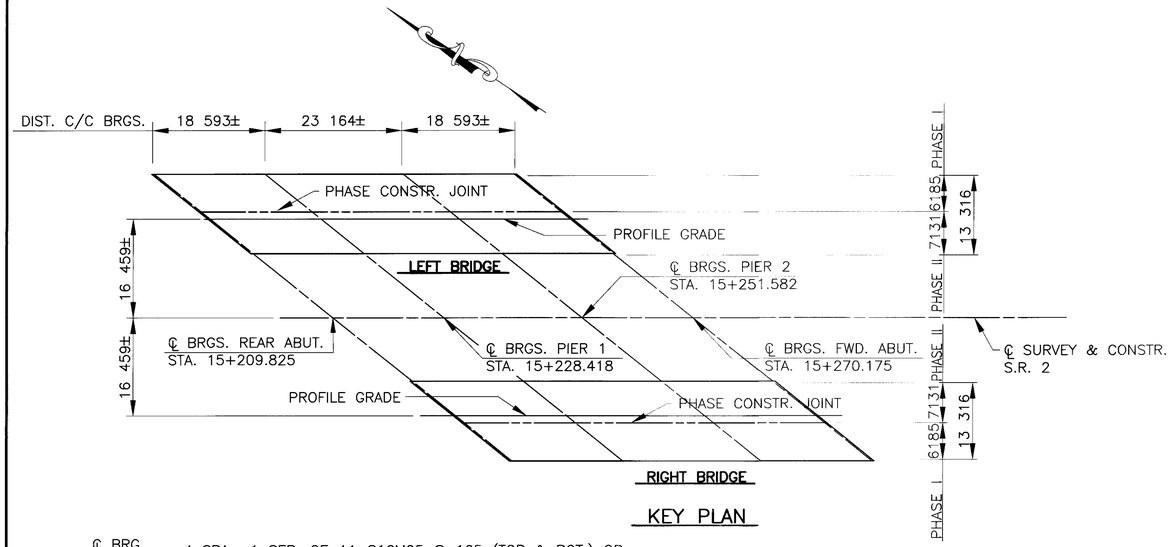
SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI–2–08336 L & R (0518)
S.R. 2 OVER BARDSHAR RD.

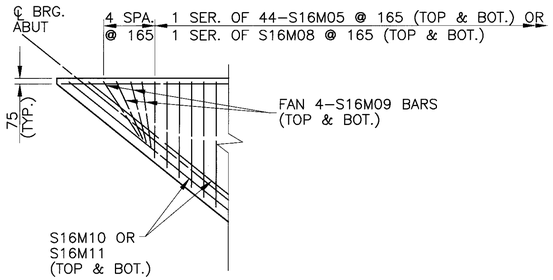
ERI–2–2.866

12/19

231/327

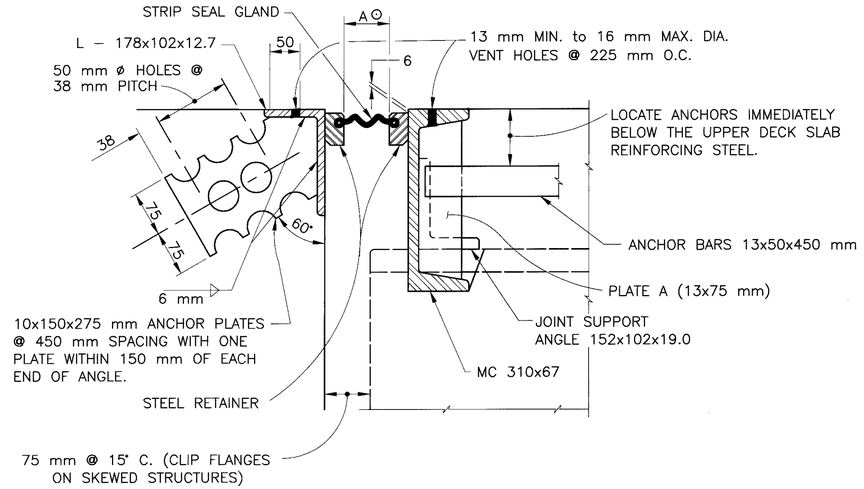


KEY PLAN



DETAIL A

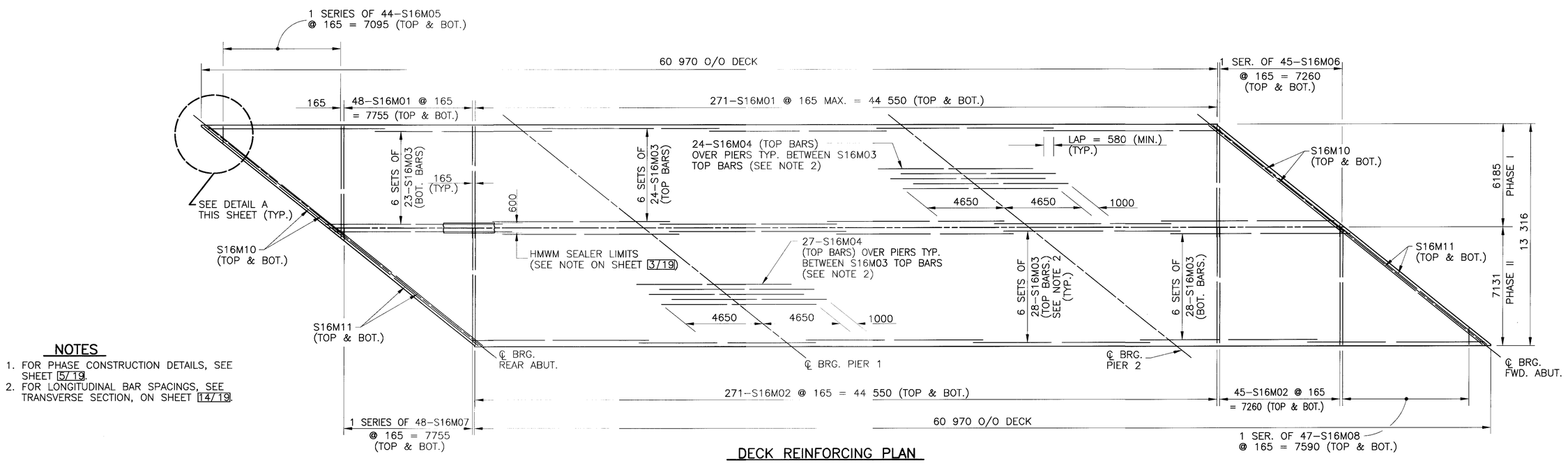
⊙ JOINT OPENING TABLE (DIM "A")		
AMBIENT TEMP (°C)	REAR ABUTMENT	FORWARD ABUTMENT
0°	47 mm	45 mm
5°	45 mm	44 mm
10°	43 mm	43 mm
15°	41 mm	42 mm
20°	39 mm	42 mm
25°	37 mm	41 mm
30°	34 mm	40 mm
35°	32 mm	39 mm



STRIP SEAL EXPANSION JOINT DETAIL

EXPANSION JOINT NOTES

1. FOR MORE DETAILS SEE STD. DWG. EXJ–4–87M.
2. STRIP SEAL GLAND SIZE SHALL BE 75 mm FOR BOTH REAR AND FORWARD ABUTMENTS.
3. ELASTOMERIC SEALS: THE JOINT SEAL FOR EACH BRIDGE DECK JOINT SHALL BE FURNISHED IN ONE CONTINUOUS PIECE.



DECK REINFORCING PLAN

LEFT BRIDGE – AS SHOWN
RIGHT BRIDGE – SIMILAR

NOTES

1. FOR PHASE CONSTRUCTION DETAILS, SEE SHEET 5/19.
2. FOR LONGITUDINAL BAR SPACINGS, SEE TRANSVERSE SECTION, ON SHEET 14/19.

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SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI–2–06336 L & R (0518)
S.R. 2 OVER BARDSHAR RD.

ERI–2–2.866

13/19

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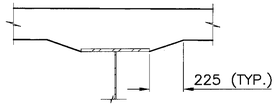
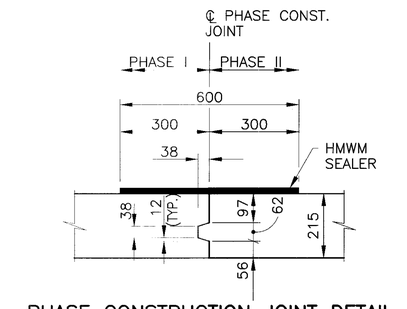


HAUNCH DETAIL

ALSO REFER TO
NOTE 1, THIS SHEET

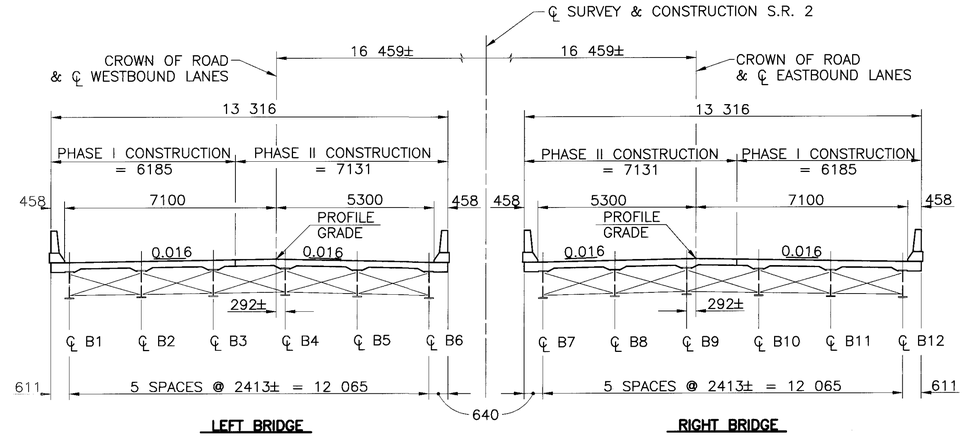
NOTES

1. A HAUNCH WIDTH OF 225 mm SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 150 mm AND 300 mm.
2. FOR TABLE OF DIMENSION "A" SEE THIS SHEET. THIS IS THE NOMINAL DIMENSION FROM THE TOP OF BEAM FLANGE TO TOP OF CONCRETE DECK. THE QUANTITY OF THAT PORTION OF THE DECK CONCRETE OVER THE BEAMS SHALL BE BASED ON THIS DIMENSION EVEN THOUGH DEVIATION FROM THIS DIMENSION MAY OCCUR BECAUSE THE TOP OF THE BEAM MAY NOT HAVE THE CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISH GRADE.
3. FOR MORE PARAPET DETAILS, SEE SHEET 17/19.
4. FOR WELDED SHEAR STUD CONNECTORS, SPACING, AND DETAIL, SEE SHEET 12/19.
5. FOR PHASE CONSTRUCTION DETAILS, SEE SHEET 5/19.
6. FIELD BEND TRANSVERSE BARS AS NECESSARY TO FIT THE CROWN. INCLUDE WITH ITEM 511 FOR PAYMENT.
7. FOR PROPOSED CROSSFRAME DETAILS, SEE SHEET 15/19.

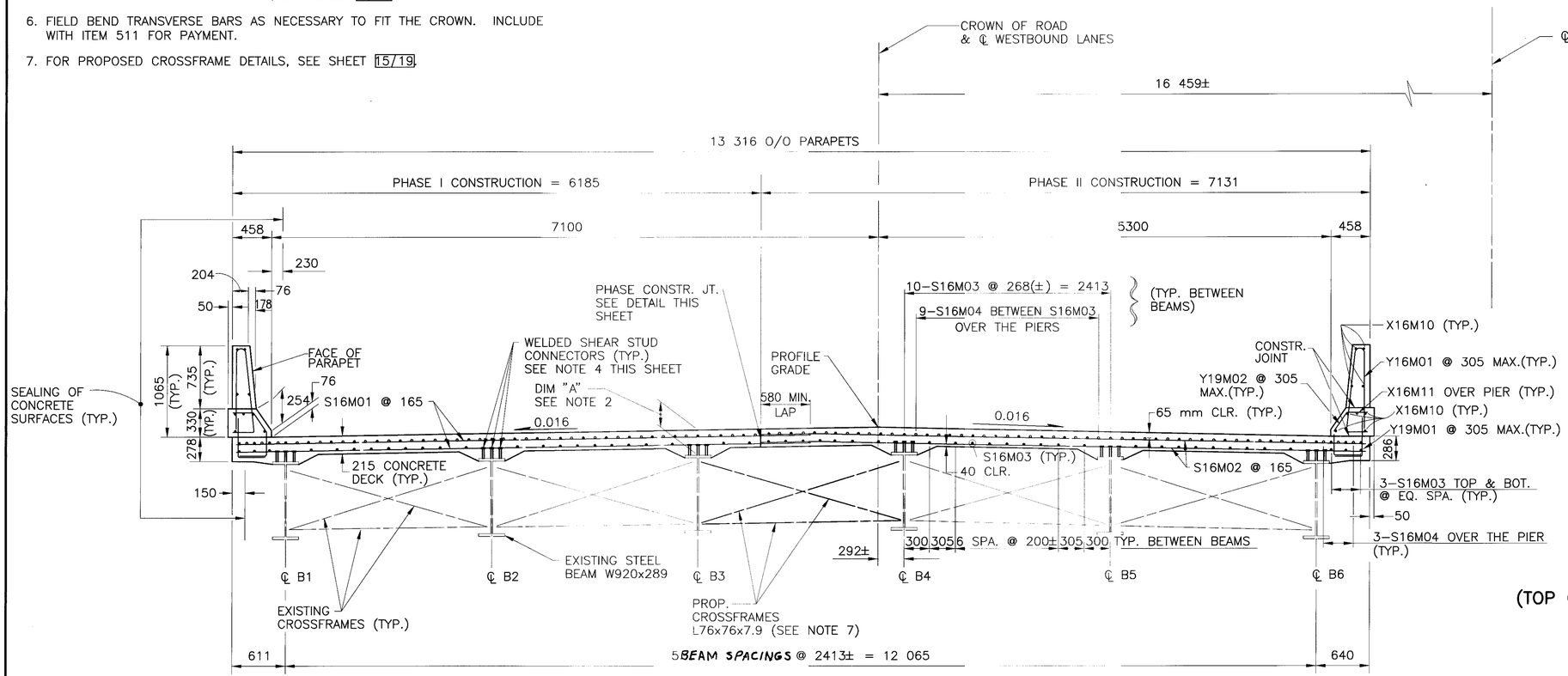


PHASE CONSTRUCTION JOINT DETAIL

NOTE: REBARS ARE NOT SHOWN



KEY TRANSVERSE SECTION



TRANSVERSE SECTION

LEFT BRIDGE – AS SHOWN
RIGHT BRIDGE – OPPOSITE HAND W.R.T. ℄ SURVEY & CONSTR. S.R. 2

DIMENSION "A"
(TOP OF BEAM/MOMENT PL. TO TOP OF CONCRETE)

BEAM \ LOCATION	R. ABUT	PIER 1	PIER 2	F. ABUT
B1	258	262	245	246
B2	262	255	252	256
B3	258	257	249	251
B4	259	269	269	256
B5	260	248	248	258
B6	256	247	243	254
B7	265	256	243	245
B8	258	261	238	248
B9	258	261	240	247
B10	261	276	250	246
B11	256	256	248	254
B12	260	251	239	250

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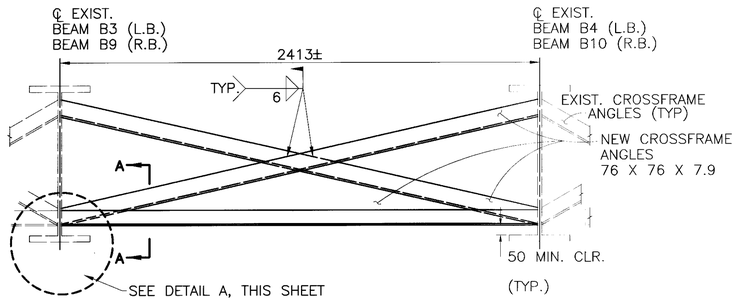
SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-08336 L & R (0518)
S.R. 2 OVER BARDSHAR RD.

ERI-2-2.866

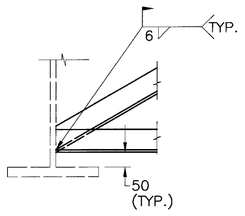
FINAL DECK SCREED ELEVATIONS (LEFT BRIDGE)

SCREED LINE	LOCATION	C.L. BRG. R.A.	SPAN 1			C.L. BRG. PIER 1	SPAN 2			C.L. BRG. PIER 2	SPAN 3			C.L. BRG. F.A.
			0.250	0.500	.750		0.250	0.500	.750		0.250	0.500	.750	
LINE A F/C	STATION	15+180.383	15+185.032	15+189.680	15+194.328	15+198.976	15+204.768	15+210.559	15+216.350	15+222.141	15+226.790	15+231.438	15+236.086	15+240.734
	T/S ELEV.	188.256	188.328	188.399	188.471	188.542	188.631	188.720	188.809	188.898	188.970	189.041	189.113	189.184
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	188.256	188.335	188.408	188.475	188.542	188.636	188.730	188.814	188.898	188.974	189.050	189.120	189.184
LINE B B1	STATION	15+180.575	15+185.223	15+189.871	15+194.519	15+199.168	15+204.959	15+210.750	15+216.541	15+222.333	15+226.981	15+231.629	15+236.277	15+240.926
	T/S ELEV.	188.262	188.333	188.405	188.476	188.548	188.637	188.726	188.815	188.904	188.975	189.047	189.118	189.190
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	188.262	188.340	188.414	188.480	188.548	188.642	188.736	188.820	188.904	188.979	189.056	189.125	189.190
LINE C B2	STATION	15+183.590	15+188.238	15+192.887	15+197.535	15+202.183	15+207.974	15+213.766	15+219.557	15+225.348	15+229.996	15+234.645	15+239.293	15+243.941
	T/S ELEV.	188.347	188.418	188.490	188.561	188.633	188.722	188.811	188.900	188.989	189.060	189.132	189.203	189.275
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	188.347	188.425	188.499	188.565	188.633	188.727	188.821	188.905	188.989	189.064	189.141	189.210	189.275
LINE D B3	STATION	15+186.606	15+191.254	15+195.902	15+200.550	15+205.199	15+210.990	15+216.781	15+222.572	15+228.364	15+233.012	15+237.660	15+242.308	15+246.957
	T/S ELEV.	188.432	188.503	188.575	188.646	188.717	188.807	188.896	188.985	189.074	189.145	189.217	189.288	189.360
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	188.432	188.510	188.584	188.650	188.717	188.812	188.906	188.990	189.074	189.149	189.226	189.295	189.360
LINE E PH. CONST.	STATION	15+187.540	15+192.189	15+196.837	15+201.485	15+206.133	15+211.925	15+217.716	15+223.507	15+229.298	15+233.947	15+238.595	15+243.243	15+247.891
	T/S ELEV.	188.458	188.529	188.601	188.672	188.744	188.833	188.922	189.011	189.100	189.172	189.243	189.315	189.386
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	188.458	188.536	188.610	188.676	188.744	188.838	188.932	189.016	189.100	189.176	189.252	189.322	189.386
LINE F P.G.	STATION	15+189.256	15+193.905	15+198.553	15+203.201	15+207.849	15+213.641	15+219.432	15+225.223	15+231.014	15+235.663	15+240.311	15+244.959	15+249.607
	T/S ELEV.	188.506	188.578	188.649	188.721	188.792	188.881	188.970	189.059	189.148	189.220	189.291	189.363	189.434
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	188.506	188.585	188.658	188.725	188.792	188.886	188.980	189.064	189.148	189.224	189.300	189.370	189.434
LINE G B4	STATION	15+189.621	15+194.269	15+198.918	15+203.566	15+208.214	15+214.005	15+219.797	15+225.588	15+231.379	15+236.027	15+240.676	15+245.324	15+249.972
	T/S ELEV.	188.507	188.579	188.650	188.722	188.793	188.882	188.971	189.060	189.149	189.221	189.292	189.364	189.435
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	188.507	188.586	188.659	188.726	188.793	188.887	188.981	189.065	189.149	189.225	189.301	189.371	189.435
LINE H B5	STATION	15+192.637	15+197.285	15+201.933	15+206.581	15+211.230	15+217.021	15+222.812	15+228.603	15+234.395	15+239.043	15+243.691	15+248.339	15+252.988
	T/S ELEV.	188.515	188.586	188.658	188.729	188.801	188.890	188.979	189.068	189.157	189.229	189.300	189.372	189.443
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	188.515	188.593	188.667	188.733	188.801	188.895	188.989	189.073	189.157	189.233	189.309	189.379	189.443
LINE I B6	STATION	15+195.652	15+200.300	15+204.949	15+209.597	15+214.245	15+220.036	15+225.828	15+231.619	15+237.410	15+242.058	15+246.707	15+251.355	15+256.003
	T/S ELEV.	188.523	188.594	188.666	188.737	188.809	188.898	188.987	189.076	189.165	189.236	189.308	189.379	189.451
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	188.523	188.601	188.675	188.741	188.809	188.903	188.997	189.081	189.165	189.240	189.317	189.386	189.451
LINE J F/C	STATION	15+195.880	15+200.528	15+205.176	15+209.824	15+214.473	15+220.264	15+226.055	15+231.846	15+237.638	15+242.286	15+246.934	15+251.582	15+256.231
	T/S ELEV.	188.523	188.595	188.666	188.738	188.809	188.898	188.987	189.076	189.166	189.237	189.309	189.380	189.452
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	188.523	188.602	188.675	188.742	188.809	188.903	188.997	189.081	189.166	189.241	189.318	189.387	189.452

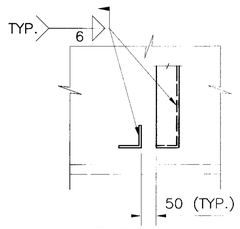
NOTE:
SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.



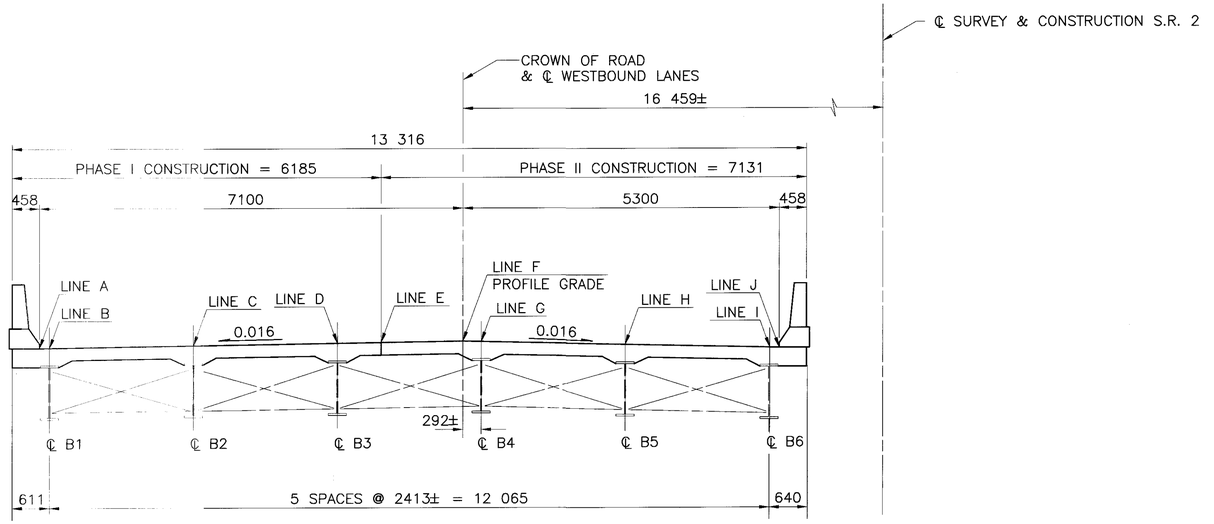
INTERMEDIATE CROSSFRAME DETAIL



DETAIL A



SECTION A–A



LEFT BRIDGE

TRANSVERSE SECTION

DESIGNED OHK | DRAWN DJD | REVIEWED OHK | DATE 7-31-97
CHECKED ACT | REVISED | STRUCTURE FILE NO 2200333, 2200368

R.D. Zande & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone (614) 486-4383

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-08336 L & R (0518)
S.R. 2 OVER BARDSHAR RD.

ERI-2-2.866

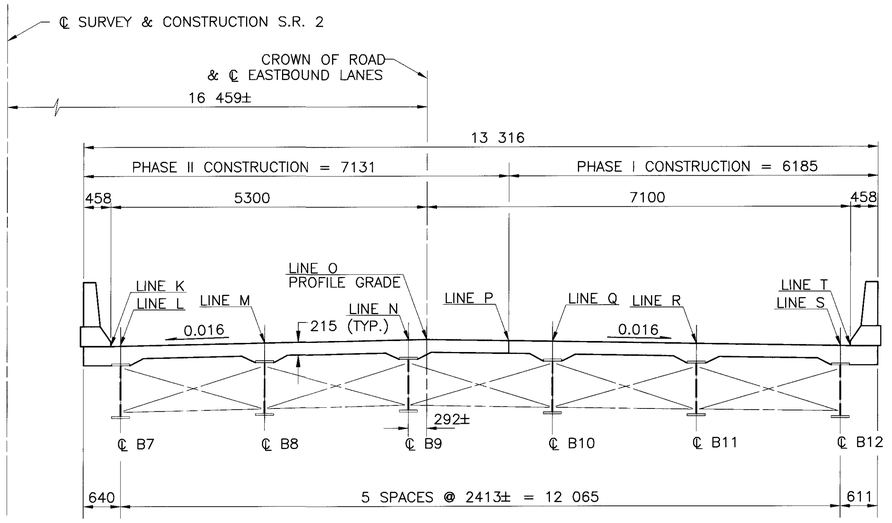
15/19

234/327

FINAL DECK SCREED ELEVATIONS (RIGHT BRIDGE)

SCREED LINE	LOCATION	C.L. BRG. R.A.	SPAN 1			C.L. BRG. PIER 1	SPAN 2			C.L. BRG. PIER 2	SPAN 3			C.L. BRG. F.A.
			0.250	0.500	0.750		0.250	0.500	0.750		0.250	0.500	0.750	
LINE K F/C	STATION	15+223.770	15+228.419	15+233.067	15+237.715	15+242.363	15+248.155	15+253.946	15+259.737	15+265.528	15+270.177	15+274.825	15+279.473	15+284.121
	T/S ELEV.	188.952	189.024	189.095	189.167	189.238	189.327	189.416	189.505	189.594	189.666	189.737	189.809	189.880
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	188.952	189.031	189.104	189.171	189.238	189.332	189.426	189.510	189.594	189.670	189.746	189.816	189.880
LINE L B7	STATION	15+223.998	15+228.646	15+233.294	15+237.943	15+242.591	15+248.382	15+254.173	15+259.965	15+265.756	15+270.404	15+275.052	15+279.701	15+284.349
	T/S ELEV.	188.959	189.030	189.102	189.173	189.245	189.334	189.423	189.512	189.601	189.672	189.744	189.815	189.887
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	188.959	189.037	189.111	189.177	189.245	189.339	189.433	189.517	189.601	189.676	189.753	189.822	189.887
LINE M B8	STATION	15+227.013	15+231.662	15+236.310	15+240.958	15+245.606	15+251.398	15+257.189	15+262.980	15+268.771	15+273.420	15+278.068	15+282.716	15+287.364
	T/S ELEV.	189.044	189.115	189.187	189.258	189.330	189.419	189.508	189.597	189.686	189.757	189.829	189.900	189.972
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	189.044	189.122	189.196	189.262	189.330	189.424	189.518	189.602	189.686	189.761	189.838	189.907	189.972
LINE N B9	STATION	15+230.029	15+234.677	15+239.325	15+243.974	15+248.622	15+254.413	15+260.204	15+265.996	15+271.787	15+276.435	15+281.083	15+285.732	15+290.380
	T/S ELEV.	189.129	189.200	189.272	189.343	189.415	189.504	189.593	189.682	189.771	189.842	189.914	189.985	190.057
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	189.129	189.207	189.281	189.347	189.415	189.509	189.603	189.687	189.771	189.846	189.923	189.992	190.057
LINE O P.G.	STATION	15+230.394	15+235.042	15+239.690	15+244.338	15+248.987	15+254.778	15+260.569	15+266.360	15+272.152	15+276.800	15+281.448	15+286.096	15+290.745
	T/S ELEV.	189.139	189.210	189.282	189.353	189.425	189.514	189.603	189.692	189.781	189.853	189.924	189.996	190.067
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	189.139	189.217	189.291	189.357	189.425	189.519	189.613	189.697	189.781	189.857	189.933	190.003	190.067
LINE P PH. CONST.	STATION	15+232.110	15+236.758	15+241.406	15+246.054	15+250.703	15+256.494	15+262.285	15+268.076	15+273.868	15+278.516	15+283.164	15+287.812	15+292.461
	T/S ELEV.	189.143	189.215	189.286	189.358	189.429	189.518	189.607	189.697	189.786	189.857	189.929	190.000	190.072
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	189.143	189.222	189.295	189.362	189.429	189.523	189.617	189.702	189.786	189.861	189.938	190.007	190.072
LINE Q B10	STATION	15+233.044	15+237.693	15+242.341	15+246.989	15+251.637	15+257.429	15+263.220	15+269.011	15+274.802	15+279.451	15+284.099	15+288.747	15+293.395
	T/S ELEV.	189.146	189.217	189.289	189.360	189.432	189.521	189.610	189.699	189.788	189.859	189.931	190.002	190.074
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	189.146	189.224	189.298	189.364	189.432	189.526	189.620	189.704	189.788	189.863	189.940	190.009	190.074
LINE R B11	STATION	15+236.060	15+240.708	15+245.356	15+250.005	15+254.653	15+260.444	15+266.235	15+272.027	15+277.818	15+282.466	15+287.114	15+291.763	15+296.411
	T/S ELEV.	189.154	189.225	189.297	189.368	189.439	189.529	189.618	189.707	189.796	189.867	189.939	190.010	190.082
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	189.154	189.232	189.306	189.372	189.439	189.534	189.628	189.712	189.796	189.871	189.948	190.017	190.082
LINE S B12	STATION	15+239.075	15+243.724	15+248.372	15+253.020	15+257.668	15+263.460	15+269.251	15+275.042	15+280.833	15+285.482	15+290.130	15+294.778	15+299.426
	T/S ELEV.	189.161	189.233	189.304	189.376	189.447	189.536	189.625	189.714	189.804	189.875	189.947	190.018	190.089
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	189.161	189.240	189.313	189.380	189.447	189.541	189.635	189.719	189.804	189.879	189.956	190.025	190.089
LINE T F/C	STATION	15+239.267	15+243.915	15+248.563	15+253.211	15+257.860	15+263.651	15+269.442	15+275.233	15+281.025	15+285.673	15+290.321	15+294.969	15+299.618
	T/S ELEV.	189.162	189.233	189.305	189.376	189.448	189.537	189.626	189.715	189.804	189.876	189.947	190.019	190.090
	DEFLECTION	0.000	0.007	0.009	0.004	0.000	0.005	0.010	0.005	0.000	0.004	0.009	0.007	0.000
	SCREED ELEV.	189.162	189.240	189.314	189.380	189.448	189.542	189.636	189.720	189.804	189.880	189.956	190.026	190.090

NOTE:
SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.



RIGHT BRIDGE

TRANSVERSE SECTION

R.D. Zande & Associates, Inc.
1257 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED OHK | DRAWN DJD | REVIEWED OHK | DATE 7-31-97
CHECKED ACT | REVISED | STRUCTURE FILE NO 2200333, 2200368

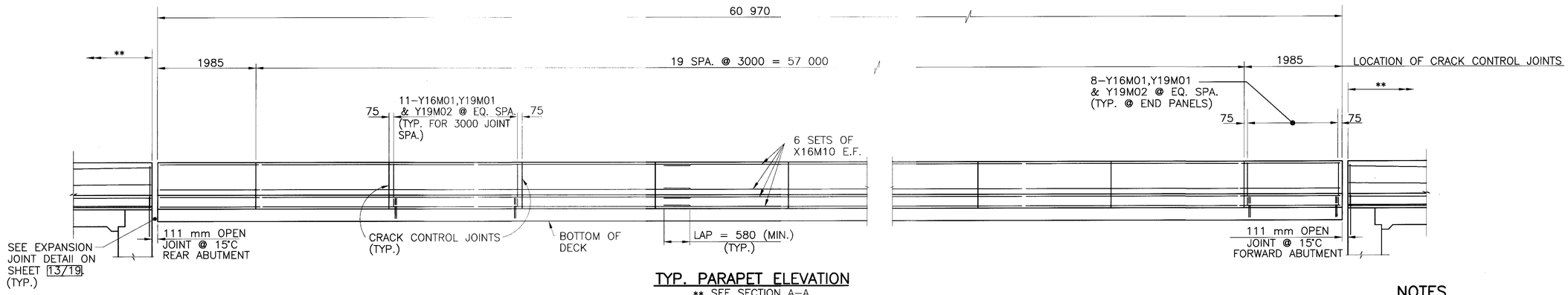
SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-08338 L & R (0518)
S.R. 2 OVER BARDSHAR RD.

ERI-2-2.866

16/19

235/327

C097 P:\3907\DWG\BRIDGE\E-2-0835\PLAN\3907ES05.DWG JUL 11, 1997 TIME: 4:15 PM



TYP. PARAPET ELEVATION

** SEE SECTION A–A

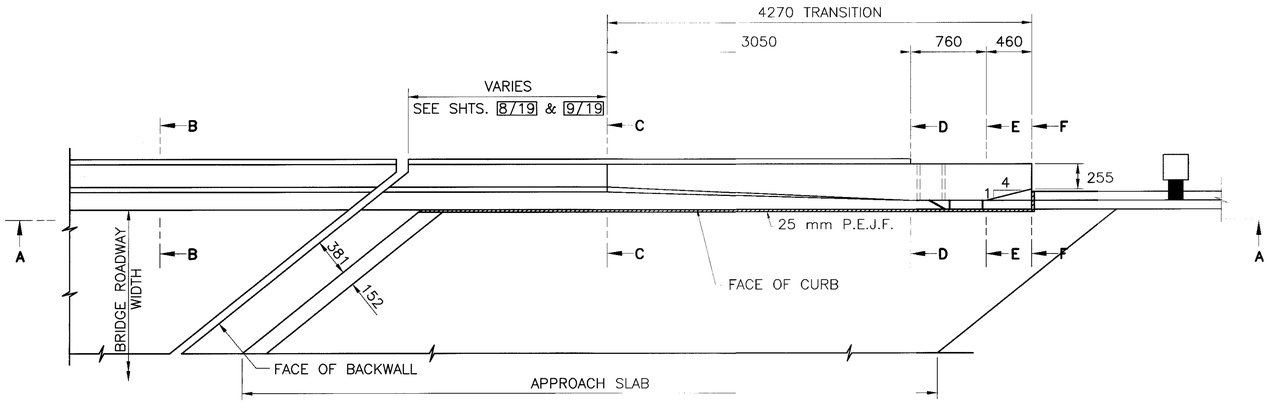
FOR ADDITIONAL PARAPET REINF. OVER PIERS SEE SHEET 14/19.

NOTES

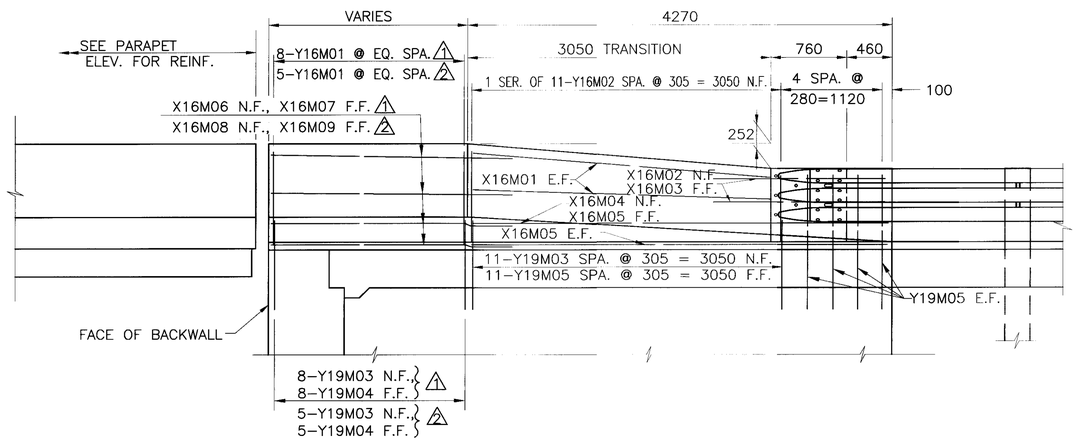
QUANTITIES OF CONCRETE, REINFORCING STEEL, CRACK CONTROL JOINT SAWCUT AND CAULKING MATERIAL FOR PARAPET ARE INCLUDED WITH APPROPRIATE ITEM UNDER EITHER ABUTMENTS OR SUPERSTRUCTURE FOR PAYMENTS.

FOR BRIDGE TERMINAL ASSEMBLY, SEE STANDARD CONSTRUCTION DRAWING GR–3.1M.

FOR LIMITS OF SEALING OF CONCRETE SURFACES, SEE SHEET 10/19.



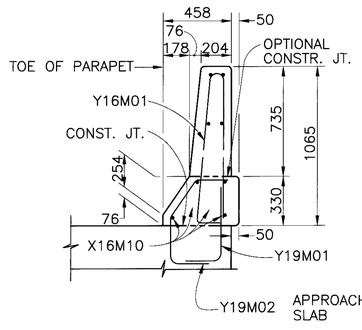
PART PLAN AT ABUTMENT



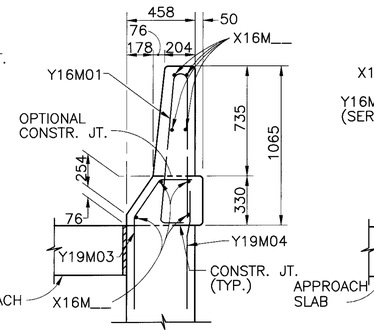
SECTION A–A

NOTE: BARS X16M02 & X16M04 SHALL BE FIELD BENT TO FIT.

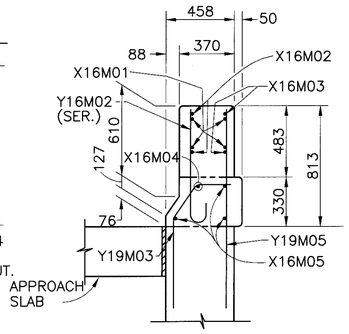
1 WINGWALLS WW1, WW4, WW5 & WW8
2 WINGWALLS WW2, WW3, WW6 & WW7



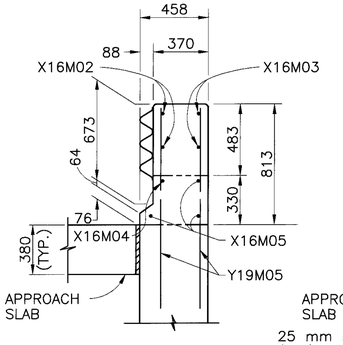
SECTION B–B



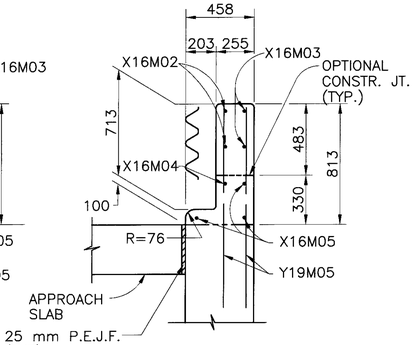
SECTION C–C



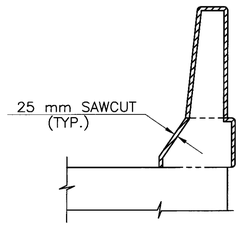
SECTION D–D



SECTION E–E



SECTION F–F



DETAIL A
(SECTION THROUGH SAWCUT)

R.D. Zanda & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED ACT | DRAWN DJD | REVIEWED OHK | DATE 7-31-97
CHECKED BAG | REVISED | STRUCTURE FILE NO 2200333, 2200368

PARAPET DETAILS
BRIDGE NO. ERI-2-08336 L & R (0518)
SR. 2 OVER BARDSHAR ROAD

ERI-2-2.866

17/19

236/327

c101 P:\3907\DWG\BRIDGE\E-2-08335\P-AN\3907ES06.DWG JUL 25, 1997 TIME: 9:43 AM

ELASTOMERIC BEARING NOTES

1. ELASTOMERIC BEARINGS: ELASTOMERIC BEARINGS SHALL COMPLY WITH ITEM 516 AND ARTICLES 18.2.5 THROUGH 18.2.8 OF SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. BEARINGS SHALL BE GRADE 3, 50 DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS CORRESPONDING TO DESIGN METHOD A. TESTING SHALL BE INCLUDED IN THE PRICE BID FOR THE BEARINGS.

2. WELDING SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 150° C AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

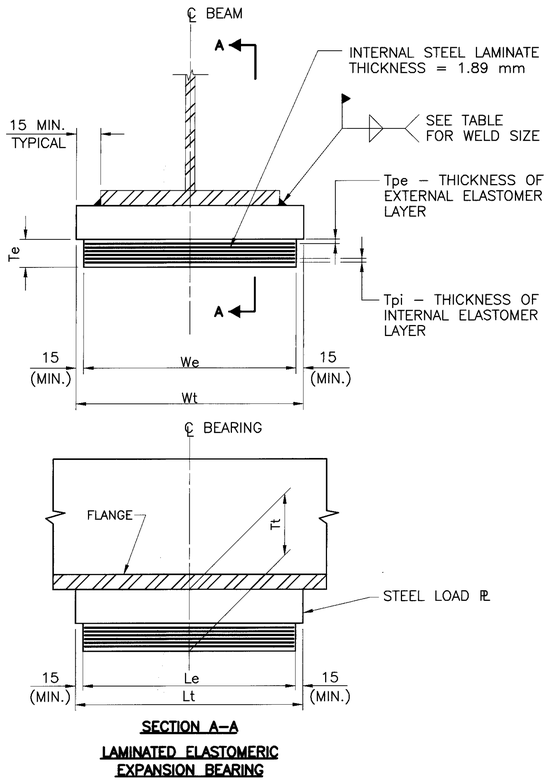
3. BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 27° C OR LOWER THAN 4° C AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 15° C (±) 5° C, THE BEAMS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 15° C (±) 5° C.

4. THE STEEL LOAD PLATE SHALL BE A-36M STEEL, CLEANED AND COATED SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR THE BEARINGS. FIELD COSTS SHALL BE INCLUDED IN THE PRICE BID FOR PAINTING MAIN STRUCTURAL STEEL.

5. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.

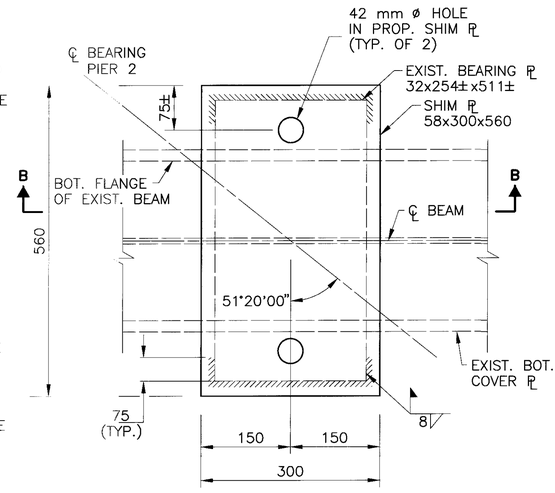
6. TOTAL DESIGN LOAD FOR BEARINGS EQUALS THE SUM OF THE DEAD LOADS AND LIVE LOADS TABULATED IN THE BEARING SCHEDULE.

7. BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS EITHER FIXED OR EXPANSION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516, EACH.

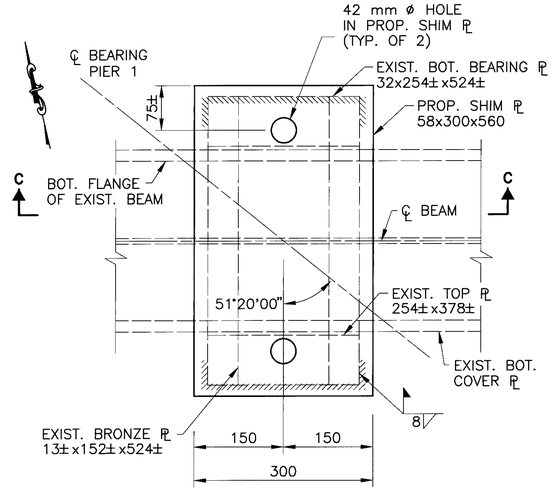


SECTION A–A

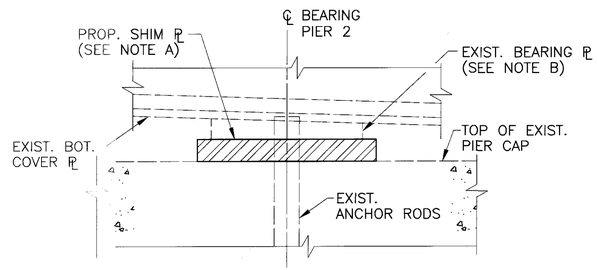
LAMINATED ELASTOMERIC EXPANSION BEARING



PLAN VIEW

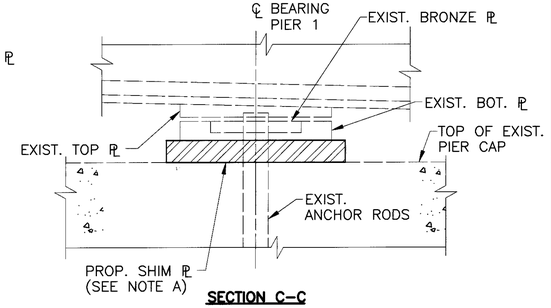


PLAN VIEW



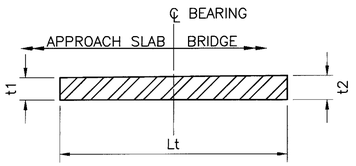
SECTION B–B

BEARING DETAIL AT PIER 2 (FIXED)

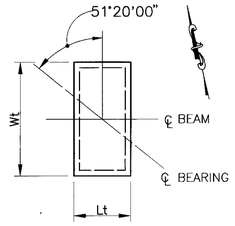


SECTION C–C

BEARING DETAIL AT PIER 1 (EXPANSION)



DETAIL "A"
STEEL LOAD PLATE



BEARING ORIENTATION PLAN

NOTES

A. AFTER THE EXISTING BEAMS ARE JACKED, THE EXISTING 3 mm PREFORMED BEARING PAD BELOW THE EXISTING BEARING PLATE ASSEMBLY SHALL BE REMOVED AND THE TOP OF PIER CAP SURFACES SHALL BE CLEANED BEFORE THE ERECTION OF SHIM PLATES.

B. THE EXISTING BASE PLATES SHALL BE CLEANED AND PAINTED AND FIELD WELDED TO THE PROPOSED SHIM PLATES.

C. SHIM PLATE SHALL BE A-36M STEEL AND PAINTED.

LAMINATED ELASTOMERIC BEARING DETAIL @ ABUTMENTS

LAMINATED ELASTOMERIC BEARING SCHEDULE

BEARING LOCATION	BEARING TYPE	NO. REQ'D.	DEAD LOAD kN	LIVE LOAD kN	TOTAL LOAD (DL+LL) kN	We (mm)	Le (mm)	Tpi (mm)	NO. OF Tpi'S	Tpe (2 EA.)	NUMBER OF INTERNAL LAMINATES (1.89 mm)	Te (mm)	STEEL LOAD PLATE				Tt (mm)	FILLET WELD SIZE (mm)
													Wt (mm)	Lt (mm)	t1 (mm)	t2 (mm)		
REAR ABUT.	EXPANSION	12	170	229	399	300	250	8	6	4	7	69	340	280	38	42	109	8
FORWARD ABUT.	EXPANSION	12	170	229	399	300	250	8	6	4	7	69	340	280	42	38	109	8

R.D. Zande & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED	DRAWN	REVIEWED	DATE
ACT	DJD	OHK	7-31-97
CHECKED	REVISED	STRUCTURE FILE NO	
BAG		2200333, 2200368	

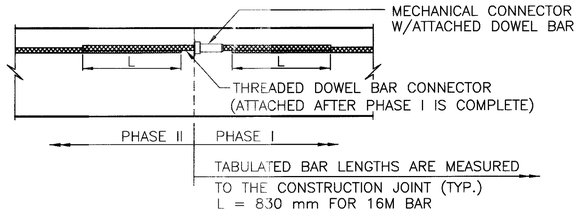
BEARING DETAILS
BRIDGE NO. ERI-2-08336 L & R (0518)
S.R. 2 OVER BARDSHAR RD.

ERI-2-2.866

REINFORCING STEEL LIST

BAR MARK	REAR	FWRD	TOTAL	LENGTH mm	WEIGHT (Kg)	TYPE	A mm	B mm	C mm	D mm	INC. mm
ABUTMENTS (LEFT / RIGHT BRIDGE)											
A16M01	10	10	20	9725	301.864	STR.					
A16M02	6	6	12	10000	186.240	STR.					
A16M03	4	4	8	10475	130.058	STR.					
A16M04	9	9	18	2990	83.529	7	1500	1500	125		
A16M05	6	6	12	2960	55.127	8	1500	1500	125		
A16M06	3	3	6	2510	23.373	37	890	750	890	32	
A16M07	5	5	10	6400	99.328	STR.					
A16M08	5	5	10	6025	93.508	STR.					
A16M09	5	5	10	5900	91.568	STR.					
A16M10	5	5	10	5525	85.748	STR.					
A19M01	68	68	136	1930	586.643	3	875	280	875		
A19M02	68	68	136	1883	572.357	3	775	433	775		
A19M03	55	55	110	1125	276.581	STR.					
D25M01	30	30	60	1526	363.847	13	830	305			
				TOTAL=	2,950						
PIER (RIGHT BRIDGE ONLY)											
P10M01	72		72	5725	639.734	STR.					
P10M02	312		312	2250	1089.504	31	533	2250			
				TOTAL=	1,729						
SUPERSTRUCTURE (LEFT / RIGHT BRIDGE)											
S16M01			638	6725	6658.934	STR.					
S16M02			632	7075	6939.613	STR.					
S16M03			618	10625	10190.820	STR.					
S16M04			102	9300	1472.227	STR.					
			2	1025							
S16M05			Ser. Of	TO	527.525	STR.					132
			44	6700							
			2	725							
S16M06			Ser. Of	TO	508.086	STR.					132
			45	6550							
			2	695							
S16M07			Ser. Of	TO	565.797	STR.					132
			48	6900							
			2	1000							
S16M08			Ser. Of	TO	589.023	STR.					132
			47	7075							
S16M09			16	875	21.728	STR.					
S16M10			8	10425	129.437	STR.					
S16M11			8	11375	141.232	STR.					
				TOTAL=	27,744						
RAILING (LEFT / RIGHT BRIDGE)											
X16M01			16	3050	75.738	STR.					
X16M02			8	1725	21.418	39					
X16M03			8	1725	21.418	STR.					
X16M04			4	4220	26.198	STR.					
X16M05			12	4220	78.593	STR.					
X16M06			8	3250	40.352	STR.					
X16M07			8	2775	34.454	STR.					
X16M08			8	1800	22.349	STR.					
X16M09			8	2275	28.246	STR.					
X16M10			96	10625	1583.040	STR.					
X16M11			4	9300	57.734	STR.					
Y16M01			476	2130	1573.542	40					
			4	920			740				
Y16M02			Ser. Of	TO	71.361	6	TO				25
			11	1170			990				
Y19M01			450	755	759.341	1	525	280			
Y19M02			450	724	728.163	12	300	230			
Y19M03			70	1225	191.651	15	230	152	800	216	
Y19M04			26	875	50.846	STR.					
Y19M05			76	1475	250.544	STR.					
				TOTAL=	5,615						
GRAND TOTAL FOR LEFT BRIDGE=					36,309						
GRAND TOTAL FOR RIGHT BRIDGE=					38,038						

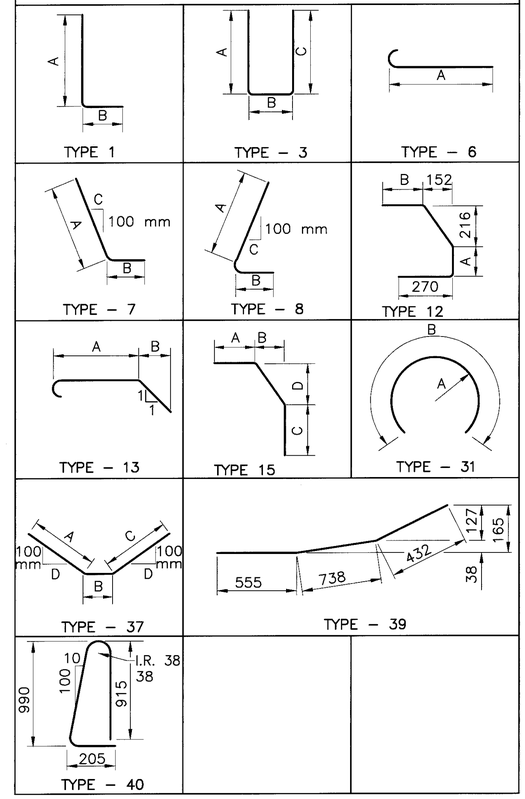
REINFORCEMENT FOR ABUTMENTS, SUPERSTRUCTURE AND RAILING IS GIVEN FOR LEFT BRIDGE. REINFORCEMENT FOR RIGHT BRIDGE IS SAME AS LEFT BRIDGE.



* BARS REQUIRING MECHANICAL CONNECTORS
A16M01 – LEFT BRIDGE REAR ABUT. &
RIGHT BRIDGE FORWARD ABUT.

A16M02 & A16M03 – LEFT BRIDGE FORWARD ABUT. &
RIGHT BRIDGE REAR ABUT.

BENDING DIAGRAMS



NOTES

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST TWO DIGITS INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, A 16M01 IS A "16M" BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. I.R. INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.

2. ALL REINFORCEMENT BARS SHALL BE EPOXY COATED. PAYMENT FOR THESE BARS SHALL BE INCLUDED WITH APPROPRIATE CONCRETE ITEMS.

3. "STR." IN THE TYPE COLUMN INDICATES STRAIGHT BARS.

4. REFER TO C.M.S. SECTION 509.05 FOR STANDARD BEND DIMENSIONS.

5. MECHANICAL CONNECTORS: AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE AS GIVEN BY THE DIMENSION "L" BELOW. CONNECTORS AND DOWEL BARS SHALL BE EPOXY COATED. COATINGS FOR BOTH CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH 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 WHICH MEETS THE SPECIFICATIONS. CONNECTORS AND DOWEL BAR EXTENSION SHALL CONFORM WITH ITEM 509.

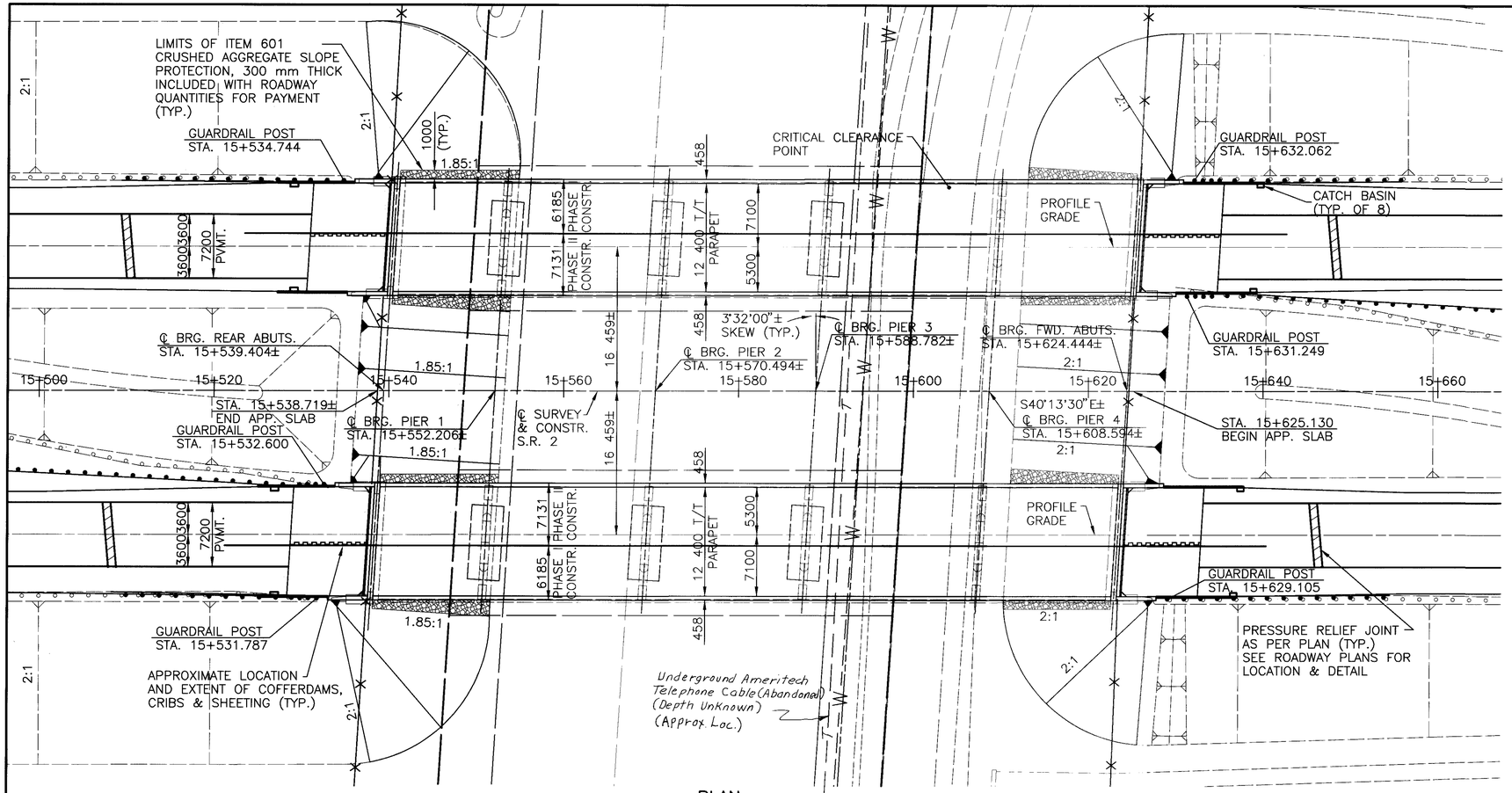
* INDICATES BARS REQUIRING MECHANICAL CONNECTORS. THE LENGTHS SHOWN IN THE TABLE ARE THE NOMINAL LENGTHS MEASURED TO THE CONSTRUCTION JOINT. ADJUSTMENT IN THE LENGTHS OF THE BARS DUE TO MECHANICAL SPLICING SHALL BE MADE PRIOR TO THE FABRICATION.

R.D. Zande & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED ACT | DRAWN DJD | REVIEWED OHK | DATE 7-31-97
CHECKED BAG | REVISED | STRUCTURE FILE NO. 2200333, 2200368

REINFORCING STEEL LIST
BRIDGE NO. ERI-2-06338 L & R (0516)
S.R. 2 OVER BARDSHAR ROAD

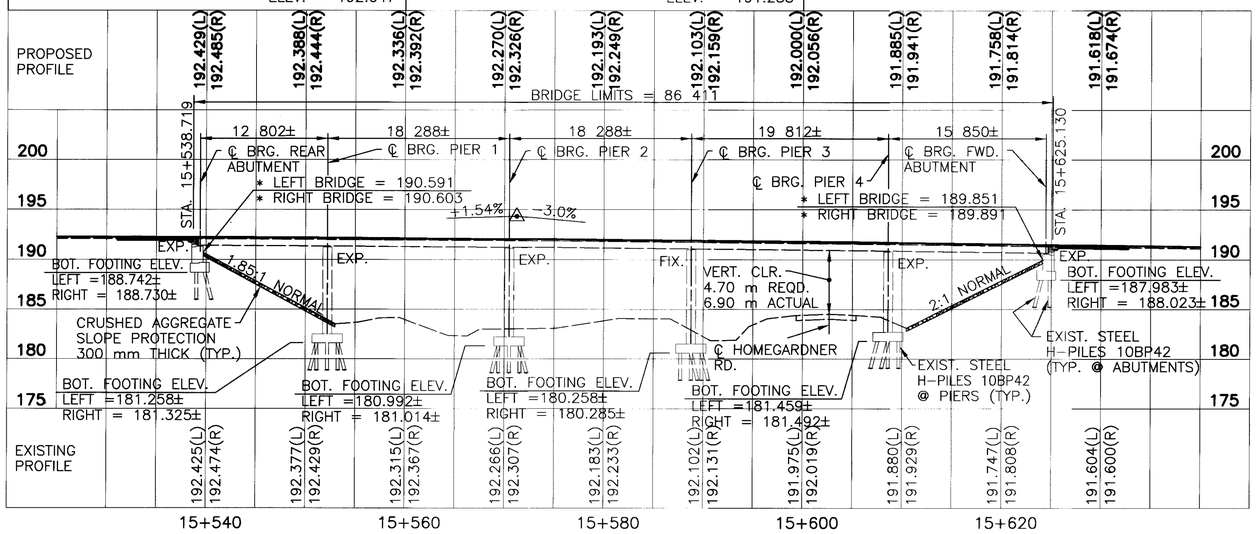
ERI-2-2.866



PLAN

BENCH MARK:
TOP OF IRON PIN BEING 5.7 METERS± RIGHT OF CENTERLINE STA. 15+533± OF S.R. 2
ELEV. = 192.047

BENCH MARK:
TOP OF IRON PIN BEING 9.9 METERS± RIGHT OF CENTERLINE STA. 15+630± OF S.R. 2
ELEV. = 191.288



PROFILE ALONG ℄ SURVEY & CONSTRUCTION S.R. 2

VERTICAL CURVE DATA

LEFT BRIDGE:
P.V.I. STA. = 15+571.250
P.V.I. ELEV. = 194.337
L = 365.760 m

RIGHT BRIDGE:
P.V.I. STA. = 15+571.250
P.V.I. ELEV. = 194.393
L = 365.760 m

metric units

NOTES

ALL DIMENSIONS ARE IN MILLIMETERS, AND ALL STATIONS & ELEVATIONS ARE IN METERS.

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPE SHALL MATCH EXISTING GRADE. QUANTITIES HAVE BEEN INCLUDED IN THE ROADWAY GENERAL SUMMARY AND SHALL BE USED AS REQUIRED UNDER THE DIRECTION OF THE PROJECT ENGINEER.

RIGHT-OF-WAY LIMITS ARE LOCATED OUTSIDE WORK LIMITS SHOWN IN PLAN VIEW.

* ELEVATIONS MARKED WITH AN ASTERISK ARE AT THE TOP OF THE SPILL THRU SLOPE AT THE FACE OF ABUTMENT.

EXISTING BRIDGE DATA

TYPE: 5 SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK ON REINFORCED CONCRETE SUBSTRUCTURE
SPANS: 12 802 mm±, 18 288 mm±, 18 288 mm±, 19 812 mm±, 15 850 mm± c/c BEARINGS
ROADWAY: 12 090 mm± T/T OF 356 mm± SAFETY CURBS
LOADING: CF-400(57)
WEARING SURFACE: 25 mm± MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
SKEW: 3° 32' 00"± L.F.
APPROACH SLABS: AS-1-54 (7620 mm± LONG)
CROWN: 0.016±
DATE BUILT: 1961
STRUCTURE FILE NUMBER: 2200392 & 2200422

PROPOSED STRUCTURE MODIFICATION

PROPOSED WORK: (FOR LEFT AND RIGHT BRIDGES)

1. REMOVE AND REPLACE EXISTING BACKWALLS TO THE BEAM SEATS
2. PROVIDE NEW EXPANSION JOINTS
3. PROVIDE TEMPORARY JACKING SYSTEM FOR THE SUPERSTRUCTURE TO REPLACE EXISTING ABUTMENT BEARINGS
4. ELIMINATE ALL EXISTING SCUPPERS
5. PAINT EXISTING AND NEW STRUCTURAL STEEL
6. PROVIDE NEW REINFORCED CONCRETE DECK
7. PROVIDE POROUS BACKFILL WITH FILTER FABRIC
8. INSTALL CATCH BASINS AT ALL BRIDGE CORNERS
9. SEAL CONCRETE SURFACES
10. REPAIR EXISTING SLOPE PROTECTION
11. REPLACE EXISTING APPROACH SLABS

(IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN SEQUENTIAL ORDER AS LISTED).

TYPE: 5 SPAN CONTINUOUS STEEL BEAM WITH COMPOSITE REINFORCED CONCRETE DECK, ON EXISTING PIERS & REHABILITATED STUB ABUTMENTS
SPANS: 12 802 mm±, 18 288 mm±, 18 288 mm±, 19 812 mm±, 15 850 mm± c/c BEARINGS
ROADWAY: 12 400 mm T/T OF PARAPET
LOADING: MS18 (CASE I) & ALT. MILITARY LOADING
WEARING SURFACE: 25 mm MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
SKEW: 3° 32' 00"± L.F.
APPROACH SLABS: AS-1-81M (7600 mm LONG)
CROWN: 0.016
LONGITUDE: 82°46'11" W **LATITUDE:** 41°25'40" N

CURRENT AVERAGE DAILY TRAFFIC: 14 030 (1998)
DESIGN AVERAGE DAILY TRAFFIC: 22 450 (2018)
CURRENT AVERAGE DAILY TRUCK TRAFFIC: 3370 (1998)
DESIGN AVERAGE DAILY TRUCK TRAFFIC: 5390 (2018)

R.D. Zande & Associates, Inc.
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DESIGNED	DRAWN	REVIEWED	DATE
BAG	DJD	OHK	7/11/97
CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200392, 2200422	

ERIE COUNTY
STA. 15+538.719
STA. 15+625.130

SITE PLAN
BRIDGE NO. ERI-2-0866 L & R (0637)
S.R. 2 OVER HOMEGARDNER RD. AND ABANDONED RAILROAD

ERI-2-2.866

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S):

AS–1–81M	DATED	10–25–94
BR–1M	DATED	12–15–94
EXJ–4–87M	DATED	2–18–97
GR–3.1M	DATED	10 -21-97
PCB–91M	DATED	3–20–95

AND TO SUPPLEMENTAL SPECIFICATION(S):

843	DATED	5-5-98
815	DATED	5–30–96
844	DATED	5-5-98
954	DATED	9-9-97
910	DATED	4–21–97
863	DATED	9-9-97
846	DATED	9-9-97

METRIC UNITS:

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS AND ALL ELEVATIONS IN METERS UNLESS NOTED OTHERWISE.

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

DESIGN LOADING: MS18, CASE I AND THE ALTERNATE MILITARY LOADING.

HIGH PERFORMANCE CONCRETE – COMPRESSIVE STRENGTH 31.0 MPa (SUPERSTRUCTURE)

CONCRETE CLASS C – COMPRESSIVE STRENGTH 27.5 MPa (SUBSTRUCTURE)

REINFORCING STEEL – ASTM A615M, A616M, OR A617M
GRADE 420 MINIMUM YIELD STRENGTH 420 MPa.
SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82M, OR A615M.

STRUCTURAL STEEL
A36M – YIELD STRENGTH 250 MPa

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL.
65 mm CONCRETE COVER.
HIGH PERFORMANCE CONCRETE.

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 25 mm THICK.

UTILITY LINES:

ALL EXPENSE INVOLVED IN RELOCATION (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY(IES). THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTION 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING STRUCTURE PLANS:

THE ORIGINAL DESIGN PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 3 OFFICE, 906 NORTH CLARK ST., ASHLAND, OHIO 44805 (419) 281–0513.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK AND PARAPET)

DESCRIPTION: THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECKS, SAFETY CURBS, PARAPETS, RAILINGS, AND SCUPPERS. CARE SHALL BE TAKEN NOT TO DAMAGE THE STEEL BEAMS DURING THE DECK REMOVAL. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAMS, CONCRETE CRUSHERS AND OTHER SIMILAR TYPE OF IMPACTIVE DEVICES IS NOT PERMITTED.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF THE DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 50 mm OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 50 mm OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 50 mm OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS: CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 16 KILOGRAMS BUT NOT TO EXCEED 41 KILOGRAMS MAY BE USED AT THE APPROVAL OF THE ENGINEER, TO ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS: DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.), CARE SHALL BE TAKEN DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. STRINGERS DAMAGED BY THE CONTRACTOR'S REMOVAL. OPERATIONS SHALL, AT NO COST TO THE PROJECT, BE REPLACED OR REPAIRED. PROPOSED REPAIRS, DEVELOPED BY A REGISTERED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED IN WRITING FOR REVIEW AND APPROVAL BY THE DIRECTOR.

EXTRANEOUS MEMBERS: EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC., AND THE SUPPORT FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES DESIGNATED "TENSION" SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS, BY A REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF THE WORK.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

THIS ITEM OF WORK SHALL BE USED TO REMOVE PORTIONS OF THE SUBSTRUCTURE AS DESIGNATED IN THE PLAN. THE CONCRETE SHALL BE REMOVED BY HYDRAULIC SPLITTING METHOD. A LINE OF HOLES SHALL BE DRILLED ALONG THE REMOVAL LINE AND HYDRAULIC SPLITTER USED AS PER THE MANUFACTURER'S RECOMMENDATIONS. 16 AND 7 KILOGRAM JACK HAMMERS SHALL BE USED FOR ANY REQUIRED FINISH WORK. HOE RAMS AND/OR CONCRETE CRUSHERS WILL NOT BE PERMITTED TO DO ANY OF THE WORK. NO SAW CUTTING WILL BE ALLOWED IN AREAS WHERE EXISTING REINFORCING SHALL REMAIN. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL DESIGNATED FOR SALVAGE, IF DAMAGED DURING THE REMOVAL OPERATION DOWELED REINFORCING STEEL MUST BE ADDED AT THE CONTRACTOR'S EXPENSE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC METER FOR ITEM 202, PORTIONS OF STRUCTURES REMOVED AS PER PLAN SUBSTRUCTURE, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 25 mm DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN:

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 MATERIAL AND PLACED IN 150 mm LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04.

ITEM 503, COFFERDAMS, CRIBS, AND SHEETING, AS PER PLAN

TEMPORARY SHORING SHALL BE USED TO ACCOMPLISH THE PROPOSED CONSTRUCTION IN PHASES. THE DESIGN OF THE TEMPORARY SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, BE DESIGNED BY A REGISTERED ENGINEER, AND CONFORM WITH 501.05. FOR APPROVAL, FIVE COPIES OF THE DRAWINGS SHALL BE SUBMITTED TO THE DIRECTOR AND CONCURRENTLY, ONE COPY TO THE OFFICE OF STRUCTURAL ENGINEERING. CONSTRUCTION OF THE SHORING SHALL NOT BEGIN UNTIL AFTER WRITTEN APPROVAL HAS BEEN RECIEVED FROM THE DIRECTOR. PORTIONS OF THE TEMPORARY SHORING COMPOSED OF STEEL OR CONCRETE MAY BE LEFT IN PLACE AT THE DISCRETION OF THE ENGINEER. PORTIONS COMPOSED OF OTHER MATERIALS SHALL BE REMOVED PRIOR TO COMPLETION OF THE WORK.

REPLACEMENT OF EXISTING REINFORCING STEEL:

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL.
ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. COST OF ALL REINFORCING STEEL SHALL BE INCLUDED WITH APPROPRIATE ITEM 511 CONCRETE ITEMS.

INSPECTION OF STRUCTURAL STEEL:

THE ENGINEER SHALL VISUALLY INSPECT ALL EXISTING BUTT–WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THAT THEY ARE FREE OF DEFECTS. THE DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS SHALL NOT BE ERECTED UNTIL AFTER THE ENGINEER HAS COMPLETED THIS INSPECTION. THIS INSPECTION SHALL NOT TAKE PLACE UNTIL AFTER THE TOP FLANGES ARE CLEANED AS SPECIFIED IN 511.08, BUT IT SHALL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE COST ASSOCIATED WITH THIS INSPECTION SHALL BE INCLUDED WITH ITEM 511, SUPERSTRUCTURE CONCRETE FOR PAYMENT.

ITEM 511, CLASS C CONCRETE, AS PER PLAN:

CLASS C CONCRETE SHALL BE IN ACCORDANCE WITH 511, EXCEPT THAT THE AGGREGATE SHALL BE #8 LIMESTONE.

ITEM 863 – STRUCTURAL STEEL MEMBERS, MISCELLANEOUS LEVEL FABRICATION

STEEL MEMBERS TO BE FABRICATED UNDER THIS ITEM WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. THE CONTRACTOR SHALL MAKE NECESSARY MEASUREMENTS AND PREPARE SKETCHES, DRAWINGS, TABLES, ETC. THE ENGINEER SHALL HAVE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE. TECHNICAL ASSISTANCE WILL BE PROVIDED ON REQUEST BY THE BUREAU OF BRIDGES. MILL TEST REPORTS AND SHIPPING DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INCORPORATING STEEL ITEMS INTO THE WORK, AS REQUIRED BY 501.07. AFTER FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL TO ENSURE THAT THE DRAWINGS DEPICT THE STEEL AS ACTUALLY INCORPORATED INTO THE WORK. THE ENGINEER WILL THEN SEND ONE APPROVED SET TO THE BUREAU OF BRIDGES FOR INFORMATION.

THE FABRICATOR SHALL FURNISH A 35 mm MICROFILM COPY OF EACH SHOP DRAWING, WHICH SHALL BE MOUNTED ON AN APERTURE CARD AS SPECIFIED IN 501.05.

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GENERAL NOTES
BRIDGE NO. ERI-2-08642 LAR (0537)
S.R. 2 OVER HOMEGARDNER RD. & ABANDONED RAILROAD

ERI-2-2.866

GENERAL NOTES CONT.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTION JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 25 mm, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING ACTUAL JACKING OPERATIONS. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 6 mm.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 25 mm OR LESS.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE, AS PER PLAN

SEE NOTES ON BEARING DETAIL SHEETS.

ITEM 518 - POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN:

POROUS BACKFILL SHALL BE NO. 57 *GRAVEL*.

ITEM 815 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL:

ALL EXISTING AND NEW STEEL SHALL BE CLEANED AND PAINTED WITH A PRIME, INTERMEDIATE, AND FINISH COAT OF PAINT USING SYSTEM OZEU. THE COST OF THIS WORK SHALL BE INCLUDED WITH SEVERAL FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU ITEMS FOR PAYMENT. THE COLOR OF THE FINISH COAT SHALL BE RED COLOR MATCHING FEDERAL STANDARD NUMBER 11136. IN ADDITION, TO THE SURFACE AREA OF THE STEEL STRINGERS TO BE PAINTED, AN ADDITIONAL TWENTY FIVE PERCENT OF THIS AMOUNT HAS BEEN ADDED TO THE SQUARE METER TOTALS TO ACCOUNT FOR INCIDENTALS SUCH AS CROSSFRAMES & BEARINGS. SEE SUPPLEMENTAL SPECIFICATION 815.

ITEM 815 - GRINDING FLANGE EDGES

GRINDING BOTTOM FLANGES OF EXISTING BEAMS OVER SPAN 4.

CONCRETE PARAPETS:

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 25 mm DEEP CONTROL JOINTS SHALL BE SAWED INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAWCUTS SHALL BE PLACED AT LOCATIONS AS DETAILED ON SHEET 17/19. THE USE OF AN EDGE GUIDE, FENCE, OR JIG IS REQUIRED TO INSURE 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 6 mm. THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 25 mm WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E. THE CONTRACTOR SHALL NOTE THAT THE OPTION TO SLIPFORM PARAPET IS NOT ALLOWED.

ITEM 844 - HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK AND PARAPET)

ON THIS PROJECT, THE CONTRACTOR SHALL USE CONCRETE MEETING THE REQUIREMENTS OF THE MIX DESIGN GIVEN IN THE PROPOSAL NOTE FOR MIX 4 (GGBF SLAG + MICROSILICA) FOR THE SUPERSTRUCTURE INSTEAD OF TEXTURING. BRIDGE DECK GROOVING SHALL BE PERFORMED AS PER THE PROPOSAL NOTE. BRIDGE GROOVING SHALL BE PAID FOR SEPARATELY.

CONSTRUCTION SEQUENCE AND MAINTENANCE OF TRAFFIC

SEE SHEET 5/19 FOR CONSTRUCTION SEQUENCE AND PHASE CONSTRUCTION DETAILS. SEE ROADWAY PLANS FOR ADDITIONAL TRAFFIC NOTES AND DETAILS.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES *(EPOXY-URETHANE)*

THE CONCRETE SHALL BE SEALED USING AN EPOXY-URETHANE SYSTEM AT THE LOCATIONS INDICATED IN THE PLAN. THE URETHANE SHALL BE A "BUFF" COLOR MEETING FEDERAL STANDARD NUMBER 37722. SEE PROPOSAL NOTE FOR ADDITIONAL INFORMATION.

ABBREVIATIONS

ABUT. - ABUTMENT
AVG. - AVERAGE
BOT. - BOTTOM
BRG. - BEARING
℄ - CENTERLINE
CLR. - CLEARANCE
CONSTR. - CONSTRUCTION
C.P.P. - CORRUGATED PLASTIC PIPE
E.B. - EAST BOUND
E.F. - EACH FACE
EXIST. - EXISTING
EXP. - EXPANSION
ELEV. - ELEVATION
EQ. - EQUAL
F.A. - FORWARD ABUTMENT
F.F. - FAR FACE
FIX. - FIXED
FTG. - FOOTING
FWD. - FORWARD
HMWM - HIGH MOLECULAR WEIGHT METHACRYLATE
JT. - JOINT
L.B. - LEFT BRIDGE
MAX. - MAXIMUM
MIN. - MINIMUM
N.B. - NORTH BOUND
N.F. - NEAR FACE
NO. - NUMBER
PH. - PHASE
PVMT. - PAVEMENT
O.C. - ON CENTER
OZEU - ORGANIC ZINC EPOXY URETHANE
PL. - PLATE
P.E.J.F. - PREFORMED EXPANSION JOINT FILLER
R - RADIUS
R.A. - REAR ABUTMENT
R.B. - RIGHT BRIDGE
RDWY. - ROADWAY
REINF. - REINFORCING
REQ'D - REQUIRED
S.B. - SOUTH BOUND
SER. - SERIES
SPA. - SPACES
STA. - STATION
STD. - STANDARD
STR. - STRAIGHT
SUBSTR. - SUBSTRUCTURE
TYP. - TYPICAL
U.N.O. - UNLESS NOTED OTHERWISE
VERT. - VERTICAL
W.B. - WESTBOUND
W.R.T. - WITH RESPECT TO

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GENERAL NOTES
BRIDGE NO. ER-2-0842 L&R (0537)
S.R. 2 OVER HOMEGARDNER RD. & ABANDONED RAILROAD

ER-2-2.866

ESTIMATED QUANTITIES

CALC. BY: BAG DATE: 7/9/97
CHK. BY: KVB DATE: 7/10/97

ITEM	ITEM EXT.	TOTAL LEFT BRIDGE	TOTAL RIGHT BRIDGE	UNIT	DESCRIPTION	ABUTMENTS LEFT BRIDGE	ABUTMENTS RIGHT BRIDGE	PIERS LEFT BRIDGE	PIERS RIGHT BRIDGE	SUPERSTRUCTURE LEFT BRIDGE	SUPERSTRUCTURE RIGHT BRIDGE	GENERAL LEFT BRIDGE	GENERAL RIGHT BRIDGE	SHEET NO. FOR AS PER PLAN ITEMS
202	11301	37	37	CU METER	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)	37	37							2/19
202	11201	LUMP	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK AND PARAPET)					LUMP	LUMP			2/19
503	11101	LUMP	LUMP		COFFERDAMS, CRIBS & SHEETING, AS PER PLAN							LUMP	LUMP	2/19
503	21301	LUMP	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	LUMP	LUMP							2/19
511	45701	30	30	CU METER	CLASS C CONCRETE, ABUTMENT, AS PER PLAN	30	30							2/19
844	48000	263	287	CU METER	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK)					263	287			
844	48020	61	61	CU METER	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET)					61	61			
844	49000	LUMP	LUMP		HIGH PERFORMANCE CONCRETE – TRIAL MIX							LUMP	LUMP	
844	49010	LUMP	LUMP		HIGH PERFORMANCE CONCRETE – TESTING							LUMP	LUMP	
512	44400	2	2	SQ METER	TYPE B WATERPROOFING	2	2							
SPECIAL	51267504	1148	1157	SQ METER	SEALING OF CONCRETE SURFACES (NON-EPOXY)	108	108	506	506	534	543			
863	10000	LUMP	LUMP		STRUCTURAL STEEL MEMBERS, MISCELLANEOUS LEVEL FABRICATION					LUMP	LUMP			2/19
863	20000	4842	4842	EACH	WELDED STUD SHEAR CONNECTOR					4842	4842			
516	11210	26.7	26.7	METER	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL					26.7	26.7			
516	44201	12	12	EACH	ELASTOMERIC BEARING (260X280X83) WITH INTERNAL LAMINATES AND LOAD PLATE (320X340X50 (AVG.)) (NEOPRENE), AS PER PLAN	12	12							3/19
516	47001	LUMP	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN					LUMP	LUMP			3/19
518	21231	LUMP	LUMP		POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	LUMP	LUMP							3/19
518	40000	25	25	METER	150 mm PERFORATED CORRUGATED PLASTIC PIPE	25	25							
518	40010	8	8	METER	150 mm NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	8	8							
843	50000	4.1	0.9	SQ METER	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR	4.1	0.9							
815	00050	1753	1753	SQ METER	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU					1753	1753			
815	00056	1753	1753	SQ METER	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU					1753	1753			
815	00060	1753	1753	SQ METER	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU					1753	1753			
815	00066	1753	1753	SQ METER	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU					1753	1753			
815	00504	100	100	MAN HOUR	GRINDING FINS, TEARS AND SLIVERS					100	100			
815	00508	475	475	METER	GRINDING FLANGE EDGES					475	475			
SPECIAL	85050070	1060	1060	SQ METER	BRIDGE DECK GROOVING					1060	1060			

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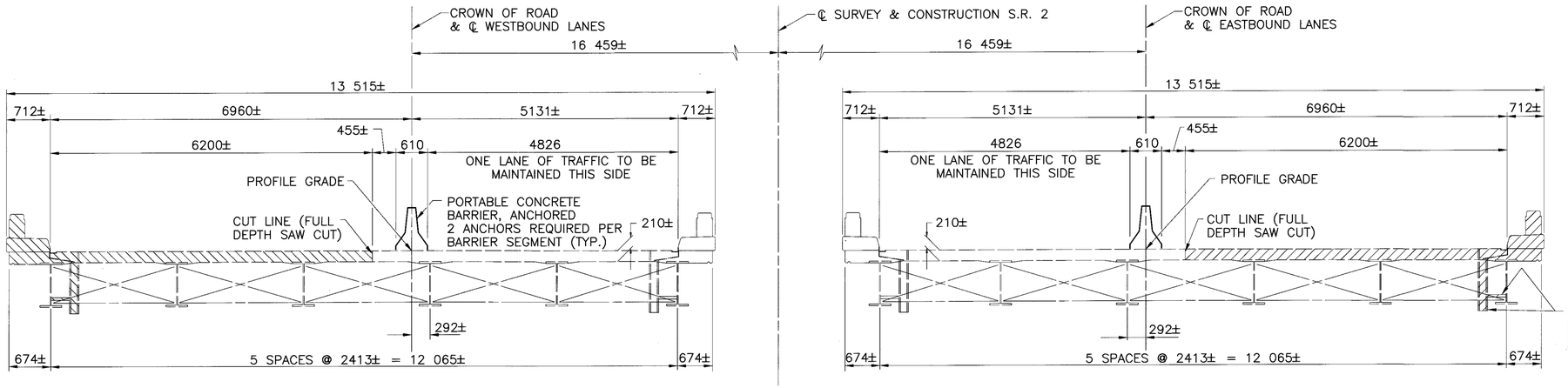
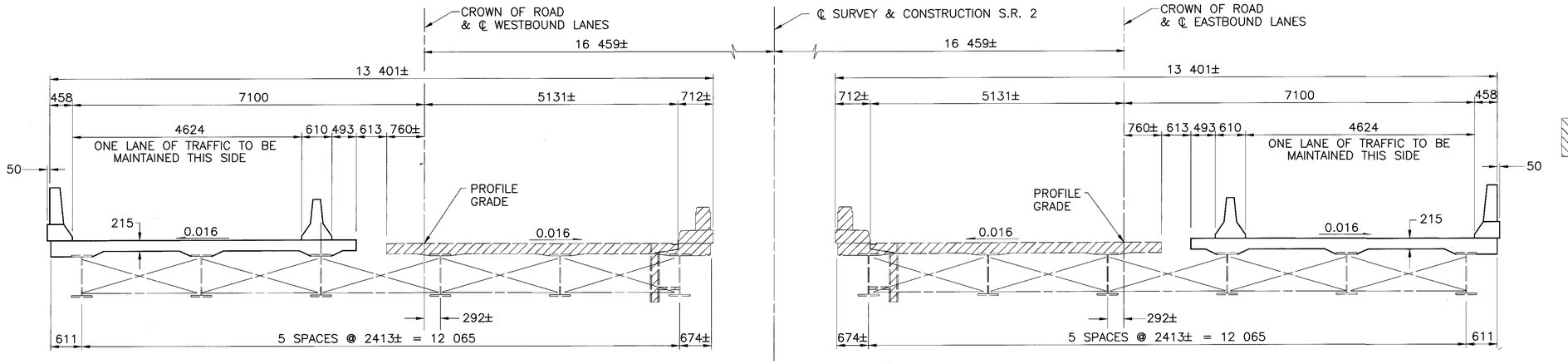


PHASE I TRANSVERSE SECTION



INDICATES AREAS TO BE REMOVED PER ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK AND PARAPET)

PHASE II TRANSVERSE SECTION

NOTES

1. PORTABLE CONCRETE BARRIER IS CARRIED IN THE ROADWAY PLANS FOR PAYMENT.
2. FOR MORE MAINTENANCE OF TRAFFIC DETAILS, SEE ROADWAY PLANS.
3. PROVIDE A MINIMUM OF 2 ANCHORS PER BARRIER SEGMENT. FOR MORE PORTABLE CONCRETE BARRIER DETAILS, SEE STANDARD DRAWING PCB–91M.
4. FOR ABUTMENT REMOVAL DETAILS, SEE SHEETS 6719 AND 7719.

CONSTRUCTION SEQUENCE:

PHASE I

1. INSTALL PORTABLE CONCRETE BARRIERS AND REROUTE TRAFFIC ONTO SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
2. MAINTAIN ONE LANE ON EACH OF THE EXISTING BRIDGES.
3. REMOVE APPROACH SLAB, DECK SLAB, SAFETY CURB, AND PARAPET OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE. IN ADDITION, REMOVE SCUPPERS INCLUDING RELATED DRAINAGE ITEMS AND SUPPORT ARMOR AND EXPANSION JOINT ARMOR.
4. PROVIDE TEMPORARY SUPPORT SYSTEMS FOR THE LEFT THREE BEAMS OF THE EXISTING LEFT BRIDGE AND THE RIGHT THREE BEAMS OF THE EXISTING RIGHT BRIDGE AS PER PLAN NOTES AND PROCEDURES.
5. REMOVE PORTIONS OF ABUTMENTS AND WINGWALLS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
6. CONSTRUCT PORTIONS OF ABUTMENTS AND WINGWALLS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
7. INSTALL ELASTOMERIC BEARINGS AT ABUTMENTS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE. REMOVE TEMPORARY SUPPORT SYSTEMS.
8. INSTALL SHEAR CONNECTORS ON EXISTING BEAMS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
9. CONSTRUCT DECK AND PARAPET OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
10. SEAL CONCRETE SURFACES.
11. COMPLETE DRAINAGE ITEMS AND APPROACH SLAB FOR THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.

PHASE II

1. RELOCATE PORTABLE CONCRETE BARRIERS AS SHOWN AND MAINTAIN TRAFFIC ONTO NORTH HALF OF EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
2. MAINTAIN ONE LANE ON EACH OF THE EXISTING BRIDGES.
3. REMOVE REMAINING PORTIONS OF EXISTING APPROACH SLAB, DECK SLAB, SAFETY CURB AND PARAPET OF THE LEFT AND RIGHT BRIDGES. IN ADDITION, REMOVE SCUPPERS INCLUDING RELATED DRAINAGE ITEMS AND SUPPORT ARMOR AND EXPANSION JOINT ARMOR.
4. PROVIDE TEMPORARY SUPPORT SYSTEMS FOR THE RIGHT THREE BEAMS OF THE EXISTING LEFT BRIDGE AND THE LEFT THREE BEAMS OF THE EXISTING RIGHT BRIDGE AS PER PLAN NOTES AND PROCEDURES.
5. REMOVE PORTIONS OF ABUTMENTS AND WINGWALLS OF THE NORTH HALF OF THE EXISTING RIGHT BRIDGE AND SOUTH HALF OF THE EXISTING LEFT BRIDGE.
6. CONSTRUCT THE REMAINING PORTIONS OF ABUTMENTS AND WINGWALLS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND THE NORTH HALF OF THE EXISTING RIGHT BRIDGE.
7. INSTALL ELASTOMERIC BEARINGS AT ABUTMENTS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE. REMOVE TEMPORARY SUPPORT SYSTEMS.
8. INSTALL SHEAR CONNECTORS ON EXISTING BEAMS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
9. CONSTRUCT THE REMAINING PORTIONS OF DECK AND PARAPET OF THE LEFT AND RIGHT BRIDGE.
10. SEAL CONCRETE SURFACES.
11. COMPLETE DRAINAGE ITEMS AND APPROACH SLAB FOR THE SOUTH OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
12. COMPLETE SLOPE PROTECTION.
13. INSTALL THE JOINT STRIP SEAL FOR EACH BRIDGE JOINT IN ONE PIECE, AFTER THE SUPERSTRUCTURE IS COMPLETE.

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PHASE CONSTRUCTION DETAILS
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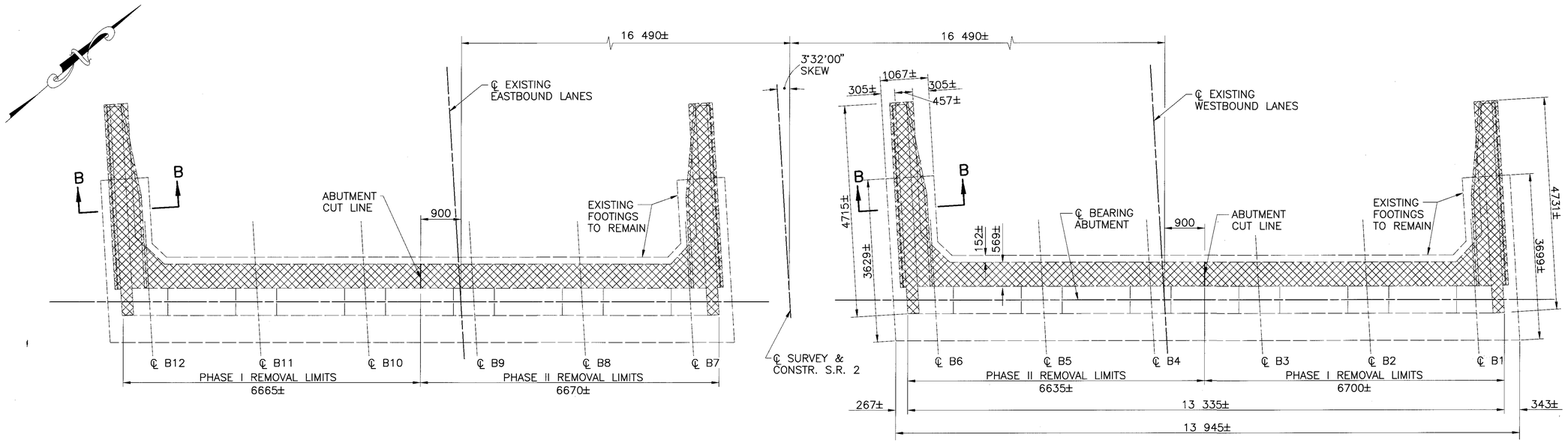
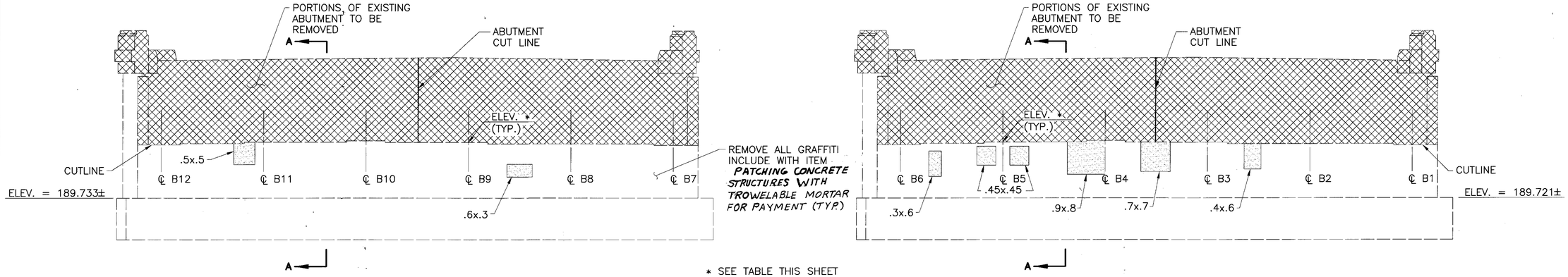


REAR ABUTMENT PLAN – RIGHT BRIDGE

NOTE: FOR DIMENSIONS, SEE LEFT BRIDGE

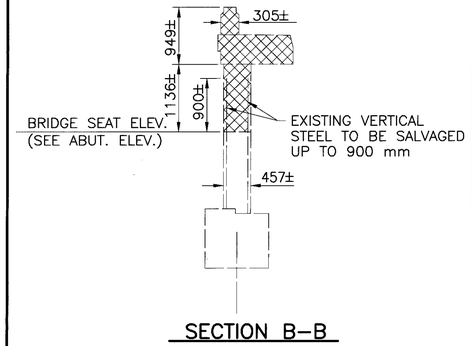
REAR ABUTMENT PLAN – LEFT BRIDGE



REAR ABUTMENT ELEVATION – RIGHT BRIDGE

* SEE TABLE THIS SHEET FOR ELEVATIONS

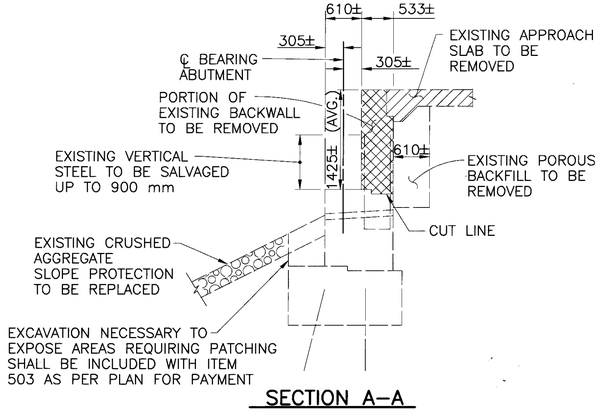
REAR ABUTMENT ELEVATION – LEFT BRIDGE



SECTION B–B

NOTE: FOR TYPICAL WINGALL ELEVATION SEE SHEET 7 / 19.

* TABLE OF EXISTING BEAM SEAT ELEVATIONS	
BEAM MARK	ELEVATION
B1	190.891±
B2	190.930±
B3	190.966±
B4	190.998±
B5	190.958±
B6	190.921±
B7	190.934±
B8	190.968±
B9	191.003±
B10	190.973±
B11	190.939±
B12	190.903±



SECTION A–A

SUMMARY OF PATCHING QUANTITIES		
LOCATION	MEASURED	ESTIMATED
LEFT BRIDGE R.A.	2.03 SQ. M.	4.06 SQ. M.
LEFT BRIDGE F.A.	0 SQ. M.	0 SQ. M.
TOTAL LEFT BRIDGE	2.0 SQ. M.	4.1 SQ. M.
RIGHT BRIDGE R.A.	0.43 SQ. M.	.86 SQ. M.
RIGHT BRIDGE F.A.	0 SQ. M.	0 SQ. M.
TOTAL RIGHT BRIDGE	0.4 SQ. M.	.9 SQ. M.

PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN OCTOBER 1997.

INDICATES AREA OF APPROACH SLAB REMOVAL. INCLUDE WITH ROADWAY QUANTITIES FOR PAYMENT.

INDICATES AREAS TO BE REMOVED AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE.

INDICATES AREAS TO BE PATCHED AS PER ITEM 843 PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR.

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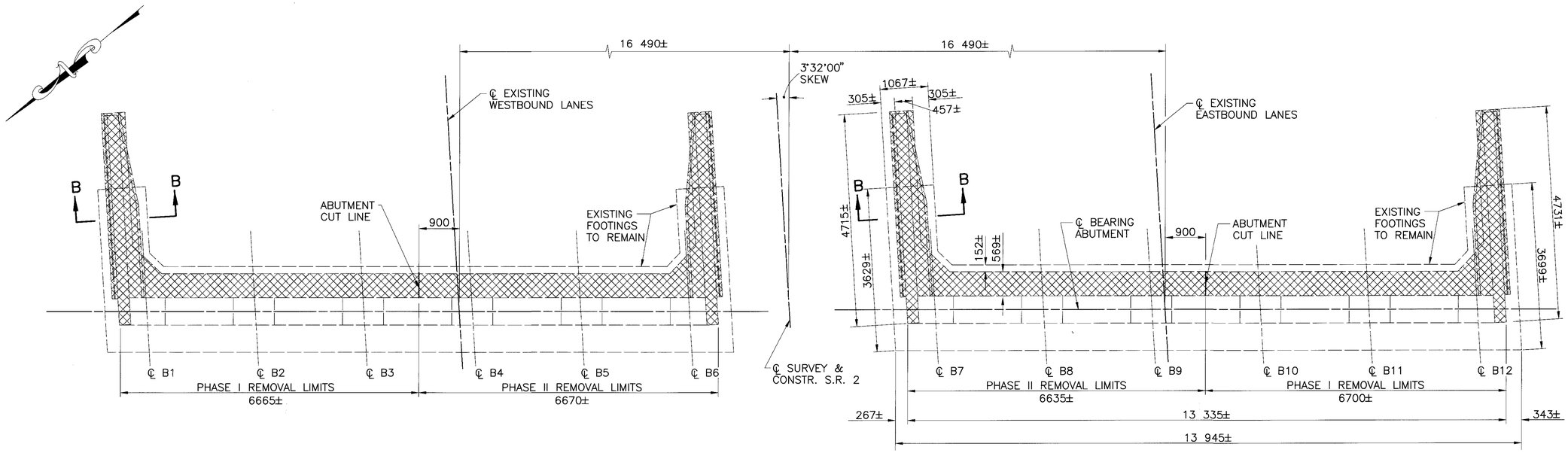
ABUTMENT REMOVAL DETAILS

BRIDGE NO. ERI-2-08842 L & R (0537)
SR. 2 OVER HOMEGARDNER RD. AND ABANDONED RAILROAD

ERI-2-2.866

6 / 19

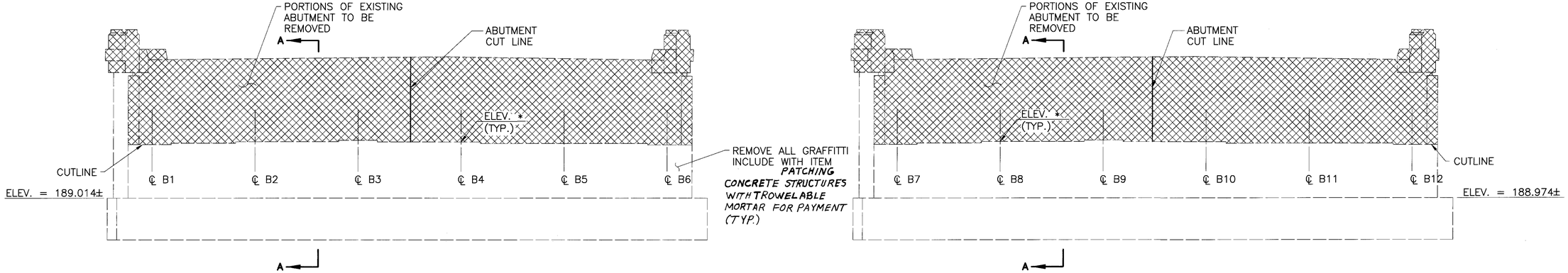
244 / 327



FORWARD ABUTMENT PLAN – LEFT BRIDGE

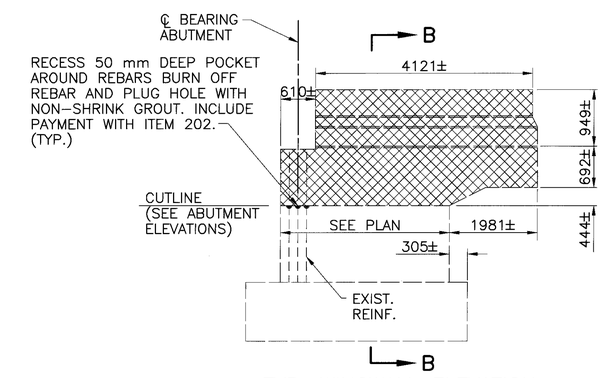
NOTE: FOR DIMENSIONS, SEE RIGHT BRIDGE

FORWARD ABUTMENT PLAN – RIGHT BRIDGE



FORWARD ABUTMENT ELEVATION – LEFT BRIDGE

FORWARD ABUTMENT ELEVATION – RIGHT BRIDGE



TYP. WINGWALL ELEVATION

(PILES NOT SHOWN)

* TABLE OF EXISTING BEAM SEAT ELEVATIONS	
BEAM MARK	ELEVATION
B1	190.151±
B2	190.188±
B3	190.230±
B4	190.264±
B5	190.229±
B6	190.191±
B7	190.211±
B8	190.253±
B9	190.292±
B10	190.266±
B11	190.227±
B12	190.191±

NOTES

FOR SECTIONS A–A AND B–B AND PATCHING QUANTITES, SEE SHEET 6/19.

INDICATES AREA OF APPROACH SLAB REMOVAL. INCLUDE WITH ROADWAY QUANTITIES FOR PAYMENT.

INDICATES AREAS TO BE REMOVED AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE.

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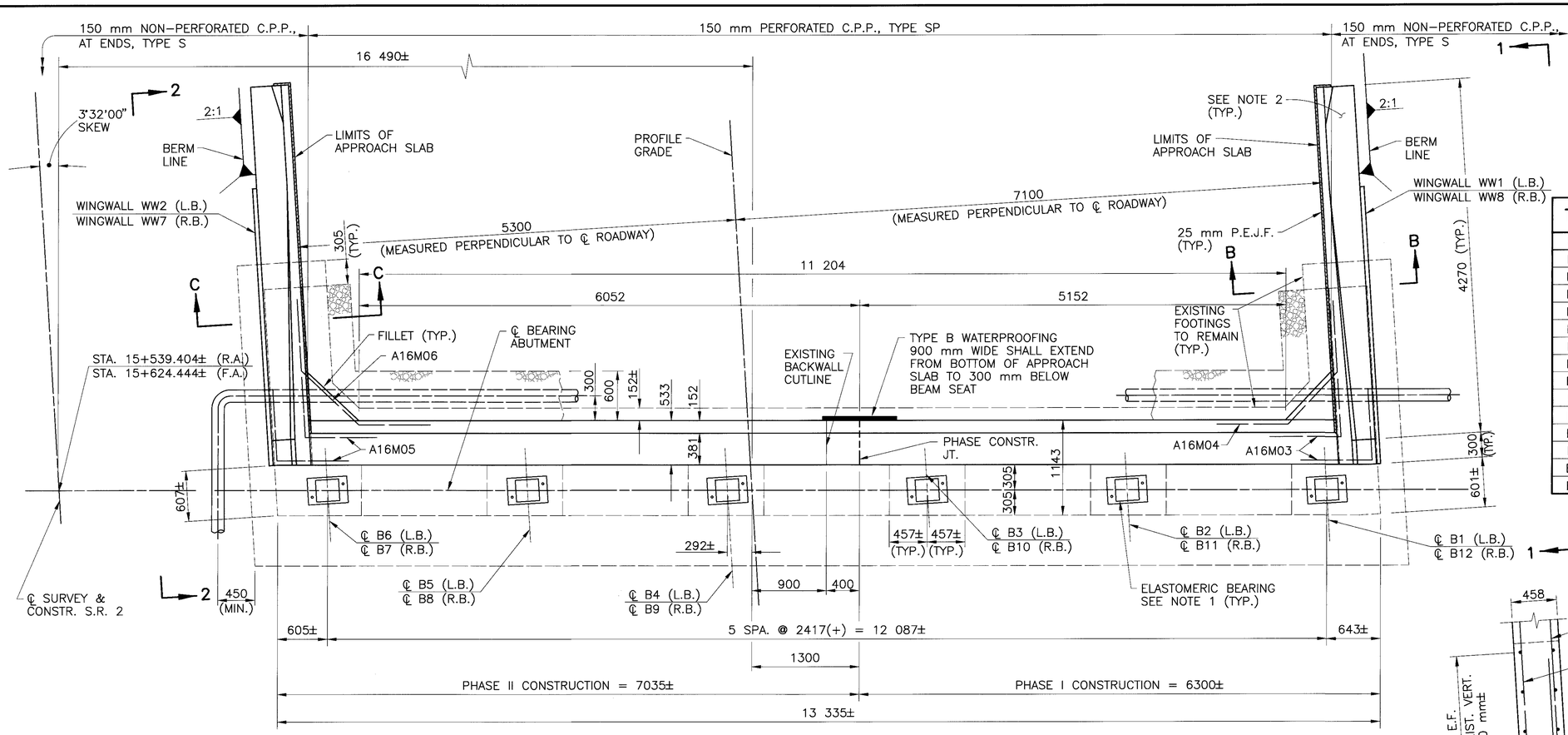
CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200392, 2200422	

ABUTMENT REMOVAL DETAILS

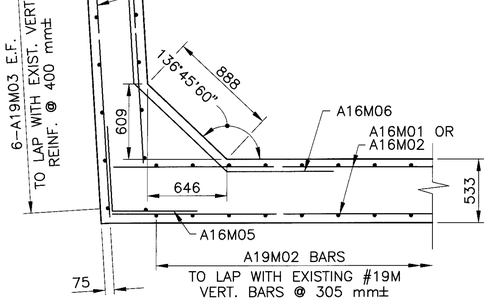
BRIDGE NO. ERI-2-08842 L & R (0537)
S.R. 2 OVER HOMEGARDNER RD. AND ABANDONED RAILROAD

ERI-2-2.866

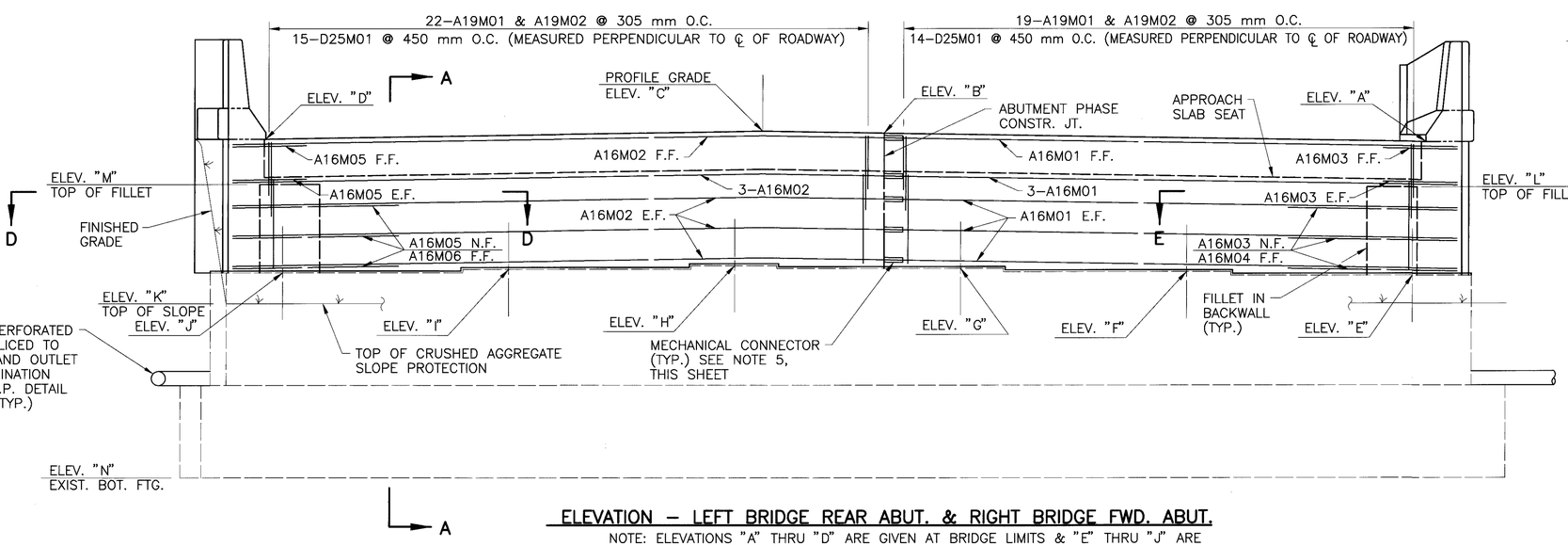


PLAN – LEFT BRIDGE REAR ABUT. & RIGHT BRIDGE FWD. ABUT.

TABLE OF ABUTMENT ELEVATIONS		
ELEVATIONS	LEFT REAR	RIGHT FORWARD
ELEV "A"	192.315	191.651
ELEV "B"	192.408	191.738
ELEV "C"	192.430	191.758
ELEV "D"	192.346	191.669
ELEV "E"	190.891±	190.191±
ELEV "F"	190.930±	190.227±
ELEV "G"	190.966±	190.266±
ELEV "H"	190.998±	190.292±
ELEV "I"	190.958±	190.253±
ELEV "J"	190.921±	190.211±
ELEV "K"	190.591	189.891
ELEV "L"	191.835	191.171
ELEV "M"	191.866	191.189
ELEV "N"	188.730±	188.023±



SECTION D–D



ELEVATION – LEFT BRIDGE REAR ABUT. & RIGHT BRIDGE FWD. ABUT.

NOTE: ELEVATIONS "A" THRU "D" ARE GIVEN AT BRIDGE LIMITS & "E" THRU "J" ARE GIVEN AT ℄ BEARINGS.

NOTES

1. EXISTING ROCKER BEARINGS, R-340 AT BOTH ABUTMENTS SHALL BE REMOVED AND REPLACED WITH NEW ELASTOMERIC BEARINGS. SEE BEARING DETAIL SHEET 18/19 FOR MORE DETAILS.
2. FOR PARAPET TRANSITION DETAIL, SEE SHEET 17/19.
3. FOR ADDITIONAL NOTES, SECTION A–A, B–B, C–C AND VIEWS 1–1 & 2–2, SEE SHEET 10/19. FOR SECTION E–E SEE SHEET 9/19.
4. FOR REINFORCING STEEL LIST, SEE SHEET 19/19.
5. FOR MECHANICAL CONNECTOR DETAIL AND NOTES, SEE SHEET 19/19.

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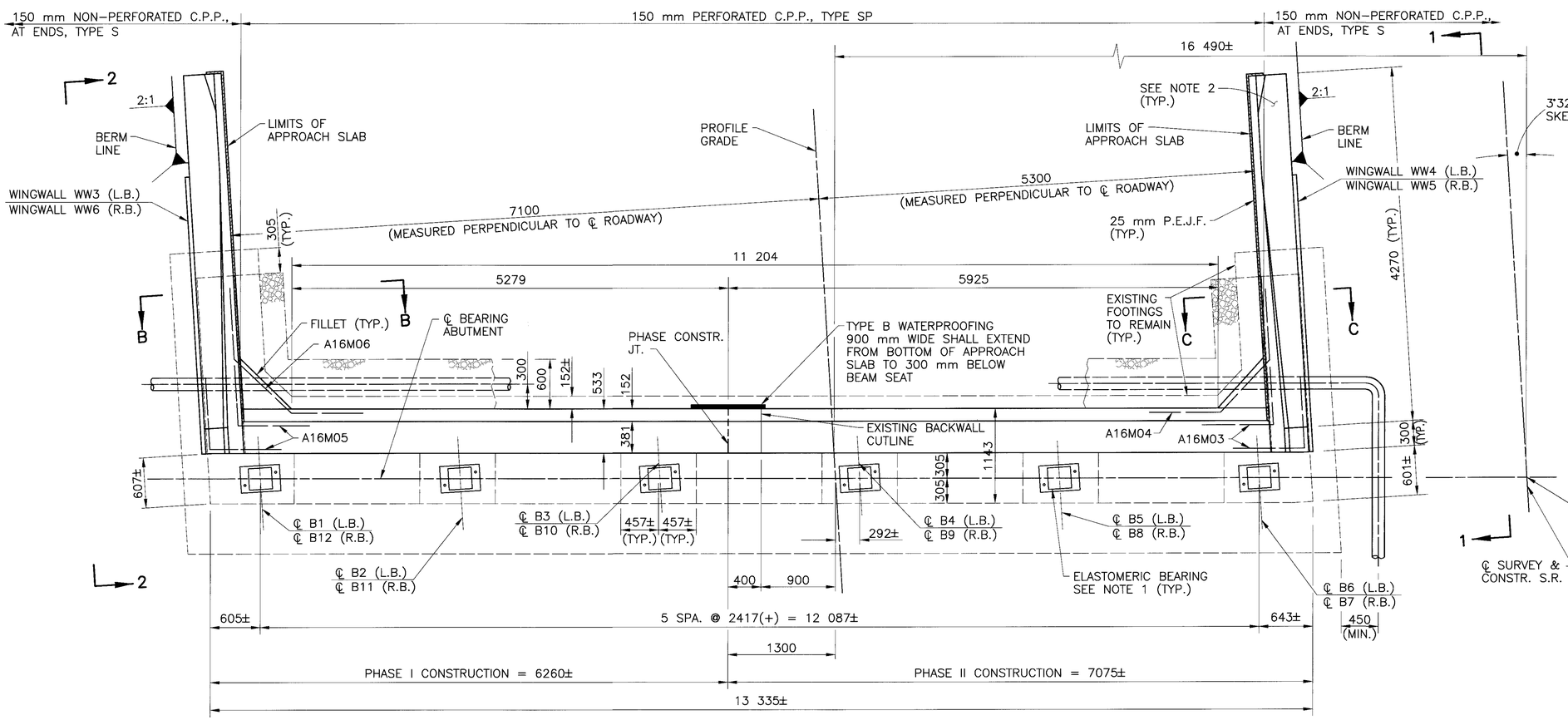
CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200392, 2200422	

ABUTMENT DETAILS
BRIDGE NO. ERI-2-08842 (0537)
S.R. 2 OVER HOMEGARDNER RD. AND ABANDONED RAILROAD

ERI-2-2.866

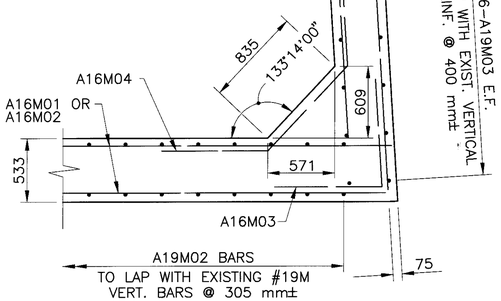
8/19

246/327

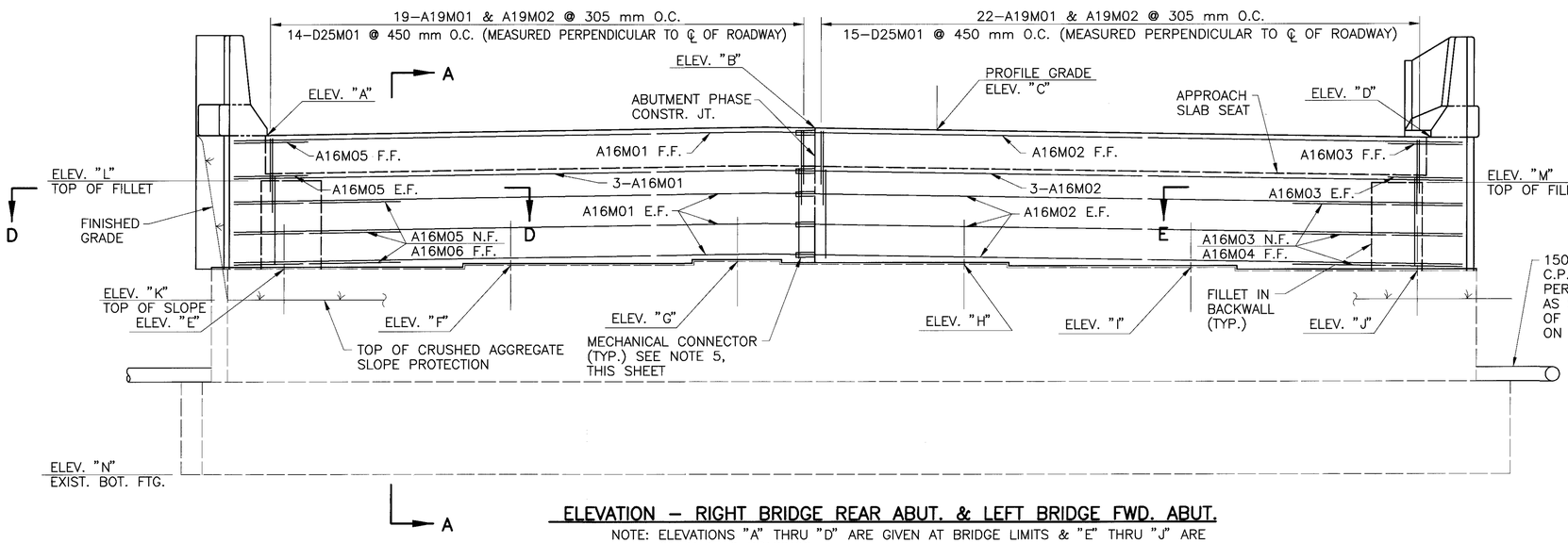


PLAN – RIGHT BRIDGE REAR ABUT. & LEFT BRIDGE FWD. ABUT.

TABLE OF ABUTMENT ELEVATIONS		
ELEVATIONS	RIGHT REAR	LEFT FORWARD
ELEV "A"	192.380	191.554
ELEV "B"	192.471	191.651
ELEV "C"	192.493	191.674
ELEV "D"	192.407	191.594
ELEV "E"	190.903±	190.151±
ELEV "F"	190.939±	190.188±
ELEV "G"	190.973±	190.230±
ELEV "H"	191.003±	190.264±
ELEV "I"	190.968±	190.229±
ELEV "J"	190.934±	190.191±
ELEV "K"	190.603	189.851
ELEV "L"	191.900	191.074
ELEV "M"	191.927	191.114
ELEV "N"	188.742±	187.983±



SECTION E–E



ELEVATION – RIGHT BRIDGE REAR ABUT. & LEFT BRIDGE FWD. ABUT.

NOTE: ELEVATIONS "A" THRU "D" ARE GIVEN AT BRIDGE LIMITS & "E" THRU "J" ARE GIVEN AT ℄ BEARINGS.

NOTES

1. EXISTING ROCKER BEARINGS, R–340 AT BOTH ABUTMENTS SHALL BE REMOVED AND REPLACED WITH NEW ELASTOMERIC BEARINGS. SEE BEARING DETAIL SHEET 18/19 FOR MORE DETAILS.
2. FOR PARAPET TRANSITION DETAIL, SEE SHEET 17/19.
3. FOR ADDITIONAL NOTES, SECTION A–A, B–B, C–C AND VIEWS 1–1 & 2–2, SEE SHEET 10/19. FOR SECTION D–D SEE SHEET 9/19.
4. FOR REINFORCING STEEL LIST, SEE SHEET 19/19.
5. FOR MECHANICAL CONNECTOR DETAIL AND NOTES, SEE SHEET 19/19.

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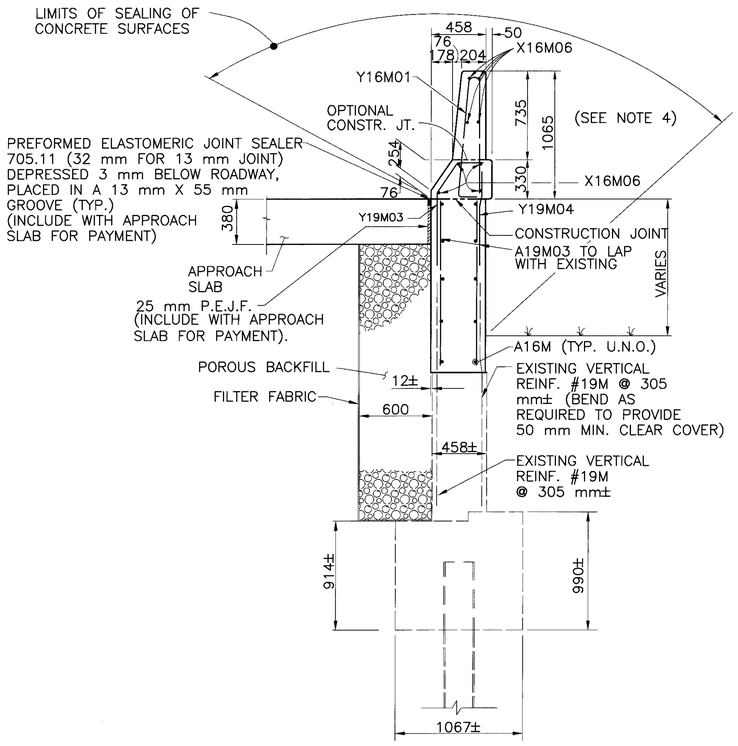
ABUTMENT DETAILS
BRIDGE NO. ERI-2-0866.42 (0537)
S.R. 2 OVER HOMEGARDNER RD. AND ABANDONED RAILROAD

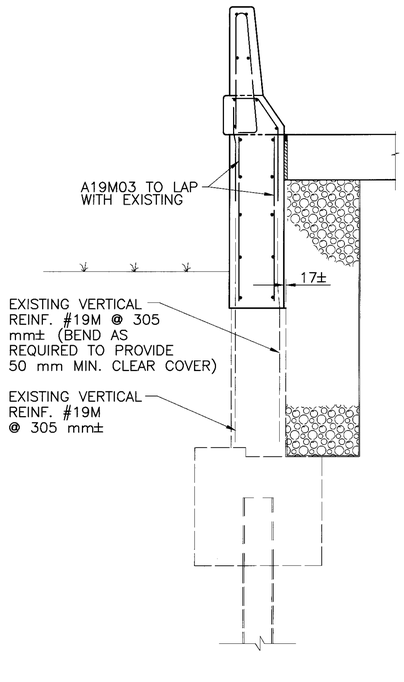
ERI-2-2.866

9/19

247/327

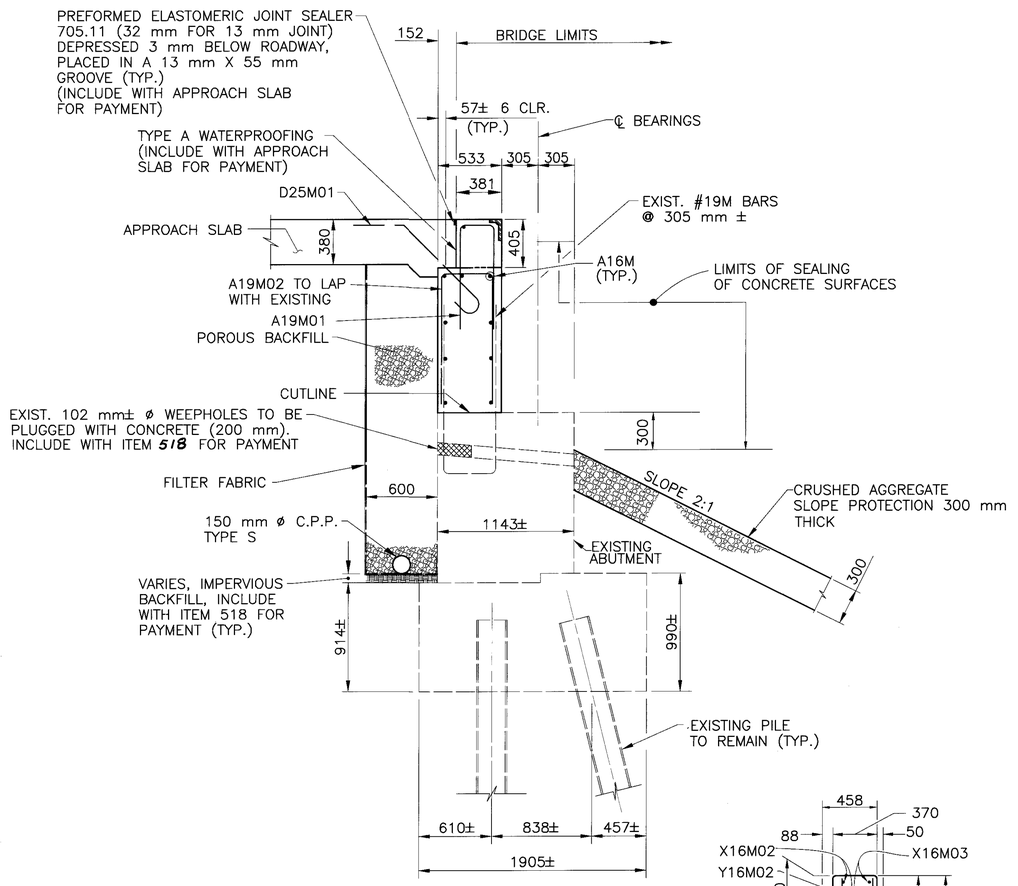


SECTION B–B

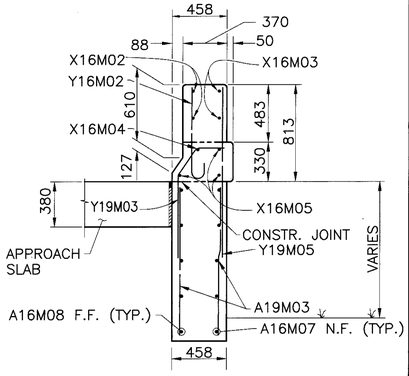


SECTION C–C

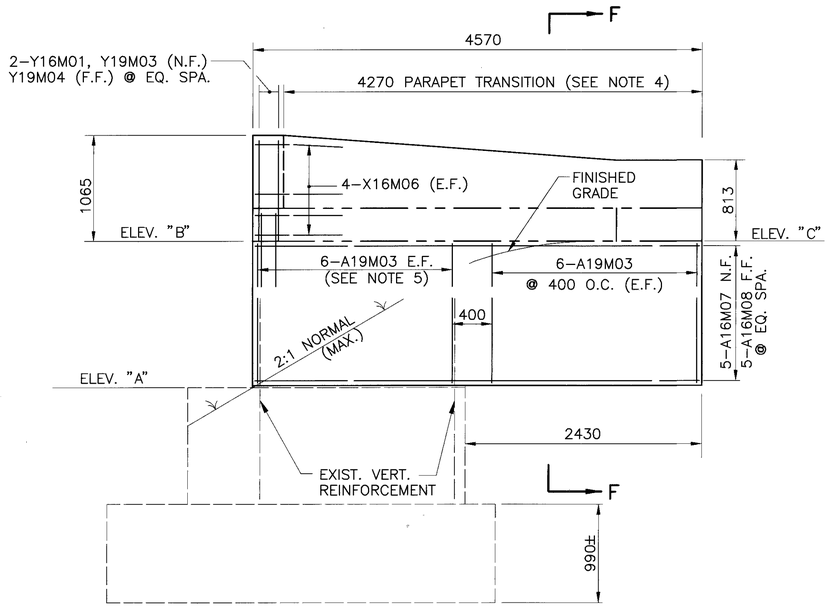
NOTE: FOR ALL OTHER CALLOUTS & DIMENSIONS, SEE SECTION B–B, THIS SHEET.



SECTION A–A



SECTION F–F



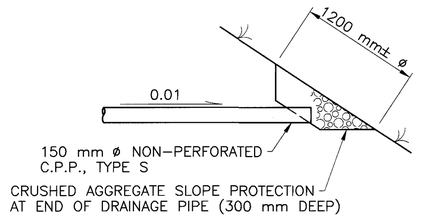
VIEW 1–1 (AS SHOWN)
VIEW 2–2 (OPPOSITE HAND)

NOTES

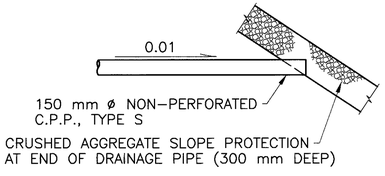
1. POROUS BACKFILL WITH FILTER FABRIC, 600 mm THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 300 mm BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS. GEOTEXTILE FABRIC SHALL CONFORM WITH 712.09, TYPE A. GEOTEXTILE SHALL BE INCLUDED WITH ITEM 518 POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN, FOR PAYMENT. POROUS BACKFILL MATERIAL SHALL BE #57 GRAVEL.
2. BACKWALL CONCRETE: IN ADDITION TO THE PROVISIONS OF 511.08, BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.
3. CONCRETE COVER SHALL BE 50 mm CLEAR TYP. U.N.O.
4. FOR DEFLECTOR PARAPET TRANSITION DETAIL AND REINFORCEMENT, SEE SHEET 17/19.
5. A19M03 VERT. BARS SHALL LAP WITH EXISTING VERT. REINFORCEMENT. SEE SECTIONS D–D & E–E ON SHEETS 8/19 & 9/19 FOR REINFORCEMENT PLACEMENT.

TABLE OF WINGWALL ELEVATIONS

WINGWALL	ELEV. "A"	ELEV. "B"	ELEV. "C"
WW1	190.891±	192.315	192.331
WW2	190.921±	192.346	192.362
WW3	190.151±	191.554	191.486
WW4	190.191±	191.594	191.526
WW5	190.934±	192.407	192.423
WW6	190.903±	192.380	192.396
WW7	190.211±	191.669	191.601
WW8	190.191±	191.651	191.583



@ EARTH SLOPE



@ CRUSHED AGGREGATE SLOPE PROTECTION

TERMINATION OF 150 mm C.P.P. DETAIL

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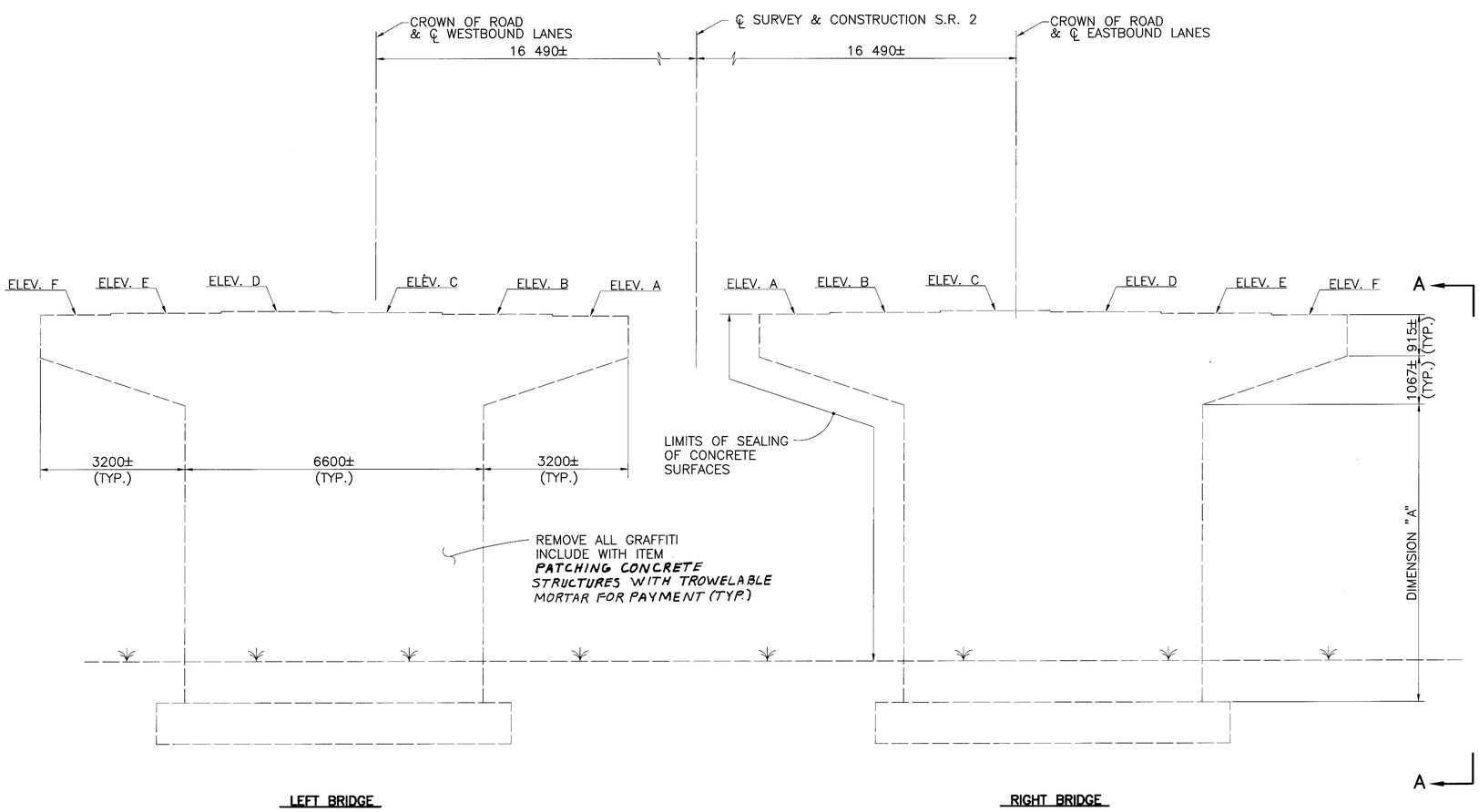
ABUTMENT DETAILS
BRIDGE NO. ERI-2-08842 L & R (0537)
S.R. 2 OVER HOMEGARDNER RD. AND ABANDONED RAILROAD

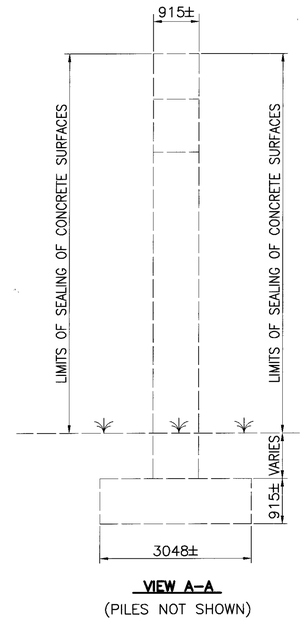
ERI-2-2.866

10/19

248/327



TYPICAL PIER ELEVATION



VIEW A–A
(PILES NOT SHOWN)

		LEFT BRIDGE				RIGHT BRIDGE			
		PIER 1	PIER 2	PIER 3	PIER 4	PIER 1	PIER 2	PIER 3	PIER 4
ELEVATION	A	190.759±	190.645±	190.460±	190.285±	190.733±	190.644±	190.456±	190.304±
	B	190.813±	190.680±	190.496±	190.328±	190.806±	190.700±	190.510±	190.351±
	C	190.851±	190.719±	190.547±	190.363±	190.850±	190.731±	190.550±	190.394±
	D	190.814±	190.698±	190.512±	190.341±	190.817±	190.715±	190.538±	190.377±
	E	190.766±	190.657±	190.450±	190.291±	190.774±	190.655±	190.493±	190.330±
	F	190.718±	190.610±	190.407±	190.240±	190.743±	190.612±	190.443±	190.272±
DIM "A"		6553±	6706±	7239±	5867±	6501±	6706±	7239±	5867±

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CHECKED	REVISED	STRUCTURE FILE NO.	
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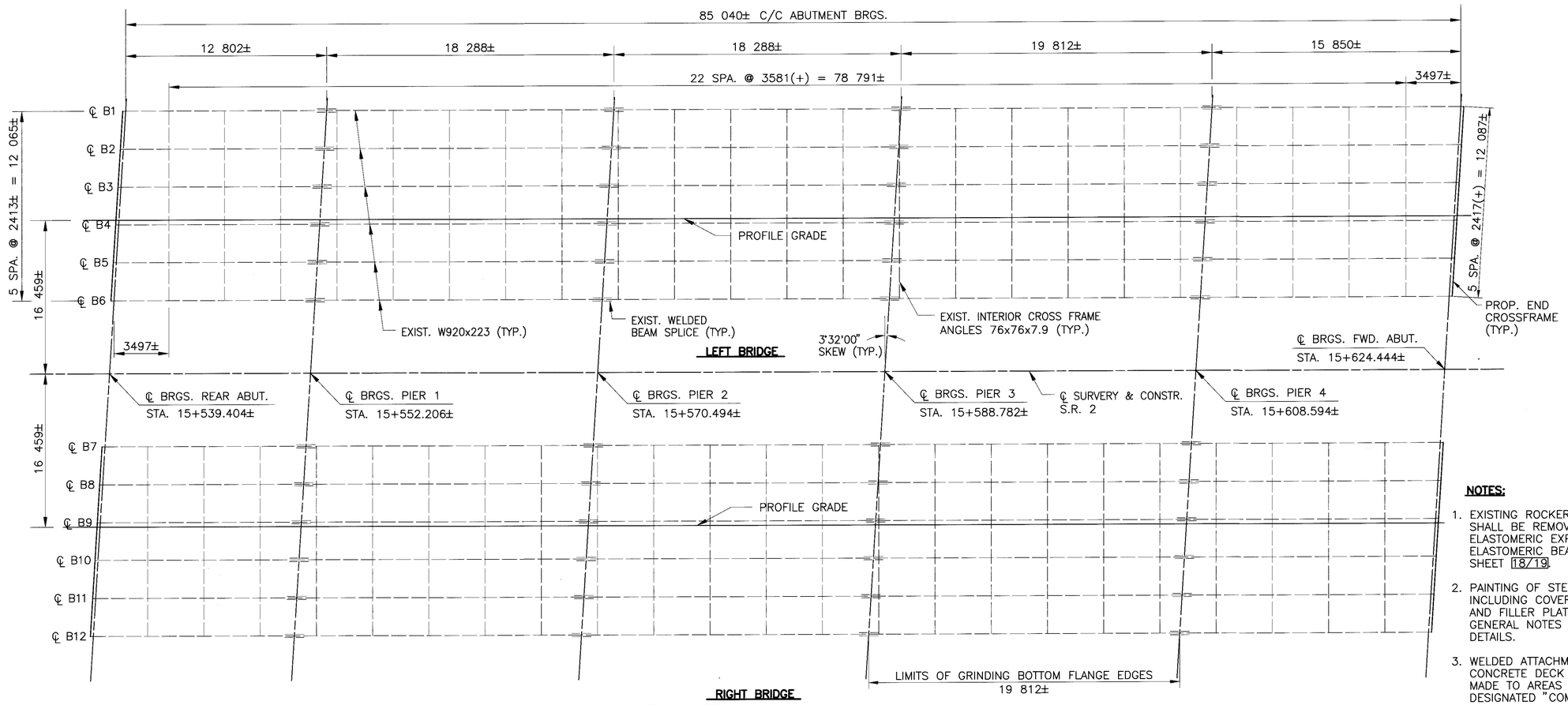
PIER DETAILS
BRIDGE NO. ERI-2-06842 L & R (05637)
S.R. 2 OVER HOMEGARDNER RD. AND ABANDONED RAILROAD

ERI-2-2.866

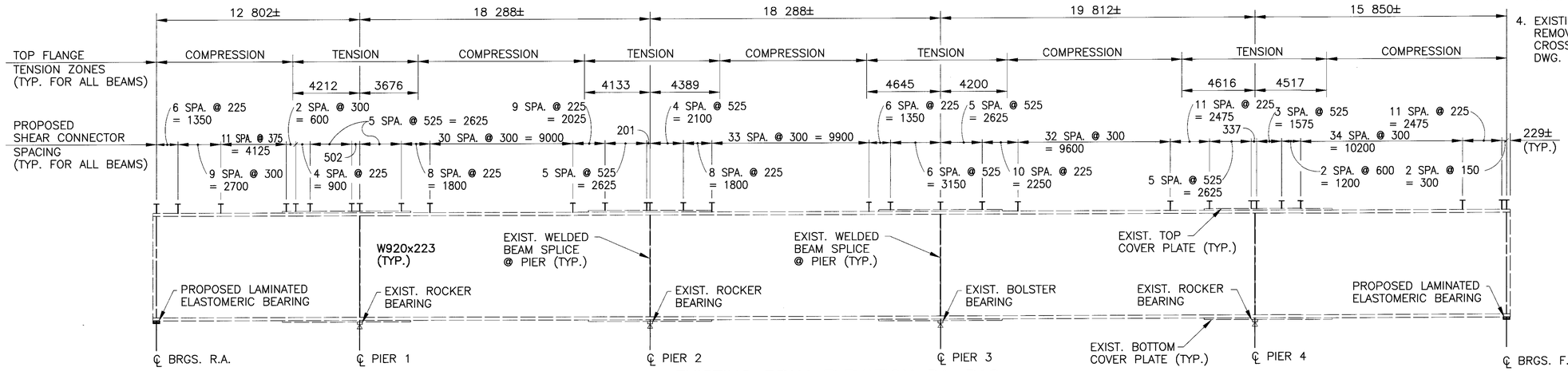
11/19

249/327



NOTE: SEE LEFT BRIDGE FOR ALL RELEVANT DIMENSIONS AND CALLOUTS.

FRAMING PLAN



EXISTING BEAM ELEVATION B1–B12

NOTES:

1. EXISTING ROCKER BEARINGS AT ABUTMENTS SHALL BE REMOVED AND REPLACED WITH ELASTOMERIC EXPANSION BEARINGS. FOR ELASTOMERIC BEARING DETAILS, SEE SHEET 18/19.
2. PAINTING OF STEEL: ALL STRUCTURAL STEEL INCLUDING COVER PLATES, CROSS FRAMES AND FILLER PLATES SHALL BE PAINTED. SEE GENERAL NOTES SHEET 3/19 FOR MORE DETAILS.
3. WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA BEAM FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL NOT BE CLOSER THAN 25 mm FROM THE EDGE OF FLANGE, BE NOT MORE THAN 50 mm LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.
4. EXISTING END CROSS–FRAMES SHALL BE REMOVED & REPLACED. THE PROPOSED END CROSS FRAMES SHALL BE PER ODOT STD. DWG. EXJ–4–87M (SHEET 1/5).

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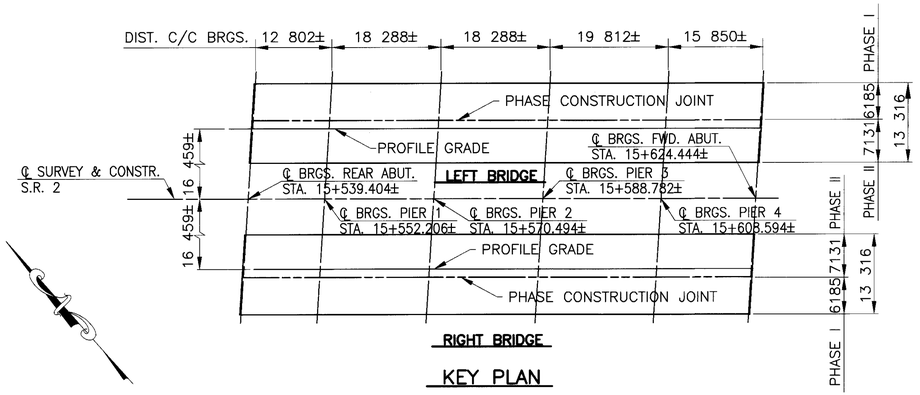
SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-0864Z L & R (0537)
S.R. 2 OVER HOMEGARDNER ROAD AND ABANDONED RAILROAD

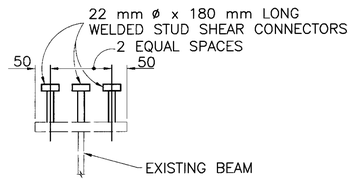
ERI-2-2.866

12/19

250/327



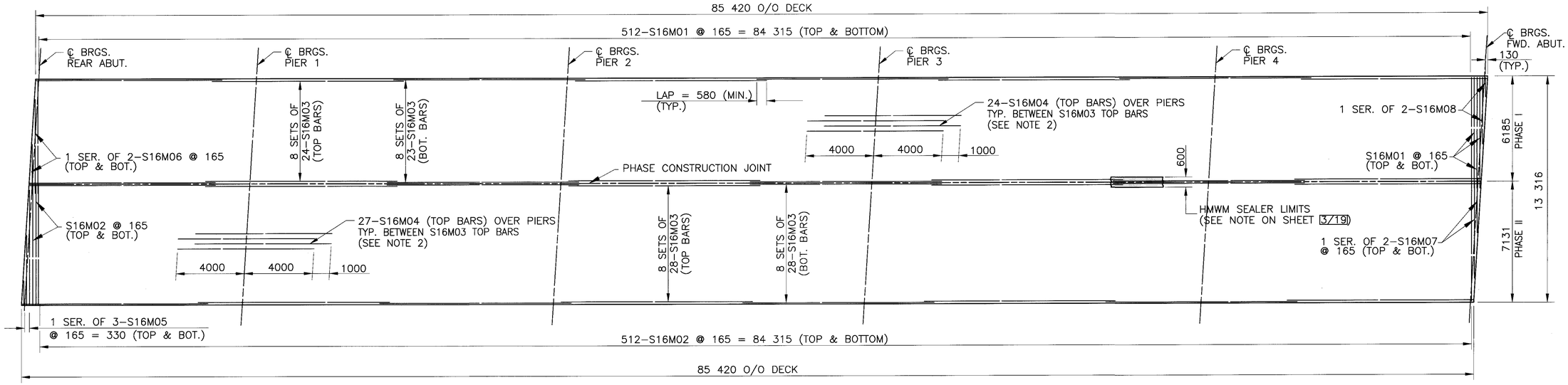
KEY PLAN



STUD SHEAR CONNECTOR DETAIL

NOTES

1. FOR PHASE CONSTRUCTION DETAILS, SEE SHEET 5/19
2. FOR LONGITUDINAL BAR SPACINGS, SEE TRANSVERSE SECTION, ON SHEET 14/19

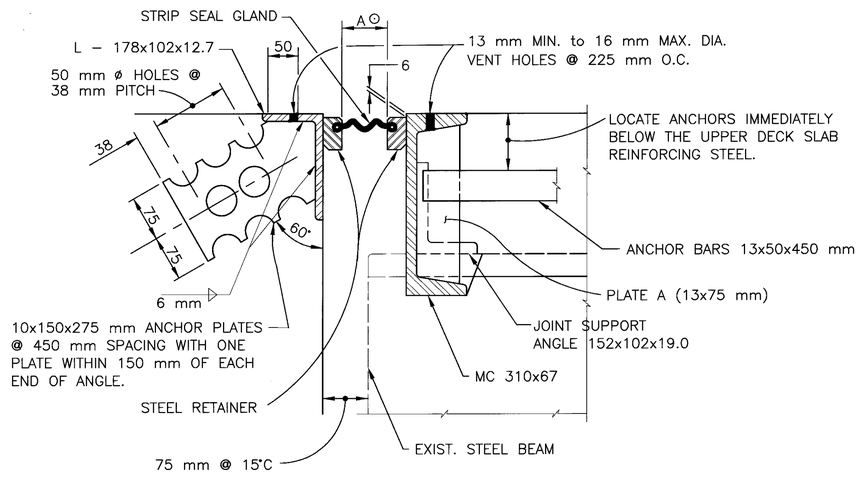


DECK REINFORCING PLAN

LEFT BRIDGE – AS SHOWN
RIGHT BRIDGE – SIMILAR

NOTES

1. FOR MORE DETAILS SEE STD. DWG. EXJ–4–87M.
2. STRIP SEAL GLAND SIZE SHALL BE 75 mm FOR BOTH REAR AND FORWARD ABUTMENTS.
3. ELASTOMERIC SEALS: THE JOINT SEAL FOR EACH BRIDGE DECK JOINT SHALL BE FURNISHED IN ONE CONTINUOUS PIECE.



STRIP SEAL EXPANSION JOINT DETAIL

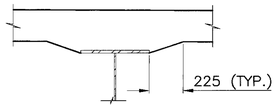
⊙ JOINT OPENING TABLE (DIM "A")		
AMBIENT TEMP (°C)	REAR ABUTMENT	FORWARD ABUTMENT
0°	48 mm	47 mm
5°	45 mm	45 mm
10°	42 mm	43 mm
15°	40 mm	41 mm
20°	37 mm	39 mm
25°	34 mm	37 mm
30°	31 mm	34 mm
35°	28 mm	32 mm

R.D. Zande & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED	DRAWN	REVIEWED	DATE
BAG	JLH	OHK	7/11/97
CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200392, 2200422	

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-0866 & ERI-2-0842 L & R (0537)
S.R. 2 OVER HOMEGARDNER ROAD AND ABANDONED RAILROAD

ERI-2-2.866

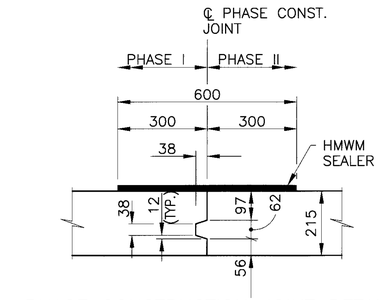


HAUNCH DETAIL

ALSO REFER TO
NOTE 1, THIS SHEET

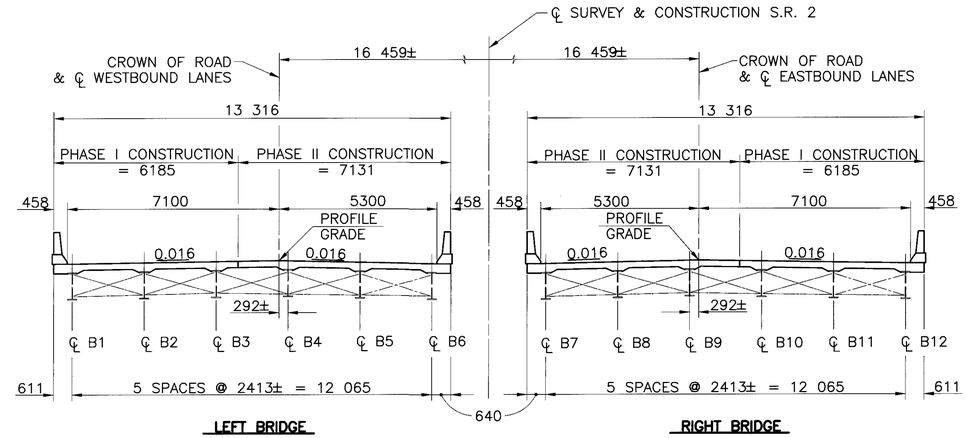
NOTES

1. A HAUNCH WIDTH OF 225 mm SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 150 mm AND 300 mm.
2. FOR TABLE OF DIMENSION "A" SEE THIS SHEET. THIS IS THE NOMINAL DIMENSION FROM THE TOP OF BEAM FLANGE TO TOP OF CONCRETE DECK. THE QUANTITY OF THAT PORTION OF THE DECK CONCRETE OVER THE BEAMS SHALL BE BASED ON THIS DIMENSION EVEN THOUGH DEVIATION FROM THIS DIMENSION MAY OCCUR BECAUSE THE TOP OF THE BEAM MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION TO PLACE IT PARALLEL TO FINISH GRADE.
3. FOR MORE PARAPET DETAILS, SEE SHEET 17/19.
4. FOR WELDED SHEAR STUD CONNECTORS, SPACING, AND DETAIL, SEE SHEET 13/19.
5. FOR PHASE CONSTRUCTION DETAILS, SEE SHEET 5/19.
6. FIELD BEND TRANSVERSE BARS AS NECESSARY TO FIT THE CROWN. INCLUDE WITH ITEM 511 FOR PAYMENT.

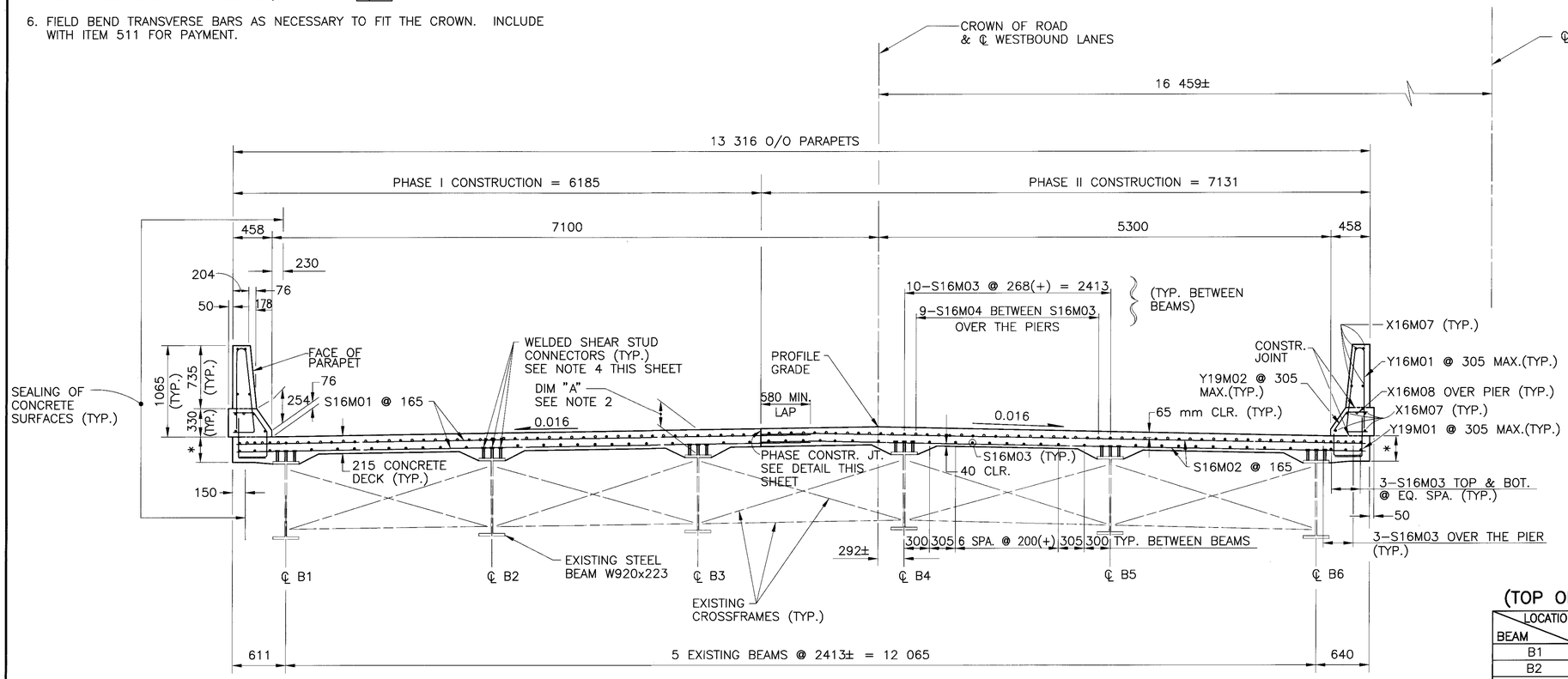


PHASE CONSTRUCTION JOINT DETAIL

NOTE: REBARS ARE NOT SHOWN



KEY TRANSVERSE SECTION



TRANSVERSE SECTION

LEFT BRIDGE – AS SHOWN
RIGHT BRIDGE – OPPOSITE HAND W.R.T. ℄ SURVEY & CONSTR. S.R. 2

* { 280 mm (LEFT BRIDGE)
{ 336 mm (RIGHT BRIDGE)

DIMENSION "A"
(TOP OF BEAM/MOMENT PL. TO TOP OF CONCRETE)

BEAM \ LOCATION	R. ABUT	PIER 1	PIER 2	PIER 3	PIER 4	F. ABUT
B1	265	259	252	256	251	256
B2	265	250	245	253	240	260
B3	268	241	244	231	231	259
B4	266	235	253	226	240	256
B5	268	235	255	240	238	255
B6	267	251	252	239	244	256
B7	315	340	319	312	298	312
B8	320	306	303	298	291	310
B9	324	301	312	298	289	312
B10	325	306	299	282	278	311
B11	321	311	322	290	288	313
B12	319	304	327	303	309	313

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CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200392, 2200422	

SUPERSTRUCTURE DETAILS

BRIDGE NO. ERI-2-08842 L & R (05317)
S.R. 2 OVER HOMEGARDNER RD. AND ABANDONED RAILROAD

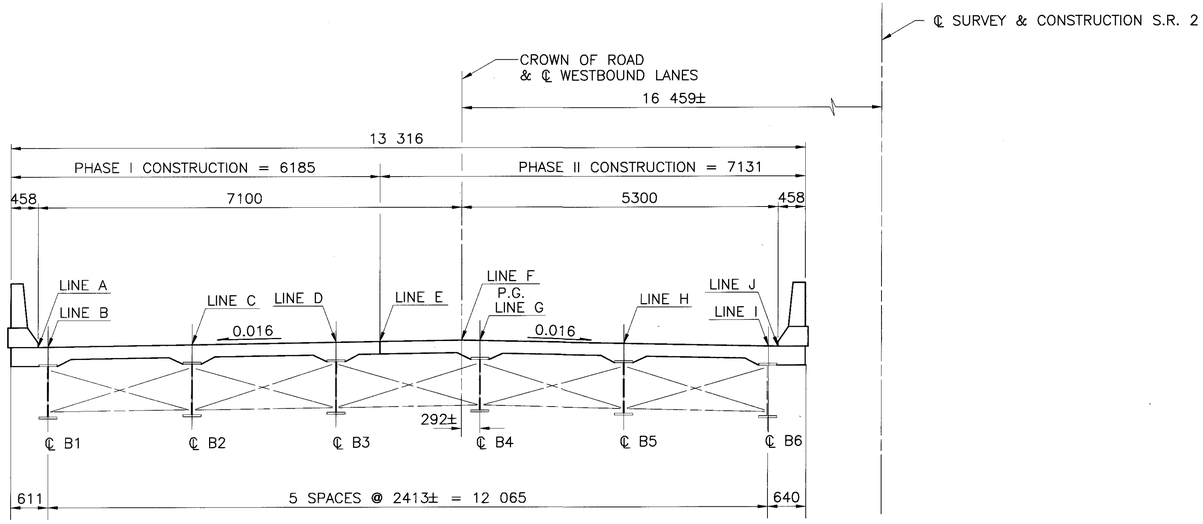
ERI-2-2.866

FINAL DECK SCREED ELEVATIONS (LEFT BRIDGE)

SCREED LINE	LOCATION	C.L. BRG. R.A.	SPAN 1			C.L. BRG. PIER 1	SPAN 2			C.L. BRG. PIER 2	SPAN 3			C.L. BRG. PIER 3	SPAN 4			C.L. BRG. PIER 4
			0.250	0.500	0.75		0.250	0.500	0.750		0.250	0.500	0.750		0.250	0.500	0.750	
LINE A F/C	STATION	15+540.859	15+544.059	15+547.260	15+550.460	15+553.661	15+558.233	15+562.805	15+567.377	15+571.949	15+576.521	15+581.093	15+585.665	15+590.237	15+595.190	15+600.143	15+605.096	15+610.049
	T/S ELEV.	192.313	192.301	192.287	192.273	192.257	192.233	192.205	192.175	192.143	192.108	192.070	192.030	191.987	191.938	191.885	191.830	191.771
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.313	192.302	192.288	192.273	192.257	192.236	192.210	192.178	192.143	192.110	192.073	192.032	191.987	191.942	191.892	191.834	191.771
LINE B B1	STATION	15+540.849	15+544.050	15+547.250	15+550.451	15+553.651	15+558.223	15+562.795	15+567.367	15+571.939	15+576.511	15+581.083	15+585.655	15+590.227	15+595.180	15+600.133	15+605.086	15+610.039
	T/S ELEV.	192.315	192.303	192.290	192.275	192.260	192.235	192.208	192.178	192.145	192.110	192.073	192.032	191.990	191.940	191.888	191.832	191.774
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.315	192.304	192.291	192.275	192.260	192.238	192.213	192.181	192.145	192.112	192.076	192.034	191.990	191.944	191.895	191.836	191.774
LINE C B2	STATION	15+540.700	15+543.901	15+547.101	15+550.302	15+553.502	15+558.074	15+562.646	15+567.218	15+571.790	15+576.362	15+580.934	15+585.506	15+590.078	15+595.031	15+599.984	15+604.937	15+609.890
	T/S ELEV.	192.354	192.342	192.329	192.315	192.299	192.275	192.247	192.218	192.185	192.150	192.113	192.072	192.030	191.980	191.928	191.873	191.814
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.354	192.343	192.330	192.315	192.299	192.278	192.252	192.221	192.185	192.152	192.116	192.074	192.030	191.984	191.935	191.877	191.814
LINE D B3	STATION	15+540.551	15+543.752	15+546.952	15+550.153	15+553.353	15+557.925	15+562.497	15+567.069	15+571.641	15+576.213	15+580.785	15+585.357	15+589.929	15+594.882	15+599.835	15+604.788	15+609.741
	T/S ELEV.	192.393	192.382	192.368	192.354	192.338	192.314	192.287	192.257	192.225	192.190	192.152	192.112	192.070	192.021	191.968	191.913	191.855
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.393	192.383	192.369	192.354	192.338	192.317	192.292	192.260	192.225	192.192	192.155	192.114	192.070	192.025	191.975	191.917	191.855
LINE E PH. CONSTR.	STATION	15+540.505	15+543.706	15+546.906	15+550.107	15+553.307	15+557.879	15+562.451	15+567.023	15+571.595	15+576.167	15+580.739	15+585.311	15+589.883	15+594.836	15+599.789	15+604.742	15+609.695
	T/S ELEV.	192.405	192.394	192.381	192.366	192.351	192.326	192.299	192.269	192.237	192.202	192.165	192.125	192.082	192.033	191.981	191.926	191.867
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.405	192.395	192.382	192.366	192.351	192.329	192.304	192.272	192.237	192.204	192.168	192.127	192.082	192.037	191.988	191.930	191.867
LINE F P.G.	STATION	15+540.420	15+543.621	15+546.821	15+550.022	15+553.222	15+557.794	15+562.366	15+566.938	15+571.510	15+576.082	15+580.654	15+585.226	15+589.798	15+594.751	15+599.704	15+604.657	15+609.610
	T/S ELEV.	192.428	192.416	192.403	192.389	192.373	192.349	192.322	192.292	192.260	192.225	192.188	192.148	192.105	192.056	192.004	191.949	191.890
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.428	192.417	192.404	192.389	192.373	192.352	192.327	192.295	192.260	192.227	192.191	192.150	192.105	192.060	192.011	191.953	191.890
LINE G B4	STATION	15+540.402	15+543.603	15+546.803	15+550.004	15+553.204	15+557.776	15+562.348	15+566.920	15+571.492	15+576.064	15+580.636	15+585.208	15+589.780	15+594.733	15+599.686	15+604.639	15+609.592
	T/S ELEV.	192.423	192.411	192.398	192.384	192.369	192.344	192.317	192.287	192.255	192.220	192.183	192.143	192.100	192.051	191.999	191.944	191.886
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.423	192.412	192.399	192.384	192.369	192.347	192.322	192.290	192.255	192.222	192.186	192.145	192.100	192.055	192.006	191.948	191.886
LINE H B5	STATION	15+540.253	15+543.454	15+546.654	15+549.855	15+553.055	15+557.627	15+562.199	15+566.771	15+571.343	15+575.915	15+580.487	15+585.059	15+589.631	15+594.584	15+599.537	15+604.490	15+609.443
	T/S ELEV.	192.385	192.373	192.360	192.346	192.331	192.306	192.279	192.250	192.218	192.183	192.146	192.106	192.063	192.014	191.962	191.907	191.849
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.385	192.374	192.361	192.346	192.331	192.309	192.284	192.253	192.218	192.185	192.149	192.108	192.063	192.018	191.969	191.911	191.849
LINE I B6	STATION	15+540.104	15+543.305	15+546.505	15+549.706	15+552.906	15+557.478	15+562.050	15+566.622	15+571.194	15+575.766	15+580.338	15+584.910	15+589.482	15+594.435	15+599.388	15+604.341	15+609.294
	T/S ELEV.	192.347	192.335	192.322	192.308	192.293	192.269	192.242	192.212	192.180	192.146	192.108	192.068	192.026	191.977	191.925	191.870	191.812
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.347	192.336	192.323	192.308	192.293	192.272	192.247	192.215	192.180	192.148	192.111	192.070	192.026	191.981	191.932	191.874	191.812
LINE J F/C	STATION	15+540.093	15+543.294	15+546.494	15+549.695	15+552.895	15+557.467	15+562.039	15+566.611	15+571.183	15+575.755	15+580.327	15+584.899	15+589.471	15+594.424	15+599.377	15+604.330	15+609.283
	T/S ELEV.	192.344	192.332	192.320	192.305	192.290	192.266	192.239	192.209	192.177	192.143	192.105	192.066	192.023	191.974	191.922	191.867	191.809
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.344	192.333	192.321	192.305	192.290	192.269	192.244	192.212	192.177	192.145	192.108	192.068	192.023	191.978	191.929	191.871	191.809

SCREED LINE	LOCATION	SPAN 5			C.L. BRG. F.A.
		0.250	0.500	0.750	
LINE A F/C	STATION	15+614.011	15+617.974	15+621.936	15+625.899
	T/S ELEV.	191.722	191.671	191.619	191.564
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.724	191.676	191.623	191.564
LINE B B1	STATION	15+614.002	15+617.964	15+621.927	15+625.889
	T/S ELEV.	191.725	191.674	191.621	191.566
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.727	191.679	191.625	191.566
LINE C B2	STATION	15+613.853	15+617.815	15+621.778	15+625.740
	T/S ELEV.	191.765	191.715	191.662	191.607
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.767	191.720	191.666	191.607
LINE D B3	STATION	15+613.704	15+617.666	15+621.629	15+625.591
	T/S ELEV.	191.806	191.755	191.702	191.648
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.808	191.760	191.706	191.648
LINE E PH. CONSTR.	STATION	15+613.658	15+617.620	15+621.583	15+625.545
	T/S ELEV.	191.819	191.768	191.715	191.660
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.821	191.773	191.719	191.660
LINE F P.G.	STATION	15+613.573	15+617.535	15+621.498	15+625.460
	T/S ELEV.	191.842	191.791	191.738	191.684
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.844	191.796	191.742	191.684
LINE G B4	STATION	15+613.555	15+617.517	15+621.480	15+625.442
	T/S ELEV.	191.837	191.786	191.734	191.679
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.839	191.791	191.738	191.679
LINE H B5	STATION	15+613.406	15+617.368	15+621.331	15+625.293
	T/S ELEV.	191.800	191.750	191.697	191.643
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.802	191.755	191.701	191.643
LINE I B6	STATION	15+613.257	15+617.219	15+621.182	15+625.144
	T/S ELEV.	191.764	191.713	191.661	191.606
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.766	191.718	191.665	191.606
LINE J F/C	STATION	15+613.246	15+617.208	15+621.171	15+625.133
	T/S ELEV.	191.761	191.710	191.658	191.603
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.763	191.715	191.662	191.603

NOTE:
SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.



LEFT BRIDGE

TRANSVERSE SECTION

R.D. Zande & Associates, Inc.
1257 Dublin Road
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Phone: (614) 486-4383

DESIGNED OHK | DRAWN DJD | REVIEWED OHK | DATE 7/11/97
CHECKED BAG | REVISED | STRUCTURE FILE NO. 2200392, 2200422

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-08842 L & R (0837)
S.R. 2 OVER HOMEGARDNER RD. AND ABANDONED RAILROAD

ERI-2-2.866

15/19

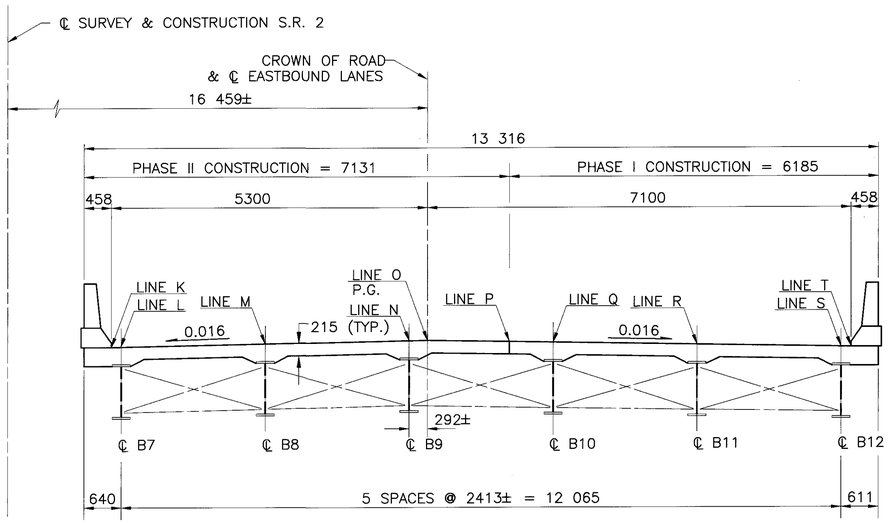
253/327

FINAL DECK SCREED ELEVATIONS "RIGHT BRIDGE"

SCREED LINE	LOCATION	C.L. BRG. R.A.	SPAN 1			C.L. BRG. PIER 1	SPAN 2			C.L. BRG. PIER 2	SPAN 3			C.L. BRG. PIER 3	SPAN 4			C.L. BRG. PIER 4
			0.250	0.500	0.75		0.250	0.500	0.75		0.250	0.500	0.75		0.250	0.500	0.75	
LINE K F/C	STATION	15+538.715	15+541.915	15+545.116	15+548.316	15+551.517	15+556.089	15+560.661	15+565.233	15+569.805	15+574.377	15+578.949	15+583.521	15+588.093	15+593.046	15+597.999	15+602.952	15+607.905
	T/S ELEV.	192.405	192.394	192.381	192.368	192.353	192.329	192.303	192.275	192.243	192.209	192.173	192.134	192.092	192.044	191.993	191.939	191.882
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.405	192.395	192.382	192.368	192.353	192.332	192.308	192.278	192.243	192.211	192.176	192.136	192.092	192.048	192.000	191.943	191.882
LINE L B7	STATION	15+538.704	15+541.904	15+545.105	15+548.305	15+551.506	15+556.078	15+560.650	15+565.222	15+569.794	15+574.366	15+578.938	15+583.510	15+588.082	15+593.035	15+597.988	15+602.941	15+607.894
	T/S ELEV.	192.408	192.397	192.384	192.371	192.356	192.332	192.306	192.278	192.246	192.212	192.176	192.137	192.095	192.047	191.996	191.942	191.885
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.408	192.398	192.385	192.371	192.356	192.335	192.311	192.281	192.246	192.214	192.179	192.139	192.095	192.051	192.003	191.946	191.885
LINE M B8	STATION	15+538.555	15+541.755	15+544.956	15+548.156	15+551.357	15+555.929	15+560.501	15+565.073	15+569.645	15+574.217	15+578.789	15+583.361	15+587.933	15+592.886	15+597.839	15+602.792	15+607.745
	T/S ELEV.	192.447	192.436	192.423	192.410	192.395	192.372	192.346	192.317	192.286	192.252	192.216	192.177	192.135	192.087	192.036	191.982	191.925
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.447	192.437	192.424	192.410	192.395	192.375	192.351	192.320	192.286	192.254	192.219	192.179	192.135	192.091	192.043	191.986	191.925
LINE N B9	STATION	15+538.406	15+541.606	15+544.807	15+548.007	15+551.208	15+555.780	15+560.352	15+564.924	15+569.496	15+574.068	15+578.640	15+583.212	15+587.784	15+592.737	15+597.690	15+602.643	15+607.596
	T/S ELEV.	192.486	192.475	192.463	192.449	192.434	192.411	192.385	192.357	192.326	192.292	192.256	192.217	192.175	192.127	192.077	192.023	191.966
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.486	192.476	192.464	192.449	192.434	192.414	192.390	192.360	192.326	192.294	192.259	192.219	192.175	192.131	192.084	192.027	191.966
LINE O P.G.	STATION	15+538.388	15+541.588	15+544.789	15+547.989	15+551.190	15+555.762	15+560.334	15+564.906	15+569.478	15+574.050	15+578.622	15+583.194	15+587.766	15+592.719	15+597.672	15+602.625	15+607.578
	T/S ELEV.	192.491	192.480	192.467	192.454	192.439	192.416	192.390	192.361	192.330	192.297	192.260	192.222	192.180	192.132	192.081	192.028	191.971
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.491	192.481	192.468	192.454	192.439	192.419	192.395	192.364	192.330	192.299	192.263	192.224	192.180	192.136	192.088	192.032	191.971
LINE P PH. CONSTR.	STATION	15+538.303	15+541.503	15+544.704	15+547.904	15+551.105	15+555.677	15+560.249	15+564.821	15+569.393	15+573.965	15+578.537	15+583.109	15+587.681	15+592.634	15+597.587	15+602.540	15+607.493
	T/S ELEV.	192.469	192.458	192.446	192.432	192.418	192.394	192.368	192.340	192.309	192.275	192.239	192.200	192.159	192.111	192.060	192.007	191.950
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.469	192.459	192.447	192.432	192.418	192.397	192.373	192.343	192.309	192.277	192.242	192.202	192.159	192.115	192.067	192.011	191.950
LINE Q B10	STATION	15+538.257	15+541.457	15+544.658	15+547.858	15+551.059	15+555.631	15+560.203	15+564.775	15+569.347	15+573.919	15+578.491	15+583.063	15+587.635	15+592.588	15+597.541	15+602.494	15+607.447
	T/S ELEV.	192.457	192.446	192.434	192.421	192.406	192.383	192.357	192.328	192.297	192.264	192.228	192.189	192.147	192.100	192.049	191.995	191.938
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.457	192.447	192.435	192.421	192.406	192.386	192.362	192.331	192.297	192.266	192.231	192.191	192.147	192.104	192.056	191.999	191.938
LINE R B11	STATION	15+538.108	15+541.308	15+544.509	15+547.709	15+550.910	15+555.482	15+560.054	15+564.626	15+569.198	15+573.770	15+578.342	15+582.914	15+587.486	15+592.439	15+597.392	15+602.345	15+607.298
	T/S ELEV.	192.419	192.408	192.396	192.383	192.368	192.345	192.319	192.291	192.260	192.226	192.190	192.152	192.110	192.063	192.012	191.958	191.901
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.419	192.409	192.397	192.383	192.368	192.348	192.324	192.294	192.260	192.228	192.193	192.154	192.110	192.067	192.019	191.962	191.901
LINE S B12	STATION	15+537.959	15+541.159	15+544.360	15+547.560	15+550.761	15+555.333	15+559.905	15+564.477	15+569.049	15+573.621	15+578.193	15+582.765	15+587.337	15+592.290	15+597.243	15+602.196	15+607.149
	T/S ELEV.	192.381	192.370	192.358	192.345	192.330	192.307	192.281	192.253	192.222	192.189	192.153	192.114	192.073	192.025	191.975	191.921	191.864
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.381	192.371	192.359	192.345	192.330	192.310	192.286	192.256	192.222	192.191	192.156	192.116	192.073	192.029	191.982	191.925	191.864
LINE T F/C	STATION	15+537.949	15+541.150	15+544.350	15+547.551	15+550.751	15+555.323	15+559.895	15+564.467	15+569.039	15+573.611	15+578.183	15+582.755	15+587.327	15+592.280	15+597.233	15+602.186	15+607.139
	T/S ELEV.	192.378	192.368	192.356	192.342	192.328	192.305	192.279	192.251	192.220	192.186	192.150	192.112	192.071	192.023	191.972	191.919	191.862
	DEFLECTION	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.003	0.000	0.002	0.003	0.002	0.000	0.004	0.007	0.004	0.000
	SCREED ELEV.	192.378	192.369	192.357	192.342	192.328	192.308	192.284	192.254	192.220	192.188	192.153	192.114	192.071	192.027	191.979	191.923	191.862

SCREED LINE	LOCATION	SPAN 5			C.L. BRG. F.A.
		0.250	0.500	0.75	
LINE K F/C	STATION	15+611.867	15+615.830	15+619.792	15+623.755
	T/S ELEV.	191.834	191.784	191.732	191.678
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.836	191.789	191.736	191.678
LINE L B7	STATION	15+611.856	15+615.819	15+619.781	15+623.744
	T/S ELEV.	191.837	191.787	191.735	191.682
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.839	191.792	191.739	191.682
LINE M B8	STATION	15+611.707	15+615.670	15+619.632	15+623.595
	T/S ELEV.	191.877	191.828	191.776	191.722
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.879	191.833	191.780	191.722
LINE N B9	STATION	15+611.558	15+615.521	15+619.483	15+623.446
	T/S ELEV.	191.918	191.868	191.817	191.763
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.920	191.873	191.821	191.763
LINE O P.G.	STATION	15+611.540	15+615.503	15+619.465	15+623.428
	T/S ELEV.	191.923	191.873	191.821	191.768
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.925	191.878	191.825	191.768
LINE P PH. CONSTR.	STATION	15+611.455	15+615.418	15+619.380	15+623.343
	T/S ELEV.	191.902	191.852	191.801	191.747
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.904	191.857	191.805	191.747
LINE Q B10	STATION	15+611.409	15+615.372	15+619.334	15+623.297
	T/S ELEV.	191.890	191.841	191.789	191.736
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.892	191.846	191.793	191.736
LINE R B11	STATION	15+611.260	15+615.223	15+619.185	15+623.148
	T/S ELEV.	191.854	191.804	191.753	191.699
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.856	191.809	191.757	191.699
LINE S B12	STATION	15+611.111	15+615.074	15+619.036	15+622.999
	T/S ELEV.	191.817	191.767	191.716	191.663
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.819	191.772	191.720	191.663
LINE T F/C	STATION	15+611.102	15+615.064	15+619.027	15+622.989
	T/S ELEV.	191.815	191.765	191.714	191.660
	DEFLECTION	0.002	0.005	0.004	0.000
	SCREED ELEV.	191.817	191.770	191.718	191.660

NOTE:
SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPAATED CALCULATED DEAD LOAD DEFLECTIONS.



RIGHT BRIDGE

TRANSVERSE SECTION

R.D. Zanda & Associates, Inc.
1207 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

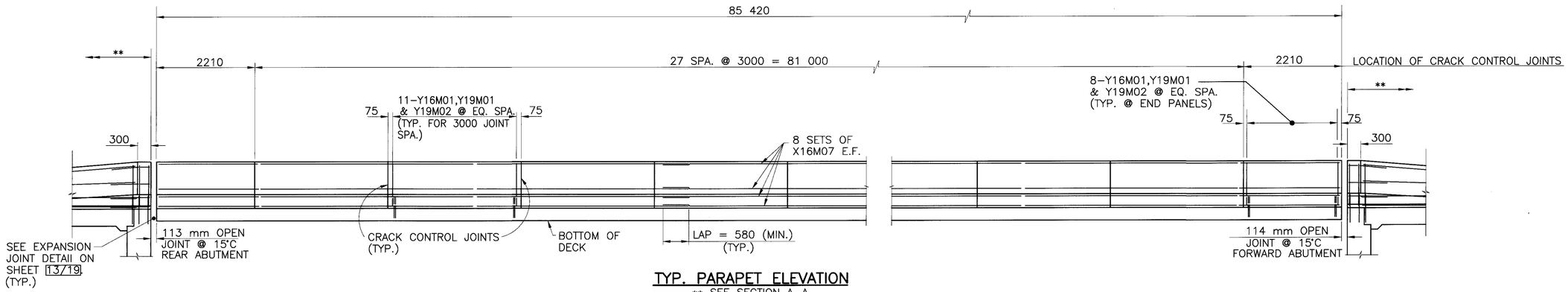
DESIGNED OHK | DRAWN DJD | REVIEWED OHK | DATE 7/11/97
CHECKED BAG | REVISED | STRUCTURE FILE NO 2200392, 2200422

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-08842 L & R (0837)
S.R. 2 OVER HOMEGARDNER RD. AND ABANDONED RAILROAD

ERI-2-2.866

16/19

254/327



TYP. PARAPET ELEVATION

** SEE SECTION A-A

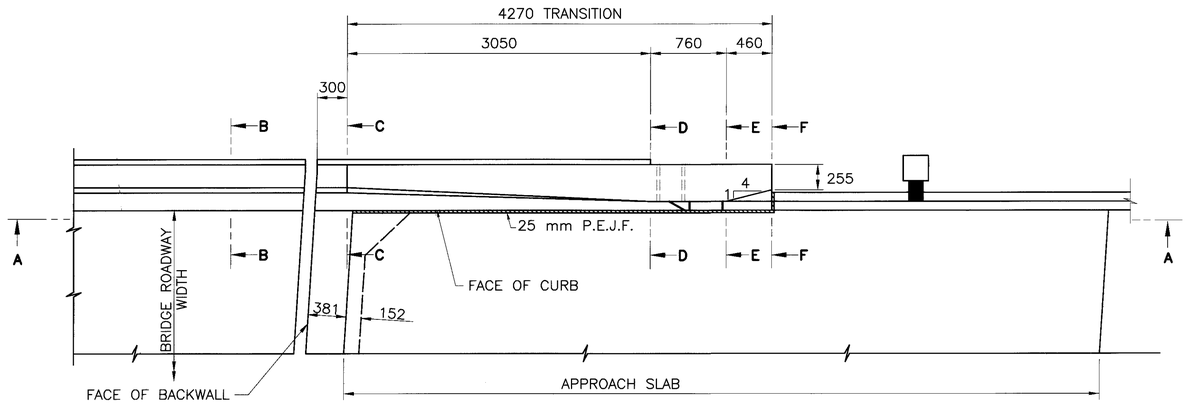
FOR ADDITIONAL PARAPET REINF. OVER PIERS SEE SHEET 14/19.

NOTES

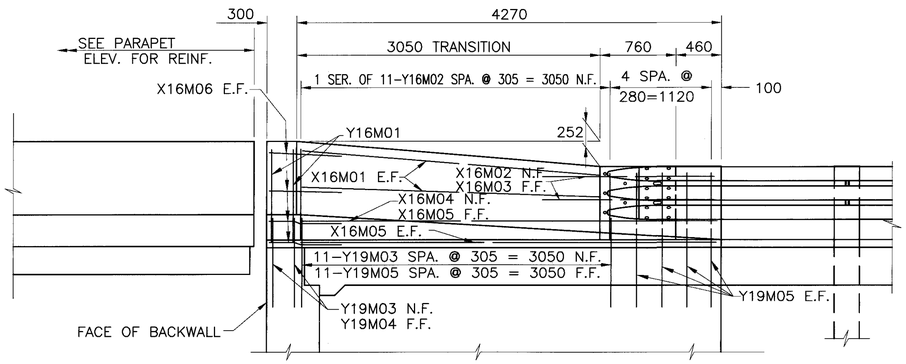
QUANTITIES OF CONCRETE, REINFORCING STEEL, CRACK CONTROL JOINT SAWCUT AND CAULKING MATERIAL FOR PARAPET ARE INCLUDED WITH APPROPRIATE ITEM UNDER EITHER ABUTMENTS OR SUPERSTRUCTURE FOR PAYMENTS.

FOR BRIDGE TERMINAL ASSEMBLY, SEE STANDARD CONSTRUCTION DRAWING GR-3.1M.

FOR LIMITS OF SEALING OF CONCRETE SURFACES, SEE SHEET 10/19.

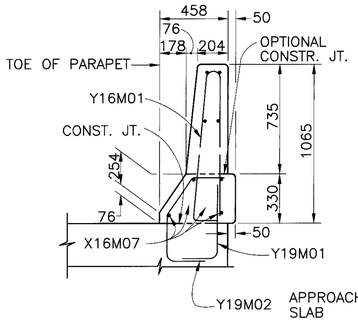


PART PLAN AT ABUTMENT

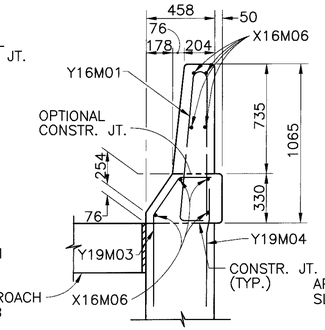


SECTION A-A

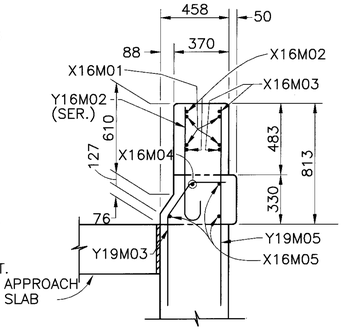
NOTE: BARS X16M02 & X16M04 SHALL BE FIELD BENT TO FIT.



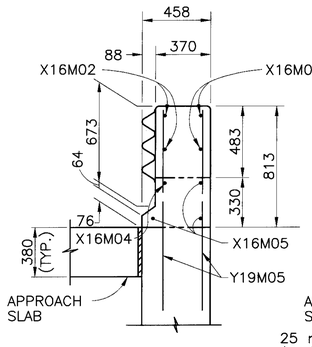
SECTION B-B



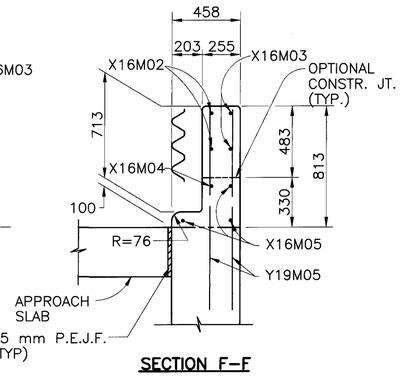
SECTION C-C



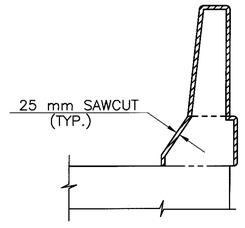
SECTION D-D



SECTION E-E



SECTION F-F



DETAIL A
(SECTION THROUGH SAWCUT)

R.D. Zande & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED	DRAWN	REVIEWED	DATE
BAG	TLJ	OHK	7/11/97
CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200392, 2200422	

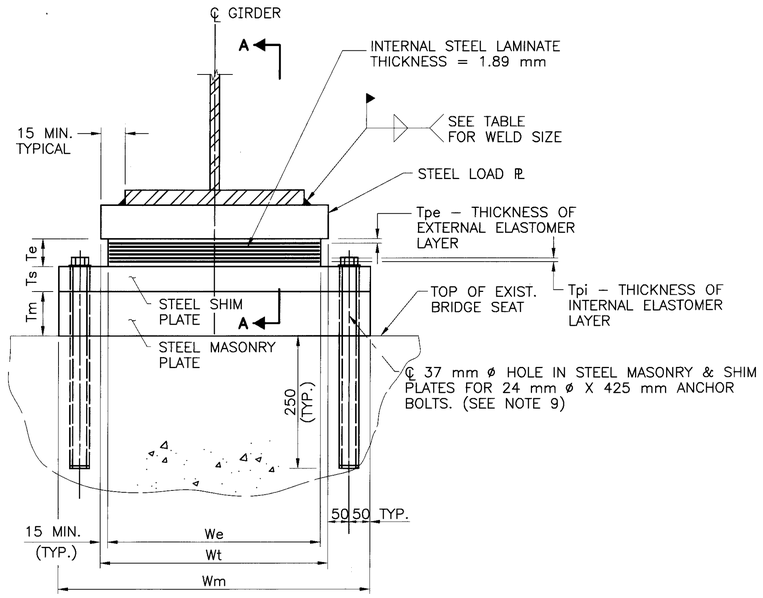
PARAPET DETAILS

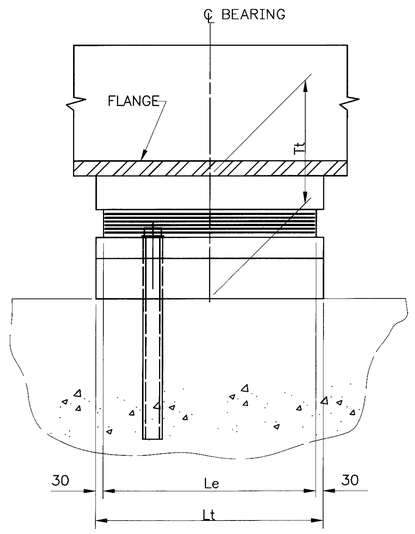
BRIDGE NO. ERI-2-0866 L & R (05537)
S.R. 2 OVER HOMEGARDNER ROAD AND ABANDONED RAILROAD

ERI-2-2.866

17/19

255/327





SECTION A–A

LAMINATED ELASTOMERIC BEARING @ ABUTMENTS (LEFT & RIGHT BRIDGE)

NOTES

1 ELASTOMERIC BEARINGS: ELASTOMERIC BEARINGS SHALL COMPLY WITH ITEM 516 AND ARTICLES 18.2.5 THROUGH 18.2.8 OF SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. BEARINGS SHALL BE GRADE 3, 50 DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS CORRESPONDING TO DESIGN METHOD A. TESTING SHALL BE INCLUDED IN THE PRICE BID FOR THE BEARINGS, AS PER PLAN, EACH.

2 WELDING SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 150° C AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

3 BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 27° C OR LOWER THAN 4° C AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 15° C (±) 5° C, THE GIRDERS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 15° C (±) 5° C.

4 THE STEEL LOAD PLATE SHALL BE THE SAME MATERIAL AS THE ATTACHED STRUCTURAL STEEL CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR THE BEARINGS. FIELD COSTS SHALL BE INCLUDED IN THE PRICE BID FOR *PAINTING MAIN STRUCTURAL STEEL*.

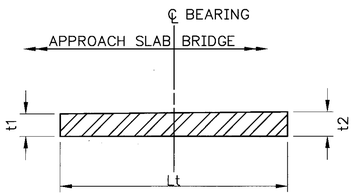
5 THE STEEL LOAD PLATE AND STEEL SHIM PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.

6 TOTAL DESIGN LOAD FOR BEARINGS EQUALS THE SUM OF THE DEAD LOADS AND LIVE LOADS TABULATED IN THE BEARING SCHEDULE.

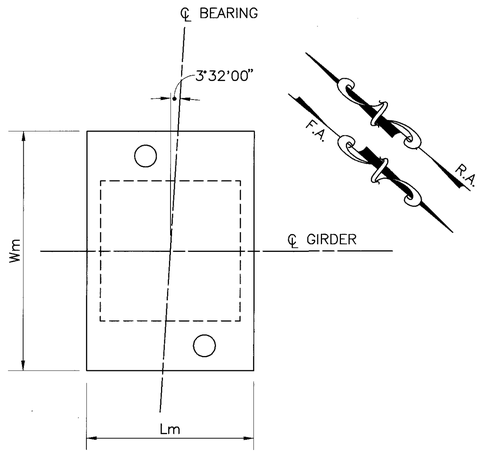
7 BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS EITHER FIXED OR EXPANSION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516, EACH.

8 THE STEEL MASONRY PLATE AND SHIM PLATE SHALL BE ASTM A36M GRADE 36 STEEL AND SHALL BE PAINTED. FIELD COST FOR PAINTING SHALL BE INCLUDED WITH ITEM 815 FIELD PAINTING OF *EXIST.* STEEL, SYSTEM 0ZEU.

