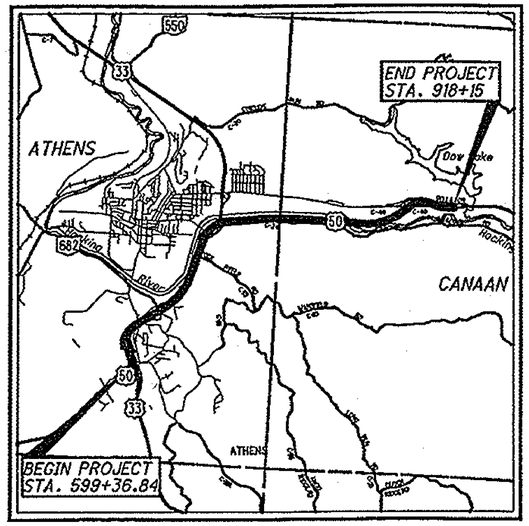
ATH-33-15.05-ATH-50-11.46
090215 PID - 21904
DIST 10 4/22/2009

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

ATH-33/50-15.05/11.46

CITY OF ATHENS
ATHENS TOWNSHIP
CANAAN TOWNSHIP
ATHENS COUNTY



LOCATION MAP

LATITUDE: 39°19'53" LONGITUDE: 82°4'57"

SCALE IN MILES
0 1 2 3 4

N

PORTION TO BE IMPROVED
INTERSTATE & DIVIDED HIGHWAY
UNDIVIDED STATE & FEDERAL ROUTES
OTHER ROADS

DESIGN DESIGNATION

CURRENT ADT (2010)	25970
DESIGN YEAR ADT (2022)	27500
DESIGN HOURLY VOLUME (2022)	2750
DIRECTIONAL DISTRIBUTION	50%
TRUCKS (24 HOUR B&C)	9%
DESIGN SPEED	55 MPH TO SLM 14.85 THEN 60 MPH
LEGAL SPEED	55 MPH TO SLM 14.85 THEN 60 MPH
DESIGN FUNCTIONAL CLASSIFICATION: URBAN FREEWAY & ARTERIAL	
NHS PROJECT	YES

DESIGN EXCEPTIONS

SEE SHEET 4

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:
D10 PRODUCTION DEPT.
MARIETTA, OHIO

INDEX OF SHEETS:

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PAV'T TRANSITION DETAILS	135-137		
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PROJECT DESCRIPTION

BREAKING AND SEATING TREATMENT WITH 6" ASPHALT OVERLAY ON EXISTING REINFORCED CONCRETE PAVEMENT TO 7.0 MILES OF USR-33 & USR-50. CONCRETE JOINT REPLACEMENT TO VARIOUS USR-33 & USR-50 RAMPS.

PROJECT EARTH DISTURBED AREA:	48.5 ACRES
ESTIMATED CONTRACTOR EARTH DISTRUBED AREA:	4 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	52.5 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.

2008 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 AS NOTED ON SHEET 18, 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 James L Woodyard
DATE 12/1/08 DISTRICT DEPUTY DIRECTOR

APPROVED James G Beasley
DATE 12-23-08 DIRECTOR, DEPARTMENT OF TRANSPORTATION

STATE OF OHIO
ENGINEERS SEAL
ALAN L. CRAIG #E-61554 REGISTERED PROFESSIONAL ENGINEER
SIGNED: Alan L. Craig
DATE: 12-1-08

STANDARD CONSTRUCTION DRAWINGS

BP-1.1	7-28-00	GR-6.2	4-18-03	AS-1-81	7-19-02	MT-101.70	10-18-02
BP-2.1	7-18-08			PCB-91	7-19-02	MT-105.10	10-18-02
BP-2.5	7-18-08	RM-4.2	10-19-07	SBR-1-99	7-19-02	MT-105.11	10-18-02
BP-3.1	7-19-07	RM-4.5	1-19-07				
BP-9.1	4-15-05	RM-4.6	1-16-04	HL-30.11	1-21-05	TC-41.20	1-19-01
						TC-42.20	7-16-04
GR-1.1	7-16-04	CB-1.1	7-15-05	MT-35.10	4-20-01	TC-52.10	1-19-07
GR-2.1	1-16-04	CB-2.3	7-15-05	MT-95.30	9-5-06	TC-52.20	1-19-07
GR-3.1	1-19-07	CB-3.2	7-15-05	MT-95.40	10-20-06	TC-61.10	1-19-07
GR-3.2	1-19-07	CB-3.3	7-15-05	MT-95.50	9-5-06	TC-65.10	1-21-05
GR-4.2	1-19-07			MT-98.10	10-19-07	TC-65.11	1-21-05
GR-4.5	4-18-03	DM-1.1	4-21-06	MT-98.11	10-19-07	TC-71.10	1-19-07
GR-5.1	4-18-03	DM-1.4	4-21-06	MT-98.20	10-19-07	TC-72.20	1-21-05
GR-5.2	1-16-04	DM-4.2	1-21-05	MT-98.22	10-19-07	TC-73.10	1-19-01
GR-5.3	1-16-04	DM-4.3	7-19-02	MT-98.28	10-19-07		
GR-6.1	4-18-03	DM-4.4	7-19-02	MT-98.29	10-19-07		

SUPPLEMENTAL SPECIFICATIONS

800-2008	11-4-08
832	4-25-06
848	4-15-05

SPECIAL PROVISIONS

SP 832	5/20/08

FEDERAL PROJECT NO. E040 (437)
PID NO. 21904
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
ATH-33/50-15.05/11.46
1/222

I:\project\ATH-33-15.05\PAVEMENT\TTL & GEN NOT.dgn 01-DEC-2008 12:03PM jbocher

EX. US-50 W.B. CURVE 1
P.I. STA. 613+82.50
Δ = 73° 20′ 37″ (LT)
Dc = 8° 00′ 00″
R = 716.20′
Ls = 400.00′
θ s = 16° 00′ 00″
LT = 267.76′
ST = 134.33′
x = 396.89′
y = 37.03′
k = 199.48′
p = 9.28′
Δ c = 41° 20′ 37″ (LT)
Lc = 516.80′
Ts = 739.68′
Es = 188.31′

EX. US-50 E.B. CURVE 2
P.I. STA. 596+64.25
Δ = 11° 13′ 28″ (RT)
Dc = 1° 30′ 00″
R = 3,819.72′
T = 375.35′
L = 748.29′
E = 18.40′

EX. US-50 E.B. CURVE 3
P.I. STA. 611+02.34
Δ = 86° 00′ 06″ (LT)
Dc = 8° 00′ 00″
R = 716.20′
Ls = 400.00′
θ s = 16° 00′ 00″
LT = 267.76′
ST = 134.33′
x = 396.89′
y = 37.03′
k = 199.48′
p = 9.28′
Δ c = 54° 00′ 07″ (LT)
Lc = 675.03′
Ts = 876.02′
Es = 275.79′

EX. US-33/50 CURVE 4
P.I. STA. 637+67.66
Δ = 76° 40′ 31″ (RT)
Dc = 5° 00′ 00″
R = 1,145.92′
Ls = 400.00′
θ s = 10° 00′ 00″
LT = 267.09′
ST = 133.72′
x = 398.78′
y = 23.22′
k = 199.80′
p = 5.81′
Δ c = 56° 40′ 31″ (RT)
Lc = 1,133.51′
Ts = 1,110.61′
Es = 322.43′

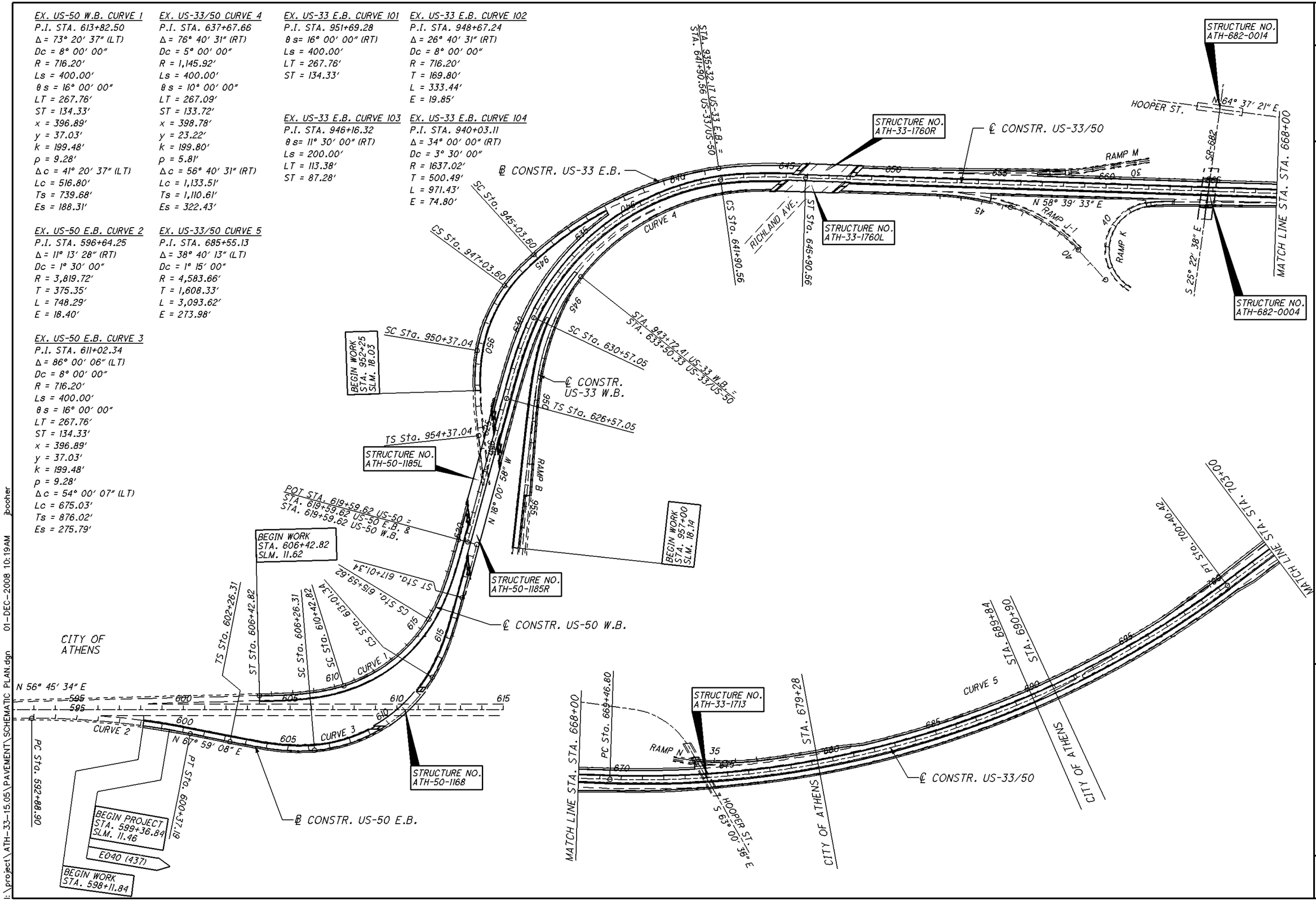
EX. US-33/50 CURVE 5
P.I. STA. 685+55.13
Δ = 38° 40′ 13″ (LT)
Dc = 1° 15′ 00″
R = 4,583.66′
T = 1,608.33′
L = 3,093.62′
E = 273.98′

EX. US-33 E.B. CURVE 101
P.I. STA. 951+69.28
θ s= 16° 00′ 00″ (RT)
Ls = 400.00′
LT = 267.76′
ST = 134.33′

EX. US-33 E.B. CURVE 102
P.I. STA. 948+67.24
Δ = 26° 40′ 31″ (RT)
Dc = 8° 00′ 00″
R = 716.20′
T = 169.80′
L = 333.44′
E = 19.85′

EX. US-33 E.B. CURVE 103
P.I. STA. 946+16.32
θ s= 11° 30′ 00″ (RT)
Ls = 200.00′
LT = 113.38′
ST = 87.28′

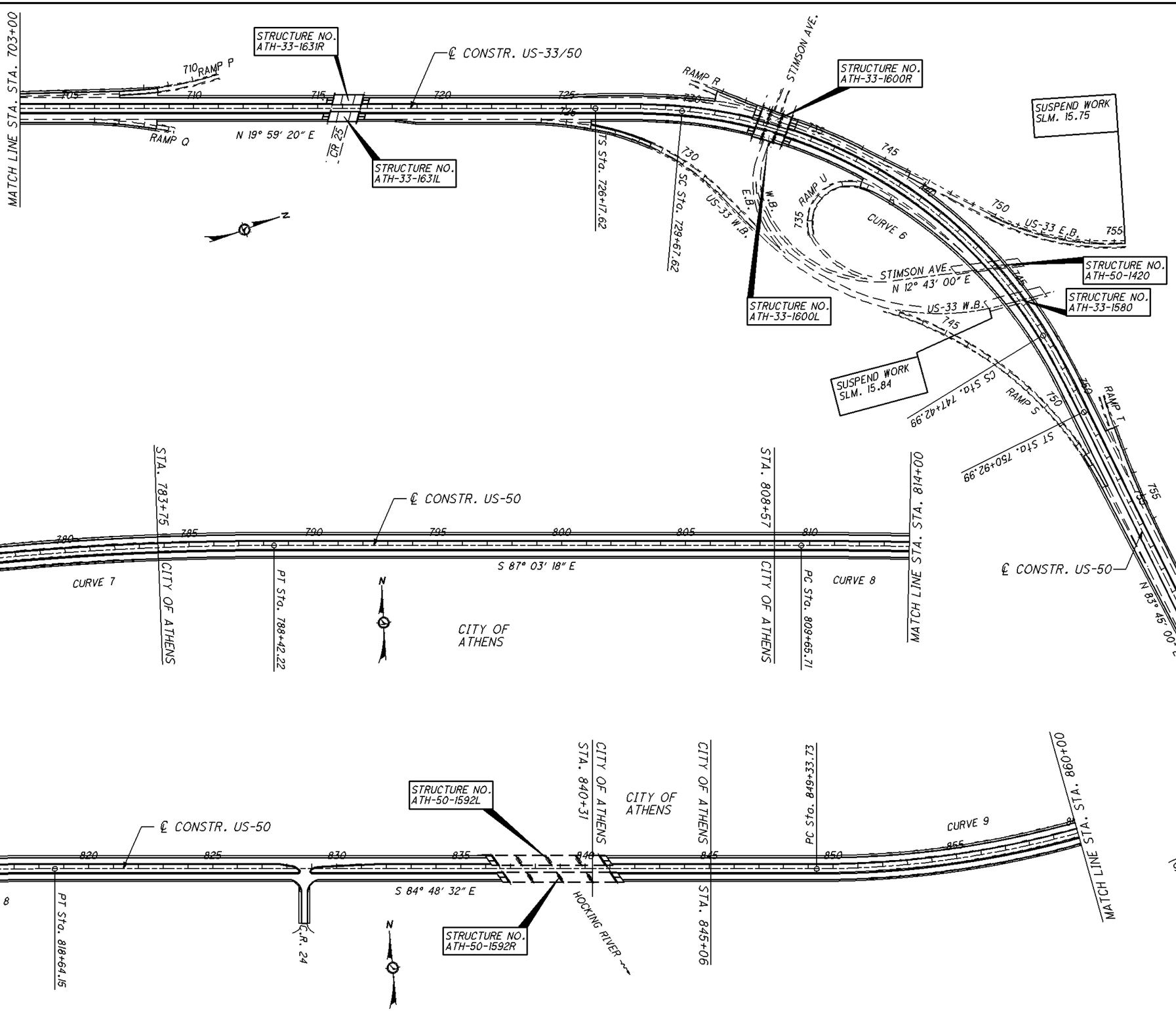
EX. US-33 E.B. CURVE 104
P.I. STA. 940+03.11
Δ = 34° 00′ 00″ (RT)
Dc = 3° 30′ 00″
R = 1637.02′
T = 500.49′
L = 971.43′
E = 74.80′



HORIZONTAL SCALE IN FEET
0 100 200 400

SCHEMATIC PLAN

ATH-33/ 50-15.05/ 11.46



EX. US-33/50 CURVE 6
P.I. STA. 739+82.12
Δ = 63° 45' 40" (RT)
Dc = 3° 00' 00"
R = 1,909.86'
Ls = 350.00'
θs = 5° 15' 00"
LT = 233.44'
ST = 116.76'
x = 349.71'
y = 10.68'
k = 174.95'
p = 2.67'
Δc = 53° 15' 40" (RT)
Lc = 1,775.37'
Ts = 1,364.50'
Es = 342.43'

EX. US-50 CURVE 7
P.I. STA. 778+59.16
Δ = 9° 11' 42" (RT)
Dc = 0° 28' 00"
R = 12,277.67'
T = 987.30'
L = 1,970.36'
E = 39.63'

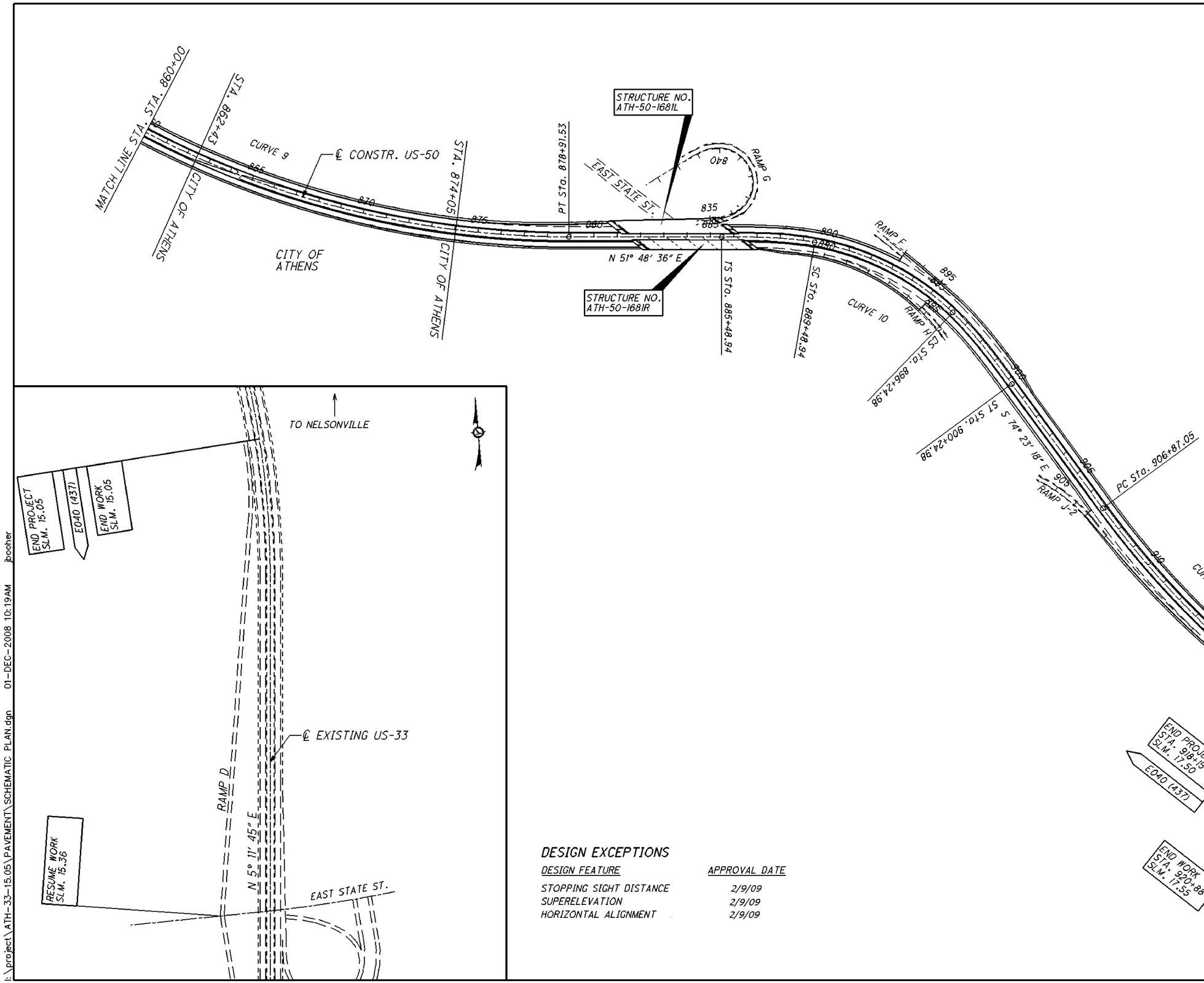
EX. US-50 CURVE 8
P.I. STA. 814+14.98
Δ = 2° 14' 46" (RT)
Dc = 0° 15' 00"
R = 22,918.31'
T = 449.28'
L = 898.44'
E = 4.40'

EX. US-50 CURVE 9
P.I. STA. 864+87.58
Δ = 43° 22' 52" (LT)
Dc = 1° 28' 00"
R = 3,906.53'
T = 1,553.85'
L = 2,957.80'
E = 297.69'

HORIZONTAL SCALE IN FEET
0 100 200 400

SCHEMATIC PLAN

ATH-33/50-15.05/11.46



EX. US-50 CURVE 9
P.I. STA. 864+87.58
Δ = 43° 22' 52" (LT)
Dc = 1° 28' 00"
R = 3,906.53'
T = 1,553.85'
L = 2,957.80'
E = 297.69'

EX. US-50 CURVE 10
P.I. STA. 893+33.07
Δ = 53° 48' 06" (RT)
Dc = 5° 00' 00"
R = 1,145.92'
Ls = 400.00'
θs = 10° 00' 00"
LT = 267.09'
ST = 133.72'
x = 398.78'
y = 23.22'
k = 199.80'
p = 5.81'
Δc = 33° 48' 06" (RT)
Lc = 676.04'
Ts = 784.13'
Es = 145.56'

EX. US-50 CURVE 11
P.I. STA. 912+29.39
Δ = 15° 48' 27" (LT)
Dc = 1° 28' 00"
R = 3,906.53'
T = 542.34'
L = 1,077.78'
E = 37.47'

HORIZONTAL SCALE IN FEET
0 100 200 400

DESIGN EXCEPTIONS

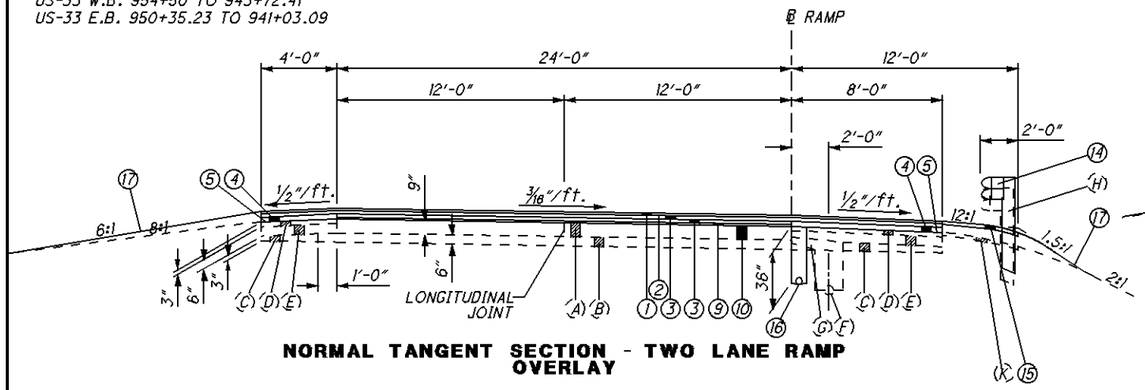
DESIGN FEATURE	APPROVAL DATE
STOPPING SIGHT DISTANCE	2/9/09
SUPERELEVATION	2/9/09
HORIZONTAL ALIGNMENT	2/9/09

SCHEMATIC PLAN

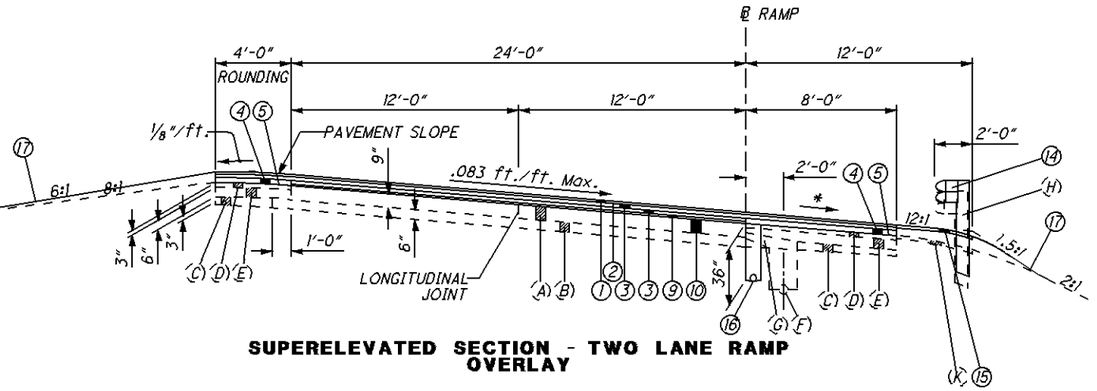
ATH-33/ 50-15.05/ 11.46

OVERLAY SECTIONS APPLY TO:
US-50 E.B. STA. 599+36.84 TO 606+85.45
US-50 W.B. STA. 607+67.82 TO 618+16.02
US-33 W.B. 954+50 TO 943+72.41
US-33 E.B. 950+35.23 TO 941+03.09

NOTE: FOR UNDERDRAIN DETAIL, SEE SHEET 6

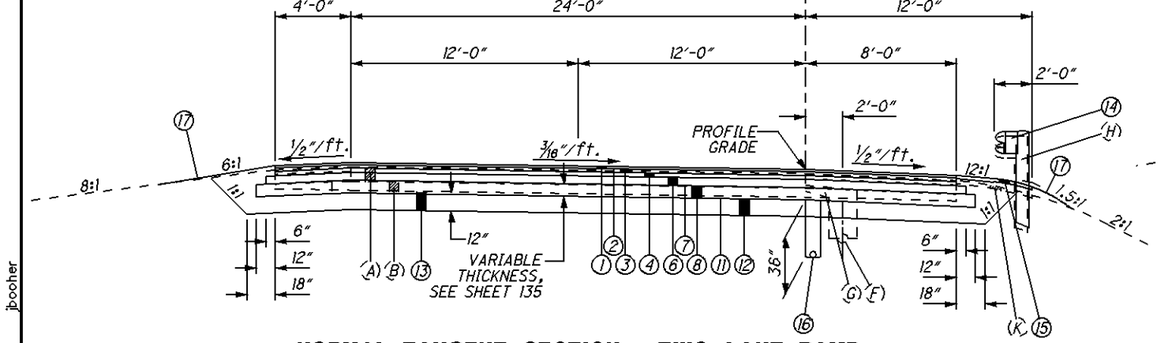


NORMAL TANGENT SECTION - TWO LANE RAMP OVERLAY

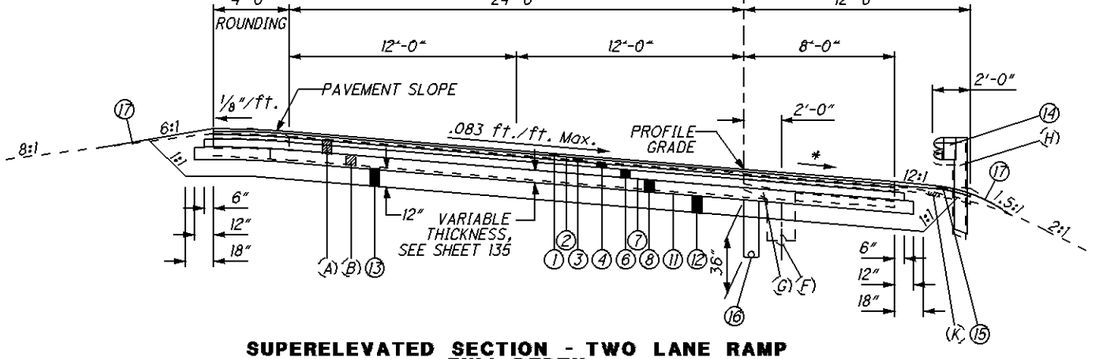


SUPERELEVATED SECTION - TWO LANE RAMP OVERLAY

FULL-DEPTH SECTIONS APPLY TO:
US-50 E.B. STA. 606+85.45 TO STA. 609+35.45
US-50 E.B. STA. 612+38.07 TO STA. 618+34.05
US-50 W.B. STA. 618+16.02 TO STA. 620+66.02



NORMAL TANGENT SECTION - TWO LANE RAMP FULL-DEPTH



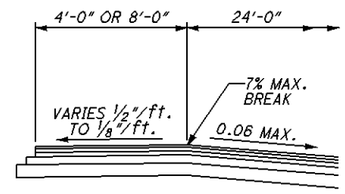
SUPERELEVATED SECTION - TWO LANE RAMP FULL-DEPTH

LEGEND

1. ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)
2. ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (0.04 GAL./SQ.YD.)
3. ITEM 442 - 2¼" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)
4. ITEM 442 - 2¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)
5. ITEM 407 - TACK COAT (0.07 GAL./SQ.YD.)
6. ITEM 301 - 5" ASPHALT CONCRETE BASE, PG64-22
7. ITEM 408 - PRIME COAT (0.4 GAL./SQ.YD.)
8. ITEM 304 - AGGREGATE BASE, DEPTH AS SHOWN
9. ITEM 422 - DOUBLE CHIP SEAL, AS PER PLAN
10. ITEM 451 - REINFORCED CONCRETE PAVEMENT, MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT
11. ITEM 204 - SUBGRADE COMPACTION
12. ITEM 204 - GRANULAR MATERIAL, TYPE C
13. ITEM 204 - EXCAVATION OF SUBGRADE
14. ITEM 606 - GUARDRAIL, TYPE 5
15. ITEM 446 - ASPHALT CONC. INT. COURSE, TYPE 2, PG 64-28, UNDER GUARDRAIL, A.P.P.
16. ITEM 605 - 4" PIPE UNDERDRAIN, 707.31
17. ITEM 659 - SEEDING & MULCHING

EXISTING LEGEND

- (A) 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
- (B) 6" SUBBASE
- (C) SUBBASE
- (D) BITUMINOUS AGGREGATE BASE
- (E) AGGREGATE BASE - DEPTH AS SHOWN
- (F) 6" PIPE UNDERDRAIN
- (G) DRAINAGE CONNECTION, USING NO. 8 AGGREGATE
- (H) GUARDRAIL, TYPE 5
- (I) 9" PLAIN CONCRETE PAVEMENT
- (J) 4" SHALLOW PIPE UNDERDRAIN
- (K) 2" INTERMEDIATE ASPHALT, UNDER GUARDRAIL



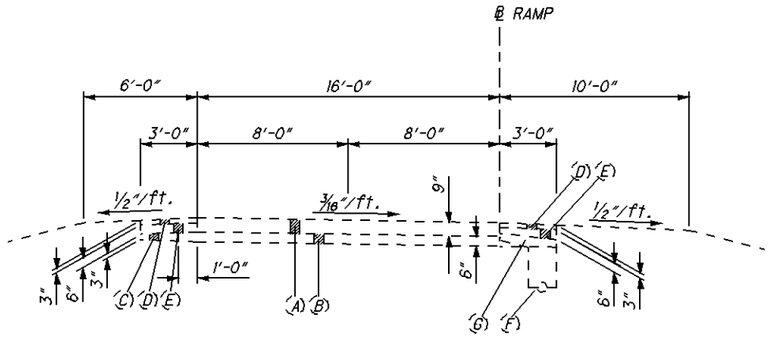
HIGH SIDE SHOULDER
(FOR SUPERELEVATION UP TO 0.06 MAX.)

* ½" PER FOOT MINIMUM SLOPE OR SUPERELEVATION RATE IF GREATER

TYPICAL SECTIONS

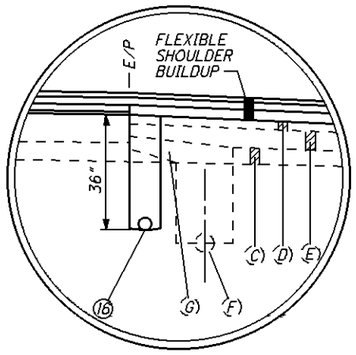
ATH-33/50-15.05/11.46

i:\project\ATH-33-15.05\PAVEMENT\TYP.dgn 17-APR-2009 12:21PM jbooher

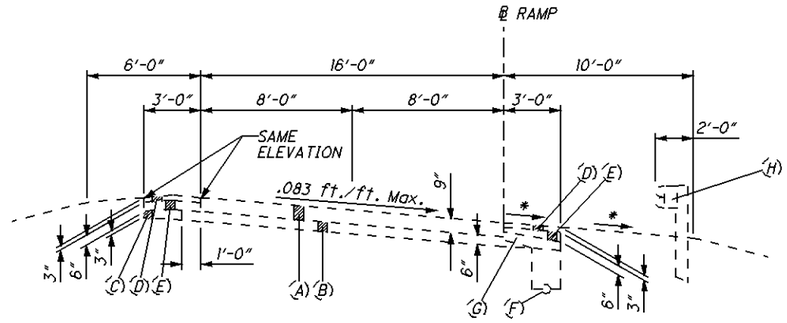


NORMAL TANGENT SECTION - ONE LANE RAMP

RAMP B-1
RAMP M
RAMP N
RAMP Q

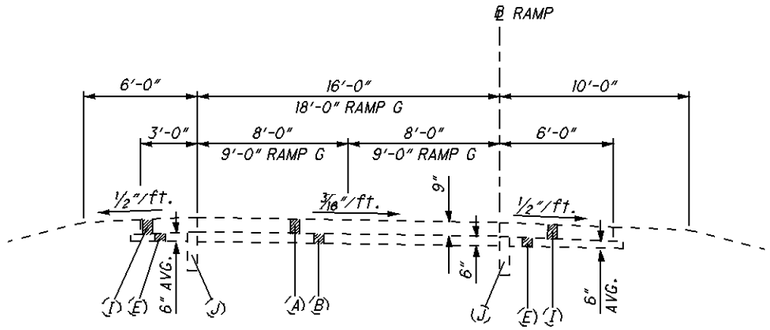


UNDERDRAIN DETAIL
OVERLAY



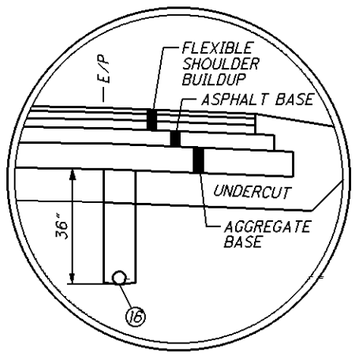
SUPERELEVATED SECTION - ONE LANE RAMP

RAMP B-1
RAMP J-1
RAMP K
RAMP M
RAMP N
RAMP P
RAMP Q

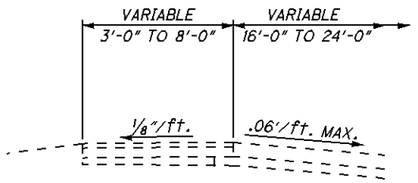


NORMAL TANGENT SECTION - ONE LANE RAMP

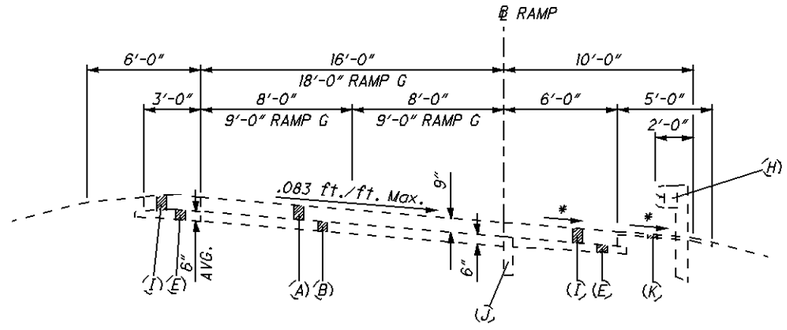
RAMP R
RAMP T
RAMP C
RAMP F
RAMP G
US-33 W.B.



UNDERDRAIN DETAIL
FULL-DEPTH
(EXISTING NOT SHOWN FOR CLARITY)

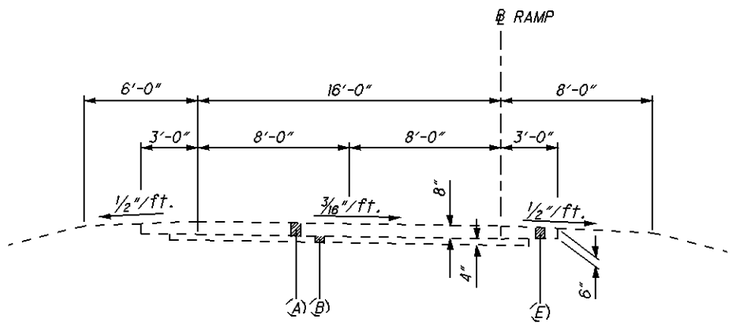


SHOULDER DETAIL - HIGH SIDE



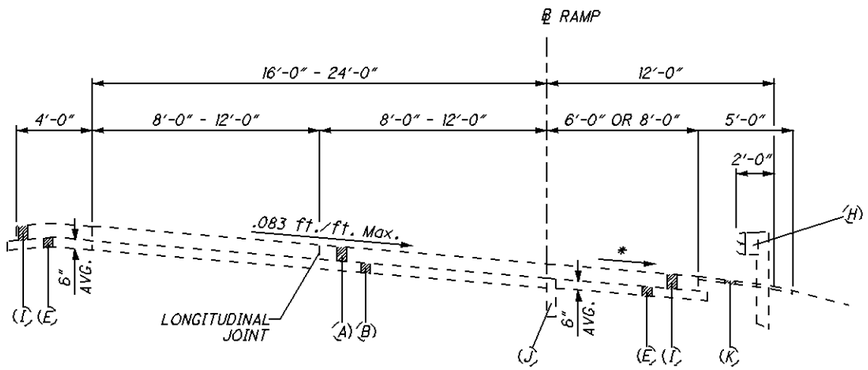
SUPERELEVATED SECTION - ONE LANE RAMP

RAMP R
RAMP S
RAMP T
RAMP U
RAMP F
RAMP G
RAMP H
RAMP J-2
STIMSOM AVE. E.B.



NORMAL TANGENT SECTION - ONE LANE RAMP

RAMP D



SUPERELEVATED SECTION - ONE LANE ROADWAY

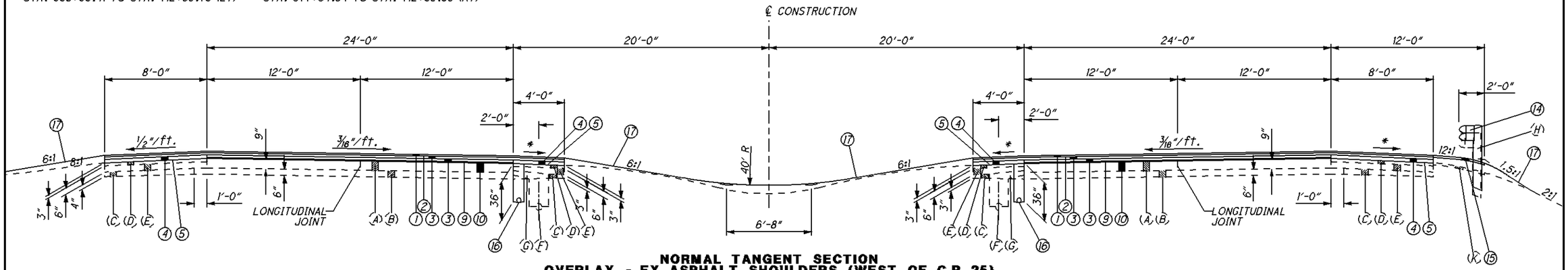
US-33 E.B.
US-33 W.B.
SSTIMSOM AVE. W.B.

* ½" PER FOOT MINIMUM SLOPE OR SUPERELEVATION RATE IF GREATER

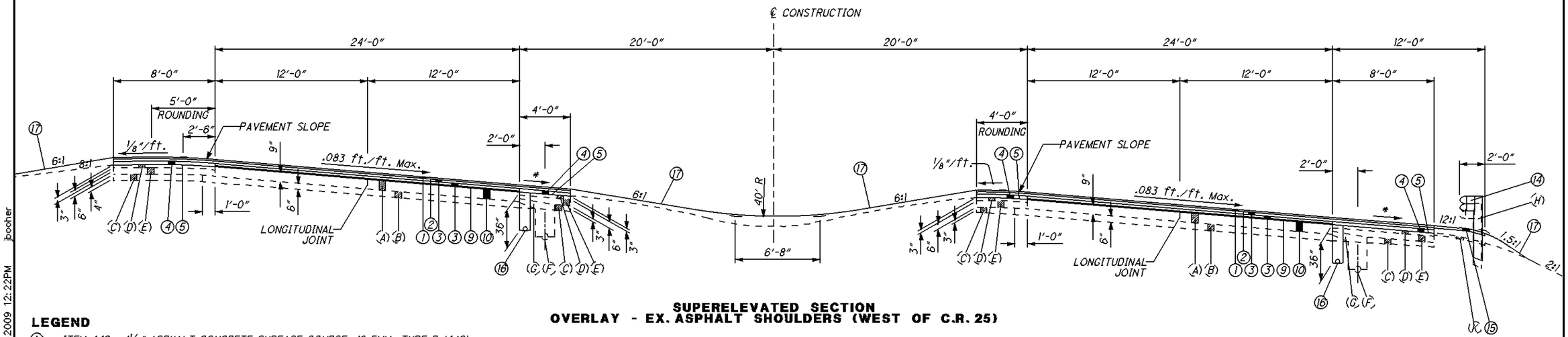
SEE SHEET 5 FOR EXISTING AND PROPOSED LEGENDS

SECTIONS APPLY TO:
STA. 628+13.77 TO STA. 642+93.24 (LT)
STA. 650+83.14 TO STA. 661+00.00 (LT)
STA. 668+66.41 TO STA. 712+85.76 (LT)
STA. 626+75.30 TO STA. 642+10.15 (RT)
STA. 650+34.04 TO STA. 660+93.37 (RT)
STA. 677+84.54 TO STA. 712+69.55 (RT)

NOTE: FOR UNDERDRAIN DETAIL, SEE SHEET 6



NORMAL TANGENT SECTION
OVERLAY - EX. ASPHALT SHOULDERS (WEST OF C.R. 25)



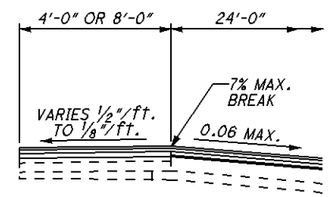
SUPERELEVATED SECTION
OVERLAY - EX. ASPHALT SHOULDERS (WEST OF C.R. 25)

LEGEND

1. ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)
2. ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (0.04 GAL./SQ.YD.)
3. ITEM 442 - 2¼" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)
4. ITEM 442 - 2¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)
5. ITEM 407 - TACK COAT (0.07 GAL./SQ.YD.)
6. ITEM 301 - 5" ASPHALT CONCRETE BASE, PG64-22
7. ITEM 408 - PRIME COAT (0.4 GAL./SQ.YD.)
8. ITEM 304 - AGGREGATE BASE, DEPTH AS SHOWN
9. ITEM 422 - DOUBLE CHIP SEAL, AS PER PLAN
10. ITEM 451 - REINFORCED CONCRETE PAVEMENT, MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT
11. ITEM 204 - SUBGRADE COMPACTION
12. ITEM 204 - GRANULAR MATERIAL, TYPE C
13. ITEM 204 - EXCAVATION OF SUBGRADE
14. ITEM 606 - GUARDRAIL, TYPE 5
15. ITEM 446 - ASPHALT CONC. INT. COURSE, TYPE 2, PG 64-28, UNDER GUARDRAIL, A.P.P.
16. ITEM 605 - 4" PIPE UNDERDRAIN, 707.31
17. ITEM 659 - SEEDING & MULCHING

EXISTING LEGEND

- (A) 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
- (B) 6" SUBBASE
- (C) SUBBASE
- (D) BITUMINOUS AGGREGATE BASE
- (E) AGGREGATE BASE - DEPTH AS SHOWN
- (F) 6" PIPE UNDERDRAIN
- (G) DRAINAGE CONNECTION, USING NO. 8 AGGREGATE
- (H) GUARDRAIL, TYPE 5
- (I) 9" PLAIN CONCRETE PAVEMENT
- (J) 4" SHALLOW PIPE UNDERDRAIN
- (K) 2" INTERMEDIATE ASPHALT, UNDER GUARDRAIL



HIGH SIDE SHOULDER
(FOR SUPERELEVATION UP TO 0.06 MAX.)

* ½" PER FOOT MINIMUM SLOPE OR SUPERELEVATION RATE IF GREATER

TYPICAL SECTIONS

ATH-33/50-15.05/11.46

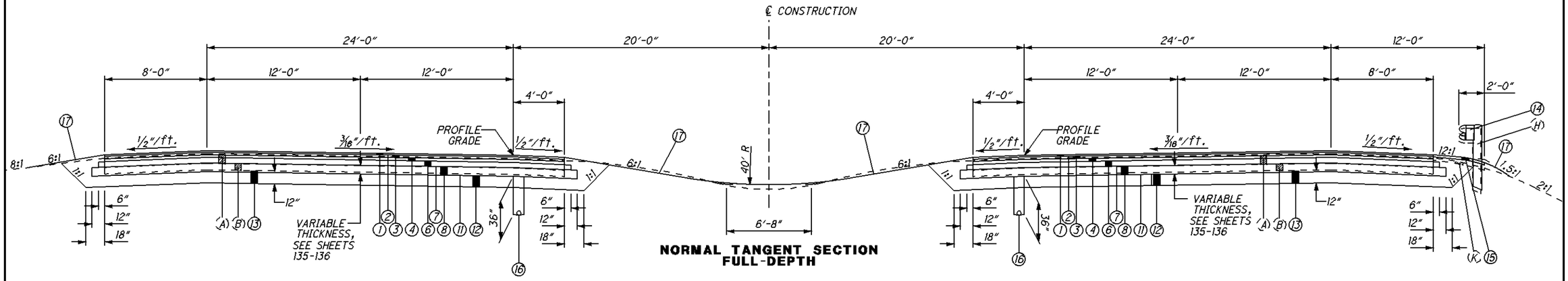
TYPICAL SECTIONS

SECTIONS APPLY TO:

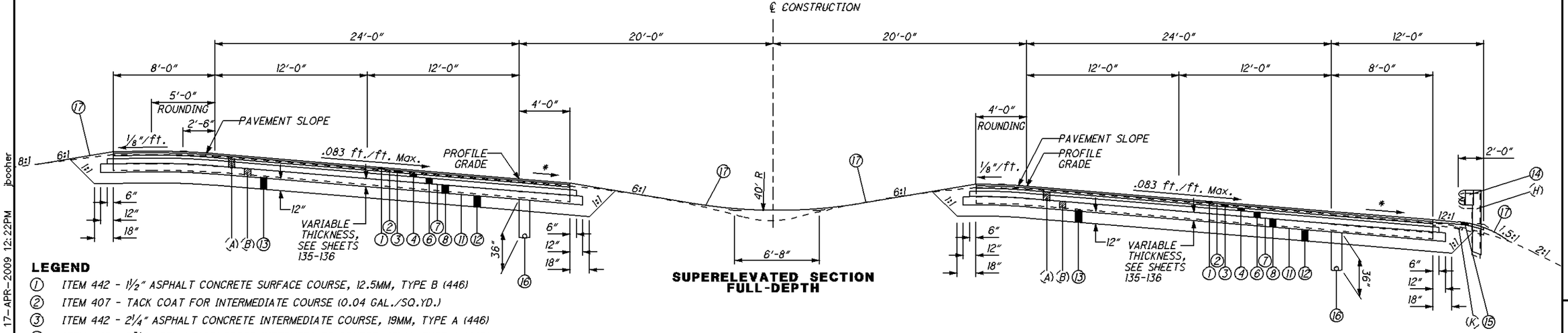
STA. 625+63.77 TO STA. 628+13.77 (LT)	STA. 624+25.30 TO STA. 626+75.30 (RT)
STA. 642+93.24 TO STA. 645+43.24 (LT)	STA. 642+10.15 TO STA. 644+60.15 (RT)
STA. 648+33.14 TO STA. 650+83.14 (LT)	STA. 647+84.04 TO STA. 650+34.04 (RT)
STA. 661+00.00 TO STA. 668+66.41 (LT)	STA. 660+93.37 TO STA. 677+84.54 (RT)
STA. 712+85.76 TO STA. 715+35.76 (LT)	STA. 712+69.55 TO STA. 715+19.55 (RT)
STA. 717+04.38 TO STA. 719+54.83 (LT)	STA. 716+88.61 TO STA. 719+38.61 (RT)
STA. 730+01.40 TO STA. 732+51.40 (LT)	STA. 729+93.84 TO STA. 732+43.84 (RT)
STA. 734+23.51 TO STA. 749+48.36 (LT)	STA. 734+21.83 TO STA. 736+71.83 (RT)
STA. 833+61.87 TO STA. 836+11.87 (LT)	STA. 834+04.21 TO STA. 836+54.21 (RT)
STA. 840+99.27 TO STA. 843+49.27 (LT)	STA. 841+41.61 TO STA. 843+91.61 (RT)
STA. 878+25.76 TO STA. 880+95.76 (LT)	STA. 879+31.33 TO STA. 881+81.33 (RT)
STA. 886+00.54 TO STA. 888+50.54 (LT)	STA. 886+80.49 TO STA. 889+30.49 (RT)

NOTE: EXISTING SHOULDER DETAILS AND UNDERDRAINS WERE NOT SHOWN IN THE TYPICAL SECTIONS FOR ADDED CLARITY. SEE SHEET 7 FOR EXISTING SHOULDER DETAILS & UNDERDRAINS WEST OF C.R. 25; SEE SHEET 9 FOR EXISTING SHOULDER DETAILS AND UNDERDRAINS EAST OF C.R. 25.

FOR UNDERDRAIN DETAIL, SEE SHEET 6



NORMAL TANGENT SECTION
FULL-DEPTH



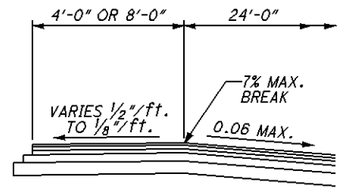
SUPERELEVATED SECTION
FULL-DEPTH

LEGEND

(1) ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)
(2) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (0.04 GAL./SQ.YD.)
(3) ITEM 442 - 2¼" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)
(4) ITEM 442 - 2¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)
(5) ITEM 407 - TACK COAT (0.07 GAL./SQ.YD.)
(6) ITEM 301 - 5" ASPHALT CONCRETE BASE, PG64-22
(7) ITEM 408 - PRIME COAT (0.4 GAL./SQ.YD.)
(8) ITEM 304 - AGGREGATE BASE, DEPTH AS SHOWN
(9) ITEM 422 - DOUBLE CHIP SEAL, AS PER PLAN
(10) ITEM 451 - REINFORCED CONCRETE PAVEMENT, MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT
(11) ITEM 204 - SUBGRADE COMPACTION
(12) ITEM 204 - GRANULAR MATERIAL, TYPE C
(13) ITEM 204 - EXCAVATION OF SUBGRADE
(14) ITEM 606 - GUARDRAIL, TYPE 5
(15) ITEM 446 - ASPHALT CONC. INT. COURSE, TYPE 2, PG 64-28, UNDER GUARDRAIL, A.P.P.
(16) ITEM 605 - 4" PIPE UNDERDRAIN, 707.31
(17) ITEM 659 - SEEDING & MULCHING

EXISTING LEGEND

(A) 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
(B) 6" SUBBASE
(C) SUBBASE
(D) BITUMINOUS AGGREGATE BASE
(E) AGGREGATE BASE - DEPTH AS SHOWN
(F) 6" PIPE UNDERDRAIN
(G) DRAINAGE CONNECTION, USING NO. 8 AGGREGATE
(H) GUARDRAIL, TYPE 5
(I) 9" PLAIN CONCRETE PAVEMENT
(J) 4" SHALLOW PIPE UNDERDRAIN
(K) 2" INTERMEDIATE ASPHALT, UNDER GUARDRAIL



HIGH SIDE SHOULDER
(FOR SUPERELEVATION UP TO 0.06 MAX.)

* ½" PER FOOT MINIMUM SLOPE OR SUPERELEVATION RATE IF GREATER

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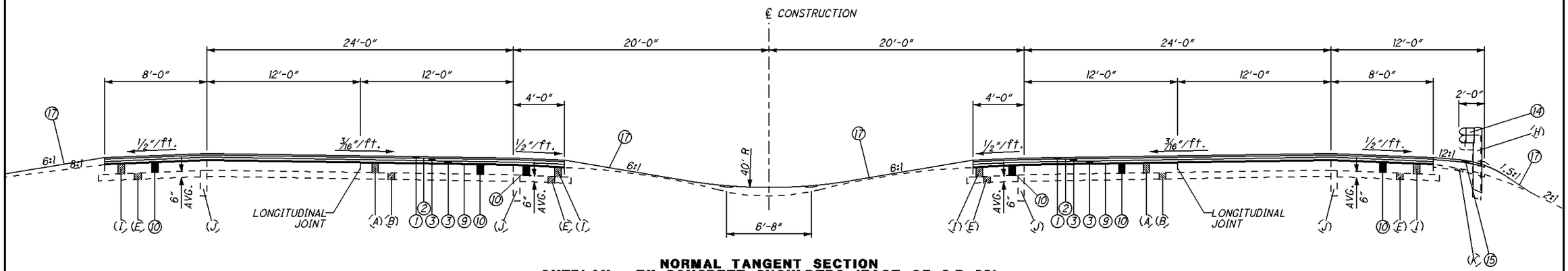
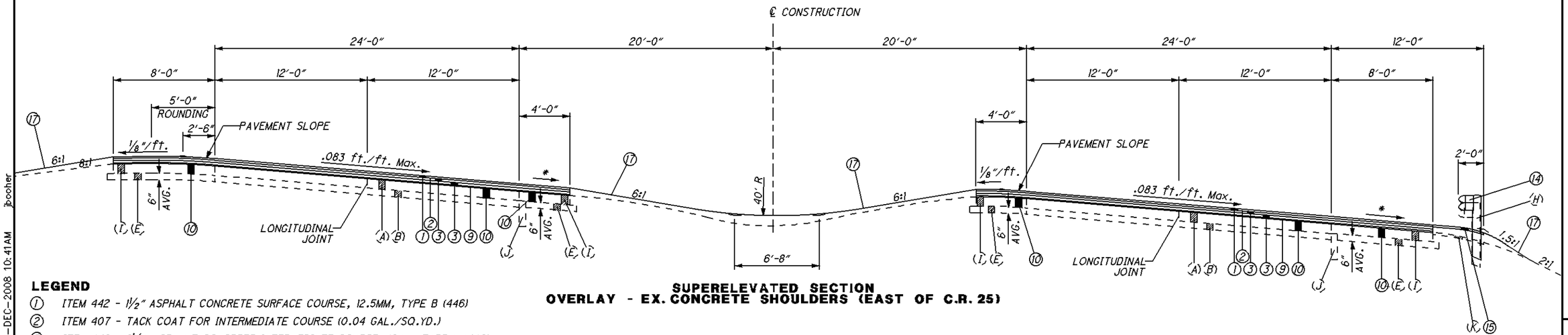
SECTIONS APPLY TO:
STA. 719+54.83 TO STA. 730+01.40 (LT)
STA. 749+48.36 TO STA. 833+61.87 (LT)
STA. 843+49.27 TO STA. 878+25.76 (LT)
STA. 888+50.54 TO STA. 917+89.86 (LT)
STA. 719+38.61 TO STA. 729+93.84 (RT)
STA. 736+71.83 TO STA. 834+04.21 (RT)
STA. 843+91.61 TO STA. 879+31.33 (RT)
STA. 889+30.49 TO STA. 917+89.86 (RT)



NORMAL TANGENT SECTION
OVERLAY - EX. CONCRETE SHOULDERS (EAST OF C.R. 25)



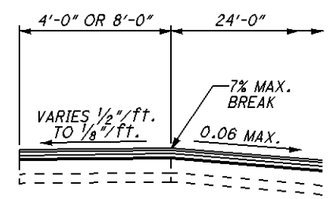
SUPERELEVATED SECTION
OVERLAY - EX. CONCRETE SHOULDERS (EAST OF C.R. 25)

LEGEND

(1) ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)
(2) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (0.04 GAL./SQ.YD.)
(3) ITEM 442 - 2¼" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)
(4) ITEM 442 - 2¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)
(5) ITEM 407 - TACK COAT (0.07 GAL./SQ.YD.)
(6) ITEM 301 - 5" ASPHALT CONCRETE BASE, PG64-22
(7) ITEM 408 - PRIME COAT (0.4 GAL./SQ.YD.)
(8) ITEM 304 - AGGREGATE BASE, DEPTH AS SHOWN
(9) ITEM 422 - DOUBLE CHIP SEAL, AS PER PLAN
(10) ITEM 451 - REINFORCED CONCRETE PAVEMENT, MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT
(11) ITEM 204 - SUBGRADE COMPACTION
(12) ITEM 204 - GRANULAR MATERIAL, TYPE C
(13) ITEM 204 - EXCAVATION OF SUBGRADE
(14) ITEM 606 - GUARDRAIL, TYPE 5
(15) ITEM 446 - ASPHALT CONC. INT. COURSE, TYPE 2, PG 64-28, UNDER GUARDRAIL, A.P.P.
(16) ITEM 605 - 4" PIPE UNDERDRAIN, 707.31
(17) ITEM 659 - SEEDING & MULCHING

EXISTING LEGEND

(A) 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
(B) 6" SUBBASE
(C) SUBBASE
(D) BITUMINOUS AGGREGATE BASE
(E) AGGREGATE BASE - DEPTH AS SHOWN
(F) 6" PIPE UNDERDRAIN
(G) DRAINAGE CONNECTION, USING NO. 8 AGGREGATE
(H) GUARDRAIL, TYPE 5
(I) 9" PLAIN CONCRETE PAVEMENT
(J) 4" SHALLOW PIPE UNDERDRAIN
(K) 2" INTERMEDIATE ASPHALT, UNDER GUARDRAIL



HIGH SIDE SHOULDER
(FOR SUPERELEVATION UP TO 0.06 MAX.)

* ½" PER FOOT MINIMUM SLOPE OR SUPERELEVATION RATE IF GREATER

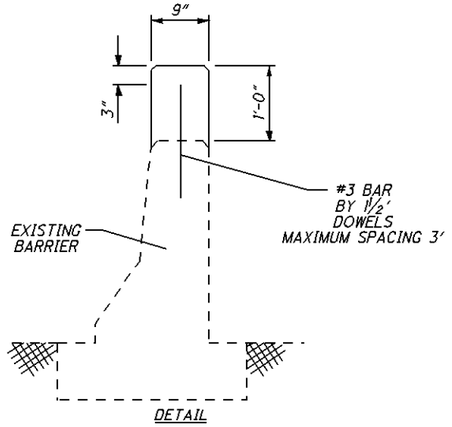
TYPICAL SECTIONS

ATH-33/50-15.05/11.46

622, CONCRETE BARRIER, TYPE D, AS PER PLAN
THIS ITEM SHALL CONSIST OF PLACING CONCRETE BARRIER EXTENSION ON EXISTING BARRIER AS SHOWN ON THE PLANS.

THIS ITEM SHALL INCLUDE ALL REINFORCING, DOWELS, DOWEL HOLES, CONCRETE, AND ALL INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

BASIS FOR PAYMENT SHALL BE AT THE UNIT PRICE BID FOR FEET AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE, GUARDRAIL HOLES AND INCIDENTALS REQUIRED TO PERFORM THE WORK.



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

204, EXCAVATION OF SUBGRADE
ALL EXCAVATION QUANTITIES THROUGHOUT THE LIMITS OF THE PROJECT SHALL BE PAID AS ITEM 204 - EXCAVATION OF SUBGRADE. THESE QUANTITIES INCLUDE, BUT ARE NOT LIMITED TO, REMOVAL OF ASPHALT PAVEMENT, PAVEMENT SUBBASE AND UNDERCUTTING SUBBASE IN SECTIONS DESIGNATED FOR FULL-DEPTH ASPHALT REPLACEMENT. QUANTITIES FOR ITEM 204 - EXCAVATION OF SUBGRADE CAN BE FOUND IN THE CALCULATION SHEETS.

422, DOUBLE CHIP SEAL, AS PER PLAN
THE REQUIREMENTS OF C.M.S. 422 APPLY EXCEPT AS MODIFIED AS FOLLOWS:

IN SECTION 422.02 MATERIALS.
USE A CRS-2 EMULSIFIED BINDER CONFORMING TO 702.04 FOR THIS PROJECT.

REMOVE AND REPLACE THE SECOND PARAGRAPH WITH "FOR COVER AGGREGATE, USE CRUSHED GRAVEL MEETING 703.05 EXCEPT THE LOSS, SODIUM SULFATE SOUNDNESS TEST AND % SHALL BE 15% MAXIMUM. THE FIRST COURSE (BASE COURSE) OF THE DOUBLE CHIP SEAL SHALL MEET THE GRADATION REQUIREMENTS FOR #8 SIZE STONE. THE GRADATION REQUIREMENTS FOR THE SECOND COURSE (TOP COURSE) OF THE DOUBLE CHIP SEAL SHALL MEET THE FOLLOWING:

SIEVE SIZE	TOTAL PERCENT PASSING
⅜ INCH (9.5 MM)	100
NO. 4 (4.75 MM)	70 TO 100
NO. 8 (2.36 MM)	5 TO 50
NO. 16	0 TO 20
NO. 50 (300 UM)	0 TO 5

IN SECTION 422.04 WEATHER LIMITATIONS.
SECTION "C" IS WAIVED.

IN SECTION 422.07 BINDER APPLICATION.
FOR DOUBLE CHIP SEAL, APPLY THE BINDER AT A MINIMUM RATE OF 0.34 GALLON PER SQUARE YARD FOR THE FIRST COURSE (BASE COURSE) AND 0.30 GALLON PER SQUARE YARD FOR THE SECOND COURSE (TOP COURSE).

IN SECTION 422.10 QUALITY CONTROL.
SECTION "C" IS WAIVED.

IN SECTION 422.11 ACCEPTANCE.
SECTIONS "E" & "F" ARE WAIVED.
SECTION "G" APPLIES TO THE FIRST COURSE (BASE COURSE) ONLY. STONE CHIP APPLIED FOR THE SECOND COURSE (TOP COURSE) SHALL FILL IN ALL VOIDS.
PROJECT ACCEPTANCE IN 25 TO 35 DAYS IS WAIVED.

ITEM SPECIAL, MISC.: BRIDGE SCAN SYSTEM
A JOINT ODOT-OHIO UNIVERSITY PAVEMENT RESEARCH PROJECT WILL BE CONDUCTED IN CONJUNCTION WITH THIS PROJECT. THE CONTRACTOR SHALL COOPERATE AS NEEDED WITH OHIO UNIVERSITY PERSONNEL AND PROCURE THE FOLLOWING:

QTY - PART #	DESCRIPTION
1 - FGBRIDGESCAN	BRIDGE SCAN SYSTEM

Bridge deck evaluation system, includes:
SIR-3000 Data Acquisition System
SIR-3000 transit case
Model 5100 1.5 GHz antenna
Model 623 cart
2-meter antenna cable
Battery charger & two batteries
Sun shield
RADAN software
Bridge Assessment module
Includes 2 training credits for classes held at GSSI(1 training credit per person per class).
Travel & living expenses are not included.

1 - FGMOD5103 MODEL 5103 ANTENNA
400 MHz ground coupled antenna

2 - FGTRAINING ADDITIONAL TRAINING CREDITS - IN HOUSE

1 - FGSHIP SHIPPING

VENDOR FOR THE ABOVE SYSTEM IS THE FOLLOWING:
GEOPHYSICAL SURVEY SYSTEMS, INC.
12 INDUSTRIAL WAY
SALEM, NH
03079-4843
PHONE: (603) 893-1109
FAX: (603) 889-3984
TOLL FREE: (800) 524-3011

DELIVERY OF ITEMS WILL BE TO OHIO UNIVERSITY WITHIN THREE MONTHS AFTER AWARD DATE; ALL EQUIPMENT SHALL BECOME THE PROPERTY OF OHIO UNIVERSITY; DELIVERY SHALL BE MADE UNDER THE DIRECTION OF:
ISSAM KHOURY
RESEARCH ENGINEER
ORITE
OHIO UNIVERSITY
116 STOCKER CENTER
(740) 593-0010 (OFFICE)
(740) 591-3963 (CELL)

BASIS OF PAYMENT:
THE DEPARTMENT WILL PAY FOR ITEMS ABOVE AT THE CONTRACT PRICE AS FOLLOWS:

ITEM	UNIT	DESCRIPTION
SPECIAL	LS	MISC.: BRIDGE SCAN SYSTEM

448, PAVING UNDER GUARDRAIL, AS PER PLAN
PAVING UNDER GUARDRAIL SHALL CONSIST OF PLACING ITEM 448 TO THE DEPTH SPECIFIED USING ONE OF THE FOLLOWING METHODS:

METHOD A: 1) SET GUARDRAIL POSTS

2) PLACE ITEM 448

METHOD B: 1) PLACE ITEM 448

2) BORE ASPHALT AT POST LOCATIONS (MAY BE OMITTED IF STEEL POSTS ARE USED)

3) SET GUARDRAIL POSTS

4) PATCH AROUND POSTS. THE MATERIALS USED FOR PATCHING SHALL BE AN ASPHALT CONCRETE APPROVED BY THE ENGINEER. PATCHED AREAS SHALL BE COMPACTED USING EITHER HAND OR MECHANICAL METHODS. FINISHED SURFACES SHALL BE SMOOTH AND SLOPED TO DRAIN AWAY FROM THE POSTS.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE, WITH THE EXCEPTION OF SETTING GUARDRAIL POSTS, SHALL BE INCLUDED FOR PAYMENT UNDER ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, UNDERGUARDRAIL, PG64-22, AS PER PLAN

LOCATIONS:
1-GR: 418.75' x 4' x 2/12 ÷ 27 = 10.34 CY
3-GR: 362.5' x 4' x 2/12 ÷27 = 8.95 CY
5-GR: 475' x 4' x 2/12 ÷27 = 11.73 CY
7-GR: 137.5' x 4' x 2/12 ÷27 = 3.40 CY
8-GR: 862.5' x 4' x 2/12 ÷27 = 21.30 CY
9-GR: 900' x 4' x 2/12 ÷27 = 22.22 CY
10-GR: 500' x 4' x 2/12 ÷27 = 12.35 CY
12-GR: 68.75' x 4' x 2/12 ÷27 = 1.70 CY
13-GR: 200' x 4' x 2/12 ÷27 = 4.94 CY
16-GR: 237.5' x 4' x 2/12 ÷27 = 5.86 CY
18-GR: 562.5' x 4' x 2/12 ÷27 = 13.89 CY
20-GR: 200' x 4' x 2/12 ÷27 = 4.94 CY
24-GR: 100' x 4' x 2/12 ÷27 = 2.47 CY
26-GR: 150' x 4' x 2/12 ÷27 = 3.70 CY
27-GR: 2462.5' x 4' x 2/12 ÷27 = 60.80 CY
32-GR: 1100' x 4' x 2/12 ÷27 = 27.16 CY
42-GR: 562.5' x 4' x 2/12 ÷27 = 13.89 CY
43-GR: 125' x 4' x 2/12 ÷27 = 3.09 CY
46-GR: 600' x 4' x 2/12 ÷27 = 14.81 CY
49-GR: 141' x 4' x 2/12 ÷27 = 3.48 CY
51-GR: 93.75' x 4' x 2/12 ÷27 = 2.31 CY
54-GR: 143.75' x 4' x 2/12 ÷27 = 3.55 CY
56-GR: 125' x 4' x 2/12 ÷27 = 3.09 CY
57-GR: 137.5' x 4' x 2/12 ÷27 = 3.40 CY
59-GR: 68.75' x 4' x 2/12 ÷27 = 1.70 CY
60-GR: 2981.25' x 4' x 2/12 ÷27 = 73.61 CY
61-GR: 1350' x 4' x 2/12 ÷27 = 33.33 CY
63-GR: 331.25' x 4' x 2/12 ÷27 = 8.18 CY
65-GR: 1137.5' x 4' x 2/12 ÷27 = 28.09 CY

QUANTITY CARRIED TO SHEET 85 IS TOTAL ITEM 448 - PAVING UNDER GUARDRAIL, AS PER PLAN = 409 CY

451, REINFORCED CONCRETE PAVEMENT, MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT
DESCRIPTION:
THIS WORK CONSISTS OF BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT BEFORE PLACING A DOUBLE CHIP SEAL AND ASPHALT CONCRETE PAVEMENT.

EQUIPMENT:
USE A SELF-CONTAINED AND SELF-PROPELLED MULTI HEAD BREAKER FOR BREAKING THE EXPOSED CONCRETE PAVEMENT. ENSURE THE MULTI HEAD BREAKER HAS THE CAPABILITY TO BREAK THE FULL 12-FOOT (3.6 M) LANE WIDTH OF THE PAVEMENT IN A SINGLE PASS. ENSURE THE BREAKING HEAD CONSISTS OF 12 TO 16 HAMMERS WEIGHING 1000 TO 1500 POUNDS (450 TO 680 KG) EACH, MOUNTED LATERALLY IN A SINGLE ROW OR LATERALLY IN PAIRS WITH HALF THE HAMMERS IN A FORWARD ROW AND THE REMAINDER DIAGONALLY OFFSET IN A REAR ROW. ATTACH EACH HAMMER TO A HYDRAULIC LIFT CYLINDER THAT OPERATES AS AN INDEPENDENT UNIT, DEVELOPS 2000 TO 12,000 FOOT-POUNDS (2700 TO 16,000 J) OF ENERGY DEPENDING ON LIFT HEIGHT SELECTED, CYCLES AT A RATE OF 30 TO 35 IMPACTS PER MINUTE, AND HAS A MAXIMUM LIFT HEIGHT OF 60 INCHES (1.5 M).

USE A 50-TON (45 METRIC TON) PNEUMATIC TIRE ROLLER CONFORMING TO THE REQUIREMENTS OF 204.06 TO SEAT THE BROKEN RIGID PAVEMENT. USE PNEUMATIC TIRE TOWING EQUIPMENT CAPABLE OF MOVING THE ROLLER FORWARD AND BACKWARD ALONG PREDETERMINED LINES.

CONSTRUCTION DETAILS:
INSTALL PROPOSED UNDERDRAINS AFTER THE EXISTING ASPHALT CONCRETE OVERLAY, IF ANY, IS REMOVED AND PRIOR TO THE BREAKING OPERATION.

MAKE A FULL DEPTH SAW CUT OR CUT LOAD TRANSFER DEVICES AT EXISTING JOINTS ON RAMPS OR MAINLINE WHERE THE BREAKING ABUTS CONCRETE PAVEMENT OR APPROACH SLABS REMAINING IN PLACE PERMANENTLY OR TEMPORARILY FOR MAINTENANCE OF TRAFFIC.

BEFORE THE BREAKING OPERATION BEGINS, THE ENGINEER WILL DESIGNATE A TEST SECTION. BREAK THE TEST SECTION USING VARYING ENERGY AND STRIKING PATTERNS UNTIL THE TEST SECTION IS BROKEN ACCORDING TO THIS SPECIFICATION. THE EXTENT OF THE BREAKAGE OF THE TEST SECTION SHALL BE USED AS A GUIDE FOR BREAKING THE PAVEMENT ON THE REMINDER OF THE PROJECT. DETERMINE MAXIMUM NUMBER OF PASSES OF THE PROOF ROLLER TO FIRMLY SEAT THE BROKEN PIECES WITHOUT DAMAGE TO THE SUBGRADE OR CONCRETE. THE ENGINEER MAY REQUIRE ADDITIONAL TEST SECTIONS, AS NECESSARY, THROUGHOUT THE BREAKING OPERATION.

VARY THE ENERGY OR STRIKING FREQUENCY OF THE BREAKING DEVICE TO MAINTAIN THE CRACK PATTERN ESTABLISHED IN THE TEST SECTION. CONTROL THE OPERATING SPEED OF THE BREAKING EQUIPMENT SUCH THAT THE EXISTING PAVEMENT IS REDUCED INTO PARTICLES:

- NOT EXCEEDING 30 INCHES (0.75 M) IN THE LARGEST DIMENSION,
- THE MAJORITY LESS THAN 18 INCHES (0.45 M) IN SIZE AND
- NO MORE THAN 20 PERCENT BEING GREATER THAN 24 INCHES (0.60 M) IN SIZE.

BREAK THE PAVEMENT WITHOUT ANY POSITIVE VERTICAL DISPLACEMENT OF THE CONCRETE GREATER THAN 3 INCHES (75 MM). BREAK THE PAVEMENT TO FORM CRACKS VISIBLE TO THE ENGINEER WITHOUT THE AID OF WATER. DO NOT FORM CONTINUOUS LONGITUDINAL CRACKS.

CONTINUED ON NEXT SHEET.

CALCULATED JDB
CHECKED ALC

GENERAL NOTES

ATH-33/50-15.05/11.46

BEFORE PLACING THE DOUBLE CHIP SEAL, ROLL THE BROKEN PAVEMENT UNTIL THE PIECES ARE FIRMLY SEATED. ROLL NO LESS THAN TWO PASSES OF THE PROOF ROLLER AND NO MORE THAN THE MAXIMUM NUMBER OF PASSES DETERMINED DURING CONSTRUCTION OF THE TEST SITE.

REMOVE LOOSE PIECES OF BROKEN CONCRETE THAT ARE NOT FIRMLY SEATED PRIOR TO PLACING THE DOUBLE CHIP SEAL. REPAIR ANY VOIDS WHICH, IN THE OPINION OF THE ENGINEER, WILL MAKE COMPACTION OF THE DOUBLE CHIP SEAL DIFFICULT. THESE VOIDS INCLUDE AREAS WHERE LOOSE PIECES OF CONCRETE WERE REMOVED, JOINTS, CRACKS, SPALLS, ETC. REPAIR THESE AREAS BY APPLYING TACK COAT, FILLING WITH AN ASPHALT CONCRETE AND COMPACTING. THE TYPE OF ASPHALT USED SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACING. PAYMENT FOR TACK COAT, ASPHALT CONCRETE AND COMPACTING SHALL BE INCLUDED IN THIS ITEM.

