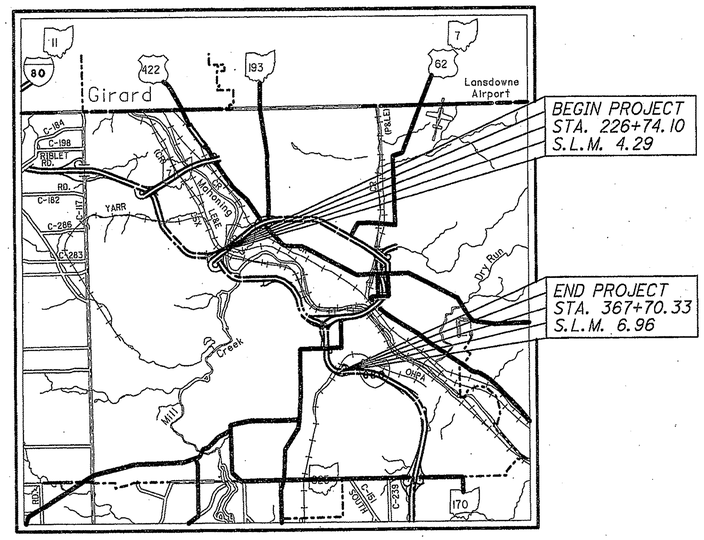


LOCATION MAP

LATITUDE: N41°05'28" LONGITUDE: W80°39'23"

SCALE IN MILES

0 1 2 3 4

PORTION TO BE IMPROVED

INTERSTATE & DIVIDED HIGHWAY

UNDIVIDED STATE & FEDERAL ROUTES

OTHER ROADS

DESIGN DESIGNATION

CURRENT ADT (2010)	VARIES (SEE BRIDGE SITE PLANS)
DESIGN YEAR ADT (2030)	VARIES (SEE BRIDGE SITE PLANS)
DESIGN HOURLY VOLUME (2030)	VARIES (SEE BRIDGE SITE PLANS)
DIRECTIONAL DISTRIBUTION	VARIES (SEE BRIDGE SITE PLANS)
TRUCKS (24 HOUR B&C)	VARIES (SEE BRIDGE SITE PLANS)
DESIGN SPEED	VARIES (SEE BRIDGE SITE PLANS)
LEGAL SPEED	VARIES (SEE BRIDGE SITE PLANS)

DESIGN FUNCTIONAL CLASSIFICATIONS:
URBAN INTERSTATE (I-680 & US-62D/SR-7D), URBAN ARTERIAL (WILLIAMSON), URBAN COLLECTOR (WOODLAND), URBAN LOCAL (DELASON)

NHS PROJECT ..... YES

DESIGN EXCEPTIONS

DESIGN FEATURE	APPROVAL DATES	BRIDGES
SUPERELEVATION & BRIDGE WIDTH	10-07-09	MAH-680-0687 & MAH-680-0693
SUPERELEVATION	04-27-09	MAH-680-0632
STRUCTURAL CAPACITY	05-16-08	MAH-680-0429, MAH-680-0632, MAH-680-0687, MAH-680-0693, & MAH-62-1751

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL
1-800-362-2764
(TOLL FREE)

OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

OIL & GAS PRODUCERS PROTECTIVE SERVICE CALL: **1-800-925-0988**

PLAN PREPARED BY:
NORTHWEST CONSULTANTS, INC.
3220 CENTRAL PARK WEST
TOLEDO, OH 43617

ENGINEERS SEAL:

STATE OF OHIO
JONATHAN DRUMMOND
E-67671
REGISTERED
PROFESSIONAL ENGINEER

SIGNED:
DATE: 7-16-2010

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

MAH-680-4.29

CITY OF YOUNGSTOWN
MAHONING COUNTY

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STANDARD CONSTRUCTION DRAWINGS

												SUPPLEMENTAL SPECIFICATIONS	
A-1-69	07-19-02	BP-2.3	07-16-04	MT-35.10	04-20-01	MT-101.60	04-17-09	HL-10.13	10-16-09	800-2010	10-15-10
AS-1-81	07-19-02			MT-95.30	07-17-09	MT-101.70	01-16-09	HL-20.11	01-19-07	802	04-16-10
BR-2-98	07-19-02	F-3.1	04-16-10	MT-95.40	07-17-09	MT-101.90	01-16-09	HL-20.13	01-15-10	832	05-05-09
EXJ-4-87	07-19-02			MT-95.50	04-17-09	MT-102.10	07-17-09	HL-30.11	10-16-09	843	04-18-03
GSD-1-96	07-19-02	GR-1.1	07-16-04	MT-95.82	09-05-06	MT-102.30	04-17-09	HL-30.21	01-19-07	902	10-20-08
PCB-91	07-19-02	GR-2.1	01-16-04	MT-96.11	01-16-09	MT-105.10	01-16-09	HL-30.22	04-17-09		
SBR-1-99	07-19-02	GR-3.1	10-16-09	MT-96.20	01-16-09			HL-30.31	04-17-09		
SICD-1-96	07-19-02	GR-4.2	01-19-07	MT-96.26	01-16-09	TC-41.20	01-19-01	HL-30.32	04-17-09		
VPF-1-90	07-19-02			MT-98.10	07-17-09	TC-41.40	07-16-04	HL-30.33	04-17-09		
		RM-4.1	10-20-06	MT-98.11	07-17-09	TC-65.10	01-21-05	HL-60.11	01-19-07	SPECIAL PROVISIONS	
CB-1.2	07-15-05	RM-4.2	10-19-07	MT-98.20	07-17-09	TC-65.11	01-21-05	HL-60.12	10-19-07		
CB-2.2	07-15-05	RM-4.5	10-16-09	MT-98.21	07-17-09	TC-72.20	10-16-09	HL-60.21	01-19-07	NONE	
HW-2.1	07-30-07	RM-4.6	04-16-10	MT-98.22	07-17-09						
MH-1.2	01-20-06			MT-98.28	07-17-09						
DM-1.1	04-21-06			MT-98.29	07-17-09						
DM-1.2	10-21-05			MT-100.00	01-16-09						

PROJECT DESCRIPTION

IMPROVEMENT AND REHABILITATION OF THE FOLLOWING SEVEN STRUCTURES: MAH-680-0429, MAH-680-0476, MAH-680-0594, MAH-680-0632, MAH-680-0687, MAH-680-0693, & MAH-62-1751.

PROJECT EARTH DISTURBED AREA:	1.85 ACRES
ESTIMATED CONTRACTOR EARTH DISTRUBED AREA:	1.00 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	4.90 ACRES

LIMITED ACCESS

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

2010 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 THE SIDE ROADS AS DESCRIBED ON SHEETS 75-77, 80-81, & 83-84 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 (H) OF THE OHIO REVISED CODE, 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.

APPROVED Erin M. Gotte
DATE 7-21-10 DISTRICT DEPUTY DIRECTOR

APPROVED Gabe M. Valentine
DATE 8-6-10 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. N/A

PID NO. 25508

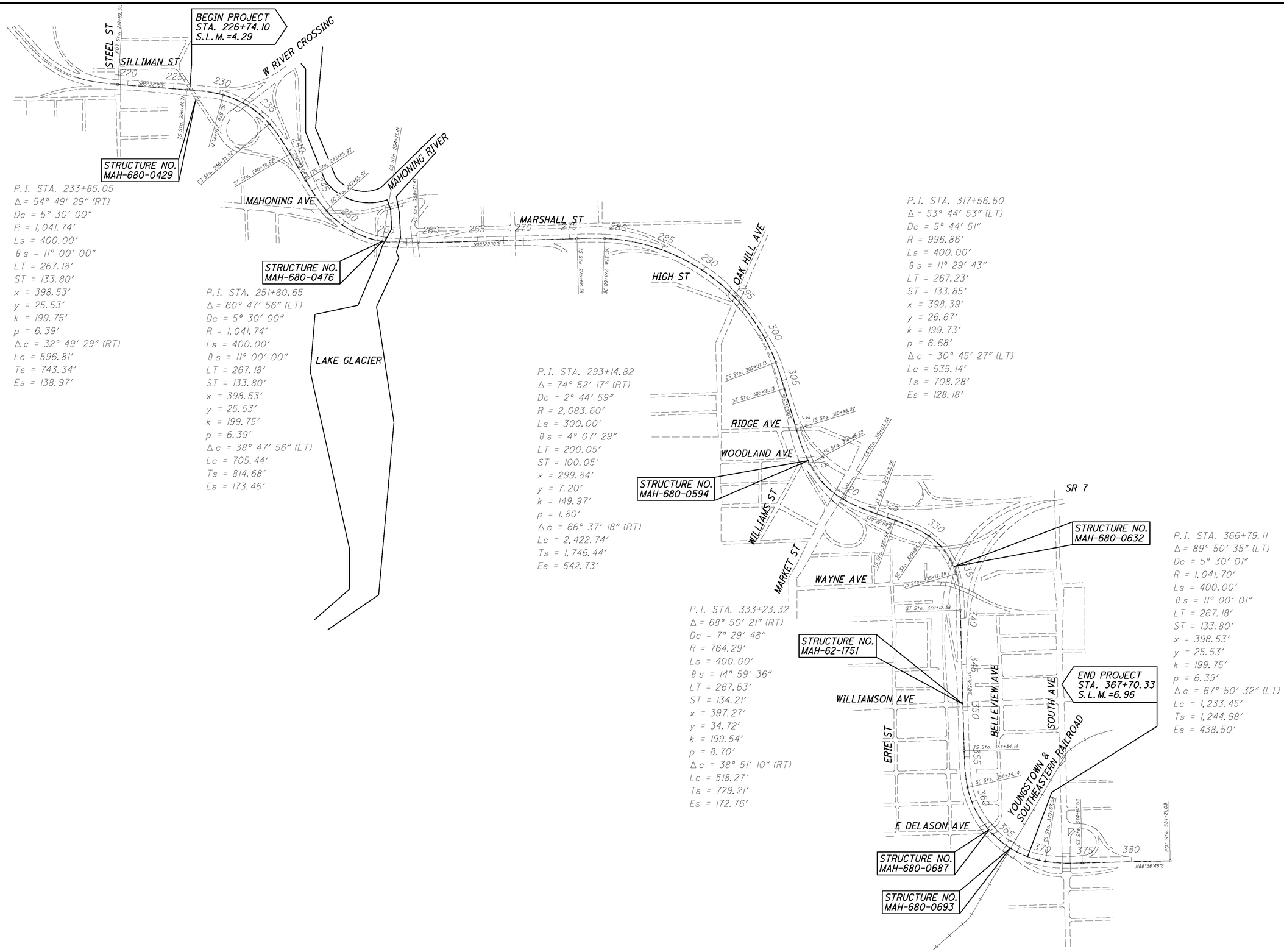
CONSTRUCTION PROJECT NO.

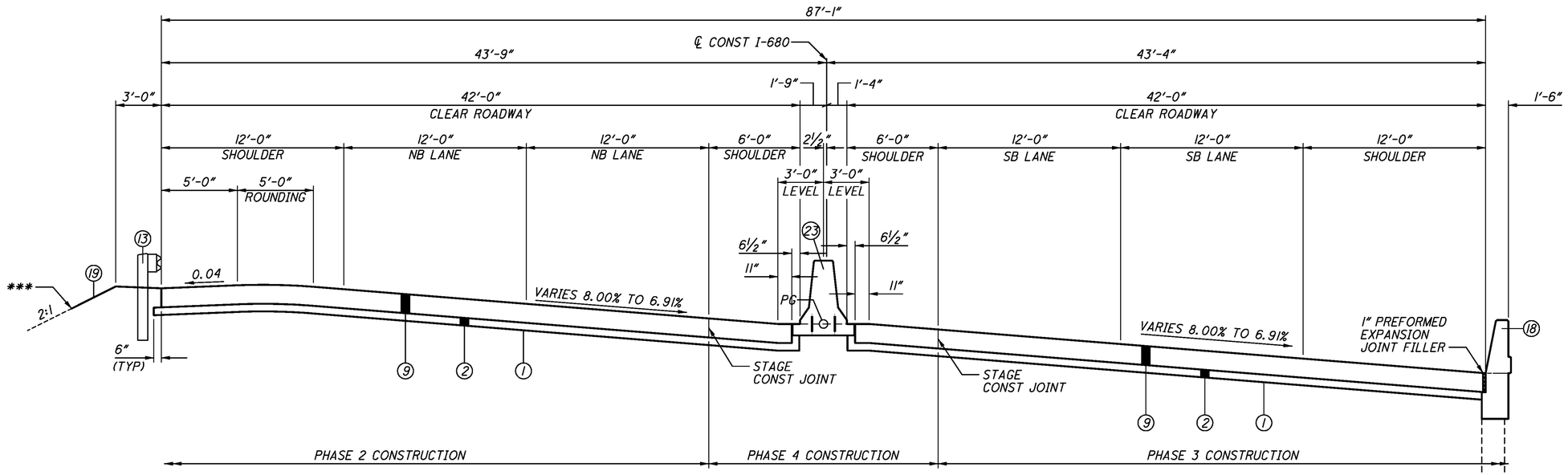
RAILROAD INVOLVEMENT
YOUNGSTOWN AND SOUTHEASTERN

MAH-680-4.29

1 / 307

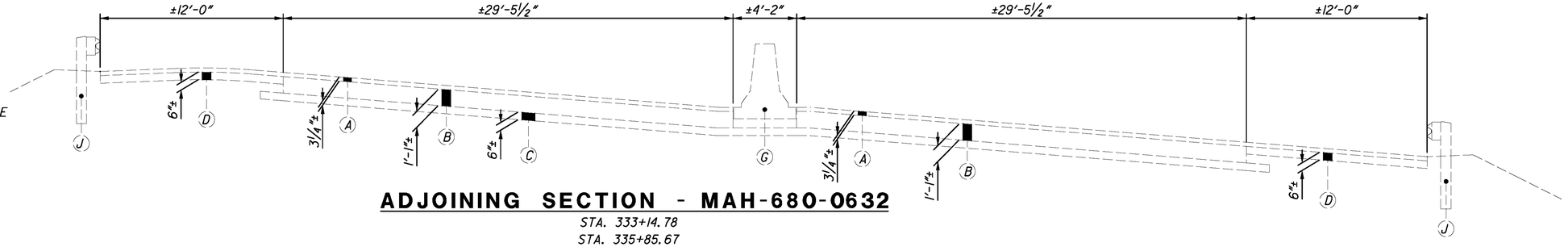
MAH - IR-680-4.29
100579 PID - 25508
Dist 4 12/2/2010


BEGIN PROJECT
STA. 226+74.10
S.L.M. =4.29
STEEL ST
SILLIMAN ST
W RIVER CROSSING
MAHONING RIVER
MAHONING AVE
MARSHALL ST
HIGH ST
OAK HILL AVE
RIDGE AVE
WOODLAND AVE
WILLIAMS ST
MARKET ST
WAYNE AVE
WILLIAMSON AVE
ERIE ST
BELLEVIEW AVE
SOUTH AVE
E DELASON AVE
LAKE GLACIER
SR 7
YOUNGSTOWN & SOUTHEASTERN RAILROAD
STRUCTURE NO. MAH-680-0429
STRUCTURE NO. MAH-680-0476
STRUCTURE NO. MAH-680-0594
STRUCTURE NO. MAH-680-0632
STRUCTURE NO. MAH-62-1751
STRUCTURE NO. MAH-680-0687
STRUCTURE NO. MAH-680-0693
END PROJECT
STA. 367+70.33
S.L.M. =6.96
P.I. STA. 233+85.05
Δ = 54° 49′ 29″ (RT)
Dc = 5° 30′ 00″
R = 1,041.74′
Ls = 400.00′
θs = 11° 00′ 00″
LT = 267.18′
ST = 133.80′
x = 398.53′
y = 25.53′
k = 199.75′
p = 6.39′
Δc = 32° 49′ 29″ (RT)
Lc = 596.81′
Ts = 743.34′
Es = 138.97′
P.I. STA. 251+80.65
Δ = 60° 47′ 56″ (LT)
Dc = 5° 30′ 00″
R = 1,041.74′
Ls = 400.00′
θs = 11° 00′ 00″
LT = 267.18′
ST = 133.80′
x = 398.53′
y = 25.53′
k = 199.75′
p = 6.39′
Δc = 38° 47′ 56″ (LT)
Lc = 705.44′
Ts = 814.68′
Es = 173.46′
P.I. STA. 293+14.82
Δ = 74° 52′ 17″ (RT)
Dc = 2° 44′ 59″
R = 2,083.60′
Ls = 300.00′
θs = 4° 07′ 29″
LT = 200.05′
ST = 100.05′
x = 299.84′
y = 7.20′
k = 149.97′
p = 1.80′
Δc = 66° 37′ 18″ (RT)
Lc = 2,422.74′
Ts = 1,746.44′
Es = 542.73′
P.I. STA. 317+56.50
Δ = 53° 44′ 53″ (LT)
Dc = 5° 44′ 51″
R = 996.86′
Ls = 400.00′
θs = 11° 29′ 43″
LT = 267.23′
ST = 133.85′
x = 398.39′
y = 26.67′
k = 199.73′
p = 6.68′
Δc = 30° 45′ 27″ (LT)
Lc = 535.14′
Ts = 708.28′
Es = 128.18′
P.I. STA. 333+23.32
Δ = 68° 50′ 21″ (RT)
Dc = 7° 29′ 48″
R = 764.29′
Ls = 400.00′
θs = 14° 59′ 36″
LT = 267.63′
ST = 134.21′
x = 397.27′
y = 34.72′
k = 199.54′
p = 8.70′
Δc = 38° 51′ 10″ (RT)
Lc = 518.27′
Ts = 729.21′
Es = 172.76′
P.I. STA. 366+79.11
Δ = 89° 50′ 35″ (LT)
Dc = 5° 30′ 01″
R = 1,041.70′
Ls = 400.00′
θs = 11° 00′ 01″
LT = 267.18′
ST = 133.80′
x = 398.53′
y = 25.53′
k = 199.75′
p = 6.39′
Δc = 67° 50′ 32″ (LT)
Lc = 1,233.45′
Ts = 1,244.98′
Es = 438.50′
HORIZONTAL SCALE IN FEET
0
250
500
1000
SCHEMATIC PLAN
MAH-680-4.29
2
307



TYPICAL APPROACH SLAB SECTION - MAH-680-0632 (OVER US62D/SR7D)

STA 333+19.78 TO STA 333+44.78 = 25.00'
STA 335+55.67 TO STA 335+80.67 = 25.00'



ADJOINING SECTION - MAH-680-0632

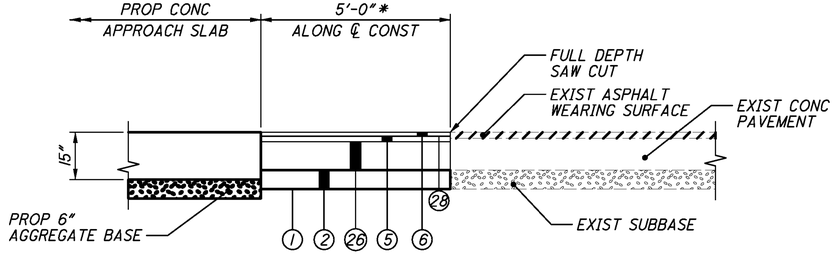
STA. 333+14.78
STA. 335+85.67

EXISTING LEGEND

- (A) EXISTING ASPHALT CONCRETE
- (B) EXISTING CONCRETE PAVEMENT
- (C) EXISTING SUBBASE
- (D) EXISTING ASPHALT SHOULDER
- (E) EXISTING CURB
- (F) EXISTING SIDEWALK
- (G) EXISTING MEDIAN BARRIER
- (H) 6" PIPE UNDERDRAIN
- (J) EXISTING GUARDRAIL
- (K) STABILIZED CRUSHED AGGREGATE
- (L) WATERPROOF AGGREGATE BASE COURSE
- (M) AGGREGATE BASE

LEGEND

- (1) ITEM 204 - SUBGRADE COMPACTION
- (2) ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN
- (3) ITEM 305 - 9" CONCRETE BASE
- (4) ITEM 408 - BITUMINOUS PRIME COAT (APPLIED AT THE RATE OF 0.40 GAL/SY)
- (5) ITEM 448 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22
- (6) ITEM 448 - 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22
- (7) ITEM 517 - RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING)
- (8) ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=13")
- (9) ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15")
- (10) ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=17")
- (11) ITEM 605 - 4" SHALLOW PIPE UNDERDRAINS
- (12) ITEM 606 - GUARDRAIL, TYPE 5
- (13) ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 1
- (14) ITEM 607 - VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC
- (15) ITEM 608 - 4" WALK
- (16) ITEM 609 - CURB, TYPE 2A
- (17) ITEM 609 - CURB, TYPE 2B
- (18) ITEM 517 - RAILING (DEFLECTOR PARAPET TYPE)
- (19) ITEM 659 - SEEDING AND MULCHING
- (20) ITEM 254 - PAVEMENT PLANING
- (21) ITEM 255 - FULL DEPTH PAVEMENT SAWING (INCLUDED UNDER CMS 202.05)
- (22) ITEM 202 - CONCRETE BARRIER REMOVED
- (23) ITEM 622 - CONCRETE BARRIER, TYPE B, AS PER PLAN
- (24) ITEM 604 - CATCH BASIN, NO. 3A
- (25) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D
- (26) ITEM 302 - 9" ASPHALT CONCRETE BASE, PG64-22
- (27) ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN
- (28) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE
- (29) ITEM 407 - TACK COAT, 702.13
- (30) ITEM 511 - CLASS HP CONCRETE, SIDEWALK, AS PER PLAN (SEE BRIDGE PLANS)



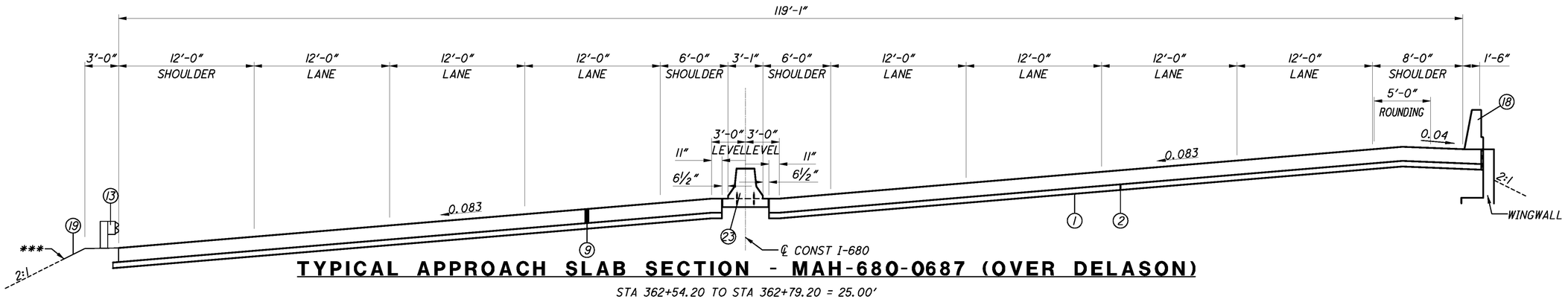
PAVEMENT REPLACEMENT SECTION AT ENDS OF PROPOSED APPROACH SLABS

STA 333+14.78 TO STA 333+19.78 = 5.00'
STA 335+80.67 TO STA 335+85.67 = 5.00'
* - DIMENSION VARIES TO ACCOMODATE STORM SEWER CONSTRUCTION

CALCULATED KJB
CHECKED JBD

TYPICAL SECTIONS

MAH-680-4.29



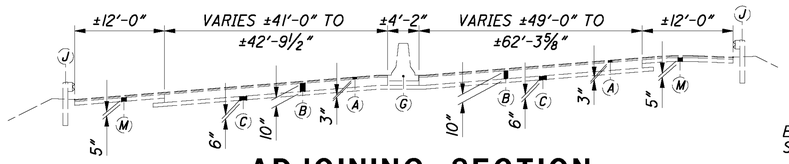
TYPICAL APPROACH SLAB SECTION - MAH-680-0687 (OVER DELASON)

STA 362+54.20 TO STA 362+79.20 = 25.00'
STA 364+15.31 TO STA 364+40.31 = 25.00'

FOR DETAILS SEE
STD DWG BP-2.3

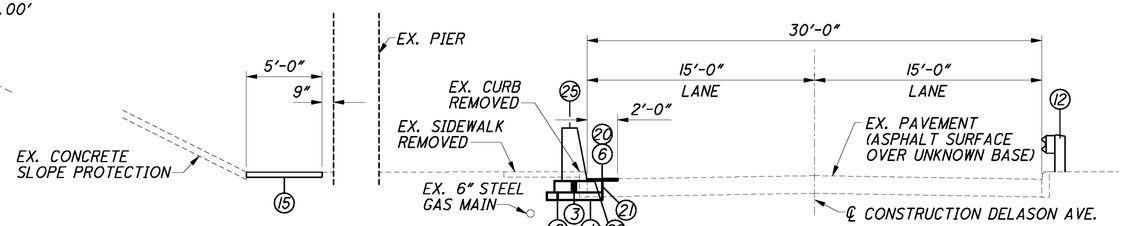
PRESSURE RELIEF JOINT TYPE A

STA 362+50.20 TO STA 362+54.20 = 4.00'
STA 364+40.31 TO STA 364+44.31 = 4.00'
STA 365+71.13 TO STA 365+75.13 = 4.00'
STA 367+66.36 TO STA 367+70.36 = 4.00'



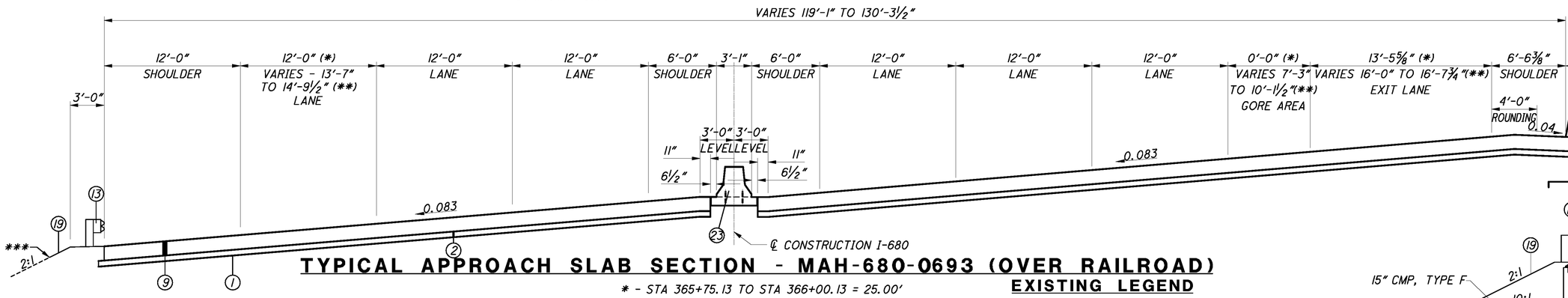
ADJOINING SECTION

STA. 362+50.20
STA. 364+44.31
STA. 365+71.13
STA. 367+70.36



TYPICAL ROADWAY SECTION - DELASON AVE

STA 2+92.89 TO STA 5+48.33 = 255.44'



TYPICAL APPROACH SLAB SECTION - MAH-680-0693 (OVER RAILROAD)

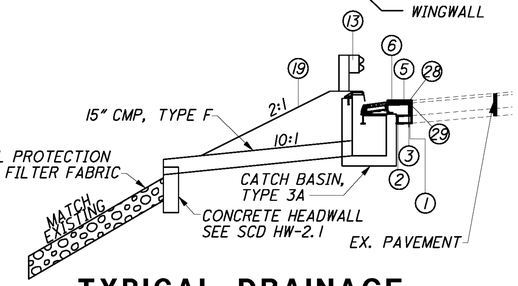
* - STA 365+75.13 TO STA 366+00.13 = 25.00'
** - STA 367+41.36 TO STA 367+66.36 = 25.00'

LEGEND

(1) ITEM 204 - SUBGRADE COMPACTION
(2) ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN
(3) ITEM 305 - 9" CONCRETE BASE
(4) ITEM 408 - BITUMINOUS PRIME COAT (APPLIED AT THE RATE OF 0.40 GAL/SY)
(5) ITEM 448 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22
(6) ITEM 448 - 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22
(7) ITEM 517 - RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING)
(8) ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=13")
(9) ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15")
(10) ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=17")
(11) ITEM 605 - 4" SHALLOW PIPE UNDERDRAINS
(12) ITEM 606 - GUARDRAIL, TYPE 5
(13) ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 1
(14) ITEM 607 - VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC
(15) ITEM 608 - 4" WALK
(16) ITEM 609 - CURB, TYPE 2A
(17) ITEM 609 - CURB, TYPE 2B
(18) ITEM 517 - RAILING (DEFLECTOR PARAPET TYPE)
(19) ITEM 659 - SEEDING AND MULCHING
(20) ITEM 254 - PAVEMENT PLANING
(21) ITEM 255 - FULL DEPTH PAVEMENT SAWING (INCLUDED UNDER CMS 202.05)
(22) ITEM 202 - CONCRETE BARRIER REMOVED
(23) ITEM 622 - CONCRETE BARRIER, TYPE B, AS PER PLAN
(24) ITEM 604 - CATCH BASIN, NO. 3A
(25) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D
(26) ITEM 302 - 9" ASPHALT CONCRETE BASE, PG64-22
(27) ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN

EXISTING LEGEND

(A) EXISTING ASPHALT CONCRETE
(B) EXISTING CONCRETE PAVEMENT
(C) EXISTING SUBBASE
(D) EXISTING ASPHALT SHOULDER
(E) EXISTING CURB
(F) EXISTING SIDEWALK
(G) EXISTING MEDIAN BARRIER
(H) 6" PIPE UNDERDRAIN
(J) EXISTING GUARDRAIL
(K) STABILIZED CRUSHED AGGREGATE
(L) WATERPROOF AGGREGATE BASE COURSE
(M) AGGREGATE BASE



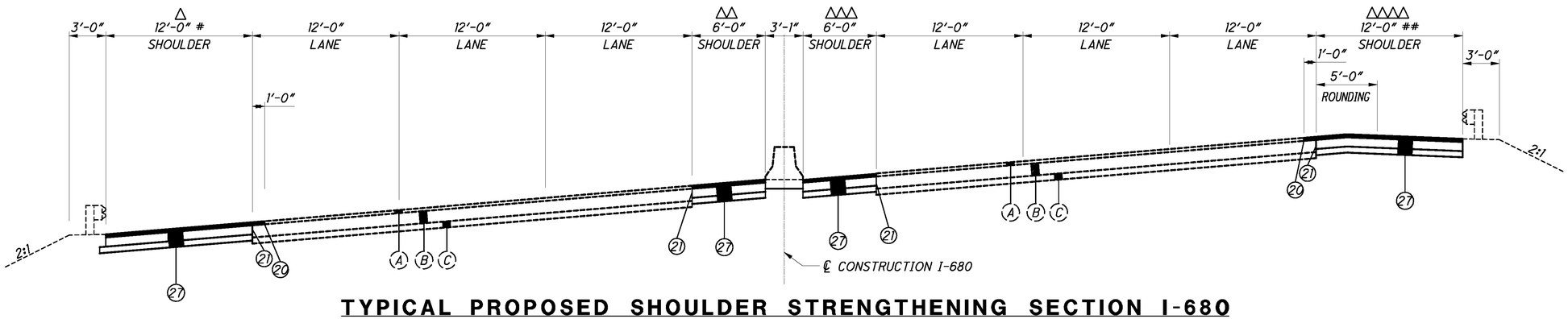
TYPICAL DRAINAGE PAVEMENT SECTION - I-680

STA 364+62.15 TO STA 364+72.32 = 10.17'
STA 367+73.54 TO STA 367+85.00 = 11.46'

CALCULATED MJP
CHECKED JBD

TYPICAL SECTIONS

MAH-680-4.29



TYPICAL PROPOSED SHOULDER STRENGTHENING SECTION I-680

\# SHOULDER VARIES FROM 6'-0" AT STA. 345+00.00 TO 12'-0" AT STA. 347+00.00

APPLIES:

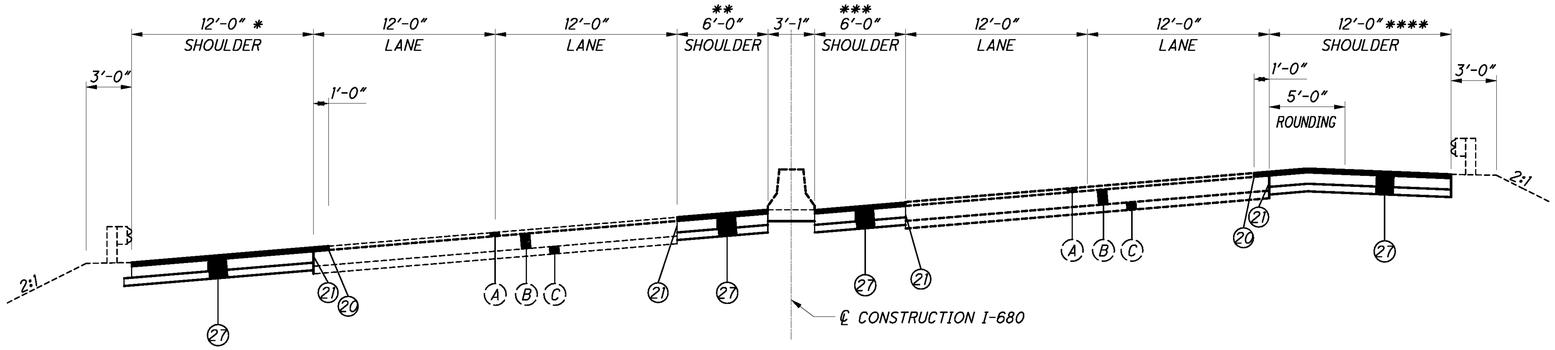
△ STA. 222+50.00 TO STA. 227+67.00 (DURING PHASE 5)
STA. 345+00.00 TO STA. 352+00.00 (DURING PHASE 1)
STA. 352+00.00 TO STA. 362+56.00 (DURING PHASE 2)
STA. 364+62.00 TO STA. 365+64.00 (DURING PHASE 2)
STA. 367+73.00 TO STA. 369+00.00 (DURING PHASE 2)

△△ STA. 224+50.00 TO STA. 231+00.00 (DURING PRE-PHASE)
STA. 349+50.00 TO STA. 350+40.00 (DURING PHASE 1)
STA. 355+65.00 TO STA. 356+50.00 (DURING PHASE 1)
STA. 356+50.00 TO STA. 362+50.00 (DURING PHASE 2)
STA. 364+48.00 TO STA. 365+70.00 (DURING PHASE 2)
STA. 367+54.00 TO STA. 373+00.00 (DURING PHASE 2)
STA. 373+00.00 TO STA. 373+50.00 (DURING PHASE 1)
STA. 381+85.00 TO STA. 383+75.00 (DURING PHASE 1)

APPLIES:

△△△ STA. 219+00.00 TO STA. 230+00.00 (DURING PRE-PHASE)
STA. 334+00.00 TO STA. 350+40.00 (DURING PHASE 1)
STA. 355+65.00 TO STA. 362+54.862 (DURING PHASE 1)
STA. 364+40.22 TO STA. 365+75.33 (DURING PHASE 1)
STA. 367+66.33 TO STA. 373+50.00 (DURING PHASE 1)

△△△△ STA. 220+50.00 TO STA. 230+75.00 (DURING PHASE 5)
STA. 348+55.50 TO STA. 355+50.00 (DURING PRE-PHASE)
STA. 355+50.00 TO STA. 361+00.00 (DURING PRE-PHASE)
STA. 367+66.40 TO STA. 377+00.00 (DURING PRE-PHASE)



TYPICAL PROPOSED SHOULDER STRENGTHENING SECTION I-680

APPLIES:

* - STA. 229+50.00 TO STA. 237+50.00 (DURING PRE-PHASE)
STA. 310+32.00 TO STA. 314+50.00 (DURING PRE-PHASE)
STA. 322+70.00 TO STA. 333+12.00 (DURING PRE-PHASE)
STA. 334+97.50 TO STA. 341+65.90 (DURING PRE-PHASE)

** - STA. 311+50.00 TO STA. 322+00.00 (DURING PRE-PHASE)
STA. 322+00.00 TO STA. 322+70.00 (DURING PHASE 1)
STA. 335+50.00 TO STA. 349+50.00 (DURING PHASE 2)

*** - STA. 306+50.00 TO STA. 316+00.00 (DURING PRE-PHASE)
STA. 335+87.82 TO STA. 343+00.00 (DURING PHASE 1)

**** - STA. 328+50.00 TO STA. 333+83.90 (DURING PRE-PHASE)
STA. 336+23.90 TO STA. 346+28.40 (DURING PRE-PHASE)

\## SHOULDER VARIES FROM 8'-0" AT STA. 348+55.50 TO 10'-0" AT STA. 350+00.00
SHOULDER VARIES FROM 10'-0" AT STA. 350+00.00 TO 12'-0" AT STA. 352+00.00
SHOULDER VARIES FROM 12'-0" AT STA. 367+66.40 TO 15'-0" AT STA. 368+50.00
SHOULDER VARIES FROM 15'-0" AT STA. 368+50.00 TO 12'-0" AT STA. 370+68.00

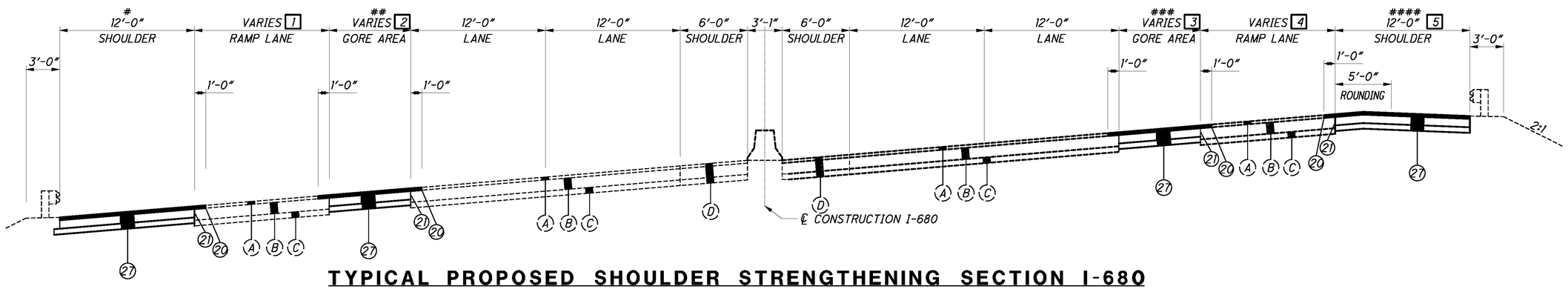
LEGEND

(1) ITEM 204 - SUBGRADE COMPACTION
(2) ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN
(3) ITEM 305 - 9" CONCRETE BASE
(4) ITEM 408 - BITUMINOUS PRIME COAT (APPLIED AT THE RATE OF 0.40 GAL/SY)
(5) ITEM 448 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22
(6) ITEM 448 - 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22
(7) ITEM 517 - RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING)
(8) ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=13")
(9) ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15")
(10) ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=17")
(11) ITEM 605 - 4" SHALLOW PIPE UNDERDRAINS
(12) ITEM 606 - GUARDRAIL, TYPE 5
(13) ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 1
(14) ITEM 607 - VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC
(15) ITEM 608 - 4" WALK
(16) ITEM 609 - CURB, TYPE 2A
(17) ITEM 609 - CURB, TYPE 2B
(18) ITEM 517 - RAILING (DEFLECTOR PARAPET TYPE)
(19) ITEM 659 - SEEDING AND MULCHING
(20) ITEM 254 - PAVEMENT PLANING
(21) ITEM 255 - FULL DEPTH PAVEMENT SAWING (INCLUDED UNDER CMS 202.05)
(22) ITEM 202 - CONCRETE BARRIER REMOVED
(23) ITEM 622 - CONCRETE BARRIER, TYPE B, AS PER PLAN
(24) ITEM 604 - CATCH BASIN, NO. 3A
(25) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D
(26) ITEM 302 - 9" ASPHALT CONCRETE BASE, PG64-22
(27) ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN
(A) EXISTING ASPHALT CONCRETE
(B) EXISTING CONCRETE PAVEMENT
(C) EXISTING SUBBASE
(D) EXISTING SHOULDER

CALCULATED JAB
CHECKED JBD

TYPICAL SECTIONS

MAH-680-4.29



TYPICAL PROPOSED SHOULDER STRENGTHENING SECTION I-680

1 VARIES FROM 12'-0" AT STA. 227+67.00 TO 16'-0" AT STA. 228+50.00
16'-0" FROM STA. 228+50.00 TO STA. 229+50.00
VARIES FROM 5'-6" AT STA. 314+50.00 TO 16'-0" AT STA. 319+56.00
16'-0" FROM STA. 319+56.00 TO STA. 323+83.36

2 VARIES FROM 0'-0" AT STA. 227+67.00 TO 12'-0" AT STA. 229+50.00
VARIES FROM 0'-0" AT STA. 308+40.00 TO 18'-5" AT STA.310+32.00
NO GORE AREA FROM STA. 314+50.00 TO STA. 319+56.00
VARIES FROM 0'-0" AT STA. 319+56.00 TO 12'-0" AT STA. 322+70.00
VARIES FROM 8'-6" AT STA. 341+65.90 TO 0'-0" AT STA. 342+64.40

LEGEND

(1) ITEM 204 - SUBGRADE COMPACTION
(2) ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN
(3) ITEM 305 - 9" CONCRETE BASE
(4) ITEM 408 - BITUMINOUS PRIME COAT (APPLIED AT THE RATE OF 0.40 GAL/SY)
(5) ITEM 448 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22
(6) ITEM 448 - 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22
(7) ITEM 517 - RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING)
(8) ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=13")
(9) ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15")
(10) ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=17")
(11) ITEM 605 - 4" SHALLOW PIPE UNDERDRAINS
(12) ITEM 606 - GUARDRAIL, TYPE 5
(13) ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 1
(14) ITEM 607 - VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC
(15) ITEM 608 - 4" WALK
(16) ITEM 609 - CURB, TYPE 2A
(17) ITEM 609 - CURB, TYPE 2B
(18) ITEM 517 - RAILING (DEFLECTOR PARAPET TYPE)
(19) ITEM 659 - SEEDING AND MULCHING
(20) ITEM 254 - PAVEMENT PLANING
(21) ITEM 255 - FULL DEPTH PAVEMENT SAWING (INCLUDED UNDER CMS 202.05)
(22) ITEM 202 - CONCRETE BARRIER REMOVED
(23) ITEM 622 - CONCRETE BARRIER, TYPE B, AS PER PLAN
(24) ITEM 604 - CATCH BASIN, NO. 3A
(25) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D
(26) ITEM 302 - 9" ASPHALT CONCRETE BASE, PG64-22
(27) ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN

(A) EXISTING ASPHALT CONCRETE
(B) EXISTING CONCRETE PAVEMENT
(C) EXISTING SUBBASE
(D) EXISTING SHOULDER

APPLIES:

- STA. 227+67.00 TO STA. 229+50.00 (DURING PHASE 5)
STA. 314+50.00 TO STA. 323+83.36 (DURING PRE-PHASE)

- STA. 227+67.00 TO STA. 229+50.00 (DURING PRE-PHASE)
STA. 308+40.00 TO STA. 310+32.00 (DURING PRE-PHASE)
STA. 319+56.00 TO STA. 322+70.00 (DURING PRE-PHASE)
STA. 341+65.90 TO STA. 342+64.40 (DURING PRE-PHASE)

- STA. 307+68.00 TO STA.310+66.00 (DURING PRE-PHASE)
STA. 346+28.40 TO STA.348+55.50 (DURING PRE-PHASE)
STA. 367+39.80 TO STA.367+66.40 (DURING PRE-PHASE)

- STA. 306+50.00 TO STA.315+50.00 (DURING PHASE 7)
STA. 346+28.40 TO STA.348+55.50 (DURING PRE-PHASE)
STA. 361+00.00 TO STA. 362+71.70 (DURING PRE-PHASE)
STA. 363+96.60 TO STA.366+08.50 (DURING PRE-PHASE)

3 NO GORE AREA FROM STA. 306+50.00 TO STA. 307+68.00
VARIES FROM 0'-0" AT STA. 307+68.00 TO 17'-8" AT STA.310+66.00
VARIES FROM 17'-8" AT STA. 310+66.00 TO 38'-0" STA. STA. 315+50.00
VARIES FROM 12'-0" AT STA. 346+28.40 TO 0'-0" AT STA. 348+55.50
NO GORE AREA FROM STA. 361+00.00 TO STA. 366+45.40
VARIES FROM 7'-1" AT STA. 367+39.80 TO 12'-0" AT STA. 367+66.40

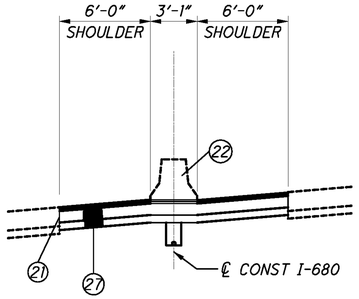
4 VARIES FROM 12'-0" AT STA. 306+50.00 TO 16'-0" AT STA. 307+68.00
16'-0" FROM STA. 307+68.00 TO STA. 315+50.00
12'-0" FROM STA. 346+28.40 TO STA. 348+55.50
VARIES FROM 12'-0" AT STA. 361+00.00 TO 21'-1" AT STA. 362+71.70
VARIES FROM 22'-6" AT STA. 363+96.60 TO 24'-0" AT STA. 364+57.70
24'-0" FROM STA. 364+57.70 TO STA. 366+08.50

5 VARIES FROM 12'-0" AT STA. 306+50.00 TO 6'-0" AT STA. 308+50.00
6'-0" FROM STA. 308+50.00 TO STA. 315+50.00
6'-0" FROM STA. 346+28.40 TO STA. 348+00.00
VARIES FROM 6'-0" AT STA. 348+00.00 TO 8'-0" AT STA. 348+55.50
VARIES FROM 12'-0" AT STA. 361+00.00 TO 10'-0" AT STA. 362+71.70

CALCULATED JAB
CHECKED JBD

TYPICAL SECTIONS

MAH-680-4.29



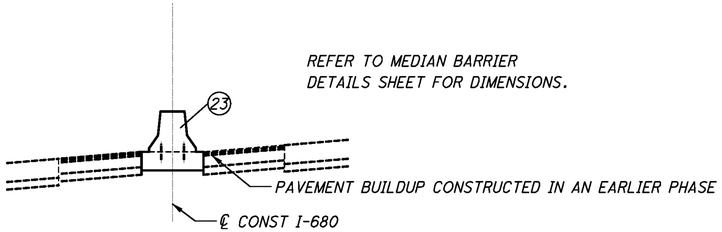
PAVEMENT REMOVAL/REPLACEMENT UNDER EXISTING BARRIER REMOVAL SECTION

PERFORMED DURING PHASE 1:
STA. 322+66.00 TO STA. 331+14.00 = 848 FT.*
STA. 333+09.40 TO STA. 333+46.43 = 37.03 FT.
STA. 335+53.43 TO STA. 335+87.82 = 34.39 FT.
STA. 336+38.00 TO STA. 336+42.00 = 4 FT.
STA. 350+31.00 TO STA. 355+74.00 = 543 FT.*
STA. 362+54.86 TO STA. 362+79.20 = 24.34 FT.
STA. 364+15.31 TO STA. 364+48.42 = 33.11 FT.
STA. 365+71.13 TO STA. 366+00.13 = 29 FT.
STA. 367+41.36 TO STA. 367+74.34 = 32.98 FT.
STA. 373+45.00 TO STA. 381+94.00 = 849 FT.*

PERFORMED DURING PHASE 4 (BARRIER REMOVAL ONLY):
STA. 322+70.00 TO STA. 322+75.00 = 5 FT.
STA. 331+05.00 TO STA. 331+10.00 = 5 FT.
STA. 350+35.00 TO STA. 350+40.00 = 5 FT.
STA. 355+65.00 TO STA. 355+70.00 = 5 FT.
STA. 381+85.00 TO STA. 381+90.00 = 5 FT.

* FOR TEMPORARY MEDIAN TRAFFIC CROSS-OVER, PAVEMENT PLACEMENT SHALL BE AS PER PLAN AT THESE SECTIONS. THE FOOTERS FOR THE BARRIER WALL MINUS THE DOWEL BARS SHALL BE PLACED.

NOTE: EXISTING PAVEMENT/FOOTERS UNDER EXISTING BARRIER REMOVAL AREAS SHALL BE REMOVED AND REPLACED WITH PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P.

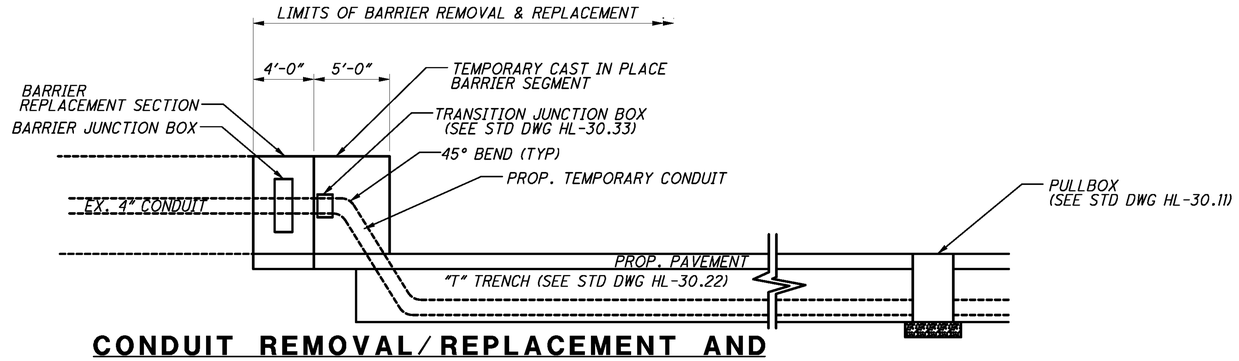


BARRIER REPLACEMENT SECTION

PERFORMED DURING PHASE 1:
STA. 322+66.00 TO STA. 322+75.00 = 9 FT.
STA. 331+05.00 TO STA. 331+14.00 = 9 FT.
STA. 333+09.40 TO STA. 333+13.40 = 4 FT.
STA. 336+38.00 TO STA. 336+42.00 = 4 FT.
STA. 350+31.00 TO STA. 350+40.00 = 9 FT.
STA. 355+65.00 TO STA. 355+74.00 = 9 FT.
STA. 362+01.86 TO STA. 362+05.86 = 4 FT.
STA. 364+44.42 TO STA. 364+48.42 = 4 FT.
STA. 367+70.34 TO STA. 367+74.34 = 4 FT.
STA. 381+85.00 TO STA. 381+94.00 = 9 FT.

PERFORMED DURING PHASE 4:
STA 322+70.00 TO STA. 331+10.00 = 840 FT.**
STA. 333+13.40 TO STA. 333+46.43 = 33.03 FT.
STA. 335+53.43 TO STA. 335+87.82 = 34.39 FT.
STA. 350+35.00 TO STA. 355+70.00 = 535 FT.**
STA. 362+54.86 TO STA. 362+79.20 = 24.34 FT.
STA. 364+15.31 TO STA. 364+44.42 = 29.11 FT.
STA. 365+71.13 TO STA. 366+00.13 = 29 FT.
STA. 367+41.36 TO STA. 367+70.34 = 28.98 FT.
STA. 373+45.00 TO STA. 381+90.00 = 845 FT.**
SUB-TOTAL = 2463.85 FT.

** CONCRETE BARRIER PLACED AT THESE SECTIONS SHALL BE AS PER PLAN TO NON-PERFORM PLACING THE FOOTERS AND TO PLACE THE DOWEL BARS.



CONDUIT REMOVAL/REPLACEMENT AND CONDUIT TRANSITION LONGITUDINAL SECTION

PERFORMED DURING PHASE 1:
STA 322+66.00 TO STA.331+14.00 = 848 FT.
STA. 350+31.00 TO STA. 355+74.00 = 543 FT.
STA. 376+60.00 TO STA. 381+94.00 = 534 FT.
TOTAL = 1925 FT.

LEGEND

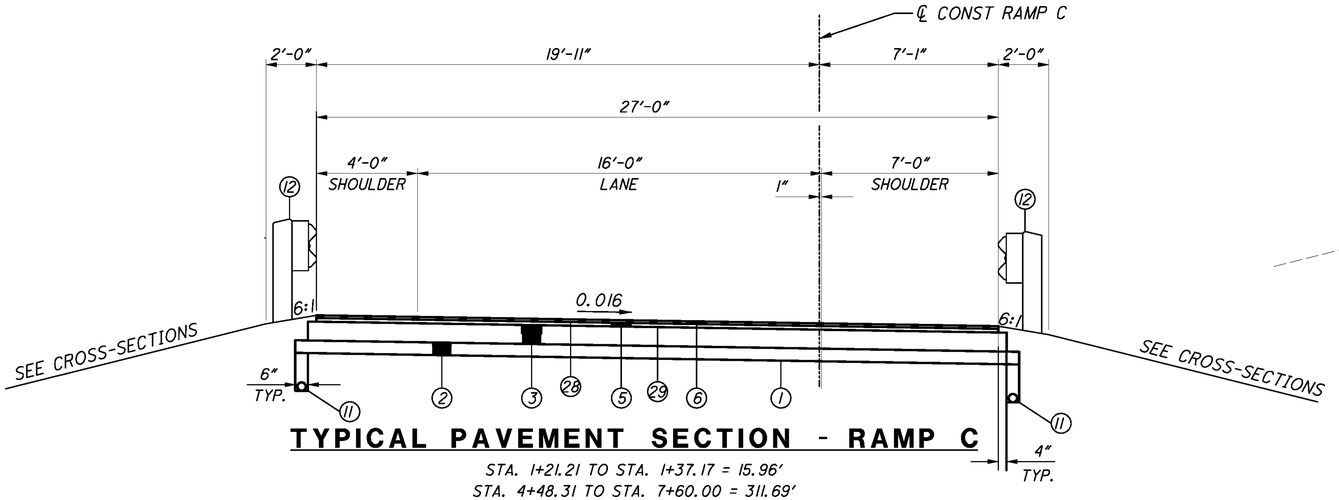
1. ITEM 204 - SUBGRADE COMPACTION
2. ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN
3. ITEM 305 - 9" CONCRETE BASE
4. ITEM 408 - BITUMINOUS PRIME COAT (APPLIED AT THE RATE OF 0.40 GAL/SY)
5. ITEM 448 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22
6. ITEM 448 - 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22
7. ITEM 517 - RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING)
8. ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=13")
9. ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15")
10. ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=17")
11. ITEM 605 - 4" SHALLOW PIPE UNDERDRAINS
12. ITEM 606 - GUARDRAIL, TYPE 5
13. ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 1
14. ITEM 607 - VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC
15. ITEM 608 - 4" WALK
16. ITEM 609 - CURB, TYPE 2A
17. ITEM 609 - CURB, TYPE 2B
18. ITEM 517 - RAILING (DEFLECTOR PARAPET TYPE)
19. ITEM 659 - SEEDING AND MULCHING
20. ITEM 254 - PAVEMENT PLANING
21. ITEM 255 - FULL DEPTH PAVEMENT SAWING (INCLUDED UNDER CMS 202.05)
22. ITEM 202 - CONCRETE BARRIER REMOVED
23. ITEM 622 - CONCRETE BARRIER, TYPE B, AS PER PLAN
24. ITEM 604 - CATCH BASIN, NO. 3A
25. ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D
26. ITEM 302 - 9" ASPHALT CONCRETE BASE, PG64-22
27. ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN

A. EXISTING ASPHALT CONCRETE
B. EXISTING CONCRETE PAVEMENT
C. EXISTING SUBBASE
D. EXISTING SHOULDER

CALCULATED JAB
CHECKED JBD

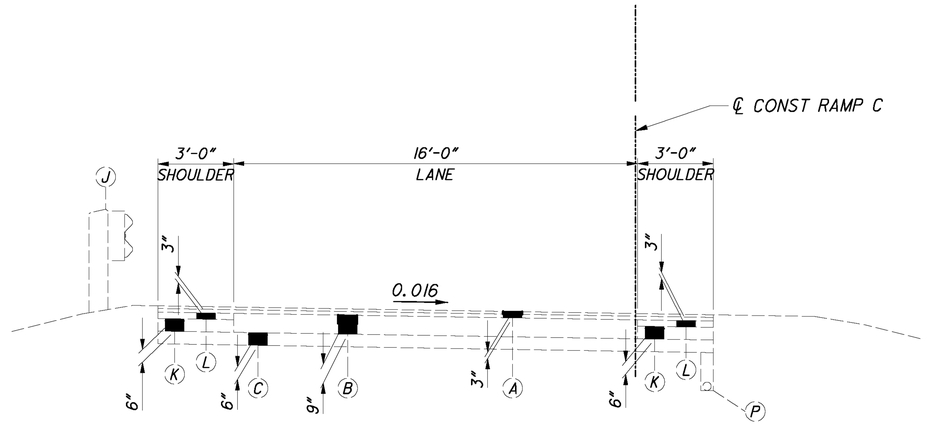
TYPICAL SECTIONS

MAH-680-4.29



TYPICAL PAVEMENT SECTION - RAMP C

STA. 1+21.21 TO STA. 1+37.17 = 15.96'
STA. 4+48.31 TO STA. 7+60.00 = 311.69'

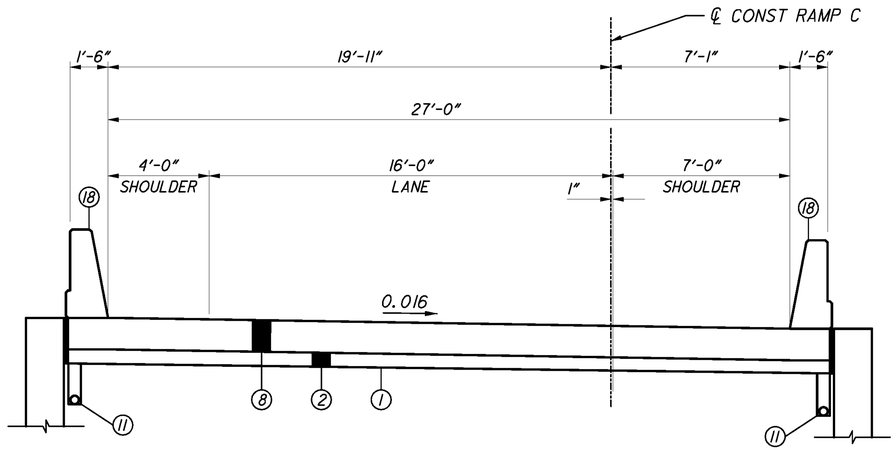


ADJOINING SECTION - RAMP C

STA. 1+21.21
STA. 7+60.00

LEGEND

1. ITEM 204 - SUBGRADE COMPACTION
2. ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN
3. ITEM 305 - 9" CONCRETE BASE
4. ITEM 408 - BITUMINOUS PRIME COAT (APPLIED AT THE RATE OF 0.40 GAL/SY)
5. ITEM 448 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22
6. ITEM 448 - 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22
7. ITEM 517 - RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING)
8. ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=13")
9. ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15")
10. ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=17")
11. ITEM 605 - 4" SHALLOW PIPE UNDERDRAINS
12. ITEM 606 - GUARDRAIL, TYPE 5
13. ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 1
14. ITEM 607 - VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC
15. ITEM 608 - 4" WALK
16. ITEM 609 - CURB, TYPE 2A
17. ITEM 609 - CURB, TYPE 2B
18. ITEM 517 - RAILING (DEFLECTOR PARAPET TYPE)
19. ITEM 659 - SEEDING AND MULCHING
20. ITEM 254 - PAVEMENT PLANING
21. ITEM 255 - FULL DEPTH PAVEMENT SAWING (INCLUDED UNDER CMS 202.05)
22. ITEM 202 - CONCRETE BARRIER REMOVED
23. ITEM 622 - CONCRETE BARRIER, TYPE B, AS PER PLAN
24. ITEM 604 - CATCH BASIN, NO. 3A
25. ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D
26. ITEM 302 - 9" ASPHALT CONCRETE BASE, PG64-22
27. ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN
28. ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE
29. ITEM 407 - TACK COAT, 702.13
30. ITEM 511 - CLASS HP CONCRETE, SIDEWALK, AS PER PLAN (SEE BRIDGE PLANS)



BRIDGE MAH-680-429 TYPICAL APPROACH SLAB SECTION - RAMP C

STA. 1+41.17 TO STA. 1+61.17 = 20.00'
STA. 4+24.31 TO STA. 4+44.31 = 20.00'

EXISTING LEGEND

- A EXISTING ASPHALT CONCRETE
- B EXISTING CONCRETE PAVEMENT
- C EXISTING SUBBASE
- D EXISTING ASPHALT SHOULDER
- E EXISTING CURB
- F EXISTING SIDEWALK
- G EXISTING MEDIAN BARRIER
- H 6" PIPE UNDERDRAIN
- J EXISTING GUARDRAIL
- K STABILIZED CRUSHED AGGREGATE
- L WATERPROOF AGGREGATE BASE COURSE
- M AGGREGATE BASE

FOR DETAILS SEE
STD DWG BP-2.3

PRESSURE RELIEF JOINT TYPE A

STA 1+37.17 TO STA 1+41.17 = 4.00'
STA 4+44.31 TO STA 4+48.31 = 4.00'

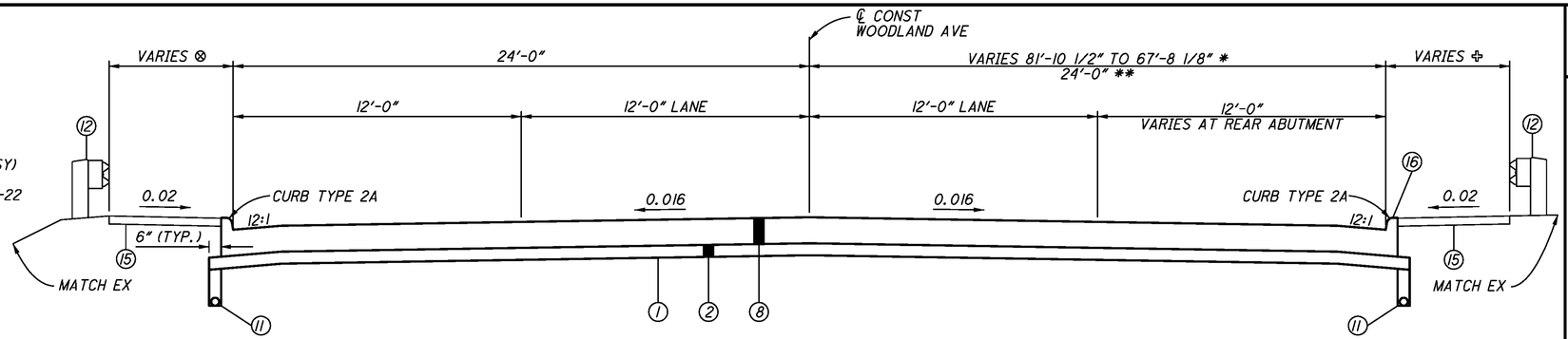
CALCULATED MJP
CHECKED JBD

TYPICAL SECTIONS

MAH-680-4.29

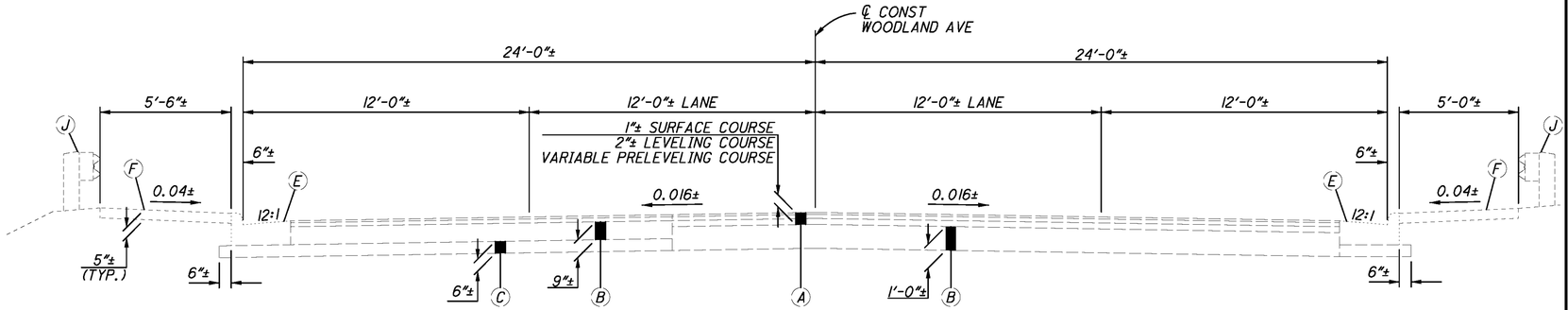
LEGEND

1. ITEM 204 - SUBGRADE COMPACTION
2. ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN
3. ITEM 305 - 9" CONCRETE BASE
4. ITEM 408 - BITUMINOUS PRIME COAT (APPLIED AT THE RATE OF 0.40 GAL/SY)
5. ITEM 448 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22
6. ITEM 448 - 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22
7. ITEM 517 - RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING)
8. ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=13")
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10. ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=17")
11. ITEM 605 - 4" SHALLOW PIPE UNDERDRAINS
12. ITEM 606 - GUARDRAIL, TYPE 5
13. ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 1
14. ITEM 607 - VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC
15. ITEM 608 - 4" WALK
16. ITEM 609 - CURB, TYPE 2A
17. ITEM 609 - CURB, TYPE 2B
18. ITEM 517 - RAILING (DEFLECTOR PARAPET TYPE)
19. ITEM 659 - SEEDING AND MULCHING
20. ITEM 254 - PAVEMENT PLANING
21. ITEM 255 - FULL DEPTH PAVEMENT SAWING (INCLUDED UNDER CMS 202.05)
22. ITEM 202 - CONCRETE BARRIER REMOVED
23. ITEM 622 - CONCRETE BARRIER, TYPE B, AS PER PLAN
24. ITEM 604 - CATCH BASIN, NO. 3A
25. ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D
26. ITEM 302 - 9" ASPHALT CONCRETE BASE, PG64-22
27. ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN
28. ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE
29. ITEM 407 - TACK COAT, 702.13
30. ITEM 511 - CLASS HP CONCRETE, SIDEWALK, AS PER PLAN (SEE BRIDGE PLANS)



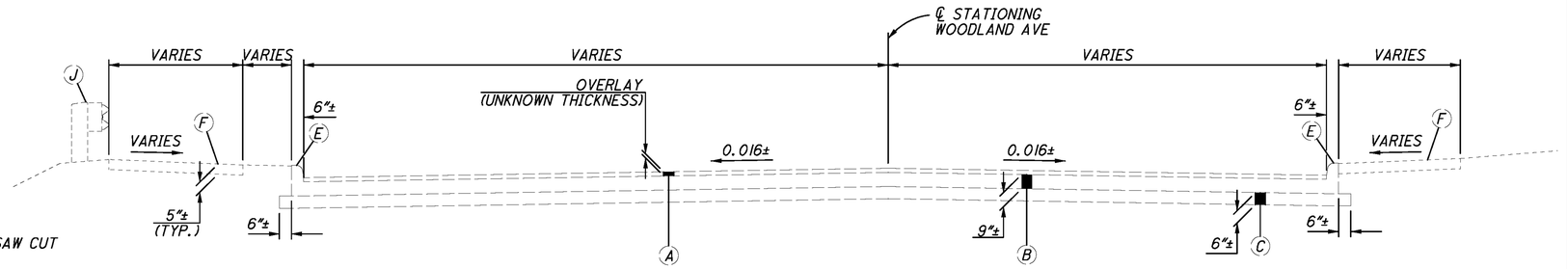
TYPICAL APPROACH SLAB SECTION - WOODLAND AVE (MAH-680-0594)

* STA 3+83.87 TO STA 4+04.23 = 20.36'
** STA 5+57.39 TO STA 5+77.39 = 20.00'
⊗ STA 3+69.53 TO STA 3+94.69 = 6'-3¾" 4'-8"
STA 5+44.78 TO STA 5+72.01 = 10'-3¾" TO 4'-8"
✣ STA 4+20.15 TO 4+34.93 = 4'-8" TO 5'-2½"
STA 5+67.99 TO 5+94.19 = 4'-8" TO 5'-4½"



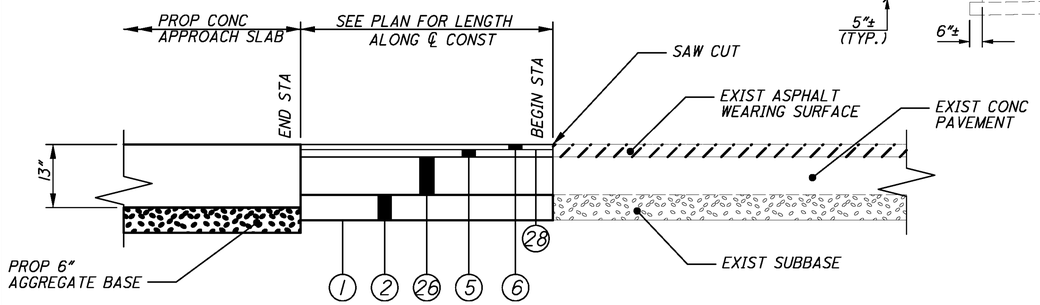
ADJOINING SECTION - WOODLAND AVE (MAH-680-0594)

STA 5+82.39



ADJOINING SECTION - WOODLAND AVE (MAH-680-0594)

STA 3+73.45



PAVEMENT REPLACEMENT SECTION AT ENDS OF PROPOSED APPROACH SLABS

STA 3+73.45 TO STA 383.87 = 10.42'
STA 5+77.39 TO STA 5+82.39 = 5.00'

EXISTING LEGEND

- (A) EXISTING ASPHALT CONCRETE
- (B) EXISTING CONCRETE PAVEMENT
- (C) EXISTING SUBBASE
- (D) EXISTING ASPHALT SHOULDER
- (E) EXISTING CURB
- (F) EXISTING SIDEWALK
- (G) EXISTING MEDIAN BARRIER
- (H) 6" PIPE UNDERDRAIN
- (J) EXISTING GUARDRAIL
- (K) STABILIZED CRUSHED AGGREGATE
- (L) WATERPROOF AGGREGATE BASE COURSE

CALCULATED KJJ
CHECKED JBD

TYPICAL SECTIONS

MAH-680-4.29

EXISTING LEGEND

- (A) EXISTING ASPHALT CONCRETE
- (B) EXISTING CONCRETE PAVEMENT
- (C) EXISTING SUBBASE
- (D) EXISTING ASPHALT SHOULDER
- (E) EXISTING CURB
- (F) EXISTING SIDEWALK
- (G) EXISTING MEDIAN BARRIER
- (H) 6" PIPE UNDERDRAIN
- (J) EXISTING GUARDRAIL
- (K) STABILIZED CRUSHED AGGREGATE
- (L) WATERPROOF AGGREGATE BASE COURSE
- (M) AGGREGATE BASE

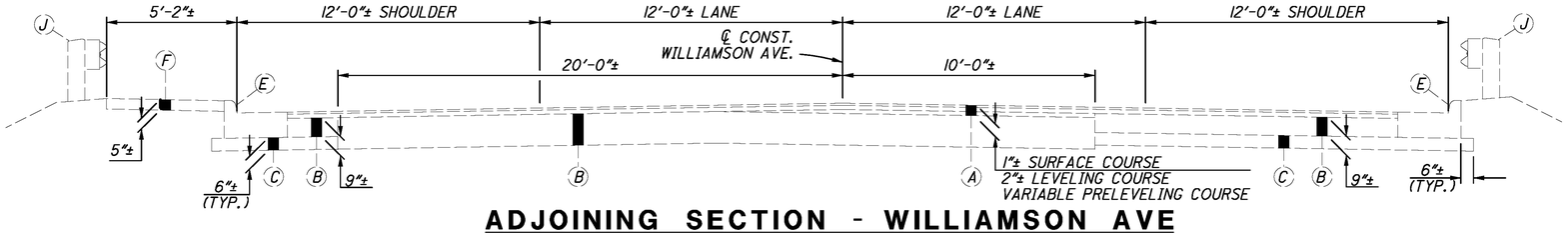
FOR DETAILS SEE STD DWG BP-2.3

PRESSURE RELIEF JOINT TYPE A

STA 924+28.67 TO STA 928+28.67 = 4.00'
STA 926+79.42 TO STA 926+83.42 = 4.00'

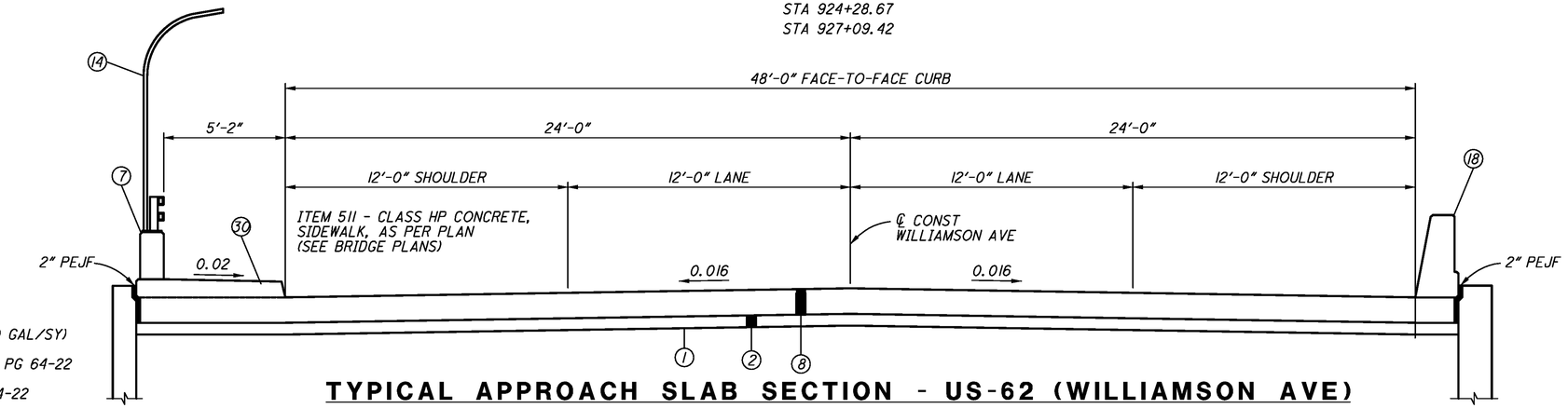
LEGEND

1. ITEM 204 - SUBGRADE COMPACTION
2. ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN
3. ITEM 305 - 9" CONCRETE BASE
4. ITEM 408 - BITUMINOUS PRIME COAT (APPLIED AT THE RATE OF 0.40 GAL/SY)
5. ITEM 448 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22
6. ITEM 448 - 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22
7. ITEM 517 - RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING)
8. ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=13")
9. ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15")
10. ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=17")
11. ITEM 605 - 4" SHALLOW PIPE UNDERDRAINS
12. ITEM 606 - GUARDRAIL, TYPE 5
13. ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 1
14. ITEM 607 - VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC
15. ITEM 608 - 4" WALK
16. ITEM 609 - CURB, TYPE 2A
17. ITEM 609 - CURB, TYPE 2B
18. ITEM 517 - RAILING (DEFLECTOR PARAPET TYPE)
19. ITEM 659 - SEEDING AND MULCHING
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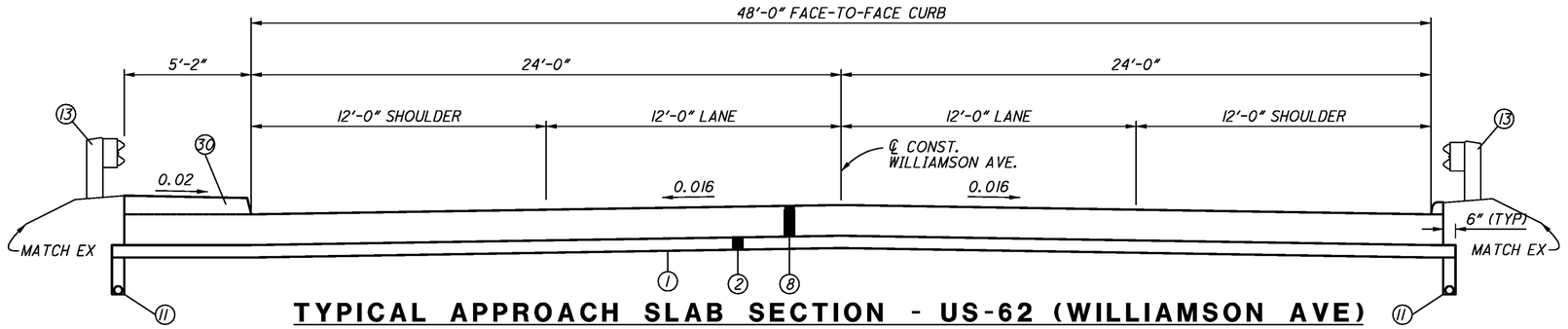
ADJOINING SECTION - WILLIAMSON AVE

STA 924+28.67
STA 927+09.42



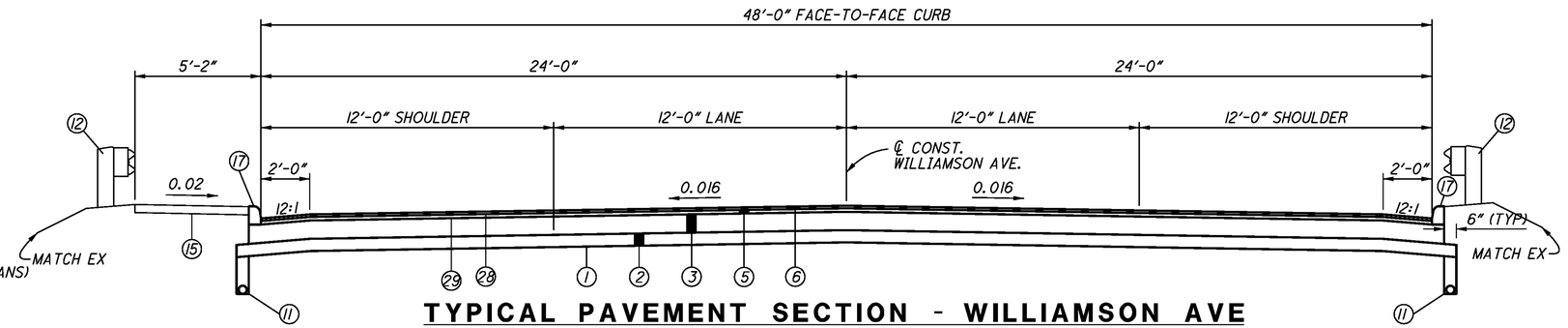
TYPICAL APPROACH SLAB SECTION - US-62 (WILLIAMSON AVE)

STA 924+38.59 TO STA 924+52.67 = 14.08'
STA 926+59.42 TO STA 926+73.50 = 14.08'



TYPICAL APPROACH SLAB SECTION - US-62 (WILLIAMSON AVE)

STA 924+32.67 TO STA 924+38.59 = 5.92'
STA 926+73.50 TO STA 926+79.42 = 5.92'



TYPICAL PAVEMENT SECTION - WILLIAMSON AVE

STA 926+83.42 TO STA 927+09.42 = 26.00'

CALCULATED GJS CHECKED JBD

TYPICAL SECTIONS

MAH-680-4.29

CALCULATED MJP
CHECKED JBD

GENERAL NOTES

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CLEARING AND GRUBBING

THE DEPARTMENT HAS NOT MARKED INDIVIDUAL TREES AND STUMPS FOR REMOVAL. UNLESS SPECIFICALLY DESIGNATED AS "DO NOT DISTURB" IN THE PLANS, REMOVE ALL TREES AND STUMPS WITHIN THE CONSTRUCTION LIMITS UNDER THE LUMP SUM BID FOR ITEM 201 CLEARING AND GRUBBING.

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, SOIL ANALYSIS TEST 2 EACH

659, TOPSOIL 186 CU. YD.

659, SEEDING AND MULCHING 1677 SQ. YD.

659, REPAIR SEEDING AND MULCHING 84 SQ. YD

659, INTER-SEEDING 84 SQ. YD.

659, COMMERCIAL FERTILIZER 0.23 TON

659, LIME 0.35 ACRES

659, WATER 9 M. GAL.

659, MOWING 4 M. SQ. FT.

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 SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

CONTRACTION AND/OR EXPANSION JOINTS

ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN CONTRACTION AND EXPANSION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. IN ALL CASES, THE PROVISION OF EXPANSION JOINTS AT ALL MAJOR STRUCTURES INCLUDING THE MAXIMUM SPACING BETWEEN CONTRACTION JOINTS IS IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-2.2 AND THE SPECIFICATIONS.

PART-WIDTH CONSTRUCTION

BECAUSE OF THE NECESSITY TO BUILD THIS PROJECT UNDER TRAFFIC AND TO CONSTRUCT THE FULL PAVEMENT WIDTH IN STAGES, EXERCISE CARE TO PREVENT THE CONSTRUCTION OF A BUTT JOINT IN THE BASE COURSES. LAP LONGITUDINAL JOINTS AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3.1.

MEDIAN AND/OR CURBING ON APPROACH SLABS

WITHIN THE LIMITS OF THE APPROACH SLAB, TRANSITION THE SHAPE OF THE MEDIAN AND/OR CURBING ON APPROACH SLABS FROM THE STANDARD SECTION ON THE APPROACHES TO THE SECTION USED ON THE BRIDGE.

ITEM 304 AGGREGATE BASE, AS PER PLAN

GRANULATED SLAG (GS) SHALL NOT BE PERMITTED FOR THIS ITEM. ALL OTHER REQUIREMENTS OF SECTIONS 304 AND 703.17 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL STILL BE APPLICABLE.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED AND SHALL BE USED AS DIRECTED BY THE ENGINEER TO BACKFILL AREAS WHICH WERE EXCAVATED UNDER ITEM 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:
304, AGGREGATE BASE, AS PER PLAN 72 CU YD

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 USING A "W-BEAM RAIL SPLICE" AS SHOWN IN AASHTO M 180. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

POST CONSTRUCTION STORM WATER TREATMENT

THIS PLAN UTILIZES STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT.

ROUNDING

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

EXISTING PLANS

EXISTING PLANS ENTITLED:
MAH-7-14.35
MAH-7-14.80
MAH-7-14.95
MAH-18-17.20
MAH-680-0476
MAH-680-6.98

MAY BE INSPECTED IN THE ODOT DISTRICT 4 OFFICE IN AKRON, OHIO.

ELEVATION DATUM

ALL ELEVATIONS ARE ORTHOMETRIC HEIGHTS USING THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND THE GEOID03 GEOID. HORIZONTAL POSITIONS ARE BASED ON THE OHIO STATE PLANE NORTH ZONE, A LAMBERT CONFORMAL CONIC MAP PROJECTION, THE NORTH AMERICAN DATUM OF 1983 ADJUSTED TO THE NATIONAL SPATIAL REFERENCE SYSTEM OF 2007 (NAD 83 (NSRS 2007)), AND THE GRS80 ELLIPSOID.

CONTRACTION JOINTS IN CONCRETE PAVEMENT OR BASE WIDENING

WHERE NEW CONCRETE IS PLACED ADJACENT TO EXISTING CONCRETE, PROVIDE CONTRACTION JOINTS IN THE NEW CONCRETE TO FORM CONTINUOUS JOINTS WITH THOSE IN THE EXISTING CONCRETE.

THE MAXIMUM DISTANCE BETWEEN THE JOINTS IN THE NEW CONCRETE ARE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-2.2, IF NECESSARY, ADDITIONAL JOINTS MAY BE PROVIDED IN THE NEW CONCRETE AT APPROXIMATELY EQUAL INTERVALS BETWEEN EXISTING JOINTS THAT EXCEED THE MAXIMUM SPACING.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEMS.

ENDANGERED SPECIES HABITAT-INDIANA BAT

NO EXCAVATION, GRADING, OR FILLING OPERATIONS SHALL BE PERFORMED IN MILL CREEK AT MAH-680-4.76 (SFN 5006872). UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR STORE CONSTRUCTION EQUIPMENT AND/OR MATERIALS IN THIS STREAM.

THIS PROJECT IS WITHIN THE RANGE OF THE FEDERALLY ENDANGERED INDIANA BAT (MYOTIS SODALIS) AND MAY IMPACT SUMMER ROOSTING HABITAT FOR THIS SPECIES. THE SUMMER ROOSTING HABITAT FOR THE INDIANA BAT CONSISTS OF LIVING OR DEAD TREES OR SNAGS WITH EXFOLIATING, PEELING OR LOOSE BARK, SPLIT TRUNKS AND/OR BRANCHES OR CAVITIES. THEREFORE, ANY UNAVOIDABLE CUTTING OF SUCH TREES OR SNAGS WILL BE PERFORMED ONLY AFTER SEPTEMBER 30 AND BEFORE APRIL 1.

PRIOR TO DEMOLITION, THE UNDERSIDE OF THE EXISTING I-680 BRIDGES AT THE SILLIMAN STREET RAMP BRIDGE TO EB 680 (STRUCTURE NO. MAH-680-4.29, SFN 5006848), OVER PRICE ROAD AND MILL CREEK (STRUCTURE NO. MAH-680-4.76, SFN 5006872), UNDER WOODLAND AVENUE (STRUCTURE NO. MAH-680-5.94, SFN 5007089), OVER US 62 AND SR 7 (STRUCTURE NO. 680-6.32, SFN 5007143), OVER I-680 AND WILLIAMSON AVENUE (STRUCTURE NO. MAH-680-17.51, SFN 5007208), OVER DELASON AVENUE (STRUCTURE NO. MAH-680-6.87, SFN 5007232) AND OVER OHIO CENTRAL RAILROAD (STRUCTURE NO. MAH-680-6.93, SFN 5007267) SHALL BE CAREFULLY EXAMINED FOR THE PRESENCE OF BATS, ESPECIALLY FROM APRIL 1 TO SEPTEMBER 30. IF ANY BATS ARE FOUND ROOSTING ON THE UNDERSIDE OF A BRIDGE, THE UNITED STATES FISH AND WILDLIFE SERVICE, ECOLOGICAL SERVICES DIVISION, THE ODOT OFFICE OF ENVIRONMENTAL SERVICES AND ODOT DISTRICT 4 ENVIRONMENTAL SECTION SHALL BE CONTACTED TO PROVIDE THIS INFORMATION.

CONSTRUCTION AND DEMOLITION DEBRIS

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

UTILITIES

THE UNDERGROUND UTILITIES ON THIS PLAN HAVE BEEN LOCATED BY USING A SUBSURFACE UTILITY ENGINEERING COMPANY [SUE]. IF THERE ARE ANY DISCREPANCIES BETWEEN FIELD MARKINGS AND WHAT THE PLAN INDICATES, PLEASE CONTACT STEVE JONES, DISTRICT UTILITY COORDINATOR 330-786-4818, PRIOR TO ANY SUBSURFACE WORK BEING INITIATED.

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

OHIO EDISON
730 SOUTH AVE
YOUNGSTOWN, OHIO 44502
330-740-7635
ATTN: BILL SPEECE

TIME WARNER CABLE
4352 YOUNGSTOWN RD., SE
WARREN, OHIO 44484-3340
330-369-7107 EXT. 7141
ATTN. STEF KWIECINSKI

AT&T
50 W. BOWERY ST., 6TH FLOOR
AKRON, OHIO 44308
330-384-2237
ATTN: BEN MILLER

DOMINION EAST OHIO
320 SPRINGSIDE DR.
AKRON, OHIO 44333
330-664-2495
ATTN: GEORGE TURNER, JR.

CITY OF YOUNGSTOWN
ENGINEERING DEPARTMENT
26 S. PHELPS ST.
YOUNGSTOWN, OHIO 44503
330-743-5338
ATTN: GENE LESON

YOUNGSTOWN THERMAL
205 NORTH AVE.
YOUNGSTOWN, OHIO 44502
330-743-7712
ATTN: JACK BIXLER

MAHONING VALLEY SANITARY DISTRICT
P.O. BOX 4119
YOUNGSTOWN, OHIO 44515-4119
330-799-6315
ATTN: MARTY KIELBASA

QWEST COMMUNICATIONS
QWEST NATIONAL NETWORK SERVICES
4650 LAKEHURST COURT
DUBLIN, OHIO 43016
614-215-5606
ATTN: CHRIS STRAYER

ELANTIC TELECOM
6341 THOMPSON RD.
SYRACUSE, NEW YORK 13206
315-414-0127
ATTN: MARC LaFOREST

VERIZON BUSINESS
120 RAVINE ST.
AKRON, OHIO 44303
330-253-8267
ATTN: AL GUEST

AT&T (FIBER OPTIC)
5980-G WILCOX PLACE
DUBLIN, OHIO 43016
630-552-4677
ATTN: CARL DONAHUE

ACCESS
425 WEST MAIN ST.
P.O. BOX 248
CANFIELD, OHIO 44406
330-702-9832
ATTN: LISA SMITH

MAH-680-4.29

ITEM 606 - ANCHOR ASSEMBLY, TYPE E

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS, OR AN APPROVED EQUAL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE AT WWW.DOT.STATE.OH.US/DRRC/ UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS:

1. THE ET-2000 (1997) MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE LENGTH OF THE ET-2000 (1997) SYSTEM IS CONSIDERED TO BE 50'-0", INCLUSIVE OF TWO 25'-0" 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. NO.	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SS142	ET2000 PLUS 50'-0" PLAN, ELEVATION AND SECTION 25'-0" RAIL, SLEEVE W/PL POSTS 1-4	4/12/00	7/31/00
SS141	ET2000 PLUS PLAN, ELEVATION AND SECTION 25'-0" RAIL, HBA POSTS 1-4	2/29/00	7/31/00
SS158	ET2000 PLUS 50'-0" WITH 12'-6" PANELS AND HBA POSTS 1-4 PLAN, ELEVATION AND SECTION	5/22/00	7/31/00
SS330	ET2000 PLUS 50'-0" WITH FOUR FOUNDATION TUBES AND FOUR CRT POSTS	3/28/06	3/29/06
SS373	ET2000 PLUS 50'-0" WITH 7 SYT POSTS AND ONE HBA POST	6/20/09	1/20/09

2. THE SKT-350 MANUFACTURED BY ROAD SYSTEMS, INC., 2516 MALLORY LANE, STOW, OHIO, 44224, (TELEPHONE: 330-346-0721).

THE LENGTH OF THE SKT-350 SYSTEM IS CONSIDERED TO BE 50'-0", INCLUSIVE OF FOUR 12'-6" 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. NO.	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
SKT HINGED CRT	SEQUENTIAL KINKING TERMINAL (SKT-350) FOUR POSTS ARE STEEL HINGED AND FIVE POSTS ARE CRT	4/30/06	5/23/06
SKT-SP	SEQUENTIAL KINKING TERMINAL (SKT-350 A SEVEN POST OPTION USING STANDARD STEEL POST	3/30/09	3/4/09

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 18" X 18", OR 12" X 18" IF APPLIED TO A RECTANGULAR ET-2000 "PLUS" EXTRUDER HEAD.

REFER TO THE MANUFACTURER'S INSTRUCTION REGARDING THE INSTALLATION OF, AND THE GRADING AROUND, THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4-INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 27-3/4-INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4-INCHES ABOVE THE GROUND LINE.

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

STRUCTURE IDENTIFICATION SIGNS

THE SIGNS WILL BE PLACED ON EACH APPROACH OFF THE RIGHT SHOULDER, FACING TRAFFIC, AND BEHIND THE GUARDRAIL IF APPLICABLE. A QUANTITY OF ONE SIGN PER APPROACH WILL BE INSTALLED.

STRUCTURE IDENTIFICATION SIGNS SHALL BE 12"x12" ALUMINUM AND HAVE A NONREFLECTIVE WHITE SHEETING BACKGROUND. LETTERS SHALL BE BLACK, 3" IN HEIGHT, SERIES C STROKE WIDTH, AND SILK SCREENED AS PER 730.22. THE FIRST LINE WILL BE THE THREE LETTER COUNTY DESIGNATION, THE SECOND WILL BE THE ROUTE NUMBER, AND THE THIRD LINE WILL BE STRAIGHT LINE MILAGE. SPACING BETWEEN LINES OF TEXT SHALL BE 3/4 ". SIGNS SHALL BE BOLTED USING TWO 5/16 " ALUMINUM BOLTS, 2 1/2 " IN LENGTH, AND TWO 5/16 " NUTS. TWO 3/8 " DIAMETER HOLES WILL BE DRILLED, ONE 3/8 " FROM THE TOP AND ONE 3/8 " FROM THE BOTTOM OF THE SIGN, AT THE VERTICAL CENTERLINE OF THE SIGN.

THE SIGNS WILL BE MOUNTED ON NEW NO. 2 POSTS AND WILL BE INSTALLED AS PER STANDARD CONSTRUCTION DRAWING TC-41.20, MOST CURRENT REVISION. EACH POST WILL BE 7.5' IN LENGTH.

INSTALL SIGNS AT THE FOLLOWING LOCATIONS:
MAH-680-0429 (1): STA. 1+28.81 RT
MAH-680-0594 (1): STA. 4+36.04 RT
MAH-62-1751 (2): STA. 924+33.00 RT
STA. 926+76.00 LT

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:
ITEM 630 - SIGN, FLAT SHEET, 4 SQ FT
ITEM 630 - GROUND MOUNTED SUPPORT, NO. 2 POST, 32 FT

ITEM 604 - INLET, NO. 3B, AS PER PLAN
ITEM 622 - CONCRETE BARRIER, TYPE B, AS PER PLAN
ITEM 622 - CONCRETE BARRIER, TYPE B, REINFORCED, AS PER PLAN

THESE ITEMS SHALL BE CONSTRUCTED ACCORING TO THE DETAILS INCLUDED IN THIS PLAN SET. THE PURPOSE IS TO MATCH THE SHAPE OF THE EXISTING MEDIAN BARRIER ON I-680. IN THE EVENT THAT EXISTING DIMENSIONS VARY FROM THOSE IN THE PLANS THE BARRIER SHALL BE CONSTRUCTED TO MATCH EXISTING DIMENSIONS.

ITEM SPECIAL - MISC.: VERTICAL CLEARANCE

AFTER ALL CONSTRUCTION HAS BEEN COMPLETED, A REGISTERED SURVEYOR WILL TAKE VERTICAL CLEARANCE MEASUREMENTS AT LOCATIONS INDICATED ON THE APPROVED ODOT FORM (AVAILABLE IN THE DISTRICT 4 STRUCTURES AND PAVEMENT OFFICE). THE FINAL MEASUREMENTS SHALL BE RECORDED ON THE FORM AND SUBMITTED TO THE PROJECT ENGINEER AND THE DISTRICT 4 STRUCTURES AND PAVEMENT ENGINEER. THE RECORD SHALL BEAR THE SEAL OF THE LECENSED SURVEYOR WHO HAS TAKEN THE MEASUREMENTS. THIS WORK SHALL BE PERFORMED AT THE FOLLOWING STRUCTURES:
MAH-680-0429
MAH-680-0594
MAH-680-0632
MAH-680-0687
MAH-680-0693
MAH-62-1751

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:
SPECIAL - MISC.: VERTICAL CLEARANCE, 6 EACH

ASBESTOS NOTIFICATION

AN ASBESTOS SURVEY OF THE I-680 BRIDGE STRUCTURES AT THE SILLIMAN STREET RAMP BRIDGE TO EB 680 (STRUCTURE NO. MAH-680-4.29, SFN 5006848), OVER PRICE ROAD AND MILL CREEK (STRUCTURE NO. MAH-680-4.76, SFN 5006872), UNDER WOODLAND AVENUE (STRUCTURE NO. MAH-680-5.94, SFN 5007089), OVER US 62 AND SR 7 (STRUCTURE NO. 680-6.32, SFN 5007143), OVER I-680 AND WILLIAMSON AVENUE (STRUCTURE NO. MAH-62-17.51, SFN 5007208), OVER DELASON AVENUE (STRUCTURE NO. MAH-680-6.87, SFN 5007232) AND OVER OHIO CENTRAL RAILROAD (STRUCTURE NO. MAH-680-6.93, SFN 5007267) SCHEDULED FOR DEMOLITION WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON ANY OF THE BRIDGE STRUCTURES.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORMS, PARTIALLY COMPLETED AND SIGNED BY THE BRIDGE OWNER, WILL BE PROVIDED TO THE SUCCESSFUL BIDDER. THE CONTRACTOR SHALL COMPLETE THE FORM AND SUBMIT IT TO:

MAHONING-TRUMBULL AIR POLLUTION CONTROL
345 OAK HILL AVENUE, SUITE 200
YOUNGSTOWN, OHIO 44502
NEIL H. ALTMAN
(330) 743-3333
FAX: (330) 743-3960

AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION AND/OR REHABILITATION. THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER. INFORMATION REQUIRED ON THE FORM WILL INCLUDE: 1) THE CONTRACTORS NAME AND ADDRESS, 2) THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL AND 3) A DESCRIPTION OF THE PLANNED DEMOLITION WORK AND THE METHOD(S) TO BE USED.

A COPY OF THE OEPA FORM IS AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 4 OFFICE, 2088 SOUTH ARLINGTON, AKRON, OHIO 44306

BASIS FOR PAYMENT-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 ITEM 202-PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

STREAM AVOIDANCE

NO EXCAVATION, GRADING, OR FILLING OPERATIONS SHALL BE PERFORMED IN MILL CREEK AT MAH-680-4.76 (SFN 5006872). UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR STORE CONSTRUCTION EQUIPMENT AND/OR MATERIALS IN THIS STREAM.

MILL CREEK METRO PARK ACCESS

ACCESS TO MILL CREEK METRO PARK FACILITIES WILL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. THE PUBLIC WILL BE ABLE TO ACCESS ALL AREAS OF THE PARK DURING PROJECT CONSTRUCTION. THIS ACCESS WILL NOT BE USED AS A STAGING AREA FOR CONSTRUCTION EQUIPMENT AND/OR MATERIALS.

CALCULATED MJP
CHECKED JBD

GENERAL NOTES

MAH-680-4.29

MAINTENANCE OF TRAFFIC NOTES

ITEM 614, MAINTAINING TRAFFIC

MAINTENANCE OF TRAFFIC FOR I-680

PHASE SEQUENCING
MAINTAINING TRAFFIC PHASE NUMBERS DO NOT NECESSARILY INDICATE A SEQUENCE OF CONSTRUCTION. IT IS ANTICIPATED THAT OVERHEAD BRIDGE WORK (PHASES 5 THRU 11), AND MAINLINE SHOULDER STRENGTHENING (PRE-PHASE) WILL TAKE PLACE DURING THE FIRST CONSTRUCTION SEASON. MAINLINE BRIDGE WORK (PHASES 1 THRU 4) WILL TAKE PLACE DURING THE SECOND CONSTRUCTION SEASON. THE CONTRACTOR MAY ELECT, AT HIS OWN RISK, TO BEGIN MAINLINE WORK DURING THE FIRST CONSTRUCTION SEASON. IF THE CONTRACTOR CHOOSES TO PROCEED WITH PHASE 1 WORK AT THE END OF THE FIRST CONSTRUCTION SEASON ANY MEASURES, INCLUDING BUT NOT LIMITED TO PAINT LINES, PORTABLE CONCRETE BARRIER, IMPACT ATTENUATORS, ETC., REQUIRED TO REESTABLISH EXISTING LANE CONFIGURATION FOR WINTER LIMITATIONS SHALL BE AT THE CONTRACTOR'S EXPENSE AND AS APPROVED BY THE ENGINEER.

PRE-PHASE
STRENGTHEN SHOULDERS NOTATED ON THE PHASING DETAIL SHEETS. THIS WORK SHALL BE DONE AT NIGHT (8:00PM - 6:00AM). THE PAVEMENT SHALL BE BUILT UP THROUGH THE INTERMEDIATE COURSE BY THE END OF EACH NIGHT. THE FAILURE OF THE CONTRACTOR TO MEET THE TIME LIMITATIONS WILL CAUSE SEPARATE DISINCENTIVES OF $5000.00 PER HOUR OF OVERRUN OF TIME LIMITATIONS TO BE ASSESSED.

PHASED CONSTRUCTION ACTIVITIES: I-680 MAINTENANCE OF TRAFFIC FOR MAH-680-0632/MAH-680-0687/MAH-680-0693

PHASE 1
REMOVE MEDIAN BARRIER AND MEDIAN LIGHTING, WHILE MAINTAINING LIGHTING CURCUIT. STRENGTHEN SHOULDERS FOR FUTURE PHASES AND PAVE FOR TRAFFIC SHIFTS IN THE MEDIAN REMOVAL AREA, AS DIRECTED BY THE ENGINEER. MAINTAIN TRAFFIC BY LANE CLOSURES AND SHIFTS AS DETAILED IN THE PLANS.

PHASE 2
TRAFFIC IS SHIFTED TO SOUTHBOUND I-680 WITH 2 LANES NORTHBOUND AND 1 LANE SOUTHBOUND UNTIL ADDITIONAL LANE IS ADDED FOR SOUTHBOUND TRAFFIC AT THE ENTRANCE RAMP FROM US-62. NORTHBOUND ENTRANCE RAMPS FROM SOUTH AVENUE AND POWERSDALE AVENUE SHALL BE CLOSED AND DETOUR ROUTES UTILIZED AS DETAILED IN THE PLANS.

PHASE 3
TRAFFIC IS SHIFTED TO NORTHBOUND I-680 WITH 2 LANES NORTHBOUND AND 1 LANE SOUTHBOUND UNTIL ADDITIONAL LANE IS ADDED FOR SOUTHBOUND TRAFFIC AT THE ENTRANCE RAMP FROM US-62. SOUTHBOUND EXIT RAMP TO SOUTH AVENUE (EXIT 7) SHALL BE CLOSED AND DETOUR ROUTE UTILIZED AS DETAILED IN THE PLANS.

PHASE 4
MEDIAN BARRIER SHALL BE RESTORED INCLUDING HIGHWAY LIGHTING AND NORMAL LANE CONFIGURATIONS SHALL BE RE-ESTABLISHED.

OVERHEAD BRIDGE SUBSTRUCTURE WORK PHASING FOR I-680:

PHASE 5 (MAH-680-0429)
TRAFFIC IS SHIFTED TOWARDS THE MEDIAN IN BOTH DIRECTIONS TO WORK ON THE OUTSIDE PIERS. MAINTAIN TRAFFIC WITH LANE SHIFTS AS DETAILED IN THE PLANS.

PHASE 6 (MAH-680-0429)
TRAFFIC IS SHIFTED TOWARDS THE OUTSIDE IN BOTH DIRECTIONS TO WORK ON THE CENTER PIER. MAINTAIN TRAFFIC WITH LANE SHIFTS AS DETAILED IN THE PLANS.

PHASE 7 (MAH-680-0594)
TRAFFIC IS SHIFTED TOWARDS THE MEDIAN IN THE NORTHBOUND DIRECTION AND EAST ON RAMP TO WORK ON THE ABUTMENTS. MAINTAIN TRAFFIC WITH LANE SHIFTS AS DETAILED IN THE PLANS.

PHASE 8 (MAH-680-0594)
TRAFFIC IS SHIFTED TOWARDS THE OUTSIDE IN BOTH DIRECTIONS TO WORK ON THE PIER NO. 2. MAINTAIN TRAFFIC WITH LANE SHIFTS AS DETAILED IN THE PLANS.

PHASE 9 (MAH-680-0594)
TRAFFIC IS SHIFTED TOWARDS THE MEDIAN IN THE SOUTHBOUND DIRECTION AND WEST ON RAMP TO WORK ON THE PIER NO. 1. MAINTAIN TRAFFIC WITH LANE SHIFTS AS DETAILED IN THE PLANS.

PHASE 10 (MAH-62-1751)
TRAFFIC IS SHIFTED TOWARDS THE MEDIAN IN BOTH DIRECTIONS TO WORK ON THE OUTSIDE PIERS. MAINTAIN TRAFFIC WITH LANE SHIFTS AS DETAILED IN THE PLANS.

PHASE 11 (MAH-62-1751)
TRAFFIC IS SHIFTED TOWARDS THE OUTSIDE IN BOTH DIRECTIONS TO WORK ON THE CENTER PIER. MAINTAIN TRAFFIC WITH LANE SHIFTS AS DETAILED IN THE PLANS.

STEEL REPAIR ACTIVITIES MAH-680-0429
REMOVAL/REPLACEMENT OF THE SECTION OF FASCIA BEAM (BEAM E) SHALL BE ACCOMPLISHED UTILIZING SHORT-DURATION NIGHTIME CLOSURES UTILIZING LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE AND AS DETAILED IN THE PLANS. REPAIR OF DAMAGED FLANGE ON BEAM D SHALL BE ACCOMPLISHED UTILIZING TEMPORARY LANE CLOSURES. REFER TO THE PERMITTED LANE CLOSURE MAP FOR ALLOWABLE LANE CLOSURE TIMES AND SCD MT-95.30 FOR LAYOUT DETAILS.

ALL WORK AND TRAFFIC CONTROL DEVICES FOR MAINTAINING TRAFFIC SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC; AND ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

CONSTRUCTION ACTIVITES MAH-680-0476
ALL WORK ON THE BRIDGE SHALL BE COMPLETED FROM ABOVE. REFER TO THE PERMITTED LANE CLOSURE MAP FOR ALLOWABLE LANE CLOSURE TIMES AND SCD MT-95.30 FOR LAYOUT DETAILS. ALL WORK AND TRAFFIC CONTROL DEVICES FOR MAINTAINING TRAFFIC FOR MAH-680-0476 SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

PAINTING ACTIVITES
REFER TO THE PERMITTED LANE CLOSURE MAP FOR ALLOWABLE LANE CLOSURE TIMES AND SCD MT-95.30 FOR LAYOUT DETAILS. ALL WORK AND TRAFFIC CONTROL DEVICES FOR MAINTAINING TRAFFIC SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

ITEM 614, MAINTAINING TRAFFIC

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.

THIS ITEM SHALL CONSIST OF MAINTENANCE OF TRAFFIC ON EXISTING ROADWAYS AND RAMPS IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, LATEST REVISION, THE SPECIFICATIONS AND THE FOLLOWING:

1. THE CONTRACTOR SHALL INFORM THE DISTRICT OFFICE (330) 786-2211, EIGHTEEN (18) DAYS PRIOR TO THE BEGINNING OF WORK.

2. THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE ALL FLAGS, BARRICADES, SIGNS, SIGN SUPPORTS AND FURNISH AND MAINTAIN ALL FLAGGERS, WATCHERS AND INCIDENTALS RELATED THERETO.

3. ONLY DURING OFF-PEAK PERIODS (ie ANY PERIOD OTHER THAN 6-8AM AND 3-6PM) SHALL THE CONTRACTOR INSTALL AND SUBSEQUENTLY RESET ALL TRAFFIC CONTROL NECESSARY FOR THE WORK ZONE FOR EACH CONSTRUCTION PHASE.

4. A QUANTITY OF 700 CU. YDS. OF 614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC SHALL BE PROVIDED FOR USE IN MAINTAINING PAVEMENT, SHOULDERS AND OTHER LOCATIONS AS DIRECTED BY THE ENGINEER.

5. PRIOR TO OPENING TO TRAFFIC EACH LANE SHALL BE IN A SAFE, PASSABLE CONDITION. ALL TRANSVERSE JOINTS SHALL EXTEND ACROSS THE FULL LANE AND SHOULDER WIDTH AND EACH LANE SHALL BE FREE FROM UNEVEN LONGITUDINAL JOINTS. THE CONTRACTOR SHALL PROVIDE ASPHALT WEDGES FOR TRANSVERSE JOINTS WHEREVER THERE ARE PAVEMENT ELEVATION DIFFERENCES.

6. 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.

7. 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. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC AND SHALL INCLUDE FURNISHING, ERECTING MAINTAINING AND REMOVING THE SIGNS INCLUDING SUPPORTS.



W20-H14-60

8. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR BE PERMITTED TO HAVE SUCCESSIVE WORK ZONES UNLESS THE DISTANCE BETWEEN THE DRUMS, BARRICADES OR CONES EXCEEDS TWO (2) MILES RURAL OR ONE (1) MILE URBAN.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. 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.

ITEM 622, PORTABLE CONCRETE BARRIER, 50", AS PER PLAN

THIS WORK SHALL CONSIST OF FURNISHING, MAINTAINING, AND SUBSEQUENTLY REMOVING A 50-INCH PORTABLE CONCRETE BARRIER (PCB) AT THE LOCATIONS SHOWN ON THE PLANS. FOR DETAILS SEE SCD RM-4.1. PLEASE NOTE THAT SCD RM-4.1 WAS UPDATED 10-20-06 TO PROVIDE A PCB WHICH IS COMPATIBLE WITH NCHRP 350 CRITERIA.

PORTABLE CONCRETE BARRIER, 32 INCHES HIGH WITH AN 18-INCH MINIMUM HEIGHT GLARE SCREEN MAY BE USED AT THE OPTION OF THE CONTRACTOR. THE GLARE SCREEN SHALL BE CONSTRUCTED USING ONE OF THE SCREENS PROVIDED ON THE APPROVED LIST, AVAILABLE ON THE OFFICE OF MATERIAL MANAGEMENT WEB PAGE. THE APPROVED LIST OF GLARE SCREENS CAN BE FOUND ON THE ODOT WEBSITE BY CLICKING ON THE SERVICES MENU, THEN CLICKING ON MATERIALS MANAGEMENT, AND CHOOSING THE APPROVED LIST LINK.

PADDLE OR INTERMITTENT TYPE GLARE SCREENS SHALL BE DESIGNED USING A 20 DEGREE CUT-OFF ANGLE BASED ON TANGENT ALIGNMENT. THAT SPACING SHALL BE USED THROUGHOUT THE BARRIER LENGTH WITHOUT REGARD TO BARRIER CURVATURE.

THE GLARE SCREEN SYSTEM SHALL BE SECURELY FASTENED TO THE 32-INCH PORTABLE CONCRETE BARRIER USING THE HARDWARE AND PROCEDURES SPECIFIED BY THE MANUFACTURER.

FOR DIRECTIONS ON HOW TO INSTALL THE GLARE SCREEN AND THE BARRIER, SEE THE MANUFACTURER'S INSTRUCTIONS.

WHERE THE BARRIER IS PLACED TO REMAIN FOR A BIDIRECTIONAL PHASE, THE CONTRACTOR MAY CHOOSE TO USE 32 INCH PORTABLE CONCRETE BARRIER WITH GLARE SCREEN. THE GLARE SCREEN MAY BE LEFT OFF UNTIL THE BIDIRECTIONAL PHASE. THE OBJECT MARKER SHALL BE PLACED FOR THE FIRST PHASE.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR ITEM 622, PORTABLE CONCRETE BARRIER, 50 INCH, AS PER PLAN.

CONTRACTOR'S EQUIPMENT - OPERATION AND STORAGE

A QUALIFIED FLAGGER SHALL BE EMPLOYED WHERE THE CONTRACTOR'S EQUIPMENT MUST MERGE WITH THE TRAFFIC STREAM. THE CONTRACTOR'S EQUIPMENT SHALL BE EQUIPPED WITH AT LEAST ONE AMBER FLASHING LIGHT. PAVERS, ROLLERS AND OTHER EQUIPMENT MAY BE PARKED IN AREAS ALONG THE HIGHWAY WHEN PAVING OPERATIONS ARE SCHEDULED TO CONTINUE WITHIN THE NEXT WORKDAY. OTHERWISE THE EQUIPMENT SHALL BE STORED AT A STORAGE AREA OUTSIDE THE R/W, THE LOCATION OF WHICH SHALL HAVE PRIOR APPROVAL OF THE ENGINEER. WHEN PARKING ALONG THE HIGHWAY THE EQUIPMENT SHALL BE PLACED AND DELINEATED AS PER 614.03. NO EQUIPMENT SHALL BE PARKED IN THE MEDIAN OF THE HIGHWAY. ADEQUATE BARRICADES AND LIGHTS SHALL BE PLACED ON THE PAVEMENT SIDE OF THE EQUIPMENT TO IDENTIFY THE LIMITS OF THE EQUIPMENT. ALL OTHER EQUIPMENT, INCLUDING PRIVATE VEHICLES, SHALL BE STORED AT THE APPROVED CONTRACTOR'S STORAGE AREA. NO EQUIPMENT SHALL BE PARKED ON PRIVATE PROPERTY UNLESS PRIOR APPROVAL OF THE OWNER AND THE PROJECT ENGINEER/SUPERVISOR HAS BEEN GRANTED.

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF CMS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

- DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
- DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF CMS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL 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 FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP). IN GENERAL, LEOS SHOULD BE POSITIONED AT THE POINT OF LANE RESTRICTION OR ROAD CLOSURE AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH INTERSECTIONS IN WORK ZONES.
- WHEN CONSTRUCTION VEHICLES ARE ENTERING/EXITING THE ZONE DIRECTLY FROM/INTO AN OPEN LANE OF TRAFFIC. IF A LANE HAS BEEN CLOSED TO PROVIDE AN ACCELERATION/DECELERATION LANE FOR THE VEHICLE, THE LEO WILL NOT BE REQUIRED.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. ONCE THE LEO HAS COMPLETED THE DUTIES DESCRIBED ABOVE AND STILL HAS TIME REMAINING ON HIS/HER SHIFT, THE LEO MAY BE ASKED TO PATROL THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) OR BE PLACED AT A LOCATION TO DETER MOTORISTS FROM SPEEDING. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (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) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 500 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF A LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC NOTES

MAH-680-4.29

MAINTENANCE OF TRAFFIC NOTES (CONT.)

ITEM 614, BARRIER REFLECTORS AND/OR OBJECT MARKERS

BARRIER REFLECTORS AND/OR OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE CONCRETE BARRIER USED FOR TRAFFIC CONTROL. BARRIER REFLECTORS, OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO CMS 626, EXCEPT THAT THE SPACING SHALL BE 50 FEET. AN ESTIMATED QUANTITY OF 766 EACH OF ITEM 614 BARRIER REFLECTOR, TYPE B, 528 EACH OF ITEM 614 OBJECT MARKER, ONE-WAY AND 238 EACH OF ITEM 614 OBJECT MARKER, TWO-WAY HAVE BEEN PROVIDED AND CARRIED TO THE GENERAL SUMMARY.

WORK ZONE INCREASED PENALTIES SIGN (R11-H5A)

R11-H5A-48 SIGNS SHALL BE FURNISHED, ERECTED, AND MAINTAINED IN GOOD CONDITION AND/OR REPLACED AS NECESSARY AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. SIGNS SHALL BE MOUNTED AT THE APPROPRIATE OFFSETS AND ELEVATIONS AS PRESCRIBED BY THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THEY SHALL BE MAINTAINED ON SUPPORTS MEETING CURRENT SAFETY CRITERIA.

THE SIGNS MAY BE ERECTED OR UNCOVERED NO MORE THAN FOUR HOURS BEFORE THE ACTUAL START OF WORK. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN FOUR HOURS FOLLOWING RESTORATION OF ALL LANES TO TRAFFIC WITH NO RESTRICTIONS, OR SOONER AS DIRECTED BY THE ENGINEER. TEMPORARY SIGN COVERING AND UNCOVERING DUE TO TEMPORARY LANE RESTORATIONS SHALL BE GUIDED BY THE FOUR-HOUR LIMITATIONS STATED ABOVE. SUCH LANE RESTORATIONS SHOULD BE EXPECTED TO REMAIN IN EFFECT FOR 30 OR MORE CONSECUTIVE CALENDAR DAYS, SUCH AS DURING WINTER SHUTDOWNS.

THE SIGNS ON THE MAINLINE SHALL BE DUAL MOUNTED UNLESS NOT PHYSICALLY POSSIBLE. THE FIRST SIGN SHALL BE PLACED BETWEEN THE ROAD WORK AHEAD (W20-1)SIGN AND THE NEXT SIGN IN THE SEQUENCE. SIGNS SHALL BE ERECTED ON EACH ENTRANCE RAMP AND EVERY 2 MILES THROUGH THE CONSTRUCTION WORK LIMITS. SIGNS ON THE MAINLINE SHALL BE R11-H5A-48. SIGNS USED ON THE RAMPS SHALL BE R11-H5A-24. R11-H5A-24 SIGNS MAY BE USED IN THE MEDIAN IN LIEU OF R11-H5A-48 SIGNS IF IT IS NOT PHYSICALLY POSSIBLE TO PROVIDE R11-H5A-48 SIGNS IN THE MEDIAN.

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED, BUT GOOD, CONDITION PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE RETROREFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF CMS 730.19.

WORK ZONE INCREASED PENALTIES SIGNS AND SUPPORTS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGN AND NECESSARY SUPPORTS. IF A SIGN AND SUPPORT COMBINATION IS REMOVED AND REERECTED AT ANOTHER LOCATION AS 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 REMOVAL OF THE SIGN AND SUPPORT.

ITEM 614, WORK ZONE INCREASED PENALTIES SIGN 47 EACH

ITEM 614, WORK ZONE IMPACT ATTENUATOR, FOR HAZARDS OVER 24" AND LESS THAN 36" WIDE, (UNIDIRECTIONAL OR BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING IMPACT ATTENUATORS:

1. THE QUADGUARD CZ WORK ZONE IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., 35 EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312-467-6750).

   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:

DRAWING NUMBER: QSCZCVR-T4
DRAWING NAME: QUADGUARD CZ SYSTEM FOR CONSTRUCTION ZONES
REVISION DATE: 5/13/99 REV. J
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-10
DRAWING NAME: QUADGUARD SYSTEM CONCRETE PAD, CZ, QG
REVISION DATE: 11/19/97 REV. D
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-16
DRAWING NAME: QUADGUARD SYSTEM BACKUP ASSEMBLY, CZ, QG
REVISION DATE: 7/30/99 REV. F
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 354051z
DRAWING NAME: QUADGUARD CZ SYSTEM NOSE ASSEMBLY, CZ, QG, 24, 30, 36
REVISION DATE: 5/17/99
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-18
DRAWING NAME: TRANSITION ASSEMBLY, 4 OFFSET, QG
REVISION DATE: 6/25/99 REV. F
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35400260
DRAWING NAME: QUADGUARD SYSTEM PCMB ANCHOR ASSEMBLY
REVISION DATE: 11/19/97 REV. C
ODOT APPROVAL DATE: 8/27/99

2. THE BARRIER SYSTEMS, INC. TAU-II IMPACT ATTENUATOR, DISTRIBUTED BY ROAD SYSTEMS, INC., SALES SUPPORT, 2183 ELM TRACE, AUSTINTOWN, OH 44515, (TELEPHONE (330)) 799-9291).

   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:

DRAWING NUMBER: SYSTEM CAPACITY
DRAWING NAME: UNIVERSAL TAU-II CRASH CUSHION SYSTEM CONFIGURATION CHART
REVISION DATE: 1/06/04 V5
ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: A040416
DRAWING NAME: UNIVERSAL TAU-II PARTS LIST
REVISION DATE: 4/22/04
ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: A040420
DRAWING NAME: UNIVERSAL TAU-II FOUNDATION, FLUSH MOUNT BACKSTOP
REVISION DATE: 4/28/04
ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: A040105
DRAWING NAME: UNIVERSAL TAU-II FOUNDATION, PCB BACKSTOP (REFERENCED ON A04020)
REVISION DATE: 1/07/04
ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: B040239
DRAWING NAME: APPLICATION, FLUSH MOUNT BACKSTOP (TYPICAL FOR PARALLEL 60 MPH UNIT)
REVISION DATE: 4/21/04
ODOT APPROVAL DATE: 10/16/04

THE CONTRACTOR SHALL PROVIDE A REPLACEMENT UNIT WHEN AN IMPACT IS SEVERE ENOUGH TO REQUIRE COMPLETE REPLACEMENT OF THE ATTENUATOR. THE CONTRACTOR SHALL HAVE A SPARE PARTS PACKAGE AVAILABLE ON THE PROJECT SITE AT ALL TIMES WHEN AN ATTENUATOR IS IN PLACE. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE COMPLETE SPARE PARTS PACKAGE FOR EVERY ONE TO SIX UNITS INSTALLED ON THE PROJECT SITE. FOR EXAMPLE, FIVE INSTALLED UNITS REQUIRE ONE SPARE PARTS PACKAGE AND SEVEN INSTALLED UNITS REQUIRE TWO SPARE PARTS PACKAGES.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT, MAINTAIN AND REPAIR A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL OR BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ONE OF THE FOLLOWING IMPACT ATTENUATORS:

1. THE QUADGUARD CZ, (24 INCHES WIDE SIX-BAY) WORK ZONE IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., 35 EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312-467-6750).

   THE LENGTH OF THE SIX-BAY QUADGUARD CZ IS 20'-9". 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:

DRAWING NUMBER: QSCZCVR-T4
DRAWING NAME: QUADGUARD CZ SYSTEM FOR CONSTRUCTION ZONES
REVISION DATE: 5/13/99 REV. J
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-10
DRAWING NAME: QUADGUARD SYSTEM CONCRETE PAD, CZ, QG
REVISION DATE: 11/19/97 REV. D
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-16
DRAWING NAME: QUADGUARD SYSTEM BACKUP ASSEMBLY, CZ, QG
REVISION DATE: 7/30/99 REV. F
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 354051Z
DRAWING NAME: QUADGUARD CZ SYSTEM NOSE ASSEMBLY, CZ, QG, 24, 30, 36
REVISION DATE: 5/17/99
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-18
DRAWING NAME: TRANSITION ASSEMBLY, 4 OFFSET, QG
REVISION DATE: 6/25/99 REV. F
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35400260
DRAWING NAME: QUADGUARD SYSTEM PCMB ANCHOR ASSEMBLY
REVISION DATE: 11/19/97 REV. C
ODOT APPROVAL DATE: 8/27/99

2. THE TRACC (TRINITY ATTENUATING CRASH CUSHION) MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

   THE TRACC IS 21'-0" LONG AND 2'-7" WIDE. 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:

DRAWING NUMBER: SS450
DRAWING NAME: CRASH-CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS
REVISION DATE: 3/12/99 REV. 1
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS455
DRAWING NAME: TRACC TRANSITION TO W-BEAM MEDIAN BARRIER PLAN, ELEVATION & SECTIONS
REVISION DATE: 2/18/99
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS461
DRAWING NAME: TRACC TRANSITION TO CONCRETE SAFETY SHAPE BARRIER PLAN, ELEVATION & SECTIONS
REVISION DATE: 6/30/99 REV. 1
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS462
DRAWING NAME: TRACC TRANSITION TO CONCRETE BARRIER SINGLE SLOPE PLAN, ELEVATION & SECTIONS
REVISION DATE: 6/30/99
ODOT APPROVAL DATE: 8/27/99

3. THE BARRIER SYSTEMS, INC. TAU-II IMPACT ATTENUATOR, DISTRIBUTED BY ROAD SYSTEMS INC., SALES SUPPORT, 2183 ELM TRACE, AUSTINTOWN, OH 44515, (TELEPHONE 330-799-9291)

   THE TAU-II FOR THIS NOTE IS A PARALLEL 8-BAY UNIT (24' LONG AND 35" WIDE). INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIEDIN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DRAWING NUMBER: A040416
DRAWING NAME: UNIVERSAL TAU-II PARTS LIST
REVISION DATE: 4/22/04
ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: A040420
DRAWING NAME: UNIVERSAL TAU-II FOUNDATION, FLUSH MOUNT BACKSTOP
REVISION DATE: 4/28/04
ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: A040105
DRAWING NAME: UNIVERSAL TAU-II FOUNDATION, PCB BACKSTOP (REFERENCED ON A04020)
REVISION DATE: 1/07/04
ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: B040239
DRAWING NAME: APPLICATION, FLUSH MOUNT BACKSTOP (TYPICAL FOR PARALLEL 60 MPH UNIT)
REVISION DATE: 4/21/04
ODOT APPROVAL DATE: 10/16/04

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616, WATER 50 M. GAL

CALCULATED JAB CHECKED JBD

MAINTENANCE OF TRAFFIC NOTES (CONT.)

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, FOUR (4) PORTABLE CHANGEABLE MESSAGE SIGNS [PCMS], ON SITE, FOR THE DURATION OF TIME SPECIFIED IN THIS NOTE, EACH SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR. THIS LIST IS AVAILABLE ON THE ODOT WEBSITE AT http://www.dot.state.oh.us/divisions/constructionmgt/materials/pages/portable-changeable.aspx
THE CLASS I, II AND III UNITS SHALL HAVE A MINIMUM LEGIBILITY DISTANCE OF 1250 FEET, 850 FEET AND 650 FEET, RESPECTIVELY.

EACH SIGN SHALL BE TRAILER MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM TO DIM THE SIGN DURING DARKNESS AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. PCMS TRAILERS SHOULD BE DELINEATED ON A PERMANENT BASIS BY AFFIXING RETROREFLECTIVE MATERIAL, IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER AS SEEN BY ONCOMING ROAD USERS.

PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE PCMS SHOULD NOT BE LOCATED IN THE MEDIAN OF THE HIGHWAY UNLESS IT IS PROTECTED FROM BOTH DIRECTIONS OF TRAFFIC. THE PCMS SHOULD BE LOCATED BEHIND GUARDRAIL WHEREVER POSSIBLE. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE THE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS WILL BE OFF, FACING AWAY FROM ALL TRAFFIC AND SHALL DISPLAY ONE OR MORE HIGH INTENSITY YELLOW REFLECTIVE SHEETING SURFACES OF 9-INCH BY 15-INCH MINIMUM SIZE FACING TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT AND TO REVISE SIGN MESSAGES, IF NECESSARY.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE CONTRACTOR. A LIST OF ALL PROPOSED PREPROGRAMMED MESSAGES WILL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION. THE SIGN SHALL HAVE TWO DIFFERENT MEMORIES [PROM AND RAM] AND CAPABILITY TO STORE UP TO 99 MESSAGES IN EACH MEMORY. MESSAGE MEMORY OR PREPROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. IN ORDER TO CONVEY A MAXIMUM OF INFORMATION AT A SINGLE GLANCE, ONLY THREE LINE PRESENTATION FORMATS WITH A MAXIMUM OF SIX MESSAGE PHASES WILL BE PERMITTED. NORMALLY, ONLY A MAXIMUM OF THREE MESSAGE PHASES SHOULD BE EMPLOYED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST ONCE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DE-ACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

THE PCMS SHALL CONTAIN A CELLULAR TELEPHONE DATA LINK WHICH WILL [IN ACTIVE CELLULAR AREAS] ALLOW REMOTE SIGN ACTIVATION, DEACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE sYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF 614. THE CONTRACTOR SHALL PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC AND THE ENTIRE COST TO CONTROL TRAFFIC ACCRUED BY THE DEPARTMENT WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24 HOURS PER DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES. THE REQUIREMENT TO FURNISH, INSTALL, MAINTAIN AND REMOVE A PCMS UNIT ON THIS PROJECT SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES AS OUTLINED IN 614.02.

A MINIMUM OF FOUR (4) PCMS SHALL BE USED FOR THE DURATION OF THE ENTIRE PROJECT, ONE IN EACH DIRECTION OF I-680, ONE IN PHASE 3 SOUTHBOUND DIRECTION FOR SOUTH AVENUE EXIT CLOSURE, AND ONE FOR LOCAL ROAD USE.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE BID FOR EACH SIGN MONTH OF ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN
2190 DAY

CONCRETE BARRIER DELINEATION AS PER PLAN

INCREASED DELINEATION, AS SPECIFIED HEREIN, SHALL BE INSTALLED ON ALL CONCRETE BARRIER, PERMANENT OR TEMPORARY, LOCATED WITHIN 5 FEET OF THE EDGE OF THE TRAVELED LANE UNDER EITHER OF THE FOLLOWING CONDITIONS:

ALONG TAPERS AND TRANSITION AREAS

ALONG CURVES (OUTSIDE ONLY) WITH DEGREE OF CURVATURE GREATER THAN OR EQUAL TO 3 DEGREES

THE INCREASED DELINEATION SHALL CONSIST OF EITHER LINEAR DELINEATION PANELS OR THE TRIPLE STACKING OF WORK ZONE BARRIER REFLECTORS.

THE LINEAR DELINEATION PANELS SHALL CONSIST OF PANELS OF DELINEATION, APPROXIMATELY 34 INCHES LONG AND 6-INCHES WIDE AND SHALL BE "CRIMPED". PANELS SHALL BE PROVIDED AT THE RATE OF ONE PER SECTION OF PORTABLE CONCRETE BARRIER, OR ONE PANEL EVERY 10 FEET ON PERMANENT BARRIER, SPACED EVENLY ALONG THE LENGTH OF THE RUN. THE PANELS SHALL BE MOUNTED SUCH THAT THE TOPS OF THE PANELS ARE 26 INCHES FROM THE BASE OF THE CONCRETE BARRIER.

TRIPLE STACKED BARRIER REFLECTORS SHALL CONSIST OF THREE BARRIER REFLECTORS STACKED VERTICALLY IN THEIR ATTACHMENT TO CONCRETE BARRIER. THERE SHALL BE NO OPEN SPACE BETWEEN THE ADJACENT BARRIER REFLECTORS. THE TOP OF THE MIDDLE BARRIER REFLECTOR SHALL BE LOCATED 26 IN ABOVE THE PAVEMENT.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING LINEAR DELINEATION.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE PLANS:

614 LINEAR DELINEATION 17360 FOOT

ALONG RUNS OF CONCRETE BARRIER WHERE THIS ITEM IS PROVIDED, THE QUANTITY SHALL BE MEASURED AS THE ENTIRE LENGTH OF THE RUN BEING DELINEATED, INCLUDING THE SPACES BETWEEN THE INDIVIDUAL PANELS OR STACKS OF BARRIER REFLECTORS.

CONSTRUCTION NOISE

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, DO NOT OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVICES BETWEEN THE HOURS OF 11:00 P.M. AND 7:00 A.M. IN ADDITION, DO NOT OPERATE AT ANY TIME ANY DEVICE IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

BRIDGE PAINTING EQUIPMENT ON SHOULDERS

IF BRIDGE PAINTING EQUIPMENT IS TO REMAIN ON THE SHOULDERS WHEN THE CONTRACTOR IS NOT WORKING, IT SHALL BE PLACED BEHIND PORTABLE CONCRETE BARRIER (PCB) AND A WORK ZONE IMPACT ATTENUATOR (WZIA) SHALL PROTECT THE LEADING BLUNT END OF THE PCB (SEE OMUTCD, FIGURE 6H-5 "SHOULDER CLOSURE ON FREEWAY" (TYPICAL APPLICATION 5)). IF THE CONTRACTOR CHOOSES TO PROTECT PAINTING EQUIPMENT WITH PCB AND A WZIA, THE COST SHALL BE CONSIDERED INCIDENTAL TO THE LUMP SUM BID FOR MAINTAINING TRAFFIC.

ITEM 614, WORK ZONE SPEED LIMIT SIGN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, COVER DURING SUSPENSION OF WORK, AND SUBSEQUENTLY REMOVE WORK ZONE SPEED LIMIT (R2-1) (40 SPEED LIMIT) SIGNS AND SUPPORTS WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

THE CONTRACTOR SHALL COVER OR REMOVE ANY EXISTING SPEED LIMIT SIGNS WITHIN THE REDUCED SPEED ZONE. THESE SIGNS SHALL BE RESTORED DURING SUSPENSION OR TERMINATION OF THE REDUCED SPEED LIMIT. THE EXPENSE OF COVERING OR REMOVAL AND RESTORATION OF EXISTING SPEED LIMIT OR MINIMUM SPEED LIMIT SIGNS SHALL BE INCLUDED IN THE PAY ITEM FOR THE WORK ZONE SPEED LIMIT SIGNS.

THE WORK ZONE SPEED LIMIT SIGNS MAY BE ERECTED OR UNCOVERED NO MORE THAN FOUR HOURS BEFORE THE ACTUAL START OF WORK. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN FOUR HOURS FOLLOWING RESTORATION OF ALL LANES TO TRAFFIC WITH NO RESTRICTIONS, OR SOONER AS DIRECTED BY THE ENGINEER. TEMPORARY SIGN COVERING AND UNCOVERING DUE TO TEMPORARY LANE RESTORATIONS SHALL BE GUIDED BY THE FOUR-HOUR LIMITATIONS STATED ABOVE. SUCH LANE RESTORATIONS SHOULD BE EXPECTED TO REMAIN IN EFFECT FOR 30 OR MORE DAYS, SUCH AS DURING WINTER SHUT-DOWNS. CLEANUP WORK AND OTHER WORK BEYOND THE SHOULDER SUCH AS SEEDING, TO BE PERFORMED AFTER RESTORATION OF ALL FULL-WIDTH LANES AND SHOULDERS TO TRAFFIC, DOES NOT CONSTITUTE A CONDITION WARRANTING A SPEED REDUCTION. THEREFORE, WHEN ACTIVITY IS LIMITED TO SUCH WORK, THE SPEED LIMIT IN EFFECT SHALL BE THE NORMAL SPEED LIMIT FOR THE SITE.

CONSTRUCTION AND MATERIALS SPECIFICATIONS, ITEM 614, PARAGRAPH 614.02(B) INDICATES THAT THE TWO DIRECTIONS OF A DIVIDED HIGHWAY ARE CONSIDERED SEPARATE HIGHWAY SECTIONS. THEREFORE, IF THE WORK ON A MULTI-LANE DIVIDED HIGHWAY IS LIMITED TO ONLY ONE DIRECTION, SPEED REDUCTION IN THE DIRECTION OF THE WORK DOES NOT AUTOMATICALLY CONSTITUTE SPEED REDUCTION IN THE OPPOSITE DIRECTION. SPEED LIMIT REDUCTION IN THE OPPOSITE DIRECTION, IN SUCH CASE, IS APPROPRIATE ONLY IF CONDITIONS ARE EXPECTED TO HAVE AN IMPACT ON THE DIRECTIONAL TRAFFIC FLOW, AS DIRECTED BY THE ENGINEER.

SPEED REDUCTION SIGNS (W3-5) SHALL BE ERECTED IN ADVANCE OF THE SPEED REDUCTION, APPROXIMATELY 1250-FEET ON MULTI-LANE HIGHWAYS AND 500 FEET ON 2-LANE HIGHWAYS.

A SIGN(S) TO INDICATE THE RESUMPTION OF THE STATUTORY SPEED LIMIT SHALL BE ERECTED AT THE END OF ANY REDUCED SPEED ZONE, TYPICALLY AT THE POINT WHERE ROADWAY AND SHOULDER WIDTHS RETURN TO NORMAL. ON UNDIVIDED ROADWAYS, THE R2-1 (SPEED LIMIT) SIGN SHALL BE USED. ON DIVIDED HIGHWAYS WHERE THE SPEED LIMIT VARIES BY VEHICLE TYPE, THE R2-1 (SPEED LIMIT) SIGN AND THE R2-H2A (TRUCK SPEED LIMIT) SIGNS SHALL BE MOUNTED SIDE-BY-SIDE ON SEPARATE SUPPORTS. THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED, BUT GOOD CONDITION, PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE RETROREFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF CMS 730.19.

WORK ZONE SPEED LIMIT SIGNS SHALL BE MOUNTED ON TWO 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 REERECTED 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. SPEED LIMIT SIGNING FOR THE POINT OF RESUMPTION OF THE STATUTORY SPEED LIMIT SHALL BE PAID FOR AS WORK ZONE SPEED LIMIT SIGNS. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, WORK ZONE SPEED LIMIT SIGN 27 EACH
ITEM 614, SPEED ZONE AHEAD SYMBOL SIGN 14 EACH

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHTTIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIVE PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED, THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC (SECTION 642-2).

ITEM 614, WORK ZONE CROSSOVER LIGHTING SYSTEM

THIS WORK SHALL CONSIST OF FURNISHING, ERECTING, OPERATING, MAINTAINING AND REMOVING A WORK ZONE LIGHTING SYSTEM FOR A SINGLE CROSSOVER, OR OVERLAPPING A PAIR OF CROSSOVERS. THE SYSTEM SHALL BE AS SHOWN ON SCD MT-100.00. THE CONTRACTOR SHALL ARRANGE FOR AND PAY FOR POWER. ALL MATERIALS AND CONSTRUCTION SHALL COMPLY WITH APPLICABLE PORTIONS OF 625 AND 725 EXCEPT: THE PERFORMANCE TEST OF 625.19F, AND CERTIFIED DRAWING REQUIREMENT OF 625.06, ARE WAIVED AND USED MATERIALS IN GOOD CONDITION ARE ACCEPTABLE.

POLES WHICH ARE NOT PROTECTED BY GUARDRAIL OR PORTABLE CONCRETE BARRIER SHALL BE LOCATED OUTSIDE THE CLEAR ZONE, AND SHOULD BE LOCATED AT LEAST 30 FT (PREFERABLY 40 FEET) FROM THE EDGE OF PAVEMENT WHEN POSSIBLE. ADDITIONAL POLE LINES, CABLES AND APPURTENANCES NECESSARY TO FURNISH POWER TO THE LIGHTING SYSTEM SHALL BE INCLUDED IN THIS ITEM. SERVICE POLES SHALL BE POSITIONED WITH THE SAME CONSTRAINTS AS THE LIGHTING POLES AS A MINIMUM.

PAYMENT WILL BE MADE AT THE UNIT PRICE PER EACH FOR ITEM 614, WORK ZONE CROSSOVER LIGHTING SYSTEM THROUGHOUT ALL PHASES OF WORK WHEN THE CROSSOVER ROADWAYS ARE USED.THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TOTHE GENERAL SUMMARY.

ITEM 614, WORK ZONE CROSSOVER LIGHTING SYSTEM 3 EACH

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. THE CONTRACTOR SHALL PROVIDE ALL OF THE "CLOSED" PLAQUES NECESSARY.

614 WORK ZONE PAVEMENT MARKINGS, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 614.11, ALL CLASS I EDGE LINES, LANE LINES, CENTER LINES AND DOTTED LINES SHALL BE 6 INCHES WIDE AND CHANNELIZING MARKINGS SHALL BE 8 INCHES WIDE. THE APPLICATION RATES FOR THE 4 INCH LINES SHALL BE 1.5 TIMES THE RATES SPECIFIED FOR 4 INCH LINES IN TABLE 614.11-1.

PER CMS 614.11A, WORK ZONE PAVEMENT MARKINGS SHALL HAVE A LIFE SPAN OF 120 DAYS. IF LINES NEED RESTRIPED WITHIN 120 DAYS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTRIPING MARKINGS, AT THE CONTRACTOR'S EXPENSE. AFTER 120 DAYS, THE CONTRACTOR SHALL BE PAID FOR THE WORK ZONE PAVEMENT MARKINGS.

EXISTING LANE CONFIGURATION SHALL BE REESTABLISHED BASED ON WINTER TRAFFIC LIMITATIONS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER TO RESTRIPE BEYOND THE 120 DAY LIMIT.

ITEM 614 WORK ZONE LANE LINE, CLASS I, AS PER PLAN 5.00 MILE
ITEM 614 WORK ZONE EDGE LINE, CLASS I, AS PER PLAN 10.00 MILE
ITEM 614 WORK ZONE CHANNELIZING LINE, CLASS I, AS PER PLAN 10000 FT
ITEM 614 WORK ZONE DOTTED LINE, CLASS I, AS PER PLAN 1500 FT

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER TO REPLACE MARKINGS IMPACTED BY PRE-PHASE WORK.

ITEM 614 WORK ZONE EDGE LINE, CLASS I, AS PER PLAN 2.70 MILE
ITEM 614 WORK ZONE CHANNELIZING LINE, CLASS I, AS PER PLAN 2700 FT

MAINTENANCE OF TRAFFIC NOTES

ITEM 614 - WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN

WORK ZONE RAISED PAVEMENT MARKERS, AS PER PLAN, AND THEIR INSTALLATION SHALL CONFORM TO CMS 614 OR CMS 621 AS SPECIFIED HEREIN.

RAISED PAVEMENT MARKERS IN USE DURING THE SNOW-PLOWING SEASON SHALL CONFORM TO 621.

RAISED PAVEMENT MARKERS IN USE DURING THE NON-SNOW-PLOW SEASON SHALL CONFORM TO EITHER 614 OR TO 621.

THE SNOW-PLOWING SEASON SHALL RUN FROM OCTOBER 15 THROUGH APRIL 1.

IF PROJECT DELAYS, NOT THE FAULT OF ODOT, CAUSE THE WORK TO EXTEND INTO THE SNOW-PLOWING SEASON, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WORK ZONE RAISED PAVEMENT MARKERS (WZRPMS) CONFORMING TO CMS 614, WITH RAISED PAVEMENT MARKERS CONFORMING TO 621, AS DETERMINED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

THIS ITEM SHALL INCLUDE PURCHASE, INSTALLATION AND REMOVAL OF ITEM 614 WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN, INCLUDING FILLING OF ANY DEPRESSIONS CREATED IN THE PAVEMENT AS PER CMS 621.08.

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

ITEM 614 WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN
5582 EACH

DETOUR NOTIFICATION

THE CONTRACTOR SHALL ADVISE THE ODOT DISTRICT OFFICE (330-786-3148), MAHONING COUNTY ENGINEER, RICHARD MARSICO (330-799-1581) AND THE CITY OF YOUNGSTOWN ENGINEER, CHUCK SHASHO (330-742-8800) EIGHTEEN (18) DAYS IN ADVANCE OF WHEN THE DETOUR ROUTE SHOULD BE IN EFFECT. ALL WORK ZONE DEVICES REQUIRED SHALL BE FURNISHED, ERECTED, MAINTAINED, AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. PAYMENT FOR ALL WORK ASSOCIATED WITH THE DETOUR SHALL BE INCLUDED UNDER THE LUMP SUM BID FOR ITEM 614, DETOUR SIGNING.

WINTER TRAFFIC LIMITATIONS

ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC BETWEEN NOVEMBER 15 AND APRIL 1. NOVEMBER 14 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND DISINCENTIVES OF $5000 SHALL BE ASSESSED FOR EACH CALENDAR DAY THAT THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT. THE CONTRACTOR MAY CLOSE LANES PRIOR TO APRIL 1 WITH WRITTEN APPROVAL FROM THE DISTRICT CONSTRUCTION ENGINEER.

ITEM 614 - MAINTAINING TRAFFIC, MISC.: TEMPORARY DRAINAGE

THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING, AND SUBSEQUENTLY REMOVING TEMPORARY DRAINAGE. TEMPORARY DRAINAGE HAS BEEN SHOWN IN THE PLANS, FOR INFORMATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING DRAINAGE AND THE EXISTING STORM SEWERS WITHIN THE CROSSOVER AREAS AND RESTORATION OF THE STORM SYSTEM WHEN THE MEDIAN WALL IS REPLACED.

PAYMENT FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, MISC.: TEMPORARY DRAINAGE.

MAINTAINING TRAFFIC QUANTITIES

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 202 PAVEMENT REMOVED 26143 SQ YD
ITEM 202 CONCRETE BARRIER REMOVED 2553 FT
ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE 1720 SQ YD
ITEM 621 RAISED PAVEMENT MARKER REMOVED 367 EACH
ITEM 604 INLET, NO. 3B, AS PER PLAN 8 EACH
(REFER TO AS PER PLAN NOTE ON SHEET 12)

ALTERNATE MAINTENANCE OF TRAFFIC PLANS

IF THE CONTRACTOR SO ELECTS, HE MAY SUBMIT ALTERNATE METHODS FOR THE MAINTENANCE OF TRAFFIC, PROVIDED THE INTENT OF THE ABOVE PROVISIONS IS FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THERE FROM. NO ALTERNATE PLANS SHALL BE PLACED IN EFFECT UNTIL APPROVAL HAS BEEN GRANTED IN WRITING BY THE ODOT DISTRICT CONSTRUCTION ENGINEER.

ITEM SPECIAL-RUMBLE STRIPS

THE RUMBLE STRIPS WILL BE PLACED AS SHOWN IN THE PLANS. RUMBLE STRIPS SHALL BE MILLED INTO THE PAVEMENT FOUR (4) INCHES WIDE AND 5/8 INCH DEEP WITH A 1/8 INCH TOLLERANCE SPACED TWELVE (12) INCHES APART C/C. THE RUMBLE STIPS SHALL BE INSTALLED TRANSVERSELY ACROSS THE LANE STARTING FOUR (4) INCHES FROM THE CHANNELIZING LINE AND ENDING EIGHTEEN (18) INCHES FROM THE EDGE LINE.

A W8-H16-48 SIGN SHALL BE DUAL MOUNTED APPROXIMATELY 500 FEET IN ADVANCE OF THE RUMBLE STRIP INSTALLATION. THE PROVISION, ERECTION, MAINTENANCE AND REMOVAL OF THE SIGNS AND SUPPORTS SHALL BE INCLUDED IN THE UNIT PRICE COST OF THE RUMBLE STRIPS.

DURING THE TRAFFIC PHASE REQUIRING THE RUMBLE STRIPS, THE CONTRACTOR SHALL MAINTAIN THE MILLED STRIPS BY KEEPING THEM FREE OF ROCKS AND DEBRIS. WHEN THE RUMBLE STRIPS ARE NO LONGER NEEDED, THE ENTIRE WIDTH AND LENGTH OF THE LANE CONTAINING THE STRIPS SHALL BE MILLED TO A DEPTH OF 1¼INCH AND RESURFACED WITH ITEM 448-ASPHALT CONCRETE SURFACE COURSE TYPE 1, PG 64-22. THE UNIT PRICE PER FOOT SHALL INCLUDE ALL LABOR MATERIALS AND EQUIPMENT FOR INSTALLATION,MAINTENANCE, REMOVAL AND RESTORATION AS DESCRIBED ABOVE.

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

ITEM 690 SPECIAL-RUMBLE STRIPS 756 FT

ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P.

IN ADDITION TO THE REQUIREMENTS OF CMS 615 THE PAVEMENT BUILD-UP SHALL BE:

ITEM 448 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22
ITEM 448 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22
ITEM 305 9" CONCRETE BASE
ITEM 304 6" AGGREGATE BASE, AS PER PLAN

STA. 322+66.00 TO STA. 331+14.00, STA. 350+31.00 TO STA. 355+74.00 AND STA. 373+45.00 TO STA. 381+94.00 PAVEMENT SHALL INCLUDE PLACING THE FOOTERS FOR THE BARRIER WALL MINUS PLACEMENT OF THE DOWEL BARS.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR AT THE CONTRACT PRICE PER SQ. YDS. FOR ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN.

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

ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN 28715 SQ YD

ITEM 204 - EXCAVATION OF SUBGRADE
ITEM 204 - GRANULAR MATERIAL, TYPE B

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR UNDERCUT OF UNSUITABLE MATERIAL IN THE SHOULDER REPLACEMENT AREAS.

ITEM 204 EXCAVATION OF SUBGRADE 950 CU YD
ITEM 204 GRANULAR MATERIAL, TYPE B 950 CU YD

ITEM 622 - CONCRETE BARRIER, TYPE B, AS PER PLAN

THIS ITEM SHALL CONSIST OF INSTALLING THE CONCRETE BARRIER, TYPE B AS DETAILED IN THE PLANS. IN ADDITION THE BARRIER PLACED AT STA 322+70.00 TO STA.331+10.00, STA. 350+35.00 TO STA. 355+70.00, AND STA. 373+45.00 TO STA. 381+90.00 SHALL BE PLACED WHILE NON-PERFORMING PLACEMENT OF THE FOOTERS. THE DOWEL BARS WILL INITIALLY BE LEFT OUT, BUT LATER INSTALLED PRIOR TO CONSTRUCTING THE MEDIAN WALL. THE TOP LAYER OF ASPHALT (1½" ASPHALT CONCRETE SURFACE COURSE) SHALL BE REMOVED PRIOR TO DOWEL BAR INSTALLATION. INSTALL BY DRILLING HOLES AND EPOXY IN THE BARS.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY TO PERFORM THE ABOVE DESCRIBED WORK AND SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR ITEM 622 CONCRETE BARRIER, TYPE B, AS PER PLAN.

(DEDUCTION FOR INLET REPLACEMENT 20' EACH = 200 FT.
DEDUCTION FOR LIGHT POLE FOUNDATION/PULLBOX PLACEMENT 2.5' EACH = 42.5 FT.
QUANTITY ACCOUNTED FOR ON THE ROADWAY SUB-SUMMARY = 147 FT.)

LABOR, INCIDENTALS AND EQUIPMENT NECESSARY TO PERFORM THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 622 CONCRETE BARRIER, TYPE B, AS PER PLAN 2075 FT

ITEM 626 - BARRIER REFLECTOR

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE ON ITEM 622 CONCRETE BARRIER, TYPE B, AS PER PLAN AND SHALL CONFORM TO CMS 626.

ITEM 626 BARRIER REFLECTOR 50 EACH

TRANSITION RESURFACING

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR RESURFACING OF THE TRANSITION AREAS. RESURFACING SHALL BE PERFORMED AFTER RAISED PAVEMENT MARKERS ARE REMOVED.

ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE 91570 SQ YD
ITEM 448 1½" ASHPALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22 3815 CU YD

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC NOTES

MAH-680-4.29

MAINTENANCE OF TRAFFIC NOTES (CONT.)

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION

THE CONTRACTOR SHALL BE RESPONSBLE FOR MAINTAINING TRAFFIC SIGNAL/FLASHER INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

1. EXISTING SIGNAL/FLASHER INSTALLATIONS WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE, OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES OR OTHERWISE DISTURBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION (AT AN INTERSECTION) FROM THE TIME HIS OPERATIONS FIRST DISTURB THE INSTALLATION UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK ACCEPTED.

2. NEW OR REUSED SIGNAL/FLASHER INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSBILE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION.

IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS, WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT, THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO, OR CANNOT RESPOND TO, AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THESE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE STATE OR THE CITY OF YOUNGSTOWN FOR POLICE SERVICES AND MAINTENANCE SERVICES BY CITY FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM.

WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 8 HOURS AND SHALL NOT INCLUDE THE HOURS OF 6 TO 8 AM AND 3 TO 6 PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE INSTALLATION OF TEMPORARY "STOP" SIGNS, EXCEPT FOR THE FOLLOWING INTERSECTIONS WHICH SHALL BE PROTECTED BY OFF-DUTY CITY YOUNGSTOWN POLICE, HIRED BY THE CONTRACTOR.

1. WOODLAND AVE. WORK ZONE

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.25.

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

1. TIME OF NOTIFICATION OF MALFUNCTION;
2. TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION;
3. ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED;
4. A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;
5. TIME OF COMPLETION OF THE REPAIR AND SYSTEM RESTORED TO FULL SERVICE.

A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

WORKSITE TRAFFIC SUPERVISOR

SUBJECT TO APPROVAL OF THE ENGINEER, THE CONTRACTOR SHALL EMPLOY AND IDENTIFY (SOMEONE OTHER THAN THE SUPERINTENDENT) A CERTIFIED WORKSITE TRAFFIC SUPERVISOR (WTS) BEFORE STARTING WORK IN THE FIELD. THE WTS MAY BE CERTIFIED FROM ONE OF THE FOLLOWING ORGANIZATIONS:

1. AMERICAN TRAFFIC SAFETY SERVICE ASSOCIATION (ATSSA), PHONE NUMBER 1-800-272-8772, CERTIFIED TRAFFIC CONTROL SUPERVISOR (TCS).
2. NATIONAL HIGHWAY INSTITUTE, DESIGN AND OPERATION OF WORK ZONE TRAFFIC CONTROL, PHONE NUMBER 1-703-235-0528.
3. THE OHIO CONTRACTORS ASSOCIATION, TRAFFIC CONTROL SUPERVISOR (OCA/TCS) WORK ZONE CLASS, ONLY IF TAKEN AFTER MAY 5, 2004, PHONE NUMBER 1-614-599-7915.
4. OHIO LABORERS TRAINING, TRAFFIC CONTROL SUPERVISORS CLASS, PHONE NUMBER 1-740-599-7915.

A COPY OF EACH WTSS CERTIFICATION AND 24-HOUR CONTACT INFORMATION SHALL BE PROVIDED TO THE ENGINEER AT THE PRECONSTRUCTION CONFERENCE. IF THE DESIGNATED WTS WILL NOT BE AVAILABLE FULL TIME (24/7) THE CONTRACTOR MAY DESIGNATE AN ALTERNATE WTS TO BE AVAILABLE WHEN THE PRIMARY IS OFF DUTY. EACH WTS SHALL HAVE A CURRENT WTS CERTIFICATION (WITH AN EXPIRATION DATE NO MORE THAN 5 YEARS FROM THE DATE OF ISSUE) FROM ANY OF THE APPROVED ORGANIZATIONS.

THE WTS POSITION HAS THE RESPONSIBILITY OF MONITORING TRAFFIC CONTROL DEFICIENCIES FOR THE ENTIRE WORK ZONE. THE DUTIES OF THE WTS ARE AS FOLLOWS:

1. BE AVAILABLE ON A 24-HOUR PER DAY BASIS, AND BE ABLE TO BE ON SITE FOR ALL EMERGENCY TRAFFIC CONTROL NEEDS WITHIN ONE HOUR OF NOTIFICATION BY POLICE OR PROJECT STAFF AND BE PREPARED TO EFFECT CORRECTIVE MEASURES IMMEDIATELY ON EXISTING WORK ZONE TRAFFIC CONTROL DEVICES.
2. ATTEND PRECONSTRUCTION MEETING AND ALL PROJECT MEETINGS WHERE TRAFFIC CONTROL MANAGEMENT IS DISCUSSED.
3. BE AVAILABLE FOR MEETINGS OR DISCUSSIONS WITH THE ENGINEER UPON REQUEST OR WITHIN 36 HOURS.
4. BE AWARE OF, AND COORDINATE IF NECESSARY, ALL TRAFFIC CONTROL OPERATIONS, INCLUDING THOSE OF SUBCONTRACTORS AND SUPPLIERS.
5. COORDINATE PROJECT ACTIVITIES WITH ALL LAW ENFORCEMENT OFFICERS (LEOS). A WTS SHALL ALSO BE THE MAIN CONTACT PERSON WITH THE LEOS WHILE THEY ARE ON THE PROJECT.
6. COORDINATE MEETINGS WITH ODOT PERSONNEL, LEOS AND OTHER APPLICABLE ENTITIES BEFORE EACH PLAN PHASE SWITCH TO DISCUSS WORK ZONE TRAFFIC CONTROL.
7. ENSURE COMPLIANCE WITH THE CONTRACT DOCUMENTS FOR SIGNS, BARRICADES, TEMPORARY CONCRETE BARRIER, PAVEMENT MARKINGS, PORTABLE MESSAGE SIGNS, AND OTHER TRAFFIC CONTROL DEVICES ON A DAILY BASIS; AND FACILITATE ANY CORRECTIVE ACTION NECESSARY.
8. NOTIFY THE CONTRACTOR OF THE NEED FOR CLEANING AND MAINTENANCE OF ALL TRAFFIC CONTROL DEVICES, INCLUDING THE COVERING AND REMOVAL OF INAPPLICABLE SIGNS.
9. INSPECT, EVALUATE, PROPOSE NECESSARY MODIFICATIONS TO, AND DOCUMENT THE EFFECTIVENESS OF, THE TRAFFIC CONTROL DEVICES AND/OR TRAFFIC OPERATIONS ON A DAILY BASIS (7 DAYS A WEEK). IN ADDITION, A WEEKLY NIGHT INSPECTION OF THE WORK ZONE SETUP FOR DAYTIME WORK OPERATIONS; AND ONE DAYTIME INSPECTION PER WEEK FOR NIGHTTIME PROJECTS. THIS SHALL INCLUDE (BUT NOT BE LIMITED TO) DOCUMENTATION ON THE FOLLOWING PROJECT EVENTS:
   - A. INITIAL TRAFFIC CONTROL SETUP (DAY AND NIGHT REVIEW).
   - B. DAILY TRAFFIC CONTROL SETUP AND REMOVAL.
   - C. WHEN CONSTRUCTION STAGING CAUSES A CHANGE IN THE TRAFFIC CONTROL SETUP.
   - D. CRASH OCCURRENCES WITHIN THE CONSTRUCTION AREA.
   - E. REMOVAL OF TRAFFIC CONTROL DEVICES AT THE END OF A PHASE OR PROJECT.
   - F. ALL OTHER EMERGENCY TRAFFIC CONTROL NEEDS.
10. COMPLETE THE DEPARTMENT APPROVED LONG TERM INSPECTION FORM (CA-D-8) AFTER EACH INSPECTION AS REQUIRED IN # 9 AND SUBMIT IT TO THE ENGINEER THE FOLLOWING WORK DAY. THESE REPORTS SHALL INCLUDE A CHECKLIST OF ALL TRAFFIC CONTROL MAINTENANCE ITEMS TO BE REVIEWED. A COPY OF THE FORM WILL BE PROVIDED AT THE PRE-CONSTRUCTION MEETING. ANY DEFICIENCIES OBSERVED SHALL BE NOTED, ALONG WITH RECOMMENDED CORRECTIVE ACTIONS AND THE DATES BY WHICH SUCH CORRECTIONS WERE, OR WILL BE, COMPLETED. A COPY OF THIS DOCUMENT CAN BE FOUND IN THE DEPARTMENT OF TRANSPORTATION CONSTRUCTION INSPECTION FORMS MANUAL DATED 10/15/06 OR CURRENT REVISION.
11. VERIFY THAT ALL FLAGGING OPERATIONS ARE BEING CONDUCTED PER THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
12. HAVE COPIES OF THE ODOT TEMPORARY TRAFFIC CONTROL MANUAL AND APPLICABLE STANDARDS AND SPECIFICATIONS INCLUDED IN THE CONTRACT DOCUMENTS AVAILABLE AT ALL TIMES ON THE PROJECT.

THE DEPARTMENT WILL NOT PAY THE UNIT PRICE BID FOR THE WTS FOR ANY DAY ON WHICH THE CONTRACTOR FAILS TO PERFORM THE DUTIES SET FORTH ABOVE. SHOULD THE CONTRACTOR'S FAILURE TO PERFORM ANY OF THE DUTIES DESCRIBED ABOVE RESULT IN A MAINTENANCE OF TRAFFIC SAFETY ISSUE, THE DEPARTMENT WILL DEDUCT THE PRORATED DAILY AMOUNT FOR ITEM 614 MAINTENANCE OF TRAFFIC FROM THE CONTRACTOR'S NEXT SCHEDULED ESTIMATE.

IF THREE OR MORE FAILURES TO PERFORM THE DUTIES SET FORTH ABOVE OCCUR, THE WTS SHALL BE IMMEDIATELY REMOVED FROM THE WORK IN ACCORDANCE WITH C&MS 108.05.

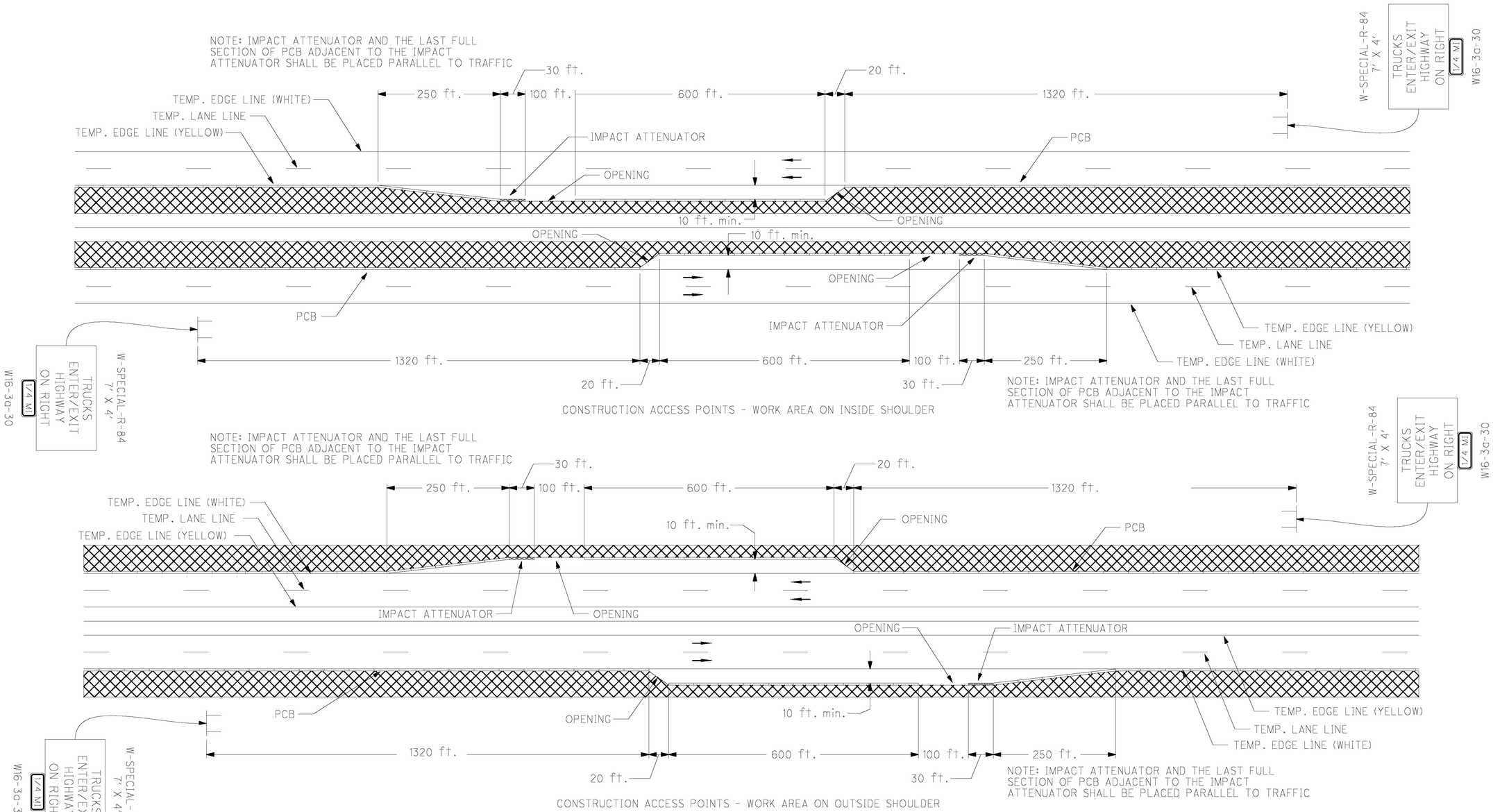
THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED FOR THE WORKSITE TRAFFIC SUPERVISOR:

ITEM 614 WORKSITE TRAFFIC SUPERVISOR 18 MONTHS

CALCULATED JAB CHECKED JBD

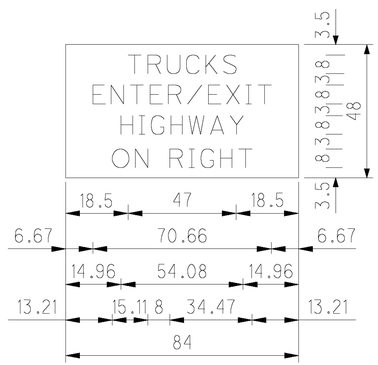
MAINTENANCE OF TRAFFIC NOTES

MAH-680-4.29



W-SPECIAL; NO BORDER, BLACK ON ORANGE;
"TRUCKS" E MOD; "ENTER/EXIT" E MOD;
"HIGHWAY" E MOD; "ON RIGHT" E MOD;
TABLE OF WIDTHS AND SPACES

18.50	T 5.94	1.65	R 6.38	2.05	U 6.37	2.06	C 6.37	1.65	K 6.50	1.65	S 6.38	18.50	
6.67	E 5.94	1.65	N 6.38	1.67	T 5.94	1.65	E 5.94	1.65	R 5.94	0.55	/ 6.47	1.10	E 5.94	1.65	X 6.94	1.65	I 1.60	1.65	T 5.94	6.67
14.96	H 6.38	2.05	I 1.60	2.05	G 6.38	2.05	H 6.37	1.65	W 8.44	0.56	A 8.00	0.55	Y 8.00	14.96						
13.21	O 6.69	2.05	N 6.37	8.00	R 6.38	2.05	I 1.60	2.05	G 6.38	2.05	H 6.37	1.65	T 5.94	13.21						



CONSTRUCTION ACCESS POINTS

Construction access point locations may be selected by the Contractor with the approval of the Engineer. The locations shall be selected for good sight distance and ease of access for entering vehicles (avoid locations just beyond crest vertical curves, on overhead structures, on upgrades, etc.). In the event that the Engineer determines that an access point does not function in a safe manner, he/she shall order it immediately closed at no cost to the State. Access points may be relocated subject to the approval of the Engineer, as necessary to accomplish construction activites.

All costs for relocation of portable concrete barrier, installation, repair, replacement and removal of impact attenuators, grading for access drives and related costs shall be included in the lump sum bid for Item 614 Maintaining Traffic.

OFFICE OF TRAFFIC ENGINEERING

DESIGNED RAS | REVIEWED LAM

REVISION DATE 04/17/09 | CHECKED

PIS NUMBER 209563

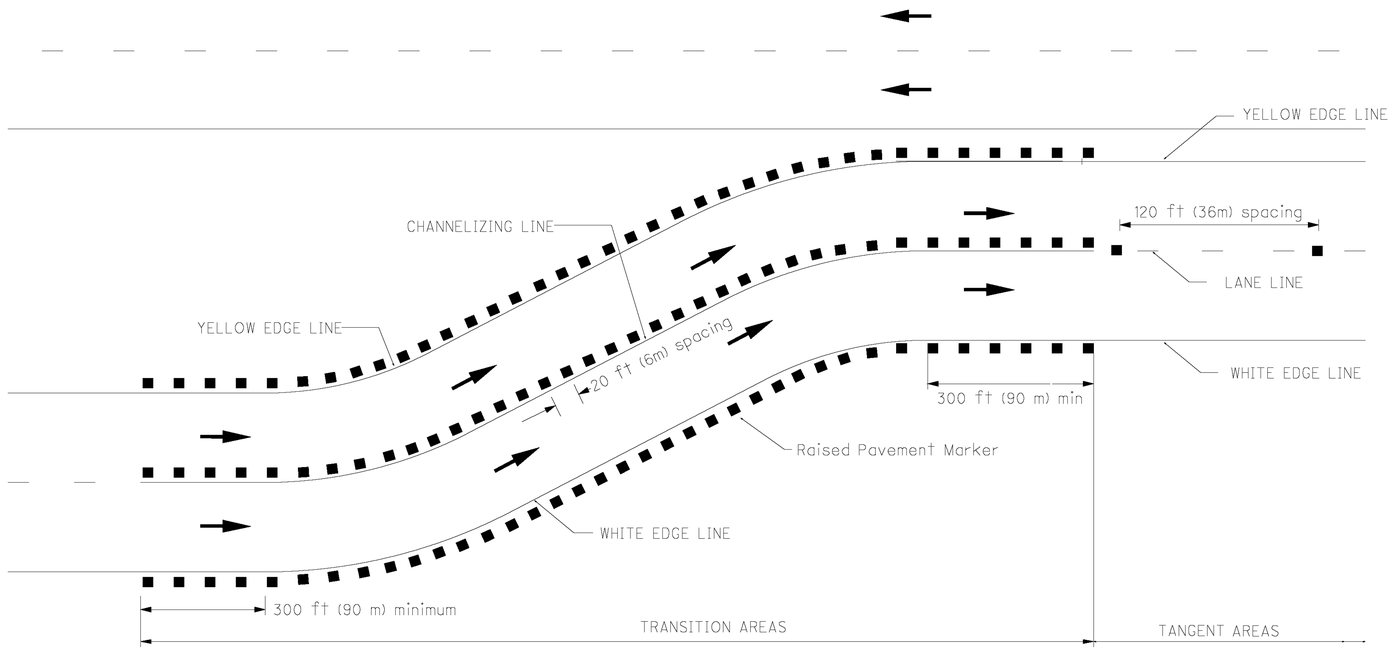
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CONSTRUCTION ACCESS POINTS

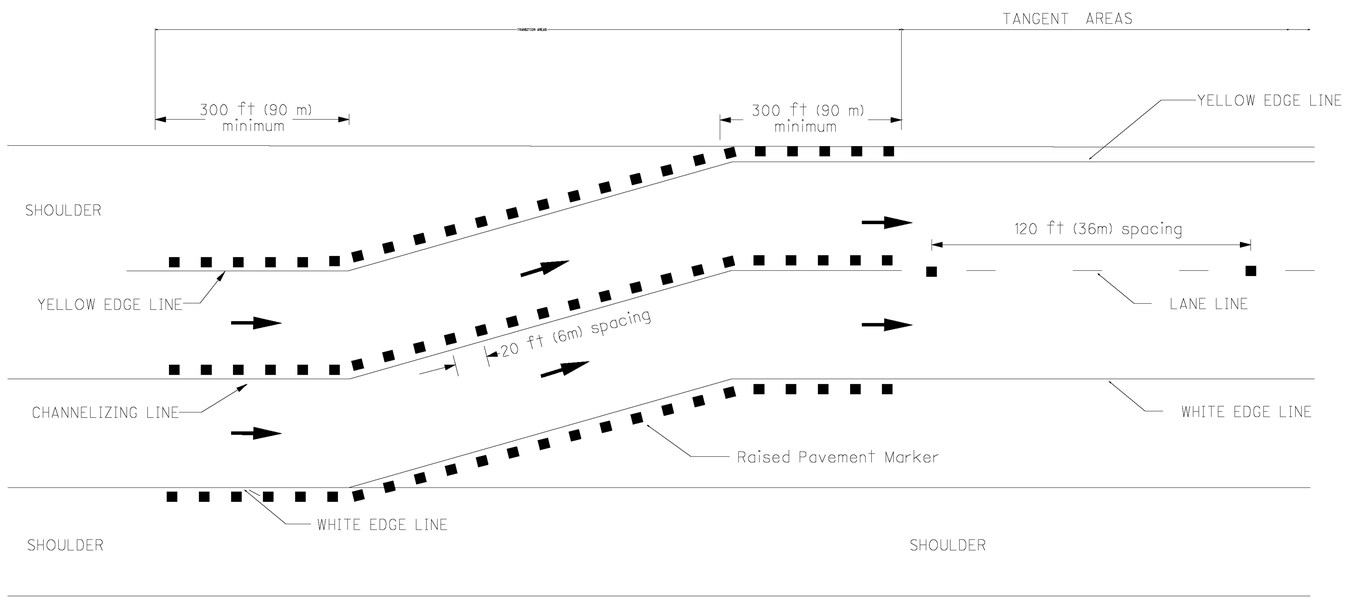
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18
307



WORK ZONE DELINEATION FOR CROSSOVERS



WORK ZONE DELINEATION FOR LANE SHIFTS

LEGEND

- RPM
- DIRECTION OF TRAVEL

NOTES

1. This drawing presents delineation procedures for freeways and expressways on asphalt surfaces. Procedures are provided for transition areas and for tangent areas. The procedures for transition areas apply to crossovers and to lane shifts of 4 feet (1.2 m) or greater. Delineation of transition areas for shifts of less than 4 inches (1.2 m)shall be as per the tangent area delineation.

2. Raised Pavement Markers shall meet the following seasonal specifications:

   a) Raised Pavement Markers in place during the normal construction season may be either 621 Raised Pavement Markers or 614 Work Zone Raised Pavement Markers (WZRPMs). The normal construction season with regard to use of WZRPMs shall be the period from April 1 through October 15.

   b) At locations where it is intended that Raised Pavement Markers will winter over, 621 Raised Pavement Markers shall be provided.

   c) At locations where it is intended that work will continue beyond October 15 but will be completed prior to the beginning of snow-plowing season, 614 WZRPMs may remain in place until such time. Snow-plowing season shall be as specified in the plans. If snow-plowing season is not specified in the plans, it shall be assumed that snow-plowing season runs from October 16 through March 31. If project delays, not the fault of ODOT, cause work to extend into the snow-plowing season, the contractor shall be responsible for replacing WZRPMs with 621 Raised Pavement Markers, as determined by the Engineer, at the contrator's expense.

3. All material furnished shall be listed on the Department's Prequalified Lists.

4. The geometrics of the crossover shall be as shown in the plans. Additional details are provided in Standard Construction Drawing MT-95.70.

5. See Standard Construction Drawings MT-102.10 and MT-102.20 for more details concerning lane shifts.

6. Spacing of raised pavement markers (RPMs) shall be at 20 feet (6 m) center-to-center for all long-line marking within transition areas. Within tangent areas RPMs shall be provided only along the lane lines, spaced at 120 foot (36 m) center-to-center.

7. The RPMs shall be 1-way, facing oncomming traffic, and shall be white or yellow to match the color of the associated line marking.

8. Along the edge lines, the RPMs shall be offset a maximum of 4 inches (100 mm) to the outside of the lines. Along the channelizing lines, the RPMs shall be offset to the left of the lines by no more than 1 inch (25 mm). Along the lane lines the RPMs shall be centered between dashes.

9. The RPMs shall be removed when they are no longer appropriate.

10. Holes resulting from removal of 621 RPMs shall be filled as per 621.08. If removal of the 621 RPMs does not take place immediately after the highlighted alignment becomes invalid, the reflectors within the 621 RPMs shall be removed.

11. Following removal of 621 RPMs resurfacing of the transition shall be performed. The resurfacing shall be performed at the time the surface course is being applied. In preparation for resurfacing, the existing pavement shall be removed to a depth necessary to match the level of the intermediate course of the proposed pavement.

OFFICE OF TRAFFIC ENGINEERING

DESIGNED | REVIEWED LAM

REVISION DATE 4/17/09 | CHECKED

PID NUMBER 209930

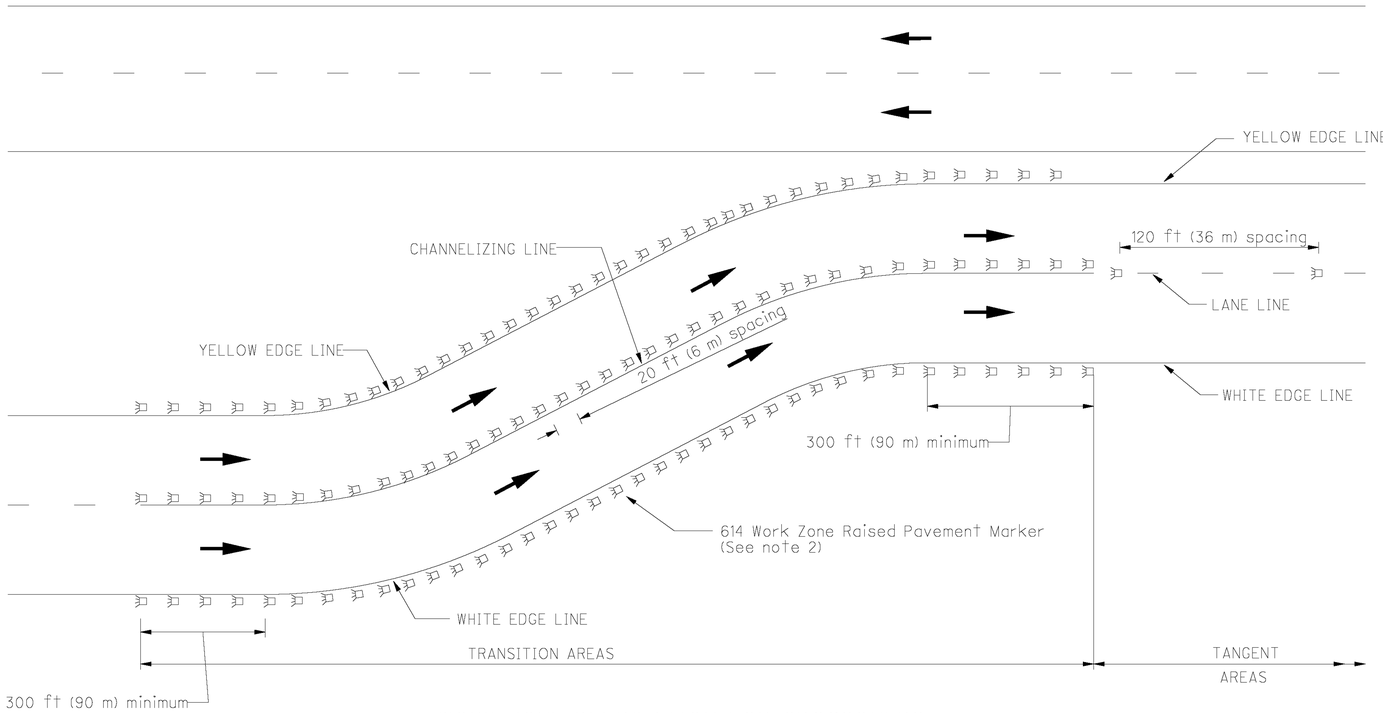
PLAN INSERT SHEET

WORK ZONE DELINEATION ON ASPHALT SURFACES

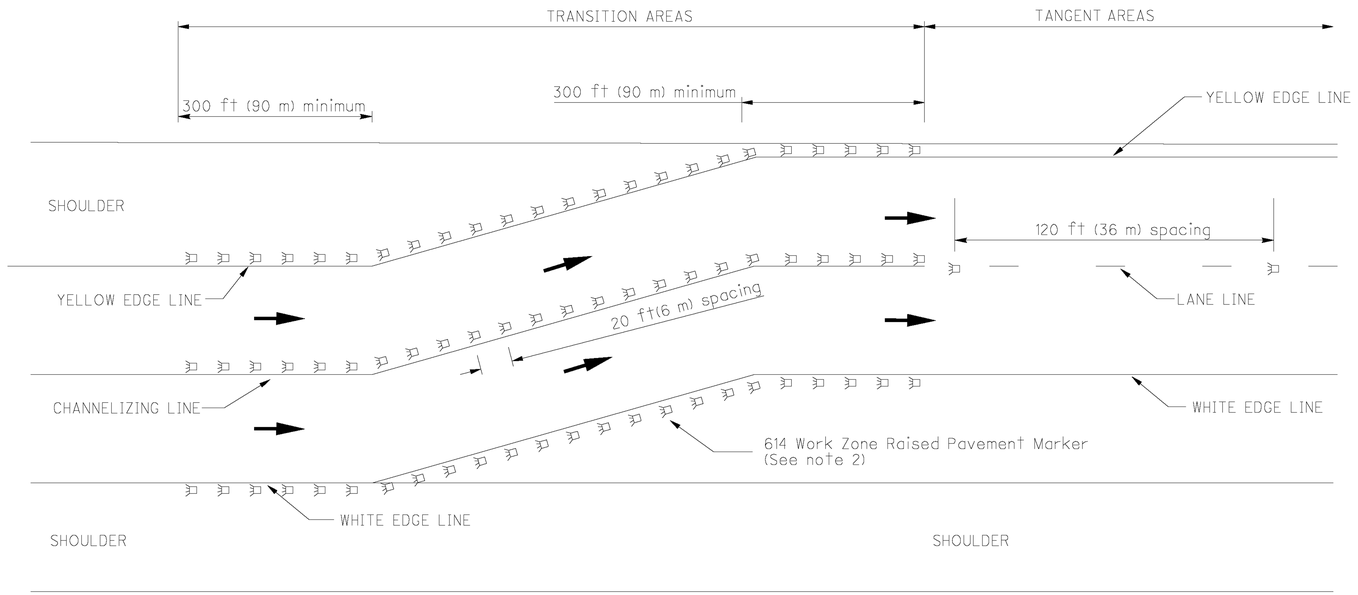
MAH-680-4.29

1 / 1

19
307



WORK ZONE DELINEATION FOR CROSSOVERS



WORK ZONE DELINEATION FOR LANE SHIFTS

NOTES

1. This drawing presents delineation procedures for freeways and expressways on concrete surfaces. Procedures are provided for transition areas and for tangent areas. The procedures for transition areas apply to crossovers and to lane shifts of 4 feet (1.2 m) or greater. Delineation of transition areas for shifts of less than 4 feet (1.2 m) shall be as per the tangent area delineation.
2. The Work Zone Raised Pavement Markers (WZRPMs) shown on this drawing are intended for use only during the non-snow-plowing season. WZRPMs shall not be provided during the snow-plowing season. The snow-plowing season shall be from October 16 through March 31 or as otherwise specified in the plans. Where a temporary alignment will remain in use through the winter, the WZRPMs shall be removed prior the beginning of snow-plowing season and replaced approximately April 1, or as otherwise determined by the Engineer
3. All material furnished shall be listed on the Department's Prequalified Lists.
4. The geometrics of the crossover shall be as shown in the plans. Additional details are provided in Standard Construction Drawing MT-95.70.
5. See Standard Construction Drawings MT-102.10 and MT-102.20 for more details concerning lane shifts.
6. Spacing of WZRPMs shall be at 20 feet (6 m) center-to-center for all long-line marking within transition areas. Within tangent areas WZRPMs shall be provided only along the lane lines, spaced at 120 feet (36 m) center-to-center.
7. The WZRPMs shall be 1-way, facing oncoming traffic, and shall be white or yellow to match the color of the associated line marking.
8. Along the edge lines, the WZRPMs shall be offset a maximum of 4 inches (100 mm) to the outside of the lines. Along the channelizing lines, the WZRPMs shall be offset to the left of the lines by no more than 1 inch (25 mm). Along the lane lines the WZRPMs shall be centered between dashes.
9. The WZRPMs shall be removed when they are no longer appropriate.

LEGEND

WORK ZONE RPM, TYPE A

DIRECTION OF TRAVEL

OFFICE OF TRAFFIC ENGINEERING

DESIGNED | REVIEWED LAM

REVISION DATE 07/20/07 | CHECKED

PIS NUMBER 209931

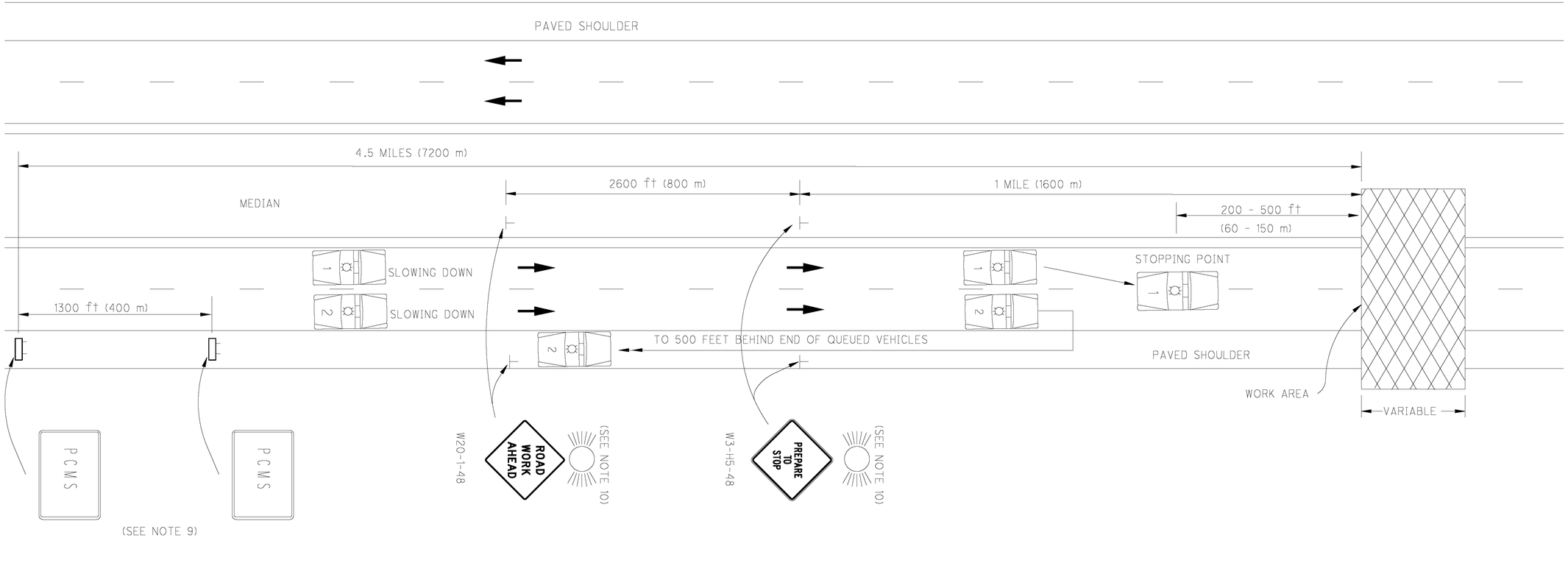
PLAN INSERT SHEET

WORK ZONE DELINEATION ON CONCRETE SURFACES

MAH-680-4.29

1 / 1

20 / 307



1. This type of highway closure shall be used for all construction, maintenance and utility operations when the duration of closure will not exceed 15 minutes.

2. A minimum of two Law Enforcement Officers (LEO) with patrol cars per direction shall be provided to block traffic and pace motorists to a stop. The number of patrol cars shall equal the number of lanes closed on the highway.

3. Patrol cars, with lights flashing, should enter the stream of traffic at approximately 3 miles before the point of closure. At approximately 2 miles before the point of closure, they should begin the gradual slow down. Traffic shall be brought to a complete stop a safe distance, between 200 and 500 feet (60 and 150 m), from the work area. This slowing operation shall take no more than 10 minutes. After traffic has been stopped, one patrol car shall travel along the roadway shoulder 500 feet (150 m) behind the end of the queued vehicles.

4. The Contractor shall not begin work until traffic has been brought to a complete stop.

5. All entrance ramps located between the stopped traffic and the work area shall be closed.

6. After the highway has been closed and reopened via this procedure, both of the following requirements shall have been met before implementation of another short duration closure, except with the approval of the Engineer:
   A. A minimum period of 15 minutes shall have elapsed
   B. The queued traffic shall have dissipated

7. The time frame for stopping traffic shall be specified in the plans or by the District District Deputy Director.

8. The public shall be given advance notice of the upcoming closure by providing Portable Changeable Message signs at the site at least one week in advance of the scheduled closing. Closure information should also be provided through the news media.

9. Two ODOT approved Portable Changeable Message Signs, Class 1, shall be provided. The first message sign shall be placed at approximately 4.5 miles in advance of the closure or as directed by the Engineer. The second message sign shall be placed at approximately one-quarter mile beyond the first message sign. The first message sign shall read ROAD CLOSED AHEAD (0.8 sec.), PREPARE TO STOP (0.8 sec.), (Black screen for 0.3 sec.) The second message sign shall read ROAD CLOSED AHEAD (0.8 sec.), "EXPECT 30 MIN. DELAY" (0.8 sec.), (Black screen for 0.3 sec.)

10. The Contractor shall erect and maintian 48 inch "ROAD WORK AHEAD" and "PREPARE TO STOP" signs on each side of the highway. During night operations, each sign shall be illuminated with one Type A flashing warning light or two flares. The flares shall be replaced if they burn out.

OFFICE OF TRAFFIC ENGINEERING

DESIGNED SHB
REVIEWED LAM

REVISION DATE 07/18/08
CHECKED

PID NUMBER 209960

PLAN INSERT SHEET

SHORT-DURATION CLOSURE OF MULTI-LANE DIVIDED HIGHWAY

MAH-680-4.29

Detail "B"

Detail "A"

TYPE OF TRAFFIC - I-680
MAINTENANCE OF ADVANCE SIGNING DETAILS

CALCULATED JAB
CHECKED JBD

MAH-680-4.29

Detail "E"

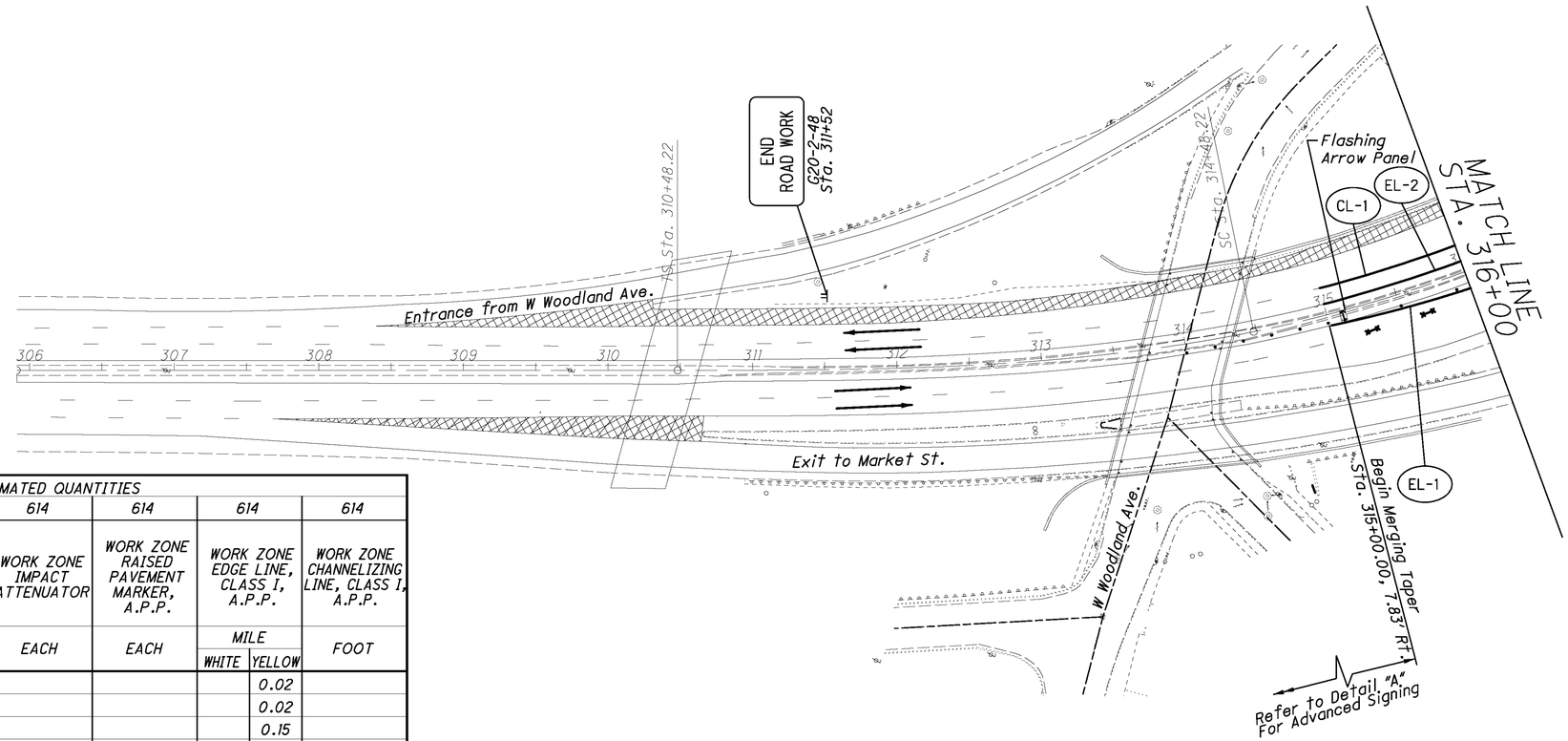
Detail "D"

Detail "C"

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
ADVANCE SIGNING DETAILS

MAH-680-4.29

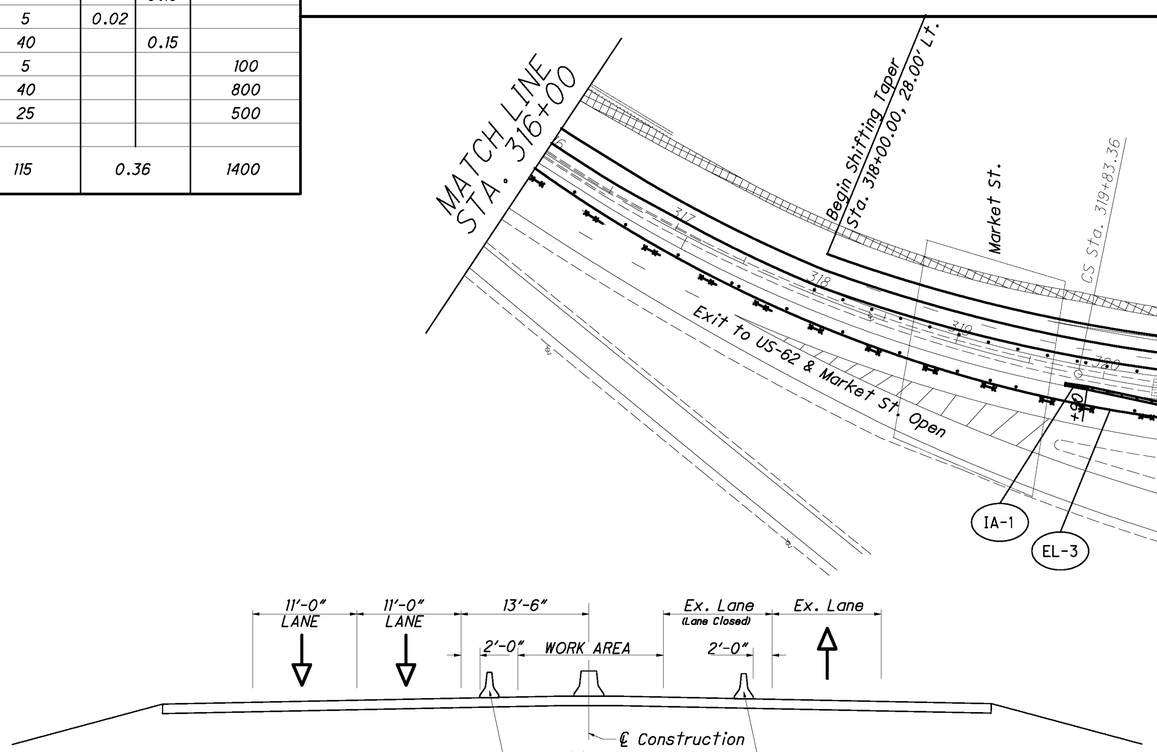


ESTIMATED QUANTITIES							
			614	614	614		614
REF. NO.	STATION TO STATION	SIDE	WORK ZONE IMPACT ATTENUATOR	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.
					MILE		
			EACH	EACH	WHITE	YELLOW	FOOT
EL-1	315+00 TO 316+00	RT				0.02	
EL-2	315+00 TO 316+00	LT				0.02	
EL-3	316+00 TO 324+00	RT				0.15	
EL-4	323+00 TO 324+00	LT		5	0.02		
EL-5	316+00 TO 324+00	LT		40		0.15	
CL-1	315+00 TO 316+00	LT		5			100
CL-2	316+00 TO 324+00	LT		40			800
CL-3	318+00 TO 323+00	LT		25			500
IA-1	319+90	RT	1				
TOTALS CARRIED TO SUBSUMMARY			1	115	0.36		1400

ESTIMATED QUANTITIES			
			622
REF. NO.	STATION TO STATION	SIDE	PORTABLE CONCRETE BARRIER, 32"
			FOOT
PCB-1	319+90 TO 324+00	RT	410
PCB-2	321+00 TO 324+00	LT	300
TOTALS CARRIED TO SUBSUMMARY			710

LEGEND

- Shoulder Strengthening (completed during this phase)
- Shoulder Strengthening (completed during pre-phase)
- Median Barrier Removed (completed during this phase)
- Construction Drum
- Existing Marking Removal



Phase 1 Typical Section
NTS

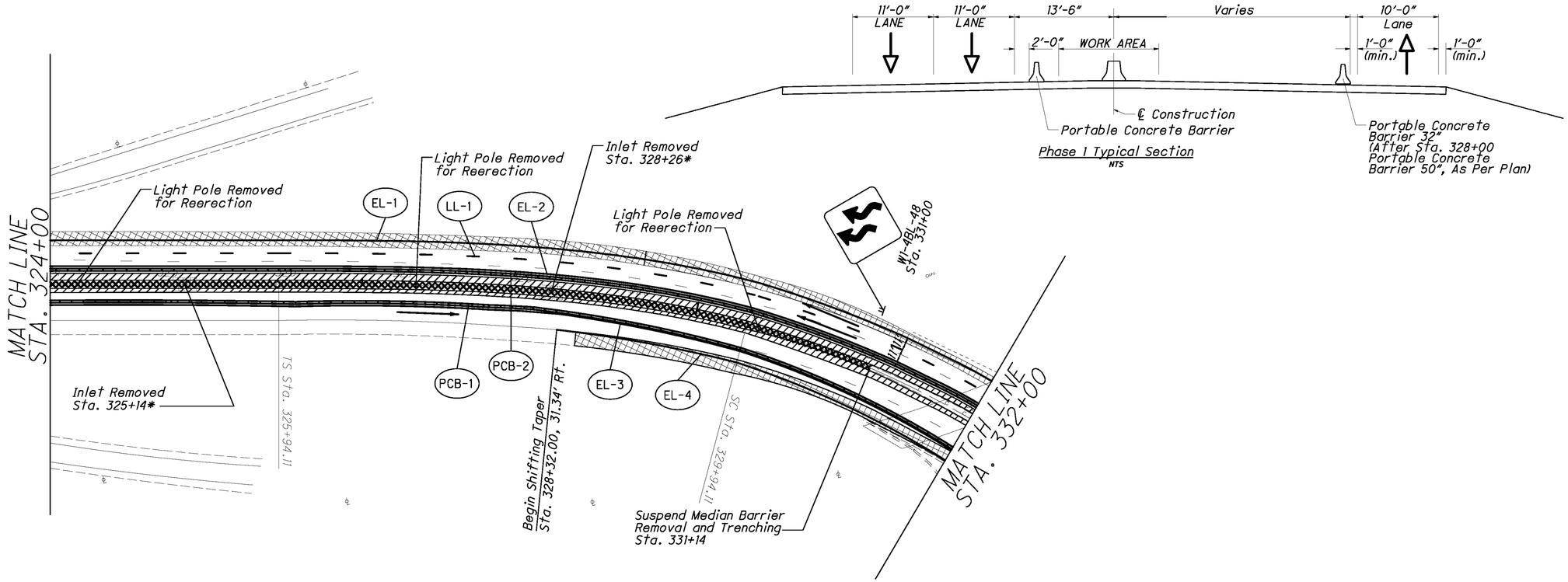
Refer to Lighting Plans for lighting details.
Refer to Typical Sections for barrier replacement limits during Phase 1.

CALCULATED JAB
CHECKED JBD

HORIZONTAL SCALE IN FEET
0 25 50 100

MAINTENANCE OF TRAFFIC - I-680
PHASE 1

MAH-680-4.29



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P. (EACH)	614 WORK ZONE LANE LINE, CLASS I, A.P.P. (MILE)	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) WHITE	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) YELLOW	622 PORTABLE CONCRETE BARRIER, 32" (FOOT)	622 PORTABLE CONCRETE BARRIER, 50", A.P.P. (FOOT)
EL-1	324+00 TO 332+00	LT			0.15			
EL-2	324+00 TO 332+00	LT				0.15		
EL-3	324+00 TO 332+00	RT	33			0.15		
EL-4	328+32 TO 332+00	RT	33		0.07			
LL-1	324+00 TO 332+00	LT	7	0.15				
PCB-1	324+00 TO 332+00	RT					400	400
PCB-2	324+00 TO 332+00	LT					800	
TOTALS CARRIED TO SUBSUMMARY			73	0.15	0.52		1200	400

*Maintain positive drainage throughout construction. Paid for as Item 614 - Maintaining Traffic, Misc.: Temporary Drainage.

LEGEND

- Shoulder Strengthening (completed during this phase)
- Shoulder Strengthening (completed during pre-phase)
- Median Barrier Removed (completed during this phase)
- Construction Drum
- Existing Marking Removal

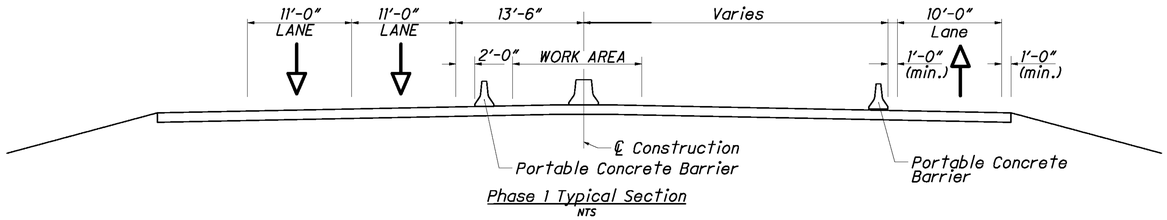
Refer to Lighting Plans for lighting details.
Refer to Typical Sections for barrier replacement limits during Phase 1.

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 1

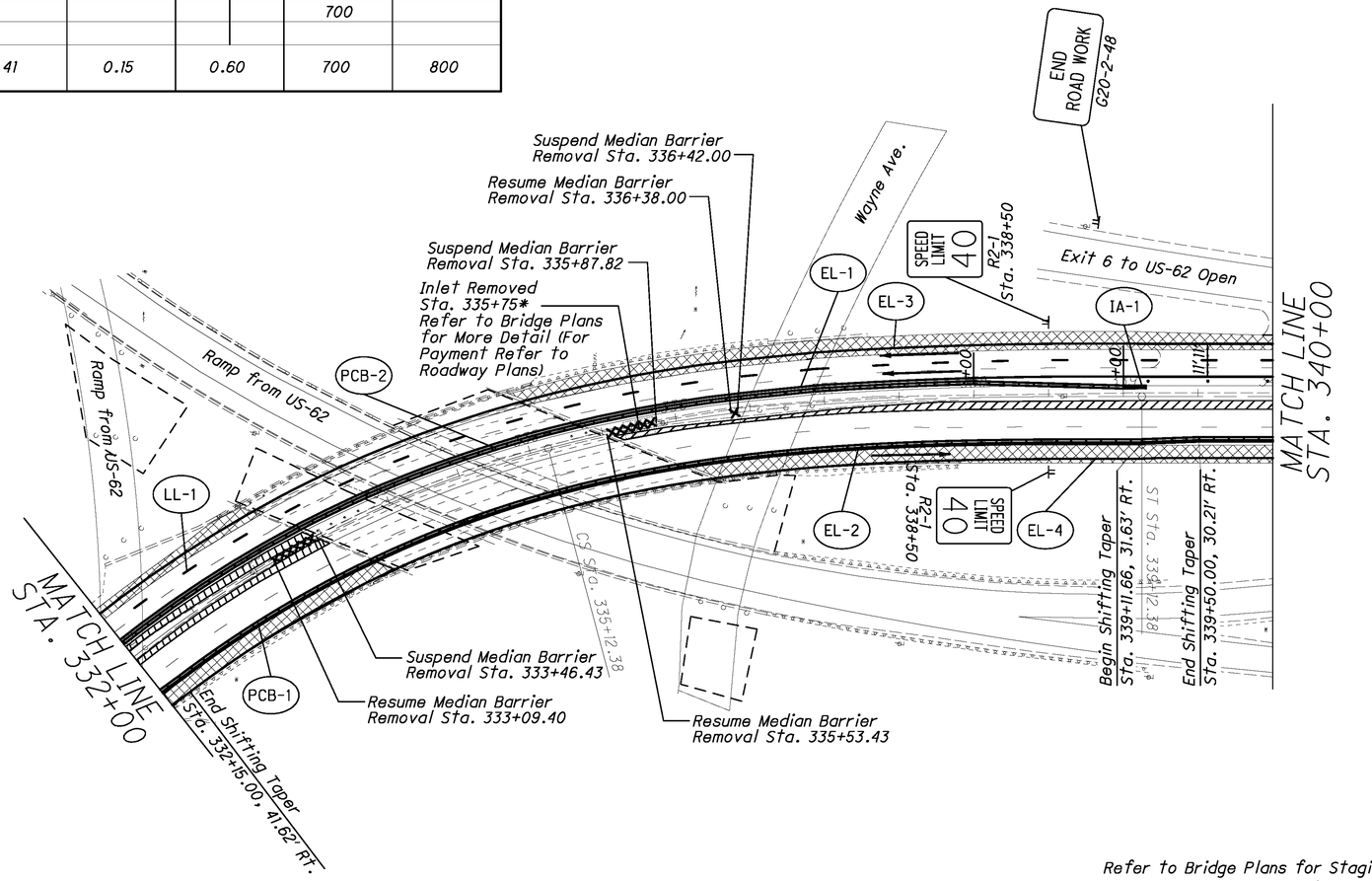
MAH-680-4.29



Phase 1 Typical Section
NTS

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	614 WORK ZONE LANE LINE, CLASS I, A.P.P.	614 WORK ZONE EDGE LINE, CLASS I, A.P.P.		622 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 50", A.P.P.
			EACH	EACH	MILE	MILE		FOOT	FOOT
						WHITE	YELLOW		
EL-1	332+00 TO 340+00	LT					0.15		
EL-2	332+00 TO 340+00	RT		17			0.15		
EL-3	332+00 TO 340+00	LT				0.15			
EL-4	332+00 TO 340+00	RT		17		0.15			
LL-1	332+00 TO 340+00	LT		7	0.15				
PCB-1	332+00 TO 340+00	RT							800
PCB-2	332+00 TO 339+00	LT						700	
IA-1	339+00	LT	1						
TOTALS CARRIED TO SUBSUMMARY			1	41	0.15	0.60		700	800



*Maintain positive drainage throughout construction. Paid for as Item 614 - Maintaining Traffic, Misc.: Temporary Drainage.

LEGEND

- Shoulder Strengthening (completed during this phase)
- Shoulder Strengthening (completed during pre-phase)
- Median Barrier Removed (completed during this phase)
- Construction Drum
- Existing Marking Removal

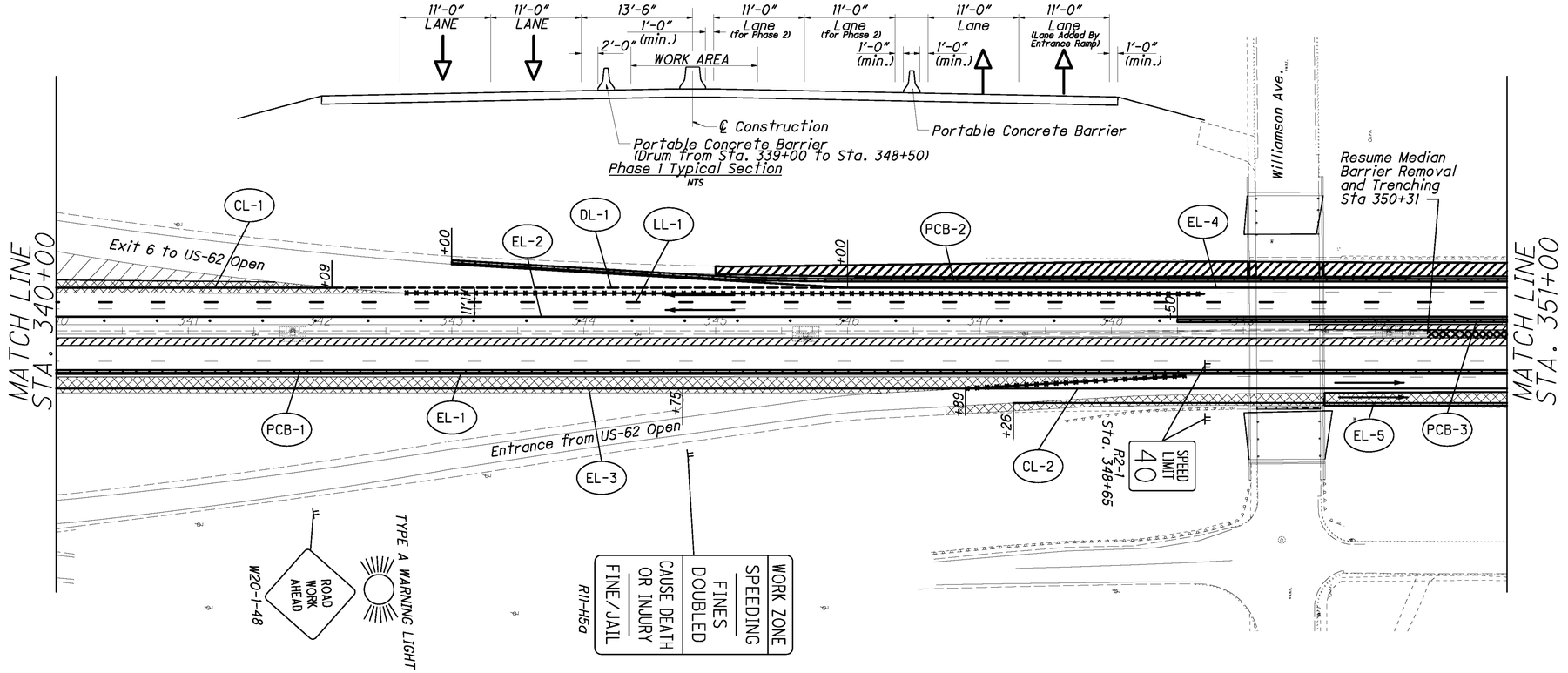
Refer to Bridge Plans for Staging of Structure MAH-680-0632.
Refer to Lighting Plans for lighting details.
Refer to Typical Sections for barrier replacement limits during Phase 1.

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 1

MAH-680-4.29



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	614 WORK ZONE LANE LINE, CLASS I, A.P.P.	614 WORK ZONE EDGE LINE, CLASS I, A.P.P.		614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	614 WORK ZONE DOTTED LINE, CLASS I, A.P.P.	622 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 50", A.P.P.
			EACH	MILE	MILE		FOOT	FOOT	FOOT	FOOT
					WHITE	YELLOW				
EL-1	340+00 TO 351+00	RT				0.21				
EL-2	340+00 TO 351+00	LT				0.21				
EL-3	340+00 TO 344+75	RT			0.09					
EL-4	343+00 TO 351+00	LT			0.15					
EL-5	347+26 TO 351+00	RT			0.07					
CL-1	340+00 TO 342+09	LT					209			
CL-2	344+75 TO 351+00	RT	31				625			
LL-1	340+00 TO 351+00	LT	10	0.21						
DL-1	342+09 TO 346+00	LT						391		
PCB-1	340+00 TO 351+00	RT								1100
PCB-2	343+00 TO 351+00	LT							800	
PCB-3	348+50 TO 351+00	LT							250	
TOTALS CARRIED TO SUBSUMMARY			41	0.21	0.73		834	391	1050	1100

LEGEND

- Shoulder Strengthening (completed during this phase)
- Shoulder Strengthening (completed during pre-phase)
- Median Barrier Removed (completed during this phase)
- Construction Drum
- Existing Marking Removal

Refer to Lighting Plans for lighting details.
Refer to Typical Sections for barrier replacement limits during Phase 1.

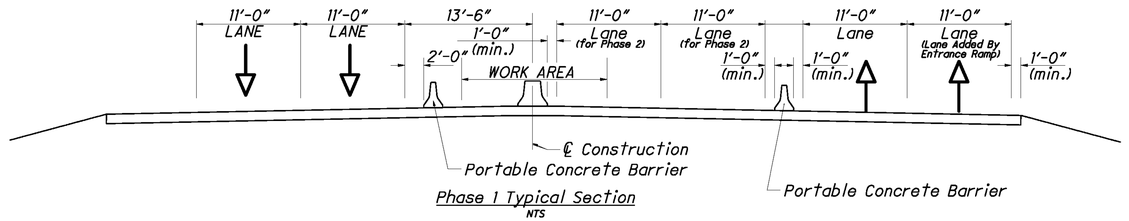
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HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 1

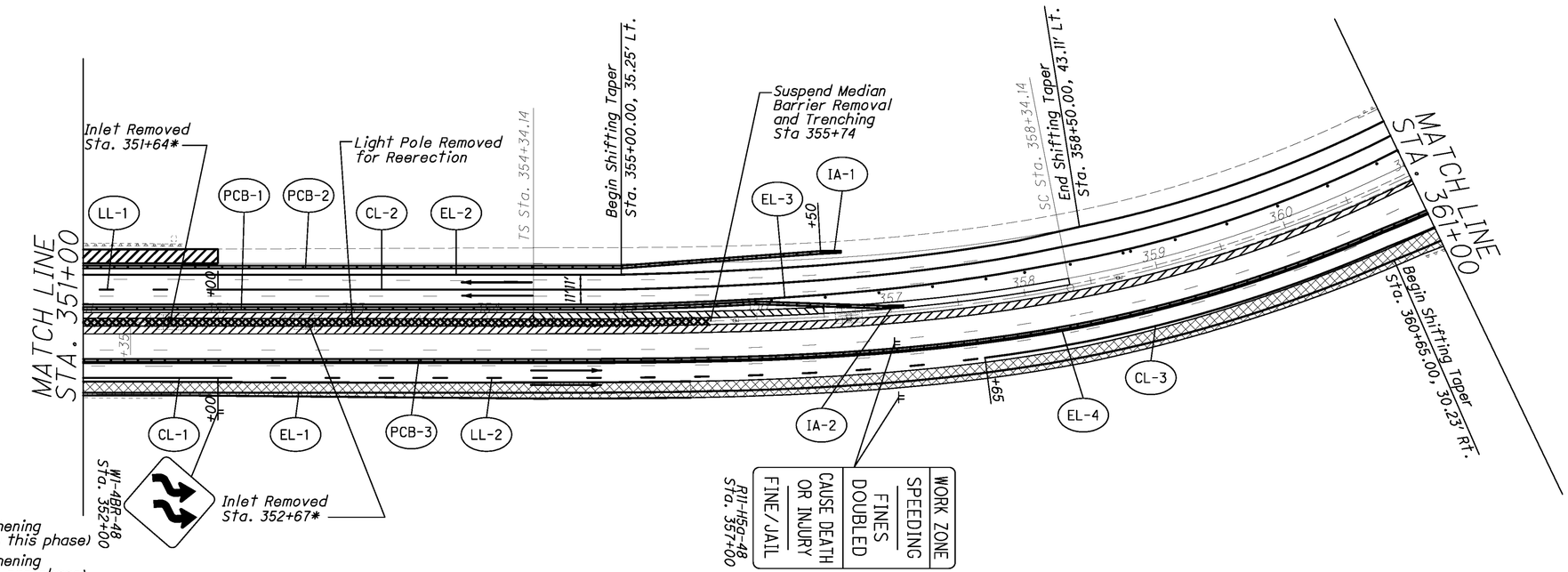
MAH-680-4.29



Phase 1 Typical Section
NTS

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR (EACH)	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P. (EACH)	614 WORK ZONE LANE LINE, CLASS I, A.P.P. (MILE)	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) WHITE	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) YELLOW	614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P. (FOOT)	622 PORTABLE CONCRETE BARRIER, 32" (FOOT)	622 PORTABLE CONCRETE BARRIER, 50", A.P.P. (FOOT)
EL-1	351+00 TO 361+00	RT		17		0.19				
EL-2	351+00 TO 361+00	LT		46		0.19				
EL-3	351+00 TO 361+00	LT		46			0.19			
EL-4	351+00 TO 361+00	RT		17			0.19			
CL-1	351+00 TO 352+00	RT		5				100		
CL-2	352+00 TO 361+00	LT		46				900		
CL-3	357+65 TO 361+00	RT		17				335		
LL-1	351+00 TO 352+00	LT			0.02					
LL-2	352+00 TO 357+65	RT		5	0.11					
PCB-1	351+00 TO 357+00	LT							600	
PCB-2	351+00 TO 356+50	LT							550	
PCB-3	351+00 TO 361+00	RT								1000
IA-1	356+50	LT	1							
IA-2	357+00	LT	1							
TOTALS CARRIED TO SUBSUMMARY			2	199	0.13	0.76		1335	1150	1000



LEGEND

- Shoulder Strengthening (completed during this phase)
- Shoulder Strengthening (completed during pre-phase)
- Median Barrier Removed (completed during this phase)
- Construction Drum
- Existing Marking Removal

*Maintain positive drainage throughout construction. Paid for as Item 614 - Maintaining Traffic, Misc.: Temporary Drainage.

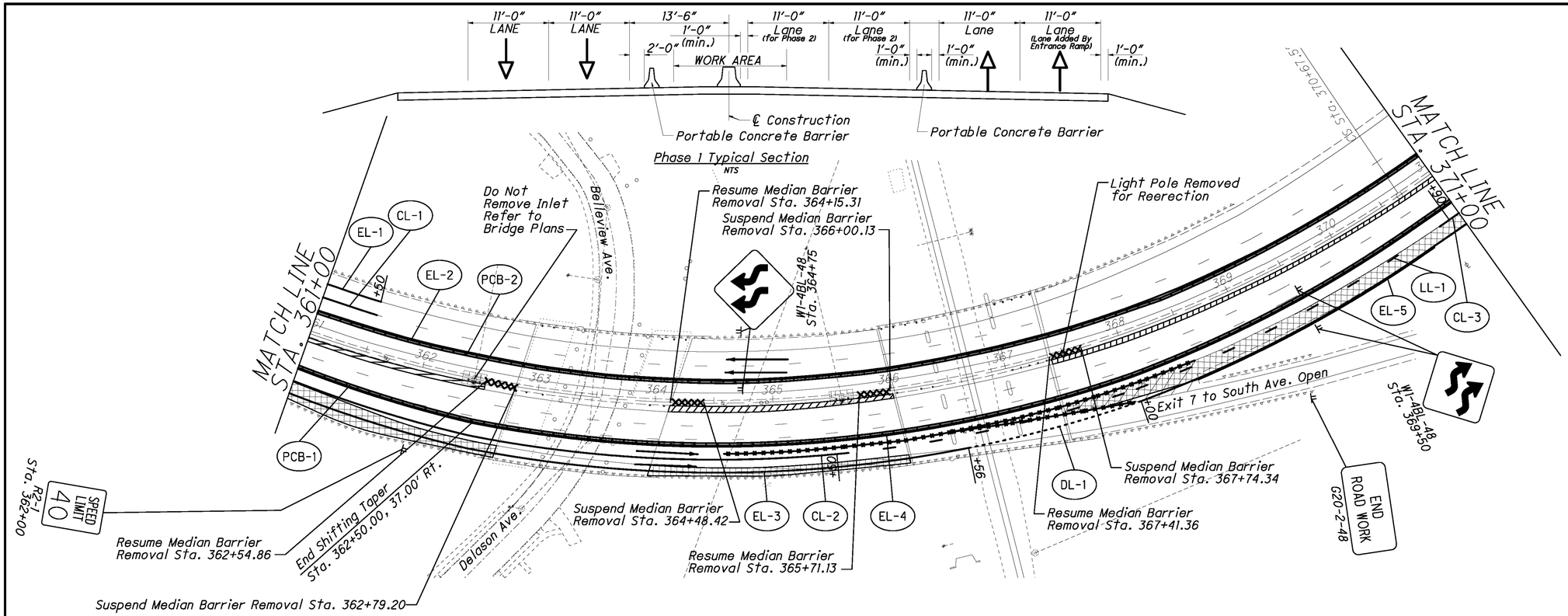
Refer to Lighting Plans for lighting details.
Refer to Typical Sections for barrier replacement limits during Phase 1.

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 1

MAH-680-4.29



Refer to Bridge Plans for Staging of Structures MAH-680-0687 & MAH-680-0693.
Refer to Lighting Plans for lighting details.
Refer to Typical Sections for barrier replacement limits during Phase 1.

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	614 WORK ZONE LANE LINE, CLASS I, A.P.P.	614 WORK ZONE EDGE LINE, CLASS I, A.P.P.		614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	614 WORK ZONE DOTTED LINE, CLASS I, A.P.P.	622 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 50", A.P.P.
			EACH	MILE	MILE		FOOT	FOOT	FOOT	FOOT
					WHITE	YELLOW				
EL-1	361+00 TO 361+50	LT	3		0.01					
EL-2	361+00 TO 371+00	LT	3			0.19				
EL-3	361+00 TO 366+56	RT	23		0.11					
EL-4	361+00 TO 371+00	RT	24			0.19				
EL-5	368+00 TO 371+00	RT	1		0.06					
CL-1	361+00 TO 361+50	LT	3				50			
CL-2	361+00 TO 365+50	RT	23				450			
CL-3	370+90 TO 371+00	RT	1				10			
LL-1	365+50 TO 370+90	RT	6	0.10						
DL-1	366+56 TO 368+00	RT						144		
PCB-1	361+00 TO 371+00	RT								1000
PCB-2	361+00 TO 371+00	LT							1000	
TOTALS CARRIED TO SUBSUMMARY			87	0.10	0.56		510	144	1000	1000

LEGEND

- Shoulder Strengthening (completed during this phase)
- Shoulder Strengthening (completed during pre-phase)
- Median Barrier Removed (completed during this phase)
- Construction Drum
- Existing Marking Removal

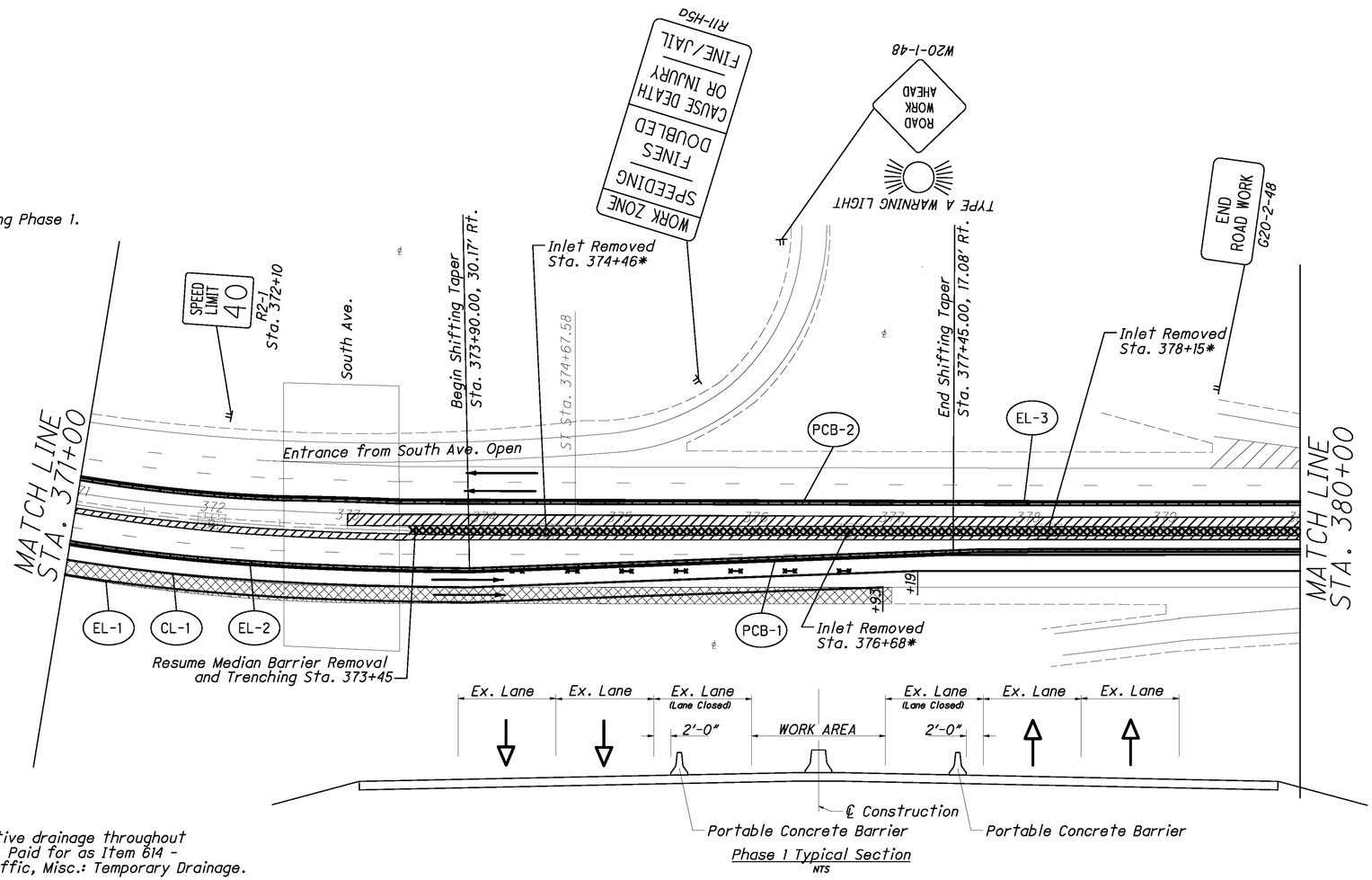
HORIZONTAL SCALE IN FEET
0 25 50 100
CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 1

MAH-680-4.29

ESTIMATED QUANTITIES							
			614	614		614	622	622
REF. NO.	STATION TO STATION	SIDE	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	PORTABLE CONCRETE BARRIER, 32"	PORTABLE CONCRETE BARRIER, 50", A.P.P.
			EACH	MILE		FOOT	FOOT	FOOT
				WHITE	YELLOW			
EL-1	371+00 TO 376+93	RT	30	0.11				
EL-2	371+00 TO 380+00	RT	45		0.17			
EL-3	371+00 TO 380+00	LT			0.17			
CL-1	371+00 TO 380+00	RT	45			900		
PCB-1	371+00 TO 380+00	RT						900
PCB-2	371+00 TO 380+00	LT					900	
TOTALS CARRIED TO SUBSUMMARY			120	0.45		900	900	900

Refer to Lighting Plans for lighting details.
Refer to Typical Sections for barrier replacement limits during Phase 1.



Phase 1 Typical Section
NTS

LEGEND

- Shoulder Strengthening (completed during this phase)
- Shoulder Strengthening (completed during pre-phase)
- Median Barrier Removed (completed during this phase)
- Construction Drum
- Existing Marking Removal

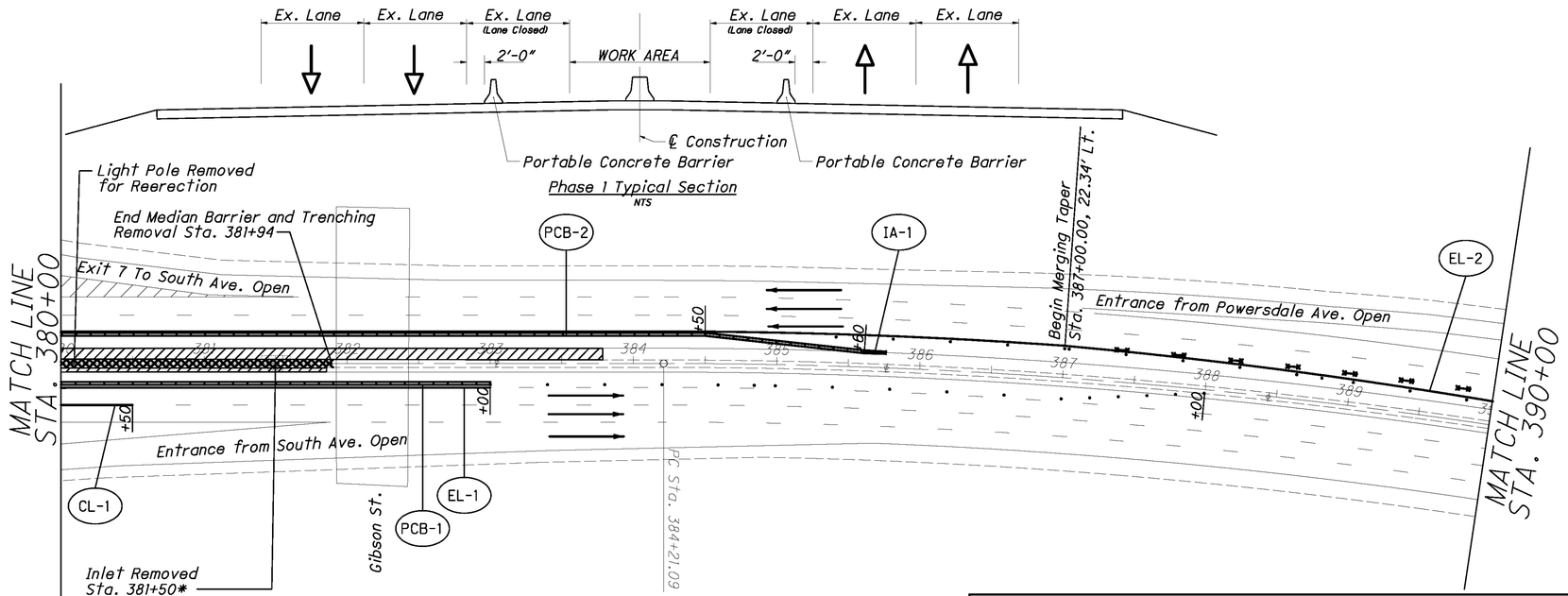
*Maintain positive drainage throughout construction. Paid for as Item 614 - Maintaining Traffic, Misc.: Temporary Drainage.

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 1

MAH-680-4.29



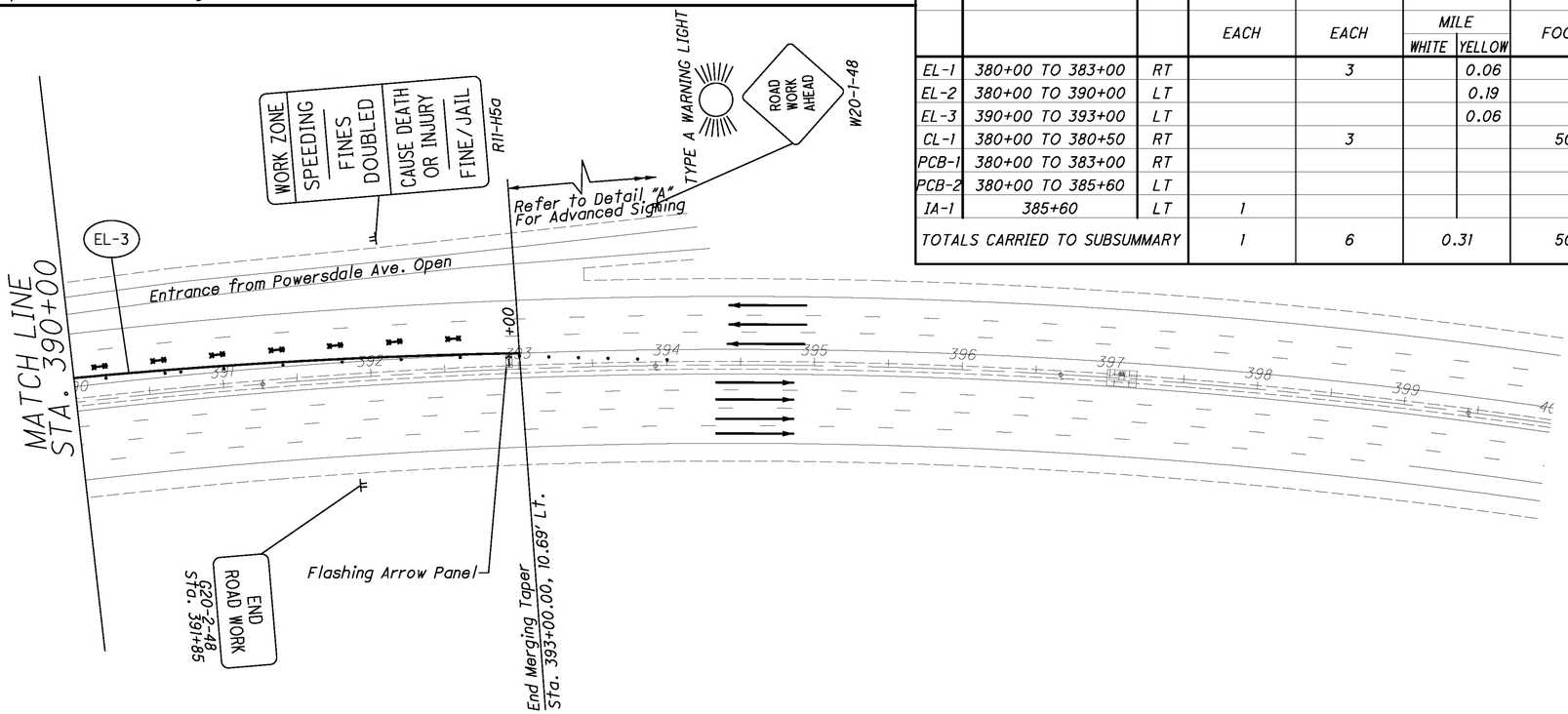
*Maintain positive drainage throughout construction. Paid for as Item 614 - Maintaining Traffic, Misc.: Temporary Drainage.

Refer to Lighting Plans for lighting details.

Refer to Typical Sections for barrier replacement limits during Phase 1.

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR (EACH)	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P. (EACH)	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE WHITE)	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE YELLOW)	614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P. (FOOT)	622 PORTABLE CONCRETE BARRIER, 32" (FOOT)
EL-1	380+00 TO 383+00	RT		3		0.06		
EL-2	380+00 TO 390+00	LT				0.19		
EL-3	390+00 TO 393+00	LT				0.06		
CL-1	380+00 TO 380+50	RT		3			50	
PCB-1	380+00 TO 383+00	RT						300
PCB-2	380+00 TO 385+60	LT						560
IA-1	385+60	LT	1					
TOTALS CARRIED TO SUBSUMMARY			1	6		0.31	50	860



LEGEND

- Shoulder Strengthening (completed during this phase)
- Shoulder Strengthening (completed during pre-phase)
- Median Barrier Removed (completed during this phase)
- Construction Drum
- Existing Marking Removal

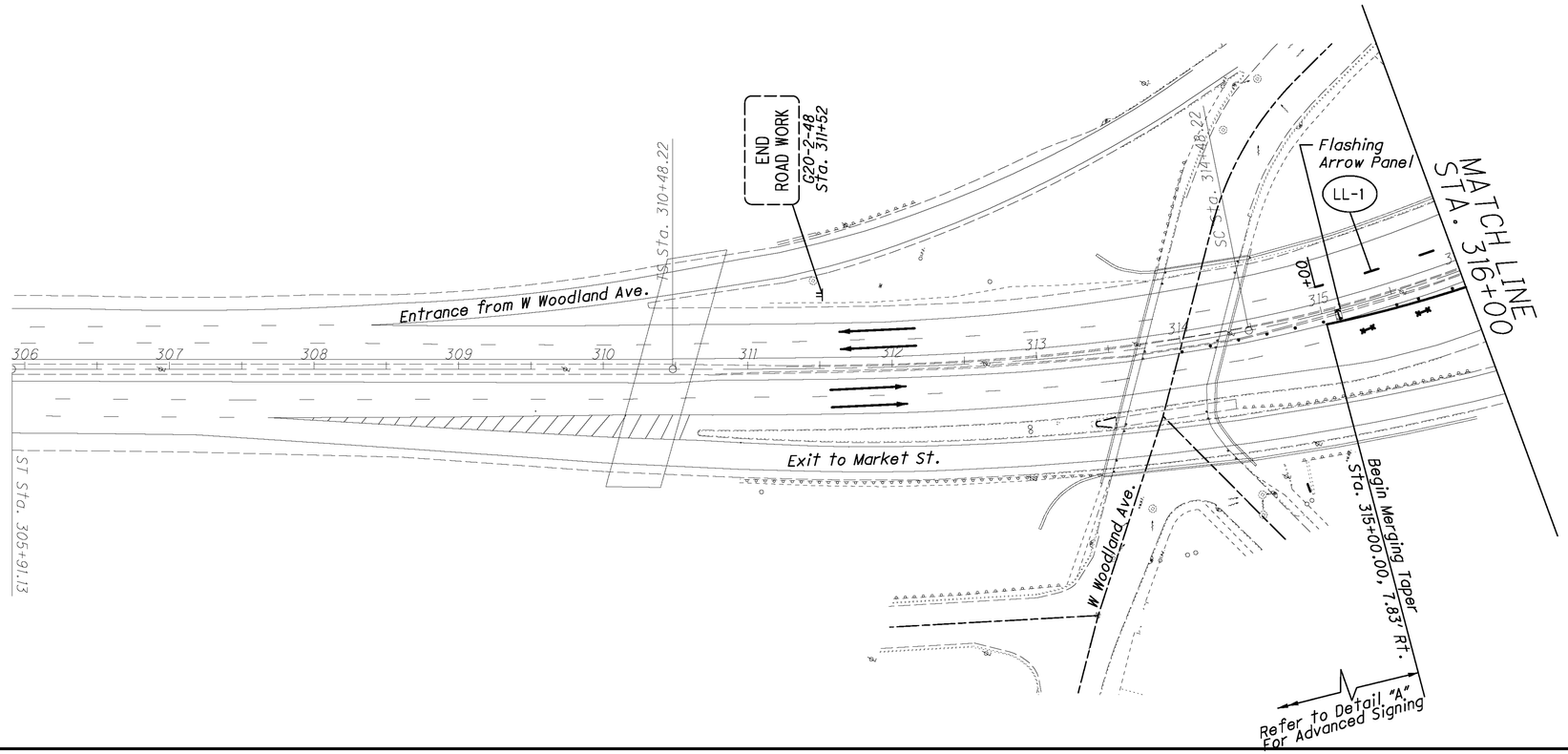
HORIZONTAL SCALE IN FEET
0 25 50 100

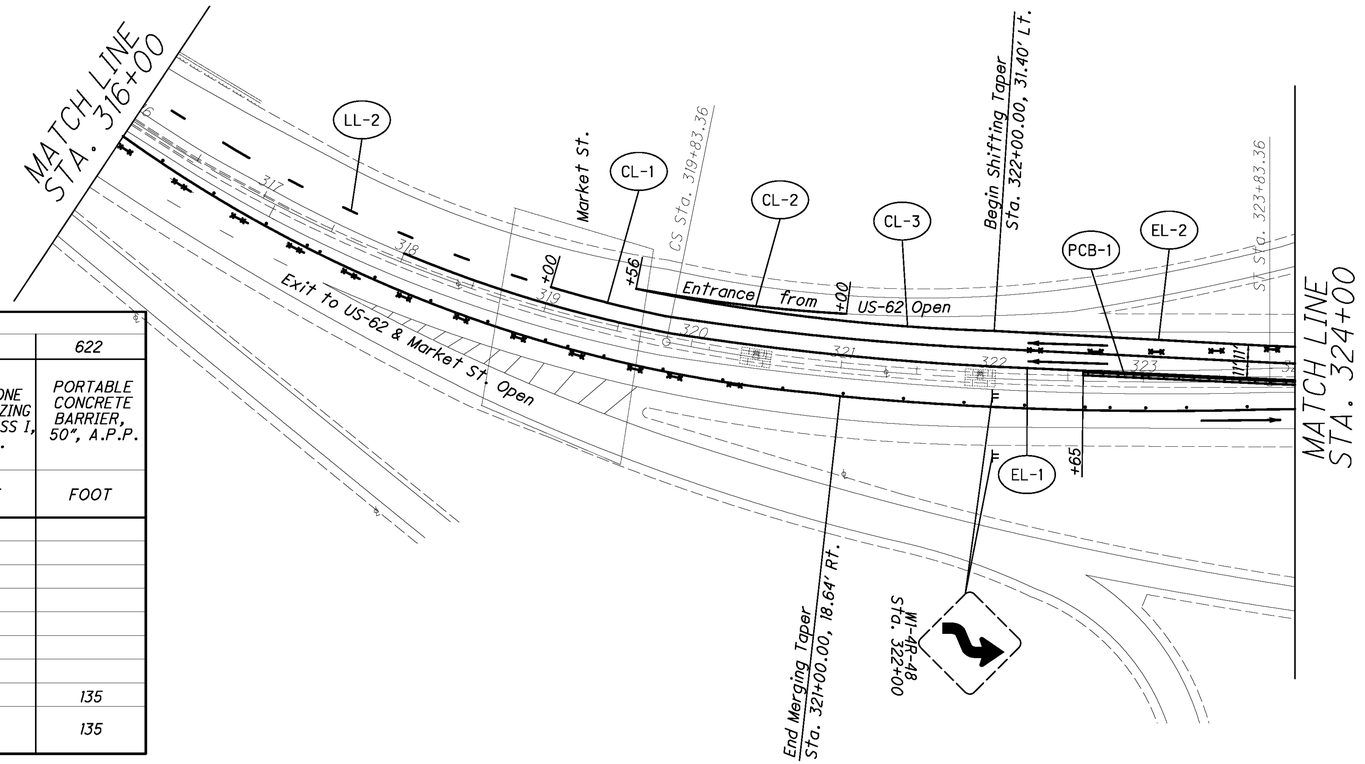
CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 1

MAH-680-4.29

31
307





Note: For southbound traffic, temporary pavement markings from Sta. 315+00 to Sta. 377+19 are in the same location for Phase 1 and Phase 2.

LEGEND

- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

ESTIMATED QUANTITIES

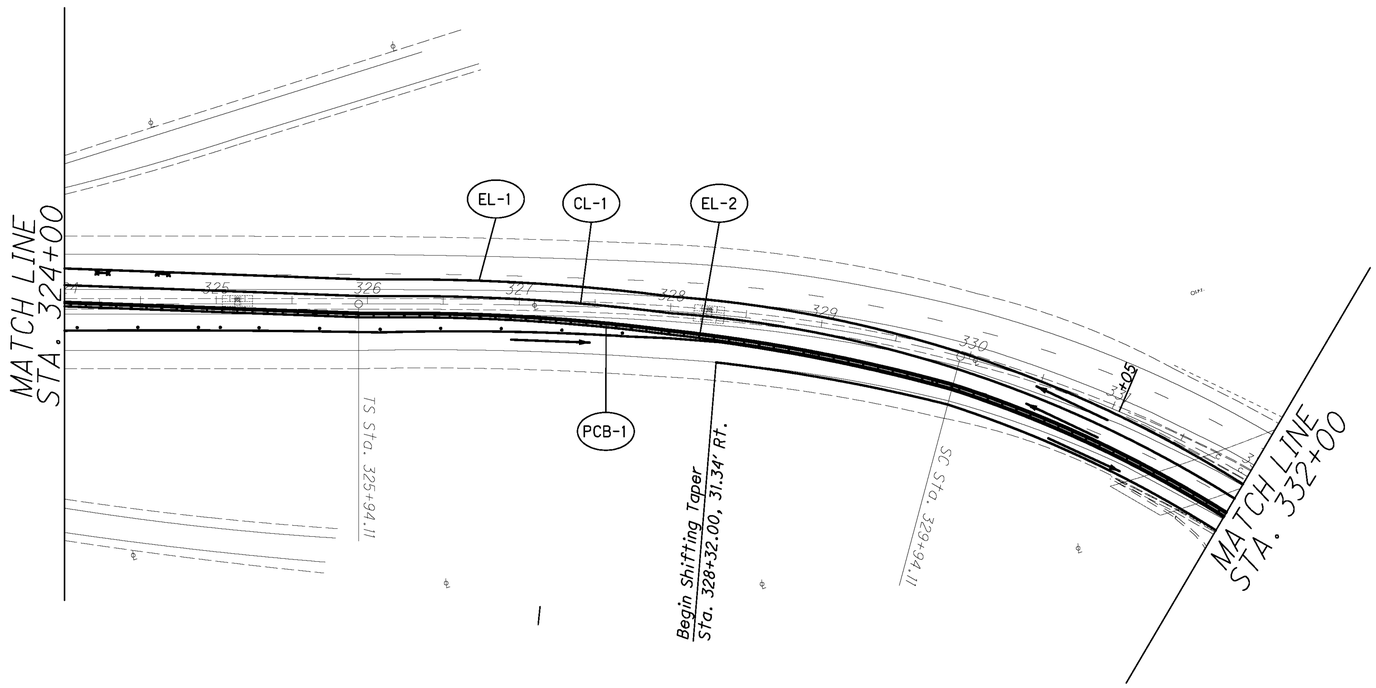
REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P. (EACH)	614 WORK ZONE LANE LINE, CLASS I, A.P.P. (MILE)	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) WHITE	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) YELLOW	614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P. (FOOT)	622 PORTABLE CONCRETE BARRIER, 50", A.P.P. (FOOT)
EL-1	318+00 TO 324+00	LT	26			0.11		
EL-2	322+00 TO 324+00	LT	10		0.04			
CL-1	319+00 TO 324+00	LT	25				500	
CL-2	319+56 TO 321+00	LT					144	
CL-3	319+56 TO 322+00	LT					244	
LL-1	315+00 TO 316+00	LT	1	0.02				
LL-2	316+00 TO 319+00	LT	3	0.06				
PCB-1	322+65 TO 324+00	LT						135
TOTALS CARRIED TO SUBSUMMARY			65	0.08	0.15		888	135

CALCULATED JAB
CHECKED JBD

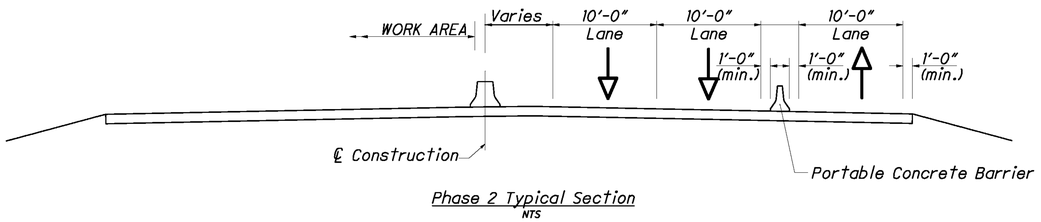
HORIZONTAL SCALE IN FEET
0 25 50 100

MAINTENANCE OF TRAFFIC - I-680
PHASE 2

MAH-680-4.29



Note: For southbound traffic, portable concrete barrier from Sta. 328+00 to Sta. 377+60 and temporary pavement markings from Sta. 315+00 to Sta. 377+19 are in the same location for Phase 1 and Phase 2.



Phase 2 Typical Section
NTS

ESTIMATED QUANTITIES							
			614	614		614	622
REF. NO.	STATION TO STATION	SIDE	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	PORTABLE CONCRETE BARRIER, 50", A.P.P.
			EACH	MILE		FOOT	FOOT
				WHITE	YELLOW		
EL-1	324+00 TO 332+00	LT&RT	40	0.15			
EL-2	324+00 TO 332+00	LT&RT	40		0.15		
CL-1	324+00 TO 332+00	LT&RT	40			800	
PCB-1	324+00 TO 328+00	RT					400
TOTALS CARRIED TO SUBSUMMARY			120	0.30		800	400

LEGEND

- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

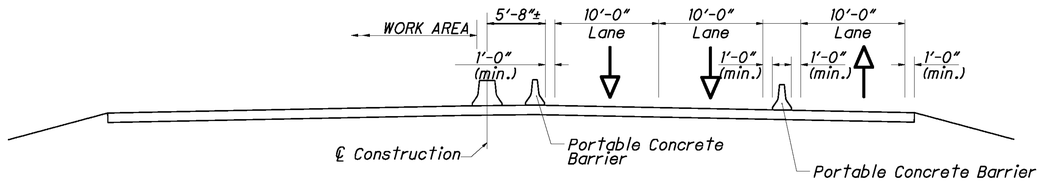
N

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 2

MAH-680-4.29



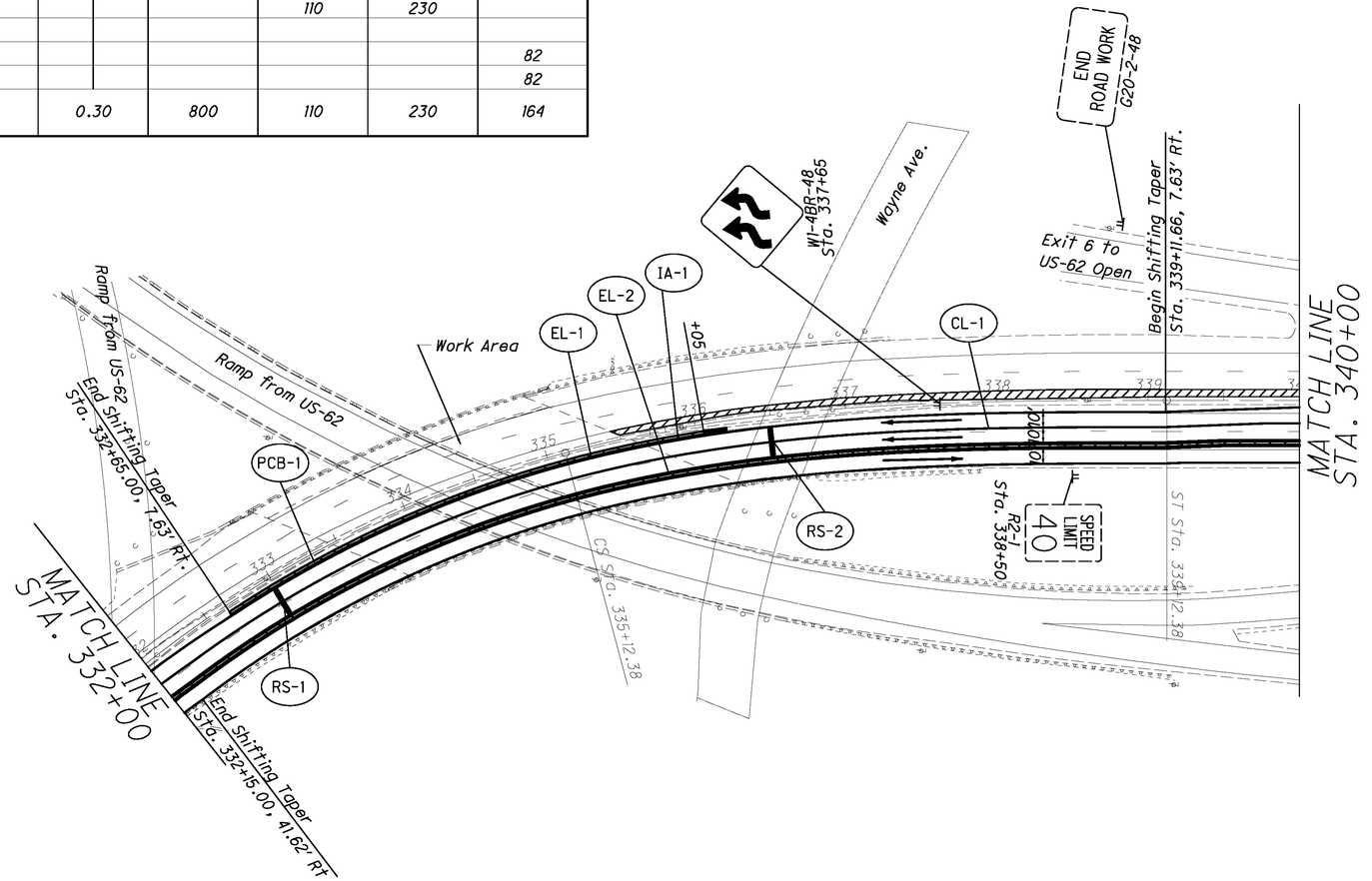
Phase 2 Typical Section
NTS

Note: Portable concrete barrier located on MAH-680-0632 shall be bridge mounted as per STD DWG PCB-91 with a minimum of 2 anchors per segment.