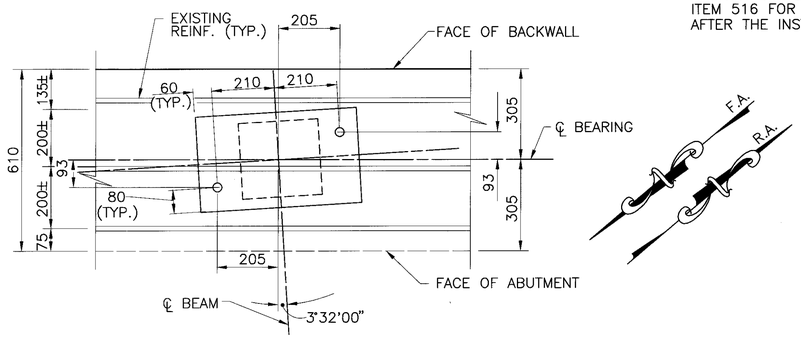
9 EXPANSION SHIELD ANCHORS CONFORMING TO CMS 712.01 SHALL BE USED. HOLES & GROUTING SHALL COMPLY WITH CMS 510. EITHER CEMENT OR NON–SHRINK, NONMETALLIC GROUT MAY BE USED. INCLUDE DOWEL HOLES, ANCHOR BOLTS, STEEL MASONRY PLATE AND STEEL SHIM PLATE WITH ITEM 516 FOR PAYMENT. EXPANSION SHIELD ANCHORS SHALL BE INSTALLED AFTER THE INSTALLATION OF THE BEARING ASSEMBLY.



DETAIL "A"
STEEL LOAD PLATE



BEARING ORIENTATION PLAN



TYP. ANCHOR ROD LAYOUT

NOTE: EXTREME CARE SHALL BE TAKEN IN DRILLING THE DOWEL HOLES. THE LOCATIONS SHOWN ABOVE ARE BASED ON AVOIDING INTERFERENCE WITH THE EXISTING REBAR AS PER THE EXISTING DRAWINGS.

LAMINATED ELASTOMERIC BEARING SCHEDULE @ ABUTMENTS

BEARING LOCATION	BEARING TYPE	NO. REQ'D.	DEAD LOAD kN	LIVE LOAD kN	TOTAL LOAD (DL+LL) kN	Le (mm)	We (mm)	Tpi (mm)	NO. OF Tpi'S	Tpe (2 EA.) (mm)	NUMBER OF INTERNAL LAMINATES (1.89 mm)	Te (mm)	STEEL LOAD PLATE				STEEL MASONRY/SHIM PLATES				Tt (mm)	FILLET WELD SIZE (mm)	REMARK
													Wt (mm)	Lt (mm)	t1 (mm)	t2 (mm)	Wm (mm)	Lm (mm)	Ts (mm)	Tm (mm)			
REAR ABUTMENT	EXPANSION	12	107	209	316	260	280	8	7	6	8	83	340	320	50	50	540	320	40	75	248	8	SEE NOTE 9
FORWARD ABUTMENT	EXPANSION	12	140	222	362	260	280	8	7	6	8	83	340	320	48	52	540	320	40	75	248	8	SEE NOTE 9

R.D. Zande & Associates, Inc.
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DESIGNED	DRAWN	REVIEWED	DATE
BAG	JLH	OHK	7/11/97
CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200392, 2200422	

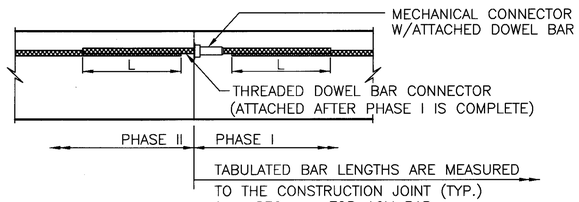
ELASTOMERIC BEARING DETAILS
BRIDGE NO. ERI-2-0842 L & R (0537)
SR. 2 OVER HOMEGARDNER ROAD & ABANDONED RAILROAD

ERI-2-2.866

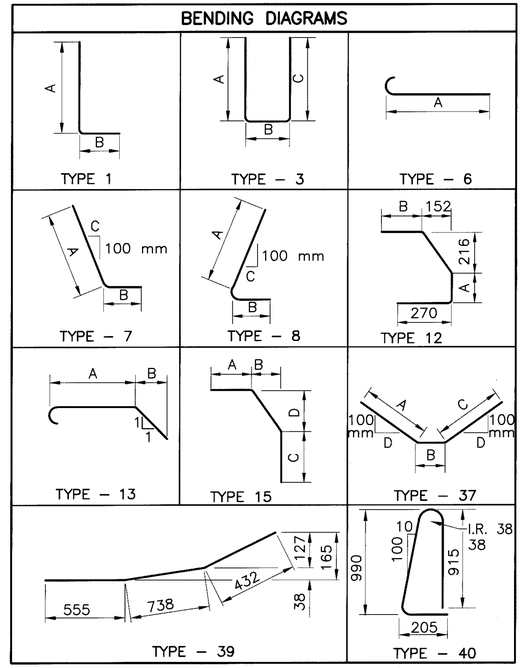
REINFORCING STEEL LIST

	BAR MARK	REAR	FWRD	TOTAL	LENGTH mm	WEIGHT (Kg)	TYPE	A mm	B mm	C mm	D mm	INC. mm
	ABUTMENTS											
*	A16M01	10	10	20	6175	191.672	STR.					
	A16M02	10	10	20	6975	216.504	STR.					
	A16M03	6	6	12	1740	32.406	8	890	890	6		
	A16M04	3	3	6	2635	24.537	37	890	875	890	94	
	A16M05	6	6	12	1740	32.406	7	890	890	6		
	A16M06	3	3	6	2710	25.236	37	890	950	890	106	
	A16M07	10	10	20	4475	138.904	STR.					
	A16M08	10	10	20	3975	123.384	STR.					
	A19M01	41	41	82	1930	353.711	3	875	280	875		
	A19M02	41	41	82	2183	400.078	3	925	433	925		
	A19M03	48	48	96	1225	262.836	STR.					
	D25M01	29	29	58	1526	351.719	13	830	305			
					TOTAL=	2,153						
	SUPERSTRUCTURE											
	S16M01			1030	6725	10750.316	STR.					
	S16M02			1028	7075	11287.851	STR.					
	S16M03			824	11175	14291.126	STR.					
	S16M04			204	8000	2532.864	STR.					
				2	1400							
	S16M05			Ser. Of	TO	37.946	STR.					2675
				3	6750							
				2	2875							
	S16M06			Ser. Of	TO	26.151	STR.					2675
				2	5550							
				2	3025							
	S16M07			Ser. Of	TO	27.082	STR.					2675
				2	5700							
				2	1200							
	S16M08			Ser. Of	TO	15.753	STR.					2675
				2	3875							
					TOTAL=	38,969						
	RAILING											
	X16M01			16	3050	75.738	STR.					
	X16M02			8	1725	21.418	39					
	X16M03			8	1725	21.418	STR.					
	X16M04			4	4220	26.198	STR.					
	X16M05			12	4220	78.593	STR.					
	X16M06			32	850	42.214	STR.					
	X16M07			128	11175	2219.981	STR.					
	X16M08			8	8000	99.328	STR.					
	Y16M01			634	2130	2095.852	40					
				4	920			740				
	Y16M02			Ser. Of	TO	71.361	6	TO				25
				11	1170			990				
	Y19M01			626	755	1056.328	1	525	280			
	Y19M02			626	724	1012.956	12	300	230			
	Y19M03			52	1225	142.370	15	230	152	800	216	
	Y19M04			8	875	15.645	STR.					
	Y19M05			76	1475	250.544	STR.					
					TOTAL=	7,230						
	GRAND TOTAL FOR LEFT BRIDGE =				**48,352**							

REINFORCEMENT GIVEN IS FOR LEFT BRIDGE. REINFORCEMENT FOR RIGHT BRIDGE IS SAME AS LEFT BRIDGE.



BENDING DIAGRAMS



NOTES

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST TWO DIGITS INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A16M01 IS A "16M" BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. I.R. INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.

2. ALL REINFORCING BARS SHALL BE EPOXY COATED. PAYMENT FOR THESE BARS SHALL BE INCLUDED WITH APPROPRIATE CONCRETE ITEMS.

3. "STR." IN THE TYPE COLUMN INDICATES STRAIGHT BARS.

4. REFER TO C.M.S. SECTION 509.05 FOR STANDARD BEND DIMENSIONS.

5. MECHANICAL CONNECTORS: AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE AS GIVEN BY THE DIMENSION "L" BELOW. CONNECTORS AND DOWEL BARS SHALL BE EPOXY COATED. COATINGS FOR BOTH CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH 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 WHICH MEETS THE SPECIFICATIONS. CONNECTORS AND DOWEL BAR EXTENSION SHALL CONFORM WITH ITEM 509.

* INDICATES BARS REQUIRING MECHANICAL CONNECTORS. THE LENGTHS SHOWN IN THE TABLE ARE THE NOMINAL LENGTHS MEASURED TO THE CONSTRUCTION JOINT. ADJUSTMENT IN THE LENGTHS OF THE BARS DUE TO MECHANICAL SPLICING SHALL BE MADE PRIOR TO THE FABRICATION.

R.D. Zanda & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

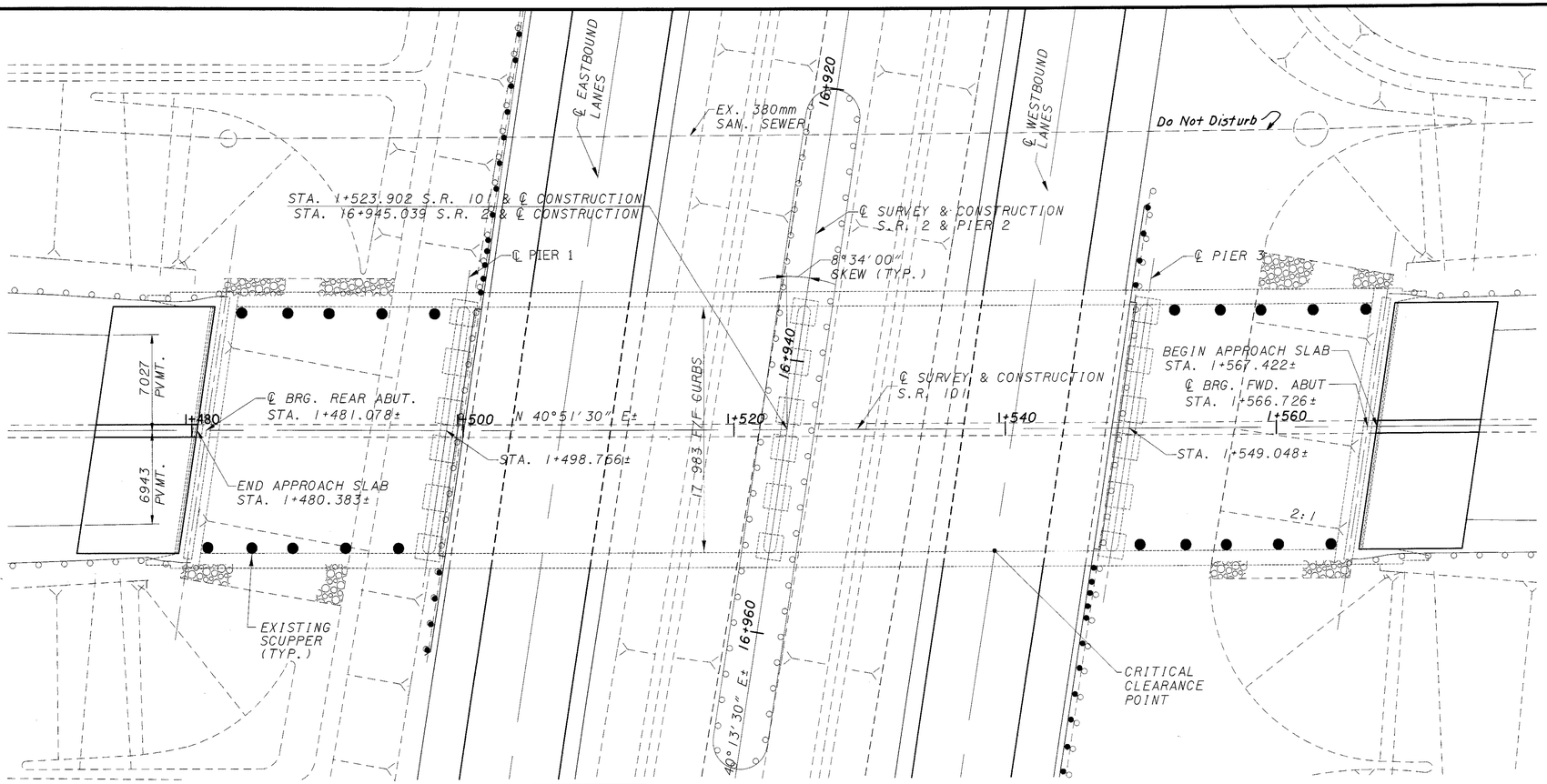
DESIGNED	DRAWN	REVIEWED	DATE
BAG	DJD	OHK	7/11/97
CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200392, 2200422	

REINFORCING STEEL LIST
BRIDGE NO. ERI-2-08.42 L & R (0537)
S.R. 2 OVER HOMEGARDNER ROAD AND ABANDONED RAILROAD

ERI-2-2.866

19/19

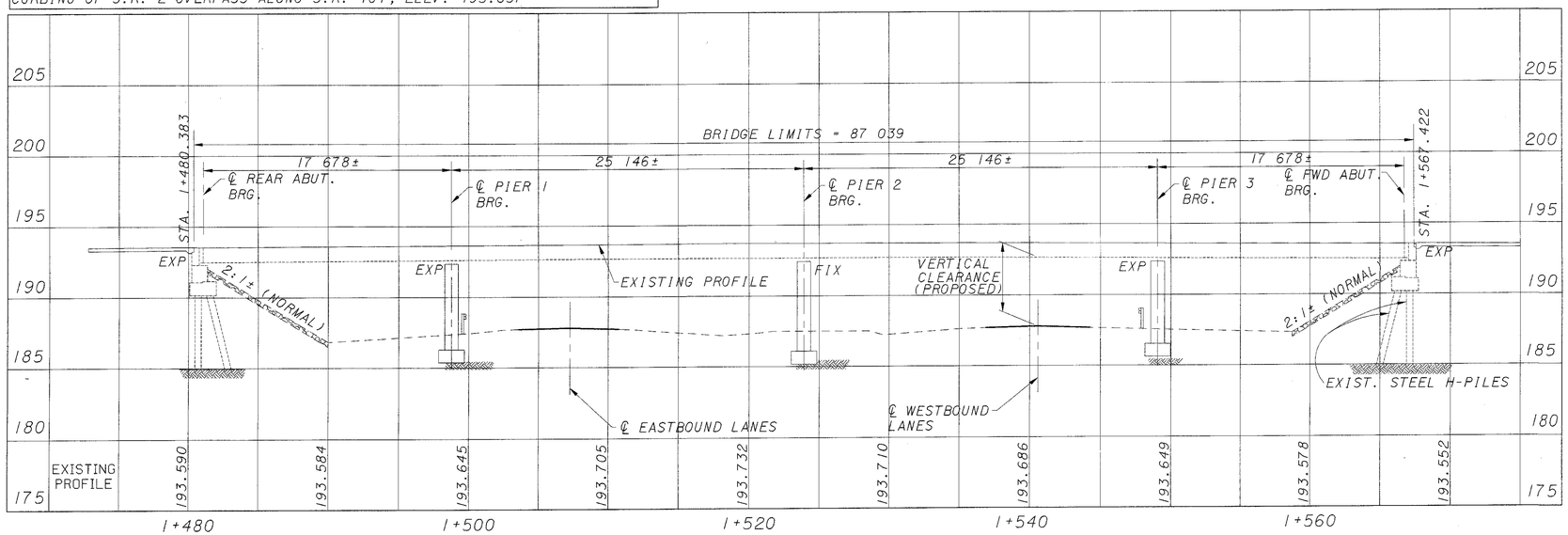
257/327



PLAN

BENCH MARK:
R.R. SPIKE IN CONC. MON. ℄ S. R. 2 AT STA. 16+855.400±, ELEV.=186.289

BENCH MARK:
B.M. #726 ERIE CO. ENG., BRASS PLUG IN THE N. END OF W. CONC. CURBING OF S.R. 2 OVERPASS ALONG S.R. 101, ELEV.=193.637



PROFILE ALONG ℄ SURVEY & CONSTRUCTION S.R. 101

NOTES

ALL DIMENSIONS ARE IN MILLIMETERS, AND ALL STATIONS & ELEVATIONS ARE IN METERS UNLESS NOTED OTHERWISE.

RIGHT-OF-WAY LIMITS ARE LOCATED OUTSIDE WORK LIMITS SHOWN IN PLAN VIEW.

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO ROADWAY PLAN CROSS-SECTIONS.

EXISTING BRIDGE DATA

TYPE: 4 SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK ON REINFORCED CONCRETE SUBSTRUCTURES.

SPANS: 17 678 mm±, 25 146 mm±, 25 146 mm±, 17 678 mm±

ROADWAY: 17 983 mm± F/F OF 686 mm± CURBS WITH 914± mm CONCRETE MEDIAN

LOADING: CF 400(57)

WEARING SURFACE: 25 mm MONOLITHIC CONCRETE

ALIGNMENT: TANGENT

SKEW: 8°-34'-00"± L.F.

APPROACH SLABS: AS-1-54 (7620 mm± LONG)

CROWN: 0.016±

DATE BUILT: 1961

STRUCTURE FILE NUMBER: 2202824

PROPOSED STRUCTURE MODIFICATION

PROPOSED WORK:

1. PROVIDE TEMPORARY JACKING SYSTEM TO RAISE THE SUPERSTRUCTURE TO REPLACE EXISTING ABUTMENT BEARING MASONRY PLATES
2. REPLACE EXISTING APPROACH SLABS AND BACKWALLS
3. PROVIDE POROUS BACKFILL WITH FILTER FABRIC
4. PATCH ABUTMENTS
5. INSTALL PROPOSED STRIP SEAL EXPANSION JOINTS
6. PLACE A 45 mm MICRO-SILICA MODIFIED CONCRETE OVERLAY
7. SEAL CONCRETE PIER COLUMNS
8. PAINT EXISTING AND PROPOSED STRUCTURAL STEEL

(IT IS NOT INTENDED THAT THE ABOVE WORK OCCUR IN SEQUENTIAL ORDER AS LISTED ABOVE)

TYPE: 4 SPAN CONTINUOUS STEEL BEAM WITH NEW CONCRETE OVERLAY ON EXISTING REINFORCED CONCRETE DECK ON REINFORCED CONCRETE SUBSTRUCTURES.

SPANS: 17 678 mm±, 25 146 mm±, 25 146 mm±, 17 678 mm±

ROADWAY: 17 983 mm± F/F OF 686 mm± CURBS WITH 914± mm CONCRETE MEDIAN

WEARING SURFACE: 45 mm MICRO-SILICA MODIFIED CONCRETE OVERLAY

ALIGNMENT: TANGENT

SKEW: 8°-34'-0"± L.F.

APPROACH SLABS: AS-1-81M (7600 mm LONG)

CROWN: 0.016

LONGITUDE: 82°45'33" W LATITUDE: 41°25'06" N

CURRENT AVERAGE DAILY TRAFFIC: 11 540 (1998)

DESIGN AVERAGE DAILY TRAFFIC: 18 460 (2018)

CURRENT AVERAGE DAILY TRUCK TRAFFIC: 1150 (1998)

DESIGN AVERAGE DAILY TRUCK TRAFFIC: 1850 (2018)

metric units

DESIGN AGENCY: DISTRICT THREE

DATE: 8/98

REVIEWED: D.C.M.

STRUCTURE FILE NUMBER: 2202824

DRAWN: D.P.A.

REVISED:

DESIGNED: E.A.Y.

CHECKED: M.R.C.

ERIE COUNTY
STA. 1+480.383
STA. 1+567.422

SITE PLAN
BRIDGE NO. ERI-2-10042 (0624)
S.R. 2 UNDER S.R. 101

ERI-2-2.866

1 / 11

258 / 327

DESIGN FILE: i:\users\dormstro\dgn\e22866\sr101\3907gsp.dgn
WORKSTATION: dormstro DATE: 18 AUG 98

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S):

RM-4.2M	DATED	10-21-97
AS-1-81M	DATED	10-25-94
EXJ-4-87M	DATED	2-18-97
PCB-91M	DATED	3-20-95
RB-1-55M	DATED	10-25-94

AND TO SUPPLEMENTAL SPECIFICATION(S):

815	DATED	5-30-96
846	DATED	9-09-97
863	DATED	9-09-97
904	DATED	5-05-98
910	DATED	4-21-97
954	DATED	9-09-97

METRIC UNITS:

ALL DIMENSIONS SHOWN IN THIS PLAN ARE IN MILLIMETERS AND ALL ELEVATIONS AND STATIONS ARE IN METERS UNLESS NOTED OTHERWISE

DESIGN SPECIFICATIONS:

THE MODIFIED PORTION OF THIS STRUCTURE REHABILITATION CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

CONCRETE CLASS S - COMPRESSIVE STRENGTH 31.0 MPA

CONCRETE CLASS C - COMPRESSIVE STRENGTH 27.5 MPA

REINFORCING STEEL - ASTM A615M, A616M, OR A617M
GRADE 420 MINIMUM YIELD STRENGTH 420 MPA.

STRUCTURAL STEEL
A36M - YIELD STRENGTH 250 MPA (UNLESS NOTED OTHERWISE)

DECK PROTECTION METHOD:

45 MM MICRO-SILICA MODIFIED CONCRETE OVERLAY

UTILITY LINES:

ALL EXPENSE INVOLVED IN RELOCATION (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY(IES). THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTION 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING STRUCTURE PLANS:

THE ORIGINAL DESIGN PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 3 OFFICE, 906 NORTH CLARK ST. ASHLAND, OHIO 44805 (419) 281-0513.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

THIS ITEM OF WORK SHALL BE USED TO REMOVE PORTIONS OF THE SUBSTRUCTURE AND SUPERSTRUCTURE AS DESIGNATED IN THE PLAN. THE CONCRETE SHALL BE REMOVED BY HYDRAULIC SPLITTING METHOD. A LINE OF HOLES SHALL BE DRILLED ALONG THE REMOVAL LINE AND HYDRAULIC SPLITTER USED AS PER THE MANUFACTURER'S RECOMMENDATIONS. 16 AND 7 KILOGRAM JACK HAMMERS SHALL BE USED FOR ANY REQUIRED FINISH WORK. HOE RAMS AND/OR CONCRETE CRUSHERS WILL NOT BE PERMITTED TO DO ANY OF THE WORK. NO SAW CUTTING WILL BE ALLOWED IN AREAS WHERE EXISTING REINFORCING SHALL REMAIN. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL DESIGNATED FOR SALVAGE, IF DAMAGED DURING THE REMOVAL OPERATION DOWELED REINFORCING STEEL MUST BE ADDED AT THE CONTRACTOR'S EXPENSE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC METER FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 25 MM DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

REPLACEMENT OF EXISTING REINFORCING STEEL:

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. COST OF ALL REINFORCING STEEL SHALL BE INCLUDED WITH APPROPRIATE ITEM 511 CONCRETE ITEMS.

ITEM 511 CLASS C CONCRETE, AS PER PLAN:

CLASS C CONCRETE SHALL BE IN ACCORDANCE WITH 511, EXCEPT THAT THE AGGREGATE SHALL BE #8 LIMESTONE.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE THE EXISTING STRUCTURES FOR REPLACEMENT OF THE ABUTMENT MASONRY PLATES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTION JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 25 MM, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING ACTUAL JACKING OPERATIONS. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 6 MM.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 25 MM OR LESS.

IF, DURING THE JACKING OPERATIONS, CRACKING OF CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, THE JACKING OPERATION SHALL IMMEDIATELY CEASE AND APPROVED SUPPORTS SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. ANY BEAMS THAT SEPARATE FROM THE DECK SHALL BE EPOXY INJECTED FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH THE PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS SHALL BE BORNE BY THE CONTRACTOR.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

DESIGN AGENCY: DISTRICT THREE

DESIGNED	DRAWN	REVIEWED	DATE
EJG	EJG	DLM	2/98
CHECKED	REVISED	STRUCTURE FILE NUMBER	
NRC		2202824	

GENERAL NOTES
BRIDGE NO. ERI-2-10042 (06624)
S.R. 2 UNDER S.R. 101

ERI-2-2.866

2/11

259/327

DESIGN FILE: c:\myfiles\dgn\er12\390?bgnl.dgn
WORKSTATION: eglover DATE: 10 SEP 98

GENERAL NOTES CONT.

ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN:

THIS ITEM SHALL BE USED AS PER DETAILS IN THE PLAN. THIS ITEM SHALL INCLUDE THE STEEL RETAINERS, THE ELASTOMERIC STRIP SEALS AND ALL OTHER ITEMS SHOWN IN THE DETAILS. SEE STANDARD DRAWING EXJ-4-87M, SHEET 5, FOR STRIP SEAL DETAILS.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER METER FOR ITEM 516- STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 516 - REFURBISH BEARING DEVICE:

THIS ITEM SHALL BE USED TO REFURBISH THE EXISTING ABUTMENT ROCKER BEARINGS.

THE BOTTOM STEEL PLATE, SHEET LEAD OR PREFORMED BEARING PAD, AND SHIMS SHALL BE REMOVED AND REPLACED WITH NEW ITEMS.

SEE STANDARD DRAWING RB-1-55M FOR DETAILS.
THE EXISTING ROCKER BEARINGS APPEAR TO BE R-450 (CONTRACTOR SHALL VERIFY)

NEW STEEL SHIMS HAVING THE SAME WIDTH AND LENGTH OF THE BOTTOM PLATE SHALL BE USED TO OBTAIN THE PROPER ELEVATION.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 516- REFURBISH BEARING DEVICE WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 518 - POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN:

POROUS BACKFILL SHALL BE NO. 57 GRAVEL.

ITEM 815 - FIELD PAINTING OF EXISTING STEEL:

ALL EXISTING AND NEW STEEL SHALL BE CLEANED AND PAINTED WITH A PRIME, INTERMEDIATE, AND FINISH COAT OF PAINT IN THE FIELD USING SYSTEM OZEU. THE COST OF THIS WORK SHALL BE INCLUDED WITH SEVERAL FIELD PAINTING OF EXISTING STEEL SYSTEM OZEU ITEMS FOR PAYMENT. THE COLOR OF THE FINISH COAT SHALL BE A RED COLOR MEETING FEDERAL STANDARD NUMBER 11136. IN ADDITION TO THE SURFACE AREA OF THE STEEL STRINGERS TO BE PAINTED, AN ADDITIONAL TWENTY FIVE PERCENT OF THIS AMOUNT HAS BEEN ADDED TO THE SQUARE METER TOTALS TO ACCOUNT FOR INCIDENTALS SUCH AS CROSSFRAMES AND BEARINGS. SEE SUPPLEMENTAL SPECIFICATION 815.

ITEM 815 - GRINDING FLANGE EDGES:

GRINDING BOTTOM FLANGES OF EXISTING BEAMS OVER SPANS 2 & 3.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

THE CONCRETE SHALL BE SEALED USING AN EPOXY-URETHANE SYSTEM AT THE LOCATIONS INDICATED IN THE PLAN. THE URETHANE SHALL BE A "BUFF" COLOR MEETING FEDERAL STANDARD NUMBER 37722. SEE PROPOSAL NOTE FOR ADDITIONAL INFORMATION.

ITEM SPECIAL - BRIDGE DECK GROOVING:

THIS ITEM SHALL BE PERFORMED INSTEAD OF TEXTURING THE DECK.
SEE THE PROPOSAL NOTE "BRIDGE DECK GROOVING" FOR ADDITIONAL NOTES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE PER SQUARE METER, ITEM SPECIAL- BRIDGE DECK GROOVING.

ITEM SPECIAL - MICRO-SILICA MODIFIED CONCRETE OVERLAY (45 MM THICK):

ITEM SPECIAL - MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS):

THESE ITEMS SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

THE COARSE AGGREGATE SHALL BE LIMESTONE.

SEE THE PROPOSAL NOTE (BRIDGE DECK REPAIR AND OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE) FOR DETAILS.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE METER OR CUBIC METER FOR THE ABOVE ITEMS WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

CONSTRUCTION SEQUENCE AND MAINTENANCE OF TRAFFIC:

SEE SHEETS 4/11 AND 5/11 FOR CONSTRUCTION SEQUENCE AND PHASE CONSTRUCTION DETAILS. SEE ROADWAY PLANS FOR ADDITIONAL TRAFFIC NOTES AND DETAILS.

ABBREVIATIONS

ABUT. - ABUTMENT
AVG. - AVERAGE
BOT. - BOTTOM
BRG. - BEARING
℄ - CENTERLINE
CONSTR. - CONSTRUCTION
CONSTR. JT. - CONSTRUCTION JOINT
E.F. - EACH FACE
EXIST. - EXISTING
EXP. - EXPANSION
ELEV. - ELEVATION
F.A. - FORWARD ABUTMENT
F.F. - FAR FACE
FIX. - FIXED
FWD. - FORWARD
HMWM - HIGH MOLECULAR WEIGHT METHACRYLATE
MIN. - MINIMUM
N.F. - NEAR FACE
NO. - NUMBER
O.C. - ON CENTER
OZEU - ORGANIC ZINC EPOXY URETHANE
PL. - PLATE
P.E.J.F. - PREFORMED EXPANSION JOINT FILLER
R - RADIUS
R.A. - REAR ABUTMENT
SER. - SERIES
SPA. - SPACES
STA. - STATION
STD. - STANDARD
STR. - STRAIGHT
SUBSTR. - SUBSTRUCTURE
TYP. - TYPICAL
U.N.O. - UNLESS NOTED OTHERWISE

ESTIMATED QUANTITIES

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTS.	PIERS	SUPER STRUCTURE	GENERAL	SHEET NO. FOR AS PER PLAN ITEMS
202	11301	32	CU. METER	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	32				2/11
511	44101	32	CU. METER	CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN	32				2/11
SPECIAL	51267510	348	SQ. METER	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		348			
516	11211	39	METER	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN			39		3/11
516	45304	20	EACH	REFURBISH BEARING DEVICE	20				
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN			LUMP		2/11
518	21231	LUMP		POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	LUMP				3/11
519	11100	14	SQ. METER	PATCHING CONCRETE STRUCTURE	13	1			
SPECIAL	51922006	1486	SQ. METER	MICRO-SILICA MODIFIED CONCRETE OVERLAY (45 MM THICK)			1486		
SPECIAL	51922100	8	CU. METER	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)			8		
SPECIAL	51922300	LUMP		TEST SLAB					
815	00050	2974	SQ. METER	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU			2974		
815	00056	2974	SQ. METER	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU			2974		
815	00060	2974	SQ. METER	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU			2974		
815	00066	2974	SQ. METER	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU			2974		
815	00504	100	MAN HOUR	GRINDING FINS, TEARS, SLIVERS			100		
815	00508	503	METER	GRINDING FLANGE EDGES			503		
SPECIAL	85050070	1486	SQ. METER	BRIDGE DECK GROOVING			1486		

DESIGN AGENCY: DISTRICT THREE
REVIEWED: DCM DATE: 1/98
STRUCTURE FILE NUMBER: 2202824
DRAWN: EJG REVISED:
DESIGNED: EJG CHECKED: MRC

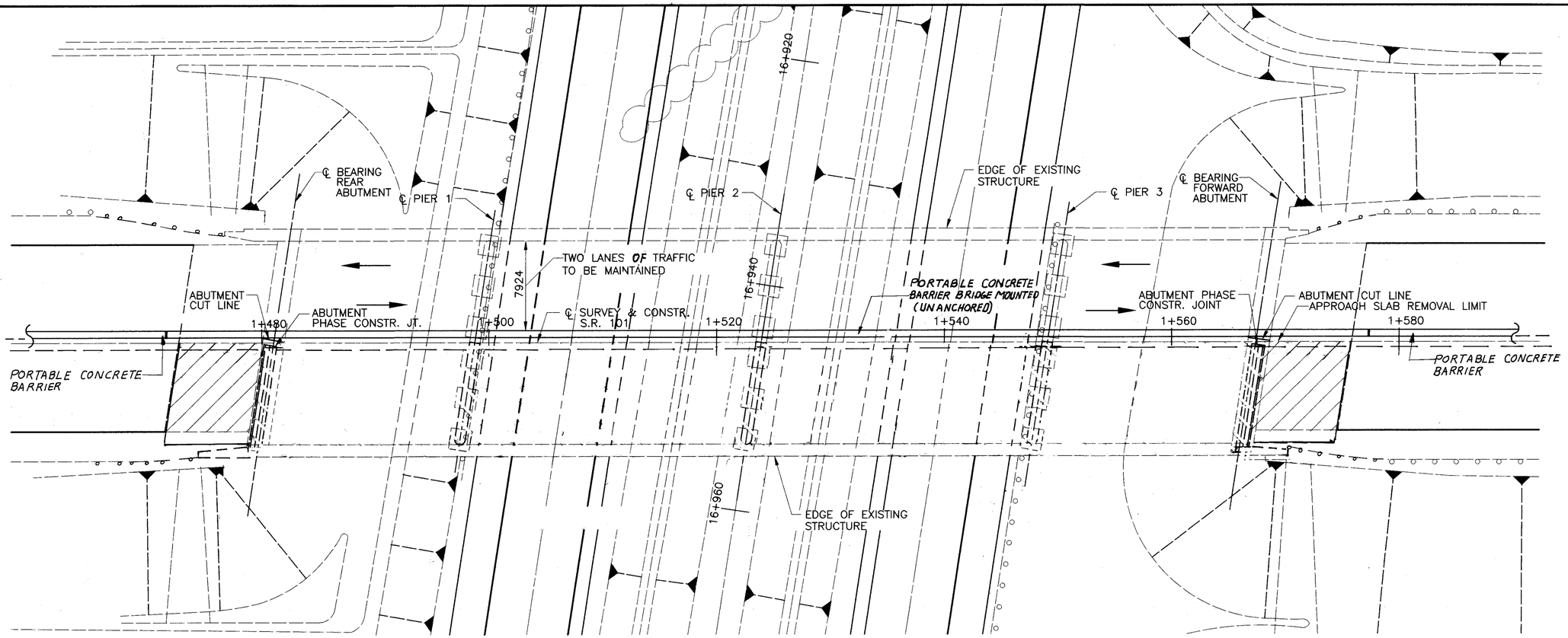
GENERAL NOTES
BRIDGE NO. ERI-2-10042 (0624)
S.R. 2 UNDER S.R. 101

ERI-2-2.866

3/11

260/327

DESIGN FILE: c:\myfiles\dgn\ver12\3907bgnl.dgn
WORKSTATION: eg/over DATE: 24 NOV 98



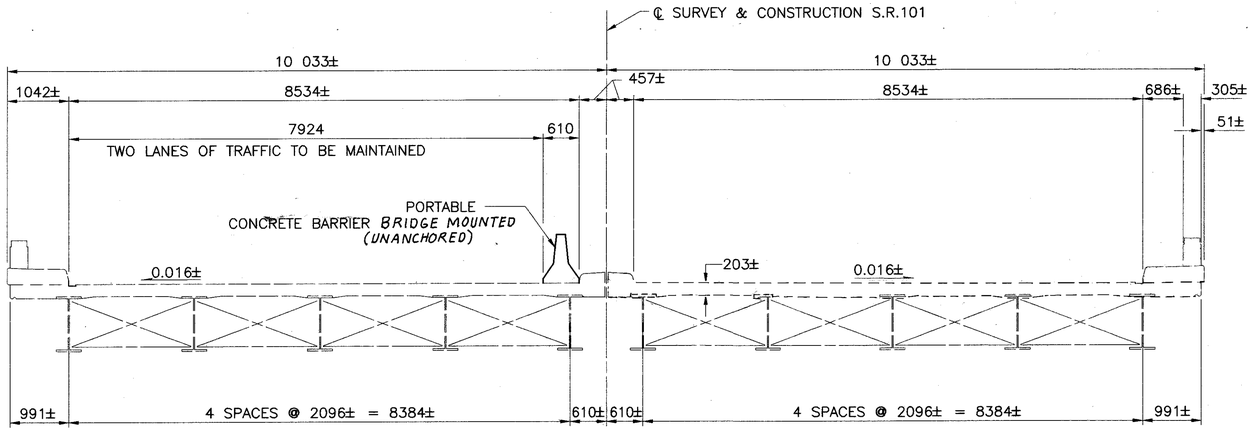
INDICATES LIMITS OF APPROACH SLAB REMOVAL IN PHASE I. INCLUDED WITH ROADWAY QUANTITIES FOR PAYMENT.

CONSTRUCTION SEQUENCE:

PHASE I

1. INSTALL PORTABLE CONCRETE BARRIERS AND REROUTE TRAFFIC ON TO THE EXISTING LEFT BRIDGE.
2. MAINTAIN TWO 3657 mm LANES ON THE EXISTING LEFT BRIDGE.
3. JACK RIGHT FIVE BEAMS SIMULTANEOUSLY AT ABUTMENTS, AS PER PLAN NOTES AND PROCEDURES, AND REPLACE EXISTING ABUTMENT BEARING MASONRY PLATES.
4. RECONSTRUCT PORTION OF APPROACH SLABS AND BACKWALLS.
5. INSTALL PORTION OF PROPOSED STRIP SEAL EXPANSION JOINTS.
6. PLACE PORTION OF 45mm MICRO-SILICA MODIFIED CONCRETE OVERLAY.
7. GROOVE AND SEAL PROPOSED CONCRETE OVERLAY.

PHASE I CONSTRUCTION PLAN



PHASE I TRANSVERSE SECTION

NOTES

1. PORTABLE CONCRETE BARRIER IS CARRIED IN THE ROADWAY FOR PAYMENT.
2. FOR MORE MAINTENANCE OF TRAFFIC DETAILS, SEE ROADWAY PLANS.
3. FOR MORE PORTABLE CONCRETE BARRIER DETAILS, SEE STANDARD DRAWINGS PCB-91M AND RM-4.2M.

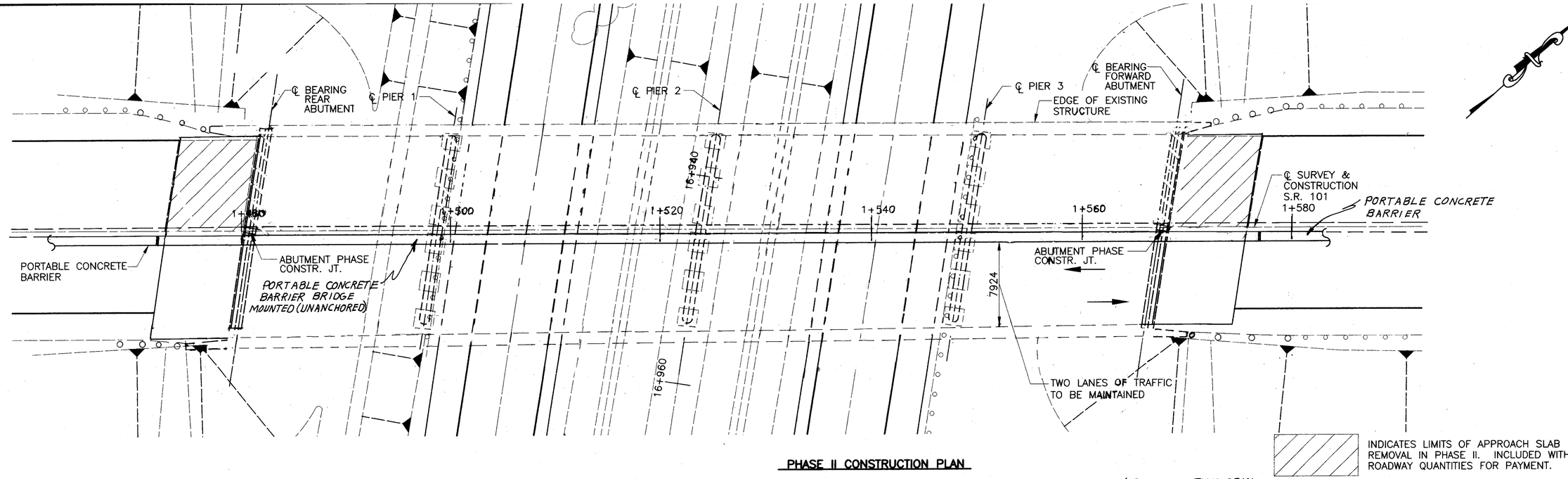
R.D. Zanda & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone: (614) 488-4383

DESIGNED	DRAWN	REVIEWED	DATE
MRMK	MRMK	OHK	5-13-97
CHECKED	REVISED	STRUCTURE FILE NO.	
BAG		2202824	

PHASE CONSTRUCTION DETAILS

BRIDGE NO. ERH-2-10.42 (0824)
S.R. 2 UNDER 101

ERH-2-2.866

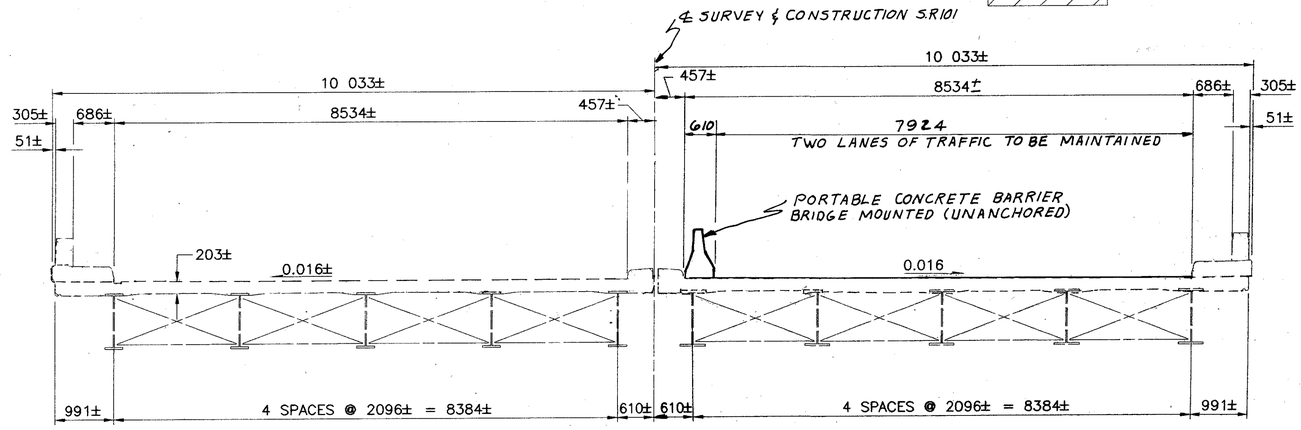


CONSTRUCTION SEQUENCE: (CONTD.)

PHASE II

1. INSTALL PORTABLE CONCRETE BARRIERS AND REROUTE TRAFFIC ONTO THE EXISTING RIGHT BRIDGE.
2. MAINTAIN TWO 3657mm LANES ON THE EXISTING RIGHT BRIDGE.
3. JACK LEFT FIVE BEAMS SIMULTANEOUSLY AT ABUTMENTS, AS PER PLAN NOTES AND PROCEDURES, AND REPLACE EXISTING ABUTMENT BEARING MASONRY PLATES.
4. RECONSTRUCT REMAINDER OF APPROACH SLABS AND BACKWALLS.
5. INSTALL PORTION OF PROPOSED STRIP SEAL EXPANSION JOINTS.
6. PLACE PORTION OF 45mm MICRO-SILICA MODIFIED CONCRETE OVERLAY.
7. GROOVE AND SEAL PROPOSED CONCRETE OVERLAY.
8. PATCH ABUTMENTS.
9. SEAL CONCRETE SURFACES ON PIERS.
10. PAINT EXISTING AND PROPOSED STRUCTURAL STEEL.

PHASE II CONSTRUCTION PLAN



PHASE II TRANSVERSE SECTION

B.D. Kinzle & Associates, Inc.
1827 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED	DRAWN	REVIEWED	DATE
MRMK	MRMK	OHK	5-13-97
CHECKED	REVISED	STRUCTURE FILE NO	
BAG		2202824	

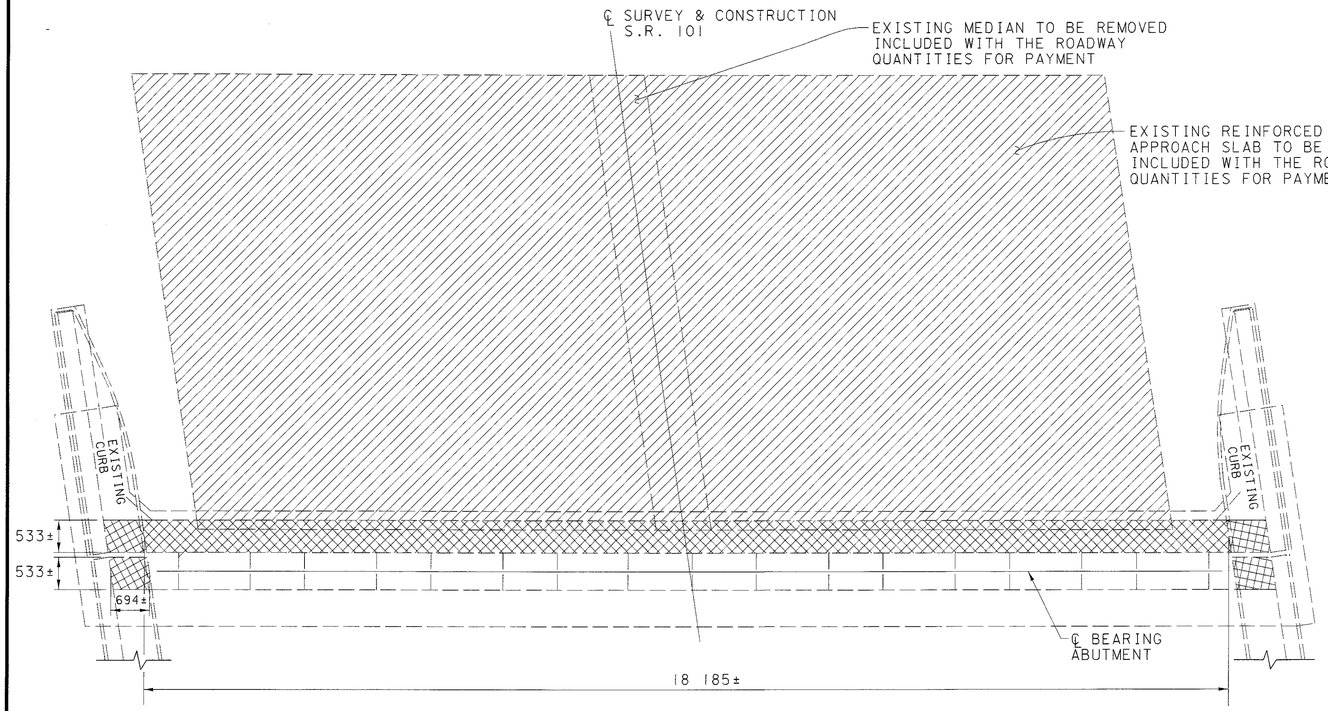
PHASE CONSTRUCTION DETAILS

BRIDGE NO. ERI-2-10.42 (0824)
S.R. 2 UNDER S.R. 101

ERI-2-2.886

5 / 11

262
327



EXISTING ABUTMENT PLAN

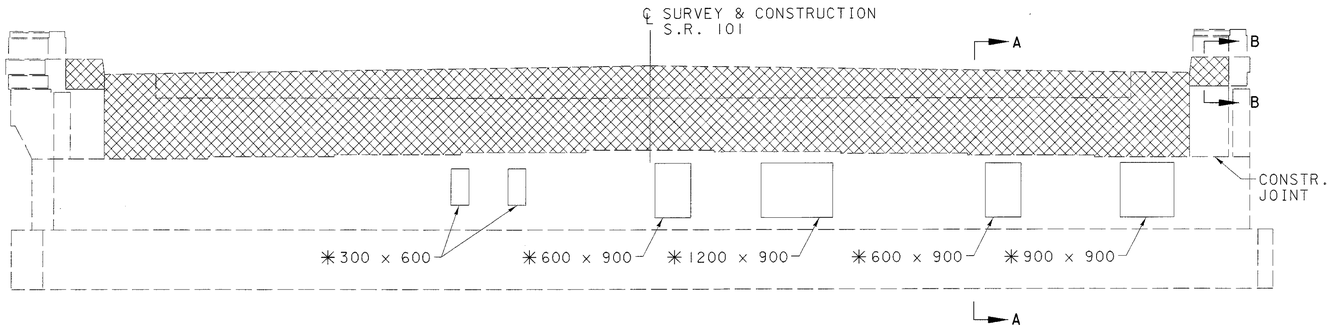
THE EXISTING REINFORCING STEEL IS NOT SHOWN

NOTE: THE EXISTING VERTICAL REINFORCING BARS IN THE BACKWALLS AND ALL EXISTING REINFORCING BARS IN THE CURBS SHALL BE PRESERVED. THE BARS SHALL BE TRIMMED ONLY AS REQUIRED TO INCORPORATE THE PROPOSED DETAILS. TRIMMING OF REINFORCING STEEL IS INCIDENTAL TO ITEM 202- PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

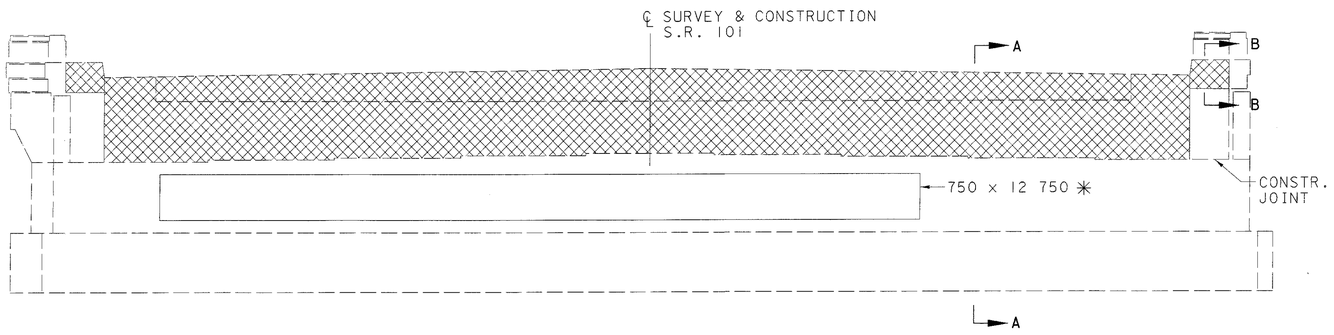
EXISTING REINFORCED CONCRETE APPROACH SLABS TO BE REMOVED. INCLUDED WITH THE ROADWAY QUANTITIES FOR PAYMENT

PORTIONS OF ABUTMENTS AND CURBS TO BE REMOVED USING ITEM 202- PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

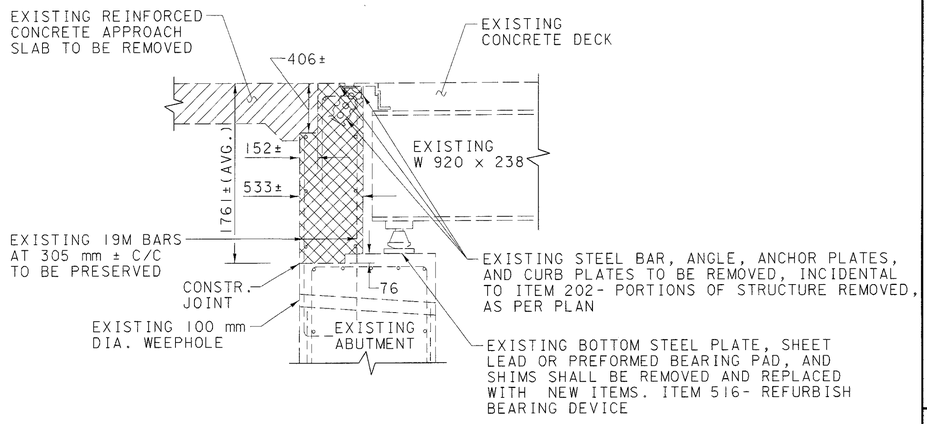
✳ PORTIONS OF ABUTMENTS TO BE PATCHED USING ITEM 519- PATCHING CONCRETE STRUCTURE



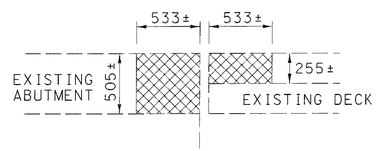
EXISTING REAR ABUTMENT ELEVATION



EXISTING FORWARD ABUTMENT ELEVATION



EXISTING SECTION A-A



EXISTING SECTION B-B

DESIGN AGENCY: DISTRICT THREE

REVIEWED: Lcm DATE: 8/19

STRUCTURE FILE NUMBER: 2202824

DRAWN: EJG REVISED:

DESIGNED: EJG CHECKED: MRC

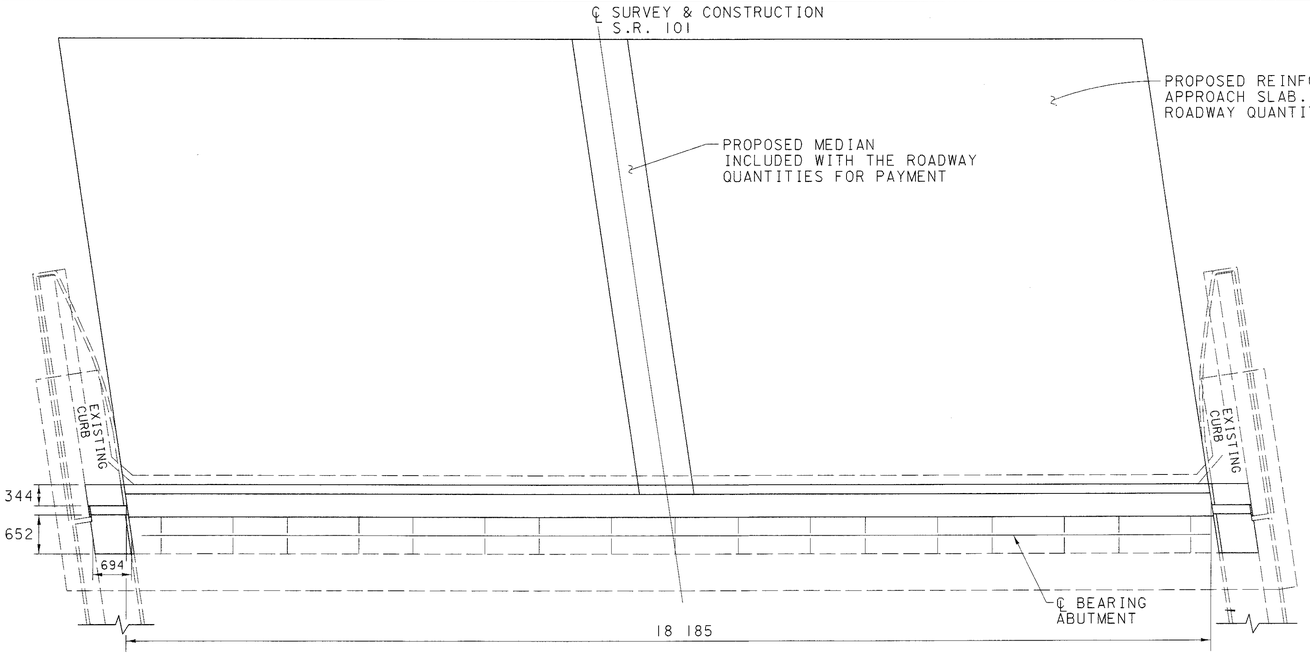
EXISTING ABUTMENT DETAILS
BRIDGE NO. ERI-2-10042 (0624)
S.R. 2 UNDER S.R. 101

ERI-2-2.866

6/11

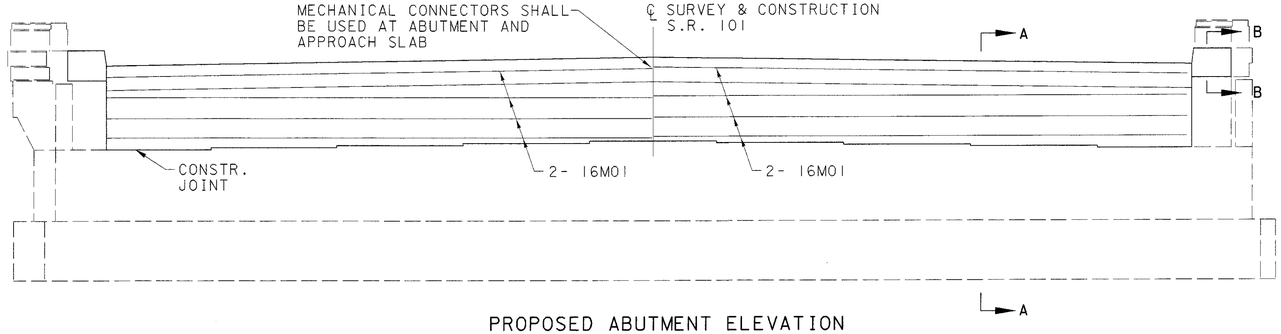
263
327

DESIGN FILE: c:\myfiles\dgn\eri2\3907bari.dgn
WORKSTATION: eglaver DATE: 19 AUG 98

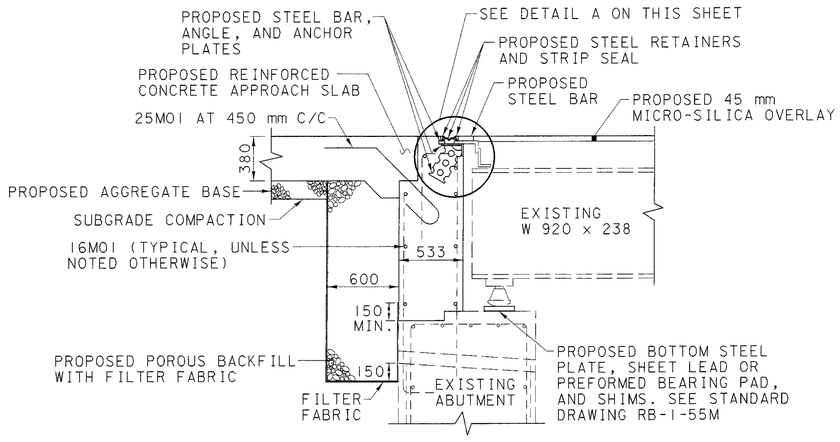


PROPOSED ABUTMENT PLAN

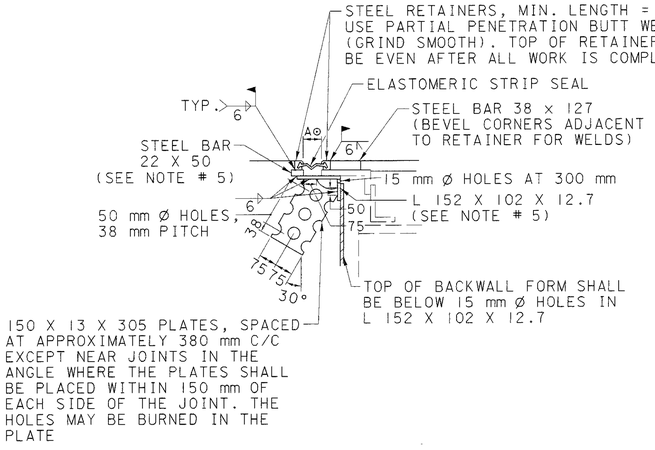
THE EXISTING REINFORCING STEEL IS NOT SHOWN



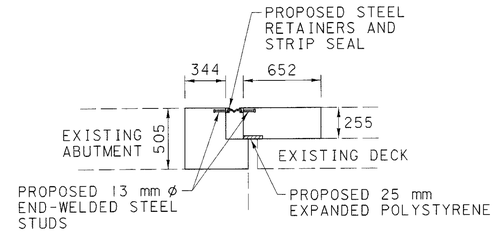
PROPOSED ABUTMENT ELEVATION



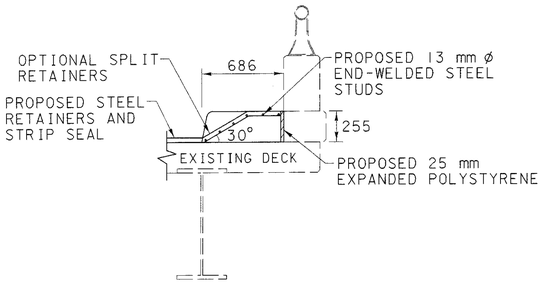
PROPOSED SECTION A-A



DETAIL A



PROPOSED SECTION B-B



PROPOSED SECTION THROUGH CURB

⊙ DIMENSION "A"

ABUTMENT AMBIENT TEMP. (°C)	DIMENSION "A" FOR REAR AND FORWARD ABUTMENTS
0°	47 mm
5°	45 mm
10°	43 mm
15°	40 mm
20°	38 mm
25°	35 mm
30°	33 mm
35°	30 mm

NOTES:

1) SEE STANDARD DRAWING AS-1-81M FOR APPROACH SLAB DETAILS
2) FOR APPROACH SLAB TYPICAL SECTION, SEE ROADWAY SHEETS
3) THE BACKWALLS AND CURBS SHALL BE RECONSTRUCTED USING ITEM 511-CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN
4) CONCRETE UNDER JOINT ARMOR SHALL BE HAND PLACED AND VIBRATED TO ACHIEVE SOLID FILLING
5) SECTIONS OF THE STEEL BAR OR ANGLE SHALL BE CONNECTED WITH COMPLETE PENETRATION BUTT WELDS (GRIND SMOOTH)
6) THE ELASTOMERIC JOINT SEAL SIZE SHALL BE 75 mm
7) THE ELASTOMERIC JOINT SEAL SHALL BE FURNISHED IN ONE CONTINUOUS PIECE
8) SEE STANDARD DRAWING EXJ-4-87M, SHEET 5, FOR ADDITIONAL NOTES
9) ALL ITEMS REQUIRED TO CONSTRUCT THE PROPOSED EXPANSION JOINT, AS SHOWN IN THESE DETAILS, SHALL BE INCLUDED IN ITEM 516-STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN

DESIGN AGENCY: DISTRICT THREE
REVIEWED: Dcm DATE: 9/98
DRAWN: EJG REVISED:
DESIGNED: EJG CHECKED: NRK
STRUCTURE FILE NUMBER: 2202824

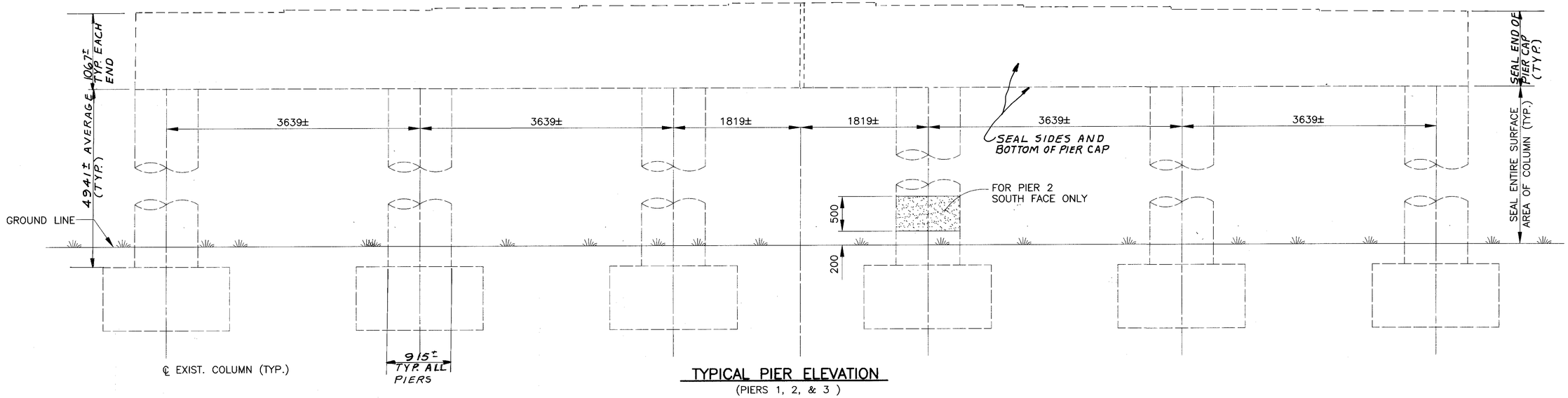
PROPOSED ABUTMENT DETAILS
BRIDGE NO. ERI-2-10042 (0624)
S.R. 2 UNDER S.R. 101

ERI-2-2.866

7/11

264/327

DESIGN FILE: c:\myfiles\dgn\ver12\3907bar1.dgn
WORKSTATION: eglover DATE: 19 AUG 98



TYPICAL PIER ELEVATION
(PIERS 1, 2, & 3)

INDICATES AREA(S) TO BE PATCHED AS PER ITEM 519– PATCHING CONCRETE STRUCTURE

MEASURED PATCHING QUANTITY = 0.5 SQ. M
ESTIMATED PATCHING QUANTITY = 1.0 SQ. M.

DESIGNED	DRAWN	REVIEWED	DATE
BAG	TWK	OHK	5-13-97
CHECKED	REVISED	STRUCTURE FILE NO.	
KVB/FJR		2202824	

E.D. Tonda & Associates, Inc.
1187 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

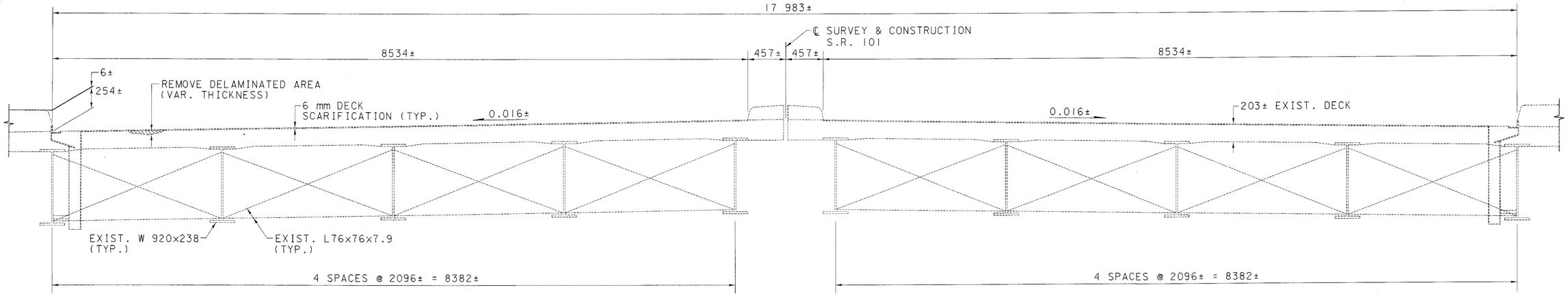
PIER SEALING DETAILS
BRIDGE NO. ER-2-10042 (0824)
SR. 2 UNDER SR. 101

ER-2-2866

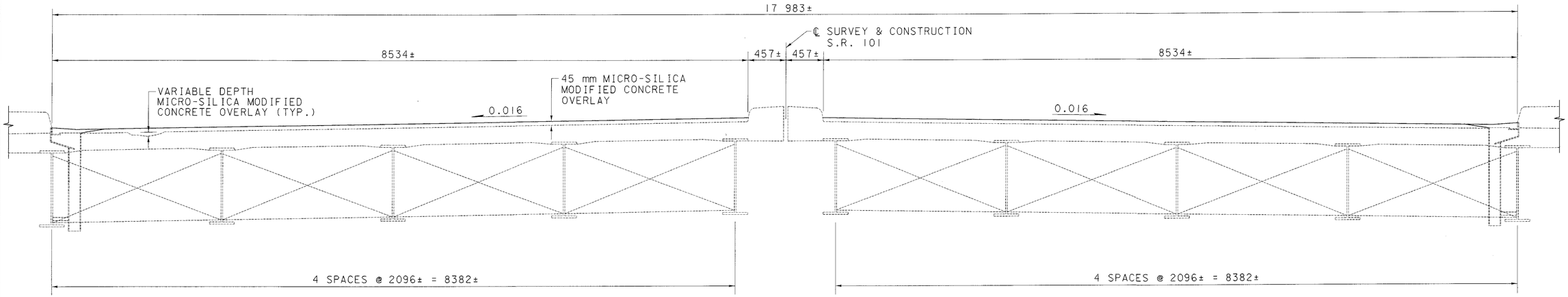
8/11

265/327

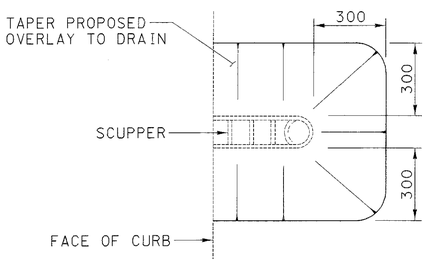
admin P:\3907\DWG\BRIDGE\ER-2-1008\PLAN\3907GPD1.DWG MAY 05, 1997 TIME: 9:16 AM



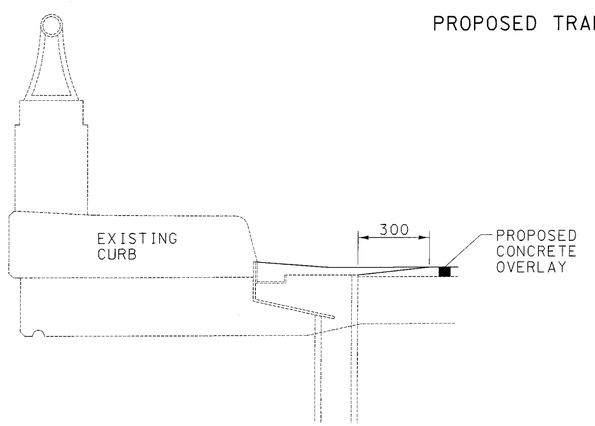
EXISTING TRANSVERSE SECTION



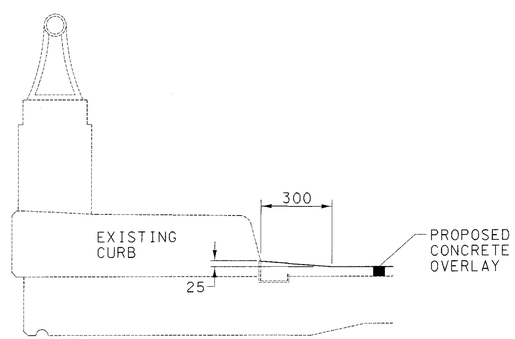
PROPOSED TRANSVERSE SECTION



PARTIAL PLAN
VIEW AT SCUPPER



SECTION VIEW AT CURB
(AT SCUPPER)



TYPICAL SECTION
VIEW AT CURB

DESIGN FILE: c:\myfiles\dgn\er12\3907bsdi.dgn
WORKSTATION: eglover DATE: 19 AUG 98

DESIGN AGENCY
DISTRICT THREE

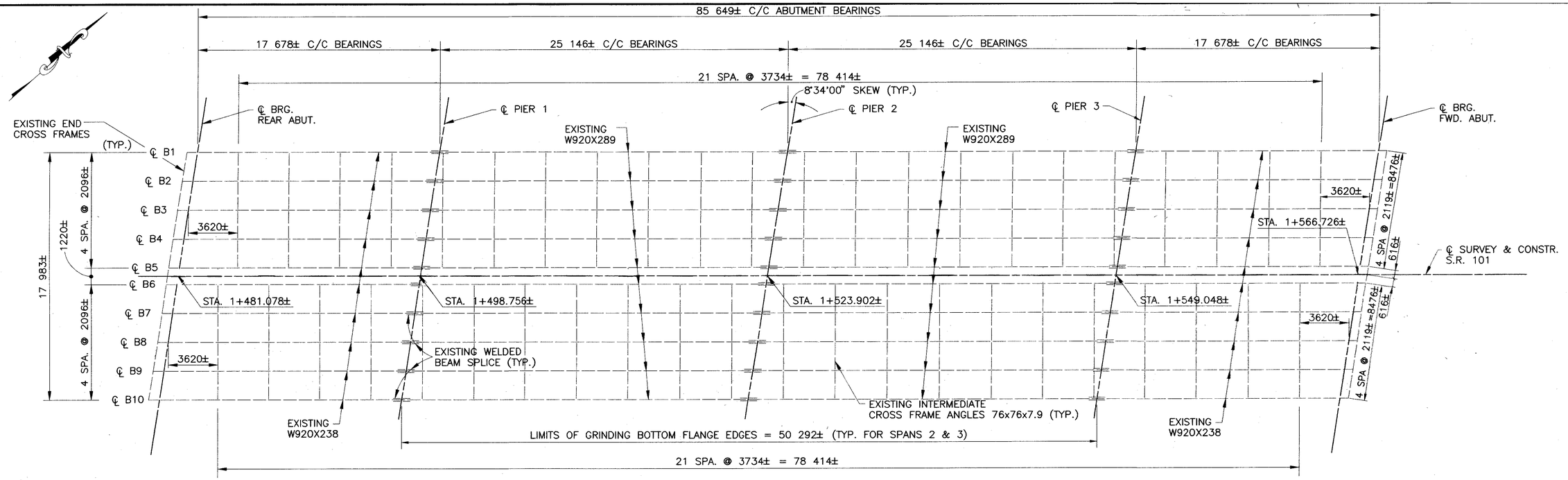
DESIGNED E.J.G
DRAWN E.J.G
CHECKED N.R.C.
REVIEWED D.C.M.
DATE 4/98
REVISED
STRUCTURE FILE NUMBER 22002824

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-10042 (0624)
S.R. 2 UNDER S.R. 101

ERI-2-2.866

9/11

266/327



FRAMING PLAN

NOTES

1. THE STEEL MASONRY PLATES AT THE ABUTMENT BEARINGS SHALL BE REMOVED AND REPLACED WITH NEW STEEL MASONRY PLATES. SEE SHEETS [6/11] AND [7/11].
2. PAINTING OF STEEL: ALL STRUCTURAL STEEL (PROPOSED AND EXISTING) INCLUDING COVER PLATES, CROSS FRAME AND FILLER PLATES SHALL BE PAINTED. SEE GENERAL NOTES SHEET [3/11] FOR MORE DETAILS.

R.D. Zande & Associates, Inc.
1237 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED BAG | DRAWN DJD | REVIEWED OHK | DATE 5-13-97
CHECKED KVB/FJR | REVISED | STRUCTURE FILE NO. 2202824

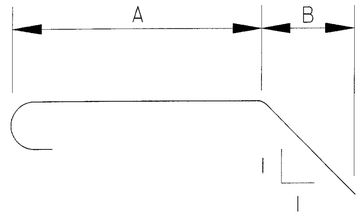
SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-10042 (0624)
S.R. 2 UNDER S.R. 101

ERI-2-2.866

REINFORCING STEEL LIST

BAR MARK	REAR	FWD.	TOTAL	LENGTH mm	MASS * (Kg)	TYPE	A mm	B mm
16M01	16	16	32	9040	449	STR.		
25M01	41	41	82	1500	489	1	797	305
				TOTAL =	938			

* FOR INFORMATIONAL PURPOSES ONLY



TYPE 1

NOTES:

1) THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST TWO DIGITS INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, A 16M01 IS A "16M" BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED

2) ALL REINFORCEMENT BARS SHALL BE EPOXY COATED. PAYMENT FOR THESE BARS SHALL BE INCLUDED WITH APPROPRIATE CONCRETE ITEMS

3) "STR." IN THE TYPE COLUMN INDICATES STRAIGHT BARS.

4) REFER TO C.M.S. SECTION 509.05 FOR STANDARD BEND DIMENSIONS

5) FOR THE 16M01 BARS, APPROVED MECHANICAL CONNECTORS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS. THE CONNECTORS SHALL BE EPOXY COATED. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS. CONNECTORS SHALL CONFORM WITH ITEM 509 AND BE INCLUDED WITH APPROPRIATE CONCRETE ITEMS.

DESIGN AGENCY: DISTRICT THREE

REVIEWED: DCM DATE: 1/18

DESIGNED: EJG DRAWN: EJG CHECKED: MRC- REVISED:

STRUCTURE FILE NUMBER: 2202824

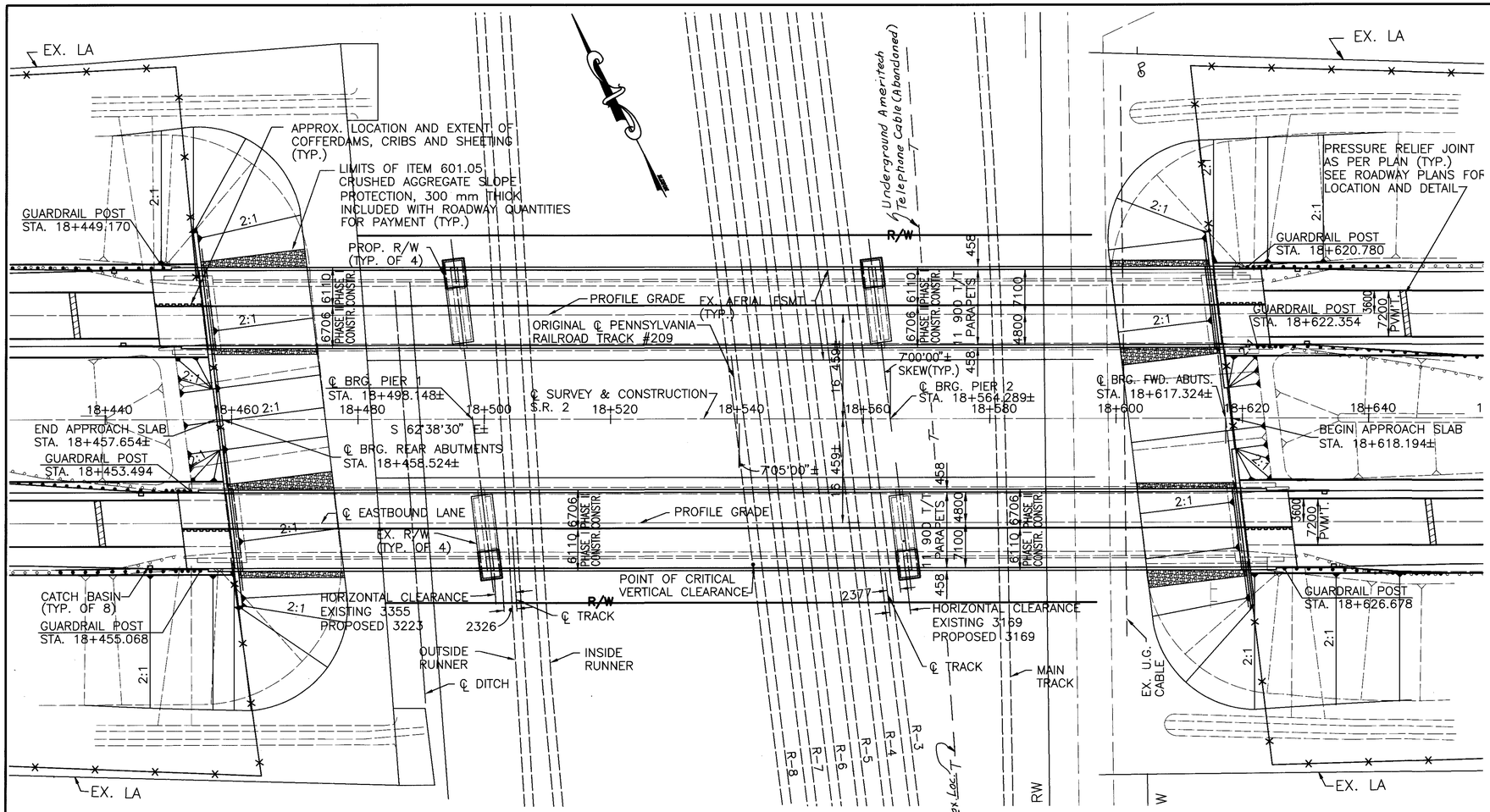
REINFORCING STEEL LIST
BRIDGE NO. ERI-2-10042 (0624)
S.R. 2 UNDER S.R. 101

ERI-2-2.866

11/11

268/327

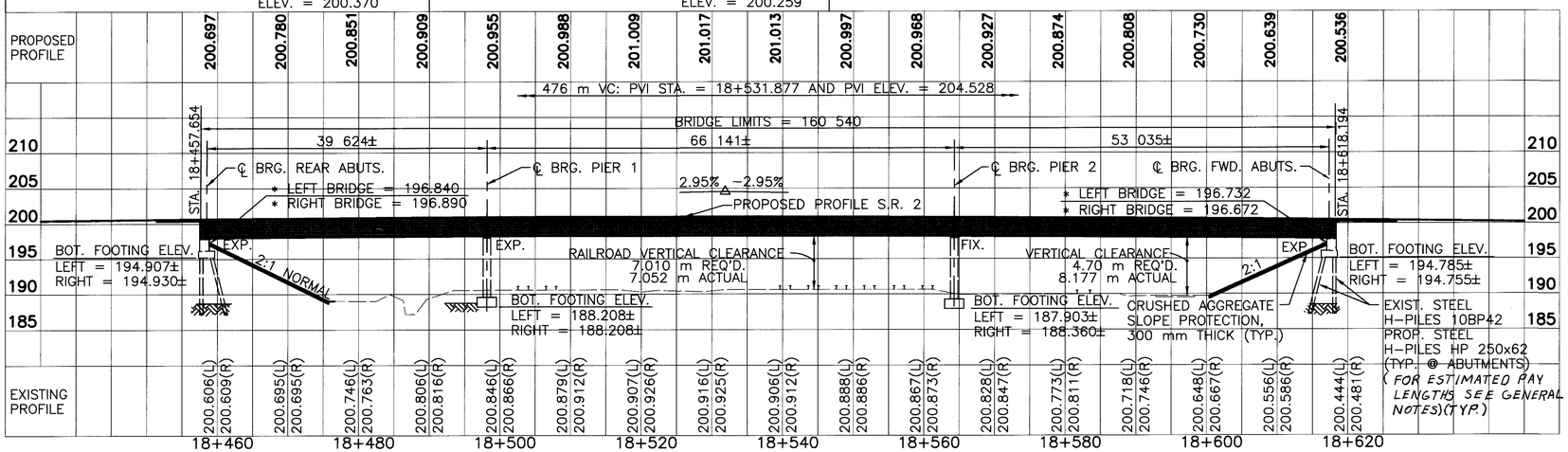
DESIGN FILE: c:\myfiles\dgn\ver12\3907brsl.dgn
WORKSTATION: eglover DATE: 19 AUG 98



PLAN

BENCH MARK:
TOP OF IRON PIN AT ℄ S.R. 2 STA. 18+444±, 22.723± LEFT OF CENTERLINE.
ELEV. = 200.370

BENCH MARK:
TOP OF IRON PIN AT ℄ S.R. 2 STA. 18+632.678±, 22.998± RIGHT OF CENTERLINE.
ELEV. = 200.259



PROFILE ALONG ℄ SURVEY & CONSTRUCTION S.R. 2

NOTES

ALL DIMENSIONS ARE IN MILLIMETERS, AND ALL STATIONS & ELEVATIONS ARE IN METERS.

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPE SHALL MATCH EXISTING GRADE. QUANTITIES HAVE BEEN INCLUDED IN THE ROADWAY GENERAL SUMMARY AND SHALL BE USED AS REQUIRED UNDER THE DIRECTION OF THE PROJECT ENGINEER.

THE AVERAGE ESTIMATED PILE PAY LENGTHS ARE 7.0 m @ REAR ABUTMENT AND 7.6 m @ FORWARD ABUTMENT.

* ELEVATIONS MARKED WITH AN ASTERISK ARE AT THE TOP OF THE SPILL THRU SLOPE AT THE FACE OF ABUTMENT.

EXISTING BRIDGE DATA

TYPE: 3 SPAN CONTINUOUS WELDED STEEL GIRDERS WITH REINFORCED CONCRETE DECK ON REINFORCED CONCRETE SUBSTRUCTURES
SPANS: 39 624 mm±, 66 141 mm±, 53 035 mm± c/c BEARINGS
ROADWAY: 9144 mm± F/F OF 686 mm± SAFETY CURBS
LOADING: CF 400 (57)
WEARING SURFACE: 25 mm± MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
SKEW: 7° 00± RT. FWD.
APPROACH SLABS: AS-1-54 (7620 mm± LONG)
CROWN: 0.0156±
DATE BUILT: 1961
STRUCTURE FILE NUMBER: 2200481 & 2200511

PROPOSED STRUCTURE

PROPOSED WORK: (FOR BOTH LEFT & RIGHT BRIDGES)

1. WIDEN THE SUBSTRUCTURE AND SUPERSTRUCTURE
2. REMOVE AND REPLACE EXISTING BACKWALLS TO THE BEAM SEATS
3. PROVIDE NEW EXPANSION JOINTS
4. PROVIDE TEMPORARY JACKING SYSTEM TO REPLACE EXISTING ABUTMENT BEARINGS AND PIER BEARINGS
5. ELIMINATE ALL EXISTING SCUPPERS
6. PAINT STRUCTURAL STEEL
7. PROVIDE A NEW REINFORCED CONCRETE DECK
8. PROVIDE POROUS BACKFILL WITH FILTER FABRIC
9. INSTALL CATCH BASINS AT BRIDGE CORNERS
10. SEAL CONCRETE SURFACES
11. REPAIR EXISTING SLOPE PROTECTION
12. REPLACE EXISTING APPROACH SLABS

(IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN SEQUENTIAL ORDER AS LISTED).

TYPE: 3 SPAN CONTINUOUS PAINTED PLATE GIRDER (A36M-250 MPa) WITH COMPOSITE REINFORCED CONCRETE DECK, SUPPORTED ON WIDENED EXISTING PIERS AND REHABILITATED STUB ABUTMENTS.
SPANS: 39 624 mm±, 66 141 mm±, 53 035 mm± c/c BEARINGS
ROADWAY: 11 900 mm T/T OF PARAPET
LOADING: MS18 & ALT. MILITARY LOADING (CASE I)
WEARING SURFACE: 25 mm MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
SKEW: 7° 00' ± RT. FWD.
APPROACH SLABS: AS-1-81M (7600 mm LONG)
CROWN: 0.016
LONGITUDE: 82°44'40"W **LATITUDE:** 41°24'34" N

CURRENT AVERAGE DAILY TRAFFIC: 14 030 (1998)
DESIGN AVERAGE DAILY TRAFFIC: 22 450 (2018)
CURRENT AVERAGE DAILY TRUCK TRAFFIC: 3370 (1998)
DESIGN AVERAGE DAILY TRUCK TRAFFIC: 5390 (2018)

metric units

R.D. Zanda & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

REVIEWED OHK DATE 5-22-97
DRAWN DJD REVISED
DESIGNED JAP CHECKED MRMK
STRUCTURE FILE NO. 2200481 & 2200511

ERIE COUNTY
STA. 18+457.654
STA. 18+618.194

SITE PLAN
BRIDGE NO. ERI-2-11571 L & R (0778)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY CO. R.R. & OLD RAILROAD ROAD

ERI-2-2.866

1/26
278/327

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S):

AS-1-81M	DATED	10-25-94
BR-1M	DATED	12-15-94
EXJ-4-87M	DATED	2-18-97
GR-3.1M	DATED	11-30-94
RB-1-55M	DATED	10-25-94
PCB-91M	DATED	3-20-95

AND TO SUPPLEMENTAL SPECIFICATION(S):

815	DATED	5-30-96
843	DATED	5-5-98
910	DATED	4-21-97

METRIC UNITS:

ALL DIMENSIONS SHOWN IN THIS PLAN ARE IN MILLIMETERS, AND ALL STATIONS AND ELEVATIONS ARE IN METERS UNLESS NOTED OTHERWISE.

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

DESIGN LOADING: MS18, CASE I AND THE ALTERNATE MILITARY LOADING.
(SUPERSTRUCTURE)
HIGH PERFORMANCE CONCRETE – COMPRESSIVE STRENGTH 31.0 MPa

(SUBSTRUCTURE)
CONCRETE CLASS C – COMPRESSIVE STRENGTH 27.5 MPa

REINFORCING STEEL – ASTM A615M, A616M, OR A617M
GRADE 420 MINIMUM YIELD STRENGTH 420 MPa.

STRUCTURAL STEEL
A36M – YIELD STRENGTH 250 MPa

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL.
65 mm CONCRETE COVER.
HIGH PERFORMANCE CONCRETE.

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 25 mm THICK.

RAILROAD AERIAL LINES

RAILROAD AERIAL LINES WILL BE RELOCATED BY THE RAILROAD. THE CONTRACTOR SHALL USE ALL PRECAUTIONS NECESSARY TO SEE THAT THE LINES ARE NOT DISTURBED DURING THE CONSTRUCTION STAGE AND SHALL COOPERATE WITH THE RAILROAD IN THE RELOCATION OF THESE LINES. THE COST OF THE RELOCATION SHALL BE INCLUDED IN THE RAILROAD FORCE ACCOUNT WORK.

UTILITY LINES:

ALL EXPENSE INVOLVED IN RELOCATION (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY(IES). THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTION 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING STRUCTURE PLANS:

THE ORIGINAL DESIGN PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 3 OFFICE, 906 NORTH CLARK ST., ASHLAND, OHIO 44805 (419) 281-0513.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK AND PARAPET)

DESCRIPTION: THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECKS, SAFETY CURBS, PARAPETS, RAILINGS, AND SCUPPERS. CARE SHALL BE TAKEN NOT TO DAMAGE THE STEEL BEAMS DURING THE DECK REMOVAL. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAMS, CONCRETE CRUSHERS AND OTHER SIMILAR TYPE OF IMPACTIVE DEVICES IS NOT PERMITTED.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF THE DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 50 mm OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 50 mm OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 50 mm OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS: CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 16 KILOGRAMS BUT NOT TO EXCEED 41 KILOGRAMS MAY BE USED AT THE APPROVAL OF THE ENGINEER, TO ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS: DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.), CARE SHALL BE TAKEN DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. STRINGERS DAMAGED BY THE CONTRACTOR'S REMOVAL. OPERATIONS SHALL, AT NO COST TO THE PROJECT, BE REPLACED OR REPAIRED. PROPOSED REPAIRS, DEVELOPED BY A REGISTERED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED IN WRITING FOR REVIEW AND APPROVAL BY THE DIRECTOR.

EXTRANEOUS MEMBERS: EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC., AND THE SUPPORT FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES DESIGNATED "TENSION" SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS, BY A REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF THE WORK.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

THIS ITEM OF WORK SHALL BE USED TO REMOVE PORTIONS OF THE SUBSTRUCTURE AS DESIGNATED IN THE PLAN. THE CONCRETE SHALL BE REMOVED BY HYDRAULIC SPLITTING METHOD. A LINE OF HOLES SHALL BE DRILLED ALONG THE REMOVAL LINE AND HYDRAULIC SPLITTER USED AS PER THE MANUFACTURER'S RECOMMENDATIONS. 16 AND 7 KILOGRAM JACK HAMMERS SHALL BE USED FOR ANY REQUIRED FINISH WORK. HOE RAMS AND/OR CONCRETE CRUSHERS WILL NOT BE PERMITTED TO DO ANY OF THE WORK. NO SAW CUTTING WILL BE ALLOWED IN AREAS WHERE EXISTING REINFORCING SHALL REMAIN. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL DESIGNATED FOR SALVAGE, IF DAMAGED DURING THE REMOVAL OPERATION DOWELED REINFORCING STEEL MUST BE ADDED AT THE CONTRACTOR'S EXPENSE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC METER FOR ITEM 202, PORTIONS OF STRUCTURES REMOVED AS PER PLAN (SUBSTRUCTURE), WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 25 mm DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN:

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 MATERIAL PLACED IN 150 mm LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04.

PILES TO BEDROCK

PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS OBTAINED BY PENETRATING SOFT BEDROCK SEVERAL MILLIMETERS WITH A MINIMUM RESISTANCE OF 20 BLOWS PER 25 mm OR REFUSAL SHALL BE CONSIDERED AS OBTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

THE ULTIMATE BEARING VALUE FOR THE ABUTMENT PILES IS 623 kN PER PILE.

REAR ABUTMENT PILES: (LEFT & RIGHT BRIDGE):
24 HP250x62 PILES 7.0 METERS LONG, ESTIMATED LENGTH
24 HP250x62 PILES OF ORDER LENGTH 7.0 METERS LONG
12 SPLICES

FORWARD ABUTMENT PILES (LEFT & RIGHT BRIDGE):
24 HP250x62 PILES 7.6 METERS LONG, ESTIMATED LENGTH
24 HP250x62 PILES OF ORDER LENGTH 7.6 METERS LONG
12 SPLICES

PIER FOOTINGS

FOUNDATION BEARING PRESSURE:
PIER FOOTING EXTENSION, AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF 480 kPa. THE ALLOWABLE BEARING PRESSURE IS 1092 kPa.

PIER FOOTING EXTENSIONS SHALL EXTEND A MINIMUM OF 75 mm INTO BEDROCK OR TO THE ELEVATION SHOWN, WHICHEVER IS LOWER.

COFFERDAMS, CRIBS, AND SHEETING, AS PER PLAN

TEMPORARY SHORING SHALL BE USED TO ACCOMPLISH THE PROPOSED CONSTRUCTION IN PHASES. THE APPROXIMATE LIMITS OF SHORING ARE SHOWN ON SITE PLAN (SHEET 1/26) AND THE SEQUENCE OF INSTALLATION ARE SHOWN ON PHASE CONSTRUCTION DETAILS (SHEETS 6/26 & 7/26). ALL SHEET PILING SHALL HAVE A MINIMUM SECTION MODULES OF 53,763 mm³ PER LINEAR METER OF WALL. SHEET PILES SHALL BE DRIVEN TO ELEVATION 190± AND EXTEND A MINIMUM OF 300 mm± ABOVE THE TOP OF EXISTING PAVEMENT. THE APPROXIMATE DREDGE LINE ELEVATION IS 195.8±. PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 503, COFFERDAMS, CRIBS, AND SHEETING, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS WORK. PORTIONS OF THE TEMPORARY SHORING COMPOSED OF STEEL OR CONCRETE MAY BE LEFT IN PLACE AT THE DISCRETION OF THE ENGINEER. PORTIONS COMPOSED OF OTHER MATERIALS SHALL BE REMOVED PRIOR TO COMPLETION OF THE WORK. SEE PROPOSAL NOTE 502 DATED 2/16/94 FOR ADDITIONAL INFORMATION. SEE RAILROAD NOTES SHEET 4/26 FOR SHORING REQUIREMENTS ADJACENT TO RAILROAD.

REPLACEMENT OF EXISTING REINFORCING STEEL:

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL. ANY EXISTING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. COST OF ALL REINFORCED STEEL SHALL BE INCLUDED WITH APPROPRIATE ITEM 511 CONCRETE FOR PAYMENT.

ITEM 507, STEEL POINTS, AS PER PLAN:

STEEL PILE POINTS SHALL BE USED TO PROTECT THE TIPS OF THE PROPOSED STEEL "H" PILING. THE STEEL POINTS SHALL BE FURNISHED BY ASSOCIATED PILE AND FITTING CORPORATION, 262 RUTHERFORD BLVD., CLIFTON, NEW JERSEY 07014; INTERNATIONAL CONSTRUCTION EQUIPMENT, INC., 301 WAREHOUSE DRIVE, MATTHEWS, NORTH CAROLINA 28015; DOUGHERTY FOUNDATION PRODUCTS, INC., P.O. BOX 688, FRANKLIN LAKES, NEW JERSERY 07417; VERSA STEEL INC., 3601 N.W. YEON AVE., P.O. BOX 10559, PORTLAND, OREGON 97210; PILING ACCESSORIES, INC., 3467 GRIBBLE ROAD, MATTHEWS NC 28105 OR BY A MANUFACTURER THAT CAN FURNISH A STEEL POINT THAT IS ACCEPTABLE TO THE DIRECTOR. THE MATERIAL USED FOR THE MANUFACTURING OF PILE POINTS SHALL CONFORM TO ASTM A27 65/35 – CLASS 2 – HEAT TREATED OR AASHTO M103 65/35 – HEAT TREATED. A NOTARIZED COPY OF THE MILL TEST REPORT SHALL BE SUBMITTED TO THE ENGINEER.

ITEM 511, CLASS C CONCRETE, AS PER PLAN:

CLASS C CONCRETE SHALL BE IN ACCORDANCE WIHT 511, EXCEPT THAT THE AGGREGATE SHALL BE #8 LIMESTONE.

H.D. Tanda & Associates, Inc.
1227 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED	DRAWN	REVIEWED	DATE
KVB	DJD	OHK	5-22-97
CHECKED	REVISED	STRUCTURE FILE NO	
BAG		2200481&2200511	

GENERAL NOTES
BRIDGE NO. ERI-2-16171 L & R (0779)
SR. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY R.R. & OLD RAILROAD RD.