DO NOT PERMIT TRAFFIC ON THE BROKEN PORTION OF THE ROADWAY UNTIL THE DOUBLE CHIP SEAL AND IST ASPHALT CONCRETE INTERMEDIATE COURSE HAVE BEEN PLACED.

PLACE THE DOUBLE CHIP SEAL AS SOON AS POSSIBLE AFTER THE BREAKING AND SEATING OPERATION BUT NO MORE THAN 96 HOURS AFTER BREAKING. SUSPEND THE BREAKING OPERATION IF THE 96 HOUR REQUIREMENT CANNOT BE MET.

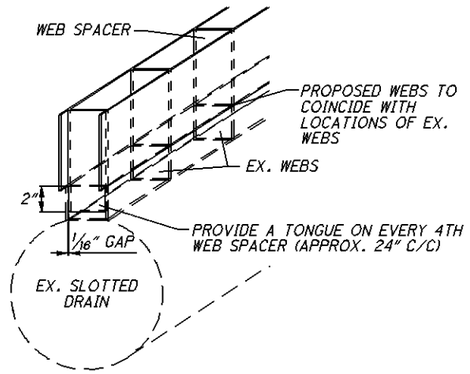
METHOD OF MEASUREMENT:
THE DEPARTMENT WILL MEASURE BREAK AND SEAT BY THE NUMBER OF SQUARE YARDS (SQUARE METERS). THE ENGINEER WILL USE THE ACTUAL WIDTH OF THE EXISTING CONCRETE PAVEMENT AND WILL MEASURE THE LENGTH ALONG THE CENTER-LINE OF EACH ROADWAY OR RAMP.

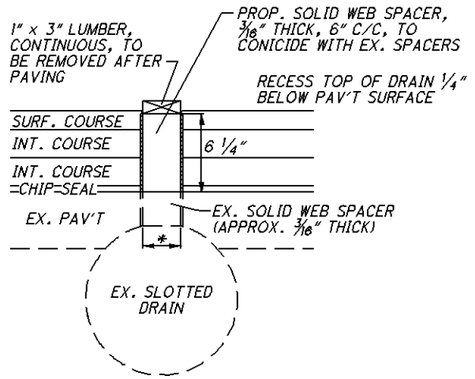
BASIS OF PAYMENT:
THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICES AS FOLLOWS:

ITEM	UNIT	DESCRIPTION
451	SQ. YD.	REINFORCED CONCRETE PAVEMENT, MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT

605, 4" SHALLOW PIPE UNDERDRAINS, 707.31, AS PER PLAN AND 605, UNDERDRAINS, MISC.: 4" UNCLASSIFIED PIPE UNDERDRAINS, 707.31, AS PER PLAN
DURING PLACEMENT OF THE PROPOSED UNDERDRAIN IT IS POSSIBLE THAT A CONFLICT WILL OCCUR WITH THE EXISTING UNDERDRAINS. THIS ITEM INCLUDES THE REMOVAL OF THE EXISTING UNDERDRAINS IF NEEDED AND ANY ADDITIONAL BACKFILLING REQUIREMENTS OF NO. 8 AGGREGATE IF NEEDED. ENSURE THAT REMAINING SECTIONS OF EXISTING UNDERDRAIN DRAIN TO AN OUTLET OR ANOTHER UNDERDRAIN. ALL PAYMENT IS INCLUSIVE FOR ANY UNDERDRAIN REMOVAL AND ADDITIONAL BACKFILLING OF AGGREGATE IN ITEMS 605, 4" SHALLOW PIPE UNDERDRAINS, 707.31, AS PER PLAN AND 605, UNDERDRAINS, MISC.: 4" UNCLASSIFIED PIPE UNDERDRAINS, 707.31, AS PER PLAN

603, CONDUIT, MISC.: SLOTTED DRAIN EXTENSION
EXTEND THE TOP OF THE EXISTING SLOTTED DRAIN AS PER THE DETAILS SHOWN BELOW. PAYMENT WILL BE MADE FOR THE NUMBER OF LINEAR FEET OF DRAIN EXTENDED. GALVANIZE AS PER 603.





* FIELD MEASURE BEFORE ORDERING

603, CONDUIT, MISC.: SLOTTED DRAIN EXTENSION = 360'
QUANTITIY CARRIED TO SHEET 84.

604, CATCH BASIN RECONSTRUCTED TO GRADE, AS PER PLAN
PERFORM THE FOLLOWING TASKS TO RECONSTRUCT THE CATCH BASINS ON THIS PROJECT:
1. REMOVE AND DISPOSE OF THE EXISTING CONCRETE APRON IF PRESENT.

2. CAREFULLY REMOVE AND CLEAN THE EXISTING FRAME OR ALTERNATIVELY SUPPLY A NEW FRAME. REMOVE AND CLEAN THE EXISTING GRATE(S). IF THE ENGINEER DETERMINES THAT A CASTING IS TOO DETERIORATED TO REUSE, THE DEPARTMENT WILL PAY FOR A NEW CASTING.

3. REMOVE EXISTING CATCH BASIN WALLS BELOW ANY WINDOW OPENINGS, GRATES, OR ANY POINTS OF WALL FAILURE. SOME EXISTING CMP UNDERDRAIN OUTLETS INTO THE CATCH BASINS HAVE DETERIORATED IN OTHERWISE SOUND WALLS. REMOVE THE UNSOUND CONCRETE FROM THE PIPE OPENING, REPLACE THE PIPE WITH NEW PIPE IF DIRECTED BY THE ENGINEER AND THEN GROUT AROUND THE PIPE AS PER 604.06. THE DEPART-MENT WILL PAY FOR NEW UNDERDRAIN OUTLET PIPE.

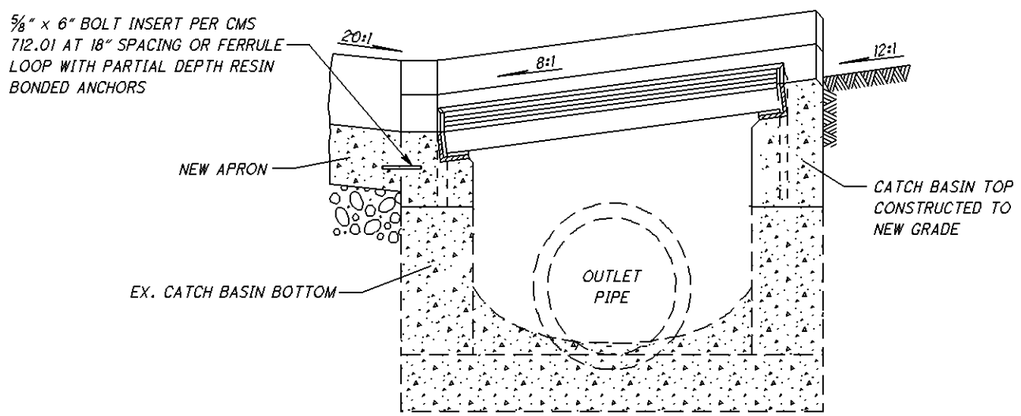
4. CONSTRUCT THE CATCH BASIN TO THE NEW GRADE. MEDIAN BASINS WILL TYPICALLY BE 11 INCHES HIGHER THAN THE EXIST-ING ELEVATION. BASINS IN THE OUTSIDE DITCHES WILL TYP-ICALLY BE AT THE SAME ELEVATION AS THE EXISTING.

5. CONSTRUCT A NEW APRON IF THE EXISTING CATCH BASIN HAD ONE. SEE STANDARD DRAWINGS CB-3.2 AND CB-3.3. THE APRONS SHALL BE MECHANICALLY ATTACHED TO THE CATCH BASIN AND SHALL HAVE CUTOFF WALLS AS SHOWN ON THE STANDARD DRAWINGS.

THERE ARE 45 CATCH BASINS TO BE RECONSTRUCTED OF WHICH THERE ARE 32 NO. 8 AND 2 NO. 2-2B CATCH BASINS IN THE MEDIAN, 2 NO. 6 CATCH BASINS IN THE PAVEMENT, AND 9 NO. 5 CATCH BASINS IN THE OUTSIDE DITCHES.

PLACE DITCH EROSION PROTECTION (7.5' x 150' TYPICAL) AT THE NO. 5 AND NO. 8 CATCH BASINS WHERE THE DITCH HAS BEEN DISTURBED.

604, CATCH BASIN RECONSTRUCTED TO GRADE, AS PER PLAN = 45 EACH
604, CATCH BASIN FRAME AND GRATE (CATCH BASIN, NO. 5) = 1 EACH
604, CATCH BASIN FRAME AND GRATE (CATCH BASIN, NO. 8) = 4 EACH
603, 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS = 80'
670, DITCH EROSION PROTECTION = 5500 SY
QUANTITIES CARRIED TO SHEET 84.

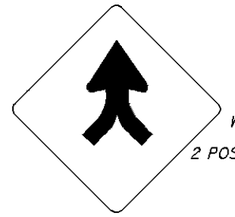


SECTION VIEW - NO. 8 CATCH BASIN

630, SIGN, FLAT SHEET
INSTALL THE SIGNS SHOWN BELOW AT THE LOCATIONS INDICATED.

630, GROUND MOUNTED SUPPORT, NO. 3 POST = 250 FT
630, SIGN, FLAT SHEET = 154.25 SF
630, REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL = 1 EACH
630, REMOVAL OF GROUND MTD POST SUPPORT & DISPOSAL = 1 EACH
QUANTITIES CARRIED TO SHEET 85.

A. REMOVE EXISTING W4-1R SIGN WHERE WB USR 33 MERGES WITH EB USR 50. REMOVE THE EXISTING POST AND REPLACE. REPLACE WITH:



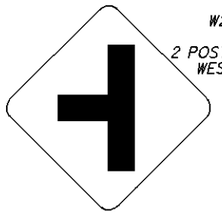
W4-H1-48
16 SF
2 POSTS, 15' EACH

B. INSTALL ON THE EB USR 33 INSIDE SHOULDER (NEAR RICHLAND AVE. EXIT) IN LINE WITH THE SAME EXISTING SIGN ASSEMBLY ON THE OUTSIDE SHOULDER.

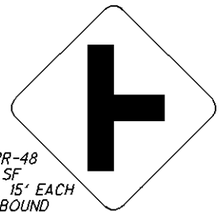
W1-2L-48
16 SF
2 POSTS, 16' EACH

W13-1-30
6.25 SF

C. INSTALL ON THE USR 50 INSIDE SHOULDER IN ADVANCE OF THE CR 24 INTERSECTION IN LINE WITH THE SAME EXISTING SIGN ON THE OUTSIDE SHOULDER.



W2-2L-48
16 SF
2 POSTS, 15' EACH
WEST BOUND



W2-2R-48
16 SF
2 POSTS, 15' EACH
EAST BOUND

D. INSTALL FOUR SIGNS ON THE OUTSIDE SHOULDER: EB USR 50 592+00 (BEHIND GR), EB USR 50 725+00, WB USR 50 725+00, AND WB USR 50 934+00 (BEHIND GR)

W11-3-48
16 SF
2 POSTS, 15' EACH

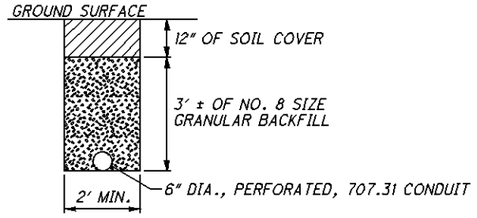
W16-4-30
5 SF

CALCULATED JDB
CHECKED ALC

GENERAL NOTES

ATH-33/50-15.05/11.46

605, UNDERDRAINS, MISC.: 6" SLOPE DRAIN
PLACE 6" DIAMETER DRAIN AT THE LOCATION SHOWN ON THE PLAN SHEETS. PAYMENT FOR THIS ITEM SHALL INCLUDE THE PRICE OF PROVIDING AND INSTALLING THE PIPE, GRANULAR BACKFILL, AND SOIL BACKFILL.



INSTALL TRENCH 4' DEEP AT 698+00 AND THEN RUN AT 0.4% SLOPE TO THE OUTLET.

USR 50 STATION	TRENCH OFFSET
694+50	86' RT
695+00	82' RT
695+50	78' RT
696+00	74' RT
696+50	70' RT
697+00	67' RT
697+50	67' RT
698+00	69' RT

OUTLET LOCATION: 693+50, 104' RT

603, 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS = 100'
604, PRECAST REINFORCED CONCRETE OUTLET = 1 EACH
605, UNDERDRAIN, MISC.: 6" SLOPE DRAIN = 350'
QUANTITIES CARRIED TO SHEET 84.

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

SANITARY
City of Athens
City Building-3rd Floor
8 E. Washington Ave.
Athens, Ohio 45701
Wayne Keys 740-592-3338

WATER
Le-Ax Water District
6000 Industrial Drive PO Box 97
The Plains, Ohio 45780
John Simpson 740-594-0123

ELECTRIC
American Electric Power
9135 SR 682
Athens, Ohio 45701
Casey Green 740-592-1981

TELEPHONE
Verizon Telephone
754 West Union Street
Athens, Ohio 45701
Jeff Schoonover 740-592-0545

GAS
Columbia Gas of Ohio, Inc.
843 Piatt Avenue
Chillicothe, Ohio 45601
Tiffany Woodyard 740-772-9131

HIGHWAY LIGHTING
ODOT District 10
338 Muskingum Dr.
Marietta, Ohio 45750
Jamie Hendershot 740-658-3975

THERE ARE NO UNDERGROUND UTILITIES SHOWN ON THIS PLAN. THE NATURE OF THE WORK REQUIRED BY THIS PROJECT WILL NOT AFFECT ANY KNOWN UNDERGROUND UTILITIES THAT EXIST UNDER OR ADJACENT TO THE WORK AREA.

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 SOUTH 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.

204, PROOF ROLLING
THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING.

ITEM 204 - PROOF ROLLING 26 HOURS.

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.

606, ANCHOR ASSEMBLY, TYPE B-98
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 SRT-350, GUARDRAIL END TERMINAL AS MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE LENGTH OF THE SRT-350 SYSTEM IS CONSIDERED TO BE 37'-6", INCLUSIVE OF THREE 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
SS444	SLOTTED RAIL TERMINAL POST LAYOUT AND	7/12/99 Rev. 1	8/27/99
SS444M	ERECTION DETAILS SRT-350 (12.5, 8 POST)	7/12/99	
SS425M	SLOTTED RAIL TERMINAL SRT-350 POST LAYOUT AND ERECTION DETAILS (12.5, 9 POST)	6/21/97 Rev. 1	3/6/98

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

THE LENGTH OF THE FLEAT-350 IS CONSIDERED TO BE 37'-6", INCLUSIVE OF THREE 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
FLT-M	FLARED ENERGY ABSORBING TERMINAL (FLEAT-350) ASSEMBLY	4/16/98	7/31/98

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.

THE FACE OF THE TYPE B-98 IMPACT HEAD SHALL BE COVERED WITH TYPE G REFLECTIVE SHEETING, PER CMS 730.19: APPROXIMATELY 36" W X 12" H FOR THE SRT-350 AND 14" W X 20" H FOR THE FLEAT.

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

606, ANCHOR ASSEMBLY, TYPE E-98
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
SSS265M	ET-2000 (1997) PLAN, ELEVATION AND SECTIONS	6/20/97	3/6/98
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

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

THE FACE OF THE TYPE E-98 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-98, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

CALCULATED JDB
CHECKED ALC

GENERAL NOTES

ATH-33/50-15.05/11.46

606, IMPACT ATTENUATOR, TYPE 1-98 (BIDIRECTIONAL)
THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY ONE OF THE FOLLOWING IMPACT ATTENUATORS, 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 IMPACT ATTENUATORS:

1) THE C-A-T MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE LENGTH OF THE C-A-T SYSTEM IS CONSIDERED TO BE 31'-3" LONG. 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
SS245M	CRASH-CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS FOR USE AS A LONGITUDINAL MEDIAN BARRIER TERMINAL OR CRASH CUSHION ATTENUATOR	4/10/97 Rev. 4	3/6/98
SS224M	C-A-T TRANSITION TO MEDIAN BARRIER GUARDRAIL PLAN, ELEVATION & SECTIONS	4/26/96	3/6/98
SS226M	C-A-T TRANSITION TO VERTICAL WALL OR PIER PLAN, ELEVATION & SECTIONS	4/26/96	3/6/98

2) THE BRAKEMASTER MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., ONE EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312-467-6750).

THE LENGTH OF THE BRAKEMASTER SYSTEM IS CONSIDERED TO BE 32'-8" LONG. 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
92-00-01	BRAKEMASTER GENERAL ASSEMBLY (UNIDIRECTIONAL SYSTEM)	3/6/97 Rev. K	3/6/98
92-00-81	BRAKEMASTER (UNIDIRECTIONAL) WITH FOUNDATION TUBES	2/9/98	3/6/98
92-00-02	BRAKEMASTER GENERAL ASSEMBLY (BIDIRECTIONAL SYSTEM)	3/10/97 Rev. K	3/6/98
92-00-82	BRAKEMASTER (BIDIRECTIONAL) WITH FOUNDATION TUBES	2/9/98	3/6/98
9202024	ANCHOR ASSEMBLY, FOUNDATION TUBE, 6½FT., BRS	6/12/97 Rev. D	3/6/98

3) THE FLEAT-MT MANUFACTURED BY ROAD SYSTEMS, INC. (RSI), 3616 OLD HOWARD COUNTY AIRPORT ROAD, BIG SPRINGS, TX, 79720 (TELEPHONE 915-263-2435) AND AVAILABLE FROM RSI'S LIST OF APPROVED DISTRIBUTORS.

THE LENGTH OF THE FLEAT-MT SYSTEM IS CONSIDERED TO BE 37'-6" LONG. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS AND THE MANUFACTURERS INSTALLATION MANUAL.

DWG. NO.	DRAWING NAME	DWG./ REV. DATE	ODOT APPROVAL DATE
MEDFLT-W-US	FLARED ENERGY ABSORBING TERMINAL - FLEAT-MT ASSEMBLY FOR WOOD BREAKAWAY POST SYSTEM	4/10/02 Rev. 5	1/6/03
MEDFLT-S-US	FLARED ENERGY ABSORBING TERMINAL - FLEAT-MT ASSEMBLY FOR STEEL BREAKAWAY POST SYSTEM	4/10/02 Rev. 6	1/6/03
MEDFLT-W-M	FLARED ENERGY ABSORBING TERMINAL - FLEAT-MT (Metric) ASSEMBLY FOR WOOD BREAKAWAY POST SYSTEM	4/10/02 Rev. 5	1/6/03
MEDFLT-S-M	FLARED ENERGY ABSORBING TERMINAL - FLEAT-MT (Metric) ASSEMBLY FOR STEEL BREAKAWAY POST SYSTEM	4/10/02 Rev. 6	1/6/03

THE FACE OF THE TYPE 1-98 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 36" X 12" (ONE 9" X 18" FOR EACH FLEAT-MT IMPACT HEAD). PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE 1-98 (UNIDIRECTIONAL OR BIDIRECTIONAL), EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED TRANSITIONS, HARDWARE, REFLECTIVE SHEETING AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

SEEDING AND MULCHING
SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE ON SHEET 129.

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.

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

CALCULATED JDB
CHECKED ALC

GENERAL NOTES

ATH-33/50-15.05/11.46

ITEM 614, MAINTAINING TRAFFIC

THE PROJECT CONSISTS OF BRIDGE REHABILITATION, FULL DEPTH PAVEMENT REPLACEMENT SECTIONS AND ASPHALT CONCRETE OVERALY FROM STA. 598+11.85 TO STA. 920+65. THE MEDIAN WILL ALSO BE RAISED ALONG WITH CATCH BASINS AND NEW GUARDRAIL WILLBE INSTALLED THROUGHOUT MUCH OF THE PROJECT LIMITS.

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.

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.

THE SIGN SHALL BE SIMILAR IN SIZE AND DESIGN TO AN OC60B.

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48 X 30 INCH ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES AND LIGHTS, AS DETAILED IN SCD MT-101.60 AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS/RAMPS ARE CLOSED TO TRAFFIC:

EAST STATE STREET RAMP TO WB US 50
WB US 50 RAMP TO STIMSON AVENUE

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN SIGNS AND SIGN SUPPORTS, AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND TYPE III BARRICADES.

A MINIMUM OF 1 (11') LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT, THE COMPLETED PAVEMENT, ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, ITEM 615 ROADS FOR MAINTAINING TRAFFIC, AND TEMPORARY SURFACES USING ITEMS 410, AND 614.

ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC BETWEEN DECEMBER 1, 2009 AND APRIL 1, 2010. ALL RAMPS SHALL BE OPEN FROM JUNE 11-14, SEPTEMBER 4-7 AND OCTOBER 30-31 EACH YEAR OF CONSTRUCTION. DECEMBER 1, 2009 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND NOVEMBER 15, 2010 SHALL BE THE COMPLETION DATE. LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH CMS 108.07 FOR EACH CALENDAR DAY THAT ALL LANES ARE NOT OPEN AND AVAILABLE TO TRAFFIC IN ACCORDANCE WITH THE DATES LISTED ABOVE.

ALL CONFLICTING SIGNS, GROUND MOUNTED OR OVERHEAD MOUNTED, SHALL BE COVERED DURING CONSTRUCTION.

YIELD SIGNS SHALL BE PLACED AT ALL ENTRANCE RAMP MERGE LOCATIONS AS SHOWN IN THE PLANS.

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 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 25 FEET.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN, ON SITE, FOR THE DURATION OF THE PROJECT. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR (OFFICE OF MATERIALS MANAGEMENT). THE APPROVED LIST OF PORTABLE CHANGEABLE MESSAGE SIGNS CAN BE FOUND ON THE ODOT WEBSITE BY CLICKING ON THE SERVICES MENU, THEN CLICKING ON MATERIALS MANAGEMENT. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 650 FT. AND 475 FT. 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.

THE PCMS LOCATIONS ARE LISTED BELOW:

1. ON STIMSON AVE. FOR CLOSURE OF ENTRANCE ONTO E.B. US50
2. ON EAST STATE STREET PRIOR TO THE W.B. US 50 ENTRANCE RAMP THAT WILL BE CLOSED FOR 30 DAYS.
3. ON E.B. 33 PRIOR TO THE EAST STATE STREET EXIT RAMP.
   A. FOR STIMSON AVE./C.R. 25 EXIT RAMP CLOSURE AND EAST STATE STREET EXIT RAMP JOINT WORK(NIGHT TIME ONLY CLOSURE 7:00PM TO 4:00 AM).THESE TWO RAMPS SHALL NOT BE CLOSED SIMULTANEOUSLY.
4. ON W.B. 50 PRIOR TO THE STIMSON AVE./C.R. 25 EXIT RAMP THAT WILL BE CLOSED FOR 60 DAYS.

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 CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED, 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 ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY.

THE CONTRACTOR SHALL IMPLEMENT A SYSTEM WHEREBY CHANGEABLE MESSAGES WILL BE IMPLEMENTED WITHIN 24 HOURS FOLLOWING TELEPHONE NOTIFICATION FROM THE PROJECT ENGINEER TO A DESIGNATED PHONE.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN

SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED 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. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED 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 PHONE AREAS) ALLOW REMOTE SIGN ACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES. ONE REMOTE DATA INPUT DEVICE (LAPTOP COMPUTER PLUS MODEM OR EQUIVALENT) SHALL BE FURNISHED FOR USE BY THE DISTRICT TRAFFIC ENGINEER, OR EQUIVALENT, AND SHALL BE INSURED AGAINST THEFT.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF CMS 614.07. 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. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN,
AS PER PLAN 12 SIGN-MONTH

ITEM 614, REPLACEMENT SIGN

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

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT SIGN, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF DAMAGED SIGNS, HARDWARE AND SUPPORTS, AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC.

AN ESTIMATED QUANTITY OF 8 EACH HAS BEEN PROVIDED

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 105 M. GAL

DETOUR NOTIFICATION

THE CONTRACTOR SHALL INSTALL AND MAINTAIN THE DETOUR ROUTE AND DETOUR SIGNING. ROUTE MARKERS SHALL BE SUPPLIED BY ODOT. THE CONTRACTOR SHALL NOTIFY THE DISTRICT 10 CONSTRUCTION ENGINEER AT LEAST 21 DAYS IN ADVANCE OF ANY ROAD CLOSURE OR LANE WIDTH RESTRICTION.

ITEM 614, REPLACEMENT DRUM

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

PAYMENT FOR THE NEW DRUMS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT DRUM, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM, AND PROVIDING AND MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUM.

AN ESTIMATED QUANTITY OF 100 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

GUARDRAIL DELINEATION

OBJECT MARKERS SHALL BE INSTALLED ON ALL GUARDRAIL LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE. GUARDRAIL-MOUNTING OF OBJECT MARKERS SHALL BE MADE BY INSTALLING THE OBJECT MARKERS ON THE EXTENSION BLOCKS RATHER THAN DIRECTLY ONTO THE GUARDRAIL ITSELF. OBJECT MARKER SPACING SHALL BE APPROXIMATELY 50 FEET.

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

AN ESTIMATED QUANTITY OF 200 EACH OF ITEM 614 OBJECT MARKERS, ONE-WAY HAS BEEN PROVIDED AND CARRIED TO THE GENERAL SUMMARY.

CONCRETE BARRIER DELINEATION

OBJECT MARKERS SHALL BE INSTALLED ON ALL PERMANENT CONCRETE BARRIER, LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE. OBJECT MARKER SPACING SHALL BE 50 FEET.

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

AN ESTIMATED QUANTITY OF 200 EACH OF ITEM 614 OBJECT MARKER, ONE-WAY HAS BEEN PROVIDED AND CARRIED TO THE GENERAL SUMMARY.

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) (45 AND 55 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.

(THE CONTRACTOR SHALL ERECT A WORK ZONE SPEED LIMIT SIGN IN ADVANCE OF ANY LANE RESTRICTION EXPECTED TO LAST AT LEAST 30 CONSECUTIVE CALENDAR DAYS, OR AS DIRECTED BY THE ENGINEER. THE SIGN SHALL BE MOUNTED ON BOTH SIDES OF A DIRECTIONAL ROADWAY OF DIVIDED HIGHWAYS. THE FIRST WORK ZONE SPEED LIMIT SIGN SHALL BE PLACED APPROXIMATELY 500 FEET IN ADVANCE OF THE LANE REDUCTION OR SHIFT TAPER OR OTHER ROADWAY OR SHOULDER RESTRICTION. ON UNDIVIDED HIGHWAYS THE SIGN SHALL BE MOUNTED ON THE RIGHT SIDE, APPROXIMATELY 250 FEET IN ADVANCE OF SUCH RESTRICTIONS. THE SIGN SHALL BE REPEATED, ON THE SIDE NEAREST TRAFFIC, EVERY 1 MILE FOR 55 MPH ZONES AND EVERY ONE-HALF MILE FOR 50 MPH AND 45 MPH ZONES. THESE SIGNS SHALL ALSO BE ERECTED IMMEDIATELY AFTER EACH OPEN ENTRANCE RAMP WITHIN THE ZONE.)

ON PROJECTS FOR WHICH THE ACTIVITY OR ROADWAY RESTRICTION IS LIMITED TO ONE SECTION OF THE PROJECT FOR AT LEAST THIRTY DAYS AND THEN IS MOVED TO ANOTHER SECTION OF THE PROJECT UPON COMPLETION OF WORK IN THE FIRST SECTION, THE SPEED LIMIT REDUCTION SHALL BE LIMITED TO ONLY THE ACTIVE PORTION OF THE PROJECT AT THE GIVEN TIME. SIGNING FOR A SPEED LIMIT REDUCTION, AS WELL AS ALL OTHER ADVANCE CONSTRUCTION SIGNING, SHALL BE RELOCATED WHEN THE CONCENTRATION OF ACTIVITY IS RELOCATED.

ON PROJECTS FOR WHICH SPEED REDUCTION IS CALLED FOR ON MORE THAN ONE ROADWAY, THE DISPLAY OF REDUCED SPEED LIMIT SIGNING ON A GIVEN ROADWAY SHALL BE DEPENDANT ON THE SCHEDULING OF WORK ACTIVITY ON THE GIVEN ROADWAY.

REDUCED SPEED AHEAD SIGNS 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 REFLECTORIZED 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.

SPEED LIMITS CAN ONLY BE REDUCED IN 10 MPH (MAX.) INCREMENTS. THEREFORE WEST BOUND U.S. 50 SHALL BE REDUCED TO 55 MPH AND THEN TO 45 MPH.

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

ITEM 614, WORK ZONE SPEED LIMIT SIGN 61 EACH

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 SHUT-DOWNS.

(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 REFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF CMS 730.19.

WORK ZONE INCREASED PENALITIES 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 PENALITIES SIGN 17 EACH

SEQUENCE OF CONSTRUCTION

THE PROJECT SHALL BE BROKEN INTO TWO (2) PARTS, WITH PART TWO(2) STATRING AT STA. 598+11.85 AND ENDING AT STA 727+00. PART ONE(1) STARTS AT STA. 727+00 AND ENDS AT STA. 920+65. PART ONE (1)SHALL BE CONSTRUCTED THE FIRST YEAR AND PART TWO (2)SHALL BE CONSTRUCTED THE SECOND YEAR.

PHASE 1/PART 1

CLOSE LT. LANE OF TRAFFIC USING STD. DWG. MT-95.30 AND INSTALL TEMPORARY PAVEMENT.

THE CONTRACTOR SHALL CLOSE THE OUTSIDE LANES (RT.) OF US 50 FROM STA. 727+00 TO STA. 920+65. THESE MAINTENACE OF TRAFFIC ZONES SHALL BE ERECTED AS PER THE ATTACHED DETAILS AND REFERENCED STD.DWGS. DRUMS SHALL BE UTILIZED THROUGHOUT THE MAJORITY OF THE CLOSURE AREAS, WITH PORTABLE CONCRETE BARRIER USED AT ALL FULL DEPTH REPLACEMENT AND BRIDGE LOCATIONS.

ONE LANE OF TRAFFIC MUST BE OPEN AT ALL TIMES IN EACH DIRECTION DURING CONSTRUCTION.

RAMP G (EAST STATE STREET TO US 50 WEST)SHALLBE CLOSED DURING PHASE 1 CONSTRUCTION OF THE APROACH SLABS. ONCE THE APPROACH SLABS AND JOINT REPAIRS HAVE BEEN COMPLETED FOR THIS PHASE OF THE RAMP, THE PCB'S SHALL BE REMOVED AND THE RAMP REOPENED USING DRUMS. RAMP G SHALL BE CLOSED FOR A MAXIMUM OF 30 DAYS.

THE STIMSON AVE./C.R. 25 EXIT RAMP WILL ALSO BE CLOSED DURING PHASE 1 OF PART 2. STIMSON AVE./C.R. 25 EXIT SHALL BE CLOSED FOR NO MORE THEN 60 DAYS. DURING THIS CLOSURE, ALL JOINT REPAIRS ON THIS RAMP SHALL BE COMPLETED.

SURFACE COURSE SHALL BE PLACED AFTER ALL OTHER MAIN LINE WORK IS COMPLETED FOR BOTH PHASES.

MAINTENANCE OF TRAFFIC FOR JOINT REPAIR ON ALL RAMPS SHALL BE IN ACCORDANCE WITH ST. DWG. MT-98.28 EXCEPT FOR RAMP S (STIMSON AVE. TO E.B. US 50) WHICH SHALL BE CLOSED DURING CONSTRUCTION.

SEE DETOUR MAP ON SHEET 18 FOR SIGNING OF RAMP CLOSURES.

PHASE 2/PART 1

THE CONTRACTOR SHALL CLOSE THE INSIDE LANE (LT.) OF US 50 FROM STA. 727+00 TO STA. 920+65.THESE MAINTENACE OF TRAFFIC ZONES SHALL BE ERECTED AS PER THE ATTACHED DETAILS AND REFERENCED STD.DWGS. DRUMS SHALL BE UTILIZED THROUGHOUT THE MAJORITY OF THE CLOSURE AREAS, WITH PORTABLE CONCRETE BARRIER USED AT ALL FULL DEPTH REPLACEMENT AND BRIDGE LOCATIONS.

ONE LANE OF TRAFFIC MUST BE OPEN AT ALL TIMES IN EACH DIRECTION DURING THE PHASE CONSTRUCTION. ONCE THE FULL DEPTH PAVEMENT REPLACEMENT AND BRIDGE WORK IS COMPLETE, THE PCB'S MAY BE REMOVED AND REPLACED WITH DRUMS IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

PHASE 1/PART 2

THE CONTRACTOR SHALL CLOSE THE OUTSIDE LANES (RT.) OF US 50 FROM STA. 587+00 TO STA. 727+00. THESE MAINTENANE OF TRAFFIC ZONES SHALL BE ERECTED AS PER THE ATTACHED DETAILS AND REFERENCED STD.DWGS. DRUMS SHALL BE UTILIZED THROUGHOUT THE MAJORITY OF THE CLOSURE AREAS, WITH PORTABLE CONCRETE BARRIER USED AT ALL FULL DEPTH REPLACEMENT AND BRIDGE LOCATIONS.

ONE LANE OF TRAFFIC MUST BE OPEN AT ALL TIMES IN EACH DIRECTION DURING THE PHASE CONSTRUCTION. ONCE THE FULL DEPTH PAVEMENT REPLACEMENT AND BRIDGE WORK IS COMPLETE, THE PCB'S MAY BE REMOVED AND REPLACED WITH DRUMS IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

AT THE SR 682 ENTRANCE RAMP TO EB US 50 AND AT THE US33 ENTRANCE RAMP TO WB 50, THERE WILL BE AN INTERMEDIATE PHASE OF CONSTRUCTION DUE TO THE FULL DEPTH REPLACEMENT AND BRIDGE WORK. THESE PHASES MUST BE COMPLETED PRIOR TO STARTING PHASE 2 WORK.

PHASE 2/PART 2

THE CONTRACTOR SHALL CLOSE THE INSIDE LANES (LT.) OF EASTBOUND US 50 FROM STA. 580+00 TO STA. 727+00. THESE MAINTENANE OF TRAFFIC ZONES SHALL BE ERECTED AS PER THE ATTACHED DETAILS AND REFERENCED STD.DWGS. DRUMS SHALL BE UTILIZED THROUGHOUT THE MAJORITY OF THE CLOSURE AREAS, WITH PORTABLE CONCRETE BARRIER USED AT ALL FULL DEPTH REPLACEMENT AND BRIDGE LOCATIONS.

ONE LANE OF TRAFFIC MUST BE OPEN AT ALL TIMES IN EACH DIRECTION DURING THE PHASE CONSTRUCTION. ONCE THE FULL DEPTH PAVEMENT REPLACEMENT AND BRIDGE WORK IS COMPLETE, THE PCB'S MAY BE REMOVED AND REPLACED WITH DRUMS IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

SURFACE COURSE SHALL BE PLACED AFTER ALL OTHER MAIN LINE WORK IS COMPLETED FOR BOTH PHASES.

REPAIRS TO ALL RAMPS SHALL BE MADE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THESE REPAIRS CAN BE MADE DURING PHASE 1 OR PHASE 2. MAINTENANCE OF TRAFFIC FOR JOINT REPAIR ON ALL RAMPS SHALL BE IN ACCORDANCE WITH ST. DWG. MT-98.28. RAMPS SHALL BE CLOSED HALF WIDTH USING TEMPORARY PAVEMENT.

CALCULATED JDC CHECKED

MAINTENANCE OF TRAFFIC GENERAL NOTES

ATH-33/50-15.05/11.46

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 AND CORRECTING 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 DEPARTMENT WILL NOT PAY FOR THE MONTHS IN WHICH WINTER CLOSURE IS IN AFFECT.

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

ITEM 614 WORKSITE TRAFFIC SUPERVISOR 16 MONTHS

MAINTENANCE OF TRAFFIC ALTERNATIVES

THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE MAINTENANCE OF TRAFFIC PLAN WHICH COMPLIES WITH THE REQUIREMENTS OF THE STANDARD DRAWINGS, THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, THE DROP-OFFS IN WORK ZONES SHEET AND VOLUME ONE OF THE LOCATION & DESIGN MANUAL. THE PLAN SHALL BE SUBMITTED IN WRITING TO THE ENGINEER FOR APPROVAL. ODOT RESERVES THE RIGHT TO REJECT ANY ALTERNATE FOR ANY REASON.

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 IN THIS NOTE WILL NOT GENERALLY BE PERMITTED AT PROJECT COST UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE ENGINEER. LEOS SHOULD NOT BE USED WHERE THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (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) SHOULD BE PROVIDED FOR CONTROLLING TRAFFIC FOR THE FOLLOWING TASKS:

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

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 CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS 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 CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A LIST OF THE APPROPRIATE LAW ENFORCEMENT AGENCY(S), INCLUDING ADDRESS AND TELEPHONE NUMBER.

THE LEO SHOULD REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING THE SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF THE SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHOULD 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 THE SHIFT.

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

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR 400 HOURS

THE HOURS PAID SHALL INCLUDE 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 AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR.

OVERNIGHT TRENCH CLOSING

THE BASE WIDENING SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 5 INCHES BELOW THE EXISTING PAVEMENT BY THE END OF EACH WORK DAY. NO TRENCH SHALL BE LEFT OPEN OVERNIGHT EXCEPT FOR A SHORT LENGTH (25 FEET OR LESS) OF A WORK SECTION AT THE END OF THE TRENCH. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED BASE WIDENING SHALL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER.

ITEM 614, MAINTAINING TRAFFIC (ESTIMATED QUANTITIES)

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DETERMINED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC.

ITEM 614, ASPHALT CONCRETE FOR MAINTAINING TRAFFIC 400 CU. YD.

ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN

PAVEMENT FOR MAINTAINING TRAFFIC SHALL BE PLACED ALONG THE RAMPS WHERE JOINT REPAIR IS BEING PERFORMED. WIDENING SHALL BE 6 FT. ON THE RT. AND 3 FT. ON THE LEFT. PAVEMENT USED FOR MAINTAINING TRAFFIC ON THE RAMPS SHALL BE LEFT IN PLACE. THIS ITEM SHALL INCLUDE ALL EARTHWORK NECESSARY TO COMPLETE THE WORK.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED TO MAINTAIN TRAFFIC ON THE RAMPS WHERE JOINTS ARE BEING REPAIRED:

RAMP B:	700 SQ. YDS.
RAMP J-1:	1400 SQ.YDS.
RAMP K:	1250 SQ. YDS.
RAMP M:	782 SQ. YDS.
RAMP N:	985 SQ. YDS.
RAMP P:	900 SQ. YDS.
RAMP Q:	675 SQ. YDS.

ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN 6692 SQ. YD.

CALCULATED JDC CHECKED

MAINTENANCE OF TRAFFIC GENERAL NOTES

ATH-33/ 50-15.05/ 11.46

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: 35405IZ
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: BO40239
DRAWING NAME: APPLICATION, FLUSH MOUNT BACKSTOP (TYPICAL FOR PARALLEL 60 MPH UNIT)
REVISION DATE: 4/21/04
ODOT APPROVAL DATE: 10/16/04

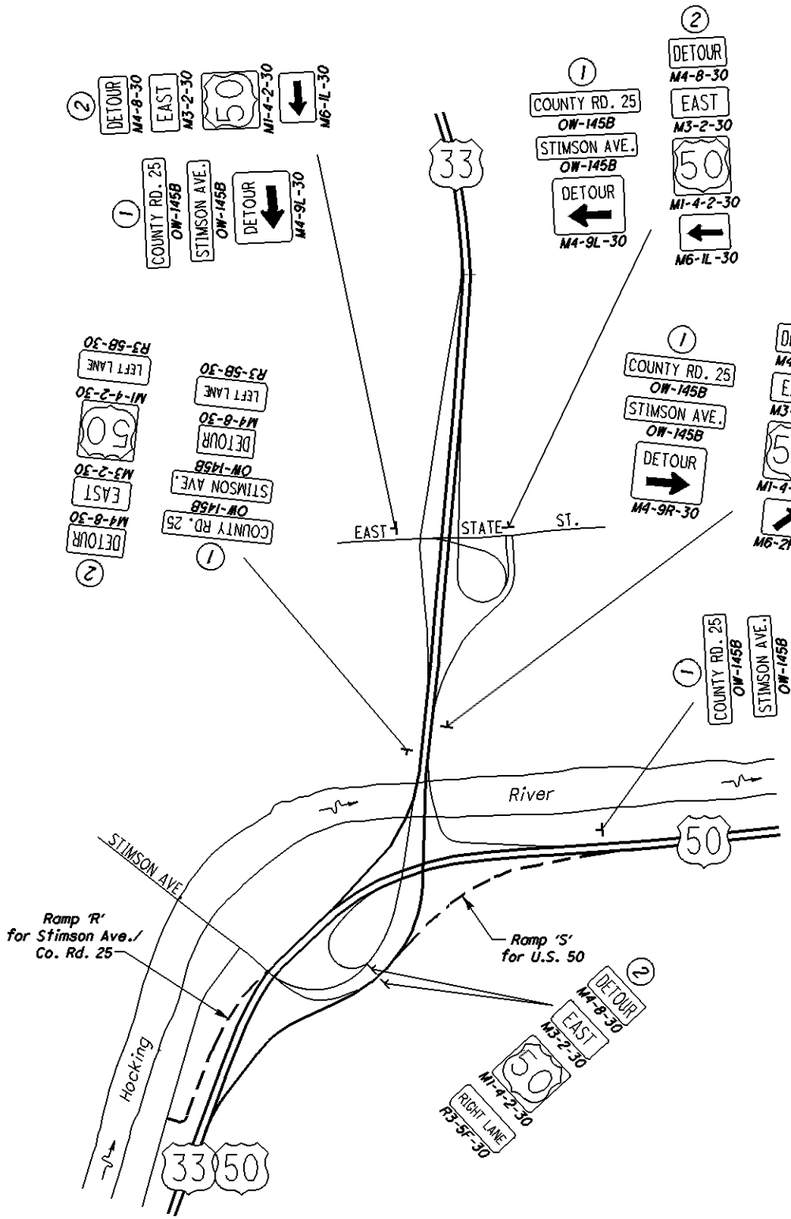
THE CONTRACTOR SHALL PROVIDE A REPLACEMENT UNIT WHEN AN IMPACT IS SEVERE ENOUGH TO REQUIRE COMPLETE REPLACEMENT OF THE ATTENUATOR. THE CONTRACTOR SHALL HAVE A SPARE PARTS PACKAGE AVAILABLE ON THE PROJECT SITE AT ALL TIMES WHEN AN ATTENUATOR IS IN PLACE. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE COMPLETE 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.

CALCULATED JDC CHECKED

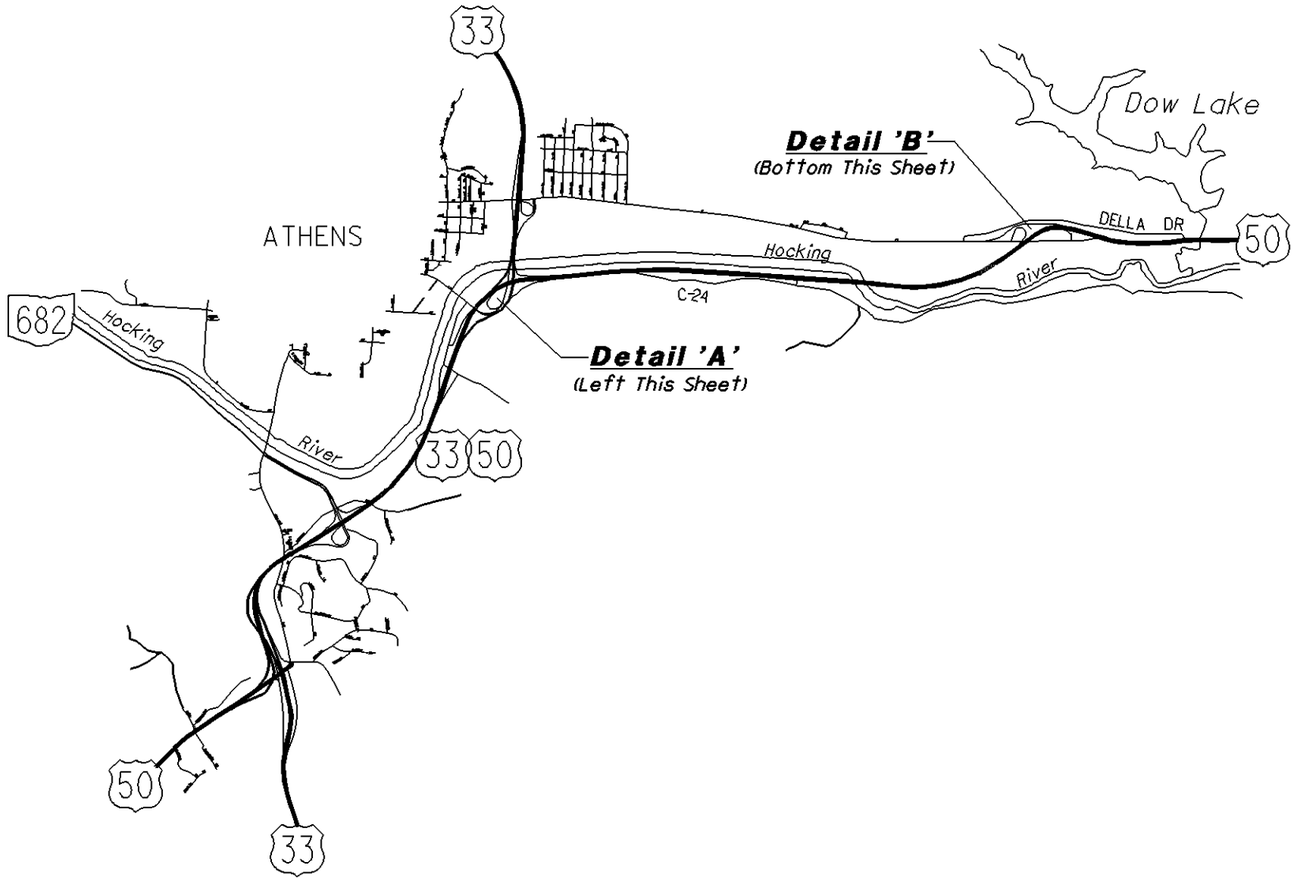
MAINTENANCE OF TRAFFIC GENERAL NOTES

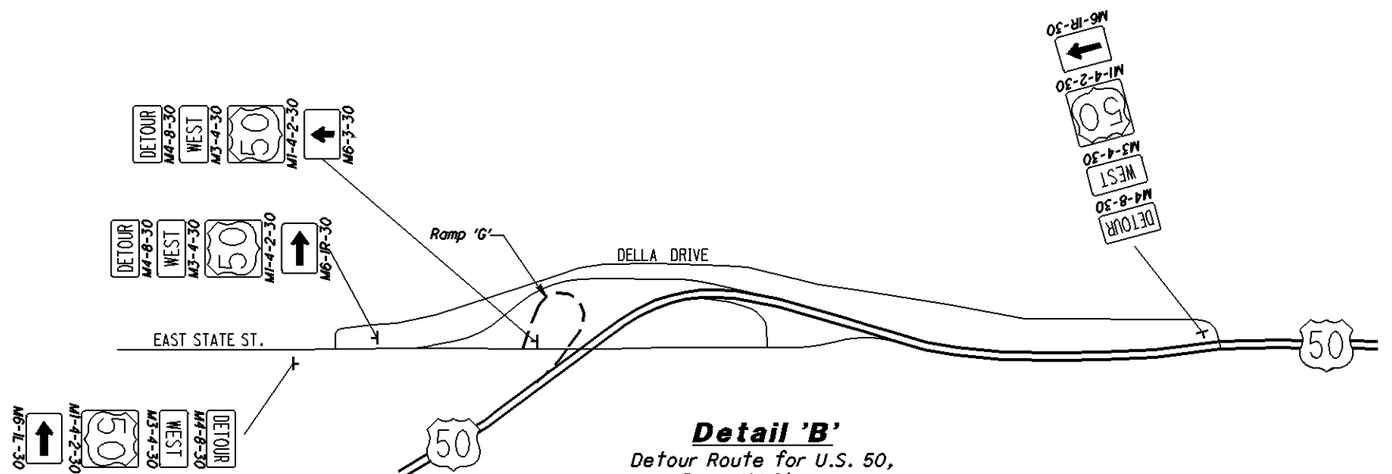
ATH-33/ 50-15.05/ 11.46



Detail 'A'

(1) Detour Route for Stimson Ave./Co.Rd. 25, Ramp 'R' Closure
(2) Detour Route for U.S. 50, Ramp 'S' Closure





Detail 'B'

Detour Route for U.S. 50, Ramp 'G' Closure

MAINTENANCE OF TRAFFIC
DETOUR MAPS

ATH-33/50-15.0511.46

18
222

DRAWN CAK
DESIGNED JDC

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MAINTENANCE OF TRAFFIC SUB-SUMMARY - PHASE 1

SHT. No.	STATION		614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	614 BARRIER REFLECTOR, TYPE B	614 OBJECT MARKER, ONE WAY	614 WORK ZONE DOTTED LINE, CLASS 1	614 WORK ZONE EDGELINE, CLASS 1	615 PAVEMENT FOR MAINTAINING TRAFFIC	622 PORTABLE CONCRETE BARRIER, 32"
	FROM	TO	EACH	EACH	EACH	FOOT	MILE	SQ. YD.	FOOT
20	592+89	598+00					0.25		
21	598+00	608+00	1	21	21		0.54	178	500
22	608+00	618+00		40	40		0.68	438	1000
23	618+00	628+00		77	77	87	1.03	446	1910
24	628+00	638+00	2	28	28	172	1.02	888	630
25	638+00	648+00		63	63	858	0.82		1510
26	648+00	658+00	2	49	49	647	0.89	611	1170
27	658+00	668+00	1	101	101		1.03	575	2480
28	668+00	678+00	1	29	29	803	0.97	355	640
29	678+00	688+00				150	0.76		
30	688+00	698+00					0.76		
31	698+00	708+00				697	0.84		
32	708+00	718+00	1	54	54		0.79	428	1310
33	718+00	728+00	2	28	28	301	0.80		630
34	728+00	738+00		70	70	452	0.76		1720
35	738+00	748+00	1	52	52	769	0.96		1250
36	748+00	758+00	1	18	18	759	0.96		420
37	758+00	818+00				595	4.56		
38	818+00	828+00					0.74		
39	828+00	838+00	1	46	46		0.66		1100
40	838+00	848+00	1	58	58		0.76		1420
41	848+00	858+00					0.76		
42	858+00	868+00					0.76		
43	868+00	878+00	1	7	7		0.76		130
44	878+00	888+00		80	80		0.76		2000
45	888+00	898+00	1	24	24	812	0.80		540
46	898+00	908+00					0.79		
47	908+00	918+00				815	0.86		
48	918+00	930+40					0.64		
Totals Carried to Sub-Total Summary This Sheet			16	845	845	7917	26.71	3919	20360

MAINTENANCE OF TRAFFIC SUB-SUMMARY - PHASE 2

SHT. No.	STATION		614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	614 BARRIER REFLECTOR, TYPE B	614 OBJECT MARKER, ONE WAY	614 WORK ZONE DOTTED LINE, CLASS 1	614 WORK ZONE EDGELINE, CLASS 1	615 PAVEMENT FOR MAINTAINING TRAFFIC	622 PORTABLE CONCRETE BARRIER, 32"
	FROM	TO	EACH	EACH	EACH	FOOT	MILE	SQ. YD.	FOOT
55	592+89	598+00					0.49		
56	598+00	608+00	1	21	21		0.55		490
57	608+00	618+00		41	41		0.68		1010
58	618+00	628+00		77	77		0.93		1910
59	628+00	638+00	1	11	11		1.08		240
60	638+00	648+00	1	58	58	620	1.09		1410
61	648+00	658+00	1	32	32	250	1.17		740
62	658+00	668+00	1	67	67	270	0.97		1630
63	668+00	678+00	1	52	52	247	0.90		1260
64	678+00	688+00		1	1	350	0.76		20
65	688+00	698+00					0.76		
66	698+00	708+00				736	1.00		
67	708+00	718+00	1	52	52		0.82		1270
68	718+00	728+00	1	22	22	522	0.88		510
69	728+00	738+00	1	71	71	749	0.81	369	1730
70	738+00	748+00		40	40	474	0.92		1000
71	748+00	758+00	1	18	18	511	0.94		420
72	758+00	818+00				586	4.56		
73	818+00	828+00					0.76		
74	828+00	838+00	1	46	46		0.65		1120
75	838+00	848+00	1	59	59		0.76		1430
76	848+00	858+00					0.76		
77	858+00	868+00					0.76		
78	868+00	878+00	1	6	6		0.76		120
79	878+00	888+00	1	80	80	356	0.96		1990
80	888+00	898+00	1	24	24	1049	0.89		550
81	898+00	908+00					0.76		
82	908+00	918+00				572	0.88		
83	918+00	930+40					0.64		
Totals Carried to Sub-Total Summary This Sheet			15	778	778	7292	27.89	369	18850

MAINTENANCE OF TRAFFIC SUB-SUMMARY - PHASE 1A

SHT. No.	STATION		614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	614 BARRIER REFLECTOR, TYPE B	614 OBJECT MARKER, ONE WAY	614 WORK ZONE DOTTED LINE, CLASS 1	614 WORK ZONE EDGELINE, CLASS 1	615 PAVEMENT FOR MAINTAINING TRAFFIC	622 PORTABLE CONCRETE BARRIER, 32"
	FROM	TO	EACH	EACH	EACH	FOOT	MILE	SQ. YD.	FOOT
49	658+00	668+00	1	33	33		0.22	129	800
50	668+00	678+00		40	40		0.19		1000
51	678+00	688+00		2	2		0.01		40
52	718+00	728+00				200	0.09		
53	728+00	738+00		35	35	198	0.56	930	850
54	738+00	748+00	1	28	28		0.40		660
Totals Carried to Sub-Total Summary This Sheet			2	138	138	398	1.47	1059	3350

SUB-TOTAL SUMMARY - PHASE 1, 1A & 2

PHASE No.	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	614 BARRIER REFLECTOR, TYPE B	614 OBJECT MARKER, ONE WAY	614 WORK ZONE DOTTED LINE, CLASS 1	614 WORK ZONE EDGELINE, CLASS 1	615 ROADS FOR MAINTAINING TRAFFIC	615 PAVEMENT FOR MAINTAINING TRAFFIC	622 PORTABLE CONCRETE BARRIER, 32"	614 DETOUR SIGNING
	EACH	EACH	EACH	FOOT	MILE	LUMP	SQ. YD.	FOOT	LUMP
1	16	845	845	7917	26.71	0	3919	20360	
1A	2	138	138	398	1.47	0	1059	3350	
2	15	778	778	7292	27.89	0	369	18850	
(ALL PHASES)						LUMP			
SUBTOTAL x 3 APPLICATIONS				15607 x 3 = 46821	56.07 x 3 = 168.21				
Totals Carried to General Summary Sheet 86 of 222.	33	1761	1761	46821	168.21	LUMP	5347	42560	LUMP

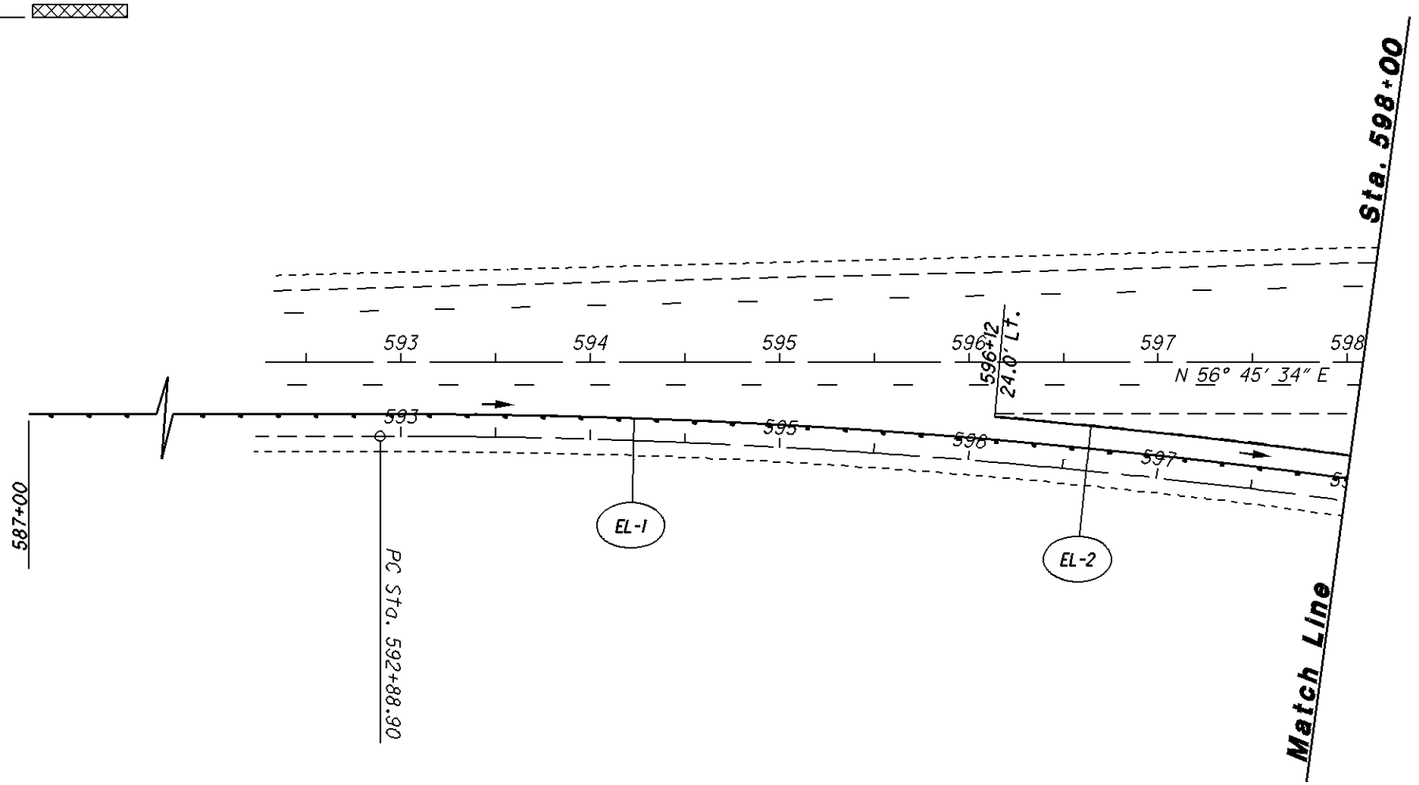
DESIGNED CAK
DRAWN ALC

MAINTENANCE OF TRAFFIC SUB-SUMMARY SHEET

ATH-33/50-15.05/11.46

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE EDGE LINE, CLASS I MILE	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-1	587+00, E.B.	598+00, E.B.					0.21		
EL-2	596+12, E.B.	598+00, E.B.					0.04		
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.							0.25		

HORIZONTAL SCALE IN FEET 0 20 40 80

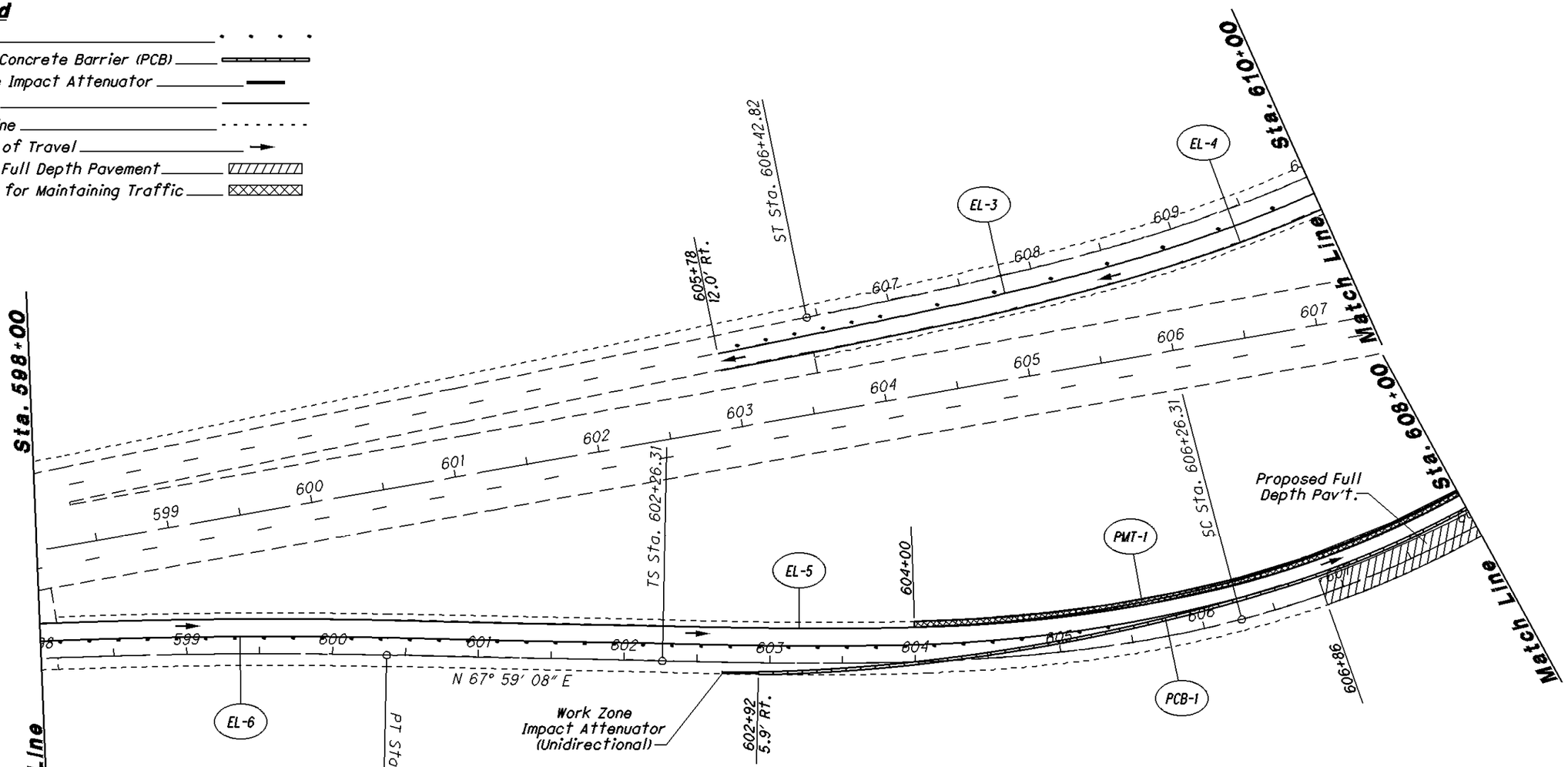
CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 592+88.90 to Sta. 598+00

ATH-33/50-15.05/11.46

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	614 BARRIER REFLECTOR, TYPE B	614 OBJECT MARKER, ONE WAY	614 WORK ZONE EDGE LINE, CLASS 1	615 PAVEMENT FOR MAINTAINING TRAFFIC	622 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED
				EACH	EACH	EACH	MILE	SQ. YD.	FOOT	FOOT
EL-3	605+78, W.B.	610+00, W.B.	Rt.				0.08			
EL-4	605+78, W.B.	610+00, W.B.	Rt.				0.08			
EL-5	598+00, E.B.	608+00, E.B.	Lt.				0.19			
EL-6	598+00, E.B.	608+00, E.B.	Lt.				0.19			
PCB-1	602+92.4, E.B.	608+00, E.B.	Rt./Lt.	1	21	21			500	
PMT-1	604+00, E.B.	608+00, E.B.	Lt.					178		
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	21	21	0.54	178	500	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 598+00 to Sta. 608+00

ATH-33/50-15.05/11.46

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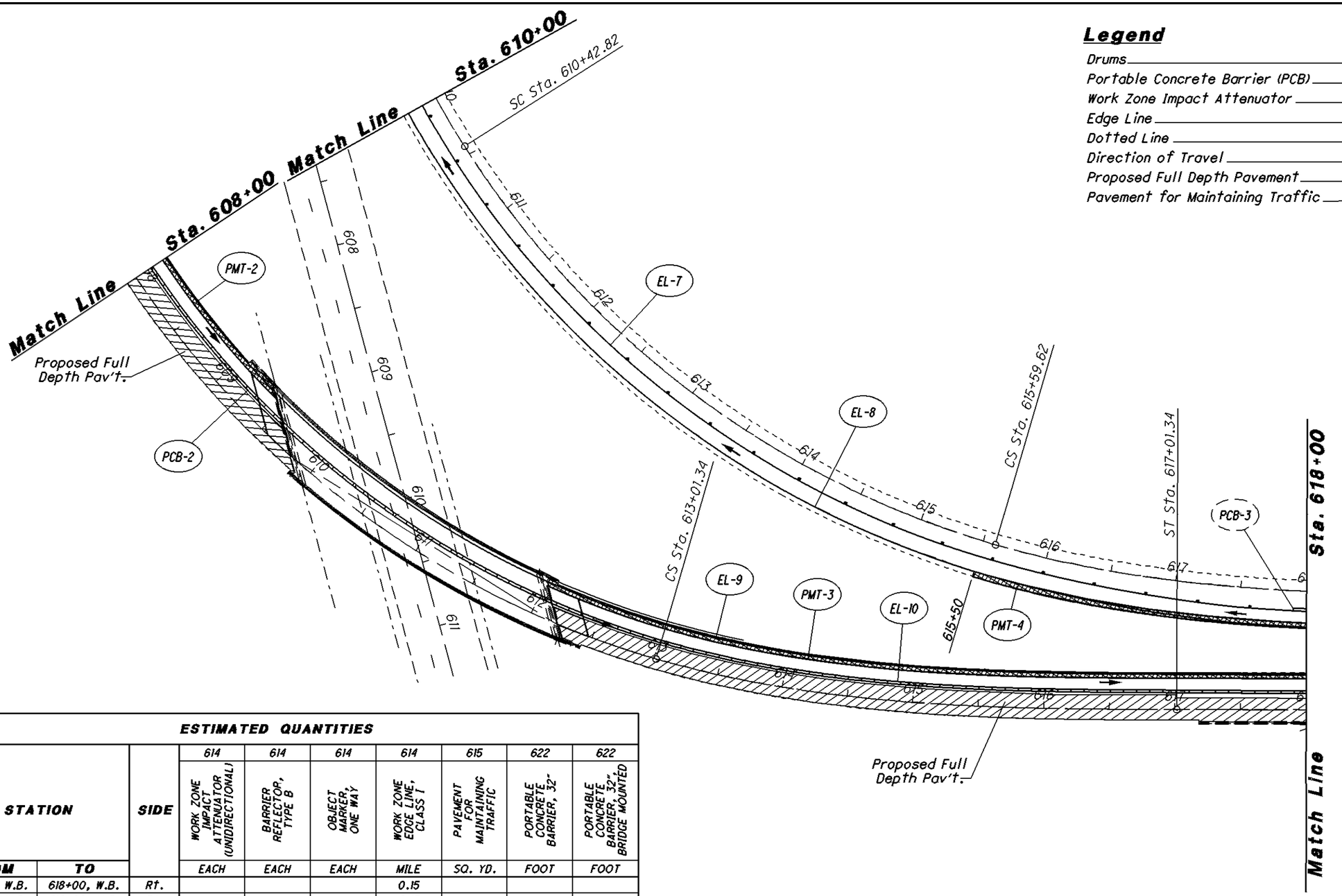


ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE EDGE LINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-7	610+00, W.B.	618+00, W.B.	Rt.				0.15			
EL-8	610+00, W.B.	618+00, W.B.	Rt.				0.15			
EL-9	608+00, E.B.	618+00, E.B.	Lt.				0.19			
EL-10	608+00, E.B.	618+00, E.B.	Lt.				0.19			
PCB-2	608+00, E.B.	618+00, E.B.	Lt.		40	40			1000	
PMT-2	608+00, E.B.	609+37, E.B.	Lt.					61		
PMT-3	612+02, E.B.	618+00, E.B.	Lt.					266		
PMT-4	615+50, W.B.	618+00, W.B.	Rt.					111		
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	40	40	0.68	438	1000	0

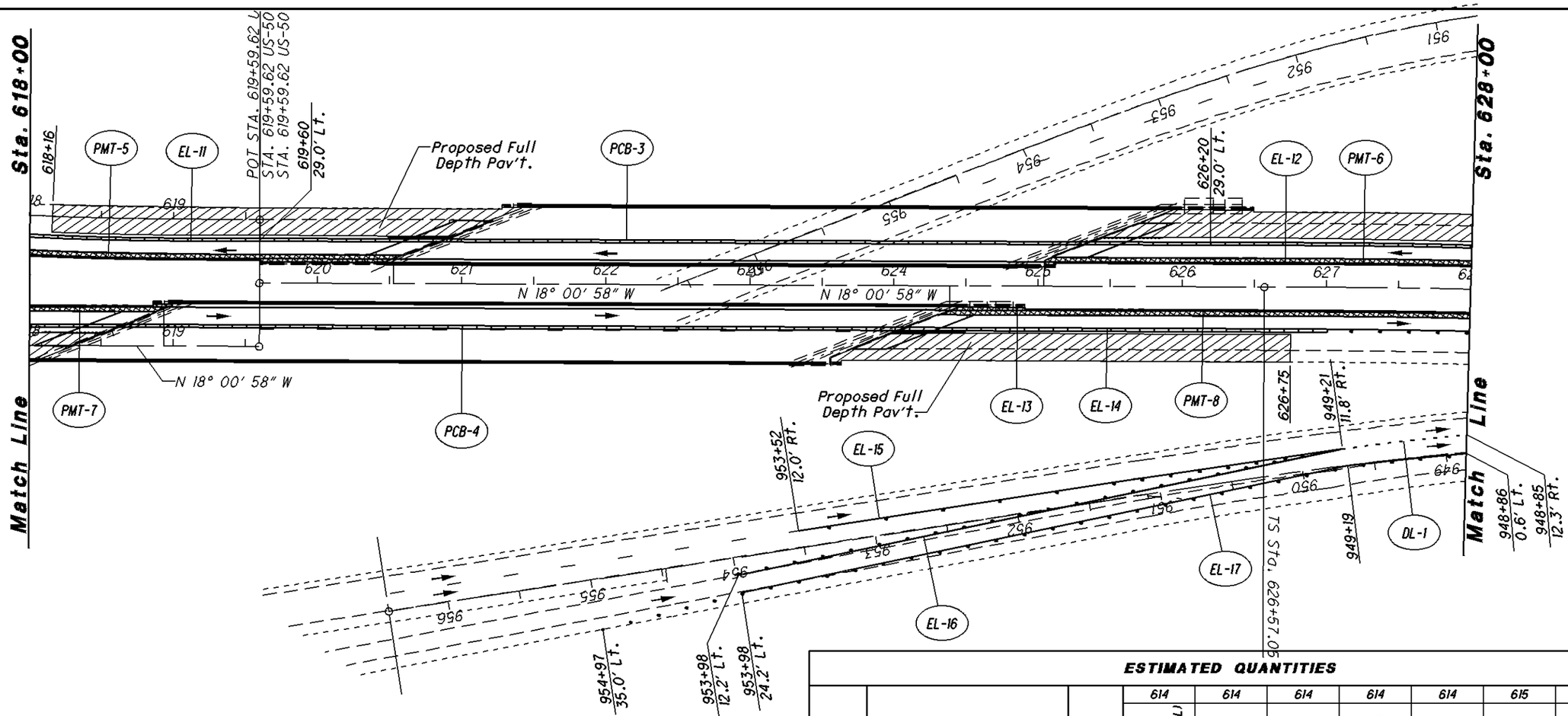
HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 608+00 to Sta. 618+00

ATH-33/50-15.05/11.46

22
222



Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGE LINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT
EL-11	618+00, W.B.	628+00	Rt./Lt.					0.19		
EL-12	618+00, W.B.	628+00	Rt./Lt.					0.19		
EL-13	618+00, E.B.	628+00	Lt./Rt.					0.19		
EL-14	618+00, E.B.	628+00	Lt./Rt.					0.19		
EL-15	949+21, Ramp	953+52, Ramp	Rt.					0.08		
EL-16	949+21, Ramp	953+98, Ramp	Lt./Rt.					0.09		
EL-17	948+86, Ramp	953+98, Ramp	Lt.					0.10		
PCB-3	618+00, W.B.	628+00	Lt.		41	41				1010
PCB-4	618+00, E.B.	627+00	Lt./Rt.		36	36				900
PMT-5	618+00, W.B.	620+53	Rt./Lt.						112	
PMT-6	625+04	628+00	Lt.						132	
PMT-7	618+00, E.B.	618+94	Lt./Rt.						42	
PMT-8	624+39	628+00	Rt.						160	
DL-1	948+85, Ramp	949+21, Ramp	Rt./Rt.				87			
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	77	77	87	1.03	446	1910