Note: For southbound traffic, portable concrete barrier from Sta. 328+00 to Sta. 377+60 and temporary pavement markings from Sta. 315+00 to Sta. 377+19 are in the same location for Phase 1 and Phase 2.

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR (EACH)	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P. (EACH)	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) WHITE	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) YELLOW	614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P. (FOOT)	622 PORTABLE CONCRETE BARRIER, 32" (FOOT)	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED (FOOT)	690 SPECIAL-RUMBLE STRIPS (FOOT)
EL-1	332+00 TO 340+00	RT		40	0.15					
EL-2	332+00 TO 340+00	RT		40		0.15				
CL-1	332+00 TO 340+00	RT		40			800			
PCB-1	332+65 TO 336+05	RT						110	230	
IA-1	336+05	RT	1							
RS-1	333+00	RT								82
RS-2	336+50	RT								82
TOTALS CARRIED TO SUBSUMMARY			1	120	0.30		800	110	230	164



LEGEND

- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

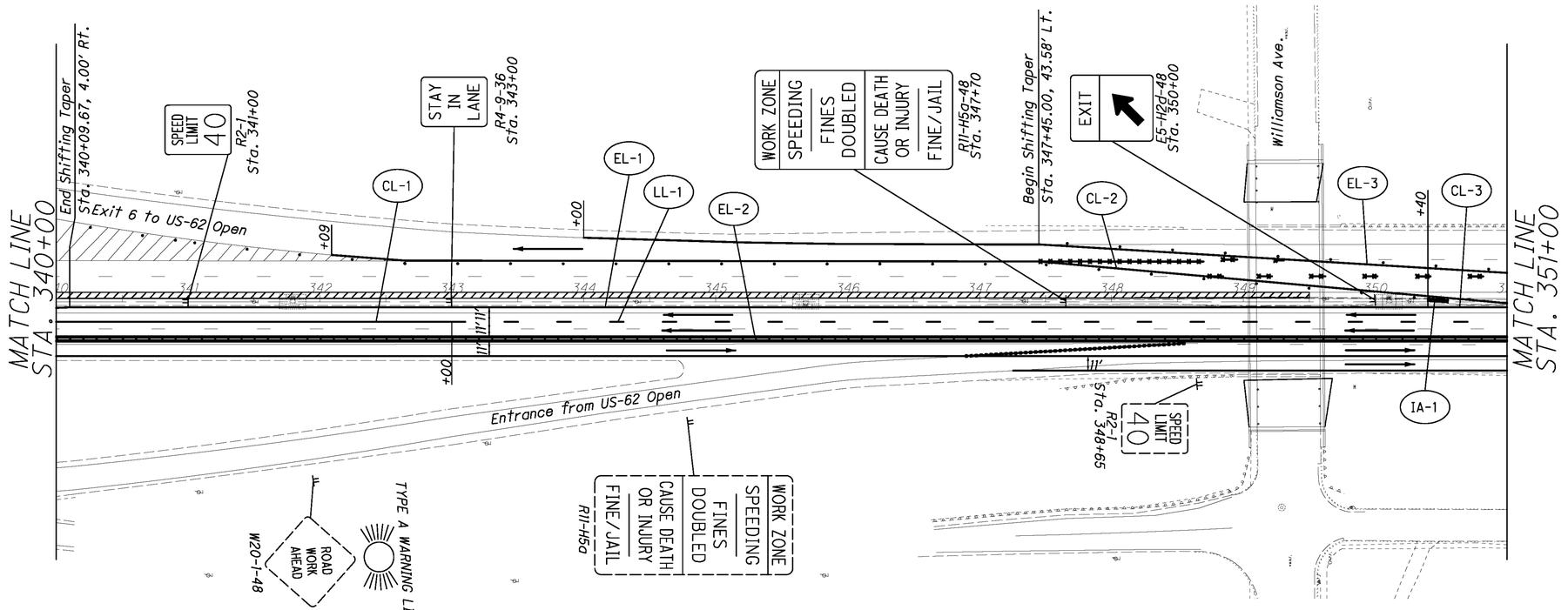
Refer to Bridge Plans for Staging of Structure MAH-680-0632.

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 2

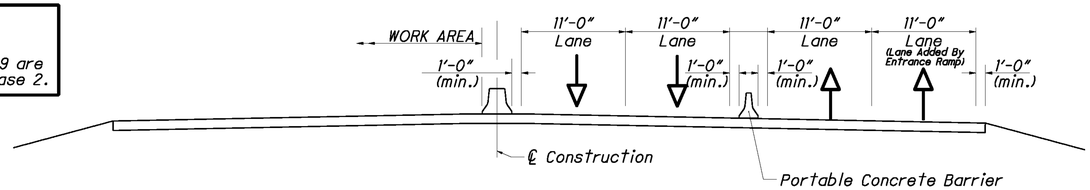
MAH-680-4.29



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR (EACH)	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P. (EACH)	614 WORK ZONE LANE LINE, CLASS I, A.P.P. (MILE)	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) WHITE	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) YELLOW	614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P. (FOOT)
EL-1	340+00 TO 350+40	RT		15		0.20		
EL-2	340+00 TO 351+00	RT		15			0.21	
EL-3	344+00 TO 351+00	LT				0.13		
CL-1	340+00 TO 343+00	RT		15				300
CL-2	342+09 TO 351+00	LT&RT						891
CL-3	350+40 TO 351+00	LT						60
LL-1	343+00 TO 351+00	RT		7	0.15			
IA-1	350+40	LT	1					
TOTALS CARRIED TO SUBSUMMARY			1	52	0.15	0.54		1251

Note: For southbound traffic, portable concrete barrier from Sta. 328+00 to Sta. 377+60 and temporary pavement markings from Sta. 315+00 to Sta. 377+19 are in the same location for Phase 1 and Phase 2.



Phase 2 Typical Section
NTS

LEGEND

- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

HORIZONTAL SCALE IN FEET
0 25 50 100

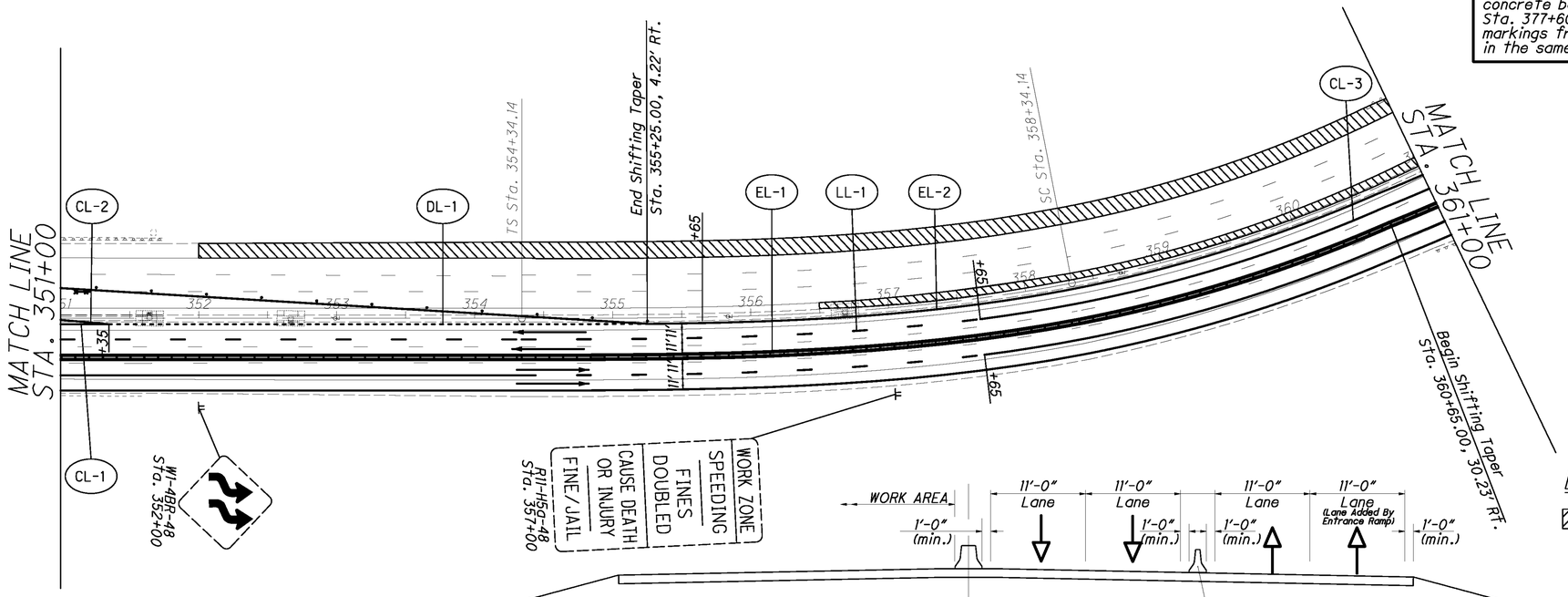
CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 2

MAH-680-4.29

ESTIMATED QUANTITIES								
			614	614	614		614	614
REF. NO.	STATION TO STATION	SIDE	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE LANE LINE, CLASS I, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	WORK ZONE DOTTED LINE, CLASS I, A.P.P.
			EACH	MILE	MILE		FOOT	FOOT
					WHITE	YELLOW		
EL-1	351+00 TO 361+00	RT	17			0.19		
EL-2	351+00 TO 361+00	LT&RT	17		0.19			
CL-1	351+00 TO 351+35	RT					35	
CL-2	351+00 TO 351+35	RT					35	
CL-3	357+65 TO 361+00	RT	17				335	
LL-1	351+00 TO 357+65	RT	6	0.13				
DL-1	351+35 TO 355+25	RT						390
TOTALS CARRIED TO SUBSUMMARY			57	0.13	0.38		405	390

Note: For southbound traffic, portable concrete barrier from Sta. 328+00 to Sta. 377+60 and temporary pavement markings from Sta. 315+00 to Sta. 377+19 are in the same location for Phase 1 and Phase 2.



Phase 2 Typical Section
NTS

LEGEND

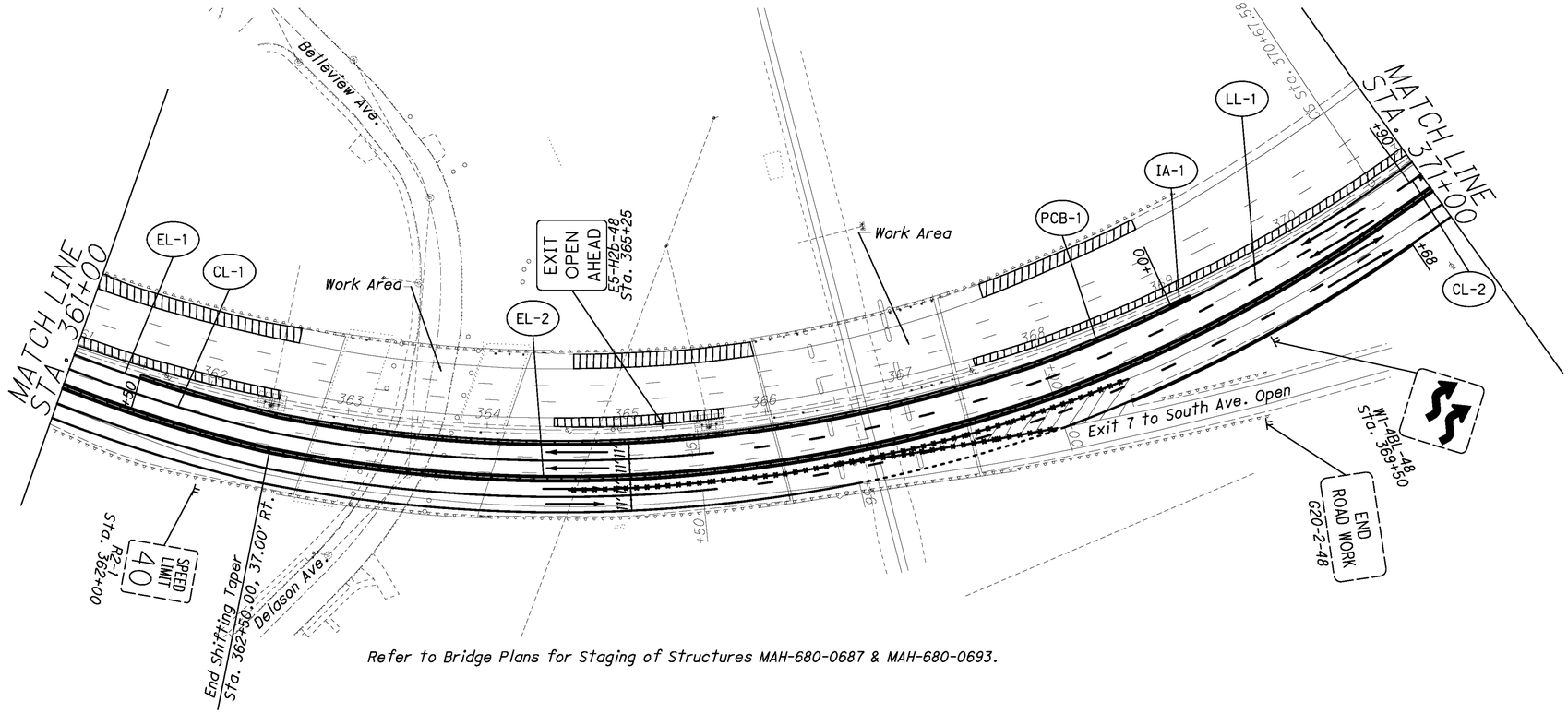
- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 2

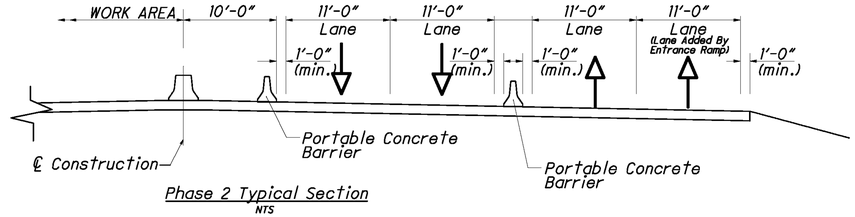
MAH-680-4.29



Refer to Bridge Plans for Staging of Structures MAH-680-0687 & MAH-680-0693.

Note: For southbound traffic, portable concrete barrier from Sta. 328+00 to Sta. 377+60 and temporary pavement markings from Sta. 315+00 to Sta. 377+19 are in the same location for Phase 1 and Phase 2.

ESTIMATED QUANTITIES								
REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	614 WORK ZONE EDGE LINE, CLASS I, A.P.P.		614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	622 PORTABLE CONCRETE BARRIER, 32"
			EACH	EACH	MILE WHITE	MILE YELLOW	FOOT	FOOT
EL-1	361+00 TO 371+00	RT		23	0.19			
EL-2	361+00 TO 371+00	RT		23		0.19		
CL-1	361+00 TO 365+50	RT		23			450	
CL-2	370+90 TO 371+00	RT		1			10	
LL-1	365+50 TO 370+90	RT		6			540	
PCB-1	361+50 TO 369+00	RT						750
IA-1	369+00	RT	1					
TOTALS CARRIED TO SUBSUMMARY			1	76	0.38		1000	750



Phase 2 Typical Section
NTS

LEGEND

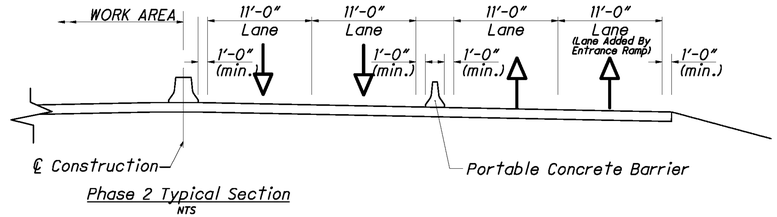
- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 2

MAH-680-4.29

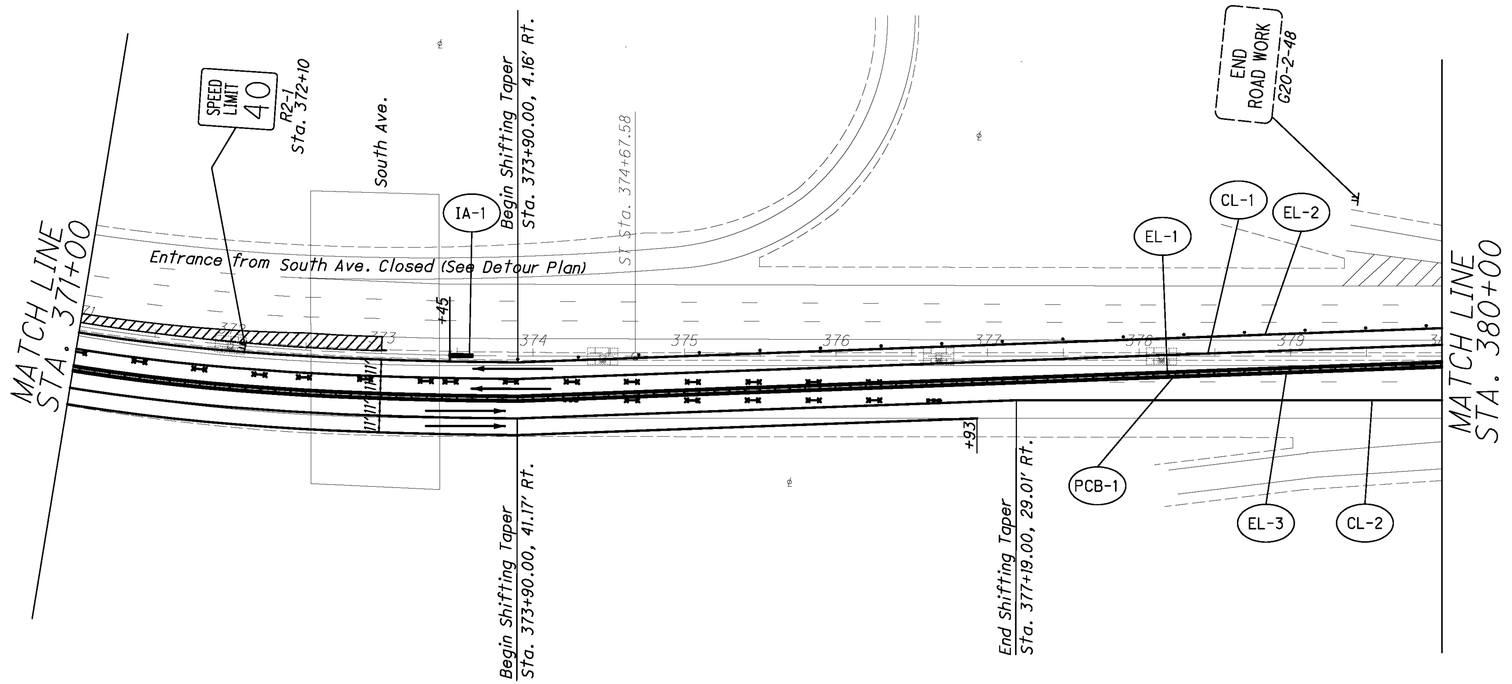


Phase 2 Typical Section
NTS

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR (EACH)	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P. (EACH)	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) WHITE	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) YELLOW	614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P. (FOOT)	622 PORTABLE CONCRETE BARRIER, 50", A.P.P. (FOOT)
EL-1	371+00 TO 380+00	RT		45		0.17		
EL-2	371+00 TO 380+00	LT&RT		45	0.17			
EL-3	377+19 TO 380+00	RT		15		0.05		
CL-1	371+00 TO 380+00	LT&RT		45			900	
CL-2	377+19 TO 380+00	RT		15			281	
PCB-1	377+60 TO 380+00	RT						240
IA-1	373+45	RT	1					
TOTALS CARRIED TO SUBSUMMARY			1	165	0.39		1181	240

Note: For southbound traffic, portable concrete barrier from Sta. 328+00 to Sta. 377+60 and temporary pavement markings from Sta. 315+00 to Sta. 377+19 are in the same location for Phase 1 and Phase 2.



LEGEND

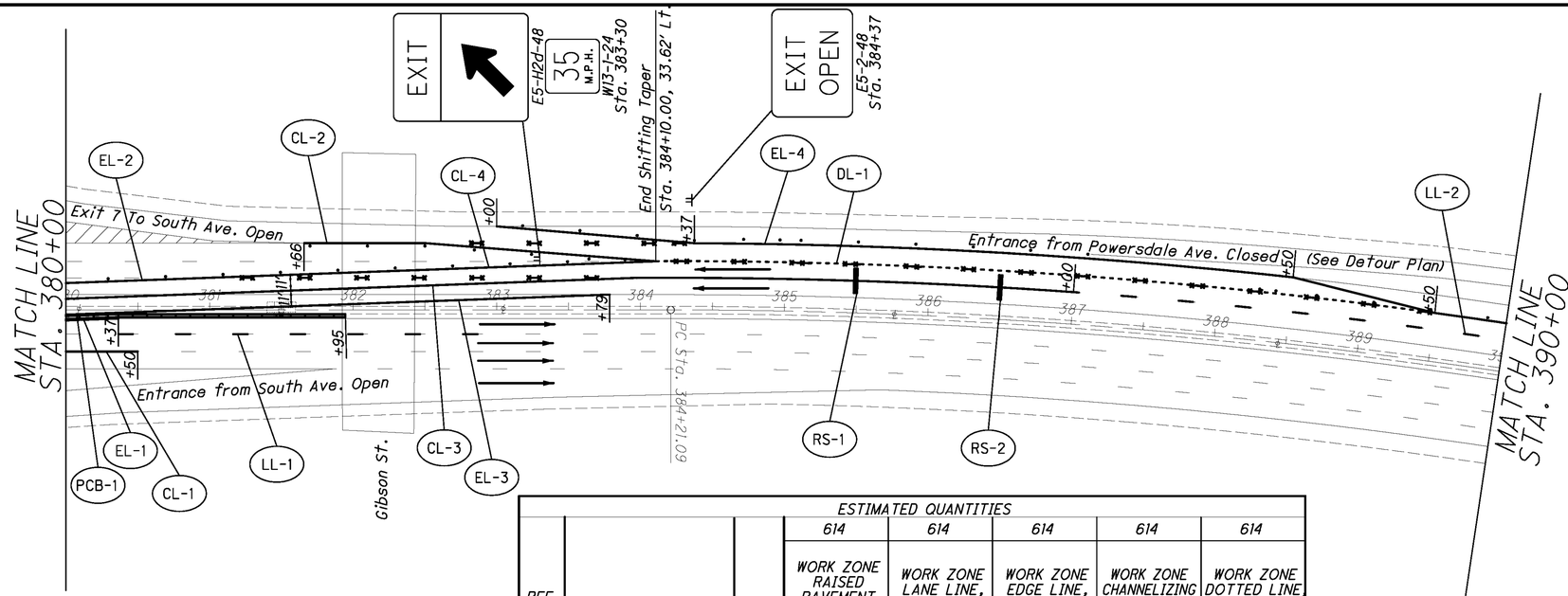
- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

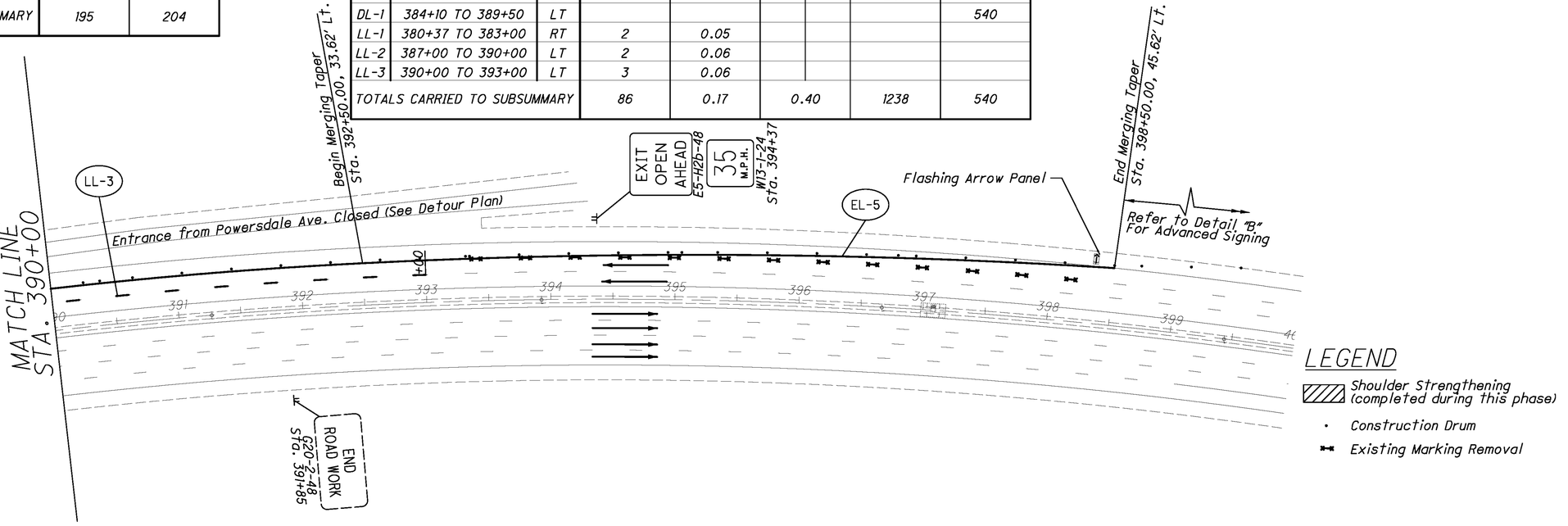
MAINTENANCE OF TRAFFIC - I-680
PHASE 2

MAH-680-4.29



ESTIMATED QUANTITIES				
			622	690
REF. NO.	STATION TO STATION	SIDE	PORTABLE CONCRETE BARRIER, 50", A.P.P.	SPECIAL-RUMBLE STRIPS
			FOOT	FOOT
PCB-1	380+00 TO 381+95	RT	195	
RS-1	385+50	LT		102
RS-2	386+50	LT		102
TOTALS CARRIED TO SUBSUMMARY			195	204

ESTIMATED QUANTITIES								
			614	614	614		614	614
REF. NO.	STATION TO STATION	SIDE	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE LANE LINE, CLASS I, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	WORK ZONE DOTTED LINE, CLASS I, A.P.P.
			EACH	MILE	MILE		FOOT	FOOT
					WHITE	YELLOW		
EL-1	380+00 TO 380+37	RT				0.01		
EL-2	380+00 TO 381+66	LT	8		0.03			
EL-3	380+00 TO 383+79	LT&RT	20			0.07		
EL-4	383+00 TO 390+00	LT			0.13			
EL-5	390+00 TO 398+50	LT			0.16			
CL-1	380+00 TO 380+50	RT	1				50	
CL-2	381+66 TO 384+10	LT					244	
CL-3	380+00 TO 387+00	LT	36				700	
CL-4	381+66 TO 384+10	LT	14				244	
DL-1	384+10 TO 389+50	LT						540
LL-1	380+37 TO 383+00	RT	2	0.05				
LL-2	387+00 TO 390+00	LT	2	0.06				
LL-3	390+00 TO 393+00	LT	3	0.06				
TOTALS CARRIED TO SUBSUMMARY			86	0.17	0.40		1238	540



LEGEND

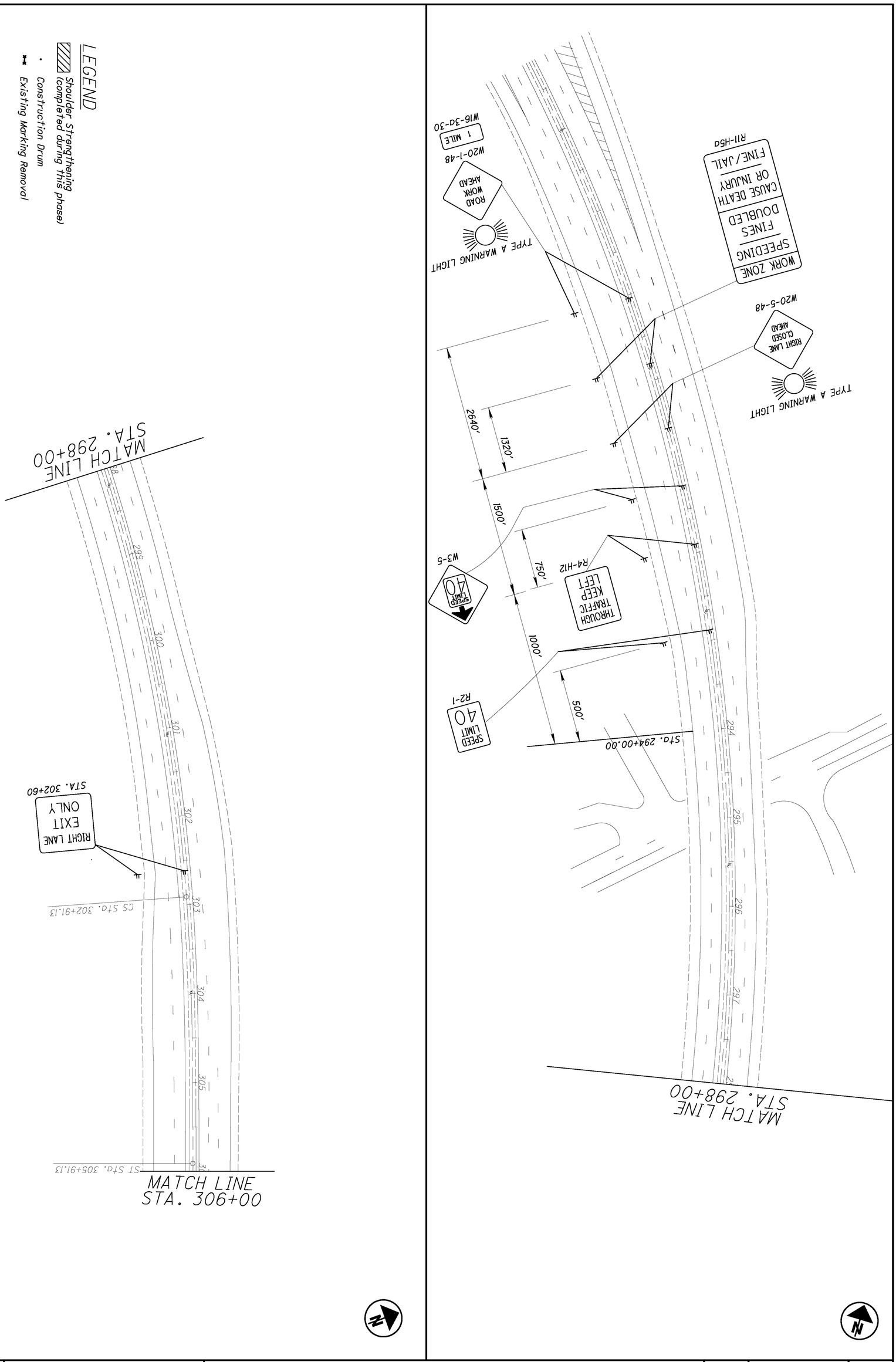
- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

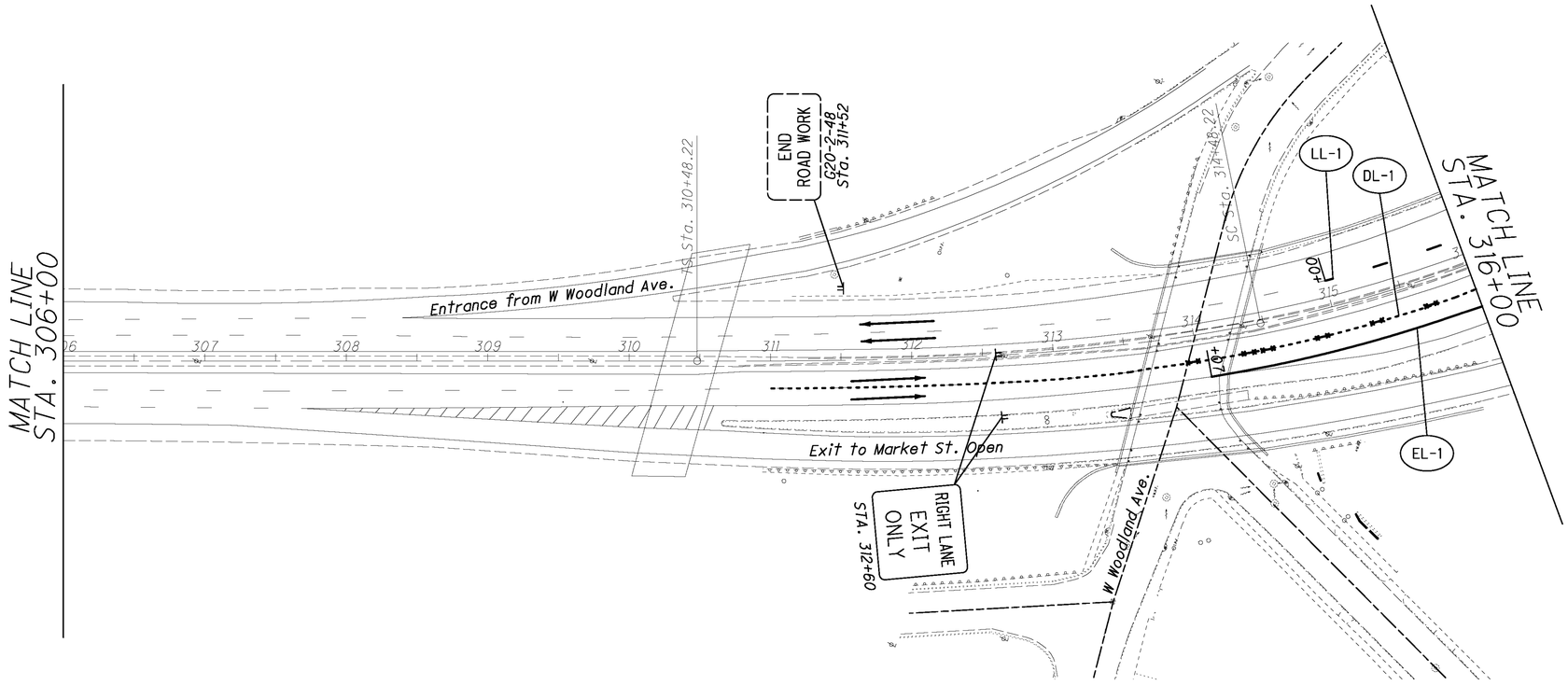
HORIZONTAL SCALE IN FEET

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 2

MAH-680-4.29


LEGEND
Shoulder Strengthening (completed during this phase)
Construction Drum
Existing Marking Removal
MATCH LINE STA. 298+00
STA. 302+60
RIGHT LANE EXIT ONLY
CS Sta. 302+91.13
ST Sta. 305+91.13
MATCH LINE STA. 306+00
299
300
301
302
303
304
305
306
W16-3a-30
1 MILE
W20-1-48
ROAD WORK AHEAD
TYPE A WARNING LIGHT
R11-H5a
WORK ZONE SPEEDING FINES DOUBLED CAUSE DEATH OR INJURY FINE/JAIL
W20-5-48
RIGHT LANE CLOSED AHEAD
TYPE A WARNING LIGHT
2640'
1320'
1500'
750'
1000'
500'
W3-5
SPEED LIMIT 40
R4-H12
THROUGH TRAFFIC KEEP LEFT
R2-1
SPEED LIMIT 40
Sta. 294+00.00
294
295
296
297
MATCH LINE STA. 298+00



ESTIMATED QUANTITIES						
			614	614		614
REF. NO.	STATION TO STATION	SIDE	WORK ZONE LANE LINE, CLASS I, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE DOTTED LINE, CLASS I, A.P.P.
			MILE	MILE		FOOT
				WHITE	YELLOW	
EL-1	314+07 TO 316+00	RT		0.04		
DL-1	311+00 TO 316+00	RT				500
LL-1	315+00 TO 316+00	LT	0.02			
TOTALS CARRIED TO SUBSUMMARY			0.02	0.04		500

LEGEND

Shoulder Strengthening (completed during this phase)

Construction Drum

Existing Marking Removal

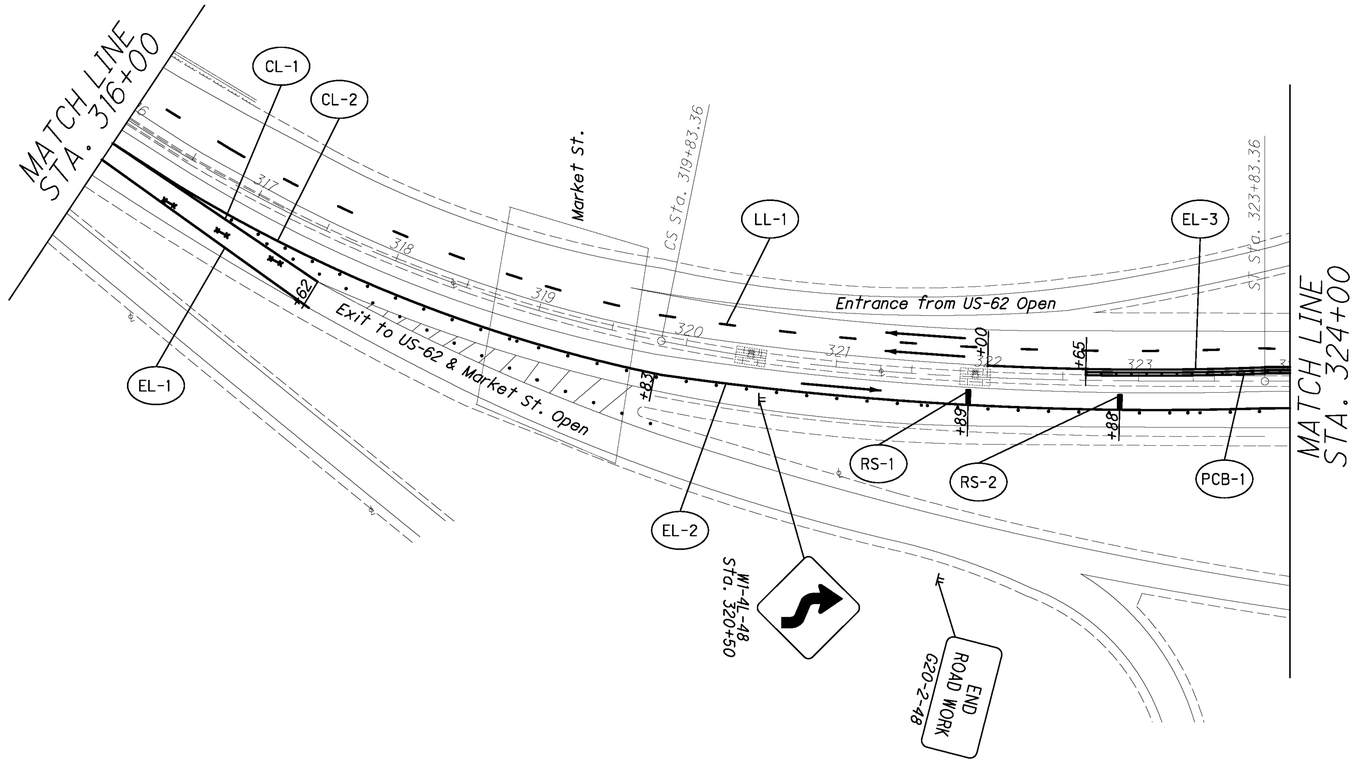
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 3

MAH-680-4.29

ESTIMATED QUANTITIES									
REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	614 WORK ZONE LANE LINE, CLASS I, A.P.P.	614 WORK ZONE EDGE LINE, CLASS I, A.P.P.		614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	622 PORTABLE CONCRETE BARRIER, 50", A.P.P.	690 SPECIAL-RUMBLE STRIPS
			EACH	MILE	MILE		FOOT	FOOT	FOOT
					WHITE	YELLOW			
EL-1	316+00 TO 317+62	RT			0.03				
EL-2	319+83 TO 324+00	RT	13		0.08				
EL-3	322+00 TO 324+00	LT				0.04			
CL-1	316+00 TO 317+62	RT					162		
CL-2	316+00 TO 319+83	RT					383		
LL-1	316+00 TO 324+00	LT	7	0.15					
PCB-1	322+65 TO 324+00	LT						135	
RS-1	321+89	RT							102
RS-2	322+88	RT							102
TOTALS CARRIED TO SUBSUMMARY			20	0.15	0.15		545	135	204



LEGEND

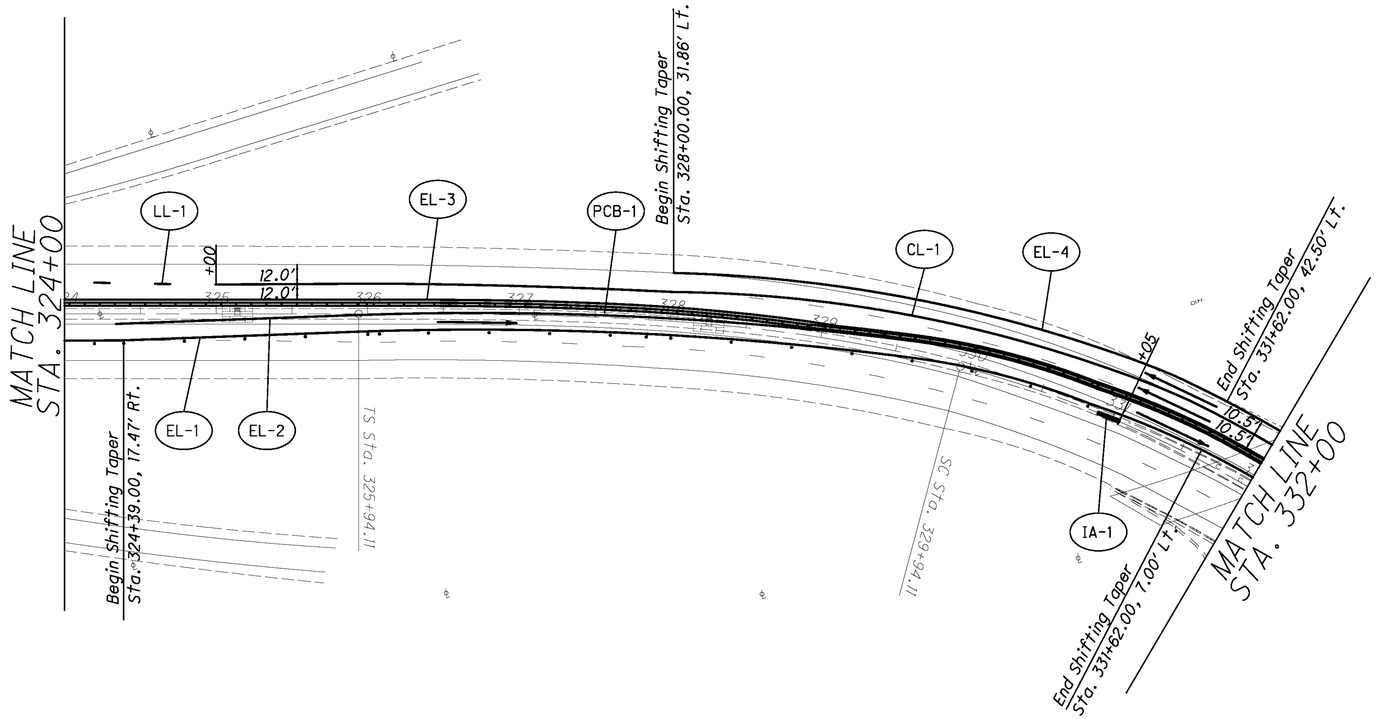
- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 3

MAH-680-4.29



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	614 WORK ZONE LANE LINE, CLASS I, A.P.P.	614 WORK ZONE EDGE LINE, CLASS I, A.P.P.		614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	622 PORTABLE CONCRETE BARRIER, 50", A.P.P.
			EACH	EACH	MILE	MILE WHITE	MILE YELLOW	FOOT	FOOT
EL-1	324+00 TO 332+00	RT&LT		40		0.15			
EL-2	324+39 TO 332+00	RT&LT		38			0.14		
EL-3	324+00 TO 332+00	LT		35			0.15		
EL-4	328+00 TO 332+00	LT		20		0.08			
LL-1	324+00 TO 325+00	LT		1	0.02				
CL-1	325+00 TO 332+00	LT		35				700	
PCB-1	324+00 TO 332+00	LT							800
IA-1	331+00	RT	1						
TOTALS CARRIED TO SUBSUMMARY			1	169	0.02	0.52		700	800

LEGEND

Shoulder Strengthening (completed during this phase)

· Construction Drum

Existing Marking Removal

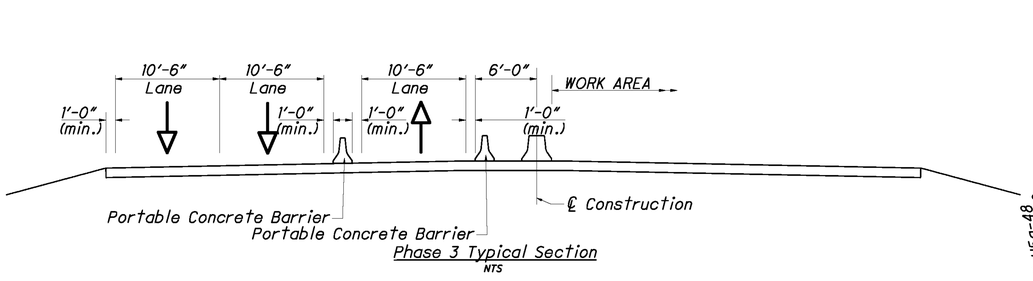
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

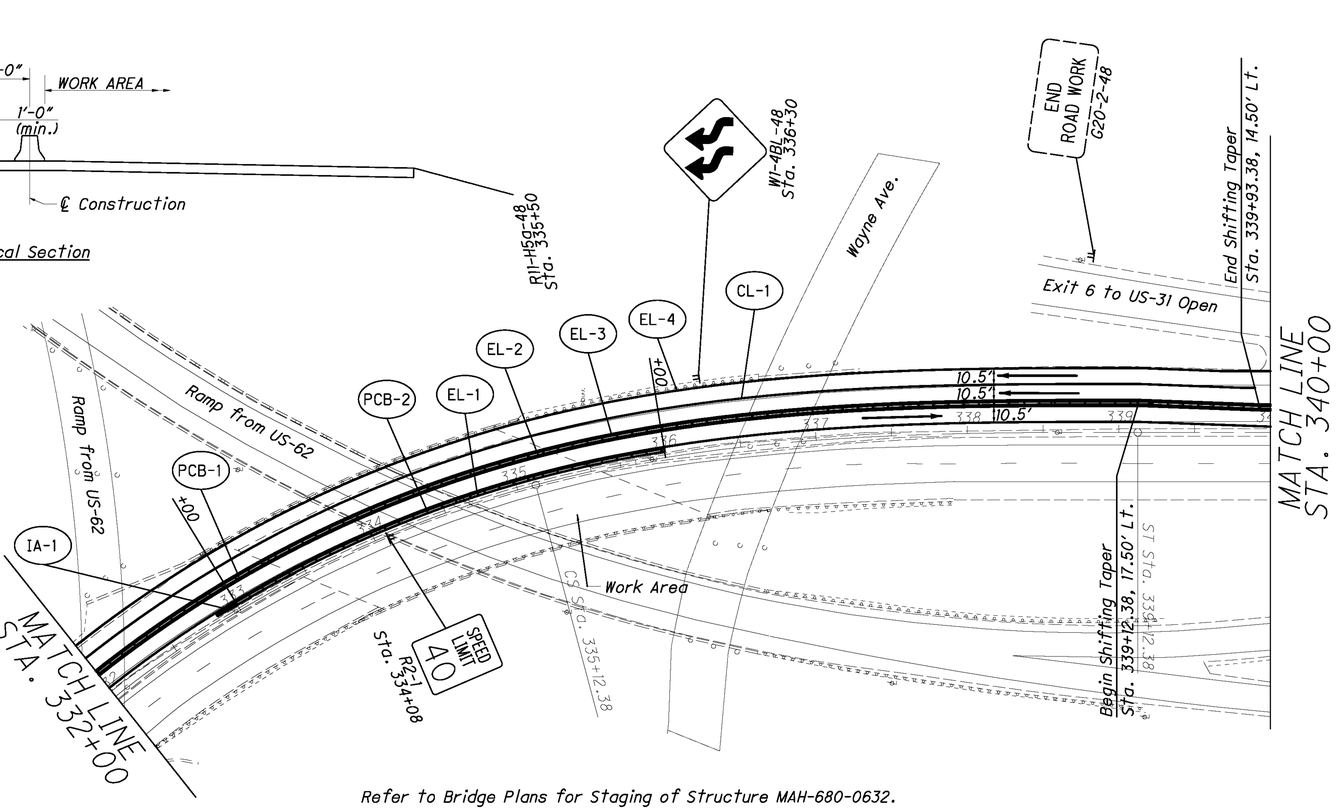
MAINTENANCE OF TRAFFIC - I-680 PHASE 3

MAH-680-4.29

ESTIMATED QUANTITIES									
REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	614 WORK ZONE EDGE LINE, CLASS I, A.P.P.		614 WORK ZONE CHANNELIZING LINE, CLASS 1, A.P.P.	622 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 50", A.P.P.
			EACH	EACH	MILE		FOOT	FOOT	FOOT
					WHITE	YELLOW			
EL-1	332+00 TO 340+00	LT		14	0.15				
EL-2	332+00 TO 340+00	LT		14		0.15			
EL-3	332+00 TO 340+00	LT		14		0.15			
EL-4	332+00 TO 340+00	LT		14	0.15				
CL-1	332+00 TO 340+00	LT		14			800		
PCB-1	332+00 TO 340+00	LT							800
PCB-2	333+00 TO 336+00	LT						70	230
IA-1	333+00	LT	1						
TOTALS CARRIED TO SUBSUMMARY			1	70	0.60		800	70	1030



Phase 3 Typical Section
NTS



LEGEND

- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

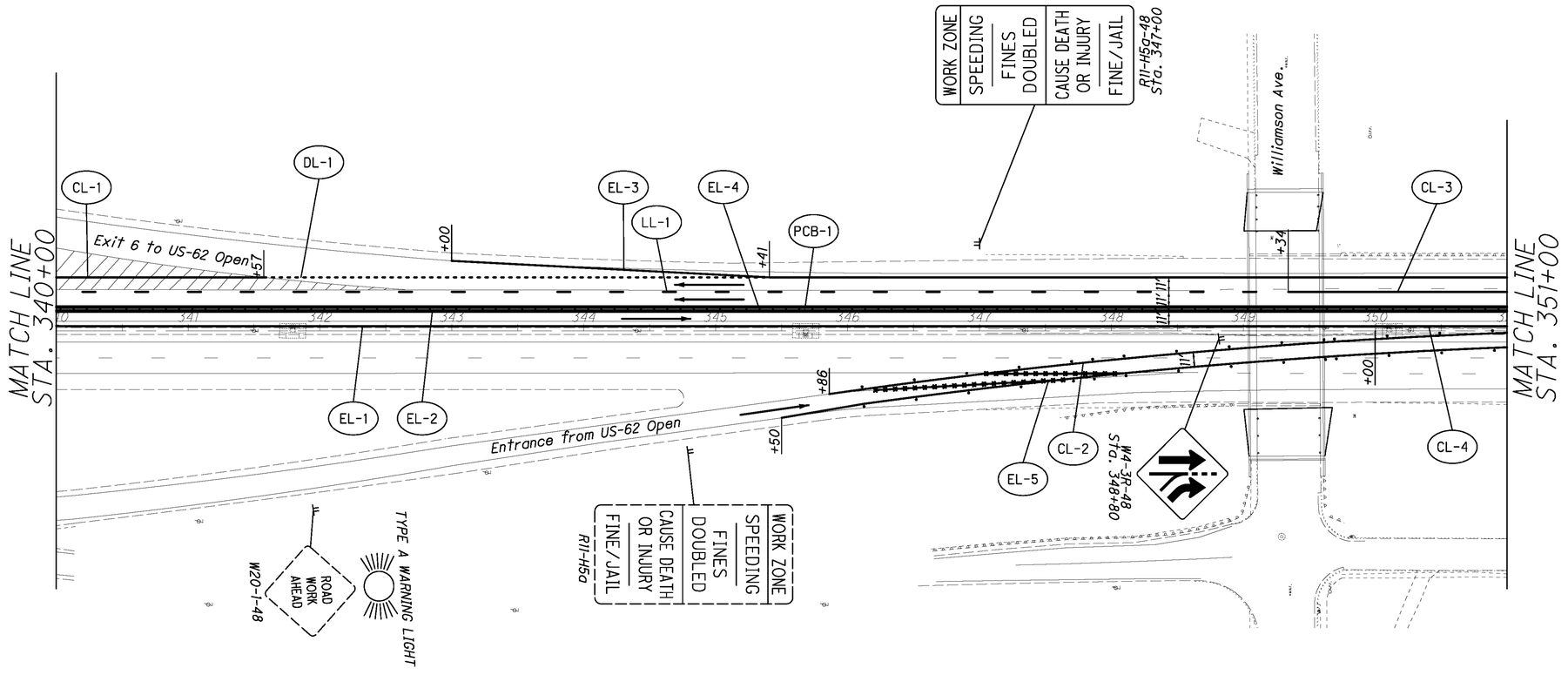
Refer to Bridge Plans for Staging of Structure MAH-680-0632.

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

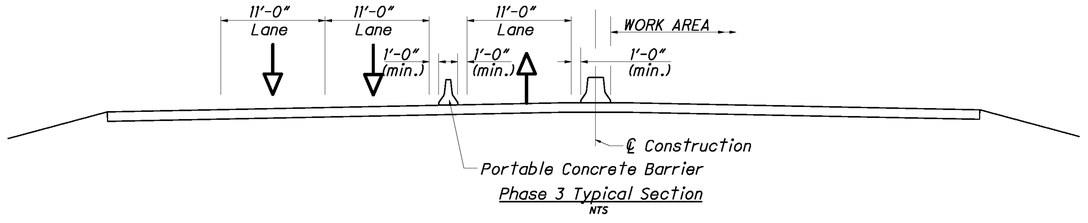
MAINTENANCE OF TRAFFIC - I-680 PHASE 3

MAH-680-4.29



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	614 WORK ZONE LANE LINE, CLASS I, A.P.P.	614 WORK ZONE EDGE LINE, CLASS I, A.P.P.		614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	614 WORK ZONE DOTTED LINE, CLASS I, A.P.P.	622 PORTABLE CONCRETE BARRIER, 50", A.P.P.
			EACH	MILE	MILE		FOOT	FOOT	FOOT
					WHITE	YELLOW			
EL-1	340+00 TO 350+00	LT	3		0.19				
EL-2	340+00 TO 351+00	LT	8			0.21			
EL-3	343+00 TO 351+00	LT	8		0.15				
EL-4	340+00 TO 351+00	LT	8			0.21			
EL-5	345+50 TO 351+00	RT			0.10				
CL-1	340+00 TO 341+57	LT					157		
CL-2	345+86 TO 351+00	RT					514		
CL-3	349+34 TO 351+00	LT	8				166		
CL-4	350+00 TO 351+00	LT	5				100		
LL-1	340+00 TO 349+34	LT	8	0.18					
DL-1	341+57 TO 345+41	LT						384	
PCB-1	340+00 TO 351+00	LT							1100
TOTALS CARRIED TO SUBSUMMARY			48	0.18	0.86		937	384	1100



Phase 3 Typical Section
NTS

LEGEND

- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

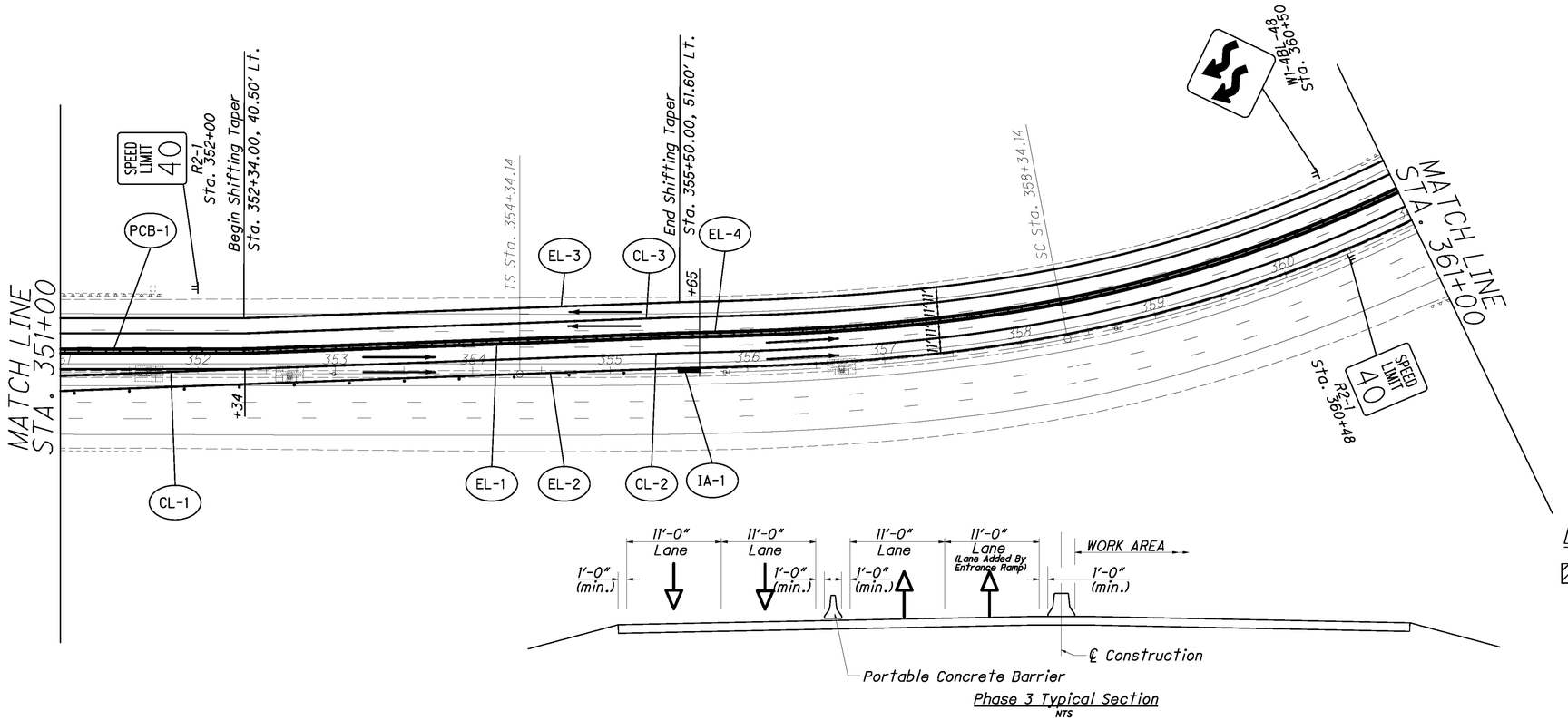
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 3

MAH-680-4.29

ESTIMATED QUANTITIES								
			614	614	614		614	622
REF. NO.	STATION TO STATION	SIDE	WORK ZONE IMPACT ATTENUATOR	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	PORTABLE CONCRETE BARRIER, 50", A.P.P.
					MILE			
			EACH	EACH	WHITE	YELLOW	FOOT	FOOT
EL-1	351+00 TO 361+00	LT		38		0.19		
EL-2	351+00 TO 361+00	RT&LT		38	0.19			
EL-3	351+00 TO 361+00	LT		38	0.19			
EL-4	351+00 TO 361+00	LT		38		0.19		
CL-1	351+00 TO 352+34	RT&LT					134	
CL-2	351+00 TO 361+00	LT		38			1000	
CL-3	351+00 TO 361+00	LT		38			1000	
PCB-1	351+00 TO 361+00	LT						1000
IA-1	355+65	LT	1					
TOTALS CARRIED TO SUBSUMMARY			1	228	0.76		2134	1000



Phase 3 Typical Section
NTS

LEGEND

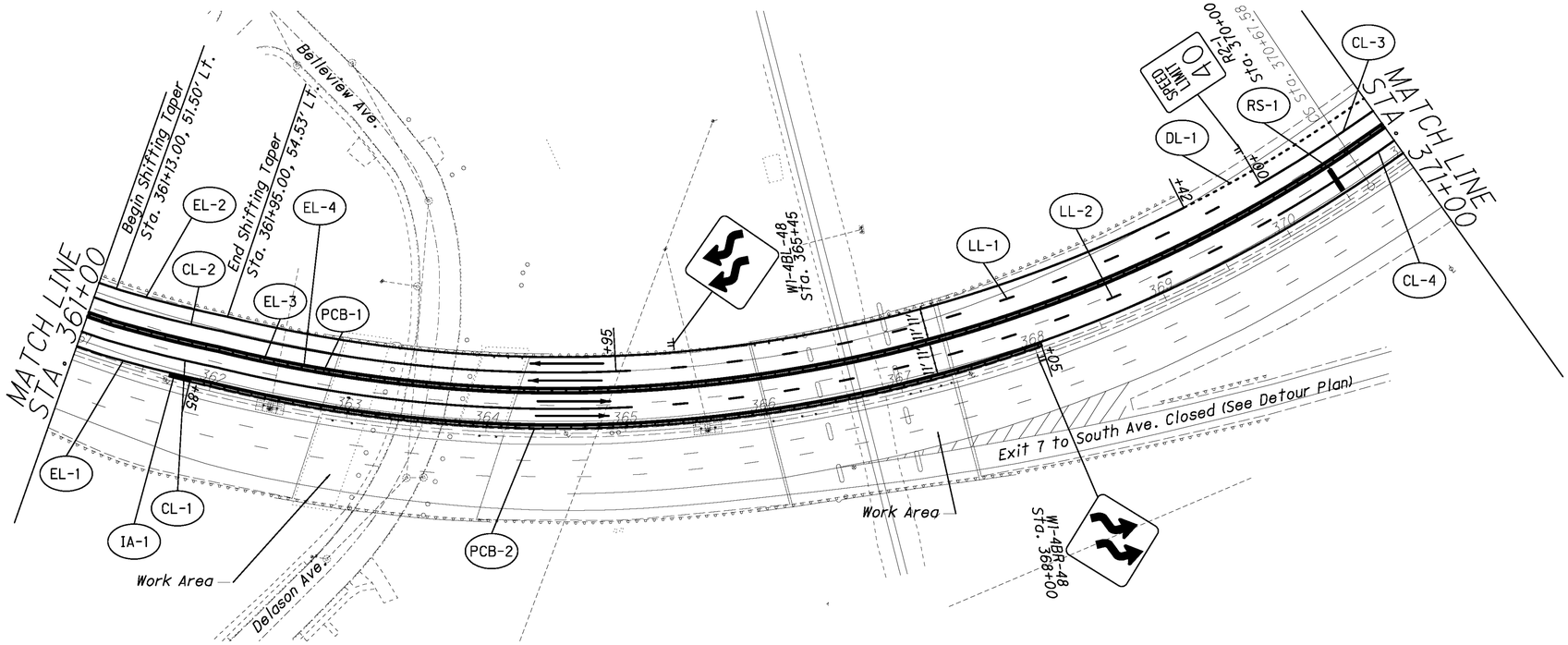
- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 3

MAH-680-4.29



Refer to Bridge Plans for Staging of Structures MAH-680-0687 & MAH-680-0693.

Phase 3 Typical Section
NTS

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	614 WORK ZONE LANE LINE, CLASS I, A.P.P.	614 WORK ZONE EDGE LINE, CLASS I, A.P.P.		614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	614 WORK ZONE DOTTED LINE, CLASS I, A.P.P.	622 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 50", A.P.P.	690 SPECIAL-RUMBLE STRIPS
			EACH	EACH	MILE	MILE		FOOT	FOOT	FOOT	FOOT	FOOT
						WHITE	YELLOW					
EL-1	361+00 TO 371+00	LT		5		0.19						
EL-2	361+00 TO 369+42	LT				0.16						
EL-3	361+00 TO 371+00	LT		5			0.19					
EL-4	361+00 TO 371+00	LT		5			0.19					
CL-1	361+00 TO 364+95	LT						395				
CL-2	361+00 TO 364+95	LT						395				
CL-3	370+00 TO 371+00	LT		5				100				
CL-4	370+00 TO 371+00	LT		5				100				
LL-1	364+95 TO 370+00	LT		5	0.10							
LL-2	364+95 TO 370+00	LT		5	0.10							
DL-1	369+42 TO 371+00	LT							158			
PCB-1	361+00 TO 371+00	LT									1000	
PCB-2	361+85 TO 368+05	LT								620		
IA-1	361+85	LT	1									
RS-1	370+50	LT										92
TOTALS CARRIED TO SUBSUMMARY			1	35	0.20	0.73		990	158	620	1000	92

ESTIMATED QUANTITIES

LEGEND

- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

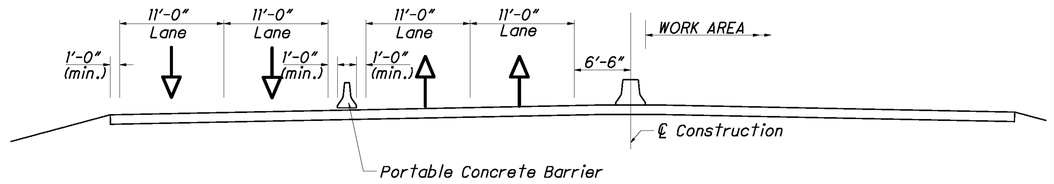
CALCULATED JAB
CHECKED JBD

HORIZONTAL SCALE IN FEET
0 25 50 100

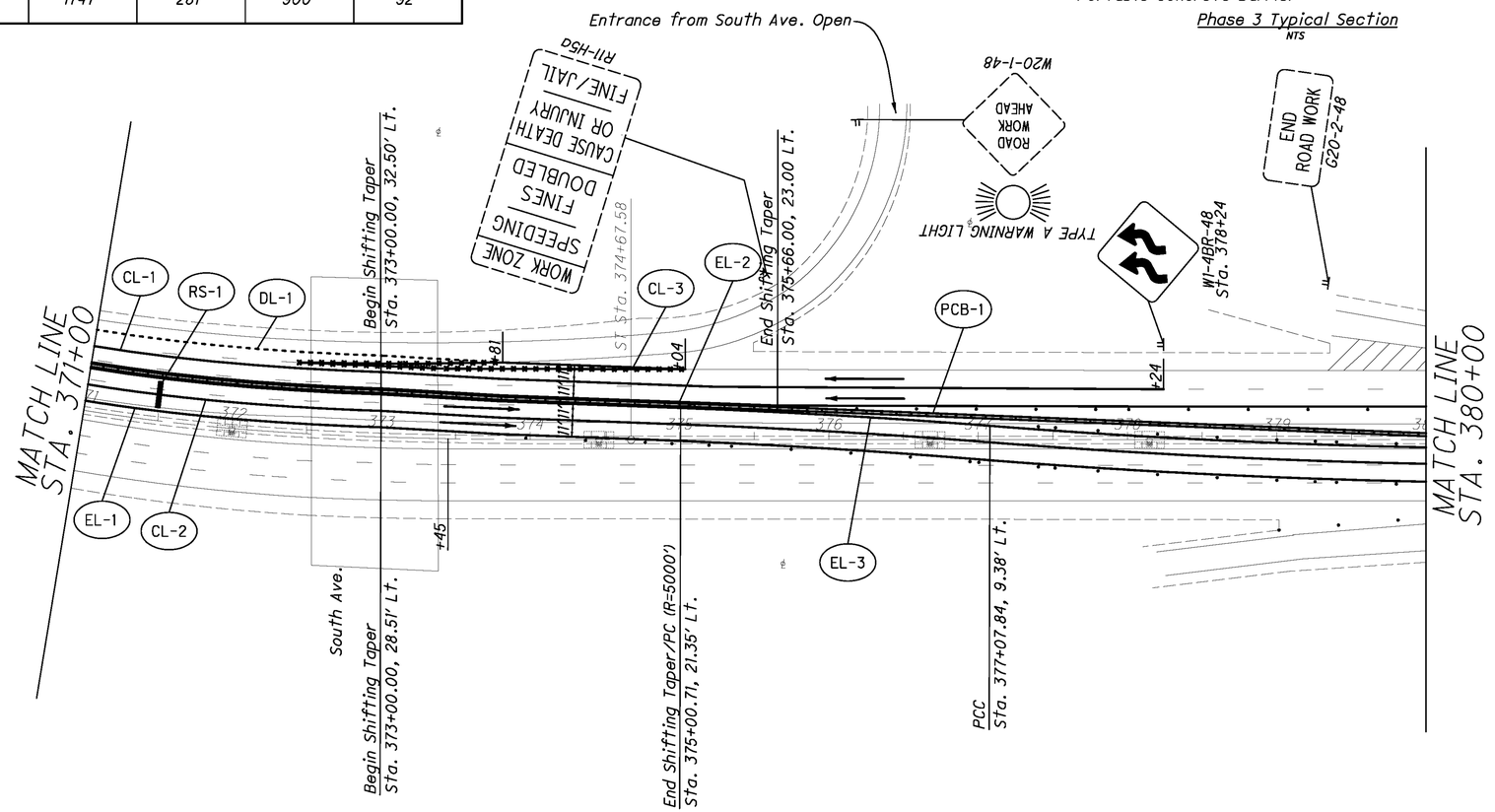
MAINTENANCE OF TRAFFIC - I-680 PHASE 3

MAH-680-4.29

ESTIMATED QUANTITIES									
			614	614		614	614	622	690
REF. NO.	STATION TO STATION	SIDE	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	WORK ZONE DOTTED LINE, CLASS I, A.P.P.	PORTABLE CONCRETE BARRIER, 50", A.P.P.	SPECIAL-RUMBLE STRIPS
			EACH	MILE		FOOT	FOOT	FOOT	FOOT
				WHITE	YELLOW				
EL-1	371+00 TO 380+00	RT&LT	45	0.17					
EL-2	371+00 TO 380+00	LT	39		0.17				
EL-3	371+00 TO 380+00	LT	45		0.17				
CL-1	371+00 TO 378+24	LT	37			724			
CL-2	371+00 TO 380+00	RT&LT	45			900			
CL-3	373+81 TO 375+04	LT	7			123			
DL-1	371+00 TO 373+81	LT					281		
PCB-1	371+00 TO 380+00	LT						900	
RS-1	371+50	LT							92
TOTALS CARRIED TO SUBSUMMARY			218	0.51		1747	281	900	92



Phase 3 Typical Section
NTS



LEGEND

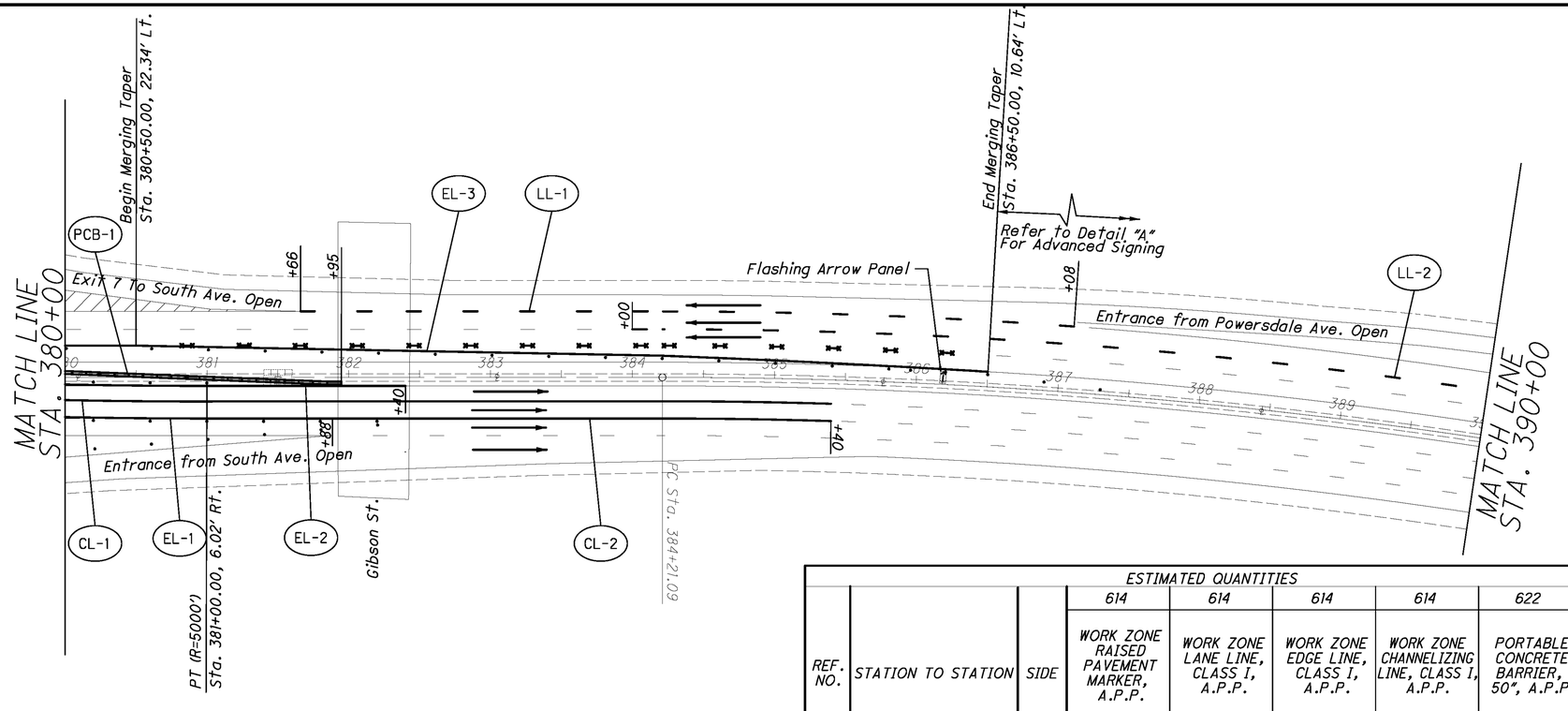
- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

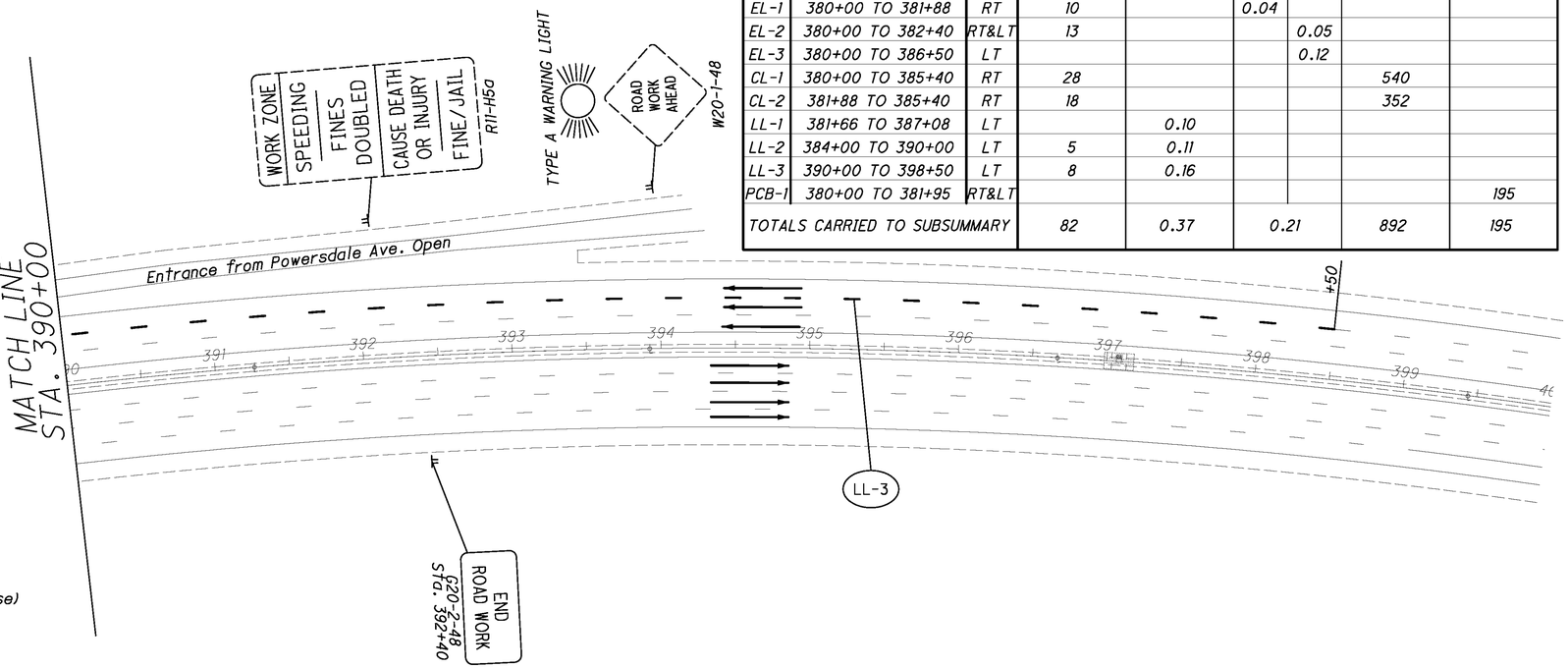
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 3

MAH-680-4.29





ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P. (EACH)	614 WORK ZONE LANE LINE, CLASS I, A.P.P. (MILE)	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) WHITE	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) YELLOW	614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P. (FOOT)	622 PORTABLE CONCRETE BARRIER, 50", A.P.P. (FOOT)
EL-1	380+00 TO 381+88	RT	10		0.04			
EL-2	380+00 TO 382+40	RT&LT	13			0.05		
EL-3	380+00 TO 386+50	LT				0.12		
CL-1	380+00 TO 385+40	RT	28				540	
CL-2	381+88 TO 385+40	RT	18				352	
LL-1	381+66 TO 387+08	LT		0.10				
LL-2	384+00 TO 390+00	LT	5	0.11				
LL-3	390+00 TO 398+50	LT	8	0.16				
PCB-1	380+00 TO 381+95	RT&LT						195
TOTALS CARRIED TO SUBSUMMARY			82	0.37	0.21		892	195

LEGEND

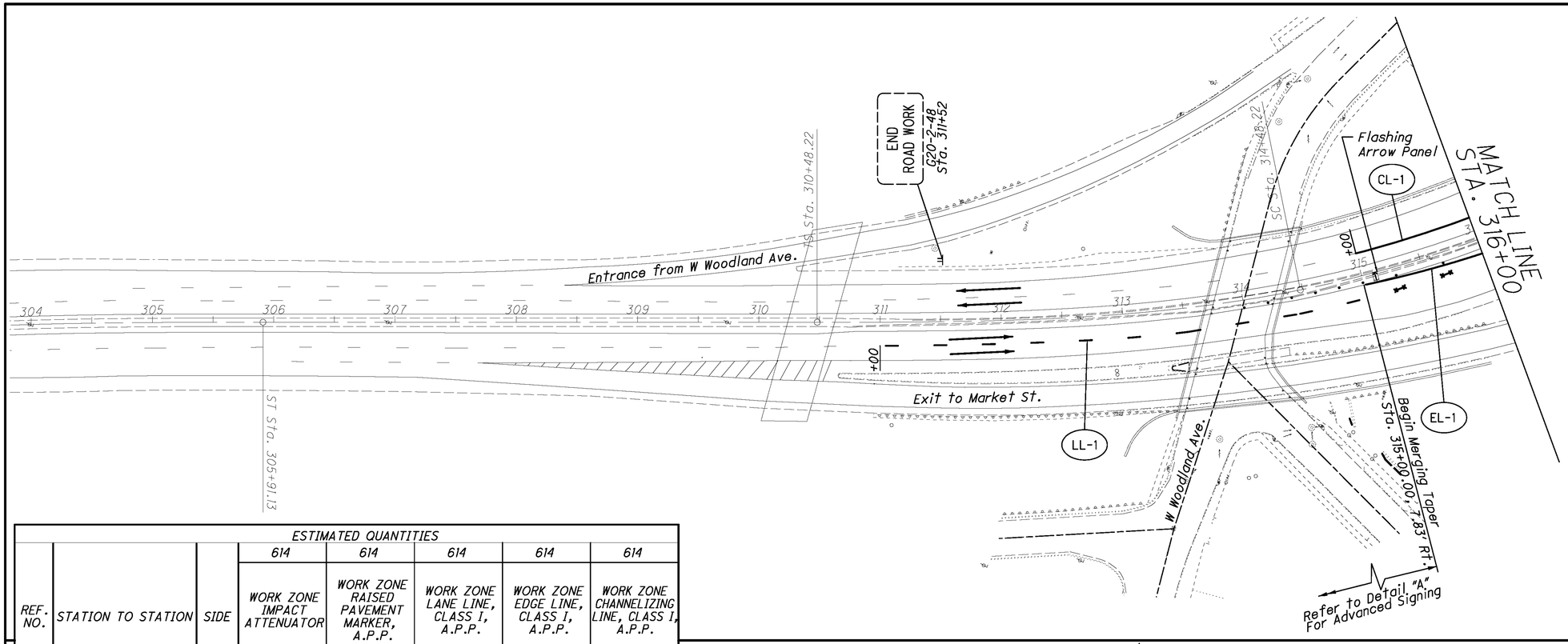
- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

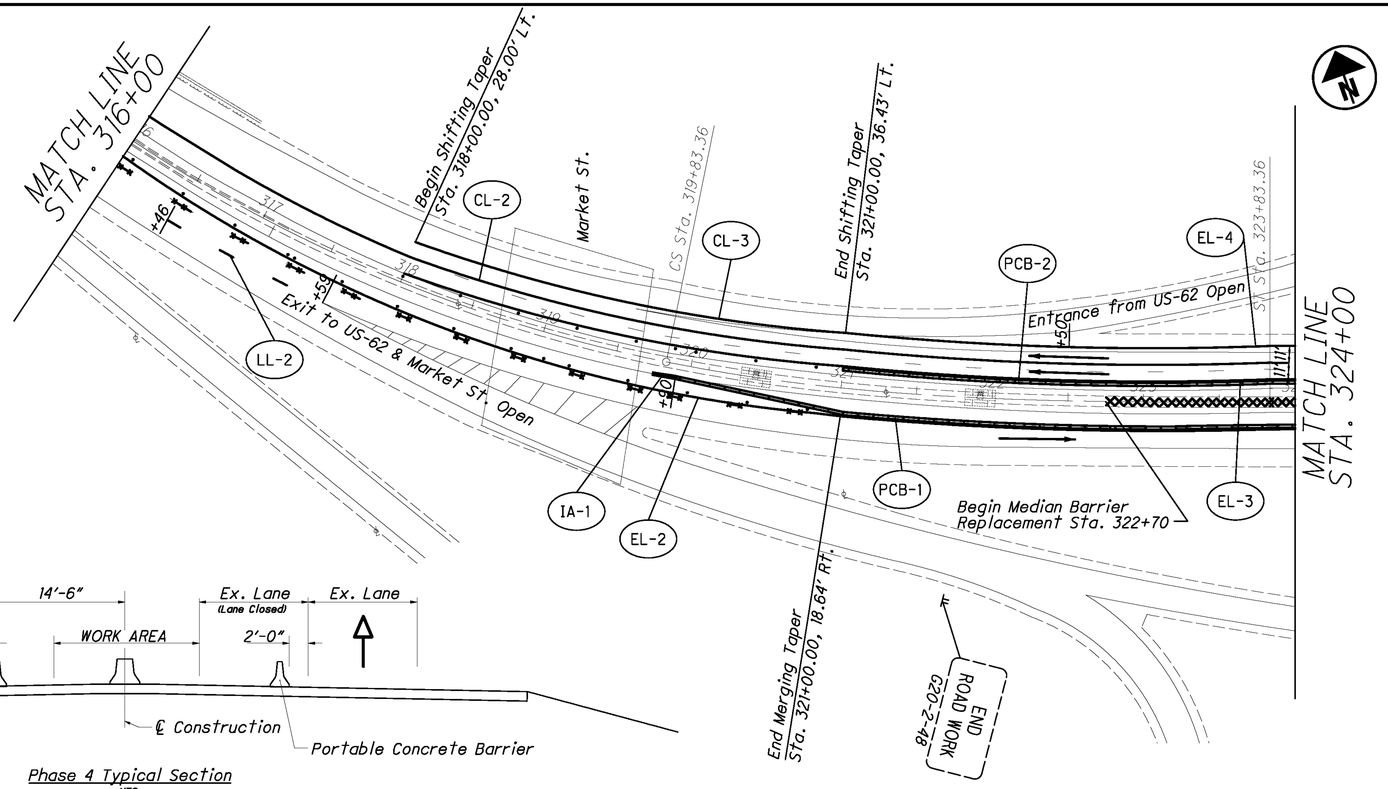
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 3

MAH-680-4.29



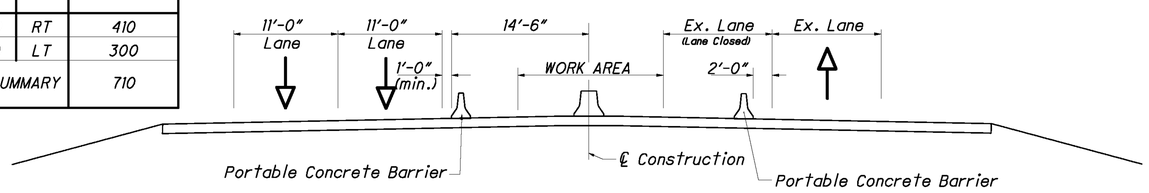


ESTIMATED QUANTITIES								
			614	614	614	614		614
REF. NO.	STATION TO STATION	SIDE	WORK ZONE IMPACT ATTENUATOR	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE LANE LINE, CLASS I, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.
						MILE		
			EACH	EACH	MILE	WHITE	YELLOW	FOOT
EL-1	315+00 TO 316+00	RT					0.02	
EL-2	316+00 TO 324+00	RT					0.15	
EL-3	318+00 TO 324+00	LT		30			0.11	
EL-4	322+50 TO 324+00	LT		8		0.03		
CL-1	315+00 TO 316+00	LT		5				100
CL-2	316+00 TO 324+00	LT		40				800
CL-3	318+00 TO 322+50	LT		22				450
LL-1	311+00 TO 315+00	LT		4	0.08			
LL-2	316+46 TO 317+59	RT			0.02			
IA-1	319+90	RT	1					
TOTALS CARRIED TO SUBSUMMARY			1	109	0.10	0.31		1350

			622
REF. NO.	STATION TO STATION	SIDE	PORTABLE CONCRETE BARRIER, 32"
			FOOT
PCB-1	319+90 TO 324+00	RT	410
PCB-2	321+00 TO 324+00	LT	300
TOTALS CARRIED TO SUBSUMMARY			710

LEGEND

- Median Barrier Replacement (completed during this phase)
- Construction Drum
- Existing Marking Removal



Phase 4 Typical Section
NTS

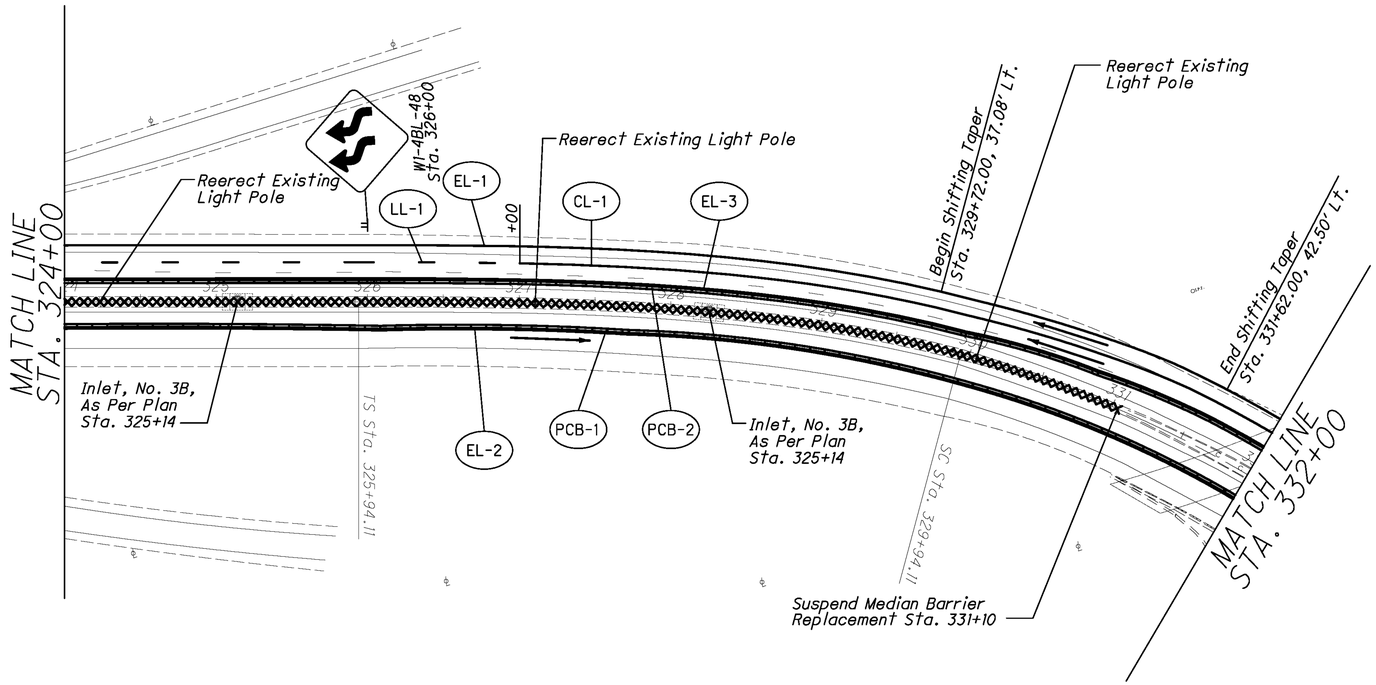
HORIZONTAL SCALE IN FEET
0 25 50 100

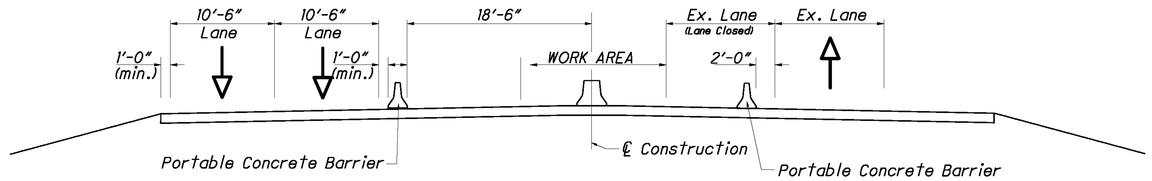
CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 4

MAH-680-4.29

Refer to Lighting Plans for lighting details.
Refer to Typical Sections for barrier replacement limits during Phase 4.





Phase 4 Typical Section
NTS

Note: For northbound traffic, portable concrete barrier from Sta. 330+00 to Sta. 375+60 and temporary pavement markings from Sta. 329+94 to Sta. 380+50 are in the same location for Phase 3 and Phase 4.

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	614 WORK ZONE LANE LINE, CLASS I, A.P.P.	614 WORK ZONE EDGE LINE, CLASS I, A.P.P.		614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	622 PORTABLE CONCRETE BARRIER, 32"
			EACH	MILE	MILE		FOOT	FOOT
					WHITE	YELLOW		
EL-1	324+00 TO 329+94	LT	17		0.11			
EL-2	324+00 TO 332+00	RT				0.15		
EL-3	324+00 TO 329+94	LT	17			0.11		
CL-1	327+00 TO 329+94	LT	14				294	
LL-1	324+00 TO 327+00	LT	3	0.06				
PCB-1	324+00 TO 332+00	RT						800
PCB-2	324+00 TO 330+00	LT						600
TOTALS CARRIED TO SUBSUMMARY			51	0.06	0.37		294	1400

LEGEND

- Median Barrier Replacement (completed during this phase)
- Construction Drum
- Existing Marking Removal

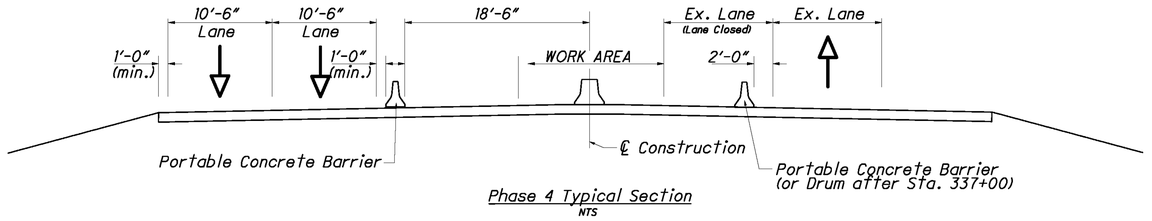
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 4

MAH-680-4.29

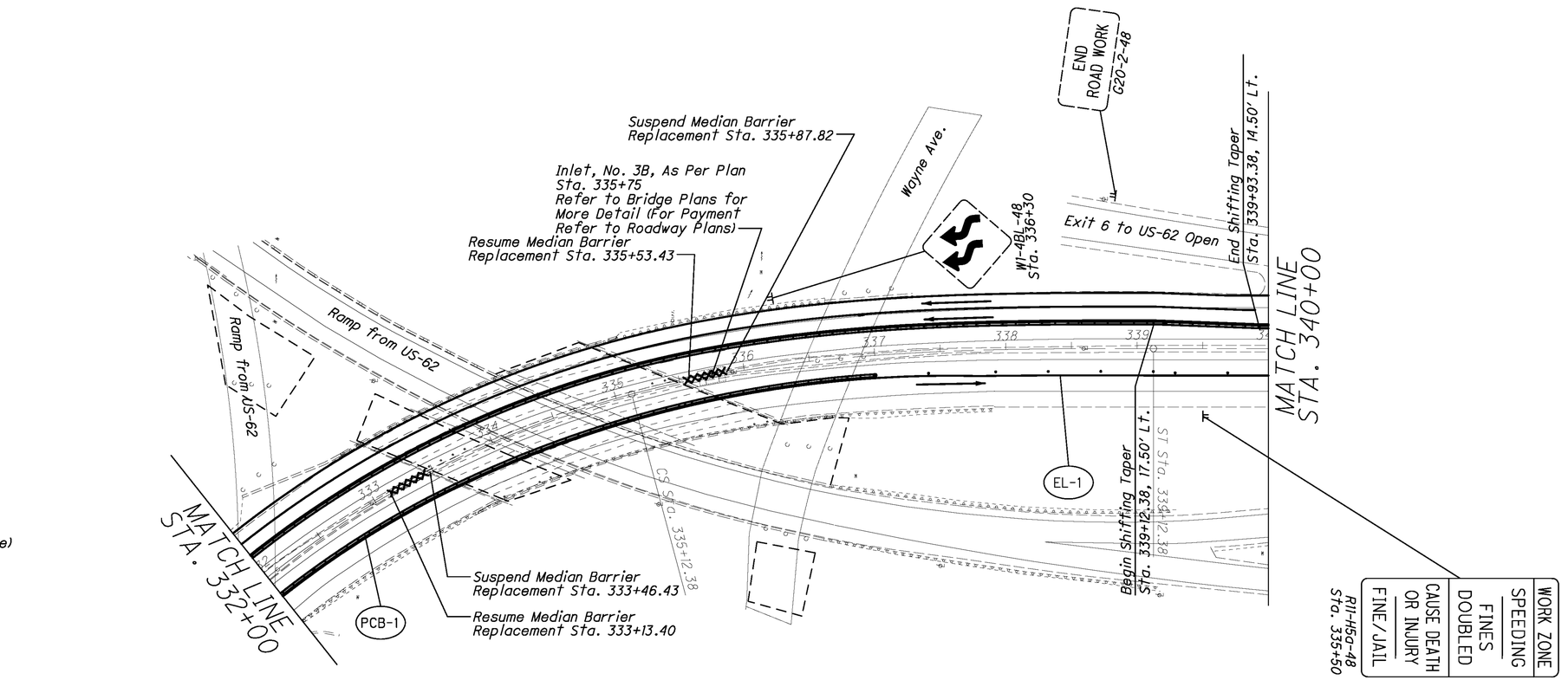
Refer to Bridge Plans for Staging of Structure MAH-680-0632.
Refer to Lighting Plans for lighting details.
Refer to Typical Sections for barrier replacement limits during Phase 4.



Phase 4 Typical Section
NTS

Note: For northbound traffic, portable concrete barrier from Sta. 330+00 to Sta. 375+60 and temporary pavement markings from Sta. 329+94 to Sta. 380+50 are in the same location for Phase 3 and Phase 4.

ESTIMATED QUANTITIES					
			614		622
REF. NO.	STATION TO STATION	SIDE	WORK ZONE EDGE LINE, CLASS I, A.P.P.		PORTABLE CONCRETE BARRIER, 32"
			MILE		FOOT
			WHITE	YELLOW	
EL-1	332+00 TO 340+00	RT		0.15	
PCB-1	332+00 TO 337+00	RT			500
TOTALS CARRIED TO SUBSUMMARY			0.15		500



LEGEND

- Median Barrier Replacement (completed during this phase)
- Construction Drum
- Existing Marking Removal

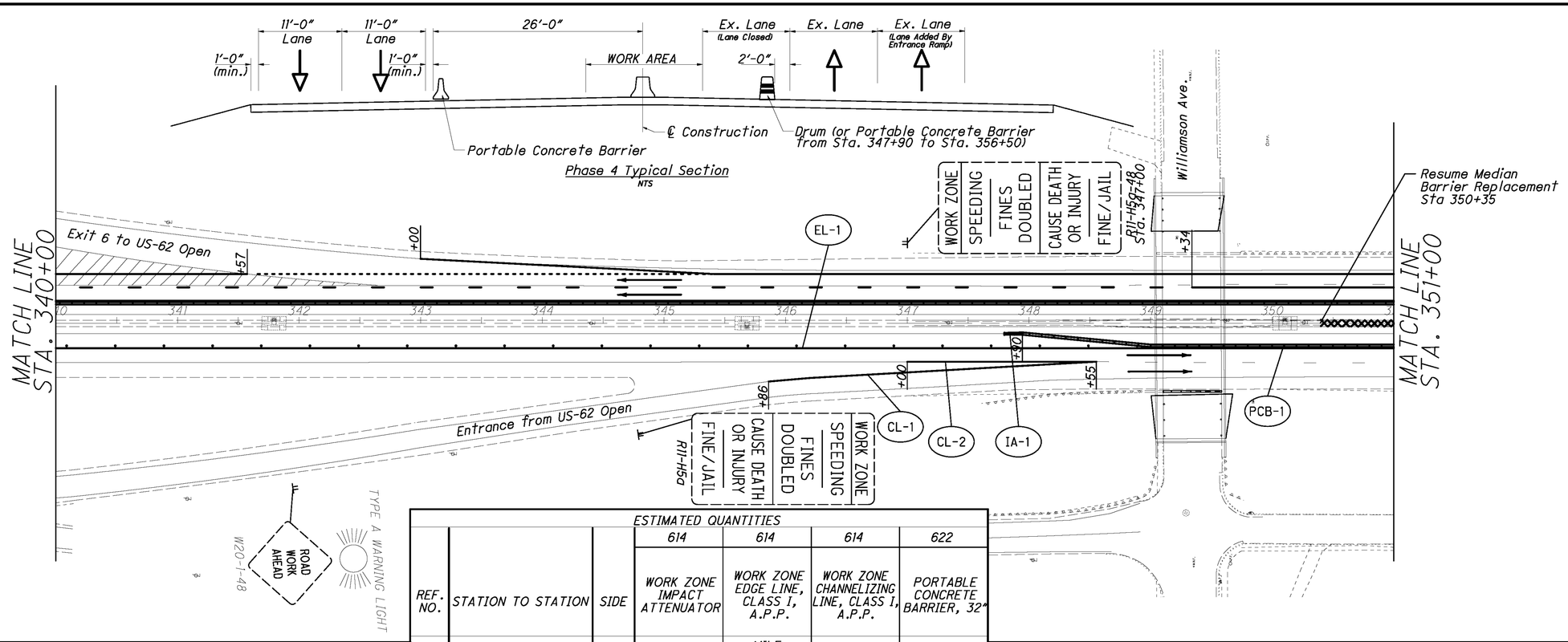
CALCULATED JAB
CHECKED JBD

HORIZONTAL SCALE IN FEET
0 25 50 100

MAINTENANCE OF TRAFFIC - I-680
PHASE 4

MAH-680-4.29

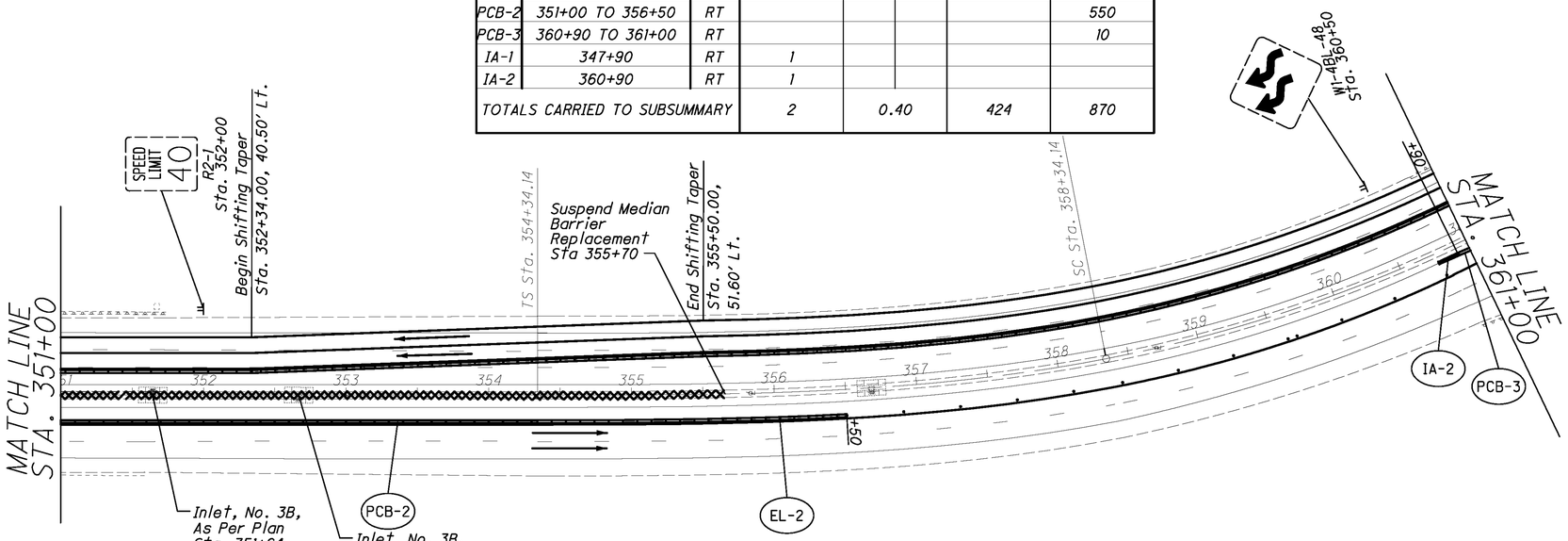
52
307



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR (EACH)	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE WHITE)	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE YELLOW)	614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P. (FOOT)	622 PORTABLE CONCRETE BARRIER, 32" (FOOT)
EL-1	340+00 TO 351+00	RT			0.21		
EL-2	351+00 TO 361+00	RT			0.19		
CL-1	345+86 TO 348+55	RT				269	
CL-2	347+00 TO 348+55	RT				155	
PCB-1	347+90 TO 351+00	RT					310
PCB-2	351+00 TO 356+50	RT					550
PCB-3	360+90 TO 361+00	RT					10
IA-1	347+90	RT	1				
IA-2	360+90	RT	1				
TOTALS CARRIED TO SUBSUMMARY			2	0.40		424	870

Note: For northbound traffic, portable concrete barrier from Sta. 330+00 to Sta. 375+60 and temporary pavement markings from Sta. 329+94 to Sta. 380+50 are in the same location for Phase 3 and Phase 4.



Refer to Lighting Plans for lighting details.

Refer to Typical Sections for barrier replacement limits during Phase 4.

LEGEND

- Median Barrier Replacement (completed during this phase)
- Construction Drum
- Existing Marking Removal

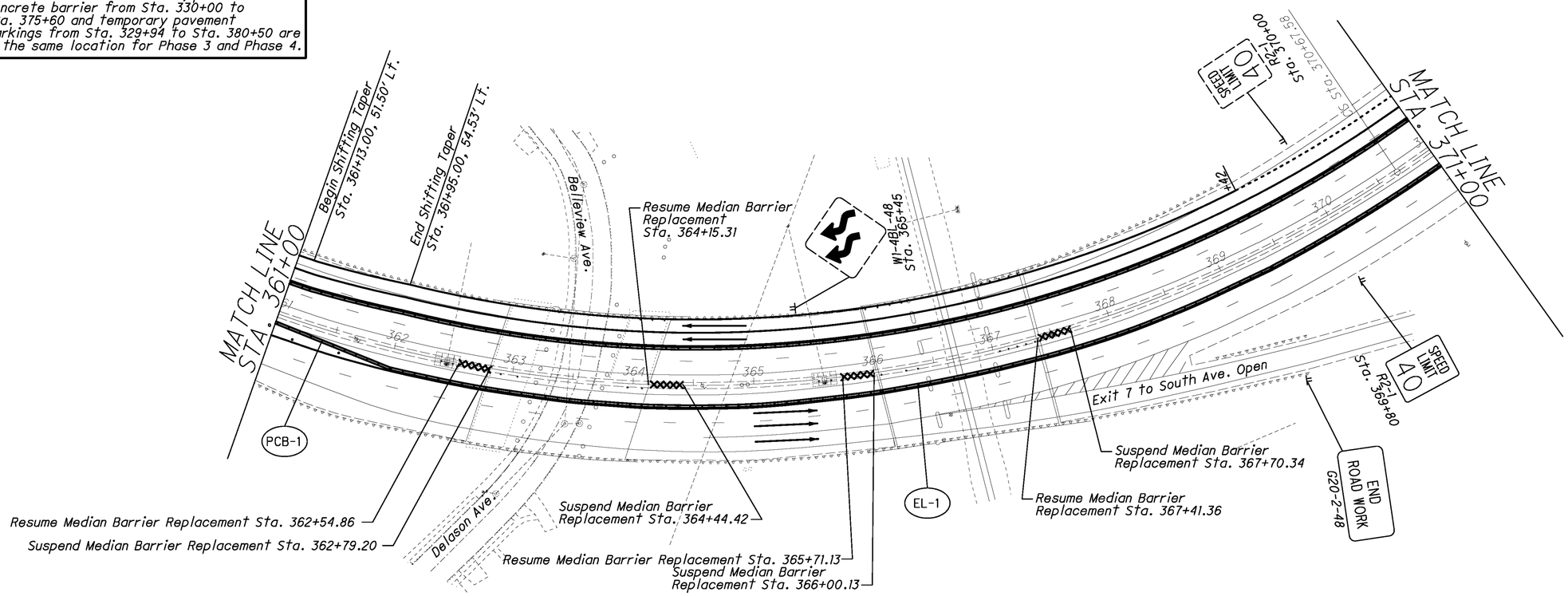
HORIZONTAL SCALE IN FEET

CALCULATED JAB CHECKED JBD

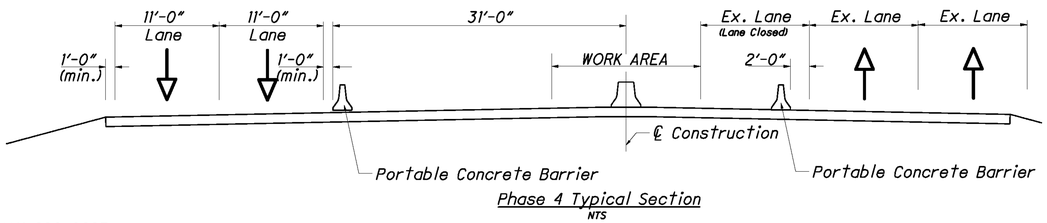
MAINTENANCE OF TRAFFIC - I-680 PHASE 4

MAH-680-4.29

Note: For northbound traffic, portable concrete barrier from Sta. 330+00 to Sta. 375+60 and temporary pavement markings from Sta. 329+94 to Sta. 380+50 are in the same location for Phase 3 and Phase 4.



ESTIMATED QUANTITIES					
			614		622
REF. NO.	STATION TO STATION	SIDE	WORK ZONE EDGE LINE, CLASS I, A.P.P.		PORTABLE CONCRETE BARRIER, 32"
			MILE		FOOT
			WHITE	YELLOW	
EL-1	361+00 TO 371+00	RT		0.19	
PCB-1	361+00 TO 371+00	RT			1000
TOTALS CARRIED TO SUBSUMMARY			0.19		1000



Phase 4 Typical Section
NTS

LEGEND

- Median Barrier Replacement (completed during this phase)
- Construction Drum
- Existing Marking Removal

Refer to Bridge Plans for Staging of Structures MAH-380-0687 & MAH-680-0693.
Refer to Lighting Plans for lighting details.
Refer to Typical Sections for barrier replacement limits during Phase 4.

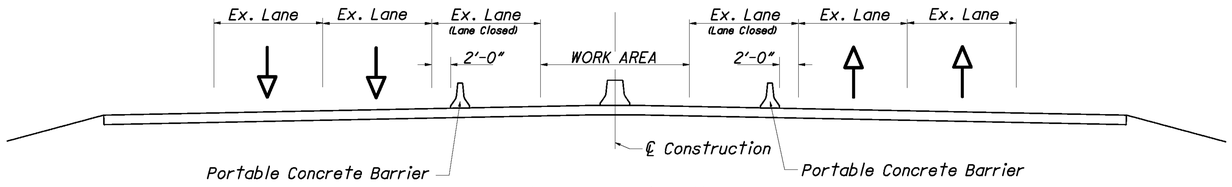
HORIZONTAL SCALE IN FEET
0 25 50 100
CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 4

MAH-680-4.29

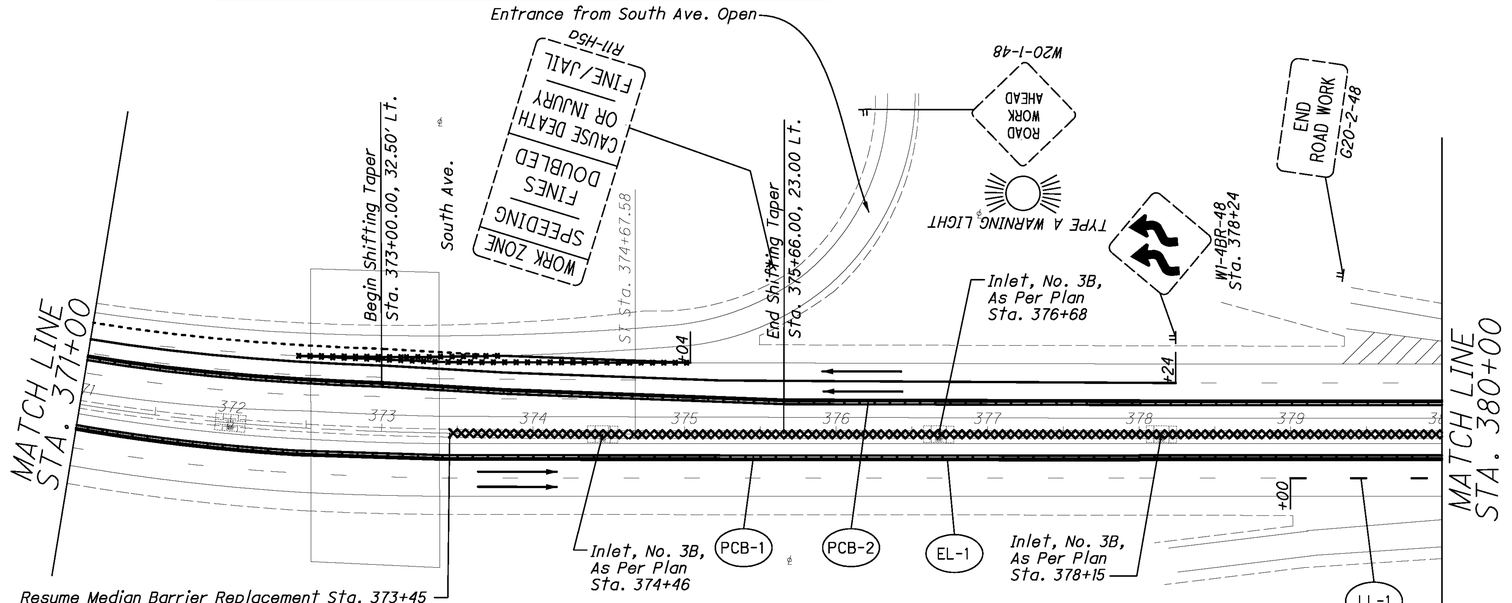
Note: For northbound traffic, portable concrete barrier from Sta. 330+00 to Sta. 375+60 and temporary pavement markings from Sta. 329+94 to Sta. 380+50 are in the same location for Phase 3 and Phase 4.

Refer to Lighting Plans for lighting details.
Refer to Typical Sections for barrier replacement limits during Phase 4.



Phase 4 Typical Section
NTS

ESTIMATED QUANTITIES						
			614	614		622
REF. NO.	STATION TO STATION	SIDE	WORK ZONE LANE LINE, CLASS I, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		PORTABLE CONCRETE BARRIER, 32"
			MILE	MILE		FOOT
				WHITE	YELLOW	
EL-1	371+00 TO 380+00	RT			0.17	
LL-1	379+00 TO 380+00	RT	0.02			
PCB-1	371+00 TO 380+00	RT				900
PCB-2	375+60 TO 380+00	LT				440
TOTALS CARRIED TO SUBSUMMARY			0.02	0.17		1340



LEGEND

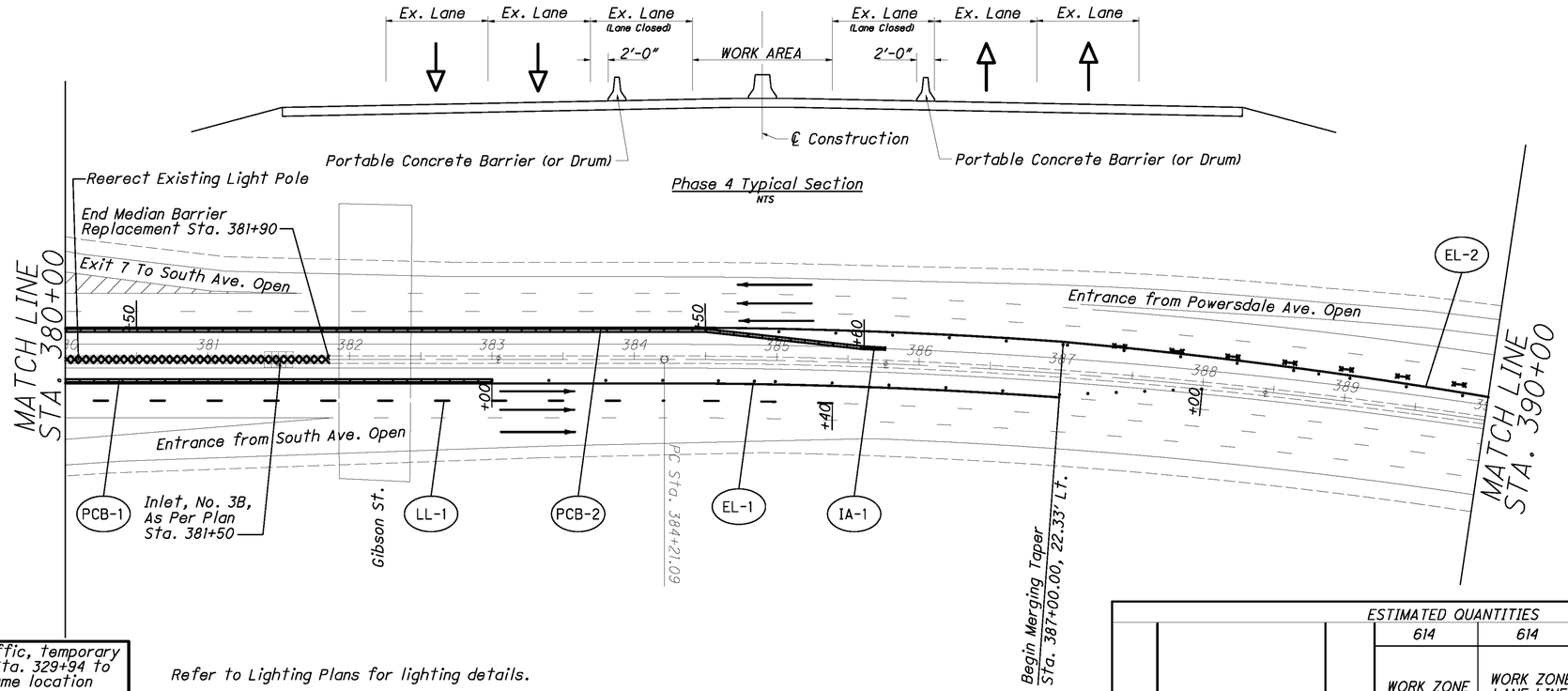
- Median Barrier Replacement (completed during this phase)
- Construction Drum
- Existing Marking Removal

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 4

MAH-680-4.29



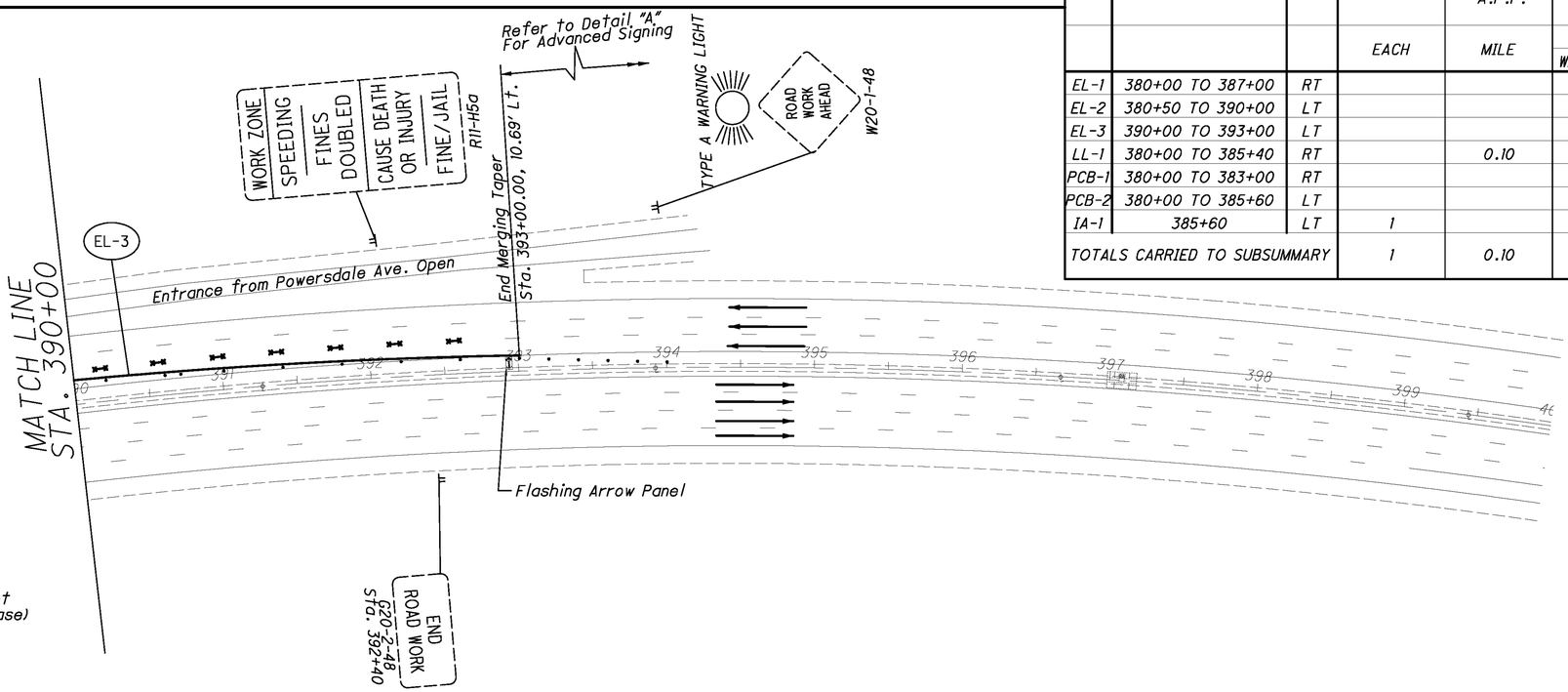
Note: For northbound traffic, temporary pavement markings from Sta. 329+94 to Sta. 380+50 are in the same location for Phase 3 and Phase 4.

Refer to Lighting Plans for lighting details.

Refer to Typical Sections for barrier replacement limits during Phase 4.

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR (EACH)	614 WORK ZONE LANE LINE, CLASS I, A.P.P. (MILE)	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE WHITE)	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE YELLOW)	622 PORTABLE CONCRETE BARRIER, 32" (FOOT)
EL-1	380+00 TO 387+00	RT				0.13	
EL-2	380+50 TO 390+00	LT				0.18	
EL-3	390+00 TO 393+00	LT				0.06	
LL-1	380+00 TO 385+40	RT		0.10			
PCB-1	380+00 TO 383+00	RT					300
PCB-2	380+00 TO 385+60	LT					560
IA-1	385+60	LT	1				
TOTALS CARRIED TO SUBSUMMARY			1	0.10	0.37		860



LEGEND

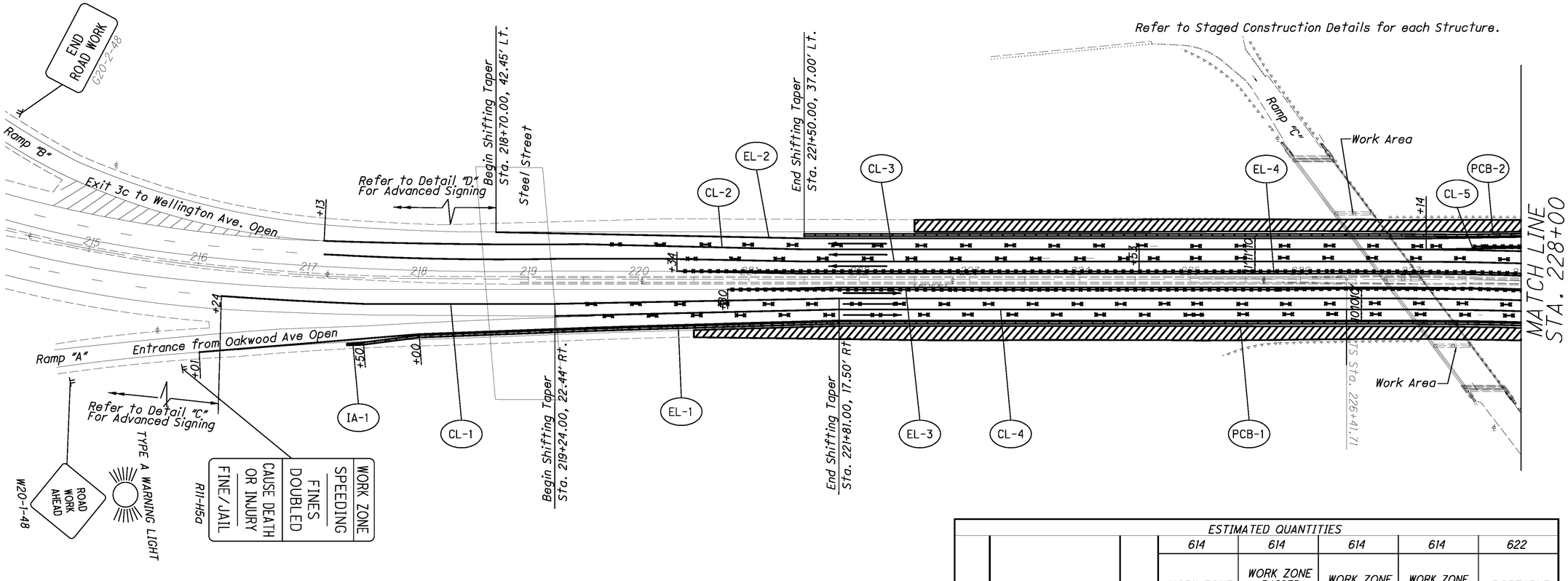
- Median Barrier Replacement (completed during this phase)
- Construction Drum
- Existing Marking Removal

HORIZONTAL SCALE IN FEET
0 25 50 100

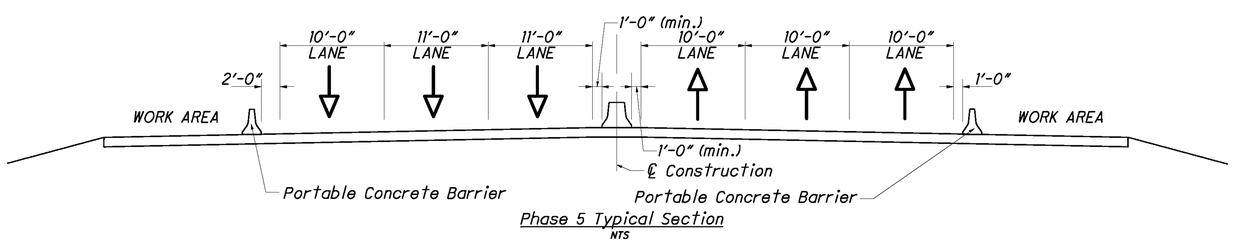
CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 4

MAH-680-4.29



ESTIMATED QUANTITIES								
			614	614	614		614	622
REF. NO.	STATION TO STATION	SIDE	WORK ZONE IMPACT ATTENUATOR	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	PORTABLE CONCRETE BARRIER, 32"
			EACH	EACH	MILE WHITE	MILE YELLOW	FOOT	FOOT
EL-1	216+01 TO 228+00	RT		60	0.23			
EL-2	218+70 TO 228+00	LT		47	0.18			
EL-3	220+80 TO 228+00	RT		36		0.14		
EL-4	220+34 TO 228+00	LT		39		0.15		
CL-1	216+24 TO 228+00	RT		59			1176	
CL-2	217+13 TO 228+00	LT		55			1087	
CL-3	217+13 TO 228+00	LT		55			1087	
CL-4	219+24 TO 228+00	RT		44			876	
CL-5	227+14 TO 228+00	LT					86	
PCB-1	217+50 TO 228+00	RT						1050
PCB-2	221+50 TO 228+00	LT						650
IA-1	217+50	RT	1					
TOTALS CARRIED TO SUBSUMMARY			1	395	0.70		4312	1700



Phase 5 Typical Section

NTS

LEGEND

- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

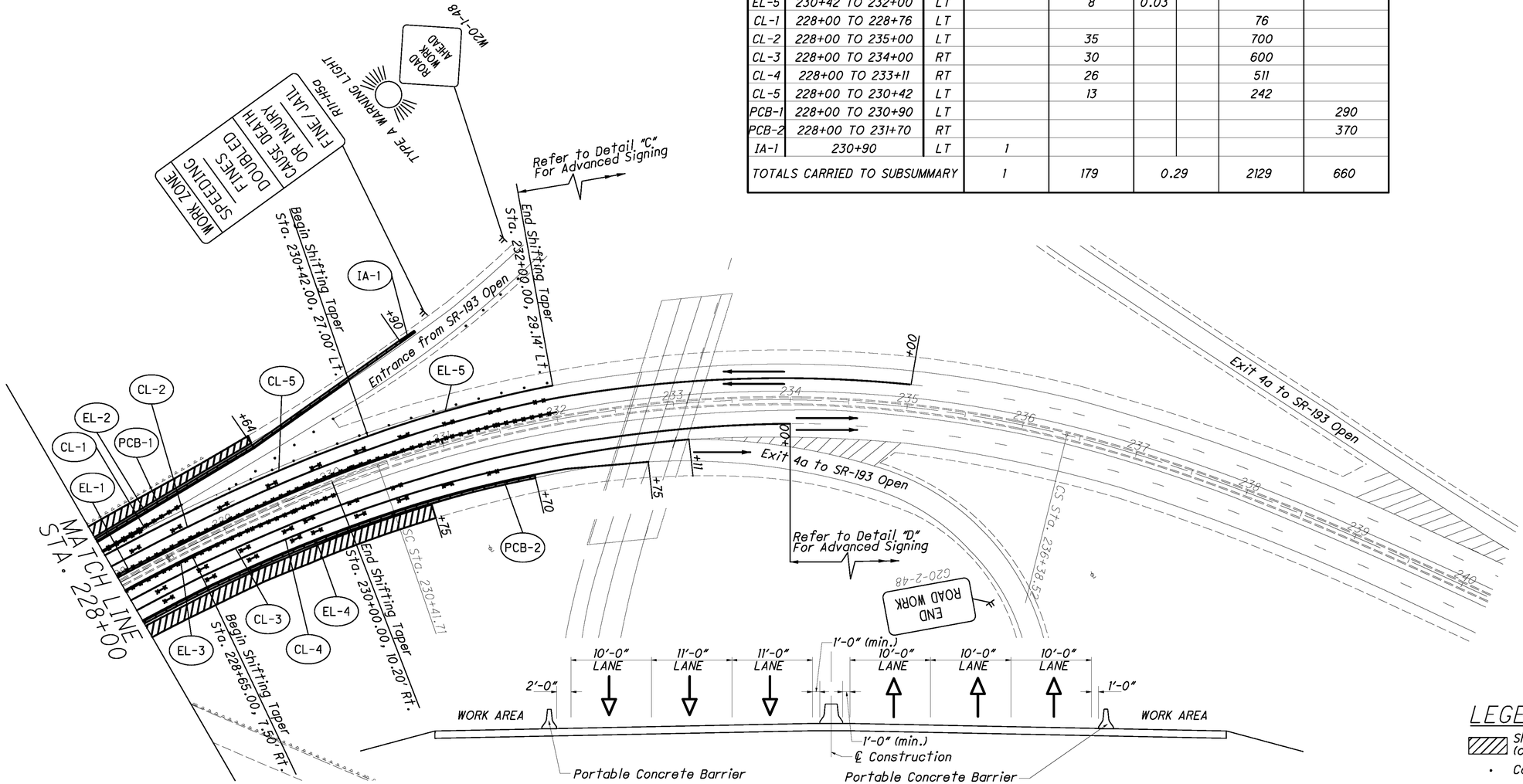
HORIZONTAL SCALE IN FEET

CALCULATED JAB CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 5

MAH-680-4.29

ESTIMATED QUANTITIES								
REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	614 WORK ZONE EDGE LINE, CLASS I, A.P.P.		614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	622 PORTABLE CONCRETE BARRIER, 32"
			EACH	EACH	MILE WHITE	MILE YELLOW	FOOT	FOOT
EL-1	228+00 TO 232+00	LT		20		0.08		
EL-2	228+00 TO 230+42	LT		13	0.05			
EL-3	228+00 TO 230+00	RT		10		0.04		
EL-4	228+00 TO 232+75	RT		24	0.09			
EL-5	230+42 TO 232+00	LT		8	0.03			
CL-1	228+00 TO 228+76	LT					76	
CL-2	228+00 TO 235+00	LT		35			700	
CL-3	228+00 TO 234+00	RT		30			600	
CL-4	228+00 TO 233+11	RT		26			511	
CL-5	228+00 TO 230+42	LT		13			242	
PCB-1	228+00 TO 230+90	LT						290
PCB-2	228+00 TO 231+70	RT						370
IA-1	230+90	LT	1					
TOTALS CARRIED TO SUBSUMMARY			1	179	0.29		2129	660



Phase 5 Typical Section
NTS

LEGEND

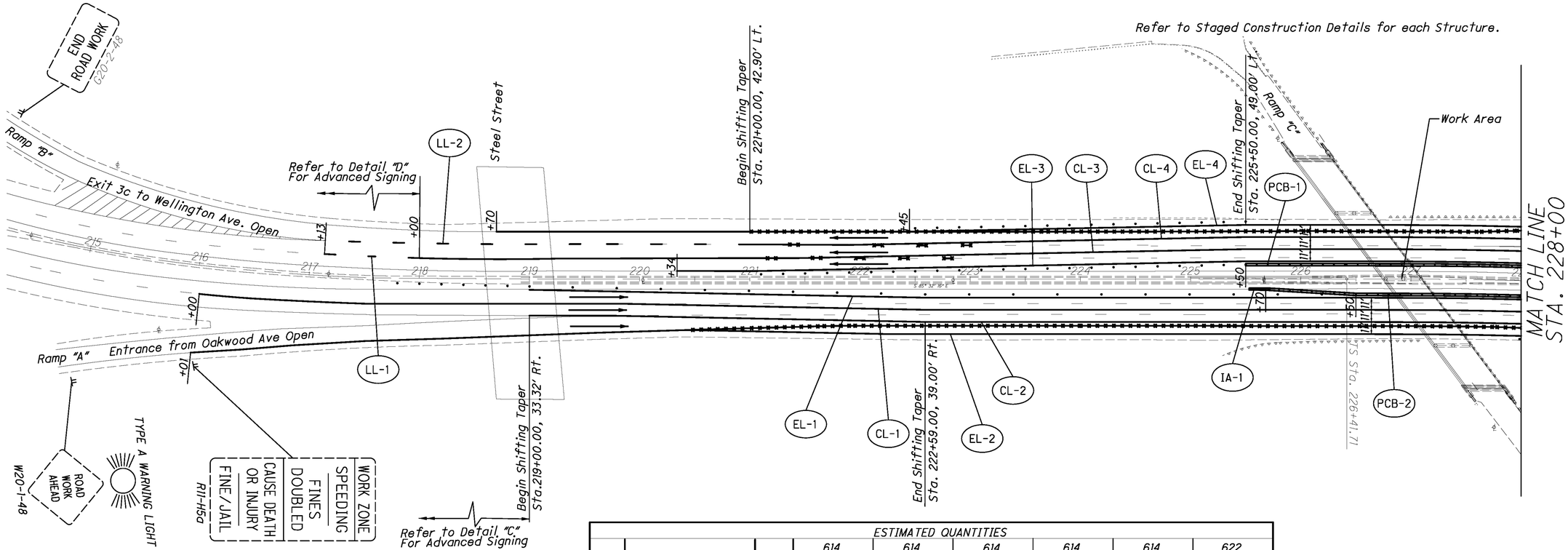
- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

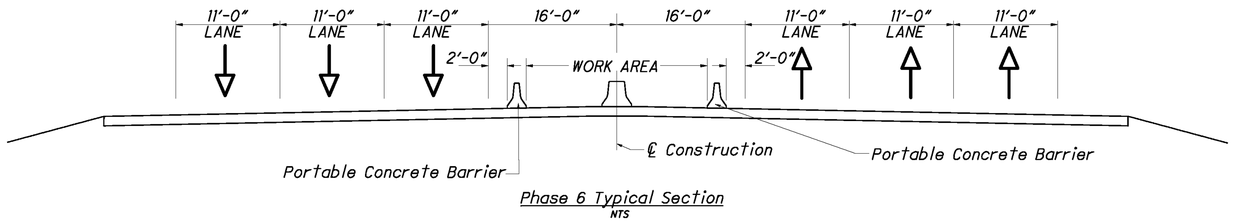
MAINTENANCE OF TRAFFIC - I-680 PHASE 5

MAH-680-4.29



ESTIMATED QUANTITIES

			614	614	614	614		614	622
REF. NO.	STATION TO STATION	SIDE	WORK ZONE IMPACT ATTENUATOR	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE LANE LINE, CLASS I, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	PORTABLE CONCRETE BARRIER, 32"
			EACH	EACH	MILE	MILE		FOOT	FOOT
						WHITE	YELLOW		
EL-1	219+00 TO 228+00	RT		45			0.17		
EL-2	216+01 TO 228+00	RT		60		0.23			
EL-3	220+34 TO 228+00	LT		38			0.15		
EL-4	218+70 TO 228+00	LT		47		0.18			
CL-1	216+00 TO 228+00	RT		60				1200	
CL-2	219+00 TO 228+00	RT		37				900	
CL-3	218+00 TO 228+00	LT		51				1000	
CL-4	221+00 TO 228+00	LT		35				700	
LL-1	217+13 TO 218+00	LT			0.02				
LL-2	217+13 TO 221+00	LT			0.07				
PCB-1	225+50 TO 228+00	LT							250
PCB-2	225+70 TO 228+00	RT							230
IA-1	225+70	RT	1						
TOTALS CARRIED TO SUBSUMMARY			1	373	0.09	0.73		3800	480



Phase 6 Typical Section
NTS

LEGEND

- Construction Drum
- Existing Marking Removal

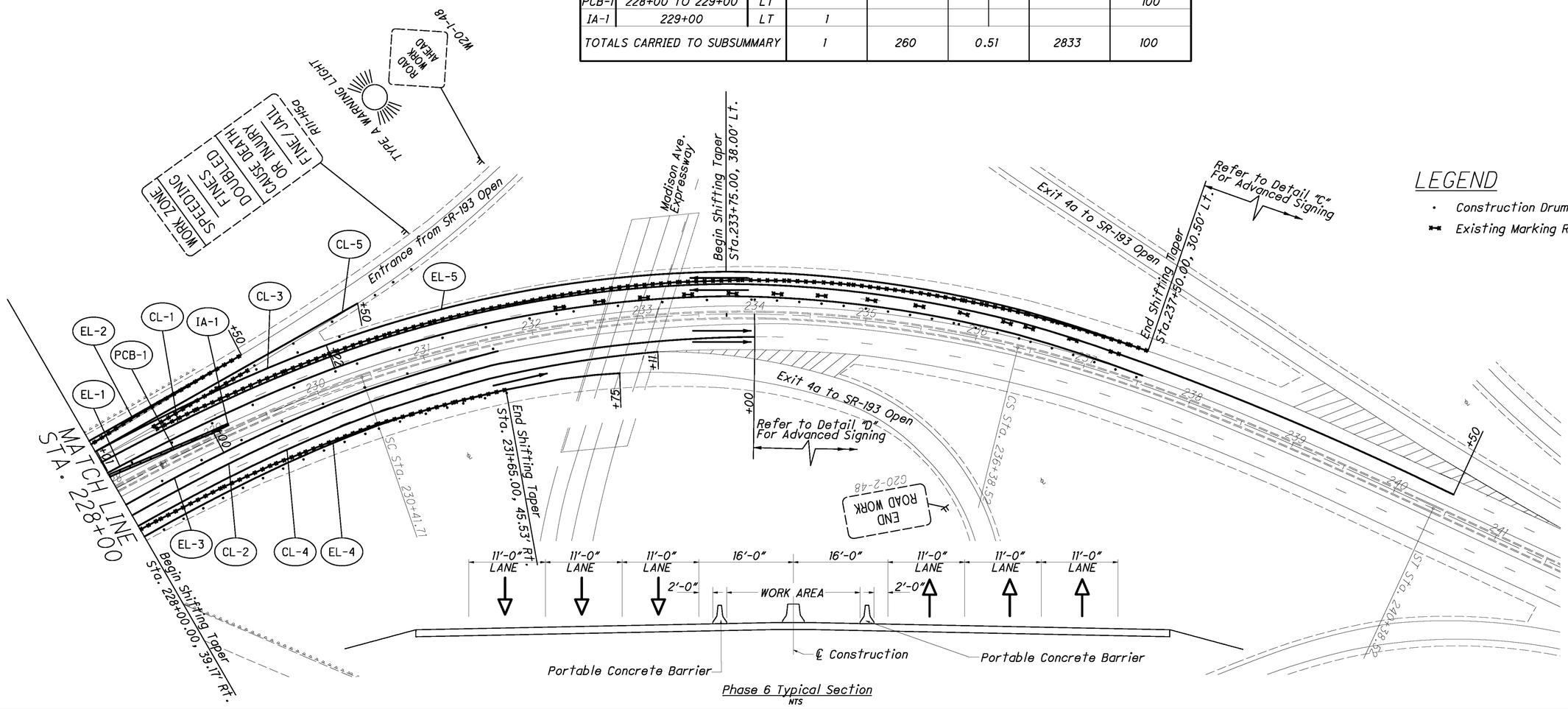
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 6

MAH-680-4.29

ESTIMATED QUANTITIES								
			614	614	614		614	622
REF. NO.	STATION TO STATION	SIDE	WORK ZONE IMPACT ATTENUATOR	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	PORTABLE CONCRETE BARRIER, 32"
			EACH	EACH	MILE		FOOT	FOOT
					WHITE	YELLOW		
EL-1	228+00 TO 237+50	LT		48		0.18		
EL-2	228+00 TO 229+50	LT			0.03			
EL-3	228+00 TO 231+65	RT		19		0.07		
EL-4	228+00 TO 232+75	RT		25	0.09			
EL-5	230+22 TO 237+50	LT		36	0.14			
CL-1	228+00 TO 240+50	LT		63			1250	
CL-2	228+00 TO 234+00	RT		31			600	
CL-3	228+00 TO 230+22	LT		12			222	
CL-4	228+00 TO 233+11	RT		26			511	
CL-5	228+00 TO 230+50	LT					250	
PCB-1	228+00 TO 229+00	LT						100
IA-1	229+00	LT	1					
TOTALS CARRIED TO SUBSUMMARY			1	260	0.51		2833	100



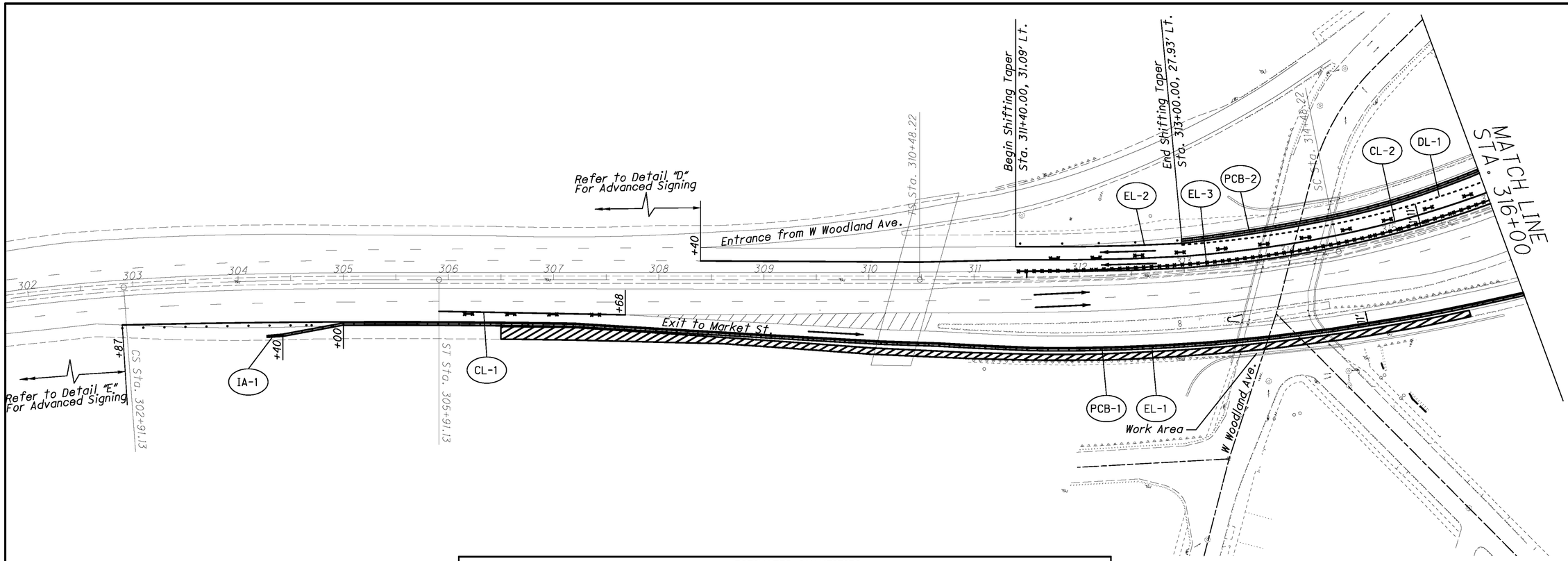
Phase 6 Typical Section
NTS

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 6

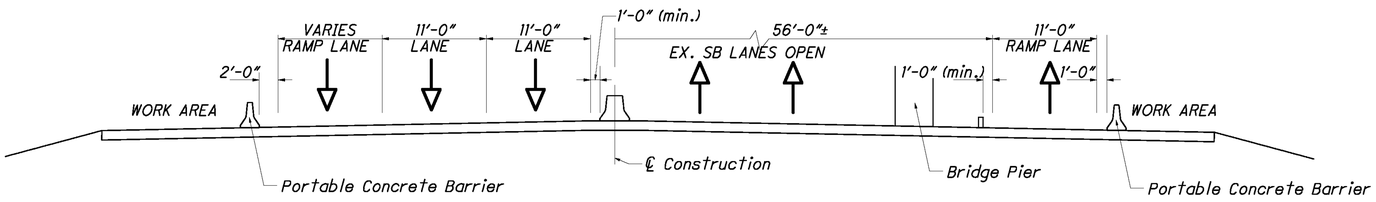
MAH-680-4.29



ESTIMATED QUANTITIES									
			614	614	614		614	614	622
REF. NO.	STATION TO STATION	SIDE	WORK ZONE IMPACT ATTENUATOR	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	WORK ZONE DOTTED LINE, CLASS I, A.P.P.	PORTABLE CONCRETE BARRIER, 32"
			EACH	EACH	MILE		FOOT	FOOT	FOOT
					WHITE	YELLOW			
EL-1	302+87 TO 316+00	RT			0.25				
EL-2	311+40 TO 316+00	LT			0.09				
EL-3	311+40 TO 316+00	LT				0.09			
CL-1	305+91 TO 307+68	RT					177		
CL-2	308+40 TO 316+00	LT		38			760		
DL-1	313+00 TO 316+00	LT						300	
PCB-1	304+40 TO 316+00	RT							1160
PCB-2	313+00 TO 316+00	LT							300
IA-1	304+40	RT	1						
TOTALS CARRIED TO SUBSUMMARY			1	38	0.43		937	300	1460

LEGEND

- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal



Phase 7 Typical Section
NTS

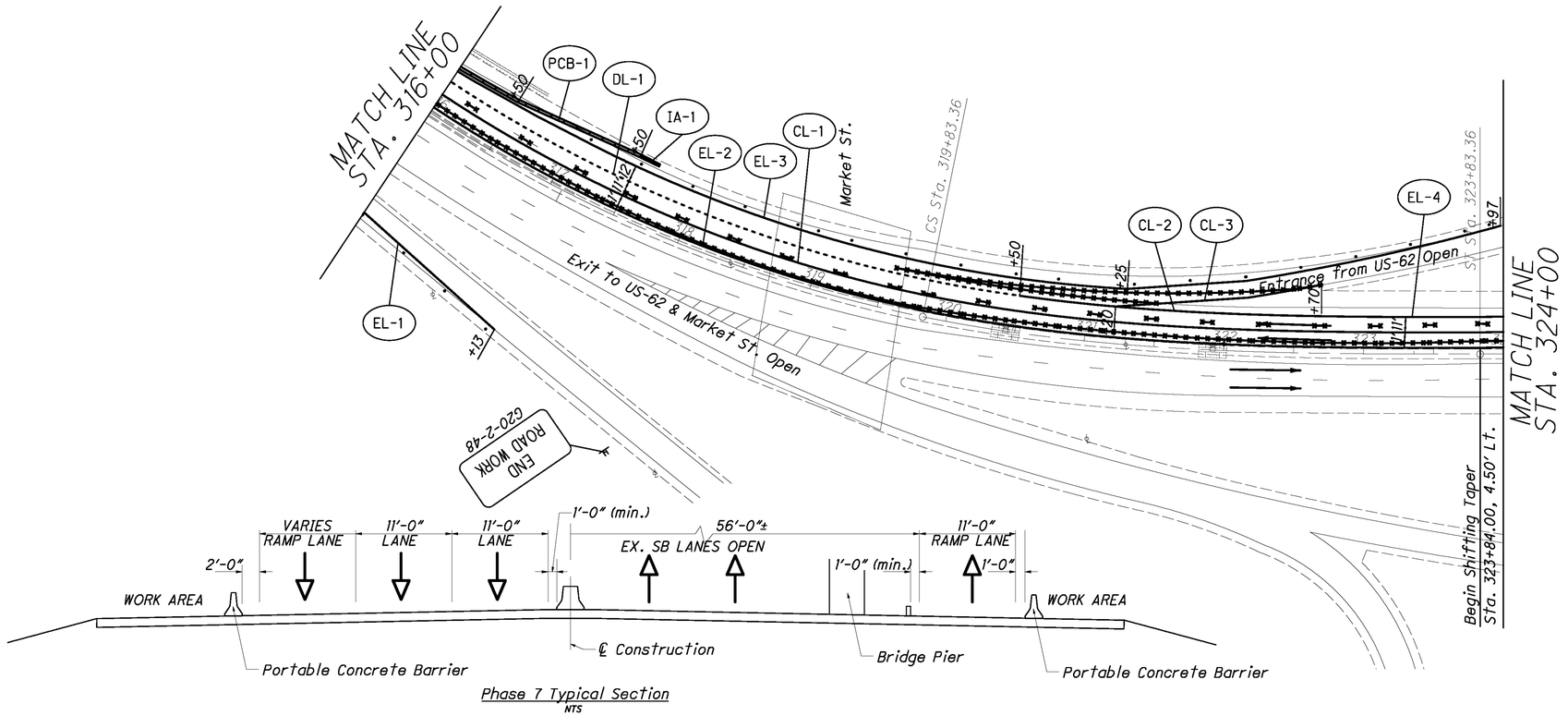
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 7

MAH-680-4.29

ESTIMATED QUANTITIES									
			614	614	614		614	614	622
REF. NO.	STATION TO STATION	SIDE	WORK ZONE IMPACT ATTENUATOR	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	WORK ZONE DOTTED LINE, CLASS I, A.P.P.	PORTABLE CONCRETE BARRIER, 32"
			EACH	EACH	MILE		FOOT	FOOT	FOOT
					WHITE	YELLOW			
EL-1	316+00 TO 317+13	RT			0.02				
EL-2	316+00 TO 324+00	LT		16		0.15			
EL-3	316+00 TO 323+97	LT			0.15				
EL-4	322+70 TO 324+00	LT		7	0.02				
CL-1	316+00 TO 324+00	LT		16			800		
CL-2	320+50 TO 322+70	LT		9			220		
CL-3	321+20 TO 322+70	LT					150		
DL-1	316+00 TO 320+50	LT						450	
PCB-1	316+00 TO 317+50	LT							150
IA-1	317+50	LT	1						
TOTALS CARRIED TO SUBSUMMARY			1	48	0.34		1170	450	150



Phase 7 Typical Section
NTS

LEGEND

- Shoulder Strengthening (completed during this phase)
- Construction Drum
- Existing Marking Removal

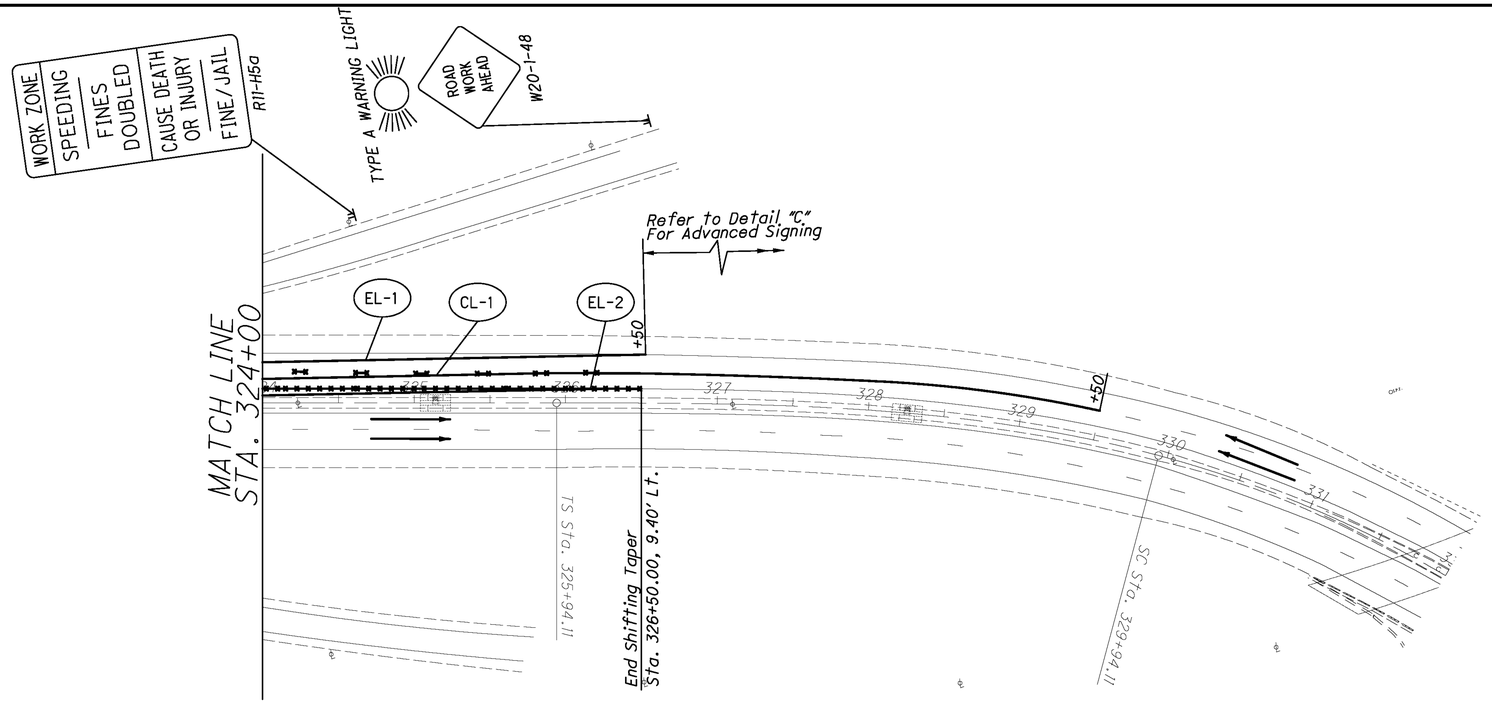
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 7

MAH-680-4.29

62
307



ESTIMATED QUANTITIES						
			614	614		614
REF. NO.	STATION TO STATION	SIDE	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.
			EACH	MILE		FOOT
				WHITE	YELLOW	
EL-1	324+00 TO 326+50	LT	13	0.05		
EL-2	324+00 TO 326+50	LT	13		0.05	
CL-1	324+00 TO 329+50	LT	28			550
TOTALS CARRIED TO SUBSUMMARY			54	0.10		550

LEGEND

Shoulder Strengthening (completed during this phase)

• Construction Drum

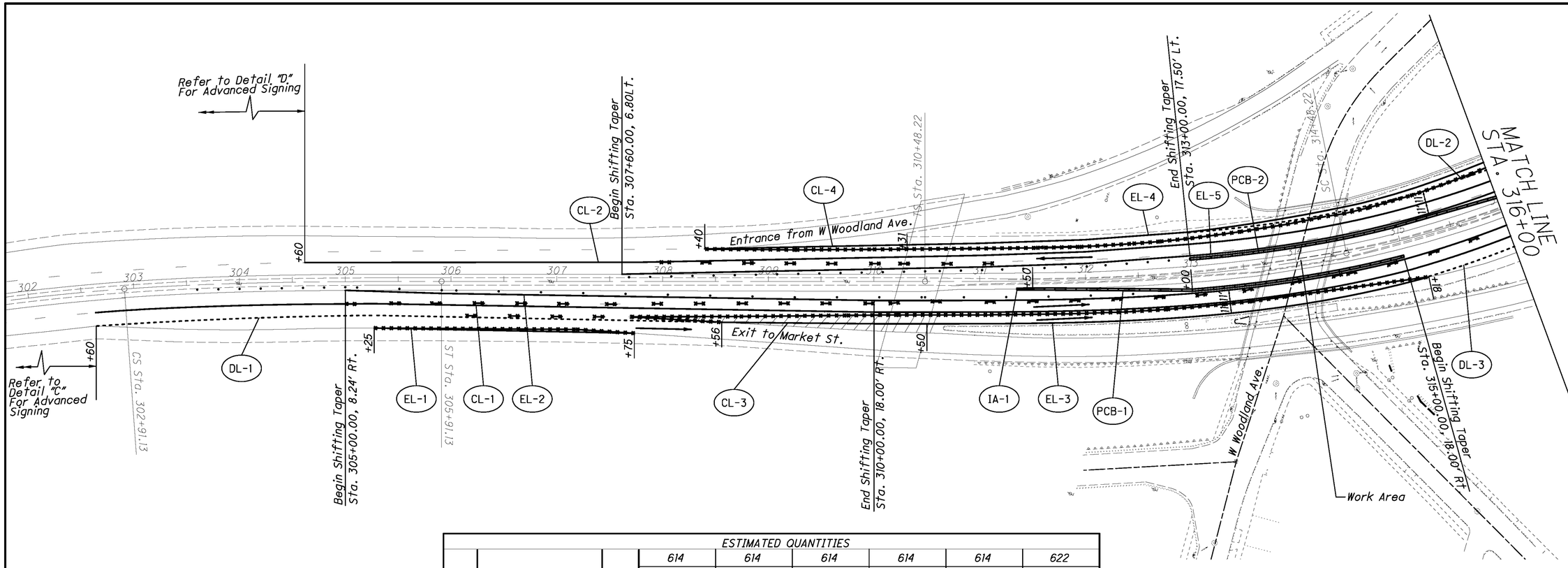
Existing Marking Removal

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 7

MAH-680-4.29

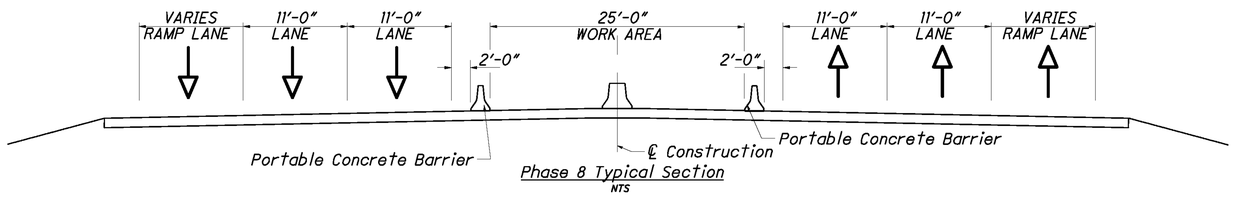


ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	614 WORK ZONE EDGE LINE, CLASS I, A.P.P.		614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	614 WORK ZONE DOTTED LINE, CLASS I, A.P.P.	622 PORTABLE CONCRETE BARRIER, 32"
			EACH	EACH	MILE		FOOT	FOOT	FOOT
					WHITE	YELLOW			
EL-1	305+25 TO 307+75	RT			0.05				
EL-2	305+00 TO 316+00	RT		55		0.21			
EL-3	310+50 TO 315+18	RT			0.09				
EL-4	310+31 TO 316+00	LT		29	0.11				
EL-5	307+60 TO 316+00	LT		43		0.16			
CL-1	302+60 TO 316+00	RT		67			1340		
CL-2	304+60 TO 316+00	LT		58			1140		
CL-3	308+56 TO 310+50	RT		10			194		
CL-4	308+40 TO 310+31	LT		10			191		
DL-1	302+60 TO 308+56	RT						596	
DL-2	313+00 TO 316+00	LT						300	
DL-3	315+18 TO 316+00	RT						82	
PCB-1	311+50 TO 315+00	RT							350
PCB-2	313+00 TO 316+00	LT							300
IA-1	311+50	RT	1						
TOTALS CARRIED TO SUBSUMMARY			1	272	0.62		2865	978	650

LEGEND

- Construction Drum
- Existing Marking Removal



Phase 8 Typical Section
NTS

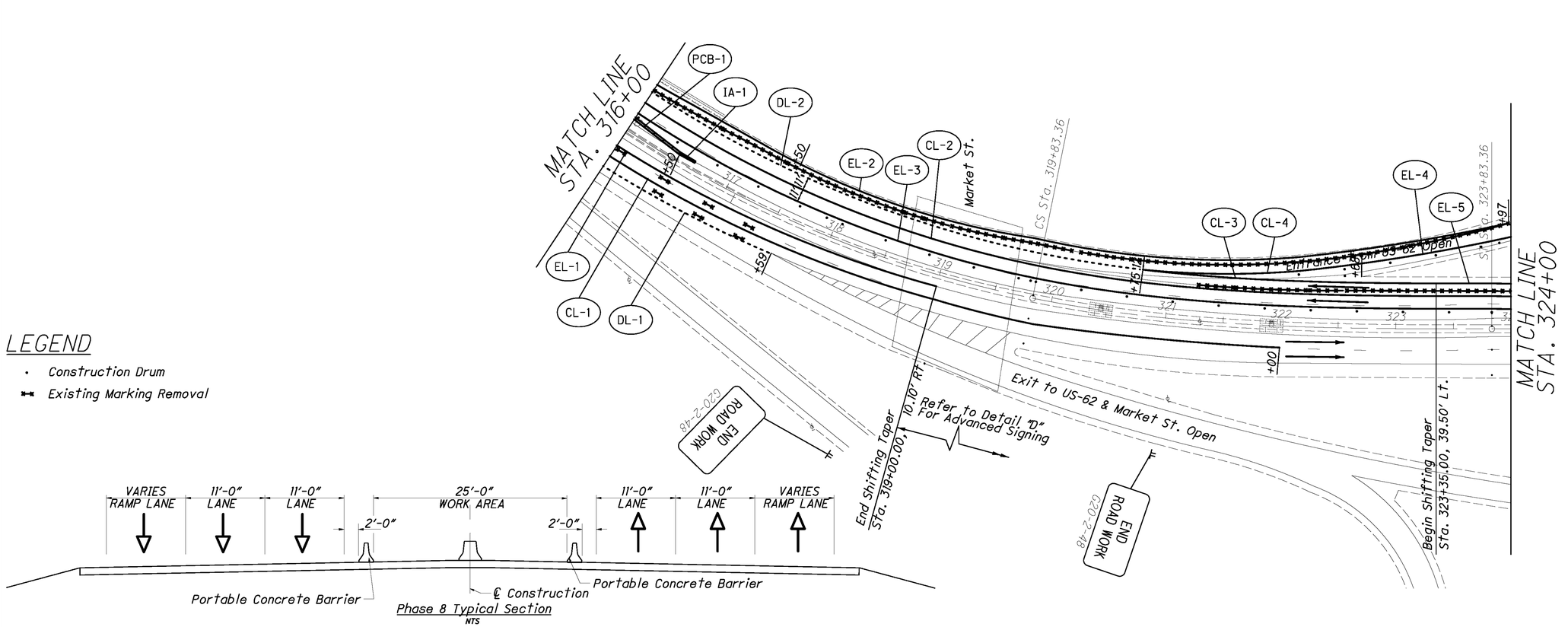
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 8

MAH-680-4.29

ESTIMATED QUANTITIES									
			614	614	614		614	614	622
REF. NO.	STATION TO STATION	SIDE	WORK ZONE IMPACT ATTENUATOR	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	WORK ZONE DOTTED LINE, CLASS I, A.P.P.	PORTABLE CONCRETE BARRIER, 32"
			EACH	EACH	MILE		FOOT	FOOT	FOOT
					WHITE	YELLOW			
EL-1	316+00 TO 319+00	RT		15		0.06			
EL-2	316+00 TO 323+97	LT			0.15				
EL-3	316+00 TO 324+00	LT		19		0.15			
EL-4	322+68 TO 324+00	LT				0.03			
EL-5	322+68 TO 324+00	LT		7	0.03				
CL-1	316+00 TO 322+00	RT		31			600		
CL-2	316+00 TO 324+00	LT		18			800		
CL-3	320+75 TO 322+68	LT		10			193		
CL-4	320+75 TO 322+68	LT					193		
DL-1	316+00 TO 317+59	RT						159	
DL-2	316+00 TO 320+75	LT						475	
PCB-1	316+00 TO 316+50	LT							50
IA-1	316+50	LT	1						
TOTALS CARRIED TO SUBSUMMARY			1	100	0.42		1786	634	50

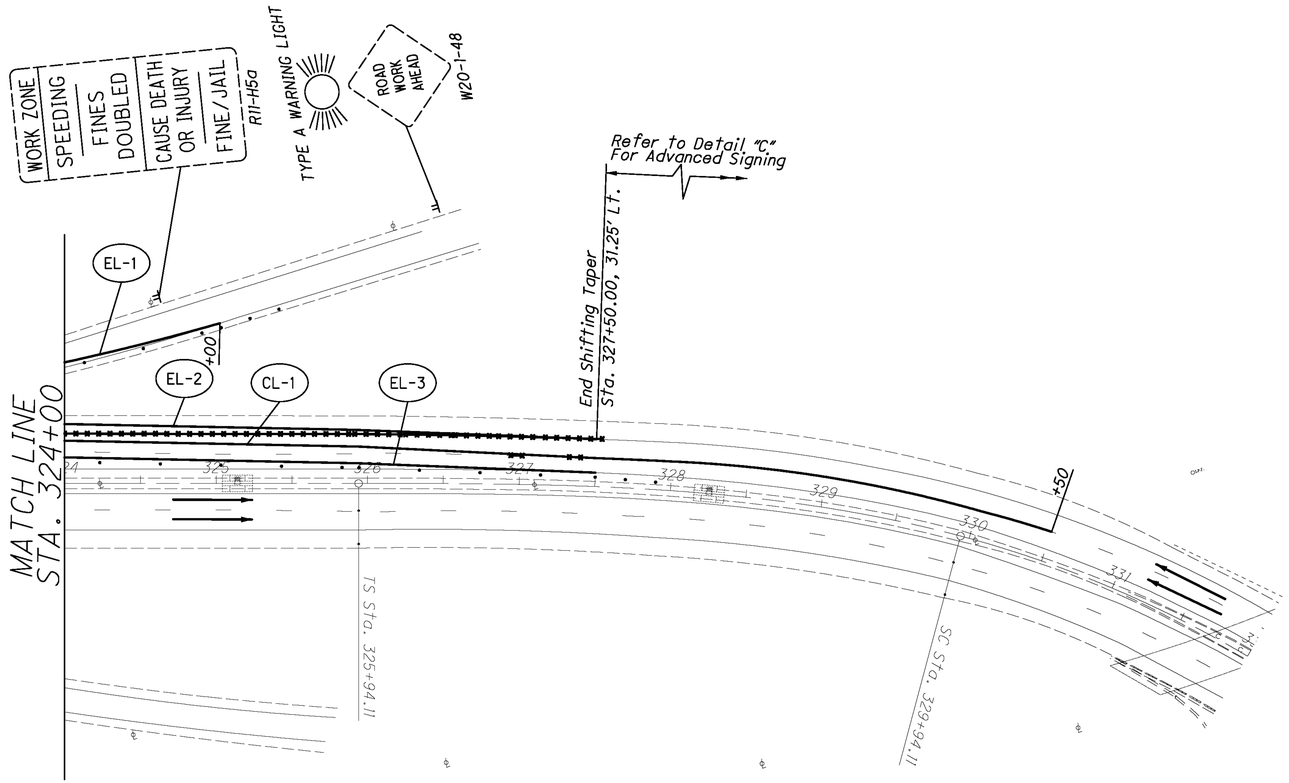


HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 8

MAH-680-4.29



ESTIMATED QUANTITIES						
			614	614		614
REF. NO.	STATION TO STATION	SIDE	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.
			EACH	MILE		FOOT
				WHITE	YELLOW	
EL-1	324+00 TO 325+00	LT			0.02	
EL-2	324+00 TO 327+50	LT	18	0.07		
EL-3	324+00 TO 327+50	LT	18		0.07	
CL-1	324+00 TO 330+50	LT	34			650
TOTALS CARRIED TO SUBSUMMARY			70	0.16		650

LEGEND

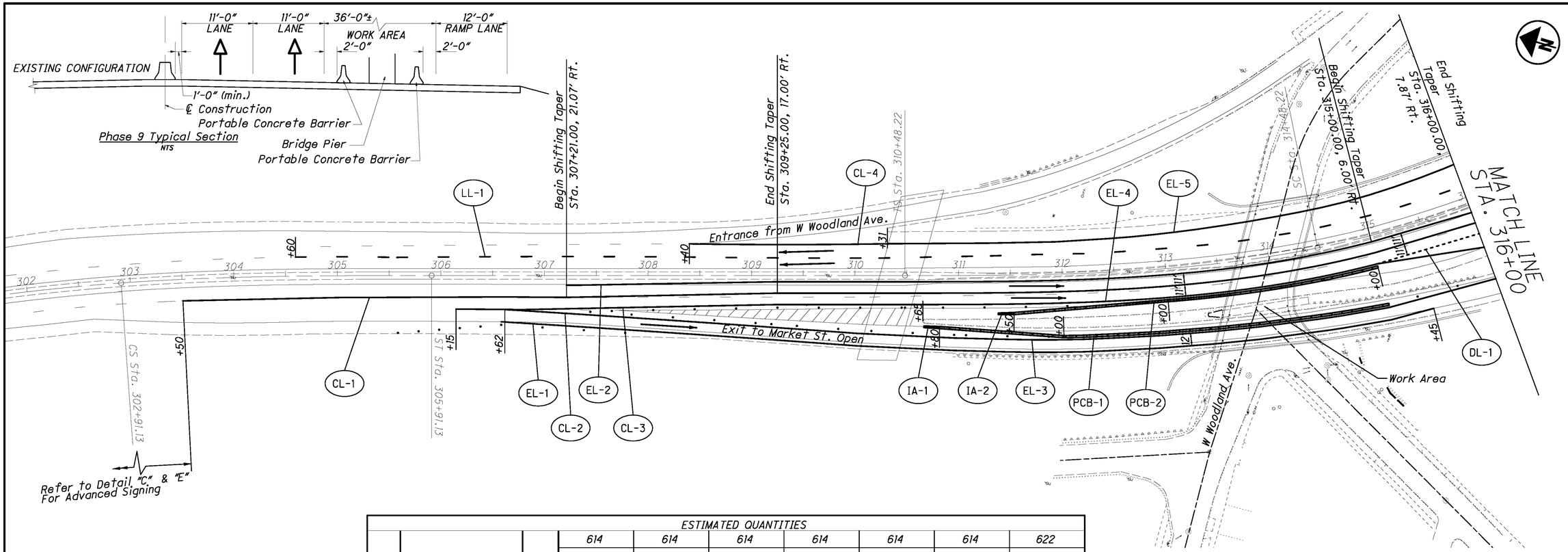
- Construction Drum
- Existing Marking Removal

CALCULATED JAB
CHECKED JBD

0 25 50 100
HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC - I-680 PHASE 8

MAH-680-4.29



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	614 WORK ZONE LANE LINE, CLASS I, A.P.P.	614 WORK ZONE EDGE LINE, CLASS I, A.P.P.		614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	614 WORK ZONE DOTTED LINE, CLASS I, A.P.P.	622 PORTABLE CONCRETE BARRIER, 32"
			EACH	EACH	MILE	MILE		FOOT	FOOT	FOOT
						WHITE	YELLOW			
EL-1	306+62 TO 315+45	RT				0.17				
EL-2	307+21 TO 316+00	RT		26			0.17			
EL-3	310+65 TO 316+00	RT					0.10			
EL-4	310+65 TO 316+00	RT		9		0.10				
EL-5	310+31 TO 316+00	LT				0.11				
CL-1	303+50 TO 316+00	RT		60				1250		
CL-2	306+62 TO 310+65	RT						403		
CL-3	306+15 TO 310+65	RT		23				450		
CL-4	308+40 TO 310+31	LT						191		
LL-1	304+60 to 316+00	LT		11	0.22					
DL-1	315+00 TO 316+00	RT							100	
PCB-1	310+80 TO 315+00	RT								420
PCB-2	311+50 TO 315+00	RT								350
IA-1	310+80	RT	1							
IA-2	311+50	RT	1							
TOTALS CARRIED TO SUBSUMMARY			2	129	0.22	0.65		2294	100	770

LEGEND

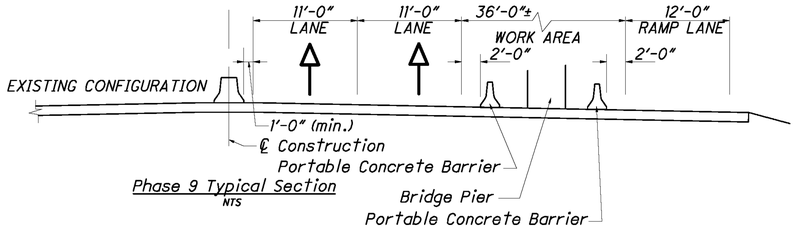
- Construction Drum
- Existing Marking Removal

HORIZONTAL SCALE IN FEET
0 25 50 100

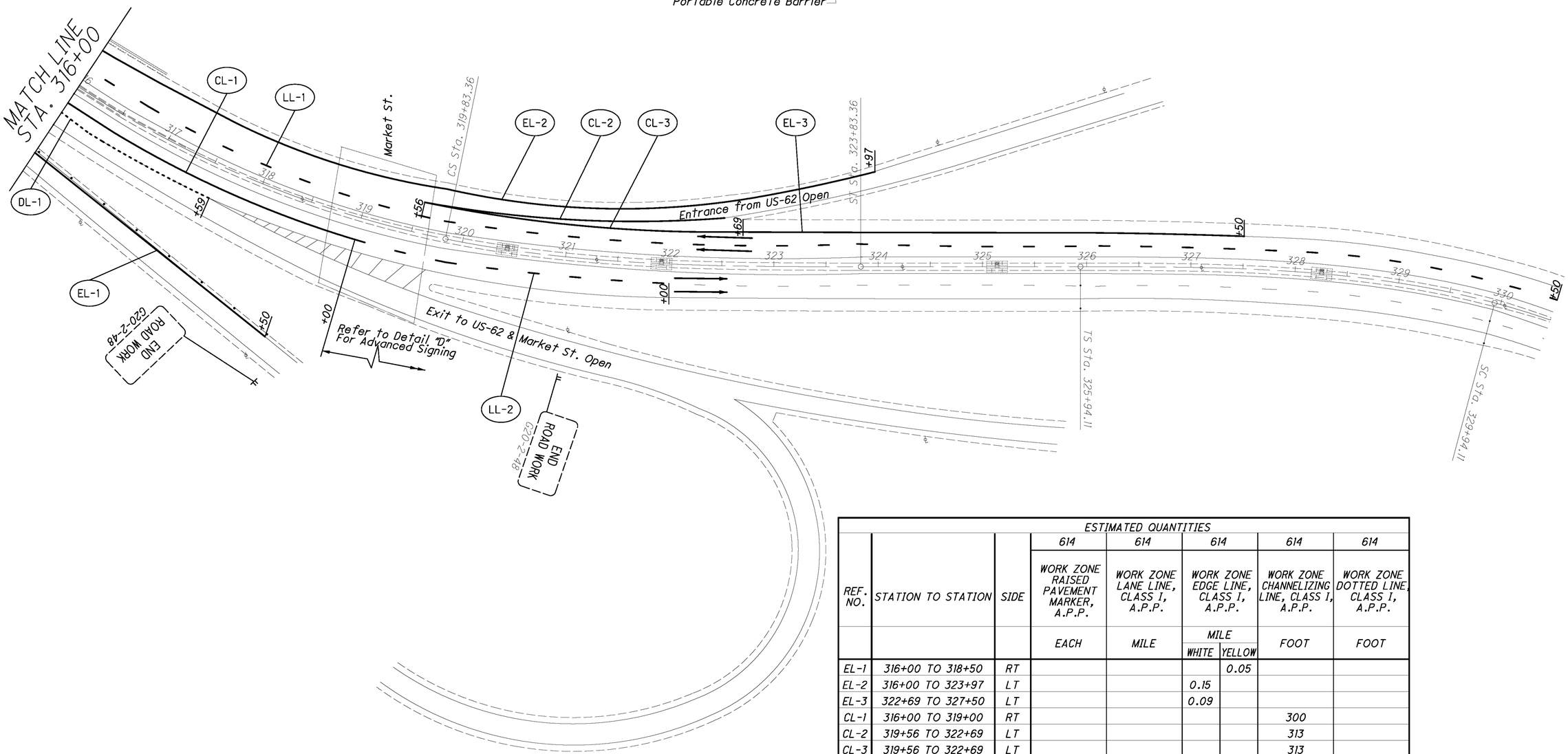
CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 9

MAH-680-4.29



Phase 9 Typical Section
NTS



LEGEND

- Construction Drum
- Existing Marking Removal

ESTIMATED QUANTITIES

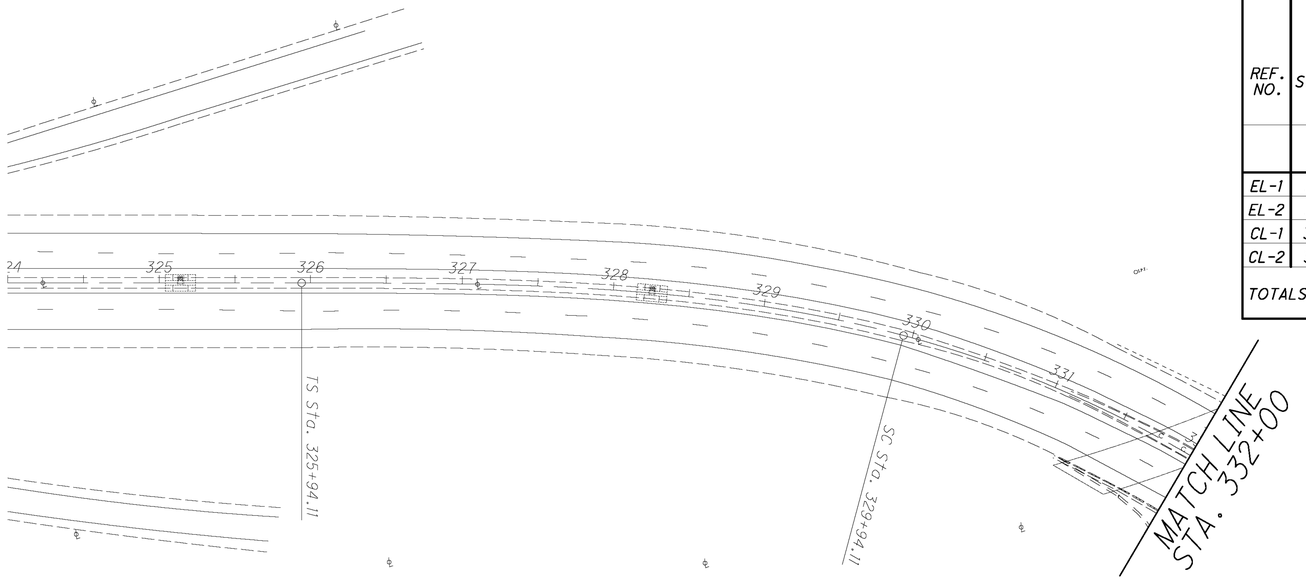
REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P. (EACH)	614 WORK ZONE LANE LINE, CLASS I, A.P.P. (MILE)	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) WHITE	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) YELLOW	614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P. (FOOT)	614 WORK ZONE DOTTED LINE, CLASS I, A.P.P. (FOOT)
EL-1	316+00 TO 318+50	RT				0.05		
EL-2	316+00 TO 323+97	LT			0.15			
EL-3	322+69 TO 327+50	LT			0.09			
CL-1	316+00 TO 319+00	RT					300	
CL-2	319+56 TO 322+69	LT					313	
CL-3	319+56 TO 322+69	LT					313	
LL-1	316+00 TO 330+50	LT	12	0.27				
LL-2	319+00 TO 322+00	RT	4	0.06				
DL-1	316+00 TO 317+59	RT						159
TOTALS CARRIED TO SUBSUMMARY			16	0.33	0.29		926	159

HORIZONTAL SCALE IN FEET
0 25 50 100

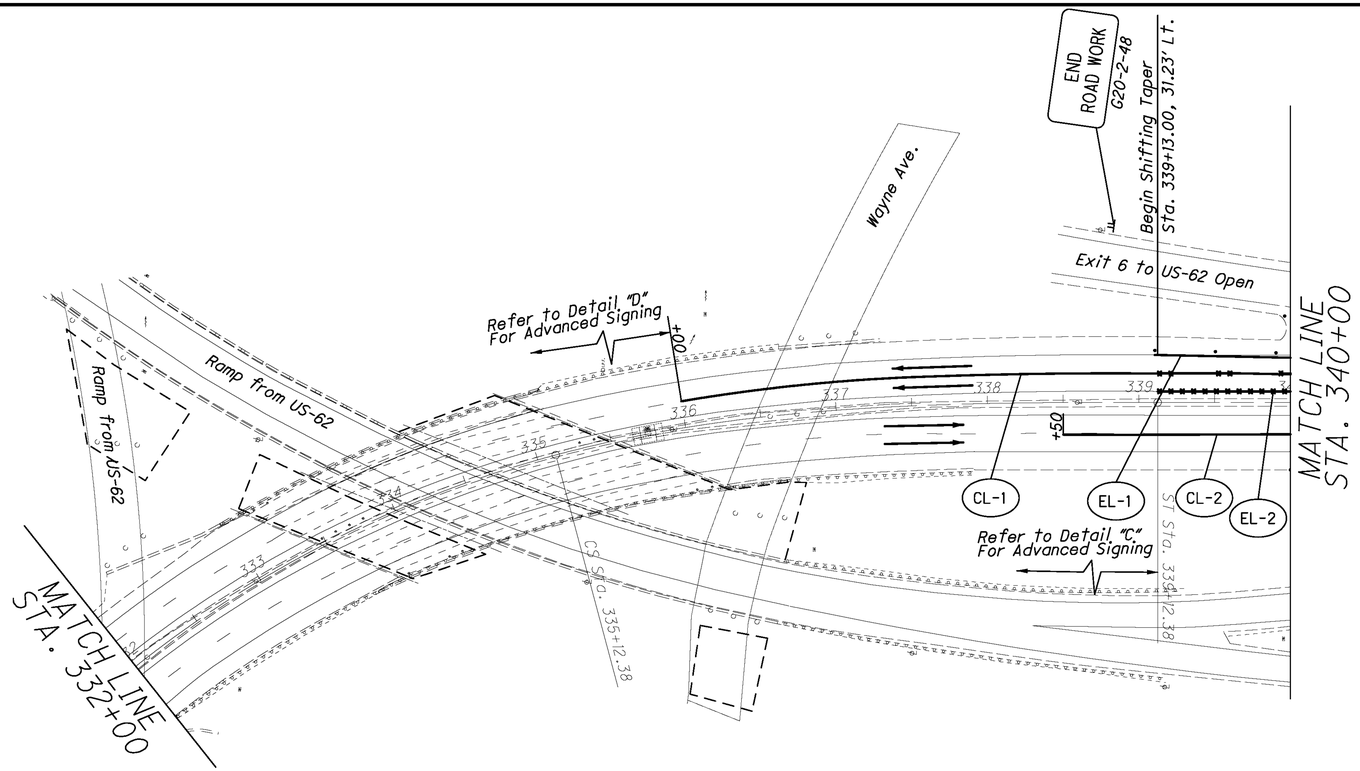
CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 9

MAH-680-4.29



ESTIMATED QUANTITIES					
			614	614	614
REF. NO.	STATION TO STATION	SIDE	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.	WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.
			EACH	MILE	FOOT
				WHITE / YELLOW	
EL-1	339+13 TO 340+00	LT	5	0.02	
EL-2	339+13 TO 340+00	LT	5	0.02	
CL-1	336+00 TO 340+00	LT	20		400
CL-2	338+50 TO 340+00	RT			150
TOTALS CARRIED TO SUBSUMMARY			30	0.04	550



LEGEND

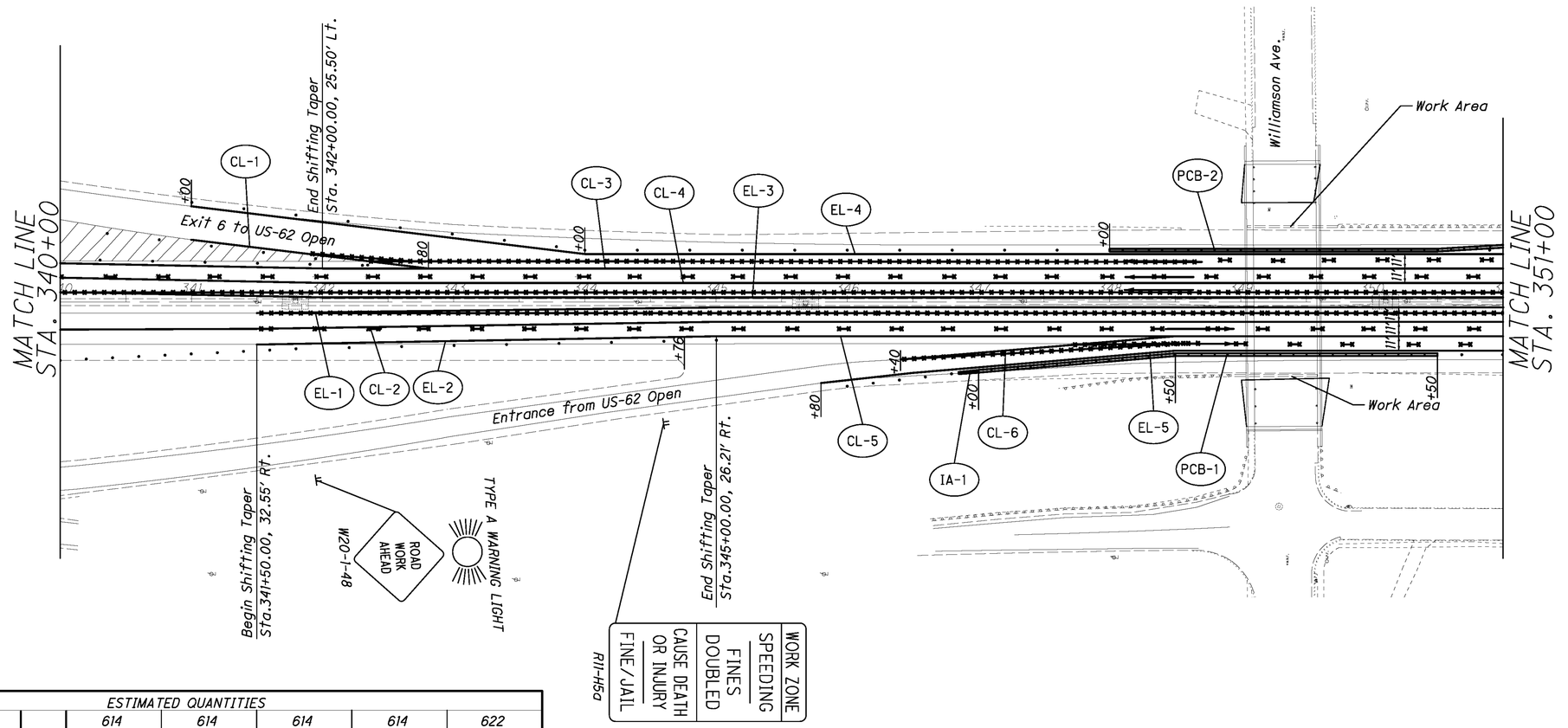
- Construction Drum
- Existing Marking Removal

HORIZONTAL SCALE IN FEET
0 25 50 100

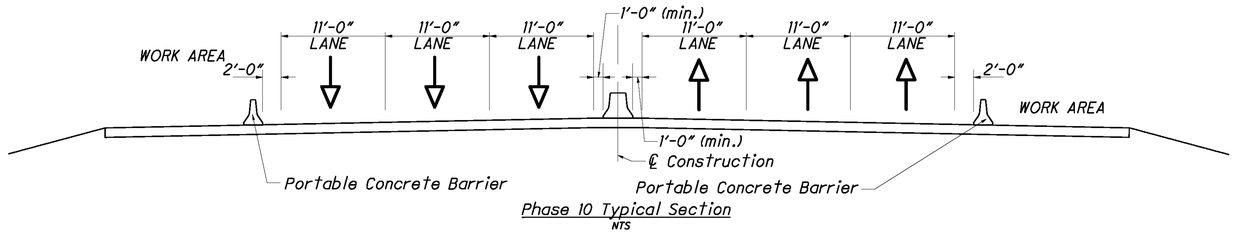
CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 10

MAH-680-4.29



ESTIMATED QUANTITIES								
			614	614	614		614	622
REF. NO.	STATION TO STATION	SIDE	WORK ZONE IMPACT ATTENUATOR	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	PORTABLE CONCRETE BARRIER, 32"
					MILE			
			EACH	EACH	WHITE	YELLOW	FOOT	FOOT
EL-1	341+50 TO 351+00	RT		49		0.18		
EL-2	341+50 TO 344+76	RT		16	0.06			
EL-3	340+00 TO 351+00	LT		33		0.21		
EL-4	341+00 TO 351+00	LT		8	0.19			
EL-5	345+80 TO 351+00	RT		13	0.10			
CL-1	341+00 TO 342+80	LT					180	
CL-2	340+00 TO 351+00	RT		56			1100	
CL-3	340+00 TO 351+00	LT		33			1100	
CL-4	340+00 TO 351+00	LT		33			1100	
CL-5	344+76 TO 351+00	RT		33			624	
CL-6	346+40 TO 348+50	RT					210	
PCB-1	347+00 TO 350+50	RT						350
PCB-2	348+00 TO 351+00	LT						300
IA-1	347+00	RT	1					
TOTALS CARRIED TO SUBSUMMARY			1	274	0.74		4314	650



Phase 10 Typical Section
NTS

LEGEND

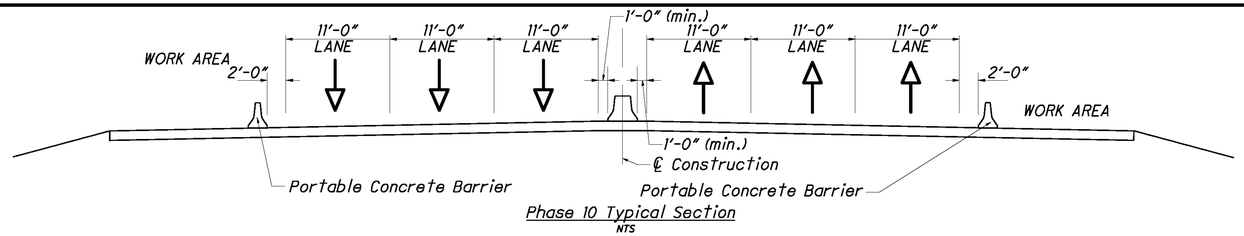
- Construction Drum
- Existing Marking Removal

CALCULATED JAB
CHECKED JBD

0 25 50 100
HORIZONTAL SCALE IN FEET

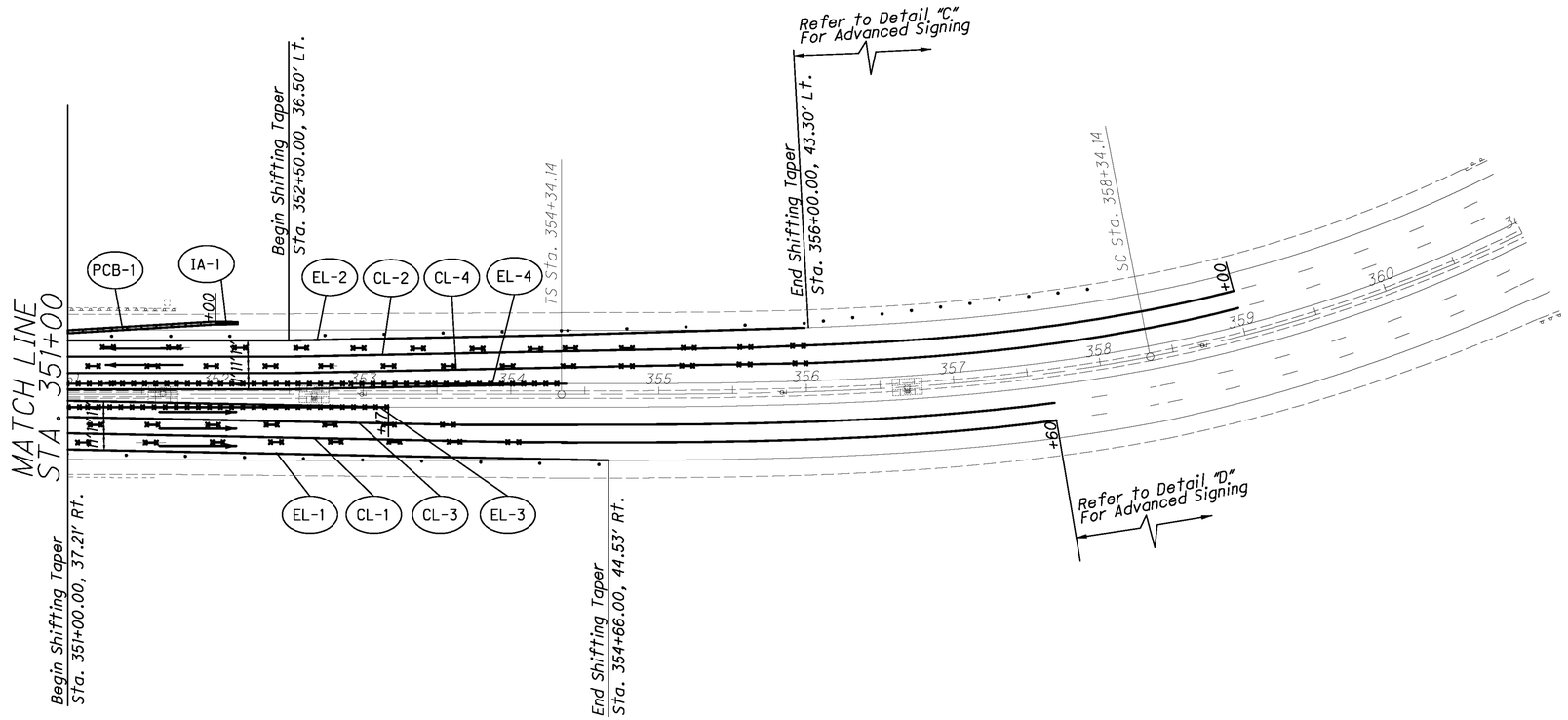
MAINTENANCE OF TRAFFIC - I-680 PHASE 10

MAH-680-4.29



Phase 10 Typical Section
NTS

ESTIMATED QUANTITIES								
			614		614		614	622
REF. NO.	STATION TO STATION	SIDE	WORK ZONE IMPACT ATTENUATOR	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	PORTABLE CONCRETE BARRIER, 32"
			EACH	EACH	MILE		FOOT	FOOT
					WHITE	YELLOW		
EL-1	351+00 TO 354+66	RT		19	0.07			
EL-2	351+00 TO 356+00	LT		26	0.09			
EL-3	351+00 TO 353+17	RT		12		0.04		
EL-4	351+00 TO 354+34	LT		17		0.06		
CL-1	351+00 TO 357+60	RT		34			660	
CL-2	351+00 TO 359+00	LT		41			800	
CL-3	351+00 TO 357+60	RT		34			660	
CL-4	351+00 TO 359+00	LT		41			800	
PCB-1	351+00 TO 352+00	LT						100
IA-1	352+00	LT	1					
TOTALS CARRIED TO SUBSUMMARY			1	224	0.26		2920	100



LEGEND

- Construction Drum
- Existing Marking Removal

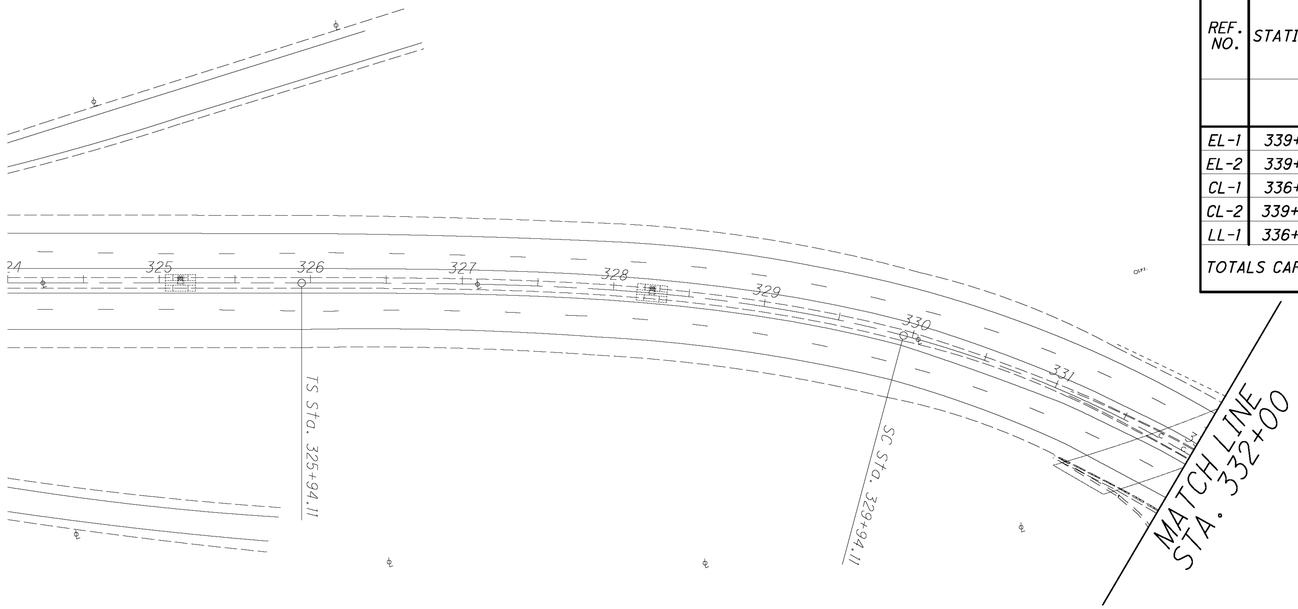
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 10

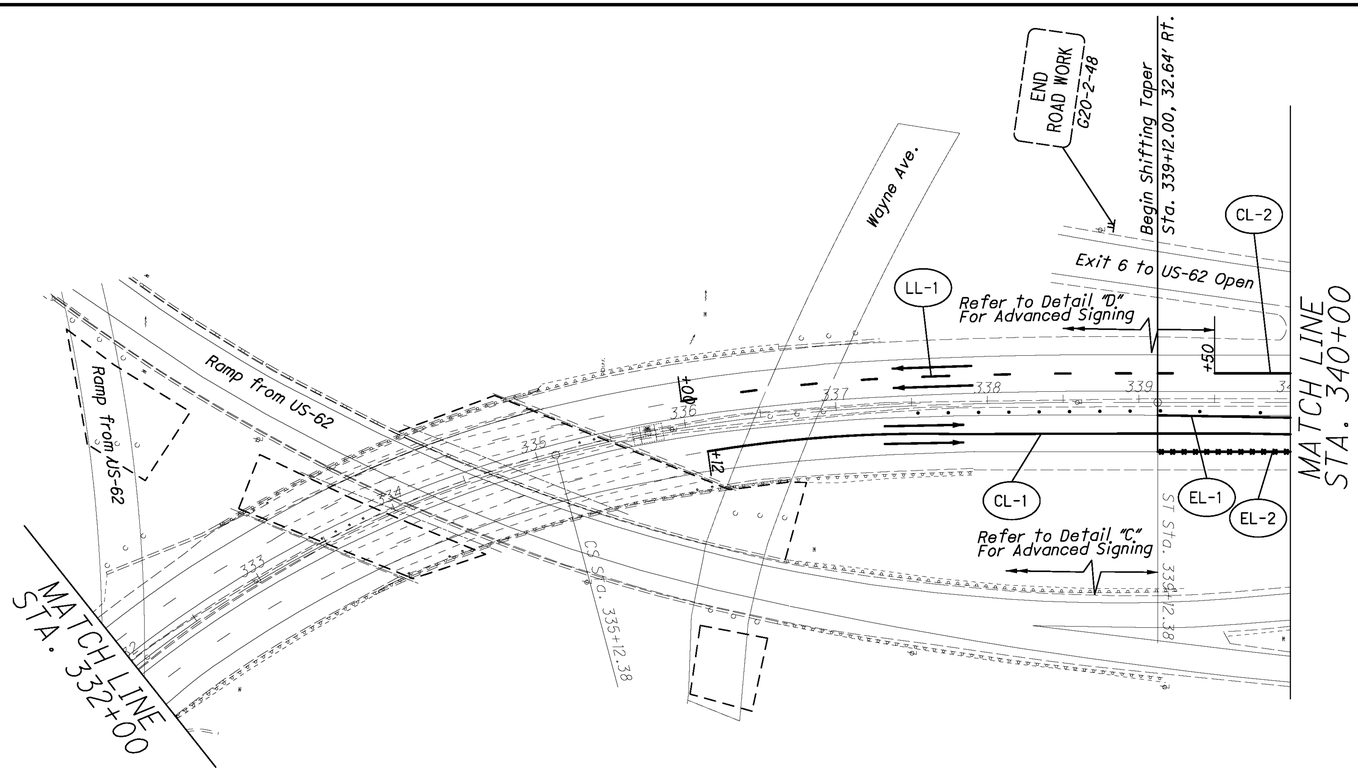
MAH-680-4.29

71
307



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P. (EACH)	614 WORK ZONE LANE LINE, CLASS I, A.P.P. (MILE)	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) WHITE	614 WORK ZONE EDGE LINE, CLASS I, A.P.P. (MILE) YELLOW	614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P. (FOOT)
EL-1	339+12 TO 340+00	RT	5			0.02	
EL-2	339+12 TO 340+00	RT	5		0.02		
CL-1	336+12 TO 340+00	RT	20				388
CL-2	339+50 TO 340+00	LT	3				50
LL-1	336+00 TO 339+50	LT	4	0.07			
TOTALS CARRIED TO SUBSUMMARY			37	0.07	0.04		438



LEGEND

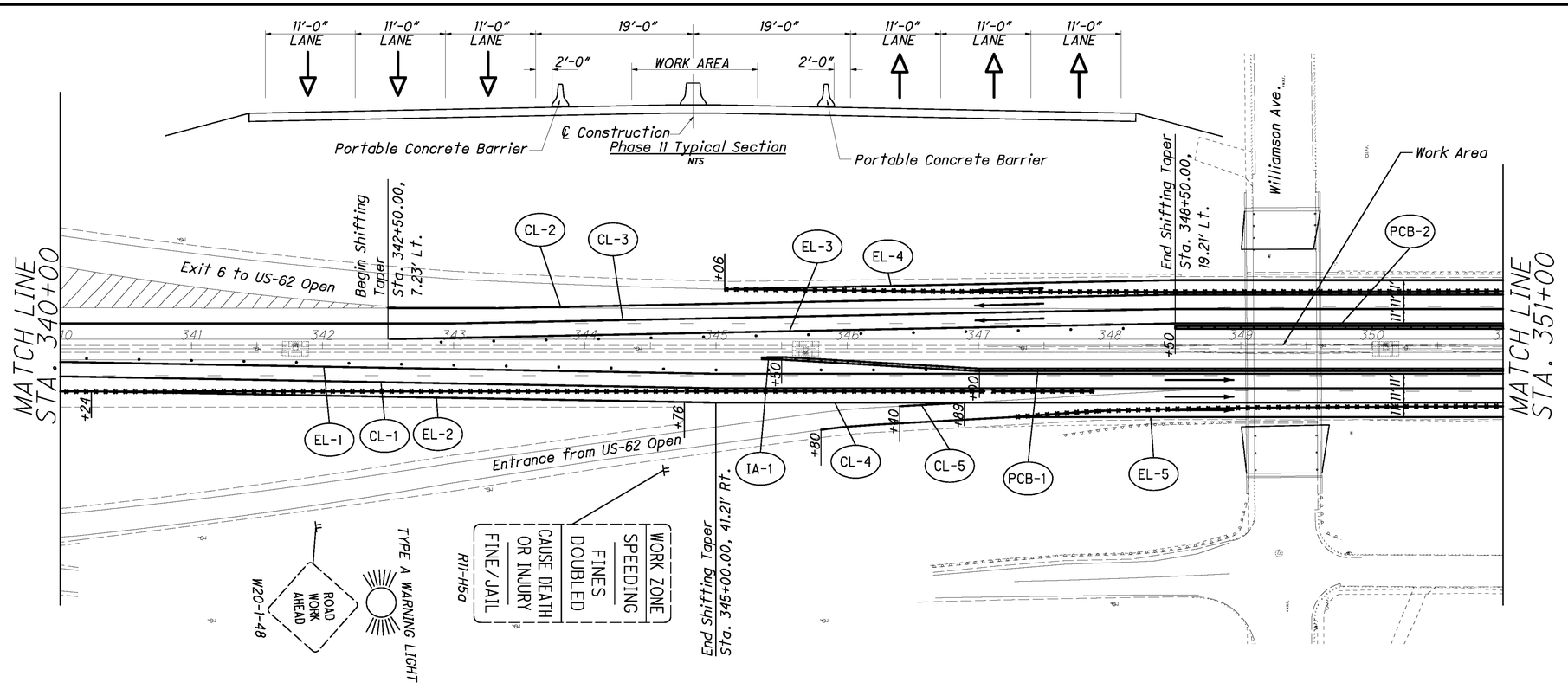
- Construction Drum
- Existing Marking Removal

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 11

MAH-680-4.29



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	614 WORK ZONE EDGE LINE, CLASS I, A.P.P.		614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	622 PORTABLE CONCRETE BARRIER, 32"
			EACH	EACH	MILE		FOOT	FOOT
					WHITE	YELLOW		
EL-1	340+00 TO 351+00	RT		55		0.21		
EL-2	340+00 TO 344+76	RT		24	0.09			
EL-3	342+50 TO 351+00	LT		42		0.16		
EL-4	345+06 TO 351+00	LT		29	0.11			
EL-5	345+80 TO 351+00	RT		21	0.10			
CL-1	340+00 TO 351+00	RT		55			1100	
CL-2	342+50 TO 351+00	LT		42			850	
CL-3	340+00 TO 351+00	LT		55			1100	
CL-4	344+76 TO 351+00	RT		31			624	
CL-5	346+40 TO 346+89	RT					49	
PCB-1	345+50 TO 351+00	RT						550
PCB-2	348+50 TO 351+00	LT						250
IA-1	345+50	RT	1					
TOTALS CARRIED TO SUBSUMMARY			1	354	0.67		3723	800

LEGEND

- Construction Drum
- Existing Marking Removal

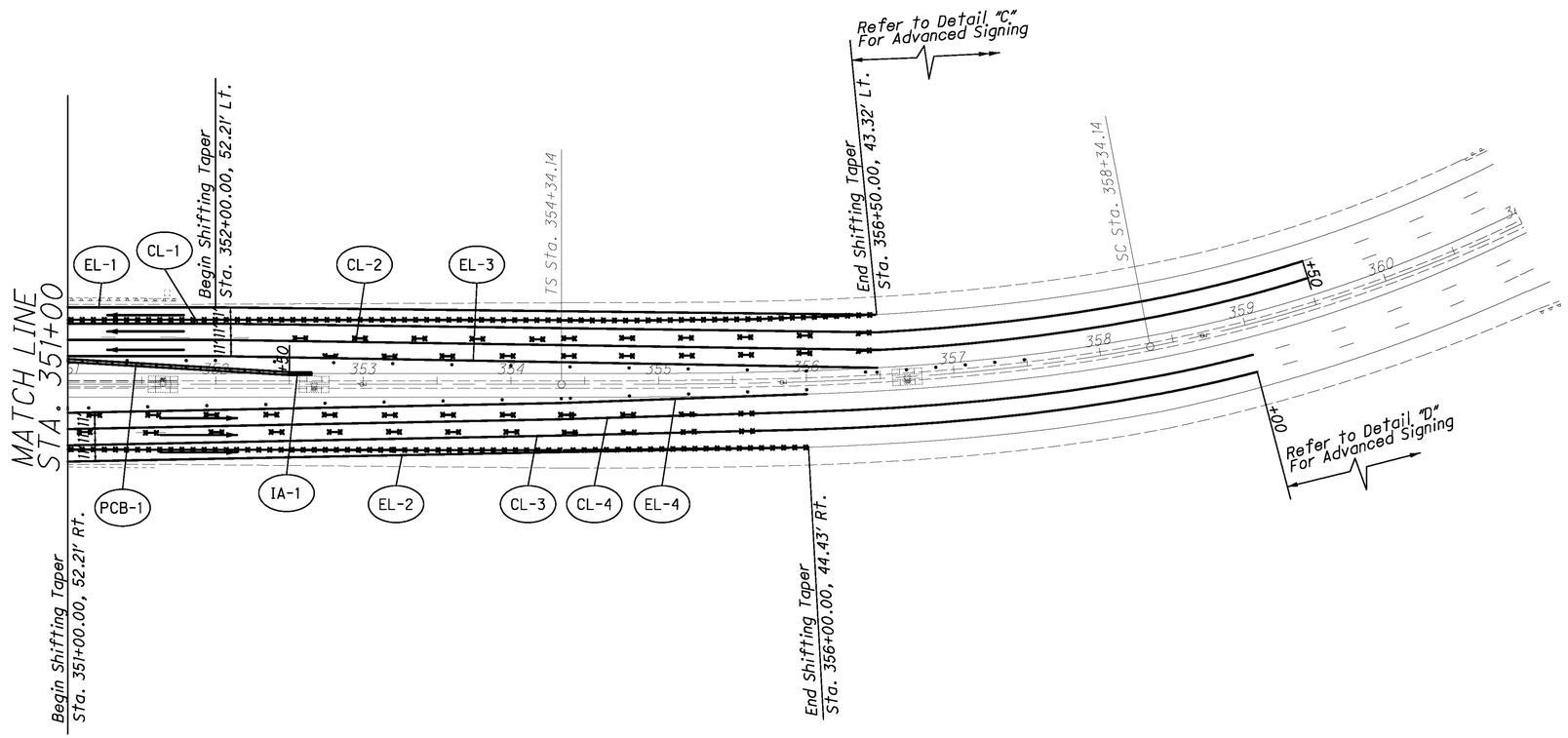
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680 PHASE 11

MAH-680-4.29

ESTIMATED QUANTITIES								
			614	614	614		614	622
REF. NO.	STATION TO STATION	SIDE	WORK ZONE IMPACT ATTENUATOR	WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	WORK ZONE EDGE LINE, CLASS I, A.P.P.		WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	PORTABLE CONCRETE BARRIER, 32"
			EACH	EACH	MILE		FOOT	FOOT
					WHITE	YELLOW		
EL-1	351+00 TO 356+50	LT		29	0.10			
EL-2	351+00 TO 356+00	RT		25	0.09			
EL-3	351+00 TO 356+50	LT		29		0.10		
EL-4	351+00 TO 356+00	RT		25		0.09		
CL-1	351+00 TO 359+50	LT		44			850	
CL-2	351+00 TO 359+50	LT		44			850	
CL-3	351+00 TO 359+00	RT		40			800	
CL-4	351+00 TO 359+00	RT		40			800	
PCB-1	351+00 TO 352+50	LT						150
IA-1	352+50	LT	1					
TOTALS CARRIED TO SUBSUMMARY			1	276	0.38		3300	150



LEGEND

- Construction Drum
- Existing Marking Removal

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
PHASE 11

MAH-680-4.29

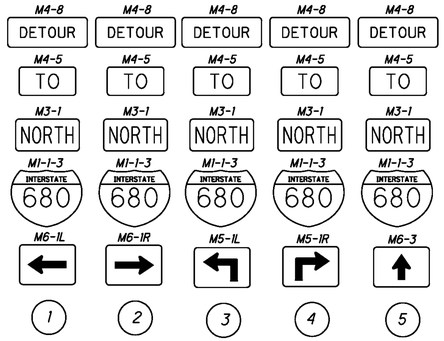
DETOUR ROUTE FOR
SOUTH AVE. & POWERSDALE AVE. ENTRANCE RAMPS

LEGEND

- *DETOUR*
- *TYPE III BARRICADE*
- *-DETOUR ROUTE*

NOTES:

1. *ALL TRAFFIC DEVICES SHALL CONFORM TO THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (O.M.U.T.C.D.)*
2. *THE CONTRACTOR SHALL PROVIDE, ERECT, MAINTAIN, AND REMOVE THE DETOURS AS SHOWN ON THIS SHEET. PAYMENT FOR ALL MATERIAL, LABOR, AND EQUIPMENT TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, DETOUR SIGNING.*



PIKE ST
WOODLAND AVE
HADNETT DR
HUGHES ST
MARKET ST
E HENRY ST
HAYES
WAYNE AVE
OKLAHOMA ST
PYATT ST
PLYMOUTH AVE
E MYRTLE AVE
WILLIAMSON AVE
E MARION AVE
E CHALMERS AVE
ERIE ST
ELLENWOOD AVE
HEASLEY
E DELASON AVE
E WARREN AVE
E EVERGREEN AVE
E GLENHAVEN AVE
E EARLE AVE
PASADENA AVE
SOUTH AVE
FOUNTAIN ST
OAK HILL AVE
KING ST
PYATT ST
CANTON AVE
E MYRTLE AVE
WISEMAN ST
WABASH AVE
FRANKLIN AVE
WILLIAMSON AVE
BELLEVIEW AVE
DOROTHY AVE
LEE AVE
BENWOOD AVE
DICKSON AVE
KNOX ST
SAMUEL AVE
MABEL AVE
EMERY ST
CAMERON AVE
ASH ST
BIRCH ST
PASADENA AVE
WILBUR ST
MILLER ST
INDIANOLA AVE
CORNELL AVE
CHAPMAN ST
GIBSON ST
HOMESTEAD AVE
FLORIDA AVE
ZEDAKER ST
COMPTON LN
ARKWRIGHT AVE
CAMPBELL ST
TAMPA AVE
HUNTER AVE
JEAN AVE
HUMBOLDT AVE
TAFT AVE
HOMEWOOD AVE
MANGER
POLAND AVE
CYPRESS ST
ALPINE ST
JONES ST
BRITTAIN ST
POWERSDALE AVE
ALEXANDER ST
CALEDONIA ST
HIRAM ST
FITHIAN AVE
HARMON AVE
UNION ST
TAYLOR ST
MURRAY AVE
COOPER ST
HOLLOW DR
POWERS
PINE

ENTRANCE CLOSED
SIGNS, GATES & BARRICADES
AS PER SCD MT-101.60

ENTRANCE CLOSED
SIGNS, GATES & BARRICADES
AS PER SCD MT-101.60

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
DETOUR ROUTE - PHASE 2

MAH-680-4.29

DETOUR ROUTE FOR
EXIT 7 (SOUTH AVE.) SOUTHBOUND I-680 EXIT RAMP

LEGEND

- DETOUR
- -DETOUR ROUTE

NOTES:

1. ALL TRAFFIC DEVICES SHALL CONFORM TO THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (O.M.U.T.C.D.)
2. THE CONTRACTOR SHALL PROVIDE, ERECT, MAINTAIN, AND REMOVE THE DETOURS AS SHOWN ON THIS SHEET. PAYMENT FOR ALL MATERIAL, LABOR, AND EQUIPMENT TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, DETOUR SIGNING.

SOUTH AVE.
M4-9R
DETOUR
1

R47-8A
END DETOUR
6

CHANGEABLE MESSAGE SIGN
"EXIT 7 CLOSED
SOUTH AVE.
USE EXIT 8"

EXIT 7 CLOSED

SIGN
"USE EXIT 8
FOR SOUTH AVE."

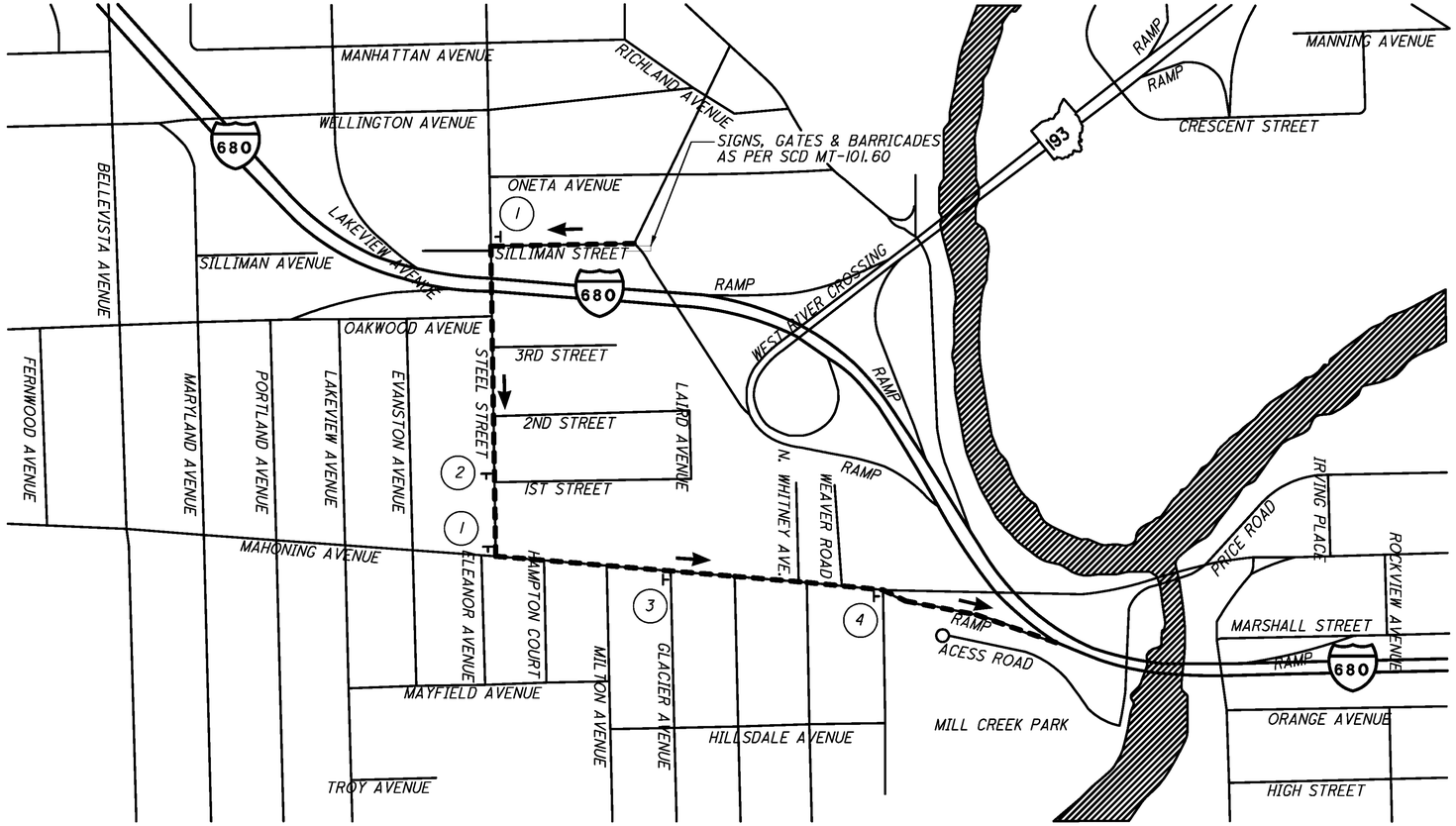
PIKE ST
WOODLAND AVE
HADNETT DR
HUGHES ST
MARKET ST
E HENRY ST
HAYES ST
WAYNE AVE
OKLAHOMA ST
PYATT ST
PLYMOUTH AVE
E MYRTLE AVE
WILLIAMSON AVE
E MARION AVE
BELLEVIEW AVE
E CHALMERS AVE
ERIE ST
ELLENWOOD AVE
HEASLEY
E DELASON AVE
E WARREN AVE
E EVERGREEN AVE
E GLENHAVEN AVE
E EARLE AVE
PASADENA AVE
KNOX ST
SOUTH AVE
OAK HILL AVE
FOUNTAIN ST
KING ST
CANTON AVE
WISEMAN ST
WABASH AVE
FRANKLIN AVE
DOROTHY AVE
LEE AVE
BENWOOD AVE
DICKSON AVE
SAMUEL AVE
MABEL AVE
EMERY ST
CAMERON AVE
ASH ST
BIRCH ST
E DEWEY AVE
WILBUR ST
MILLER ST
INDIANOLA AVE
CORNELL AVE
CHAPMAN ST
GIBSON ST
HOMESTEAD AVE
FLORIDA AVE
POLAND AVE
CYPRESS ST
ALPINE ST
JONES ST
BRITTAIN ST
POWERSDALE AVE
ALEXANDER ST
CALEDONIA AVE
HIRAM ST
FITHIAN AVE
HARMON AVE
CALEDONIA UNION ST
TAYLOR ST
MURRAY AVE
COOPER ST
HOMEWOOD AVE
ZEDAKER ST
ARKWRIGHT AVE
COMPTON LN
CAMPBELL
TAMPA
HUNTER AVE
TAFT AVE
JEAN AVE
HUMBOLDT
CORNELL AVE
HOOVER
PINE HOLLOW DR
POWERS

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - I-680
DETOUR ROUTE - PHASE 3

MAH-680-4.29

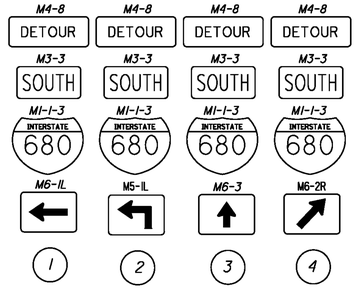
76
307



DETOUR ROUTE FOR SILLIMAN ST. TO I-680 RAMP (RAMP C)

LEGEND

- DETOUR
- TYPE III BARRICADE
- -DETOUR ROUTE



NOTES:

1. ALL TRAFFIC DEVICES SHALL CONFORM TO THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (O.M.U.T.C.D.)
2. THE CONTRACTOR SHALL PROVIDE, ERECT, MAINTAIN, AND REMOVE THE DETOURS AS SHOWN ON THIS SHEET. PAYMENT FOR ALL MATERIAL, LABOR, AND EQUIPMENT TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, DETOUR SIGNING.
3. DETOUR DURATION - THE MAXIMUM LENGTH OF TIME FOR THE DETOUR ROUTE TO BE IN EFFECT SHALL BE 90 CONSECUTIVE DAYS. CONSTRUCTION WORK MAY BE PERFORMED BEFORE AND AFTER THE DETOUR LIMITATION DATES, BUT THERE SHALL BE NO RESTRICTIONS (LANE WIDTH REDUCTIONS, TEMPORARY ROADWAYS, OR ONE WAY TRAFFIC) TO THROUGH OR LOCAL TRAFFIC. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE AND PERFORM THE CONSTRUCTION WORK WITHIN THE DETOUR LIMITATION TIME. THE FAILURE OF THE CONTRACTOR TO MEET THE DETOUR LIMITATION DATES WILL CAUSE SEPARATE DISINCENTIVES OF $5000.00 PER CALENDAR DAY OF OVERRUN OF DETOUR LIMITATION TIME TO BE ASSESSED.

N

0 167.5 335 670 HORIZONTAL SCALE IN FEET

CALCULATED MJP CHECKED JBD

MAINTENANCE OF TRAFFIC
DETOUR ROUTE - SILLIMAN STREET RAMP C

MAH-680-4.29

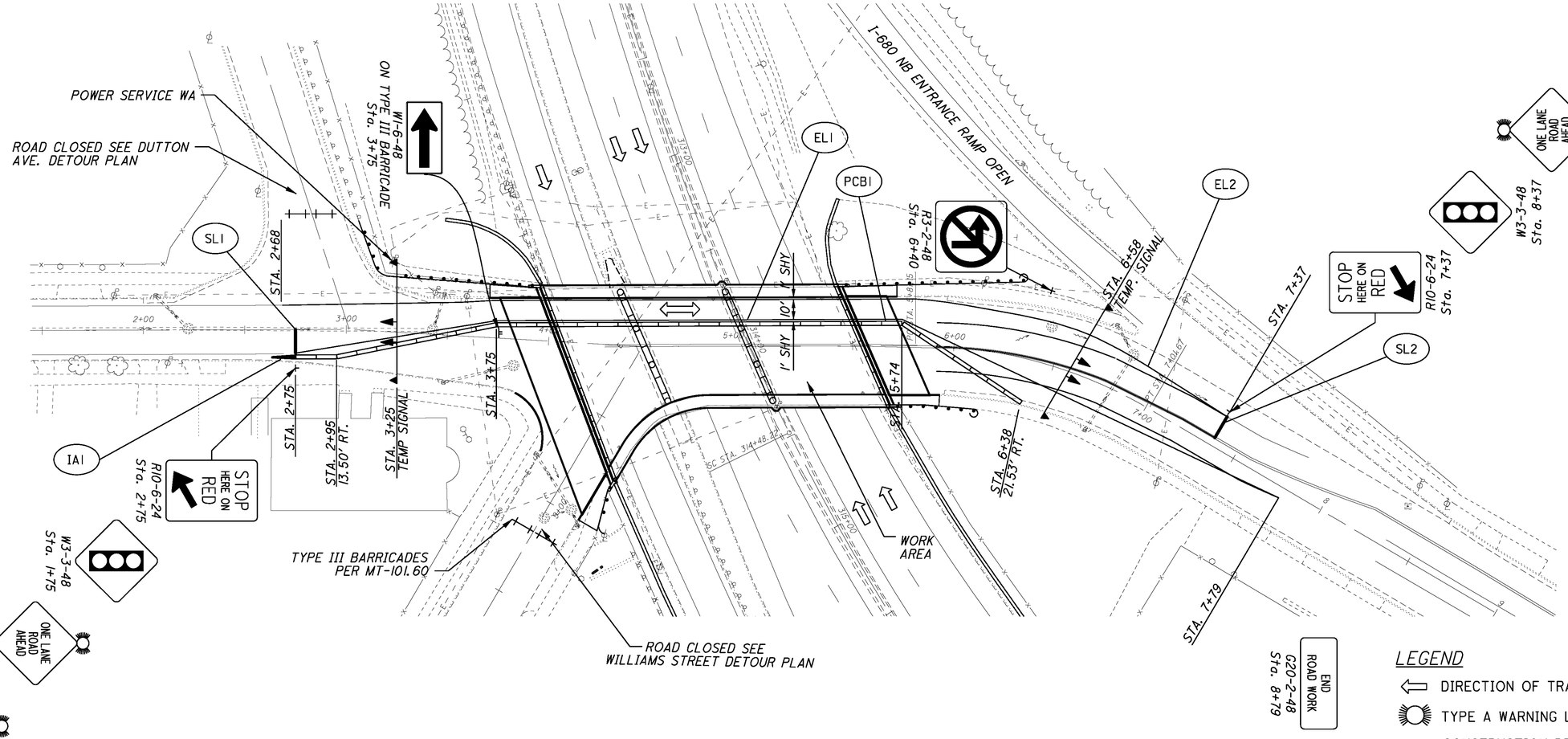
77
307

POWER SERVICE DATA									
POWER SERVICE	LINE VOLTAGE (VOLTS)	CONNECTED LOAD (KVA)	SERVICE ENTRANCE CABLE (AWG)	ENCLOSURE RATING (AMPS)	CIRCUIT NO.	CIRCUIT LOAD (AMPS)	CIRCUIT FUSE SIZE (AMPS)	CIRCUIT CABLE SIZE (AWG)	MAINTAINING AGENCY
WA	480	21.7	2/0	150	3	20.7	60	4	ODOT
					1	24.6	60	4	

SIGNAL TIMING DIAGRAM					
PHASE 1			PHASE 2		
1	2	3	1	2	3
42.0 SEC.	4.0 SEC.	14.0 SEC.	42.0 SEC.	4.0 SEC.	14.0 SEC.

TRAFFIC QUANTITIES TABLE

REFERENCE NO.	STATION TO STATION		SIDE	614 WORK ZONE IMPACT ATTENUATOR	614 SPECIAL - WORK ZONE TRAFFIC SIGNAL	614 WORK ZONE EDGE LINE, CLASS 1	614 WORK ZONE STOP LINE, CLASS 1	622 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED
	AT/TO	FROM	LT/RT	EACH	EACH	MILE	FT	FT	FT
EL1	2+75.00	7+79.00	LT RT			0.09			
EL2	2+68.00	7+37.00	LT			0.10			
IA1	2+63.00		RT	1					
PCB1	2+75.00	6+38.00	LT RT					220	150
SL1	2+75.00		RT				12		
SL2	7+37.00		LT				12		
	3+25.00		LT RT		1				
	6+58.00		LT RT		1				
TOTALS CARRIED TO MAINTENANCE OF TRAFFIC SUBSUMMARY				**1**	**2**	**0.19**	**24**	**220**	**150**



PHASE 1 CONSTRUCTION

HORIZONTAL SCALE IN FEET (0, 15, 30, 60)

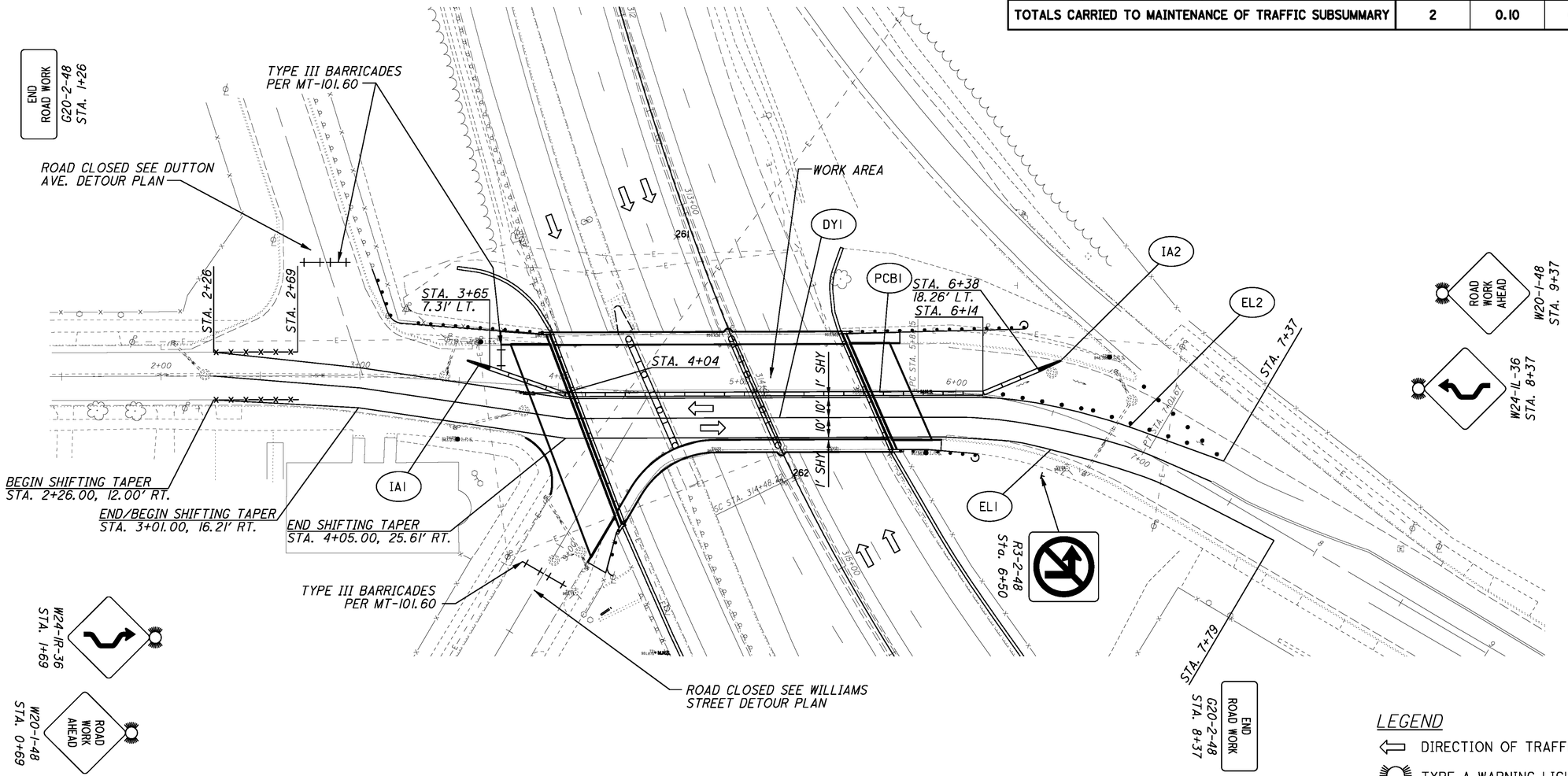
CALCULATED JAB CHECKED JBD

MAINTENANCE OF TRAFFIC - WOODLAND AVE PHASE 1

MAH-680-4.29

TRAFFIC QUANTITIES TABLE

REFERENCE NO.	STATION TO STATION		SIDE	614 WORK ZONE IMPACT ATTENUATOR	614 WORK ZONE CENTER LINE, CLASS I	614 WORK ZONE EDGE LINE, CLASS I	622 PORTABLE CONCRETE BARRIER, 32"
	AT/TO	FROM	LT/RT	EACH	MILE	MILE	FT
DY1	2+26.00	7+37.00	LT & RT		0.10		
EL1	2+26.00	7+79.00	RT			0.11	
EL2	2+26.00	7+37.00	LT & RT			0.10	
IA1	3+53.00		LT	1			
IA2	6+47.00		LT	1			
PCB1	3+65.00	6+38.00	LT & RT				280
TOTALS CARRIED TO MAINTENANCE OF TRAFFIC SUBSUMMARY				**2**	**0.10**	**0.21**	**280**



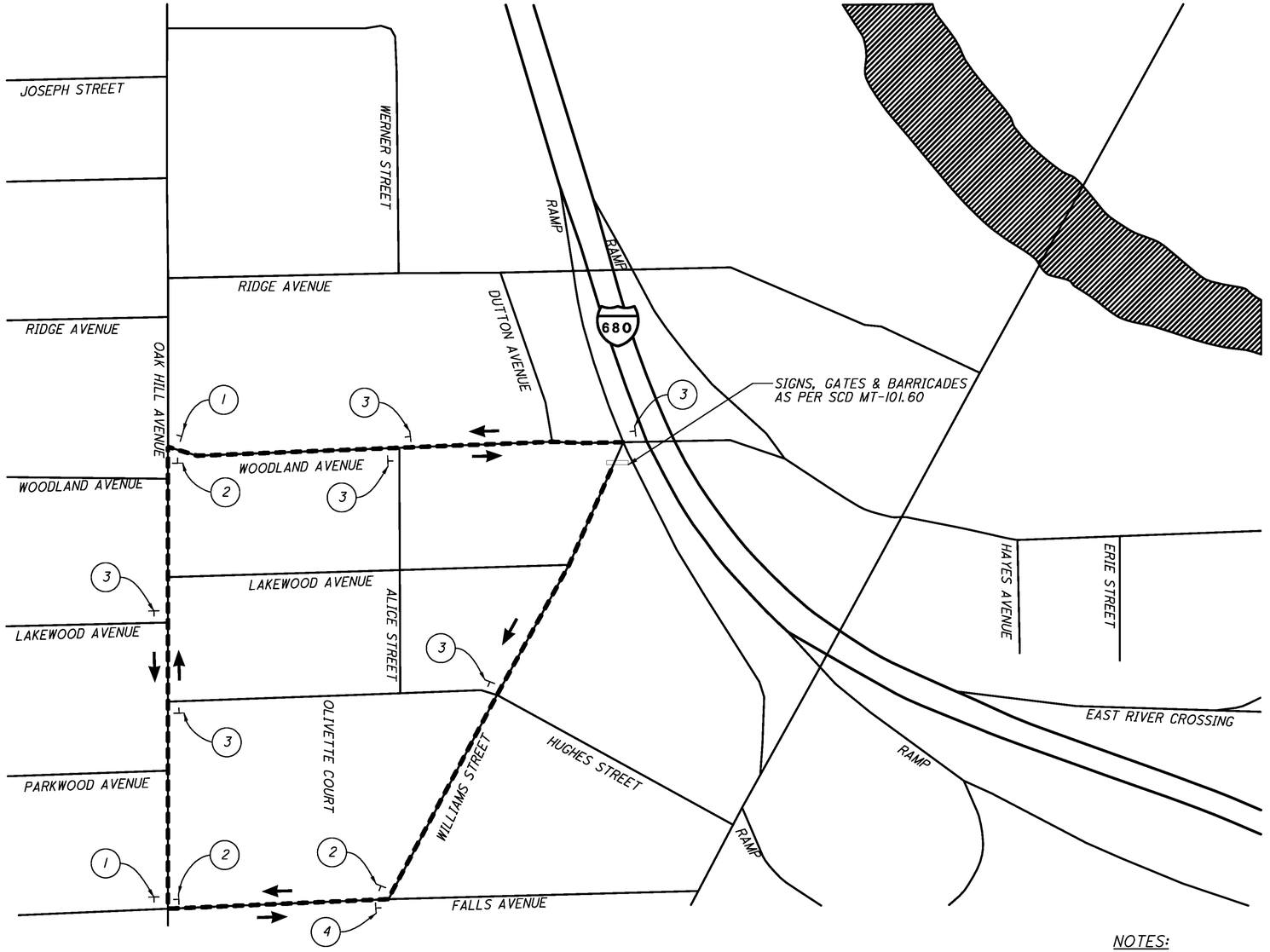
PHASE 2 CONSTRUCTION

HORIZONTAL SCALE IN FEET
0 15 30 60

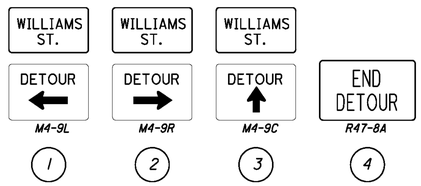
CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - WOODLAND AVE. PHASE 2

MAH-680-4.29



DETOUR ROUTE FOR WILLIAMS ST.



LEGEND

- DETOUR
- TYPE III BARRICADE
- DETOUR ROUTE

NOTES:

1. ALL TRAFFIC DEVICES SHALL CONFORM TO THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (O.M.U.T.C.D.)
2. THE CONTRACTOR SHALL PROVIDE, ERECT, MAINTAIN, AND REMOVE THE DETOURS AS SHOWN ON THIS SHEET. PAYMENT FOR ALL MATERIAL, LABOR, AND EQUIPMENT TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, DETOUR SIGNING.
3. DETOUR DURATION - THE MAXIMUM LENGTH OF TIME FOR THE DETOUR ROUTE TO BE IN EFFECT SHALL BE 150 CONSECUTIVE DAYS. CONSTRUCTION WORK MAY BE PERFORMED BEFORE AND AFTER THE DETOUR LIMITATION DATES, BUT THERE SHALL BE NO RESTRICTIONS (LANE WIDTH REDUCTIONS, TEMPORARY ROADWAYS, OR ONE WAY TRAFFIC) TO THROUGH OR LOCAL TRAFFIC. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE AND PERFORM THE CONSTRUCTION WORK WITHIN THE DETOUR LIMITATION TIME. THE FAILURE OF THE CONTRACTOR TO MEET THE DETOUR LIMITATION DATES WILL CAUSE SEPARATE DISINCENTIVES OF $5,000.00 PER CALENDAR DAY OF OVERRUN OF DETOUR LIMITATION TIME TO BE ASSESSED.

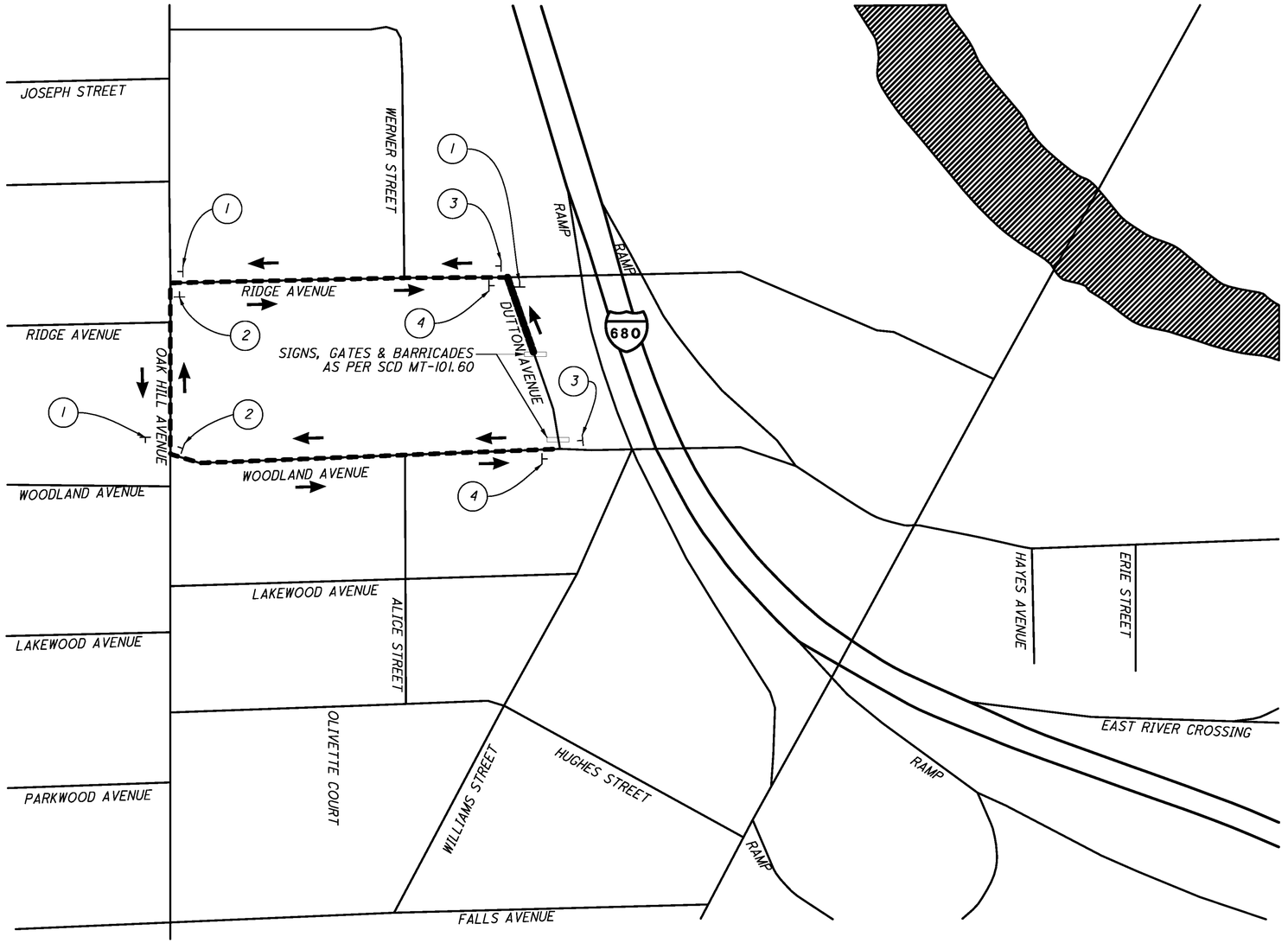
N

0 167.5 335 670
HORIZONTAL SCALE IN FEET

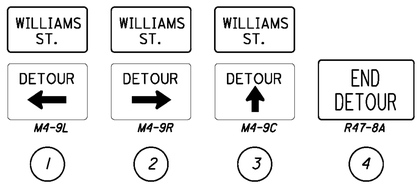
CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - WOODLAND AVE. DETOUR ROUTE - WILLIAMS ST.

MAH-680-4.29



DETOUR ROUTE FOR DUTTON AVE.



LEGEND

- DETOUR
- TYPE III BARRICADE
- DETOUR ROUTE

NOTES:

1. ALL TRAFFIC DEVICES SHALL CONFORM TO THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (O.M.U.T.C.D.)
2. THE CONTRACTOR SHALL PROVIDE, ERECT, MAINTAIN, AND REMOVE THE DETOURS AS SHOWN ON THIS SHEET. PAYMENT FOR ALL MATERIAL, LABOR, AND EQUIPMENT TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, DETOUR SIGNING.
3. DETOUR DURATION - THE MAXIMUM LENGTH OF TIME FOR THE DETOUR ROUTE TO BE IN EFFECT SHALL BE 150 CONSECUTIVE DAYS. CONSTRUCTION WORK MAY BE PERFORMED BEFORE AND AFTER THE DETOUR LIMITATION DATES, BUT THERE SHALL BE NO RESTRICTIONS (LANE WIDTH REDUCTIONS, TEMPORARY ROADWAYS, OR ONE WAY TRAFFIC) TO THROUGH OR LOCAL TRAFFIC. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE AND PERFORM THE CONSTRUCTION WORK WITHIN THE DETOUR LIMITATION TIME. THE FAILURE OF THE CONTRACTOR TO MEET THE DETOUR LIMITATION DATES WILL CAUSE SEPARATE DISINCENTIVES OF $5,000.00 PER CALENDAR DAY OF OVERRUN OF DETOUR LIMITATION TIME TO BE ASSESSED.

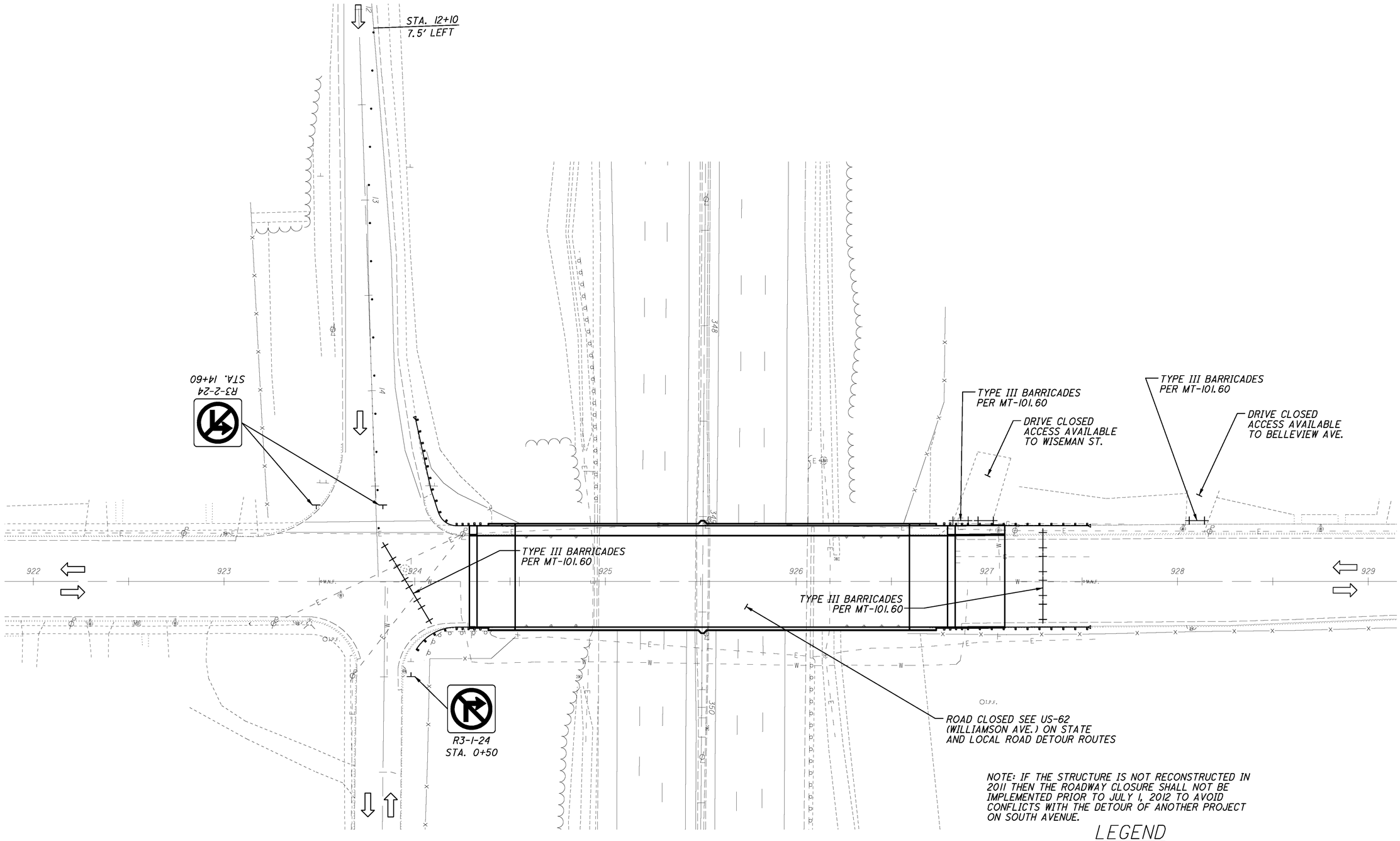
N

0 167.5 335 670
HORIZONTAL SCALE IN FEET

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC - WOODLAND AVE.
DETOUR ROUTE - DUTTON AVE.

MAH-680-4.29



NOTE: IF THE STRUCTURE IS NOT RECONSTRUCTED IN 2011 THEN THE ROADWAY CLOSURE SHALL NOT BE IMPLEMENTED PRIOR TO JULY 1, 2012 TO AVOID CONFLICTS WITH THE DETOUR OF ANOTHER PROJECT ON SOUTH AVENUE.