ERI-2-2.866

GENERAL NOTES CONT.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTION JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 25 mm, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING ACTUAL JACKING OPERATIONS. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 6 mm.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 25 mm OR LESS.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE, AS PER PLAN

SEE NOTES ON BEARING DETAIL SHEETS.

ITEM 518 - POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN:

POROUS BACKFILL SHALL BE NO. 57 *GRAVEL*.

ITEM 815 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL:

ALL EXISTING AND NEW STEEL SHALL BE CLEANED AND PAINTED WITH A PRIME, INTERMEDIATE, AND FINISH COAT OF PAINT USING SYSTEM OZEU. THE COST OF THIS WORK SHALL BE INCLUDED WITH SEVERAL FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU ITEMS FOR PAYMENT. THE COLOR OF THE FINISH COAT SHALL BE RED COLOR MATCHING FEDERAL STANDARD NUMBER 11136. IN ADDITION, TO THE SURFACE AREA OF THE STEEL STRINGERS TO BE PAINTED, AN ADDITIONAL TWENTY FIVE PERCENT OF THIS AMOUNT HAS BEEN ADDED TO THE SQUARE METER TOTALS TO ACCOUNT FOR INCIDENTALS SUCH AS CROSSFRAMES & BEARINGS. SEE SUPPLEMENTAL SPECIFICATION 815.

INSPECTION OF STRUCTURAL STEEL:

THE ENGINEER SHALL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THAT THEY ARE FREE OF DEFECTS. THE DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS SHALL NOT BE ERECTED UNTIL AFTER THE ENGINEER HAS COMPLETED THIS INSPECTION. THIS INSPECTION SHALL NOT TAKE PLACE UNTIL AFTER THE TOP FLANGES ARE CLEANED AND SPECIFIED IN 511.08, BUT IT SHALL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE COST ASSOCIATED WITH THIS INSPECTION SHALL BE INCLUDED WITH ITEM 511, SUPERSTRUCTURE CONCRETE FOR PAYMENT.

CONCRETE PARAPETS:

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PACED CONCRETE, 25 mm DEEP CONTROL JOINTS SHALL BE SAWED INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAWCUTS SHALL BE PLACED AT LOCATIONS AS DETAILED ON SHEET 24/26. THE USE OF AN EDGE GUIDE, FENCE, OR JIG IS REQUIRED TO INSURE 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 6 mm. THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 25 mm WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E. THE CONTRACTOR SHALL NOTE THAT THE OPTION TO SLIPFORM PARAPET IS NOT ALLOWED.

ITEM 844 - HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK AND PARAPET)

ON THIS PROJECT, THE CONTRACTOR SHALL USE CONCRETE MEETING THE REQUIREMENTS OF THE MIX DESIGN GIVEN IN THE PROPOSAL NOTE FOR MIX 4 (GGBF SLAG + MICROSILICA) FOR THE SUPERSTRUCTURE INSTEAD OF TEXTURING. BRIDGE DECK GROOVING SHALL BE PERFORMED AS PER THE PROPOSAL NOTE. BRIDGE GROOVING SHALL BE PAID FOR SEPARATELY.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES *(EPOXY-URETHANE)*

THE CONCRETE SHALL BE SEALED USING AN EPOXY-URETHANE SYSTEM AT THE LOCATIONS INDICATED IN THE PLAN. THE URETHANE SHALL BE A "BUFF" COLOR MEETING FEDERAL STANDARD NUMBER 37722. SEE PROPOSAL NOTE FOR ADDITIONAL INFORMATION.

CONSTRUCTION SEQUENCE AND MAINTENANCE OF TRAFFIC

SEE SHEETS 6/26 AND 7/26 FOR CONSTRUCTION SEQUENCE AND PHASE CONSTRUCTION DETAILS. SEE ROADWAY PLANS FOR ADDITIONAL TRAFFIC NOTES AND DETAILS.

RAILROAD NOTES

FOR RAILROAD NOTES SEE SHEET 4/26

ABBREVIATIONS

ABUT. - ABUTMENT
AVG. - AVERAGE
BOT. - BOTTOM
BRG. - BEARING
℄ - CENTERLINE
CLR. - CLEARANCE
CONSTR. - CONSTRUCTION
C.P.P. - CORRUGATED PLASTIC PIPE
E.B. - EAST BOUND
E.F. - EACH FACE
EXIST. - EXISTING
EXP. - EXPANSION
ELEV. - ELEVATION
EQ. - EQUAL
F.A. - FORWARD ABUTMENT
F.F. - FAR FACE
FIX. - FIXED
FTG. - FOOTING
FWD. - FORWARD
HMWM - HIGH MOLECULAR WEIGHT METHACRYLATE
JT. - JOINT
L.B. - LEFT BRIDGE
MAX. - MAXIMUM
MIN. - MINIMUM
N.B. - NORTH BOUND
N.F. - NEAR FACE
NO. - NUMBER
PH. - PHASE
PVMT. - PAVEMENT
O.C. - ON CENTER
OZEU - ORGANIC ZINC EPOXY URETHANE
PL. - PLATE
P.E.J.F. - PREFORMED EXPANSION JOINT FILLER
R - RADIUS
R.A. - REAR ABUTMENT
R.B. - RIGHT BRIDGE
RDWY. - ROADWAY
REINF. - REINFORCING
REQ'D - REQUIRED
S.B. - SOUTH BOUND
SER. - SERIES
SPA. - SPACES
STA. - STATION
STD. - STANDARD
STR. - STRAIGHT
SUBSTR. - SUBSTRUCTURE
TYP. - TYPICAL
U.N.O. - UNLESS NOTED OTHERWISE
VERT. - VERTICAL
W.B. - WESTBOUND
W.F. - WEST FACE
W.R.T. - WITH RESPECT TO

R.D. Zande & Associates, Inc.
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DESIGNED	DRAWN	REVIEWED	DATE
KVB	DJD	OHK	5-22-97
CHECKED	REVISED	STRUCTURE FILE NO	
BAG		2200481&2200511	

GENERAL NOTES
BRIDGE NO. ERI-2-1671 L & R (0779)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY R.R. & OLD RAILROAD RD.

ERI-2-2.866

RAILROAD NOTES

I. STRUCTURE EXCAVATION AND SHORING

SHORING OR SHEETING PROTECTION SHALL BE PROVIDED WHEN EXCAVATING ADJACENT TO AN ACTIVE RAILROAD TRACK.

PREFERRED PROTECTION IS THE COFFERDAM TYPE THAT COMPLETELY ENCLOSES THE EXCAVATION. WHERE DICTATED BY CONDITIONS, PARTIAL COFFERDAM WITH OPEN SIDES AWAY FROM THE TRACK MAY BE USED. SHORING SHALL BE CONSTRUCTED USING STEEL SHEET PILING.

WALES AND STRUTS SHALL BE PROVIDED AS NEEDED. THE FOLLOWING SHALL BE CONSIDERED WHEN DESIGNING COFFERDAMS:

A. SHEETING SHALL BE DESIGNED TO RESIST A VERTICAL LIVE LOAD SURCHARGE OF 90.1 kPa IN ADDITION TO ACTIVE EARTH PRESSURE. THE SURCHARGE SHALL BE ASSUMED TO ACT ON A CONTINUOUS STRIP, 2590 mm WIDE. LATERAL PRESSURES DUE TO SURCHARGE SHALL BE COMPUTED USING THE STRIP LOAD FORMULA SHOWN IN A.R.E.A. SPECIFICATIONS, CHAPTER 8, PART 20.

B. ALLOWABLE BENDING STRESSES IN MATERIALS SHALL BE IN ACCORDANCE WITH A.R.E.A. SPECIFICATIONS, CHAPTERS 7, 8 AND 15.

C. A CONSTRUCTION PROCEDURE FOR TEMPORARY SHORING SHALL BE SHOWN ON THE DRAWING.

D. SAFETY RAILING AND A WALKWAY SHALL BE INSTALLED. RAILING SHALL EXTEND AT LEAST 1067 mm ABOVE THE WALKING SURFACE AND SHALL BE NO CLOSER THAN 3048 mm FROM THE TRACK CENTERLINE.

E. CAVITIES ADJACENT TO SHEET PILING, CREATED BY DRIVING OF SHEET PILING, SHALL BE FILLED WITH SAND AND ANY DISTURBED BALLAST MUST BE RESTORED AND TAMPED IMMEDIATELY.

F. SHEET PILING SHALL BE CUT OFF AT TOP OF TIE DURING CONSTRUCTION. AFTER CONSTRUCTION AND BACKFILLING HAS BEEN COMPLETED, PILING WITHIN 3000 mm FROM CENTERLINE OF TRACK SHALL BE CUT OFF 600 mm BELOW EXISTING GROUND LINE AND LEFT IN PLACE.

G. FINAL BACKFILLING OF EXCAVATION SHALL BE AS REQUIRED BY PROJECT SPECIFICATIONS.

H. THE CONTRACTOR IS TO ADVISE RAILROAD AUTHORITY OF THE TIME SCHEDULE OF EACH OPERATION AND OBTAIN APPROVAL OF RAILROAD AUTHORITY FOR ALL WORK TO BE PERFORMED ADJACENT TO TRACKS SO THAT IT MAY BE PROPERLY SUPERVISED BY RAILROAD PERSONNEL.

THE CONTRACTOR SHALL SUBMIT THE FOLLOWING DRAWINGS AND CALCULATIONS FOR RAILROAD REVIEW AND APPROVAL A MINIMUM OF SIX WEEKS PRIOR TO THE START OF CONSTRUCTION.

1. THREE (3) SETS OF DETAILED DRAWINGS OF THE SHORING SYSTEMS SHOWING SIZES OF ALL STRUCTURAL MEMBERS, DETAILS OF CONNECTIONS, AND DISTANCE FROM CENTERLINE OF TRACK TO FACE OF SHORING. DRAWING SHALL PROVIDE A SECTION SHOWING HEIGHT OF SHEETING AND TOP OF RAIL ELEVATIONS IN RELATION TO BOTTOM OF EXCAVATION.

2. THREE (3) SETS OF CALCULATIONS OF THE SHORING DESIGN.

THE DRAWINGS AND CALCULATIONS SHALL BE PREPARED BY A LICENSED PROFESSIONAL ENGINEER EXPERIENCED IN DESIGN OF SHORING AND COFFERDAMS AND SHALL BEAR HIS SEAL AND SIGNATURE. EXCAVATION AND SHORING PLANS SHALL BE APPROVED BY THE RAILROAD AND ODOT. WORK SHALL NOT BEGIN UNTIL SUCH WRITTEN APPROVAL HAS BEEN OBTAINED.

II. DEMOLITION OF EXISTING STRUCTURES

RAILROAD TRACKS SHALL BE PROTECTED FROM DAMAGE DURING DEMOLITION OF PORTIONS OF EXISTING STRUCTURE AND REPLACEMENT OF DECK SLAB.

A. DURING DEMOLITION OF THE DECKS, A PROTECTION SHIELD SHALL BE ERECTED OVER THE TRACK TO CATCH FALLING DEBRIS. THE PROTECTION SHIELD SHALL BE SUPPORTED FROM GIRDERS OR BEAMS AND SHALL NOT BE LOWER THAN ALLOWED TEMPORARY CLEARANCE. THE DECK SHALL BE REMOVED BY CUTTING IT IN SECTIONS AND LIFTING OUT. LARGE PIECES OF DECK SHALL NOT BE ALLOWED TO FALL ON PROTECTION SHIELD. NO DEBRIS SHALL FALL TO THE TRACKS OR PROPERTY BELOW.

B. ON LIGHT TRAFFIC DENSITY LINES OR WHEN OVERHEAD PROTECTION SHIELD CANNOT BE INSTALLED DUE TO LIMITED CLEARANCE OR TYPE OF SUPERSTRUCTURE, TRACK MAY BE PROTECTED BY TIMBER MATS PLACED OVER THE TRACK STRUCTURE, SUBJECT TO APPROVAL BY THE RAILROAD. TIMBER MATS SHALL BE MADE IN SECTIONS SUCH THAT THEY MAY BE LIFTED IN AND OUT QUICKLY. MATS SHALL NOT REST ON RAILS. GEO-FABRIC OR CANVAS SHALL BE PLACED OVER THE TRACK STRUCTURE TO KEEP THE BALLAST CLEAN.

THE CONTRACTOR SHALL SUBMIT DETAILED PLANS OF THE PROTECTION SHIELD OR THE TIMBER MATS TO THE RAILROAD FOR APPROVAL PRIOR TO THE START OF DEMOLITION. THE PLANS SHALL BE PREPARED BY A LICENSED PROFESSIONAL ENGINEER AND SHALL BEAR HIS SEAL AND SIGNATURE.

BLASTING WILL NOT BE PERMITTED TO DEMOLISH A STRUCTURE OVER OR WITHIN RAILROAD RIGHT-OF-WAY.

III. ERECTION PROCEDURE

THE CONTRACTOR SHALL SUBMIT A DETAILED PROCEDURE FOR ERECTING THE SPANS OVER RAILROAD TRACKS. THE PROCEDURE SHALL INDICATE THE CAPACITY OF CRANES, LOCATION OF CRANES WITH RESPECT TO THE TRACKS AND ESTIMATED LIFTING LOADS. THE ERECTION PROCEDURE MUST BE APPROVED BY THE RAILROAD.

IV. TEMPORARY CONSTRUCTION CLEARANCE

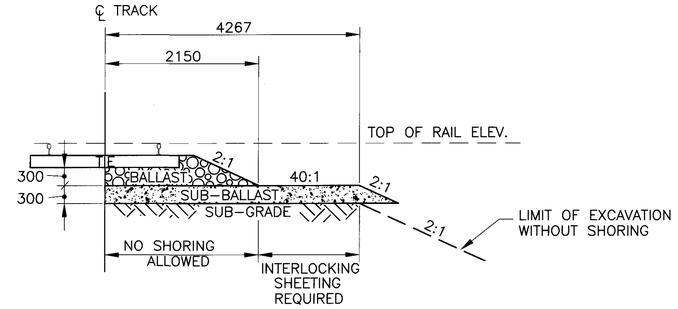
TEMPORARY MINIMUM CONSTRUCTION CLEARANCE OF 6.7 m VERTICALLY ABOVE TOP OF RAIL SHALL BE MAINTAINED AT ALL TIMES.

A HORIZONTAL CLEARANCE OF 2.75 m TO FORMWORK, FALSEWORK, ETC. AS MEASURED FROM THE CENTERLINE OF THE NEAREST TRACK SHALL BE MAINTAINED DURING THE WIDENING OF PIERS. FOR ALL OTHER WORK, A TEMPORARY HORIZONTAL CLEARANCE OF 4 m MUST BE MAINTAINED FOR ANY FORMWORK, FALSEWORK, OR TEMPORARY OBSTRUCTION.

RAILROAD MAINTENANCE DRIVES MUST BE KEPT IN SERVICE AT ALL TIMES.

V. OTHER RAILROAD REQUIREMENTS

SEE SPECIAL CLAUSES IN THE PROPOSAL.



NORFOLK & WESTERN COMPANY SHORING REQUIREMENTS

NOTE: EXCAVATION WITHIN THE LIMITS DEPICTED ON THIS DRAWING WILL REQUIRE SHORING FOR THE PROTECTION OF THE RAILROAD. EXCAVATION OUTSIDE THESE LIMITS MAY REQUIRE SHORING FOR SAFETY BUT WILL NOT HAVE TO BE DESIGNED FOR LATERAL PRESSURE DUE TO RAILROAD SURCHARGE LOADING.

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RAILROAD NOTES
BRIDGE NO. ERI-2-11571 L & R (07.19)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY RR. & OLD RAILROAD RD.

ERI-2-2.866

ESTIMATED QUANTITIES

CALC. BY: BAG DATE: 5/21/97
CHK. BY: FJR DATE: 10/10/97

ITEM	ITEM EXT.	TOTAL LEFT BRIDGE	TOTAL RIGHT BRIDGE	UNIT	DESCRIPTION	ABUTMENTS LEFT BRIDGE	ABUTMENTS RIGHT BRIDGE	PIERS LEFT BRIDGE	PIERS RIGHT BRIDGE	SUPERSTRUCTURE LEFT BRIDGE	SUPERSTRUCTURE RIGHT BRIDGE	GENERAL LEFT BRIDGE	GENERAL RIGHT BRIDGE	SHEET NO. FOR AS PER PLAN ITEMS
202	11301	119	119	CU METER	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)	117	117	2	2					2/26
202	11201	LUMP	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK AND PARAPET)					LUMP	LUMP			2/26
503	11101	LUMP	LUMP		COFFERDAMS, CRIBS & SHEETING, AS PER PLAN							LUMP	LUMP	2/26
503	21301	LUMP	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	LUMP	LUMP	LUMP	LUMP					2/26
505	11100	LUMP	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION							LUMP	LUMP	
507	00100	175	175	METER	STEEL PILES HP250X62, FURNISHED	175	175							
507	00150	175	175	METER	STEEL PILES HP250X62, DRIVEN	175	175							
507	50500	12	12	EACH	STEEL PILE SPLICES	12	12							
507	93300	24	24	EACH	STEEL POINT (OR SHOE)	24	24							
511	40501	82	82	CU METER	CLASS C CONCRETE, PIER ABOVE FOOTINGS (WALLS), AS PER PLAN			82	82					2/26
511	44101	127	127	CU METER	CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN	127	127							2/26
511	46501	93	93	CU METER	CLASS C CONCRETE, FOOTING, AS PER PLAN	59	59	34	34					2/26
844	48000	527	527	CU METER	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK)					527	527			
844	48020	109	109	CU METER	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET)					109	109			
844	49000	LUMP	LUMP		HIGH PERFORMANCE CONCRETE – TRIAL MIX							LUMP	LUMP	
844	49010	LUMP	LUMP		HIGH PERFORMANCE CONCRETE – TESTING							LUMP	LUMP	
512	44400	6	6	SQ METER	TYPE B WATERPROOFING	6	6							
SPECIAL	5126751O	1629	1629	SQ METER	SEALING OF CONCRETE SURFACES (EPOXY - URETHANE)	194	194	360	360	1075	1075			
863	10080	LUMP	LUMP		STRUCTURAL STEL MEMBERS, LEVEL FOUR(4) FABRICATION					LUMP	LUMP			
863	20000	4824	4824	EACH	WELDED STUD SHEAR CONNECTOR					4824	4824			
516	11210	25.8	25.8	METER	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL					25.8	25.8			
516	44101	6	6	EACH	ELASTOMERIC BEARING (500X700X68) WITH INTERNAL LAMINATES AND LOAD PLATE (530X980X75) (NEOPRENE), AS PER PLAN			6	6					3/26
516	44201	6	6	EACH	ELASTOMERIC BEARING (500X700X93) WITH INTERNAL LAMINATES AND LOAD PLATE (530X730X75) (NEOPRENE), AS PER PLAN			6	6					3/26
516	46200	12	12	EACH	BEARING DEVICE, ROCKER	12	12							
516	47001	LUMP	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN					LUMP	LUMP			3/26
518	21231	LUMP	LUMP		POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	LUMP	LUMP							3/26
518	40000	51	51	METER	150 mm PERFORATED CORRUGATED PLASTIC PIPE	51	51							
518	40010	11	11	METER	150 mm NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	11	11							
815	00030	9200	9200	SQ. METER	SURFACE PREPARATION OF EXISTING STEEL SYSTEM OZEU					9200	9200			
843	50000	16.1	6.0	SQ METER	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR	8.3	6.0	7.8						
815	00056	9200	9200	SQ. METER	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU					9200	9200			
815	00060	9200	9200	SQ. METER	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU					9200	9200			
815	00066	9200	9200	SQ. METER	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU					9200	9200			
SPECIAL	85050070	1896	1896	SQ. METER	BRIDGE DECK GROOVING					1896	1896			

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ESTIMATED QUANTITIES
BRIDGE NO. ERI-2-11571 L & R (0799)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY R.R. & OLD RAILROAD RD.

ERI-2-2.866

CONSTRUCTION SEQUENCE:

PHASE I

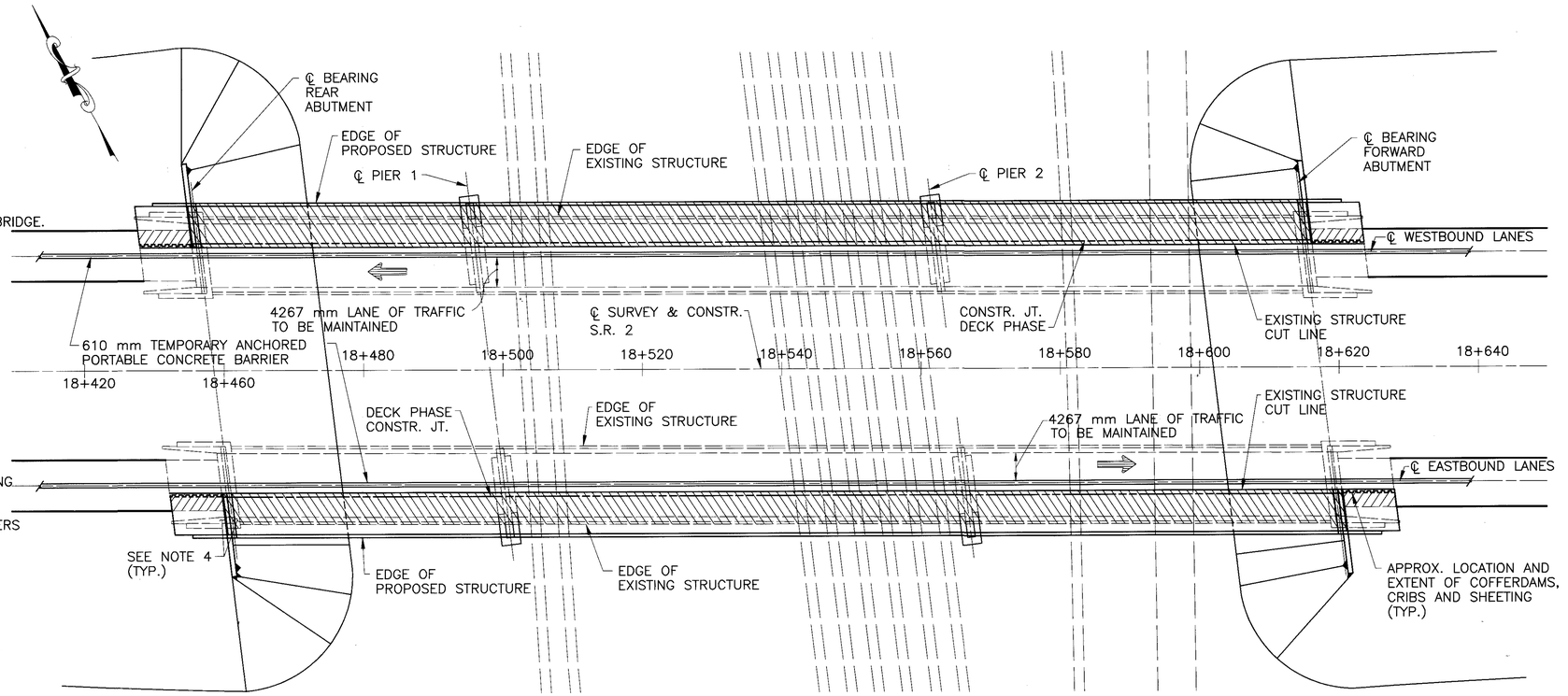
1. INSTALL PORTABLE CONCRETE BARRIERS AND REROUTE TRAFFIC ONTO SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE. INSTALL SHEET PILING AS SHOWN.
2. INSTALL PROPOSED PILES AT THE ABUTMENTS AND CONSTRUCT THE ABUTMENT FOOTING EXTENSIONS FOR THE NORTH HALF OF THE LEFT BRIDGE AND THE SOUTH HALF OF THE RIGHT BRIDGE.
3. CONSTRUCT PROPOSED PIER FOOTING EXTENSIONS AND PIER WALL EXTENSIONS UP TO THE CONSTRUCTION JOINT BELOW THE PROPOSED BRIDGE SEAT FOR THE NORTH HALF OF THE LEFT BRIDGE AND THE SOUTH HALF OF THE RIGHT BRIDGE.
4. MAINTAIN ONE 4267 mm LANE ON EACH OF THE EXISTING BRIDGES.
5. REMOVE APPROACH SLAB, DECK SLAB, MEDIAN, SAFETY CURB AND PARAPET OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE. IN ADDITION, REMOVE SCUPPERS INCLUDING RELATED DRAINAGE ITEMS AND SUPPORT ARMOR AND EXPANSION JOINT ARMOR.
6. PROVIDE TEMPORARY SUPPORT SYSTEMS FOR THE LEFT TWO GIRDERS OF THE EXISTING LEFT BRIDGE AND THE RIGHT TWO GIRDERS OF THE EXISTING RIGHT BRIDGE AT ABUTMENTS AND PIERS AS PER PLAN NOTES AND PROCEDURES.
7. REMOVE PORTIONS OF ABUTMENTS AND WINGWALLS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
8. CONSTRUCT THE REMAINING PORTIONS OF THE ABUTMENTS AND PIERS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
9. INSTALL ROCKER BEARINGS AT ABUTMENTS AND ELASTOMERIC BEARINGS AT PIERS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE. REMOVE TEMPORARY SUPPORT SYSTEMS.
10. INSTALL SHEAR CONNECTORS ON EXISTING GIRDERS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE. ERECT PROPOSED EXTERIOR GIRDER FOR BOTH THE LEFT AND THE RIGHT BRIDGE.
11. CONSTRUCT DECK AND PARAPET OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
12. SEAL CONCRETE SURFACES.
13. COMPLETE DRAINAGE ITEMS AND APPROACH SLAB FOR THE NORTH OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.

NOTES

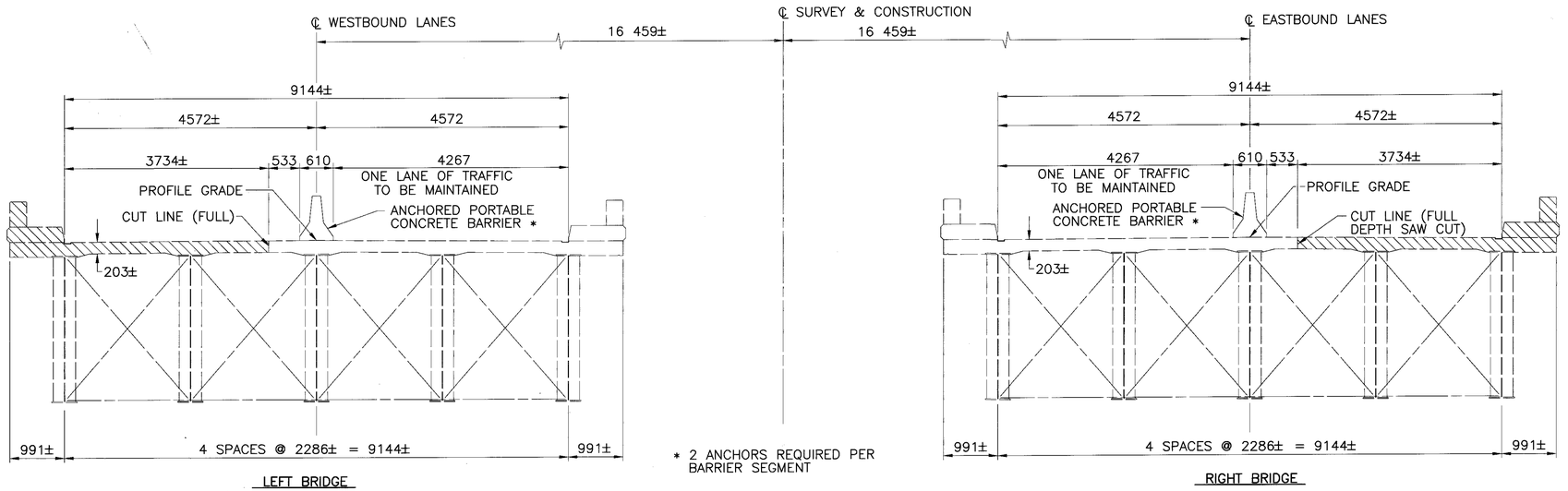
1. PORTABLE CONCRETE BARRIER IS CARRIED IN THE ROADWAY PLANS FOR PAYMENT.
2. FOR MORE MAINTENANCE OF TRAFFIC DETAILS, SEE ROADWAY PLANS.
3. FOR MORE PORTABLE CONCRETE BARRIER DETAILS, SEE STANDARD DRAWING PCB-91M.
4. FOR ABUTMENT REMOVAL DETAILS, SEE SHEETS 8/26 AND 9/26.

INDICATES LIMITS OF APPROACH SLAB REMOVAL IN PHASE I. INCLUDED WITH ROADWAY QUANTITIES FOR PAYMENT.

INDICATES AREAS TO BE REMOVED IN PHASE I PER ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN DECK AND PARAPET



PHASE I CONSTRUCTION PLAN



PHASE I TRANSVERSE SECTION

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KVB		2200481&2200511	

PHASE CONSTRUCTION DETAILS
BRIDGE NO. ERI-2-11571 L & R (0792)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY R.R. & OLD RAILROAD RD.

ERI-2-2.866

6/26

283/327

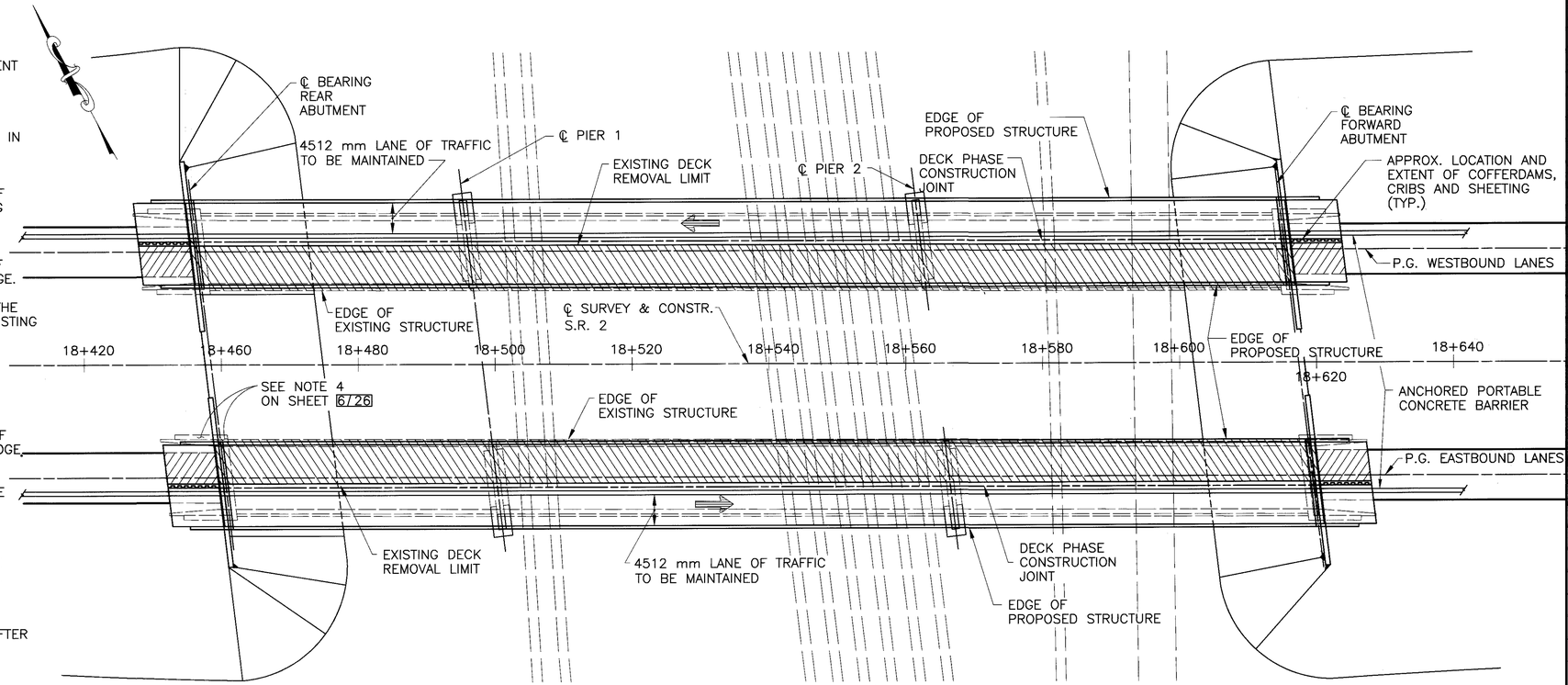
CONSTRUCTION SEQUENCE:

PHASE II

1. RELOCATE PORTABLE CONCRETE BARRIERS AS SHOWN AND MAINTAIN TRAFFIC ONTO NORTH HALF OF EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
2. MAINTAIN ONE 4512 mm LANE ON EACH OF THE EXISTING BRIDGES.
3. INSTALL PROPOSED PILES AT THE ABUTMENTS AND CONSTRUCT THE ABUTMENT FOOTING EXTENSIONS FOR SOUTH HALF OF THE LEFT BRIDGE AND NORTH HALF OF THE RIGHT BRIDGE.
4. REMOVE REMAINING PORTIONS OF EXISTING APPROACH SLAB, DECK SLAB, MEDIAN, SAFETY CURB AND PARAPET OF THE LEFT AND RIGHT BRIDGES. IN ADDITION, REMOVE SCUPPERS INCLUDING RELATED DRAINAGE ITEMS AND SUPPORT ARMOR AND EXPANSION JOINT ARMOR.
5. PROVIDE TEMPORARY SUPPORT SYSTEMS FOR THE RIGHT THREE GIRDERS OF THE EXISTING LEFT BRIDGE AND THE LEFT THREE GIRDERS OF THE EXISTING RIGHT BRIDGE AT ABUTMENTS AND PIERS AS PER PLAN NOTES AND PROCEDURES.
6. REMOVE PORTIONS OF ABUTMENTS AND WINGWALLS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
7. CONSTRUCT THE REMAINING PORTIONS OF THE ABUTMENTS AND PIERS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
8. INSTALL ROCKER BEARINGS AT ABUTMENTS AND ELASTOMERIC BEARINGS AT PIERS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE. REMOVE TEMPORARY SUPPORT SYSTEMS.
9. INSTALL SHEAR CONNECTORS ON EXISTING GIRDERS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
10. CONSTRUCT THE REMAINING PORTIONS OF THE DECK AND PARAPET OF THE LEFT AND THE RIGHT BRIDGE.
11. SEAL CONCRETE SURFACES.
12. COMPLETE DRAINAGE ITEMS AND APPROACH SLAB FOR THE SOUTH OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
13. COMPLETE SLOPE PROTECTION.
14. INSTALL THE JOINT STRIP SEAL FOR EACH BRIDGE JOINT IN ONE PIECE, AFTER THE SUPERSTRUCTURE IS COMPLETE.

NOTES

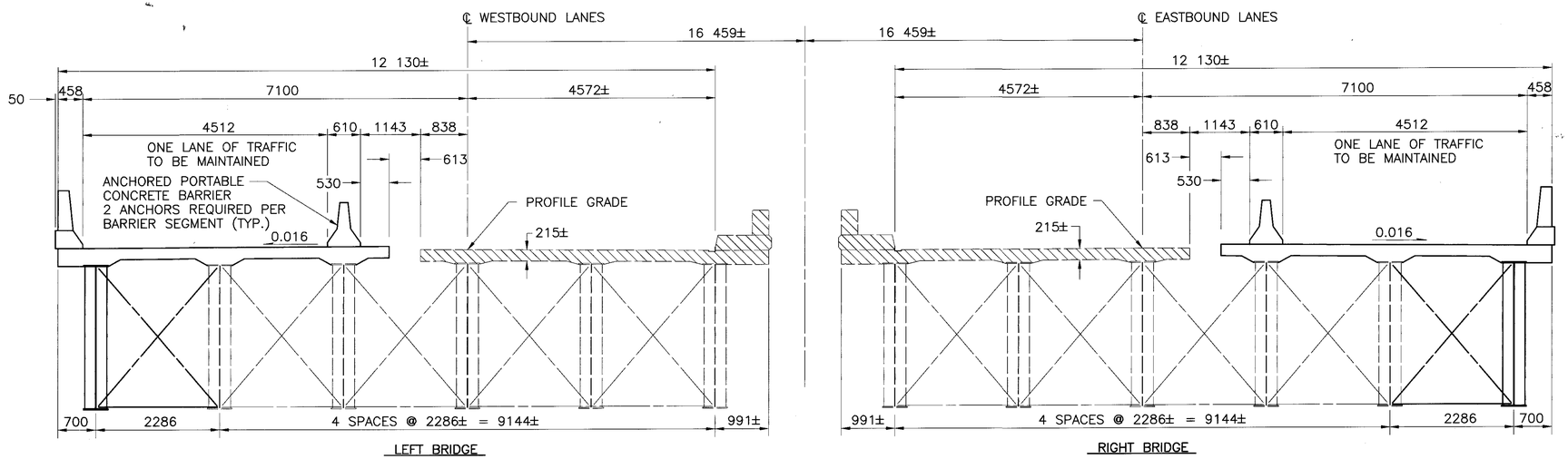
FOR NOTES SEE SHEET 6/26.



PHASE II CONSTRUCTION PLAN

INDICATES LIMITS OF APPROACH SLAB REMOVAL IN PHASE II. INCLUDED WITH ROADWAY QUANTITIES FOR PAYMENT.

INDICATES AREAS TO BE REMOVED IN PHASE II PER ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK AND PARAPET)



PHASE II TRANSVERSE SECTION

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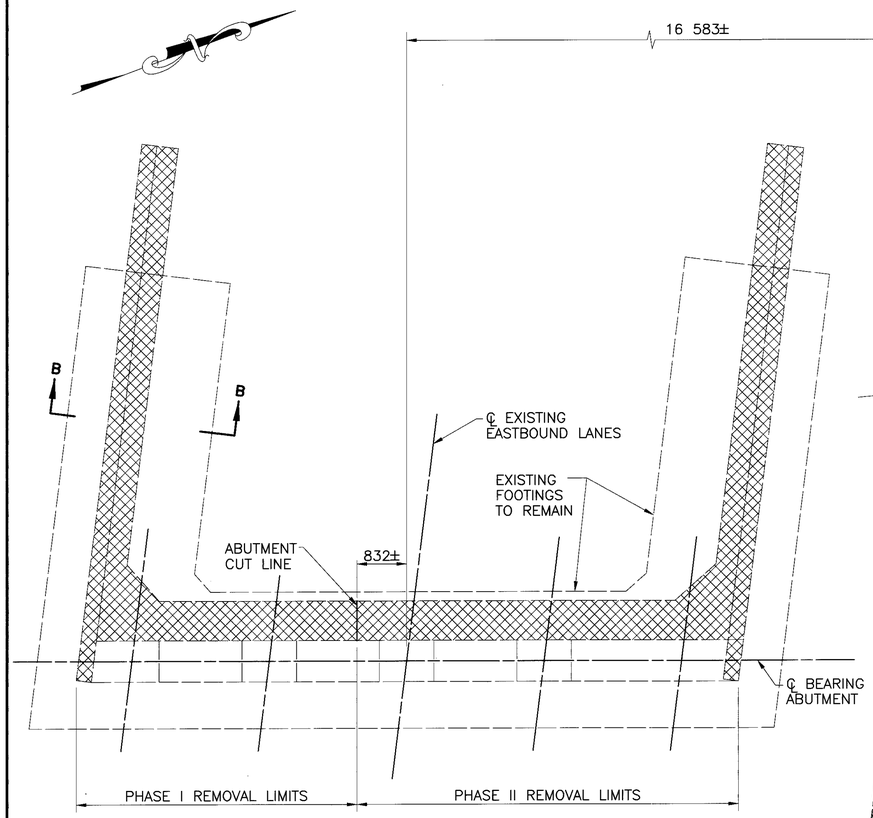
PHASE CONSTRUCTION DETAILS
BRIDGE NO. ER-2-11571 L & R (0779)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY R.R. & OLD RAILROAD RD.

ER-2-2.866

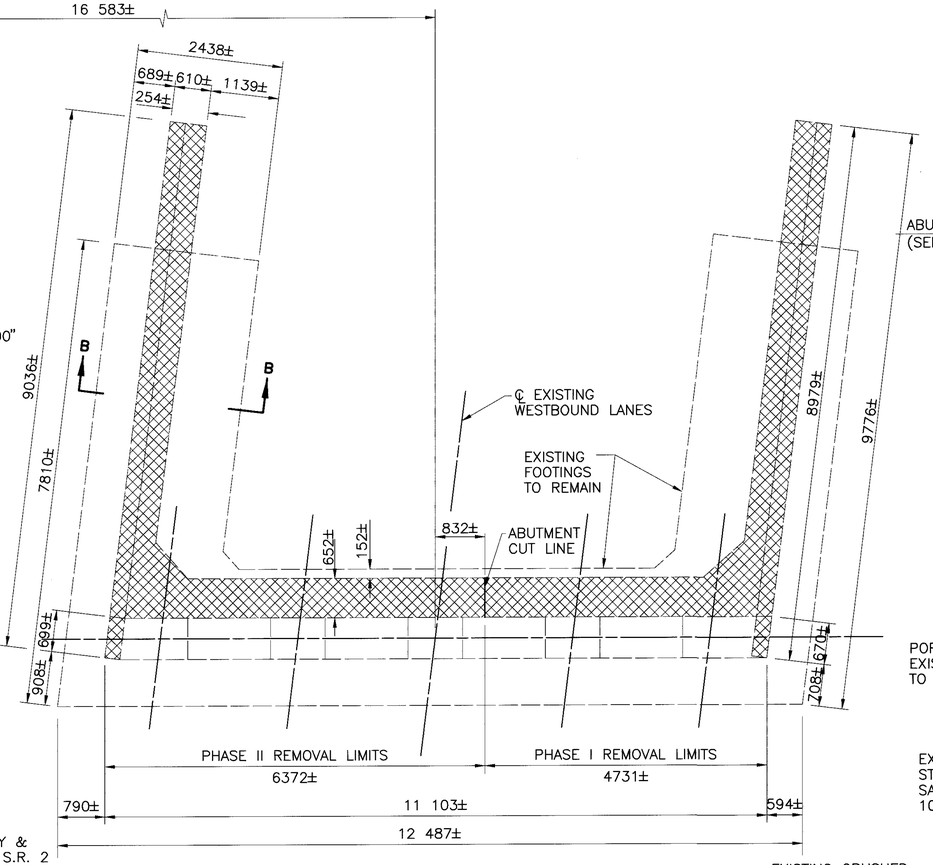
7/26

284/327

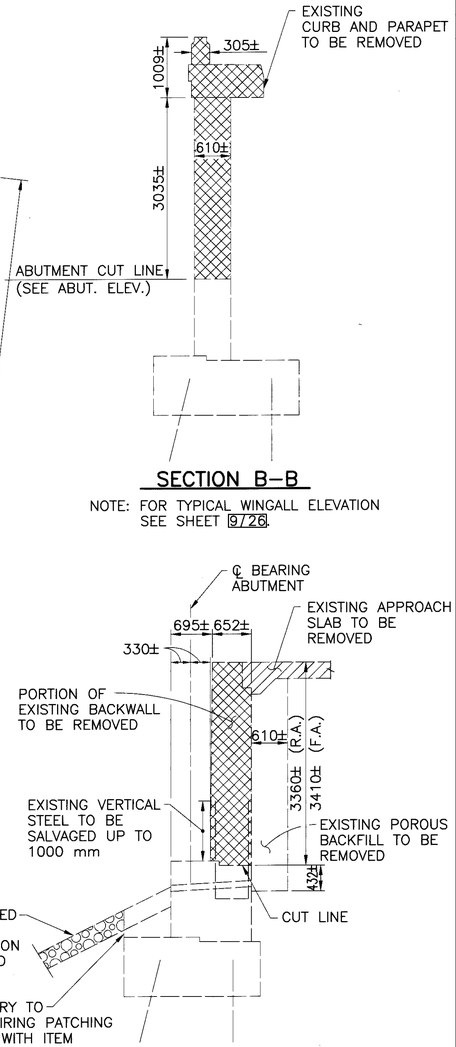


REAR ABUTMENT PLAN – RIGHT BRIDGE

NOTE: FOR DIMENSIONS, SEE LEFT BRIDGE



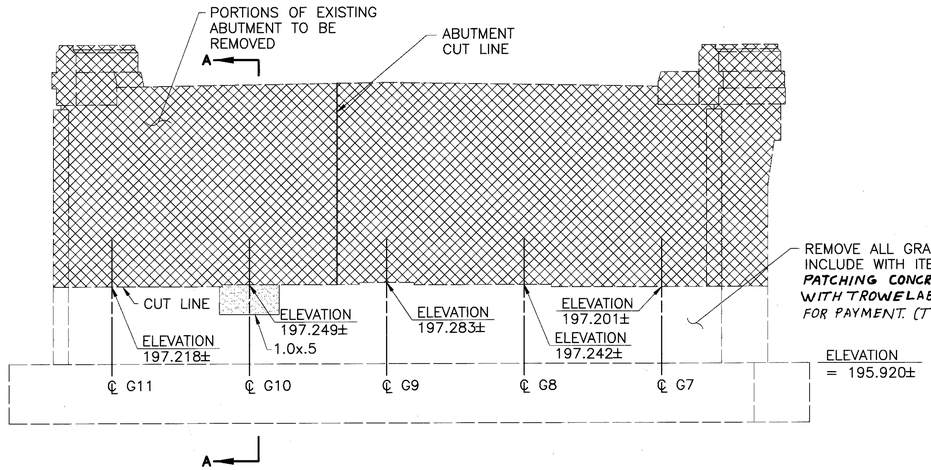
REAR ABUTMENT PLAN – LEFT BRIDGE



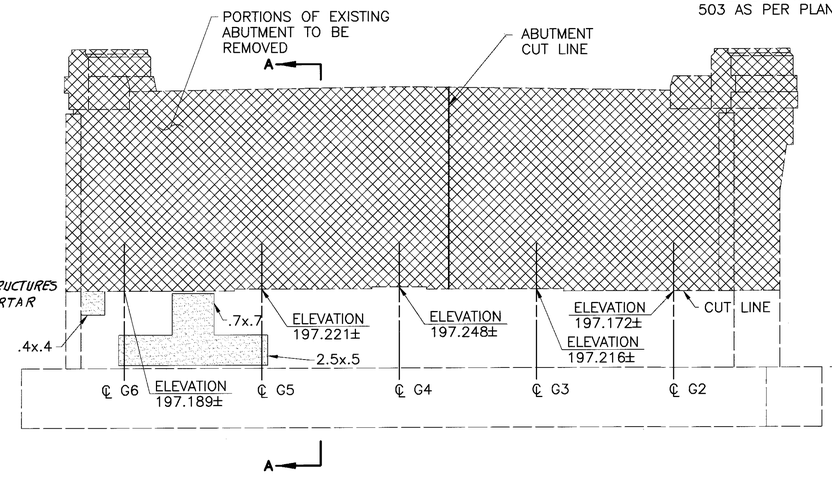
SECTION B–B

NOTE: FOR TYPICAL WINGALL ELEVATION SEE SHEET 9/26.

SECTION A–A



REAR ABUTMENT ELEVATION – RIGHT BRIDGE



REAR ABUTMENT ELEVATION – LEFT BRIDGE

SUMMARY OF PATCHING QUANTITIES		
LOCATION	MEASURED	ESTIMATED
LEFT BRIDGE R.A.	1.90 SQ. M	3.80 SQ. M
LEFT BRIDGE F.A.	2.25 SQ. M	4.50 SQ. M
TOTAL LEFT BRIDGE	4.20 SQ. M	8.30 SQ. M
RIGHT BRIDGE R.A.	0.50 SQ. M	1.00 SQ. M
RIGHT BRIDGE F.A.	2.50 SQ. M	5.00 SQ. M
TOTAL RIGHT BRIDGE	3.00 SQ. M	6.00 SQ. M

PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN OCTOBER 1997.

INDICATES AREA OF APPROACH SLAB REMOVAL. INCLUDED WITH ROADWAY QUANTITIES FOR PAYMENT.

INDICATES AREAS TO BE REMOVED AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE.

INDICATES AREAS TO BE PATCHED AS PER ITEM. PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR.

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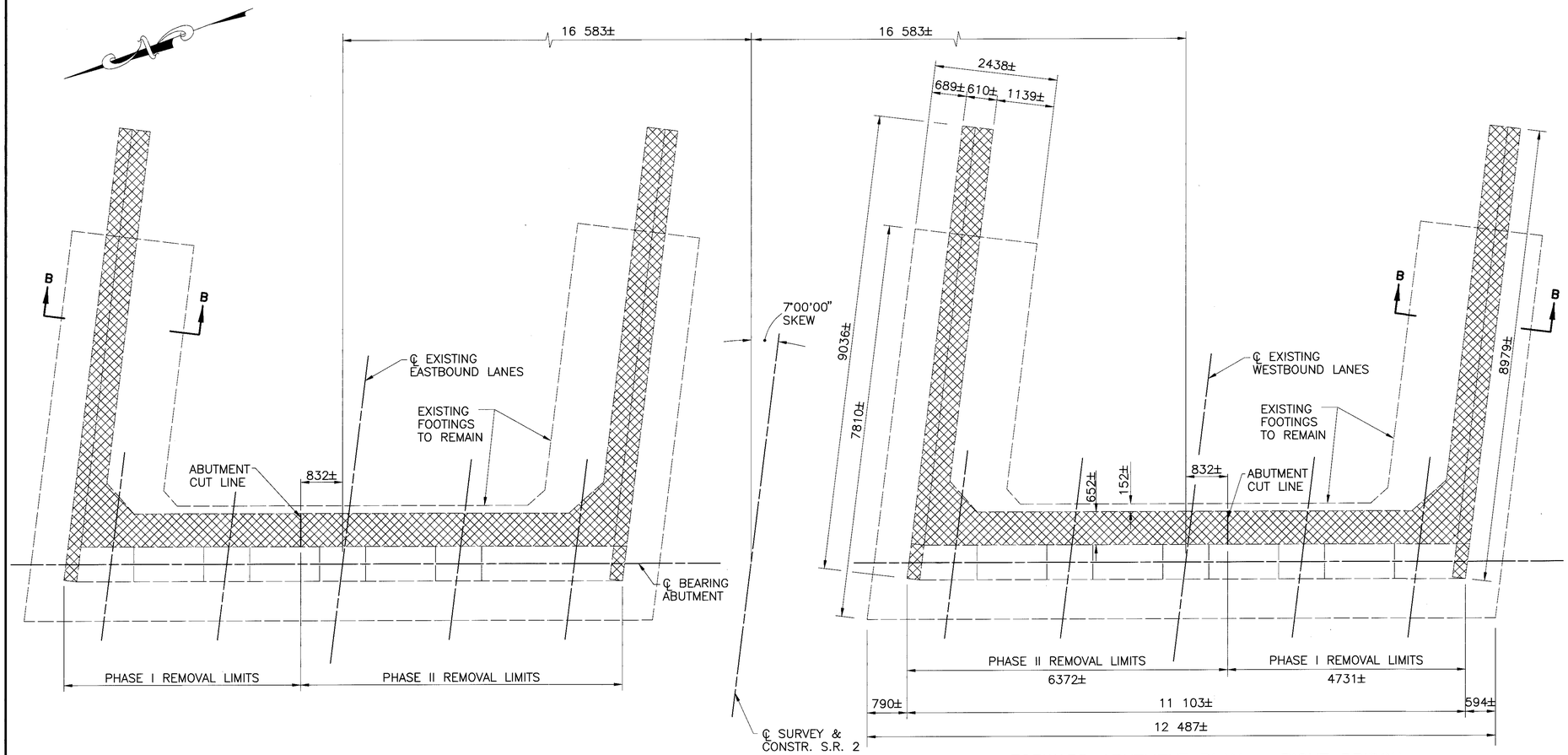
BAG		2200481&2200511	

ABUTMENT REMOVAL DETAILS

BRIDGE NO. ERI-2-11571 L & R (0799)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY R.R. & OLD RAILROAD RD.

ERI-2-2.866



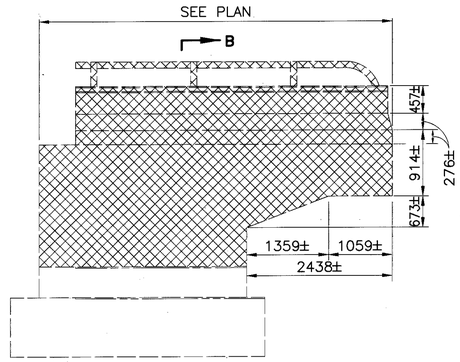
FORWARD ABUTMENT PLAN – LEFT BRIDGE

NOTE: FOR DIMENSIONS, SEE RIGHT BRIDGE

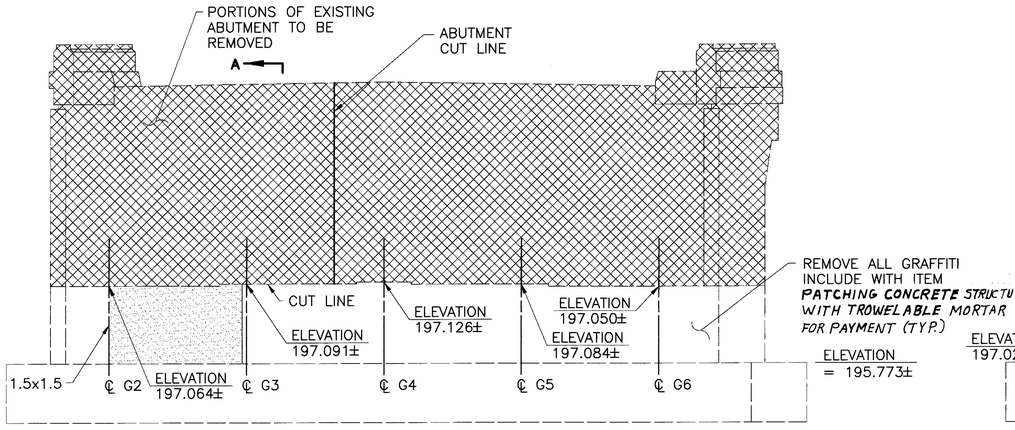
FORWARD ABUTMENT PLAN – RIGHT BRIDGE

NOTES

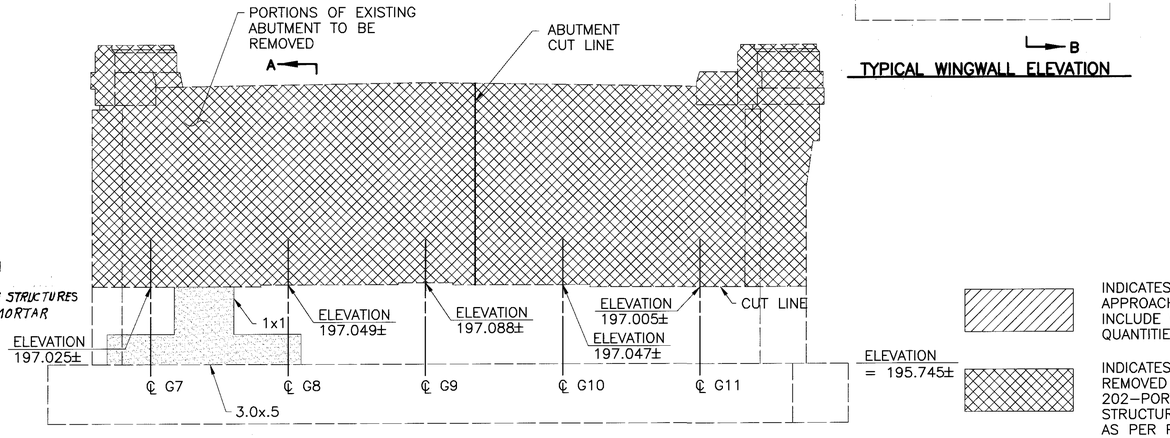
FOR SECTIONS A–A AND B–B AND PATCHING QUANTITIES, SEE SHEET 8/26.



TYPICAL WINGWALL ELEVATION



FORWARD ABUTMENT ELEVATION – LEFT BRIDGE



FORWARD ABUTMENT ELEVATION – RIGHT BRIDGE

INDICATES AREA OF APPROACH SLAB REMOVAL. INCLUDE WITH ROADWAY QUANTITIES FOR PAYMENT.

INDICATES AREAS TO BE REMOVED AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE.

INDICATES AREAS TO BE PATCHED AS PER ITEM PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR.

R.D. Zanda & Associates, Inc.
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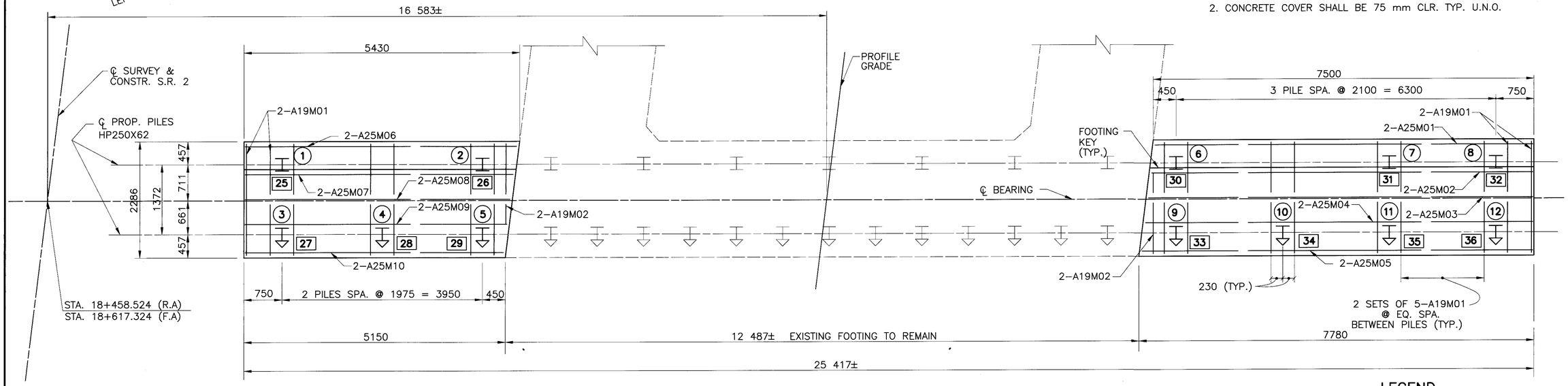
BAG/FJR		2200481&2200511	

ABUTMENT REMOVAL DETAILS
BRIDGE NO. ERI-2-11571 L & R (0799)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY RR. & OLD RAILROAD RD.

ERI-2-2.866

NOTES

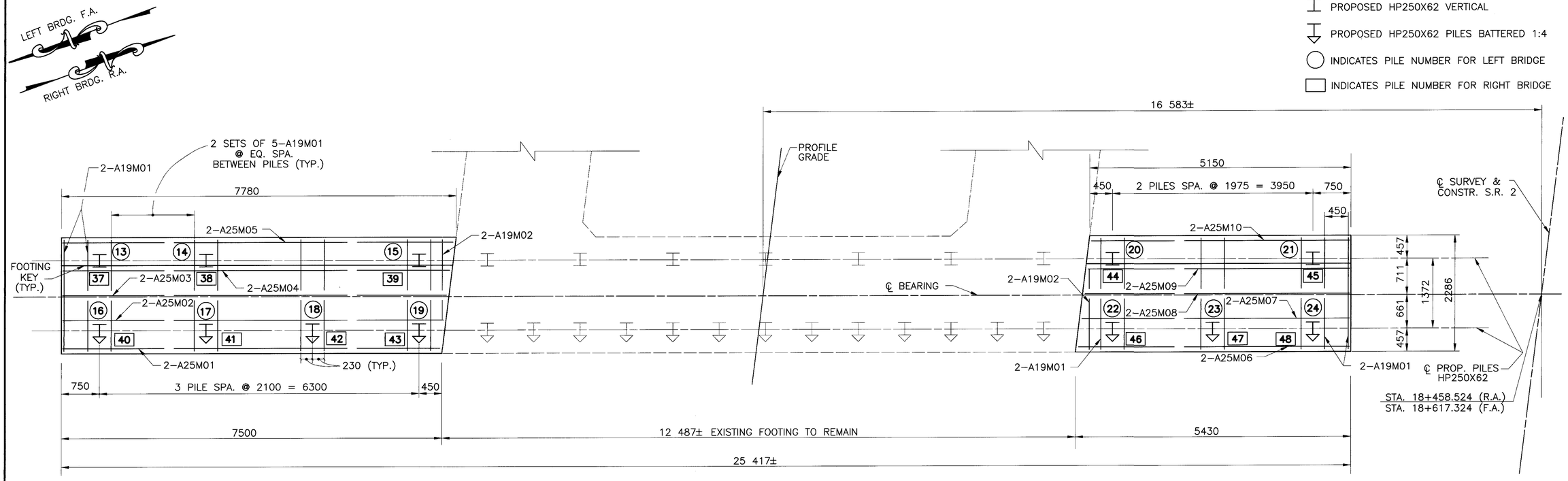
1. FOR NOTES AND DETAILS SEE SHEET 13/26.
2. CONCRETE COVER SHALL BE 75 mm CLR. TYP. U.N.O.



ABUTMENT FOOTING AND PILE LAYOUT PLAN
(LEFT BRIDGE REAR ABUT. & RIGHT BRIDGE FORWARD ABUT.)

LEGEND

- EXISTING 10BP42 PILES VERTICAL
- EXISTING 10BP42 PILES BATTERED 1:4
- PROPOSED HP250X62 VERTICAL
- PROPOSED HP250X62 PILES BATTERED 1:4
- INDICATES PILE NUMBER FOR LEFT BRIDGE
- INDICATES PILE NUMBER FOR RIGHT BRIDGE



ABUTMENT FOOTING AND PILE LAYOUT PLAN
(RIGHT BRIDGE REAR ABUT. & LEFT BRIDGE FORWARD ABUT.)

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BAG		2200481&2200511	

ABUTMENT FOOTING AND PILE LAYOUT PLAN
BRIDGE NO. ERI-2-11571 L & R (0792)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY R.R. & OLD RAILROAD RD.

ERI-2-2.866

10/26

287/327

RIGHT BRDG. F.A.

LEFT BRDG. R.A.

BERM LINE

150 mm NON–PERFORATED C.P.P. AT ENDS, TYPE S

150 mm PERFORATED C.P.P., TYPE SP

BERM LINE

150 mm NON–PERFORATED C.P.P. AT ENDS, TYPE S

2:1

PHASE II CONSTRUCTION LIMITS = 13 033±

PHASE I CONSTRUCTION LIMITS = 12 384

7283±

6634

16 583±

5750

5430

1500

7°00'00" SKEW (TYP)

SEE NOTE 2 (TYP.)

LIMITS OF APPROACH SLAB

POROUS BACKFILL WITH FILTER FABRIC

300

PROFILE GRADE

TYPE B WATER PROOFING 900 mm WIDE (EXISTING FROM BOTTOM OF APPROACH SLAB SEAT TO 300 mm BELOW BEAM SEAT)

LIMITS OF APPROACH SLAB

EXISTING FOOTING TO REMAIN (TYP.)

2:1

7500

5750

℄ SURVEY & CONSTR. S.R. 2

LIMITS OF POROUS BACKFILL (TYP.)

152

650

2286

1484

600

498

650

PHASE CONSTR. JOINT

152±

152

498

366

1346

330

457 (TYP.)

457 (TYP.)

℄ BEARING

12 mm P.E.J.F. (TYP.)

EDGE OF DECK

EDGE OF DECK

℄ G6 (L.B.) ℄ G7 (R.B.)

℄ G5 (L.B.) ℄ G8 (R.B.)

℄ G4 (L.B.) ℄ G9 (R.B.)

℄ G3 (L.B.) ℄ G10 (R.B.)

℄ G2 (L.B.) ℄ G11 (R.B.)

℄ G1 (L.B.) ℄ G12 (R.B.)

STA. 18+458.524 (R.A.)
STA. 18+617.324 (F.A.)

4 SPA. @ 2303± = 9212±

2303

457

11 103±

2000

5150

12 487±

7780

25 417±

ABUTMENT REINFORCEMENT TABLE

1	5–A19M09 @ 380 mm O.C. (E.F.)
2	4–A16M05 (N.F.) & 4–A16M06 (F.F.) @ EQ. SPA.
3	11–A25M11 @ 215 mm O.C. (F.F.) & 6–A19M07 @ 430 mm O.C. (N.F.)
4	9–A19M08 & 6–A16M21 @ EQ. SPA.
5	4–A16M03 (N.F.) & 4–A16M04 (F.F.) @ EQ. SPA.
6	3–A16M08 @ EQ. SPA. (E.F.)
7	15–A25M11 @ 225 mm O.C. (F.F) & 8–A19M07 @ 450 mm O.C. (N.F.)

PLAN – LEFT BRIDGE REAR ABUT. & RIGHT BRIDGE FORWARD ABUT.

NOTE: SEE SHEET 10/26 FOR PROP. PILE LAYOUT AND NUMBERS

30–A19M03 & A19M04 @ 230 mm O.C.
15–D25M01 450 mm O.C. (MEASURED PERPENDICULAR TO ℄ OF RDWY.)

27–A19M03 & A19M04 @ 230 mm O.C.
14–D25M01 @ 450 mm O.C. (MEASURED PERPENDICULAR TO ℄ OF RDWY.)

A

B

ELEV. D

PROFILE GRADE
ELEV. C

ELEV. B

APPROACH SLAB SEAT

ELEV. A

A16M18

A16M13

1 SER. OF 5–A19M17 @ 450 mm O.C.

C

1 SER. OF 7–A19M13 @ 450 mm O.C.

2–A16M14

C

1 SER. OF 5–A19M16 @ 380 mm O.C.

D

1 SER. OF 6–A16M17 @ 400 mm O.C. (E.F.)

1 SER. OF 6–A16M12 @ 400 mm O.C. (E.F.)

A19M05

1 SER. OF 5–A19M12 @ 410 mm O.C.

D

A19M18

A19M19

PHASE CONSTR. JOINT

ELEV. G
SEE NOTE 1 (TYP.)

LAP=830 (MIN.) (TYP.)

4

2–A16M19

ELEV. L

2–A16M16

ELEV. J

2–A16M15

ELEV. J

ELEV. I

ELEV. H

ELEV. F

ELEV. E

2–A16M10

ELEV. L

ELEV. E

2–A16M11

2–A16M07

2–A16M09

150 mm ø NON–PERFORATED C.P.P. AT ENDS SPLICED TO PERFORATED PIPE, OUTLET AS SHOWN IN TERMINATION OF 150 mm ø C.P.P. DETAIL ON SHEET 13/26. (TYP.)

A19M14
A19M15

1

2

A19M20 (N.F.)
A25M12 (F.F.)

400 (TYP.)

2–A16M02 DOWELS

2

2

2–A16M20

TOP OF SLOPE
ELEV. K

2–A16M01 (TYP.)

1

1

5–A16M08

5

5–A19M09 @ 410 mm O.C. (E.F.)

A19M10

A19M11

6

1

4–A19M06 400 mm O.C. (E.F.)

450 (TYP.)

2–A16M02 DOWEL

990

3

450 (TYP.)

150 (TYP.)

7

ELEV. M (MATCH EX.)

A19M01

A19M01

A19M02

200 (TYP.)

A19M01

A19M02

A25M01, A25M02, A25M03
A25M04 & A25M05

2 SETS OF 5–A19M01 @ EQ. SPA. BETWEEN PILES (TYP.)

A25M06, A25M07, A25M08, A25M09 & A25M10

A

B

D

C

C

D

ELEVATION – LEFT BRIDGE REAR ABUT. & RIGHT BRIDGE FORWARD ABUT.

NOTE: ELEVATIONS A THRU D ARE GIVEN AT BRIDGE LIMITS AND ALL OTHER ELEVATIONS ARE AT ℄ BEARINGS

NOTES

1. FOR ELEVATIONS SEE SHEET 13/26.
2. FOR PARPET TRANSITION DETAIL SEE SHEET 25/26.
3. FOR ADDITIONAL NOTES AND ABUTMENTS AND WINGWALL SECTIONS SEE SHEET 13/26.
4. FOR REINFORCING STEEL LIST, SEE SHEET 26/26.

* SLOPE 20 mm BETWEEN BRIDGE SEATS.

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CHECKED	REVISED	STRUCTURE FILE NO	
BAG		2200481&2200511	

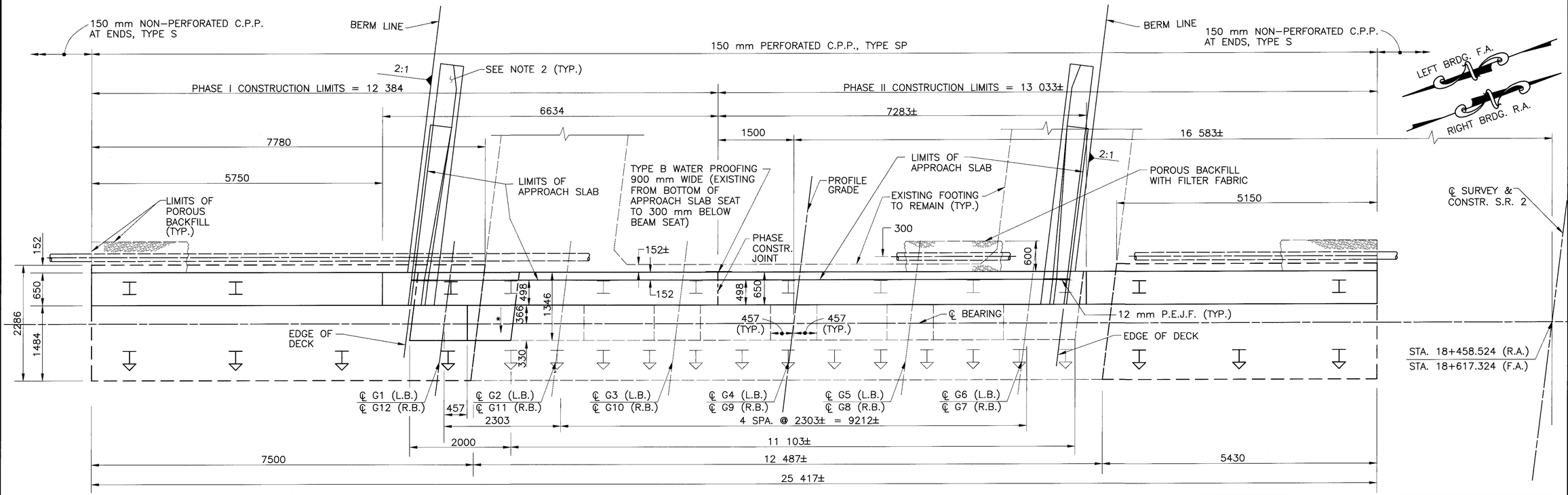
ABUTMENT PLAN AND ELEVATION

BRIDGE NO. ERI-2-11671 L & R (0799)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY RR. & OLD RAILROAD RD.

ERI-2-2.866

11/26

288/327



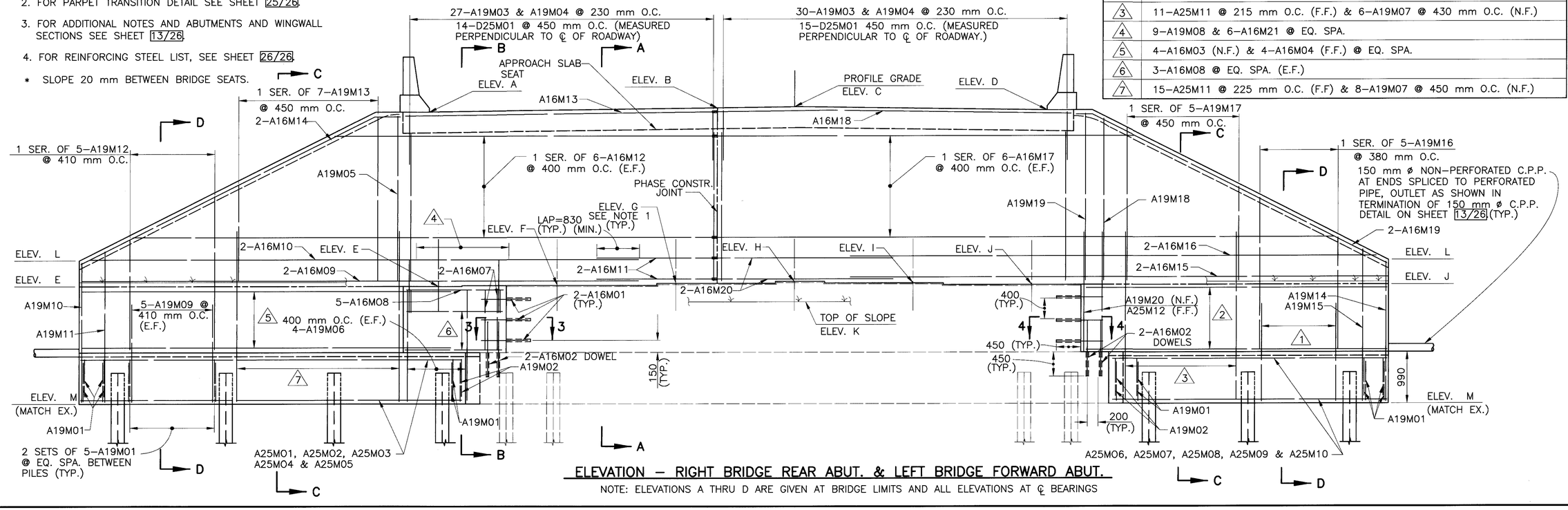
NOTES

1. FOR ELEVATIONS SEE SHEET 13/26.
2. FOR PARPET TRANSITION DETAIL SEE SHEET 25/26.
3. FOR ADDITIONAL NOTES AND ABUTMENTS AND WINGWALL SECTIONS SEE SHEET 13/26.
4. FOR REINFORCING STEEL LIST, SEE SHEET 26/26.

* SLOPE 20 mm BETWEEN BRIDGE SEATS.

PLAN – RIGHT BRIDGE REAR ABUT. & LEFT BRIDGE FORWARD ABUT.

NOTE: SEE SHEET 10/26 FOR PROP. PILE LAYOUT AND NUMBERS



ELEVATION – RIGHT BRIDGE REAR ABUT. & LEFT BRIDGE FORWARD ABUT.

NOTE: ELEVATIONS A THRU D ARE GIVEN AT BRIDGE LIMITS AND ALL ELEVATIONS AT ℄ BEARINGS

ABUTMENT REINFORCEMENT TABLE

1	5–A19M09 @ 380 mm O.C. (E.F.)
2	4–A16M05 (N.F.) & 4–A16M06 (F.F.) @ EQ. SPA.
3	11–A25M11 @ 215 mm O.C. (F.F.) & 6–A19M07 @ 430 mm O.C. (N.F.)
4	9–A19M08 & 6–A16M21 @ EQ. SPA.
5	4–A16M03 (N.F.) & 4–A16M04 (F.F.) @ EQ. SPA.
6	3–A16M08 @ EQ. SPA. (E.F.)
7	15–A25M11 @ 225 mm O.C. (F.F) & 8–A19M07 @ 450 mm O.C. (N.F.)

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CHECKED BAG | REVISED | STRUCTURE FILE NO. 2200481&2200511

ABUTMENT PLAN AND ELEVATION

BRIDGE NO. ERI-2-11571 L & R (0799)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY R.R. & OLD RAILROAD RD.

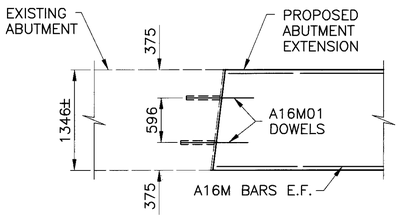
ERI-2-2.866

12/26

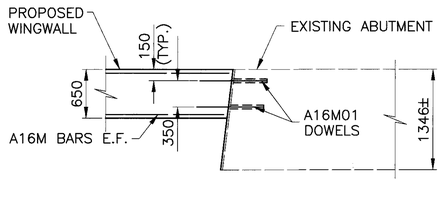
289/327

TABLE OF ABUTMENT ELEVATIONS

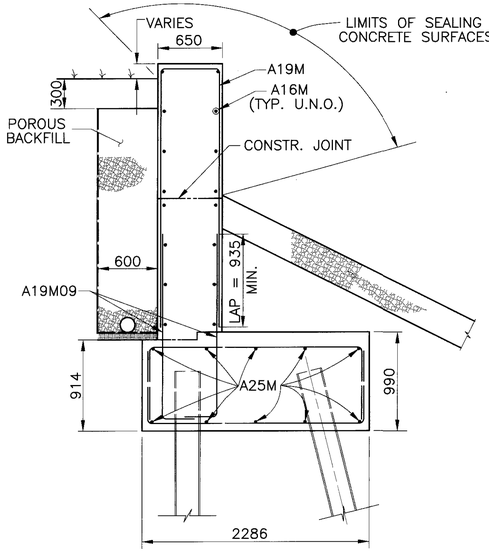
BRIDGES	ABUTMENTS	A	B	C	D	E	F	G	H	I	J	K	L	M
LEFT BRIDGE	REAR ABUTMENT	200.535	200.632	200.657	200.586	197.140	197.172	197.216	197.248	197.221	197.189	196.840	197.662	194.907
	FORWARD ABUTMENT	200.473	200.555	200.577	200.494	197.033	197.064	197.091	197.126	197.084	197.050	196.732	197.555	194.785
RIGHT BRIDGE	REAR ABUTMENT	200.589	200.672	200.694	200.612	197.192	197.218	197.249	197.283	197.242	197.201	196.890	197.713	194.930
	FORWARD ABUTMENT	200.411	200.508	200.534	200.464	196.972	197.005	197.047	197.088	197.049	197.025	196.672	197.495	194.755



VIEW 1–1 (AS SHOWN)
VIEW 3–3 (OPPOSITE)



VIEW 2–2 (AS SHOWN)
VIEW 4–4 (OPPOSITE)

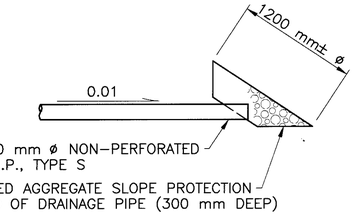


SECTION D–D

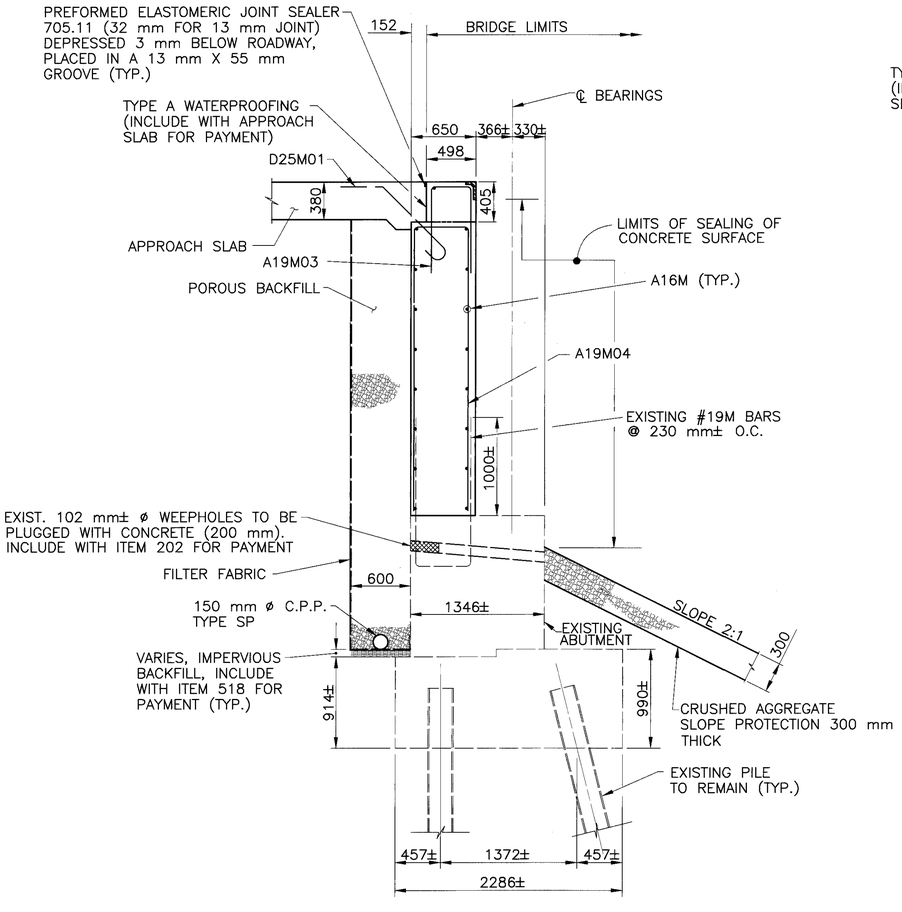
NOTE: FOR ADDITIONAL INFORMATION SEE SECTION C–C

NOTES

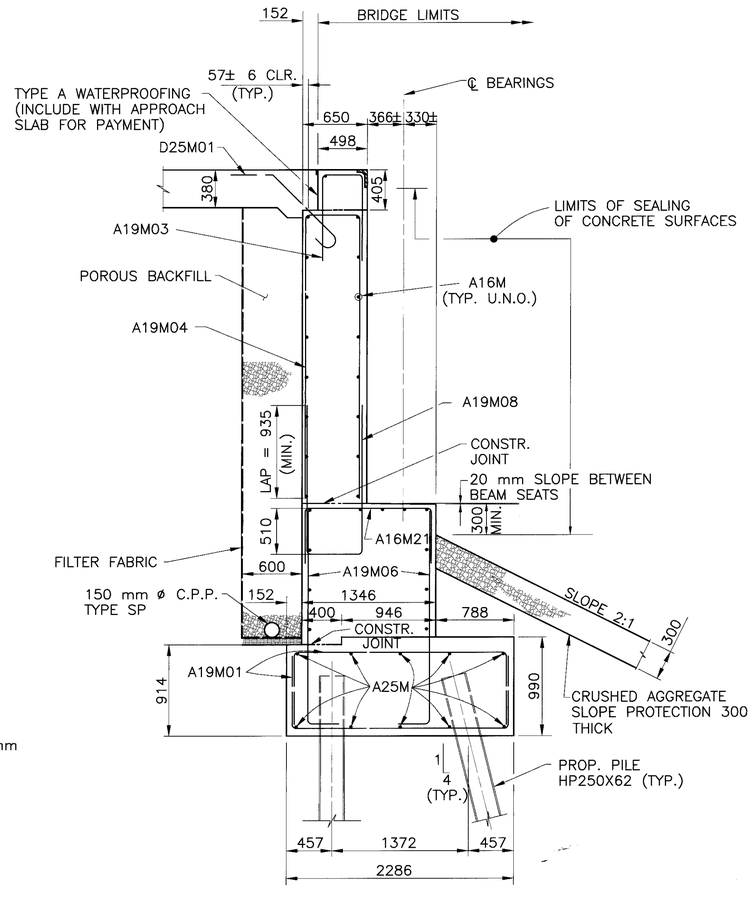
1. POROUS BACKFILL WITH FILTER FABRIC, 600 mm THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 300 mm BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS. GEOTEXTILE FABRIC SHALL CONFORM WITH 712.09, TYPE A. GEOTEXTILE SHALL BE INCLUDED WITH ITEM 518 POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN, FOR PAYMENT. POROUS BACKFILL MATERIAL SHALL BE #57 GRAVEL.
2. BACKWALL CONCRETE: IN ADDITIOIN TO THE PROVISIONS OF 511.08, BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.
3. BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE PROPOSED BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE–SETTING OF BEARING ANCHORS.
4. CONCRETE COVER SHALL BE 50 mm CLEAR TYP. U.N.O.



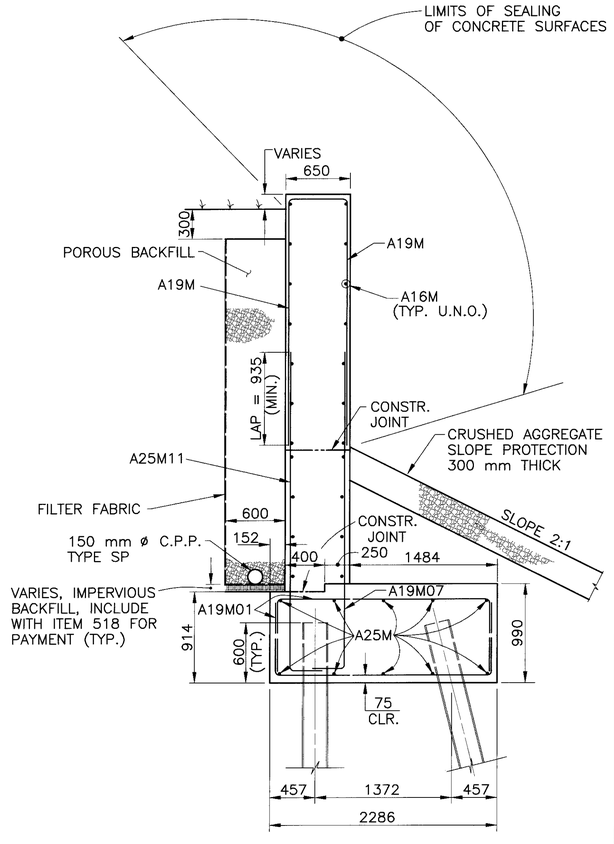
TERMINATION OF 150 mm C.P.P. DETAIL



SECTION A–A



SECTION B–B



SECTION C–C

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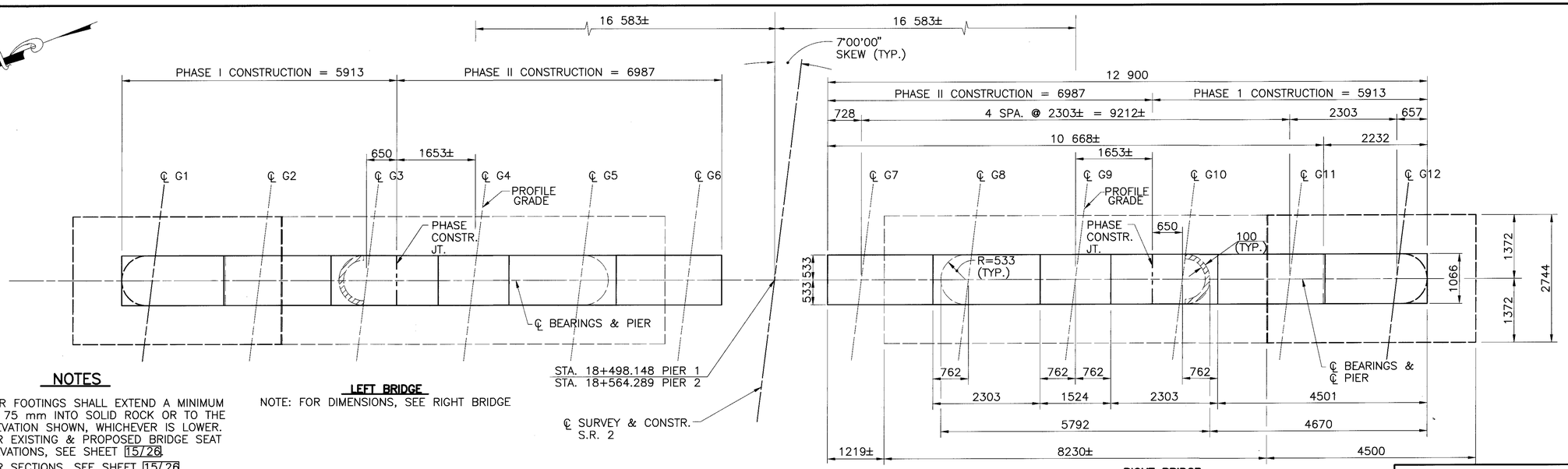
BAG		2200481&2200511	

ABUTMENT DETAILS
BRIDGE NO. ERI-2-11571 L & R (07.79)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY R.R. & OLD RAILROAD RD.

ERI-2-2.866

13/26
290/327



LEFT BRIDGE

NOTE: FOR DIMENSIONS, SEE RIGHT BRIDGE

RIGHT BRIDGE

NOTES

1. PIER FOOTINGS SHALL EXTEND A MINIMUM OF 75 mm INTO SOLID ROCK OR TO THE ELEVATION SHOWN, WHICHEVER IS LOWER.
2. FOR EXISTING & PROPOSED BRIDGE SEAT ELEVATIONS, SEE SHEET 15/26.
3. FOR SECTIONS, SEE SHEET 15/26.
4. SCARIFY 6 mm EXISTING PIER CAP SURFACES.
5. FOR ADDITIONAL NOTES SEE SHEET 15/26.
6. FOR REINFORCING STEEL LIST, SEE SHEET 26/26.

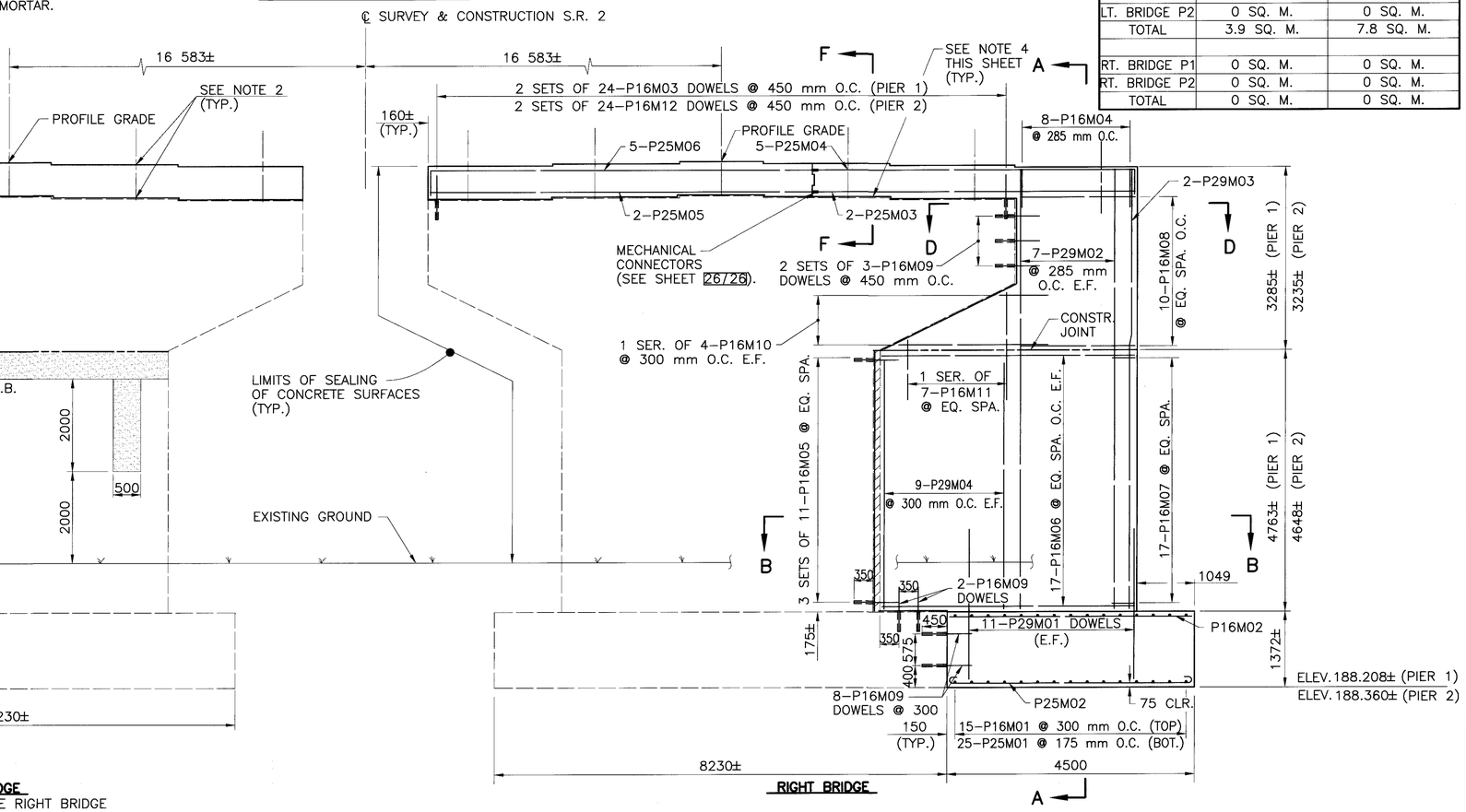
INDICATES AREAS TO BE REMOVED AS PER ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE.

INDICATES AREAS TO BE PATCHED AS PER ITEM PATCHING CONCRETE STRUCTURES, WITH TROWELABLE MORTAR.

SUMMARY OF PATCHING QUANTITIES

LOCATION	MEASURED	ESTIMATED
LT. BRIDGE P1	3.9 SQ. M.	7.8 SQ. M.
LT. BRIDGE P2	0 SQ. M.	0 SQ. M.
TOTAL	3.9 SQ. M.	7.8 SQ. M.
RT. BRIDGE P1	0 SQ. M.	0 SQ. M.
RT. BRIDGE P2	0 SQ. M.	0 SQ. M.
TOTAL	0 SQ. M.	0 SQ. M.

TYPICAL PIER PLAN



LEFT BRIDGE

NOTE: FOR REINF., SEE RIGHT BRIDGE

TYPICAL PIER ELEVATION

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Phone: (614) 488-4383

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CHECKED BAG | REVISED | STRUCTURE FILE NO 2200481 & 220051

PIER DETAILS
BRIDGE NO. ERI-2-11571 L & R (0779)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY R.R. & OLD RAILROAD ROAD

ERI-2-2.866

14/26

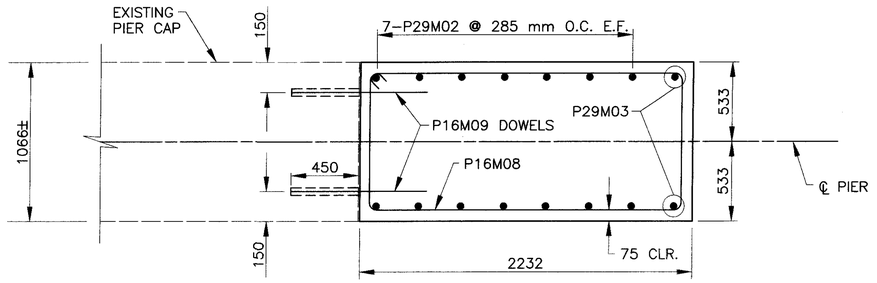
291/327

BRIDGE SEAT ELEVATIONS

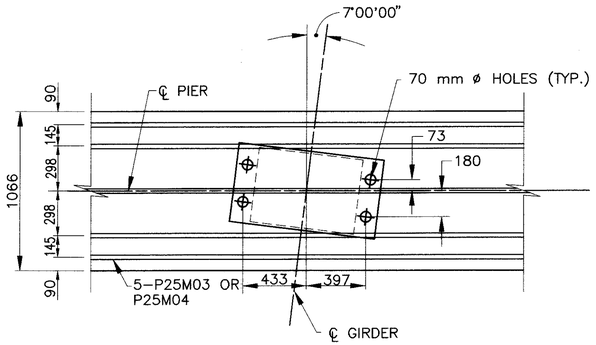
PIER NO.	GIRDER NO. / DESCRIPTION	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12
PIER 1	EXISTING SEAT ELEV.	N/A	197.065±	197.102±	197.138±	197.105±	197.071±	197.084±	197.120±	197.157±	197.123±	197.087±	N/A
	PROPOSED SEAT ELEV.	197.604	197.615	197.652	197.688	197.655	197.621	197.634	197.670	197.707	197.673	197.637	197.628
PIER 2	EXISTING SEAT ELEV.	N/A	197.074±	197.108±	197.141±	197.105±	197.068±	197.056±	197.093±	197.126±	197.090±	197.053±	N/A
	PROPOSED SEAT ELEV.	197.638	197.649	197.683	197.716	197.680	197.643	197.631	197.668	197.701	197.665	197.628	197.615

NOTES

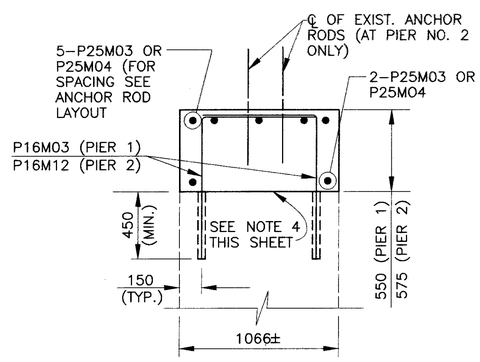
1. BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.
2. BEARING ANCHORS: AT THE OPTION OF THE CONTRACTOR, BEARING ANCHORS, LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST IN PLACE.
3. REMOVE ALL GRAFFITI FROM EXISTING PIER SURFACES. PAYMENT FOR THIS SHALL BE INCLUDED WITH ITEM PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR.
4. SCARIFY 6 mm OF EXISTING PIER CAP SURFACES.
5. CONCRETE COVER SHALL BE 50 mm CLEAR TYP. U.N.O.