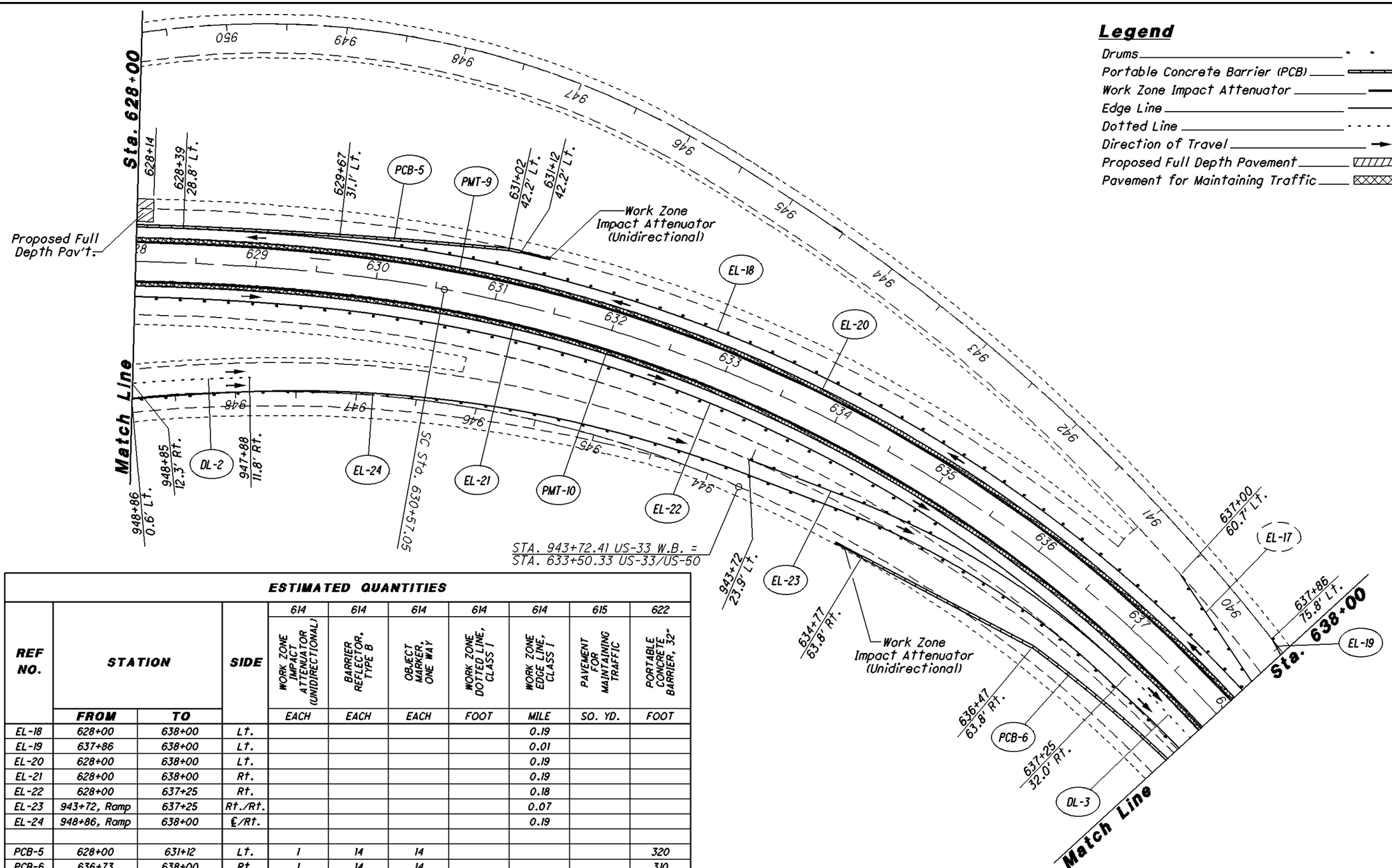
HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 618+00 to Sta. 628+00

ATH-33/50-15.05/11.46

23/222



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	614 BARRIER REFLECTOR, TYPE B	614 OBJECT MARKER, ONE WAY	614 WORK ZONE DOTTED LINE, CLASS 1	614 WORK ZONE EDGE LINE, CLASS 1	615 PAVEMENT FOR MAINTAINING TRAFFIC	622 PORTABLE CONCRETE BARRIER, 32"
				EACH	EACH	EACH	FOOT	MILE	SQ. YD.	FOOT
EL-18	628+00	638+00	Lt.					0.19		
EL-19	637+86	638+00	Lt.					0.01		
EL-20	628+00	638+00	Lt.					0.19		
EL-21	628+00	638+00	Rt.					0.19		
EL-22	628+00	637+25	Rt.					0.18		
EL-23	943+72, Ramp	637+25	Rt./Rt.					0.07		
EL-24	948+86, Ramp	638+00	℄/Rt.					0.19		
PCB-5	628+00	631+12	Lt.	1	14	14				320
PCB-6	636+73	638+00	Rt.	1	14	14				310
PMT-9	628+00	638+00	Lt.						444	
PMT-10	628+00	638+00	Rt.						444	
DL-2	947+88, Ramp	948+85, Ramp	Rt./Rt.				97			
DL-3	637+25	638+00	Rt.				75			
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				2	28	28	172	1.02	888	630

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 628+00 to Sta. 638+00

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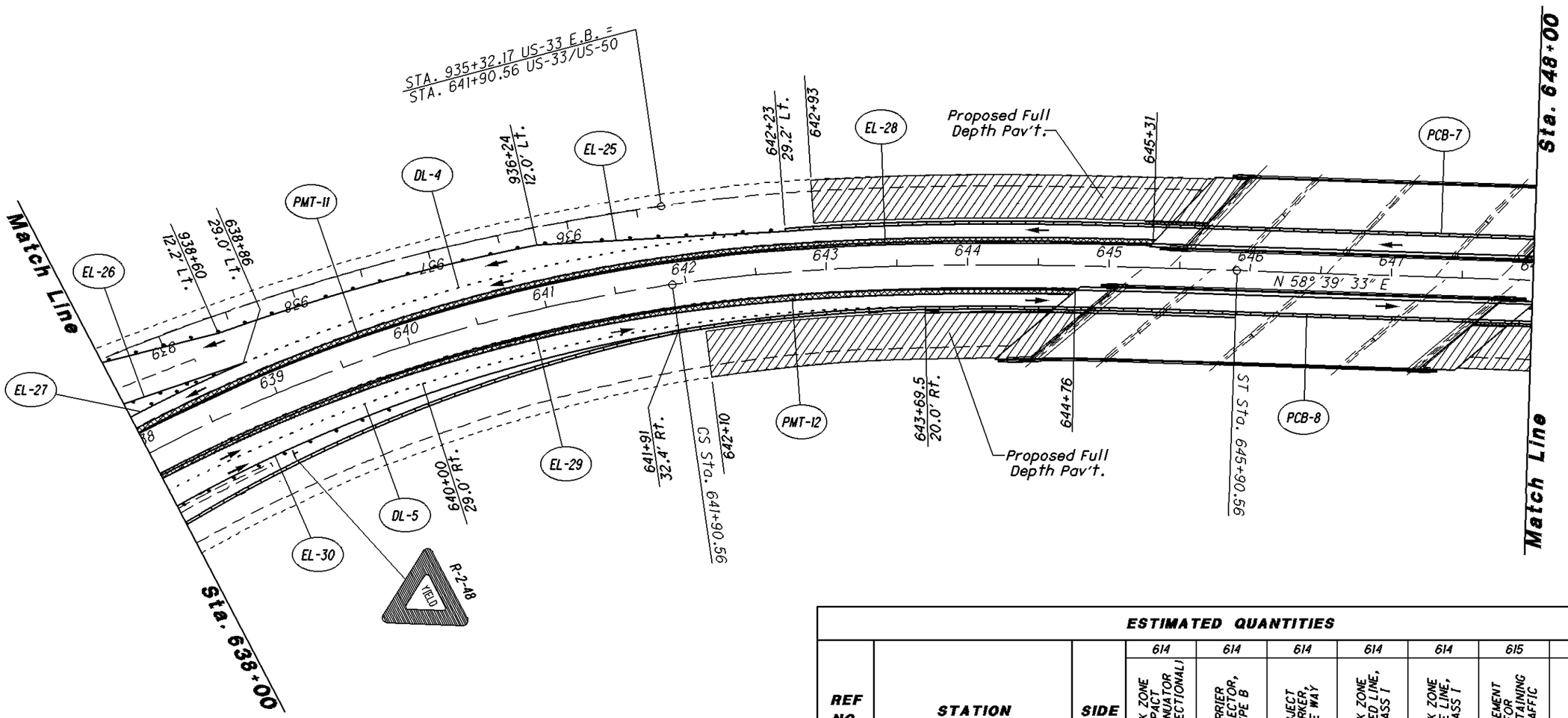

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE, DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGE LINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT
EL-25	638+00	648+00	Lt.					0.19		
EL-26	637+00	638+86	Lt.					0.04		
EL-27	638+00	638+86	Lt.					0.02		
EL-28	638+00	648+00	Lt.					0.19		
EL-29	638+00	648+00	Rt.					0.19		
EL-30	638+00	648+00	Rt.					0.19		
PCB-7	642+23	648+00	Lt.		23	23				530
PCB-8	638+00	648+00	Rt.		40	40				980
PMT-11	638+00	645+31	Lt.						325	
PMT-12	638+00	644+76	Rt.						300	
DL-4	638+86	642+23	Lt.				397			
DL-5	638+00	643+70	Rt.				461			
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.					63	63	858	0.82	625	1510

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 638+00 to Sta. 648+00

ATH-33/50-15.05/11.46

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222

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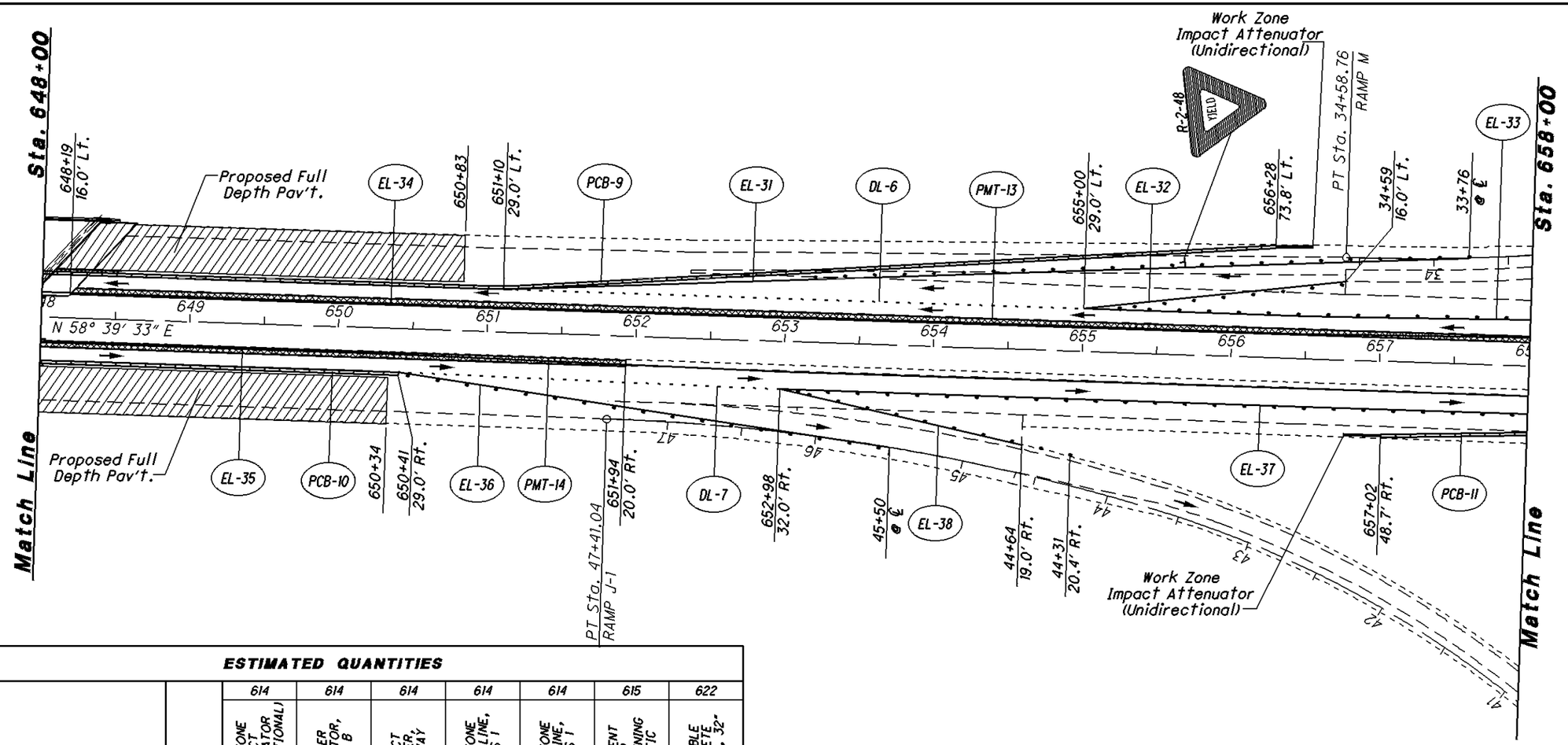

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGE LINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT
EL-31	648+00	33+76, Ramp	Lt./℄					0.18		
EL-32	655+00	34+59, Ramp	Lt./Lt.					0.03		
EL-33	655+00	658+00	Lt.					0.06		
EL-34	648+00	658+00	Lt.					0.19		
EL-35	648+00	658+00	Rt.					0.19		
EL-36	648+00	45+50, Ramp	Rt./℄					0.11		
EL-37	652+98	658+00	Rt.					0.10		
EL-38	652+98	44+64	Rt./Rt.					0.03		
PCB-9	648+00	656+28	Lt.	1	34	34				830
PCB-10	648+00	650+41	Rt.		10	10				240
PCB-11	657+02	658+00	Rt.	1	5	5				100
PMT-13	648+19	658+00	Lt.						436	
PMT-14	648+00	651+94	Rt.						175	
DL-6	651+10	655+00	Lt.				390			
DL-7	650+41	652+98	Rt.				257			
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 19 of 222.				2	49	49	647	0.89	611	1170

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 648+00 to Sta. 658+00

ATH-33/50-15.05/11.46

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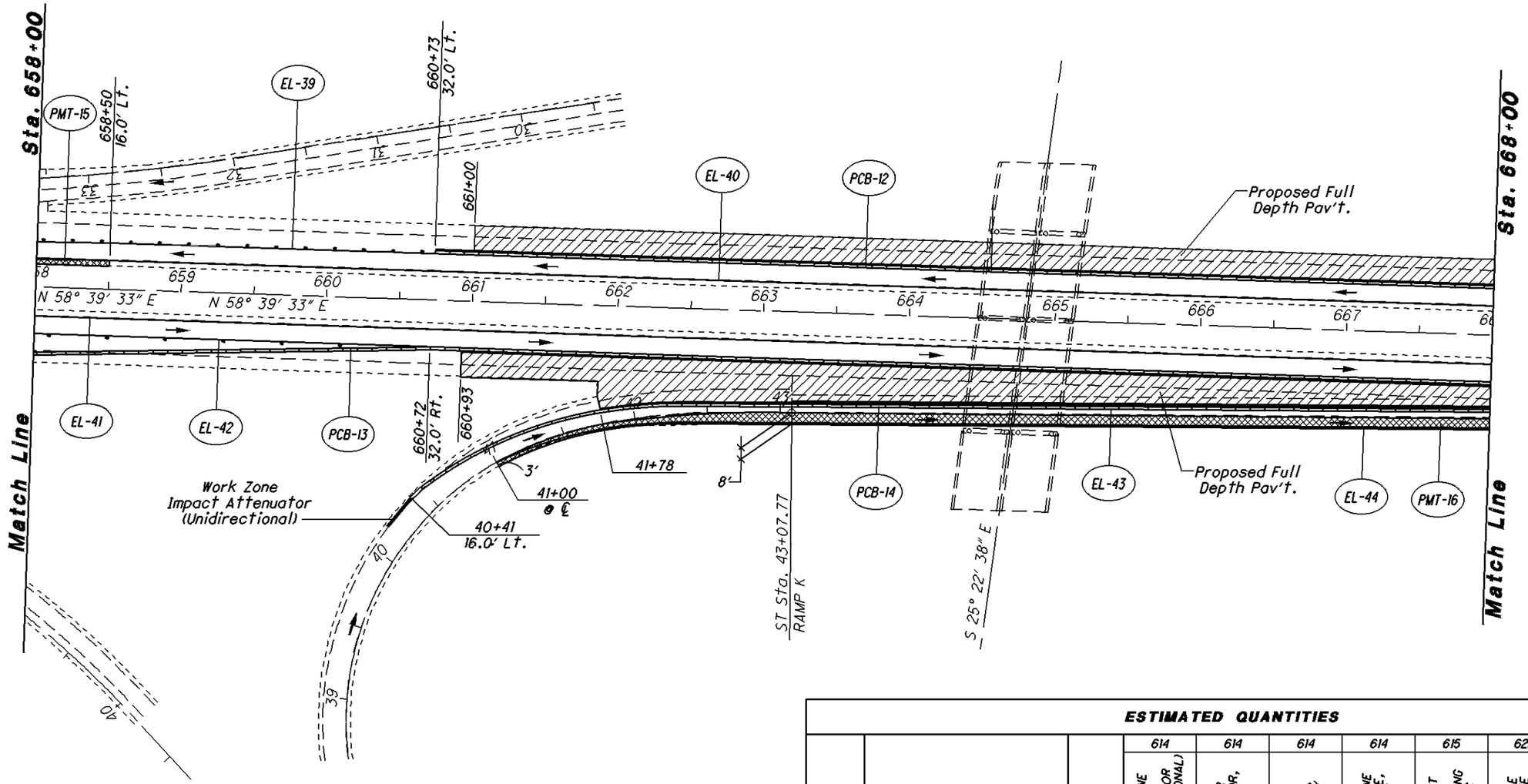


Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE EDGE LINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-39	658+00	668+00	Lt.				0.19			
EL-40	658+00	668+00	Lt.				0.19			
EL-41	658+00	668+00	Rt.				0.19			
EL-42	658+00	668+00	Rt.				0.19			
EL-43	40+41, Ramp	668+00	Lt./Rt.				0.14			
EL-44	41+00, Ramp	668+00	Rt./Rt.				0.13			
PCB-12	660+73	668+00	Lt.		30	30			730	
PCB-13	658+00	668+00	Rt.		40	40			1000	
PCB-14	40+41, Ramp	668+00	Lt./Rt.	1	31	31			750	
PMT-15	658+00	658+50	Lt.					22		
PMT-16	41+00	668+00	℄/Rt.					553		
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	101	101	1.03	575	2480	0

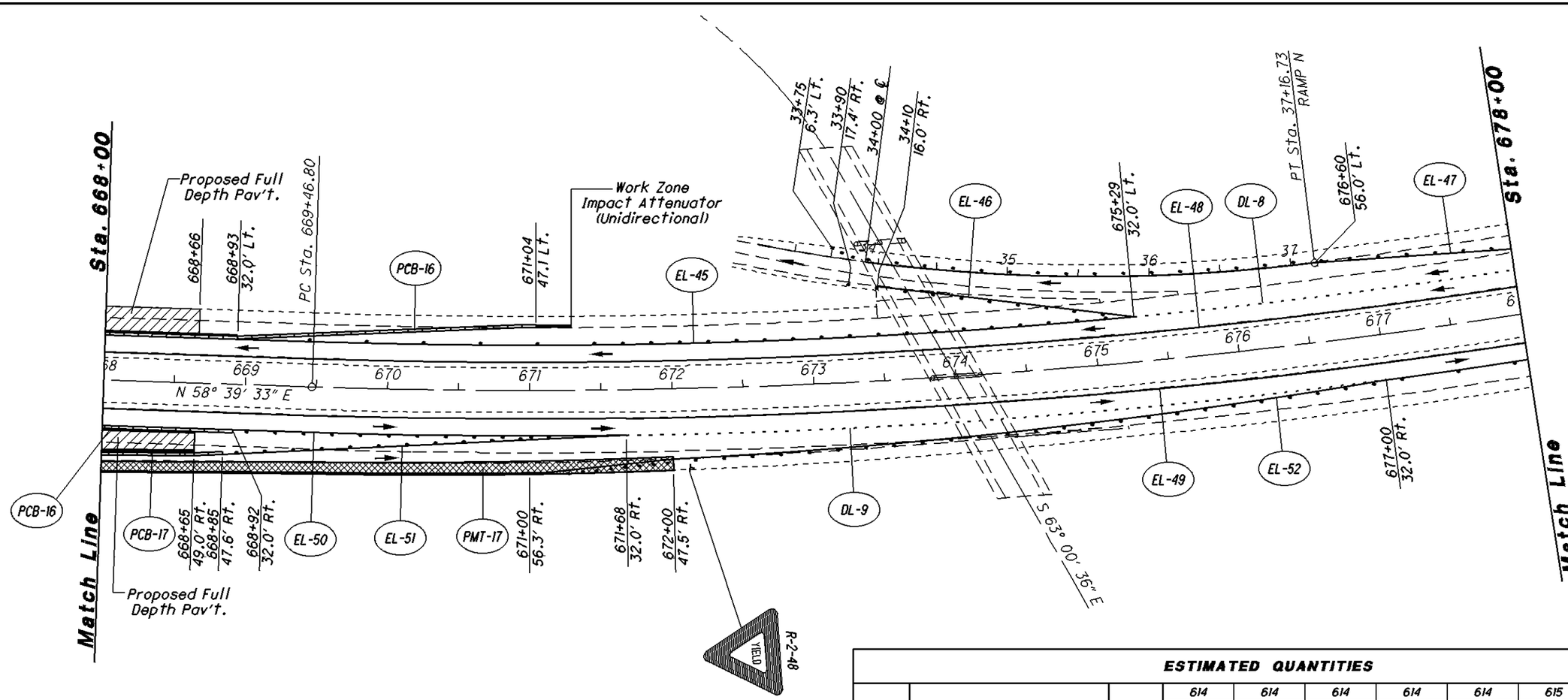
MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 658+00 to Sta. 668+00

CALCULATED CAK
CHECKED ALC

HORIZONTAL SCALE IN FEET
0 20 40 80

ATH-33/50-15.05/11.46

27
222



Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGE LINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT
EL-45	668+00	675+29	Lt.					0.14		
EL-46	34+10, Ramp	675+29	Rt./Lt.					0.03		
EL-47	34+00, Ramp	678+00	℄/Lt.					0.09		
EL-48	668+00	678+00	Lt.					0.19		
EL-49	668+00	678+00	Rt.					0.19		
EL-50	668+00	671+68	Rt.					0.07		
EL-51	668+00	671+68	Rt.					0.07		
EL-52	668+00	678+00	Rt.					0.19		
PMT-17	668+00	672+00	Rt.						355	
PCB-15	668+00	671+04	Lt.	1	13	13				300
PCB-16	668+00	668+92	Rt.		4	4				90
PCB-17	668+00	668+85	Rt.		4	4				80
DL-8	675+29	678+00	Lt.		4	4	271			90
DL-9	671+68	677+00	Rt.		4	4	532			80
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	29	29	803	0.97	355	640

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 668+00 to Sta. 678+00

ATH-33/50-15.05/11.46

28
222

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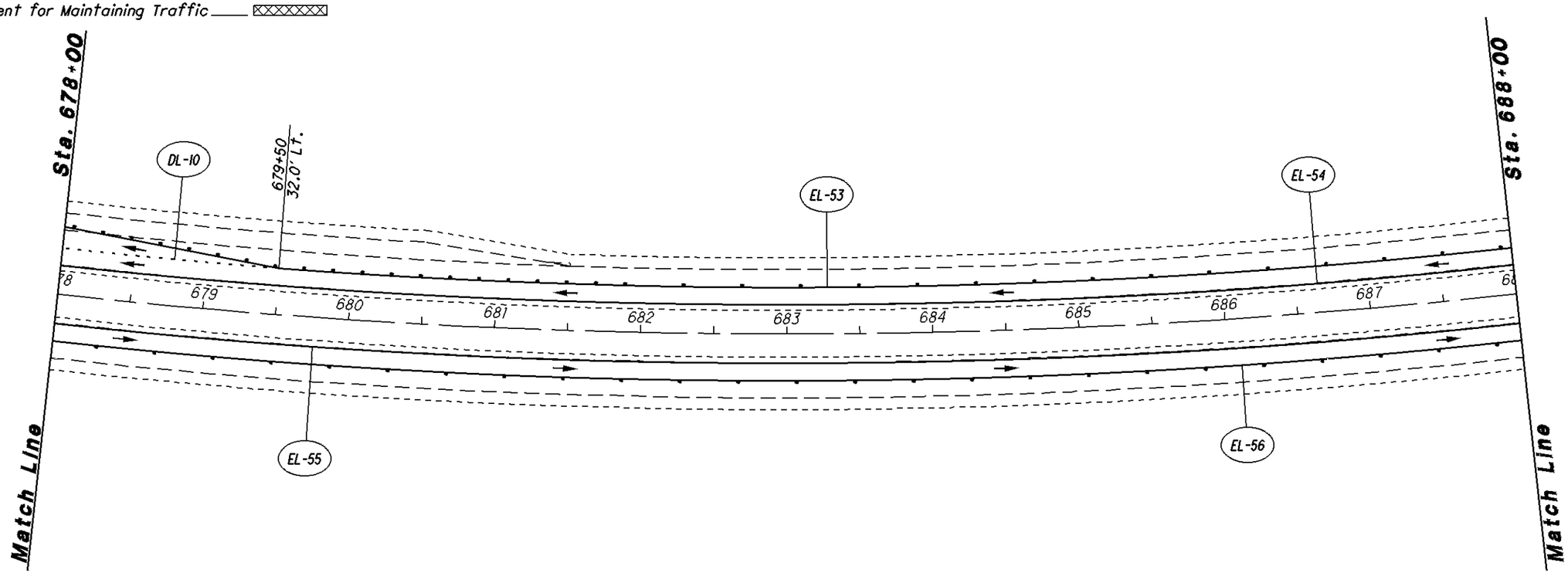
Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGE LINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT
EL-53	678+00	688+00	Lt.					0.19		
EL-54	678+00	688+00	Lt.					0.19		
EL-55	678+00	688+00	Rt.					0.19		
EL-56	678+00	688+00	Rt.					0.19		
DL-10	678+00	679+50	Lt.				150			
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	0	0	150	0.76	0	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 678+00 to Sta. 688+00

ATH-33/50-15.05/11.46

29
222

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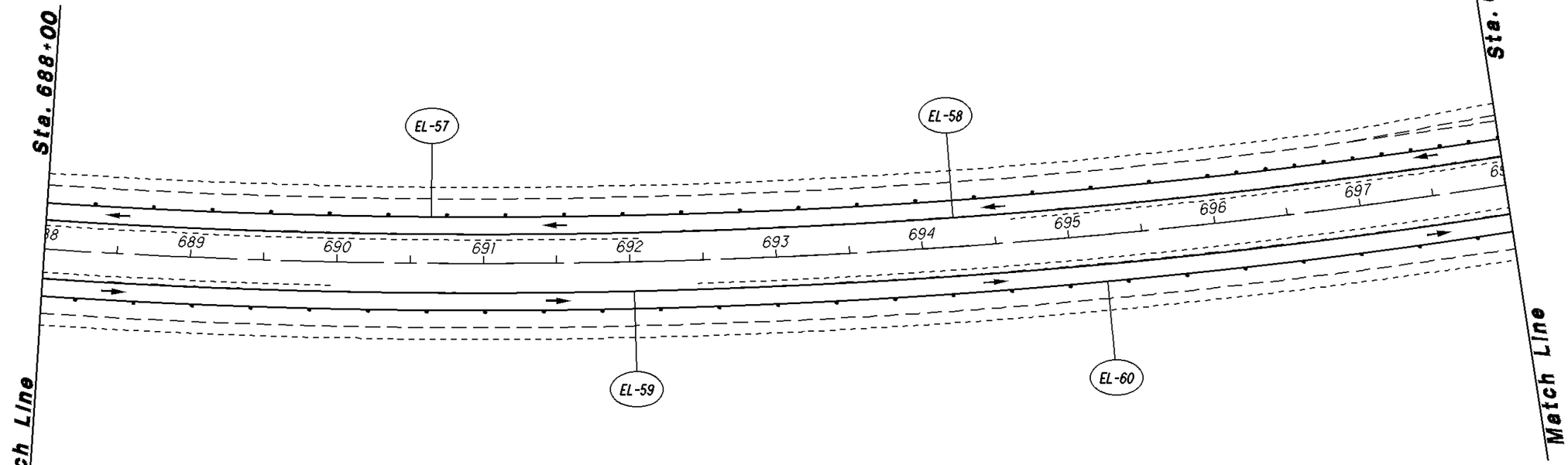
Legend

Drums
Portable Concrete Barrier (PCB)
Work Zone Impact Attenuator
Edge Line
Dotted Line
Direction of Travel
Proposed Full Depth Pavement
Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGELINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-57	688+00	698+00	Lt.					0.19			
EL-58	688+00	698+00	Lt.					0.19			
EL-59	688+00	698+00	Rt.					0.19			
EL-60	688+00	698+00	Rt.					0.19			
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 19 of 222.				0	0	0	0	0.76	0	0	0

HORIZONTAL SCALE IN FEET
0 20 40 80
CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 688+00 to Sta. 698+00

ATH-33/50-15.05/11.46

30
222

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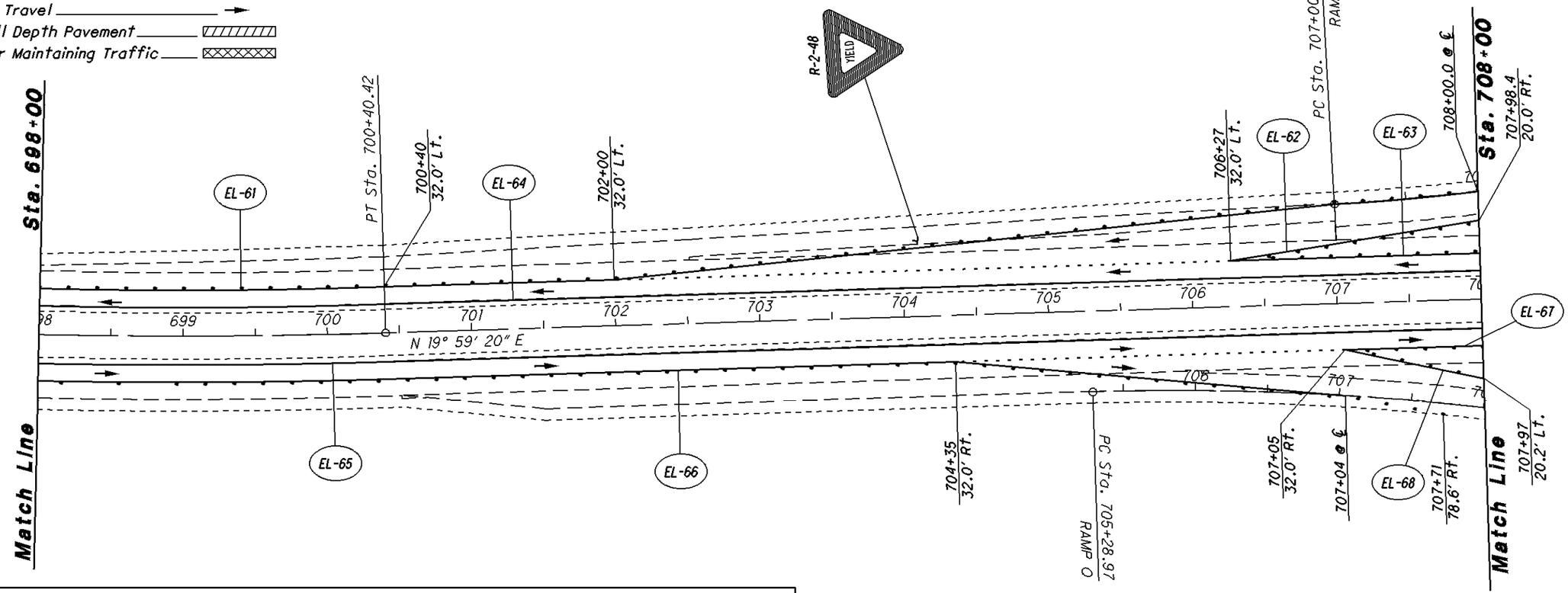
ath-33-15.05trafplan2 4/14/08

Legend

Drums
Portable Concrete Barrier (PCB)
Work Zone Impact Attenuator
Edge Line
Dotted Line
Direction of Travel
Proposed Full Depth Pavement
Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGELINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-61	698+00	708+00, Ramp	Lt./℄					0.19			
EL-62	706+27	707+98, Ramp	Lt./Rt.					0.03			
EL-63	706+27	708+00	Lt.					0.03			
EL-64	698+00	708+00	Lt.					0.19			
EL-65	698+00	708+00	Rt.					0.19			
EL-66	698+00	707+04, Ramp	Rt./℄					0.17			
EL-67	707+05	708+00	Rt.					0.02			
EL-68	707+05	707+97, Ramp	Rt./Lt.					0.02			
DL-11	702+00	706+27	Lt.				427				
DL-12	704+35	707+05	Rt.				270				
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	0	0	697	0.84	0	0	0

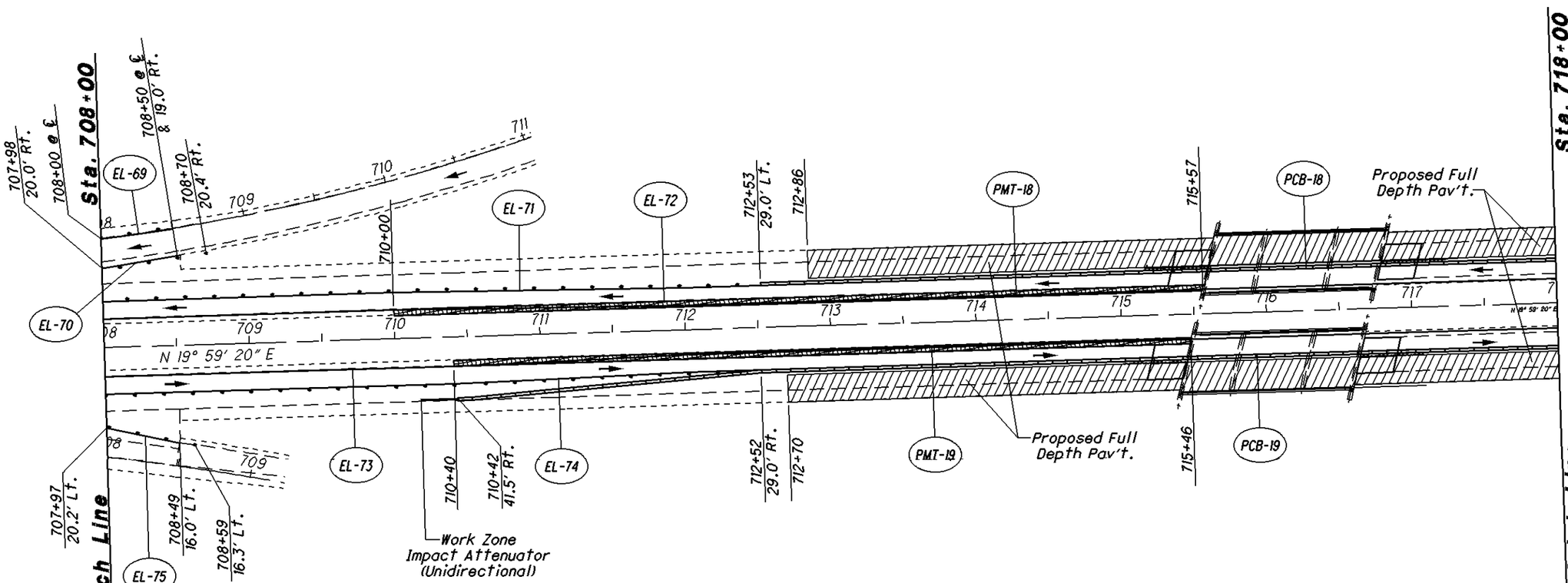
HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 698+00 to Sta. 708+00

ATH-33/50-15.05/11.46

31
222



Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGELINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-69	708+00, Ramp	708+50, Ramp	Rt.					0.01			
EL-70	707+98, Ramp	708+50, Ramp	Rt.					0.01			
EL-71	708+00	718+00	Lt.					0.19			
EL-72	708+00	718+00	Lt.					0.19			
EL-73	708+00	718+00	Rt.					0.19			
EL-74	708+00	718+00	Rt.					0.19			
EL-75	707+97, Ramp	708+49, Ramp	Lt.					0.01			
PMT-18	710+00	715+57	Lt.						203		
PMT-19	710+40	715+46	Rt.						225		
PCB-18	712+53	718+00	Lt.		22	22				550	
PCB-19	710+42	718+00	Rt.	1	32	32				760	
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 10 of 222.				1	54	54	0	0.79	428	1310	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 708+00 to Sta. 718+00

ATH-33/50-15.05/11.46

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222

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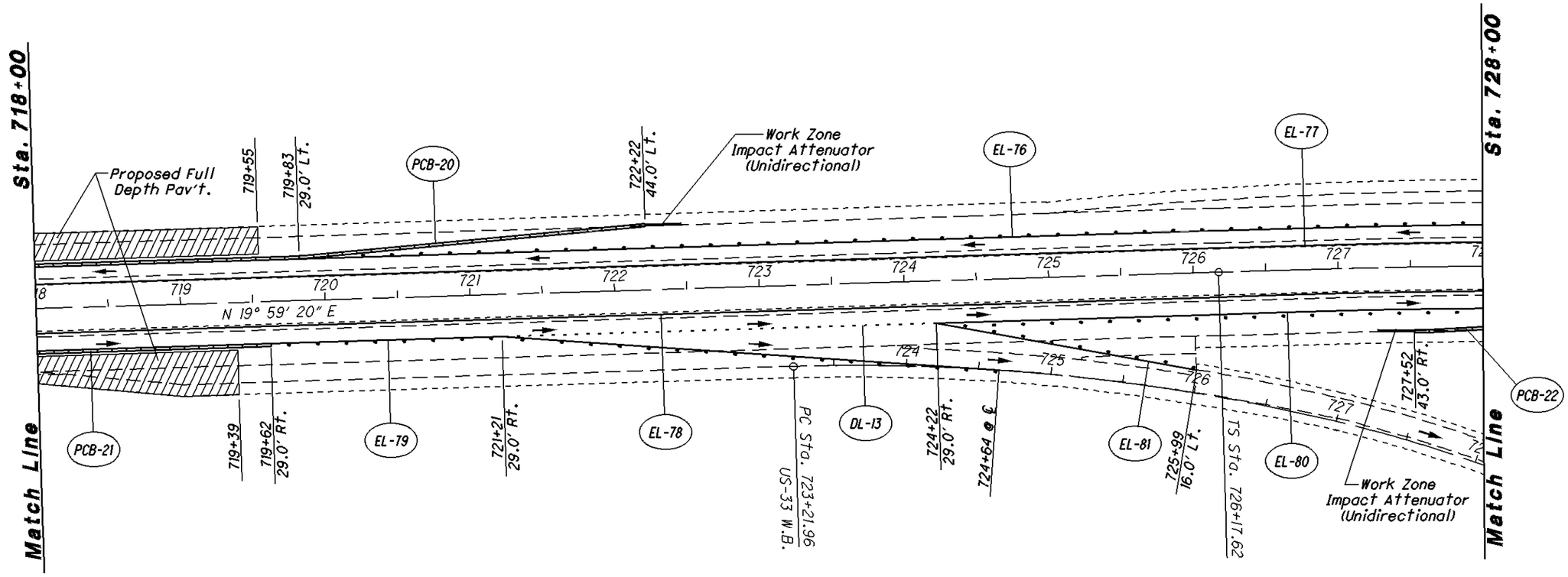

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-76	718+00	728+00	Lt.					0.19			
EL-77	718+00	728+00	Lt.					0.19			
EL-78	718+00	728+00	Rt.					0.19			
EL-79	718+00	724+64, Ramp	Rt./℄					0.13			
EL-80	724+22	728+00	Rt.					0.07			
EL-81	724+22	725+99, Ramp	Rt./Lt.					0.03			
PCB-20	718+00	722+22	Lt.	1	18	18				420	
PCB-21	718+00	719+62	Rt.		7	7				160	
PCB-22	727+52	728+00	Rt.	1	3	3				50	
DL-13	721+21	724+22	Rt.				301				
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				2	28	28	301	0.80	0	630	0

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

HORIZONTAL SCALE IN FEET (0, 20, 40, 80)

CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 718+00 to Sta. 728+00

ATH-33/50-15.05/11.46

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222

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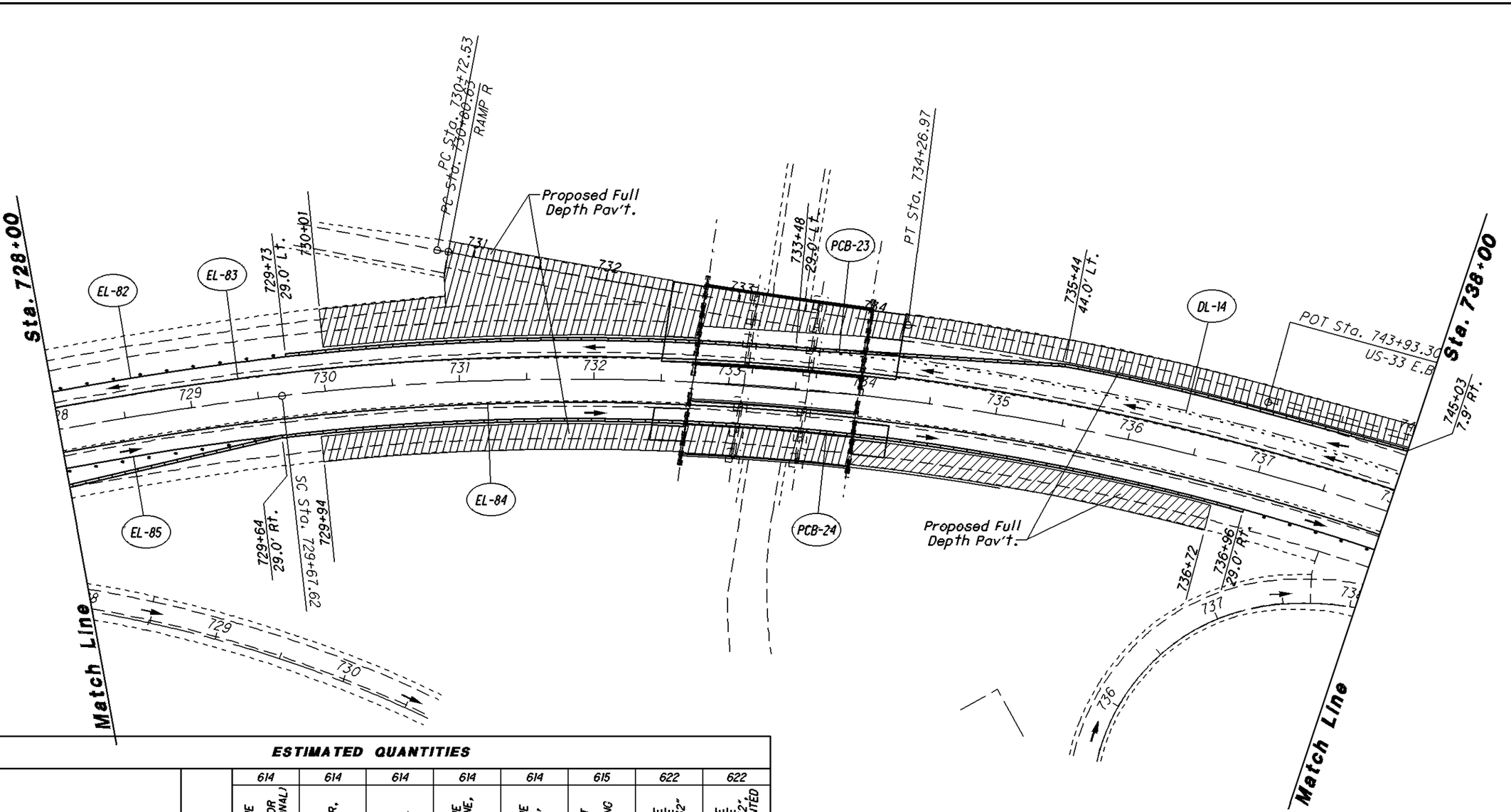

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-82	728+00	745+03, Ramp	Lt./Rt.					0.19			
EL-83	728+00	738+00	Lt.					0.19			
EL-84	728+00	738+00	Rt.					0.19			
EL-85	728+00	738+00	Rt.					0.19			
PCB-23	729+73	738+00	Lt.		34	34				840	
PCB-24	728+00	736+96	Rt.		36	36				880	
DL-14	733+48	738+00	Rt.				452				
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	70	70	452	0.76	0	1720	0

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 728+00 to Sta. 738+00

ATH-33/50-15.05/11.46

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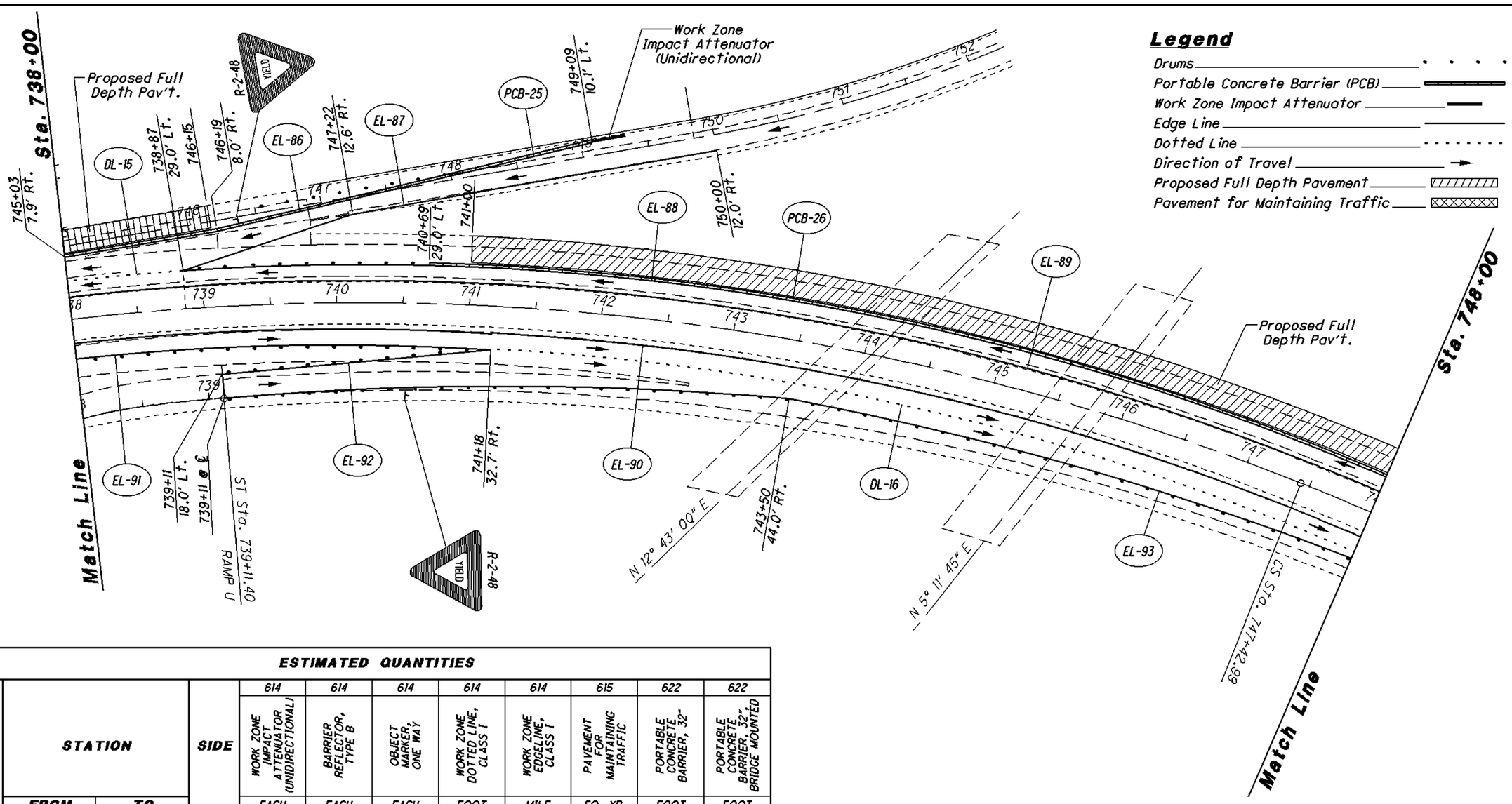


ESTIMATED QUANTITIES

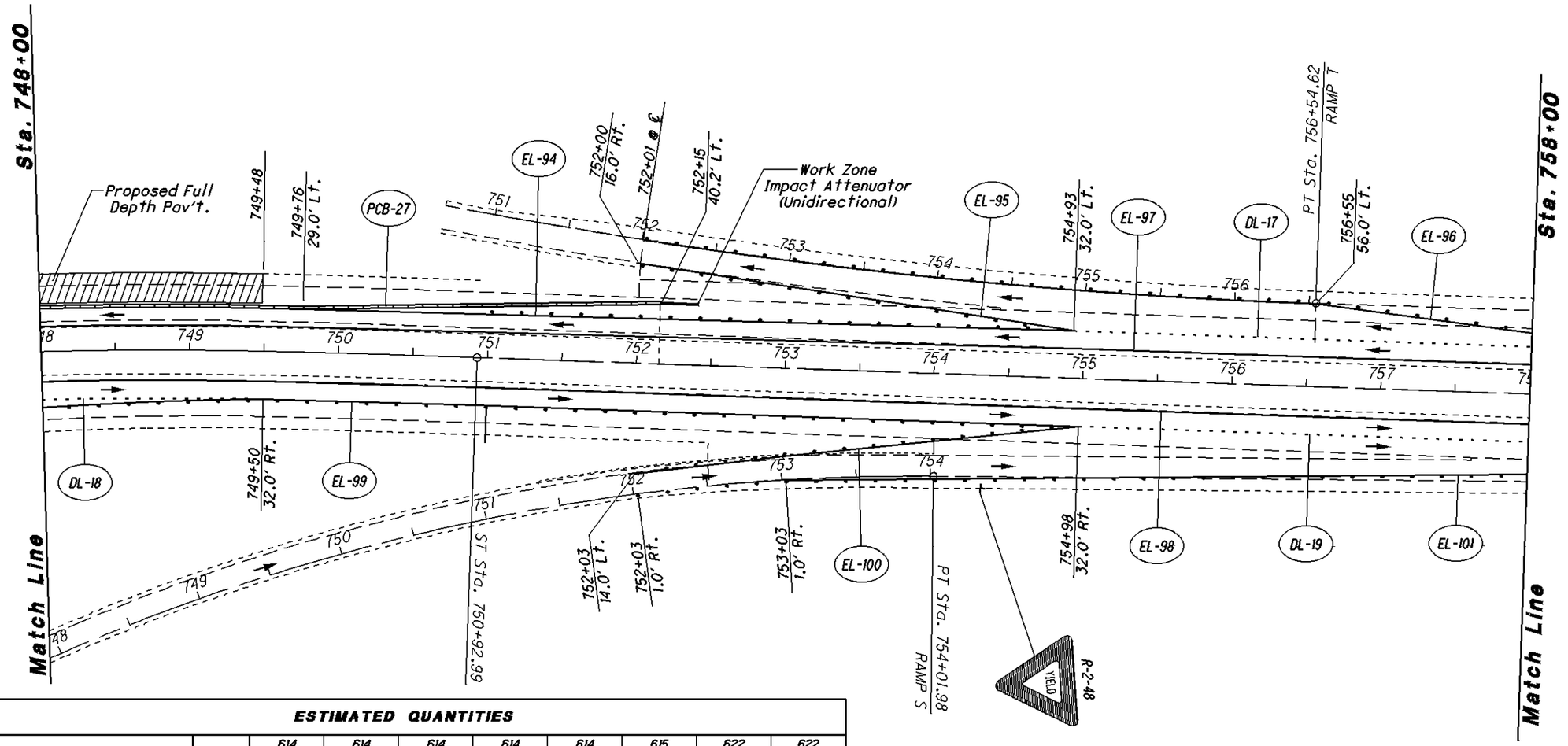
REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	614 BARRIER REFLECTOR, TYPE B	614 OBJECT MARKER, ONE WAY	614 WORK ZONE DOTTED LINE, CLASS 1	614 WORK ZONE EDGELINE, CLASS 1	615 PAVEMENT FOR MAINTAINING TRAFFIC	622 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 32" BRIDGE MOUNTED
				EACH	EACH	EACH	FOOT	MILE	SQ. YD.	FOOT	FOOT
EL-86	745+03, Ramp	749+09, Ramp	Rt./Lt.					0.10			
EL-87	738+87	750+00, Ramp	Lt./Rt.					0.08			
EL-88	738+87	748+00	Lt.					0.17			
EL-89	738+00	748+00	Lt.					0.19			
EL-90	738+00	748+00	Rt.					0.19			
EL-91	738+00	741+18	Rt.					0.06			
EL-92	739+11, Ramp	741+18	Lt./Rt.					0.04			
EL-93	739+11, Ramp	748+00	℄/Rt.					0.13			
PCB-25	745+03, Ramp	749+09, Ramp	Rt./Lt.	1	22	22				510	
PCB-26	740+69	748+00	Lt.		30	30				740	
DL-15	738+00	738+87	Lt.				87				
DL-16	741+18	748+00	Rt.				682				
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	52	52	769	0.96	0	1250	0

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 738+00 to Sta. 748+00

ATH-33/50-15.05/11.46

35
222



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGELINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-94	748+00	754+93	Lt.					0.13			
EL-95	752+00, Ramp	754+93	Rt./Lt.					0.06			
EL-96	752+01, Ramp	758+00	℄/Lt.					0.11			
EL-97	748+00	758+00	Lt.					0.19			
EL-98	748+00	758+00	Rt.					0.19			
EL-99	748+00	754+98	Rt.					0.13			
EL-100	752+03, Ramp	754+98	Lt./Rt.					0.06			
EL-101	753+03, Ramp	758+00	℄/Rt.					0.09			
PCB-27	748+00	752+15	Lt.	1	18	18				420	
DL-17	754+93	758+00	Lt.				307				
DL-18	748+00	749+50	Rt.				150				
DL-19	754+98	758+00	Rt.				302				
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	18	18	759	0.96	0	420	0

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

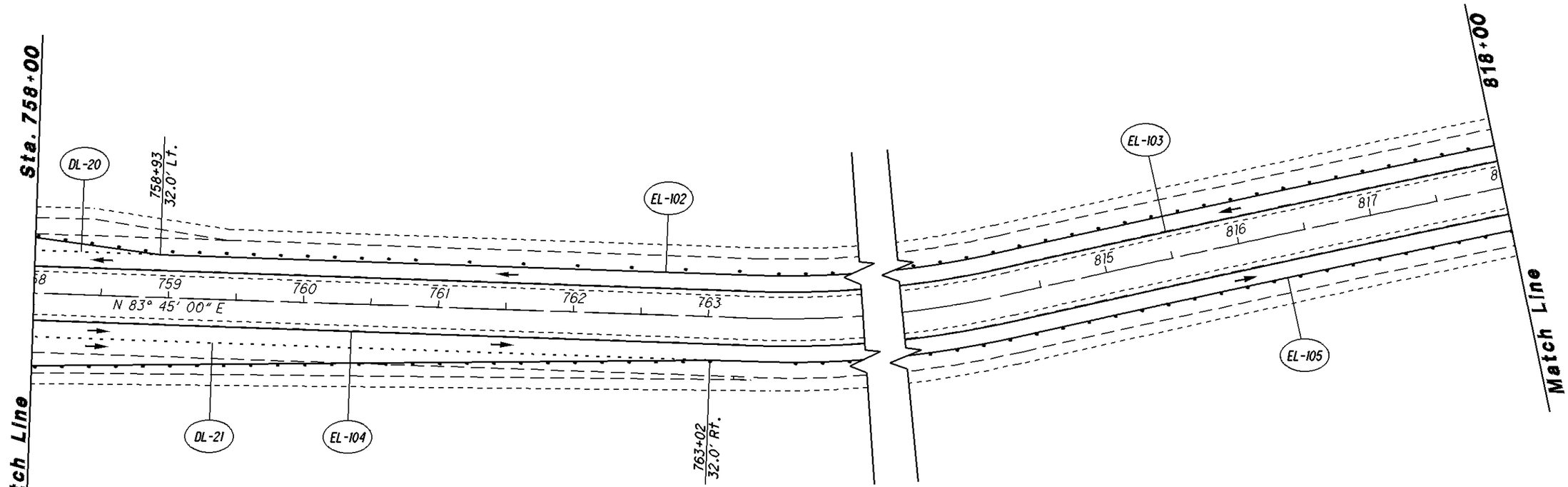
MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 748+00 to Sta. 758+00

ATH-33/50-15.05/11.46

36
75

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-102	758+00	818+00	Lt.					1.14			
EL-103	758+00	818+00	Lt.					1.14			
EL-104	758+00	818+00	Rt.					1.14			
EL-105	758+00	818+00	Rt.					1.14			
DL-20	758+00	758+93	Lt.				93				
DL-21	758+00	763+02	Rt.				502				
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	0	0	595	4.56	0	0	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

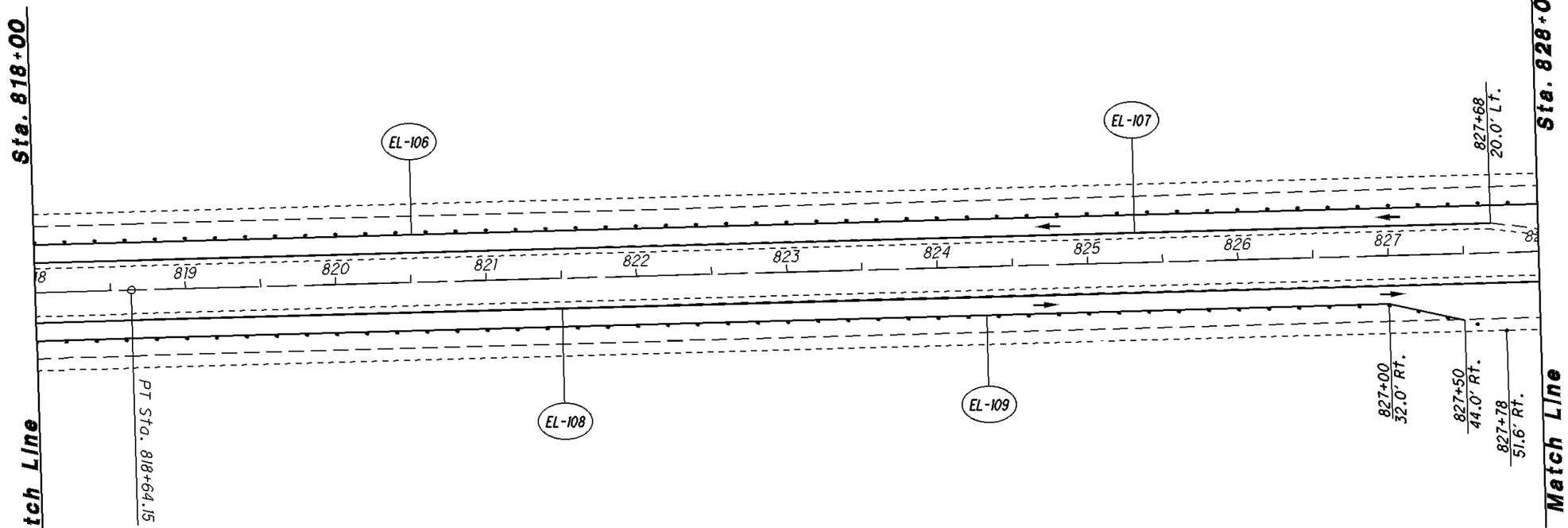
MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 758+00 to Sta. 818+00

ATH-33/50-15.05/11.46

37
222

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-106	818+00	828+00	Lt.					0.19			
EL-107	818+00	827+67	Lt.					0.18			
EL-108	818+00	828+00	Rt.					0.19			
EL-109	818+00	827+50	Rt.					0.18			
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 19 of 222.				0	0	0	0	0.74	0	0	0

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

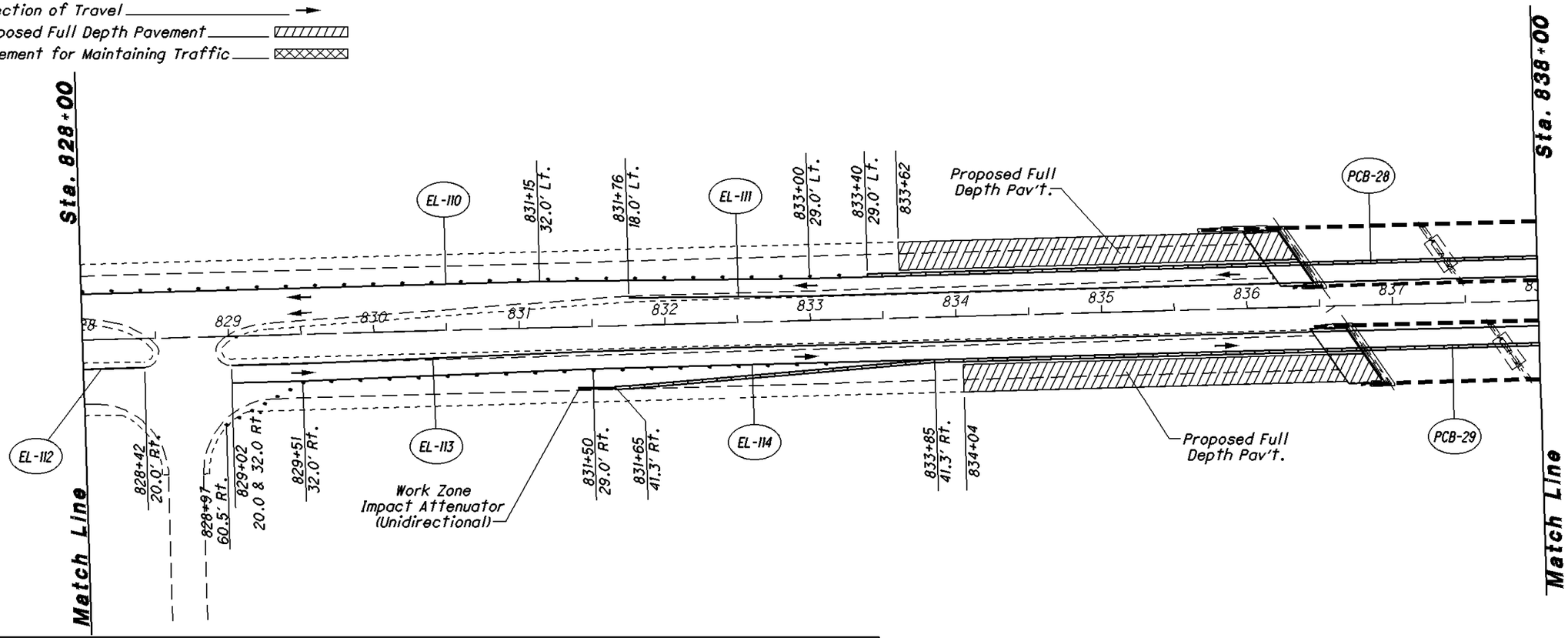
MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 818+00 to Sta. 828+00

ATH-33/50-15.05/11.46

38
222

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-110	828+00	838+00	Lt.					0.19			
EL-111	831+76	838+00	Lt.					0.12			
EL-112	828+00	828+42	Rt.					0.01			
EL-113	829+02	838+00	Rt.					0.17			
EL-114	829+02	838+00	Rt.					0.17			
PCB-28	833+40	838+00	Lt.		19	19				460	
PCB-29	831+65	838+00	Rt.	1	27	27				640	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	46	46	0	0.66	0	1100	0

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 828+00 to Sta. 838+00

ATH-33/50-15.05/11.46

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222

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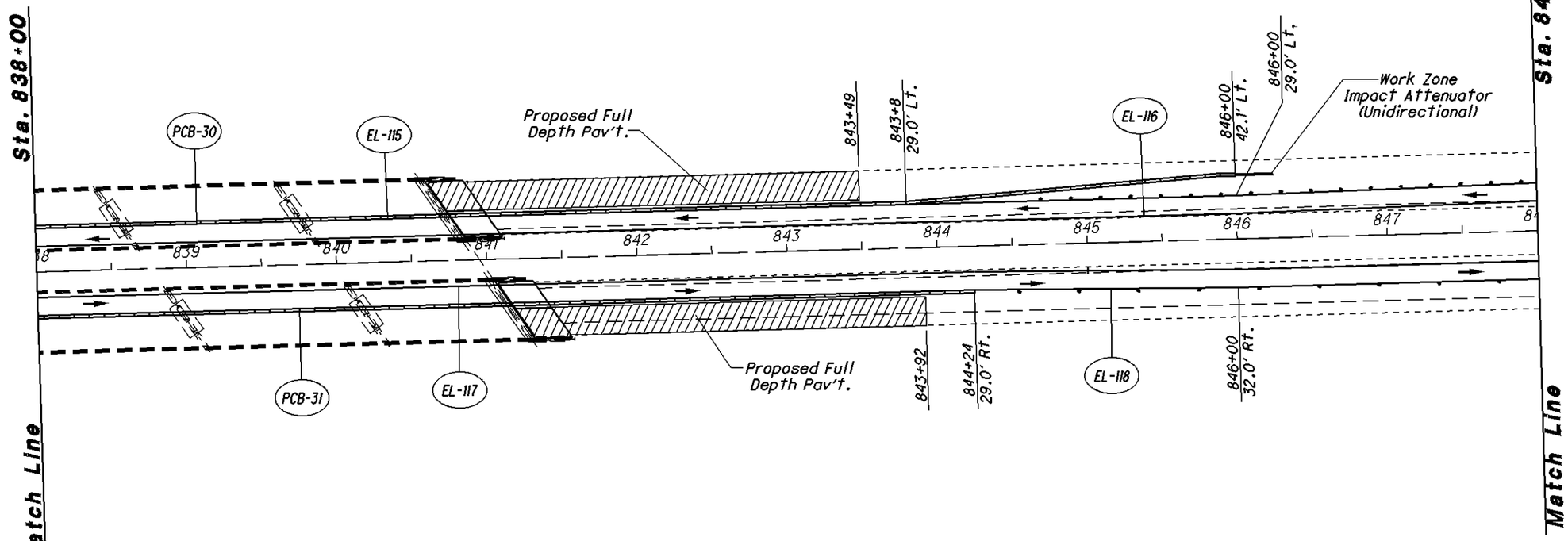
Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-115	838+00	848+00	Lt.					0.19			
EL-116	838+00	848+00	Lt.					0.19			
EL-117	838+00	848+00	Rt.					0.19			
EL-118	838+00	848+00	Rt.					0.19			
PCB-30	838+00	846+00	Lt.	1	33	33				800	
PCB-31	838+00	844+24	Rt.		25	25				620	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	58	58	0	0.76	0	1420	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

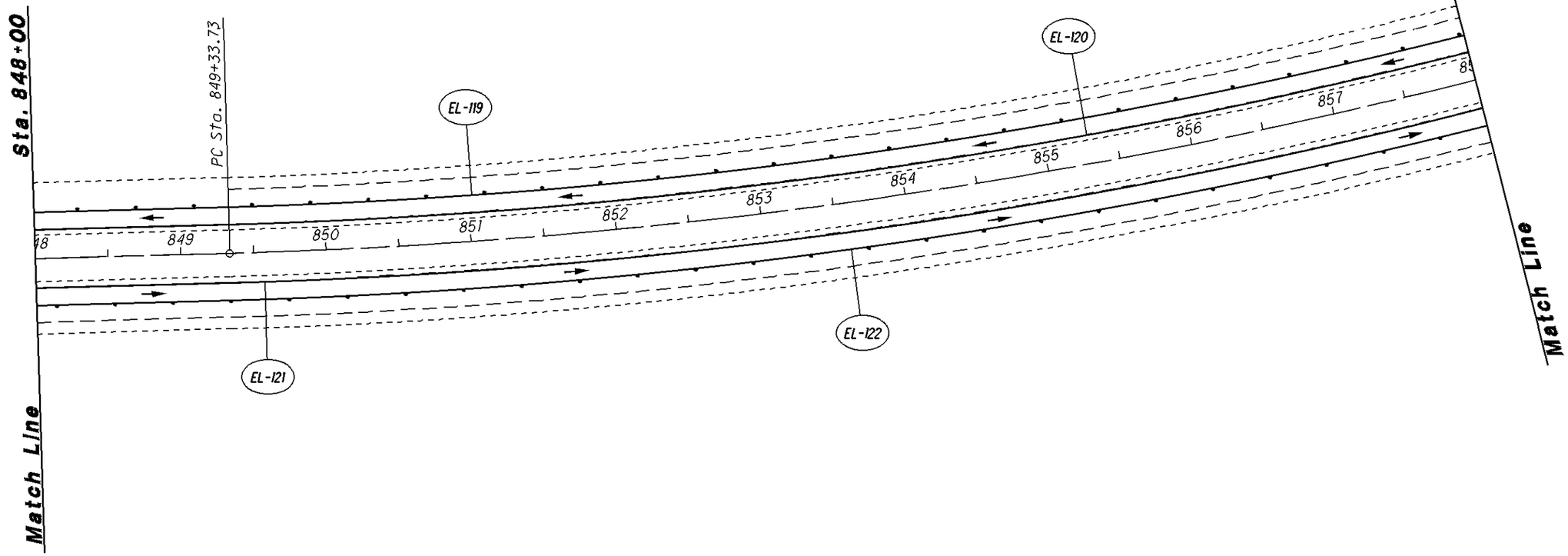
MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 838+00 to Sta. 848+00

ATH-33/50-15.05/11.46

40
222

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	614 BARRIER REFLECTOR, TYPE B	614 OBJECT MARKER, ONE WAY	614 WORK ZONE DOTTED LINE, CLASS 1	614 WORK ZONE EDGELINE, CLASS 1	615 PAVEMENT FOR MAINTAINING TRAFFIC	622 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED
	FROM	TO		EACH	EACH	EACH	FOOT	MILE	SQ. YD.	FOOT	FOOT
EL-119	848+00	858+00	Lt.					0.19			
EL-120	848+00	858+00	Lt.					0.19			
EL-121	848+00	858+00	Rt.					0.19			
EL-122	848+00	858+00	Rt.					0.19			
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 19 of 222.				0	0	0	0	0.76	0	0	0

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

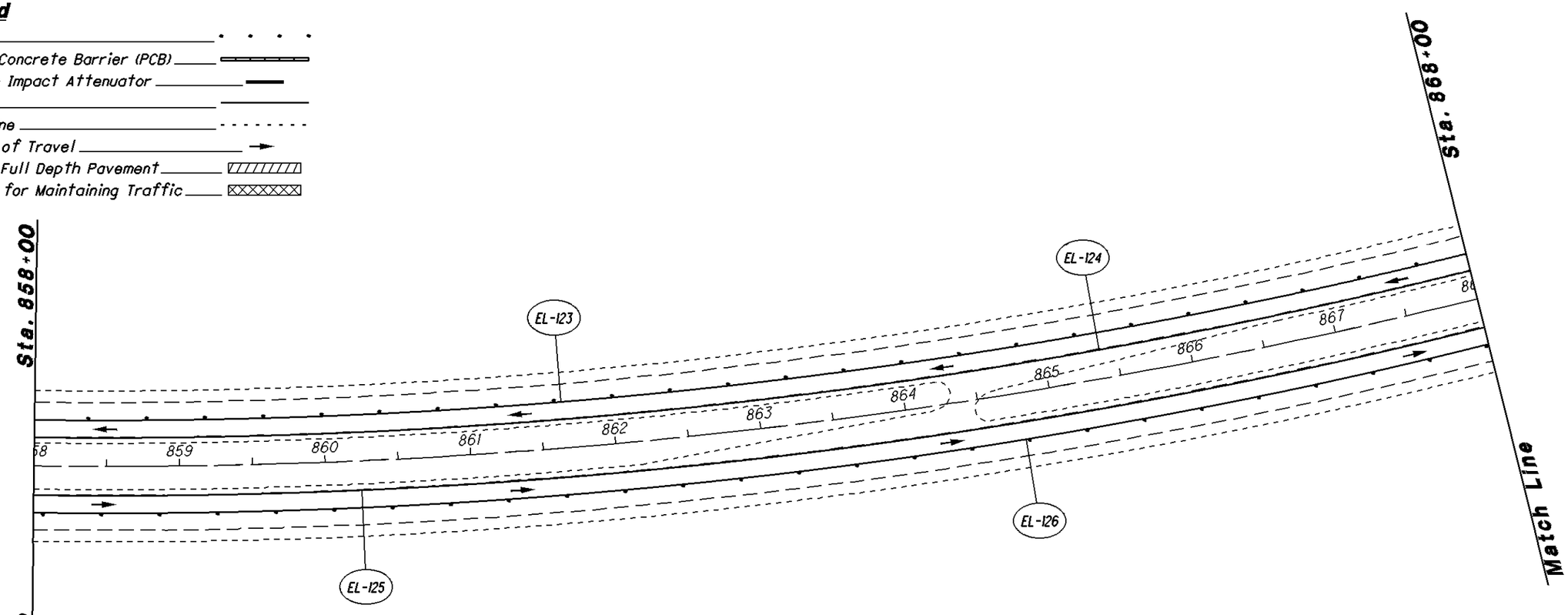
MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 848+00 to Sta. 858+00

ATH-33/50-15.05/11.46

41
222

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGELINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-123	858+00	868+00	Lt.					0.19			
EL-124	858+00	868+00	Lt.					0.19			
EL-125	858+00	868+00	Rt.					0.19			
EL-126	858+00	868+00	Rt.					0.19			
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 19 of 222.				0	0	0	0	0.76	0	0	0

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 858+00 to Sta. 868+00

ATH-33/50-15.05/11.46

42
222

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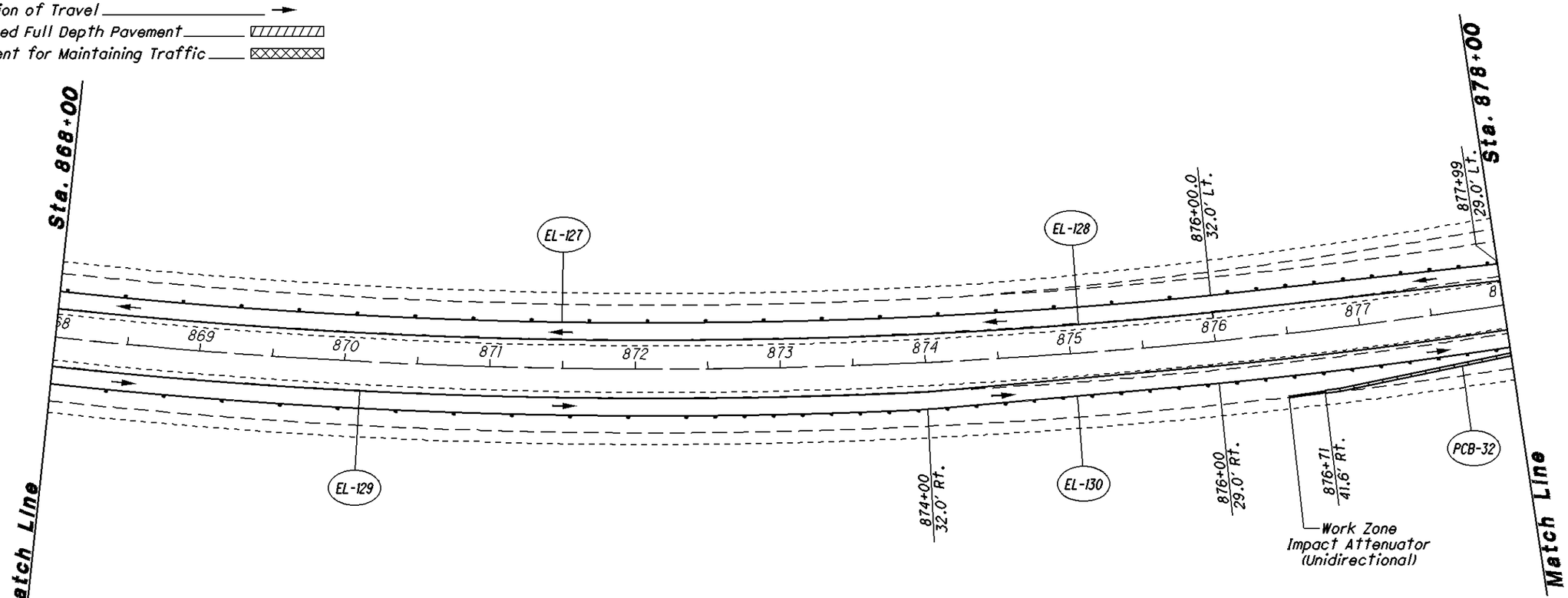
Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-127	868+00	878+00	Lt.					0.19			
EL-128	868+00	878+00	Lt.					0.19			
EL-129	868+00	878+00	Rt.					0.19			
EL-130	868+00	878+00	Rt.					0.19			
PCB-32	876+71	878+00	Rt.	1	7	7				130	
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 19 of 222.				1	7	7	0	0.76	0	130	0