LEGEND

- Construction Drum
- Existing Marking Removal
- Direction of Traffic
- Type A Warning Light

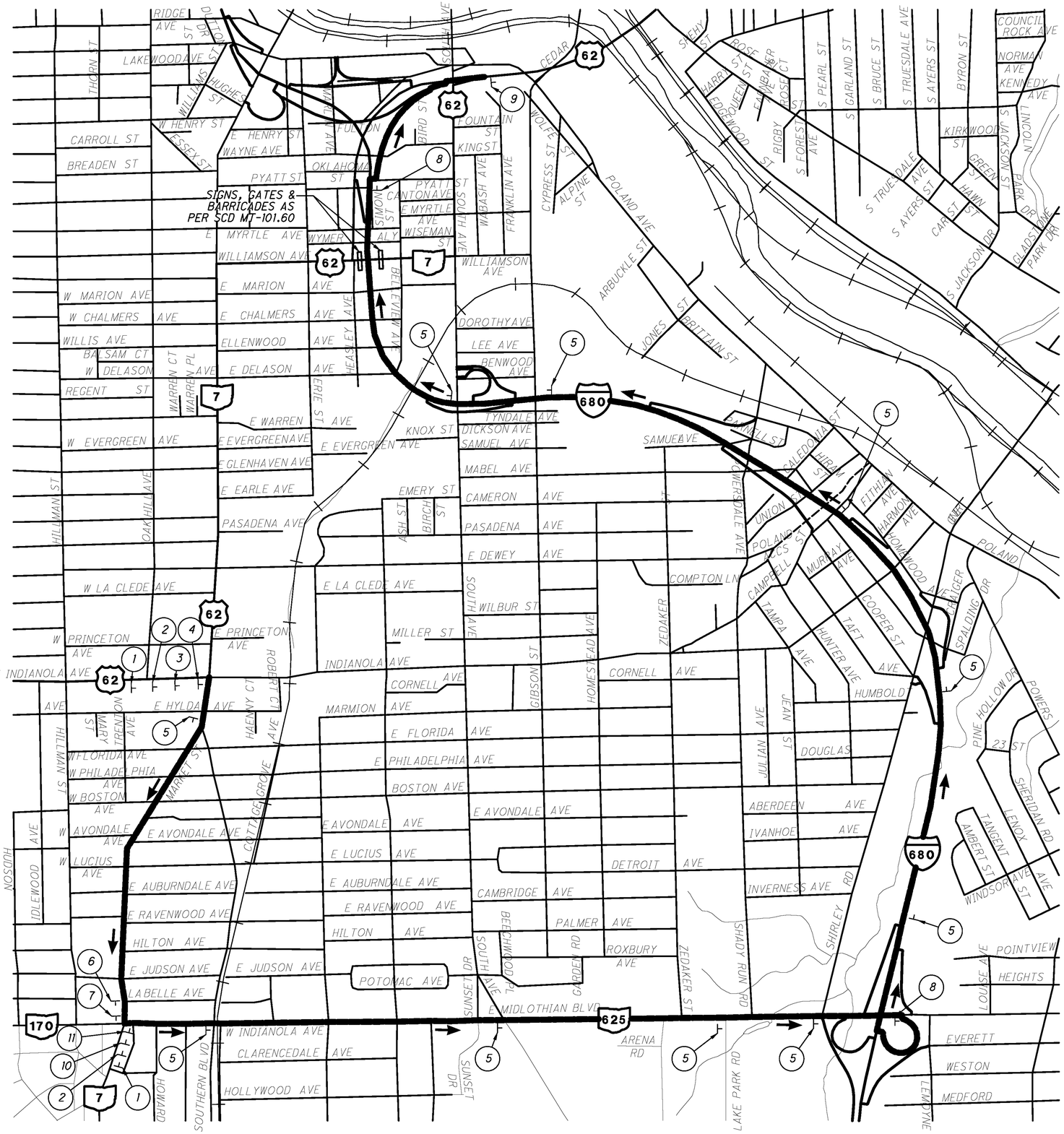
HORIZONTAL SCALE IN FEET
0 25

CALCULATED GJS
CHECKED JBD

MAINTENANCE OF TRAFFIC
US-62 TO WILLIAMSON AVE. RAMP LANE CLOSURE

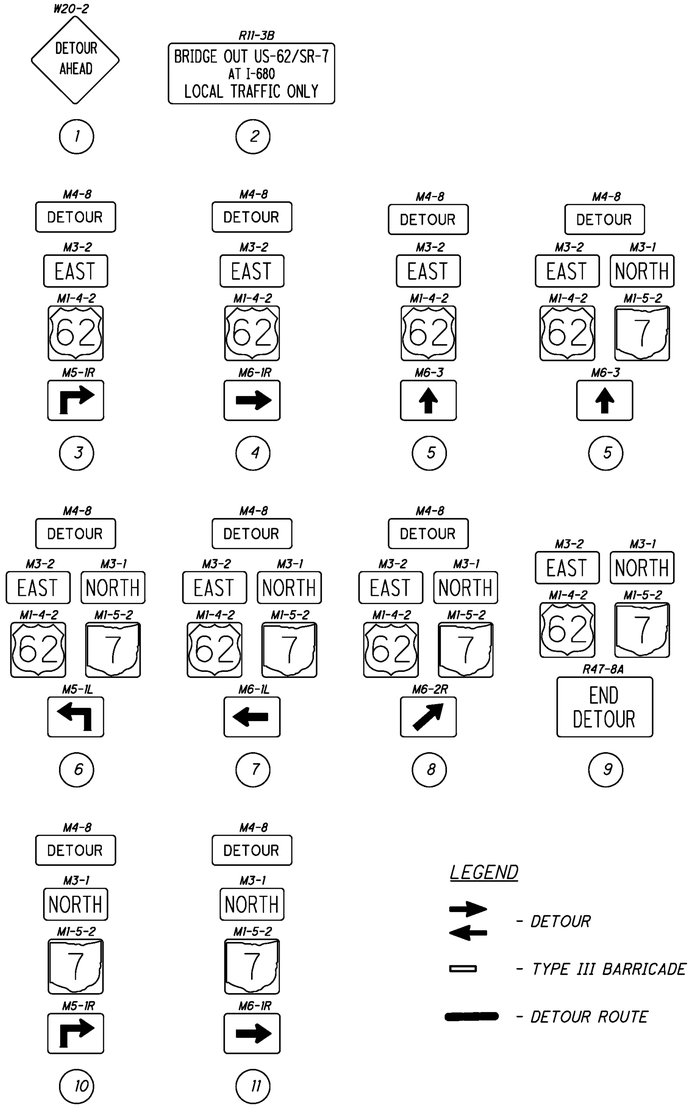
MAH-680-4.29

DETOUR ROUTE FOR
EB US-62/NB SR-7 ON STATE ROADS



NOTES:

1. ALL TRAFFIC DEVICES SHALL CONFORM TO THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (O.M.U.T.C.D.)
2. THE CONTRACTOR SHALL PROVIDE, ERECT, MAINTAIN, AND REMOVE THE DETOURS AS SHOWN ON THIS SHEET. PAYMENT FOR ALL MATERIAL, LABOR, AND EQUIPMENT TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, DETOUR SIGNING.
3. THE MAXIMUM LENGTH OF TIME FOR THE DETOUR ROUTE TO BE IN EFFECT SHALL BE 120 CONSECUTIVE DAYS. CONSTRUCTION WORK MAY BE PERFORMED BEFORE AND AFTER THE DETOUR LIMITATION DATES, BUT THERE SHALL BE NO RESTRICTIONS (LANE WIDTH REDUCTIONS, TEMPORARY ROADWAYS, OR ONE WAY TRAFFIC) TO THROUGH OR LOCAL TRAFFIC. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE AND PERFORM THE CONSTRUCTION WORK WITHIN THE DETOUR LIMITATION TIME. THE FAILURE OF THE CONTRACTOR TO MEET THE DETOUR LIMITATION DATES WILL CAUSE SEPARATE DISINCENTIVES OF $5000.00 PER CALENDAR DAY OF OVERRUN OF DETOUR LIMITATION TIME TO BE ASSESSED.



CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC
US-62 DETOUR - STATE ROUTE

MAH-680-4.29



DETOUR ROUTE FOR US-62/SR-7 (WILLIAMSON AVE.) ON LOCAL ROADS

LEGEND

- DETOUR
- TYPE III BARRICADE
- DETOUR ROUTE

NOTES:

1. ALL TRAFFIC DEVICES SHALL CONFORM TO THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (O.M.U.T.C.D.)
2. THE CONTRACTOR SHALL PROVIDE, ERECT, MAINTAIN, AND REMOVE THE DETOURS AS SHOWN ON THIS SHEET. PAYMENT FOR ALL MATERIAL, LABOR, AND EQUIPMENT TO PERFORM THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, DETOUR SIGNING.
3. THE MAXIMUM LENGTH OF TIME FOR THE DETOUR ROUTE TO BE IN EFFECT SHALL BE 120 CONSECUTIVE DAYS. CONSTRUCTION WORK MAY BE PERFORMED BEFORE AND AFTER THE DETOUR LIMITATION DATES, BUT THERE SHALL BE NO RESTRICTIONS (LANE WIDTH REDUCTIONS, TEMPORARY ROADWAYS, OR ONE WAY TRAFFIC) TO THROUGH OR LOCAL TRAFFIC. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE AND PERFORM THE CONSTRUCTION WORK WITHIN THE DETOUR LIMITATION TIME. THE FAILURE OF THE CONTRACTOR TO MEET THE DETOUR LIMITATION DATES WILL CAUSE SEPARATE DISINCENTIVES OF $5000.00 PER CALENDAR DAY OF OVERRUN OF DETOUR LIMITATION TIME TO BE ASSESSED.

W20-1 ROAD CLOSED AHEAD — 1

W20-2 DETOUR AHEAD — 2

R11-3B BRIDGE OUT US-62/SR-7 WILLIAMSON AVE AT I-680 LOCAL TRAFFIC ONLY — 3

M4-8 DETOUR
WILLIAMSON AVE
M3-2 EAST / M3-1 NORTH
M1-4-2 62 / M1-5-2 7
M5-1L — 4

M4-8 DETOUR
WILLIAMSON AVE
M3-2 EAST / M3-1 NORTH
M1-4-2 62 / M1-5-2 7
M6-1L — 5

M4-8 DETOUR
WILLIAMSON AVE
M3-2 EAST / M3-1 NORTH
M1-4-2 62 / M1-5-2 7
M6-3 — 6

M4-8 DETOUR
WILLIAMSON AVE
M3-2 EAST / M3-1 NORTH
M1-4-2 62 / M1-5-2 7
M6-1R — 7

WILLIAMSON AVE
M3-2 EAST / M3-1 NORTH
M1-4-2 62 / M1-5-2 7
R47-8A END DETOUR — 8

M4-8 DETOUR
WILLIAMSON AVE
M3-4 WEST / M3-3 SOUTH
M1-4-2 62 / M1-5-2 7
M5-1R — 9

M4-8 DETOUR
WILLIAMSON AVE
M3-4 WEST / M3-3 SOUTH
M1-4-2 62 / M1-5-2 7
M6-1R — 10

M4-8 DETOUR
WILLIAMSON AVE
M3-4 WEST / M3-3 SOUTH
M1-4-2 62 / M1-5-2 7
M6-3 — 11

M4-8 DETOUR
WILLIAMSON AVE
M3-4 WEST / M3-3 SOUTH
M1-4-2 62 / M1-5-2 7
M6-1L — 12

M4-8 DETOUR
WILLIAMSON AVE
M5-1R — 13

M3-4 WEST / M3-3 SOUTH
M1-4-2 62 / M1-5-2 7
R47-8A END DETOUR — 14

M4-8 DETOUR
WILLIAMSON AVE
M6-1R — 15

M4-8 DETOUR
WILLIAMSON AVE
M6-3 — 16

CALCULATED JAB
CHECKED JBD

MAINTENANCE OF TRAFFIC
US-62 DETOUR - LOCAL ROUTE

MAH-680-4.29

SHEET NUMBER																		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
11	12	13	14	15	16	17	88	89	90	91	92	93	96	97	130	132	133	134						
																						ROADWAY	
																			201	11000	LUMP		CLEARING AND GRUBBING	
					26143		136	989											202	23000	27268	SQ YD	PAVEMENT REMOVED	
									1100	636									202	30000	1736	SQ FT	WALK REMOVED	
					2553				13										202	30700	2566	FT	CONCRETE BARRIER REMOVED	
							123	84											202	32000	207	FT	CURB REMOVED	
											18								202	32800	18	SQ YD	CONCRETE SLOPE PROTECTION REMOVED	
									856	697									202	38000	1553	FT	GUARDRAIL REMOVED	
											1								202	58200	1	EACH	INLET REMOVED	
																8	11	9	202	75801	28	EACH	DISCONNECT EXISTING CIRCUIT, AS PER PLAN	130
										733									203	10000	733	CU YD	EXCAVATION	
										596									203	20000	596	CU YD	EMBANKMENT	
							1945	2018											204	10000	3963	SQ YD	SUBGRADE COMPACTION	
					950														204	13000	950	CU YD	EXCAVATION OF SUBGRADE	
					950														204	30010	950	CU YD	GRANULAR MATERIAL, TYPE B	
									1098	875									606	13000	1973	FT	GUARDRAIL, TYPE 5	
										1									606	20000	1	EACH	FLARED END SECTION	
										3									606	26100	3	EACH	ANCHOR ASSEMBLY, TYPE E	12
									4	6									606	26500	10	EACH	ANCHOR ASSEMBLY, TYPE T	
									15	11									606	35000	26	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE I	
									120	190									607	35000	310	FT	FENCE REMOVED AND REBUILT	
									1100	668									608	10000	1768	SQ FT	4" CONCRETE WALK	
					367														621	54000	367	EACH	RAISED PAVEMENT MARKER REMOVED	
									108										622	10160	108	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D	
					2075				62										622	23401	2137	FT	CONCRETE BARRIER, TYPE B, AS PER PLAN	12
									85										622	23403	85	FT	CONCRETE BARRIER, TYPE B, REINFORCED, AS PER PLAN	12
									2										622	25000	2	EACH	CONCRETE BARRIER END SECTION, TYPE D	
					50				44	36									626	00100	130	EACH	BARRIER REFLECTOR	
																						EROSION CONTROL	
											18								601	21000	18	SQ YD	CONCRETE SLOPE PROTECTION	
											38								601	32204	38	CU YD	ROCK CHANNEL PROTECTION, TYPE C WITH FABRIC FILTER	
2																			659	00100	2	EACH	SOIL ANALYSIS TEST	
186																			659	00300	186	CU YD	TOPSOIL	
1677																			659	10000	1677	SQ YD	SEEDING AND MULCHING	
84																			659	14000	84	SQ YD	REPAIR SEEDING AND MULCHING	
84																			659	15000	84	SQ YD	INTER-SEEDING	
0.23																			659	20000	0.23	TON	COMMERCIAL FERTILIZER	
0.35																			659	31000	0.35	ACRE	LIME	
9																			659	35000	9	M GAL	WATER	
4																			659	40000	4	M SQ FT	MOWING	
																			832	15000	LUMP		STORM WATER POLLUTION PREVENTION PLAN	
																			832	30000	60,000	EACH	EROSION CONTROL	
																						DRAINAGE	
											2								511	46600	2	CY YD	CLASS C CONCRETE, HEADWALL	
											64								603	01500	64	FT	6" CONDUIT, TYPE F	
											103								603	04400	103	FT	12" CONDUIT, TYPE B	
											106								603	05900	106	FT	15" CONDUIT, TYPE B	
											55								603	06100	55	FT	15" CONDUIT, TYPE C	
											26								603	06700	26	FT	15" CONDUIT, TYPE F	
											6								604	00800	6	EACH	CATCH BASIN, NO. 3A	
					8						2								604	14601	10	EACH	INLET, NO. 3B, AS PER PLAN	12
											3								604	31500	3	EACH	MANHOLE, NO. 3	
											1000								605	05100	1000	FT	4" SHALLOW PIPE UNDERDRAINS	
											669								605	11100	669	FT	6" SHALLOW PIPE UNDERDRAINS	

CALCULATED KJB
CHECKED JBD

GENERAL SUMMARY

MAH-680-4.29

SHEET NUMBER																			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
11	12	13	14	15	16	17	88	89	90	91	92	93	96	97	130	132	133	134						
																							PAVEMENT	
					93290														254	01000	93290	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE	
							29	32											302	46000	61	CU YD	ASPHALT CONCRETE BASE, PG64-22	
72							324	337											304	20001	733	CU YD	AGGREGATE BASE, AS PER PLAN	11
							55	1149											305	13000	1204	SQ YD	9" CONCRETE BASE	
							3	84											407	13900	87	GALLON	TACK COAT, 702.13	
							5	50											407	14000	55	GALLON	TACK COAT FOR INTERMEDIATE COURSE	
							6	61											448	46050	67	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	
					3815		5	44											448	47020	3864	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	
							484	166											SPECIAL	45130000	650	FT	SPECIAL - PRESSURE RELIEF JOINT, TYPE A	
								53											609	14000	53	FT	CURB, TYPE 2-A	
							100	126											609	24510	226	FT	CURB, TYPE 4-C	
																							LIGHTING	
																32	34	28	625	00500	94	EACH	CONNECTOR KIT, TYPE II	
																3	1	2	625	14306	6	EACH	MEDIAN LIGHT POLE FOUNDATION, 10' DEEP	
																270	310	3354	625	23000	3934	FT	NO. 4 AWG 600 VOLT DISTRIBUTION CABLE	
																10292	8101	918	625	23200	19311	FT	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	
																1336	1488	709	625	25400	3533	FT	CONDUIT, 2", 725.04	
																346	305		625	25401	651	FT	CONDUIT, 2", 725.04, AS PER PLAN	130
																230	284	273	625	25900	787	FT	CONDUIT, JACKED OR DRILLED, 2"	
																625	65	172	625	25910	862	FT	CONDUIT CLEANED AND CABLES REMOVED	
																5	1	2	625	27561	8	EACH	LUMINAIRE, INSTALLATION ONLY, AS PER PLAN	130
																1126	1128	709	625	29002	2963	FT	TRENCH, 24" DEEP	
																2	2	1	625	29910	5	EACH	TRANSITION JUNCTION BOX	
																	2		625	29920	2	EACH	STRUCTURE JUNCTION BOX	
																7	5	5	625	29940	17	EACH	BARRIER JUNCTION BOX	
																5	5	5	625	30700	15	EACH	PULL BOX, 725.08, 18"	
																2	3	2	625	31510	7	EACH	PULL BOX REMOVED	
																3	1	2	625	35001	6	EACH	REERECT EXISTING LIGHT POLE, AS PER PLAN	130
																1126	1128	709	625	36000	2963	FT	PLASTIC CAUTION TAPE	
																3	5	4	625	39520	12	EACH	PULL BOX CLEANED	
															1				SPECIAL	62540000	LUMP		SPECIAL - MAINTAIN EXISTING LIGHTING	130
															3				SPECIAL	62540010	3	EACH	SPECIAL - REPLACEMENT OF EXISTING LIGHTING UNIT	130
																3	1	2	625	75402	6	EACH	LIGHT POLE REMOVED FOR STORAGE	
																3	1	2	625	75500	6	EACH	LIGHT POLE FOUNDATION REMOVED	
																5	1	2	625	75508	8	EACH	LUMINAIRE REMOVED FOR REUSE	
																							TRAFFIC CONTROL	
								367											621	00100	367	EACH	RPM	
	32																		630	02100	32	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
							5												630	79610	5	EACH	SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED	
	4																		630	80100	4	SQ FT	SIGN, FLAT SHEET	
							25												630	85100	25	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
							19												630	86010	19	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND REERECTION	
								6.85											646	10000	6.85	MILE	EDGE LINE	
								6.19											646	10100	6.19	MILE	LANE LINE	
								0.12											646	10200	0.12	MILE	CENTER LINE	
								5323											646	10300	5323	FT	CHANNELIZING LINE	
								242											646	10600	242	FT	TRANSVERSE/DIAGONAL LINE	
																							STRUCTURES (20' AND OVER)	
																							FOR MAH-680-0429 SEE SHEET 145	
																							FOR MAH-680-0476 SEE SHEET 162	
																							FOR MAH-680-0594 SEE SHEET 166	
																							FOR MAH-680-0632 SEE SHEET 185	
																							FOR MAH-680-0687 SEE SHEET 228	
																							FOR MAH-680-0693 SEE SHEET 259	
																							FOR MAH-62-1751 SEE SHEET 290	

CALCULATED KJB
CHECKED JBD

GENERAL SUMMARY

MAH-680-4.29

SHEET NUMBER																			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
11	12	13	14	15	16	17	88	89	90	91	92	93	96	97	130	132	133	134						
																							MAINTENANCE OF TRAFFIC	
		500																	614	11110	500	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
														2					SPECIAL	61411300	2	EACH	SPECIAL - WORK ZONE TRAFFIC SIGNAL	
						18													614	11500	18	MONTH	WORKSITE TRAFFIC SUPERVISOR	
				17360															614	11620	17360	FT	LINEAR DELINEATION	15
														34					614	12350	34	EACH	WORK ZONE IMPACT ATTENUATOR	
				14															614	12410	14	EACH	SPEED ZONE AHEAD SYMBOL SIGN	
																			614	12420	LUMP		DETOUR SIGNING	
				27															614	12470	27	EACH	WORK ZONE SPEED LIMIT SIGN	
			47																614	12484	47	EACH	WORK ZONE INCREASED PENALTIES SIGN	
				3															614	12756	3	EACH	WORK ZONE CROSSOVER LIGHTING SYSTEM	
					5582														614	12801	5582	EACH	WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN	16
		700																	614	13000	700	CU YD	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
			766																614	13300	766	EACH	BARRIER REFLECTOR, TYPE B	
			528																614	13350	528	EACH	OBJECT MARKER, ONE WAY	
			238																614	13360	238	EACH	OBJECT MARKER, TWO WAY	
				2190															614	18002	LUMP		MAINTAINING TRAFFIC, MISC.: TEMPORARY DRAINAGE	16
				5.00										3.20					614	18401	2190	DAYS	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	15
														0.10					614	20001	8.20	MILE	WORK ZONE LANE LINE, CLASS I, AS PER PLAN	15
														0.40					614	21000	0.10	MILE	WORK ZONE CENTER LINE, CLASS I	
																			614	22000	0.40	MILE	WORK ZONE EDGE LINE, CLASS I	
				12.70										20.84					614	22001	33.54	MILE	WORK ZONE EDGE LINE, CLASS I, AS PER PLAN	15
				12700										62902					614	23001	75602	FT	WORK ZONE CHANNELIZING LINE, CLASS I, AS PER PLAN	15
				1500										5409					614	24001	6909	FT	WORK ZONE DOTTED LINE, CLASS I, AS PER PLAN	15
														24					614	26000	24	FT	WORK ZONE STOP LINE, CLASS I	
					28715														615	20001	28715	SQ YD	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN	16
			50																616	10000	50	M GAL	WATER	
														24020					622	40020	24020	FT	PORTABLE CONCRETE BARRIER, 32"	
														12330					622	40031	12330	FT	PORTABLE CONCRETE BARRIER, 50", AS PER PLAN	13
														380					622	40040	380	FT	PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED	
					756														SPECIAL	69013000	756	FT	SPECIAL - RUMBLE STRIPS	16
																			614	11000	LUMP		MAINTAINING TRAFFIC	
																			619	16020	18	MONTH	FIELD OFFICE, TYPE C	
																			623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
																			624	10000	LUMP		MOBILIZATION	12
	6																		SPECIAL	69098000	6	EACH	SPECIAL - MISC.: VERTICAL CLEARANCE	

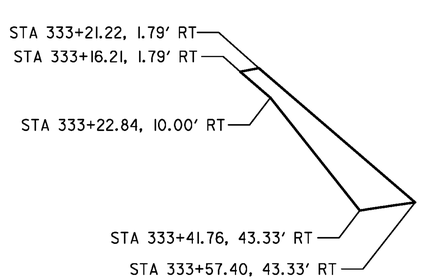
CALCULATED KJB
CHECKED JBD

GENERAL SUMMARY

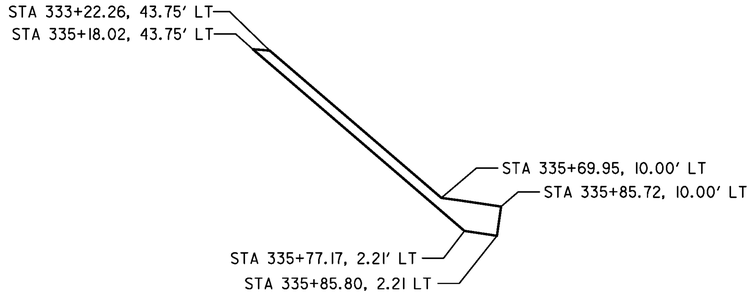
MAH-680-4.29

PAVEMENT QUANTITIES TABLE

REFERENCE NO.	SHEET NO.	STATION TO STATION		SIDE	LENGTH L	AVERAGE WIDTH W	SURFACE AREA A = L x W	202 PAVEMENT REMOVED	202 CURB REMOVED	204 SUBGRADE COMPACTION	302 ASPHALT CONCRETE BASE, PG64-22	304 AGGREGATE BASE, AS PER PLAN	305 9" CONCRETE BASE	407 TACK COAT, 702.13 0.075 GALLONS/SY	407 TACK COAT FOR INTERMEDIATE COURSE 0.04 GALLONS/SY	448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	448 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	451 SPECIAL - PRESSURE RELIEF JOINT, TYPE A	609 CURB, TYPE 2-A	609 CURB, TYPE 4-C
		AT/TO	FROM	LT/RT	FT	FT	SQ FT	SQ YD	FT	SQ YD	CU YD	CU YD	SQ YD	GALLONS	GALLONS	CU YD	CU YD	FT	FT	FT
P10	103	333+14.78	333+19.78	LT	5.00	41.54	207.70	23.08		23.08	5.77	3.85			0.92	1.12	0.80			
P11	103	333+14.78	333+19.78	RT	VARIES	41.54	369.66	41.08		41.08	10.27	6.85			1.64	2.00	1.43			
AS10	103	333+19.78	333+44.78	LT	25.00	41.54	1038.50			115.39		19.23								
AS11	103	333+19.78	333+44.78	RT	25.00	41.54	1038.50			115.39		19.23								
C10	103	333+41.76	333+66.97	RT																23.78
C11	103	335+12.21	335+18.02	LT																5.96
AS12	103	335+55.67	335+80.67	LT	25.00	41.54	1038.50			115.39		19.23								
AS13	103	335+55.67	335+80.67	RT	25.00	41.54	1038.50			115.39		19.23								
P12	103	335+80.67	335+85.67	LT	VARIES	41.54	272.06	30.23		30.23	7.56	5.04			1.21	1.47	1.05			
P13	103	335+80.67	335+85.67	RT	5.00	41.54	207.70	23.08		23.08	5.77	3.85			0.92	1.12	0.80			
J20	104	362+50.20	362+54.20	LT	4.00													53.88		
J21	104	362+50.20	362+54.20	RT	4.00													61.89		
AS20	104	362+54.20	362+79.20	LT	25.00	53.64	1341.00			149.00		24.83								
AS21	104	362+54.20	362+79.20	RT	25.00	61.20	1530.00			170.00		28.33								
AS22	104	364+15.31	364+40.31	RT	25.00	61.20	1530.00			170.00		28.33								
AS23	104	364+15.31	364+40.31	LT	25.00	53.28	1332.00			148.00		24.67								
J22	104	364+40.31	364+44.31	RT	4.00													64.40		
J23	104	364+40.31	364+44.31	LT	4.00													56.27		
P20	104	364+62.15	364+72.32	LT	9.06	3.67	33.21	1.88		2.37		0.40	2.37	0.28	0.15	0.12	0.08			
J24	105	365+71.13	365+75.13	LT	4.00													53.95		
J25	105	365+71.13	365+75.13	RT	4.00													61.93		
AS24	105	365+75.13	366+00.13	LT	25.00	53.28	1332.00			148.00		24.67								
AS25	105	365+75.13	366+00.13	RT	25.00	60.84	1521.00			169.00		28.17								
AS26	105	367+41.36	367+66.36	RT	25.00	73.08	1827.00			203.00		33.83								
AS27	105	367+41.36	367+66.36	LT	25.00	55.44	1386.00			154.00		25.67								
J26	105	367+66.36	367+70.36	RT	4.00													75.53		
J27	105	367+66.36	367+70.36	LT	4.00													55.99		
P21	105	367+73.54	367+85.00	LT	10.68	3.67	39.18	3.25		2.93		0.49	2.93	0.33	0.17	0.14	0.10			
P22	110	3+44.57	4+75.00	LT	123.00	3.17	2.00	13.67	123.00	50.16		8.36	50.16	2.01			0.95			
C20	104	362+61.72	362+73.43	LT																11.08
C21	104	362+46.57	362+56.72	RT																10.77
C22	104	364+11.11	364+21.32	RT																10.83
C23	104	364+47.39	364+58.83	LT																10.83
C24	105	365+67.49	365+78.88	LT																10.79
C25	105	365+83.33	365+85.94	RT																2.77
C26	105	367+60.91	367+62.65	RT																1.89
C27	105	367+57.92	367+69.49	LT																10.94
TOTALS CARRIED TO GENERAL SUMMARY								**136**	**123**	**1945**	**29**	**324**	**55**	**3**	**5**	**6**	**5**	**484**	**0**	**100**



P11 AREA DETAIL



P12 AREA DETAIL

CALCULATED KJB
CHECKED JBD

PAVEMENT CALCULATIONS & SUBSUMMARIES

MAH-680-4.29

PAVEMENT QUANTITIES TABLE

REFERENCE NO.	SHEET NO.	STATION TO STATION		SIDE	LENGTH L	AVERAGE WIDTH W	SURFACE AREA A = L x W	202 PAVEMENT REMOVED	202 CURB REMOVED	204 SUBGRADE COMPACTION	302 ASPHALT CONCRETE BASE, PG64-22	304 AGGREGATE BASE, AS PER PLAN	305 9" CONCRETE BASE	407 TACK COAT, 702.13 0.075 GALLONS/SY	407 TACK COAT FOR INTERMEDIATE COURSE 0.04 GALLONS/SY	448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	448 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	451 SPECIAL - PRESSURE RELIEF JOINT, TYPE A	609 CURB, TYPE 2-A	609 CURB, TYPE 4-C
		AT/TO	FROM	LT/RT	FT	FT	SQ FT	SQ YD	FT	SQ YD	CU YD	CU YD	SQ YD	GALLONS	GALLONS	CU YD	CU YD	FT	FT	FT
P40	106	1+21.21	1+37.17	LT & RT	15.96	27.00	562.87	53.34		66.40		11.07	64.09	4.69	2.50	3.04	2.17			
J40	106	1+37.17	1+41.17	LT & RT	4.00	27.00												33.78		
AS40	106	1+41.17	1+61.17	LT & RT	20.00	30.00	600.00			66.67		11.11								
AS41	106	4+24.31	4+44.31	LT & RT	20.00	30.00	600.00			66.67		11.11								
J41	106	4+44.31	4+48.31	LT & RT	4.00	27.00												33.78		
P41	106-107	4+48.31	7+60.00	LT & RT	311.69	27.00	8285.37	756.65		971.74		161.96	943.33	69.04	36.82	44.75	31.97			
C40	106	1+36.15	1+56.15	LT																20
C41	106	1+15.85	1+35.85	RT																20
C42	106	4+38.98	4+52.98	RT																14
C43	106	4+59.28	4+79.28	LT																20
P50	108	3+73.45	3+83.87	LT & RT	7.84	118.30	927.20	44.94		103.02	25.76	17.17			4.12	5.01	3.58			
AS50	108	3+83.87	4+04.23	LT & RT	20.00	97.04	1940.95			218.15		36.36								
AS51	108	5+57.39	5+77.39	LT & RT	20.00	49.02	980.27			111.14		18.52								
P51	108	5+77.39	5+82.39	LT & RT	5.00	48.04	240.20			26.69	6.67	4.45			1.07	1.30	0.93			
C50	108	3+69.95	3+94.91	LT															5.00	
C51	108	4+19.70	4+32.23	RT															3.58	
C52	108	5+47.01	5+72.01	LT															5.00	
C53	108	5+67.77	5+94.08	RT															5.00	
C54	108	3+85.19	3+99.37	RT					34.00										34.00	
J61	109	924+28.67	924+32.67	LT & RT	4.00	53.67	214.67											49.00		
AS61	109	924+32.67	924+52.67	LT & RT	20.00	54.67	1093.33			121.48		20.25								
AS62	109	926+59.42	926+79.42	LT & RT	20.00	54.67	1093.33			121.48		20.25								
J62	109	926+79.42	926+83.42	LT & RT	4.00	53.67	214.67											49.00		
P61	109	926+84.42	927+09.42	LT & RT	25.00	48.26	1206.41	134.05		144.44		24.07	141.56	10.05	5.36	6.74	4.81			
C61	109	926+83.42	927+09.42	LT					25.00											26.00
C62	109	926+83.42	927+09.42	RT					25.00											26.00
TOTALS CARRIED TO GENERAL SUMMARY								989	84	2018	32	337	1149	84	50	61	44	166	53	126

CALCULATED KJB
CHECKED JBD

PAVEMENT CALCULATIONS & SUBSUMMARIES

MAH-680-4.29

WALK, BARRIER, GUARDRAIL, & FENCE QUANTITIES TABLE

REFERENCE NO.	SHEET NO.	STATION TO STATION		SIDE	202 WALK REMOVED	202 CONCRETE BARRIER REMOVED	202 GUARDRAIL REMOVED	606 GUARDRAIL, TYPE 5	606 FLARED END SECTION	606 ANCHOR ASSEMBLY, TYPE T	606 BRIDGE TERMINAL ASSEMBLY, TYPE I	606 ANCHOR ASSEMBLY, TYPE E	607 FENCE REMOVED AND REBUILT	608 4" CONCRETE WALK	622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D	622 CONCRETE BARRIER, TYPE B, AS PER PLAN	622 CONCRETE BARRIER, TYPE B, REINFORCED, AS PER PLAN	622 CONCRETE BARRIER END SECTION, TYPE D	626 BARRIER REFLECTOR
		AT/TO	FROM	LT/RT	SQ FT	FT	FT	FT	EACH	EACH	EACH	EACH	FT	SQ FT	FT	FT	FT	EACH	EACH
B10	103	332+83.00	332+96.00	LT		13									13				2
B11	103	333+09.40	333+33.40													4.00			
B12	103	333+33.40	333+46.43														13.03		4
B13	103	335+53.43	335+65.82														12.39		2
B14	103	335+65.82	335+87.82													2.00			
G10	103	331+98.37	333+69.20	RT			166.38	170.83			2								3
G11	103	335+10.22	336+68.52	LT			154.16	158.30			2								2
G12	103	336+60.80	337+48.89	RT			85.91	81.25			1								3
B20	110	3+44.57	4+75.00	LT											95			2	2
B21	104	362+50.19	362+79.20	LT & RT												14	15		2
B22	104	364+15.31	364+44.42	LT & RT												14	15		2
B23	105	365+71.29	366+00.13	LT & RT												14	15		2
B24	105	367+41.36	367+70.34	LT & RT												14	15		2
SW20	110	2+93.19	5+41.61	LT	1100									1100					
G20	110	3+00.45	3+44.57	LT				31.25		1	1								1
G21	110	3+33.30	5+10.84	RT				175		2									4
G22	110	4+75.00	5+18.32	LT				31.25		1	1								1
G23	104	362+42.63	362+75.65	LT			31.25	31.25			1								1
G24	104	362+30.27	362+59.73	RT			31.25	31.25			1								1
G25	104-105	364+09.12	365+87.92	RT			187.5	187.5			2								4
G26	104-105	364+45.17	365+81.11	LT			137.5	137.5			2								4
G27	105	367+55.69	367+88.74	LT			31.25	31.25			1								1
G28	105	367+58.96	367+87.84	RT			31.25	31.25			1								1
F20	104	362+92.00		LT									15						
F21	104	362+70.00		RT									15						
F22	104	363+97.00		RT									15						
F23	104	364+29.00		LT									15						
F24	105	365+95.00		LT									15						
F25	105	366+10.00		RT									15						
F26	105	367+35.00		RT									15						
F27	105	367+42.00		LT									15						
TOTALS CARRIED TO GENERAL SUMMARY					1100	13	856	1098	0	4	15	0	120	1100	108	62	85	2	44

CALCULATED KJB
CHECKED JBD

PAVEMENT CALCULATIONS & SUBSUMMARIES

MAH-680-4.29

WALK, BARRIER, GUARDRAIL, & FENCE QUANTITIES TABLE

REFERENCE NO.	SHEET NO.	STATION TO STATION		SIDE	202 WALK REMOVED	202 CONCRETE BARRIER REMOVED	202 GUARDRAIL REMOVED	606 GUARDRAIL, TYPE 5	606 FLARED END SECTION	606 ANCHOR ASSEMBLY, TYPE T	606 BRIDGE TERMINAL ASSEMBLY, TYPE I	606 ANCHOR ASSEMBLY TYPE E	607 FENCE REMOVED AND REBUILT	608 4" CONCRETE WALK	622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D	622 CONCRETE BARRIER, TYPE B, AS PER PLAN	622 CONCRETE BARRIER, TYPE B, REINFORCED, AS PER PLAN	622 CONCRETE BARRIER END SECTION, TYPE D	626 BARRIER REFLECTOR
		AT/TO	FROM	LT/RT	SQ FT	FT	FT	FT	EACH	EACH	EACH	EACH	FT	SQ FT	FT	FT	FT	EACH	EACH
G40	106	0+47.97	1+56.15	LT			113.98	100		1	1								3
G41	106	0+19.93	1+35.85	RT			132.53	112.5		1	1								6
G42	106-107	4+59.28	7+51.28	LT			307.96	287.5		1	1								6
G50	108	3+03.09	3+96.62	LT			25.00	112.5			1								2
G51	108	4+30.08	4+36.91	RT				25.00	1		1								2
G52	108	5+40.76	6+27.35	LT			74.82	81.25		1	1								3
G53	108	5+66.00	6+14.03	RT				31.25		1	1								2
SW50	108	3+69.53	3+94.69	LT	97.75									128.48					
SW51	108	4+20.15	4+34.93	RT	173.54									173.54					
SW52	108	5+44.78	5+72.01	LT	129.96									129.96					
SW53	108	5+67.99	5+94.08	RT	117.73									113.61					
G61	109	924+00.00	924+40.69	LT				31.25			1	1							3
G62	109	924+00.72	924+40.69	RT			42.85	31.25		1	1								3
G63	109	926+71.40	927+54.48	LT				31.25			1	1							3
G64	109	926+71.40	927+54.48	RT				31.25			1	1							3
F61	109	924+22.75	924+55.32	LT									36.11						
F62	109	924+07.78	924+54.87	RT									52.00						
F63	109	926+58.46	927+60.39	RT									101.94						
SW61	109	926+83.42	927+09.42	LT	117.35									122.28					
TOTALS CARRIED TO GENERAL SUMMARY					**636**	**0**	**697**	**875**	**1**	**6**	**11**	**3**	**190**	**668**	**0**	**0**	**0**	**0**	**36**

EARTHWORK QUANTITIES TABLE

STATION TO STATION		SIDE	LENGTH L	AVERAGE WIDTH W	AVERAGE DEPTH D	203 EXCAVATION	203 EMBANKMENT	659 SEEDING AND MULCHING	659 SOIL ANALYSIS TEST	659 TOPSOIL	659 REPAIR SEEDING AND MULCHING	659 INTER-SEEDING	659 COMMERCIAL FERTILIZER	659 LIME	659 WATER	659 MOWING
AT/TO	FROM	LT/RT	FT	FT	FT	CU YD	CU YD	SQ YD	EACH	SQ YD	SQ YD	SQ YD	TON	ACRE	M GAL	M SQ FT
332+00.00	337+50.00	LT & RT				128	210	142		15.76	7.10	7.10	0.020	0.029	0.79	0.32
924+28.67	924+52.67	LT & RT	24.00	57.45	1.26	64.34										
926+59.42	927+09.42	LT & RT	50.00	56.75	1.17	122.96										
924+28.67	924+52.67	LT	24.00	5.00				13.33		1.48	0.67	0.67	0.002	0.003	0.07	0.03
924+28.67	924+52.67	RT	24.00	5.00				13.33		1.48	0.67	0.67	0.002	0.003	0.07	0.03
926+59.42	927+09.42	LT	50.00	5.00				27.78		3.08	1.39	1.39	0.004	0.006	0.15	0.06
926+59.42	927+09.42	RT	50.00	5.00				27.78		3.08	1.39	1.39	0.004	0.006	0.15	0.06
3+73.45	4+03.68	LT & RT				44	53									
5+57.94	5+82.39	LT & RT				16	33									
3+40.00	3+95.00	LT						86		9.55	4.30	4.30	0.012	0.018	0.48	0.19
5+38.00	5+58.00	LT						25		2.78	1.25	1.25	0.003	0.005	0.14	0.06
1+00.00	4+44.30	LT & RT				46	29	168		18.65	8.40	8.40	0.023	0.035	0.93	0.38
4+44.30	6+50.00	LT & RT				210	239	900		99.90	45.00	45.00	0.126	0.186	4.98	2.03
6+50.00	7+60.00	LT & RT				102	32	274		30.41	13.70	13.70	0.038	0.057	1.52	0.62
TOTALS CARRIED TO GENERAL SUMMARY						**733**	**596**	**1677***	**2***	**186***	**84***	**84***	**0.23***	**0.35***	**9***	**4***

*** TOTAL CARRIED TO GENERAL NOTES**

CALCULATED KJB
CHECKED JBD

PAVEMENT CALCULATIONS & SUBSUMMARIES

MAH-680-4.29

DRAINAGE QUANTITIES TABLE

REFERENCE NO.	SHEET NO.	STATION TO STATION		SIDE	202 CONCRETE SLOPE PROTECTION REMOVED	202 INLET REMOVED	511 CLASS C CONCRETE, HEADWALL	601 CONCRETE SLOPE PROTECTION	601 ROCK CHANNEL PROTECTION, TYPE C WITH FABRIC FILTER	603 6" CONDUIT, TYPE F	603 12" CONDUIT, TYPE B	603 15" CONDUIT, TYPE B	603 15" CONDUIT, TYPE C	603 15" CONDUIT, TYPE F	604 CATCH BASIN, NO. 3A	604 INLET, NO. 3B, AS PER PLAN	604 MANHOLE, NO. 3	605 4" SHALLOW PIPE UNDERDRAINS	605 6" SHALLOW PIPE UNDERDRAINS
		AT/TO	FROM	LT/RT	SQ YD	EACH	CU YD	SQ YD	CU YD	FT	FT	FT	FT	FT	EACH	EACH	EACH	FT	FT
D10	103	333+23.40		LT												1			
D11	103	333+23.40	333+46.00	RT								50							
D12	103	333+46.00		RT											1				
D13	103	333+46.00	333+46.00	RT								6							
D14	103	333+46.00		RT													1		
D15	103	333+46.00	333+99.53	RT								50							
D16	103	333+99.53		RT															
D17	103	333+99.53	334+46.68	RT					10.00										
D18	103	335+75.82		LT		1										1			
D19	103	336+28.00	336+66.00	RT	18.00			18.00											
UD20	104	362+50.94		LT & RT						13.00									120.00
UD21	104	364+43.63		LT & RT						13.00									125.00
UD22	104	365+72.05		LT & RT						13.00									120.00
UD23	104	367+69.58		LT & RT						13.00									136.00
D20	104	364+68.16		LT					9.00										
D21	104	364+68.16		LT			0.27							13	1				
D22	105	367+78.85		LT					9.67										
D23	105	367+78.85		LT			0.27							13	1				
UD40	106	1+21.21	1+76.07	LT														54.86	
UD41	106	1+33.73		LT & RT						12.00									36.00
UD42	106	1+21.21	1+55.85	RT														34.64	
UD43	106 & 107	4+39.36	7+60.00	LT														320.64	
UD44	106	4+51.75		LT & RT															32.00
UD45	106 & 107	4+19.06	7+60.00	RT														340.94	
D40	106	3+96.04	7+46.09	RT			0.27						50						
D41	106	4+47.98		RT													1		
D42	106	3+79.11	3+97.04	RT									5		1				
D43	106	4+47.98		RT					4.31										
UD50	108	3+69.53	3+93.95	LT														24.47	
UD51	108	4+20.17	4+32.40	RT														26.80	
UD52	108	5+47.15	5+72.25	LT														24.87	
UD53	108	5+68.77	5+92.97	RT														24.21	
UD60	109	924+28.67	924+52.67	LT														24.00	
UD61	109	924+33.42		LT & RT															50.00
UD62	109	924+28.67	924+52.67	RT														24.00	
UD63	109	926+59.42	927+09.42	LT														50.00	
UD64	109	926+86.17		LT & RT															50.00
UD65	109	926+59.42	927+09.42	RT														50.00	
D61	109	926+93.50		LT											1				
D62	109	926+93.50	926+93.50	LT & RT							48.00								
D63	109	926+93.50		RT											1				
D64	109	926+93.50	926+93.50	RT							11.00								
D65	109	926+93.50	-	RT													1		
D66	109	926+50.00	926+93.50	RT							44.00								
D67	109	926+50.00		RT			0.25		5.00										
TOTALS CARRIED TO GENERAL SUMMARY					**18**	**1**	**2**	**18**	**38**	**64**	**103**	**106**	**55**	**26**	**6**	**2**	**3**	**1000**	**669**

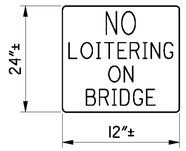
CALCULATED KJB
CHECKED JBD

PAVEMENT CALCULATIONS & SUBSUMMARIES

MAH-680-4.29

SIGNING QUANTITIES TABLE

REFERENCE NO.	SHEET NO.	STATION	SIDE	CODE	SIZE (W X H)	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND REERECTION	630 SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED	630 REMOVAL OF GROUND MOUNTED SIGN AND REERECTION
			LT/RT		IN X IN	EACH	EACH	EACH
S10	103	333+36.37		OM-H3L	12 X 36		1	1
S11	103	333+58.19	RT	OM-H3R	12 X 36	1		1
S12	103	333+58.31	RT	I-H25a	12 X 12	1		1
S13	103	334+20.33	LT	W1-8	18 X 24		1	1
S14	103	334+46.58		W1-8	18 X 24		1	1
S15	103	335+17.54	LT	I-H25a	12 X 12	1		1
S16	103	335+17.55	LT	OM-H3R	12 X 36	1		1
S17	103	335+62.02		OM-H3L	12 X 36		1	1
S20	104	362+51.14	RT	I-H25a	12 X 12	1		1
S21	104	362+51.45	RT	OM-H3R	12 X 36	1		1
S22	104	364+60.05	LT	I-H25a	12 X 12	1		1
S23	104	364+60.13	LT	OM-H3R	12 X 36	1		1
S24	105	365+71.77	RT	I-H25a	12 X 12	1		1
S25	105	365+71.84	RT	OM-H3R	12 X 36	1		1
S26	105	367+71.84	LT	OM-H3R	12 X 36	1		1
S27	105	367+71.52	LT	I-H25a	12 X 12	1		1
S28	105	365+71.18		OM-H3L	12 X 36		1	1
S40	106	1+28.81	RT	R5-10b	18 X 30	1		1
S41	106	5+32.68	RT	D10-H5a	30 X 30	1		1
S50	108	4+32.05	RT	R1-1	36 X 36	1		1
S51	108	5+51.54	LT	I-H25a	12 X 12	1		1
S61	109	924+08.75	LT	R1-1	36 X 36	2		1
S61	109	924+08.75	LT	R5-1	36 X 36			1
S61	109	924+08.75	LT	R6-1R	12 X 36			1
S62	109	924+33.00	RT	DETAIL 1	12 X 24	1		1
TOTALS CARRIED TO GENERAL SUMMARY						**19**	**5**	**25**



DETAIL 1

CALCULATED KJB
CHECKED JBD

PAVEMENT CALCULATIONS & SUBSUMMARIES

MAH-680-4.29

SHEET NO.	REFERENCE NO.	LOCATION	STATION TO STATION		SIDE	621 RPM, ONE-WAY	621 RPM, TWO-WAY (WHITE/RED)	621 RPM, TWO-WAY (YELLOW/RED)	646 EDGE LINE, WHITE	646 EDGE LINE, YELLOW	646 LANE LINE	646 CENTER LINE	646 CHANNELIZING LINE	646 TRANSVERSE/DIAGONAL LINE							
			AT/TO	FROM	LT/RT	EACH	EACH	EACH	MILE	MILE	MILE	MILE	FT	FT							
117	CL-1	℄ I-680	219+00	219+59	RT								59								
117	CL-2	℄ I-680	227+67	228+00	LT								33								
117	CL-3	℄ I-680	227+67	228+00	LT		1						33								
117	CL-4	℄ I-680	228+00	230+45	LT								245								
117	CL-5	℄ I-680	228+00	230+50	LT		6						250								
118	CL-6	℄ I-680	307+68	310+76	RT		8						308								
118	CL-7	℄ I-680	307+68	310+76	RT		8						308								
118	CL-8	℄ I-680	308+40	310+35	LT		6						195								
118	CL-9	℄ I-680	308+40	310+35	LT								195								
118	CL-10	℄ I-680	319+56	322+60	LT		8						304								
118	CL-11	℄ I-680	319+56	322+60	LT								304								
119	CL-12	℄ I-680	339+96	340+00	LT		1						4								
120	CL-13	℄ I-680	340+00	342+64	LT		6						264								
120	CL-14	℄ I-680	340+00	348+70	LT		23						870								
120	CL-15	℄ I-680	344+75	348+55	RT								380								
120	CL-16	℄ I-680	346+00	348+55	RT		7						255								
121	CL-17	℄ I-680	364+58	368+50	RT		11						392								
121	CL-18	℄ I-680	366+45	368+00	RT		5						155								
121	CL-19	℄ I-680	372+40	374+68	LT		7						228								
121	CL-20	℄ I-680	372+40	375+50	LT								310								
121	CL-21	℄ I-680	379+35	380+00	LT		2						65								
122	CL-22	℄ I-680	380+00	381+66	LT		5						166								
117	EL-1	℄ I-680	216+10	228+00	RT				0.23												
117	EL-2	℄ I-680	219+00	228+00	RT					0.17											
117	EL-3	℄ I-680	218+70	228+00	LT				0.18												
117	EL-4	℄ I-680	221+00	228+00	LT					0.13											
117	EL-5	℄ I-680	228+00	230+90	LT				0.05												
117	EL-6	℄ I-680	228+00	231+65	RT					0.07											
117	EL-7	℄ I-680	228+00	232+75	RT				0.09												
117	EL-8	℄ I-680	228+00	237+50	LT					0.18											
117	EL-9	℄ I-680	230+45	237+50	LT				0.13												
118	EL-10	℄ I-680	305+00	316+00	RT					0.21											
118	EL-11	℄ I-680	302+87	317+13	RT				0.27												
118	EL-12	℄ I-680	307+60	316+00	LT					0.16											
118	EL-13	℄ I-680	310+35	316+00	LT				0.11												
118	EL-14	℄ I-680	310+76	316+00	RT			7		0.10											
118	EL-15	℄ I-680	310+76	315+80	RT				0.10												
118	EL-16	℄ I-680	316+00	316+45	RT					0.01											
118	EL-17	℄ I-680	316+00	318+50	RT					0.05											
118	EL-18	℄ I-680	316+00	323+97	LT				0.15												
118	EL-19	℄ I-680	316+00	324+00	LT					0.15											
118	EL-20	℄ I-680	322+60	324+00	LT				0.03												
118	EL-21	℄ I-680	322+60	325+00	LT			3		0.05											
118	EL-22	℄ I-680	323+83	324+00	RT					0.01											
119	EL-23	℄ I-680	324+00	332+00	RT					0.15											
119	EL-24	℄ I-680	324+00	332+00	LT				0.15												
119	EL-25	℄ I-680	324+00	332+00	LT					0.15											
119	EL-26	℄ I-680	328+00	332+00	RT				0.08												
119	EL-27	℄ I-680	332+00	340+00	LT				0.15												
119	EL-28	℄ I-680	332+00	340+00	LT					0.15											
119	EL-29	℄ I-680	332+00	340+00	RT					0.15											
119	EL-30	℄ I-680	332+00	340+00	RT				0.15												
SUBTOTALS							104	10	1.87	1.89											
TOTALS THIS SHEET							**114**		**3.76**				**5323**								

CALCULATED JAB
CHECKED JBD

PAVEMENT MARKING SUBSUMMARY

MAH-680-4.29

SHEET NO.	REFERENCE NO.	LOCATION	STATION TO STATION		SIDE	621 RPM, ONE-WAY	621 RPM, TWO-WAY (WHITE/RED)	621 RPM, TWO-WAY (YELLOW/RED)	646 EDGE LINE, WHITE	646 EDGE LINE, YELLOW	646 LANE LINE	646 CENTER LINE	646 CHANNELIZING LINE	646 TRANSVERSE/DIAGONAL LINE							
			AT/TO	FROM	LT/RT	EACH	EACH	EACH	MILE	MILE	MILE	MILE	FT	FT							
120	EL-31	℄ I-680	340+00	351+00	RT					0.21											
120	EL-32	℄ I-680	340+00	344+75	RT				0.09												
120	EL-33	℄ I-680	340+00	351+00	LT					0.21											
120	EL-34	℄ I-680	341+00	351+00	LT				0.19												
120	EL-35	℄ I-680	345+80	351+00	RT				0.10												
120	EL-36	℄ I-680	351+00	361+00	RT					0.19											
120	EL-37	℄ I-680	351+00	361+00	RT				0.19												
120	EL-38	℄ I-680	351+00	361+00	LT				0.19												
120	EL-39	℄ I-680	351+00	361+00	LT					0.19											
121	EL-40	℄ I-680	361+00	371+00	RT					0.19											
121	EL-41	℄ I-680	361+00	368+00	RT				0.13												
121	EL-42	℄ I-680	361+00	371+00	LT				0.19												
121	EL-43	℄ I-680	361+00	371+00	LT					0.19											
121	EL-44	℄ I-680	368+50	371+00	RT				0.05												
121	EL-45	℄ I-680	371+00	372+25	LT				0.02												
121	EL-46	℄ I-680	371+00	380+00	RT					0.17											
121	EL-47	℄ I-680	371+00	377+50	RT				0.12												
121	EL-48	℄ I-680	371+00	380+00	LT					0.17											
121	EL-49	℄ I-680	375+50	379+35	LT				0.07												
122	EL-50	℄ I-680	380+00	382+00	RT					0.04											
122	EL-51	℄ I-680	380+00	384+21	LT					0.08											
117	LL-1	℄ I-680	213+00	228+00	RT	14					0.28										
117	LL-2	℄ I-680	219+59	228+00	RT						0.16										
117	LL-3	℄ I-680	217+13	227+67	LT						0.20										
117	LL-4	℄ I-680	217+13	228+00	LT	9					0.21										
117	LL-5	℄ I-680	228+00	234+00	RT	6					0.11										
117	LL-6	℄ I-680	228+00	233+11	RT						0.10										
117	LL-7	℄ I-680	228+00	240+50	LT	11					0.24										
118	LL-8	℄ I-680	302+60	316+00	RT	12					0.25										
118	LL-9	℄ I-680	306+15	307+68	RT						0.03										
118	LL-10	℄ I-680	307+60	316+00	LT	7					0.16										
118	LL-11	℄ I-680	316+00	321+00	RT	5					0.09										
118	LL-12	℄ I-680	316+00	324+00	LT	7					0.15										
118	LL-13	℄ I-680	316+45	317+62	RT						0.02										
119	LL-14	℄ I-680	324+00	332+00	LT	7					0.15										
119	LL-15	℄ I-680	328+00	332+00	RT	4					0.08										
119	LL-16	℄ I-680	332+00	340+00	LT	7					0.15										
119	LL-17	℄ I-680	332+00	340+00	RT	7					0.15										
120	LL-18	℄ I-680	340+00	351+00	RT	9					0.21										
120	LL-19	℄ I-680	340+00	351+00	LT	9					0.21										
120	LL-20	℄ I-680	348+55	351+00	RT	2					0.05										
120	LL-21	℄ I-680	348+70	351+00	LT	2					0.04										
120	LL-22	℄ I-680	351+00	361+00	RT	8					0.19										
120	LL-23	℄ I-680	351+00	361+00	RT	8					0.19										
120	LL-24	℄ I-680	351+00	361+00	LT	8					0.19										
120	LL-25	℄ I-680	351+00	361+00	LT	8					0.19										
121	LL-26	℄ I-680	361+00	371+00	RT	8					0.19										
121	LL-27	℄ I-680	361+00	371+00	RT	8					0.19										
121	LL-28	℄ I-680	361+00	371+00	LT	8					0.19										
121	LL-29	℄ I-680	361+00	371+00	LT	8					0.19										
121	LL-30	℄ I-680	371+00	380+00	LT	8					0.17										
121	LL-31	℄ I-680	371+00	380+00	LT	8					0.17										
SUBTOTALS						198			1.34	1.64											
TOTALS THIS SHEET						**198**			**2.98**		**4.90**										

CALCULATED JAB
CHECKED JBD

PAVEMENT MARKING SUBSUMMARY

MAH-680-4.29

SHEET NO.	REFERENCE NO.	LOCATION	STATION TO STATION		SIDE	621 RPM, ONE-WAY	621 RPM, TWO-WAY (WHITE/RED)	621 RPM, TWO-WAY (YELLOW/RED)	646 EDGE LINE, WHITE	646 EDGE LINE, YELLOW	646 LANE LINE	646 CENTER LINE	646 CHANNELIZING LINE	646 TRANSVERSE/DIAGONAL LINE							
			AT/TO	FROM	LT/RT	EACH	EACH	EACH	MILE	MILE	MILE	MILE	FT	FT							
121	LL-32	℄ I-680	371+45	372+40	LT						0.02										
121	LL-33	℄ I-680	371+00	380+00	RT	8					0.17										
121	LL-34	℄ I-680	371+00	380+00	RT	8					0.17										
122	LL-35	℄ I-680	380+00	387+00	RT	6					0.13										
122	LL-36	℄ I-680	380+00	390+00	LT	8					0.19										
122	LL-37	℄ I-680	380+00	390+00	LT	8					0.19										
122	LL-38	℄ I-680	380+00	385+40	RT	6					0.10										
122	LL-39	℄ I-680	381+66	387+08	LT						0.10										
122	LL-40	℄ I-680	390+00	393+00	LT	3					0.06										
122	LL-41	℄ I-680	390+00	398+50	LT	8					0.16										
118	TL-1	℄ I-680	307+68	310+76	RT									75							
120	TL-2	℄ I-680	339+96	342+64	LT									113							
121	TL-3	℄ I-680	366+45	368+50	RT									54							
108		℄ MAH-680-5.94	4+28.00	7+37.00	LT & RT							0.06									
109		℄ MAH-62-17.51	924+28.00	927+10.00	LT & RT							0.06									
109		℄ MAH-62-17.51	924+28.00	927+10.00	LT & RT				0.11												
TOTALS THIS SHEET						55			0.11		1.29	0.12		242							
SUBTOTALS						253	104	10	3.32	3.53											
TOTALS CARRIED TO GENERAL SUMMARY						367			6.85		6.19	0.12	5323	242							

CALCULATED JAB
CHECKED JBD

PAVEMENT MARKING SUBSUMMARY

MAH-680-4.29

SHEET NO.	614 WORK ZONE IMPACT ATTENUATOR	614 WORK ZONE RAISED PAVEMENT MARKER, A.P.P.	614 WORK ZONE LANE LINE, CLASS I, A.P.P.	614 WORK ZONE EDGE LINE, CLASS I, A.P.P.	614 WORK ZONE CHANNELIZING LINE, CLASS I, A.P.P.	614 WORK ZONE DOTTED LINE, CLASS I, A.P.P.	614 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED	622 PORTABLE CONCRETE BARRIER, 50", A.P.P.	690 SPECIAL- RUMBLE STRIPS
	EACH	EACH	MILE	MILE	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT
24	1	115		0.36	1400		710			
25		73	0.15	0.52			1200		400	
26	1	41	0.15	0.60			700		800	
27		41	0.21	0.73	834	391	1050		1100	
28	2	199	0.13	0.76	1335		1150		1000	
29		87	0.10	0.56	510	144	1000		1000	
30		120		0.45	900		900		900	
31	1	6		0.31	50		860			
32		65	0.08	0.15	888				135	
33		120		0.30	800				400	
34	1	120		0.30	800		110	230		164
35	1	52	0.15	0.54	1251					
36		57	0.13	0.38	405	390				
37	1	76		0.38	1000		750			
38	1	165		0.39	1181				240	
39		86	0.17	0.40	1238	540			195	204
40										
41			0.02	0.04		500				
42		20	0.15	0.15	545				135	204
43	1	169	0.02	0.52	700				800	
44	1	70		0.60	800		70		1030	
45		48	0.18	0.86	937	384			1100	
46	1	228		0.76	2134				1000	
47	1	35	0.20	0.73	990	158	620		1000	92
48		218		0.51	1747	281			900	92
49		82	0.37	0.21	892				195	
50	1	109	0.10	0.31	1350		710			
51		51	0.06	0.37	294		1400			
52				0.15			500			
53	2			0.40	424		870			
54				0.19			1000			
55			0.02	0.17			1340			
56	1		0.10	0.37			860			
57	1	395		0.70	4312		1700			
58	1	179		0.29	2129		660			
59	1	373	0.09	0.73	3800		480			
60	1	260		0.51	2833		100			
61	1	38		0.43	937	300	1460			
62	1	48		0.34	1170	450	150			
63		54		0.10	550					
64	1	272		0.62	2865	978	650			
65	1	100		0.42	1786	634	50			
66		70		0.16	650					
67	2	129	0.22	0.65	2294	100	770			
68		16	0.33	0.29	926	159				
69		30		0.04	550					
70	1	274		0.74	4314		650			
71	1	224		0.26	2920		100			
72		37	0.07	0.04	438					
73	1	354		0.67	3723		800			
74	1	276		0.38	3300		150			
TOTALS CARRIED TO GENERAL SUMMARY	**31**	**5582***	**3.20**	**20.84**	**62902**	**5409**	**23520**	**230**	**12330**	**756***

SHEET NO.	614 WORK ZONE IMPACT ATTENUATOR	614 SPECIAL- WORK ZONE TRAFFIC SIGNAL	614 WORK ZONE CENTER LINE, CLASS I	614 WORK ZONE EDGE LINE, CLASS I	614 WORK ZONE STOP LINE, CLASS I	622 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED
	EACH	EACH	MILE	MILE	FOOT	FOOT	FOOT
78	1	2		0.19	24	220	150
79	2		0.10	0.21		280	
TOTALS CARRIED TO GENERAL SUMMARY	**3**	**2**	**0.10**	**0.40**	**24**	**500**	**150**

* TOTAL CARRIED TO MAINTENANCE OF TRAFFIC NOTES

CALCULATED JAB
CHECKED JBD

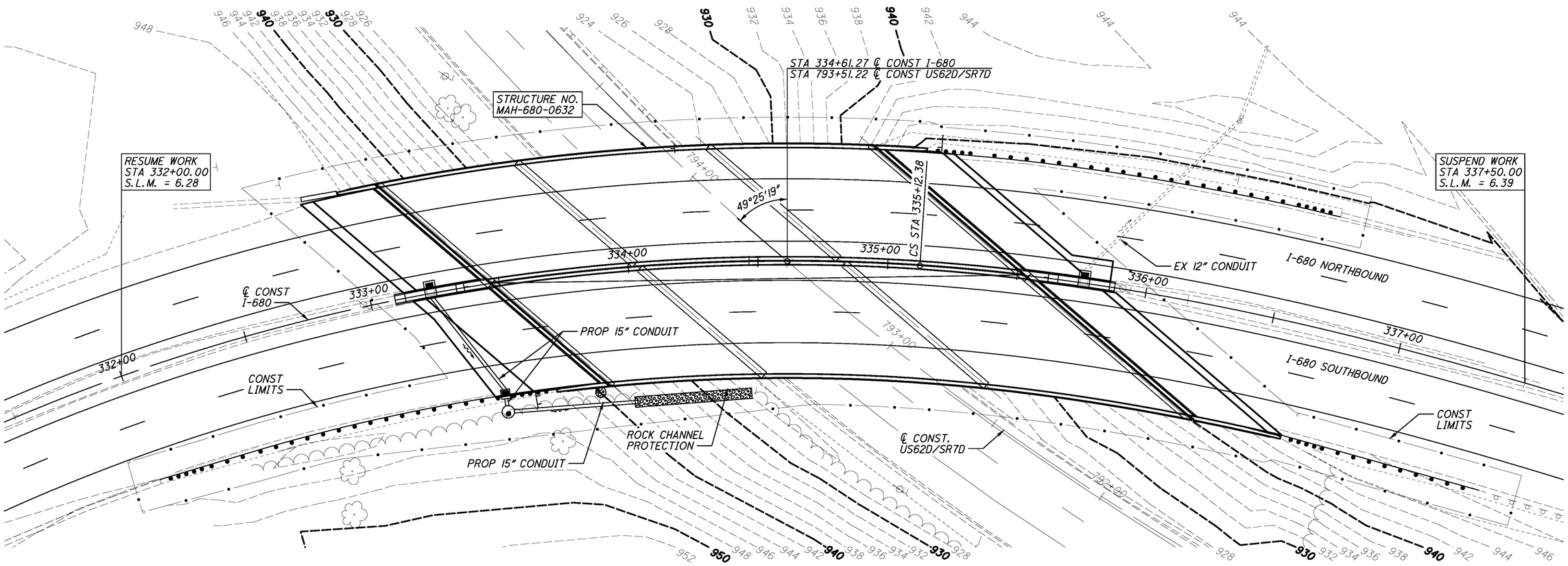
MAINTENANCE OF TRAFFIC SUBSUMMARY

MAH-680-4.29

PROJECT DESCRIPTION

The project consists of replacing the existing superstructure for the I-680 bridge over US62D/SR7D, including associated approach roadway reconstruction, in the City of Youngstown, Mahoning County, Ohio.

PROJECT DATA			
Total Area (Right-Of-Way)	0.95 Ac	Runoff Coefficient for Pre-Construction Site	0.83
Project Earth Disturbed Area	0.19 Ac	Runoff Coefficient for Post Construction Site	0.83
Estimated Contractor Earth Disturbed Area	1.00 Ac	Post Construction BMP:	
Notice of Intent Earth Disturbed Area	4.90 Ac		
Impervious (Paved) Area for Pre-Construction Site	0.74 Ac	Immediate Receiving Waters	N/A
Impervious (Paved) Area for Post Construction Site	0.74 Ac	Subsequent Receiving Water	N/A



I-680 SPIRAL DATA

P.I. STA. 333+23.32	x = 397.27'
Δ = 68° 50' 21" (RT)	y = 34.72'
Dc = 7° 29' 48"	k = 199.54'
R = 764.29'	p = 8.70'
Ls = 400.00'	Δc = 38° 51' 10" (RT)
θs = 14° 59' 36"	Lc = 518.27'
LT = 267.63'	Ts = 729.21'
ST = 134.21'	Es = 172.76'

USGS Quadrant No. 4866 II SW
Youngstown, Ohio
Longitude: W80°39'02"*
Latitude: N41°05'26"*

* Longitude and Latitude to Approx. Center of Project

LEGEND

- INLET NO. 3B
- CATCH BASIN NO. 3A
- MANHOLE NO. 3
- EX CATCH BASIN

HORIZONTAL SCALE IN FEET

CALCULATED KJB
CHECKED JBD

PROJECT SITE PLAN - I-680
STA 332+00 TO 337+50

MAH-680-4.29

98
307

RESUME WORK
STA 362+00.00
S.L.M. = 6.86

SUSPEND WORK
STA 368+00.00
S.L.M. = 6.97

STRUCTURE NO.
MAH-680-0687

STRUCTURE NO.
MAH-680-0693

ROCK CHANNEL
PROTECTION

PROPOSED
15" CONDUIT

I-680 NORTHBOUND

I-680 SOUTHBOUND

DELASON AVENUE

EX. 12' X 6'
CULVERT

HORIZONTAL
SCALE IN FEET
0 10 20 40

CALCULATED MJP
CHECKED JBD

PROJECT SITE PLAN - I-680
STA 362+00 TO 368+00

MAH-680-4.29

99
307

PROJECT DESCRIPTION
The project consists of replacing the existing superstructure for the I-680 bridge over Delason Avenue and the I-680 bridge over the Youngstown & Southeastern Railroad, including associated approach roadway reconstruction, in the City of Youngstown, Mahoning County, Ohio

LEGEND

- INLET NO. 3B
- CATCH BASIN NO. 3A
- EX CATCH BASIN

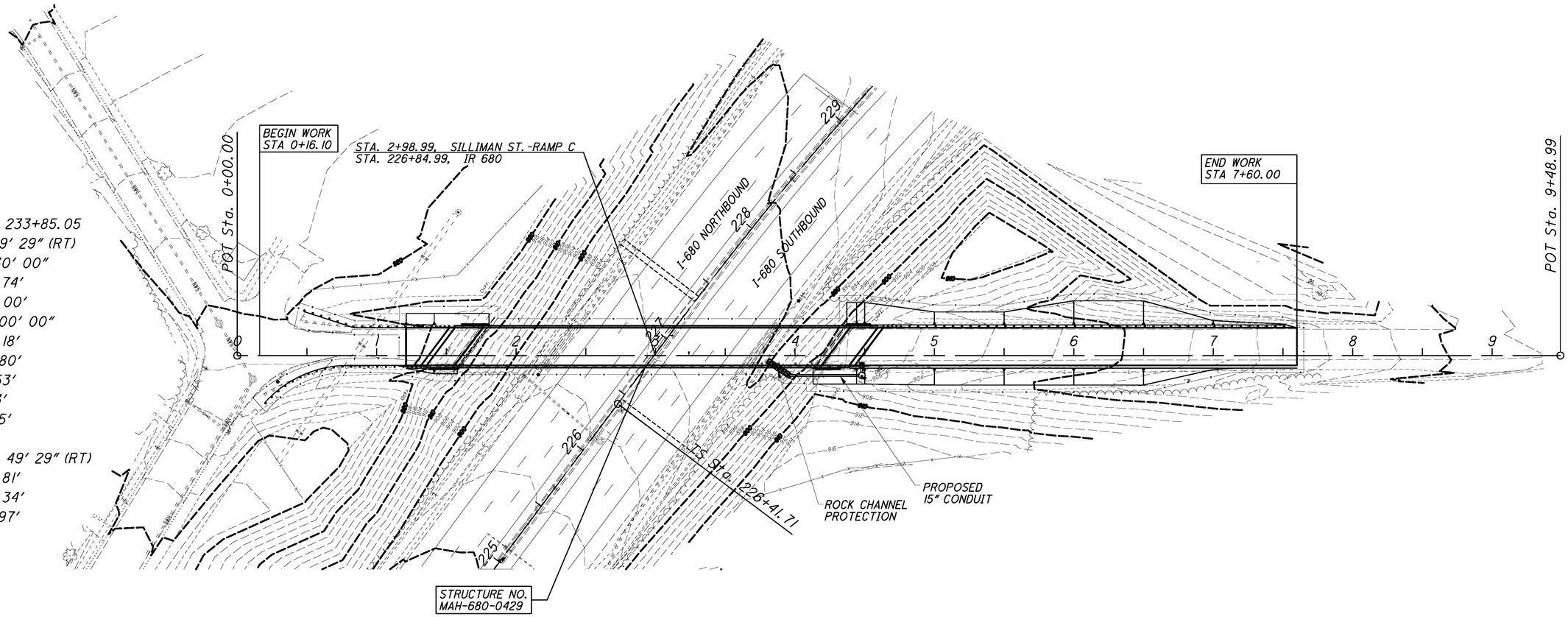
USGS Quadrant Product No. 86490
Youngstown, Ohio
*Longitude: W80°38'56"**
*Latitude: N41°04'56"**
** Longitude and Latitude to Approx. Center of Project*

I-680 CURVE DATA

P.I. STA. 366+79.11	x = 398.53'
Δ = 89° 50' 35" (LT)	y = 25.53'
Dc = 5° 30' 01"	k = 199.75'
R = 1,041.70'	p = 6.39'
Ls = 400.00'	Δc = 67° 50' 32" (LT)
θs = 11° 00' 01"	Lc = 1,233.45'
LT = 267.18'	Ts = 1,244.98'
ST = 133.80'	Es = 438.50'

PROJECT DATA

Total Area (Right-Of-Way)	2.212 Ac	Runoff Coefficient for Pre-Construction Site	0.555
Project Earth Disturbed Area	0.596 Ac	Runoff Coefficient for Post Construction Site	0.555
Estimated Contractor Earth Disturbed Area	1.000 Ac	Post Construction BMP:	
Notice of Intent Earth Disturbed Area	4.90 Ac		
Impervious (Paved) Area for Pre-Construction Site	1.126 Ac	Immediate Receiving Waters	N/A
Impervious (Paved) Area for Post Construction Site	1.126 Ac	Subsequent Receiving Water	N/A



P.I. STA. 233+85.05
Δ = 54° 49′ 29″ (RT)
Dc = 5° 30′ 00″
R = 1,041.74′
Ls = 400.00′
θs = 11° 00′ 00″
LT = 267.18′
ST = 133.80′
x = 398.53′
y = 25.53′
k = 199.75′
p = 6.39′
Δc = 32° 49′ 29″ (RT)
Lc = 596.81′
Ts = 743.34′
Es = 138.97′

PROJECT DESCRIPTION
The project consists of replacing the existing superstructure and raising the profile for the Silliman Street-Ramp C bridge over I-680 including associated approach roadway reconstruction, in the City of Youngstown, Mahoning County, Ohio

LEGEND

- MANHOLE NO. 3
- CATCH BASIN NO. 3A
- EX CATCH BASIN

USGS Quadrant Product No. 86490
Youngstown, Ohio
Longitude: W80°40′18″*
Latitude: N41°06′18″*
* Longitude and Latitude to Approx. Center of Project

I-680 CURVE DATA

P.I. STA. 366+79.11	x = 398.53′
Δ = 89° 50′ 35″ (LT)	y = 25.53′
Dc = 5° 30′ 01″	k = 199.75′
R = 1,041.70′	p = 6.39′
Ls = 400.00′	Δc = 67° 50′ 32″ (LT)
θs = 11° 00′ 01″	Lc = 1,233.45′
LT = 267.18′	Ts = 1,244.98′
ST = 133.80′	Es = 438.50′

PROJECT DATA			
Total Area (Right-Of-Way)	1.708 Ac	Runoff Coefficient for Pre-Construction Site	0.49
Project Earth Disturbed Area	0.594 Ac	Runoff Coefficient for Post Construction Site	0.50
Estimated Contractor Earth Disturbed Area	1.000 Ac	Post Construction BMP:	
Notice of Intent Earth Disturbed Area	4.90 Ac		
Impervious (Paved) Area for Pre-Construction Site	0.356 Ac	Immediate Receiving Waters	N/A
Impervious (Paved) Area for Post Construction Site	0.396 Ac	Subsequent Receiving Water	N/A

HORIZONTAL SCALE IN FEET
0 20 40 80

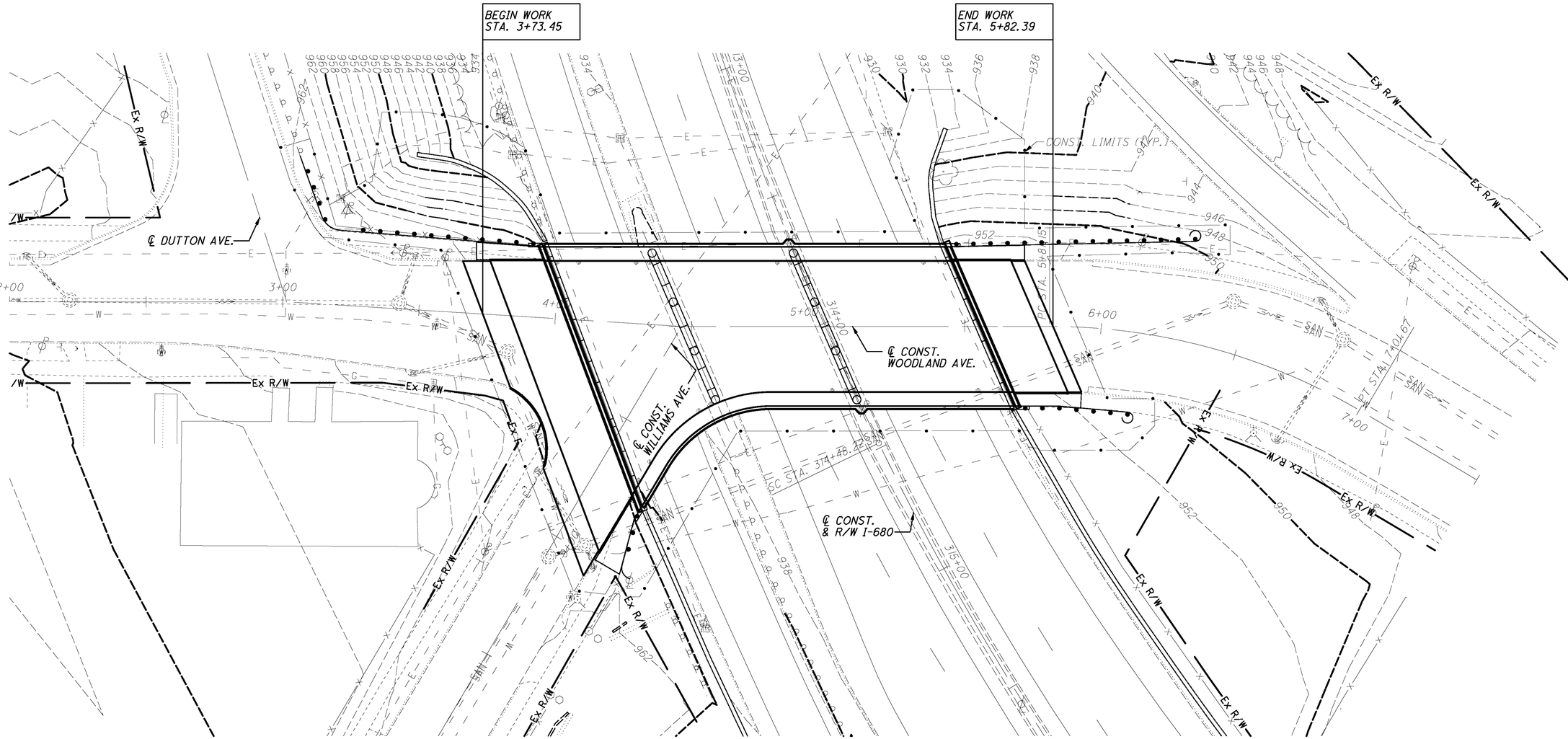
CALCULATED MJP
CHECKED JBD

PROJECT SITE PLAN - SILLIMAN ST.-RAMP C
STA 0+16.10 TO STA 7+60.00

MAH-680-4.29

100
307

PROJECT DATA	
Total Area (Right-Of-Way)----------0.57 Ac	Runoff Coefficient for Pre-Construction Site ----------0.79
Project Earth Disturbed Area ------0.26 Ac	Runoff Coefficient for Post Construction Site ----------0.79
Estimated Contractor Earth Disturbed Area --------1.00 Ac	Post Construction BMP: N/A
Notice of Intent Earth Disturbed Area ----------4.90 Ac	
Impervious (Paved) Area for Pre-Construction Site --------0.42 Ac	Immediate Receiving Waters ---Storm Sewer
Impervious (Paved) Area for Post Construction Site --------0.42 Ac	Subsequent Receiving Water---------- N/A



LEGEND

- EX MANHOLE
- EX CATCH BASIN

USGS Quadrant No. 4866 II SW
YOUNGSTOWN OHIO
Longitude: W80°39'22"*
Latitude: N41°05'38"*

* Longitude and Latitude to Approx. Center of Project

PROJECT DESCRIPTION

This project consists of removal and replacement of the concrete deck, bridge rails, pedestrian fence, approach slabs, abutment bearings, and portions of the substructure. Other work includes spot painting of existing structural steel, patching portions of the existing substructure, and sealing concrete surfaces. Traffic is to be maintained over the structure during construction. The Woodland Ave. bridge over I-680 has an east-west orientation and is located in the City of Youngstown, Mahoning County, Ohio.

HORIZONTAL SCALE IN FEET
0 10 20 40

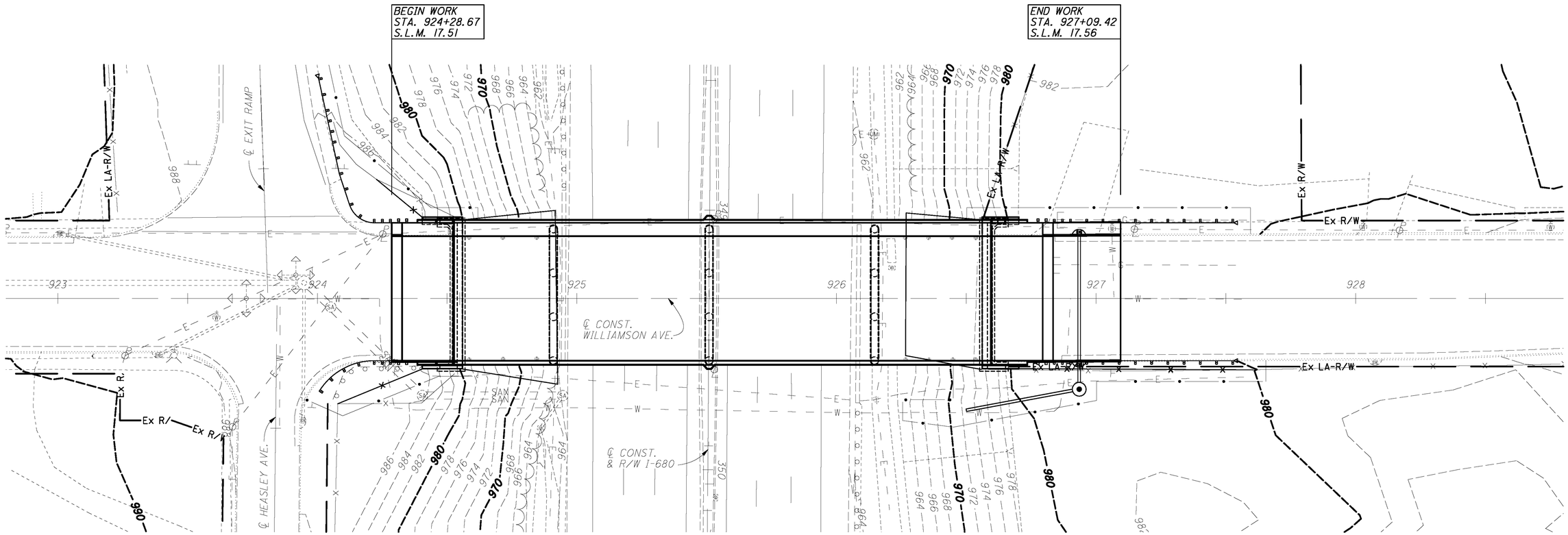
CALCULATED K.J.J
CHECKED J.B.D

PROJECT SITE PLAN - WOODLAND AVE.
STA. 2+00 TO STA. 7+50

MAH-680-4.29

101
307

PROJECT DATA			
Total Area (Right-Of-Way)	0.87 Ac	Runoff Coefficient for Pre-Construction Site	0.85
Project Earth Disturbed Area	0.21 Ac	Runoff Coefficient for Post Construction Site	0.85
Estimated Contractor Earth Disturbed Area	1.00 Ac	Post Construction BMP:	N/A
Notice of Intent Earth Disturbed Area	4.90 Ac		
Impervious (Paved) Area for Pre-Construction Site	0.78 Ac	Immediate Receiving Waters	Storm Sewer
Impervious (Paved) Area for Post Construction Site	0.78 Ac	Subsequent Receiving Water	N/A



USGS Quadrant No. 4866 II SW
YOUNGSTOWN OHIO
Longitude: W80°39'00"*
Latitude: N41°05'11"*

* Longitude and Latitude to Approx. Center of Project

LEGEND

- MANHOLE NO. 3
- CATCH BASIN NO. 3A
- EX CATCH BASIN

PROJECT DESCRIPTION

The project consists of replacing the existing superstructure for the Williamson Ave. bridge over I-680, including associated approach roadway reconstruction in the City of Youngstown, Mahoning County, Ohio.

HORIZONTAL SCALE IN FEET
0 10 20 40

GJS
CHECKED JBD

PROJECT SITE PLAN - WILLIAMSON AVE.
STA. 922+80 TO STA. 928+80

MAH-680-4.29

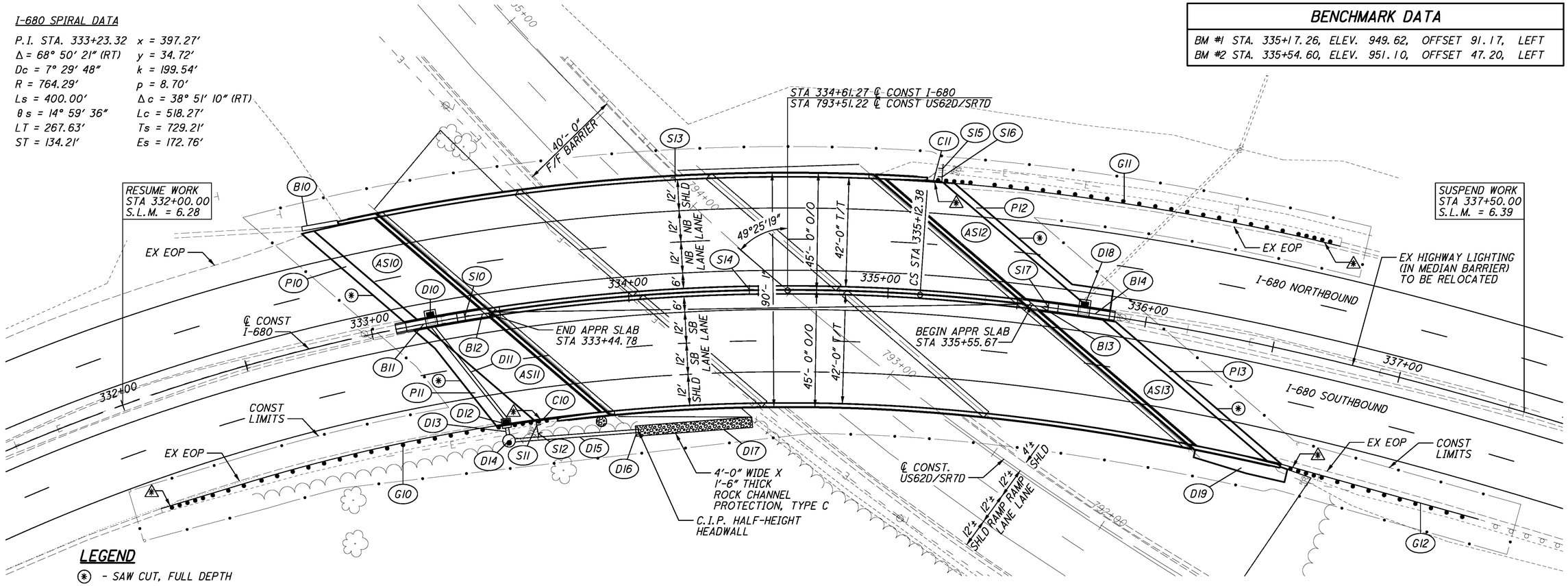
102
307

I-680 SPIRAL DATA

P.I. STA. 333+23.32	x = 397.27'
Δ = 68° 50' 21" (RT)	y = 34.72'
Dc = 7° 29' 48"	k = 199.54'
R = 764.29'	p = 8.70'
Ls = 400.00'	Δc = 38° 51' 10" (RT)
θs = 14° 59' 36"	Lc = 518.27'
LT = 267.63'	Ts = 729.21'
ST = 134.21'	Es = 172.76'

BENCHMARK DATA

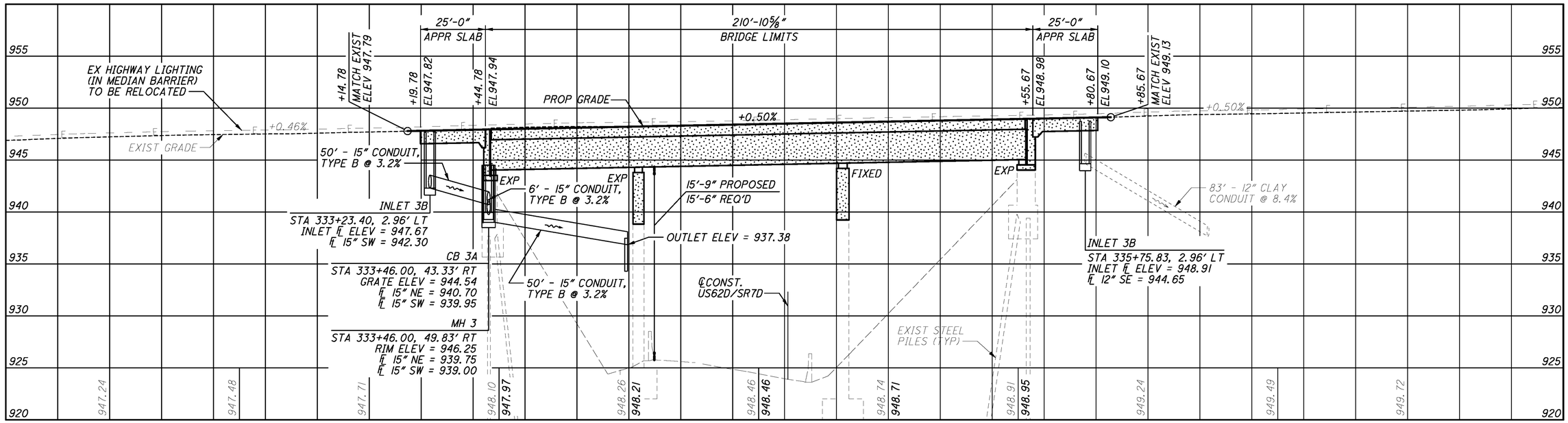
BM #1 STA. 335+17.26, ELEV. 949.62, OFFSET 91.17, LEFT
BM #2 STA. 335+54.60, ELEV. 951.10, OFFSET 47.20, LEFT



LEGEND

⊛ - SAW CUT, FULL DEPTH

⋔ - BRIDGE TERMINAL ASSEMBLY, TYPE I



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED KJB
CHECKED JBD

PLAN AND PROFILE - I-680
STA 332+00 TO 337+50

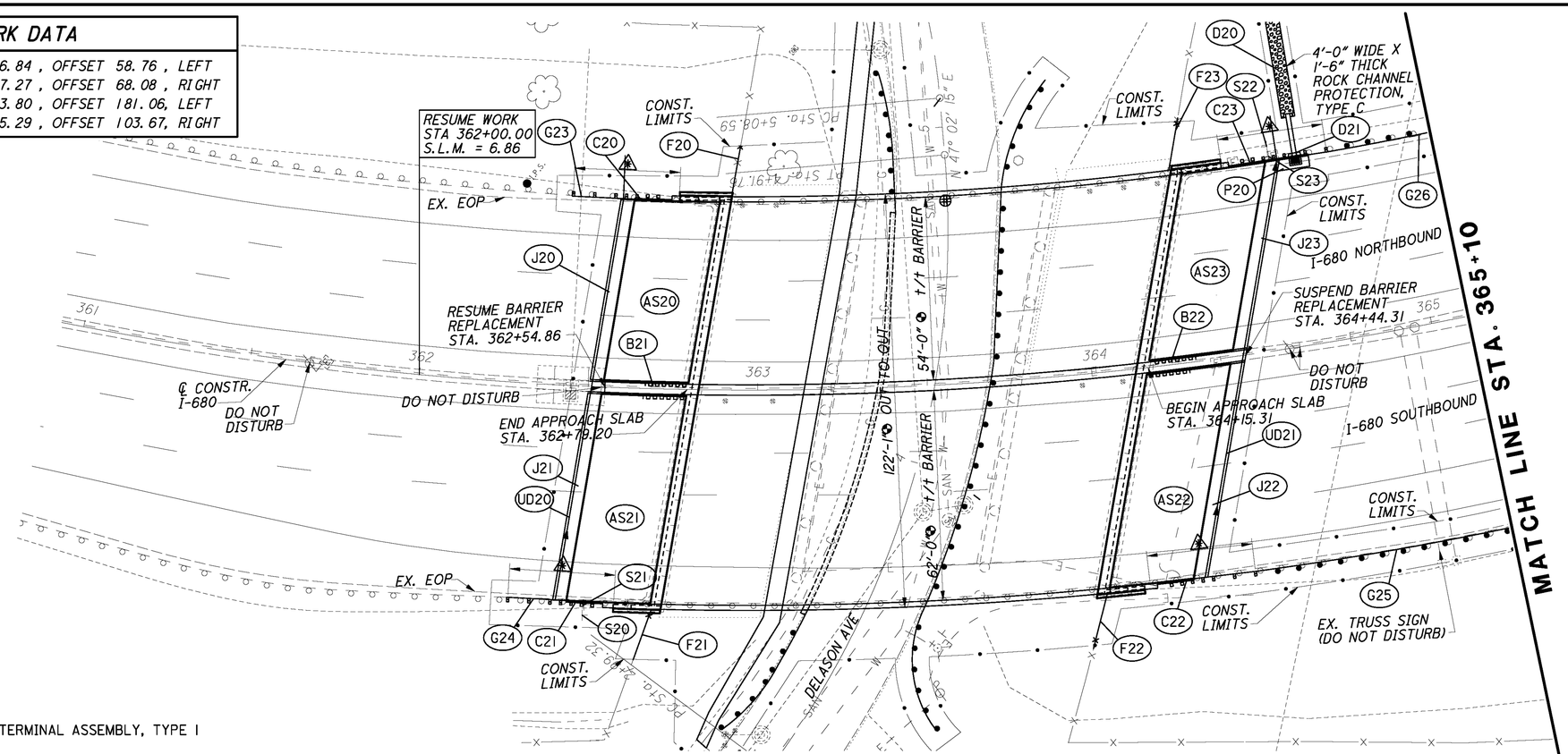
MAH-680-4.29

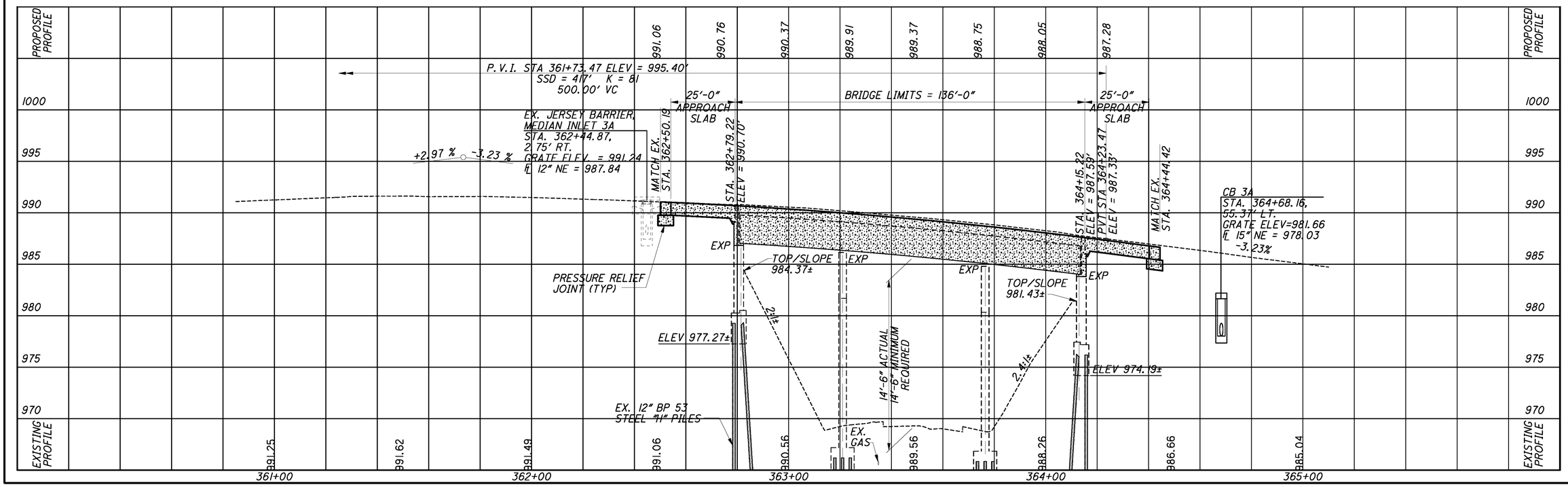
BENCHMARK DATA

BM #1	STA. 362+27.95,	ELEV. 986.84 ,	OFFSET 58.76 ,	LEFT
BM #2	STA. 365+61.38,	ELEV. 987.27 ,	OFFSET 68.08 ,	RIGHT
BM #3	STA. 363+52.26,	ELEV. 963.80 ,	OFFSET 181.06,	LEFT
BM #4	STA. 363+42.18,	ELEV. 975.29 ,	OFFSET 103.67,	RIGHT

P.I. STA. 366+79.11
Δ = 89° 50' 35" (LT)
Dc = 5° 30' 01"
R = 1,041.70'
Ls = 400.00'
θs = 11° 00' 01"
LT = 267.18'
ST = 133.80'
x = 398.53'
y = 25.53'
k = 199.75'
p = 6.39'
Δc = 67° 50' 32" (LT)
Lc = 1,233.45'
Ts = 1,244.98'
Es = 438.50'

⚠- BRIDGE TERMINAL ASSEMBLY, TYPE I





PLAN AND PROFILE - I-680
STA. 360+85 TO STA. 365+10

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MJP
CHECKED JBD

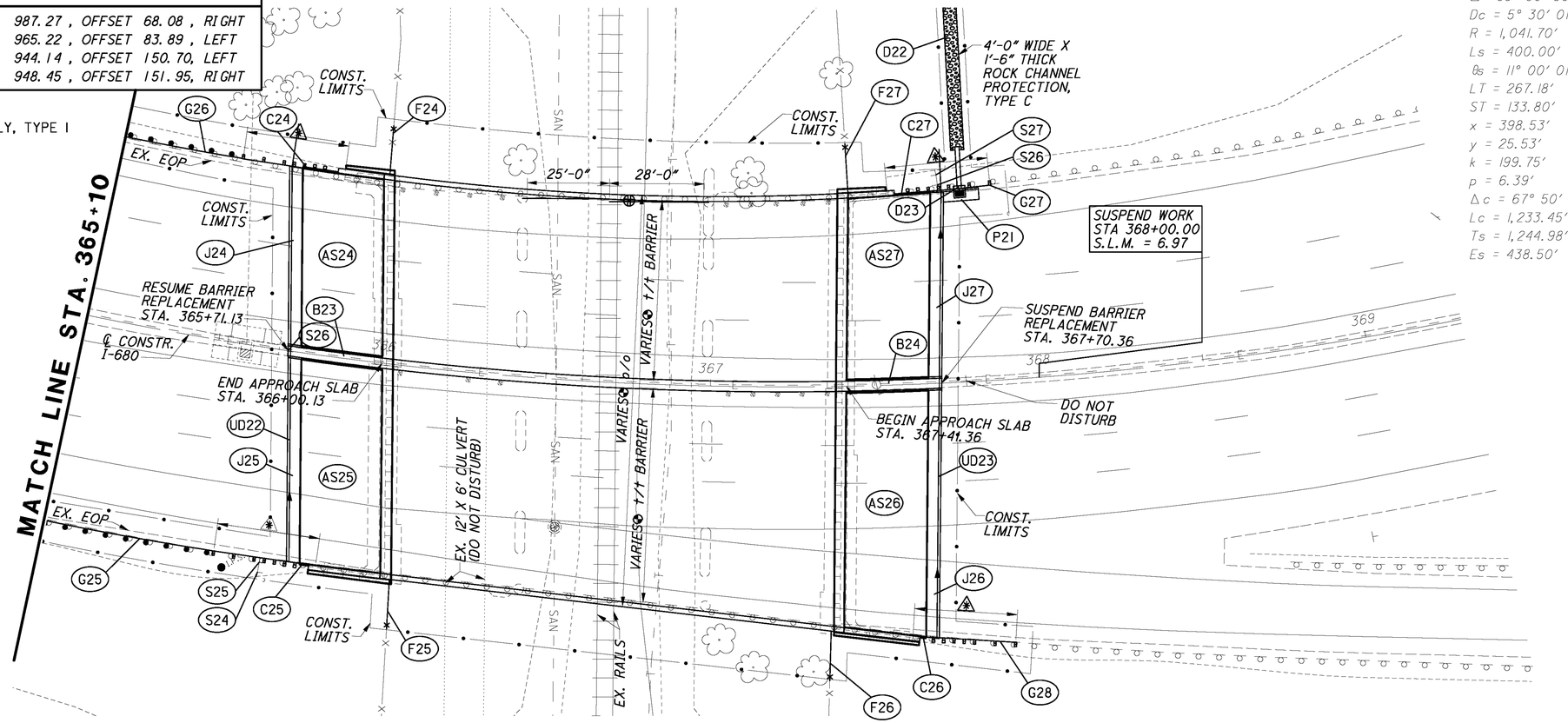
MAH-680-4.29

104
307

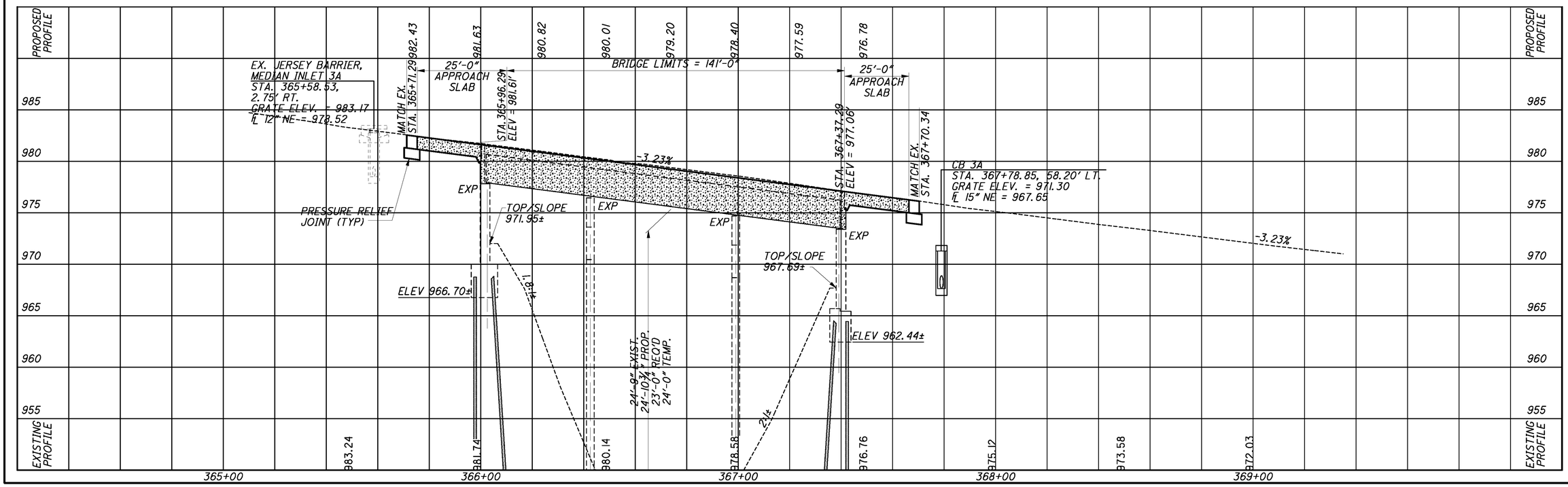
BENCHMARK DATA

BM #1	STA. 365+61.38,	ELEV. 987.27 ,	OFFSET 68.08 ,	RIGHT
BM #2	STA. 369+39.60,	ELEV. 965.22 ,	OFFSET 83.89 ,	LEFT
BM #3	STA. 366+81.01,	ELEV. 944.14 ,	OFFSET 150.70,	LEFT
BM #4	STA. 366+58.29,	ELEV. 948.45 ,	OFFSET 151.95,	RIGHT

⚠ - BRIDGE TERMINAL ASSEMBLY, TYPE I



P.I. STA. 366+79.11
Δ = 89° 50' 35" (LT)
Dc = 5° 30' 01"
R = 1,041.70'
Ls = 400.00'
θs = 11° 00' 01"
LT = 267.18'
ST = 133.80'
x = 398.53'
y = 25.53'
k = 199.75'
p = 6.39'
Δc = 67° 50' 32" (LT)
Lc = 1,233.45'
Ts = 1,244.98'
Es = 438.50'



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MJP
CHECKED JBD

PLAN AND PROFILE - I-680
STA. 365+10 TO STA. 369+35

MAH-680-4.29

105
307

SUE TEST HOLE #5A
STA. 1+02.05, 19.76' LT.
921.25' SURFACE ELEV
916.55' TOP OF42" WATERLINE

SUE TEST HOLE #5
STA. 0+97.56, 23.98' LT.
920.37' SURFACE ELEV
916.63' TOP OF 42" WATERLINE

BEGIN WORK
STA. 0+16.10

CONSTR. LIMITS

6.2' CONC. CAP ON 42" WATERLINE

DO NOT DISTURB

SUE TEST HOLE #8A
STA. 0+79.45, 11.69' RT
921.39' SURFACE ELEV
917.48' TOP OF 42" WATERLINE

SUE TEST HOLE #8
STA. 0+71.77, 11.66' RT.
921.73' SURFACE ELEV
917.78' TOP OF 42" WATERLINE

℄ CONST & ℄ R/W, I-680

EX. TRUSS SIGN

30'-0" O/O
27'-0" F/F PARAPET

53°03'42"

STA. 2+98.99, SILLIMAN ST. RAMP C
STA. 226+84.99, IR 680

RELOCATE BY OTHERS

TS STA. 226+17.77

EX. I-680 SPIRAL DATA

P.I. STA. 233+85.05	x = 398.53'
Δ = 54° 49' 29" (RT)	y = 25.53'
Dc = 5° 30' 00"	k = 199.75'
R = 1,041.74'	p = 6.39'
Ls = 400.00'	Δc = 32° 49' 29" (RT)
θs = 11° 00' 00"	Lc = 596.81'
LT = 267.18'	Ts = 743.34'
ST = 133.80'	Es = 138.97'

DO NOT DISTURB
S 32° 21' 13" E

℄ CONST. RAMP C

BURIED (DO NOT DISTURB)

BENCHMARK DATA

BM #1	STA.	0+00.00,	ELEV. 921.73 ,	OFFSET 0.00 ,
BM #2	STA.	1+75.77,	ELEV. 921.30 ,	OFFSET 46.29 , LEFT
BM #3	STA.	4+58.35,	ELEV. 908.95 ,	OFFSET 8.38 , RIGHT
BM #4	STA.	4+60.39,	ELEV. 906.91 ,	OFFSET 26.32 , LEFT

△ - BRIDGE TERMINAL ASSEMBLY, TYPE I

PROP ELEV: 920.30 | 919.45 | 918.60 | 917.75 | 916.90 | 916.04 | 915.19 | 914.34 | 913.49 | 912.64 | 911.79 | 910.94 | 910.09 | 909.23 | 908.30 | 907.29 | 906.20 | 905.02 | 903.75

638'-9 9/16"

263'-1 1/2"± BRIDGE LIMITS

20'-0" APPROACH SLAB

MATCH EX. STA. 1+21.21 ELEV. 920.43

STA. 1+41.17 ELEV. 919.75

STA. 1+61.17 ELEV. 919.07

CONC. CAP ON 42" WATERLINE

PRESSURE RELIEF JOINT (TYP)

-2.79

EXP

ELEV. 906.10±

-3.40

16'-3" PROP MIN. 15'-6" REQ'D

ELEV. 889.27±

15'-10" PROP MIN. 15'-6" REQ'D

ELEV. 888.27±

℄ 14.25' RT. ELEV. 898.00

51'-15" CMP, TYPE C

CONCRETE HEADWALL SEE STD DWG HW-2.1 FOR DETAILS

ROCK CHANNEL PROTECTION TYPE C, WITH FILTER FABRIC

ELEV. 884.27±

STA. 4+24.31 ELEV. 910.11

STA. 4+40 ELEV. 909.58

20'-0" APPROACH SLAB

135'-0" V.C. K=74 P.V.I. STA. 5+07.50 ELEV. 907.28

CB 3A
STA. 4+47.98, 7.08' LT.
GRATE ELEV. = 909.04
℄ 15" SW = 905.40

MH TYPE 3
STA. 4+47.98, 14.25' RT.
RIM ELEV. = 908.25
℄ 15" NE = 904.32
℄ 15" NW = 903.00

ELEV. 895.92±

5'-15" CMP, TYPE C

-3.40

-5.22

50'-0"

STA. 5+75.00 ELEV. 903.75

EXIST ELEV: 921.03 | 919.23 | 917.27 | 915.27 | 913.27 | 911.24 | 909.26 | 907.31 | 905.34 | 903.41 | EXIST ELEV 910.40

925 920 915 910 905 900 895 890 885

0+00 1+00 2+00 3+00 4+00 5+00 6+00

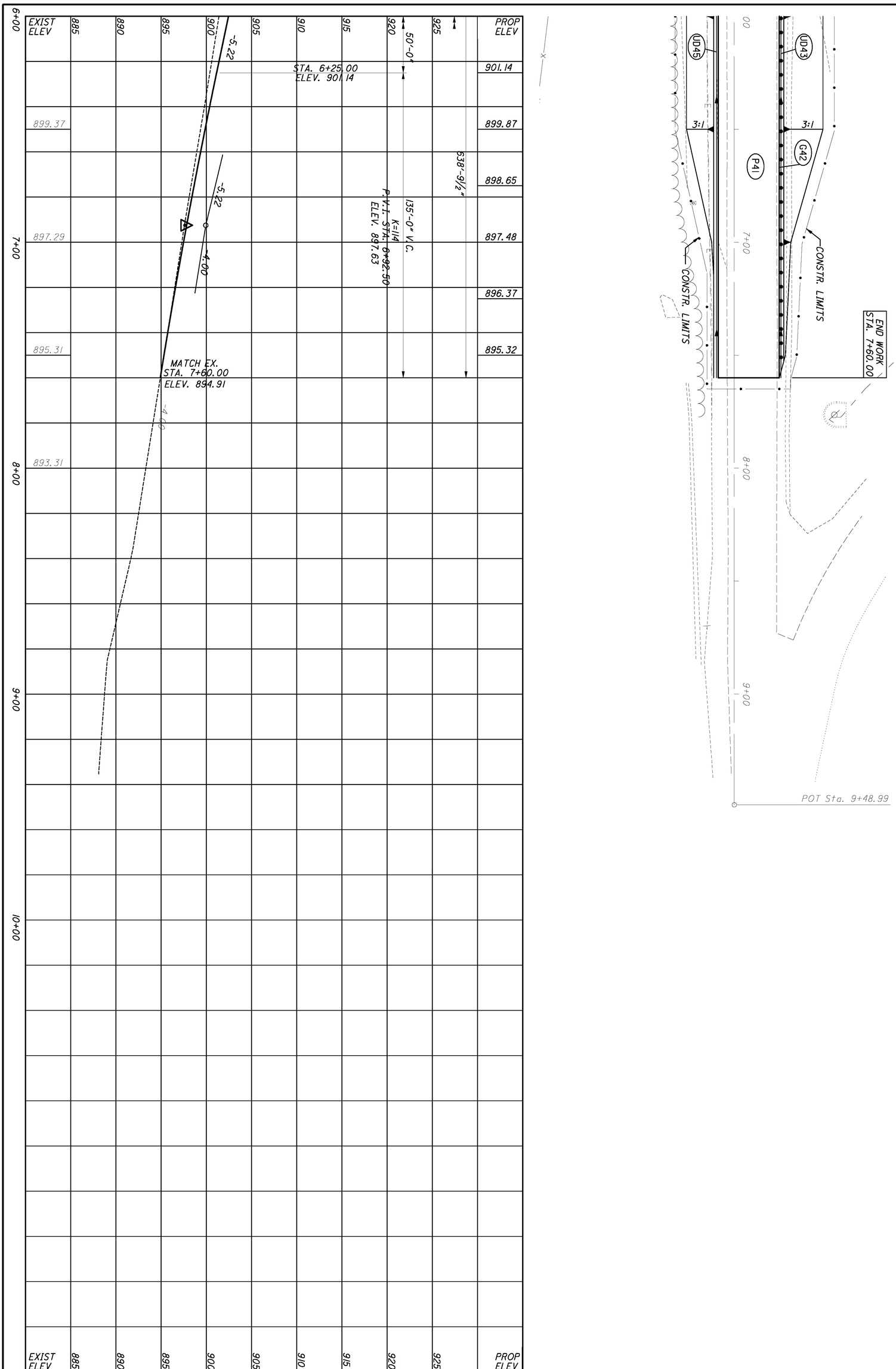
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MJP
CHECKED JBD

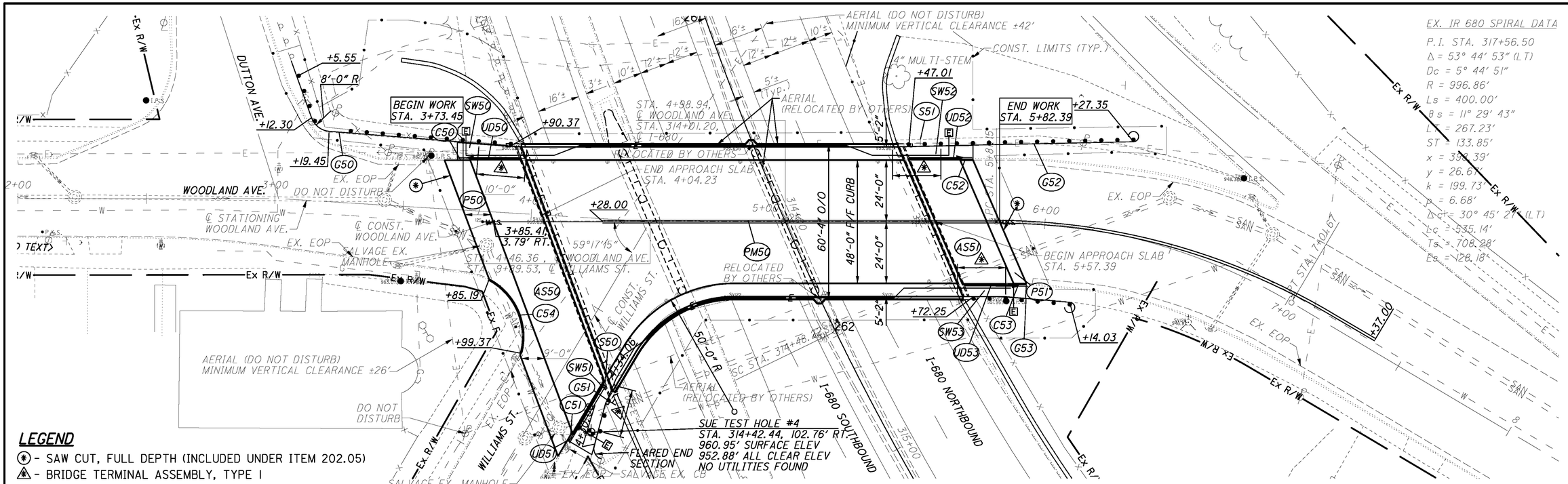
PLAN AND PROFILE - RAMP C
STA. 0+00 TO STA. 6+00

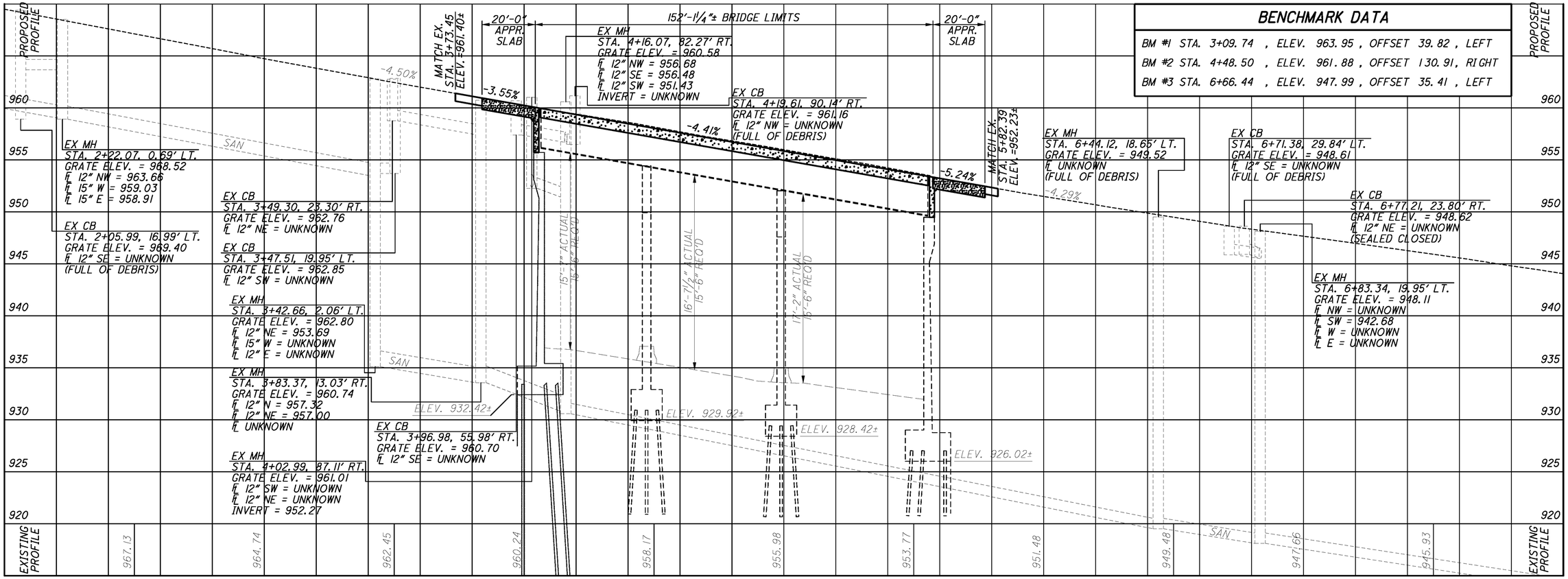
MAH-680-4.29

106
307



307 / 107	MAH-680-4.29	PLAN AND PROFILE - RAMP C STA. 6+00 TO STA. 9+48.99	CALCULATED MJP CHECKED JBD	0 20 10 40 HORIZONTAL SCALE IN FEET





BENCHMARK DATA

BM #1	STA. 3+09.74	ELEV. 963.95	OFFSET 39.82	LEFT
BM #2	STA. 4+48.50	ELEV. 961.88	OFFSET 130.91	RIGHT
BM #3	STA. 6+66.44	ELEV. 947.99	OFFSET 35.41	LEFT

BENCHMARK DATA

BM #1 STA. 923+52.97, ELEV. 988.36 , OFFSET 30.25 , RIGHT
BM #2 STA. 926+97.54, ELEV. 981.15 , OFFSET 63.19 , RIGHT

BEGIN WORK
STA. 924+28.67
S.L.M. 17.51

END WORK
STA. 927+09.42
S.L.M. 17.56

℄ EXIT RAMP
Ex LA-R/W
AERIAL (DO NOT DISTURB)
AERIAL (DO NOT DISTURB)
℄ HEASLEY AVE.
Ex R/W
Ex R/W
Ex R.
S61
G61
F61
CONST. LIMITS
UD60
UD61
AS61
J61
UD62
G62
F62
CONST. LIMITS
END APPROACH SLAB STA. 924+52.67
AERIAL (RELOCATE BY OTHERS)
RELOCATE BY OTHERS
STA. 925+50.92, ℄ WILLIAMSON AVE.
STA. 349+33.98, ℄ I-680
90°00'00"
N 88°02'16" E
℄ CONST. WILLIAMSON AVE.
56'-0" O/O
48'-0" F/F CURB
24'-0"
24'-0"
℄ CONST. & R/W I-680
RELOCATE BY OTHERS
FIBER OPTIC AERIAL (RELOCATE BY OTHERS)
5'-2"
BEGIN APPROACH SLAB STA. 926+59.42
ABANDON DRIVE
Ex LA-R/W
UD63
UD64
AS62
UD65
C61
C62
P61
SW61
D61
G63
CONST. LIMITS
Ex R/W
Ex LA-R/W
C.I.P. HALF-HEIGHT HEADWALL
D67
D66
D63
G64
D64
D65
F63
CONST. LIMITS
4'-0" WIDE X 1'-6" THICK ROCK CHANNEL PROTECTION, TYPE C

SUE TEST HOLE #3
STA. 927+65.85, 30.32' LT.
980.37' SURFACE ELEV
978.82' TOP OF 2" STEEL GAS

SUE TEST HOLE #9
STA. 927+14.72, 12.71' LT.
980.97' SURFACE ELEV
978.87' TOP OF 6" STEEL GAS

SUE TEST HOLE #10
STA. 926+94.00, 0.11' LT.
981.44' SURFACE ELEV
976.87' TOP OF 8" CAST IRON WATER

SUE TEST HOLE #7
STA. 926+87.63, 35.44' RT.
981.23' SURFACE ELEV
975.87' TOP OF 8" CAST IRON WATER

SUE TEST HOLE #6
STA. 926+51.98, 43.83' RT.
974.09' SURFACE ELEV
971.19' TOP OF 8" CAST IRON WATERLINE

LEGEND
- ✱ - SAW CUT, FULL DEPTH
- ✱ - BRIDGE TERMINAL ASSEMBLY, TYPE I

PROPOSED PROFILE
EXISTING PROFILE

986.38 985.91 985.44 984.96 984.49 984.02 983.55 983.07 982.60 982.03 981.37

EX CB
STA. 923+00.75, 24.97' LT.
GRATE ELEV. = 989.30
℄ 12" SE = UNKNOWN
(FULL TO THE RIM)

EX CB
STA. 923+38.51, 21.87' RT.
GRATE ELEV. = 988.91
℄ 12" NE = UNKNOWN
(FULL OF WATER)

MATCH EX. STA. 924+28.67 ELEV.=986.76
STA. 924+52.67 ELEV. 986.30
20'-0"
206'-9" BRIDGE LIMITS
20'-0"
PVI (NO CURVE) STA. 926+59.42 ELEV.=982.40
MATCH EX. STA. 927+09.42 ELEV.=981.10

CB 3A
STA. 926+93.50, 24.00' LT.
GRATE ELEV. = 981.00
℄ 12" S = 977.60
℄ 4" W = 977.94 (UNDERDRAIN)

-2.55%
-1.89%
-2.58%
-2.00%

PRESSURE RELIEF JOINT, TYPE A (TYP)
W30x99
W30x116
W30x99
EXP
EXP
EXP
EXP
EXP

16'-10" PROPOSED 15'-6" REQ'D
16'-0" PROPOSED 15'-6" REQ'D

EX CB
STA. 923+94.57, 47.05' RT.
GRATE ELEV. = 987.24
℄ 12" N = UNKNOWN
(FULL OF DEBRIS)

EX MH
STA. 923+94.92, 6.00' LT.
RIM ELEV. = 987.60
℄ 12" NW = 982.54
℄ 12" SW = 982.51
℄ 24" W = 973.10
℄ 12" S = 973.00
℄ 30" SE = 973.10

EX SAN MH
STA. 924+05.19, 3.33' RT.
RIM ELEV. = 987.40
℄ 30" NW = 967.49
℄ 30" SE = 967.40

EX SAN MH
STA. 924+40.47, 37.41' RT.
RIM ELEV. = 986.59
℄ 30" NW = UNKNOWN
℄ 36" E = UNKNOWN

EX SAN MH
STA. 924+94.56, 37.46' RT.
RIM ELEV. = 983.97
℄ 36" W = 956.97
℄ 36" E = 956.97
℄ 12" SW = 959.06

EX CB
STA. 924+86.08, 49.93' RT.
GRATE ELEV. = 962.05
℄ 18" NE = 959.21

EX CB
STA. 925+53.46, 76.75' RT.
GRATE ELEV. = 964.56
℄ 15" N = 959.97

EX CB
STA. 926+21.89, 11.78' LT.
GRATE ELEV. = 960.36
℄ 12" S = 957.89

44'-12" CONDUIT, TYPE B @ 1.00%
EX. 8" CAST IRON WATERLINE

MH 3
STA. 926+93.50, 35.00' RT.
RIM ELEV. = 981.00
℄ 12" N = 977.32
℄ 12" W = 972.80

EX CB
STA. 928+07.45, 24.76' RT.
GRATE ELEV. = 978.93
(FULL OF WATER)

SAN

995 990 985 980 975 970 965 960 955

989.55 988.65 987.52 986.27 985.17 984.19 983.24 982.25 981.28 980.30 979.30 978.33

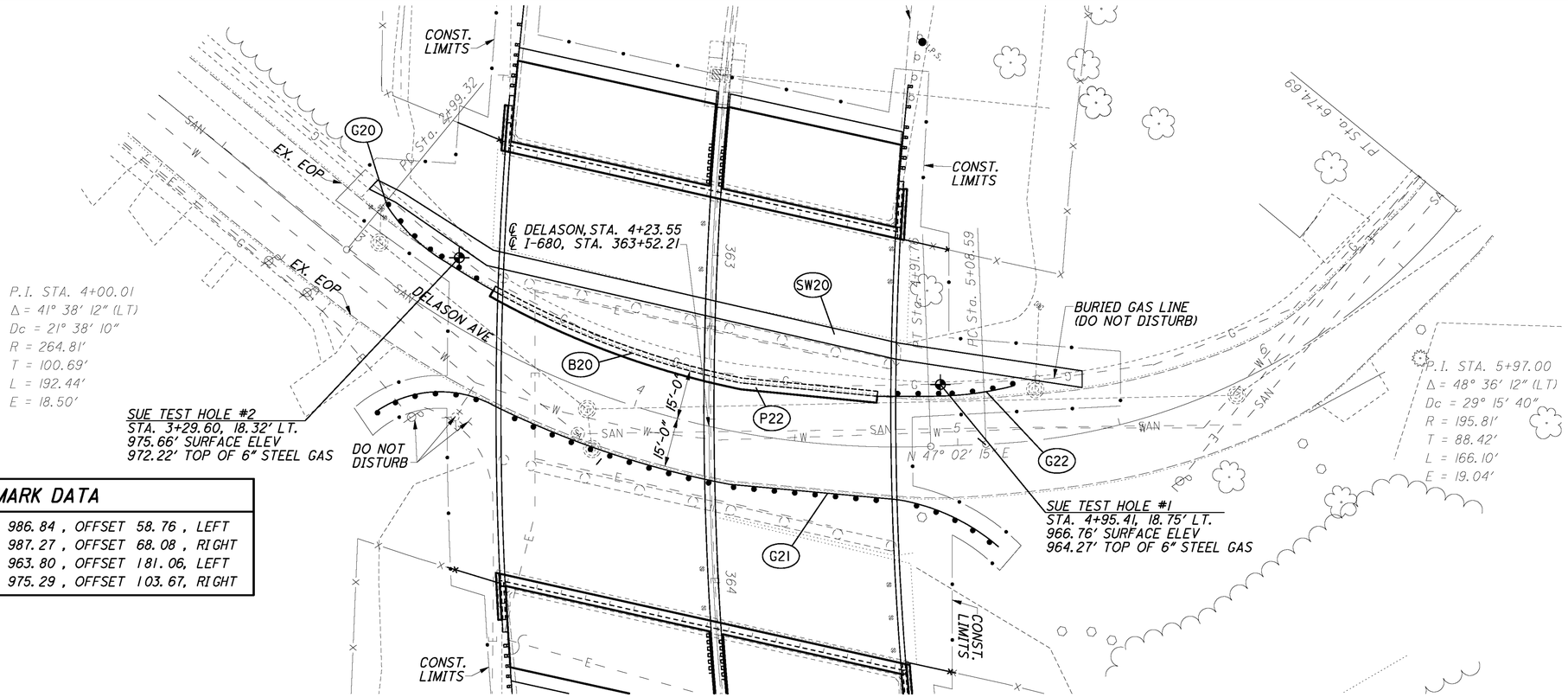
923+00 924+00 925+00 926+00 927+00 928+00

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED GJS
CHECKED JBD

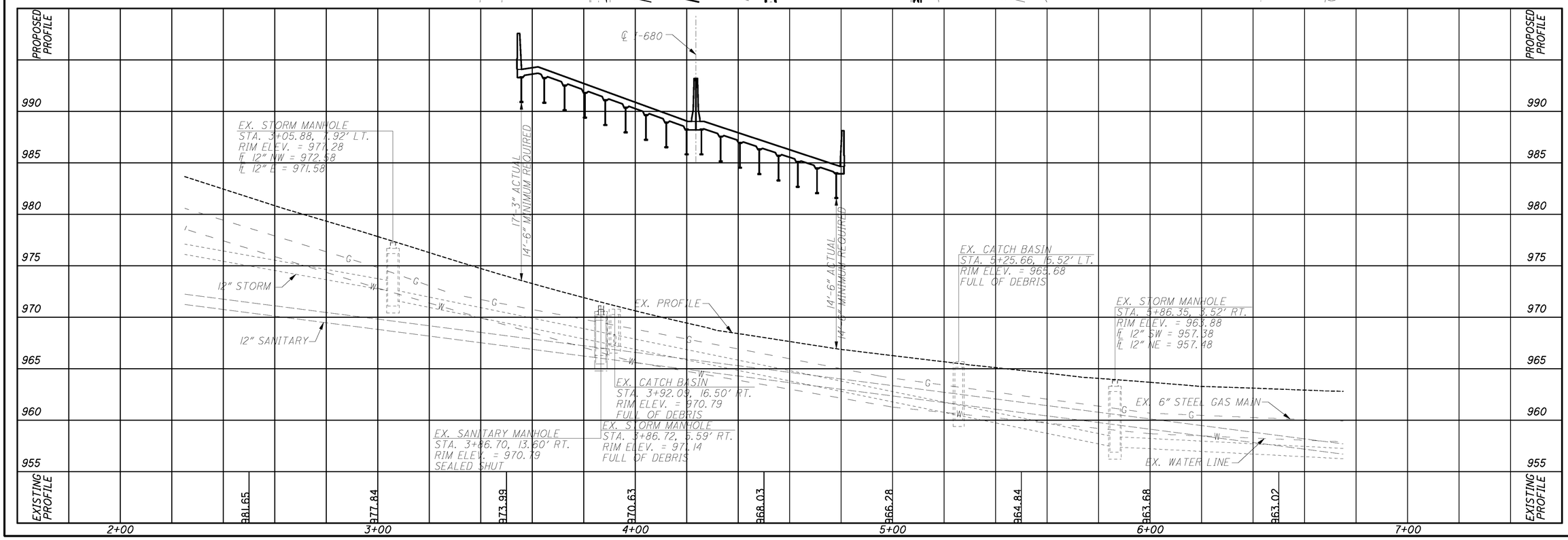
PLAN AND PROFILE - WILLIAMSON AVE.
STA. 922+80 TO STA. 928+80

MAH-680-4.29



BENCHMARK DATA

BM #1	STA. 362+27.95,	ELEV. 986.84 ,	OFFSET 58.76 ,	LEFT
BM #2	STA. 365+61.38,	ELEV. 987.27 ,	OFFSET 68.08 ,	RIGHT
BM #3	STA. 363+52.26,	ELEV. 963.80 ,	OFFSET 181.06,	LEFT
BM #4	STA. 363+42.18,	ELEV. 975.29 ,	OFFSET 103.67,	RIGHT



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MJP
CHECKED JBD

PLAN AND PROFILE - DELASON AVE. STA. 2+25 TO STA. 6+75

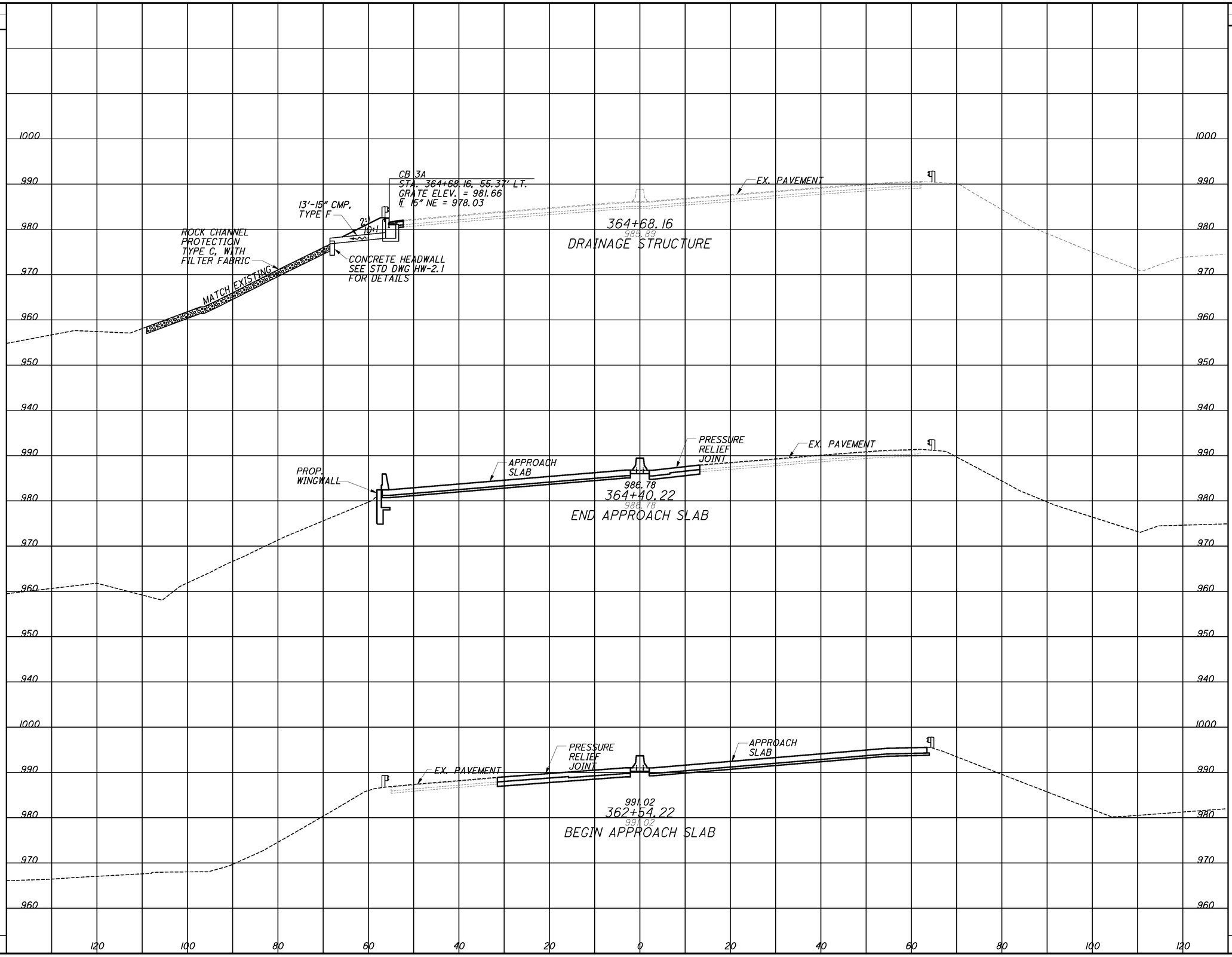
MAH-680-4.29

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED MJP

CHECKED JBD



CROSS SECTIONS - I-680

STA. 362+54.22 TO STA. 364+68.16

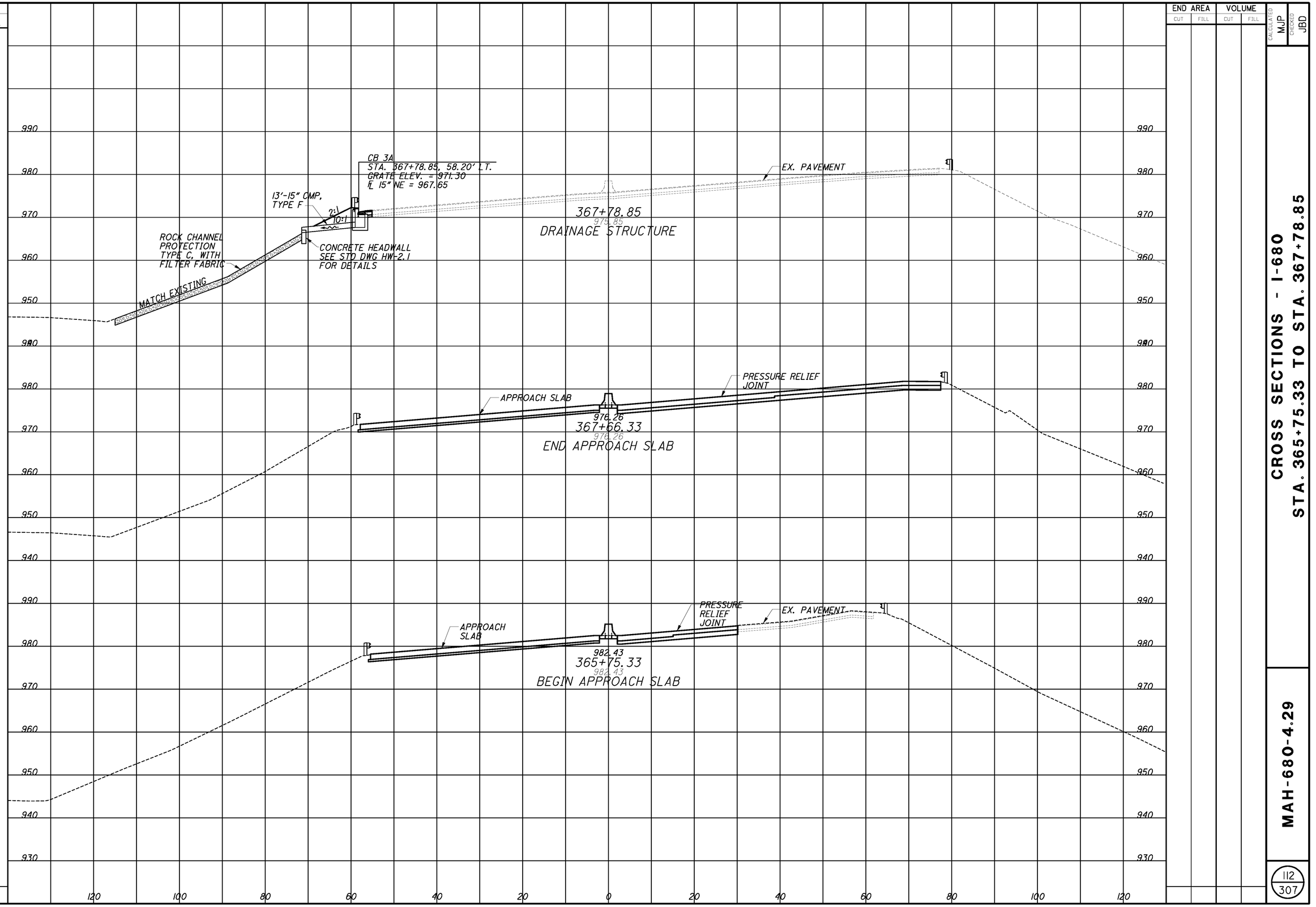
MAH-680-4.29

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED MJP

CHECKED JBD



CROSS SECTIONS - I-680

STA. 365+75.33 TO STA. 367+78.85

MAH-680-4.29

SEEDING END WIDTH	SEEDING SQ. YDS.
29.0	64
24.5	54
	50
20.5	0
0.0	
	168

-60 -50 -40 -30 -20 -10 ℄ 10 20 30 40 50 60

915 910 905 900 895 890 925 920 915 925 920 915 925 920 915 925 920 915

909.43
4+44.31
907.42
END APPROACH SLAB

910.11
4+24.31
908.16
BRIDGE LIMITS

919.07
1+61.17
918.75
BRIDGE LIMITS

919.75
1+41.17
919.61
BEGIN APPROACH SLAB

920.43
1+21.21
920.43
BEGIN PAVEMENT

℄ CONC. CAP ON
42" WATERLINE
STA. 0+84.03

1+00.00
921.03

2:1 3:1 6:1 2:1 6:1

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
27.5	24.9		
		13	18
7.5	24.9		
7.5	9.4		
		13	7
27.5	9.4		
		20	4.4
27.5	2.2		
		0	0
	0.0		
		46	29

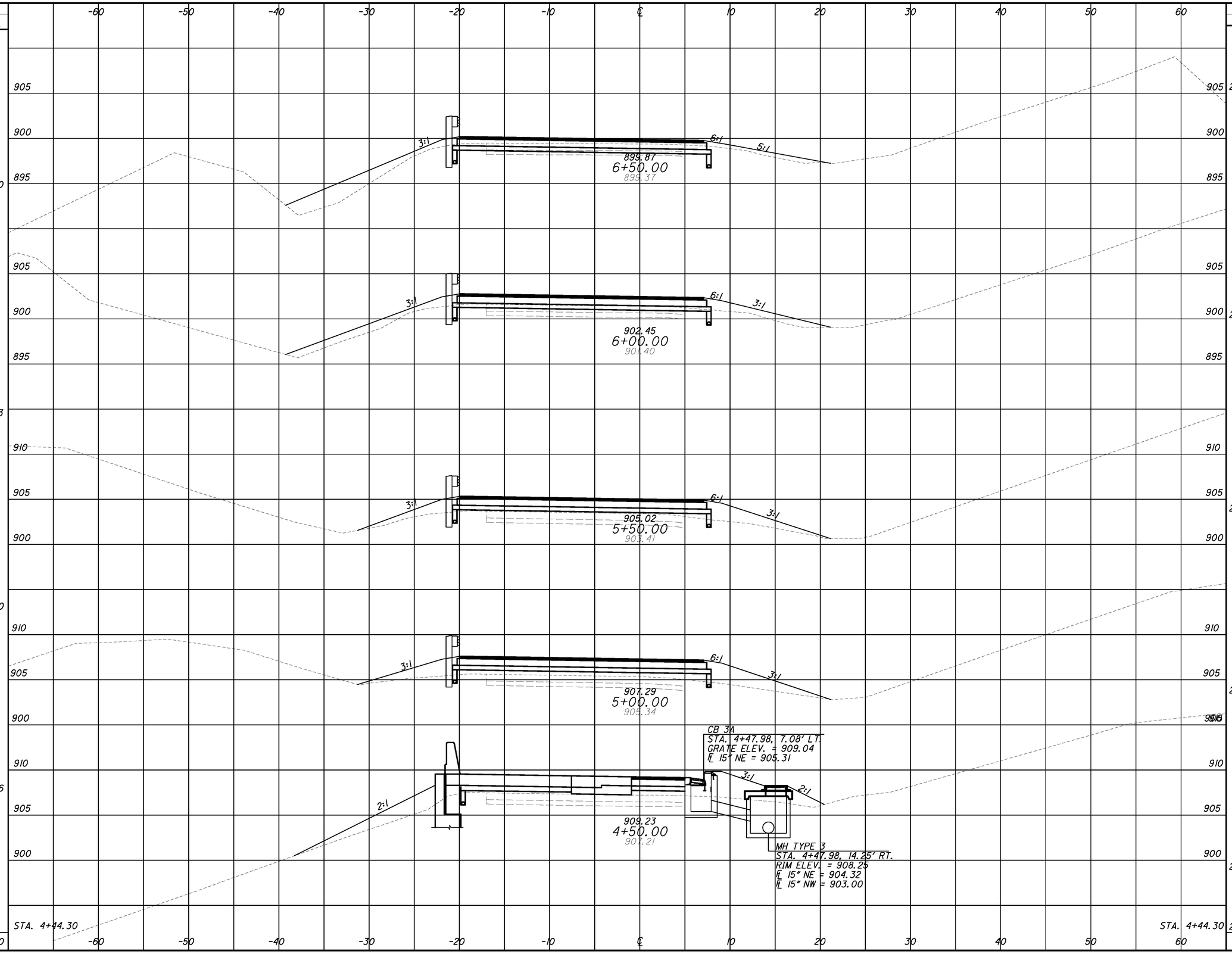
CALCULATED MJP
CHECKED JBD

CROSS SECTIONS - RAMP C
STA. 1+00 TO STA. 4+44.30

MAH-680-4.29

113
307

SEEDING END WIDTH	SEEDING SQ. YDS.
45.11	250
44.9	223
35.5	200
36.6	206
37.7	21
29.0	
	900



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
27.5	29.5		
		51	51
27.5	25.4		
		51	48
27.5	26.7		
		51	63
27.5	41.5		
		51	71
27.5	35.1		
		6	6
27.5	24.9		
		210	239

CALCULATED MJP
CHECKED JBD

CROSS SECTIONS - RAMP C
STA. 4+50 TO STA. 6+50

MAH-680-4.29

SEEDING	
END WIDTH	SQ. YDS.
10	
	13
12.9	
	86
18.0	
	175
45.1	
	274

-60 -50 -40 -30 -20 -10 ℄ 10 20 30 40 50 60

900 895 890 885 905 900 895 900 895 890

7+60.00
894.91
END WORK

895.32
7+50.00
894.31

3:1 6:1

897.48
7+00.00
897.29

STA. 6+50.00 STA. 6+50.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
-	0		
		10	0
27.5	1.9		
		51	3
27.5	1.4		
		51	29
27.5	29.5	102	32

CALCULATED MJP
CHECKED JBD

CROSS SECTIONS - RAMP C
STA. 7+00 TO STA. 7+60

MAH-680-4.29

115
307

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED GJS
CHECKED JBD

-60 -50 -40 -30 -20 -10 ℄ 10 20 30 40 50 60

985 980 975 970 990

MATCH EX.

MATCH EX.

EX. 2" STEEL GAS MAIN

981.10
927+09.42

CB 3A
STA. 926+93.50, 24.00' LT.
GRATE ELEV. = 981.00
℄ 12" S = 977.60
℄ 4" W = 977.94 (UNDERDRAIN)

CB 3A
STA. 926+93.50, 24.00' RT.
GRATE ELEV. = 981.00
℄ 12" N = 977.36
℄ 12" S = 977.36
℄ 4" W = 977.94 (UNDERDRAIN)

MH 3
STA. 926+93.50, 35.00' RT.
RIM ELEV. = 981.00
℄ 12" N = 977.32
℄ 12" W = 972.80

EX. 2" STEEL GAS MAIN

48'-2" CONDUIT,
TYPE B @ 0.50%

EX. 6" STEEL GAS MAIN

981.58
926+90.25
986.46

EX. 8" CAST
IRON WATERLINE
STA. 926+94 TO 926+87

11'-12" CONDUIT,
TYPE B @ 0.50%

981.88
926+79.42
981.68
END APPROACH SLAB

EX. 8" CAST
IRON WATERLINE

982.40
926+59.42
BRIDGE LIMITS

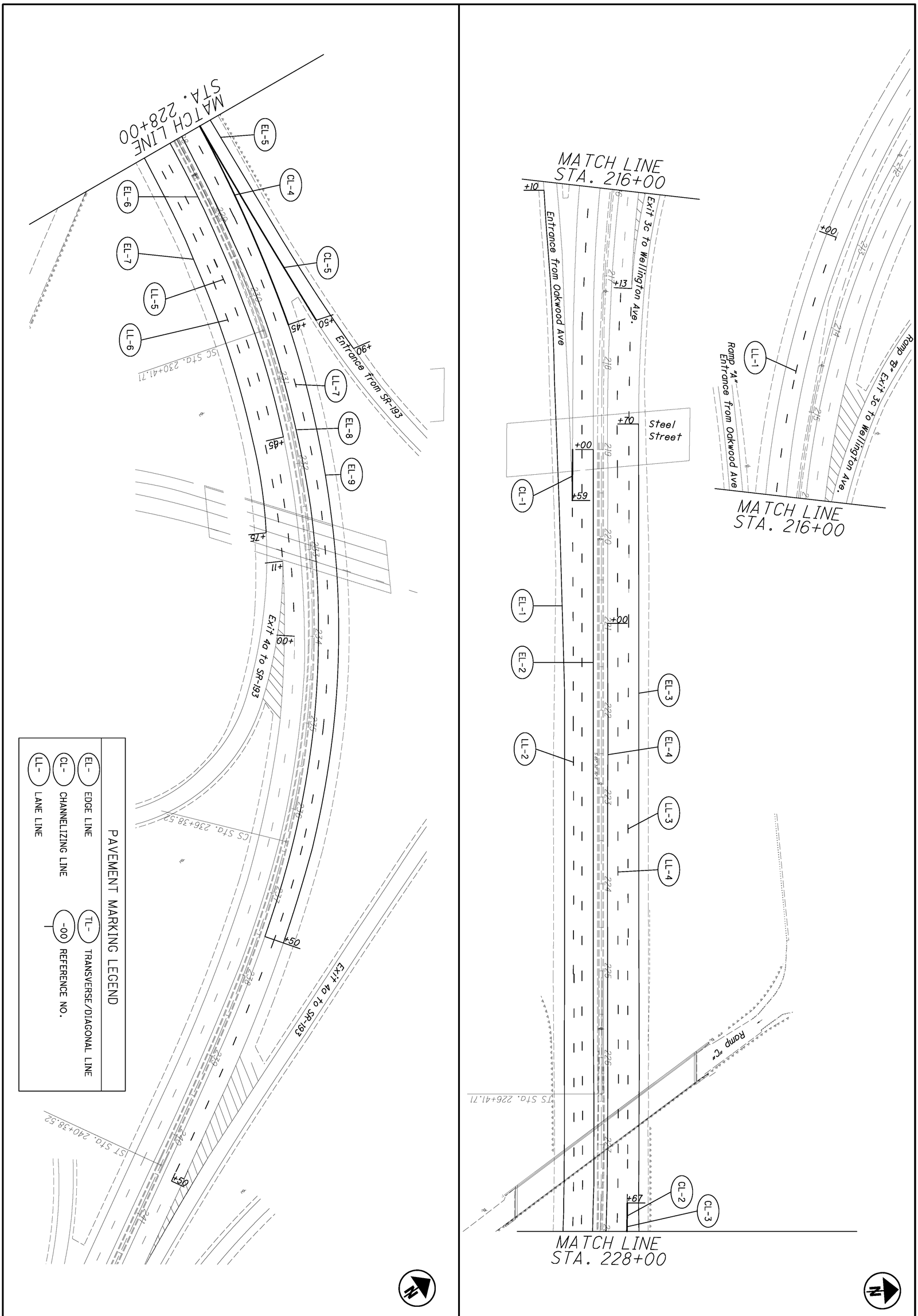
986.30
924+52.67
BRIDGE LIMITS

986.76
924+28.67
986.76
BEGIN WORK

CROSS SECTIONS - WILLIAMSON AVE.
STA. 924+28.67 TO STA. 927+09.42

MAH-680-4.29

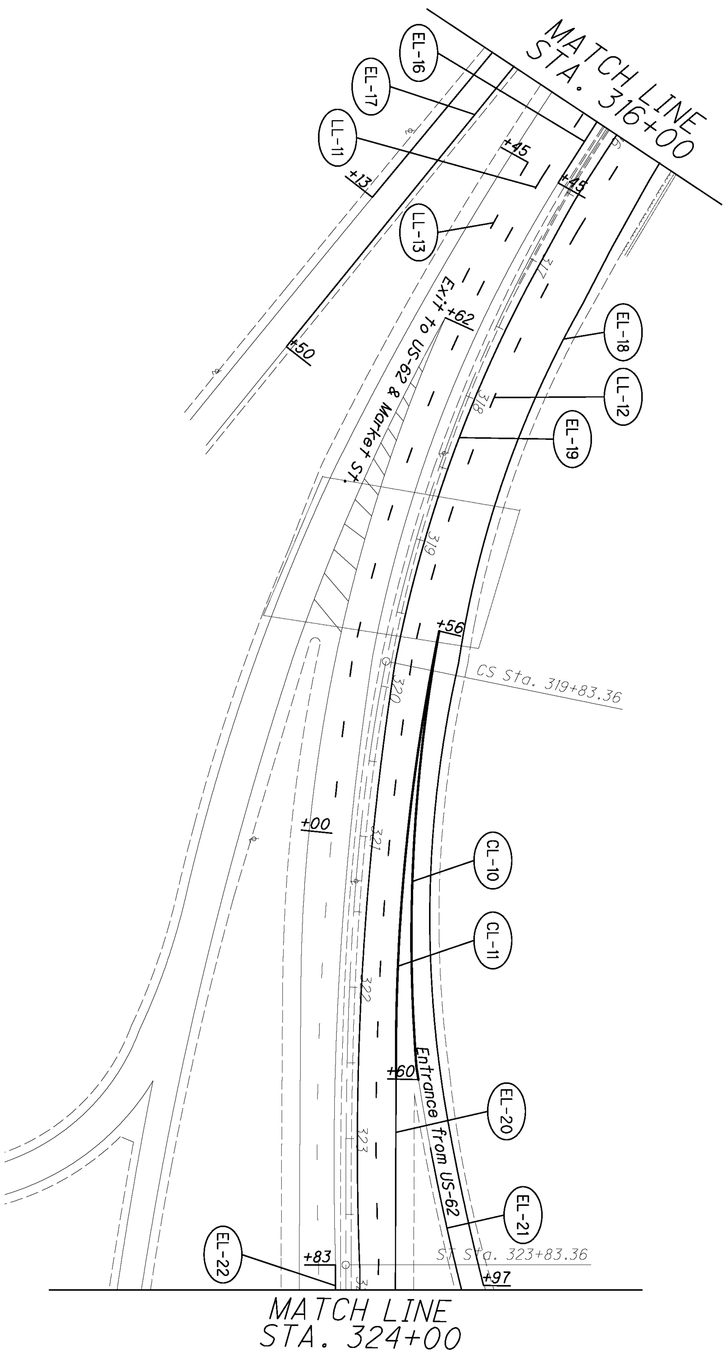
116
307

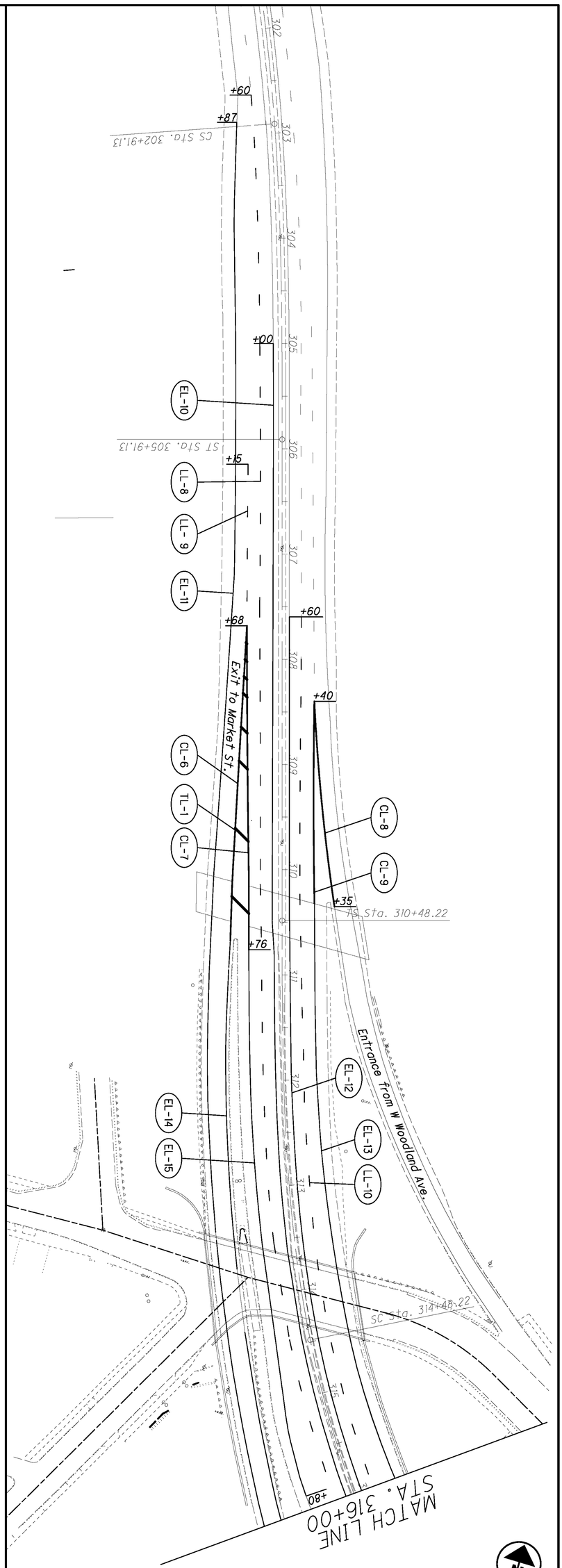


117 / 307	MAH-680-4.29	PAVEMENT MARKING PLAN - I-680	CALCULATED JAB / CHECKED JBD	HORIZONTAL SCALE IN FEET

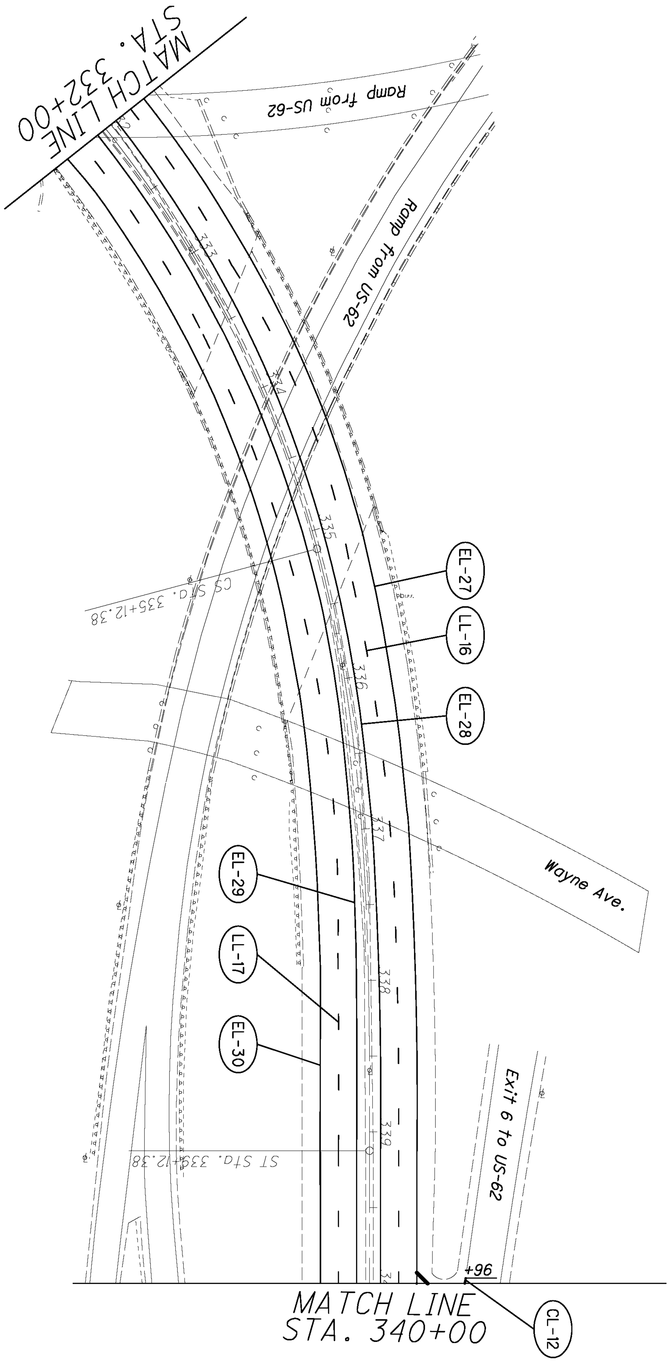
TRANSVERSE LINES SHALL BE 24" WIDE DIAGONAL LINES, PLACED AT 45°, AND SPACED AS FOLLOWS:

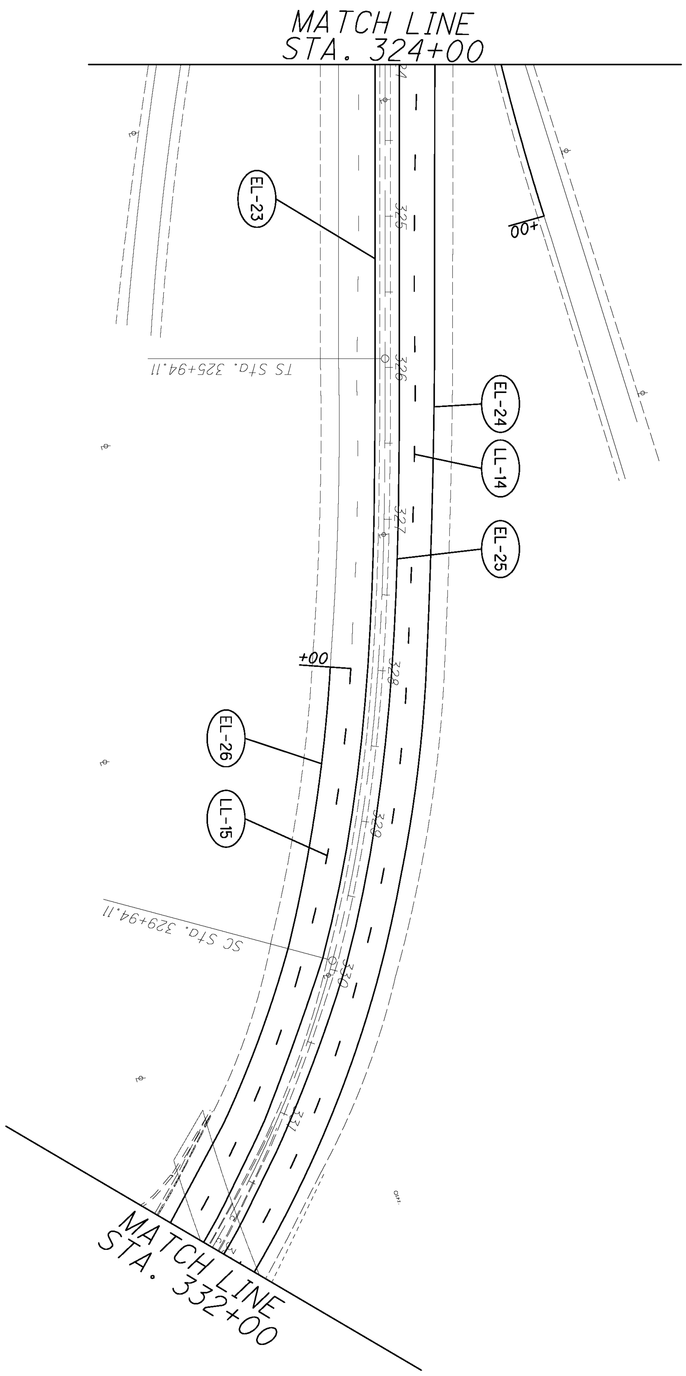
FROM	TO	DIAGONAL LINE SPACING
0'	48'	12' ON CENTER
49'	96'	24' ON CENTER
97'	GREATER THAN 97'	48' ON CENTER



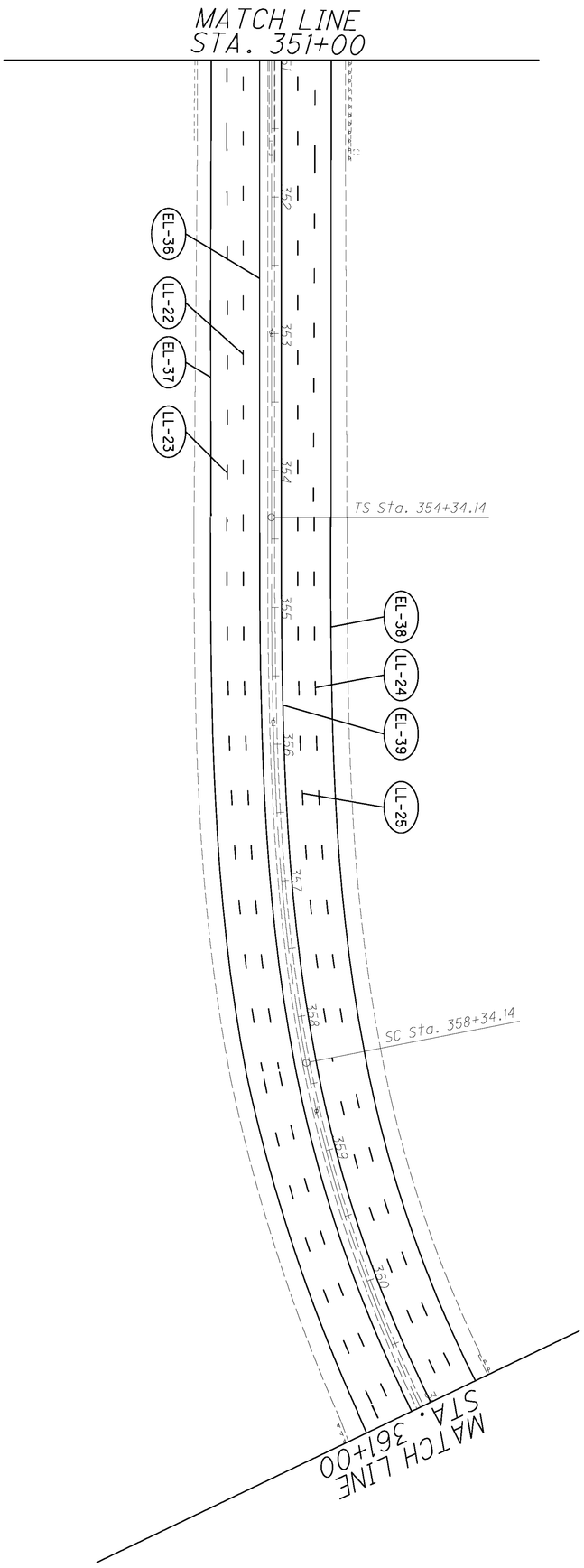


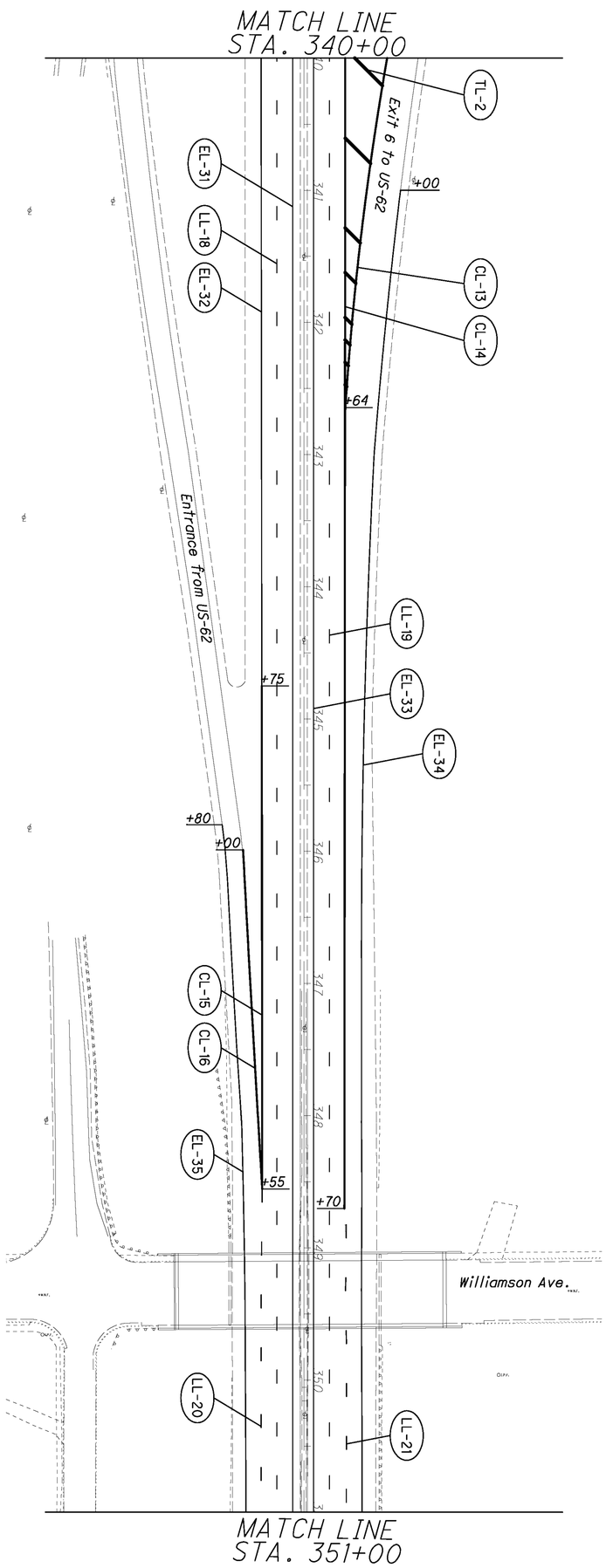
307 / 118	MAH-680-4.29	PAVEMENT MARKING PLAN - I-680	CALCULATED JAB / CHECKED JBD	0 50 / 25 100 HORIZONTAL SCALE IN FEET



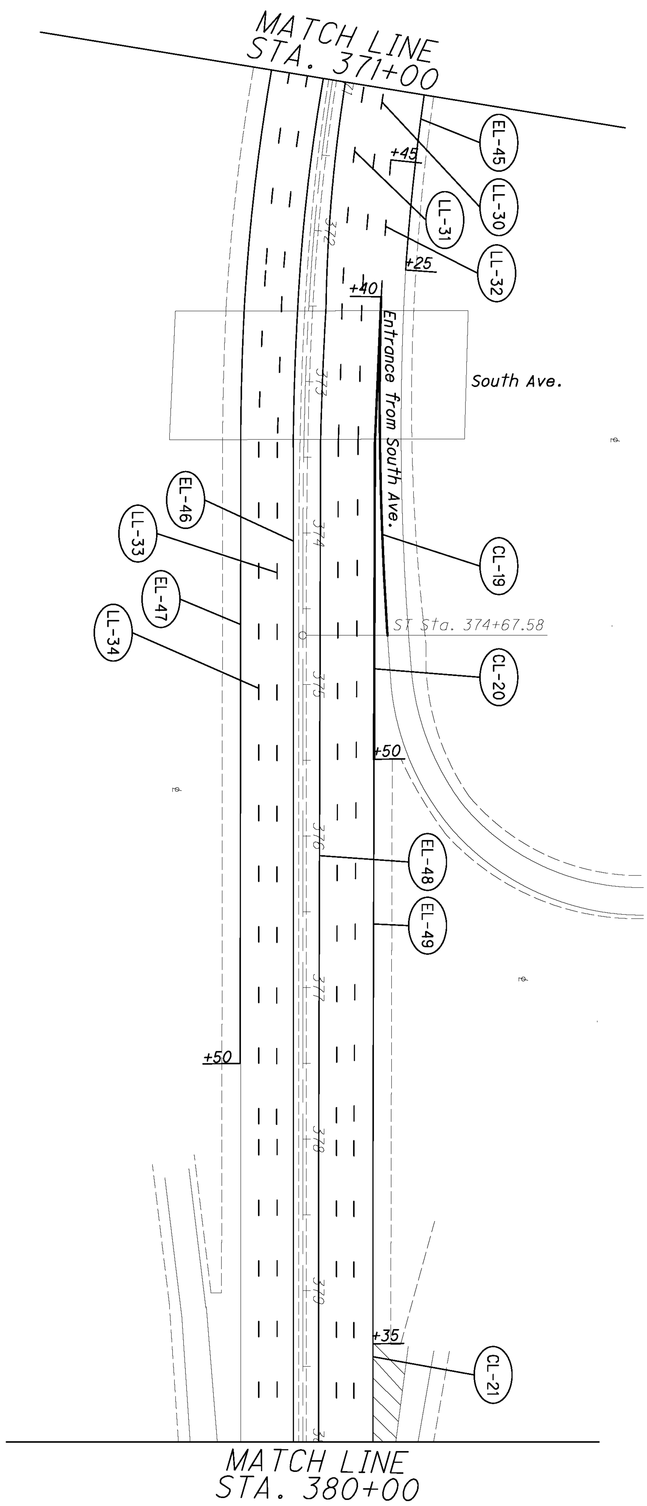


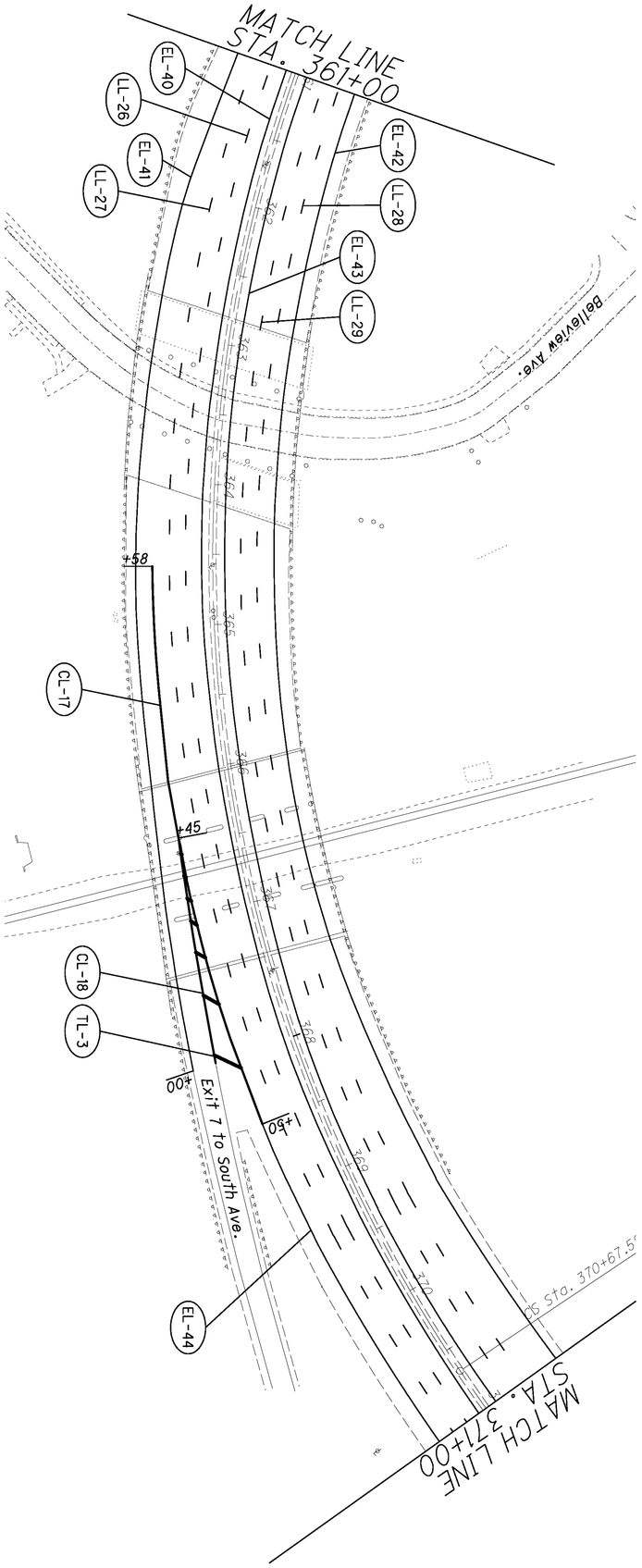
191 / 307	MAH-680-4.29	PAVEMENT MARKING PLAN - I-680	CALCULATED JAB / CHECKED JBD	HORIZONTAL SCALE IN FEET



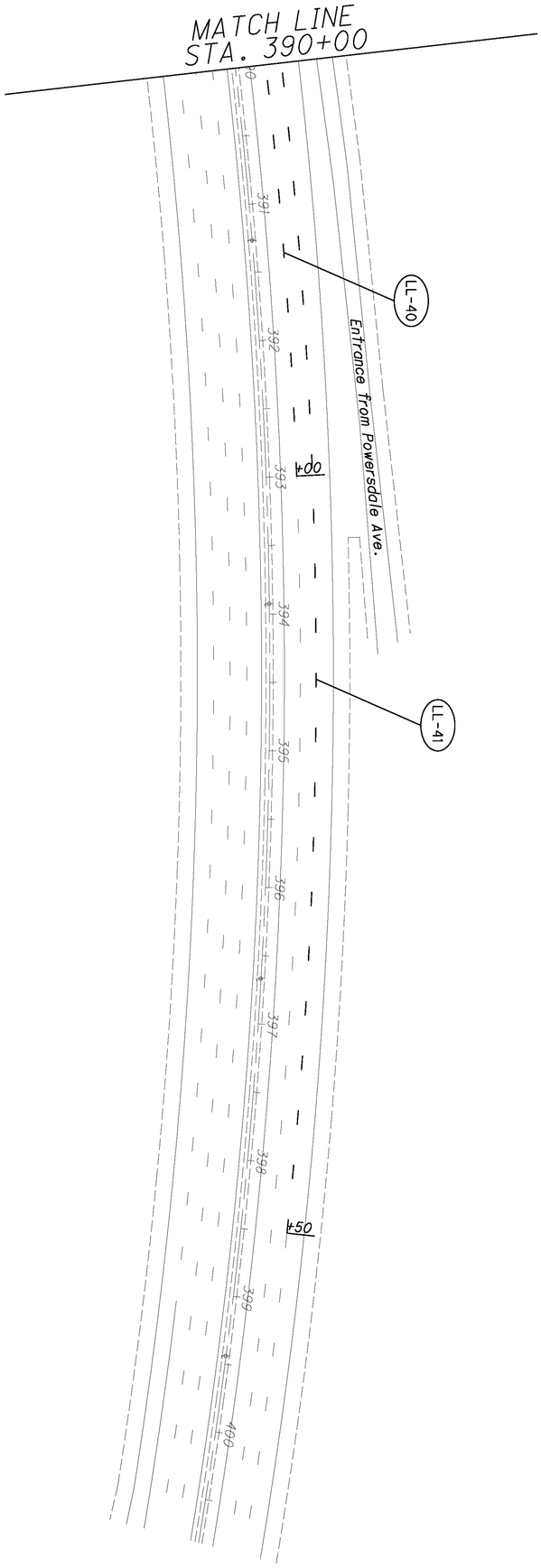


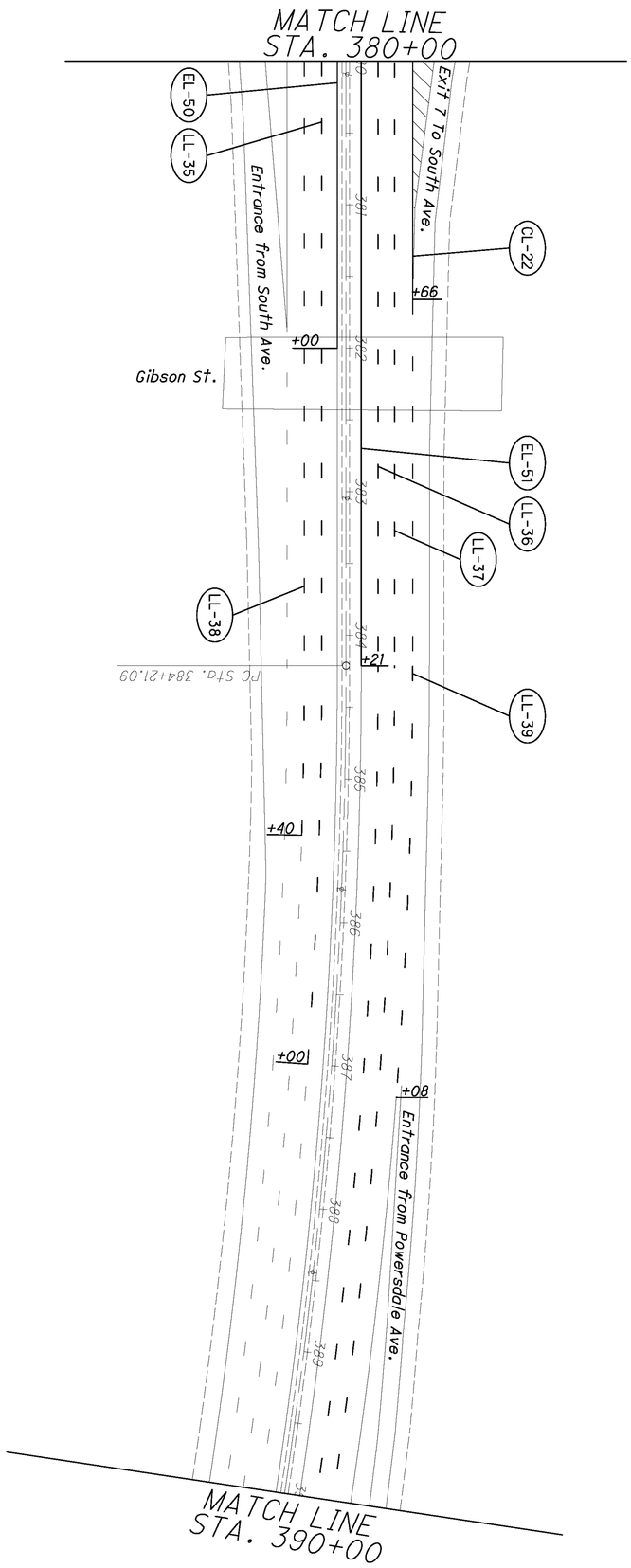
120 / 307	MAH-680-4.29	PAVEMENT MARKING PLAN - I-680	CALCULATED JAB / CHECKED JBD	0 50 / 25 100 HORIZONTAL SCALE IN FEET



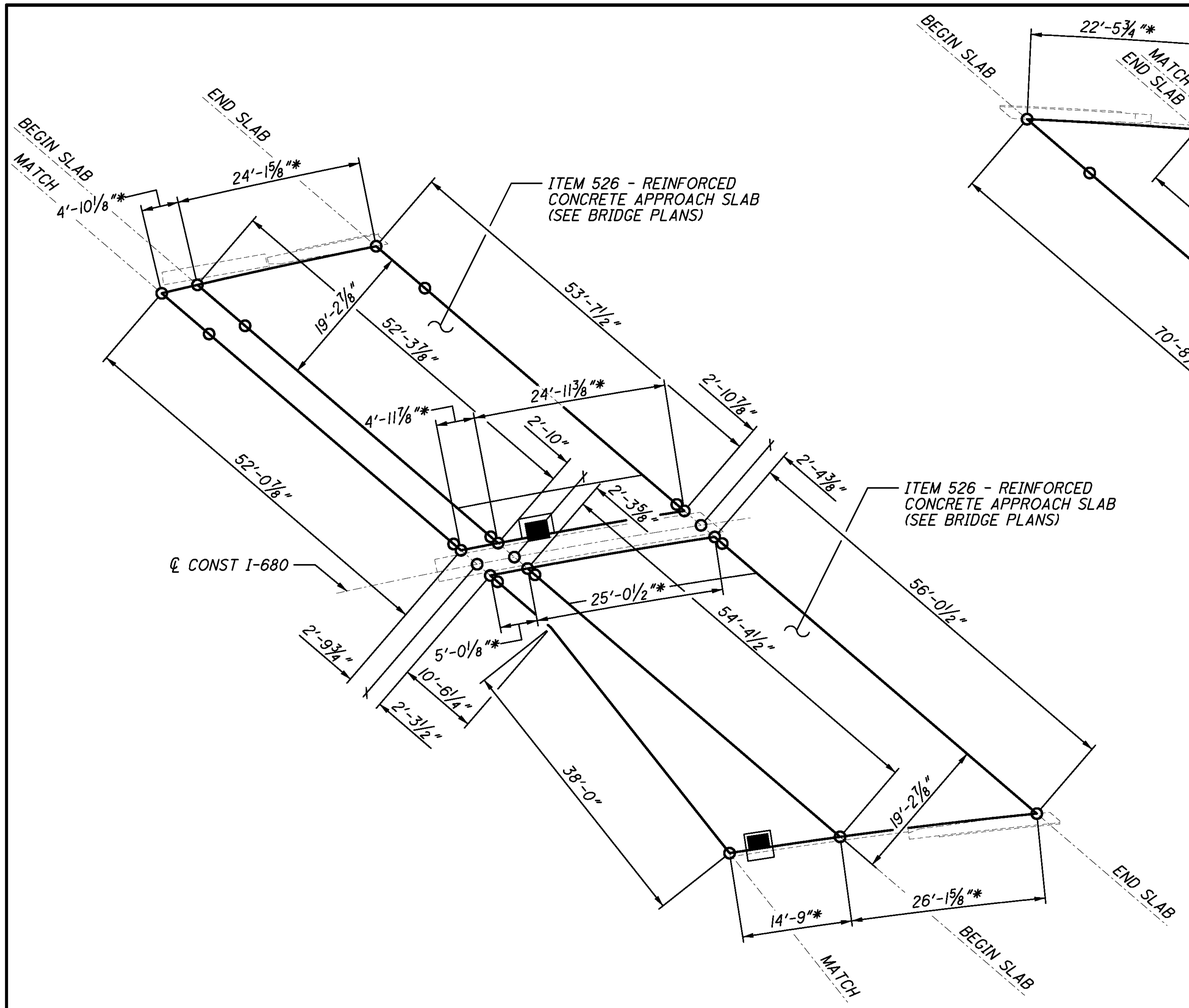


121 / 307	MAH-680-4.29	PAVEMENT MARKING PLAN - I-680	CALCULATED JAB / CHECKED JBD	0 50 / 25 100 HORIZONTAL SCALE IN FEET



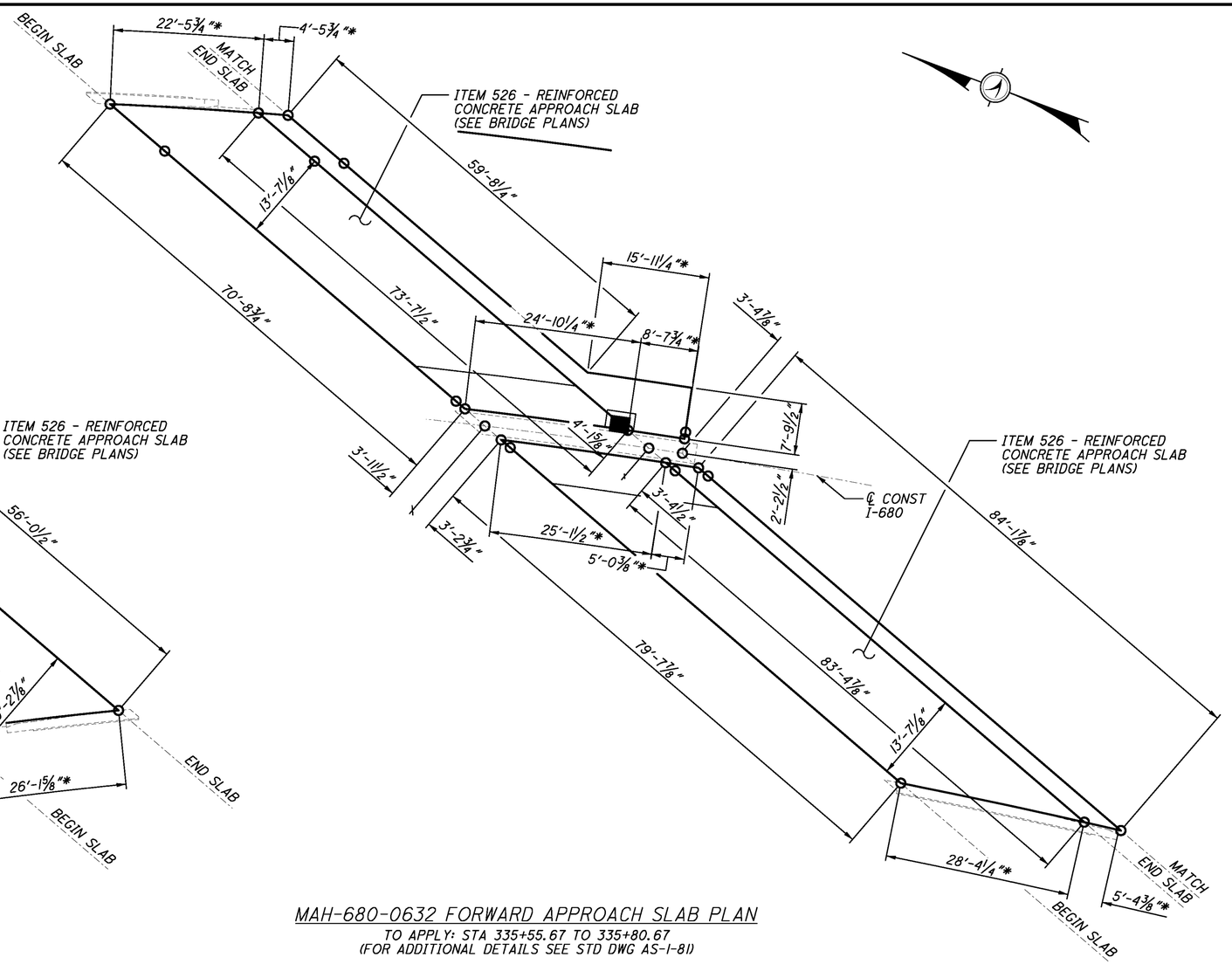


122 / 307	MAH-680-4.29	PAVEMENT MARKING PLAN - I-680	CALCULATED JAB / CHECKED JBD	0 50 / 25 100 HORIZONTAL SCALE IN FEET



MAH-680-0632 REAR APPROACH SLAB PLAN

TO APPLY: STA 333+19.78 TO 333+44.78
(FOR ADDITIONAL DETAILS SEE STD DWG AS-1-81)



MAH-680-0632 FORWARD APPROACH SLAB PLAN

TO APPLY: STA 335+55.67 TO 335+80.67
(FOR ADDITIONAL DETAILS SEE STD DWG AS-1-81)

CURVE INFORMATION FOR ℄ CONST. I-680

P.I. STA. 333+23.32
Δ = 68° 50' 21" (RT)
Dc = 7° 29' 48"
R = 764.29'
Ls = 400.00'
θ s = 14° 59' 36"
LT = 267.63'
ST = 134.21'
x = 397.27'
y = 34.72'
k = 199.54'
p = 8.70'
Δ c = 38° 51' 10" (RT)
Lc = 518.27'
Ts = 729.21'
Es = 172.76'

* - RADIAL DIMENSION

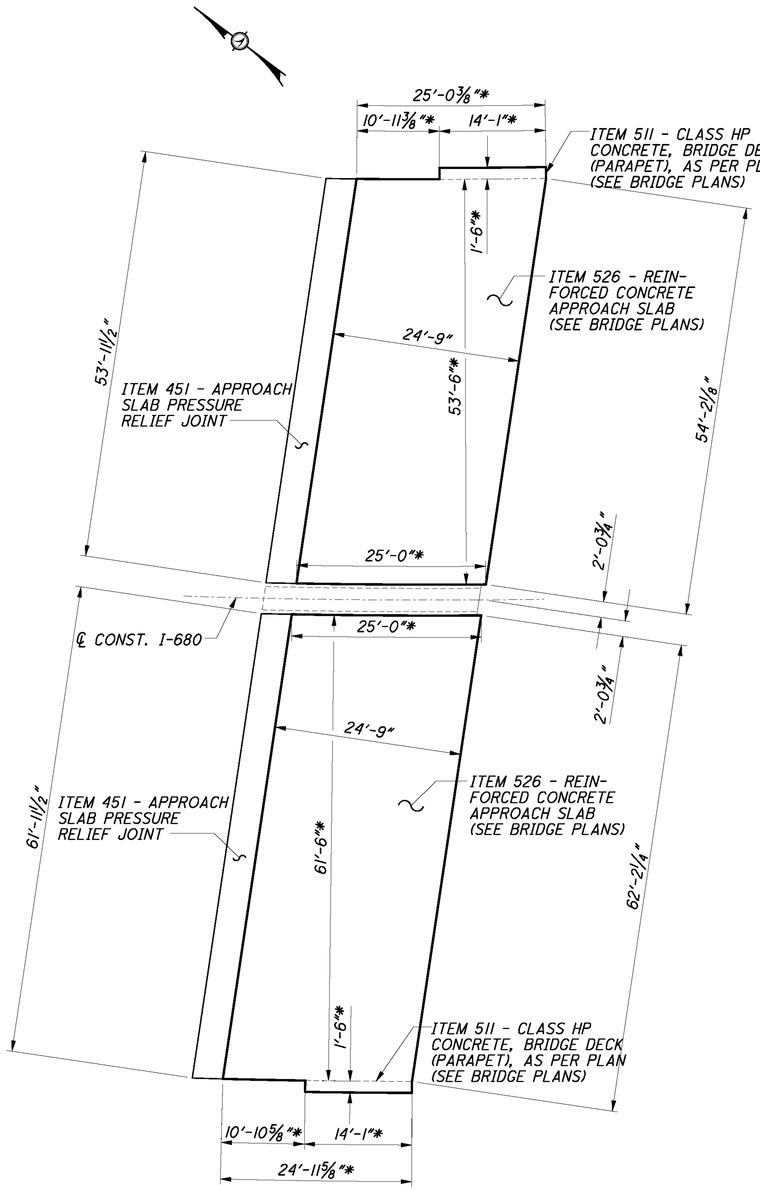
ROADWAY SURFACE ELEVATIONS

OFFSET	REAR APPROACH			FORWARD APPROACH		
	MATCH	BEGIN SLAB	END SLAB	BEGIN SLAB	END SLAB	MATCH
43.75' LEFT	332+82.55 950.15±	332+87.13 950.14	333+09.96 950.11	334+96.75 951.03	335+18.02 951.27	335+22.26 951.32±
37.08' LEFT	332+87.17 950.16±	332+91.81 950.20	333+14.95 950.37	335+04.95 951.29	335+26.72 951.21	335+31.07 951.19±
3.21' LEFT	333+12.26 948.00±	333+17.22 947.99	333+42.05 947.93	335+50.91 948.96	335+75.60 949.17	335+85.79 949.26±
2.21' LEFT	333+13.04 947.87±	333+18.02 947.88	333+42.90 947.93	335+52.39 948.96	335+77.17 949.08	335+85.80 949.12±
PROFILE GRADE	333+14.78 947.79±	333+19.78 947.82	333+44.78 947.94	335+55.67 948.98	335+80.67 949.10	335+85.67 949.13±
1.79' RIGHT	333+16.21 947.78±	333+21.22 947.81	333+46.32 947.95	335+58.37 948.99	335+83.54 949.19	335+88.57 949.23±
2.79' RIGHT	333+17.00 947.74±	333+22.03 947.78	333+47.19 947.95	335+59.88 949.00	335+85.14 949.19	335+90.20 949.23±
43.33' RIGHT	333+41.76 944.69±	333+57.40 944.77	333+85.11 944.90	336+27.94 946.84	336+57.42 947.18	336+63.31 947.25±

CALCULATED KJB
CHECKED JBD

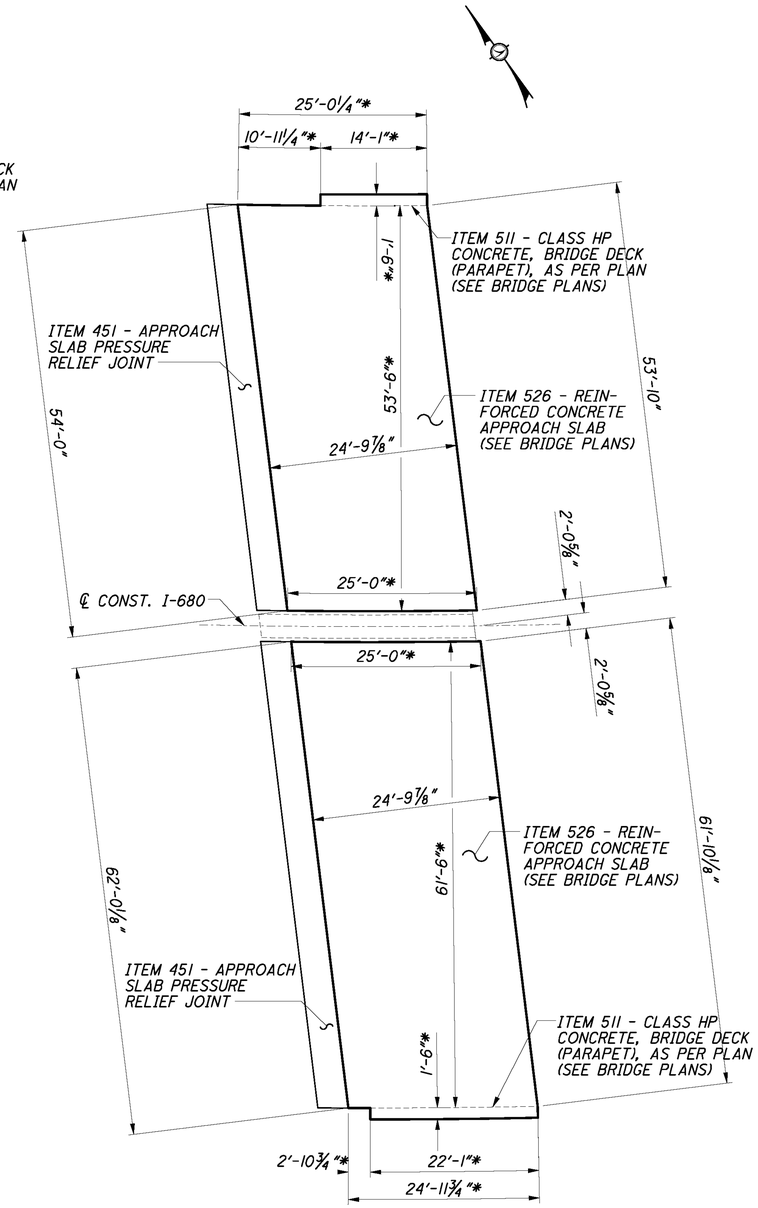
APPROACH SLAB DETAILS

MAH-680-4.29



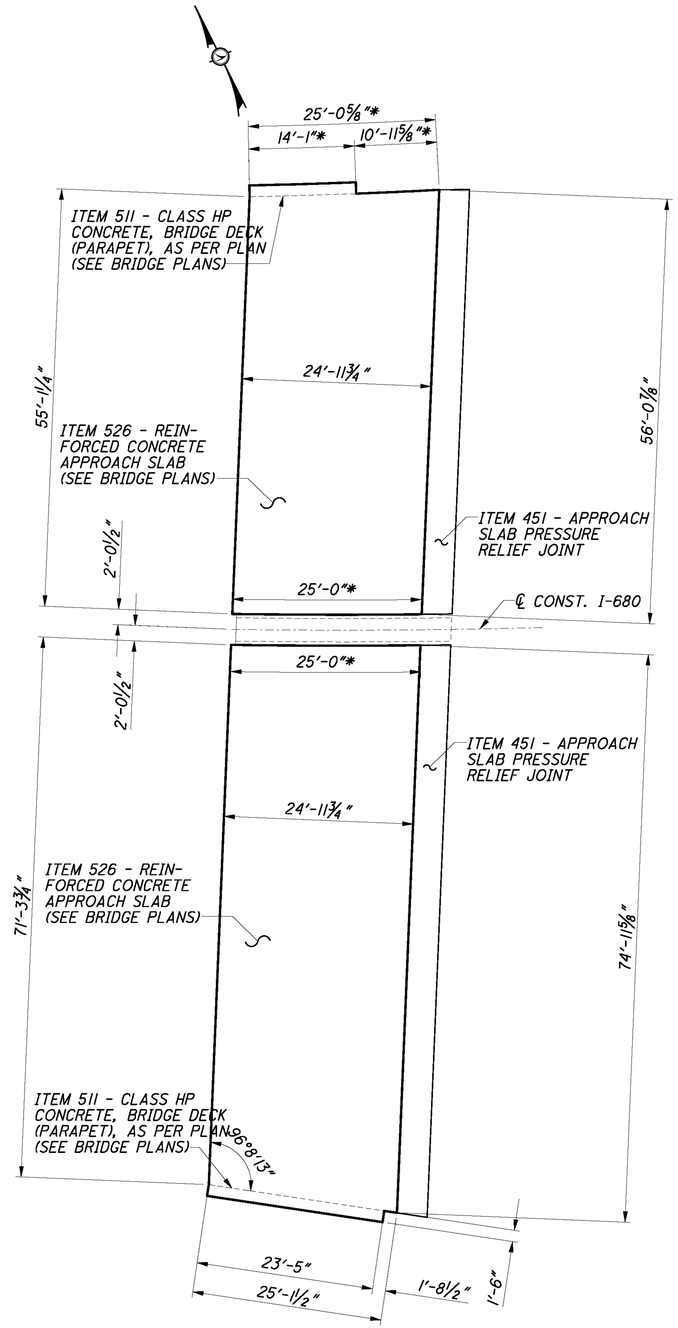
MAH-680-0687 APPROACH SLAB PLAN

REAR APPROACH SLAB SHOWN
FORWARD APPROACH SLAB SIMILAR BY MIRROR IMAGE
TO APPLY: STA 362+54.20 TO STA 362+79.20 (REAR)
STA 364+15.31 TO STA 364+40.31 (FWD)
(FOR ADDITIONAL DETAILS SEE STD DWG AS-1-81)



MAH-680-0693 REAR APPROACH SLAB PLAN

TO APPLY: STA 365+75.13 TO 366+00.13
(FOR ADDITIONAL DETAILS SEE STD DWG AS-1-81)



MAH-680-0693 FORWARD APPROACH SLAB PLAN

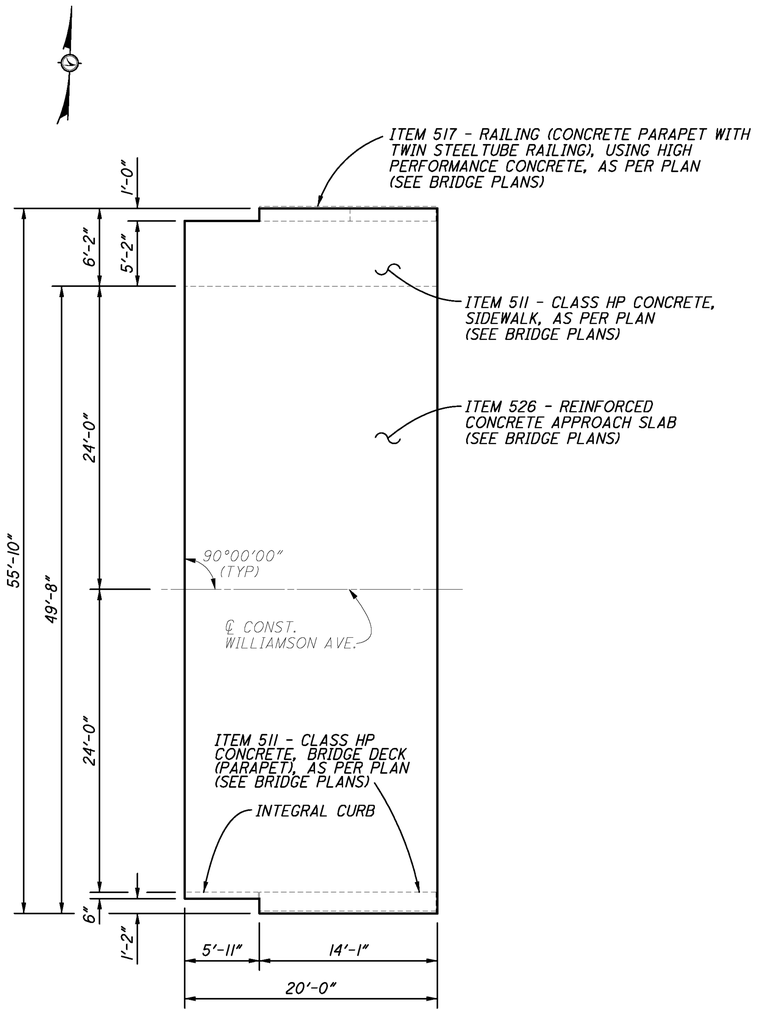
TO APPLY: STA 367+41.36 TO 367+66.36
(FOR ADDITIONAL DETAILS SEE STD DWG AS-1-81)

* - RADIAL DIMENSION

CALCULATED MJP
CHECKED JBD

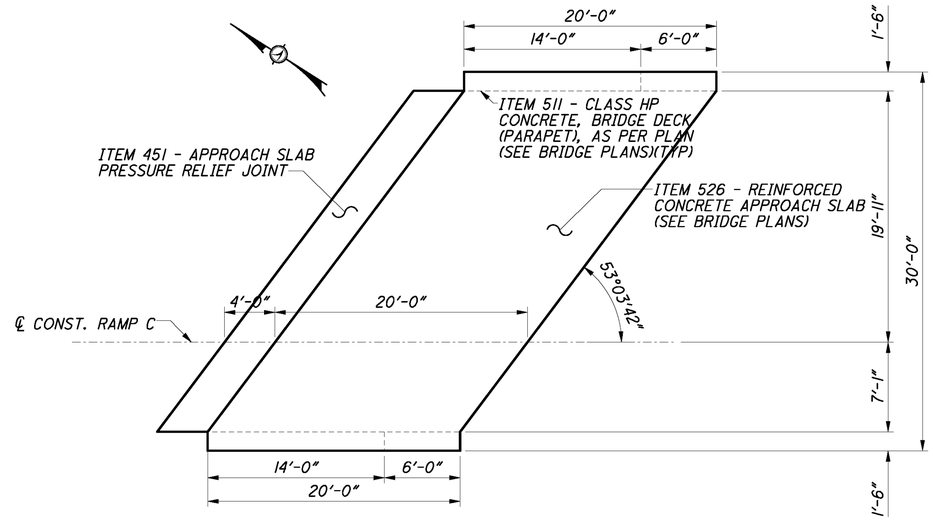
APPROACH SLAB DETAILS

MAH-680-4.29



MAH-62-1751 APPROACH SLAB PLAN

REAR APPROACH SLAB SHOWN
FORWARD APPROACH SLAB SIMILAR BY MIRROR IMAGE
TO APPLY: STA 924+32.67 TO STA 924+52.67 (REAR)
STA 926+59.42 TO STA 926+79.42 (FWD)
(FOR ADDITIONAL DETAILS SEE STD DWG AS-1-81)



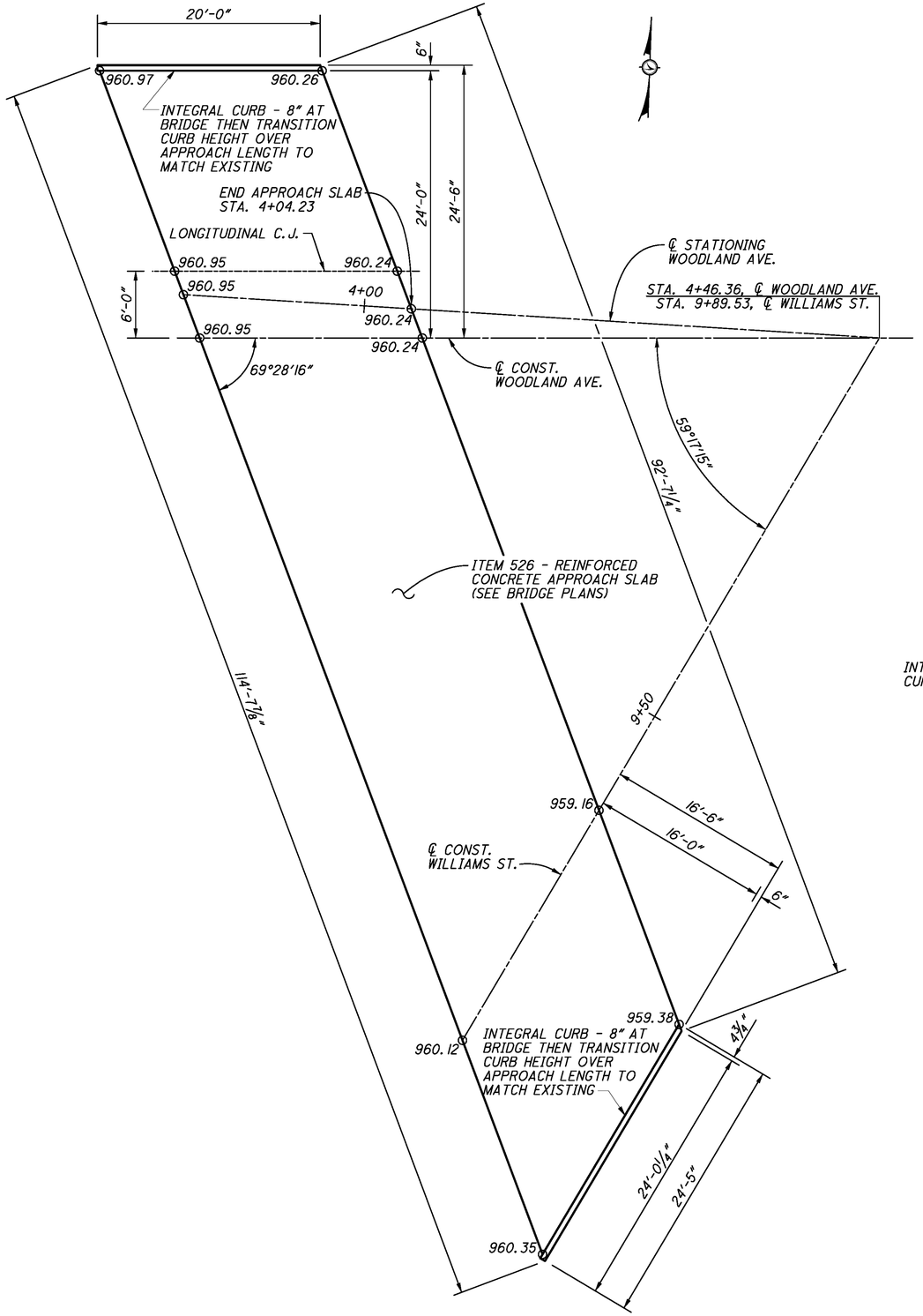
MAH-680-0429 APPROACH SLAB PLAN

REAR APPROACH SLAB SHOWN
FORWARD APPROACH SLAB SIMILAR BY MIRROR IMAGE
TO APPLY: STA 1+41.17 TO STA 1+61.17(REAR)
STA 4+24.31 TO STA 4+44.31 (FWD)
(FOR ADDITIONAL DETAILS SEE STD DWG AS-1-81)

CALCULATED GJS
CHECKED JBD

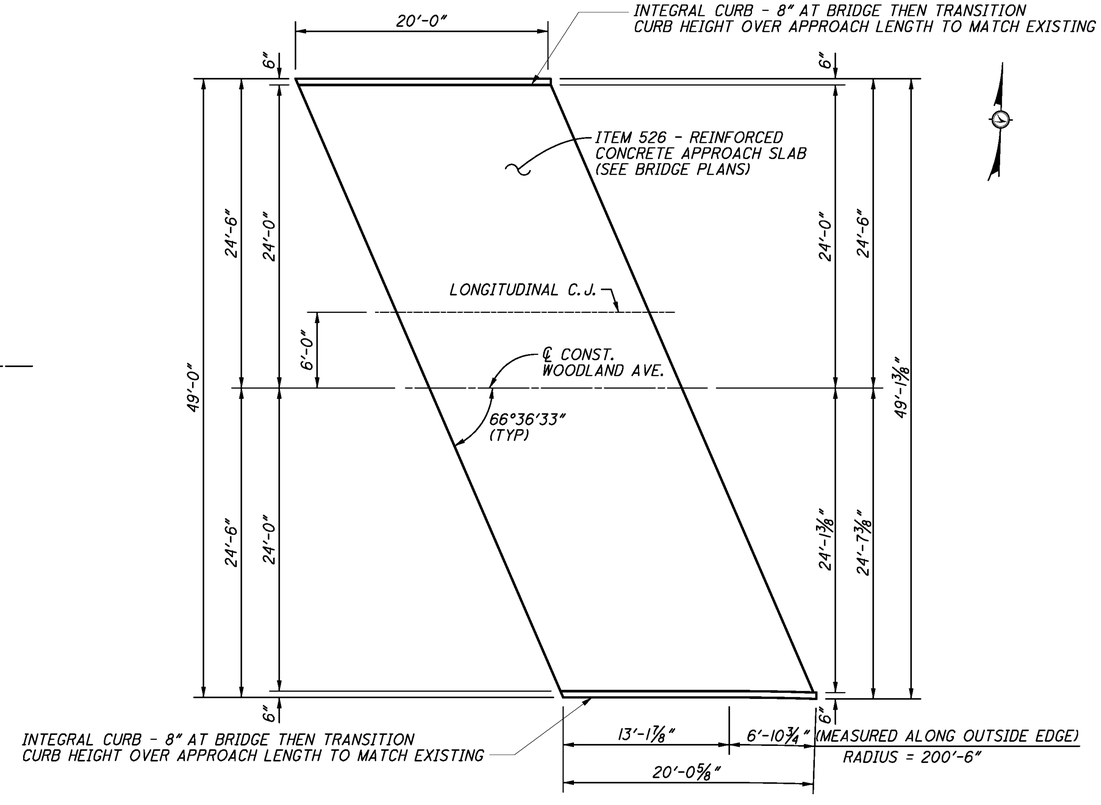
APPROACH SLAB DETAILS

MAH-680-4.29



MAH-680-0594 REAR APPROACH SLAB PLAN

TO APPLY: STA 3+83.87 TO STA 4+04.23
(FOR ADDITIONAL DETAILS SEE STD DWG AS-1-81)



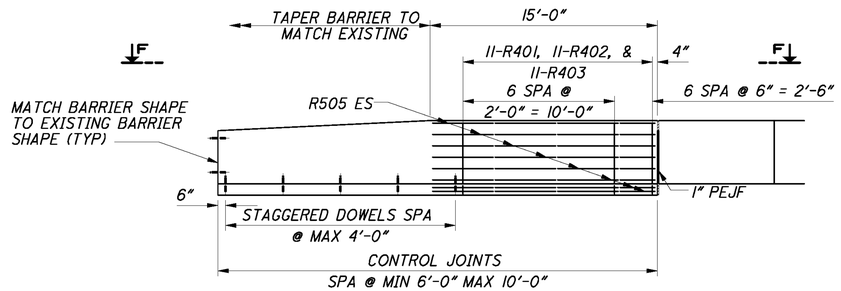
MAH-680-0594 FORWARD APPROACH SLAB PLAN

TO APPLY: STA 5+57.39 TO STA 5+77.39
(FOR ADDITIONAL DETAILS SEE STD DWG AS-1-81)

CALCULATED KJJ
CHECKED JBD

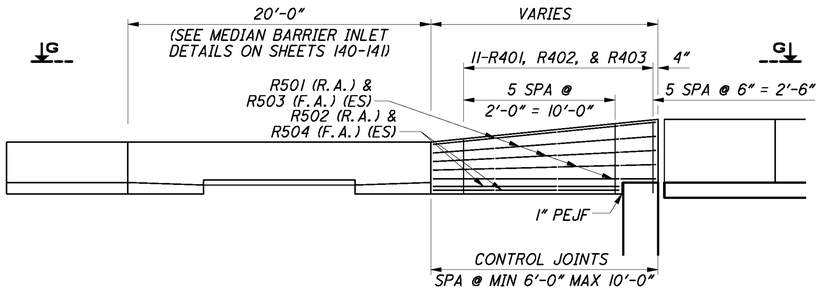
APPROACH SLAB DETAILS

MAH-680-4.29



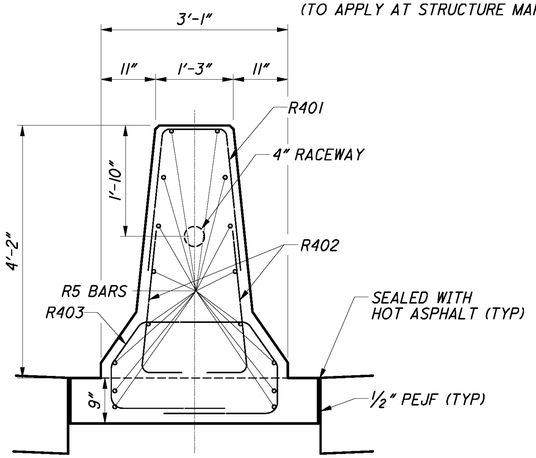
BARRIER ELEVATION

(TO APPLY AT STRUCTURE MAH-680-0687 & MAH-680-0693)

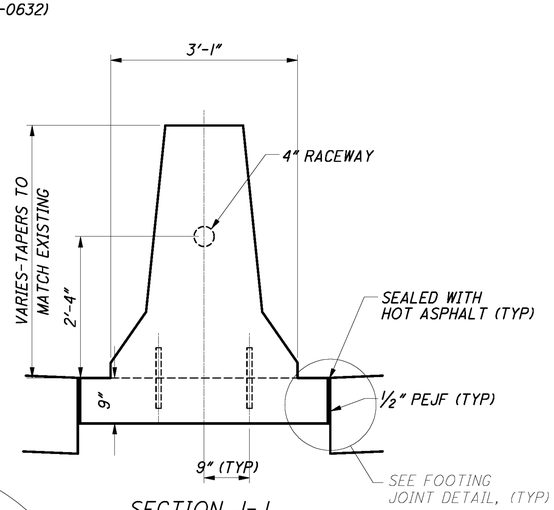


BARRIER ELEVATION

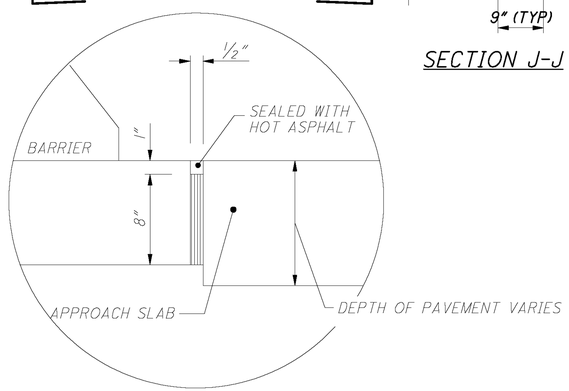
(TO APPLY AT STRUCTURE MAH-680-0632)



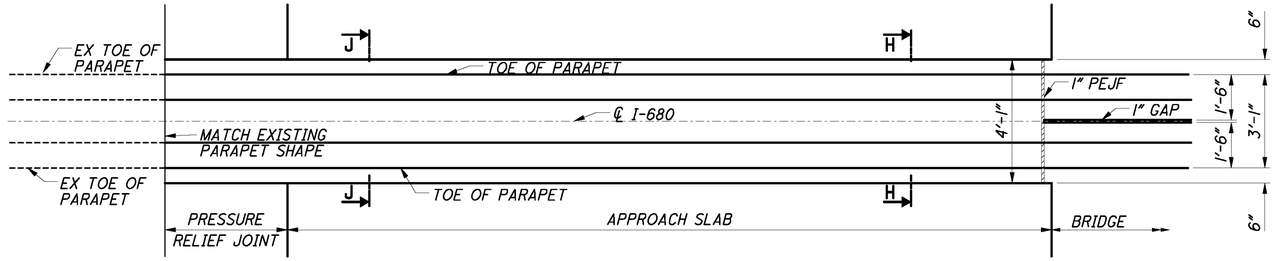
SECTION H-H



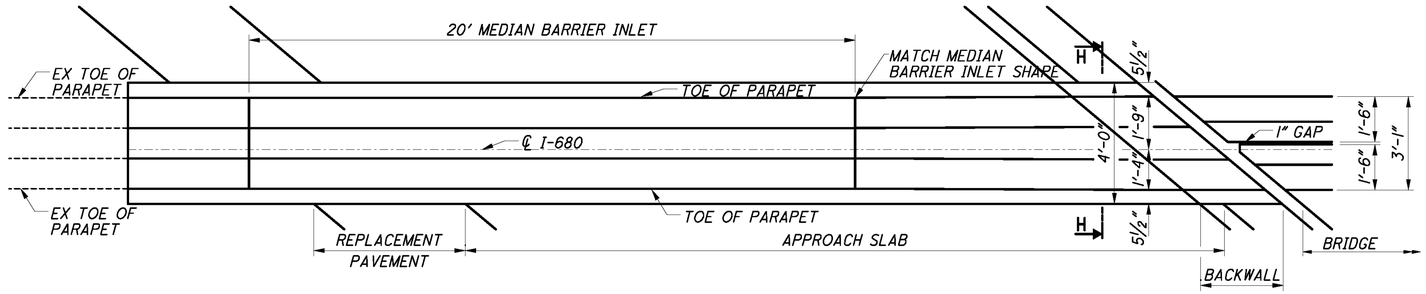
SECTION J-J



FOOTING JOINT DETAIL



SECTION F-F



SECTION G-G

REINFORCING STEEL LIST *

MARK	NUMBER REAR	NUMBER FWD	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC.
MEDIAN BARRIER												
R401	22	22	5'-2"	76	20	2'-4"	0'-3½"	0'-10"	0'-3½"	2'-4"		
R402	44	44	2'-11"	86	11	0'-3½"	2'-4"	0'-8"				
R403	18	17	8'-7"	75	15	1'-10½"	0'-10"	0'-9"	0'-7"	1'-7"		
R501	12	0	11'-3"	141	STR	11'-3"						
R502	12	0	9'-0"	113	STR	9'-0"						
R503	0	12	10'-0"	125	STR	10'-0"						
R504	0	12	7'-7"	95	STR	7'-7"						
R505	16	16	15'-0"	501	STR	15'-0"						

* FOR INFORMATION ONLY, INCLUDED IN ITEM 622 FOR PAYMENT

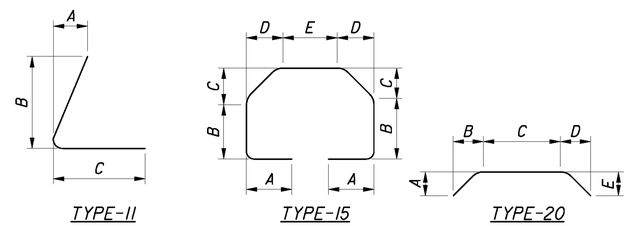
NOTES

THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHEN FOUR DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A No.6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

ALL REINFORCING STEEL TO BE EPOXY COATED.

REBAR DIMENSIONS SHOWN ARE FOR INFORMATION PURPOSESES ONLY. IF THE REINFORCING STEEL LIST IS USED, IT SHALL BE VERIFIED BY THE CONTRACTOR. ANY REVISIONS IN THE REINFORCING STEEL SHALL NOT BE A REASON FOR ADJUSTMENT IN THE BID PRICE FOR STRUCTURAL STEEL.

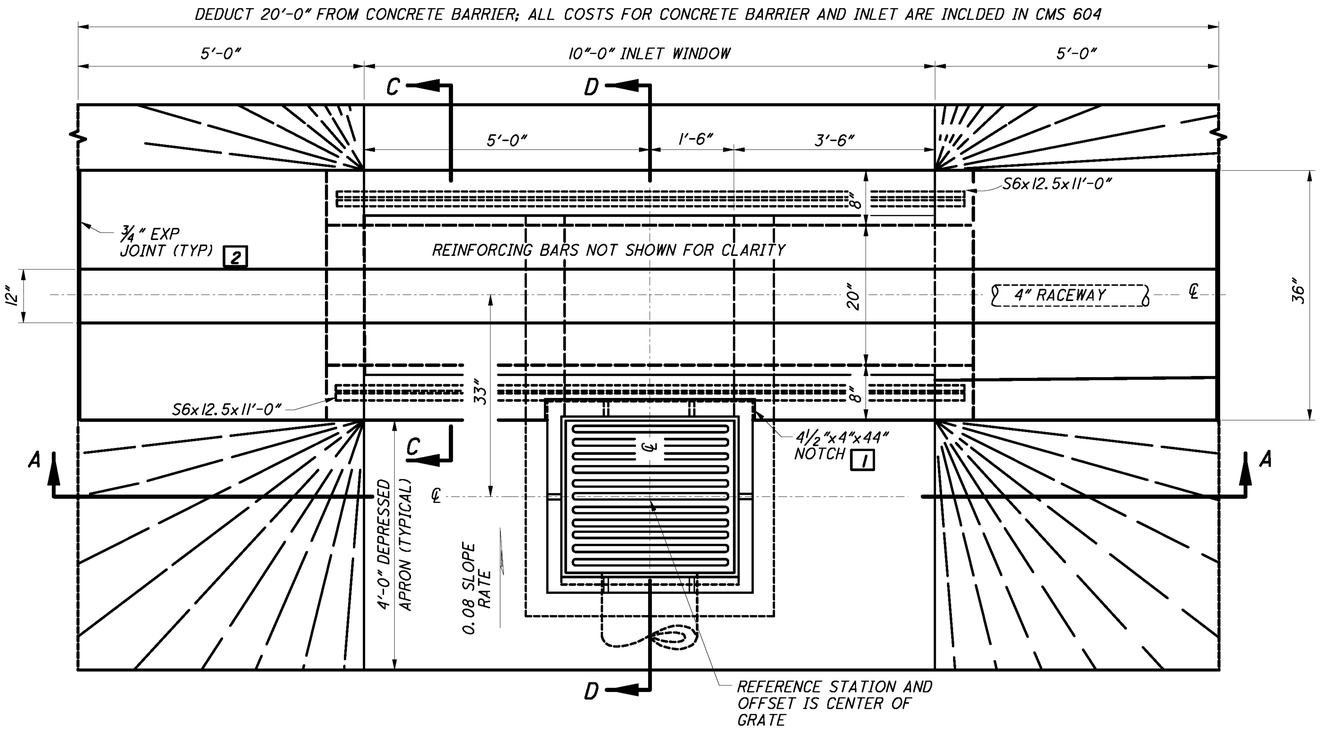
BENDING DIAGRAM



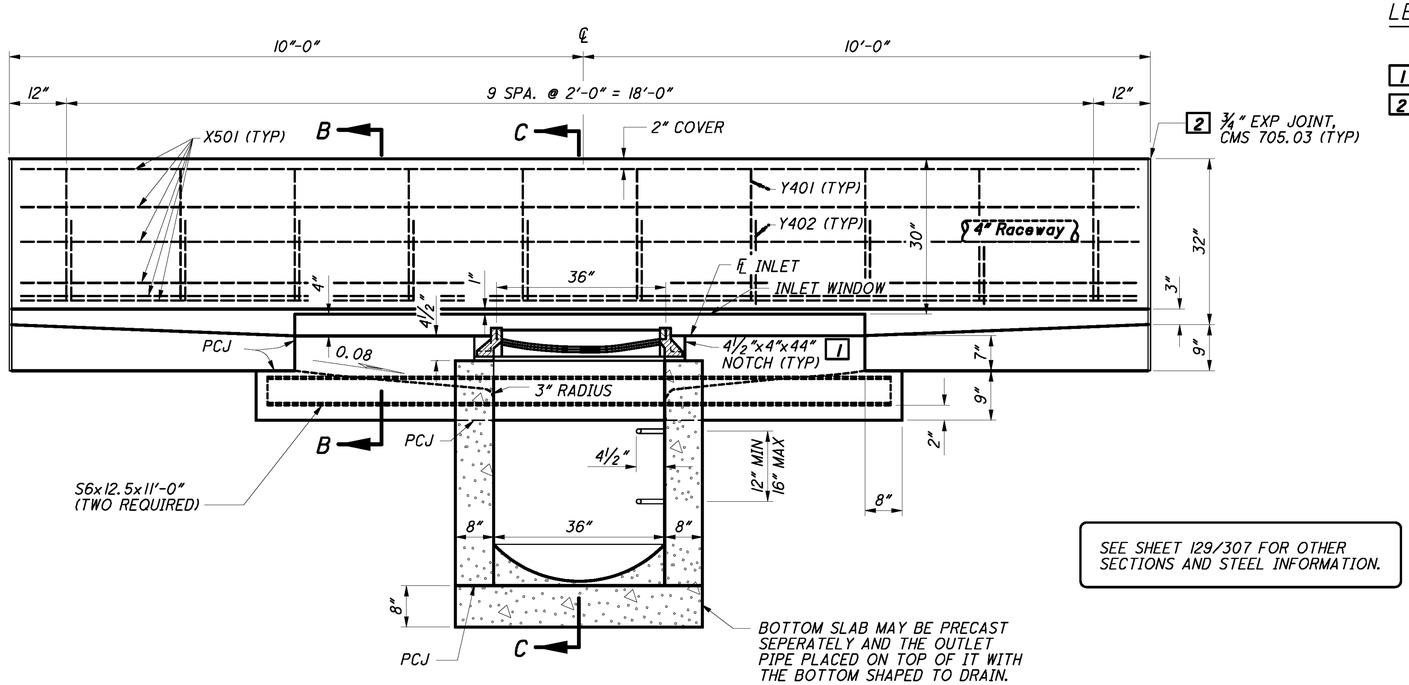
CALCULATED KJB
CHECKED JBD

MEDIAN BARRIER DETAILS

MAH-680-4.29



PLAN VIEW



SECTION A-A

NOTES

1. WALLS: THE WALLS BETWEEN THE BOTTOM SLAB AND THE UPPER PERMISSIBLE CONSTRUCTION JOINT MAY BE BUILT OF BRICK, CONCRETE BLOCK, OR CAST-IN-PLACE CONCRETE, 8"[200] NOMINAL THICKNESS FOR DEPTHS OF 12'[3.5m] OR LESS. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF 6"[150] AND BE REINFORCED SUFFICIENTLY TO PERMIT SHIPPING AND HANDLING WITHOUT DAMAGE. THE UNIT ABOVE THE UPPER PERMISSIBLE CONSTRUCTION JOINT MAY BE PRECAST OR CAST-IN-PLACE.

2. CONCRETE: CAST-IN-PLACE CONCRETE IS TO BE CLASS C. ALL PRECAST CONCRETE SHALL MEET THE REQUIREMENTS OF CMS 706.13. REQUIRED MARKINGS SHALL INCLUDE THE INLET NUMBER. EXPOSED CONCRETE SURFACES OF THE BARRIER SHALL BE SEALED WITH AN APPROVED SEALER.

3. REINFORCING STEEL: REINFORCING STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH CMS 509.09.

4. CASTINGS: MINIMUM MASS OF FRAME AND COVER SHALL BE 540 LBS. [245 KG]. SEE SHEET 129/307 FOR CASTING DETAILS.

   LIGHTER WEIGHT FRAMES AND GRATES THAT MEET THE REQUIREMENTS OF CMS 711.14 MAY ALSO BE PROVIDED. GRATE OPENINGS AND DIMENSIONS SHALL NOT DIFFER FROM THOSE SHOWN UNLESS OTHERWISE SHOWN IN THE PLANS.

5. STEPS: STEPS SHALL BE IN ACCORDANCE WITH SCD MH-1.1.

6. INLETS OVER 12 FEET [3.5m] IN DEPTH: SUCH INLETS SHALL BE PRECAST OR CAST-IN-PLACE CONCRETE; REINFORCED WITH #5 [#16M] BARS ON 12"[300] CENTERS BOTH VERTICALLY AND HORIZONTALLY WITH 2"[50] CLEARANCE FROM THE INSIDE WALL FACE.

7. OPENINGS: PIPE OPENINGS SHALL BE THE OUTSIDE DIAMETER OF THE PIPE BEING SUPPLIED PLUS 2"[50] WHEN FABRICATED OR FIELD CUT. FILL ANY VOIDS PER CMS 601.

8. PCJ: PERMISSIBLE CONSTRUCTION JOINT.

9. PAYMENT: PAYMENT WILL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM 604 - INLET, NO. 3B, AS PER PLAN AND SHALL INCLUDE ALL MATERIALS, REINFORCING STEEL, CASTINGS, RACEWAYS, WIRING, AND LABOR REQUIRED TO CONSTRUCT THE INLET AS SHOWN.

LEGEND

1 AFTER CASTING IS PLACED, FILL NOTCH WITH CLASS C CONCRETE.

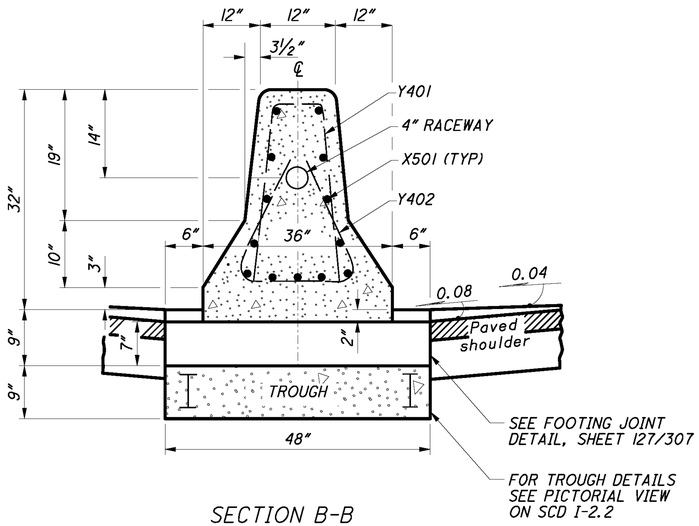
2 A 1½" MIN EXPANSION JOINT SHALL BE PROVIDED IN CONCRETE PAVEMENT OR CONCRETE SHOULDERS.

SEE SHEET 129/307 FOR OTHER SECTIONS AND STEEL INFORMATION.

CALCULATED KJB
CHECKED JBD

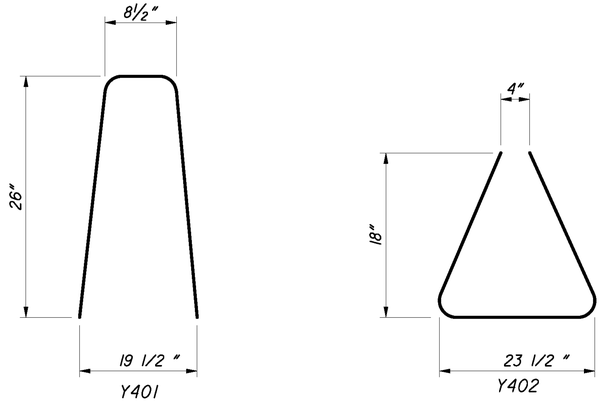
MEDIAN BARRIER INLET DETAILS

MAH-680-4.29



SECTION B-B

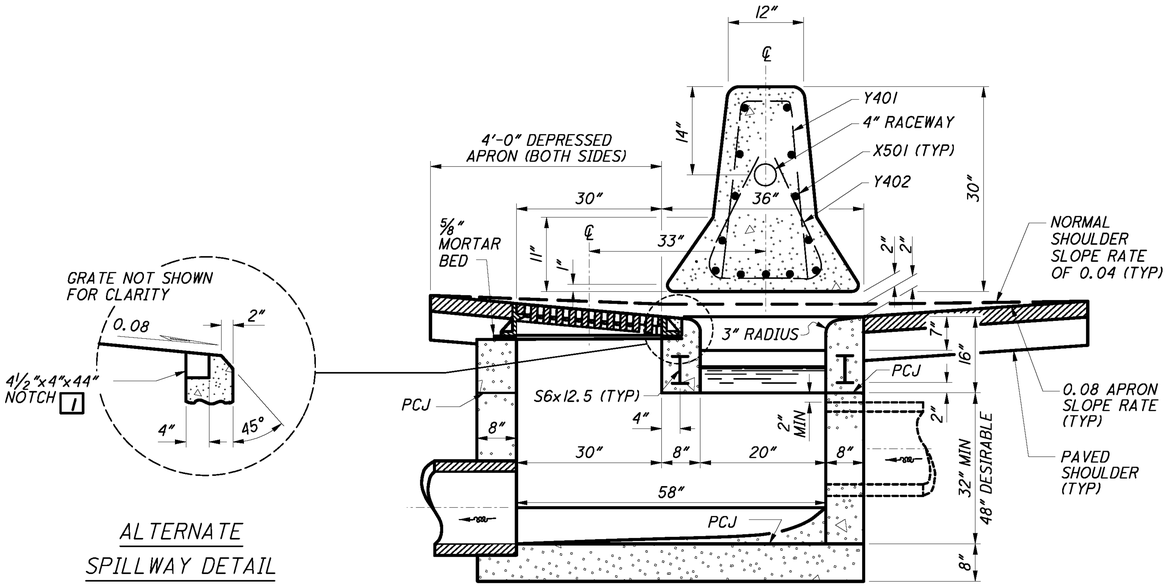
SEE SHEET 128/307



BENDING DIAGRAMS

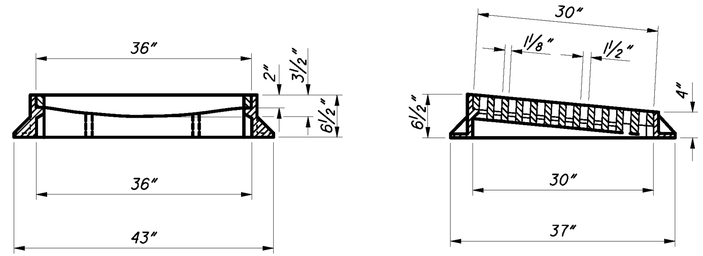
STEEL LIST (FOR ESTIMATING PURPOSES ONLY)							
X501 #5		Y401 #4		Y402 #4		S6x12.5	
STRAIGHT		BENT		BENT			
NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
13	19'-8"	10	5'-0"	10	5'-0"	2	11'-0"

ALTERNATE SPILLWAY DETAIL



SECTION C-C

SEE SHEET 128/307



CASTING DETAILS

SEE SHEET 128/307 FOR NOTES, LEGEND, PLAN, AND SECTION A-A.

CALCULATED KJB
CHECKED JBD

MEDIAN BARRIER INLET DETAILS

MAH-680-4.29

625, LUMINAIRE REMOVED FOR REUSE

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LUMINAIRE AND PROPERLY STORING IT ON THE PROJECT SITE FOR RE-ERECTION.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625, "LUMINAIRE REMOVED FOR REUSE" FOR EACH LUMINAIRE REMOVED AND STORED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

625, LIGHT POLE REMOVED FOR STORAGE

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LIGHT POLE INCLUDING THE BRACKET ARM(S), TRANSFORMER BASE (IF ANY) AND PROPERLY STORING THIS ASSEMBLY ON THE PROJECT SITE UNTIL RE-ERECTED.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625, "LIGHT POLE REMOVED FOR STORAGE," FOR EACH POLE REMOVED AND STORED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

625, LIGHT POLE FOUNDATION REMOVED

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LIGHT POLE FOUNDATION TO A MINIMUM OF 1 FOOT BELOW FINISHED GRADE, OR REMOVING THE FOUNDATION COMPLETELY, BACKFILLING THE RESULTANT DEPRESSION WITH COMPACTED SOIL AND RESTORING THE DISTURBED AREA.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625, "LIGHT POLE FOUNDATION REMOVED" FOR EACH FOUNDATION REMOVED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

625, PULL BOX REMOVED

THIS ITEM OF WORK WILL CONSIST OF REMOVING AND PROPERLY DISPOSING OF AN EXISTING PULL BOX. THE RESULTANT OPENING SHALL THEN BE BACKFILLED TO GRADE WITH SUITABLE COMPACTED SOIL AND RESTORED TO MATCH THE SURROUNDING AREA.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625, "PULL BOX REMOVED" FOR EACH PULL BOX REMOVED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

625, PULL BOX CLEANED

THIS ITEM OF WORK SHALL CONSIST OF CLEANING AN EXISTING PULL BOX, OR JUNCTION BOX, BY REMOVING ANY EXISTING CABLES NOT BEING RECONNECTED, AND DEBRIS SO THAT NEW CABLES CAN BE INSTALLED. ANY UNUSED OPENINGS SHALL BE CLOSED. DISTURBED AREAS NEAR THE PULL BOX, OR JUNCTION BOX, SHALL BE CLEARED OF WEEDS OR DEBRIS AND SHALL BE FULLY RESTORED. MATERIAL REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF OF THE PROJECT SITE.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625, "PULL BOX CLEANED" FOR EACH PULL BOX, OR JUNCTION BOX, CLEANED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

625, CONDUIT CLEANED AND CABLES REMOVED

THIS ITEM SHALL CONSIST OF CLEANING AN EXISTING CONDUIT BY REMOVING EXISTING CABLES, MUD AND DEBRIS SO THAT NEW CABLE CAN BE INSTALLED. INCIDENTAL TO THE CLEANING IS THE INSTALLATION OF BUSHINGS AND/OR COUPLINGS ON THE ENDS OF EXISTING CONDUIT AS REQUIRED. MATERIALS REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR FOR PROPER DISPOSAL OFF OF THE PROJECT SITE. DISTURBED AREAS SHALL BE PROPERLY RESTORED.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625, "CONDUIT CLEANED AND CABLES REMOVED" PER FOOT OF CONDUIT CLEANED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

202, DISCONNECT EXISTING CIRCUIT, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF THE DISCONNECTION OF AN EXISTING LIGHT CIRCUIT AT A PULL BOX, TRANSFORMER BASE, OR JUNCTION BOX.

DISCONNECTION AT A PULL BOX OR JUNCTION BOX SHALL INVOLVE CUTTING THE EXISTING CIRCUIT AND REMOVING ALL SPLICE KITS. ANY CABLE THAT IS TO BE ABANDONED SHALL BE TERMINATED FROM THE BOX SO THAT NO CABLE IS LEFT IN THE BOX.

DISCONNECTION AT A TRANSFORMER BASE SHALL INVOLVE CUTTING THE EXISTING CIRCUIT AND REMOVING ALL CONNECTOR KITS. ALL DUCT-CABLE NOT TO BE REUSED SHALL BE REMOVED FROM THE TRANSFORMER BASE AND THE EXISTING CONDUIT IN THE FOUNDATION SHALL BE CLEANED OF ALL CABLE AND DEBRIS SO THAT THE NEW DUCT-CABLE CAN BE INSTALLED. ALL EXISTING CABLE TO REMAIN ACTIVE SHALL BE CUT IN A MANNER SO THAT THERE IS SUFFICIENT CABLE LEFT FOR RE-CONNECTION.

THOSE WIRES THAT ARE TO REMAIN ON ACTIVE CIRCUITS SHALL HAVE A WATER-RESISTANT SEAL AT THE CUT END. THE WATER-RESISTANT SEAL SHALL BE ACCOMPLISHED BY PLUGGING THE DEACTIVATED PORT OF AN EXISTING CONNECTOR KIT OR BY INSTALLING A CABLE SPLICE KIT ON THE CUT END OF THE CABLE.

PAYMENT SHALL BE MADE AT THE UNIT BID PRICE UNDER CMS ITEM 202, "DISCONNECT EXISTING CIRCUIT, AS PER PLAN" AT EACH LOCATION WHERE DISCONNECTION IS REQUIRED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

625, LUMINAIRE, INSTALLATION ONLY, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF INSTALLING A LUMINAIRE EITHER REMOVED FROM A PREVIOUS LOCATION ON THE PROJECT SITE OR SUPPLIED TO THE PROJECT SITE BY OTHERS.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625, "LUMINAIRE, INSTALLATION ONLY, AS PER PLAN" FOR EACH LUMINAIRE INSTALLED WHICH SHALL INCLUDE ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO PERFORM THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

625, REERECT EXISTING LIGHT POLE, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF RE-ERECTING AN EXISTING LIGHT POLE REMOVED FROM A PREVIOUS LOCATION ON THE PROJECT SITE. THE LIGHT POLE WILL BE INSTALLED ON A NEW FOUNDATION AS INDICATED IN THE PLAN.

WHERE THE POLE WILL BE INSTALLED ON A NEW FOUNDATION, NEW ANCHOR BOLTS SHALL BE FURNISHED.

IN ADDITION, THE EXISTING LIGHT POLE IDENTIFICATION DECAL SHALL BE REMOVED, AND A NEW DECAL FOR THE NEW IDENTIFICATION NUMBER FURNISHED AND INSTALLED.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625, "REERECT EXISTING LIGHT POLE, AS PER PLAN" FOR EACH POLE RE-ERECTED WHICH SHALL INCLUDE ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

CONDUIT EXPANSION AND DEFLECTION

EXPANSION FITTINGS SHALL BE OZ TYPE AX, CROUSE HINDS TYPE XJG, APPLETON TYPE AX, OR EQUAL APPROVED BY THE ENGINEER. EACH EXPANSION FITTING SHALL PROVIDE EITHER 4 OR 8 INCHES TOTAL MOVEMENT AS SPECIFIED BY THE PLAN DETAILS AND SHALL HAVE AN EXTERNAL COPPER BONDING JUMPER, UNLESS SPECIFIED OTHERWISE BY THE PLAN DETAILS.

DEFLECTION COUPLINGS SHALL BE OZ TYPE DX, CROUSE HINDS TYPE XD, APPLETON TYPE DF, OR EQUAL APPROVED BY THE ENGINEER. EACH DEFLECTION COUPLING SHALL HAVE AN EXTERNAL COPPER BONDING JUMPER, UNLESS SPECIFIED OTHERWISE BY THE PLAN DETAILS.

HIGH VOLTAGE TEST WAIVED

THE HIGH VOLTAGE TEST SHALL NOT BE PERFORMED ON THE CIRCUITS CONSTRUCTED BY THIS PROJECT, SINCE THE TEST COULD DAMAGE THE PORTION OF THE COMPLETED CIRCUIT WHICH HAS BEEN IN SERVICE PRIOR TO THIS PROJECT.

SPECIAL, MAINTAIN EXISTING LIGHTING

EXISTING ROADWAYS WITH ARE TO REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION OF THIS PROJECT AND ARE LIGHTED SHALL HAVE THE LIGHTING MAINTAINED AS DESCRIBED HEREIN.

BEFORE ANY WORK IS STARTED IN THE IMMEDIATE VICINITY OF ANY EXISTING LIGHTING CIRCUITS, REPRESENTATIVES OF THE STATE, THE MAINTAINING AGENCY, AND THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE EXISTING ROADWAY LIGHTING CIRCUITS TO BE MAINTAINED. DURING THIS INSPECTION A WRITTEN RECORD OF THE CONDITION OF THE EXISTING LIGHTING SHALL BE MADE BY THE STATE'S REPRESENTATIVE. THIS WRITTEN REPORT SHALL NOTE INDIVIDUAL LUMINAIRES WHICH ARE NOT OPERATIONAL, AND INDIVIDUAL CIRCUITS WHICH ARE NOT IN WORKING ORDER. THE COMPLETED REPORT SHALL BE SIGNED BY THE REPRESENTATIVES OF THE STATE, THE MAINTAINING AGENCY, AND THE CONTRACTOR. IF, AS A RESULT OF THIS INSPECTION, IT IS DETERMINED THAT THE CONDITION OF THE EXISTING SYSTEM IS BELOW THAT REQUIRED FOR THE SAFETY OF THE TRAVELING PUBLIC, THEN THE MAINTAINING AGENCY SHALL MAKE REPAIRS NECESSARY TO RETURN THE SYSTEM TO AN ACCEPTABLE CONDITION. FOLLOWING THESE REPAIRS, THE SYSTEM SHALL AGAIN BE INSPECTED AND A REPORT MADE AND SIGNED AS OUTLINED HEREIN.

WHEN THE EXISTING SYSTEM IS IN AN ACCEPTABLE CONDITION, IT SHALL BE TURNED OVER TO THE CONTRACTOR WHO SHALL THEN BE REQUIRED TO MAINTAIN THE EXISTING LIGHTING TO THE CONDITION OUTLINED IN THIS REPORT WITH THE EXCEPTION OF KNOCKDOWNS DUE TO TRAFFIC ACCIDENTS. REPLACEMENTS OF KNOCKED DOWN UNITS SHALL BE DONE ONLY WHEN THE ENGINEER HAS DETERMINED THAT THE REPLACEMENT OF THE KNOCKED DOWN UNIT IS NECESSARY AND SHALL BE PAID SEPERATELY ON A PER UNIT BASIS. BETTERMENTS SHALL BE COVERED IN ITEMS OF WORK PERTAINING TO THE CONSTRUCTION OF PERMANENT IMPROVEMENTS. THE MAINTAINING AGENCY SHALL GIVE THE CONTRACTOR ONE COPY OF THE EXISTING LIGHTING CIRCUITRY LAYOUT. WHEN THE CONTRACTOR HAS TAKEN OVER THE MAINTENANCE OF THE EXISTING SYSTEM, HE SHALL PROVIDE ALL REQUIRED LAYOUT AND LOCATING OF EXISTING LIGHTING CIRCUITS WITHIN THE PROJECT.

SHOULD THE CONTRACTOR DESIRE THE REMOVAL OF THE EXISTING LIGHTING BEFORE THE NEW LIGHTING IS OPERATIONAL, THE CONTRACTOR SHALL THEN BE RESPONSIBLE FOR ADEQUATE TEMPORARY LIGHTING OF THAT PORTION OF THE EXISTING ROADWAY AFFECTED BY THE REMOVAL OF THE EXISTING LIGHTING. TWO (2) WEEKS PRIOR TO INSTALLING SUCH LIGHTING, THE CONTRACTOR SHALL PREPARE AND SUBMIT FOUR (4) SETS OF THE TEMPORARY LIGHTING PLANS TO THE ENGINEER FOR REVIEW AND APPROVAL. THIS PLAN SHALL SHOW LOCATION OF POLES, LENGTH OF BRACKET ARMS, STYLE OF LUMINAIRES, MOUNTING HEIGHT, WIRING METHODS, AND OTHER PERTINENT INFORMATION. THE TEMPORARY LIGHTING SHALL PROVIDE AN AVERAGE INITIAL INTENSITY OF 1.2 FOOT-CANDLES WITH AN AVERAGE TO MINIMUM UNIFORMITY RATIO NOT TO EXCEED 4:1. MOUNTING HEIGHT FOR TEMPORARY LUMINAIRES SHALL NOT BE LESS THAN 27 FEET AND MINIMUM OVERHEAD CONDUCTOR CLEARANCE SHALL BE 20 FEET. TEMPORARY OVERHEAD CONSTRUCTION SHALL NOT BE LESS THAN GRADE "A" FOR STRENGTH REQUIREMENTS AS DEFINED BY THE NATIONAL ELECTRIC SAFETY CODE. WOOD POLES WITH OVERHEAD WIRING MAY BE USED. HOWEVER, TEMPORARY LIGHTING SHALL MEET FEDERAL AND STATE SAFETY CRITERIA. IF BREAK-AWAY POLES ARE USED TO MEET THIS CRITERIA, THEN UNDERGROUND WIRING WILL BE USED. RECONDITIONED OR USED MATRIALS MAY BE FURNISHED FOR TEMPORARY LIGHTING. ALL MATERIALS NECESSARY TO COMPLETE THE TEMPORARY LIGHTING SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. A SEPERATE POWER SERVICE WILL BE PROVIDED BY THE CONTRACTOR FOR THE TEMPORARY LIGHTING SYSTEM. THE TEMPORARY LIGHTING SHALL NOT BE SPLICED INTO EXISTING LIGHTING CIRCUITS. THE CONTRACTOR SHALL PAY ALL HOOK-UP FEES AND ELECTRICAL COSTS FOR THE TEMPORARY SYSTEM. THESE COSTS SHALL BE PAID FOR UNDER THE LUMP SUM ITEM SPECIAL MAINTAIN EXISTING LIGHTING. WHEN NO LONGER NEEDED THE TEMPORARY LIGHTING INSTALLATION SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.

THE LUMP SUM BID FOR ITEM SPECIAL - MAINTAIN EXISTING LIGHTING, SHALL INCLUDE PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS, INCIDENTALS, AND TEMPORARY POWER SERVICES NECESSARY TO MAINTAIN THE EXISTING LIGHTING AS SPECIFIED HEREIN. THE UNIT BID PRICE FOR EACH ITEM SPECIAL - REPLACING EXISTING CONVENTIONAL LIGHTING UNIT, SHALL BE FULL PAYMENT FOR THE REPLACEMENT OF AN EXISTING UNIT WHICH HAS BEEN KNOCKED DOWN AFTER THE AFOREMENTIONED INSPECTION AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO PROVIDE A REPLACEMENT FOR SUCH UNIT. THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

SPECIAL, REPLACING EXISTING LIGHTING UNIT, 3 EACH
SPECIAL, MAINTAIN EXISTING LIGHTING, 1 LUMP

ITEM 625 - CONDUIT, 2", 725.04, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 625 AND 725.04, CONDUITS INSTALLED UNDER THIS ITEM SHALL BE ATTACHED TO THE OUTER SIDE OF A BRIDGE CONCRETE PARAPET WHERE INDICATED IN THE PLANS. THE CONDUIT SHALL BE SECURED TO THE PARAPET BY TWO-HOLE STRAPS SPACED AT 5 FOOT INTERVALS. TWO HOLES SHALL BE DRILLED 1 INCH INTO THE CONCRETE TO ACCOMMODATE 1/4 INCH DIAMETER STAINLESS STEEL AND/OR EPOXY CONCRETE ANCHORS.