SECTION D-D (AS SHOWN)
SECTION E-E (OPPOSITE HAND)

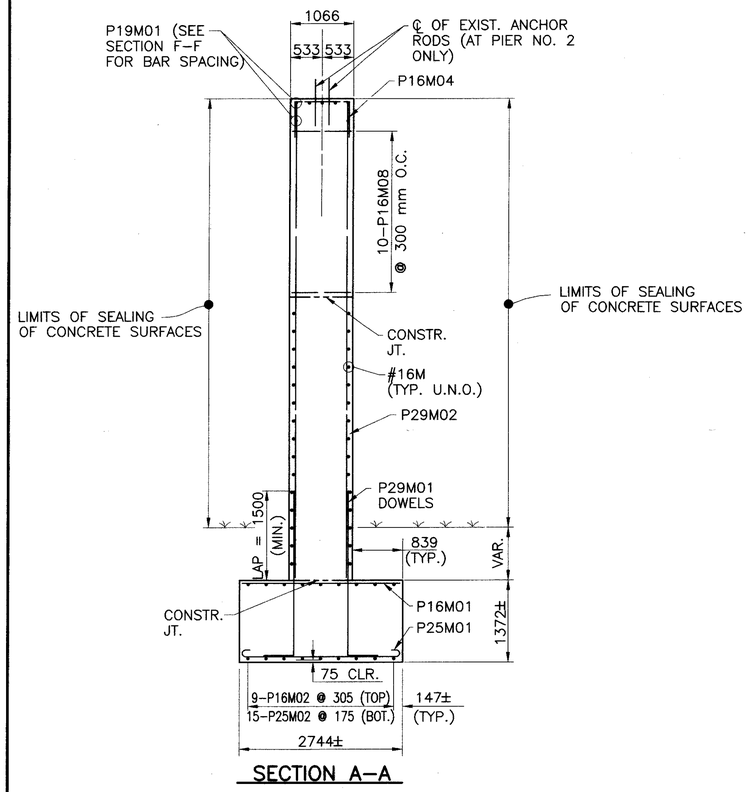


BEARING ANCHOR RODS LOCATION
TYPICAL AT PIER NO. 2 ONLY

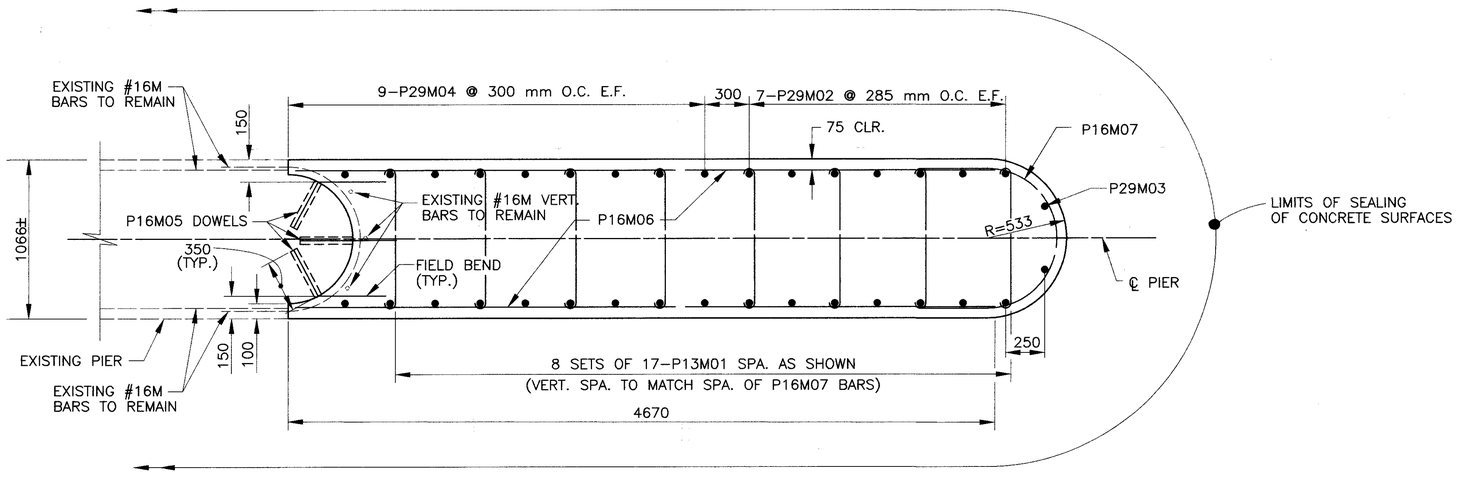


SECTION F-F

NOTE: FOR LIMITS OF SEALING OF CONCRETE SURFACES SEE SECTION A-A.



SECTION A-A



SECTION B-B (AS SHOWN)
SECTION C-C (OPPOSITE HAND)

Admin P:\3907\DWG\BRIDGE\E-2-1160\PLAN\3907HP02.DWG MAY 22, 1997 TIME: 1:59 PM

R.D. Zande & Associates, Inc.
Land Development Consultants
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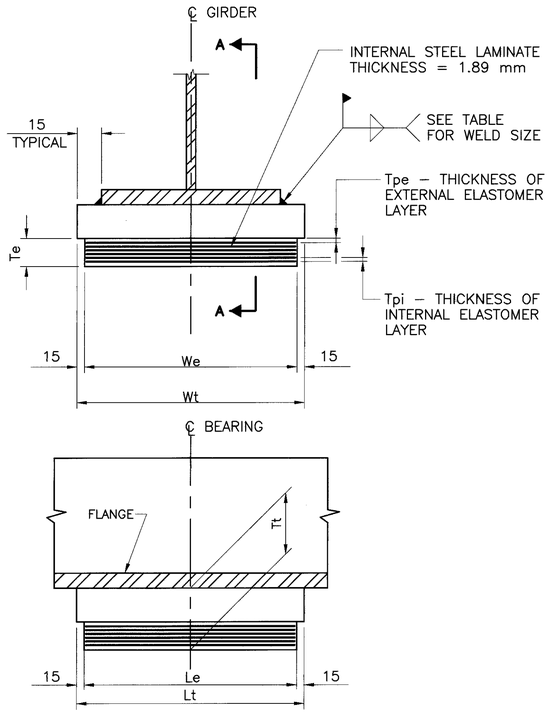
BAG		220481 & 220051	

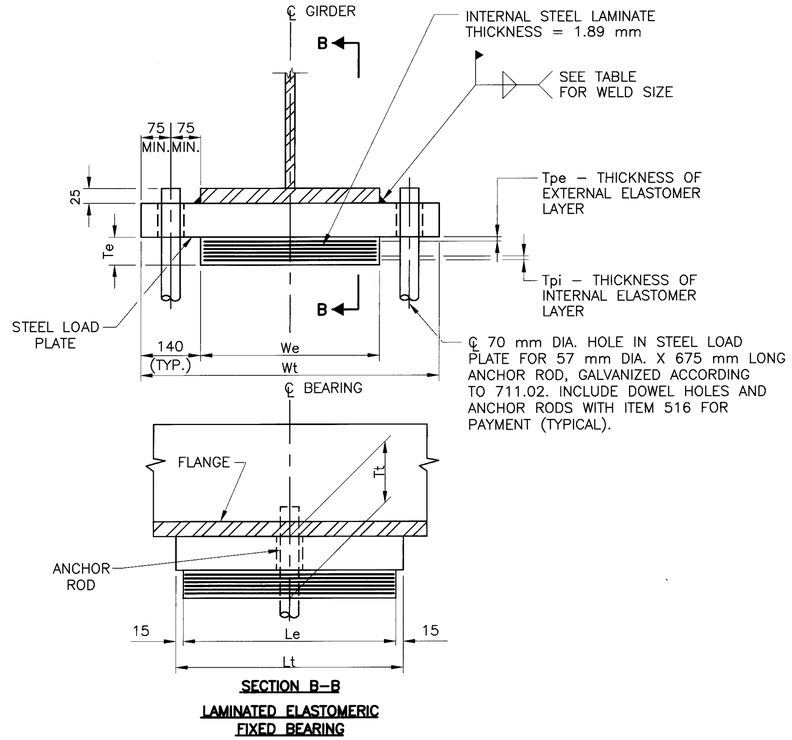
PIER DETAILS
BRIDGE NO. ER-2-11671 L & R (0779)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY RR. & OLD RAILROAD ROAD

ER-2-2866



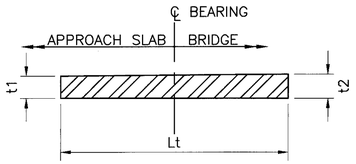
SECTION A–A

LAMINATED ELASTOMERIC EXPANSION BEARING

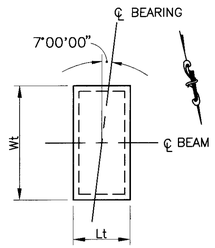


SECTION B–B

LAMINATED ELASTOMERIC FIXED BEARING



DETAIL "A"
STEEL LOAD PLATE



BEARING ORIENTATION PLAN

NOTES

1. ELASTOMERIC BEARINGS: ELASTOMERIC BEARINGS SHALL COMPLY WITH ITEM 516 AND ARTICLES 18.2.5 THROUGH 18.2.8 OF SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. BEARINGS SHALL BE GRADE 3, 50 DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS CORRESPONDING TO DESIGN METHOD A. TESTING SHALL BE INCLUDED IN THE PRICE BID FOR THE BEARINGS, AS PER PLAN, EACH.
2. WELDING SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 150° C AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
3. BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 27° C OR LOWER THAN 4° C AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 15° C (±) 5° C, THE GIRDERS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 15° C (±) 5° C.
4. THE STEEL LOAD PLATE SHALL BE THE SAME MATERIAL AS THE ATTACHED STRUCTURAL STEEL CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR THE BEARINGS. FIELD COSTS SHALL BE INCLUDED IN THE PRICE BID FOR PAINTING MAIN STRUCTURAL STEEL.
5. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
6. TOTAL DESIGN LOAD FOR BEARINGS EQUALS THE SUM OF THE DEAD LOADS AND LIVE LOADS TABULATED IN THE BEARING SCHEDULE.
7. BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS, AS PER PLAN, EITHER FIXED OR EXPANSION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516,
8. BEARING ANCHOR RODS: AT THE OPTION OF THE CONTRACTOR, THE BEARING ANCHOR RODS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST–IN–PLACE. IF ANCHOR RODS ARE NOT CAST–IN–PLACE THEY SHALL BE GROUTED.
9. ANCHOR RODS SHALL BE A687M STEEL AND SHALL BE GALVANIZED AS PER O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATION 711.02. ANCHOR RODS SHALL EXTEND 25 mm ABOVE THE LOAD PLATE (PIER 2 BEARINGS).

LAMINATED ELASTOMERIC BEARING SCHEDULE @ PIERS

BEARING LOCATION	BEARING TYPE	NO. REQ'D.	DEAD LOAD kN	LIVE LOAD kN	TOTAL LOAD (DL+LL) kN	We (mm)	Le (mm)	Tpi (mm)	NO. OF Tpi'S	Tpe (2 EA.)	NUMBER OF INTERNAL LAMINATES (1.89 mm)	Te (mm)	STEEL LOAD PLATE				Tt (mm)	FILLET WELD SIZE (mm)
													Wt (mm)	Lt (mm)	t1 (mm)	t2 (mm)		
PIER 1	EXPANSION	12	1672	583	2255	700	500	11	6	7	7	93	730	530	75	75	168	12
PIER 2	FIXED	12	2002	642	2644	700	500	11	4	7	5	68	980	530	75	75	143	12

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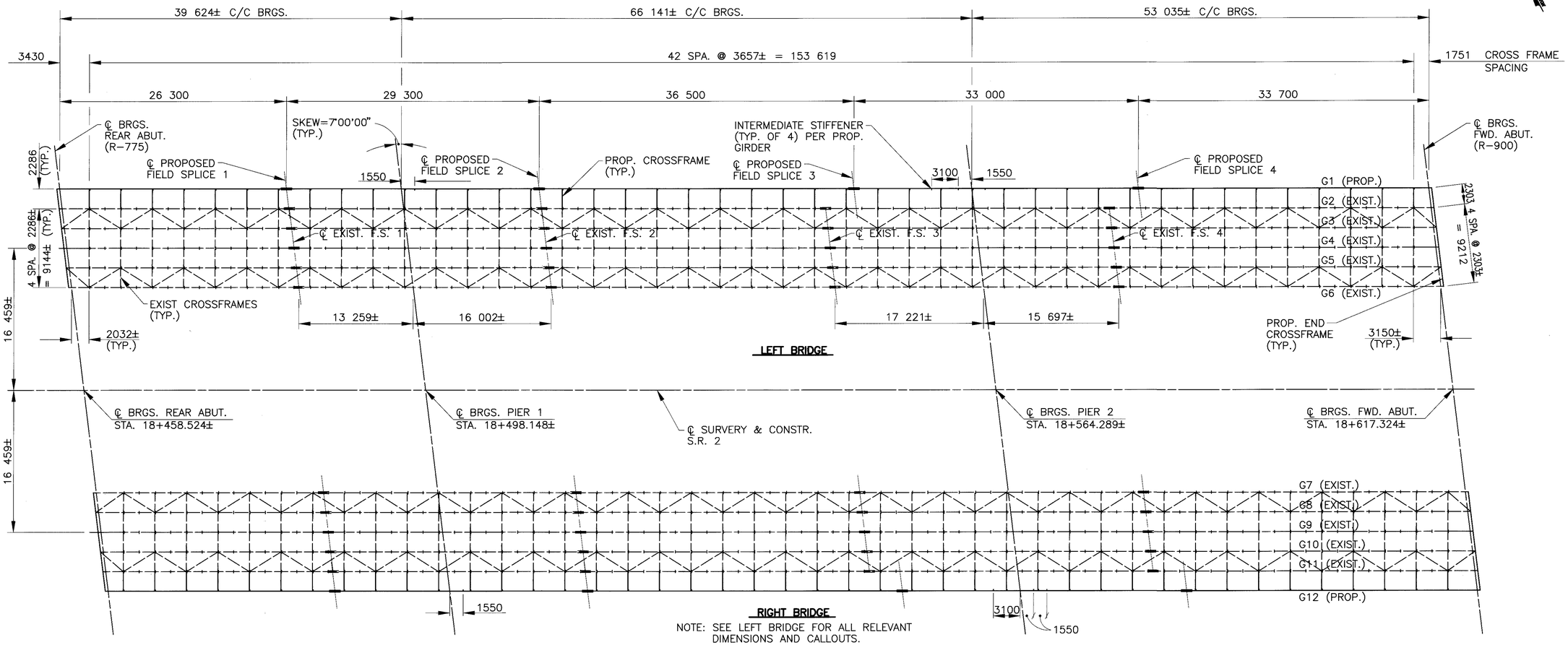
ELASTOMERIC BEARING DETAILS
BRIDGE NO. ERI-2-11571 L & R (0779)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY R.R. & OLD RAILROAD RD.

ERI-2-2.866



NOTE: SEE LEFT BRIDGE FOR ALL RELEVANT DIMENSIONS AND CALLOUTS.

FRAMING PLAN

NOTES

1. FOR GIRDER ELEVATIONS SEE SHEET 18726.
2. FOR INTERMEDIATE & BEARING STIFFENERS, CROSS–FRAME, SPLICE DETAILS AND ADDITIONAL STRUCTURAL STEEL NOTES SEE SHEET 19726.

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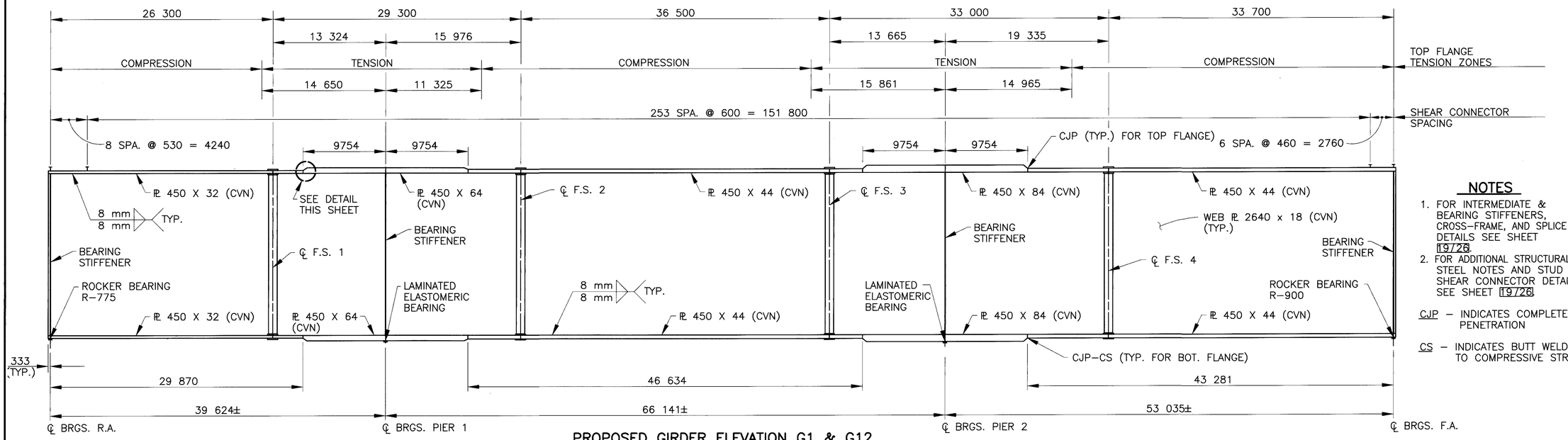
SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-11571 L & R (0718)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY R.R. & OLD RAILROAD RD.

ERI-2-2.866

17/26

294/327



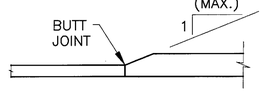
PROPOSED GIRDER ELEVATION G1 & G12

NOTES

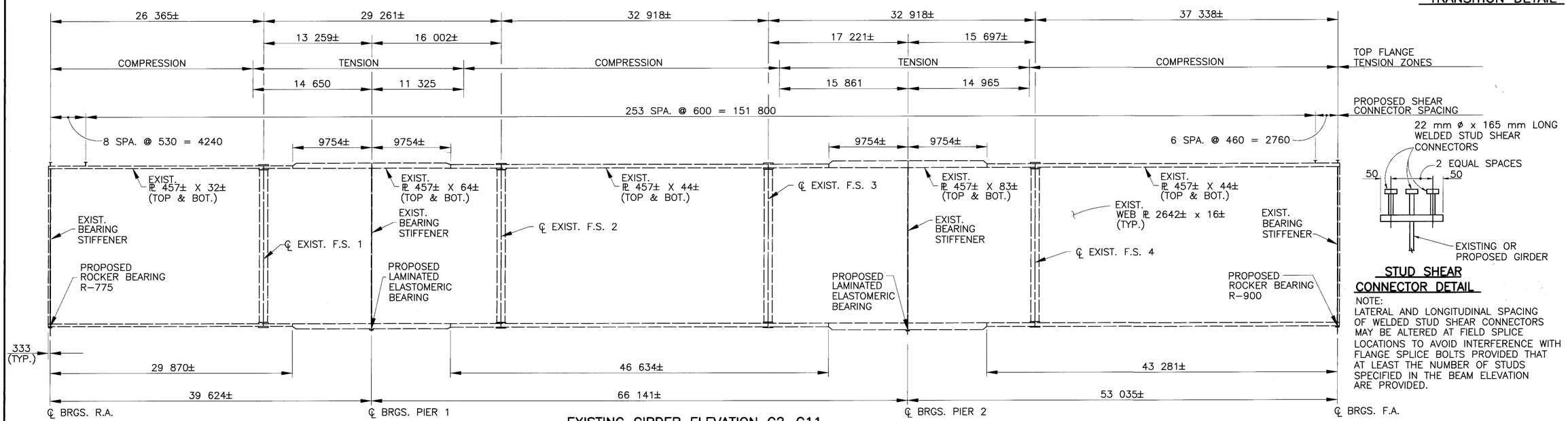
1. FOR INTERMEDIATE & BEARING STIFFENERS, CROSS–FRAME, AND SPLICE DETAILS SEE SHEET 19726.
2. FOR ADDITIONAL STRUCTURAL STEEL NOTES AND STUD SHEAR CONNECTOR DETAIL SEE SHEET 19726.

CJP – INDICATES COMPLETE JOINT PENETRATION

CS – INDICATES BUTT WELD SUBJECT TO COMPRESSIVE STRESS ONLY



TYPICAL FLANGE TRANSITION DETAIL



EXISTING GIRDER ELEVATION G2–G11

STUD SHEAR CONNECTOR DETAIL

NOTE:
LATERAL AND LONGITUDINAL SPACING OF WELDED STUD SHEAR CONNECTORS MAY BE ALTERED AT FIELD SPLICE LOCATIONS TO AVOID INTERFERENCE WITH FLANGE SPLICE BOLTS PROVIDED THAT AT LEAST THE NUMBER OF STUDS SPECIFIED IN THE BEAM ELEVATION ARE PROVIDED.

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SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-11571 L & R (0799)
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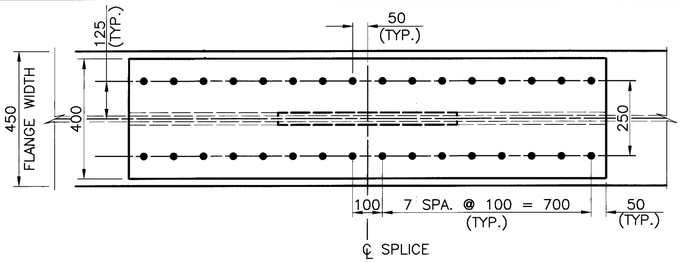
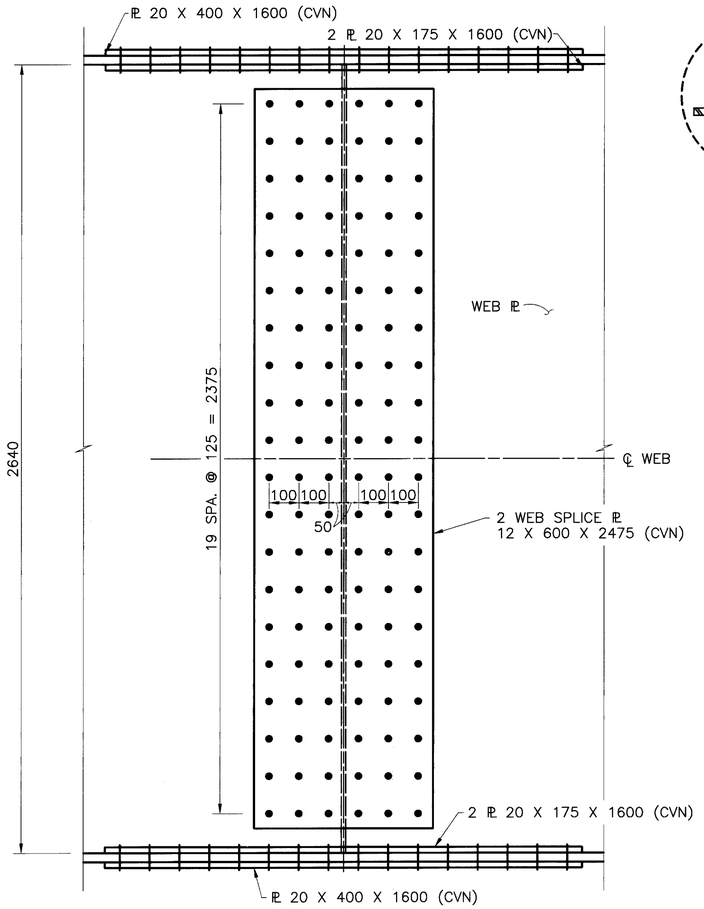
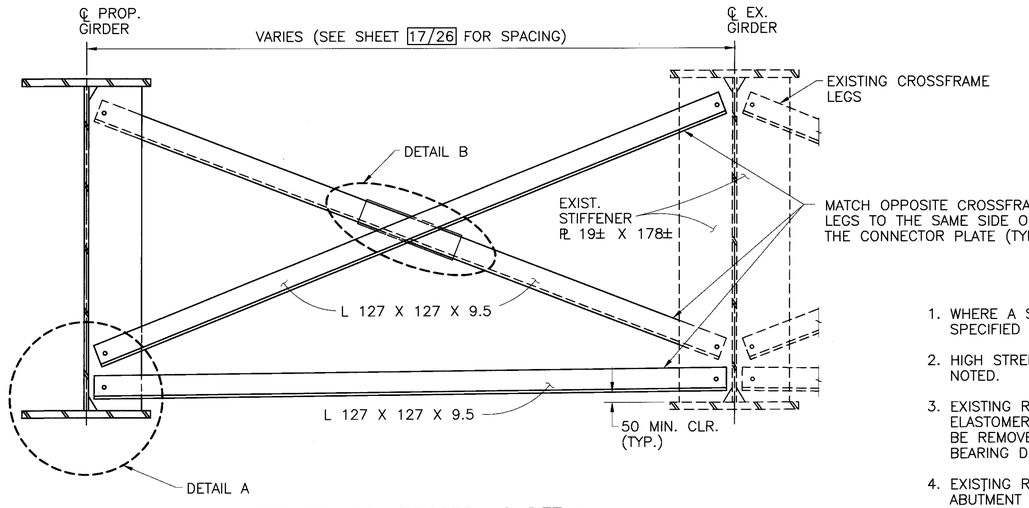


TOP/BOTTOM FLANGE PLAN



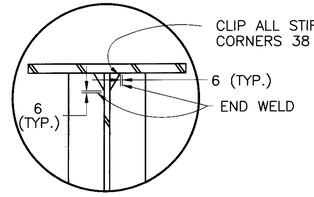
ELEVATION

TYPICAL FIELD SPLICE DETAIL



INTERMEDIATE CROSSFRAME DETAIL

NOTES: FOR ERECTION BOLT NOTES SEE NOTE 6 THIS SHEET
SEE DETAIL C ON THIS SHEET FOR WELD TERMINATION

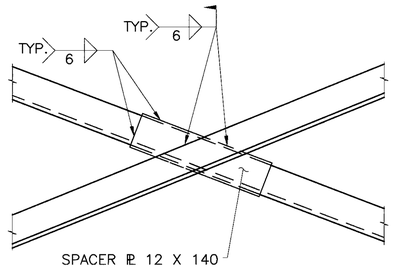


DETAIL C

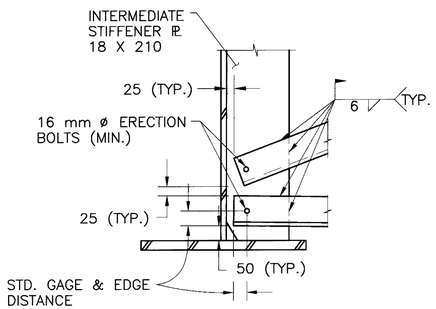
NOTES

1. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
2. HIGH STRENGTH BOLTS SHALL BE 27 mm DIAMETER A-325M UNLESS OTHERWISE NOTED.
3. EXISTING ROCKER BEARINGS AT PIER 1 SHALL BE REMOVED AND REPLACED WITH ELASTOMERIC EXPANSION BEARINGS. EXISTING BOLSTER BEARINGS AT PIER 2 SHALL BE REMOVED AND REPLACED WITH ELASTOMERIC FIXED BEARINGS. FOR ELASTOMERIC BEARING DETAILS, SEE SHEET 16/26.
4. EXISTING ROCKER BEARINGS, R-775 AT REAR ABUTMENT AND R-900 AT FORWARD ABUTMENT SHALL BE REMOVED AND REPLACED.
5. EXISTING END CROSS-FRAMES SHALL BE REMOVED AND REPLACED. THE PROPOSED END CROSS-FRAMES SHALL BE PER ODOT STD. DWG.GSD-1-96.
6. ALL SPLICE PLATES SHALL BE A-36M STEEL & CVN. ALL CROSS-FRAME MEMBERS & FILLER PLATES SHALL BE A-36M STEEL.
7. CLEANING STEEL: THE OUTSIDE SURFACE AND BOTTOM SURFACES OF BOTTOM FLANGES OF FASCIA BEAMS SHALL BE ABRASIVELY BLAST CLEANED TO GRADE Sa2 IN THE SHOP.
8. PAINTING OF STEEL: ALL PROPOSED STRUCTURAL STEEL, INCLUDING SPLICE PLATES, CROSS FRAME AND FILLER PLATES SHALL BE PAINTED. ALL EXISTING STRUCTURAL STEEL INCLUDING SPLICE PLATES AND CROSS FRAMES SHALL BE PAINTED. SEE GENERAL NOTES SHEET 3/26 FOR MORE DETAILS.
9. ERECTION BOLTS: THE HOLE DIAMETER IN THE CROSS FRAMES AND GIRDER STIFFENERS SHALL BE 4 mm LARGER THAN THE DIAMETER OF THE ERECTION BOLTS. UNLESS REPLACED BY PERMANENT HIGH STRENGTH BOLTS, ERECTION BOLTS SHALL REMAIN IN PLACE. LOCK WASHERS SHALL BE FURNISHED FOR OTHER THAN FULLY TORQUED, HIGH STRENGTH ERECTION BOLTS. BOLTS SHALL BE FURNISHED AS PART OF ITEM 863.

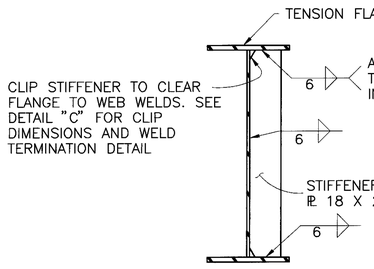
   IN LIEU OF ERECTION BOLTS AND AT THE OPTION OF THE CONTRACTOR, ALTERNATIVE MEANS OF TEMPORARY BRACING MAY BE USED SUBJECT TO THE APPROVAL OF THE DIRECTOR (501.06).
10. WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 25 mm FROM THE EDGE OF FLANGE, BE NOT MORE THAN 50 mm LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.



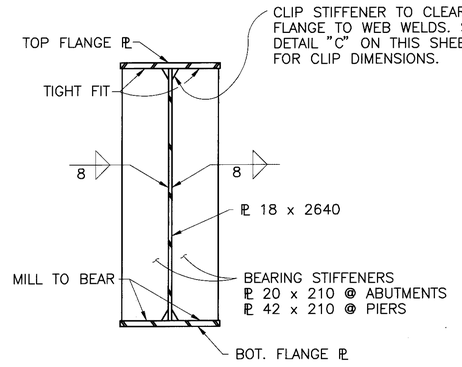
DETAIL B



DETAIL A



INTERMEDIATE STIFFENER DETAIL
NOT TO SCALE



TYP. BEARING STIFFENER DETAIL
NOT TO SCALE

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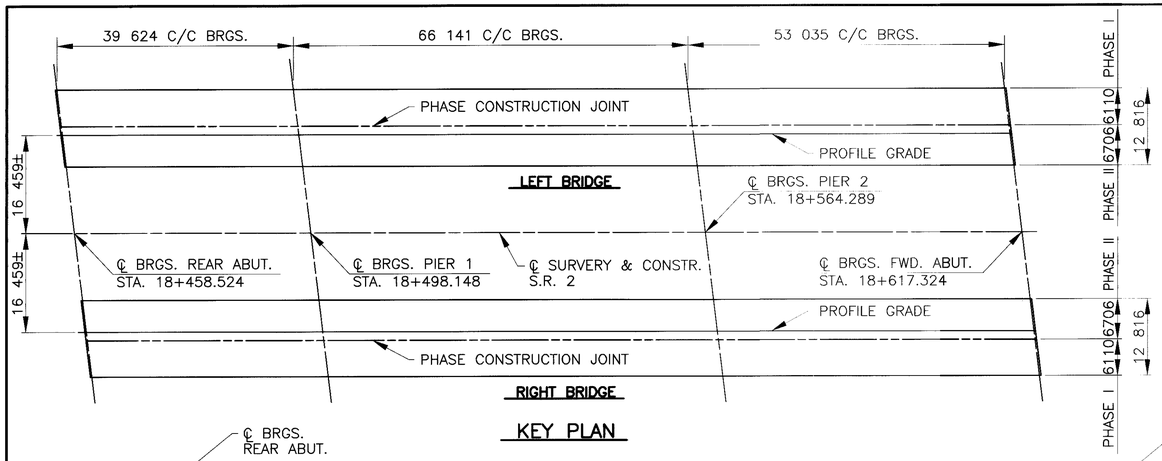
SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-11571 L & R (0779)
SR. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY R.R. & OLD RAILROAD RD.

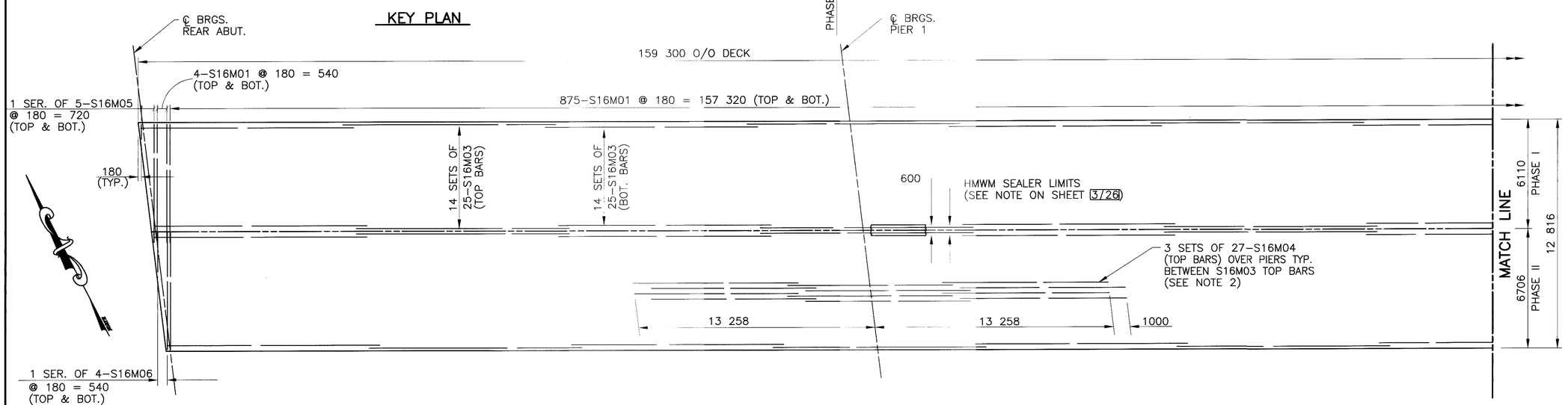
ERI-2-2.866

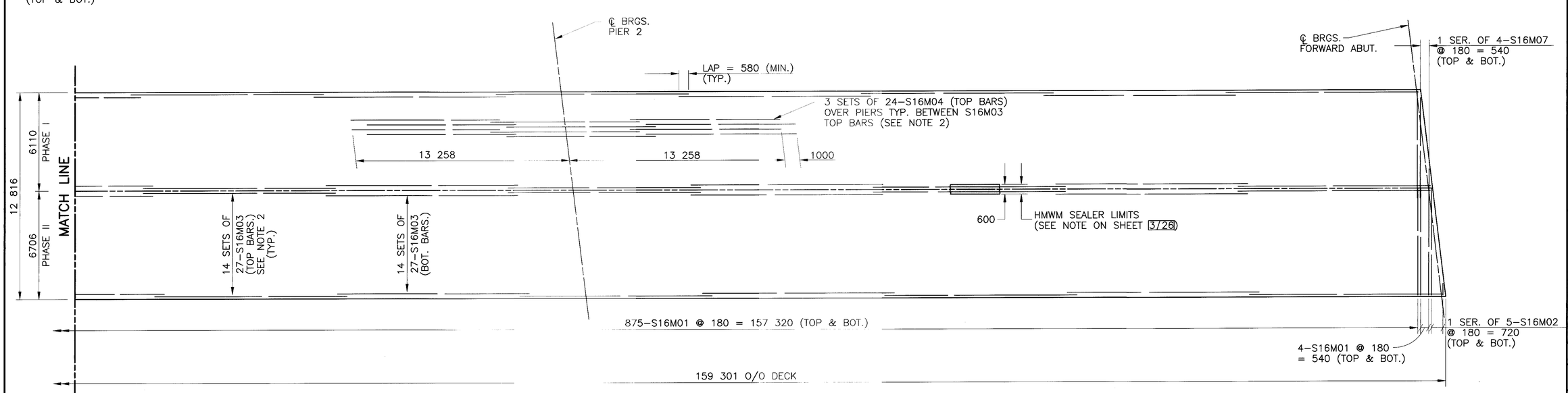


KEY PLAN

NOTES

1. FOR PHASE CONSTRUCTION DETAILS, SEE SHEETS 6/26 & 7/26.
2. FOR LONGITUDINAL BAR SPACINGS, SEE TRANSVERSE SECTION, ON SHEET 21/26.





DECK REINFORCING PLAN

LEFT BRIDGE – AS SHOWN
RIGHT BRIDGE – SIMILAR

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SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-11571 L & R (0779)
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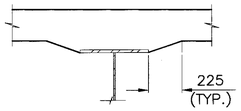
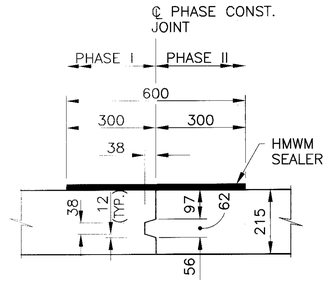


HAUNCH DETAIL

ALSO REFER TO DETAIL
PLAN NOTE, THIS SHEET

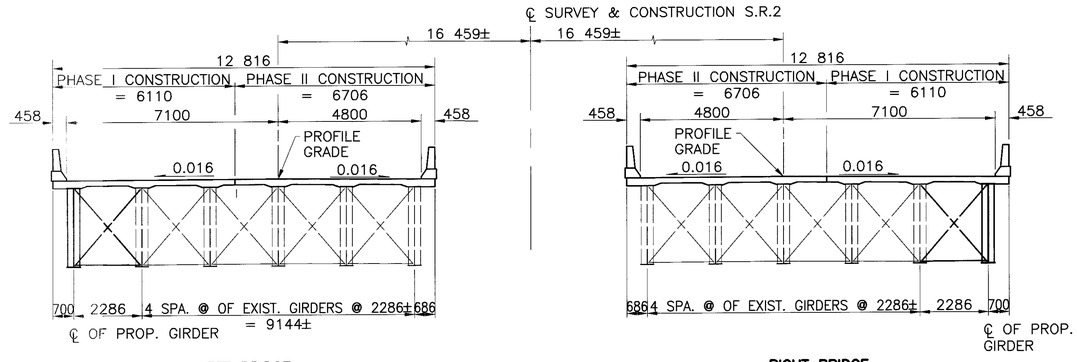
NOTES

1. A HAUNCH WIDTH OF 225 mm SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 150 mm AND 300 mm.
2. FOR TABLE OF DIMENSION "A" SEE THIS SHEET. THIS IS THE NOMINAL DIMENSION FROM THE TOP OF GIRDER WEB TO TOP OF CONCRETE DECK. THE QUANTITY OF THAT PORTION OF THE DECK CONCRETE OVER THE GIRDERS SHALL BE BASED ON THIS DIMENSION EVEN THOUGH DEVIATION FROM THIS DIMENSION MAY OCCUR BECAUSE THE TOP OF THE GIRDER MAY NOT HAVE THE CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISH GRADE.
3. FOR MORE PARAPET DETAILS SEE SHEET 24/26.
4. FOR WELDED SHEAR STUD CONNECTORS, SPACING, AND DETAIL, SEE SHEET 18/26.
5. SEE SHEET 19/26 FOR CROSSFRAME DETAIL.



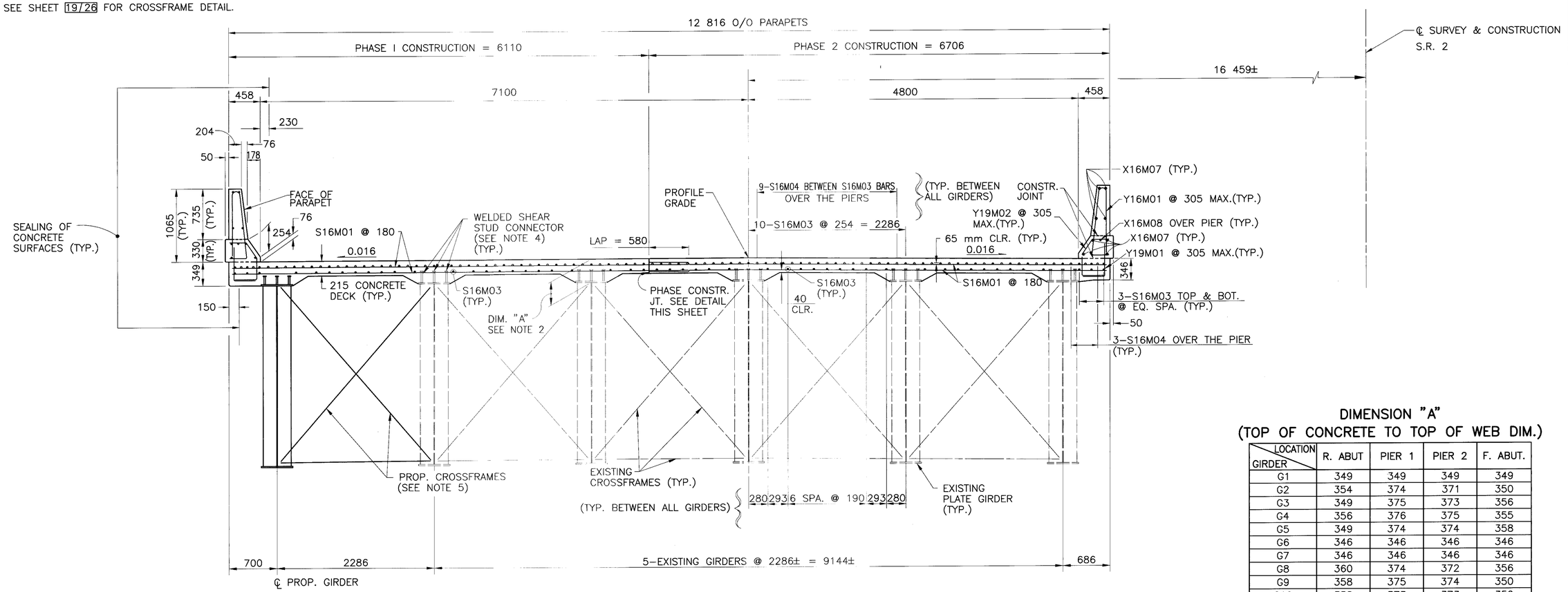
PHASE CONSTRUCTION JOINT DETAIL

NOTE: REBARS ARE NOT SHOWN



LEFT BRIDGE **RIGHT BRIDGE**

KEY TRANSVERSE SECTION



TRANSVERSE SECTION

LEFT BRIDGE – AS SHOWN
RIGHT BRIDGE – OPPOSITE HAND W.R.T. ℄ SURVEY & CONSTR. S.R. 2

DIMENSION "A"
(TOP OF CONCRETE TO TOP OF WEB DIM.)

LOCATION / GIRDER	R. ABUT	PIER 1	PIER 2	F. ABUT.
G1	349	349	349	349
G2	354	374	371	350
G3	349	375	373	356
G4	356	376	375	355
G5	349	374	374	358
G6	346	346	346	346
G7	346	346	346	346
G8	360	374	372	356
G9	358	375	374	350
G10	358	373	373	352
G11	355	374	372	354
G12	349	349	349	349

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S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY RR. & OLD RAILROAD RD.

ERI-2-2866

21/26

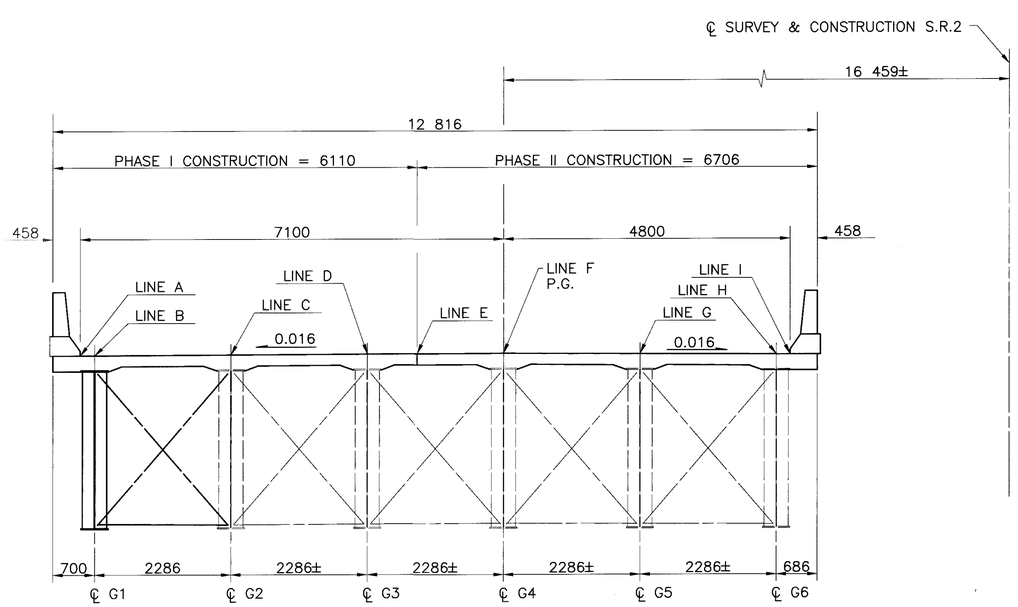
298/327

FINAL DECK SCREED ELEVATIONS (LEFT BRIDGE)

SCREED LINE	LOCATION	C.L. BRG. R,A.	SPAN 1							C.L. BRG. PIER 1	SPAN 2									
			0.125	0.250	0.375	0.500	F.S.1 0.664	0.750	0.875		0.100	0.200	F.S.2 0.242	0.300	0.400	0.500	0.600	0.700	F.S.3 0.793	0.900
LINE A F/C	STATION	18+455.631	18+460.584	18+465.537	18+470.490	18+475.443	18+481.931	18+485.349	18+490.302	18+495.255	18+501.869	18+508.484	18+511.231	18+515.098	18+521.712	18+528.326	18+534.940	18+541.554	18+547.731	18+554.782
	T/S ELEV.	200.544	200.589	200.631	200.670	200.707	200.749	200.770	200.797	200.821	200.848	200.870	200.877	200.886	200.897	200.903	200.903	200.898	200.888	200.871
	DEFLECTION	0.000	0.003	0.004	0.004	0.003	0.000	−0.002	−0.002	0.000	0.008	0.020	0.024	0.030	0.037	0.039	0.035	0.026	0.015	0.005
	SCREED ELEV.	200.544	200.592	200.635	200.674	200.710	200.749	200.768	200.795	200.821	200.856	200.890	200.901	200.916	200.934	200.942	200.938	200.924	200.903	200.876
LINE B G1	STATION	18+455.661	18+460.614	18+465.567	18+470.520	18+475.473	18+481.961	18+485.379	18+490.332	18+495.285	18+501.899	18+508.513	18+511.261	18+515.127	18+521.741	18+528.356	18+534.970	18+541.584	18+547.761	18+554.812
	T/S ELEV.	200.548	200.593	200.635	200.674	200.711	200.753	200.774	200.801	200.825	200.852	200.874	200.881	200.890	200.901	200.907	200.907	200.902	200.892	200.875
	DEFLECTION	0.000	0.003	0.004	0.004	0.003	0.000	−0.002	−0.002	0.000	0.008	0.020	0.024	0.030	0.037	0.039	0.035	0.026	0.015	0.005
	SCREED ELEV.	200.548	200.596	200.639	200.678	200.714	200.753	200.772	200.799	200.825	200.860	200.894	200.905	200.920	200.938	200.946	200.942	200.928	200.907	200.880
LINE C G2	STATION	18+455.942	18+460.895	18+465.848	18+470.801	18+475.754	18+482.242	18+485.660	18+490.613	18+495.566	18+502.180	18+508.794	18+511.542	18+515.408	18+522.022	18+528.636	18+535.250	18+541.864	18+548.042	18+555.093
	T/S ELEV.	200.587	200.632	200.674	200.713	200.749	200.792	200.812	200.839	200.863	200.890	200.911	200.919	200.928	200.938	200.944	200.944	200.938	200.928	200.911
	DEFLECTION	0.000	0.003	0.005	0.005	0.003	0.000	−0.002	−0.002	0.000	0.009	0.021	0.026	0.033	0.040	0.042	0.038	0.028	0.017	0.005
	SCREED ELEV.	200.587	200.635	200.679	200.718	200.752	200.792	200.810	200.837	200.863	200.899	200.932	200.945	200.961	200.978	200.986	200.982	200.966	200.945	200.916
LINE D G3	STATION	18+456.222	18+461.175	18+466.128	18+471.081	18+476.034	18+482.522	18+485.940	18+490.893	18+495.846	18+502.461	18+509.075	18+511.822	18+515.689	18+522.303	18+528.917	18+535.531	18+542.145	18+548.322	18+555.373
	T/S ELEV.	200.626	200.671	200.713	200.752	200.788	200.830	200.850	200.877	200.900	200.927	200.949	200.956	200.965	200.975	200.980	200.980	200.974	200.964	200.947
	DEFLECTION	0.000	0.003	0.005	0.005	0.003	0.000	−0.002	−0.002	0.000	0.009	0.021	0.026	0.033	0.040	0.042	0.038	0.028	0.017	0.005
	SCREED ELEV.	200.626	200.674	200.718	200.757	200.791	200.830	200.848	200.875	200.900	200.936	200.970	200.982	200.998	201.015	201.022	201.018	201.002	200.981	200.952
LINE E PH. CONST	STATION	18+456.325	18+461.278	18+466.231	18+471.184	18+476.137	18+482.625	18+486.043	18+490.996	18+495.949	18+502.563	18+509.177	18+511.925	18+515.792	18+522.406	18+529.020	18+535.634	18+542.248	18+548.425	18+555.476
	T/S ELEV.	200.641	200.685	200.727	200.766	200.802	200.844	200.864	200.891	200.914	200.941	200.962	200.970	200.978	200.989	200.994	200.993	200.988	200.977	200.960
	DEFLECTION	0.000	0.003	0.005	0.005	0.003	0.000	−0.002	−0.002	0.000	0.009	0.021	0.026	0.033	0.040	0.042	0.038	0.028	0.017	0.005
	SCREED ELEV.	200.641	200.688	200.732	200.771	200.805	200.844	200.862	200.889	200.914	200.950	200.983	200.996	201.011	201.029	201.036	201.031	201.016	200.994	200.965
LINE F P.G. & G4	STATION	18+456.503	18+461.456	18+466.409	18+471.362	18+476.315	18+482.803	18+486.221	18+491.174	18+496.127	18+502.741	18+509.355	18+512.103	18+515.969	18+522.583	18+529.198	18+535.812	18+542.426	18+548.603	18+555.654
	T/S ELEV.	200.665	200.710	200.752	200.791	200.826	200.868	200.888	200.915	200.938	200.965	200.986	200.993	201.002	201.012	201.017	201.017	201.011	201.000	200.982
	DEFLECTION	0.000	0.003	0.005	0.005	0.003	0.000	−0.002	−0.002	0.000	0.009	0.021	0.026	0.033	0.040	0.042	0.038	0.028	0.017	0.005
	SCREED ELEV.	200.665	200.713	200.757	200.796	200.829	200.868	200.886	200.913	200.938	200.974	201.007	201.019	201.035	201.052	201.059	201.055	201.039	201.017	200.987
LINE G G5	STATION	18+456.784	18+461.737	18+466.690	18+471.643	18+476.596	18+483.084	18+486.502	18+491.455	18+496.408	18+503.022	18+509.636	18+512.384	18+516.250	18+522.864	18+529.478	18+536.092	18+542.706	18+548.884	18+555.935
	T/S ELEV.	200.631	200.676	200.718	200.756	200.792	200.833	200.853	200.880	200.903	200.929	200.950	200.957	200.966	200.976	200.981	200.980	200.974	200.963	200.945
	DEFLECTION	0.000	0.003	0.005	0.005	0.003	0.000	−0.002	−0.002	0.000	0.009	0.021	0.026	0.033	0.040	0.042	0.038	0.028	0.017	0.005
	SCREED ELEV.	200.631	200.679	200.723	200.761	200.795	200.833	200.851	200.878	200.903	200.938	200.971	200.983	200.999	201.016	201.023	201.018	201.002	200.980	200.950
LINE H G6	STATION	18+457.064	18+462.017	18+466.970	18+471.923	18+476.876	18+483.364	18+486.782	18+491.735	18+496.688	18+503.303	18+509.917	18+512.664	18+516.531	18+523.145	18+529.759	18+536.373	18+542.987	18+549.164	18+556.215
	T/S ELEV.	200.597	200.642	200.683	200.722	200.757	200.798	200.818	200.844	200.868	200.894	200.914	200.921	200.930	200.940	200.944	200.943	200.937	200.926	200.908
	DEFLECTION	0.000	0.003	0.004	0.004	0.003	0.000	−0.002	−0.002	0.000	0.008	0.020	0.024	0.030	0.037	0.039	0.035	0.026	0.015	0.005
	SCREED ELEV.	200.597	200.645	200.687	200.726	200.760	200.798	200.816	200.842	200.868	200.902	200.934	200.945	200.960	200.977	200.983	200.978	200.963	200.941	200.913
LINE I F/C	STATION	18+457.092	18+462.045	18+466.998	18+471.951	18+476.904	18+483.392	18+486.810	18+491.763	18+496.716	18+503.331	18+509.945	18+512.692	18+516.559	18+523.173	18+529.787	18+536.401	18+543.015	18+549.192	18+556.243
	T/S ELEV.	200.594	200.638	200.680	200.718	200.753	200.795	200.815	200.841	200.864	200.890	200.911	200.918	200.926	200.936	200.940	200.939	200.933	200.922	200.904
	DEFLECTION	0.000	0.003	0.004	0.004	0.003	0.000	−0.002	−0.002	0.000	0.008	0.020	0.024	0.030	0.037	0.039	0.035	0.026	0.015	0.005
	SCREED ELEV.	200.594	200.641	200.684	200.722	200.756	200.795	200.813	200.839	200.864	200.898	200.931	200.942	200.956	200.973	200.979	200.974	200.959	200.937	200.909

SCREED LINE	LOCATION	C.L. BRG. PIER 2	SPAN 3							C.L. BRG. F.A.
			0.125	0.250	F.S.4 0.365	0.500	0.625	0.750	0.875	
LINE A F/C	STATION	18+561.396	18+568.026	18+574.655	18+580.731	18+587.914	18+594.543	18+601.173	18+607.802	18+614.431
	T/S ELEV.	200.850	200.823	200.790	200.756	200.709	200.661	200.606	200.547	200.482
	DEFLECTION	0.000	0.002	0.009	0.016	0.023	0.024	0.020	0.012	0.000
	SCREED ELEV.	200.850	200.825	200.799	200.772	200.732	200.685	200.626	200.559	200.482
LINE B G1	STATION	18+561.426	18+568.055	18+574.685	18+580.761	18+587.944	18+594.573	18+601.202	18+607.832	18+614.461
	T/S ELEV.	200.854	200.827	200.794	200.760	200.713	200.664	200.610	200.550	200.485
	DEFLECTION	0.000	0.002	0.009	0.016	0.023	0.024	0.020	0.012	0.000
	SCREED ELEV.	200.854	200.829	200.803	200.776	200.736	200.688	200.630	200.562	200.485
LINE C G2	STATION	18+561.707	18+568.336	18+574.965	18+581.042	18+588.224	18+594.854	18+601.483	18+608.112	18+614.742
	T/S ELEV.	200.889	200.862	200.829	200.795	200.748	200.699	200.644	200.584	200.519
	DEFLECTION	0.000	0.002	0.010	0.018	0.025	0.026	0.022	0.013	0.000
	SCREED ELEV.	200.889	200.864	200.839	200.813	200.773	200.725	200.666	200.597	200.519
LINE D G3	STATION	18+561.987	18+568.617	18+575.246	18+581.322	18+588.505	18+595.134	18+601.764	18+608.393	18+615.022
	T/S ELEV.	200.925	200.897	200.864	200.829	200.782	200.733	200.678	200.618	200.552
	DEFLECTION	0.000	0.002	0.010	0.018	0.025	0.026	0.022	0.013	0.000
	SCREED ELEV.	200.925	200.899	200.874	200.847	200.807	200.759	200.700	200.631	200.552
LINE E PH. CONST	STATION	18+562.090	18+568.720	18+575.349	18+581.425	18+588.608	18+595.237	18+601.867	18+608.496	18+615.125
	T/S ELEV.	200.938	200.910	200.877	200.842	200.795	200.746	200.691	200.631	200.565
	DEFLECTION	0.000	0.002	0.010	0.018	0.025	0.026	0.022	0.013	0.000
	SCREED ELEV.	200.938	200.912	200.887	200.860	200.820	200.772	200.713	200.644	200.565
LINE F P.G. & G4	STATION	18+562.268	18+568.897	18+575.527	18+581.603	18+588.786	18+595.415	18+602.044	18+608.674	18+615.303
	T/S ELEV.	200.960	200.933	200.899	200.864	200.817	200.767	200.712	200.652	200.586
	DEFLECTION	0.000	0.002	0.010	0.018	0.025	0.026	0.022	0.013	0.000
	SCREED ELEV.	200.960	200.935	200.909	200.882	200.842	200.793	200.734	200.665	200.586
LINE G G5	STATION	18+562.549	18+569.178	18+575.808	18+581.884	18+589.066	18+595.696	18+602.325	18+608.954	18+615.584
	T/S ELEV.	200.923	200.895	200.861	200.826	200.778	200.729	200.673	200.613	200.547
	DEFLECTION	0.000	0.002	0.010	0.018	0.025	0.026	0.022	0.013	0.000
	SCREED ELEV.	200.923	200.897	200.871	200.844	200.803	200.755	200.695	200.626	200.547
LINE H G6	STATION	18+562.829	18+569.459	18+576.088	18+582.164	18+589.347	18+595.976	18+602.606	18+609.235	18+615.864
	T/S ELEV.	200.885	200.857	200.823	200.788	200.740	200.690	200.634	200.573	200.507
	DEFLECTION	0.000	0.002	0.009	0.016	0.023	0.024	0.020	0.012	0.000
	SCREED ELEV.	200.885	200.859	200.832	200.804	200.763	200.714	200.654	200.585	200.507
LINE I F/C	STATION	18+562.857	18+569.487	18+576.116	18+582.192	18+589.375	18+596.004	18+602.634	18+609.263	18+615.892
	T/S ELEV.	200.881	200.853	200.819	200.784	200.736	200.686	200.630	200.570	200.503
	DEFLECTION	0.000	0.002	0.009	0.016	0.023	0.024	0.020	0.012	0.000
	SCREED ELEV.	200.881	200.855	200.828	200.800	200.759	200.710	200.650	200.582	200.503

NOTE:
SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.



LEFT BRIDGE

TRANSVERSE SECTION

R.D. Zande & Associates, Inc.
1249 Dublin Road
Columbus, Ohio 43215
Phone: (614) 488-4383

REVIEWED OHK DATE 5-22-97
STRUCTURE FILE NO 22004814&2200511
DRAWN DJD
REVISED
DESIGNED KVB
CHECKED BAG

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-11571 L & R (0779)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY RR. & OLD RAILROAD RD.

ERI-2-2.866

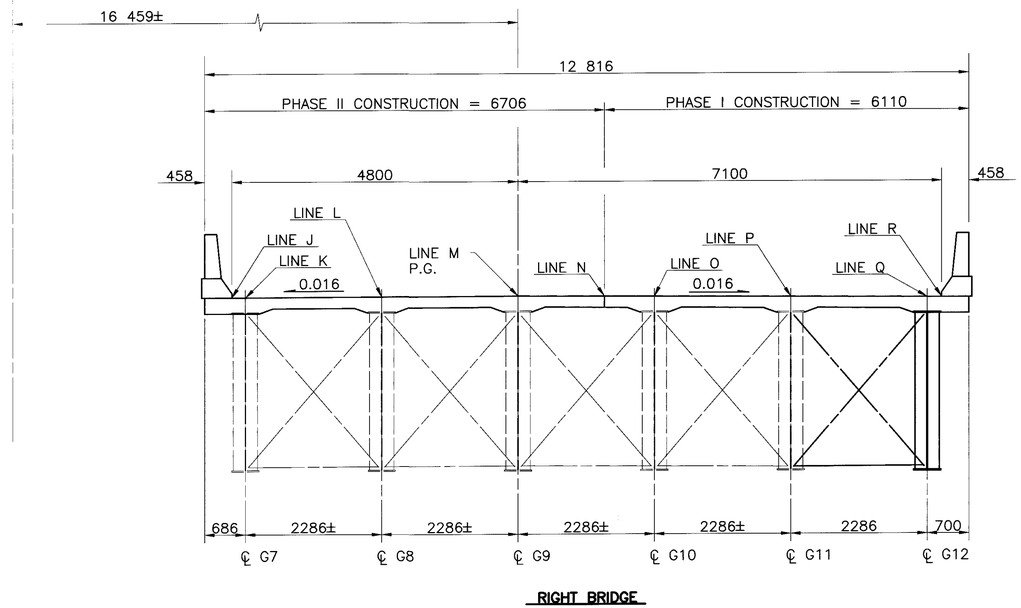
FINAL DECK SCREED ELEVATIONS (RIGHT BRIDGE)

SCREED LINE	LOCATION	C.L. BRG. R.A.	SPAN 1							C.L. BRG. PIER 1	SPAN 2									
			0.125	0.250	0.375	0.500	F.S.1 0.664	0.75	0.875		0.100	0.200	F.S.2 0.300	0.300	0.400	0.500	0.600	0.700	F.S.3 0.793	0.900
LINE J F/C	STATION	18+459.956	18+464.909	18+469.862	18+474.815	18+479.768	18+486.256	18+489.674	18+494.627	18+499.580	18+506.194	18+512.808	18+515.556	18+519.422	18+526.036	18+532.650	18+539.264	18+545.878	18+552.056	18+559.106
	T/S ELEV.	200.620	200.663	200.702	200.739	200.772	200.812	200.830	200.855	200.876	200.900	200.918	200.924	200.931	200.939	200.941	200.937	200.929	200.915	200.895
	DEFLECTION	0.000	0.003	0.004	0.004	0.003	0.000	−0.002	−0.002	0.000	0.008	0.020	0.024	0.030	0.037	0.039	0.035	0.026	0.015	0.005
	SCREED ELEV.	200.620	200.666	200.706	200.743	200.775	200.812	200.828	200.853	200.876	200.908	200.938	200.948	200.961	200.976	200.980	200.972	200.955	200.930	200.900
LINE K G7	STATION	18+459.984	18+464.937	18+469.890	18+474.843	18+479.796	18+486.284	18+489.702	18+494.655	18+499.608	18+506.222	18+512.836	18+515.584	18+519.450	18+526.064	18+532.678	18+539.292	18+545.906	18+552.084	18+559.134
	T/S ELEV.	200.624	200.667	200.706	200.743	200.776	200.816	200.834	200.858	200.880	200.904	200.922	200.928	200.935	200.942	200.944	200.941	200.932	200.919	200.898
	DEFLECTION	0.000	0.003	0.004	0.004	0.003	0.000	−0.002	−0.002	0.000	0.008	0.020	0.024	0.030	0.037	0.039	0.035	0.026	0.015	0.005
	SCREED ELEV.	200.624	200.670	200.710	200.747	200.779	200.816	200.832	200.856	200.880	200.912	200.942	200.952	200.965	200.979	200.983	200.976	200.958	200.934	200.903
LINE L G8	STATION	18+460.264	18+465.217	18+470.170	18+475.123	18+480.076	18+486.564	18+489.982	18+494.935	18+499.888	18+506.502	18+513.116	18+515.864	18+519.731	18+526.345	18+532.959	18+539.573	18+546.187	18+552.364	18+559.415
	T/S ELEV.	200.663	200.706	200.745	200.781	200.815	200.854	200.872	200.896	200.918	200.941	200.959	200.965	200.972	200.979	200.981	200.977	200.968	200.955	200.934
	DEFLECTION	0.000	0.003	0.005	0.005	0.003	0.000	−0.002	−0.002	0.000	0.009	0.021	0.026	0.033	0.040	0.042	0.038	0.028	0.017	0.005
	SCREED ELEV.	200.663	200.709	200.750	200.786	200.818	200.854	200.870	200.894	200.918	200.950	200.980	200.991	201.005	201.019	201.023	201.015	200.996	200.972	200.939
LINE M P.G. & G9	STATION	18+460.545	18+465.498	18+470.451	18+475.404	18+480.357	18+486.845	18+490.263	18+495.216	18+500.169	18+506.783	18+513.397	18+516.145	18+520.011	18+526.625	18+533.239	18+539.854	18+546.468	18+552.645	18+559.696
	T/S ELEV.	200.702	200.744	200.784	200.820	200.853	200.892	200.910	200.934	200.955	200.978	200.996	201.002	201.009	201.016	201.017	201.014	201.004	200.991	200.970
	DEFLECTION	0.000	0.003	0.005	0.005	0.003	0.000	−0.002	−0.002	0.000	0.009	0.021	0.026	0.033	0.040	0.042	0.038	0.028	0.017	0.005
	SCREED ELEV.	200.702	200.747	200.789	200.825	200.856	200.892	200.908	200.932	200.955	200.987	201.017	201.028	201.042	201.056	201.059	201.052	201.032	201.008	200.975
LINE N PH. CONST	STATION	18+460.723	18+465.676	18+470.629	18+475.582	18+480.535	18+487.023	18+490.441	18+495.394	18+500.347	18+506.961	18+513.575	18+516.323	18+520.189	18+526.803	18+533.417	18+540.031	18+546.645	18+552.823	18+559.874
	T/S ELEV.	200.681	200.723	200.762	200.798	200.831	200.870	200.888	200.912	200.933	200.956	200.974	200.979	200.986	200.993	200.994	200.990	200.981	200.967	200.946
	DEFLECTION	0.000	0.003	0.005	0.005	0.003	0.000	−0.002	−0.002	0.000	0.009	0.021	0.026	0.033	0.040	0.042	0.038	0.028	0.017	0.005
	SCREED ELEV.	200.681	200.726	200.767	200.803	200.834	200.870	200.886	200.910	200.933	200.965	200.995	201.005	201.019	201.033	201.036	201.028	201.009	200.984	200.951
LINE O G10	STATION	18+460.826	18+465.779	18+470.732	18+475.685	18+480.638	18+487.126	18+490.544	18+495.497	18+500.450	18+507.064	18+513.678	18+516.426	18+520.292	18+526.906	18+533.520	18+540.134	18+546.748	18+552.926	18+559.976
	T/S ELEV.	200.668	200.710	200.749	200.785	200.818	200.857	200.875	200.899	200.920	200.943	200.960	200.966	200.973	200.979	200.981	200.977	200.967	200.953	200.932
	DEFLECTION	0.000	0.003	0.005	0.005	0.003	0.000	−0.002	−0.002	0.000	0.009	0.021	0.026	0.033	0.040	0.042	0.038	0.028	0.017	0.005
	SCREED ELEV.	200.668	200.713	200.754	200.790	200.821	200.857	200.873	200.897	200.920	200.952	200.981	200.992	201.006	201.019	201.023	201.015	200.995	200.970	200.937
LINE P G11	STATION	18+461.106	18+466.059	18+471.012	18+475.965	18+480.918	18+487.406	18+490.824	18+495.777	18+500.730	18+507.344	18+513.958	18+516.706	18+520.573	18+527.187	18+533.801	18+540.415	18+547.029	18+553.206	18+560.257
	T/S ELEV.	200.634	200.676	200.715	200.751	200.783	200.822	200.840	200.864	200.884	200.907	200.924	200.930	200.936	200.943	200.944	200.940	200.930	200.916	200.894
	DEFLECTION	0.000	0.003	0.005	0.005	0.003	0.000	−0.002	−0.002	0.000	0.009	0.021	0.026	0.033	0.040	0.042	0.038	0.028	0.017	0.005
	SCREED ELEV.	200.634	200.679	200.720	200.756	200.786	200.822	200.838	200.862	200.884	200.916	200.945	200.956	200.969	200.983	200.986	200.978	200.958	200.933	200.899
LINE Q G12	STATION	18+461.387	18+466.340	18+471.293	18+476.246	18+481.199	18+487.687	18+491.105	18+496.058	18+501.011	18+507.625	18+514.239	18+516.987	18+520.853	18+527.467	18+534.081	18+540.696	18+547.310	18+553.487	18+560.538
	T/S ELEV.	200.600	200.642	200.680	200.716	200.749	200.787	200.805	200.828	200.849	200.871	200.888	200.894	200.900	200.907	200.907	200.903	200.893	200.879	200.857
	DEFLECTION	0.000	0.003	0.004	0.004	0.003	0.000	−0.002	−0.002	0.000	0.008	0.020	0.024	0.030	0.037	0.039	0.035	0.026	0.015	0.005
	SCREED ELEV.	200.600	200.645	200.684	200.720	200.752	200.787	200.803	200.826	200.849	200.879	200.908	200.918	200.930	200.944	200.946	200.938	200.919	200.894	200.862
LINE R F/C	STATION	18+461.417	18+466.370	18+471.323	18+476.276	18+481.229	18+487.717	18+491.135	18+496.088	18+501.041	18+507.655	18+514.269	18+517.017	18+520.883	18+527.497	18+534.111	18+540.725	18+547.339	18+553.517	18+560.568
	T/S ELEV.	200.596	200.638	200.677	200.712	200.745	200.783	200.801	200.825	200.845	200.868	200.885	200.890	200.896	200.903	200.904	200.899	200.889	200.875	200.853
	DEFLECTION	0.000	0.003	0.004	0.004	0.003	0.000	−0.002	−0.002	0.000	0.008	0.020	0.024	0.030	0.037	0.039	0.035	0.026	0.015	0.005
	SCREED ELEV.	200.596	200.641	200.681	200.716	200.748	200.783	200.799	200.823	200.845	200.876	200.905	200.914	200.926	200.940	200.943	200.934	200.915	200.890	200.858

SCREED LINE	LOCATION	C.L. BRG. PIER 2	SPAN 3							C.L. BRG. F.A.
			0.125	0.250	F.S.4 0.365	0.500	0.625	0.750	0.875	
LINE J F/C	STATION	18+565.721	18+572.350	18+578.979	18+585.056	18+592.238	18+598.867	18+605.497	18+612.126	18+618.756
	T/S ELEV.	200.870	200.839	200.803	200.765	200.715	200.663	200.605	200.542	200.473
	DEFLECTION	0.000	0.002	0.009	0.016	0.023	0.024	0.020	0.012	0.000
	SCREED ELEV.	200.870	200.841	200.812	200.781	200.738	200.687	200.625	200.554	200.473
LINE K G7	STATION	18+565.749	18+572.378	18+579.007	18+585.084	18+592.266	18+598.895	18+605.525	18+612.154	18+618.784
	T/S ELEV.	200.873	200.843	200.807	200.769	200.718	200.666	200.608	200.545	200.476
	DEFLECTION	0.000	0.002	0.009	0.016	0.023	0.024	0.020	0.012	0.000
	SCREED ELEV.	200.873	200.845	200.816	200.785	200.741	200.690	200.628	200.557	200.476
LINE L G8	STATION	18+566.029	18+572.659	18+579.288	18+585.364	18+592.547	18+599.176	18+605.805	18+612.435	18+619.064
	T/S ELEV.	200.909	200.878	200.842	200.804	200.753	200.700	200.642	200.579	200.510
	DEFLECTION	0.000	0.002	0.010	0.018	0.025	0.026	0.022	0.013	0.000
	SCREED ELEV.	200.909	200.880	200.852	200.822	200.778	200.726	200.664	200.592	200.510
LINE M P.G. & G9	STATION	18+566.310	18+572.939	18+579.569	18+585.645	18+592.827	18+599.457	18+606.086	18+612.716	18+619.345
	T/S ELEV.	200.944	200.913	200.877	200.838	200.787	200.734	200.676	200.613	200.543
	DEFLECTION	0.000	0.002	0.010	0.018	0.025	0.026	0.022	0.013	0.000
	SCREED ELEV.	200.944	200.915	200.887	200.856	200.812	200.760	200.698	200.626	200.543
LINE N PH. CONST	STATION	18+566.488	18+573.117	18+579.746	18+585.823	18+593.005	18+599.635	18+606.264	18+612.893	18+619.523
	T/S ELEV.	200.920	200.889	200.852	200.814	200.763	200.710	200.651	200.588	200.518
	DEFLECTION	0.000	0.002	0.010	0.018	0.025	0.026	0.022	0.013	0.000
	SCREED ELEV.	200.920	200.891	200.862	200.832	200.788	200.736	200.673	200.601	200.518
LINE O G10	STATION	18+566.591	18+573.220	18+579.849	18+585.926	18+593.108	18+599.737	18+606.367	18+612.996	18+619.626
	T/S ELEV.	200.906	200.875	200.838	200.800	200.749	200.696	200.637	200.573	200.504
	DEFLECTION	0.000	0.002	0.010	0.018	0.025	0.026	0.022	0.013	0.000
	SCREED ELEV.	200.906	200.877	200.848	200.818	200.774	200.722	200.659	200.586	200.504
LINE P G11	STATION	18+566.871	18+573.501	18+580.130	18+586.206	18+593.389	18+600.018	18+606.648	18+613.277	18+619.906
	T/S ELEV.	200.868	200.837	200.800	200.761	200.710	200.657	200.598	200.534	200.464
	DEFLECTION	0.000	0.002	0.010	0.018	0.025	0.026	0.022	0.013	0.000
	SCREED ELEV.	200.868	200.839	200.810	200.779	200.735	200.683	200.620	200.547	200.464
LINE Q G12	STATION	18+567.152	18+573.781	18+580.411	18+586.487	18+593.669	18+600.299	18+606.928	18+613.558	18+620.187
	T/S ELEV.	200.831	200.799	200.762	200.723	200.671	200.618	200.559	200.494	200.424
	DEFLECTION	0.000	0.002	0.009	0.016	0.023	0.024	0.020	0.012	0.000
	SCREED ELEV.	200.831	200.801	200.771	200.739	200.694	200.642	200.579	200.506	200.424
LINE R F/C	STATION	18+567.182	18+573.811	18+580.440	18+586.517	18+593.699	18+600.329	18+606.958	18+613.587	18+620.217
	T/S ELEV.	200.827	200.795	200.758	200.719	200.667	200.614	200.555	200.490	200.420
	DEFLECTION	0.000	0.002	0.009	0.016	0.023	0.024	0.020	0.012	0.000
	SCREED ELEV.	200.827	200.797	200.767	200.735	200.690	200.638	200.575	200.502	200.420

NOTE:
SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

℄ SURVEY & CONSTRUCTION S.R.2



RIGHT BRIDGE

KEY TRANSVERSE SECTION

R.D. Zande & Associates, Inc.
1207 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

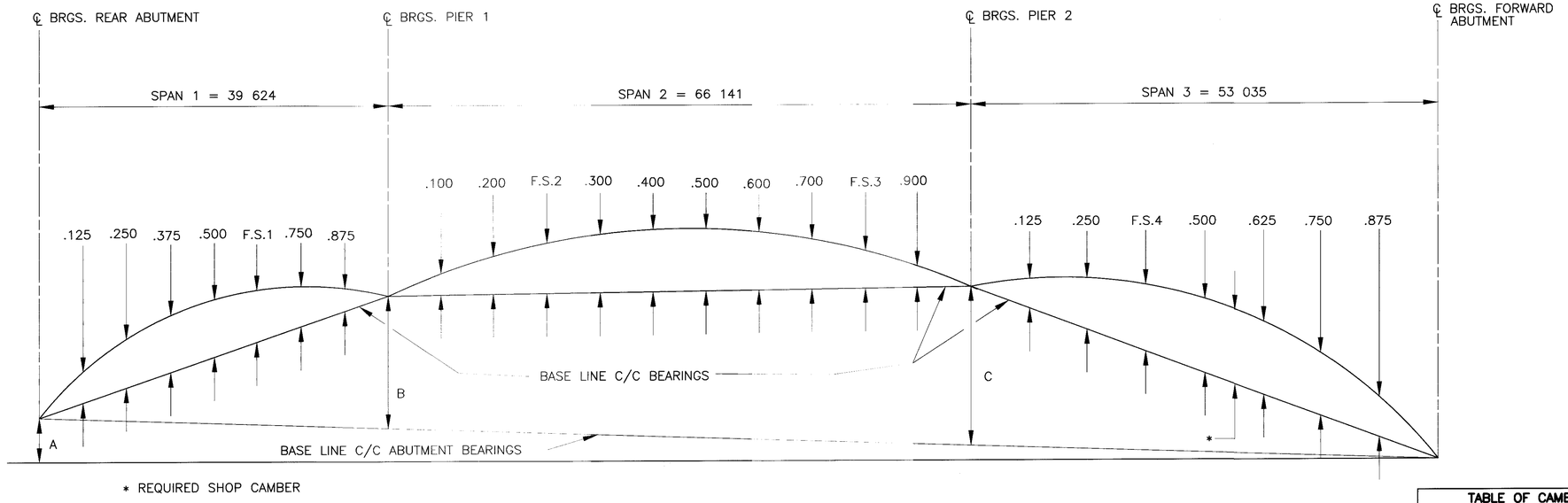
DESIGNED	DRAWN	REVIEWED	DATE
KVB	DJD	OHK	5-22-97
CHECKED	REVISED	STRUCTURE FILE NO	
BAG		2200481&2200511	

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-11571 L & R (0779)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY RR. & RAILROAD ROAD

ERI-2-2.866

23/26

300/327



* REQUIRED SHOP CAMBER

CAMBER DIAGRAM

TABLE OF CAMBER DIAGRAM DIMENSIONS			
DIMENSION / GIRDER MK.	A	B	C
G1	63	293	348
G12	176	293	348

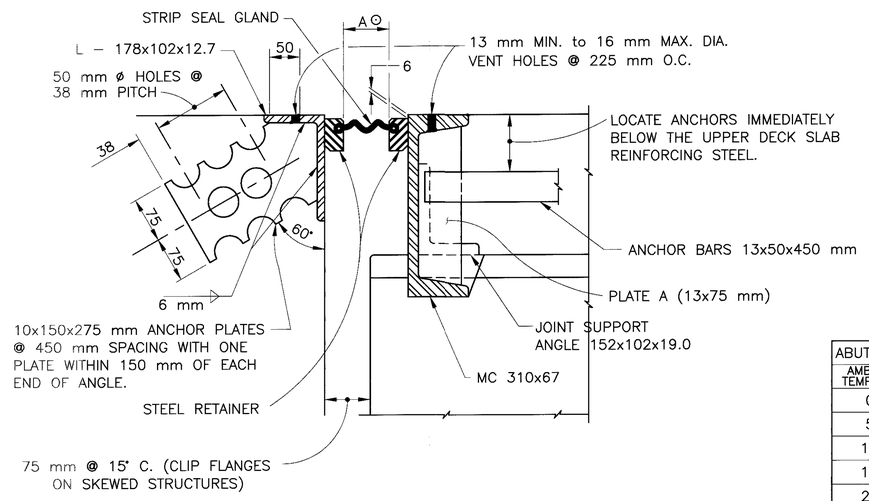
NOTE: DIMENSIONS ARE MEASURED ALONG TOP OF WEB

CAMBER & DEFLECTION, mm

		SPAN 1							SPAN 2											SPAN 3							
GIRDER MK.	LOCATION	.125	.250	.375	.500	F.S.1	.750	.875	.100	.200	F.S.2	.300	.400	.500	.600	.700	F.S.3	.900	.125	.250	F.S.4	.500	.625	.750	.875
G1	STEEL WEIGHT DEFLECTION	1	1	1	0	−1	−1	−1	4	9	12	14	18	18	16	12	7	2	0	4	7	10	11	9	5
	REM. DEAD LOAD DEFLECTION	3	4	4	3	0	−2	−2	8	20	24	30	37	39	35	26	15	5	0	9	16	23	24	20	12
	VERTICAL CURVE CORRECTION	10	18	22	25	21	18	11	24	43	49	56	64	67	65	57	44	24	19	32	41	43	41	33	19
	REQUIRED SHOP CAMBER	14	23	27	28	20	15	8	36	72	85	100	119	124	116	95	66	31	0	45	64	76	76	62	36
G12	STEEL WEIGHT DEFLECTION	1	1	1	0	−1	−1	−1	4	9	12	14	18	18	16	12	7	2	0	4	7	10	11	9	5
	REM. DEAD LOAD DEFLECTION	3	4	4	3	0	−2	−2	8	20	24	30	37	39	35	26	15	5	0	9	16	23	24	20	12
	VERTICAL CURVE CORRECTION	11	18	23	25	22	22	10	24	43	49	56	65	67	65	57	44	24	19	33	40	43	41	33	19
	REQUIRED SHOP CAMBER	15	23	28	28	21	15	7	36	72	85	100	120	124	116	95	66	31	0	46	63	76	76	62	36

NOTES

1. FOR MORE DETAILS SEE STD. DWG. EXJ−4−87M.
2. STRIP SEAL GLAND SIZE SHALL BE 125 mm FOR REAR ABUTMENTS AND 75 mm FOR FORWARD ABUTMENTS.
3. ELASTOMERIC SEALS: THE JOINT SEAL FOR EACH BRIDGE DECK JOINT SHALL BE FURNISHED IN ONE CONTINUOUS PIECE.



STRIP SEAL EXPANSION JOINT DETAIL

⊙ DIMENSION "A"

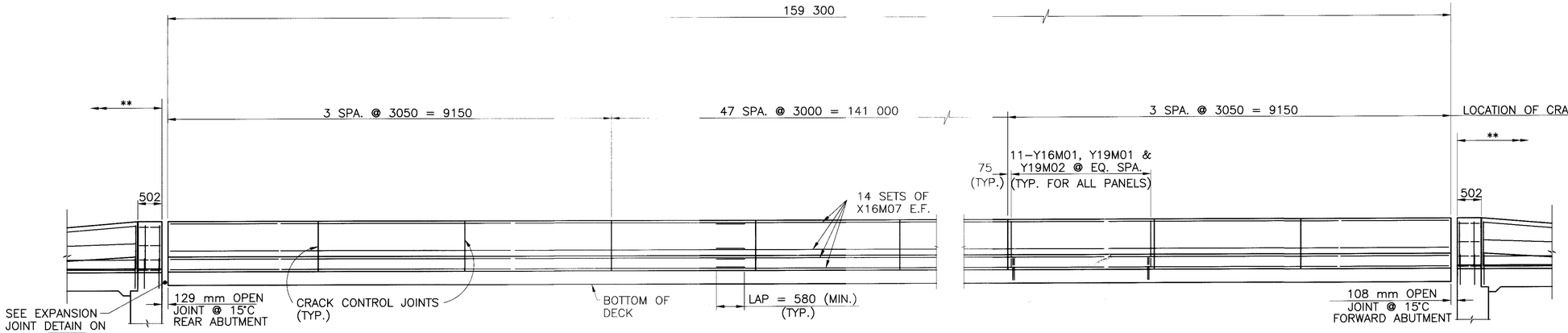
ABUTMENT AMBIENT TEMP (°C)	REAR DIM "A"	FORWARD DIM "A"
0°	76 mm	48 mm
5°	71 mm	45 mm
10°	65 mm	42 mm
15°	59 mm	38 mm
20°	54 mm	36 mm
25°	47 mm	32 mm
30°	41 mm	30 mm
35°	34 mm	27 mm

R.D. Zande & Associates, Inc.
1207 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED OHK | DRAWN CJG | REVIEWED OHK | DATE 5-22-97
CHECKED KVB | REVISED | STRUCTURE FILE NO. 2200481&2200511

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-11571 L & R (0799)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY RR. & OLD RAILROAD RD.

ERI-2-2.866



TYP. PARAPET ELEVATION

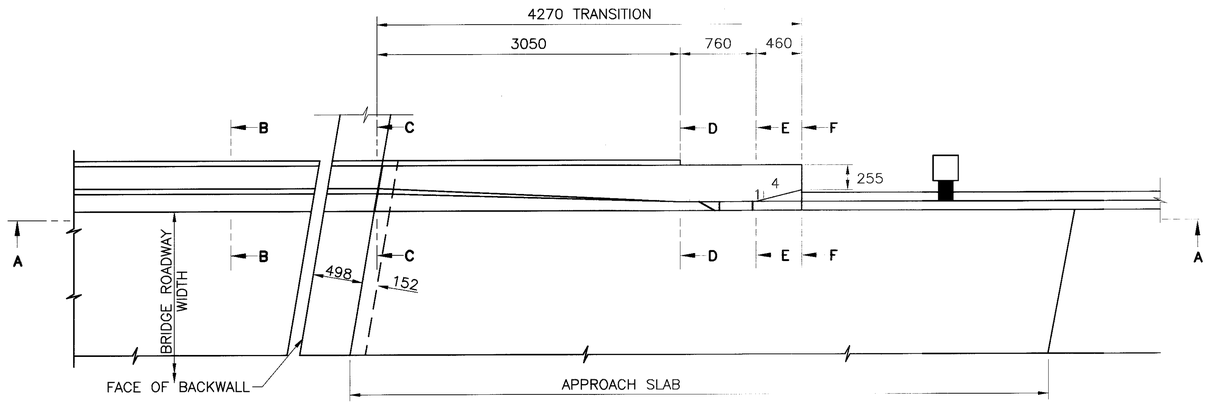
** SEE SECTION A–A

FOR ADDITIONAL PARAPET REINF. OVER PIERS SEE SHEET 21/26.

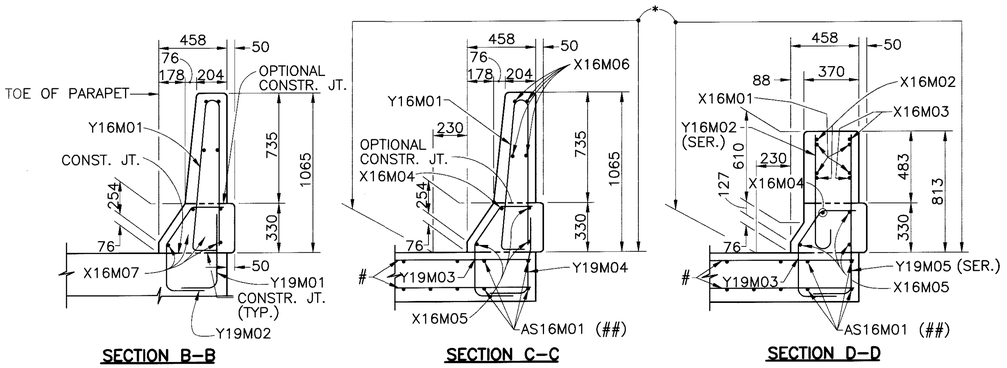
NOTES

QUANTITIES OF CONCRETE, REINFORCING STEEL, CRACK CONTROL JOINT SAWCUT AND CAULKING MATERIAL FOR PARAPET ARE INCLUDED WITH APPROPRIATE ITEM UNDER EITHER ABUTMENTS OR SUPERSTRUCTURE FOR PAYMENTS.

FOR BRIDGE TERMINAL ASSEMBLY, SEE STANDARD CONSTRUCTION DRAWING GR–3.1M.



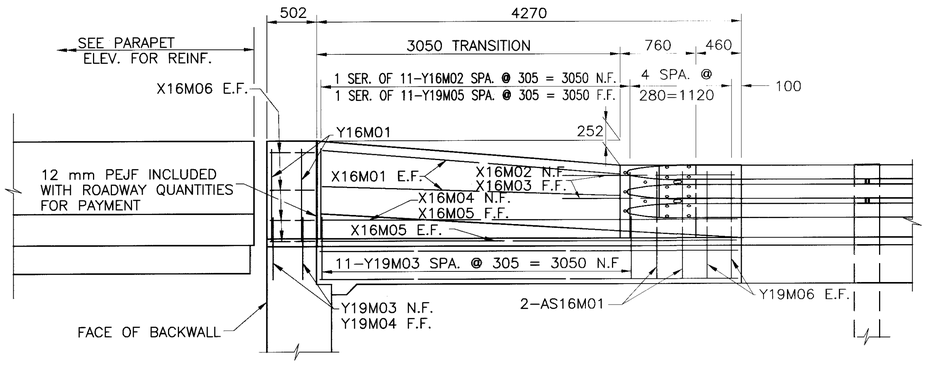
PART PLAN AT ABUTMENT



SECTION B–B

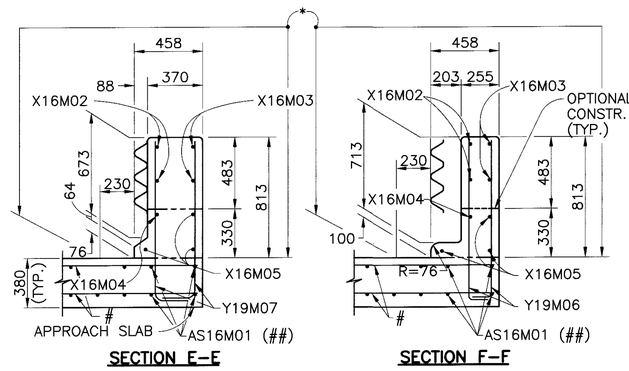
SECTION C–C

SECTION D–D



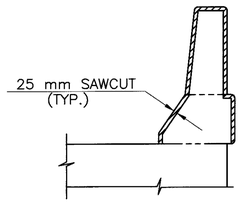
SECTION A–A

NOTE: BARS X16M02 & X16M04 SHALL BE FIELD BENT TO FIT.



SECTION E–E

SECTION F–F



DETAIL A

(SECTION THROUGH SAWCUT)

\# EXTEND APPROACH SLAB TRANSVERSE REINFORCEMENT AS REQUIRED. INCLUDE PAYMENT WITH ROADWAY ITEM 611–REINFORCED CONCRETE APPROACH SLAB, AS PER PLAN.

\## AS16M01 BARS IN APPROACH SLAB BELOW PARAPET SHALL BE 4650 mm LONG. INCLUDE PAYMENT WITH ROADWAY ITEM 611–REINFORCED CONCRETE APPROACH SLAB, AS PER PLAN

* LIMITS OF SEALING OF CONCRETE SURFACES.

R.D. Tande & Associates, Inc.
1257 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486–4383

DESIGNED	DRAWN	REVIEWED	DATE
KVB	KVB/CJG	OHK	5–22–97
CHECKED	REVISED	STRUCTURE FILE NO	
BAG		2200481&2200511	

PARAPET DETAILS
BRIDGE NO. ERI-2-11571 L & R (0779)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY RR. & OLD RAILROAD RD.

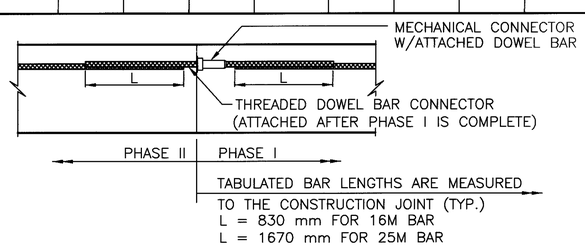
ERI-2-2.866

25/26

302/327

REINFORCING STEEL LIST

	BAR MARK	REAR	FWRD	TOTAL	LENGTH mm	WEIGHT (Kg)	TYPE	A mm	B mm	C mm	D mm	INC. mm
	ABUTMENTS											
	A16M01	12	12	24	900	33.523	STR.					
	A16M02	8	8	16	1050	26.074	STR.					
	A16M03	4	4	8	7050	87.533	STR.					
	A16M04	4	4	8	7230	89.768	STR.					
	A16M05	4	4	8	5800	72.013	STR.					
	A16M06	4	4	8	5700	70.771	STR.					
	A16M07	4	4	8	3466	43.034	3	1150	1246	1150		
	A16M08	11	11	22	1900	64.874	STR.					
	A16M09	2	2	4	10800	67.046	STR.					
	A16M10	2	2	4	10600	65.805	STR.					
*	A16M11	4	4	8	2400	29.798	STR.					
		2	2	4	7400							
*	A16M12	Ser. Of	Ser. Of	Ser. Of	TO	349.200	STR.					790
		6	6	6	11350							
*	A16M13	1	1	2	6100	18.934	STR.					
	A16M14	2	2	4	6640	41.221	7	6350	300	200		
	A16M15	2	2	4	11375	70.616	STR.					
	A16M16	2	2	4	11125	69.064	STR.					
		2	2	4	8000							
	A16M17	Ser. Of	Ser. Of	Ser. Of	TO	372.480	STR.					800
		6	6	6	12000							
	A16M18	1	1	2	6800	21.107	STR.					
	A16M19	2	2	4	6690	41.532	7	6400	300	197		
	A16M20	4	4	8	2500	31.040	STR.					
	A16M21	6	6	12	2366	44.064	3	600	1246	600		
	A19M01	62	62	124	3425	949.205	3	700	2125	700		
	A19M02	4	4	8	2875	51.405	3	700	1575	700		
	A19M03	57	57	114	2048	521.810	3	875	398	875		
	A19M04	57	57	114	6200	1579.698	3	2875	550	2875		
	A19M05	1	1	2	7050	31.514	3	3300	550	3300		
	A19M06	8	8	16	2375	84.930	1	2125	300			
	A19M07	14	14	28	3350	209.643	1	3100	300			
	A19M08	9	9	18	3550	142.817	3	1550	550	1550		
	A19M09	20	20	40	2150	192.210	1	1900	300			
	A19M10	1	1	2	5650	25.256	3	2600	550	2600		
	A19M11	1	1	2	6100	27.267	3	2825	550	2825		
		1	1	2	4650			2100		2100		
	A19M12	Ser. Of	Ser. Of	Ser. Of	TO	122.255	3	TO	550	TO		205
		5	5	5	6290			2920		2920		
		1	1	2	4250			1900		1900		
	A19M13	Ser. Of	Ser. Of	Ser. Of	TO	174.285	3	TO	550	TO		220
		7	7	7	6890			3220		3220		
	A19M14	1	1	2	5650	25.256	3	2600	550	2600		
	A19M15	1	1	2	6050	27.044	3	2800	550	2800		
		1	1	2	4730			2140		2140		
	A19M16	Ser. Of	Ser. Of	Ser. Of	TO	122.702	3	TO	550	TO		190
		5	5	5	6250			2900		2900		
		1	1	2	4170			1860		1860		
	A19M17	Ser. Of	Ser. Of	Ser. Of	TO	116.444	3	TO	550	TO		260
		5	5	5	6250			2900		2900		
	A19M18	1	1	2	6700	29.949	3	3125	550	3125		
	A19M19	1	1	2	6850	30.620	3	3250	550	3150		
	A19M20	2	2	4	2225	19.892	STR.					
	A25M01	1	1	2	7400	58.800	STR.					
	A25M02	1	1	2	7500	59.595	STR.					
	A25M03	1	1	2	7550	59.992	STR.					
	A25M04	1	1	2	7625	60.588	STR.					
	A25M05	1	1	2	7675	60.986	STR.					
	A25M06	1	1	2	5325	42.312	STR.					
	A25M07	1	1	2	5275	41.915	STR.					
	A25M08	1	1	2	5200	41.319	STR.					
	A25M09	1	1	2	5125	40.723	STR.					
	A25M10	1	1	2	5050	40.127	STR.					
	A25M11	26	26	52	3335	688.998	1	3100	300			
	A25M12	2	2	4	2225	35.360	STR.					
	D25M01	29	29	58	1526	351.719	13	830	305			
					TOTAL=	7,776						

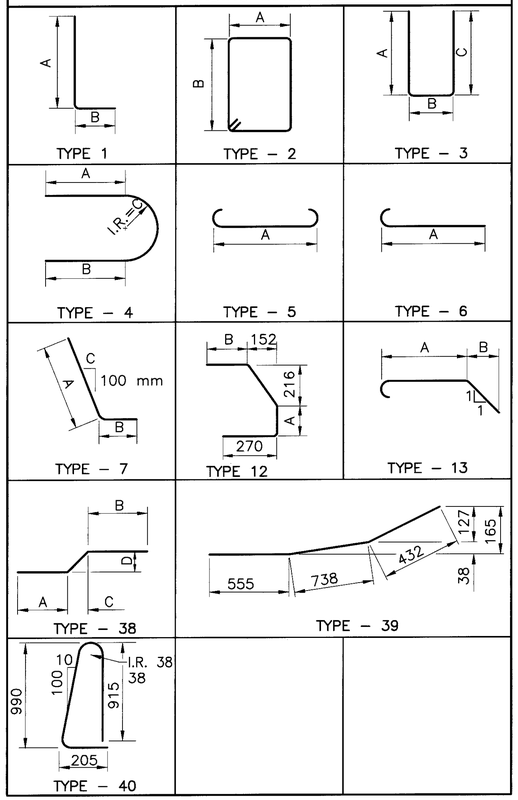


REINFORCING STEEL LIST

	BAR MARK	REAR	FWRD	TOTAL	LENGTH mm	WEIGHT (Kg)	TYPE	A mm	B mm	C mm	D mm	INC. mm
	PIERS											
	P13M01	136	136	272	1225	331.201	5	915				
	P16M01	15	15	30	2600	121.056	STR.					
	P16M02	9	9	18	4375	122.220	STR.					
	P16M03	48		48	1676	124.855	1	950	766			
	P16M04	8	8	16	2086	51.800	3	600	966	600		
	P16M05	33	33	66	800	81.946	STR.					
	P16M06	34	34	68	4600	485.466	STR.					
	P16M07	17	17	34	2439	128.677	4	500	500	442		
	P16M08	10	10	20	6156	191.082	2	2082	916			
	P16M09	26	26	52	900	72.634	STR.					
		2	2	4	900							
	P16M10	Ser. Of	Ser. Of	Ser. Of	TO	44.698	STR.					600
		4	4	4	2700							
		1	1	2	2990			1077		1077		
	P16M11	Ser. Of	Ser. Of	Ser. Of	TO	84.261	3	TO	950	TO		148
		7	7	7	4800			1965		1965		
	P16M12		48	48	1701	126.718	1	975	766			
	P25M01	25	25	50	3160	627.734	5	2600				
	P25M02	15	15	30	4935	588.203	5	4375				
*	P25M03	2	2	4	5850	92.968	STR.					
*	P25M04	5	5	10	6235	247.717	1	5850	450			
	P25M05	2	2	4	9200	146.206	STR.					
	P25M06	5	5	10	7310	290.426	1	6925	450			
	P29M01	22	22	44	3215	715.788	1	2800	500			
	P29M02	14	14	28	7775	1101.562	STR.					
	P29M03	2	2	4	7803	157.937	38	4550	1915	1320	220	
	P29M04	18	18	36	4550	828.828	STR.					
					TOTAL=	6,764						
	SUPERSTRUCTURE											
	S16M01			3516	6650	36287.933	STR.					
				2	800							
	S16M02			Ser. Of	TO	57.424	STR.					1450
				5	6600							
	S16M03			1456	11925	26947.066	STR.					
	S16M04			306	9225	4381.063	STR.					
				2	900							
	S16M05			Ser. Of	TO	58.666	STR.					1440
				5	6660							
				2	2220							
	S16M06			Ser. Of	TO	54.755	STR.					1460
				4	6600							
				2	1800							
	S16M07			Ser. Of	TO	49.540	STR.					1460
				4	6180							
					TOTAL=	67,836						
	RAILING											
	X16M01			16	3050	75.738	STR.					
	X16M02			8	1725	21.418	39					
	X16M03			8	1725	21.418	STR.					
	X16M04			4	4220	26.198	STR.					
	X16M05			12	4220	78.593	STR.					
	X16M06			32	400	19.866	STR.					
	X16M07			224	11925	4145.702	STR.					
	X16M08			12	9225	171.806	STR.					
	Y16M01			1174	2130	3880.962	40					
				4	920			740				
	Y16M02			Ser. Of	TO	71.361	6	TO				25
				11	1170			990				
	Y19M01			1166	800	2084.808	1	570	280			
	Y19M02			1166	774	2017.052	12	350	230			
	Y19M03			52	804	93.441	12	380	230			
	Y19M04			8	830	14.840	1	600	280			
				4	1350			1120				
	Y19M05			Ser. Of	TO	145.052	1	TO	280			25
				11	1600			1370				
	Y19M06			16	1180	42.197	1	1075	155			
	Y19M07			16	1295	46.309	1	1075	270			
					TOTAL=	12,957						
					GRAND TOTAL =	**95,333**						

REINFORCEMENT GIVEN IS FOR LEFT BRIDGE.
REINFORCEMENT FOR RIGHT BRIDGE IS SAME AS LEFT BRIDGE.