HORIZONTAL SCALE IN FEET 0 20 40 80

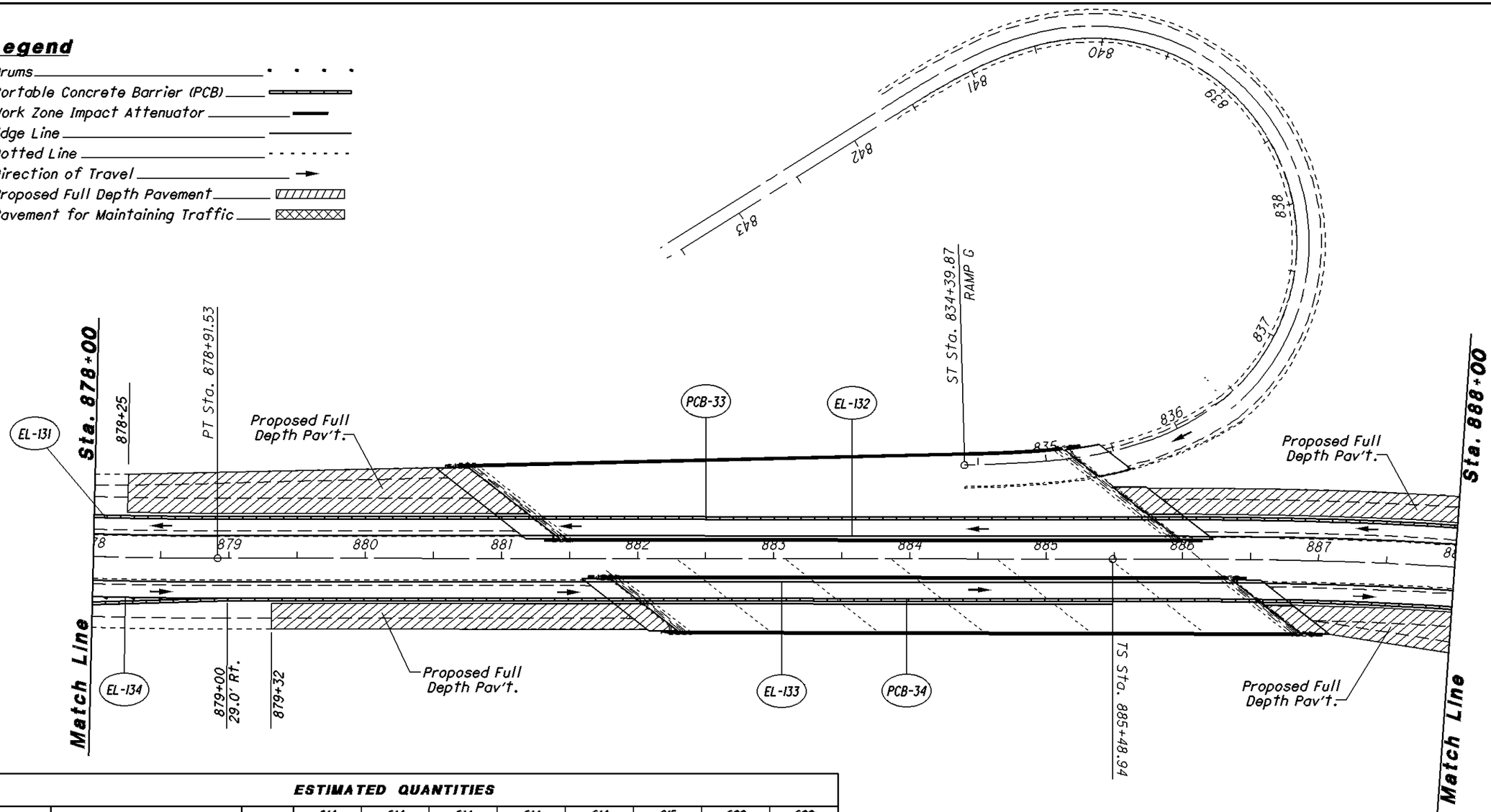
CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 868+00 to Sta. 878+00

ATH-33/50-15.05/11.46

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-131	878+00	888+00	Lt.					0.19			
EL-132	878+00	888+00	Lt.					0.19			
EL-133	878+00	888+00	Rt.					0.19			
EL-134	878+00	888+00	Rt.					0.19			
PCB-33	877+99	888+00	Lt.		40	40				1000	
PCB-34	878+00	888+00	Rt.		40	40				1000	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	80	80	0	0.76	0	2000	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 878+00 to Sta. 888+00

ATH-33/50-15.05/11.46

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222

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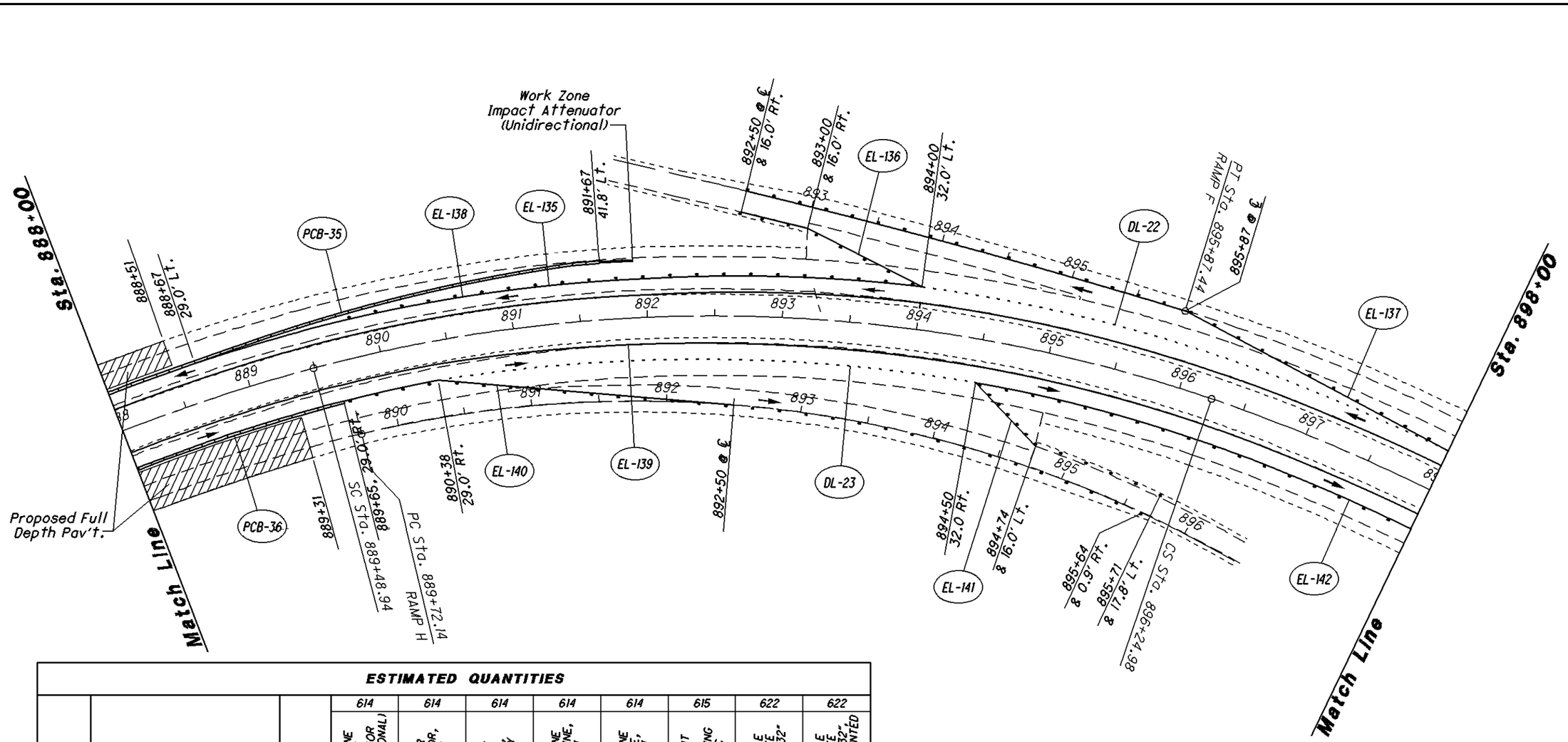

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-135	888+00	894+00	Lt.					0.11			
EL-136	892+50, Ramp	894+00	Rt./Lt.					0.03			
EL-137	892+50, Ramp	898+00	℄/Lt.					0.11			
EL-138	888+00	898+00	Lt.					0.19			
EL-139	888+00	898+00	Rt.					0.19			
EL-140	888+00	892+50, Ramp	Rt./℄					0.09			
EL-141	894+50	894+74, Ramp	Rt./Lt.					0.01			
EL-142	894+50	898+00	Rt.					0.07			
PCB-35	888+00	891+67	Lt.	1	17	17				380	
PCB-36	888+00	889+65	Rt.		7	7				160	
DL-22	894+00	898+00	Lt.				400				
DL-23	890+38	894+50	Rt.				412				
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	24	24	812	0.80	0	540	0

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 888+00 to Sta. 898+00

ATH-33/50-15.05/11.46

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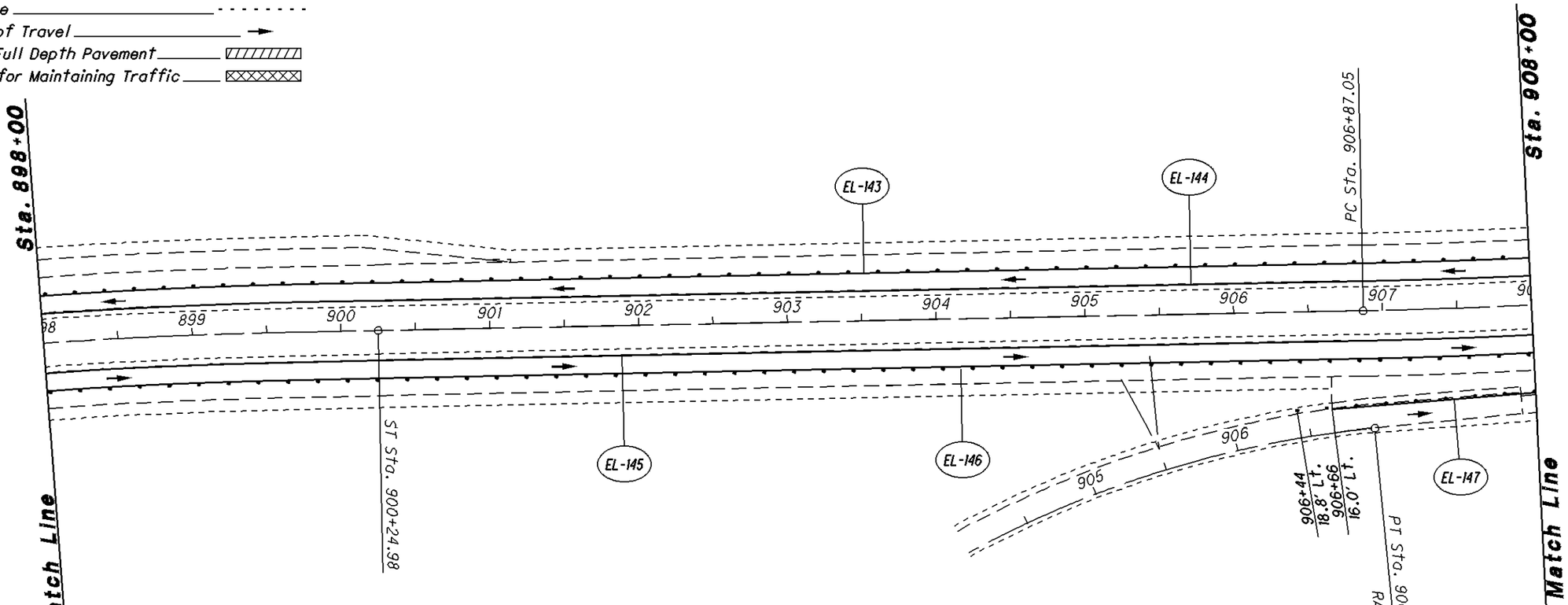
222

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-143	898+00	908+00	Lt.					0.19			
EL-144	898+00	908+00	Lt.					0.19			
EL-145	898+00	908+00	Rt.					0.19			
EL-146	898+00	908+00	Rt.					0.19			
EL-147	906+66, Ramp	908+00	Lt./Rt.					0.03			
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 19 of 222.				0	0	0	0	0.79	0	0	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 898+00 to Sta. 908+00

ATH-33/50-15.05/11.46

46
222

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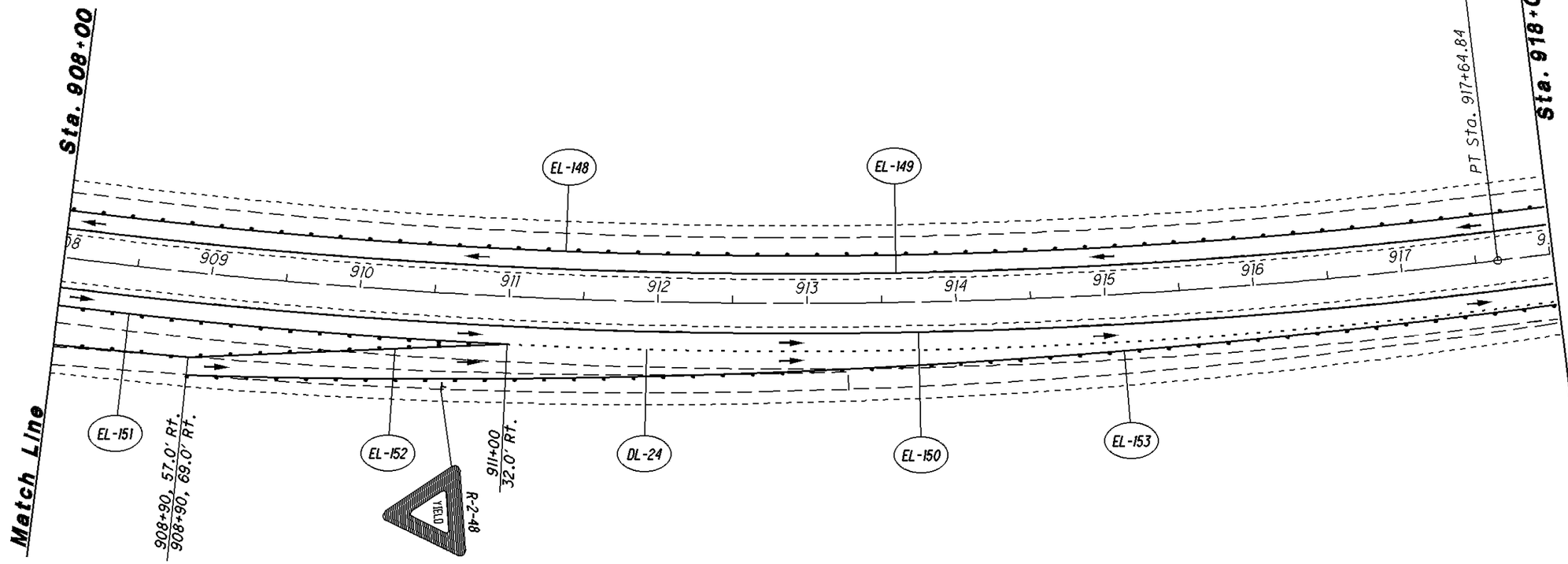
Legend

Drums
Portable Concrete Barrier (PCB)
Work Zone Impact Attenuator
Edge Line
Dotted Line
Direction of Travel
Proposed Full Depth Pavement
Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-148	908+00	918+00	Lt.					0.19			
EL-149	908+00	918+00	Lt.					0.19			
EL-150	908+00	918+00	Rt.					0.19			
EL-151	908+00	911+00	Rt.					0.06			
EL-152	908+00	911+00	Rt.					0.06			
EL-153	908+90	918+00	Rt.					0.17			
DL-24	911+00	919+15	Rt.				815				
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	0	0	815	0.86	0	0	0

HORIZONTAL SCALE IN FEET
0 20 40 80
CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 908+00 to Sta. 918+00

ATH-33/50-15.05/11.46

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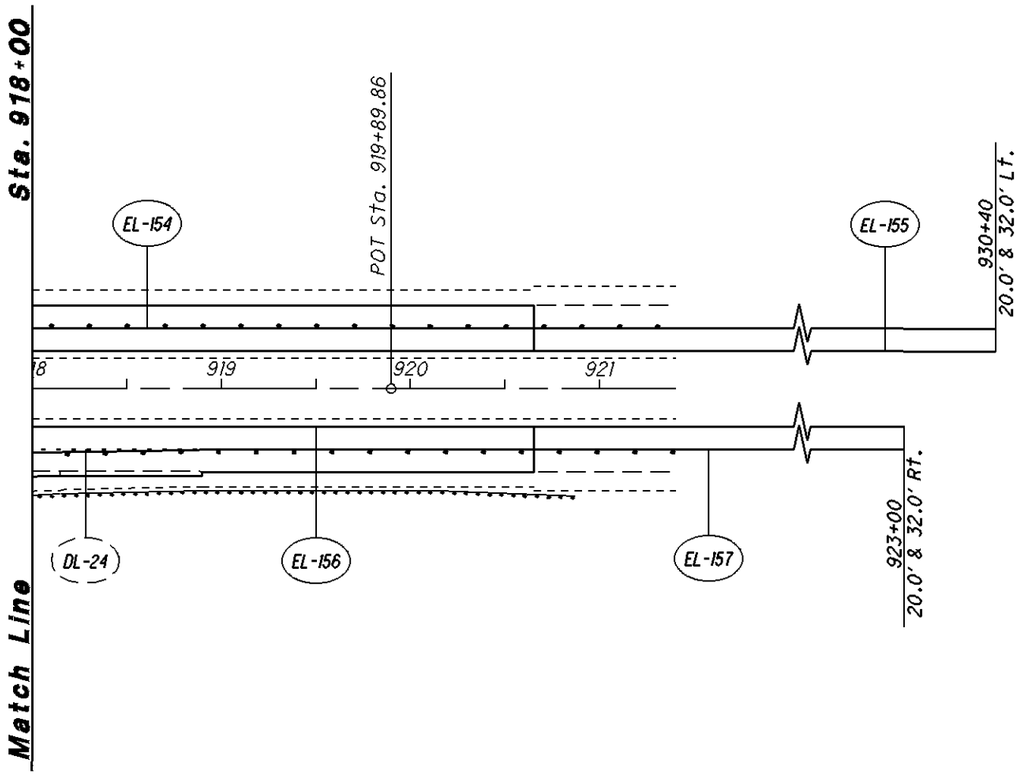
222

Legend

Drums
Portable Concrete Barrier (PCB)
Work Zone Impact Attenuator
Edge Line
Dotted Line
Direction of Travel
Proposed Full Depth Pavement
Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

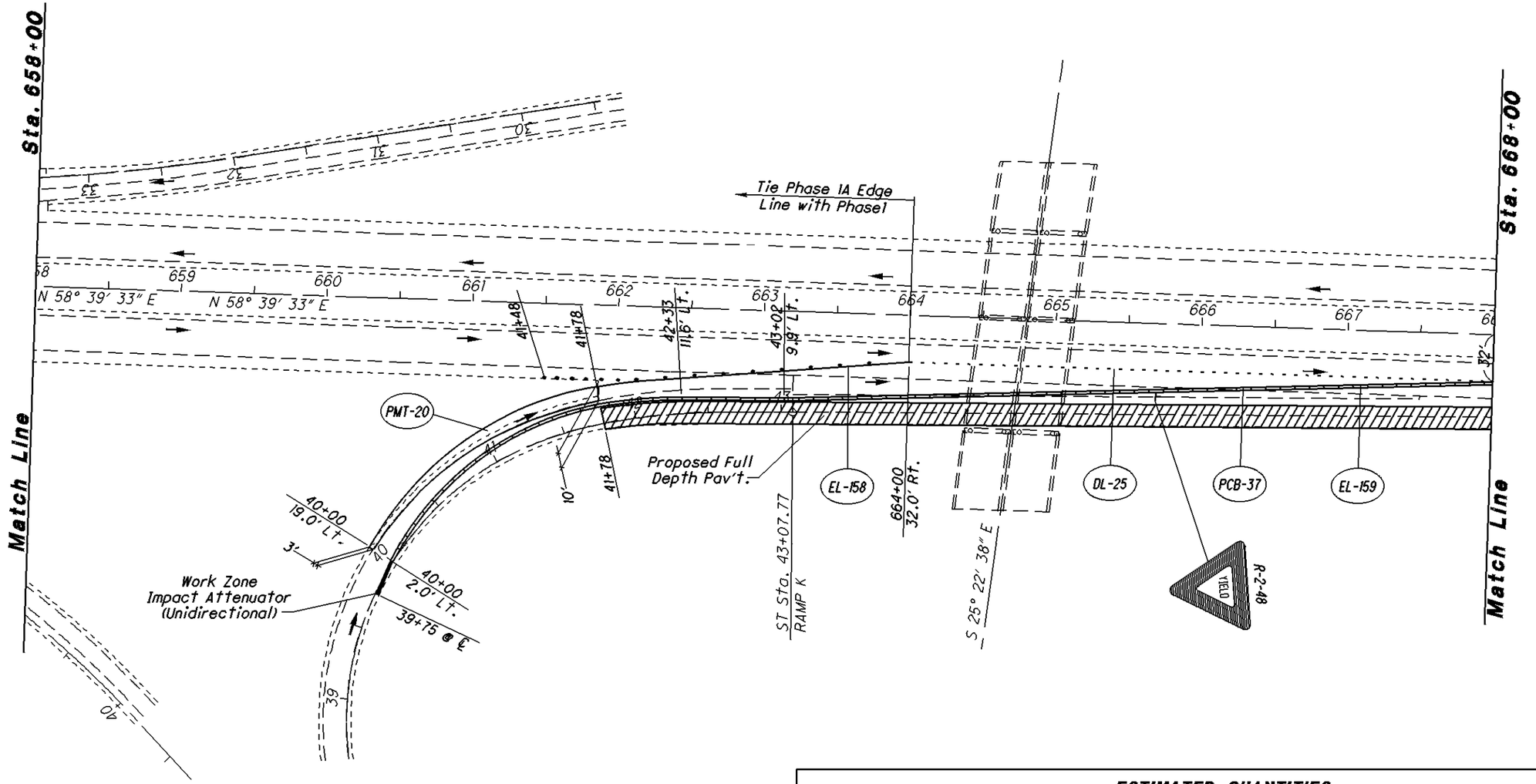
REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGELINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-154	918+00	930+40	Lt.					0.23			
EL-155	918+00	930+40	Lt.					0.23			
EL-156	918+00	923+00	Rt.					0.09			
EL-157	918+00	923+00	Rt.					0.09			
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 19 of 222.				0	0	0	0	0.64	0	0	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1
Sta. 918+00 to Sta. 930+40

ATH-33/50-15.05/11.46



Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	614 BARRIER REFLECTOR, TYPE B	614 OBJECT MARKER, ONE WAY	614 WORK ZONE DOTTED LINE, CLASS I	614 WORK ZONE EDGE LINE, CLASS I	615 PAVEMENT FOR MAINTAINING TRAFFIC	622 PORTABLE CONCRETE BARRIER, 32"
				EACH	EACH	EACH	FOOT	MILE	SQ. YD.	FOOT
EL-158	40+00, Ramp	664+00	Lt./Rt.					0.07		
EL-159	40+00, Ramp	668+00	Lt./Rt.					0.15		
PCB-37	40+00, Ramp	668+00	℄/Rt.	1	33	33				800
PMT-20	40+00, Ramp	41+78, Ramp	Lt.						129	
DL-25	664+00	667+94	Rt.				394			
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	33	33	394	0.22	129	800

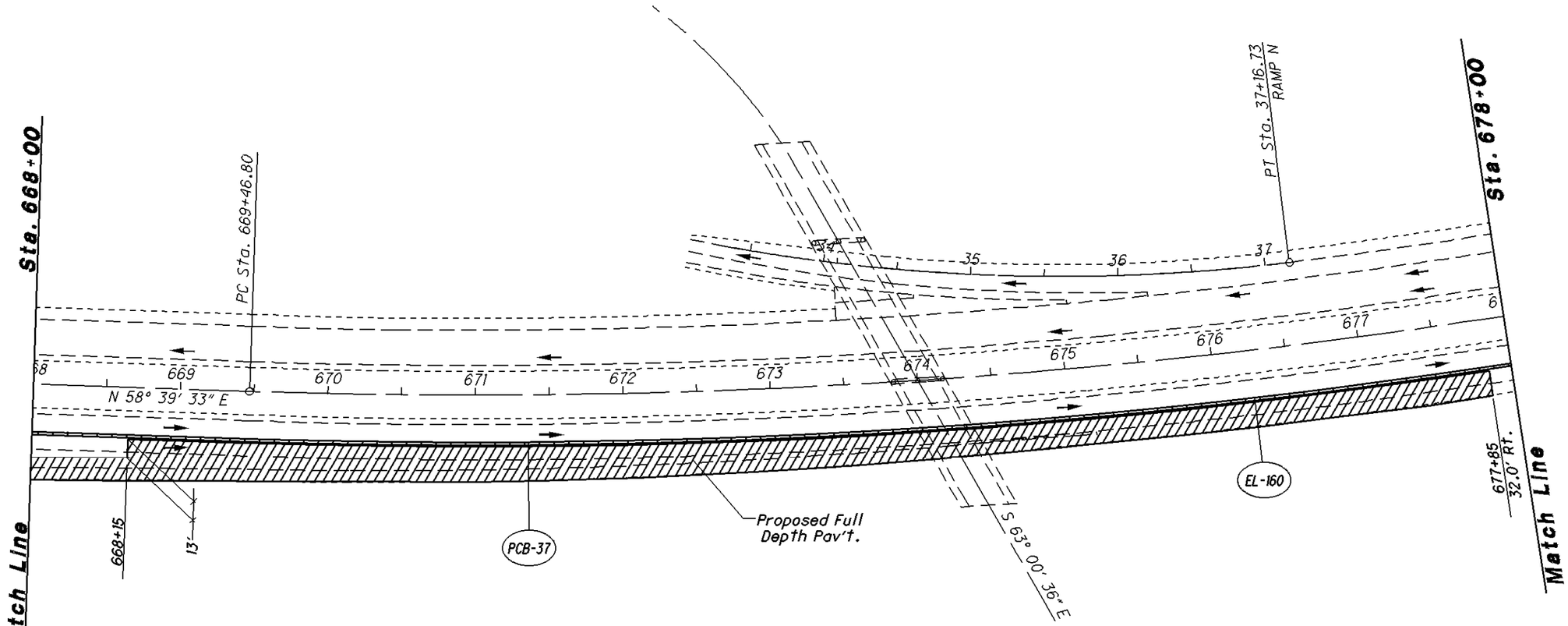
HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1A Sta. 658+00 to Sta. 668+00

ATH-33/50-15.05/11.46

49
222



Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE EDGE LINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-160	668+00	678+00	Lt.				0.19			
PCB-37	668+00	678+00	Rt.		40	40			1000	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	40	40	0.19	0	1000	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1A
Sta. 668+00 to Sta. 678+00

ATH-33/50-15.05/11.46

50
222

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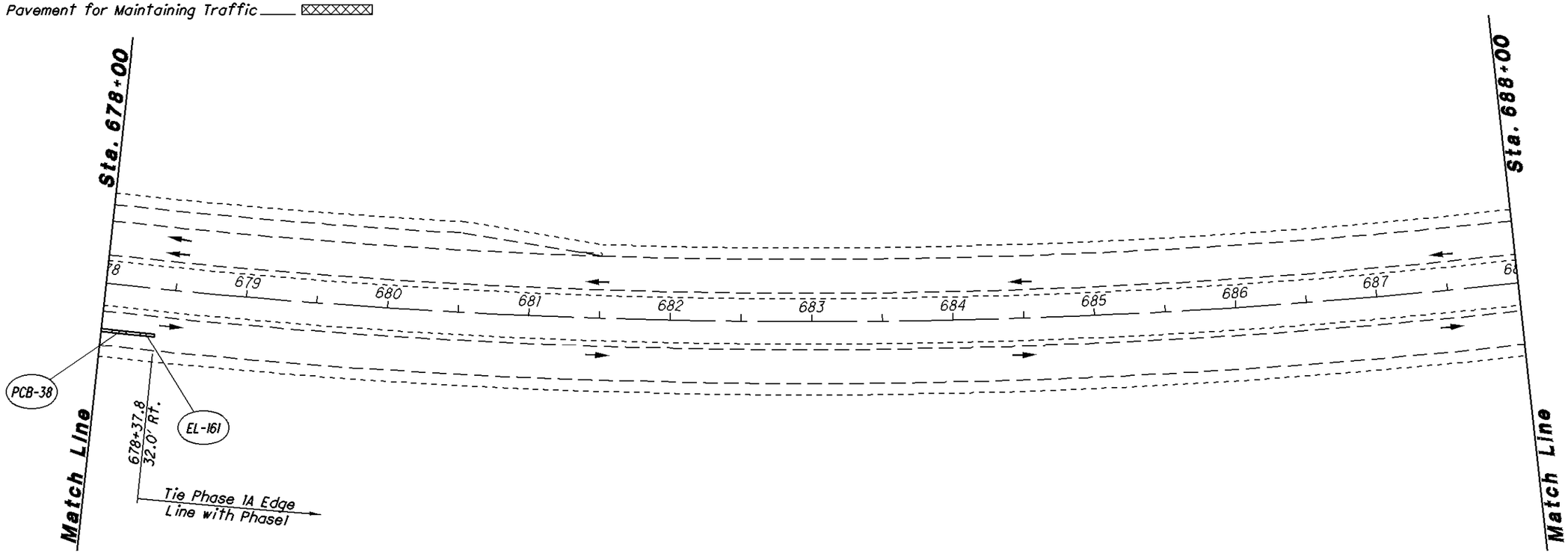
Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	614 BARRIER REFLECTOR, TYPE B	614 OBJECT MARKER, ONE WAY	614 WORK ZONE EDGE LINE, CLASS 1	615 PAVEMENT FOR MAINTAINING TRAFFIC	622 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED
				EACH	EACH	EACH	MILE	SQ. YD.	FOOT	FOOT
EL-161	678+00	688+38	Rt.				0.01			
PCB-38	678+00	678+38	Rt.		2	2			40	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	2	2	0.01	0	40	0

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1A
Sta. 678+00 to Sta. 688+00

ATH-33/50-15.05/11.46

51
222

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Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-162	723+14	728+00	Lt.					0.09			
DL-26	726+00	728+00	Lt.				200				
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	0	0	200	0.09	0	0	0

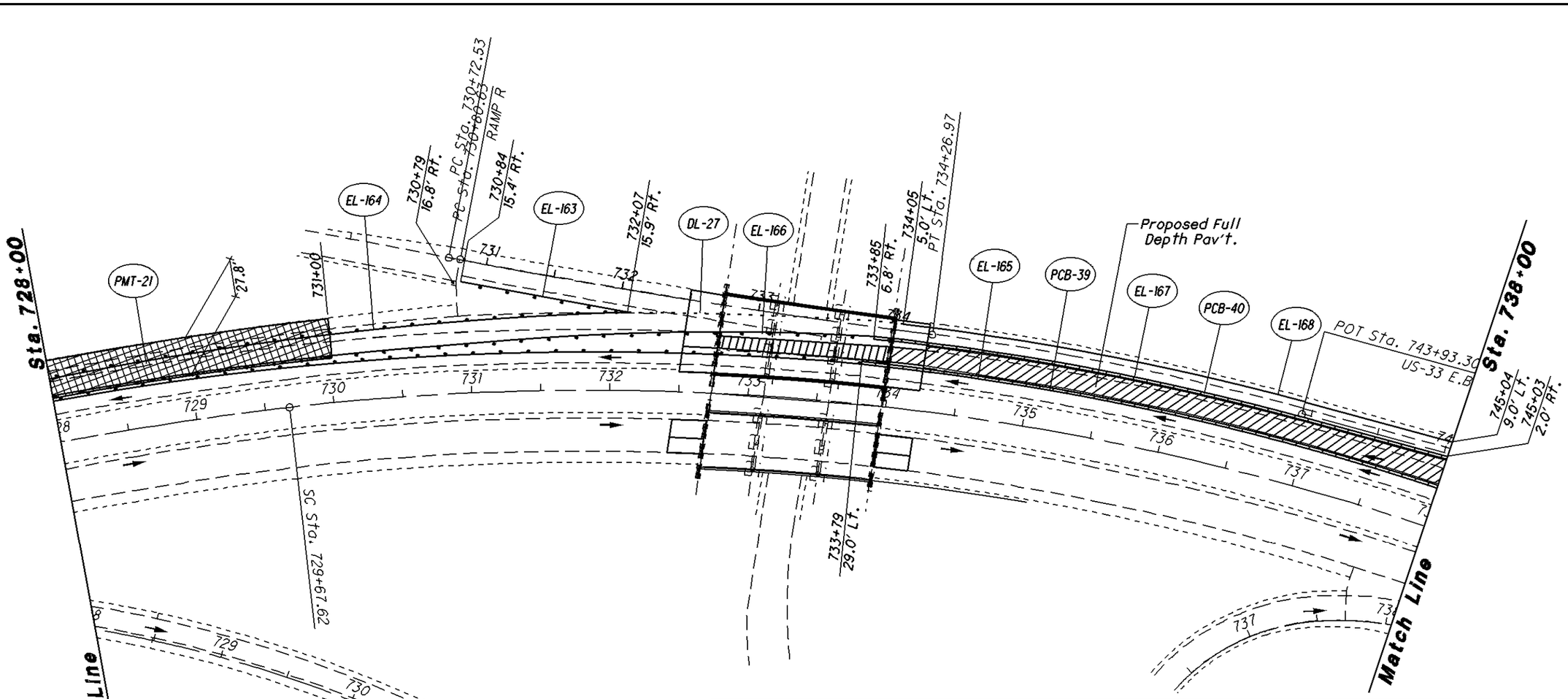
HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1A
Sta. 718+00 to Sta. 728+00

ATH-33/50-15.05/11.46

52
222



Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-163	730+84, Ramp	732+07, Ramp	Rt.					0.02			
EL-164	728+00	732+07, Ramp	Lt./Rt.					0.08			
EL-165	728+00	738+00	Lt.					0.19			
EL-166	728+00	733+85, Ramp	Lt./Rt.					0.11			
EL-167	733+85, Ramp	745+03, Ramp	Rt./Rt.					0.08			
EL-168	734+05, Ramp	745+04, Ramp	Lt./Lt.					0.08			
PCB-39	733+79	738+00	Lt.		18	18				430	
PCB-40	733+85, Ramp	738+00	Rt./Lt.		17	17				420	
PMT-21	728+00	731+00	Lt.						930		
DL-27	732+07, Ramp	733+85, Ramp	Rt./Rt.				198				
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 19 of 222.				0	35	35	198	0.56	930	850	0

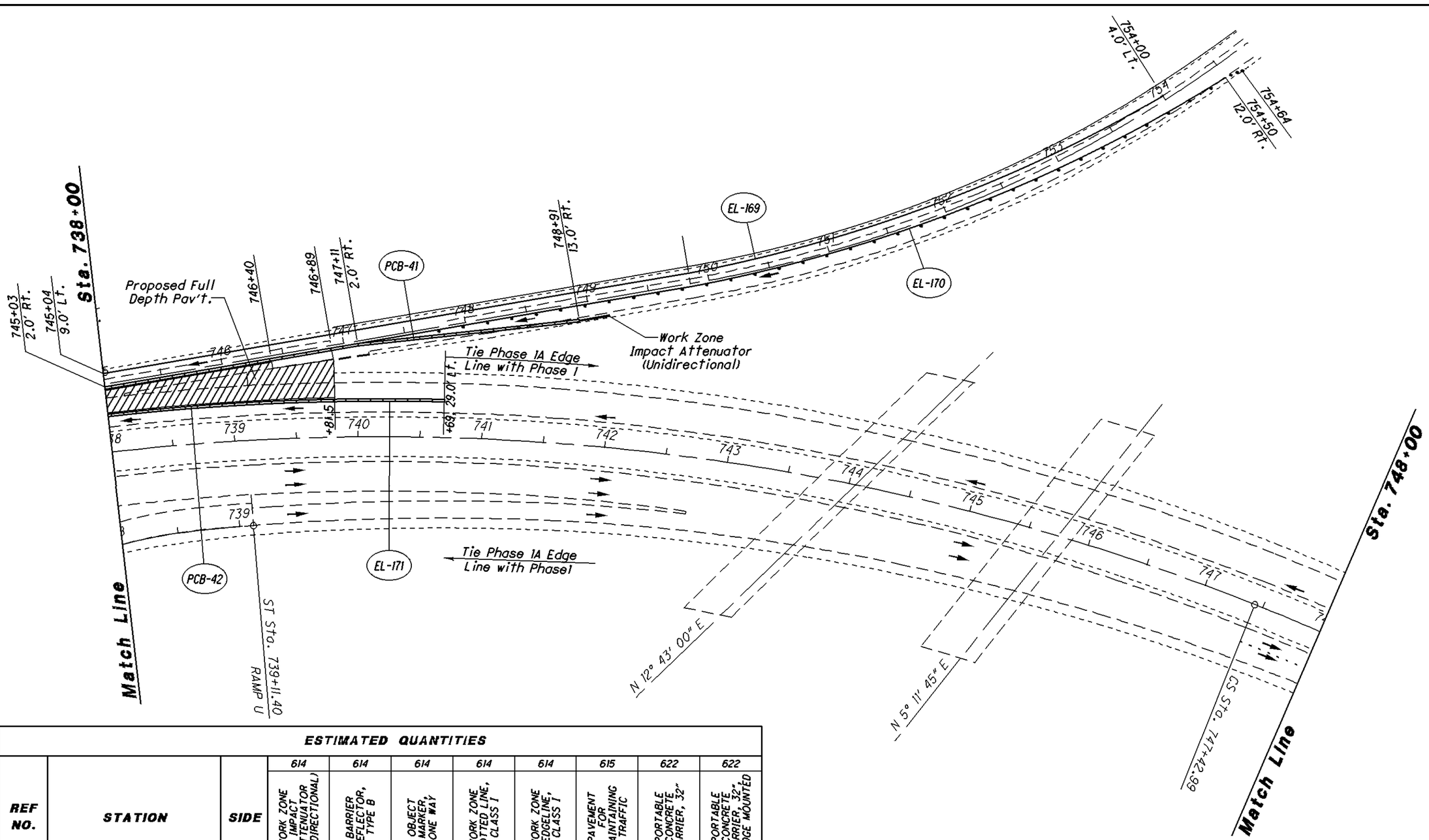
HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 1A
Sta. 728+00 to Sta. 738+00

ATH-33/50-15.05/11.46

53
222



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGELINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-169	745+04, Ramp	746+90, Ramp	Lt./Lt.					0.17			
EL-170	745+03, Ramp	748+91, Ramp	Rt./Rt.					0.18			
EL-171	738+00	740+69	Lt.					0.05			
PCB-41	745+03, Ramp	748+91, Ramp	Rt./Rt.	1	17	17				390	
PCB-42	738+00	740+69	Lt.		11	11				270	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	28	28	0	0.40	0	660	0

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

MAINTENANCE OF TRAFFIC - PHASE 1A
Sta. 738+00 to Sta. 748+00

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

ATH-33/50-15.05/11.46

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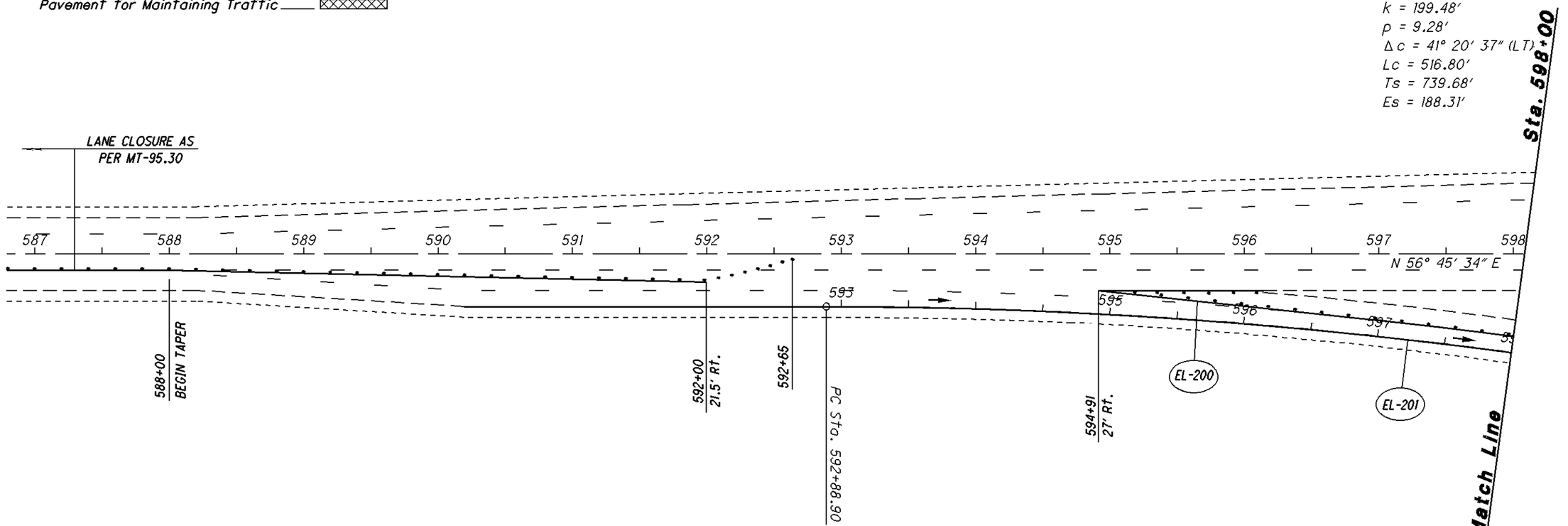
222

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

R = 716.20
Ls = 400.00'
θs = 16° 00' 00"
LT = 267.76'
ST = 134.33'
x = 396.89'
y = 37.03'
k = 199.48'
p = 9.28'
Δc = 41° 20' 37" (LT)
Lc = 516.80'
Ts = 739.68'
Es = 188.31'



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE EDGE LINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-200	580+00, E.B.	598+00, E.B.	Lt.				0.34			
EL-201	590+20, E.B.	598+00, E.B.	℄				0.15			
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 19 of 222.				0	0	0	0.49	0	0	0

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 592+88.90 to Sta. 598+00

CALCULATED CAK
CHECKED ALC

HORIZONTAL SCALE IN FEET
0 20 40 80

ATH-33/50-15.05/11.46

55
222

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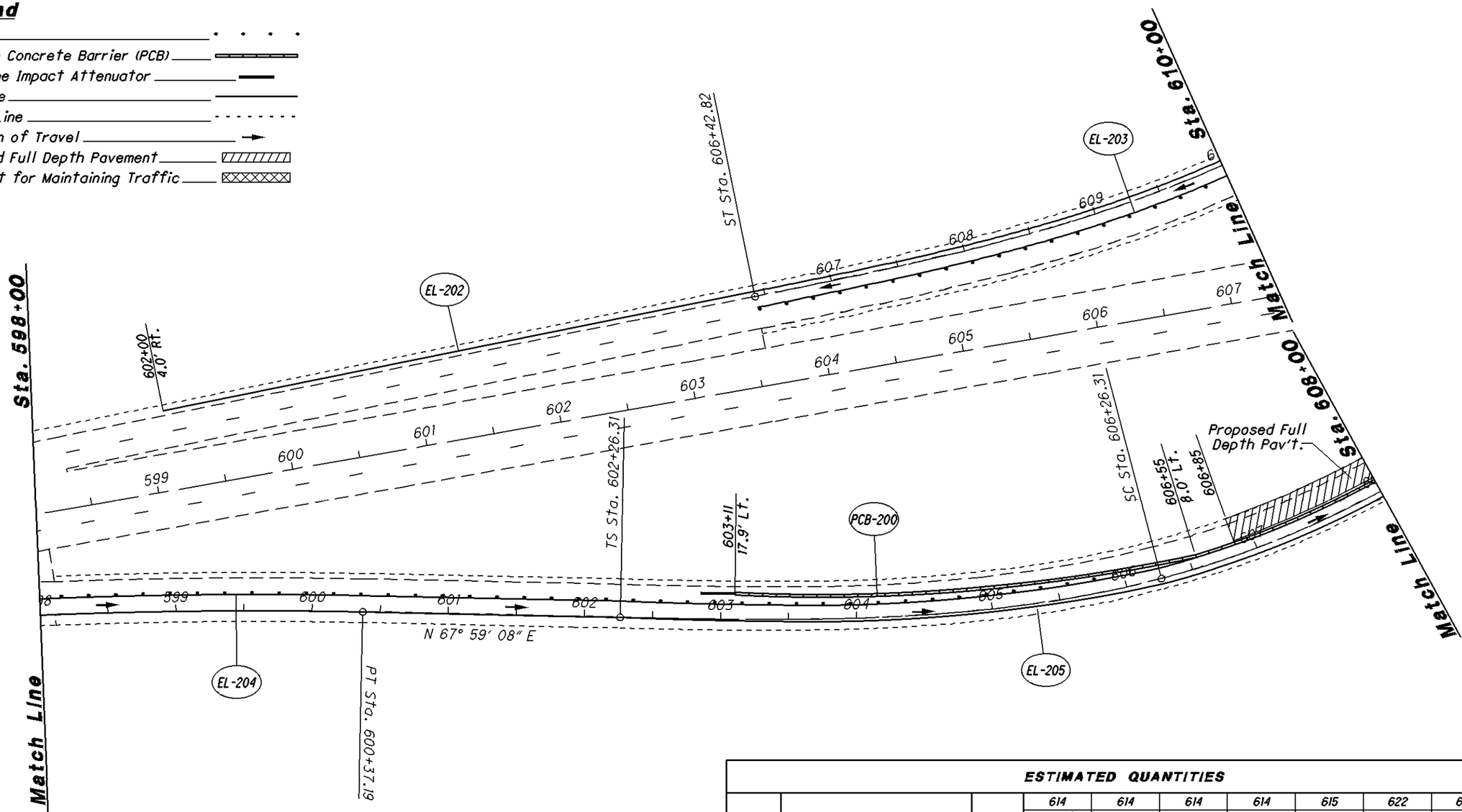
Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE EDGE LINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-202	602+00, W.B.	610+00, W.B.	Lt.				0.10			
EL-203	606+43, W.B.	610+00, W.B.	Rt.				0.07			
EL-204	598+00, E.B.	608+00, E.B.	Lt.				0.19			
EL-205	598+00, E.B.	608+00, E.B.	Rt.				0.19			
PCB-200	603+11, E.B.	608+00, E.B.	Lt.	1	21	21			490	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	21	21	0.55	0	490	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 603+00 to Sta. 615+00

ATH-33/50-15.05/11.46

56
222

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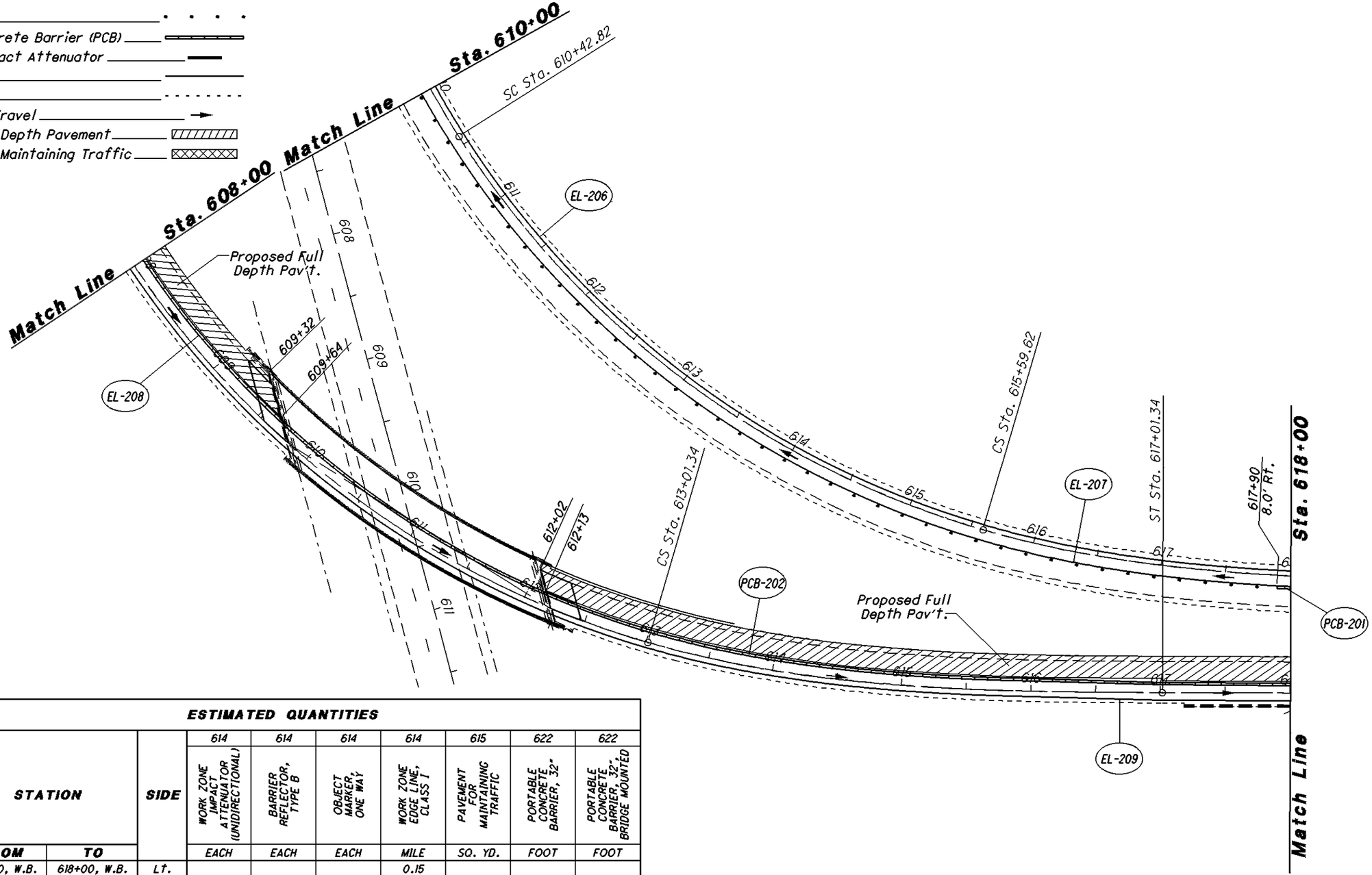
Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

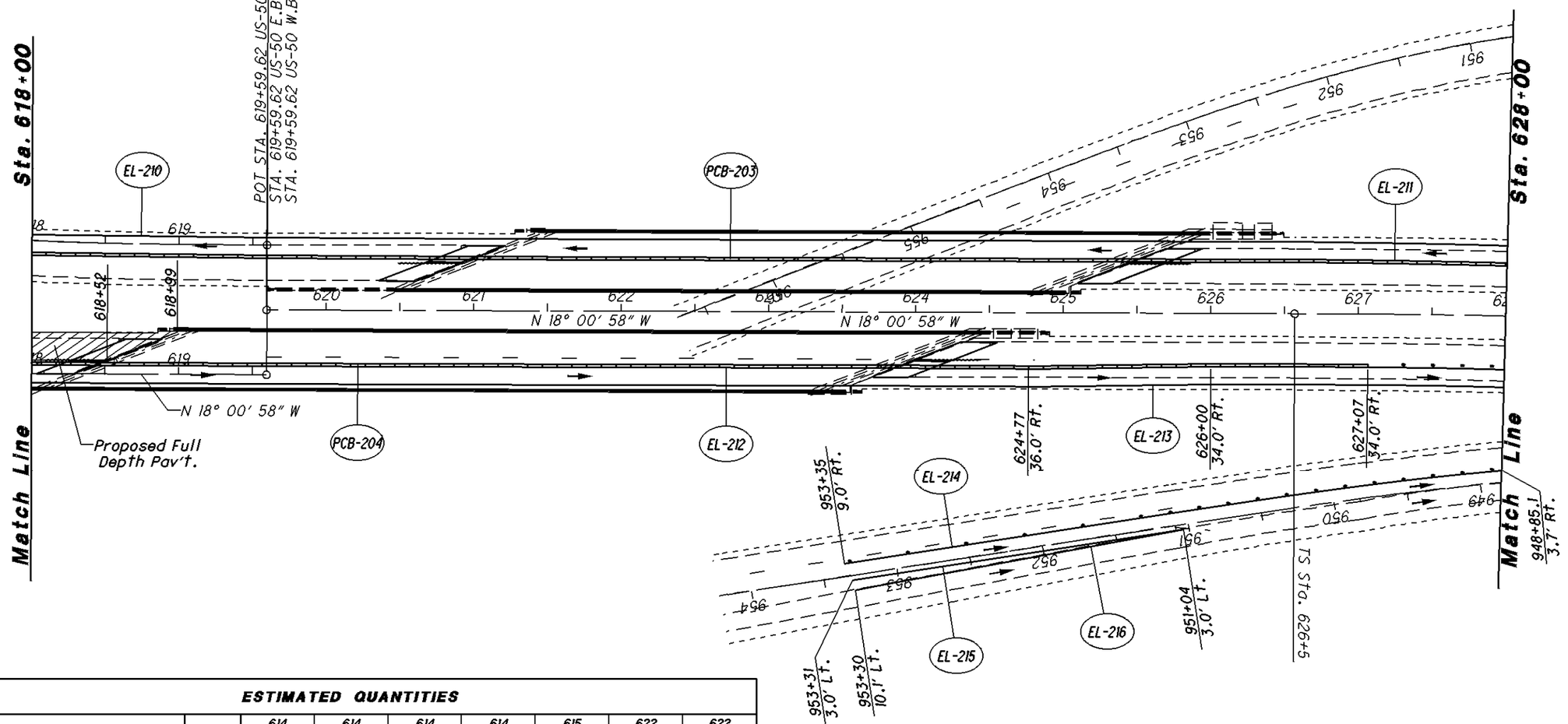
REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE EDGE LINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-206	610+00, W.B.	618+00, W.B.	Lt.				0.15			
EL-207	610+00, W.B.	618+00, W.B.	Rt.				0.15			
EL-208	608+00, E.B.	618+00, E.B.	Lt.				0.19			
EL-209	608+00, E.B.	618+00, E.B.	Rt.				0.19			
PCB-201	617+90, W.B.	618+00, W.B.	Rt.		1	1			10	
PCB-202	608+00, E.B.	618+00, E.B.	Lt.		40	40			1000	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	41	41	0.68	0	1010	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

TRAFFIC - PHASE 2
MAINTENANCE OF TRAFFIC Sta. 608+00 to Sta. 618+00

ATH-33/50-15.05/11.46



ESTIMATED QUANTITIES										
REF NO.	STATION		SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	614 BARRIER REFLECTOR, TYPE B	614 OBJECT MARKER, ONE WAY	614 WORK ZONE EDGE LINE, CLASS 1	615 PAVEMENT FOR MAINTAINING TRAFFIC	622 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED
	FROM	TO		EACH	EACH	EACH	MILE	SQ. YD.	FOOT	FOOT
EL-210	618+00, W.B.	628+00	Lt./Lt.				0.19			
EL-211	618+00, W.B.	628+00	Rt./Lt.				0.19			
EL-212	618+00, E.B.	628+00	Lt./Rt.				0.19			
EL-213	618+00, E.B.	628+00	Rt./Rt.				0.19			
EL-214	948+85, Ramp	953+35, Ramp	Rt.				0.09			
EL-215	951+04, Ramp	953+31, Ramp	℄				0.04			
EL-216	951+04, Ramp	953+30, Ramp	Lt.				0.04			
PCB-203	618+00, W.B.	628+00	Lt.		40	40			1000	
PCB-204	618+00, E.B.	627+07	Rt.		37	37			910	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	77	77	0.93	0	1910	0

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 618+00 to Sta. 628+00

ATH-33/50-15.05/11.46

58
222

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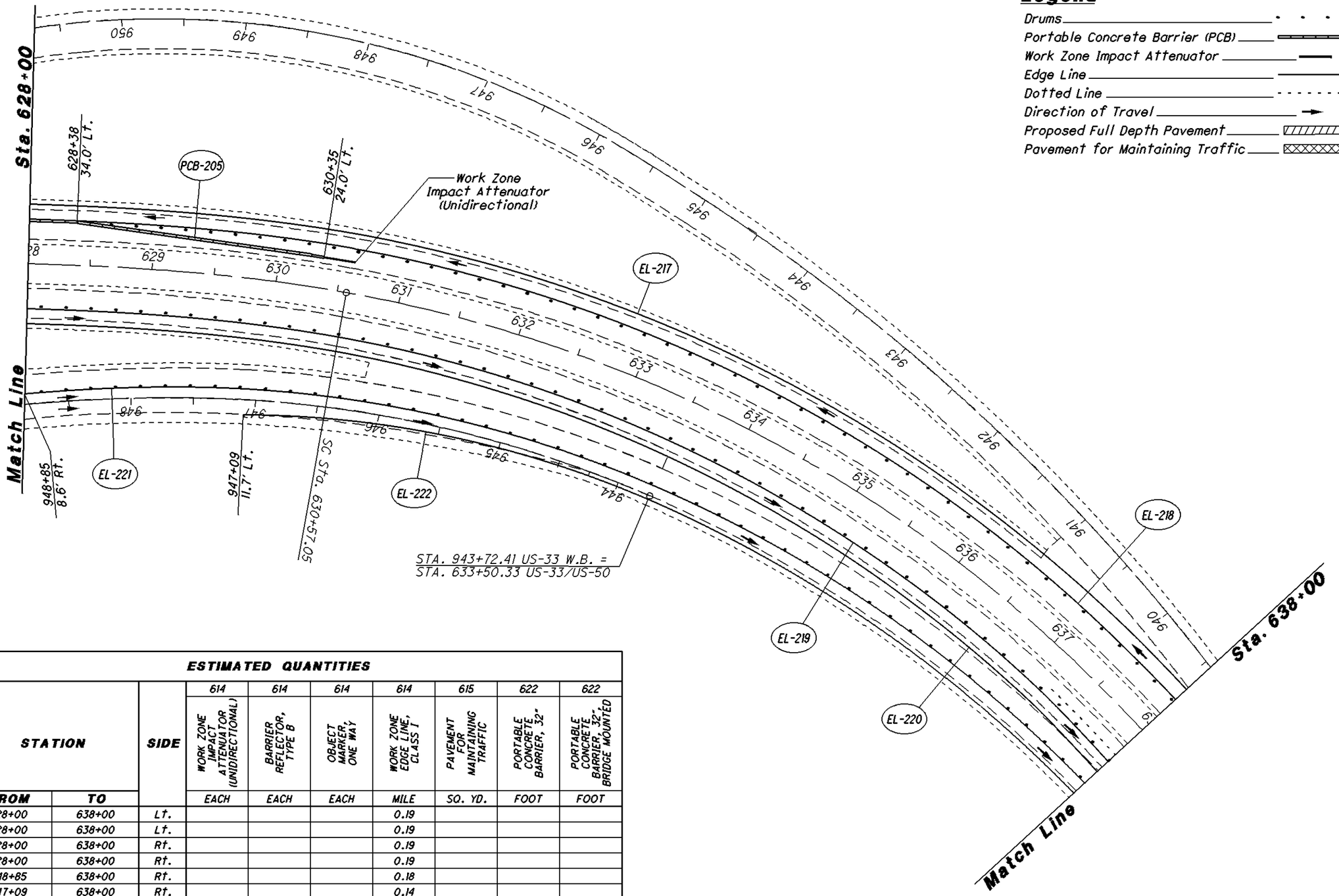


Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

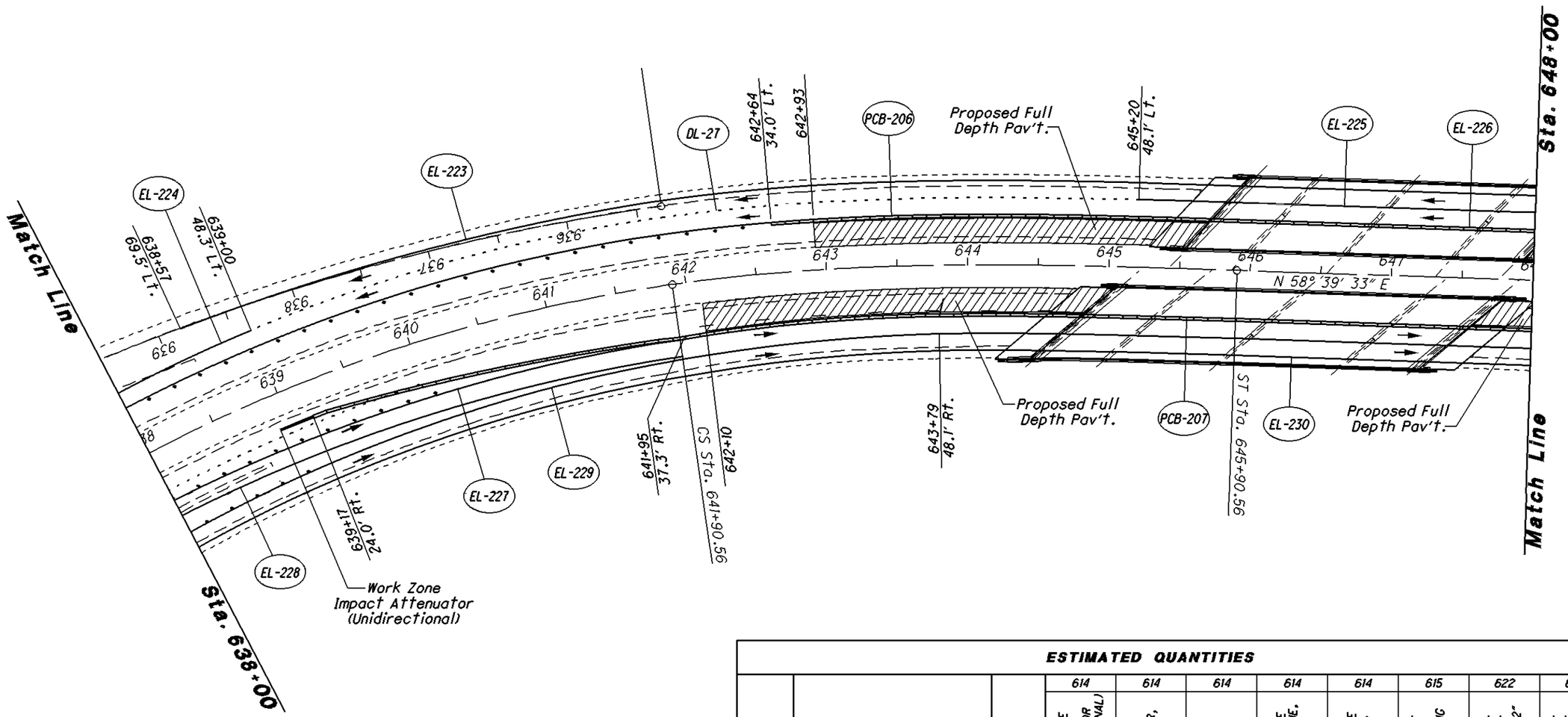
MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 628+00 to Sta. 638+00

ATH-33/50-15.05/11.46

59
75

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE EDGE LINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-217	628+00	638+00	Lt.				0.19			
EL-218	628+00	638+00	Lt.				0.19			
EL-219	628+00	638+00	Rt.				0.19			
EL-220	628+00	638+00	Rt.				0.19			
EL-221	948+85	638+00	Rt.				0.18			
EL-222	947+09	638+00	Rt.				0.14			
PCB-205	628+00	630+35	Lt.	1	11	11			240	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	11	11	1.08	0	240	0



Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-223	638+57	648+00	Lt.					0.18			
EL-224	638+00	639+00	Lt.					0.02			
EL-225	645+20	648+00	Lt.					0.05			
EL-226	638+00	648+00	Lt.					0.19			
EL-227	638+00	648+00	Rt.					0.19			
EL-228	638+00	641+91	Rt.					0.08			
EL-229	638+00	648+00	Rt.					0.19			
EL-230	638+00	648+00	Rt.					0.19			
DL-27	639+00	645+20	Rt.				620				
PCB-206	645+20	648+00	Lt.		22	22				540	
PCB-207	641+14	648+00	Rt.	1	36	36				870	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	58	58	620	1.09	0	1410	0

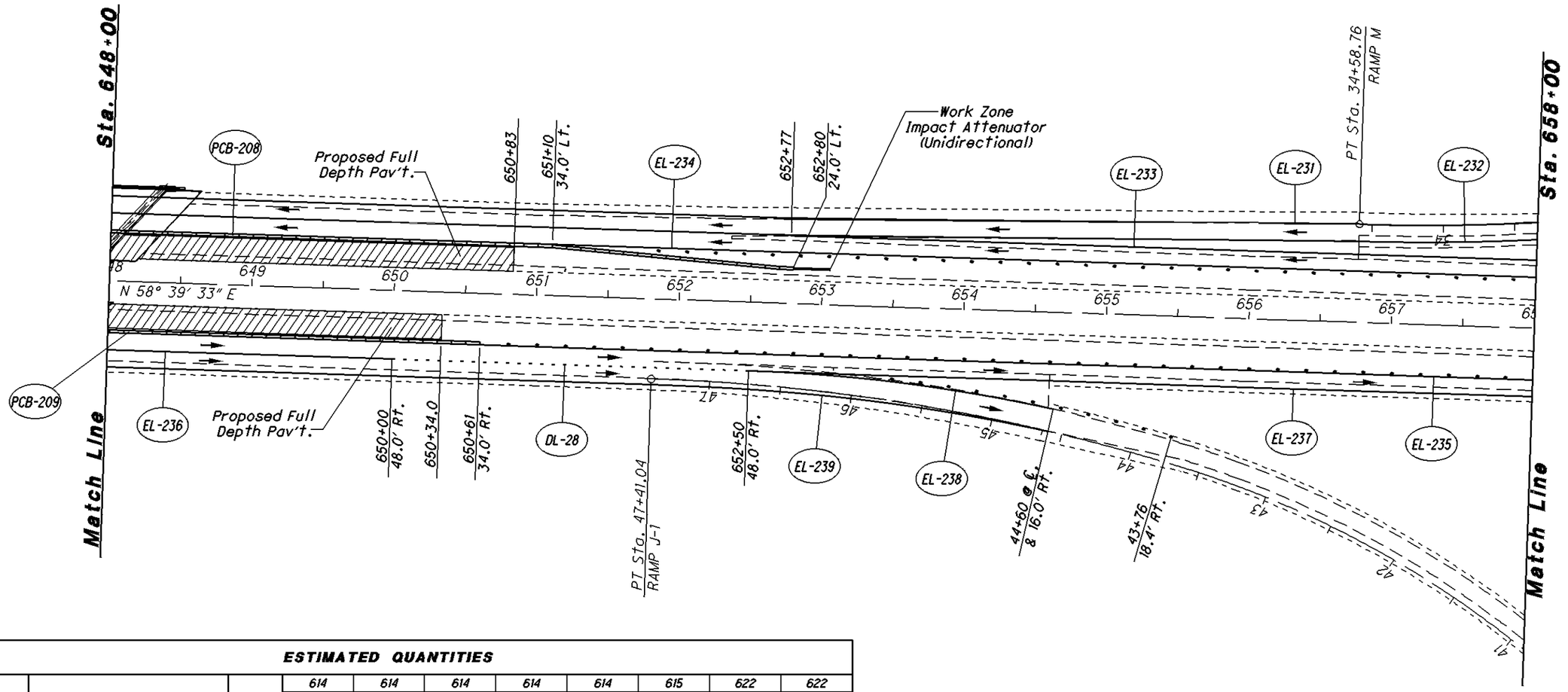
HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 638+00 to Sta. 648+00

ATH-33/50-15.05/11.46

60
222



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	614 BARRIER REFLECTOR, TYPE B	614 OBJECT MARKER, ONE WAY	614 WORK ZONE DOTTED LINE, CLASS I	614 WORK ZONE EDGELINE, CLASS I	615 PAVEMENT FOR MAINTAINING TRAFFIC	622 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED
				EACH	EACH	EACH	FOOT	MILE	SQ. YD.	FOOT	FOOT
EL-231	648+00	658+00	Lt.					0.19			
EL-232	648+00	658+00	Lt.					0.19			
EL-233	652+77	658+00	Lt.					0.10			
EL-234	648+00	658+00	Lt.					0.19			
EL-235	648+00	658+00	Rt.					0.19			
EL-236	648+00	650+00	Rt.					0.04			
EL-237	652+50	658+00	Rt.					0.10			
EL-238	652+50	44+60, Ramp	Rt./Lt.					0.04			
EL-239	648+00	44+60, Ramp	Rt./℄					0.13			
DL-28	650+00	652+50	Rt.				250				
PCB-208	648+00	652+80	Lt.	1	21	21				480	
PCB-209	648+00	650+61	Rt.		11	11				260	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	32	32	250	1.17	0	740	0

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

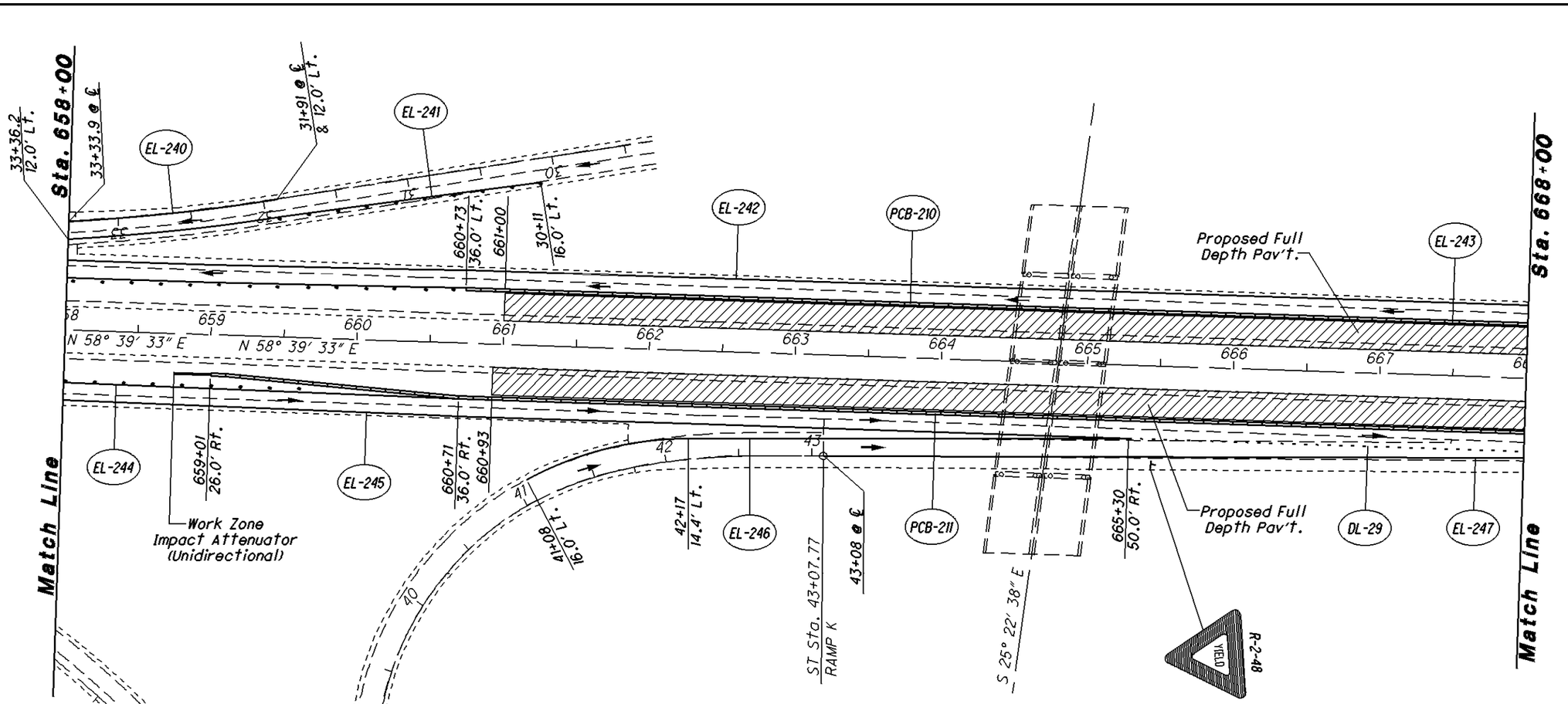
HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 648+00 to Sta. 658+00

ATH-33/50-15.05/11.46

61
222



Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32" BRIDGE MOUNTED FOOT
EL-240	31+90, Ramp	33+34, Ramp	℄					0.03			
EL-241	30+11, Ramp	33+36, Ramp	Lt.					0.06			
EL-242	658+00	668+00	Lt.					0.19			
EL-243	658+00	668+00	Lt.					0.19			
EL-244	658+00	668+00	Rt.					0.19			
EL-245	658+00	665+30	Rt.					0.14			
EL-246	41+08, Ramp	665+30	Lt./Rt.					0.08			
EL-247	43+08, Ramp	668+00	℄/Rt.					0.09			
PCB-210	660+73	668+00	Lt.		30	30				730	
PCB-211	659+01	668+00	Rt.	1	37	37				900	
DL-29	665+30	668+00	Rt.				270				
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	67	67	270	0.97	0	1630	0