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE BID, PER FOOT, OF ITEM 625 CONDUIT, 2", 725.04, AS PER PLAN, FURNISHED AND INSTALLED INCLUDING ALL FITTINGS AND APPURTENANCES, JOINTS, BENDS AND GROUND, IN PLACE AND ACCEPTED.

625, GENERAL

THE POWER SUPPLY AGENCY FOR THIS PROJECT IS:

OHIO EDISON
730 SOUTH AVENUE
YOUNGSTOWN, OHIO 44502
PHONE: 330-740-4635
CONTACT: BILL SPEECE

POWER SERVICE: 480 VOLT, 3-WIRE, SINGLE PHASE, GROUNDED NEUTRAL. THIS PROJECT HAS BEEN DESIGNED ON THE BASIS OF 5% VOLTAGE DROP WITH A MAXIMUM UNIFORMITY RATIO OF 4.0 TO 1.0 FOR CONVENTIONAL UNITS AND 3.0 TO 1.0 FOR HIGH MAST UNITS.

THE CONTRACTOR SHALL PAY ALL ELECTRICAL ENERGY CHARGES FOR NEW POWER SERVICES ESTABLISHED BY THIS PROJECT. UPON COMPLETION OF THIS PROJECT, POWER SERVICE ELECTRICAL ENERGY ACCOUNTS SHALL BE TRANSFERRED TO MAINTAINING AGENCY. THIS SHALL INCLUDE NEW POWER SERVICE ESTABLISHED BY THIS PROJECT AS WELL AS REASSIGNMENT OF EXISTING SERVICE DUE TO WORK PERFORMED BY THIS PROJECT.

CALCULATED KJB
CHECKED JBD

LIGHTING GENERAL NOTES

MAH-680-4.29

LIGHTING QUANTITIES TABLE

REFERENCE NO.	SHEET NO.	STATION TO STATION		SIDE	202 DISCONNECT EXISTING CIRCUIT, AS PER PLAN	625 CONNECTOR KIT, TYPE II	625 MEDIAN LIGHT POLE FOUNDATION, 10' DEEP	625 NO. 4 AWG 600 VOLT DISTRIBUTION CABLE	625 NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	625 CONDUIT, 2", 725.04	625 CONDUIT, 2", 725.04, AS PER PLAN	625 CONDUIT, JACKED OR DRILLED, 2"	625 CONDUIT CLEANED AND CABLES REMOVED	625 LUMINAIRE, INSTALLATION ONLY, AS PER PLAN	625 TRENCH, 24" DEEP	625 TRANSITION JUNCTION BOX	625 STRUCTURE JUNCTION BOX	625 BARRIER JUNCTION BOX	625 PULL BOX, 725.08, 18"	625 PULL BOX REMOVED	625 REERECT EXISTING LIGHT POLE, AS PER PLAN	625 PLASTIC CAUTION TAPE	625 PULL BOX CLEANED	625 LIGHT POLE REMOVED FOR STORAGE	625 LIGHT POLE FOUNDATION REMOVED	625 LUMINAIRE REMOVED FOR REUSE
		AT/TO	FROM	LT/RT	EACH	EACH	EACH	FT	FT	FT	FT	FT	FT	EACH	FT	EACH	EACH	EACH	EACH	EACH	EACH	FT	EACH	EACH	EACH	EACH
IWA6	135	321+30.00	-	-	1	2																		1			
	135	321+30.00	322+68.00	-					444				138														
BJB1	135	322+68.00	-	-	1	2												1									
	135	322+68.00	324+23.50	-					496																		
	135-136	322+68.00	331+12.00	-					2562																		
TJB1	135	322+70.00	-	-												1											
	135-136	322+70.00	331+10.00	-						840					840								840				
IWA13	135	324+23.50	-	-		2	1							1				1			1				1	1	1
	135	324+23.50	327+10.00	-					891																		
IWA14	135	327+10.00	-	-		2	1							1				1			1				1	1	1
	135	327+10.00	330+04.00	-					912																		
IWA15	135	330+04.00	-	-		2	1							1				1			1				1	1	1
	135-136	330+04.00	331+12.00	-					354																		
TJB2	136	331+10.00	-	-												1											
BJB2	136	331+12.00	-	-	1	2												1									
	136	331+12.00	332+97.00	-					585				185														
PB1	136	332+81.00	-	LT		2													1								
	136	332+81.00	333+11.50	LT					186			52															
	136	332+81.00	335+31.00	LT					846	272					62								62				
IWA16	136	332+97.00	-	-	1	2																		1			
	136	332+97.00	333+11.50	-					72				14														
BJB3	136	333+11.50	-	-	1	2												1									
	136	333+11.50	333+50.00	RT					213			61															
PB2	136	333+50.00	-	RT		2													1	1							
	136	333+50.00	336+87.50	RT					999	102	221				102								102				
	136	334+05.00	-	-	1	2		270			125			2													2
PB3	136	335+31.00	-	LT		2													1								
	136	335.31+00	336+47.00	LT					396	122					122								122				
IWA17	136	335+91.00	-	-	1	2																		1			
	136	335+91.00	336+40.00	-					237				69														
PB4	136	336+47.00	-	LT		2													1								
	136	336+47.00	336+40.00	LT					177			49															
BJB4	136	336+40.00	-	-	1	2												1									
	136	336+40.00	336+87.50	RT					234			68															
	136	336+40.00	338+59.50	-					688				219														
PB5	136	336+87.50	-	RT		2													1	1							
TOTALS CARRIED TO GENERAL SUMMARY					8	32	3	270	10292	1336	346	230	625	5	1126	2	0	7	5	2	3	1126	3	3	3	5

CALCULATED KJB
CHECKED JBD

LIGHTING SUBSUMMARY

MAH-680-4.29

LIGHTING QUANTITIES TABLE

REFERENCE NO.	SHEET NO.	STATION TO STATION		SIDE	202	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625
					DISCONNECT EXISTING CIRCUIT, AS PER PLAN	CONNECTOR KIT, TYPE II	MEDIAN LIGHT POLE FOUNDATION, 10' DEEP	NO. 4 AWG 600 VOLT DISTRIBUTION CABLE	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	CONDUIT, 2", 725.04	CONDUIT, 2", 725.04, AS PER PLAN	CONDUIT, JACKED OR DRILLED, 2"	CONDUIT CLEANED AND CABLES REMOVED	LUMINAIRE, INSTALLATION ONLY, AS PER PLAN	TRENCH, 24" DEEP	TRANSITION JUNCTION BOX	STRUCTURE JUNCTION BOX	BARRIER JUNCTION BOX	PULL BOX, 725.08, 18"	PULL BOX REMOVED	REERECT EXISTING LIGHT POLE, AS PER PLAN	PLASTIC CAUTION TAPE	PULL BOX CLEANED	LIGHT POLE REMOVED FOR STORAGE	LIGHT POLE FOUNDATION REMOVED	LUMINAIRE REMOVED FOR REUSE
		AT/TO	FROM	LT/RT	EACH	EACH	EACH	FT	FT	FT	FT	FT	FT	EACH	FT	EACH	EACH	EACH	EACH	EACH	EACH	FT	EACH	EACH	EACH	EACH
IWA18	136	338+59.50	-	-	1	2																	1			
IDA5	137	350+26.00	-	-	1	2																	1			
	137	350+26.00	350+33.00	-					51				7													
BJB5	137	350+33.00	-	-	1	2												1								
	137	350+33.00	352+99.00	-					828																	
	137	350+33.00	355+72.00	-					1647																	
TJB3	137	350+35.00	-	-												1										
	137	350+35.00	355+70.00	-						535					535							535				
IDA4	137	352+99.00	-	-		2	1							1				1			1			1	1	1
	137	352+99.00	355+72.00	-					849																	
TJB4	137	355+70.00	-	-												1										
BJB6	137	355+72.00	-	-	1	2												1								
	137	355+72.00	355+83.50	-					64				11													
IDA3	137	355+83.50	-	-	1	2																	1			
IDA1	138	361+67.50	-	-	1	2																	1			
	138	361+67.50	362+03.50	-					138				36													
PB6	138	362+37.00	-	RT		2														1	1					
	138	362+03.00	362+37.00	RT					261			77														
	138	362+37.00	364+29.00	RT					646	82	124				82								82			
BJB7	138	362+03.50	-	-	1	2												1								
	138	362+03.50	362+31.50	LT					228			66														
PB7	138	362+31.50	-	LT		2														1						
	138	362+31.50	364+83.50	LT					780	250					115								115			
SJB1	138	363+10.00	-	RT	1	2											1									
	138	363+10.00	363+60.00	RT				120			50															
SJB2	138	363+60.00	-	RT	1	2											1									
	138	363+60.00	364+29.00	RT				190		85																
PB8	138	364+29.00	-	RT		2														1	1					
	138	364+29.00	364+46.50	RT					243			71														
	138	364+29.00	367+80.00	RT					1162	246	131				246								246			
	138	364+36.50	-	RT																	1					
BJB8	138	364+46.50	-	-	1	2												1								
	138	364+46.50	364+57.50	-					63				11													
	138	364+46.50	364+83.50	LT					210			70														
3DA1	138	364+57.50	-	-	1	2																		1		
PB9	138	364+83.50	-	LT		2														1						
	138	364+83.50	365+57.50	LT					240	70					70								70			
PB10	138	365+57.50	-	LT		2														1						
	138	365+57.50	367+79.50	LT					691	220					80								80			
TOTALS CARRIED TO GENERAL SUMMARY					**11**	**34**	**1**	**310**	**8101**	**1488**	**305**	**284**	**65**	**1**	**1128**	**2**	**2**	**5**	**5**	**3**	**1**	**1128**	**5**	**1**	**1**	**1**

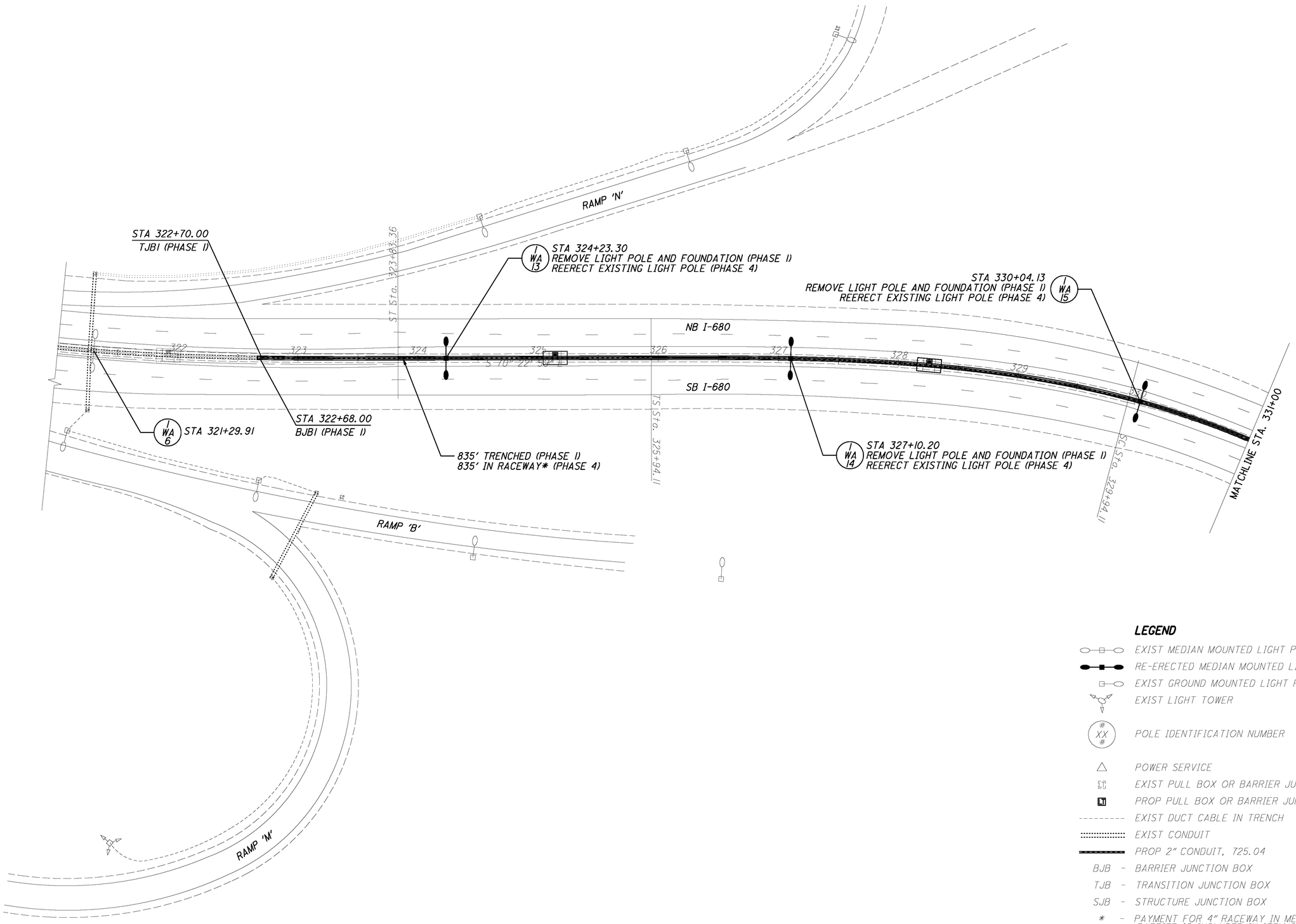
CALCULATED KJB
CHECKED JBD

LIGHTING SUBSUMMARY

MAH-680-4.29

LIGHTING QUANTITIES TABLE

REFERENCE NO.	SHEET NO.	STATION TO STATION		SIDE	202 DISCONNECT EXISTING CIRCUIT, AS PER PLAN	625 CONNECTOR KIT, TYPE II	625 MEDIAN LIGHT POLE FOUNDATION, 10' DEEP	625 NO. 4 AWG 600 VOLT DISTRIBUTION CABLE	625 NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	625 CONDUIT, 2", 725.04	625 CONDUIT, 2", 725.04, AS PER PLAN	625 CONDUIT, JACKED OR DRILLED, 2"	625 CONDUIT CLEANED AND CABLES REMOVED	625 LUMINAIRE, INSTALLATION ONLY, AS PER PLAN	625 TRENCH, 24" DEEP	625 TRANSITION JUNCTION BOX	625 STRUCTURE JUNCTION BOX	625 BARRIER JUNCTION BOX	625 PULL BOX, 725.08, 18"	625 PULL BOX REMOVED	625 REERECT EXISTING LIGHT POLE, AS PER PLAN	625 PLASTIC CAUTION TAPE	625 PULL BOX CLEANED	625 LIGHT POLE REMOVED FOR STORAGE	625 LIGHT POLE FOUNDATION REMOVED	625 LUMINAIRE REMOVED FOR REUSE
		AT/TO	FROM	LT/RT	EACH	EACH	EACH	FT	FT	FT	FT	FT	FT	EACH	FT	EACH	EACH	EACH	EACH	EACH	EACH	FT	EACH	EACH	EACH	EACH
3DA2	138	367+50.50	-	-		2	1							1				1			1			1	1	1
	138	367+50.50	367+72.50	-					95																	
BJB9	138	367+72.50	-	-	1	2												1								
	138	367+72.50	367+79.50	LT					223			64														
	138	367+72.50	367+80.00	RT					283			84														
	138	367+72.50	368+68.00	-					317				96													
PBI1	138	367+79.50	-	LT		2													1							
PBI2	138	367+80.00	-	RT		2													1	1						
	138	368+68.00	-	-	1	2																		1		
3GA2	139	375+69.00	-	RT	1	2																		1		
	139	375+69.00	376+56.00	RT				200		90					90							90				
PBI3	139	376+56.00	-	RT	1	2													1							
	139	376+56.00	376+56.00	RT				280				60														
PBI4	139	376+56.00	-	-	1	2													1	1						
BJBI0	139	376+56.00	-	-		2												1								
	139	376+56.00	376+56.00	LT				300				65														
PBI5	139	376+56.00	-	LT	1	2													1							
	139	376+56.00	376+94.00	LT				198		89					89							89				
	139	376+56.00	380+09.00	-				726																		
	139	376+56.00	381+90.00	-						530					530							530				
	139	376+56.00	381+92.00	-				1092																		
3GA3	139	376+94.00	-	LT	1	2																		1		
3GAI	139	380+09.00	-	-		2	1							1				1			1				1	1
	139	380+09.00	381+92.00	-				386																		
TJB5	139	381+90.00	-	-												1										
BJBII	139	381+92.00	-	-	1	2												1								
	139	381+92.00	382+68.00	-				172					76													
	139	382+68.00	-	-	1	2																		1		



LEGEND

- EXIST MEDIAN MOUNTED LIGHT POLE
- RE-ERECTED MEDIAN MOUNTED LIGHT POLE
- EXIST GROUND MOUNTED LIGHT POLE
- EXIST LIGHT TOWER
- # / XX / # — POLE IDENTIFICATION NUMBER
- △ — POWER SERVICE
- EXIST PULL BOX OR BARRIER JUNCTION BOX
- PROP PULL BOX OR BARRIER JUNCTION BOX
- EXIST DUCT CABLE IN TRENCH
- EXIST CONDUIT
- PROP 2" CONDUIT, 725.04
- BJB - BARRIER JUNCTION BOX
- TJB - TRANSITION JUNCTION BOX
- SJB - STRUCTURE JUNCTION BOX
- * - PAYMENT FOR 4" RACEWAY IN MEDIAN BARRIER IS INCLUDED IN ITEM 622

N

HORIZONTAL SCALE IN FEET
0 20 40 80

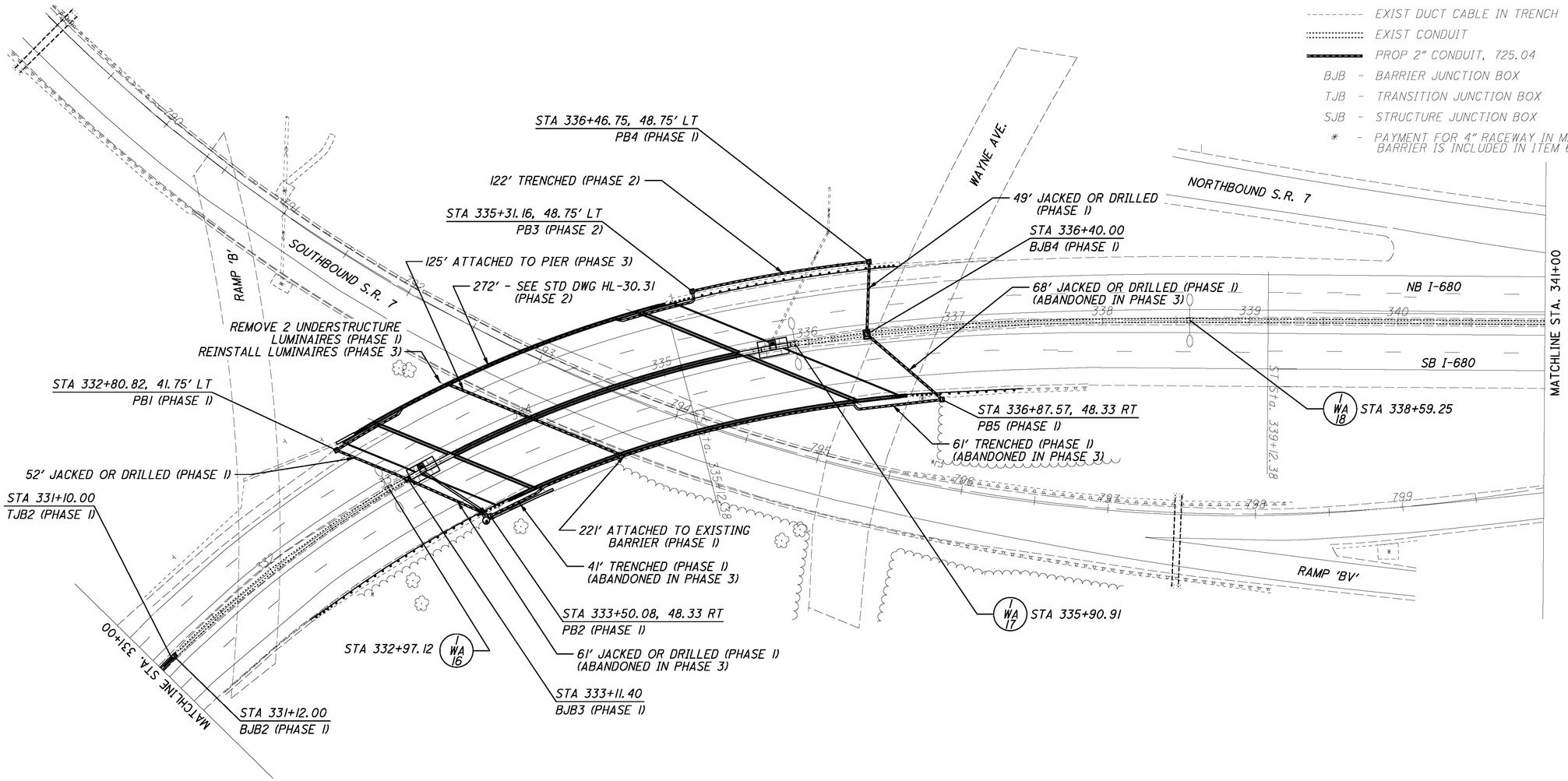
CALCULATED KJB
CHECKED JBD

LIGHTING PLAN
STA. 321+00 TO STA. 331+00

MAH-680-4.29

LEGEND

- EXIST MEDIAN MOUNTED LIGHT POLE
- RE-ERECTED MEDIAN MOUNTED LIGHT POLE
- EXIST GROUND MOUNTED LIGHT POLE
- EXIST LIGHT TOWER
- # / XX / # — POLE IDENTIFICATION NUMBER
- POWER SERVICE
- EXIST PULL BOX OR BARRIER JUNCTION BOX
- PROP PULL BOX OR BARRIER JUNCTION BOX
- EXIST DUCT CABLE IN TRENCH
- EXIST CONDUIT
- PROP 2" CONDUIT, 725.04
- BJB - BARRIER JUNCTION BOX
- TJB - TRANSITION JUNCTION BOX
- SJB - STRUCTURE JUNCTION BOX
- * - PAYMENT FOR 4" RACEWAY IN MEDIAN BARRIER IS INCLUDED IN ITEM 622



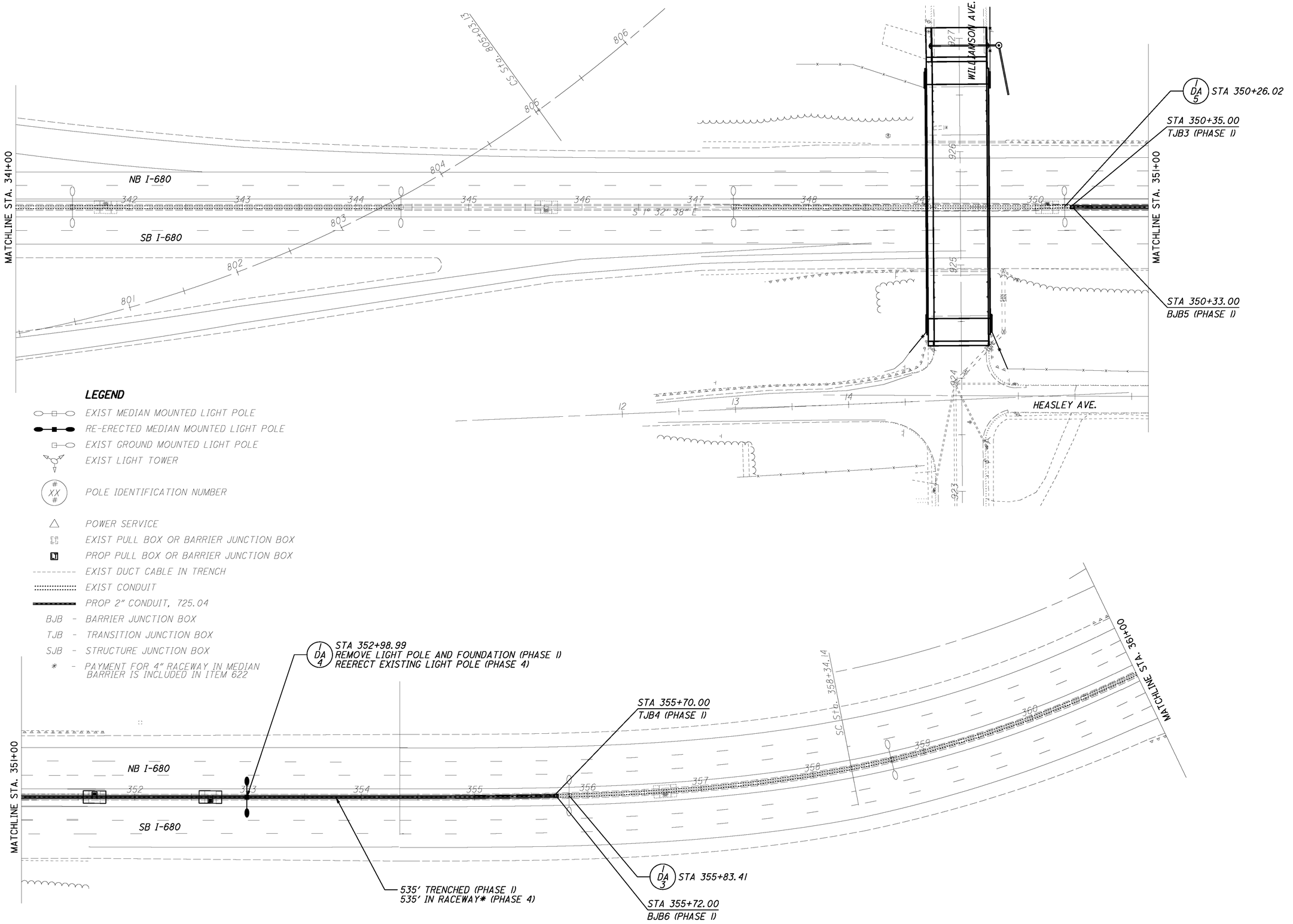
HORIZONTAL SCALE IN FEET
0 20 40 80

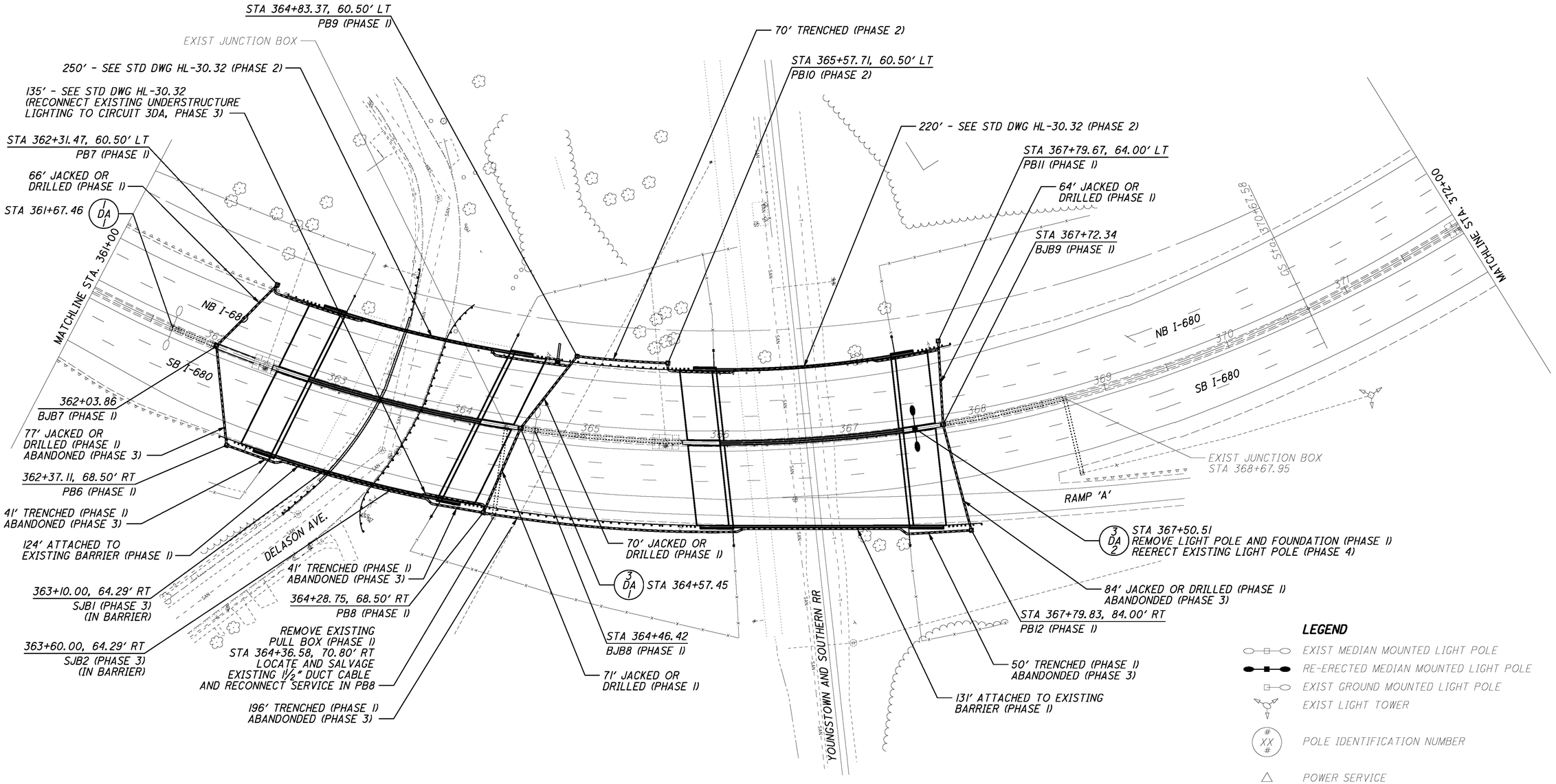
CALCULATED KJB
CHECKED JBD

LIGHTING PLAN
STA. 331+00 TO STA. 341+00

MAH-680-4.29

136
307


MATCHLINE STA. 341+00
NB I-680
SB I-680
342
343
344
345
346
347
348
349
350
801
802
803
804
805
806
CS STA. 805+02.13
S 1° 32' 38" E
WILLIAMSON AVE.
927
926
925
924
923
1/DA 5
STA 350+26.02
STA 350+35.00
TJB3 (PHASE I)
STA 350+33.00
BJB5 (PHASE I)
MATCHLINE STA. 351+00
HEASLEY AVE.
12
13
14
LEGEND
EXIST MEDIAN MOUNTED LIGHT POLE
RE-ERECTED MEDIAN MOUNTED LIGHT POLE
EXIST GROUND MOUNTED LIGHT POLE
EXIST LIGHT TOWER
XX
POLE IDENTIFICATION NUMBER
POWER SERVICE
EXIST PULL BOX OR BARRIER JUNCTION BOX
PROP PULL BOX OR BARRIER JUNCTION BOX
EXIST DUCT CABLE IN TRENCH
EXIST CONDUIT
PROP 2" CONDUIT, 725.04
BJB - BARRIER JUNCTION BOX
TJB - TRANSITION JUNCTION BOX
SJB - STRUCTURE JUNCTION BOX
* - PAYMENT FOR 4" RACEWAY IN MEDIAN BARRIER IS INCLUDED IN ITEM 622
1/DA 4
STA 352+98.99
REMOVE LIGHT POLE AND FOUNDATION (PHASE I)
REERECT EXISTING LIGHT POLE (PHASE 4)
MATCHLINE STA. 351+00
NB I-680
SB I-680
352
353
354
355
356
357
358
359
360
SC STA. 358+34.14
MATCHLINE STA. 361+00
STA 355+70.00
TJB4 (PHASE I)
535' TRENCHED (PHASE I)
535' IN RACEWAY* (PHASE 4)
1/DA 3
STA 355+83.41
STA 355+72.00
BJB6 (PHASE I)
N
0
20
40
80
HORIZONTAL SCALE IN FEET
CALCULATED KJB
CHECKED JBD
LIGHTING PLAN
STA. 341+00 TO STA. 361+00
MAH-680-4.29
137
307



HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED KJB
CHECKED JBD

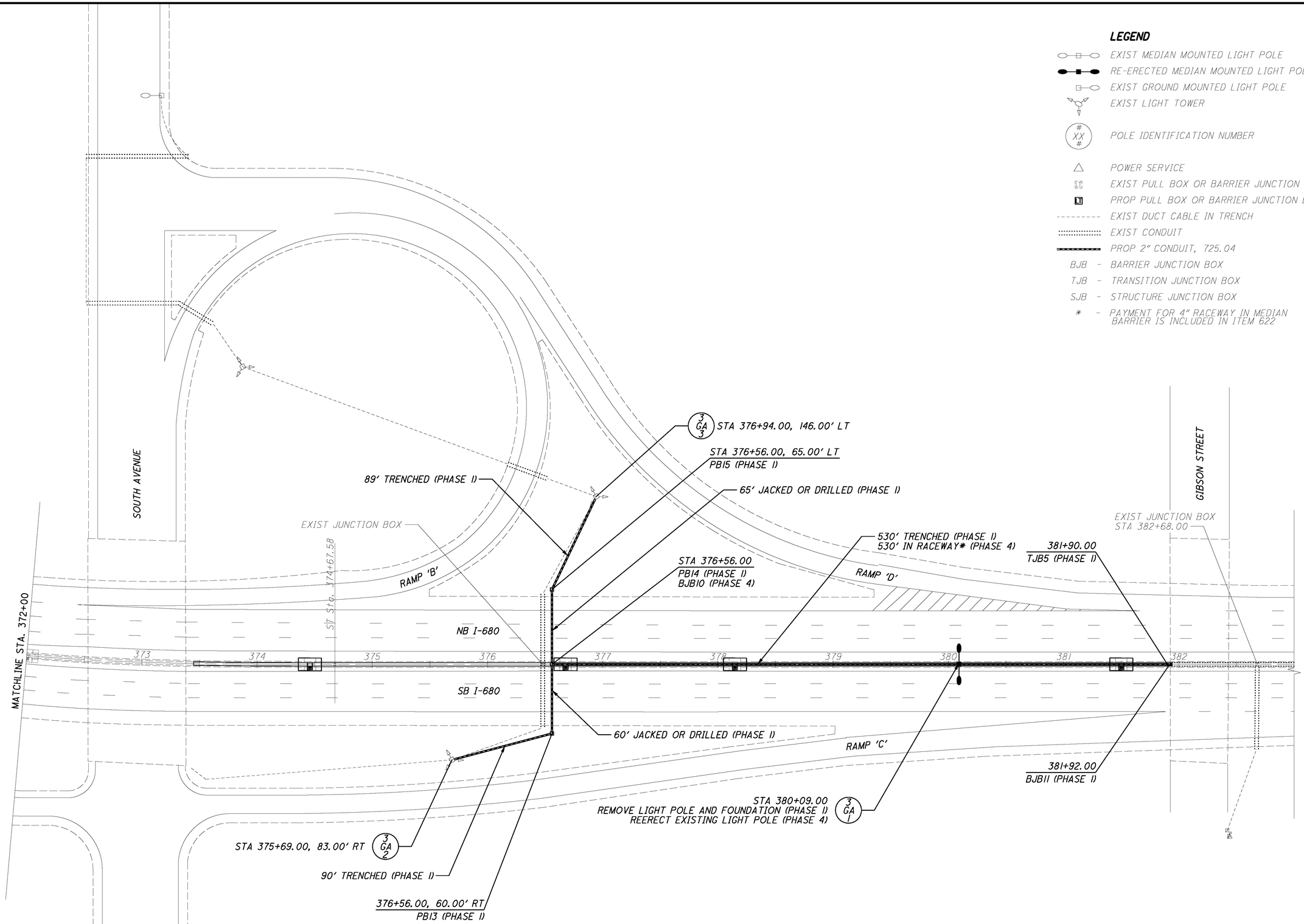
LIGHTING PLAN
STA. 361+00 TO STA. 372+00

MAH-680-4.29

138
307

LEGEND

- EXIST MEDIAN MOUNTED LIGHT POLE
- RE-ERECTED MEDIAN MOUNTED LIGHT POLE
- EXIST GROUND MOUNTED LIGHT POLE
- EXIST LIGHT TOWER
- # / XX / # — POLE IDENTIFICATION NUMBER
- POWER SERVICE
- EXIST PULL BOX OR BARRIER JUNCTION BOX
- PROP PULL BOX OR BARRIER JUNCTION BOX
- EXIST DUCT CABLE IN TRENCH
- EXIST CONDUIT
- PROP 2" CONDUIT, 725.04
- BJB - BARRIER JUNCTION BOX
- TJB - TRANSITION JUNCTION BOX
- SJB - STRUCTURE JUNCTION BOX
- * - PAYMENT FOR 4" RACEWAY IN MEDIAN BARRIER IS INCLUDED IN ITEM 622

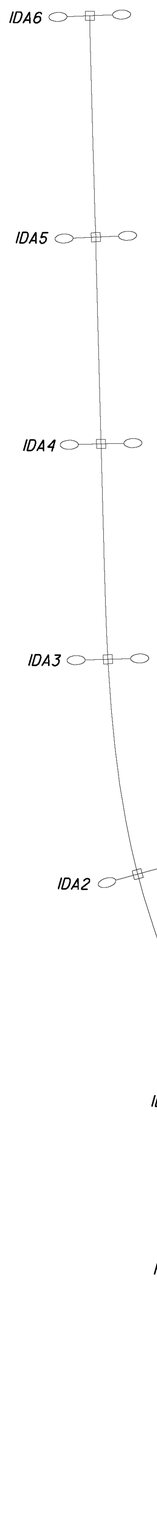


HORIZONTAL SCALE IN FEET
0 20 40 80

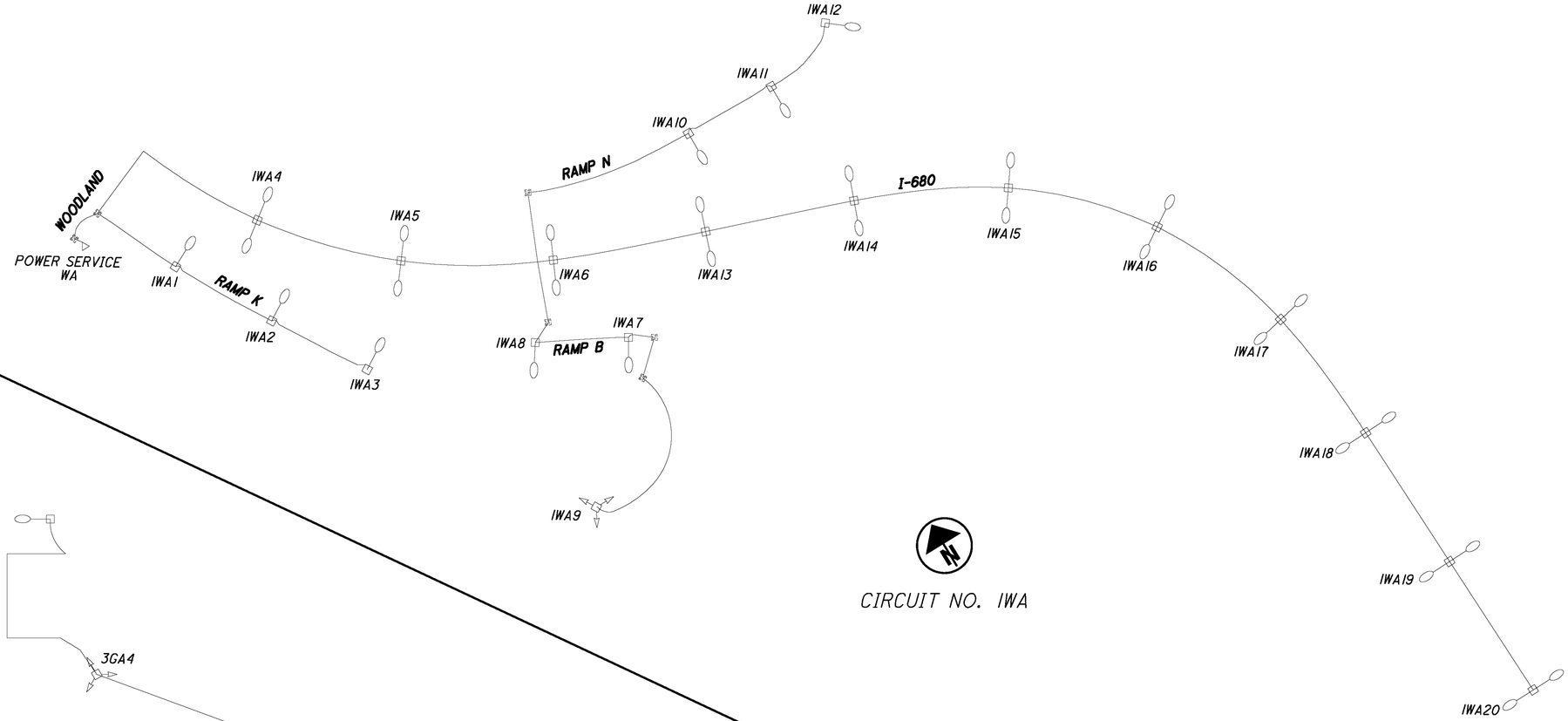
CALCULATED KJB
CHECKED JBD

LIGHTING PLAN
STA. 372+00 TO STA. 383+00

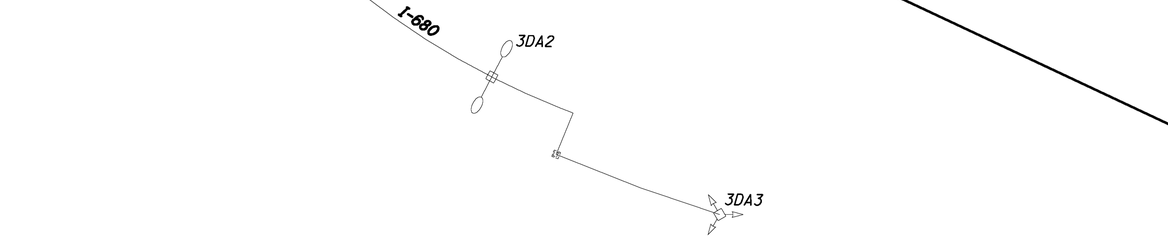
MAH-680-4.29



CIRCUIT NO. I&3DA



CIRCUIT NO. IWA



CIRCUIT NO. 3GA

LEGEND

- 2 - 250 WATT, TYPE II, HPS
- 1 - 200 WATT, TYPE II, HPS
- 2 - 1000 WATT, TYPE IV, HPS
- EXIST PULL BOX

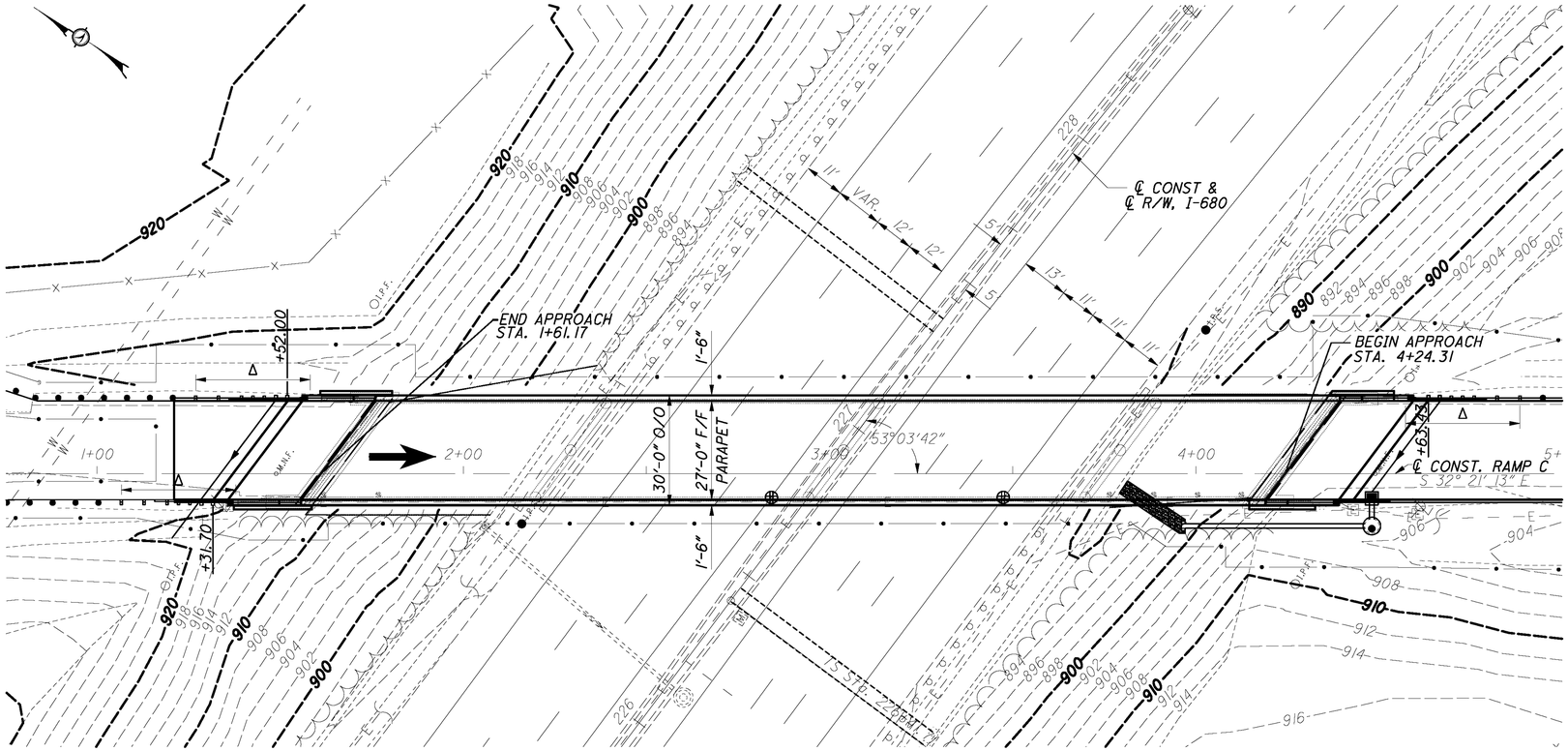
POWER SERVICE DATA									
POWER SERVICE	LINE VOLTAGE (VOLTS)	CONNECTED LOAD (KVA)	SERVICE ENTRANCE CABLE (AWG)	ENCLOSURE RATING (AMPS)	CIRCUIT NO.	CIRCUIT LOAD (AMPS)	CIRCUIT FUSE SIZE (AMPS)	CIRCUIT CABLE SIZE (AWG)	MAINTAINING AGENCY
WA	480	21.7	2/0	150	1	24.6	60	4	ODOT
DA	480	7.8	2/0	150	1	7.8	60	4	ODOT
					3	8.4	60	4	
GA	480	-	-	-	3	-	-	4	ODOT

CALCULATED KJB
CHECKED JBD

LIGHTING CIRCUIT DIAGRAMS

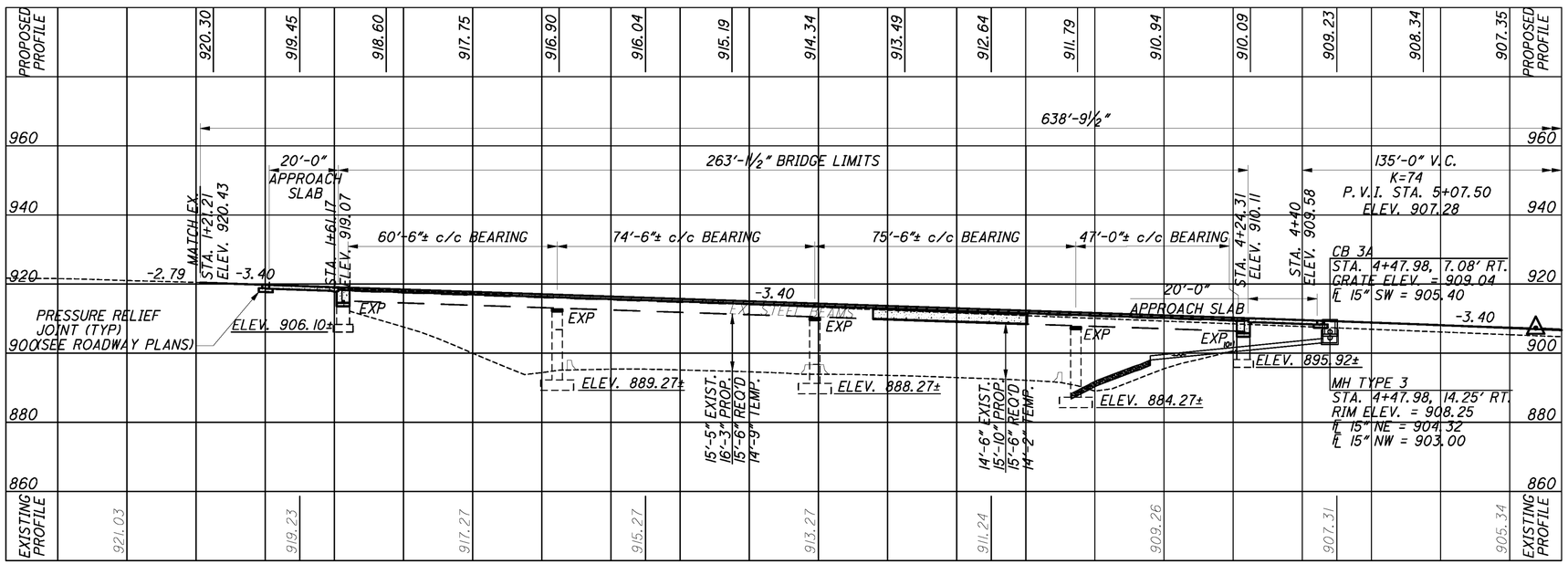
MAH-680-4.29

STRUCTURE NUMBER MAH-680-0429



PLAN

PORTIONS OF EXISTING BRIDGE TO BE REMOVED UNDER ITEM 202



PLAN

PORTIONS OF EXISTING BRIDGE TO BE REMOVED UNDER ITEM 202

PROFILE AT ℄ CONSTRUCTION

BENCHMARK DATA					
BM #1 STA.	0+00.00,	ELEV.	921.73 ,	OFFSET	0.00 ,
BM #2 STA.	1+75.77,	ELEV.	921.30 ,	OFFSET	46.29 , LEFT
BM #3 STA.	4+58.35,	ELEV.	908.95 ,	OFFSET	8.38 , RIGHT
BM #4 STA.	4+60.39,	ELEV.	906.91 ,	OFFSET	26.32 , LEFT

NOTES

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

DESIGN TRAFFIC (I-680):
2010 ADT = 53930 2010 ADTT = 4854
2030 ADT = 56660 2030 ADTT = 5099
DIRECTIONAL DISTRIBUTION = 0.58
DESIGN SPEED = 55 MPH LEGAL SPEED= 50 MPH

DESIGN TRAFFIC (RAMP C):
2010 ADT = 530 2010 ADTT = 22
2030 ADT = 530 2030 ADTT = 22
DIRECTIONAL DISTRIBUTION = 1.00
DESIGN SPEED = 45 MPH LEGAL SPEED= N/A

LEGEND

Δ - BRIDGE TERMINAL ASSEMBLY, TYPE I

⊕ 15'-6" REQUIRED MINIMUM VERTICAL CLEARANCE

I-680 SOUTHBOUND CLEARANCES	I-680 NORTHBOUND CLEARANCES
14'-6" EXISTING VERTICAL CLEARANCE	15'-5" EXISTING CLEARANCE
15'-10" PROPOSED CLEARANCE	16'-3" PROPOSED CLEARANCE
14'-2" TEMPORARY CLEARANCE	14'-9" TEMPORARY CLEARANCE

EXISTING STRUCTURE

TYPE: 4-SPAN STEEL BEAM CONTINUOUS BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES

SPANS: 60'-6"±, 74'-6"±, 75'-6"± AND 47'-0"± = 257'-6"± C/C BEARINGS ALONG ℄ CONST.

ROADWAY: 25'-8"± F/F CURB WIDTH

LOADING: CF 2000

SKEW: 36°56'19"± WITH CHORD LEFT FORWARD

APPROACH SLABS: 25'-0" LONG (AS-I-54)

ALIGNMENT: TANGENT

CROWN: 0.016 FT/F

WEARING SURFACE: 1" MONOLITHIC

STRUCTURAL FILE NUMBER: 5006848

DATE BUILT: 1963

PROPOSED STRUCTURE

PROPOSED WORK: REPLACE DECK, REPAIR STRUCTURAL STEEL, INCREASE VERTICAL CLEARANCE, AND CONVERT ABUTMENTS TO SEMI-INTEGRAL

TYPE: 4 SPAN CONTINUOUS STEEL BEAM STRUCTURE WITH COMPOSITE REINFORCED CONCRETE DECK AND REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 60'-6"±, 74'-6"±, 75'-6"± AND 47'-0"± = 257'-6"± C/C BEARINGS ALONG ℄ CONST.

ROADWAY: 27'-0" TOE/TOE PARAPET

LOADING: HS25 (CASE II) & ALT. MILITARY + 60 PSF FWS (SUPERSTRUCTURE ONLY)

SKEW: 36°56'19"± WITH CHORD LEFT FORWARD

APPROACH SLABS: 20'-0" LONG (AS-I-81)(MODIFIED)

ALIGNMENT: TANGENT

CROWN: 0.016 FT/FT

WEARING SURFACE: 1" MONOLITHIC

COORDINATES: LATITUDE N41°06'18"
LONGITUDE W80°40'48"

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5006848	

MAHONING COUNTY
STA. 1+61.17
STA. 4+24.31

SITE PLAN
BRIDGE NO. MAH-680-0429
SILLIMAN ST./RAMP C OVER I-680

MAH-680-4.29
PID No. 25508

PROPOSED WORK

THE WORK COVERED BY THESE PLANS INCLUDES REMOVAL AND REPLACEMENT OF THE CONCRETE DECK, BRIDGE RAILS, APPROACH SLABS, BEARINGS, PORTIONS OF THE SUPERSTRUCTURE, AND PORTIONS OF THE SUBSTRUCTRURE. OTHER WORK INCLUDES CONVERTING ABUTMENT BACKWALLS TO SEMI-INTEGRAL, RAISING THE SUPERSTRUCTURE, REPAIRING STRUCTURAL STEEL, CLEANING AND PAINTING STRUCTURAL STEEL, PATCHING PORTIONS OF THE EXISTING SUBSTRUCTURE TO REMAIN, AND SEALING CONCRETE SURFACES. TRAFFIC IS TO BE DETOURED OVER OTHER EXISTING ROADS DURING CONSTRUCTION.

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81 REVISED 07-19-02

GSD-1-96 REVISED 07-19-02

SBR-1-99 REVISED 07-19-02

SICD-1-96 REVISED 07-19-02

VPF-1-90 REVISED 07-19-02

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17TH EDITION-2002, INCLUDING THE ODOT BRIDGE DESIGN MANUAL 2004.

DESIGN DATA:

CONCRETE CLASS HP - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE & RAILING)

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615 OR A996
GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

STRUCTURAL STEEL - ASTM A709 GRADE 50
YIELD STRENGTH 50,000 PSI

DESIGN LOADING:

HS25 CASE II AND THE ALTERNATE MILITARY LOADING.

FUTURE WEARING SURFACE (FWS) OF 60 LBS/SQ. FT.

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL
2-1/2" CONCRETE COVER

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED,
FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

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 SECTIONS 102.05, 105.02, AND 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.

INSPECTION OF EXISTING STRUCTURAL STEEL

THE ENGINEER WILL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THE WELDS, PLATES, AND BEAMS OR GIRDERS ARE FREE OF DEFECTS AND CRACKS. IF NECESSARY, REMOVE ALL DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS THAT MAY INTERFERE WITH THE ENGINEER'S INSPECTION. THE INSPECTION WILL NOT TAKE PLACE UNTIL THE TOP FLANGES ARE CLEANED ACCORDING TO 511.10, BUT IT WILL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE DEPARTMENT WILL PAY FOR THE COST ASSOCIATED WITH THIS INSPECTION WITH ITEM 511, SUPERSTRUCTURE CONCRETE. THE ENGINEER WILL REPORT ALL CRACKS FOUND TO THE OFFICE OF CONSTRUCTION ADMINISTRATION, BRIDGE CONSTRUCTION SPECIALIST, ALONG WITH SPECIFIC INFORMATION ON LOCATION OF THE CRACKS, LENGTH, AND DEPTH SO AN EVALUATION AND REPAIR OR REPLACEMENT RECOMMENDATION CAN BE MADE.

STEEL RESTRAINT OR PRELOAD LIMITS

EXISTING ASTM A7 GRADE 33 - DO NOT SUBJECT ANY PART OF THE STRUCTURE TO A JACKING, PULLING, OR RESTRAINING UNIT STRESS EXCEEDING 16,500 PSI.

DECK PLACEMENT DESIGN ASSUMPTIONS:

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 0.984 KIPS FOR A TOTAL MACHINE LOAD OF 7.87 KIPS

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65".

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

DESCRIPTION: THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECK INCLUDING PARAPETS, RAILINGS, DECK JOINTS, AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES, HEADACHE BALLS, AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2-INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE. REPLACE OR REPAIR STEEL MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

REMOVAL METHODS: THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER STRUCTURAL MEMBERS (STEEL BEAM, STEEL GIRDER, ETC), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS.

DUE TO THE POSSIBLE PRESENCE OF ATTACHMENTS (E.G., FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) TO EXISTING STRUCTURAL MEMBERS, PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRUCTURAL MEMBERS THAT ARE TO REMAIN. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

SUBSTRUCTURE CONCRETE REMOVAL: REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

SECONDARY MEMBER REMOVAL: REMOVE CROSSFRAMES TO BE REPLACED (SEE FRAMING PLAN). REMOVE ADDITIONAL CROSSFRAMES FOR REPLACEMENT AS DIRECTED BY THE ENGINEER. FLAME OR SAW CUT THE EXISTING MEMBERS TO WITHIN 1/8 INCH OF THE EXISTING MAIN MATERIAL USING A MECHANICAL GUIDE ACCORDING TO C&MS 513.12. PROVIDE SHIELDING AS NECESSARY TO PREVENT DAMAGE TO MAIN OR SECONDARY MATERIALS THAT REMAIN. GRIND THE EXISTING MAIN OR SECONDARY MEMBER SMOOTH IN PREPARATION FOR FILLET WELDING. PROVIDE A SURFACE FINISH ACCORDING TO ANSI B46.1 OF 250 MIL (TO ACCOMODATE THE PROPOSED REPLACEMENT MATERIALS).

PARTIAL BEAM REMOVAL: REMOVE PORTION OF BEAM E TO BE REPLACED (SEE FRAMING PLAN). PERFORM MAGNETIC PARTICLE INSPECTION AT DAMAGED AREA No. 1 PER C&MS 513.25 (SEE FRAMING PLAN). REMOVE PORTIONS OF BEAM D AT DAMAGED AREA No. 1 AS DIRECTED BY THE ENGINEER. FLAME OR SAW CUT PORTIONS OF THE EXISTING MEMBERS USING A MECHANICAL GUIDE ACCORDING TO C&MS 513.12. PROVIDE SHIELDING AS NECESSARY TO PREVENT DAMAGE TO MAIN OR SECONDARY MATERIALS THAT REMAIN. GRIND THE REMAINING CUT SURFACES OF BEAM D SMOOTH IN PREPARATION FOR COMPLETE PENETRATION WELDING. PROVIDE A SURFACE FINISH ACCORDING TO ANSI B46.1 OF 250 MIL (TO ACCOMMODATE THE PROPOSED REPLACEMENT MATERIAL).

THERE IS EXISTING PLYWOOD OR OSB UNDERDECK PROTECTION IN PLACE AT THIS STRUCTURE, WHICH SHALL BE REMOVED PRIOR TO DECK REMOVAL. THE CONTRACTOR SHALL NOT UTILIZE THE EXISTING UNDERDECK PROTECTION DURING THE DECK REMOVAL OPERATION. REMOVAL OF EXISTING UNDERECK PROTECTION SHALL BE INCLUDED AS PART OF THIS ITEM. PROPOSED PROTECTION DURING DECK REMOVAL SHALL BE PER CMS 501.05.

MEASUREMENT & PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN. PAYMENT FOR TEMPORARY SUPPORTS FOR CROSSFRAME AND PARTIAL BEAM REMOVALS WILL BE INCLUDED IN ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 709.00.

ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN

THIS ITEM INCLUDES AN ESTIMATED QUANTITY OF 370 LBS TO BE USED FOR THE PROPOSED REPLACEMENT OF THREE CROSSFRAMES (SEE FRAMING PLAN) AND AN ADDITIONAL 246 LBS TO BE USED AS DIRECTED BY THE ENGINEER FOR THE REPLACEMENT OF UP TO TWO ADDITIONAL CROSSFRAMES. QUANTITIES CARRIED TO ESTIMATED QUANTITIES TABLE.

ITEM 513 - STRUCTURAL STEEL MISC., REPAIR OF DAMAGED MEMBERS, COPE HOLES

AN ESTIMATED QUANTITY OF 2 COPE HOLES HAVE BEEN INCLUDED FOR USE AS DIRECTED BY THE ENGINEER. QUANTITY CARRIED TO ESTIMATED QUANTITES TABLE.

PROVIDE A 2 INCH DIAMETER X 4 INCH LONG COPE ACCORDING TO PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. GRIND THE HOLES SMOOTH ACCORDING TO C&MS 513.19. THE DEPARTMENT WILL INCLUDE ALL MATERIALS, TOOLS, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK FOR PAYMENT WITH ITEM 513 - STRUCTURAL STEEL MISC., REPAIR OF DAMAGED MEMBERS, COPE HOLES: EACH.

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 5-28-10 | CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5006848

GENERAL NOTES

BRIDGE NO. MAH-680-0429
SILLIMAN ST./RAMP C OVER I-680

MAH-680-4.29
PID No. 25508

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

ALL REQUIREMENTS OF 513 APPLY TO SHOP FABRICATED MEMBERS. PERFORM WORK FOR FIELD FABRICATED MEMBERS ACCORDING TO ITEM 513, EXCEPT AS MODIFIED HERIN. THE DEPARTMENT WILL NOT REQUIRE THE CONTRACTOR PERFORMING FIELD FABRICATION TO BE PRE-QUALIFIED AS SPECIFIED IN SUPPLEMENT 1078. SUBMIT A WRITTEN LETTER OF MATERIAL ACCEPTANCE, 501.06, TO THE ENGINEER. PROVIDE SHOP DRAWINGS ACCORDING TO 513.06 OR SUPPLY THE ENGINEER WITH "AS BUILT" DRAWINGS MEETING 513.06 AFTER COMPLETION OF FIELD FABRICATION. THE ENGINEER WILL REIVEW THE SUBMITTED DRAWINGS FOR CONCURRENCE WITH THE FINAL AS-BUILT CONDITION. THE ENGINEER MAY CONTACT THE OFFICE OF STRUCTURAL ENGINEERING FOR TECHNICAL ASSISTANCE. IF THE ENGINEER IS SATISFIED WITH THE "AS-BUILT" DRAWINGS AND THE AND THE DELIVERED MATERIALS, SUPPLY A COPY OF THE DRAWINGS, STAMPED, SEALED, AND DATED, ACCORDING TO S1002, TO THE STRUCTURAL, WELDING, AND METALS SECTION OF THE OFFICE OF MATERIAL MANAGEMENT FOR RECORD PURPOSES.

THIS ITEM INCLUDES AN ESTIMATED QUANTITY OF 15 POUNDS FOR PARTIAL REPLACEMENT OF THE DAMAGED FLANGE AT DAMAGED AREA No. 1 (SEE FRAMING PLAN). AN ADDITIONAL ESTIMATED QUANTITY OF 55 POUNDS HAS BEEN INCLUDED FOR USE AS DIRECTED BY THE ENGINEER. QUANTITIES CARRIED TO ESTIMATED QUANTITES TABLE.

THE DEPARTMENT WILL INCLUDE ALL THE MATERIALS, TOOLS, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK FOR PAYMENT WITH ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN: POUND.

ITEM 513 - STRUCTURAL STEEL MISC., REPAIR OF DAMAGED MAIN MEMBER, COMPLETE PENETRATION WELDING

AFTER DAMAGED PORTIONS OF BEAM D HAVE BEEN REMOVED, PREPARE THE MATERIAL FOR WELDING. PROVIDE RUNOFF TABS FOR ALL COMPLETE PENETRATION WELDS. PERFORM COMPLETE PENETRATION WELDS ACCORDING TO C&MS 513 USING APPROVED ELECTRODES, PROCEDURES, AND WELDERS. REMOVE RUNOFF TABS AND GRIND THE COMPLETED EDGES SMOOTH. GRIND THE COMPLETED WELDS SMOOTH AND FLUSH WITH THE ADJACENT SURFACES TO PROVIDE A SURFACE FINISH ACCORDING TO ANSI B46.1 OF 250 MIL. DO NOT OVER GRIND AS TO REDUCE THE MATERIAL THICKNESS OR WIDTH OF THE NEW OR EXISTING MATERIALS. PREPARE ALL REENTRANT CORNERS WITH A ONE INCH RADIUS. REMOVE WELDING, START AND STOP DISCONTINUITIES. RADIOGRAPHIC TEST THE FINISHED WELDS ACCORDING TO C&MS 513.25A AND SUBMIT COPIES OF THE REPORTS TO THE ENGINEER. THE ENGINEER MAY OBTAIN TECHNICAL ASSISTANCE FROM THE OFFICE OF MATERIALS MANAGEMENT.

THIS ITEM INCLUDES AN ESTIMATED QUANTITY OF 2 FEET FOR PARTIAL REPLACEMENT OF THE DAMAGED FLANGE AT DAMAGED AREA No. 1 (SEE FRAMING PLAN). AN ADDITIONAL ESTIMATED QUANTITY OF 2 FEET HAS BEEN INCLUDED FOR USE AS DIRECTED BY THE ENGINEER. QUANTITIES CARRIED TO ESTIMATED QUANTITIES TABLE.

THE DEPARTMENT WILL INCLUDE ALL MATERIALS, TOOLS, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK FOR PAYMENT WITH ITEM 513 - STRUCTURAL STEEL MISC., REPAIR OF DAMAGED MAIN MEMBERS, COMPLETE PENETRATION WELDING: FOOT.

ITEM 514 - FIELD PAINTING STRUCTRUAL STEEL, FINISH COAT

THE FINISH COAT ON THE BEAM SHOULD BE PAINTED LIGHT BLUE, FEDERAL COLOR #15450.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPER-STRUCTURE, AS PER PLAN

THIS WORK CONSISTS OF RAISING OR RE-POSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS AND PROVIDING TEMPORARY SUPPORT FOR CROSSFRAME AND PARTIAL BEAM REPLACEMENT.

SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, IMMEDIATELY CEASE THE JACKING OPERATION AND INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. EPOXY INJECT ALL BEAMS THAT SEPARATE FROM THE DECK FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH CMS 512.07. THE DEPARTMENT WILL NOT PAY FOR THE COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS.

THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

ITEM 516 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN

INSTALL A 3 FOOT WIDE NEOPRENE SHEET AT LOCATIONS SHOWN IN THE PLANS. SECURE THE NEOPRENE SHEETING TO THE CONCRETE WITH 1-1/4" X #10 GAGE (LENGTH X SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 1 INCH OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. USE OF OTHER SIMILAR GALVANIZED DEVICES, WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE WILL BE 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 6 INCHES, +/-, 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 6 INCHES, +/-, FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 6 INCHES, CENTER TO CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHALL COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAP LENGTHS OF THE HORIZONTAL STRIPS THAT ARE NOT VULCANIZED OR ADHESIVE BONDED, SHALL BE AT LEAST 1 FOOT IN LENGTH, OR 6 INCHES IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 3/32" 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, INCHES	D751	0.094 +/- 0.01
BREAKING STRENGTH, GRAB, LBS, MINIMUM (LONG. X TRANS.)	D751	700 X 700
ADHESIVE STRIP, 1" WIDE X 2" LONG, LBS MINIMUM	D751	9
BURST STRENGTH, PSI MINIMUM	D751	1400
HEAT AGING, 70 HR, 212 DEGREES F, 180 DEGREES BEND WITHOUT CRACKING	D2136	NO CRACKING OF COATING
LOW TEMP. BRITTLENESS, 1 HR, 40 DEGREES F, BEND AROUND 1/4" MANDREL	D2136	NO CRACKING OF COATING

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE TOTAL LENGTH OF JOINT TO BE SEALED BY THE NUMBER OF FEET.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN

INCLUDED IN THIS PAY ITEM IS FILLING AND PLUGGING THE EXISTING WEEPHOLES AT THE REAR AND FORWARD ABUTMENTS. THERE ARE TEN, FOUR INCH DIAMETER WEEPHOLES THAT ARE 3'-9" LONG EACH FOR A TOTAL LENGTH OF 37'-9". THE WEEPHOLES WILL ALL BE FILLED WITH A NONSHRINK, NONMETALIC GROUT

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

ITEM 519-PATCHING CONCRETE STRUCTURE, AS PER PLAN INSPECTED 11-08-2005

LOCATION	MEASURED AREA (2005)	PROJECTION FACTOR	REPAIR AREA (2010)	SEE SHEET
REAR ABUTMENT	9 SQ FT	1.10	10 SQ FT	6/21
PIER 1	32 SQ FT	1.10	35 SQ FT	12/21
PIER 2	50 SQ FT	1.10	55 SQ FT	12/21
PIER 3	20 SQ FT	1.10	22 SQ FT	12/21
FORWARD ABUT.	11 SQ FT	1.10	12 SQ FT	9/21
		TOTAL	134 SQ FT	

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS, AS PER PLAN

THE PROVISIONS OF CMS 526 SHALL APPLY EXCEPT AS NOTED BELOW.

CLASS HP CONCRETE, MIX 4, AS PER PLAN, SHALL BE THE ONLY MIX DESIGN OPTION. THE PROPORTIONS FOR THE STARTING MIX DESIGN SHALL BE AS SHOWN FOR ITEM
511 - CLASS HP CONCRETE, AS PER PLAN.

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DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 5-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5006848

GENERAL NOTES
BRIDGE NO. MAH-680-0429
SILLIMAN ST./RAMP C OVER I-680

MAH-680-4.29
PID No. 25508

ITEM 511 - CLASS HP CONCRETE, AS PER PLAN

THE PROVISIONS OF ITEM 511 SHALL APPLY EXCEPT AS NOTED BELOW.

MIX OPTIONS:
ALL SUPERSTRUCTURE, BRIDGE DECK, SIDEWALK, APPROACH SLABS AND PARAPET CONCRETE SHALL BE THIS MIX (HP4, AS PER PLAN). THE FOLLOWING PROPORTIONS WILL BE USED AS A STARTING MIX DESIGN.

CONCRETE TABLE
QUANTITIES PER CUBIC YARD
AGGREGATES (SSD)
MIX 4, AS PER PLAN (GGBF SLAG + MICROSILICA)

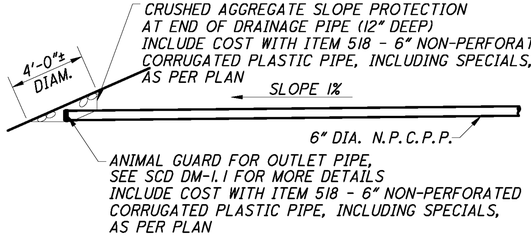
Aggre. Type	Fine Aggre. (lb)	#8 Coarse Aggre. (lb)	#57 Coarse Aggre. (lb)	Total (lb)	Cement Content (lb)	GGBF Slag (lb)	Micro-Silica (lb)	Water to Cementitious Ratio +/-.01	Air Content +/-2%
Gravel	1370	650	790	2810	440	190	30	0.42	6
Limestone	1370	655	800	2820	440	190	30	0.42	6
Slag	1370	570	695	2635	440	190	30	0.42	6

* ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127

BASIS OF PAYMENT:

PAYMENT FOR THE ABOVE COMPLETED AND ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN, CU YD
ITEM 511 - CLASS HP CONCRETE, SUPERSTRUCTURE, AS PER PLAN, CU YD



TERMINATION OF 6" N.P.C.P.P.,
AS PER PLAN DETAIL

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CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5006848	

GENERAL NOTES & MISCELLANEOUS DETAILS

BRIDGE NO. MAH-680-0429
SILLIMAN ST./RAMP C OVER I-680

MAH-680-4.29
PID No. 25508

CALCULATED BY: MJP 05-28-10 CHECKED BY: JBD 05-28-10

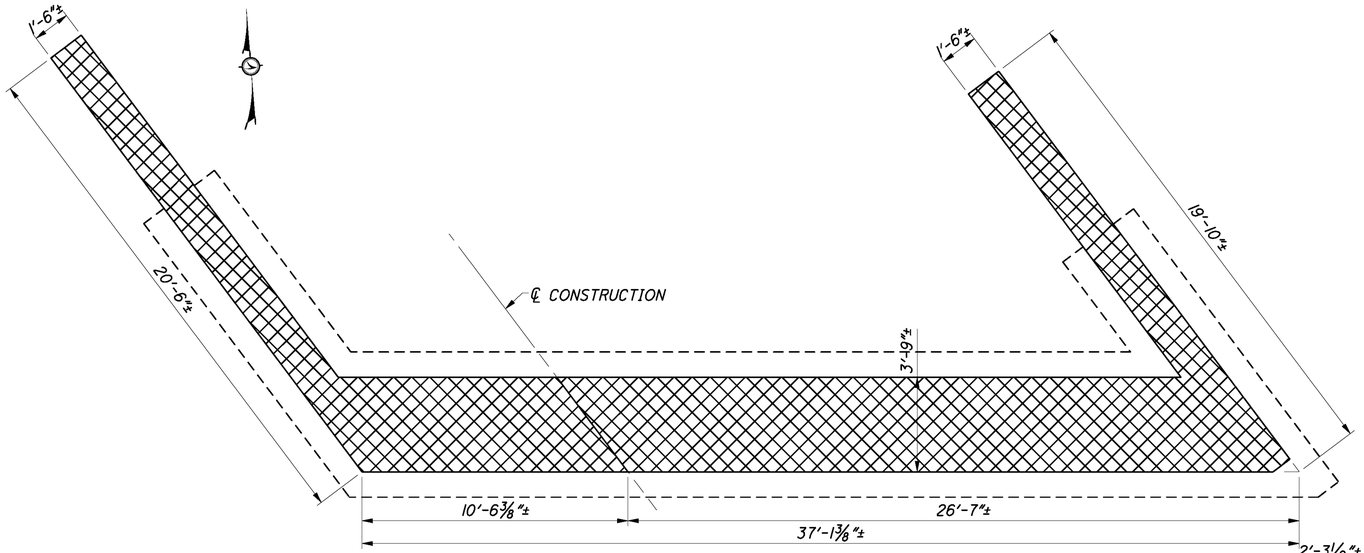
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GENERAL	SEE SHEET NO.
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOR SPAN, AS PER PLAN					2/21
202	22900	89	SQ YD	APPROACH SLAB REMOVED				89	
202	23500	89	SQ YD	WEARING COURSE REMOVED (FROM APPROACH SLABS)				89	
503	21100	74	CU YD	UNCLASSIFIED EXCAVATION	74				
509	10001	88,057	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN	10,902	3,704	73,451		2/21
510	10000	422	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	212	210			
511	43200	22	CU YD	CLASS C CONCRETE, PIER		22			
511	45700	49	CU YD	CLASS C CONCRETE, ABUTMENT	49				
511	50101	95	CU YD	CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN			95		4/21
511	51001	274	CU YD	CLASS HP CONCRETE, SUPERSTRUCTURE, AS PER PLAN			274		4/21
511	52000	LUMP		CLASS HP CONCRETE, TEST SLAB					
512	10100	1014	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	53	273	688		
512	44400	5	SQ YD	TYPE B WATERPROOFING	5				
513	10201	70	POUND	STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN			15	55	3/21
513	10240	8333	POUND	STRUCTURAL STEEL MEMBERS, LEVEL 2			8333		
513	10241	616	POUND	STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN			370	246	2/21
513	20000	3270	EACH	WELDED STUD SHEAR CONNECTORS			3270		
513	95000	4	FT	STRUCTURAL STEEL, MISC.: REPAIR OF DAMAGED MAIN MEMBER, COMPLETE PENETRATION WELDING			2	2	3/21
513	95030	2	EACH	STRUCTURAL STEEL, MISC.: REPAIR OF DAMAGED MEMBERS, COPE HOLES				2	2/21
514	00050	12,670	SQ FT	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL			12,670		
514	00056	12,670	SQ FT	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT			12,670		
514	00060	13,133	SQ FT	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			13,133		
514	00066	13,133	SQ FT	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT			13,133		3/21
514	00504	22	MAN HOUR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL			22		
514	10000	13	EACH	FINAL INSPECTION REPAIR			13		
516	13900	195	SQ FT	2" PREFORMED EXPANSION JOINT FILLER	195				
516	14021	68	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN	68				3/21
516	44200	5	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),	5				
				(13"x13"x3 1/8" BEARING WITH 22"x14"x VARIES LOAD PLATE)					
516	44200	5	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),	5				
				(13"x13"x3 5/8" BEARING WITH 14"x14"x VARIES LOAD PLATE)					
516	44200	15	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),		15			
				(15 1/2"x12 1/2"x3 1/8" BEARING WITH 16 1/2"x13 1/2"x VARIES LOAD PLATE)					
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN					3/21
518	21200	69	CU YD	POROUS BACKFILL WITH FILTER FABRIC	69				
518	40001	90	FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	90				3/21
518	40011	60	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE,INCLUDING SPECIALS, AS PER PLAN	60				4/21
519	11101	134	SQ FT	PATCHING CONCRETE STRUCTURE, AS PER PLAN	22	112			3/21
526	15001	134	SQ YD	REINFORCED CONCRETE APPROACH SLABS (T=13"), AS PER PLAN				134	3/21
607	39900	520	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC			520		

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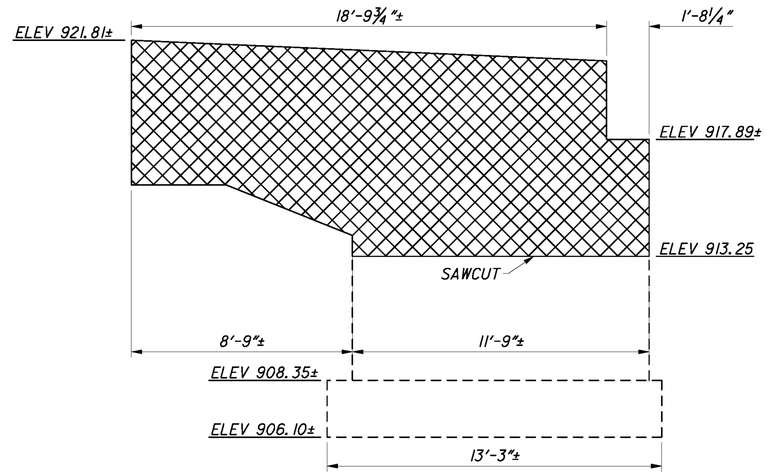
DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 5-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5006848

ESTIMATED QUANTITIES
BRIDGE NO. MAH-680-0429
SILLIMAN ST./RAMP C OVER I-680

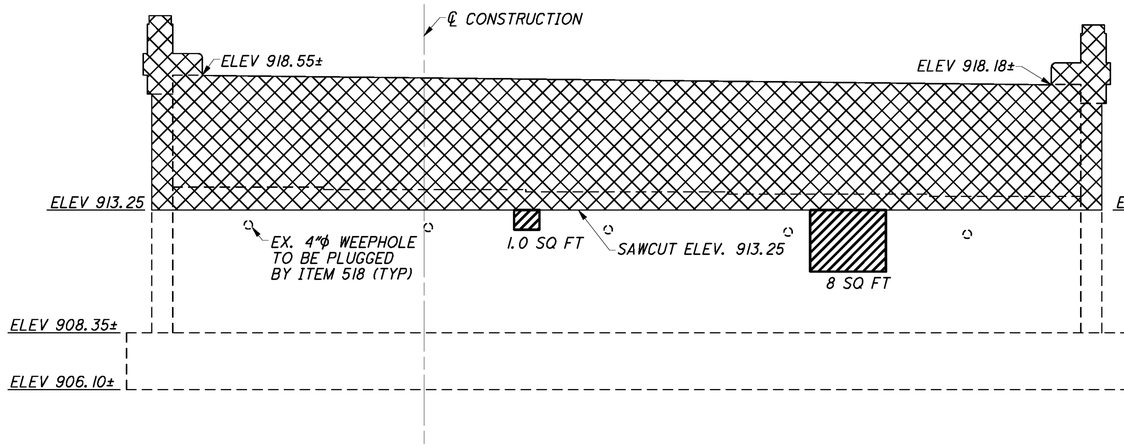
MAH-680-4.29
PID No. 25508



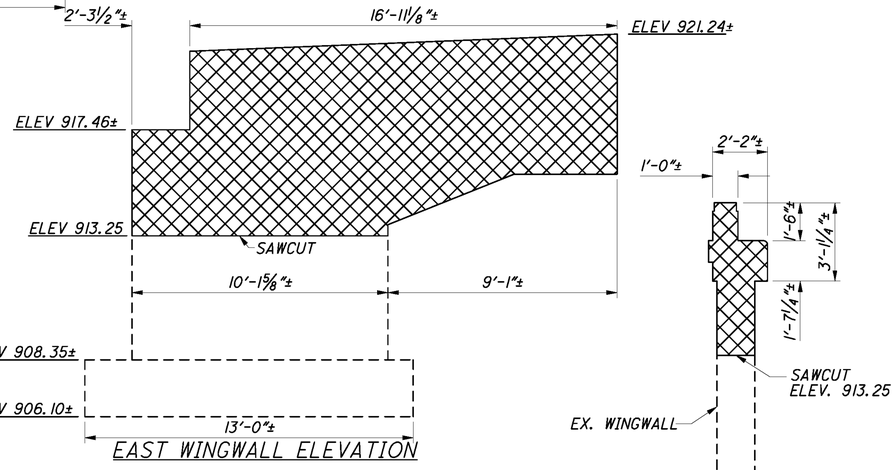
REAR ABUTMENT PLAN



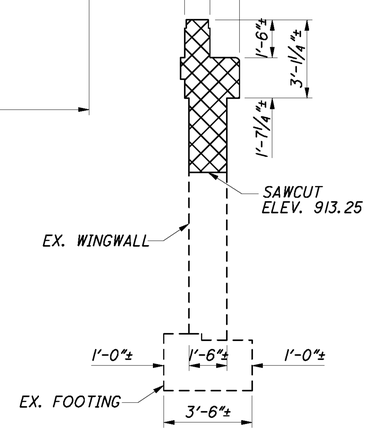
WEST WINGWALL ELEVATION



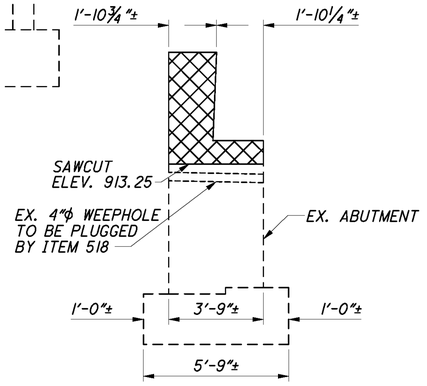
REAR ABUTMENT ELEVATION



EAST WINGWALL ELEVATION



WINGWALL CROSS SECTION



ABUTMENT CROSS SECTION

NOTES:
1. SOUNDING OF CONCRETE WAS DONE ON 11/08/05 AND A TOTAL OF 9 SQUARE FEET OF THE REAR ABUTMENT NEEDS REPAIR.
2. GUARDRAIL ATTACHED TO THE WINGWALL PARAPET WILL BE REMOVED UNDER ITEM 202.

LEGEND

R.A. - REAR ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
ELEV - ELEVATION
EX. - EXISTING
SQ FT - SQUARE FEET

- INDICATES LIMITS OF ITEM 202 - PORTIONS OF STRUCTURE TO BE REMOVED, AS PER PLAN
- INDICATES DELAMINATED AREA (REPAIR USING ITEM 519)

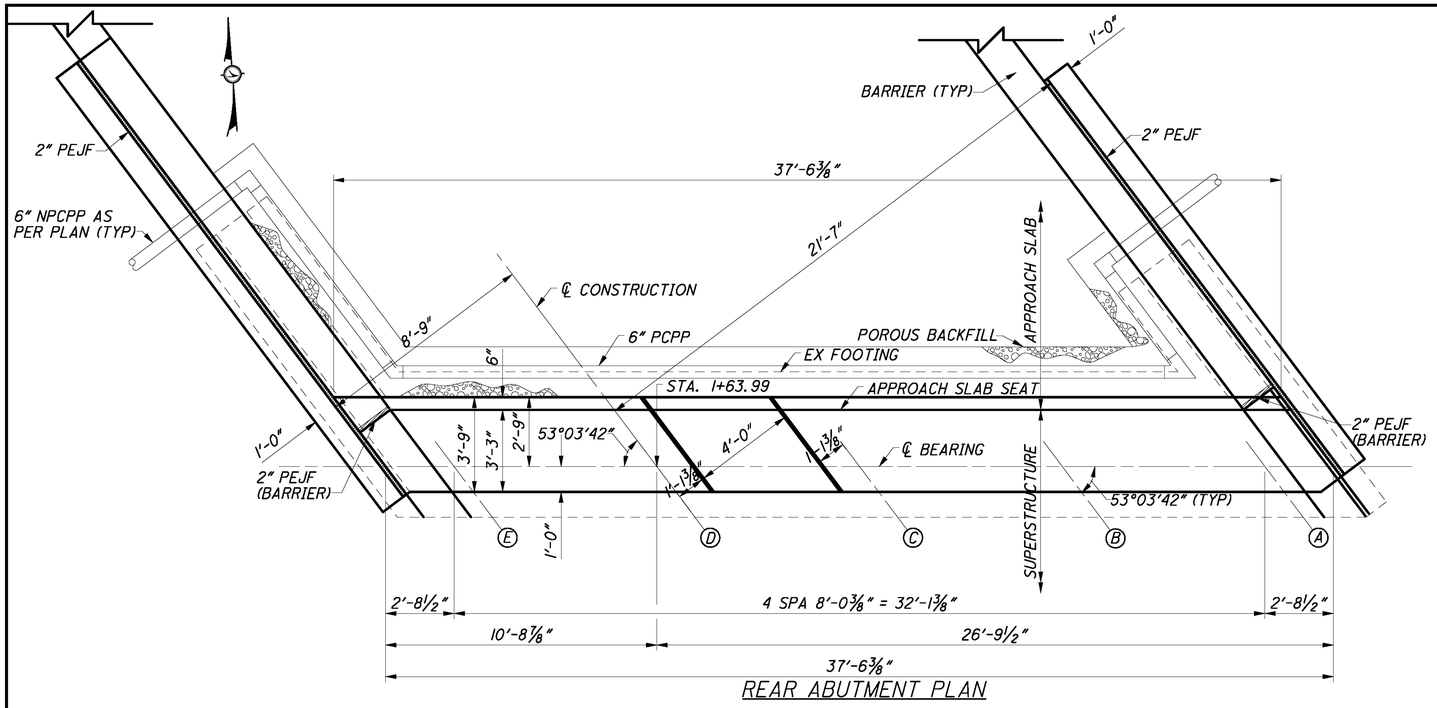
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JBD		5006848	

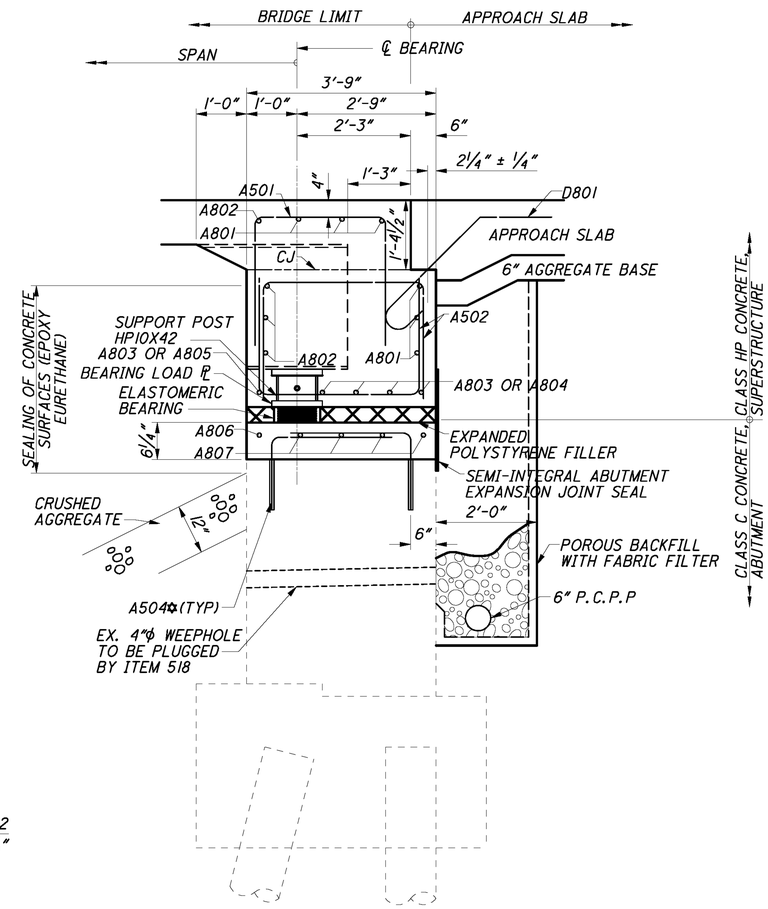
REAR ABUTMENT REMOVAL DETAILS

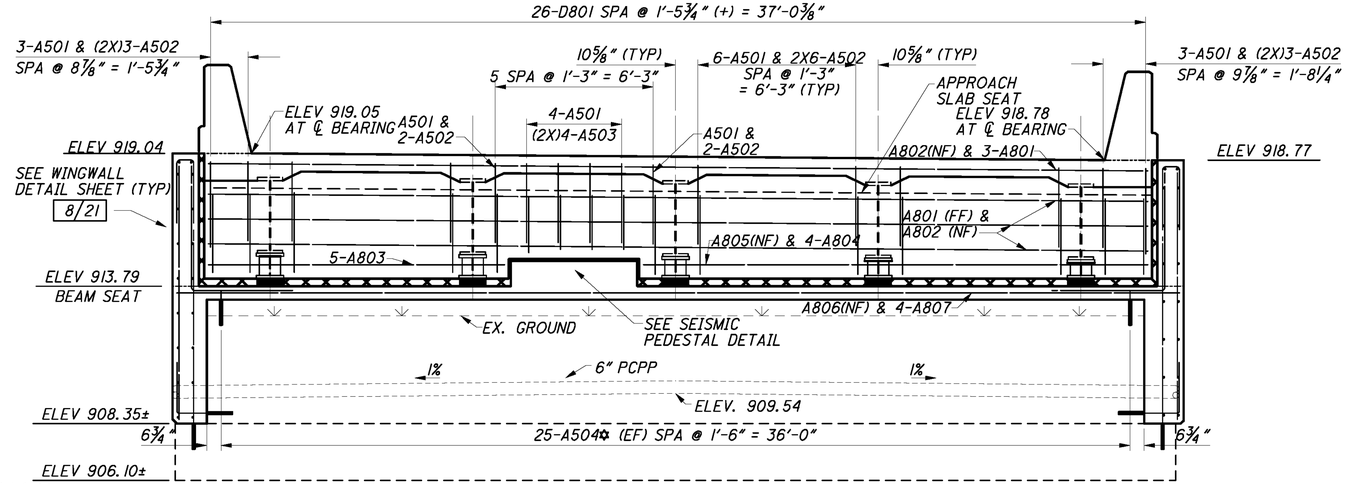
BRIDGE NO. MAH-680-0429
SILLIMAN STREET/RAMP C OVER I-680

MAH-680-4.29
PID No. 25508

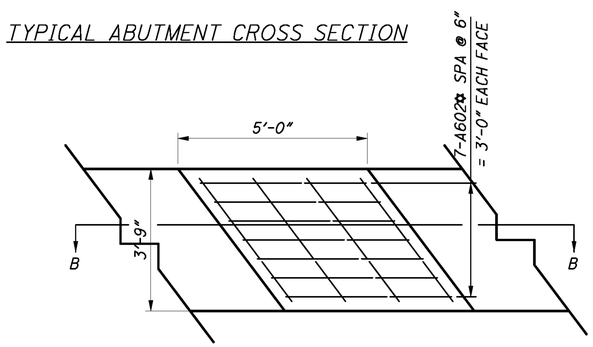


REAR ABUTMENT PLAN

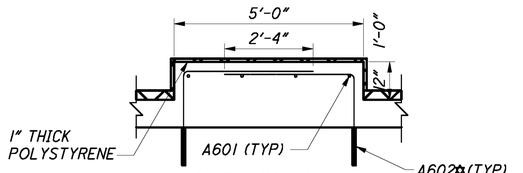




REAR ABUTMENT ELEVATION



SEISMIC PEDESTAL DETAIL



SECTION B-B

TYPICAL ABUTMENT CROSS SECTION

NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 6 BARS 2'-4"
2. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE ABUTMENT WALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).
3. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS
4. BARS A501, A502, A503, & A504 SHALL BE PLACED PARRALEL TO THE BEAMS.
5. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTURCTURE: PLACE THE CONCRETE ENCASING THE STRUCTURAL STEEL MEMBERS AT LEAST 48 HOURS BEFORE PLACING DECK CONCRETE.
6. ALL ELEVATIONS LABELED REPRESENT THE ELEVATION AT THE CENTERLINE OF BEARING UNLESS OTHERWISE NOTED.

LEGEND

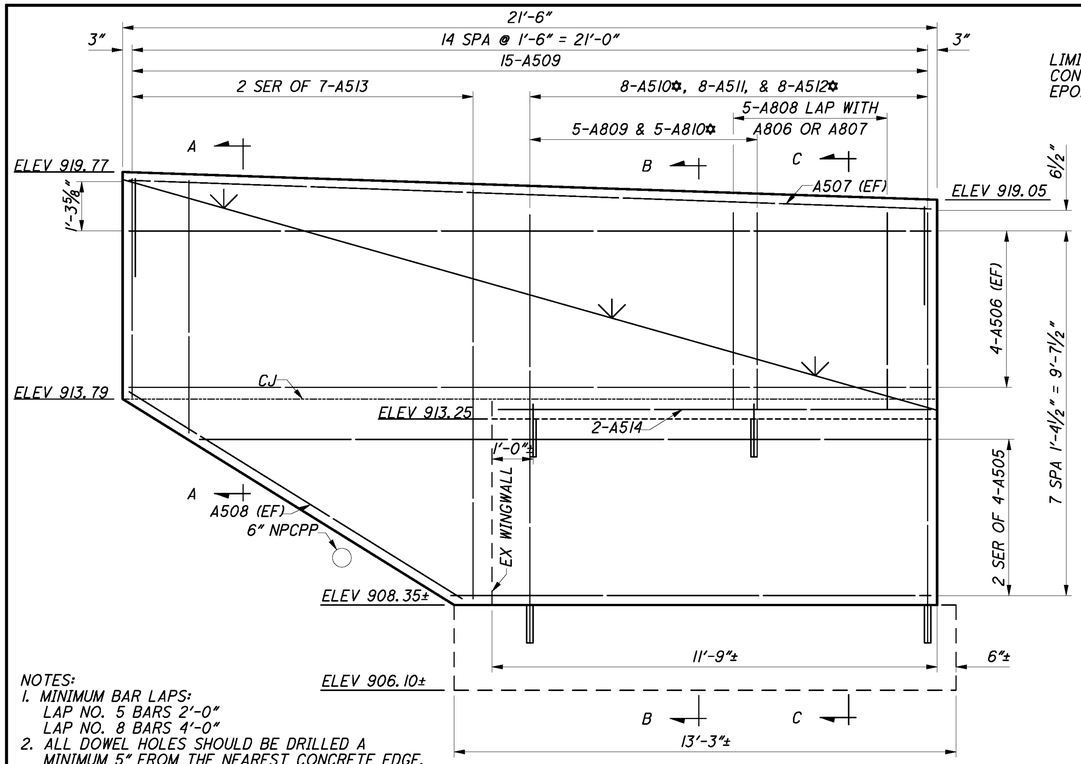
R.A.	- REAR ABUTMENT
F.A.	- FORWARD ABUTMENT
TYP	- TYPICAL
STA	- STATION
BRG.	- BEARING
SPA	- SPACE
CJ	- CONSTRUCTION JOINT
ELEV	- ELEVATION
PEJF	- PREFORMED EXPANSION JOINT FILLER
MIN	- MINIMUM
NPCPP	- NON-PERFORATED CORRUGATED PLASTIC PIPE
PCPP	- PERFORATED CORRUGATED PLASTIC PIPE
EF	- EACH FACE
NF	- NEAR FACE
FF	- FAR FACE
✡	- 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT

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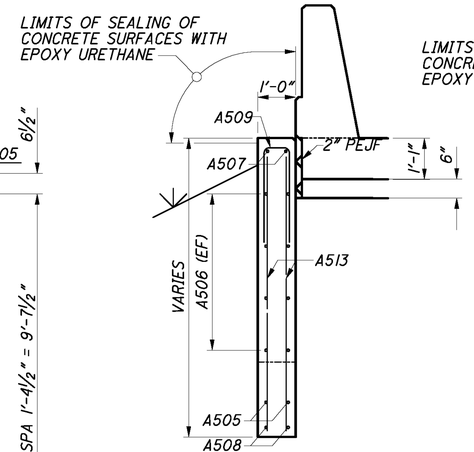
REAR ABUTMENT DETAILS
BRIDGE NO. MAH-680-0429
SILLIMAN STREET/RAMP C OVER I-680

MAH-680-4.29
PID No. 25508

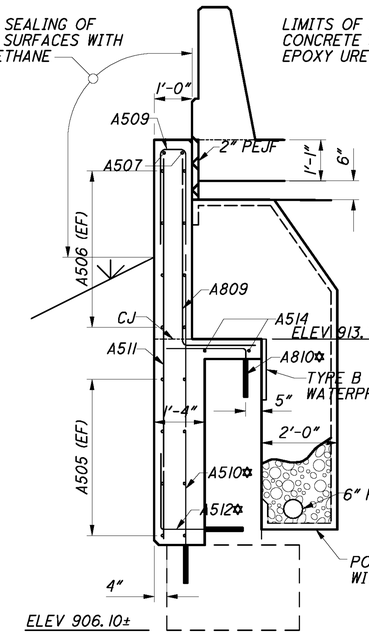


NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 8 BARS 4'-0"
2. ALL DOWEL HOLES SHOULD BE DRILLED A MINIMUM 5" FROM THE NEAREST CONCRETE EDGE.
3. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE WINGWALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).

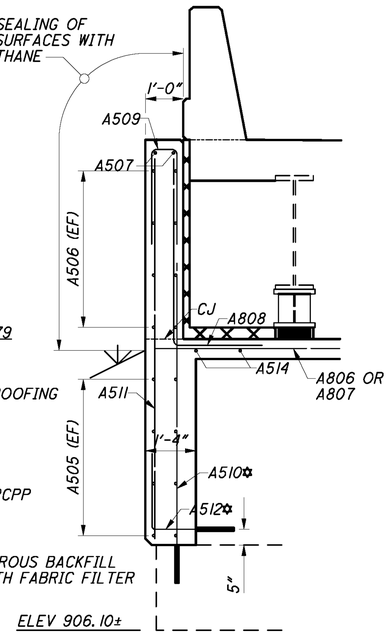
WEST WINGWALL ELEVATION



SECTION A-A



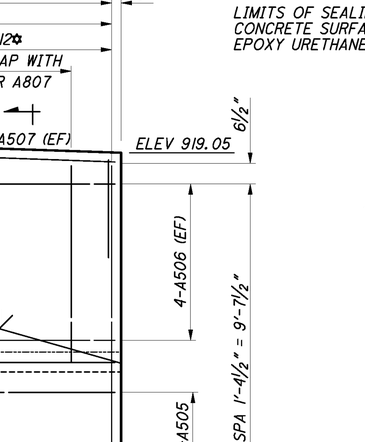
SECTION B-B



SECTION C-C

SECTION F-F

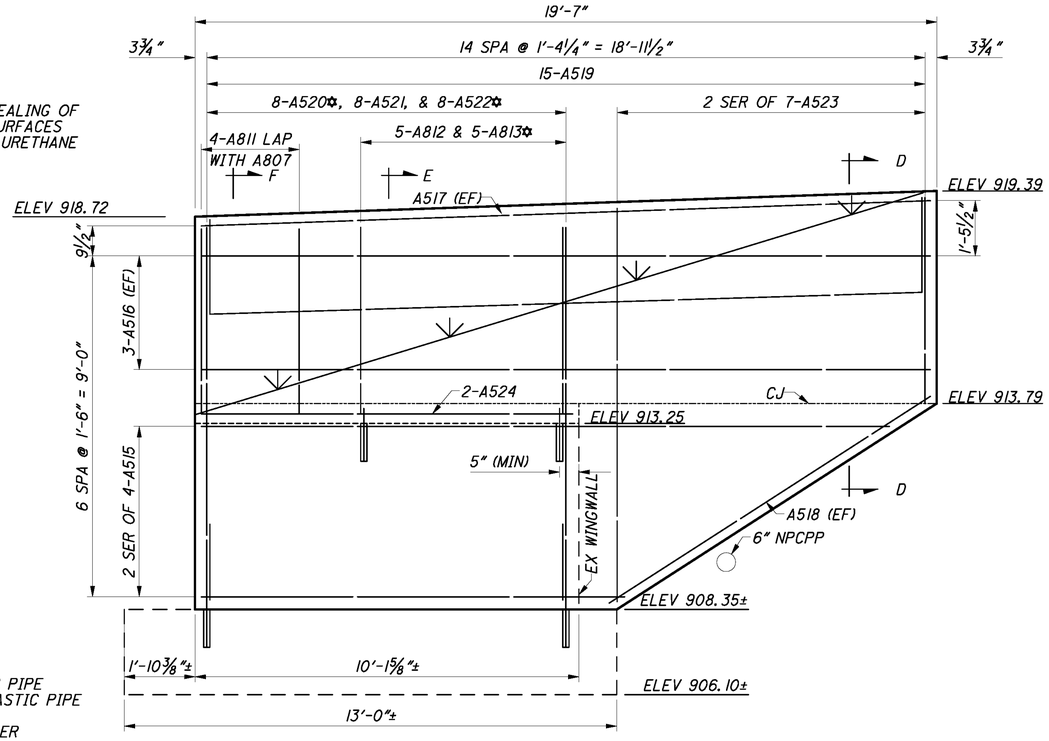
SECTION E-E



SECTION D-D

LEGEND

CJ	- CONSTRUCTION JOINT
ELEV	- ELEVATION
PCPP	- PERFORATED CORRUGATED PLASTIC PIPE
NPCPP	- NON PERFORATED CORRUGATED PLASTIC PIPE
SPA	- SPACED
PEJF	- PREFORMED EXPANSION JOINT FILLER
EF	- EACH FACE
✡	- 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT



EAST WINGWALL ELEVATION

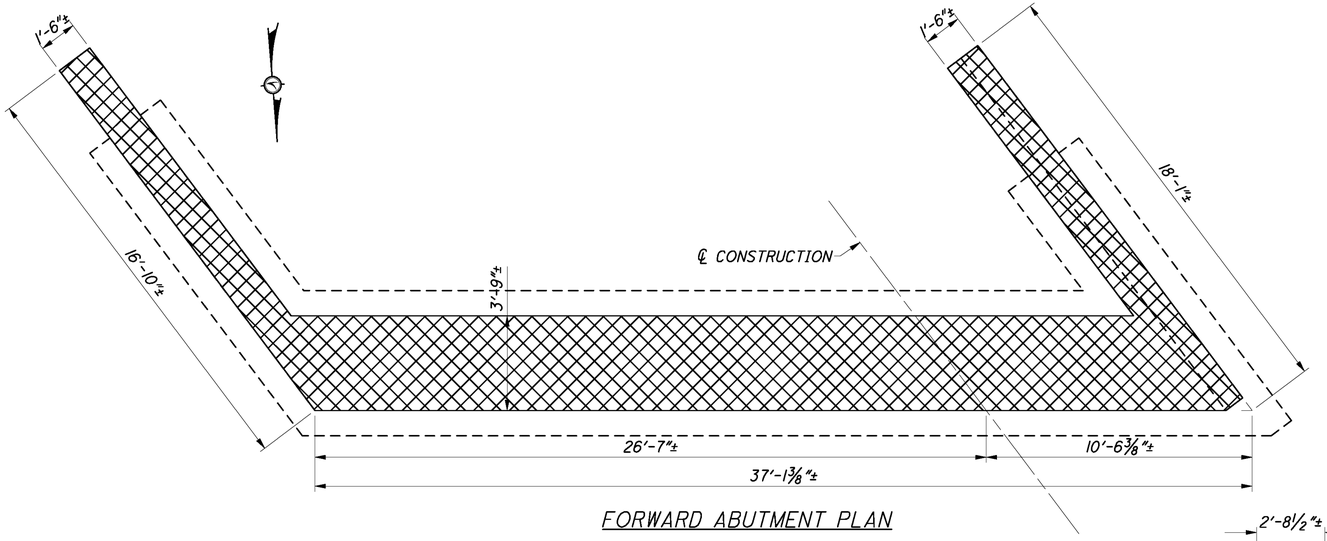
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5006848	

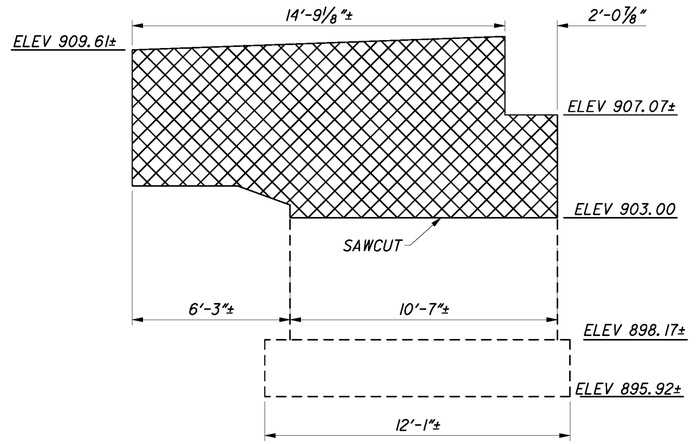
REAR ABUTMENT WINGWALL DETAILS

BRIDGE NO. MAH-680-0429
SILLIMAN STREET/RAMP C OVER I-680

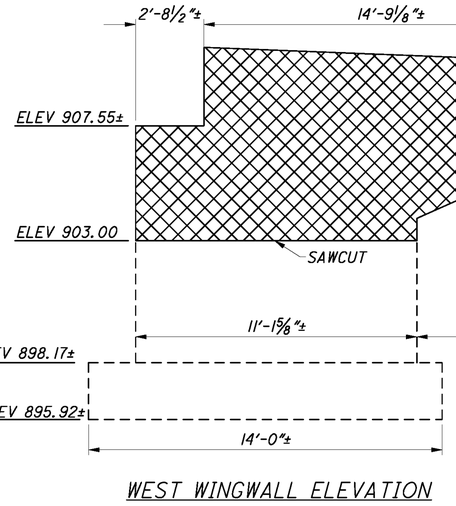
MAH-680-4.29
PID No. 25508



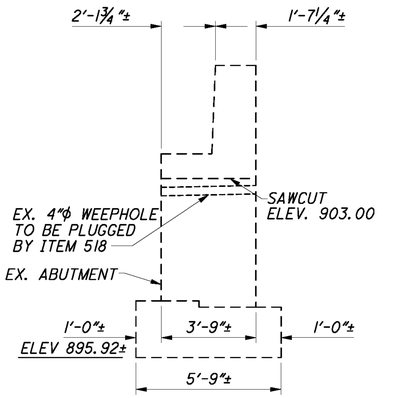
FORWARD ABUTMENT PLAN



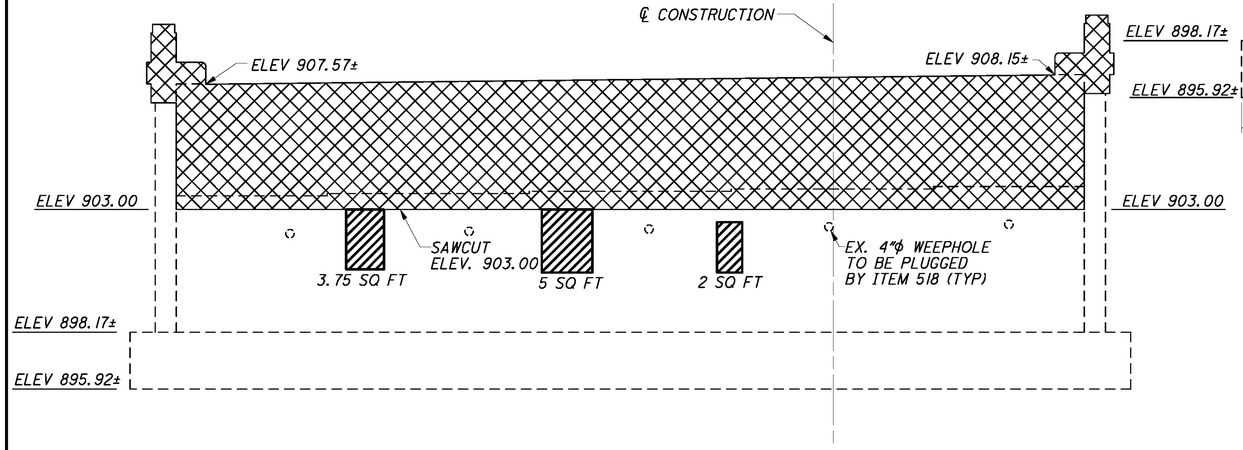
EAST WINGWALL ELEVATION



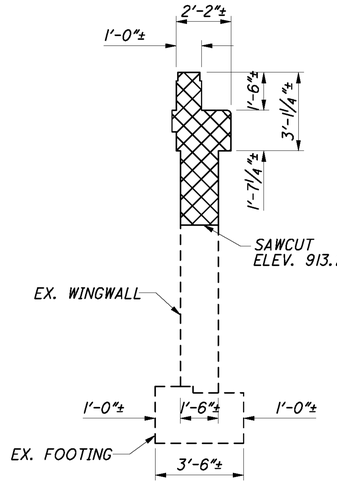
WEST WINGWALL ELEVATION



ABUTMENT CROSS SECTION



FORWARD ABUTMENT ELEVATION



WINGWALL CROSS SECTION

LEGEND

F.A. - FORWARD ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
ELEV - ELEVATION
EX. - EXISTING
SQ FT - SQUARE FEET

- INDICATES LIMITS OF ITEM 202 - PORTIONS OF STRUCTURE TO BE REMOVED, AS PER PLAN
- INDICATES DELAMINATED AREA (REPAIR USING ITEM 519)

NOTES:
1. SOUNDING OF CONCRETE WAS DONE ON 11/08/05 AND A TOTAL OF 10.75 SQUARE FEET OF THE REAR ABUTMENT NEEDS REPAIR.
2. GUARDRAIL ATTACHED TO THE WINGWALL PARAPET WILL BE REMOVED UNDER ITEM 202.

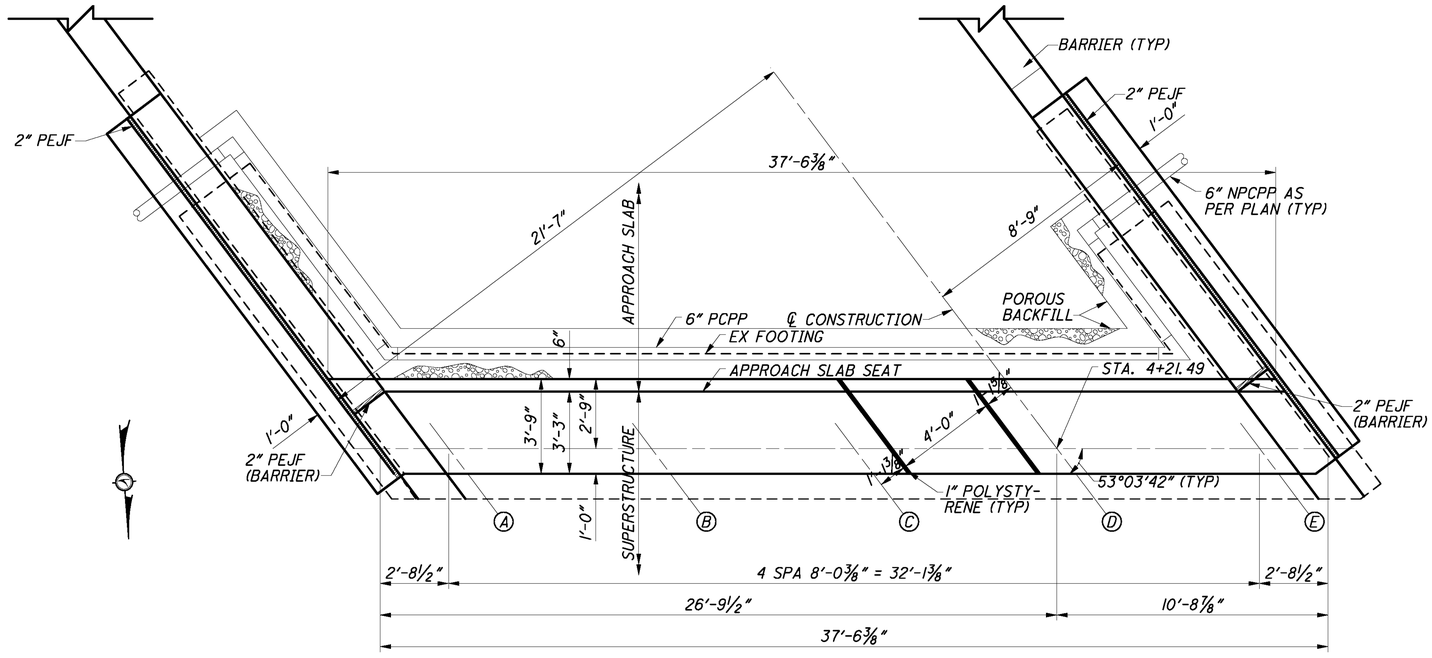
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
EDA	EDA	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5006848	

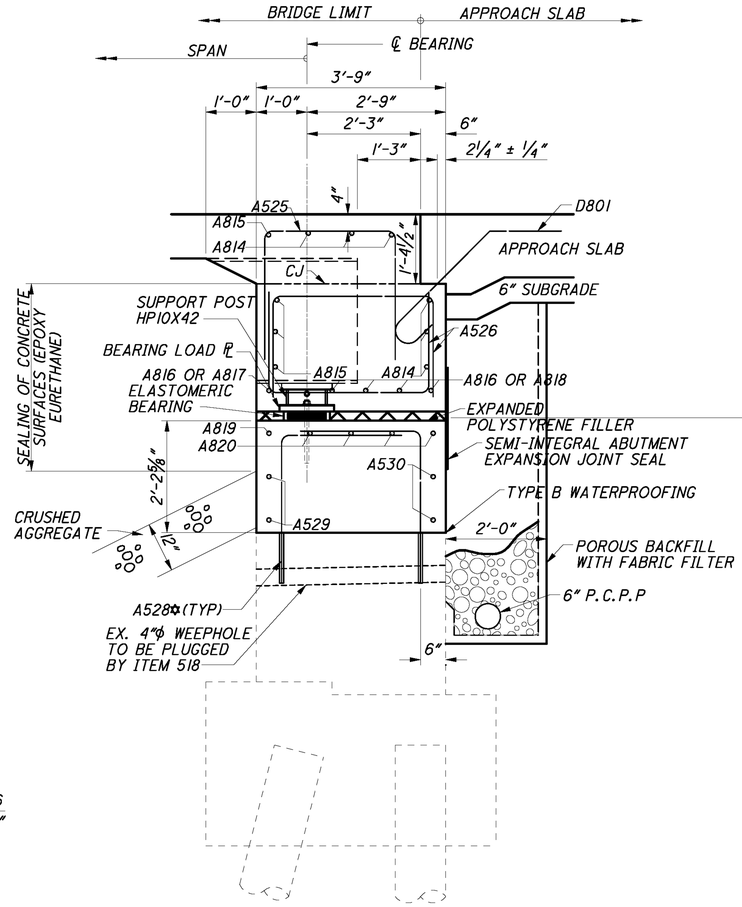
FORWARD ABUTMENT REMOVAL DETAILS

BRIDGE NO. MAH-680-0429
SILLIMAN STREET/RAMP C OVER I-680

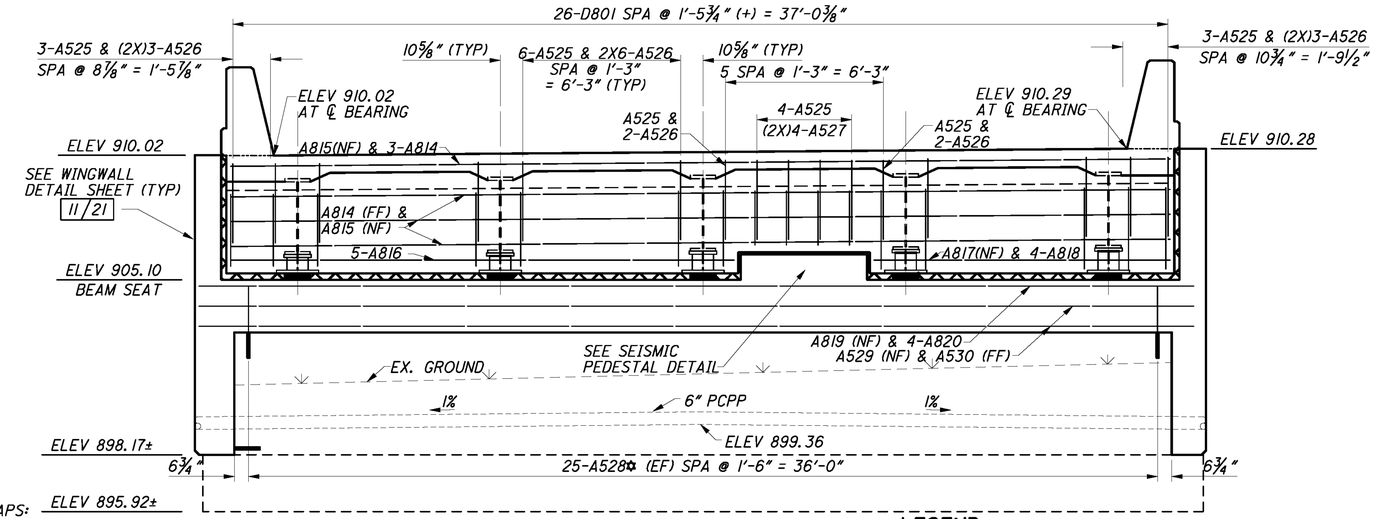
MAH-680-4.29
PID No. 25508



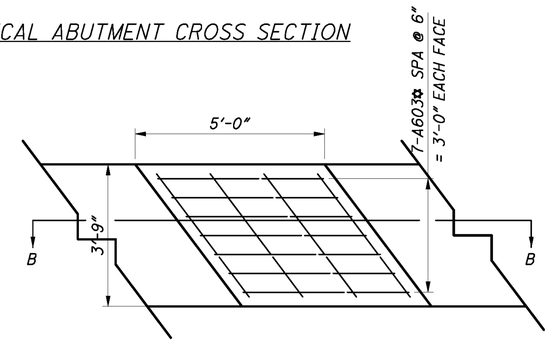
FORWARD ABUTMENT PLAN



TYPICAL ABUTMENT CROSS SECTION



FORWARD ABUTMENT ELEVATION

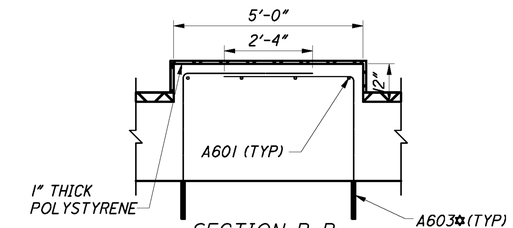


SEISMIC PEDESTAL DETAIL

NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 6 BARS 2'-4"
2. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE ABUTMENT WALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).
3. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.
4. BARS A518, A519, A520, & A521 SHALL BE PLACED PARALLEL TO THE BEAMS.
5. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTURCTURE: PLACE THE CONCRETE ENCASING THE STRUCTURAL STEEL MEMBERS AT LEAST 48 HOURS BEFORE PLACING DECK CONCRETE.
6. ALL ELEVATIONS LABELED REPRESENT THE ELEVATION AT THE CENTERLINE OF BEARING UNLESS OTHERWISE NOTED.

LEGEND

R.A.	- REAR ABUTMENT
F.A.	- FORWARD ABUTMENT
TYP	- TYPICAL
STA	- STATION
BRG.	- BEARING
SPA	- SPACE
CJ	- CONSTRUCTION JOINT
ELEV	- ELEVATION
PEJF	- PREFORMED EXPANSION JOINT FILLER
MIN	- MINIMUM
NPCPP	- NON-PERFORATED CORRUGATED PLASTIC PIPE
PCPP	- PERFORATED CORRUGATED PLASTIC PIPE
EF	- EACH FACE
NF	- NEAR FACE
FF	- FAR FACE
✡	- 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT



SECTION B-B

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2879

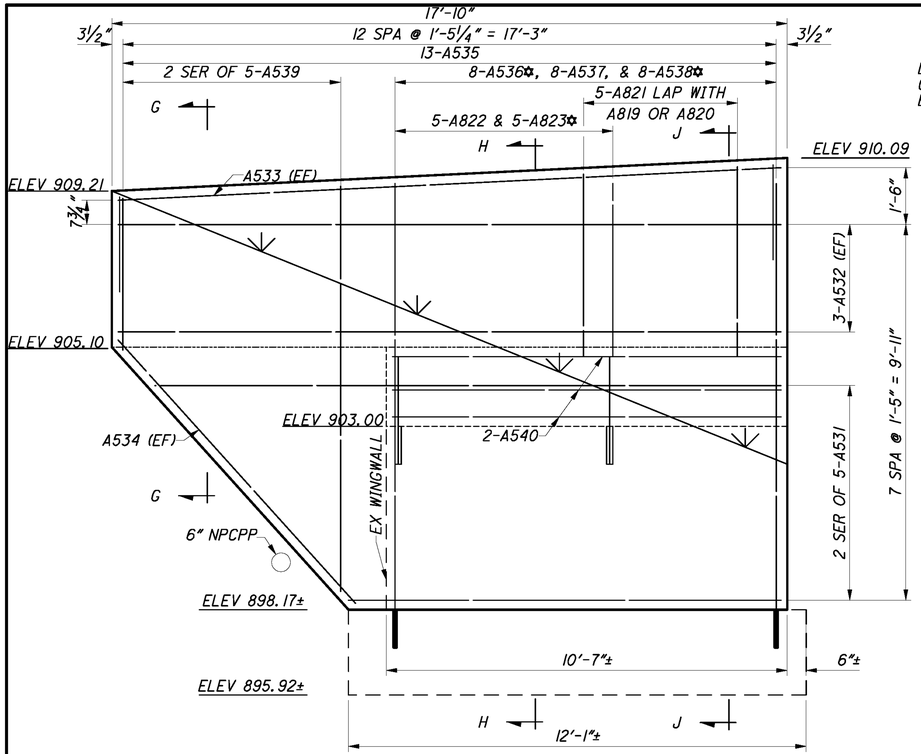
DESIGNED	DRAWN	REVIEWED	DATE	STRUCTURE FILE NUMBER
MJP	MJP	EEC	05-28-10	5006848
CHECKED	REVISED			
JBD				

FORWARD ABUTMENT DETAILS
BRIDGE NO. MAH-680-0429
SILLIMAN STREET/RAMP C OVER I-680

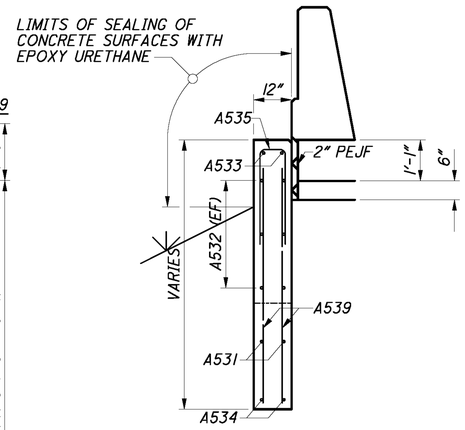
MAH-680-4.29
PID No. 25508

10 / 21

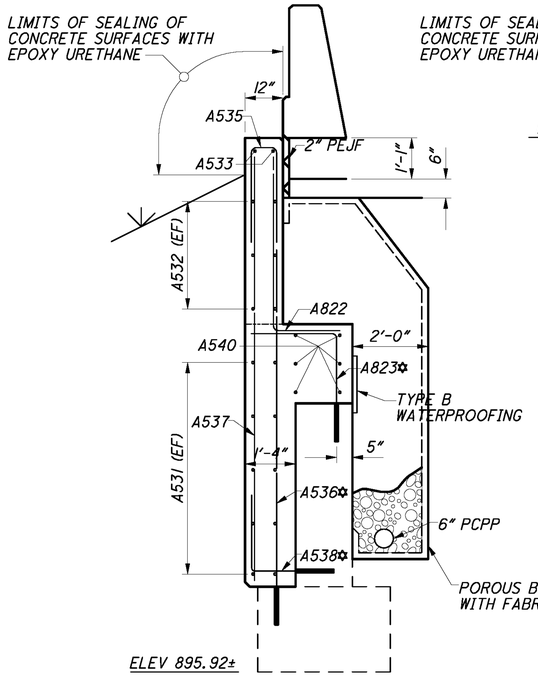
150 / 307



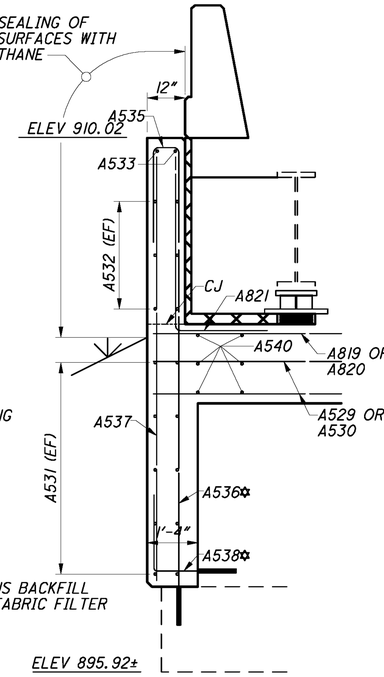
EAST WINGWALL ELEVATION



SECTION G-G



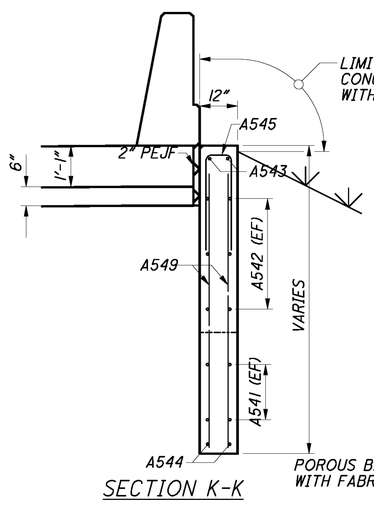
SECTION H-H



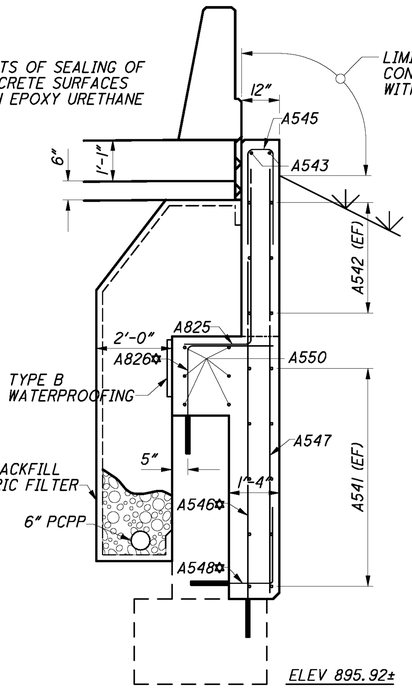
SECTION J-J

LEGEND

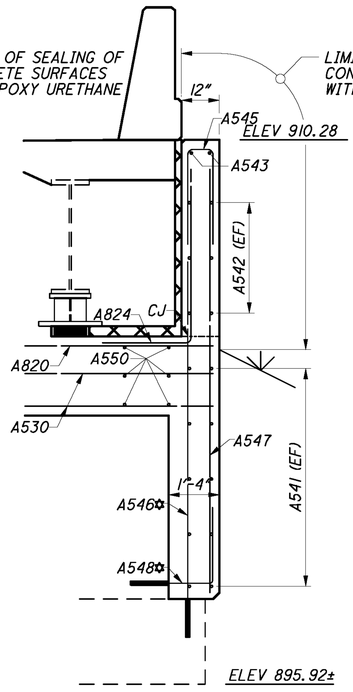
CJ - CONSTRUCTION JOINT
ELEV - ELEVATION
PCPP - PERFORATED CORRUGATED PLASTIC PIPE
NPCPP - NON PERFORATED CORRUGATED PLASTIC PIPE
SPA - SPACED
PEJF - PREFORMED EXPANSION JOINT FILLER
EF - EACH FACE
✡ - 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT



SECTION K-K

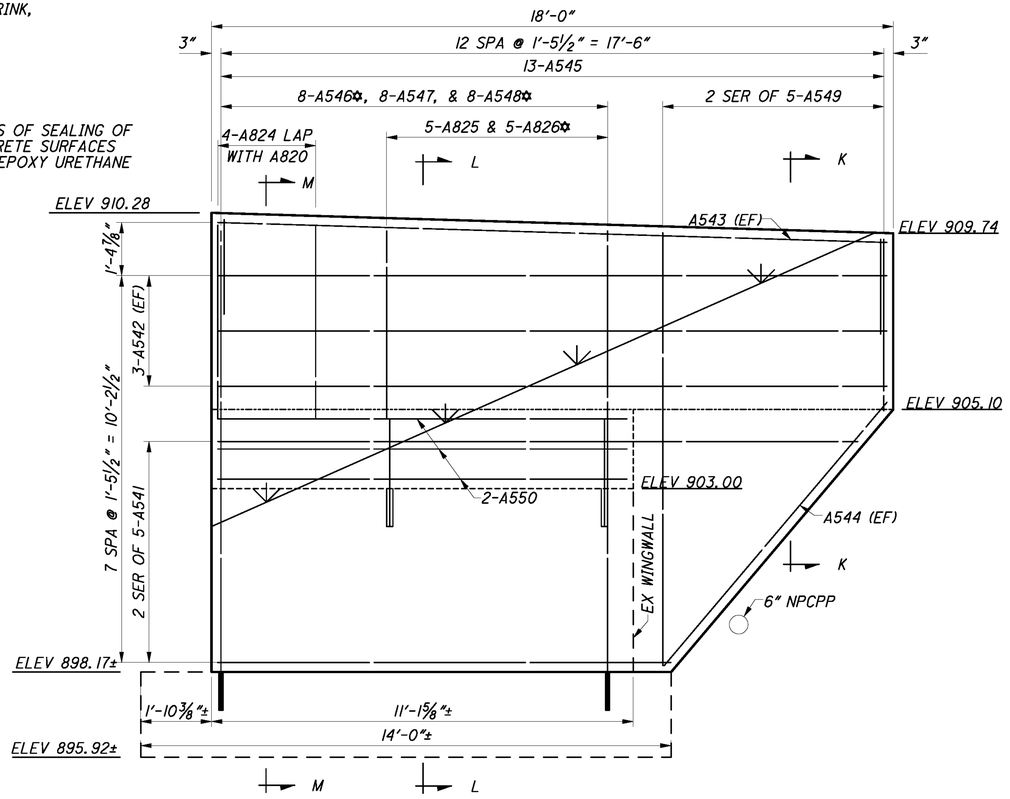


SECTION L-L



SECTION M-M

NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 8 BARS 4'-0"
2. ALL DOWEL HOLES SHOULD BE DRILLED A MINIMUM 5" FROM THE NEAREST CONCRETE EDGE.
3. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE WINGWALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).



WEST WINGWALL ELEVATION

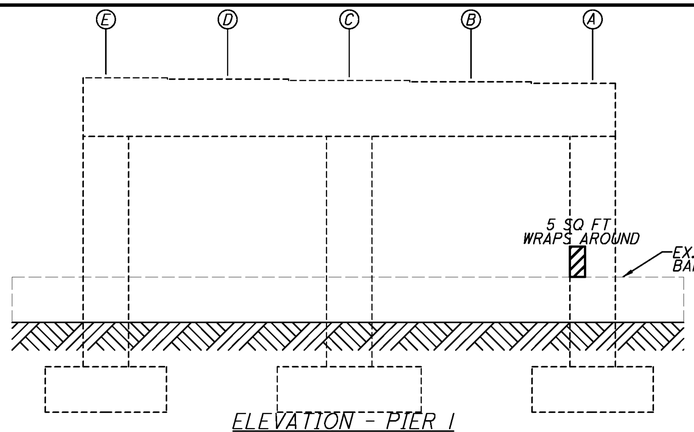
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5006848	

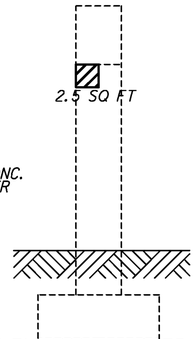
FORWARD ABUTMENT WINGWALL DETAILS

BRIDGE NO. MAH-680-0429
SILLIMAN STREET/RAMP C OVER I-680

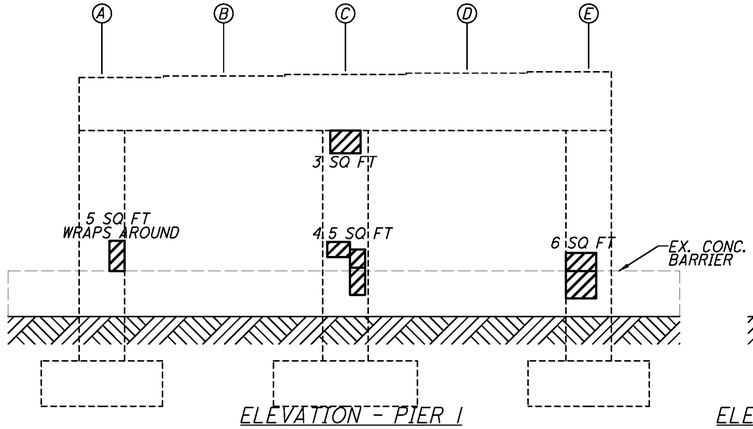
MAH-680-4.29
PID No. 25508



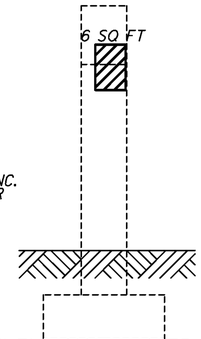
ELEVATION - PIER 1
NORTH SIDE SHOWING PATCHING AREAS



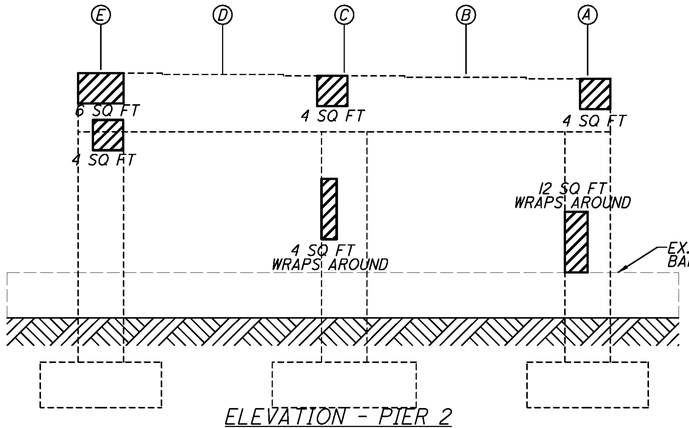
ELEVATION - PIER 1
WEST SIDE SHOWING PATCHING AREAS



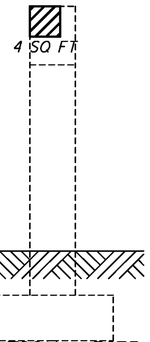
ELEVATION - PIER 1
SOUTH SIDE SHOWING PATCHING AREAS



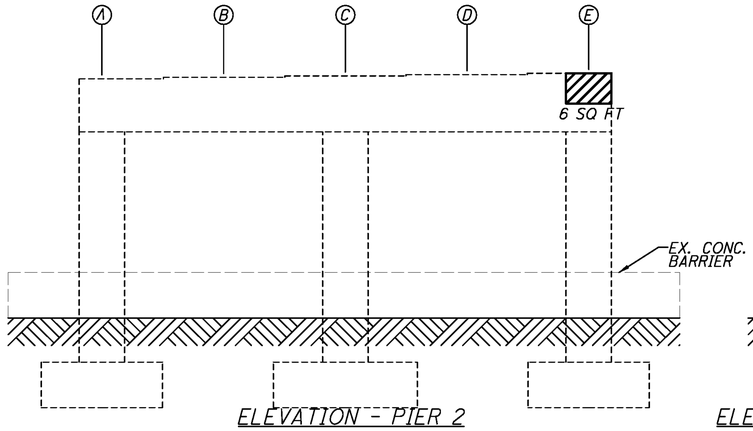
ELEVATION - PIER 1
EAST SIDE SHOWING PATCHING AREAS



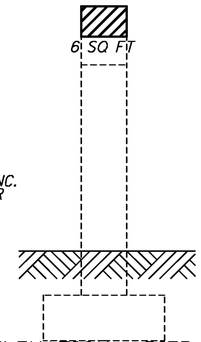
ELEVATION - PIER 2
NORTH SIDE SHOWING PATCHING AREAS



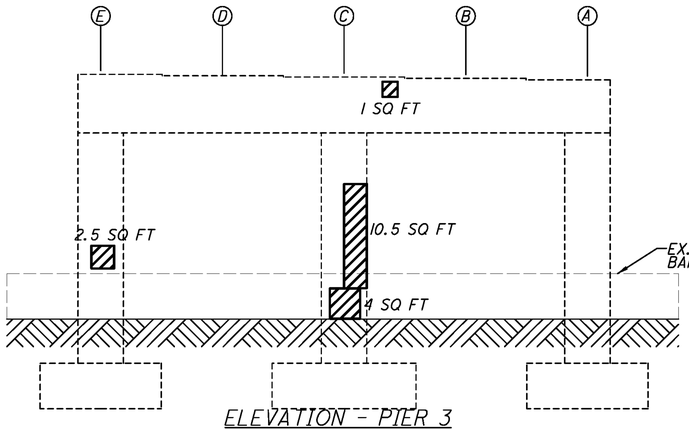
ELEVATION - PIER 1
WEST SIDE SHOWING PATCHING AREAS



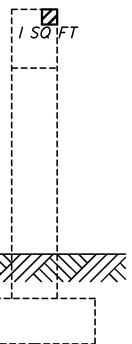
ELEVATION - PIER 2
SOUTH SIDE SHOWING PATCHING AREAS



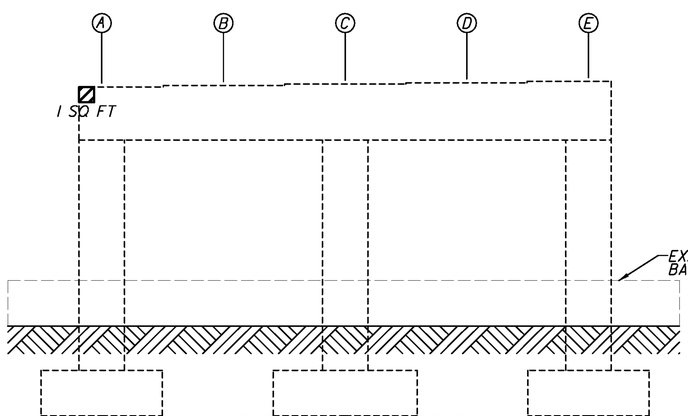
ELEVATION - PIER 1
EAST SIDE SHOWING PATCHING AREAS



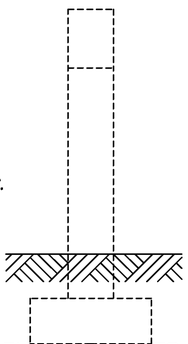
ELEVATION - PIER 3
NORTH SIDE SHOWING PATCHING AREAS



ELEVATION - PIER 1
WEST SIDE SHOWING PATCHING AREAS



ELEVATION - PIER 3
SOUTH SIDE SHOWING PATCHING AREAS



ELEVATION - PIER 1
EAST SIDE SHOWING PATCHING AREAS

LEGEND

CONC. - CONCRETE
ELEV - ELEVATION
EX. - EXISTING
SQ FT - SQUARE FEET

▨ - INDICATES DELAMINATED AREA (REPAIR USING ITEM 519)

NOTE:
SOUNDING OF CONCRETE WAS DONE ON 11/08/05 AND
A TOTAL OF 102 SQUARE FEET OF THE PIERS NEEDS REPAIR.

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
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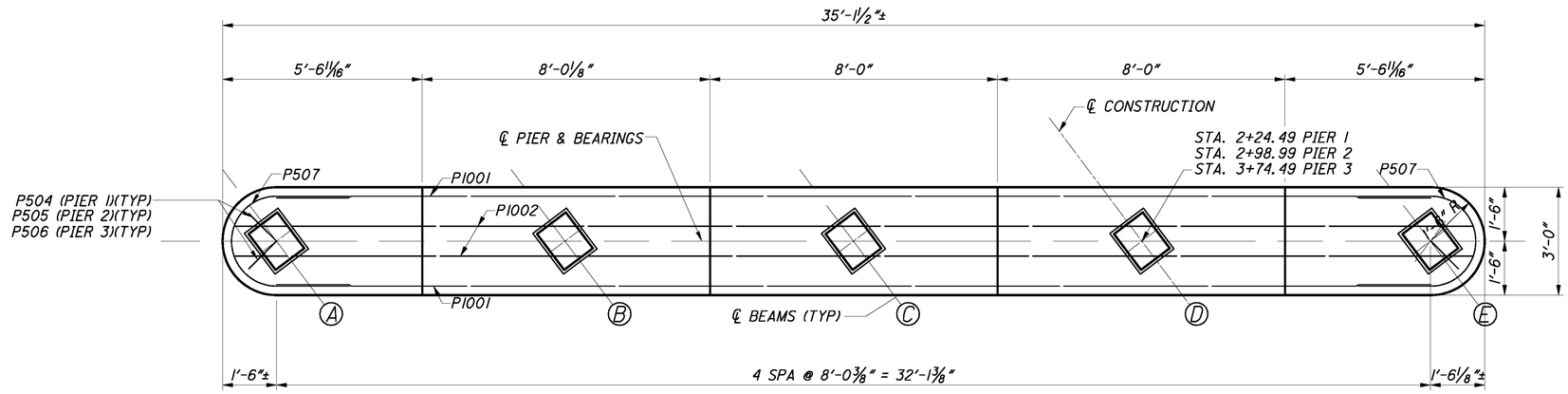
DESIGNED	DRAWN	REVIEWED	DATE
EDA	EDA	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5006848	

PIER DETAILS
BRIDGE NO. MAH-680-0429
SILLIMAN STREET/RAMP C OVER I-680

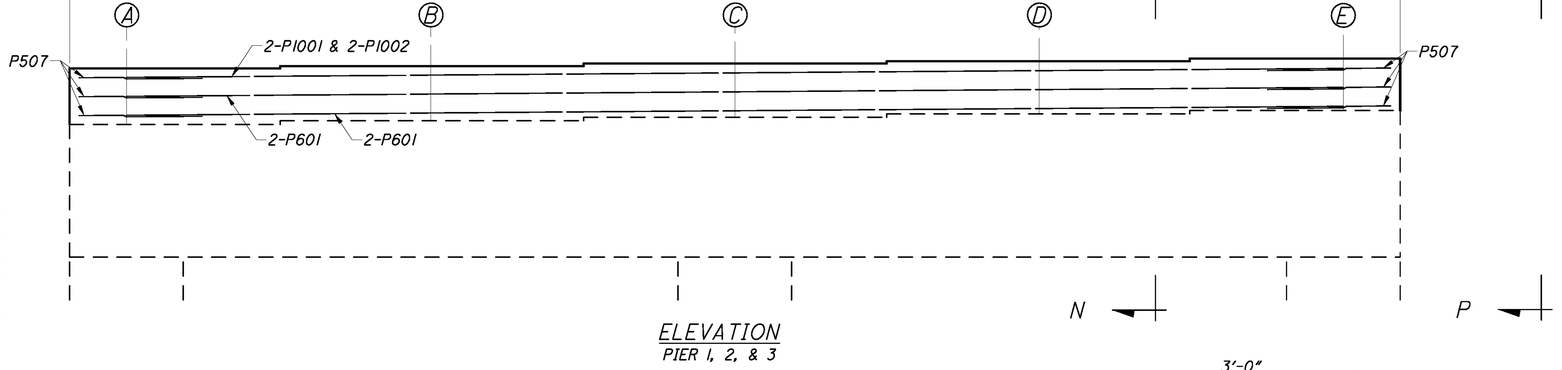
MAH-680-4.29
PID No. 25508

PROPOSED ELEVATION TABLE			
LOCATION	PIER 1	PIER 2	PIER 3
ELEV. A	912.37	909.83	907.27
ELEV. B	912.43	909.90	907.33
ELEV. C	912.50	909.96	907.40
ELEV. D	912.56	910.03	907.46
ELEV. E	912.62	910.09	907.52

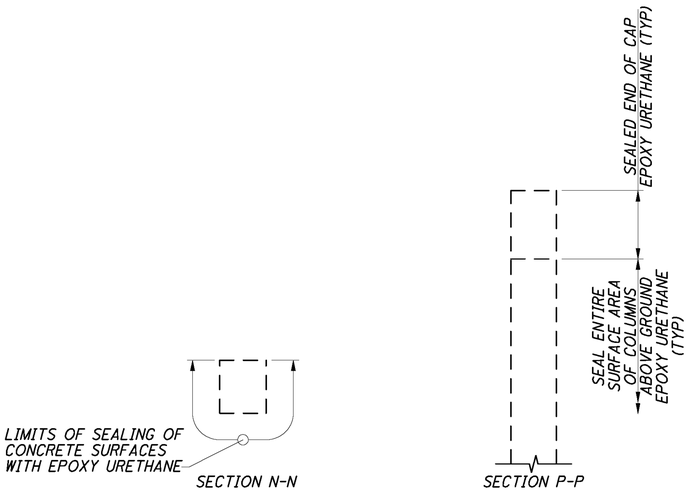
EXISTING ELEVATION TABLE			
LOCATION	PIER 1	PIER 2	PIER 3
ELEV. A	910.96 ±	907.98 ±	904.96 ±
ELEV. B	911.06 ±	908.08 ±	905.06 ±
ELEV. C	911.15 ±	908.17 ±	905.15 ±
ELEV. D	911.24 ±	908.26 ±	905.24 ±
ELEV. E	911.33 ±	908.35 ±	905.33 ±



PLAN
PIER 1, 2, & 3



ELEVATION
PIER 1, 2, & 3



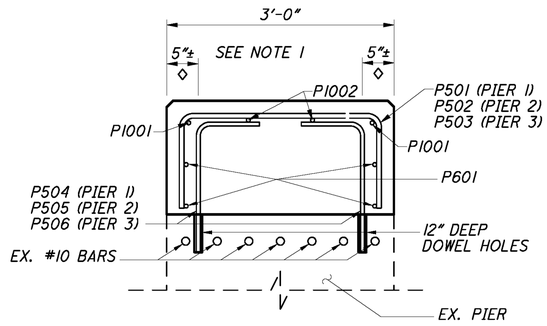
TYPICAL PIER SEALING DETAILS
PIERS 1, 2, & 3

LEGEND

EX. - EXISTING
TYP - TYPICAL
STA - STATION
ELEV- ELEVATION

NOTES:
1. THE REINFORCEMENT IN THE EXISTING PIER CAP IS TO BE LOCATED AND MARKED IN THE FIELD USING NON-DESTRUCTIVE EQUIPMENT SO AS TO MISS THE BARS DURING DRILLING OPERATION FOR DOWELS.

2. REINFORCING STEEL: NEW REINFORCING STEEL MAY REQUIRE FIELD CUTTING OR BENDING TO BE PROPERLY FITTED.



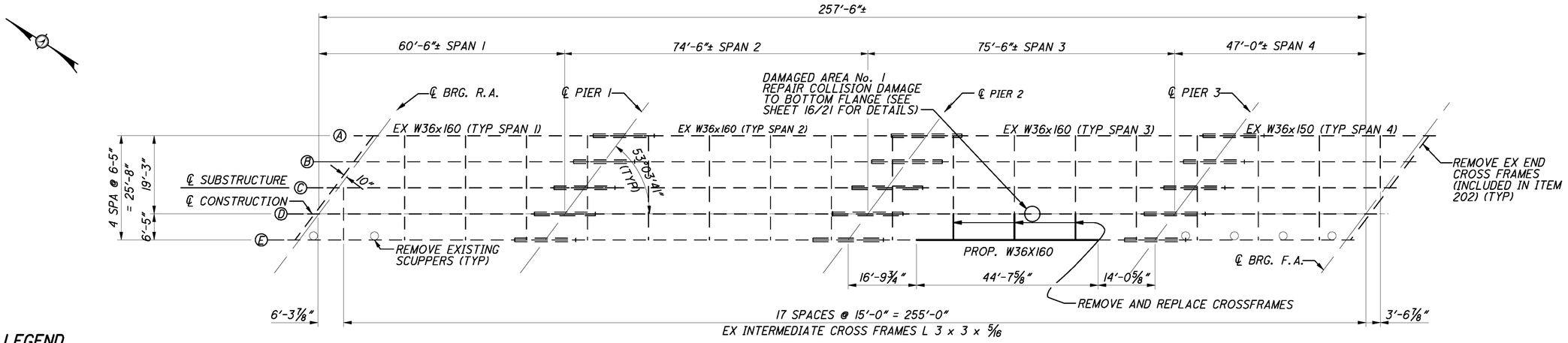
SECTION THRU CAP
PIER 1, 2, & 3
◇- SEE NOTE 1

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
EDA	EDA	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5006848	

PIER DETAILS
BRIDGE NO. MAH-680-0429
SILLIMAN STREET/RAMP C OVER I-680

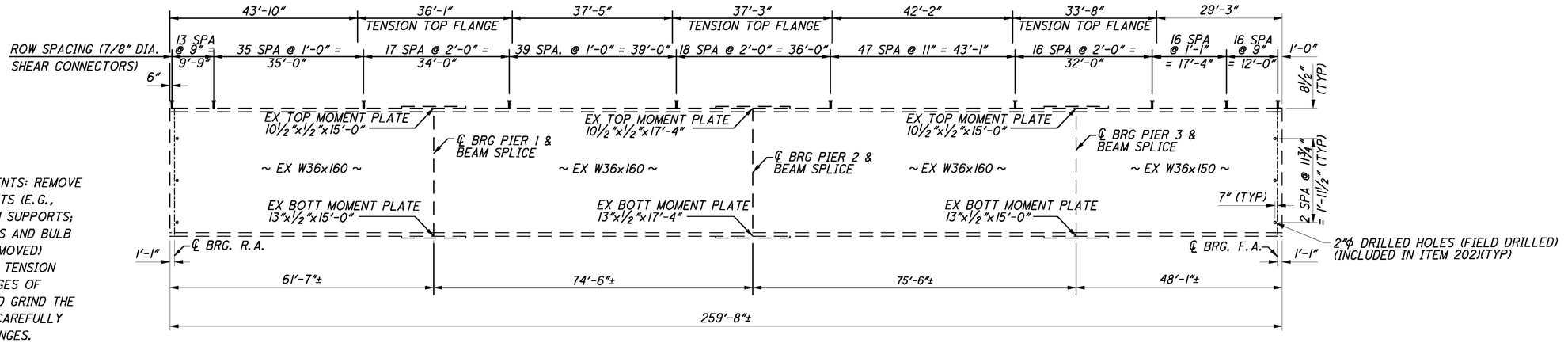
MAH-680-4.29
PID No. 25508



FRAMING PLAN

LEGEND

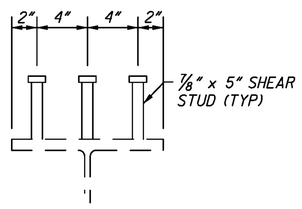
R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
TYP - TYPICAL
BRG. - BEARING
DIA. - DIAMETER
SPA - SPACED
BOTT - BOTTOM



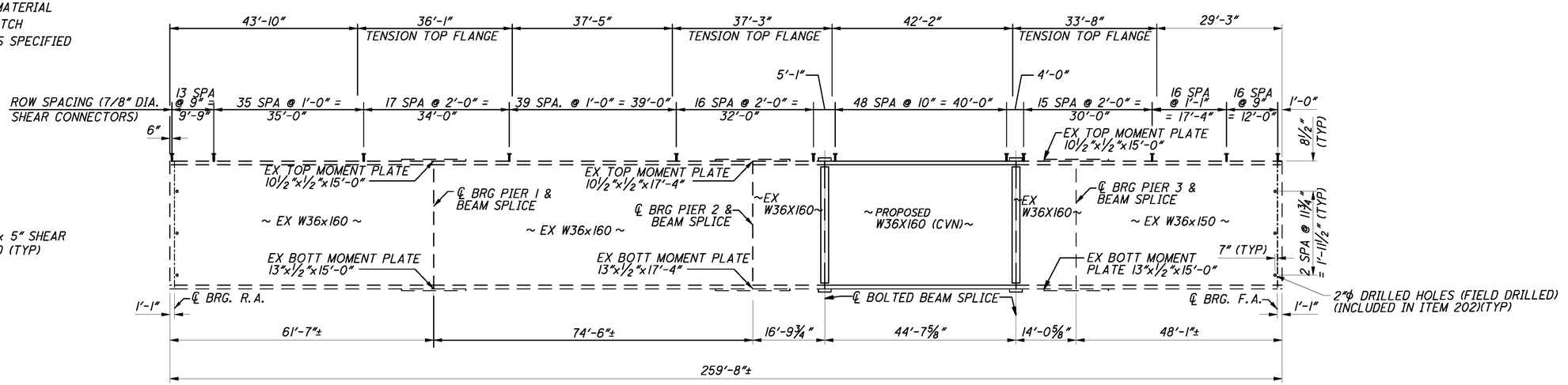
BEAM ELEVATION - A THRU D

NOTES:
1. EXISTING WELDED ATTACHMENTS: REMOVE EXISTING WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS; AND SUPPORTS FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES. (INCLUDED IN ITEM 202).

2. CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.



SHEAR STUD CONNECTOR DETAIL



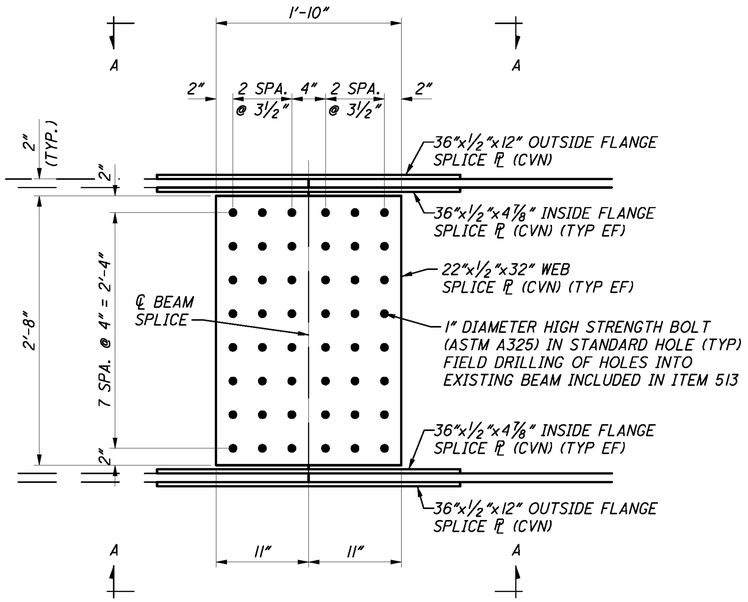
BEAM ELEVATION - E

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EDA	EDA	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5006848	

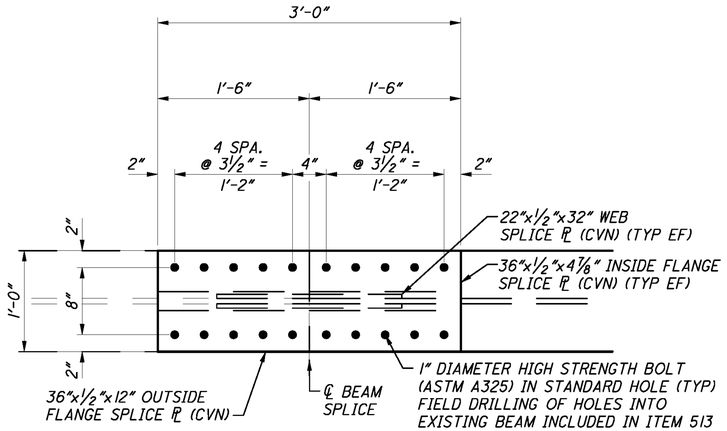
SUPERSTRUCTURE DETAILS
BRIDGE NO. MAH-680-0429
SILLIMAN STREET/RAMP C OVER I-680

MAH-680-4.29
PID No. 25508



TYPICAL BOLTED BEAM SPLICE DETAIL

2 REQUIRED



SECTION A-A

NOTES:
1. CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.

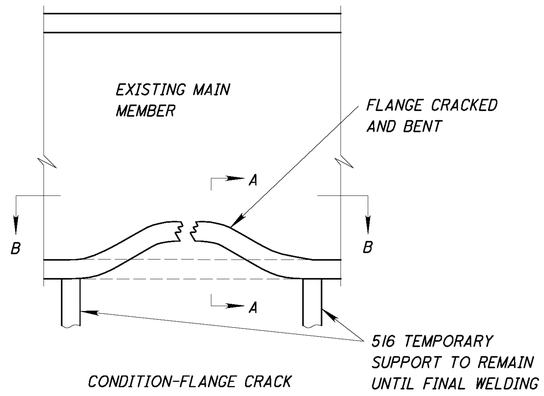
2. HIGH STRENGTH BOLTS SHALL BE 1" DIAMETER A325 UNLESS OTHERWISE NOTED.

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APM	APM	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5006848	

SUPERSTRUCTURE DETAILS
BRIDGE NO. MAH-680-0429
SILLIMAN STREET/RAMP C OVER I-680

MAH-680-4.29
PID No. 25508



CONDITION-FLANGE CRACK

COLLISION REPAIR FCI-1

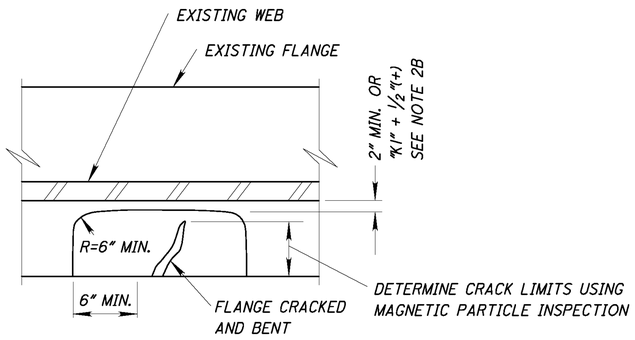
SEE NOTE 1

1. INSTALL TEMPORARY SUPPORT
2A. SAW OR FLAME CUT TO REMOVE DAMAGED FLANGE USING A MECHANICAL GUIDE
2B. IF IT IS BELIEVED THAT THE CRACK DOES NOT EXTEND INTO THE WEB, BUT THAT THE CRACK DOES EXTEND BEYOND THE REMOVAL LIMITS SHOWN REMOVE THE ENTIRE WIDTH OF FLANGE. REMOVE THE WEB MATERIAL AS REQUIRED TO DEVELOP A CONTINUOUS COMPLETE PENETRATION FLANGE WELD. IF NEEDED WEB COPE AND REMOVAL DETAILS CAN BE FOUND ON THE COLLISION REPAIR AND HEAT STRAIGHTENING NOTES PLAN INSERT SHEET, SHEET WC1 OR BC1, LOCATED ON THE OFFICE OF STRUCTURAL ENGINEERING WEBSITE. CONTINGENCY QUANTITIES HAVE BEEN INCLUDED IN THIS PLAN SET, FOR USE BY THE ENGINEER, IN THE EVENT THAT THIS WORK IS NECESSARY.
3. PREPARE EXISTING FLANGE FOR A COMPLETE PENETRATION WELD BY EDGE BEVELING.
4. PREPARE NEW FLANGE MATERIAL THAT MATCHES THE THICKNESS OF THE EXISTING PLATE BY EDGE BEVELING
5. ERECT NEW FLANGE AND CHECK FIT UP, NO GAP EXCEEDING 1/16", TACK WELD PLATE IN PLACE
6. PERFORM THE COMPLETE PENETRATION FLANGE WELDING ACCORDING TO C&MS 513.21 BY ATTACHING RUNOFF TABS, PERFORM WELDS, REMOVE THE TABS AND GRIND ALL WELDED SURFACES SMOOTH ACCORDING TO ANSI B46.1 OF 250 mil
7. PERFORM NDT TESTING ACCORDING TO C&MS 513.25A

TABLE #1 513 REPAIRS

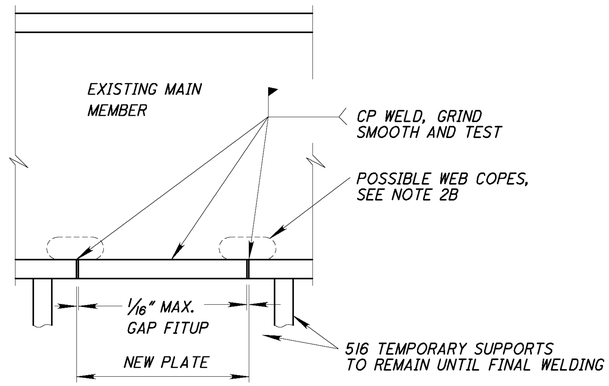
DAMAGED AREA No.	MEMBER LINE	REPAIR DETAIL TYPE	DRILLING HOLES (EACH)	COPE HOLES (EACH)	STEEL MEMBER LEVEL UF (POUNDS)	CP WELD (FEET)
1	D	FC1	0	0	15	2

SEE FRAMING PLAN FOR REPAIR LOCATION



SECTION B-B

SEE NOTES 2 THROUGH 4



COLLISION REPAIR FCI-2

SEE NOTES 5, 6, AND 7

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CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5006848

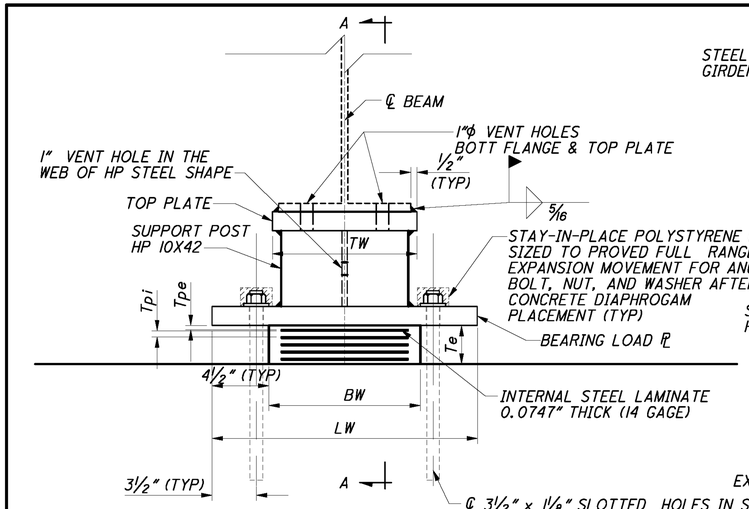
COLLISION REPAIR OF FLANGE CRACKS FCI

BRIDGE NO. MAH-680-0429
SILLIMAN ST./RAMP C OVER I-680

MAH-680-4.29
PID No. 25508

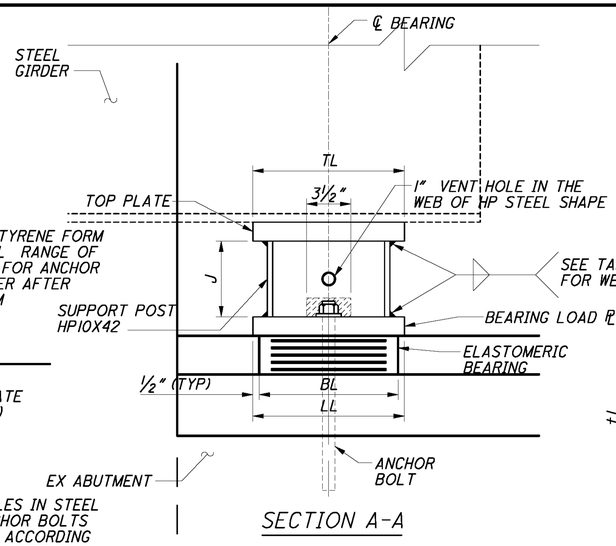
16 / 21

156
307



50 DUROMETER LAMINATED ELASTOMERIC EXPANSION BEARING

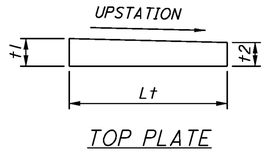
(FORWARD ABUTMENT)



SECTION A-A

LEGEND

EX. - EXISTING
TYP - TYPICAL
STA - STATION
ELEV - ELEVATION
LT. - LEFT
R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
NO. - NUMBER
DL - DEAD LOAD
LL - LIVE LOAD
IN - INCHES
℄ - PLATE



TOP PLATE

NOTES:

1. ASTM A709 GRADE 50W STEEL LOAD PLATES SHALL BE USED FOR ALL BEARINGS. THE LOAD PLATE SHALL BE VULCANIZED BONDED TO THE LAMINATED ELASTOMERIC PAD DURING THE MOLDING PROCESS.

2. SUPPORT POSTS AND STEEL LOAD PLATES SHALL BE ASTM A709 GRADE 50W STEEL AND SHALL BE COATED IN A SIMILAR MANNER AS THE REST OF THE STRUCTURAL STEEL.

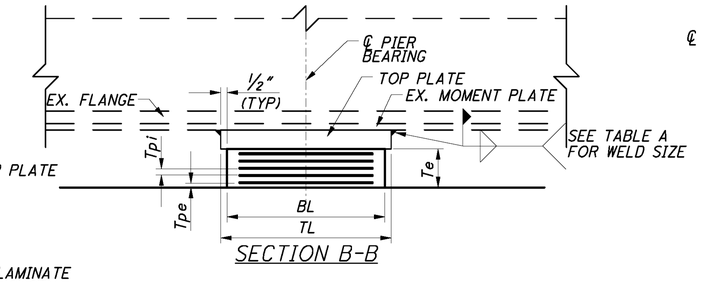
3. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 OR 60 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES.

4. WELDING: CONTROL WELDING SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

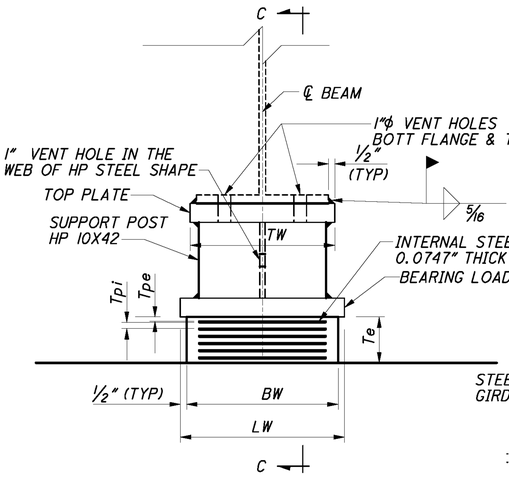
5. BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80°F OR LOWER THAN 40°F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60°F (±) 10°F, RAISE THE BEAMS OR GIRDERS TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F (±) 10°F.

6. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL THE LAMINATED ELASTOMERIC BEARINGS, SUPPORT POSTS, ANCHOR BOLTS, AND STEEL LOAD PLATES. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE).

7. SHOP MARK LOAD PLATES WITH THE FOLLWOING INFORMATION: TOP, UPSTATION DIRECTION, GIRDER DESIGNATION, AND LOCATION (REAR ABUTMENT, PIER 1, PIER 2, PIER 3, OR FORWARD ABUTMENT.

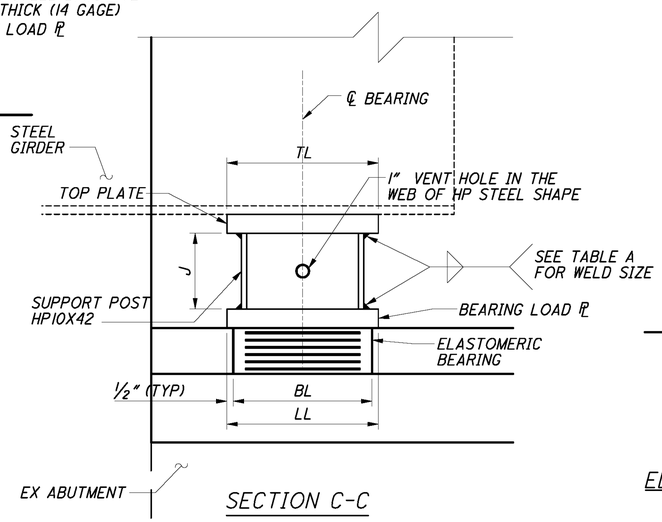


SECTION B-B

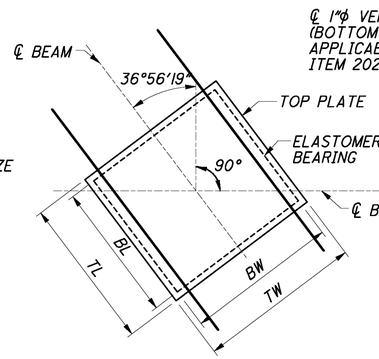


50 DUROMETER LAMINATED ELASTOMERIC EXPANSION BEARING

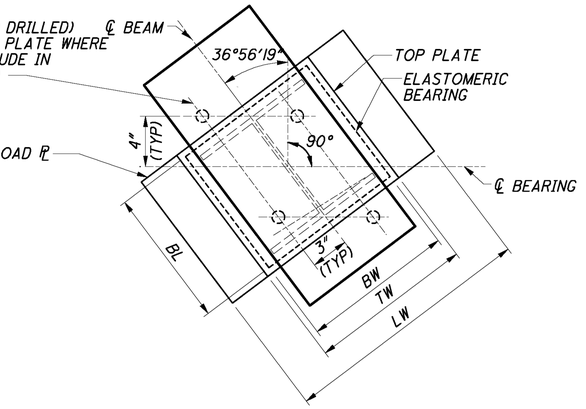
(REAR ABUTMENT)



SECTION C-C

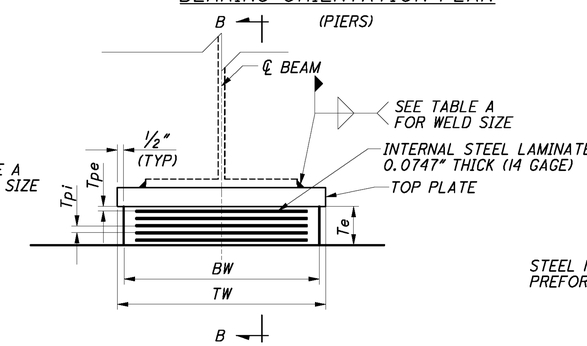


BEARING ORIENTATION PLAN



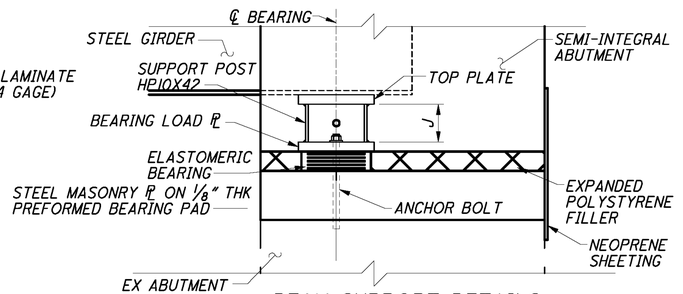
BEARING ORIENTATION PLAN

(ABUTMENTS)



60 DUROMETER LAMINATED ELASTOMERIC EXPANSION BEARING

(PIERS)



BEAM SUPPORT DETAILS

SUPPORTED POSTS AND LOAD PLATES SHALL BE INCLUDED IN ITEM 516, ELASTOMERIC BEARING PAD WITH INTERNAL LAMINATES.

SUPPORT POST HEIGHT "J" TABLE		
LOCATION	REAR ABUTMENT	FORWARD ABUTMENT
GIRDER A	6"	6"
GIRDER B	6 3/4"	6 1/8"
GIRDER C	7 1/2"	7 1/2"
GIRDER D	8 1/4"	8 1/4"
GIRDER E	9 1/8"	9"

TABLE A

LAMINATED ELASTOMERIC BEARING DATA

BEARING LOCATION	GIRDERS	BEARING TYPE	NO. REQUIRED	DEAD LOAD (KIPS)	LIVE LOAD (KIPS)	TOTAL LOAD (DL+LL) KIPS	BW (IN)	BL (IN)	Tpi (IN)	NO. OF Tpi	Tpe (IN) (2 EACH)	NO. OF INTERNAL STEEL LAMINATES (14 GAGE)	Te (IN)	FILLET WELD SIZE (IN)	TOP PLATE (IN)				BEARING LOAD PLATE (IN)			ELASTOMER HARDNESS	GIRDERS	BEARING LOCATION
															TW	TL	t1	t2	LW	LL	tm			
R.A.	A - E	EXPANSION	5	53.7	45.5	99.2	13.00	13.00	0.50	5	0.35	6	3.648	5/16	13	10.75	2	1 1/2	14	14	1 1/2	50	A - E	R.A.
PIER 1	A - E	EXPANSION	5	109.0	56.6	165.6	15.50	12.50	0.50	4	0.35	5	3.074	5/16	16.50	13.50	2	1 1/2	-	-	-	60	A - E	PIER 1
PIER 2	A - E	EXPANSION	5	112.1	58.1	170.2	15.50	12.50	0.50	4	0.35	5	3.074	5/16	16.50	13.50	2	1 1/2	-	-	-	60	A - E	PIER 2
PIER 3	A - E	EXPANSION	5	99.8	55.4	155.2	15.50	12.50	0.50	4	0.35	5	3.074	5/16	16.50	13.50	2	1 1/2	-	-	-	60	A - E	PIER 3
F.A.	A - E	EXPANSION	5	42.4	43.1	85.5	13.00	13.00	0.50	4	0.35	5	3.074	5/16	13	10.75	2	1 1/2	22	14	1 1/2	50	A - E	F.A.

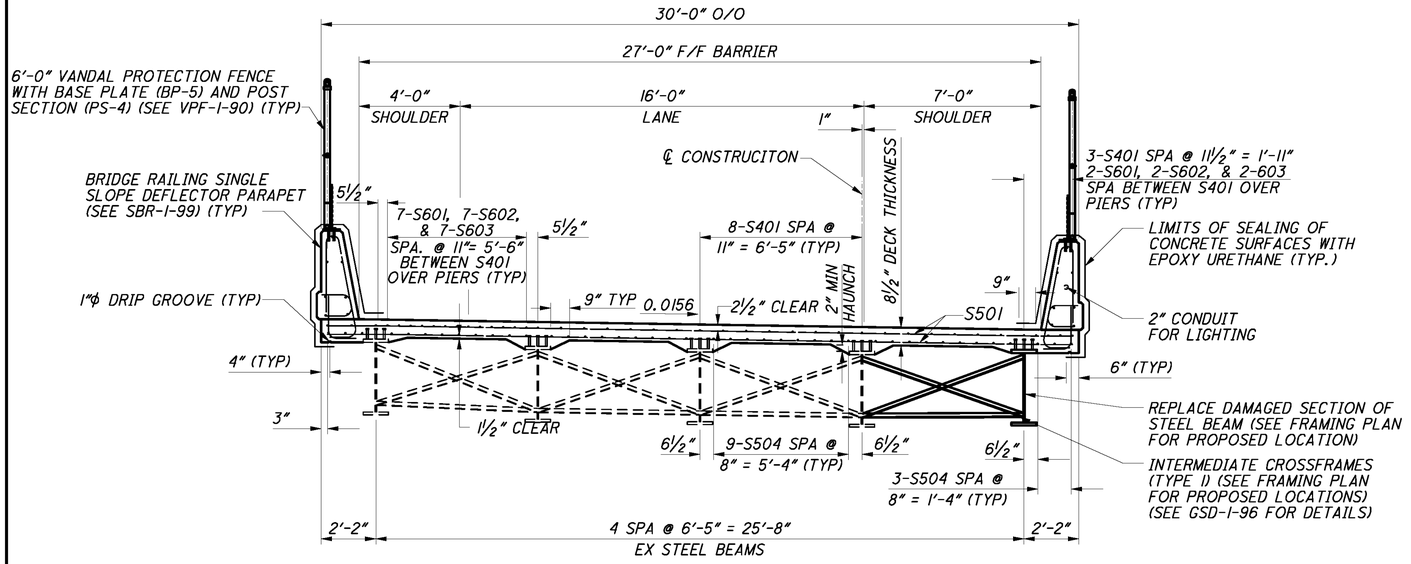
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
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DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | STRUCTURE FILE NUMBER 5006848 | CHECKED JBD | REVISED

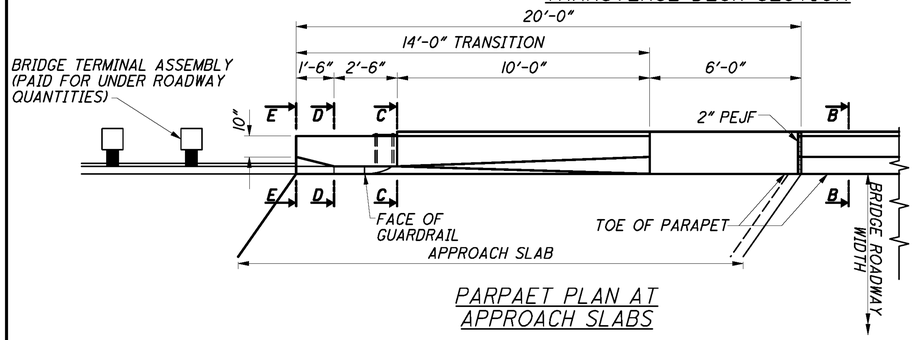
BEARING DETAILS

BRIDGE NO. MAH-680-0429
SILLIMAN STREET/RAMP C OVER I-680

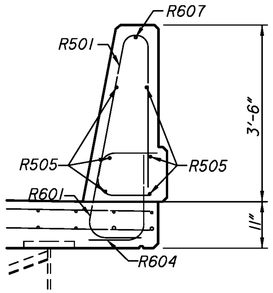
MAH-680-4.29
PID No. 25508



TRANSVERSE DECK SECTION

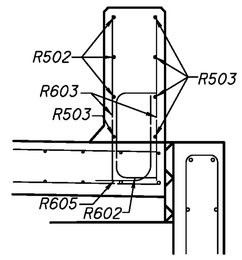


PARPAET PLAN AT APPROACH SLABS



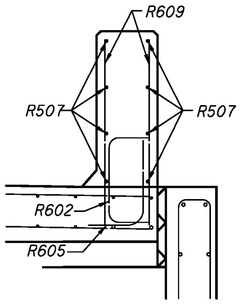
SECTION B-B

(FOR ADDITIONAL DETAILS SEE STD. DWG. SBR-1-99)



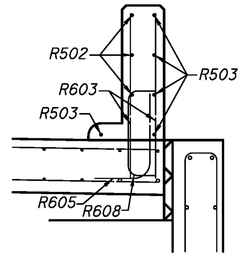
SECTION D-D

(FOR ADDITIONAL DETAILS SEE STD. DWG. SBR-1-99)



SECTION C-C

(FOR ADDITIONAL DETAILS SEE STD. DWG. SBR-1-99)



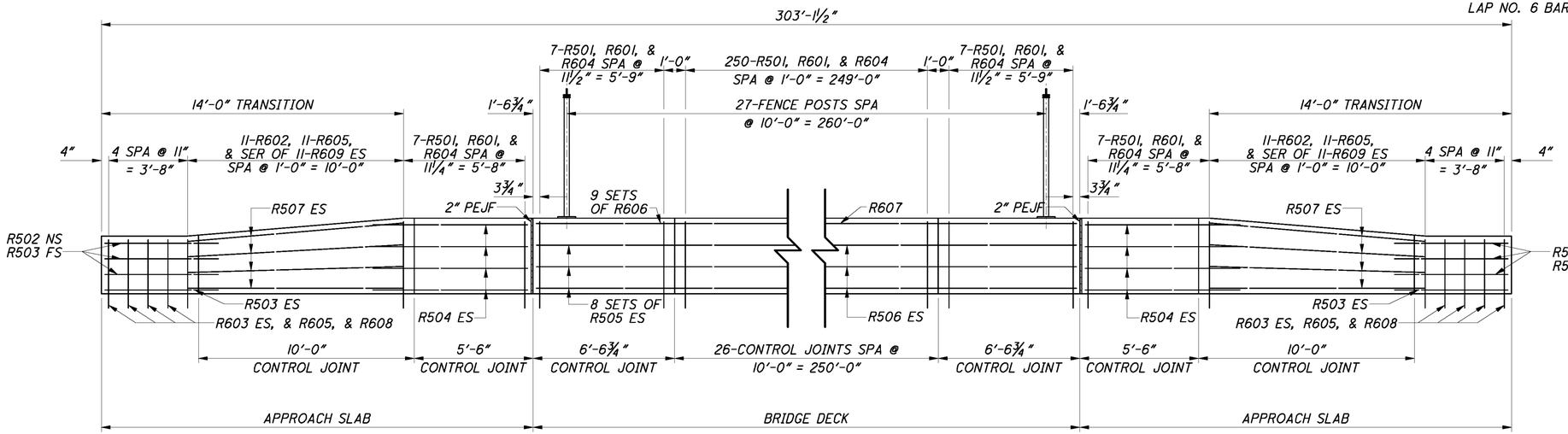
SECTION E-E

(FOR ADDITIONAL DETAILS SEE STD. DWG. SBR-1-99)

NOTES:

1. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM/ GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 3 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE IS ±3 INCHES.

2. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 6 BARS 2'-4"



PARPAET ELEVATION

(FOR ADDITIONAL DETAILS SEE STD. DWG. SBR-1-99 & VPF-1-99)

LEGEND

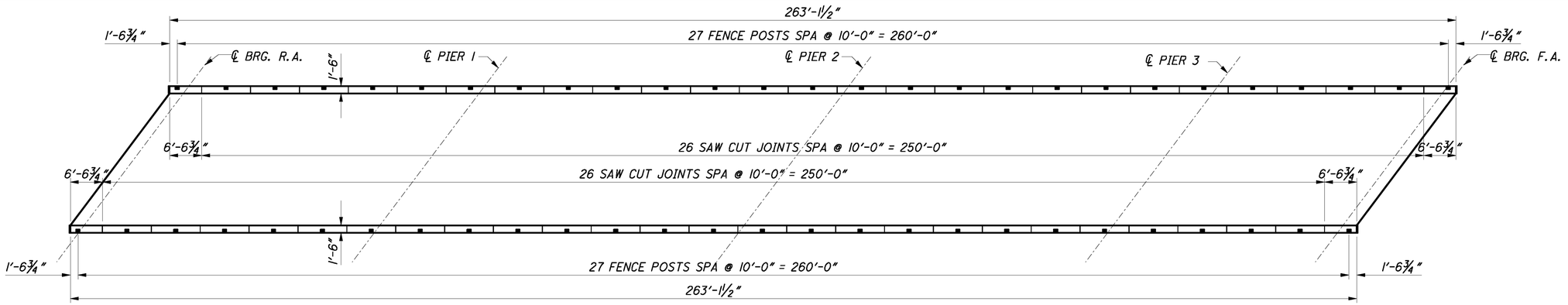
SPA	- SPACED
TYP	- TYPICAL
R.A.	- REAR ABUTMENT
F.A.	- FORWARD ABUTMENT
BOTT	- BOTTOM
MIN.	- MINIMUM
STD DWG	- STANDARD DRAWING
ES	- EACH SIDE
NS	- NEAR SIDE
FS	- FAR SIDE
SER	- SERIES

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
EDA	EDA	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5006848	

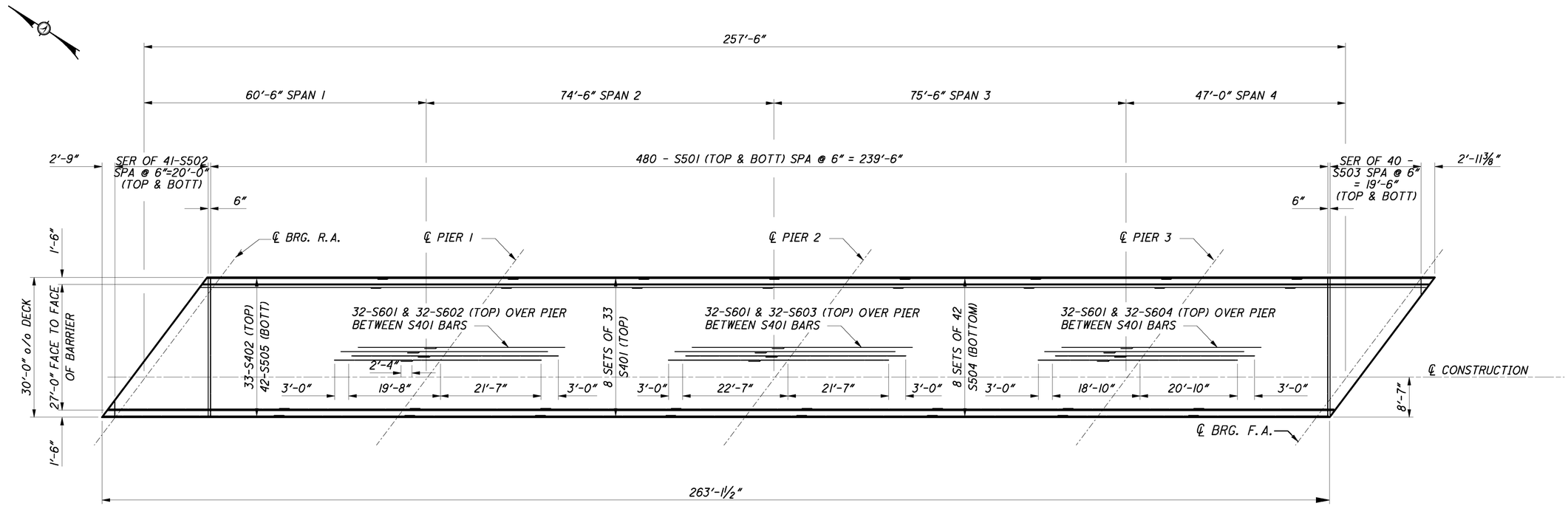
TRANSVERSE DECK SECTION & BARRIER DETAILS
BRIDGE NO. MAH-680-0429
SILLIMAN STREET/RAMP C OVER I-680

MAH-680-4.29
PID No. 25508



FENCE POST SCHEMATIC PLAN

(FOR ADDITIONAL DETAILS SEE STD. DWG. VPF-1-99)



DECK REINFORCEMENT PLAN

NOTES:
1. FOR LONGITUDINAL REINFORCING, SEE TRANSVERSE SECTION SHEET 14/17

2. PARAPET REINFORCING SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH SAW CUT JOINT.

3. MINIMUM BAR LAPS:
   LAP NO. 4 BARS 1'-7"
   LAP NO. 5 BARS 2'-0"
   LAP NO. 6 BARS 2'-4"

LEGEND

R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
o/o - OUT TO OUT
MIN - MINIMUM
BOTT- BOTTOM

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DESIGNED EDA | DRAWN EDA | REVIEWED EEC | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5006848

DECK DETAILS
BRIDGE NO. MAH-680-0429
SILLIMAN STREET/RAMP C OVER I-680

MAH-680-4.29
PID No. 25508

SCREED ELEVATIONS

	SPAN 1					SPAN 2				SPAN 3				SPAN 4				
LOCATION	R.A.	1/4	1/2	3/4	PIER 1	1/4	1/2	3/4	PIER 2	1/4	1/2	3/4	PIER 3	1/4	1/2	3/4	F.A.
LEFT GUTTER	918.78	918.29	917.78	917.25	916.72	916.10	915.48	914.83	914.19	913.57	912.95	912.29	911.62	911.22	910.82	910.43	910.02
RIGHT GUTTER	919.05	918.56	918.05	917.52	916.99	916.37	915.75	915.10	914.46	913.84	913.22	912.56	911.89	911.49	911.09	910.70	910.29

TOP OF HAUNCH ELEVATIONS

	SPAN 1					SPAN 2				SPAN 3				SPAN 4				
LOCATION	R.A.	1/4	1/2	3/4	PIER 1	1/4	1/2	3/4	PIER 2	1/4	1/2	3/4	PIER 3	1/4	1/2	3/4	F.A.
BEAM A	918.08	917.59	917.08	916.55	916.02	915.40	914.78	914.13	913.49	912.87	912.25	911.59	910.92	910.52	910.12	909.73	909.32
BEAM B	918.14	917.66	917.15	916.61	916.08	915.47	914.85	914.20	913.55	912.94	912.32	911.66	910.98	910.58	910.19	909.79	909.38
BEAM C	918.20	917.72	917.21	916.68	916.15	915.53	914.91	914.26	913.61	913.00	912.38	911.72	911.05	910.64	910.25	909.85	909.45
BEAM D	918.27	917.78	917.27	916.74	916.21	915.59	914.98	914.33	913.68	913.06	912.44	911.78	911.11	910.71	910.31	909.92	909.51
BEAM E	918.33	917.84	917.33	916.80	916.27	915.66	915.04	914.39	913.74	913.12	912.50	911.84	911.17	910.77	910.38	909.98	909.58

FINISHED DECK SURFACE ELEVATIONS

	SPAN 1					SPAN 2				SPAN 3				SPAN 4				
LOCATION	R.A.	1/4	1/2	3/4	PIER 1	1/4	1/2	3/4	PIER 2	1/4	1/2	3/4	PIER 3	1/4	1/2	3/4	F.A.
LEFT GUTTER	918.78	918.26	917.75	917.23	916.72	916.09	915.45	914.82	914.19	913.54	912.90	912.26	911.62	911.22	910.82	910.42	910.02
BEAM A	918.78	918.27	917.76	917.24	916.73	916.09	915.46	914.83	914.19	913.55	912.91	912.27	911.63	911.23	910.83	910.43	910.03
BEAM B	918.85	918.33	917.82	917.31	916.79	916.16	915.52	914.89	914.26	913.62	912.97	912.33	911.69	911.29	910.89	910.49	910.09
BEAM C	918.91	918.40	917.88	917.37	916.86	916.22	915.59	914.96	914.32	913.68	913.04	912.40	911.76	911.36	910.96	910.56	910.16
BEAM D	918.975	918.46	917.95	917.43	916.92	916.29	915.65	915.02	914.39	913.74	913.10	912.46	911.82	911.42	911.02	910.62	910.22
BEAM E	919.04	918.53	918.01	917.50	916.98	916.35	915.72	915.08	914.45	913.81	913.17	912.52	911.88	911.48	911.08	910.68	910.28
RIGHT GUTTER	919.05	918.53	918.02	917.50	916.99	916.36	915.72	915.09	914.46	913.81	913.17	912.53	911.89	911.49	911.09	910.69	910.29

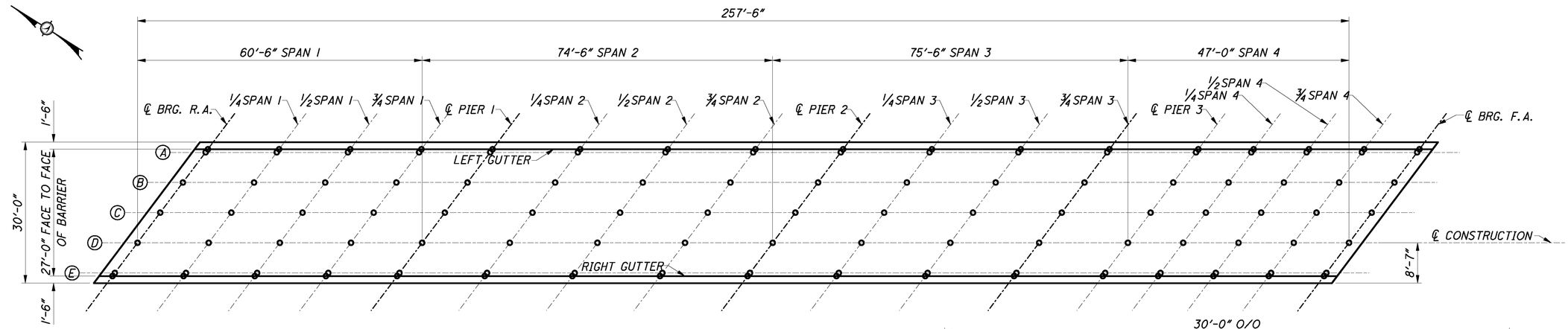


TABLE ELEVATION PLAN

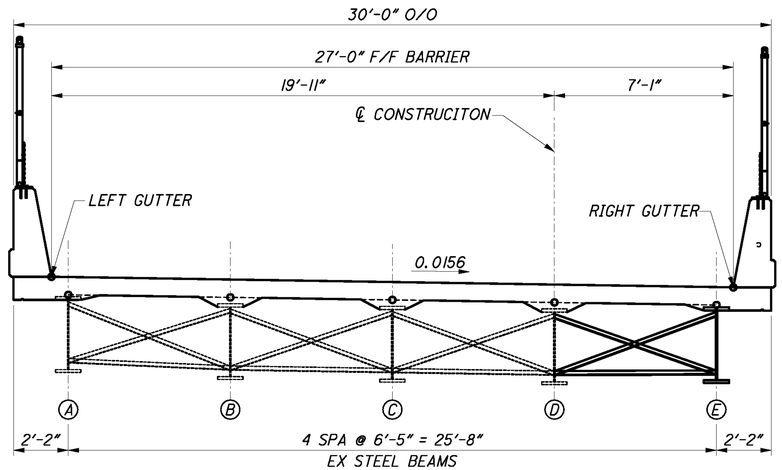


TABLE ELEVATION TRANSVERSE SECTION

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

2. TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE BEAM/ GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

3. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCRRED.

LEGEND

R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
EX - EXISTING
SPA - SPACED
O/O - OUT TO OUT
F/F - FACE TO FACE

DESIGN AGENCY
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PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED EDA | DRAWN EDA | REVIEWED EEC | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5006848

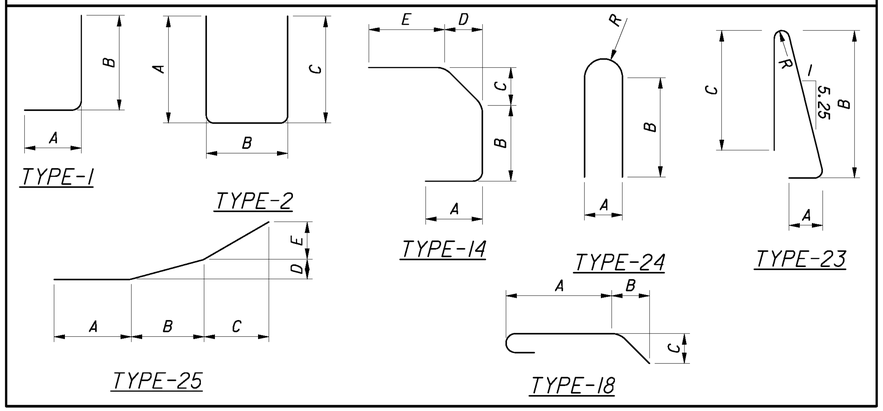
DECK DETAILS
BRIDGE NO. MAH-680-0429
SILLIMAN STREET/RAMP C OVER I-680

MAH-680-4.29
PID No. 25508

REINFORCING STEEL LIST

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	INCR.
ABUTMENTS								
A501	30	7'-0"	219	2	2'-3"	2'-9"	2'-3"	
A502	52	8'-2"	443	2	2'-7"	3'-3"	2'-7"	
A503	8	7'-4"	61	2	2'-2"	3'-3"	2'-2"	
A504	50	3'-6"	183	1	2'-4½"	1'-3"		
A505	2 SERIES OF 4	12'-7" TO 19'-3"	133	STR				2'-2⅝"
A506	8	21'-2"	177	STR				
A507	2	21'-2"	44	STR				
A508	2	10'-4"	22	STR				
A509	15	5'-3"	82	2	2'-6"	0'-6"	2'-6"	
A510	8	8'-6"	71	STR				
A511	8	10'-4"	86	STR				
A512	8	3'-11"	33	1	2'-1"	2'-0"		
A513	2 SERIES OF 7	5'-9" TO 10'-9"	120	STR				0'-10"
A514	2	11'-5"	24	STR				
A515	2 SERIES OF 4	11'-2" TO 18'-2"	122	STR				2'-4"
A516	6	19'-3"	120	STR				
A517	2	19'-3"	40	STR				
A518	2	10'-0"	21	STR				
A519	15	5'-3"	82	2	2'-6"	0'-6"	2'-6"	
A520	8	8'-6"	71	STR				
A521	8	10'-0"	83	STR				
A522	8	3'-11"	33	1	2'-1"	2'-0"		
A523	2 SERIES OF 7	5'-5" TO 10'-4"	115	STR				0'-9¾"
A524	2	9'-9"	20	STR				
A525	30	7'-0"	219	2	2'-3"	2'-9"	2'-3"	
A526	52	8'-2"	443	2	2'-7"	3'-3"	2'-7"	
A527	8	7'-4"	61	2	2'-2"	3'-3"	2'-2"	
A528	50	5'-1"	265	1	2'-4½"	2'-10"		
A529	2	37'-9"	79	STR				
A530	2	40'-0"	83	STR				
A531	2 SERIES OF 5	11'-4" TO 16'-6"	145	STR				1'-3½"
A532	6	17'-6"	110	STR				
A533	2	17'-6"	37	STR				
A534	2	9'-4"	19	STR				
A535	13	5'-3"	71	2	2'-6"	0'-6"	2'-6"	
A536	8	10'-0"	83	STR				
A537	8	11'-0"	92	STR				
A538	8	3'-11"	33	1	2'-1"	2'-0"		
A539	2 SERIES OF 5	4'-0" TO 10'-8"	76	STR				1'-8"
A540	6	10'-3"	64	STR				
A541	2 SERIES OF 5	11'-11" TO 16'-10"	150	STR				1'-2¾"
A542	6	17'-8"	111	STR				
A543	2	17'-8"	37	STR				
A544	2	9'-1"	19	STR				
A545	13	5'-3"	71	2	2'-6"	0'-6"	2'-6"	
A546	8	10'-0"	83	STR				
A547	8	11'-5"	95	STR				
A548	8	3'-11"	33	1	2'-1"	2'-0"		
A549	2 SERIES OF 5	4'-6" TO 11'-4"	83	STR				1'-8½"
A550	6	10'-9"	67	STR				
A601	8	4'-2"	50	STR				
A602	14	5'-8"	119	1	3'-5"	2'-5"		
A603	14	7'-1"	149	1	3'-5"	3'-10"		
A801	6	37'-1"	594	STR				
A802	4	36'-4"	388	STR				
A803	5	11'-8"	156	STR				
A804	4	19'-9"	211	STR				
A805	1	18'-11"	51	STR				
A806	1	37'-9"	101	STR				
A807	4	40'-0"	427	STR				
A808	5	7'-1"	95	1	2'-4"	4'-11½"		
A809	5	7'-0"	93	1	2'-0"	5'-2½"		
A810	5	3'-2"	42	1	2'-1"	1'-3"		
A811	4	7'-2"	77	1	2'-4"	5'-0"		
A812	5	6'-8"	89	1	2'-0"	4'-10½"		
A813	5	3'-2"	42	1	2'-1"	1'-3"		
A814	6	37'-1"	594	STR				
A815	4	36'-4"	388	STR				
A816	5	19'-8"	263	STR				
A817	1	10'-11"	29	STR				
A818	4	11'-8"	125	STR				
A819	1	37'-9"	101	STR				
A820	4	40'-0"	427	STR				
A821	5	6'-11"	92	1	2'-4"	4'-9½"		
A822	5	6'-4"	85	1	2'-0"	4'-6½"		
A823	5	4'-9"	63	1	2'-1"	2'-10"		
A824	4	7'-3"	77	1	2'-4"	5'-1½"		
A825	5	6'-9"	90	1	2'-0"	4'-11½"		
A826	5	4'-9"	63	1	2'-1"	2'-10"		
D801	52	5'-8"	787	18	3'-9½"	1'-0"	1'-0"	
ABUTMENT TOTAL			10,901					
PIERS								
P501	33	4'-5"	152	2	1'-1"	2'-6"	1'-1"	
P502	33	5'-3"	181	2	1'-6"	2'-6"	1'-6"	
P503	33	6'-1"	209	2	1'-11"	2'-6"	1'-11"	
P504	70	2'-10"	207	1	0'-10½"	2'-1"		
P505	70	3'-3"	237	1	0'-10½"	2'-6"		
P506	70	3'-8"	268	1	0'-10½"	2'-11"		
P507	18	7'-11"	149	24	2'-6"	2'-0"	1'-3"	
P601	12	32'-2"	580	STR				
P1001	6	32'-2"	830	STR				
P1002	6	34'-6"	891	STR				
PIER TOTAL			3,704					
SUPERSTRUCTURE								
S401	264	30'-0"	5291	STR				
S402	33	35'-5"	781	STR				
S501	960	29'-8"	29,705	STR				
S502	2 SERIES OF 41	3'-2" TO 29'-8"	1404	STR				0'-8"
S503	2 SERIES OF 40	3'-5" TO 29'-4"	1366	STR				0'-8"
S504	336	30'-0"	10,513	STR				
S505	42	38'-8"	1694	STR				
S601	96	30'-0"	4326	STR				
S602	32	16'-7"	797	STR				
S603	32	19'-6"	937	STR				
S604	32	15'-0"	721	STR				
R501	556	7'-5"	4301	23	1'-1"	3'-2"	3'-0"	0'-2¾"
R502	12	5'-6"	69	25	1'-8"	2'-5"	1'-5"	0'-1½" 0'-5"
R503	20	5'-6"	115	STR				
R504	32	8'-0"	267	STR				
R505	96	30'-0"	3004	STR				
R506	12	38'-10"	486	STR				
R507	32	10'-0"	334	STR				
R601	556	3'-9"	3132	14	1'-1"	0'-0"	1'-8"	0'-6" 1'-1"
R602	44	2'-8"	176	2	0'-8"	1'-8"	0'-8"	
R603	32	3'-5"	164	STR				
R604	556	2'-8"	2227	1	1'-1"	1'-9"		
R605	60	2'-10"	255	1	1'-1"	1'-11"		
R606	18	30'-0"	811	STR				
R607	2	13'-10"	42	STR				
R608	16	2'-0"	48	2	0'-4"	1'-8"	0'-4"	
R609	8 SERIES OF 11	3'-3" TO 4'-1"	485	STR				0'-1"
SUPERSTRUCTURE TOTAL			73,451					
TOTAL			88,057					

BEND DIAGRAMS



NOTES:

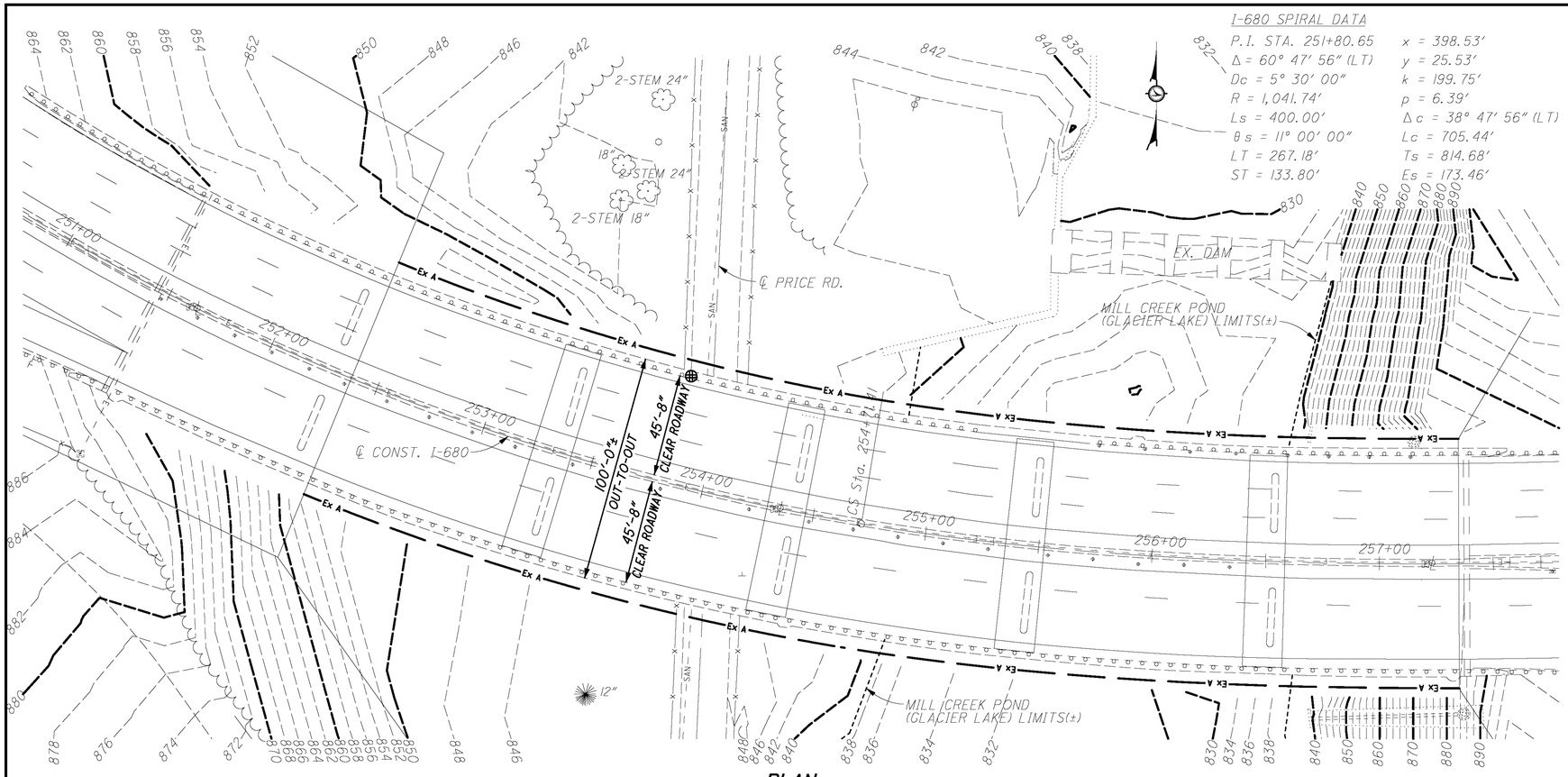
1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHEN FOUR DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A No.6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.
2. ALL REINFORCING STEEL TO BE EPOXY COATED.

DESIGN AGENCY
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3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5006848

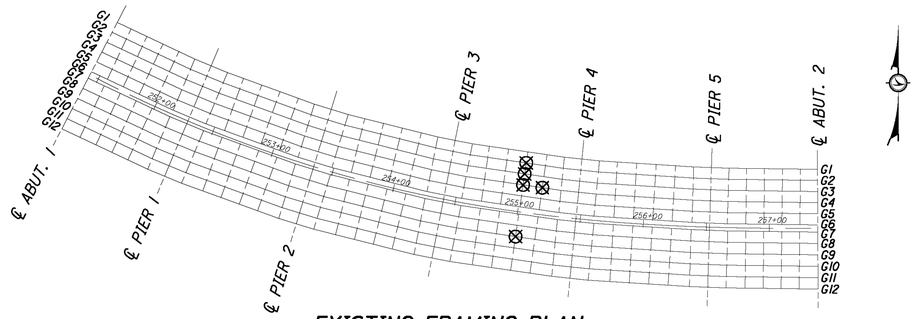
REINFORCING STEEL LIST
BRIDGE NO. MAH-680-0429
SILLIMAN ST./RAMP C OVER I-680

MAH-680-4.29
PID No. 25508



PLAN

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
513	95030	8	EACH	SPECIAL - STRUCTURAL STEEL, MISC.: STOP DRILLING WEB CRACKS
514	27700	250	SQ FT	FIELD PAINTING, MISC.: REPAIR PAINTING



EXISTING FRAMING PLAN

⊠ WEB CRACK LOCATION

NOTE: CRACKS LOCATED IN WEB NEAR TOP OF STIFFENER

EXISTING STRUCTURE

TYPE: TWIN 6-SPAN STEEL GIRDER CONTINUOUS BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES

SPANS: 85'-0", 106'-0", 106'-0", 106'-0", 106'-0", AND 85'-0" = 594'-0" C/C BEARINGS

ROADWAY: 45'-8" TOE/TOE BARRIER

LOADING: CF 2000 (57) ADEQUATE FOR AASHTO ALTERNATE LOADING

SKEW: NONE

APPROACH SLABS: 25'-0" LONG (AS-1-54)

ALIGNMENT: 5°30' CURVE LEFT WITH SPIRAL TRANSITION

STRUCTURAL FILE NUMBER: 5006872

DATE BUILT: 1963

DESIGN TRAFFIC:
2009 ADT = 40340 2009 ADTT = 4034
2029 ADT = 41230 2029 ADTT = 4123
DIRECTIONAL DISTRIBUTION = 0.58

LEGEND

⊕ 14'-6" REQUIRED MINIMUM VERTICAL CLEARANCE
33'-0" ACTUAL MINIMUM VERTICAL CLEARANCE

INDEX OF STRUCTURAL WORK ITEMS

1. REPAIR GIRDER WEB CRACKS
2. REPAIR PAINTING AT CRACK REPAIR LOCATIONS

GENERAL NOTES

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 SECTIONS 102.05, 105.02 AND 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.

MAINTENANCE OF TRAFFIC

FOR MAINTENANCE OF TRAFFIC RESTRICTIONS, REQUIREMENTS, AND PAYMENT SEE MAINTENANCE OF TRAFFIC NOTE SHEET IN THE ROADWAY PLANS.

ITEM 514-FIELD PAINTING, MISC.: REPAIR PAINTING

PAINTED AREAS THAT ARE DAMAGED OR RUSTED WILL BE DESIGNATED BY THE PROJECT ENGINEER. THE CMS 514.22 PROCESS WILL BE USED TO REPAIR THESE AREAS.

THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH ALL NECESSARY EQUIPMENT TO INSPECT THIS WORK.

THE MAJORITY OF THE AREAS TO BE REPAIR PAINTED ARE:
STOP DRILLING LOCATIONS

AREAS TO BE REPAIR PAINTED ARE NOT LIMITED TO THESE AREAS. THE AREAS DESIGNATED BY THE PROJECT ENGINEER WILL BE PAINTED.

ITEM SPECIAL-STRUCTURAL STEEL, MISC.: STOP DRILLING WEB CRACKS

THIS ITEM SHALL INCLUDE ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY TO ACCESS THE WEB CRACK LOCATIONS, PERFORM NON-DESTRUCTIVE TESTING TO IDENTIFY THE ENDS OF THE CRACK, DRILL HOLES TO ARREST CRACK PROPAGATION, AND RE-PERFORM THE NON-DESTRUCTIVE TESTING IN THE PRESENCE OF THE ENGINEER TO CONFIRM THAT THE ENDS OF THE CRACK DO NOT EXTEND PAST THE HOLE.

ACCESS EQUIPMENT SHALL BE CAPABLE OF OPERATING FROM THE TOP OF THE BRIDGE, REACHING ALL AREAS OF THE UNDERSIDE OF THE SUPERSTRUCTURE, AND CARRYING A MINIMUM OF 2 PERSONS. NON-DESTRUCTIVE TESTING SHALL INCLUDE DYE PENETRANT AND/OR MAGNETIC PARTICLE TESTING BY A QUALIFIED TECHNICIAN. DRILLED HOLES SHALL BE 1/2" DIAMETER AND SHALL COMPLETELY ENCOMPASS THE END OF THE CRACK.

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE BID FOR EACH LOCATION REGARDLESS OF THE NUMBER OF DRILLED HOLES REQUIRED AT A SPECIFIC LOCATION.

IN ADDITION TO THE SPECIFIC LOCATIONS IN THIS PLAN, WHICH WERE IDENTIFIED DURING THE 2005 FIELD INSPECTION, AN ADDITIONAL QUANTITY OF 3 EACH HAS BEEN PROVIDED FOR USE AS DIRECTED BY THE ENGINEER.

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED JBD | DRAWN JBD | REVIEWED EEC | DATE 05-28-10
CHECKED KJJ | REVISED | STRUCTURE FILE NUMBER 5006872

MAHONING COUNTY
STA. 251+41.13
STA. 257+39.81

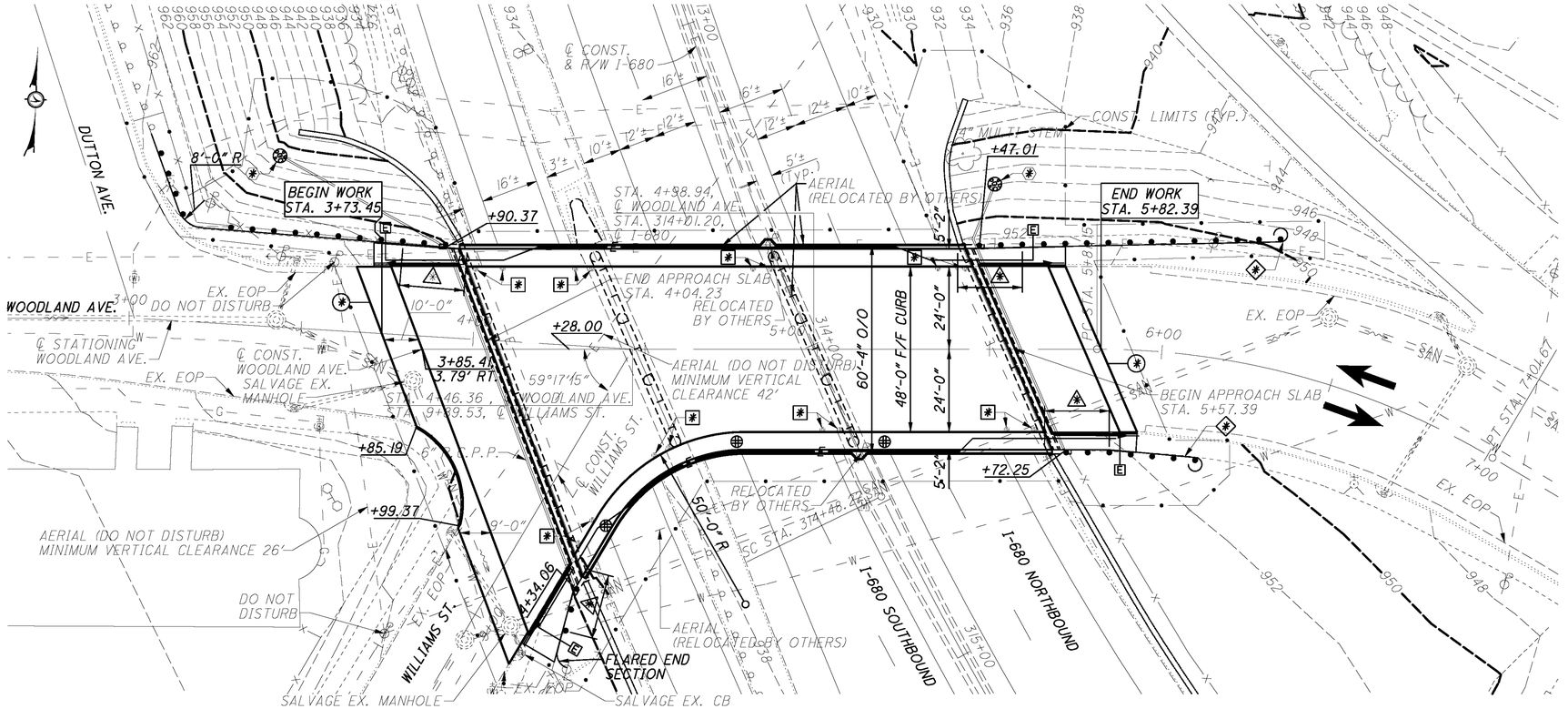
GENERAL PLAN
BRIDGE NO. MAH-680-0476
MAH-680 OVER PRICE RD./MILL CREEK

MAH-680-4.29
PID No. 25508

1 / 1

162
307

STRUCTURE NUMBER MAH-680-0594


DUTTON AVE.
WOODLAND AVE.
BEGIN WORK STA. 3+73.45
END WORK STA. 5+82.39
8'-0" R
+90.37
+47.01
+28.00
+85.19
+99.37
+72.25
3+85.41
3.79' RT
59°17'15"
STA. 4+46.36, ℄ WOODLAND AVE.
STA. 9+29.53, ℄ WILLIAMS ST.
℄ CONSTRUCTION
℄ CONST. & R/W I-680
℄ CONST. WOODLAND AVE.
℄ CONST. WILLIAMS ST.
℄ STATIONING WOODLAND AVE.
STA. 4+98.94, ℄ WOODLAND AVE.
STA. 314+01.20, ℄ I-680
END APPROACH SLAB STA. 4+04.23
BEGIN APPROACH SLAB STA. 5+57.39
RELOCATED BY OTHERS
AERIAL (RELOCATED BY OTHERS)
AERIAL (DO NOT DISTURB) MINIMUM VERTICAL CLEARANCE 42'
AERIAL (DO NOT DISTURB) MINIMUM VERTICAL CLEARANCE 26'
CONST. LIMITS (TYP.)
4" MULTI-STEM
60'-4" O/O
48'-0" F/F CURB
24'-0"
5'-2"
50'-0" R
I-680 SOUTHBOUND
I-680 NORTHBOUND
WILLIAMS ST.
FLARED END SECTION
EX. EOP
SALVAGE EX. MANHOLE
SALVAGE EX. CB
DO NOT DISTURB
EX. 6" W.L.P.P.
EX. 8" SAN
EX. 12" W
EX. 16" W
EX. 24" W
EX. 30" W
EX. 36" W
EX. 42" W
EX. 48" W
EX. 54" W
EX. 60" W
EX. 66" W
EX. 72" W
EX. 78" W
EX. 84" W
EX. 90" W
EX. 96" W
EX.

LATERAL LIMITS OF SEALING OF CONCRETE SURFACES (EPOXY EURETHANE). SEE TYPICAL ABUTMENT SECTIONS ON PAGE 9/18 FOR VERTICAL LIMITS.

93'-11¾" ±

6" N.P.C.P.P., AS PER PLAN

147'-3" c/c ABUTMENT BEARINGS

SPAN 1 = 39'-6"±

SPAN 2 = 51'-9"±

SPAN 3 = 56'-0"±

LATERAL LIMITS OF SEALING OF CONCRETE SURFACES (EPOXY EURETHANE). SEE TYPICAL ABUTMENT SECTIONS ON PAGE 9/18 FOR VERTICAL LIMITS.

6" N.P.C.P.P., AS PER PLAN

E

18'-6" PHASE 2 APPR. SLAB CONSTRUCTION

20°31'44"±

23°23'27"±

℄ STATIONING WOODLAND AVE.

4+00

℄ BEARING R.A. STA. 4+06.69

℄ PIER 1 STA. 4+47.19

59°17'15"

APPROX. LIMITS OF TEMP. SHORING FOR PHASE 1

APPROX. LIMITS OF TEMP. SHORING FOR PHASE 2

℄ CONST. WILLIAMS AVE.

VARIES 60'-8" TO 97'-5¾"

48'-0" F/F CURB

24'-4" PHASE 2 CONSTRUCTION

6'-0"

VARIES 36'-4" TO 73'-1¾" PHASE 1 CONSTRUCTION

71'-5¾" ±

6" P.C.P.P.

VARIES TO 88'-10½" TO 68'-2⅝" PHASE 1 APPR. SLAB CONST.

23°23'27"±

LONGITUDINAL C.J. (BRIDGE DECK AND APPROACH SLABS)

℄ PIER 2 STA. 4+98.94, ℄ WOODLAND AVE. STA. 314+01.20, ℄ I-680

5+00

℄ CONST. WOODLAND AVE.

76'-1¾" ±

18'-6" PHASE 2 APPR. SLAB CONSTRUCTION

APPROX. LIMITS OF TEMP. SHORING FOR PHASE 1

23°23'27"±

℄ BEARING F.A. STA. 5+54.94

APPROX. LIMITS OF TEMP. SHORING FOR PHASE 2

33'-8⅛" ±

24'-6" PHASE 1 APPR. SLAB CONST.

6" P.C.P.P.

E

℄ CONST. & R/W I-680

PLAN

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
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DESIGNED	DRAWN	REVIEWED	DATE
KJJ	KJJ	ECC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007089	

GENERAL PLAN
BRIDGE NO. MAH-680-0594
MAH-680 UNDER WOODLAND AVE.

MAH-680-4.29
PID No. 25508

2 / 18

164
307

PROPOSED WORK

THE WORK COVERED BY THESE PLANS INCLUDES REMOVAL AND REPLACEMENT OF THE CONCRETE DECK, BRIDGE RAILS, PEDESTRIAN FENCE, APPROACH SLABS, ABUTMENT BEARINGS, AND PORTIONS OF THE SUBSTRUCTURE. OTHER WORK INCLUDES SPOT PAINTING OF EXISTING STRUCTURAL STEEL, PATCHING PORTIONS OF THE EXISTING SUBSTRUCTURE, AND SEALING CONCRETE SURFACES. TRAFFIC IS TO BE MAINTAINED OVER THE STRUCTURE DURING CONSTRUCTION.

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81	DATED	07-19-02
BR-2-98	DATED	07-19-02
EXJ-4-87	DATED	07-19-02
GSD-1-96	DATED	07-19-02
PCB-91	DATED	07-19-02
VPF-1-90	DATED	07-19-02
HL-10.13	DATED	10-16-09
HL-20.14	DATED	10-16-09
HL-30.31	DATED	04-17-09

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17TH EDITION-2002, INCLUDING THE ODOT BRIDGE DESIGN MANUAL 2004.

DESIGN LOADING:

HS25 AND THE ALTERNATE MILITARY LOADING.

FUTURE WEARING SURFACE (FWS) OF 60 LBS/SQ. FT.

DESIGN DATA:

CONCRETE CLASS HP - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE, SIDEWALK, AND RAILING)

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615 OR A996
GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL
2-1/2" CONCRETE COVER

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

EXISTING STRUCTURE VERIFICATION

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 SECTIONS 102.05, 105.02 AND 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.

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

DESCRIPTION: THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS INCLUDING SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

THIS ITEM SHALL ALSO INCLUDE THE REMOVAL OF SUBSTRUCTURE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND [41 KILOGRAM] CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF THE DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES [50 mm] OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF THE FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES [50 mm] OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES [50 mm] OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE. REPLACE OR REPAIR STEEL MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR, OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

REMOVAL METHODS: THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER STRUCTURAL MEMBERS (STEEL BEAM, STEEL GIRDER, ETC), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS [16 KILOGRAMS] BUT NOT TO EXCEED 90 POUNDS [41 KILOGRAMS] UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS.

DUE TO THE POSSIBLE PRESENCE OF ATTACHMENTS (E.G., FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) TO EXISTING STRUCTURAL MEMBERS, PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRUCTURAL MEMBERS THAT ARE TO REMAIN. REMOVE EXISTING SCUPPERS AND ALL ASSOCIATED WELDED ATTACHMENTS AND GRIND THE STEEL SURFACES SMOOTH. REMOVE OTHER WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS; SUPPORTS FOR BULB ANGLES WHICH ARE TO BE REMOVED) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PAPALLEL TO THE FLANGES. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR, OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

SUBSTRUCTURE CONCRETE REMOVAL: REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

THERE IS EXISTING PLYWOOD OR OSB UNDERDECK PROTECTION IN PLACE AT THIS STRUCTURE, WHICH SHALL BE REMOVED PRIOR TO DECK REMOVAL. THE CONTRACTOR SHALL NOT UTILIZE THE EXISTING UNDERDECK PROTECTION DURING THE DECK REMOVAL OPERATION. REMOVAL OF EXISTING UNDERDECK PROTECTION SHALL BE INCLUDED AS PART OF THIS ITEM. PROPOSED PROTECTION DURING DECK REMOVAL SHALL BE PER CMS 501.05.

MEASUREMENT & PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 709.00. PAYMENT FOR THIS ITEM SHALL INCLUDE 16 MECHANICAL SPLICES AS SHOWN IN THE PLANS.

ITEM 511 - CLASS HP CONCRETE, AS PER PLAN

THE PROVISIONS OF ITEM 511 SHALL APPLY EXCEPT AS NOTED BELOW.

MIX OPTIONS: ALL SUPERSTRUCTURE, BRIDGE DECK, SIDEWALK, APPROACH SLABS AND PARAPET CONCRETE SHALL BE THIS MIX (HP4, AS PER PLAN). THE FOLLOWING PROPORTIONS WILL BE USED AS A STARTING MIX DESIGN.

CONCRETE TABLE (QUANTITIES PER CUBIC YARD)
AGGREGATES (SSD)

MIX 4, AS PER PLAN (GGBF SLAG + MICROSILICA)

Aggre. Type	Fine Aggre. (lb)	#8 Coarse Aggre. (lb)	#57 Coarse Aggre. (lb)	Total (lb)	Cement Content (lb)	GGBF Slag
Gravel	1370	650	790	2810	440	190
Limestone	1370	655	800	2820	440	190
Slag	1370	570	695	2635	440	190

Aggre. Type	Micro-Silica (lb)	Water to Cementitious Ratio +/-.01	Air Content +/-2%
Gravel	30	0.42	6
Limestone	30	0.42	6
Slag	30	0.42	6

* ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127

BASIS OF PAYMENT:
PAYMENT FOR THE ABOVE COMPLETED AND ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM 511-CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN, CU YD
ITEM 511-CLASS HP CONCRETE, SIDEWALK, AS PER PLAN, CU YD

ITEM 514 - FIELD PAINTING, MISC.; REPAIR PAINTING

PAINTED AREAS THAT ARE DAMAGED OR RUSTED WILL BE DESIGNATED BY THE PROJECT ENGINEER. THE CMS 514.22 PROCESS WILL BE USED TO REPAIR THESE AREAS.

THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH ALL NECESSARY EQUIPMENT TO INSPECT THIS WORK.

THE MAJORITY OF THE AREAS TO BE REPAIR PAINTED ARE: EXISTING CONNECTIONS OF SCUPPERS TO SUPERSTRUCTURE AFTER SCUPPERS HAVE BEEN REMOVED, AREAS OF FAILED PAINT EXPOSED AFTER PRESSURE WASHING OF THE SUPERSTRUCTURE, AND OUTSIDE FACE AND BOTTOM FLANGE OF FASCIA BEAMS.

AREAS TO BE REPAIR PAINTED ARE NOT LIMITED TO THESE AREAS. THE AREAS DESIGNATED BY THE PROJECT ENGINEER WILL BE PAINTED.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

THIS WORK CONSISTS OF RAISING OR RE-POSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, IMMEDIATELY CEASE THE JACKING OPERATION AND INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. EPOXY INJECT ALL BEAMS THAT SEPARATE FROM THE DECK FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH CMS 512.07. THE DEPARTMENT WILL NOT PAY FOR THE COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS.

THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

ITEM 517 - RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING), USING HIGH PERFORMANCE CONCRETE, AS PER PLAN

THE PROVISIONS OF ITEM 517 SHALL APPLY EXCEPT AS NOTED BELOW.

THE CONCRETE MIX DESIGN FOR THE PARAPET AND RAILING TRANSITIONS SHALL FOLLOW THE MIX DESIGN GIVEN UNDER ITEM 511 - CLASS HP CONCRETE, AS PER PLAN.

PAYMENT FOR ADDITIONAL CONCRETE AND REINFORCMENT STEEL REQUIRED TO CONSTRUCT THE LIGHT POLE PILASTER FOR BRIDGE WITH SIDWALK RAILING IS INCLUDED IN ITEM 517 - RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING), USING HIGH PERFORMANCE CONCRETE, AS PER PLAN.

ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

ITEM 519-PATCHING CONCRETE STRUCTURES, AS PER PLAN INSPECTED 11-01-2005

LOCATION	MEASURED AREA (2005)	PROJECTION FACTOR	REPAIR AREA (2010)	SEE SHEET
REAR ABUTMENT	106 SQ FT	1.10	117 SQ FT	6/17
PIER 1	24 SQ FT	1.10	27 SQ FT	10/17
PIER 2	0 SQ FT	1.10	0 SQ FT	10/17
FORWARD ABUT.	58 SQ FT	1.10	64 SQ FT	8/17
		TOTAL	208 SQ FT	

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS, AS PER PLAN

THE PROVISIONS OF CMS 526 SHALL APPLY EXCEPT AS NOTED BELOW.

CLASS HP CONCRETE, MIX 4, AS PER PLAN, SHALL BE THE ONLY MIX DESIGN OPTION. THE PROPORTIONS FOR THE STARTING MIX DESIGN SHALL BE AS SHOWN FOR ITEM 511 - CLASS HP CONCRETE, AS PER PLAN.

DECK PLACEMENT DESIGN ASSUMPTIONS

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 1.375 KIPS FOR A TOTAL MACHINE LOAD OF 11.0 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48".

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65".

DESIGN AGENCY
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DESIGNED KJJ | DRAWN KJJ | REVIEWED EEC | CHECKED JBD | DATE 05-28-10 | REVISED | STRUCTURE FILE NUMBER 5007089

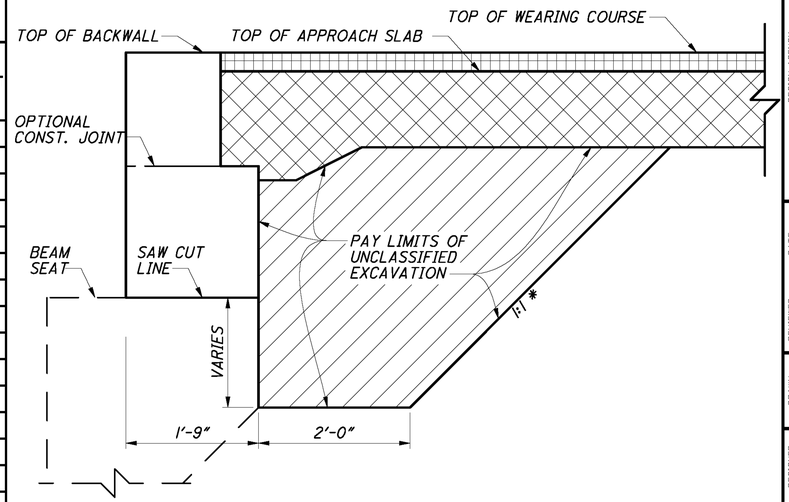
GENERAL NOTES
BRIDGE NO. MAH-680-0594
I-680 UNDER WOODLAND AVE.

MAH-680-4.29
PID No. 25508

ESTIMATED QUANTITIES

COMPUTED BY: KJJ DATED: 05/28/10
CHECKED BY: JBD DATED: 05/28/10

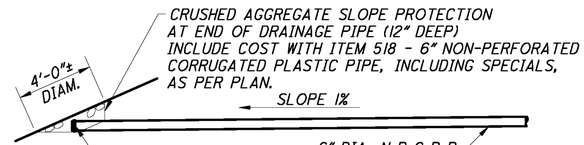
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	GEN	ABUT	PIER	SUPER	SEE SHEET NO.
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	LUMP				3/18
202	22900	413	SQ YD	APPROACH SLAB REMOVED	413				
202	23500	413	SQ YD	WEARING COURSE REMOVED	413				
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING	LUMP				
503	21100	174	CU YD	UNCLASSIFIED EXCAVATION		174			4/18
509	10001	90779	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN		8416		82363	3/18
510	10000	446	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT		446			
511	45700	46	CU YD	CLASS C CONCRETE, ABUTMENT		46			
511	50001	269	CU YD	CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN				269	3/18
511	51501	52	CU YD	CLASS HP CONCRETE, SIDEWALK, AS PER PLAN				52	3/18
511	52000	LUMP		CLASS HP CONCRETE, TEST SLAB	LUMP				
512	10100	1354	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		625	251	478	
512	10300	33	SQ YD	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN				33	
512	33000	3	SQ YD	TYPE 2 WATERPROOFING		3			
513	20000	3879	EACH	WELDED STUD SHEAR CONNECTORS				3879	
514	00050	2066	SQ FT	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL				2066	
514	10000	1	EACH	FINAL INSPECTION REPAIR				1	
514	27700	2066	SQ FT	FIELD PAINTING, MISC.: REPAIR PAINTING				2066	3/18
516	11210	171	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL		171			
516	44100	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),		12			
				(11¾"x11¾"x2⅜" BEARING WITH 12¾"x12¾"xVARIES LOAD PLATE)					
516	44200	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),		8			
				(11½"x11½"x3¼" BEARING WITH 12½"x12½"xVARIES LOAD PLATE)					
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP	3/18
517	75125	299	FT	RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING),				299	3/18
				USING HIGH PERFORMANCE CONCRETE, AS PER PLAN					
518	21200	64	CU YD	POROUS BACKFILL WITH FILTER FABRIC	64				
518	40000	172	FT	6" PERFORATED CORRUGATED PLASTIC PIPE		172			
518	40011	74	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN		74			4/18
519	11101	208	SQ FT	PATCHING CONCRETE STRUCTURE, AS PER PLAN		181	27		3/18
526	15001	325	SQ YD	REINFORCED CONCRETE APPROACH SLABS (T=13"), AS PER PLAN	325				3/18
607	39930	265	FT	VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC				265	
625	10614	8	EACH	LIGHT POLE ANCHOR BOLTS ON STRUCTURE				8	
625	25400	417	FT	CONDUIT, 2", 725.04				417	
625	29920	2	EACH	STRUCTURE JUNCTION BOX				2	
625	30700	4	EACH	PULL BOX, 725.08, 18"				4	



LIMITS OF UNCLASSIFIED EXCAVATION DETAILS

- LIMITS OF ITEM 202, APPROACH SLAB REMOVED
- LIMITS OF ITEM 202, WEARING COURSE REMOVED
- LIMITS OF ITEM 503, UNCLASSIFIED EXCAVATION

* - 1:1 SLOPE SPECIFIED FOR PURPOSE OF DETERMINING PAY LIMITS ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE NECESSARY SLOPE FOR STABILITY DURING CONSTRUCTION.



TERMINATION OF 6" N.P.C.P.P., AS PER PLAN DETAIL

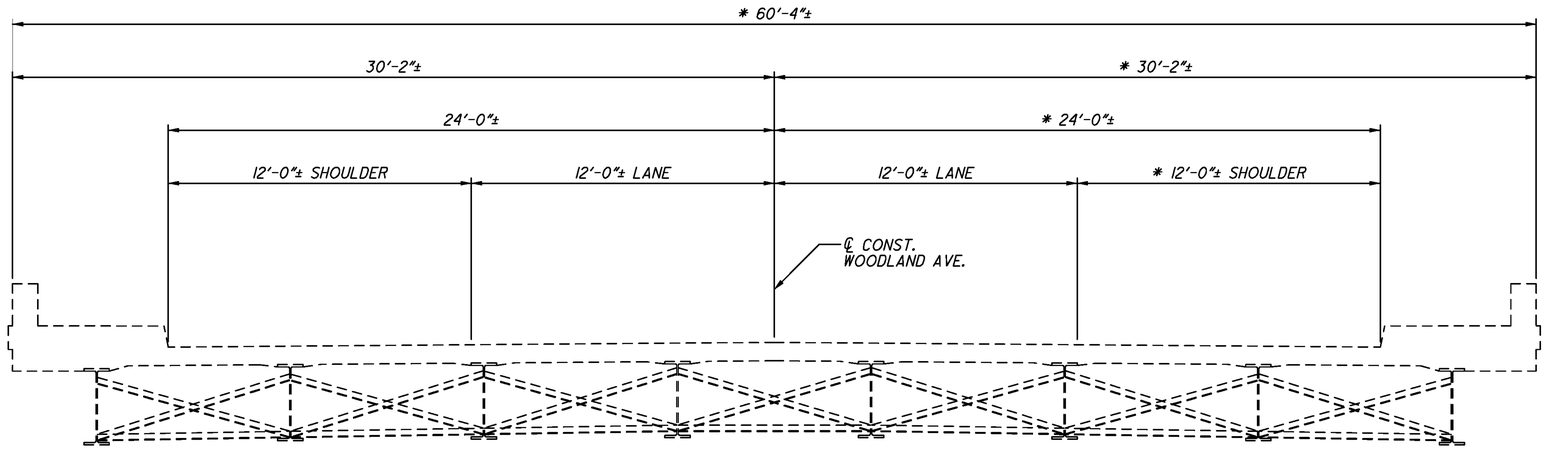
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED KJJ | DRAWN KJJ | REVIEWED EEC | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007089

GENERAL NOTES, ESTIMATED QUANTITIES, AND MISC. DETAILS

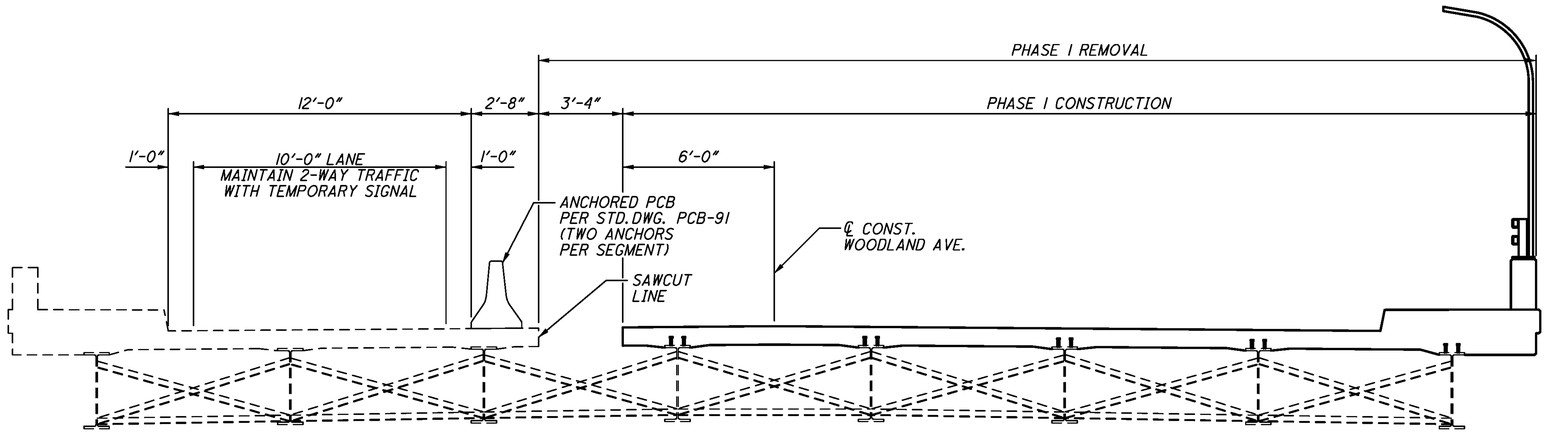
BRIDGE NO. MAH-680-0594
I-680 UNDER WOODLAND AVE.

MAH-680-4.29
PID No. 25508

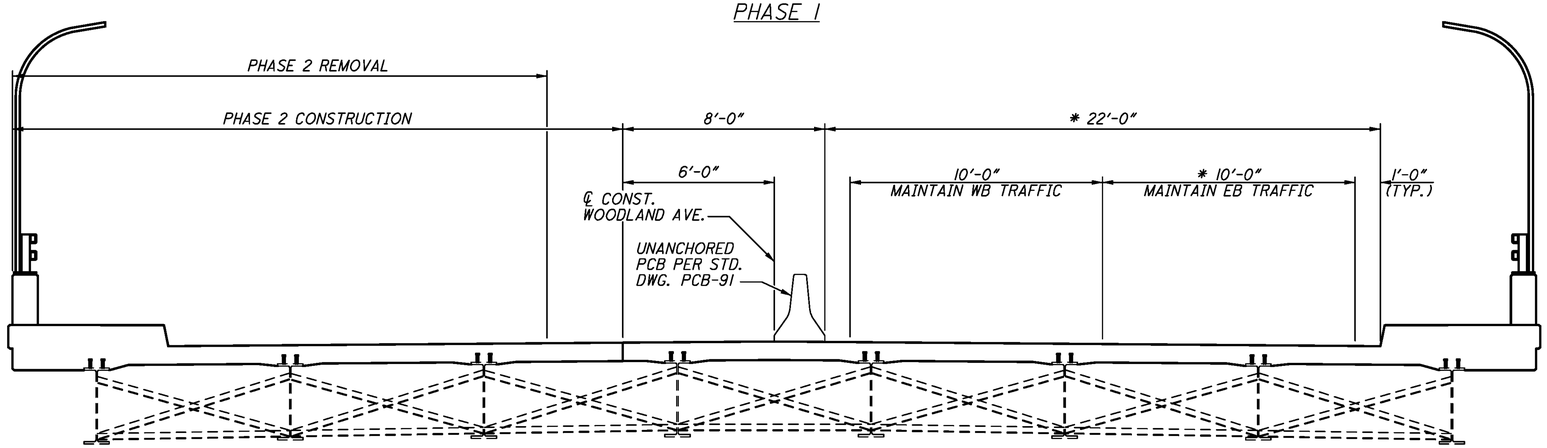


EXISTING DECK SECTION

* WIDTH VARIES AT REAR ABUTMENT



PHASE I



PHASE 2

* WIDTH VARIES AT REAR ABUTMENT

PHASE I: CONSTRUCT THE SOUTH PORTION OF THE BRIDGE

1. PLACE TEMPORARY PAVEMENT MARKINGS, SIGNS, AND PORTABLE CONCRETE BARRIER TO MAINTAIN ONE LANE OF TRAFFIC AS SHOWN. QUANTITIES FOR PAVEMENT MARKINGS AND PORTABLE CONCRETE BARRIER ARE INCLUDED IN ROADWAY ITEMS.
2. FULL-DEPTH SAWCUT AND REMOVE THE PORTIONS OF THE DECK AND APPROACH SLABS AS SHOWN IN THE PLANS.
3. ENSURE THAT AFTER REMOVING THE PORTION OF THE EXISTING DECK THAT THE REMAINING CONCRETE WILL NOT BREAK APART AND FALL ONTO TRAFFIC BELOW.
4. DRIVE TEMPORARY SHORING AT BOTH ENDS OF THE STRUCTURE TO RETAIN THE EXISTING ROADWAY FILL AS SHOWN IN THE PLANS.
5. REMOVE THE EXISTING CONCRETE BACKWALL AS SHOWN IN THE PLANS.
6. DRIVE TEMPORARY SHORING AT BOTH ENDS OF THE STRUCTURE TO RETAIN THE PROPOSED ROADWAY FILL AS SHOWN IN THE PLANS.
7. RECONSTRUCT THE BACKWALLS, DECK, APPROACH SLABS, PARAPET, VANDAL PROTECTION FENCE, AND GUARDRAIL AS SHOWN IN THE PLANS.

PHASE 2: CONSTRUCT THE NORTH PORTION OF THE BRIDGE

1. PLACE TEMPORARY PAVEMENT MARKINGS, SIGNS, AND PORTABLE CONCRETE BARRIER TO MAINTAIN TWO LANES OF TRAFFIC AS SHOWN. QUANTITIES FOR PAVEMENT MARKINGS AND PORTABLE CONCRETE BARRIER ARE INCLUDED IN ROADWAY ITEMS.
2. REMOVE THE REMAINING PORTIONS OF THE EXISTING DECK AND APPROACH SLABS AS SHOWN IN THE PLANS.
3. REMOVE TEMPORARY SHORING UTILIZED TO RETAIN THE EXISTING ROADWAY EMBANKMENT PLACED IN PHASE I.
4. REMOVE THE REMAINING EXISTING CONCRETE BACKWALL AS SHOWN IN THE PLANS.
5. RECONSTRUCT THE REMAINING PORTION OF THE BACKWALLS.
6. REMOVE TEMPORARY SHORING UTILIZED TO RETAIN THE PROPOSED ROADWAY EMBANKMENT PLACED IN PHASE I.
7. RECONSTRUCT THE REMAINING PORTIONS OF THE DECK, APPROACH SLABS, PARAPET, VANDAL PROTECTION FENCE, AND GUARDRAIL AS SHOWN IN THE PLANS.
8. INSTALL ELASTOMER JOINT SEAL IN ONE CONTINUOUS PIECE AT EACH END OF THE STRUCTURE.

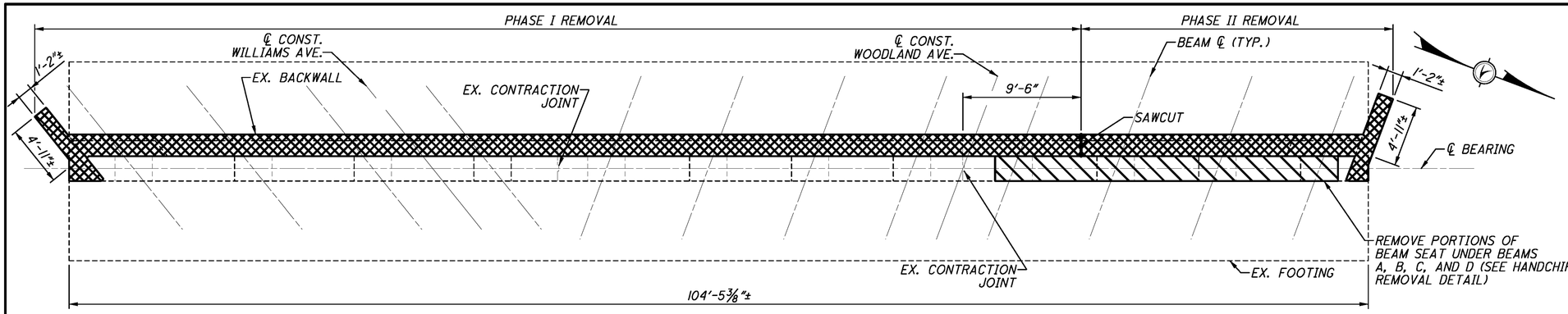
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
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DESIGNED	DRAWN	REVIEWED	DATE
KJJ	KJJ	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007089	

STAGED CONSTRUCTION

BRIDGE NO. MAH-680-0594
I-680 UNDER WOODLAND AVE

MAH-680-4.29
PID No. 25508



REAR ABUTMENT PLAN VIEW

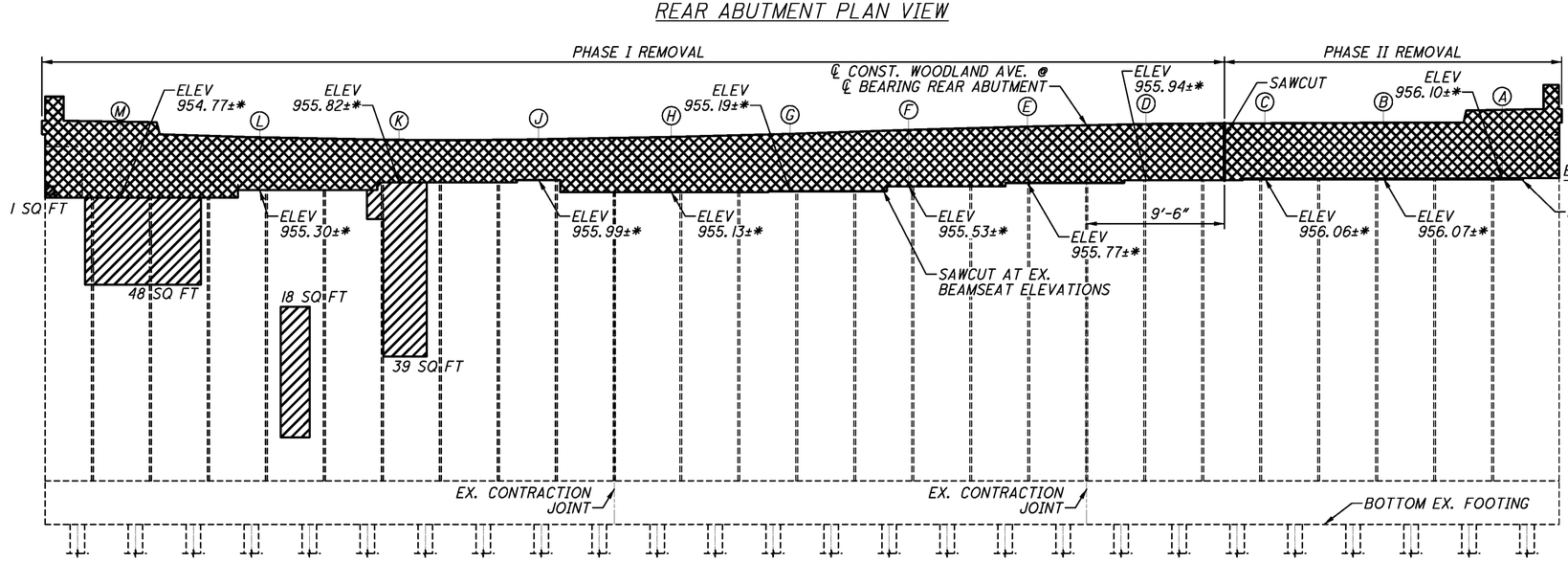
LEGEND

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

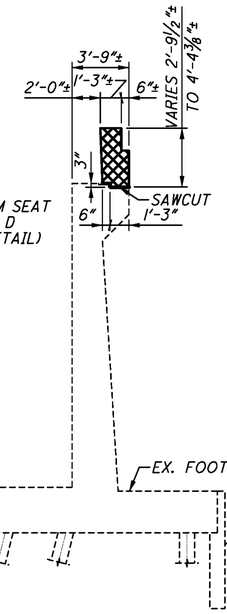
INDICATES DELAMINATED AREA REPAIR USING ITEM 519

INDICATES LIMITS OF ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN (FOR LOWERING OF BEAM SEAT)

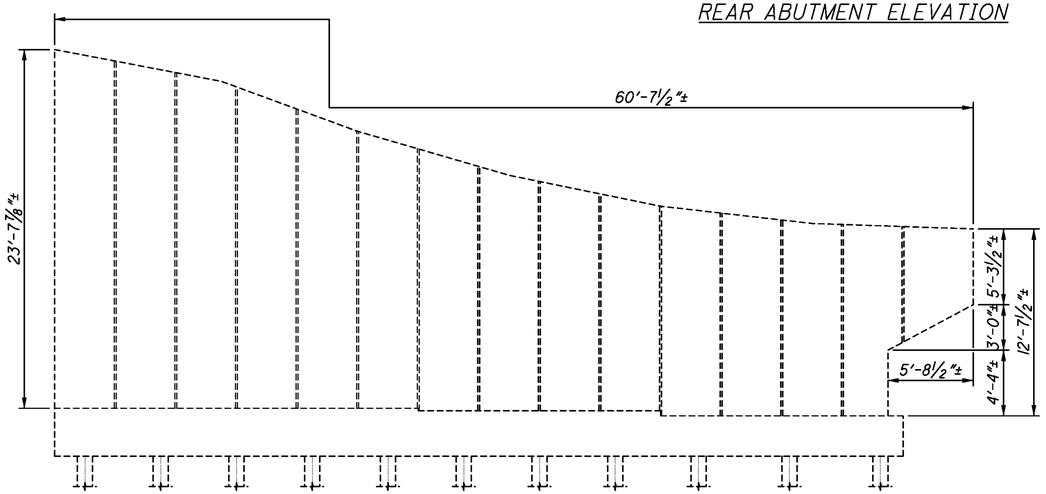
* - SEE NOTE 1



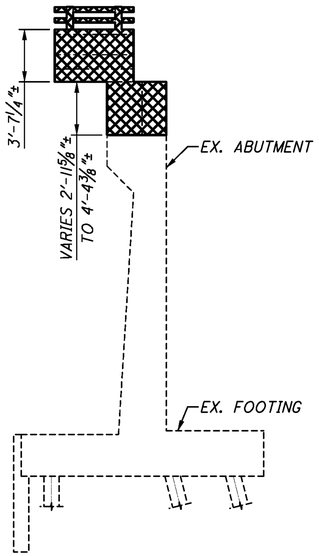
REAR ABUTMENT ELEVATION



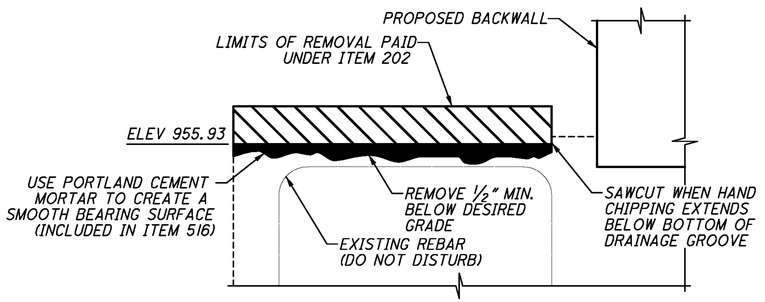
ABUTMENT CROSS SECTION



RETAINING WALL ELEVATION



SOUTH ABUTMENT END
(NORTH END SIMILAR)



HANDCHIP REMOVAL DETAIL

NOTES:

1. BEFORE ORDERING THE PROPOSED BEARINGS THE CONTRACTOR SHALL FIELD VERIFY EXISTING BEAM SEAT ELEVATIONS. IF VARIATIONS GREATER THAN 0.02' ARE FOUND BETWEEN MEASURED ELEVATIONS AND THE ELEVATIONS SHOWN ON THE PLANS, APPROPRIATE ADJUSTMENTS SHALL BE MADE TO THE THICKNESS OF THE STEEL LOAD PLATE TO ACCOUNT FOR THE DIFFERENCE.