BENDING DIAGRAMS



NOTES

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST TWO DIGITS INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A16M01 IS A "16M" BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. I.R. INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.
2. ALL REINFORCING BARS SHALL BE EPOXY COATED. PAYMENT FOR THESE BARS SHALL BE INCLUDED WITH APPROPRIATE CONCRETE ITEMS.
3. "STR." IN THE TYPE COLUMN INDICATES STRAIGHT BARS.
4. REFER TO C.M.S. SECTION 509.05 FOR STANDARD BEND DIMENSIONS.
5. MECHANICAL CONNECTORS: AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE AS GIVEN BY THE DIMENSION "L" BELOW. CONNECTORS AND DOWEL BARS SHALL BE EPOXY COATED. COATINGS FOR BOTH CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH 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 WHICH MEETS THE SPECIFICATIONS. CONNECTORS AND DOWEL BAR EXTENSION SHALL CONFORM WITH ITEM 509.

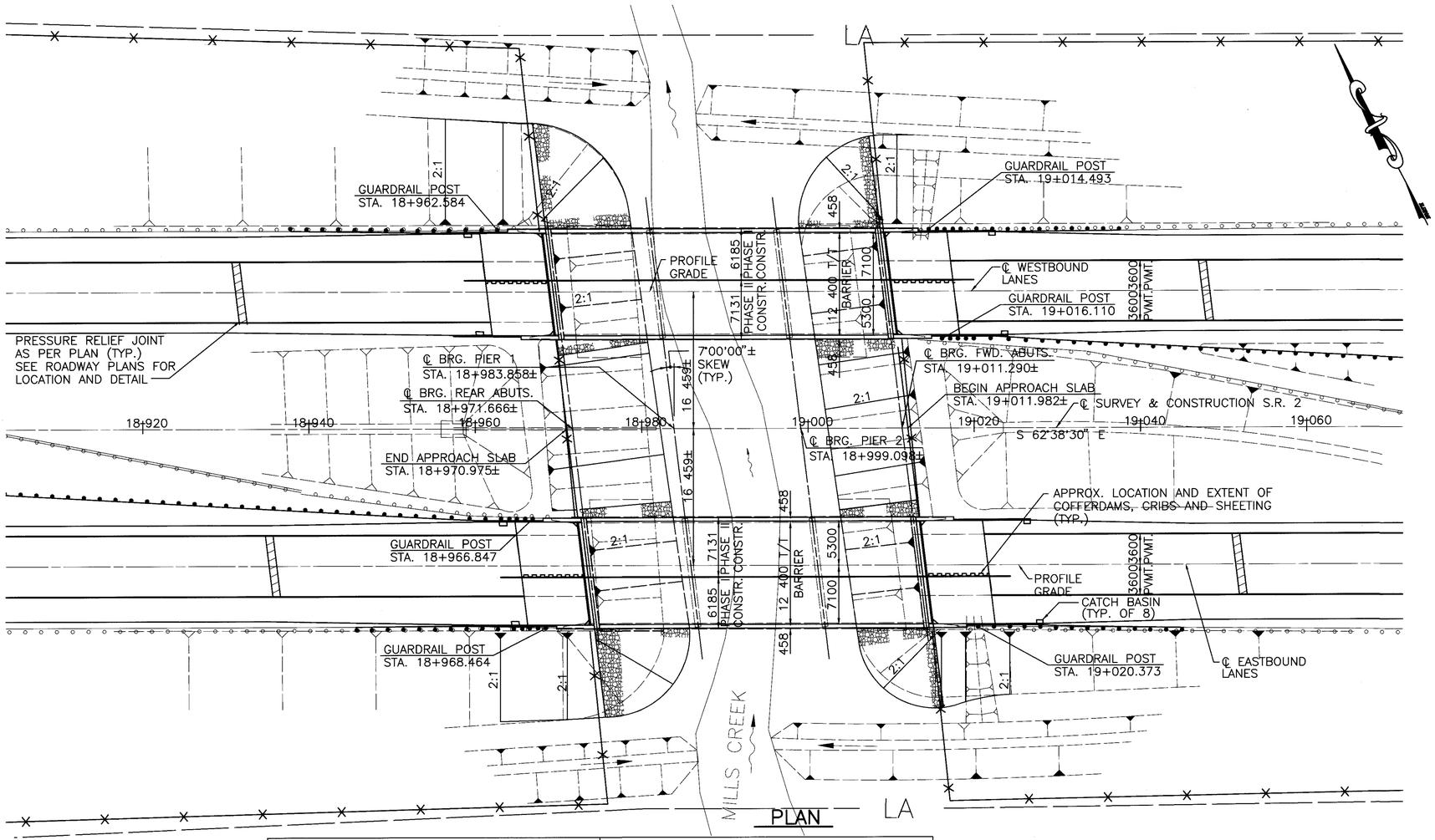
* INDICATES BARS REQUIRING MECHANICAL CONNECTORS. THE LENGTHS SHOWN IN THE TABLE ARE THE NOMINAL LENGTHS MEASURED TO THE CONSTRUCTION JOINT. ADJUSTMENT IN THE LENGTHS OF THE BARS DUE TO MECHANICAL SPLICING SHALL BE MADE PRIOR TO THE FABRICATION.

R.D. Zande & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone (614) 486-4383

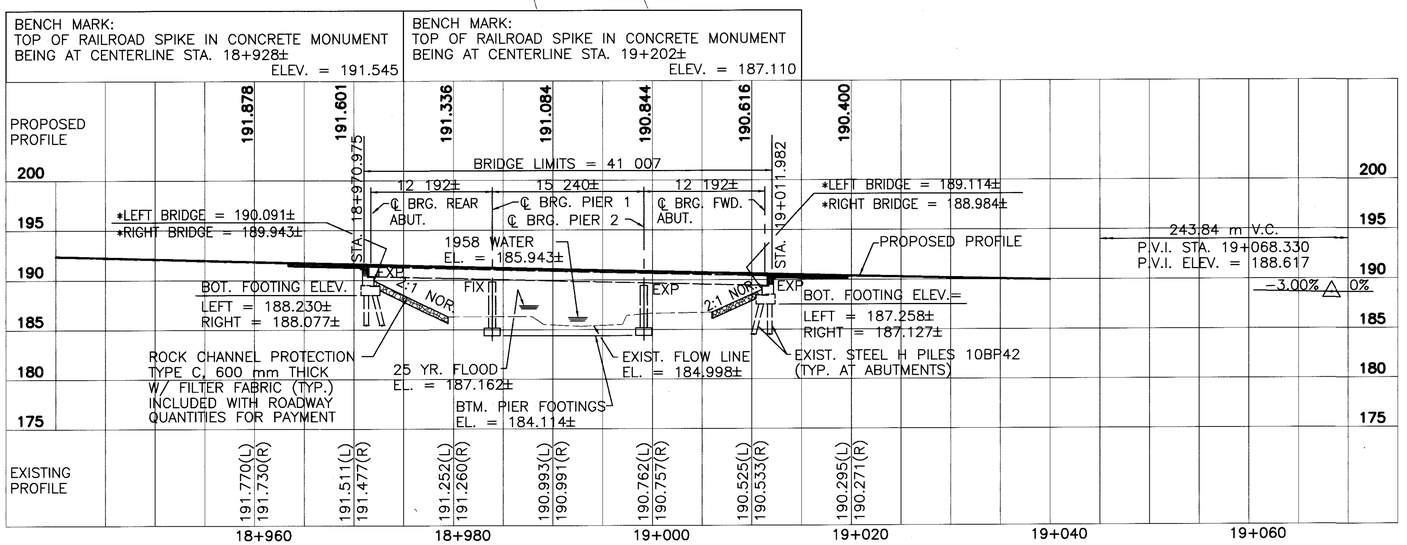
DESIGNED	DRAWN	REVIEWED	DATE
KVB	DJD	OHK	
CHECKED	REVISED	STRUCTURE FILE NO	
BAG		2200481&2200511	

REINFORCING STEEL LIST
BRIDGE NO. ERI-2-11.71 L & R (0.7.12)
S.R. 2 OVER NORFOLK & WESTERN RAILWAY COMPANY R/R & OLD RAILROAD RD.

ERI-2-2.866



PLAN



PROFILE ALONG ℄ SURVEY & CONSTRUCTION S.R. 2

NOTES

ALL DIMENSIONS ARE IN MILLIMETERS, AND ALL STATIONS & ELEVATIONS ARE IN METERS.

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPE SHALL MATCH EXISTING GRADE. QUANTITIES HAVE BEEN INCLUDED IN THE ROADWAY GENERAL SUMMARY AND SHALL BE USED AS REQUIRED UNDER THE DIRECTION OF THE PROJECT ENGINEER.

RIGHT-OF-WAY LIMITS ARE LOCATED OUTSIDE WORK LIMITS SHOWN IN PLAN VIEW.

* ELEVATIONS MARKED WITH AN ASTERISK ARE AT THE TOP OF THE SPILL THRU SLOPE AT THE FACE OF ABUTMENT.

EXISTING BRIDGE DATA

TYPE: 3 SPAN CONTINUOUS STEEL BEAMS WITH REINFORCED CONCRETE DECK ON REINFORCED CONCRETE SUBSTRUCTURE.
SPANS: 12 192 mm±, 15 240 mm±, 12 192 mm± c/c BEARINGS
ROADWAY: 12 090 mm± T/T OF 356 mm± SAFETY CURBS
LOADING: CF 400 (57)
WEARING SURFACE: 25 mm± MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
SKEW: 7°-00'-00"± R.F.
APPROACH SLABS: AS-1-54 (7620 mm± LONG)
CROWN: 0.0156±
DATE BUILT: 1961
STRUCTURE FILE NUMBER: 2200546 & 2200570

PROPOSED STRUCTURE MODIFICATION

PROPOSED WORK: (FOR BOTH LEFT & RIGHT BRIDGES)

1. REMOVE AND REPLACE EXISTING BACKWALLS TO THE BEAM SEATS
2. PROVIDE NEW EXPANSION JOINTS
3. PROVIDE TEMPORARY JACKING SYSTEM FOR THE SUPERSTRUCTURE TO REPLACE THE EXISTING ABUTMENT BEARINGS AND TO PROVIDE SHIM PLATES UNDER PIER BEARINGS
4. ELIMINATE ALL EXISTING SCUPPERS
5. PAINT EXISTING AND NEW STRUCTURAL STEEL
6. PROVIDE A NEW REINFORCED CONCRETE DECK
7. PROVIDE POROUS BACKFILL WITH FILTER FABRIC
8. INSTALL CATCH BASINS AT ALL BRIDGE CORNERS
9. SEAL CONCRETE SURFACES
10. REPAIR EXISTING SLOPE PROTECTION
11. REPLACE EXISTING APPROACH SLABS

(IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN SEQUENTIAL ORDER AS LISTED).

TYPE: 3 SPAN CONTINUOUS STEEL BEAMS WITH COMPOSITE REINFORCED CONCRETE DECK SUPPORTED ON EXISTING PIERS AND REHABILITATED STUB ABUTMENTS.
SPANS: 12 192 mm±, 15 240 mm±, 12 192 mm± C/C BRGS.
ROADWAY: 12 400 mm T/T OF BARRIER
LOADING: MS18 & ALT. MILITARY LOADING (CASE I)
WEARING SURFACE: 25 mm MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
SKEW: 7°-00'-00"± R.F.
APPROACH SLABS: AS-1-81M (7600 mm LONG)
CROWN: 0.016
LONGITUDE: 82°44'23"W **LATITUDE:** 41°24'27" N

CURRENT AVERAGE DAILY TRAFFIC: 14 030 (1998)
DESIGN AVERAGE DAILY TRAFFIC: 22 450 (2018)
CURRENT AVERAGE DAILY TRUCK TRAFFIC: 3370 (1998)
DESIGN AVERAGE DAILY TRUCK TRAFFIC: 5390 (2018)

metric units

R.D. Zande & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
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DESIGNED	DRAWN	REVIEWED	DATE
JAP	DJD	OHK	7/11/97
CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200546, 2200570	

ERIE COUNTY
STA. 18+970.975
STA. 19+011.982

SITE PLAN
BRIDGE NO. ERI-2-12086 L & R (0750)
S.R. 2 OVER MILLS CREEK

ERI-2-2.866

1/18

304/327

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S):

AS-1-81M	DATED	10-25-94
BR-1M	DATED	12-15-94
EXJ-4-87M	DATED	2-18-97
GR-3.1M	DATED	10-21-97
PCB-91M	DATED	3-20-95

AND TO SUPPLEMENTAL SPECIFICATION(S):

843	DATED	5-5-98
815	DATED	5-30-96
954	DATED	9-9-97
846	DATED	9-9-97
910	DATED	4-21-97
863	DATED	9-9-97
844	DATED	5-5-98

METRIC UNITS:

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS AND ALL ELEVATIONS IN METERS UNLESS NOTED OTHERWISE.

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

DESIGN LOADING: MS18, CASE I AND THE ALTERNATE MILITARY LOADING.

HIGH PERFORMANCE CONCRETE – COMPRESSIVE STRENGTH 31.0 MPa (SUPERSTRUCTURE)

CONCRETE CLASS C – COMPRESSIVE STRENGTH 27.5 MPa (SUBSTRUCTURE)

REINFORCING STEEL – ASTM A615M, A616M, OR A617M
GRADE 420 MINIMUM YIELD STRENGTH 420 MPa.
SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82M, OR A615M.

STRUCTURAL STEEL
A36M – YIELD STRENGTH 250 MPa

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL.
65 mm CONCRETE COVER.
HIGH PERFORMANCE CONCRETE.

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 25 mm THICK.

UTILITY LINES:

ALL EXPENSE INVOLVED IN RELOCATION (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY(IES). THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTION 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING STRUCTURE PLANS:

THE ORIGINAL DESIGN PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 3 OFFICE, 906 NORTH CLARK ST., ASHLAND, OHIO 44805 (419) 281-0513.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK AND PARAPET)

DESCRIPTION: THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECKS, SAFETY CURBS, PARAPETS, RAILINGS, AND SCUPPERS. CARE SHALL BE TAKEN NOT TO DAMAGE THE STEEL BEAMS DURING THE DECK REMOVAL. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAMS, CONCRETE CRUSHERS AND OTHER SIMILAR TYPE OF IMPACTIVE DEVICES IS NOT PERMITTED.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF THE DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 50 mm OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 50 mm OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 50 mm OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS: CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 16 KILOGRAMS BUT NOT TO EXCEED 41 KILOGRAMS MAY BE USED AT THE APPROVAL OF THE ENGINEER, TO ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS: DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.), CARE SHALL BE TAKEN DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. STRINGERS DAMAGED BY THE CONTRACTOR'S REMOVAL. OPERATIONS SHALL, AT NO COST TO THE PROJECT, BE REPLACED OR REPAIRED. PROPOSED REPAIRS, DEVELOPED BY A REGISTERED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED IN WRITING FOR REVIEW AND APPROVAL BY THE DIRECTOR.

EXTRANEOUS MEMBERS: EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC., AND THE SUPPORT FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES DESIGNATED "TENSION" SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS, BY A REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF THE WORK.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

THIS ITEM OF WORK SHALL BE USED TO REMOVE PORTIONS OF THE SUBSTRUCTURE AS DESIGNATED IN THE PLAN. THE CONCRETE SHALL BE REMOVED BY HYDRAULIC SPLITTING METHOD. A LINE OF HOLES SHALL BE DRILLED ALONG THE REMOVAL LINE AND HYDRAULIC SPLITTER USED AS PER THE MANUFACTURER'S RECOMMENDATIONS. 16 AND 7 KILOGRAM JACK HAMMERS SHALL BE USED FOR ANY REQUIRED FINISH WORK. HOE RAMS AND/OR CONCRETE CRUSHERS WILL NOT BE PERMITTED TO DO ANY OF THE WORK. NO SAW CUTTING WILL BE ALLOWED IN AREAS WHERE EXISTING REINFORCING SHALL REMAIN. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL DESIGNATED FOR SALVAGE, IF DAMAGED DURING THE REMOVAL OPERATION DOWELED REINFORCING STEEL MUST BE ADDED AT THE CONTRACTOR'S EXPENSE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC METER FOR ITEM 202, PORTIONS OF STRUCTURES REMOVED AS PER PLAN (SUBSTRUCTURE), WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 25 mm DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN:

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 MATERIAL AND PLACED IN 150 mm LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04.

ITEM 503, COFFERDAMS, CRIBS, AND SHEETING, AS PER PLAN

TEMPORARY SHORING SHALL BE USED TO ACCOMPLISH THE PROPOSED CONSTRUCTION IN PHASES. THE DESIGN OF THE TEMPORARY SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, BE DESIGNED BY A REGISTERED ENGINEER, AND CONFORM WITH 501.05. FOR APPROVAL, FIVE COPIES OF THE DRAWINGS SHALL BE SUBMITTED TO THE DIRECTOR AND CONCURRENTLY, ONE COPY TO THE OFFICE OF STRUCTURAL ENGINEERING. CONSTRUCTION OF THE SHORING SHALL NOT BEGIN UNTIL AFTER WRITTEN APPROVAL HAS BEEN RECEIVED FROM THE DIRECTOR. PORTIONS OF THE TEMPORARY SHORING COMPOSED OF STEEL OR CONCRETE MAY BE LEFT IN PLACE AT THE DISCRETION OF THE ENGINEER. PORTIONS COMPOSED OF OTHER MATERIALS SHALL BE REMOVED PRIOR TO COMPLETION OF THE WORK.

REPLACEMENT OF EXISTING REINFORCING STEEL:

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL.
ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. COST OF ALL REINFORCING STEEL SHALL BE INCLUDED WITH APPROPRIATE ITEM 511 CONCRETE ITEMS.

INSPECTION OF STRUCTURAL STEEL:

THE ENGINEER SHALL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THAT THEY ARE FREE OF DEFECTS. THE DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS SHALL NOT BE ERECTED UNTIL AFTER THE ENGINEER HAS COMPLETED THIS INSPECTION. THIS INSPECTION SHALL NOT TAKE PLACE UNTIL AFTER THE TOP FLANGES ARE CLEANED AS SPECIFIED IN 511.08, BUT IT SHALL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE COST ASSOCIATED WITH THIS INSPECTION SHALL BE INCLUDED WITH ITEM 511, SUPERSTRUCTURE CONCRETE FOR PAYMENT.

ITEM 511, CLASS C CONCRETE, AS PER PLAN:

CLASS C CONCRETE SHALL BE IN ACCORDANCE WITH 511, EXCEPT THAT THE AGGREGATE SHALL BE #8 LIMESTONE.

ITEM 863 – STRUCTURAL STEEL, MEMBERS, LEVEL ONE (1) FABRICATION

STEEL MEMBERS TO BE FABRICATED UNDER THIS ITEM WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. THE CONTRACTOR SHALL MAKE NECESSARY MEASUREMENTS AND PREPARE SKETCHES, DRAWINGS, TABLES, ETC. THE ENGINEER SHALL HAVE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE. TECHNICAL ASSISTANCE WILL BE PROVIDED ON REQUEST BY THE OFFICE OF STRUCTURAL ENGINEERING. MILL TEST REPORTS AND SHIPPING DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INCORPORATING STEEL ITEMS INTO THE WORK, AS REQUIRED BY 501.07. AFTER FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL TO ENSURE THAT THE DRAWINGS DEPICT THE STEEL AS ACTUALLY INCORPORATED INTO THE WORK. THE ENGINEER WILL THEN SEND ONE APPROVED SET TO THE BUREAU OF BRIDGES FOR INFORMATION. PAY WEIGHTS SHALL BE COMPUTED IN COMPLIANCE WITH 513 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS AND SUBMITTED TO THE ENGINEER FOR HIS REVIEW AND APPROVAL. THE FABRICATOR SHALL FURNISH A 35 mm MICROFILM COPY OF EACH SHOP DRAWING, WHICH SHALL BE MOUNTED ON AN APERTURE CARD AS SPECIFIED IN 501.05.

STEEL MEMBERS INCLUDED IN THIS ITEM INCLUDE CROSSFRAMES, SHIM PLATES AT PIER BEARINGS, BOLTS, NUTS, AND PLATES FOR REHABILITATION FOR BEAM B3 (LEFT BRIDGE)

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CHECKED	REVISED	STRUCTURE FILE NO.	
BAG		2200546, 2200570	

GENERAL NOTES
BRIDGE NO. ERI-2-22066 LAR (0760)
S.R. 2 OVER MILLS CREEK

ERI-2-2.866

GENERAL NOTES CONT.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTION JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 25 mm, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING ACTUAL JACKING OPERATIONS. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 6 mm.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 25 mm OR LESS.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE, AS PER PLAN

SEE NOTES ON BEARING DETAIL SHEETS.

ITEM 518 - POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN:

POROUS BACKFILL SHALL BE NO. 57 *STONE*.

ITEM 815 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL:

ALL EXISTING AND NEW STEEL SHALL BE CLEANED AND PAINTED WITH A PRIME, INTERMEDIATE, AND FINISH COAT OF PAINT USING SYSTEM OZEU. THE COST OF THIS WORK SHALL BE INCLUDED WITH SEVERAL FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU ITEMS FOR PAYMENT. THE COLOR OF THE FINISH COAT SHALL BE RED COLOR MATCHING FEDERAL STANDARD NUMBER 11136. IN ADDITION, TO THE SURFACE AREA OF THE STEEL STRINGERS TO BE PAINTED, AN ADDITIONAL TWENTY FIVE PERCENT OF THIS AMOUNT HAS BEEN ADDED TO THE SQUARE METER TOTALS TO ACCOUNT FOR INCIDENTALS SUCH AS CROSSFRAMES & BEARINGS. SEE SUPPLEMENTAL SPECIFICATION 815.

CONCRETE PARAPETS:

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 25 mm DEEP CONTROL JOINTS SHALL BE SAWED INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAWCUTS SHALL BE PLACED AT LOCATIONS AS DETAILED ON SHEET 16/18. THE USE OF AN EDGE GUIDE, FENCE, OR JIG IS REQUIRED TO INSURE 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 6 mm. THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 25 mm WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E. THE CONTRACTOR SHALL NOTE THAT THE OPTION TO SLIPFORM PARAPET IS NOT ALLOWED.

ITEM 844 - HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK AND PARAPET)

ON THIS PROJECT, THE CONTRACTOR SHALL USE CONCRETE MEETING THE REQUIREMENTS OF THE MIX DESIGN GIVEN IN THE PROPOSAL NOTE FOR MIX 4 (GGBF SLAG + MICROSILICA) FOR THE SUPERSTRUCTURE INSTEAD OF TEXTURING. BRIDGE DECK GROOVING SHALL BE PERFORMED AS PER THE PROPOSAL NOTE. BRIDGE GROOVING SHALL BE PAID FOR SEPARATELY.

CONSTRUCTION SEQUENCE AND MAINTENANCE OF TRAFFIC

SEE SHEET 5/18 FOR CONSTRUCTION SEQUENCE AND PHASE CONSTRUCTION DETAILS. SEE ROADWAY PLANS FOR ADDITIONAL TRAFFIC NOTES AND DETAILS.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (*EPOXY-URETHANE*)

THE CONCRETE SHALL BE SEALED USING AN EPOXY-URETHANE SYSTEM AT THE LOCATIONS INDICATED IN THE PLAN. THE URETHANE SHALL BE A "BUFF" COLOR MEETING FEDERAL STANDARD NUMBER 37722. SEE PROPOSAL NOTE FOR ADDITIONAL INFORMATION.

ITEM SPECIAL - STRUCTURE MISC.: DRILLING OF STRUCTURAL STEEL (25mm DIAMETER)

THE CONTRACTOR SHALL PENCIL ABRASIVE BLAST THE APPARENT END OF THE CRACK AND PERFORM NON-DESTRUCTIVE TESTS TO LOCATE THE END OF THE CRACK. A 25mm DIAMETER HOLE SHALL THEN BE DRILLED AT THE END OF THE CRACK, AND THE EXPOSED CIRCUMFERENCE OF THE HOLE SHALL THEN BE GROUND SMOOTH AND CAREFULLY INSPECTED FOR CRACKS USING MAGNETIC PARTICLE AND DYE PENETRANT TESTING. BOTH SIDES OF THE WEB MIGHT NEED TO BE TESTED. DRILLING, GRINDING, AND TESTING SHALL CONTINUE UNTIL THE CRACK END IS REMOVED.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH OF ITEM SPECIAL - STRUCTURAL MISC.: DRILLING OF STRUCTURAL STEEL (25mm DIAMETER) WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ABBREVIATIONS

ABUT. - ABUTMENT
AVG. - AVERAGE
BOT. - BOTTOM
BRG. - BEARING
℄ - CENTERLINE
CLR. - CLEARANCE
CONSTR. - CONSTRUCTION
C.P.P. - CORRUGATED PLASTIC PIPE
E.B. - EAST BOUND
E.F. - EACH FACE
EXIST. - EXISTING
EXP. - EXPANSION
ELEV. - ELEVATION
EQ. - EQUAL
F.A. - FORWARD ABUTMENT
F.F. - FAR FACE
FIX. - FIXED
FTG. - FOOTING
FWD. - FORWARD
HMWM - HIGH MOLECULAR WEIGHT METHACRYLATE
JT. - JOINT
L.B. - LEFT BRIDGE
MAX. - MAXIMUM
MIN. - MINIMUM
N.B. - NORTH BOUND
N.F. - NEAR FACE
NO. - NUMBER
PH. - PHASE
PVMT. - PAVEMENT
O.C. - ON CENTER
OZEU - ORGANIC ZINC EPOXY URETHANE
PL. - PLATE
P.E.J.F. - PREFORMED EXPANSION JOINT FILLER
R - RADIUS
R.A. - REAR ABUTMENT
R.B. - RIGHT BRIDGE
RDWY. - ROADWAY
REINF. - REINFORCING
REQ'D - REQUIRED
S.B. - SOUTH BOUND
SER. - SERIES
SPA. - SPACES
STA. - STATION
STD. - STANDARD
STR. - STRAIGHT
SUBSTR. - SUBSTRUCTURE
TYP. - TYPICAL
U.N.O. - UNLESS NOTED OTHERWISE
VERT. - VERTICAL
W.B. - WESTBOUND
W.R.T. - WITH RESPECT TO

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GENERAL NOTES
BRIDGE NO. ERH-2-12086 L&R (0760)
S.R. 2 OVER MILLS CREEK

ERH-2-2.866

3/18

306
327

ESTIMATED QUANTITIES

CALC. BY: KVB DATE: 7/10/97
CHK. BY: BAG DATE: 7/11/97

ITEM	ITEM EXT.	TOTAL LEFT BRIDGE	TOTAL RIGHT BRIDGE	UNIT	DESCRIPTION	ABUTMENTS LEFT BRIDGE	ABUTMENTS RIGHT BRIDGE	PIERS LEFT BRIDGE	PIERS RIGHT BRIDGE	SUPERSTRUCTURE LEFT BRIDGE	SUPERSTRUCTURE RIGHT BRIDGE	GENERAL LEFT BRIDGE	GENERAL RIGHT BRIDGE	SHEET NO. FOR AS PER PLAN ITEMS
202	11301	27	27	CU METER	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)	27	27							2/18
202	11201	LUMP	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK AND PARAPET)					LUMP	LUMP			2/18
503	11101	LUMP	LUMP		COFFERDAMS, CRIBS & SHEETING, AS PER PLAN							LUMP	LUMP	2/18
503	21301	LUMP	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	LUMP	LUMP							2/18
511	44101	24	24	CU METER	CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN	24	24							2/18
844	48000	125	125	CU METER	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK)					125	125			
844	48020	32	32	CU METER	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET)					32	32			
844	49000	LUMP	LUMP		HIGH PERFORMANCE CONCRETE – TRIAL MIX							LUMP	LUMP	
844	49010	LUMP	LUMP		HIGH PERFORMANCE CONCRETE – TESTING							LUMP	LUMP	
512	44400	2	2	SQ METER	TYPE B WATERPROOFING	2	2							
SPECIAL	512675 10	350	350	SQ METER	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	99	99			251	251			
863	10020	LUMP	LUMP		STRUCTURAL STEEL MEMBERS, LEVEL ONE (1) FABRICATION					LUMP	LUMP			2/18
863	20000	2682	2682	EACH	WELDED STUD SHEAR CONNECTOR					2682	2682			
516	11210	26.8	26.8	METER	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL					26.8	26.8			
516	44101	12	12	EACH	ELASTOMERIC BEARING (190x280x57) WITH INTERNAL LAMINATES AND LOAD PLATE (220x310x41[AVG.]) (NEOPRENE), AS PER PLAN	12	12							3/18
516	47001	LUMP	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN					LUMP	LUMP			3/18
518	21231	LUMP	LUMP		POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	LUMP	LUMP							3/18
518	40000	25	25	METER	150 mm PERFORATED CORRUGATED PLASTIC PIPE	25	25							
518	40010	9	9	METER	150 mm NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	9	9							
843	50000	15.3	5.6	SQ METER	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR	15.3	5.6							
SPECIAL	53000400	1		EACH	STRUCTURE MISC. : DRILLING OF STRUCTURAL STEEL (25mm DIAMETER)	1								
815	00050	833	833	SQ METER	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU					833	833			
815	00056	833	833	SQ METER	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU					833	833			
815	00060	833	833	SQ METER	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU					833	833			
815	00066	833	833	SQ METER	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU					833	833			
815	00504	100	100	MAN HOUR	GRINDING FINS, TEARS AND SLIVERS					100	100			
SPECIAL	85050070	496	496	SQ. METER	BRIDGE DECK GROOVING					496	496			

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STRUCTURE FILE NO 2200546, 2200570

ESTIMATED QUANTITIES
BRIDGE NO. ERI-2-12066 L&R (0750)
S.R. 2 OVER MILLS CREEK

ERI-2-2.866

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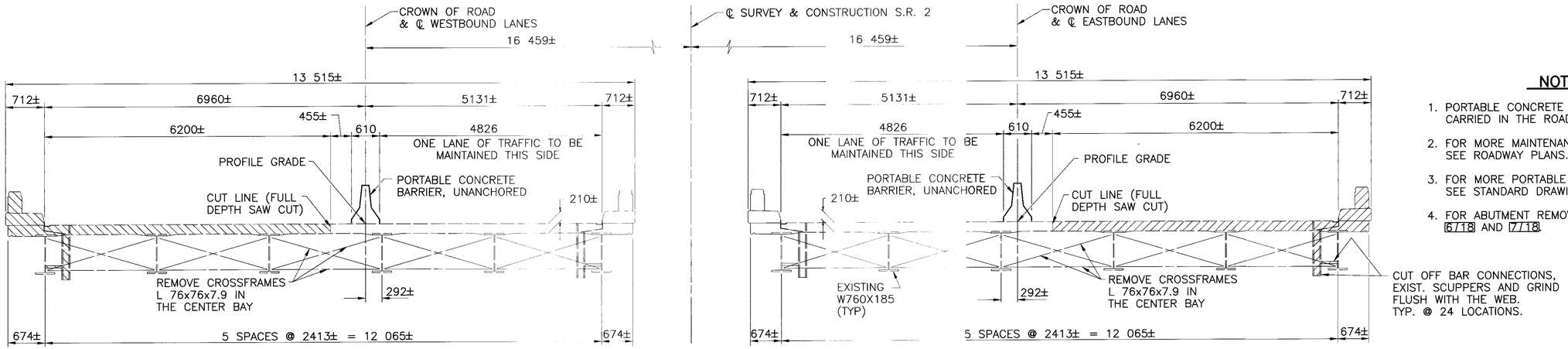
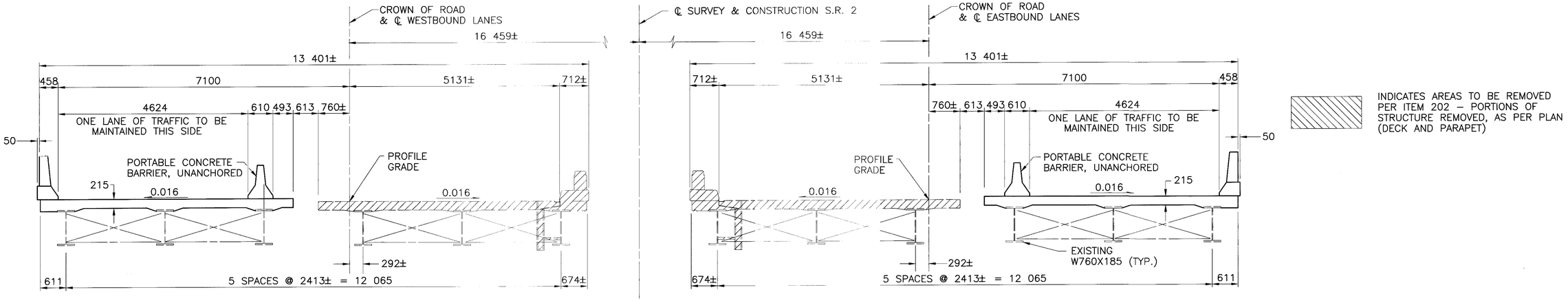


PHASE I TRANSVERSE SECTION



INDICATES AREAS TO BE REMOVED PER ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (DECK AND PARAPET)

NOTES

1. PORTABLE CONCRETE BARRIER IS CARRIED IN THE ROADWAY PLANS FOR PAYMENT.
2. FOR MORE MAINTENANCE OF TRAFFIC DETAILS, SEE ROADWAY PLANS.
3. FOR MORE PORTABLE CONCRETE BARRIER DETAILS, SEE STANDARD DRAWING PCB–91M.
4. FOR ABUTMENT REMOVAL DETAILS, SEE SHEETS 6718 AND 7718.

CONSTRUCTION SEQUENCE:

PHASE I

1. INSTALL PORTABLE CONCRETE BARRIERS AND REROUTE TRAFFIC ONTO SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
2. MAINTAIN ONE LANE ON EACH OF THE EXISTING BRIDGES.
3. REMOVE APPROACH SLAB, DECK SLAB, SAFETY CURB, AND PARAPET OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE. IN ADDITION, REMOVE SCUPPERS INCLUDING RELATED DRAINAGE ITEMS AND SUPPORT ARMOR AND EXPANSION JOINT ARMOR. REMOVE EXISTING CROSSFRAMES IN THE CENTER BAY.
4. JACK THE LEFT THREE BEAMS OF THE EXISTING LEFT BRIDGE AND THE RIGHT THREE BEAMS OF THE EXISTING RIGHT BRIDGE AS PER PLAN NOTES AND PROCEDURES.
5. REMOVE PORTIONS OF ABUTMENTS AND WINGWALLS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
6. CONSTRUCT PORTIONS OF ABUTMENTS AND WINGWALLS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
7. INSTALL ELASTOMERIC BEARINGS AT ABUTMENTS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE. INSTALL SHIM PLATES AT PIERS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF EXISTING RIGHT BRIDGE.
8. LOWER THE LEFT THREE BEAMS OF THE EXISTING LEFT BRIDGE AND THE RIGHT THREE BEAMS OF THE EXISTING RIGHT BRIDGE TO THEIR FINAL POSITIONS.
9. INSTALL SHEAR CONNECTORS ON EXISTING BEAMS OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE. PAINT EXISTING STRUCTURAL STEEL.

PHASE II TRANSVERSE SECTION

10. CONSTRUCT DECK AND PARAPET OF THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
11. SEAL CONCRETE SURFACES.
12. COMPLETE DRAINAGE ITEMS AND APPROACH SLAB FOR THE NORTH HALF OF THE EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.

PHASE II

1. RELOCATE PORTABLE CONCRETE BARRIERS AS SHOWN AND MAINTAIN TRAFFIC ONTO NORTH HALF OF EXISTING LEFT BRIDGE AND SOUTH HALF OF THE EXISTING RIGHT BRIDGE.
2. MAINTAIN ONE LANE ON EACH OF THE EXISTING BRIDGES.
3. REMOVE REMAINING PORTIONS OF EXISTING APPROACH SLAB, DECK SLAB, SAFETY CURB AND PARAPET OF THE LEFT AND RIGHT BRIDGES. IN ADDITION, REMOVE SCUPPERS INCLUDING RELATED DRAINAGE ITEMS AND SUPPORT ARMOR AND EXPANSION JOINT ARMOR.
4. JACK THE RIGHT THREE BEAMS OF THE EXISTING LEFT BRIDGE AND THE LEFT THREE BEAMS OF THE EXISTING RIGHT BRIDGE AS PER PLAN NOTES AND PROCEDURES.
5. REMOVE PORTIONS OF ABUTMENTS AND WINGWALLS OF THE NORTH HALF OF THE EXISTING RIGHT BRIDGE AND SOUTH HALF OF THE EXISTING LEFT BRIDGE.
6. CONSTRUCT THE REMAINING PORTIONS OF ABUTMENTS AND WINGWALLS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND THE NORTH HALF OF THE EXISTING RIGHT BRIDGE.
7. INSTALL ELASTOMERIC BEARINGS AT ABUTMENTS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE. INSTALL SHIM PLATES AT PIERS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND THE NORTH HALF OF THE EXISTING RIGHT BRIDGE.
8. LOWER THE RIGHT THREE BEAMS OF THE EXISTING LEFT BRIDGE AND THE LEFT THREE BEAMS OF THE EXISTING RIGHT BRIDGE TO THEIR FINAL POSITIONS.
9. INSTALL SHEAR CONNECTORS ON EXISTING BEAMS OF THE SOUTH HALF OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
10. CONSTRUCT THE REMAINING PORTIONS OF DECK AND PARAPET OF THE LEFT AND RIGHT BRIDGE.
11. ERECT PROPOSED CROSSFRAMES IN THE CENTER BAY FOR BOTH THE LEFT AND RIGHT BRIDGES.
12. SEAL CONCRETE SURFACES.
13. COMPLETE DRAINAGE ITEMS AND APPROACH SLAB FOR THE SOUTH OF THE EXISTING LEFT BRIDGE AND NORTH HALF OF THE EXISTING RIGHT BRIDGE.
14. COMPLETE SLOPE PROTECTION.
15. INSTALL THE JOINT STRIP SEAL FOR EACH BRIDGE JOINT IN ONE PIECE, AFTER THE SUPERSTRUCTURE IS COMPLETE.

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DESIGNED KVB | DRAWN DJD | REVIEWED OHK | DATE 7/11/97
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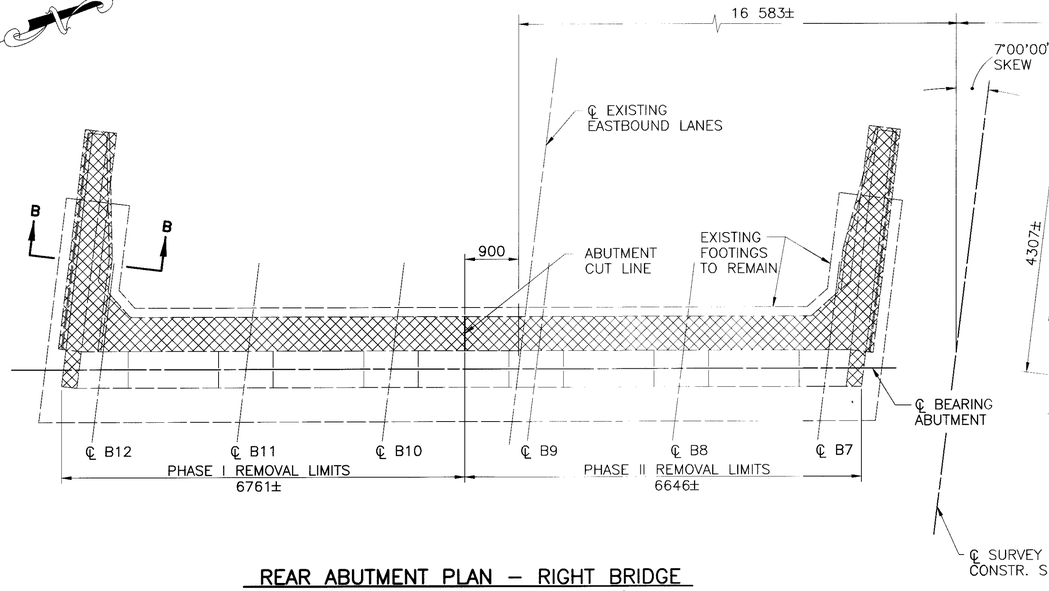
PHASE CONSTRUCTION DETAILS

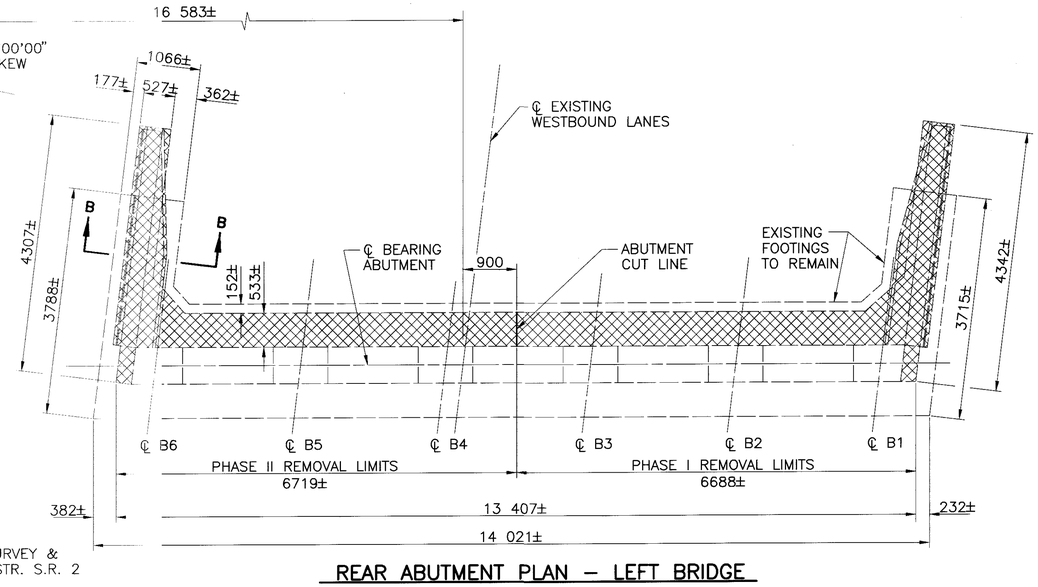
BRIDGE NO. ERI-2-08.42 L & R (0537)
S.R. 2 OVER MILLS CREEK

ERI-2-2.866

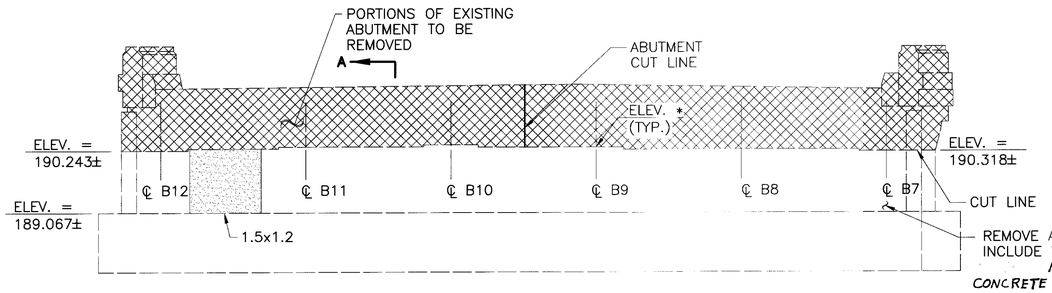


REAR ABUTMENT PLAN – RIGHT BRIDGE

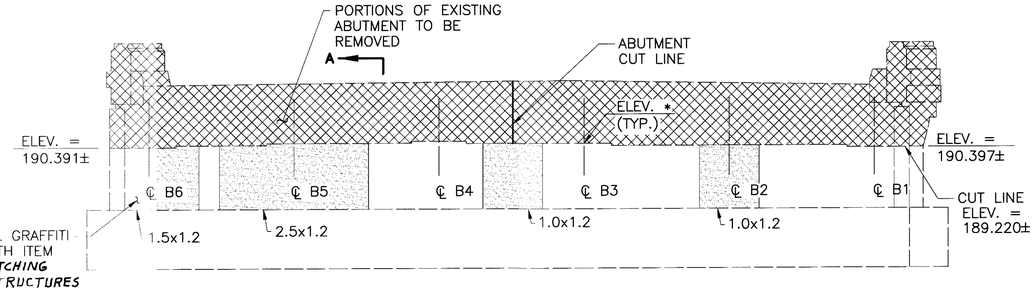
NOTE: FOR DIMENSIONS, SEE LEFT BRIDGE



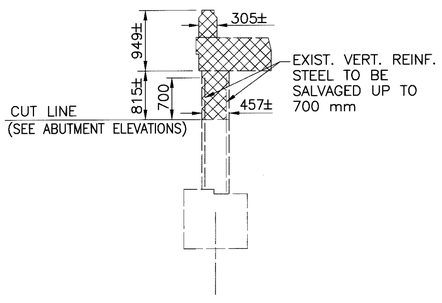
REAR ABUTMENT PLAN – LEFT BRIDGE



REAR ABUTMENT ELEVATION – RIGHT BRIDGE



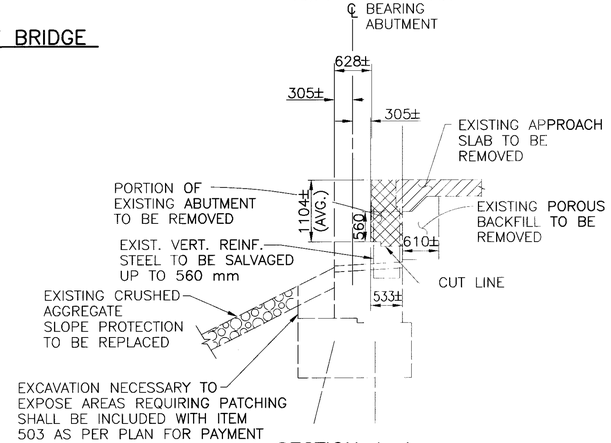
REAR ABUTMENT ELEVATION – LEFT BRIDGE



SECTION B–B

NOTE: FOR TYPICAL WINGALL ELEVATION SEE SHEET 7718.

* TABLE OF EXISTING BEAM SEAT ELEVATIONS	
BEAM MARK	ELEVATION
B1	190.397±
B2	190.430±
B3	190.468±
B4	190.485±
B5	190.436±
B6	190.391±
B7	190.318±
B8	190.338±
B9	190.376±
B10	190.334±
B11	190.288±
B12	190.243±



SECTION A–A

SUMMARY OF PATCHING QUANTITIES		
LOCATION	MEASURED	ESTIMATED
LEFT BRIDGE R.A.	7.2 SQ. M.	14.4 SQ. M.
LEFT BRIDGE F.A.	0.45 SQ. M.	0.90 SQ. M.
TOTAL LEFT BRIDGE	7.65 SQ. M.	15.3 SQ. M.
RIGHT BRIDGE R.A.	1.8 SQ. M.	3.6 SQ. M.
RIGHT BRIDGE F.A.	1.0 SQ. M.	2.0 SQ. M.
TOTAL RIGHT BRIDGE	2.8 SQ. M.	5.6 SQ. M.

PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN OCTOBER 1997.

INDICATES AREA OF APPROACH SLAB REMOVAL. INCLUDE WITH ROADWAY QUANTITIES FOR PAYMENT.

INDICATES AREAS TO BE REMOVED AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE.

INDICATES AREAS TO BE PATCHED AS PER ITEM **843** -PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR

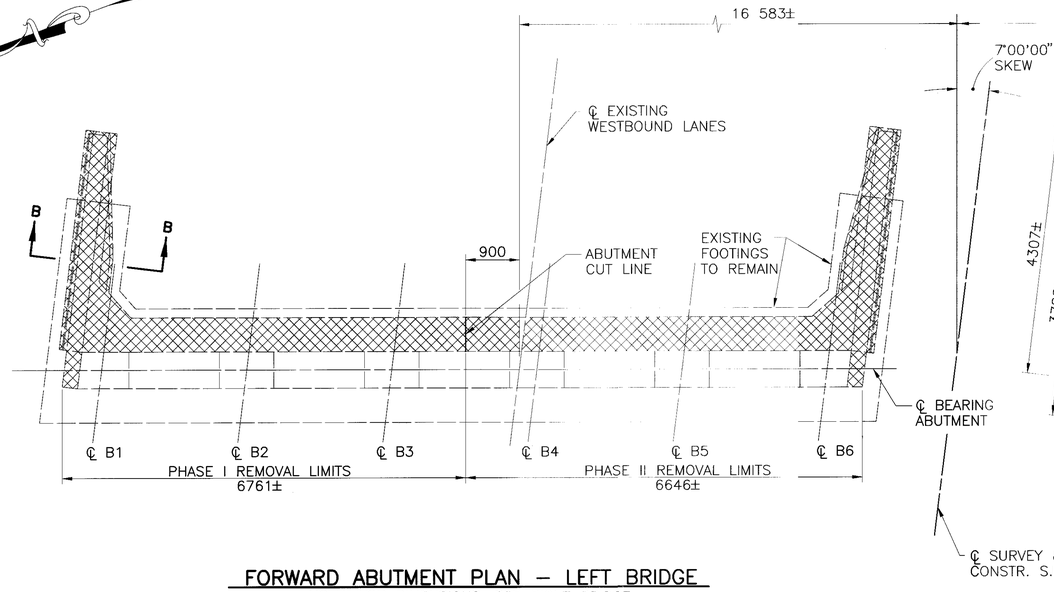
R.D. Zanda & Associates, Inc.
1257 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED KVB | DRAWN JLH | REVIEWED OHK | DATE 7/11/97
CHECKED BAG | REVISED | STRUCTURE FILE NO 2200546, 2200570

ABUTMENT REMOVAL DETAILS

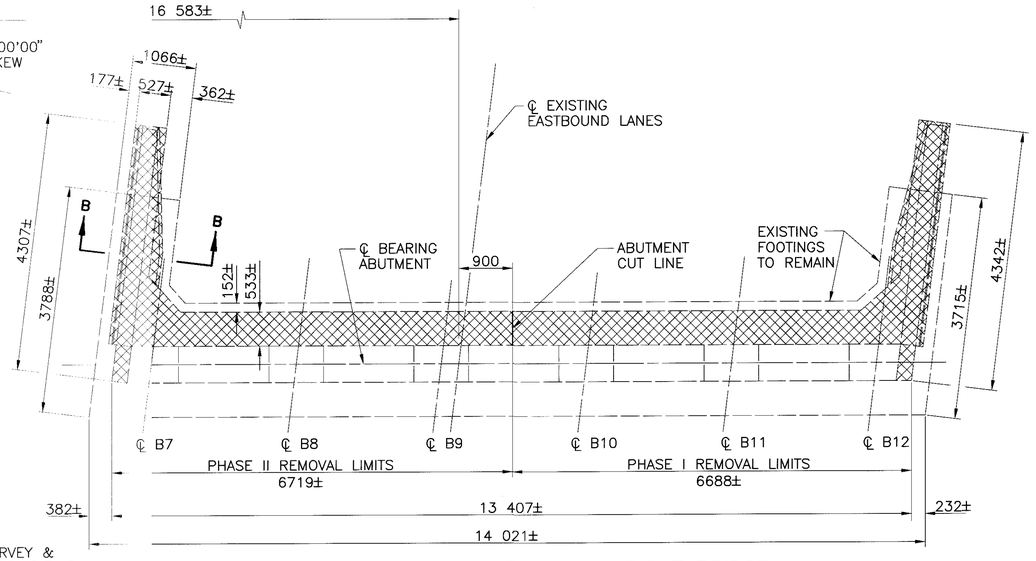
BRIDGE NO. ERI-2-12066 L & R (0760)
S.R. 2 OVER MILLS CREEK

ERI-2-2.866

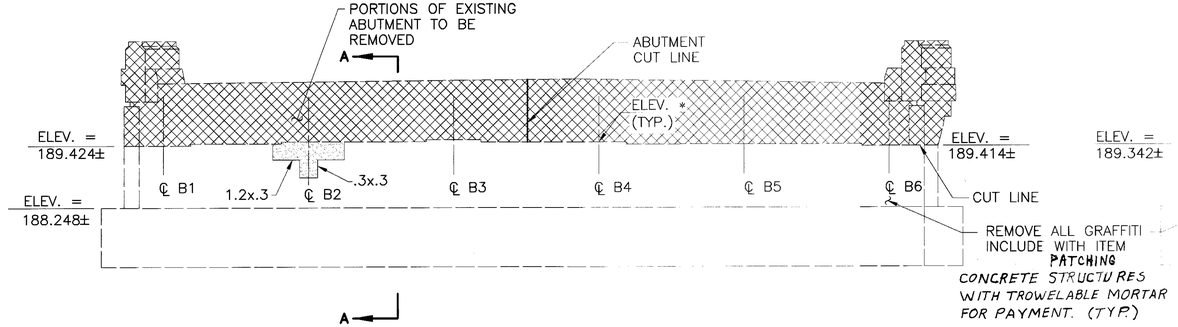


FORWARD ABUTMENT PLAN – LEFT BRIDGE

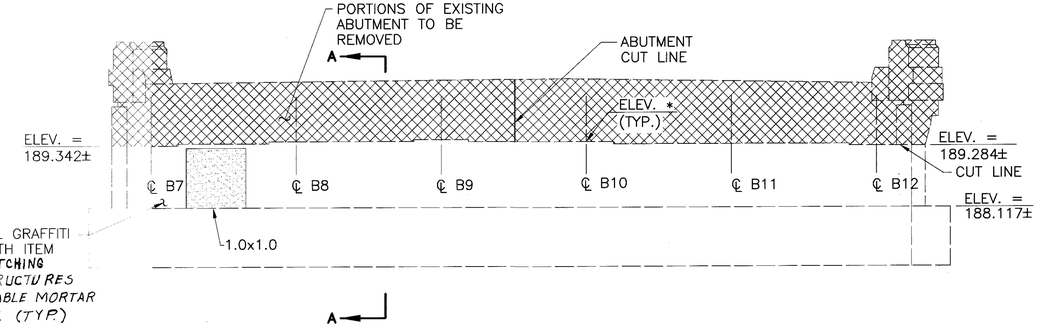
NOTE: FOR DIMENSIONS, SEE RIGHT BRIDGE



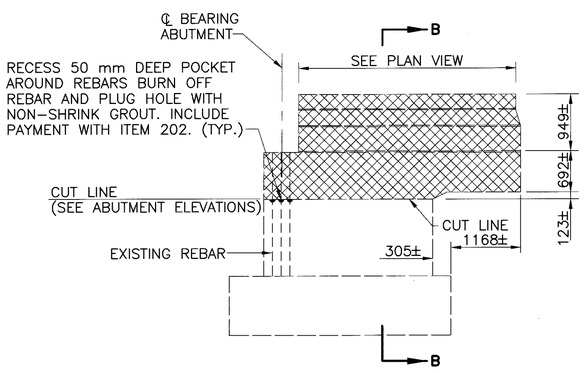
FORWARD ABUTMENT PLAN – RIGHT BRIDGE



FORWARD ABUTMENT ELEVATION – LEFT BRIDGE



FORWARD ABUTMENT ELEVATION – RIGHT BRIDGE



TYP. WINGWALL ELEVATION

* TABLE OF EXISTING BEAM SEAT ELEVATIONS	
BEAM MARK	ELEVATION
B1	189.424±
B2	189.452±
B3	189.482±
B4	189.505±
B5	189.458±
B6	189.414±
B7	189.342±
B8	189.385±
B9	189.415±
B10	189.375±
B11	189.330±
B12	189.284±

NOTES:

FOR SECTIONS A–A AND B–B AND PATCHING QUANTITIES, SEE SHEET 6/18.

INDICATES AREA OF APPROACH SLAB REMOVAL. INCLUDE WITH ROADWAY QUANTITIES FOR PAYMENT.

INDICATES AREAS TO BE REMOVED AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN SUBSTRUCTURE.

INDICATES AREAS TO BE PATCHED AS PER ITEM PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR.

R.D. Zande & Associates, Inc.
1297 Dublin Road
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DESIGNED	DRAWN	REVIEWED	DATE
KVB	JLH	OHK	7/11/97
CHECKED	REVISED	STRUCTURE FILE NO.	
BAG		2200546, 2200570	

ABUTMENT REMOVAL DETAILS

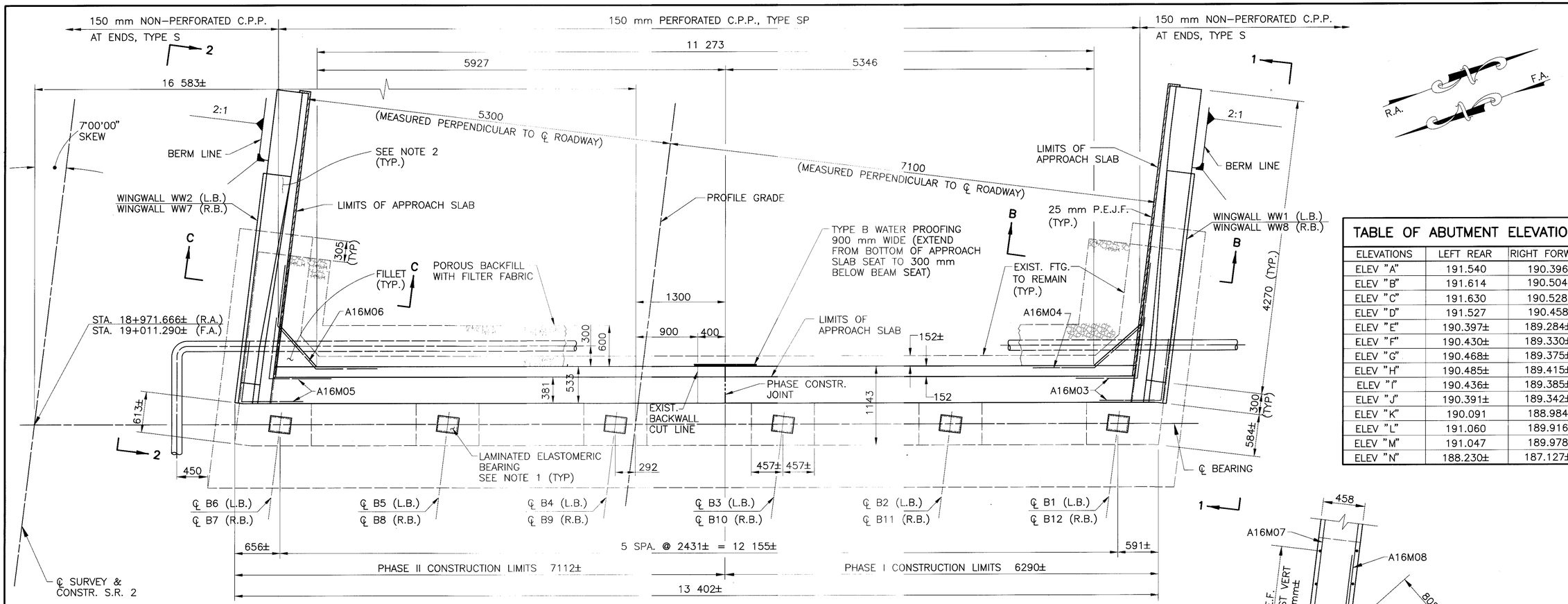
BRIDGE NO. ERI-2-12066 L & R (0760)
S.R. 2 OVER MILLS CREEK

ERI-2-2.866

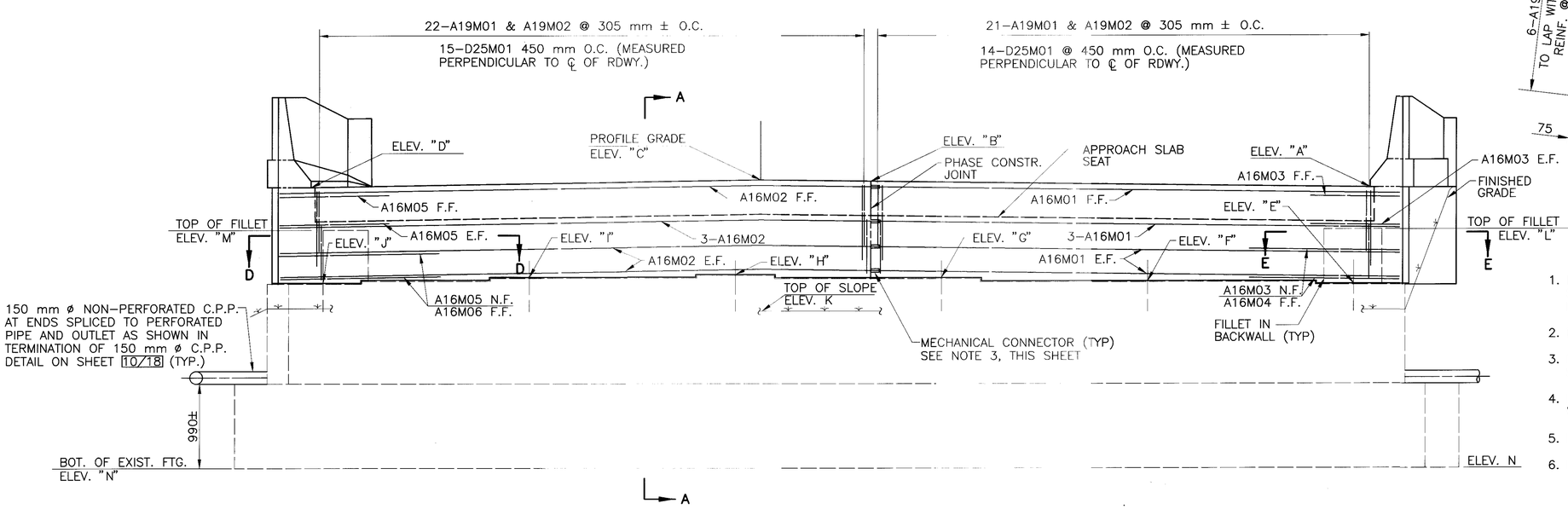
7/18

310/327

C097 P:\3907\DWG\BRIDGE\LE-2-1211\PLAN\3907AR2.DWG JUL 11, 1997 TIME: 11:12 AM

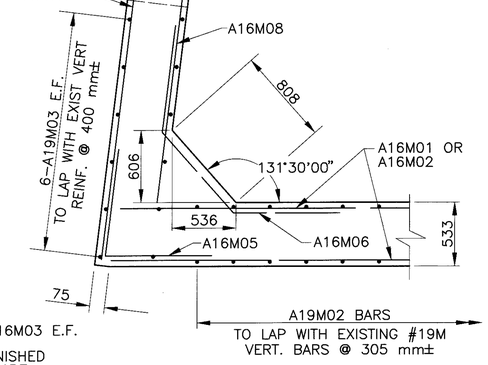


PLAN – LEFT BRIDGE REAR ABUT. AND RIGHT BRIDGE FORWARD ABUT.



ELEVATION – LEFT BRIDGE REAR ABUT. AND RIGHT BRIDGE FORWARD ABUT.

NOTE: ELEVATIONS "A" THRU "D" ARE GIVEN AT BRIDGE LIMITS & "E" THRU "J" ARE GIVEN AT ℄ BEARINGS. SEE TABLE THIS SHEET FOR ABUTMENT ELEVATIONS.



SECTION D–D

TABLE OF ABUTMENT ELEVATIONS		
ELEVATIONS	LEFT REAR	RIGHT FORWARD
ELEV "A"	191.540	190.396
ELEV "B"	191.614	190.504
ELEV "C"	191.630	190.528
ELEV "D"	191.527	190.458
ELEV "E"	190.397±	189.284±
ELEV "F"	190.430±	189.330±
ELEV "G"	190.468±	189.375±
ELEV "H"	190.485±	189.415±
ELEV "I"	190.436±	189.385±
ELEV "J"	190.391±	189.342±
ELEV "K"	190.091	188.984
ELEV "L"	191.060	189.916
ELEV "M"	191.047	189.978
ELEV "N"	188.230±	187.127±

NOTES

1. EXISTING BEARING PLATES AT BOTH ABUTMENTS SHALL BE REMOVED AND REPLACED WITH ELASTOMERIC BEARINGS. SEE SHEET 17/18 FOR BEARING DETAILS.
2. FOR PARAPET TRANSITION DETAIL, SEE SHEET 16/18.
3. FOR MECHANICAL CONNECTORS DETAIL AND NOTES SEE SHEET 18/18.
4. FOR ADDITIONAL NOTES, SECTIONS A–A, B–B, C–C AND VIEWS 1–1 & 2–2, SEE SHEET 10/18.
5. FOR SECTION E–E, SEE SHEET 9/18.
6. FOR REINFORCING STEEL LIST, SEE SHEET 18/18.

R.D. Zanda & Associates, Inc.
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Columbus, Ohio 43215
Phone: (614) 486-4383

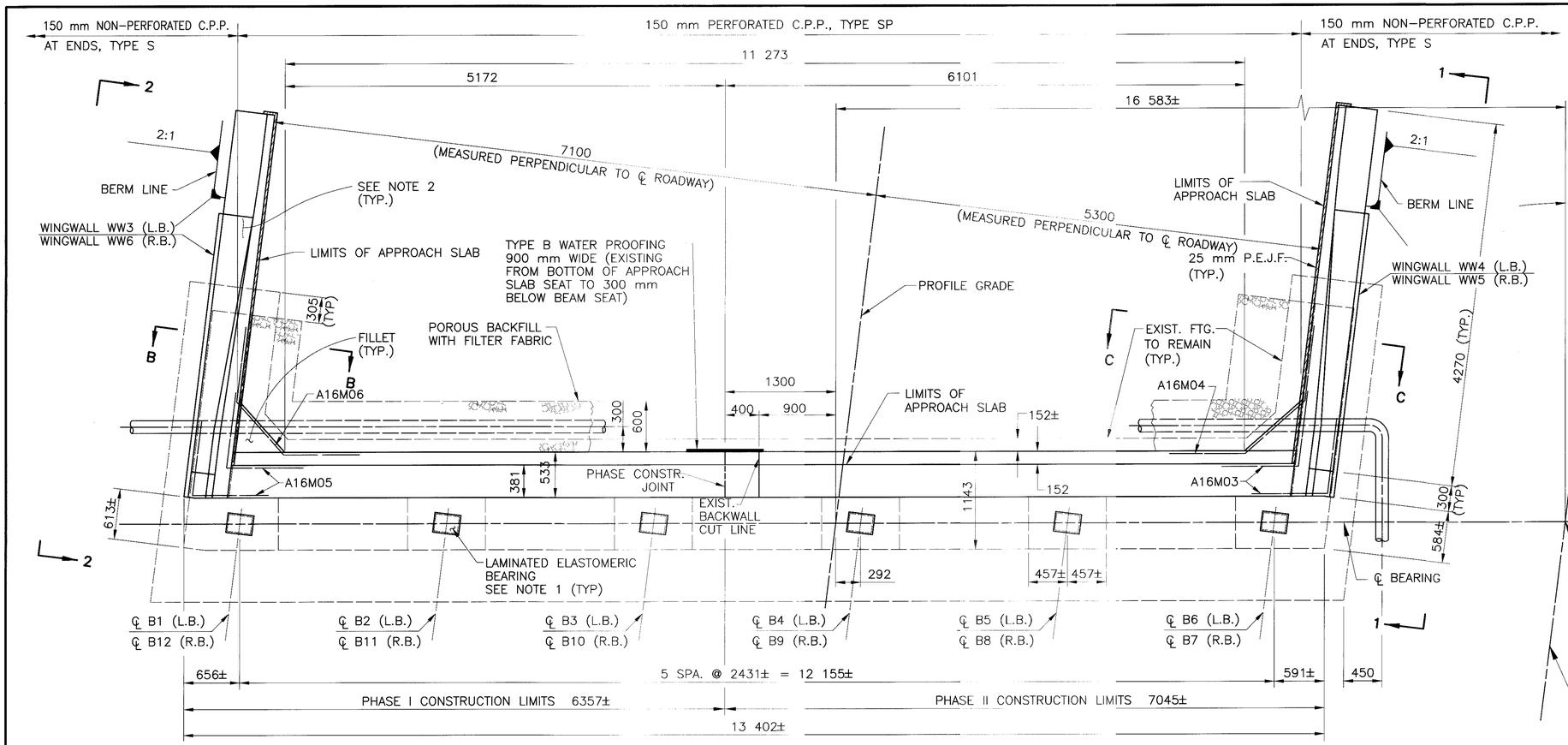
DESIGNED KVB | DRAWN KVB/JLH | CHECKED BAG | REVISED | REVIEWED OHK | DATE 7/11/97 | STRUCTURE FILE NO 2200546, 2200570

ABUTMENT DETAILS
BRIDGE NO. ERI-2-12096 L & R (0760)
S.R. 2 OVER MILLS CREEK

ERI-2-2.866

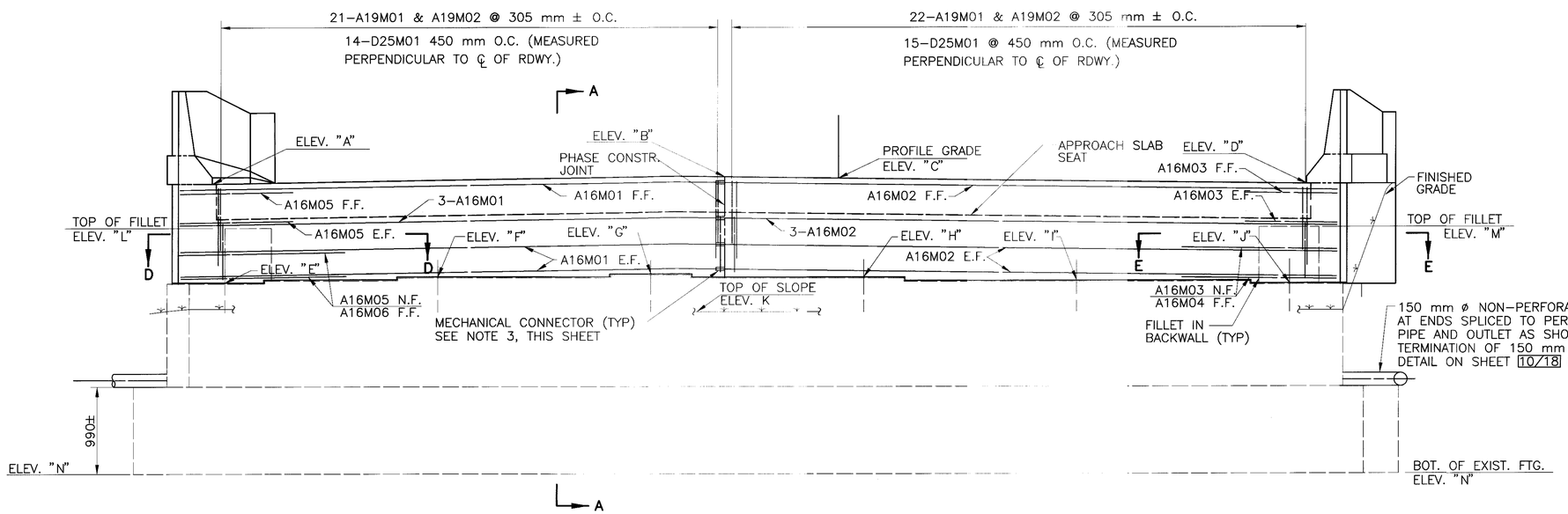
8/18

311/327



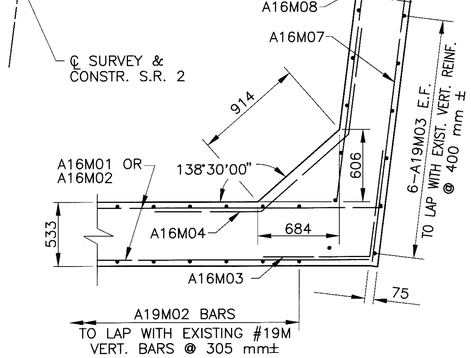
PLAN – RIGHT BRIDGE REAR ABUT. AND LEFT BRIDGE FORWARD ABUT.

TABLE OF ABUTMENT ELEVATIONS		
ELEVATIONS	RIGHT REAR	LEFT FORWARD
ELEV "A"	191.384	190.523
ELEV "B"	191.494	190.599
ELEV "C"	191.521	190.617
ELEV "D"	191.454	190.518
ELEV "E"	190.243±	189.424±
ELEV "F"	190.288±	189.452±
ELEV "G"	190.334±	189.482±
ELEV "H"	190.376±	189.505±
ELEV "I"	190.338±	189.458±
ELEV "J"	190.318±	189.414±
ELEV "K"	189.943	189.114
ELEV "L"	190.904	190.043
ELEV "M"	190.974	190.038
ELEV "N"	188.077±	187.258±



ELEVATION – RIGHT BRIDGE REAR ABUT. AND LEFT BRIDGE FORWARD ABUT.

NOTE: ELEVATIONS "A" THRU "D" ARE GIVEN AT BRIDGE LIMITS & "E" THRU "J" ARE GIVEN AT ℄ BEARINGS. SEE TABLE THIS SHEET FOR ABUTMENT ELEVATIONS.



SECTION E–E

NOTES

1. EXISTING BEARING PLATES AT BOTH ABUTMENTS SHALL BE REMOVED AND REPLACED WITH ELASTOMERIC BEARINGS. SEE SHEET 17/18 FOR BEARING DETAILS.
2. FOR PARAPET TRANSITION DETAIL, SEE SHEET 16/18.
3. FOR MECHANICAL CONNECTORS DETAIL AND NOTES SEE SHEET 18/18.
4. FOR ADDITIONAL NOTES, SECTIONS A–A, B–B, C–C AND VIEWS 1–1 & 2–2, SEE SHEET 10/18.
5. FOR SECTION D–D, SEE SHEET 8/18.
6. FOR REINFORCING STEEL LIST, SEE SHEET 18/18.

R.D. Zanda & Associates, Inc.
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Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED KVB
DRAWN KVB/JLH
CHECKED BAG
REVIEWED OHK
DATE 7/11/97
REVISED
STRUCTURE FILE NO 2200546, 2200570

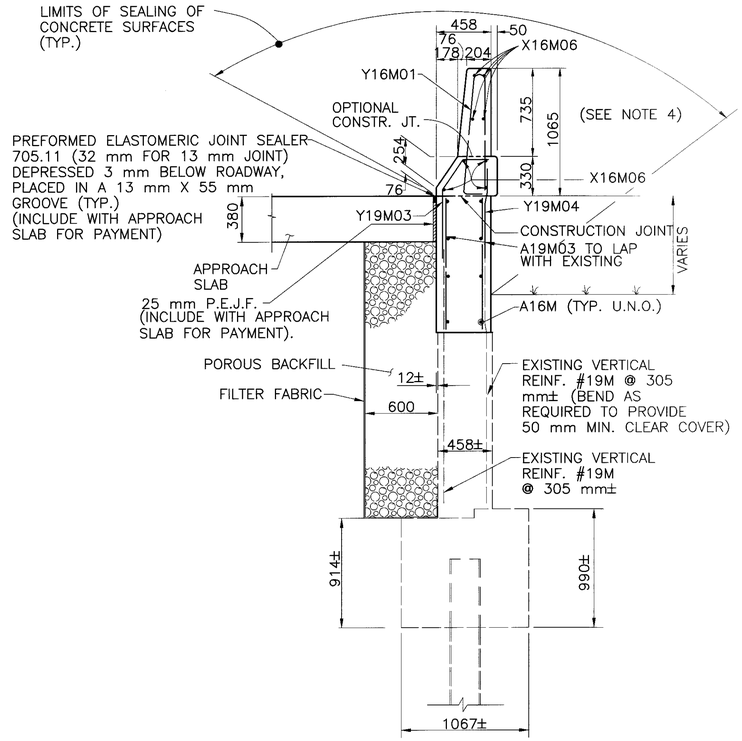
ABUTMENT DETAILS
BRIDGE NO. ERI-2-12096 L & R (0760)
S.R. 2 OVER MILLS CREEK

ERI-2-2.866

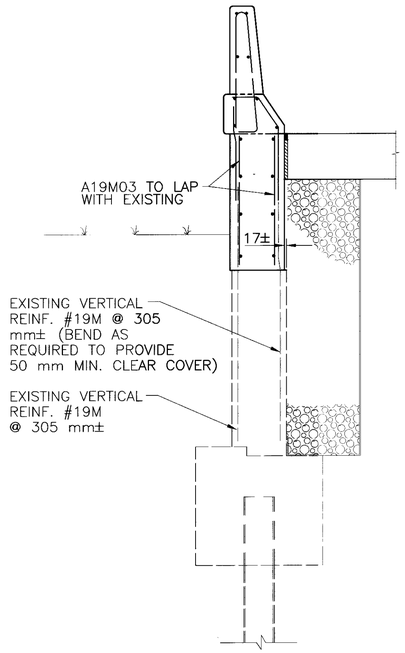
9/18

312/327

C005 P:\3907\DWG\BRIDGE\E-2-1211\PLAN\3907A02.DWG JUL 10, 1997 TIME: 6:10 PM

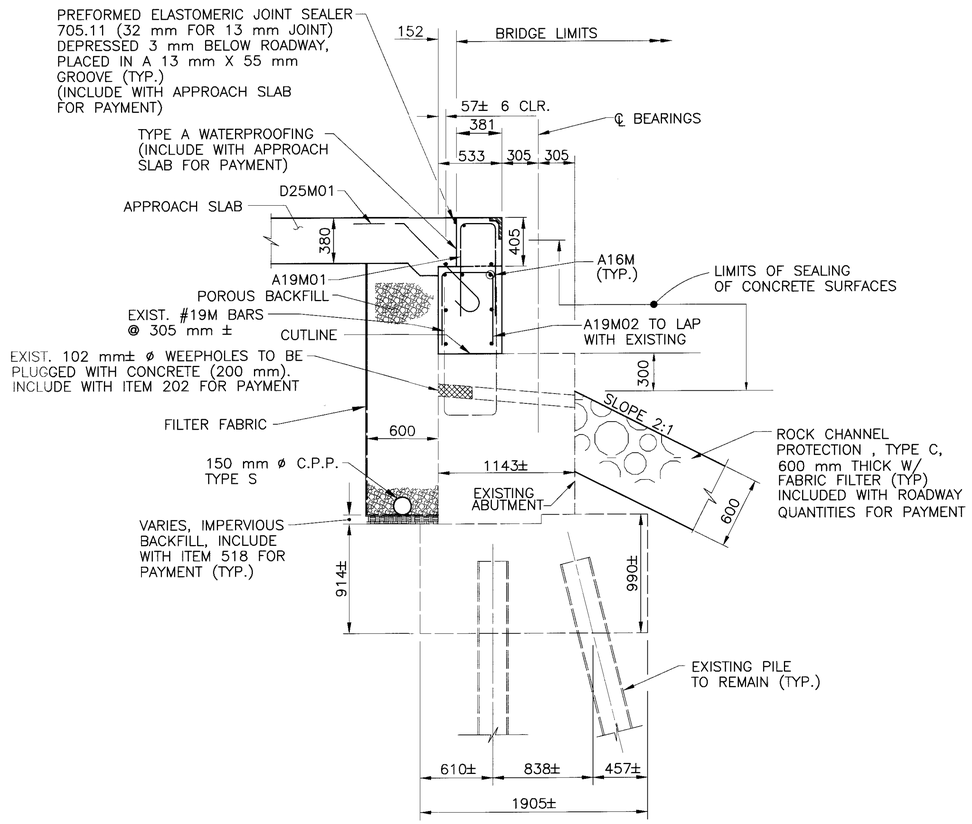


SECTION B–B

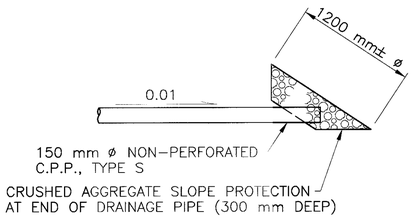


SECTION C–C

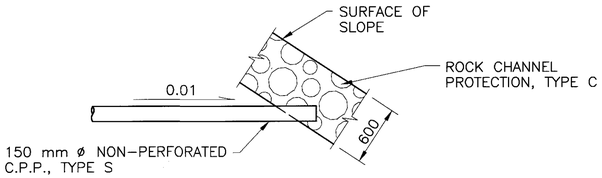
NOTE: FOR ALL OTHER CALLOUTS & DIMENSIONS, SEE SECTION B–B, THIS SHEET.



SECTION A–A

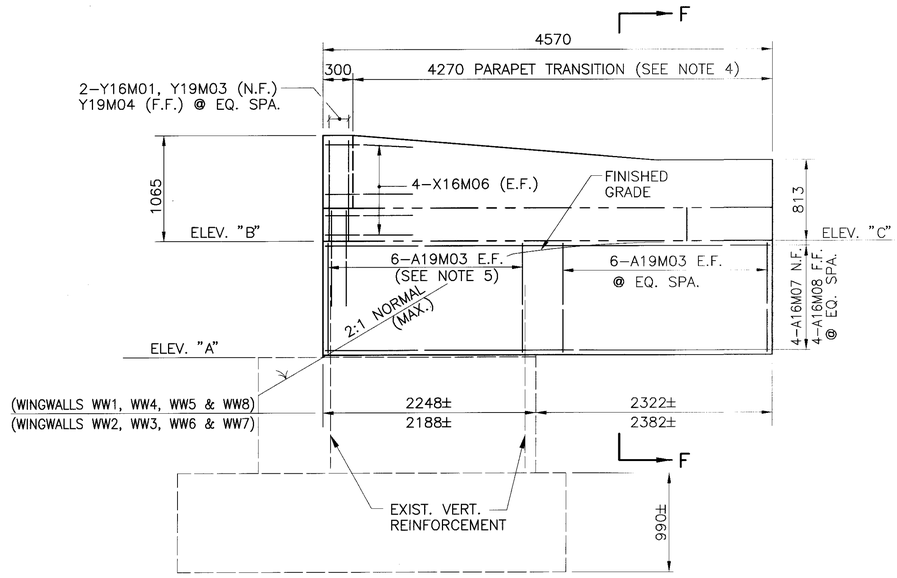


❷ EARTH SLOPE



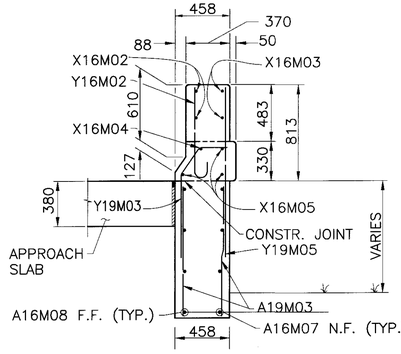
❷ ROCK CHANNEL PROTECTION

TERMINATION OF 150 mm C.P.P. DETAIL



VIEW 1–1 (AS SHOWN)
VIEW 2–2 (OPPOSITE HAND)

TABLE OF WINGWALL ELEVATIONS			
WINGWALL	ELEV. "A"	ELEV. "B"	ELEV. "C"
WW1	190.397±	191.540	191.656
WW2	190.391±	191.527	191.640
WW3	189.424±	190.523	190.431
WW4	189.414±	190.518	190.425
WW5	190.318±	191.454	191.581
WW6	190.243±	191.384	191.494
WW7	189.342±	190.458	190.368
WW8	189.284±	190.396	190.305



SECTION F–F

NOTES

1. POROUS BACKFILL WITH FILTER FABRIC, 600 mm THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 300 mm BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS. GEOTEXTILE FABRIC SHALL CONFORM WITH 712.09, TYPE A. GEOTEXTILE SHALL BE INCLUDED WITH ITEM 518 POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN, FOR PAYMENT. POROUS BACKFILL MATERIAL SHALL BE #57 GRAVEL.
2. BACKWALL CONCRETE: IN ADDITION TO THE PROVISIONS OF 511.08, BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.
3. CONCRETE COVER SHALL BE 50 mm CLEAR TYP. U.N.O.
4. FOR DEFLECTOR PARAPET TRANSITION DETAIL AND REINFORCEMENT, SEE SHEET 16/18.
5. A19M03 VERT. BARS SHALL LAP WITH EXISTING VERT. REINFORCEMENT. SEE SECTIONS D–D & E–E ON SHEETS 8/18 & 9/18 FOR REINFORCEMENT PLACEMENT.

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DESIGNED KVB
DRAWN KVB/JLH
CHECKED BAG
REVIEWED OHK
DATE 7/11/97
REVISED
STRUCTURE FILE NO 2200546, 2200570

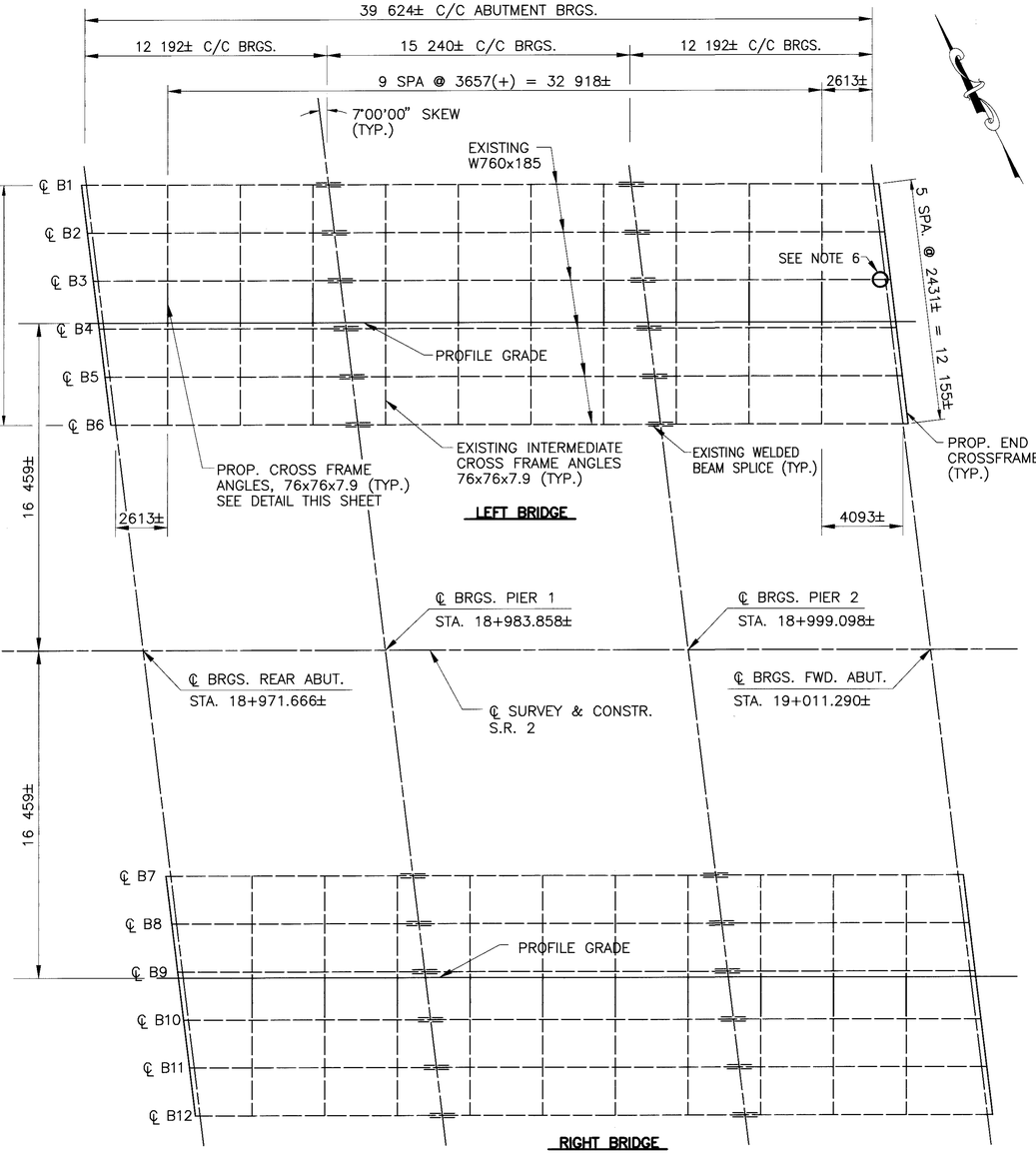
ABUTMENT DETAILS
BRIDGE NO. ERI-2-12066 L & R (0750)
SR. 2 OVER MILLS CREEK

ERI-2-2.866

10/18

313/327

C097 P:\390\DWG\BRIDGE\E-2-121\PLAN\390TA03.DWG JUL 11, 1997 TIME: 11:28 AM

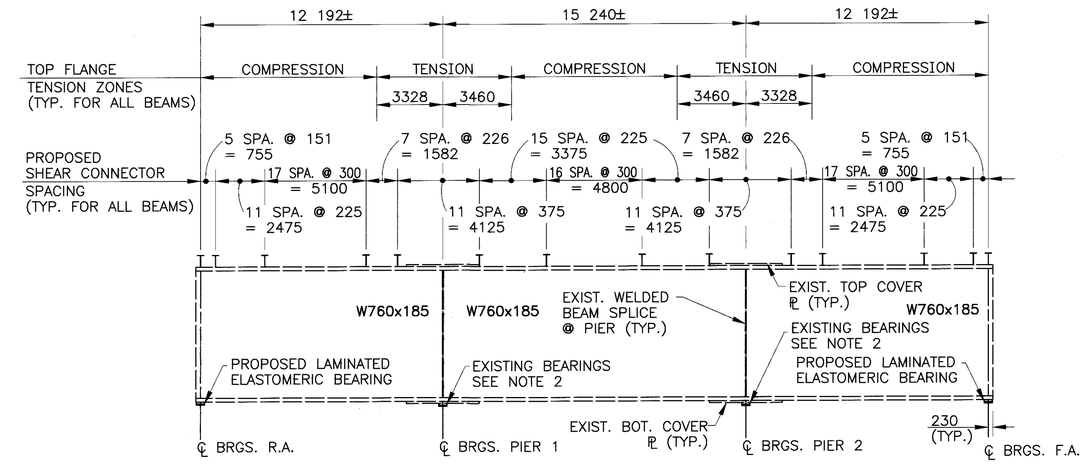


LEFT BRIDGE

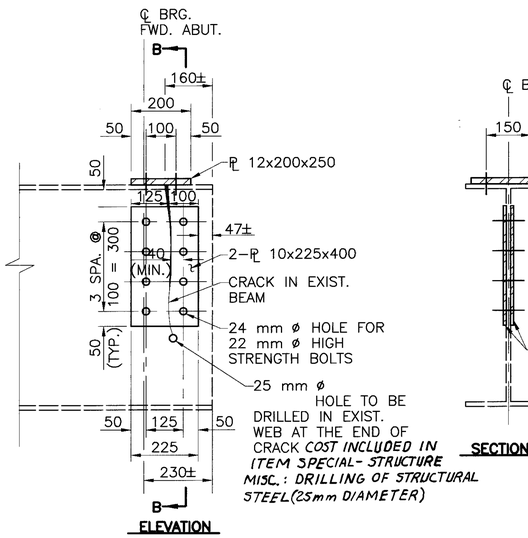
RIGHT BRIDGE

NOTE: SEE LEFT BRIDGE FOR ALL RELEVANT DIMENSIONS AND CALLOUTS.