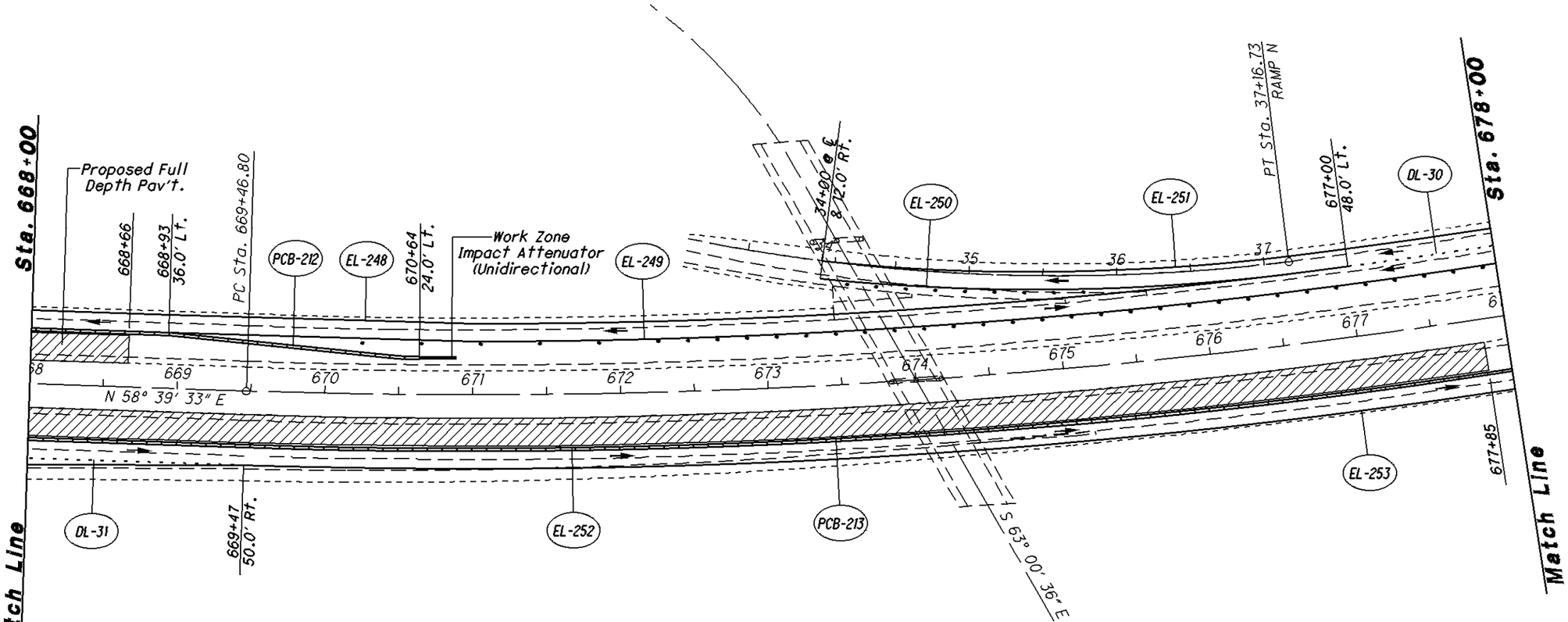
HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 658+00 to Sta. 668+00

ATH-33/50-15.05/11.46

62
222



Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-248	668+00	677+00	Lt.					0.17			
EL-249	668+00	678+00	Lt.					0.19			
EL-250	34+00, Ramp	677+00	Rt./Lt.					0.07			
EL-251	34+00, Ramp	678+00	Lt./Lt.					0.09			
EL-252	668+00	678+00	Rt.					0.19			
EL-253	668+00	678+00	Rt.					0.19			
PCB-212	668+00	670+64	Lt.	1	12	12				260	
PCB-213	668+00	678+00	Rt.		40	40				1000	
DL-30	677+00	678+00	Lt.				100				
DL-31	668+00	669+47	Rt.				147				
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	52	52	247	0.90	0	1260	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 668+00 to Sta. 678+00

ATH-33/50-15.05/11.46

63
222

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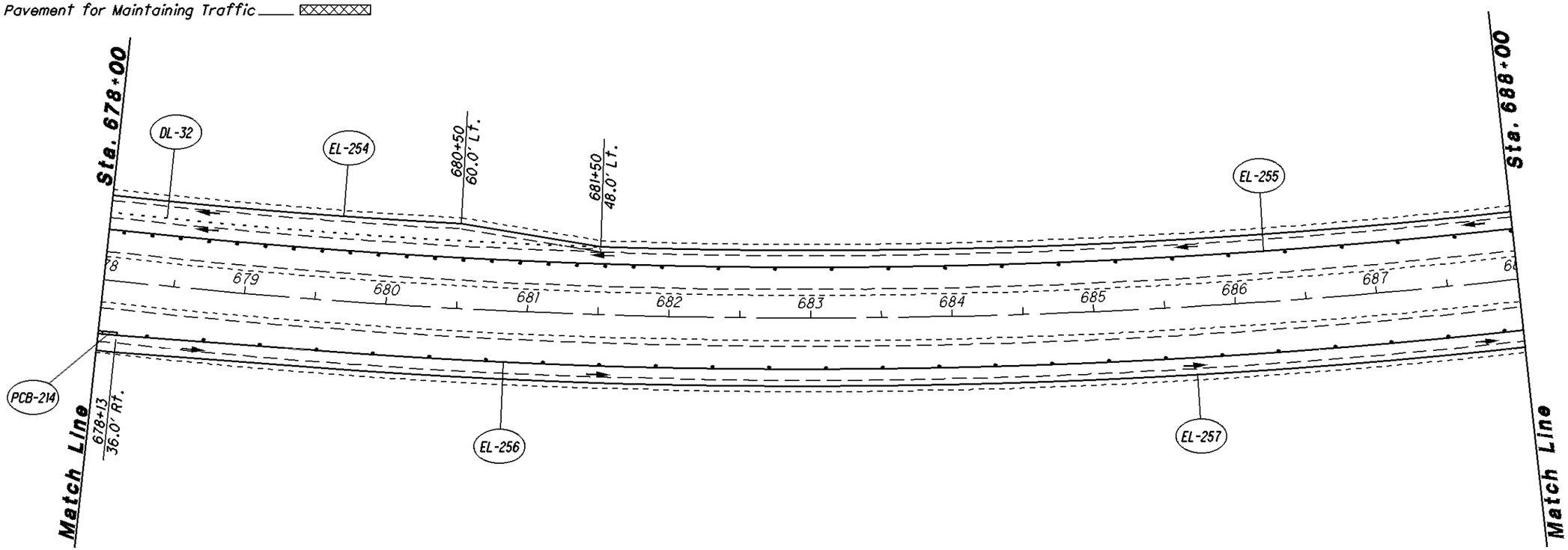
Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGELINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-254	678+00	688+00	Lt.					0.19			
EL-255	678+00	688+00	Lt.					0.19			
EL-256	678+00	688+00	Rt.					0.19			
EL-257	678+00	688+00	Rt.					0.19			
PCB-214	678+00	678+13	Rt.		1	1				20	
DL-32	678+00	681+50	Lt.				350				
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 19 of 222.				0	1	1	350	0.76	0	20	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 678+00 to Sta. 688+00

ATH-33/50-15.05/11.46

64
222

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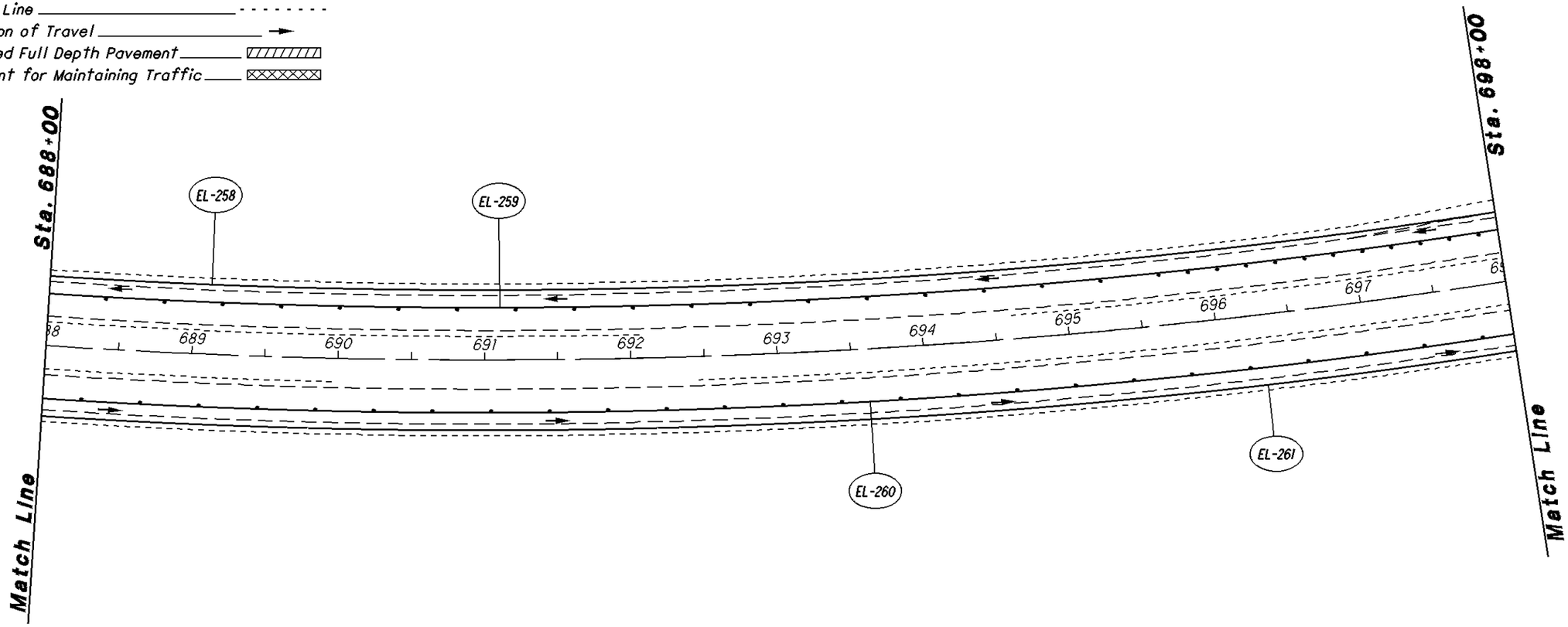
Legend

Drums
Portable Concrete Barrier (PCB)
Work Zone Impact Attenuator
Edge Line
Dotted Line
Direction of Travel
Proposed Full Depth Pavement
Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGELINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-258	688+00	698+00	Lt.					0.19			
EL-259	688+00	698+00	Lt.					0.19			
EL-260	688+00	698+00	Rt.					0.19			
EL-261	688+00	698+00	Rt.					0.19			
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	0	0	0	0.76	0	0	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

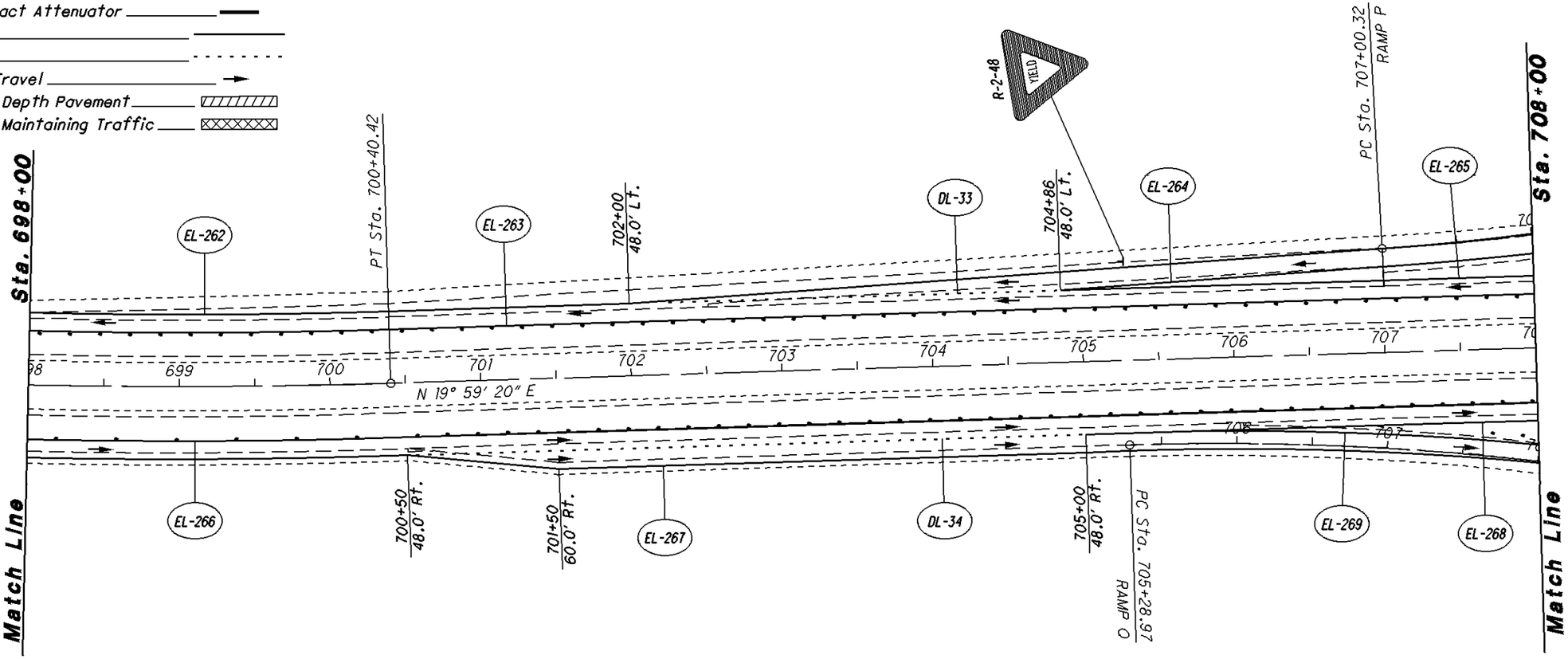
MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 688+00 to Sta. 698+00

ATH-33/50-15.06/11.46

65
222

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-262	698+00	708+00	Lt.					0.19			
EL-263	698+00	708+00	Lt.					0.19			
EL-264	704+86	708+00	Lt.					0.06			
EL-265	704+86	708+00	Lt.					0.06			
EL-266	698+00	708+00	Rt.					0.19			
EL-267	698+00	708+00	Rt.					0.19			
EL-268	705+00	708+00	Rt.					0.06			
EL-269	705+00	708+00	Rt.					0.06			
DL-33	702+00	704+86	Lt.				286				
DL-34	700+50	705+00	Rt.				450				
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	0	0	736	1.00	0	0	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 698+00 to Sta. 708+00

ATH-33/50-15.05/11.46

66
222

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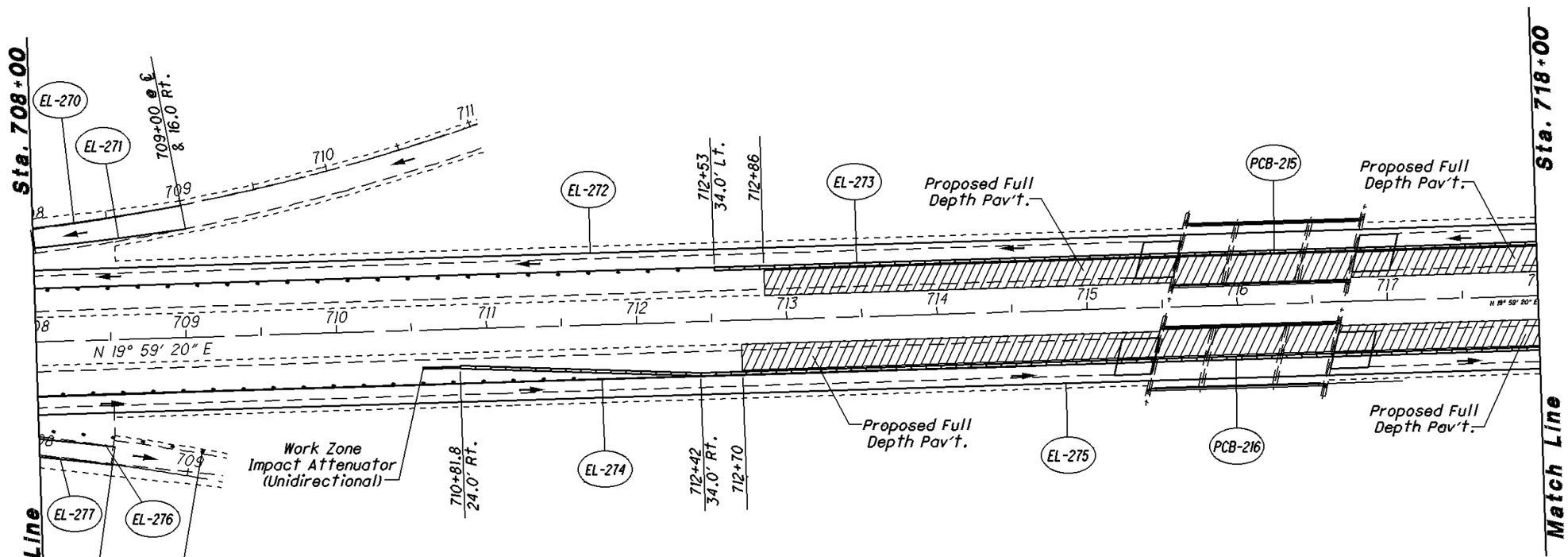


Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	614 BARRIER REFLECTOR, TYPE B	614 OBJECT MARKER, ONE WAY	614 WORK ZONE DOTTED LINE, CLASS 1	614 WORK ZONE EDGELINE, CLASS 1	615 PAVEMENT FOR MAINTAINING TRAFFIC	622 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED
				EACH	EACH	EACH	FOOT	MILE	SQ. YD.	FOOT	FOOT
EL-270	708+00, Ramp	709+00, Ramp	℄					0.02			
EL-271	708+00, Ramp	709+00, Ramp	Rt.					0.02			
EL-272	708+00	718+00	Lt.					0.19			
EL-273	708+00	718+00	Lt.					0.19			
EL-274	708+00	718+00	Rt.					0.19			
EL-275	708+00	718+00	Rt.					0.19			
EL-276	708+00, Ramp	708+50, Ramp	Lt.					0.01			
EL-277	708+00, Ramp	708+50, Ramp	℄					0.01			
PCB-215	712+52	718+00	Lt.		22	22				550	
PCB-216	710+82	718+00	Rt.	1	30	30				720	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	52	52	0	0.82	0	1270	0

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK
CHECKED ALC

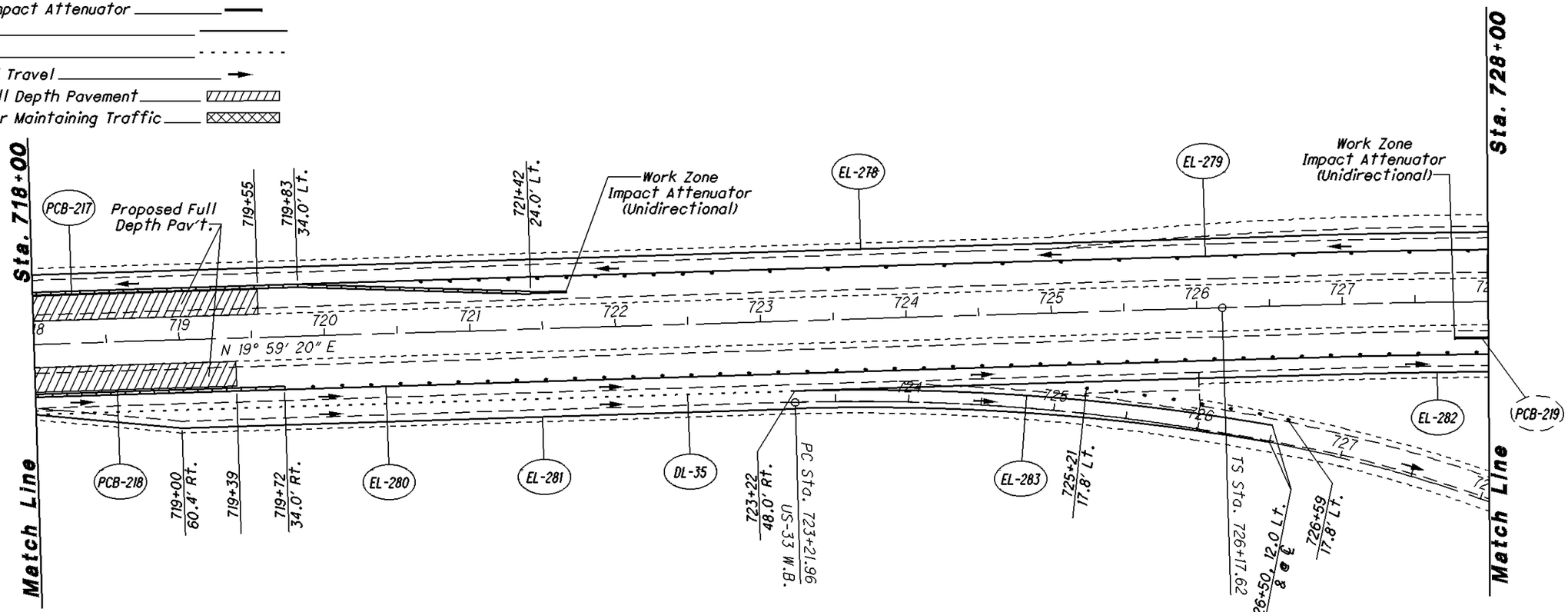
MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 708+00 to Sta. 718+00

ATH-33/50-15.05/11.46

67
222

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE, BARRIER, 32", BRIDGE MOUNTED FOOT
EL-278	718+00	728+00	Lt.					0.19			
EL-279	718+00	728+00	Lt.					0.19			
EL-280	718+00	728+00	Rt.					0.19			
EL-281	718+00	726+50, Ramp	Rt./Rt.					0.16			
EL-282	723+22	728+00	Rt.					0.09			
EL-283	723+22	726+50, Ramp	Rt./Lt.					0.06			
DL-35	718+00	723+22	Rt.				522				
PCB-217	718+00	721+42	Lt.	1	15	15				340	
PCB-218	718+00	719+72	Rt.		7	7				170	
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 19 of 222.				1	22	22	522	0.88	0	510	0

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 718+00 to Sta. 728+00

ATH-33/50-15.05/11.46

68
222

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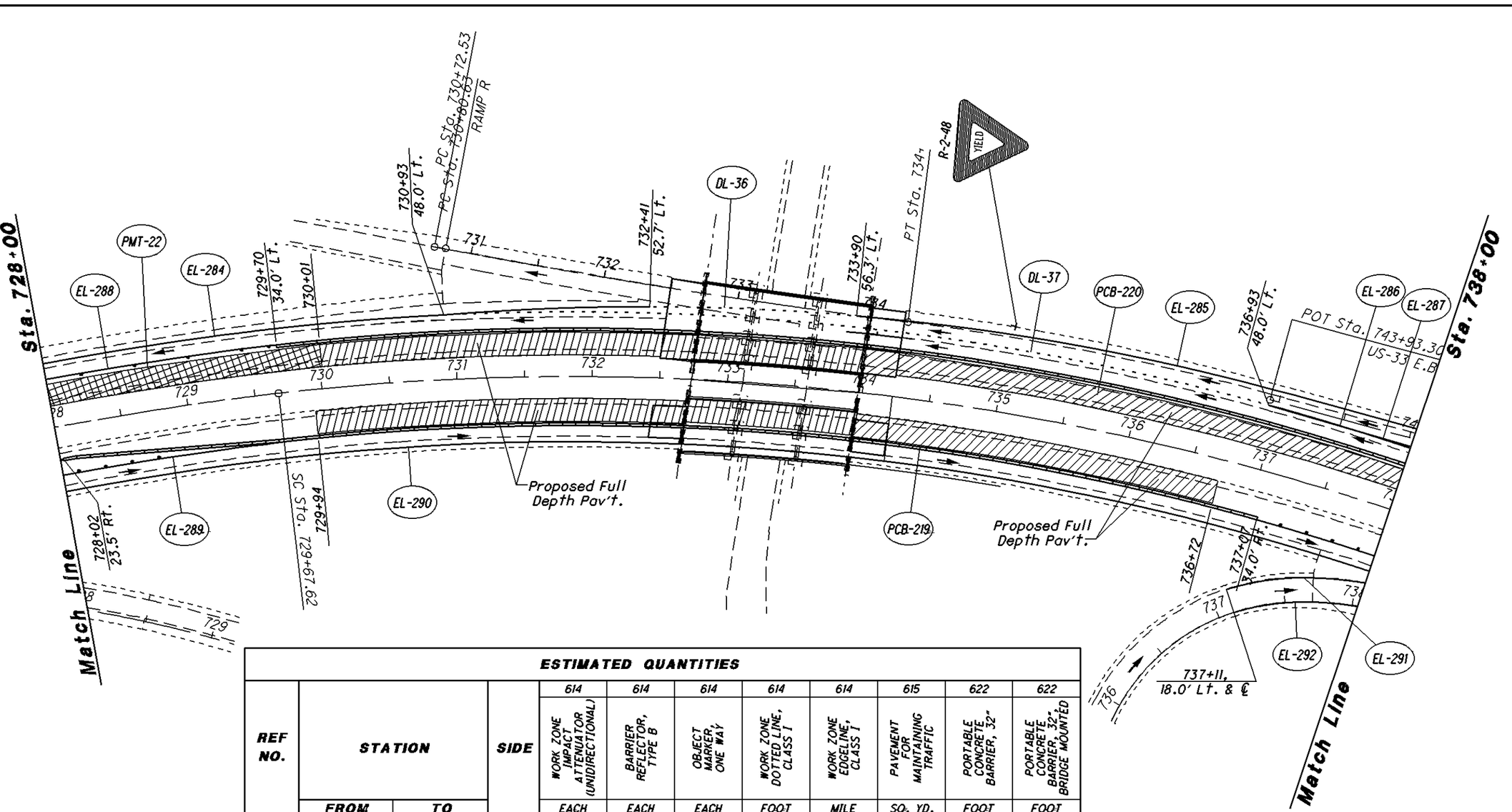

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGELINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-284	728+00	732+41	Lt.					0.08			
EL-285	733+90	738+00	Lt.					0.08			
EL-286	736+93	738+00	Lt.					0.02			
EL-287	736+93	738+00	Lt.					0.02			
EL-288	728+00	738+00	Lt.					0.19			
EL-289	728+00	738+00	Rt.					0.19			
EL-290	728+00	738+00	Rt.					0.19			
EL-291	737+11, Ramp	738+00	Rt.					0.02			
EL-292	737+11, Ramp	738+00	Rt.					0.02			
DL-36	732+41	733+90	Lt.				149				
DL-37	730+93	736+93	Lt.				600				
PCB-219	728+02	737+02	Rt.	1	37	37				900	
PCB-220	729+70	738+00	Lt.		34	34				830	
PMT-22	728+00	731+00	Lt.						369		
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 10 of 222.				1	71	71	749	0.81	369	1730	0

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 728+00 to Sta. 738+00

ATH-33/50-15.05/11.46

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222

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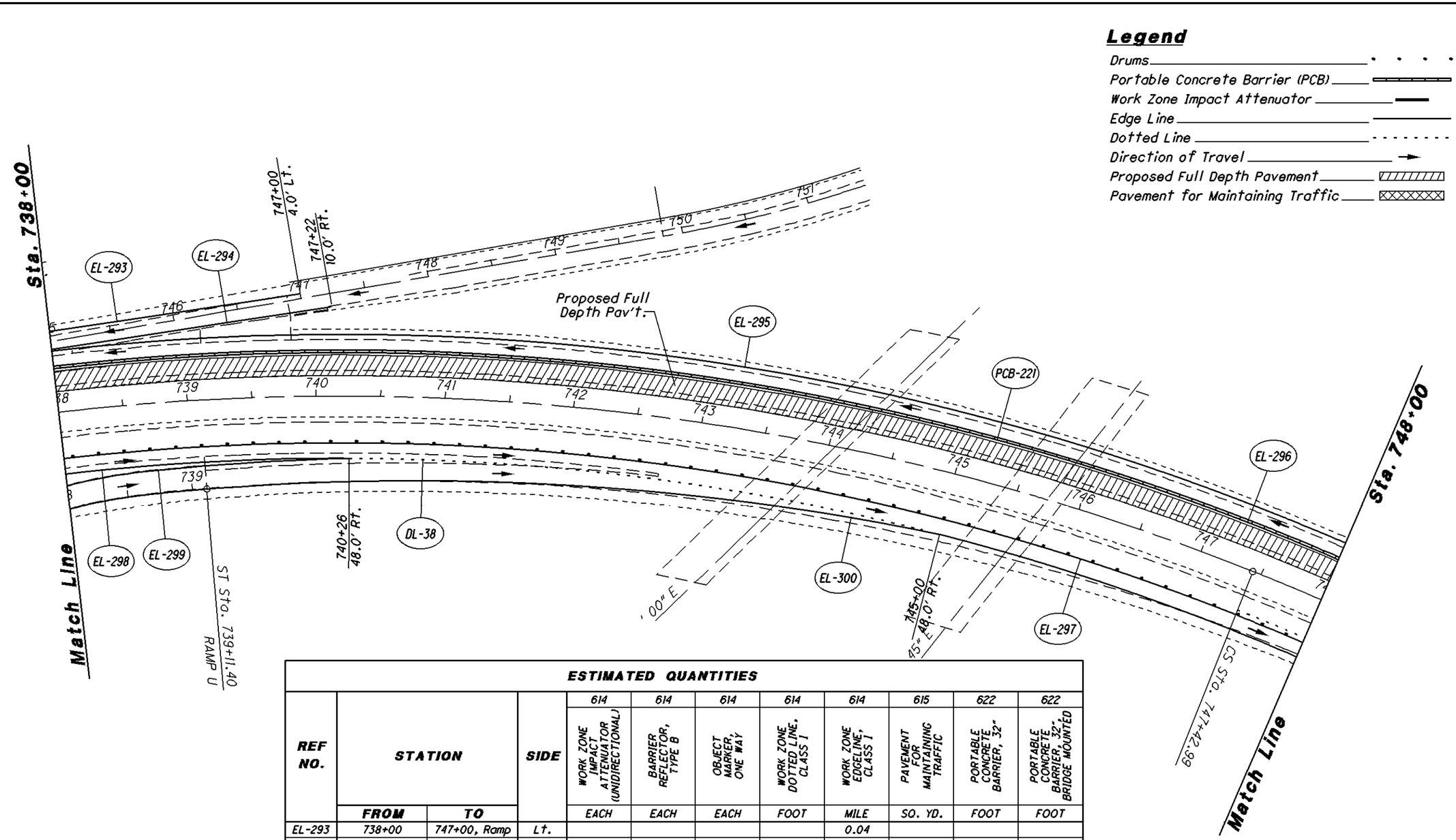

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-293	738+00	747+00, Ramp	Lt.					0.04			
EL-294	738+00	747+22, Ramp	Lt./Rt.					0.04			
EL-295	738+00	748+00	Lt.					0.19			
EL-296	738+00	748+00	Lt.					0.19			
EL-297	738+00	748+00	Rt.					0.19			
EL-298	738+00	740+26	Rt.					0.04			
EL-299	738+00	740+26	Rt.					0.04			
EL-300	738+00	748+00	Rt.					0.19			
DL-38	740+26	745+00	Rt.				474				
PCB-221	738+00	748+00	Lt.		40	40				1000	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	40	40	474	0.92	0	1000	0

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 738+00 to Sta. 748+00

ATH-33/50-15.05/11.46

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222

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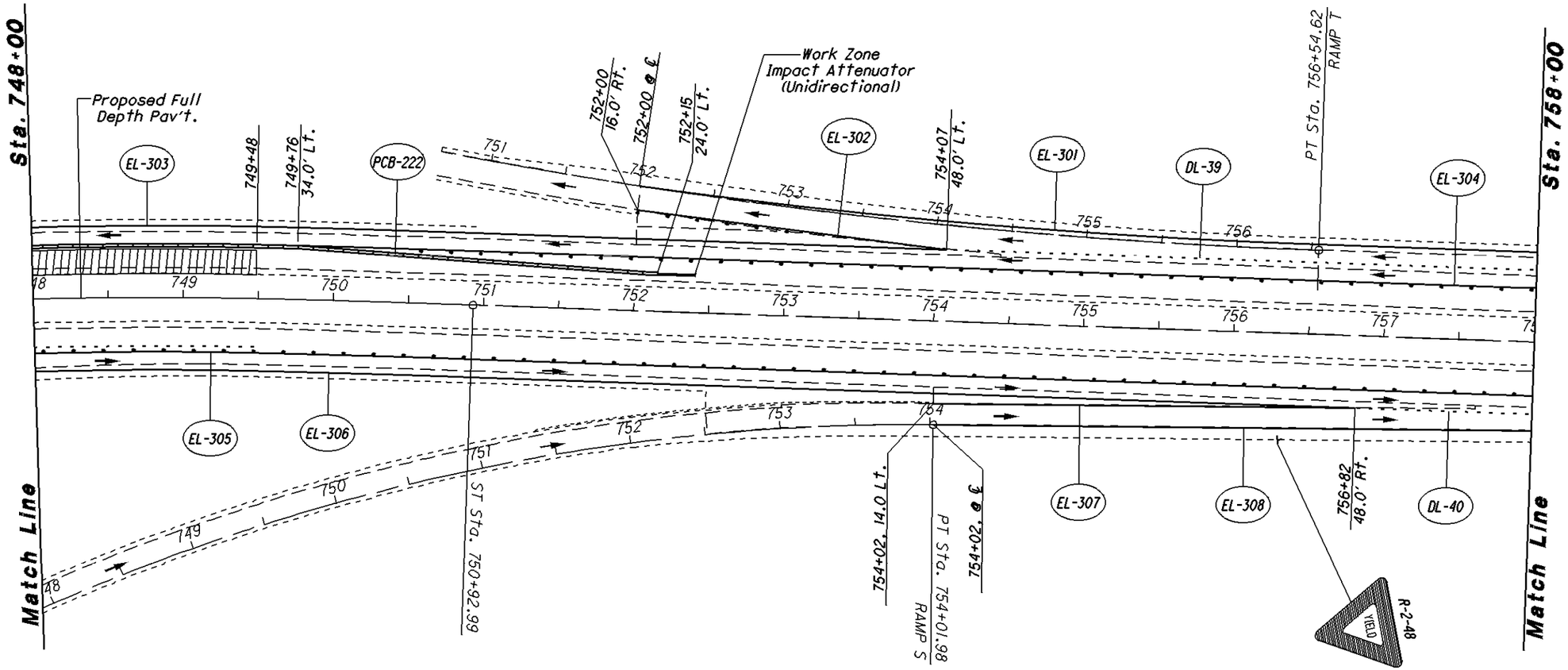

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGELINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-301	752+00, Ramp	758+00	℄/Lt.					0.11			
EL-302	752+00, Ramp	754+07	Rt./Lt.					0.04			
EL-303	748+00	754+07	Lt.					0.11			
EL-304	748+00	758+00	Lt.					0.19			
EL-305	748+00	758+00	Rt.					0.19			
EL-306	748+00	756+82	Rt.					0.17			
EL-307	754+02, Ramp	756+82	Lt./Rt.					0.05			
EL-308	754+02, Ramp	758+00	℄/Rt.					0.08			
DL-39	754+07	758+00	Lt.				393				
DL-40	756+82	758+00	Rt.				118				
PCB-222	748+00	752+15	Lt.	1	18	18				420	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	18	18	511	0.94	0	420	0

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 748+00 to Sta. 758+00

ATH-33/50-15.05/11.46

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222

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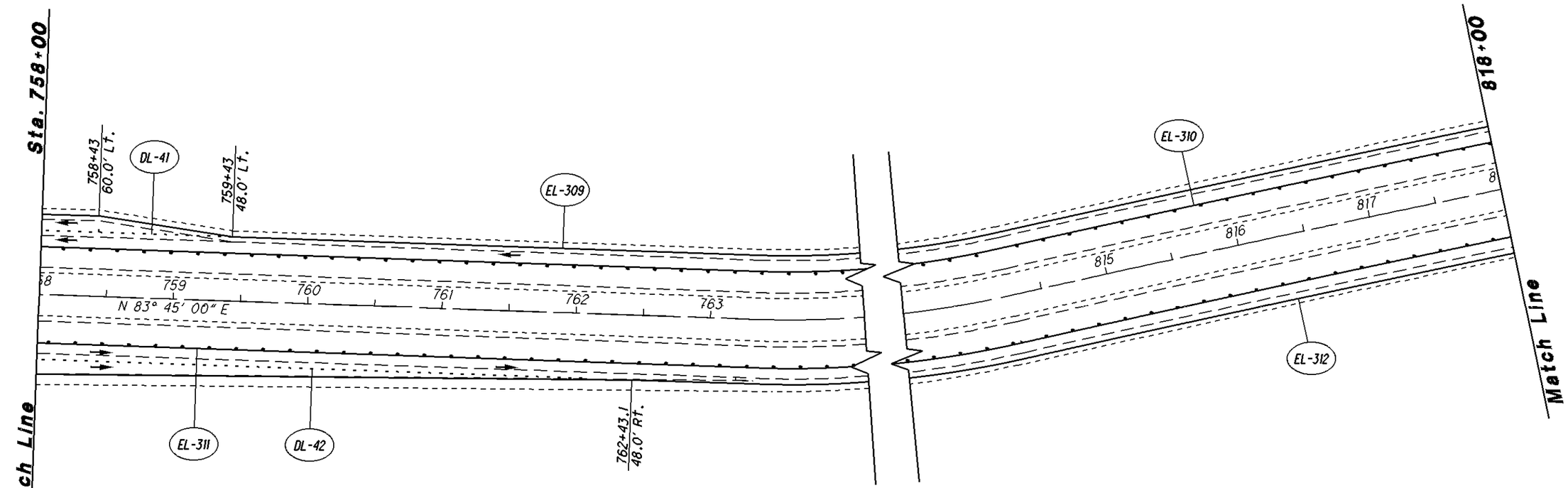
Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-309	758+00	818+00	Lt.					1.14			
EL-310	758+00	818+00	Lt.					1.14			
EL-311	758+00	818+00	Rt.					1.14			
EL-312	758+00	818+00	Rt.					1.14			
DL-41	758+00	759+43	Lt.				143				
DL-42	758+00	762+43	Rt.				443				
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 19 of 222.				0	0	0	586	4.56	0	0	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

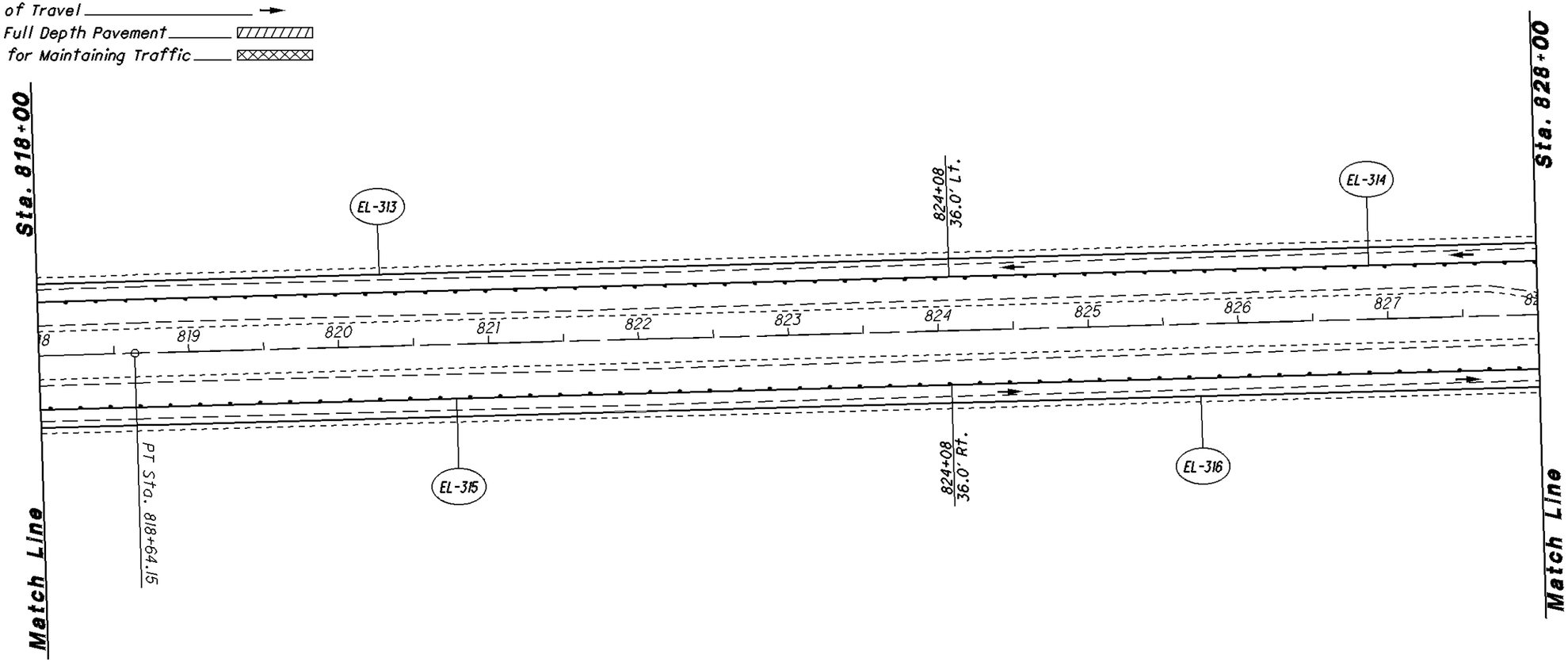
MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 758+00 to Sta. 818+00

ATH-33/50-15.05/11.46

72
222

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGELINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-313	818+00	828+00	Lt.					0.19			
EL-314	818+00	828+00	Lt.					0.19			
EL-315	818+00	828+00	Rt.					0.19			
EL-316	818+00	828+00	Rt.					0.19			
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	0	0	0	0.76	0	0	0

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 818+00 to Sta. 828+00

ATH-33/50-15.05/11.46

73
222

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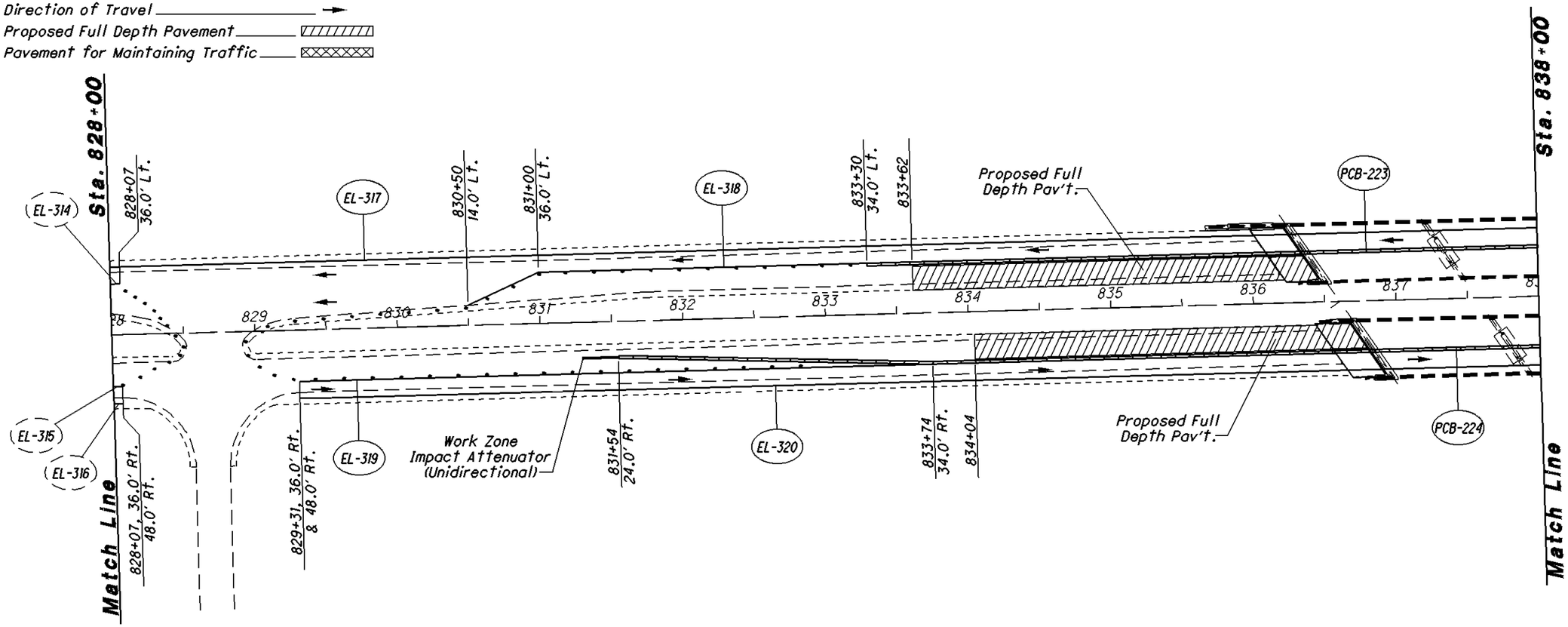
Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGELINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-317	828+00	838+00	Lt.					0.19			
EL-318	830+50	838+00	Lt.					0.14			
EL-319	829+31	838+00	Rt.					0.16			
EL-320	829+31	838+00	Rt.					0.16			
PCB-223	833+30	838+00	Lt.		19	19				470	
PCB-224	831+54	838+00	Rt.	1	27	27				650	
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 19 of 222.				1	46	46	0	0.65	0	1120	0

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 828+00 to Sta. 838+00

ATH-33/50-15.05/11.46

74
222

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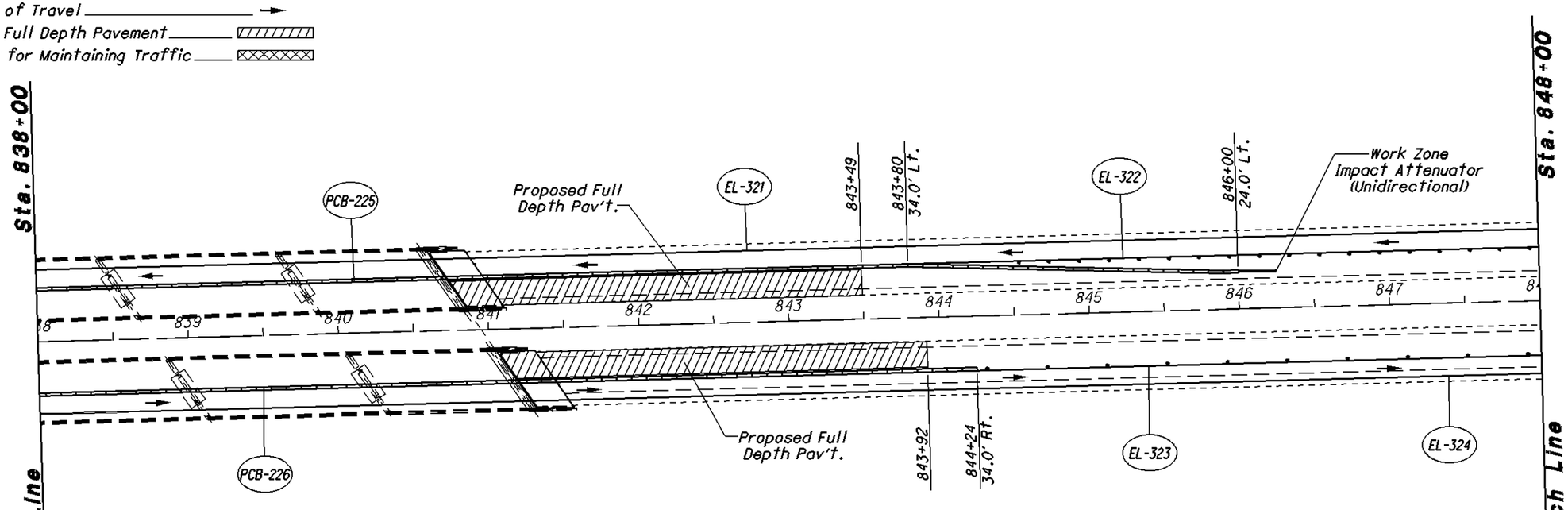
Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-321	838+00	848+00	Lt.					0.19			
EL-322	838+00	848+00	Lt.					0.19			
EL-323	838+00	848+00	Rt.					0.19			
EL-324	838+00	848+00	Rt.					0.19			
PCB-225	838+00	846+00	Lt.	1	33	33				800	
PCB-226	838+00	844+24	Rt.		26	26				630	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	59	59	0	0.76	0	1430	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

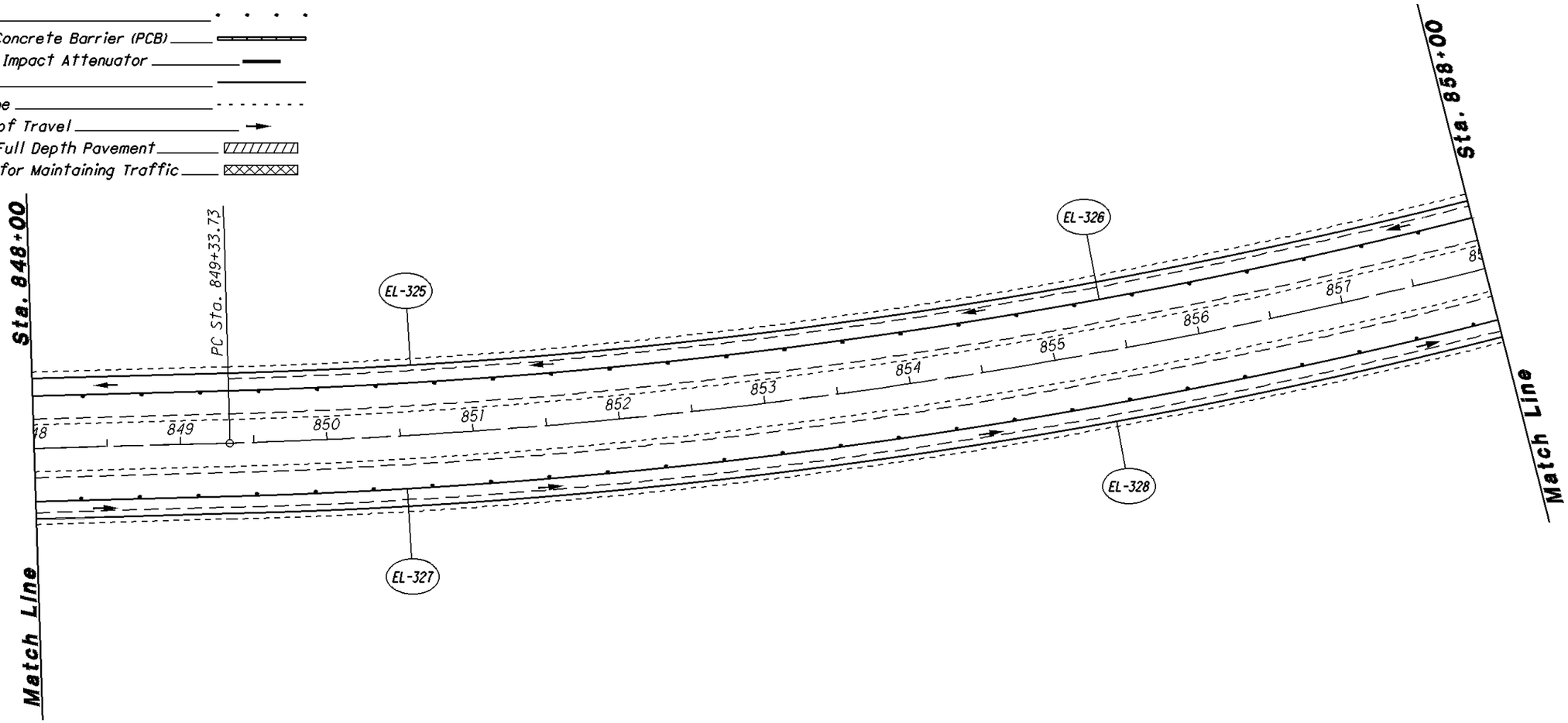
MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 838+00 to Sta. 848+00

ATH-33/50-15.05/11.46

75
222

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	614 BARRIER REFLECTOR, TYPE B	614 OBJECT MARKER, ONE WAY	614 WORK ZONE DOTTED LINE, CLASS I	614 WORK ZONE EDGELINE, CLASS I	615 PAVEMENT FOR MAINTAINING TRAFFIC	622 PORTABLE CONCRETE BARRIER, 32"	622 PORTABLE CONCRETE BARRIER, 32" BRIDGE MOUNTED
	FROM	TO		EACH	EACH	EACH	FOOT	MILE	SQ. YD.	FOOT	FOOT
EL-325	848+00	858+00	Lt.					0.19			
EL-326	848+00	858+00	Lt.					0.19			
EL-327	848+00	858+00	Rt.					0.19			
EL-328	848+00	858+00	Rt.					0.19			
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	0	0	0	0.76	0	0	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

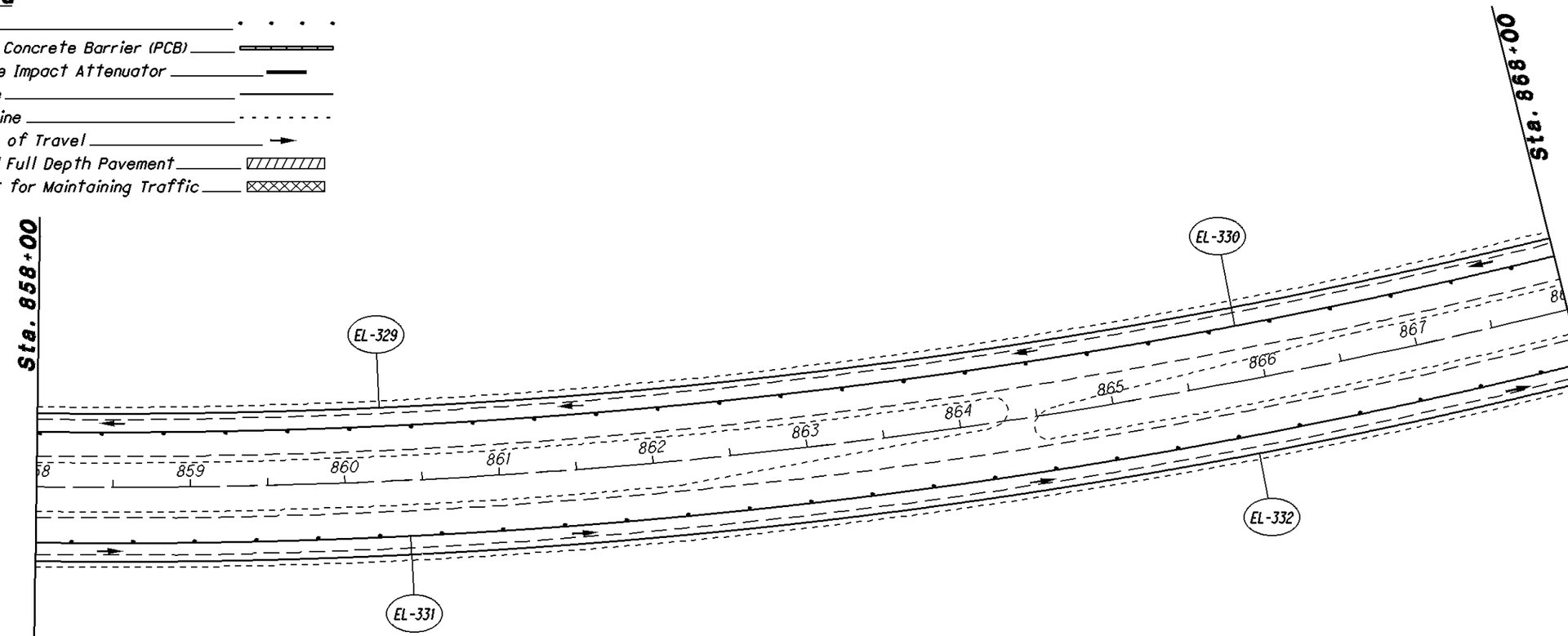
MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 848+00 to Sta. 858+00

ATH-33/50-15.05/11.46

76
222

Legend

Drums
Portable Concrete Barrier (PCB)
Work Zone Impact Attenuator
Edge Line
Dotted Line
Direction of Travel
Proposed Full Depth Pavement
Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32" BRIDGE MOUNTED FOOT
EL-329	858+00	868+00	Lt.					0.19			
EL-330	858+00	868+00	Lt.					0.19			
EL-331	858+00	868+00	Rt.					0.19			
EL-332	858+00	868+00	Rt.					0.19			
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	0	0	0	0.76	0	0	0

HORIZONTAL SCALE IN FEET
0 20 40 80
CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 858+00 to Sta. 868+00

ATH-33/50-15.05/11.46

77
222

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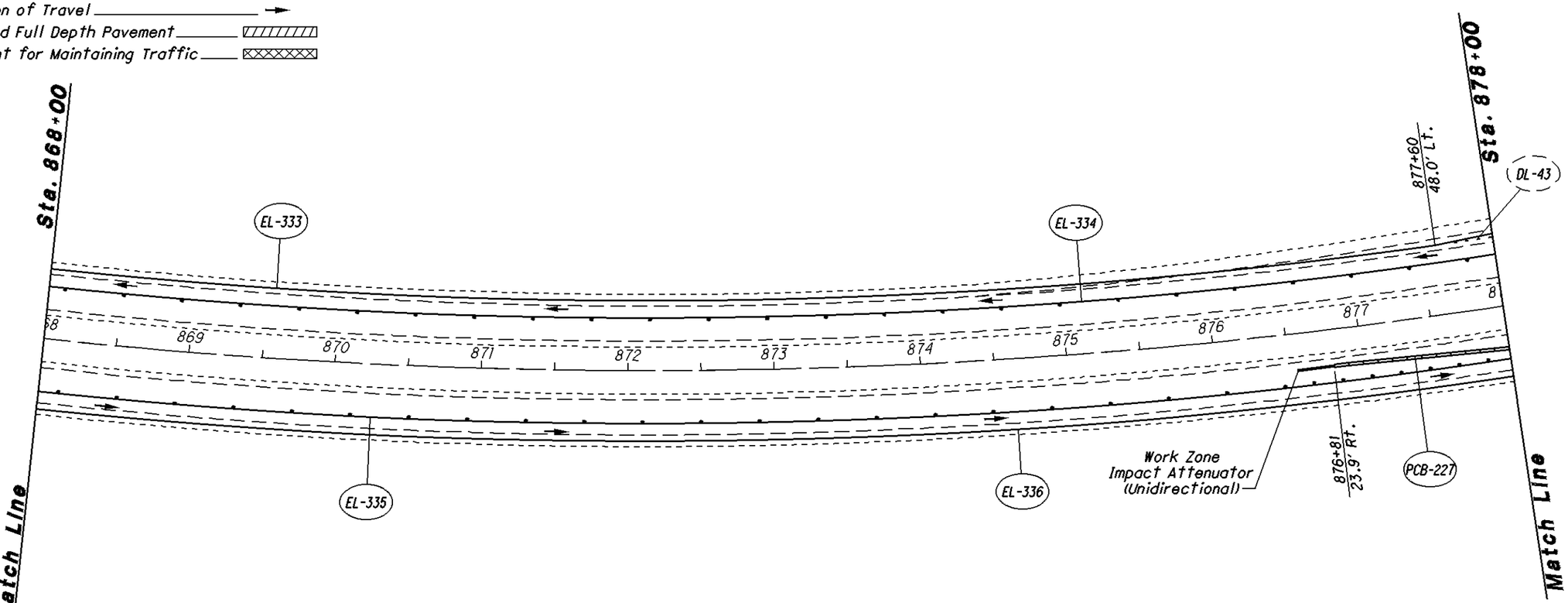
Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32" BRIDGE MOUNTED FOOT
EL-333	868+00	878+00	Lt.					0.19			
EL-334	868+00	878+00	Lt.					0.19			
EL-335	868+00	878+00	Rt.					0.19			
EL-336	868+00	878+00	Rt.					0.19			
PCB-227	876+81	878+00	Rt.	1	6	6				120	
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 19 of 222.				1	6	6	0	0.76	0	120	0

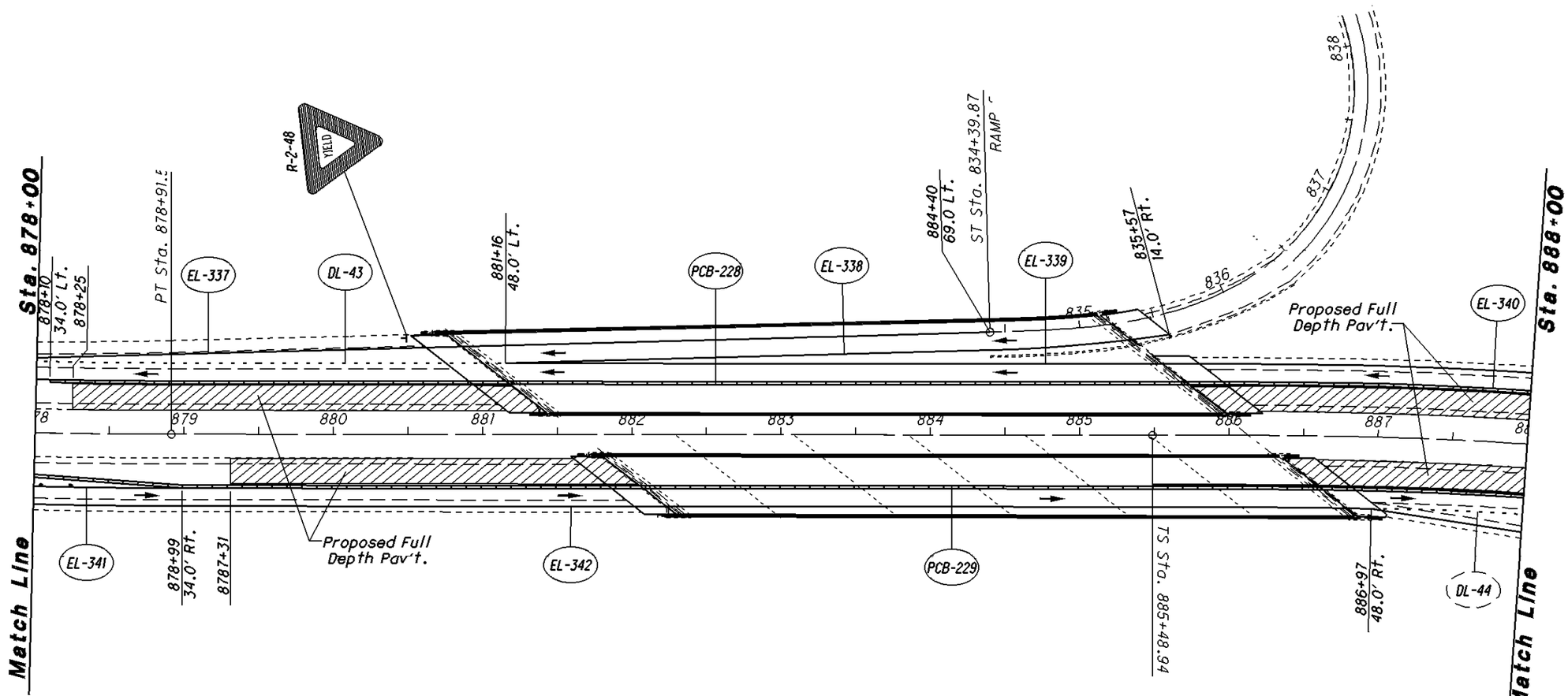
HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 868+00 to Sta. 878+00

ATH-33/50-15.05/11.46

78
222



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGELINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-337	878+00	884+40	Lt.					0.12			
EL-338	881+16	835+57, Ramp	Lt.					0.14			
EL-339	881+16	888+00	Lt.					0.13			
EL-340	878+00	888+00	Lt.					0.19			
EL-341	878+00	888+00	Rt.					0.19			
EL-342	878+00	888+00	Rt.					0.19			
DL-43	877+60	881+16	Lt.				356				
PCB-228	878+10	888+00	Lt.		40	40				990	
PCB-229	878+00	888+00	Rt.	1	40	40				1000	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	80	80	356	0.96	0	1990	0

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

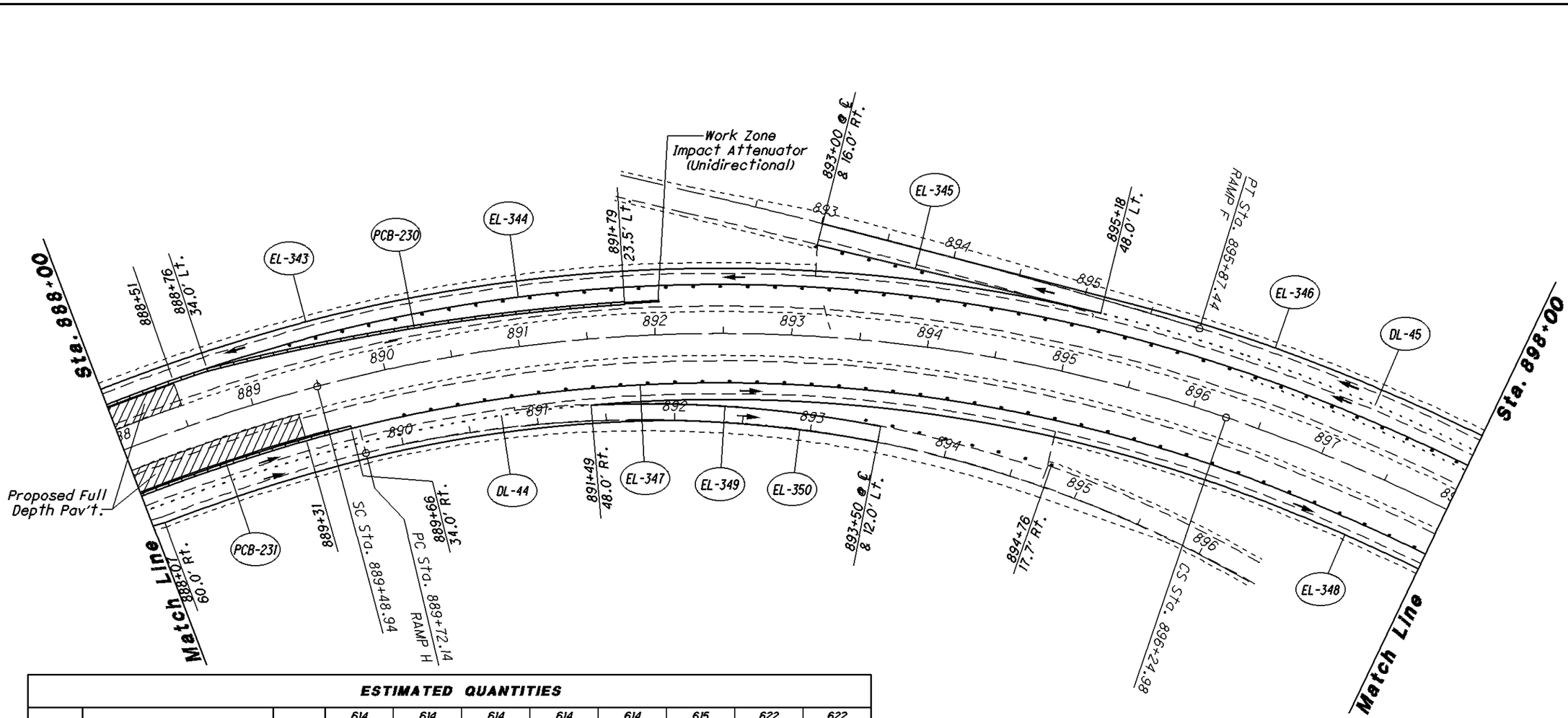
HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 878+00 to Sta. 888+00

ATH-33/50-15.05/11.46

79
222



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGELINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-343	888+00	895+18	Lt.					0.14			
EL-344	888+00	898+00	Lt.					0.19			
EL-345	893+00, Ramp	895+18	Rt./Lt.					0.04			
EL-346	893+00, Ramp	898+00	℄/Lt.					0.10			
EL-347	888+00	898+00	Rt.					0.19			
EL-348	891+49	898+00	Rt.					0.12			
EL-349	891+49	893+50, Ramp	Rt./Lt.					0.04			
EL-350	888+00	893+50, Ramp	Rt./℄					0.07			
DL-44	895+18	901+15	Lt.				597				
DL-45	886+97	891+49	Rt.				452				
PCB-230	888+00	891+79	Lt.	1	17	17				390	
PCB-231	888+00	889+66	Rt.		7	7				160	
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				1	24	24	1049	0.89	0	550	0

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

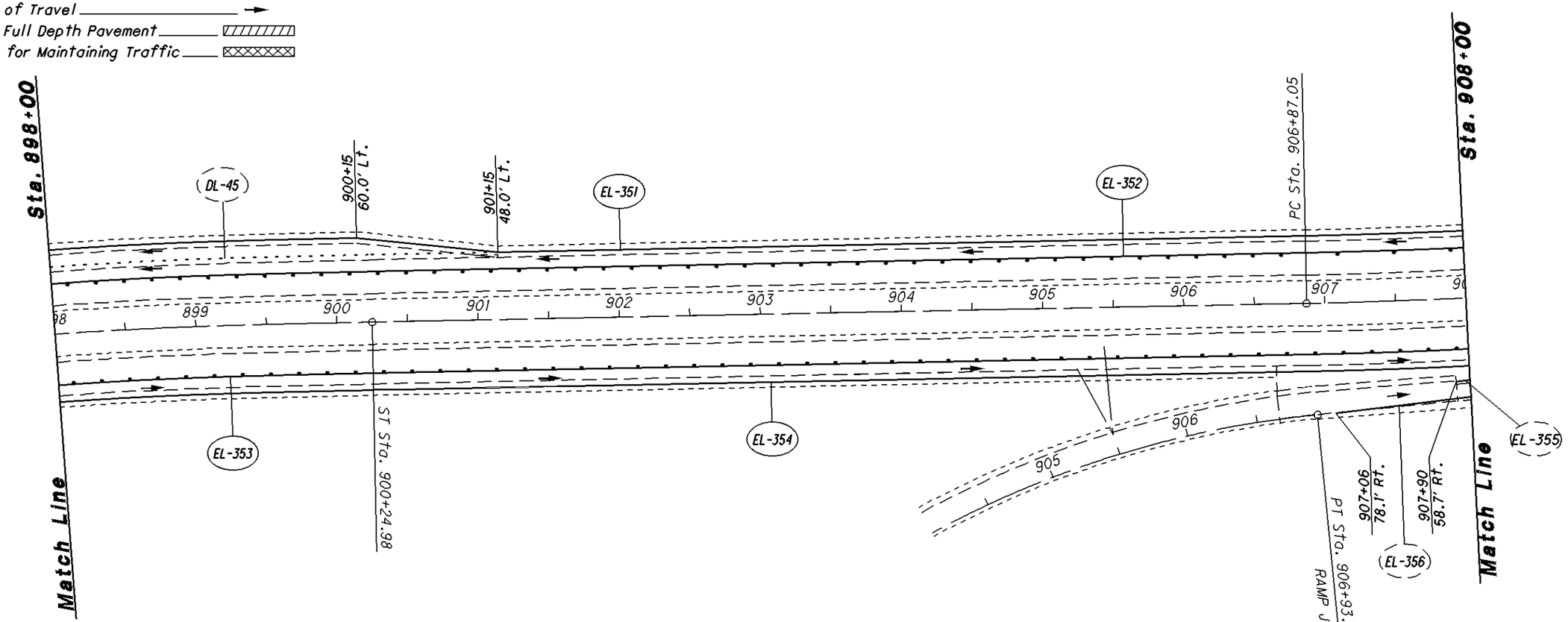
MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 888+00 to Sta. 898+00

ATH-33/50-15.05/11.46

80
222

Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-351	898+00	908+00	Lt.					0.19			
EL-352	898+00	908+00	Lt.					0.19			
EL-353	898+00	908+00	Rt.					0.19			
EL-354	898+00	908+00	Rt.					0.19			
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	0	0	0	0.76	0	0	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 898+00 to Sta. 908+00

ATH-33/50-15.05/11.46

81
222

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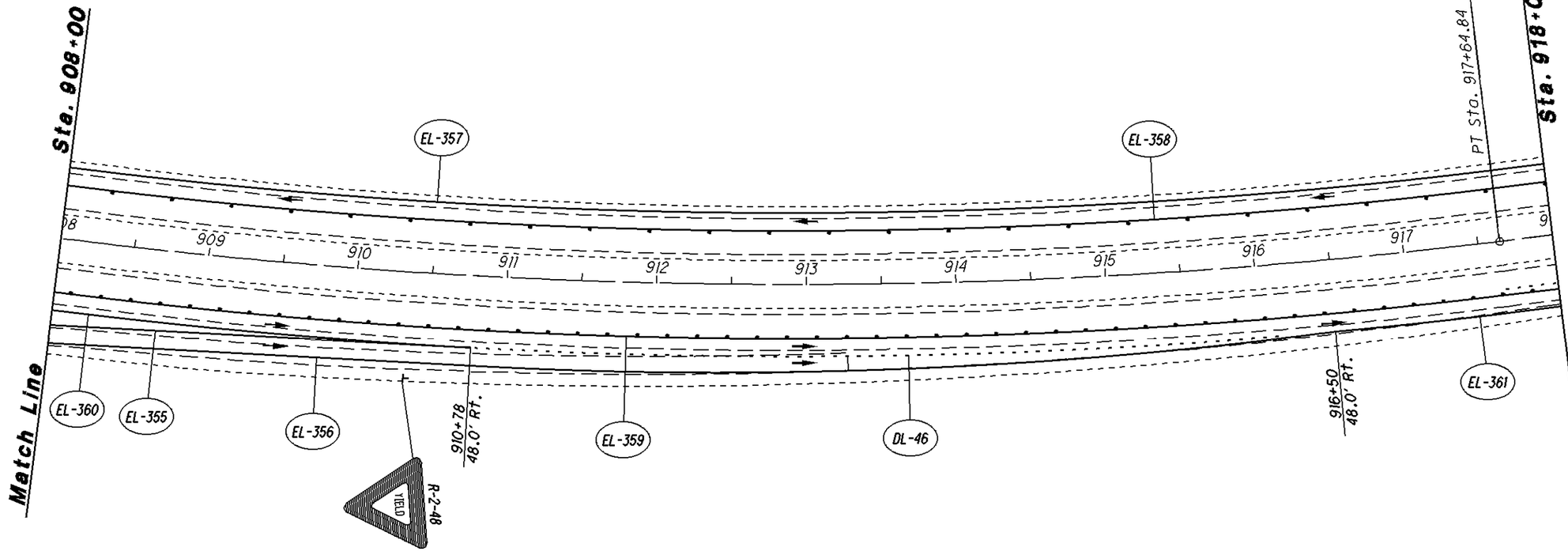
Legend