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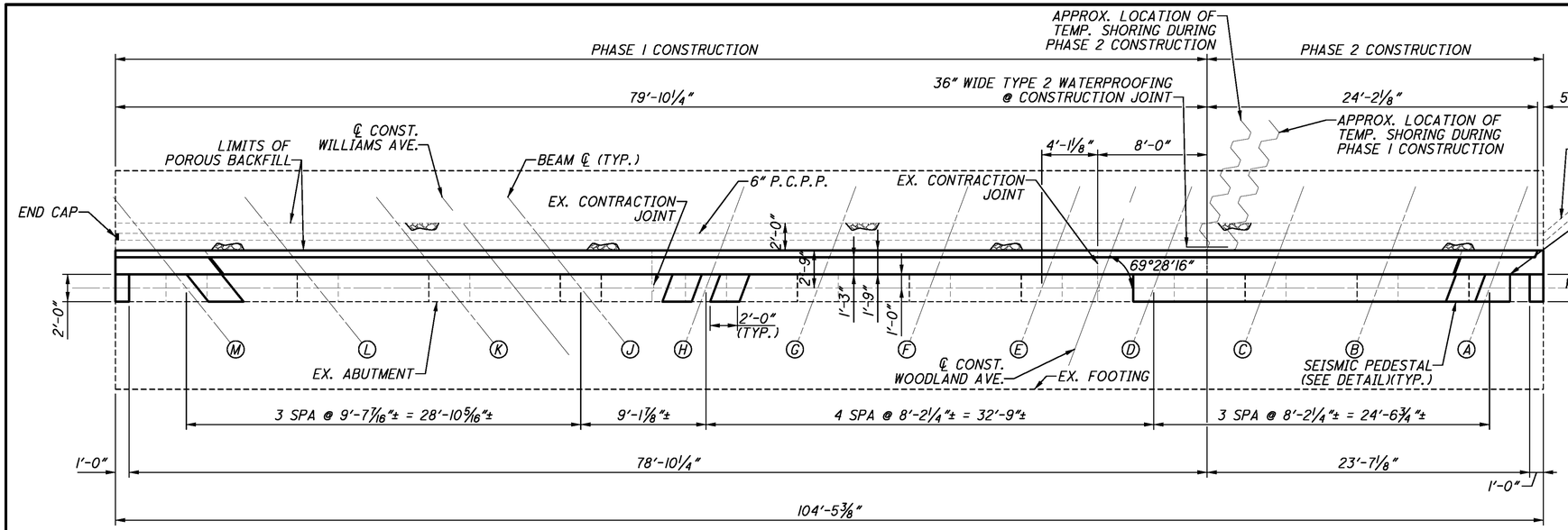
DESIGNED	DRAWN	REVIEWED	DATE
KJJ	KJJ	EEC	05-28-10

CHECKED	REVISED	STRUCTURE FILE NUMBER
JBD		5007089

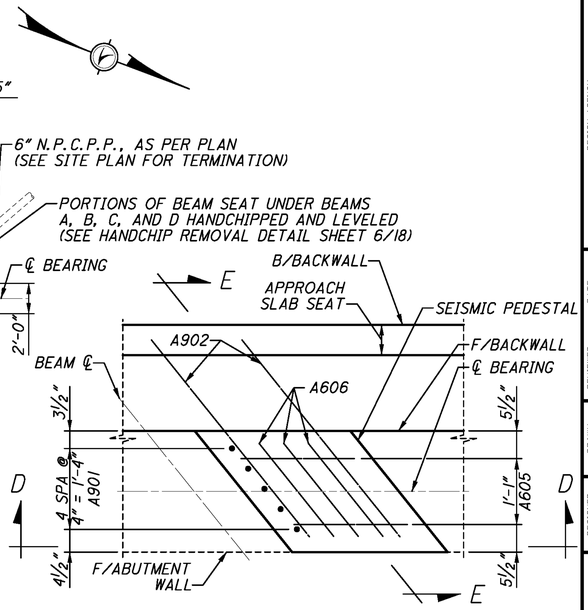
REAR ABUTMENT REMOVAL DETAILS

BRIDGE NO. MAH-680-0594
I-680 UNDER WOODLAND AVE.

MAH-680-4.29
PID No. 25508

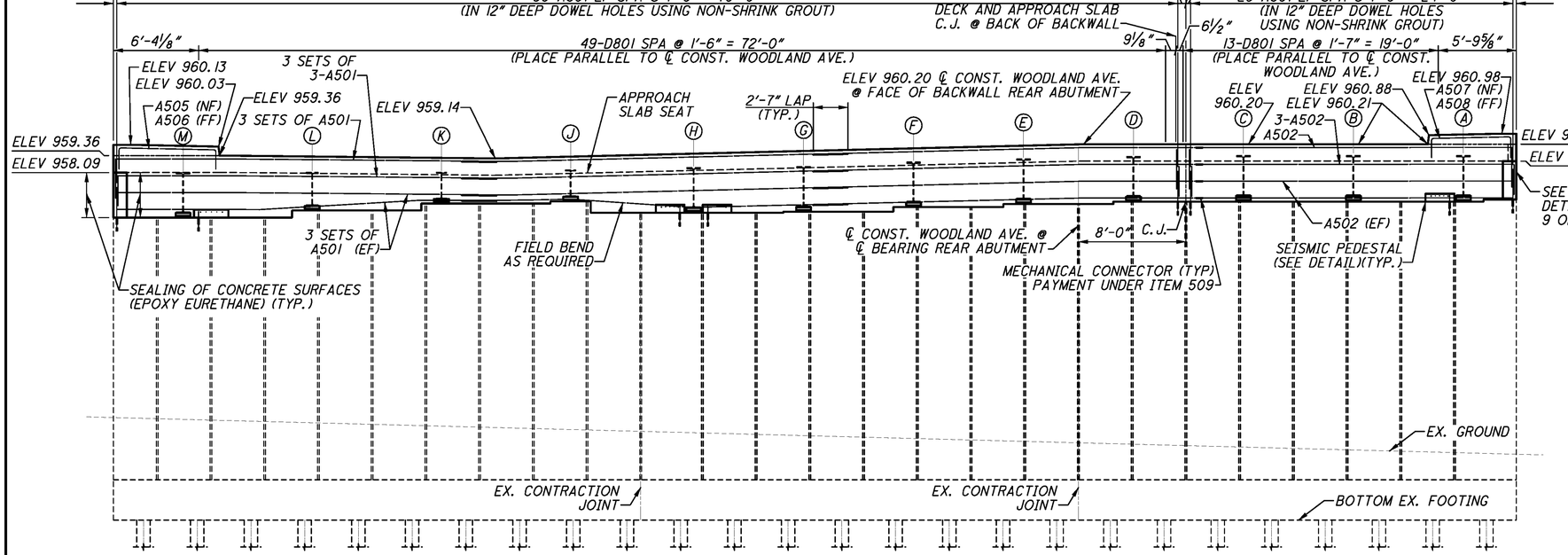


REAR ABUTMENT PLAN VIEW

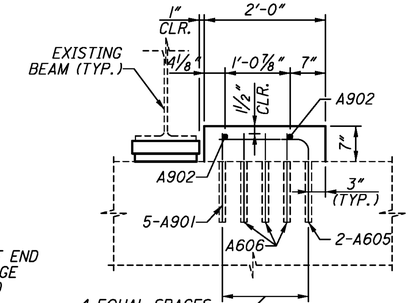


TYPICAL SEISMIC PEDESTAL DETAIL

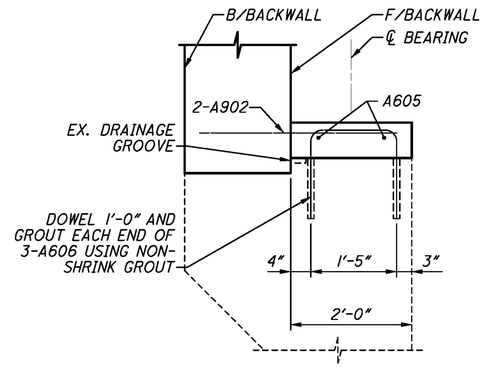
4 REQUIRED - REAR ABUTMENT
2 REQUIRED - FORWARD ABUTMENT



REAR ABUTMENT ELEVATION



SECTION D-D



SECTION E-E

(DIMENSIONS GIVEN PERPENDICULAR TO ℄ BEARING)

NOTES:

1. FOR TYPICAL ABUTMENT SECTION SEE SHEET 9/18.

2. THE REINFORCEMENT IN THE EXISTING ABUTMENTS IS TO BE LOCATED AND MARKED IN THE FIELD USING NON-DESTRUCTIVE EQUIPMENT SO AS TO AVOID DAMAGING OF THE BARS DURING DRILLING OPERATION FOR DOWELS.

3. REINFORCING STEEL: NEW REINFORCING STEEL MAY REQUIRE FIELD CUTTING OR BENDING TO BE PROPERLY FITTED.

4. DO NOT BLOCK EXISTING DRAINAGE GROOVE WHEN INSTALLING PROPOSED SEISMIC PEDESTALS. ENSURE GROOVE IS CLEAR OF DEBRIS AND FUNCTIONAL AT COMPLETION OF CONSTRUCTION.

5. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE ABUTMENT.

6. BACKWALL ELEVATIONS ARE GIVEN AT THE HEEL OF THE 7" X 4" ANGLE LOCATED ON THE FRONT OF THE BACKWALL.

LEGEND

FF - FAR FACE

NF - NEAR FACE

EF - EACH FACE

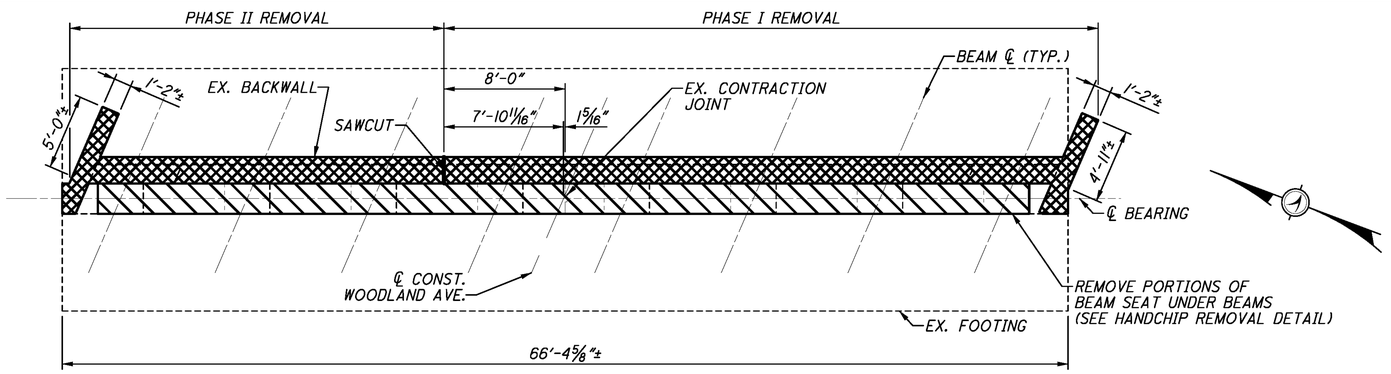
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
KJJ	KJJ	EEC	05-28-10
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JBD		5007089	

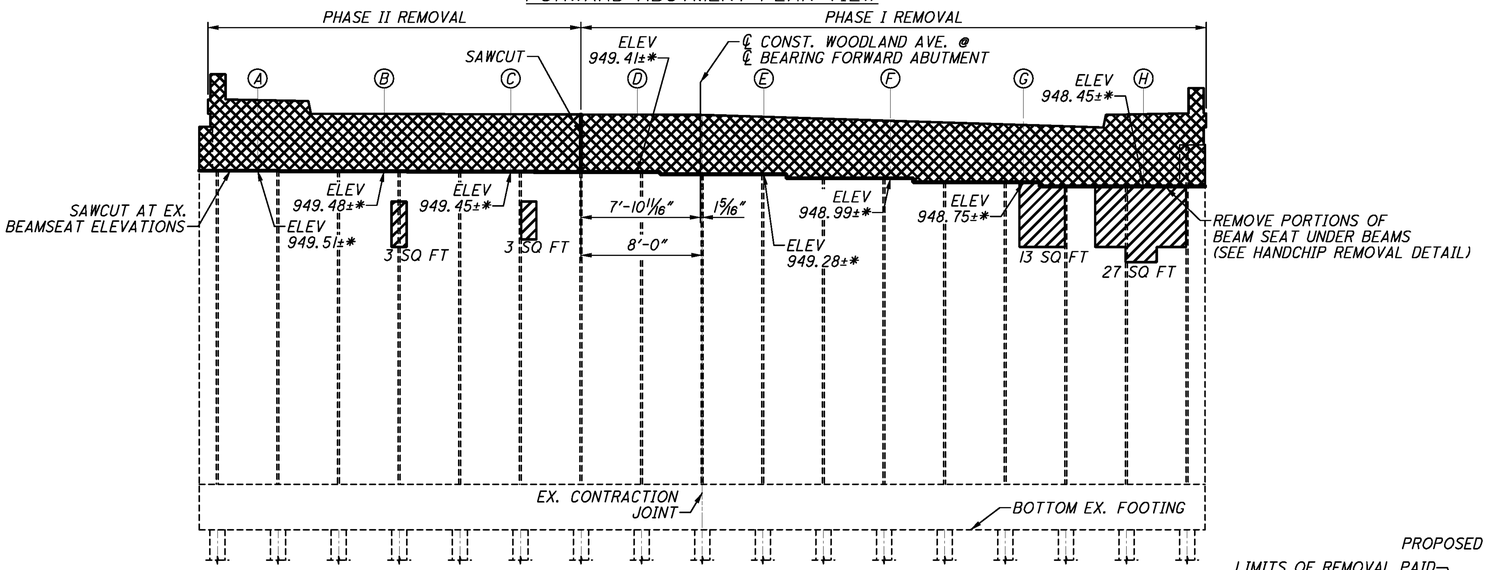
REAR ABUTMENT DETAILS

BRIDGE NO. MAH-680-0594
I-680 UNDER WOODLAND AVE.

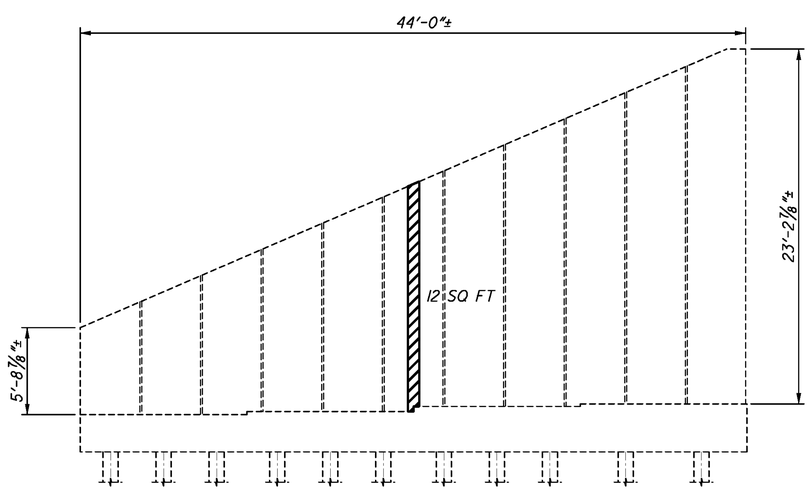
MAH-680-4.29
PID No. 25508



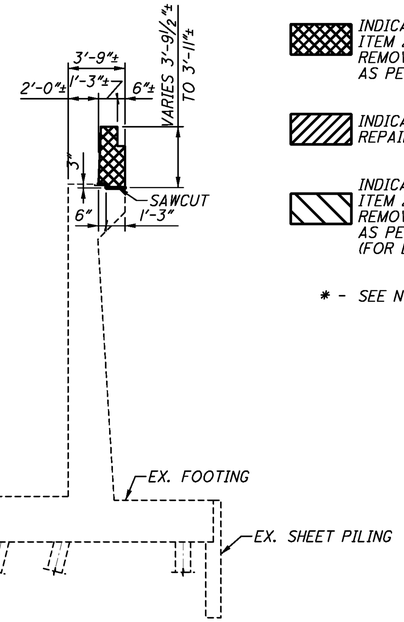
FORWARD ABUTMENT PLAN VIEW



FORWARD ABUTMENT ELEVATION



RETAINING WALL ELEVATION

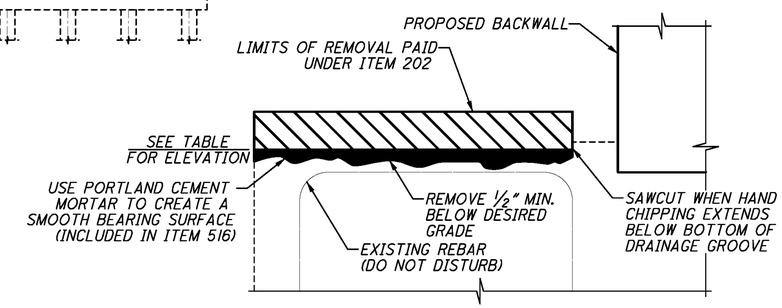


ABUTMENT CROSS SECTION

LEGEND

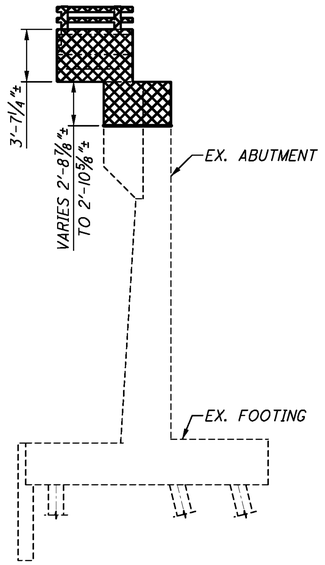
- INDICATES LIMITS OF ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
- INDICATES DELAMINATED AREA REPAIR USING ITEM 519
- INDICATES LIMITS OF ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN (FOR LOWERING OF BEAM SEAT)

* - SEE NOTE 1



HANDCHIP REMOVAL DETAIL

BEAM SEAT ELEVATIONS		
LOCATION	PROPOSED ELEVATION	DEPTH OF REMOVAL
BEAM A	949.42	1 1/8"
BEAM B	949.39	1 1/8"
BEAM C	949.37	1"
BEAM D	949.35	3/4"
BEAM E	949.20	1"
BEAM F	948.93	3/4"
BEAM G	948.66	1 1/8"
BEAM H	948.39	3/4"



NORTH ABUTMENT END
(SOUTH END SIMILAR)

NOTES:

1. BEFORE ORDERING THE PROPOSED BEARINGS THE CONTRACTOR SHALL FIELD VERIFY EXISTING BEAM SEAT ELEVATIONS. IF VARIATIONS GREATER THAN 0.02' ARE FOUND BETWEEN MEASURED ELEVATIONS AND THE ELEVATIONS SHOWN ON THE PLANS, APPROPRIATE ADJUSTMENTS SHALL BE MADE TO THE THICKNESS OF THE STEEL LOAD PLATE TO ACCOUNT FOR THE DIFFERENCE.

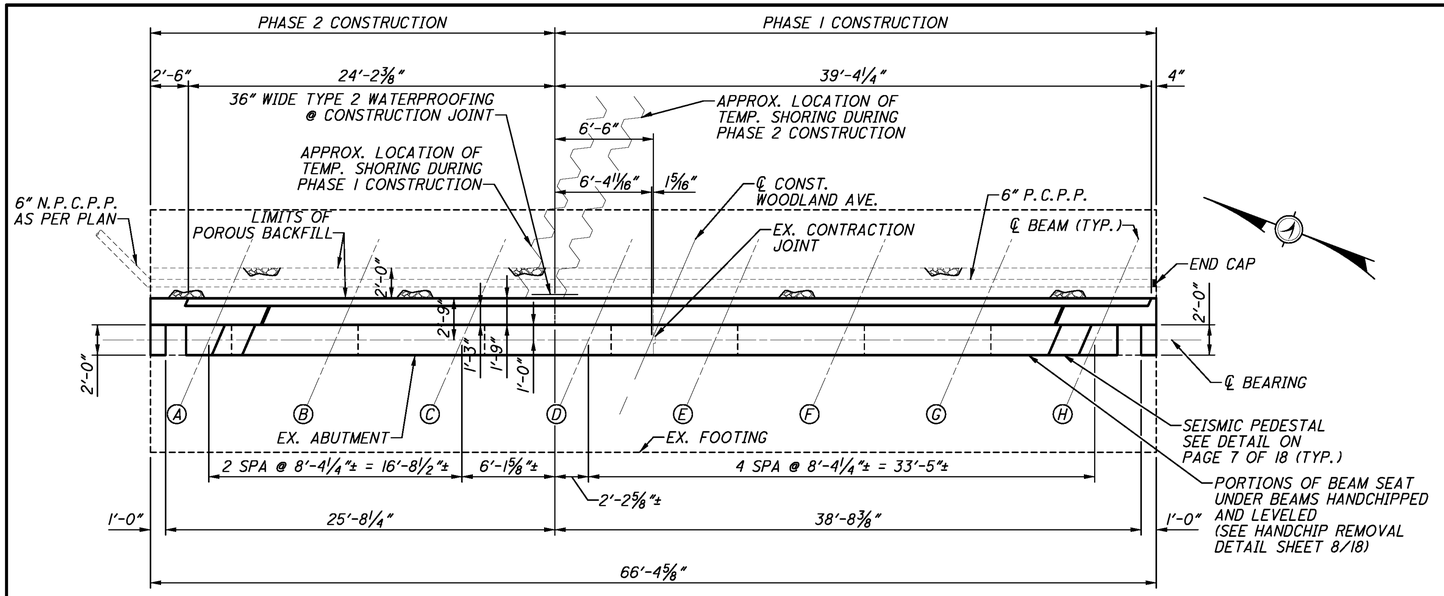
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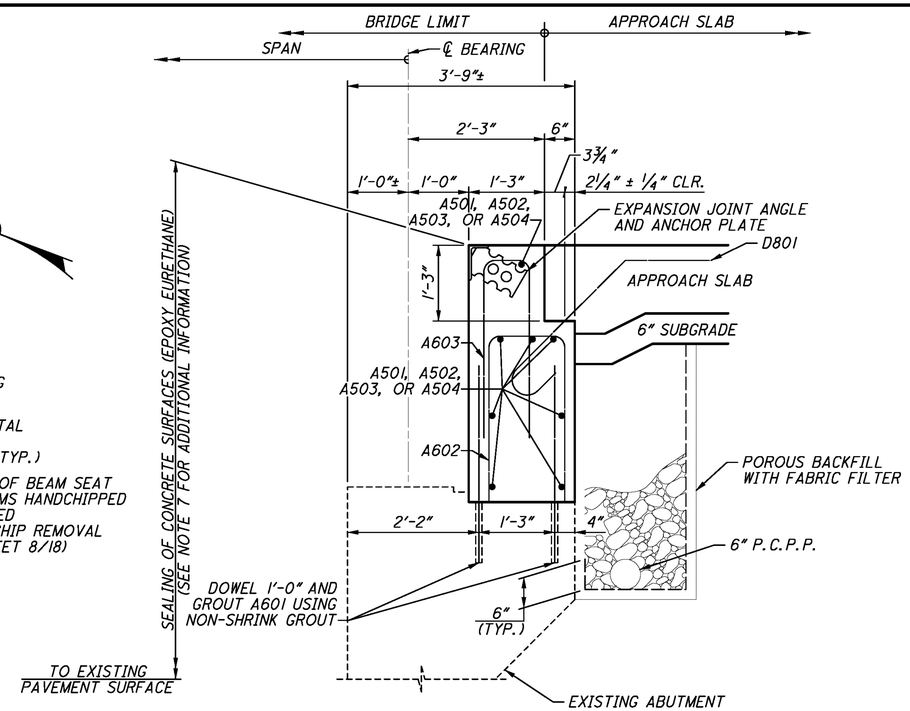
FORWARD ABUTMENT REMOVAL DETAILS

BRIDGE NO. MAH-680-0594
I-680 UNDER WOODLAND AVE.

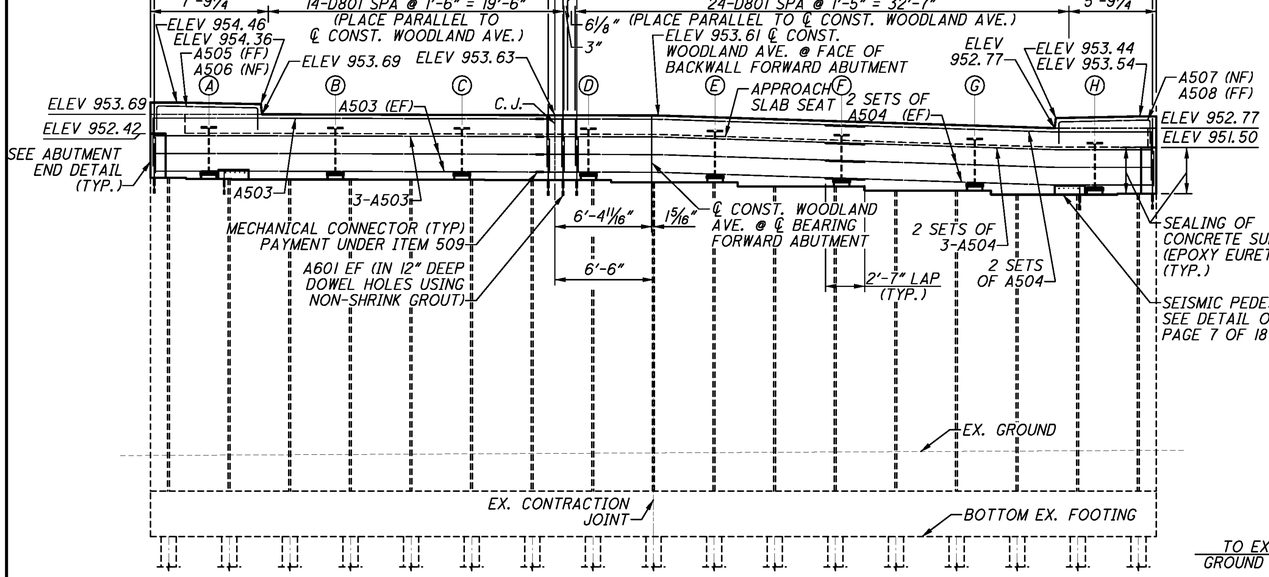
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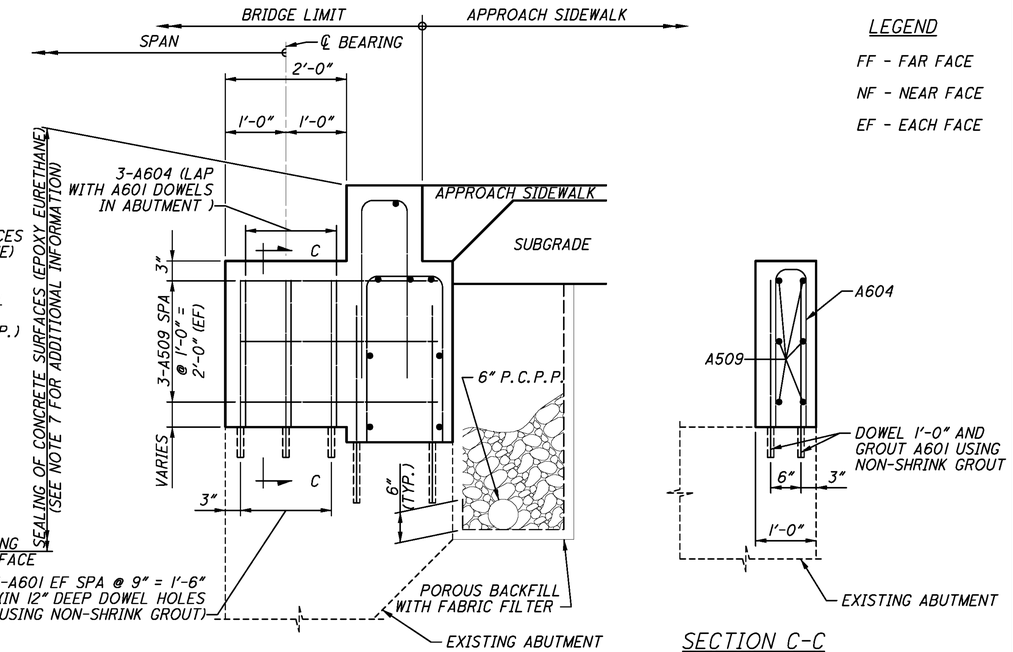
FORWARD ABUTMENT PLAN VIEW



TYPICAL ABUTMENT CROSS SECTION



FORWARD ABUTMENT ELEVATION



TYPICAL ABUTMENT END
(SEE TYPICAL ABUTMENT CROSS SECTION FOR ABUTMENT REINFORCEMENT DETAILS)

LEGEND

FF - FAR FACE

NF - NEAR FACE

EF - EACH FACE

SECTION C-C

NOTES:

1. THE REINFORCEMENT IN THE EXISTING ABUTMENTS IS TO BE LOCATED AND MARKED IN THE FIELD USING NON-DESTRUCTIVE EQUIPMENT SO AS TO AVOID DAMAGING OF THE BARS DURING DRILLING OPERATION FOR DOWELS.

2. REINFORCING STEEL: NEW REINFORCING STEEL MAY REQUIRE FIELD CUTTING OR BENDING TO BE PROPERLY FITTED.

3. DO NOT BLOCK EXISTING DRAINAGE GROOVE WHEN INSTALLING PROPOSED SEISMIC PEDESTALS. ENSURE GROOVE IS CLEAR OF DEBRIS AND FUNCTIONAL AT COMPLETION OF CONSTRUCTION.

4. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE ABUTMENT.

5. BACKWALL ELEVATIONS ARE GIVEN AT THE HEEL OF THE 7" X 4" ANGLE LOCATED ON THE FRONT OF THE BACKWALL.

6. SEE STD DWG EXJ-4-87 AND SHEET 12/18 FOR ADDITIONAL EXPANSION JOINT AND STRIP SEAL DETAILS.

7. FOR LATERAL LIMITS OF SEALING OF CONCRETE SURFACES (EPOXY EURETHANE) SEE THE GENERAL PLAN, SHEET 2/18.

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FORWARD ABUTMENT DETAILS

BRIDGE NO. MAH-680-0594
I-680 UNDER WOODLAND AVE.

MAH-680-4.29
PID No. 25508

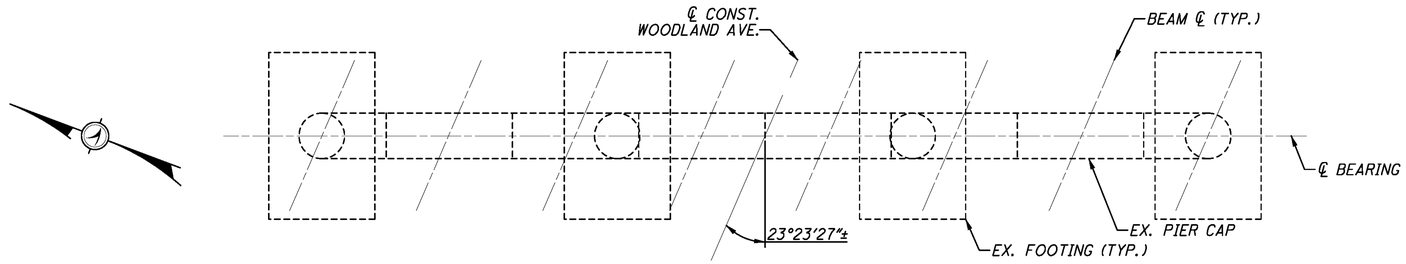
LEGEND

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

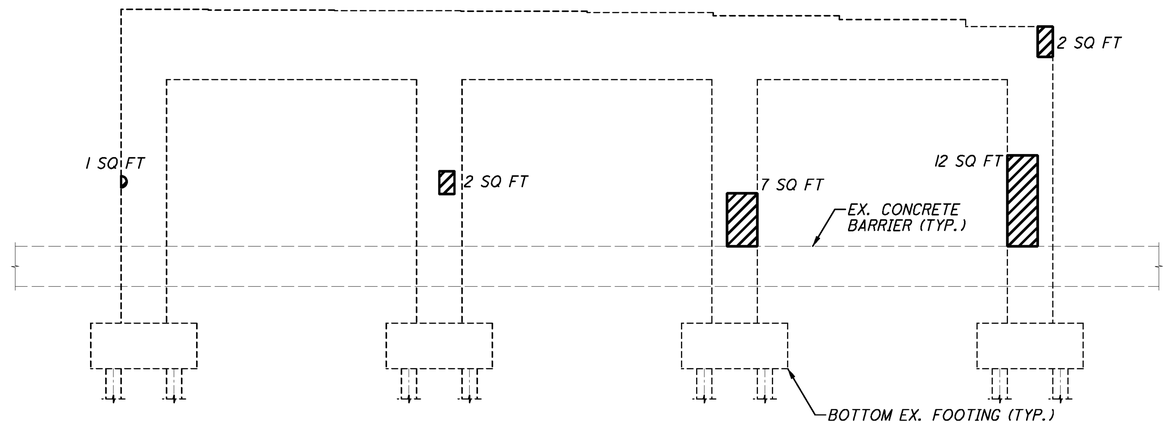
INDICATES DELAMINATED AREA REPAIR USING ITEM 519

NOTES:

1. AFTER ALL PROPOSED WORK HAS BEEN COMPLETED THE ENTIRE PIER ABOVE GROUND (EXCEPT FOR THE BEAM SEATS) SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE)



PIER 1 PLAN VIEW



PIER 1 LOOKING TOWARD FORWARD ABUTMENT

NO PATCHING NEEDED FOR PIER 1 LOOKING TOWARD REAR ABUTMENT
NO PATCHING NEEDED FOR PIER 2

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

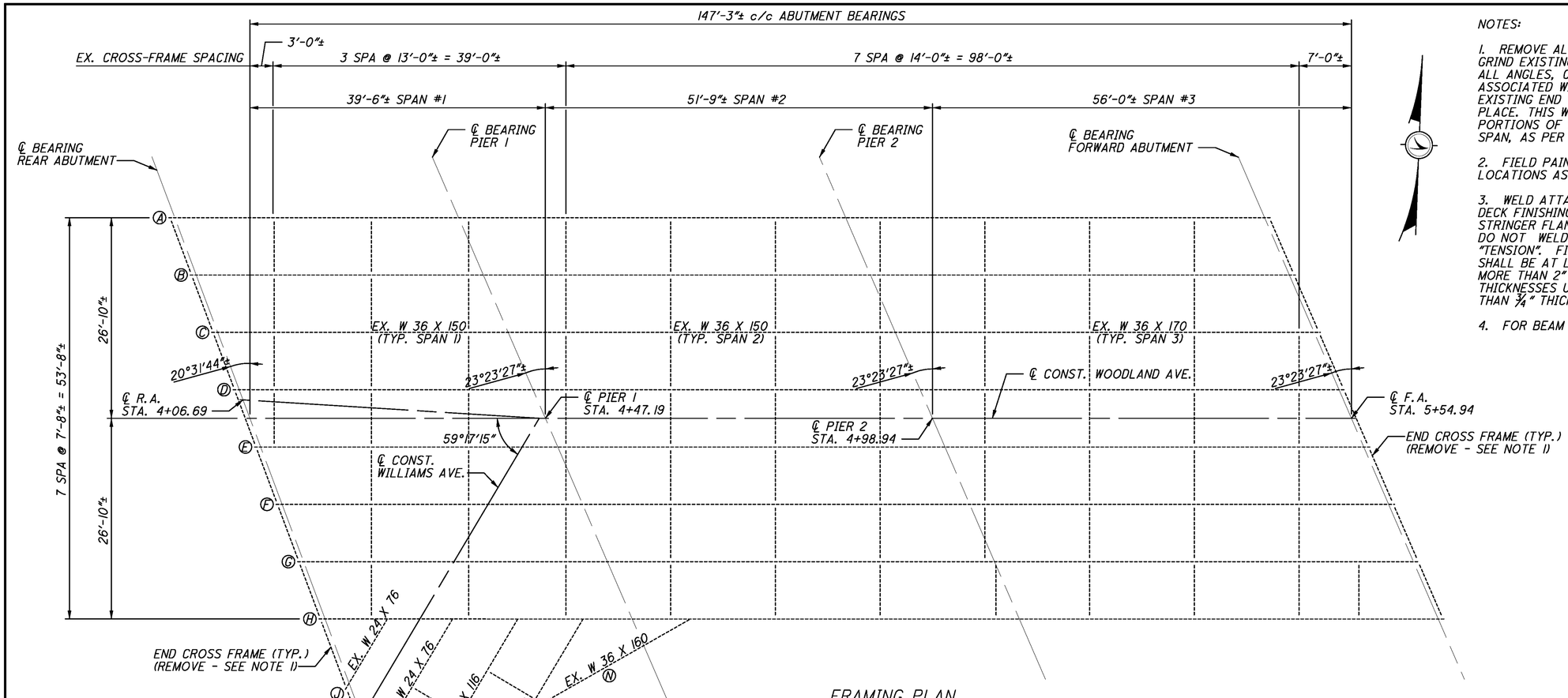
DESIGNED	DRAWN	REVIEWED	DATE
KJJ	KJJ	EEC	05-28-10

CHECKED	REVISED	STRUCTURE FILE NUMBER
JBD		5007089

PIER DETAILS

BRIDGE NO. MAH-680-0594
1-680 UNDER WOODLAND AVE.

MAH-680-4.29
PID No. 25508



FRAMING PLAN

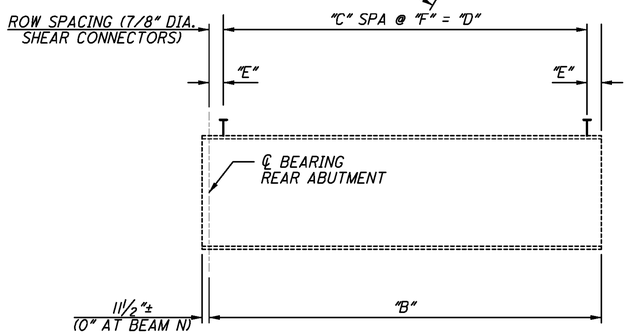
NOTES:

1. REMOVE ALL EXISTING SCUPPERS AND ATTACHMENTS. GRIND EXISTING ATTACHMENT WELDS SMOOTH. REMOVE ALL ANGLES, CHANNELS, AND GUSSET PLATES ASSOCIATED WITH THE EXISTING EXPANSION JOINTS. EXISTING END CROSS FRAMES ARE TO BE LEFT IN PLACE. THIS WORK IS TO BE PAID UNDER ITEM 202 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

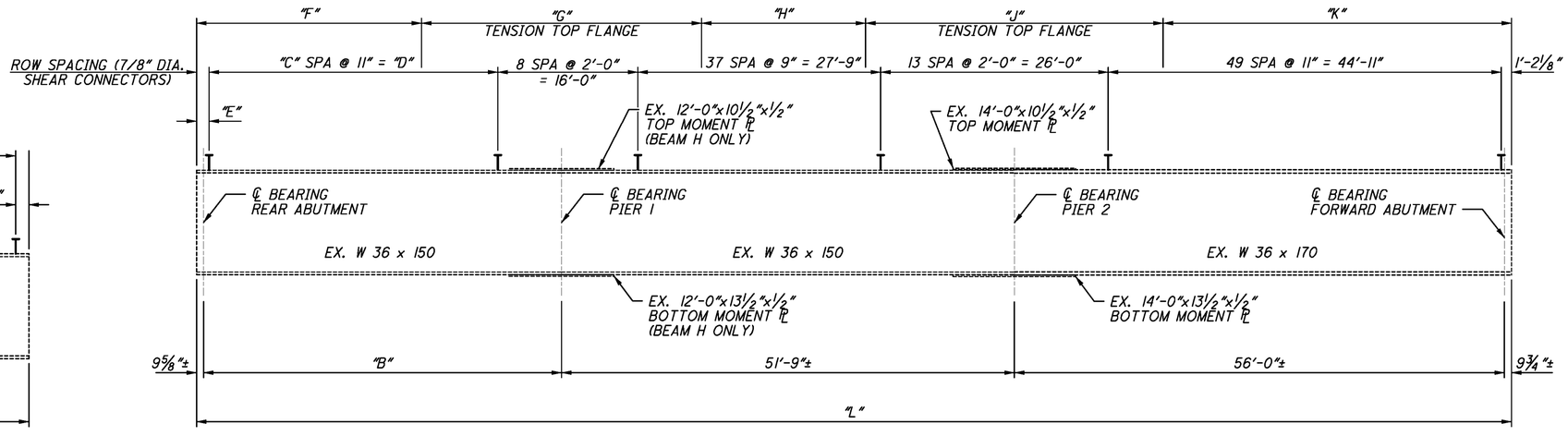
2. FIELD PAINTING SHALL ONLY BE PERFORMED AT LOCATIONS AS DIRECTED BY THE ENGINEER.

3. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.

4. FOR BEAM DIMENSIONS TABLE SEE SHEET 12/18.



BEAMS J-N ELEVATION



BEAMS A-H ELEVATION

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DESIGNED KJJ | DRAWN KJJ | REVIEWED ECC | DATE 05-28-10

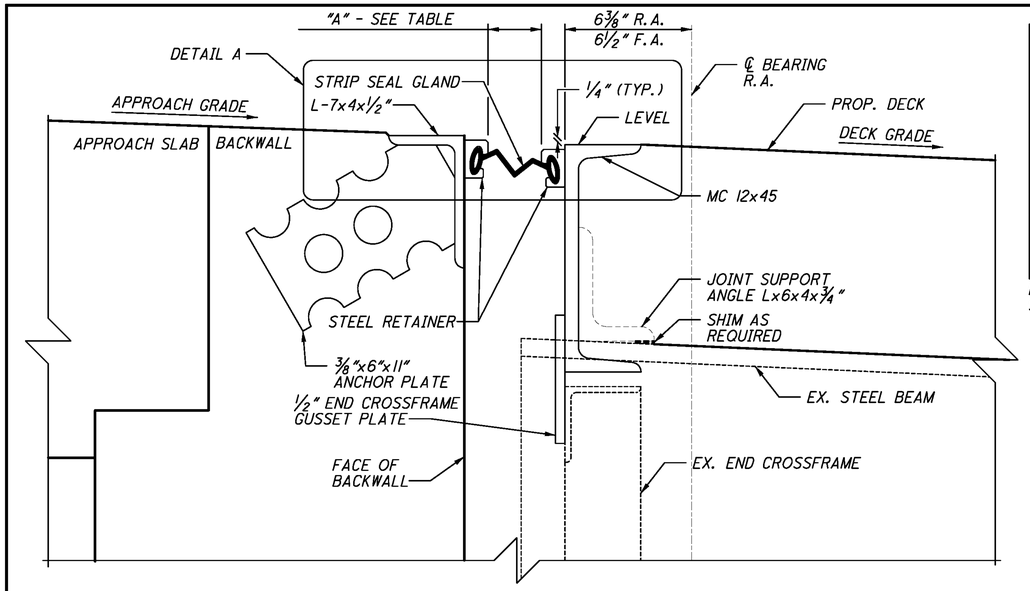
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007089

SUPERSTRUCTURE DETAILS

BRIDGE NO. MAH-680-0594
I-680 UNDER WOODLAND AVE.

MAH-680-4.29

PID No. 25508



EXPANSION JOINT DETAIL

FOR ADDITIONAL INFORMATION SEE STD DWG EXJ-4-87

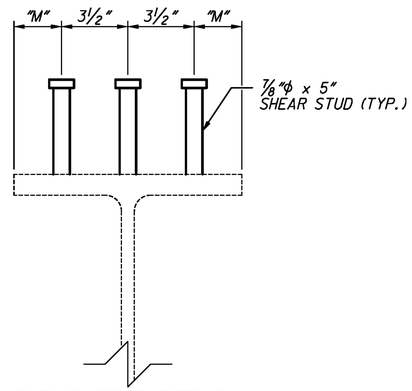
3" STRIP SEAL EXPANSION JOINTS

	DIMENSION "A"	
TEMPERATURE	RA	FA
30° F	1¾"	1⅞"
40° F	1¾"	1¾"
50° F	1¾"	1¾"
60° F	1¾"	1⅝"
70° F	1⅝"	1½"
80° F	1⅝"	1½"
90° F	1⅝"	1⅜"

FOR ADDITIONAL INFORMATION SEE STD DWG EXJ-4-87

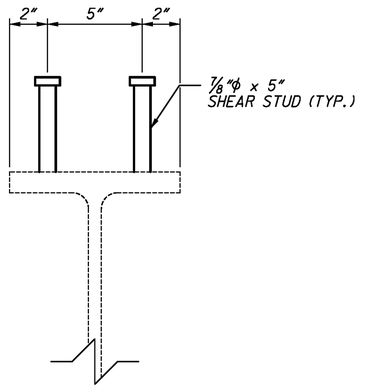
BEAM DIMENSIONS

	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"	"L"	"M"
BEAM "A"	37'-11¼"±	33	30'-3"	1'-2½"	29'-9⅛"	18'-7⅜"	25'-7"	28'-9"	44'-7⅛"	147'-3⅝"±	2½"
BEAM "B"	38'-4⅝"±	34	31'-2"	8⅞"	30'-2"	19'-4¾"	24'-8¼"	28'-9⅜"	44'-8⅝"	147'-9"±	2½"
BEAM "C"	38'-10"±	34	31'-2"	1'-2¼"	30'-7⅜"	19'-4¾"	24'-8¼"	28'-9⅜"	44'-8⅝"	148'-2⅜"±	2½"
BEAM "D"	39'-3⅜"±	35	32'-1"	8⅝"	31'-0¾"	19'-4¾"	24'-8¼"	28'-9⅜"	44'-8⅝"	148'-7¾"±	2½"
BEAM "E"	39'-8⅝"±	35	32'-1"	1'-1⅞"	31'-6"	19'-4¾"	24'-8¼"	28'-9⅜"	44'-8⅝"	149'-1"±	2½"
BEAM "F"	40'-2"±	36	33'-0"	8¼"	31'-11⅜"	19'-4¾"	24'-8¼"	28'-9⅜"	44'-8⅝"	149'-6⅜"±	2½"
BEAM "G"	40'-7⅜"±	36	33'-0"	1'-1⅝"	32'-4¾"	19'-4¾"	24'-8¼"	28'-9⅜"	44'-8⅝"	149'-11¾"±	2½"
BEAM "H"	41'-0¾"±	37	33'-11"	8"	32'-0⅞"	28'-9½"	23'-4½"	21'-4¼"	44'-10½"	150'-5⅛"±	2½"
BEAM "J"	9'-11¾"±	22	9'-2"	4⅞"	5"	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
BEAM "K"	20'-5½"±	33	19'-3"	7¼"	7"	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
BEAM "L"	30'-11¼"±	32	29'-4"	9⅝"	11"	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	1¾"
BEAM "M"	41'-5½"±	44	40'-4"	6¾"	11"	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	2½"
BEAM "N"	24'-11¾"±	32	24'-0"	5⅛"	9"	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	2½"



SHEAR STUD DETAIL

(BEAMS A TO H AND L TO M)

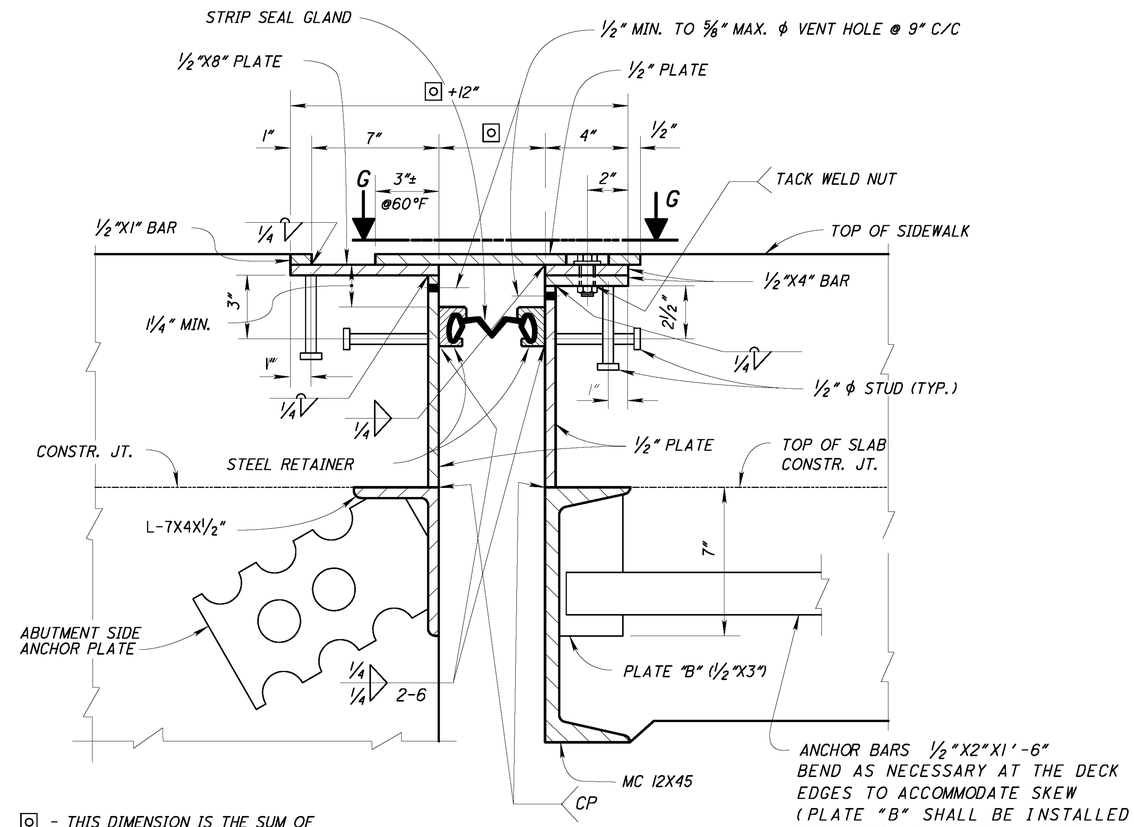


SHEAR STUD DETAIL

(BEAMS J AND K)

EXPANSION JOINT ELEVATIONS

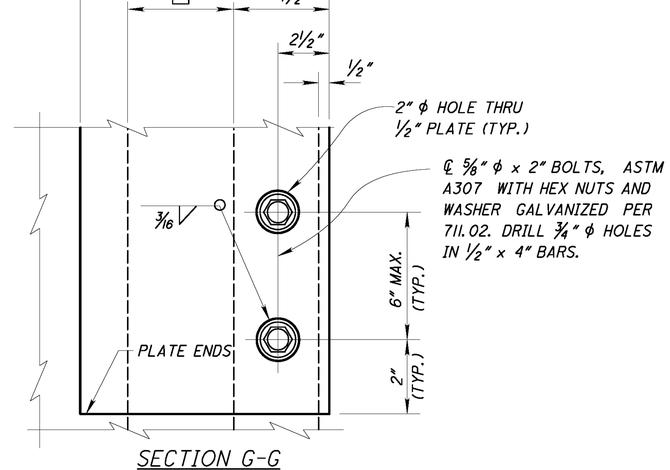
	REAR ABUTMENT		FORWARD ABUTMENT	
	ANGLE	CHANNEL	ANGLE	CHANNEL
BEAM "A"	960.21	960.17	953.69	953.73
BEAM "B"	960.21	960.17	953.67	953.71
BEAM "C"	960.20	960.16	953.65	953.69
BEAM "D"	960.20	960.16	953.62	953.66
BEAM "E"	960.10	960.06	953.48	953.52
BEAM "F"	959.90	959.86	953.21	953.25
BEAM "G"	959.70	959.66	952.94	952.98
BEAM "H"	959.51	959.47	952.67	952.71
BEAM "J"	959.26	959.24	(N/A)	(N/A)
BEAM "K"	959.19	959.17	(N/A)	(N/A)
BEAM "L"	959.29	959.26	(N/A)	(N/A)
BEAM "M"	959.36	959.33	(N/A)	(N/A)



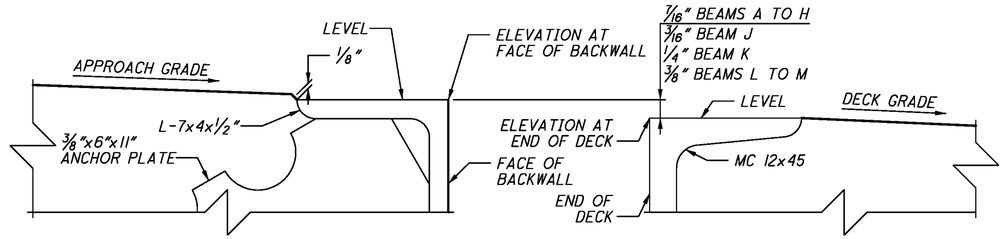
◻ - THIS DIMENSION IS THE SUM OF (2 X STEEL RETAINER WIDTH + DIM. "A").

EXPANSION JOINT DETAIL AT SIDEWALK

FOR ADDITIONAL INFORMATION SEE STD DWG EXJ-4-87



SECTION G-G



DETAIL A

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
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TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED KJJ | DRAWN KJJ | REVIEWED ECC | DATE 05-28-10

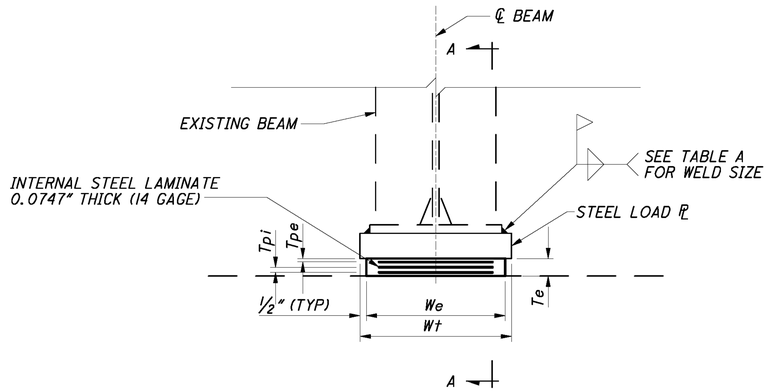
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007089

SUPERSTRUCTURE DETAILS

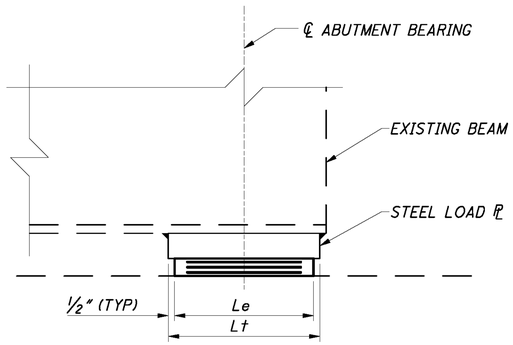
BRIDGE NO. MAH-680-0594
I-680 UNDER WOODLAND AVE.

MAH-680-4.29

PID No. 25508



50 DUROMETER LAMINATED
ELASTOMERIC EXPANSION BEARING
(ABUTMENTS)



SECTION A-A

NOTES:
1. ASTM A709 STEEL LOAD PLATES SHALL BE USED FOR ALL BEARINGS. THE LOAD PLATE SHALL BE VULCANIZED BONDED TO THE LAMINATED ELASOMERIC PAD DURING THE MOLDING PROCESS.

2. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATION FOR HIGHTWAY BRIDGES.

3. WELDING: CONTROL WELDING SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

4. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL THE LAMINATED ELASTOMERIC BEARINGS AND STEEL LOAD PLATES. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516.

5. SHOP MARK LOAD PLATES WITH THE FOLLOWING INFORMATION: TOP, UPSTATION DIRECTION, GIRDER DESIGNATION, AND LOCATION (REAR ABUTMENT OR FORWARD ABUTMENT).

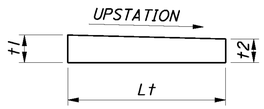
TABLE A

LAMINATED ELASTOMERIC BEARING DATA

BEARING LOCATION	BEAM	BEARING TYPE	NO. REQUIRED	DEAD LOAD (KIPS)	LIVE LOAD (KIPS)	TOTAL LOAD (DL+LL) KIPS	Le (IN)	We (IN)	Tpi (IN)	NO. OF Tpi	Tpe (IN) (2 EACH)	NO. OF INTERNAL STEEL LAMINATES (14 GAGE)	Te (IN)	STEEL LOAD PLATE (IN) Lt	STEEL LOAD PLATE (IN) Wt	FILLET WELD SIZE (IN)
R.A.	A	EXPANSION	1	25	43	68	11.75	11.75	0.375	4	0.263	5	2 3/8	12.75	12.75	5/16
F.A.	A	EXPANSION	1	38	48	86	11.5	11.5	0.375	6	0.263	7	3 1/4	12.5	12.5	5/16
R.A.	B-G	EXPANSION	6	26	54	80	11.75	11.75	0.375	4	0.263	5	2 3/8	12.75	12.75	5/16
F.A.	B-G	EXPANSION	6	37	58	95	11.5	11.5	0.375	6	0.263	7	3 1/4	12.5	12.5	5/16
R.A.	H	EXPANSION	1	49	44	93	11.75	11.75	0.375	4	0.263	5	2 3/8	12.75	12.75	5/16
F.A.	H	EXPANSION	1	39	48	87	11.5	11.5	0.375	6	0.263	7	3 1/4	12.5	12.5	5/16
R.A.	J	EXPANSION	1	7	34	41	11.75	11.75	0.375	4	0.263	5	2 3/8	12.75	12.75	5/16
R.A.	K	EXPANSION	1	15	41	56	11.75	11.75	0.375	4	0.263	5	2 3/8	12.75	12.75	5/16
R.A.	L	EXPANSION	1	22	46	68	11.75	11.75	0.375	4	0.263	5	2 3/8	12.75	12.75	5/16
R.A.	M	EXPANSION	1	53	45	98	11.75	11.75	0.375	4	0.263	5	2 3/8	12.75	12.75	5/16

TOTAL

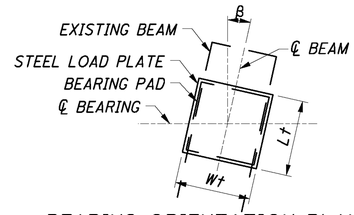
BEARING LOCATION	BEAM	BEARING TYPE	NO. REQUIRED	Le (IN)	We (IN)	Tpi (IN)	NO. OF Tpi	Tpe (IN) (2 EACH)	NO. OF INTERNAL STEEL LAMINATES (14 GAGE)	Te (IN)	STEEL LOAD PLATE (IN) Lt	STEEL LOAD PLATE (IN) Wt	FILLET WELD SIZE (IN)
R.A.	A-M	EXPANSION	12	11.75	11.75	0.375	4	0.263	5	2 3/8	12.75	12.75	5/16
F.A.	A-H	EXPANSION	8	11.5	11.5	0.375	6	0.263	7	3 1/4	12.5	12.5	5/16



STEEL LOAD PLATE

STEEL PLATE THICKNESSES

BEARING LOCATION	REAR ABUT. STEEL LOAD PLATE t1	REAR ABUT. STEEL LOAD PLATE t2	FORWARD ABUT. STEEL LOAD PLATE t1	FORWARD ABUT. STEEL LOAD PLATE t2	BEARING LOCATION
BEAM A	2 3/16"	1 5/8"	2 1/16"	1 1/2"	BEAM A
BEAM B	2 3/16"	1 5/8"	2 1/8"	1 9/16"	BEAM B
BEAM C	2 1/8"	1 9/16"	2 1/16"	1 1/2"	BEAM C
BEAM D	2 1/16"	1 1/2"	2 1/16"	1 1/2"	BEAM D
BEAM E	2 13/16"	2 1/4"	2 1/16"	1 1/2"	BEAM E
BEAM F	3 1/4"	2 11/16"	2 1/16"	1 9/16"	BEAM F
BEAM G	4 15/16"	4 3/8"	2 1/8"	1 9/16"	BEAM G
BEAM H	3 5/16"	2 3/4"	2 1/8"	1 9/16"	BEAM H
BEAM J	2 1/4"	2"	(N/A)	(N/A)	BEAM J
BEAM K	3 3/8"	3 1/16"	(N/A)	(N/A)	BEAM K
BEAM L	4 5/8"	4 1/4"	(N/A)	(N/A)	BEAM L
BEAM M	5 3/4"	5 1/4"	(N/A)	(N/A)	BEAM M



BEARING ORIENTATION PLAN
(ABUTMENTS)

ANGLE β

BEARING LOCATION	REAR ABUT.	FORWARD ABUT.
BEAMS A-H	20°31'44"	23°23'27"
BEAMS J-M	38°45'41"	(N/A)

NOTE: ANGLE β FOR BEAMS A-H IS A CLOCKWISE ROTATION. ANGLE β FOR BEAMS J-M IS A COUNTERCLOCKWISE ROTATION.

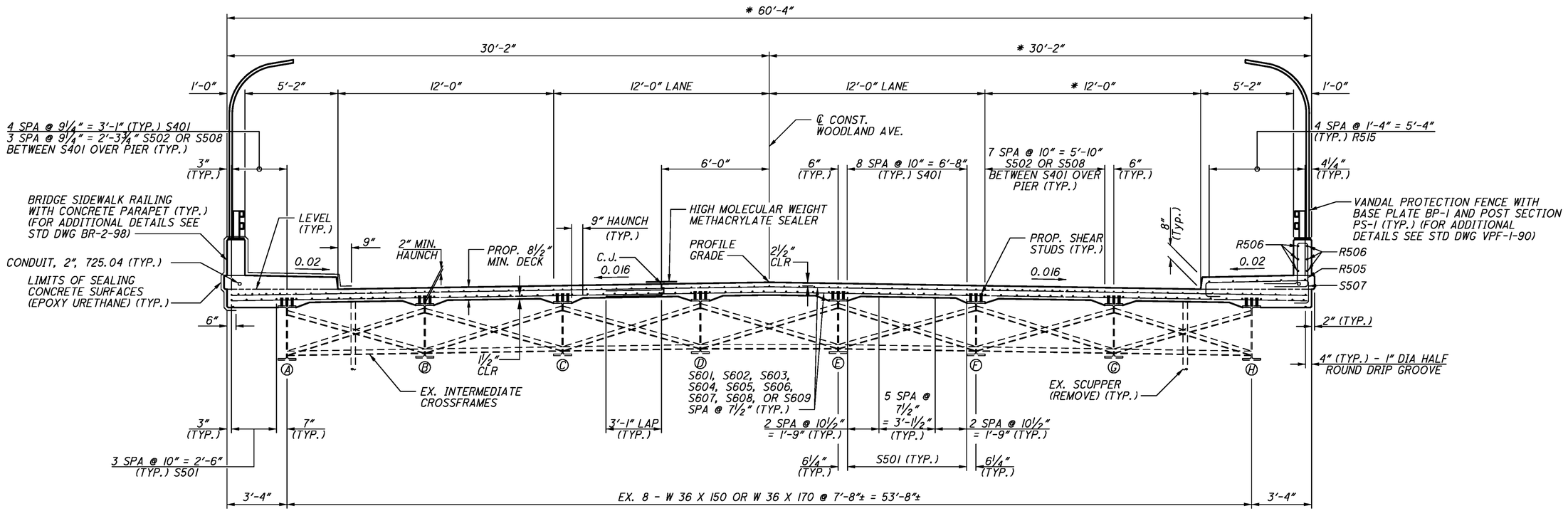
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
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TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
KJJ	KJJ	EEC	05-28-10

CHECKED	REVISED	STRUCTURE FILE NUMBER
JBD		5007089

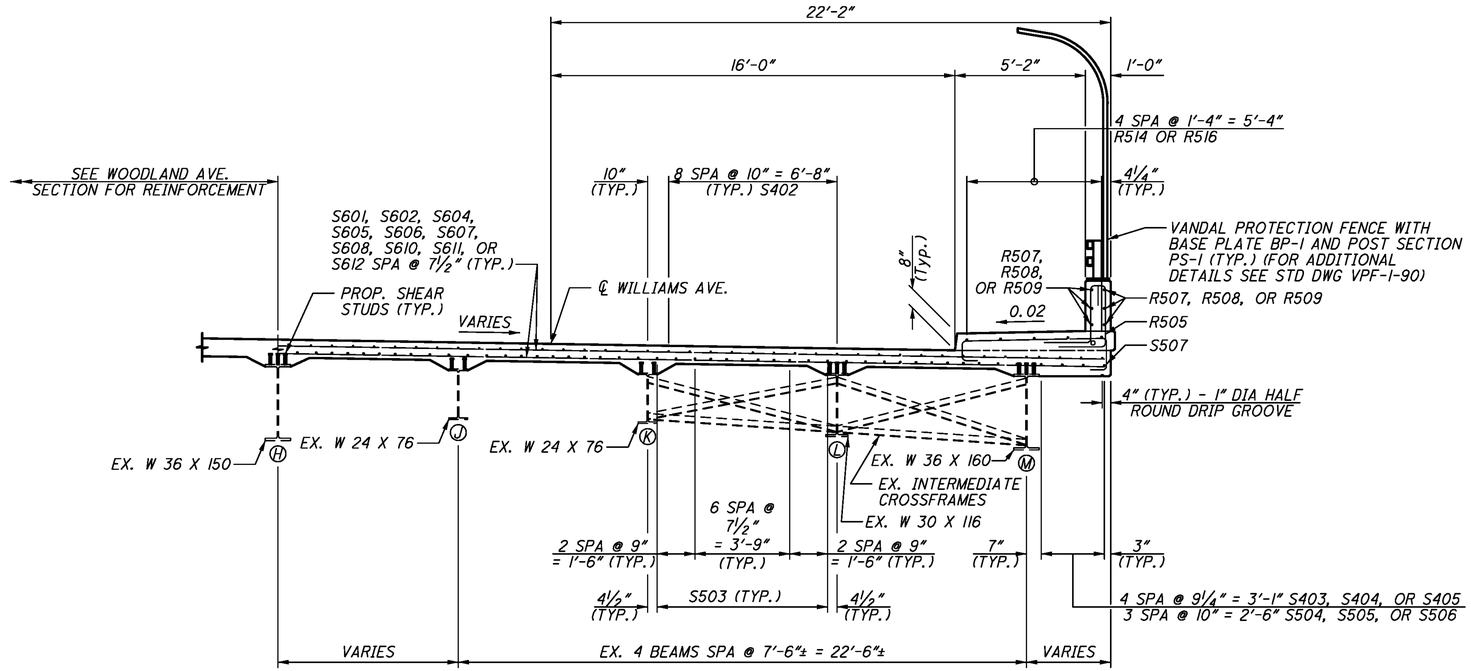
BEARING DETAILS
BRIDGE NO. MAH-680-0594
I-680 UNDER WOODLAND AVE.

MAH-680-4.29
PID No. 25508



TRANSVERSE DECK SECTION (WOODLAND AVE.)

* WIDTH VARIES AT REAR ABUTMENT



TRANSVERSE DECK SECTION (WILLIAMS AVE.)

NOTES:

1. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 2 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE IS ±3 INCHES.

2. THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.24.

3. LONGITUDINAL CONSTRUCTION JOINTS SHALL BE SEALED WITH HIGH MOLECULAR WEIGHT METHACRYLATE. THE WIDTH OF THE SEALING SHALL BE 2 FEET CENTERED OVER THE JOINT.

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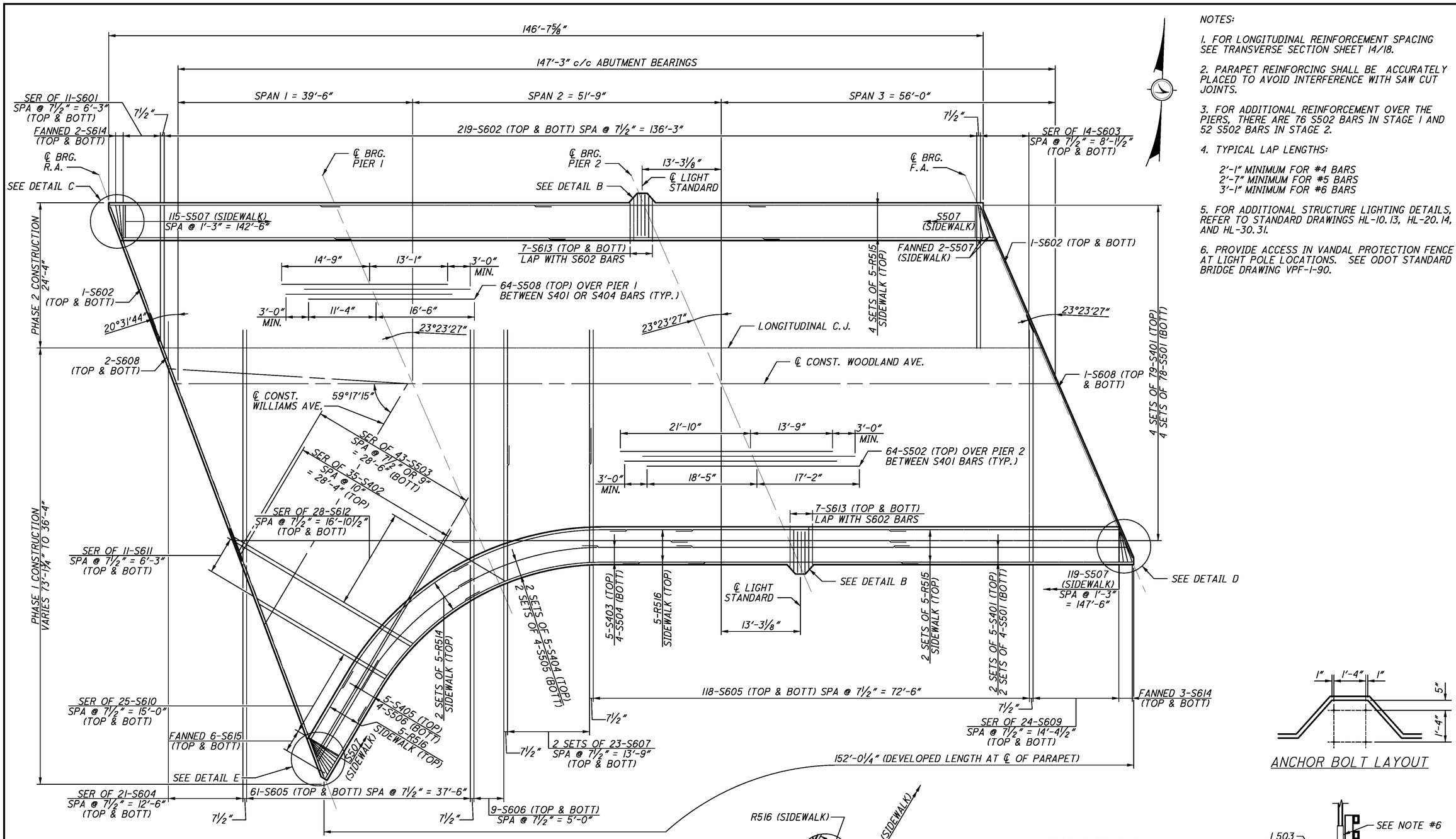
DESIGNED	DRAWN	REVIEWED	DATE
KJJ	KJJ	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007089	

TRANSVERSE DECK SECTION

BRIDGE NO. MAH-680-0594
I-680 UNDER WOODLAND AVE.

MAH-680-4.29

PID No. 25508



DECK REINFORCEMENT PLAN

NOTES:

1. FOR LONGITUDINAL REINFORCEMENT SPACING SEE TRANSVERSE SECTION SHEET 14/18.

2. PARAPET REINFORCING SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH SAW CUT JOINTS.

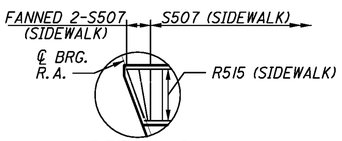
3. FOR ADDITIONAL REINFORCEMENT OVER THE PIERS, THERE ARE 76 S502 BARS IN STAGE 1 AND 52 S502 BARS IN STAGE 2.

4. TYPICAL LAP LENGTHS:

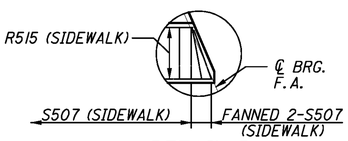
   2'-1" MINIMUM FOR #4 BARS
   2'-7" MINIMUM FOR #5 BARS
   3'-1" MINIMUM FOR #6 BARS

5. FOR ADDITIONAL STRUCTURE LIGHTING DETAILS, REFER TO STANDARD DRAWINGS HL-10.13, HL-20.14, AND HL-30.31.

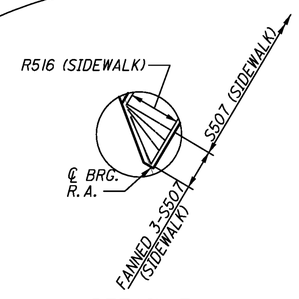
6. PROVIDE ACCESS IN VANDAL PROTECTION FENCE AT LIGHT POLE LOCATIONS. SEE ODOT STANDARD BRIDGE DRAWING VPF-1-90.



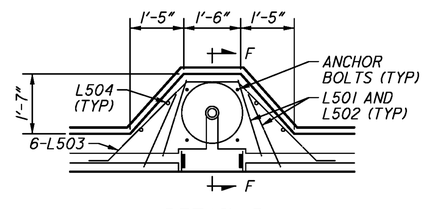
DETAIL C
(DECK REINFORCEMENT NOT SHOWN)



DETAIL D
(DECK REINFORCEMENT NOT SHOWN)

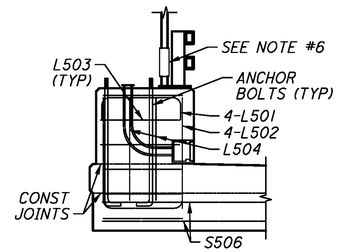


DETAIL E
(DECK REINFORCEMENT NOT SHOWN)



DETAIL B

ANCHOR BOLT LAYOUT



SECTION F-F

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
KJJ	KJJ	ECC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007089	

DECK DETAILS
BRIDGE NO. MAH-680-0594
I-680 UNDER WOODLAND AVE.

MAH-680-4.29
PID No. 25508

SCREED ELEVATIONS *

	SPAN 1				SPAN 2				SPAN 3				
LOCATION	R.A.	1/4	1/2	3/4	PIER 1	1/4	1/2	3/4	PIER 2	1/4	1/2	3/4	F.A.
LT. GUTTER	960.16	959.74	959.30	958.86	958.48	957.91	957.35	956.77	956.20	955.61	955.01	954.38	953.73
CONST. JOINT	960.15	959.72	959.29	958.85	958.42	957.85	957.28	956.71	956.14	955.55	954.95	954.32	953.67
℄ CONST. WOODLAND AVE.	960.15	959.72	959.29	958.85	958.41	957.84	957.27	956.70	956.13	955.53	954.94	954.31	953.66
BEAM "H"	959.46	958.99	958.60	958.14	957.60	957.00	956.42	955.85	955.29	954.70	954.10	953.47	952.82
RT. GUTTER	N/A	N/A	N/A	N/A	N/A	956.95	956.42	955.85	955.29	954.70	954.10	953.47	952.82

TOP OF HAUNCH ELEVATIONS *

	SPAN 1				SPAN 2				SPAN 3				
LOCATION	R.A.	1/4	1/2	3/4	PIER 1	1/4	1/2	3/4	PIER 2	1/4	1/2	3/4	F.A.
BEAM "A"	959.46	959.03	958.59	958.15	957.78	957.21	956.65	956.07	955.50	954.91	954.31	953.68	953.03
BEAM "B"	959.45	959.03	958.59	958.15	957.76	957.19	956.62	956.05	955.48	954.88	954.29	953.66	953.01
BEAM "C"	959.45	959.02	958.59	958.15	957.74	957.17	956.60	956.03	955.46	954.86	954.26	953.63	952.99
BEAM "D"	959.44	959.02	958.58	958.15	957.71	957.14	956.57	956.00	955.43	954.84	954.24	953.61	952.96
BEAM "E"	959.34	958.95	958.51	958.06	957.60	957.01	956.43	955.86	955.29	954.69	954.09	953.47	952.82
BEAM "F"	959.14	958.74	958.29	957.83	957.36	956.76	956.16	955.59	955.02	954.42	953.82	953.20	952.55
BEAM "G"	958.94	958.53	958.06	957.60	957.12	956.50	955.89	955.32	954.75	954.15	953.55	952.93	952.28
BEAM "H"	958.75	958.28	957.90	957.43	956.89	956.29	955.71	955.14	954.58	953.99	953.40	952.77	952.11

FINAL DECK SURFACE ELEVATIONS *

	SPAN 1				SPAN 2				SPAN 3				
LOCATION	R.A.	1/4	1/2	3/4	PIER 1	1/4	1/2	3/4	PIER 2	1/4	1/2	3/4	F.A.
LT. DECK EDGE													
BEAM "A"	960.16	959.73	959.29	958.86	958.48	957.91	957.34	956.77	956.20	955.59	954.97	954.35	953.73
LT. GUTTER													
BEAM "B"	960.16	959.72	959.29	958.85	958.47	957.90	957.33	956.76	956.19	955.57	954.95	954.34	953.72
BEAM "C"	960.16	959.72	959.28	958.85	958.45	957.87	957.30	956.73	956.17	955.55	954.93	954.31	953.70
CONST. JOINT	960.15	959.72	959.28	958.85	958.42	957.85	957.28	956.71	956.14	955.53	954.91	954.29	953.67
BEAM "D"	960.15	959.72	959.28	958.85	958.42	957.85	957.28	956.71	956.14	955.52	954.91	954.29	953.67
℄ CONST. WOODLAND AVE.	960.15	959.71	959.28	958.84	958.41	957.84	957.27	956.70	956.13	955.51	954.90	954.28	953.66
BEAM "E"	960.05	959.65	959.20	958.76	958.31	957.72	957.13	956.56	956.00	955.38	954.76	954.14	953.53
BEAM "F"	959.85	959.44	958.98	958.53	958.07	957.47	956.87	956.30	955.73	955.11	954.49	953.87	953.26
BEAM "G"	959.65	959.23	958.76	958.29	957.83	957.21	956.60	956.03	955.46	954.84	954.22	953.61	952.99
RT. GUTTER	N/A	N/A	N/A	N/A									
BEAM "H"	959.46	958.96	958.56	958.12	957.60	957.01	956.43	955.86	955.29	954.67	954.05	953.44	952.82
RT. DECK EDGE	N/A	N/A	N/A	N/A									

* THE LOCATION OF THE ELEVATIONS GIVEN IN THESE TABLES IS DENOTED WITH THE SYMBOL "○". "SPAN" IN THESE TABLES REFERS TO THE SPAN OF THE STRUCTURE.

SCREED ELEVATIONS **

	SPAN 1				
LOCATION	R.A.	1/4	1/2	3/4	BEAM "H"
℄ CONST. WILLIAMS AVE.	959.12	959.07	959.02	958.97	958.91
RT. GUTTER	959.31	958.94	958.56	958.12	957.31

TOP OF HAUNCH ELEVATIONS **

	SPAN 1				
LOCATION	R.A.	1/4	1/2	3/4	BEAM "H"
BEAM "J"	958.53	958.50	958.47	958.43	958.40
BEAM "K"	958.45	958.35	958.24	958.13	958.01
BEAM "L"	958.54	958.32	958.09	957.86	957.62
BEAM "M"	958.60	958.28	957.86	957.41	957.20
LOCATION	BEAM "M"	1/4	1/2	3/4	BEAM "H"
BEAM "N"	957.58	957.30	957.01	956.72	956.44

FINAL DECK SURFACE ELEVATIONS **

	SPAN 1				
LOCATION	R.A.	1/4	1/2	3/4	BEAM "H"
BEAM "J"	959.24	959.20	959.16	959.12	959.08
℄ CONST. WILLIAMS AVE.	959.12	959.06	959.00	958.94	958.88
BEAM "K"	959.16	959.04	958.92	958.81	958.69
BEAM "L"	959.25	959.01	958.77	958.53	958.29
RT. GUTTER					957.32
BEAM "M"	959.31	958.91	958.52	958.08	957.90
RT. DECK EDGE					N/A
LOCATION	BEAM "M"	1/4	1/2	3/4	BEAM "H"
BEAM "N"	958.24	957.98	957.70	957.42	957.16

** THE LOCATION OF THE ELEVATIONS GIVEN IN THESE TABLES IS DENOTED WITH THE SYMBOL "◇". "SPAN" IN THESE TABLES REFERS TO THE SPAN OF THE INDIVIDUAL COMPONENT.

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

2. TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE BEAM HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

3. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURED.

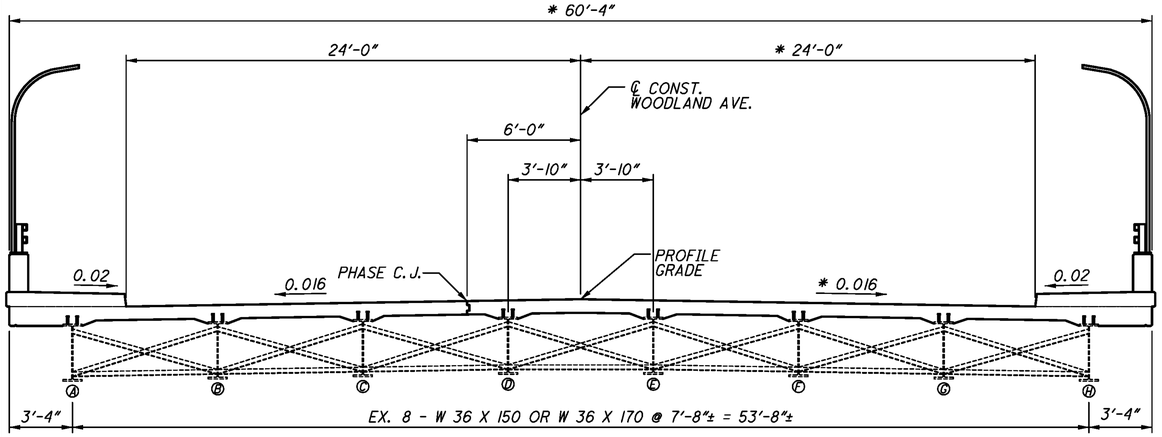


TABLE ELEVATION TRANSVERSE SECTION

* WIDTH AND CROSS SLOPE VARY IN SPAN 1

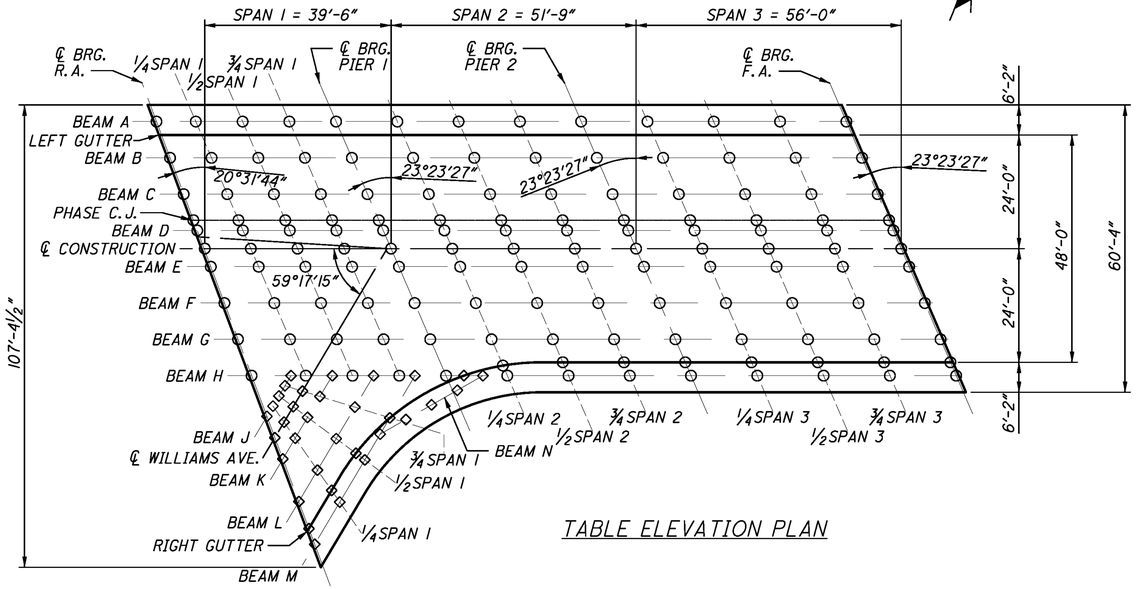


TABLE ELEVATION PLAN

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

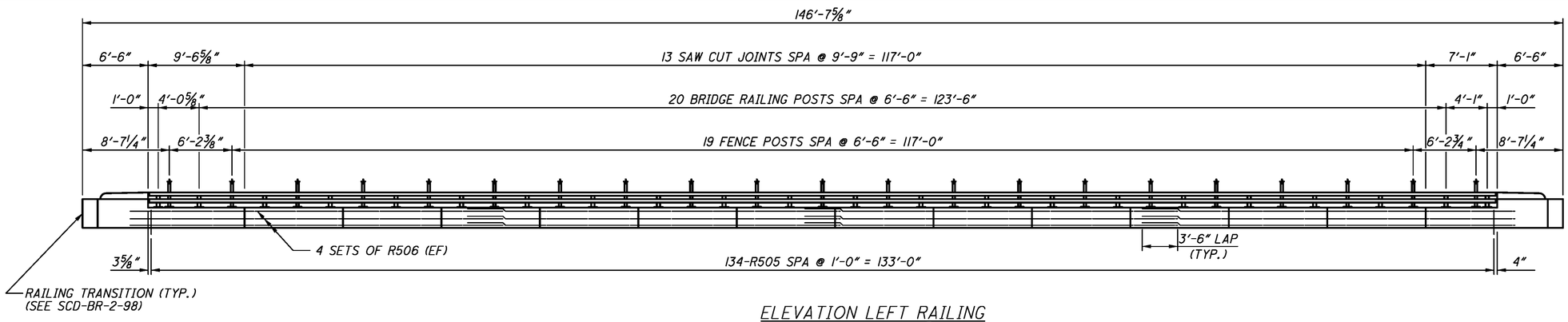
DESIGNED KJJ | DRAWN KJJ | REVIEWED ECC | DATE 05-28-10 | CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007089

DECK DETAILS

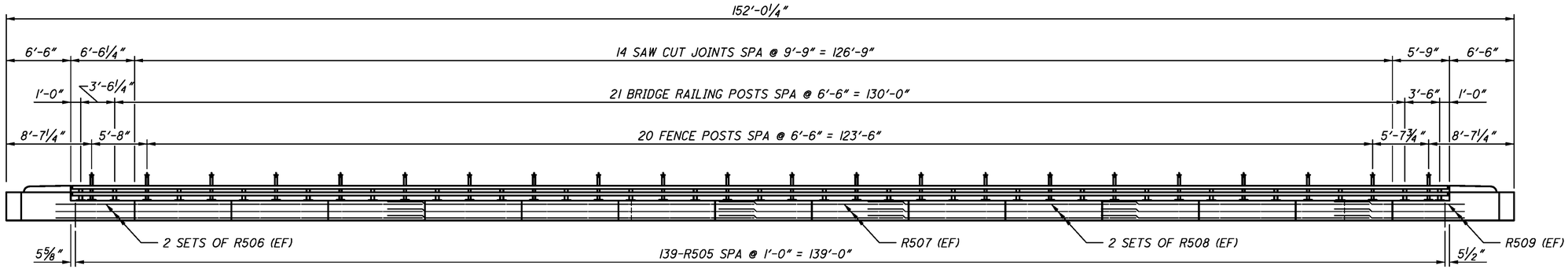
BRIDGE NO. MAH-680-0594
I-680 UNDER WOODLAND AVE.

MAH-680-4.29

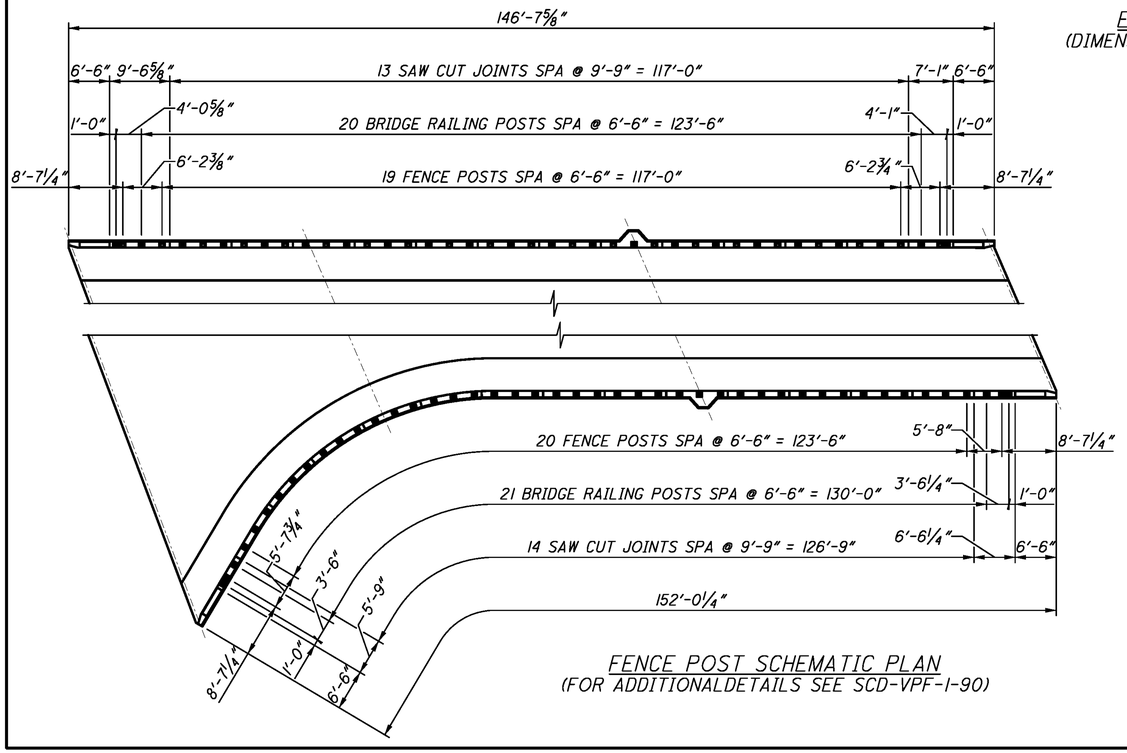
PID No. 25508



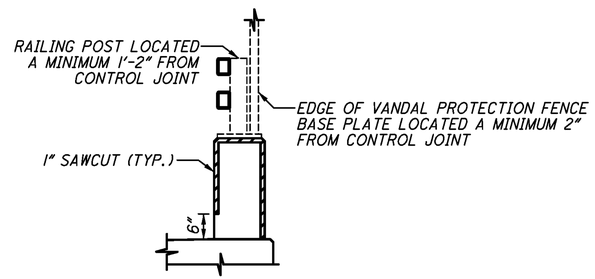
ELEVATION LEFT RAILING
(DIMENSIONS GIVEN ALONG ℄ OF RAILING)



ELEVATION RIGHT RAILING
(DIMENSIONS GIVEN ALONG ℄ OF RAILING)



FENCE POST SCHEMATIC PLAN
(FOR ADDITIONALDETAILS SEE SCD-VPF-1-90)



SECTION THROUGH
CONTROL JOINT

NOTES:

1. FOR ADDITIONAL RAILING INFORMATION SEE SCD-BR-2-98.
2. FOR ADDITIONAL FENCE INFORMATION SEE SCD-VPF-1-90.

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
KJJ	KJJ	ECC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007089	

PARAPET DETAILS

BRIDGE NO. MAH-680-0594
I-680 UNDER WOODLAND AVE.

MAH-680-4.29
PID No. 25508

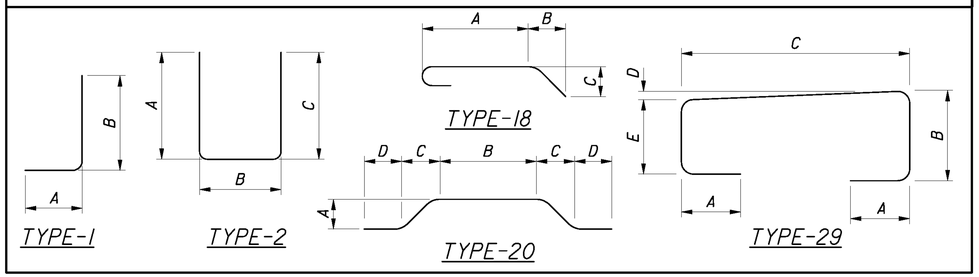
REINFORCING STEEL LIST

MARK	NUMBER REAR	NUMBER FWD	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC.
ABUTMENTS												
A501	24	0	28'-9"	720	STR	-	-	-	-	-	-	-
A502	8	0	23'-4"	195	STR	-	-	-	-	-	-	-
A503	0	8	25'-5"	212	STR	-	-	-	-	-	-	-
A504	0	16	21'-7"	360	STR	-	-	-	-	-	-	-
A505	1	1	9'-9"	20	29	0"	1'-7"	7'-0"	2"	1'-5"	-	-
A506	1	1	9'-3"	19	29	0"	1'-7"	6'-6"	2"	1'-5"	-	-
A507	1	1	8'-8"	18	29	0"	1'-7"	5'-11"	2"	1'-5"	-	-
A508	1	1	8'-4"	17	29	0"	1'-7"	5'-7"	2"	1'-5"	-	-
A509	12	12	3'-3"	81	STR	-	-	-	-	-	-	-
A601	222	146	3'-6"	1935	STR	-	-	-	-	-	-	-
A602	105	67	4'-7"	1184	2	1'-9½"	1'-4"	1'-9½"	-	-	-	-
A603	105	67	6'-7"	1701	2	3'-0½"	10"	3'-0½"	-	-	-	-
A604	6	6	5'-6"	99	2	2'-7½"	7"	2'-7½"	-	-	-	-
A605	8	4	2'-9"	50	1	1'-6¾"	1'-4¼"	-	-	-	-	-
A606	12	6	4'-1"	110	2	1'-5½"	1'-6"	1'-5½"	-	-	-	-
A901	20	10	1'-5"	145	STR	-	-	-	-	-	-	-
A902	8	4	4'-2"	170	STR	-	-	-	-	-	-	-
D801	62	38	5'-2"	1380	18	2'-10"	1'-0"	1'-0"	-	-	-	-
			SUBTOTAL	8416								

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC.
RAILINGS AND LIGHT POLE PILASTERS (FOR INFORMATION ONLY)											
R501	20	3'-7"	75	BT*	-	-	-	-	-	-	-
R502	8	7'-6"	63	BT*	-	-	-	-	-	-	-
R505	273	7'-8"	2183	BT*	-	-	-	-	-	-	-
R506	36	36'-11"	1386	STR	-	-	-	-	-	-	-
R507	6	18'-6"	116	STR	-	-	-	-	-	-	-
R508	12	27'-0"	338	STR	-	-	-	-	-	-	-
R509	6	13'-7"	85	STR	-	-	-	-	-	-	-
R510	20	8'-3"	172	BT*	-	-	-	-	-	-	-
R511	20	8'-3"	172	STR	-	-	-	-	-	-	-
R512	8	6'-1"	51	BT*	-	-	-	-	-	-	-
R513	8	6'-2"	51	STR	-	-	-	-	-	-	-
R601	40	9'-11"	596	BT*	-	-	-	-	-	-	-
R602	12	4'-10"	87	BT*	-	-	-	-	-	-	-
R603	12	4'-8"	84	BT*	-	-	-	-	-	-	-
L501	8	3'-0"	25	2	2'-1"	7"	7"	-	-	-	-
L502	8	7'-8"	64	2	2'-1"	2'-11"	2'-11"	-	-	-	-
L503	12	8'-0"	100	20	2'-1"	1'-4"	2'-1"	6"	-	-	-
L504	8	2'-11"	24	STR	-	-	-	-	-	-	-
		SUBTOTAL	5672								

* SEE STD DWG BR-2-98 FOR BAR BENDING DIAGRAM

BENDING DIAGRAM



MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC.
DECK SLAB											
S401	326	39'-0"	8493	STR	-	-	-	-	-	-	-
S402	1 SER OF 35	4'-7" TO 44'-3"	571	STR	-	-	-	-	-	-	1'-2"
S403	5	16'-1"	54	STR	-	-	-	-	-	-	-
S404	10	25'-3"	169	STR	-	-	-	-	-	-	-
S405	5	18'-0"	60	STR	-	-	-	-	-	-	-
S501	320	39'-3"	13100	STR	-	-	-	-	-	-	-
S502	64	35'-7"	2375	STR	-	-	-	-	-	-	-
S503	1 SER OF 43	3'-10" TO 44'-1"	1075	STR	-	-	-	-	-	-	11½"
S504	4	17'-2"	72	STR	-	-	-	-	-	-	-
S505	8	25'-5"	212	STR	-	-	-	-	-	-	-
S506	4	18'-7"	78	STR	-	-	-	-	-	-	-
S507	243	9'-1"	2302	29	9½"	1'-2¾"	5'-8¾"	1½"	1'-0"	-	-
S508	64	27'-10"	1858	STR	-	-	-	-	-	-	-
S601	2 SER OF 11	6'-1" TO 22'-9"	476	STR	-	-	-	-	-	-	1'-8"
S602	442	24'-0"	15933	STR	-	-	-	-	-	-	-
S603	2 SER OF 14	4'-10" TO 23'-9½"	602	STR	-	-	-	-	-	-	1'-5½"
S604	2 SER OF 21	5'-5" TO 38'-9"	1393	STR	-	-	-	-	-	-	1'-8"
S605	358	38'-11"	20926	STR	-	-	-	-	-	-	-
S606	18	42'-2"	1140	STR	-	-	-	-	-	-	-
S607	92	22'-6"	3109	STR	-	-	-	-	-	-	-
S608	6	44'-5"	400	STR	-	-	-	-	-	-	-
S609	2 SER OF 24	5'-10⅜" TO 39'-2"	1623	STR	-	-	-	-	-	-	1'-5⅜"
S610	2 SER OF 25	5'-9¾" TO 24'-6¾"	1141	STR	-	-	-	-	-	-	9⅜"
S611	2 SER OF 11	25'-5½" TO 34'-0"	982	STR	-	-	-	-	-	-	10¼"
S612	2 SER OF 28	14'-9" TO 35'-0"	2092	STR	-	-	-	-	-	-	9"
S613	28	6'-10"	287	STR	-	-	-	-	-	-	-
S614	10	5'-2"	78	STR	-	-	-	-	-	-	-
S615	12	5'-7"	101	STR	-	-	-	-	-	-	-
		SUBTOTAL	80702								
SIDEWALK											
R514	10	30'-0"	313	STR	-	-	-	-	-	-	-
R515	30	38'-6"	1205	STR	-	-	-	-	-	-	-
R516	10	13'-8"	143	STR	-	-	-	-	-	-	-
		SUBTOTAL	1661								

NOTES

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHEN FOUR DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A No.6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.
2. ALL REINFORCING STEEL TO BE EPOXY COATED.
3. REBAR DIMENSIONS SHOWN ARE FOR INFORMATION PURPOSESES ONLY. IF THE REINFORCING STEEL LIST IS USED, IT SHALL BE VERIFIED BY THE CONTRACTOR. ANY REVISIONS IN THE REINFORCING STEEL SHALL NOT BE A REASON FOR ADJUSTMENT IN THE BID PRICE FOR STRUCTURAL STEEL.

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

DESIGNED KJJ | DRAWN KJJ | REVIEWED ECC | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007089

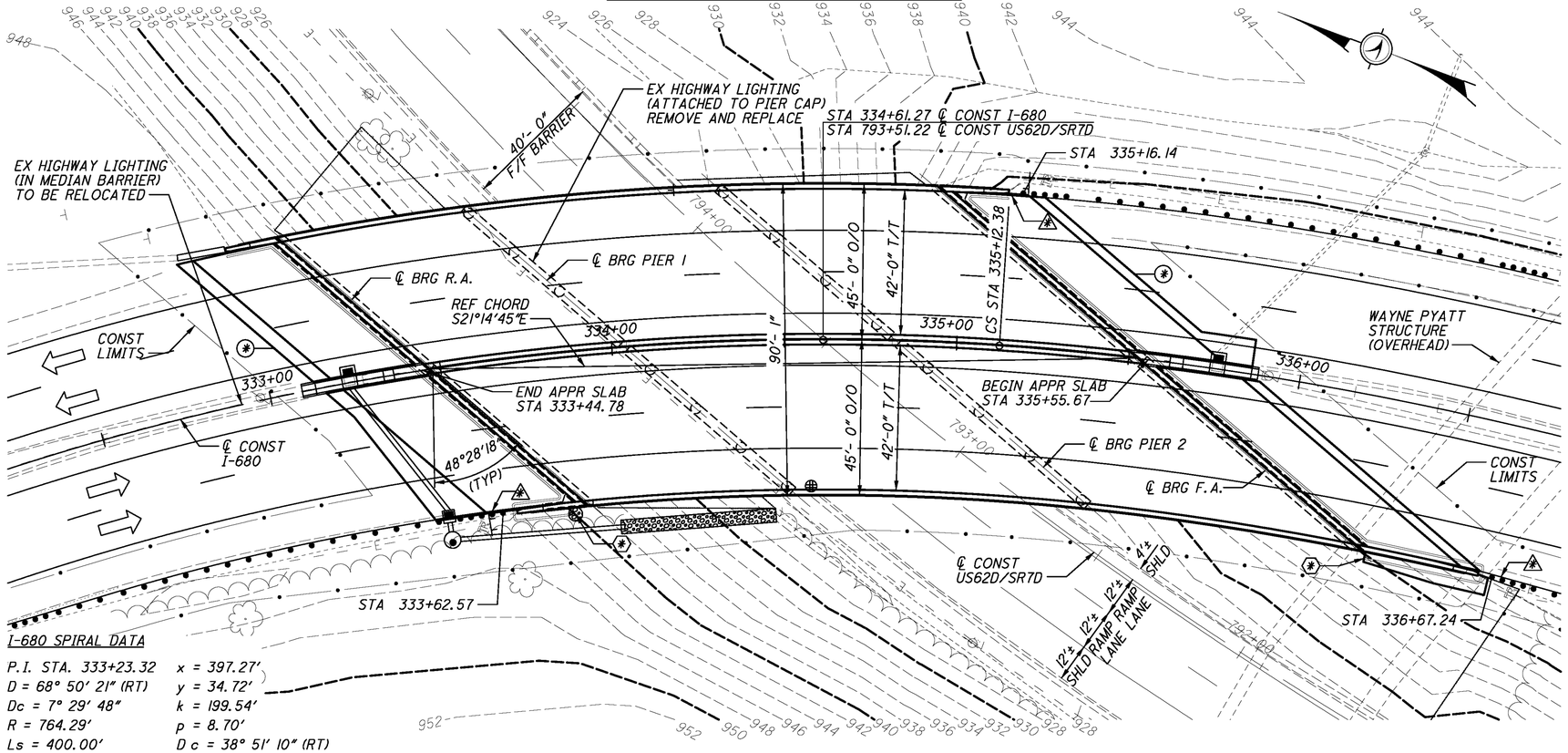
REINFORCING STEEL LIST
BRIDGE NO. MAH-680-0594
I-680 UNDER WOODLAND AVE.

MAH-680-4.29
PID No. 25508

18 / 18

180
307

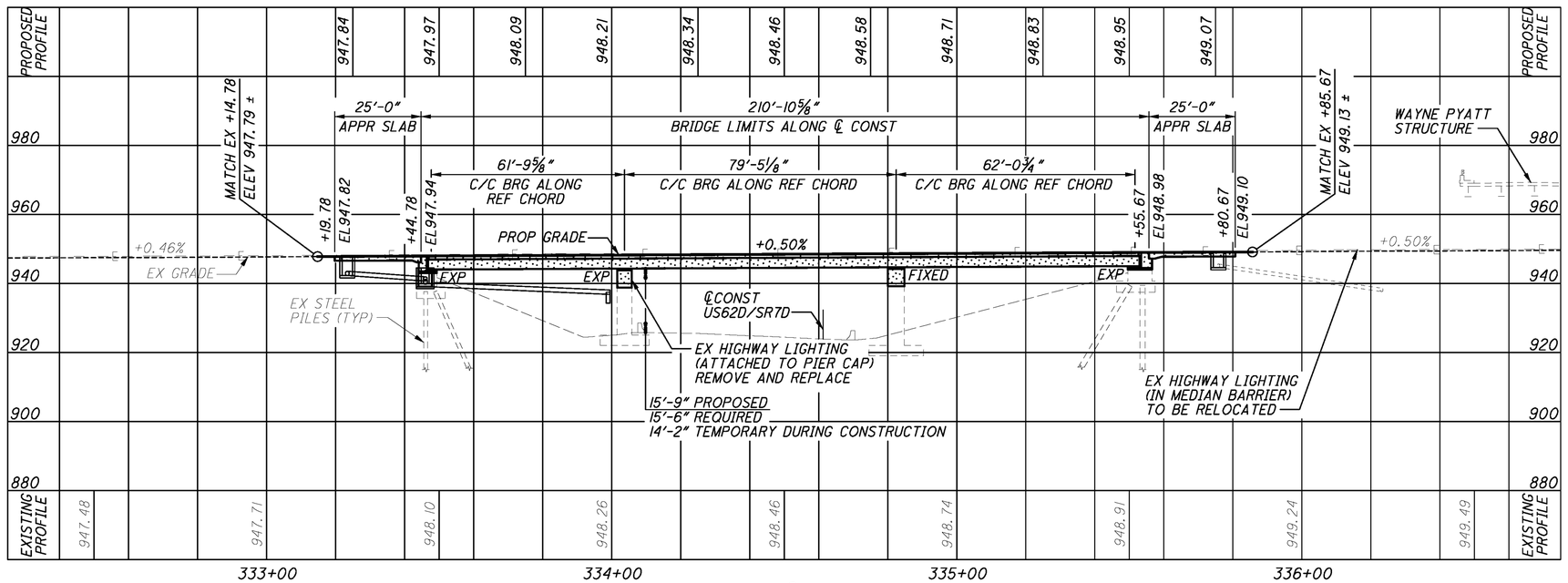
STRUCTURE NUMBER MAH-680-0632



PLAN

I-680 SPIRAL DATA

P.I. STA. 333+23.32	x = 397.27'
D = 68° 50' 21" (RT)	y = 34.72'
Dc = 7° 29' 48"	k = 199.54'
R = 764.29'	p = 8.70'
Ls = 400.00'	D c = 38° 51' 10" (RT)
f s = 14° 59' 36"	Lc = 518.27'
LT = 267.63'	Ts = 729.21'
ST = 134.21'	Es = 172.76'



PROFILE ALONG ℄ CONSTRUCTION

BENCHMARK DATA

BM #1 STA. 335+17.26, ELEV. 949.62, OFFSET 91.17, LEFT
BM #2 STA. 335+54.60, ELEV. 951.10, OFFSET 47.20, LEFT

NOTES

PROPOSED WORK SHALL INCLUDE REMOVAL OF THE EXISTING SUPERSTRUCTURE, CONSTRUCTING A NEW 3-SPAN CURVED STEEL PLATE GIRDER SUPERSTRUCTURE, AND REPLACING THE PIER CAPS, BEARINGS, BACKWALLS, BARRIER, AND APPROACH SLABS.

I-680 DESIGN TRAFFIC:

LEGAL SPEED = 50 MPH	DESIGN SPEED = 55 MPH
2010 ADT = 39050	2010 ADTT = 5860
2030 ADT = 42290	2030 ADTT = 6350

DIRECTIONAL DISTRIBUTION = 0.58

US62D/SR7D DESIGN TRAFFIC:

LEGAL SPEED = 50 MPH	DESIGN SPEED = 55 MPH
2010 ADT = 13280	2010 ADTT = 800
2030 ADT = 13520	2030 ADTT = 820

LEGEND

⊕ 15'-6" REQUIRED MINIMUM VERTICAL CLEARANCE
15'-9" ACTUAL MINIMUM VERTICAL CLEARANCE
14'-2" TEMPORARY MINIMUM VERTICAL CLEARANCE DURING CONST

(*) - SAW CUT, FULL DEPTH

(▲) - BRIDGE TERMINAL ASSEMBLY, TYPE I

(*) - TERMINATION OF ITEM 518 - 6" N.P.C.P.P., AS PER PLAN

EXISTING STRUCTURE

TYPE: 3-SPAN STEEL BEAM CONTINUOUS BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES

SPANS: 61'-9⅝"±, 79'-5⅛"±, AND 62'-0¾"± = 203'-3½"± (C/C BEARINGS ALONG REFERENCE CHORD)

ROADWAY: 85'-8"± F/F GUARDRAIL WIDTH (RADIAL)

LOADING: CF 2000 (57) ADEQUATE FOR A.A.S.H.T.O. ALTERNATE LOADING

SKEW: 48°28'18" TO THE REFERENCE CHORD, RIGHT FORWARD

APPROACH SLABS: 25'-0" LONG (AS-I-54)

ALIGNMENT: 7°30'00" CURVE RIGHT WITH SPIRAL TRANSITION

CROWN: SUPERELEVATED AT 8.0% - STA 329+94.11 TO 335+12.38

SUPERELEVATED FROM 8.0% TO 1.6% - STA 335+12.38 TO 339+12.38

STRUCTURAL FILE NUMBER: 5007143

DATE BUILT: 1963

PROPOSED STRUCTURE

PROPOSED WORK: SUPERSTRUCTURE REPLACEMENT

TYPE: 3-SPAN CONTINUOUS CURVED STEEL PLATE GIRDERS (ASTM A709 GRADE 50W) (FASCIA GIRDERS PAINTED) WITH COMPOSITE REINFORCED CONCRETE DECK

SPANS: 61'-9⅝", 79'-5⅛", AND 62'-0¾" = 203'-3⅜" (C/C BEARINGS ALONG REFERENCE CHORD)

ROADWAY: 42'-0" TOE/TOE PARAPET EACH DIRECTION (RADIAL)

LOADING: HS25 AND ALTERNATE MILITARY WITH 60 PSF FWS, FATIGUE CASE I

SKEW: 48°28'18" TO THE REFERENCE CHORD, RIGHT FORWARD

APPROACH SLABS: AS-I-81, 25' LONG (MODIFIED)

ALIGNMENT: 7°30'00" CURVE RIGHT WITH SPIRAL TRANSITION

CROWN: SUPERELEVATED AT 8.0% - STA 329+94.11 TO 335+12.38

SUPERELEVATED FROM 8.0% TO 1.6% - STA 335+12.38 TO 339+12.38

COORDINATES: LATITUDE N 41° 5' 26" LONGITUDE W 80° 39' 2"

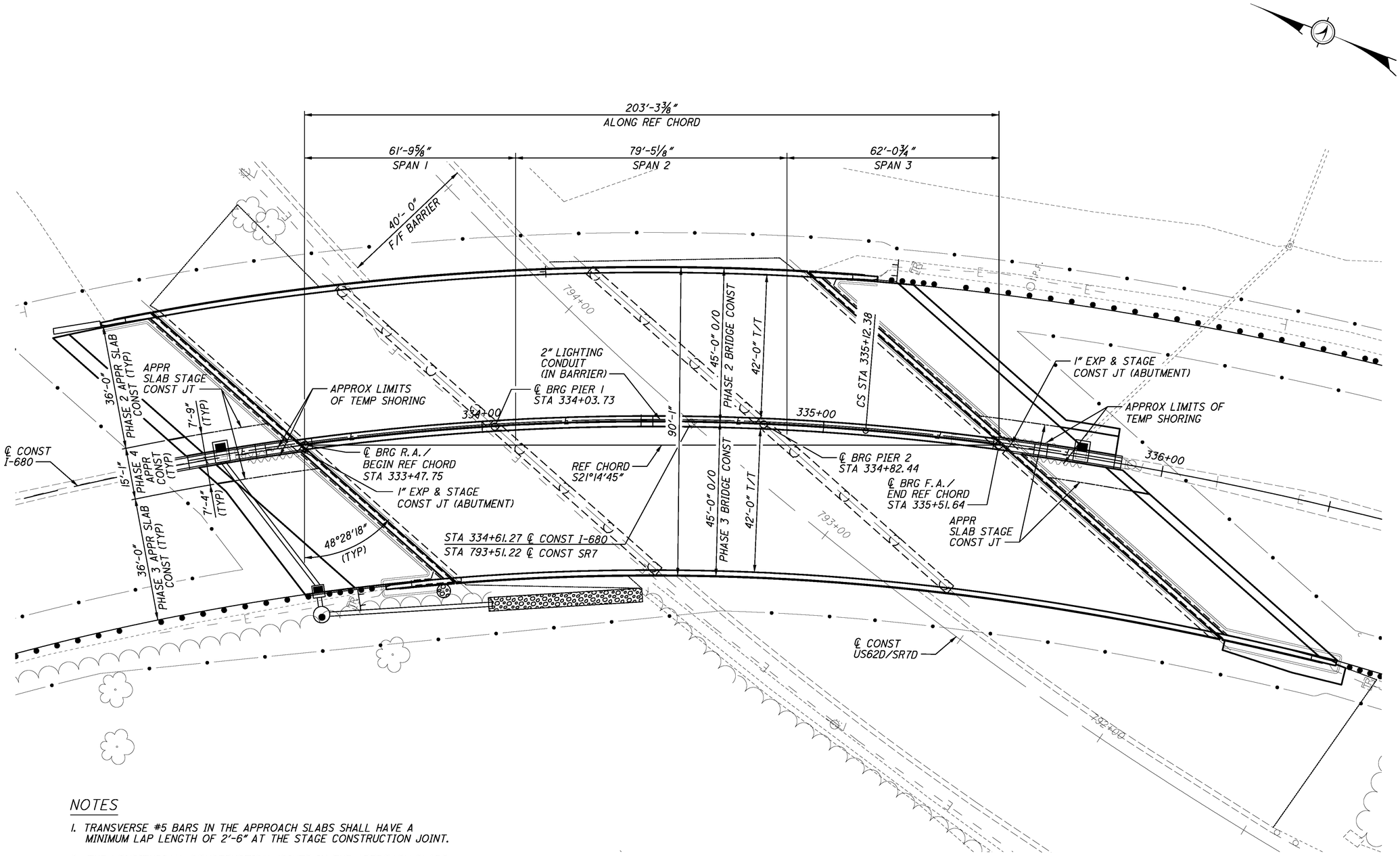
DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
KJB	KJB	JCS	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007143	

MAHONING COUNTY
STA. 333+44.78
STA. 335+55.67

SITE PLAN
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508



NOTES

1. TRANSVERSE #5 BARS IN THE APPROACH SLABS SHALL HAVE A MINIMUM LAP LENGTH OF 2'-6" AT THE STAGE CONSTRUCTION JOINT.
2. THE LONGITUDINAL CONSTRUCTION JOINTS IN THE APPROACH SLABS SHALL BE SEALED WITH HIGH MOLECULAR WEIGHT METHACRYLATE. THE WIDTH OF THE SEALING SHALL BE 2 FEET CENTERED OVER THE JOINT. PAYMENT SHALL BE INCLUDED WITH ITEM 526 REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN.
3. SEE STANDARD DRAWING HL-30.33 FOR DETAILS OF THE CONDUIT TRANSITION FROM THE MEDIAN ROADWAY BARRIER TO THE BRIDGE RAILING.

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KJB	KJB	JCS	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007143	

GENERAL PLAN
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508

PROPOSED WORK

THE WORK COVERED BY THESE PLANS INCLUDES REMOVAL AND REPLACEMENT OF THE CONCRETE DECK, STEEL GIRDERS, BRIDGE RAILS, APPROACH SLABS, BEARINGS, AND PORTIONS OF THE SUBSTRUCTURE. OTHER WORK INCLUDES PATCHING PORTIONS OF THE EXISTING SUBSTRUCTURE AND SEALING CONCRETE SURFACES. TRAFFIC IS TO BE MAINTAINED OVER THE STRUCTURE DURING CONSTRUCTION.

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

A-1-69	DATED	07-19-02
AS-1-81	DATED	07-19-02
EXJ-4-87	DATED	07-19-02
GSD-1-96	DATED	07-19-02
PCB-91	DATED	07-19-02
SBR-1-99	DATED	07-19-02

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002, AND THE ODOT BRIDGE DESIGN MANUAL.

SPECIAL DESIGN SPECIFICATIONS

THIS BRIDGE REQUIRED THE USE OF A TWO-DIMENSIONAL MODEL USING THE GRILLAGE DESIGN METHOD TO ANALYZE THE STRUCTURE. THE COMPUTER PROGRAM USED FOR STRUCTURAL ANALYSIS WAS DESCUS-I, NETWORK VERSION 4.1. THE BRIDGE COMPONENTS DESIGNED BY THIS METHOD AND THE LIVE LOAD DISTRIBUTION FACTORS USED WERE:

DEAD LOAD DISTRIBUTION:
EACH NON-COMPOSITE GIRDER WAS ASSUMMED TO CARRY ITS OWN SELF WEIGHT, MULITPLIED BY 1.15 TO ACCOUNT FOR FIELD SPLICES, CROSS FRAMES, ETC. AND A PORTION OF THE DECK DEAD LOAD RELATIVE TO ITS TRIUBUTARY AREA. DEAD LOADS ASSUMED TO BE SUPPORTED BY THE COMPOSITE GIRDER SECTION INCLUDED THE WEIGHT OF THE BARRIER AND THE FUTURE WEARING SURFACE. THESE LOADS WERE DIVIDED EVENLY AMONGST THE GIRDERS OF EACH SUPERSTRUCTURE.

LIVE LOAD DISTRIBUTION FACTORS:
EXTERIOR MEMBERS A, E, & F -
- 1.54 FOR AXLE LOAD MOMENTS AND SHEARS
- 0.77 FOR LANE LOAD MOMENTS AND SHEARS

INTERIOR MEMBERS B, C, D, G, & H -
- 1.82 FOR AXLE LOAD MOMENTS AND SHEARS
- 0.91 FOR LANE LOAD MOMENTS AND SHEARS

INTERIOR MEMBER J -
- 1.36 FOR AXLE LOAD MOMENTS AND SHEARS
- 0.68 FOR LANE LOAD MOMENTS AND SHEARS

INTERIOR MEMBER K AND EXTERIOR MEMBER L -
- 0.91 FOR AXLE LOAD MOMENTS AND SHEARS
- 0.45 FOR LANE LOAD MOMENTS AND SHEARS

DESIGN LOADING

HS25, CASE I AND THE ALTERNATE MILITARY LOADING.
FUTURE WEARING SURFACE (FWS) OF 60 LBS/SQ FT.

DESIGN DATA

CONCRETE CLASS HP - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE & RAILING)

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615 OR A996 GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

STRUCTURAL STEEL - ASTM A709 GRADE 50W YIELD STRENGTH 50,000 PSI

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL
2-1/2" CONCRETE COVER

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

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

REMOVE ENTIRE NORTHBOUND AND SOUTHBOUND SUPERSTRUCTURES. REMOVE PORTIONS OF ABUTMENTS, PIERS, AND WINGWALLS AS SHOWN IN THE PLANS. THIS ITEM SHALL INCLUDE THE INSTALLATION, MAINTENANCE, AND REMOVAL OF ALL REQUIRED TEMPORARY SUPPORTS. IF AN ALTERNATE TEMPORARY SUPPORT SYSTEM IS USED, SUPPORTS SHALL STILL BE LOCATED WHERE SHOWN AND NOTED IN IN THE PLANS. THE ALTERNATE TEMPORARY SUPPORT SYSTEM SHALL BE DESIGNED FOR THE LOADS PROVIDED IN THE PLANS AT NO COST TO THE DEPARTMENT.

CUT LINE CONSTRUCTION JOINT PREPARATION

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

SUBSTRUCTURE CONCRETE REMOVAL

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

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 SECTIONS 102.05 AND 513.04. BASE CONTRACT BID PRICES UPON A RECONGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

ITEM 509 - REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN:

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE.

REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN:

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 709.00.

DECK PLACEMENT DESIGN ASSUMPTIONS

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 1.6 KIPS FOR A TOTAL MACHINE LOAD OF 12.8 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

SCREED MACHINE MUST BE SUPPORTED DIRECTLY ON TOP OF THE EXTERIOR GIRDERS DURING EACH PHASE OF THE DECK POUR.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF FASCIA GIRDERS A AND L TO THE FACE OF THE SAFTEY HANDRAIL OF 59" AND NO WALKWAY SUPPORTED BY FASCIA GIRDERS E AND F.

ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT

THE FINISH COAT ON FASCIA GIRDERS A AND L, TO THE LIMITS DEFINED ON SHEET 35/44, SHALL BE PAINTED LIGHT BLUE, FEDERAL COLOR #15450. EVERYWHERE ELSE THAT PARTIAL PAINTING SPECIFIED, THE FINISH COAT SHALL BE PAINTED THE COLOR OF WEATHERING STEEL, FEDERAL COLOR #20045 OR #20059.

ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

PAYMENT FOR THE TEMPORARY SUPPORT MATERIALS, AS WELL AS ALL NECESSARY LABOR FOR THE INSTALLATION, MAINTENANCE, AND REMOVAL OF THE TEMPORARY SUPPORT SYSTEM SHALL BE PAID FOR AS ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE, AS PER PLAN

PAYMENT FOR THIS ITEM SHALL INCLUDE ALL ADDITIONAL LABOR, MATERIAL, AND EQUIPMENT REQUIRED TO INSTALL THE MASONRY PLATES AND ANCHOR BOLTS REQUIRED AT THE REAR ABUTMENT, AND THE ANCHOR BOLTS REQUIRED AT PIER 2.

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN

INCLUDED IN THIS PAY ITEM IS FILLING AND PLUGGING THE EXISTING WEEPHOLES AT THE REAR AND FORWARD ABUTMENTS. THERE ARE THIRTY-ONE, 4" DIAMETER WEEPHOLES THAT ARE 3'-11" LONG EACH FOR A TOTAL LENGTH OF 118'-10". THE WEEPHOLES SHALL ALL BE FILLED WITH A NONSHRINK, NONMETALLIC GROUT.

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN (INSPECTED 11-04-2005)

LOCATION	MEASURED AREA (2005)	PROJECTION FACTOR	REPAIR AREA (2010)	SEE SHEET
REAR ABUT.	26 SQ FT	1.10	29 SQ FT	12 / 44
PIER 1	0 SQ FT	1.10	0 SQ FT	21 / 44
PIER 2	15 SQ FT	1.10	17 SQ FT	24 / 44
FORWARD ABUT.	37 SQ FT	1.10	41 SQ FT	16 / 44
		TOTAL	87 SQ FT	

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS, AS PER PLAN

THE PROVISIONS OF CMS 526 SHALL APPLY EXCEPT AS NOTED BELOW.

CLASS HP CONCRETE, MIX 4, AS PER PLAN, SHALL BE THE ONLY MIX DESIGN OPTION. THE PROPORTIONS FOR THE STARTING MIX DESIGN SHALL BE AS SHOWN FOR ITEM 511 - CLASS HP CONCRETE, AS PER PLAN.

DESIGN AGENCY
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DESIGNED KJB | DRAWN KJB | REVIEWED JCS | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007143

GENERAL NOTES
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508

ITEM 511 - CLASS HP CONCRETE, AS PER PLAN

THE PROVISIONS OF ITEM 511 SHALL APPLY EXCEPT AS NOTED BELOW.

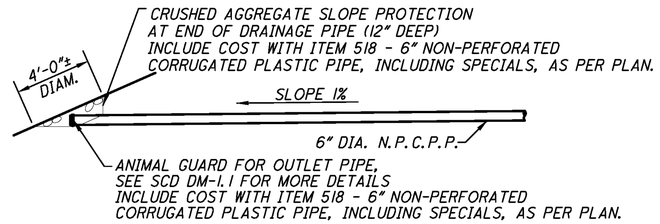
MIX OPTIONS:
ALL SUPERSTRUCTURE, BRIDGE DECK, SIDEWALK, APPROACH SLABS AND PARAPET CONCRETE SHALL BE THIS MIX (HP4, AS PER PLAN). THE FOLLOWING PROPORTIONS WILL BE USED AS A STARTING MIX DESIGN.

CONCRETE TABLE
QUANTITIES PER CUBIC YARD
AGGREGATES (SSD)
MIX 4, AS PER PLAN (GGBF SLAG + MICROSILICA)

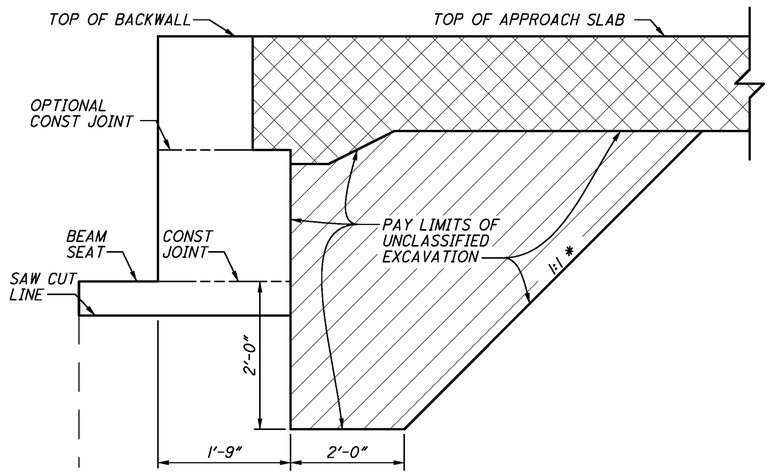
Aggr. Type	Fine Aggre. (lb)	#8 Coarse Aggre. (lb)	#57 Coarse Aggre. (lb)	Total (lb)	Cement Content (lb)	GGBF Slag (lb)	Micro-Silica (lb)	Water to Cementitious Ratio	Air Content +/-2%
Gravel	1370	650	790	2810	440	190	30	0.42	6
Limestone	1370	655	800	2820	440	190	30	0.42	6
Slag	1370	570	695	2635	440	190	30	0.42	6

* ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127

BASIS OF PAYMENT:
PAYMENT FOR THE ABOVE COMPLETED AND ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT BID PRICE FOR:
- ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN, CU YD
- ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN, CU YD



TERMINATION OF 6" N.P.C.P.P., AS PER PLAN DETAIL



LIMITS OF UNCLASSIFIED EXCAVATION DETAIL

- LIMITS OF ITEM 202, APPROACH SLAB REMOVED
- LIMITS OF ITEM 503, UNCLASSIFIED EXCAVATION

* - 1:1 SLOPE SPECIFIED FOR PURPOSE OF DETERMING PAY LIMITS ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE NECESSARY SLOPE FOR STABILITY DURING CONSTRUCTION.

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GENERAL NOTES AND MISC. DETAILS
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508

ESTIMATED QUANTITIES

COMPUTED BY: KJB DATED: 05/28/10
CHECKED BY: JBD DATED: 05/28/10

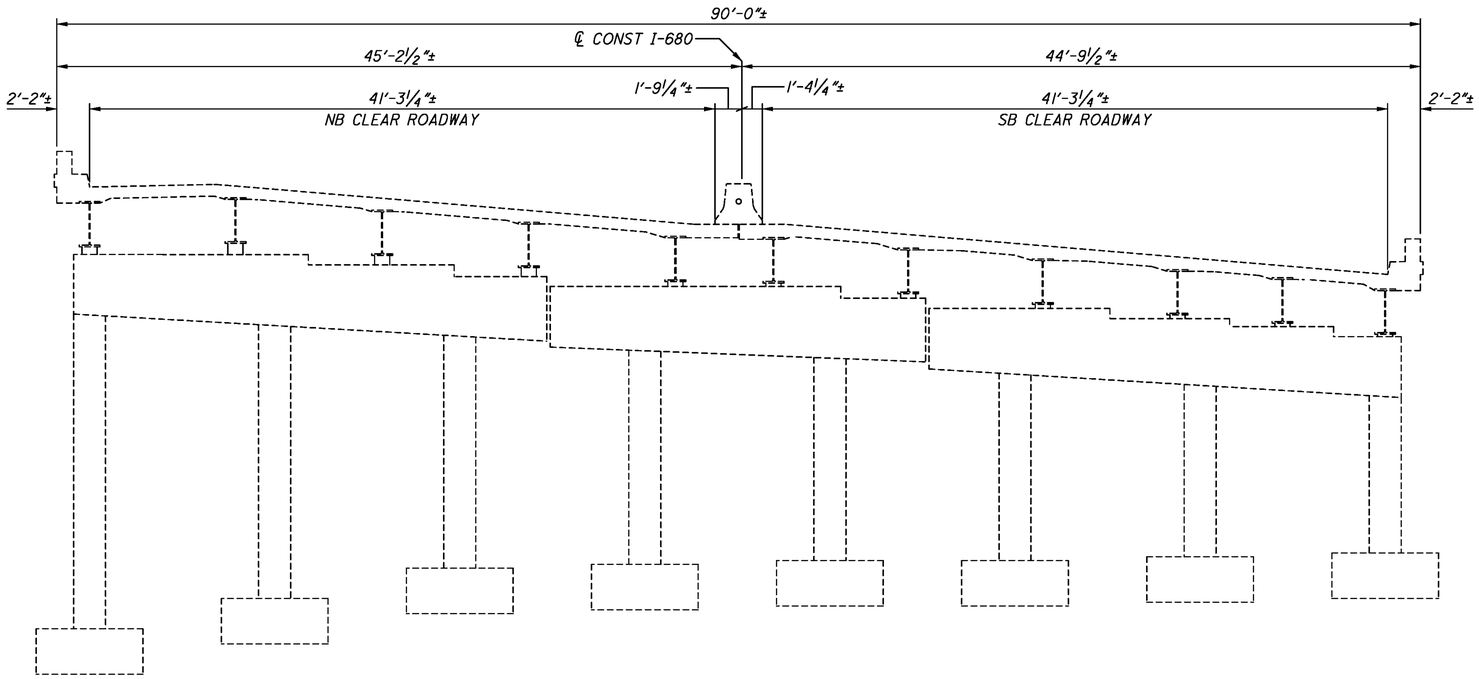
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	GEN	ABUT	PIER	SUPER	SEE SHEET NO.
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN					3/44
202	22900	267	SQ YD	APPROACH SLAB REMOVED	267				
202	23500	267	SQ YD	WEARING COURSE REMOVED	267				
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING					
503	21100	350	CU YD	UNCLASSIFIED EXCAVATION		350			
509	10001	249289	POUND	EPOXY COATED RENIFORCING STEEL, AS PER PLAN		19605	20436	209248	3/44
509	20001	650	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN			650		3/44
510	10000	1276	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT		1276			
511	43200	158	CU YD	CLASS C CONCRETE, PIER			158		
511	45700	113	CU YD	CLASS C CONCRETE, ABUTMENT		113			
511	50001	556	CU YD	CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN				556	4/44
511	50101	135	CU YD	CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN		13		122	4/44
511	52000	LUMP		CLASS HP CONCRETE, TEST SLAB					
512	10100	1794	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		416	633	745	
512	33000	57	SQ YD	TYPE 2 WATERPROOFING		57			
513	10300	439600	POUND	STRUCTURAL STEEL MEMBERS, LEVEL 5				439600	
513	20000	8916	EACH	WELDED STUD SHEAR CONNECTORS				8916	
514	00060	5160	SQ FT	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT				5160	
514	00066	5160	SQ FT	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT				5160	3/44
514	10000	5	EACH	FINAL INSPECTION REPAIR				5	
516	11210	279	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL				279	
516	44200	2	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE)				2	
				(11"x11"x3 3/8" BEARING WITH VARIOUS LOAD PLATES)					
516	44200	7	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE)				7	
				(12"x14"x3 3/8" BEARING WITH VARIOUS LOAD PLATES)					
516	44201	2	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN				2	3/44
				(10 1/2"x10 1/2"x3 3/8" BEARING WITH VARIOUS LOAD PLATES)					
516	44201	9	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN				9	3/44
				(12"x13"x3 3/8" BEARING WITH VARIOUS LOAD PLATES)					
516	44300	2	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE)				2	
				(12 1/2"x13"x4" BEARING WITH VARIOUS LOAD PLATES)					
516	44300	9	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE)				9	
				(17"x19"x4 1/2" BEARING WITH VARIOUS LOAD PLATES)					
516	44301	2	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN				2	
				(16"x17"x4 1/2" BEARING WITH VARIOUS LOAD PLATES)					
516	44301	2	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN				2	3/44
				(16"x17"x4 1/2" FIXED BEARING WITH VARIOUS LOAD PLATES)					
516	44301	9	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN				9	3/44
				(17"x19 1/2"x4 1/2" FIXED BEARING WITH VARIOUS LOAD PLATES)					
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN					3/44
518	21200	140	CU YD	POROUS BACKFILL WITH FILTER FABRIC		140			
518	40001	335	FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN		335			3/44
518	40011	65	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN		65			4/44
519	11101	87	SQ FT	PATCHING CONCRETE STRUCTURE, AS PER PLAN		70	17		3/44
526	25001	463	SQ YD	REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN	463				3/44

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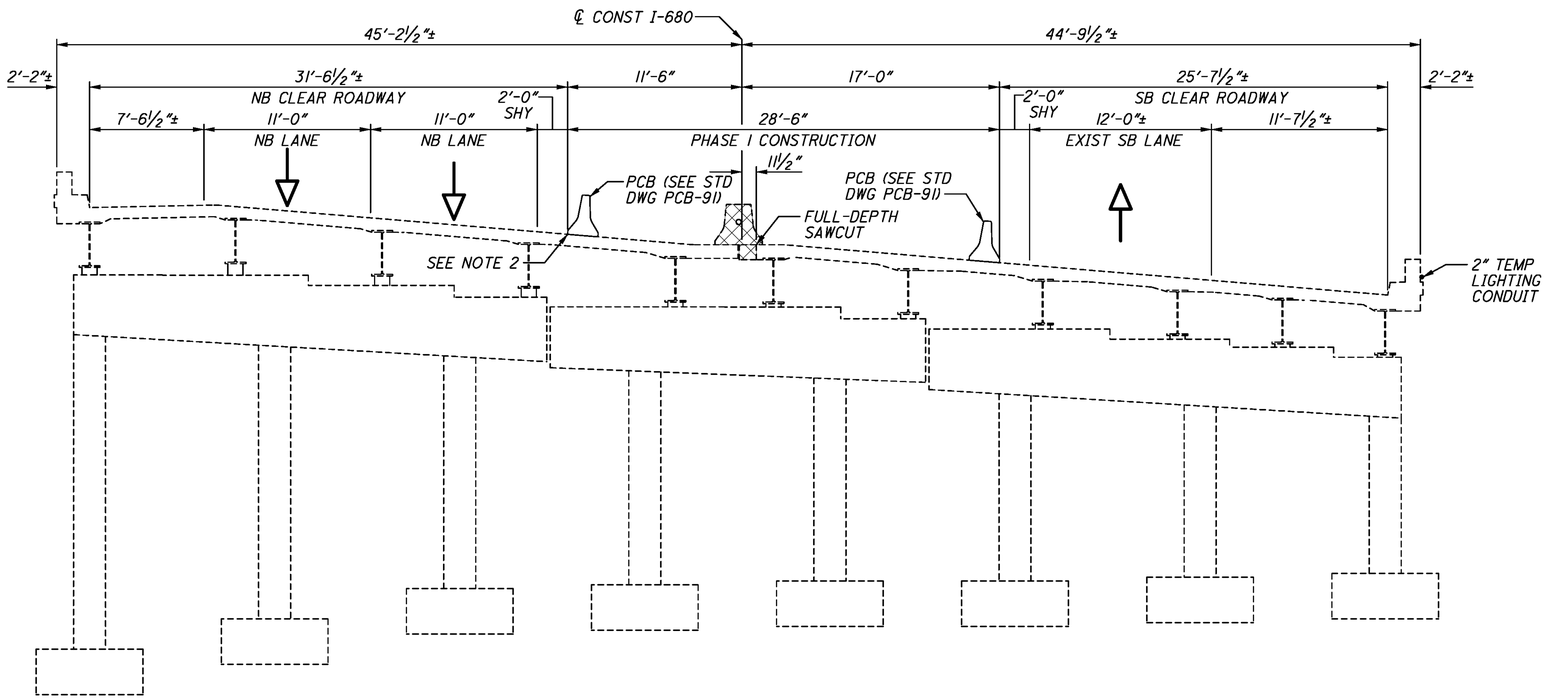
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I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508



EXISTING TRANSVERSE SECTION



PHASE I

PHASE I: REMOVE MEDIAN BARRIER AND PORTION OF DECK

1. PLACE PAVEMENT MARKINGS AND PORTABLE CONCRETE BARRIER TO MAINTAIN ONE SOUTHBOUND LANE AND TWO NORTHBOUND LANES AS SHOWN. QUANTITIES FOR PAVEMENT MARKINGS AND PORTABLE CONCRETE BARRIER ARE INCLUDED IN ROADWAY ITEMS.
2. IN ORDER TO PREVENT OVER-THE-SIDE DRAINAGE ONTO US62/SR7 BELOW, PLUG BOTH THE SLOTS AND THE JOINTS IN THIS LINE OF PORTABLE CONCRETE BARRIER BETWEEN STATIONS 333+95.00 AND 334+90.00.
3. REMOVE EXISTING ELECTRICAL UTITITY FROM MEDIAN BARRIER AND RE-ROUTE IT THROUGH TEMPORARY CONDUIT ATTACHED TO SOUTHBOUND FASCIA BARRIER. SEE LIGHTING PLANS FOR DETAILS AND PAYMENT.
4. REMOVE THE EXISTING MEDIAN BARRIER BETWEEN THE LIMITS SHOWN IN THE ROADWAY PLANS. QUANTITY FOR REMOVING THE MEDIAN BARRIER NOT ON THE STRUCTURE IS INCLUDED IN ROADWAY ITEMS.
5. FULL-DEPTH SAWCUT AND REMOVE PORTION OF THE SOUTHBOUND DECK AS SHOWN.
6. ENSURE THAT AFTER REMOVING THE PORTION OF EXISTING DECK THAT THE REMAINING CONCRETE WILL NOT BREAK APART AND FALL ONTO TRAFFIC BELOW.

LEGEND

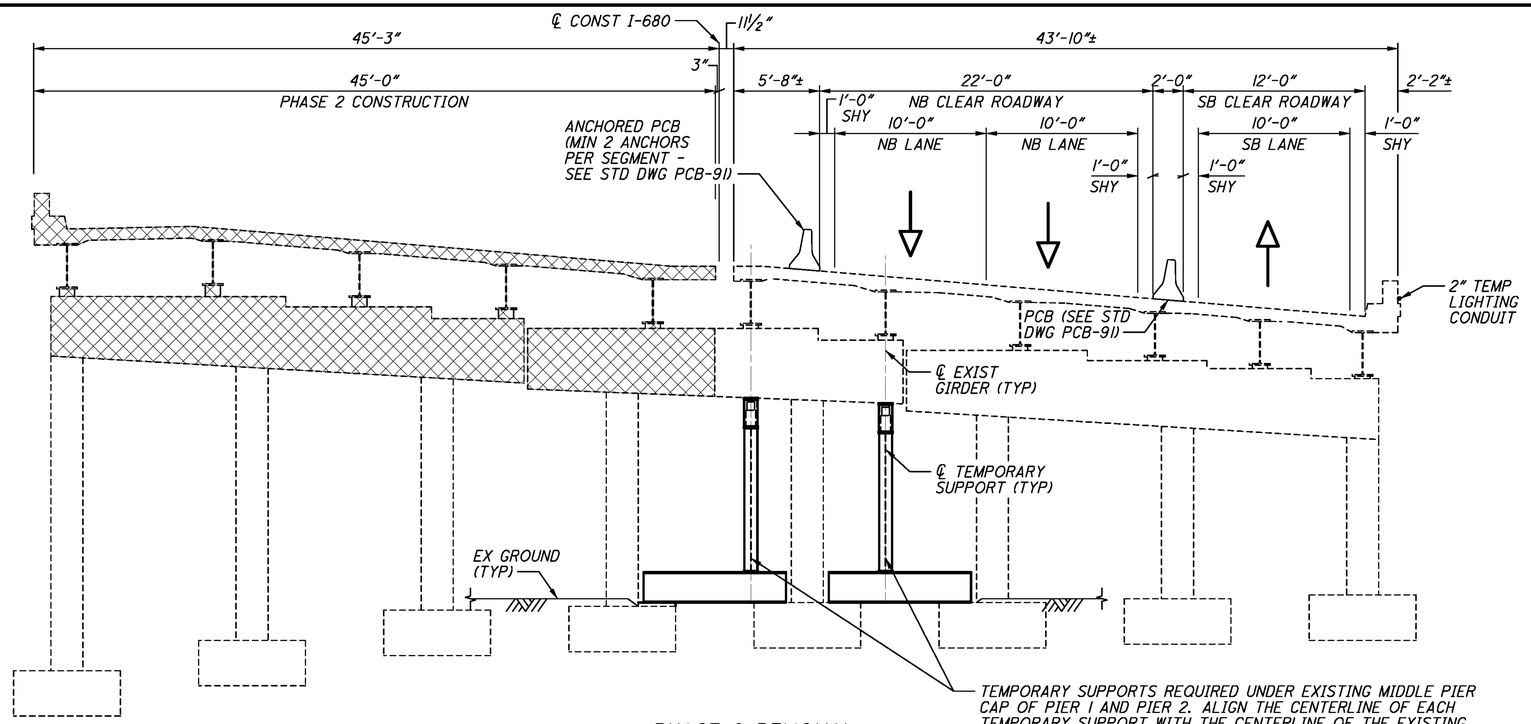
INDICATES LIMITS OF ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

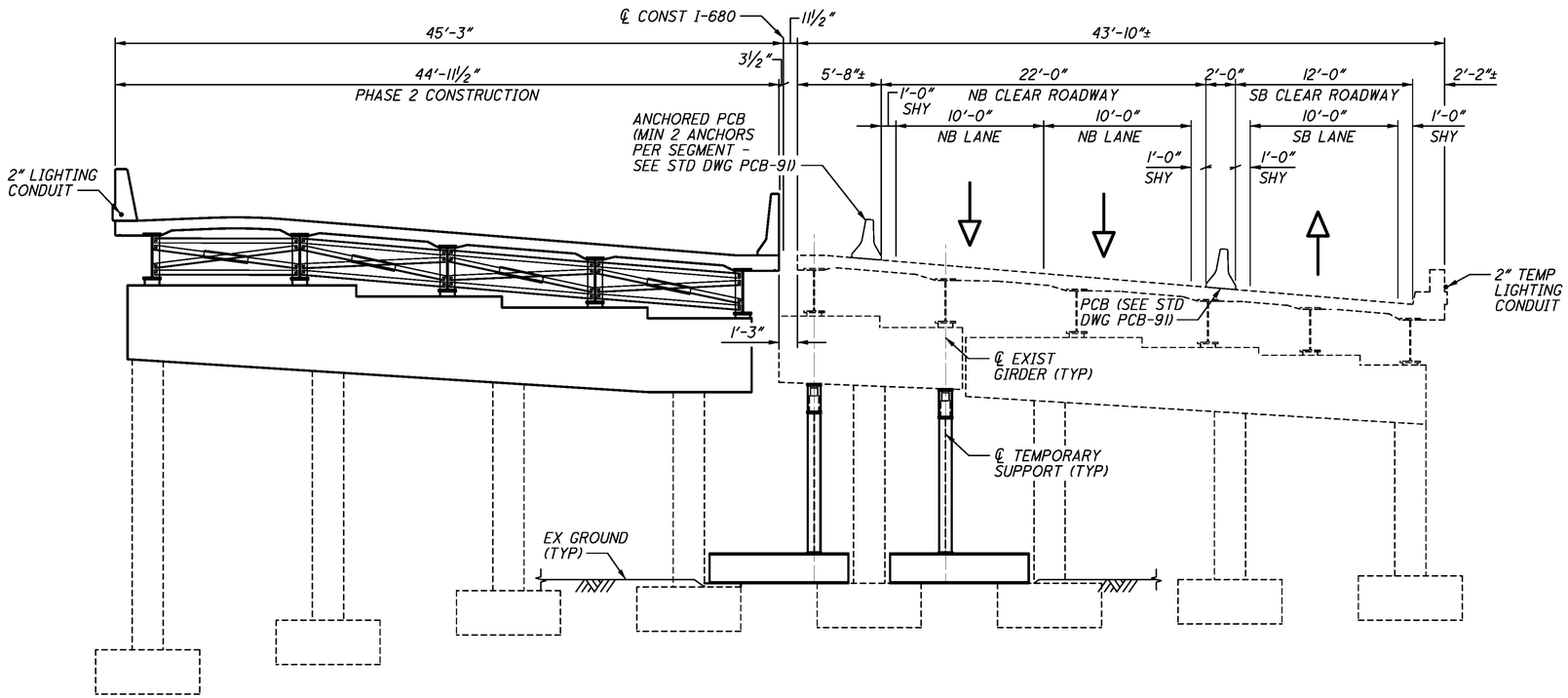
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KJB	KJB	JCS	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007143	

STAGE CONSTRUCTION
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508



PHASE 2 REMOVAL



PHASE 2 CONSTRUCTION

PHASE 2: REMOVE AND REPLACE NORTHBOUND SUPERSTRUCTURE

1. INSTALL TEMPORARY SUPPORTS UNDER EXISTING MIDDLE PIER CAP OF PIER 1 AND PIER 2 AS SHOWN ON SHEET 44 / 44 PRIOR TO ANY MIDDLE PIER REMOVALS.
2. PLACE PAVEMENT MARKINGS AND PORTABLE CONCRETE BARRIER (ANCHOR CHAIN NEAREST DECK EDGE) TO MAINTAIN ONE SOUTHBOUND LANE AND TWO NORTHBOUND LANES ON THE EXISTING SOUTHBOUND SUPERSTRUCTURE AS SHOWN. FOR MORE INFORMATION, SEE PLAN VIEW ON SHEET 9 / 44. QUANTITIES FOR PAVEMENT MARKINGS AND PORTABLE CONCRETE BARRIER ARE INCLUDED IN ROADWAY ITEMS.
3. DRIVE PHASE 2 TEMPORARY SHORING AT EACH END OF THE STRUCTURE AS SHOWN IN PLAN VIEW ON SHEET 9 / 44.
4. REMOVE THE NORTHBOUND SUPERSTRUCTURE, BARRIER, AND APPROACH SLABS, AS WELL AS PORTIONS OF THE SUBSTRUCTURE AS SHOWN IN THE PLANS.
5. REMOVE THE EXISTING INLET AT THE SOUTHERN END OF THE STRUCTURE, TAKING CARE NOT TO DISTURB THE EXISTING SEWER. QUANTITY FOR REMOVING THE INLET IS INCLUDED IN ROADWAY ITEMS.
6. CONSTRUCT THE NORTHBOUND SUPERSTRUCTURE AND BARRIER, AS WELL AS PORTIONS OF THE APPROACH SLABS, ROADWAY, AND SUBSTRUCTURE AS SHOWN IN THE PLANS. AFTER CONSTRUCTION IS IS COMPLETE, INSTALL THE ELASTOMER JOINT SEAL IN ONE CONTINUOUS PIECE AT EACH END OF THE STRUCTURE.
7. REMOVE ELECTRICAL UTILITY FROM TEMPORARY CONDUIT ATTACHED TO SOUTHBOUND FASCIA BARRIER AND PERMANENTLY RE-ROUTE IT THROUGH NORTHBOUND FASCIA BARRIER. SEE LIGHTING PLANS FOR DETAILS AND PAYMENT.
8. PROVIDE TEMPORARY PAVEMENT ADJACENT TO THE APPROACH SLABS AS SHOWN IN PLAN VIEW ON SHEET 9 / 44. QUANTITY FOR TEMPORARY PAVEMENT IS INCLUDED IN ROADWAY ITEMS.

LEGEND

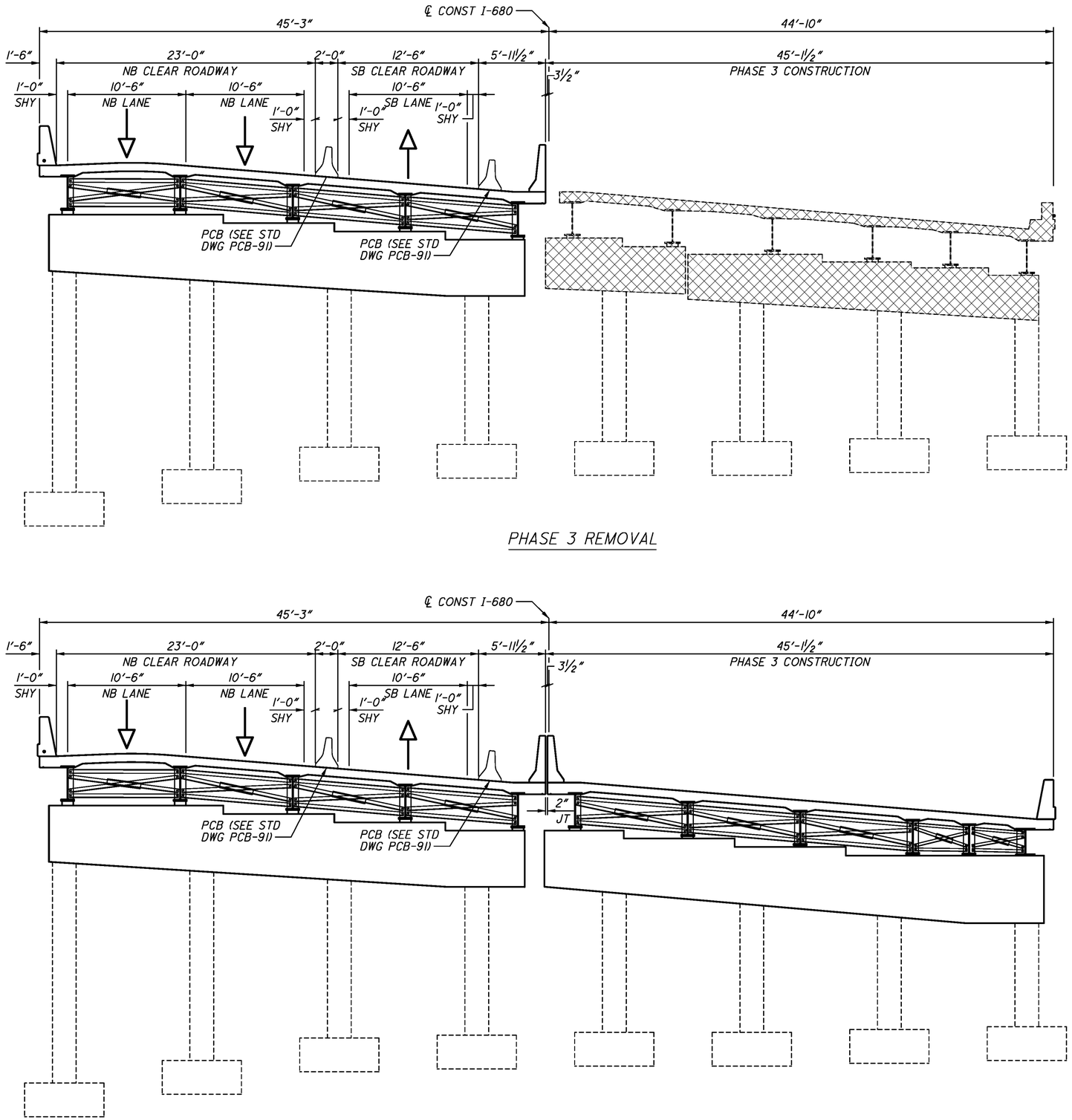
INDICATES LIMITS OF ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

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STAGE CONSTRUCTION
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508



PHASE 3 REMOVAL

PHASE 3 CONSTRUCTION

PHASE 3: REMOVE AND REPLACE SOUTHBOUND SUPERSTRUCTURE

1. PLACE PAVEMENT MARKINGS AND PORTABLE CONCRETE BARRIER TO MAINTAIN ONE SOUTHBOUND LANE AND TWO NORTHBOUND LANES ON THE NEWLY CONSTRUCTED NORTHBOUND SUPERSTRUCTURE AS SHOWN. FOR MORE INFORMATION, SEE PLAN VIEW ON SHEET 10 / 44. QUANTITIES FOR PAVEMENT MARKINGS AND PORTABLE CONCRETE BARRIER ARE INCLUDED IN ROADWAY ITEMS.
2. AFTER TRAFFIC HAS BEEN COMPLETELY SHIFTED OFF OF THE EXISTING SOUTHBOUND SUPERSTRUCTURE, REMOVE THE TEMPORARY SUPPORTS UNDER PIER 1 AND PIER 2.
3. REMOVE PHASE 2 TEMPORARY SHORING AND DRIVE PHASE 3 TEMPORARY SHORING AT EACH END OF THE STRUCTURE AS SHOWN IN PLAN VIEW ON SHEET 10 / 44.
4. REMOVE THE SOUTHBOUND SUPERSTRUCTURE, BARRIER, AND APPROACH SLABS, AS WELL AS PORTIONS OF THE SUBSTRUCTURE AS SHOWN IN THE PLANS.
5. CONSTRUCT THE PORTION OF THE CLOSED DRAINAGE SYSTEM SHOWN IN PLAN VIEW ON SHEET 10 / 44. CATCH BASIN, MANHOLE, AND CONDUIT QUANTITIES ARE INCLUDED IN ROADWAY ITEMS.
6. CONSTRUCT THE SOUTHBOUND SUPERSTRUCTURE AND BARRIER, AS WELL AS PORTIONS OF THE APPROACH SLABS, ROADWAY, AND SUBSTRUCTURE AS SHOWN IN THE PLANS. AFTER CONSTRUCTION IS IS COMPLETE, INSTALL THE ELASTOMER JOINT SEAL IN ONE CONTINUOUS PIECE AT EACH END OF THE STRUCTURE.

PHASE 4: RECONSTRUCT MEDIAN APPROACHES

(PHASE NOT SHOWN - SEE PLAN VIEW ON SHEET 11 / 44)

1. PLACE PAVEMENT MARKINGS AND PORTABLE CONCRETE BARRIER TO MAINTAIN ONE SOUTHBOUND LANE AND TWO NORTHBOUND LANES AS SHOWN. QUANTITIES FOR PAVEMENT MARKINGS AND PORTABLE CONCRETE BARRIER ARE INCLUDED IN ROADWAY ITEMS.
2. REMOVE TEMPORARY PAVEMENT PLACED DURING PHASE 2 AND PHASE 3 TEMPORARY SHORING AT EACH END OF THE STRUCTURE.
3. INSTALL THE PROPOSED INLETS AT EACH END OF THE STRUCTURE. COMPLETE THE CONSTRUCTION OF THE CLOSED DRAINAGE SYSTEM AT THE NORTHERN END AND RECONNECT THE INLET TO THE EXISTING DRAINAGE SYSTEM AT THE SOUTHERN END. INLET AND CONDUIT QUANTITIES ARE INCLUDED IN ROADWAY ITEMS.
4. CONSTRUCT THE REMAINING PORTIONS OF THE MEDIAN BARRIER, APPROACH SLABS, AND ROADWAY AS SHOWN IN THE PLANS. QUANTITY FOR CONSTRUCTING THE MEDIAN BARRIER NOT ON THE STRUCTURE IS INCLUDED IN ROADWAY ITEMS.

LEGEND

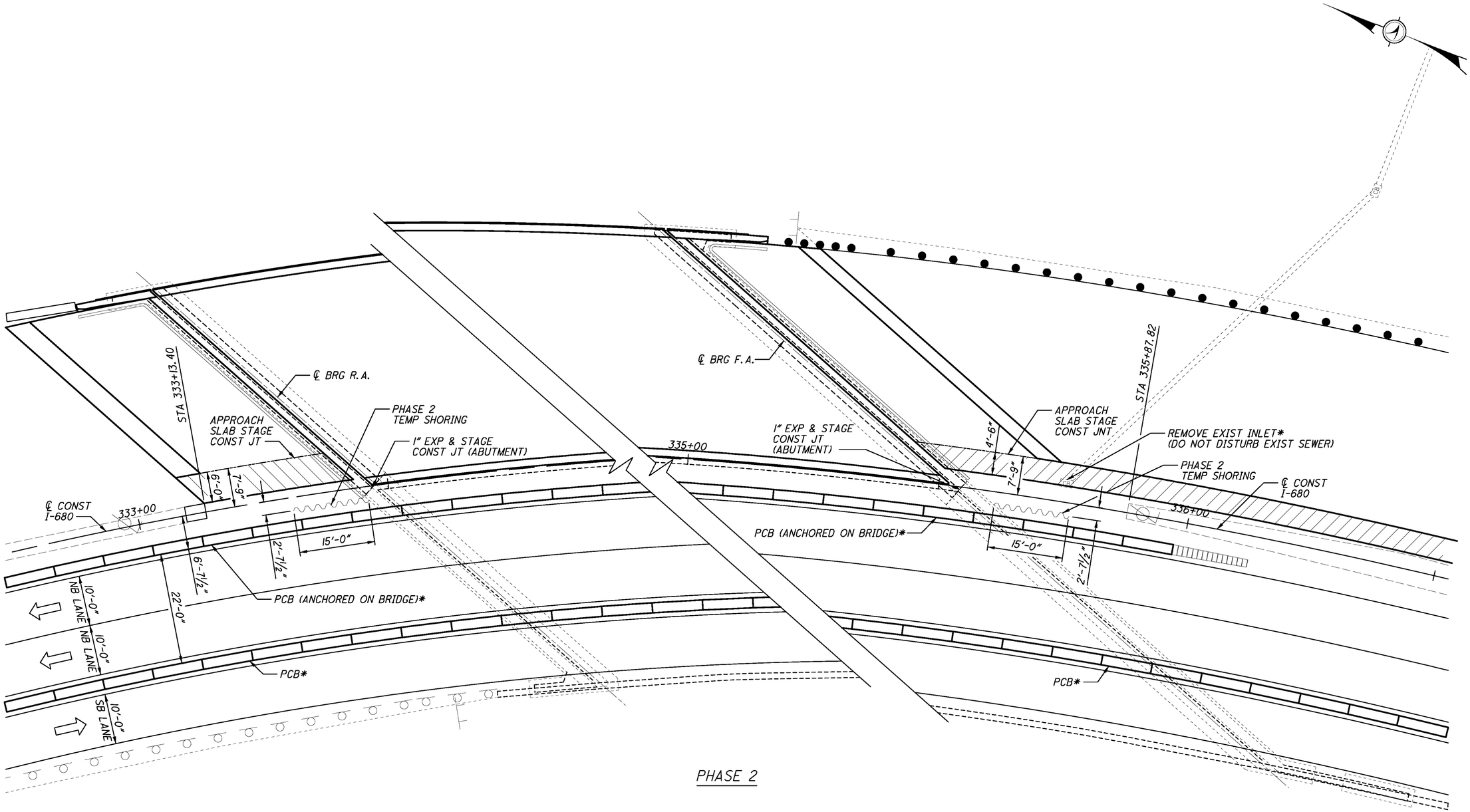
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STAGE CONSTRUCTION
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

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PID No. 25508



PHASE 2

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC*
- * - SEE ROADWAY PLANS FOR PAYMENT

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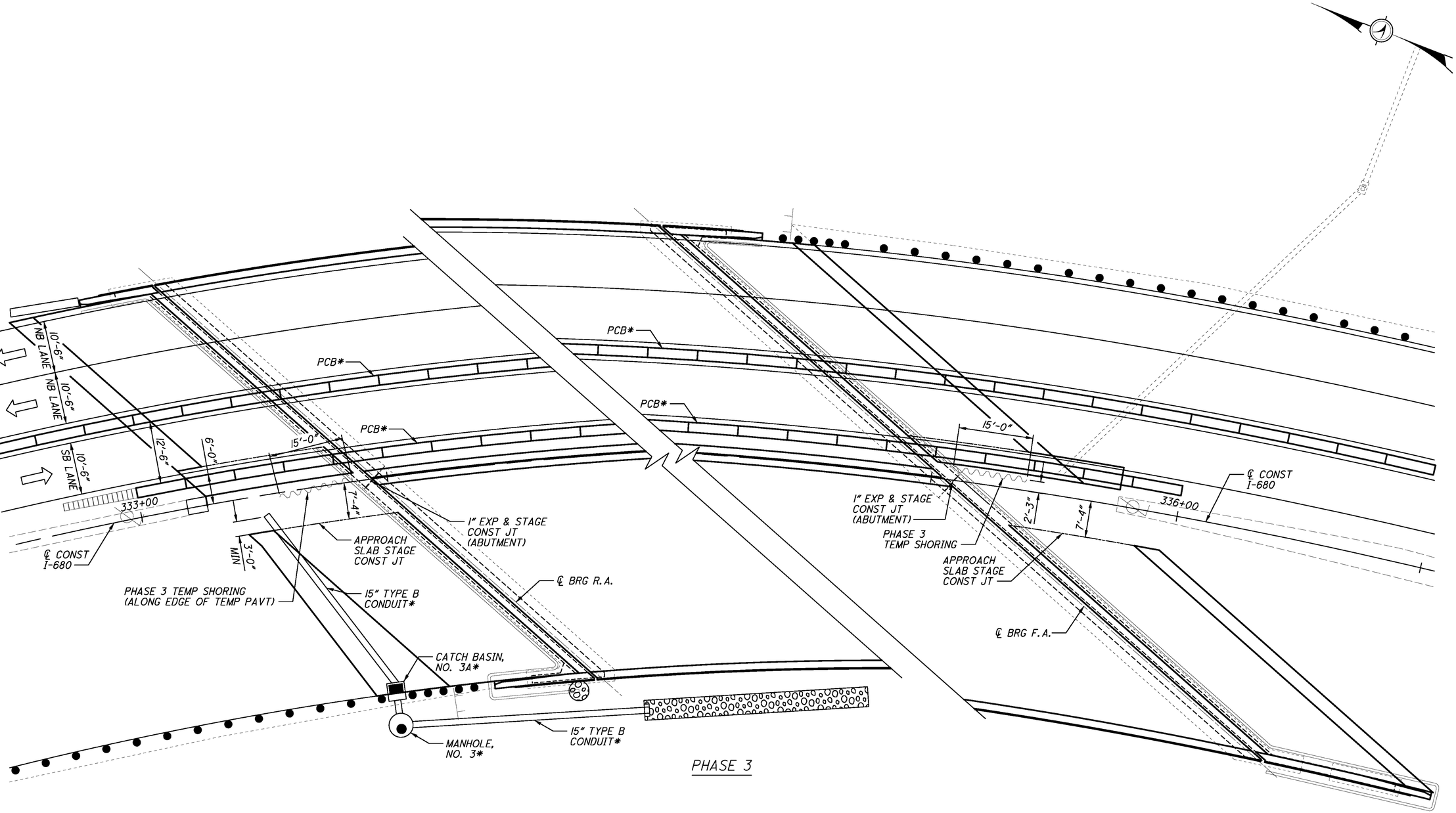
STAGE CONSTRUCTION

BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508

9/44

189/307



PHASE 3

LEGEND

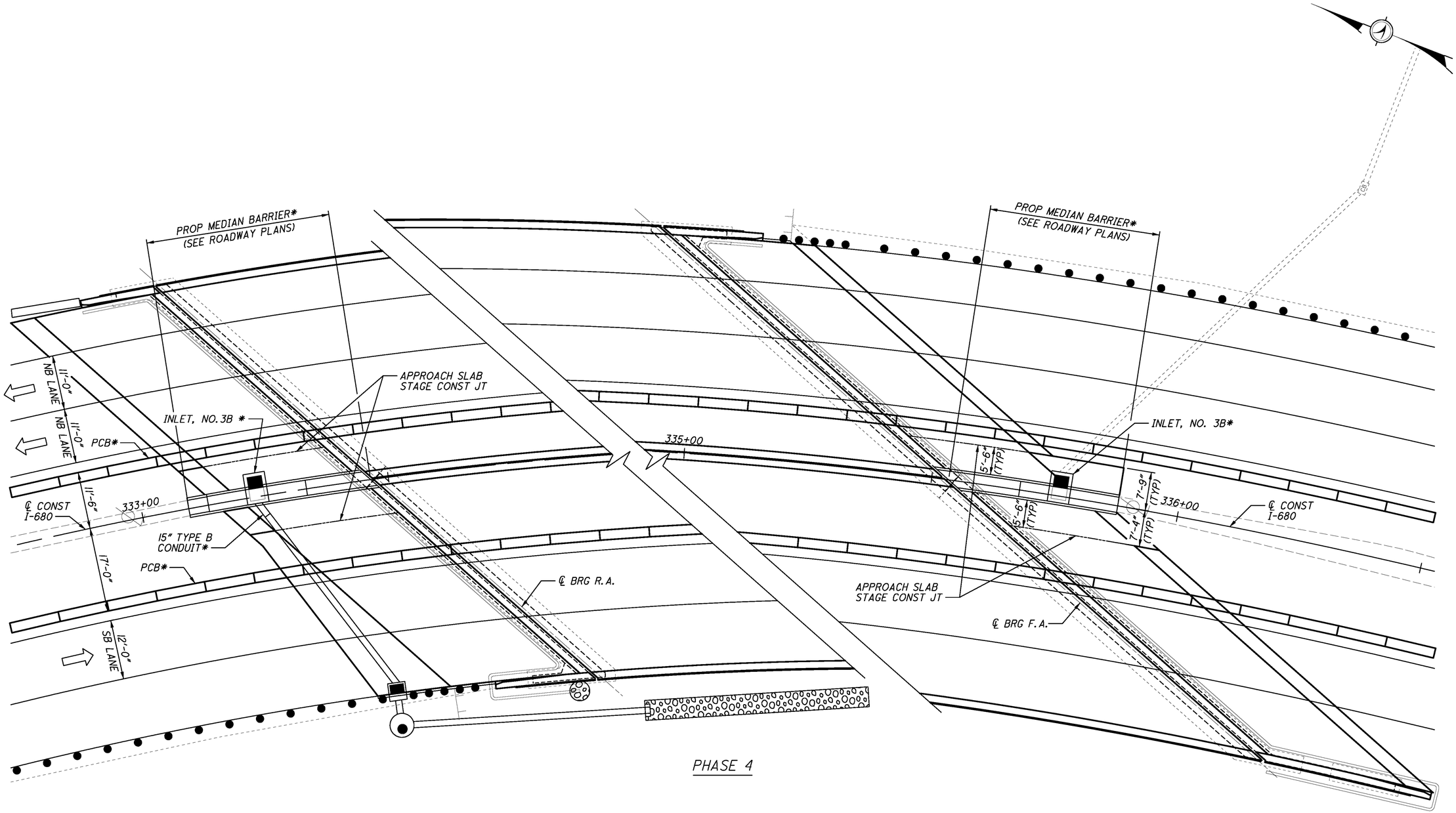
* - SEE ROADWAY PLANS FOR PAYMENT

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STAGE CONSTRUCTION
BRIDGE NO. MAH-680-0632
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MAH-680-4.29
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PHASE 4

LEGEND

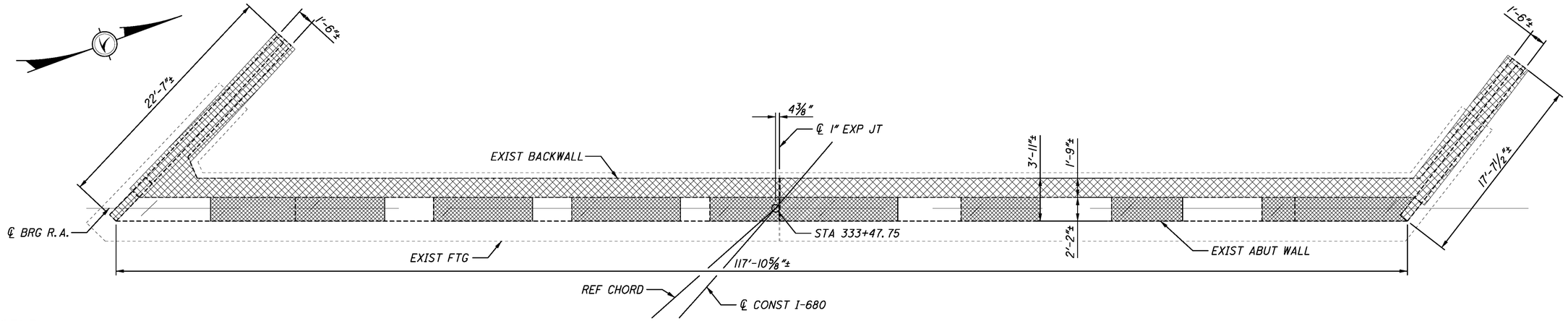
* - SEE ROADWAY PLANS FOR PAYMENT

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STAGE CONSTRUCTION
BRIDGE NO. MAH-680-0632
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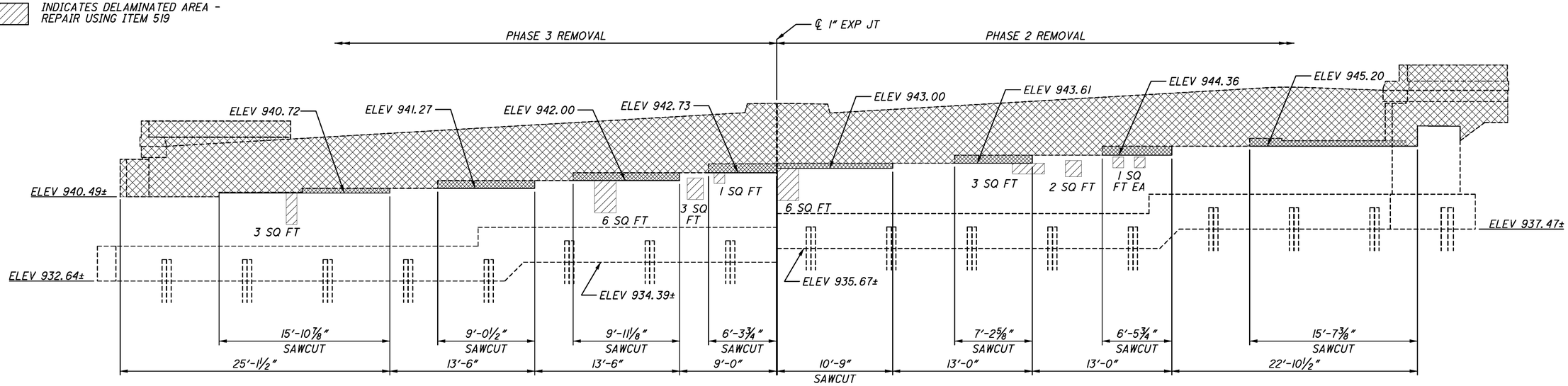


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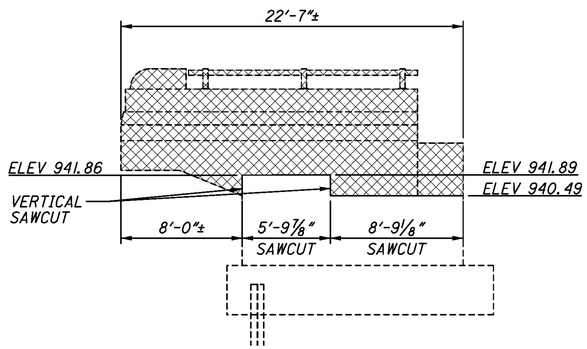
INDICATES LIMITS OF ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

INDICATES DELAMINATED AREA - REPAIR USING ITEM 519

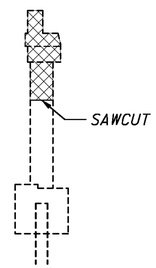
REAR ABUTMENT PLAN VIEW



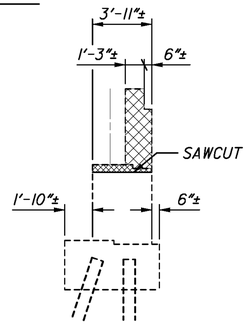
REAR ABUTMENT ELEVATION



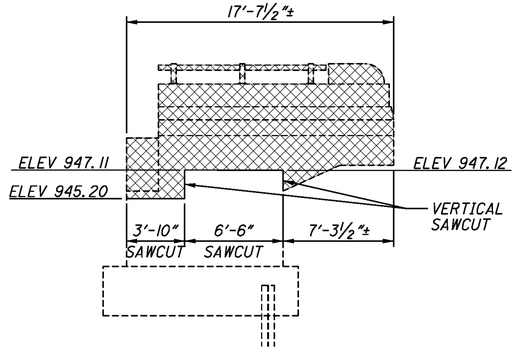
WEST WINGWALL ELEVATION



WINGWALL SECTION



ABUTMENT SECTION



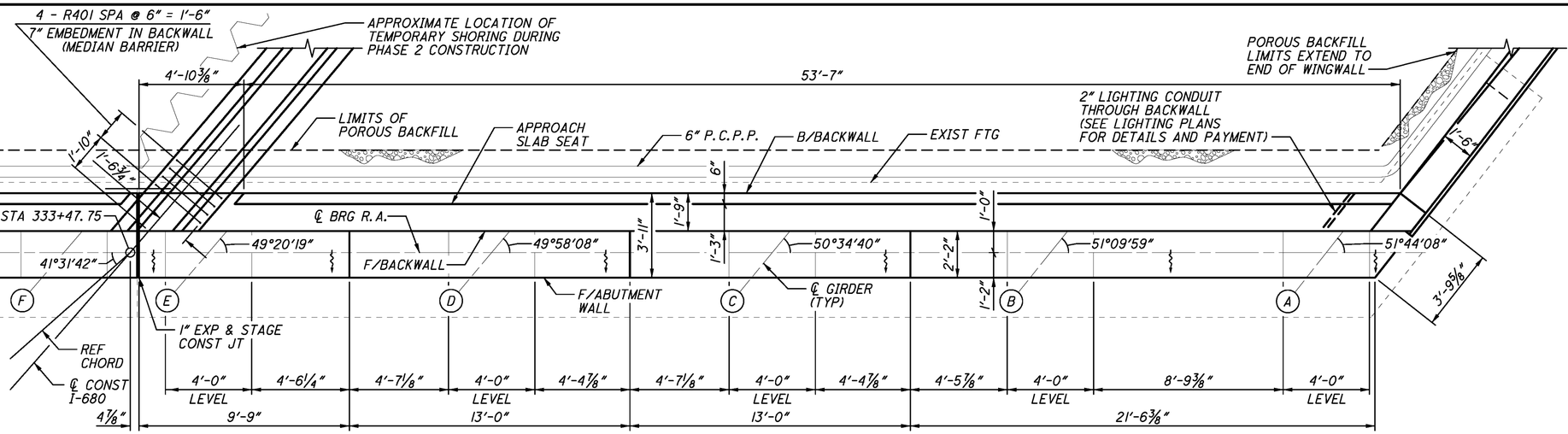
EAST WINGWALL ELEVATION

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3220 CENTRAL PARK WEST
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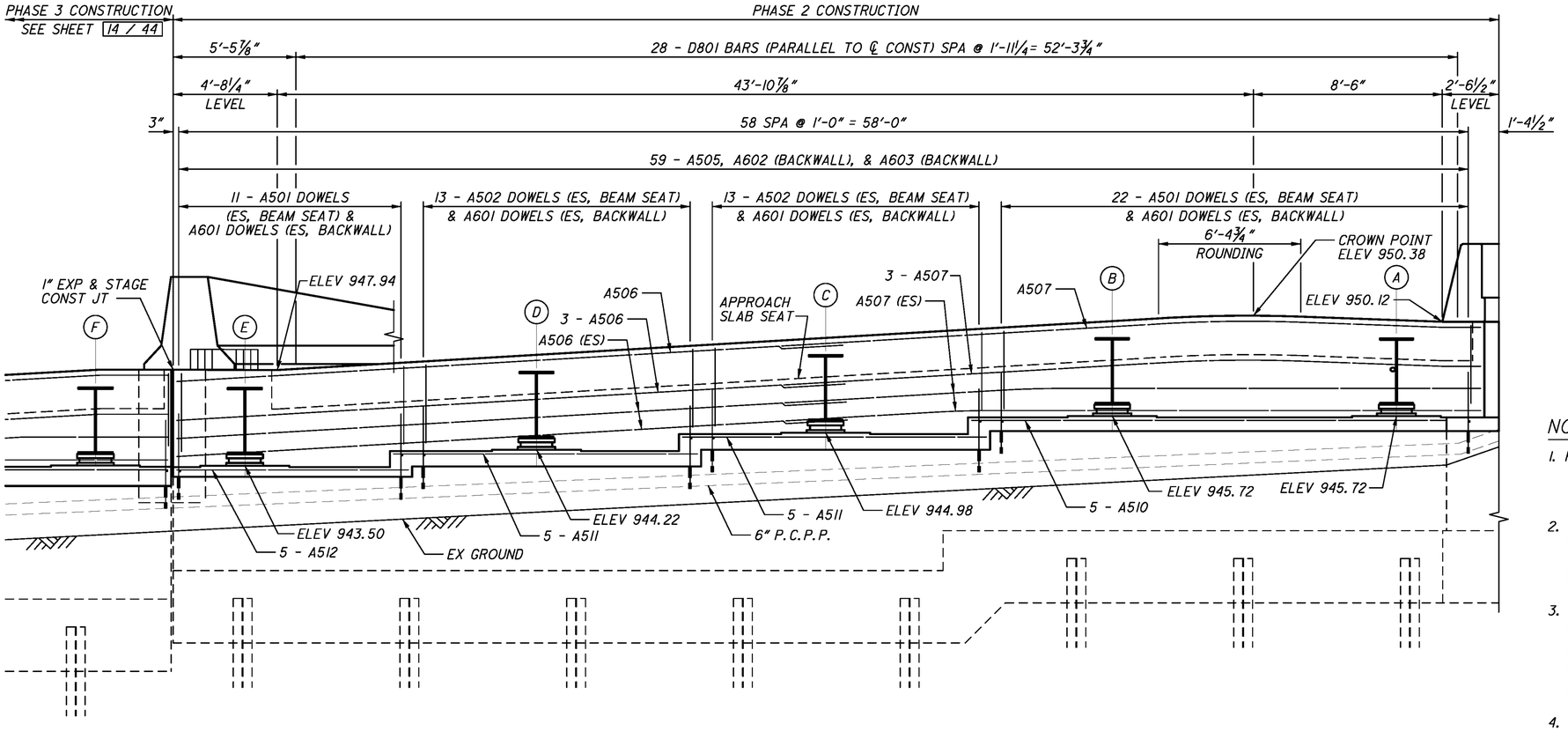
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REAR ABUTMENT REMOVAL DETAILS
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508



REAR ABUTMENT PLAN VIEW



REAR ABUTMENT ELEVATION

NOTES

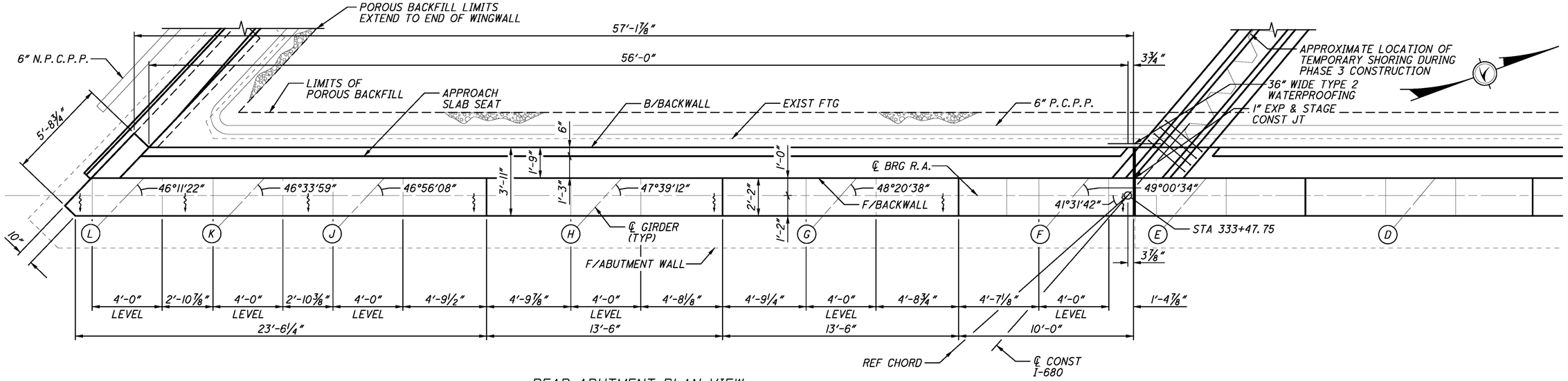
1. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.
2. BACKWALL CONCRETE: IN ADDITION TO 511.10, DO NOT PLACE BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.
3. SEALING OF BEAM SEATS: IF THE BEAMS SEATS ARE SEALED WITH AN EPOXY OR NON-EPOXY SEALER PRIOR TO SETTING THE BEARINGS, DO NOT APPLY SEALER TO THE CONCRETE SURFACES UNDER THE PROPOSED BEARING LOCATIONS. IF THESE LOCATIONS ARE SEALED, REMOVE THE SEALER TO THE SATISFACTION OF THE ENGINEER PRIOR TO SETTING THE BEARINGS. THE DEPARTMENT WILL NOT PAY FOR THIS REMOVAL.
4. TYPICAL LAP LENGTHS:
   2'-9" MINIMUM FOR #5 BARS
5. SEE SHEET 20 / 44 FOR ABUTMENT SECTIONS.

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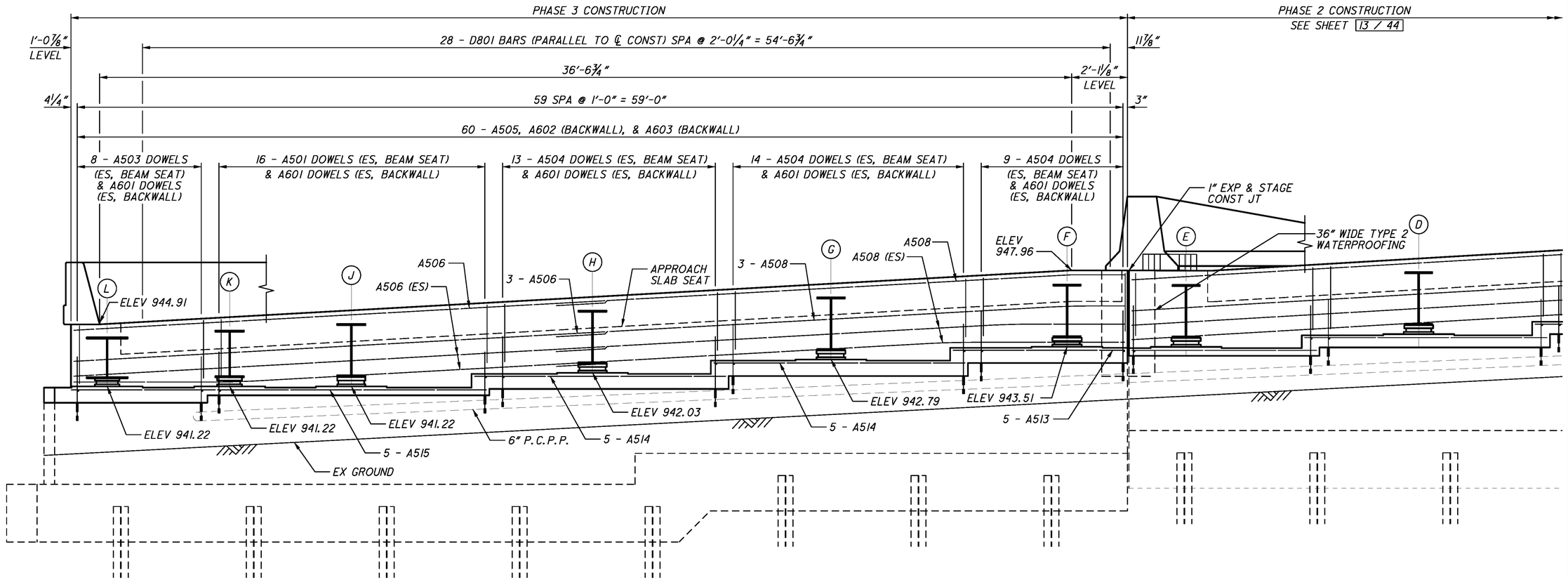
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MAH-680-4.29
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REAR ABUTMENT PLAN VIEW



REAR ABUTMENT ELEVATION

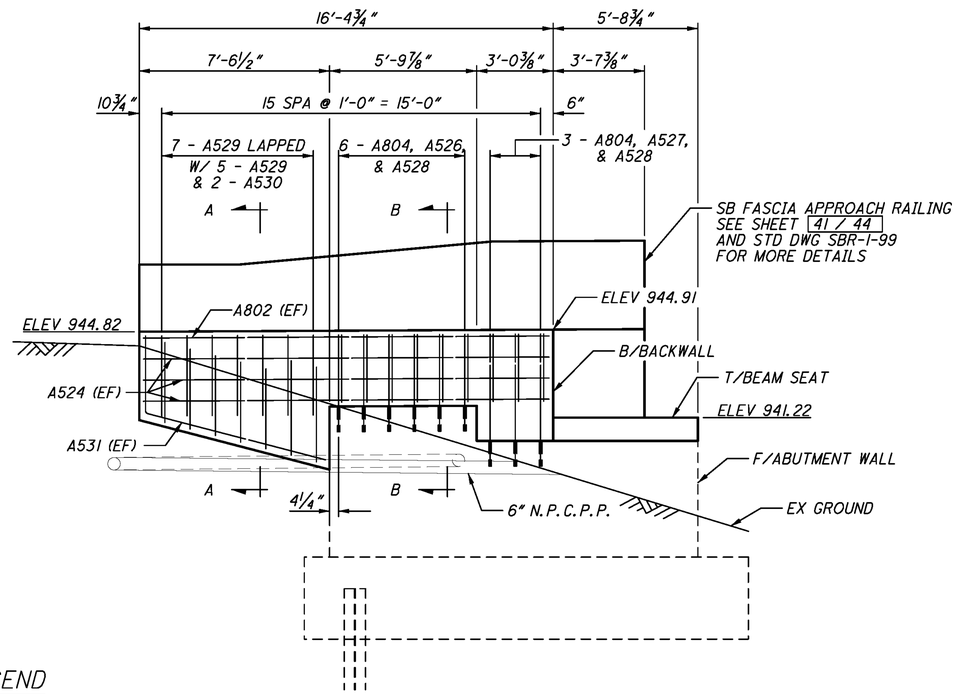
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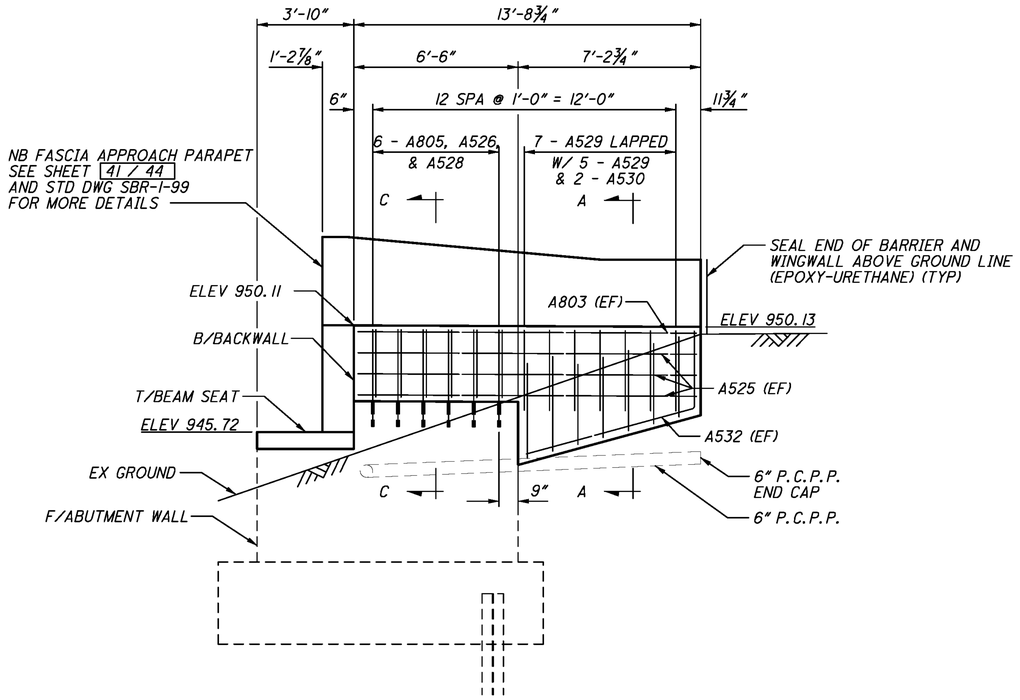
REAR ABUTMENT DETAILS

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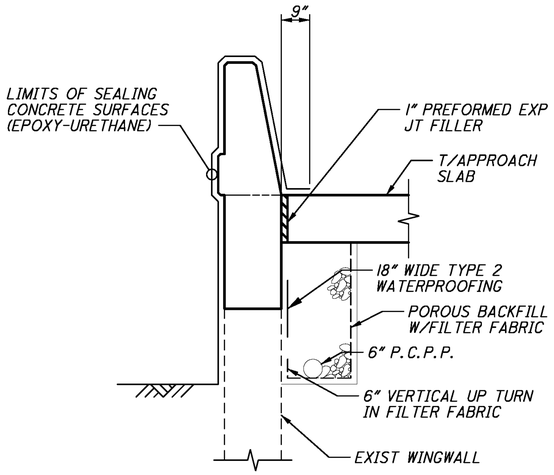
REAR ABUTMENT - WEST WINGWALL ELEVATION



REAR ABUTMENT - EAST WINGWALL ELEVATION

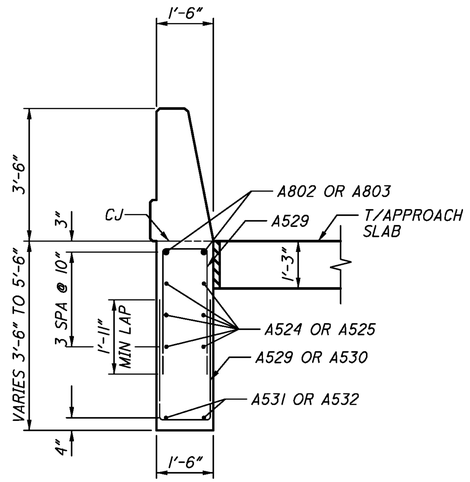
LEGEND

EF = EACH FACE

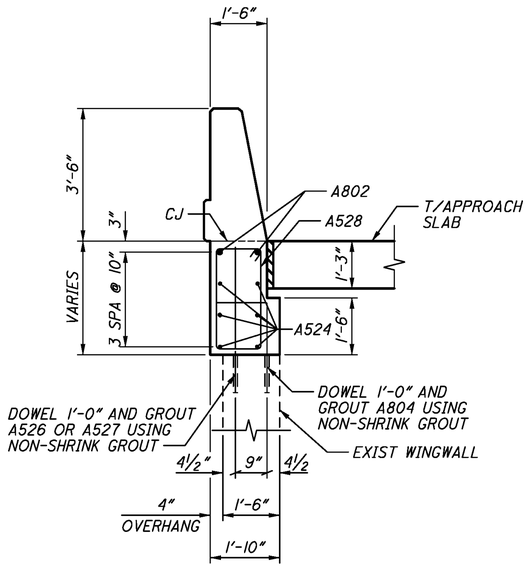


TYPICAL WINGWALL DETAIL

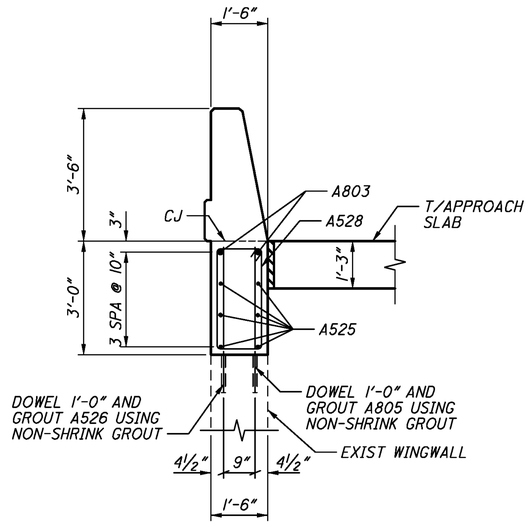
(APPLIES TO ALL SECTIONS)



SECTION A-A



SECTION B-B



SECTION C-C

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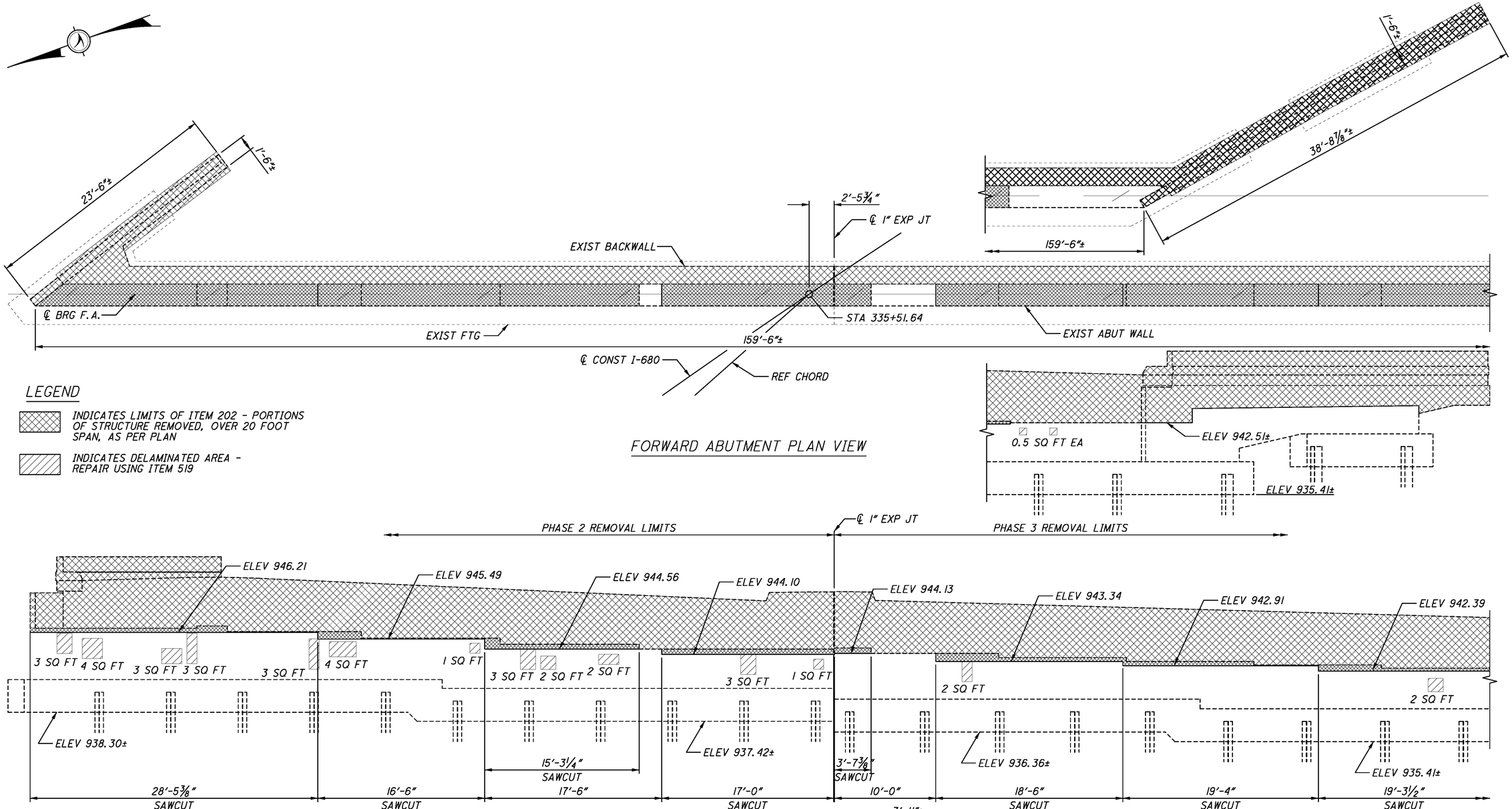
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REAR ABUTMENT WINGWALL DETAILS

BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29

PID No. 25508



LEGEND

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

INDICATES DELAMINATED AREA - REPAIR USING ITEM 519

FORWARD ABUTMENT PLAN VIEW

FORWARD ABUTMENT ELEVATION

EAST WINGWALL ELEVATION

WINGWALL SECTION

ABUTMENT SECTION

WEST WINGWALL ELEVATION

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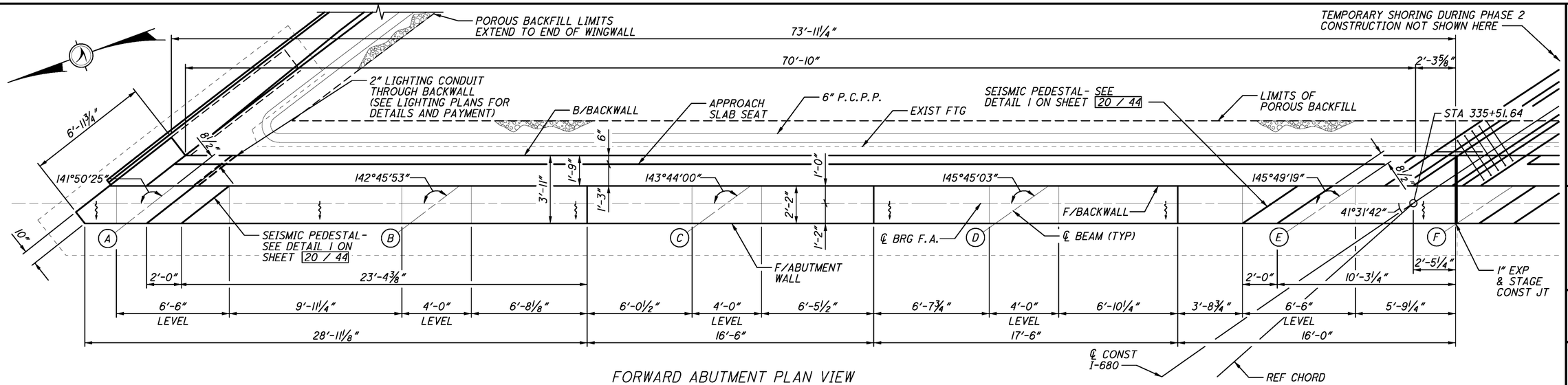
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DETAILS

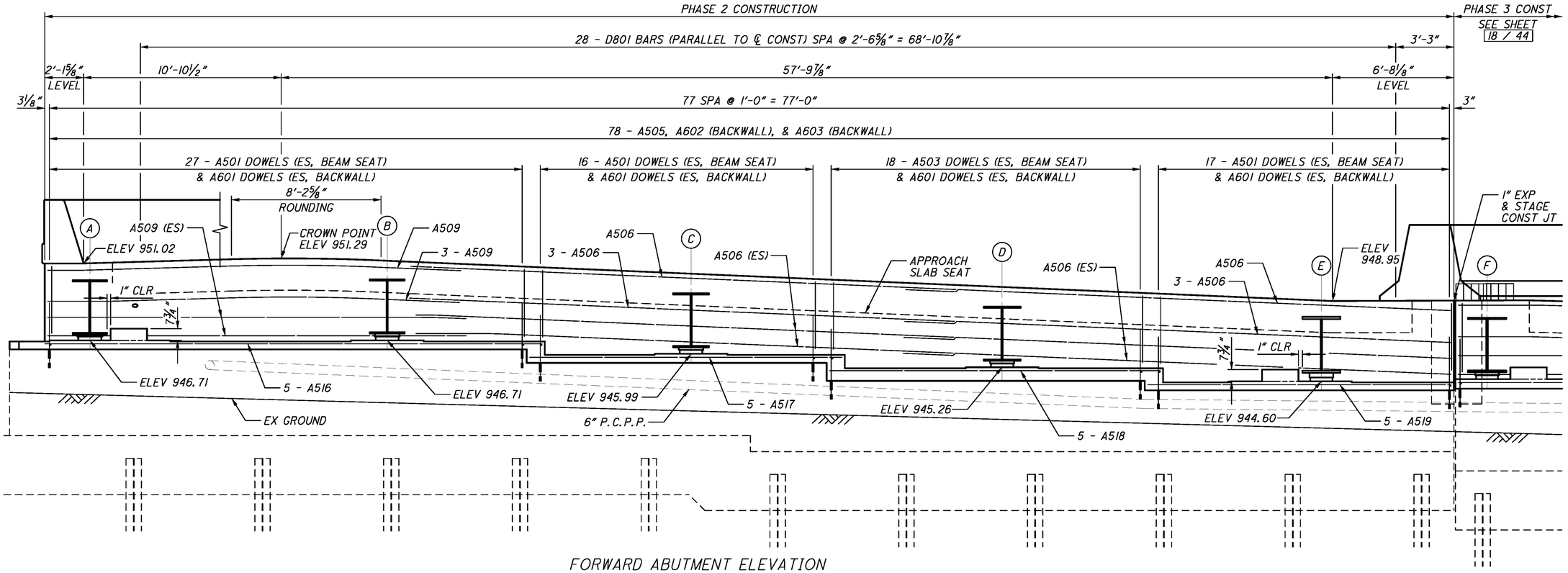
FORWARD ABUTMENT REMOVAL DETAILS

BRIDGE NO. MAH-680-0632
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FORWARD ABUTMENT PLAN VIEW



FORWARD ABUTMENT ELEVATION

NOTES

1. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.
2. BACKWALL CONCRETE: IN ADDITION TO 511.10, DO NOT PLACE BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.
3. SEALING OF BEAM SEATS: IF THE BEAMS SEATS ARE SEALED WITH AN EPOXY OR NON-EPOXY SEALER PRIOR TO SETTING THE BEARINGS, DO NOT APPLY SEALER TO THE CONCRETE SURFACES UNDER THE PROPOSED BEARING LOCATIONS. IF THESE LOCATIONS ARE SEALED, REMOVE THE SEALER TO THE SATISFACTION OF THE ENGINEER PRIOR TO SETTING THE BEARINGS. THE DEPARTMENT WILL NOT PAY FOR THIS REMOVAL.
4. TYPICAL LAP LENGTHS:
   2'-9" MINIMUM FOR #5 BARS
5. SEE SHEET 20/ 44 FOR ABUTMENT SECTIONS.

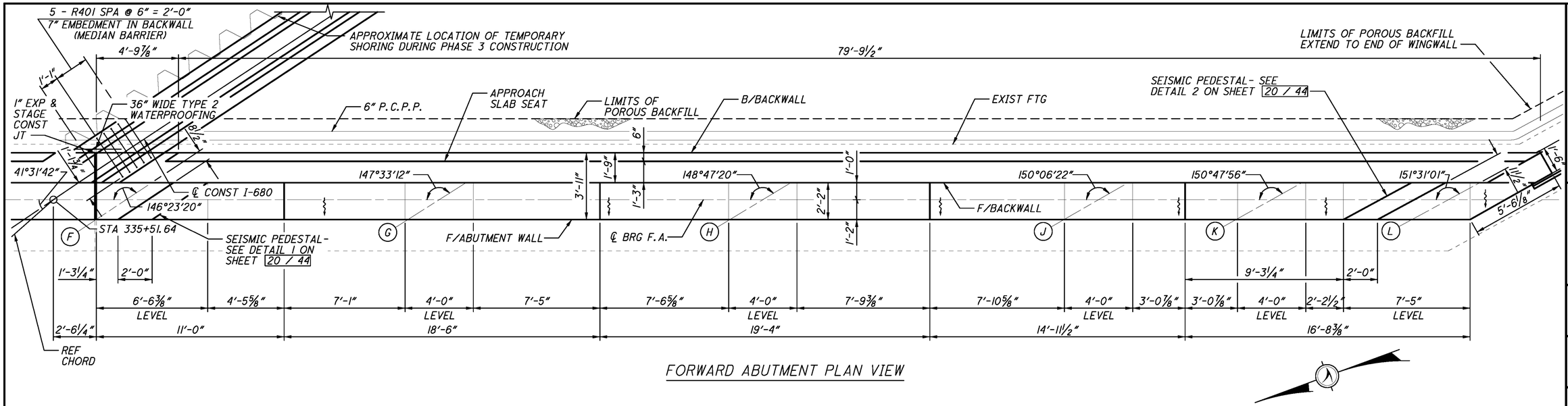
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979
DESIGN AGENCY

DATE 05-28-10
REVIEWED JCS
STRUCTURE FILE NUMBER 5007143
DRAWN KJB
REVISED
DESIGNED KJB
CHECKED JBD

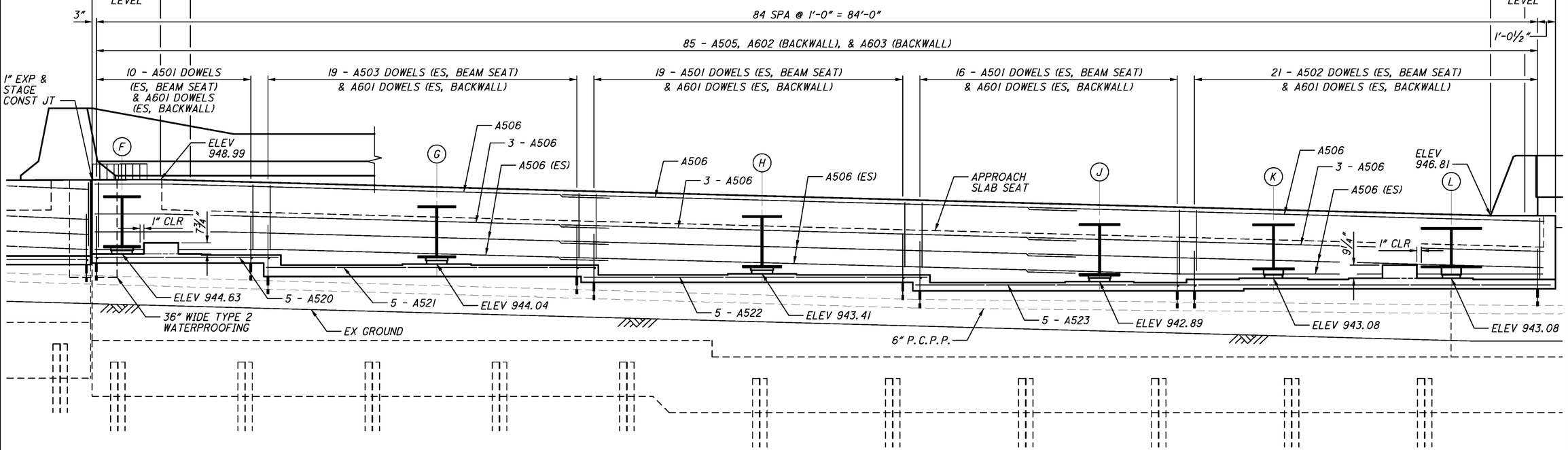
FORWARD ABUTMENT DETAILS

BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SRTD

MAH-680-4.29
PID No. 25508



FORWARD ABUTMENT PLAN VIEW



FORWARD ABUTMENT ELEVATION

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

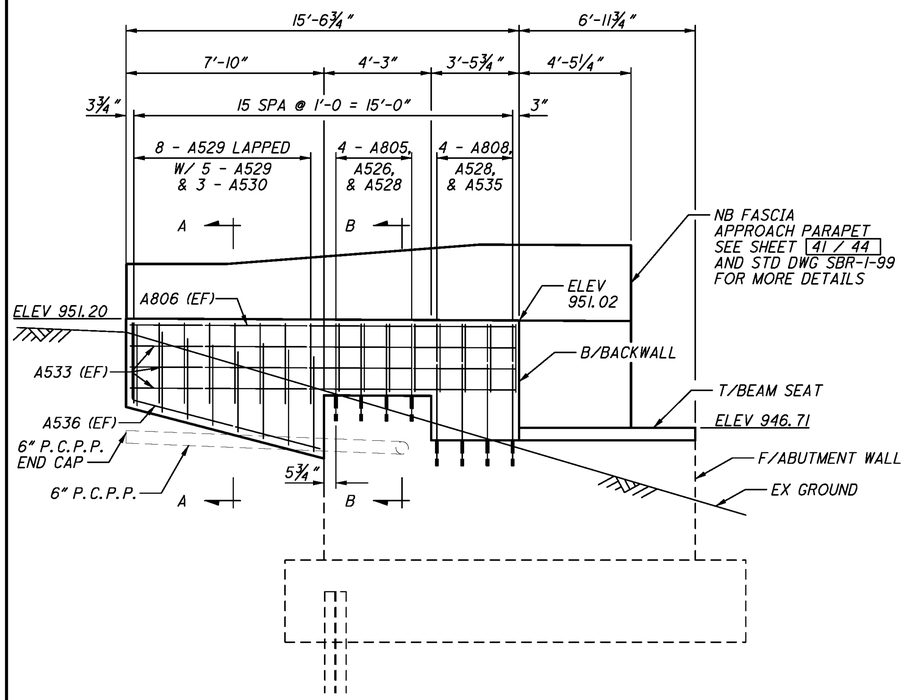
DESIGNED	DRAWN	REVIEWED	DATE
KJB	KJB	JCS	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007143	

FORWARD ABUTMENT DETAILS

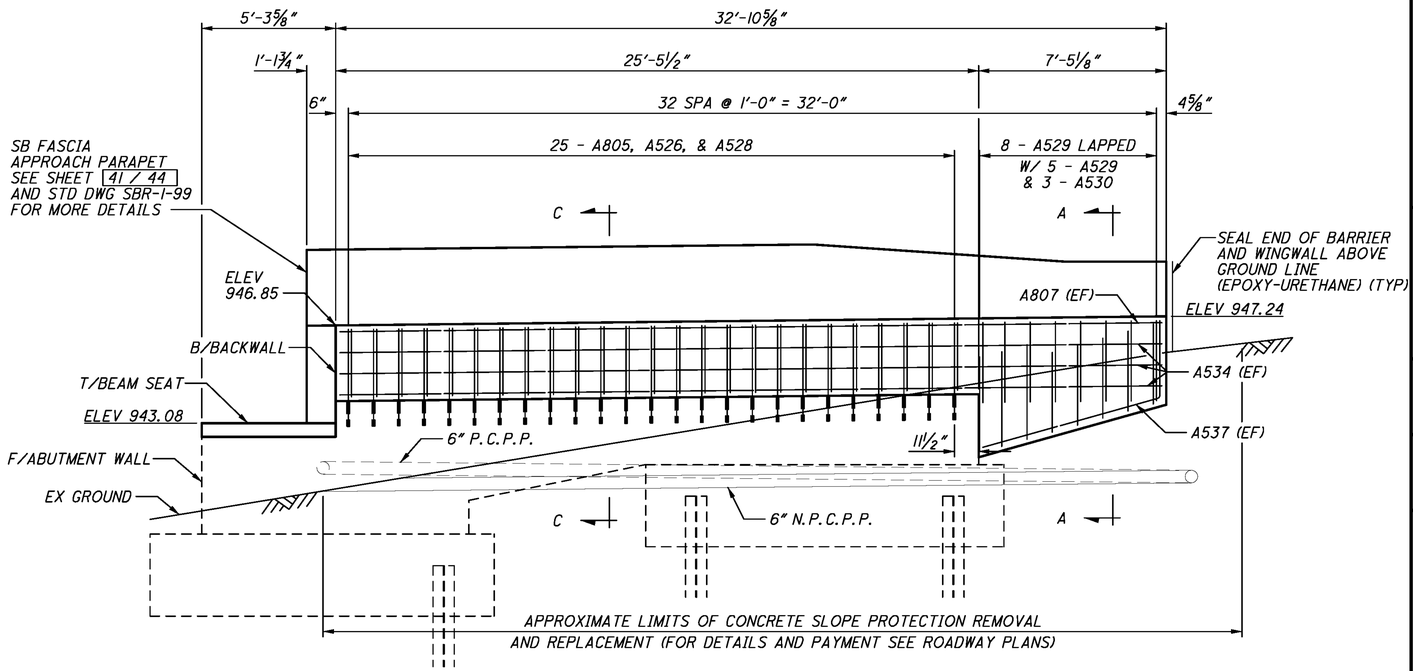
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29

PID No. 25508



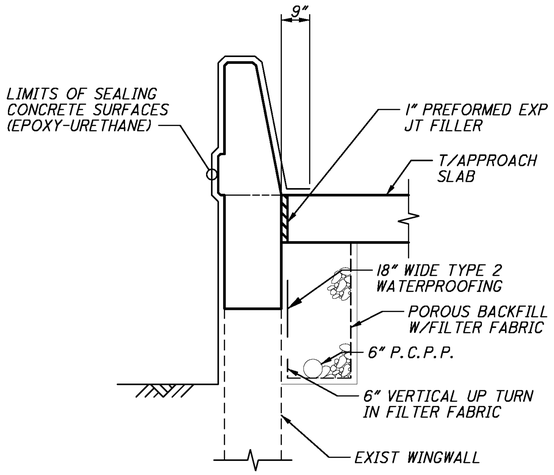
FORWARD ABUTMENT - EAST WINGWALL ELEVATION



FORWARD ABUTMENT - WEST WINGWALL ELEVATION

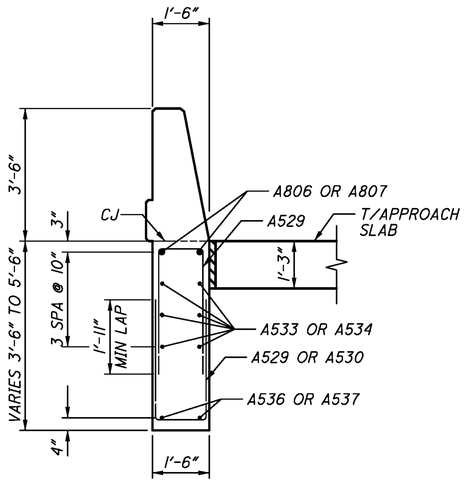
LEGEND

EF = EACH FACE

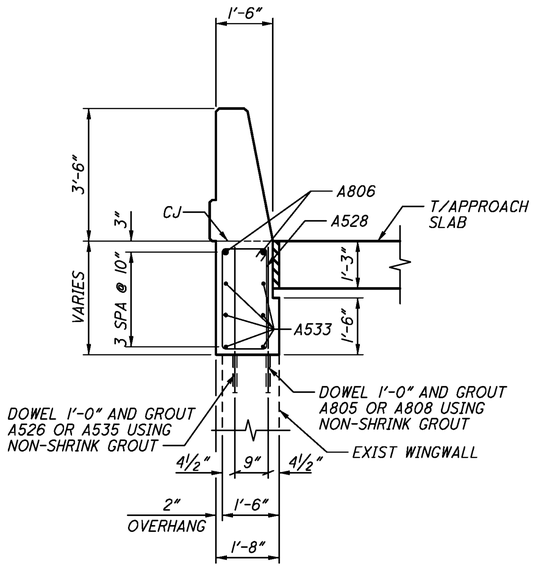


TYPICAL WINGWALL DETAIL

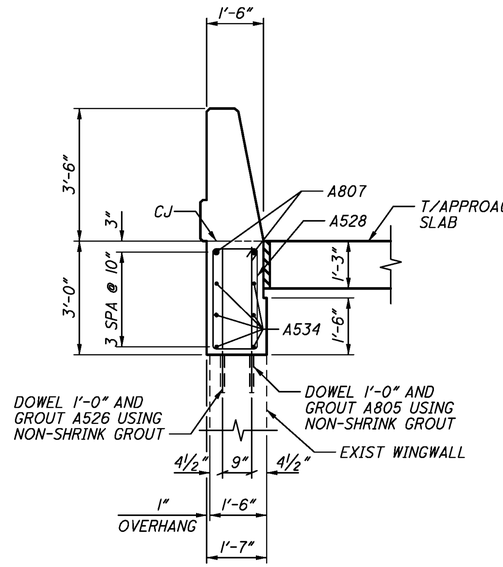
(APPLIES TO ALL SECTIONS)



SECTION A-A



SECTION B-B



SECTION C-C

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
KJB	KJB	JCS	05-28-10

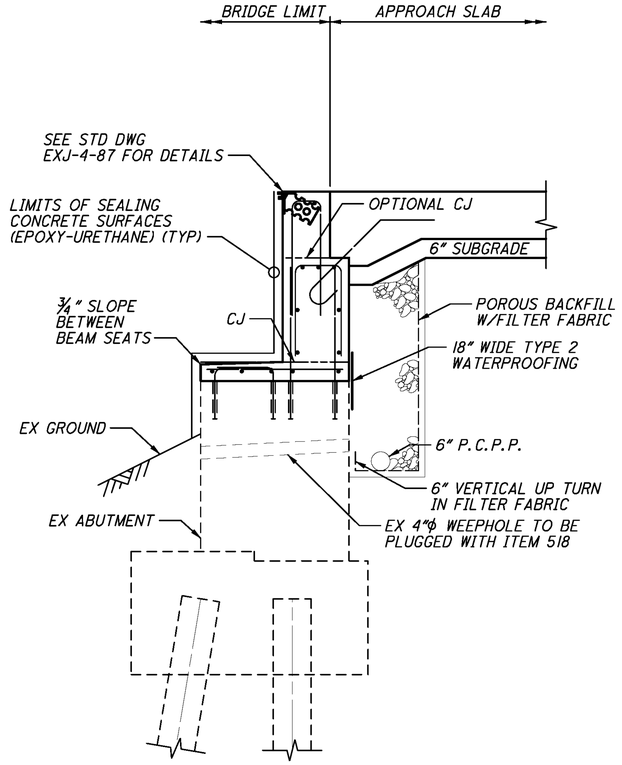
CHECKED	REVISED	STRUCTURE FILE NUMBER
JBD		5007143

FORWARD ABUTMENT WINGWALL DETAILS

BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

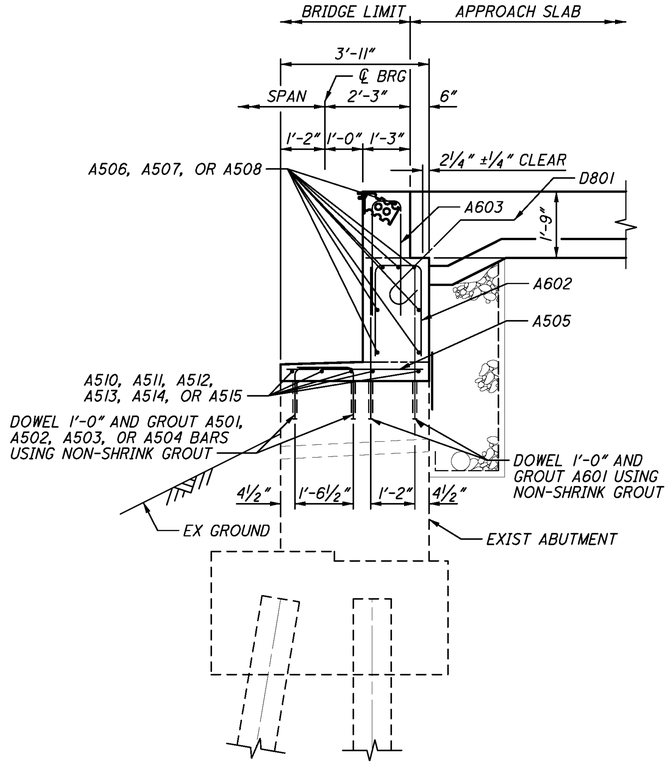
MAH-680-4.29

PID No. 25508

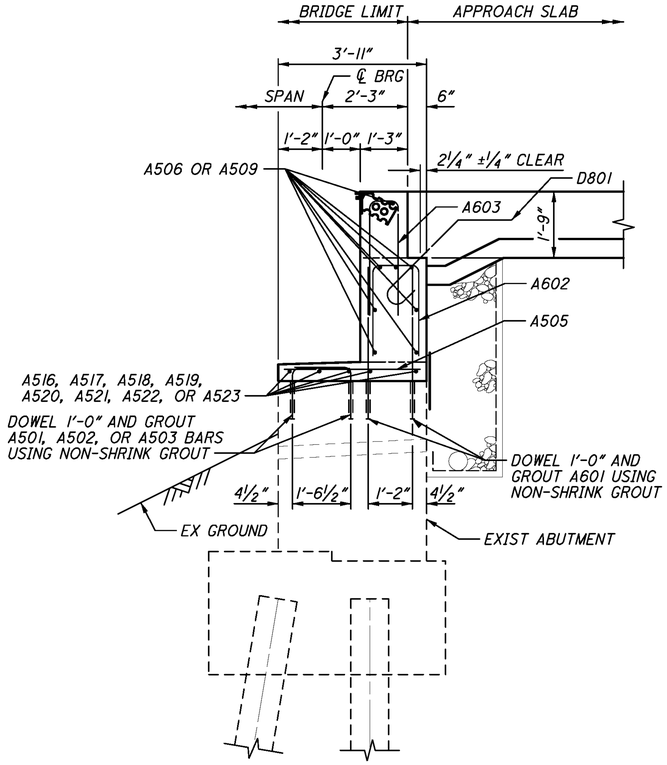


TYPICAL ABUTMENT CROSS SECTION

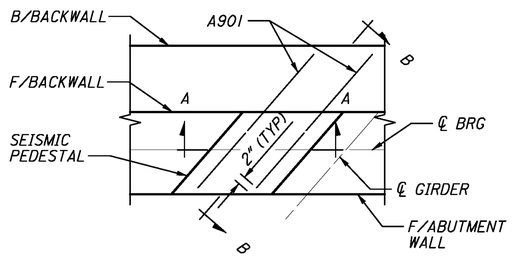
(APPLIES TO REAR ABUTMENT AND FORWARD ABUTMENT)



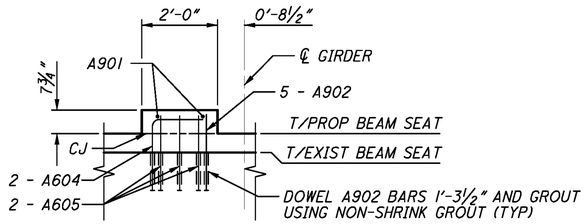
TYPICAL REAR ABUTMENT CROSS SECTION



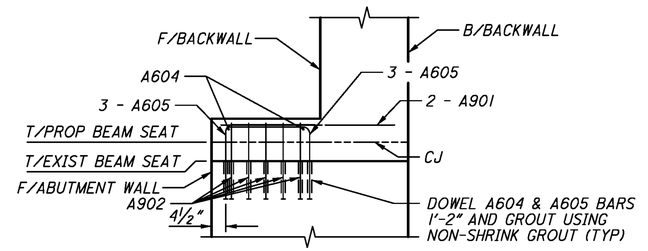
TYPICAL FORWARD ABUTMENT CROSS SECTION



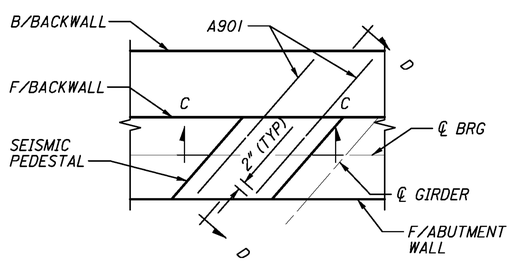
SEISMIC PEDESTAL DETAIL 1



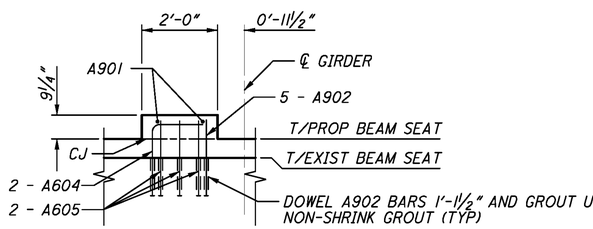
SECTION A-A



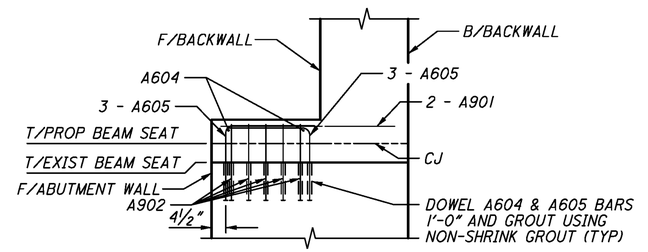
SECTION B-B



SEISMIC PEDESTAL DETAIL 2



SECTION C-C



SECTION D-D

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

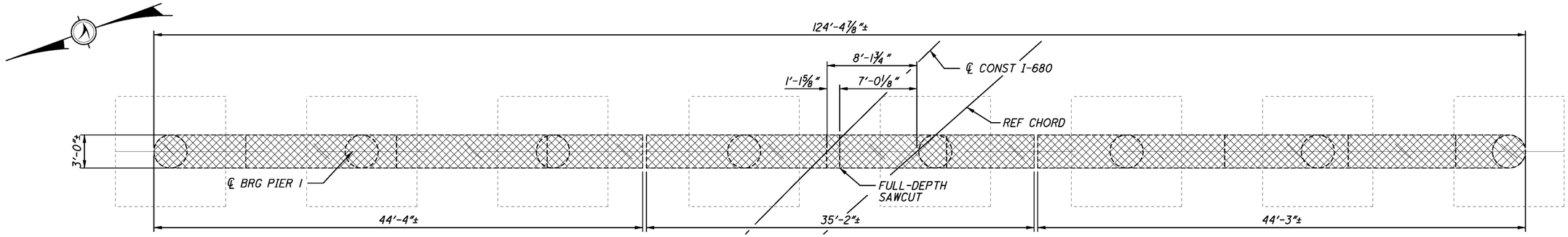
DESIGNED	DRAWN	REVIEWED	DATE
KJB	KJB	JCS	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007143	

ABUTMENT DETAILS

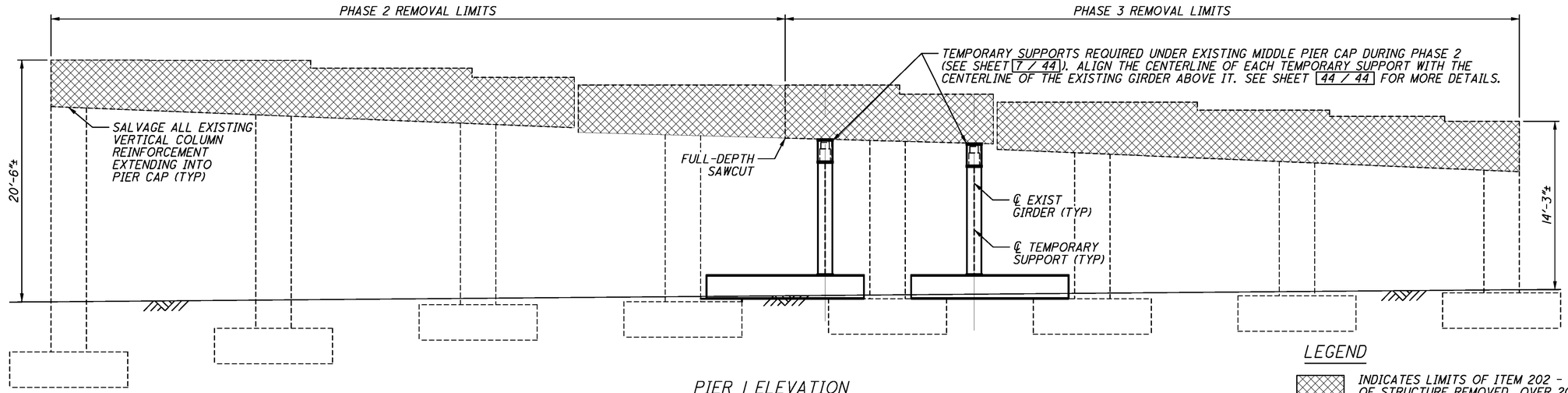
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29

PID No. 25508



PIER 1 PLAN VIEW



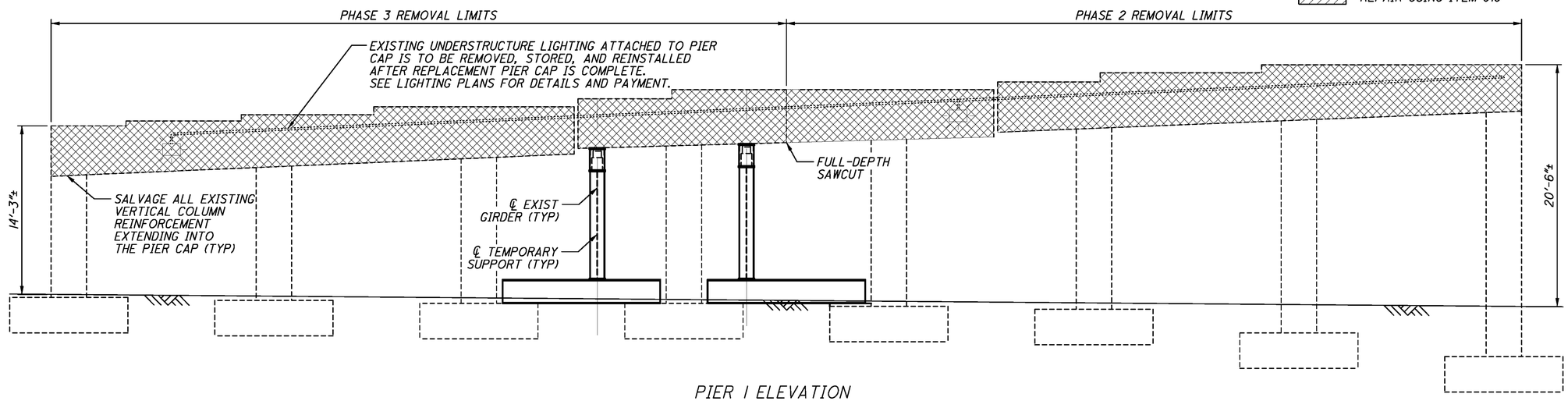
PIER 1 ELEVATION

(LOOKING UPSTATION)

LEGEND

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

INDICATES DELAMINATED AREA - REPAIR USING ITEM 519



PIER 1 ELEVATION

(LOOKING DOWNSTATION)

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

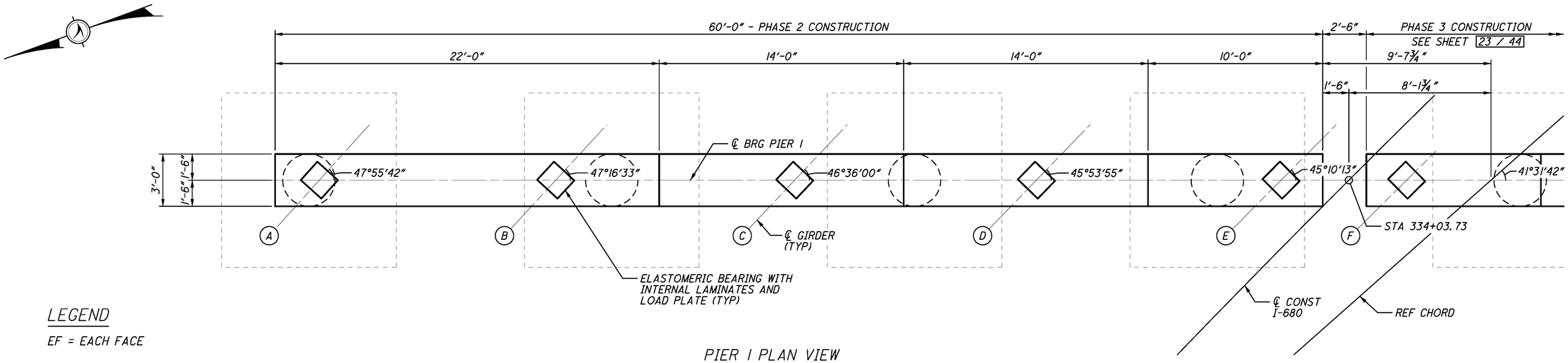
DESIGNED	DRAWN	REVIEWED	DATE
KJB	KJB	JCS	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007143	

PIER 1 REMOVAL DETAILS

BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508

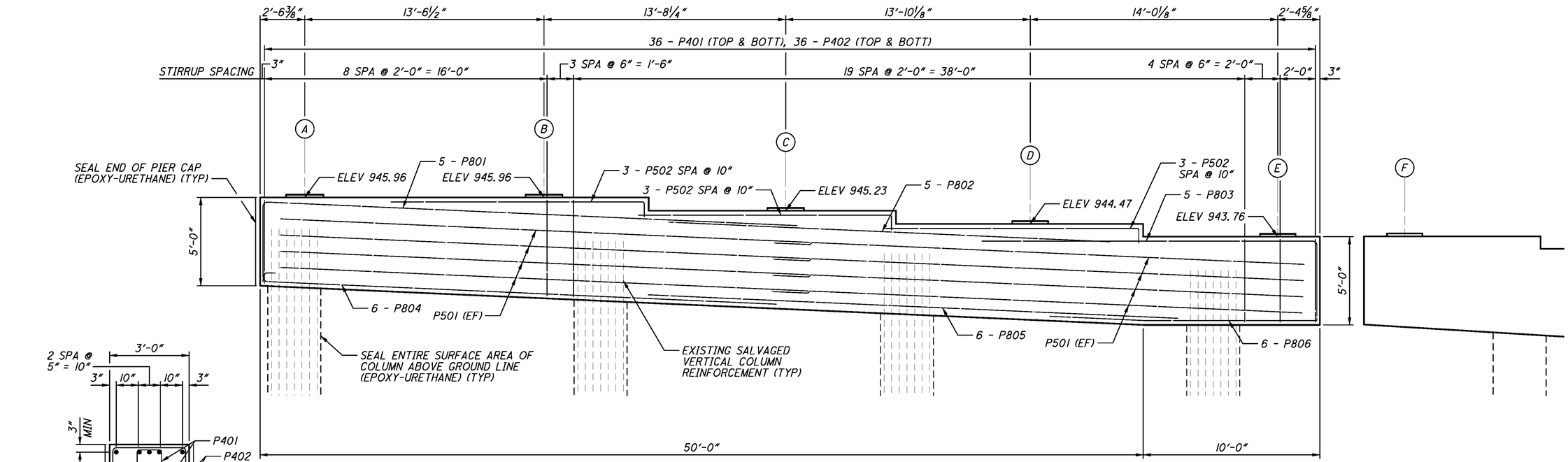
201
307



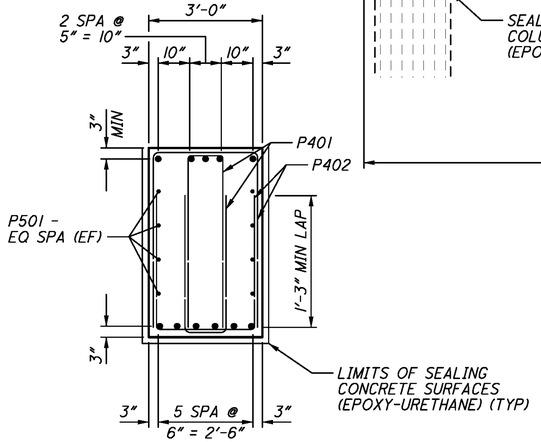
LEGEND

EF = EACH FACE

PIER I PLAN VIEW



PIER I ELEVATION



TYPICAL SECTION THRU CAP

NOTES

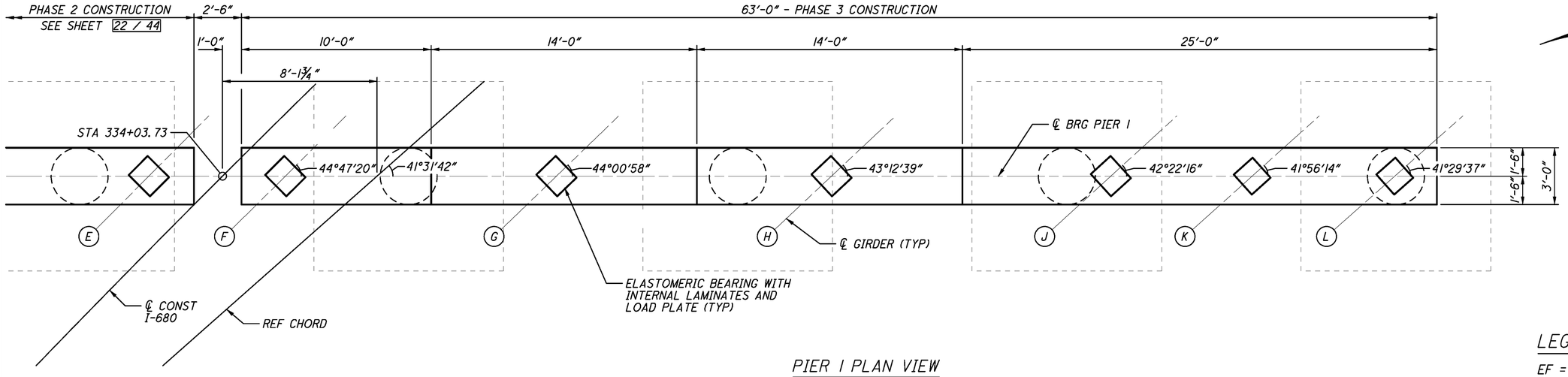
1. TYPICAL LAP LENGTHS:
   - 1'-3" MINIMUM FOR #4 STIRRUP BARS
   - 2'-0" MINIMUM FOR #5 BARS
   - 7'-3" MINIMUM FOR #8 BARS
   - 9'-2" MINIMUM FOR #9 BARS
   - 11'-7" MINIMUM FOR #10 BARS

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TOLEDO, OHIO 43617
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DESIGNED KJB | DRAWN KJB | REVIEWED JCS | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007143

PIER I DETAILS
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

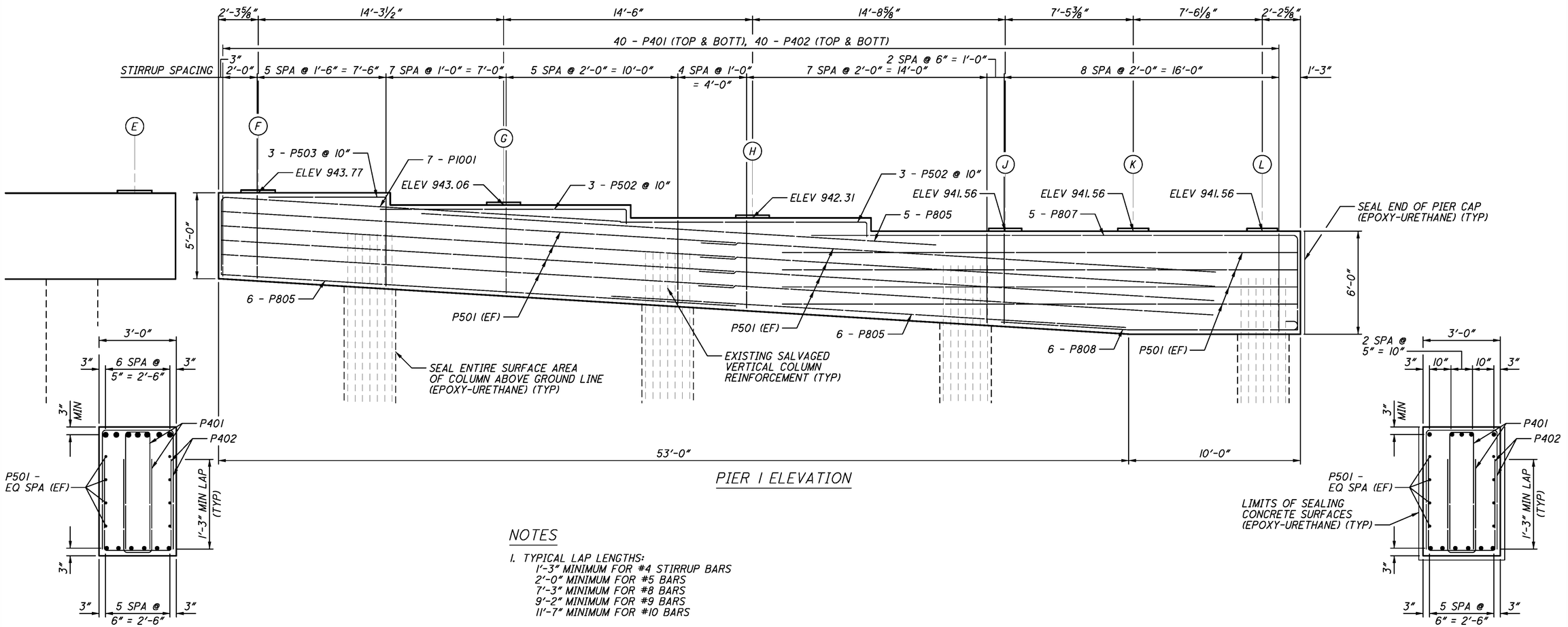
MAH-680-4.29
PID No. 25508



PIER I PLAN VIEW

LEGEND

EF = EACH FACE



PIER I ELEVATION

SECTION THRU CAP CANTILEVER

TYPICAL SECTION THRU CAP

NOTES

1. TYPICAL LAP LENGTHS:
   - 1'-3" MINIMUM FOR #4 STIRRUP BARS
   - 2'-0" MINIMUM FOR #5 BARS
   - 7'-3" MINIMUM FOR #8 BARS
   - 9'-2" MINIMUM FOR #9 BARS
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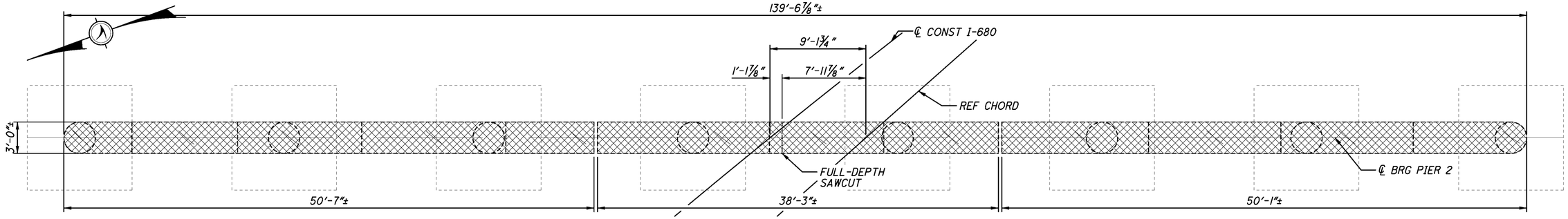
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CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007143	

PIER I DETAILS

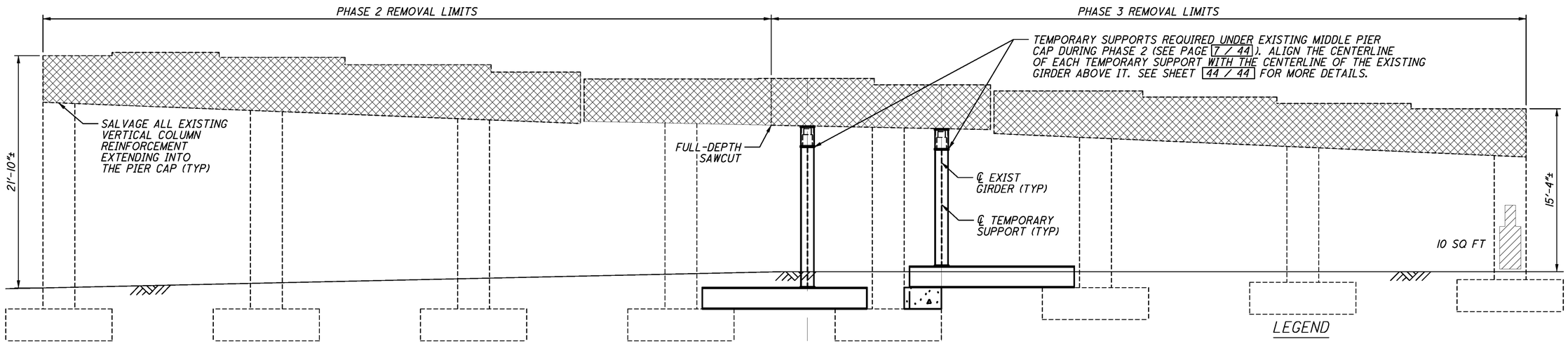
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29

PID No. 25508



PIER 2 PLAN VIEW



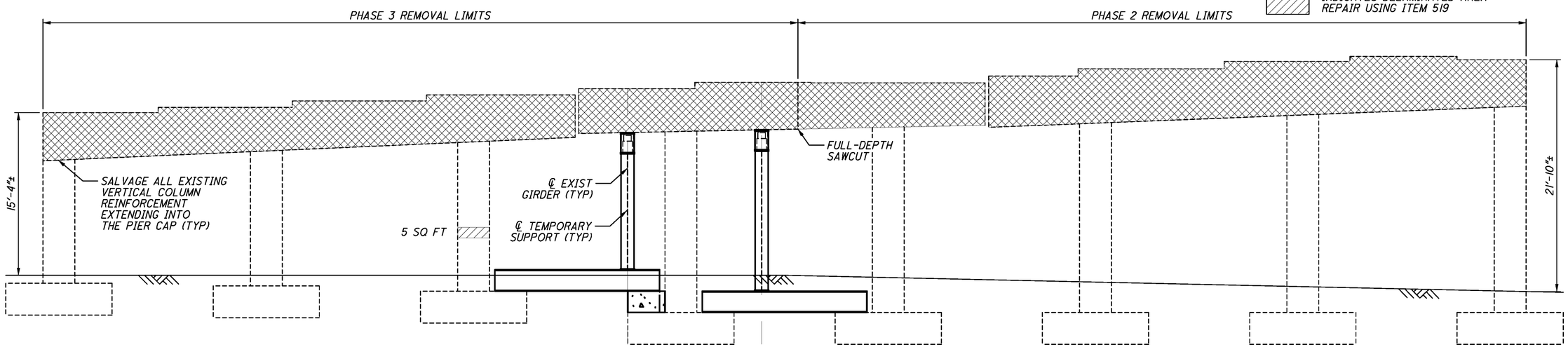
PIER 2 ELEVATION

(LOOKING UPSTATION)

LEGEND

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

INDICATES DELAMINATED AREA - REPAIR USING ITEM 519



PIER 2 ELEVATION

(LOOKING DOWNSTATION)

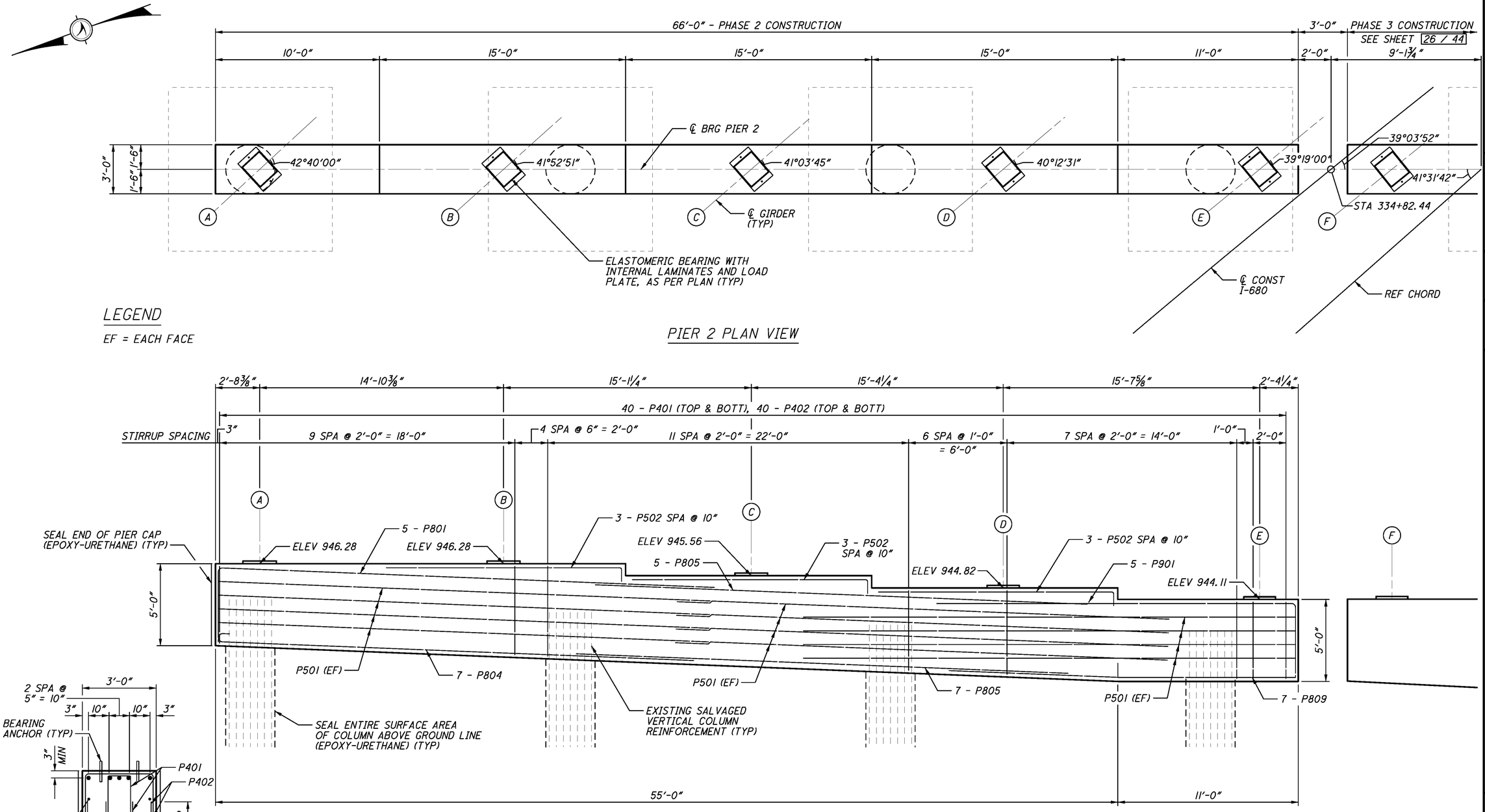
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
KJB	KJB	JCS	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007143	

PIER 2 REMOVAL DETAILS

BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508

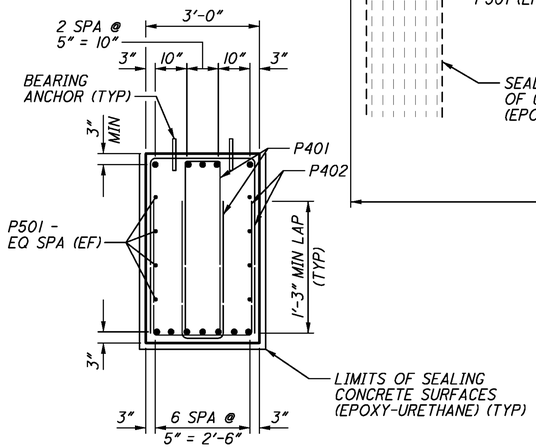


LEGEND

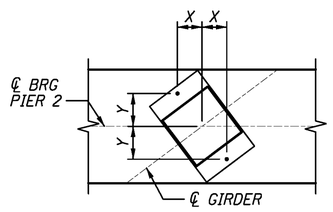
EF = EACH FACE

PIER 2 PLAN VIEW

PIER 2 ELEVATION



TYPICAL SECTION THRU CAP



BEARING ANCHOR PLAN

LOCATION	X	Y
GIRDER A	8"	8⅝"
GIRDER B	7⅞"	8¾"
GIRDER C	7¾"	8⅞"
GIRDER D	7⅝"	9"
GIRDER E	7½"	9⅛"

NOTES

1. BRIDGE SEAT REINFORCING, SETTING ANCHORS: ACCURATELY PLACE REINFORCING STEEL IN THE VINCINITY OF THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.