FRAMING PLAN

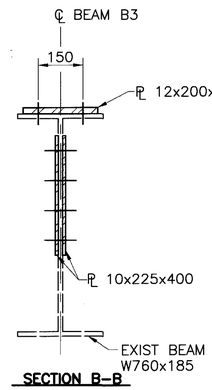


EXISTING BEAM ELEVATION B1–B12

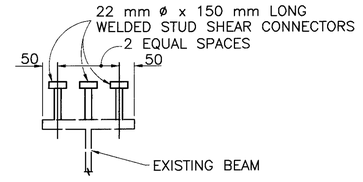


ELEVATION

REPAIR DETAIL FOR CRACK IN BEAM B3



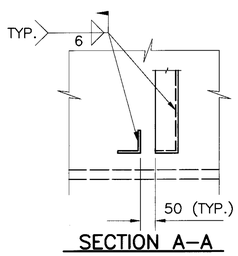
SECTION B–B



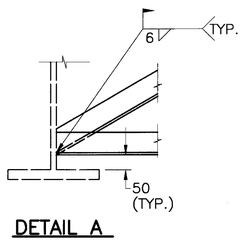
STUD SHEAR CONNECTOR DETAIL

NOTES

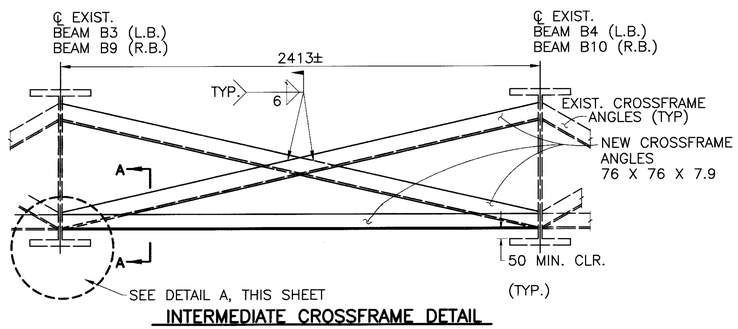
1. EXISTING BEARING PLATES AT BOTH ABUTMENTS SHALL BE REMOVED AND REPLACED WITH ELASTOMERIC EXPANSION BEARINGS. FOR ELASTOMERIC BEARING DETAILS, SEE SHEET 17/18.
2. PROVIDE SHIM PLATES BELOW EXISTING BEARING PLATES AT ALL PIERS. SEE DETAIL ON SHEET 17/18.
3. EXISTING END CROSS–FRAMES SHALL BE REMOVED AND REPLACED. THE PROPOSED END CROSS–FRAMES SHALL BE PER ODOT STD. DWG EXJ–4–87M (SHEET 1/5). *PROPOSED END CROSS FRAMES SHALL BE LOCATED TO MISS PROPOSED STEEL PLATES AT BEAM B3.*
4. PAINTING OF STEEL: ALL STRUCTURAL STEEL (PROPOSED AND EXISTING), INCLUDING COVER PLATES AND CROSS FRAME SHALL BE PAINTED. SEE GENERAL NOTES SHEET 3/18 FOR MORE DETAILS.
5. WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 25 mm FROM THE EDGE OF FLANGE, BE NOT MORE THAN 50 mm LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.
6. WEB AND FLANGE OF EXISTING BEAM B3 NEAR FORWARD ABUTMENT SHALL BE REHABILITATED PER DETAIL ON THIS SHEET. THE COST OF THIS WORK SHALL BE INCLUDED WITH ITEM 863 *STRUCTURAL STEEL MEMBERS LEVEL ONE (1) FABRICATION*
7. HIGH STRENGTH BOLTS SHALL BE 25 mm DIAMETER A–325M UNLESS OTHERWISE NOTED.
8. ALL CROSS–FRAME MEMBERS SHALL BE A–36M STEEL.



SECTION A–A



DETAIL A



INTERMEDIATE CROSSFRAME DETAIL

R.D. Zande & Associates, Inc.
1207 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED	DRAWN	REVIEWED	DATE
KVB	KVB/JLH	OHK	7/11/97
CHECKED	REVISED	STRUCTURE FILE NO	
BAG		2200546, 2200570	

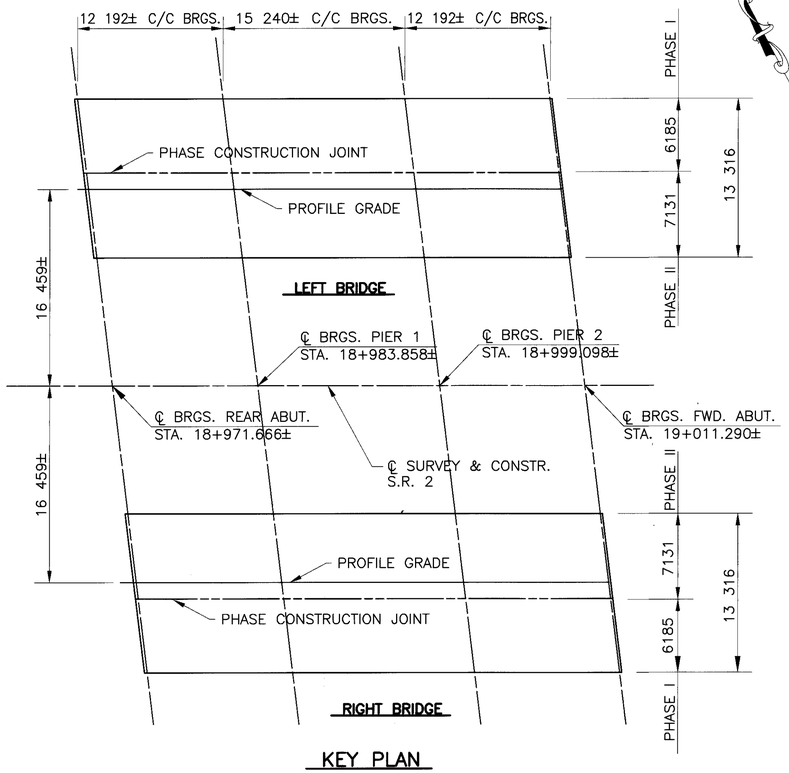
SUPERSTRUCTURE DETAILS

BRIDGE NO. ERI-2-12096 L & R (0761)
S.R. 2 OVER MILLS CREEK

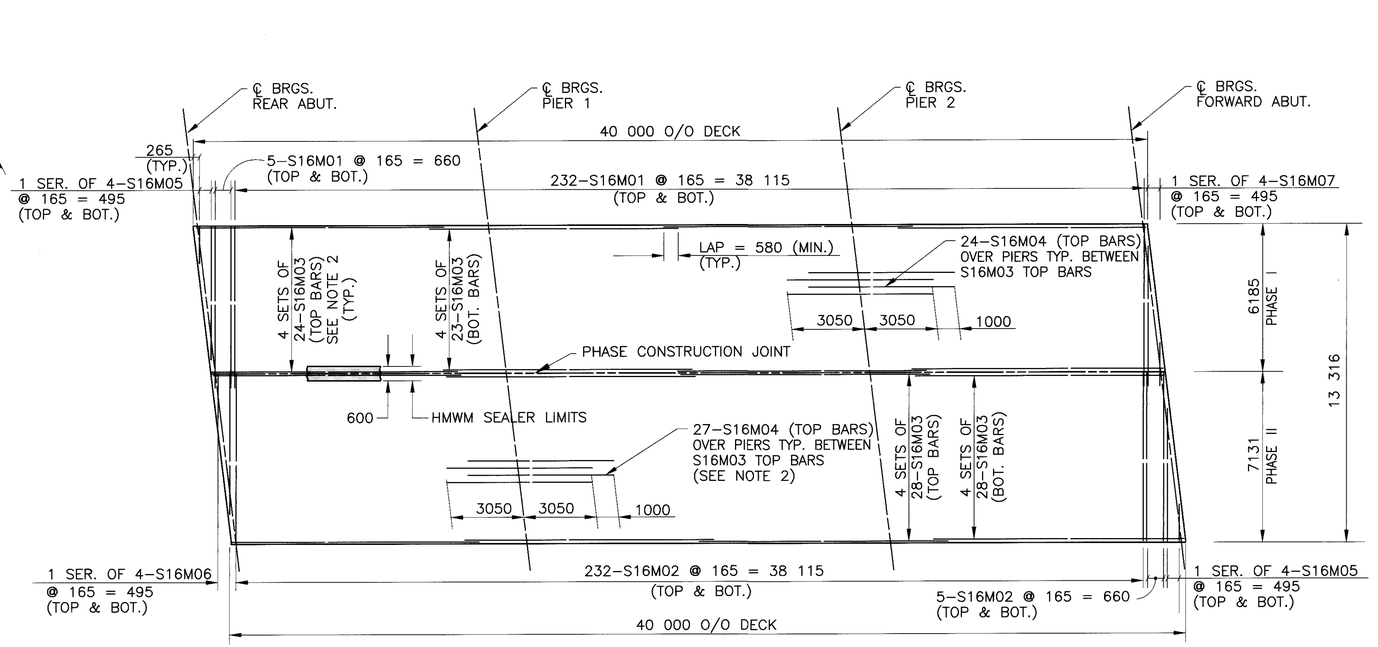
ERI-2-2.866

11/18

314
327



KEY PLAN



DECK REINFORCING PLAN

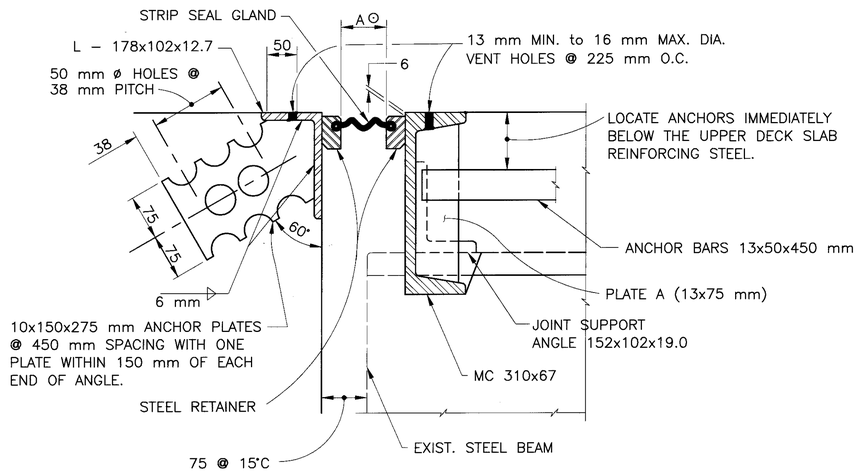
LEFT BRIDGE – AS SHOWN
RIGHT BRIDGE – SIMILAR

NOTES

1. FOR PHASE CONSTRUCTION DETAILS, SEE SHEET 5/18.
2. FOR LONGITUDINAL BAR SPACING, SEE TRANSVERSE SECTION, ON SHEET 13/18.

NOTES

1. FOR MORE DETAILS SEE STD. DWG. EXJ–4–87M.
2. STRIP SEAL GLAND SIZE SHALL BE 75 mm FOR BOTH REAR AND FORWARD ABUTMENTS.
3. ELASTOMERIC SEALS: THE JOINT SEAL FOR EACH BRIDGE DECK JOINT SHALL BE FURNISHED IN ONE CONTINUOUS PIECE.



STRIP SEAL EXPANSION JOINT DETAIL

⊙ JOINT OPENING TABLE (DIM "A")		
AMBIENT TEMP (°C)	REAR ABUTMENT	FORWARD ABUTMENT
0°	45 mm	46 mm
5°	45 mm	45 mm
10°	44 mm	43 mm
15°	43 mm	42 mm
20°	42 mm	40 mm
25°	41 mm	39 mm
30°	41 mm	37 mm
35°	40 mm	35 mm

R.D. Zande & Associates, Inc.
1207 Dublin Road
Columbus, Ohio 43215
Phone: (614) 488-4383

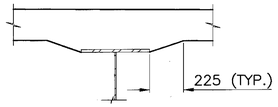
DESIGNED KVB | DRAWN KVB/JLH | REVIEWED OHK | DATE 7/11/97
CHECKED BAG | REVISED | STRUCTURE FILE NO. 2200546, 2200570

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-12066 L & R (0761)
S.R. 2 OVER MILLS CREEK

ERI-2-2.866

12/18

315/327

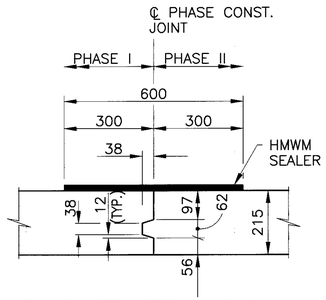


HAUNCH DETAIL

ALSO REFER TO
NOTE 1, THIS SHEET

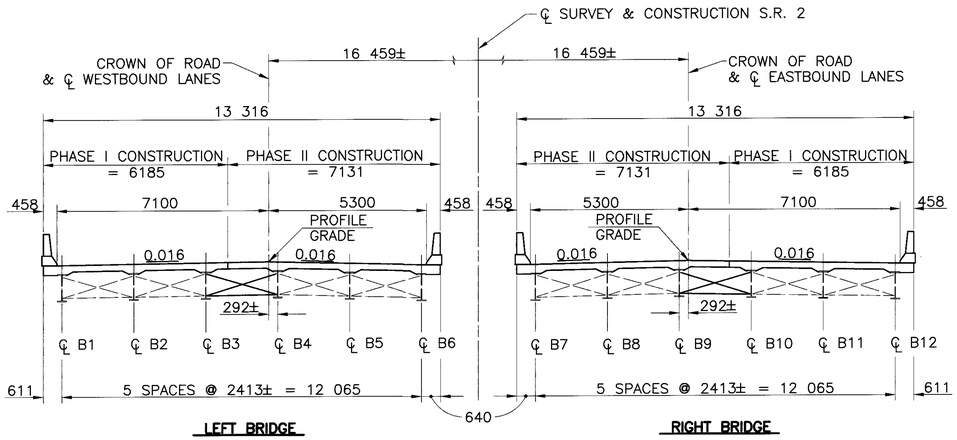
NOTES

1. A HAUNCH WIDTH OF 225 mm SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 150 mm AND 300 mm.
2. FOR TABLE OF DIMENSION "A" SEE THIS SHEET. THIS IS THE NOMINAL DIMENSION FROM THE TOP OF BEAM FLANGE TO TOP OF CONCRETE DECK. THE QUANTITY OF THAT PORTION OF THE DECK CONCRETE OVER THE BEAMS SHALL BE BASED ON THIS DIMENSION EVEN THOUGH DEVIATION FROM THIS DIMENSION MAY OCCUR BECAUSE THE TOP OF THE BEAM MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISH GRADE.
3. FOR MORE PARAPET DETAILS, SEE SHEET 16/18.
4. FOR WELDED SHEAR STUD CONNECTORS, SPACING, AND DETAIL, SEE SHEET 11/18.
5. FOR PHASE CONSTRUCTION DETAILS, SEE SHEET 5/18.
6. FIELD BEND TRANSVERSE BARS AS NECESSARY TO FIT THE CROWN. INCLUDE WITH ITEM 511 FOR PAYMENT.
7. FOR PROPOSED CROSSFRAME DETAILS, SEE SHEET 11/18.

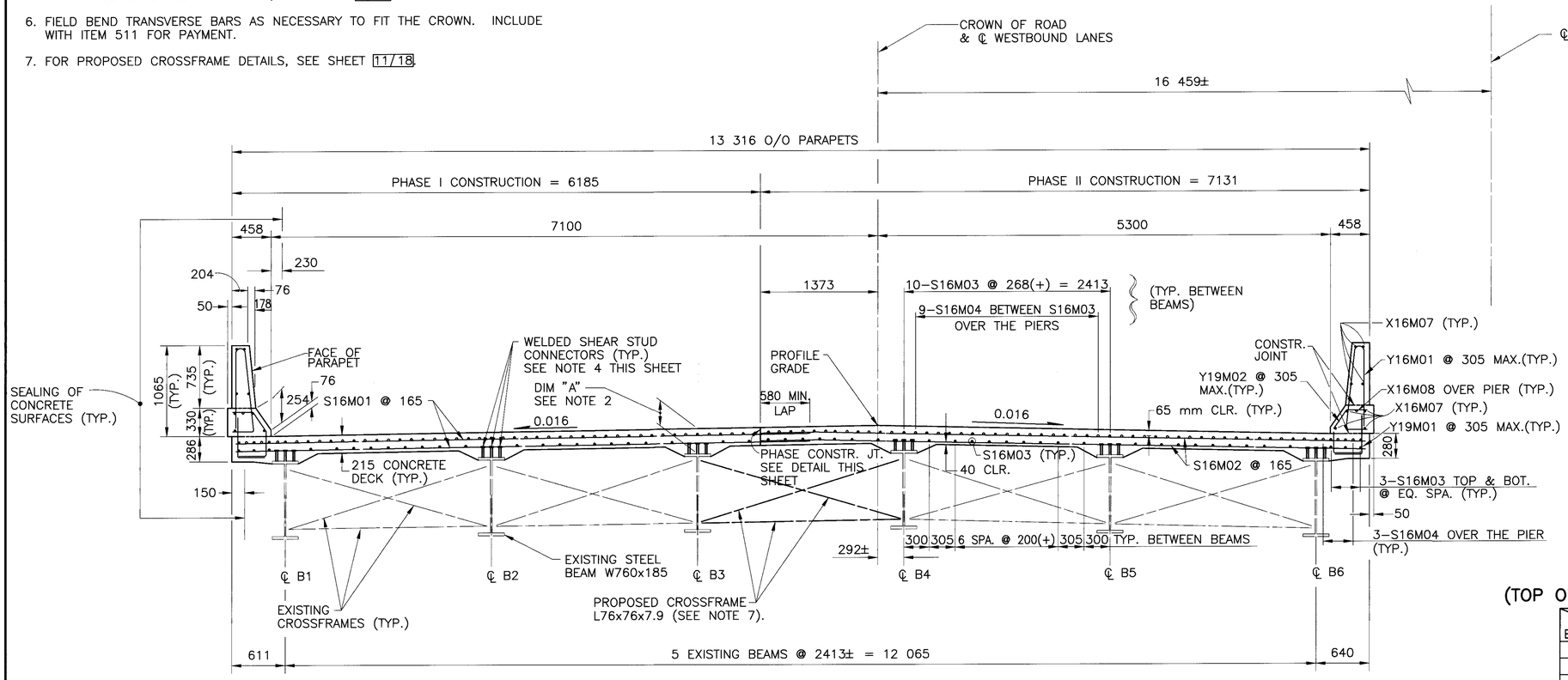


PHASE CONSTRUCTION JOINT DETAIL

NOTE: REBARS ARE NOT SHOWN



KEY TRANSVERSE SECTION



TRANSVERSE SECTION

LEFT BRIDGE – AS SHOWN
RIGHT BRIDGE – OPPOSITE HAND W.R.T. ℄ SURVEY & CONSTR. S.R. 2

DIMENSION "A"
(TOP OF BEAM/MOMENT PL. TO TOP OF CONCRETE)

LOCATION / BEAM	R. ABUT	PIER 1	PIER 2	F. ABUT
B1	262	271	257	252
B2	260	255	248	256
B3	252	252	246	258
B4	257	253	242	258
B5	259	263	259	260
B6	257	261	252	258
B7	255	257	257	269
B8	266	240	259	258
B9	259	240	256	260
B10	264	243	253	265
B11	263	251	250	265
B12	262	263	257	266

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DESIGNED KVB | DRAWN BAG/DJD | CHECKED BAG | REVIEWED OHK | DATE 7/11/97 | REVISED | STRUCTURE FILE NO. 2200546, 2200570

SUPERSTRUCTURE DETAILS

BRIDGE NO. ERI-2-12066 L & R (0760)
S.R. 2 OVER MILLS CREEK

ERI-2-2.866

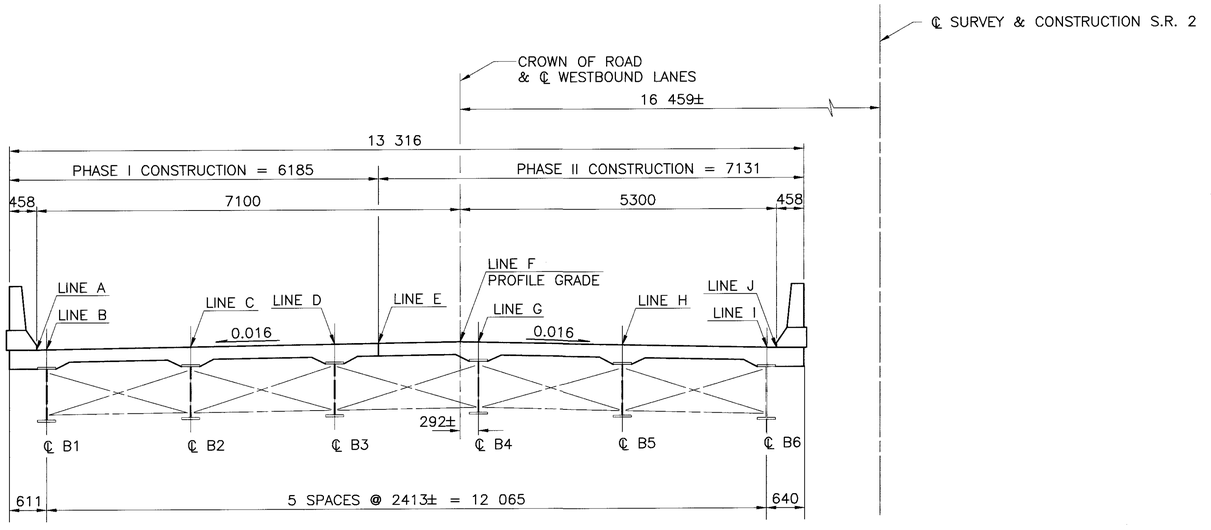
13/18

316/327

FINAL DECK SCREED ELEVATIONS (LEFT BRIDGE)

SCREED LINE	LOCATION	C.L. BRG. R.A.	SPAN 1			C.L. BRG. PIER 1	SPAN 2			C.L. BRG. PIER 2	SPAN 3			C.L. BRG. F.A.
			0.250	0.500	.0750		0.250	0.500	.0750		0.250	0.500	.0750	
LINE A F/C	STATION	18+968.773	18+971.821	18+974.869	18+977.917	18+980.965	18+984.775	18+988.585	18+992.395	18+996.205	18+999.253	19+002.301	19+005.349	19+008.397
	T/S ELEV.	191.521	191.439	191.357	191.277	191.198	191.101	191.006	190.912	190.820	190.748	190.677	190.607	190.538
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.521	191.442	191.360	191.279	191.198	191.103	191.010	190.914	190.820	190.749	190.680	190.610	190.538
LINE B B1	STATION	18+968.792	18+971.840	18+974.888	18+977.936	18+980.984	18+984.794	18+988.604	18+992.414	18+996.224	18+999.272	19+002.320	19+005.368	19+008.416
	T/S ELEV.	191.523	191.441	191.359	191.279	191.200	191.103	191.008	190.914	190.822	190.750	190.679	190.609	190.540
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.523	191.444	191.362	191.281	191.200	191.105	191.012	190.916	190.822	190.751	190.682	190.612	190.540
LINE C B2	STATION	18+969.088	18+972.136	18+975.184	18+978.232	18+981.280	18+985.090	18+988.900	18+992.710	18+996.520	18+999.568	19+002.616	19+005.664	19+008.712
	T/S ELEV.	191.554	191.471	191.390	191.310	191.231	191.134	191.039	190.945	190.854	190.782	190.711	190.641	190.572
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.554	191.474	191.393	191.312	191.231	191.136	191.043	190.947	190.854	190.783	190.714	190.644	190.572
LINE D B3	STATION	18+969.385	18+972.433	18+975.481	18+978.529	18+981.577	18+985.387	18+989.197	18+993.007	18+996.817	18+999.865	19+002.913	19+005.961	19+009.009
	T/S ELEV.	191.584	191.502	191.421	191.341	191.262	191.165	191.070	190.977	190.885	190.813	190.742	190.673	190.604
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.584	191.505	191.424	191.343	191.262	191.167	191.074	190.979	190.885	190.814	190.745	190.676	190.604
LINE E PH. CONSTR.	STATION	18+969.477	18+972.525	18+975.573	18+978.621	18+981.669	18+985.479	18+989.289	18+993.099	18+996.909	18+999.957	19+003.005	19+006.053	19+009.101
	T/S ELEV.	191.594	191.512	191.430	191.351	191.272	191.175	191.080	190.986	190.895	190.823	190.752	190.683	190.614
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.594	191.515	191.433	191.353	191.272	191.177	191.084	190.988	190.895	190.824	190.755	190.686	190.614
LINE F P.G.	STATION	18+969.645	18+972.693	18+975.741	18+978.789	18+981.837	18+985.647	18+989.457	18+993.267	18+997.077	19+000.125	19+003.173	19+006.221	19+009.269
	T/S ELEV.	191.611	191.529	191.448	191.368	191.289	191.193	191.098	191.004	190.913	190.841	190.770	190.701	190.632
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.611	191.532	191.451	191.370	191.289	191.195	191.102	191.006	190.913	190.842	190.773	190.704	190.632
LINE G B4	STATION	18+969.681	18+972.729	18+975.777	18+978.825	18+981.873	18+985.683	18+989.493	18+993.303	18+997.113	19+000.161	19+003.209	19+006.257	19+009.305
	T/S ELEV.	191.606	191.523	191.442	191.363	191.284	191.187	191.092	190.999	190.907	190.836	190.765	190.695	190.627
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.606	191.526	191.445	191.365	191.284	191.189	191.096	191.001	190.907	190.837	190.768	190.698	190.627
LINE H B5	STATION	18+969.977	18+973.025	18+976.073	18+979.121	18+982.169	18+985.979	18+989.789	18+993.599	18+997.409	19+000.457	19+003.505	19+006.553	19+009.601
	T/S ELEV.	191.559	191.477	191.396	191.316	191.238	191.141	191.046	190.953	190.862	190.790	190.719	190.650	190.582
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.559	191.480	191.399	191.318	191.238	191.143	191.050	190.955	190.862	190.791	190.722	190.653	190.582
LINE I B6	STATION	18+970.274	18+973.322	18+976.370	18+979.418	18+982.466	18+986.276	18+990.086	18+993.896	18+997.706	19+000.754	19+003.802	19+006.850	19+009.898
	T/S ELEV.	191.512	191.430	191.350	191.270	191.191	191.095	191.000	190.907	190.816	190.744	190.674	190.605	190.536
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.512	191.433	191.353	191.272	191.191	191.097	191.004	190.909	190.816	190.745	190.677	190.608	190.536
LINE J F/C	STATION	18+970.296	18+973.344	18+976.392	18+979.440	18+982.488	18+986.298	18+990.108	18+993.918	18+997.728	19+000.776	19+003.824	19+006.872	19+009.920
	T/S ELEV.	191.509	191.427	191.346	191.266	191.188	191.091	190.997	190.904	190.813	190.741	190.671	190.601	190.533
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.509	191.430	191.349	191.268	191.188	191.093	191.001	190.906	190.813	190.742	190.674	190.604	190.533

NOTE:
SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.



LEFT BRIDGE

TRANSVERSE SECTION

R.D. Zanda & Associates, Inc.
1207 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED	DRAWN	REVIEWED	DATE
OHK	DJD	OHK	7/11/97
CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200546, 2200570	

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-12066 L & R (0760)
S.R. 2 OVER MILLS CREEK

ERI-2-2.866

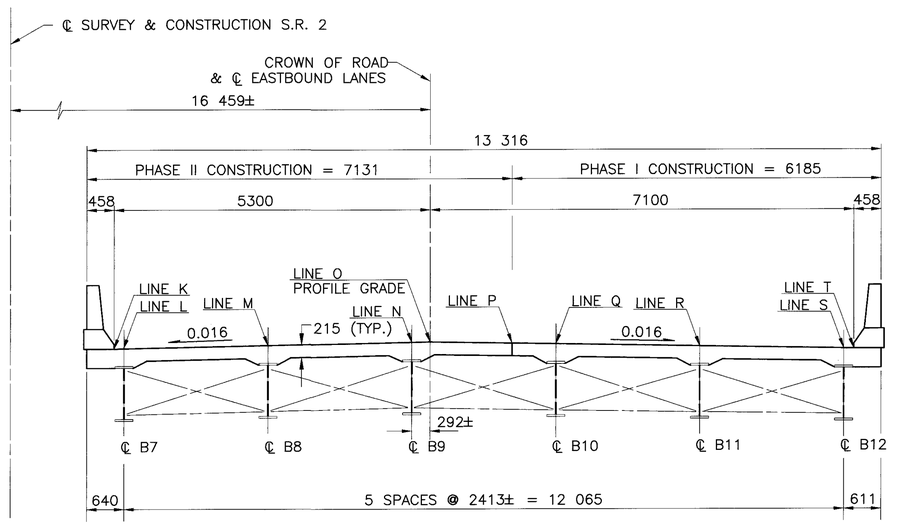
14/18

317/327

FINAL DECK SCREED ELEVATIONS (RIGHT BRIDGE)

SCREED LINE	LOCATION	C.L. BRG. R.A.	SPAN 1			C.L. BRG. PIER 1	SPAN 2			C.L. BRG. PIER 2	SPAN 3			C.L. BRG. F.A.
			0.250	0.500	0.750		0.250	0.500	0.750		0.250	0.500	0.750	
LINE K F/C	STATION	18+973.036	18+976.084	18+979.132	18+982.180	18+985.228	18+989.038	18+992.848	18+996.658	19+000.468	19+003.516	19+006.564	19+009.612	19+012.660
	T/S ELEV.	191.435	191.354	191.274	191.196	191.118	191.023	190.930	190.838	190.748	190.678	190.608	190.540	190.473
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.435	191.357	191.277	191.198	191.118	191.025	190.934	190.840	190.748	190.679	190.611	190.543	190.473
LINE L B7	STATION	18+973.058	18+976.106	18+979.154	18+982.202	18+985.250	18+989.060	18+992.870	18+996.680	19+000.490	19+003.538	19+006.586	19+009.634	19+012.682
	T/S ELEV.	191.437	191.356	191.277	191.198	191.121	191.025	190.932	190.840	190.751	190.680	190.611	190.542	190.475
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.437	191.359	191.280	191.200	191.121	191.027	190.936	190.842	190.751	190.681	190.614	190.545	190.475
LINE M B8	STATION	18+973.355	18+976.403	18+979.451	18+982.499	18+985.547	18+989.357	18+993.167	18+996.977	19+000.787	19+003.835	19+006.883	19+009.931	19+012.979
	T/S ELEV.	191.468	191.387	191.308	191.229	191.152	191.057	190.964	190.872	190.782	190.712	190.642	190.574	190.507
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.468	191.390	191.311	191.231	191.152	191.059	190.968	190.874	190.782	190.713	190.645	190.577	190.507
LINE N B9	STATION	18+973.651	18+976.699	18+979.747	18+982.795	18+985.843	18+989.653	18+993.463	18+997.273	19+001.083	19+004.131	19+007.179	19+010.227	19+013.275
	T/S ELEV.	191.499	191.418	191.339	191.260	191.183	191.088	190.995	190.904	190.814	190.744	190.674	190.606	190.539
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.499	191.421	191.342	191.262	191.183	191.090	190.999	190.906	190.814	190.745	190.677	190.609	190.539
LINE O P.G.	STATION	18+973.687	18+976.735	18+979.783	18+982.831	18+985.879	18+989.689	18+993.499	18+997.309	19+001.119	19+004.167	19+007.215	19+010.263	19+013.311
	T/S ELEV.	191.502	191.422	191.342	191.264	191.187	191.092	190.999	190.907	190.818	190.748	190.678	190.610	190.543
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.502	191.425	191.345	191.266	191.187	191.094	191.003	190.909	190.818	190.749	190.681	190.613	190.543
LINE P PH. CONSTR.	STATION	18+973.855	18+976.903	18+979.951	18+982.999	18+986.047	18+989.857	18+993.667	18+997.477	19+001.287	19+004.335	19+007.383	19+010.431	19+013.479
	T/S ELEV.	191.476	191.395	191.316	191.238	191.161	191.066	190.973	190.881	190.792	190.722	190.653	190.585	190.518
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.476	191.398	191.319	191.240	191.161	191.068	190.977	190.883	190.792	190.723	190.656	190.588	190.518
LINE Q B10	STATION	18+973.947	18+976.995	18+980.043	18+983.091	18+986.139	18+989.949	18+993.759	18+997.569	19+001.379	19+004.427	19+007.475	19+010.523	19+013.571
	T/S ELEV.	191.462	191.381	191.302	191.223	191.146	191.051	190.958	190.867	190.778	190.708	190.638	190.571	190.504
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.462	191.384	191.305	191.225	191.146	191.053	190.962	190.869	190.778	190.709	190.641	190.574	190.504
LINE R B11	STATION	18+974.244	18+977.292	18+980.340	18+983.388	18+986.436	18+990.246	18+994.056	18+997.866	19+001.676	19+004.724	19+007.772	19+010.820	19+013.868
	T/S ELEV.	191.415	191.335	191.255	191.177	191.100	191.006	190.913	190.822	190.732	190.662	190.593	190.525	190.459
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.415	191.338	191.258	191.179	191.100	191.008	190.917	190.824	190.732	190.663	190.596	190.528	190.459
LINE S B12	STATION	18+974.540	18+977.588	18+980.636	18+983.684	18+986.732	18+990.542	18+994.352	18+998.162	19+001.972	19+005.020	19+008.068	19+011.116	19+014.164
	T/S ELEV.	191.369	191.288	191.209	191.131	191.054	190.960	190.867	190.776	190.687	190.617	190.548	190.480	190.414
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.369	191.291	191.212	191.133	191.054	190.962	190.871	190.778	190.687	190.618	190.551	190.483	190.414
LINE T F/C	STATION	18+974.559	18+977.607	18+980.655	18+983.703	18+986.751	18+990.561	18+994.371	18+998.181	19+001.991	19+005.039	19+008.087	19+011.135	19+014.183
	T/S ELEV.	191.366	191.285	191.206	191.128	191.051	190.957	190.864	190.773	190.684	190.614	190.545	190.477	190.411
	DEFLECTION	0.000	0.003	0.003	0.002	0.000	0.002	0.004	0.002	0.000	0.001	0.003	0.003	0.000
	SCREED ELEV.	191.366	191.288	191.209	191.130	191.051	190.959	190.868	190.775	190.684	190.615	190.548	190.480	190.411

NOTE:
SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.



RIGHT BRIDGE

TRANSVERSE SECTION

R.D. Zanda & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

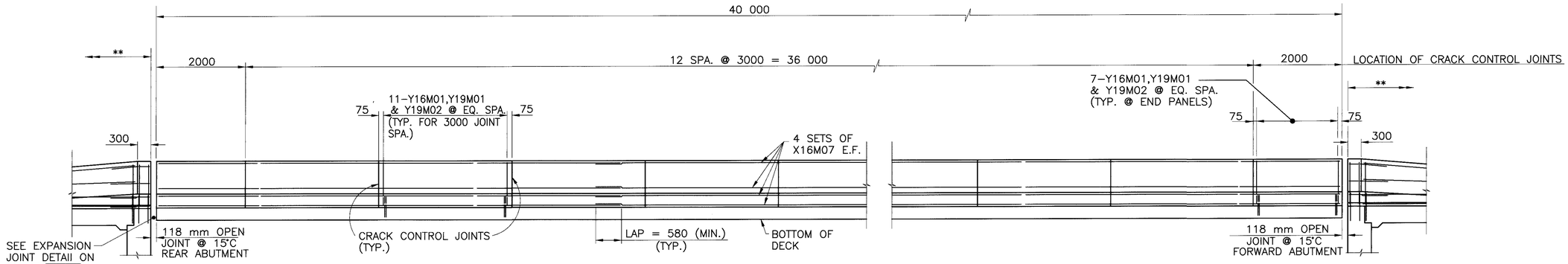
DESIGNED	DRAWN	REVIEWED	DATE
OHK	DJD	OHK	7/11/97
CHECKED	REVISED	STRUCTURE FILE NO	
KVB		2200546, 2200570	

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-2-12066 L & R (0750)
S.R. 2 OVER MILLS CREEK

ERI-2-2.866

15/18

318/327



TYP. PARAPET ELEVATION

** SEE SECTION A–A

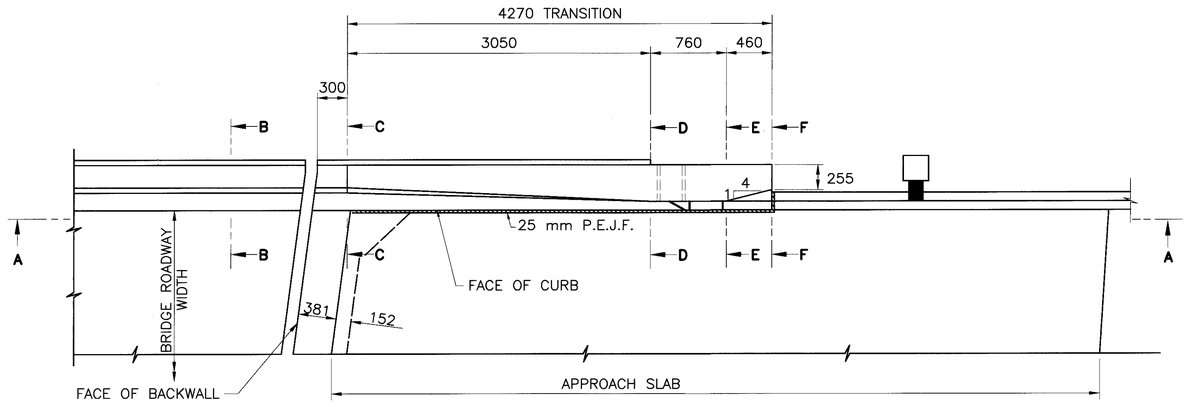
FOR ADDITIONAL PARAPET REINF. OVER PIERS SEE SHEET 13/18.

NOTES

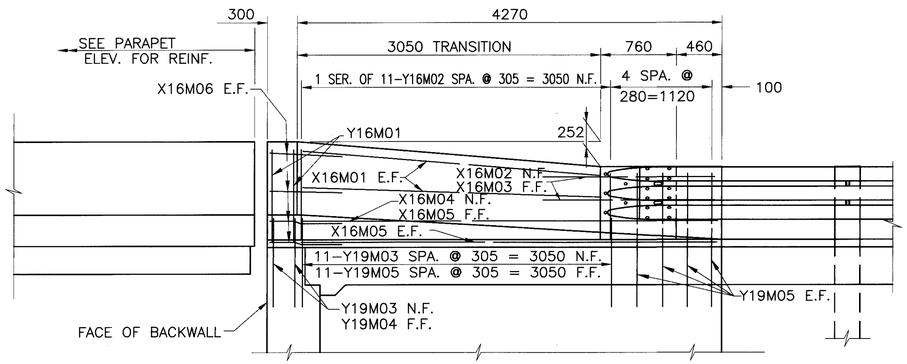
QUANTITIES OF CONCRETE, REINFORCING STEEL, CRACK CONTROL JOINT SAWCUT AND CAULKING MATERIAL FOR PARAPET ARE INCLUDED WITH APPROPRIATE ITEM UNDER EITHER ABUTMENTS OR SUPERSTRUCTURE FOR PAYMENTS.

FOR BRIDGE TERMINAL ASSEMBLY, SEE STANDARD CONSTRUCTION DRAWING GR–3.1M.

FOR LIMITS OF SEALING OF CONCRETE SURFACES, SEE SHEET 10/18.

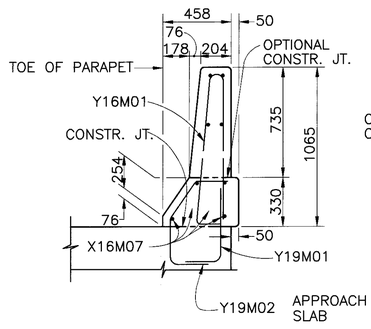


PART PLAN AT ABUTMENT

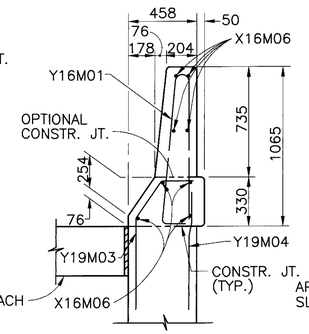


SECTION A–A

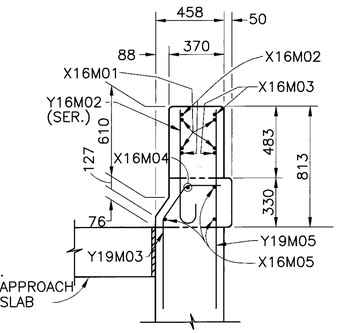
NOTE: BARS X16M02 & X16M04 SHALL BE FIELD BENT TO FIT.



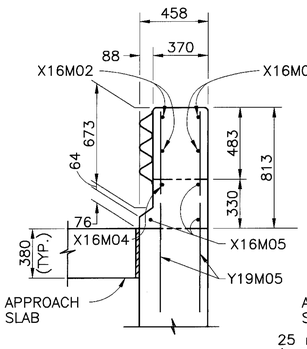
SECTION B–B



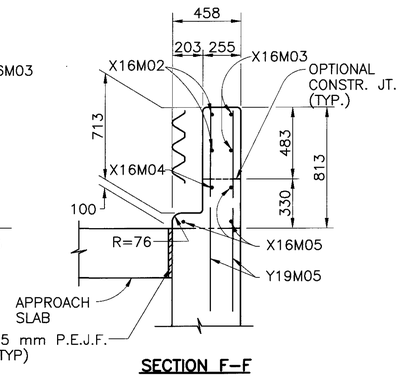
SECTION C–C



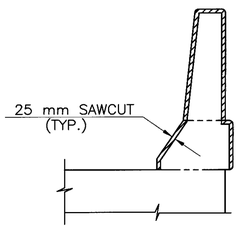
SECTION D–D



SECTION E–E



SECTION F–F



DETAIL A
(SECTION THROUGH SAWCUT)

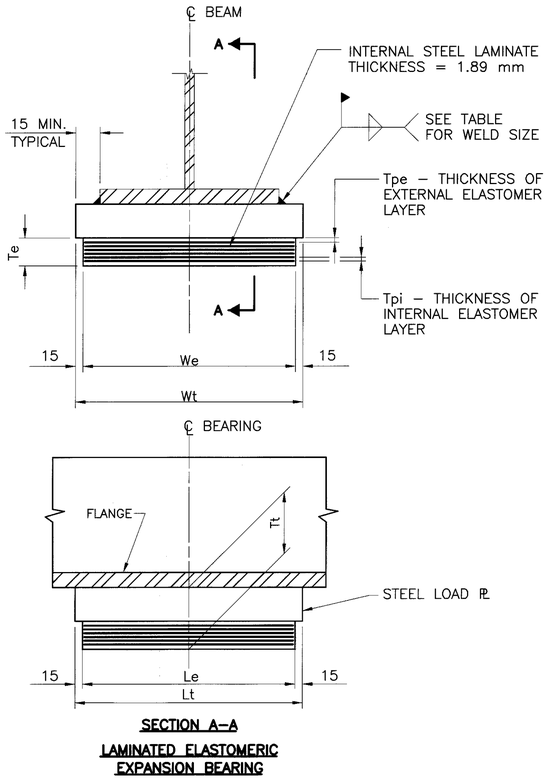
R.D. Zanda & Associates, Inc.
1297 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

DESIGNED	DRAWN	REVIEWED	DATE
KVB	TLJ	OHK	7/11/97
CHECKED	REVISED	STRUCTURE FILE NO.	
BAG		2200546, 2200570	

PARAPET DETAILS

BRIDGE NO. ERI-2-12086 L & R (07751)
S.R. 2 OVER MILLS CREEK

ERI-2-2.866

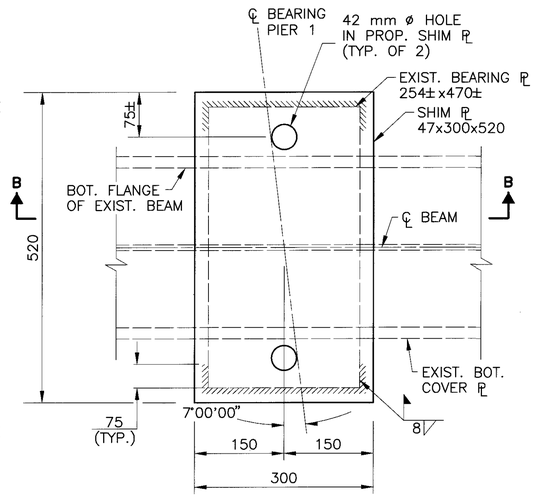


SECTION A–A

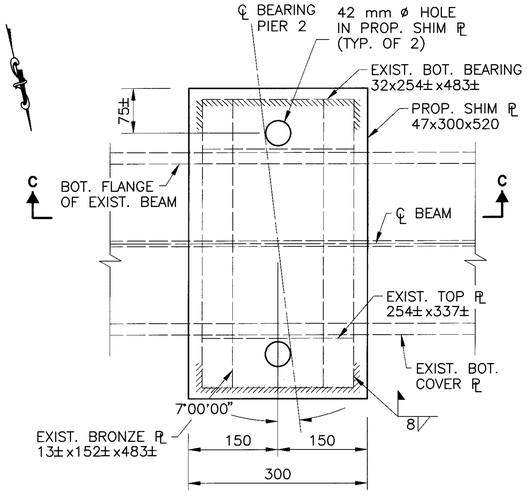
LAMINATED ELASTOMERIC EXPANSION BEARING

NOTES

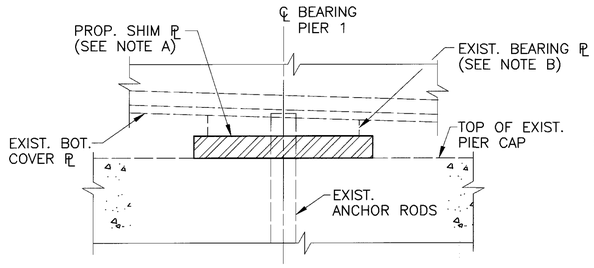
1. ELASTOMERIC BEARINGS: ELASTOMERIC BEARINGS SHALL COMPLY WITH ITEM 516 AND ARTICLES 18.2.5 THROUGH 18.2.8 OF SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. BEARINGS SHALL BE GRADE 3, 50 DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS CORRESPONDING TO DESIGN METHOD A. TESTING SHALL BE INCLUDED IN THE PRICE BID FOR THE BEARINGS, AS PER PLAN, EACH.
2. WELDING SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 150° C AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
3. BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 27° C OR LOWER THAN 4° C AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 15° C (±) 5° C, THE BEAMS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 15° C (±) 5° C.
4. THE STEEL LOAD PLATE SHALL BE A–36M STEEL, CLEANED AND COATED SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR THE BEARINGS. FIELD COSTS SHALL BE INCLUDED IN THE PRICE BID FOR PAINTING MAIN STRUCTURAL STEEL.
5. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
6. TOTAL DESIGN LOAD FOR BEARINGS EQUALS THE SUM OF THE DEAD LOADS AND LIVE LOADS TABULATED IN THE BEARING SCHEDULE.
7. BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS EITHER FIXED OR EXPANSION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516, EACH.



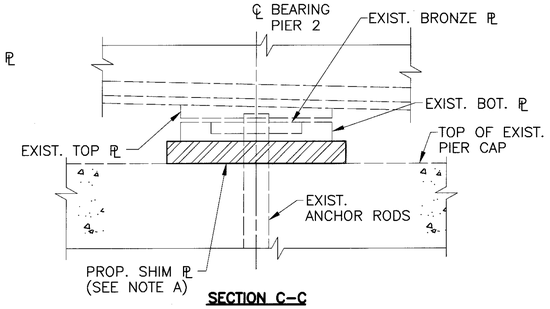
PLAN VIEW



PLAN VIEW



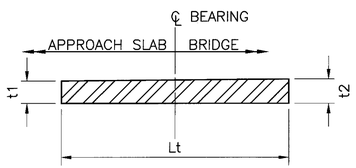
SECTION B–B



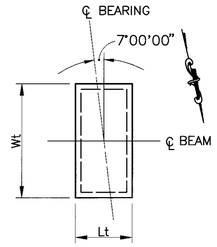
SECTION C–C

BEARING DETAIL AT PIER 1 (FIXED)

BEARING DETAIL AT PIER 2 (EXPANSION)



DETAIL "A"
STEEL LOAD PLATE



BEARING ORIENTATION PLAN

NOTES

A. AFTER THE EXISTING BEAMS ARE JACKED, THE EXISTING 3 mm PREFORMED BEARING PAD BELOW THE EXISTING BEARING PLATE ASSEMBLY SHALL BE REMOVED AND THE TOP OF PIER CAP SURFACES SHALL BE CLEANED BEFORE THE ERECTION OF SHIM PLATES.

B. THE EXISTING BASE PLATES SHALL BE CLEANED AND PAINTED AND FIELD WELDED TO THE PROPOSED SHIM PLATES.

C. SHIM PLATE SHALL BE A–36M STEEL AND PAINTED.

LAMINATED ELASTOMERIC BEARING DETAIL @ ABUTMENTS

LAMINATED ELASTOMERIC BEARING SCHEDULE

BEARING LOCATION	BEARING TYPE	NO. REQ'D.	DEAD LOAD kN	LIVE LOAD kN	TOTAL LOAD (DL+LL) kN	We (mm)	Le (mm)	Tpi (mm)	NO. OF Tpi'S	Tpe (2 EA.)	NUMBER OF INTERNAL LAMINATES (1.89 mm)	Te (mm)	STEEL LOAD PLATE				Tt (mm)	FILLET WELD SIZE (mm)
													Wt (mm)	Lt (mm)	t1 (mm)	t2 (mm)		
REAR ABUT.	EXPANSION	12	108	205	313	280	190	6	6	4	7	57	310	220	44	38	98	8
FORWARD ABUT.	EXPANSION	12	108	205	313	280	190	6	6	4	7	57	310	220	38	44	98	8

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CHECKED	REVISED	STRUCTURE FILE NO	
BAG		2200546, 2200570	

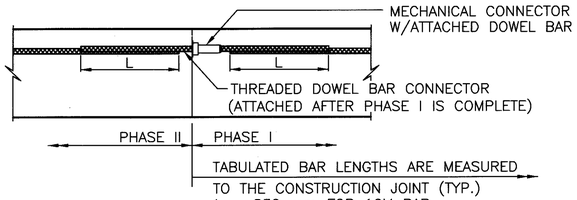
BEARING DETAILS
BRIDGE NO. ERI-2-12066 L & R (0760)
S.R. 2 OVER MILLS CREEK

ERI-2-2.866

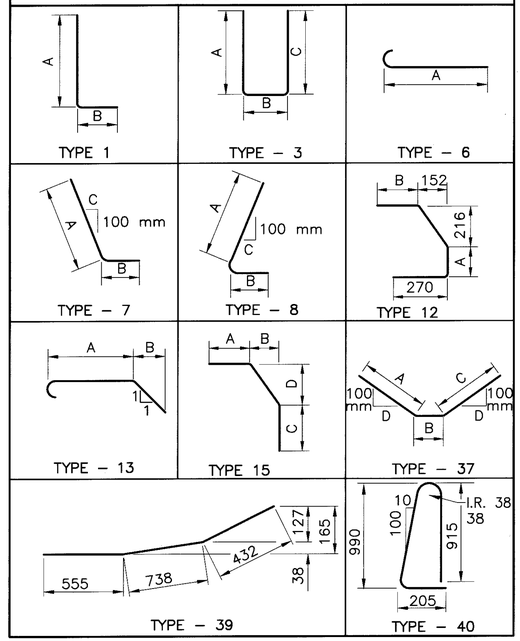
REINFORCING STEEL LIST

	BAR MARK	REAR	FWRD	TOTAL	LENGTH mm	WEIGHT (Kg)	TYPE	A mm	B mm	C mm	D mm	INC. mm
	ABUTMENTS											
*	A16M01	8	8	16	6200	153.958	STR.					
	A16M02	8	8	16	6950	172.582	STR.					
	A16M03	5	5	10	1840	28.557	7	990	890	12		
	A16M04	2	2	4	2685	16.668	37	890	925	890	113	
	A16M05	5	5	10	1790	27.781	8	940	890	12		
	A16M06	2	2	4	2610	16.203	37	890	850	890	88	
	A16M07	8	8	16	4450	110.502	STR.					
	A16M08	8	8	16	4000	99.328	STR.					
	A19M01	43	43	86	1930	370.965	3	875	280	875		
	A19M02	43	43	86	1583	304.268	3	625	433	625		
	A19M03	48	48	96	950	203.832	STR.					
	D25M01	29	29	58	1526	351.719	13	830	305			
					TOTAL=	1,856						
	SUPERSTRUCTURE											
	S16M01			474	6725	4947.233	STR.					
	S16M02			474	7075	5204.710	STR.					
	S16M03			412	10425	6665.995	STR.					
	S16M04			102	6100	965.654	STR.					
				4	1525							
	S16M05			Ser. Of	TO	87.781	STR.					1340
				4	5545							
				2	1830							
	S16M06			Ser. Of	TO	47.677	STR.					1340
				4	5850							
				2	1805							
	S16M07			Ser. Of	TO	47.367	STR.					1340
				4	5825							
					TOTAL=	17,966						
	RAILING											
	X16M01			16	3050	75.738	STR.					
	X16M02			8	1725	21.418	39					
	X16M03			8	1725	21.418	STR.					
	X16M04			4	4220	26.198	STR.					
	X16M05			12	4220	78.593	STR.					
	X16M06			32	850	42.214	STR.					
	X16M07			64	10425	1035.494	STR.					
	X16M08			4	6100	37.869	STR.					
	Y16M01			300	2130	991.728	40					
				4	920			740				
	Y16M02			Ser. Of	TO	71.361	6	TO				25
				11	1170			990				
	Y19M01			292	755	492.728	1	525	280			
	Y19M02			292	724	472.497	12	300	230			
	Y19M03			52	1225	142.370	15	230	152	800	216	
	Y19M04			8	875	15.645	STR.					
	Y19M05			76	1500	254.790	STR.					
					TOTAL=	3,780						
		GRAND TOTAL FOR LEFT BRIDGE=				**23,602**						

REINFORCEMENT GIVEN IS FOR LEFT BRIDGE.
REINFORCEMENT FOR RIGHT BRIDGE IS SAME AS LEFT BRIDGE.



BENDING DIAGRAMS



NOTES

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST TWO DIGITS INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A16M01 IS A "16M" BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. I.R. INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.

2. ALL REINFORCING BARS SHALL BE EPOXY COATED. PAYMENT FOR THESE BARS SHALL BE INCLUDED WITH APPROPRIATE CONCRETE ITEMS.

3. "STR." IN THE TYPE COLUMN INDICATES STRAIGHT BARS.

4. REFER TO C.M.S. SECTION 509.05 FOR STANDARD BEND DIMENSIONS.

5. MECHANICAL CONNECTORS: AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE AS GIVEN BY THE DIMENSION "L" BELOW. CONNECTORS AND DOWEL BARS SHALL BE EPOXY COATED. COATINGS FOR BOTH CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH 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 WHICH MEETS THE SPECIFICATIONS. CONNECTORS AND DOWEL BAR EXTENSION SHALL CONFORM WITH ITEM 509.

* INDICATES BARS REQUIRING MECHANICAL CONNECTORS. THE LENGTHS SHOWN IN THE TABLE ARE THE NOMINAL LENGTHS MEASURED TO THE CONSTRUCTION JOINT. ADJUSTMENT IN THE LENGTHS OF THE BARS DUE TO MECHANICAL SPLICING SHALL BE MADE PRIOR TO THE FABRICATION.

R.D. Zanda & Associates, Inc.
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CHECKED	REVISED	STRUCTURE FILE NO	
FJR		2200546, 2200570	

REINFORCING STEEL LIST
BRIDGE NO. ERI-2-12086 L & R (0761)
S.R. 2 OVER MILLS CREEK

ERI-2-2.866

18/18

321/327

C005 P:\3907\DWG\BRIDGE\E-2-1211\PLAN\3907RS1.DWG JUL 10, 1997 TIME: 7:31 PM

PROPERTY MAP
ERI-2-2.866 (1.78)
MARGARETTA TWP.
SEC. 2, T.6 N., R 24 W
PERKINS TWP.
SEC. 3, T.6 N., R 23 W
ERIE COUNTY

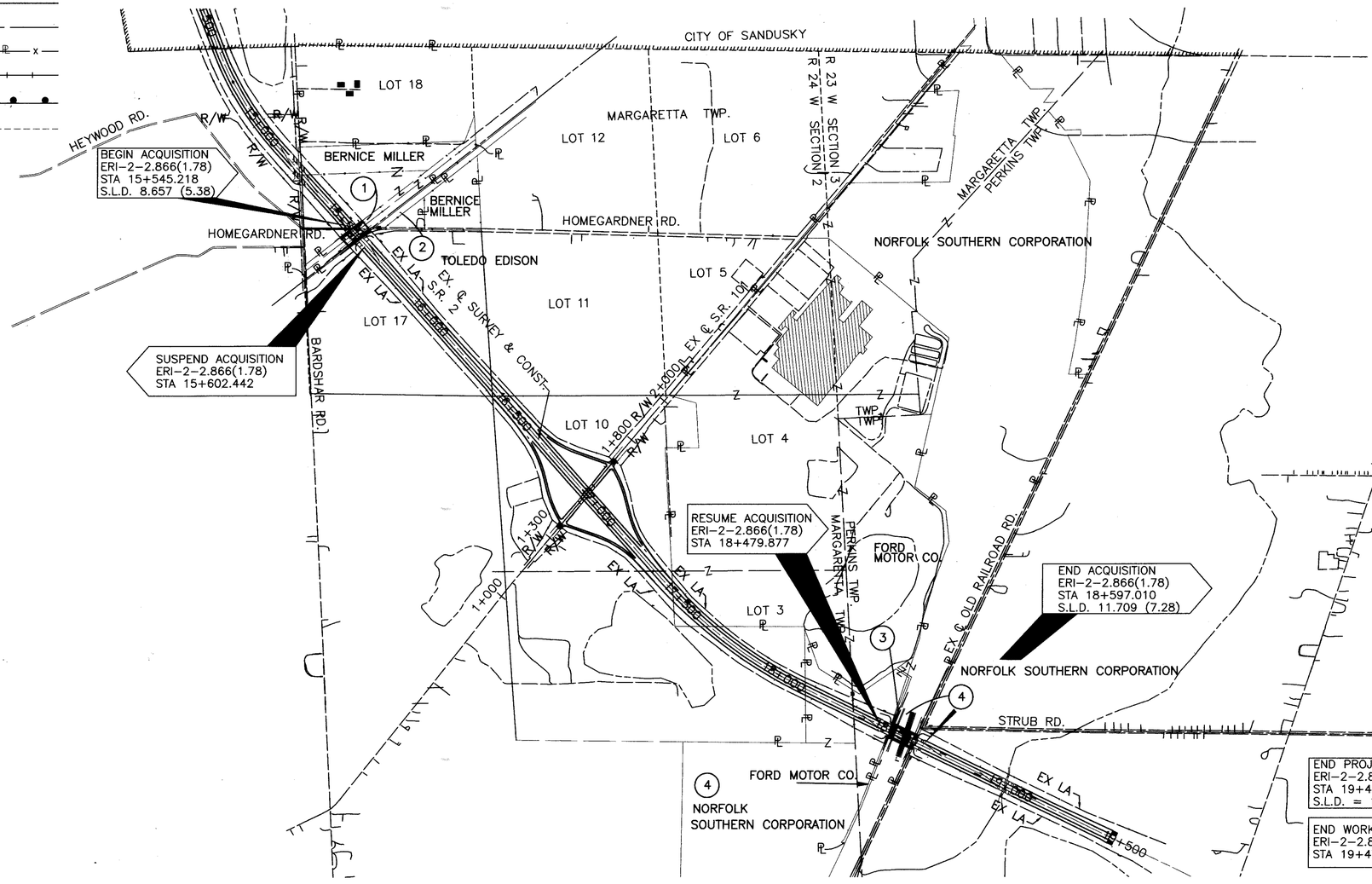
metric units

CONVENTIONAL SIGNS

COUNTY LINE
TOWNSHIP LINE
SECTION LINE
CORPORATION LINE ... OR
FENCE LINE (EXISTING) ... PROPOSED
CENTERLINE (352 / 353)
TREES, STUMPS, (TO BE REMOVED)
UTILITY POLES: TELEPHONE, POWER, LIGHT
LIMITED ACCESS (ONLY) ... LA
RIGHT OF WAY (ONLY) ... R/W
LIMITED ACCESS & RIGHT OF WAY ... LA – R/W
EXISTING RIGHT OF WAY ... EXIST. R/W
PROPERTY LINE ... (IN EXISTING FENCE)
RAILROAD ... OR
GUARDRAIL (EXISTING) ... (PROPOSED)
CONSTRUCTION LIMITS ... CONSTR. LIMITS

BEGIN WORK
ERI-2-2.866(1.78)
STA 2+629.500

BEGIN PROJECT
ERI-2-2.866(1.78)
STA 2+866.000
S.L.D. = 2.866



ERIE COUNTY SANITARY ENGINEER
P.O. BOX 370
554 RIVER RD.
HURON, OH. 44839
(419) 433-7303

CITY OF SANDUSKY
222 MEIGS ST.
SANDUSKY, OH. 44870
(419) 627-5829

AMERITECH
121 N. HURON ST., ROOM 207
TOLEDO, OH. 43604
(419) 245-7494

COLUMBIA GAS OF OHIO
P.O. BOX 2358
2110 CALDWELL ST.
SANDUSKY, OH. 44871 - 2358
(419) 625-4554

OHIO EDISON
6326 LAKE AVENUE
ELYRIA, OH. 44035-4034
(216) 324-0207

ERIE COUNTY CABLEVISION
P.O. BOX 5800
105 W. SHORELINE DR.
SANDUSKY, OH 44870
(419) 627-1360

NOTE: UNDERGROUND UTILITIES --
THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 O.R.C.

STRUCTURE KEY :
COMMERCIAL BUILDINGS
RESIDENTIAL BUILDINGS
OUT BUILDINGS

R.D. Zande & Associates, Inc.
1237 Dublin Road
Columbus, Ohio 43215
Phone: (614) 486-4383

REV.	DATE	DESCRIPTION
DATE OF COMPLETION		12-30-97

SCALE IN METERS 0 250 500 1:1000

PID NO. 11377

PROPERTY MAP
STA. 15+540 TO STA. 18+600

ERI-2-2.866 (1.78)

1 / 6

322 / 327

TOTAL NUMBER OF :
OWNERSHIPS 3
TOTAL TAKES 0
OWNERSHIPS WITH STRUCTURES INVOLVED 0
OWNERSHIPS WITH 'P' ITEMS 0

NET RESIDUE = RECORD AREA – TOTAL PRO – NET TAKE

metric units

SUMMARY OF ADDITIONAL RIGHT OF WAY

GRANTEE:
ALL RIGHT OF WAY ACQUIRED IN THE NAME OF STATE OF OHIO UNLESS OTHERWISE SHOWN.

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD BOOK	OWNERS RECORD PAGE	AUDITORS PARCEL	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE LEFT	NET RESIDUE RIGHT	TYPE FUND	REMARKS AND PERSONALTY	AS ACQUIRED BOOK	AS ACQUIRED PAGE
1 LA	BERNICE MILLER	–	O.R. 033	184	33–01936.000	4.4597	0.2030	0.5346	0.0991	0.4355	NO	2.8016	1.0196	STATE		425	929
			493	741		(11.02)	(0.5016)	(1.3210)	(0.2449)	(1.0761)		(6.9228)	(2.5194)				
			O.R. 041	233	33–00963.000	11.0563	0.0142					11.0421					
						(27.32)	(0.0351)					(27.2849)					
	TOTALS					15.5160	0.2172	0.5346	0.0991	0.4355		13.8437	1.0196				
						(38.34)	(0.5367)	(1.3210)	(0.2449)	(1.0761)		(34.2078)	(2.5194)				
2	TOLEDO EDISON	–	159	43				(NO RIGHT OF WAY REQUIRED)									
3R	FORD MOTOR COMPANY	–	309	525	32–01204.000	38.2841	0.0348	0.0444	0.0218	0.0226	NO	37.8702	0.3565			436	860
						(94.60)	(0.0860)	(0.1097)	(0.0539)	(0.0558)		(93.5773)	(0.8809)				
		–	272	218	33–00392.000	0.0445	–			–		0.0445	–				
						(0.11)	–			–		(0.11)	–				
		–			33–00391.000	41.2546	1.4660			–		39.7886	–				
						(101.94)	(3.6225)			–		(98.3175)	–				
		–	277	389	33–00393.000	2.8086	–			–		2.8086	–				
						(6.94)	–			–		(6.94)	–				
					33–00394.000	59.0571	–			–		59.0571	–				
						(145.93)	–			–		(145.93)	–				
	TOTALS					141.4489	1.5008	0.0444	0.0218	0.0226		139.5690	0.3565				
						(349.52)	(3.7085)	(0.1097)	(0.0539)	(0.0558)		(344.8748)	(0.8809)				
4R	NORFOLK SOUTHERN CORPORATION	–	349	681			0.3035	0.6204	0.3035	0.3169	NO					1349	681
		–	350	151			(0.75)	(1.5330)	(0.75)	(0.7830)						1350	151
4		–	360	404			29.6m²	44.7m²	29.6m²	15.1m²						1360	404
							(319 SF)	(481 SF)	(319 SF)	(162 SF)							
4–1							29.6m²	44.7m²	29.6m²	15.1m²							
							(319 SF)	(481 SF)	(319 SF)	(162 SF)							
4–2							29.6m²	44.7m²	29.6m²	15.1m²							
							(319 SF)	(481 SF)	(319 SF)	(162 SF)							
4–3							29.6m²	44.7m²	29.6m²	15.1m²							
							(319 SF)	(481 SF)	(319 SF)	(162 SF)							
														STATE			

NOTE: UNDER NO CIRCUMSTANCES ARE TEMPORARY EASEMENTS ACQUIRED FOR THE PURPOSE OF STRUCTURE REMOVAL TO BE USED FOR STORAGE OF MATERIAL OR EQUIPMENT BY THE CONTRACTOR. UPON COMPLETION OF THE WORK REQUIRED FOR SUCH REMOVAL AND SUBSEQUENT RECLAMATION, THE EASEMENT SHALL BE VACATED IMMEDIATELY.

NOTE: UNLESS SPECIFIED OTHERWISE, AREAS ARE STATED IN HECTARES WITH ENGLISH EQUIVALENTS IN (ACRES).
1 HECTARE = 2.471044 ACRES

NOTE: ALL TEMPORARY PARCELS TO BE OF 24 MONTHS DURATION,

REV.	DATE	DESCRIPTION
DATE OF COMPLETION		10–30–97

FEDERAL PROJECT NO.
PID NO. 11377
STATE PROJECT NO. 039730
SUMMARY OF ADDITIONAL RIGHT-OF-WAY
ERI-2-2.866 (1.78)

ERI-2-2.866(1.78)

MARGARETTA TWP.
SEC. 2, T.6 N., R 24 W
ERIE COUNTY

metric units

SCALE IN METERS 0 10 20 1:500

PID NO. 11377

RIGHT OF WAY
15+400 TO STA. 15+740

ERI-2-2.866(1.78)

3/6

324/327

OLD NICKLE PLATE R.R. R/W
OLD BIG FOUR R.R. R/W
TOLEDO EDISON (NO R/W REQUIRED)
OLD BIG FOUR R.R. R/W

① BERNICE MILLER

AGRICULTURAL

P.T. STA. 0+690.243 ℄ HOMEGARDNER RD. = 15+638.615
0.014 m Lt. (0.05') 99.976 m Lt. (328.00')

AGRICULTURAL

EX. CURVE DATA ℄ HOMEGARDNER RD.
P.I. STA. 0+645.810
△ = 38° 39' 30" RT.
T = 48.111 m (157.84')
R = 137.160 m (450.00')
L = 92.544 m (303.62')
e max. = 0.050 (0.16')

OBT MARKER
WATER VALVE
EX. RW
EX. WATER
EX. ℄ HOMEGARDNER RD.
EX. RW
EX. LA

SUSPEND ACQUISITION
ERI-2-2.866(1.78)
STA 15+602.442

15+602.442
50.908 m Lt. (167.02')
S 37°28'12" E
50.601m(166.01')

3-12"
LA
BRUSH
1LA
16" COTTON-WOOD

BEGIN ACQUISITION
ERI-2-2.866(1.78)
STA 15+545.218
S.L.D. 8.657 (5.38)

15+551.899
53.340 m Lt. (175.00')

15+548.609
0.601 m Lt. (1.97')

N 53°18'30" E
52.839m(173.36')

BRUSH
CONST. LIMITS
EX. RW

S 53°18'30" W
102.919m(337.66')

15+603.369
16.330 m Lt. (53.58')

P.C. STA.. 0+597.699 = EX. ℄ HOMEGARDNER RD.
0.000 m Rt.
EX. AERIAL EASEMENT

EX. LA

15+599.299
0.000 m

15+400 15+420 15+460 15+480 15+500 15+520 15+540 15+560 15+580 15+600 15+620 15+640 15+660 15+680 15+700 15+720 15+740

0.816m(2.68')
BRUSH
15" COTTON WOOD MAPLE CLUMP

℄ SURVEY AND CONST. SR 2

S 40°13'30" E

15+666.773 (EX. C/L MON FND)
0.067 m Lt. (0.22')

EXISTING FOOTER EASEMENT (TYPICAL OF 6)

CONST. LIMITS

EX. AERIAL EASEMENT

N 53°18'30" E
55.571m(182.32')

138 VOL 322 PAGE 153

139 VOL 330, PAGE 71

15+596.049
51.816 m Rt. (170.00')

BRUSH
2-15" COTTONWOOD

EX. SLOPE EASEMENT AS ACQUIRED BY THE STATE OF OHIO FOUND IN VOL 322, PAGE 153 IN THE ERIE COUNTY RECORDERS OFFICE

STA. 15+548.064

15+545.218
54.864 m Rt. (180.00')

12"

N 43°39'11" W
50.973m(167.23')

EX. LA

EX. LA

EX. RW
℄ BARDSHAR RD.
EX. RW

S 88°03'00" E
192.732m(632.32' PLAN)
(ERI-6-3.80)

RESIDENTIAL

LOT 18
LOT 17
LOT 24
LOT 23
N.W. CORNER LOT 17

N01°36'00"W
75.307 m
(247.07' PLAN)
(ERI-6-3.80)

℄ HOMEGARDNER RD.

STA. 15+548.572

BRUSH

OLD NICKLE PLATE R.R. R/W
OLD BIG FOUR R.R. R/W

EX WATER LINE (APPROX. LOCAT.)

EX. RW

OLD BIG FOUR R.R. R/W

EX. ℄ HOMEGARDNER RD.

OLD NICKLE PLATE R.R. R/W

20.117 m (66')
30.480 m (100')
24.384 m (80')

EX. RW

AGRICULTURAL

MONUMENT LEGEND
● #19 mm (3/4") BAR SET WITH I.D. CAP, "ODOT R/W R.D. ZANDE & ASSOC."
EM EXISTING MONUMENT BOX
R.R. SPIKE FOUND
O EXISTING IRON PIN/P.K. NAIL FOUND

NOTE:
THE CENTERLINE BEARING AND EXISTING RIGHT OF WAY BASIS IS PER OHIO DEPARTMENT OF TRANSPORTATION PROJECT ERI-2-4.02 & ERI-6-3.80 OF RECORD IN VOL 14, PAGE 68 & 69, RECORDS OF THE ERIE COUNTY RECORDER'S OFFICE.

REV.	DATE	DESCRIPTION
DATE OF COMPLETION		12-30-97

knehl2 P:\3907\DWG\HWY\ROW\PLAN\ 3907ART1A.dwg DEC 30, 1997 TIME: 1:28 PM

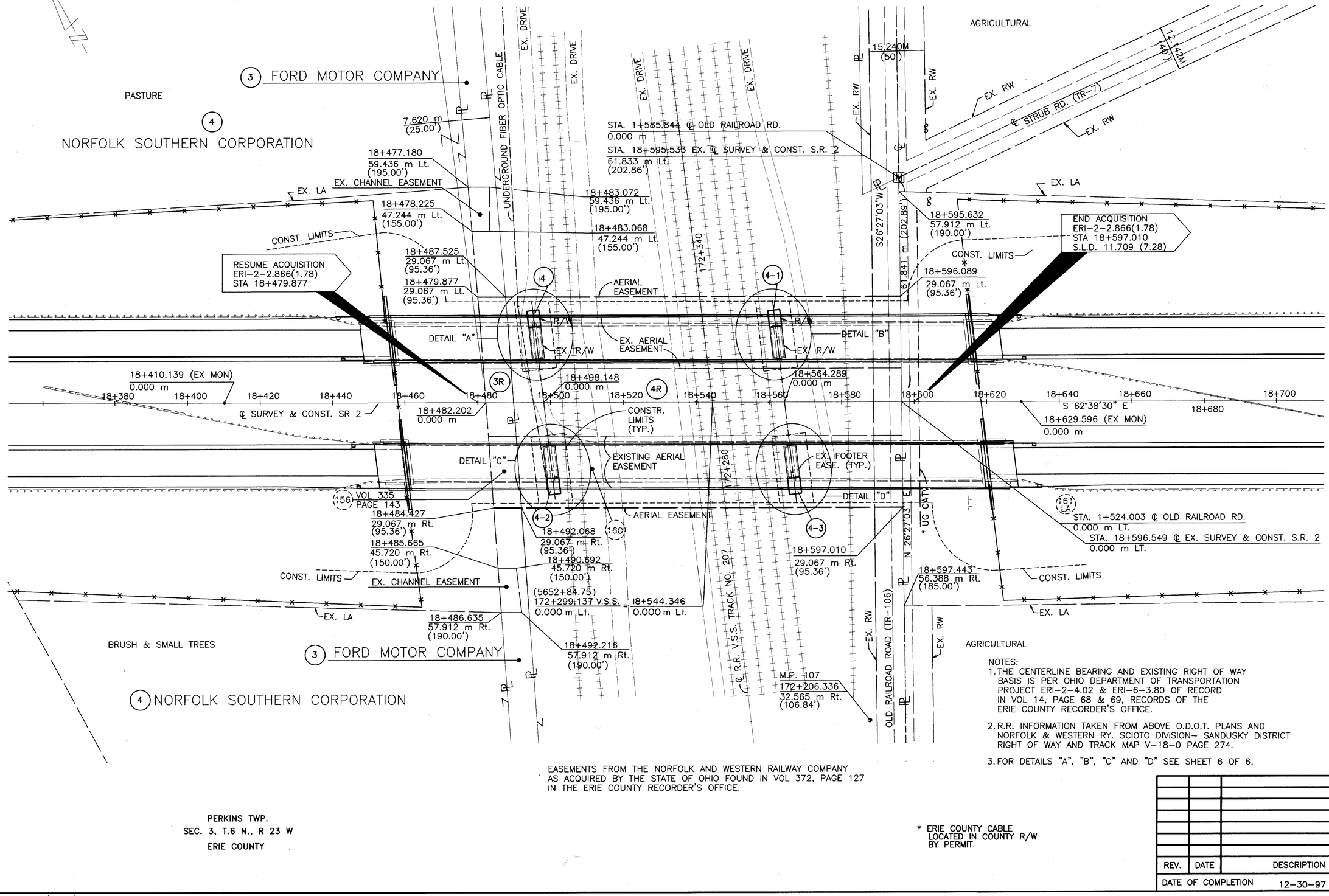
metric units

SCALE IN METERS 0 10 20 1:500

PID NO. 11377

RIGHT OF WAY
STA 18+380 TO STA 18+700

ERI-2-2.866(178)



NOTES:
1. THE CENTERLINE BEARING AND EXISTING RIGHT OF WAY BASIS IS PER OHIO DEPARTMENT OF TRANSPORTATION PROJECT ERI-2-4.02 & ERI-6-3.80 OF RECORD IN VOL 14, PAGE 68 & 69, RECORDS OF THE ERIE COUNTY RECORDER'S OFFICE.
2. R.R. INFORMATION TAKEN FROM ABOVE O.D.O.T. PLANS AND NORFOLK & WESTERN RY. SCIOTO DIVISION- SANDUSKY DISTRICT RIGHT OF WAY AND TRACK MAP V-18-0 PAGE 274.
3. FOR DETAILS "A", "B", "C" AND "D" SEE SHEET 6 OF 6.

EASEMENTS FROM THE NORFOLK AND WESTERN RAILWAY COMPANY AS ACQUIRED BY THE STATE OF OHIO FOUND IN VOL 372, PAGE 127 IN THE ERIE COUNTY RECORDER'S OFFICE.

PERKINS TWP.
SEC. 3, T.6 N., R 23 W
ERIE COUNTY

* ERIE COUNTY CABLE LOCATED IN COUNTY R/W BY PERMIT.

REV.	DATE	DESCRIPTION
DATE OF COMPLETION		12-30-97

4 / 6

325
327

koehl2 P:\13907\DWG\HWY\ROW\PLAN\ 13907ARZA.dwg DEC 30, 1997 TIME: 1:24 PM

ERI-2-2.866(1.78)

NUMBER	DIRECTION	DISTANCE	
L1	S 62°38'30" E	7.648m	25.09 FT
L2	S 22°16'58" W	7.514m	24.65 FT
L3	S 22°58'50" W	50.798m	166.66 FT
L4	N 62°38'30" W	7.641m	25.07 FT
L5	N 22°58'50" E	50.168m	164.59 FT
L6	N 22°16'58" E	8.144m	26.72 FT
L7	S 62°38'30" E	108.564m	356.18 FT
L8	S 26°27'03" W	58.141m	190.75 FT
L9	N 62°38'30" W	104.942m	344.30 FT

PARCEL NUMBER	EASEMENT REQUIRED	TOTAL AREA	PRO AREA	NET TAKE	AREA OF OVERLAP HIGHWAY	AREA OF OVERLAP EX. AERIAL	AREA OF OVERLAP AERIAL
3R	AERIAL	0.0444ha	–	–	–	* 0.0218ha	–
		(0.1097AC)	–	–	–	* (0.0539)	–
4R	AERIAL	0.6204ha	–	–	178.8m²	* 0.3035ha	–
		(1.533AC)	–	–	(1924 SF)	* (0.75AC)	–
4	HIGHWAY	44.7m²	29.6m²	15.1m²	–	* 38.9m²	5.8m²
		(481 SF)	(319 SF)	(162 SF)	–	* (419 SF)	(62 SF)
4-1	HIGHWAY	44.7m²	29.6m²	15.1m²	–	* 38.9m²	5.8m²
		(481 SF)	(319 SF)	(162 SF)	–	* (419 SF)	(62 SF)
4-2	HIGHWAY	44.7m²	29.6m²	15.1m²	–	* 38.9m²	5.8m²
		(481 SF)	(319 SF)	(162 SF)	–	* (419 SF)	(62 SF)
4-3	HIGHWAY	44.7m²	29.6m²	15.1m²	–	* 38.9m²	5.8m²
		(481 SF)	(319 SF)	(162 SF)	–	* (419 SF)	(62 SF)

NOTES:
1. THE CENTERLINE BEARING AND EXISTING RIGHT OF WAY BASIS IS PER OHIO DEPARTMENT OF TRANSPORTATION PROJECT ERI-2-4.02 & ERI-6-3.80 OF RECORD IN VOL 14, PAGE 68 & 69, RECORDS OF THE ERIE COUNTY RECORDER'S OFFICE.
2. R.R. INFORMATION TAKEN FROM ABOVE O.D.O.T. PLANS AND NORFOLK & WESTERN RY. SCIOTO DIVISION- SANDUSKY DISTRICT RIGHT OF WAY AND TRACK MAP V-18-0 PAGE 274.
3. FOR DETAILS "A", "B", "C" & "D" SEE SHEET 6 OF 6

REV.	DATE	DESCRIPTION
DATE OF COMPLETION		12-30-97

RAILROAD PLAT
STA. 18+480 TO STA. 18+600

ERI-2-2.866 (178)

PID NO. 11377

SCALE IN METERS 0 5 10 1:200

metric units

5/6

326/327

ERI–2–2.866(1.78)

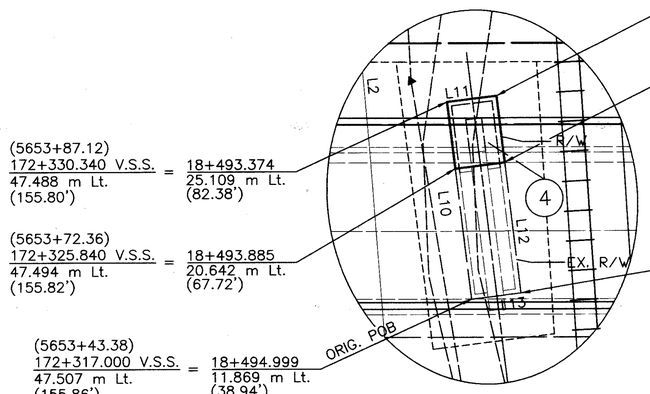
0 5 10

1:200

metric units

PID NO. 11377

RIGHT OF WAY PLAN DETAILS



(5653+87.12) 172+330.340 V.S.S. 47.488 m Lt. (155.80') = 18+493.374 25.109 m Lt. (82.38')

(5653+72.36) 172+325.840 V.S.S. 47.494 m Lt. (155.82') = 18+493.885 20.642 m Lt. (67.72')

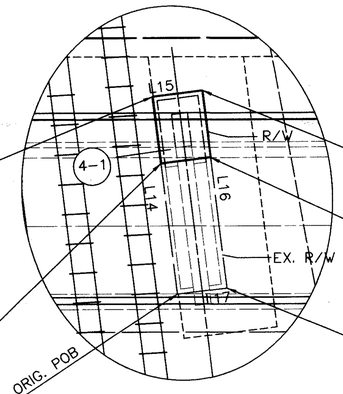
(5653+43.38) 172+317.000 V.S.S. 47.507 m Lt. (155.86') = 18+494.999 11.869 m Lt. (38.94')

18+496.701 25.517 m Lt. (83.72') = (5653+87.11) 172+330.335 V.S.S. 44.135 m Lt. (144.80')

18+497.213 21.051 m Lt. (69.06') = (5653+45.60) 172+317.683 V.S.S. 18.147 m Lt. (59.54')

18+498.327 12.278 m Lt. (40.28') = (5653+43.34) 172+316.995 V.S.S. 44.154 m Lt. (144.86')

DETAIL "A"



(5653+60.36) 172+322.183 V.S.S. 18.153 m Rt. (59.56') = 18+559.519 25.109 m Lt. (82.38')

(5653+45.60) 172+317.683 V.S.S. 18.147 m Rt. (59.54') = 18+560.031 20.643 m Lt. (67.73')

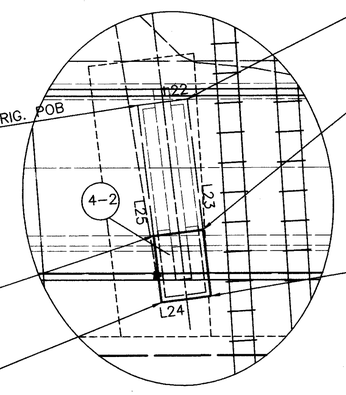
(5653+16.60) 172+308.844 V.S.S. 18.134 m Rt. (59.49') = 18+561.145 11.869 m Lt. (38.94')

18+562.847 25.518 m Lt. (83.72') = (5653+60.34) 172+322.178 V.S.S. 21.506 m Rt. (70.56')

18.563.358 21.051 m Lt. (69.06') = (5653+45.58) 172+317.678 V.S.S. 21.499 m Rt. (70.53')

18+564.473 12.278 m Lt. (40.28') = (5653+16.58) 172+308.839 V.S.S. 21.487 m Rt. (70.50')

DETAIL "B"



(5652+63.54) 172+292.672 V.S.S. 47.538 m Lt. (155.96') = 18+497.968 12.277 m Rt. (40.28')

(5652+34.54) 172+283.833 V.S.S. 47.551 m Lt. (156.01') = 18+499.008 21.051 m Rt. (69.06')

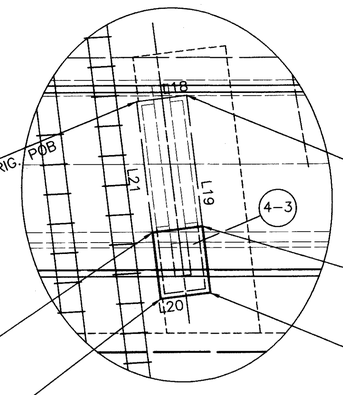
(5652+19.78) 172+279.333 V.S.S. 47.558 m Lt. (156.03') = 18+499.594 25.517 m Rt. (83.72')

18+501.296 11.869 m Rt. (38.94') = (5652+63.52) 172+292.667 V.S.S. 44.186 m Lt. (144.97')

18+502.336 20.642 m Rt. (67.72') = (5652+34.53) 172+283.828 V.S.S. 44.198 m Lt. (145.01')

18+502.921 25.108 m Rt. (82.38') = (5652+19.76) 172+279.328 V.S.S. 44.205 m Lt. (145.03')

DETAIL "C"



(5652+36.78) 172+284.516 V.S.S. 18.098 m Rt. (59.37') = 18+564.110 12.277 m Rt. (40.28')

(5652+07.78) 172+275+677 V.S.S. 18.086 m Rt. (59.34') = 18+565.150 21.051 m Rt. (69.06')

(5651+89.21) 172+270.016 V.S.S. 16.059 m Rt. (52.59') = 18+565.735 25.517 m Rt. (83.72')

18+567.437 11.869 m Rt. (38.94') = (5652+36.77) 172+284.511 V.S.S. 21.451 m Rt. (70.38')

18+568.478 20.642 m Rt. (67.72') = (5652+07.77) 172+275.672 V.S.S. 21.438 m Rt. (70.33')

18+569.063 25.108 m Rt. (82.78') = (5651+93.00) 172+271.172 V.S.S. 21.432 m Rt. (70.32')

DETAIL "D"

LINE DATA			
LINE NUMBER	DIRECTION	DISTANCE METRIC	DISTANCE ENGLISH
L10	N 20°21'30" E	13.339m	43.76 FT
L11	S 69°38'30" E	3.353m	11.00 FT
L12	S 20°21'30" W	13.339m	43.76 FT
L13	N 69°38'30" W	3.353m	11.00 FT
L14	N 20°21'30" E	13.339m	43.76 FT
L15	S 69°38'30" E	3.353m	11.00 FT
L16	S 20°21'30" W	13.339m	43.76 FT
L17	N 69°38'30" W	3.353m	11.00 FT
L18	S 69°38'30" E	3.353m	11.00 FT
L19	S 20°21'30" W	13.339m	43.76 FT
L20	N 69°38'30" W	3.353m	11.00 FT
L21	N 20°21'30" E	13.339m	43.76 FT
L22	S 69°38'30" E	3.353m	11.00 FT
L23	S 20°21'30" W	13.339m	43.76 FT
L24	N 69°38'30" W	3.353m	11.00 FT
L25	N 20°21'30" E	13.339m	43.76 FT

REV.	DATE	DESCRIPTION
DATE OF COMPLETION		12–30–97

ERI–2–2.866 (1.78)

6 / 6

327 / 327

SPECIAL PROVISIONS

SUBGRADE INVESTIGATION

FOR

ERI-2-2.866

PID. NO. 11377

DATE: NOVEMBER 20, 1998

PAVEMENT SUBGRADE EVALUATION
ODOT PROJECT
ERI-2-2.866
ERIE COUNTY, OHIO

Report to

R.D. ZANDE & ASSOCIATES, INC.

COLUMBUS, OHIO

Prepared by

BBC&M ENGINEERING, INC.

GEOSCIENCES AND MATERIALS CONSULTANTS

DUBLIN, OHIO

November, 1998

TABLE OF CONTENTS

APPENDIX A

INTRODUCTION

District 3 of the Ohio Department of Transportation is proposing improvement to the pavement on a section of S.R. 2 in Erie County, Ohio, just south of Sandusky, as shown on the Vicinity Map included as Plate 1 of Appendix A. The section of State Route 2 which is to be improved is approximately 9694 meters long, extending from just west of the State Route 269 interchange (Sta. 2+866) to the west end of the State Route 4 on- and off-ramps (Sta. 19+466). The project includes all of the mainline pavement, as well as the majority of the on- and off-ramps located within the portion of S.R. 2 to be improved. It is the understanding of BBC&M that ODOT has proposed removal of the existing rigid pavement in its entirety and replacement with a flexible pavement section. It is also understood that any existing subbase materials will be removed. At this time it is not yet determined whether these subbase materials will be stockpiled and reused or merely wasted.

This portion of State Route 2 was originally constructed in the late 1960s through relatively low lying farm and swamp land. Subsurface information available from the original investigation (performed during the period of 1958 to 1961) indicates that much of the near-surface natural soils consist of compressible organic deposits. Based on visual reconnaissance, it would appear that much of the roadway is constructed on fill, varying in height from 1 to 4 meters. ODOT District 3 has indicated that the western portion of the existing subgrade may have been improved with an in-place modification system, such as lime or cement stabilization, however no formal records are available supporting this.

The existing pavement is a rigid section consisting of concrete overlying a granular subbase. At the majority of the joint locations, the concrete at the upper adjoining slab corners has broken away resulting in a shallow depression. Many of the joints have been replaced, frequently with asphalt. Visual observation of the pavement indicates that, while the joints are in poor condition, the concrete pavement slabs themselves appear to be in good condition, with no significant surface cracking evident. In addition, adjoining slabs appear to be at the same elevation and orientation, indicating that significant differential movements have not occurred.

The original intent of our study was to evaluate the condition of the existing pavement subgrade. In addition, accurate measurements of the pavement and granular subbase were made. In particular, this investigation sought to verify the existence of a stabilized layer, as well as to quantify the improvement in subgrade support (if any) provided by this layer. The scope of the project has been expanded to include recommendations for subgrade stabilization.

GEOLOGY

The project area lies within the glaciated portion of Ohio and the near-surface soils consist principally of glacially-deposited ground moraine materials. Ground moraine materials at this site consist of an unsorted, unstratified mixture of clay, silt, sand and coarser materials. Geologic information indicates that the depth to bedrock is relatively shallow and averages 7 meters. Bedrock consists primarily of Devonian age limestone associated with the Columbus and Delaware formations.

FIELD INVESTIGATION

During the period of September 1 through 29, 1998, 49 roadway, 15 berm and 9 ramp borings were drilled along the project length. The roadway borings were located at approximately 200 meter intervals, alternating between the eastbound and westbound lanes. In addition, roughly every third boring in a given direction was placed in the highspeed lane, while the others were located in the low speed lane. The borings were drilled to depths ranging from 1.13 to 2.13 m, with an average depth of 1.83 m.

The approximate boring locations are shown on the Plan of Borings, submitted as Plates 2 through 5 in Appendix A of this report. Boring locations were established in the field by BBC&M personnel by means of a measuring wheel utilizing the existing mile markers as reference points. Elevations at the boring locations were not obtained, in accordance with the agreement of all parties.

At the boring locations, a hole was made through the existing pavement with a 200 mm diamond bit core barrel using water as the circulating fluid. Once the overlying pavement was removed, the borings were performed with a truck-mounted drill rig using an 83 mm I.D. hollow-stem auger to advance the borings between samples. At regular intervals, beginning at the approximate subbase or subgrade elevation, the drilling stem was withdrawn from the borings and disturbed, but representative, samples were obtained by driving a 51-mm O.D. split-barrel sampler into the soil with blows from a 64 kg hammer freely falling 762 mm (Standard Penetration Test). Immediately after drilling was completed and groundwater measurements obtained, the borings were backfilled with soil cuttings and the surface of the pavement repaired with cold-patch asphalt.

In the field, experienced personnel from this office provided overall supervision of drilling procedures and performed the following specific duties: examined all samples recovered from the borings; cleaned and preserved representative portions of all samples; prepared a log of each boring; recorded seepage and groundwater observations; made hand-penetrometer measurements in soil samples exhibiting cohesion; and, provided liaison

between the field work and the Project Engineer so that the investigation could be modified in the event unusual or unexpected subsurface conditions were encountered. All samples were transported to the soils laboratory of BBC&M Engineering, Inc. for further testing.

LABORATORY TESTING

In the laboratory, all samples were visually identified and, on the majority of subgrade samples as well as on selected representative specimens natural moisture content and liquid and plastic limit determinations were performed. The results of these tests are useful in the classification of soils, and permit an evaluation of the strength and compressibility characteristics of the soils encountered at this site by comparison with similar soils for which these characteristics have been previously determined. In addition, grain-size analyses were performed on the approximate subgrade samples and a portion of the subbase samples for the purpose of classification and determination of Group Indices to develop pavement subgrade parameters. The types and numbers of tests performed for this project are listed as follows:

Visual Identification	-	273
Natural Moisture Content	-	83
Liquid and Plastic Limits	-	72
Sieve Analysis	-	11
Sieve Analysis and Short Hydrometer	-	59

Results of all laboratory tests are recorded on the individual boring logs. Based on the results of the laboratory testing program, soil and rock descriptions contained on the field logs were modified, if necessary, and laboratory-corrected borings logs are submitted as Plates 8 through 80 of Appendix A. Shown on these logs are: descriptions of the soil stratigraphy encountered; depths from which samples were preserved; sampling efforts (blow counts) required to obtain the specimens in the borings; seepage and groundwater observations; and, values of hand-penetrometer measurements made in soil samples exhibiting cohesion. Hand-penetrometer values are roughly equivalent to the unconfined compressive strength of the cohesive fraction of the soil sample.

Soils described in this report have been classified generally in accordance with the Unified Soil Classification System. However, the system has been augmented by the use of special adjectives to designate approximate percentages of minor soil components. An explanation of the symbols and terms used on the boring logs, and definitions of the special adjectives used to denote the minor soil components and rock hardness are presented on Plates 6 and 7 in Appendix A. Highway Research Board Symbols, as modified by ODOT, have been

included on the logs, along with Group Indices determined from the laboratory testing program.

GENERAL SUBSURFACE CONDITIONS

All of the mainline and ramp borings, with the exception of Boring B-9, encountered concrete pavement ranging in thickness from 183 to 244 mm (average thickness equal to 230 mm). Boring B-9 was positioned at the location of a replaced joint and encountered 290 mm of asphaltic concrete. In addition, 8 of the 58 mainline and ramp borings encountered a thin (15 to 30 mm) layer of asphalt overlying the concrete pavement. Underlying the pavement, as little as 76 mm and as much as 701 mm of granular subbase were encountered. It should be noted though that only 6 of the 58 borings encountered subbase thicknesses in excess of 260 mm, all of which were located at the east end of the project and may have been associated with localized undercuts. If these borings are not included, the average subbase thickness encountered under the mainline and ramp borings is 164 mm.

The subgrade soils along the length of this project generally consisted of fill or natural soils composed of very-stiff to hard brown or brown mottled with gray silty clay (A-6a, A-6b and A-7-6). In some of the borings, particularly at the eastern end of the project, subgrade soils classified as A-4a were encountered. In a few of the borings roots or wood fragments were encountered within the fill. Several of the borings contained soils described as slightly or partly organic. At depth, a few of the borings encountered limestone bedrock.

Evidence of a stabilized soil layer was observed in the majority of the borings located west of Station 6+300 (see the individual boring logs). However, east of this location, no evidence of such a layer was found. Where observed, the stabilized soil appeared to consist of hard brown silty clay containing white flakes or streaks. The white material may be cementitious. The soil matrix was observed to be far more friable than the underlying unstabilized soil and typically the recovered material was in a semi-granular form. In ten of the borings, the recovered stabilized soil was located between overlying granular subbase and underlying non-stabilized silty clay within the same split-spoon sample. In these cases, the stabilized soil thickness may be considered accurate and was found to range from 30 to 122 mm (average equal to 100 mm).

Very slight seepage was encountered in only Borings B-6B and B-35B at depths of 1.40 and 0.71 meters, respectively. No measurable amounts of water collected in any of the borings at the completion of drilling.

ANALYSIS AND RECOMMENDATIONS

Existing Subgrade Characteristics

The subgrade is defined as the natural or prepared soil surface which becomes the foundation for a pavement system. Based on samples collected from the borings, the existing subgrade soil types are shown in Table I. Also shown are the estimated values of the California Bearing Ratio (CBR), Modulus of Subgrade Reaction (k) in kN/m^3, and Resilient Modulus (M_R) in MPa. It should be noted that the following subgrade parameter estimates are based on the laboratory testing results and reflect the support characteristics of unimproved or unstabilized soil.