- Drums
- Portable Concrete Barrier (PCB)
- Work Zone Impact Attenuator
- Edge Line
- Dotted Line
- Direction of Travel
- Proposed Full Depth Pavement
- Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS I FOOT	614 WORK ZONE EDGELINE, CLASS I MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-355	907+90	910+78	Rt.					0.05			
EL-356	907+06	916+50	Rt.					0.18			
EL-357	908+00	918+00	Lt.					0.19			
EL-358	908+00	918+00	Lt.					0.19			
EL-359	908+00	918+00	Rt.					0.19			
EL-360	908+00	910+78	Rt.					0.05			
EL-361	916+50	918+00	Rt.					0.03			
DL-46	910+78	916+50	Rt.				572				
Totals Carried to Maintenance of Traffic Sub-Summary, See Sheet 19 of 222.				0	0	0	572	0.88	0	0	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 908+00 to Sta. 918+00

ATH-33/50-15.05/11.46

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222

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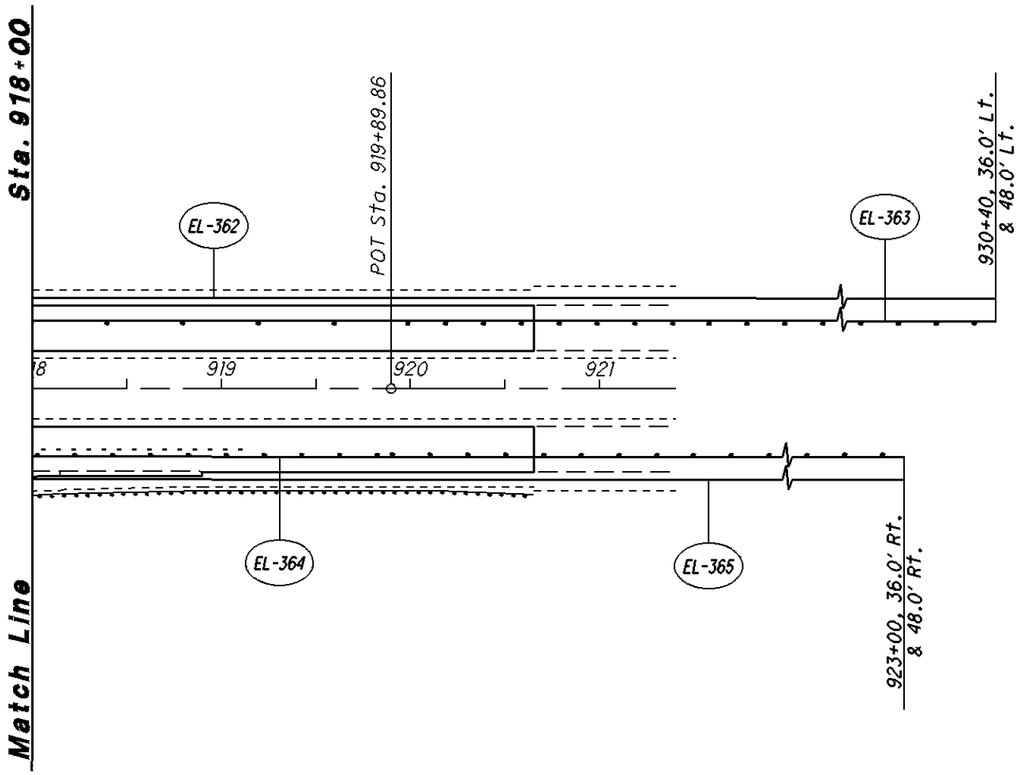
Legend

Drums
Portable Concrete Barrier (PCB)
Work Zone Impact Attenuator
Edge Line
Dotted Line
Direction of Travel
Proposed Full Depth Pavement
Pavement for Maintaining Traffic



ESTIMATED QUANTITIES

REF NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 BARRIER REFLECTOR, TYPE B EACH	614 OBJECT MARKER, ONE WAY EACH	614 WORK ZONE DOTTED LINE, CLASS 1 FOOT	614 WORK ZONE EDGELINE, CLASS 1 MILE	615 PAVEMENT FOR MAINTAINING TRAFFIC SQ. YD.	622 PORTABLE CONCRETE BARRIER, 32" FOOT	622 PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED FOOT
EL-361	918+00	930+40	Lt.					0.23			
EL-362	918+00	930+40	Lt.					0.23			
EL-363	918+00	923+00	Rt.					0.09			
EL-364	918+00	923+00	Rt.					0.09			
Totals Carried to Maintenance of Traffic Sub-Summary. See Sheet 19 of 222.				0	0	0	0	0.64	0	0	0

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CAK
CHECKED ALC

MAINTENANCE OF TRAFFIC - PHASE 2
Sta. 918+00 to Sta. 930+40

ATH-33/50-15.05/11.46

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SHEET NUMBER														ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
			10	11	12	87	88	89	102	125	129								
																		ROADWAY	
									39805					202	23000	39805	SY	PAVEMENT REMOVED	
							142							202	30700	142	FT	CONCRETE BARRIER REMOVED	
						16025	8163							202	38000	24188	FT	GUARDRAIL REMOVED	
						1564	1090							202	38300	2654	FT	GUARDRAIL REMOVED, BARRIER DESIGN	
									50660					204	10000	50660	SY	SUBGRADE COMPACTION	
									36383	2				204	13000	36385	CY	EXCAVATION OF SUBGRADE	
									19112					204	30020	19112	CY	GRANULAR MATERIAL, TYPE C	
					26									204	45000	26	HOUR	PROOF ROLLING	
											19.23			209	60501	19.23	MILE	LINEAR GRADING, AS PER PLAN	129
											26996			209	70000	26996	CY	BORROW	
						11781.25	7384.75							606	13000	19166	FT	GUARDRAIL, TYPE 5	
						175								606	13050	175	FT	GUARDRAIL, TYPE 5A	
						512.5								606	14000	512.5	FT	GUARDRAIL, TYPE 8	
						1700	775							606	15500	2475	FT	GUARDRAIL, BARRIER DESIGN, TYPE 5	
						2								606	17500	2	EACH	POST END ANCHOR (OR CONCRETE BLOCK END ANCHOR)	
						15	7							606	22000	22	EACH	ANCHOR ASSEMBLY, TYPE B-98	
						2								606	22010	2	EACH	ANCHOR ASSEMBLY, TYPE E-98	
						28	10							606	26500	38	EACH	ANCHOR ASSEMBLY, TYPE T	
						23	11							606	35000	34	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
						8	6							606	35100	14	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
						22	8							606	60010	30	EACH	IMPACT ATTENUATOR, TYPE 1-98 (BIDIRECTIONAL)	
						140	85							622	10160	225	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D	
							146							622	24001	146	FT	CONCRETE BARRIER, TYPE D, AS PER PLAN	10
						6	3							622	25000	9	EACH	CONCRETE BARRIER END SECTION, TYPE D	
			LUMP											SPECIAL	69098400	LUMP		MISC.: BRIDGE SCAN SYSTEM	10
																		EROSION CONTROL	
											186309			659	10000	186309	SY	SEEDING AND MULCHING	
											9300			659	14000	9300	SY	REPAIR SEEDING AND MULCHING	
											25.15			659	20000	25.15	TON	COMMERCIAL FERTILIZER	
											38.50			659	31000	38.50	ACRE	LIME	
											202			659	35000	202	MGAL	WATER	
				5500										670	00700	5500	SY	DITCH EROSION PROTECTION	
														832	15000	LUMP		STORM WATER POLLUTION PREVENTION PLAN	
														832	30000	442000	EACH	EROSION CONTROL	
																		DRAINAGE	
								1464						603	00410	1464	FT	4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET	
				80	100			200						603	00510	380	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
				360										603	98300	360	FT	CONDUIT, MISC.: SLOTTED DRAIN EXTENSION	11
				45										604	09501	45	EACH	CATCH BASIN RECONSTRUCTED TO GRADE, AS PER PLAN	11
				1										604	09910	1	EACH	CATCH BASIN FRAME AND GRATE (CATCH BASIN, NO. 5)	
				4										604	09910	4	EACH	CATCH BASIN FRAME AND GRATE (CATCH BASIN, NO. 8)	
					1			8						604	36600	9	EACH	PRECAST REINFORCED CONCRETE OUTLET	
								24683						605	05101	24683	FT	4" SHALLOW PIPE UNDERDRAINS, 707.31, AS PER PLAN	11
								885						605	98000	885	FT	UNDERDRAINS, MISC.: 4" UNCLASSIFIED PIPE UNDERDRAINS, 707.31, AS PER PLAN	11
					350									605	98000	350	FT	UNDERDRAINS, MISC.: 6" SLOPE DRAIN	12

CALCULATED JDB
CHECKED ALC

GENERAL SUMMARY

ATH-33/ 50-15.05/ 11.46

SHEET NUMBER														ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	10	11	87	88	90	91	92	102	112	125	129								
																		PAVEMENT	
								1334	1007					254	01000	2341	SY	PAVEMENT PLANING, ASPHALT CONCRETE	
					2843									255	10101	2843	SY	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS FS, AS PER PLAN A	134
					1116									255	10101	1116	SY	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS FS, AS PER PLAN B	134
					17181			525						255	20000	17706	FT	FULL DEPTH PAVEMENT SAWING	
					268									256	10100	268	SF	BONDED PATCHING OF PORTLAND CEMENT CONCRETE PAVEMENT, TYPE B	
								6719		2				301	46000	6721	CY	ASPHALT CONCRETE BASE, PG64-22	
								10068						304	20000	10068	CY	AGGREGATE BASE	
								2724						407	10000	2724	GAL	TACK COAT	
								11147						407	14000	11147	GAL	TACK COAT FOR INTERMEDIATE COURSE	
								19806						408	10000	19806	GAL	PRIME COAT	
								188394						422	20001	188394	SY	DOUBLE CHIP SEAL, AS PER PLAN	10
								11663						442	10050	11663	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)	
								35991						442	10100	35991	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)	
	409													448	46061	409	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, UNDER GUARDRAIL, PG64-22, AS PER PLAN	10
								202300						451	20000	202300	SY	REINFORCED CONCRETE PAVEMENT, MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT	10-11
								26						617	10100	26	CY	COMPACTED AGGREGATE	
								122906						618	40100	122906	FT	RUMBLE STRIPS, (ASPHALT CONCRETE)	
																		LIGHTING	
											25			625	30707	25	EACH	PULL BOX, 725.08, 24", AS PER PLAN	129
																		TRAFFIC SURVEILLANCE	
						1								632	26500	1	EACH	DETECTOR LOOP	
																		TRAFFIC CONTROL	
							453							620	00500	453	EACH	DELINEATOR, POST MOUNTED	
							20							620	11000	20	EACH	DELINEATOR, BRACKET MOUNTED	
							150							620	31200	150	EACH	REMOVAL OF DELINEATOR	
						1208								621	10020	1208	EACH	RPM, LOW PROFILE WHITE/RED	
						283								621	10030	283	EACH	RPM, LOW PROFILE YELLOW/RED	
						1491								621	54000	1491	EACH	RAISED PAVEMENT MARKER REMOVED	
			423	173										626	00100	596	EACH	BARRIER REFLECTOR	
		250												630	03100	250	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
		154.3												630	80100	154.3	SF	SIGN, FLAT SHEET	
		1												630	84900	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
		1												630	86002	1	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
						9.33								642	00090	9.33	MILE	EDGE LINE	
						350								642	00390	350	FT	CHANNELIZING LINE	
						124								642	00490	124	FT	STOP LINE	
						2								642	01290	2	EACH	LANE ARROW	
						25.81								644	00100	25.81	MILE	EDGE LINE	
						13.87								644	00200	13.87	MILE	LANE LINE	
						0.15								644	00300	0.15	MILE	CENTER LINE	
						8025								644	00400	8025	FT	CHANNELIZING LINE	
						25								644	00500	25	FT	STOP LINE	
						120								644	00700	120	FT	TRANSVERSE/DIAGONAL LINE	

CALCULATED JDB
CHECKED ALC

GENERAL SUMMARY

ATH-33/ 50-15.05/ 11.46

SHEET NUMBER														ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
								14	15	16	19								
																		STRUCTURES 20', AND OVER:	
																		FOR STRUCTURE ATH-50-1168, SEE SHEET 148.	*148*
																		FOR STRUCTURE ATH-50-1185, SEE SHEET 154.	*154*
																		FOR STRUCTURE ATH-33-1760, SEE SHEET 165.	*165*
																		FOR STRUCTURE ATH-682-0004, SEE SHEET 170.	*170*
																		FOR STRUCTURE ATH-682-0014, SEE SHEET 177.	*177*
																		FOR STRUCTURE ATH-33-1713, SEE SHEET 184.	*184*
																		FOR STRUCTURE ATH-33-1631, SEE SHEET 192.	*192*
																		FOR STRUCTURE ATH-33-1600, SEE SHEET 199.	*199*
																		FOR STRUCTURE ATH-50-1592, SEE SHEET 213.	*213*
																		FOR STRUCTURE ATH-50-1681, SEE SHEET 219.	*219*
																		MAINTENANCE OF TRAFFIC	
										400				614	11100	400	HOUR	*LAW ENFORCEMENT OFFICER WITH PATROL CAR*	
										16				614	11500	16	MNTH	*WORKSITE TRAFFIC SUPERVISOR*	
											33			614	12336	33	EACH	*WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)*	
											LUMP			614	12420	LUMP		*DETOUR SIGNING*	
									61					614	12470	61	EACH	*WORK ZONE SPEED LIMIT SIGN*	
									17					614	12484	17	EACH	*WORK ZONE INCREASED PENALTIES SIGN*	
								8						614	12500	8	EACH	*REPLACEMENT SIGN*	
								100						614	12600	100	EACH	*REPLACEMENT DRUM*	
										400				614	13000	400	CY	*ASPHALT CONCRETE FOR MAINTAINING TRAFFIC*	
								200			1761			614	13300	1961	EACH	*BARRIER REFLECTOR, TYPE B*	
								200			1761			614	13350	1961	EACH	*OBJECT MARKER, ONE WAY*	
								12						614	18601	12	SNMT	*PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN*	*14*
											168.21			614	22000	168.21	MILE	*WORK ZONE EDGE LINE, CLASS I*	
											46821			614	24000	46821	FT	*WORK ZONE DOTTED LINE, CLASS I*	
											LUMP			615	10000	LUMP		*ROADS FOR MAINTAINING TRAFFIC*	
											5347			615	20000	5347	SY	*PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A*	
										6692				615	20001	6692	SY	*PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN*	*16*
								105						616	10000	105	MGAL	*WATER*	
											42560			622	40020	42560	FT	*PORTABLE CONCRETE BARRIER, 32"*	
														614	11000	LUMP		*MAINTAINING TRAFFIC*	
														619	16020	20	MNTH	*FIELD OFFICE, TYPE C*	
														623	10000	LUMP		*CONSTRUCTION LAYOUT STAKES*	
														624	10000	LUMP		*MOBILIZATION*	

CALCULATED JDB
CHECKED ALC

GENERAL SUMMARY

ATH-33/ 50-15.05/ 11.46

GUARDRAIL SUBSUMMARY

CALCULATED JDB
CHECKED ALC

REFERENCE	ROUTE	EXISTING GUARDRAIL LOCATION STATION FROM	EXISTING GUARDRAIL LOCATION STATION TO	SIDE	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED, BARRIER DESIGN	PROPOSED GUARDRAIL LOCATION STATION FROM	PROPOSED GUARDRAIL LOCATION STATION TO	606 GUARDRAIL, TYPE 5	606 GUARDRAIL, TYPE 5A	606 GUARDRAIL, TYPE 8	606 GUARDRAIL, BARRIER DESIGN, TYPE 5	606 POST END ANCHOR (OR CONCRETE BLOCK END ANCHOR)	606 ANCHOR ASSEMBLY, TYPE B-98	606 ANCHOR ASSEMBLY, TYPE E-98	606 ANCHOR ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 IMPACT ATTENUATOR, TYPE 1-98 (BIDIRECTIONAL)		622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D	622 CONCRETE BARRIER END SECTION, TYPE D	626 BARRIER REFLECTOR, TYPE A	626 BARRIER REFLECTOR, TYPE B
		FT	FT		FT	FT	FT	FT	FT	FT	FT	FT	EA	EA	EA	EA	EA	EA	EA		FT	EA	EA	EA
1-GR	US-50 EAST	606+12	609+87	RT	375		605+74	609+87	368.75						1		1						10	
2-GR	US-50 EAST	607+59	609+06	LT	150		607+29	609+06	131.25					1			1						5	
4-GR	US-50 EAST	612+09	613+64	LT	150																			
5-GR	US-50 EAST	612+44	617+19	RT	475		612+44	617+19	475								1	1					11	
6-GR	US-50 EAST	617+61	618+86	LT	75	50	616+97	618+86	81.25			75					1		1				9	
3-GR	US-50 WEST	608+37	611+87	RT	375		608+37	611+87	300						1	1							9	
7-GR	US-50 WEST	618+11	619+60	RT	150		618+11	619+60	137.5							1		1					3	
8-GR	US-33 EAST	937+50	946+56	LT	900		946+56	937+50	837.5	25				1		1							19	
9-GR	RAMP B	RAMP B	951+00	RT	950		RAMP B	951+00	887.5					1		1							11	
10-GR	US-50	623+63	630+13	RT	650		623+63	628+66	487.5							1		1					6	
11-GR	US-50	625+12	626+25	MED	87.5	25	625+12	627+01	43.75			112.5					1		1				9	
12-GR	US-50	626+49	627+99	LT	150		626+49	628+53	168.75					1			1						4	
13-GR	US-33 WEST	633+57	637+44	RT	387.5		632+57	637+44	187.5		250		1			1							10	
14-GR	US-33/50	637+31	639+69	MED	400	50	637+31	639+69	25			150				2			2				18	
15-GR	US-33/50	642+25	644+22	RT	187.5		641+25	644+22	18.75		262.5		1				1						8	
16-GR	US-33/50	643+49	645+86	LT	237.5		643+52	645+86	225							1		1					6	
17-GR	US-33/50	643+70	644+95	MED	87.5	37.5	643+06	644+95	43.75			112.5					1		1				10	
18-GR	US-33/50	647+34	653+31	RT	637.5		647+34	653+31	562.5								1	1			20	1	7	2
19-GR	US-33/50	648+02	649+27	MED	125		648+02	649+90	125			62.5					1		1				8	
20-GR	US-33/50	648+51	651+03	LT	250		648+51	651+88	300					1			1						5	
21-GR	US-33/50	652+14	654+28	MED	200	150	652+14	654+28	25			125				2			2				14	
22-GR	US-33/50	662+65	665+02	RT	237.5		663+35	665+02	56.25					1			1				60	1	3	2
23-GR	US-33/50	663+16	666+44	MED	425	100	663+16	666+44	150			175				2			2				14	
24-GR	US-33/50	664+42	666+30	LT	237.5		664+42	666+30	50	87.5				1		1							3	
25-GR	US-33/50	672+53	676+18	MED	525	100	672+75	676+15	275			125				2			2				18	
26-GR	US-33/50	673+33	676+05	LT	337.5		673+33	676+05	150					1			2	1			40	3	5	4
27-GR	US-33/50	678+87	704+12	LT	2387.5		678+87	704+12	2425	25				1		1							51	
28-GR	US-33/50	688+92	691+07	MED	300	100	688+92	691+07	25			125				2			2				14	
29-GR	US-33/50	689+26	690+12	RT	175		689+26	690+12		37.5				1		1							3	
30-GR	US-33/50	705+83	707+99	MED	300	100	705+83	708+12	25			137.5				2			2				14	
31-GR	US-33/50	705+17	706+92	RT	175		705+77	706+92	43.75					1			1				20	1	3	2
32-GR	US-33/50	706+00	CR 25 INT.	LT	1100		706+00	CR 25 INT.	1087.5							1							23	
33-GR	US-33/50	714+09	715+38	RT	125		713+70	715+38	131.25					1			1						4	
34-GR	US-33/50	713+00	715+49	MED	81.25	169	713+60	715+49	43.75			112.5					1		1				8	
35-GR	US-33/50	714+55	715+66	LT	112.5																			
36-GR	US-33/50	716+59	717+55	RT	50																			
37-GR	US-33/50	716+68	717+42	MED	75																			
38-GR	US-33/50	716+76	719+24	MED	68.75	181.5	716+76	718+89	93.75			87.5					1		1				7	
39-GR	US-33/50	716+85	718+26	LT	168.75		716+85	718+91	168.75					1			1						4	
40-GR	US-33/50	723+87	724+75	RT	175		723+87	724+75	37.5					1		1							3	
41-GR	US-33/50	723+55	725+70	MED	150	250.5	723+55	725+70	25			125				2			2				14	
42-GR	US-33/50	RAMP R	732+79	LT	562.5		RAMP R	732+79	550							1		1					12	
43-GR	US-33/50	730+81	732+70	MED	125		730+81	732+70	112.5							1		1					3	
44-GR	US-50	731+49	732+73	MED	168.75	81.5	731+49	732+73	125			62.5					1		1				5	
45-GR	US-50	730+92	732+66	RT	168.75		730+92	732+66	131.25					1			1						4	
46-GR	US-33/50	734+00	US-33 E.B. RAMP	LT	600		734+00	US-33 E.B. RAMP	600								1						7	
47-GR	US-33/50	733+99	735+87	MED	81.25	169	733+99	735+87	43.75			112.5					1		1				9	
48-GR	US-50	733+96	735+12	RT	112.5																			
TOTALS CARRIED TO GENERAL SUMMARY					16025	1564			11781.25	175	512.5	1700	2	15	2	28	23	8	22		140	6	413	10
																							423	

ATH-33/50-15.05/11.46

87
222

REFERENCE	ROUTE	EXISTING GUARDRAIL LOCATION STATION FROM	EXISTING GUARDRAIL LOCATION STATION TO	SIDE	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED, BARRIER DESIGN	PROPOSED GUARDRAIL LOCATION STATION FROM	PROPOSED GUARDRAIL LOCATION STATION TO	606 GUARDRAIL, TYPE 5	606 GUARDRAIL, BARRIER DESIGN, TYPE 5	606 ANCHOR ASSEMBLY, TYPE B-98	606 ANCHOR ASSEMBLY, TYPE T	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 IMPACT ATTENUATOR, TYPE 1-98 (BIDIRECTIONAL)		622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN	622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D	622 CONCRETE BARRIER END SECTION, TYPE D	202 CONCRETE BARRIER REMOVED	626 BARRIER REFLECTOR, TYPE A	626 BARRIER REFLECTOR, TYPE B
		FROM	TO		FT	FT	FROM	TO	FT	FT	EA	EA	EA	EA	EA		FT	FT	EA	FT	EA	EA
49-GR	US-50	742+21	745+83	RT	275		742+21	745+83	166		1		2	1			145.65				6	4
50-GR	US-50	742+74	746+86	MED	500	163	742+74	746+86	450	100		2			2						18	
51-GR	US-50	743+93	747+01	LT	237.5		743+93	747+01	131.25		1		2	1				85.00	3	142	5	4
52-GR	US-50	757+42	759+58	MED	150	250.5	757+42	759+58	25	125		2			2						14	
53-GR	US-50	758+38	760+12	LT	175		758+38	760+12	125		1	1									4	
54-GR	US-50	834+96	836+77	RT	181.25		834+96	836+77	143.75		1		1								4	
55-GR	US-50	834+33	836+46	MED	81.25	169	834+33	836+46	43.75	137.5			1		1						9	
56-GR	US-50	834+43	835+68	LT	125		834+43	835+68	112.5			1		1							3	
57-GR	US-50	841+57	842+95	RT	137.5		841+57	842+95	125			1		1							3	
58-GR	US-50	841+12	843+26	MED	81.25	169	841+12	843+26	43.75	137.5			1		1						9	
59-GR	US-50	840+81	842+49	LT	168.75		840+81	842+49	131.25		1		1								3	
60-GR	US-50	852+36	882+18	RT	2981.25		852+36	882+18	2981.25		1		1								32	
61-GR	US-50	866+92	880+59	LT	1362.5		866+92	880+59	1337.5			1		1							15	
62-GR	US-50	879+50	881+64	MED	81.25	169	879+50	881+64	43.75	137.5			1		1						9	
63-GR	US-50	887+04	890+51	RT	331.25		887+04	890+51	318.75			1		1							8	
64-GR	US-50	886+14	888+27	MED	81.25	169	886+14	888+27	43.75	137.5			1		1						9	
65-GR	US-50	908+90	920+88	RT	1212.5		908+90	920+88	1162.5		1	1									14	
TOTALS CARRIED TO GENERAL SUMMARY					8163	1090			7384.75	775	7	10	11	6	8		146	85	3	142	165	8
																					173	

CALCULATED JDB
CHECKED ALC

GUARDRAIL SUBSUMMARY

ATH-33/ 50-15.05/ 11.46

REF. NO.	PLAN SHEET NO.	STATION TO STATION (ALL STATIONING IS USR 50 MAINLINE ℄ STATIONING UNLESS NOTED OTHERWISE.) FROM	TO	LOCATION CODE	FLOW LINE DEPTH BELOW EX. CONCRETE PAVEMENT SURFACE (OVERLAY AREAS)	FLOW LINE DEPTH BELOW NEW ASPHALT PAVEMENT SURFACE (FULL DEPTH REPLACEMENT AREAS)	603 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	603 4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	604 PRECAST REINFORCED CONCRETE OUTLET	605 4" SHALLOW PIPE UNDERDRAINS, 707.31, AS PER PLAN	605 UNDERDRAINS, MISC.: 4" UNCLASSIFIED PIPE UNDERDRAINS, 707.31, AS PER PLAN			FOR INFORMATION ONLY: OUTLETS INTO ANOTHER UNDERDRAIN	OUTLETS INTO CATCH BASIN OR MANHOLE	END CAP	TEE CONNECTION	90° ELL CONNECTION	45° ELL CONNECTION	OUTLET NO. 1 STATION	OUTLET NO. 1 OFFSET FROM ℄	OUTLET NO. 2 STATION	OUTLET NO. 2 OFFSET FROM ℄	NOTES
		FROM	TO		FT	FT	FT	FT	EA	FT	FT			EA	EA	EA	EA	EA	EA					
1-UD		598+12	609+00	RT/IN	3	3		40	1	1073	15					2	1			606+85	64' LT			UNCLASS.: 606+85 TO 607+00, STATIONING ALONG 50 EB ℄
2-UD		606+42	620+90	LT/OUT	3	3		25		1434	14				1	2	1			611+50	25' LT			UNCLASS.: 618+16 TO 618+30, STATIONING ALONG 50 WB ℄
3-UD		612+30	618+60	RT/IN		3		40	1	630						1		1		612+30	64' LT			STATIONING ALONG 50 EB ℄
4-UD		624+00	633+44	RT/OUT	3	3		9		931	13				1	1		1		633+44	53' RT			UNCLASSIFIED: 626+25 TO 626+38
5-UD		625+35	636+30	LT/IN	3	3		20		1081	14				1	1		1		636+30	0'			UNCLASSIFIED: 628+00 TO 628+14
6-UD		951+50	943+78	RAMP/OUT		3		37	1	772					1			2		951+50	37' LT	943+78	17' LT	STATIONING ALONG 33 WB ℄
7-UD		951+50	941+20	RAMP/IN		3		27		1030					2			2		951+50	42' LT	941+20	33' LT	STATIONING ALONG 33 EB ℄
8-UD		633+50	644+10	RT/OUT	3	3		20	1	1045	15					1		1		644+10	82' RT			UNCLASSIFIED: 642+10 TO 642+25
9-UD		636+32	644+75	LT/IN	3	3		20		826	17				1	1		1		644+75	0'			UNCLASSIFIED: 642+93 TO 643+10
10-UD		648+00	656+95	RT/IN	3			20		661	234				1	2	1			649+50	0'			UNCLASS.: 648+00 TO 650+34, SLOPE TO DRAIN TO 649+50
11-UD		648+25	656+95	LT/IN	3	UNCLASS.		20		612	258				1	2	1			649+50	0'			UNCLASS.: 648+25 TO 650+83, SLOPE TO DRAIN TO 649+50
12-UD		657+00	666+55	RT/IN	3	3		20		938	17				1	1		1		657+00	0'			UNCLASSIFIED: 660+93 TO 661+10
13-UD		657+00	667+60	LT/IN	3	3		20		1050	10				1	1		1		657+00	0'			UNCLASSIFIED: 661+00 TO 661+10
14-UD		666+60	684+00	RT/IN	3	3		40		1725	15				2			2		666+60	0'	684+00	0'	UNCLASSIFIED: 677+70 TO 677+85
15-UD		677+00	690+00	LT/OUT	3			20	1	1300						1		1		690+00	64' LT			
16-UD		684+02	692+00	RT/IN	3			20		798					1	1		1		692+00	0'			
17-UD		690+02	702+50	LT/OUT	3			40	1	1248						1		1		702+50	98' LT			
18-UD		692+02	700+00	RT/IN	3			20		798					1	1		1		700+00	0'			
19-UD		700+02	715+20	RT/IN	3	3		20		1503	15				1	2	1			707+88	0'			UNCLASSIFIED: 712+70 TO 712+85
20-UD		702+25	715+30	LT/IN	3	3		20		1290	15				1	2	1			707+88	0'			UNCLASSIFIED: 712+85 TO 713+00
21-UD		717+10	719+38	RT/IN		3		20		228					1	1		1		717+00	0'			CONNECT IN EX. UD IF NEEDED TO MAINTAIN ITS DRAINAGE
22-UD		717+10	719+54	LT/IN		3		20		244					1	1		1		717+00	0'			CONNECT IN EX. UD IF NEEDED TO MAINTAIN ITS DRAINAGE
23-UD		719+94	732+30	RT/OUT		3		35	1	236						1			1	732+55	69' RT			CONNECT IN EX. UD IF NEEDED TO MAINTAIN ITS DRAINAGE
24-UD		730+02	732+25	LT/IN		3		20		223					1	1		1		732+25	0'			CONNECT IN EX. UD IF NEEDED TO MAINTAIN ITS DRAINAGE
25-UD		734+25	736+71	RT/OUT		3		95		246					1	1		2		737+60	60' RT			
26-UD		734+25	749+48	LT/IN		3		20		1523					1	2	1			747+25	0'			CONNECT IN EX. UD IF NEEDED TO MAINTAIN ITS DRAINAGE
27-UD		833+62	836+15	LT/IN		3		20		253				1		1		1						OUTLETS INTO 28-UD OR INTO EX. UD IF AVAILABLE
28-UD		834+05	836+60	RT/IN		3		190		255					1	1	1	1		832+33	0'			OUTLET INTO EX. UD IF AVAILABLE
29-UD		841+05	843+49	LT/IN		3		486		244					1	1	1	1		848+15	0'			OUTLET INTO EX. UD IF AVAILABLE
30-UD		841+35	843+91	RT/IN		3		20		256				1		1		1						OUTLETS INTO 29-UD OR INTO EX. UD IF AVAILABLE
31-UD		879+32	881+65	RT/IN		UNCLASS.		20			233				1	2	1			881+18	0'			SLOPE TO DRAIN TO 881+18
32-UD		887+00	889+30	RT/OUT		3		20	1	230						1		1		889+30	76' RT			
FOR REPAIR OF EX. UD OUTLETS IF DAMAGED BY CONSTRUCTION							200																	
TOTALS CARRIED TO GENERAL SUMMARY							200	1464	8	24683	885													

LOCATION CODES: IN = PLACE UD BETWEEN LANE & INSIDE SHOULDER, OUT = PLACE UD BETWEEN LANE AND OUTSIDE SHOULDER

NOTES:

A. 4" TO 6" TRANSITION COUPLERS WILL BE NEEDED TO CONNECT EXISTING UNDERDRAIN TO NEW UNDERDRAIN.

B. OUTLET PIPE SLOPE SHALL BE 0.4% ABSOLUTE MINIMUM AND 1% DESIRABLE MINIMUM. OUTLET FLOW LINES INTO CATCH BASINS SHALL BE 6" ABSOLUTE MINIMUM ABOVE THE BOTTOM WITH 12" BEING THE DESIRABLE MINIMUM.

UNDERDRAIN SUBSUMMARY

CALCULATED ALC
CHECKED ALC

ATH-33/50-15.05/11.46

SHEET NO.	REFERENCE NO.	LOCATION	DESCRIPTION	SIDE	CODE	SIZE (INCHES)	255 FULL DEPTH PAV'T REMOVAL & RIGID REPLACEMENT, CLASS F.S.; APP A (TRANSVERSE) SY	255 FULL DEPTH PAV'T REMOVAL & RIGID REPLACEMENT, CLASS F.S.; APP B (LONGITUDINAL) SY	255 FULL DEPTH PAV'T SAWING FT	256 BONDED PATCHING OF PORTLAND CONCRETE PAVEMENT, TYPE B SF
		RAMP B-1					67	13	1155	
		RAMP D					549	41	2300	6
		RAMP F					57	735	3632	
		RAMP G								19
		RAMP H								16
		RAMP J-1					504		2414	
		RAMP J-2								6
		RAMP K					11		40	
		RAMP M					315	45	1568	
		RAMP N								
		RAMP P					224		798	
		RAMP Q					160		570	
		RAMP R					11		40	33
		RAMP S					162	264	2138	160
		RAMP T					78		268	8
		RAMP U					180	18	772	
		US-33 E.B. (RAMP)	FROM GORE TO GORE				200		800	
		US-33 W.B. (RAMP)	FROM GORE TO ATH-33-1580				277		518	
		STIMSON AVE. E.B.					27		92	4
		STIMSON AVE. W.B.					21		76	16
TOTALS CARRIED TO GENERAL SUMMARY							2843	1116	17181	268

CALCULATED JDB
CHECKED ALC

RIGID PAVEMENT REPAIR SUBSUMMARY

ATH-33/50-15.05/11.46

SHEET NO.	REFERENCE NO.	LOCATION	STATION FROM	STATION TO	SIDE	621 RPM, LOW PROFILE WHITE/RED EACH	621 RPM, LOW PROFILE YELLOW/RED EACH	621 RAISED PAVEMENT MARKER REMOVED EACH		632 DETECTOR LOOP EACH	642 EDGE LINE (WHITE) MILE	642 EDGE LINE (YELLOW) MILE	642 CHANNELIZING LINE FT	642 STOP LINE FT	642 LANE ARROW EA	644 EDGE LINE (WHITE) MILE	644 EDGE LINE (YELLOW) MILE	644 LANE LINE MILE	644 CENTER LINE MILE	644 CHANNELIZING LINE FT	644 STOP LINE FT	644 TRANSVERSE/DIAGONAL LINE FT
		US-50 EAST	598+11.84	618+34.05		26		26								0.383	0.383	0.383				
		US-50 WEST	606+42.82	620+66.02		18		18								0.270	0.270	0.270				
		US-33 WEST	957+00	943+72.41		17		17								0.252	0.252	0.252				
		US-33 EAST	952+25	941+03.09		15		15								0.213	0.213	0.213				
		MAINLINE (LEFT)	620+66.02	920+65		376		376								5.682	5.682	5.682				
		MAINLINE (RIGHT)	618+34.05	920+65		379		379								5.726	5.726	5.726				
		US-33 WEST (RAMP)				25		25			0.360	0.360										
		US-33 EAST (RAMP)				11		11			0.152	0.152										
138						17	88	105			1.320	1.320				0.119		0.389		630		
139						97	31	128			0.444	0.444						0.316		1950		120
140						18	28	46			0.394	0.394				0.048		0.093		640		
141						44	22	66			0.296	0.296		20		0.073		0.143		1135		
142						50	21	71			0.304	0.304		24		0.053		0.139		1105		
143						25	22	47			0.328	0.328				0.067		0.080		915		
144						6	10	16			0.156	0.156				0.137		0.044	0.047	225	25	
145						84	61	145		1	0.909	0.909	350	80	2	0.059		0.132		1425		
		BRIDGE ATH-33-1713																	0.05			
		BRIDGE ATH-682-0004														0.20						
		BRIDGE ATH-682-0014																	0.05			
SUBTOTALS						1208	283	1491		1	4.663	4.663	350	124	2	13.282	12.526	13.862	0.147	8025	25	120
TOTALS CARRIED TO GENERAL SUMMARY						1208	283	1491		1	9.33		350	124	2	25.81		13.87	0.15	8025	25	120

NOTE:
LANE LINE RPM SPACING IS 80' c/c.

CALCULATED JDB
CHECKED ALC

PAVEMENT MARKING SUBSUMMARY

PAVEMENT

ATH-33/50-15.05/11.46

LEFT			RIGHT		LEFT			RIGHT		LEFT			RIGHT		LEFT			RIGHT		LEFT			RIGHT	
OUTSIDE SHOULDER	INSIDE SHOULDER	USR 50 STATION	INSIDE SHOULDER	OUTSIDE SHOULDER	OUTSIDE SHOULDER	INSIDE SHOULDER	USR 50 STATION	INSIDE SHOULDER	OUTSIDE SHOULDER	OUTSIDE SHOULDER	INSIDE SHOULDER	USR 50 STATION	INSIDE SHOULDER	OUTSIDE SHOULDER	OUTSIDE SHOULDER	INSIDE SHOULDER	USR 50 STATION	INSIDE SHOULDER	OUTSIDE SHOULDER	OUTSIDE SHOULDER	INSIDE SHOULDER	USR 50 STATION	INSIDE SHOULDER	OUTSIDE SHOULDER
		596+80		P			645+00		BE	PE		699+00		P	P		751+40			PE		898+00		P
		598+65		P	PE		645+50			PE		700+00			PE		752+00		P	PE		899+00		P
		600+50		P			646+00		BE	PE		701+00		PE	PE		753+00		PE	PE		900+00		P
		602+00		P	BE		646+50			PE		702+00		PE	PE		754+00		PE	PE		901+00		
		602+75		P			647+00		BE	PE		703+00		PE	PE		755+00		PE			902+00		P
		603+50		P	BE		647+50			PE		704+00		PE	PE		756+00		PE	P		903+00		
		604+25		P			648+00		PE	PE		705+00		PE	PE		757+00		PE			904+00		P
		605+00		P	PE		648+50			PE		706+00		PE	PE		758+00		PE			906+00		P
		605+75		P			649+00		PE	PE		707+00		PE	PE		759+00		PE	P		906+50		
P		606+50		P	PE		649+50			P		711+50					760+00		PE			907+00		PE
P		607+25		P			650+00		PE			712+00		P			761+00		PE			908+00		PE
P		608+00		P	PE		650+50					715+00		P			762+00		PE	P		908+35		
P		608+75		P			651+00		PE	B		716+60					763+00		PE			909+00		PE
P		609+50		P	PE		651+50					718+00		PE			764+00		PE			910+00		PE
P		610+25		B			652+00		PE			719+00		PE		P	773+80			P		910+20		
P		611+00		B	PE		652+50			P		719+60					774+20	P				911+00		PE
P		611+75		B			653+00		PE			720+00		PE		P	829+50					912+00		PE
P		612+50		P	PE		653+50					721+00		PE		P	830+50			P		912+05		
P		613+25		P			654+00		PE			722+00		PE		P	831+50					913+00		PE
P		614+00		P	PE		654+50					723+00		PE	P		849+40		P	P		913+90		
P		614+75		P	PE		655+50			P		723+50			P		851+25		P			914+00		PE
P		615+50		P	PE		656+50					724+00		PE	P		853+10		P			915+00		PE
P		616+25		P			657+00		P			725+00		PE	P		854+95		P	P		915+75		
P		617+00		P	PE		657+50			P		726+10			P		856+80		P			916+00		PE
P		617+75			P		659+00					726+30		P	P		858+65		P			917+00		PE
P		618+50		B			660+00		P	P		727+40			P		860+50		P	P		917+60		
P		619+25			P		662+30					727+60		P	P		862+35		P			918+00		PE
P		620+00					663+00		PE	P		728+70			P		864+20		P			919+00		PE
		620+75		B			664+00		PE			728+90		P		P	864+25							
B		621+50					665+00		PE	P		730+00					864+55	P						
B		623+25			P		665+60					730+20		P	P		866+05		P					
		624+50		P			666+00		PE	PE		731+00			P		867+90		P					
B		625+00					667+00		PE			731+50		P	P		869+75		P					
P		626+50		P			668+00		PE	PE		732+00			P		871+60		P					
P		627+50		P	P		669+00		PE			732+80		B	P		873+45		P					
P		628+50		P			670+00		PE	BE		733+00			PE		874+50							
P		629+50		P	P		671+00		PE	PE		734+00					875+30		P					
P		630+50		P			672+00		PE			734+10		P	PE		875+50							
P		631+50			P		673+00		PE	PE		735+00			PE		876+50							
P		632+50					674+00		PE			735+30		P			877+15		P					
P		633+50			PE		674+50			PE		736+00			PE		877+50							
		634+00		PE			675+00		PE			736+70		P	PE		878+50							
P		634+50			PE		675+50			PE		737+00					879+00		P					
		635+00		PE	PE		676+50			PE		738+00		PE	PE		879+50							
P		635+50					677+00		P	PE		739+00		PE	PE		880+50							
		636+00		PE	PE		677+50			PE		740+00		PE	BE		881+50							
P		636+50			PE		678+50			P		741+00		PE			882+00		P					
		637+00		PE			679+00		P			742+00		PE	BE		882+50							
PE		637+50			PE		679+50			P		742+30			BE		883+50							
		638+00		PE	PE		680+50					743+00		PE	BE		884+50							
PE		638+50					681+00		P	P		743+60					885+00		B					
		639+00		PE	PE		681+50					744+00		PE	P		886+00							
PE		639+50			P		683+00		P	P		744+90			P		887+00		PE					
		640+00		PE	P		685+00		P			745+00		PE	P		888+00		PE					
PE		640+50			P		687+00		P			746+00		PE	P		889+00		PE					
		641+00		PE	P		689+00		P	P		746+20			P		890+00		PE					
PE		641+50			P		691+00		P			747+00		PE	P		891+00		PE					
		642+00		PE		P	692+10			P		747+50			P		892+00		PE					
PE		642+50					692+45	P				748+00		PE	P		893+00		PE					
		643+00		PE	P		693+00		P	P		748+80			PE		894+00		PE					
PE		643+50			P		695+00		P			749+00		PE	PE		895+00		P					
		644+00		PE	PE		697+00		P	P		750+10			PE		896+00		P					
PE		644+50			PE		698+00					750+30		P	PE		897+00		P					

WB USR 33 944+23 TO 953+23 AT 100' c/c = 10 PE
EB USR 33 941+00 TO 954+00 AT 100 c/c = 14 P

ON RAMPS, PLACE DELINEATORS 100' c/c ON THE OUTSIDE OF CURVES.
SR 682 RAMP J-1 = 15 P
SR 682 RAMP K = 4 P
SR 682 RAMP M = 8 P
SR 682 RAMP N = 7 P
CR 25 RAMP P = 6 P
CR 25 RAMP Q = 1 P
WB 33 RAMP AT STIMSON = 9 P
EB 33 RAMP AT STIMSON = 7 P
WB STIMSON = 8 P
EB STIMSON = 5 P
RAMP S = 12 P
RAMP U = 6 P
E. STATE ST. RAMP F = 10 P
E. STATE ST. RAMP G = 8 P
E. STATE. ST RAMP H = 4 P
E. STATE. ST. RAMP J-2 = 4 P

P = GROUND MOUNTED DELINEATOR POST (WHERE GUARDRAIL IS PRESENT, GUARDRAIL MOUNTED POSTS MAY BE USED)
B = BRIDGE BRACKET (SHORTEN FOR 42" PARAPET HEIGHT WHERE PRESENT)
E = ELONGATED REFLECTOR TO MARK ACCEL./DECEL. LANES

620, DELINEATOR, POST MOUNTED = 453 EACH
620, DELINEATOR, BRACKET MOUNTED = 20 EACH
620, REMOVAL OF DELINEATOR = 150 EACH
QUANTITIES CARRIED TO SHEET 85.

CALCULATED ALC
CHECKED ALC

DELINEATOR SUMMARY

ATH-33/50-15.05/11.46

US-50 EAST

ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)

STA. 599+36.84 TO STA. 609+35.45
998.61' x 36' x 1.5/12 ÷ 27 = 166.5 CY

STA. 612+38.07 TO STA. 618+34.05
595.98' x 36' x 1.5/12 ÷ 27 = 99.4 CY

TOTAL ITEM 442 SURFACE COURSE = 265.9 CY

ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE

STA. 599+36.84 TO STA. 609+35.45
998.61' x 36' ÷ 9 x 0.04 = 159.8 GAL

STA. 612+38.07 TO STA. 618+34.05
595.98' x 36' ÷ 9 x 0.04 = 95.4 GAL

TOTAL ITEM 407 TACK COAT FOR INTERMEDIATE = 255.2 GAL

ITEM 442 - 2¼" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

STA. 599+36.84 TO STA. 609+35.45
998.61' x 36' x 2.25/12 ÷ 27 = 249.7 CY

STA. 599+36.84 TO STA. 606+85.45
748.61' x 24' x 2.25/12 ÷ 27 = 124.8 CY

STA. 612+38.07 TO STA. 618+34.05
595.98' x 36' x 2.25/12 ÷ 27 = 149.0 CY

ITEM 442 - 2¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

STA. 599+36.84 TO STA. 606+85.45
748.61' x 12' x 2.75/12 ÷ 27 = 76.3 CY

STA. 606+85.45 TO STA. 609+35.45
250' x 36' x 2.75/12 ÷27 = 76.4 CY

STA. 612+38.07 TO STA. 618+34.05
595.98' x 36' x 2.75/12 ÷ 27 = 182.1 CY

TOTAL ITEM 442 INTERMEDIATE COURSE = 858.3 CY

ITEM 407 - TACK COAT

STA. 599+36.84 TO STA. 606+85.45
748.61' x 12' ÷ 9 x 0.07 = 69.9 GAL

TOTAL ITEM 407 TACK COAT = 69.9 GAL

ITEM 422 - DOUBLE CHIP SEAL, AS PER PLAN

STA. 599+36.84 TO STA. 606+85.45
748.61' x 24' ÷ 9 = 1996.3 SY

TOTAL ITEM 442 DOUBLE CHIP SEAL, APP = 1996.3 SY

ITEM 451 - REINFORCED CONCRETE PAV'T, MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT

STA. 599+36.84 TO STA. 606+85.45
748.61' x 24' ÷ 9 = 1996.3 SY

TOTAL ITEM 451 BREAKING AND SEATING = 1996.3 SY

ITEM 301 - 5" ASPHALT CONCRETE BASE, PG64-22

STA. 606+85.45 TO STA. 609+35.45
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 612+38.07 TO STA. 618+34.05
595.98' x 37' x 5/12 ÷ 27 = 340.3 CY

TOTAL ITEM 301 5" ASPHALT CONCRETE BASE = 483.1 CY

ITEM 408 - PRIME COAT

STA. 606+85.45 TO STA. 609+35.45
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 612+38.07 TO STA. 618+34.05
595.98' x 38' ÷ 9 x 0.4 = 1006.6 GAL

TOTAL ITEM 408 PRIME COAT = 1428.9 GAL

ITEM 304 - AGGREGATE BASE

STA. 606+85.45 TO STA. 609+35.45
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 612+38.07 TO STA. 618+34.05
595.98' x 38' x 6/12 ÷ 27 = 419.4 CY

TOTAL ITEM 304 AGGREGATE BASE = 654.0 CY

ITEM 204 - SUBGRADE COMPACTION

STA. 606+85.45 TO STA. 609+35.45
250' x 39' ÷ 9 = 1083.3 SY

STA. 612+38.07 TO STA. 618+34.05
595.98' x 39' ÷ 9 = 2582.6 SY

TOTAL ITEM 204 SUBGRADE COMPACTION = 3665.9 SY

ITEM 202 - PAVEMENT REMOVED

STA. 606+85.45 TO STA. 609+35.45
250' x 24' ÷ 9 = 666.7 SY

STA. 612+38.07 TO STA. 618+34.05
595.98' x 24' ÷ 9 = 1589.3 SY

TOTAL ITEM 202 PAVEMENT REMOVED = 2256.0 SY

ITEM 204 - EXCAVATION OF SUBGRADE

STA. 606+85.45 TO STA. 609+35.45
250' x (24' x 18/12 + 12' x 27/12 + 10.5) ÷ 27 = 680.6 CY

STA. 612+38.07 TO STA. 618+34.05
595.98' x (24' x 18/12 + 12' x 27/12 + 10.5) ÷ 27 = 1622.4 CY

TOTAL ITEM 204 EXCAVATION OF SUBGRADE = 2303.0 CY

ITEM 204 - GRANULAR MATERIAL, TYPE C

STA. 606+85.45 TO STA. 609+35.45
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 612+38.07 TO STA. 618+34.05
595.98' x (36' x 12/12 + 8.8) ÷ 27 = 988.9 CY

TOTAL ITEM 204 GRANULAR MATERIAL, TYPE C = 1403.8 CY

ITEM 255 - FULL DEPTH PAVEMENT SAWING

STA. 599+36.84
24 FT

TOTAL ITEM 255 FULL DEPTH PAV'T SAWING = 24 FT

ITEM 618 - RUMBLE STRIPS, (ASPHALT CONCRETE)

STA. 598+11.84 TO STA. 609+35.45
1123.61' x 2 = 2247.3 FT

STA. 612+38.07 TO STA. 618+34.05
595.98' x 2 = 1192.0 FT

TOTAL ITEM 618 RUMBLE STRIPS = 3439.3 FT

US-50 WEST

ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)

STA. 607+67.82 TO STA. 620+66.02
1298.2' x 36' x 1.5/12 ÷ 27 = 216.4 CY

TOTAL ITEM 442 SURFACE COURSE = 216.4 CY

ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE

STA. 607+67.82 TO STA. 620+66.02
1298.2' x 36' ÷ 9 x 0.04 = 207.8 GAL

TOTAL ITEM 407 TACK COAT FOR INTERMEDIATE = 207.8 GAL

ITEM 442 - 2¼" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

STA. 607+67.82 TO STA. 620+66.02
1298.2' x 36' x 2.25/12 ÷ 27 = 324.6 CY

STA. 607+67.82 TO STA. 618+16.02
1048.20' x 24' x 2.25/12 ÷ 27 = 174.7 CY

ITEM 442 - 2¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

STA. 607+67.82 TO STA. 618+16.02
1048.20' x 12' x 2.75/12 ÷ 27 = 106.8 CY

STA. 618+16.02 TO STA. 620+66.02
250.00' x 36' x 2.75/12 ÷ 27 = 76.4 CY

TOTAL ITEM 442 INTERMEDIATE COURSE = 682.5 CY

ITEM 407 - TACK COAT

STA. 607+67.82 TO STA. 618+16.02
1048.20' x 12' ÷ 9 x 0.07 = 97.9 GAL

TOTAL ITEM 407 TACK COAT = 97.9 GAL

ITEM 422 - DOUBLE CHIP SEAL, AS PER PLAN

STA. 607+67.82 TO STA. 618+16.02
1048.20' x 24' ÷ 9 = 2795.2 SY

TOTAL ITEM 442 DOUBLE CHIP SEAL, APP = 2795.2 SY

ITEM 451 - REINFORCED CONCRETE PAV'T, MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT

STA. 607+67.82 TO STA. 618+16.02
1048.2' x 24' ÷ 9 = 2795.2 SY

TOTAL ITEM 451 BREAKING AND SEATING = 2795.2 SY

ITEM 301 - 5" ASPHALT CONCRETE BASE, PG64-22

STA. 618+16.02 TO STA. 620+66.02
250' x 37' x 5/12 ÷ 27 = 142.8 CY

TOTAL ITEM 301 5" ASPHALT CONCRETE BASE = 142.8 CY

ITEM 408 - PRIME COAT

STA. 618+16.02 TO STA. 620+66.02
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

TOTAL ITEM 408 PRIME COAT = 422.3 GAL

ITEM 304 - AGGREGATE BASE

STA. 618+16.02 TO STA. 620+66.02
250.00' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

TOTAL ITEM 304 AGGREGATE BASE = 234.6 CY

ITEM 204 - SUBGRADE COMPACTION

STA. 618+16.02 TO STA. 620+66.02
250' x 39' ÷ 9 = 1083.3 SY

TOTAL ITEM 204 SUBGRADE COMPACTION = 1083.3 SY

ITEM 202 - PAVEMENT REMOVED

STA. 618+16.02 TO STA. 620+66.02
250' x 24' ÷ 9 = 666.7 SY

TOTAL ITEM 202 PAVEMENT REMOVED = 666.7 SY

ITEM 204 - EXCAVATION OF SUBGRADE

STA. 618+16.02 TO STA. 620+66.02
250' x (24' x 18/12 + 12' x 27/12 + 10.5) ÷ 27 = 680.6 CY

TOTAL ITEM 204 EXCAVATION OF SUBGRADE = 680.6 CY

ITEM 204 - GRANULAR MATERIAL, TYPE C

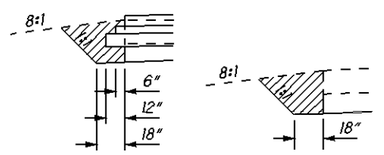
STA. 618+16.02 TO STA. 620+66.02
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

TOTAL ITEM 204 GRANULAR MATERIAL, TYPE C = 414.9 CY

ITEM 255 - FULL DEPTH PAVEMENT SAWING

STA. 607+67.82
24 FT

TOTAL ITEM 255 FULL DEPTH PAV'T SAWING = 24 FT



QUANTITIES ARE CARRIED TO SHEET 102.

CALCULATED JDB
CHECKED WAB

CALCULATIONS

ATH-33/50-15.05/11.46

93
222

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ITEM 618 - RUMBLE STRIPS, (ASPHALT CONCRETE)

STA. 606+42.82 TO STA. 620+66.02
1423.2' x 2 = 2846.4 FT

TOTAL ITEM 618 RUMBLE STRIPS = 2846.4 FT

US-33 WEST

ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)

STA. 954+50 TO STA. 943+72.41
1077.59' x 36' x 1.5/12 ÷ 27 = 179.6 CY
1000' x ½(25'+0') x 1.5/12 ÷ 27 = 57.9 CY
80' x ½(0'+2') x 1.5/12 ÷ 27 = 0.4 CY

TOTAL ITEM 442 SURFACE COURSE = 237.9 CY

ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE

STA. 954+50 TO STA. 943+72.41
1077.59' x 36' ÷ 9 x 0.04 = 172.5 GAL
1000' x ½(25'+0') ÷ 9 x 0.04 = 55.6 GAL
80' x ½(0'+2') ÷ 9 x 0.04 = 0.4 GAL

TOTAL ITEM 407 TACK COAT FOR INTERMEDIATE = 228.5 GAL

ITEM 442 - 2¼" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

STA. 954+50 TO STA. 943+72.41
1077.59' x 36' x 2.25/12 ÷ 27 = 269.4 CY
1000' x ½(25'+0') x 2.25/12 ÷ 27 = 86.8 CY
80' x ½(0'+2') x 2.25/12 ÷ 27 = 0.6 CY

STA. 954+50 TO STA. 943+72.41
1077.59' x 24' x 2.25/12 ÷ 27 = 179.6 CY
1000' x ½(25'+0') x 2.25/12 ÷ 27 = 86.8 CY
80' x ½(0'+2') x 2.25/12 ÷ 27 = 0.6 CY

ITEM 442 - 2¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

STA. 954+50 TO STA. 943+72.41
1077.59' x 12' x 2.75/12 ÷ 27 = 109.8 CY

TOTAL ITEM 442 INTERMEDIATE COURSE = 733.6 CY

ITEM 407 - TACK COAT

STA. 954+50 TO STA. 943+72.41
1077.59' x 12' ÷ 9 x 0.07 = 100.6 GAL

TOTAL ITEM 407 TACK COAT = 100.6 GAL

ITEM 422 - DOUBLE CHIP SEAL, AS PER PLAN

STA. 954+50 TO STA. 943+72.41
1077.59' x 24' ÷ 9 = 2873.6 SY
1000' x ½(25'+0') ÷ 9 = 1388.9 SY
80' x ½(0'+2') ÷ 9 = 8.9 SY

TOTAL ITEM 442 DOUBLE CHIP SEAL, APP = 4271.4 SY

ITEM 451 - REINFORCED CONCRETE PAV'T, MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT

STA. 954+50 TO STA. 943+72.41
1077.59' x 24' ÷ 9 = 2873.6 SY
1000' x ½(25'+0') ÷ 9 = 1388.9 SY
80' x ½(0'+2') ÷ 9 = 8.9 SY

TOTAL ITEM 451 BREAKING AND SEATING = 4271.4 SY

ITEM 255 - FULL DEPTH PAVEMENT SAWING

STA. 954+50
24 FT

RAMP B-1
16 FT

TOTAL ITEM 255 FULL DEPTH PAV'T SAWING = 40 FT

ITEM 618 - RUMBLE STRIPS, (ASPHALT CONCRETE)

STA. 957+00 TO STA. 943+72.41
1327.59' x 2 = 2655.2 FT

TOTAL ITEM 618 RUMBLE STRIPS = 2655.2 FT

US-33 EAST

ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)

STA. 949+75 TO STA. 941+03.09
871.91' x 36' x 1.5/12 ÷ 27 = 145.4 CY

TOTAL ITEM 442 SURFACE COURSE = 145.4 CY

ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE

STA. 949+75 TO STA. 941+03.09
871.91' x 36' ÷ 9 x 0.04 = 139.5 GAL

TOTAL ITEM 407 TACK COAT FOR INTERMEDIATE = 139.5 GAL

ITEM 442 - 2¼" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

STA. 949+75 TO STA. 941+03.09
871.91' x 36' x 2.25/12 ÷ 27 = 218.0 CY

STA. 949+75 TO STA. 941+03.09
871.91' x 24' x 2.25/12 ÷ 27 = 145.4 CY

ITEM 442 - 2¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

STA. 949+75 TO STA. 941+03.09
871.91' x 12' x 2.75/12 ÷ 27 = 88.8 CY

TOTAL ITEM 442 INTERMEDIATE COURSE = 452.2 CY

ITEM 407 - TACK COAT

STA. 949+75 TO STA. 941+03.09
871.91' x 12' ÷ 9 x 0.07 = 81.4 GAL

TOTAL ITEM 407 TACK COAT = 81.4 GAL

ITEM 422 - DOUBLE CHIP SEAL, AS PER PLAN

STA. 949+75 TO STA. 941+03.09
871.91' x 24' ÷ 9 = 2325.1 SY

TOTAL ITEM 442 DOUBLE CHIP SEAL, APP = 2325.1 SY

ITEM 451 - REINFORCED CONCRETE PAV'T, MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT

STA. 949+75 TO STA. 941+03.09
871.91' x 24' ÷ 9 = 2325.1 SY

TOTAL ITEM 451 BREAKING AND SEATING = 2325.1 SY

ITEM 255 - FULL DEPTH PAVEMENT SAWING

STA. 949+75
24 FT

TOTAL ITEM 255 FULL DEPTH PAV'T SAWING = 24 FT

ITEM 618 - RUMBLE STRIPS, (ASPHALT CONCRETE)

STA. 952+25 TO STA. 941+03.09
1121.91' x 2 = 2243.9 FT

TOTAL ITEM 618 RUMBLE STRIPS = 2243.9 FT

QUANTITIES ARE CARRIED TO SHEET 102.

CALCULATED JDB
CHECKED WAB

CALCULATIONS

ATH-33/50-15.05/11.46

MAINLINE (LEFT)

ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)

STA. 625+63.77 TO STA. 645+43.24
1979.47' x 36' x 1.5/12 ÷ 27 = 330.0 CY

STA. 648+33.14 TO STA. 715+35.76
6702.62' x 36' x 1.5/12 ÷ 27 = 1117.1 CY

STA. 717+04.83 TO STA. 732+51.40
1546.57' x 36' x 1.5/12 ÷ 27 = 257.8 CY

STA. 734+23.51 TO STA. 836+11.87
10188.36' x 36' x 1.5/12 ÷ 27 = 1698.1 CY

STA. 840+99.27 TO STA. 880+95.76
3996.49' x 36' x 1.5/12 ÷ 27 = 666.1 CY

STA. 886+00.54 TO STA. 918+15
3214.46' x 36' x 1.5/12 ÷ 27 = 535.8 CY

TOTAL ITEM 442 SURFACE COURSE = 4604.9 CY

ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE

STA. 625+63.77 TO STA. 645+43.24
1979.47' x 36' ÷ 9 x 0.04 = 316.8 GAL

STA. 648+33.14 TO STA. 715+35.76
6702.62' x 36' ÷ 9 x 0.04 = 1072.5 GAL

STA. 717+04.83 TO STA. 732+51.40
1546.57' x 36' ÷ 9 x 0.04 = 247.5 GAL

STA. 734+23.51 TO STA. 836+11.87
10188.36' x 36' ÷ 9 x 0.04 = 1630.2 GAL

STA. 840+99.27 TO STA. 880+95.76
3996.49' x 36' ÷ 9 x 0.04 = 639.5 GAL

STA. 886+00.54 TO STA. 918+15
3214.46' x 36' ÷ 9 x 0.04 = 514.4 GAL

TOTAL ITEM 407 TACK COAT FOR INTERMEDIATE = 4420.9 GAL

ITEM 442 - 2¼" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

STA. 625+63.77 TO STA. 645+43.24
1979.47' x 36' x 2.25/12 ÷ 27 = 494.9 CY

STA. 648+33.14 TO STA. 715+35.76
6702.62' x 36' x 2.25/12 ÷ 27 = 1675.7 CY

STA. 717+04.83 TO STA. 732+51.40
1546.57' x 36' x 2.25/12 ÷ 27 = 386.7 CY

STA. 734+23.51 TO STA. 836+11.87
10188.36' x 36' x 2.25/12 ÷ 27 = 2547.1 CY

STA. 840+99.27 TO STA. 880+95.76
3996.49' x 36' x 2.25/12 ÷ 27 = 999.2 CY

STA. 886+00.54 TO STA. 918+15
3214.46' x 36' x 2.25/12 ÷ 27 = 803.7 CY

STA. 628+13.77 TO STA. 642+93.24
1479.47' x 24' x 2.25/12 ÷ 27 = 246.6 CY

STA. 650+83.14 TO STA. 661+00
1016.86' x 24' x 2.25/12 ÷ 27 = 169.5 CY

STA. 668+66.41 TO STA. 712+85.76
4419.35' x 24' x 2.25/12 ÷ 27 = 736.6 CY

STA. 719+54.83 TO STA. 730+01.40
1046.57' x 36' x 2.25/12 ÷ 27 = 261.7 CY

STA. 749+48.36 TO STA. 833+61.87
8413.51' x 36' x 2.25/12 ÷ 27 = 2103.4 CY

STA. 843+49.27 TO STA. 878+25.76
3476.44' x 36' x 2.25/12 ÷ 27 = 869.2 CY

STA. 888+50.54 TO STA. 918+15
2964.46' x 36' x 2.25/12 ÷ 27 = 741.2 CY

ITEM 442 - 2¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

STA. 625+63.77 TO STA. 628+13.77
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 628+13.77 TO STA. 642+93.24
1479.47' x 12' x 2.75/12 ÷ 27 = 150.7 CY

STA. 642+93.24 TO STA. 645+43.24
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 648+33.14 TO STA. 650+83.14
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 650+83.14 TO STA. 661+00
1016.86' x 12' x 2.75/12 ÷ 27 = 103.6 CY

STA. 661+00 TO STA. 668+66.41
766.41' x 36' x 2.75/12 ÷ 27 = 234.2 CY

STA. 668+66.41 TO STA. 712+85.76
4419.35' x 12' x 2.75/12 ÷ 27 = 450.2 CY

STA. 712+85.76 TO STA. 715+35.76
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 717+04.83 TO STA. 719+54.83
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 730+01.40 TO STA. 732+51.40
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 734+23.51 TO STA. 749+48.36
1524.85' x 36' x 2.75/12 ÷ 27 = 466.0 CY

STA. 833+61.87 TO STA. 836+11.87
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 840+99.27 TO STA. 843+49.27
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 878+25.76 TO STA. 880+95.76
270' x 36' x 2.75/12 ÷ 27 = 82.5 CY

STA. 886+00.54 TO STA. 918+15
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

TOTAL ITEM 442 INTERMEDIATE COURSE = 14210.3 CY

ITEM 407 - TACK COAT

STA. 628+13.77 TO STA. 642+93.24
1479.47' x 12' ÷ 9 x 0.07 = 138.1 GAL

STA. 650+83.14 TO STA. 661+00
1016.86' x 12' ÷ 9 x 0.07 = 94.9 GAL

STA. 668+66.41 TO STA. 712+85.76
4419.35' x 12' ÷ 9 x 0.07 = 412.5 GAL

TOTAL ITEM 407 TACK COAT = 645.5 GAL

ITEM 422 - DOUBLE CHIP SEAL, AS PER PLAN

STA. 628+13.77 TO STA. 642+93.24
1479.47' x 24' ÷ 9 = 3945.3 SY

STA. 650+83.14 TO STA. 661+00
1016.86' x 24' ÷ 9 = 2711.7 SY

STA. 668+66.41 TO STA. 712+85.76
4419.35' x 24' ÷ 9 = 11785.0 SY

STA. 719+54.83 TO STA. 730+01.40
1046.57' x 36' ÷ 9 = 4186.3 SY

STA. 749+48.36 TO STA. 833+61.87
8413.51' x 36' ÷ 9 = 33654.1 SY

STA. 843+49.27 TO STA. 878+25.76
3476.49' x 36' ÷ 9 = 13906.0 SY

STA. 888+50.54 TO STA. 918+15
2964.46' x 36' ÷ 9 = 11857.9 SY

TOTAL ITEM 442 DOUBLE CHIP SEAL, APP = 82046.3 SY

ITEM 451 - REINFORCED CONCRETE PAV'T, MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT

STA. 628+13.77 TO STA. 642+93.24
1479.47' x 24' ÷ 9 = 3945.3 SY

STA. 650+83.14 TO STA. 661+00
1016.86' x 24' ÷ 9 = 2711.7 SY

STA. 668+66.41 TO STA. 712+85.76
4419.35' x 24' ÷ 9 = 11785.0 SY

STA. 719+54.83 TO STA. 730+01.40
1046.57' x 36' ÷ 9 = 4186.3 SY

STA. 749+48.36 TO STA. 833+61.87
8413.51' x 36' ÷ 9 = 33654.1 SY

STA. 843+49.27 TO STA. 878+25.76
TEST SECTION. NO CHIP SEAL APPLIED.

STA. 888+50.54 TO STA. 918+15
2964.46' x 36' ÷ 9 = 11857.9 SY

TOTAL ITEM 451 BREAKING AND SEATING = 68140.3 SY

ITEM 301 - 5" ASPHALT CONCRETE BASE, PG64-22

STA. 625+63.77 TO STA. 628+13.77
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 642+93.24 TO STA. 645+43.24
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 648+33.14 TO STA. 650+83.14
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 661+00 TO STA. 668+66.41
766.41' x 37' x 5/12 ÷ 27 = 437.7 CY

STA. 712+85.76 TO STA. 715+35.76
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 717+04.83 TO STA. 719+54.83
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 730+01.40 TO STA. 732+51.40
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 734+23.51 TO STA. 749+48.36
1524.85' x 37' x 5/12 ÷ 27 = 870.7 CY

STA. 833+61.87 TO STA. 836+11.87
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 840+99.27 TO STA. 843+49.27
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 878+25.76 TO STA. 880+95.76
270' x 37' x 5/12 ÷ 27 = 154.2 CY

STA. 886+00.54 TO STA. 888+50.54
250' x 37' x 5/12 ÷ 27 = 142.8 CY

TOTAL ITEM 301 5" ASPHALT CONCRETE BASE = 2747.8 CY

ITEM 408 - PRIME COAT

STA. 625+63.77 TO STA. 628+13.77
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 642+93.24 TO STA. 645+43.24
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 648+33.14 TO STA. 650+83.14
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 661+00 TO STA. 668+66.41
766.41' x 38' ÷ 9 x 0.4 = 1294.4 GAL

STA. 712+85.76 TO STA. 715+35.76
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 717+04.83 TO STA. 719+54.83
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 730+01.40 TO STA. 732+51.40
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 734+23.51 TO STA. 749+48.36
1524.85' x 38' ÷ 9 x 0.4 = 2575.3 GAL

STA. 833+61.87 TO STA. 836+11.87
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 840+99.27 TO STA. 843+49.27
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 878+25.76 TO STA. 880+95.76
270' x 38' ÷ 9 x 0.4 = 456.0 GAL

STA. 886+00.54 TO STA. 888+50.54
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

TOTAL ITEM 408 PRIME COAT = 8126.4 GAL

QUANTITIES ARE CARRIED TO SHEET 102.

CALCULATED JDB
CHECKED WAB

CALCULATIONS

ATH-33/ 50-15.05/ 11.46

ITEM 304 - AGGREGATE BASE

STA. 625+63.77 TO STA. 628+13.77
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 642+93.24 TO STA. 645+43.24
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 648+33.14 TO STA. 650+83.14
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 661+00 TO STA. 668+66.41
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY
266.41' x 38' x 6/12 ÷ 27 = 187.5 CY
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 712+85.76 TO STA. 715+35.76
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 717+04.83 TO STA. 719+54.83
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 730+01.40 TO STA. 732+51.40
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 734+23.51 TO STA. 749+48.36
1274.85' x 38' x 6/12 ÷ 27 = 897.2 CY
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 833+61.87 TO STA. 836+11.87
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 840+99.27 TO STA. 843+49.27
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 878+25.76 TO STA. 880+95.76
270' x 38' x 8(AVG.)/12 ÷ 27 = 253.4 CY

STA. 886+00.54 TO STA. 888+50.54
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

TOTAL ITEM 304 AGGREGATE BASE = 4153.3 CY

ITEM 204 - SUBGRADE COMPACTION

STA. 625+63.77 TO STA. 628+13.77
250' x 39' ÷ 9 = 1083.4 SY

STA. 642+93.24 TO STA. 645+43.24
250' x 39' ÷ 9 = 1083.4 SY

STA. 648+33.14 TO STA. 650+83.14
250' x 39' ÷ 9 = 1083.4 SY

STA. 661+00 TO STA. 668+66.41
766.41' x 39' ÷ 9 = 3321.2 SY

STA. 712+85.76 TO STA. 715+35.76
250' x 39' ÷ 9 = 1083.4 SY

STA. 717+04.83 TO STA. 719+54.83
250' x 39' ÷ 9 = 1083.4 SY

STA. 730+01.40 TO STA. 732+51.40
250' x 39' ÷ 9 = 1083.4 SY

STA. 734+23.51 TO STA. 749+48.36
1524.85' x 39' ÷ 9 = 6607.7 SY

STA. 833+61.87 TO STA. 836+11.87
250' x 39' ÷ 9 = 1083.4 SY

STA. 840+99.27 TO STA. 843+49.27
250' x 39' ÷ 9 = 1083.4 SY

STA. 878+25.76 TO STA. 880+95.76
270' x 39' ÷ 9 = 1170.0 SY

STA. 886+00.54 TO STA. 888+50.54
250' x 39' ÷ 9 = 1083.4 SY

TOTAL ITEM 204 SUBGRADE COMPACTION = 20849.5 SY

ITEM 202 - PAVEMENT REMOVED

STA. 625+63.77 TO STA. 628+13.77
250' x 24' ÷ 9 = 666.7 SY

STA. 642+93.24 TO STA. 645+43.24
250' x 24' ÷ 9 = 666.7 SY

STA. 648+33.14 TO STA. 650+83.14
250' x 24' ÷ 9 = 666.7 SY

STA. 661+00 TO STA. 668+66.41
766.41' x 24' ÷ 9 = 2043.8 SY

STA. 712+85.76 TO STA. 715+35.76
250' x 24' ÷ 9 = 666.7 SY

STA. 717+04.83 TO STA. 719+54.83
250' x 36' ÷ 9 = 1000.0 SY

STA. 730+01.40 TO STA. 732+51.40
250' x 36' ÷ 9 = 1000.0 SY

STA. 734+23.51 TO STA. 749+48.36
1524.85' x 36' ÷ 9 = 6099.4 SY

STA. 833+61.87 TO STA. 836+11.87
250' x 36' ÷ 9 = 1000.0 SY

STA. 840+99.27 TO STA. 843+49.27
250' x 36' ÷ 9 = 1000.0 SY

STA. 878+25.76 TO STA. 880+95.76
270' x 36' ÷ 9 = 1080.0 SY

STA. 886+00.54 TO STA. 888+50.54
250' x 36' ÷ 9 = 1000.0 SY

TOTAL ITEM 202 PAVEMENT REMOVED = 16890.0 SY

ITEM 204 - EXCAVATION OF SUBGRADE

STA. 625+63.77 TO STA. 628+13.77
250' x (24' x 18/12 + 12' x 27/12 + 10.5) ÷ 27 = 680.6 CY

STA. 642+93.24 TO STA. 645+43.24
250' x (24' x 18/12 + 12' x 27/12 + 10.5) ÷ 27 = 680.6 CY

STA. 648+33.14 TO STA. 650+83.14
250' x (24' x 18/12 + 12' x 27/12 + 10.5) ÷ 27 = 680.6 CY

STA. 661+00 TO STA. 668+66.41
766.41' x (24' x 18/12 + 12' x 27/12 + 10.5) ÷ 27 = 2086.4 CY

STA. 712+85.76 TO STA. 715+35.76
250' x (24' x 18/12 + 12' x 27/12 + 10.5) ÷ 27 = 680.6 CY

STA. 717+04.83 TO STA. 719+54.83
250' x (36' x 18/12 + 10.5) ÷ 27 = 597.3 CY

STA. 730+01.40 TO STA. 732+51.40
250' x (36' x 18/12 + 10.5) ÷ 27 = 597.3 CY

STA. 734+23.51 TO STA. 749+48.36
1524.85' x (36' x 18/12 + 10.5) ÷ 27 = 3642.7 CY

STA. 833+61.87 TO STA. 836+11.87
250' x (36' x 18/12 + 10.5) ÷ 27 = 597.3 CY

STA. 840+99.27 TO STA. 843+49.27
250' x (36' x 18/12 + 10.5) ÷ 27 = 597.3 CY

STA. 878+25.76 TO STA. 880+95.76
270' x (36' x 18/12 + 10.5) ÷ 27 = 645.0 CY

STA. 886+00.54 TO STA. 888+50.54
250' x (36' x 18/12 + 10.5) ÷ 27 = 597.3 CY

TOTAL ITEM 204 EXCAVATION OF SUBGRADE = 12083.0 CY

ITEM 204 - GRANULAR MATERIAL, TYPE C

STA. 625+63.77 TO STA. 628+13.77
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 642+93.24 TO STA. 645+43.24
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 648+33.14 TO STA. 650+83.14
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 661+00 TO STA. 668+66.41
766.41' x (36' x 12/12 + 8.8) ÷ 27 = 1271.7 CY

STA. 712+85.76 TO STA. 715+35.76
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 717+04.83 TO STA. 719+54.83
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 730+01.40 TO STA. 732+51.40
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 734+23.51 TO STA. 749+48.36
1524.85' x (36' x 12/12 + 8.8) ÷ 27 = 2530.2 CY

STA. 833+61.87 TO STA. 836+11.87
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 840+99.27 TO STA. 843+49.27
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 878+25.76 TO STA. 880+95.76
270' x (36' x 12/12 + 8.8) ÷ 27 = 448.0 CY

STA. 886+00.54 TO STA. 888+50.54
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

TOTAL ITEM 204 GRANULAR MATERIAL, TYPE C = 7984.0 CY

ITEM 255 - FULL DEPTH PAVEMENT SAWING

RAMPS M, N & P
3 x 16' = 48 FT

RAMPS R, T & F
3 x 25' = 75 FT

US-33 E.B.
26 FT

STA. 918+15
36 FT

TOTAL ITEM 255 FULL DEPTH PAV'T SAWING = 185 FT

ITEM 618 - RUMBLE STRIPS, (ASPHALT CONCRETE)

STA. 625+63.77 TO STA. 645+43.24
1979.47' x 2 = 3959.0 FT

STA. 648+33.14 TO STA. 715+35.76
6702.62' x 2 = 13405.3 FT

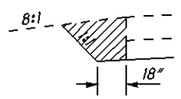
STA. 717+04.83 TO STA. 732+51.40
1546.57' x 2 = 3093.2 FT

STA. 734+23.51 TO STA. 836+11.87
10188.36' x 2 = 20376.8 FT

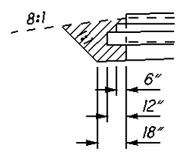
STA. 840+99.27 TO STA. 880+95.76
3996.49' x 2 = 7993.0 FT

STA. 886+00.54 TO STA. 920+65
3464.46' x 2 = 6929.0 FT

TOTAL ITEM 618 RUMBLE STRIPS = 55756.2 FT



A = ±5.25 SQ.FT.