2. TYPICAL LAP LENGTHS:
   2'-0" MINIMUM FOR #5 BARS
   7'-3" MINIMUM FOR #8 BARS
   9'-2" MINIMUM FOR #9 BARS
   11'-7" MINIMUM FOR #10 BARS

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DESIGNED	DRAWN	REVIEWED	DATE
KJB	KJB	JCS	05-28-10

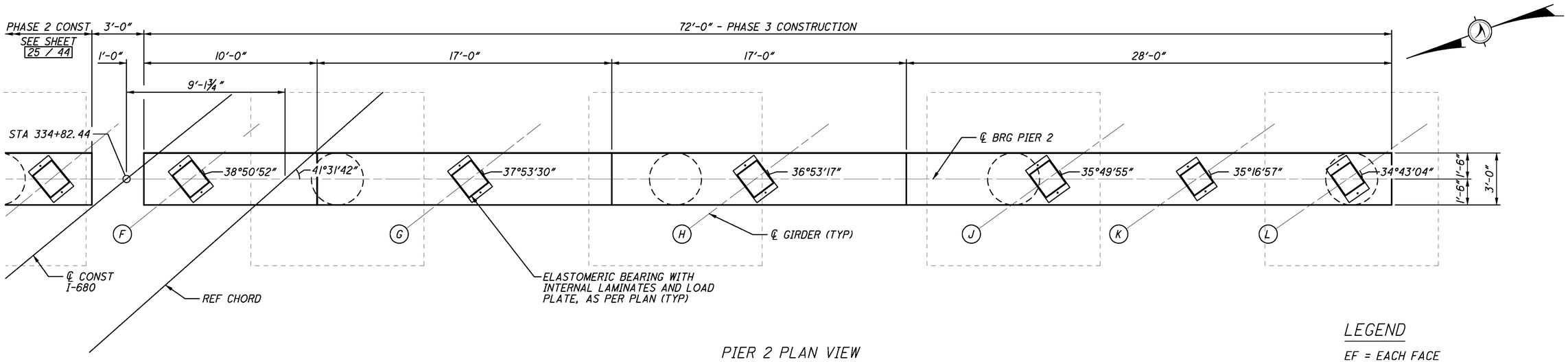
CHECKED	REVISED	STRUCTURE FILE NUMBER
JBD		5007143

PIER 2 DETAILS

BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29

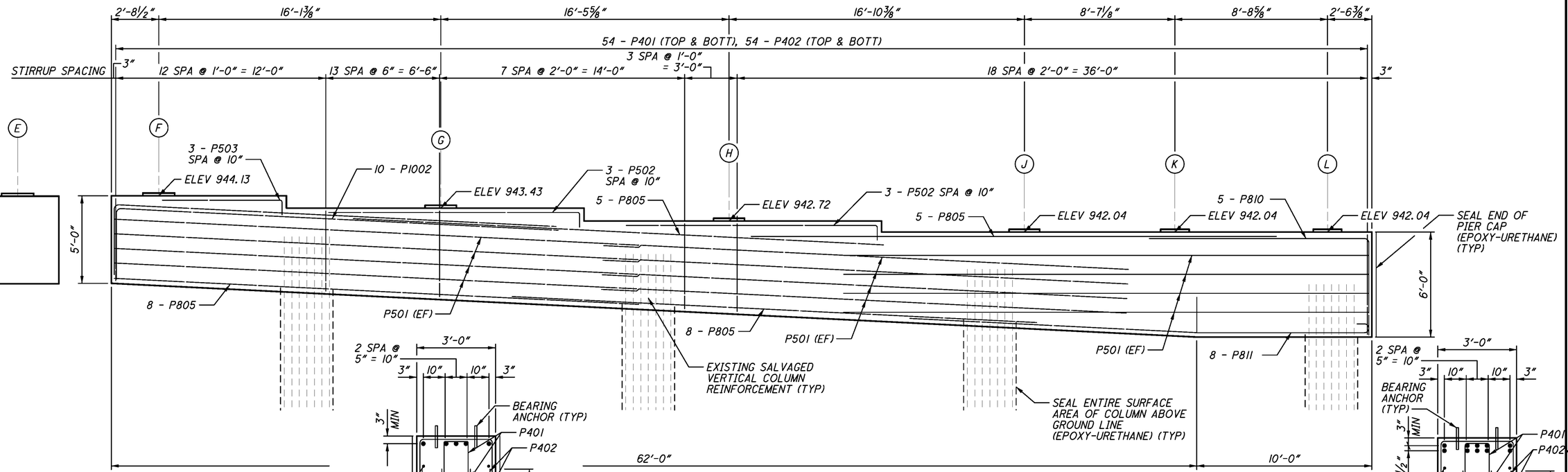
PID No. 25508



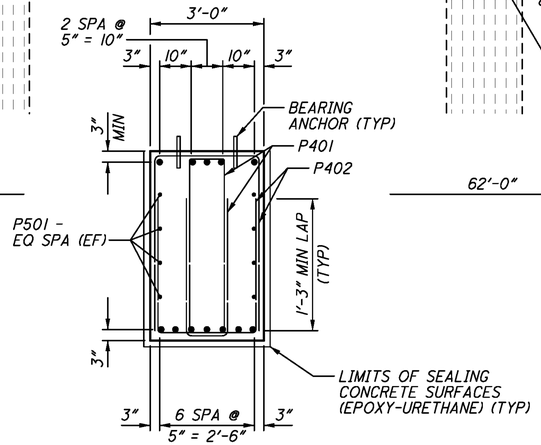
PIER 2 PLAN VIEW

LEGEND

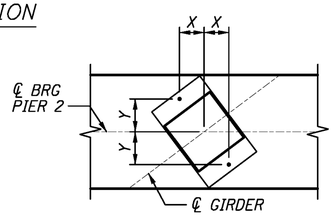
EF = EACH FACE



PIER 2 ELEVATION

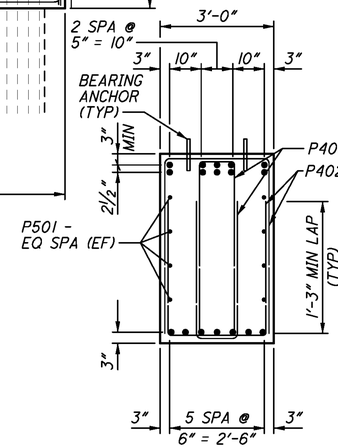


TYPICAL SECTION THRU CAP



LOCATION	X	Y
GIRDER F	7⅜"	9⅛"
GIRDER G	7¼"	9¼"
GIRDER H	7"	9⅜"
GIRDER J	6⅞"	9½"
GIRDER K	6⅛"	8⅝"
GIRDER L	6⅛"	9⅛"

BEARING ANCHOR PLAN



SECTION THRU CAP CANTILEVER

NOTES

1. TYPICAL LAP LENGTHS:
   - 1'-3" MINIMUM FOR #4 STIRRUP BARS
   - 2'-0" MINIMUM FOR #5 BARS
   - 7'-3" MINIMUM FOR #8 BARS
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DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
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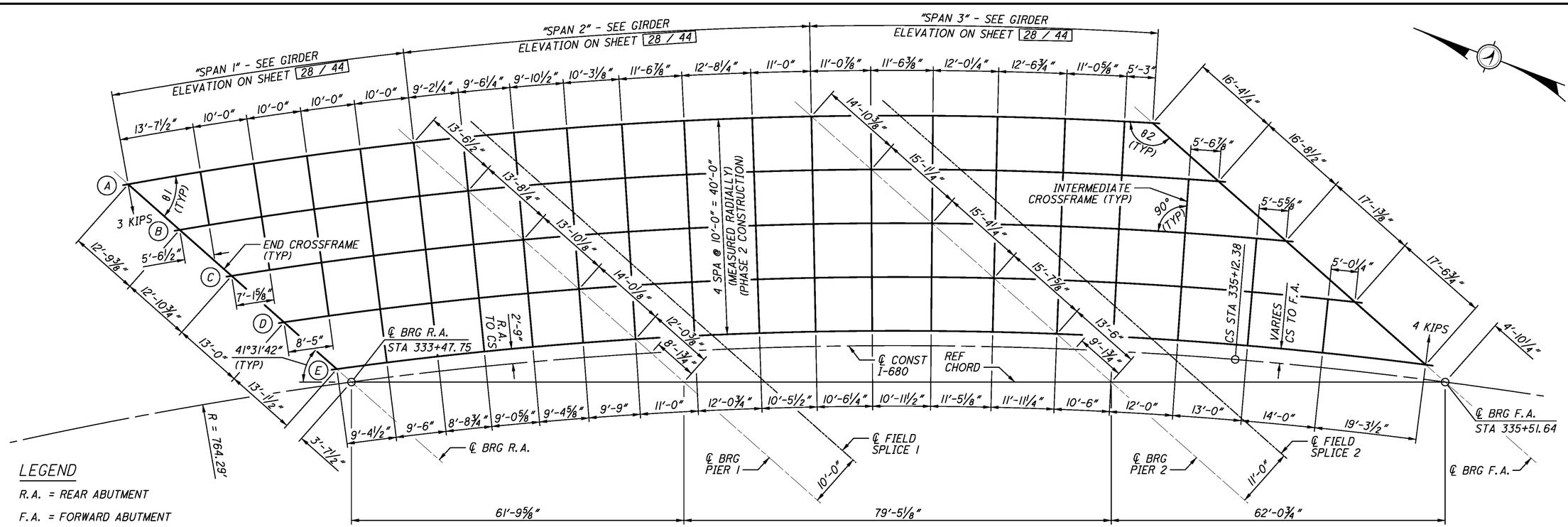
DESIGNED KJB | DRAWN KJB | REVIEWED JCS | DATE 05-28-10 | CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007143

PIER 2 DETAILS

BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29

PID No. 25508



LEGEND

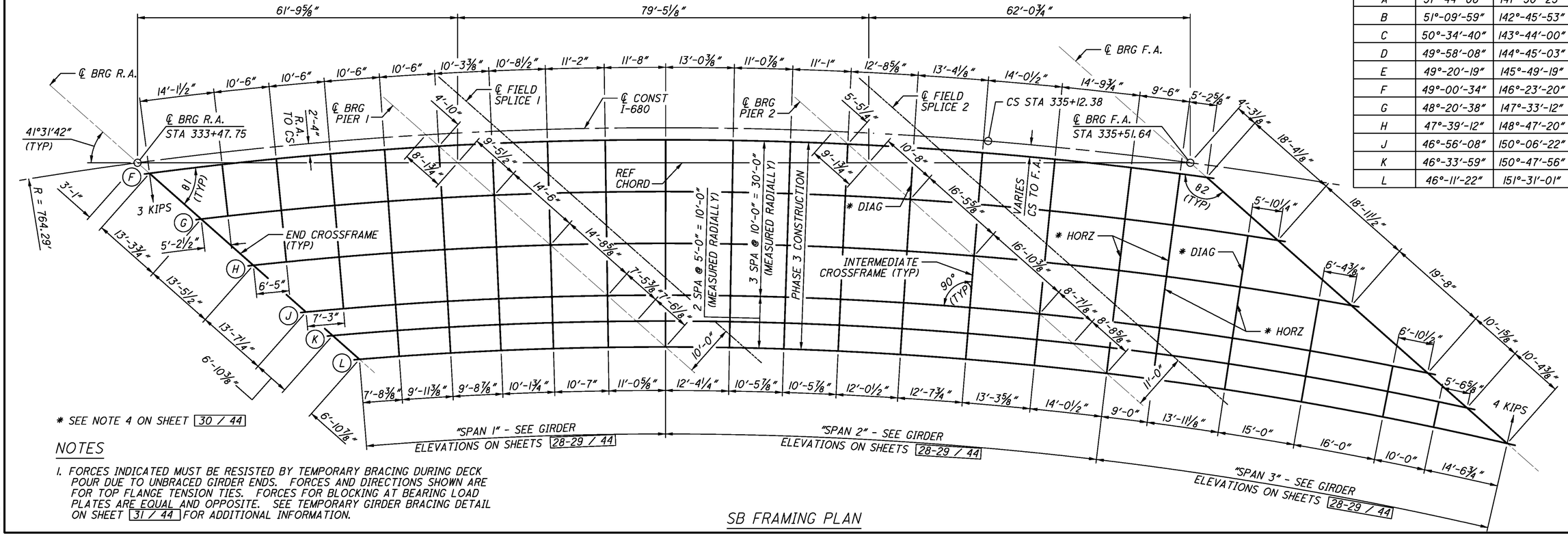
R.A. = REAR ABUTMENT

F.A. = FORWARD ABUTMENT

(A) = GIRDER LINE DESIGNATION

END ANGLES		
GIRDER	θ1	θ2
A	51°-44'-08"	141°-50'-25"
B	51°-09'-59"	142°-45'-53"
C	50°-34'-40"	143°-44'-00"
D	49°-58'-08"	144°-45'-03"
E	49°-20'-19"	145°-49'-19"
F	49°-00'-34"	146°-23'-20"
G	48°-20'-38"	147°-33'-12"
H	47°-39'-12"	148°-47'-20"
J	46°-56'-08"	150°-06'-22"
K	46°-33'-59"	150°-47'-56"
L	46°-11'-22"	151°-31'-01"

NB FRAMING PLAN



* SEE NOTE 4 ON SHEET 30 / 44

NOTES

1. FORCES INDICATED MUST BE RESISTED BY TEMPORARY BRACING DURING DECK POUR DUE TO UNBRACED GIRDER ENDS. FORCES AND DIRECTIONS SHOWN ARE FOR TOP FLANGE TENSION TIES. FORCES FOR BLOCKING AT BEARING LOAD PLATES ARE EQUAL AND OPPOSITE. SEE TEMPORARY GIRDER BRACING DETAIL ON SHEET 31 / 44 FOR ADDITIONAL INFORMATION.

SB FRAMING PLAN

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DRAWN KJB | REVIEWED JBD | DESIGNED KJB | CHECKED BES | DATE 05-28-10 | STRUCTURE FILE NUMBER 5007143 | REVISED

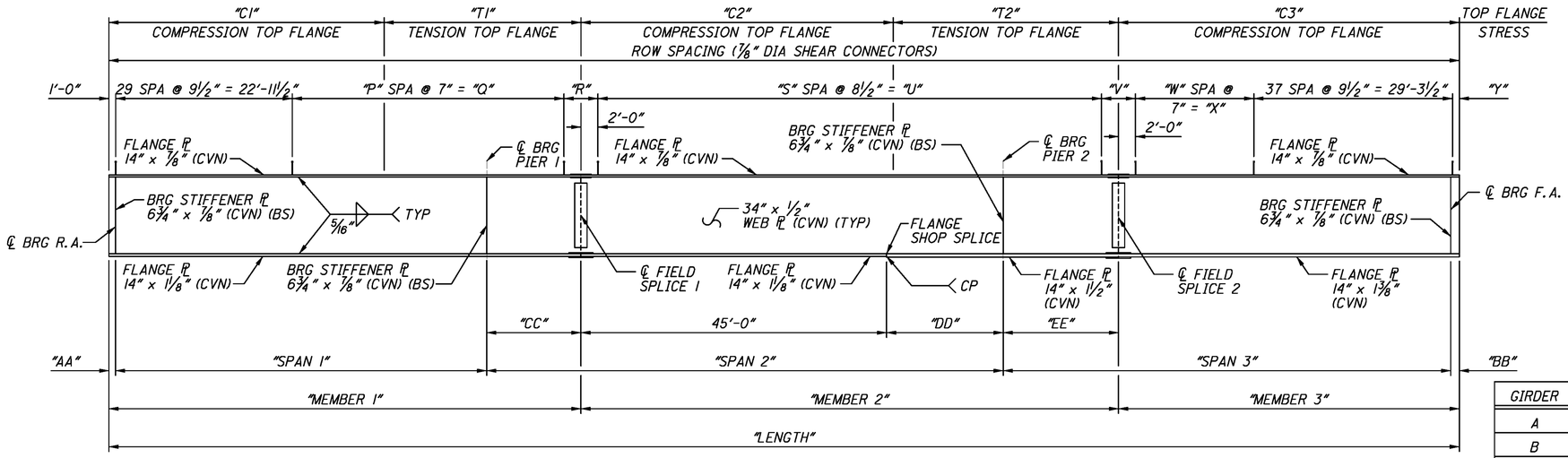
FRAMING PLAN

BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SRTD

MAH-680-4.29
PID No. 25508

27 / 44

207
307

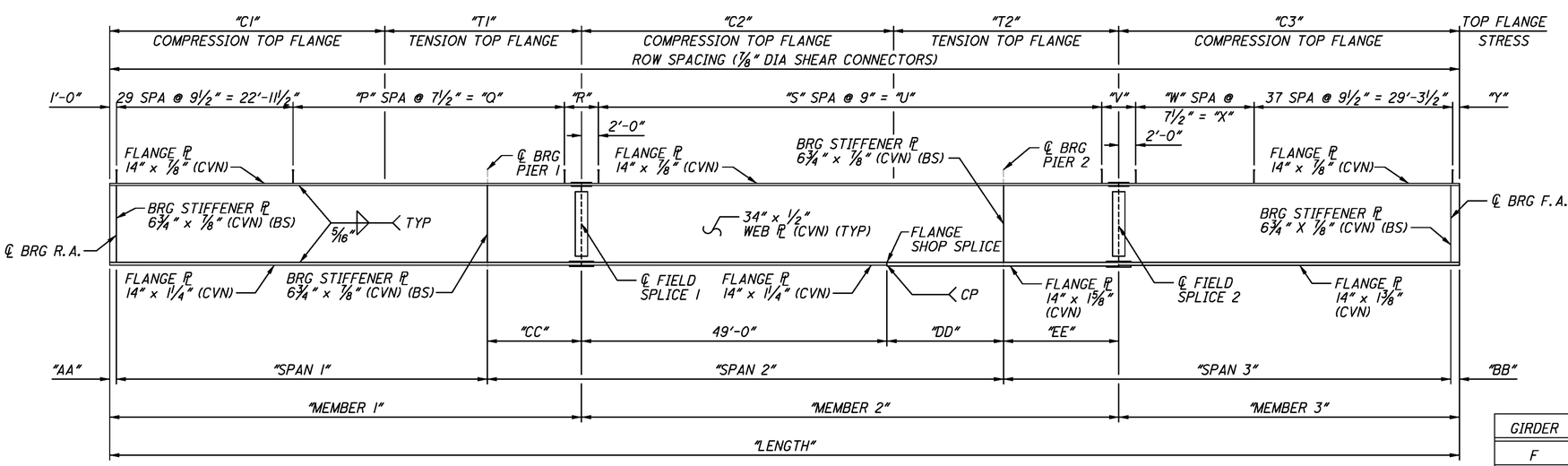


GIRDERS A, B, C, D, & E ELEVATION

(CROSSFRAME STIFFENERS NOT SHOWN)

GIRDER	RADIUS	"LENGTH"	"MEMBER 1"	"MEMBER 2"	"MEMBER 3"	"AA"	"SPAN 1"	"SPAN 2"	"SPAN 3"	"BB"	"CC"	"DD"	"EE"	"P"	"Q"	"R"	"S"	"U"	"V"	"W"	"X"	"Y"
A	807'-0 1/2"	193'-4 1/8"	68'-1 5/8"	76'-11 3/8"	48'-3"	0'-11 1/4"	53'-7 1/2"	74'-1 3/8"	63'-5 3/4"	1'-2 1/4"	13'-6 7/8"	15'-6 1/2"	16'-5"	72	42'-0"	4'-2 1/8"	103	72'-11 1/2"	3'-11 7/8"	27	15'-9"	1'-2 1/2"
B	797'-0 1/2"	195'-11 3/8"	68'-9 3/8"	78'-0"	49'-1 7/8"	0'-11 1/4"	54'-1 3/8"	75'-0 5/8"	64'-7 1/2"	1'-2 1/2"	13'-8 5/8"	16'-4"	16'-8 1/8"	73	42'-7"	4'-2 7/8"	104	73'-8"	4'-4"	29	16'-11"	0'-11 3/8"
C	787'-0 1/2"	198'-9 1/4"	69'-5 5/8"	79'-1 3/4"	50'-1 7/8"	0'-11 3/8"	54'-7 3/4"	76'-0 3/4"	65'-10 1/2"	1'-2 7/8"	13'-10 1/2"	17'-2 1/4"	16'-11 1/2"	74	43'-2"	4'-4 1/8"	106	75'-1"	4'-0 3/4"	30	17'-6"	1'-4 3/8"
D	777'-0 1/2"	201'-10 1/4"	70'-2 1/2"	80'-4 5/8"	51'-3 1/8"	0'-11 1/2"	55'-2 3/8"	77'-2"	67'-3 1/8"	1'-3 1/4"	14'-0 5/8"	18'-1 3/8"	17'-3 1/4"	76	44'-4"	3'-11"	108	76'-6"	3'-10 5/8"	32	18'-8"	1'-3 5/8"
E	767'-0 1/2"	205'-2 3/4"	71'-0"	81'-8 7/8"	52'-5 7/8"	0'-11 5/8"	55'-9 5/8"	78'-4 3/8"	68'-9 1/2"	1'-3 5/8"	14'-2 3/4"	19'-1 1/2"	17'-7 1/4"	77	44'-11"	4'-1 1/2"	110	77'-11"	3'-9 7/8"	34	19'-10"	1'-4 3/8"

GIRDER	"C1"	"T1"	"C2"	"T2"	"C3"
A	39'-8 3/8"	30'-0 3/4"	43'-7 1/8"	32'-8 1/4"	47'-2 7/8"
B	40'-6 5/8"	29'-4 1/8"	45'-3 5/8"	31'-7 5/8"	49'-1 3/8"
C	40'-4 3/8"	29'-7"	45'-4 3/8"	32'-9 1/8"	50'-8 1/2"
D	40'-1 3/8"	29'-6 7/8"	46'-0 3/4"	33'-2 1/8"	52'-11 5/8"
E	39'-8 3/4"	30'-5 1/8"	45'-2 1/4"	35'-2 3/4"	54'-7 1/8"



GIRDERS F, G, H, & J ELEVATION

(CROSSFRAME STIFFENERS NOT SHOWN)

GIRDER	RADIUS	"LENGTH"	"MEMBER 1"	"MEMBER 2"	"MEMBER 3"	"AA"	"SPAN 1"	"SPAN 2"	"SPAN 3"	"BB"	"CC"	"DD"	"EE"	"P"	"Q"	"R"	"S"	"U"	"V"	"W"	"X"	"Y"
F	761'-11 1/2"	207'-0 7/8"	71'-5 1/8"	82'-5 3/4"	53'-2"	0'-11 5/8"	56'-1 1/2"	79'-0 1/8"	69'-7 3/4"	1'-3 7/8"	14'-4"	15'-8 1/8"	17'-9 5/8"	73	45'-7 1/2"	3'-10 1/8"	104	78'-0"	4'-5 3/4"	33	20'-7 1/2"	1'-3"
G	751'-11 1/2"	210'-11 3/4"	72'-3 7/8"	84'-0 3/8"	54'-7 1/2"	0'-11 3/4"	56'-9 5/8"	80'-4 1/2"	71'-5 1/2"	1'-4 3/8"	14'-6 1/2"	16'-10"	18'-2 3/8"	74	46'-3"	4'-1 3/8"	107	80'-3"	3'-9 3/8"	35	21'-10 1/2"	1'-5 5/8"
H	741'-11 1/2"	215'-3 7/8"	73'-3 3/8"	85'-9"	56'-3 1/2"	0'-11 7/8"	57'-6 1/4"	81'-10 1/2"	73'-6 1/8"	1'-5"	14'-9 1/8"	18'-1 3/8"	18'-7 5/8"	76	47'-6"	3'-9 7/8"	109	81'-9"	4'-0 1/8"	38	23'-9"	1'-3"
J	731'-11 1/2"	220'-2 1/4"	74'-3 7/8"	87'-8"	58'-2 3/8"	1'-0"	58'-3 3/4"	83'-6 1/2"	75'-10 1/4"	1'-5 3/4"	15'-0 1/8"	19'-6 3/8"	19'-1 5/8"	77	48'-1 1/2"	4'-2 1/8"	111	83'-3"	4'-5"	41	25'-7 1/2"	1'-3 3/8"

GIRDER	"C1"	"T1"	"C2"	"T2"	"C3"
F	41'-5 3/8"	31'-11 1/2"	46'-5 1/2"	35'-7"	51'-7 1/2"
G	42'-5 3/4"	30'-11 7/8"	48'-8 5/8"	34'-1"	54'-8 1/2"
H	42'-0 1/2"	31'-4 3/4"	49'-0 5/8"	35'-7 5/8"	57'-2 3/8"
J	42'-1 1/8"	32'-0 1/8"	49'-4 1/8"	37'-2 3/8"	59'-5 3/4"

LEGEND

BS = BOTH SIDES

R.A. = REAR ABUTMENT

F.A. = FORWARD ABUTMENT

CP = COMPLETE JOINT PENETRATION

NOTES

1. SEE SHEET 29 / 44 FOR NOTES AND ADDITIONAL DETAILS.

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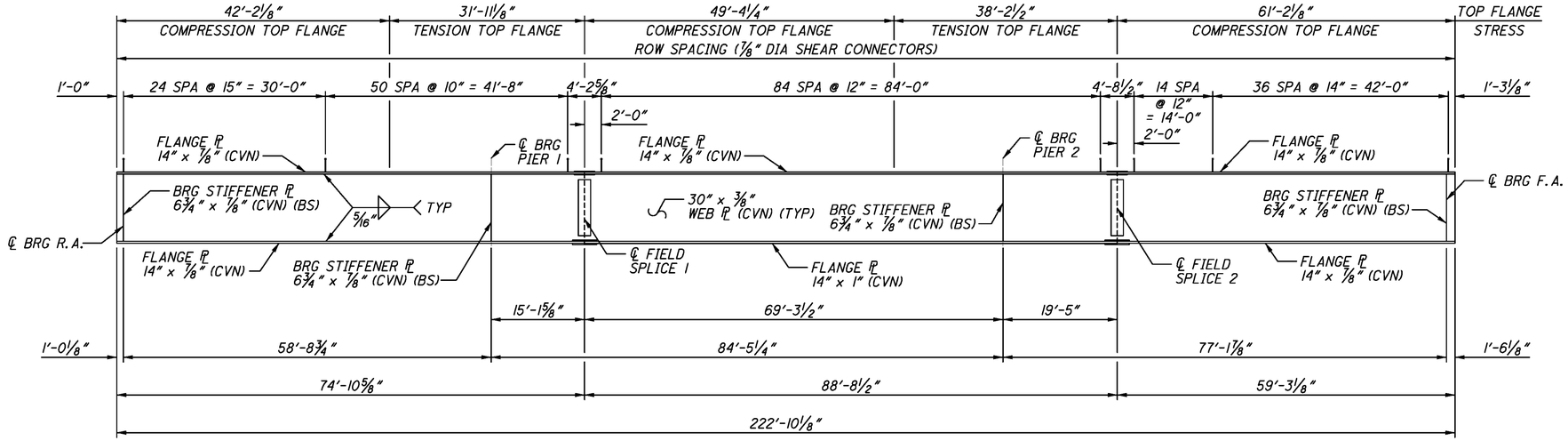
DESIGNED KJB | DRAWN KJB | REVIEWED JBD | DATE 05-10-28 | STRUCTURE FILE NUMBER 5007143 | CHECKED BES | REVISED

GIRDER ELEVATIONS

BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

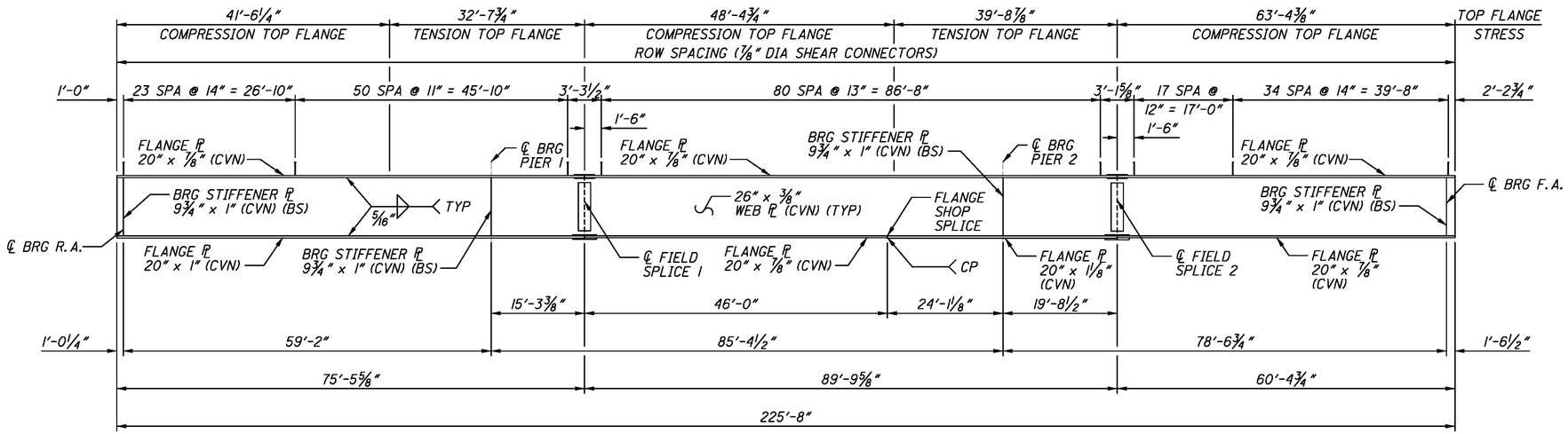
MAH-680-4.29

PID No. 25508



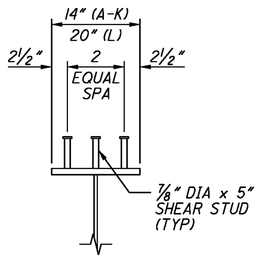
GIRDER K ELEVATION

RADIUS = 726'-11 1/2"
(CROSSFRAME STIFFENERS NOT SHOWN)

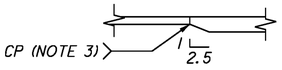


GIRDER L ELEVATION

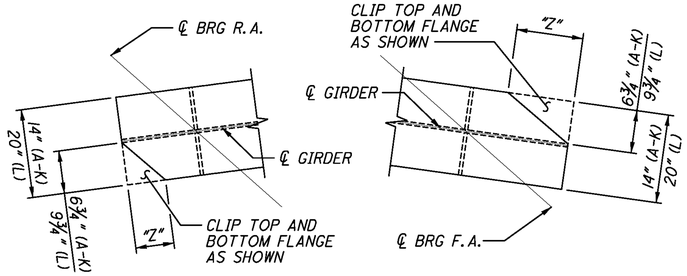
RADIUS = 721'-11 1/2"
(CROSSFRAME STIFFENERS NOT SHOWN)



SHEAR STUD CONNECTOR DETAIL



FLANGE WELD DETAIL



FLANGE TRIMMING DETAIL

FLANGE TRIMMING DIMENSIONS		
GIRDER	RA "Z"	FA "Z"
A	5 1/4"	8 1/2"
B	5 3/8"	8 3/8"
C	5 1/2"	9 1/4"
D	5 5/8"	9 1/2"
E	5 3/4"	10"
F	5 7/8"	10 1/4"
G	6"	10 5/8"
H	6 1/8"	11 1/4"
J	6 1/4"	11 7/8"
K	6 3/8"	12 1/4"
L	9 3/8"	18 1/8"

LEGEND

BS = BOTH SIDES
R.A. = REAR ABUTMENT
F.A. = FORWARD ABUTMENT
CP = COMPLETE JOINT PENETRATION

NOTES

1. CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
2. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.
3. GRIND COMPLETE JOINT PENETRATION WELDS SMOOTH IN LONGITUDINAL DIRECTION TO REMOVE REINFORCEMENT.
4. SEE FRAMING PLAN, SHEET 27 / 44 FOR CROSSFRAME LOCATIONS.
5. SEE SHEET 35 / 44 FOR LIMITS OF FIELD PAINTING STRUCTURAL STEEL.

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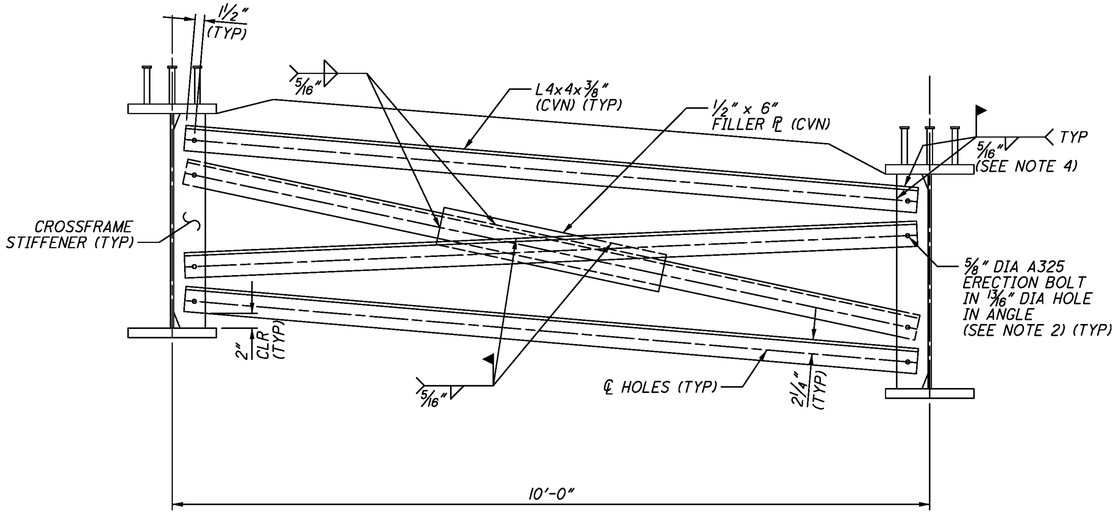
DESIGNED	DRAWN	REVIEWED	DATE
KJB	KJB	JBD	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BES		5007143	

GIRDER ELEVATIONS
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508

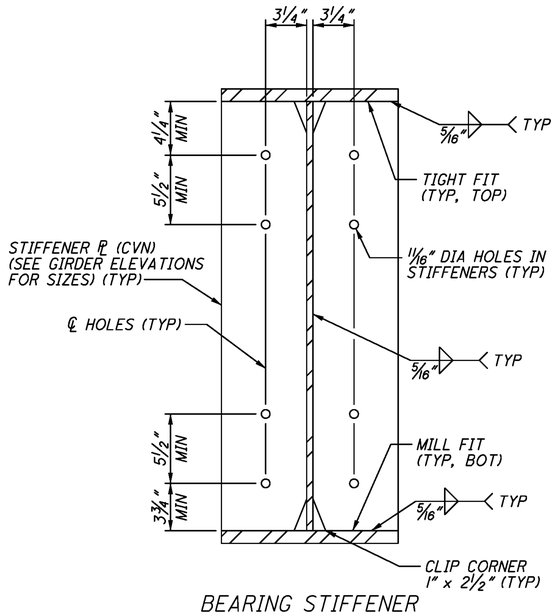
29 / 44

209
307

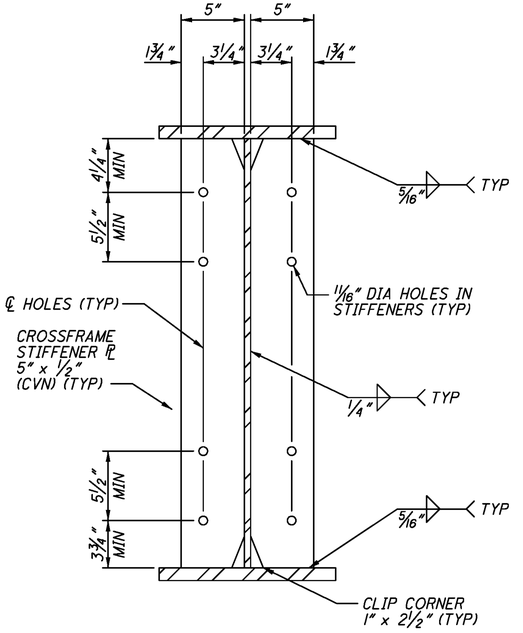


INTERMEDIATE CROSSFRAME DETAIL

GIRDERS A THRU E & GIRDERS F THUR J

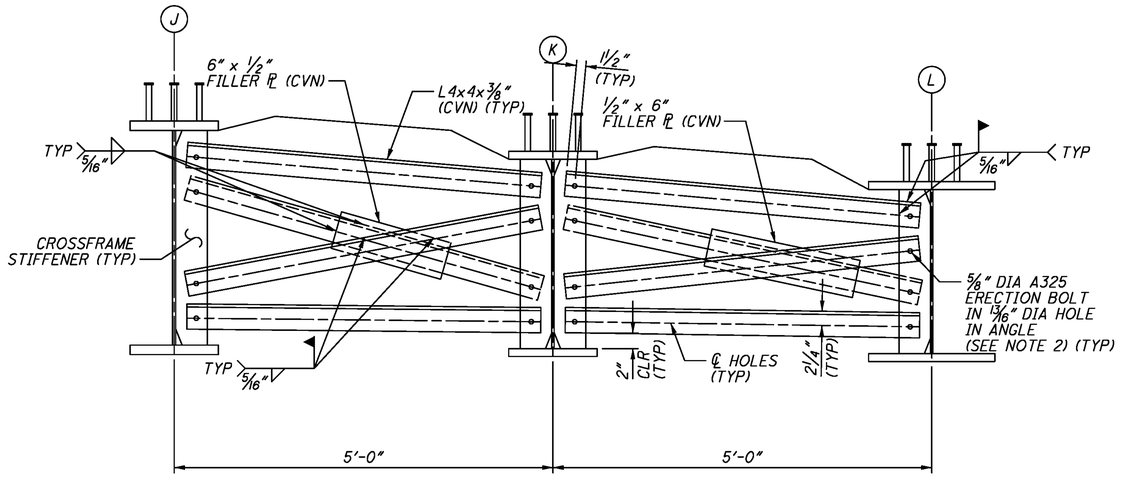


BEARING STIFFENER



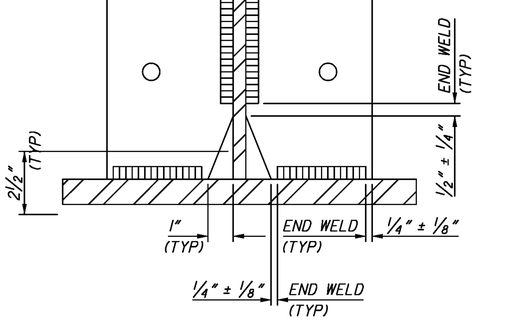
CROSSFRAME STIFFENER

(GIRDERS B-D & G-K SHOWN. GIRDERS A, E, F, & L SHALL HAVE CROSSFRAME STIFFENERS ON INSIDE FACE OF WEB ONLY. SEE FRAMING PLAN ON SHEET 27 / 44 FOR LOCATIONS WHERE CROSSFRAME STIFFENERS ARE REQUIRED ON ONLY ONE FACE OF WEB FOR GIRDERS B-D & G-K)



INTERMEDIATE CROSSFRAME DETAIL

GIRDERS J THRU L



STIFFENER CLIP AND WELD TERMINATION DETAIL

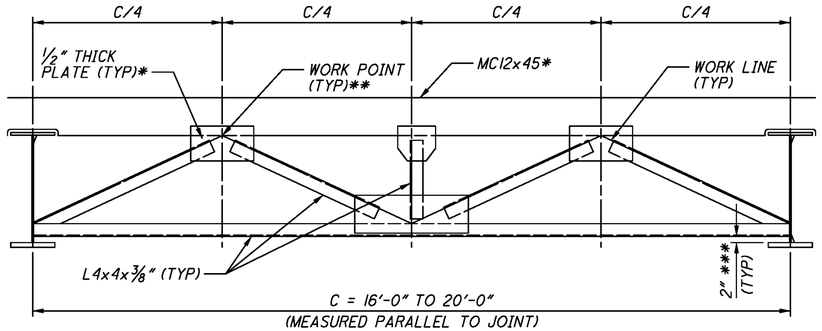
(CROSSFRAME STIFFENER SHOWN, BEARING STIFFENERS SIMILAR)
(BOTTOM FLANGE SHOWN, TOP FLANGE SHOWN, SIMILAR)

STRIP SEAL EXPANSION JOINT (3" SEAL GLAND)		
	DIMENSION "A"	
TEMPERATURE	R.A.	F.A.
30° F	2⅛"	2"
40° F	2"	2"
50° F	2"	2"
60° F	1⅞"	2"
70° F	1⅞"	1⅞"
80° F	1¾"	1⅞"
90° F	1⅝"	1⅞"

FOR MORE INFORMATION SEE STD DWG EXJ-4-87

NOTES

1. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
2. ERECTION BOLTS SHALL BE ASTM A325, TYPE 3 AND SHALL REMAIN IN PLACE. SUPPLY A NUT AND TWO HARDENED WASHERS WITH EACH BOLT. FURNISH ERECTION BOLTS AS PART OF ITEM 513. INSTALL AND COMPLETELY TIGHTEN ALL CONNECTIONS ACCORDING TO CMS 513 PRIOR TO DECK PLACEMENT. WELD THE CROSSFRAME MEMBERS TO THE STIFFENERS PRIOR TO DECK PLACEMENT.
3. SEE STANDARD DRAWING GSD-1-96 FOR ADDITIONAL END CROSSFRAME DETAILS. THE END CROSSFRAME LOWER HORIZONTAL L4x4x3/8" SHALL CLEAR THE BOTTOM FLANGE BY 5" (INSTEAD OF 2" AS SHOWN ON GSD-1-96) AT GIRDERS A, E, F, AND L AT THE FORWARD ABUTMENT IN ORDER TO AVOID INTERFERENCE WITH THE SEISMIC PEDESTALS. THE CLEAR DISTANCE SHALL BE 2" AT ALL OTHER LOCATIONS. DO NOT INSTALL THE END CROSSFRAME DIAGONALS UNTIL DECK PLACEMENT IS COMPLETE. ALL END CROSSFRAME ANGLES, CONNECTION PLATES, AND THE MC12x45 CHANNEL SHALL BE DESIGNATED (CVN) AND SHALL MEET THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
4. 3/8" FILLET WELDS REQUIRED IN PLACE OF 5/16" FOR EITHER THE HORIZONTAL OR DIAGONAL MEMBERS OF CERTAIN CROSSFRAMES. THESE LOCATIONS ARE INDICATED WITH A "*" FOLLOWED BY "HORZ" OR "DIAG" IN THE FRAMING PLAN ON SHEET 27 / 44.
5. SEE SHEET 35 / 44 FOR LIMITS OF FIELD PAINTING STRUCTURAL STEEL.



END CROSSFRAME DETAIL

(FOR MORE INFORMATION SEE STD DWG GSD-1-96 AND NOTE 3)

* - THE ½" THICK PLATE AND MC12x45 ARE PART OF THE EXPANSION JOINT SYSTEM. SEE THE STANDARD BRIDGE DRAWING EXJ-4-87 FOR DETAILS INCLUDING MATERIAL AND COATING REQUIREMENTS.

** - THE WORK LINE SHALL BE THE INSIDE FACE OF THE PROTRUDING ANGLE LEG EXTENDED AS SHOWN. THE WORK POINT SHALL BE THE INTERSECTION OF THESE LINES.

*** - DIMENSION SHALL BE 5" INSTEAD OF 2" AT GIRDERS A, E, F, AND L AT THE FORWARD ABUTMENT IN ORDER TO AVOID INTERFERENCE WITH THE SEISMIC PEDESTALS.

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DESIGNED	DRAWN	REVIEWED	DATE
KJB	KJB	JBD	05-28-10
CHECKED	REVISED		STRUCTURE FILE NUMBER
BES			5007143

SUPERSTRUCTURE DETAILS
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

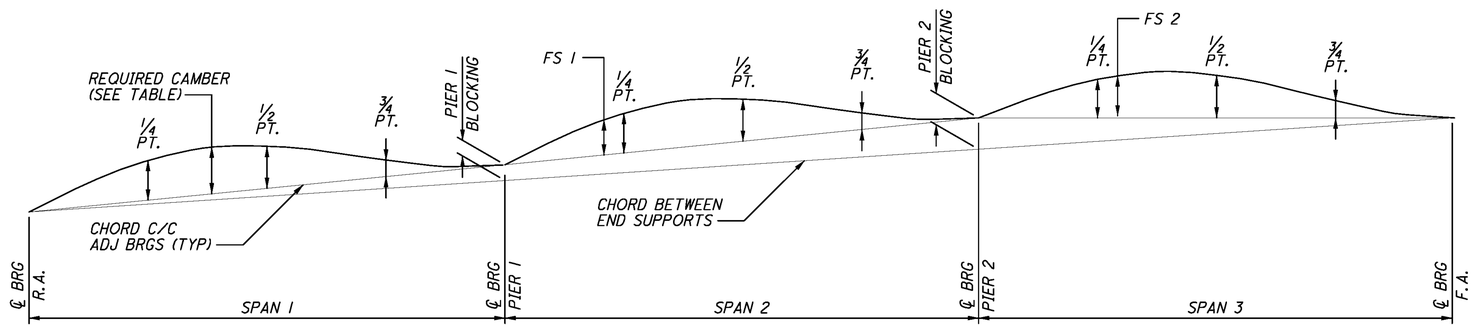
MAH-680-4.29
PID No. 25508

STRUCTURAL STEEL DEFLECTION & CAMBER TABLE FOR GIRDERS A - E (ALL DIMENSIONS ARE IN INCHES)															
	SPAN 1				SPAN 2					SPAN 3					
LOCATION	RA	1/4	1/2	3/4	P 1	FS 1	1/4	1/2	3/4	P 2	1/4	FS 2	1/2	3/4	FA
DEFLECTION DUE TO WEIGHT OF STEEL	0	1/16	1/16	0	0	1/16	1/16	1/16	1/16	0	1/16	1/16	1/8	1/16	0
DEFLECTION DUE TO REMAINING DEADLOAD	0	1/4	1/4	1/8	0	1/4	3/8	5/8	5/16	0	1/4	5/16	9/16	1/2	0
ADJUSTMENT REQUIRED FOR SUPERELEVATION TRANSITION	0	0	0	0	0	0	0	0	0	0	1/16	1/16	1/8	1/8	0
REQUIRED SHOP CAMBER	0	5/16	5/16	1/8	0	5/16	7/16	11/16	3/8	0	3/8	7/16	13/16	11/16	0

STRUCTURAL STEEL DEFLECTION & CAMBER TABLE FOR GIRDERS F - J (ALL DIMENSIONS ARE IN INCHES)															
	SPAN 1				SPAN 2					SPAN 3					
LOCATION	RA	1/4	1/2	3/4	P 1	FS 1	1/4	1/2	3/4	P 2	1/4	FS 2	1/2	3/4	FA
DEFLECTION DUE TO WEIGHT OF STEEL (F-J)	0	1/16	1/16	0	0	1/16	1/16	1/8	1/16	0	1/16	1/16	1/8	1/8	0
DEFLECTION DUE TO REMAINING DEADLOAD (F-J)	0	1/4	1/4	1/8	0	5/16	7/16	3/4	3/8	0	3/8	3/8	3/4	5/8	0
ADJUSTMENT REQUIRED FOR SUPERELEV. TRANSITION (F-H)	0	0	0	0	0	0	0	0	0	0	-1/16	-1/16	0	0	0
ADJUSTMENT REQUIRED FOR SUPERELEV. TRANSITION (J)	0	0	0	0	0	-1/8	-3/16	-3/8	-9/16	0	1/16	1/16	1/8	1/16	0
REQUIRED SHOP CAMBER (F-H)	0	5/16	5/16	1/8	0	3/8	1/2	7/8	7/16	0	3/8	3/8	7/8	3/4	0
REQUIRED SHOP CAMBER (J)	0	5/16	5/16	1/8	0	1/4	5/16	1/2	-1/8	0	1/2	1/2	1	13/16	0

STRUCTURAL STEEL DEFLECTION & CAMBER TABLE FOR GIRDER K (ALL DIMENSIONS ARE IN INCHES)															
	SPAN 1				SPAN 2					SPAN 3					
LOCATION	RA	1/4	1/2	3/4	P 1	FS 1	1/4	1/2	3/4	P 2	1/4	FS 2	1/2	3/4	FA
DEFLECTION DUE TO WEIGHT OF STEEL	0	1/16	1/16	0	0	1/16	1/8	1/8	1/16	0	1/8	1/8	3/16	3/16	0
DEFLECTION DUE TO REMAINING DEADLOAD	0	1/4	1/4	1/16	0	5/16	1/2	3/4	5/16	0	9/16	9/16	11/16	7/8	0
ADJUSTMENT REQUIRED FOR SUPERELEVATION TRANSITION	0	0	0	0	0	-1/4	-5/16	-11/16	-1	0	0	0	0	0	0
REQUIRED SHOP CAMBER	0	5/16	5/16	1/16	0	1/8	1/16	-1/16	-5/8	0	11/16	11/16	1 1/4	1 1/16	0

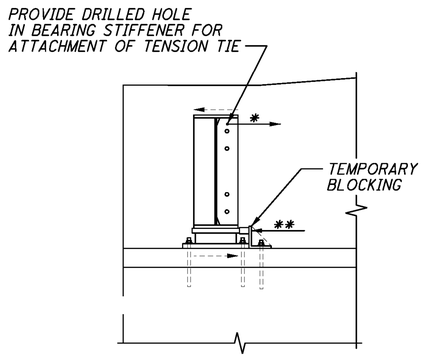
STRUCTURAL STEEL DEFLECTION & CAMBER TABLE FOR GIRDER L (ALL DIMENSIONS ARE IN INCHES)															
	SPAN 1				SPAN 2					SPAN 3					
LOCATION	RA	1/4	1/2	3/4	P 1	FS 1	1/4	1/2	3/4	P 2	1/4	FS 2	1/2	3/4	FA
DEFLECTION DUE TO WEIGHT OF STEEL	0	1/16	1/16	0	0	1/16	1/8	3/16	1/16	0	3/16	3/16	5/16	1/4	0
DEFLECTION DUE TO REMAINING DEADLOAD	0	1/4	1/4	1/16	0	3/8	9/16	3/4	5/16	0	3/4	3/4	1 3/8	1 1/16	0
ADJUSTMENT REQUIRED FOR SUPERELEVATION TRANSITION	0	0	0	0	0	-3/8	-1/2	-1	-1 3/16	0	0	0	0	0	0
REQUIRED SHOP CAMBER	0	5/16	5/16	1/16	0	1/16	3/16	-1/16	-1 3/16	0	1 5/16	1 5/16	1 11/16	1 5/16	0



CAMBER DIAGRAM

(ALL CHORDS REFERENCED TO TOP OF WEB)

BLOCKING DIMENSIONS (INCHES)		
	PIER 1	PIER 2
GIRDER A	0	0
GIRDER B	1/16	1/8
GIRDER C	1/8	1/4
GIRDER D	1/8	1/4
GIRDER E	0	0
GIRDER F	0	0
GIRDER G	-5/16	-11/16
GIRDER H	-3/4	-15/16
GIRDER J	-1 3/8	-2 5/16
GIRDER K	-1 3/4	-2 15/16
GIRDER L	-2 3/16	-3 1/4



TEMPORARY GIRDER BRACING DETAIL

(REAR ABUTMENT SHOWN)

* - CONTRACTOR TO PROVIDE TENSION TIE OF FORCE INDICATED ON FRAMING PLAN AT LOCATIONS SHOWN. TIE SHALL BE INSTALLED PERPENDICULAR TO CENTERLINE OF GIRDER WITHIN 2" OF THE TOP FLANGE. FORCES GIVEN ARE HORIZONTAL (ADJUST AS NECESSARY IF TIE IS NOT HORIZONTAL). REMOVE TENSION TIE AFTER DECK PLACEMENT IS COMPLETE AND PRIOR TO INSTALLING END CROSSFRAME DIAGONALS. CONTRACTOR SHALL DESIGN TENSION TIE AND ANCHORAGE AS PER SECTION 501.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS. CALCULATIONS PERFORMED BY A PROFESSIONAL ENGINEER SHALL BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION. PAYMENT SHALL BE INCLUDED IN PAY ITEM 513, STRUCTURAL STEEL MEMBERS, LEVEL 5.

** - CONTRACTOR TO PROVIDE TEMPORARY BLOCKING TO RESIST THE FORCE INDICATED ON FRAMING PLAN AT LOCATIONS SHOWN. TEMPORARY BLOCKING SHALL ENGAGE THE BEARING LOAD PLATE. AT THE FORWARD ABUTMENT, A MATERIAL OF SUITABLE STRENGTH SHALL BE PROVIDED TO FILL THE 1" GAP BETWEEN THE LOAD PLATE AND THE SEISMIC PEDESTAL FOR THIS PURPOSE. REMOVE BLOCKING AFTER DECK PLACEMENT IS COMPLETE AND PRIOR TO INSTALLING END CROSSFRAME DIAGONALS. SEE TENSION TIE NOTE (ABOVE) FOR SUBMITTAL, APPROVAL, AND PAYMENT INFORMATION.

LEGEND

R.A. = REAR ABUTMENT

F.A. = FORWARD ABUTMENT

FS = FIELD SPLICE

NOTES

1. POSITIVE CAMBER VALUES INDICATE CAMBER ABOVE CHORD BETWEEN ADJACENT BEARINGS.
2. POSITIVE BLOCKING VALUES INDICATE BLOCKING ABOVE CHORD BETWEEN END SUPPORTS.
3. IF HEAT CURVING IS USED TO FABRICATE THE GIRDERS, THE FABRICATOR SHALL ADJUST GIRDER CAMBER IN THE AFFECTED AREAS PER AASHTO 10.15. ADDITIONALLY, THE CONTRACTOR SHALL ADJUST SCREED ELEVATIONS IN THE AFFECTED AREAS PER AASHTO 10.15.3.

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DESIGNED KJB | DRAWN KJB | REVIEWED JBD | DATE 05-28-10

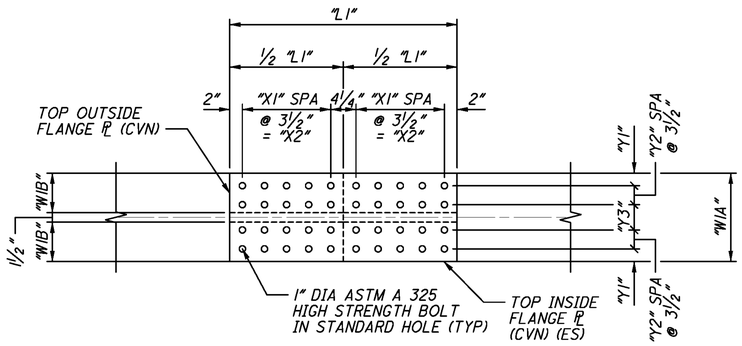
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SUPERSTRUCTURE DETAILS

BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

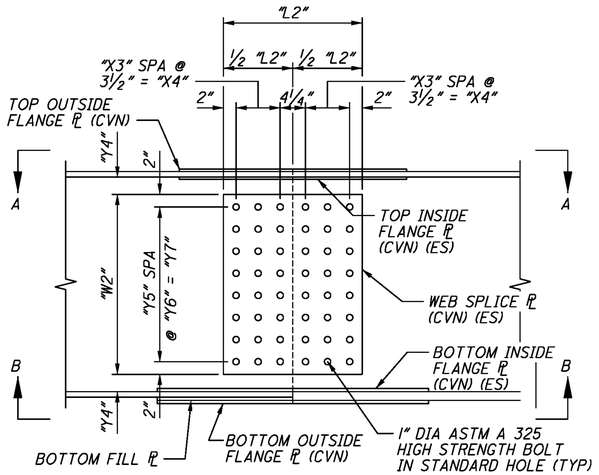
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PID No. 25508



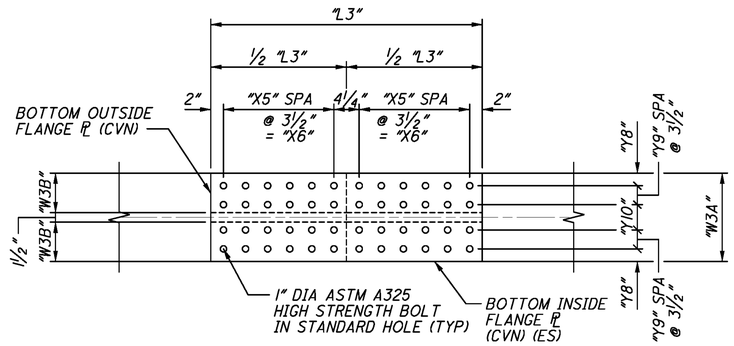
VIEW A-A

(SEE NOTE 5)



TYPICAL PLATE GIRDER SPLICE DETAIL

(SEE NOTE 6)



VIEW B-B

(SEE NOTE 5)

FIELD SPLICE DIMENSION TABLE (ALL DIMENSIONS ARE IN INCHES)

		TOP OUTSIDE ℄			TOP INSIDE ℄			TOP ℄ SPACINGS						WEB ℄			WEB ℄ SPACINGS							BOT OUTSIDE ℄			BOT FILLER ℄			BOT INSIDE ℄			BOT ℄ SPACINGS				
		"L1"	"W1A"	T	"L1"	"W1B"	T	"X1"	"X2"	"Y1"	"Y2"	"Y3"		"L2"	"W2"	T	"X3"	"X4"	"Y4"	"Y5"	"Y6"	"Y7"		"L3"	"W3A"	T	½L3	"W3A"	T	"L3"	"W3B"	T	"X5"	"X6"	"Y8"	"Y9"	"Y10"	
FS 1	GIRDERS A-J	36¼	14	½	36¼	6¼	½	4	14	4	0	6		29¼	29½	½	3	10½	2¼	6	4¼	25½		50¼	14	⅝	–	–	–	50¼	6¼	⅝	6	21	4	0	6	
	GIRDER K	36¼	14	½	36¼	6¼	½	4	14	4	0	6		22¼	26½	⅜	2	7	1¾	6	3¾	22½		43¼	14	½	21⅝	14	⅛	43¼	6¼	½	5	17½	4	0	6	
	GIRDER L	22¼	20	½	22¼	9¼	½	2	7	3½	1	6		29¼	22¾	⅜	3	10½	1⅝	5	3¾	18¾		29¼	20	½	14⅝	20	⅛	29¼	9¼	½	3	10½	3½	1	6	
FS 2	GIRDERS A-E	36¼	14	½	36¼	6¼	½	4	14	4	0	6		29¼	29½	½	3	10½	2¼	6	4¼	25½		57¼	14	¾	28⅝	14	⅛	57¼	6¼	¾	7	24½	4	0	6	
	GIRDERS F-J	36¼	14	½	36¼	6¼	½	4	14	4	0	6		29¼	29½	½	3	10½	2¼	6	4¼	25½		64¼	14	¾	32⅛	14	¼	64¼	6¼	¾	8	28	4	0	6	
	GIRDER K	36¼	14	½	36¼	6¼	½	4	14	4	0	6		22¼	26½	⅜	2	7	1¾	6	3¾	22½		43¼	14	½	21⅝	14	⅛	43¼	6¼	½	5	17½	4	0	6	
	GIRDER L	22¼	20	½	22¼	9¼	½	2	7	3½	1	6		29¼	22¾	⅜	3	10½	1⅝	5	3¾	18¾		36¼	20	½	18⅛	20	¼	36¼	9¼	½	4	14	3½	1	6	

LEGEND

ES = EACH SIDE

NOTES

1. HIGH STRENGTH BOLTS SHALL BE 1" DIAMETER ASTM A325 (TYPE 3) UNLESS OTHERWISE NOTED.
2. HORIZONTAL CURVATURE NOT SHOWN ON FIELD SPLICE DETAILS. FIELD SPLICE PLATES AND BOLT PATTERNS MAY BE FABRICATED AS STRAIGHT OR CURVED.
3. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
4. SEE SHEET 35 / 44 FOR LIMITS OF FIELD PAINTING STRUCTURAL STEEL.
5. 4 BOLTS ACROSS FLANGE WIDTH ARE SHOWN. SOME SPLICES REQUIRE ONLY 2 BOLTS ACROSS FLANGE WIDTH. SEE TABLE, DIMENSIONS "Y2" AND "Y9".
6. 3 COLUMNS OF WEB BOLTS ON EACH SIDE OF SPLICE ARE SHOWN. SOME SPLICES REQUIRE 4 COLUMNS OF WEB BOLTS ON EACH SIDE OF SPLICE. SEE TABLE, DIMENSION "X3".

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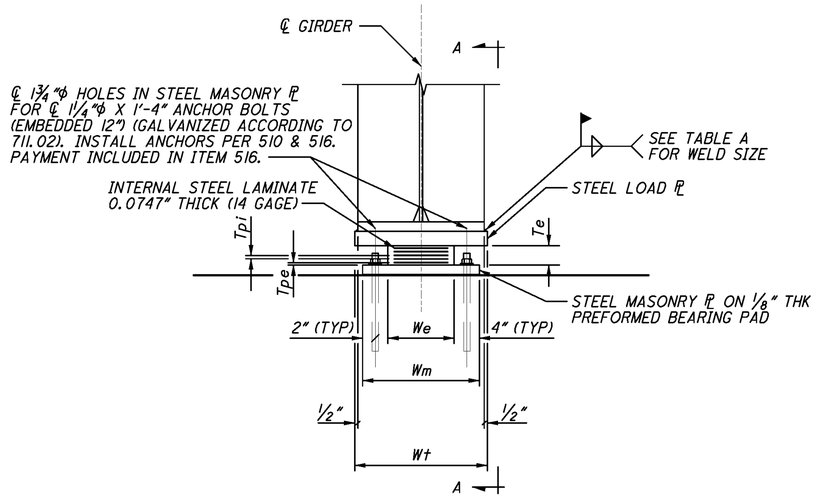
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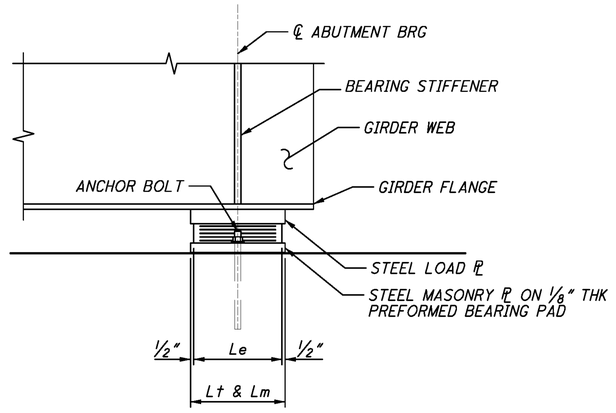
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60 DUROMETER LAMINATED ELASTOMERIC EXPANSION BEARING

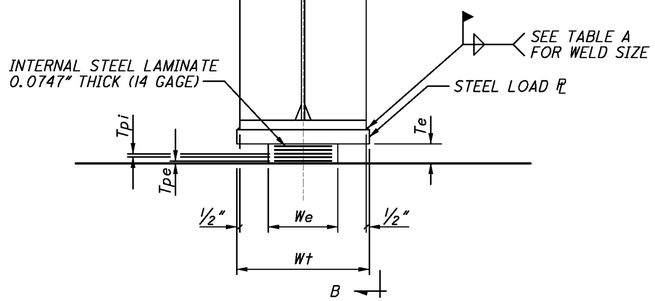
(REAR ABUTMENT)



SECTION A-A

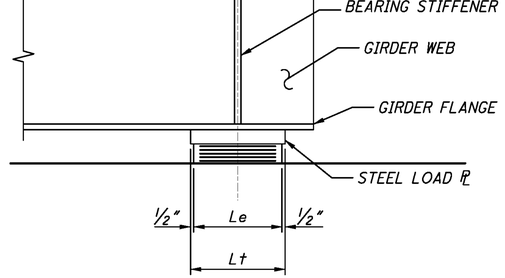
NOTES

1. LOAD PLATES AND MASONRY PLATES SHALL BE ASTM A709 GRADE 50W. THE LOAD PLATE AND MASONRY PLATE (WHERE APPLICABLE) SHALL BE VULCANIZED BONDED TO THE LAMINATED ELASTOMERIC PAD DURING THE MOLDING PROCESS.
2. WELDING: CONTROL WELDING SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
3. BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80°F OR LOWER THAN 40°F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60°F (+/-) 10°F, RAISE THE BEAMS OR GIRDERS TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F (+/-) 10°F.
4. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 60 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES.
5. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL THE MATERIALS, LABOR, AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL THE LAMINATED ELASTOMERIC BEARINGS, STEEL LOAD PLATES, AND MASONRY PLATES. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE).
6. SHOP MARK LOAD PLATES WITH THE FOLLOWING INFORMATION: TOP, UPSTATION DIRECTION, GIRDER DESIGNATION, AND LOCATION (REAR ABUT, PIER 1, PIER 2, OR FORWARD ABUT).

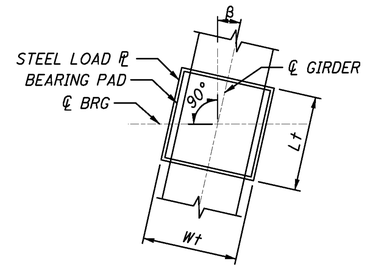


60 DUROMETER LAMINATED ELASTOMERIC EXPANSION BEARING

(FORWARD ABUTMENT)



SECTION B-B



BEARING ORIENTATION PLAN

ANGLE β				
BEARING LOCATION	REAR ABUT	PIER 1	PIER 2	FORWARD ABUT
BEAM A	38°-15'-52"	42°-04'-18"	47°-20'-00"	51°-50'-25"
BEAM B	38°-50'-01"	42°-43'-27"	48°-07'-09"	52°-45'-53"
BEAM C	39°-25'-20"	43°-24'-00"	48°-56'-15"	53°-44'-00"
BEAM D	40°-01'-52"	44°-06'-05"	49°-47'-29"	54°-45'-03"
BEAM E	40°-39'-41"	44°-49'-47"	50°-41'-00"	55°-49'-19"
BEAM F	40°-59'-26"	45°-12'-40"	51°-09'-08"	56°-23'-20"
BEAM G	41°-39'-22"	45°-59'-02"	52°-06'-30"	57°-33'-12"
BEAM H	42°-20'-48"	46°-47'-21"	53°-06'-43"	58°-47'-20"
BEAM J	43°-03'-52"	47°-37'-44"	54°-10'-05"	60°-06'-22"
BEAM K	43°-26'-01"	48°-03'-46"	54°-43'-03"	60°-47'-56"
BEAM L	43°-48'-38"	48°-30'-23"	55°-16'-56"	61°-31'-01"

NOTE: ANGLE β IS A CLOCKWISE ROTATION FROM A LINE NORMAL TO THE ℄ BRG TO THE ℄ GIRDER.

TABLE A

LAMINATED ELASTOMERIC BEARING DATA

BEARING LOCATION	GIRDERS	BEARING TYPE	NO. REQUIRED	DEAD LOAD (KIPS)	LIVE LOAD (KIPS)	TOTAL LOAD (DL+LL) KIPS	TRANSVERSE ROTATION	Le (IN)	We (IN)	Tpi (IN)	NO. OF Tpi	Tpe (IN) (2 EACH)	NO. OF INTERNAL STEEL LAMINATES (14 GAGE)	Te (IN)	FILLET WELD SIZE (IN)
R.A.	A - J	EXPANSION	9	41.4	64.3	105.7	0.07°	12.00	13.00	0.556	4	0.389	5	3.376	⅜
R.A.	K - L	EXPANSION	2	32.4	34.5	66.9	0.06°	10.50	10.50	0.556	4	0.389	5	3.376	⅜
PIER 1	A - J	EXPANSION	9	151.5	91.7	243.2	0.08°	17.00	19.00	0.765	4	0.536	5	4.505	⅜
PIER 1	K - L	EXPANSION	2	108.5	47.0	155.5	0.09°	16.00	17.00	0.765	4	0.536	5	4.505	⅜
PIER 2	A - J	FIXED	9	173.2	97.4	270.6	0.13°	17.00	19.50	0.765	4	0.536	5	4.505	⅜
PIER 2	K - L	FIXED	2	139.3	50.9	190.2	0.14°	16.00	17.00	0.765	4	0.536	5	4.505	⅜
F.A.	A - G	EXPANSION	7	51.9	67.6	119.5	0.25°	12.00	14.00	0.556	4	0.389	5	3.376	⅜
F.A.	H - J	EXPANSION	2	50.4	67.8	118.2	0.47°	12.50	13.00	0.556	5	0.389	6	4.007	⅜
F.A.	K - L	EXPANSION	2	38.8	33.8	72.6	0.57°	11.00	11.00	0.556	4	0.389	5	3.376	⅜

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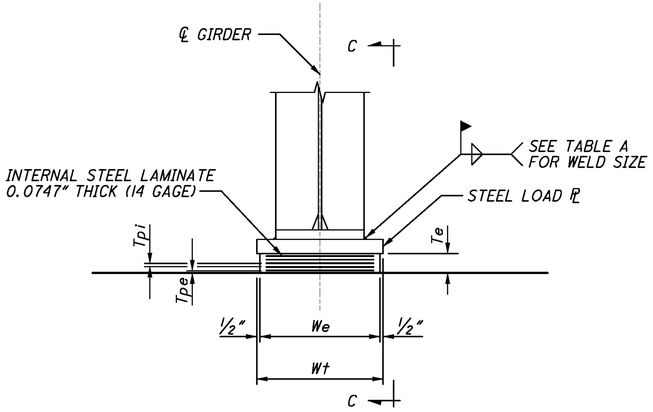
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BEARING DETAILS

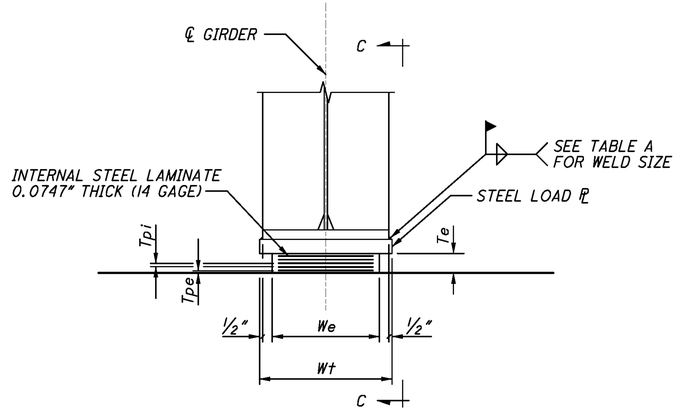
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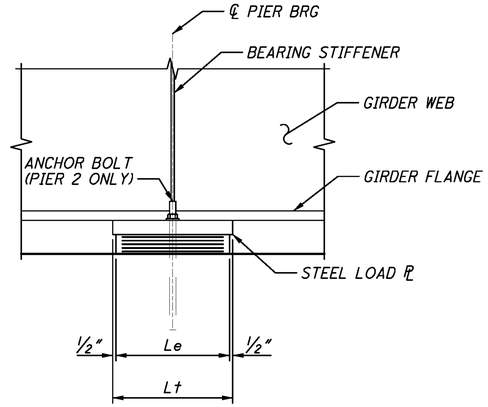
60 DUROMETER LAMINATED ELASTOMERIC EXPANSION BEARING

(PIER 1, GIRDERS A - K)

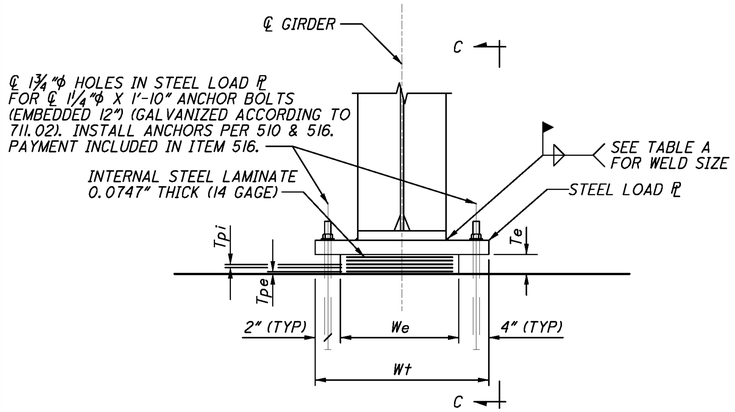


60 DUROMETER LAMINATED ELASTOMERIC EXPANSION BEARING

(PIER 1, GIRDER L)

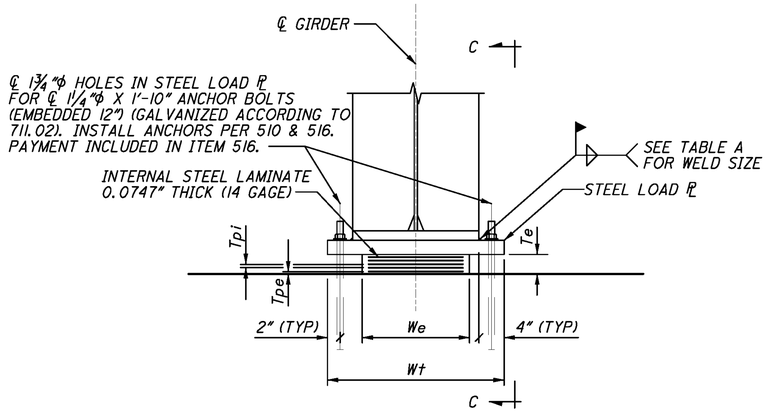


SECTION C-C



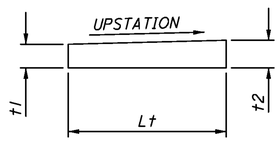
60 DUROMETER LAMINATED ELASTOMERIC FIXED BEARING

(PIER 2, GIRDERS A - K)

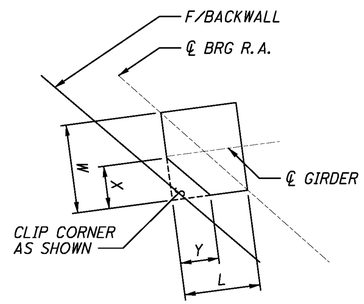


60 DUROMETER LAMINATED ELASTOMERIC FIXED BEARING

(PIER 2, GIRDER L)



STEEL LOAD PLATE



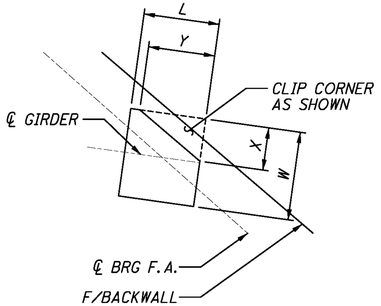


PLATE TRIMMING DETAIL

STEEL PLATE DIMENSIONS (IN)

BEARING LOCATION	REAR ABUT LOAD ℄				REAR ABUT MASONRY ℄			PIER 1 LOAD ℄				PIER 2 LOAD ℄				FORWARD ABUT LOAD ℄			
	Lt	Wt	t1	t2	Lm	Wm	tm	Lt	Wt	t1	t2	Lt	Wt	t1	t2	Lt	Wt	t1	t2
GIRDER A	13	15	1 7/16	1 9/16	13	21	1 1/2	18	20	1 5/16	2 1/16	18	27 1/2	1 5/16	2 1/16	13	15	1 7/16	1 9/16
GIRDER B	13	15	1 9/16	1 11/16	13	21	1 1/2	18	20	2 3/16	2 5/16	18	27 1/2	2 5/16	2 7/16	13	15	1 15/16	2 1/16
GIRDER C	13	15	1 7/16	1 9/16	13	21	1 1/2	18	20	1 5/16	2 1/16	18	27 1/2	1 5/16	2 1/16	13	15	1 1/2	1 1/2
GIRDER D	13	15	1 7/16	1 9/16	13	21	1 1/2	18	20	1 5/16	2 1/16	18	27 1/2	1 5/16	2 1/16	13	15	1 1/2	1 1/2
GIRDER E	13	15	1 7/16	1 9/16	13	21	1 1/2	18	20	1 5/16	2 1/16	18	27 1/2	1 5/16	2 1/16	13	15	1 7/16	1 9/16
GIRDER F	13	15	1 7/16	1 9/16	13	21	1 1/2	18	20	1 5/16	2 1/16	18	27 1/2	1 5/16	2 1/16	13	15	1 7/16	1 9/16
GIRDER G	13	15	1 7/16	1 9/16	13	21	1 1/2	18	20	1 5/16	2 1/16	18	27 1/2	1 5/16	2 1/16	13	15	1 7/16	1 9/16
GIRDER H	13	15	1 7/16	1 9/16	13	21	1 1/2	18	20	1 5/16	2 1/16	18	27 1/2	1 5/16	2 1/16	13 1/2	15	1 7/16	1 9/16
GIRDER J	13	15	2 3/16	2 5/16	13	21	1 1/2	18	20	2 1/16	2 3/16	18	27 1/2	1 5/16	2 1/16	13 1/2	15	1 7/16	1 9/16
GIRDER K	11 1/2	15	2 1/8	2 1/8	11 1/2	18 1/2	1 1/2	17	18	1 5/16	2 1/16	17	25	2 13/16	2 15/16	12	15	1 7/16	1 9/16
GIRDER L	11 1/2	21	1 1/2	1 1/2	11 1/2	18 1/2	1 1/2	17	21	1 7/16	1 9/16	17	28	3 1/16	3 3/16	12	21	2 13/16	2 15/16

PLATE TRIMMING DIMENSIONS (IN)

GIRDER	R.A.				F.A.	
	LOAD ℄		MASONRY ℄		LOAD ℄	
	X	Y	X	Y	X	Y
A	1 1/4	1	4 1/4	3 3/8	1 1/8	1 1/2
B	1 1/4	1	4 1/4	3 3/8	1 1/8	1 1/2
C	1 1/4	1	4 1/4	3 1/2	1 1/8	1 1/2
D	1 1/4	1	4 1/4	3 5/8	1 1/8	1 1/2
E	1 1/4	1 1/8	4 1/4	3 5/8	1	1 1/2
F	1 1/4	1 1/8	4 1/4	3 3/4	1	1 1/2
G	1 1/4	1 1/8	4 1/4	3 3/4	1	1 1/2
H	1 1/4	1 1/8	4 1/4	3 7/8	1 1/8	1 3/4
J	1 1/4	1 1/4	4 1/4	4	1	1 3/4
K	0 1/2	0 1/2	2 1/4	2 1/8	1/2	1
L	3 1/2	3 3/8	2 1/4	2 1/8	3 1/2	6 1/2

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Columbus, Ohio 43220

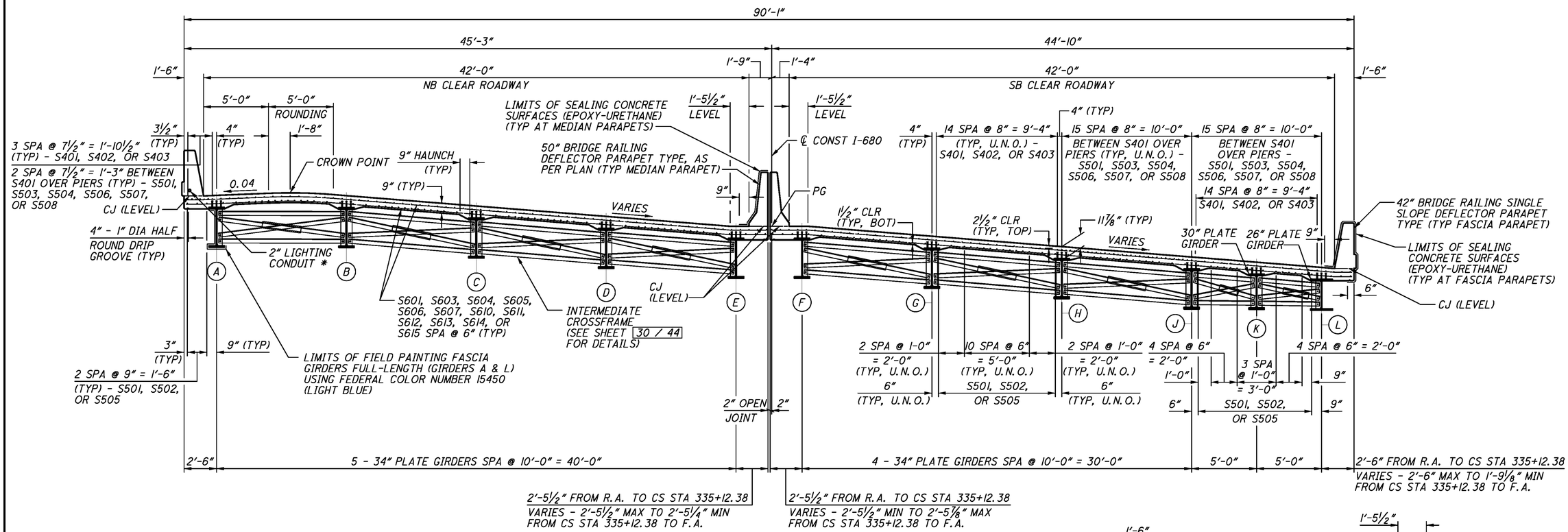
DESIGNED	DRAWN	REVIEWED	DATE
KJB	KJB	JBD	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BES		5007143	

BEARING DETAILS

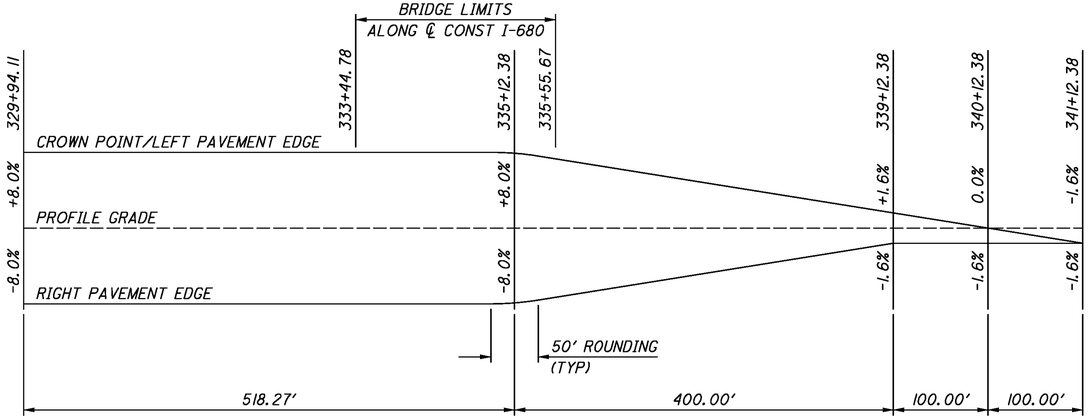
BRIDGE NO. MAH-680-0632
1-680 OVER US62D/SR7D

MAH-680-4.29

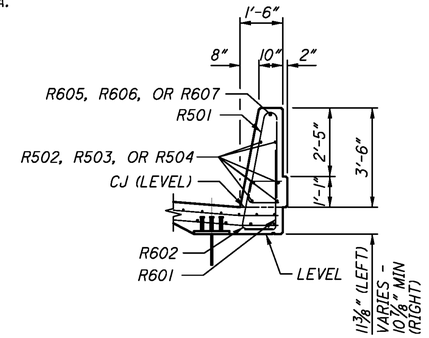
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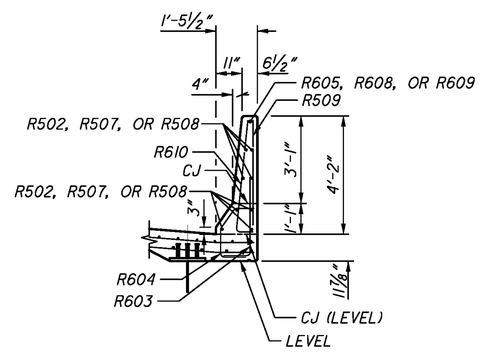
TYPICAL TRANSVERSE SECTION



SUPERELEVATION TRANSITION DIAGRAM



FASCIA PARAPET DETAIL
SECTION A-A



MEDIAN PARAPET DETAIL
SECTION B-B

(FOR ADDITIONAL DETAILS SEE STD DWG SBR-1-99)

LEGEND

U.N.O. = UNLESS NOTED OTHERWISE

R.A. = REAR ABUTMENT

F.A. = FORWARD ABUTMENT

CJ = CONSTRUCTION JOINT

* - SEE LIGHTING PLANS FOR DETAILS AND PAYMENT

(A) - GIRDER LINE DESIGNATION

NOTES

1. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 2⅞" INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE IS ±3 INCHES.

   THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE GIRDER, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.24.

2. PARTIAL PAINTING OF A709 GRADE 50W STEEL: PAINT THE LAST 10 FT OF EACH GIRDER END ADJACENT TO THE ABUTMENTS INCLUDING ALL CROSS FRAMES AND OTHER STEEL WITHIN THESE LIMITS. THE PRIME COAT SHALL BE 708.01. THE TOP COAT COLOR SHALL CLOSELY APPROACH FEDERAL STANDARD NO. 595B - 20045 OR 20059 (THE COLOR OF WEATHERING STEEL).

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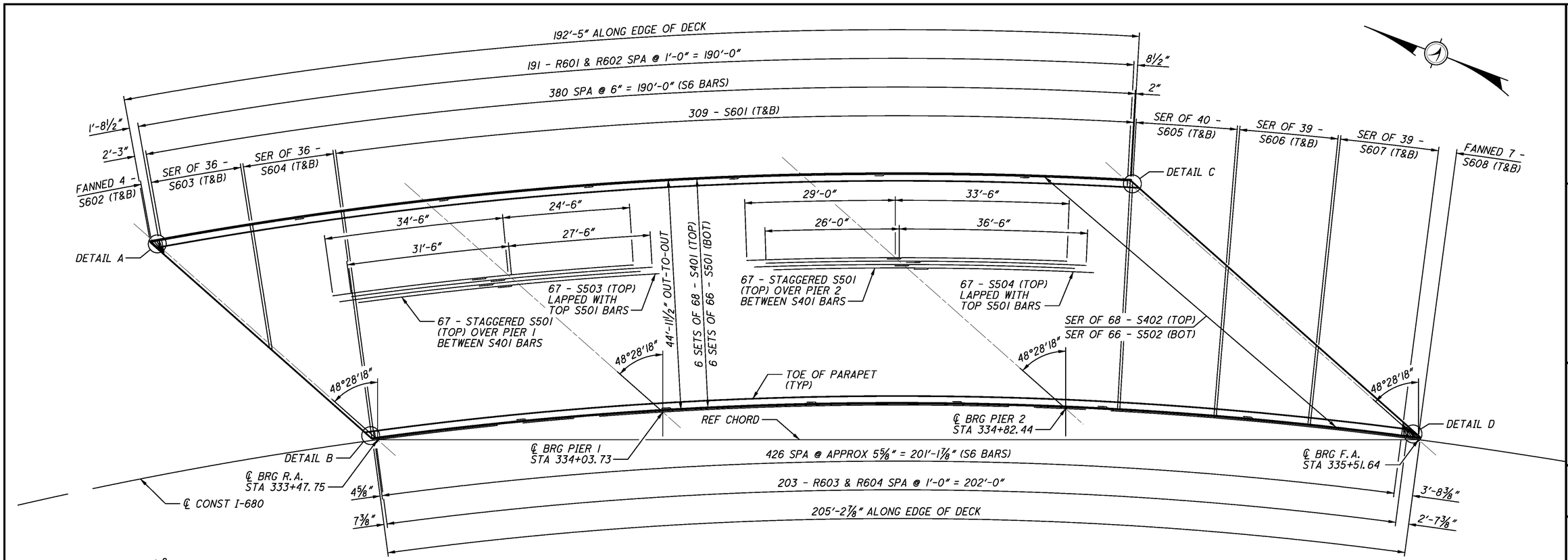
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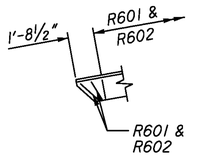
TRANSVERSE DECK SECTION
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508

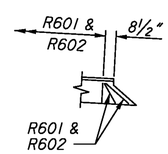
35 / 44

215 / 307

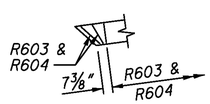




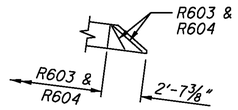
DETAIL A



DETAIL C



DETAIL B



DETAIL D

NB DECK REINFORCEMENT PLAN

(PARAPET REINFORCING NOT SHOWN FOR CLARITY)

LEGEND

R.A. = REAR ABUTMENT
F.A. = FORWARD ABUTMENT
SER = SERIES
T&B = TOP AND BOTTOM
FS = FIELD SPLICE

NOTES

1. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.
2. SEE SHEET 38 / 44 FOR MORE INFORMATION ON FINAL DECK SURFACE ELEVATION LOCATIONS.
3. TYPICAL LAP LENGTHS:
   1'-7" MINIMUM FOR #4 BARS
   2'-0" MINIMUM FOR #5 BOTTOM BARS
   2'-7" MINIMUM FOR #5 TOP BARS

FINAL DECK SURFACE ELEVATIONS

	SPAN 1					SPAN 2					SPAN 3					
	R.A.	¼	½	¾	PIER 1	FS 1	¼	½	¾	PIER 2	¼	FS 2	½	¾	F.A.
LEFT GUTTER #1	333+12.67 950.13	333+25.34 950.19	333+38.00 950.25	333+50.68 950.31	333+63.35 950.38	333+76.17 950.44	333+80.85 950.46	333+98.36 950.55	334+15.85 950.63	334+33.36 950.72	334+48.34 950.79	334+48.86 950.80	334+63.33 950.87	334+78.31 950.94	334+93.30 951.01
GIRDER A	333+13.41 950.17	333+26.11 950.23	333+38.80 950.29	333+51.50 950.36	333+64.20 950.42	333+77.06 950.48	333+81.75 950.51	333+99.30 950.59	334+16.84 950.68	334+34.39 950.77	334+49.42 950.84	334+49.93 950.84	334+64.44 950.91	334+79.47 950.99	334+94.51 951.06
CROWN POINT #2	333+17.68 950.39	333+30.53 950.45	333+43.39 950.51	333+56.24 950.58	333+69.09 950.64	333+82.12 950.70	333+86.89 950.73	334+04.68 950.82	334+22.48 950.90	334+40.27 950.99	334+55.56 951.07	334+56.07 951.07	334+70.85 951.14	334+86.13 951.22	335+01.42 951.29
GIRDER B	333+21.01 950.19	333+33.98 950.25	333+46.95 950.31	333+59.93 950.38	333+72.90 950.44	333+86.06 950.51	333+90.89 950.53	334+08.89 950.62	334+26.88 950.71	334+44.87 950.80	334+60.36 950.87	334+60.86 950.88	334+75.85 950.95	334+91.35 951.03	335+06.84 951.09
GIRDER C	333+28.86 949.43	333+42.12 949.49	333+55.39 949.56	333+68.65 949.62	333+81.92 949.69	333+95.40 949.75	334+00.39 949.78	334+18.85 949.87	334+37.32 949.96	334+55.79 950.05	334+71.78 950.13	334+72.25 950.13	334+87.77 950.21	335+03.77 950.28	335+19.76 950.34
GIRDER D	333+36.98 948.67	333+50.55 948.73	333+64.12 948.80	333+77.70 948.87	333+91.27 948.93	334+05.09 949.00	334+10.25 949.03	334+29.22 949.12	334+48.19 949.21	334+67.17 949.31	334+83.71 949.39	334+84.16 949.39	335+00.25 949.47	335+16.79 949.54	335+33.34 949.60
BREAK POINT #3	333+44.99 947.94	333+58.88 948.01	333+72.76 948.08	333+86.65 948.15	334+00.54 948.22	334+14.70 948.29	334+20.03 948.31	334+39.52 948.41	334+59.02 948.50	334+78.51 948.60	334+95.62 948.68	334+96.03 948.69	335+12.73 948.77	335+29.84 948.85	335+46.92 948.94
GIRDER E	333+45.39 947.94	333+59.29 948.01	333+73.19 948.08	333+87.09 948.15	334+00.99 948.22	334+15.17 948.29	334+20.51 948.31	334+40.03 948.41	334+59.55 948.51	334+79.07 948.60	334+96.21 948.69	334+96.62 948.69	335+13.35 948.77	335+30.49 948.86	335+47.62 948.94
RIGHT GUTTER #4	333+46.24 947.95	333+60.18 948.02	333+74.11 948.09	333+88.04 948.15	334+01.98 948.22	334+16.20 948.29	334+21.56 948.32	334+41.14 948.42	334+60.71 948.51	334+80.29 948.61	334+97.49 948.69	334+97.90 948.69	335+14.70 948.78	335+31.89 948.86	335+49.05 948.95
PROFILE GRADE	333+47.75 947.96	333+61.75 948.02	333+75.74 948.09	333+89.74 948.16	334+03.73 948.23	334+18.01 948.30	334+23.41 948.33	334+43.09 948.43	334+62.76 948.52	334+82.44 948.62	334+99.74 948.70	335+00.15 948.71	335+17.04 948.79	335+34.34 948.87	335+51.64 948.96

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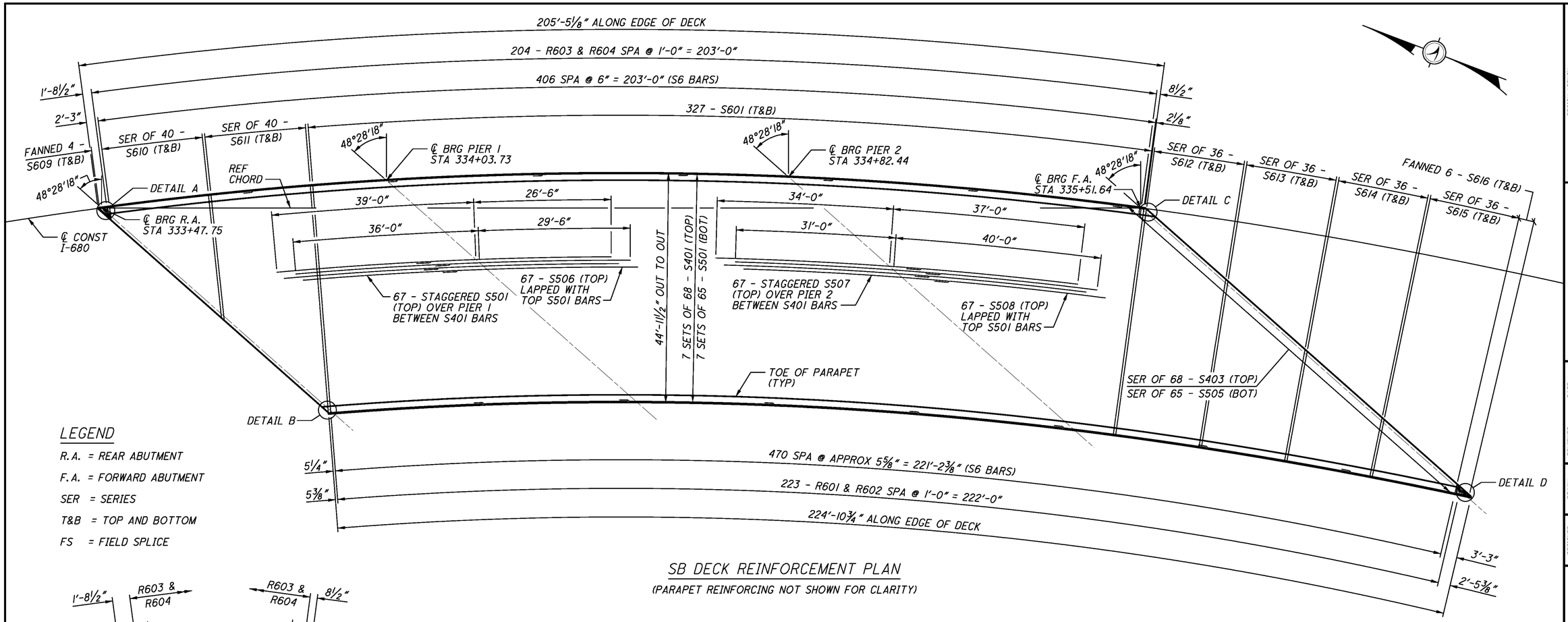
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DRAWN KJB
CHECKED JHL/BES
REVIEWED JBD
DATE 05-28-10
REVISED
STRUCTURE FILE NUMBER 5007143

DECK DETAILS
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508

36 / 44

216
307



LEGEND

R.A. = REAR ABUTMENT

F.A. = FORWARD ABUTMENT

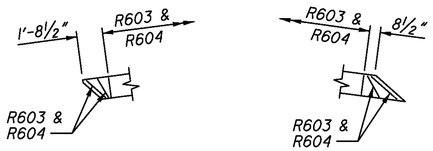
SER = SERIES

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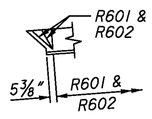
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(PARAPET REINFORCING NOT SHOWN FOR CLARITY)

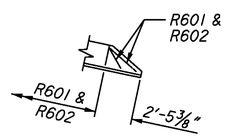


DETAIL A

DETAIL C



DETAIL B



DETAIL D

NOTES

1. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.
2. SEE SHEET 38 / 44 FOR MORE INFORMATION ON FINAL DECK SURFACE ELEVATION LOCATIONS.
3. TYPICAL LAP LENGTHS:
   1'-7" MINIMUM FOR #4 BARS
   2'-0" MINIMUM FOR #5 BOTTOM BARS
   2'-7" MINIMUM FOR #5 TOP BARS

FINAL DECK SURFACE ELEVATIONS

	SPAN 1				SPAN 2					SPAN 3					
	R.A.	¼	½	¾	PIER 1	FS 1	¼	½	¾	PIER 2	¼	FS 2	½	¾	F.A.
PROFILE GRADE	333+47.75 947.96	333+61.75 948.02	333+75.74 948.09	333+89.74 948.16	334+03.73 948.23	334+18.01 948.30	334+23.41 948.33	334+43.09 948.43	334+62.76 948.52	334+82.44 948.62	334+99.74 948.70	335+00.15 948.71	335+17.04 948.79	335+34.34 948.87	335+51.64 948.96
LEFT GUTTER #5	333+48.91 947.96	333+62.94 948.03	333+76.98 948.10	333+91.03 948.17	334+05.07 948.24	334+19.40 948.31	334+24.82 948.34	334+44.58 948.43	334+64.33 948.53	334+84.09 948.63	335+01.48 948.71	335+01.88 948.71	335+18.88 948.80	335+36.27 948.88	335+53.62 948.97
GIRDER F	333+49.78 947.97	333+63.85 948.03	333+77.92 948.10	333+92.01 948.17	334+06.08 948.24	334+20.45 948.32	334+25.89 948.34	334+45.71 948.44	334+65.52 948.54	334+85.33 948.63	335+02.79 948.72	335+03.18 948.72	335+20.25 948.81	335+37.72 948.89	335+55.18 948.98
BREAK POINT #6	333+50.18 947.97	333+64.27 948.04	333+78.35 948.11	333+92.45 948.18	334+06.54 948.24	334+20.93 948.31	334+26.38 948.34	334+46.22 948.44	334+66.06 948.54	334+85.90 948.64	335+03.39 948.72	335+03.78 948.72	335+20.88 948.81	335+38.36 948.89	335+55.80 948.98
GIRDER G	333+58.65 947.25	333+73.09 947.32	333+87.52 947.39	334+01.95 947.46	334+16.39 947.53	334+31.16 947.60	334+36.81 947.63	334+57.23 947.73	334+77.65 947.83	334+98.08 947.93	335+16.24 948.03	335+16.57 948.04	335+34.39 948.14	335+52.53 948.26	335+70.64 948.38
GIRDER H	333+67.87 946.49	333+82.68 946.56	333+97.49 946.64	334+12.31 946.71	334+27.12 946.78	334+42.33 946.86	334+48.21 946.89	334+69.30 946.99	334+90.38 947.09	335+11.47 947.22	335+30.39 947.35	335+30.66 947.35	335+49.28 947.50	335+68.15 947.65	335+86.99 947.80
GIRDER J	333+77.44 945.74	333+92.70 945.81	334+07.89 945.89	334+23.10 945.96	334+38.33 946.04	334+54.00 946.12	334+60.13 946.15	334+81.94 946.25	335+03.75 946.37	335+25.55 946.54	335+45.27 946.72	335+45.48 946.72	335+64.97 946.91	335+84.66 947.10	336+04.31 947.29
GIRDER K	333+82.37 945.36	333+97.80 945.44	334+13.25 945.51	334+28.68 945.59	334+44.11 945.67	334+60.03 945.75	334+66.31 945.78	334+88.50 945.89	335+10.69 946.02	335+32.86 946.22	335+53.02 946.43	335+53.19 946.43	335+73.15 946.64	335+93.28 946.85	336+13.36 947.06
GIRDER L	333+87.39 944.99	334+03.05 945.06	334+18.71 945.14	334+34.38 945.22	334+50.03 945.30	334+66.20 945.38	334+72.62 945.41	334+95.23 945.52	335+17.81 945.69	335+40.36 945.92	335+60.99 946.15	335+61.10 946.15	335+81.58 946.38	336+02.16 946.61	336+22.71 946.84
RIGHT GUTTER #7	333+88.41 944.91	334+04.11 944.99	334+19.82 945.07	334+35.53 945.14	334+51.23 945.22	334+67.46 945.30	334+73.90 945.33	334+96.55 945.45	335+19.20 945.62	335+41.86 945.86	335+62.19 946.09	335+62.60 946.10	335+82.53 946.32	336+02.86 946.56	336+23.19 946.79

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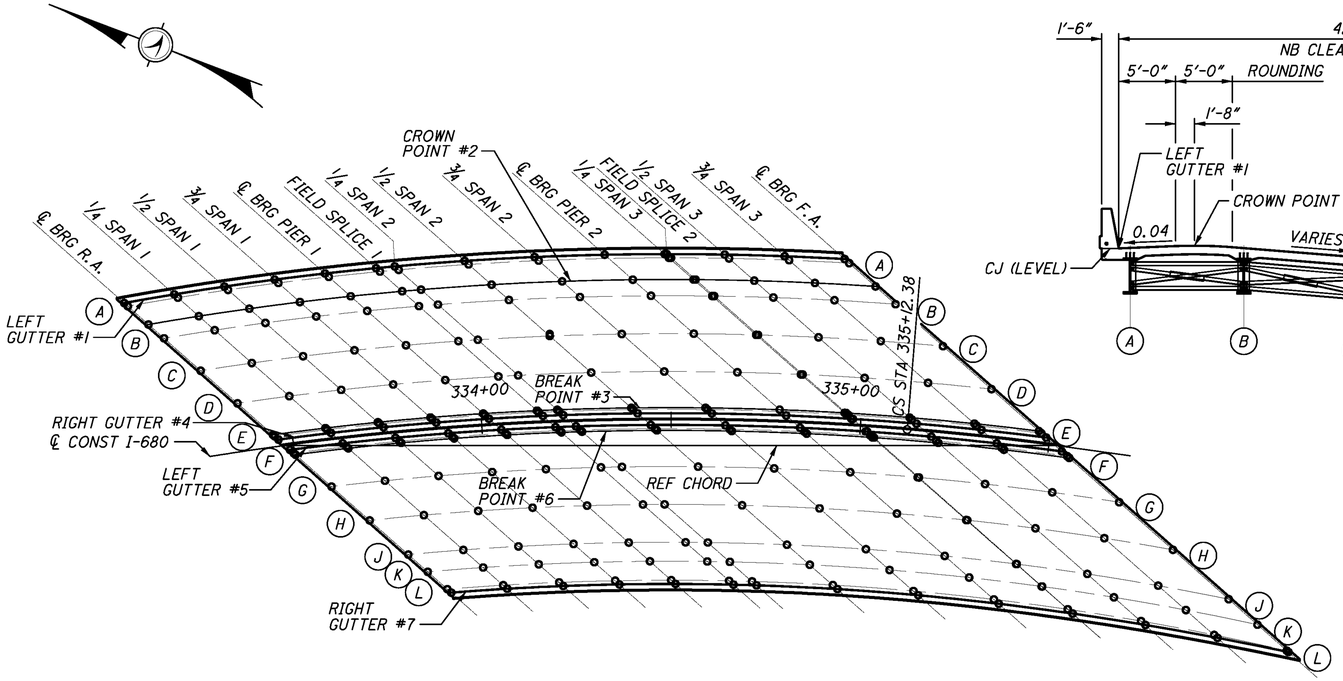
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CHECKED	REVISED	STRUCTURE FILE NUMBER	
JHL/BES		5007143	

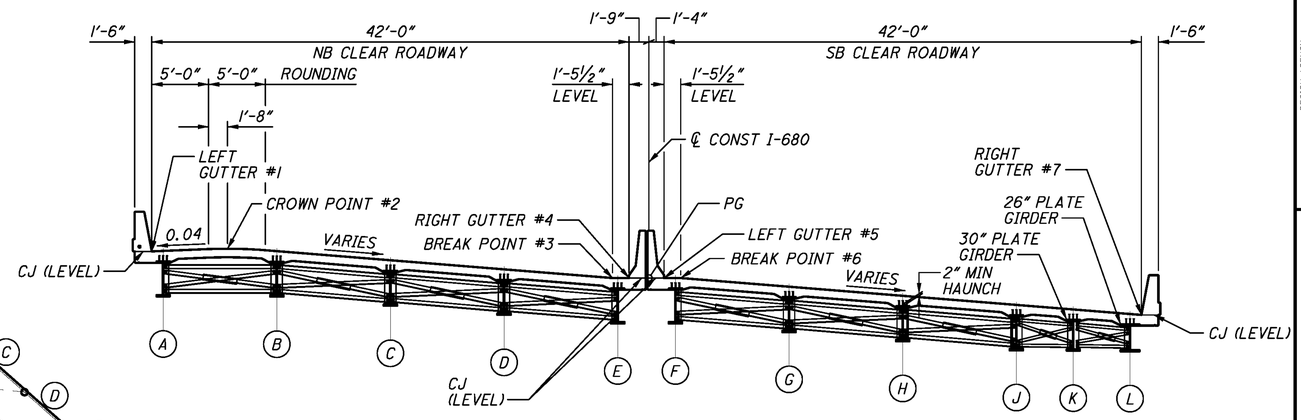
DECK DETAILS
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508

37 / 44

217
307





LEGEND

R.A. = REAR ABUTMENT

F.A. = FORWARD ABUTMENT

FS = FIELD SPLICE

(A) - GIRDER LINE DESIGNATION

NOTES

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
2. TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
3. SEE SHEETS 36-37 / 44 FOR STATIONS OF ALL POINTS IN THE TOP OF HAUNCH ELEVATIONS TABLE.

SCREED ELEVATIONS

	SPAN 1					SPAN 2					SPAN 3				
	R.A.	¼	½	¾	PIER 1	FS 1	¼	½	¾	PIER 2	¼	FS 2	½	¾	F.A.
LEFT GUTTER #1	333+12.67 950.13	333+25.34 950.21	333+38.00 950.27	333+50.68 950.32	333+63.35 950.38	333+76.17 950.46	333+80.85 950.49	333+98.36 950.61	334+15.85 950.66	334+33.36 950.72	334+48.34 950.81	334+48.86 950.82	334+63.33 950.91	334+78.31 950.98	334+93.30 951.01
CROWN POINT #2	333+17.68 950.39	333+30.53 950.47	333+43.39 950.53	333+56.24 950.59	333+69.09 950.64	333+82.12 950.72	333+86.89 950.76	334+04.68 950.88	334+22.48 950.93	334+40.27 950.99	334+55.56 951.09	334+56.07 951.09	334+70.85 951.19	334+86.13 951.26	335+01.42 951.29
BREAK POINT #3	333+44.99 947.94	333+58.88 948.03	333+72.76 948.10	333+86.65 948.16	334+00.54 948.22	334+14.70 948.32	334+20.03 948.35	334+39.52 948.47	334+59.02 948.53	334+78.51 948.60	334+95.62 948.72	334+96.03 948.73	335+12.73 948.84	335+29.84 948.91	335+46.92 948.94
RIGHT GUTTER #4	333+46.24 947.95	333+60.18 948.04	333+74.11 948.11	333+88.04 948.16	334+01.98 948.22	334+16.20 948.32	334+21.56 948.36	334+41.14 948.48	334+60.71 948.54	334+80.29 948.61	334+97.49 948.73	334+97.90 948.73	335+14.70 948.85	335+31.89 948.92	335+49.05 948.95
PROFILE GRADE	333+47.75 947.96	333+61.75 948.04	333+75.74 948.12	333+89.74 948.17	334+03.73 948.23	334+18.01 948.33	334+23.41 948.37	334+43.09 948.50	334+62.76 948.56	334+82.44 948.62	334+99.74 948.73	335+00.15 948.74	335+17.04 948.85	335+34.34 948.93	335+51.64 948.96
LEFT GUTTER #5	333+48.91 947.96	333+62.94 948.05	333+76.98 948.13	333+91.03 948.18	334+05.07 948.24	334+19.40 948.34	334+24.82 948.38	334+44.58 948.50	334+64.33 948.57	334+84.09 948.63	335+01.48 948.74	335+01.88 948.74	335+18.88 948.86	335+36.27 948.94	335+53.62 948.97
BREAK POINT #6	333+50.18 947.97	333+64.27 948.06	333+78.35 948.14	333+92.45 948.19	334+06.54 948.24	334+20.93 948.35	334+26.38 948.38	334+46.22 948.51	334+66.06 948.58	334+85.90 948.64	335+03.39 948.75	335+03.78 948.75	335+20.88 948.87	335+38.36 948.95	335+55.80 948.98
RIGHT GUTTER #7	333+88.41 944.91	334+04.11 945.02	334+19.82 945.10	334+35.53 945.15	334+51.23 945.22	334+67.46 945.34	334+73.90 945.39	334+96.55 945.53	335+19.20 945.65	335+41.86 945.86	335+62.19 946.17	335+62.60 946.18	335+82.53 946.46	336+02.86 946.67	336+23.19 946.79

TOP OF HAUNCH ELEVATIONS

	SPAN 1					SPAN 2					SPAN 3				
	RA	¼	½	¾	PIER 1	FS 1	¼	½	¾	PIER 2	¼	FS 2	½	¾	FA
GIRDER A	949.42	949.50	949.57	949.62	949.67	949.76	949.79	949.90	949.96	950.02	950.11	950.11	950.21	950.28	950.31
GIRDER B	949.44	949.52	949.59	949.64	949.69	949.78	949.82	949.93	949.99	950.05	950.14	950.15	950.25	950.32	950.34
GIRDER C	948.68	948.76	948.83	948.88	948.94	949.03	949.07	949.18	949.24	949.30	949.41	949.41	949.51	949.58	949.59
GIRDER D	947.92	948.00	948.07	948.13	948.18	948.28	948.32	948.43	948.49	948.56	948.67	948.67	948.78	948.84	948.85
GIRDER E	947.19	947.28	947.35	947.41	947.47	947.57	947.60	947.72	947.78	947.85	947.97	947.98	948.09	948.16	948.19
GIRDER F	947.22	947.31	947.38	947.43	947.49	947.59	947.63	947.76	947.83	947.88	948.00	948.00	948.12	948.20	948.23
GIRDER G	946.50	946.59	946.67	946.72	946.78	946.88	946.92	947.05	947.12	947.18	947.31	947.32	947.46	947.57	947.63
GIRDER H	945.74	945.84	945.91	945.97	946.03	946.14	946.18	946.31	946.38	946.47	946.64	946.64	946.83	946.97	947.05
GIRDER J	944.99	945.09	945.16	945.22	945.29	945.40	945.44	945.57	945.66	945.79	946.02	946.02	946.25	946.43	946.54
GIRDER K	944.61	944.71	944.79	944.85	944.92	945.03	945.08	945.21	945.31	945.47	945.73	945.74	946.00	946.19	946.31
GIRDER L	944.24	944.34	944.42	944.48	944.55	944.66	944.71	944.85	944.97	945.17	945.48	945.48	945.77	945.97	946.09

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
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TOLEDO, OHIO 43617
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BURGESS & NIPLE
5085 Reed Road
Columbus, Ohio 43220

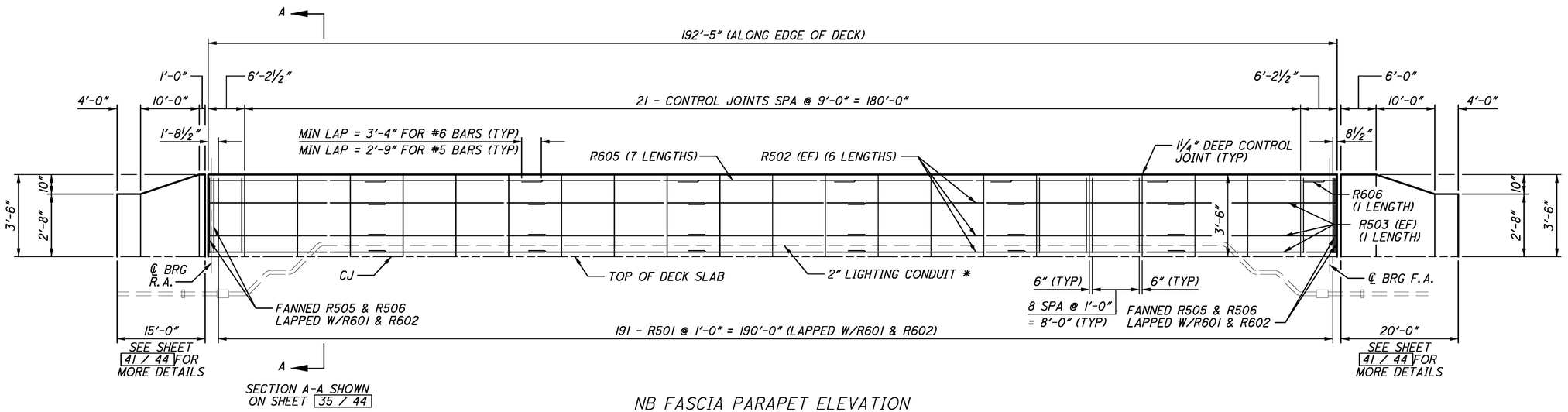
DESIGNED KJB
DRAWN KJB
CHECKED BES
REVIEWED JBD
DATE 05-28-10
STRUCTURE FILE NUMBER 5007143
REVISED

DECK DETAILS
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508

38 / 44

218
307



NB FASCIA PARAPET ELEVATION

(VIEWED FROM TRAFFIC SIDE OF PARAPET)

NOTES

1. SEE STANDARD DRAWING SBR-1-99 FOR ADDITIONAL NOTES AND DETAILS.
2. CONCRETE SHALL BE CLASS HP.

LEGEND

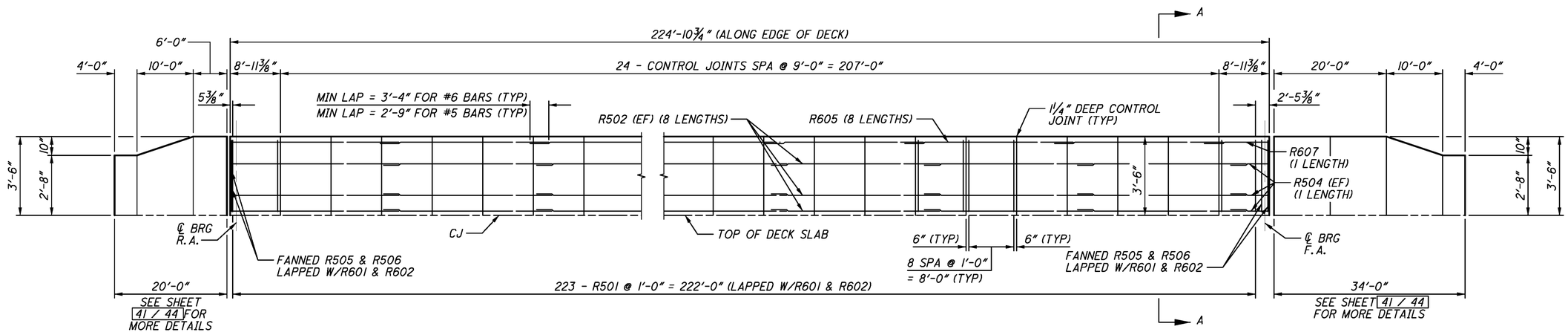
R.A. = REAR ABUTMENT

F.A. = FORWARD ABUTMENT

EF = EACH FACE

CJ = CONSTRUCTION JOINT

* - SEE LIGHTING PLANS FOR DETAILS AND PAYMENT



SB FASCIA PARAPET ELEVATION

(VIEWED FROM OUTSIDE OF PARAPET)

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2919

BURGESS & NIPLE
5085 Reed Road
Columbus, Ohio 43220

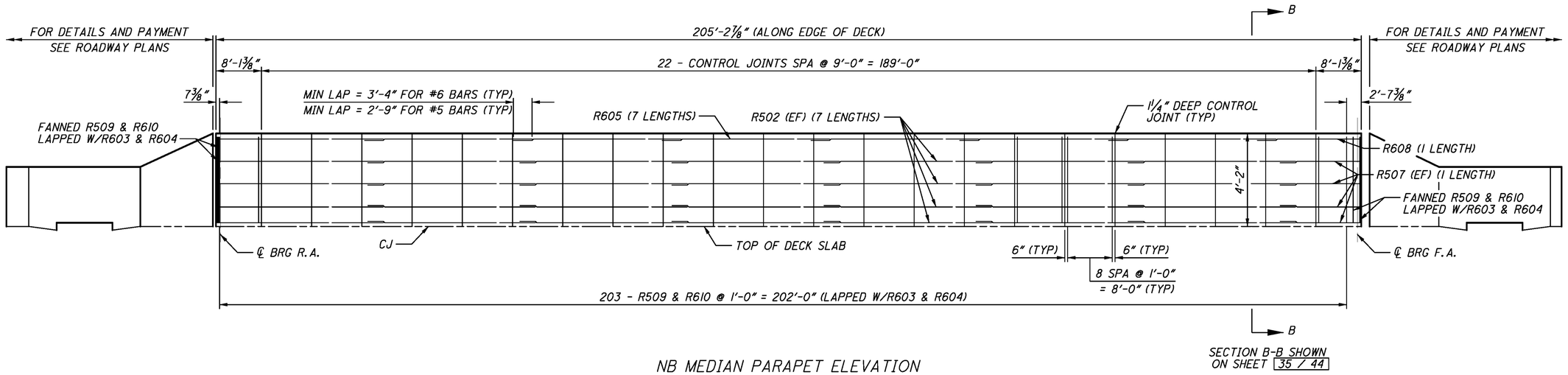
DESIGNED	DRAWN	REVIEWED	DATE
KJB	KJB	JBD	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JHL		5007143	

PARAPET DETAILS

BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SRTD

MAH-680-4.29

PID No. 25508



NB MEDIAN PARAPET ELEVATION

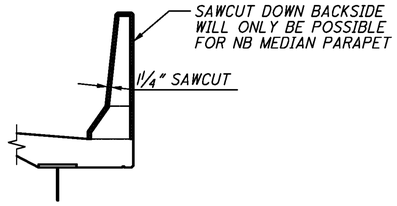
(VIEWED FROM OUTSIDE OF PARAPET)

NOTES

1. CONCRETE PARAPET SAWCUT JOINTS:

   AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, SAWCUT 1-1/4" DEEP CONTROL JOINTS INTO THE PERIMETER OF THE CONCRETE PARAPET AS SHOWN. USE AN EDGE GUIDE, FENCE, OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF ¼ INCH. SEAL THE PERIMETER OF THE DEFLECTION CONTROL JOINT TO A MINIMUM DEPTH OF 1 INCH WITH A POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO ASTM C920, TYPE S. LEAVE THE BOTTOM 1/2 INCH OF THE INSIDE AND OUTSIDE FACE UNSEALED TO ALLOW WATER TO ESCAPE.

2. CONCRETE SHALL BE CLASS HP.



SECTION THROUGH SAWCUT

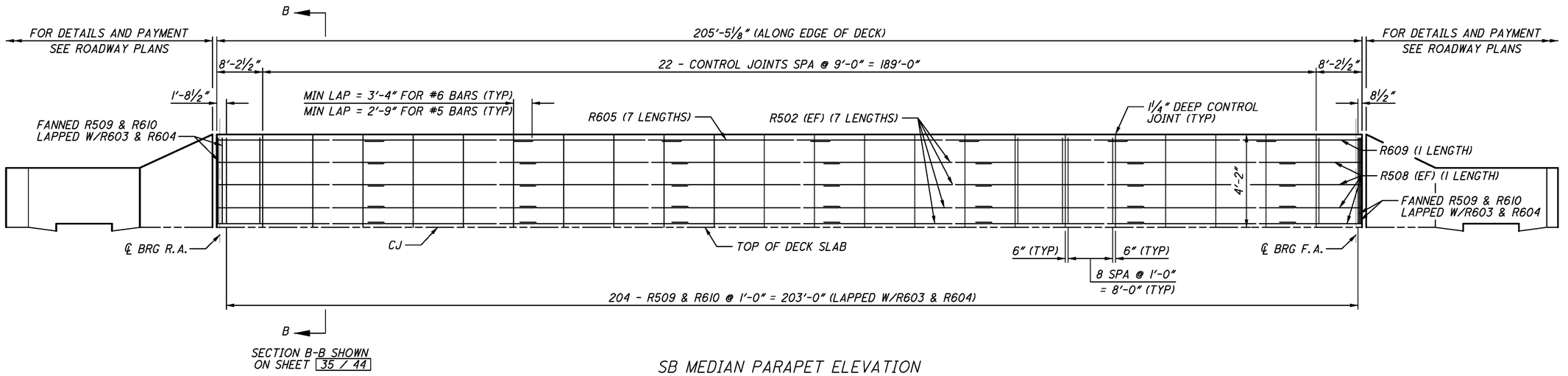
LEGEND

R.A. = REAR ABUTMENT

F.A. = FORWARD ABUTMENT

EF = EACH FACE

CJ = CONSTRUCTION JOINT



SB MEDIAN PARAPET ELEVATION

(VIEWED FROM TRAFFIC SIDE OF PARAPET)

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

BURGESS & NIPLE
5085 Reed Road
Columbus, Ohio 43220

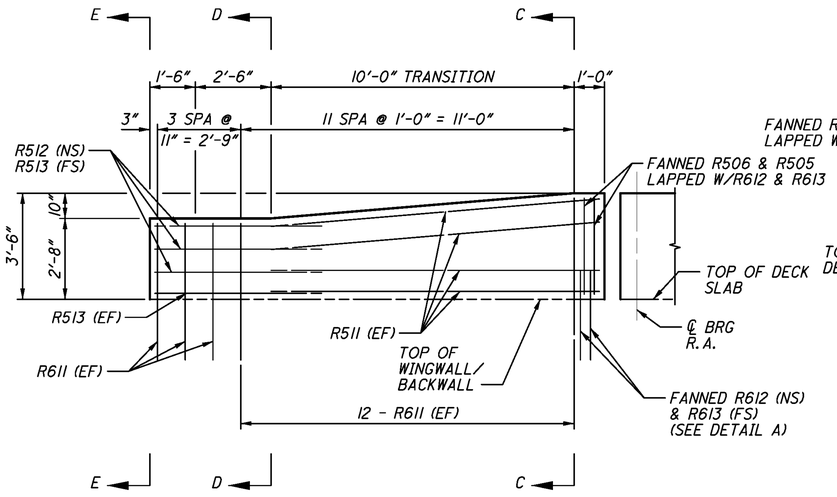
DESIGNED	DRAWN	REVIEWED	DATE
KJB	KJB	JBD	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JHL		5007143	

PARAPET DETAILS

BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

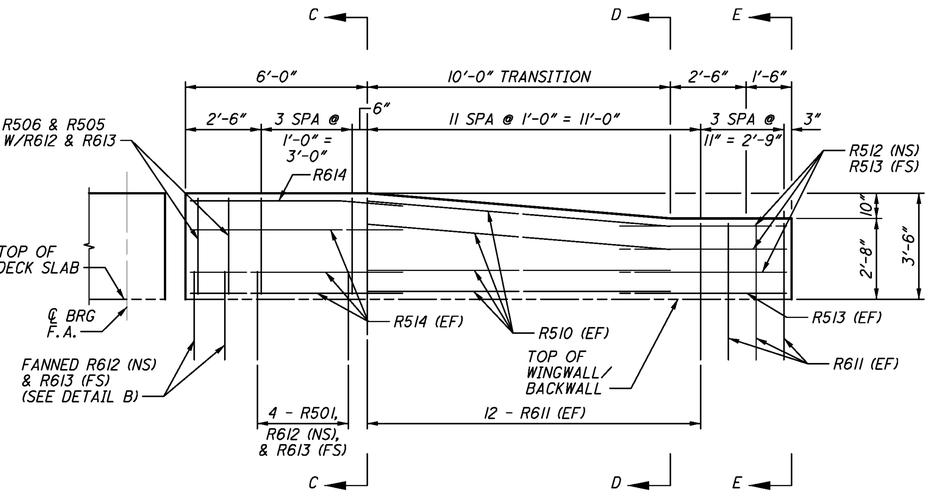
MAH-680-4.29

PID No. 25508



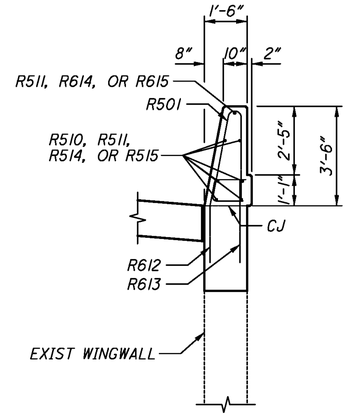
NB FASCIA APPROACH PARAPET ELEVATION

(VIEWED FROM TRAFFIC SIDE OF PARAPET)

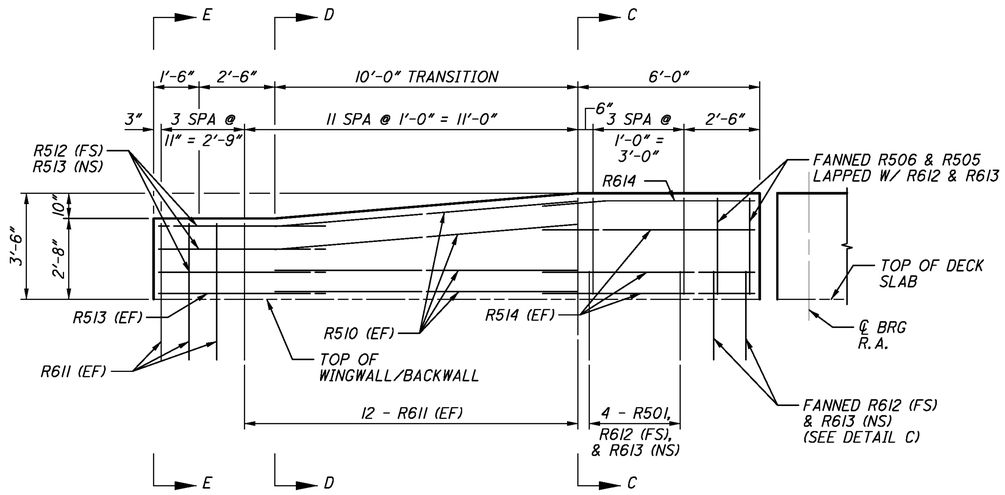


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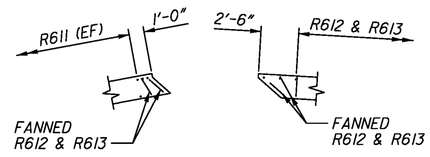


SECTION C-C



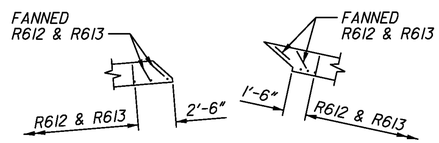
SB FASCIA APPROACH PARAPET ELEVATION

(VIEWED FROM OUTSIDE OF PARAPET)



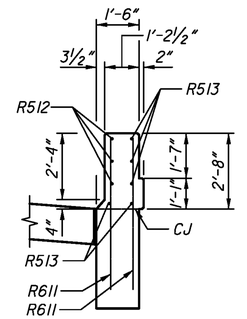
DETAIL A

DETAIL B

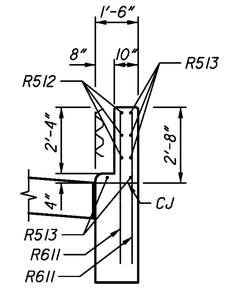


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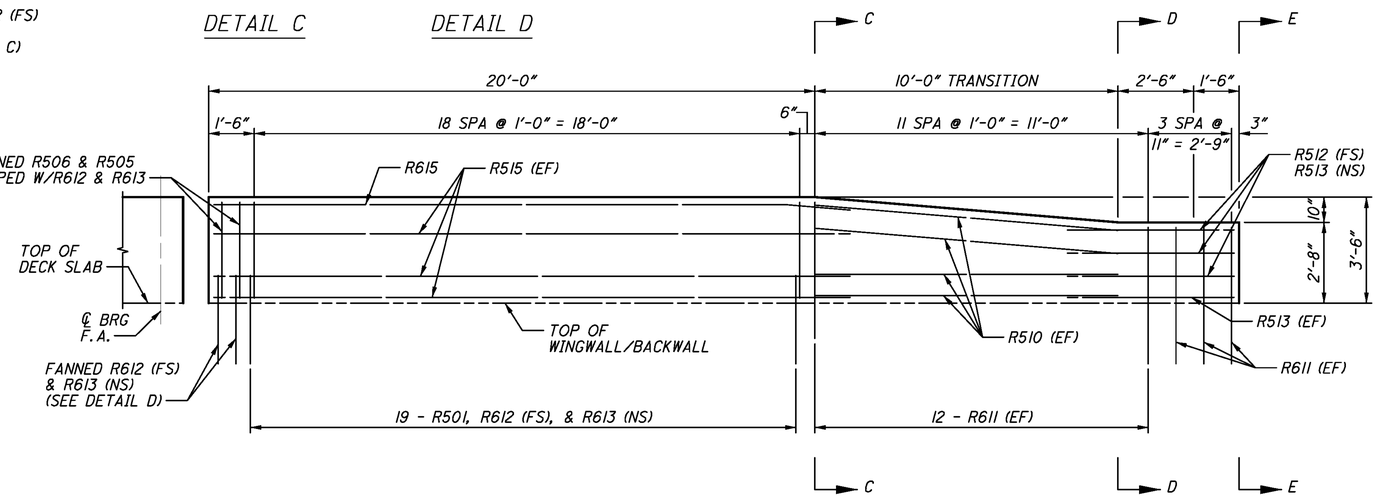
DETAIL D



SECTION D-D



SECTION E-E



SB FASCIA APPROACH PARAPET ELEVATION

(VIEWED FROM OUTSIDE OF PARAPET)

NOTES

1. SEE STANDARD DRAWING SBR-1-99 FOR ADDITIONAL NOTES AND DETAILS.
2. CONCRETE SHALL BE CLASS HP.

LEGEND

R.A. = REAR ABUTMENT
F.A. = FORWARD ABUTMENT
EF = EACH FACE
NS = NEAR SIDE
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DESIGNED	DRAWN	REVIEWED	DATE
KJB	KJB	JBD	05-28-10
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PARAPET DETAILS
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

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PID No. 25508

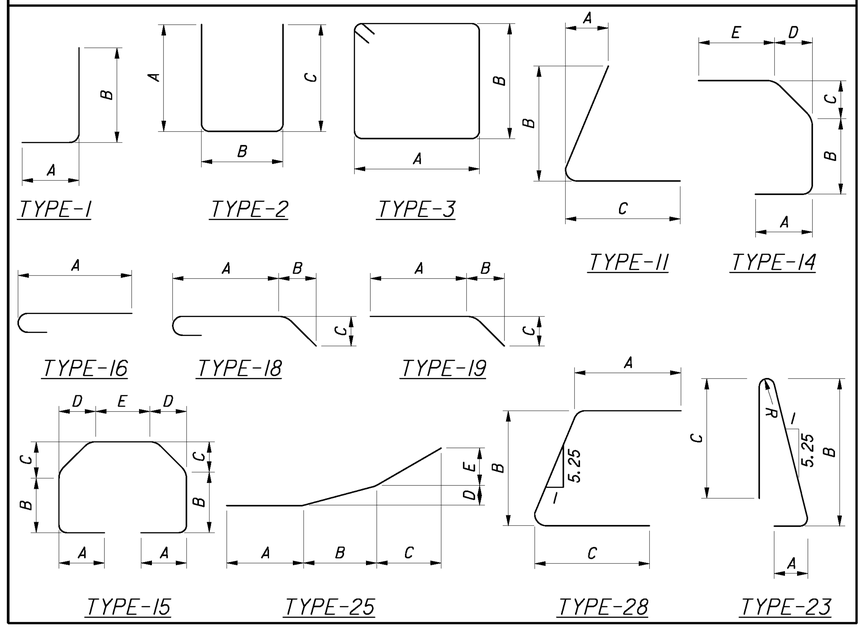
REINFORCING STEEL LIST

MARK	NUMBER		LENGTH	WEIGHT	TYPE	DIMENSIONS						
	REAR	FWD				A	B	C	D	E	R	INC.
ABUTMENTS												
R401	4	5	8'-7"	52	15	1'-10½"	0'-10"	0'-9"	0'-7"	1'-7"	-	-
A501	98	210	2'-10"	910	1	1'-9"	1'-2"	-	-	-	-	-
A502	52	42	2'-11"	286	1	1'-9"	1'-3¼"	-	-	-	-	-
A503	16	74	3'-0"	282	1	1'-9"	1'-4½"	-	-	-	-	-
A504	72	0	3'-1"	232	1	1'-9"	1'-5½"	-	-	-	-	-
A505	119	163	2'-6"	735	STR	-	-	-	-	-	-	-
A506	16	40	30'-0"	1752	STR	-	-	-	-	-	-	-
A507	8	0	31'-6"	263	STR	-	-	-	-	-	-	-
A508	8	0	32'-1"	268	STR	-	-	-	-	-	-	-
A509	0	8	23'-0"	192	STR	-	-	-	-	-	-	-
A510	5	0	21'-4"	111	STR	-	-	-	-	-	-	-
A511	10	0	13'-8"	143	STR	-	-	-	-	-	-	-
A512	5	0	10'-5"	54	STR	-	-	-	-	-	-	-
A513	5	0	9'-8"	50	STR	-	-	-	-	-	-	-
A514	10	0	14'-2"	148	STR	-	-	-	-	-	-	-
A515	5	0	23'-5"	122	STR	-	-	-	-	-	-	-
A516	0	5	27'-4"	143	STR	-	-	-	-	-	-	-
A517	0	5	17'-2"	90	STR	-	-	-	-	-	-	-
A518	0	5	18'-2"	95	STR	-	-	-	-	-	-	-
A519	0	5	16'-8"	87	STR	-	-	-	-	-	-	-
A520	0	5	10'-8"	56	STR	-	-	-	-	-	-	-
A521	0	5	19'-2"	100	STR	-	-	-	-	-	-	-
A522	0	5	20'-0"	104	STR	-	-	-	-	-	-	-
A523	0	5	32'-4"	169	STR	-	-	-	-	-	-	-
A524	6	0	16'-0"	100	STR	-	-	-	-	-	-	-
A525	6	0	13'-4"	83	STR	-	-	-	-	-	-	-
A526	12	29	3'-10"	164	STR	-	-	-	-	-	-	-
A527	3	0	5'-2"	16	STR	-	-	-	-	-	-	-
A528	15	33	8'-3"	413	3	2'-7½"	1'-1½"	-	-	-	-	-
A529	24	26	7'-3"	378	2	3'-2"	1'-1½"	3'-2"	-	-	-	-
A530	4	6	8'-5"	88	2	3'-9"	1'-1½"	3'-9"	-	-	-	-
A531	2	0	10'-3"	21	19	7'-4"	0'-9"	2'-11½"	-	-	-	-
A532	2	0	9'-10"	21	19	6'-10½"	0'-9½"	2'-11½"	-	-	-	-
A533	0	6	15'-2"	95	STR	-	-	-	-	-	-	-
A534	0	6	32'-6"	203	STR	-	-	-	-	-	-	-
A535	0	4	5'-6"	23	STR	-	-	-	-	-	-	-
A536	0	2	10'-7"	22	19	7'-8"	0'-9"	2'-11½"	-	-	-	-
A537	0	2	10'-3"	21	19	7'-3"	0'-9½"	2'-11½"	-	-	-	-
A601	238	326	2'-9"	2330	STR	-	-	-	-	-	-	-
A602	119	163	4'-6"	1906	2	1'-9"	1'-4"	1'-9"	-	-	-	-
A603	119	163	7'-6"	3177	2	3'-6"	0'-10"	3'-6"	-	-	-	-
A604	0	8	3'-4"	40	1	2'-0"	1'-6"	-	-	-	-	-
A605	0	24	5'-4"	192	1	2'-1½"	3'-4"	-	-	-	-	-
D801	56	56	8'-10"	2642	18	6'-6"	1'-0"	1'-0"	-	-	-	-
A802	2	0	16'-0"	85	STR	-	-	-	-	-	-	-
A803	2	0	13'-4"	71	STR	-	-	-	-	-	-	-
A804	9	0	3'-5"	82	1	2'-4"	1'-3½"	-	-	-	-	-
A805	6	29	3'-10"	358	STR	-	-	-	-	-	-	-
A806	0	2	15'-2"	81	STR	-	-	-	-	-	-	-
A807	0	2	32'-6"	174	STR	-	-	-	-	-	-	-
A808	0	4	5'-6"	59	STR	-	-	-	-	-	-	-
A901	0	8	6'-0"	163	STR	-	-	-	-	-	-	-
A902	0	20	2'-3"	153	STR	-	-	-	-	-	-	-

REINFORCING STEEL LIST

MARK	NUMBER		LENGTH	WEIGHT	TYPE	DIMENSIONS						
	PIER1	PIER2				A	B	C	D	E	R	INC.
PIERS												
P401	152	188	11'-9"	2669	2	4'-7½"	2'-7½"	4'-7½"	-	-	-	-
P402	152	188	10'-1"	2290	2	4'-7½"	0'-11½"	4'-7½"	-	-	-	-
P501	40	48	30'-0"	2754	STR	-	-	-	-	-	-	-
P502	15	15	15'-0"	469	1	14'-3"	0'-10"	-	-	-	-	-
P503	3	3	7'-6"	47	1	6'-9"	0'-10"	-	-	-	-	-
P801	5	5	34'-7"	923	11	0'-2½"	4'-6"	30'-3"	-	-	-	-
P802	5	0	25'-0"	334	STR	-	-	-	-	-	-	-
P803	5	0	23'-4"	312	1	19'-0"	4'-6"	-	-	-	-	-
P804	6	7	30'-0"	1041	16	29'-1"	-	-	-	-	-	-
P805	23	38	30'-0"	4886	STR	-	-	-	-	-	-	-
P806	6	0	15'-2"	243	19	9'-10"	5'-3½"	0'-3"	-	-	-	-
P807	5	0	33'-7"	448	1	28'-3½"	5'-6"	-	-	-	-	-
P808	6	0	18'-2"	291	18	9'-10"	7'-5"	0'-5½"	-	-	-	-
P809	0	7	21'-2"	396	19	10'-10"	10'-3½"	0'-5"	-	-	-	-
P810	0	5	17'-10"	238	1	12'-6½"	5'-6"	-	-	-	-	-
P811	0	8	27'-2"	580	18	9'-10"	16'-5"	10"	-	-	-	-
P901	0	5	26'-1"	443	1	21'-10½"	4'-6"	-	-	-	-	-
P1001	7	0	27'-6"	828	11	0'-3½"	4'-6"	23'-3½"	-	-	-	-
P1002	0	10	28'-11"	1244	11	0'-2½"	4'-0"	25'-3"	-	-	-	-

BENDING DIAGRAM



NOTES

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHEN FOUR DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A No.6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.
2. ALL REINFORCING STEEL TO BE EPOXY COATED.
3. REBAR DIMENSIONS SHOWN ARE FOR INFORMATION PURPOSESES ONLY. IF THE REINFORCING STEEL LIST IS USED, IT SHALL BE VERIFIED BY THE CONTRACTOR. ANY REVISIONS IN THE REINFORCING STEEL SHALL NOT BE A REASON FOR ADJUSTMENT IN THE BID PRICE FOR STRUCTURAL STEEL.

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED KJB | DRAWN KJB | REVIEWED JCS | DATE 05-28-10 | CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007143

REINFORCING STEEL LIST
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SRTD

MAH-680-4.29 PID No. 25508

REINFORCING STEEL LIST

MARK	NUMBER		LENGTH	WEIGHT	TYPE	DIMENSIONS						
	NB	SB				A	B	C	D	E	R	INC.
DECK SLABS												
S401	408	476	30'-0"	17715	STR	-	-	-	-	-	-	-
S402	1 SER OF 68	0	21'-6" TO 34'-9"	1278	STR	-	-	-	-	-	-	2½"
S403	0	1 SER OF 68	6'-6" TO 25'-9"	732	STR	-	-	-	-	-	-	3½"
S501	530	522	30'-0"	32917	STR	-	-	-	-	-	-	-
S502	1 SER OF 66	0	24'-0" TO 37'-3"	2108	STR	-	-	-	-	-	-	2½"
S503	67	0	31'-8"	2213	STR	-	-	-	-	-	-	-
S504	67	0	35'-2"	2457	STR	-	-	-	-	-	-	-
S505	0	1 SER OF 65	9'-6" TO 28'-9"	1297	STR	-	-	-	-	-	-	3½"
S506	0	67	38'-2"	2667	STR	-	-	-	-	-	-	-
S507	0	67	40'-0"	2795	STR	-	-	-	-	-	-	-
S508	0	67	33'-8"	2353	STR	-	-	-	-	-	-	-
S601	618	654	44'-8"	85338	STR	-	-	-	-	-	-	-
S602	8	0	2'-8"	32	STR	-	-	-	-	-	-	-
S603	2 SER OF 36	0	2'-8" TO 24'-0"	1442	STR	-	-	-	-	-	-	7¼"
S604	2 SER OF 36	0	24'-7" TO 44'-5"	3731	STR	-	-	-	-	-	-	6¾"
S605	2 SER OF 40	0	29'-3" TO 44'-1"	4406	STR	-	-	-	-	-	-	4½"
S606	2 SER OF 39	0	15'-4" TO 28'-10"	3393	STR	-	-	-	-	-	-	4¼"
S607	2 SER OF 39	0	2'-4" TO 15'-0"	1015	STR	-	-	-	-	-	-	4"
S608	14	0	2'-4"	49	STR	-	-	-	-	-	-	-
S609	0	8	2'-5"	29	STR	-	-	-	-	-	-	-
S610	0	2 SER OF 40	2'-5" TO 23'-11"	1582	STR	-	-	-	-	-	-	6½"
S611	0	2 SER OF 40	24'-5" TO 44'-3"	4125	STR	-	-	-	-	-	-	6"
S612	0	2 SER OF 36	33'-0" TO 44'-5"	4186	STR	-	-	-	-	-	-	4"
S613	0	2 SER OF 36	21'-11" TO 32'-8"	2951	STR	-	-	-	-	-	-	3¾"
S614	0	2 SER OF 36	11'-6" TO 21'-8"	1793	STR	-	-	-	-	-	-	3½"
S615	0	2 SER OF 36	1'-8" TO 11'-3"	698	STR	-	-	-	-	-	-	3¼"
S616	0	12	1'-8"	30	STR	-	-	-	-	-	-	-

REINFORCING STEEL LIST

MARK	NUMBER		LENGTH	WEIGHT	TYPE	DIMENSIONS						
	NB	SB				A	B	C	D	E	R	INC.
RAILINGS												
R501	195	246	7'-5"	3203	23	1'-1"	3'-2"	3'-0"	-	-	2¾"	-
R502	92	104	30'-0"	6133	STR	-	-	-	-	-	-	-
R503	6	0	28'-10"	180	STR	-	-	-	-	-	-	-
R504	0	6	6'-7"	41	STR	-	-	-	-	-	-	-
R505	8	8	3'-2"	53	STR	-	-	-	-	-	-	-
R506	8	8	4'-2"	70	11	0'-7"	3'-2"	1'-1"	-	-	-	-
R507	8	0	14'-2"	118	STR	-	-	-	-	-	-	-
R508	0	8	15'-1"	126	STR	-	-	-	-	-	-	-
R509	207	208	3'-10"	1659	STR	-	-	-	-	-	-	-
R510	8	16	10'-0"	250	STR	-	-	-	-	-	-	-
R511	8	0	10'-10"	90	STR	-	-	-	-	-	-	-
R512	6	6	5'-6"	69	25	1'-8"	2'-5"	1'-5"	0'-1½"	0'-5"	-	-
R513	10	10	5'-6"	115	STR	-	-	-	-	-	-	-
R514	6	6	7'-0"	88	STR	-	-	-	-	-	-	-
R515	0	6	21'-0"	131	STR	-	-	-	-	-	-	-
R601	195	227	3'-8"	2324	1	1'-1"	2'-9"	-	-	-	-	-
R602	195	227	3'-6"	2218	28	1'-1"	1'-8"	1'-1"	-	-	-	-
R603	207	208	3'-6"	2182	1	0'-11"	2'-9"	-	-	-	-	-
R604	207	208	3'-2"	1974	14	0'-10½"	1'-0"	0-8½"	0'-6"	0'-8"	-	-
R605	14	15	30'-0"	1307	STR	-	-	-	-	-	-	-
R606	1	0	5'-8"	9	STR	-	-	-	-	-	-	-
R607	0	1	11'-3"	17	STR	-	-	-	-	-	-	-
R608	1	0	18'-3"	27	STR	-	-	-	-	-	-	-
R609	0	1	19'-2"	29	STR	-	-	-	-	-	-	-
R610	207	208	3'-4"	2078	11	0'-5"	3'-10"	0'-8"	-	-	-	-
R611	60	60	5'-4"	961	STR	-	-	-	-	-	-	-
R612	8	27	3'-11"	206	14	0'-0"	2'-0"	0'-11"	0'-2"	1'-1"	-	-
R613	8	27	2'-11"	153	STR	-	-	-	-	-	-	-
R614	1	1	7'-0"	21	STR	-	-	-	-	-	-	-
R615	0	1	21'-0"	32	STR	-	-	-	-	-	-	-

NOTES

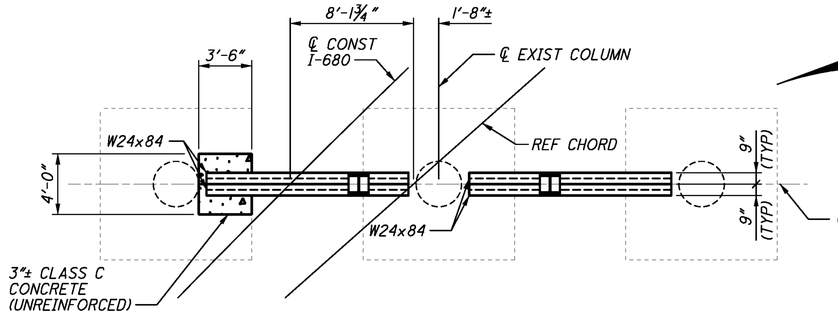
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4. SEE SHEET 42 / 44 FOR REINFORCEMENT BAR BENDING DIAGRAM.

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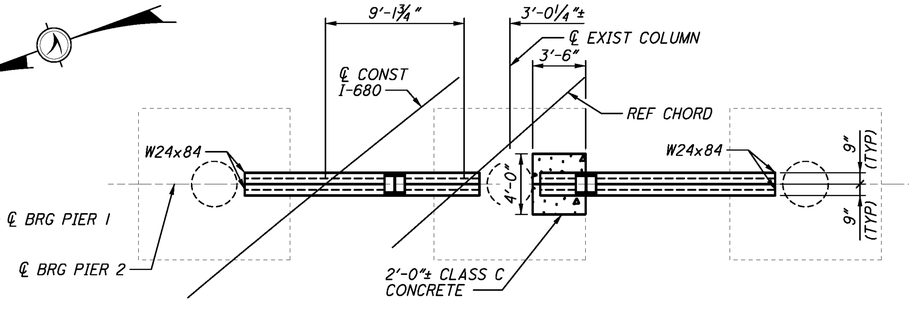
DESIGNED KJB | DRAWN KJB | CHECKED JBD | REVIEWED JCS | DATE 05-28-10 | REVISED | STRUCTURE FILE NUMBER 5007143

REINFORCING STEEL LIST
BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SRTD

MAH-680-4.29
PID No. 25508



PIER 1 PLAN VIEW



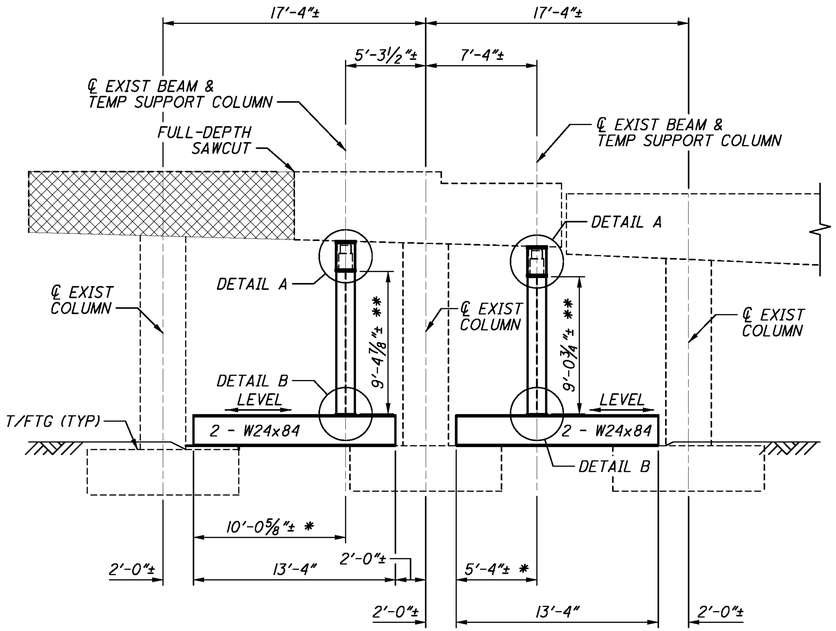
PIER 2 PLAN VIEW

NOTES

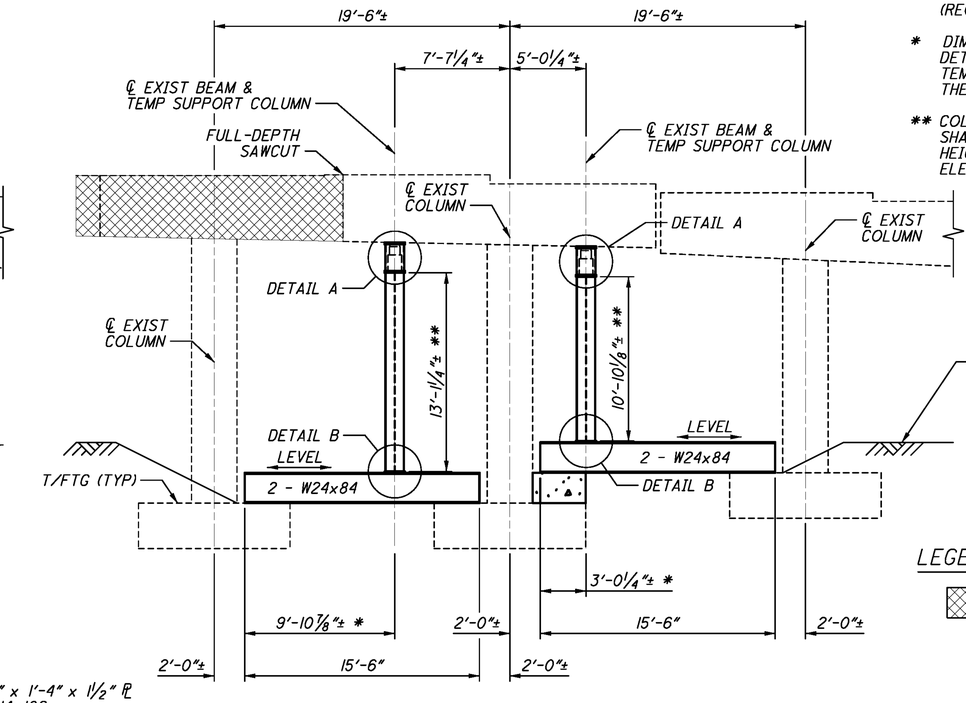
1. PAYMENT FOR THE TEMPORARY SUPPORT MATERIALS, AS WELL AS ALL NECESSARY LABOR FOR THE INSTALLATION, MAINTENANCE, AND REMOVAL OF THE TEMPORARY SUPPORT SYSTEM SHALL BE PAID FOR AS ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.
2. THE CONTRACTOR MAY ELECT TO USE A DESIGN DIFFERENT THAN THE ONE SHOWN ON THESE PLANS, PROVIDED THE DESIGN IS PREPARED PER SECTION 501.05 CONSTRUCTION AND MATERIALS SPECIFICATION. EACH TEMPORARY SUPPORT SHALL BE DESIGNED TO SUPPORT 130 KIPS DEAD LOAD AND 100 KIPS LIVE LOAD (REQUIRED SUPPORT LOADS ARE UNFACTORED).

* DIMENSION IS APPROXIMATE. EXACT DIMENSION SHALL BE DETERMINED IN THE FIELD BY CONTRACTOR SO THAT THE ℄ OF TEMPORARY SUPPORT COLUMN IS LOCATED DIRECTLY BENEATH THE ℄ OF THE EXISTING BEAM BEARING ON THE PIER CAP.

** COLUMN HEIGHT IS APPROXIMATE. EXACT COLUMN HEIGHT SHALL BE DETERMINED IN THE FIELD BY CONTRACTOR. EXACT HEIGHT WILL DEPEND ON THE ACTUAL FOOTING AND PIER CAP ELEVATIONS AS WELL AS THE HEIGHT OF THE HYDRAULIC JACK.



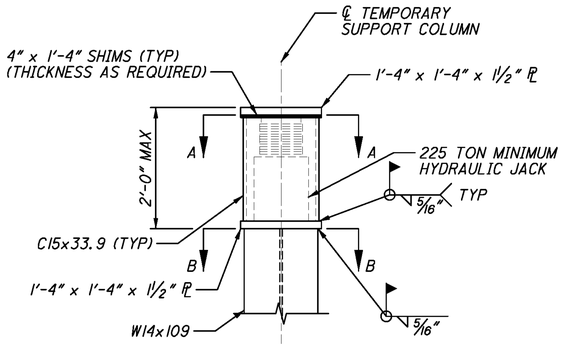
PIER 1 ELEVATION



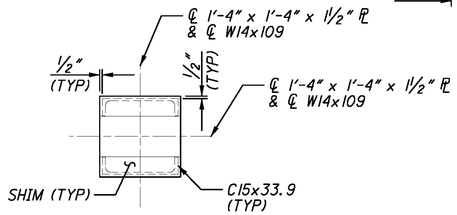
PIER 2 ELEVATION

LEGEND

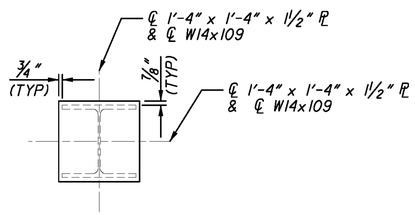
INDICATES A PORTION OF THE STRUCTURE TO BE REMOVED IN PHASE 2



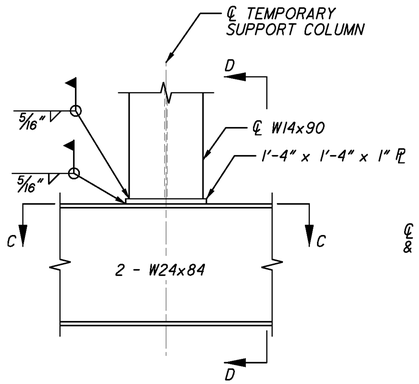
DETAIL A



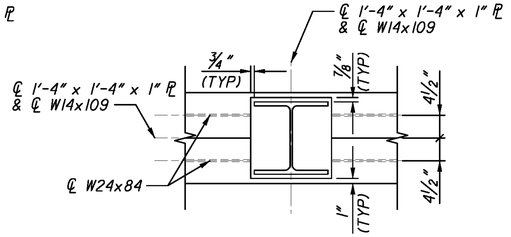
SECTION A-A



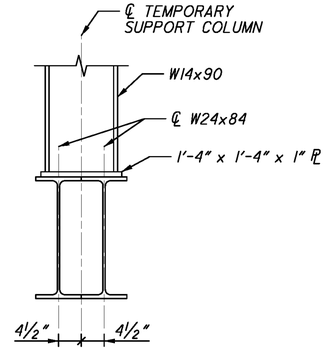
SECTION B-B



DETAIL B



SECTION C-C



SECTION D-D

DESIGN AGENCY
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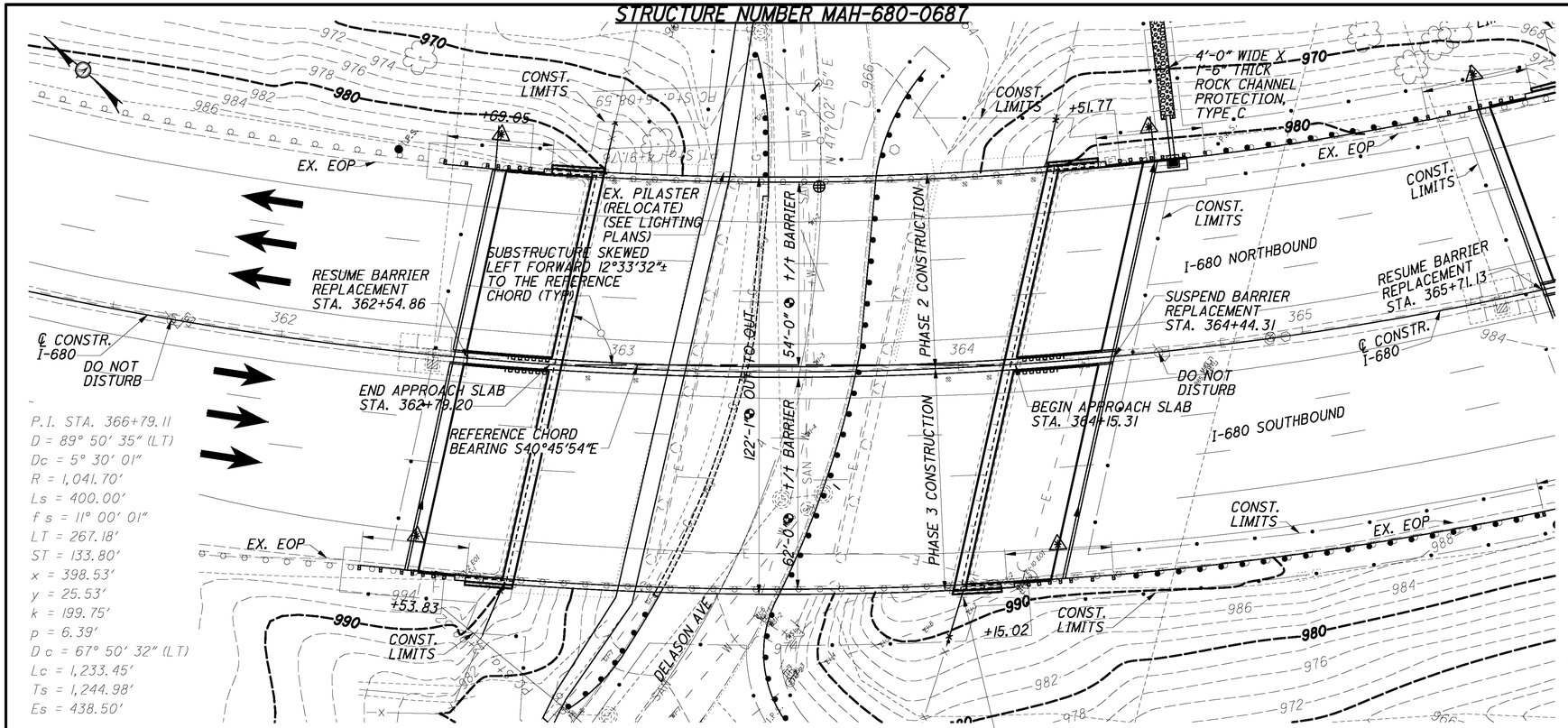
DESIGNED	DRAWN	REVIEWED	DATE
KJB	KJB	JCS	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007143	

TEMPORARY SUPPORT DETAILS

BRIDGE NO. MAH-680-0632
I-680 OVER US62D/SR7D

MAH-680-4.29
PID No. 25508

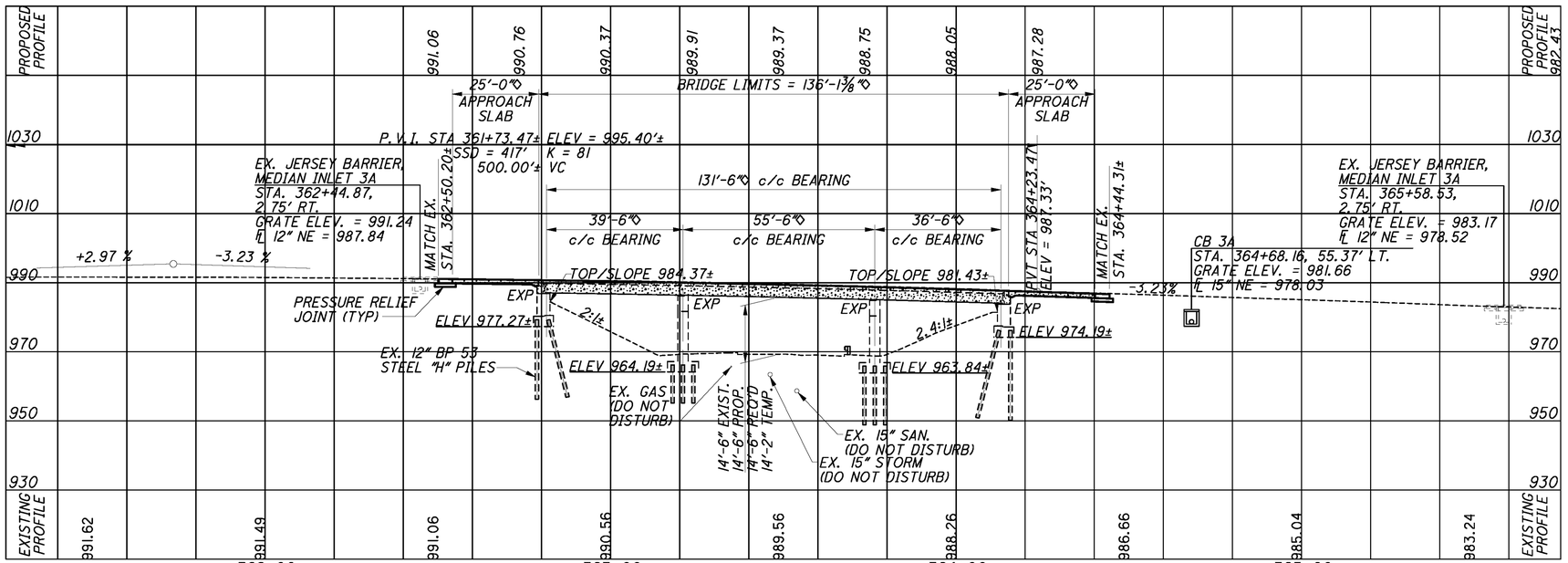
STRUCTURE NUMBER MAH-680-0687



EX HIGHWAY LIGHTING - DO NOT DISTURB
SEE LIGHTING PLANS FOR DETAILS

PLAN

PORTIONS OF EXISTING BRIDGE TO BE REMOVED UNDER ITEM 202



PROFILE AT ℄ CONSTRUCTION

BENCHMARK DATA

BM #1	STA. 362+27.95,	ELEV. 986.84 ,	OFFSET 58.76 ,	LEFT
BM #2	STA. 365+61.38,	ELEV. 987.27 ,	OFFSET 68.08 ,	RIGHT
BM #3	STA. 363+52.26,	ELEV. 963.80 ,	OFFSET 181.06,	LEFT
BM #4	STA. 363+42.18,	ELEV. 975.29 ,	OFFSET 103.67,	RIGHT

NOTES

PROPOSED WORK SHALL INCLUDE REMOVAL OF PORTIONS OF THE EXISTING STRUCTURE, CONSTRUCTING A NEW SUPERSTRUCTURE WITH COMPOSITE CONCRETE DECK, CONVERTING BACKWALLS TO SEMI-INTEGRAL, PATCHING SUBSTRUCTURE CONCRETE, AND REPLACING APPROACH SLABS.

DESIGN TRAFFIC (I-680):
2010 ADT = 55290 2010 ADTT = 6082
2030 ADT = 58740 2030 ADTT = 6461
DIRECTIONAL DISTRIBUTION = 0.58
DESIGN SPEED = 55 MPH LEGAL SPEED= 50 MPH

DESIGN TRAFFIC (DELASON):
2010 ADT = 760 2010 ADTT = 30
2030 ADT = 760 2030 ADTT = 30
DIRECTIONAL DISTRIBUTION = 0.55
DESIGN SPEED = 25 MPH LEGAL SPEED= 25 MPH

LEGEND

- ◈ - DIMENSION MEASURED RADIALLY
- ◇ - DIMENSION MEASURED ALONG ℄ I-680
- ⊕ - 14'-6" REQUIRED MINIMUM VERTICAL CLEARANCE

DELASON AVE CLEARANCES
14'-6" EXISTING VERTICAL CLEARANCE
14'-6" PROPOSED CLEARANCE
14'-2" TEMPORARY CLEARANCE

⚠ - BRIDGE TERMINAL ASSEMBLY, TYPE I

EXISTING STRUCTURE

TYPE: 3-SPAN STEEL BEAM CONTINUOUS BRIDGE WITH NON-COMPOSITE REINFORCED CONCRETE DECK AND SUBSTRUCTURES
SPANS: 39.50'±, 55.50'±◇, AND 36.50'±◇ = 131'-6"±◇ c/c BEARINGS
ROADWAY: 120'-0"◈ F/F SAFETY CURB
LOADING: CF2000
SKEW: 12°33'32" TO THE REFERENCE CHORD, LEFT FORWARD
APPROACH SLABS: AS-I-54 (25'-0" LONG)
ALIGNMENT: 5°30'00" CURVE LEFT
CROWN: SUPERELEVATED
WEARING SURFACE: 1" MONOLITHIC
STRUCTURAL FILE NUMBER: 5007232
DATE BUILT: 1961

PROPOSED STRUCTURE

PROPOSED WORK:NEW SUPERSTRUCTURE, CONVERT ABUTMENTS TO SEMI-INTEGRAL, AND REHABILITATE SUBSTRUCTURE
TYPE: NEW 3 SPAN CONTINUOUS STEEL BEAM STRUCTURE WITH COMPOSITE REINFORCED CONCRETE DECK AND REINFORCED CONCRETE SUBSTRUCTURE
SPANS: 39'-10 1/8"±, 55'-5 3/4"±, 36'-1 1/8"± c/c BEARING ALONG REFERENCE CHORD
ROADWAY: LEFT BRIDGE 54'-0" TOE/TOE PARAPET
RIGHT BRIDGE 62'-0" TOE/TOE PARAPET
LOADING: HS25 CASE I AND ALTERNATE MILITARY + 60PSF FWS
SKEW: 12°33'32"± TO THE REFERENCE CHORD, LEFT FORWARD
APPROACH SLABS: AS-I-81, 25'-0" (MODIFIED)
ALIGNMENT: 5°30'00" CURVE LEFT
SUPERELEVATION: 0.083 FT/FT
WEARING SURFACE: 1" MONOLITHIC
COORDINATES: LATITUDE N41°04'56"
LONGITUDE W80°38'57"

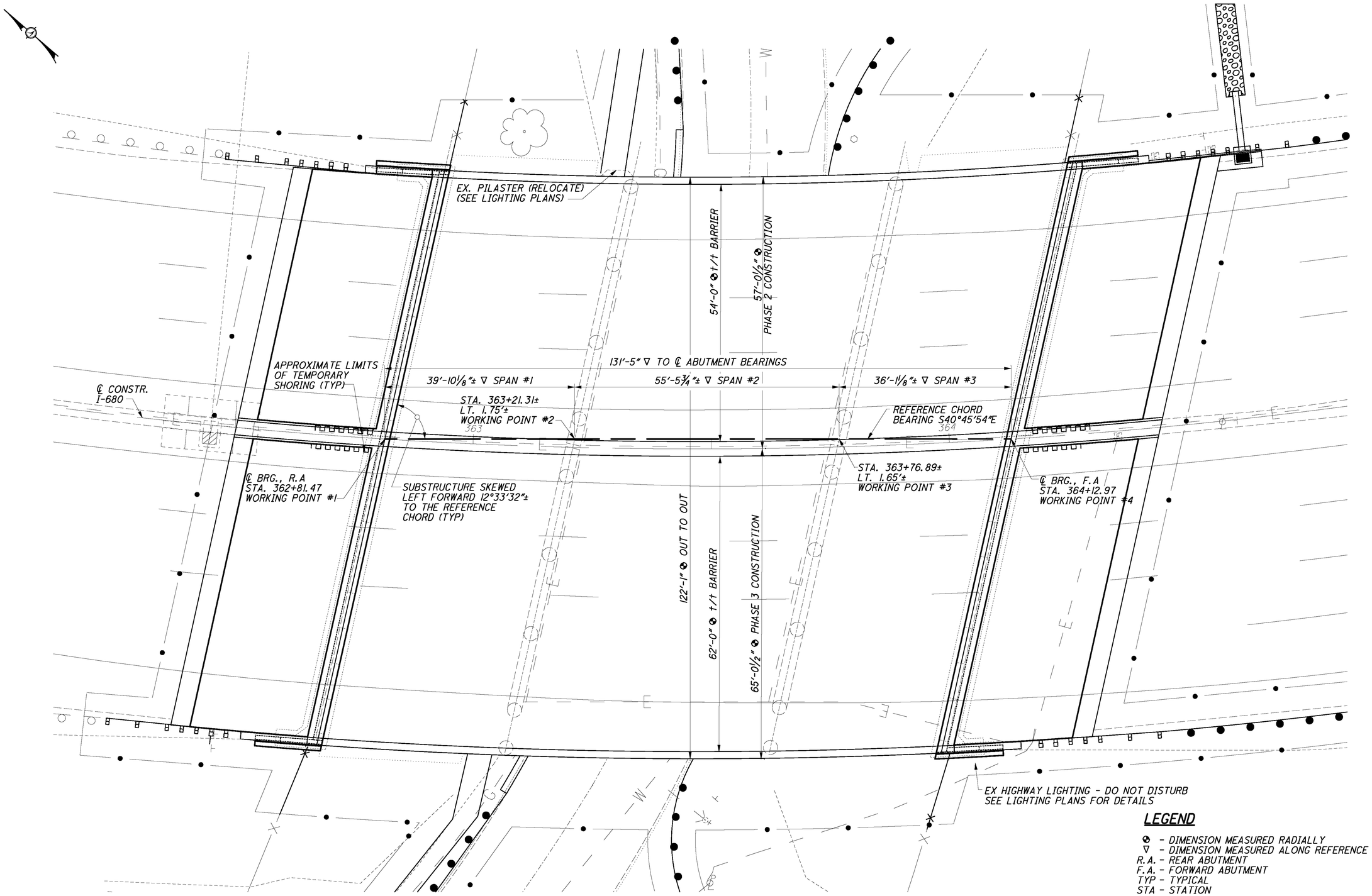
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007232	

MAHONING COUNTY
STA. 362+79.20
STA. 364+15.31

SITE PLAN
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508



LEGEND

⌀ - DIMENSION MEASURED RADIALLY
∇ - DIMENSION MEASURED ALONG REFERENCE CHORD
R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
LT. - LEFT
t/t - TOE TO TOE

DESIGN AGENCY
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TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007232	

GENERAL PLAN

BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508

PROPOSED WORK

THE WORK COVERED BY THESE PLANS INCLUDES REMOVAL AND REPLACEMENT OF THE CONCRETE DECK, STEEL BEAMS, BRIDGE RAILS, APPROACH SLABS, BEARINGS, AND PORTIONS OF THE SUB-STRUCUTRE. OTHER WORK INCLUDES CONVERTING THE ABUT-MENT BACKWALLS TO SEMI-INTEGRAL, PATCHING PORTIONS OF THE EXISTING SUBSTRUCTURE, AND SEALING CONCRETE SURFACES. TRAFFIC IS TO BE MAINTAINED OVER THE STRUCTURE DURING CONSTRUCTION.

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81 REVISED 07-19-02

GSD-1-96 REVISED 07-19-02

PCB-91 REVISED 07-19-02

SBR-1-99 REVISED 07-19-02

SICD-1-96 REVISED 07-19-02

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002 AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

CONCRETE CLASS HP - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE & RAILING)

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615 OR A996
GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

STRUCTURAL STEEL - ASTM A709 GRADE 50W
YIELD STRENGTH 50,000 PSI

DESIGN LOADING:

HS25 (CASE I) AND THE ALTERNATE MILITARY LOADING.

FUTURE WEARING SURFACE (FWS) OF 60 LBS/SQ. FT.

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL
2-1/2" CONCRETE COVER

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED,
FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

UTILITY LINES

UTILITY LINES: THE UTILITY(IES) SHALL BORE ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVEN-IENCE TO EITHER WILL BE HELD TO A MINIMUM.

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN

INCLUDED IN THIS PAY ITEM IS FILLING AND PLUGGING THE EXISTING WEEPHOLES AT THE REAR AND FORWARD ABUTMENTS. THERE ARE TEN, FOUR INCH DIAMETER WEEPHOLES THAT ARE 3'-9" LONG EACH FOR A TOTAL LENGTH OF 37'-9". THE WEEPHOLES WILL ALL BE FILLED WITH A NONSHRINK, NONMETALIC GROUT

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

ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN: THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PER-FORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORP-ORATED INTO THE PROPOSED STRUCTURE. REPLACE OR REPAIR STEEL MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PER-FORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BE-FORE PERFORMING REPAIR.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CON-CRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

SUBSTRUCTURE CONCRETE REMOVAL: REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

ITEM 516 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN

INSTALL A 3 FOOT WIDE NEOPRENE SHEET AT LOCATIONS SHOWN IN THE PLANS. SECURE THE NEOPRENE SHEETING TO THE CON-CRETE WITH 1-1/4" X #10 GAGE (LENGTH X SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 1 INCH OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. USE OF OTHER SIMILAR GALVANIZED DEVICES, WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORI-ZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTI-CAL JOINTS SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAR-EST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 6 INCHES, CENTER TO CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHALL COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAP LENGTHS OF THE HORIZONTAL STRIPS THAT ARE NOT VULCANIZED OR ADHESIVE BONDED, SHALL BE AT LEAST 1 FOOT IN LENGTH, OR 6 INCHES IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 3/32" 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, INCHES	D751	0.094 +/- 0.01
BREAKING STRENGTH, GRAB, LBS, MINIMUM (LONG. X TRANS.)	D751	700 X 700
ADHESIVE STRIP, 1" WIDE X 2" LONG, LBS MINIMUM	D751	9
BURST STRENGTH, PSI MINIMUM	D751	1400
HEAT AGING, 70 HR, 212 DEGREES F, 180 DEGREES BEND WITHOUT CRACKING	D2136	NO CRACKING OF COATING
LOW TEMP. BRITTLENESS, 1 HR, 40 DEGREES F, BEND AROUND 1/4" MANDREL	D2136	NO CRACKING OF COATING

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE TOTAL LENGTH OF JOINT TO BE SEALED BY THE NUMBER OF FEET.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS, AS PER PLAN

THE PROVISIONS OF CMS 526 SHALL APPLY EXCEPT AS NOTED BELOW.

CLASS HP CONCRETE, MIX 4, AS PER PLAN, SHALL BE THE ONLY MIX DESIGN OPTION. THE PROPORTIONS FOR THE STARTING MIX DESIGN SHALL BE AS SHOWN FOR ITEM
511 - CLASS HP CONCRETE, AS PER PLAN.

DECK PLACEMENT DESIGN ASSUMPTIONS:

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 1.33 KIPS FOR A TOTAL MACHINE LOAD OF 10.66 KIPS

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

THE MAXMIUM DISTANCE FROM THE CENTERLINE OF THE FASCIA BEAMS TO THE FACE OF THE SAFETY HANDRAIL SHALL BE:
BEAM A - 79½"
BEAM H - 57"
BEAM J - 52" (NO HANDRAIL)
BEAM S - 65"

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

ITEM 519-PATCHING CONCRETE STRUCTURE, AS PER PLAN INSPECTED 11-07-2005

LOCATION	MEASURED AREA (2005)	PROJECTION FACTOR	REPAIR AREA (2010)	SEE SHEET
REAR ABUTMENT	4 SQ FT	1.10	4 SQ FT	8/31
PIER 1	8 SQ FT	1.10	9 SQ FT	17/31
PIER 2	2 SQ FT	1.10	2 SQ FT	17/31
FORWARD ABUT.	11 SQ FT	1.10	12 SQ FT	12/31
		TOTAL	27 SQ FT	

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DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007232

GENERAL NOTES
BRIDGE NO. MAH-680-0687
1-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508

CALCULATED BY: MJP 05-28-10 CHECKED BY: JBD 05-28-10

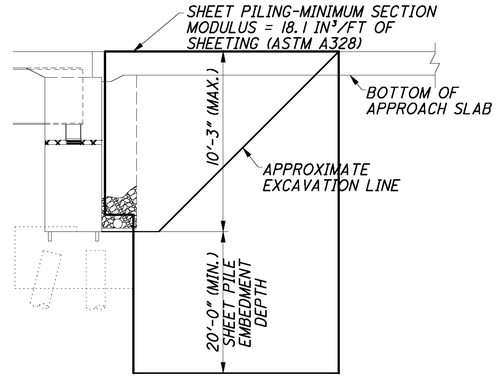
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GENERAL	SEE SHEET NO.
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN					3/31
202	22900	467	SQ YD	APPROACH SLAB REMOVED				467	
202	23500	467	SQ YD	WEARING COURSE REMOVED				467	
503	11101	LUMP		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN					4/31
503	21100	272	CU YD	UNCLASSIFIED EXCAVATION				272	
509	10001	169,445	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN	24,256		145,189		3/31
510	10000	505	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	505				
511	45700	47	CU YD	CLASS C CONCRETE, ABUTMENT	47				
511	50101	87	CU YD	CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN			87		4/31
511	51001	570	CU YD	CLASS HP CONCRETE, SUPERSTRUCTURE, AS PER PLAN			570		4/31
511	52000	LUMP		CLASS HP CONCRETE, TEST SLAB					
512	10100	1345	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	186	614	545		
512	33000	7	SQ YD	TYPE 2 WATERPROOFING	7				
512	44400	4	SQ YD	TYPE B WATERPROOFING	4				
513	10260	264,271	POUND	STRUCTURAL STEEL MEMBERS, LEVEL 3			264,271		
513	20000	9813	EACH	WELDED STUD SHEAR CONNECTORS			9813		
514	00060	1064	SQ FT	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			1064		
514	00066	1064	SQ FT	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT			1064		4/31
514	10000	2	EACH	FINAL INSPECTION REPAIR			2		
516	13900	300	SQ FT	2" PREFORMED EXPANSION JOINT FILLER	300				
516	14021	245	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN	245				3/31
516	44200	34	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),	34				
				(13½"x13½"x3⅛" BEARING WITH 14½"x14½"x VARIES LOAD PLATE)					
516	44200	34	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),		34			
				(12½"x15"x3⅛" BEARING WITH 13½"x16"x VARIES LOAD PLATE)					
518	21200	103	CU YD	POROUS BACKFILL WITH FILTER FABRIC	103				
518	40001	252	FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	252				3/31
518	40011	65	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	65				4/31
519	11101	27	SQ FT	PATCHING CONCRETE STRUCTURE, AS PER PLAN	16	11			3/31
526	25001	637	SQ YD	REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN				637	3/31

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 709.00.

ITEM 503, COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN:

THE DESIGN SHOWN BELOW FOR TEMPORARY SUPPORT OF EXCAVATION IS ONE REPRESENTATIVE DESIGN THAT MAY BE USED TO CONSTRUCT THE PROJECT. THE CONTRACTOR MAY CONSTRUCT THE DESIGN SHOWN ON THE PLANS OR PREPARE AN ALTERNATE DESIGN TO SUPPORT THE SIDES OF EXCAVATIONS. IF CONSTRUCTING AN ALTERNATE DESIGN FOR TEMPORARY SUPPORT OF EXCAVATION, PREPARE AND PROVIDE PLANS IN ACCORDANCE WITH C&MS 501.05. THE DEPARTMENT WILL PAY FOR THE TEMPORARY SUPPORT OF EXCAVATION AT THE CONTRACT LUMP SUM PRICE FOR COFFERDAMS, CRIBS, AND SHEETING. NO ADDITIONAL PAYMENT WILL BE MADE FOR PROVIDING AN ALTERNATE DESIGN.



ELEVATION
SHORING DETAILS
(TO BE PAID FOR WITH ITEM 503 - COFFERDAMS, CRIBS, AND SHEETNG, AS PER PLAN)

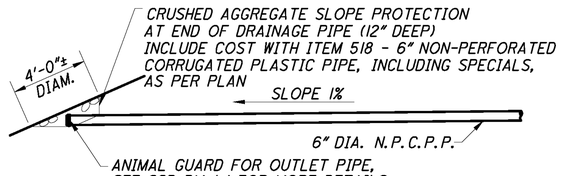
EXISTING STRUCTURE VERIFICATION

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 SECTIONS 102.05, 105.02 AND 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.

ITEM 514 - FIELD PAINTING STRUCTRUAL STEEL, FINISH COAT

THE FINISH COAT ON THE BEAM SHOULD BE PAINTED LIGHT BLUE, FEDERAL COLOR #15450.



TERMINATION OF 6" N.P.C.P.P.,
AS PER PLAN DETAIL

ITEM 511 - CLASS HP CONCRETE, AS PER PLAN

THE PROVISIONS OF ITEM 511 SHALL APPLY EXCEPT AS NOTED BELOW.
MIX OPTIONS:
ALL SUPERSTRUCTURE, BRIDGE DECK, SIDEWALK, APPROACH SLABS AND PARAPET CONCRETE SHALL BE THIS MIX (HP4, AS PER PLAN). THE FOLLOWING PROPORTIONS WILL BE USED AS A STARTING MIX DESIGN.
CONCRETE TABLE
QUANTITIES PER CUBIC YARD
AGGREGATES (SSD)
MIX 4, AS PER PLAN (GGBF SLAG + MICROSILICA)

Aggr. Type	Fine Aggr. (lb)	#8 Coarse Aggr. (lb)	#57 Coarse Aggr. (lb)	Total (lb)	Cement Content (lb)	GGBF Slag (lb)	Micro-Silica (lb)	Water to Cementitious Ratio +/-.01	Air Content +/-2%
Gravel	1370	650	790	2810	440	190	30	0.42	6
Limestone	1370	655	800	2820	440	190	30	0.42	6
Slag	1370	570	695	2635	440	190	30	0.42	6

* ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127
BASIS OF PAYMENT:
PAYMENT FOR THE ABOVE COMPLETED AND ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT BID PRICE FOR:
ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN, CU YD
ITEM 511 - CLASS HP CONCRETE, SUPERSTRUCTURE, AS PER PLAN, CU YD

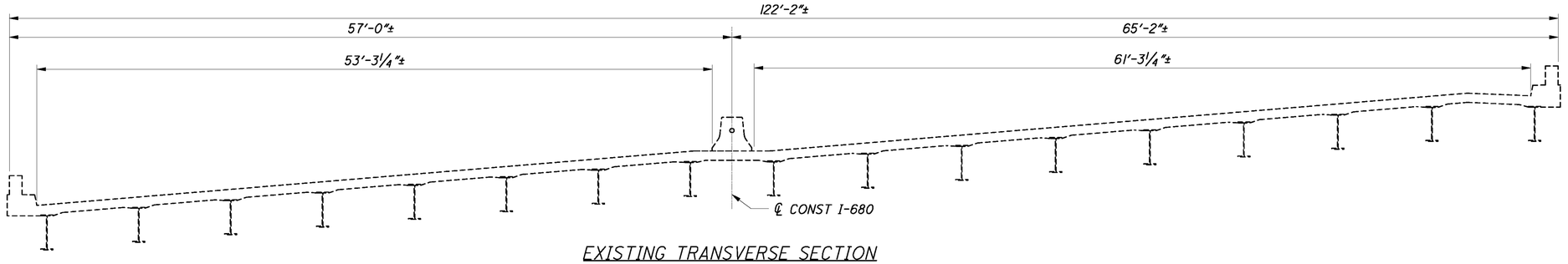
DESIGN AGENCY
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DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10
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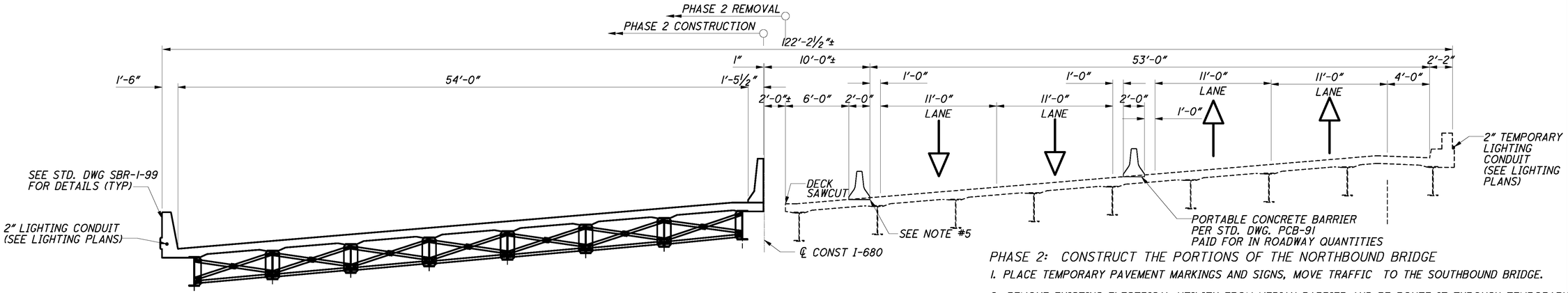
GENERAL NOTES, ESTIMATED QUANTITIES & MISCELLANEOUS DETAILS

BRIDGE NO. MAH-680-0687
1-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508



EXISTING TRANSVERSE SECTION



PHASE 2

PHASE 2: CONSTRUCT THE PORTIONS OF THE NORTHBOUND BRIDGE

1. PLACE TEMPORARY PAVEMENT MARKINGS AND SIGNS, MOVE TRAFFIC TO THE SOUTHBOUND BRIDGE.

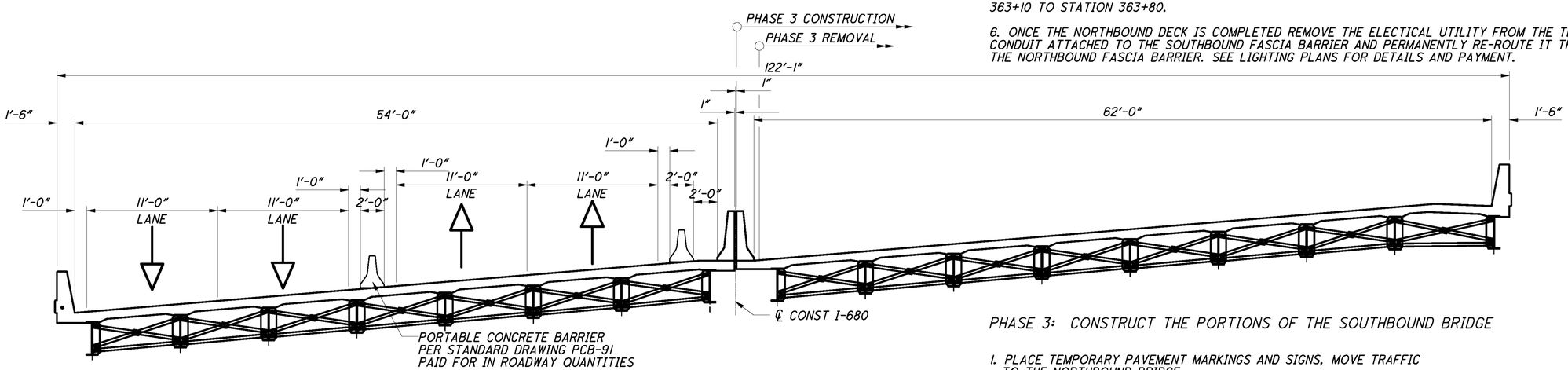
2. REMOVE EXISTING ELECTRICAL UTILITY FROM MEDIAN BARRIER AND RE-ROUTE IT THROUGH TEMPORARY CONDUIT ATTACHED TO SOUTHBOUND FASCIA BARRIER. SEE LIGHTING PLANS FOR DETAILS AND PAYMENT.

3. REMOVE & REPLACE PORTIONS OF NORTHBOUND BRIDGE AS INDICATED ON PLANS.

4. REMOVE TWO FEET OF THE SOUTHBOUND DECK INCLUDING THE MEDIAN BARRIER.

5. IN ORDER TO PREVENT OVER THE SIDE DRAINAGE ONTO DELASON AVENUE BELOW, BOTH THE SLOTS AND THE JOINTS IN THIS LINE OF PORTABLE CONCRETE BARRIER SHALL BE PLUGGED FROM STATION 363+10 TO STATION 363+80.

6. ONCE THE NORTHBOUND DECK IS COMPLETED REMOVE THE ELECTICAL UTILITY FROM THE TEMPORARY CONDUIT ATTACHED TO THE SOUTHBOUND FASCIA BARRIER AND PERMANENTLY RE-ROUTE IT THROUGH THE NORTHBOUND FASCIA BARRIER. SEE LIGHTING PLANS FOR DETAILS AND PAYMENT.



PHASE 3

PHASE 3: CONSTRUCT THE PORTIONS OF THE SOUTHBOUND BRIDGE

1. PLACE TEMPORARY PAVEMENT MARKINGS AND SIGNS, MOVE TRAFFIC TO THE NORTHBOUND BRIDGE.

2. REMOVE & REPLACE PORTIONS OF SOUTHBOUND BRIDGE AS INDICATED ON PLANS.

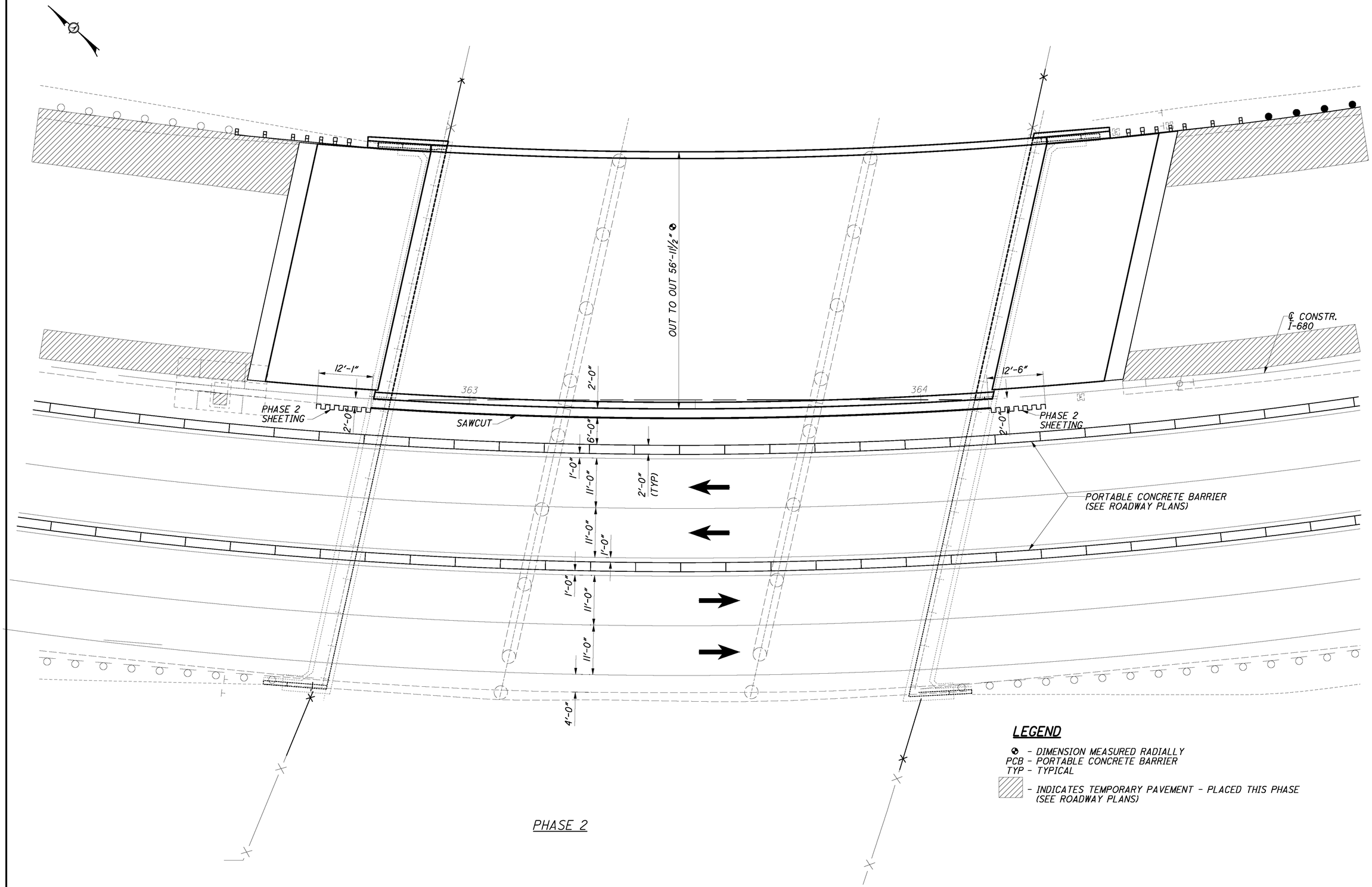
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DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007232	

STAGED CONSTRUCTION DETAILS

BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508



LEGEND

⊕ - DIMENSION MEASURED RADIALLY
PCB - PORTABLE CONCRETE BARRIER
TYP - TYPICAL
▨ - INDICATES TEMPORARY PAVEMENT - PLACED THIS PHASE (SEE ROADWAY PLANS)

PHASE 2

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
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JBD		5007232	

STAGE CONSTRUCTION DETAILS

BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508

PHASE 3

LEGEND

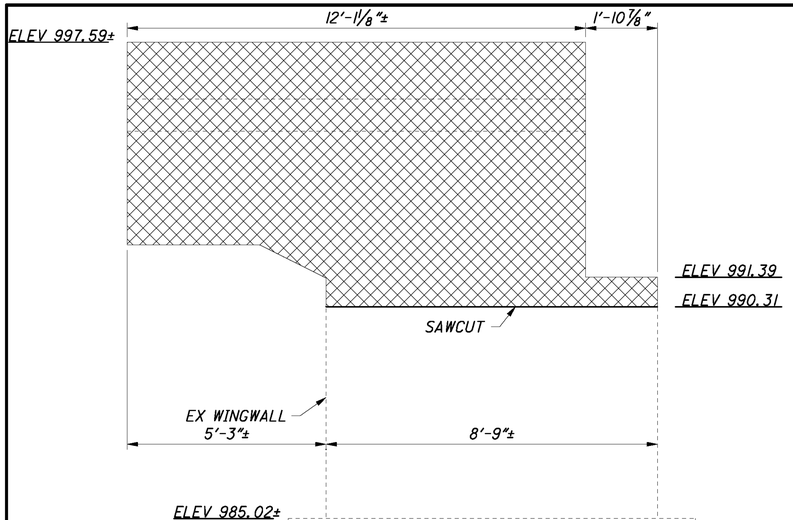
✪ - DIMENSION MEASURED RADIALLY
TYP - TYPICAL

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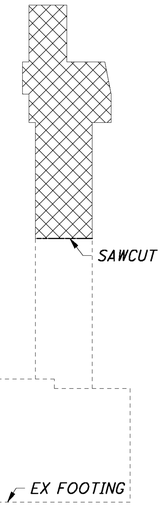
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MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007232	

STAGED CONSTRUCTION DETAILS
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

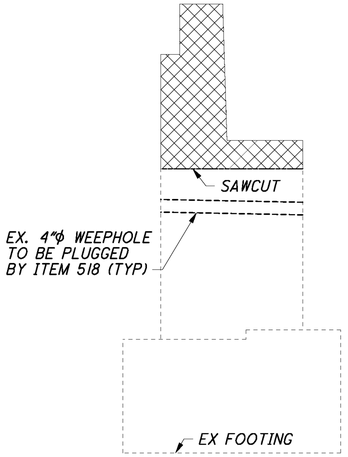
MAH-680-4.29
PID No. 25508



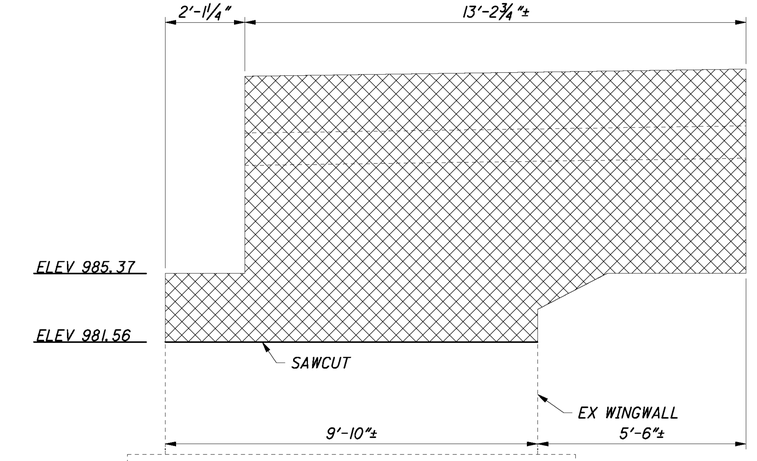
SOUTHBOUND REAR ABUTMENT



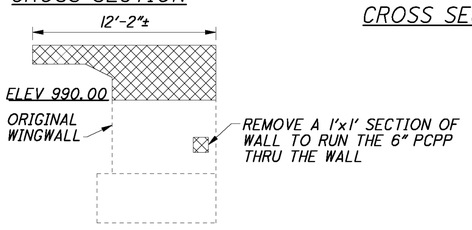
TYPICAL WINGWALL CROSS SECTION



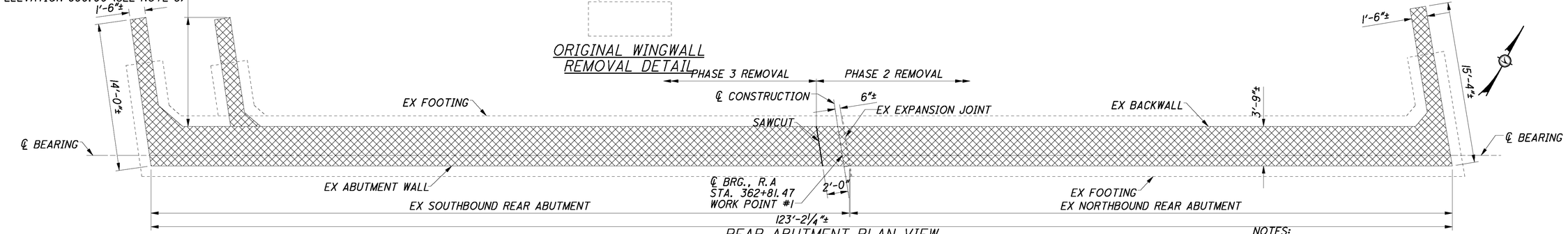
TYPICAL ABUTMENT CROSS SECTION



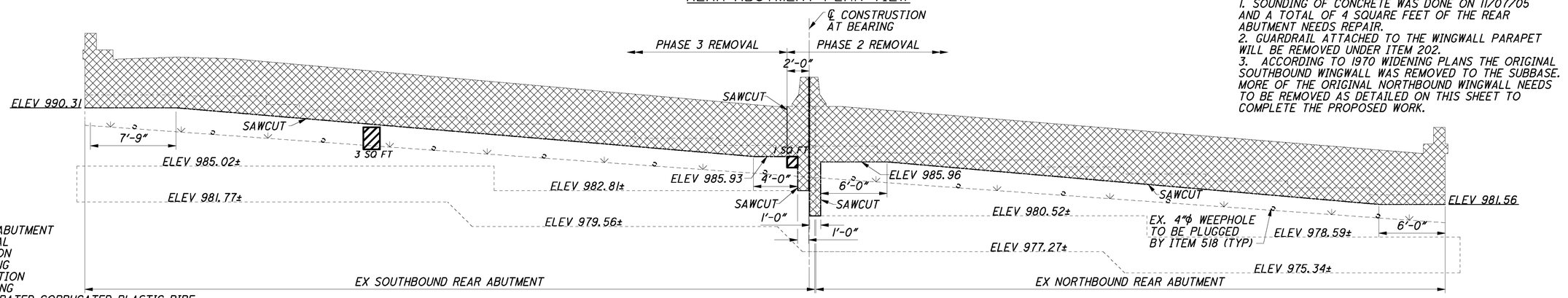
NORTHBOUND REAR ABUTMENT



ORIGINAL WINGWALL REMOVAL DETAIL



REAR ABUTMENT PLAN VIEW



REAR ABUTMENT ELEVATION

NOTES:
1. SOUNDING OF CONCRETE WAS DONE ON 11/07/05 AND A TOTAL OF 4 SQUARE FEET OF THE REAR ABUTMENT NEEDS REPAIR.
2. GUARDRAIL ATTACHED TO THE WINGWALL PARAPET WILL BE REMOVED UNDER ITEM 202.
3. ACCORDING TO 1970 WIDENING PLANS THE ORIGINAL SOUTHBOUND WINGWALL WAS REMOVED TO THE SUBBASE. MORE OF THE ORIGINAL NORTHBOUND WINGWALL NEEDS TO BE REMOVED AS DETAILED ON THIS SHEET TO COMPLETE THE PROPOSED WORK.

LEGEND

R.A. - REAR ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
ELEV - ELEVATION
EX. - EXISTING
PCPP - PERFORATED CORRUGATED PLASTIC PIPE

- INDICATES LIMITS OF ITEM 202 - PORTIONS OF STRUCTURE TO BE REMOVED, AS PER PLAN
- INDICATES DELAMINATED AREA (REPAIR USING ITEM 519)

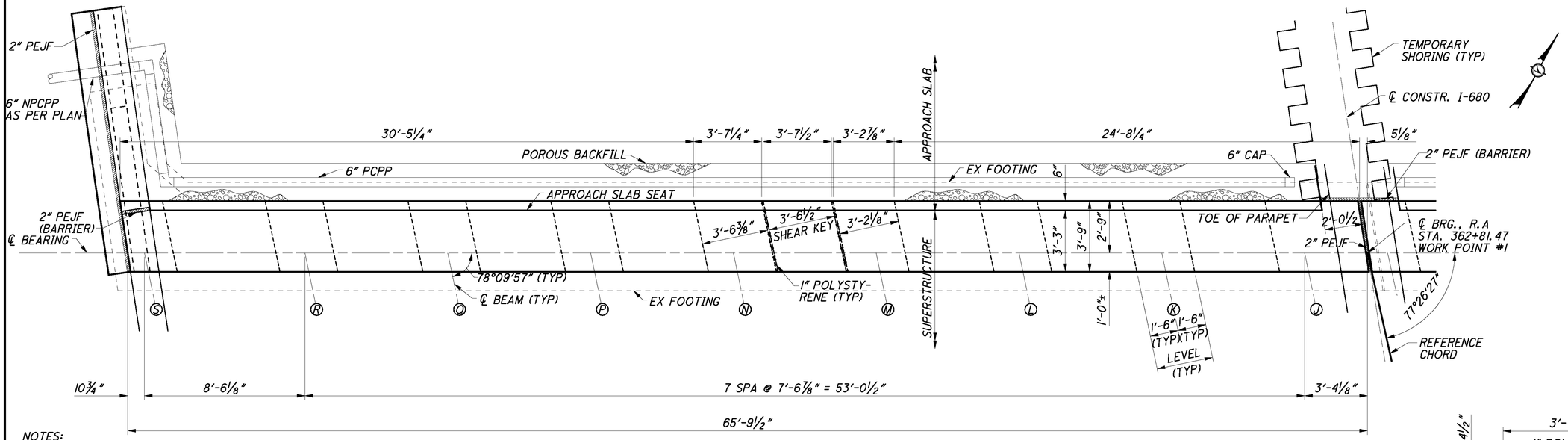
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007232	

REAR ABUTMENT REMOVAL DETAILS

BRIDGE NO. MAH-680-0687
1-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508

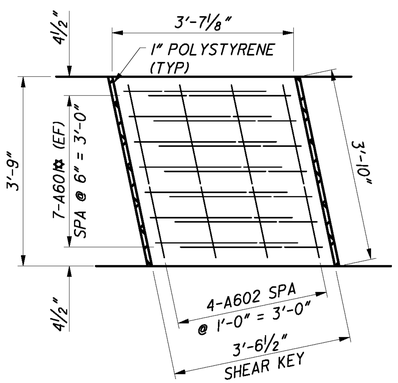


NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 6 BARS 2'-4"
   LAP NO. 8 BARS 4'-0"
2. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE ABUTMENT WALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).
3. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.
4. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTRUCTURE: PLACE THE CONCRETE ENCASING THE STRUCTURAL STEEL MEMBERS AT LEAST 48 HOURS BEFORE PLACING DECK CONCRETE.
5. BARS A501, A502, A503, & A504 SHALL BE PLACED PARRALEL TO THE BEAMS.
6. ALL ELEVATIONS LABELED REPRESENT THE ELEVATION AT THE CENTERLINE OF BEARING UNLESS OTHERWISE NOTED.

SOUTHBOUND REAR ABUTMENT PLAN VIEW

LEGEND

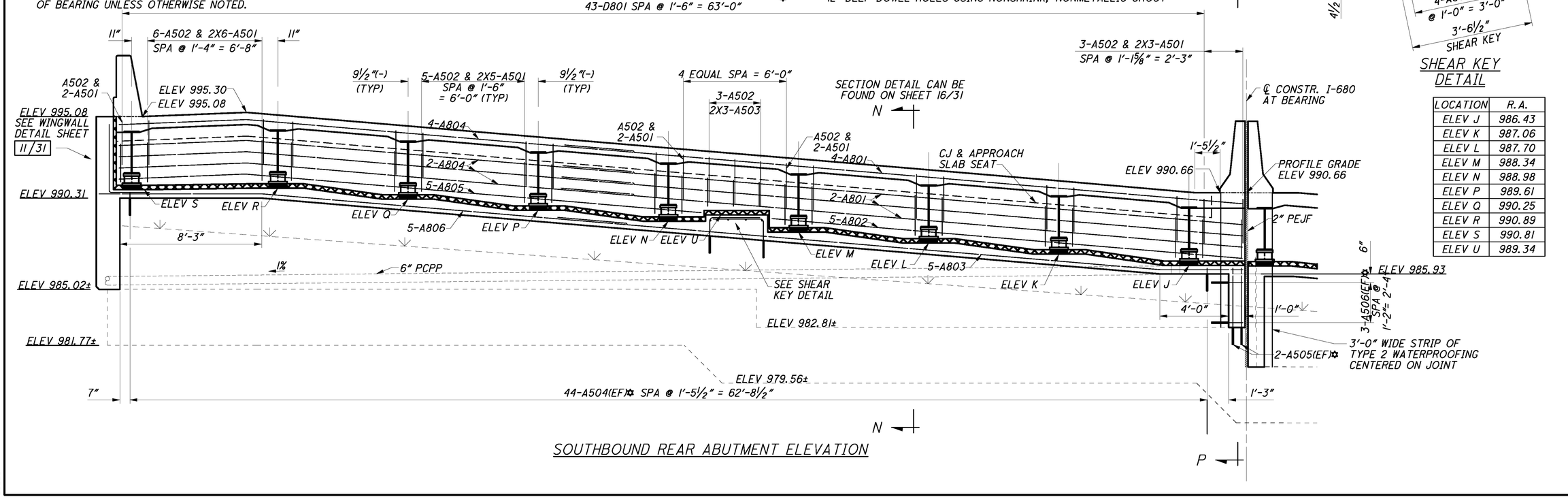
R.A.	- REAR ABUTMENT
F.A.	- FORWARD ABUTMENT
TYP	- TYPICAL
STA	- STATION
BRG.	- BEARING
SPA	- SPACE
CJ	- CONSTRUCTION JOINT
ELEV	- ELEVATION
PEJF	- PREFORMED EXPANSION JOINT FILLER
MIN	- MINIMUM
NPCPP	- NON-PERFORATED CORRUGATED PLASTIC PIPE
PCPP	- PERFORATED CORRUGATED PLASTIC PIPE
EF	- EACH FACE
✡	- 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT



SHEAR KEY DETAIL

LOCATION	R.A.
ELEV J	986.43
ELEV K	987.06
ELEV L	987.70
ELEV M	988.34
ELEV N	988.98
ELEV P	989.61
ELEV Q	990.25
ELEV R	990.89
ELEV S	990.81
ELEV U	989.34

SECTION DETAIL CAN BE FOUND ON SHEET 16/31 — P



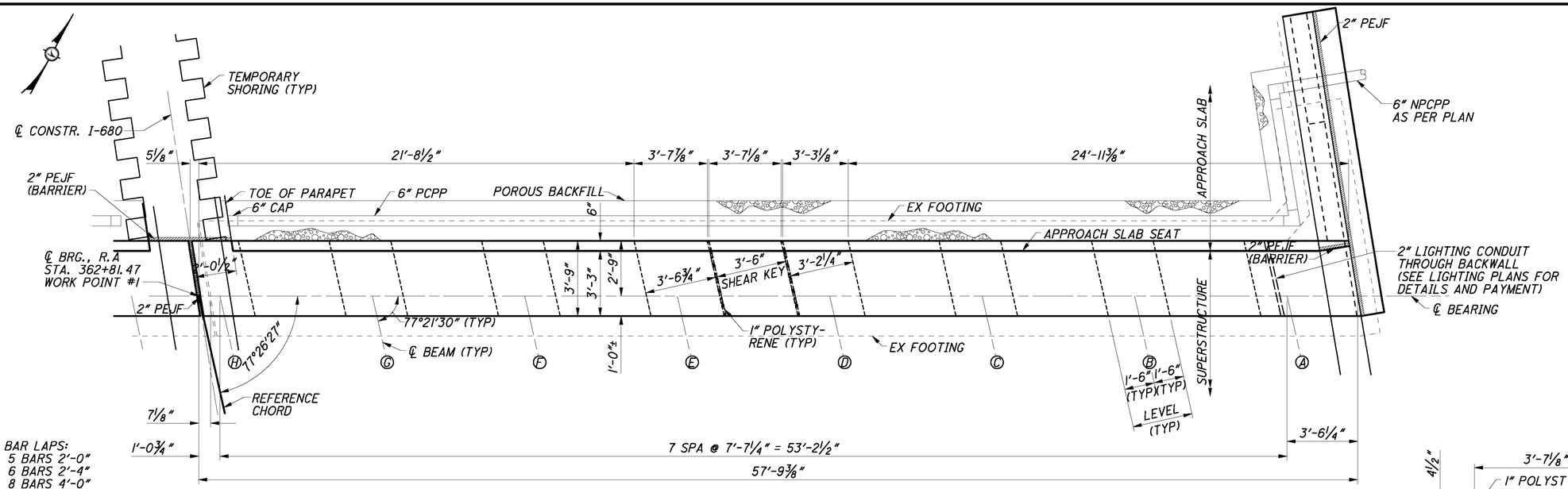
SOUTHBOUND REAR ABUTMENT ELEVATION

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007232	

REAR ABUTMENT DETAILS
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508

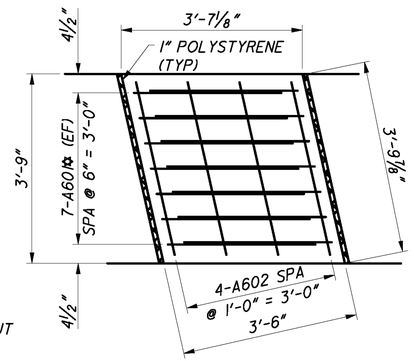


NORTHBOUND REAR ABUTMENT PLAN VIEW

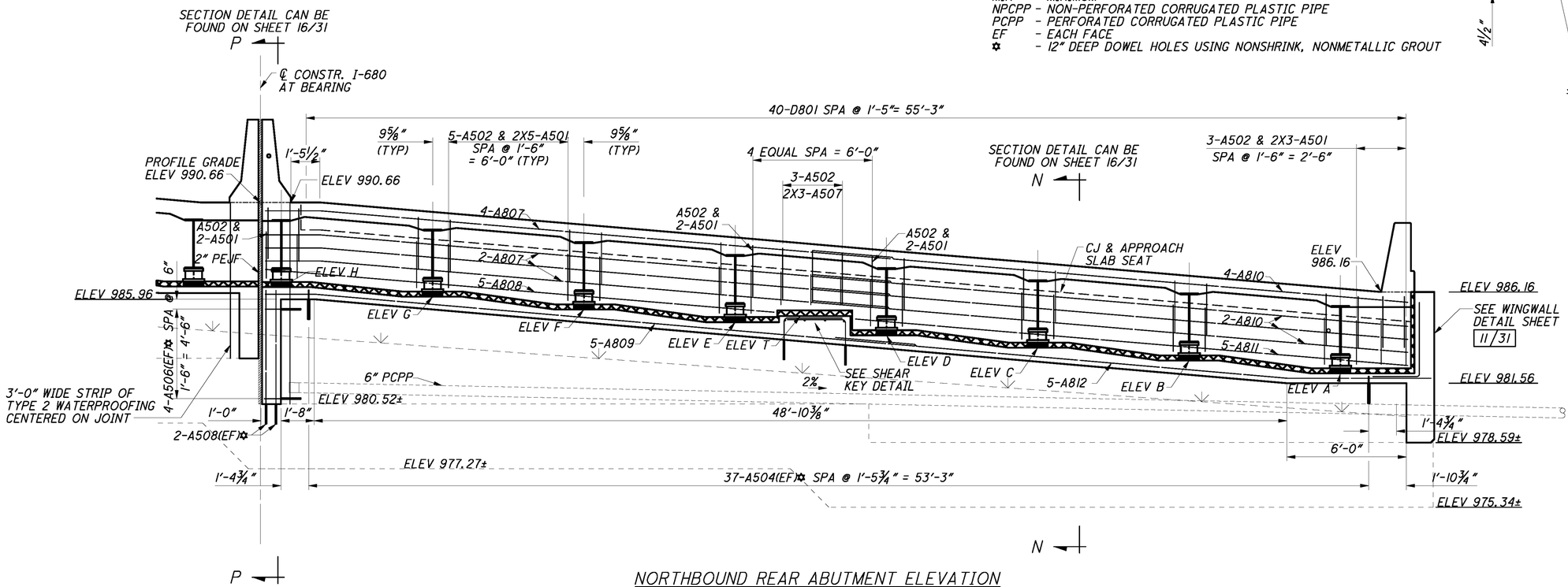
NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 6 BARS 2'-4"
   LAP NO. 8 BARS 4'-0"
2. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE ABUTMENT WALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).
3. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.
4. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTRUCTURE: PLACE THE CONCRETE ENCASING THE STRUCTURAL STEEL MEMBERS AT LEAST 48 HOURS BEFORE PLACING DECK CONCRETE.
5. BARS A501, A502, A503, & A504 SHALL BE PLACED PARRALEL TO THE BEAMS.
6. ALL ELEVATIONS LABELED REPRESENT THE ELEVATION AT THE CENTERLINE OF BEARING UNLESS OTHERWISE NOTED.

LEGEND

R.A.	- REAR ABUTMENT
F.A.	- FORWARD ABUTMENT
TYP	- TYPICAL
STA	- STATION
BRG.	- BEARING
SPA	- SPACE
CJ	- CONSTRUCTION JOINT
ELEV	- ELEVATION
PEJF	- PREFORMED EXPANSION JOINT FILLER
MIN	- MINIMUM
NPCPP	- NON-PERFORATED CORRUGATED PLASTIC PIPE
PCPP	- PERFORATED CORRUGATED PLASTIC PIPE
EF	- EACH FACE
✡	- 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT



SHEAR KEY DETAIL



NORTHBOUND REAR ABUTMENT ELEVATION

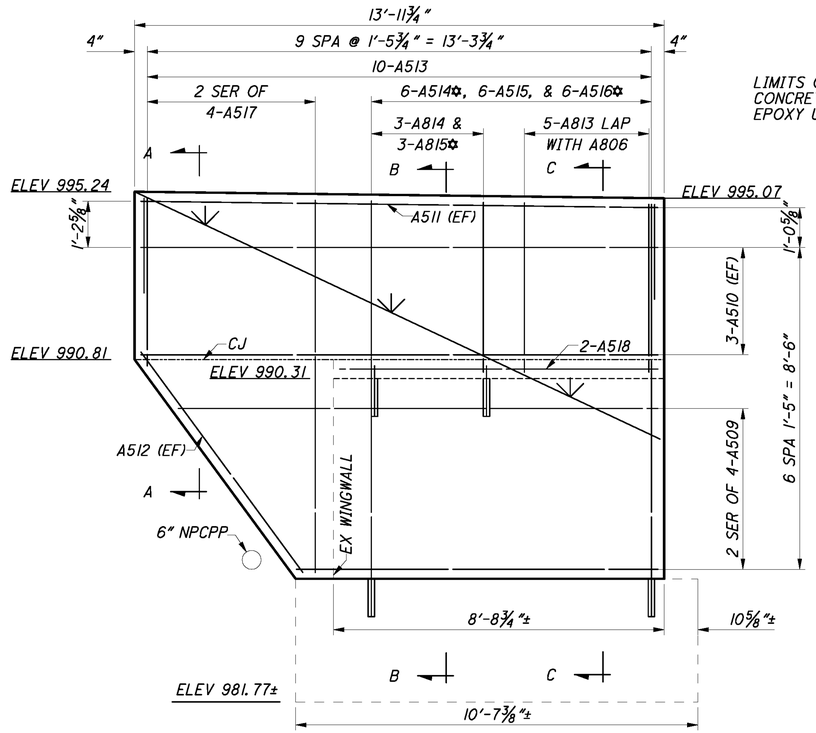
LOCATION	R.A.
ELEV A	982.06
ELEV B	982.70
ELEV C	983.34
ELEV D	983.97
ELEV E	984.63
ELEV F	985.27
ELEV G	985.91
ELEV H	986.39
ELEV T	984.97

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

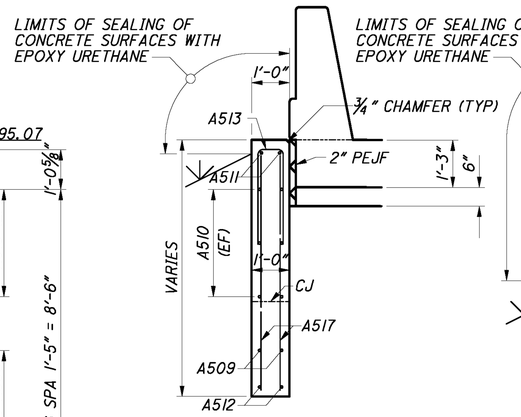
DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007232	

REAR ABUTMENT DETAILS
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

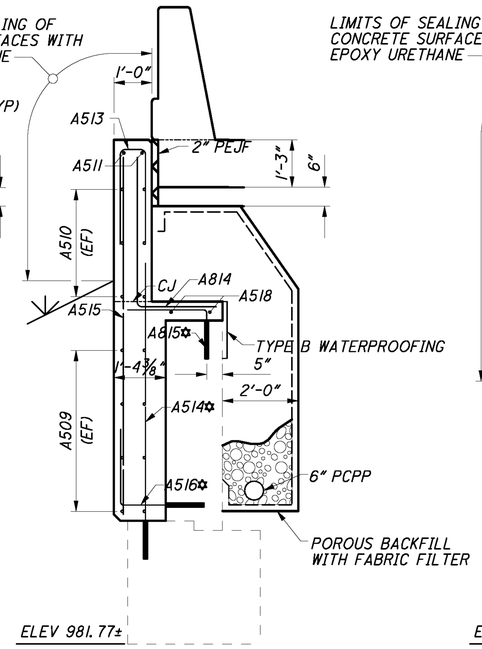
MAH-680-4.29
PID No. 25508



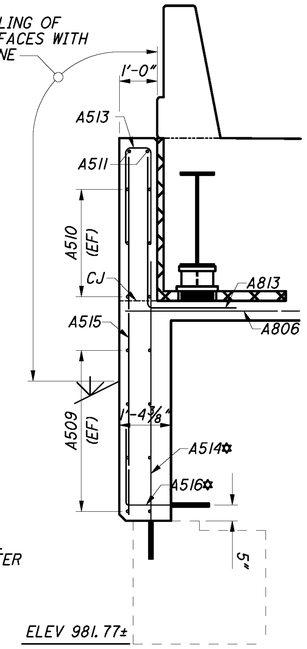
SOUTHBOUND REAR ABUTMENT WINGWALL ELEVATION



SECTION A-A

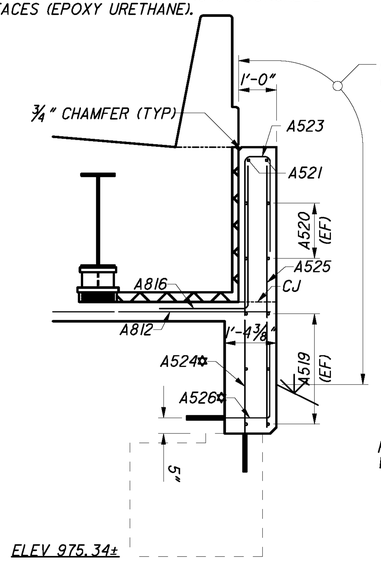


SECTION B-B

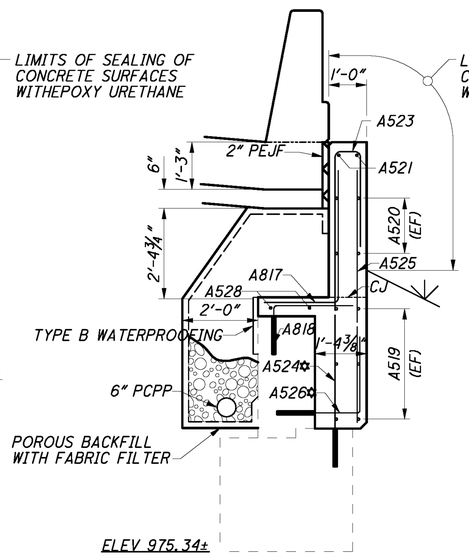


SECTION C-C

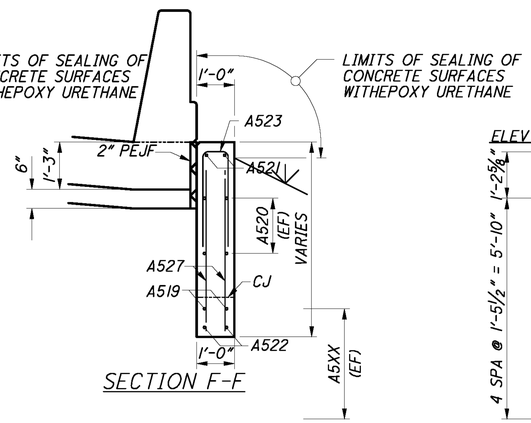
NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 8 BARS 4'-0"
2. ALL DOWEL HOLES SHOULD BE DRILLED A MINIMUM 5" FROM THE NEAREST CONCRETE EDGE.
3. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE WINGWALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).



SECTION D-D



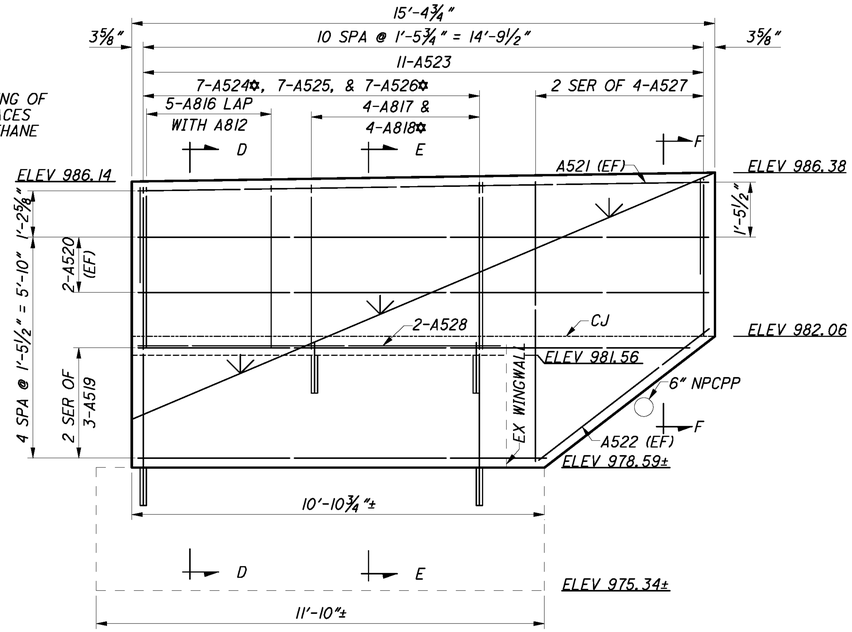
SECTION E-E



SECTION F-F

LEGEND

CJ	-	CONSTRUCTION JOINT
ELEV	-	ELEVATION
NPCPP	-	NON PERFORATED CORRUGATED PLASTIC PIPE
SPA	-	SPACED
PEJF	-	PREFORMED EXPANSION JOINT FILLER
✡	-	12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT



NORTHBOUND REAR ABUTMENT WINGWALL ELEVATION

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007232	

REAR ABUTMENT WINGWALL DETAILS

BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

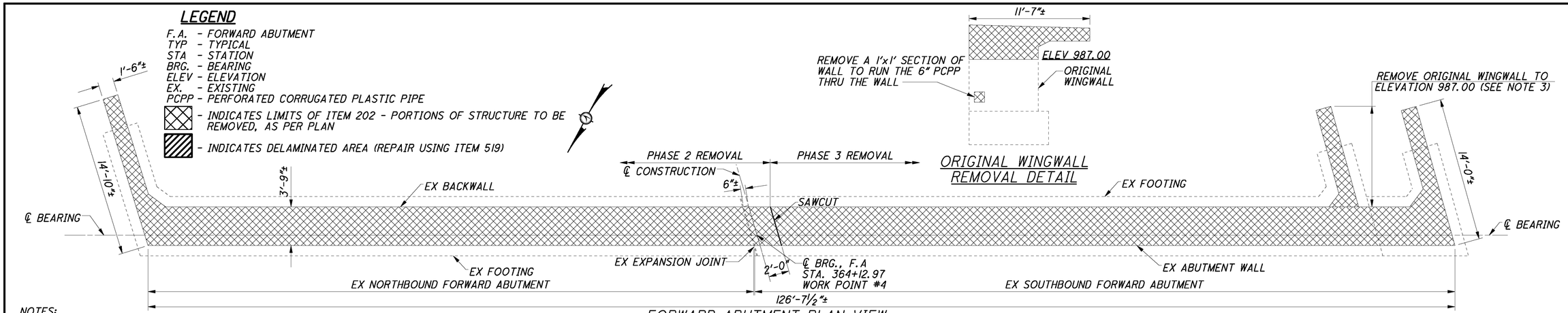
MAH-680-4.29
PID No. 25508

LEGEND

F.A. - FORWARD ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
ELEV - ELEVATION
EX. - EXISTING
PCPP - PERFORATED CORRUGATED PLASTIC PIPE

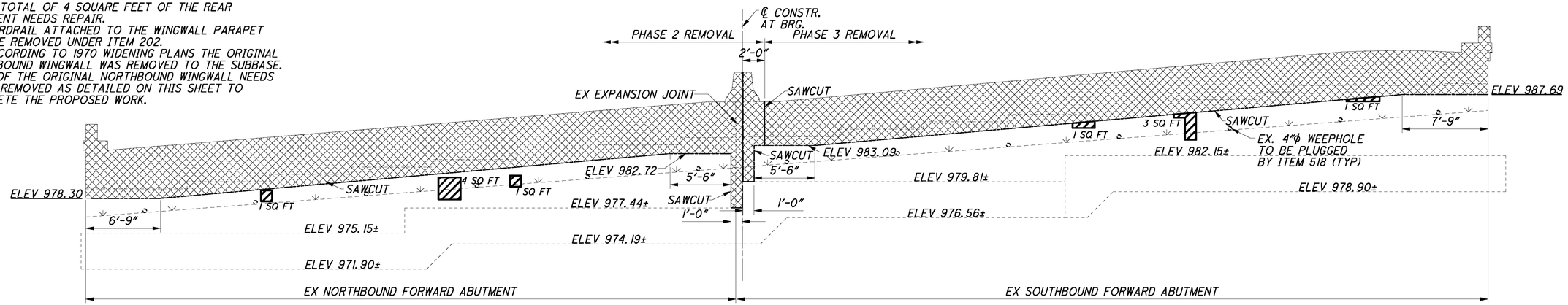
- INDICATES LIMITS OF ITEM 202 - PORTIONS OF STRUCTURE TO BE REMOVED, AS PER PLAN
- INDICATES DELAMINATED AREA (REPAIR USING ITEM 519)

NOTES:
1. SOUNDING OF CONCRETE WAS DONE ON 11/07/05 AND A TOTAL OF 4 SQUARE FEET OF THE REAR ABUTMENT NEEDS REPAIR.
2. GUARDRAIL ATTACHED TO THE WINGWALL PARAPET WILL BE REMOVED UNDER ITEM 202.
3. ACCORDING TO 1970 WIDENING PLANS THE ORIGINAL SOUTHBOUND WINGWALL WAS REMOVED TO THE SUBBASE. MORE OF THE ORIGINAL NORTHBOUND WINGWALL NEEDS TO BE REMOVED AS DETAILED ON THIS SHEET TO COMPLETE THE PROPOSED WORK.

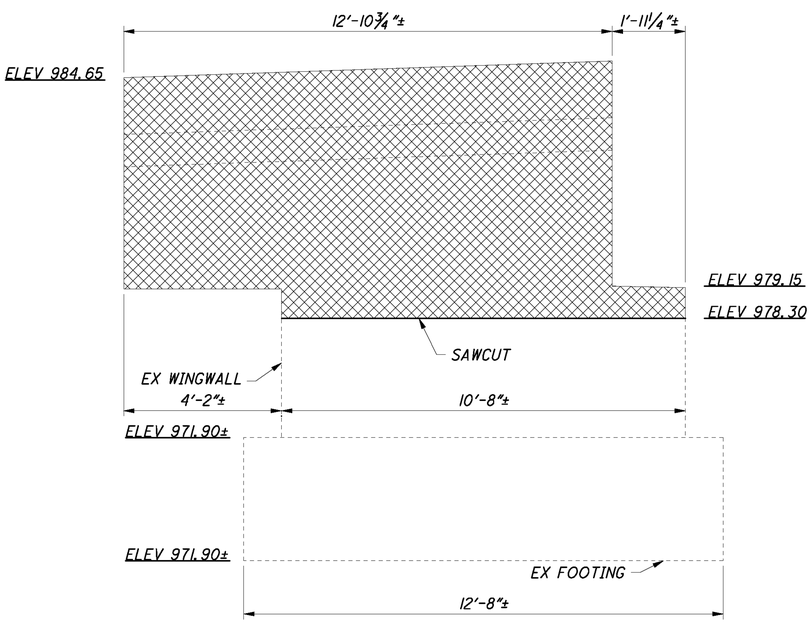


ORIGINAL WINGWALL REMOVAL DETAIL

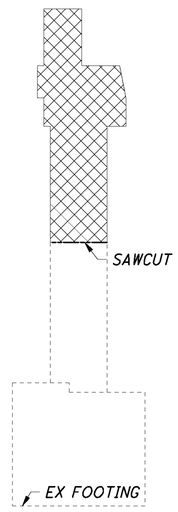
FORWARD ABUTMENT PLAN VIEW



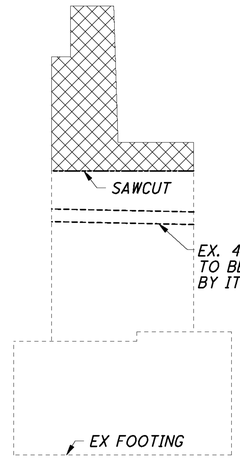
FORWARD ABUTMENT ELEVATION



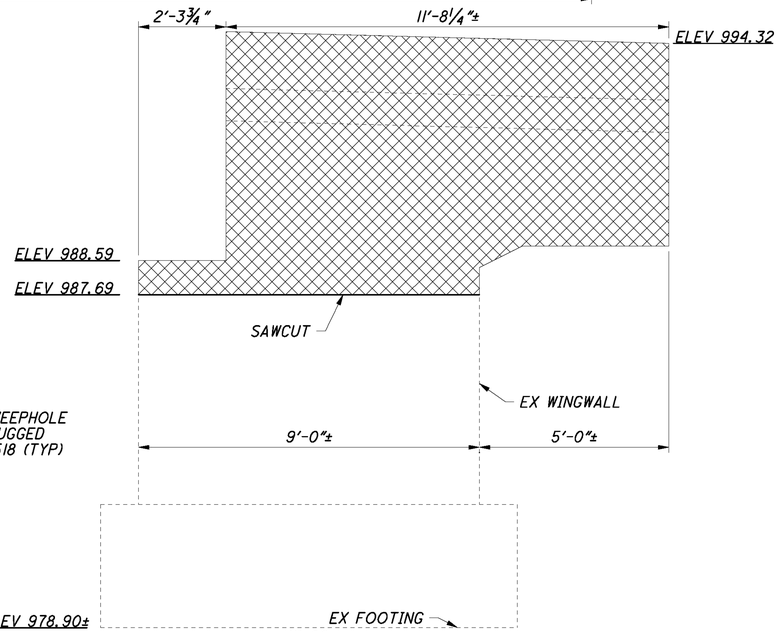
NORTHBOUND FORWARD ABUTMENT



TYPICAL WINGWALL CROSS SECTION



TYPICAL ABUTMENT CROSS SECTION



SOUTHBOUND FORWARD ABUTMENT

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | STRUCTURE FILE NUMBER 5007232 | CHECKED JBD | REVISED

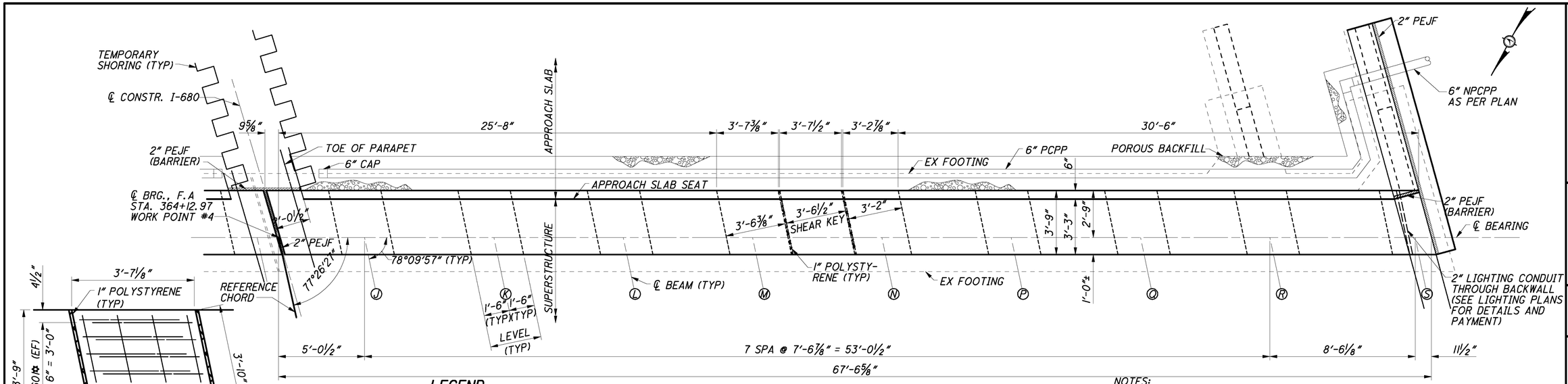
FORWARD ABUTMENT REMOVAL DETAILS

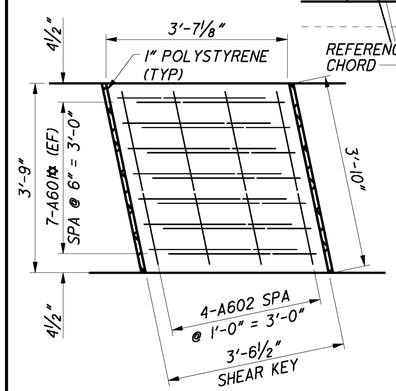
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508

12 / 31

236
307





SHEAR KEY DETAIL

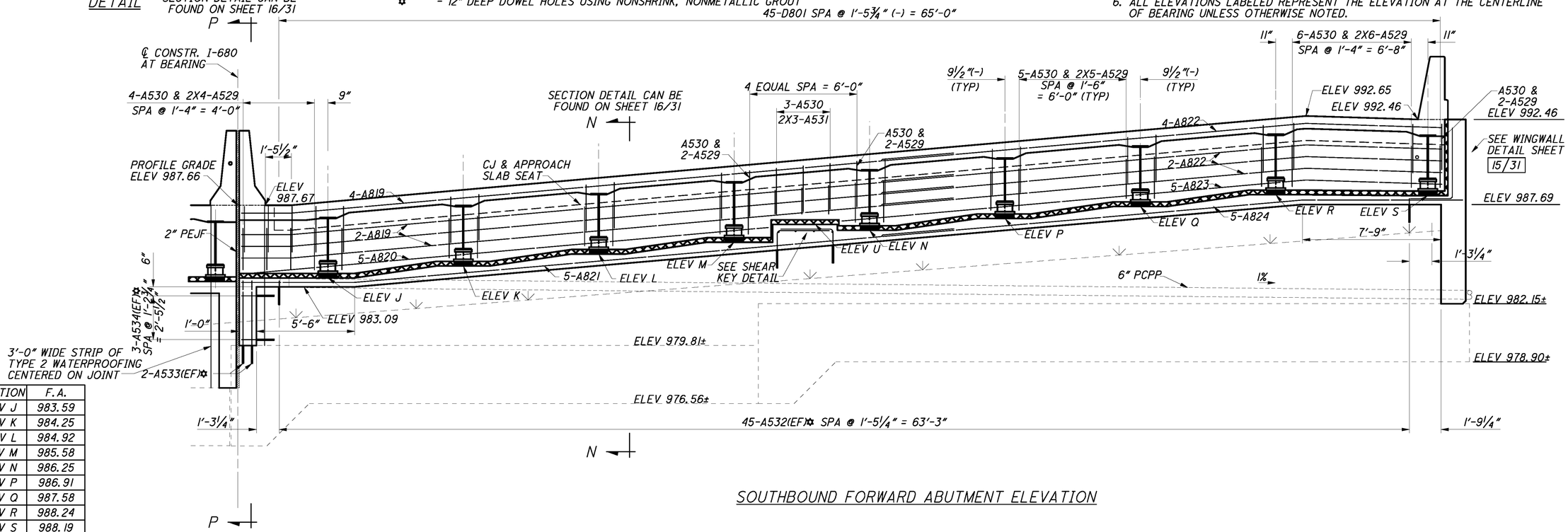
SECTION DETAIL CAN BE FOUND ON SHEET 16/31

LEGEND

R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
SPA - SPACE
CJ - CONSTRUCTION JOINT
ELEV - ELEVATION
PEJF - PREFORMED EXPANSION JOINT FILLER
MIN - MINIMUM
NPCPP - NON-PERFORATED CORRUGATED PLASTIC PIPE
PCPP - PERFORATED CORRUGATED PLASTIC PIPE
EF - EACH FACE
✡ - 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT

SOUTHBOUND FORWARD PLAN VIEW

NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 6 BARS 2'-4"
   LAP NO. 8 BARS 4'-0"
2. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE ABUTMENT WALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).
3. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.
4. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTRUCTURE: PLACE THE CONCRETE ENCASING THE STRUCTURAL STEEL MEMBERS AT LEAST 48 HOURS BEFORE PLACING DECK CONCRETE.
5. BARS A522, A523, A524, & A525 SHALL BE PLACED PARRALEL TO THE BEAMS.
6. ALL ELEVATIONS LABELED REPRESENT THE ELEVATION AT THE CENTERLINE OF BEARING UNLESS OTHERWISE NOTED.



LOCATION	F.A.
ELEV J	983.59
ELEV K	984.25
ELEV L	984.92
ELEV M	985.58
ELEV N	986.25
ELEV P	986.91
ELEV Q	987.58
ELEV R	988.24
ELEV S	988.19
ELEV U	986.58

SOUTHBOUND FORWARD ABUTMENT ELEVATION

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED MJP | DRAWN MJP | CHECKED JBD | REVIEWED EEC | DATE 05-28-10 | REVISED | STRUCTURE FILE NUMBER 50007232

FORWARD ABUTMENT DETAILS

BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508

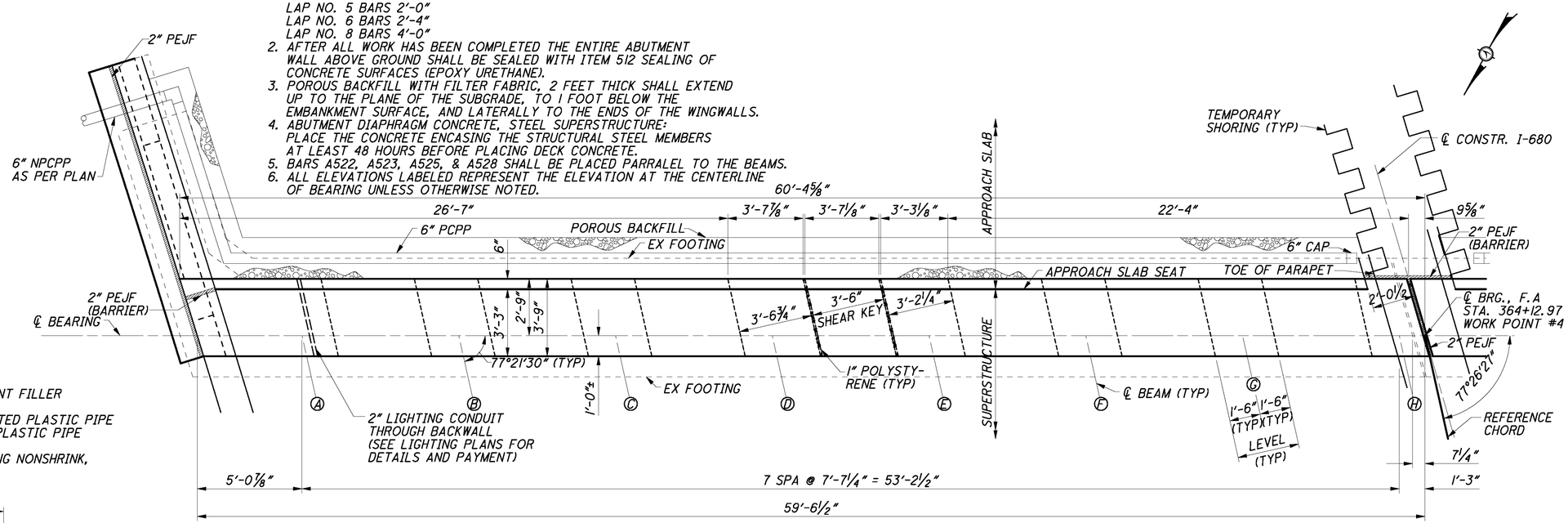
13 / 31

237 / 307

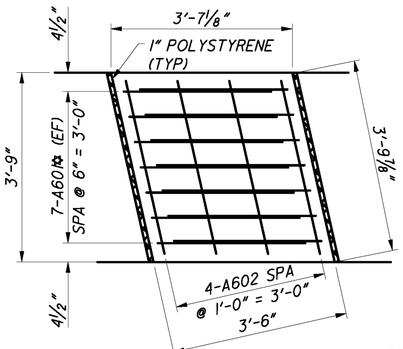
NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 6 BARS 2'-4"
   LAP NO. 8 BARS 4'-0"
2. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE ABUTMENT WALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).
3. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.
4. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTRUCTURE: PLACE THE CONCRETE ENCASING THE STRUCTURAL STEEL MEMBERS AT LEAST 48 HOURS BEFORE PLACING DECK CONCRETE.
5. BARS A522, A523, A525, & A528 SHALL BE PLACED PARRALEL TO THE BEAMS.
6. ALL ELEVATIONS LABELED REPRESENT THE ELEVATION AT THE CENTERLINE OF BEARING UNLESS OTHERWISE NOTED.