TABLE I

SUMMARY OF CHARACTERISTICS OF EXISTING SUBGRADE SOILS

ERI-2-2.866

Boring	Station	ODOT Classification	Est. CBR(%)	Est. M_r (MPa)	Est. "k" (kN/m^3)
R-1	S.R. 269 Ramp	A-7-6 (14)	4	28	33000
R-2	S.R. 269 Ramp	A-7-6 (20)	<3	14	22000
R-3	U.S. 6 Ramp	A-7-6 (20)	<3	14	22000
R-4	U.S. 6 Ramp	A-7-6 (13)	5	35	37000
R-5	U.S. 6 Ramp	A-7-6 (19)	<3	14	22000
R-6	S.R. 101 Ramp	A-4a (6)	7	48	45000
R-7	S.R. 101 Ramp	A-4a	7	48	45000
R-8	S.R. 101 Ramp	A-4a (7)	7	48	45000
R-9	S.R. 101 Ramp	A-7-6 (15)	4	28	33000
B-1	2+900	A-7-6 (19)	<3	14	22000
B-2	3+070	A-7-6 (15)	4	28	33000
B-3	3+300	A-7-6 (14)	4	28	33000
B-3B	3+300	A-7-6 (13)	5	35	37000
B-4	3+565	A-7-6 (17)	3	21	28000
B-6	3+900	A-7-6 (15)	4	28	33000
B-6B	3+900	A-7-6	3	21	28000
B-7	4+100	A-7-6 (16)	3	21	28000
B-8	4+300	A-6b (10)	6	41	41000
B-9	4+500	A-7-6 (18)	3	21	28000
B-10	4+700	A-7-6 (19)	<3	14	22000
B-11	4+900	A-7-6 (19)	<3	14	22000
B-11B	4+900	A-7-6 (18)	3	21	28000
B-12	5+100	A-7-6 (13)	5	35	37000
B-13	5+300	A-7-6 (17)	3	21	28000
B-14	5+500	A-7-6 (18)	3	21	28000

Boring	Station	ODOT Classification	Est. CBR(%)	Est. M_r (MPa)	Est. "k" (kN/m^3)
B-14B	5+500	A-7-6	3	21	28000
B-15	5+700	A-6b (12)	5	35	37000
B-16	5+900	A-7-6 (13)	5	35	37000
B-17	6+100	A-7-6 (12)	5	35	37000
B-18	6+343	A-7-6 (16)	3	21	28000
B-19	13+400	A-7-6 (17)	3	21	28000
B-19B	13+400	A-7-6 (15)	4	28	33000
B-20	13+600	A-7-6 (17)	3	21	28000
B-21	13+800	A-7-6 (14)	4	28	33000
B-22	14+000	A-6a (10)	6	41	41000
B-22B	14+000	A-7-6 (14)	4	28	33000
B-23	14+200	A-6b	5	35	37000
B-24	14+400	A-7-6 (20)	<3	14	22000
B-25	14+600	A-7-6	3	21	28000
B-26	14+800	A-7-6 (14)	4	28	33000
B-27	15+000	A-7-6	3	21	28000
B-27B	15+000	A-7-6 (19)	<3	14	22000
B-28	15+170	A-6b (12)	5	34	37000
B-29	15+340	A-4a (6)	7	48	45000
B-30	15+500	A-6b (9)	6	41	41000
B-30B	15+500	A-6a	6	41	41000
B-30BB	15+500	A-6a (7)	7	48	45000
B-31	15+670	A-6b (11)	5	34	37000
B-32	15+900	A-6a (8)	6	41	41000
B-33	16+100	A-7-6 (16)	3	21	28000
B-34	16+300	A-6a (9)	6	41	41000
B-35	16+520	A-6b	5	34	37000
B-36	16+700	A-6b (11)	5	34	37000
B-37	16+900	A-6a (8)	6	41	41000
B-38	17+100	A-7-6	3	21	28000
B-38B	17+100	A-7-6 (19)	<3	14	22000
B-39	17+300	A-6a (5)	7	48	45000
B-40	17+500	A-6a (3)	9	62	51000
B-41	17+700	A-4a (2)	10	69	53000
B-42	17+900	A-6a (6)	7	48	45000
B-43	18+100	A-6a (6)	7	48	45000
B-43BB	18+100	A-4a (6)	7	48	45000
B-44	18+300	A-4a (6)	7	48	45000
B-45	18+700	A-6b (10)	6	41	41000
B-46	18+900	A-7-6 (17)	3	21	28000
B-46B	18+900	A-7-6 (16)	3	21	28000
B-46BB	18+900	A-6b (11)	5	34	37000
B-47	19+060	A-6a (6)	7	48	45000
B-49	19+435	A-7-6 (15)	4	28	33000

Based on the results of the laboratory testing program, it is recommended that the following values be used for design of pavement sections located on the existing, unimproved subgrade:

California Bearing Ratio (CBR):	4%
Modulus of Subgrade Reaction (k):	33000 kN/m^3
Resilient Modulus (M_r):	28 MPa

The preceding values represent the mean values for the lower 85% of the samples tested, consistent with standard practice.

Existing Stabilized Soil

As previously indicated, evidence of stabilized subgrade soils was found in the majority of the borings located west of Station 6+300, consistent with the plans provided by R.D. Zande. However, in the borings in which the stabilized material was encountered, the average thickness was found to be only 100 mm, far less than the depth typically required to substantially improve subgrade performance. Moreover, some borings within the "stabilized zone" did not encounter evidence of a stabilized layer. Based on this, it is the recommendation of BBC&M that the existing stabilized soil layer not be relied upon as an improvement of the soil support characteristics within the western zone of the project. While it is likely that this layer will provide a somewhat more stable subgrade during construction activities, it is our opinion that, neither the depth, nor continuity of this existing stabilized zone is sufficient to allow for a reduced pavement section.

It was initially proposed to perform at least four field CBR tests to quantify any improved subgrade support characteristics for the stabilized soil. However, in light of the results of the subgrade sampling in our boring program, it was jointly decided by R.D. Zande, ODOT District 3 and BBC&M personnel to omit the field CBR tests from this evaluation.

Stabilized Subgrade Recommendations

Based on discussions with R.D. Zande and ODOT District 3, it is understood that innovative design or construction techniques should be considered in an effort to reduce the required pavement section and reduce the cost of pavement replacement. Based on the results of the subgrade exploration and laboratory testing programs, as well as our experience, BBC&M recommends that the in-situ subgrade support characteristics be improved with soil stabilization, incorporating a modifier within a controlled thickness of the existing subgrade soil. To achieve this, it is recommended that the existing subgrade soils be stabilized with a modifier consisting of quicklime/flyash or hydrated lime. Such materials, when properly mixed with the existing soil and then recompacted in place serve to permanently increase the

subgrade CBR, thereby allowing for design of a reduced pavement section. Beyond increasing the subgrade CBR value, more uniform support characteristics will be achieved with soil stabilization as well as improvement of the drainage conditions.

To assure the success of the recommended subgrade stabilization, it is important that several critical steps be executed. The most important of these is to determine the optimal mixture of modifiers (hydrated lime or quicklime/flyash) for the existing soil types. This should be done through the use of a laboratory testing program in which the selected modifier is combined in varying quantities with samples of the on-site subgrade soils. Once the combined samples are compacted, various index and performance tests should be performed, including, but not necessarily limited to, CBR and unconfined compression tests.

Several bag samples of the existing subgrade material should be obtained for use in the laboratory testing program. It is important that representative soil samples are obtained. Specifically, at least one sample of all of the various soil types encountered should be obtained from all portions of the entire project length. As can be seen in Table 1, the western portion of the project contains a preponderance of soils classified as A-6b and A-7-6, while the eastern portion contains more soils classified as A-4a and A-6a. At the very least, bag samples must be obtained from each of these areas, utilizing the boring logs contained with this report for guidance.

In addition to soil samples, samples of all prospective modifiers must also be obtained for use in the laboratory testing program. The chemical composition and performance of modifiers, such as fly-ash, are highly source dependent, and as a result, it is critical that identical sources be used for both the laboratory testing and field stabilization phases of the work. At the time of sampling, it should be determined whether the source can provide sufficient material for the entire proposed stabilization work. Any sources which are not considered viable should not be used for laboratory testing purposes.

As previously indicated, laboratory testing should be performed on the entire range of soil types likely to be encountered on this project. Because of the variation in the existing subgrade soil types, it may be beneficial to utilize more than one modifier type or mix. In general, hydrated lime stabilization is best suited for high plasticity clays, as found at the western end of the project. In contrast, a combination of quicklime and flyash is best suited for less plastic clays containing an increased granular content (silts). The final selection of the modifier should be based on the results of the laboratory testing.

The overall subgrade improvement achieved with soil stabilization is highly dependent upon contractor techniques. As such, it is important that proposed contractor methods are reviewed prior to the commencement of work. The contractor must display experience with the proposed modifier and proposed construction methods. It should be noted that the final

modifier(s) selected will greatly influence the actual stabilization technique. Specifically, hydrated lime requires a cure time, known as mellowing, between the initial mixing of the modifier and final compaction. This must be taken into consideration by the contractor and may result in a more drawn out construction schedule. In contrast, the use of quicklime and flyash requires no such lag time. In light of this, the exact modifier(s) must be selected prior to any specific proposed construction technique discussions.

It has been the experience of BBC&M that mixing methods using plows or discs are inadequate for the type of stabilization required on this project and generally result in inconsistent subgrade improvement. To promote uniform subgrade improvement, it is recommended that any stabilization be performed with a specialized reclaimer/stabilizer machine or sufficiently sized rotary mixer. Such a device will allow the mixing of the modifier throughout the full depth of the stabilized section, and will inhibit creation of zones of high and low concentration of modifier.

Once the proper stabilization technique and parameters are selected, steps must be taken in the field to assure that similar results as those obtained in the laboratory are obtained. Principally, the soil/modifier mixture should be compacted in the filed to a dry density of no less than 98% of maximum dry density for the soil/modifier mixture as measured in the laboratory using the Standard Proctor compaction method (ASTM D 698). It should be noted that, due to the on-going chemical/pozzalonic reaction of the soil and modifier, measurement of the in-place density of the compacted mixture using instrumentation such as nuclear moisture/density gauges may not be appropriate. Use of positive-displacement methods of in-place density measurement, such as the sand-cone method (ASTM D 1556) or drive-sampler methods (ASTM D 2937) are more appropriate, as they are not affected by the reacting components. Following curing, it is also recommended that field CBR tests be performed, in conjunction with proofrolling, on the completed stabilized soil subgrade to provide additional assurance that project parameters are being achieved. Proofrolling of the cured subgrade should be performed in accordance with Item 13 of the ODOT, Manual of Procedures for Earthwork.

BBC&M has previously supplied R.D. Zande with a series of notes relative to subgrade stabilization for inclusion with the project plans. These notes are included as Appendix B of this report, for formal submission purposes.

Drainage Considerations

At this time, it is understood that a free-draining granular subbase is being considered for this project. BBC&M concurs with this approach and agrees that adequate drainage may be achieved with the existing lateral roadway slopes, provided that the granular subbase is connected to longitudinal collection trenches filled with free-draining gravel outside of the

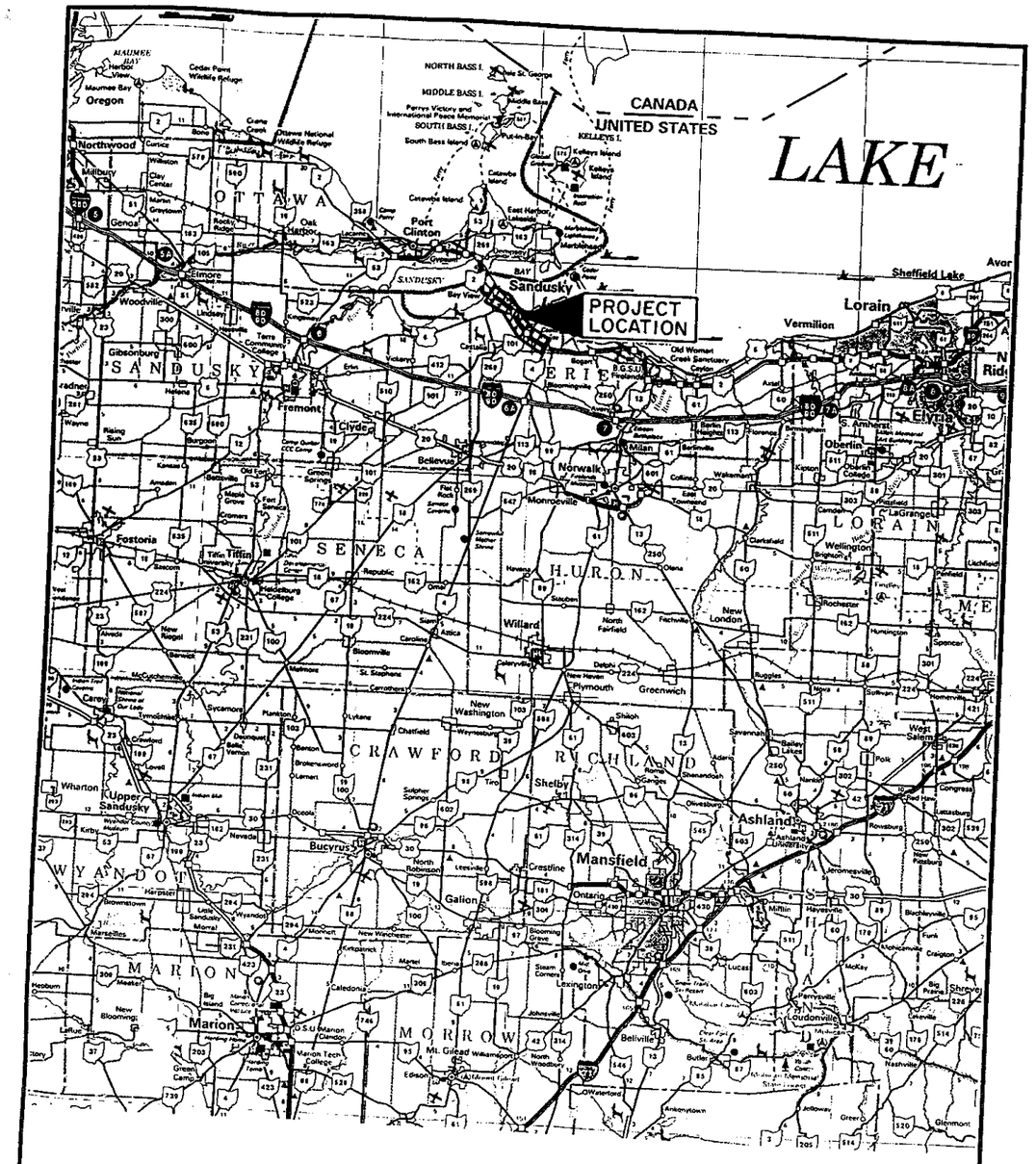
pavement section. It is recommended that the trenches be filled with very free draining material, such as ODOT Item 703, No. 2 stone. While it is understood that a similar system exists under the existing pavement, it is our opinion that superior results may be achieved if such a drainage system is installed initially, instead of as a post-construction modification.

It should be noted that subgrade stabilization will serve to reduce the permeability of the improved subgrade soils. This improvement, along with the use of a free-draining base should serve to provide an excellent underdrain system.

Groundwater Considerations

Based upon observations made at the time of this investigation, significant groundwater problems are not anticipated in connection with the proposed widening of the road. It is recognized, however, that the subgrade exploration program was performed during a typically drier season of the year and that local groundwater may be elevated to near-surface levels during the winter and spring seasons of the year.

APPENDIX A



VICINITY MAP

PAVEMENT SUBGRADE EVALUATION
ERI-2-2.866
ERIE COUNTY, OHIO

Drawing No: 6381A010.MAN		
Drawn By: B.L.R.	Approved By: M.G.R.	
Date: 10/12/98	Revision:	Scale:

BBC&M
6190 Enterprise Court
Dublin, Ohio 43016-7297
Phone (614) 793-2226

PLATE 1

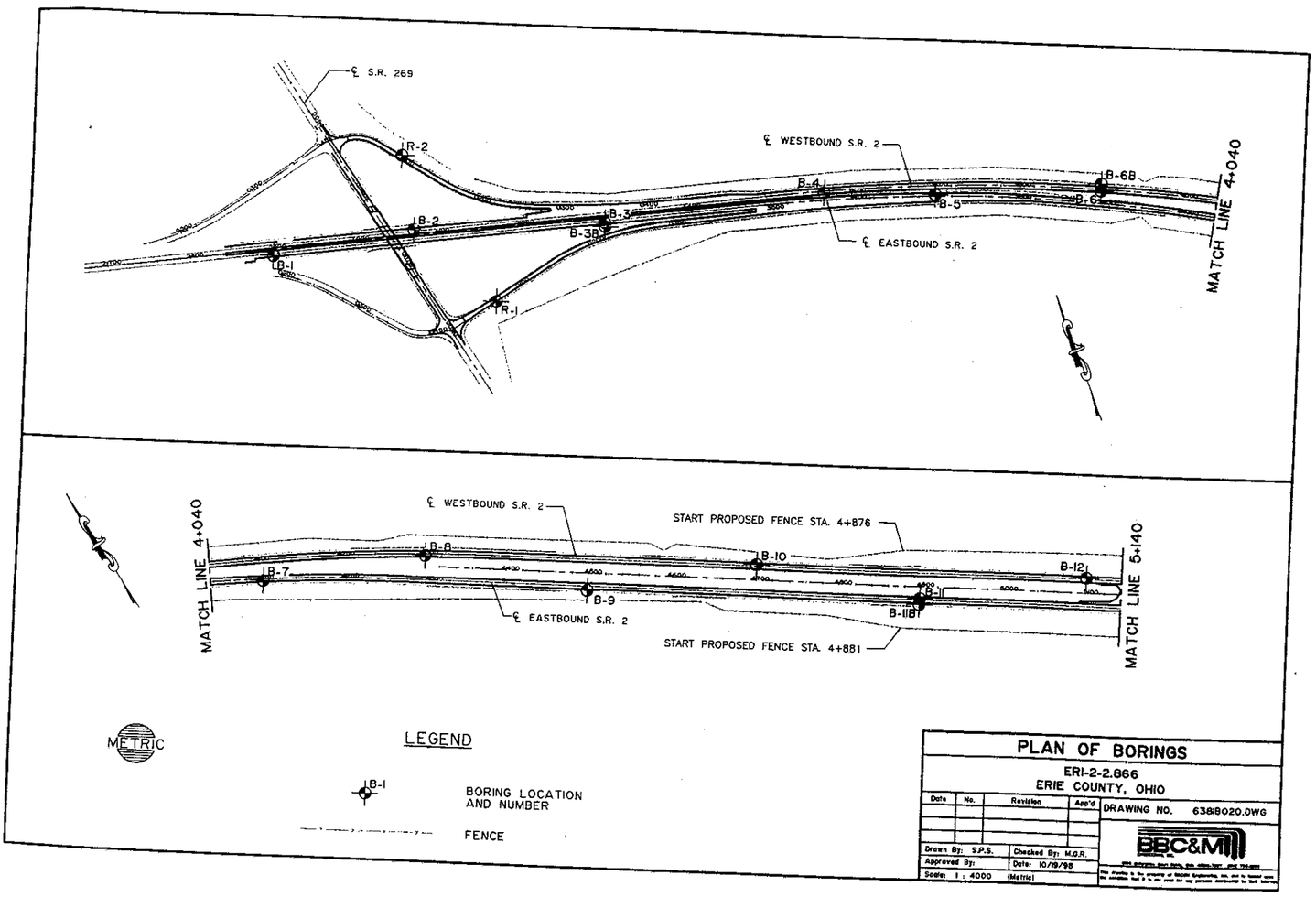


PLATE 2

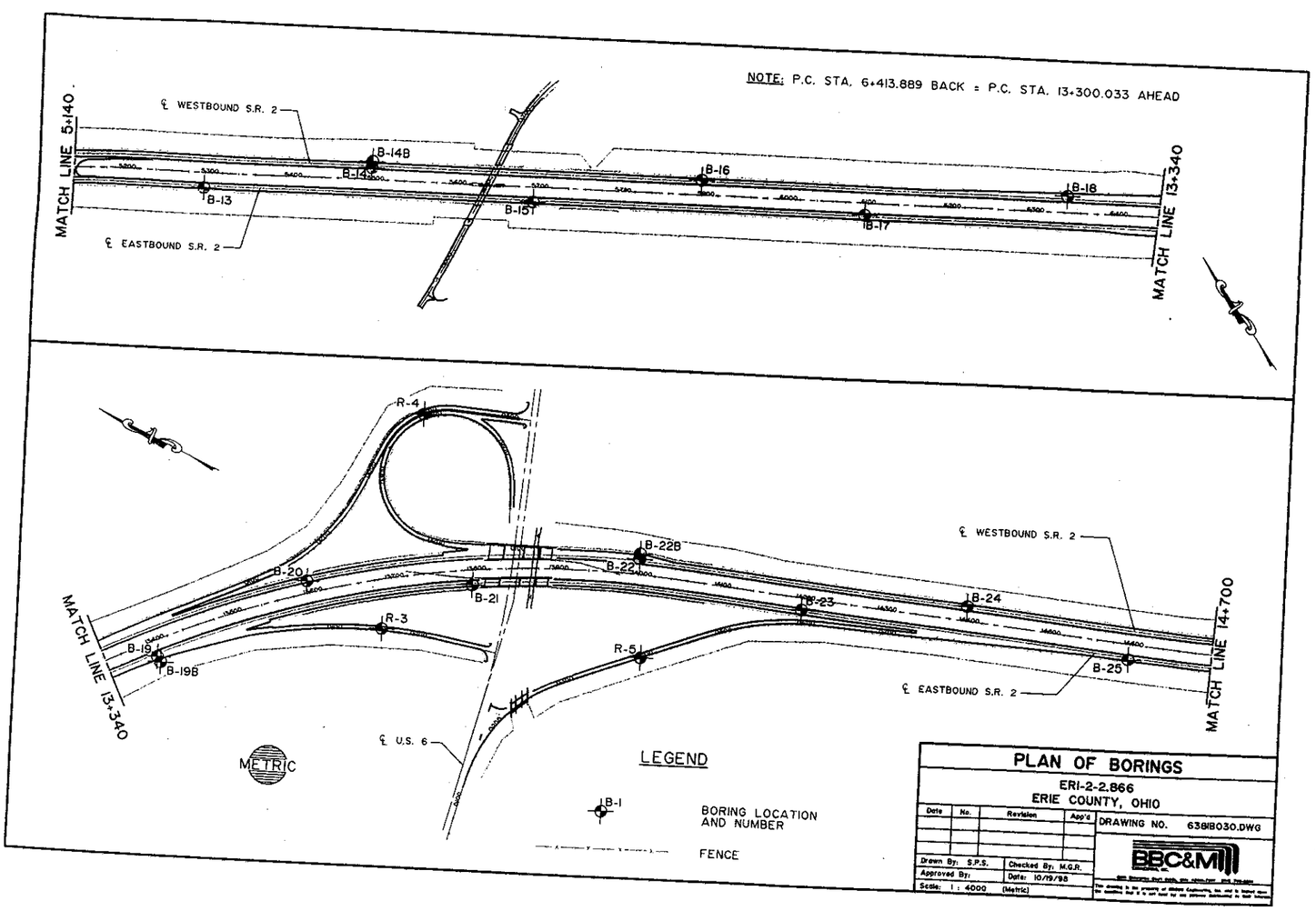
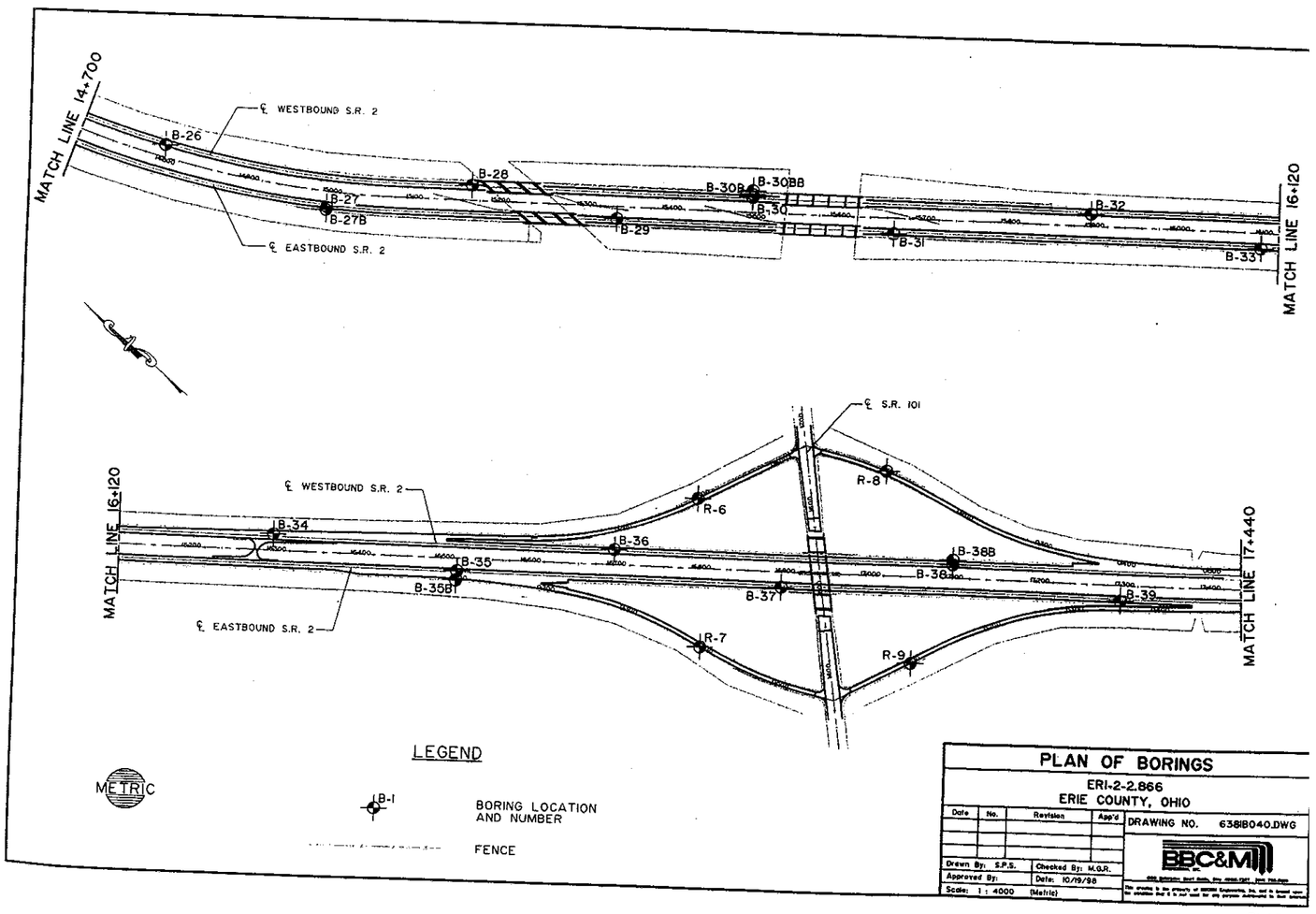


PLATE 3



LEGEND

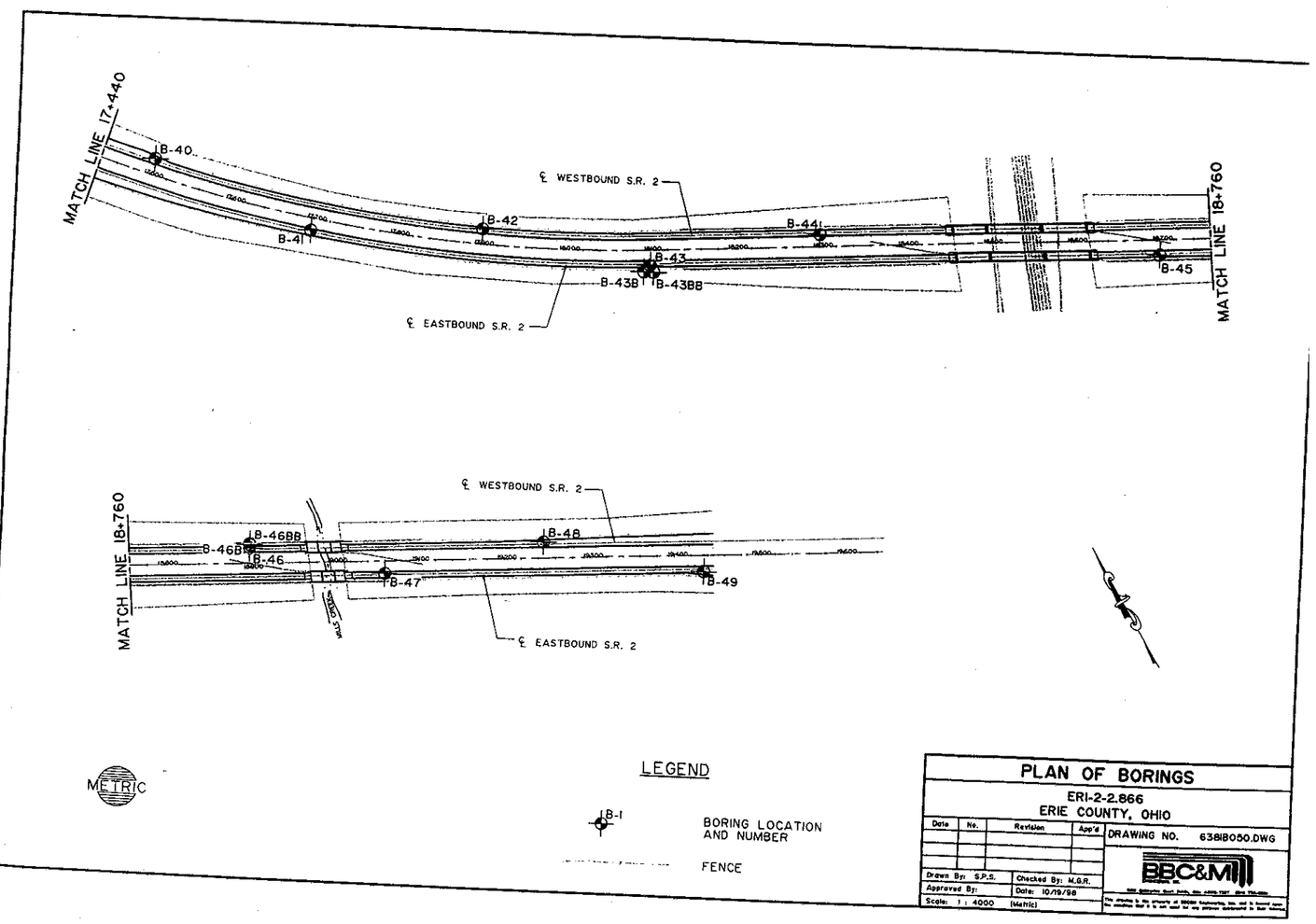
METRIC

B-1 BORING LOCATION AND NUMBER

FENCE

PLAN OF BORINGS			
ERI-2-2.866 ERIE COUNTY, OHIO			
Date	No.	Revision	App'd
Drawn By: S.P.S.	Checked By: M.G.R.	DRAWING NO. 6381B040.DWG	
Approved By:	Date: 10/19/98	BBC&M	
Scale: 1 : 4000 (Metric)			

PLATE 4



LEGEND

METRIC

B-1 BORING LOCATION AND NUMBER

FENCE

PLAN OF BORINGS			
ERI-2-2.866 ERIE COUNTY, OHIO			
Date	No.	Revision	App'd
Drawn By: S.P.S.	Checked By: M.G.R.	DRAWING NO. 6381B050.DWG	
Approved By:	Date: 10/19/98	BBC&M	
Scale: 1 : 4000 (Metric)			

EXPLANATION OF SYMBOLS AND TERMS USED ON BORING LOGS

SAMPLING DATA

	-	Blocked-in "SAMPLES" column indicates sample was attempted and recovered within this depth interval.
	-	Sample was attempted within this interval but not recovered.
2/5/9	-	The number of blows required for each 150mm increment of penetration of a "Standard" 50mm O.D. split-barrel sampler, driven a distance of 450mm by a 64 kilogram hammer freely falling 760mm. Addition of one of the following symbols indicates the use of a split-barrel other than the 50mm O.D. sampler:
[2S]	-	65mm O.D. split-barrel sampler.
[3S]	-	80mm O.D. split-barrel sampler.
P	-	Shelby tube sampler, 80mm O.D., hydraulically pushed.
R	-	Refusal of sampler in very-hard or dense soil, or on a resistant surface.
50-10mm	-	Number of blows (50) to drive a split-barrel sampler a certain distance (10mm), other than the normal 150mm increment.
S/D S/H	-	Sampler (split-barrel) advanced by weight of drill rods (D), or combined weight of rods and drive hammer (H).

SOIL DESCRIPTIONS - All soils have been classified basically in accordance with the Unified Soil Classification System, but this system has been augmented by the use of special adjectives to designate the approximate percentages of minor components as follows:

Adjective	Percent by Weight
trace	1 to 10
little	11 to 20
some	21 to 35
"and"	36 to 50

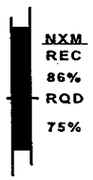
The following terms are used to describe density and consistency of soils:

Term (Granular Soils)	Blows/300mm
Very-loose	Less than 5
Loose	5 to 10
Medium-dense	11 to 30
Dense	31 to 50
Very-dense	Over 50

Term (Cohesive Soils)	Qu (kPa)
Very-soft	Less than 25
Soft	25 to 45
Medium-stiff	45 to 95
Stiff	95 to 190
Very-stiff	190 to 380
Hard	Over 380

EXPLANATION OF SYMBOLS AND TERMS USED ON LOGS FOR SAMPLING AND DESCRIPTION OF ROCK

SAMPLING DATA



When bedrock is encountered and rock core samples are attempted, the "SAMPLING EFFORT" column is used to record the type of core barrel used (NXM), the percentage of core recovered for each run of the sampler and generally the Rock Quality Designation (RQD) value. Rock-core barrels can be of either single- or double-tube construction, and a special series of double-tube barrels, designated by the suffix M, is commonly used to obtain maximum core recovery in very-soft or fractured rock. Three basic groups of barrels are used most often in subsurface investigations for engineering purposes, and these groups and the diameters of the cores obtained are as follows:

AX, AW, AXM, AWM - 30mm
BX, BW, BXM, BWM - 43mm
NX, NW, NXM, NWM - 58mm

Rock Quality Designation (RQD) is expressed as a percentage and is obtained by summing the total length of all core pieces which are at least 4 inches long and then dividing this sum by the total length of core run. It has been found that there is a reasonably good relationship between the RQD value and the general quality of rock for engineering purposes. This relationship is shown as follows:

RQD - %	General Quality
0 - 25	Very-poor
25 - 50	Poor
50 - 75	Fair
75 - 90	Good
90 - 100	Excellent

ROCK HARDNESS

The following terms are used to describe rock hardness:

Term	Meaning	Mohs' Hardness
Very-soft	Rock such as shale can be easily picked apart by the fingers. Sandstone is poorly cemented and very friable. The rock resembles hard clay or dense sand, but has rock structure.	Less than 1
Soft	Rock such as shale, siltstone or limestone can be scratched or powdered by fingernail pressure. Sandstone is mostly poorly cemented, and individual sand grains can be separated from the main rock mass by a fingernail.	1 to 1½
Medium-hard	Rock cannot be scratched by a fingernail, but can be powdered by a knife. Sandstone is mostly well cemented, but individual grains can be removed by scratching with a knife.	2½ to 5½
Hard	Rock is well cemented and cannot be powdered by a knife. Rock can be powdered by a steel file.	5½ to 6½
Very-hard	Rock cannot be scratched by a steel file and core rings when struck with a hammer.	Greater than 6½

BBC&M ENGINEERING, INC.

LOG OF BORING NO. R-1
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. D-0+065, Center of Ramp S.R. 269 Interchange
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/16/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 229 MILLIMETERS
	1A		1/2/2										FILL: Loose to medium-dense brown fine to coarse sand, little fine gravel, trace silt. Est. A-1-b
	1B			230-260									FILL: Very-stiff brown intermixed with dark-brown silty clay, trace fine to medium sand, few seams of silt, few roots.
			1/2/2										
1	2			210-295	24	46	23	0	1	2	34	63	
			1/2/3										
	3			200-345									A-7-6 (14)
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/16/98

JOB: 6381

PLATE 8

BBC&M ENGINEERING, INC.

LOG OF BORING NO. R-2
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. C-0+095, Center of Ramp S.R. 269 Interchange
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/16/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 229 MILLIMETERS
	1A		2/2/2										FILL: Loose to medium-dense brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B			180-220									FILL: Stiff to very-stiff brown intermixed with gray silty clay, trace fine to medium sand, slightly organic. Est. A-7-6
			2/3/2										
1	2			95-190	27	68	25	0	1	1	37	61	FILL: Stiff to very-stiff dark-gray mottled with brown silty clay, trace fine to medium sand. A-7-6 (20)
			2/2/3										
	3			145-250									FILL: Stiff to very-stiff brown mottled with gray silty clay, trace fine to medium sand, few pockets of organic silt. Est. A-7-6
2													- No seepage enountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/16/98

JOB: 6381

PLATE 9

BBC&M ENGINEERING, INC.

LOG OF BORING NO. R-3
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. C-0+160, Center of Ramp U.S. 6 Interchange
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/16/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 229 MILLIMETERS
	1A		3 / 2 / 3										FILL: Medium-dense brown fine to coarse sand, little fine gravel, little silt. Est. A-1-b
	1B			280									FILL: Stiff to very-stiff dark-gray mottled with brown silty clay, trace fine to coarse sand, trace fine gravel, slightly organic.
			2 / 3 / 4										
1	2			115-155	23	58	25	0	2	2	38	58	A-7-6 (20)
			2 / 3 / 3										FILL: Dark-gray organic silt intermixed with very-stiff brown mottled with gray silty clay, trace fine to medium sand.
	3												Visual
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/16/98

JOB: 6381

PLATE 10

BBC&M ENGINEERING, INC.

LOG OF BORING NO. R-4
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. A/B - 0+400, Center of Ramp U.S. 6 Interchange
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/16/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 229 MILLIMETERS
	1A		3 / 2 / 2										FILL: Medium-dense brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B			220-345	19	43	21	1	1	1	46	51	FILL: Very-stiff to hard brown mottled with gray silty clay, trace fine to coarse sand, trace fine gravel, few seams of silt.
			3 / 4 / 5										
1	2			250-410									A-7-6 (13)
			2 / 3 / 5										FILL: Stiff to very-stiff gray mottled with brown becoming dark-gray silty clay, trace fine to medium sand, partly organic.
	3			135-295									Est. A-7-6
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/16/98

JOB: 6381

PLATE 11

BBC&M ENGINEERING, INC.

LOG OF BORING NO. R-5
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta D-0+400, Center of Ramp U.S. 6 Interchange
COMPLETION DEPTH: 1.68m ELEVATION: ____ DATE: 9/2/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 244mm
												FILL: Medium-dense (est.) brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
		2 / 3 / 4										
1	1		240-430	22	57	24	0	1	2	35	62	FILL: Very-stiff to hard brown mottled with gray and dark-gray silty clay, trace fine to medium sand. A-7-6 (19)
		2 / 3 / 3										Loose dark-gray mottled with gray and brown organic silt, trace fine to coarse sand, contains decayed roots. Visual
	2		235-430									Very-stiff to hard brown mottled with gray and dark-gray silty clay. Est. A-7-6
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/02/98

JOB: 6381

PLATE 12

BBC&M ENGINEERING, INC.

LOG OF BORING NO. R-6
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. A-0+200, Center of Ramp S.R. 101 Interchange
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/29/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 229 MILLIMETERS
	1A	5 / 3 / 4										FILL: Medium-dense (est.) brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B		365-430+	14	25	16	9	6	20	42	23	FILL: Very-stiff to hard brown mottled with gray silty clay, intermixed with silt, some fine sand, trace medium to coarse sand, trace fine gravel. A-4a (6)
		3 / 4 / 8										
1	2		200-430+									FILL: Very-stiff to hard brown mottled with gray silty clay, intermixed with clayey silt, some fine to coarse sand, trace fine gravel, slightly organic.
		3 / 3 / 3										
	3		315-430+									Est. A-6a
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09-29-98

JOB: 6381

PLATE 13

BBC&M ENGINEERING, INC.

LOG OF BORING NO. R-7
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. D-0+400, Center of Ramp S.R. 101 Interchange
COMPLETION DEPTH: 1.80m ELEVATION: ____ DATE: 9/21/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 229 MILLIMETERS
	1A	3 / 4 / 6										FILL: Loose to medium (est.) brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B		285-430+	11	24	15						FILL: Very-stiff to hard brown mottled with dark-gray clayey silt, some fine to coarse sand, trace fine gravel. Est. A-4a
	2A	3 / 4 / 5	335-430+									FILL: Very-stiff to hard brown mottled with gray silty clay, little fine sand, trace medium to coarse sand, trace fine gravel. Est. A-6b
1	2B		375-430+									Very-stiff to hard dark-gray organic silty clay, trace fine to medium sand. Visual
		2 / 3 /										Very-stiff brown mottled with gray silty clay, trace fine to medium sand, trace fine gravel, few seams of silt.
	3	50-122mm	190-270									Est. A-7-6
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/21/98

JOB: 6381

PLATE 14

BBC&M ENGINEERING, INC.

LOG OF BORING NO. R-8
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. B-0+100, Center of Ramp S.R. 101 Interchange
COMPLETION DEPTH: 1.16m ELEVATION: ____ DATE: 9/10/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 244 MILLIMETERS
	1A	4 / 4 / 3										FILL: Medium-dense brown fine to coarse sand, little fine gravel, trace silt. Est. A-1-b
	1B		285-430+	13	27	17	6	8	16	33	37	FILL: Very-stiff to hard brown mottled with gray silty clay, intermixed with clayey silt, some fine to coarse sand, trace fine gravel.
		4 / 6 / 11										
	2		410-430+									A-4a (7)
1												- No seepage encountered.
2												
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/10/98

JOB: 6381

PLATE 15

BBC&M ENGINEERING, INC.

LOG OF BORING NO. R-9
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. C-0+100, Center of Ramp S.R. 101 Interchange
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/21/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 229 MILLIMETERS
	1A		5/5/7										FILL: Loose to medium-dense (est.) brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B			410-430+									FILL: Hard brown mottled with gray silty clay, little fine to coarse sand, partly organic.
			5/6/7										
1	2			400-430+	16	45	21	3	4	11	36	46	A-7-6 (15)
			7/8/8										FILL: Medium-dense brown silt "and" fine sand intermixed with hard brown mottled with dark-gray silty clay, little fine to coarse sand, trace fine gravel.
	3												Est. A-4a
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/21/98

JOB: 6381

PLATE 16

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-1
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 2+900, Center of EB Left Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/22/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 244 MILLIMETERS
	1A		4/6/5										FILL: Medium-dense (est.) brown fine to coarse sand, little fine gravel, little silt. Est. A-1-b
	1B				27	NP	NP						FILL: Medium-dense (est.) brown fine to coarse sand, some fine gravel, some silty clay intermixed with cement. Visual
	1C			315-365									
			2/3/4										FILL: Very-stiff brown mottled with gray silty clay, trace fine to coarse sand, trace fine gravel, few seams of silt.
1	2			190-270	24	56	24	0	0	3	35	62	A-7-6(19)
			2/4/6										
	3			210-325									- No seepage encountered.
2													
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/22/98

JOB: 6381

PLATE 17

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-2
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 3+070, Center of WB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/21/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 229 MILLIMETERS
	1A	5 / 3 / 4										FILL: Loose to medium-dense (est.) brown fine to coarse sand, little fine gravel, little silt. Est. A-1-b
	1B											
	1C		180-200									FILL: Hard brown silty clay, some fine to coarse sand, trace fine gravel. Est. A-6a
		1 / 1 / 3										FILL: Stiff to very-stiff brown mottled with gray and dark-gray silty clay, trace fine to coarse sand, few seams of silt, slightly organic.
1	2		250-305	24	47	22	0	0	1	35	64	
		2 / 3 / 5										
	3		250-280									A-7-6(15)
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/21/98

JOB: 6381

PLATE 18

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-3
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 3+300, Center of EB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/15/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 229 MILLIMETERS
	1A	5 / 4 / 4										FILL: Medium-dense brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B			30	41	27						
	1C		375-430+	16	44	21	0	0	1	44	55	FILL: Stiff brown silty clay, "and" fine to coarse sand, trace fine gravel intermixed with cement. Visual
												Very-stiff to hard brown mottled with gray silty clay, trace fine to medium sand, few seams of silt.
1												
		2 / 4 / 5										
	2		270-430+									A-7-6(14)
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/15/98

JOB: 6381

PLATE 19

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-3B
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 3+300, Center of EB Berm Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/15/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													ASPHALT - 91 MILLIMETERS
	1A		4 / 3 / 2										FILL: Loose gray fine to coarse gravel, trace fine to coarse sand, trace silt. Est. A-1-a
	1B												
	1C												FILL: Loose to medium-dense brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1D			420									
			3 / 3 / 4										FILL: Loose to medium-dense brown fine to coarse sand "and" silty clay, trace fine gravel intermixed with cement. Visual
	2			305-430+	19	42	20	0	0	1	42	57	Very-stiff to hard brown mottled with gray silty clay, trace fine to medium sand, few lenses of silt.
1													
			3 / 6 / 6										
	3			325-430+									A-7-6(13)
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE:

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-4
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 3+565 Center of WB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/29/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													ASPHALT - 15 MILLIMETERS
													CONCRETE - 229 MILLIMETERS
	1A		4 / 4 / 3										FILL: Medium-dense (est.) brown fine to coarse sand, trace fine gravel, little silt. Est. A-1-b
	1B			430+									FILL: Hard brown silty clay, little fine to coarse sand, intermixed with cement. Visual
			2 / 3 / 4										
1	2			295-410	21	51	23	7	1	1	34	57	FILL: Very-stiff to hard brown mottled with gray and dark-gray silty clay, trace fine to coarse sand, trace fine gravel, few seams of silt.
			3 / 3 / 6										
	3			250-365									A-7-6(17)
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09-29-98

JOB: 6381

PLATE 21

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-5
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 3+700, Center of EB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/22/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 229 MILLIMETERS
	1A		4 / 2 / 3										FILL: Loose to medium-dense (est.) brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B			170-180									FILL: Stiff brown silty clay, little fine to coarse sand, trace fine gravel. Est. A-6b
	1C			220-295									FILL: Very-stiff to hard brown mottled with gray silty clay, trace fine to coarse sand, few seams of silt.
			3 / 6 / 7										
1	2			430+									
			2 / 6 / 8										
	3			285-430+									Est. A-6b
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/22/98

JOB: 6381

PLATE 22

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-6
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 3+900, Center of WB Lt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/15/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													ASPHALT - 15 MILLIMETERS CONCRETE - 229 MILLIMETERS
	1A		5 / 4 / 2					40	36	11	13		FILL: Medium-dense brown fine to coarse sand, trace fine gravel, little silt. A-1-b
	1B			375									FILL: Very-stiff brown silty clay, trace fine to coarse sand, trace fine gravel. Est. A-7-6
			4 / 5 / 8										Very-stiff to hard brown mottled with gray silty clay, trace fine to coarse sand, trace fine gravel, few seams of silt.
1	2			305-430+	19	47	23	1	0	1	38	60	
			3 / 4 / 5										
	3			305-395									A-7-6(15)
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/15/98

JOB: 6381

PLATE 23

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-6B
ER1-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 3+900, Center of WB Berm Lane
COMPLETION DEPTH: 1.83 ELEVATION: ____ DATE: 9/15/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												ASPHALT - 76 MILLIMETERS
	1A	4/7/9										FILL: Loose gray fine to coarse gravel, trace fine to coarse sand. Est. A-1-a
	1B											FILL: Loose brown and gray fine to coarse sand, '"and" fine gravel, little silt.
		4/3/3										
	2						63	18	7	12		A-1-a
1												
	3A	2/2/2										Very-stiff brown mottled with gray and dark-gray silty clay, trace fine sand.
	3B		210-230	25	56	23						Est. A-7-6
2												- Encountered very-slight seepage at 1.40m.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/15/98

JOB: 6381

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-7
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 4+100, Center of EB Rt Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/15/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												ASPHALT - 30 MILLIMETERS CONCRETE - 229 MILLIMETERS
	1A	10/7/4										FILL: Medium-dense brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B											FILL: Very-stiff to hard brown mottled with gray silty clay, trace fine to medium sand, intermixed with cement. Visual
		3/5/5										
	2		325-430+	20	50	26	1	1	1	34	63	FILL: Very-stiff to hard brown mottled with gray silty clay, trace fine to coarse sand, trace fine gravel, contains few slightly organic silt seams.
1												A-7-6(16)
	3A	9/23/34	210-270									
	3B											Very-dense gray-brown fine to coarse gravel consisting of limestone fragments, some fine to coarse sand, little silt. Est. A-1-a
2												- No seepage noted.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/15/98

JOB: 6381

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-8
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 4+300, Center of WB Left Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/18/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 229 MILLIMETERS
	1A		5 / 3 / 4										FILL: Loose brown fine to coarse sand, little fine gravel, little silt. Est. A-1-b
	1B			430+									
	1C			430+	17	38	22	0	0	1	52	47	FILL: Hard brown silty clay, some fine to coarse sand, trace fine gravel intermixed with cement. Visual
1													FILL: Hard brown silty clay, trace fine to medium sand, contains several seams of silt.
			5 / 4 / 3										
2				400-430+									A-6b(10)
													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/18/98

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-9
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 4+500, Center of EB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/16/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													ASPHALT - 290 MILLIMETERS
	1A		10 / 4 / 5										FILL: Medium-dense brown fine to coarse sand, some fine gravel, some silt. Est. A-3a
	1B			430+									
	1C			305-430+	19	48	18	0	0	1	42	57	FILL: Hard brown silty clay, some fine to coarse sand, trace fine gravel intermixed with cement. Visual
1													Very-stiff to hard brown mottled with gray silty clay, trace fine to medium sand, few seams of silt.
			3 / 4 / 4										
2				230-355									A-7-6(18)
													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/16/98

JOB: 6381

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-10
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 4+700, Center of WB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/15/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													ASPHALT - 15 MILLIMETERS CONCRETE - 229 MILLIMETERS
	1A		8/9/4										FILL: Medium-dense brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B												
	1C			430+									FILL: Medium-dense brown fine to coarse sand, little fine to coarse gravel, some silty clay, intermixed with cement. Visual
			3/4/5										FILL: Very-stiff to hard brown mottled with gray silty clay, trace fine to coarse sand, trace fine gravel, few seams of silt.
1	2			315-295	20	54	22	0	1	2	39	58	
	3A		3/4/7	230-260									A-7-6(19)
	3B			305-395									Very-stiff to hard dark-gray mottled with brown silty clay, trace fine to medium sand, partly organic. Est. A-7-6
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/15/98

JOB: 6381

PLATE 28

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-11
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 4+900 Center of EB Left Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/22/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 229 MILLIMETERS
	1A		5/7/5										FILL: Loose to medium-dense (est.) brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B			430+									FILL: Hard brown silty clay, trace fine to medium sand intermixed with cement. Visual
			3/5/6										FILL: Very-stiff to hard brown mottled with gray silty clay, trace fine to coarse sand, few seams of silt.
1	2			315-430+	19	54	21	1	1	1	37	60	
	3		2/3/5	305-430+									A-7-6(19)
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/22/98

JOB: 6381

PLATE 29

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-11B
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 4+900, Center of EB Berm Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/16/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												ASPHALT - 91 MILLIMETERS
	1A	4/4/4										FILL: Loose to medium-dense gray fine to coarse gravel, trace fine to coarse sand. Est. A-1-a
	1B											FILL: Loose brown and gray fine gravel, some fine to coarse sand, trace silt. Est. A-1-a
	2A	3/5/3										FILL: Very-stiff to hard brown mottled with gray silty clay, trace fine to medium sand, contains field tile fragments.
	2B		200-430+	21	53	24	0	0	2	38	60	
1												
	3	3/4/6	220-430+									A-7-6(19)
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/16/98

JOB: 6381

PLATE 30

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-12
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 5+100, Center of WB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/14/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												ASPHALT - 15 MILLIMETERS
												CONCRETE - 229 MILLIMETERS
	1A	3/16/5										FILL: Medium-dense brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B			25	NP	NP						
	1C		365-430+									FILL: Medium-dense to dense brown fine to coarse sand, little fine gravel, some silty clay intermixed with cement. Visual
		3/4/5										FILL: Very-stiff to hard brown mottled with gray silty clay, trace fine to medium sand, few seams of silt.
	2		305-430+	18	45	24	0	1	1	41	57	
1												
	3	3/5/5	365-430+									A-7-6(13)
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/14/98

JOB: 6381

PLATE 31

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-13
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 5+300, Center of EB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/16/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													ASPHALT - 15 MILLIMETERS CONCRETE - 229 MILLIMETERS
	1A		9/4/4										FILL: Medium-dense brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B												
	1C			430+									FILL: Hard brown silty clay, some fine to medium sand, little fine gravel, intermixed with cement. Visual
			4/4/4										FILL: Very-stiff to hard brown mottled with gray silty clay, trace fine to medium sand, few silt lenses.
1	2			280-430+	20	48	20	0	1	2	38	59	A-7-6(17)
	3A		3/4/5	230-260									Very-stiff gray mottled with brown becoming gray silty clay, trace fine to medium sand, partly organic, few lenses of silt.
	3B			250-375									Est. A-7-6
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/16/98

JOB: 6381

PLATE 32

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-14
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 5+500, Center of WB Left Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/18/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 229 MILLIMETERS
	1A		5/4/3										FILL: Loose brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B												
	1C												FILL: Loose brown fine to coarse sand, little fine gravel, some silty clay intermixed with cement. Visual
	2A		4/4/6	315-430+	19	51	21	0	0	2	37	61	FILL: Very-stiff to hard brown mottled with gray silty clay, trace fine to medium sand, few seams of silt. A-7-6(18)
1	2B			305-345									Very-stiff gray mottled with brown becoming gray silty clay, trace fine to medium sand, partly organic. Est. A-7-6
	3		4/3/4	335-430+									Very-stiff to hard brown mottled with gray silty clay, trace fine to medium sand, few lenses of silt. Est. A-7-6
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/18/98

JOB: 6381

PLATE 33

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-14B
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 5+500, Center of WB Berm Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/14/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												ASPHALT - 91 MILLIMETERS
	1A	5/4/3										FILL: Loose to medium-dense gray fine to coarse gravel, trace fine to coarse sand. Est. A-1-a
	1B											
	1C		325-430+	18	54	22						FILL: Medium-dense brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
1												FILL: Very-stiff to hard brown mottled with gray silty clay, trace fine to coarse sand, few lenses of silt. Est. A-7-6
	2	3/4/3	230-260									Very-stiff brown mottled with gray silty clay, trace fine to coarse sand, few silt lenses. Est. A-7-6
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/14/98

JOB: 6381

PLATE 34

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-15
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: STA 5+700 Center of EB Rt Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/29/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												ASPHALT - 30 MILLIMETERS CONCRETE - 229 MILLIMETERS
	1A	6/4/3										FILL: Medium-dense (est.) brown fine to coarse sand, little fine gravel, little silt. Est. A-1-b
	1B		190-280									FILL: Very-stiff brown mottled with gray silty clay, trace fine to coarse sand. Est. A-7-6
		2/3/4										
1	2		220-365	21	38	19	1	1	1	57	40	FILL: Very-stiff brown mottled with gray silty clay, intermixed with silt, trace fine to coarse sand, trace fine gravel. A-6b(12)
	3A	2/3/18	115-250									Stiff to very-stiff brown intermixed with dark-brown silty clay, trace fine to coarse sand. Est. A-7-6
	3B											Dense gray fine to coarse gravel, consisting of limestone fragments, fine to coarse sand, little silt. Est. A-1-a
2												- No seepage noted.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09-29-98

JOB: 6381

PLATE 35

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-16
ERI-2-2.866 PAVEMENT SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger
51mm O.D. Split-barrel Sampler
LOCATION: Sta. 5+900, Center of WB R. Lane
COMPLETION DEPTH: 1.83m ELEVATION: DATE: 9/14/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
												ASPHALT - 75 MILLIMETERS
												CONCRETE - 229 MILLIMETERS
												FILL: Medium-dense brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
												FILL: Very-stiff to hard brown mottled with gray silty clay, trace fine to coarse sand, trace fine gravel, few seams of silt.

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-17
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

Page 1 of 1

TYPE: 83mm I.D. Hollow-stem Auger
51mm O.D. Split-barrel Sampler
LOCATION: Sta. 6+100 Center of EB Left Lane
COMPLETION DEPTH: 1.83m ELEVATION: DATE: 9/22/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 229 MILLIMETERS
	1A	5/4/3										FILL: Loose (est.) brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B											
	1C		230-375	21	37	18						FILL: Medium-dense (est.) brown fine to coarse sand, "and" fine to coarse gravel, little silty clay, intermixed with cement. Visual
		1/3/6										
1	2		315-430+	19	41	22	0	0	1	44	55	FILL: Very-stiff brown mottled with gray and dark-gray silty clay, trace fine to medium sand, few seams of silt.
		3/5/6										
	3		430+									A-7-6(12)
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/22/98

JOB: 6381

PLATE 37

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-18
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 6+343, Center of WB Ramp Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/18/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 229 MILLIMETERS
	1A	5 / 3 / 3										FILL: Loose brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B		430+									FILL: Hard brown silty clay, some fine to coarse sand, trace fine gravel intermixed with cement. Visual
	1C		190-220									FILL: Stiff to very-stiff brown mottled with gray silty clay, trace fine to coarse sand, few seams of silt.
		1 / 3 / 3										
1	2		115-250	24	49	23	0	1	2	39	58	A-7-6(16)
												FILL: Hard brown mottled with gray silty clay, trace fine to coarse sand, trace fine gravel. Est. A-7-6
	3A	3 / 3 / 4	385-430+									
	3B		305-430+									FILL: Very-stiff to hard gray silty clay, intermixed with dark-gray organic clayey silt, trace fine to coarse sand. Est. A-6a
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/18/98

JOB: 6381

PLATE 38

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-19
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 13+400, Center of EB Ramp Lane
COMPLETION DEPTH: 1.22m ELEVATION: ____ DATE: 9/9/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 244 MILLIMETERS
	1A	2 / 3 / 4					40	36	12	12		FILL: Loose (est.) brown fine to coarse sand, trace fine gravel, little silt. A-1-b
	1B		430+	20	49	22	2	1	1	43	53	FILL: Very-stiff to hard brown mottled with gray silty clay, trace fine to coarse sand, trace fine gravel, few seams of silt.
	2A	3 / 4 / 5	285-335	24								A-7-6(17)
1	2B		285-430									Very-stiff to hard dark-brown mottled with dark-gray silty clay, trace fine to medium sand, contains decayed vegetation. Est. A-7-6
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/09/98

JOB: 6381

PLATE 39

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-19B
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: STA 13+400, Center of EB Berm Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/29/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													ASPHALT - 152 MILLIMETERS
	1A		6 / 6 / 4										FILL: Loose (est.) brown and gray fine to coarse gravel, trace fine to coarse sand. Est. A-1-a
	1B												FILL: Loose brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
			2 / 2 / 3										Stiff to very-stiff brown mottled with gray silty clay, trace fine to coarse sand, trace fine gravel, few roots near top of stratum.
1	2			155-270	24	47	24	5	4	4	38	49	
			2 / 3 / 5										
	3			180-270									A-7-6(15)
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09-29-98

JOB: 6381

PLATE 40

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-20
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 13+600, Center of WB Left Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/18/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 229 MILLIMETERS
	1A		3 / 2 / 3										FILL: Loose brown fine to coarse sand, little fine gravel, little silt. Est. A-1-b
	1B			315-355									FILL: Very-stiff brown mottled with gray silty clay, intermixed with organic clayey silt, trace fine to medium sand. Est. A-6a
			3 / 5 / 3										FILL: Very-stiff brown mottled with gray silty clay, trace fine to medium sand, few seams of silt.
1	2			210-345	22	49	21	0	0	2	42	56	
			3 / 4 / 3										
	3			260-365									A-7-6(17)
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/18/98

JOB: 6381

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-21
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 13+800 Center of EB Rt. Lane
COMPLETION DEPTH: 1.16m ELEVATION: ____ DATE: 9/9/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 244 MILLIMETERS
	1A	2 / 2 / 3										FILL: Loose (est.) gray fine to coarse sand, some fine to coarse gravel, trace silt. Est. A-1-b
	1B		385-430	19	44	22	1	1	2	38	58	FILL: Very-stiff to hard brown mottled with gray silty clay, trace fine to coarse sand, trace fine gravel. A-7-6(14)
		3 / 2 / 4										FILL: Very-stiff to hard brown mottled with gray and dark-gray silty clay, trace fine to coarse sand, few seams of organic silt.
1	2		285-430									Est. A-7-6
												- No seepage encountered.
2												
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/09/98

JOB: 6381

PLATE 42

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-22
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 14+000 Center of WB Ramp Lane
COMPLETION DEPTH: 1.52m ELEVATION: ____ DATE: 9/2/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 244 MILLIMETERS
												FILL: Loose (est.) brown fine to coarse sand, little fine gravel, little silt. Est. A-1-b
		2 / 3 / 5										FILL: Hard brown mottled with gray silty clay, intermixed with silt, trace fine to medium sand.
	1		430+	17	34	20	0	1	1	53	45	A-6a(10)
1		3 / 4 / 6										FILL: Hard brown mottled with gray silty clay, intermixed with dark-gray organic silt, trace fine to coarse sand.
	2		430+									Est. A-6a
												- No seepage encountered.
2												
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/02/98

JOB: 6381

PLATE 43

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-22B

ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 14+000, Center of WB Rt. Berm Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/2/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												ASPHALT - 153 MILLIMETERS
												FILL: Loose (est.) fine to coarse sand, little fine gravel, little silt.
												Est. A-1-b
												Very-stiff to hard brown mottled with gray silty clay, trace fine to medium sand, few seams of silt, becoming desiccated with depth.
1		3/4/4										
	1		385-430	19	44	21	0	1	1	45	53	
		3/5/5										
	2		385-430									A-7-6(14)
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/02/98

JOB: 6381

PLATE 44

BBC&M ENGINEERING, INC.

ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 14+200 Center of EB Left Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/28/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												ASPHALT - 229 MILLIMETERS
	1A	4/3/3										FILL: Medium-dense (est.) brown fine to coarse sand, trace fine gravel, little silt.
												Est. A-1-b
	1B		295-430+	20	40	19						Very-stiff to hard brown mottled with gray silty clay, trace fine to coarse sand, trace fine gravel.
1												Est. A-6b
		2/3/5										Very-stiff brown mottled with gray silty clay, trace fine to medium sand, slightly organic.
	2		200-325									Est. A-7-6
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09-28-98

JOB: 6381

PLATE 45

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-24
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 14+400, Center of WB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/2/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 243 MILLIMETERS
												FILL: Loose (est.) brown fine to coarse sand, some fine to coarse gravel, little silt. Est. A-1-b
	1A	2/2/4	385	17								FILL: Very-stiff to hard brown mottled with gray silty clay, trace fine to coarse sand, trace fine gravel.
	1B		240-335	24	72	24	1	1	2	44	52	
1												
	2	3/3/5	385-430+									A-7-6(20)
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/02/98

JOB: 6381

PLATE 46

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-25
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 14+600, Center of EB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/9/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 213 MILLIMETERS
	1A	5/3/3					38	36	12	14		FILL: Medium-dense brown fine to coarse sand, trace fine gravel, little silt. A-1-b
	1B		250-305	23	46	22						FILL: Very-stiff brown mottled with gray and dark-gray silty clay, trace fine to coarse sand.
1												Est. A-7-6
	2	3/3/5										Very-stiff brown mottled with gray silty clay, trace fine to coarse sand. Est. A-7-6
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/09/98

JOB: 6381

PLATE 47

BBC&M ENGINEERING, INC.

ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 14+800, Center of WB Left Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/18/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 229 MILLIMETERS
	1A		4 / 2 / 3										FILL: Loose fine to coarse sand, trace fine gravel, little silt. Est. A-1-b
	1B			250									FILL: Very-stiff brown mottled with gray and dark-gray silty clay, trace fine to coarse sand, trace fine gravel, few silt seams.
	2A		3 / 5 / 4	270-375	20	44	20	1	1	1	47	50	A-7-6(14)
1	2B												Loose dark-gray organic silt, trace fine to medium sand. Visual
	3A		4 / 4 / 4	170-200									Stiff to very-stiff brown mottled with gray and dark-brown silty clay, trace fine to medium sand, partly organic. Est. A-7-6
	3B			210-325									Very-stiff gray mottled with brown silty clay, trace fine to medium sand. Est. A-7-6
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/18/98

JOB: 6381

PLATE 48

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-27

ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 15+000 Center of EB Rt. Lane
COMPLETION DEPTH: 1.13m ELEVATION: ____ DATE: 9/9/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 213 MILLIMETERS
	1A		5 / 3 / 2					40	33	12		15	FILL: Loose gray-brown fine to coarse sand, trace fine gravel, little silt. A-1-b
	1B			180-280	20								FILL: Stiff to very-stiff brown mottled with gray and dark-gray silty clay, trace fine to coarse sand, trace fine gravel. Est. A-7-6
	2		3 / 4 / 5	305-430+	20	43	20						FILL: Very-stiff to hard brown mottled with gray silty clay, little fine to coarse sand, trace fine gravel, slightly organic. Est. A-7-6
1													
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/09/98

JOB: 6381

PLATE 49

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-27B
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 15+000, Center of EB Rt. Berm
COMPLETION DEPTH: 1.07m ELEVATION: ____ DATE: 9/9/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													ASPHALT - 91 MILLIMETERS
	1A		5/3/2										FILL: Medium-dense gray fine gravel, little fine to coarse sand, trace silt. Est. A-1-a
	1B												FILL: Medium-dense brown fine to coarse sand, trace fine gravel, trace silt. Est. A-1-b
	1C			240-305	20	55	21	0	1	2	49	48	FILL: Very-stiff to hard brown mottled with gray silty clay, trace fine to coarse sand, trace fine gravel.
			3/4/4										
	2			305-430+									A-7-6(19)
1													Very-stiff gray mottled with dark-gray silty clay, trace fine to coarse sand. Est. A-7-6
													- No seepage encountered.
2													
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/09/98

JOB: 6381

PLATE 50

BBC&M ENGINEERING, INC.

ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 15+170, Center of WB Rt. Lane
COMPLETION DEPTH: 1.52m ELEVATION: ____ DATE: 9/2/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 244 MILLIMETERS
													FILL: Loose (est.) brown fine to coarse sand, little fine to coarse gravel, little silt. Est. A-1-b
			3/5/5										FILL: Hard brown mottled with gray silty clay, trace fine to coarse sand, trace fine gravel, few seams of silt.
	1			430+	19	33	17	0	1	1	55	43	A-6b(10)
1			3/4/5										FILL: Very-stiff to hard brown mottled with gray and dark-gray silty clay, trace fine to coarse sand, trace fine gravel, slightly organic. Est. A-7-6
	2			335-430									- No seepage encountered.
2													
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/02/98

JOB: 6381

PLATE 51

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-29
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: STA 15+340 Center of EB Left Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/28/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 229 MILLIMETERS
	1A	4 / 3 / 4										FILL: Medium-dense (est.) brown fine to coarse sand, trace fine gravel, little silt. Est. A-1-b
	1B		285-430+	13	25	15	6	10	19	36	29	FILL: Very-stiff to hard brown mottled with gray clayey silt, some fine to coarse sand, trace fine gravel. A-4a(6)
		2 / 2 / 6										
1	2		430+									FILL: Hard brown intermixed with dark-gray silty clay, some fine to coarse sand, trace fine gravel. Est. A-6b
		4 / 5 / 6										
	3											FILL: Medium-dense dark gray and brown fine sand, little silt intermixed with hard gray clayey silt, some fine to coarse sand, trace fine gravel. Est. A-2-4
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09-28-98

JOB: 6381

PLATE 52

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-30
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 15+500, Center of WB Rt. Lane
COMPLETION DEPTH: 1.68m ELEVATION: ____ DATE: 9/1/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 244 MILLIMETERS
												FILL: Loose (est.) brown fine to coarse sand, little fine gravel, little silt. Est. A-1-b
		4 / 5 / 6										
1	1		430+	16	39	19	3	2	37	35	23	FILL: Hard brown intermixed with gray silty clay, "and" fine sand, trace medium to coarse sand, trace fine gravel, few seams of fine sand, slightly organic. A-6b(9)
	2A	2 / 5 / 8	385									FILL: Hard brown intermixed with dark-brown silty clay, trace fine to coarse sand, trace fine gravel. Est. A-7-6
	2B		430+									FILL: Hard brown mottled with gray and dark-gray silty clay intermixed with clayey silt, some fine to coarse sand, trace fine gravel. Est. A-6a
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/01/98

JOB: 6381

PLATE 53

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-30B
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 15+500, Center of WB Rt. Berm
COMPLETION DEPTH: 2.13m ELEVATION: ____ DATE: 9/1/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												ASPHALT - 122 MILLIMETERS
												FILL: Loose (est.) brown-gray fine to coarse gravel, little fine to coarse sand, trace silt. Est. A-1-a
1	1	50R-183mm	430	9	30	17						FILL: Hard gray intermixed with brown silty clay, little fine to coarse sand, trace fine gravel, contains cobbles. Est. A-6a
2	2	5 / 7 / 7	365-430									FILL: Very-stiff to hard brown mottled with gray and dark-gray silty clay intermixed with clayey silt, some fine to coarse sand, trace fine gravel. Est. A-6a
												- Encountered cobbles at 1.4m.
												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/01/98

JOB: 6381

PLATE 54

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-30BB
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: STA 15+500 WB Berm Lane, 2.1m north of edge of concrete
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/29/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												ASPHALT - 91 MILLIMETERS
												FILL: Loose (est.) gray fine to coarse gravel, little fine to coarse sand, trace silt. Est. A-1-a
1	1	4 / 6 / 7	430+	13	29	17	7	6	19	36	32	FILL: Very-stiff to hard brown mottled with gray and dark-gray silty clay, some fine to coarse sand, trace fine to coarse gravel, few seams of fine to coarse sand. A-6a(7)
	2	3 / 3 / 6	305-430+									
2	3	4 / 7 / 5	430+									FILL: Hard brown silty clay intermixed with gray clayey silt, some fine to coarse sand, trace fine gravel. Est. A-6a
												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09-29-98

JOB: 6381

PLATE 55

BBC&M ENGINEERING, INC.

ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 15+670, Center of EB Rt. Lane
COMPLETION DEPTH: 1.13m ELEVATION: ____ DATE: 9/10/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG. %	C.S. %	F.S. %	SILT %	CLAY %	DESCRIPTION
0													CONCRETE - 213 MILLIMETERS
	1A		3 / 3 / 4										FILL: Medium-dense brown fine to coarse sand, trace fine gravel, little silt. Est. A-1-b
	1B			250-375	17	35	17	3	3	14	44	36	FILL: Very-stiff brown and dark-brown silty clay, little fine to coarse sand, trace fine gravel. A-6b(11)
			3 / 3 / 4										
	2			240-430+	14								FILL: Very-stiff to hard brown silty clay intermixed with gray mottled with brown clayey silt, some fine to coarse sand, trace fine gravel. Est. A-6a
1													
													- No seepage encountered.
2													
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/10/98

JOB: 6381

PLATE 56

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-32
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 15+900, Center of WB Left Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/17/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG. %	C.S. %	F.S. %	SILT %	CLAY %	DESCRIPTION
0													CONCRETE - 229 MILLIMETERS
	1A		4 / 5 / 8										FILL: Medium-dense brown fine to coarse sand, some fine gravel, trace silt. Est. A-1-b
	1B			430+	11	30	18	6	8	15	39	32	FILL: Hard brown mottled with gray silty clay, some fine to coarse sand, trace fine gravel. A-6a (8)
			14 / 10 / 6										
	2			430+									FILL: Very-stiff gray mottled with brown silty clay, trace fine to coarse sand, trace fine gravel. Est. A-7-6
1													
			4 / 4 / 5										FILL: Very-stiff dark-gray intermixed with gray mottled with brown silty clay, trace fine to medium sand, slightly organic. Est. A-7-6
	3			200-325									
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/17/98

JOB: 6381

PLATE 57

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-33
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 16+100, Center of EB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/10/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 244 MILLIMETERS
	1A		3 / 3 / 4										FILL: Medium-dense brown fine to coarse sand, trace fine gravel, little silt. Est. A-1-b
	1B			355-430+	17	46	20	0	1	11	50	38	FILL: Very-stiff to hard dark-gray intermixed with gray and brown silty clay, little fine to coarse sand, slightly organic. A-7-6 (16)
1													Very-stiff brown mottled with gray silty clay, trace fine to coarse sand.
			3 / 4 / 4										
	2			220-305									Est. A-7-6
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/10/98

JOB: 6381

PLATE 58

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-34
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 16+300, Center of WB Ramp Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/1/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 244 MILLIMETERS
													FILL: Medium-dense (est.) brown fine to coarse sand, little fine gravel, little silt. Est. A-1-b
			3 / 4 / 5										
	1			430+	15	36	24	2	2	17	48	31	FILL: Hard brown mottled with gray silty clay, little fine to coarse sand, trace fine gravel, slightly organic. A-6a (9)
1													
			3 / 3 / 5										Very-stiff brown mottled with gray and dark-gray silty clay, little fine sand, trace medium to coarse sand, trace fine gravel.
	2			285-365	20								Est. A-6a
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/01/98

JOB: 6381

PLATE 59

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-35
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 16+520, Center of EB Left Lane
COMPLETION DEPTH: 1.98m ELEVATION: ____ DATE: 9/28/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 229 MILLIMETERS
	1A		5 / 4 / 3										FILL: Medium-dense (est.) brown fine to coarse sand, trace fine gravel, little silt. Est. A-1-b
	1B			430+	16	36	19						POSSIBLE FILL: Hard dark gray mottled with brown silty clay, trace fine to coarse sand, trace fine gravel. Est. A-6b
1													Very-stiff to hard brown mottled with gray silty clay intermixed with fine sand, trace medium sand.
			3 / 5 / 6 /5										
	2			270-395									Est. A-6a
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09-28-98

JOB: 6381

PLATE 60

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-35B
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 16+520, Center of EB Berm Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/21/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													ASPHALT - 168 MILLIMETERS
	1A		5 / 5 / 5										FILL: Loose to medium-dense (est.) gray fine gravel, some coarse gravel, trace fine to coarse sand. Est. A-1-a
	1B							63	17	8	12		FILL: Loose brown fine to coarse sand, "and" fine to coarse gravel, little silt. Est. A-1-a
	2A		3 / 3 / 4										
1	2B			200-270									FILL: Very-stiff dark-gray silty clay, trace fine to coarse sand, partly organic. Est. A-7-6
			3 / 4 / 5										Very-stiff dark-gray mottled with gray and brown organic clayey silt, some fine sand. Visual
	3			210-430+									Very-stiff to hard brown mottled with gray silty clay "and" fine sand, trace medium to coarse sand. Est. A-6a
2													- Encountered slight seepage at 1.71m.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/21/98

JOB: 6381

PLATE 61

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-36
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 16+700, Center of WB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/1/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 244 MILLIMETERS
												FILL: Medium-dense (est.) brown fine to coarse sand, little fine gravel, little silt. Est. A-1-b
	1A	5/5/6	430	9	34	17	3	4	14	42	37	FILL: Hard brown intermixed with gray and dark-gray silty clay, little fine to coarse sand, trace fine gravel. A-6b (11)
1	1B		430	23								Hard dark-gray silty clay, trace fine to medium sand. Est. A-7-6
	2A	3/4/6	430									Very-stiff brown mottled with gray and dark-gray silty clay, trace fine to coarse sand, trace fine gravel.
	2B		285-335									Est. A-7-6
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/01/98

JOB: 6381

PLATE 62

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-37
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 16+900, Center of EB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/10/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 213 MILLIMETERS
	1A	4/5/4					44	34	11	11		FILL: Medium-dense brown fine to coarse sand, trace fine gravel, little silt. A-1-b
	1B		375-430+	12	30	18	5	6	16	38	35	FILL: Very-stiff to hard brown mottled with gray and dark-gray silty clay, some fine to coarse sand, trace fine gravel. A-6a (8)
1												Hard brown mottled with gray silty clay, little fine to coarse sand, trace fine to coarse gravel.
	2	3/4/5	400-430+									Est. A-6b
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/10/98

JOB: 6381

PLATE 63

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-38
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 17+100, Center of WB Left Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/17/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 229 MILLIMETERS
	1A	3 / 3 / 4										FILL: Medium-dense brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B		315-430+	18	41	21						FILL: Very-stiff to hard brown mottled with gray and dark-gray silty clay, trace fine to medium sand. Est. A-7-6
1												Very-stiff brown mottled with gray and dark-gray silty clay, little fine to coarse sand, trace fine gravel.
	2	4 / 4 / 4	210-365									Est. A-6b
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/17/98

JOB: 6381

PLATE 64

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-38B
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 17+100, Center of WB Rt. Berm Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/1/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												ASPHALT - 122 MILLIMETERS
												FILL: Medium-dense (est.) brown fine to coarse sand, little fine gravel, little silt. Est. A-1-b
	1	2 / 2 / 5	335-410	23	55	24	1	1	8	40	50	FILL: Very-stiff to hard brown mottled with gray intermixed with dark-gray silty clay, trace fine to coarse sand. A-7-6 (19)
1												Very-stiff brown mottled with gray and dark-gray silty clay, trace fine to coarse sand.
	2	2 / 4 / 4	285-345									Est. A-7-6
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/01/98

JOB: 6381

PLATE 65

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-39
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 17+300, Center of EB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/10/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 213 MILLIMETERS
	1A		4/5/7										FILL: Medium-dense brown fine to coarse sand, little fine gravel, trace silt. Est. A-1-b
	1B			430+	25	31	20	10	3	29	29	29	FILL: Hard gray silty clay, some fine to coarse sand, trace fine gravel, slightly organic. A-6a (5)
1													Very-stiff brown mottled with gray silty clay, trace fine to coarse sand.
	2		4/5/6	230-325	20								Est. A-7-6
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/10/98

JOB: 6381

PLATE 66

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-40
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 17+500, Center of WB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 8/31/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 244 MILLIMETERS
													FILL: Loose (est.) gray fine to coarse sand, little fine gravel, little silt. Est. A-1-b
													FILL: Very-loose gray, dark-gray and brown fine sand, "and" silty clay, trace medium to coarse sand.
1	1A		1/3/3	145-190	18	27	14	1	1	54	26	18	A-6a (3)
	1B			240-300									Stiff to very-stiff brown mottled with gray silty clay, trace fine to medium sand, few seams of silt.
	2		S/P/2/2	160-200									Est. A-7-6
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/31/98

JOB: 6381

PLATE 67

BBC&M ENGINEERING, INC.

ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 17+700, Center of EB Left Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/28/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 229 MILLIMETERS
	1A		4/5/3										FILL: Medium-dense (est.) brown fine to coarse sand, trace fine gravel, little silt. Est. A-1-b
	1B				16	27	18	9	3	42	27	19	FILL: Loose dark-gray fine sand intermixed with brown silty clay, trace medium to coarse sand, trace fine gravel. A-4a (2)
1													Hard brown mottled with gray silty clay, trace fine to coarse sand, trace fine gravel.
	2		4/5/6	430+									Est. A-7-6
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09-28-98

JOB: 6381

PLATE 68

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-42
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 17+900, Center of WB Rt. Lane
COMPLETION DEPTH: 1.40m ELEVATION: ____ DATE: 8/31/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 244 MILLIMETERS
													FILL: Medium-dense (est.) brown fine to coarse sand, some fine to coarse gravel, little silt. Est. A-1-b
1	1		50R-122mm										Medium-hard gray limestone. Visual
	2		50R-30mm										- No seepage encountered.
2													
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 08/31/98

JOB: 6381

PLATE 69

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-43

ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 18+100, Center of EB Rt. Lane
COMPLETION DEPTH: 1.43m ELEVATION: ____ DATE: 9/11/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 213 MILLIMETERS
	1A	4/4/7										FILL: Medium-dense brown fine to coarse sand, little fine gravel, trace silt. Est. A-1-b
	1B		430+	14								
	1C		430+	8	27	16	8	10	18	34	30	FILL: Hard brown mottled with dark-gray silty clay, some fine to coarse sand, trace fine gravel. Est. A-6a
1												FILL: Hard gray silty clay, some fine to coarse sand, trace fine gravel. A-6a (6)
	2	50R-30mm										Medium-hard gray limestone. Visual
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/11/98

JOB: 6381

PLATE 70

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-43B

ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 18+100, Center of EB Rt. Berm Lane
COMPLETION DEPTH: 1.40m ELEVATION: ____ DATE: 9/11/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												ASPHALT - 61 MILLIMETERS
	1A	6/9/8										FILL: Loose medium-dense brown and gray fine gravel, trace fine to coarse sand, trace silt. Est. A-1-a
	1B						59	19	9	13		FILL: Medium-dense brown fine to coarse sand, "and" some fine gravel, little silt. A-1-a
1		4/3/1										FILL: Loose brown fine gravel, "and" fine to coarse sand, trace silt.
	2						75	13	5	7		A-1-a
	3	50R-30mm										Medium-hard to hard gray limestone. Visual
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/11/98

JOB: 6381

PLATE 71

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-43BB
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 18+100, EB Berm Lane, 1.7m south of edge of concrete
COMPLETION DEPTH: 1.40m ELEVATION: ____ DATE: 9/29/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													ASPHALT - 122 MILLIMETERS
													FILL: Loose (est.) gray fine to coarse gravel, little fine to coarse sand, trace silt. Est. A-1-a
	1A		5/6/7										FILL: Loose to medium-dense (est.) brown fine to coarse sand, trace fine gravel, little silt. Est. A-1-b
	1B			430+	11	26	16	7	10	16	34	33	FILL: Hard gray silty clay, some fine to coarse sand, trace fine gravel. A-4a (6)
1													Medium-hard gray limestone. Visual
	2		50-30mm										- No seepage encountered.
2													
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09-29-98

JOB: 6381

PLATE 72

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-44
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 18+300, Center of WB Left Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/17/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 229 MILLIMETERS
	1A		5/4/4										FILL: Medium-dense brown fine to coarse sand, some fine gravel, little silt. Est. A-1-b
	1B			365-430+									FILL: Very-stiff to hard brown mottled with gray silty clay, little fine to coarse sand, trace fine gravel. Est. A-6b
			5/7/6										
1	2			430+	11	24	16	11	9	16	37	27	FILL: Hard gray intermixed with brown clayey silt, some fine to coarse sand, trace fine gravel. A-4a (6)
			5/7/5										FILL: Very-stiff to hard brown mottled with gray silty clay, some fine to coarse sand, trace fine to coarse gravel. Est. A-6a
	3			345-430+									- No seepage encountered.
2													
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/17/98

JOB: 6381

PLATE 73

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-45
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 18+700, Center of EB Rt. Lane
COMPLETION DEPTH: 1.22m ELEVATION: ____ DATE: 9/11/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG. %	C.S. %	F.S. %	SILT %	CLAY %	DESCRIPTION
0													CONCRETE - 213 MILLIMETERS
	1A		6/7/5										FILL: Medium-dense brown fine to coarse sand, little fine gravel, little silt. Est. A-1-b
	1B			430+	12	33	17	2	6	18	45	29	FILL: Very-stiff to hard brown mottled with gray and dark-gray silty clay, little to some fine to coarse sand, trace fine gravel.
			3/4/4										
1	2			260-430+	15								A-6b (10)
													- No seepage encountered.
2													
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/11/98

JOB: 6381

PLATE 74

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-46
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 114mm O.D. Continuous-flight Auger; 51mm and 64mm O.D. Split-barrel Samplers
LOCATION: Sta 18+900, Center of WB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 8/31/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG. %	C.S. %	F.S. %	SILT %	CLAY %	DESCRIPTION
0													CONCRETE - 244 MILLIMETERS
													FILL: Loose (est.) brown fine to coarse sand, some fine to coarse gravel, little silt. Est. A-1-b
			8/6/4										
1	1			430+	15	50	22	16	3	6	28	47	FILL: Hard brown mottled with gray silty clay, little to some fine to coarse sand, little fine to coarse gravel. A-7-6 (17)
	2S		5/5/9										
	2			335-385									FILL: Very-stiff to hard brown intermixed with gray and dark-gray silty clay, little fine to coarse sand, trace fine gravel, slightly organic. Est. A-7-6
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 08/31/98

JOB: 6381

PLATE 75

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-46B
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta 18+900, Center of WB Rt. Berm
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 8/31/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													ASPHALT - 91 MILLIMETERS
													FILL: Loose (est.) brown fine to coarse sand, some fine to coarse gravel, little silt.
													Est. A-1-b
1			2/4/6										FILL: Hard brown mottled with gray and dark-gray silty clay, some fine to coarse sand, trace fine gravel.
	1			430	15	46	22	4	6	14	40	36	
			4/4/8										A-7-6 (15)
	2A			385									FILL: Hard brown mottled with gray and dark-gray silty clay, some fine to medium sand, trace coarse sand, slightly organic.
	2B			385									Est. A-7-6
2													- No seepage encountered.
3													

WATER LEVEL: "Dry"
WATER NOTE:
DATE: 08/31/98

JOB: 6381

PLATE 76

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-46BB
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 18+900 WB Berm Lane, 2m north of edge of concrete
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/29/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													ASPHALT - 91 MILLIMETERS
													FILL: Loose (est.) gray fine to coarse gravel, little fine to coarse sand, trace silt.
													Est. A-1-a
			3/3/5										FILL: Loose medium-dense (est.) brown fine to coarse sand, some fine gravel, little silt.
	1			345-400	15	37	19	11	4	11	32	42	Est. A-1-b
			4/7/8										FILL: Very-stiff to hard brown mottled with gray silty clay, little fine to coarse sand, trace fine gravel, few seams of clayey silt, few seams of fine sand and silt.
1	2			355-430+									
													A-6b (11)
			3/3/6										FILL: Very-stiff to hard brown mottled with gray silty clay, little fine to medium sand, partly organic.
	3			285-430+									Est. A-6b
2													- No seepage encountered.
3													

WATER LEVEL: "Dry"
WATER NOTE:
DATE: 09-29-98

JOB: 6381

PLATE 77

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-47
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 51mm O.D. Split-barrel Sampler
LOCATION: Sta. 19+060, Center of EB Left Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/28/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE 229 MILLIMETERS
	1A		4 / 3 / 4										FILL: Medium-dense (est.) brown fine to coarse sand, trace fine gravel, little silt. Est. A-1-b
	1B			375-430+	14	30	17	7	7	25	32	29	FILL: Very-stiff to hard dark gray intermixed with brown silty clay, some fine to coarse sand, trace fine gravel. A-6a (6)
1	2		3 / 7 / 8	430+									Very-stiff to hard brown mottled with gray silty clay, trace becoming some fine to coarse sand, trace fine gravel, few seams of clayey silt.
	3		4 / 5 / 7	365-430+									Est. A-6b
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09-28-98

JOB: 6381

PLATE 78

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-48
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 114mm O.D. Continuous-flight Auger; 51mm and 64mm O.D. Split-barrel Samplers
LOCATION: Sta 19+245, Center of WB Rt. Lane
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 8/31/98

DEPTH, METERS	SAMPLE NO.	SAMPLES	SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0													CONCRETE - 213 MILLIMETERS
			13 / 13 / 8										FILL: Medium-dense gray fine to coarse sand, trace fine gravel, little silt. A-1-b
1	1							34	37	13	16		Stiff to very-stiff brown mottled with gray and red-brown silty clay, trace fine to medium sand, many seams of silt.
	2		3 / 4 / 5	160-240	24								Est. A-6b
2													- No seepage encountered.
3													

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 08/31/98

JOB: 6381

PLATE 79

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-49
ERI-2-2.866 PAVEMENT/SUBGRADE INVESTIGATION
ERIE COUNTY, OHIO

TYPE: 83mm I.D. Hollow-stem Auger
51mm O.D. Split-barrel Sampler

LOCATION: Sta 19+435, Center of EB Rt. Lane

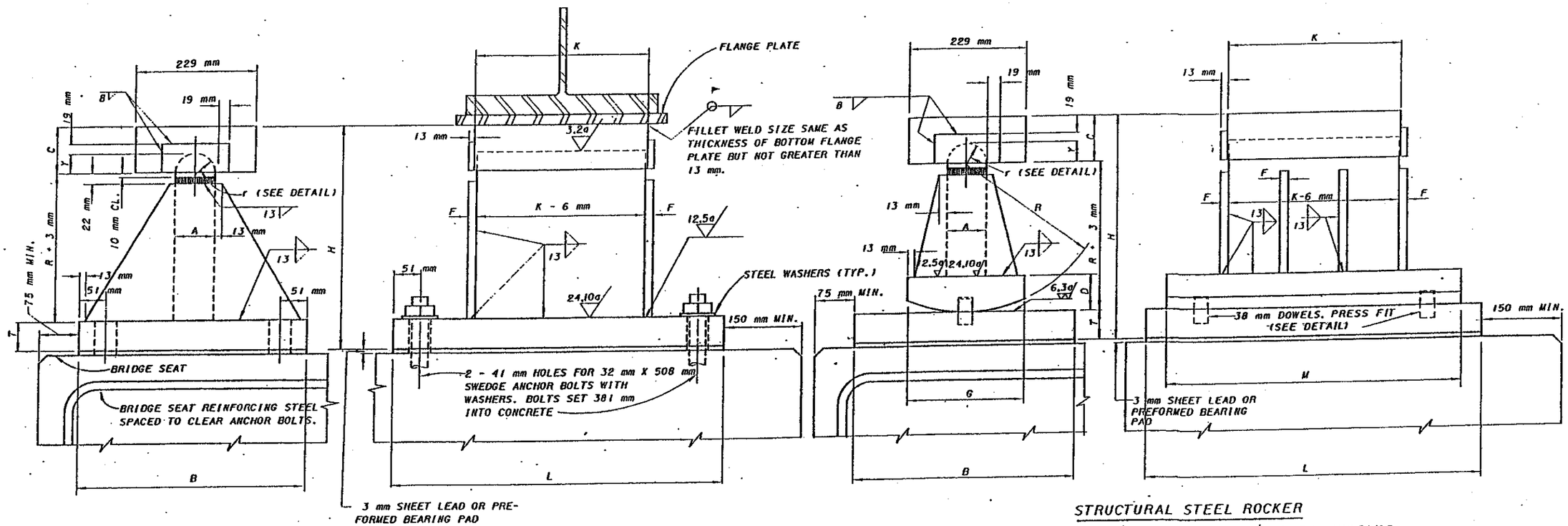
COMPLETION DEPTH: 1.83m ELEVATION: ____ DATE: 9/11/98

DEPTH, METERS	SAMPLE NO.	SAMPLES SAMPLING EFFORT	HAND PENE-TROMETER kPa	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
0												CONCRETE - 213 MILLIMETERS
	1	6/10/6					36	35	13	16		FILL: Medium-dense brown fine to coarse sand, trace fine gravel, little silt. A-1-b
1	2	4/4/5	250-430+	21	45	20	1	1	4	47	47	Very-stiff to hard brown silty clay, trace fine to coarse sand, trace fine gravel, few seams of silt. A-7-6 (15)
	3A	4/6/9	125-180									Stiff brown mottled with gray silty clay, trace fine to medium sand, few seams of silt. Est. A-7-6
	3B		430+	22								Hard brown silty clay, little fine to coarse sand, trace fine gravel, desiccated. Est. A-6b
2												- No seepage encountered.
3												

WATER LEVEL: ▽ "Dry"
WATER NOTE:
DATE: 09/11/98

JOB: 6381

PLATE 80



STRUCTURAL STEEL BOLSTER

SEE TABLE BELOW FOR ADDITIONAL DIMENSIONS.

BOLSTER NO.	ROCKER NO.	DIMENSIONS (MILLIMETERS)													WEIGHT EACH (Kg)		MAXIMUM LOAD (kN)
		A	B	C	D	F	G	H	K	L	M	R	T	Y	BOLSTER	ROCKER	
	R-340	64	203	64	44	13	178	244	229	457	406	140	38	30		93	340
B-450	R-450	64	254	64	51	13	191	270	229	483	432	165	38	30	102	114	450
B-575	R-575	76	279	76	51	13	203	308	267	508	457	191	38	37	134	143	575
B-675	R-675	76	305	76	57	13	216	340	292	559	483	216	44	37	164	182	675
B-775	R-775	76	356	89	64	13	229	384	305	584	508	241	51	37	207	230	775
B-900	R-900	76	406	89	70	16	229	416	305	610	533	267	57	37	245	275	900
B-1000	R-1000	76	432	89	70	16	229	429	330	635	559	279	57	37	268	302	1000
B-1100	R-1100	89	457	89	70	19	254	448	330	660	584	292	64	43	316	352	1100
B-1225	R-1225	89	483	89	83	19	305	467	356	686	610	305	70	43	363	429	1225
B-1325	R-1325	89	508	89	83	19	305	486	356	711	635	318	76	43	406	477	1325
B-1550	R-1550	102	559	102	89	19	356	537	381	762	686	343	89	48	610	509	1550

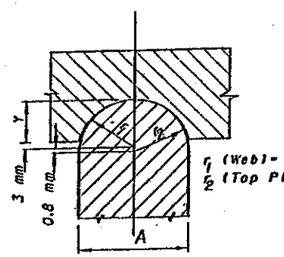
WEIGHTS GIVEN ARE FOR ONE ROCKER OR BOLSTER COMPLETE (INCLUDING SHEET LEAD, ANCHOR BOLTS AND WASHERS).

LEGEND

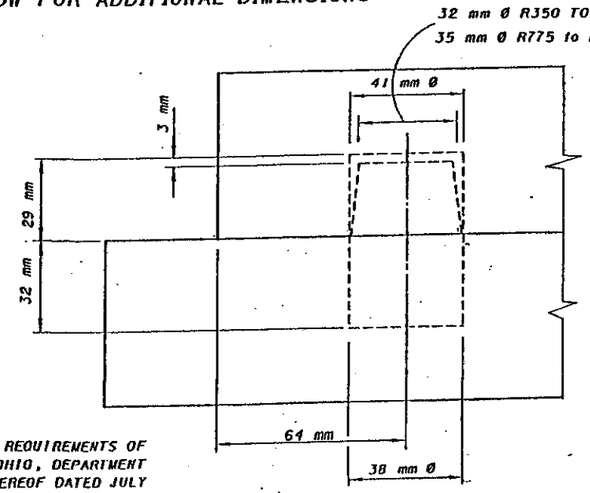
Kg - KILOGRAM
kN - KILONEWTONS

STRUCTURAL STEEL ROCKER

SEE TABLE BELOW FOR ADDITIONAL DIMENSIONS



TOP BEARING DETAIL



DOWEL DETAIL

DESIGN SPECIFICATIONS: THIS STANDARD DRAWING CONFORMS TO THE REQUIREMENTS OF "DESIGN SPECIFICATIONS FOR HIGHWAY STRUCTURES" OF THE STATE OHIO, DEPARTMENT OF HIGHWAYS, DATED OCTOBER 1,1951, TOGETHER WITH REVISIONS THEREOF DATED JULY 15, 1952, APRIL 1, 1954 AND FEBRUARY 1, 1955.

LIMITATION: THIS ROCKER AND BOLSTER DESIGN SHALL NOT BE USED WHERE THE ANTICIPATED MOVEMENT IN ONE DIRECTION IS IN EXCESS OF 50 mm.

ROADWAY GRADE: IF THE ROADWAY GRADE EXCEEDS 2 % THE UPPER LOAD PLATE OF THE BEARING SHALL BE BEVELED TO MATCH THE GRADE, DIMENSION "C" SHALL BE MAINTAINED AT THE CENTER OF THE PLATE.

BOLSTER AND ROCKER CAPACITIES SHOWN ON THIS STANDARD DRAWING ARE BASED ON ACTUAL DEAD LOAD, LIVE LOAD AND IMPACT.

DESIGN AGENCY
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
ENGINEER OF BRIDGES
10-25-94
DATE

REVISIONS	DESIGNED	DRAWN	CHECKED	APPROVED
	JFF	JFF	JAW	LHW

RB-1-55M

STANDARD
ROCKERS AND BOLSTERS FOR STEEL BEAM AND GIRDER BRIDGES
METRIC

1 / 1