A = ±4.4 SQ.FT.

QUANTITIES ARE CARRIED TO SHEET 102.

CALCULATED JDB
CHECKED WAB

CALCULATIONS

ATH-33/50-15.05/11.46

MAINLINE (RIGHT)

ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)

STA. 624+25.30 TO STA. 644+60.15
2034.85' x 36' x 1.5/12 ÷ 27 = 339.2 CY

STA. 647+84.04 TO STA. 715+19.55
6735.51' x 36' x 1.5/12 ÷ 27 = 1122.6 CY

STA. 716+88.61 TO STA. 732+43.84
1555.23' x 36' x 1.5/12 ÷ 27 = 259.2 CY

STA. 734+21.83 TO STA. 836+54.21
10232.38' x 36' x 1.5/12 ÷ 27 = 1705.4 CY

STA. 841+41.61 TO STA. 881+81.33
4039.72' x 36' x 1.5/12 ÷ 27 = 673.3 CY

STA. 886+80.49 TO STA. 918+15
3134.51' x 36' x 1.5/12 ÷ 27 = 522.5 CY

TOTAL ITEM 442 SURFACE COURSE = 4622.2 CY

ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE

STA. 624+25.30 TO STA. 644+60.15
2034.85' x 36' ÷ 9 x 0.04 = 325.6 GAL

STA. 647+84.04 TO STA. 715+19.55
6735.51' x 36' ÷ 9 x 0.04 = 1077.7 GAL

STA. 716+88.61 TO STA. 732+43.84
1555.23' x 36' ÷ 9 x 0.04 = 248.9 GAL

STA. 734+21.83 TO STA. 836+54.21
10232.38' x 36' ÷ 9 x 0.04 = 1637.2 GAL

STA. 841+41.61 TO STA. 881+81.33
4039.72' x 36' ÷ 9 x 0.04 = 646.4 GAL

STA. 886+80.49 TO STA. 918+15
3134.51' x 36' ÷ 9 x 0.04 = 501.6 GAL

TOTAL ITEM 407 TACK COAT FOR INTERMEDIATE = 4437.4 GAL

ITEM 442 - 2¼" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

STA. 624+25.30 TO STA. 644+60.15
2034.85' x 36' x 2.25/12 ÷ 27 = 508.8 CY

STA. 647+84.04 TO STA. 715+19.55
6735.51' x 36' x 2.25/12 ÷ 27 = 1683.9 CY

STA. 716+88.61 TO STA. 732+43.84
1555.23' x 36' x 2.25/12 ÷ 27 = 388.8 CY

STA. 734+21.83 TO STA. 836+54.21
10232.38' x 36' x 2.25/12 ÷ 27 = 2558.1 CY

STA. 841+41.61 TO STA. 881+81.33
4039.72' x 36' x 2.25/12 ÷ 27 = 1010.0 CY

STA. 886+80.49 TO STA. 918+15
3134.6' x 36' x 2.25/12 ÷ 27 = 783.7 CY

STA. 626+75.30 TO STA. 642+10.15
1534.85' x 24' x 2.25/12 ÷ 27 = 255.8 CY

STA. 650+34.04 TO STA. 660+93.37
1059.33' x 24' x 2.25/12 ÷ 27 = 176.6 CY

STA. 677+84.54 TO STA. 712+69.55
3485.01' x 24' x 2.25/12 ÷ 27 = 580.9 CY

STA. 719+38.61 TO STA. 729+93.84
1055.23' x 36' x 2.25/12 ÷ 27 = 263.9 CY

STA. 736+71.83 TO STA. 834+04.21
9732.38' x 36' x 2.25/12 ÷ 27 = 2433.1 CY

STA. 843+91.61 TO STA. 879+31.33
3539.72' x 36' x 2.25/12 ÷ 27 = 885.0 CY

STA. 889+30.49 TO STA. 918+15
2884.51' x 36' x 2.25/12 ÷ 27 = 721.2 CY

ITEM 442 - 2¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

STA. 624+25.30 TO STA. 626+75.30
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 626+75.30 TO STA. 642+10.15
1534.85' x 12' x 2.75/12 ÷ 27 = 156.4 CY

STA. 642+10.15 TO STA. 644+60.15
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 647+84.04 TO STA. 650+34.04
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 650+34.04 TO STA. 660+93.37
1059.33' x 12' x 2.75/12 ÷ 27 = 107.9 CY

STA. 660+93.37 TO STA. 677+84.54
1691.17' x 36' x 2.75/12 ÷ 27 = 516.8 CY

STA. 677+84.54 TO STA. 712+69.55
3485.01' x 12' x 2.75/12 ÷ 27 = 355.0 CY

STA. 712+69.55 TO STA. 715+19.55
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 716+88.61 TO STA. 719+38.61
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 729+93.84 TO STA. 732+43.84
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 734+21.83 TO STA. 736+71.83
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 834+04.21 TO STA. 836+54.21
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 841+41.61 TO STA. 843+91.61
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 879+31.33 TO STA. 881+81.33
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

STA. 886+80.49 TO STA. 889+30.49
250' x 36' x 2.75/12 ÷ 27 = 76.4 CY

TOTAL ITEM 442 INTERMEDIATE COURSE = 14226.3 CY

ITEM 407 - TACK COAT

STA. 626+75.30 TO STA. 642+10.15
1534.85' x 12' ÷ 9 x 0.07 = 143.3 GAL

STA. 650+34.04 TO STA. 660+93.37
1059.33' x 12' ÷ 9 x 0.07 = 98.9 GAL

STA. 677+84.54 TO STA. 712+69.55
3485.01' x 12' ÷ 9 x 0.07 = 325.3 GAL

TOTAL ITEM 407 TACK COAT = 567.5 GAL

ITEM 422 - DOUBLE CHIP SEAL, AS PER PLAN

STA. 626+75.30 TO STA. 642+10.15
1534.85' x 24' ÷ 9 = 4093.0 SY

STA. 650+34.04 TO STA. 660+93.37
1059.33' x 24' ÷ 9 = 2824.9 SY

STA. 677+84.54 TO STA. 712+69.55
3485.01' x 24' ÷ 9 = 9293.4 SY

STA. 719+38.61 TO STA. 729+93.84
1055.23' x 36' ÷ 9 = 4221.0 SY

STA. 736+71.83 TO STA. 834+04.21
9732.38' x 36' ÷ 9 = 38929.6 SY

STA. 843+91.61 TO STA. 879+31.33
3539.72' x 36' ÷ 9 = 14158.9 SY

STA. 889+30.49 TO STA. 918+15
2884.51' x 36' ÷ 9 = 11538.1 SY

TOTAL ITEM 442 DOUBLE CHIP SEAL, APP = 85058.9 SY

ITEM 451 - REINFORCED CONCRETE PAV'T, MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT

STA. 626+75.30 TO STA. 642+10.15
1534.85' x 24' ÷ 9 = 4093.0 SY

STA. 650+34.04 TO STA. 660+93.37
1059.33' x 24' ÷ 9 = 2824.9 SY

STA. 677+84.54 TO STA. 712+69.55
3485.01' x 24' ÷ 9 = 9293.4 SY

STA. 719+38.61 TO STA. 729+93.84
1055.23' x 36' ÷ 9 = 4221.0 SY

STA. 736+71.83 TO STA. 834+04.21
9732.38' x 36' ÷ 9 = 38929.6 SY

STA. 843+91.61 TO STA. 879+31.33
3539.72' x 36' ÷ 9 = 14158.9 SY

STA. 889+30.49 TO STA. 918+15
2884.51' x 36' ÷ 9 = 11538.1 SY

TOTAL ITEM 451 BREAKING AND SEATING = 85058.9 SY

ITEM 301 - 5" ASPHALT CONCRETE BASE, PG64-22

STA. 624+25.30 TO STA. 626+75.30
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 642+10.15 TO STA. 644+60.15
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 647+84.04 TO STA. 650+34.04
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 660+93.37 TO STA. 677+84.54
1691.17' x 37' x 5/12 ÷ 27 = 965.7 CY

STA. 712+69.55 TO STA. 715+19.55
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 716+88.61 TO STA. 719+38.61
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 729+93.84 TO STA. 732+43.84
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 734+21.83 TO STA. 736+71.83
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 834+04.21 TO STA. 836+54.21
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 841+41.61 TO STA. 843+91.61
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 879+31.33 TO STA. 881+81.33
250' x 37' x 5/12 ÷ 27 = 142.8 CY

STA. 886+80.49 TO STA. 889+30.49
250' x 37' x 5/12 ÷ 27 = 142.8 CY

TOTAL ITEM 301 5" ASPHALT CONCRETE BASE = 2536.5 CY

ITEM 408 - PRIME COAT

STA. 624+25.30 TO STA. 626+75.30
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 642+10.15 TO STA. 644+60.15
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 647+84.04 TO STA. 650+34.04
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 660+93.37 TO STA. 677+84.54
1691.17' x 38' ÷ 9 x 0.4 = 2856.2 GAL

STA. 712+69.55 TO STA. 715+19.55
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 716+88.61 TO STA. 719+38.61
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 729+93.84 TO STA. 732+43.84
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 734+21.83 TO STA. 736+71.83
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 834+04.21 TO STA. 836+54.21
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 841+41.61 TO STA. 843+91.61
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 879+31.33 TO STA. 881+81.33
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

STA. 886+80.49 TO STA. 889+30.49
250' x 38' ÷ 9 x 0.4 = 422.3 GAL

TOTAL ITEM 408 PRIME COAT = 7501.5 GAL

QUANTITIES ARE CARRIED TO SHEET 102.

ITEM 304 - AGGREGATE BASE

STA. 624+25.30 TO STA. 626+75.30
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 642+10.15 TO STA. 644+60.15
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 647+84.04 TO STA. 650+34.04
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 660+93.37 TO STA. 677+84.54
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY
1191.17' x 38' x 6/12 ÷ 27 = 838.3 CY
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 712+69.55 TO STA. 715+19.55
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 716+88.61 TO STA. 719+38.61
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 729+93.84 TO STA. 732+43.84
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 734+21.83 TO STA. 736+71.83
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 834+04.21 TO STA. 836+54.21
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 841+41.61 TO STA. 843+91.61
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 879+31.33 TO STA. 881+81.33
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

STA. 886+80.49 TO STA. 889+30.49
250' x 38' x 8(AVG.)/12 ÷ 27 = 234.6 CY

TOTAL ITEM 304 AGGREGATE BASE = 3888.1 CY

ITEM 204 - SUBGRADE COMPACTION

STA. 624+25.30 TO STA. 626+75.30
250' x 39' ÷ 9 = 1083.4 SY

STA. 642+10.15 TO STA. 644+60.15
250' x 39' ÷ 9 = 1083.4 SY

STA. 647+84.04 TO STA. 650+34.04
250' x 39' ÷ 9 = 1083.4 SY

STA. 660+93.37 TO STA. 677+84.54
1691.17' x 39' ÷ 9 = 7328.4 SY

STA. 712+69.55 TO STA. 715+19.55
250' x 39' ÷ 9 = 1083.4 SY

STA. 716+88.61 TO STA. 719+38.61
250' x 39' ÷ 9 = 1083.4 SY

STA. 729+93.84 TO STA. 732+43.84
250' x 39' ÷ 9 = 1083.4 SY

STA. 734+21.83 TO STA. 736+71.83
250' x 39' ÷ 9 = 1083.4 SY

STA. 834+04.21 TO STA. 836+54.21
250' x 39' ÷ 9 = 1083.4 SY

STA. 841+41.61 TO STA. 843+91.61
250' x 39' ÷ 9 = 1083.4 SY

STA. 879+31.33 TO STA. 881+81.33
250' x 39' ÷ 9 = 1083.4 SY

STA. 886+80.49 TO STA. 889+30.49
250' x 39' ÷ 9 = 1083.4 SY

TOTAL ITEM 204 SUBGRADE COMPACTION = 19245.8 SY

ITEM 202 - PAVEMENT REMOVED

STA. 624+25.30 TO STA. 626+75.30
250' x 24' ÷ 9 = 666.7 SY

STA. 642+10.15 TO STA. 644+60.15
250' x 24' ÷ 9 = 666.7 SY

STA. 647+84.04 TO STA. 650+34.04
250' x 24' ÷ 9 = 666.7 SY

STA. 660+93.37 TO STA. 677+84.54
1691.17' x 24' ÷ 9 = 4509.8 SY

STA. 712+69.55 TO STA. 715+19.55
250' x 24' ÷ 9 = 666.7 SY

STA. 716+88.61 TO STA. 719+38.61
250' x 36' ÷ 9 = 1000.0 SY

STA. 729+93.84 TO STA. 732+43.84
250' x 36' ÷ 9 = 1000.0 SY

STA. 734+21.83 TO STA. 736+71.83
250' x 36' ÷ 9 = 1000.0 SY

STA. 834+04.21 TO STA. 836+54.21
250' x 36' ÷ 9 = 1000.0 SY

STA. 841+41.61 TO STA. 843+91.61
250' x 36' ÷ 9 = 1000.0 SY

STA. 879+31.33 TO STA. 881+81.33
250' x 36' ÷ 9 = 1000.0 SY

STA. 886+80.49 TO STA. 889+30.49
250' x 36' ÷ 9 = 1000.0 SY

TOTAL ITEM 202 PAVEMENT REMOVED = 14176.6 SY

ITEM 204 - EXCAVATION OF SUBGRADE

STA. 624+25.30 TO STA. 626+75.30
250' x (24' x 18/12 + 12' x 27/12 + 10.5) ÷ 27 = 680.6 CY

STA. 642+10.15 TO STA. 644+60.15
250' x (24' x 18/12 + 12' x 27/12 + 10.5) ÷ 27 = 680.6 CY

STA. 647+84.04 TO STA. 650+34.04
250' x (24' x 18/12 + 12' x 27/12 + 10.5) ÷ 27 = 680.6 CY

STA. 660+93.37 TO STA. 677+84.54
1691.17' x (24' x 18/12 + 12' x 27/12 + 10.5) ÷ 27 = 4603.8 CY

STA. 712+69.55 TO STA. 715+19.55
250' x (24' x 18/12 + 12' x 27/12 + 10.5) ÷ 27 = 680.6 CY

STA. 716+88.61 TO STA. 719+38.61
250' x (36' x 18/12 + 10.5) ÷ 27 = 597.3 CY

STA. 729+93.84 TO STA. 732+43.84
250' x (36' x 18/12 + 10.5) ÷ 27 = 597.3 CY

STA. 734+21.83 TO STA. 736+71.83
250' x (36' x 18/12 + 10.5) ÷ 27 = 597.3 CY

STA. 834+04.21 TO STA. 836+54.21
250' x (36' x 18/12 + 10.5) ÷ 27 = 597.3 CY

STA. 841+41.61 TO STA. 843+91.61
250' x (36' x 18/12 + 10.5) ÷ 27 = 597.3 CY

STA. 879+31.33 TO STA. 881+81.33
250' x (36' x 18/12 + 10.5) ÷ 27 = 597.3 CY

STA. 886+80.49 TO STA. 889+30.49
250' x (36' x 18/12 + 10.5) ÷ 27 = 597.3 CY

TOTAL ITEM 204 EXCAVATION OF SUBGRADE = 11507.3 CY

ITEM 204 - GRANULAR MATERIAL, TYPE C

STA. 624+25.30 TO STA. 626+75.30
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 642+10.15 TO STA. 644+60.15
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 647+84.04 TO STA. 650+34.04
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 660+93.37 TO STA. 677+84.54
1691.17' x (36' x 12/12 + 8.8) ÷ 27 = 2806.1 CY

STA. 712+69.55 TO STA. 715+19.55
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 716+88.61 TO STA. 719+38.61
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 729+93.84 TO STA. 732+43.84
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 734+21.83 TO STA. 736+71.83
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 834+04.21 TO STA. 836+54.21
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 841+41.61 TO STA. 843+91.61
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 879+31.33 TO STA. 881+81.33
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

STA. 886+80.49 TO STA. 889+30.49
250' x (36' x 12/12 + 8.8) ÷ 27 = 414.9 CY

TOTAL ITEM 204 GRANULAR MATERIAL, TYPE C = 7370 CY

ITEM 255 - FULL DEPTH PAVEMENT SAWING

RAMPS J-1, K & Q
3 x 16' = 48 FT

RAMPS U, S, H & J-2
4 x 25' = 100 FT

US-33 W.B.
26 FT

CR 24
18 FT

STA. 918+15
36 FT

TOTAL ITEM 255 FULL DEPTH PAV'T SAWING = 228 FT

ITEM 618 - RUMBLE STRIPS, (ASPHALT CONCRETE)

STA. 624+25.30 TO STA. 644+60.15
2034.85' x 2 = 4069.7 FT

STA. 647+84.04 TO STA. 715+19.55
6735.51' x 2 = 13471.1 FT

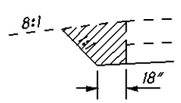
STA. 716+88.61 TO STA. 732+43.84
1555.23' x 2 = 3110.5 FT

STA. 734+21.83 TO STA. 836+54.21
10232.38' x 2 = 20464.8 FT

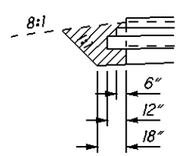
STA. 841+41.61 TO STA. 881+81.33
4039.72' x 2 = 8079.5 FT

STA. 886+80.49 TO STA. 920+65
3384.51' x 2 = 6769.1 FT

TOTAL ITEM 618 RUMBLE STRIPS = 55964.7 FT



A = ±5.25 SQ.FT.



A = ±4.4 SQ.FT.

QUANTITIES ARE CARRIED TO SHEET 102.

CALCULATED JDB
CHECKED WAB

CALCULATIONS

ATH-33/50-15.05/11.46

PAVEMENT FEATHERING - BEGIN/END PAVEMENT

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)

STA. 598+11.84 TO STA. 599+36.84 (US-50 E.B.)
125' x 36' x 1.5/12 ÷ 27 = 20.9 CY

STA. 606+42.82 TO STA. 607+67.82 (US-50 W.B.)
125' x 36' x 1.5/12 ÷ 27 = 20.9 CY

CR 24
125' x 24' x 1.5/12 ÷ 27 = 13.9 CY

STA. 957+00 TO STA. 954+50 (US-33 W.B.)
100' x 36' x ½(0+1.5)/12 ÷ 27 = 8.4 CY
150' x 36' x 1.5/12 ÷ 27 = 25.0 CY

STA. 952+25 TO STA. 949+75 (US-33 E.B.)
100' x 36' x ½(0+1.5)/12 ÷ 27 = 8.4 CY
150' x 36' x 1.5/12 ÷ 27 = 25.0 CY

STA. 725+98.97 TO STA. 728+48.97 (US-33 W.B.)
100' x 26' x ½(0+1.5)/12 ÷ 27 = 6.1 CY
50' x 26' x 1.5/12 ÷ 27 = 6.1 CY
100' x ½(28'+26') x 1.5/12 ÷ 27 = 12.5 CY

STA. 918+15 TO STA. 920+65 (US-50 MAINLINE)
100' x 76' x ½(0+1.5)/12 ÷ 27 = 17.6 CY
150' x 76' x 1.5/12 ÷ 27 = 52.8 CY

RAMPS: B, J-1, M, N, P, & Q
100' x 22' x ½(0+1.5)/12 ÷ 27 = 5.1 CY
150' x 22' x 1.5/12 ÷ 27 = 15.3 CY

RAMPS: F, H, J-2, S, T & U
100' x 25' x ½(0+1.5)/12 ÷ 27 = 5.8 CY
150' x 25' x 1.5/12 ÷ 27 = 17.4 CY

TOTAL ITEM 442 SURFACE COURSE = 261.2 CY

ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE

STA. 598+11.84 TO STA. 599+36.84 (US-50 E.B.)
125' x 36' ÷ 9 x 0.04 = 20.0 GAL

STA. 606+42.82 TO STA. 607+67.82 (US-50 W.B.)
125' x 36' ÷ 9 x 0.04 = 20.0 GAL

CR 24
125' x 24' ÷ 9 x 0.04 = 13.4 GAL

STA. 957+00 TO STA. 954+50 (US-33 W.B.)
150' x 36' ÷ 9 x 0.04 = 24.0 GAL

STA. 952+25 TO STA. 949+75 (US-33 E.B.)
150' x 36' ÷ 9 x 0.04 = 24.0 GAL

STA. 725+98.97 TO STA. 728+48.97 (US-33 W.B.)
100' x ½(28'+26') ÷ 9 x 0.04 = 12.0 GAL
50' x 26' ÷ 9 x 0.04 = 5.8 GAL

STA. 918+15 TO STA. 920+65 (US-50 MAINLINE)
150' x 76' ÷ 9 x 0.04 = 50.7 GAL

RAMPS: B, J-1, M, N, P, & Q
150' x 22' ÷ 9 x 0.04 = 14.7 GAL

RAMPS: F, H, J-2, S, T & U
150' x 25' ÷ 9 x 0.04 = 16.7 GAL

TOTAL ITEM 407 TACK COAT FOR INTERMEDIATE = 201.3 GAL

ITEM 442 - ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

STA. 598+11.84 TO STA. 599+36.84 (US-50 E.B.)
125' x 36' x 3.5(AVG.)/12 ÷ 27 = 48.7 CY

STA. 606+42.82 TO STA. 607+67.82 (US-50 W.B.)
125' x 36' x 3.5(AVG.)/12 ÷ 27 = 48.7 CY

CR 24
125' x 24' x 3.5(AVG.)/12 ÷ 27 = 32.4 CY

STA. 957+00 TO STA. 954+50 (US-33 W.B.)
50' x 36' x ½(1+2.25)/12 ÷ 27 = 9.1 CY
100' x 36' x 2.25/12 ÷ 27 = 25.0 CY
100' x 36' x ½(0+2.75)/12 ÷ 27 = 15.3 CY

STA. 952+25 TO STA. 949+75 (US-33 E.B.)
50' x 36' x ½(1+2.25)/12 ÷ 27 = 9.1 CY
100' x 36' x 2.25/12 ÷ 27 = 25.0 CY
100' x 36' x ½(0+2.75)/12 ÷ 27 = 15.3 CY

STA. 725+98.97 TO STA. 728+48.97 (US-33 W.B.)
50' x 26' x ½(1+2.25)/12 ÷ 27 = 6.6 CY
100' x ½(28'+26') x 2.25/12 ÷ 27 = 18.8 CY
100' x ½(28'+26') x ½(0+2.75)/12 ÷ 27 = 11.5 CY

STA. 918+15 TO STA. 920+65 (US-50 MAINLINE)
50' x 76' x ½(1+2.25)/12 ÷ 27 = 19.1 CY
100' x 76' x 2.25/12 ÷ 27 = 52.8 CY
100' x 76' x ½(0+2.75)/12 ÷ 27 = 32.3 CY

RAMPS: B, J-1, M, N, P, & Q
6 x 50' x 22' x ½(1+2.25)/12 ÷ 27 = 33.1 CY
6 x 100' x 22' x 2.25/12 ÷ 27 = 91.7 CY
6 x 100' x 22' x ½(0+2.75)/12 ÷ 27 = 56.1 CY

RAMPS: F, H, J-2, S, T & U
6 x 50' x 25' x ½(1+2.25)/12 ÷ 27 = 37.7 CY
6 x 100' x 25' x 2.25/12 ÷ 27 = 104.2 CY
6 x 100' x 25' x ½(0+2.75)/12 ÷ 27 = 63.7 CY

TOTAL ITEM 442 INTERMEDIATE COURSE = 756.2 CY

ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE

STA. 598+11.84 TO STA. 599+36.84 (US-50 E.B.)
125' x 36' ÷ 9 = 500 SY

STA. 606+42.82 TO STA. 607+67.82 (US-50 W.B.)
125' x 36' ÷ 9 = 500 SY

CR 24
125' x 24' ÷ 9 = 333.4 SY

TOTAL ITEM 254 PAV'T PLANING, ASPHALT CONC. = 1333.4 SY

ITEM 407 - TACK COAT

STA. 598+11.84 TO STA. 599+36.84 (US-50 E.B.)
125' x 36' ÷ 9 x 0.07 = 35.0 GAL

STA. 606+42.82 TO STA. 607+67.82 (US-50 W.B.)
125' x 36' ÷ 9 x 0.07 = 35.0 GAL

CR 24
125' x 24' ÷ 9 x 0.07 = 23.4 GAL

STA. 957+00 TO STA. 954+50 (US-33 W.B.)
250' x 36' ÷ 9 x 0.07 = 70.0 GAL

STA. 952+25 TO STA. 949+75 (US-33 E.B.)
250' x 36' ÷ 9 x 0.07 = 70.0 GAL

STA. 725+98.97 TO STA. 728+48.97 (US-33 W.B.)
100' x ½(28'+26') ÷ 9 x 0.07 = 21.0 GAL
150' x 26' ÷ 9 x 0.07 = 30.4 GAL

STA. 918+15 TO STA. 920+65 (US-50 MAINLINE)
250' x 76' ÷ 9 x 0.07 = 147.8 GAL

RAMPS: B, J-1, M, N, P, & Q
6 x 250' x 22' ÷ 9 x 0.07 = 256.7 GAL

RAMPS: F, H, J-2, S, T & U
6 x 250' x 25' ÷ 9 x 0.07 = 291.7 GAL

TOTAL ITEM 407 TACK COAT = 981.0 GAL

ITEM 617 - COMPACTED AGGREGATE

CR 24
125' x 2 x 10' x 3.25(AVG.)/12 ÷ 27 = 25.1 CY

TOTAL ITEM 617 COMPACTED AGGREGATE = 25.1 CU. YD.

TURN AROUNDS

A = 485 SQ. YD.

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)

4 x 485 x 1.5/12 ÷ 3 = 80.9 CY

TOTAL ITEM 442 SURFACE COURSE = 80.9 CY

ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE

4 x 485 x 0.04 = 77.6 GAL

TOTAL ITEM 407 TACK COAT FOR INTERMEDIATE = 77.6 GAL

ITEM 442 - 2¼" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

4 x 485 x 2.25/12 ÷ 3 = 121.3 CY

ITEM 442 - 2¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

4 x 485 x 2.75/12 ÷ 3 = 148.2 CY

TOTAL ITEM 442 INTERMEDIATE COURSE = 269.5 CY

ITEM 407 - TACK COAT

4 x 485 x 0.07 = 135.8 GAL

TOTAL ITEM 407 TACK COAT = 135.8 GAL

QUANTITIES ARE CARRIED TO SHEET 102.

CALCULATED JDB
CHECKED WAB

CALCULATIONS

ATH-33/50-15.05/11.46

ACCELERATION/DECELERATION LANES

ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)

STA. 630+86 TO STA. 633+50.33 (RT) - US-33 W.B.
264.33' x ½(11'+3') x 1.5/12 ÷ 27 = 8.6 CY

STA. 633+50.33 TO STA. 644+60.15 (RT) - US-33 W.B.
1109.82' x ½(39'+13') x 1.5/12 ÷ 27 = 133.6 CY

STA. 636+50 TO STA. 641+90.56 (LT) - US-33 E.B.
14112 SF x 1.5/12 ÷ 27 = 65.4 CY

STA. 641+90.56 TO STA. 645+43.24 (LT) - US-33 E.B.
352.68' x 12' x 1.5/12 ÷ 27 = 19.6 CY

STA. 647+84.04 TO STA. 654+61.50 (RT) - RAMP J-1
677.46' x 12' x 1.5/12 ÷ 27 = 37.7 CY
279.34' x ½(0'+28') x 1.5/12 ÷ 27 = 18.1 CY

STA. 648+33.14 TO STA. 658+06.50 (LT) - RAMP M
841.86' x 12' x 1.5/12 ÷ 27 = 46.8 CY
575' x ½(0'+13') x 1.5/12 ÷ 27 = 17.3 CY
130.5' x 16' x 1.5/12 ÷ 27 = 9.7 CY
130.5' x ½(9'+18') x 1.5/12 ÷ 27 = 8.2 CY

STA. 661+88.36 TO STA. 673+20.94 (RT) - RAMP K
132.58' x 16' x 1.5/12 ÷ 27 = 9.9 CY
132.58' x ½(18'+9') x 1.5/12 ÷ 27 = 8.3 CY
920' x ½(24'+2') x 1.5/12 ÷ 27 = 55.4 CY

STA. 673+47 TO STA. 681+50.32 (LT) - RAMP N
313.32' x ½(40'+12') x 1.5/12 ÷ 27 = 37.8 CY
390' x 12' x 1.5/12 ÷ 27 = 21.7 CY
83.33' x ½(12'+2') x 1.5/12 ÷ 27 = 2.7 CY

STA. 697+00 TO STA. 708+53 (LT) - RAMP P
920' x ½(2'+25') x 1.5/12 ÷ 27 = 57.5 CY
153' x 16' x 1.5/12 ÷ 27 = 11.4 CY
153' x ½(9'+18') x 1.5/12 ÷ 27 = 9.6 CY

STA. 700+50 TO STA. 708+50 (RT) - RAMP Q
83.33' x ½(2'+12') x 1.5/12 ÷ 27 = 2.7 CY
700' x 12' x 1.5/12 ÷ 27 = 38.9 CY
246' x ½(2'+27') x 1.5/12 ÷ 27 = 16.6 CY

STA. 718+00 TO STA. 726+00 (RT) - US-33 W.B.
83.33' x ½(2'+12') x 1.5/12 ÷ 27 = 2.7 CY
700' x 12' x 1.5/12 ÷ 27 = 38.9 CY
216' x ½(2'+27') x 1.5/12 ÷ 27 = 14.5 CY

STA. 725+00 TO STA. 732+51.40 (LT) - RAMP R
500' x ½(2'+12') x 1.5/12 ÷ 27 = 16.2 CY
158.93' x ½(39'+11') x 1.5/12 ÷ 27 = 18.4 CY
158.93' x 12' x 1.5/12 ÷ 27 = 8.9 CY

STA. 734+23.51 TO STA. 739+81.52 (LT) - US-33 E.B.
270' x 12' x 1.5/12 ÷ 27 = 15.0 CY
288' x ½(12'+34') x 1.5/12 ÷ 27 = 30.7 CY

STA. 737+60 TO STA. 749+11.58 (RT) - RAMP U
4075 SF x 1.5/12 ÷ 27 = 18.9 CY
975' x ½(25'+2') x 1.5/12 ÷ 27 = 61.0 CY

STA. 752+00 TO STA. 759+42.63 (LT) - RAMP T
4090 SF x 1.5/12 ÷ 27 = 19.0 CY
700' x 12' x 1.5/12 ÷ 27 = 38.9 CY
100' x ½(12'+0') x 1.5/12 ÷ 27 = 2.8 CY

STA. 752+50 TO STA. 764+02 (RT) - RAMP S
4500 SF x 1.5/12 ÷ 27 = 20.9 CY
1000' x ½(25'+0') x 1.5/12 ÷ 27 = 57.9 CY

STA. 874+70 TO STA. 880+95 (LT) - RAMP G
625' x ½(0'+16') x 1.5/12 ÷ 27 = 23.2 CY

STA. 887+15 TO STA. 895+00 (RT) - RAMP H
98' x ½(0'+12') x 1.5/12 ÷ 27 = 2.8 CY
161.51' x 12' x 1.5/12 ÷ 27 = 9.0 CY
10683 SF x 1.5/12 ÷ 27 = 49.5 CY

STA. 893+10.86 TO STA. 901+25 (LT) - RAMP F
6120 SF x 1.5/12 ÷ 27 = 28.4 CY
438' x 12' x 1.5/12 ÷ 27 = 24.4 CY
100' x ½(12'+0') x 1.5/12 ÷ 27 = 2.8 CY

STA. 906+75 TO STA. 919+00 (RT) - RAMP J-2
7135 SF x 1.5/12 ÷ 27 = 33.1 CY
900' x ½(25'+0') x 1.5/12 ÷ 27 = 52.1 CY

TOTAL ITEM 442 SURFACE COURSE = 1227.5 CY

ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE

STA. 630+86 TO STA. 633+50.33 (RT) - US-33 W.B.
264.33' x ½(11'+3') ÷ 9 x 0.04 = 8.3 GAL

STA. 633+50.33 TO STA. 644+60.15 (RT) - US-33 W.B.
1109.82' x ½(39'+13') ÷ 9 x 0.04 = 128.3 GAL

STA. 636+50 TO STA. 641+90.56 (LT) - US-33 E.B.
14112 SF ÷ 9 x 0.04 = 62.8 GAL

STA. 641+90.56 TO STA. 645+43.24 (LT) - US-33 E.B.
352.68' x 12' ÷ 9 x 0.04 = 18.8 GAL

STA. 647+84.04 TO STA. 654+61.50 (RT) - RAMP J-1
677.46' x 12' ÷ 9 x 0.04 = 36.2 GAL
279.34' x ½(0'+28') ÷ 9 x 0.04 = 17.4 GAL

STA. 648+33.14 TO STA. 658+06.50 (LT) - RAMP M
841.86' x 12' ÷ 9 x 0.04 = 44.9 GAL
575' x ½(0'+13') ÷ 9 x 0.04 = 16.7 GAL
130.5' x 16' ÷ 9 x 0.04 = 9.3 GAL
130.5' x ½(9'+18') ÷ 9 x 0.04 = 7.9 GAL

STA. 661+88.36 TO STA. 673+20.94 (RT) - RAMP K
132.58' x 16' ÷ 9 x 0.04 = 9.5 GAL
132.58' x ½(18'+9') ÷ 9 x 0.04 = 8.0 GAL
920' x ½(24'+2') ÷ 9 x 0.04 = 53.2 GAL

STA. 673+47 TO STA. 681+50.32 (LT) - RAMP N
313.32' x ½(40'+12') ÷ 9 x 0.04 = 36.2 GAL
390' x 12' ÷ 9 x 0.04 = 20.8 GAL
83.33' x ½(12'+2') ÷ 9 x 0.04 = 2.6 GAL

STA. 697+00 TO STA. 708+53 (LT) - RAMP P
920' x ½(2'+25') ÷ 9 x 0.04 = 55.2 GAL
153' x 16' ÷ 9 x 0.04 = 10.9 GAL
153' x ½(9'+18') ÷ 9 x 0.04 = 9.2 GAL

STA. 700+50 TO STA. 708+50 (RT) - RAMP Q
83.33' x ½(2'+12') ÷ 9 x 0.04 = 2.6 GAL
700' x 12' ÷ 9 x 0.04 = 37.4 GAL
246' x ½(2'+27') ÷ 9 x 0.04 = 15.9 GAL

STA. 718+00 TO STA. 726+00 (RT) - US-33 W.B.
83.33' x ½(2'+12') ÷ 9 x 0.04 = 2.6 GAL
700' x 12' ÷ 9 x 0.04 = 37.4 GAL
216' x ½(2'+27') ÷ 9 x 0.04 = 14.0 GAL

STA. 725+00 TO STA. 732+51.40 (LT) - RAMP R
500' x ½(2'+12') ÷ 9 x 0.04 = 15.6 GAL
158.93' x ½(39'+11') ÷ 9 x 0.04 = 17.7 GAL
158.93' x 12' ÷ 9 x 0.04 = 8.5 GAL

STA. 734+23.51 TO STA. 739+81.52 (LT) - US-33 E.B.
270' x 12' ÷ 9 x 0.04 = 14.4 GAL
288' x ½(12'+34') ÷ 9 x 0.04 = 29.5 GAL

STA. 737+60 TO STA. 749+11.58 (RT) - RAMP U
4075 SF ÷ 9 x 0.04 = 18.2 GAL
975' x ½(25'+2') ÷ 9 x 0.04 = 58.5 GAL

STA. 752+00 TO STA. 759+42.63 (LT) - RAMP T
4090 SF ÷ 9 x 0.04 = 18.2 GAL
700' x 12' ÷ 9 x 0.04 = 37.4 GAL
100' x ½(12'+0') ÷ 9 x 0.04 = 2.7 GAL

STA. 752+50 TO STA. 764+02 (RT) - RAMP S
4500 SF ÷ 9 x 0.04 = 20.0 GAL
1000' x ½(25'+0') ÷ 9 x 0.04 = 55.6 GAL

STA. 874+70 TO STA. 880+95 (LT) - RAMP G
625' x ½(0'+16') ÷ 9 x 0.04 = 22.3 GAL

STA. 887+15 TO STA. 895+00 (RT) - RAMP H
98' x ½(0'+12') ÷ 9 x 0.04 = 2.7 GAL
161.51' x 12' ÷ 9 x 0.04 = 8.7 GAL
10683 SF ÷ 9 x 0.04 = 47.5 GAL

STA. 893+10.86 TO STA. 901+25 (LT) - RAMP F
6120 SF ÷ 9 x 0.04 = 27.2 GAL
438' x 12' ÷ 9 x 0.04 = 23.4 GAL
100' x ½(12'+0') ÷ 9 x 0.04 = 2.7 GAL

STA. 906+75 TO STA. 919+00 (RT) - RAMP J-2
7135 SF ÷ 9 x 0.04 = 31.8 GAL
900' x ½(25'+0') ÷ 9 x 0.04 = 50.0 GAL

TOTAL ITEM 407 TACK COAT FOR INTERMEDIATE = 1178.7

ITEM 442 - ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)

STA. 630+86 TO STA. 633+50.33 (RT) - US-33 W.B.
264.33' x ½(11'+3') x 5/12 ÷ 27 = 28.6 CY

STA. 633+50.33 TO STA. 642+10.15 (RT) - US-33 W.B.
1109.82' x ½(39'+19') x 4.5/12 ÷ 27 = 447.1 CY

STA. 642+10.15 TO STA. 644+60.15 (RT) - US-33 W.B.
250' x ½(19'+13') x 5/12 ÷ 27 = 61.8 CY

STA. 636+50 TO STA. 641+90.56 (LT) - US-33 E.B.
14112 SF x 4.5/12 ÷ 27 = 196.0 CY

STA. 641+90.56 TO STA. 642+93.24 (LT) - US-33 E.B.
102.68' x 12' x 4.5/12 ÷ 27 = 17.2 CY

STA. 642+93.24 TO STA. 645+43.24 (LT) - US-33 E.B.
250' x 12' x 5/12 ÷ 27 = 46.3 CY

STA. 647+84.04 TO STA. 650+34.04 (RT) - RAMP J-1
250' x 12' x 5/12 ÷ 27 = 46.3 CY

STA. 650+34.04 TO STA. 654+61.50 (RT) - RAMP J-1
427.46' x 12' x 4.5/12 ÷ 27 = 71.3 CY
279.34' x ½(0'+28') x 4.5/12 ÷ 27 = 54.4 CY

STA. 648+33.14 TO STA. 650+83.14 (LT) - RAMP M
250' x 12' x 5/12 ÷ 27 = 46.3 CY

STA. 650+83.14 TO STA. 658+06.50 (LT) - RAMP M
591.86' x 12' x 4.5/12 ÷ 27 = 98.7 CY
575' x ½(0'+13') x 4.5/12 ÷ 27 = 51.9 CY
130.5' x 16' x 4.5/12 ÷ 27 = 29.0 CY
130.5' x ½(9'+18') x 5/12 ÷ 27 = 27.2 CY

STA. 661+88.36 TO STA. 673+20.94 (RT) - RAMP K
132.58' x 16' x 5/12 ÷ 27 = 32.8 CY
132.58' x ½(18'+9') x 5/12 ÷ 27 = 27.7 CY
920' x ½(24'+2') x 5/12 ÷ 27 = 184.6 CY

STA. 673+47 TO STA. 681+50.32 (LT) - RAMP N
313.32' x ½(40'+12') x 4.5/12 ÷ 27 = 113.2 CY
390' x 12' x 4.5/12 ÷ 27 = 65.0 CY
83.33' x ½(12'+2') x 4.5/12 ÷ 27 = 8.1 CY

STA. 697+00 TO STA. 708+53 (LT) - RAMP P
920' x ½(2'+25') x 4.5/12 ÷ 27 = 172.5 CY
153' x 16' x 4.5/12 ÷ 27 = 34.0 CY
153' x ½(9'+18') x 5/12 ÷ 27 = 31.9 CY

STA. 700+50 TO STA. 708+50 (RT) - RAMP Q
83.33' x ½(2'+12') x 4.5/12 ÷ 27 = 8.1 CY
700' x 12' x 4.5/12 ÷ 27 = 116.7 CY
246' x ½(2'+27') x 4.5/12 ÷ 27 = 49.6 CY

STA. 718+00 TO STA. 726+00 (RT) - US-33 W.B.
83.33' x ½(2'+12') x 5/12 ÷ 27 = 9.0 CY
38.29' x 12' x 5/12 ÷ 27 = 7.1 CY
661.71' x 12' x 4.5/12 ÷ 27 = 110.3 CY
216' x ½(2'+27') x 4.5/12 ÷ 27 = 43.5 CY

STA. 725+00 TO STA. 732+51.40 (LT) - RAMP R
400' x ½(2'+10') x 4.5/12 ÷ 27 = 33.4 CY
100' x ½(10'+12') x 5/12 ÷ 27 = 17.0 CY
158.93' x ½(39'+11') x 5/12 ÷ 27 = 61.4 CY
158.93' x 12' x 5/12 ÷ 27 = 29.5 CY

STA. 734+23.51 TO STA. 739+81.52 (LT) - US-33 E.B.
270' x 12' x 5/12 ÷ 27 = 50.0 CY
288' x ½(12'+34') x 5/12 ÷ 27 = 102.3 CY

STA. 737+60 TO STA. 749+11.58 (RT) - RAMP U
4075 SF x 4.5/12 ÷ 27 = 56.6 CY
975' x ½(25'+2') x 4.5/12 ÷ 27 = 182.9 CY

STA. 752+00 TO STA. 759+42.63 (LT) - RAMP T
4090 SF x 4.5/12 ÷ 27 = 56.8 CY
700' x 12' x 4.5/12 ÷ 27 = 116.7 CY
100' x ½(12'+0') x 4.5/12 ÷ 27 = 8.4 CY

STA. 752+50 TO STA. 764+02 (RT) - RAMP S
4500 SF x 4.5/12 ÷ 27 = 62.5 CY
1000' x ½(25'+0') x 4.5/12 ÷ 27 = 173.7 CY

STA. 893+10.86 TO STA. 901+25 (LT) - RAMP G
375' x ½(0'+10') x 4.5/12 ÷ 27 = 26.1 CY
250' x ½(10'+16') x 5/12 ÷ 27 = 50.2 CY

STA. 887+15 TO STA. 895+00 (RT) - RAMP H
98' x ½(0'+12') x 5/12 ÷ 27 = 9.1 CY
144.51' x 12' x 5/12 ÷ 27 = 26.8 CY
17' x 12' x 4.5/12 ÷ 27 = 2.9 CY
10683 SF x 4.5/12 ÷ 27 = 148.4 CY

STA. 893+10.86 TO STA. 901+25 (LT) - RAMP F
6120 SF x 4.5/12 ÷ 27 = 85.0 CY
438' x 12' x 4.5/12 ÷ 27 = 73.0 CY
100' x ½(12'+0') x 4.5/12 ÷ 27 = 8.4 CY

QUANTITIES ARE CARRIED TO SHEET 102.

CALCULATED JDB
CHECKED WAB

CALCULATIONS

ATH-33/50-15.05/11.46

STA. 906+75 TO STA. 919+00 (RT) - RAMP J-2
7135 SF x 4.5/12 ÷ 27 = 99.1 CY
900' x ½(25'+0') x 4.5/12 ÷ 27 = 156.3 CY

TOTAL ITEM 442 INTERMEDIATE COURSE = 3801.4 CY

ITEM 407 - TACK COAT

STA. 630+86 TO STA. 633+50.33 (RT) - US-33 W.B.
264.33' x ½(11'+3') ÷ 9 x 0.07 = 14.4 GAL

STA. 650+83.14 TO STA. 658+06.50 (LT) - RAMP M
130.5' x ½(9'+18') ÷ 9 x 0.07 = 13.7 GAL

STA. 697+00 TO STA. 708+53 (LT) - RAMP P
153' x ½(9'+18') ÷ 9 x 0.07 = 16.1 GAL

TOTAL ITEM 407 TACK COAT = 44.2 GAL

ITEM 422 - DOUBLE CHIP SEAL, AS PER PLAN

STA. 633+50.33 TO STA. 642+10.15 (RT) - US-33 W.B.
1109.82' x ½(39'+19') ÷ 9 = 3576.1 SY

STA. 636+50 TO STA. 641+90.56 (LT) - US-33 E.B.
14112 SF ÷ 9 = 1568.0 SY

STA. 641+90.56 TO STA. 642+93.24 (LT) - US-33 E.B.
102.68' x 12' ÷ 9 = 136.9 SY

STA. 650+34.04 TO STA. 654+61.50 (RT) - RAMP J-1
427.46' x 12' ÷ 9 = 570.0 SY
279.34' x ½(0'+28') ÷ 9 = 434.6 SY

STA. 650+83.14 TO STA. 658+06.50 (LT) - RAMP M
591.86' x 12' ÷ 9 = 789.2 SY
575' x ½(0'+13') ÷ 9 = 415.3 SY
130.5' x 16' ÷ 9 = 232.0 SY

STA. 673+47 TO STA. 681+50.32 (LT) - RAMP N
313.32' x ½(40'+12') ÷ 9 = 905.2 SY
390' x 12' ÷ 9 = 520.0 SY
83.33' x ½(12'+2') ÷ 9 = 64.9 SY

STA. 697+00 TO STA. 708+53 (LT) - RAMP P
920' x ½(2'+25') ÷ 9 = 1380.0 SY
153' x 16' ÷ 9 = 272.0 SY

STA. 700+50 TO STA. 708+50 (RT) - RAMP Q
83.33' x ½(2'+12') ÷ 9 = 64.9 SY
700' x 12' ÷ 9 = 933.4 SY
246' x ½(2'+27') ÷ 9 = 396.4 SY

STA. 718+00 TO STA. 726+00 (RT) - US-33 W.B.
661.71' x 12' ÷ 9 = 882.3 SY
216' x ½(2'+27') ÷ 9 = 348.0 SY

STA. 725+00 TO STA. 732+51.40 (LT) - RAMP R
400' x ½(2'+10') ÷ 9 = 266.7 SY

STA. 737+60 TO STA. 749+11.58 (RT) - RAMP U
4075 SF ÷ 9 = 452.8 SY
975' x ½(25'+2') ÷ 9 = 1462.5 SY

STA. 752+00 TO STA. 759+42.63 (LT) - RAMP T
4090 SF ÷ 9 = 454.5 SY
700' x 12' ÷ 9 = 933.4 SY
100' x ½(12'+0') ÷ 9 = 66.7 SY

STA. 752+50 TO STA. 764+02 (RT) - RAMP S
4500 SF ÷ 9 = 500.0 SY
1000' x ½(25'+0') ÷ 9 = 1388.9 SY

STA. 893+10.86 TO STA. 901+25 (LT) - RAMP G
375' x ½(0'+10') ÷ 9 = 208.4 SY

STA. 887+15 TO STA. 895+00 (RT) - RAMP H
17' x 12' ÷ 9 = 22.7 SY
10683 SF ÷ 9 = 1187.0 SY

STA. 893+10.86 TO STA. 901+25 (LT) - RAMP F
6120 SF ÷ 9 = 680.0 SY
438' x 12' ÷ 9 = 584.0 SY
100' x ½(12'+0') ÷ 9 = 66.7 SY

STA. 906+75 TO STA. 919+00 (RT) - RAMP J-2
7135 SF ÷ 9 = 792.8 SY
900' x ½(25'+0') ÷ 9 = 1250.0 SY

TOTAL ITEM 442 DOUBLE CHIP SEAL, APP = 23806.3 SY

ITEM 451 - REINFORCED CONCRETE PAV'T, MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT

STA. 633+50.33 TO STA. 642+10.15 (RT) - US-33 W.B.
1109.82' x ½(39'+19') ÷ 9 = 3576.1 SY

STA. 636+50 TO STA. 641+90.56 (LT) - US-33 E.B.
14112 SF ÷ 9 = 1568.0 SY

STA. 641+90.56 TO STA. 642+93.24 (LT) - US-33 E.B.
102.68' x 12' ÷ 9 = 136.9 SY

STA. 650+34.04 TO STA. 654+61.50 (RT) - RAMP J-1
427.46' x 12' ÷ 9 = 570.0 SY
279.34' x ½(0'+28') ÷ 9 = 434.6 SY

STA. 650+83.14 TO STA. 658+06.50 (LT) - RAMP M
591.86' x 12' ÷ 9 = 789.2 SY
575' x ½(0'+13') ÷ 9 = 415.3 SY
130.5' x 16' ÷ 9 = 232.0 SY

STA. 673+47 TO STA. 681+50.32 (LT) - RAMP N
313.32' x ½(40'+12') ÷ 9 = 905.2 SY
390' x 12' ÷ 9 = 520.0 SY
83.33' x ½(12'+2') ÷ 9 = 64.9 SY

STA. 697+00 TO STA. 708+53 (LT) - RAMP P
920' x ½(2'+25') ÷ 9 = 1380.0 SY
153' x 16' ÷ 9 = 272.0 SY

STA. 700+50 TO STA. 708+50 (RT) - RAMP Q
83.33' x ½(2'+12') ÷ 9 = 64.9 SY
700' x 12' ÷ 9 = 933.4 SY
246' x ½(2'+27') ÷ 9 = 396.4 SY

STA. 718+00 TO STA. 726+00 (RT) - US-33 W.B.
661.71' x 12' ÷ 9 = 882.3 SY
216' x ½(2'+27') ÷ 9 = 348.0 SY

STA. 725+00 TO STA. 732+51.40 (LT) - RAMP R
400' x ½(2'+10') ÷ 9 = 266.7 SY

STA. 737+60 TO STA. 749+11.58 (RT) - RAMP U
4075 SF ÷ 9 = 452.8 SY
975' x ½(25'+2') ÷ 9 = 1462.5 SY

STA. 752+00 TO STA. 759+42.63 (LT) - RAMP T
4090 SF ÷ 9 = 454.5 SY
700' x 12' ÷ 9 = 933.4 SY
100' x ½(12'+0') ÷ 9 = 66.7 SY

STA. 752+50 TO STA. 764+02 (RT) - RAMP S
4500 SF ÷ 9 = 500.0 SY
1000' x ½(25'+0') ÷ 9 = 1388.9 SY

STA. 893+10.86 TO STA. 901+25 (LT) - RAMP G
375' x ½(0'+10') ÷ 9 = 208.4 SY

STA. 887+15 TO STA. 895+00 (RT) - RAMP H
17' x 12' ÷ 9 = 22.7 SY
10683 SF ÷ 9 = 1187.0 SY

STA. 893+10.86 TO STA. 901+25 (LT) - RAMP F
6120 SF ÷ 9 = 680.0 SY
438' x 12' ÷ 9 = 584.0 SY
100' x ½(12'+0') ÷ 9 = 66.7 SY

STA. 906+75 TO STA. 919+00 (RT) - RAMP J-2
7135 SF ÷ 9 = 792.8 SY
900' x ½(25'+0') ÷ 9 = 1250.0 SY

TOTAL ITEM 451 BREAKING AND SEATING = 23806.3 SY

ITEM 301 - 5" ASPHALT CONCRETE BASE, PG64-22

STA. 642+10.15 TO STA. 644+60.15 (RT) - US-33 W.B.
250' x ½(19'+13') x 5/12 ÷ 27 = 61.8 CY

STA. 642+93.24 TO STA. 645+43.24 (LT) - US-33 E.B.
250' x 12' x 5/12 ÷ 27 = 46.3 CY

STA. 647+84.04 TO STA. 650+34.04 (RT) - RAMP J-1
250' x 12' x 5/12 ÷ 27 = 46.3 CY

STA. 648+33.14 TO STA. 650+83.14 (LT) - RAMP M
250' x 12' x 5/12 ÷ 27 = 46.3 CY

STA. 661+88.36 TO STA. 673+20.94 (RT) - RAMP K
132.58' x 16' x 5/12 ÷ 27 = 32.8 CY
132.58' x ½(18'+9') x 5/12 ÷ 27 = 27.7 CY
920' x ½(24'+2') x 5/12 ÷ 27 = 184.6 CY

STA. 718+00 TO STA. 726+00 (RT) - US-33 W.B.
83.33' x ½(2'+12') x 5/12 ÷ 27 = 9.0 CY
38.29' x 12' x 5/12 ÷ 27 = 7.1 CY

STA. 725+00 TO STA. 732+51.40 (LT) - RAMP R
100' x ½(10'+12') x 5/12 ÷ 27 = 17.0 CY
158.93' x ½(39'+11') x 5/12 ÷ 27 = 61.4 CY
158.93' x 12' x 5/12 ÷ 27 = 29.5 CY

STA. 734+23.51 TO STA. 739+81.52 (LT) - US-33 E.B.
270' x 12' x 5/12 ÷ 27 = 50.0 CY
288' x ½(12'+34') x 5/12 ÷ 27 = 102.3 CY

STA. 893+10.86 TO STA. 901+25 (LT) - RAMP G
250' x ½(10'+16') x 5/12 ÷ 27 = 50.2 CY

STA. 887+15 TO STA. 895+00 (RT) - RAMP H
98' x ½(0'+12') x 5/12 ÷ 27 = 9.1 CY
144.51' x 12' x 5/12 ÷ 27 = 26.8 CY

TOTAL ITEM 301 5" ASPHALT CONCRETE BASE = 808.2 CY

ITEM 408 - PRIME COAT

STA. 642+10.15 TO STA. 644+60.15 (RT) - US-33 W.B.
250' x ½(19'+13') ÷ 9 x 0.4 = 177.8 GAL

STA. 642+93.24 TO STA. 645+43.24 (LT) - US-33 E.B.
250' x 12' ÷ 9 x 0.4 = 133.4 GAL

STA. 647+84.04 TO STA. 650+34.04 (RT) - RAMP J-1
250' x 12' ÷ 9 x 0.4 = 133.4 GAL

STA. 648+33.14 TO STA. 650+83.14 (LT) - RAMP M
250' x 12' ÷ 9 x 0.4 = 133.4 GAL

STA. 661+88.36 TO STA. 673+20.94 (RT) - RAMP K
132.58' x 16' ÷ 9 x 0.4 = 94.3 GAL
132.58' x ½(18'+9') ÷ 9 x 0.4 = 79.6 GAL
920' x ½(24'+2') ÷ 9 x 0.4 = 531.6 GAL

STA. 718+00 TO STA. 726+00 (RT) - US-33 W.B.
83.33' x ½(2'+12') ÷ 9 x 0.4 = 26.0 GAL
38.29' x 12' ÷ 9 x 0.4 = 20.5 GAL

STA. 725+00 TO STA. 732+51.40 (LT) - RAMP R
100' x ½(10'+12') ÷ 9 x 0.4 = 48.9 GAL
158.93' x ½(39'+11') ÷ 9 x 0.4 = 176.6 GAL
158.93' x 12' ÷ 9 x 0.4 = 84.8 GAL

STA. 734+23.51 TO STA. 739+81.52 (LT) - US-33 E.B.
270' x 12' ÷ 9 x 0.4 = 144.0 GAL
288' x ½(12'+34') ÷ 9 x 0.4 = 294.4 GAL

STA. 893+10.86 TO STA. 901+25 (LT) - RAMP G
250' x ½(10'+16') ÷ 9 x 0.4 = 144.5 GAL

STA. 887+15 TO STA. 895+00 (RT) - RAMP H
98' x ½(0'+12') ÷ 9 x 0.4 = 26.2 GAL
144.51' x 12' ÷ 9 x 0.4 = 77.1 GAL

TOTAL ITEM 408 PRIME COAT = 2326.5 GAL

ITEM 304 - AGGREGATE BASE

STA. 642+10.15 TO STA. 644+60.15 (RT) - US-33 W.B.
250' x ½(19'+13') x 8(AVG.)/12 ÷ 27 = 98.8 CY

STA. 642+93.24 TO STA. 645+43.24 (LT) - US-33 E.B.
250' x 12' x 8(AVG.)/12 ÷ 27 = 74.1 CY

STA. 647+84.04 TO STA. 650+34.04 (RT) - RAMP J-1
250' x 12' x 8(AVG.)/12 ÷ 27 = 74.1 CY

STA. 648+33.14 TO STA. 650+83.14 (LT) - RAMP M
250' x 12' x 8(AVG)/12 ÷ 27 = 74.1 CY

STA. 661+88.36 TO STA. 673+20.94 (RT) - RAMP K
132.58' x 16' x 7.5(AVG.)/12 ÷ 27 = 49.1 CY
132.58' x ½(18'+9') x 7.5(AVG.)/12 ÷ 27 = 41.5 CY
920' x ½(24'+2') x 6/12 ÷ 27 = 221.5 CY

STA. 718+00 TO STA. 726+00 (RT) - US-33 W.B.
83.33' x ½(2'+12') x 7.3(AVG.)/12 ÷ 27 = 13.2 CY
38.29' x 12' x 6.3(AVG.)/12 ÷ 27 = 9.0 CY

STA. 725+00 TO STA. 732+51.40 (LT) - RAMP R
100' x ½(10'+12') x 9.3(AVG.)/12 ÷ 27 = 31.6 CY
158.93' x ½(39'+11') x 7.3(AVG.)/12 ÷ 27 = 89.6 CY
158.93' x 12' x 7.3(AVG.)/12 ÷ 27 = 43.0 CY

STA. 734+23.51 TO STA. 739+81.52 (LT) - US-33 E.B.
270' x 12' x 6/12 ÷ 27 = 60.0 CY
288' x ½(12'+34') x 6/12 ÷ 27 = 122.7 CY

STA. 893+10.86 TO STA. 901+25 (LT) - RAMP G
250' x ½(10'+16') x 8(AVG.)/12 ÷ 27 = 80.3 CY

STA. 887+15 TO STA. 895+00 (RT) - RAMP H
98' x ½(0'+12') x 9.2(AVG.)/12 ÷ 27 = 16.7 CY
144.51' x 12' x 7.2(AVG.)/12 ÷ 27 = 38.6 CY

QUANTITIES ARE CARRIED TO SHEET 102.

CALCULATED JDB
CHECKED WAB

CALCULATIONS

ATH-33/50-15.05/11.46

TOTAL ITEM 304 AGGREGATE BASE = 1137.9 CY

ITEM 204 - SUBGRADE COMPACTION

STA. 642+10.15 TO STA. 644+60.15 (RT) - US-33 W.B.
250' x ½(19'+13') ÷ 9 = 444.5 SY

STA. 642+93.24 TO STA. 645+43.24 (LT) - US-33 E.B.
250' x 12' ÷ 9 = 333.4 SY

STA. 647+84.04 TO STA. 650+34.04 (RT) - RAMP J-1
250' x 12' ÷ 9 = 333.4 SY

STA. 648+33.14 TO STA. 650+83.14 (LT) - RAMP M
250' x 12' ÷ 9 = 333.4 SY

STA. 661+88.36 TO STA. 673+20.94 (RT) - RAMP K
132.58' x 16' ÷ 9 = 235.7 SY
132.58' x ½(18'+9') ÷ 9 = 198.9 SY
920' x ½(24'+2') ÷ 9 = 1328.9 SY

STA. 718+00 TO STA. 726+00 (RT) - US-33 W.B.
83.33' x ½(2'+12') ÷ 9 = 64.9 SY
38.29' x 12' ÷ 9 = 51.1 SY

STA. 725+00 TO STA. 732+51.40 (LT) - RAMP R
100' x ½(10'+12') ÷ 9 = 122.3 SY
158.93' x ½(39'+11') ÷ 9 = 441.5 SY
158.93' x 12' ÷ 9 = 211.9 SY

STA. 734+23.51 TO STA. 739+81.52 (LT) - US-33 E.B.
270' x 12' ÷ 9 = 360.0 SY
288' x ½(12'+34') ÷ 9 = 736.0 SY

STA. 893+10.86 TO STA. 901+25 (LT) - RAMP G
250' x ½(10'+16') ÷ 9 = 361.2 SY

STA. 887+15 TO STA. 895+00 (RT) - RAMP H
98' x ½(0'+12') ÷ 9 = 65.4 SY
144.51' x 12' ÷ 9 = 192.7 SY

TOTAL ITEM 204 SUBGRADE COMPACTION = 5815.2 SY

ITEM 202 - PAVEMENT REMOVED

STA. 642+10.15 TO STA. 644+60.15 (RT) - US-33 W.B.
250' x ½(19'+13') ÷ 9 = 444.5 SY

STA. 642+93.24 TO STA. 645+43.24 (LT) - US-33 E.B.
250' x 12' ÷ 9 = 333.4 SY

STA. 647+84.04 TO STA. 650+34.04 (RT) - RAMP J-1
250' x 12' ÷ 9 = 333.4 SY

STA. 648+33.14 TO STA. 650+83.14 (LT) - RAMP M
250' x 12' ÷ 9 = 333.4 SY

STA. 661+88.36 TO STA. 673+20.94 (RT) - RAMP K
132.58' x 16' ÷ 9 = 235.7 SY
132.58' x ½(18'+9') ÷ 9 = 198.9 SY
920' x ½(24'+2') ÷ 9 = 1328.9 SY

STA. 718+00 TO STA. 726+00 (RT) - US-33 W.B.
83.33' x ½(2'+12') ÷ 9 = 64.9 SY
38.29' x 12' ÷ 9 = 51.1 SY

STA. 725+00 TO STA. 732+51.40 (LT) - RAMP R
100' x ½(10'+12') ÷ 9 = 122.3 SY
158.93' x ½(39'+11') ÷ 9 = 441.5 SY
158.93' x 12' ÷ 9 = 211.9 SY

STA. 734+23.51 TO STA. 739+81.52 (LT) - US-33 E.B.
270' x 12' ÷ 9 = 360.0 SY
288' x ½(12'+34') ÷ 9 = 736.0 SY

STA. 893+10.86 TO STA. 901+25 (LT) - RAMP G
250' x ½(10'+16') ÷ 9 = 361.2 SY

STA. 887+15 TO STA. 895+00 (RT) - RAMP H
98' x ½(0'+12') ÷ 9 = 65.4 SY
144.51' x 12' ÷ 9 = 192.7 SY

TOTAL ITEM 202 PAVEMENT REMOVED = 5815.2 SY

ITEM 204 - EXCAVATION OF SUBGRADE

STA. 642+10.15 TO STA. 644+60.15 (RT) - US-33 W.B.
250' x ½(19'+13') x 18/12 ÷ 27 = 222.3 CY

STA. 642+93.24 TO STA. 645+43.24 (LT) - US-33 E.B.
250' x 12' x 18/12 ÷ 27 = 166.8 CY

STA. 647+84.04 TO STA. 650+34.04 (RT) - RAMP J-1
250' x 12' x 18/12 ÷ 27 = 166.8 CY

STA. 648+33.14 TO STA. 650+83.14 (LT) - RAMP M
250' x 12' x 18/12 ÷ 27 = 166.8 CY

STA. 661+88.36 TO STA. 673+20.94 (RT) - RAMP K
132.58' x 16' x 18/12 ÷ 27 = 117.9 CY
132.58' x ½(18'+9') x 18/12 ÷ 27 = 99.5 CY
920' x ½(24'+2') x 18/12 ÷ 27 = 664.5 CY

STA. 718+00 TO STA. 726+00 (RT) - US-33 W.B.
83.33' x ½(2'+12') x 18/12 ÷ 27 = 32.4 CY
38.29' x 12' x 18/12 ÷ 27 = 25.6 CY

STA. 725+00 TO STA. 732+51.40 (LT) - RAMP R
100' x ½(10'+12') x 18/12 ÷ 27 = 61.2 CY
158.93' x ½(39'+11') x 18/12 ÷ 27 = 220.8 CY
158.93' x 12' x 18/12 ÷ 27 = 106.0 CY

STA. 734+23.51 TO STA. 739+81.52 (LT) - US-33 E.B.
270' x 12' x 18/12 ÷ 27 = 180.0 CY
288' x ½(12'+34') x 18/12 ÷ 27 = 368.1 CY

STA. 893+10.86 TO STA. 901+25 (LT) - RAMP G
250' x ½(10'+16') x 18/12 ÷ 27 = 180.6 CY

STA. 887+15 TO STA. 895+00 (RT) - RAMP H
98' x ½(0'+12') x 18/12 ÷ 27 = 32.7 CY
144.51' x 12' x 18/12 ÷ 27 = 96.4 CY

TOTAL ITEM 204 EXCAVATION OF SUBGRADE = 2908.4 CY

ITEM 204 - GRANULAR MATERIAL, TYPE C

STA. 642+10.15 TO STA. 644+60.15 (RT) - US-33 W.B.
250' x ½(19'+13') x 12/12 ÷ 27 = 148.2 CY

STA. 642+93.24 TO STA. 645+43.24 (LT) - US-33 E.B.
250' x 12' x 12/12 ÷ 27 = 111.2 CY

STA. 647+84.04 TO STA. 650+34.04 (RT) - RAMP J-1
250' x 12' x 12/12 ÷ 27 = 111.2 CY

STA. 648+33.14 TO STA. 650+83.14 (LT) - RAMP M
250' x 12' x 12/12 ÷ 27 = 111.2 CY

STA. 661+88.36 TO STA. 673+20.94 (RT) - RAMP K
132.58' x 16' x 12/12 ÷ 27 = 78.6 CY
132.58' x ½(18'+9') x 12/12 ÷ 27 = 66.3 CY
920' x ½(24'+2') x 12/12 ÷ 27 = 443.0 CY

STA. 718+00 TO STA. 726+00 (RT) - US-33 W.B.
83.33' x ½(2'+12') x 12/12 ÷ 27 = 21.6 CY
38.29' x 12' x 12/12 ÷ 27 = 17.1 CY

STA. 725+00 TO STA. 732+51.40 (LT) - RAMP R
100' x ½(10'+12') x 12/12 ÷ 27 = 40.8 CY
158.93' x ½(39'+11') x 12/12 ÷ 27 = 147.2 CY
158.93' x 12' x 12/12 ÷ 27 = 70.7 CY

STA. 734+23.51 TO STA. 739+81.52 (LT) - US-33 E.B.
270' x 12' x 12/12 ÷ 27 = 120.0 CY
288' x ½(12'+34') x 12/12 ÷ 27 = 245.4 CY

STA. 893+10.86 TO STA. 901+25 (LT) - RAMP G
250' x ½(10'+16') x 12/12 ÷ 27 = 120.4 CY

STA. 887+15 TO STA. 895+00 (RT) - RAMP H
98' x ½(0'+12') x 12/12 ÷ 27 = 21.8 CY
144.51' x 12' x 12/12 ÷ 27 = 64.3 CY

TOTAL ITEM 204 GRANULAR MATERIAL, TYPE C = 1939.0 CY

ROADWAY	SHEET NO.	202 PAVEMENT REMOVED (SQ. YD.)	204 SUBGRADE COMPACTION (SQ. YD.)	204 EXCAVATION OF SUBGRADE (CU. YD.)	204 GRANULAR MATERIAL, TYPE C (CU. YD.)	254 PAVEMENT PLANING, ASPHALT CONCRETE (SQ. YD.)	255 FULL DEPTH PAVEMENT SAWING (FT)		301 5" ASPHALT CONCRETE BASE, PG64-22 (CU. YD.)	304 AGGREGATE BASE (CU. YD.)		407 TACK COAT (0.07 GAL./SQ.YD.) (GAL.)	407 TACK COAT FOR INTERMEDIATE COURSE (0.04 GAL./SQ.YD.) (GAL.)	408 PRIME COAT (0.4 GAL./SQ.YD.) (GAL.)	422 DOUBLE CHIP SEAL, AS PER PLAN (SQ. YD.)	442 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446) (CU. YD.)	442 ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446) (CU. YD.)	451 REINFORCED CONCRETE PAVEMENT, MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT (SQ. YD.)		617 COMPACTED AGGREGATE (CU. YD.)	618 RUMBLE STRIPS, (ASPHALT CONCRETE) (FT)
US-50 EAST	93	2256.0	3665.9	2303.0	1403.8		24		483.1	654.0		69.9	255.2	1428.9	1996.3	265.9	858.3	1996.3			3439.3
US-50 WEST	93-94	666.7	1083.3	680.6	414.9		24		142.8	234.6		97.9	207.8	422.3	2795.2	216.4	682.5	2795.2			2846.4
US-33 WEST	94						40					100.6	228.5		4271.4	237.9	733.6	4271.4			2655.2
US-33 EAST	94						24					81.4	139.5		2325.1	145.4	452.2	2325.1			2243.9
MAINLINE (LEFT)	95-96	16890.0	20849.5	12083.0	7984.0		185		2747.8	4153.3		645.5	4420.9	8126.4	68140.3	4604.9	14210.3	82046.3			55756.2
MAINLINE (RIGHT)	97-98	14176.6	19245.8	11507.3	7370.0		228		2536.5	3888.1		567.5	4437.4	7501.5	85058.9	4622.2	14226.3	85058.9			55964.7
PAV'T FEATHERING - BEGIN/END PAV'T	99					1333.4						981.0	201.3			261.2	756.2			25.1	
TURN AROUNDS	99											135.8	77.6			80.9	269.5				
ACCELERATION/DECELERATION LANES	100-102	5815.2	5815.2	9808.4	1939.0				808.2	1137.9		44.2	1178.7	2326.5	23806.3	1227.5	3801.4	23806.3			
TOTALS CARRIED TO THE GENERAL SUMMARY		39805	50660	36383	19112	1334	525		6719	10068		2724	11147	19806	188394	11663	35991	202300		26	122906

CALCULATED JDB
CHECKED WAB

CALCULATIONS

ATH-33/ 50-15.05/ 11.46

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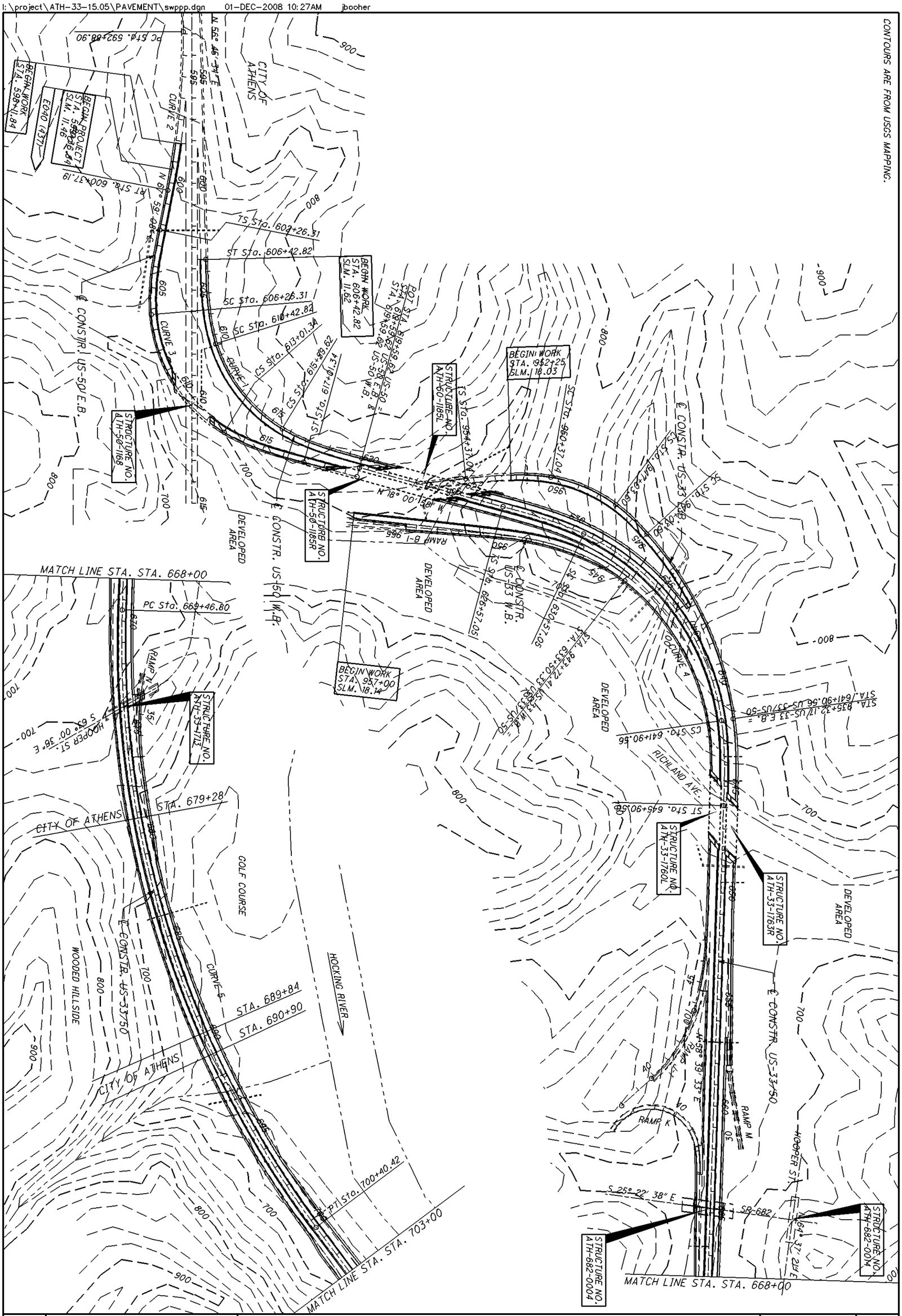

103/222	ATH-33/50-15.05/11.46	PROJECT SITE PLAN	0 200 100 400 HORIZONTAL SCALE IN FEET

HOCKING RIVER

STRUCTURE NO. ATH-33-1631R

℄ CONSTR. US-33/50

RAMP P

RAMP R

STIMSON AVE.