LEGEND

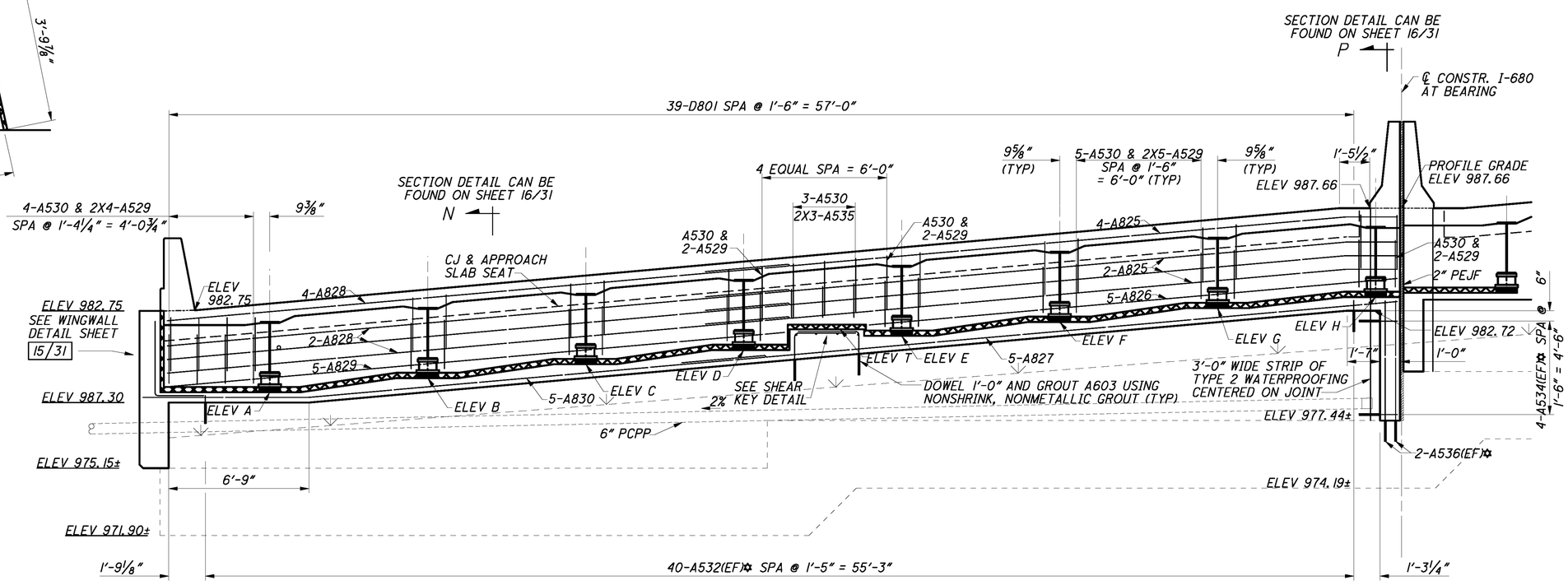
R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
SPA - SPACE
CJ - CONSTRUCTION JOINT
ELEV - ELEVATION
PEJF - PREFORMED EXPANSION JOINT FILLER
MIN - MINIMUM
NPCPP - NON-PERFORATED CORRUGATED PLASTIC PIPE
PCPP - PERFORATED CORRUGATED PLASTIC PIPE
EF - EACH FACE
✡ - 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT



NORTHBOUND FORWARD ABUTMENT PLAN VIEW



SHEAR KEY DETAIL



NORTHBOUND FORWARD ABUTMENT ELEVATION

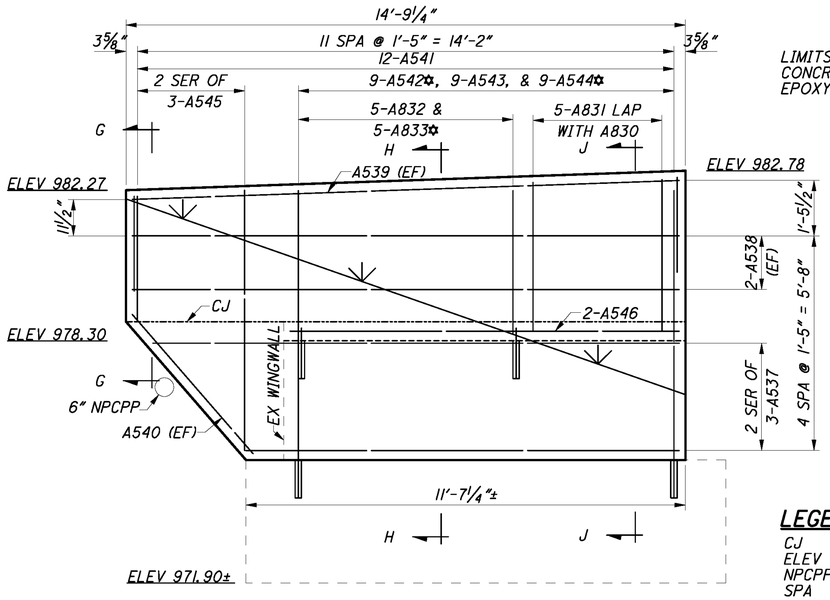
LOCATION	F.A.
ELEV A	978.80
ELEV B	979.47
ELEV C	980.15
ELEV D	980.83
ELEV E	981.51
ELEV F	982.18
ELEV G	982.85
ELEV H	983.38
ELEV T	981.83

DESIGN AGENCY
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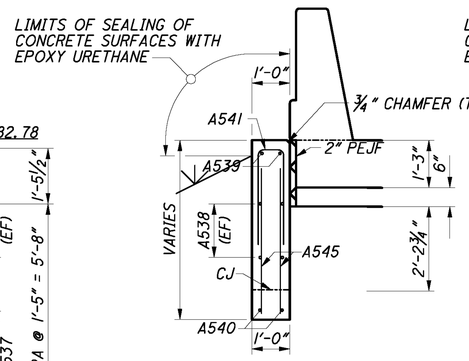
DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | STRUCTURE FILE NUMBER 50072232 | CHECKED JBD | REVISED

FORWARD ABUTMENT DETAILS
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

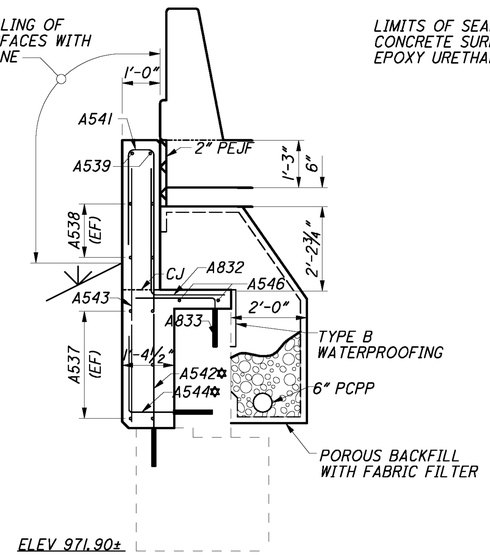
MAH-680-4.29
PID No. 25508



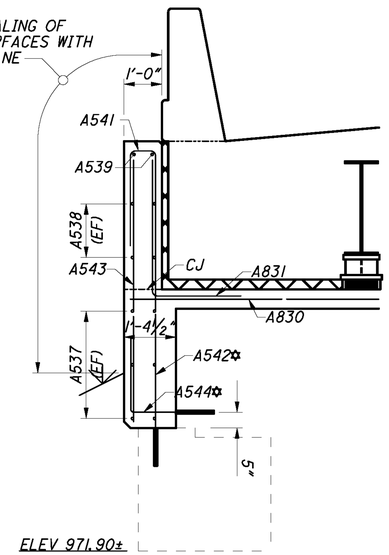
NORTHBOUND FORWARD ABUTMENT WINGWALL ELEVATION



SECTION G-G



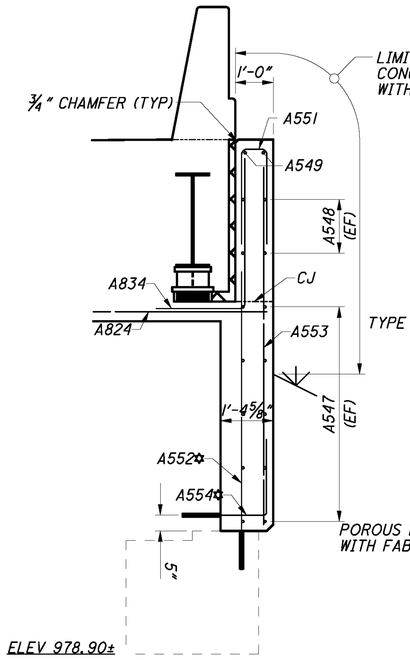
SECTION H-H



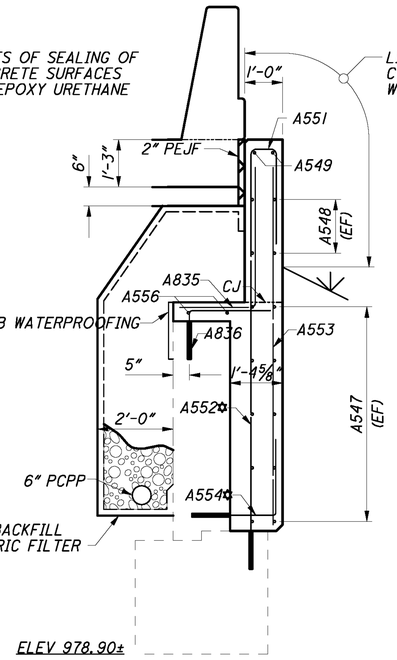
SECTION J-J

LEGEND

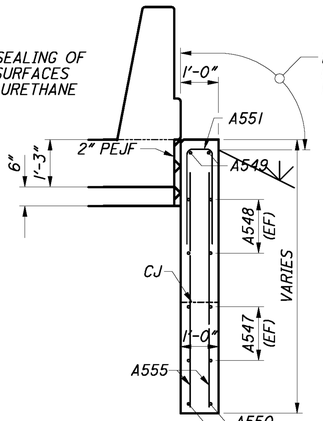
CJ - CONSTRUCTION JOINT
ELEV - ELEVATION
NPCPP - NON PERFORATED CORRUGATED PLASTIC PIPE
SPA - SPACED
PEJF - PREFORMED EXPANSION JOINT FILLER
✡ - 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT



SECTION K-K

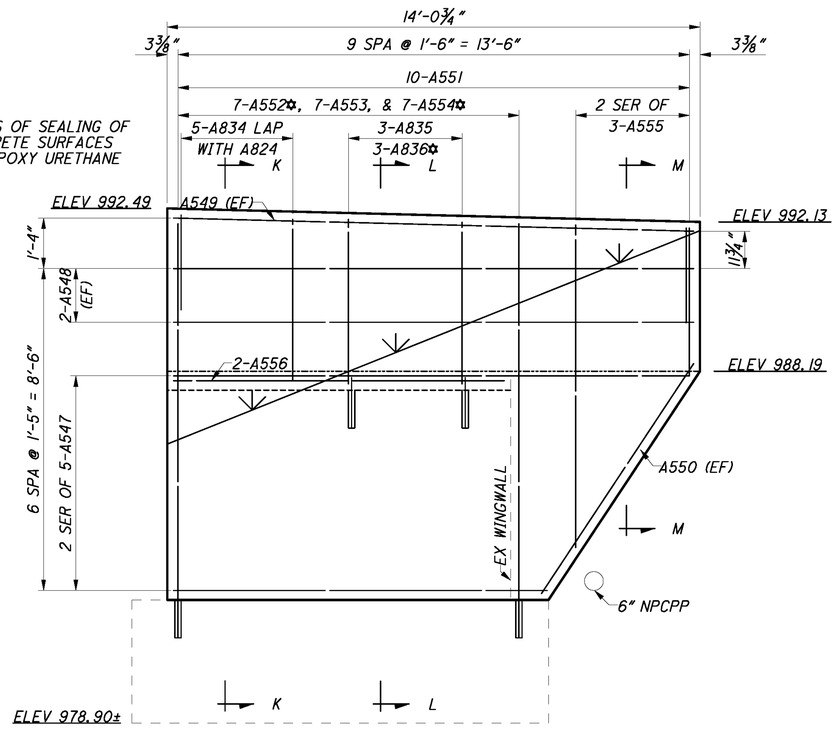


SECTION L-L



SECTION M-M

NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 8 BARS 4'-0"
2. ALL DOWEL HOLES SHOULD BE DRILLED A MINIMUM 5" FROM THE NEAREST CONCRETE EDGE.
3. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE WINGWALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).



SOUTHBOUND FORWARD ABUTMENT WINGWALL ELEVATION

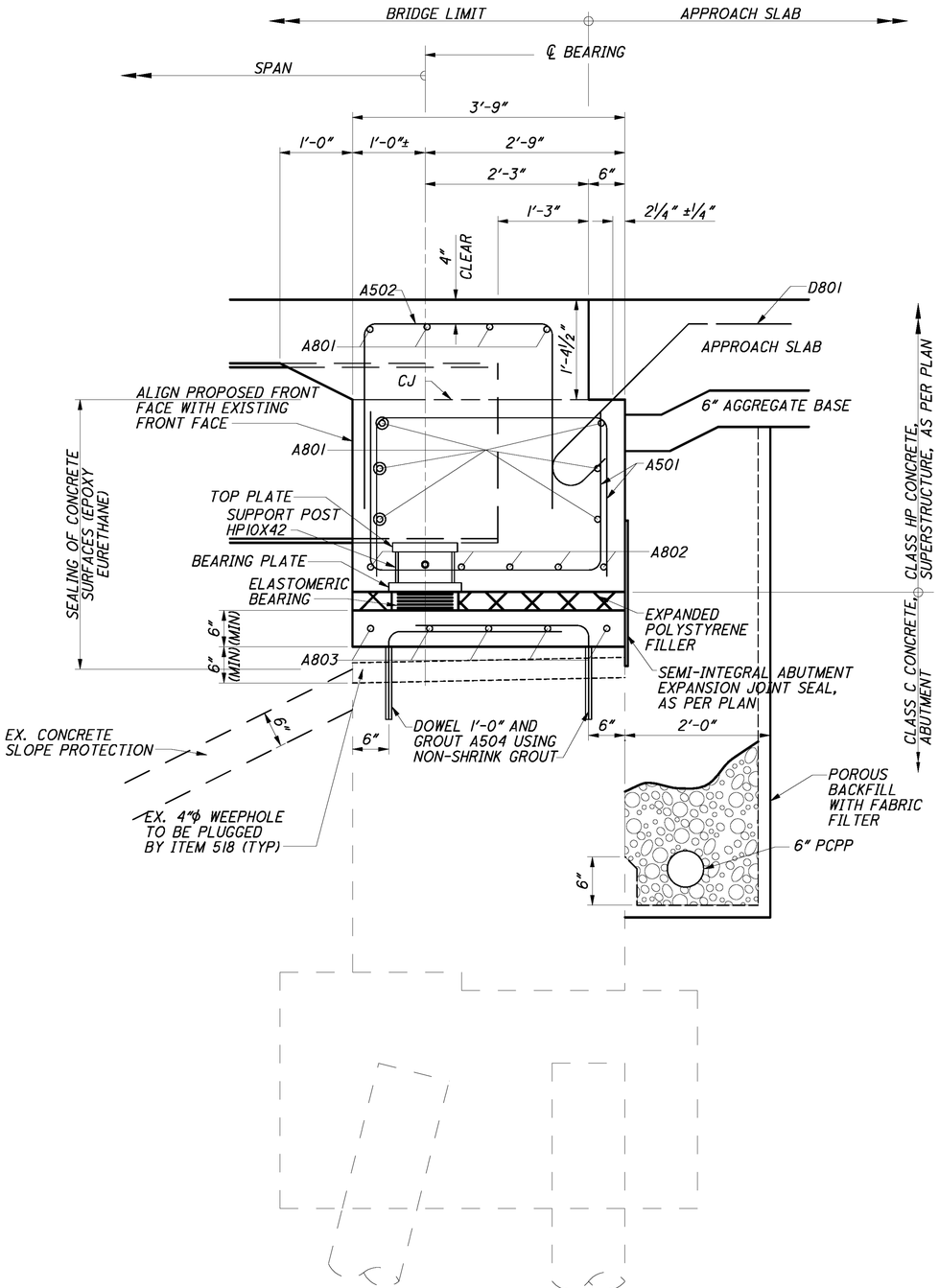
DESIGN AGENCY
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DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 50007232

FORWARD ABUTMENT WINGWALL DETAILS

BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

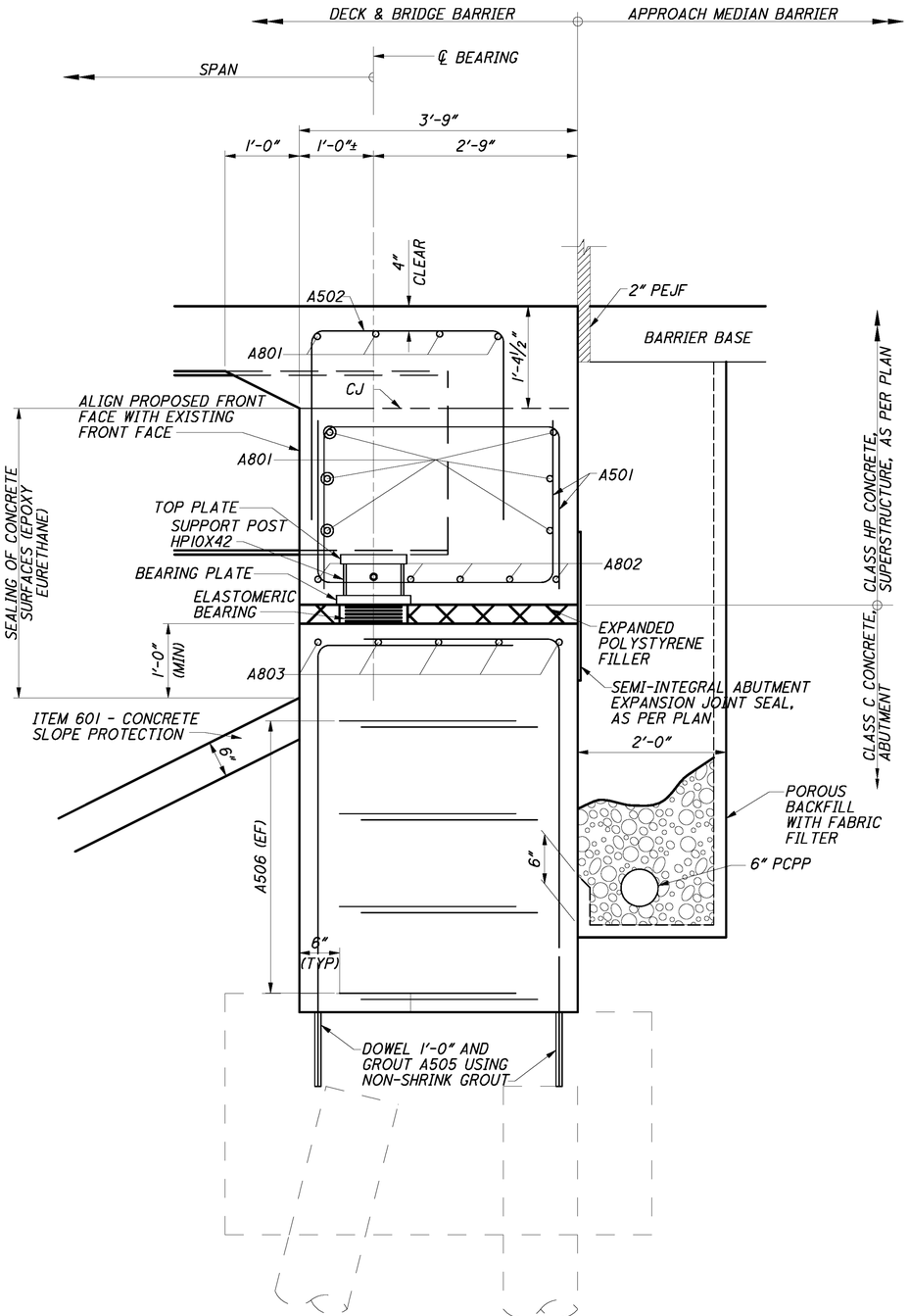
MAH-680-4.29
PID No. 25508



TYPICAL ABUTMENT CROSS SECTION

SECTION N-N

(BAR NUMBERS SHOWN ARE FOR REAR ABUTMENT)



TYPICAL ABUTMENT CROSS SECTION AT ABUTMENT EXPANSION JOINT

SECTION P-P

(BAR NUMBERS SHOWN ARE FOR REAR ABUTMENT)

NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 8 BARS 4'-0"
2. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTRUCTURE: PLACE THE CONCRETE ENCASING THE STRUCTURAL STEEL MEMBERS AT LEAST 48 HOURS BEFORE PLACING DECK CONCRETE.
3. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.

LEGEND

CJ - CONSTRUCTION JOINT
PEJF - PREFORMED EXPANSION JOINT FILLER
MIN - MINIMUM
PCPP - PERFORATED CORRUGATED PLASTIC PIPE
EX. - EXISTING

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ABUTMENT SECTIONS

BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29

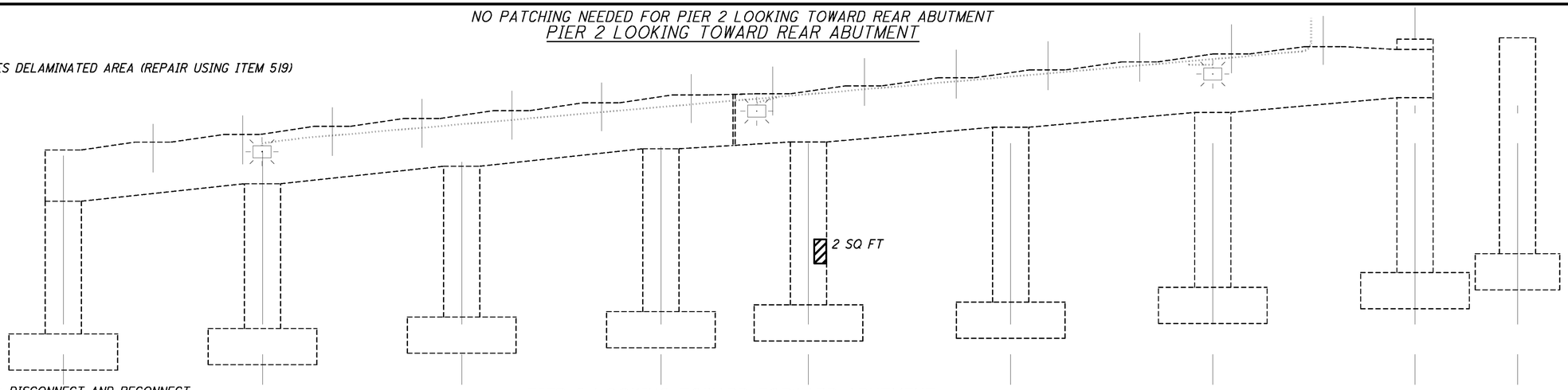
PID No. 25508

LEGEND

- INDICATES DELAMINATED AREA (REPAIR USING ITEM 519)

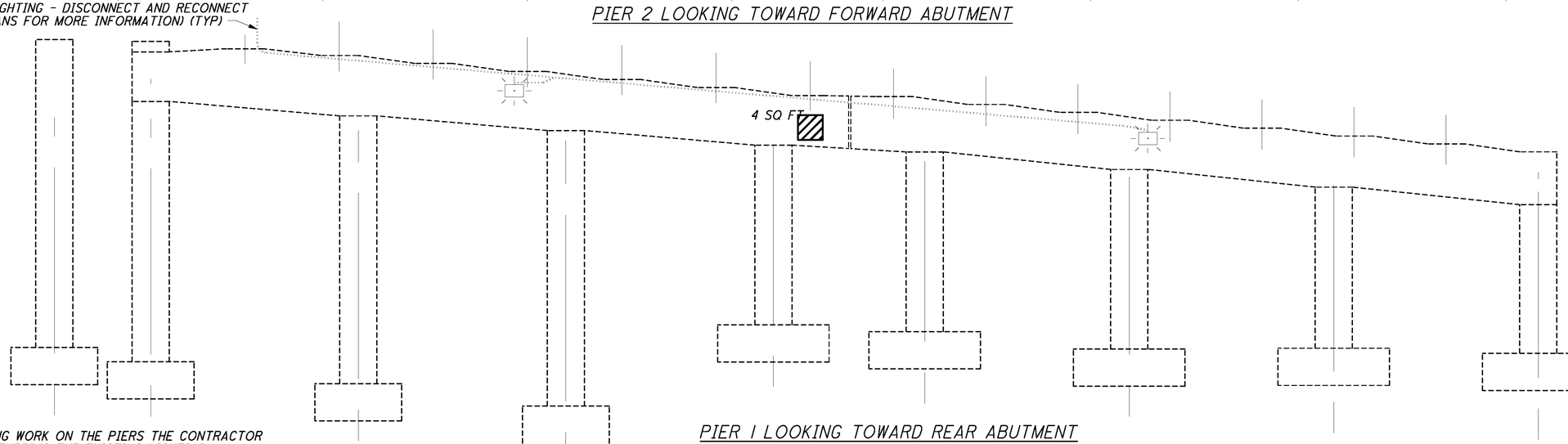
NO PATCHING NEEDED FOR PIER 2 LOOKING TOWARD REAR ABUTMENT

PIER 2 LOOKING TOWARD REAR ABUTMENT



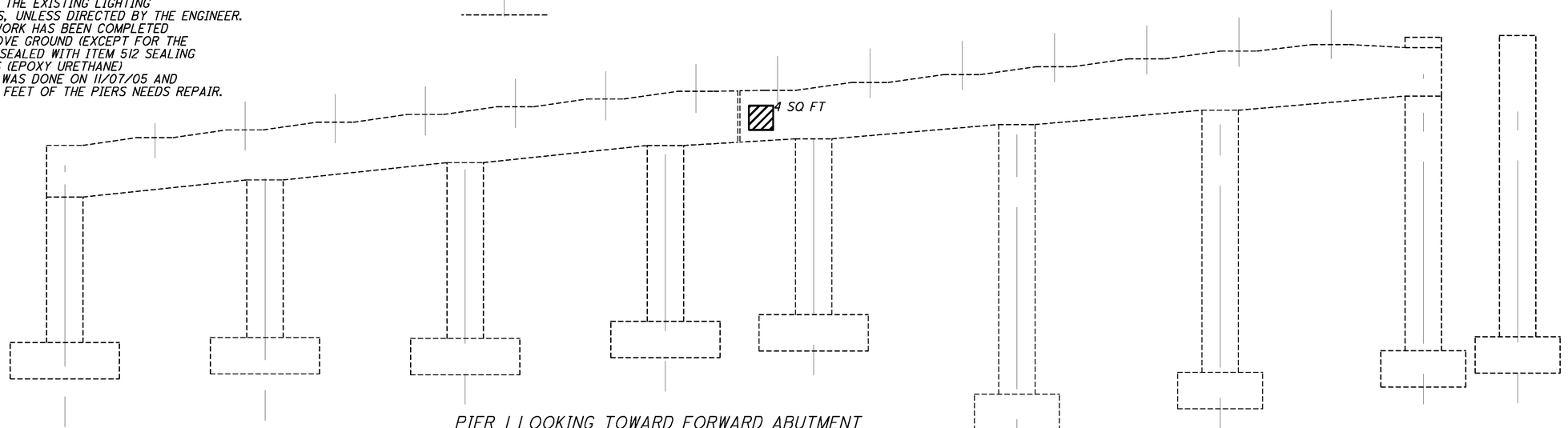
EX. UNDERPASS LIGHTING - DISCONNECT AND RECONNECT (SEE LIGHTING PLANS FOR MORE INFORMATION) (TYP)

PIER 2 LOOKING TOWARD FORWARD ABUTMENT



NOTES:
1. WHEN PERFORMING WORK ON THE PIERS THE CONTRACTOR WILL AVOID DISTURBING THE EXISTING LIGHTING ATTACHED TO THE PIERS, UNLESS DIRECTED BY THE ENGINEER.
2. AFTER ALL PROPOSED WORK HAS BEEN COMPLETED ALL PIER SURFACES ABOVE GROUND (EXCEPT FOR THE BEAM SEATS) SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE)
3. SOUNDING OF CONCRETE WAS DONE ON 11/07/05 AND A TOTAL OF 10 SQUARE FEET OF THE PIERS NEEDS REPAIR.

PIER 1 LOOKING TOWARD REAR ABUTMENT



PIER 1 LOOKING TOWARD FORWARD ABUTMENT

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DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007232	

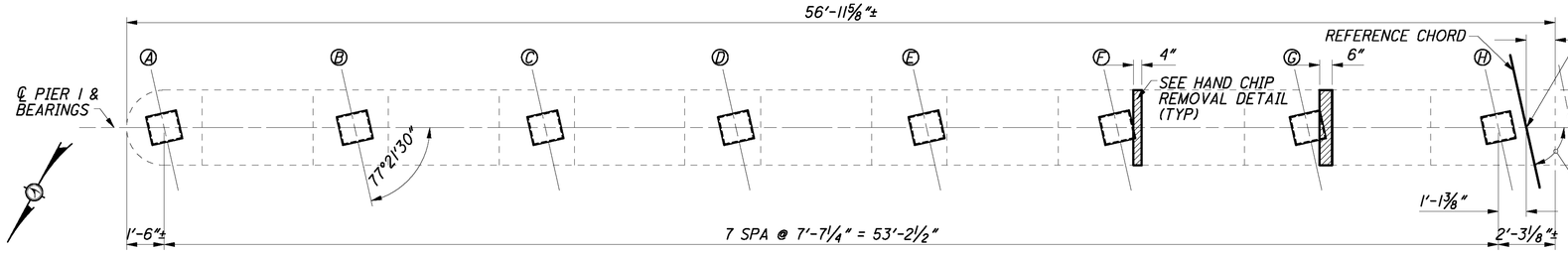
PIER DETAILS

BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

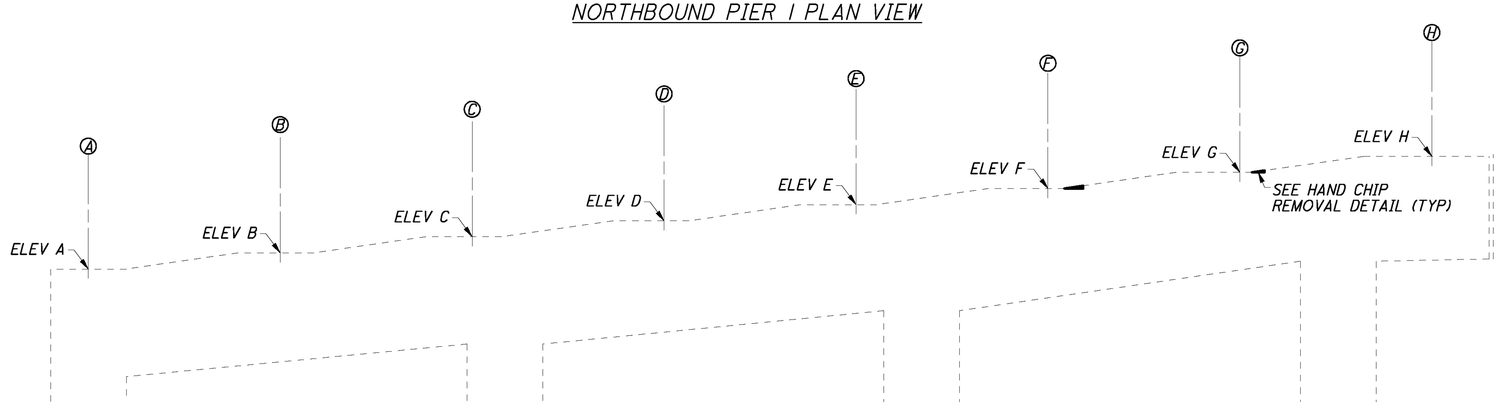
MAH-680-4.29
PID No. 25508

17 / 31

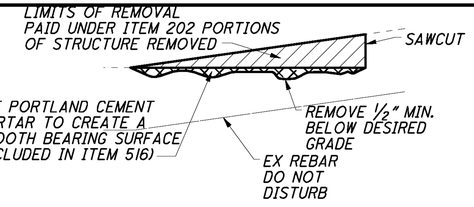
241
307



NORTHBOUND PIER 1 PLAN VIEW



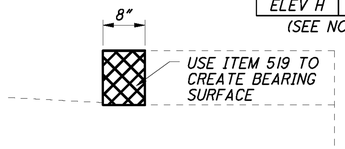
NORTHBOUND PIER 1 ELEVATION



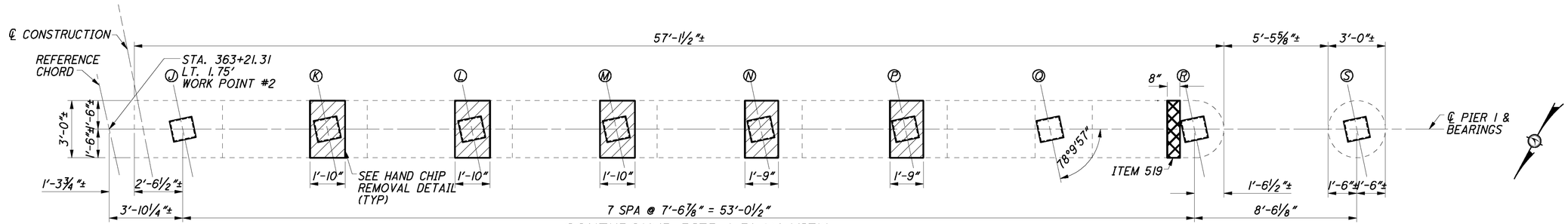
HANDCHIP REMOVAL DETAIL

LOCATION	PIER 1
ELEV A	981.72±
ELEV B	982.33±
ELEV C	983.00±
ELEV D	983.62±
ELEV E	984.27±
ELEV F	984.88±
ELEV G	985.52±
ELEV H	986.16±

(SEE NOTE 2)



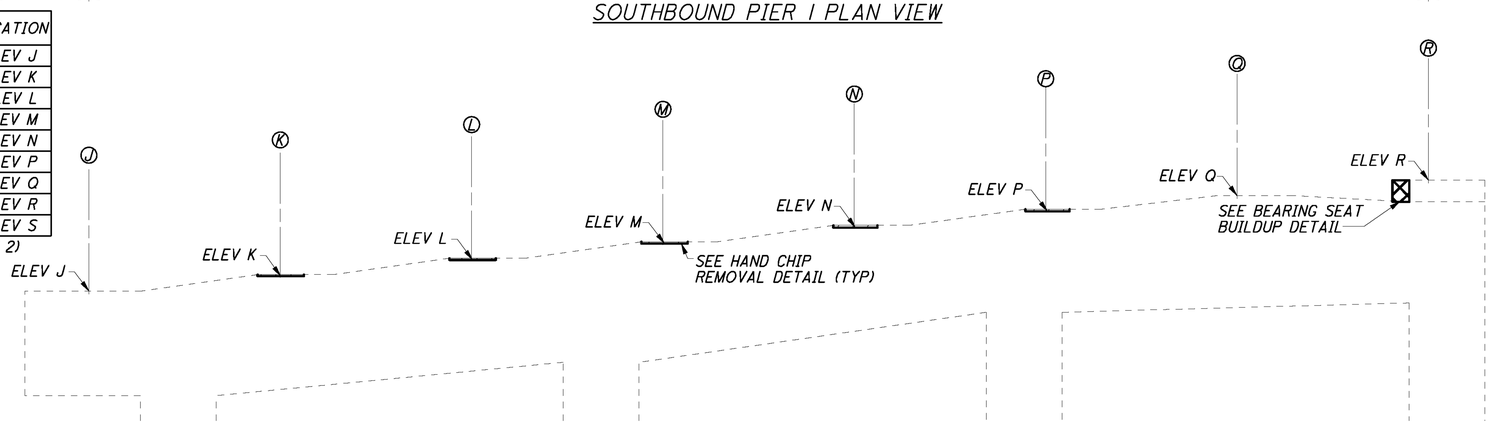
BEARING SEAT BUILDUP DETAIL



SOUTHBOUND PIER 1 PLAN VIEW

PROPOSED PIER 1	EXISTING PIER 1	LOCATION
-	986.24±	ELEV J
986.82	986.88±	ELEV K
987.46	987.53±	ELEV L
988.11	988.18±	ELEV M
988.75	988.84±	ELEV N
989.39	989.47±	ELEV P
-	990.02±	ELEV Q
-	990.58±	ELEV R
-	990.79±	ELEV S

(SEE NOTE 2)



SOUTHBOUND PIER 1 ELEVATION

LEGEND

EX. - EXISTING
TYP - TYPICAL
STA - STATION
ELEV- ELEVATION
LT. - LEFT

NOTES:

1. THE REINFORCEMENT IN THE EXISTING PIER CAPS ARE TO BE LOCATED AND MARKED IN THE FIELD USING NON-DESTRUCTIVE EQUIPMENT SO AS TO AVOID DAMAGING OF THE BARS DURING DRILLING OPERATION FOR DOWELS AND BEARING ANCHORS

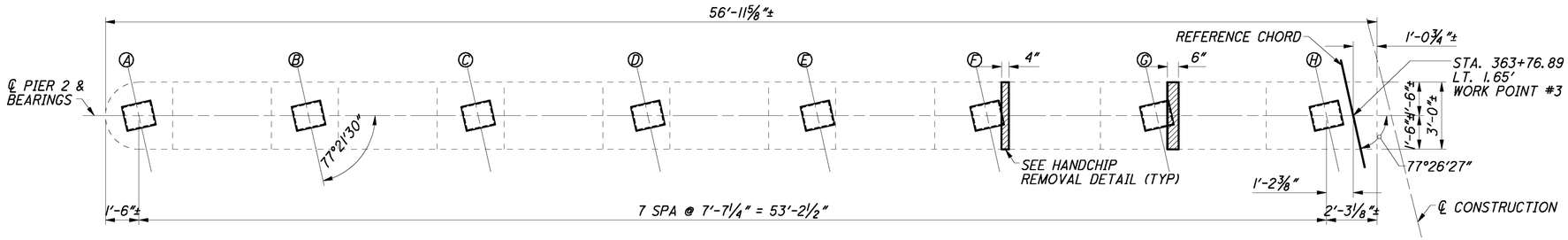
2. BEFORE ORDERING THE PROPOSED BEARINGS THE CONTRACTOR SHALL FIELD VERIFY EXISTING BEAM SEAT ELEVATIONS. IF VARIATIONS GREATER THAN 0.02 FEET ARE FOUND BETWEEN MEASURED ELEVATIONS AND THE ELEVATIONS SHOWN ON THE PLANS, APPROPRIATE ADJUSTMENTS SHALL BE MADE TO THE THICKNESS OF THE STEEL LOAD PLATE TO ACCOUNT FOR THE DIFFERENCE.

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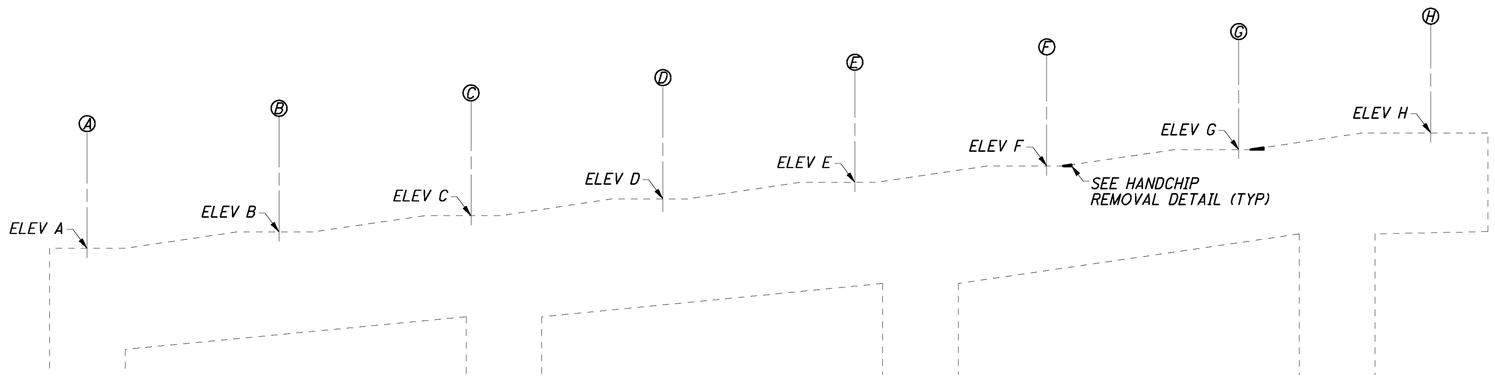
DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007232

PIER DETAILS
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

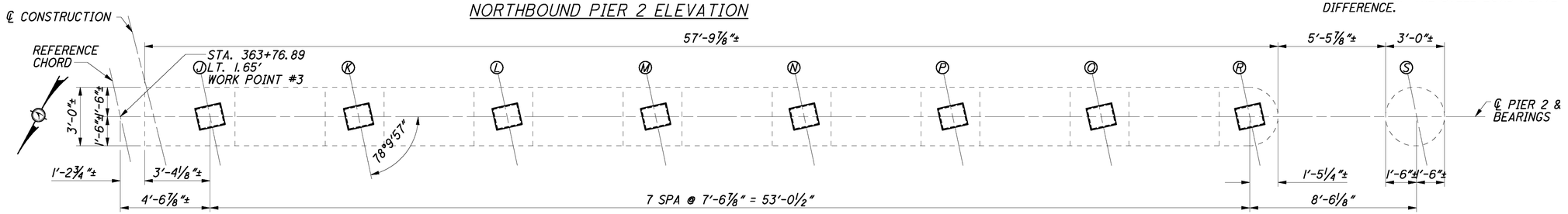
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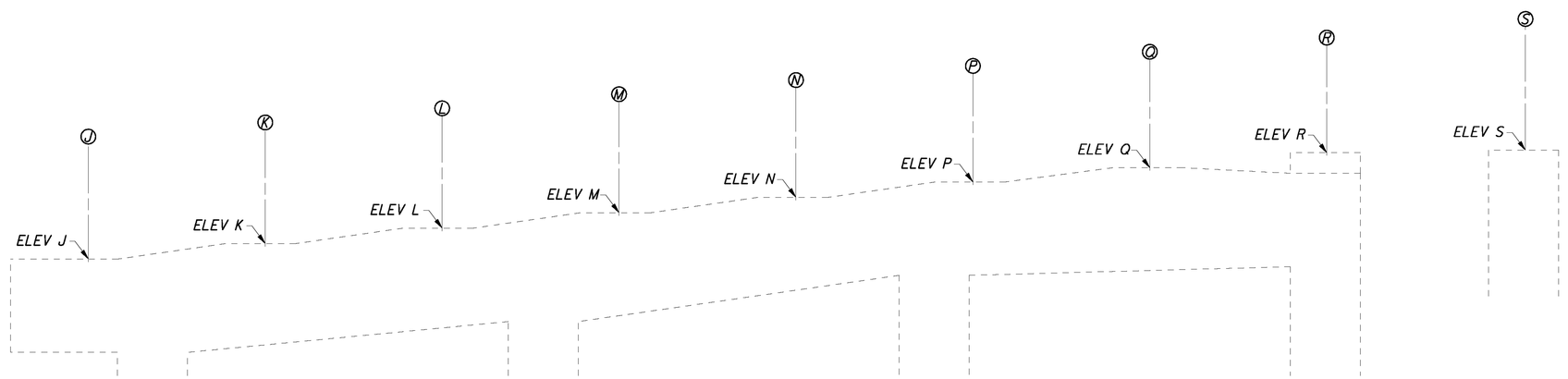
NORTHBOUND PIER 2 PLAN VIEW



NORTHBOUND PIER 2 ELEVATION



SOUTHBOUND PIER 2 PLAN VIEW



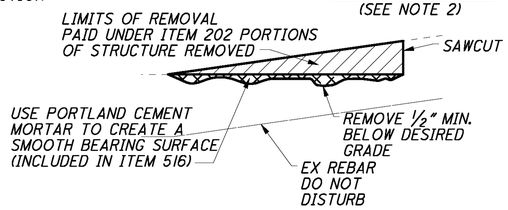
SOUTHBOUND PIER 2 ELEVATION

LOCATION	PIER 2
ELEV J	984.89±
ELEV K	985.54±
ELEV L	986.19±
ELEV M	986.83±
ELEV N	987.49±
ELEV P	988.16±
ELEV Q	988.77±
ELEV R	989.38±
ELEV S	989.61±

(SEE NOTE 2)

LOCATION	PIER 2
ELEV A	980.23±
ELEV B	980.87±
ELEV C	981.49±
ELEV D	982.18±
ELEV E	982.83±
ELEV F	983.49±
ELEV G	984.13±
ELEV H	984.79±

(SEE NOTE 2)



HANDCHIP REMOVAL DETAIL

NOTES:

1. THE REINFORCEMENT IN THE EXISTING PIER CAPS ARE TO BE LOCATED AND MARKED IN THE FIELD USING NON-DESTRUCTIVE EQUIPMENT SO AS TO AVOID DAMAGING OF THE BARS DURING DRILLING OPERATION FOR DOWELS AND BEARING ANCHORS

2. BEFORE ORDERING THE PROPOSED BEARINGS THE CONTRACTOR SHALL FIELD VERIFY EXISTING BEAM SEAT ELEVATIONS. IF VARIATIONS GREATER THAN 0.02 FEET ARE FOUND BETWEEN MEASURED ELEVATIONS AND THE ELEVATIONS SHOWN ON THE PLANS, APPROPRIATE ADJUSTMENTS SHALL BE MADE TO THE THICKNESS OF THE STEEL LOAD PLATE TO ACCOUNT FOR THE DIFFERENCE.

LEGEND

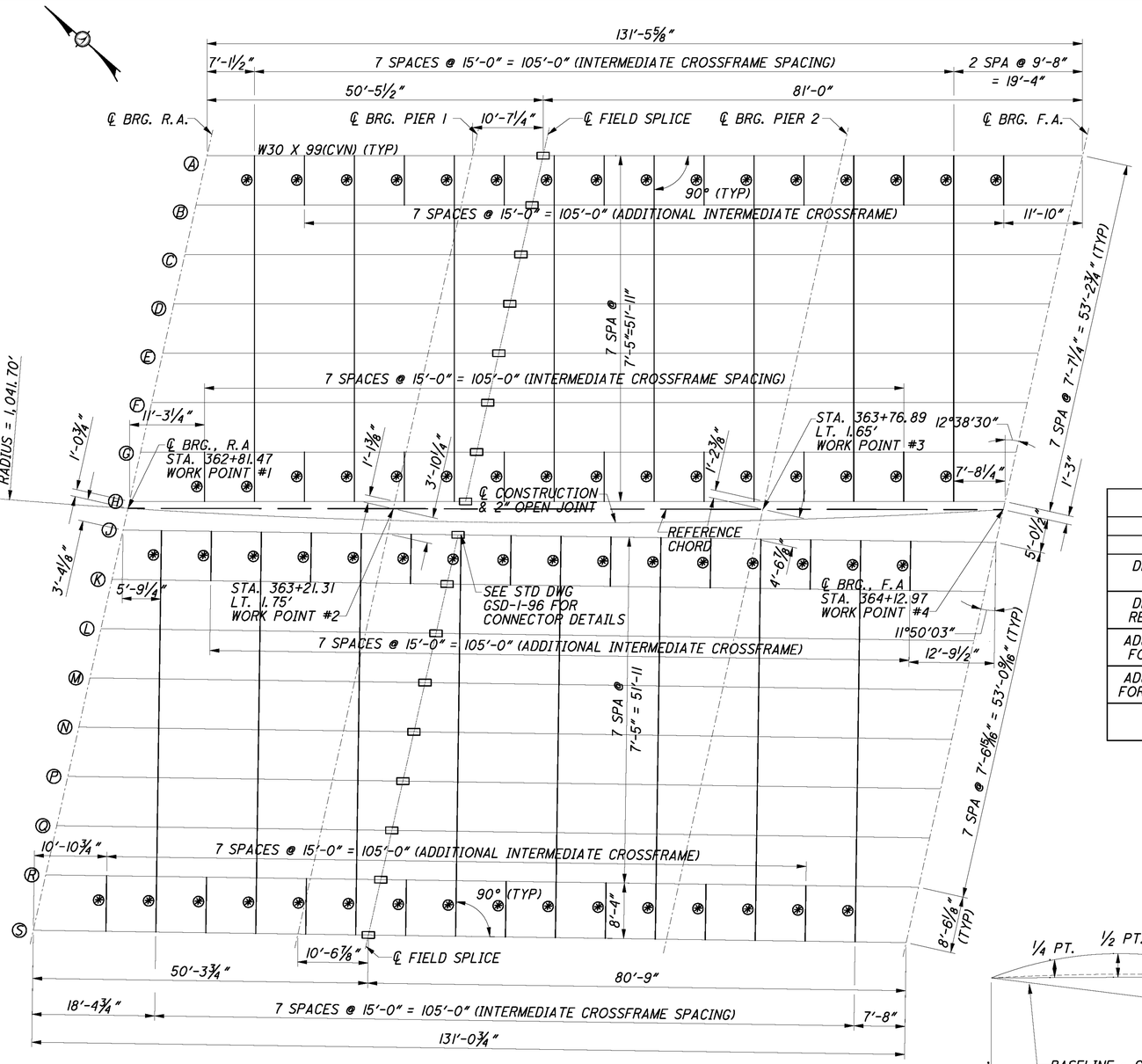
EX. - EXISTING
TYP - TYPICAL
STA - STATION
ELEV - ELEVATION
LT. - LEFT

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
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DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10
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PIER DETAILS
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508



FRAMING PLAN

NOTES:
1. CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
2. INTERMEDIATE CROSS-FRAME ANGLE SIZE SHALL BE AS GIVEN IN SCD GSD-1-96 UNLESS MARKED WITH A ⊛ IN THE FRAMING PLAN. IF MARKED WITH A ⊛ ANGLE SIZE SHALL BE L3½x3½x7/16.

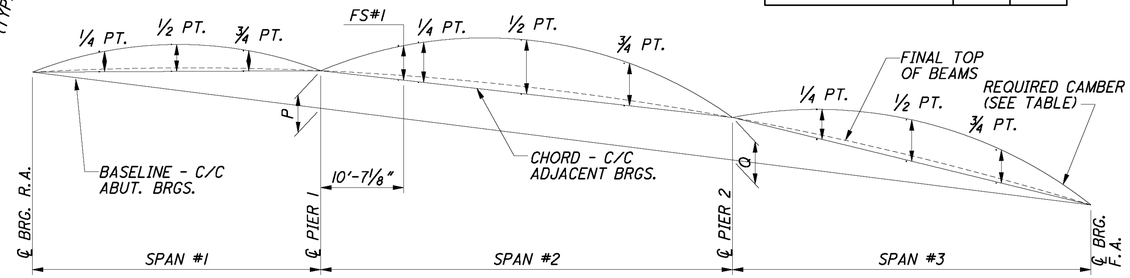
LEGEND

R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
LT. - LEFT
CVN - CHARPY V-NOTCH
C/C - CENTER TO CENTER
PT. - POINT
FS - FIELD SPLICE
⊛ - SEE NOTE 2

STRUCTURAL STEEL DEFLECTION & CAMBER TABLE

	SPAN 1					SPAN 2					SPAN 3				
LOCATION	R.A.	¼	½	¾	PIER 1	FS	¼	½	¾	PIER 2	¼	½	¾	F.A.
DEFLECTION DUE TO WEIGHT OF STEEL	0"	0"	0"	0"	0"	0"	1/16"	1/16"	1/16"	0"	0"	0"	0"	0"
DEFLECTION DUE TO REMAINING DEADLOAD	0"	1/8"	1/8"	1/16"	0"	1/4"	5/16"	1/2"	5/16"	0"	1/16"	1/16"	1/8"	0"
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0"	3/16"	5/16"	3/16"	0"	3/8"	7/16'	9/16"	7/16'	0"	3/16"	1/4"	3/16"	0"
ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0"	-1/4"	-3/8"	-5/16"	0"	-9/16"	-9/16"	-1/2"	-1/2"	0"	-3/16	-3/16	-3/16	0"
REQUIRED SHOP CAMBER	0"	1/16"	1/16"	0"	0"	1/16"	1/4"	5/8"	5/16"	0"	1/16"	1/8"	1/8"	0"

BLOCKING DIMENSIONS		
BEAM LETTER	P	Q
BEAMS "A" THRU "S"	2¾"	2⅝"



CAMBER DIAGRAM

((ALL POINTS (i.e. ¼, ½, ¾...) ARE MEASURED ALONG THE ℄ OF THE BEAM)

BEAM LENGTH TABLE

BEAM	OVERHANG	SPAN #1	SPAN #2	SPAN #3	OVERHANG	TOTAL
BEAM A, B, C, D, E, F, G, H	1'-0"	39'-10⅜"	55'-6"	36'-1¼"	1'-0"	133'-5⅝"
BEAM J, K, L, M, N, P, Q, R, S	1'-0"	39'-8⅞"	55'-4"	35'-11⅞"	1'-0"	133'-0¾"

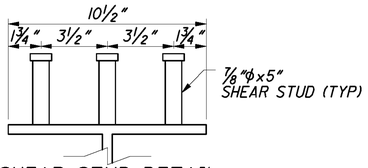
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007232

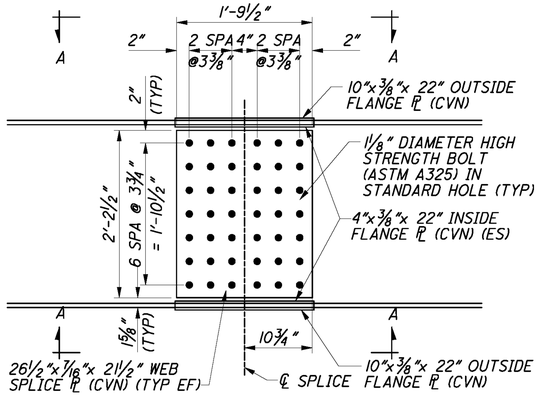
FRAMING PLAN & CAMBER DIAGRAM
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508

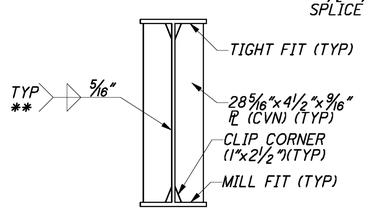
NOTES:
1. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.
2. CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
3. HIGH STRENGTH BOLTS SHALL BE 1 1/8" DIAMETER A325 TYPE III UNLESS OTHERWISE NOTED.



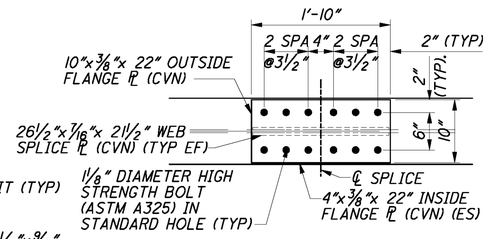
SHEAR STUD DETAIL



TYPCIAL BEAM SPLICE DETAIL



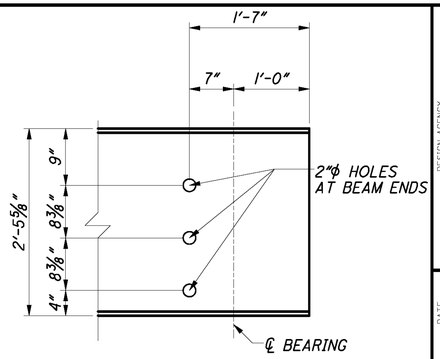
BEARING STIFFENER DETAIL
** - STOP WELDS 1/4" SHORT OF CORNER CLIPS



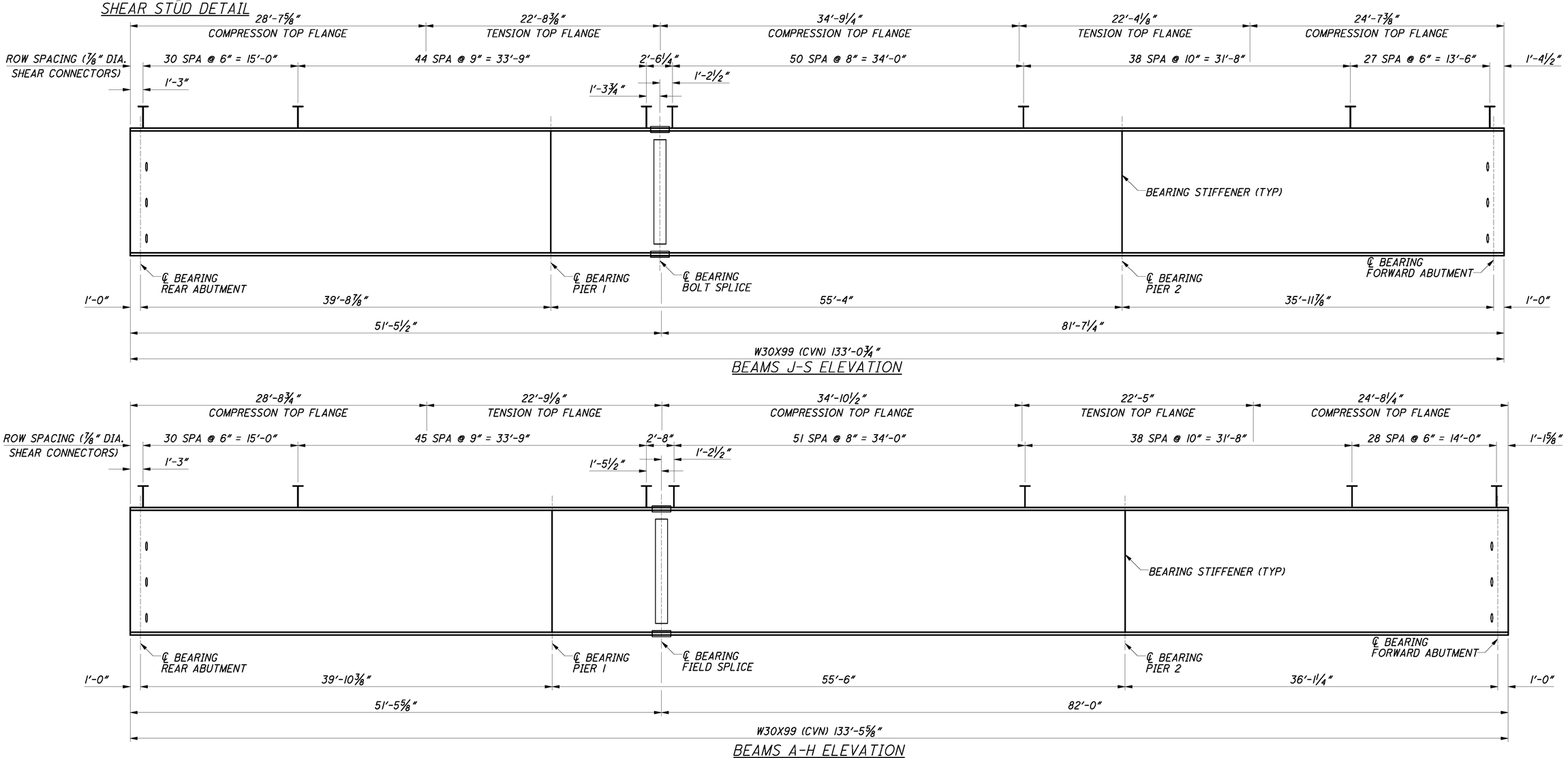
SECTION A-A

LEGEND

CVN - CHARPY V-NOTCH
TYP - TYPICAL
DIA - DIAMETER
EF - EACH FACE
PL - PLATE



BEAM END DETAIL



BEAMS J-S ELEVATION

BEAMS A-H ELEVATION

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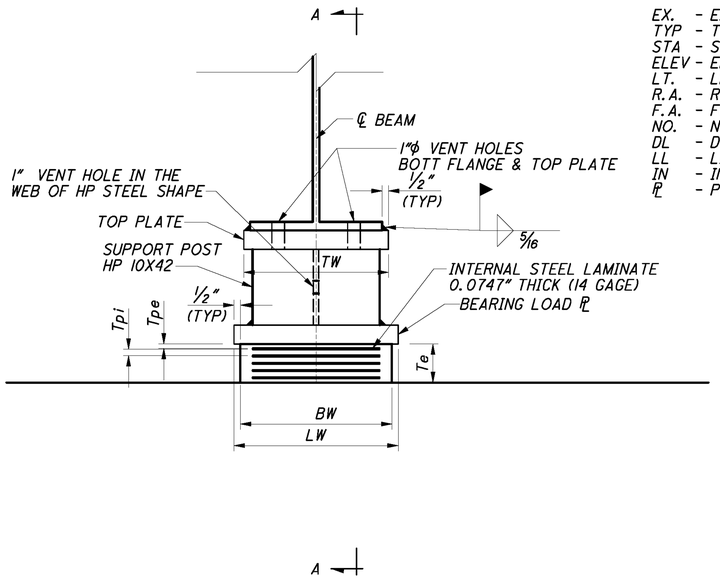
SUPERSTRUCTURE DETAILS

BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

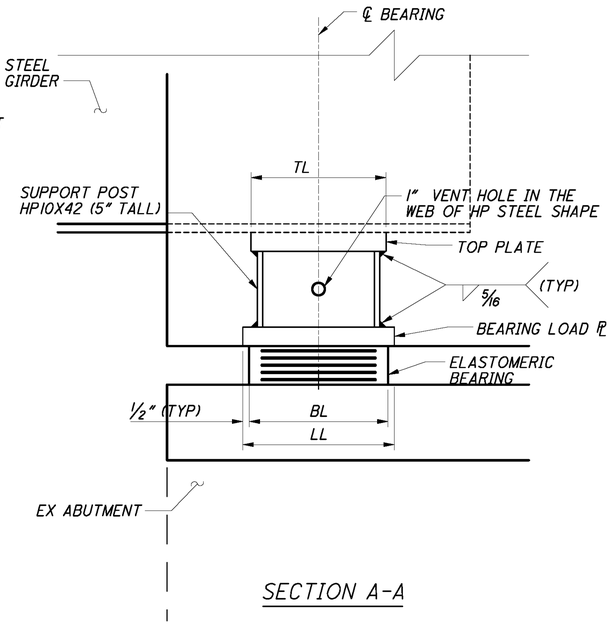
MAH-680-4.29
PID No. 25508

LEGEND

EX. - EXISTING
TYP - TYPICAL
STA - STATION
ELEV - ELEVATION
LT. - LEFT
R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
NO. - NUMBER
DL - DEAD LOAD
LL - LIVE LOAD
IN - INCHES
℄ - PLATE



50 DUROMETER LAMINATED
ELASTOMERIC EXPANSION BEARING
(ABUTMENTS)



SECTION A-A

NOTES:
1. ASTM A709 GRADE 50W STEEL LOAD PLATES SHALL BE USED FOR ALL BEARINGS. THE LOAD PLATE SHALL BE VULCANIZED BONDED TO THE LAMINATED ELASTOMERIC PAD DURING THE MOLDING PROCESS.

2. SUPPORT POSTS, STEEL LOAD PLATES, AND STEEL TOP PLATES SHALL BE ASTM A709 GRADE 50W STEEL AND SHALL BE COATED IN A SIMILAR MANNER AS THE REST OF THE STRUCTURAL STEEL.

3. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 OR 60 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES.

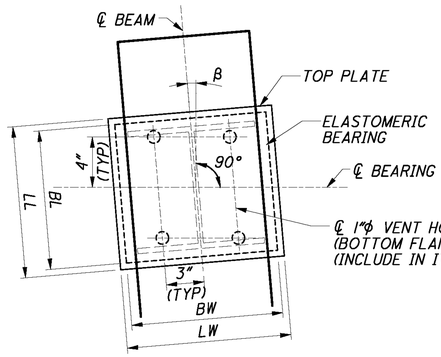
4. WELDING: CONTROL WELDING SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

5. BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80°F OR LOWER THAN 40°F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60°F (±) 10°F, RAISE THE BEAMS OR GIRDERS TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F (±) 10°F.

6. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL THE LAMINATED ELASTOMERIC BEARINGS, SUPPORT POSTS, STEEL TOP PLATES AND STEEL LOAD PLATES. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516 .

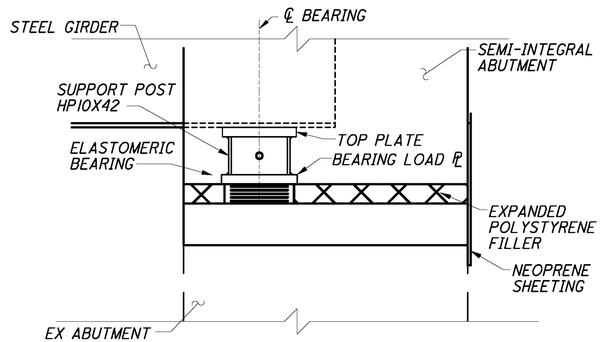
7. SHOP MARK LOAD PLATES AND TOP PLATES WITH THE FOLLOWING INFORMATION: TOP, UPSTATION DIRECTION, GIRDER DESIGNATION, AND LOCATION (REAR ABUTMENT, PIER 1, PIER 2, OR FORWARD ABUTMENT.)

8. ALL HP10x42 SUPPORT POSTS SHALL BE 5" TALL.



BEARING LOCATION	ANGLE β
BEAMS A-H	12°38'30"
BEAMS J-S	11°50'03"

BEARING ORIENTATION PLAN
(ABUTMENTS)



BEAM SUPPORT DETAILS

SUPPORTED POSTS AND LOAD PLATES SHALL BE INCLUDED IN ITEM 516

TABLE A

LAMINATED ELASTOMERIC BEARING DATA

BEARING LOCATION	GIRDERS	BEARING TYPE	NO. REQUIRED	DEAD LOAD (KIPS)	LIVE LOAD (KIPS)	TOTAL LOAD (DL+LL) KIPS	BW (IN)	BL (IN)	Tpi (IN)	NO. OF Tpi	Tpe (IN) (2 EACH)	NO. OF INTERNAL STEEL LAMINATES (14 GAGE)	Te (IN)	FILLET WELD SIZE (IN)	ELASTOMER HARDNESS	GIRDERS	BEARING LOCATION
R.A.	A	EXPANSION	1	43.4	51.6	95.0	13.50	13.50	0.50	2	0.35	5	3.074	5/16	50	A	R.A.
R.A.	B-G	EXPANSION	6	47.1	50.1	97.2	13.50	13.50	0.50	2	0.35	5	3.074	5/16	50	B-G	R.A.
R.A.	H	EXPANSION	1	32.6	41.3	73.9	13.50	13.50	0.50	2	0.35	5	3.074	5/16	50	H	R.A.
R.A.	J	EXPANSION	1	42.0	52.5	94.5	13.50	13.50	0.50	2	0.35	5	3.074	5/16	50	J	R.A.
R.A.	K-Q	EXPANSION	6	46.8	50.0	96.8	13.50	13.50	0.50	2	0.35	5	3.074	5/16	50	K-Q	R.A.
R.A.	R	EXPANSION	1	49.5	55.1	104.6	13.50	13.50	0.50	2	0.35	5	3.074	5/16	50	R	R.A.
R.A.	S	EXPANSION	1	34.1	44.6	78.7	13.50	13.50	0.50	2	0.35	5	3.074	5/16	50	S	R.A.
PIER 1	A	EXPANSION	1	69.9	64.9	134.8	15.00	12.50	0.50	3	0.35	5	3.074	5/16	60	A	PIER 1
PIER 1	B-G	EXPANSION	6	85.6	61.3	146.9	15.00	12.50	0.50	3	0.35	5	3.074	5/16	60	B-G	PIER 1
PIER 1	H	EXPANSION	1	73.2	51.9	125.1	15.00	12.50	0.50	3	0.35	5	3.074	5/16	60	H	PIER 1
PIER 1	J	EXPANSION	1	68.8	66.0	134.8	15.00	12.50	0.50	3	0.35	5	3.074	5/16	60	J	PIER 1
PIER 1	K-Q	EXPANSION	6	84.6	61.3	145.9	15.00	12.50	0.50	3	0.35	5	3.074	5/16	60	K-Q	PIER 1
PIER 1	R	EXPANSION	1	89.2	67.8	157.0	15.00	12.50	0.50	3	0.35	5	3.074	5/16	60	R	PIER 1
PIER 1	S	EXPANSION	1	74.0	56.1	130.1	15.00	12.50	0.50	3	0.35	5	3.074	5/16	60	S	PIER 1
PIER 2	A	EXPANSION	1	71.1	65.8	136.9	15.00	12.50	0.50	3	0.35	5	3.074	5/16	60	A	PIER 2
PIER 2	B-G	EXPANSION	6	81.9	62.2	144.1	15.00	12.50	0.50	3	0.35	5	3.074	5/16	60	B-G	PIER 2
PIER 2	G	EXPANSION	1	70.7	52.7	123.4	15.00	12.50	0.50	3	0.35	5	3.074	5/16	60	G	PIER 2
PIER 2	J	EXPANSION	1	70.4	68.1	138.5	15.00	12.50	0.50	3	0.35	5	3.074	5/16	60	J	PIER 2
PIER 2	K-Q	EXPANSION	6	80.9	63.1	144.0	15.00	12.50	0.50	3	0.35	5	3.074	5/16	60	K-Q	PIER 2
PIER 2	R	EXPANSION	1	85.2	69.8	155.0	15.00	12.50	0.50	3	0.35	5	3.074	5/16	60	R	PIER 2
PIER 2	S	EXPANSION	1	71.1	57.9	129.0	15.00	12.50	0.50	3	0.35	5	3.074	5/16	60	S	PIER 2
F.A.	A	EXPANSION	1	48.8	50.0	98.8	13.50	13.50	0.50	2	0.35	5	3.074	5/16	50	A	F.A.
F.A.	B-G	EXPANSION	6	43.9	48.7	92.6	13.50	13.50	0.50	2	0.35	5	3.074	5/16	50	B-G	F.A.
F.A.	H	EXPANSION	1	30.8	40.0	70.8	13.50	13.50	0.50	2	0.35	5	3.074	5/16	50	H	F.A.
F.A.	J	EXPANSION	1	48.2	50.8	99.0	13.50	13.50	0.50	2	0.35	5	3.074	5/16	50	J	F.A.
F.A.	K-Q	EXPANSION	6	43.6	48.6	92.2	13.50	13.50	0.50	2	0.35	5	3.074	5/16	50	K-Q	F.A.
F.A.	R	EXPANSION	1	46.1	53.5	99.6	13.50	13.50	0.50	2	0.35	5	3.074	5/16	50	R	F.A.
F.A.	S	EXPANSION	1	31.6	43.2	74.8	13.50	13.50	0.50	2	0.35	5	3.074	5/16	50	S	F.A.

DESIGN AGENCY
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TOLEDO, OHIO 43617
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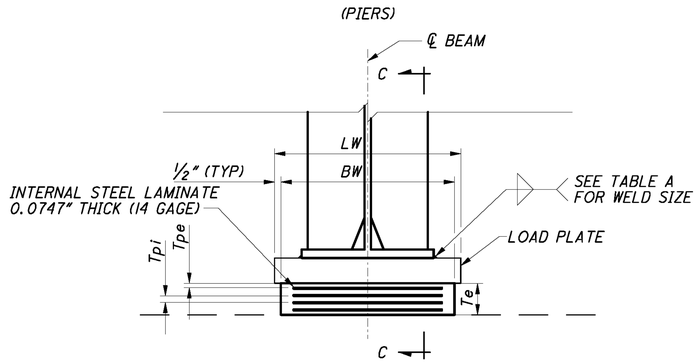
DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007232

BEARING DETAILS
BRIDGE NO. MAH-680-0687
1-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508

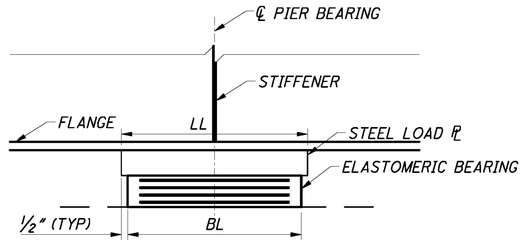
22 / 31

246
307



60 DUROMETER LAMINATED
ELASTOMERIC EXPANSION BEARING

(PIERS)



SECTION C-C

NOTES:
1. ASTM A709 GRADE 50W STEEL LOAD PLATES SHALL BE USED FOR ALL BEARINGS. THE LOAD PLATE SHALL BE VULCANIZED BONDED TO THE LAMINATED ELASTOMERIC PAD DURING THE MOLDING PROCESS.

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4. WELDING: CONTROL WELDING SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

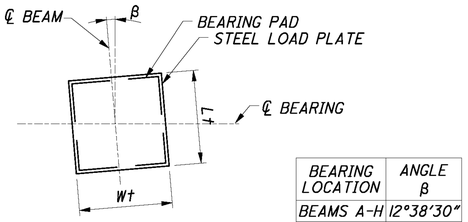
5. BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80°F OR LOWER THAN 40°F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60°F (±) 10°F, RAISE THE BEAMS OR GIRDERS TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F (±) 10°F.

6. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL THE LAMINATED ELASTOMERIC BEARINGS, SUPPORT POSTS, STEEL TOP PLATES AND STEEL LOAD PLATES. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516 .

7. SHOP MARK LOAD PLATES AND TOP PLATES WITH THE FOLLOWING INFORMATION: TOP, UPSTATION DIRECTION, GIRDER DESIGNATION, AND LOCATION (REAR ABUTMENT, PIER 1, PIER 2, OR FORWARD ABUTMENT.)

LEGEND

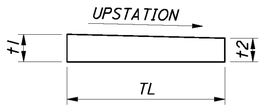
EX. - EXISTING
TYP - TYPICAL
STA - STATION
ELEV - ELEVATION
LT. - LEFT
R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
NO. - NUMBER
DL - DEAD LOAD
LL - LIVE LOAD
IN - INCHES
℄ - PLATE



BEARING LOCATION	ANGLE β
BEAMS A-H	12°38'30"
BEAMS J-S	11°50'03"

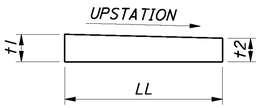
BEARING ORIENTATION PLAN

(PIERS)



TOP PLATE

(ABUTMENTS)



LOAD PLATE

(PIERS)

STEEL PLATE DIMENSIONS (IN)

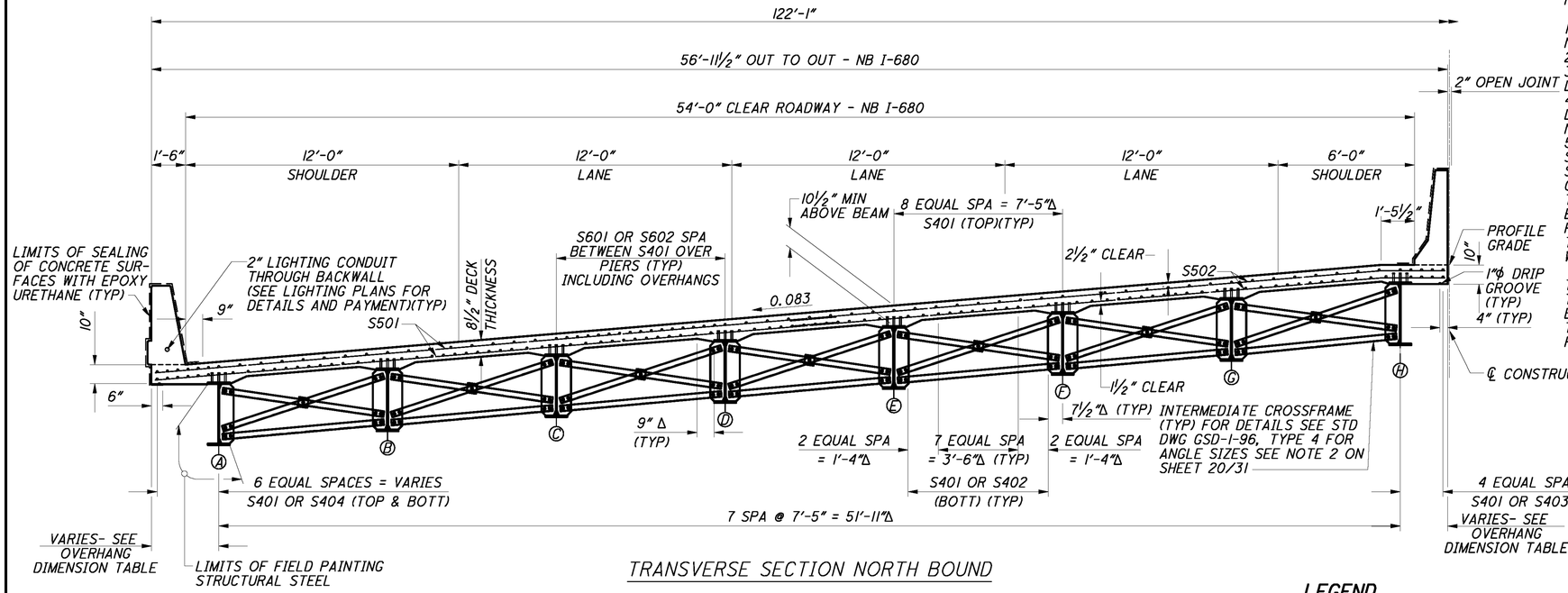
BEARING LOCATION	REAR ABUTMENT							PIER 1				PIER 2				FORWARD ABUTMENT							BEARING LOCATION
	TW	TL	t1	t2	LW	LL	tL	LW	LL	t1	t2	LW	LL	t1	t2	TW	TL	t1	t2	LW	LL	tL	
BEAM A	11½	10¾	1¾	1½	14½	14½	1½	16	13½	1¾	1½	16	13½	2¾	2½	11½	10¾	1¾	1½	14½	14½	1½	BEAM A
BEAM B	11½	10¾	1¾	1½	14½	14½	1½	16	13½	2	1¾	16	13½	3⅛	2⅞	11½	10¾	1¾	1½	14½	14½	1½	BEAM B
BEAM C	11½	10¾	1¾	1½	14½	14½	1½	16	13½	1¾	1½	16	13½	3⅝	3⅜	11½	10¾	1¾	1½	14½	14½	1½	BEAM C
BEAM D	11½	10¾	1¾	1½	14½	14½	1½	16	13½	2⅛	1⅞	16	13½	3⅜	3⅛	11½	10¾	1¾	1½	14½	14½	1½	BEAM D
BEAM E	11½	10¾	1¾	1½	14½	14½	1½	16	13½	2⅛	1⅞	16	13½	3½	3¼	11½	10¾	1¾	1½	14½	14½	1½	BEAM E
BEAM F	11½	10¾	1¾	1½	14½	14½	1½	16	13½	2⅝	2⅜	16	13½	3⅝	3⅜	11½	10¾	1¾	1½	14½	14½	1½	BEAM F
BEAM G	11½	10¾	1¾	1½	14½	14½	1½	16	13½	2¾	2½	16	13½	3¾	3½	11½	10¾	1¾	1½	14½	14½	1½	BEAM G
BEAM H	11½	10¾	1¾	1½	14½	14½	1½	16	13½	2⅛	1⅞	16	13½	3⅝	3⅜	11½	10¾	1¾	1½	14½	14½	1½	BEAM H
BEAM J	11½	10¾	1¾	1½	14½	14½	1½	16	13½	1⅞	1⅝	16	13½	2⅞	2⅝	11½	10¾	1¾	1½	14½	14½	1½	BEAM J
BEAM K	11½	10¾	1¾	1½	14½	14½	1½	16	13½	1¾	1½	16	13½	2¾	2½	11½	10¾	1¾	1½	14½	14½	1½	BEAM K
BEAM L	11½	10¾	1¾	1½	14½	14½	1½	16	13½	1¾	1½	16	13½	2⅞	2⅝	11½	10¾	1¾	1½	14½	14½	1½	BEAM L
BEAM M	11½	10¾	1¾	1½	14½	14½	1½	16	13½	1¾	1½	16	13½	3⅛	2⅞	11½	10¾	1¾	1½	14½	14½	1½	BEAM M
BEAM N	11½	10¾	1¾	1½	14½	14½	1½	16	13½	1¾	1½	16	13½	3	2¾	11½	10¾	1¾	1½	14½	14½	1½	BEAM N
BEAM P	11½	10¾	1¾	1½	14½	14½	1½	16	13½	1¾	1½	16	13½	2⅞	2⅝	11½	10¾	1¾	1½	14½	14½	1½	BEAM P
BEAM Q	11½	10¾	1¾	1½	14½	14½	1½	16	13½	2	1¾	16	13½	3⅜	3⅛	11½	10¾	1¾	1½	14½	14½	1½	BEAM Q
BEAM R	11½	10¾	1¾	1½	14½	14½	1½	16	13½	3	2¾	16	13½	3⅞	3⅝	11½	10¾	1¾	1½	14½	14½	1½	BEAM R
BEAM S	11½	10¾	1¾	1½	14½	14½	1½	16	13½	1¾	1½	16	13½	2½	2¼	11½	10¾	1¾	1½	14½	14½	1½	BEAM S

DESIGN AGENCY
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3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

DESIGNED MJP | CHECKED JBD
DRAWN MJP | REVISED
REVIEWED EEC | DATE 05-28-10
STRUCTURE FILE NUMBER 5007232

BEARING DETAILS
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508

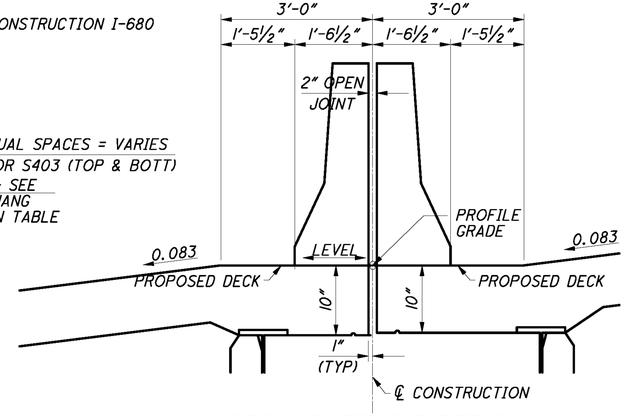


TRANSVERSE SECTION NORTH BOUND

NOTES:

1. ALL DIMENSIONS SHOWN PERPENDICULAR TO ℄ CONSTRUTION UNLESS NOTED OTHERWISE.
2. Δ - INDICATES DIMENSIONS SHOWN ARE PERPENDICULAR TO ℄ BEAMS
3. MINIMUM BAR LAPS:
LAP NO. 5 BARS 2'-0"
4. BEAM "A" & BEAM "S" (THE FASCIA BEAMS) SHALL BE PAINTED TO THE LIMITS SHOWN. THE COLOR OF THE PAINT SHALL BE FEDERAL STANDARD NUMBER 15450(LIGHT BLUE).
5. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM/GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 2 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE IS ±3 INCHES.

THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM/GIRDER, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.24.



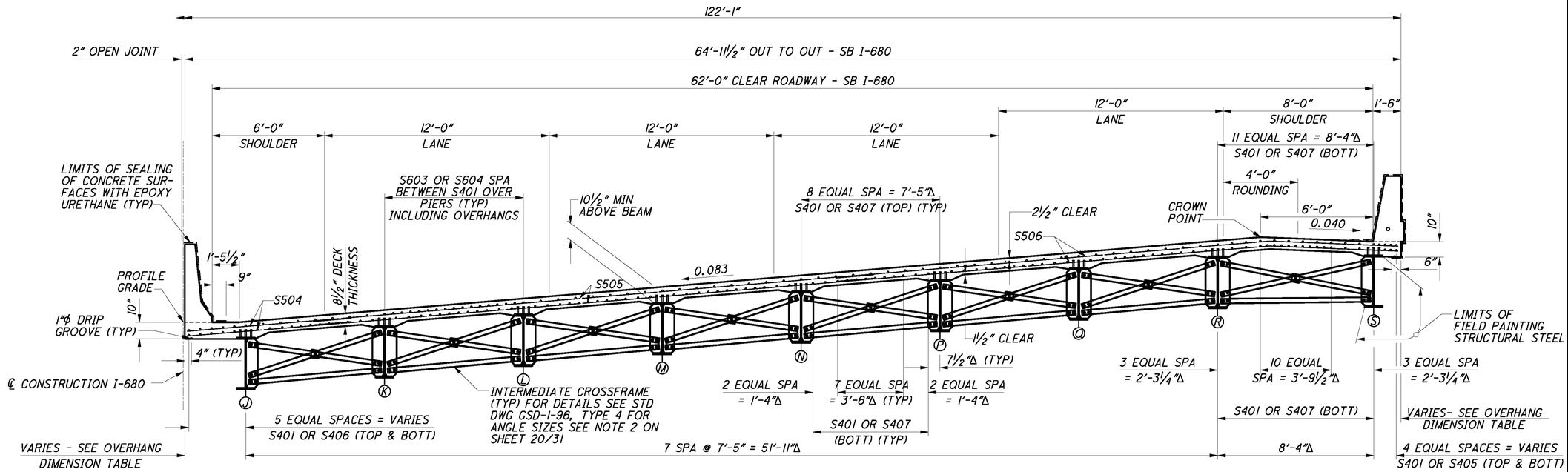
DECK CENTERLINE DETAIL

LEGEND

SPA	- SPACED
TYP	- TYPICAL
R.A.	- REAR ABUTMENT
F.A.	- FORWARD ABUTMENT
BOTT	- BOTTOM
MIN.	- MINIMUM
NB	- NORTHBOUND
SB	- SOUTHBOUND
STD DWG	- STANDARD DRAWING
Δ	- DIMENSION PERPENDICULAR TO BEAMS

OVERHANG DIMENSIONS (MEASURED PERPENDICULAR TO BEAMS)

	SPAN 1					SPAN 2					SPAN 3				
OVERHANG LOCATION	R.A.	¼	½	¾	PIER 1	SPLICE	¼	½	¾	PIER 2	¼	½	¾	F.A.
OUTSIDE NORTH BOUND	3'-4½"	2'-11¼"	2'-6½"	2'-2⅞"	2'-0⅜"	1'-11⅞"	1'-11"	2'-0"	2'-3⅜"	2'-9⅛"	3'-2⅛"	3'-8¼"	4'-3⅜"	4'-9½"
MEDIAN NORTH BOUND	1'-0⅜"	1'-6½"	2'-0⅜"	2'-5¼"	2'-9"	2'-11¾"	3'-0⅜"	3'-1½"	3'-0⅜"	2'-9"	2'-5⅜"	2'-1¼"	1'-8"	1'-2⅜"
MEDIAN SOUTH BOUND	3'-1⅝"	2'-8⅞"	2'-4⅝"	2'-1⅜"	1'-11⅜"	1'-10⅜"	1'-10⅜"	1'-11⅝"	2'-3"	2'-8¾"	3'-1⅝"	3'-7½"	4'-2⅜"	4'-8⅜"
OUTSIDE SOUTH BOUND	0'-11⅜"	1'-5⅛"	1'-10⅝"	2'-3⅛"	2'-6⅜"	2'-8⅞"	2'-9⅜"	2'-10⅛"	2'-8⅞"	2'-5½"	2'-2¼"	1'-10"	1'-5"	0'-11⅜"



TRANSVERSE SECTION SOUTH BOUND

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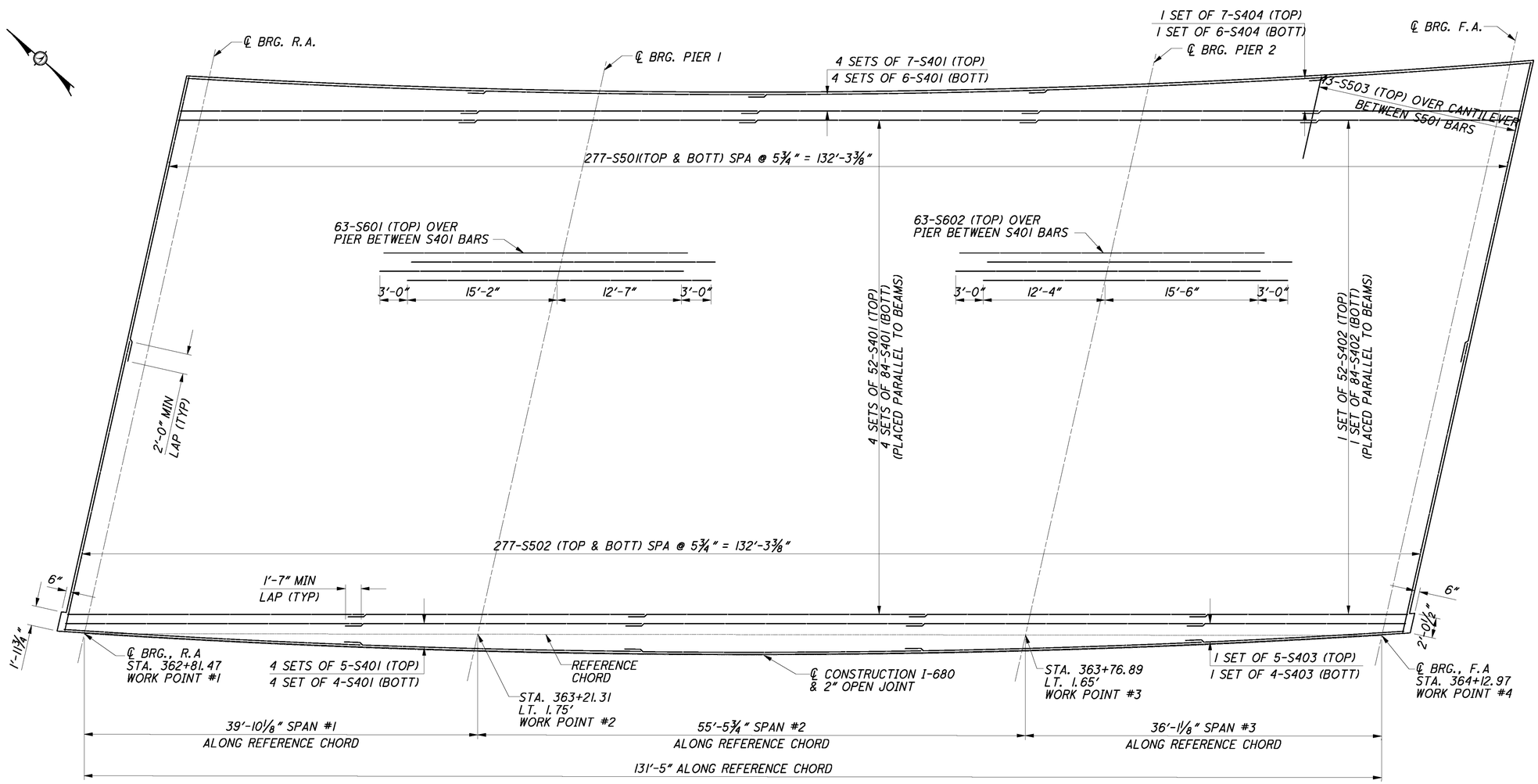
DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | STRUCTURE FILE NUMBER 5007232 | CHECKED JBD | REVISED

TRANSVERSE DECK SECTION
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508

24 / 31

248
307



NORTHBOUND DECK REINFORCEMENT PLAN

(PARAPET REINFORCING NOT SHOWN FOR CLARITY)

NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 4 BARS 1'-7"
   LAP NO. 5 BARS 2'-0"
2. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTURCTURE:
   PLACE THE CONCRETE ENCASING THE STRUCTURAL STEEL MEMBERS AT LEAST 48 HOURS BEFORE PLACING DECK CONCRETE.

LEGEND

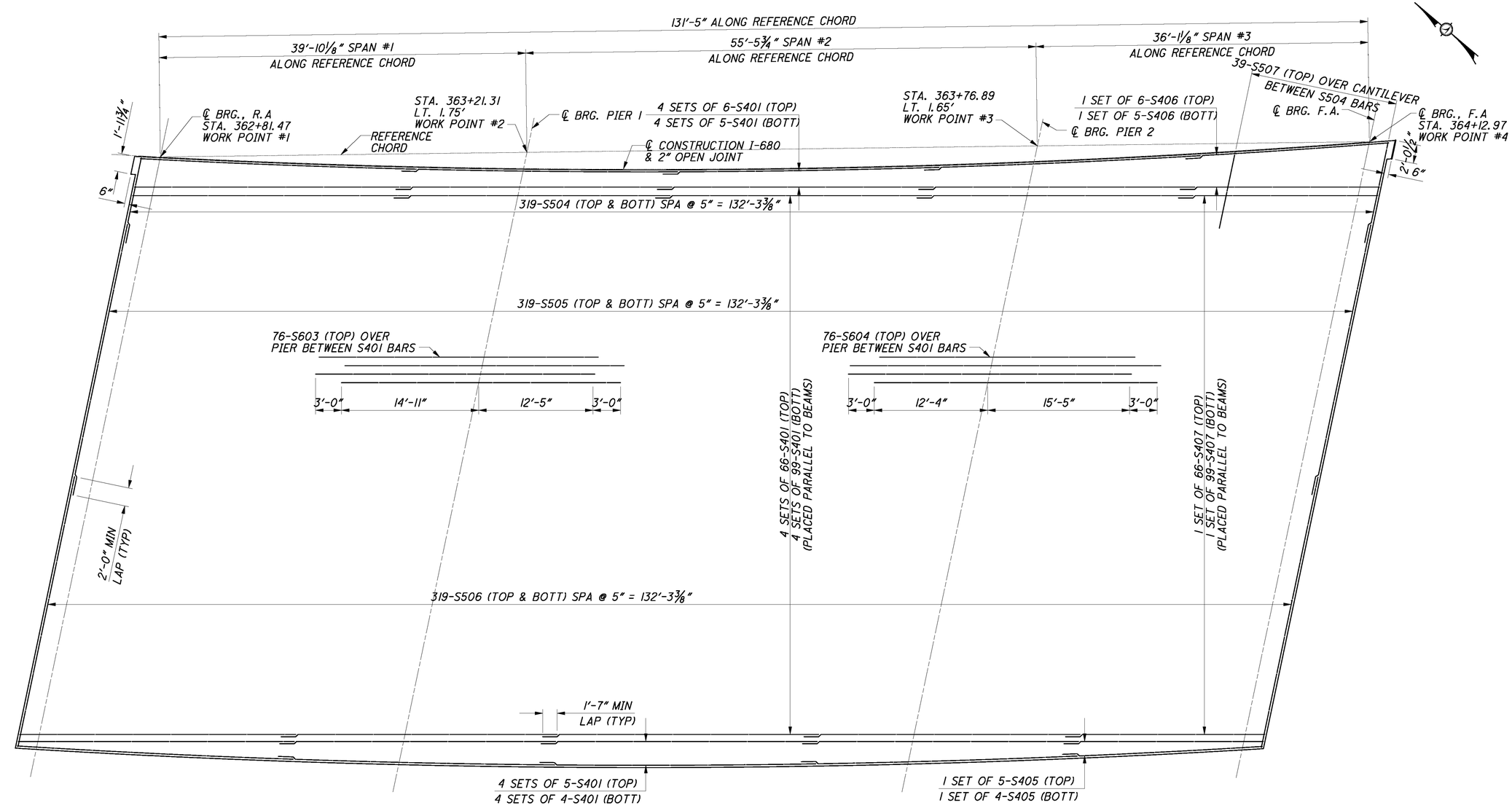
R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
LT. - LEFT
MIN - MINIMUM
BOTT- BOTTOM

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007232	

DECK DETAILS
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508



SOUTHBOUND DECK REINFORCEMENT PLAN

(PARAPET REINFORCING NOT SHOWN FOR CLARITY)

NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 4 BARS 1'-7"
   LAP NO. 5 BARS 2'-0"
2. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTURCTURE:
   PLACE THE CONCRETE ENCASING THE STRUCTURAL STEEL
   MEMBERS AT LEAST 48 HOURS BEFORE PLACING DECK CONCRETE.

LEGEND

R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
LT. - LEFT
MIN - MINIMUM
BOTT- BOTTOM

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007232	

DECK DETAILS
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508

26 / 31

250
307

NORTHBOUND TOP OF HAUNCH ELEVATIONS

	SPAN 1					SPAN 2					SPAN 3					
	R.A.	1/4	1/2	3/4	PIER 1	SPLICE	1/4	1/2	3/4	PIER 2	1/4	1/2	3/4	F.A.	
BEAM A	985.62	985.43	985.22	984.98	984.73	984.52	984.45	984.14	983.76	983.34	983.12	983.07	982.63	982.36	BEAM A
BEAM B	986.26	986.08	985.87	985.63	985.38	985.18	985.12	984.81	984.43	984.01	983.79	983.74	983.31	983.04	BEAM B
BEAM C	986.91	986.72	986.51	986.28	986.03	985.83	985.77	985.47	985.09	984.68	984.46	984.41	983.98	983.71	BEAM C
BEAM D	987.55	987.37	987.16	986.93	986.68	986.49	986.42	986.12	985.75	985.34	985.13	985.08	984.66	984.39	BEAM D
BEAM E	988.19	988.01	987.81	987.57	987.33	987.14	987.08	986.78	986.41	986.01	985.79	985.75	985.33	985.07	BEAM E
BEAM F	988.83	988.65	988.45	988.22	987.98	987.79	987.73	987.44	987.07	986.67	986.46	986.42	986.00	985.74	BEAM F
BEAM G	989.47	989.30	989.10	988.87	988.63	988.44	988.38	988.13	987.73	987.33	987.12	987.09	986.67	986.41	BEAM G
BEAM H	989.95	989.82	989.66	989.47	989.27	989.09	989.03	988.74	988.39	987.98	987.75	987.68	987.23	986.94	BEAM H

SOUTHBOUND TOP OF HAUNCH ELEVATIONS

	SPAN 1					SPAN 2					SPAN 3				
	R.A.	1/4	1/2	3/4	PIER 1	SPLICE	1/4	1/2	3/4	PIER 2	1/4	1/2	3/4	F.A.	
BEAM J	989.99	989.84	989.68	989.49	989.28	989.11	989.06	988.78	988.44	988.02	987.81	987.79	987.39	987.15	BEAM J
BEAM K	990.62	990.47	990.28	990.07	989.85	989.68	989.63	989.36	989.03	988.66	988.47	988.45	988.05	987.81	BEAM K
BEAM L	991.26	991.11	990.95	990.71	990.49	990.33	990.27	990.01	989.68	989.31	989.13	989.11	988.71	988.48	BEAM L
BEAM M	991.90	991.74	991.56	991.36	991.14	990.97	990.92	990.66	990.34	989.97	989.78	989.77	989.37	989.15	BEAM M
BEAM N	992.54	992.38	992.20	992.00	991.78	991.62	991.57	991.31	990.97	990.63	990.44	990.43	990.04	989.81	BEAM N
BEAM P	993.17	993.02	992.84	992.64	992.43	992.26	992.21	991.96	991.64	991.28	991.10	991.09	990.70	990.48	BEAM P
BEAM Q	993.81	993.66	993.48	993.28	993.07	992.91	992.86	992.61	992.29	991.94	991.76	991.75	991.36	991.14	BEAM Q
BEAM R	994.45	994.30	994.12	993.92	993.71	993.55	993.51	993.26	992.94	992.59	992.41	992.41	992.02	991.80	BEAM R
BEAM S	994.37	994.26	994.14	993.99	993.82	993.69	993.64	993.40	993.07	992.70	992.49	992.44	992.01	991.76	BEAM S

NOTES:

1. TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE BEAM/ GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

2. SCREED ELEVATIONS AND FINAL DECK ELEVATIONS CAN BE FOUND ON SHEET 28/31.

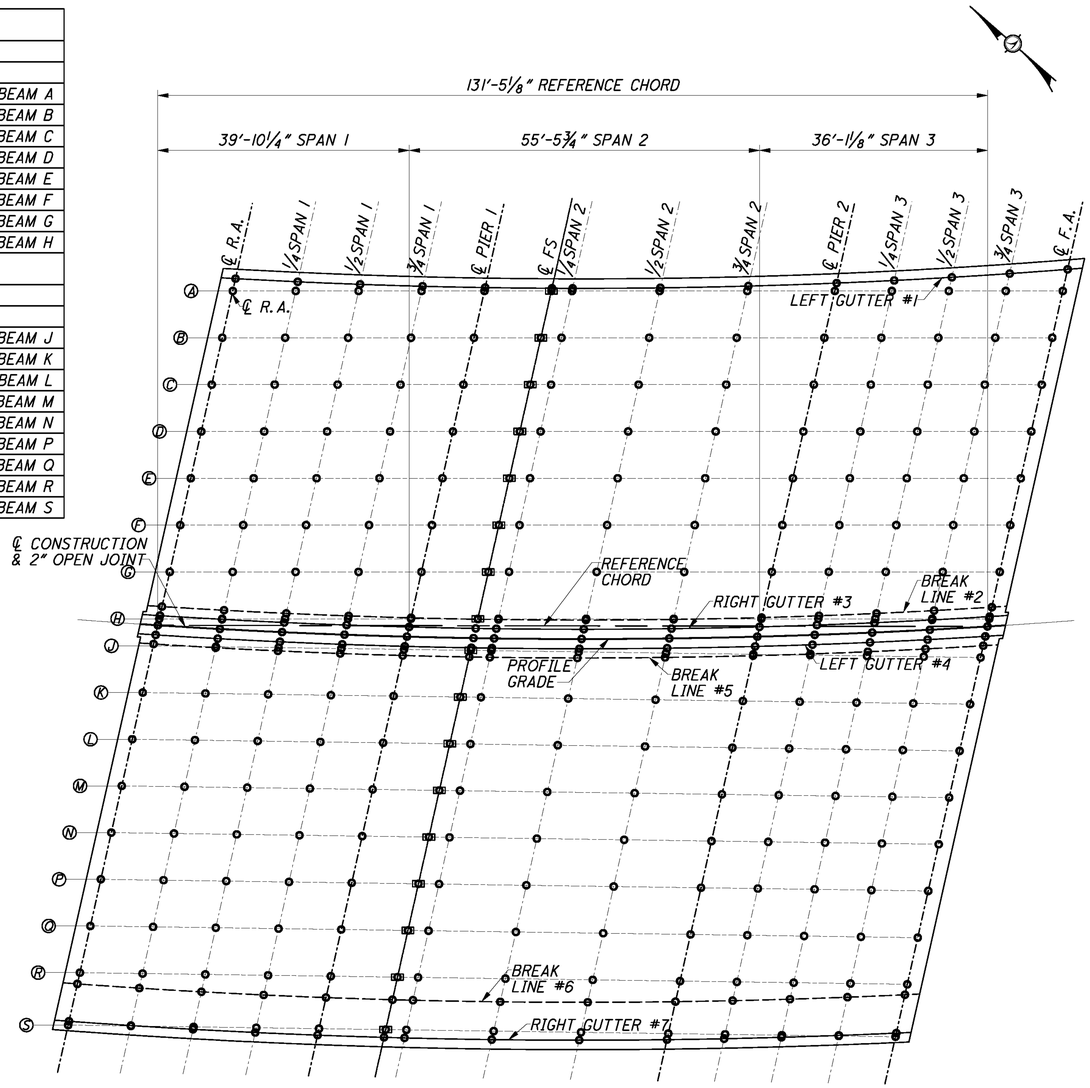


TABLE ELEVATION PLAN

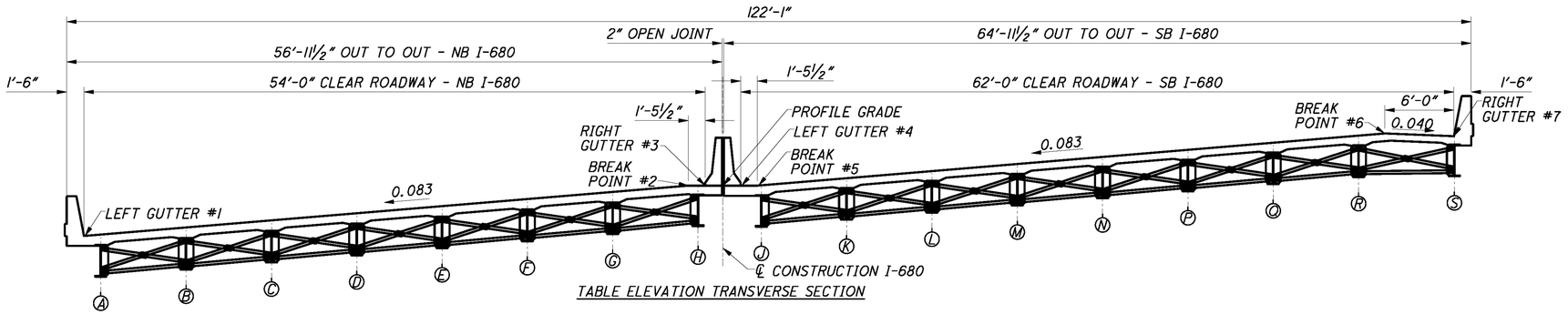


TABLE ELEVATION TRANSVERSE SECTION

LEGEND

R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
FS - FIELD SPICE
NB - NORTHBOUND
SB - SOUTHBOUND

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DESIGNED	CHECKED
MJP	JBD

DRAWN	REVIEWED	DATE
MJP	EEC	05-28-10

REVISED

STRUCTURE FILE NUMBER 5007232

DECK DETAILS

BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29

PID No. 25508

SCREED ELEVATIONS

	SPAN 1					SPAN 2					SPAN 3					
LOCATION	R.A.	1/4	1/2	3/4	PIER 1	SPLICE	1/4	1/2	3/4	PIER 2	1/4	1/2	3/4	F.A.	LOCATION
LEFT GUTTER #1	362+90.71 986.16	363+01.13 986.02	363+11.57 985.84	363+22.03 985.62	363+32.51 985.39	363+43.69 985.19	363+47.14 985.12	363+61.82 984.80	363+76.54 984.40	363+91.31 983.94	364+00.96 983.68	364+10.53 983.58	364+20.32 983.09	364+30.03 982.75	LEFT GUTTER #1
BREAK POINT #2	362+81.95 990.65	362+91.83 990.53	363+01.72 990.37	363+11.64 990.18	363+21.56 989.97	363+32.15 989.81	363+35.42 989.75	363+49.32 989.47	363+63.26 989.11	363+77.23 988.69	363+86.36 988.46	363+95.51 988.39	364+04.67 987.93	364+13.84 987.63	BREAK POINT #2
RIGHT GUTTER #3	362+81.72 990.66	362+91.58 990.53	363+01.46 990.37	363+11.36 990.19	363+21.27 989.98	363+31.85 989.81	363+35.11 989.76	363+48.99 989.48	363+62.91 989.12	363+76.86 988.70	363+86.00 988.47	363+95.11 988.40	364+04.26 987.94	364+13.42 987.64	RIGHT GUTTER #3
PROFILE GRADE	362+81.47 990.66	362+91.33 990.53	363+01.19 990.38	363+11.08 990.19	363+20.97 989.98	363+31.53 989.81	363+34.79 989.76	363+48.65 989.48	363+62.55 989.12	363+76.47 988.71	363+85.58 988.48	363+94.69 988.41	364+03.83 987.95	364+12.97 987.66	PROFILE GRADE
LEFTGUTTER #4	362+81.23 990.66	362+91.07 990.54	363+00.92 990.39	363+10.79 990.20	363+20.67 989.99	363+31.21 989.82	363+34.47 989.76	363+48.30 989.48	363+62.18 989.13	363+76.08 988.72	363+85.17 988.49	363+94.27 988.43	364+03.39 987.97	364+12.52 987.67	LEFTGUTTER #4
BREAK POINT #5	362+81.00 990.67	362+90.82 990.55	363+00.66 990.39	363+10.52 990.20	363+20.38 990.00	363+30.91 989.83	363+34.16 989.77	363+48.98 989.47	363+61.83 989.14	363+75.71 988.73	363+84.79 988.50	363+93.88 988.44	364+02.99 987.98	364+12.10 987.68	BREAK POINT #5
BREAK POINT #6	362+72.90 995.30	362+82.22 995.20	362+91.56 995.05	363+00.91 994.89	363+10.27 994.71	363+20.25 994.55	363+23.34 994.50	363+36.44 994.24	363+49.57 993.93	363+62.73 993.58	363+71.33 993.38	363+79.93 993.34	363+88.56 992.91	363+91.79 992.65	BREAK POINT #6
RIGHT GUTTER #7	362+72.06 995.08	362+81.33 994.97	362+90.61 994.84	362+99.91 994.67	363+09.22 994.49	363+19.15 994.35	363+22.21 994.31	363+35.24 994.07	363+48.30 993.75	363+61.38 993.37	363+69.93 993.18	363+78.49 993.14	363+87.04 992.72	363+95.64 992.46	RIGHT GUTTER #7

FINAL DECK SURFACE ELEVATIONS

	SPAN 1					SPAN 2					SPAN 3					
LOCATION	R.A.	1/4	1/2	3/4	PIER 1	SPLICE	1/4	1/2	3/4	PIER 2	1/4	1/2	3/4	F.A.	LOCATION
LEFT GUTTER #1	362+90.71 986.16	363+01.13 985.99	363+11.57 985.80	363+22.03 985.60	363+32.51 985.39	363+43.69 985.15	363+47.14 985.07	363+61.82 984.72	363+76.54 984.34	363+91.31 983.94	364+00.96 983.66	364+10.53 983.37	364+20.32 983.07	364+30.03 982.75	LEFT GUTTER #1
BEAM A	362+90.37 986.33	363+00.86 986.11	363+11.37 985.89	363+21.88 985.67	363+32.39 985.44	363+43.59 985.18	363+47.05 985.11	363+58.51 984.76	363+76.34 984.41	363+90.96 984.05	364+00.48 983.81	364+09.99 983.57	364+19.48 983.32	364+28.94 983.07	BEAM A
BEAM B	362+89.06 986.97	362+99.48 986.76	363+09.90 986.54	363+20.34 986.32	363+30.77 986.09	363+41.88 985.84	363+45.31 985.76	363+59.86 985.42	363+74.39 985.08	363+88.90 984.72	363+98.36 984.48	364+07.79 984.24	364+17.22 983.99	364+26.61 983.74	BEAM B
BEAM C	362+87.78 987.61	362+98.12 987.40	363+08.46 987.19	363+18.82 986.97	363+29.17 986.74	363+40.20 986.49	363+43.61 986.42	363+58.04 986.08	363+72.47 985.74	363+86.88 985.38	363+96.26 985.15	364+05.63 984.91	364+14.99 984.67	364+24.32 984.42	BEAM C
BEAM D	362+86.51 988.24	362+96.77 988.05	363+07.04 987.83	363+17.32 987.61	363+27.60 987.39	363+38.55 987.15	363+41.93 987.07	363+56.26 986.74	363+70.58 986.40	363+84.88 986.05	363+94.20 985.82	364+03.50 985.58	364+12.79 985.34	364+22.05 985.10	BEAM D
BEAM E	362+85.27 988.90	362+95.45 988.69	363+05.65 988.48	363+15.85 988.26	363+26.05 988.04	363+36.92 987.80	363+40.27 987.72	363+54.50 987.40	363+68.72 987.06	363+82.92 986.71	363+92.17 986.49	364+01.40 986.25	364+10.62 986.02	364+19.82 985.78	BEAM E
BEAM F	362+84.04 989.54	362+94.15 989.33	363+04.27 989.12	363+14.39 988.91	363+24.52 988.69	363+35.31 988.45	363+38.64 988.37	363+52.76 988.05	363+66.88 987.72	363+80.98 987.38	363+90.16 987.15	363+99.33 986.92	364+08.49 986.69	364+17.62 986.45	BEAM F
BEAM G	362+82.83 990.18	362+92.86 989.98	363+02.91 989.77	363+12.96 989.56	363+23.02 989.34	363+33.73 989.10	363+37.03 989.03	363+51.05 988.74	363+65.07 988.38	363+79.07 988.04	363+88.19 987.82	363+97.29 987.59	364+06.38 987.36	364+15.46 987.12	BEAM G
BREAK POINT #2	362+81.95 990.65	362+91.83 990.50	363+01.72 990.34	363+11.64 990.16	363+21.56 989.97	363+32.15 989.76	363+35.42 989.69	363+49.32 989.38	363+63.26 989.05	363+77.23 988.69	363+86.36 988.44	363+95.51 988.18	364+04.67 987.91	364+13.84 987.63	BREAK POINT #2
BEAM H	362+81.64 990.66	362+91.60 990.51	363+01.57 990.34	363+11.55 990.16	363+21.53 989.97	363+32.17 989.75	363+35.45 989.68	363+49.37 989.36	363+63.28 989.04	363+77.18 988.69	363+86.24 988.44	363+95.28 988.19	364+04.31 987.92	364+13.32 987.65	BEAM H
RIGHT GUTTER #3	362+81.72 990.66	362+91.58 990.51	363+01.46 990.34	363+11.36 990.17	363+21.27 989.98	363+31.85 989.76	363+35.11 989.69	363+48.99 989.39	363+62.91 989.05	363+76.86 988.70	363+86.00 988.45	363+95.11 988.19	364+04.26 987.92	364+13.42 987.64	RIGHT GUTTER #3
PROFILE GRADE	362+81.47 990.66	362+91.33 990.51	363+01.19 990.34	363+11.08 990.17	363+20.97 989.98	363+31.53 989.76	363+34.79 989.70	363+48.65 989.39	363+62.55 989.06	363+76.47 988.71	363+85.58 988.46	363+94.69 988.20	364+03.83 987.94	364+12.97 987.66	PROFILE GRADE
	SPAN 1					SPAN 2					SPAN 3					
LOCATION	R.A.	1/4	1/2	3/4	PIER 1	SPLICE	1/4	1/2	3/4	PIER 2	1/4	1/2	3/4	F.A.	LOCATION
LEFT GUTTER #4	362+81.23 990.66	362+91.07 990.51	363+00.92 990.35	363+10.79 990.18	363+20.67 989.99	363+31.21 989.78	363+34.47 989.71	363+48.30 989.40	363+62.18 989.07	363+76.08 988.72	363+85.17 988.47	363+94.27 988.22	364+03.39 987.95	364+12.52 987.67	LEFT GUTTER #4
BREAK POINT #5	362+81.00 990.67	362+90.82 990.52	363+00.66 990.36	363+10.52 990.18	363+20.38 990.00	363+30.91 989.78	363+34.16 989.72	363+48.98 989.39	363+61.83 989.08	363+75.71 988.73	363+84.79 988.48	363+93.88 988.23	364+02.99 987.96	364+12.10 987.68	BREAK POINT #5
BEAM J	362+80.86 990.70	362+90.85 990.52	363+00.75 990.36	363+10.66 990.18	363+20.57 989.99	363+31.13 989.78	363+34.38 989.71	363+48.19 989.41	363+61.19 989.10	363+75.77 988.72	363+84.75 988.50	363+93.70 988.29	364+02.65 988.07	364+11.57 987.85	BEAM J
BEAM K	362+79.79 991.33	362+89.62 991.15	362+99.45 990.95	363+09.29 990.76	363+19.13 990.56	363+29.61 990.34	363+32.84 990.27	363+46.55 989.98	363+60.25 989.67	363+73.94 989.36	363+82.85 989.16	363+91.75 988.95	364+00.63 988.74	364+09.49 988.52	BEAM K
BEAM L	362+78.65 991.97	362+88.40 991.78	362+98.16 991.62	363+07.93 991.40	363+17.70 991.20	363+28.11 990.99	363+31.32 990.92	363+44.93 990.63	363+58.54 990.33	363+72.13 990.02	363+80.98 989.82	363+89.82 989.61	363+98.64 989.40	364+07.45 989.19	BEAM L
BEAM M	362+77.52 992.61	362+87.20 992.42	362+96.90 992.24	363+06.60 992.04	363+16.30 991.85	363+26.63 991.63	363+29.82 991.57	363+43.34 991.28	363+56.85 990.98	363+70.35 990.68	363+79.14 990.48	363+87.92 990.27	363+96.88 990.06	364+05.43 989.85	BEAM M
BEAM N	362+76.40 993.25	362+86.02 993.06	362+95.65 992.88	363+05.28 992.69	363+14.91 992.49	363+25.17 992.28	363+28.34 992.21	363+41.77 991.93	363+55.23 991.62	363+68.59 991.33	363+77.32 991.14	363+86.04 990.93	363+94.75 990.73	364+03.43 990.52	BEAM N
BEAM P	362+75.35 993.88	362+84.86 993.70	362+94.41 993.52	363+03.98 993.33	363+13.55 993.13	363+23.74 992.92	363+26.88 992.86	363+40.21 992.58	363+53.55 992.29	363+66.86 991.99	363+75.53 991.79	363+84.19 991.59	363+92.84 991.39	364+01.47 991.18	BEAM P
BEAM Q	362+74.22 994.52	362+83.71 994.34	362+93.20 994.16	363+02.70 993.97	363+12.20 993.78	363+22.32 993.57	363+25.44 993.50	363+38.69 993.22	363+51.93 992.94	363+65.15 992.64	363+73.76 992.45	363+82.36 992.25	363+90.96 992.05	363+99.53 991.85	BEAM Q
BEAM R	362+73.15 995.16	362+82.57 994.98	362+92.00 994.80	363+01.43 994.61	363+10.87 994.42	363+20.92 994.21	363+24.02 994.15	363+37.18 993.87	363+50.33 993.59	363+63.46 993.30	363+72.02 993.10	363+80.56 992.91	363+89.10 992.71	363+97.61 992.51	BEAM R
BREAK POINT #6	362+72.90 995.30	362+82.22 995.17	362+91.56 995.03	363+00.91 994.87	363+10.27 994.71	363+20.25 994.52	363+23.34 994.46	363+36.44 994.19	363+49.57 993.90	363+62.73 993.58	363+71.33 993.36	363+79.93 993.14	363+88.56 992.90	363+91.79 992.65	BREAK POINT #6
BEAM S	362+71.97 995.08	362+81.32 994.95	362+90.67 994.82	363+00.03 994.68	363+09.40 994.53	363+19.37 994.35	363+22.45 994.29	363+35.50 994.02	363+48.56 993.72	363+61.59 993.41	363+70.09 993.18	363+78.57 992.95	363+87.04 992.70	363+95.49 992.46	BEAM S
RIGHT GUTTER #7	362+72.06 995.08	362+81.33 994.95	362+90.61 994.81	362+99.91 994.65	363+09.22 994.49	363+19.15 994.30	363+22.21 994.24	363+35.24 993.98	363+48.30 993.69	363+61.38 993.37	363+69.93 993.16	363+78.49 992.94	363+87.04 992.70	363+95.64 992.46	RIGHT GUTTER #7

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

2. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.

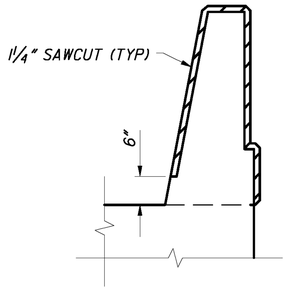
3. TOP OF HAUNCH ELEVATIONS CAN BE FOUND ON SHEET 27/31.

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
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TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

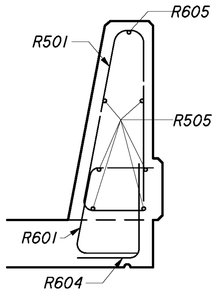
DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007232

DECK DETAILS
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

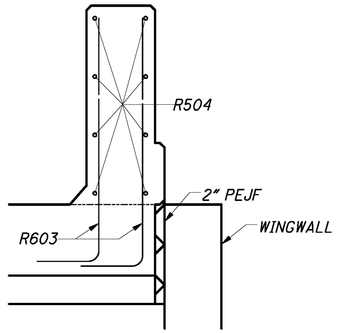
MAH-680-4.29
PID No. 25508



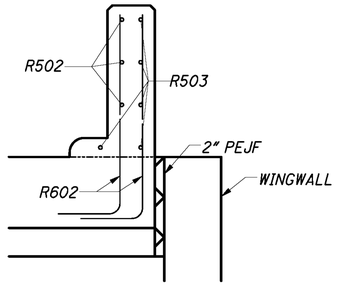
SECTION THROUGH CONTROL JOINT



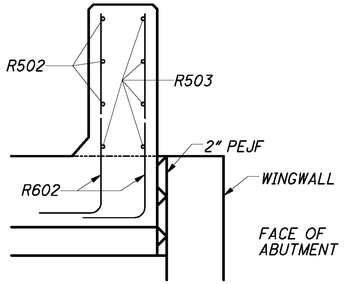
SECTION B-B
(FOR ADDITIONAL DETAILS SEE STD DWG SBR-1-99)



SECTION C-C
(FOR ADDITIONAL DETAILS SEE STD DWG SBR-1-99)



SECTION E-E
(FOR ADDITIONAL DETAILS SEE STD DWG SBR-1-99)



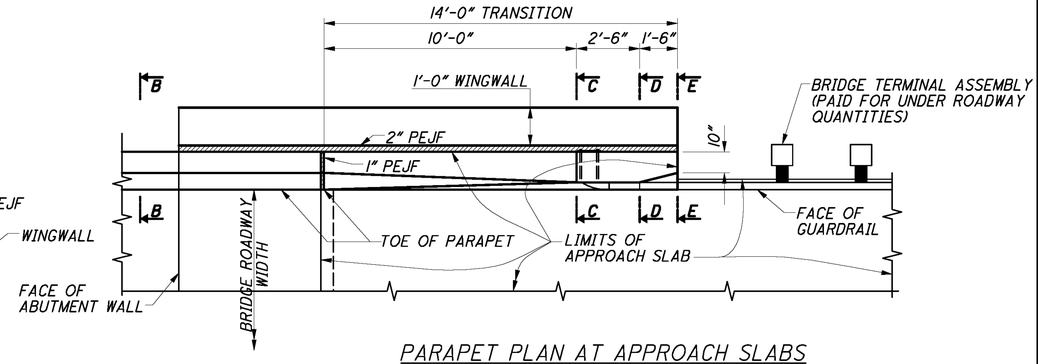
SECTION D-D
(FOR ADDITIONAL DETAILS SEE STD DWG SBR-1-99)

NOTES

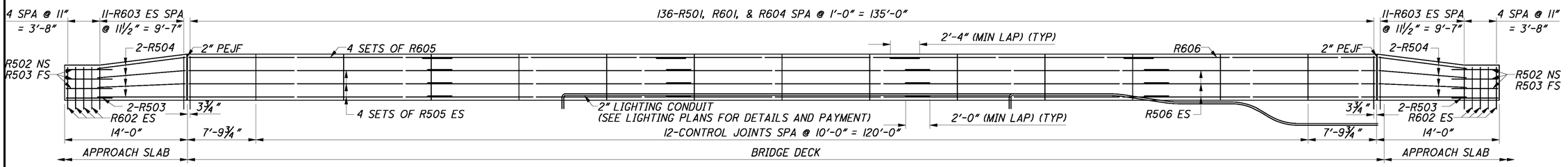
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 6 BARS 2'-4"

LEGEND

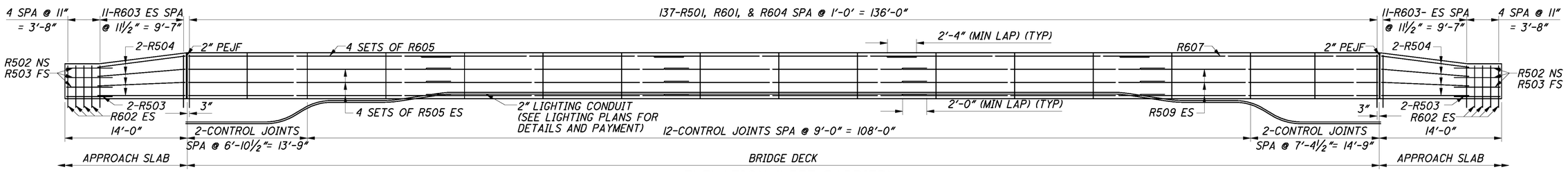
STD DWG	- STANDARD DRAWING
TYP	- TYPICAL
SPA	- SPACE
PEJF	- PREFORMED EXPANSION JOINT FILLER
MIN	- MINIMUM
ES	- EACH SIDE
NS	- NEAR SIDE
FS	- FAR SIDE



PARAPET PLAN AT APPROACH SLABS



ELEVATION (RIGHT BARRIER)



ELEVATION (LEFT BARRIER)

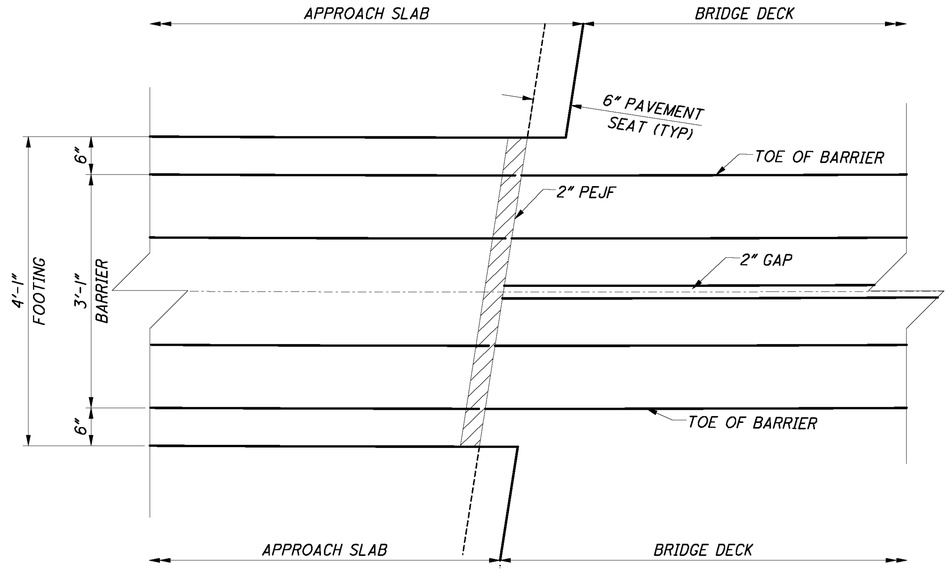
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
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PHONE:(419) 841-4704 FAX:(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007232	

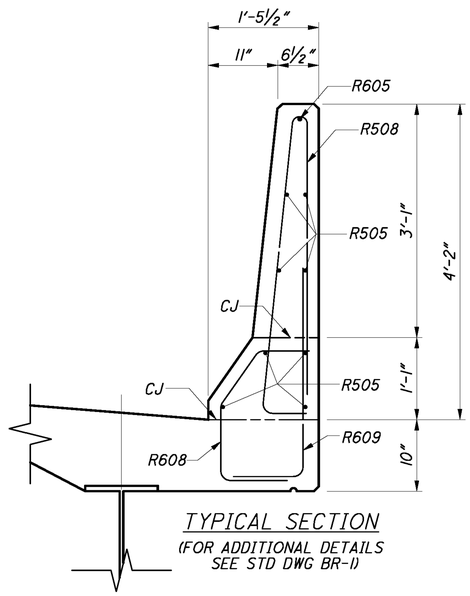
PARAPET DETAILS
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508

NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 6 BARS 2'-4"



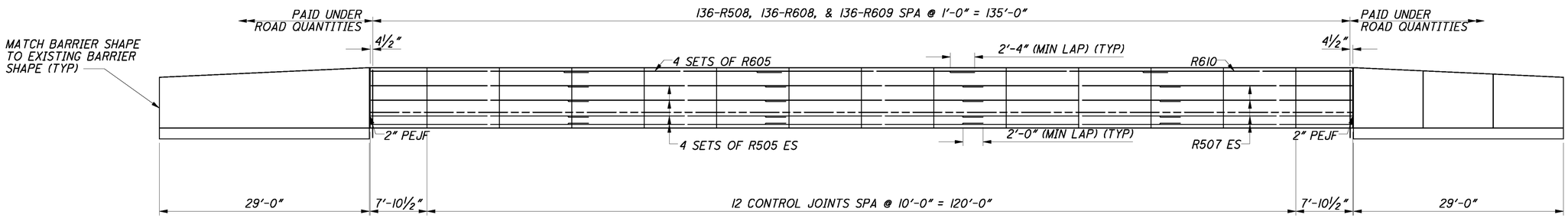
MEDIAN BARRIER TRANSITION DETAIL



TYPICAL SECTION
(FOR ADDITIONAL DETAILS SEE STD DWG BR-1)

LEGEND

STD DWG - STANDARD DRAWING
TYP - TYPICAL
SPA - SPACE
PEJF - PREFORMED EXPANSION JOINT FILLER
MIN - MINIMUM
ES - EACH SIDE



ELEVATION (MEDIAN BARRIER)
2 REQUIRED

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007232	

PARAPET DETAILS
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508

REINFORCING STEEL LIST

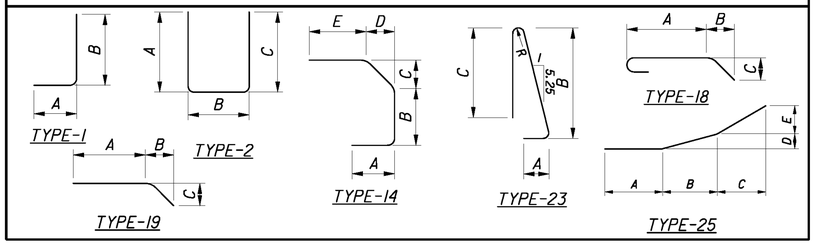
MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	INCR.
ABUTMENTS								
A501	156	7'-0"	1139	2	2'-0"	3'-3"	2'-0"	
A502	84	7'-8"	672	2	2'-7"	2'-9"	2'-7"	
A503	6	5'-6"	34	2	1'-3"	3'-3"	1'-3"	
A504	162	3'-6"	591	1	2'-4½"	1'-3"		
A505	4	6'-10"	29	1	2'-7½"	4'-4"		
A506	14	4'-0"	58	1	2'-4½"	1'-9"		
A507	6	5'-6"	34	2	1'-3"	3'-3"	1'-3"	
A508	4	9'-1"	38	1	2'-7½"	6'-7"		
A509	2 SERIES OF 4	9'-6" TO 12'-6"	92	STR				1'-0"
A510	6	13'-7"	85	STR				
A511	2	13'-7"	28	STR				
A512	2	7'-2"	15	STR				
A513	10	5'-3"	55	2	2'-6"	0'-6"	2'-6"	
A514	6	8'-9"	55	STR				
A515	6	9'-8"	60	STR				
A516	6	3'-11"	25	1	2'-0½"	2'-0"		
A517	2 SERIES OF 4	4'-5" TO 9'-8"	59	STR				1'-9"
A518	2	8'-4"	17	STR				
A519	2 SERIES OF 3	10'-9" TO 14'-5"	79	STR				1'-10"
A520	4	15'-0"	63	STR				
A521	2	15'-0"	31	STR				
A522	2	5'-8"	12	STR				
A523	11	5'-3"	60	2	2'-6"	0'-6"	2'-6"	
A524	7	6'-6"	47	STR				
A525	7	7'-2"	52	STR				
A526	7	3'-11"	29	1	2'-0½"	2'-0"		
A527	2 SERIES OF 4	4'-1" TO 7'-4"	48	STR				1'-1"
A528	2	9'-6"	20	STR				
A529	160	7'-0"	1168	2	2'-0"	3'-3"	2'-0"	
A530	86	7'-8"	688	2	2'-7"	2'-9"	2'-7"	
A531	6	5'-6"	34	2	1'-3"	3'-3"	1'-3"	
A532	170	3'-6"	621	1	2'-4½"	1'-3"		
A533	4	7'-0"	29	1	2'-7½"	4'-6"		
A534	14	4'-0"	58	1	2'-4½"	1'-9"		
A535	6	5'-8"	35	2	1'-4"	3'-3"	1'-4"	
A536	4	9'-2"	38	1	2'-7½"	6'-8"		
A537	2 SERIES OF 3	11'-5" TO 13'-10"	79	STR				1'-2½"
A538	4	14'-5"	60	STR				
A539	2	14'-5"	30	STR				
A540	2	4'-10"	10	STR				
A541	12	5'-3"	66	2	2'-6"	0'-6"	2'-6"	
A542	9	6'-8"	63	STR				
A543	9	6'-11"	65	STR				
A544	9	3'-11"	37	1	2'-0½"	2'-0"		
ABUTMENTS CONTINUED								
A545	2 SERIES OF 3	3'-2" TO 6'-10"	31	STR				1'-10"
A546	2	10'-3"	21	STR				
A547	2 SERIES OF 5	9'-10" TO 13'-7"	122	STR				11¼"
A548	4	13'-8"	57	STR				
A549	2	13'-8"	29	STR				
A550	2	7'-3"	15	STR				
A551	10	5'-3"	55	2	2'-6"	0'-6"	2'-6"	
A552	7	9'-11"	72	STR				
A553	7	9'-9"	71	STR				
A554	7	3'-11"	29	1	2'-0½"	2'-0"		
A555	2 SERIES OF 3	3'-10" TO 8'-6"	39	STR				2'-4"
A556	2	8'-8"	18	STR				
A601	56	4'-6"	379	1	2'-8½"	1'-11"		
A602	16	3'-7"	86	STR				
A801	10	39'-10"	1064	STR				
A802	5	27'-5"	366	STR				
A803	5	40'-0"	534	STR				
A804	10	30'-0"	801	STR				
A805	5	33'-11"	453	STR				
A806	5	30'-11"	413	STR				
A807	10	31'-8"	846	STR				
A808	5	25'-7"	342	STR				
A809	5	32'-10"	438	STR				
A810	10	30'-0"	801	STR				
A811	5	27'-9"	370	STR				
A812	5	30'-0"	401	STR				
A813	5	6'-5"	86	1	2'-4"	4'-3½"		
A814	3	6'-1"	49	1	2'-0"	4'-3½"		
A815	3	3'-3"	26	1	2'-2½"	1'-3"		
A816	5	6'-3"	83	1	2'-4"	4'-1½"		
A817	4	6'-1"	65	1	2'-1"	4'-2½"		
A818	4	3'-3"	35	1	2'-2½"	1'-3"		
A819	10	40'-0"	1068	STR				
A820	5	29'-6"	394	STR				
A821	5	40'-0"	534	STR				
A822	10	31'-6"	841	STR				
A823	5	33'-7"	448	STR				
A824	5	32'-8"	436	STR				
A825	10	33'-6"	894	STR				
A826	5	25'-5"	339	STR				
A827	5	34'-8"	463	STR				
A828	10	30'-0"	801	STR				
A829	5	29'-9"	397	STR				
A830	5	30'-0"	401	STR				
A831	5	6'-0"	80	1	2'-4"	3'-10½"		
A832	5	5'-6"	73	1	2'-0"	3'-8½"		
A833	5	3'-3"	43	1	2'-2½"	1'-3"		
A834	5	6'-4"	85	1	2'-4"	4'-2½"		
A835	3	5'-11"	47	1	2'-0"	4'-1½"		
A836	3	3'-3"	26	1	2'-2½"	1'-3"		
D801	167	4'-8"	2081	18	2'-9½"	1'-0"	1'-0"	
ABUTMENT TOTAL			24,256					

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R
SUPERSTRUCTURE										
S401	1372	30'-0"	27,495	STR						
S402	136	22'-2"	2014	STR						
S403	9	22'-2"	133	STR						
S404	13	22'-7"	196	STR						
S405	9	21'-9"	131	STR						
S406	11	22'-2"	163	STR						
S407	165	21'-8"	2388	STR						
S501	554	31'-2"	18,009	STR						
S502	554	30'-0"	17,335	STR						
S503	43	8'-6"	381	STR						
S504	638	11'-3"	7486	STR						
S505	638	30'-0"	19,963	STR						
S506	638	30'-0"	19,963	19	23'-9"	6'-9½"	0'-10"			
S507	39	8'-5"	342	STR						
S601	63	30'-9"	2910	STR						
S602	63	30'-10"	2918	STR						
S603	76	30'-4"	3463	STR						
S604	76	30'-9"	3510	STR						
R501	273	7'-5"	2112	23	1'-1"	3'-2"	3'-0"			0'-2¾"
R502	12	5'-6"	69	25	1'-8"	2'-5"	1'-5"	0'-1½"	0'-5"	
R503	20	5'-6"	115	STR						
R504	32	10'-0"	334	STR						
R505	112	30'-0"	3504	STR						
R506	6	23'-4"	146	STR						
R507	16	23'-6"	392	STR						
R508	272	8'-5"	2388	23	0'-7"	3'-11"	3'-8"			0'-1¼"
R509	6	24'-2"	151	STR						
R601	273	3'-9"	1538	14	1'-1"	0'-0"	1'-8"	0'-6"	1'-1"	
R602	32	4'-5"	212	1	1'-5"	3'-2"				
R603	88	4'-10"	639	1	1'-5"	3'-7"				
R604	273	2'-8"	1039	1	1'-1"	1'-9"				
R605	16	30'-0"	721	STR						
R606	1	24'-8"	37	STR						
R607	1	25'-6"	38	STR						
R608	272	3'-5"	1396	14	0'-10½"	1'-0"	0'-8½"	0'-6"	0'-8"	
R609	272	3'-6"	1430	1	0'-11"	2'-9"				
R610	2	24'-9"	74	STR						
SUPERSTRUCTURE TOTAL			145,189							
TOTAL			169,445							

NOTES:

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHEN FOUR DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A No.6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.
2. ALL REINFORCING STEEL TO BE EPOXY COATED.

BEND DIAGRAMS



DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
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TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

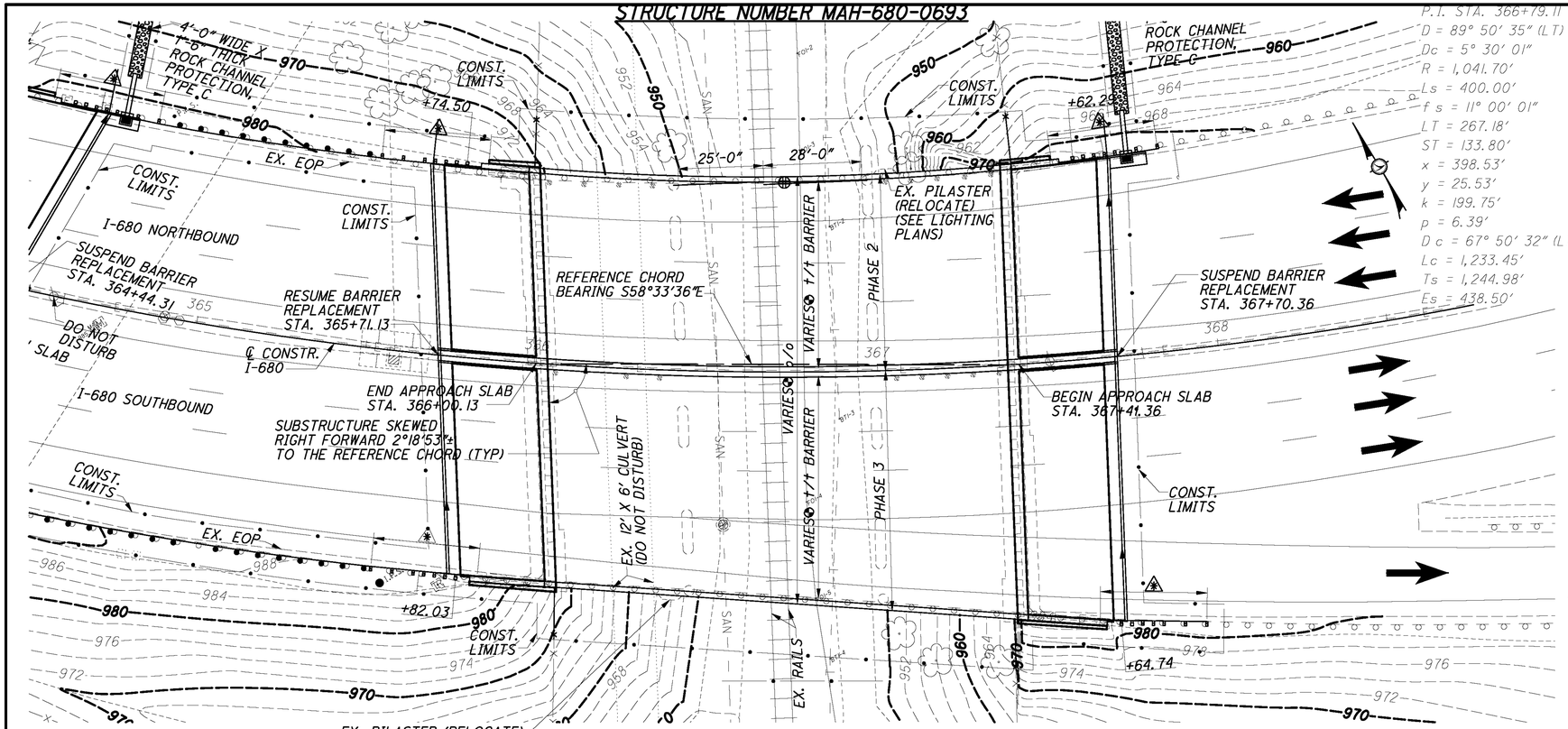
DESIGNED MJP | DRAWN MJP | CHECKED JBD | REVIEWED EEC | DATE 05-28-10 | STRUCTURE FILE NUMBER 5007232 | REVISED

REINFORCING STEEL LIST
BRIDGE NO. MAH-680-0687
I-680 OVER DELASON AVE.

MAH-680-4.29
PID No. 25508

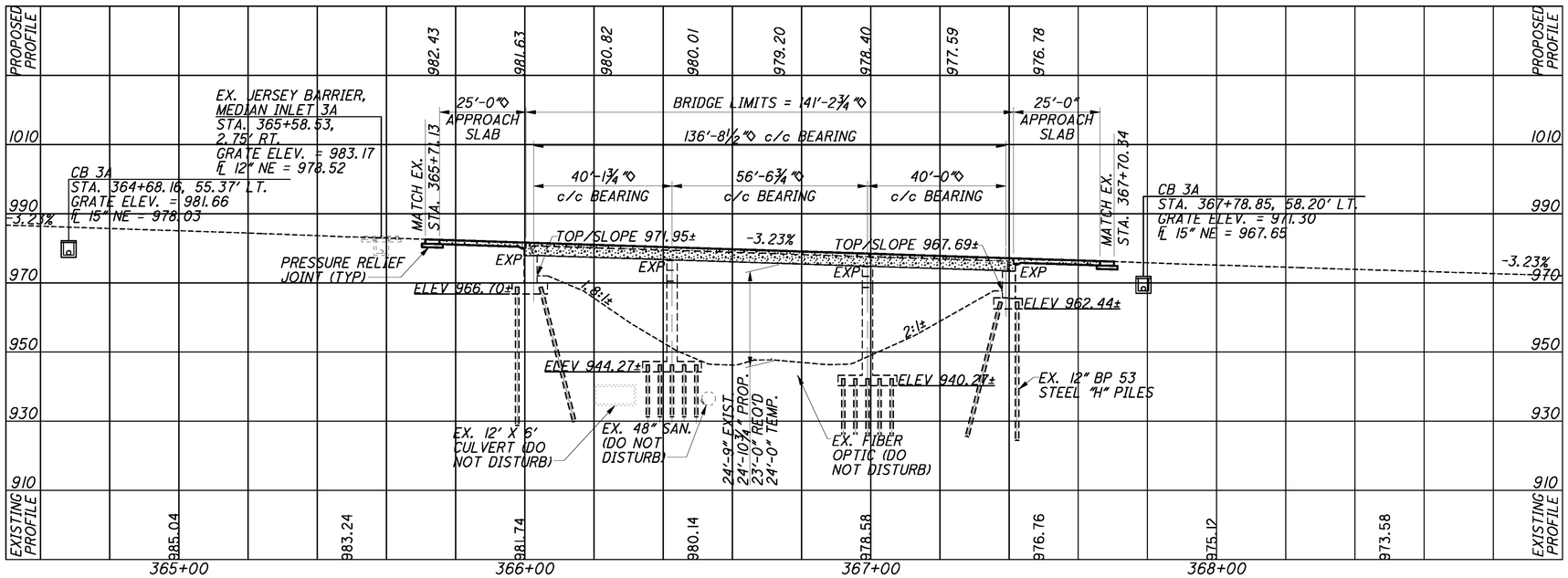
31 / 31

255
307



PLAN

PORTIONS OF EXISTING BRIDGE TO BE REMOVED UNDER ITEM 202



PROFILE AT ℄ CONSTRUCTION

BENCHMARK DATA

BM #1	STA. 365+61.38,	ELEV. 987.27 ,	OFFSET 68.08 ,	RIGHT
BM #2	STA. 369+39.60,	ELEV. 965.22 ,	OFFSET 83.89 ,	LEFT
BM #3	STA. 366+81.01,	ELEV. 944.14 ,	OFFSET 150.70,	LEFT
BM #4	STA. 366+58.29,	ELEV. 948.45 ,	OFFSET 151.95,	RIGHT

NOTES

PROPOSED WORK SHALL INCLUDE REMOVAL OF PORTIONS OF THE EXISTING STRUCTURE, CONSTRUCTING A NEW SUPERSTRUCTURE WITH COMPOSITE CONCRETE DECK, CONVERTING BACKWALLS TO SEMI-INTEGRAL, PATCHING SUBSTRUCTURE CONCRETE, AND REPLACING APPROACH SLABS.

DESIGN TRAFFIC (I-680):
2010 ADT = 55290 2010 ADTT = 6082
2030 ADT = 58740 2030 ADTT = 6461
DIRECTIONAL DISTRIBUTION = 0.58
DESIGN SPEED = 55 MPH LEGAL SPEED= 50 MPH

LEGEND

- ⊕ - DIMENSION MEASURED RADIALLY
- ◇ - DIMENSION MEASURED ALONG ℄ I-680
- ⊕ - 23'-0" REQUIRED MINIMUM VERTICAL CLEARANCE

DELASON AVE CLEARANCES
24'-9" EXISTING VERTICAL CLEARANCE
24'-10¾" EXISTING VERTICAL CLEARANCE
24'-0" TEMPORARY CLEARANCE

- ⚠ - BRIDGE TERMINAL ASSEMBLY, TYPE I

EXISTING STRUCTURE

TYPE: 3-SPAN CONTINUOUS ROLLED STEEL BEAM WITH NON-COMPOSITE REINFORCED CONCRETE DECK AND SUBSTRUCTURES
SPANS: 40'-0"±, 56'-6"±, AND 40'-0"± = 136'-6"± c/c BEARINGS PERPENDICULAR BETWEEN SUBSTRUCTURE BEARINGS
ROADWAY: VARIES◇ F/F SAFETY CURB
LOADING: CF2000
SKEW: 2°18'53"± TO THE REFERENCE CHORD, RIGHT FORWARD
APPROACH SLABS: AS-I-81, 25' LONG (MODIFIED)
ALIGNMENT: 5°30'00" CURVE LEFT
CROWN: SUPERELEVATED
WEARING SURFACE: 1" MONOLITHIC
STRUCTURAL FILE NUMBER: 5007267
DATE BUILT: 1961

PROPOSED STRUCTURE

PROPOSED WORK:NEW SUPERSTRUCTURE, CONVERT ABUTMENTS TO SEMI-INTEGRAL, AND REHABILITATE SUBSTRUCTURE
TYPE: NEW 3 SPAN CONTINUOUS STEEL BEAM STRUCTURE WITH COMPOSITE REINFORCED CONCRETE DECK AND REINFORCED CONCRETE SUBSTRUCTURE
SPANS: 40'-0⅜"±, 56'-5⅝"±, 40'-0⅜"± c/c BEARING ALONG REFERENCE CHORD
ROADWAY: LEFT BRIDGE VARIES 54'-0" TO 55'-6⅛" T/T PARAPET RIGHT BRIDGE VARIES 62'-0" TO 71'-9⅜" T/T PARAPET
LOADING: HS25 CASE I AND ALTERNATE MILITARY + 60PSF FWS
SKEW: 2°18'54" TO THE REFERENCE CHORD, RIGHT FORWARD
APPROACH SLABS: AS-I-81, 25'-0" (MODIFIED)
ALIGNMENT: 5°30'00" CURVE LEFT
SUPERELEVATION: 0.083 FT/FT
WEARING SURFACE: 1" MONOLITHIC
COORDINATES: LATITUDE N41°04'58"
LONGITUDE W80°38'54"

DESIGN AGENCY
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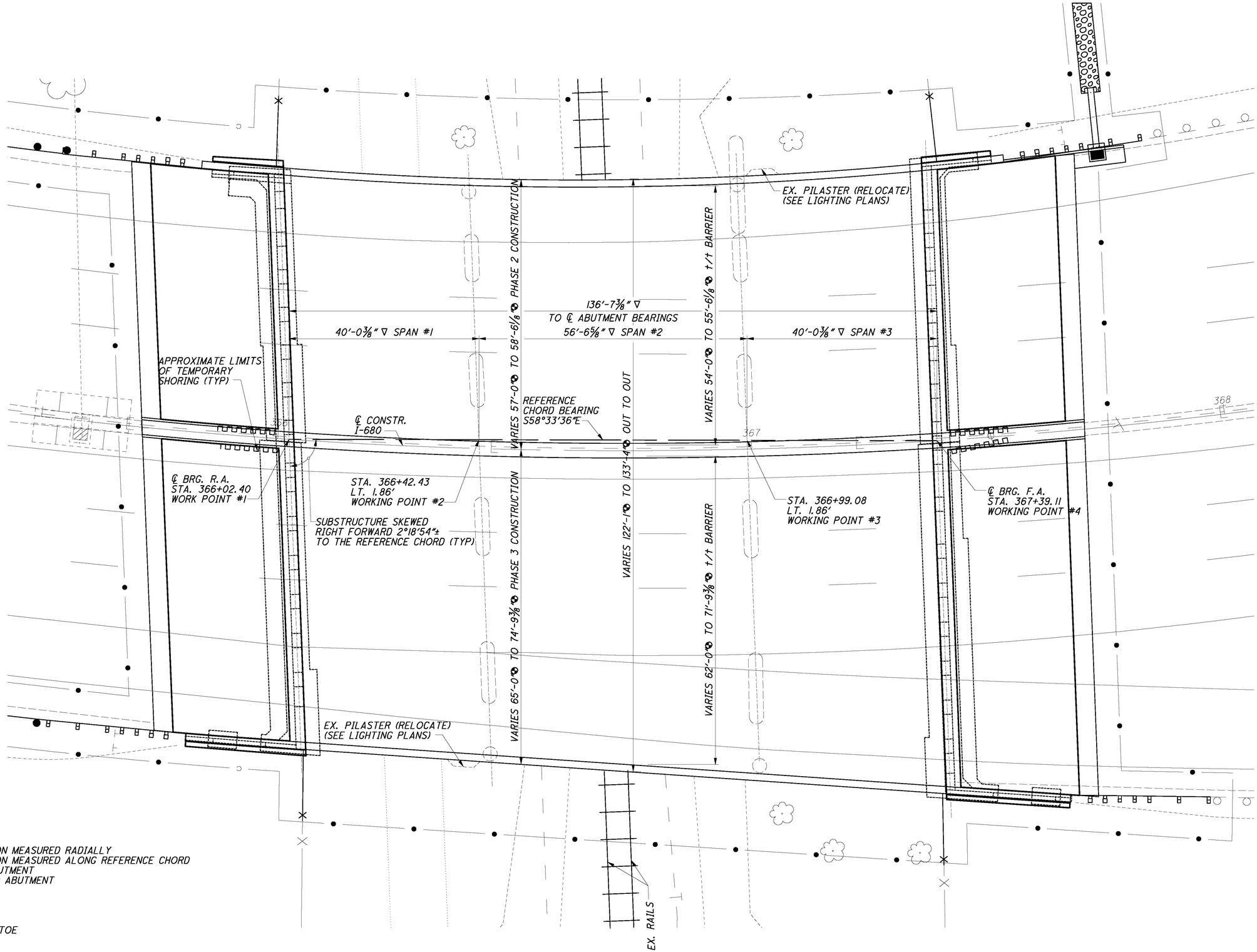
DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007267

MAHONING COUNTY
STA. 366+00.13
STA. 367+41.36

SITE PLAN

BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508



LEGEND

℄ - DIMENSION MEASURED RADIALLY
▽ - DIMENSION MEASURED ALONG REFERENCE CHORD
R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
LT. - LEFT
t/t - TOE TO TOE

DESIGN AGENCY
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TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007267	

GENERAL PLAN

BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

PROPOSED WORK

THE WORK COVERED BY THESE PLANS INCLUDES REMOVAL AND REPLACEMENT OF THE CONCRETE DECK, STEEL BEAMS, BRIDGE RAILS, APPROACH SLABS, BEARINGS, AND PORTIONS OF THE SUB-STRUCUTRE. OTHER WORK INCLUDES CONVERTING THE ABUT-MENT BACKWALLS TO SEMI-INTEGRAL, PATCHING PORTIONS OF THE EXISTING SUBSTRUCTURE, AND SEALING CONCRETE SURFACES. TRAFFIC IS TO BE MAINTAINED OVER THE STRUCTURE DURING CONSTRUCTION.

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81 REVISED 07-19-02

GSD-1-96 REVISED 07-19-02

PCB-91 REVISED 07-19-02

SBR-1-99 REVISED 07-19-02

SICD-1-96 REVISED 07-19-02

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002 AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

CONCRETE CLASS HP - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE & RAILING)

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615 OR A996
GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

STRUCTURAL STEEL - ASTM A709 GRADE 50W
YIELD STRENGTH 50,000 PSI

DESIGN LOADING:

HS25 (CASE I) AND THE ALTERNATE MILITARY LOADING.

FUTURE WEARING SURFACE (FWS) OF 60 LBS/SQ. FT.

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL
2-1/2" CONCRETE COVER

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED,
FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

UTILITY LINES

UTILITY LINES: THE UTILITY(IES) SHALL BORE ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVEN-IENCE TO EITHER WILL BE HELD TO A MINIMUM.

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN

INCLUDED IN THIS PAY ITEM IS FILLING AND PLUGGING THE EXISTING WEEPHOLES AT THE REAR AND FORWARD ABUTMENTS. THERE ARE TEN, FOUR INCH DIAMETER WEEPHOLES THAT ARE 3'-9" LONG EACH FOR A TOTAL LENGTH OF 37'-9". THE WEEPHOLES WILL ALL BE FILLED WITH A NONSHRINK, NONMETALIC GROUT

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

ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN: THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PER-FORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORP-ORATED INTO THE PROPOSED STRUCTURE. REPLACE OR REPAIR STEEL MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PER-FORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BE-FORE PERFORMING REPAIR.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CON-CRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

SUBSTRUCTURE CONCRETE REMOVAL: REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

ITEM 516 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN

INSTALL A 3 FOOT WIDE NEOPRENE SHEET AT LOCATIONS SHOWN IN THE PLANS. SECURE THE NEOPRENE SHEETING TO THE CON-CRETE WITH 1-1/4" X #10 GAGE (LENGTH X SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 1 INCH OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. USE OF OTHER SIMILAR GALVANIZED DEVICES, WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORI-ZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTI-CAL JOINTS SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAR-EST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 6 INCHES, CENTER TO CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHALL COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAP LENGTHS OF THE HORIZONTAL STRIPS THAT ARE NOT VULCANIZED OR ADHESIVE BONDED, SHALL BE AT LEAST 1 FOOT IN LENGTH, OR 6 INCHES IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 3/32" 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, INCHES	D751	0.094 +/- 0.01
BREAKING STRENGTH, GRAB, LBS, MINIMUM (LONG. X TRANS.)	D751	700 X 700
ADHESIVE STRIP, 1" WIDE X 2" LONG, LBS MINIMUM	D751	9
BURST STRENGTH, PSI MINIMUM	D751	1400
HEAT AGING, 70 HR, 212 DEGREES F, 180 DEGREES BEND WITHOUT CRACKING	D2136	NO CRACKING OF COATING
LOW TEMP. BRITTLENESS, 1 HR, 40 DEGREES F, BEND AROUND 1/4" MANDREL	D2136	NO CRACKING OF COATING

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE TOTAL LENGTH OF JOINT TO BE SEALED BY THE NUMBER OF FEET.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS, AS PER PLAN

THE PROVISIONS OF CMS 526 SHALL APPLY EXCEPT AS NOTED BELOW.

CLASS HP CONCRETE, MIX 4, AS PER PLAN, SHALL BE THE ONLY MIX DESIGN OPTION. THE PROPORTIONS FOR THE STARTING MIX DESIGN SHALL BE AS SHOWN FOR ITEM
511 - CLASS HP CONCRETE, AS PER PLAN.

DECK PLACEMENT DESIGN ASSUMPTIONS:

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 1.39 KIPS FOR A TOTAL MACHINE LOAD OF 11.09 KIPS

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

THE MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA BEAMS TO THE FACE OF THE SAFETY HANDRAIL SHALL BE:
BEAM A - 79½"
BEAM H - 57"
BEAM J - 57" (NO HANDRAIL)
BEAM S - 67"

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

ITEM 519-PATCHING CONCRETE STRUCTURE, AS PER PLAN INSPECTED 11-07-2005

LOCATION	MEASURED AREA (2005)	PROJECTION FACTOR	REPAIR AREA (2010)	SEE SHEET
REAR ABUTMENT	11 SQ FT	1.10	12 SQ FT	8/31
PIER 1	0 SQ FT	1.10	0 SQ FT	18/31
PIER 2	0 SQ FT	1.10	0 SQ FT	19/31
FORWARD ABUT.	8 SQ FT	1.10	9 SQ FT	12/31
		TOTAL	21 SQ FT	

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007267

GENERAL NOTES

BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

CALCULATED BY: MJP 05-28-10 CHECKED BY: JBD 05-28-10

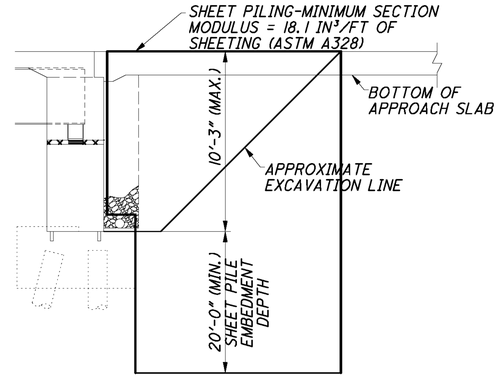
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GENERAL	SEE SHEET NO.
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN					3/31
202	22900	473	SQ YD	APPROACH SLAB REMOVED				473	
202	23500	473	SQ YD	WEARING COURSE REMOVED				473	
503	11101	LUMP		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN					4/31
503	21100	284	CU YD	UNCLASSIFIED EXCAVATION	284				
509	10001	203,489	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN	26,453	1416	175,620		4/31
510	10000	594	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	464	130			
511	43200	3	CU YD	CLASS C CONCRETE, PIER		3			
511	45700	58	CU YD	CLASS C CONCRETE, ABUTMENT	58				
511	50101	90	CU YD	CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN			90		4/31
511	51001	604	CU YD	CLASS HP CONCRETE, SUPERSTRUCTURE, AS PER PLAN			604		4/31
511	52000	LUMP		CLASS HP CONCRETE, TEST SLAB					
512	10100	1918	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	302	1053	563		
512	33000	8	SQ YD	TYPE 2 WATERPROOFING	8				
512	44400	9	SQ YD	TYPE B WATERPROOFING	9				
513	10260	280,012	POUND	STRUCTURAL STEEL MEMBERS, LEVEL 3			280,012		
513	20000	11,010	EACH	WELDED STUD SHEAR CONNECTORS			11,010		
516	13900	347	SQ FT	2" PREFORMED EXPANSION JOINT FILLER	347				
516	14021	250	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN	250				3/31
516	44200	17	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),	17				
				(13"x13¾"x3⅛" BEARING WITH 14"x14¾"x VARIES LOAD PLATE)					
516	44200	34	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),		34			
				(12½"x14¾"x3⅛" BEARING WITH 13½"x15¾"x VARIES LOAD PLATE)					
516	44300	17	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),	17				
				(13"x14"x4⅛" BEARING WITH 14"x15"x VARIES LOAD PLATE)					
518	21200	159	CU YD	POROUS BACKFILL WITH FILTER FABRIC	159				
518	40001	262	FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	262				3/31
518	40011	72	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE,INCLUDING SPECIALS, AS PER PLAN	72				4/31
519	11101	21	SQ FT	PATCHING CONCRETE STRUCTURE, AS PER PLAN	21				3/31
526	25001	673	SQ YD	REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN				673	4/31

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 709.00.

ITEM 503, COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN:

THE DESIGN SHOWN BELOW FOR TEMPORARY SUPPORT OF EXCAVATION IS ONE REPRESENTATIVE DESIGN THAT MAY BE USED TO CONSTRUCT THE PROJECT. THE CONTRACTOR MAY CONSTRUCT THE DESIGN SHOWN ON THE PLANS OR PREPARE AN ALTERNATE DESIGN TO SUPPORT THE SIDES OF EXCAVATIONS. IF CONSTRUCTING AN ALTERNATE DESIGN FOR TEMPORARY SUPPORT OF EXCAVATION, PREPARE AND PROVIDE PLANS IN ACCORDANCE WITH C&MS 501.05. THE DEPARTMENT WILL PAY FOR THE TEMPORARY SUPPORT OF EXCAVATION AT THE CONTRACT LUMP SUM PRICE FOR COFFERDAMS, CRIBS, AND SHEETING. NO ADDITIONAL PAYMENT WILL BE MADE FOR PROVIDING AN ALTERNATE DESIGN.

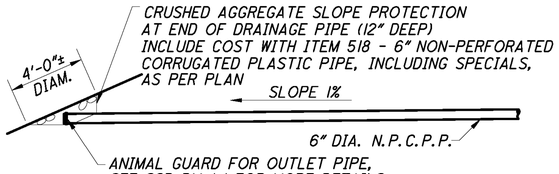


ELEVATION
SHORING DETAILS
(TO BE PAID FOR WITH ITEM 503 - COFFERDAMS, CRIBS, AND SHEETNG, AS PER PLAN)

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 SECTIONS 102.05, 105.02 AND 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.



TERMINATION OF 6" N.P.C.P.P., AS PER PLAN DETAIL

ITEM 511 - CLASS HP CONCRETE, AS PER PLAN

THE PROVISIONS OF ITEM 511 SHALL APPLY EXCEPT AS NOTED BELOW.
MIX OPTIONS:
ALL SUPERSTRUCTURE, BRIDGE DECK, SIDEWALK, APPROACH SLABS AND PARAPET CONCRETE SHALL BE THIS MIX (HP4, AS PER PLAN). THE FOLLOWING PROPORTIONS WILL BE USED AS A STARTING MIX DESIGN.

CONCRETE TABLE
QUANTITIES PER CUBIC YARD
AGGREGATES (SSD)
MIX 4, AS PER PLAN (GGBF SLAG + MICROSILICA)

Aggre. Type	Fine Aggre. (lb)	#8 Coarse Aggre. (lb)	#57 Coarse Aggre. (lb)	Total (lb)	Cement Content (lb)	GGBF Slag (lb)	Micro-Silica (lb)	Water to Cementitious Ratio +/-.01	Air Content +/-2%
Gravel	1370	650	790	2810	440	190	30	0.42	6
Limestone	1370	655	800	2820	440	190	30	0.42	6
Slag	1370	570	695	2635	440	190	30	0.42	6

* ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127
BASIS OF PAYMENT:
PAYMENT FOR THE ABOVE COMPLETED AND ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT BID PRICE FOR:

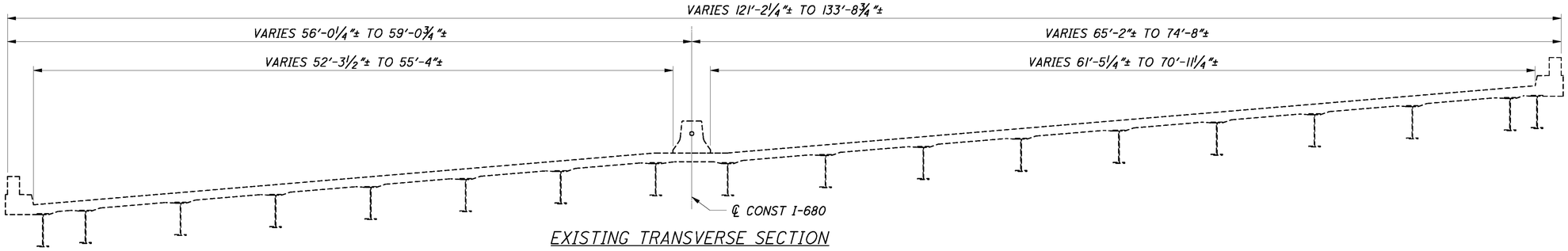
ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN, CU YD
ITEM 511 - CLASS HP CONCRETE, SUPERSTRUCTURE, AS PER PLAN, CU YD

DESIGN AGENCY
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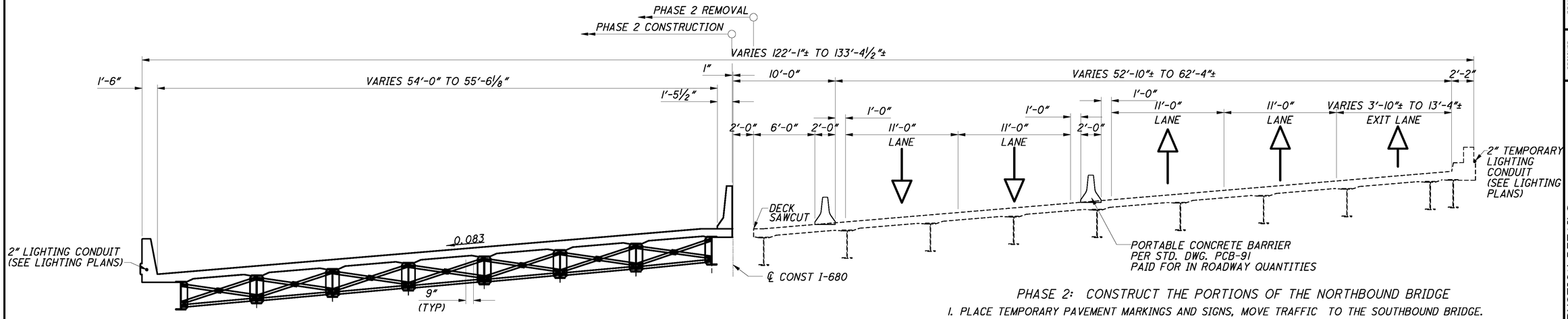
DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007267

GENERAL NOTES, ESTIMATED QUANTITIES & MISCELLANEOUS DETAILS
BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508



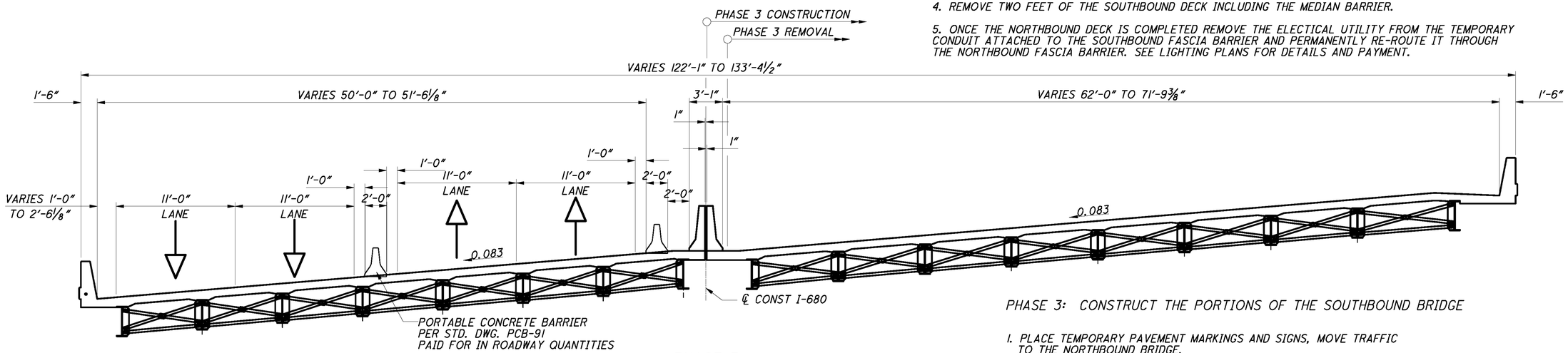
EXISTING TRANSVERSE SECTION



PHASE 2

PHASE 2: CONSTRUCT THE PORTIONS OF THE NORTHBOUND BRIDGE

1. PLACE TEMPORARY PAVEMENT MARKINGS AND SIGNS, MOVE TRAFFIC TO THE SOUTHBOUND BRIDGE.
2. REMOVE EXISTING ELECTRICAL UTILITY FROM MEDIAN BARRIER AND RE-ROUTE IT THROUGH TEMPORARY CONDUIT ATTACHED TO SOUTHBOUND FASCIA BARRIER. SEE LIGHTING PLANS FOR DETAILS AND PAYMENT.
3. REMOVE & REPLACE PORTIONS OF NORTHBOUND BRIDGE AS INDICATED ON PLANS.
4. REMOVE TWO FEET OF THE SOUTHBOUND DECK INCLUDING THE MEDIAN BARRIER.
5. ONCE THE NORTHBOUND DECK IS COMPLETED REMOVE THE ELECTICAL UTILITY FROM THE TEMPORARY CONDUIT ATTACHED TO THE SOUTHBOUND FASCIA BARRIER AND PERMANENTLY RE-ROUTE IT THROUGH THE NORTHBOUND FASCIA BARRIER. SEE LIGHTING PLANS FOR DETAILS AND PAYMENT.



PHASE 3

PHASE 3: CONSTRUCT THE PORTIONS OF THE SOUTHBOUND BRIDGE

1. PLACE TEMPORARY PAVEMENT MARKINGS AND SIGNS, MOVE TRAFFIC TO THE NORTHBOUND BRIDGE.
2. REMOVE & REPLACE PORTIONS OF SOUTHBOUND BRIDGE AS INDICATED ON PLANS.

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DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007267	

STAGED CONSTRUCTION DETAILS

BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

LEGEND

⌀ - DIMENSION MEASURED RADIALLY
TYP - TYPICAL
▨ - INDICATES TEMPORARY PAVEMENT - PLACED THIS PHASE (SEE ROADWAY PLANS)

PHASE 2

STAGE CONSTRUCTION DETAILS

BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

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261
307

DESIGN AGENCY
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PHASE 3

LEGEND

⦲ - DIMENSION MEASURED RADIALLY
TYP - TYPICAL
STA - STATION

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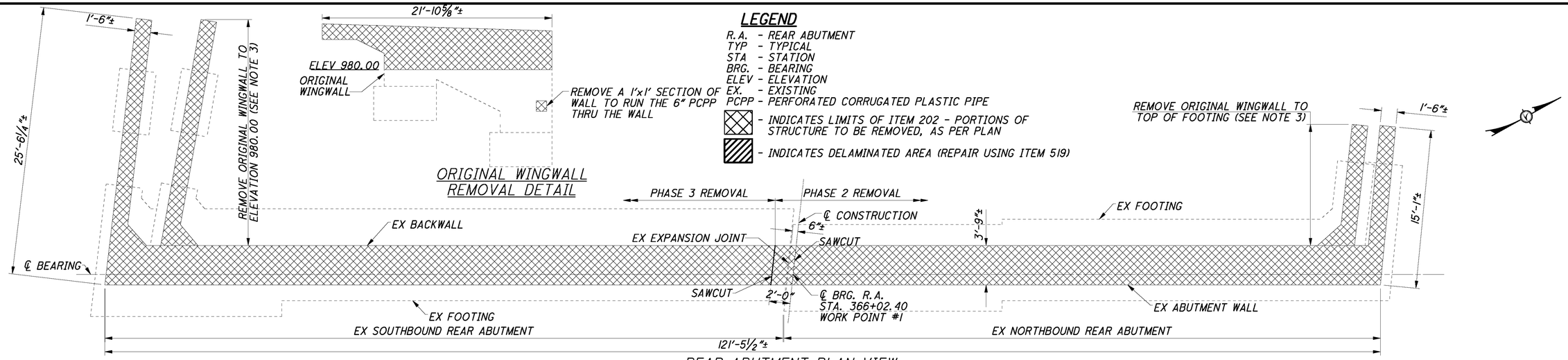
STAGE CONSTRUCTION DETAILS
BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

LEGEND

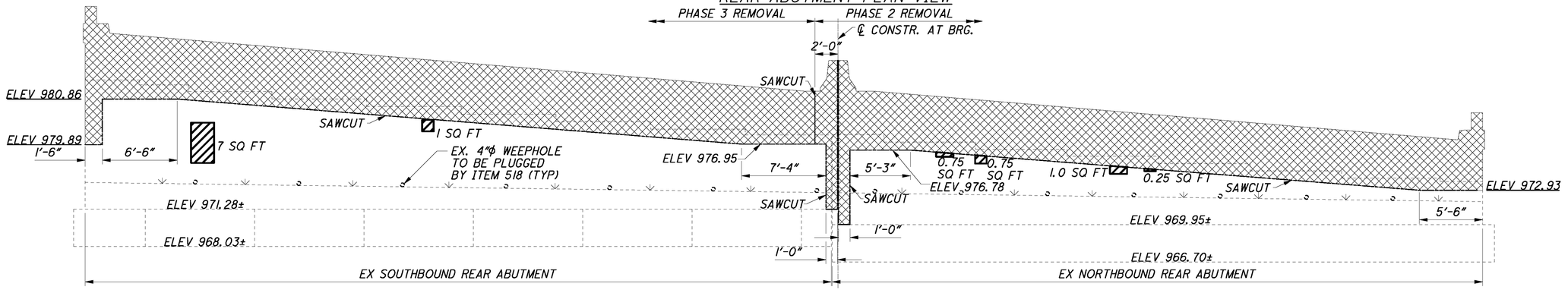
R.A. - REAR ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
ELEV - ELEVATION
EX. - EXISTING
PCPP - PERFORATED CORRUGATED PLASTIC PIPE

- INDICATES LIMITS OF ITEM 202 - PORTIONS OF STRUCTURE TO BE REMOVED, AS PER PLAN
- INDICATES DELAMINATED AREA (REPAIR USING ITEM 519)

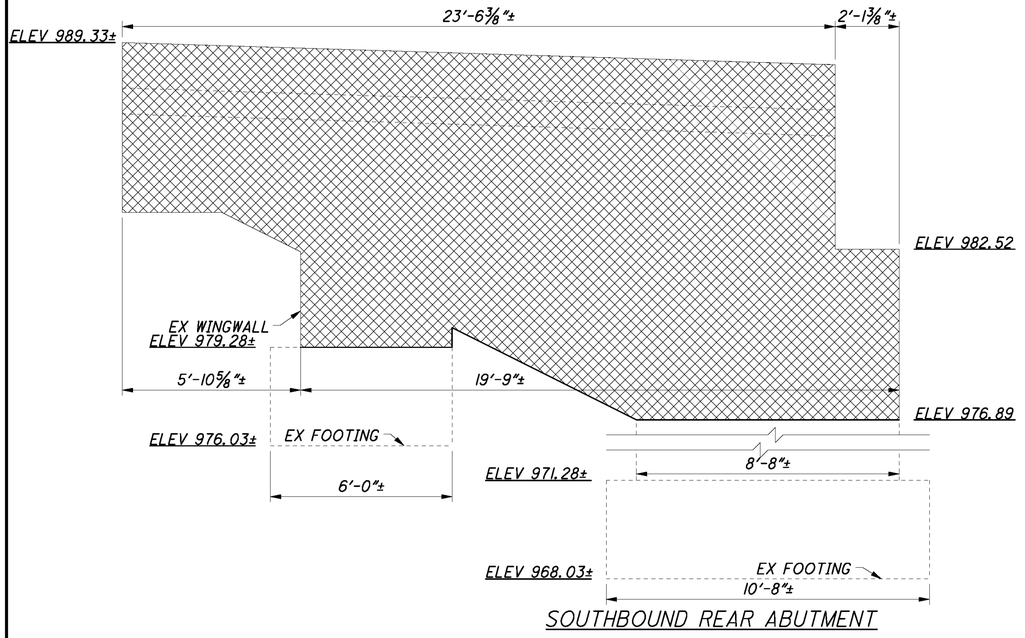


ORIGINAL WINGWALL REMOVAL DETAIL

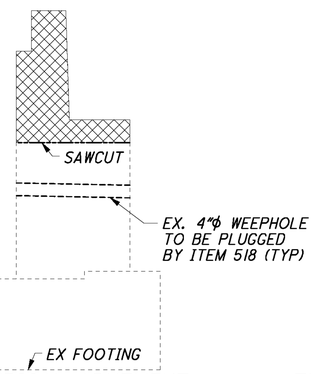
REAR ABUTMENT PLAN VIEW



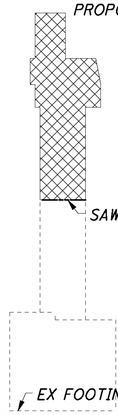
REAR ABUTMENT ELEVATION



SOUTHBOUND REAR ABUTMENT

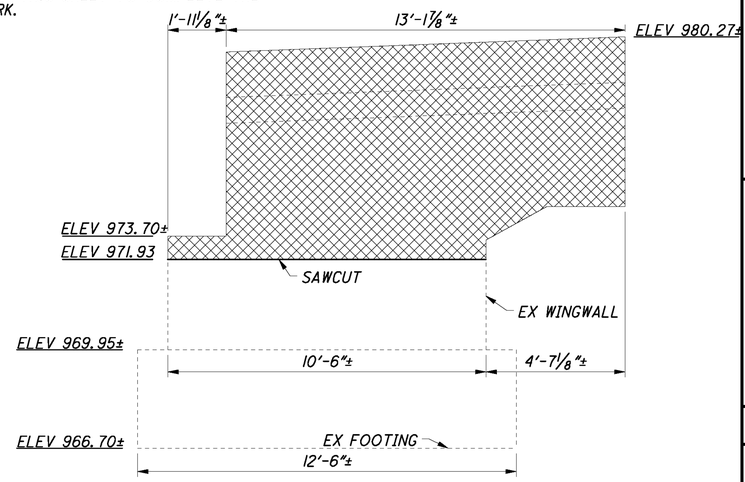


TYPICAL ABUTMENT CROSS SECTION



TYPICAL WINGWALL CROSS SECTION

NOTES:
1. SOUNDING OF CONCRETE WAS DONE ON 11/07/05 AND A TOTAL OF 11 SQUARE FEET OF THE REAR ABUTMENT NEEDS REPAIR.
2. GUARDRAIL ATTACHED TO THE WINGWALL PARAPET WILL BE REMOVED UNDER ITEM 202.
3. ACCORDING TO 1970 WIDENING PLANS THE ORIGINAL WINGWALLS WERE REMOVED TO THE SUBBASE. MORE OF THE ORIGINAL WINGWALLS NEED TO BE REMOVED AS DETAILED ON THIS SHEET TO COMPLETE THE PROPOSED WORK.



NORTHBOUND REAR ABUTMENT

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DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007267

REAR ABUTMENT REMOVAL

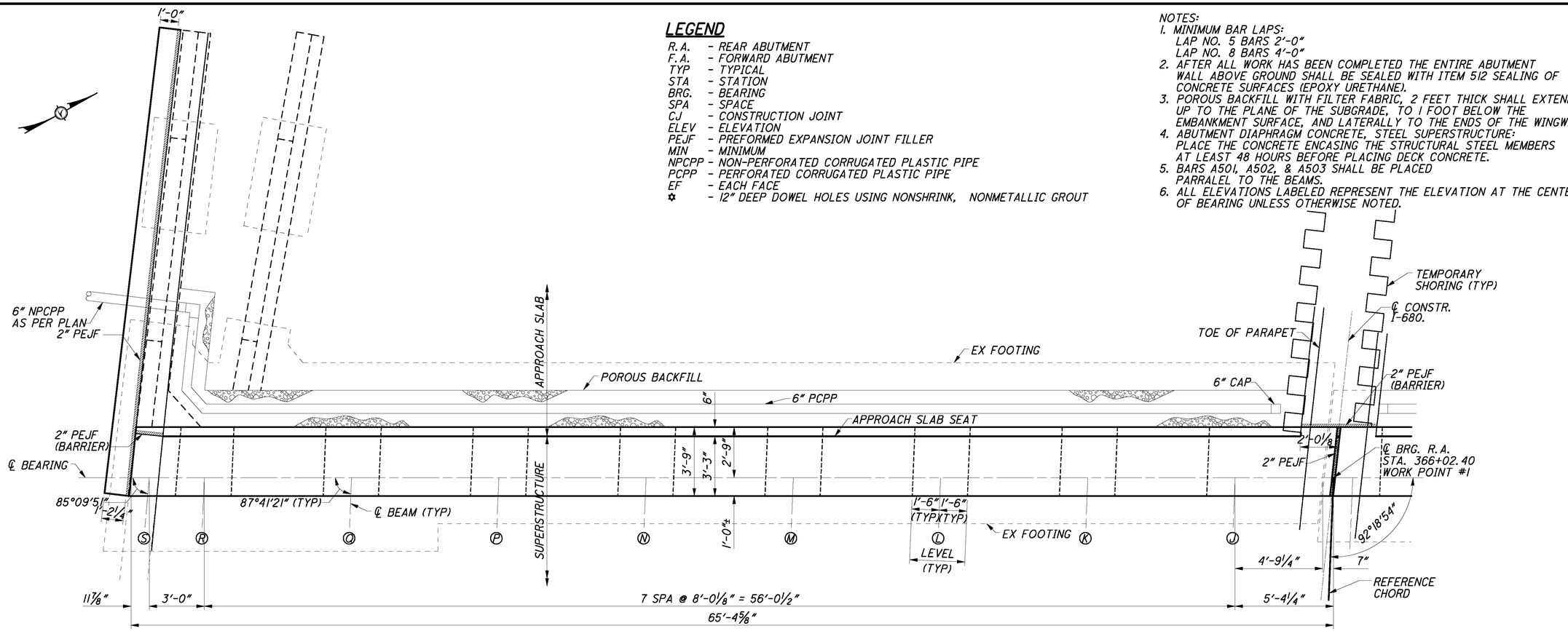
BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

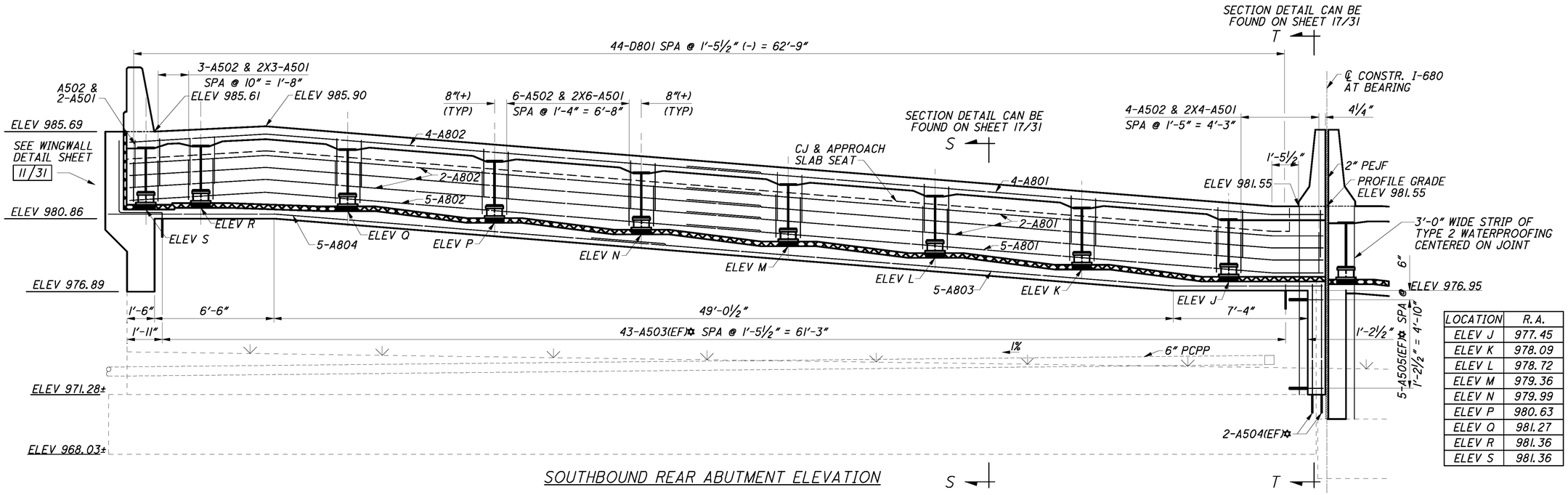
LEGEND

R.A.	- REAR ABUTMENT
F.A.	- FORWARD ABUTMENT
TYP	- TYPICAL
STA	- STATION
BRG.	- BEARING
SPA	- SPACE
CJ	- CONSTRUCTION JOINT
ELEV	- ELEVATION
PEJF	- PREFORMED EXPANSION JOINT FILLER
MIN	- MINIMUM
NPCPP	- NON-PERFORATED CORRUGATED PLASTIC PIPE
PCPP	- PERFORATED CORRUGATED PLASTIC PIPE
EF	- EACH FACE
✡	- 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT

NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 8 BARS 4'-0"
2. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE ABUTMENT WALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).
3. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.
4. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTRUCTURE: PLACE THE CONCRETE ENCASING THE STRUCTURAL STEEL MEMBERS AT LEAST 48 HOURS BEFORE PLACING DECK CONCRETE.
5. BARS A501, A502, & A503 SHALL BE PLACED PARRALEL TO THE BEAMS.
6. ALL ELEVATIONS LABELED REPRESENT THE ELEVATION AT THE CENTERLINE OF BEARING UNLESS OTHERWISE NOTED.



SOUTHBOUND REAR ABUTMENT PLAN VIEW



SOUTHBOUND REAR ABUTMENT ELEVATION

LOCATION	R.A.
ELEV J	977.45
ELEV K	978.09
ELEV L	978.72
ELEV M	979.36
ELEV N	979.99
ELEV P	980.63
ELEV Q	981.27
ELEV R	981.36
ELEV S	981.36

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CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007267	

REAR ABUTMENT DETAILS

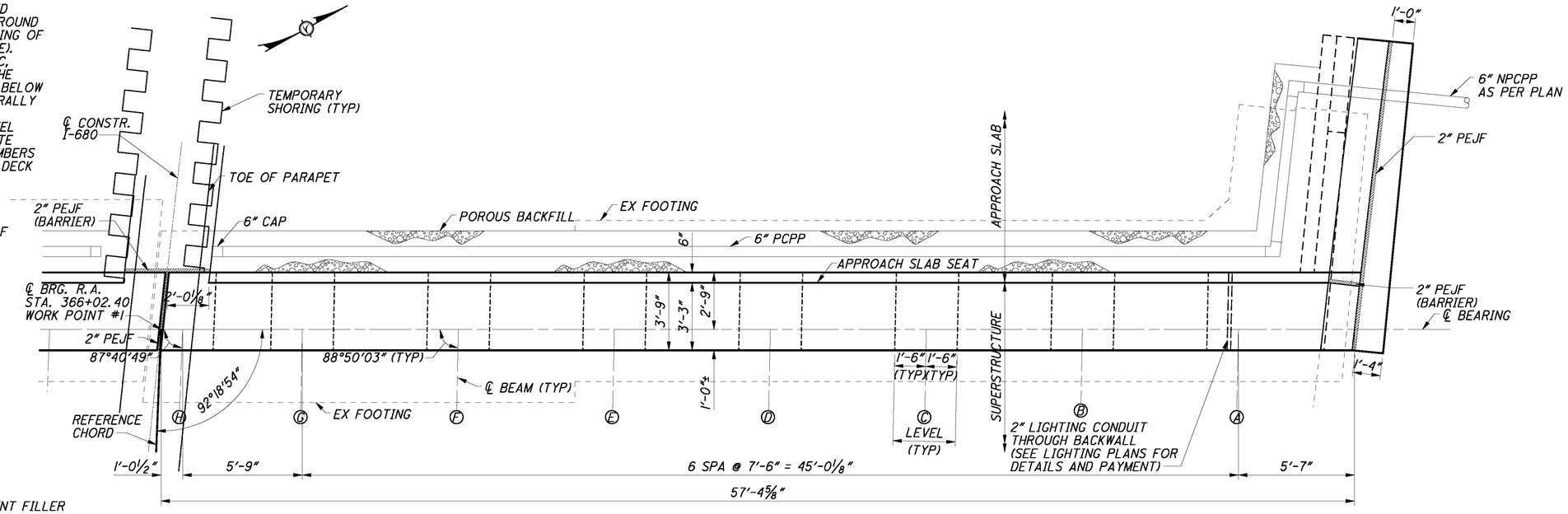
BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

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307

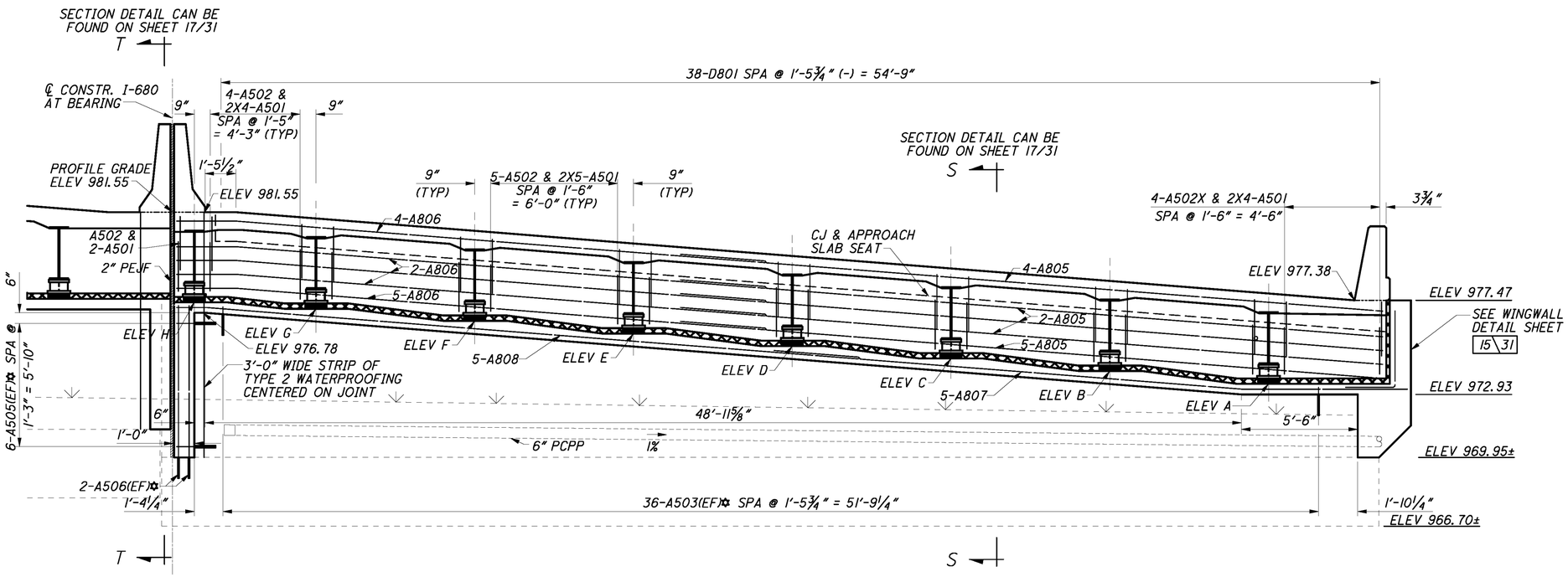
NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 8 BARS 4'-0"
2. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE ABUTMENT WALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).
3. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.
4. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTRUCTURE: PLACE THE CONCRETE ENCASING THE STRUCTURAL STEEL MEMBERS AT LEAST 48 HOURS BEFORE PLACING DECK CONCRETE.
5. BARS A501, A502, & A503 SHALL BE PLACED PARRALEL TO THE BEAMS.
6. ALL ELEVATIONS LABELED REPRESENT THE ELEVATION AT THE CENTERLINE OF BEARING UNLESS OTHERWISE NOTED.



NORTHBOUND REAR ABUTMENT PLAN VIEW

LEGEND

R.A.	- REAR ABUTMENT
F.A.	- FORWARD ABUTMENT
TYP	- TYPICAL
STA	- STATION
BRG.	- BEARING
SPA	- SPACE
CJ	- CONSTRUCTION JOINT
ELEV	- ELEVATION
PEJF	- PREFORMED EXPANSION JOINT FILLER
MIN	- MINIMUM
NPCPP	- NON-PERFORATED CORRUGATED PLASTIC PIPE
PCPP	- PERFORATED CORRUGATED PLASTIC PIPE
EF	- EACH FACE
✡	- 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT



NORTHBOUND REAR ABUTMENT ELEVATION

LOCATION	R.A.
ELEV A	973.43
ELEV B	974.03
ELEV C	974.62
ELEV D	975.21
ELEV E	975.81
ELEV F	976.40
ELEV G	976.98
ELEV H	977.28

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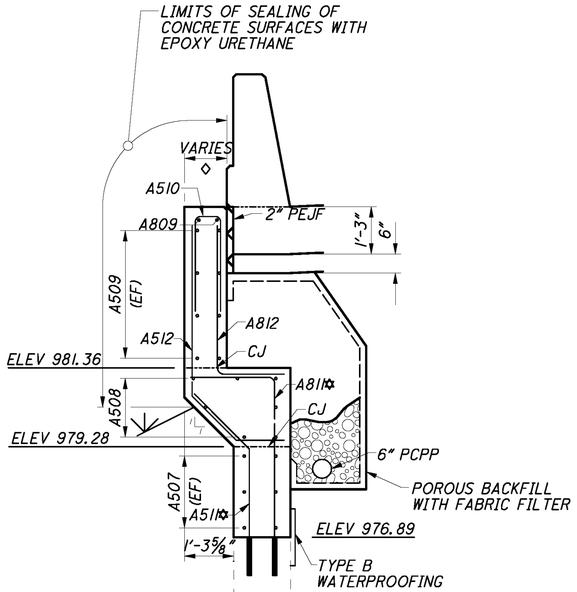
DESIGNED	DRAWN	REVIEWED	DATE
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CHECKED	REVISED	STRUCTURE FILE NUMBER
JBD		5007267

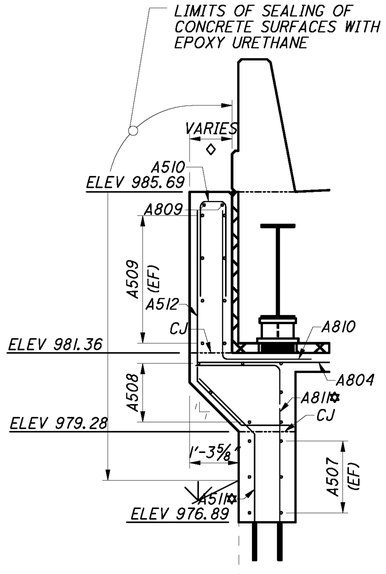
REAR ABUTMENT DETAILS

BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

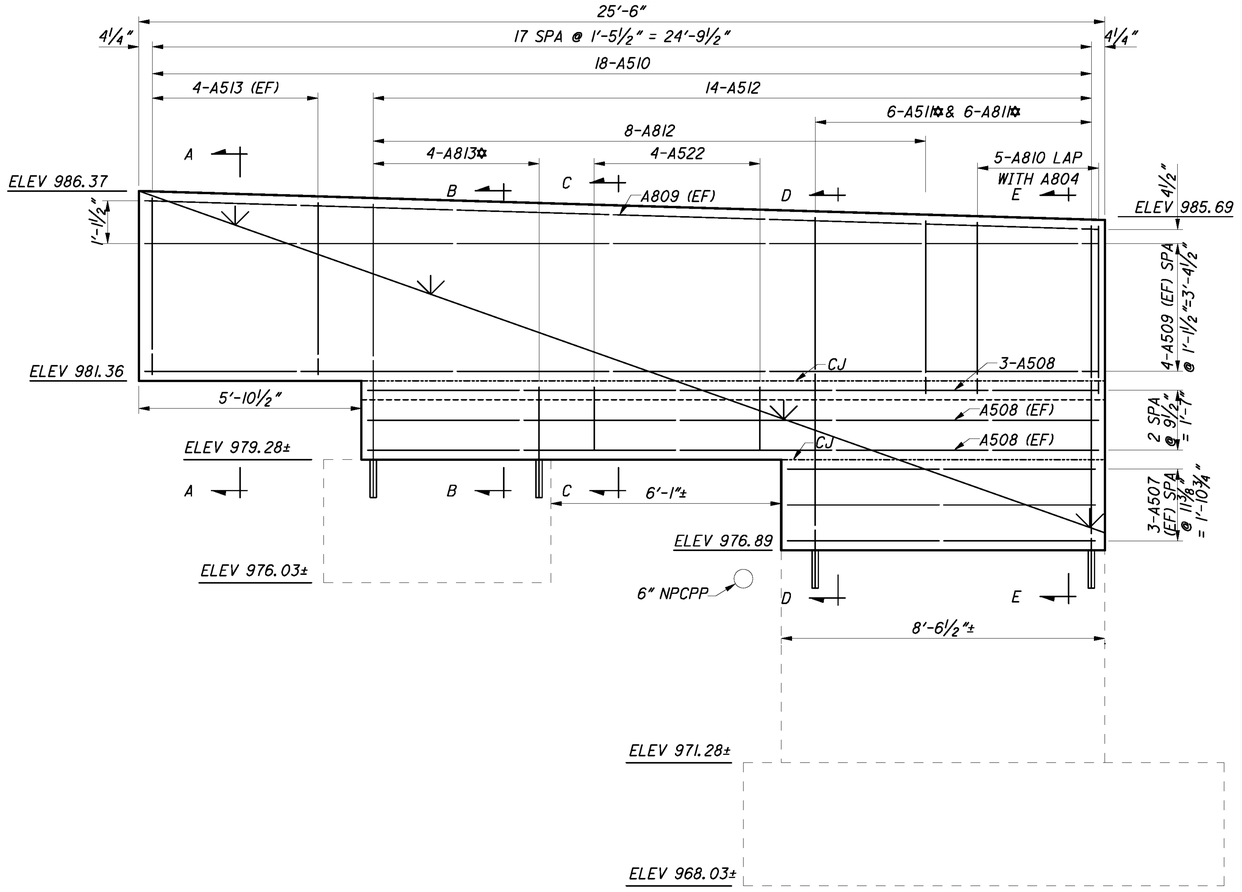
MAH-680-4.29
PID No. 25508



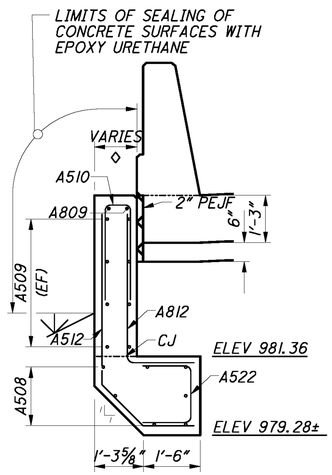
SECTION D-D



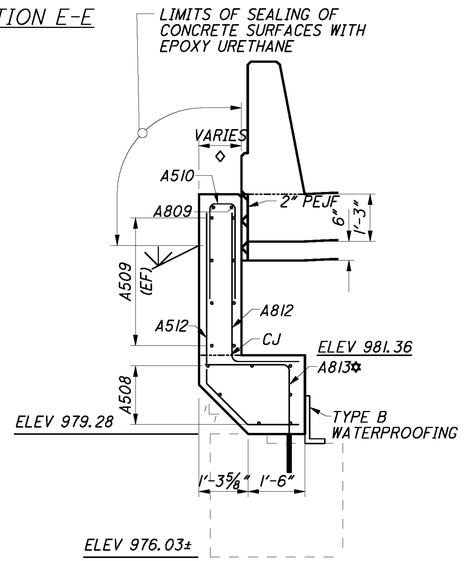
SECTION E-E



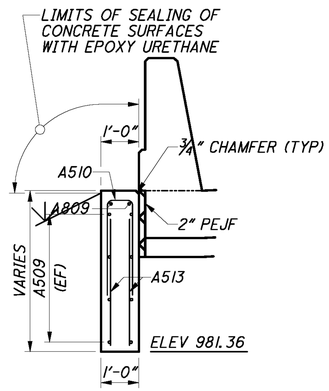
SOUTHBOUND REAR ABUTMENT WINGWALL ELEVATION



SECTION C-C



SECTION B-B



SECTION A-A

LEGEND

CJ	- CONSTRUCTION JOINT
ELEV	- ELEVATION
NPCPP	- NON PERFORATED CORRUGATED PLASTIC PIPE
SPA	- SPACED
PEJF	- PREFORMED EXPANSION JOINT FILLER
✡	- 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT
◇	- SEE SHEET 9/31 FOR WINGWALL VARIANCE

NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 8 BARS 4'-0"
2. ALL DOWEL HOLES SHOULD BE DRILLED A MINIMUM 5" FROM THE NEAREST CONCRETE EDGE.
3. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE WINGWALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).

DESIGN AGENCY
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DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | STRUCTURE FILE NUMBER 5007267
CHECKED JBD | REVISED

REAR ABUTMENT WINGWALL DETAILS

BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

11 / 31

266
307

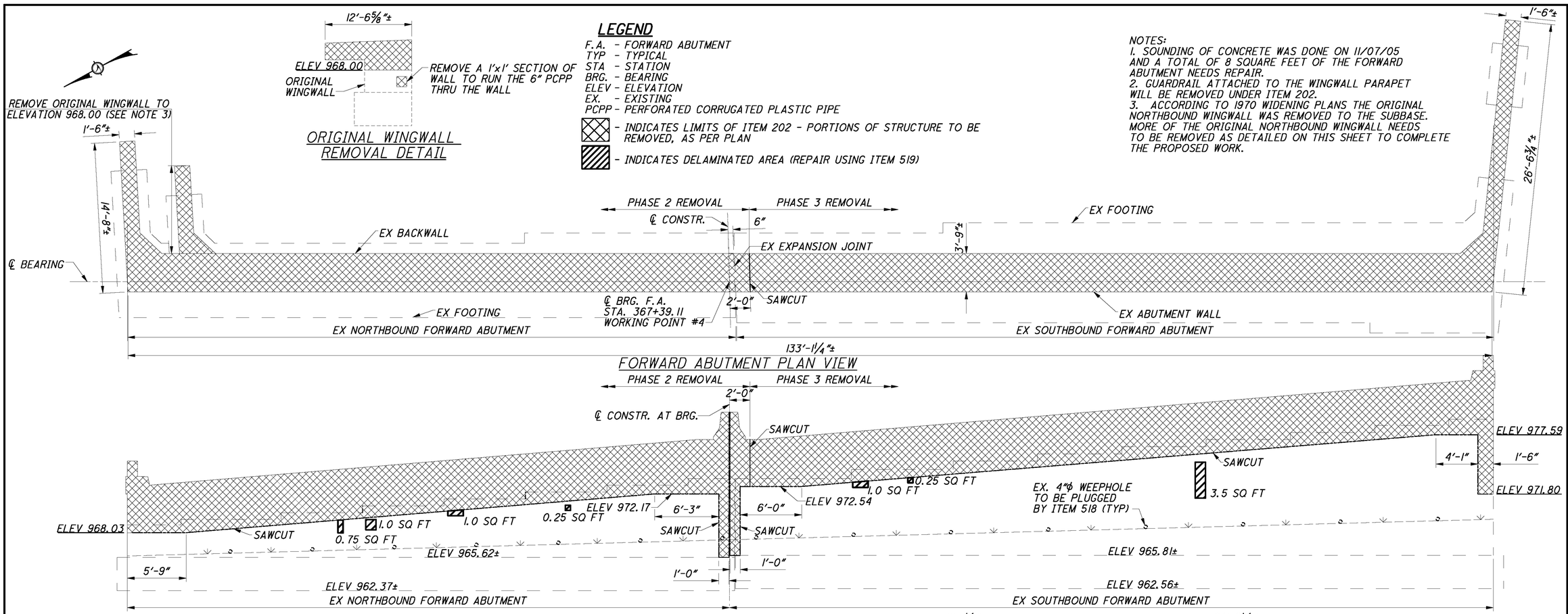
LEGEND

F.A. - FORWARD ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
ELEV - ELEVATION
EX. - EXISTING
PCPP - PERFORATED CORRUGATED PLASTIC PIPE

- INDICATES LIMITS OF ITEM 202 - PORTIONS OF STRUCTURE TO BE REMOVED, AS PER PLAN
- INDICATES DELAMINATED AREA (REPAIR USING ITEM 519)

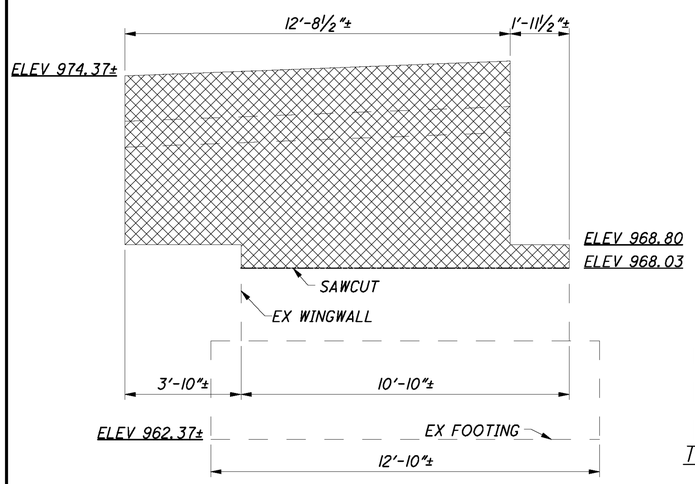
NOTES:
1. SOUNDING OF CONCRETE WAS DONE ON 11/07/05 AND A TOTAL OF 8 SQUARE FEET OF THE FORWARD ABUTMENT NEEDS REPAIR.
2. GUARDRAIL ATTACHED TO THE WINGWALL PARAPET WILL BE REMOVED UNDER ITEM 202.
3. ACCORDING TO 1970 WIDENING PLANS THE ORIGINAL NORTHBOUND WINGWALL WAS REMOVED TO THE SUBBASE. MORE OF THE ORIGINAL NORTHBOUND WINGWALL NEEDS TO BE REMOVED AS DETAILED ON THIS SHEET TO COMPLETE THE PROPOSED WORK.

ORIGINAL WINGWALL REMOVAL DETAIL

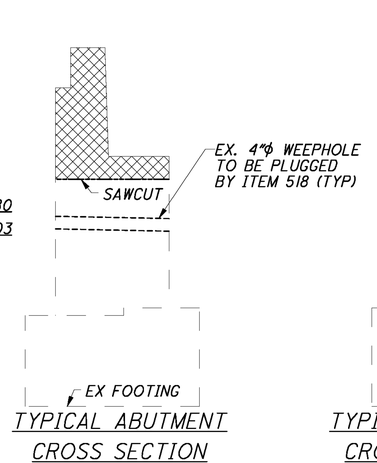


FORWARD ABUTMENT PLAN VIEW

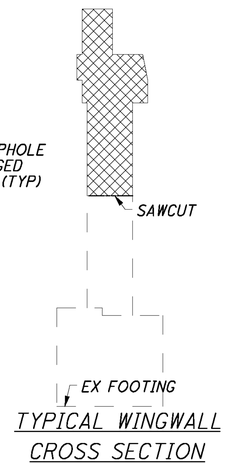
FORWARD ABUTMENT ELEVATION



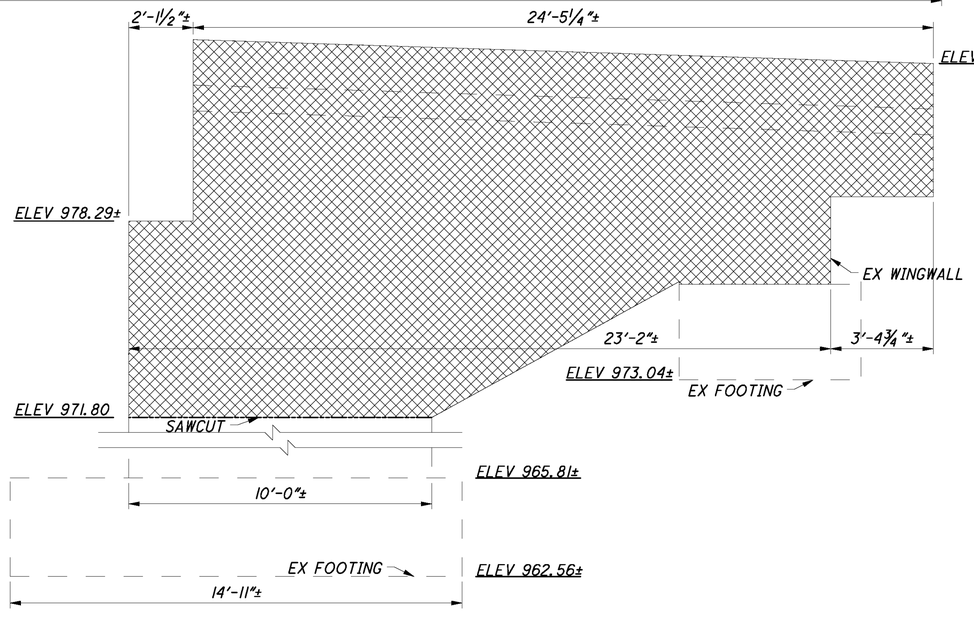
NORTHBOUND FORWARD ABUTMENT



TYPICAL ABUTMENT CROSS SECTION



TYPICAL WINGWALL CROSS SECTION



SOUTHBOUND FORWARD ABUTMENT

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007267	

FORWARD ABUTMENT REMOVAL DETAILS

BRIDGE NO. MAH-680-0693
1-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

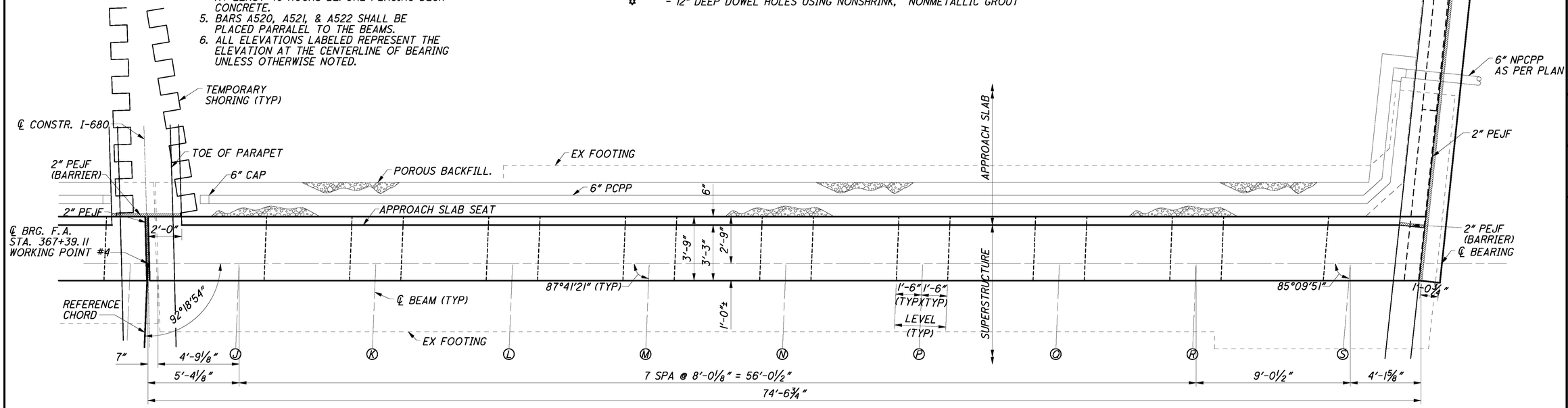
MAH-680-4.29
PID No. 25508

LOCATION	F.A.
ELEV J	973.05
ELEV K	973.73
ELEV L	974.40
ELEV M	975.08
ELEV N	975.75
ELEV P	976.42
ELEV Q	977.09
ELEV R	977.75
ELEV S	978.09

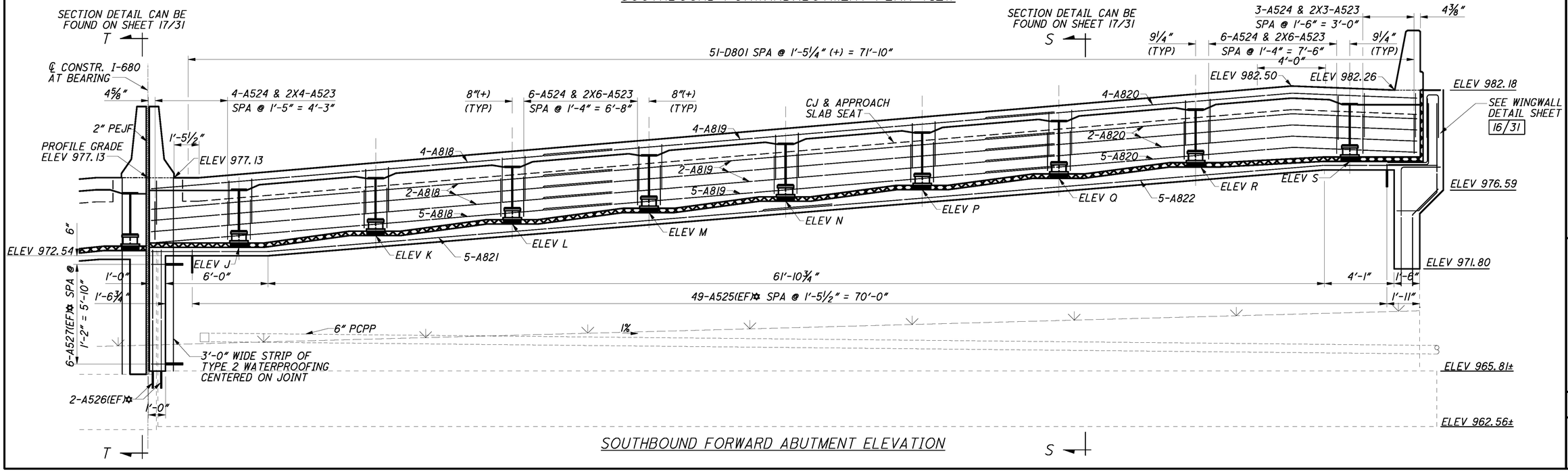
NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 8 BARS 4'-0"
2. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE ABUTMENT WALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).
3. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.
4. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTRUCTURE: PLACE THE CONCRETE ENCASING THE STRUCTURAL STEEL MEMBERS AT LEAST 48 HOURS BEFORE PLACING DECK CONCRETE.
5. BARS A520, A521, & A522 SHALL BE PLACED PARRALEL TO THE BEAMS.
6. ALL ELEVATIONS LABELED REPRESENT THE ELEVATION AT THE CENTERLINE OF BEARING UNLESS OTHERWISE NOTED.

LEGEND

R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
SPA - SPACE
CJ - CONSTRUCTION JOINT
ELEV - ELEVATION
PEJF - PREFORMED EXPANSION JOINT FILLER
MIN - MINIMUM
NPCPP - NON-PERFORATED CORRUGATED PLASTIC PIPE
PCPP - PERFORATED CORRUGATED PLASTIC PIPE
EF - EACH FACE
✡ - 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT



SOUTHBOUND FORWARDABUTMENT PLAN VIEW



SOUTHBOUND FORWARD ABUTMENT ELEVATION

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2919

DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007267

FORWARD ABUTMENT DETAILS

BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

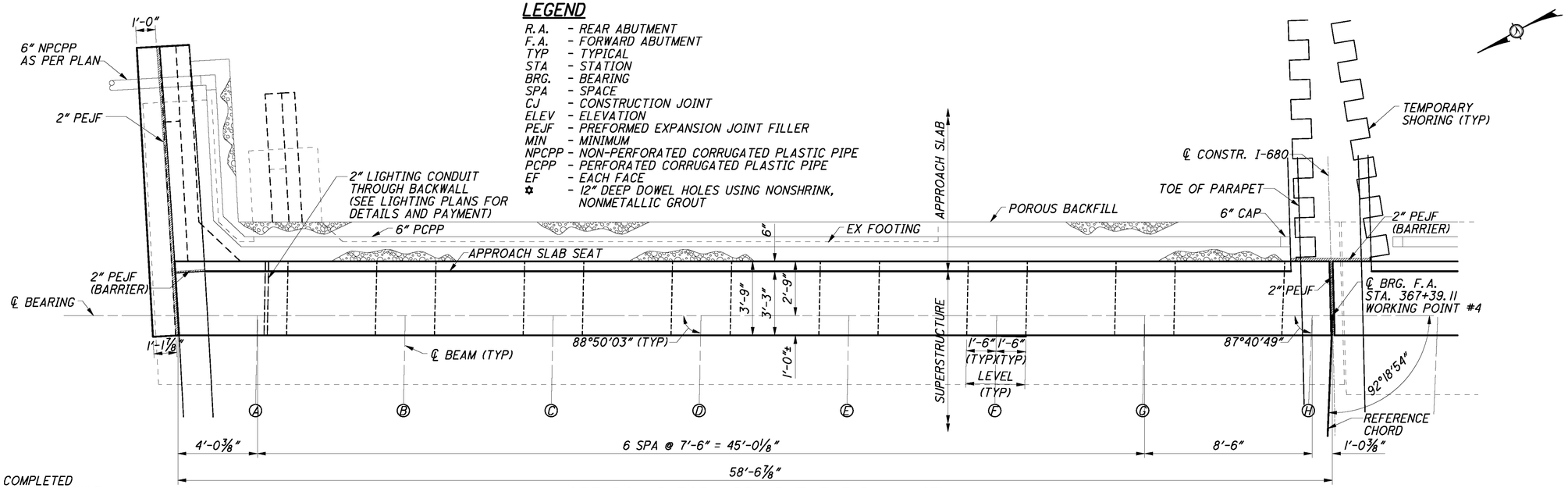
MAH-680-4.29
PID No. 25508

13 / 31

268 / 307

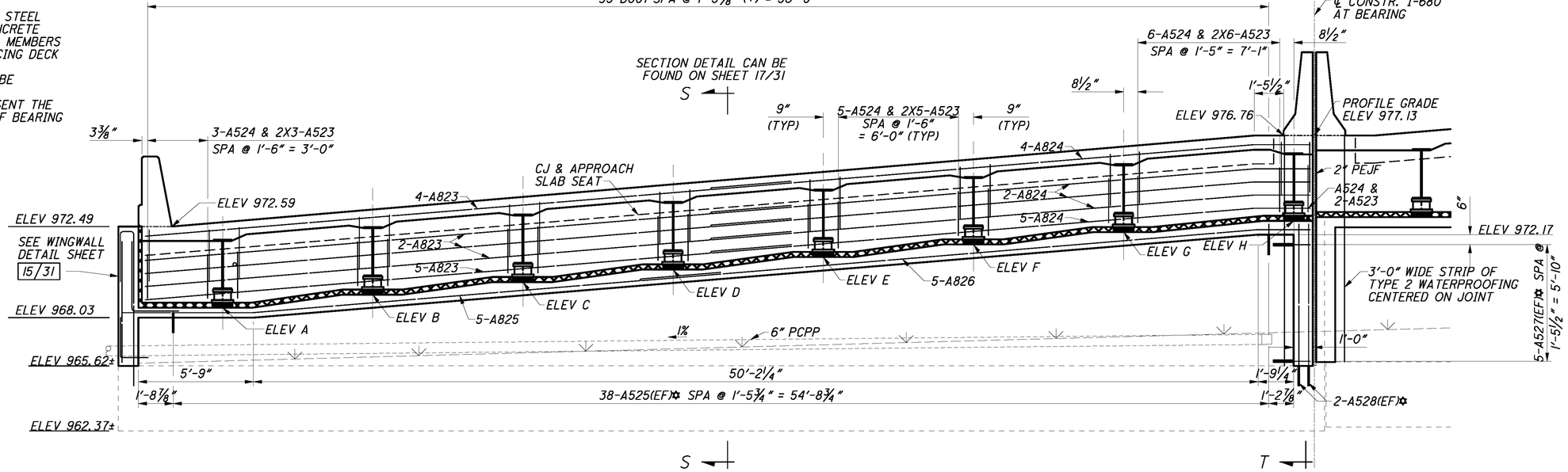
LEGEND

R.A.	- REAR ABUTMENT
F.A.	- FORWARD ABUTMENT
TYP	- TYPICAL
STA	- STATION
BRG.	- BEARING
SPA	- SPACE
CJ	- CONSTRUCTION JOINT
ELEV	- ELEVATION
PEJF	- PREFORMED EXPANSION JOINT FILLER
MIN	- MINIMUM
NPCPP	- NON-PERFORATED CORRUGATED PLASTIC PIPE
PCPP	- PERFORATED CORRUGATED PLASTIC PIPE
EF	- EACH FACE
✡	- 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT



NORTHBOUND FORWARD ABUTMENT PLAN VIEW

NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 8 BARS 4'-0"
2. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE ABUTMENT WALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).
3. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.
4. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTRUCTURE: PLACE THE CONCRETE ENCASING THE STRUCTURAL STEEL MEMBERS AT LEAST 48 HOURS BEFORE PLACING DECK CONCRETE.
5. BARS A520, A521, & A522 SHALL BE PLACED PARRALEL TO THE BEAMS.
6. ALL ELEVATIONS LABELED REPRESENT THE ELEVATION AT THE CENTERLINE OF BEARING UNLESS OTHERWISE NOTED.



NORTHBOUND FORWARD ABUTMENT ELEVATION

LOCATION	F.A.
ELEV A	968.53
ELEV B	969.17
ELEV C	969.80
ELEV D	970.43
ELEV E	971.06
ELEV F	971.69
ELEV G	972.31
ELEV H	972.86

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007267

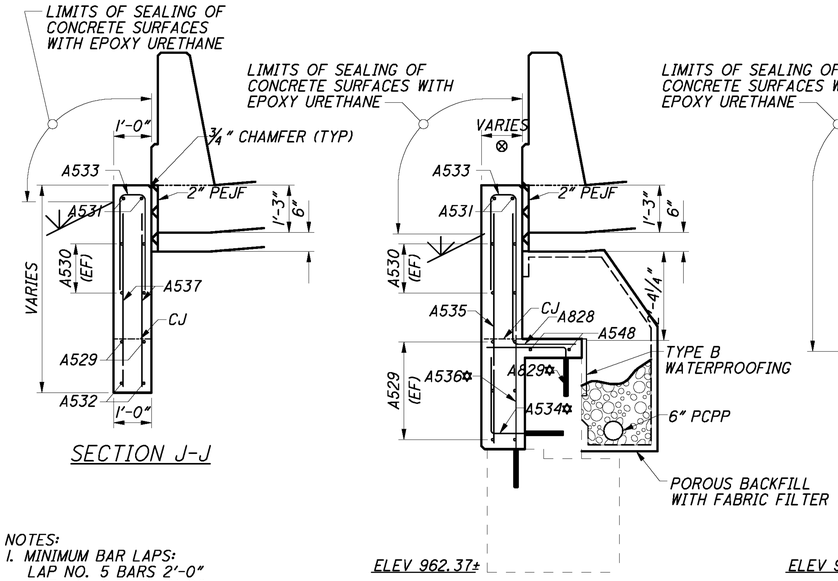
FORWARD ABUTMENT DETAILS

BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

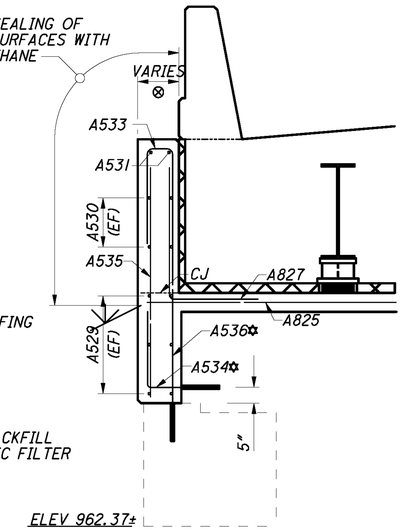
14 / 31

269
307

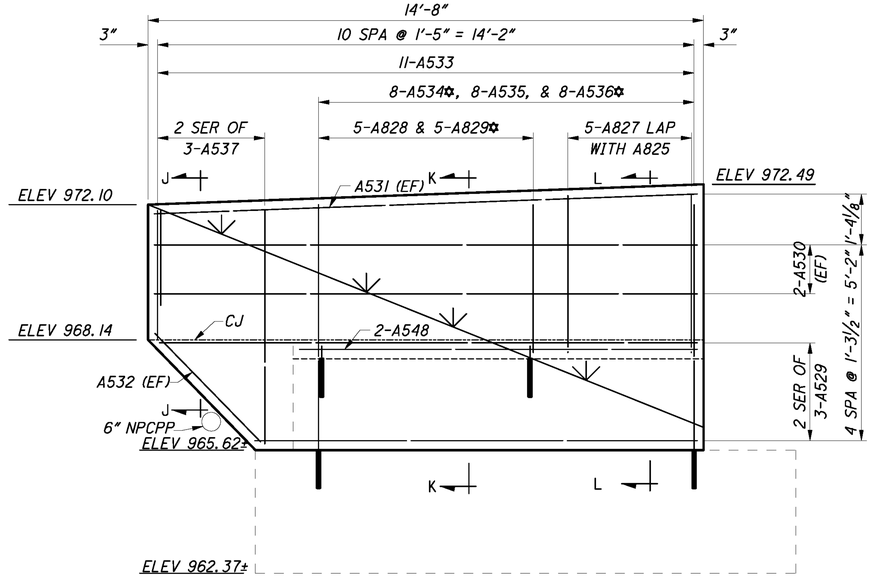


SECTION J-J

SECTION K-K



SECTION L-L

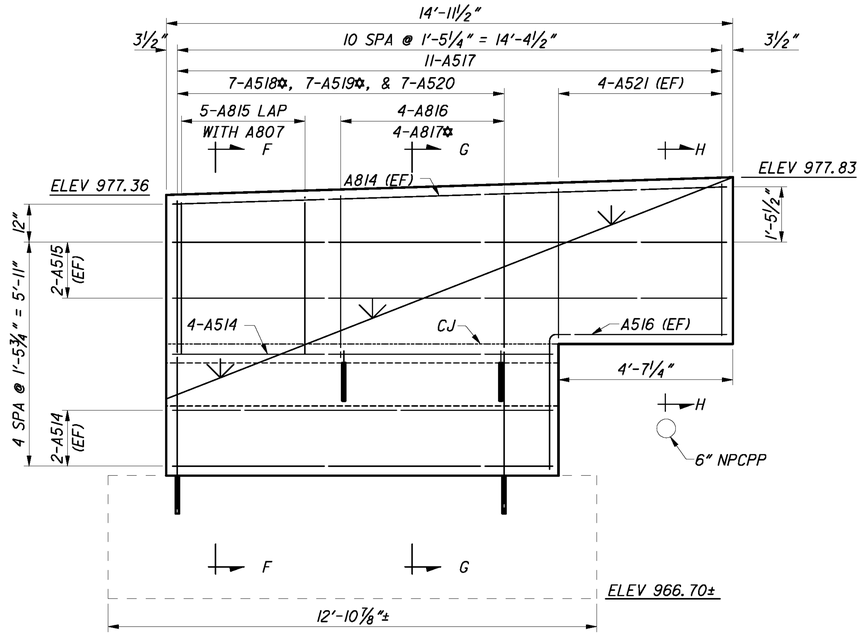


NORTHBOUND FORWARD ABUTMENT WINGWALL ELEVATION

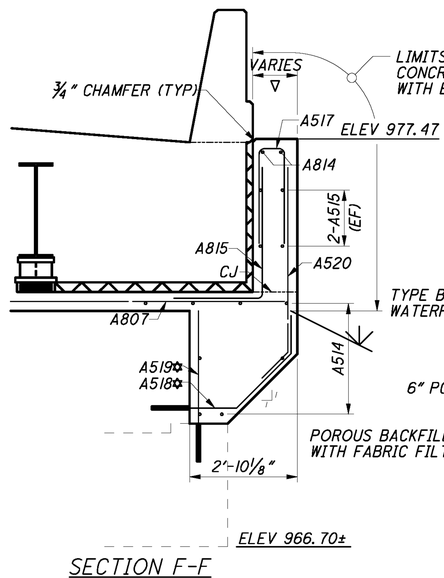
NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 8 BARS 4'-0"
2. ALL DOWEL HOLES SHOULD BE DRILLED A MINIMUM 5" FROM THE NEAREST CONCRETE EDGE.
3. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE WINGWALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).

LEGEND

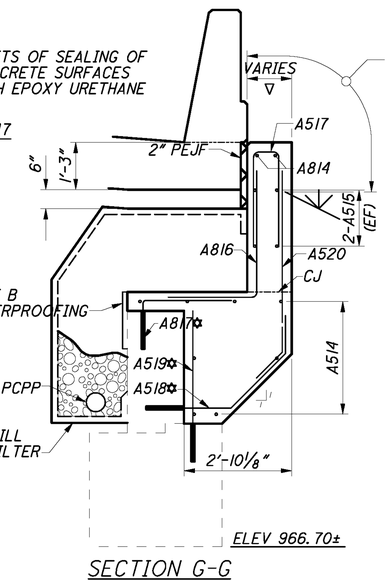
CJ - CONSTRUCTION JOINT
ELEV - ELEVATION
NPCPP - NON PERFORATED CORRUGATED PLASTIC PIPE
SPA - SPACED
PEJF - PREFORMED EXPANSION JOINT FILLER
✡ - 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT
⊗ - SEE SHEET 14/31 FOR WINGWALL VARIANCE
▽ - SEE SHEET 10/31 FOR WINGWALL VARIANCE



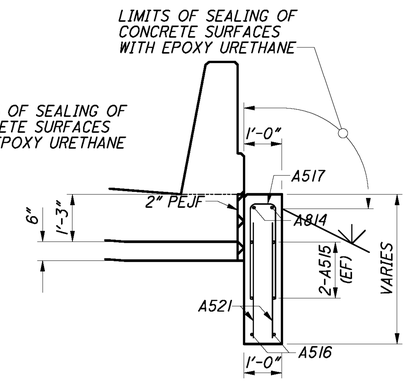
NORTHBOUND REAR ABUTMENT WINGWALL ELEVATION



SECTION F-F



SECTION G-G



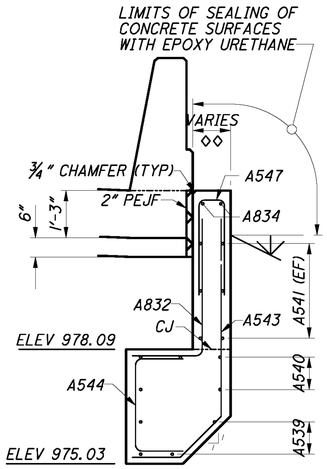
SECTION H-H

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
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TOLEDO, OHIO 43617
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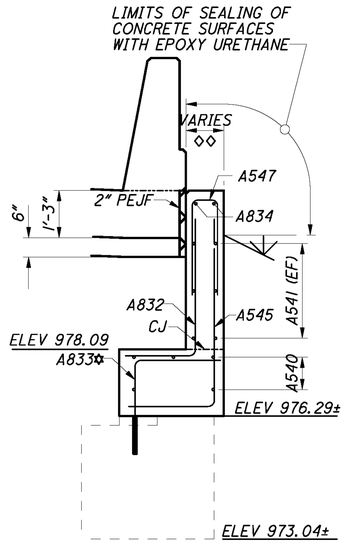
DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | STRUCTURE FILE NUMBER 5007267 | CHECKED JBD | REVISED

ABUTMENT WINGWALL DETAILS
BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

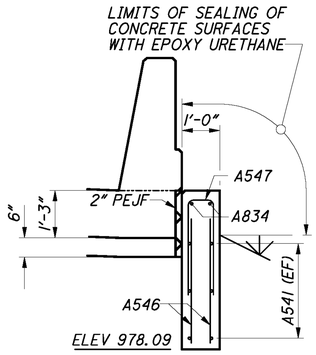
MAH-680-4.29
PID No. 25508



SECTION P-P



SECTION Q-Q

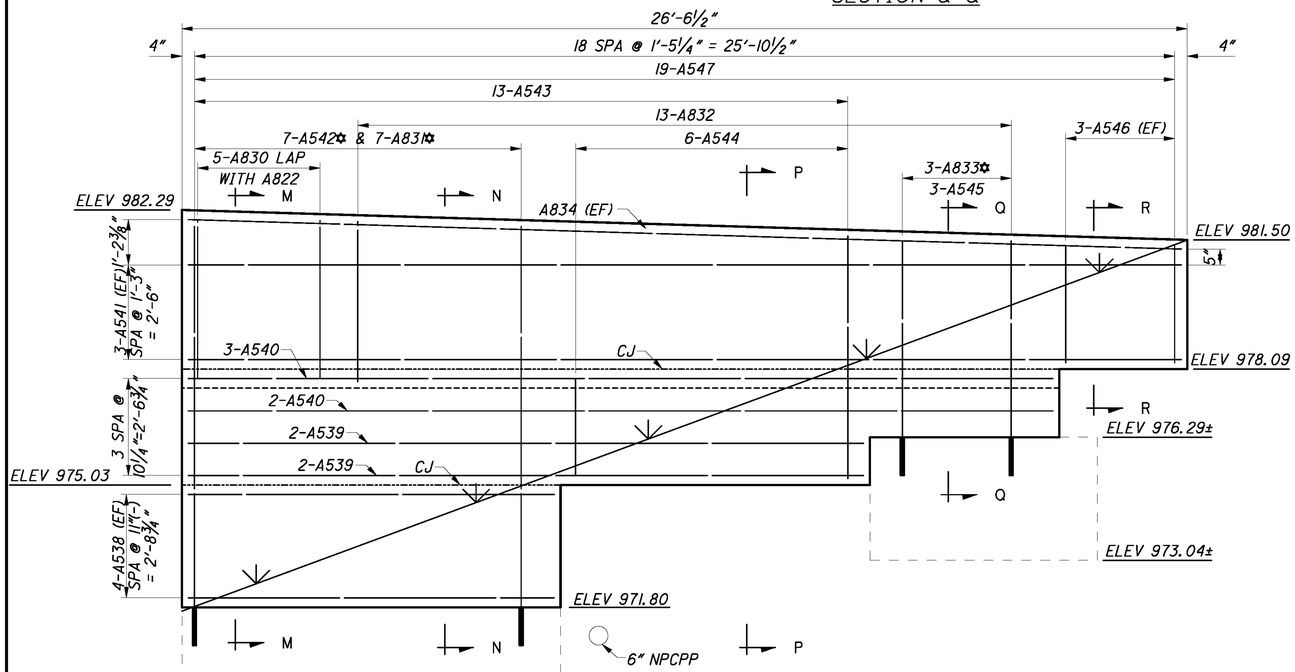


SECTION R-R

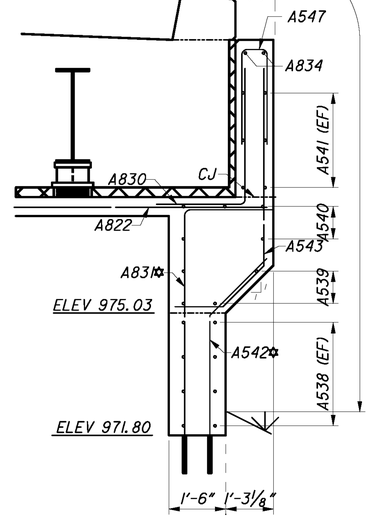
LEGEND

CJ - CONSTRUCTION JOINT
ELEV - ELEVATION
NPCPP - NON PERFORATED CORRUGATED PLASTIC PIPE
SPA - SPACED
PEJF - PREFORMED EXPANSION JOINT FILLER
✡ - 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT
◇◇ - SEE SHEET 13/31 FOR WINGWALL VARIANCE

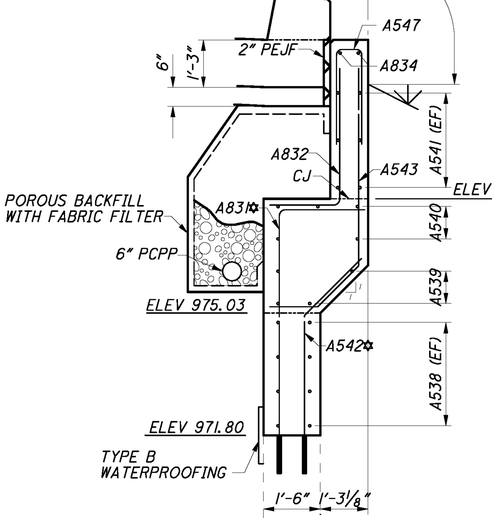
NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 8 BARS 4'-0"
2. ALL DOWEL HOLES SHOULD BE DRILLED A MINIMUM 5" FROM THE NEAREST CONCRETE EDGE.
3. AFTER ALL WORK HAS BEEN COMPLETED THE ENTIRE WINGWALL ABOVE GROUND SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).



SOUTHBOUND FORWARD ABUTMENT WINGWALL ELEVATION



SECTION M-M



SECTION N-N

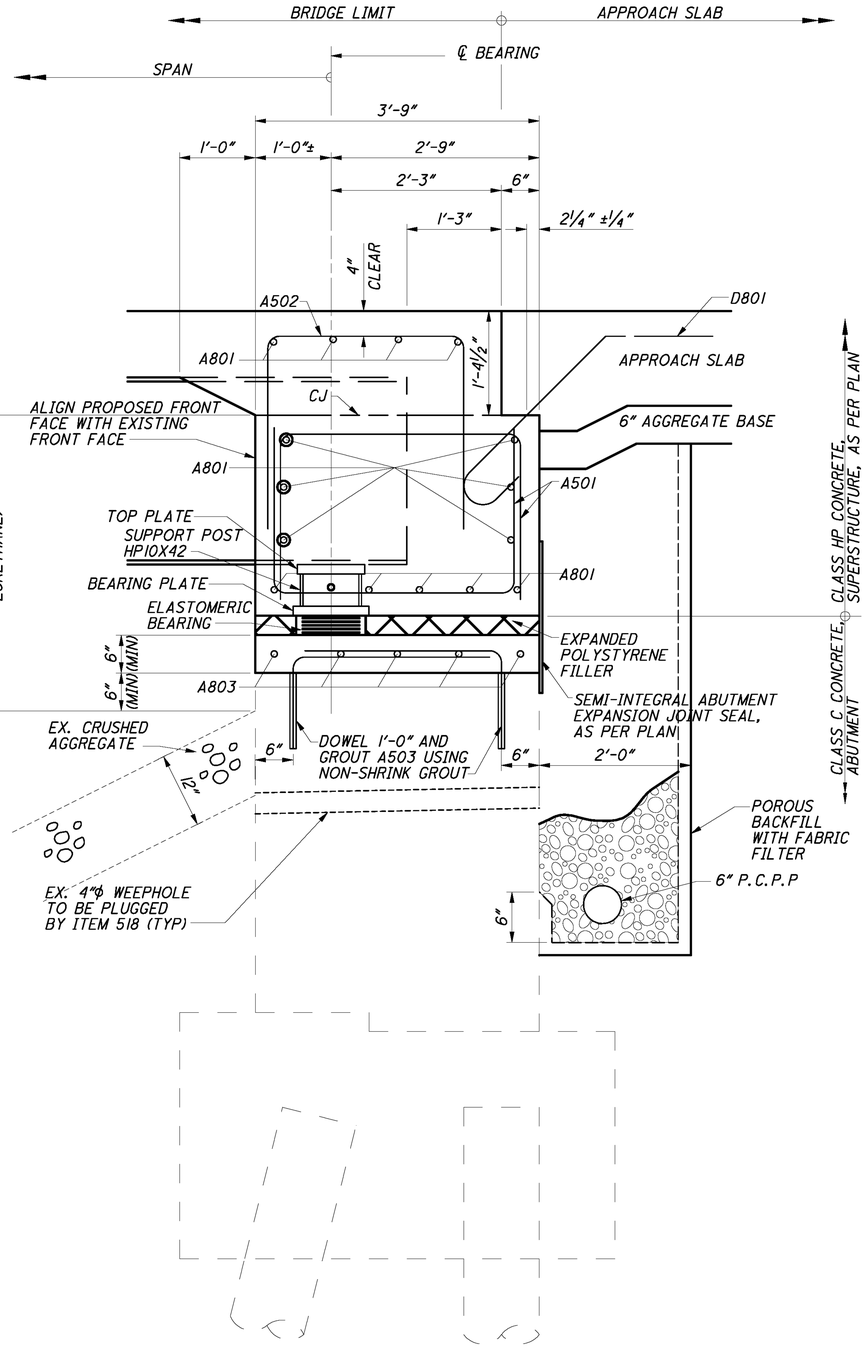
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007267	

FORWARD ABUTMENT WINGWALL DETAILS

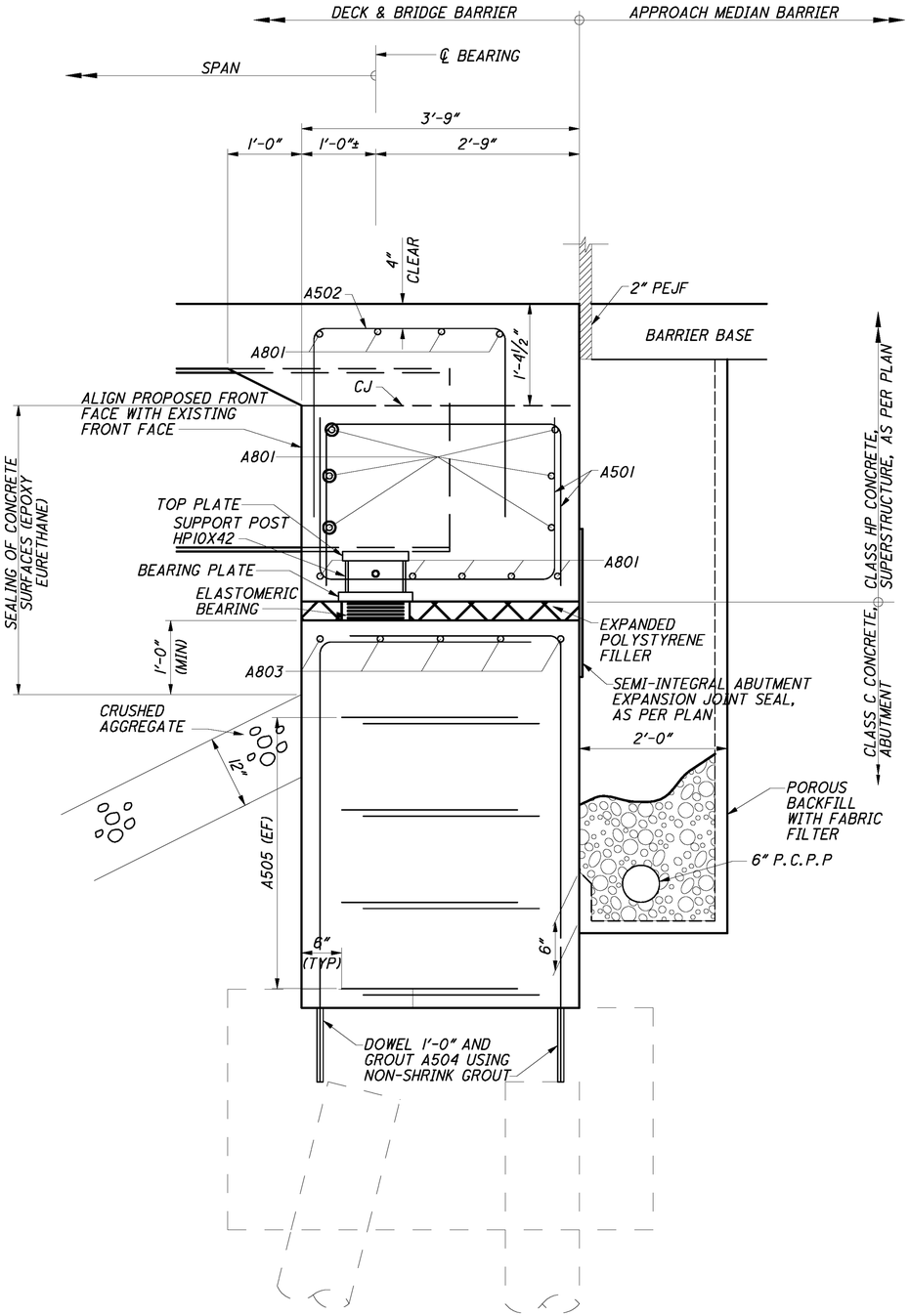
BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508



TYPICAL ABUTMENT CROSS SECTION S-S

(BAR NUMBERS SHOWN ARE FOR SOUTHBOUND REAR ABUTMENT)



TYPICAL ABUTMENT CROSS SECTION T-T AT ABUTMENT EXPANSION JOINT

(BAR NUMBERS SHOWN ARE FOR SOUTHBOUND REAR ABUTMENT)

NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 8 BARS 4'-0"
2. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTRUCTURE: PLACE THE CONCRETE ENCASING THE STRUCTURAL STEEL MEMBERS AT LEAST 48 HOURS BEFORE PLACING DECK CONCRETE.
3. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.

LEGEND

CJ	- CONSTRUCTION JOINT
PEJF	- PREFORMED EXPANSION JOINT FILLER
MIN	- MINIMUM
PCPP	- PERFORATED CORRUGATED PLASTIC PIPE
℄	- PLATE

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007267	

ABUTMENT SECTIONS

BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29

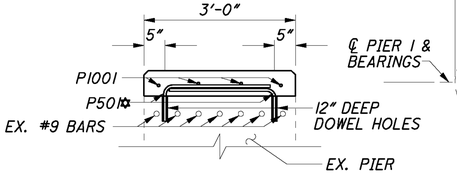
PID No. 25508

17 / 31

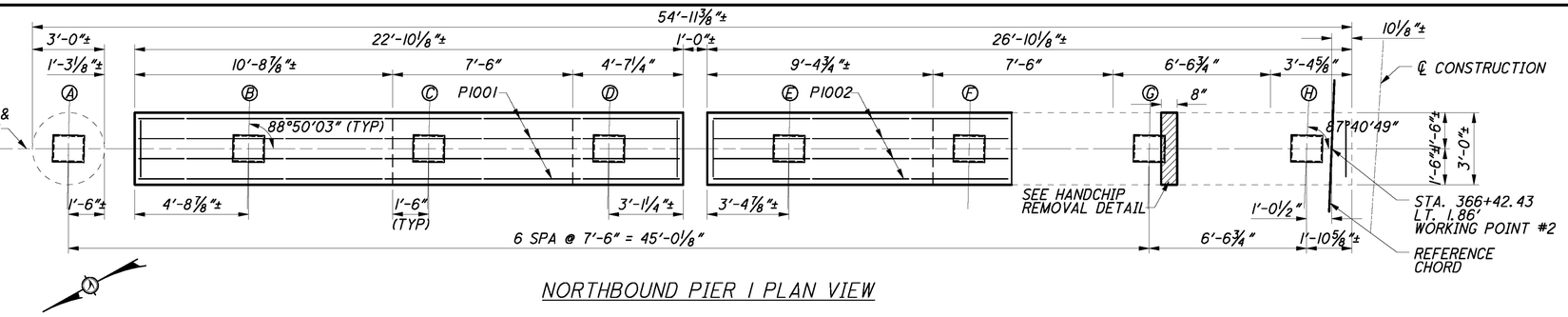
272 / 307

LOCATION	PIER I
ELEV A	972.20±
ELEV B	972.98
ELEV C	973.58
ELEV D	974.19
ELEV E	974.79
ELEV F	975.40
ELEV G	975.74±
ELEV H	976.38±

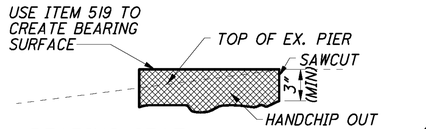
(SEE NOTE 4)



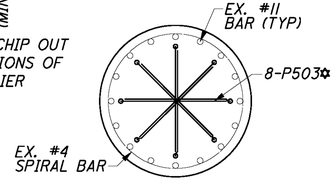
SECTION THRU CAP



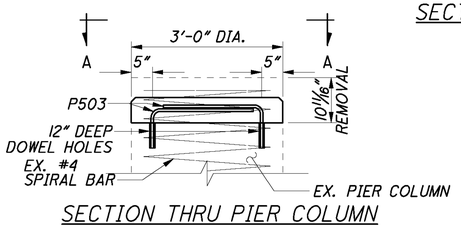
NORTHBOUND PIER I PLAN VIEW



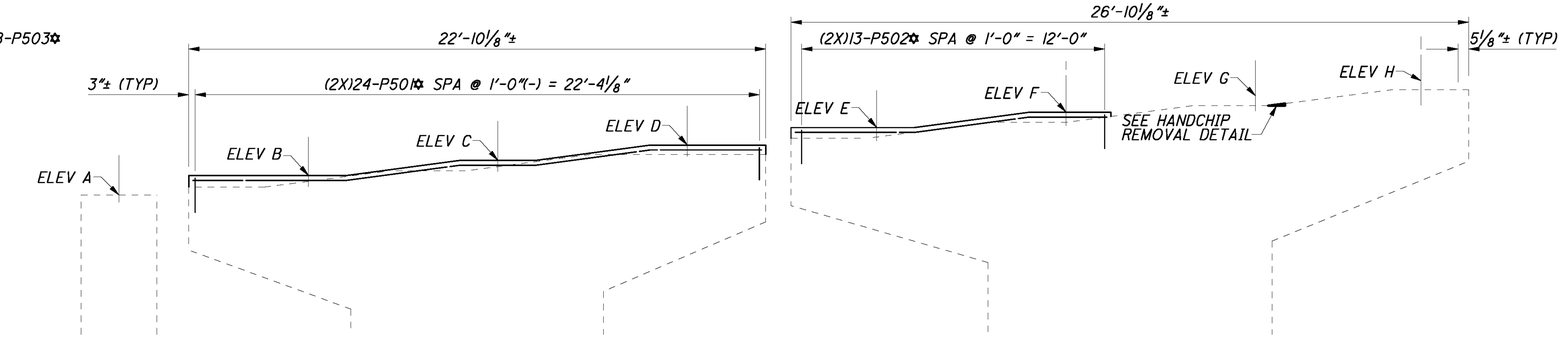
BEARING SEAT BUILDUP DETAIL



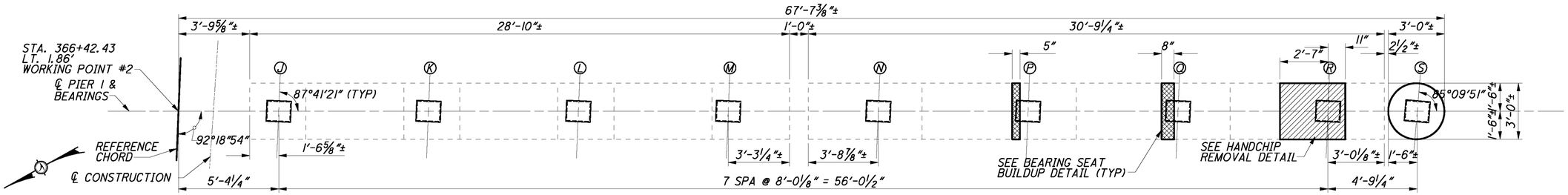
SECTION A-A



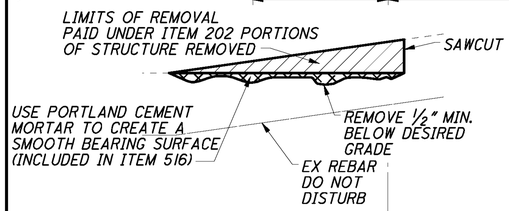
SECTION THRU PIER COLUMN



NORTHBOUND PIER I ELEVATION



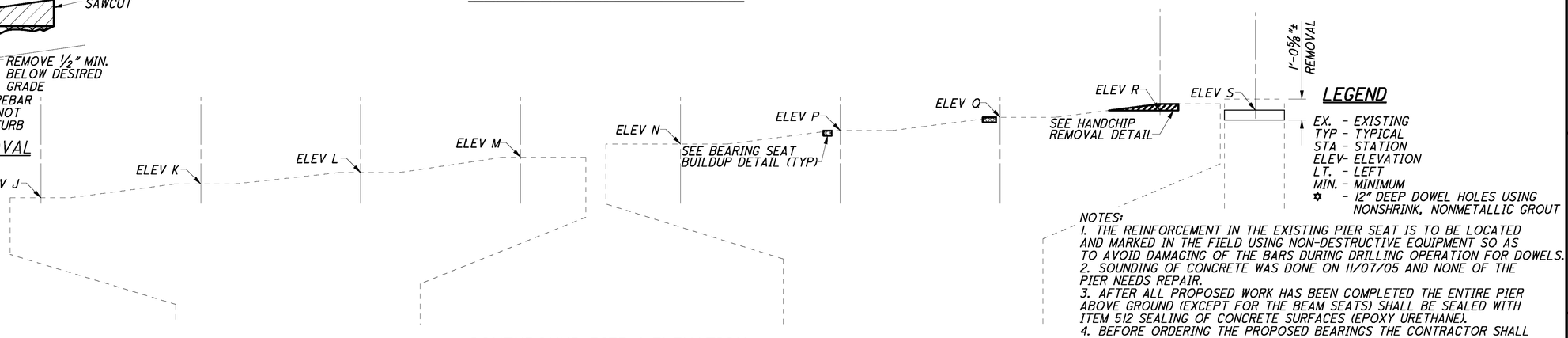
SOUTHBOUND PIER I PLAN VIEW



HANDCHIP REMOVAL DETAIL

LOCATION	PIER I
ELEV J	976.37±
ELEV K	977.06±
ELEV L	977.63±
ELEV M	978.40±
ELEV N	979.06±
ELEV P	979.73±
ELEV Q	980.40±
ELEV R	980.74
ELEV S	980.76

(SEE NOTE 4)



SOUTHBOUND PIER I ELEVATION

LEGEND

EX. - EXISTING
TYP - TYPICAL
STA - STATION
ELEV- ELEVATION
LT. - LEFT
MIN. - MINIMUM
✡ - 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT

NOTES:
1. THE REINFORCEMENT IN THE EXISTING PIER SEAT IS TO BE LOCATED AND MARKED IN THE FIELD USING NON-DESTRUCTIVE EQUIPMENT SO AS TO AVOID DAMAGING OF THE BARS DURING DRILLING OPERATION FOR DOWELS.
2. SOUNDING OF CONCRETE WAS DONE ON 11/07/05 AND NONE OF THE PIER NEEDS REPAIR.
3. AFTER ALL PROPOSED WORK HAS BEEN COMPLETED THE ENTIRE PIER ABOVE GROUND (EXCEPT FOR THE BEAM SEATS) SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).
4. BEFORE ORDERING THE PROPOSED BEARINGS THE CONTRACTOR SHALL FIELD VERIFY EXISTING BEAM SEAT ELEVATIONS. IF VARIATIONS GREATER THAN 0.02 FEET ARE FOUND BETWEEN MEASURED ELEVATIONS AND THE ELEVATIONS SHOWN ON THE PLANS, APPROPRIATE ADJUSTMENTS SHALL BE MADE TO THE THICKNESS OF THE STEEL LOAD PLATE TO ACCOUNT FOR THE DIFFERENCE.

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
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DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007267

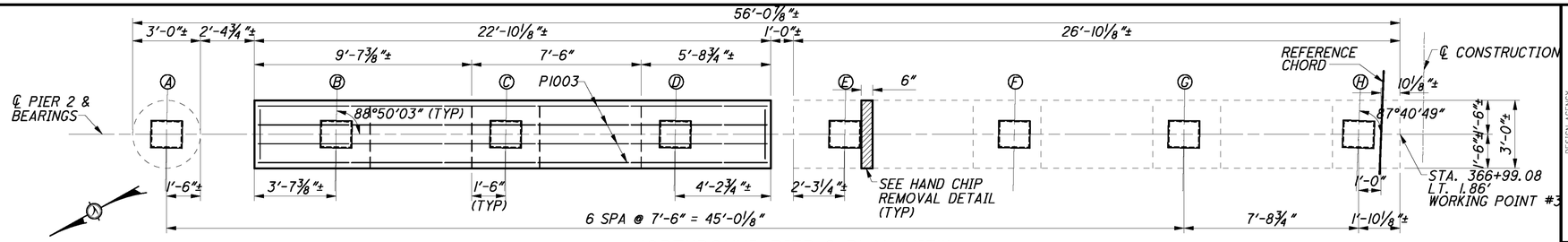
PIER DETAILS

BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

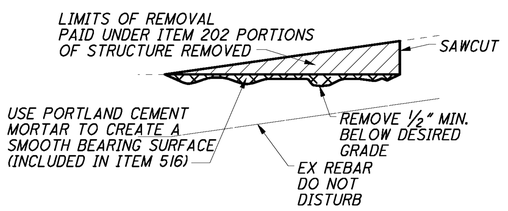
MAH-680-4.29
PID No. 25508

LOCATION	PIER 2
ELEV A	970.25±
ELEV B	970.96
ELEV C	971.67
ELEV D	972.19
ELEV E	972.66±
ELEV F	973.32±
ELEV G	973.97±
ELEV H	974.63±

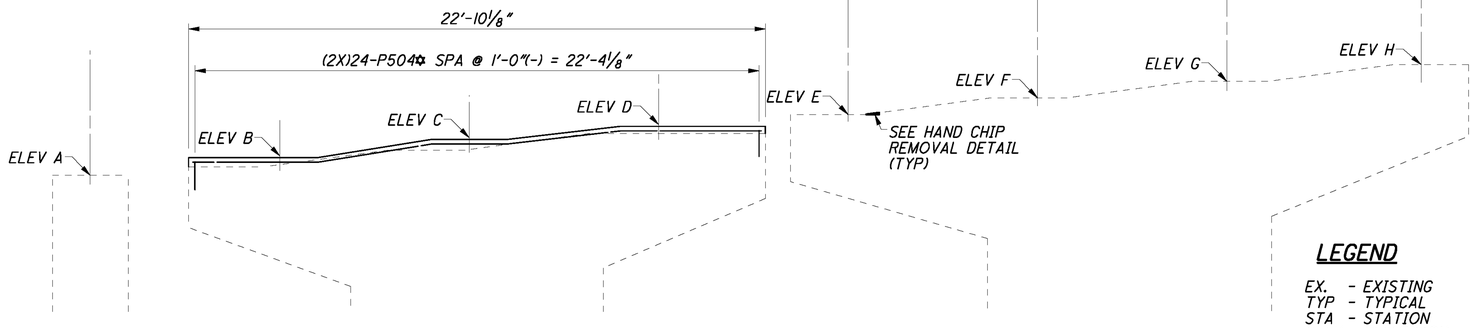
(SEE NOTE 4)



NORTHBOUND PIER 2 PLAN VIEW



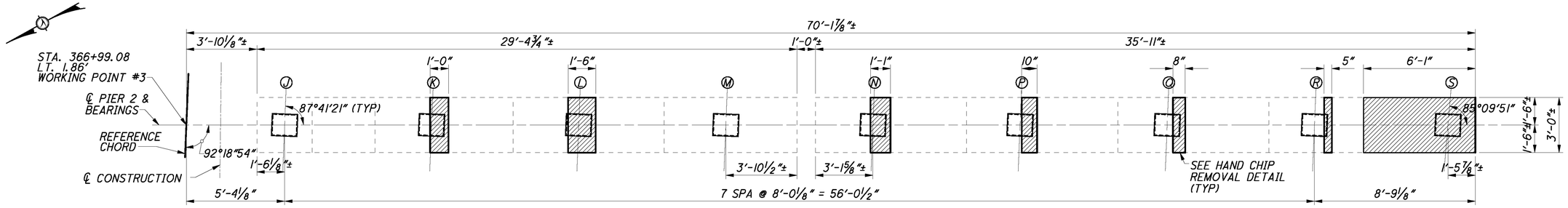
HANDCHIP REMOVAL DETAIL



NORTHBOUND PIER 2 ELEVATION

LEGEND

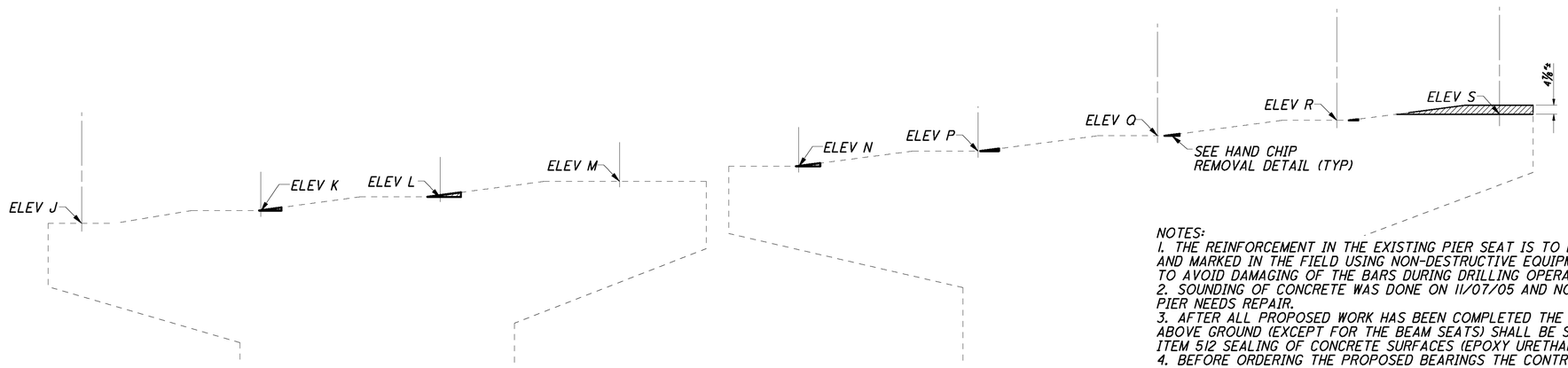
EX. - EXISTING
TYP - TYPICAL
STA - STATION
ELEV - ELEVATION
LT. - LEFT
℄ - PLATE
✡ - 12" DEEP DOWEL HOLES USING NONSHRINK, NONMETALLIC GROUT



SOUTHBOUND PIER 2 PLAN VIEW

LOCATION	PIER 2
ELEV J	974.63±
ELEV K	975.20±
ELEV L	975.81±
ELEV M	976.50±
ELEV N	977.18±
ELEV P	977.86±
ELEV Q	978.54±
ELEV R	979.23±
ELEV S	979.52

(SEE NOTE 4)



SOUTHBOUND PIER 2 ELEVATION

NOTES:
1. THE REINFORCEMENT IN THE EXISTING PIER SEAT IS TO BE LOCATED AND MARKED IN THE FIELD USING NON-DESTRUCTIVE EQUIPMENT SO AS TO AVOID DAMAGING OF THE BARS DURING DRILLING OPERATION FOR DOWELS.
2. SOUNDING OF CONCRETE WAS DONE ON 11/07/05 AND NONE OF THE PIER NEEDS REPAIR.
3. AFTER ALL PROPOSED WORK HAS BEEN COMPLETED THE ENTIRE PIER ABOVE GROUND (EXCEPT FOR THE BEAM SEATS) SHALL BE SEALED WITH ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY URETHANE).
4. BEFORE ORDERING THE PROPOSED BEARINGS THE CONTRACTOR SHALL FIELD VERIFY EXISTING BEAM SEAT ELEVATIONS. IF VARIATIONS GREATER THAN 0.02 FEET ARE FOUND BETWEEN MEASURED ELEVATIONS AND THE ELEVATIONS SHOWN ON THE PLANS, APPROPRIATE ADJUSTMENTS SHALL BE MADE TO THE THICKNESS OF THE STEEL LOAD PLATE TO ACCOUNT FOR THE DIFFERENCE.

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DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007267	

PIER DETAILS

BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

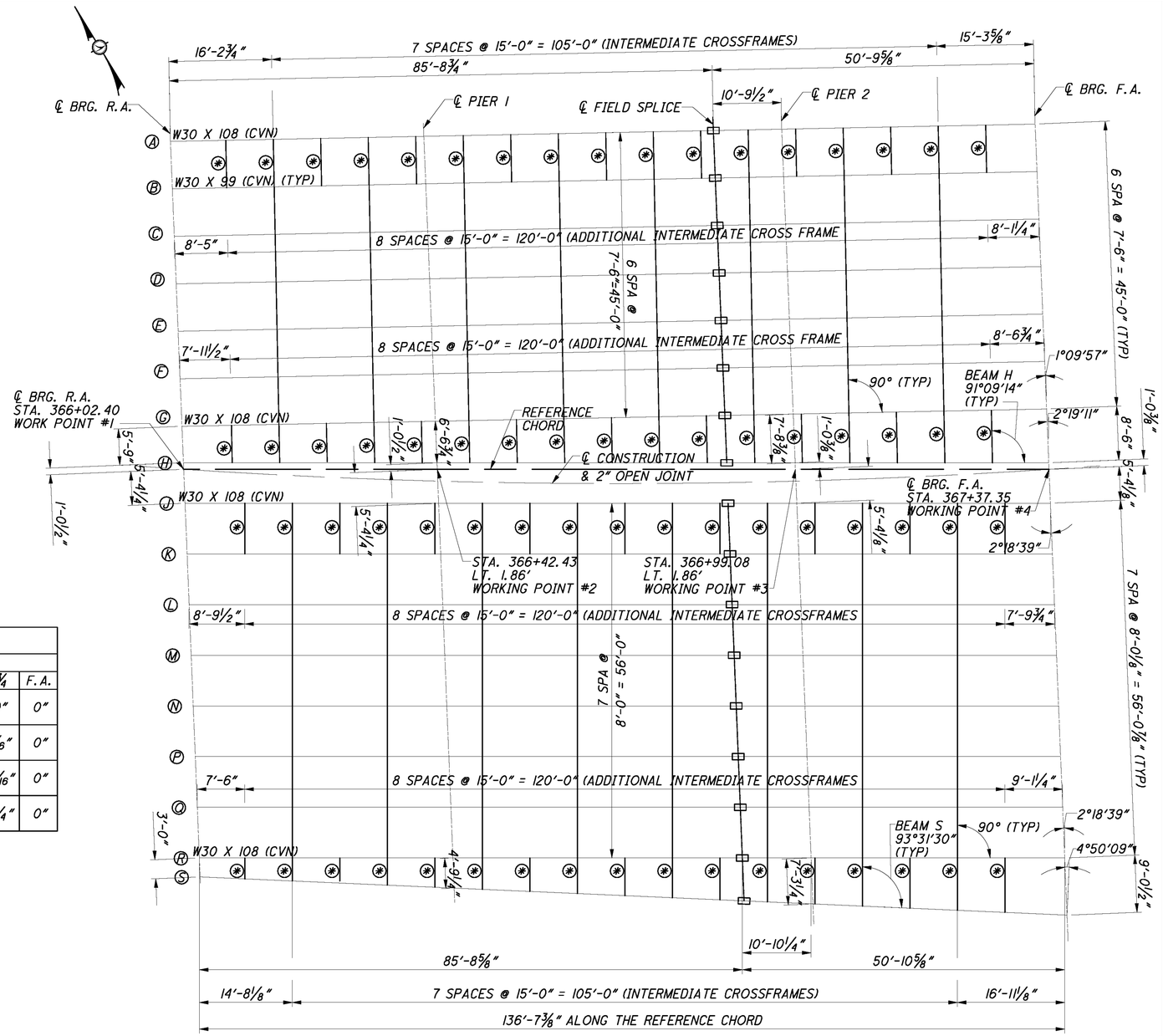
NOTES:
1. CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
2. INTERMEDIATE CROSS-FRAME ANGLE SIZE SHALL BE AS GIVEN IN SCD GSD-1-96 UNLESS MARKED WITH A ⊛ IN THE FRAMING PLAN. IF MARKED WITH A ⊛ ANGLE SIZE SHALL BE L4x3x½.

BEAM LENGTH TABLE

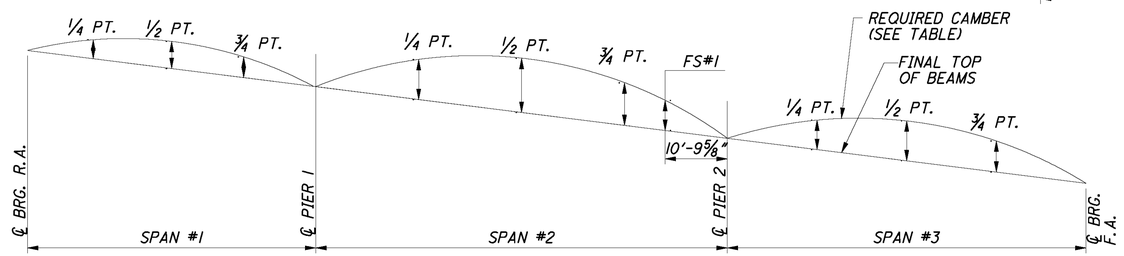
BEAM	OVERHANG	SPAN #1	SPAN #2	SPAN #3	OVERHANG	TOTAL
BEAM A, B, C, D, E, F, G	1'-0"	40'-0 1/8"	56'-6 1/8"	40'-0 1/8"	1'-0"	138'-6 3/8"
BEAM H	1'-0"	40'-0 3/8"	56'-6 5/8"	40'-0 3/8"	1'-0"	138'-7 3/8"
BEAM J, K, L, M, N, P, Q, R	1'-0"	40'-0 3/8"	56'-6 5/8"	40'-0 3/8"	1'-0"	138'-7 3/8"
BEAM S	1'-0"	40'-1 3/4"	56'-8 3/8"	40'-1 3/4"	1'-0"	138'-11 7/8"

STRUCTURAL STEEL DEFLECTION & CAMBER TABLE

	SPAN 1				SPAN 2					SPAN 3				
LOCATION	R.A.	1/4	1/2	3/4	PIER 1	1/4	1/2	3/4	FS	PIER 2	1/4	1/2	3/4	F.A.
DEFLECTION DUE TO WEIGHT OF STEEL	0"	0"	0"	0"	0"	1/16"	1/16"	1/16"	0"	0"	0"	0"	0"	0"
DEFLECTION DUE TO REMAINING DEADLOAD	0"	3/16"	3/16"	1/16"	0"	3/8"	9/16"	3/8"	1/4"	0"	1/16"	3/16"	3/16"	0"
ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE	0"	-1/4	-1/4	-1/4	0"	-1"	-1"	-1 1/8"	-1 1/8"	0"	-1 1/16"	-3/4"	-7/16"	0"
REQUIRED SHOP CAMBER	0"	-1/16"	-1/16"	-3/16"	0"	-9/16"	-3/8"	-1 1/16"	-1/8"	0"	-1"	-9/16"	-1/4"	0"



FRAMING PLAN



CAMBER DIAGRAM

LEGEND

R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
LT. - LEFT
CVN - CHARPY V-NOTCH
C/C - CENTER TO CENTER
PT. - POINT
FS - FIELD SPLICE
⊛ - SEE NOTE 2

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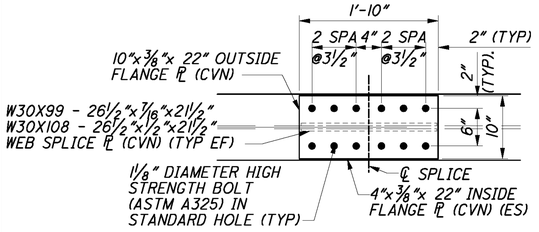
FRAMING PLAN & CAMBER DIAGRAM
BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

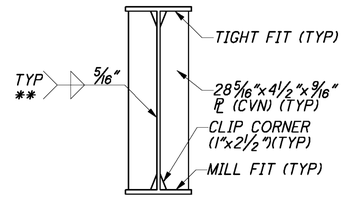
NOTES:
1. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.
2. CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
3. HIGH STRENGTH BOLTS SHALL BE 1 1/8" DIAMETER A325 TYPE III UNLESS OTHERWISE NOTED.

LEGEND

CVN - CHARPY V-NOTCH
TYP - TYPICAL
DIA - DIAMETER
EF - EACH FACE
℄ - PLATE

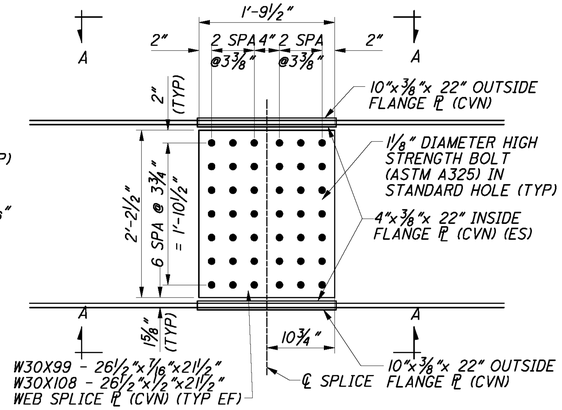


SECTION A-A

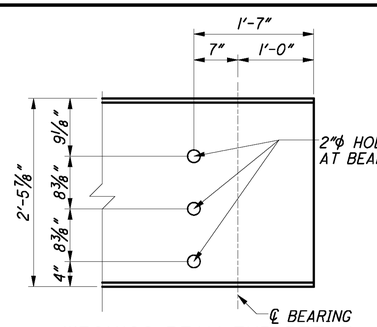


BEARING STIFFENER DETAIL

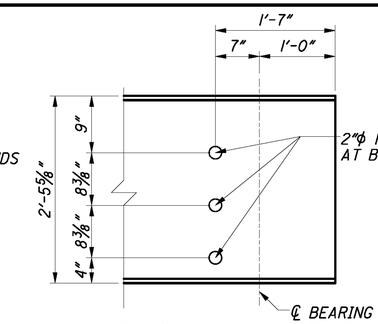
** - STOP WELDS ¼" SHORT OF CORNER CLIPS



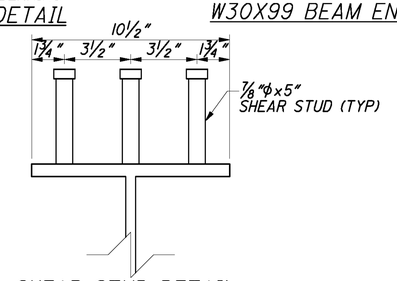
TYPCIAL BEAM SPLICE DETAIL



W30X108 BEAM END DETAIL



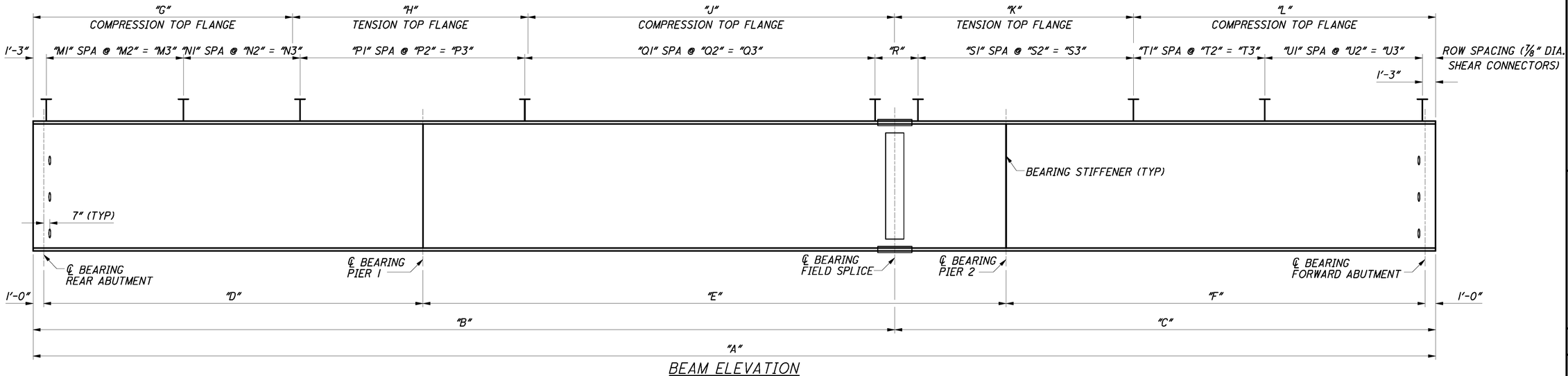
W30X99 BEAM END DETAIL



SHEAR STUD DETAIL

BEAM & SHEAR CONNECTOR TABLE

GIRDER	BEAM SECTION	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"	"L"	"M1"	"M2"	"M3"	"N1"	"N2"	"N3"	"P1"	"P2"	"P3"	"Q1"	"Q2"	"Q3"	"R"	"S1"	"S2"	"S3"	"T1"	"T2"	"T3"	"U1"	"U2"	"U3"
BEAM A	W30x108(CVN)	138'-6⅛"	86'-8¾"	51'-9⅝"	40'-0⅛"	56'-6⅛"	40'-0⅛"	30'-7¾"	22'-2⅛"	33'-6⅜"	22'-1¾"	30'-0⅜"	27	7"	15'-5"	18	9"	13'-6"	20	13"	21'-8"	51	8"	34'-0"	2'-4½"	17	13"	18'-5"	21	9"	15'-9"	26	7"	15'-2"
BEAMS B-F	W30x99(CVN)	138'-6⅛"	86'-8¾"	51'-9⅝"	40'-0⅛"	56'-6⅛"	40'-0⅛"	28'-9¼"	22'-11⅛"	35'-1½"	22'-11¼"	28'-9¼"	31	6"	15'-3"	17	9"	12'-9"	27	10"	22'-6"	51	8"	34'-0"	2'-4⅜"	26	10"	21'-8"	17	9"	12'-9"	30	6"	15'-0"
BEAM G	W30x108(CVN)	138'-6⅛"	86'-8¾"	51'-9⅝"	40'-0⅛"	56'-6⅛"	40'-0⅛"	28'-4½"	23'-1"	35'-1½"	22'-9⅞"	29'-1½"	37	5"	15'-3"	16	9"	12'-0"	30	9"	22'-6"	60	7"	35'-0"	2'-1⅜"	29	9"	21'-9"	19	8"	12'-8"	36	5"	15'-0"
BEAM H	W30x99(CVN)	138'-7⅜"	86'-9⅜"	51'-10"	40'-0⅜"	56'-6⅝"	40'-0⅜"	26'-10⅝"	24'-0¾"	35'-10⅛"	23'-2½"	28'-7⅜"	31	6"	15'-3"	14	9"	10'-6"	29	10"	24'-2"	59	7"	34'-5"	2'-8⅜"	26	10"	21'-8"	19	8"	12'-8"	30	6"	15'-0"
BEAM J	W30x108(CVN)	138'-7⅜"	86'-8 11/16"	51'-10 11/16"	40'-0⅜"	56'-6⅝"	40'-0⅜"	29'-9⅝"	22'-4⅞"	34'-2½"	22'-4⅞"	29'-9½"	27	7"	15'-5"	18	9"	13'-6"	22	12"	22'-0"	50	8"	33'-4"	2'-8⅜"	20	12"	20'-0"	19	9"	14'-3"	26	7"	15'-2"
BEAMS K-Q	W30x99(CVN)	138'-7⅜"	86'-8 11/16"	51'-10 11/16"	40'-0⅜"	56'-6⅝"	40'-0⅜"	28'-9⅜"	22'-11½"	35'-1¾"	22'-11⅜"	28'-9⅜"	31	6"	15'-3"	16	9"	12'-0"	31	9"	23'-3"	68	6"	34'-0"	2'-6⅜"	28	9"	21'-0"	20	8"	13'-4"	36	5"	15'-0"
BEAM R	W30x108(CVN)	138'-7⅜"	86'-8 11/16"	51'-10 11/16"	40'-0⅜"	56'-6⅝"	40'-0⅜"	27'-9¾"	23'-4½"	35'-1⅞"	22'-9"	29'-6¼"	37	5"	15'-3"	27	8"	18'-0"	22	9"	16'-6"	69	6"	34'-6"	2'-9⅜"	28	9"	21'-0"	20	8"	13'-4"	36	5"	15'-0"
BEAM S	W30x99(CVN)	138'-11⅞"	86'-11½"	52'-0⅜"	40'-1¾"	56'-8⅜"	40'-1¾"	25'-2¾"	25'-3⅝"	36'-1½"	23'-2"	29'-2"	31	6"	15'-3"	18	8"	9'-0"	30	10"	25'-0"	70	6"	35'-0"	2'-7¾"	25	10"	20'-10"	21	8"	14'-0"	30	6"	15'-0"



BEAM ELEVATION

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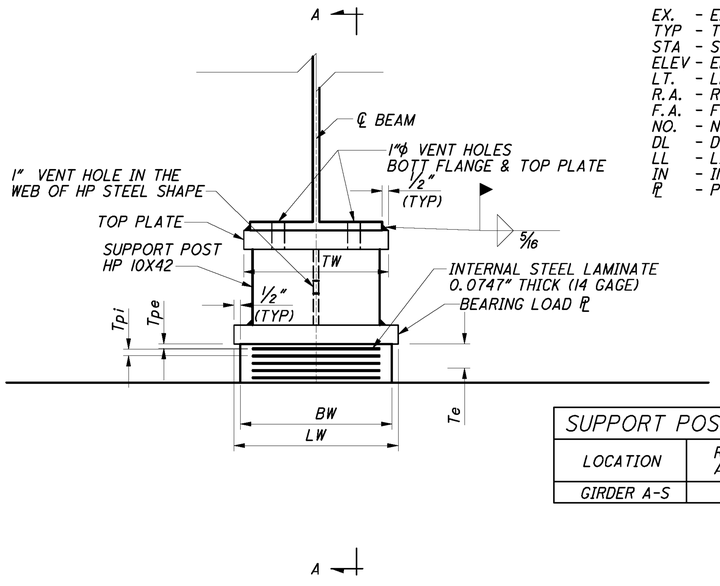
DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | STRUCTURE FILE NUMBER 5007267 | CHECKED JBD | REVISED

SUPERSTRUCTURE DETAILS
BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

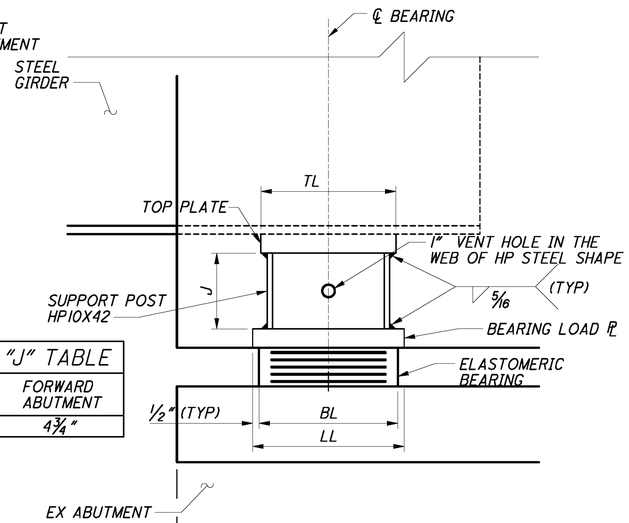
MAH-680-4.29
PID No. 25508

LEGEND

EX. - EXISTING
TYP - TYPICAL
STA - STATION
ELEV - ELEVATION
LT. - LEFT
R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
NO. - NUMBER
DL - DEAD LOAD
LL - LIVE LOAD
IN - INCHES
℄ - PLATE



50 DUROMETER LAMINATED
ELASTOMERIC EXPANSION BEARING
(ABUTMENTS)



SECTION A-A

SUPPORT POST HEIGHT "J" TABLE		
LOCATION	REAR ABUTMENT	FORWARD ABUTMENT
GIRDER A-S	3 3/4"	4 3/4"

NOTES:
1. ASTM A709 GRADE 50W STEEL LOAD PLATES SHALL BE USED FOR ALL BEARINGS. THE LOAD PLATE SHALL BE VULCANIZED BONDED TO THE LAMINATED ELASTOMERIC PAD DURING THE MOLDING PROCESS.

2. SUPPORT POSTS, STEEL LOAD PLATES, AND STEEL TOP PLATES SHALL BE ASTM A709 GRADE 50W STEEL AND SHALL BE COATED IN A SIMILAR MANNER AS THE REST OF THE STRUCTURAL STEEL.

3. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 OR 60 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES.

4. WELDING: CONTROL WELDING SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

5. BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80°F OR LOWER THAN 40°F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60°F (±) 10°F, RAISE THE BEAMS OR GIRDERS TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F (±) 10°F.

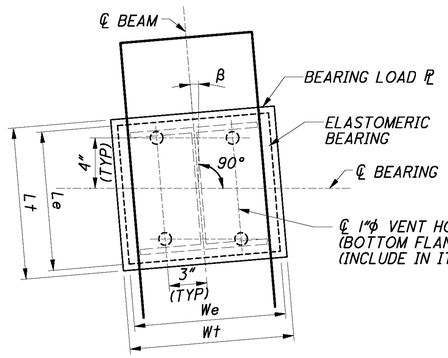
6. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL THE LAMINATED ELASTOMERIC BEARINGS, SUPPORT POSTS, STEEL TOP PLATES AND STEEL LOAD PLATES. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516 .

7. SHOP MARK LOAD PLATES AND TOP PLATES WITH THE FOLLOWING INFORMATION: TOP, UPSTATION DIRECTION, GIRDER DESIGNATION, AND LOCATION (REAR ABUTMENT, PIER 1, PIER 2, OR FORWARD ABUTMENT.)

TABLE A

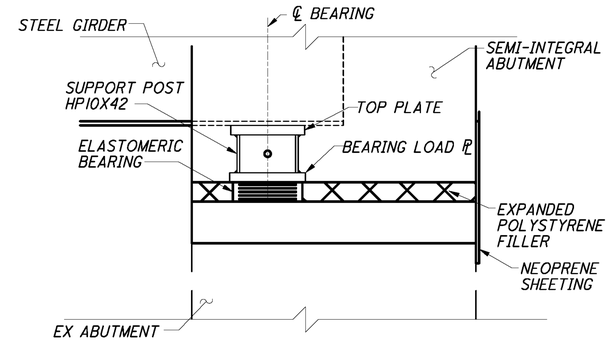
LAMINATED ELASTOMERIC BEARING DATA

BEARING LOCATION	GIRDERS	BEARING TYPE	NO. REQUIRED	DEAD LOAD (KIPS)	LIVE LOAD (KIPS)	TOTAL LOAD (DL+LL) KIPS	BW (IN)	BL (IN)	Tpi (IN)	NO. OF Tpi	Tpe (IN) (2 EACH)	NO. OF INTERNAL STEEL LAMINATES (14 GAGE)	Te (IN)	FILLET WELD SIZE (IN)	ELASTOMER HARDNESS	GIRDERS	BEARING LOCATION
R.A.	A	EXPANSION	1	54.0	57.1	111.1	14.00	13.00	0.48	2	0.336	7	4.075	5/16	50	A	R.A.
R.A.	B-F	EXPANSION	5	47.0	50.6	97.6	14.00	13.00	0.48	2	0.336	7	4.075	5/16	50	B-F	R.A.
R.A.	G	EXPANSION	1	42.2	56.1	98.3	14.00	13.00	0.48	2	0.336	7	4.075	5/16	50	G	R.A.
R.A.	H	EXPANSION	1	27.7	45.4	73.1	14.00	13.00	0.48	2	0.336	7	4.075	5/16	50	H	R.A.
R.A.	J	EXPANSION	1	54.8	56.0	110.8	14.00	13.00	0.48	2	0.336	7	4.075	5/16	50	J	R.A.
R.A.	K-Q	EXPANSION	6	49.7	53.5	103.2	14.00	13.00	0.48	2	0.336	7	4.075	5/16	50	K-Q	R.A.
R.A.	R	EXPANSION	1	35.8	58.8	94.6	14.00	13.00	0.48	2	0.336	7	4.075	5/16	50	R	R.A.
R.A.	S	EXPANSION	1	18.4	48.2	66.6	14.00	13.00	0.48	2	0.336	7	4.075	5/16	50	S	R.A.
PIER 1	A	EXPANSION	1	75.3	72.1	147.4	14.75	12.50	0.50	3	0.35	5	3.074	5/16	60	A	PIER 1
PIER 1	B-F	EXPANSION	5	87.0	62.4	149.4	14.75	12.50	0.50	3	0.35	5	3.074	5/16	60	B-F	PIER 1
PIER 1	G	EXPANSION	1	83.2	69.4	152.6	14.75	12.50	0.50	3	0.35	5	3.074	5/16	60	G	PIER 1
PIER 1	H	EXPANSION	1	70.2	57.3	127.5	14.75	12.50	0.50	3	0.35	5	3.074	5/16	60	H	PIER 1
PIER 1	J	EXPANSION	1	85.3	70.7	156.0	14.75	12.50	0.50	3	0.35	5	3.074	5/16	60	J	PIER 1
PIER 1	K-Q	EXPANSION	6	91.2	66.0	157.2	14.75	12.50	0.50	3	0.35	5	3.074	5/16	60	K-Q	PIER 1
PIER 1	R	EXPANSION	1	76.6	72.9	149.5	14.75	12.50	0.50	3	0.35	5	3.074	5/16	60	R	PIER 1
PIER 1	S	EXPANSION	1	55.6	60.8	116.4	14.75	12.50	0.50	3	0.35	5	3.074	5/16	60	S	PIER 1
PIER 2	A	EXPANSION	1	70.4	73.8	144.2	14.75	12.50	0.50	3	0.35	5	3.074	5/16	60	A	PIER 2
PIER 2	B-F	EXPANSION	5	87.0	63.6	150.6	14.75	12.50	0.50	3	0.35	5	3.074	5/16	60	B-F	PIER 2
PIER 2	G	EXPANSION	1	88.0	70.8	158.8	14.75	12.50	0.50	3	0.35	5	3.074	5/16	60	G	PIER 2
PIER 2	H	EXPANSION	1	78.1	57.3	135.4	14.75	12.50	0.50	3	0.35	5	3.074	5/16	60	H	PIER 2
PIER 2	J	EXPANSION	1	85.2	70.7	155.9	14.75	12.50	0.50	3	0.35	5	3.074	5/16	60	J	PIER 2
PIER 2	K-Q	EXPANSION	6	91.2	66.0	157.2	14.75	12.50	0.50	3	0.35	5	3.074	5/16	60	K-Q	PIER 2
PIER 2	R	EXPANSION	1	87.1	72.9	160.0	14.75	12.50	0.50	3	0.35	5	3.074	5/16	60	R	PIER 2
PIER 2	S	EXPANSION	1	69.5	62.2	131.7	14.75	12.50	0.50	3	0.35	5	3.074	5/16	60	S	PIER 2
F.A.	A	EXPANSION	1	45.9	57.1	103.0	13.75	13.00	0.50	2	0.35	5	3.074	5/16	50	A	F.A.
F.A.	B-F	EXPANSION	5	47.0	50.6	97.6	13.75	13.00	0.50	2	0.35	5	3.074	5/16	50	B-F	F.A.
F.A.	G	EXPANSION	1	49.8	56.1	105.9	13.75	13.00	0.50	2	0.35	5	3.074	5/16	50	G	F.A.
F.A.	H	EXPANSION	1	37.2	45.4	82.6	13.75	13.00	0.50	2	0.35	5	3.074	5/16	50	H	F.A.
F.A.	J	EXPANSION	1	52.6	56.0	108.6	13.75	13.00	0.50	2	0.35	5	3.074	5/16	50	J	F.A.
F.A.	K-Q	EXPANSION	6	49.7	53.5	103.2	13.75	13.00	0.50	2	0.35	5	3.074	5/16	50	K-Q	F.A.
F.A.	R	EXPANSION	1	52.4	58.8	111.2	13.75	13.00	0.50	2	0.35	5	3.074	5/16	50	R	F.A.
F.A.	S	EXPANSION	1	47.3	48.2	95.5	13.75	13.00	0.50	2	0.35	5	3.074	5/16	50	S	F.A.



BEARING LOCATION	ANGLE β
BEAMS A-G	1°09'57"
BEAMS H	2°19'11"
BEAMS J-R	2°18'39"
BEAMS S	4°50'09"

BEARING ORIENTATION PLAN
(ABUTMENTS)



BEAM SUPPORT DETAILS

SUPPORTED POSTS AND LOAD PLATES SHALL BE INCLUDED IN ITEM 516

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

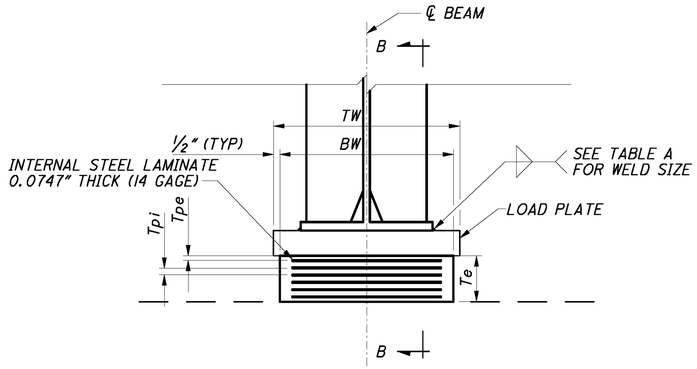
DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | STRUCTURE FILE NUMBER 50007267 | CHECKED JBD | REVISED

BEARING DETAILS
BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

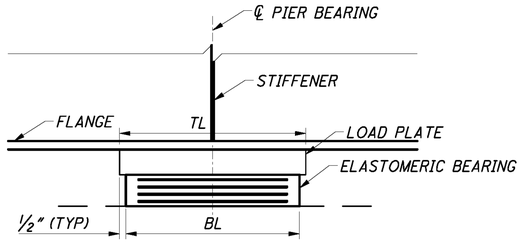
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277
307



60 DUROMETER LAMINATED
ELASTOMERIC EXPANSION BEARING

(PIERS)



SECTION C-C

NOTES:

1. ASTM A709 GRADE 50W STEEL LOAD PLATES SHALL BE USED FOR ALL BEARINGS. THE LOAD PLATE SHALL BE VULCANIZED BONDED TO THE LAMINATED ELASTOMERIC PAD DURING THE MOLDING PROCESS.

2. SUPPORT POSTS, STEEL LOAD PLATES, AND STEEL TOP PLATES SHALL BE ASTM A709 GRADE 50W STEEL AND SHALL BE COATED IN A SIMILAR MANNER AS THE REST OF THE STRUCTURAL STEEL.

3. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 OR 60 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES.

4. WELDING: CONTROL WELDING SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

5. BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80°F OR LOWER THAN 40°F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60°F (±) 10°F, RAISE THE BEAMS OR GIRDERS TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F (±) 10°F.

6. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL THE LAMINATED ELASTOMERIC BEARINGS, SUPPORT POSTS, ANCHOR BOLTS, STEEL TOP PLATES AND STEEL LOAD PLATES. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516 .

7. SHOP MARK LOAD PLATES AND TOP PLATES WITH THE FOLLOWING INFORMATION: TOP, UPSTATION DIRECTION, GIRDER DESIGNATION, AND LOCATION (REAR ABUTMENT, PIER 1, PIER 2, OR FORWARD ABUTMENT.)

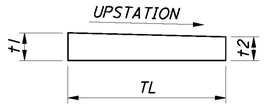
LEGEND

EX. - EXISTING
TYP - TYPICAL
STA - STATION
ELEV - ELEVATION
LT. - LEFT
R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
NO. - NUMBER
DL - DEAD LOAD
LL - LIVE LOAD
IN - INCHES
℄ - PLATE

BEARING ORIENTATION PLAN

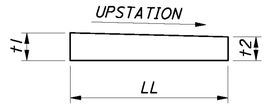
(PIERS)

BEARING LOCATION	ANGLE β
BEAMS A-G	1°09'57"
BEAMS H	2°19'11"
BEAMS J-R	2°18'39"
BEAMS S	4°50'09"



TOP PLATE

(ABUTMENTS)



LOAD PLATE

(PIERS)

STEEL PLATE DIMENSIONS (IN)

BEARING LOCATION	REAR ABUTMENT							PIER 1				PIER 2				FORWARD ABUTMENT							BEARING LOCATION
	TW	TL	t1	t2	LW	LL	tm	LW	LL	t1	t2	LW	LL	t1	t2	TW	TL	t1	t2	LW	LL	tm	
BEAM A	11½	10¾	2	1½	15	14	1½	15¾	13½	3⅞	3⅞	15¾	13½	2⅞	2⅝	11½	10¾	1⅞	1½	14¾	14	1½	BEAM A
BEAM B	11½	10¾	2	1½	15	14	1½	15¾	13½	2	1½	15¾	13½	2	1½	11½	10¾	1⅞	1½	14¾	14	1½	BEAM B
BEAM C	11½	10¾	2	1½	15	14	1½	15¾	13½	2	1½	15¾	13½	2	1½	11½	10¾	1⅞	1½	14¾	14	1½	BEAM C
BEAM D	11½	10¾	2	1½	15	14	1½	15¾	13½	2	1½	15¾	13½	2	1½	11½	10¾	1⅞	1½	14¾	14	1½	BEAM D
BEAM E	11½	10¾	2	1½	15	14	1½	15¾	13½	2	1½	15¾	13½	3¾	3¼	11½	10¾	1⅞	1½	14¾	14	1½	BEAM E
BEAM F	11½	10¾	2	1½	15	14	1½	15¾	13½	2	1½	15¾	13½	3⅜	2⅞	11½	10¾	1⅞	1½	14¾	14	1½	BEAM F
BEAM G	11½	10¾	2	1½	15	14	1½	15¾	13½	4⅞	4⅜	15¾	13½	2¾	2¼	11½	10¾	1⅞	1½	14¾	14	1½	BEAM G
BEAM H	11½	10¾	2	1½	15	14	1½	15¾	13½	3½	3	15¾	13½	2⅝	2⅛	11½	10¾	1⅞	1½	14¾	14	1½	BEAM H
BEAM J	11½	10¾	2	1½	15	14	1½	15¾	13½	3⅞	3⅜	15¾	13½	2⅞	2⅜	11½	10¾	1⅞	1½	14¾	14	1½	BEAM J
BEAM K	11½	10¾	2	1½	15	14	1½	15¾	13½	3½	3	15¾	13½	4⅛	3⅝	11½	10¾	1⅞	1½	14¾	14	1½	BEAM K
BEAM L	11½	10¾	2	1½	15	14	1½	15¾	13½	4⅜	3⅞	15¾	13½	4¾	4¼	11½	10¾	1⅞	1½	14¾	14	1½	BEAM L
BEAM M	11½	10¾	2	1½	15	14	1½	15¾	13½	2⅞	2⅜	15¾	13½	4⅜	3⅞	11½	10¾	1⅞	1½	14¾	14	1½	BEAM M
BEAM N	11½	10¾	2	1½	15	14	1½	15¾	13½	2¾	2¼	15¾	13½	4⅛	3⅝	11½	10¾	1⅞	1½	14¾	14	1½	BEAM N
BEAM P	11½	10¾	2	1½	15	14	1½	15¾	13½	2½	2	15¾	13½	3⅞	3⅜	11½	10¾	1⅞	1½	14¾	14	1½	BEAM P
BEAM Q	11½	10¾	2	1½	15	14	1½	15¾	13½	2¼	1¾	15¾	13½	3⅝	3⅛	11½	10¾	1⅞	1½	14¾	14	1½	BEAM Q
BEAM R	11½	10¾	2	1½	15	14	1½	15¾	13½	2	1½	15¾	13½	3⅛	2⅝	11½	10¾	1⅞	1½	14¾	14	1½	BEAM R
BEAM S	11½	10¾	2	1½	15	14	1½	15¾	13½	1⅞	1½	15¾	13½	1⅞	1½	11½	10¾	1⅞	1½	14¾	14	1½	BEAM S

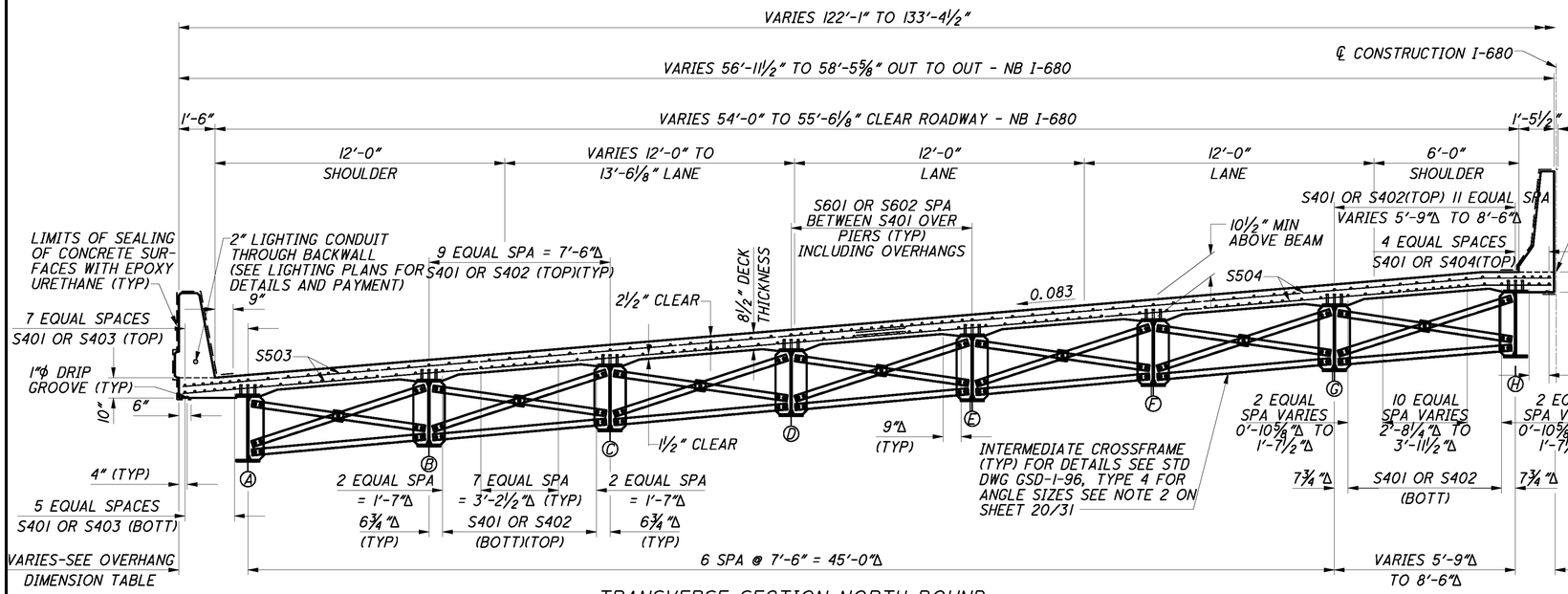
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007267	

BEARING DETAILS

BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508



TRANSVERSE SECTION NORTH BOUND

NOTES:
1. ALL DIMENSIONS SHOWN PERPENDICULAR TO ℄ CONSTRUTION UNLESS NOTED OTHERWISE.

2. Δ - INDICATES DIMENSIONS SHOWN ARE PERPENDICULAR TO ℄ BEAMS

3. MINIMUM BAR LAPS:
LAP NO. 5 BARS 2'-0"

4. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM/GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 2 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE IS ±3 INCHES.

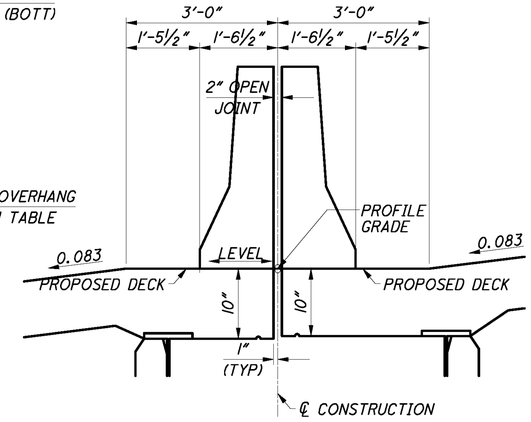
THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM/GIRDER, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.24.

OVERHANG DIMENSIONS (MEASURED PERPENDICULAR TO BEAMS)

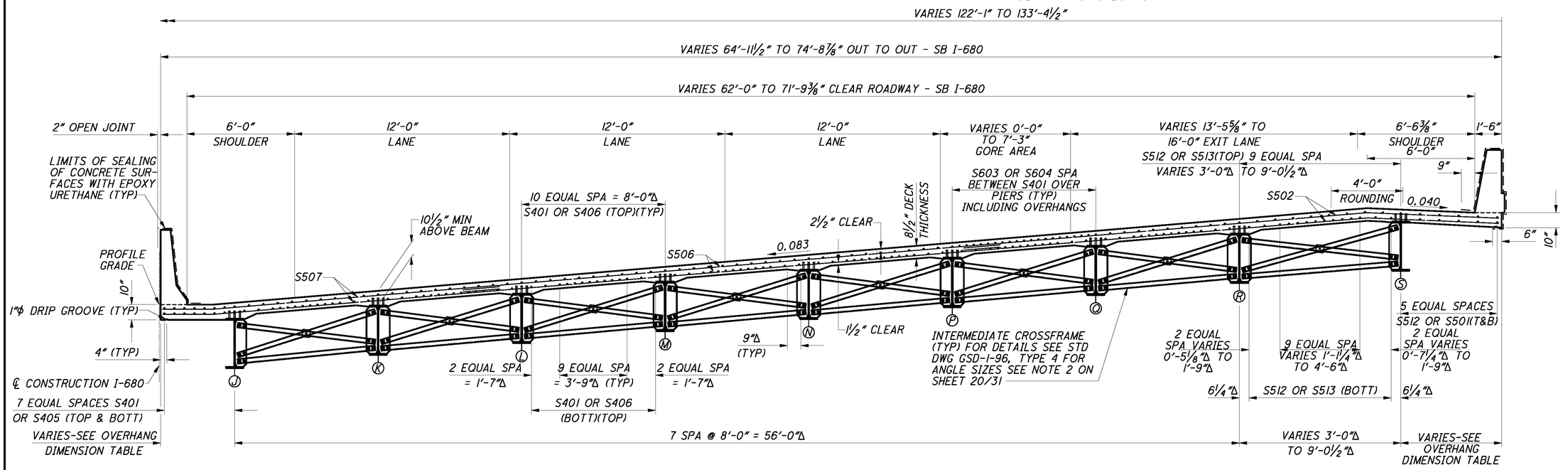
	SPAN 1				SPAN 2					SPAN 3				
OVERHANG LOCATION	R.A.	¼	½	¾	PIER 1	¼	½	¾	SPLICE	PIER 2	¼	½	¾	F.A.
OUTSIDE NORTH BOUND	5'-5⅜"	4'-7¼"	3'-9½"	3'-11¼"	2'-6¾"	2'-0⅛"	1'-8⅝"	1'-8⅜"	1'-8¾"	1'-11¼"	2'-3⅛"	2'-8⅝"	3'-3¾"	3'-11½"
MEDIAN NORTH BOUND	1'-0½"	1'-6¾"	2'-1"	2'-6"	2'-9¾"	3'-1¼"	3'-2⅜"	3'-1⅞"	3'-0½"	2'-9⅝"	2'-5¾"	2'-0¾"	1'-6⅝"	1'-0⅛"
MEDIAN SOUTH BOUND	5'-2¼"	4'-7¾"	4'-1⅝"	3'-8⅝"	3'-4¾"	3'-1⅜"	3'-0¼"	3'-1⅜"	3'-2"	3'-4⅛"	3'-8¾"	4'-1¾"	4'-7⅛"	5'-2¼"
OUTSIDE SOUTH BOUND	1'-0¼"	1'-2¾"	1'-5½"	1'-8¼"	1'-11"	2'-2⅞"	2'-6¾"	2'-10⅝"	2'-11⅜"	3'-2½"	3'-5⅛"	3'-7⅞"	3'-10⅝"	4'-1⅛"

LEGEND

SPA	- SPACED
TYP	- TYPICAL
R.A.	- REAR ABUTMENT
F.A.	- FORWARD ABUTMENT
BOTT	- BOTTOM
MIN.	- MINIMUM
NB	- NORTHBOUND
SB	- SOUTHBOUND
STD DWG	- STANDARD DRAWING
Δ	- DIMENSION PERPENDICULAR TO BEAMS
T&B	- TOP & BOTTOM



DECK CENTERLINE DETAIL



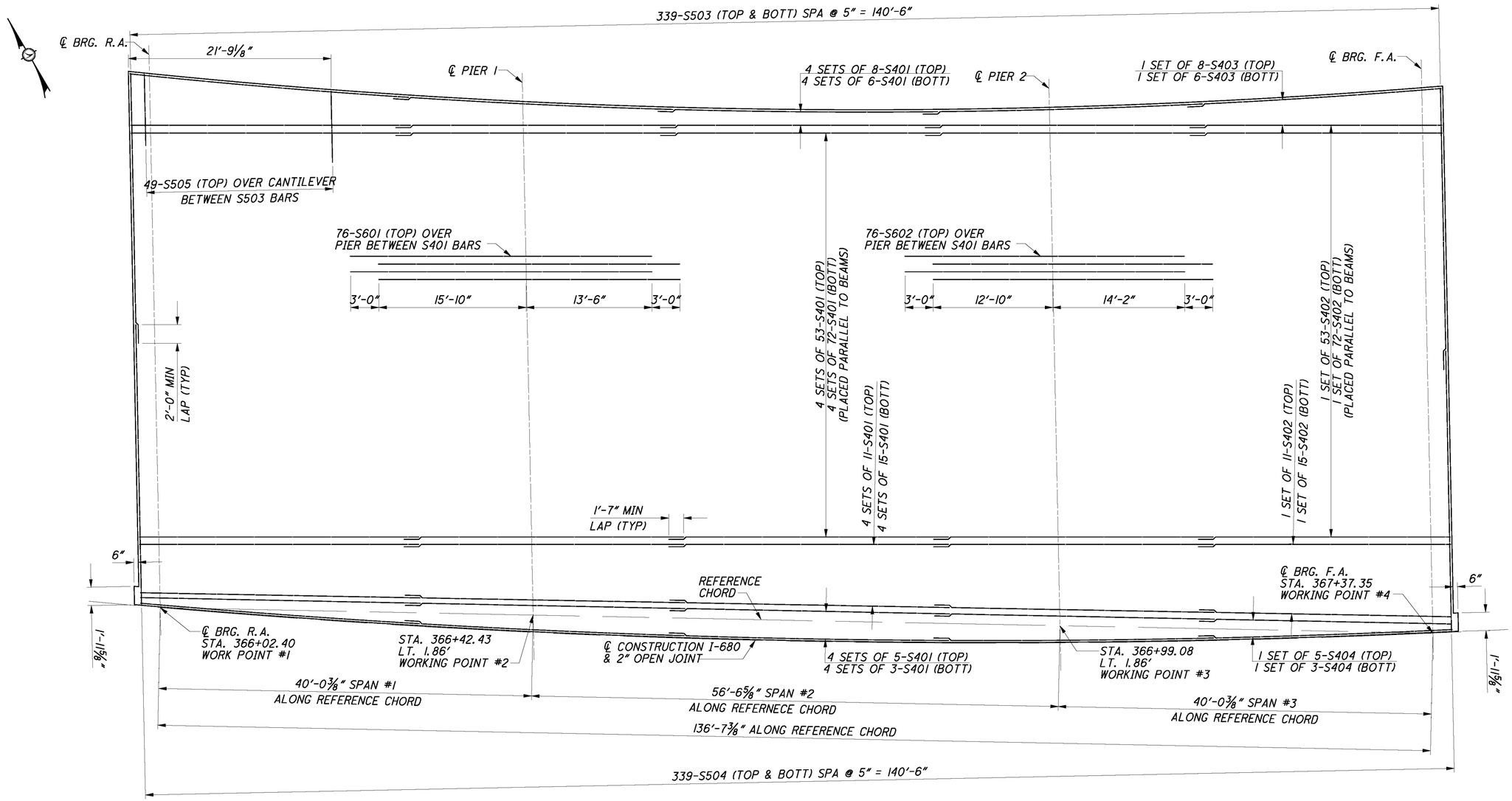
TRANSVERSE SECTION SOUTH BOUND

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
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PHONE:(419) 841-4704 FAX:(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007267	

TRANSVERSE DECK SECTION
BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508



NORTHBOUND DECK REINFORCEMENT PLAN

(PARAPET REINFORCING NOT SHOWN FOR CLARITY)

NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 4 BARS 1'-7"
   LAP NO. 5 BARS 2'-0"
2. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTURCTURE:
   PLACE THE CONCRETE ENCASING THE STRUCTURAL STEEL
   MEMBERS AT LEAST 48 HOURS BEFORE PLACING DECK CONCRETE.

LEGEND

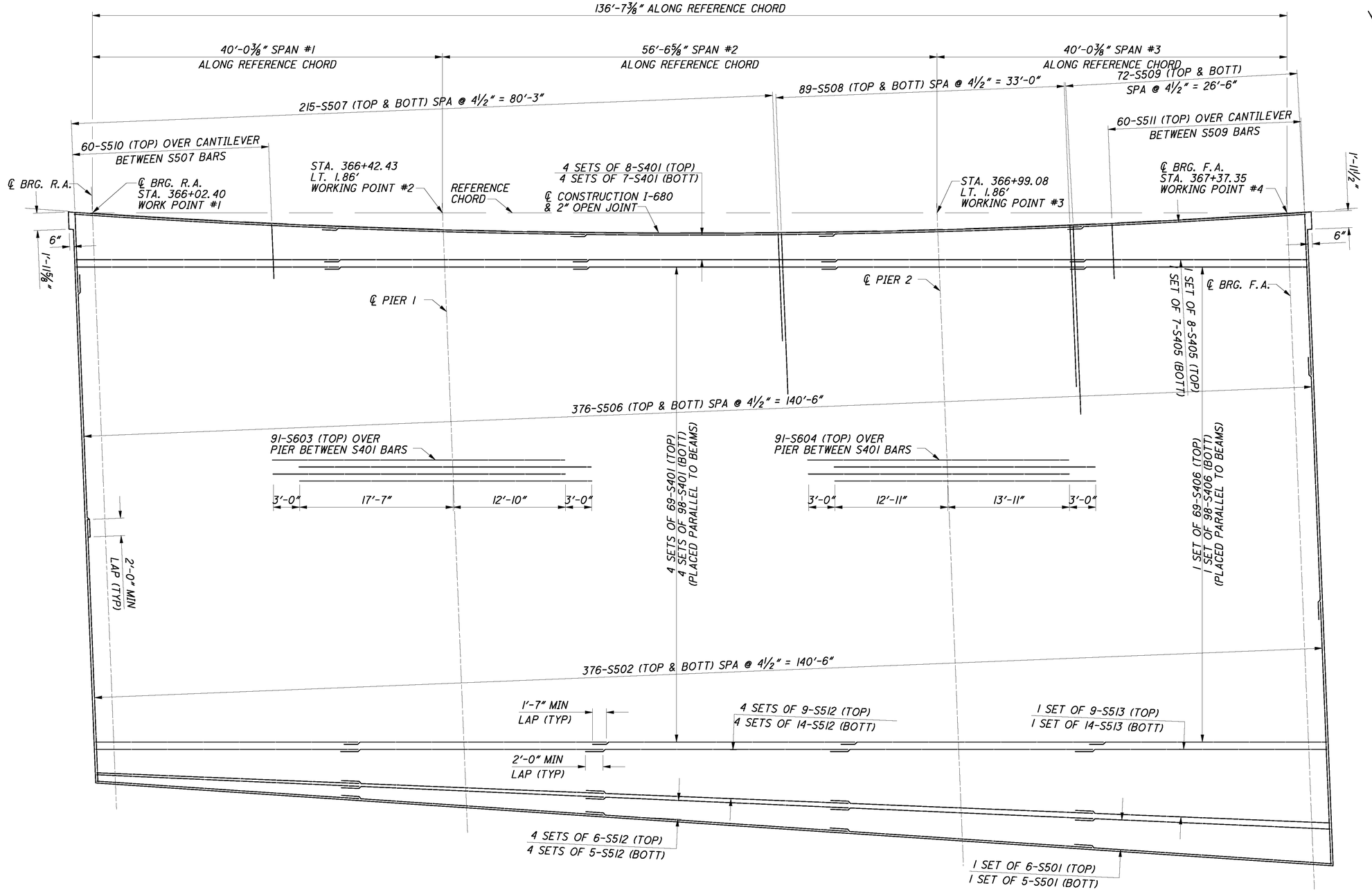
R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
LT. - LEFT
MIN - MINIMUM
BOTT- BOTTOM

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007267	

DECK DETAILS
BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508



SOUTHBOUND DECK REINFORCEMENT PLAN

(PARAPET REINFORCING NOT SHOWN FOR CLARITY)

NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 4 BARS 1'-7"
   LAP NO. 5 BARS 2'-0"
2. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTURCTURE:
   PLACE THE CONCRETE ENCASING THE STRUCTURAL STEEL
   MEMBERS AT LEAST 48 HOURS BEFORE PLACING DECK CONCRETE.

LEGEND

R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
TYP - TYPICAL
STA - STATION
BRG. - BEARING
LT. - LEFT
MIN - MINIMUM
BOTT- BOTTOM

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
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TOLEDO, OHIO 43617
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DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007267	

DECK DETAILS
BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

NORTHBOUND TOP OF HAUNCH ELEVATIONS

	SPAN 1					SPAN 2					SPAN 3					
	R.A.	1/4	1/2	3/4	PIER 1	1/4	1/2	3/4	SPLICE	PIER 2	1/4	1/2	3/4	F.A.	
BEAM A	977.00	976.61	976.21	975.80	975.41	974.89	974.39	973.88	973.76	973.38	973.05	972.74	972.42	972.10	BEAM A
BEAM B	977.59	977.20	976.80	976.40	976.01	975.51	975.02	974.51	974.38	974.00	973.68	973.36	973.05	972.73	BEAM B
BEAM C	978.19	977.79	977.40	977.00	976.62	976.12	975.63	975.12	975.00	974.71	974.29	973.98	973.67	973.36	BEAM C
BEAM D	978.78	978.39	977.99	977.60	977.22	976.73	976.24	975.74	975.61	975.24	974.92	974.61	974.30	973.99	BEAM D
BEAM E	979.37	978.98	978.59	978.20	977.82	977.34	976.85	976.35	976.23	975.85	975.54	975.23	974.93	974.62	BEAM E
BEAM F	979.96	979.58	979.19	978.80	978.43	977.94	977.47	976.97	976.85	976.47	976.16	975.86	975.55	975.25	BEAM F
BEAM G	980.55	980.17	979.79	979.40	979.03	978.55	978.07	977.58	977.46	977.09	976.78	976.48	976.18	975.88	BEAM G
BEAM H	980.85	980.53	980.20	979.87	979.55	979.11	978.66	978.19	978.08	977.72	977.40	977.08	976.76	976.43	BEAM H

SOUTHBOUND TOP OF HAUNCH ELEVATIONS

	SPAN 1					SPAN 2					SPAN 3				
	R.A.	1/4	1/2	3/4	PIER 1	SPLICE	1/4	1/2	3/4	PIER 2	1/4	1/2	3/4	F.A.	
BEAM J	981.02	980.66	980.30	979.93	979.58	979.12	978.67	978.21	978.10	977.76	977.47	977.19	976.91	976.63	BEAM J
BEAM K	981.65	981.29	980.93	980.57	980.22	979.78	979.34	978.88	978.77	978.42	978.13	977.85	977.58	977.30	BEAM K
BEAM L	982.29	981.93	981.57	981.22	980.87	980.49	979.99	979.53	979.43	979.08	978.79	978.52	978.24	977.97	BEAM L
BEAM M	982.92	982.57	982.22	981.86	981.52	981.08	980.65	980.19	980.08	979.74	979.46	979.19	978.91	978.64	BEAM M
BEAM N	983.56	983.21	982.86	982.50	982.16	981.73	981.30	980.85	980.74	980.40	980.12	979.85	979.58	979.31	BEAM N
BEAM P	984.19	983.85	983.50	983.15	982.81	982.38	981.96	981.51	981.40	981.06	980.78	980.52	980.25	979.98	BEAM P
BEAM Q	984.83	984.49	984.14	983.79	983.46	983.03	982.61	982.17	982.06	981.72	981.45	981.18	980.92	980.65	BEAM Q
BEAM R	984.93	984.64	984.35	984.07	983.79	983.39	983.26	982.82	982.71	982.39	982.11	981.85	981.59	981.32	BEAM R
BEAM S	984.92	984.63	984.34	984.06	983.78	983.38	983.09	982.74	982.65	982.49	982.17	981.96	981.76	981.55	BEAM S

NOTES:

1. TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE BEAM/ GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

2. SCREED ELEVATIONS AND FINAL DECK ELEVATIONS CAN BE FOUND ON SHEET 28/31.

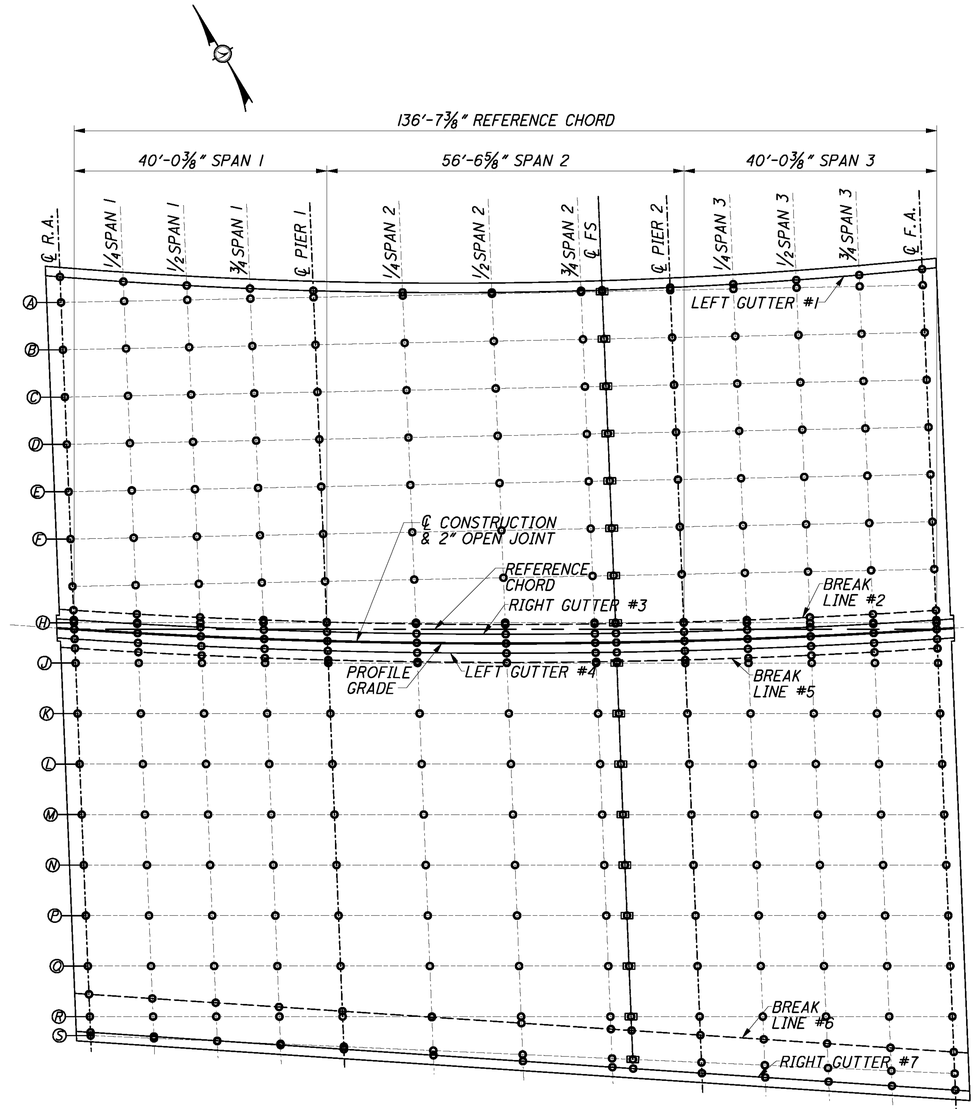


TABLE ELEVATION PLAN

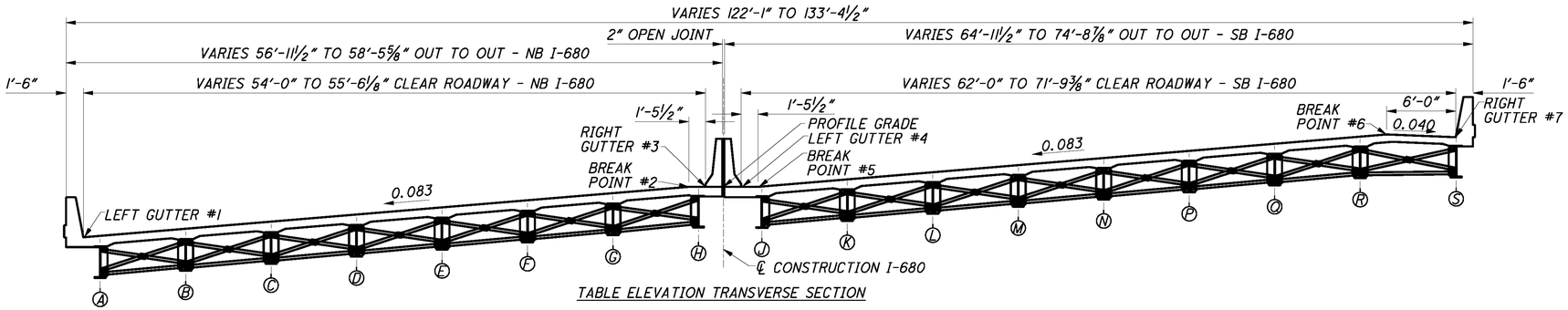


TABLE ELEVATION TRANSVERSE SECTION

LEGEND

R.A. - REAR ABUTMENT
F.A. - FORWARD ABUTMENT
FS - FIELD SPLICE
NB - NORTHBOUND
SB - SOUTHBOUND

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10

CHECKED	REVISED	STRUCTURE FILE NUMBER
JBD		5007267

DECK DETAILS

BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

SCREED ELEVATIONS

	SPAN 1					SPAN 2					SPAN 3				
LOCATION	R.A.	1/4	1/2	3/4	PIER 1	1/4	1/2	3/4	SPLICE	PIER 2	1/4	1/2	3/4	F.A.	LOCATION
LEFT GUTTER #1	365+96.15 977.39	366+06.79 977.07	366+17.40 976.73	366+28.01 976.38	366+38.60 976.03	366+53.51 975.56	366+68.47 975.08	366+83.40 974.57	366+86.92 974.45	366+98.33 973.97	367+08.89 973.70	367+19.46 973.34	367+30.04 972.98	367+40.63 972.60	LEFT GUTTER #1
BREAK POINT #2	366+02.08 981.56	366+12.16 981.24	366+22.23 980.92	366+32.29 980.58	366+42.35 980.26	366+56.54 979.83	366+70.72 979.39	366+84.90 978.91	366+88.24 978.80	366+99.07 978.43	367+09.09 978.11	367+19.12 977.79	367+29.15 977.47	367+39.19 977.13	BREAK POINT #2
RIGHT GUTTER #3	366+02.23 981.56	366+12.30 981.24	366+22.36 980.91	366+32.41 980.58	366+42.45 980.26	366+56.62 979.83	366+70.78 979.38	366+84.94 978.91	366+88.28 978.79	366+99.09 978.43	367+09.10 978.11	367+19.11 977.79	367+29.13 977.47	367+39.15 977.13	RIGHT GUTTER #3
PROFILE GRADE	366+02.40 981.56	366+12.45 981.24	366+22.50 980.91	366+32.53 980.58	366+42.56 980.26	366+56.71 979.83	366+70.85 979.38	366+84.98 978.91	366+88.29 978.79	366+99.11 978.43	367+09.11 978.11	367+19.11 977.79	367+29.11 977.47	367+39.11 977.13	PROFILE GRADE
LEFT GUTTER #4	366+02.56 981.55	366+12.60 981.23	366+22.63 980.91	366+32.64 980.58	366+42.66 980.25	366+56.79 979.82	366+70.91 979.37	366+85.02 978.90	366+88.29 978.79	366+99.13 978.43	367+09.11 978.11	367+19.10 977.79	367+29.08 977.47	367+39.07 977.14	LEFT GUTTER #4
BREAK POINT #5	366+02.72 981.54	366+12.74 981.23	366+22.75 980.91	366+32.76 980.57	366+42.76 980.25	366+56.86 979.81	366+70.96 979.37	366+85.06 978.90	366+88.33 978.79	366+99.15 978.43	367+09.12 978.11	367+19.09 977.79	367+29.06 977.47	367+39.03 977.14	BREAK POINT #5
BREAK POINT #6	366+08.20 985.89	366+17.73 985.60	366+27.26 985.31	366+36.78 985.02	366+46.30 984.74	366+59.73 984.39	366+73.14 984.05	366+86.52 983.69	366+89.63 983.60	366+99.88 983.41	367+09.32 983.12	367+18.74 982.91	367+28.14 982.71	367+37.52 982.50	BREAK POINT #6
RIGHT GUTTER #7	366+08.77 985.63	366+18.25 985.31	366+27.72 985.05	366+37.19 984.76	366+46.66 984.49	366+60.02 984.08	366+73.35 983.80	366+86.67 983.44	366+89.75 983.36	366+99.95 983.20	367+09.34 982.88	367+18.71 982.67	367+28.06 982.47	367+37.39 982.26	LEFT GUTTER #7

FINAL DECK SURFACE ELEVATIONS

	SPAN 1					SPAN 2					SPAN 3				
LOCATION	R.A.	1/4	1/2	3/4	PIER 1	1/4	1/2	3/4	SPLICE	PIER 2	1/4	1/2	3/4	F.A.	LOCATION
LEFT GUTTER #1	365+96.15 977.39	366+06.79 977.06	366+17.40 976.72	366+28.01 976.38	366+38.60 976.03	366+53.51 975.55	366+68.47 975.05	366+83.40 974.55	366+86.92 974.44	366+98.33 973.97	367+08.89 973.69	367+19.46 973.33	367+30.04 972.97	367+40.63 972.60	LEFT GUTTER #1
BEAM A	365+96.63 977.71	366+07.12 977.30	366+17.62 976.90	366+28.14 976.50	366+38.68 976.12	366+53.57 975.59	366+68.48 975.07	366+83.41 974.57	366+86.93 974.45	366+98.33 974.09	367+08.90 973.76	367+19.46 973.43	367+30.01 973.12	367+40.56 972.81	BEAM A
BEAM B	365+97.50 978.30	366+07.91 977.90	366+18.34 977.50	366+28.78 977.10	366+39.24 976.72	366+54.02 976.19	366+68.82 975.68	366+83.63 975.19	366+87.13 975.07	366+98.44 974.71	367+08.93 974.38	367+19.41 974.06	367+29.88 973.74	367+40.35 973.44	BEAM B
BEAM C	365+98.36 978.89	366+08.70 978.49	366+19.05 978.09	366+29.41 977.70	366+39.79 977.32	366+54.46 976.80	366+69.15 976.29	366+83.85 975.80	366+87.32 975.69	366+95.55 975.42	367+08.95 975.00	367+19.36 974.68	367+29.75 974.37	367+40.15 974.07	BEAM C
BEAM D	365+99.21 979.48	366+09.47 979.08	366+19.74 978.69	366+30.03 978.31	366+40.33 977.93	366+54.89 977.41	366+69.47 976.90	366+84.06 976.42	366+87.51 976.30	366+98.66 975.94	367+08.98 975.62	367+19.31 975.30	367+29.63 975.00	367+39.94 974.70	BEAM D
BEAM E	366+00.04 980.08	366+10.23 979.68	366+20.43 979.29	366+30.64 978.91	366+40.86 978.53	366+55.32 978.02	366+69.79 977.52	366+84.28 977.03	366+87.69 976.92	366+98.76 976.56	367+09.01 976.24	367+19.26 975.93	367+29.50 975.62	367+39.74 975.33	BEAM E
BEAM F	366+00.86 980.67	366+10.97 980.27	366+21.10 979.89	366+31.24 979.51	366+41.39 979.14	366+55.74 978.62	366+70.11 978.13	366+84.48 977.65	366+87.88 977.54	366+98.86 977.18	367+09.04 976.86	367+19.21 976.55	367+29.38 976.25	367+39.55 975.96	BEAM F
BEAM G	366+01.67 981.26	366+11.71 980.87	366+21.77 980.49	366+31.83 980.11	366+41.91 979.74	366+56.16 979.23	366+70.42 978.74	366+84.69 978.26	366+88.06 978.15	366+98.97 977.80	367+09.07 977.49	367+19.17 977.18	367+29.26 976.88	367+39.35 976.59	BEAM G
BREAK POINT #2	366+02.08 981.56	366+12.16 981.24	366+22.23 980.91	366+32.29 980.59	366+42.35 980.26	366+56.54 979.80	366+70.72 979.34	366+84.90 978.89	366+88.24 978.78	366+99.07 978.43	367+09.09 978.10	367+19.12 977.78	367+29.15 977.46	367+39.19 977.13	BREAK POINT #2
BEAM H	366+02.29 981.55	366+12.29 981.23	366+22.30 980.91	366+32.33 980.58	366+42.55 980.25	366+56.53 979.79	366+70.71 979.32	366+84.89 978.87	366+88.24 978.77	366+99.07 978.43	367+09.10 978.10	367+19.12 977.78	367+29.13 977.46	367+39.14 977.13	BEAM H
RIGHT GUTTER #3	366+02.23 981.56	366+12.30 981.23	366+22.36 980.91	366+32.41 980.58	366+42.45 980.26	366+56.62 979.80	366+70.78 979.34	366+84.94 978.88	366+88.28 978.78	366+99.09 978.43	367+09.10 978.10	367+19.11 977.78	367+29.13 977.46	367+39.15 977.13	RIGHT GUTTER #3
PROFILE GRADE	366+02.40 981.55	366+12.45 981.23	366+22.50 980.90	366+32.53 980.58	366+42.56 980.25	366+56.71 979.80	366+70.85 979.34	366+84.98 978.88	366+88.29 978.78	366+99.11 978.43	367+09.11 978.10	367+19.11 977.78	367+29.11 977.46	367+39.11 977.13	PROFILE GRADE
	SPAN 1					SPAN 2					SPAN 3				
LOCATION	R.A.	1/4	1/2	3/4	PIER 1	1/4	1/2	3/4	SPLICE	PIER 2	1/4	1/2	3/4	F.A.	LOCATION
LEFT GUTTER #4	366+02.56 981.55	366+12.60 981.22	366+22.63 980.90	366+32.64 980.57	366+42.66 980.25	366+56.79 979.79	366+70.91 979.34	366+85.02 978.88	366+88.29 978.78	366+99.13 978.43	367+09.11 978.10	367+19.10 977.78	367+29.08 977.46	367+39.07 977.14	LEFT GUTTER #4
BREAK POINT #5	366+02.72 981.54	366+12.74 981.22	366+22.75 980.89	366+32.76 980.57	366+42.76 980.25	366+56.86 979.79	366+70.96 979.34	366+85.06 978.88	366+88.33 978.78	366+99.15 978.43	367+09.12 978.10	367+19.09 977.78	367+29.06 977.46	367+39.03 977.14	BREAK POINT #5
BEAM J	366+02.96 981.73	366+12.90 981.35	366+22.86 980.99	366+32.82 980.63	366+42.79 980.29	366+56.87 979.81	366+70.97 979.34	366+85.06 978.90	366+88.33 978.80	366+99.15 978.47	367+09.12 978.17	367+19.08 977.88	367+29.03 977.60	367+38.98 977.33	BEAM J
BEAM K	366+03.79 982.36	366+13.66 981.99	366+23.54 981.63	366+33.43 981.28	366+43.32 980.93	366+57.30 980.46	366+71.29 980.00	366+85.27 979.55	366+88.52 979.45	366+99.26 979.13	367+09.15 978.83	367+19.03 978.55	367+28.91 978.27	367+38.78 978.00	BEAM K
BEAM L	366+04.61 982.99	366+14.44 982.63	366+24.21 982.27	366+34.02 981.92	366+43.84 981.58	366+57.72 981.16	366+71.60 980.65	366+85.48 980.21	366+88.70 980.11	366+99.36 979.79	367+09.18 979.50	367+18.99 979.22	367+28.79 978.94	367+38.58 978.67	BEAM L
BEAM M	366+05.42 983.63	366+15.14 983.27	366+24.87 982.91	366+34.61 982.56	366+44.36 982.22	366+58.13 981.76	366+71.91 981.31	366+85.69 980.87	366+88.88 980.77	366+99.46 980.45	367+09.20 980.16	367+18.94 979.88	367+28.67 979.61	367+38.39 979.35	BEAM M
BEAM N	366+06.22 984.26	366+15.87 983.90	366+25.53 983.55	366+35.19 983.21	366+44.87 982.87	366+58.51 982.41	366+72.21 981.96	366+85.89 981.53	366+89.06 981.43	366+99.56 981.11	367+09.23 980.83	367+18.89 980.55	367+28.55 980.28	367+38.20 980.02	BEAM N
BEAM P	366+07.00 984.90	366+16.58 984.54	366+26.17 984.19	366+35.77 983.85	366+45.37 983.52	366+58.94 983.06	366+72.52 982.62	366+86.09 982.19	366+89.24 982.09	366+99.66 981.77	367+09.26 981.49	367+18.85 981.21	367+28.44 980.95	367+38.01 980.69	BEAM P
BEAM Q	366+07.77 985.54	366+17.28 985.18	366+26.80 984.84	366+36.33 984.50	366+45.86 984.17	366+59.33 983.71	366+72.81 983.27	366+86.28 982.84	366+89.41 982.75	366+99.75 982.43	367+09.28 982.15	367+18.81 981.88	367+28.32 981.61	367+37.83 981.36	BEAM Q
BEAM R	366+08.51 985.64	366+17.98 985.34	366+27.43 985.06	366+36.89 984.78	366+46.35 984.50	366+59.72 984.07	366+73.10 983.92	366+86.48 983.50	366+89.58 983.41	366+99.85 983.09	367+09.31 982.82	367+18.76 982.55	367+28.21 982.28	367+37.65 982.03	BEAM R
BREAK POINT #6	366+08.20 985.89	366+17.73 985.59	366+27.26 985.31	366+36.78 985.02	366+46.30 984.74	366+59.73 984.37	366+73.14 984.01	366+86.52 983.67	366+89.63 983.59	366+99.88 983.41	367+09.32 983.12	367+18.74 982.90	367+28.14 982.70	367+37.52 982.50	BREAK POINT #6
BEAM S	366+08.82 985.63	366+18.27 985.33	366+27.73 985.05	366+37.18 984.77	366+46.64 984.51	366+59.98 984.15	366+73.32 983.80	366+86.63 983.48	366+89.72 983.40	366+99.93 983.27	367+09.33 982.95	367+18.72 982.75	367+28.09 982.55	367+37.45 982.36	BEAM S
RIGHT GUTTER #7	366+08.77 985.63	366+18.25 985.34	366+27.72 985.05	366+37.19 984.77	366+46.66 984.49	366+60.02 984.06	366+73.35 983.76	366+86.67 983.42	366+89.75 983.34	366+99.95 983.20	367+09.34 982.87	367+18.71 982.66	367+28.06 982.46	367+37.39 982.26	RIGHT GUTTER #7

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

2. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.

3. TOP OF HAUNCH ELEVATIONS CAN BE FOUND ON SHEET 27/31.

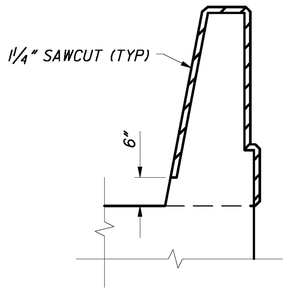
4. TO VIEW SCREED AND DECK ELEVATION LOCATIONS IN THE PLAN VIEW AND TRANSVERSE VIEW PLEASE SEE SHEET 27/31.

DESIGN AGENCY
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3220 CENTRAL PARK WEST
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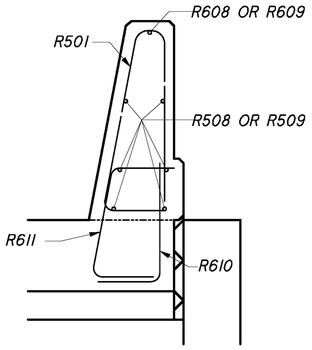
DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007267

DECK DETAILS
BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29 PID No. 25508

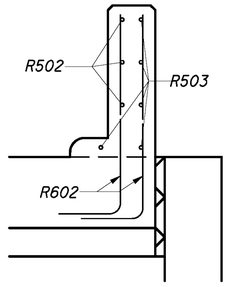


SECTION THROUGH CONTROL JOINT



SECTION B-B

(FOR ADDITIONAL DETAILS SEE STD DWG SBR-1-99)

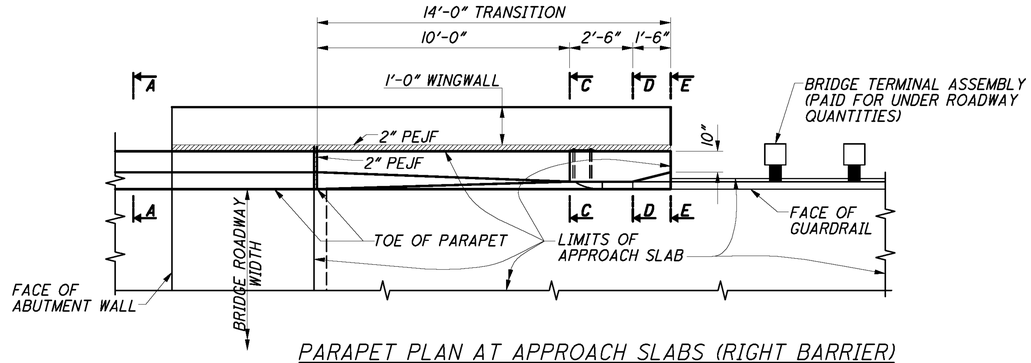


SECTION E-E

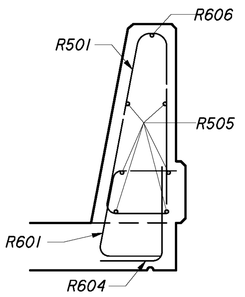
(FOR ADDITIONAL DETAILS SEE STD DWG SBR-1-99)

NOTES

1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 6 BARS 2'-4"

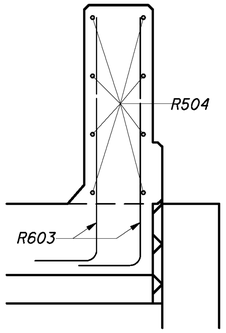


PARAPET PLAN AT APPROACH SLABS (RIGHT BARRIER)



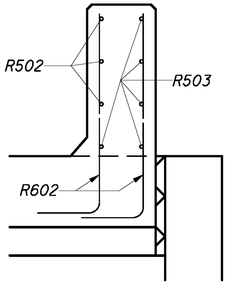
SECTION A-A

(FOR ADDITIONAL DETAILS SEE STD DWG SBR-1-99)



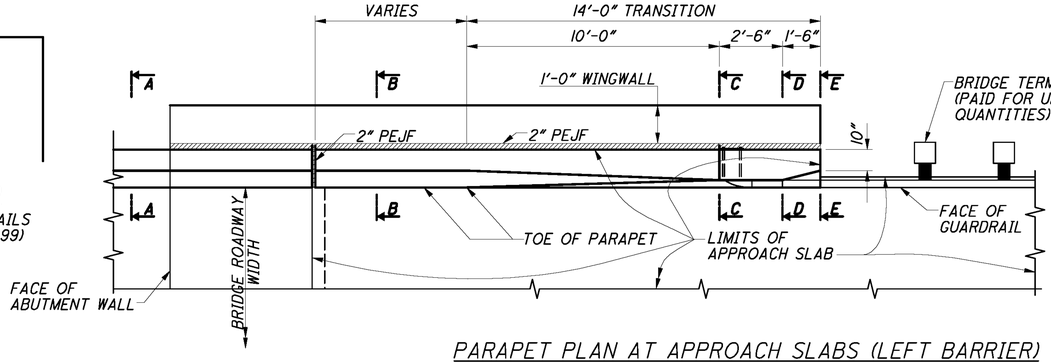
SECTION C-C

(FOR ADDITIONAL DETAILS SEE STD DWG SBR-1-99)



SECTION D-D

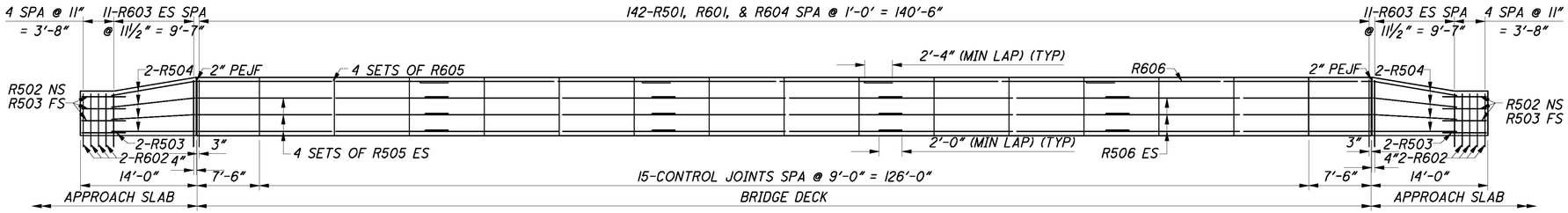
(FOR ADDITIONAL DETAILS SEE STD DWG SBR-1-99)



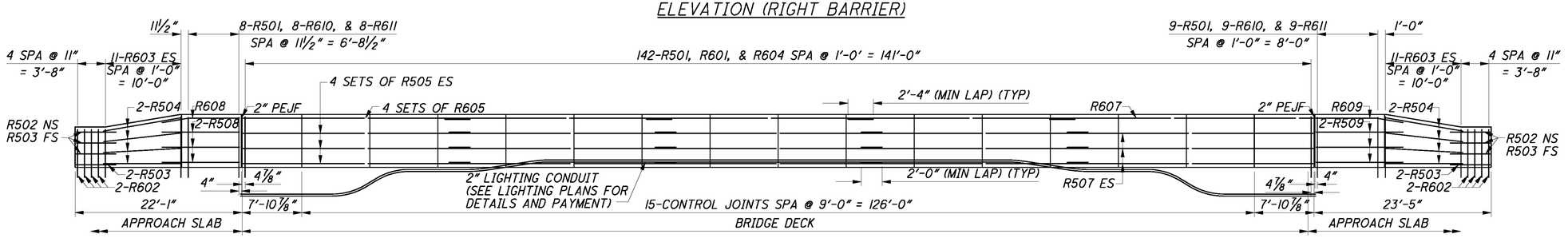
PARAPET PLAN AT APPROACH SLABS (LEFT BARRIER)

LEGEND

STD DWG- STANDARD DRAWING
TYP - TYPICAL
SPA - SPACE
PEJF - PREFORMED EXPANSION JOINT FILLER
MIN - MINIMUM
ES - EACH SIDE
NS - NEAR SIDE
FS - FAR SIDE



ELEVATION (RIGHT BARRIER)



ELEVATION (LEFT BARRIER)

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

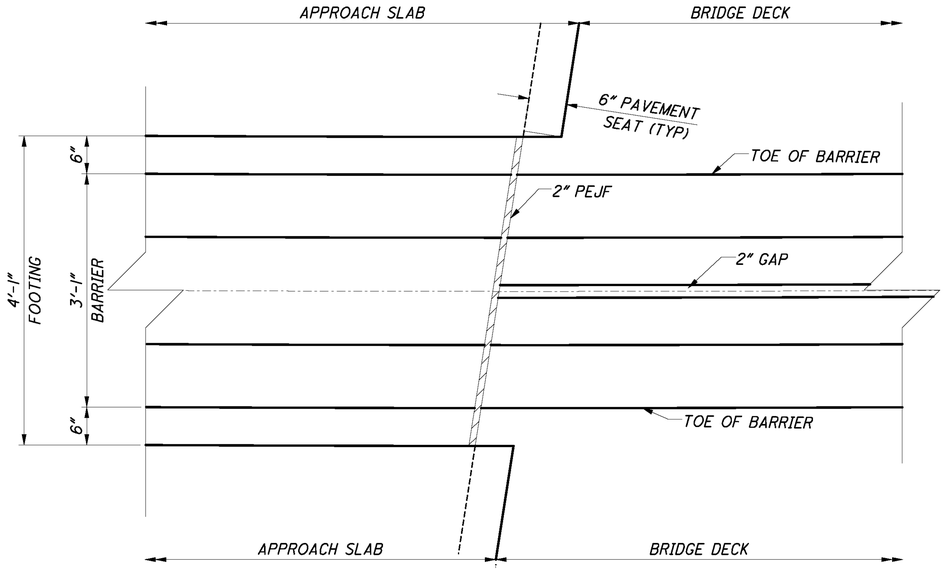
DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007267	

PARAPET DETAILS

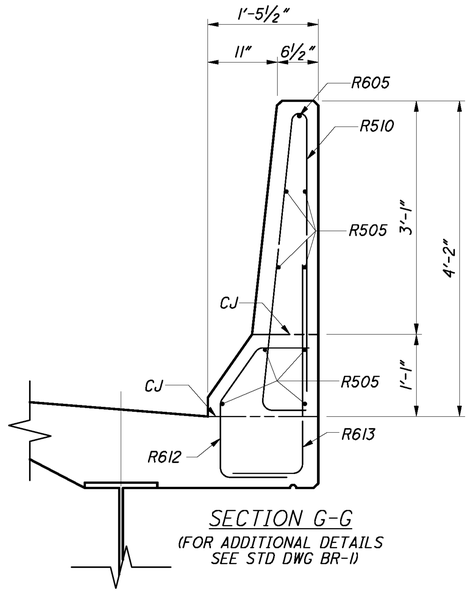
BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

NOTES:
1. MINIMUM BAR LAPS:
   LAP NO. 5 BARS 2'-0"
   LAP NO. 6 BARS 2'-4"



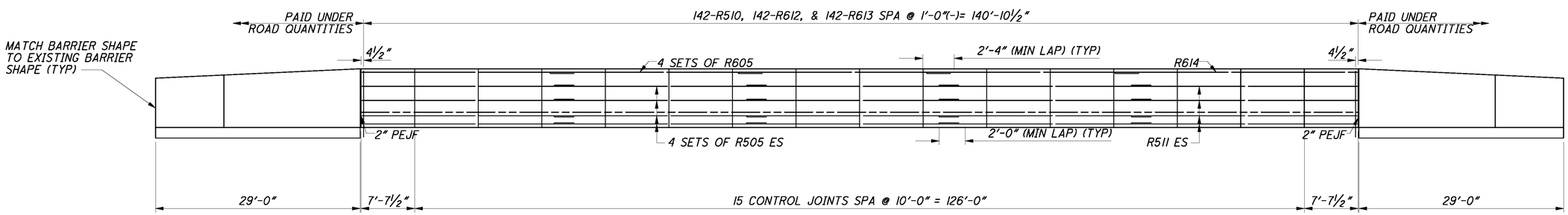
MEDIAN BARRIER TRANSITION DETAIL



SECTION G-G
(FOR ADDITIONAL DETAILS SEE STD DWG BR-1)

LEGEND

STD DWG- STANDARD DRAWING
TYP - TYPICAL
SPA - SPACE
PEJF - PREFORMED EXPANSION JOINT FILLER
MIN - MINIMUM
ES - EACH SIDE



ELEVATION (MEDIAN BARRIER)
2 REQUIRED

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
MJP	MJP	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007267	

PARAPET DETAILS
BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

REINFORCING STEEL LIST

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS				
					A	B	C	D	INCR.
ABUTMENTS									
A501	178	7'-2"	1331	2	2'-1"	3'-3"	2'-1"		
A502	89	7'-8"	712	2	2'-7"	2'-9"	2'-7"		
A503	158	3'-6"	577	1	2'-4½"	1'-3"			
A504	4	9'-4"	39	1	2'-7½"	6'-10"			
A505	22	3'-11"	90	1	2'-4½"	1'-8"			
A506	4	10'-6"	44	1	2'-7½"	8'-0"			
A507	6	8'-2"	51	STR					
A508	7	19'-3"	141	STR					
A509	8	25'-2"	210	STR					
A510	18	5'-3"	99	2	2'-6"	0'-6"	2'-6"		
A511	6	5'-3"	33	19	3'-4"	1'-3½"	1'-5½"		
A512	14	7'-8"	112	13	1'-3"	1'-2"	1'-2"	4'-10"	
A513	8	4'-6"	38	STR					
A514	8	10'-0"	83	STR					
A515	4	14'-7"	61	STR					
A516	2	8'-2"	17	1	4'-9"	3'-6½"			
A517	11	5'-3"	60	2	2'-4"	0'-6"	2'-4"		
A518	7	5'-1"	37	13	2'-1"	1'-6"	1'-6"	1'-0"	
A519	7	4'-3"	31	STR					
A520	7	6'-5"	47	19	5'-5"	0'-8"	0'-8"		
A521	8	3'-11"	33	STR					
A522	4	3'-10"	16	2	1'-3"	1'-7"	1'-3"		
A523	190	7'-0"	1387	2	2'-0"	3'-3"	2'-0"		
A524	95	7'-8"	760	2	2'-7"	2'-9"	2'-7"		
A525	174	3'-6"	635	1	2'-4½"	1'-3"			
A526	4	10'-5"	43	1	2'-7½"	7'-11"			
A527	22	4'-0"	92	1	2'-4½"	1'-9"			
A528	4	10'-5"	43	1	2'-7½"	7'-11"			
A529	2 SERIES OF 3	11'-8" TO 14'-2"	81	STR					1'-3"
A530	4	14'-4"	60	STR					
A531	2	14'-4"	30	STR					
A532	2	3'-11"	8	STR					
A533	11	5'-3"	60	2	2'-6"	0'-6"	2'-6"		
A534	8	3'-7"	30	1	1'-8½"	2'-0"			
A535	8	6'-3"	52	STR					
A536	8	5'-10"	49	STR					
A537	2 SERIES OF 3	3'-5" TO 6'-1"	30	STR					1'-4"
A538	8	9'-8"	81	STR					
A539	4	17'-10"	74	STR					
A540	5	22'-10"	119	STR					
A541	6	26'-2"	164	STR					
A542	7	6'-4"	46	19	4'-3"	1'-5"	1'-5"		
A543	13	7'-10"	106	13	1'-1"	1'-1"	1'-1"	5'-2"	
A544	6	4'-9"	30	2	1'-3"	2'-6"	1'-3"		
A545	3	7'-0"	22	1	2'-3"	4'-10½"			
A546	6	3'-0"	19	STR					
A547	19	5'-3"	104	2	2'-6	0'-6"	2'-6		
A548	2	10'-6"	22	STR					
A801	15	34'-10"	1395	STR					
A802	15	34'-6"	1382	STR					
A803	5	40'-0"	534	STR					
A804	5	30'-5"	406	STR					

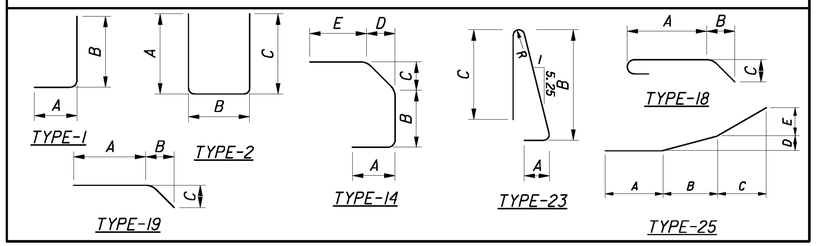
MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS		
					A	B	C
ABUTMENTS CONTINUED							
A805	15	33'-4"	1335	STR			
A806	15	27'-11"	1118	STR			
A807	5	30'-0"	401	STR			
A808	5	32'-4"	432	STR			
A809	2	25'-2"	134	STR			
A810	5	6'-4"	85	1	2'-4"	4'-2½"	
A811	6	7'-2"	115	1	2'-2"	5'-2½"	
A812	8	6'-0"	128	1	1'-9"	4'-5½"	
A813	4	4'-8"	50	1	2'-0½"	2'-10"	
A814	2	14'-7"	78	STR			
A815	5	6'-2"	82	1	2'-4"	4'-0½"	
A816	4	6'-4"	68	1	2'-4½"	4'-2"	
A817	4	3'-5"	36	1	2'-4½"	1'-3"	
A818	15	27'-3"	1091	STR			
A819	15	30'-0"	1202	STR			
A820	15	25'-4"	1015	STR			
A821	5	40'-0"	534	STR			
A822	5	39'-7"	528	STR			
A823	15	32'-7"	1305	STR			
A824	15	30'-0"	1202	STR			
A825	5	30'-0"	401	STR			
A826	5	33'-7"	448	STR			
A827	5	6'-2"	82	1	2'-4"	4'-0½"	
A828	5	5'-3"	70	1	1'-8"	3'-9½"	
A829	5	2'-11"	39	1	1'-10½"	1'-3"	
A830	5	6'-3"	83	1	2'-4"	4'-1½"	
A831	7	8-11"	167	1	2'-1½"	7'-0"	
A832	13	5'-3"	182	1	1'-10"	3'-7½"	
A833	3	4'-2"	33	1	1'-11"	2'-5½"	
A834	2	26'-2"	140	STR			
D801	172	4'-8"	2143	18	2'-9½"	1'-0"	1'-0"
ABUTMENT TOTAL			26,453				
PIERS							
P501	48	3'-2"	159	1	2'-1"	1'-2½"	
P502	26	3'-2"	86	1	2'-1"	1'-2½"	
P503	8	3'-2"	26	1	2'-0½"	1'-3"	
P504	48	3'-2"	159	1	2'-1"	1'-2½"	
P1001	4	22'-6"	387	STR			
P1002	4	12'-4"	212	STR			
P1003	4	22'-6"	387	STR			
PIER TOTAL			1416				
SUPERSTRUCTURE							
S401	1420	30'-0"	28,457	STR			
S402	151	27'-1"	2732	STR			
S403	14	27'-4"	256	STR			
S404	8	27'-4"	146	STR			
S405	15	27'-3"	273	STR			
S406	167	27'-2"	3031	STR			
S501	11	29'-6"	338	STR			
S502	752	30'-0"	23,530	19	22'-10"	7'-3"	0'-11"
S503	678	30'-3"	21,391	STR			
S504	678	28'-11"	20,449	19	26'-1"	2'-9½"	0'-3"
S505	49	7'-8"	392	STR			
S506	752	30'-0"	23,530	STR			
S507	430	12'-3"	5494	19	9'-5"	2'-9½"	0'-3"
S508	178	18'-4"	3404	19	15'-6"	2'-9½"	0'-3"
S509	144	21'-6"	3229	19	18'-8"	2'-9½"	0'-3"
S510	60	6'-2"	386	STR			

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS					
					A	B	C	D	E	R
SUPERSTRUCTURE CONTINUED										
S511	60	6'-2"	386	STR						
S512	136	30'-0"	4255	STR						
S513	23	28'-10"	692	STR						
S601	76	32'-4"	3691	STR						
S602	76	30'-0"	3425	STR						
S603	91	33'-5"	4567	STR						
S604	91	29'-10"	4078	STR						
R501	301	7'-5"	2328	23	1'-1"	3'-2"	3'-0"			2¾"
R502	12	5'-6"	69	25	1'-8"	2'-5"	1'-5"	0'-1½"	0'-5"	
R503	20	5'-6"	115	STR						
R504	32	10'-0"	334	STR						
R505	112	30'-0"	3504	STR						
R506	6	28'-8"	179	STR						
R507	6	29'-6"	185	STR						
R508	6	10'-3"	64	STR						
R509	6	11'-6"	72	STR						
R510	284	8'-5"	2493	23	0'-7"	3'-11"	3'-8"			1¼"
R511	16	28'-11"	483	STR						
R601	284	3'-9"	1600	14	1'-1"	0'-0"	1'-8"	0'-6"	1'-1"	
R602	32	4'-5"	212	1	1'-5"	3'-2"				
R603	88	4'-10"	639	1	1'-5"	3'-7"				
R604	284	2'-8"	1138	1	1'-1"	1'-9"				
R605	16	30'-0"	721	STR						
R606	1	30'-0"	45	STR						
R607	1	30'-10"	46	STR						
R608	1	10'-3"	15	STR						
R609	1	11'-6"	17	STR						
R610	17	3'-1"	79	1	1'-1"	2'-2"				
R611	17	4'-3"	109	14	1'-1"	0'-0"	2'-3"	0'-6"	1'-1"	
R612	284	3'-5"	1457	14	0'-10½"	1'-0"	0'-8½"	0'-6"	0'-8"	
R613	284	3'-6"	1493	1	0'-11"	2'-9"				
R614	2	30'-3"	91	STR						
SUPERSTRUCTURE TOTAL			175,620							
TOTAL			203,489							

NOTES:

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHEN FOUR DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A No.6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.
2. ALL REINFORCING STEEL TO BE EPOXY COATED.

BEND DIAGRAMS



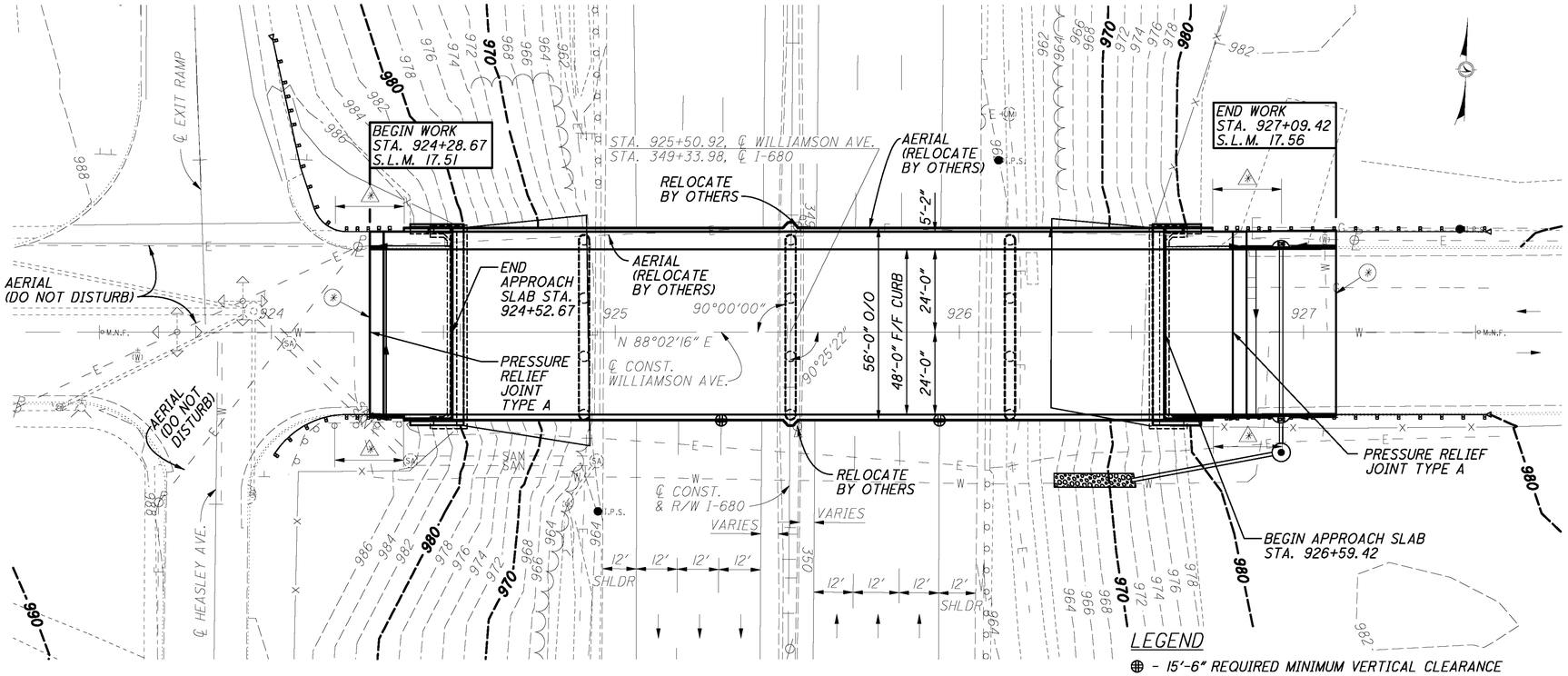
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED MJP | DRAWN MJP | REVIEWED EEC | DATE 05-28-10 | CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007232

REINFORCING STEEL LIST
BRIDGE NO. MAH-680-0693
I-680 OVER YOUNGSTOWN AND SOUTHEASTERN RAILROAD

MAH-680-4.29
PID No. 25508

STRUCTURE NUMBER MAH-62-1751



PLAN

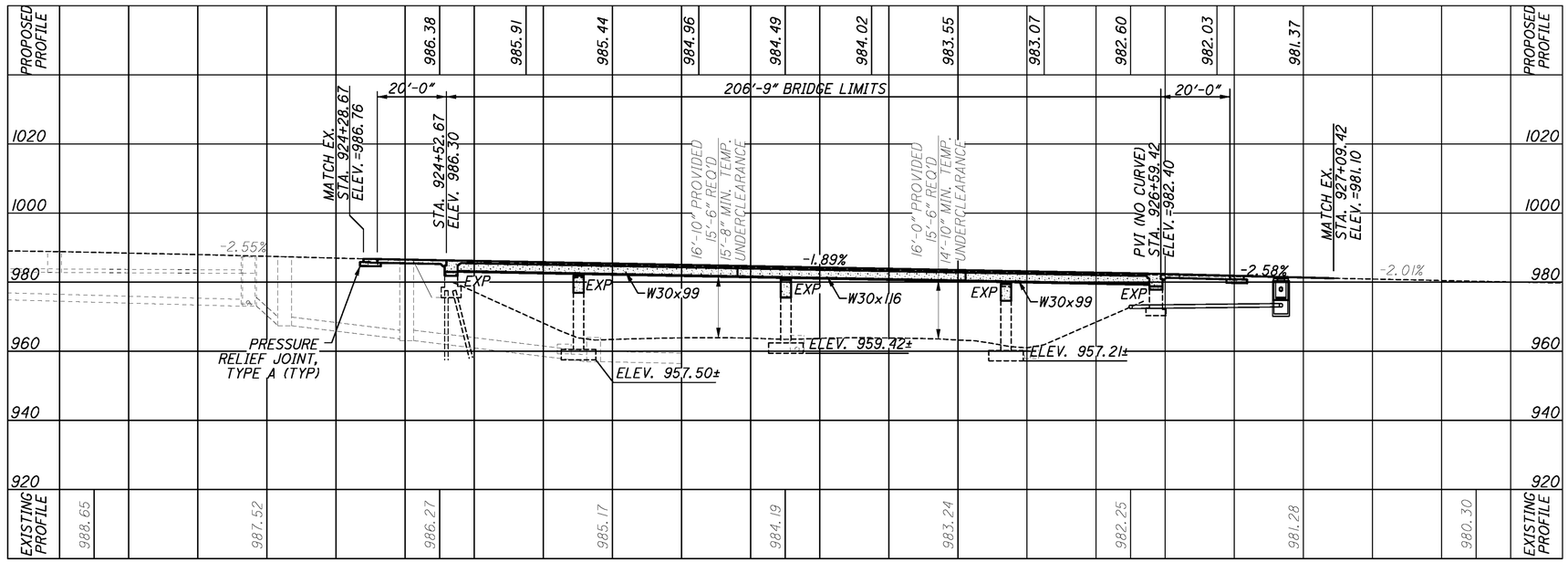
PORTIONS OF EXISTING BRIDGE TO BE REMOVED UNDER ITEM 202

LEGEND

⊕ - 15'-6" REQUIRED MINIMUM VERTICAL CLEARANCE
16'-0" PROPOSED MINIMUM VERTICAL CLEARANCE
15'-8" MINIMUM TEMPORARY VERTICAL CLEARANCE (SB)
14'-10" MINIMUM TEMPORARY VERTICAL CLEARANCE (NB)

⊛ - SAW CUT, FULL DEPTH

⚠ - BRIDGE TERMINAL ASSEMBLY, TYPE I



PROFILE AT ℄ CONSTRUCTION

BENCHMARK DATA

BM #1 STA. 923+52.97, ELEV. 988.36 , OFFSET 30.25 , RIGHT
BM #2 STA. 926+97.54, ELEV. 981.15 , OFFSET 63.19 , RIGHT

NOTES

PROPOSED WORK SHALL INCLUDE REMOVAL OF PORTIONS OF THE EXISTING STRUCTURE, CONSTRUCTING A NEW SUPERSTRUCTURE WITH COMPOSITE CONCRETE DECK, CONVERTING BACKWALLS TO SEMI-INTEGRAL, REPLACING PIER CAPS, PATCHING SUBSTRUCTURE CONCRETE, AND REPLACING APPROACH SLABS.

DESIGN TRAFFIC (I-680):
2010 ADT = 53930 2010 ADTT = 4854
2030 ADT = 56660 2030 ADTT = 5099
DIRECTIONAL DISTRIBUTION = 0.58
DESIGN SPEED = 55 MPH LEGAL SPEED= 50 MPH

DESIGN TRAFFIC (US-62):
2010 ADT = 5730 2010 ADTT = 573
2030 ADT = 5850 2030 ADTT = 585
DIRECTIONAL DISTRIBUTION = 1.00
DESIGN SPEED = 25 MPH LEGAL SPEED= 25

EXISTING STRUCTURE

TYPE: 4-SPAN CONTINUOUS STEEL BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES
SPANS: 36.00'±, 60.00'±, 63.75'±, AND 42.50'±
= 202'-3"± c/c BEARINGS
ROADWAY: 48'-0"± F/F SAFETY CURB
LOADING: CF 2000
SKEW: 0°0'0"
APPROACH SLABS: 25'-0"± LONG (AS-1-54)
ALIGNMENT: TANGENT
CROWN: NORMAL
STRUCTURAL FILE NUMBER: 5007208
DATE BUILT: 1963

PROPOSED STRUCTURE

PROPOSED WORK: NEW 4-SPAN CONTINUOUS STEEL BEAM SUPERSTRUCTURE WITH COMPOSITE REINFORCED CONCRETE DECK SUPPORTED BY REHABILITATED REINFORCED CONCRETE SEMI-INTEGRAL TYPE ABUTMENTS AND CAP AND COLUMN PIERS
SPANS: 36.00', 60.00', 63.75', AND 42.50'
= 202'-3" c/c BEARINGS
ROADWAY: 48'-0" F/F CURB
LOADING: HS25 (CASE II) AND ALTERNATE MILITARY + 60 PSF FUTURE WEARING SURFACE, SUPERSTRUCTURE ONLY
SKEW: 0°0'0"
APPROACH SLABS: AS-1-81, 20' LONG (MODIFIED)
ALIGNMENT: TANGENT
CROWN: 0.016 FT/FT
COORDINATES: LATITUDE N41°05'11"
LONGITUDE W80°39'00"

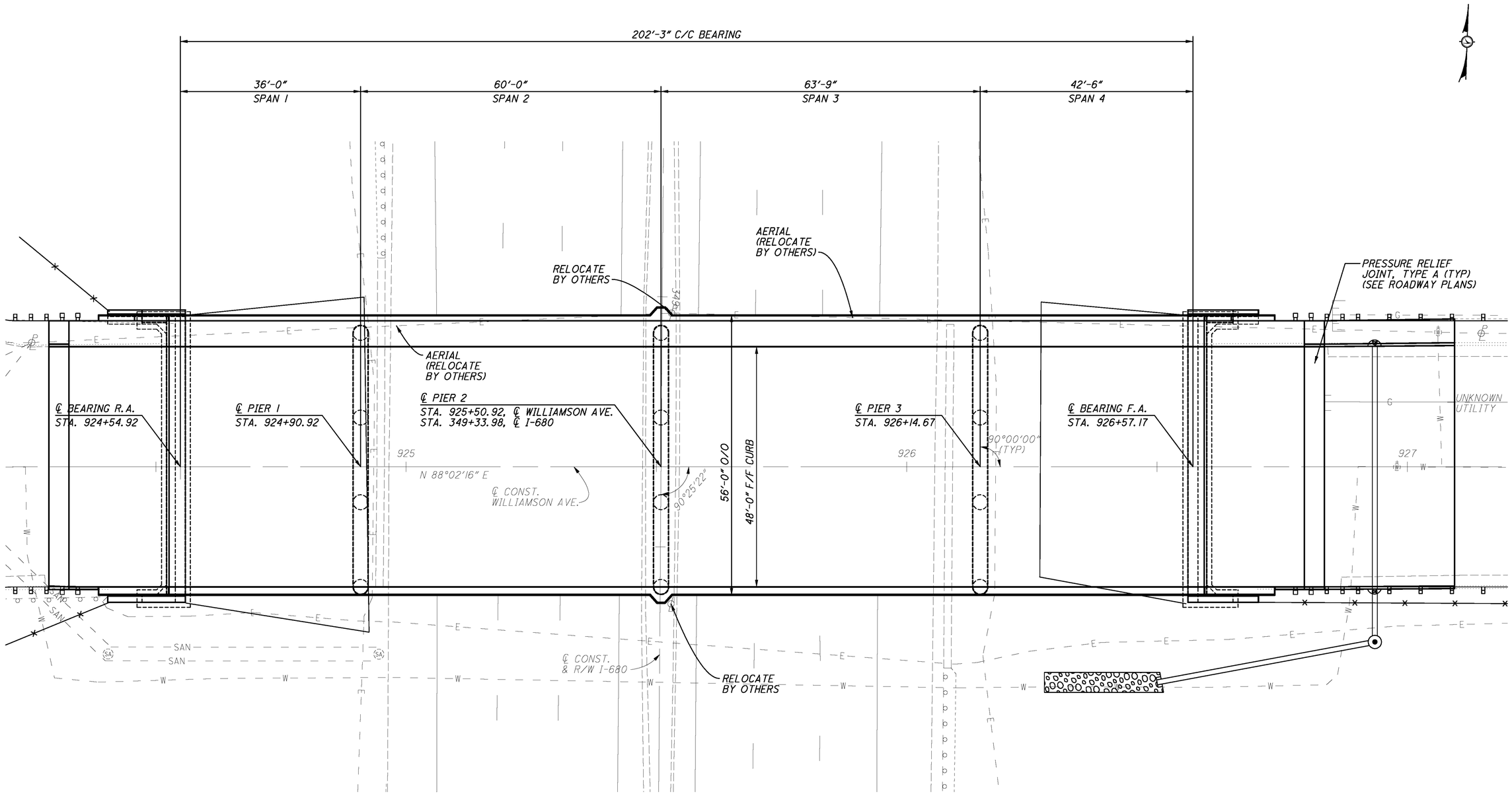
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED GJS | DRAWN GJS | REVIEWED EEC | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007208

MAHONING COUNTY
STA. 924+52.67
STA. 926+59.42

SITE PLAN
BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

MAH-680-4.29
PID No. 25508



PLAN

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
GJS	GJS	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007208	

GENERAL PLAN
BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

MAH-680-4.29
PID No. 25508

2 / 21

288
307

PROPOSED WORK

THE WORK COVERED BY THESE PLANS INCLUDES REMOVAL AND REPLACEMENT OF THE CONCRETE DECK, STEEL BEAMS, BRIDGE RAILINGS, APPROACH SLABS, BEARINGS, AND PORTIONS OF THE SUBSTRUCTURE. OTHER WORK INCLUDES CONVERTING ABUTMENT BACKWALLS TO SEMI-INTEGRAL, PATCHING PORTIONS OF THE EXISTING SUBSTRUCTURE, AND SEALING CONCRETE SURFACES. TRAFFIC IS TO BE DETOURED DURING CONSTRUCTION.

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

- AS-1-81 DATED 07-19-02
- BR-2-98 DATED 07-19-02
- GSD-1-96 DATED 07-19-02
- PCB-91 DATED 07-19-02
- SBR-1-99 DATED 07-19-02
- SICD-1-96 DATED 07-19-02
- VPF-1-90 DATED 07-19-02
- HL-10.13 DATED 10-16-09
- HL-20.14 DATED 10-16-09
- HL-30.31 DATED 04-17-09
- HL-30.32 DATED 04-17-09

AND TO SUPPLEMENTAL SPECIFICATIONS:

- 843 DATED 04-18-03

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002 AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

CONCRETE CLASS HP - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE & RAILING)

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615 OR A996
GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

STRUCTURAL STEEL - ASTM A709 GRADE 50W, MINIMUM YIELD STRENGTH 50,000 PSI

DESIGN LOADING:

HS25, CASE II AND THE ALTERNATE MILITARY LOADING.
FUTURE WEARING SURFACE (FWS) OF 60 LBS/SQ. FT.

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL
2-1/2" CONCRETE COVER

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED,
FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

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 SECTIONS 102.05, 105.02 AND 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.

UTILITY LINES

THE UTILITY SHALL BORE ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED LINES. THE CONTRACTOR AND UTILITY ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

DECK PLACEMENT DESIGN ASSUMPTIONS

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 1.6 KIPS FOR A TOTAL MACHINE LOAD OF 12.8 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65".

ITEM 202 PORTION OF STRUCTURE REMOVED, AS PER PLAN

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.
SUBSTRUCTURE CONCRETE REMOVAL: REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

ITEM 203 EMBANKMENT, AS PER PLAN

PLACE AND COMPACT EMBANKMENT MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT.

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 709.00.

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE.

REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

ITEM 511 - CLASS HP CONCRETE, AS PER PLAN

THE PROVISIONS OF ITEM 511 SHALL APPLY EXCEPT AS NOTED BELOW.

MIX OPTIONS:
ALL SUPERSTRUCTURE, BRIDGE DECK, SIDEWALK, APPROACH SLABS AND PARAPET CONCRETE SHALL BE THIS MIX (HP4, AS PER PLAN). THE FOLLOWING PROPORTIONS WILL BE USED AS A STARTING MIX DESIGN.

CONCRETE TABLE
QUANTITIES PER CUBIC YARD
AGGREGATES (SSD)

MIX 4, AS PER PLAN (GGBF SLAG + MICROSILICA)

Aggr. Type	Fine Aggr. (lb)	#8 Coarse Aggr. (lb)	#57 Coarse Aggr. (lb)	Total (lb)	Cement Content (lb)	GGBF Slag (lb)	Micro-Silica (lb)	Water to Cementitious Ratio	Air Content +/-2%
Gravel	1370	650	790	2810	440	190	30	0.42	6
Limestone	1370	650	800	2820	440	190	30	0.42	6
Slag	1370	570	695	2635	440	190	30	0.42	6

* ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127

BASIS OF PAYMENT:
PAYMENT FOR THE ABOVE COMPLETED AND ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT BID PRICE FOR:

- ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN, CU YD
- ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN, CU YD
- ITEM 511 - CLASS HP CONCRETE, SUPERSTRUCTURE, AS PER PLAN, CU YD
- ITEM 511 - CLASS HP CONCRETE, SIDEWALK, AS PER PLAN, CU YD

ITEM 514 - FIELD PAINTING STRUCTRUAL STEEL, FINISH COAT

THE FINISH COAT ON THE FASCIA BEAM LINES SHOULD BE PAINTED LIGHT BLUE, FEDERAL COLOR #15450.

ITEM 516 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN

INSTALL A 3 FOOT WIDE NEOPRENE SHEET AT LOCATIONS SHOWN IN THE PLANS. SECURE THE NEOPRENE SHEETING TO THE CONCRETE WITH 1-1/4" X #10 GAGE (LENGTH X SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 1 INCH OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. USE OF OTHER SIMILAR GALVANIZED DEVICES, WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE WILL BE 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 6 INCHES, +/-, 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 6 INCHES, +/-, FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 6 INCHES, CENTER TO CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHALL COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAP LENGTHS OF THE HORIZONTAL STRIPS THAT ARE NOT VULCANIZED OR ADHESIVE BONDED, SHALL BE AT LEAST 1 FOOT IN LENGTH, OR 6 INCHES IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 3/32" 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, INCHES	D751	0.094 +/- 0.01
BREAKING STRENGTH, GRAB, LBS, MINIMUM (LONG. X TRANS.)	D751	700 X 700
ADHESIVE STRIP, 1" WIDE X 2" LONG, LBS MINIMUM	D751	9
BURST STRENGTH, PSI MINIMUM	D751	1400
HEAT AGING, 70 HR, 212 DEGREES F, 180 DEGREES BEND WITHOUT CRACKING	D2136	NO CRACKING OF COATING
LOW TEMP. BRITTLENESS, 1 HR, 40 DEGREES F, BEND AROUND 1/4" MANDREL	D2136	NO CRACKING OF COATING

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE TOTAL LENGTH OF JOINT TO BE SEALED BY THE NUMBER OF FEET.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.

ITEM 517 - RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING), USING HIGH PERFORMANCE CONCRETE, AS PER PLAN

THE PROVISIONS OF ITEM 517 SHALL APPLY EXCEPT AS NOTED BELOW.

THE CONCRETE MIX DESIGN FOR THE PARAPET AND RAILING TRANSITIONS SHALL FOLLOW THE MIX DESIGN GIVEN UNDER ITEM 511 - CLASS HP CONCRETE, AS PER PLAN.

PAYMENT FOR ADDITIONAL CONCRETE AND REINFORCMENT STEEL REQUIRED TO CONSTRUCT THE LIGHT POLE PILASTER FOR BRIDGE WITH SIDWALK RAILING IS INCLUDED IN ITEM ITEM 517 - RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING), USING HIGH PERFORMANCE CONCRETE, AS PER PLAN.

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

INSPECTED 11-03-2005

LOCATION	MEASURED AREA (2005)	PROJECTION FACTOR	REPAIR AREA (2010)	SEE SHEET
REAR ABUTMENT	4 SQ FT	1.10	5 SQ FT	5/21
PIER 1	0 SQ FT	1.10	0 SQ FT	11/21
PIER 2	0 SQ FT	1.10	0 SQ FT	11/21
PIER 3	0 SQ FT	1.10	0 SQ FT	11/21
FORWARD ABUT.	50 SQ FT	1.10	55 SQ FT	8/21
		TOTAL	60 SQ FT	

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS, AS PER PLAN

THE PROVISIONS OF CMS 526 SHALL APPLY EXCEPT AS NOTED BELOW.

CLASS HP CONCRETE, MIX 4, AS PER PLAN, SHALL BE THE ONLY MIX DESIGN OPTION. THE PROPORTIONS FOR THE STARTING MIX DESIGN SHALL BE AS SHOWN FOR ITEM 511 - CLASS HP CONCRETE, AS PER PLAN.

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED GJS | DRAWN GJS | REVIEWED EEC | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007208

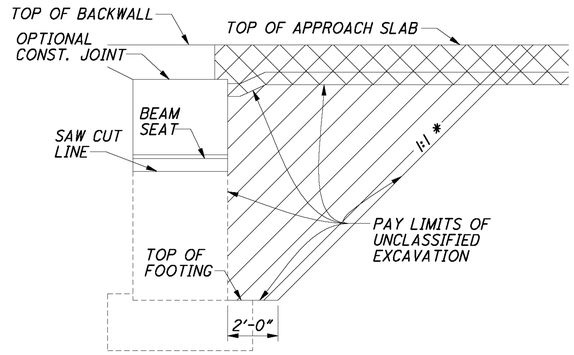
GENERAL NOTES

BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

MAH-680-4.29
PID No. 25508

COMPUTED BY: GJS 05-28-10 CHECKED BY: JBD 05-28-10

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GEN.	SEE SHEET NO.
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	3/21
202	22900	315	SQ YD	APPROACH SLAB REMOVED				315	
202	23500	270	SQ YD	WEARING COURSE REMOVED				270	
503	21100	700	CU YD	UNCLASSIFIED EXCAVATION	700				
509	10001	110,743	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN	10,597	9,860	83,556	6,730	3/21
509	20001	200	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN		200			3/21
510	10000	222	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	222				
511	43200	90	CU YD	CLASS C CONCRETE, PIER		90			
511	45700	28	CU YD	CLASS C CONCRETE, ABUTMENT	28				
511	50001	340	CU YD	CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN			340		3/21
511	50101	37	CU YD	CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN			37		3/21
511	51001	47	CU YD	CLASS HP CONCRETE, SUPERSTRUCTURE, AS PER PLAN	47				3/21
511	51501	42	CU YD	CLASS HP CONCRETE, SIDEWALK, AS PER PLAN			35	7	3/21
511	52000	LUMP		CLASS HP CONCRETE, TEST SLAB				LUMP	
512	10100	1,115	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	90	445	580		
512	33000	5	SQ YD	TYPE 2 WATERPROOFING	5				
513	10240	192,000	POUND	STRUCTURAL STEEL MEMBERS, LEVEL 2			192,000		
513	20000	6,432	EACH	WELDED STUD SHEAR CONNECTORS			6,432		
514	00060	15,800	SQ FT	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			15,800		3/21
514	00066	15,800	SQ FT	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT			15,800		3/21
514	10000	3	EACH	FINAL INSPECTION REPAIR				3	
516	13900	135	SQ FT	2" PREFORMED EXPANSION JOINT FILLER	135				
516	14021	112	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN	112				3/21
516	44200	24	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE)			24		
				(14"x17"x3 11/16" BEARING WITH 15"x18"x VARIES LOAD PLATE)					
516	44300	16	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE)			16		
				(13"x13"x4 1/4" BEARING WITH 14"x14"x VARIES LOAD PLATE)					
517	75125	235	FT	RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING),			235		3/21
				USING HIGH PERFORMANCE CONCRETE, AS PER PLAN					
518	21200	75	CU YD	POROUS BACKFILL WITH FILTER FABRIC	75				
518	40000	180	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	180				
518	40011	92	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	92				4/21
519	11101	60	SQ FT	PATCHING CONCRETE STRUCTURE, AS PER PLAN				60	3/21
526	15001	250	SQ YD	REINFORCED CONCRETE APPROACH SLABS (T=13"), AS PER PLAN				250	3/21
607	39900	205	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC			205		
607	39930	221	FT	VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC			221		
625	10614	8	EACH	LIGHT POLE ANCHOR BOLTS ON STRUCTURE			8		
625	25400	530	FT	CONDUIT, 2", 725.04			530		
625	29920	2	EACH	STRUCTURE JUNCTION BOX			2		
625	30700	4	EACH	PULL BOX, 725.08, 18"			4		

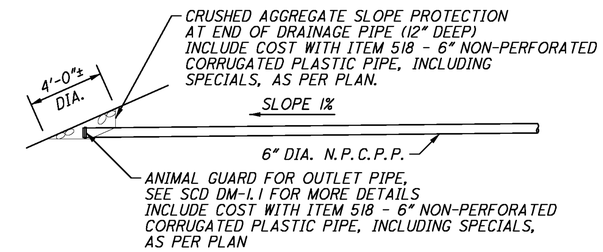


LIMITS OF UNCLASSIFIED EXCAVATION DETAILS

- LIMITS OF ITEM 202, APPROACH SLAB REMOVED

- LIMITS OF ITEM 503, UNCLASSIFIED EXCAVATION

* - 1:1 SLOPE SPECIFIED FOR PURPOSE OF DETERMINING PAY LIMITS ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE NECESSARY SLOPE FOR STABILITY DURING CONSTRUCTION.



TERMINATION OF 6" N.P.C.P.P., AS PER PLAN DETAIL

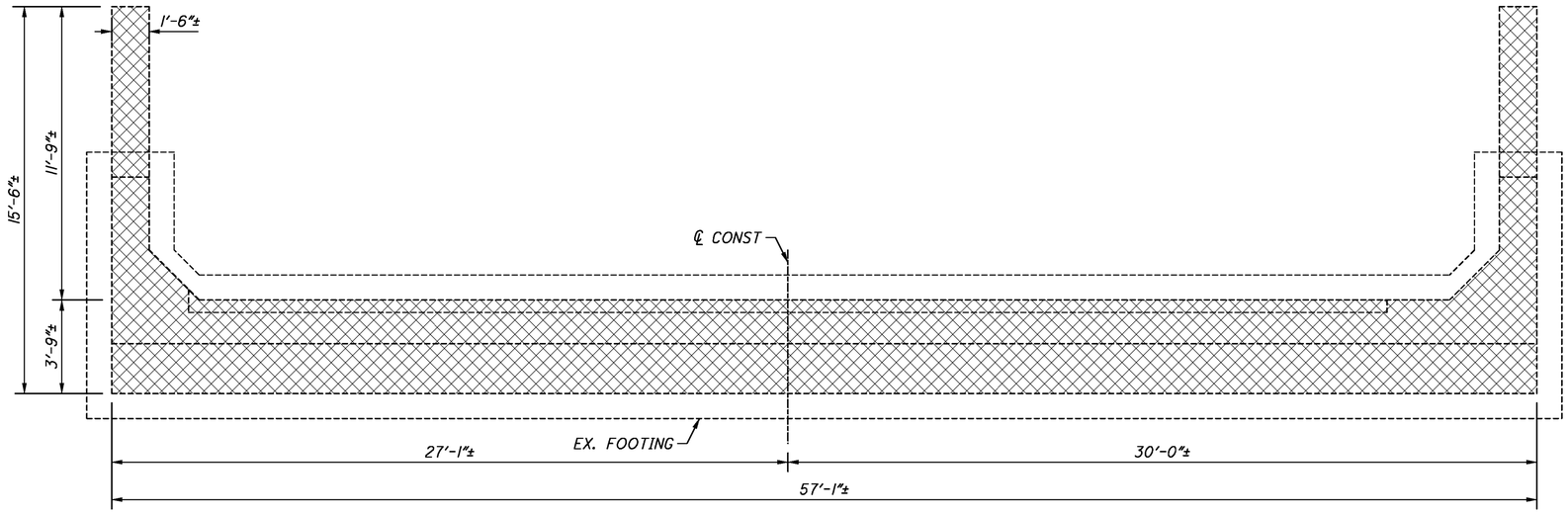
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED GJS | DRAWN GJS | REVIEWED EEC | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007208

GENERAL NOTES, ESTIMATED QUANTITIES & MISCELLANEOUS DETAILS

BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

MAH-680-4.29
PID No. 25508



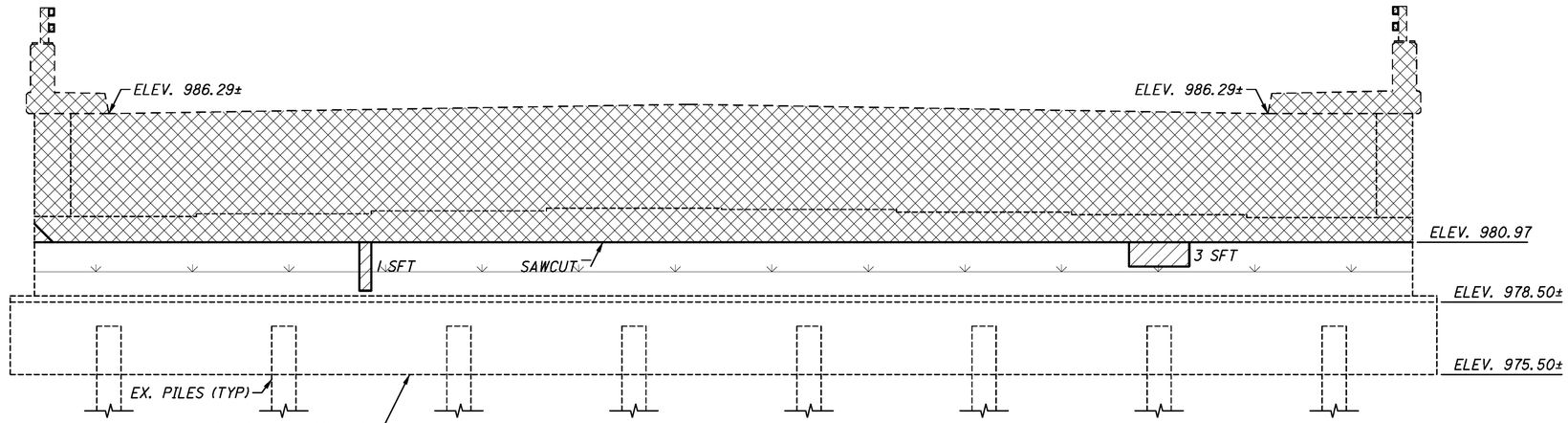
REAR ABUTMENT PLAN

NOTES:

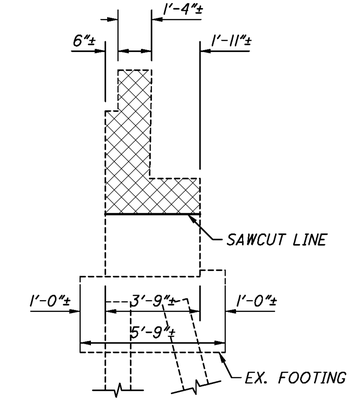
1. REPAIR QUANTITIES BASED ON BRIDGE INSPECTION PERFORMED ON NOVEMBER 3, 2005.

LEGEND

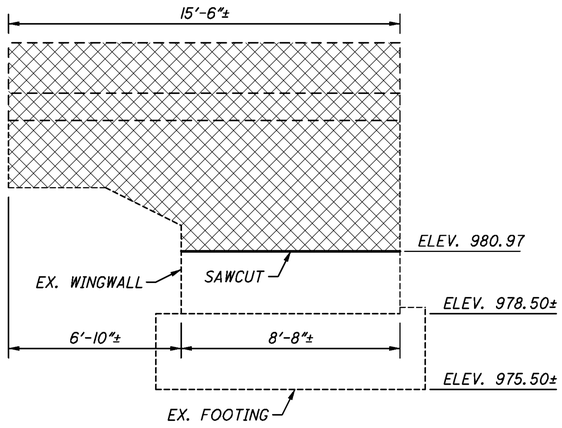
- INDICATES LIMITS OF ITEM 202 - PORTIONS OF STRUCTURES TO BE REMOVED AS PER PLANS
- INDICATES DELAMINATED AREA - REPAIR USING ITEM 519



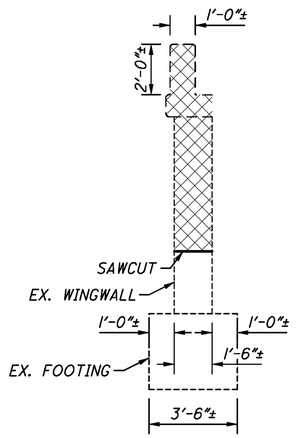
REAR ABUTMENT ELEVATION



SECTION THRU ABUTMENT



WINGWALL ELEVATION



SECTION THRU WINGWALL

NORTHWEST CONSULTANTS, INC
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DESIGN AGENCY

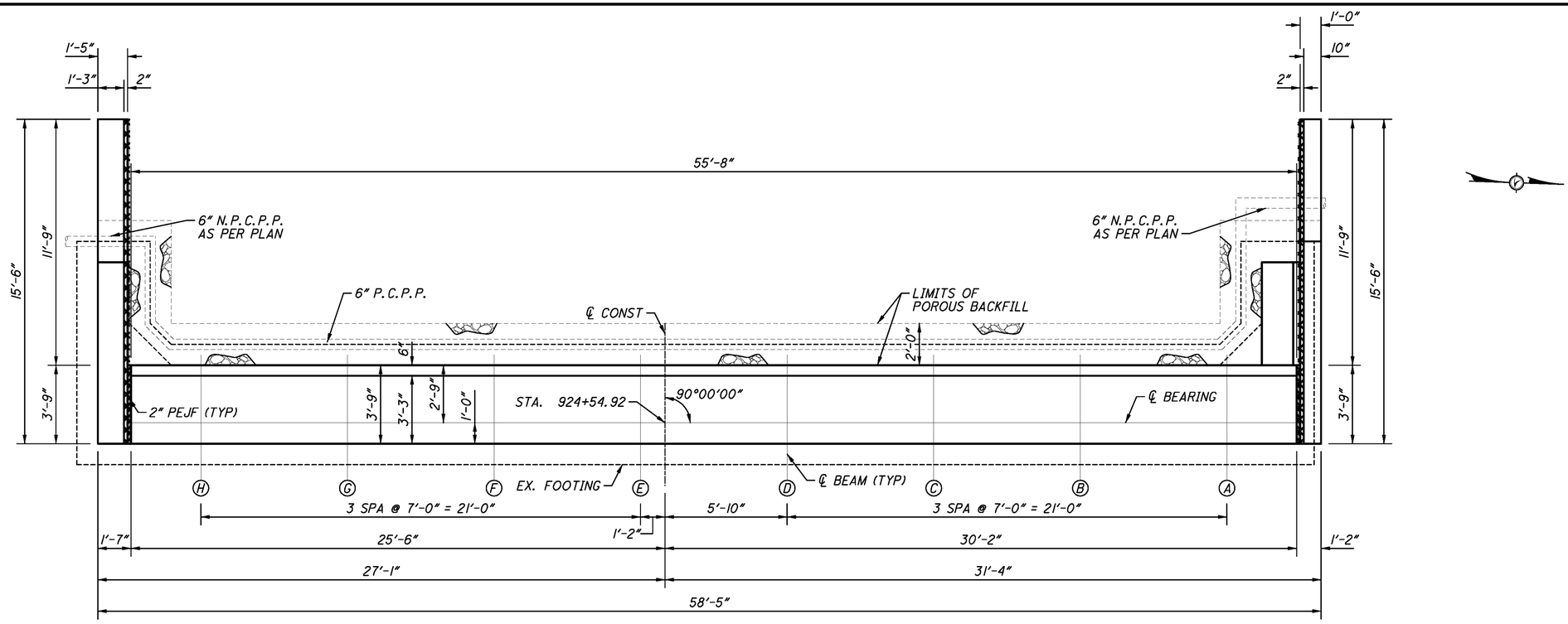
DATE 05-28-10
REVIEWED EEC
STRUCTURE FILE NUMBER 5007208
DRAWN GJS
REVISED
DESIGNED GJS
CHECKED JBD

REAR ABUTMENT REMOVAL DETAILS
BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

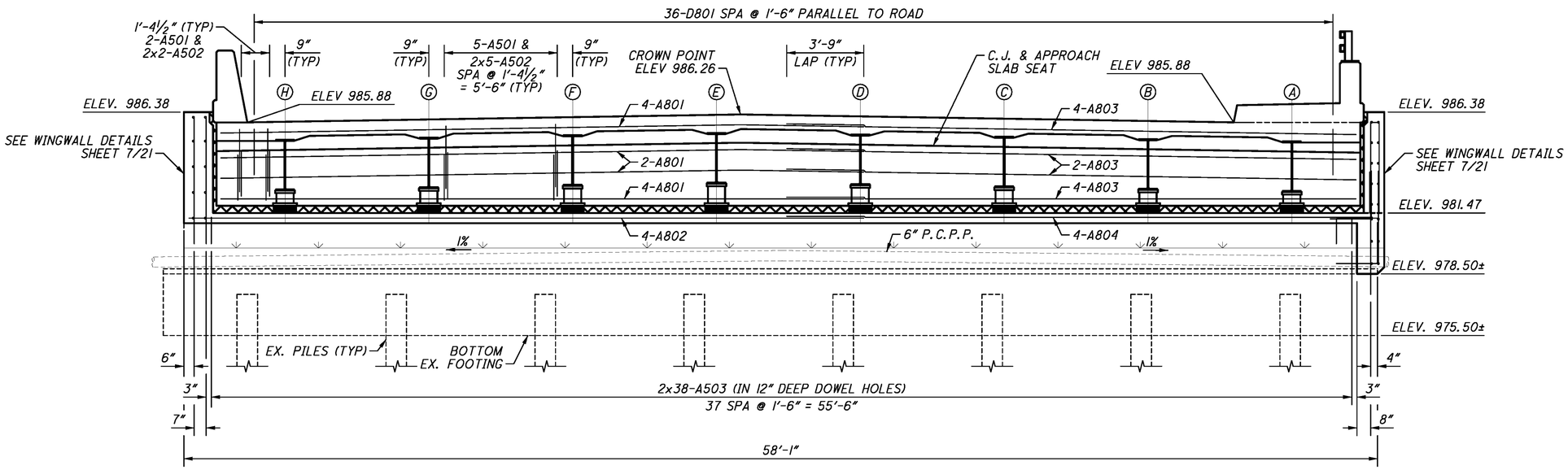
MAH-680-4.29
PID No. 25508

5 / 21

291
307



REAR ABUTMENT PLAN



REAR ABUTMENT ELEVATION

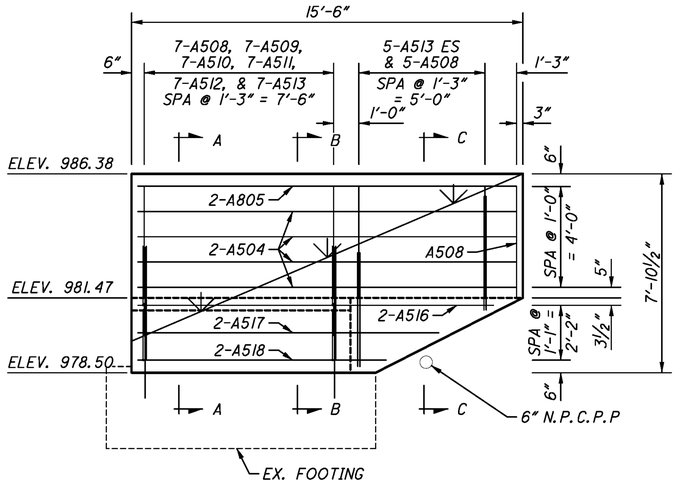
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DESIGNED	DRAWN	REVIEWED	DATE
GJS	GJS	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007208	

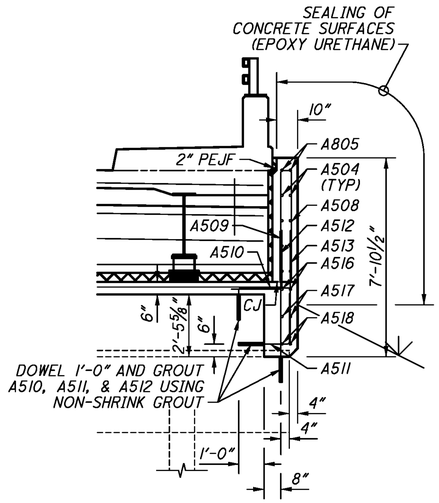
REAR ABUTMENT DETAILS

BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

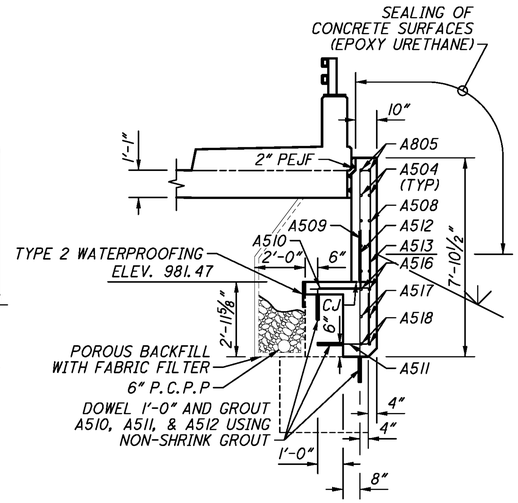
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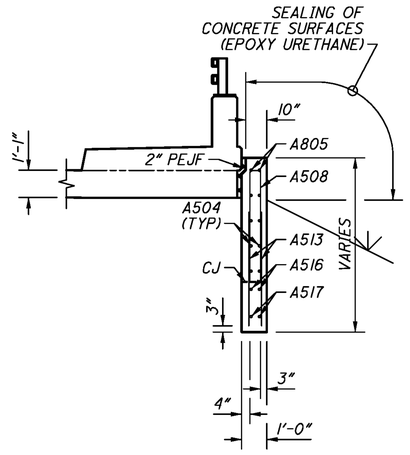
NORTH REAR WINGWALL ELEVATION



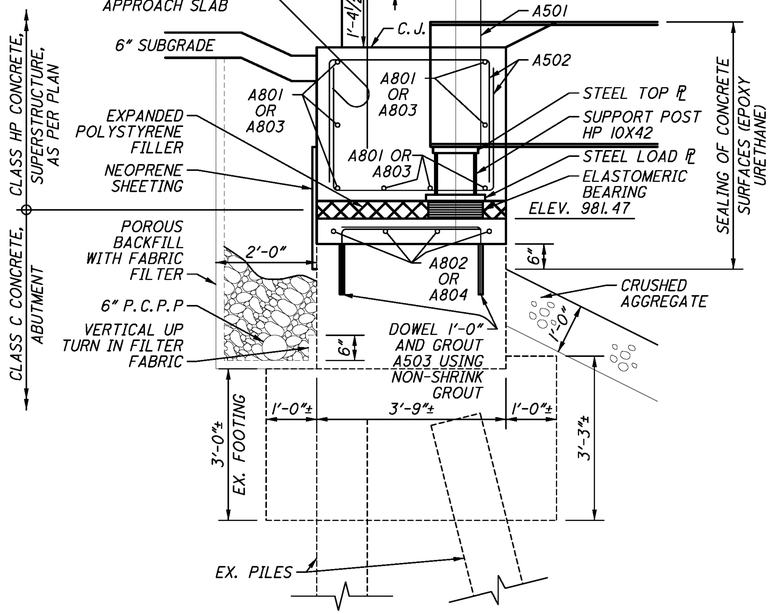
SECTION A-A



SECTION B-B



SECTION C-C

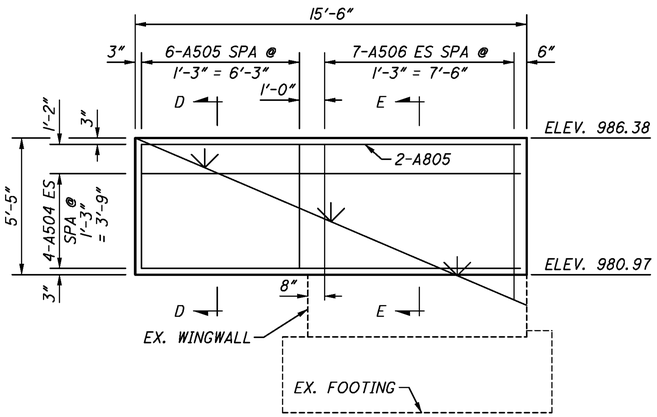


TYPICAL REAR ABUTMENT

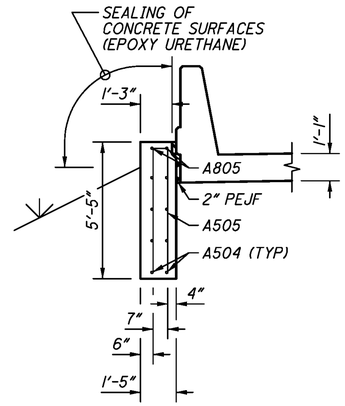
FOR MORE DETAILS SEE STD. DWG. SCID-1-96

NOTES:

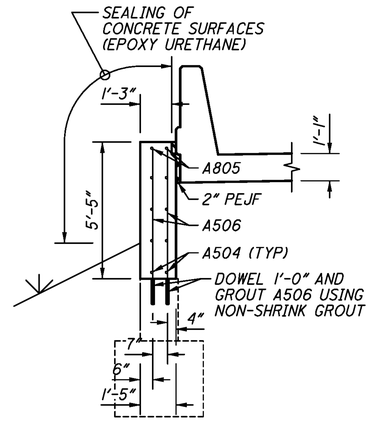
1. POROUS BACKFILL: POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.



SOUTH REAR WINGWALL ELEVATION



SECTION D-D



SECTION E-E

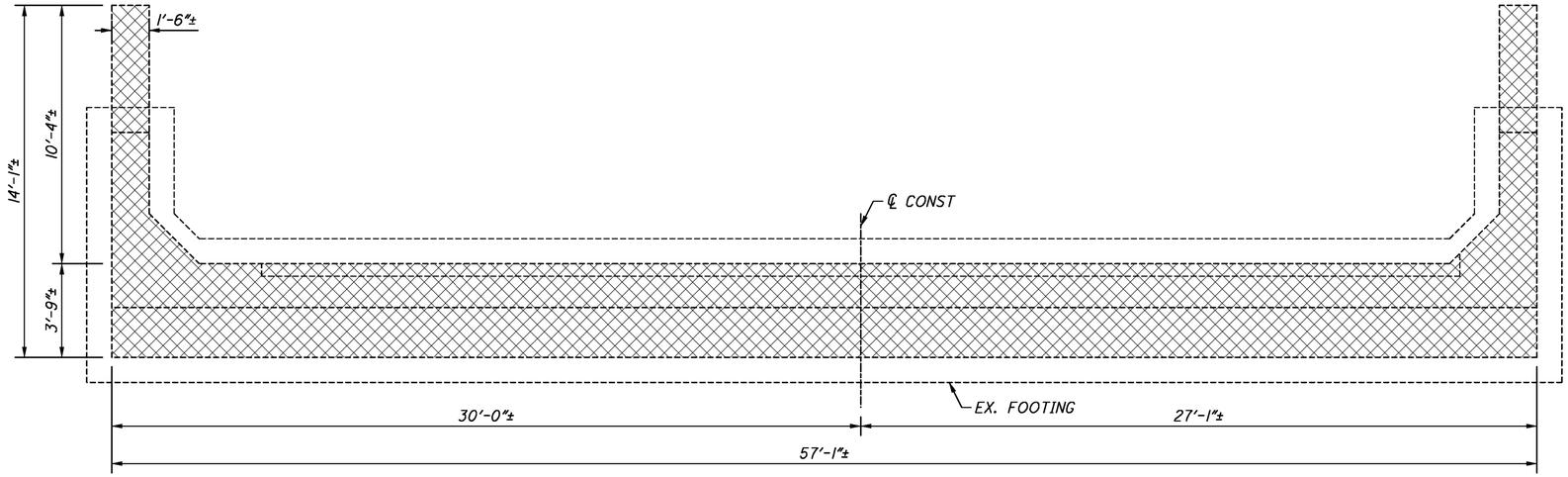
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

DESIGNED	DRAWN	REVIEWED	DATE
GJS	GJS	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007208	

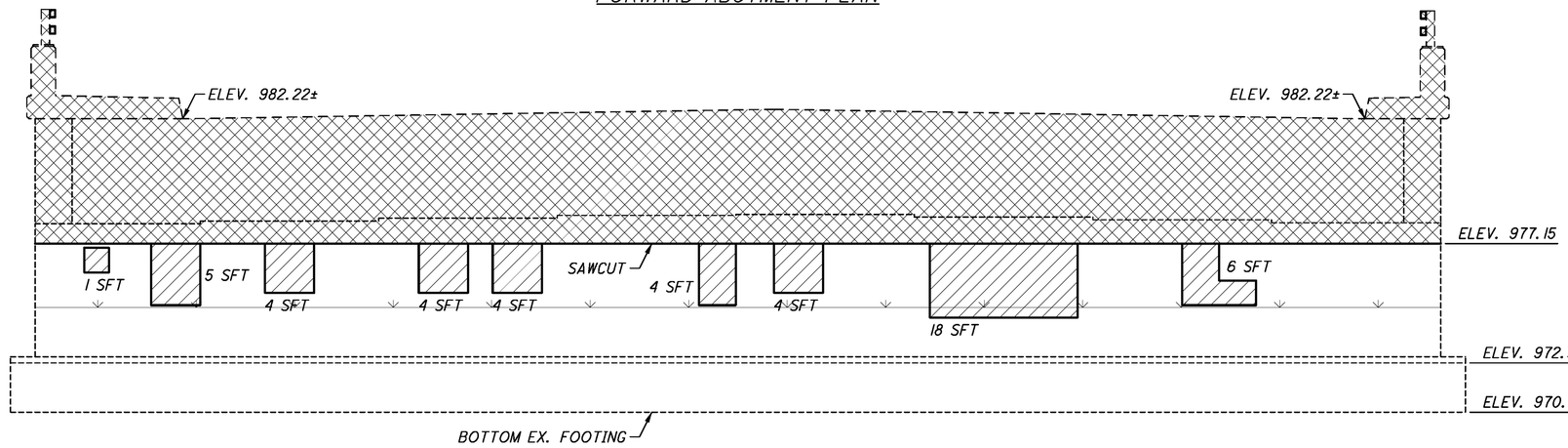
REAR ABUTMENT SECTION & WING-WALL DETAILS

BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

MAH-680-4.29
PID No. 25508



FORWARD ABUTMENT PLAN



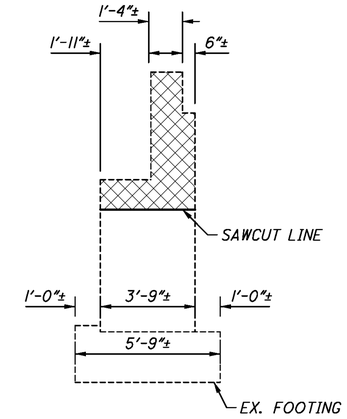
FORWARD ABUTMENT ELEVATION

NOTES:

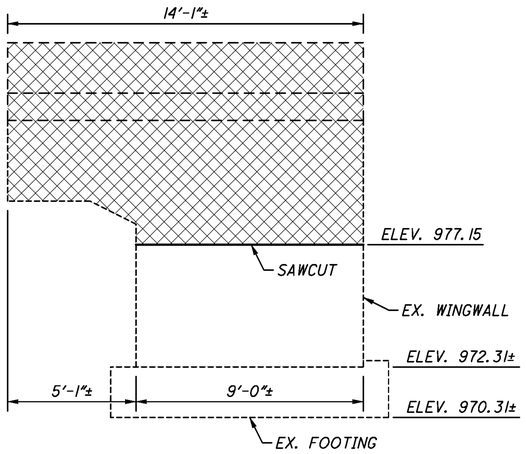
1. REPAIR QUANTITIES BASED ON BRIDGE INSPECTION PERFORMED ON NOVEMBER 3, 2005.

LEGEND

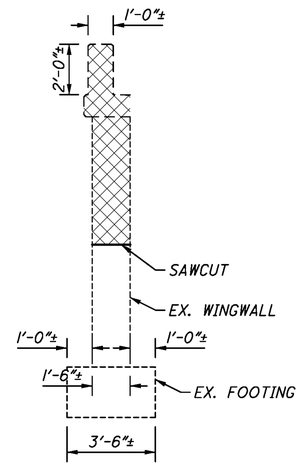
- INDICATES LIMITS OF ITEM 202 - PORTIONS OF STRUCTURES TO BE REMOVED AS PER PLANS
- INDICATES DELAMINATED AREA - REPAIR USING ITEM 519



SECTION THRU ABUTMENT



WINGWALL ELEVATION



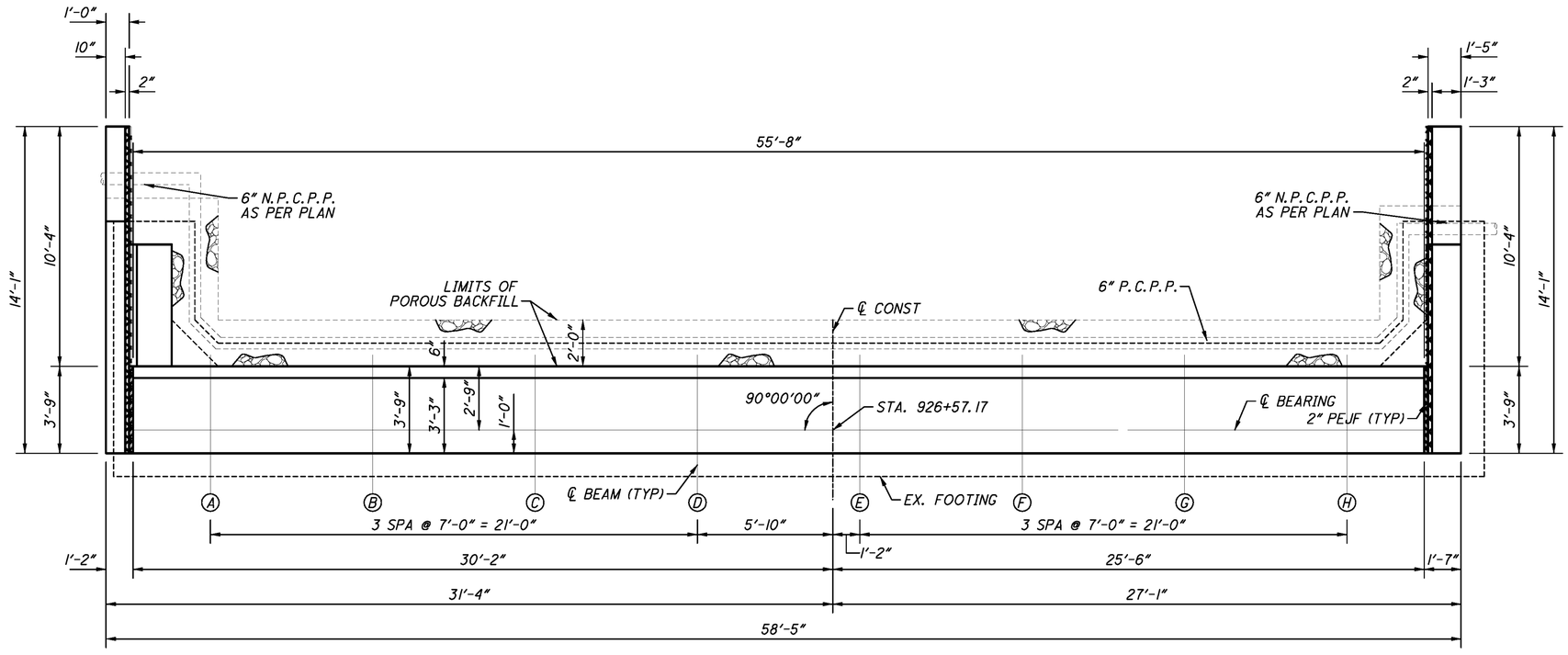
SECTION THRU WINGWALL

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

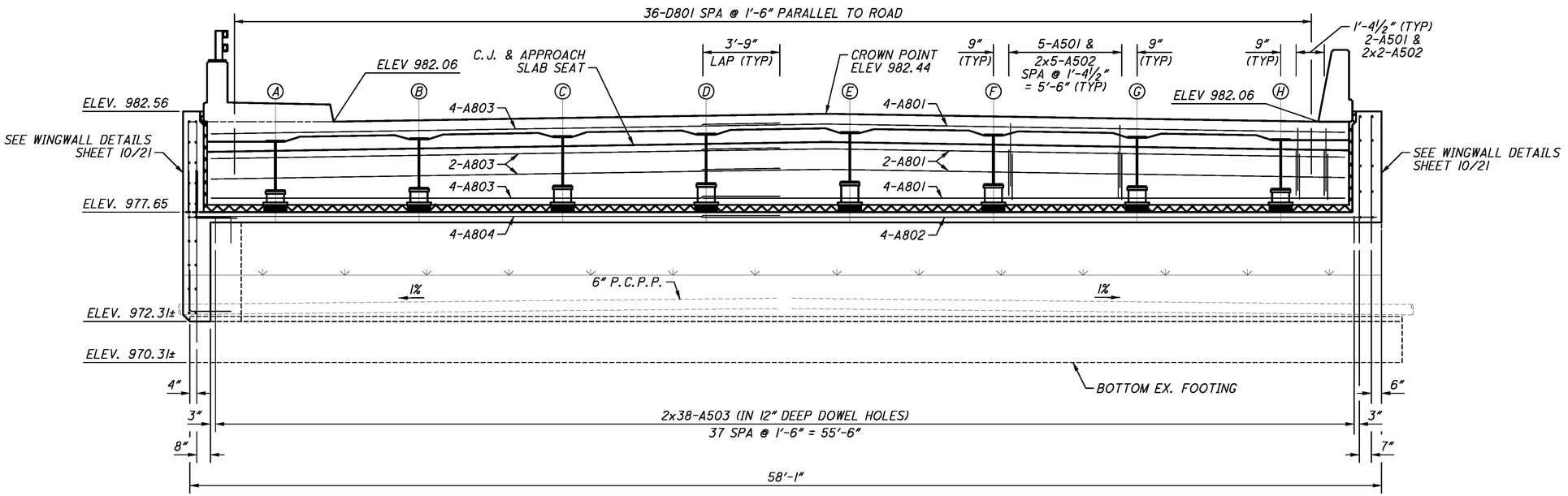
DESIGNED	DRAWN	REVIEWED	DATE
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JBD		5007208	

FORWARD ABUTMENT REMOVAL DETAILS
BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

MAH-680-4.29
PID No. 25508



FORWARD ABUTMENT PLAN



FORWARD ABUTMENT ELEVATION

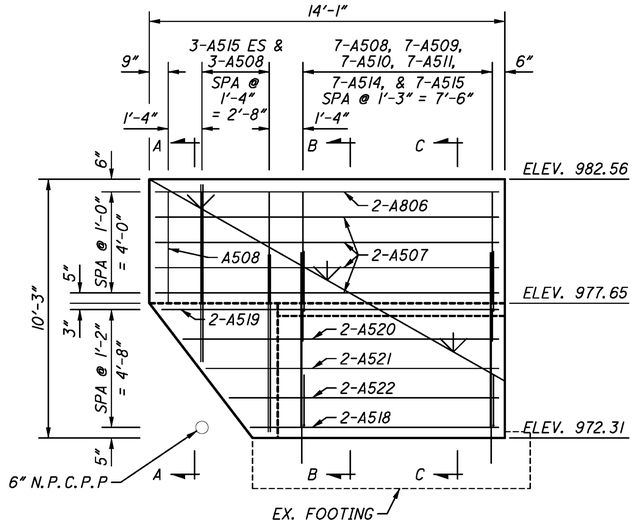
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NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
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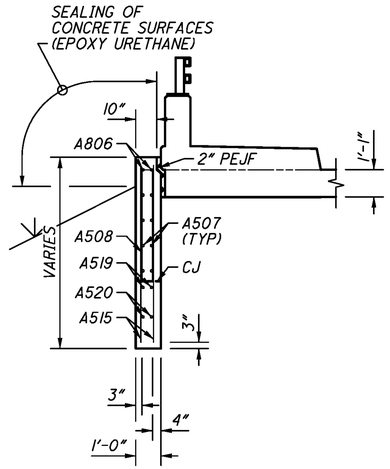
FORWARD ABUTMENT DETAILS

BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

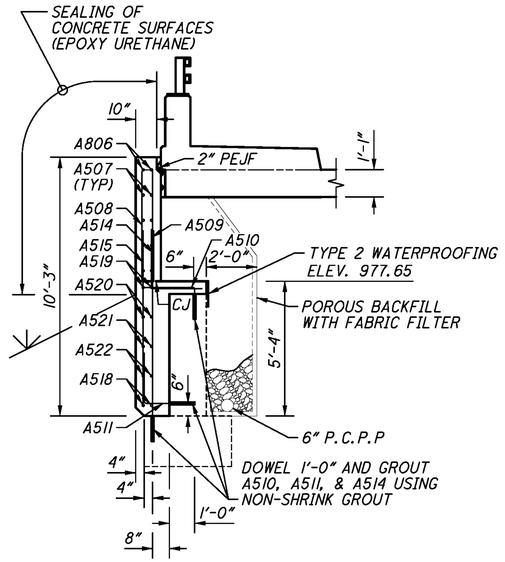
MAH-680-4.29
PID No. 25508



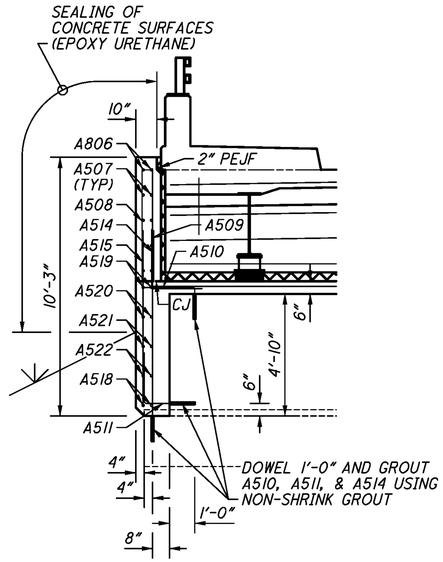
NORTH FORWARD WINGWALL ELEVATION



SECTION A-A



SECTION B-B



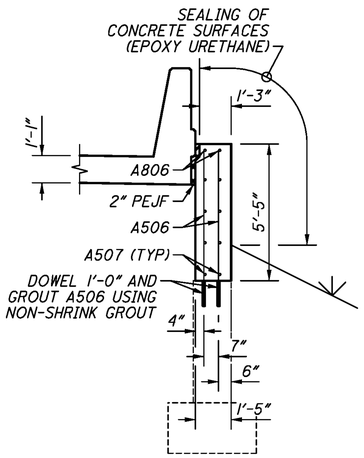
SECTION C-C

TYPICAL FORWARD ABUTMENT

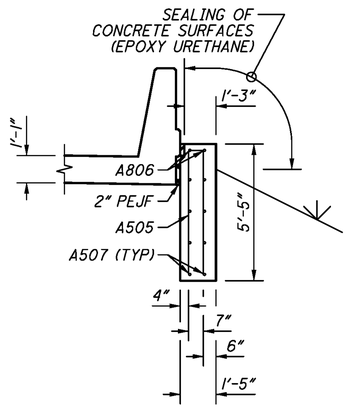
FOR MORE DETAILS SEE STD. DWG. SCID-1-96

NOTES:

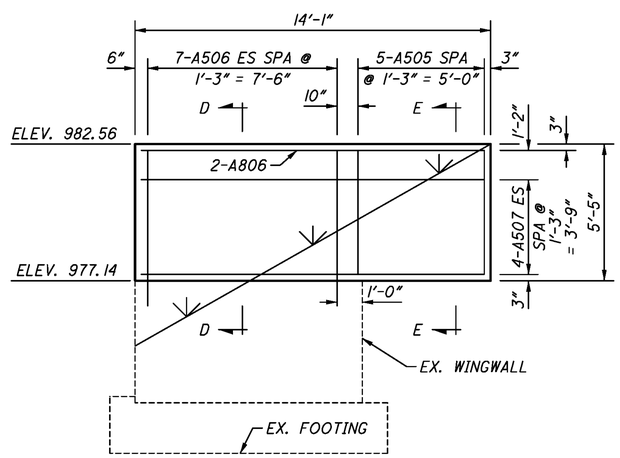
1. POROUS BACKFILL: POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.



SECTION D-D



SECTION E-E



SOUTH FORWARD WINGWALL ELEVATION

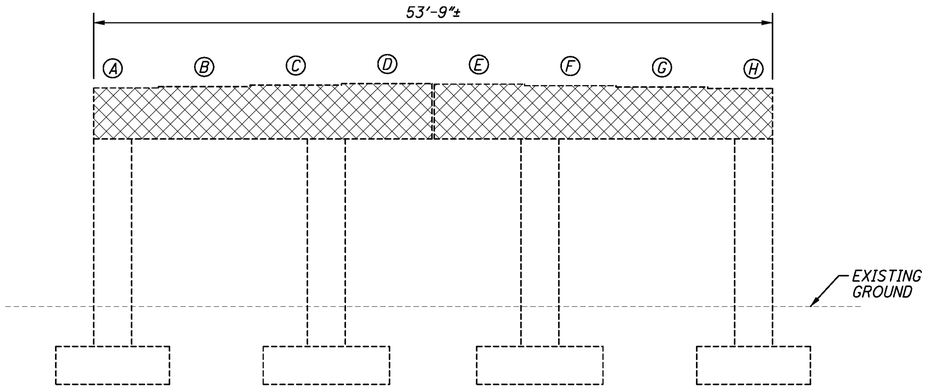
DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

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JBD		5007208	

FORWARD ABUTMENT SECTION & WING-WALL DETAILS

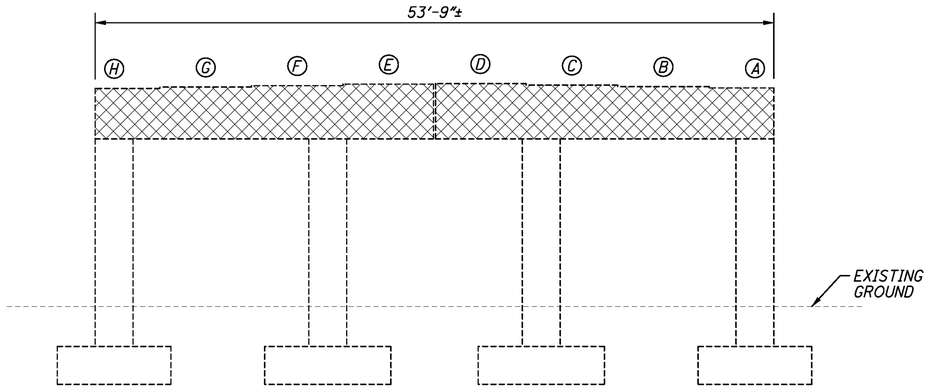
BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

MAH-680-4.29
PID No. 25508



ELEVATION - PIER 1

WEST SIDE (SHOWING PATCHING AREAS AND PIER CAP REMOVAL)



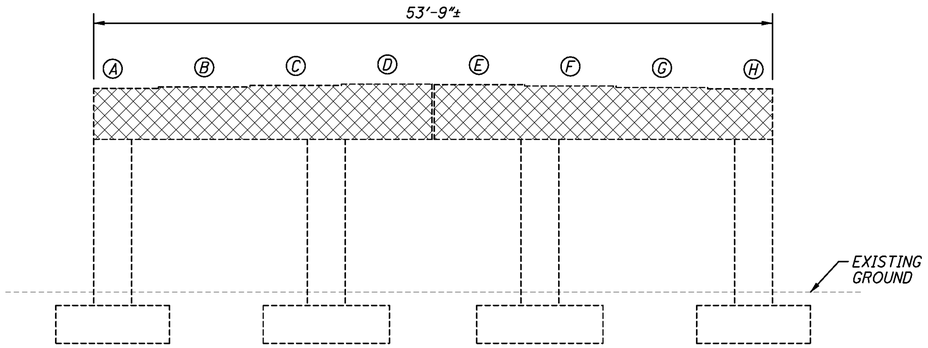
ELEVATION - PIER 1

EAST SIDE (SHOWING PATCHING AREAS AND PIER CAP REMOVAL)

LEGEND

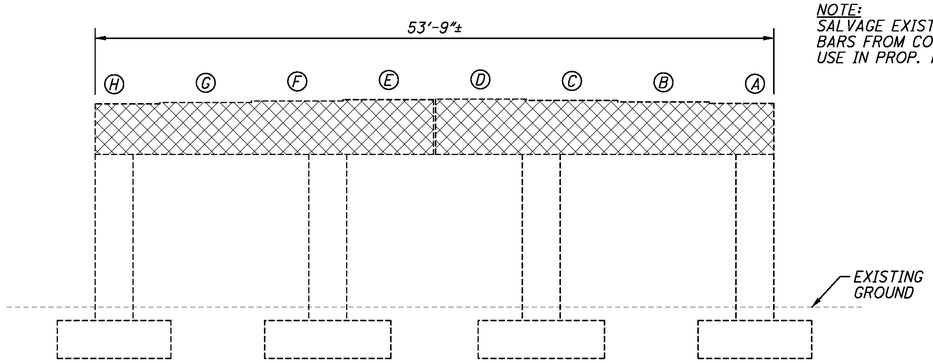
⊠ - INDICATES LIMITS OF ITEM 202 - PORTIONS OF STRUCTURES TO BE REMOVED, AS PER PLAN

NOTE:
SALVAGE EXISTING VERT. BARS FROM COLUMNS FOR USE IN PROP. PIER CAPS.



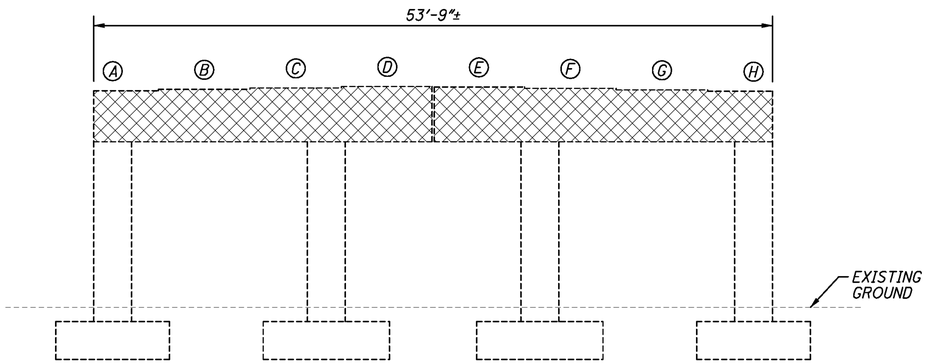
ELEVATION - PIER 2

WEST SIDE (SHOWING PATCHING AREAS AND PIER CAP REMOVAL)



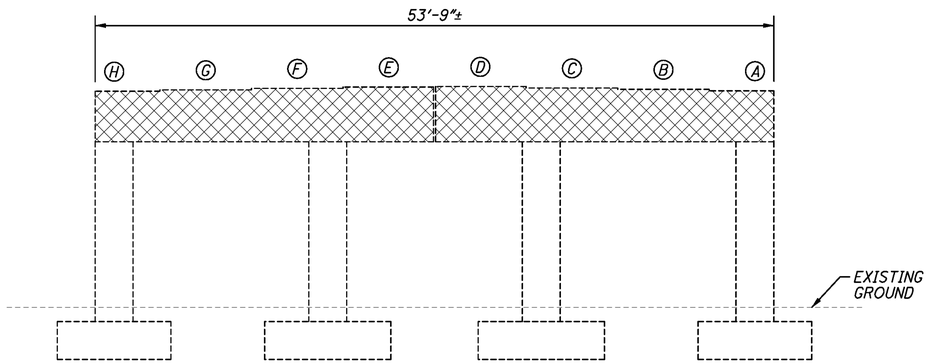
ELEVATION - PIER 2

EAST SIDE (SHOWING PATCHING AREAS AND PIER CAP REMOVAL)



ELEVATION - PIER 3

WEST SIDE (SHOWING PATCHING AREAS AND PIER CAP REMOVAL)



ELEVATION - PIER 3

EAST SIDE (SHOWING PATCHING AREAS AND PIER CAP REMOVAL)

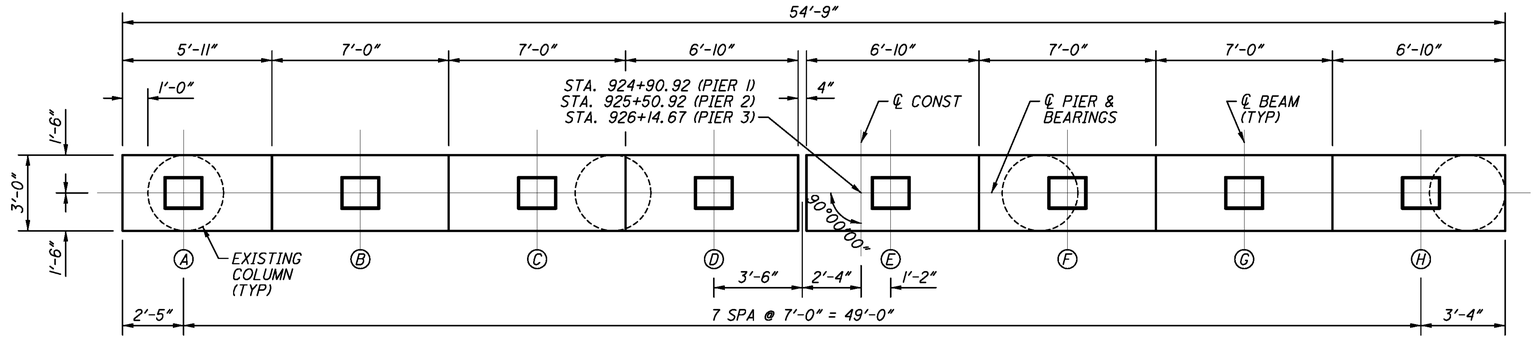
DESIGN AGENCY
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PHONE:(419) 841-4704 FAX:(419) 841-2979

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PIER REMOVAL DETAILS

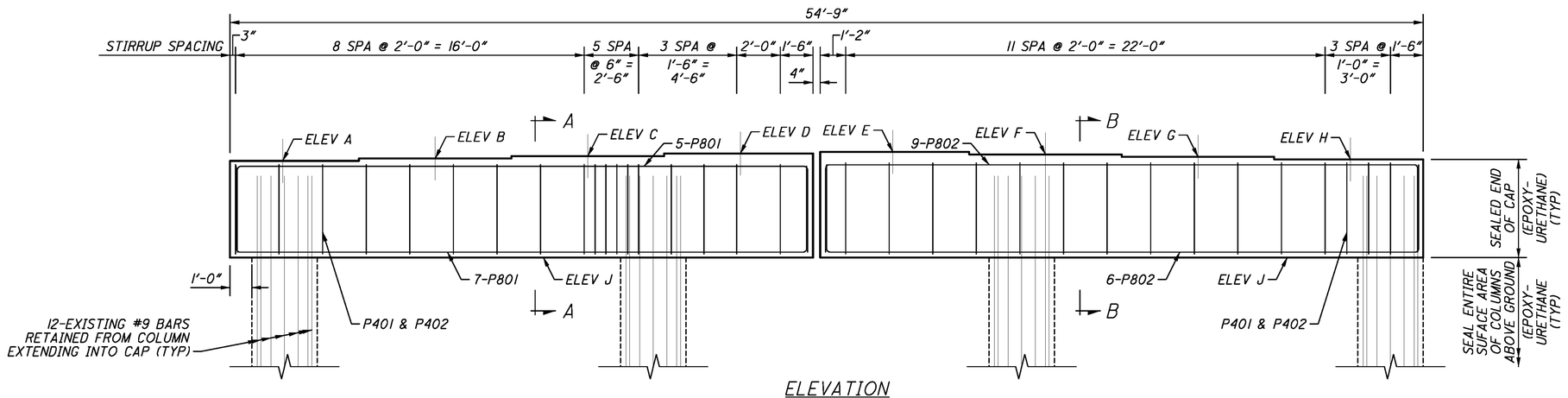
BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

MAH-680-4.29
PID No. 25508



PLAN

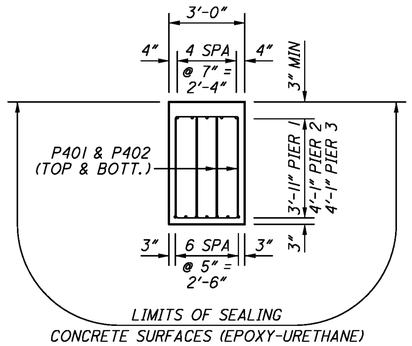
PIERS 1, 2, & 3



ELEVATION

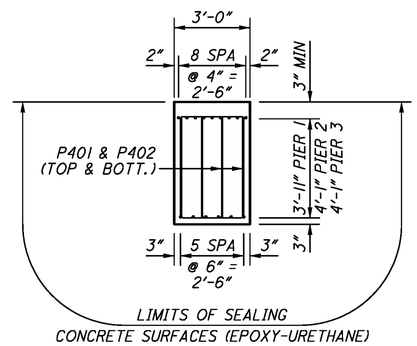
PIERS 1, 2, & 3

ELEVATION TABLE			
LOCATION	PIER 1	PIER 2	PIER 3
A	981.36	980.19	979.02
B	981.47	980.31	979.13
C	981.58	980.42	979.24
D	981.70	980.53	979.36
E	981.77	980.60	979.43
F	981.66	980.49	979.32
G	981.55	980.38	979.21
H	981.43	980.27	979.09
J	976.93±	975.58±	974.45±



SECTION A-A

PIERS 1, 2, & 3



SECTION B-B

PIERS 1, 2, & 3

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NORTHWEST CONSULTANTS, INC
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TOLEDO, OHIO 43617
PHONE:(419) 841-4704 FAX:(419) 841-2979

DESIGNED GJS | DRAWN GJS | REVIEWED EEC | DATE 05-28-10

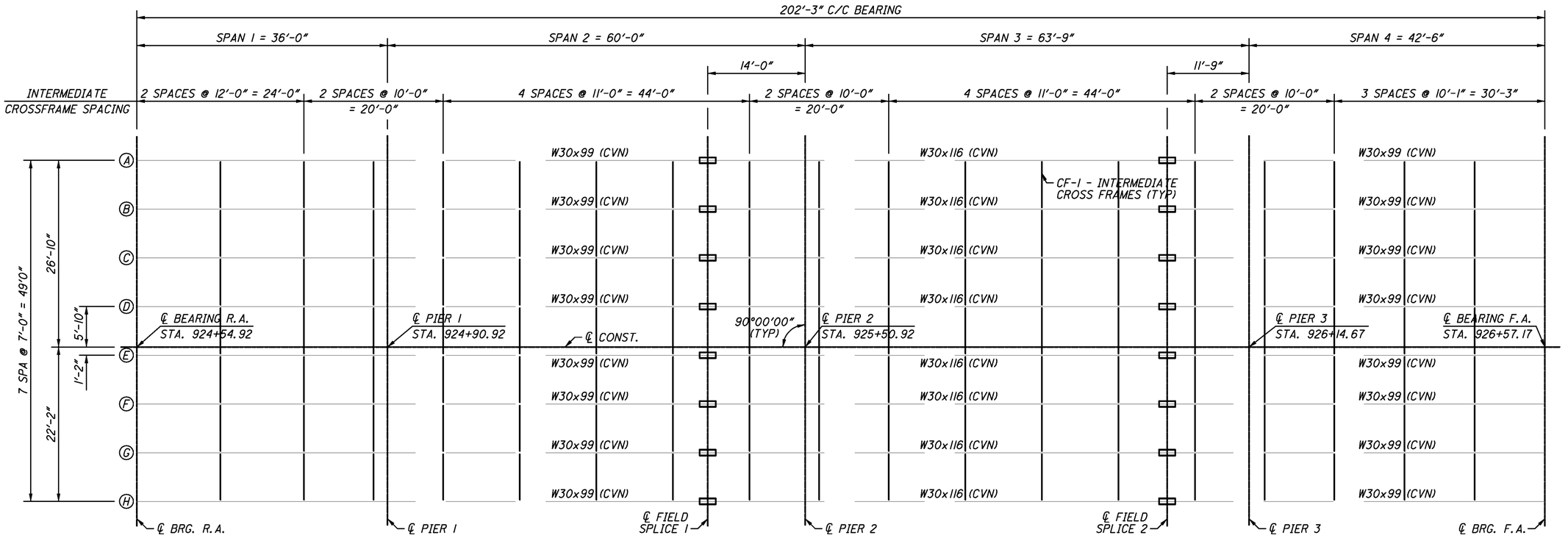
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007208

PIER DETAILS

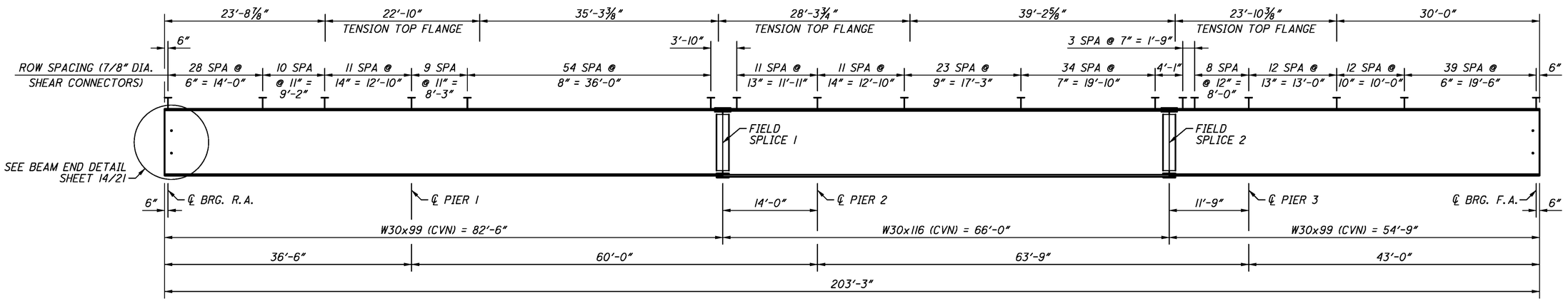
BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

MAH-680-4.29

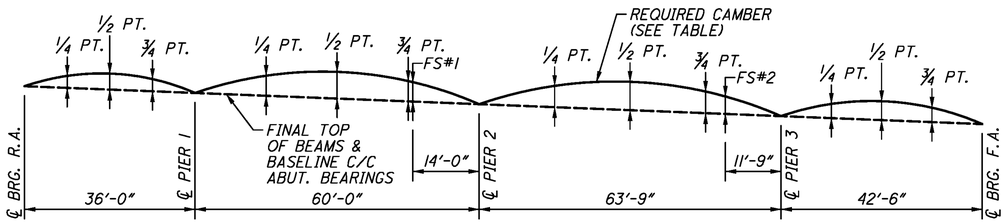
PID No. 25508



FRAMING PLAN



BEAM ELEVATION



CAMBER DIAGRAM

STRUCTURAL STEEL DEFLECTION & CAMBER TABLE

	SPAN 1					SPAN 2					SPAN 3					SPAN 4				
LOCATION	R.A.	¼	½	¾	PIER	¼	½	¾	FS#1	PIER	¼	½	¾	FS#2	PIER	¼	½	¾	F.A.
DEFLECTION DUE TO WEIGHT OF STEEL	0"	1/16"	1/16"	0"	0"	1/16"	1/16"	1/16"	1/16"	0"	1/16"	1/8"	1/16"	1/16"	0"	0"	1/16"	1/16"	0"
DEFLECTION DUE TO REMAINING DEADLOAD	0"	1/16"	1/16"	0"	0"	3/8"	9/16"	1/4"	3/16"	0"	3/8"	5/8"	7/16"	5/16"	0"	1/16"	1/8"	1/8"	0"
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"
REQUIRED SHOP CAMBPER	0"	1/8"	1/8"	0"	0"	7/16"	5/8"	5/16"	1/4"	0"	7/16"	3/4"	1/2"	3/8"	0"	1/16"	3/16"	3/16"	0"

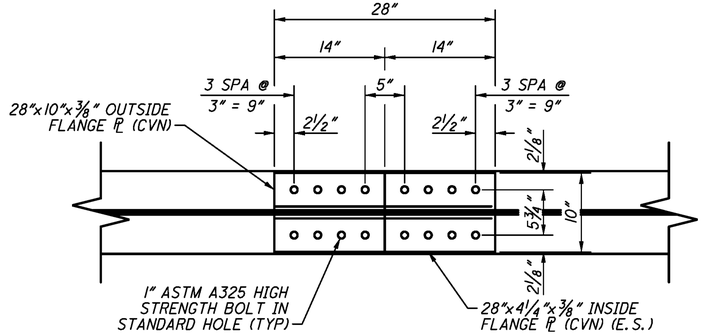
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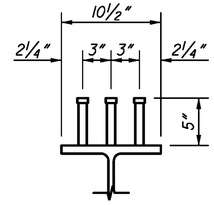
FRAMING PLAN & CAMBER DIAGRAM

BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

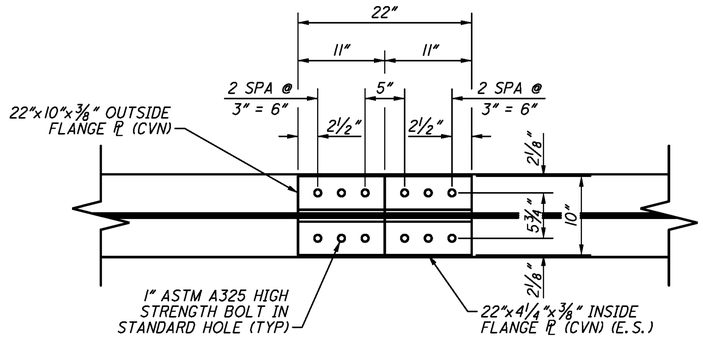
MAH-680-4.29
PID No. 25508



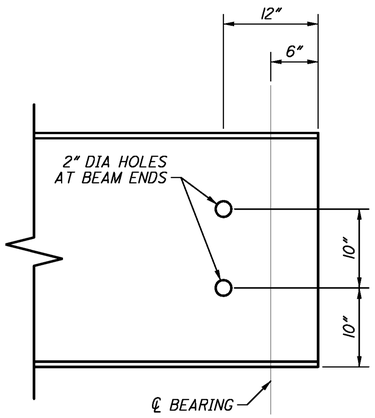
VIEW A-A



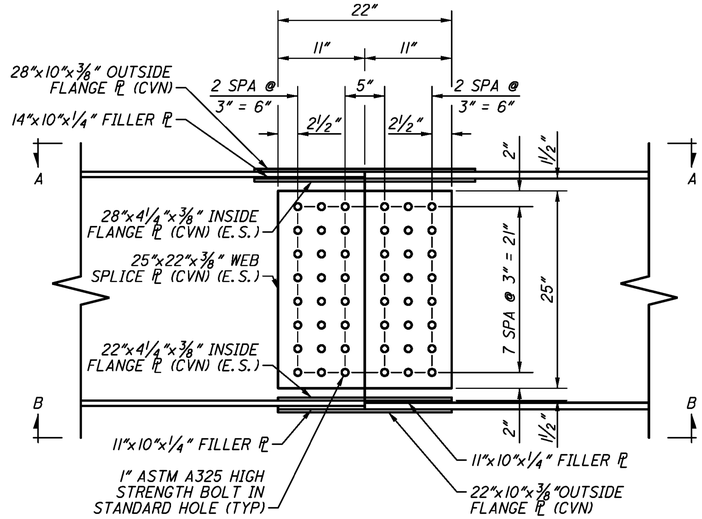
SHEAR STUD CONNECTOR DETAIL



VIEW B-B



BEAM END DETAIL



TYPICAL BEAM SPLICE DETAIL

NOTES:

1. ES DENOTES "EACH SIDE".

2. CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.

3. HIGH STRENGTH BOLTS SHALL BE 1" DIAMETER A325 UNLESS OTHERWISE NOTED.

4. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.

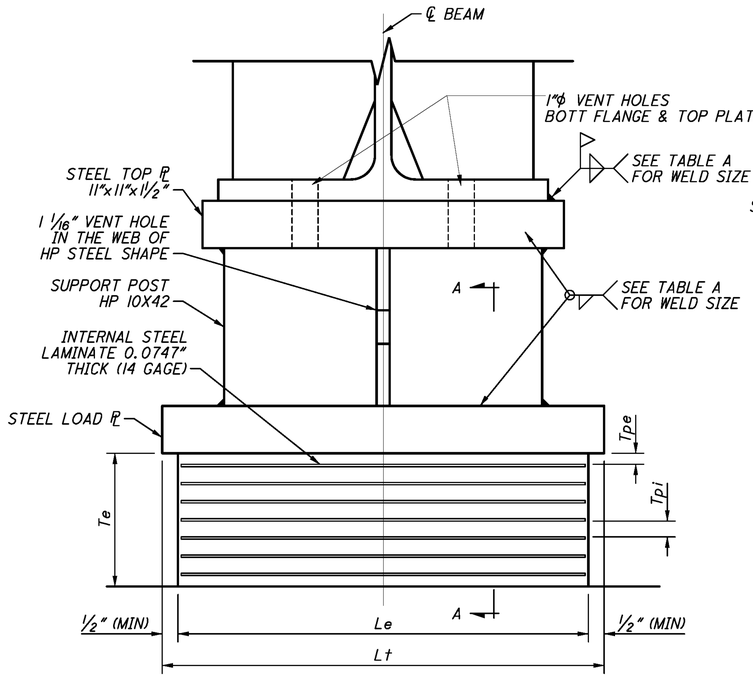
5. WHERE INTERFERENCE BETWEEN FLANGE SPLICE PLATES AND CROSSFRAME STIFFENERS CAN NOT BE AVOIDED THE FABRICATOR HAS THE OPTION TO ADJUST THE CROSSFRAME LOCATION BY UP TO 12" FROM PLAN LOCATION AND USE DETAIL "F" FROM STANDARD DRAWING GSD-1-96, OR ADJUST THE FIELD SPLICE LOCATION BY UP TO 6" FROM THE PLAN LOCATION.

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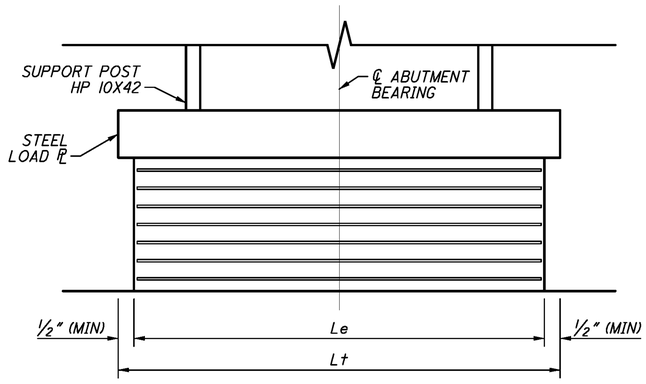
DESIGNED	DRAWN	REVIEWED	DATE
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CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007208	

SUPERSTRUCTURE DETAILS
BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

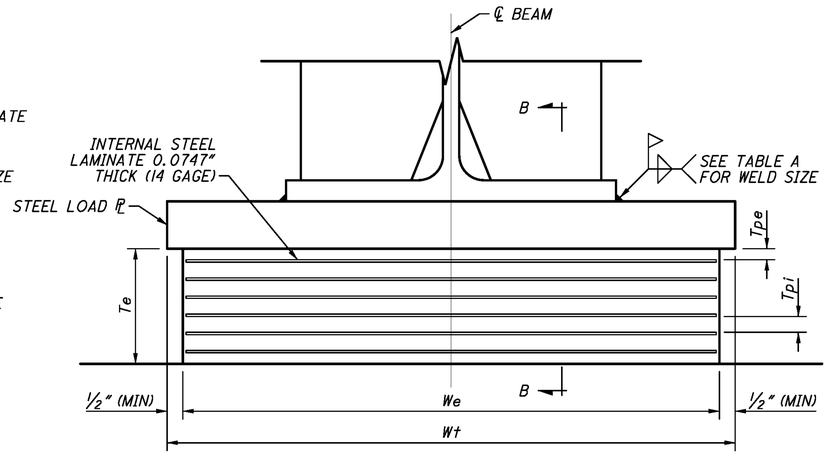
MAH-680-4.29
PID No. 25508



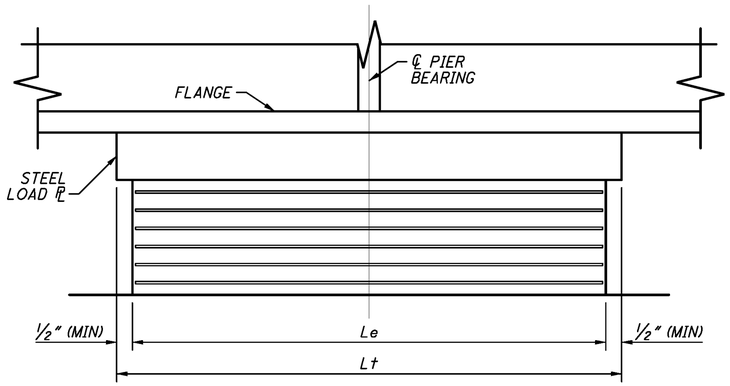
50 DUROMETER LAMINATED
ELASTOMERIC EXPANSION BEARING
(ABUTMENTS)



SECTION A-A

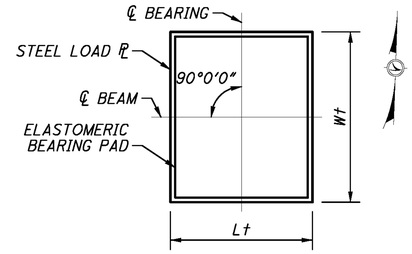


50 DUROMETER LAMINATED
ELASTOMERIC EXPANSION BEARING
(PIERS)



SECTION B-B

SUPPORT POST HEIGHT "J" TABLE		
LOCATION	REAR ABUTMENT	FORWARD ABUTMENT
BEAM A	5"	5"
BEAM B	6 3/8"	6 3/8"
BEAM C	7 11/16"	7 11/16"
BEAM D	9 1/16"	9 1/16"
BEAM E	9 15/16"	9 15/16"
BEAM F	8 9/16"	8 9/16"
BEAM G	7 1/4"	7 1/4"
BEAM H	5 7/8"	5 7/8"



BEARING ORIENTATION PLAN
(PIERS)

NOTES:

1. ASTM A709 GRADE 50W STEEL LOAD PLATES SHALL BE USED FOR ALL BEARINGS. THE LOAD PLATE SHALL BE VULCANIZED BONDED TO THE LAMINATED ELASTOMERIC PAD DURING THE MOLDING PROCESS.

2. SUPPORT POSTS, STEEL LOAD PLATES, AND STEEL TOP PLATES SHALL BE ASTM A709 GRADE 50W STEEL AND SHALL BE COATED IN A SIMILAR MANNER AS THE REST OF THE STRUCTURAL STEEL.

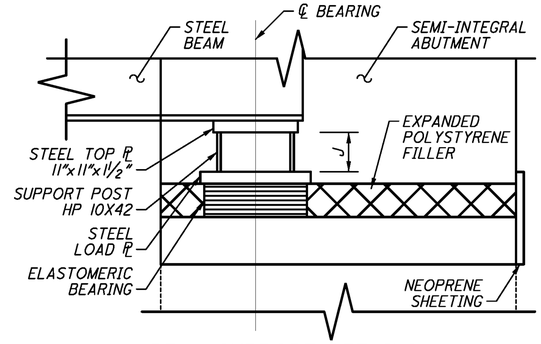
3. ELASTOMERIC BEARINGS: THE ELASTOMERIC SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES.

4. WELDING: CONTROL WELDING SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMERATURE MONITORING DEVICES.

5. BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERTURE HIGHER THAN 80°F OR LOWER THAN 40°F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60°F (±) 10°F, RAISE THE BEAMS OR GIRDERS TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F (±) 10°F.

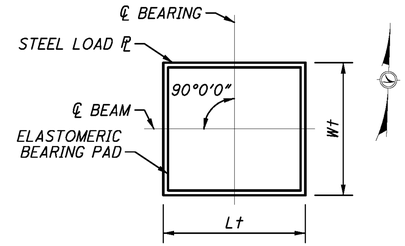
6. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL THE LAMINATED ELASTOMERIC BEARINGS, SUPPORT POSTS, ANCHOR BOLTS, MASONRY PLATES AND STEEL LOAD PLATES. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE).

7. SEALING OF BEAM SEATS: IF THE BEAMS SEATS ARE SEALED WITH AN EPOXY OR NON-EPOXY SEALER PRIOR TO SETTING THE BEARINGS, DO NOT APPLY SEALER TO THE CONCRETE SURFACES UNDER THE BEARING LOCATIONS. IF THESE LOCATIONS ARE SEALED, REMOVE THE SEALER TO THE SATISFACTION OF THE ENGINEER PRIOR TO SETTING THE BEARINGS. THE DEPARTMENT WILL NOT PAY FOR THIS REMOVAL.

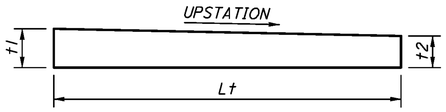


BEAM SUPPORT DETAILS

SUPPORT POSTS AND LOAD PLATES SHALL BE INCLUDED IN ITEM 516, ELASTOMERIC BEARING PAD WITH INTERNAL LAMINATES.



BEARING ORIENTATION PLAN
(ABUTMENTS)



STEEL LOAD PLATE

TABLE A

ELASTOMERIC BEARING DATA

BEARING LOCATION	BEARING TYPE	NO. REQUIRED	DEAD LOAD (KIPS)	LIVE LOAD (KIPS)	TOTAL LOAD (DL+LL) KIPS	Le (IN)	We (IN)	Tpi (IN)	NO. OF Tpi	Tpe (IN) (2 EACH)	NO. OF INTERNAL STEEL LAMINATES	Te (IN)	STEEL LOAD PLATE (IN)				FILLET WELD SIZE (IN)
													Lt	Wt	t1	t2	
R.A.	EXPANSION	8	42	48	90	13.0	13.0	0.500	6	0.350	7	4 1/4	14	14	1 13/16	1 1/2	1/4
PIER 1	EXPANSION	8	83	66	149	14.0	17.0	0.500	5	0.350	6	3 11/16	15	18	1 13/16	1 1/2	1/4
PIER 2	EXPANSION	8	104	68	172	14.0	17.0	0.500	5	0.350	6	3 11/16	15	18	1 13/16	1 1/2	1/4
PIER 3	EXPANSION	8	93	66	159	14.0	17.0	0.500	5	0.350	6	3 11/16	15	18	1 13/16	1 1/2	1/4
F.A.	EXPANSION	8	46	51	97	13.0	13.0	0.500	6	0.350	7	4 1/4	14	14	1 13/16	1 1/2	1/4

DESIGN AGENCY
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DESIGNED GJS | DRAWN GJS | REVIEWED EEC | DATE 05-28-10

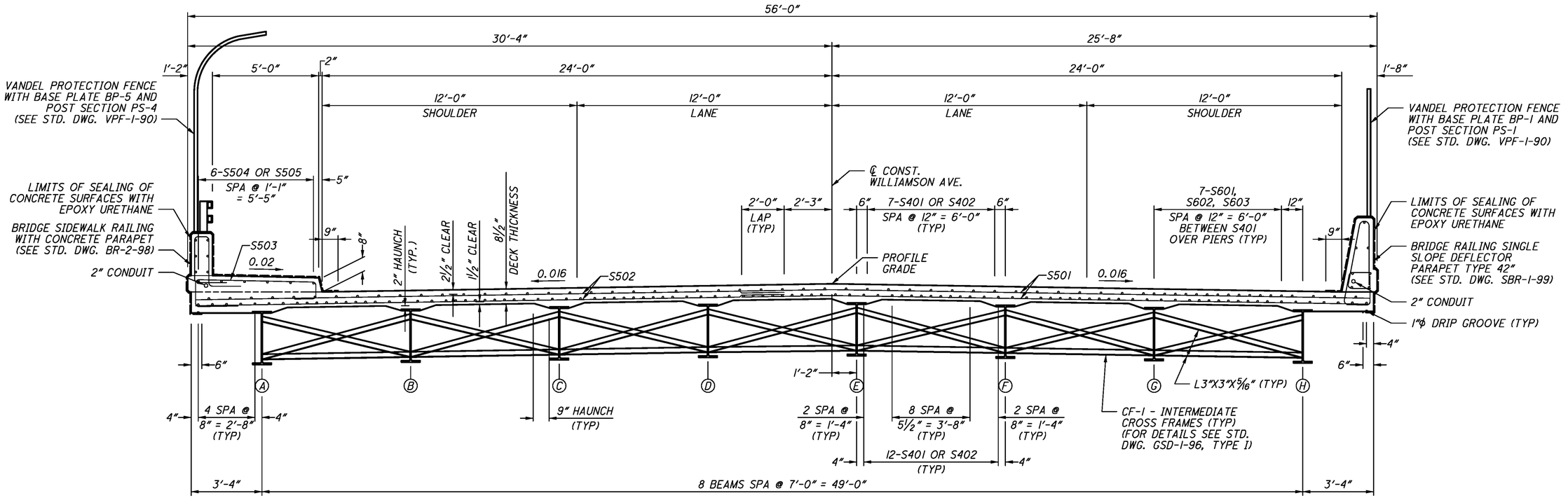
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007208

BEARING DETAILS

BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

MAH-680-4.29

PID No. 25508



TRANSVERSE DECK SECTION

NOTES:

1. DECK SLAB CONCRETE QUANTITY: ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 3 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE IS ±3 INCHES.

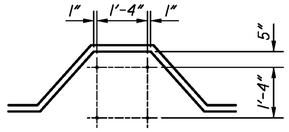
THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.24.

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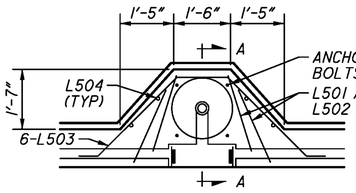
DESIGNED	DRAWN	REVIEWED	DATE
GJS	GJS	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007208	

TRANSVERSE DECK SECTION
BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

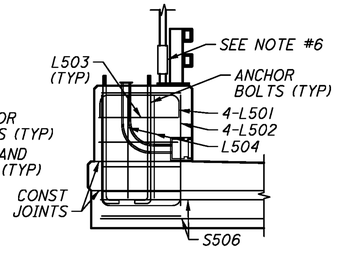
MAH-680-4.29
PID No. 25508



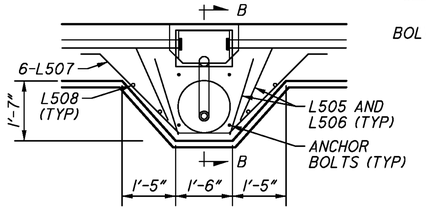
ANCHOR BOLT LAYOUT



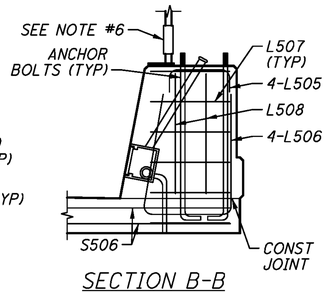
DETAIL A



SECTION A-A



DETAIL B



SECTION B-B

NOTES:

1. FOR LONGITUDINAL REINFORCING SEE TRANSVERSE SECTION SHEET 16/21.

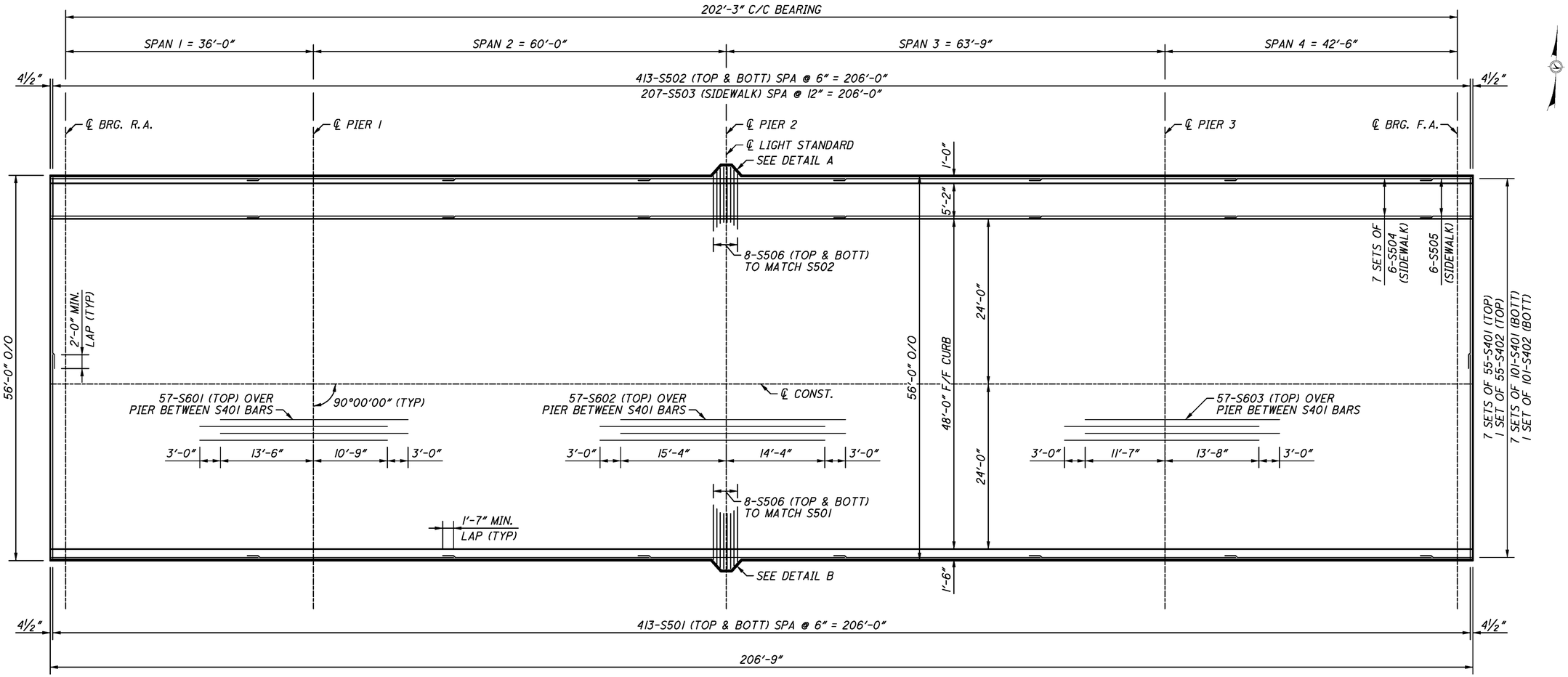
2. PARAPET REINFORCING SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH SAW CUT JOINT.

3. FOR ADDITIONAL REINFORCEMENT OVER THE PIERS, THERE ARE 57 (S601, S602, AND S603) BARS.

4. IN ORDER TO PREVENT UPLIFT AT THE ABUTMENTS, PLACE THE CONCRETE IN THE ABUTMENT DIAPHRAGM ENCASING STRUCTURAL STEEL MEMBERS OF AN INDIVIDUAL PHASE SEPARATELY. ALLOW AT LEAST 48 HOURS OF SET TIME BEFORE PLACING DECK CONCRETE. LOCATE THE HORIZONTAL CONSTRUCTION JOINT BETWEEN THE DIAPHRAGM AND DECK CONCRETE AT THE APPROACH SLAB SEAT.

5. FOR ADDITIONAL STRUCTURE LIGHTING DETAILS, REFER TO STANDARD DRAWINGS HL-10.13, HL-20.14, HL-30.31, AND HL-30.32.

6. PROVIDE ACCESS IN VANDAL PROTECTION FENCE AT LIGHT POLE LOCATIONS. SEE ODOT STANDARD BRIDGE DRAWING VPF-1-90.



DECK REINFORCEMENT PLAN

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DESIGNED GJS | DRAWN GJS | REVIEWED EEC | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007208

DECK DETAILS
BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

MAH-680-4.29
PID No. 25508

17 / 21

303
307

SCREED ELEVATIONS

	SPAN 1					SPAN 2					SPAN 3					SPAN 4				
LOCATION	R.A.	1/4	1/2	3/4	PIER 1	1/4	1/2	3/4	SPLICE	PIER 2	1/4	1/2	3/4	SPLICE	PIER 3	1/4	1/2	3/4	F.A.
STATION	924+54.92	924+63.92	924+72.92	924+81.92	924+90.92	925+05.92	925+20.92	925+35.92	925+36.92	925+50.92	925+66.86	925+82.80	925+98.73	926+02.92	926+14.67	926+25.30	926+35.92	926+46.55	926+57.17
LEFT GUTTER	985.88	985.71	985.54	985.37	985.20	984.94	984.67	984.37	984.35	984.06	983.79	983.51	983.19	983.10	982.86	982.66	982.47	982.27	982.06
CROWN/℄ CONST.	986.26	986.09	985.92	985.75	985.58	985.33	985.06	984.75	984.73	984.45	984.17	983.90	983.58	983.49	983.24	983.05	982.86	982.65	982.44
RT. GUTTER	985.88	985.71	985.54	985.37	985.20	984.94	984.67	984.37	984.35	984.06	983.79	983.51	983.19	983.10	982.86	982.66	982.47	982.27	982.06

TOP OF HAUNCH ELEVATIONS

	SPAN 1					SPAN 2					SPAN 3					SPAN 4				
LOCATION	R.A.	1/4	1/2	3/4	PIER 1	1/4	1/2	3/4	SPLICE	PIER 2	1/4	1/2	3/4	SPLICE	PIER 3	1/4	1/2	3/4	F.A.
STATION	924+54.92	924+63.92	924+72.92	924+81.92	924+90.92	925+05.92	925+20.92	925+35.92	925+36.92	925+50.92	925+66.86	925+82.80	925+98.73	926+02.92	926+14.67	926+25.30	926+35.92	926+46.55	926+57.17
BEAM A	985.12	984.96	984.79	984.61	984.44	984.19	983.92	983.61	983.59	983.31	983.04	982.76	982.44	982.35	982.11	981.91	981.72	981.52	981.30
BEAM B	985.23	985.07	984.90	984.72	984.55	984.30	984.03	983.73	983.71	983.42	983.15	982.87	982.55	982.46	982.22	982.02	981.83	981.63	981.41
BEAM C	985.35	985.18	985.01	984.84	984.67	984.41	984.14	983.84	983.82	983.53	983.26	982.98	982.66	982.57	982.33	982.13	981.94	981.74	981.53
BEAM D	985.46	985.29	985.12	984.95	984.78	984.53	984.26	983.95	983.93	983.65	983.37	983.10	982.78	982.69	982.44	982.24	982.05	981.85	981.64
BEAM E	985.53	985.37	985.20	985.02	984.85	984.60	984.33	984.03	984.00	983.72	983.45	983.17	982.85	982.76	982.52	982.32	982.13	981.93	981.71
BEAM F	985.42	985.26	985.09	984.91	984.74	984.49	984.22	983.91	983.89	983.61	983.34	983.06	982.74	982.65	982.40	982.21	982.02	981.82	981.60
BEAM G	985.31	985.14	984.97	984.80	984.63	984.38	984.11	983.80	983.78	983.50	983.22	982.95	982.63	982.54	982.29	982.09	981.90	981.70	981.49
BEAM H	985.20	985.03	984.86	984.69	984.52	984.26	984.00	983.69	983.67	983.38	983.11	982.83	982.51	982.43	982.18	981.98	981.79	981.59	981.38

FINAL DECK SURFACE ELEVATIONS

	SPAN 1					SPAN 2					SPAN 3					SPAN 4				
LOCATION	R.A.	1/4	1/2	3/4	PIER 1	1/4	1/2	3/4	SPLICE	PIER 2	1/4	1/2	3/4	SPLICE	PIER 3	1/4	1/2	3/4	F.A.
STATION	924+54.92	924+63.92	924+72.92	924+81.92	924+90.92	925+05.92	925+20.92	925+35.92	925+36.92	925+50.92	925+66.86	925+82.80	925+98.73	926+02.92	926+14.67	926+25.30	926+35.92	926+46.55	926+57.17
BEAM A	985.83	985.66	985.49	985.32	985.15	984.87	984.58	984.30	984.28	984.02	983.72	983.42	983.11	983.04	982.81	982.61	982.41	982.21	982.01
LEFT GUTTER	985.88	985.71	985.54	985.37	985.20	984.91	984.63	984.35	984.33	984.06	983.76	983.46	983.16	983.08	982.86	982.66	982.46	982.26	982.06
BEAM B	985.94	985.77	985.60	985.43	985.26	984.98	984.70	984.41	984.39	984.13	983.83	983.53	983.23	983.15	982.93	982.72	982.52	982.32	982.12
BEAM C	986.05	985.88	985.71	985.54	985.37	985.09	984.81	984.52	984.51	984.24	983.94	983.64	983.34	983.26	983.04	982.84	982.64	982.44	982.23
BEAM D	986.17	986.00	985.83	985.66	985.49	985.20	984.92	984.64	984.62	984.35	984.05	983.75	983.45	983.37	983.15	982.95	982.75	982.55	982.35
CROWN/℄ CONST.	986.26	986.09	985.92	985.75	985.58	985.30	985.01	984.73	984.71	984.45	984.15	983.84	983.54	983.46	983.24	983.04	982.84	982.64	982.44
BEAM E	986.24	986.07	985.90	985.73	985.56	985.28	984.99	984.71	984.69	984.43	984.13	983.83	983.53	983.45	983.22	983.02	982.82	982.62	982.42
BEAM F	986.13	985.96	985.79	985.62	985.45	985.17	984.88	984.60	984.58	984.32	984.02	983.71	983.41	983.33	983.11	982.91	982.71	982.51	982.31
BEAM G	986.02	985.85	985.68	985.51	985.34	985.05	984.77	984.49	984.47	984.20	983.90	983.60	983.30	983.22	983.00	982.80	982.60	982.40	982.20
BEAM H	985.91	985.74	985.57	985.40	985.23	984.94	984.66	984.38	984.36	984.09	983.79	983.49	983.19	983.11	982.89	982.69	982.49	982.29	982.09
RIGHT GUTTER	985.88	985.71	985.54	985.37	985.20	984.91	984.63	984.35	984.33	984.06	983.76	983.46	983.16	983.08	982.86	982.66	982.46	982.26	982.06

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

2. TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE BEAM/ GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

3. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCRRED.

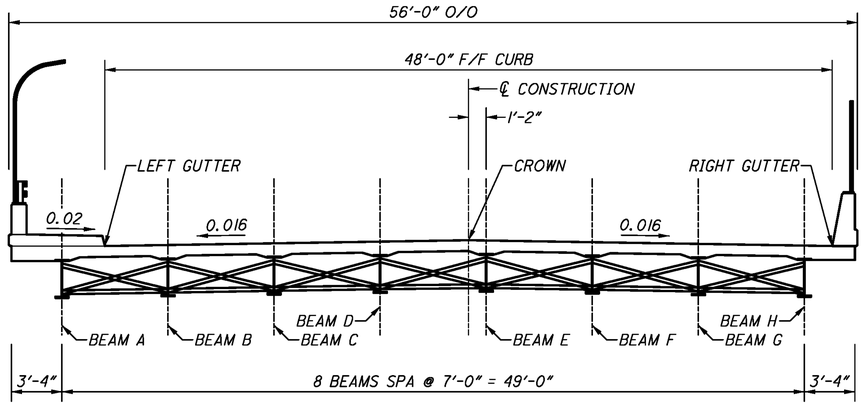


TABLE ELEVATION TRANSVERSE SECTION

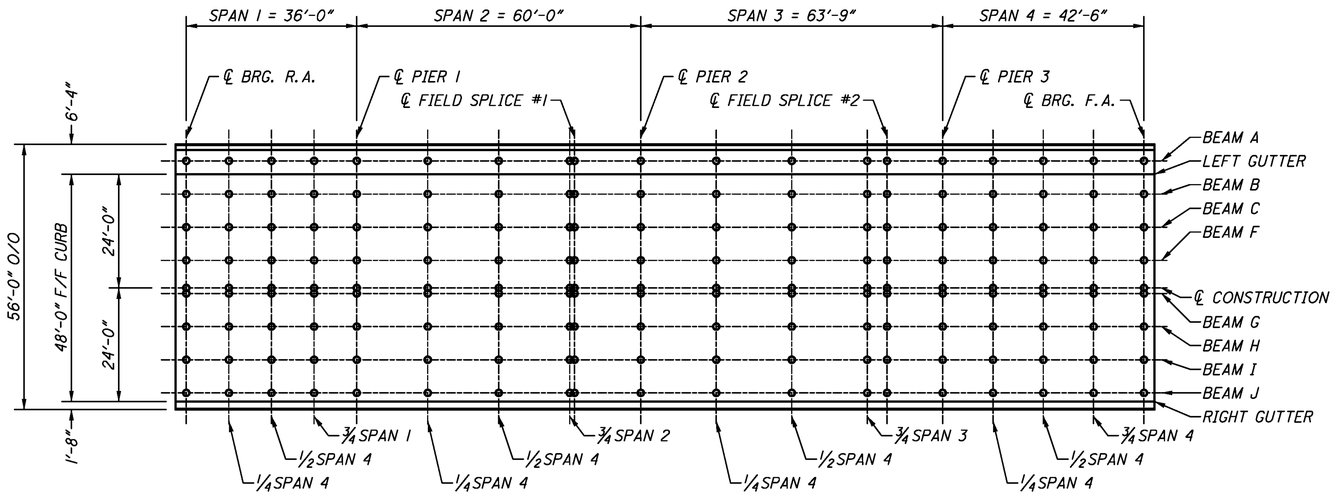


TABLE ELEVATION PLAN

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE(419) 841-4704 FAX(419) 841-2979

DESIGNED GJS | DRAWN GJS | REVIEWED EEC | DATE 05-28-10

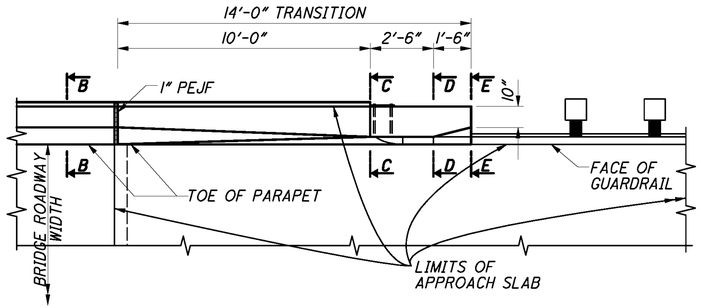
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007208

DECK DETAILS

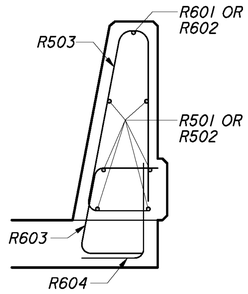
BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

MAH-680-4.29

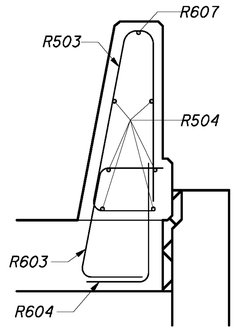
PID No. 25508



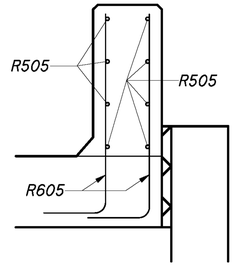
PARAPET PLAN AT APPROACH SLABS



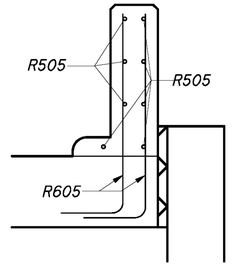
SECTION B-B
(FOR ADDITIONAL DETAILS SEE STD DWG SBR-1-99)



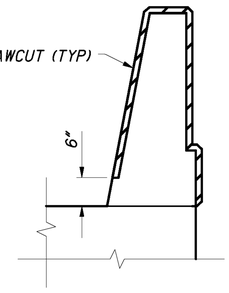
SECTION C-C
(FOR ADDITIONAL DETAILS SEE STD DWG SBR-1-99)



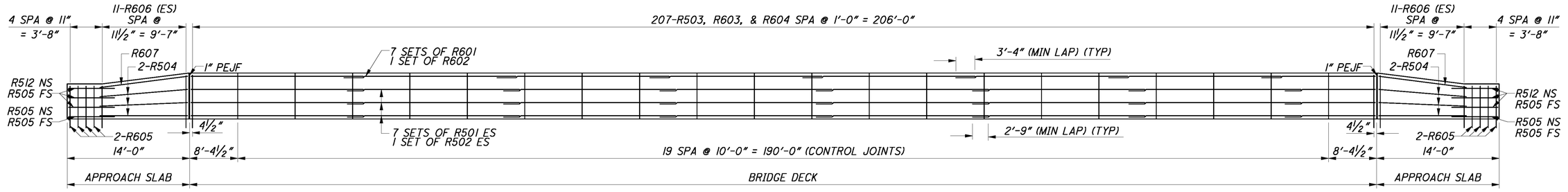
SECTION D-D
(FOR ADDITIONAL DETAILS SEE STD DWG SBR-1-99)



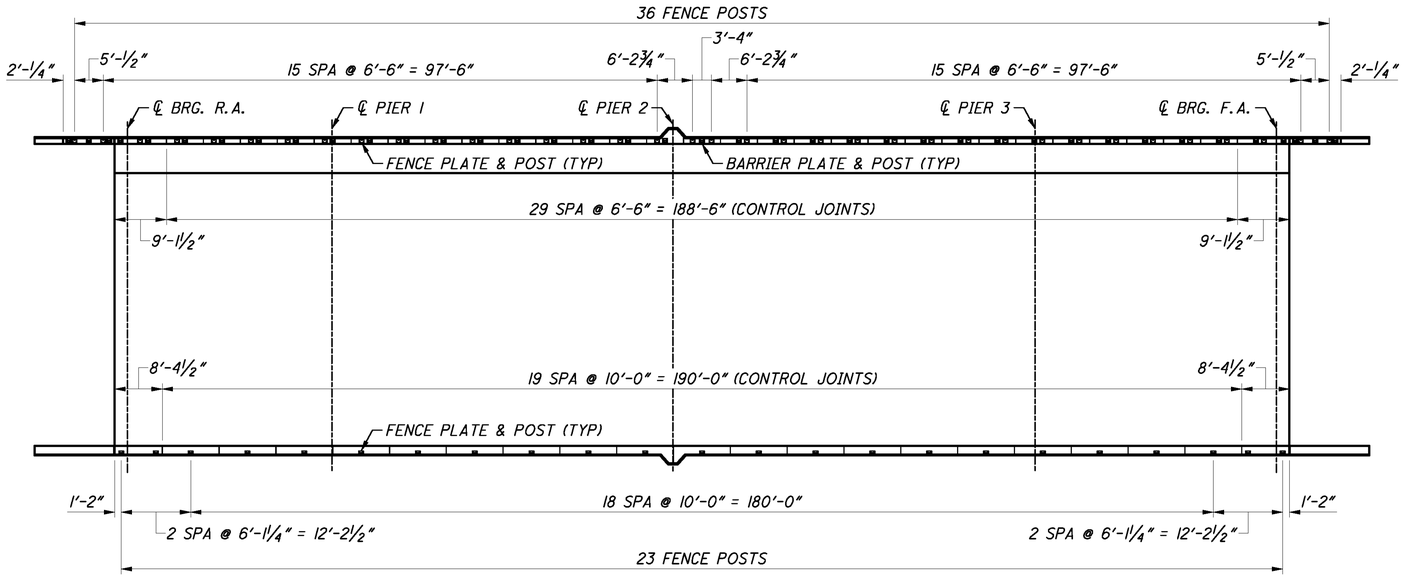
SECTION E-E
(FOR ADDITIONAL DETAILS SEE STD DWG SBR-1-99)



SECTION THROUGH CONTROL JOINT



ELEVATION RIGHT RAILING



FENCE POST SCHEMATIC PLAN

NOTES

SAWCUT 1¼" DEEP CONTROL JOINTS ALONG THE PERIMETER OF THE PARAPET AS SOON AS THE SAW CAN BE OPERATED WITHOUT DAMAGING THE CONCRETE.

USE AN EDGE GUIDE, FENCE OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF ¼ INCH.

SEAL THE PERIMETER OF THE CONTROL JOINT TO A MINIMUM DEPTH OF ONE INCH WITH A POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO ASTM C920, TYPE S. LEAVE THE BOTTOM ONE-HALF INCH OF BOTH THE INSIDE AND OUTSIDE FACES OF THE PARAPET UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE.

FOR BRIDGE TERMINAL ASSEMBLY SEE STANDARD CONSTRUCTION DRAIWING GR-3.1 AND GR-3.2 AND ROADWAY PLANS.

CONSTRUCT 6' STRAIGHT VANDAL PROTECTION FENCE ON RIGHT BARRIER WITH BASE PLATE BP-1 AND POST SECTION PS-1. CONSTRUCT 12' CURVED VANDAL PROTECTION FENCE ON LEFT BARRIER WITH BASE PLATE BP-5 AND POST SECTION PS-4. SEE STD. DWG. VPF-1-90 FOR ADDITIONAL DETAILS.

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REVIEWED	DATE
EEC	05-28-10

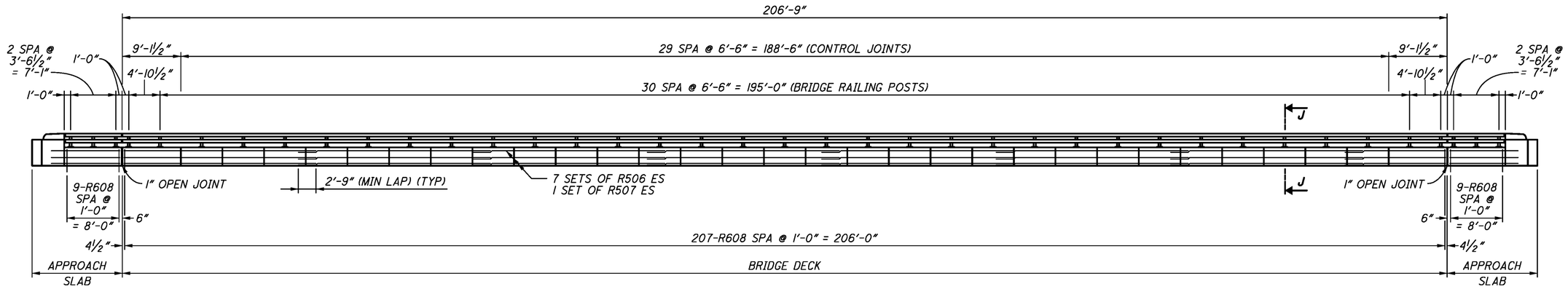
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DRAWN	REVISED
GJS	

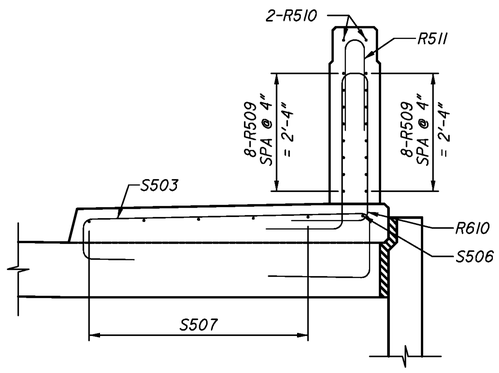
DESIGNED	CHECKED
GJS	JBD

PARAPET DETAILS
BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

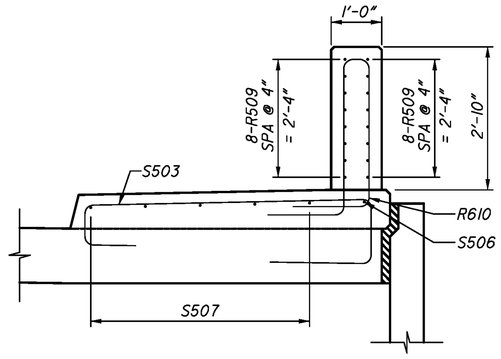
MAH-680-4.29
PID No. 25508



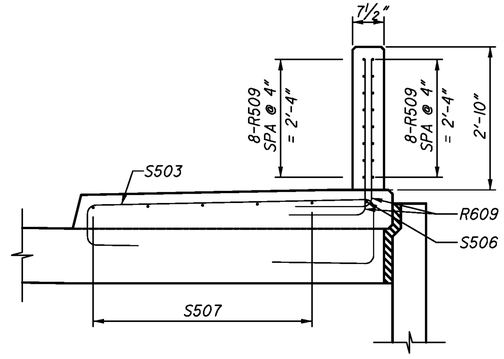
ELEVATION LEFT RAILING



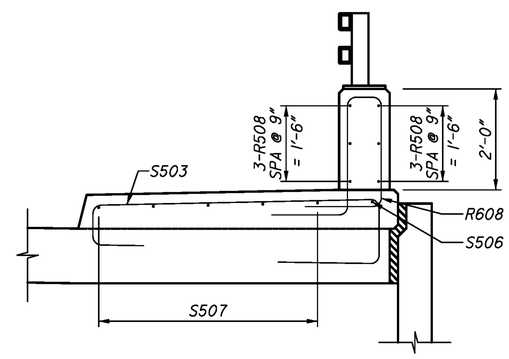
SECTION F-F
(FOR ADDITIONAL DETAILS SEE STD DWG BR-2-98)



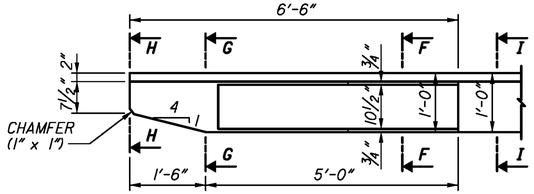
SECTION G-G
(FOR ADDITIONAL DETAILS SEE STD DWG BR-2-98)



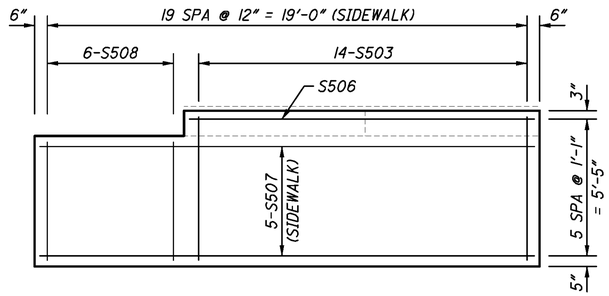
SECTION H-H
(FOR ADDITIONAL DETAILS SEE STD DWG BR-2-98)



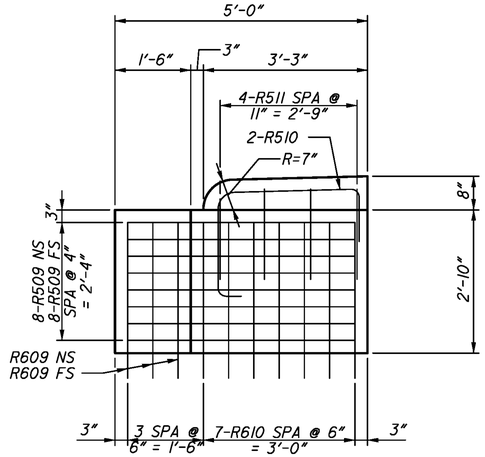
SECTION I-I
(FOR ADDITIONAL DETAILS SEE STD DWG BR-2-98)



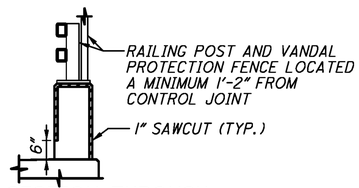
PARAPET PLAN AT APPROACH SLAB
(FOR ADDITIONAL DETAILS SEE STD DWG BR-2-98)



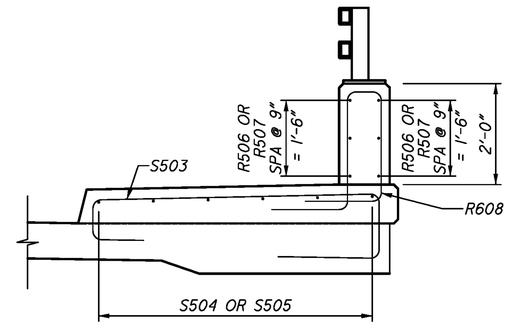
APPROACH SIDEWALK PLAN



RAILING TRANSITION ELEVATION
(FOR ADDITIONAL DETAILS SEE STD DWG BR-2-98)



SECTION THROUGH CONTROL JOINT



SECTION J-J

NOTES

SAWCUT 1¼" DEEP CONTROL JOINTS ALONG THE PERIMETER OF THE PARAPET AS SOON AS THE SAW CAN BE OPERATED WITHOUT DAMAGING THE CONCRETE.

USE AN EDGE GUIDE, FENCE OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF ¼ INCH.

SEAL THE PERIMETER OF THE CONTROL JOINT TO A MINIMUM DEPTH OF ONE INCH WITH A POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO ASTM C920, TYPE S. LEAVE THE BOTTOM ONE-HALF INCH OF BOTH THE INSIDE AND OUTSIDE FACES OF THE PARAPET UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE.

FOR BRIDGE TERMINAL ASSEMBLY SEE STANDARD CONSTRUCTION DRAIWING GR-3.1 AND ROADWAY PLANS. ONLY A TYPE I ASSEMBLY IS TO BE USED.

DESIGN AGENCY
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3220 CENTRAL PARK WEST
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DESIGNED	DRAWN	REVIEWED	DATE
GJS	GJS	EEC	05-28-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JBD		5007208	

PARAPET DETAILS

BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

MAH-680-4.29
PID No. 25508

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
ABUTMENTS											
A501	78	8'-0"	651	2	3'-0"	2'-3"	3'-0"				
A502	156	8'-0"	1302	2	2'-6"	3'-3"	2'-6"				
A503	152	3'-11"	621	1	1'-3"	2'-9½"					
A504	16	15'-0"	251	STR							
A505	11	10'-0"	115	2	4'-10"	7"	4'-10"				
A506	28	6'-2"	180	STR							
A507	16	13'-7"	227	STR							
A508	24	9'-0"	225	2	4'-5"	5"	4'-5"				
A509	14	4'-3"	62	1	2'-½"	2'-4"					
A510	14	3'-2"	46	1	2'-½"	1'-3"					
A511	14	3'-11"	57	1	2'-0"	2'-½"					
A512	7	6'-0"	44	STR							
A513	17	4'-6"	80	STR							
A514	7	8'-4"	61	STR							
A515	13	7'-0"	95	STR							
A516	2	14'-1"	30	STR							
A517	2	11'-11"	25	STR							
A518	4	9'-10"	41	STR							
A519	2	13'-4"	28	STR							
A520	2	12'-6"	26	STR							
A521	2	11'-7"	24	STR							
A522	2	10'-8"	22	STR							
A801	24	31'-3"	2003	STR							
A802	8	32'-10"	701	STR							
A803	24	27'-8"	1773	STR							
A804	8	28'-6"	609	STR							
A805	4	15'-0"	160	STR							
A806	4	13'-7"	145	STR							
D801	72	5'-2"	993	18	2'-9¾"	1'-0"	1'-0"				
SUBTOTAL			10597								
PIERS											
P401	198	10'-2"	1345	2	3'-11"	2'-6"	3'-11"				
P402	198	8'-6"	1124	2	3'-11"	10"	3'-11"				
P801	36	33'-8"	3236	2	3'-11"	26'-3"	3'-11"				
P802	45	34'-7"	4155	2	3'-11"	27'-2"	3'-11"				
SUBTOTAL			9860								
SUPERSTRUCTURE											
S401	1092	30'-0"	21884	STR							
S402	156	7'-4"	764	STR							
S501	826	29'-9"	25630	STR							
S502	826	27'-9"	23907	STR							
S503	207	10'-2"	2195	30	2'-0"	1'-3"	5'-8"	9"	1'-0"		
S504	42	30'-0"	1314	STR							
S505	6	7'-4"	46	STR							
S506	32	8'-0	267	STR							
S601	57	27'-3"	2333	STR							
S602	57	32'-8"	2797	STR							
S603	57	28'-3"	2419	STR							
SUBTOTAL			83556								

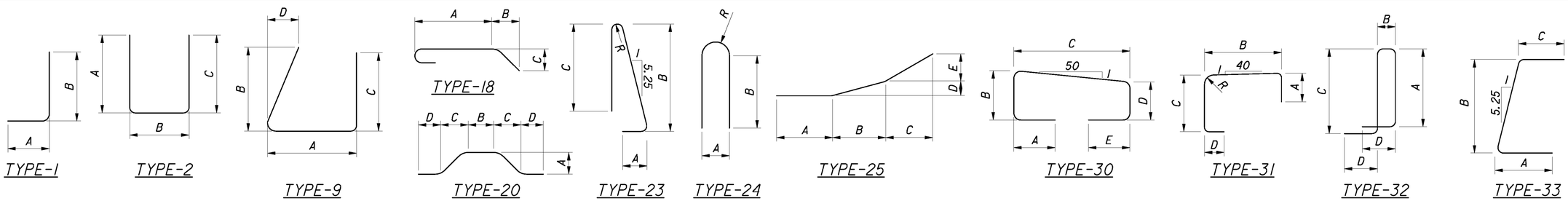
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
APPROACH SIDEWALK											
S503	28	10'-2"	297	30	2'-0"	1'-3"	5'-8"	9"	1'-0"		
S506	2	13'-6"	28	STR							
S507	10	19'-6"	204	STR							
S508	12	9'-2"	115	30	2'-0"	1'-3"	4'-8"	9"	1'-0"		
SUBTOTAL			644								
DEFLECTOR PARAPET RAILING AND LIGHT POLE PILASTER											
R501	42	30'-0"	1314	STR							
R502	6	15'-9"	99	STR							
R503	207	7'-5"	1601	23	1'-1"	3'-2"	3'-0"			2¾"	
R504	12	10'-0"	125	STR							
R505	10	5'-6"	58	STR							
R512	6	5'-6"	35	25	1'-8"	2'-5"	1'-5"	1½"	5"		
R601	7	30'-0"	316	STR							
R602	1	19'-9"	30	STR							
R603	207	3'-8"	1140	33	1'-1"	1'-8"	1'-1"				
R604	207	2'-7"	804	1	1'-1"	1'-8"					
R605	16	4'-7"	110	1	1'-6"	3'-3"					
R606	44	4'-10"	319	1	1'-6"	3'-6"					
R607	2	10'-0"	30	STR							
L505	4	2'-9"	11	2	1'-10"	7"	7"				
L506	4	8'-7"	36	9	2'-4"	3'-2"	3'-2"	6½"			
L507	6	7'-3"	45	20	1'-10"	1'-4"	1'-10"	6"			
L508	4	3'-2"	13	STR							
SUBTOTAL			6086								
SIDEWALK RAILING AND LIGHT POLE PILASTER*											
R506	42	30'-0"	1314	STR							
R507	6	15'-9"	99	STR							
R508	12	10'-8"	134	STR							
R509	32	4'-6"	150	STR							
R510	4	6'-2"	26	31	1'-0"	2'-9"	1'-10"	1'-0"		4⅜"	
R511	8	3'-7"	30	24	7½"	1'-4¾"				3¼"	
R608	225	7'-6"	2535	32	2'-2"	8"	2'-4"	1'-6"			
R609	12	4'-10"	87	1	1'-10"	3'-2"					
R610	14	9'-11"	209	32	3'-0"	8"	3'-2"	1'-10"			
L501	4	3'-0"	13	2	2'-1"	7"	7"				
L502	4	7'-8"	32	2	2'-1"	2'-11"	2'-11"				
L503	6	8'-0"	50	20	2'-1"	1'-4"	2'-1"	6"			
L504	4	2'-11"	12	STR							
SUBTOTAL*			4691								

***FOR INFORMATION ONLY**

NOTES:

1. THE BAR SIZE NUMBER IS SPEDIFIED ON THE PLANS IN THE BAR MARK COLUMN THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHEN FOUR DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A No. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.
2. ALL REINFORCING STEEL TO BE EPOXY COATED.
3. REBAR DIMENSIONS SHOWN ARE FOR INFORMATION PURPOSES ONLY. IF THE REINFORCING STEEL LIST IS USED, IT SHALL BE VERIFIED BY THE CONTRACTOR. ANY REVISIONS IN THE REINFORCING STEEL SHALL NOT BE A REASON FOR ADJUSTMENT IN THE BID PRICE FOR STRUCTURAL STEEL.

BENDING DIAGRAM



DESIGN AGENCY
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DESIGNED GJS | DRAWN GJS | REVIEWED EEC | DATE 05-28-10
CHECKED JBD | REVISED | STRUCTURE FILE NUMBER 5007208

REINFORCING STEEL LIST
BRIDGE NO. MAH-62-1751
WILLIAMSON AVE. OVER I-680

MAH-680-4.29
PID No. 25508

21 / 21

307
307