END WORK STA. 738+81.52 SLM. 15.86

STRUCTURE NO. ATH-33-1600R

MATCH LINE STA. STA. 703+00

RAMP Q

N 19° 59' 20" E

STRUCTURE NO. ATH-33-1631L

WOODED HILLSIDE

END WORK STA. 728+48.97 SLM. 16.08

CS Sta. 726+17.62

SC Sta. 729+57.92

US-33 E.B.

US-33 W.B.

RAMP U

CURVE 6

STIMSON AVE. N 12° 43' 00" E

US-33 E.B.

STRUCTURE NO. ATH-50-1420

STRUCTURE NO. ATH-33-1580

STRUCTURE NO. ATH-33-1600L

US-33 W.B.

CS Sta. 747+42.99

RAMP S

ST Sta. 750+92.99

RAMP T

STA. 775+00

STA. 783+75

℄ CONSTR. US-50

HOCKING RIVER

STA. 808+57

STA. 814+00

MATCH LINE STA. STA. 775+00

CURVE 7

CITY OF ATHENS

PT Sta. 788+42.22

S 87° 03' 18" E

PC Sta. 809+05.21

CURVE 8

MATCH LINE STA. STA. 814+00

CITY OF ATHENS

WOODED HILLSIDE

HOCKING RIVER

STRUCTURE NO. ATH-50-1592L

CITY OF ATHENS STA. 840+31

CITY OF ATHENS

CITY OF ATHENS STA. 845+06

PC Sta. 849+33.73

CURVE 9

MATCH LINE STA. STA. 860+00

℄ CONSTR. US-50

S 84° 48' 32" E

CURVE 8

PT Sta. 818+41.19

C.R. 124

STRUCTURE NO. ATH-50-1592R

HOCKING RIVER

WOODED HILLSIDE

CONSTR. US-50

N 83° 45' 00" E

PC Sta. 768+11.86

CURVE 7

HOCKING RIVER

MATCH LINE STA. STA. 775+00

HORIZONTAL SCALE IN FEET

0 100 200 400

PROJECT SITE PLAN

ATH-33/50-15.05/11.46

104
222

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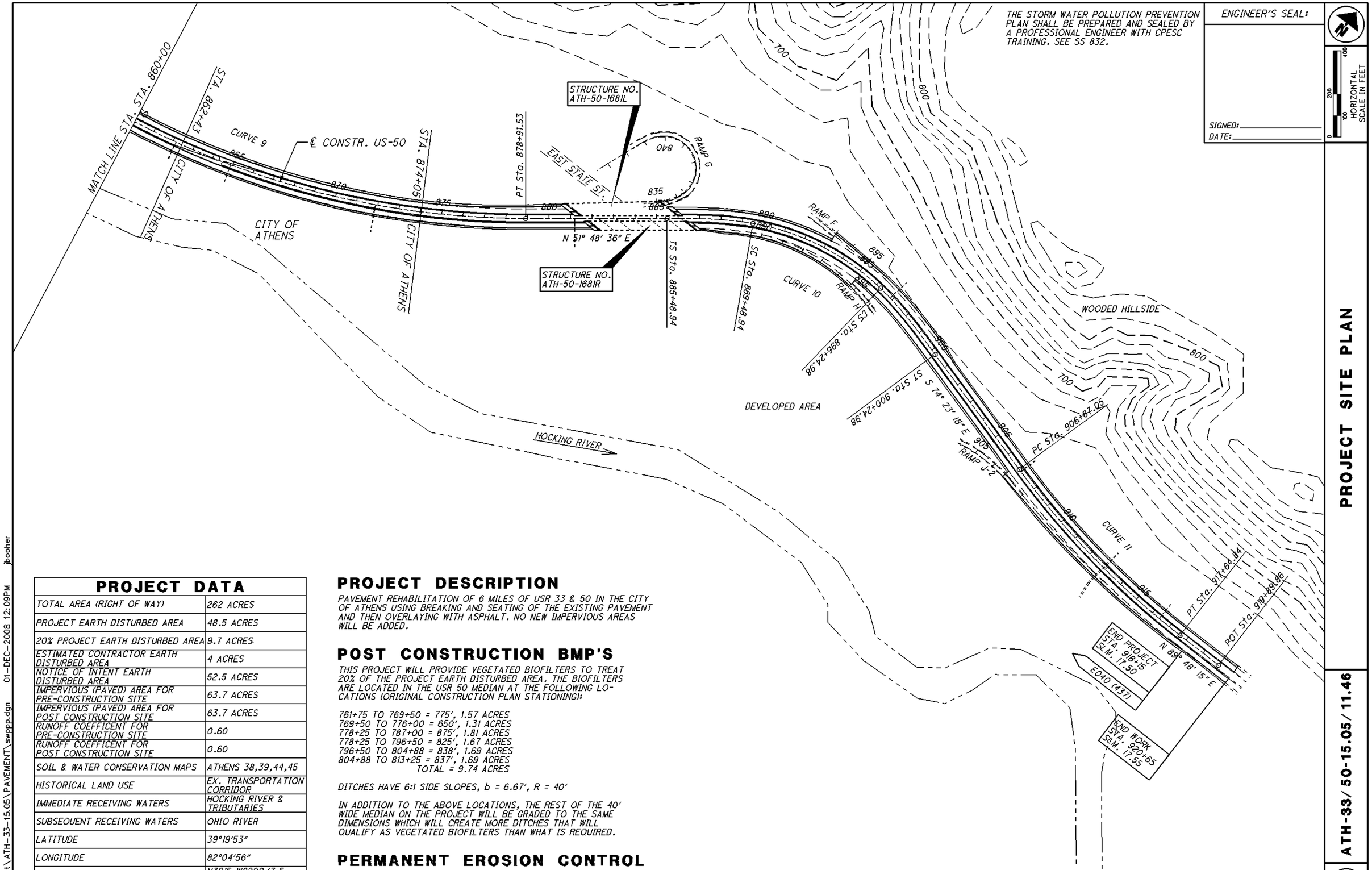


THE STORM WATER POLLUTION PREVENTION PLAN SHALL BE PREPARED AND SEALED BY A PROFESSIONAL ENGINEER WITH CPESC TRAINING. SEE SS 832.

ENGINEER'S SEAL:

SIGNED: _____

DATE: _____

HORIZONTAL SCALE IN FEET
0 100 200 400

PROJECT SITE PLAN

ATH-33/ 50-15.05/ 11.46

105
222

PROJECT DATA	
TOTAL AREA (RIGHT OF WAY)	262 ACRES
PROJECT EARTH DISTURBED AREA	48.5 ACRES
20% PROJECT EARTH DISTURBED AREA	9.7 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	4 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA	52.5 ACRES
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION SITE	63.7 ACRES
IMPERVIOUS (PAVED) AREA FOR POST CONSTRUCTION SITE	63.7 ACRES
RUNOFF COEFFICENT FOR PRE-CONSTRUCTION SITE	0.60
RUNOFF COEFFICENT FOR POST CONSTRUCTION SITE	0.60
SOIL & WATER CONSERVATION MAPS	ATHENS 38,39,44,45
HISTORICAL LAND USE	EX. TRANSPORTATION CORRIDOR
IMMEDIATE RECEIVING WATERS	HOCKING RIVER & TRIBUTARIES
SUBSEQUENT RECEIVING WATERS	OHIO RIVER
LATITUDE	39°19'53"
LONGITUDE	82°04'56"
USGS QUADRANT NO.	N3915-W8200/7.5 ATHENS, OHIO

PROJECT DESCRIPTION

PAVEMENT REHABILITATION OF 6 MILES OF USR 33 & 50 IN THE CITY OF ATHENS USING BREAKING AND SEATING OF THE EXISTING PAVEMENT AND THEN OVERLAYING WITH ASPHALT. NO NEW IMPERVIOUS AREAS WILL BE ADDED.

POST CONSTRUCTION BMP'S

THIS PROJECT WILL PROVIDE VEGETATED BIOFILTERS TO TREAT 20% OF THE PROJECT EARTH DISTURBED AREA. THE BIOFILTERS ARE LOCATED IN THE USR 50 MEDIAN AT THE FOLLOWING LOCATIONS (ORIGINAL CONSTRUCTION PLAN STATIONING):

761+75 TO 769+50 = 775', 1.57 ACRES
769+50 TO 776+00 = 650', 1.31 ACRES
778+25 TO 787+00 = 875', 1.81 ACRES
778+25 TO 796+50 = 825', 1.67 ACRES
796+50 TO 804+88 = 838', 1.69 ACRES
804+88 TO 813+25 = 837', 1.69 ACRES
TOTAL = 9.74 ACRES

DITCHES HAVE 6:1 SIDE SLOPES, b = 6.67', R = 40'

IN ADDITION TO THE ABOVE LOCATIONS, THE REST OF THE 40' WIDE MEDIAN ON THE PROJECT WILL BE GRADED TO THE SAME DIMENSIONS WHICH WILL CREATE MORE DITCHES THAT WILL QUALIFY AS VEGETATED BIOFILTERS THAN WHAT IS REQUIRED.

PERMANENT EROSION CONTROL

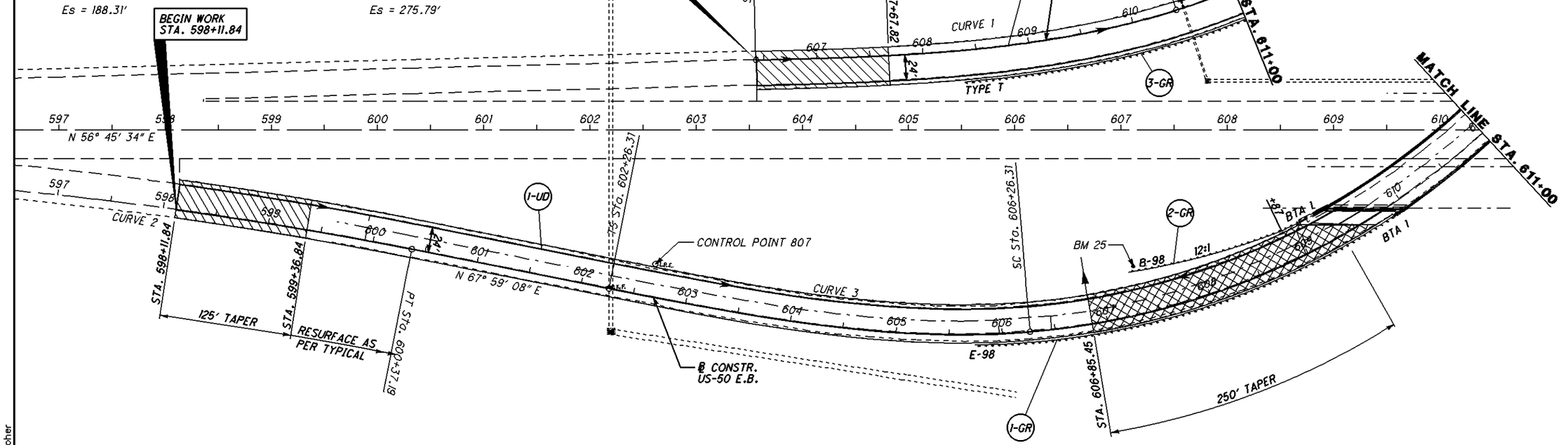
QUANTITIES FOR 659, SEEDING AND MULCHING AND 670, DITCH EROSION PROTECTION HAVE BEEN PROVIDED ELSEWHERE IN THESE PLANS.

EX. US-50 W.B. CURVE 1
P.I. STA. 613+82.50
Δ = 73° 20′ 37″ (LT)
Dc = 8° 00′ 00″
R = 716.20′
Ls = 400.00′
θs = 16° 00′ 00″
LT = 267.76′
ST = 134.33′
x = 396.89′
y = 37.03′
k = 199.48′
p = 9.28′
Δc = 41° 20′ 37″ (LT)
Lc = 516.80′
Ts = 739.68′
Es = 188.31′

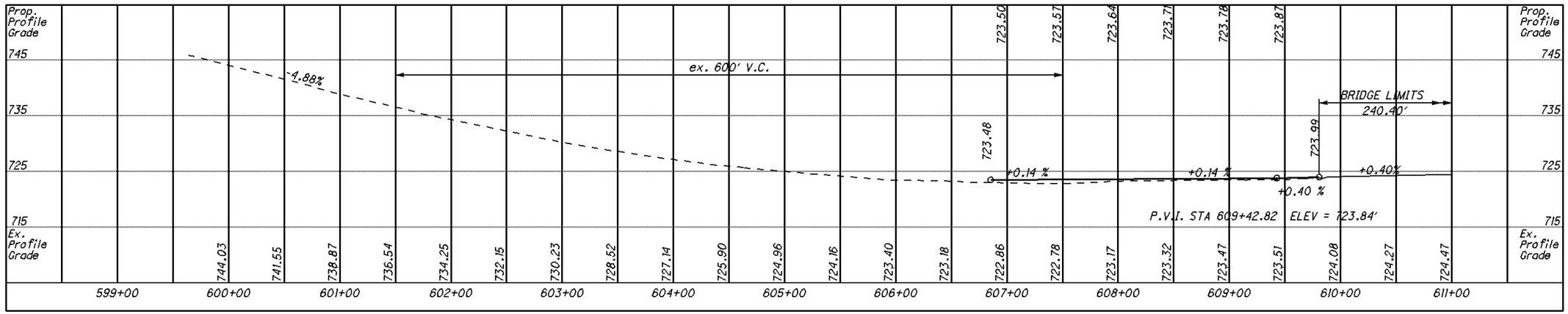
EX. US-50 E.B. CURVE 2
P.I. STA. 596+64.25
Δ = 11° 13′ 28″ (RT)
Dc = 1° 30′ 00″
R = 3,819.72′
T = 375.35′
L = 748.29′
E = 18.40′

EX. US-50 E.B. CURVE 3
P.I. STA. 611+02.34
Δ = 86° 00′ 06″ (LT)
Dc = 8° 00′ 00″
R = 716.20′
Ls = 400.00′
θs = 16° 00′ 00″
LT = 267.76′
ST = 134.33′
x = 396.89′
y = 37.03′
k = 199.48′
p = 9.28′
Δc = 54° 00′ 07″ (LT)
Lc = 675.03′
Ts = 876.02′
Es = 275.79′

PAVEMENT TRANSITION, SEE SHEET 135.
PAVEMENT TRANSITION, SEE SHEET 135.



BENCHMARKS AND REFERENCES						
POINT	STATION	OFFSET FROM ℄		STATE PLANE GRID COORDINATES OHIO SOUTH ZONE. NAD83(2007), NAVD88.		ELEVATION
		LEFT	RIGHT	NORTHING (Y)	EASTING (X)	
P.K. NAIL	602+25.96	1.54				
807	602+64.85	31.00		474231.5829	2079775.9170	
BM 25	607+35.72	45.64		474476.31	2080153.54	718.88



PLAN AND PROFILE
STA. 597+00 TO STA. 611+00

ATH-33/50-15.05/11.46

106
222

CALCULATED JDB
CHECKED ALC

HORIZONTAL SCALE IN FEET
0 25 50 100

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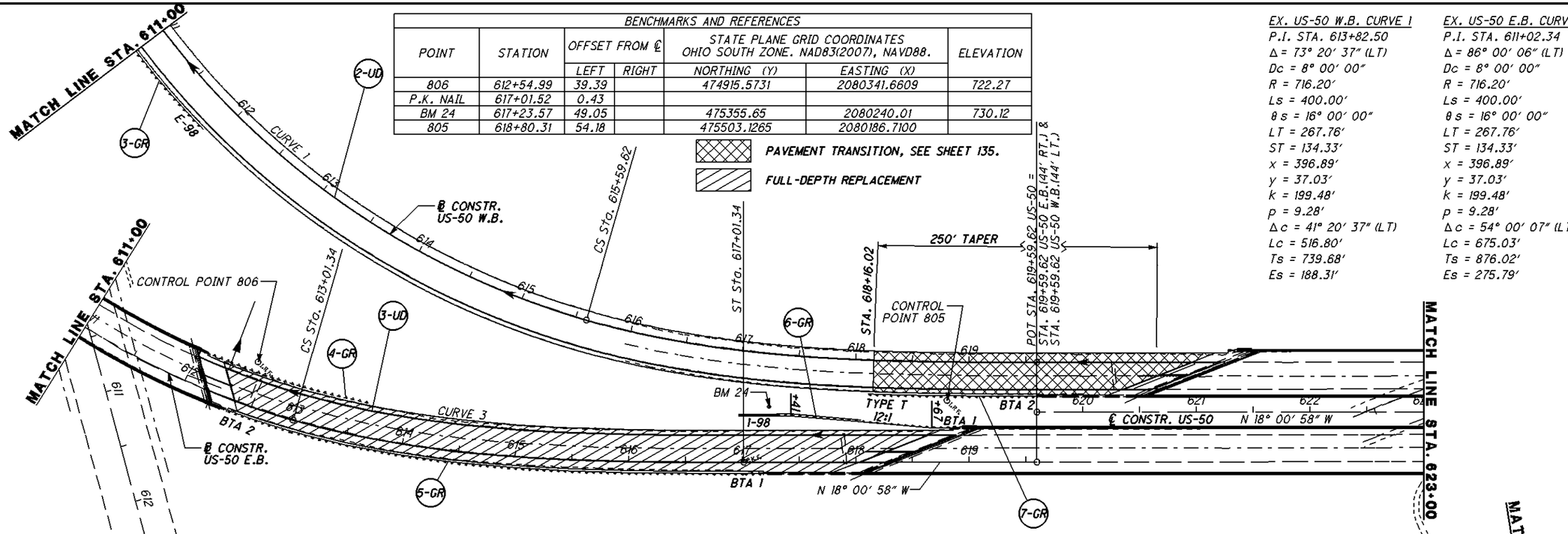
BENCHMARKS AND REFERENCES						
POINT	STATION	OFFSET FROM ℄		STATE PLANE GRID COORDINATES OHIO SOUTH ZONE. NAD83(2007), NAVD88.		ELEVATION
		LEFT	RIGHT	NORTHING (Y)	EASTING (X)	
806	612+54.99	39.39		474915.5731	2080341.6609	722.27
P.K. NAIL	617+01.52	0.43				
BM 24	617+23.57	49.05		475355.65	2080240.01	730.12
805	618+80.31	54.18		475503.1265	2080186.7100	

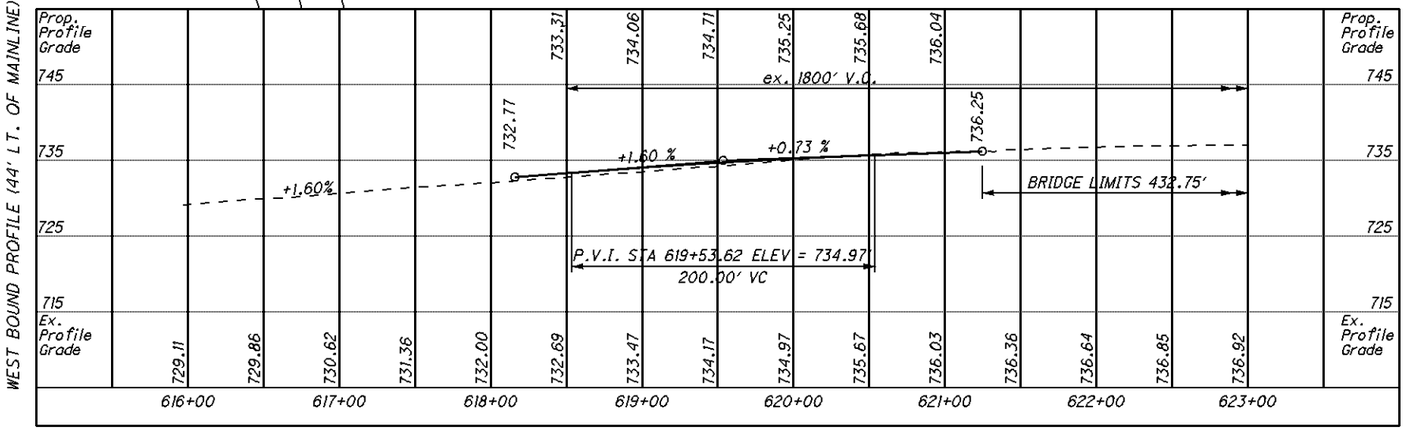
PAVEMENT TRANSITION, SEE SHEET 135.

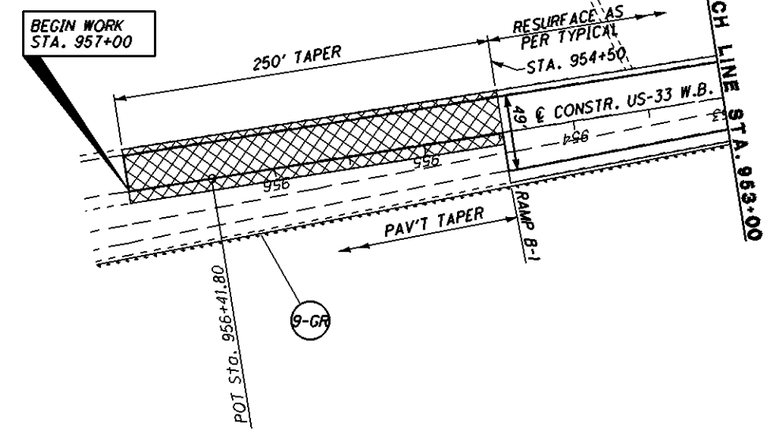
FULL-DEPTH REPLACEMENT

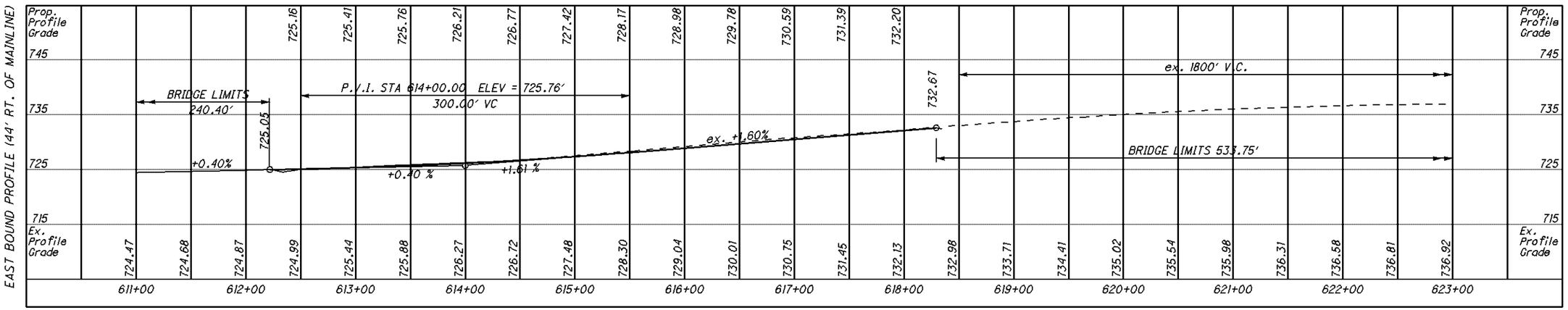
EX. US-50 W.B. CURVE 1
P.I. STA. 613+82.50
Δ = 73° 20′ 37″ (LT)
Dc = 8° 00′ 00″
R = 716.20′
Ls = 400.00′
θs = 16° 00′ 00″
LT = 267.76′
ST = 134.33′
x = 396.89′
y = 37.03′
k = 199.48′
p = 9.28′
Δc = 41° 20′ 37″ (LT)
Lc = 516.80′
Ts = 739.68′
Es = 188.31′

EX. US-50 E.B. CURVE 3
P.I. STA. 611+02.34
Δ = 86° 00′ 06″ (LT)
Dc = 8° 00′ 00″
R = 716.20′
Ls = 400.00′
θs = 16° 00′ 00″
LT = 267.76′
ST = 134.33′
x = 396.89′
y = 37.03′
k = 199.48′
p = 9.28′
Δc = 54° 00′ 07″ (LT)
Lc = 675.03′
Ts = 876.02′
Es = 275.79′









PLAN AND PROFILE
STA. 611+00 TO STA. 623+00

ATH-33/50-15.05/11.46

107
222

CALCULATED JDB
CHECKED ALC

HORIZONTAL SCALE IN FEET
0 25 50 100

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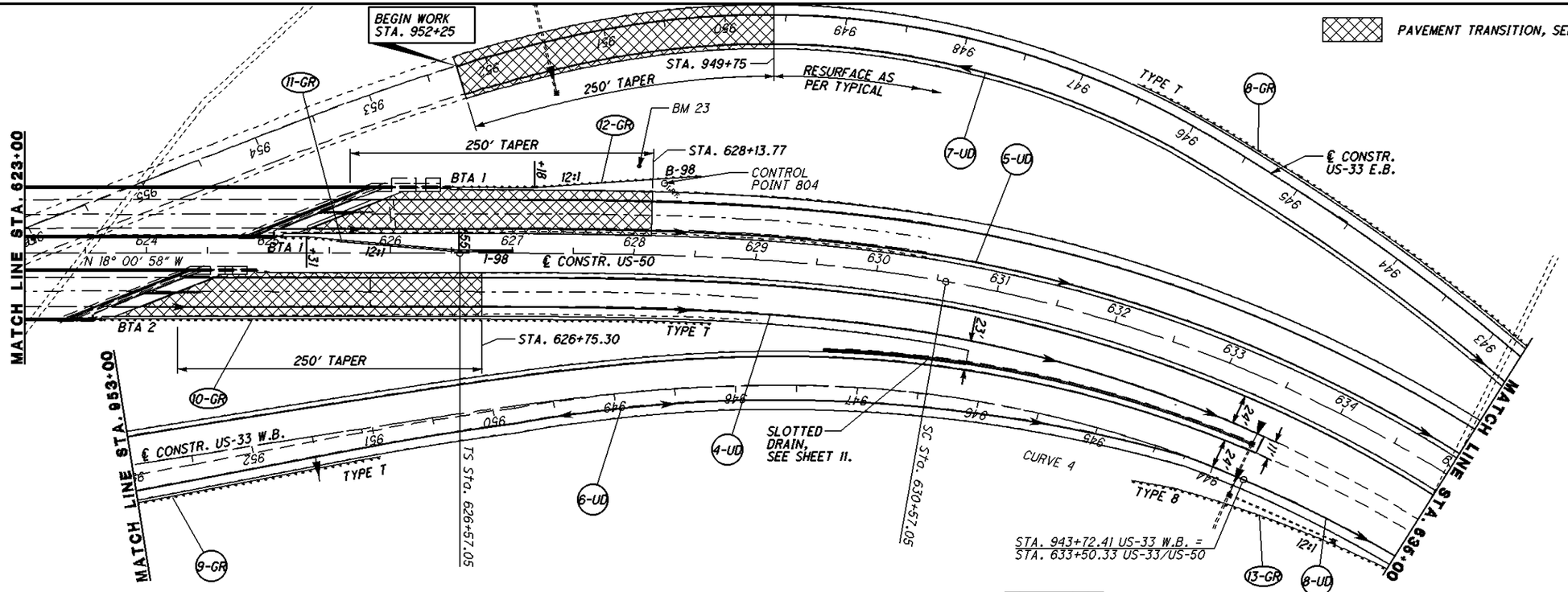
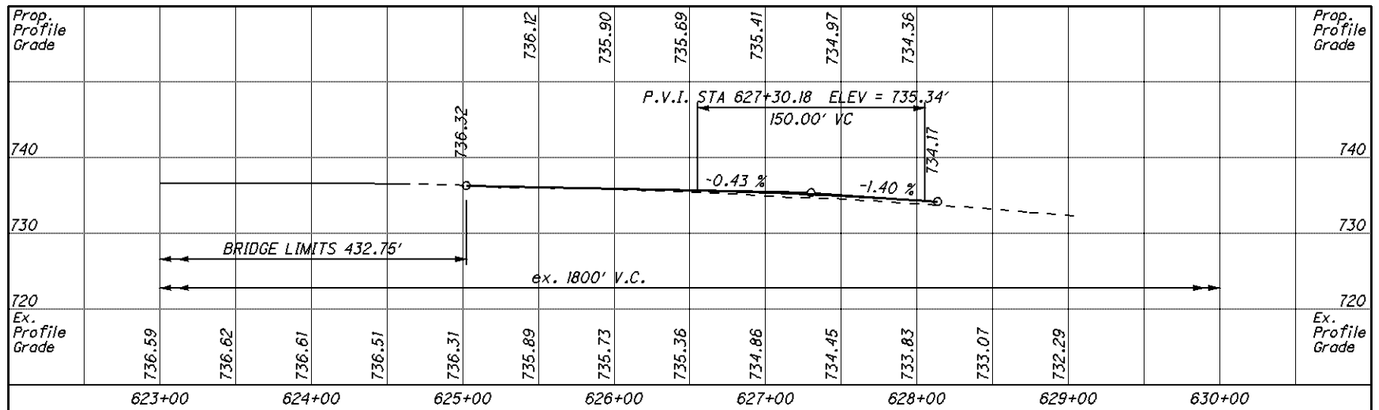
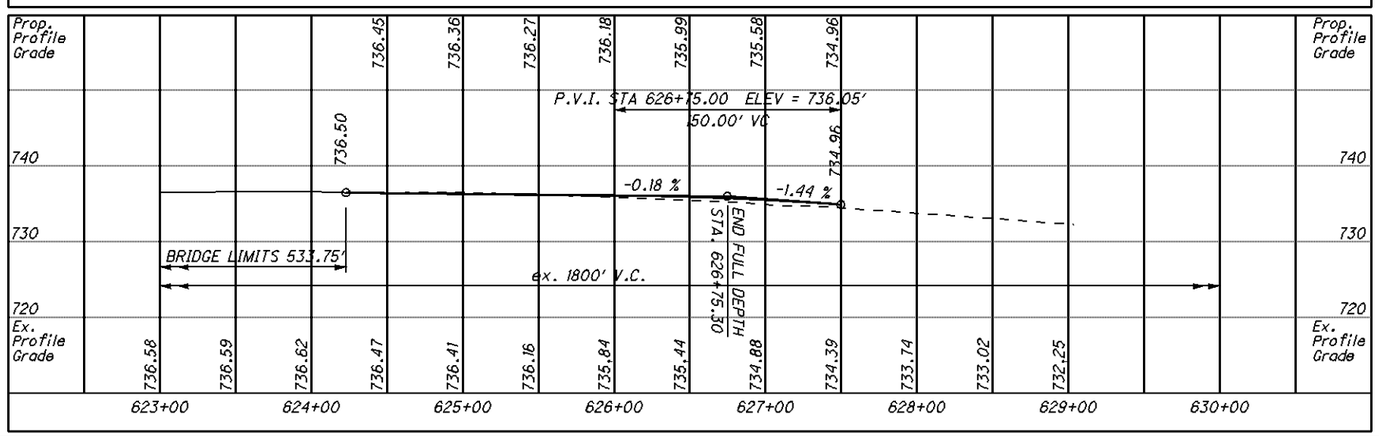
EX. US-33/50 CURVE 4
P.I. STA. 637+67.66
Δ = 76° 40′ 31″ (RT)
Dc = 5° 00′ 00″
R = 1,145.92′
Ls = 400.00′
θs = 10° 00′ 00″
LT = 267.09′
ST = 133.72′
x = 398.78′
y = 23.22′
k = 199.80′
p = 5.81′
Δc = 56° 40′ 31″ (RT)
Lc = 1,133.51′
Ts = 1,110.61′
Es = 322.43′







BENCHMARKS AND REFERENCES

POINT	STATION	OFFSET FROM ℄ LEFT	OFFSET FROM ℄ RIGHT	STATE PLANE GRID COORDINATES OHIO SOUTH ZONE. NAD83(2007), NAVD88. NORTHING (Y)	EASTING (X)	ELEVATION
BM 23	628+02.77	73.02		476363.02	2079842.55	732.59
804	628+23.31	59.21		476387.0726	2079849.8427	

PLAN AND PROFILE
STA. 623+00 TO STA. 635+00

ATH-33/50-15.05/11.46

108
222

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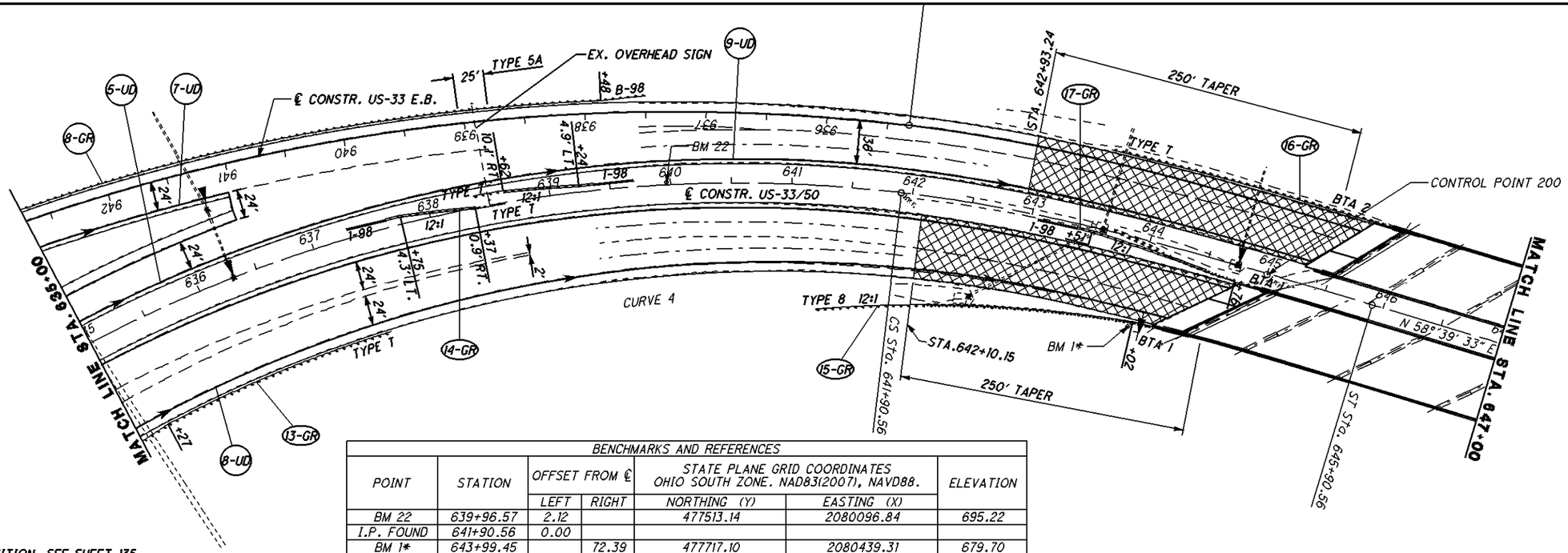
EX. US-33/50 CURVE 4
P.I. STA. 637+67.66
Δ = 76° 40′ 31″ (RT)
Dc = 5° 00′ 00″
R = 1,145.92′
Ls = 400.00′
θs = 10° 00′ 00″
LT = 267.09′
ST = 133.72′
x = 398.78′
y = 23.22′
k = 199.80′
p = 5.81′
Δc = 56° 40′ 31″ (RT)
Lc = 1,133.51′
Ts = 1,110.61′
Es = 322.43′

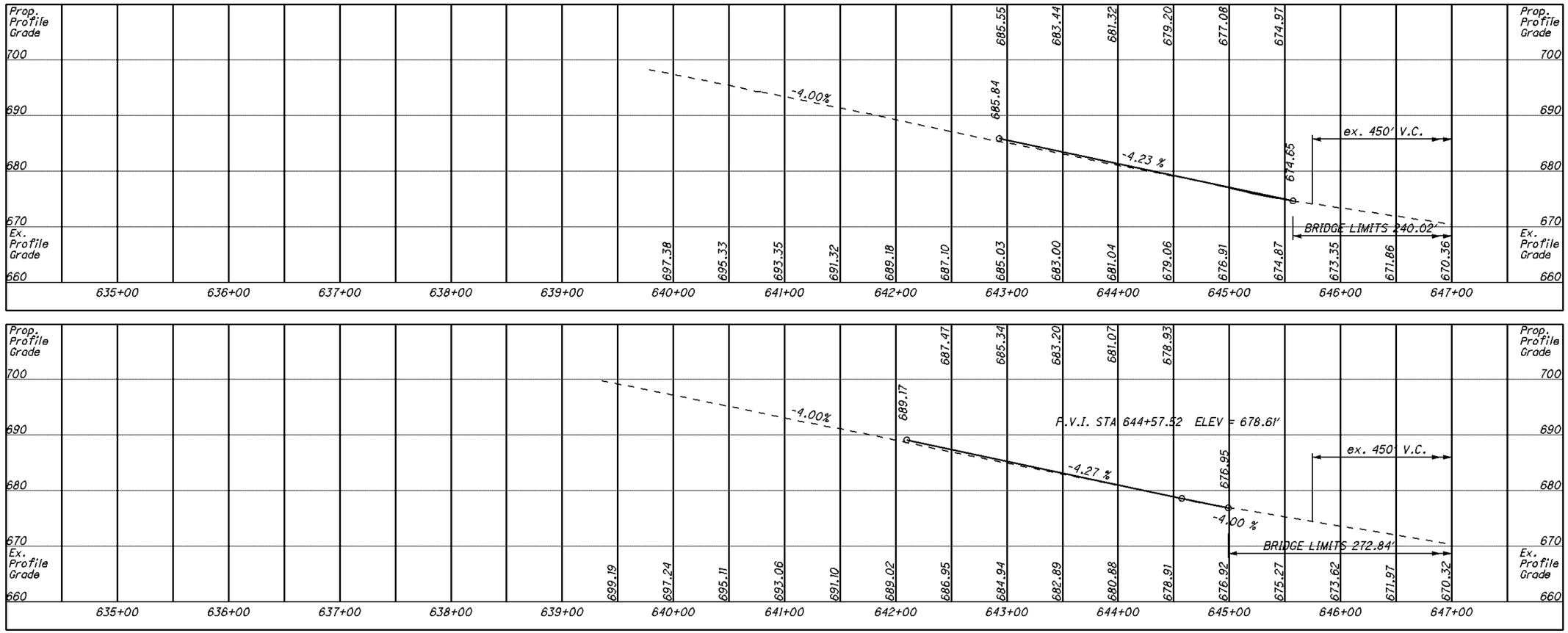


BENCHMARKS AND REFERENCES

POINT	STATION	OFFSET FROM ℄		STATE PLANE GRID COORDINATES OHIO SOUTH ZONE. NAD83(2007), NAVD88.		ELEVATION
		LEFT	RIGHT	NORTHING (Y)	EASTING (X)	
BM 22	639+96.57	2.12		477513.14	2080096.84	695.22
I.P. FOUND	641+90.56	0.00				
BM 1*	643+99.45		72.39	477717.10	2080439.31	679.70
200	645+00.22		0.67	477831.1553	2080484.4314	676.51

*TOP OF SW BOLT OF SIGN POST 682 N

PAVEMENT TRANSITION, SEE SHEET 135.



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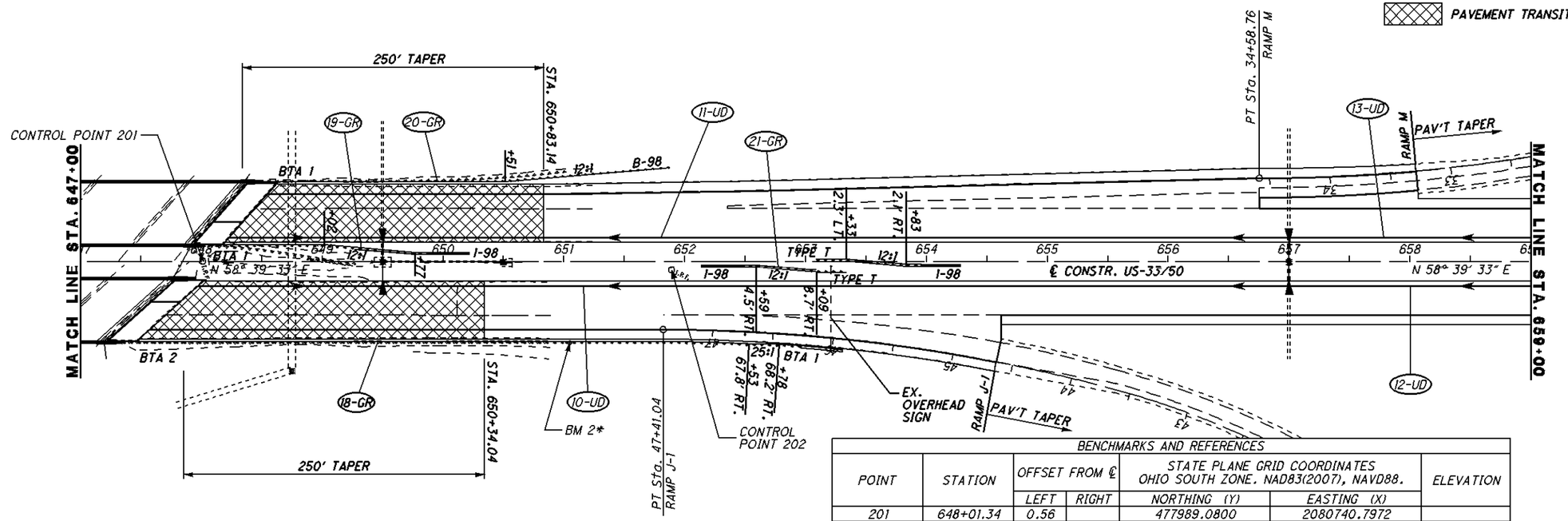
HORIZONTAL SCALE IN FEET
0 25 50 100
CALCULATED JDB
CHECKED ALC

PLAN AND PROFILE
STA. 635+00 TO STA. 647+00

ATH-33/50-15.05/11.46

109
222

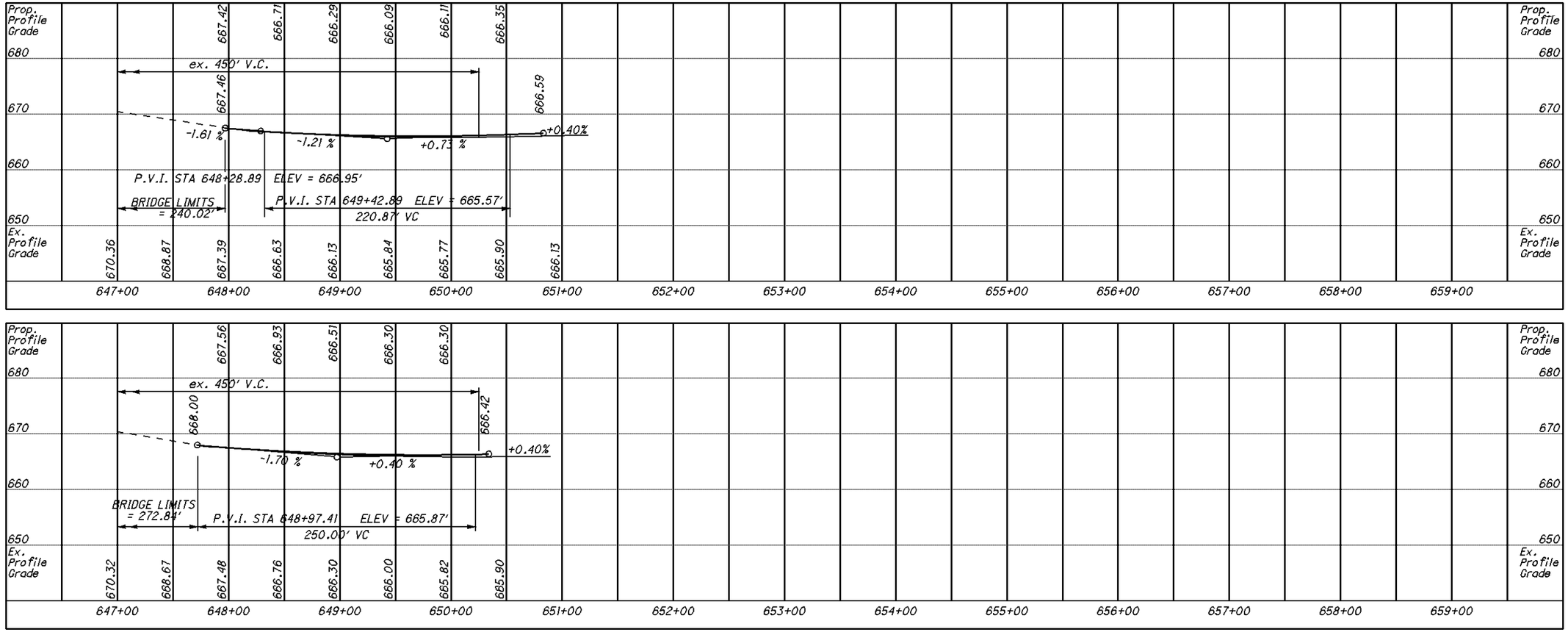
PAVEMENT TRANSITION, SEE SHEET 135.



BENCHMARKS AND REFERENCES

POINT	STATION	OFFSET FROM ℄		STATE PLANE GRID COORDINATES OHIO SOUTH ZONE. NAD83(2007), NAVD88.		ELEVATION
		LEFT	RIGHT	NORTHING (Y)	EASTING (X)	
201	648+01.34	0.56		477989.0800	2080740.7972	
BM 2*	651+04.88		66.93	478089.37	2081035.14	667.70
202	651+82.16		6.76	478184.6333	2081075.8641	

*TOP OF SW BOLT ON LIGHT POLE



HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JDB
CHECKED ALC

PLAN AND PROFILE
STA. 647+00 TO STA. 659+00

ATH-33/50-15.05/11.46

PAVEMENT TRANSITION, SEE SHEET 136.

766.41' FULL-DEPTH PAV'T REPLACEMENT

EX. US-33/50 CURVE 5
P.I. STA. 685+55.13
Δ = 38° 40' 13" (LT)
Dc = 1° 15' 00"
R = 4,583.66'
T = 1,608.33'
L = 3,093.62'
E = 273.98'

MATCH LINE STA. 659+00

MATCH LINE STA. 671+00

STA. 661+00

STA. 668+66.41

PC Sta. 669+46.80

SR 682

13-UD, 12-UD, 14-UD, 22-GR, 23-GR, 24-GR

TYPE 5A, TYPE T, TYPE 1

B-98, I-98

CONTROL POINT 801
BM 20**

CONTROL POINT 802
BM 21*

N 58° 39' 33" E
℄ CONSTR. US-33/50

RAMP K

STA. 660+93.37

FULL-DEPTH PAV'T REPLACEMENT

ST Sta. 43+07.77
RAMP K

S 25° 22' 38" E

* X ON BOLT
** X ON BOLT

BENCHMARKS AND REFERENCES

	STATION	OFFSET FROM ℄ LEFT	OFFSET FROM ℄ RIGHT	STATE PLANE GRID COORDINATES OHIO SOUTH ZONE. NAD83(2007), NAVD88. NORTHING (Y)	EASTING (X)	ELEVATION
802	662+97.36	9.18		478773.4641	2082011.9846	676.25
BM 21*	663+24.71	3.43		478782.77	2082036.34	684.81
801	666+20.88	6.78		478939.6016	2082289.6027	
BM 20**	666+40.10	0.87		478944.54	2082309.09	

WEST BOUND PROFILE (20' LT.)

ex. 450' V.C.
ex. 1600' V.C.
P.V.I. STA 663+00.00 ELEV = 676.28'
150.00' VC
P.V.I. STA 666+16.41 ELEV = 684.00'
+1.79 %
+2.44 %
ex. +2.44%
+2.76 %

Prop. Profile Grade	672.70	673.59	674.49	675.40	676.40	677.51	678.72	679.94	681.16	682.38	683.60	684.93	686.31	687.69	689.07	690.45	690.91	Prop. Profile Grade
700																		700
690																		690
680																		680
670																		670
Ex. Profile Grade	671.31	672.15	673.11	674.11	675.22	676.42	677.57	678.70	679.94	681.14	682.41	683.70	685.01	686.20	687.50	688.75	689.95	691.16	692.42	693.61	694.69	695.62	Ex. Profile Grade
	659+00	660+00	661+00	662+00	663+00	664+00	665+00	666+00	667+00	668+00	669+00	670+00	671+00										

EAST BOUND PROFILE (20' RT.)

ex. 450' V.C.
ex. 1600' V.C.
P.V.I. STA 663+43.37 ELEV = 677.30'
150.00' VC
P.V.I. STA 672+07.66 ELEV = 698.39'
400.00' VC
+1.87 %
+2.44 %
ex. +2.44%

Prop. Profile Grade	672.75	673.69	674.62	675.56	676.51	677.55	678.69	679.90	681.12	682.34	683.56	684.78	686.00	687.22	688.44	689.66	690.88	692.10	693.32	694.51	695.60	Prop. Profile Grade
700																						700
690																						690
680																						680
670																						670
Ex. Profile Grade	671.37	672.19	673.09	674.05	675.11	676.28	677.48	678.74	679.98	681.13	682.39	683.60	684.93	686.09	687.37	688.64	689.87	691.12	692.35	693.57	694.72	695.76	Ex. Profile Grade
	660+00	661+00	662+00	663+00	664+00	665+00	666+00	667+00	668+00	669+00	670+00	671+00											

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JDB
CHECKED ALC

PLAN AND PROFILE
STA. 659+00 TO STA. 671+00

ATH-33/50-15.05/11.46

111
222

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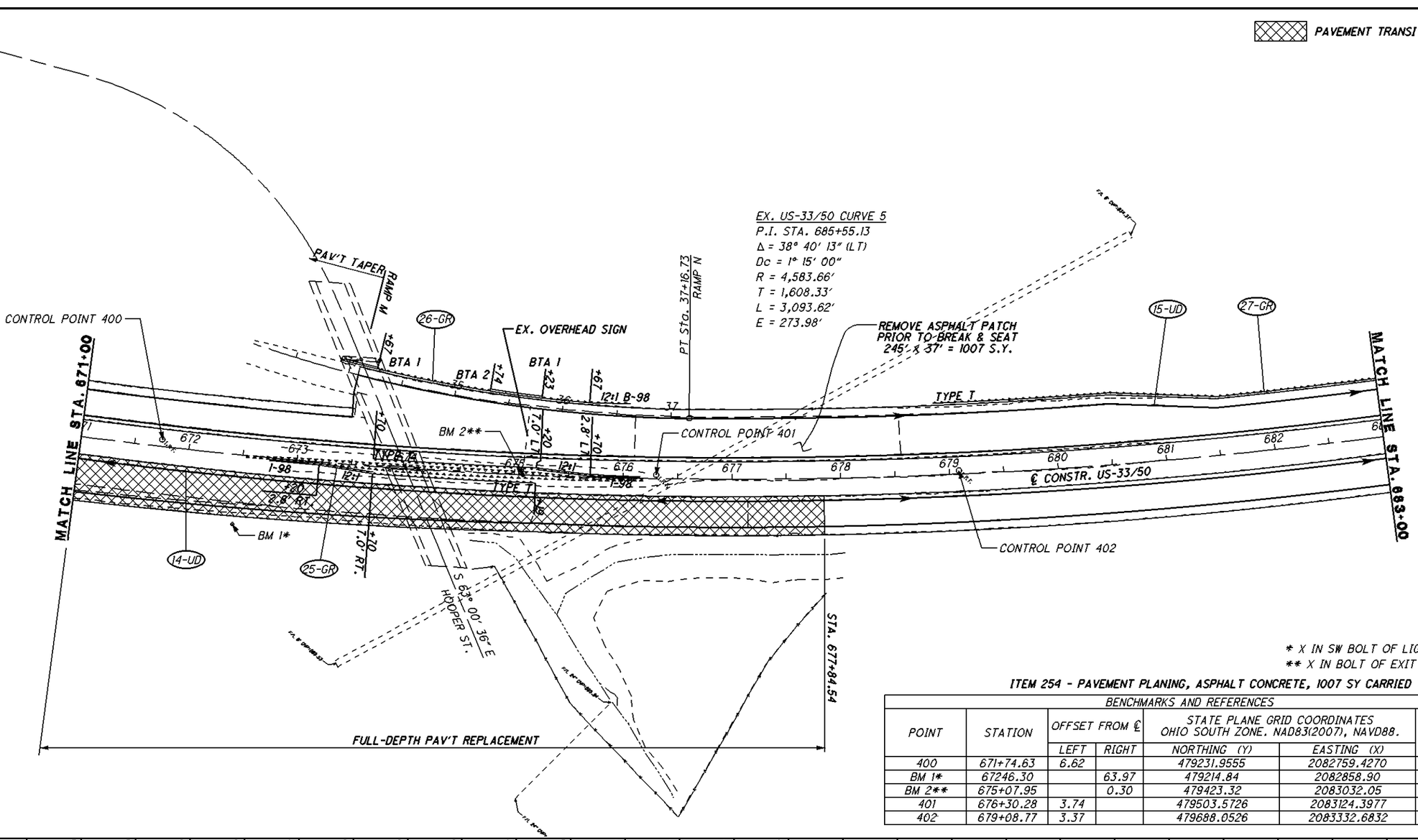
PAVEMENT TRANSITION, SEE SHEET 136.

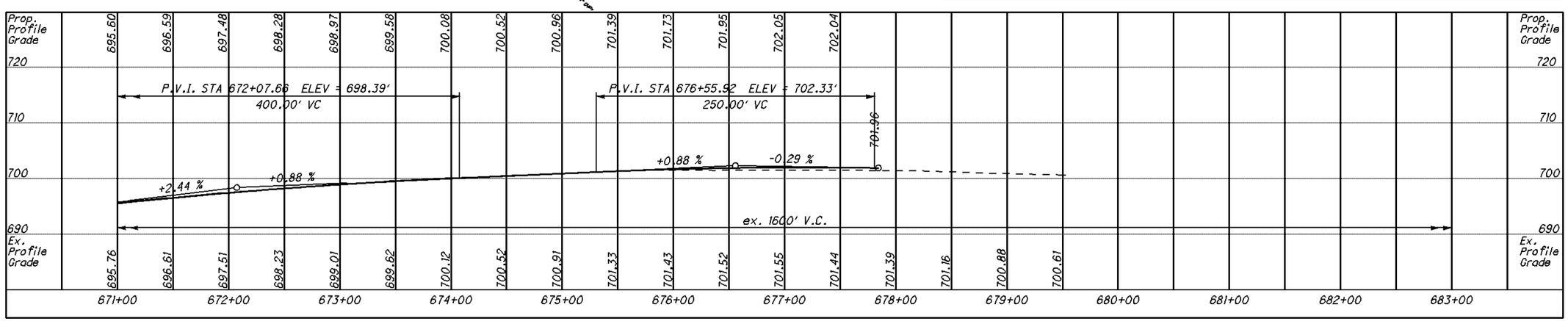


* X IN SW BOLT OF LIGHT POLE D13
** X IN BOLT OF EXIT 17 SIGN

ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE, 1007 SY CARRIED TO SHEET 85.

BENCHMARKS AND REFERENCES

POINT	STATION	OFFSET FROM ℄		STATE PLANE GRID COORDINATES OHIO SOUTH ZONE. NAD83(2007), NAVD88.		ELEVATION
		LEFT	RIGHT	NORTHING (Y)	EASTING (X)	
400	671+74.63	6.62		479231.9555	2082759.4270	695.31
BM 1*	67246.30		63.97	479214.84	2082858.90	699.73
BM 2**	675+07.95		0.30	479423.32	2083032.05	702.12
401	676+30.28	3.74		479503.5726	2083124.3977	700.68
402	679+08.77	3.37		479688.0526	2083332.6832	699.55

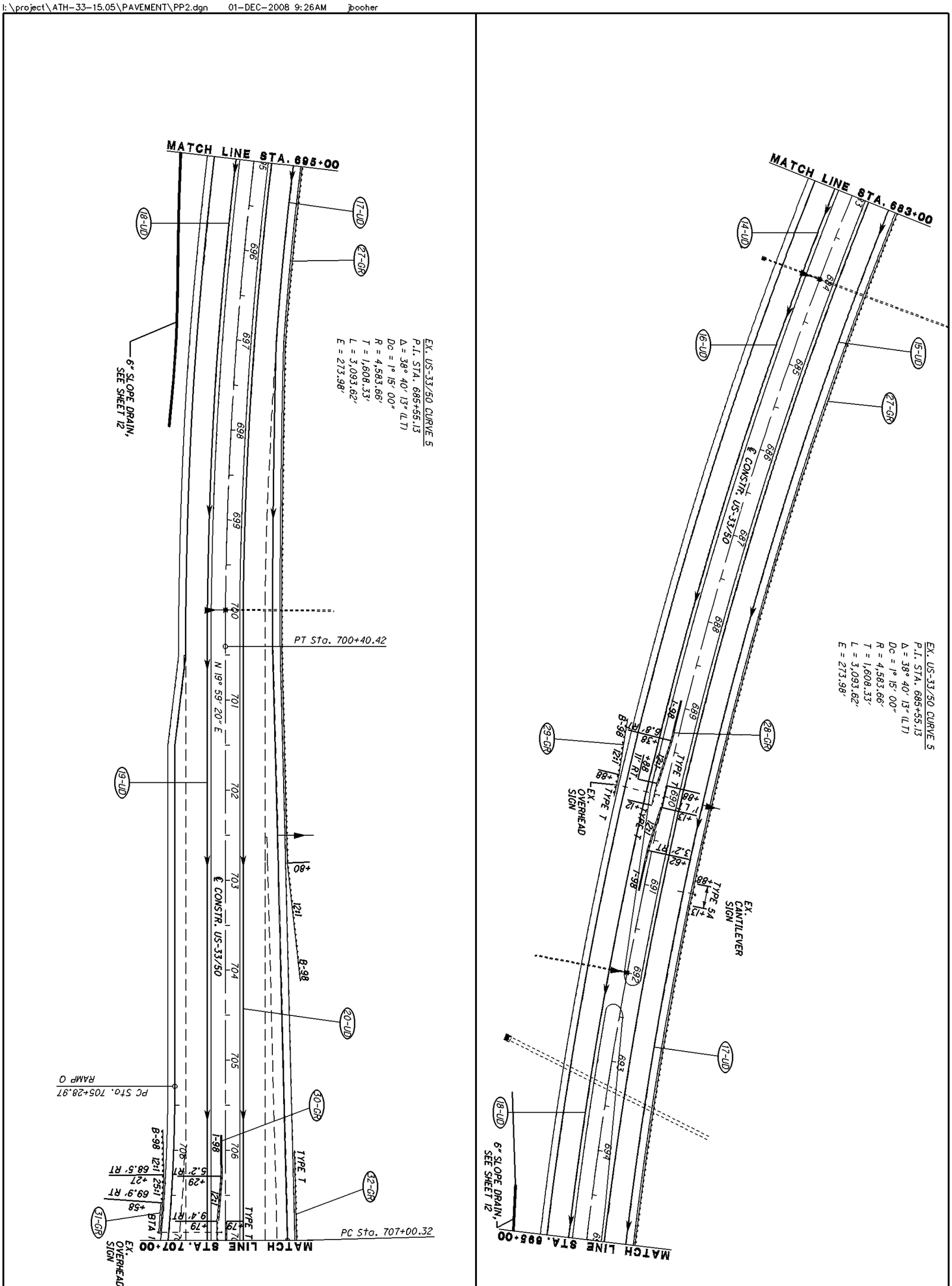


HORIZONTAL SCALE IN FEET
0 25 50 100

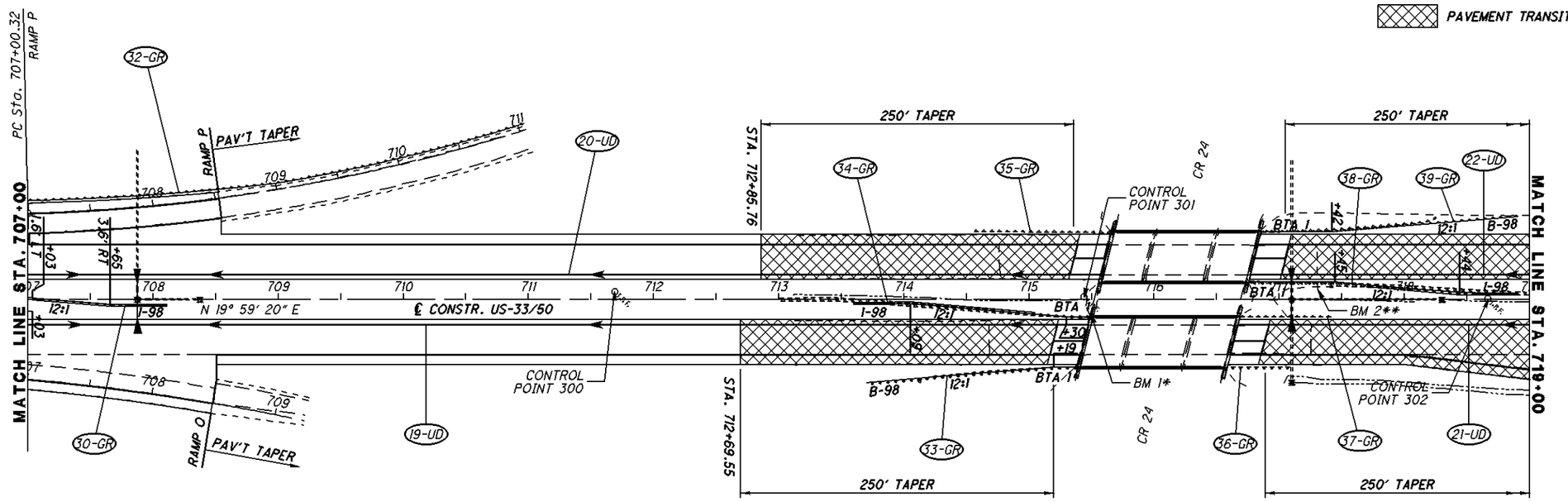
CALCULATED JDB
CHECKED ALC

PLAN AND PROFILE
STA. 671+00 TO STA. 683+00

ATH-33/50-15.05/11.46



113 / 222	ATH-33/50-15.05/11.46	PLAN AND PROFILE STA. 683+00 TO STA. 707+00	CALCULATED JDB / CHECKED ALC	0 50 25 100 HORIZONTAL SCALE IN FEET

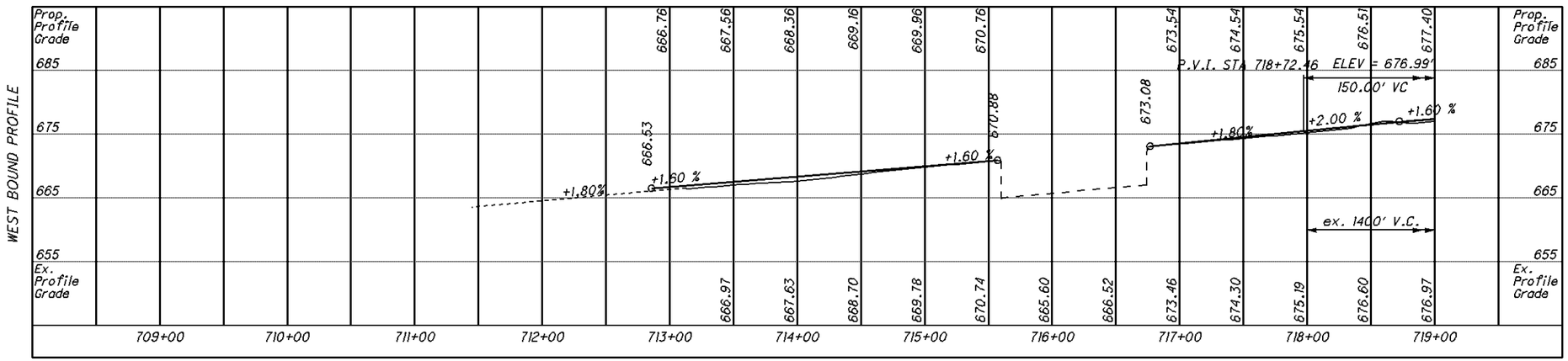


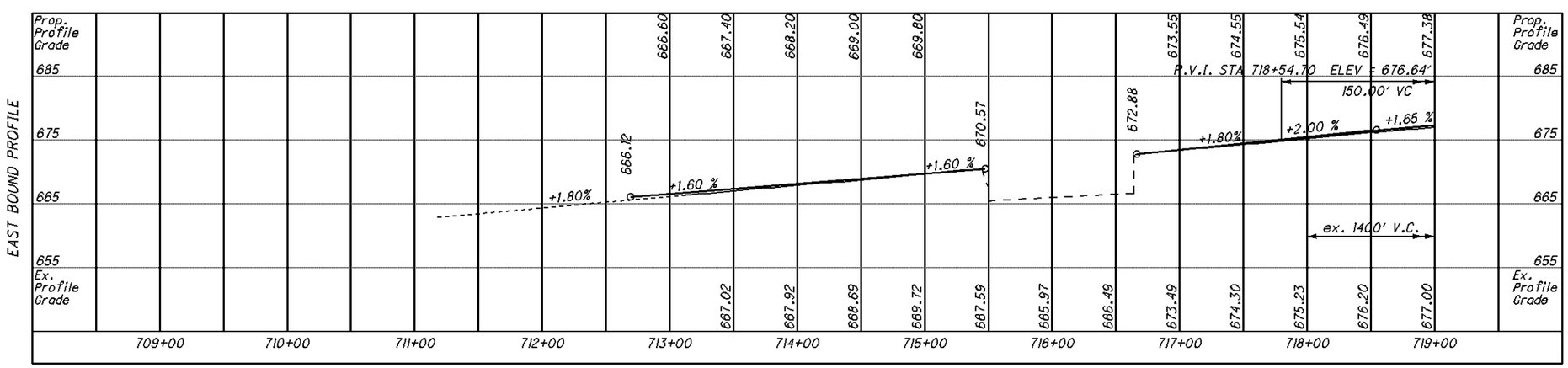
BENCHMARKS AND REFERENCES

POINT	STATION	OFFSET FROM ℄		STATE PLANE GRID COORDINATES OHIO SOUTH ZONE, NAD83(2007), NAVD88.		ELEVATION
		LEFT	RIGHT	NORTHING (Y)	EASTING (X)	
300	711+69.12	6.61		482515.0946	2084875.5982	662.86
301	715+44.10	2.39		482865.9255	2085008.0612	669.91
BM 1*	715+49.70		11.42	482866.46	2085022.96	670.59
BM 2**	717+30.95	8.12		483043.43	2085066.71	675.15
302	718+66.78	0.84		483168.5444	2085120.0884	674.59

* MAG NAIL SW ABUT W. BOUND 33

** X IN ANCHOR BOLT ON OVERHEAD SIGN





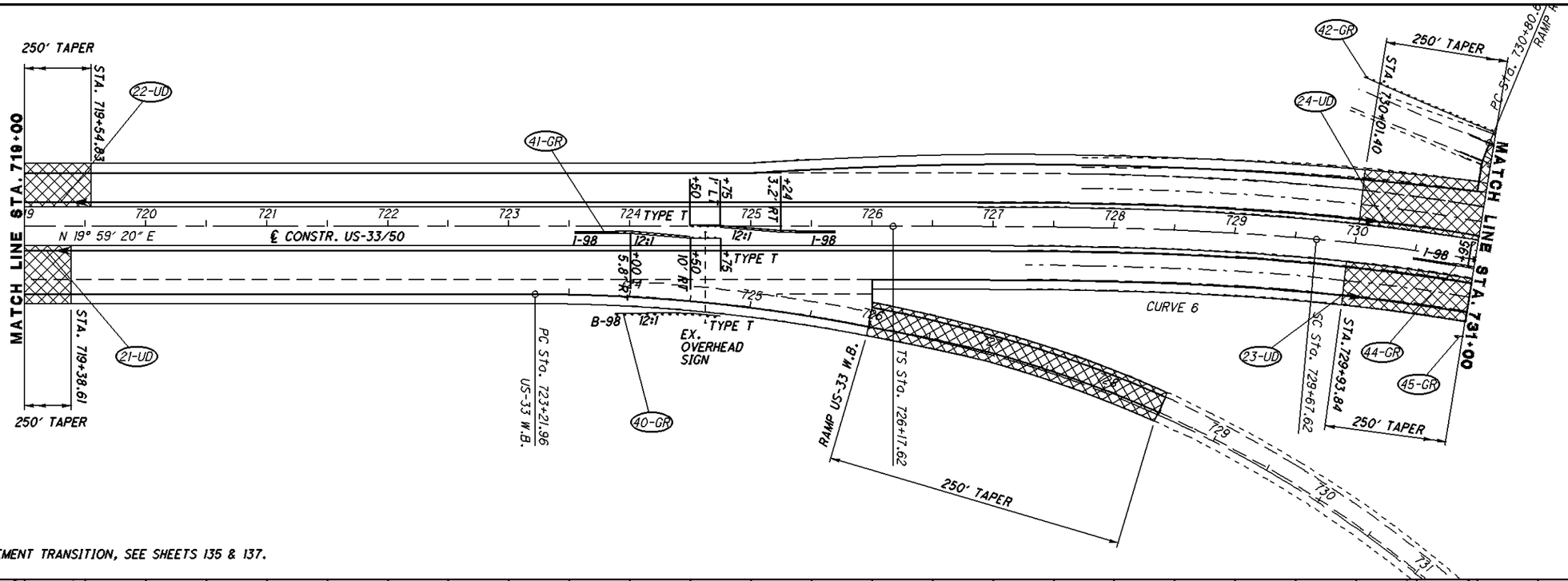
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JDB
CHECKED ALC

PLAN AND PROFILE
STA. 707+00 TO STA. 719+00

ATH-33/50-15.05/11.46

EX. US-33/50 CURVE 6
P.I. STA. 739+82.12
Δ = 63° 45′ 40″ (RT)
Dc = 3° 00′ 00″
R = 1,909.86′
Ls = 350.00′
θs = 5° 15′ 00″
LT = 233.44′
ST = 116.76′
x = 349.71′
y = 10.68′
k = 174.95′
p = 2.67′
Δc = 53° 15′ 40″ (RT)
Lc = 1,775.37′
Ts = 1,364.50′
Es = 342.43′



PAVEMENT TRANSITION, SEE SHEETS 135 & 137.

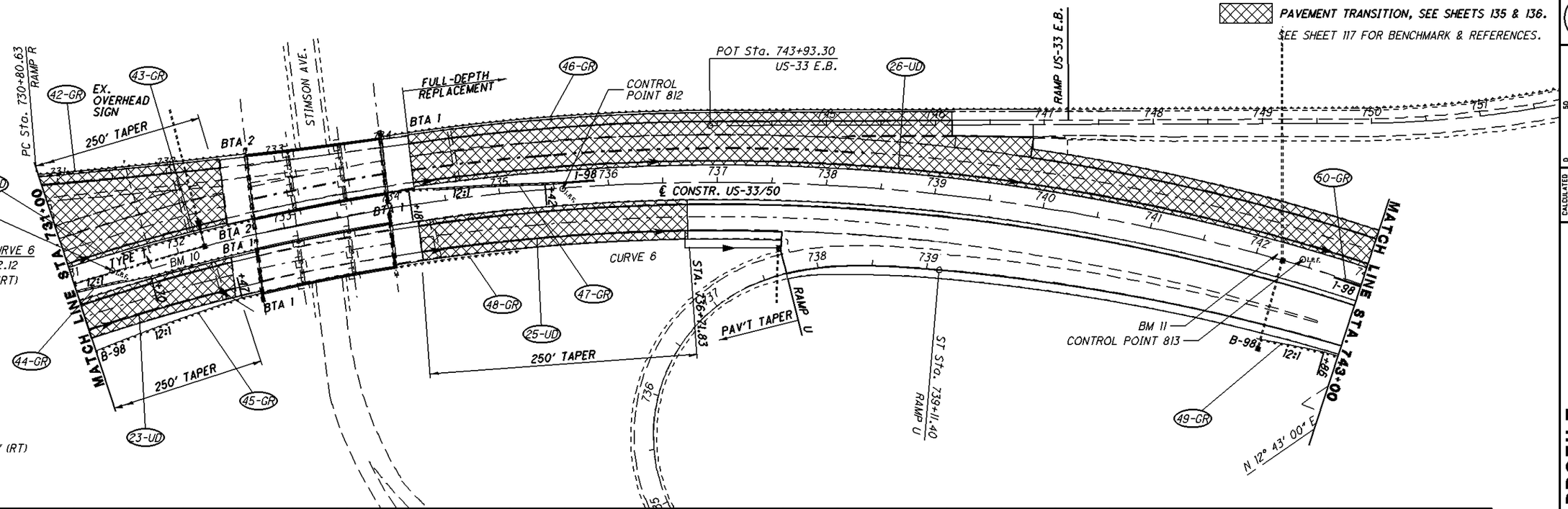
HORIZONTAL SCALE IN FEET
0 25 50 100
CALCULATED JDB
CHECKED ALC

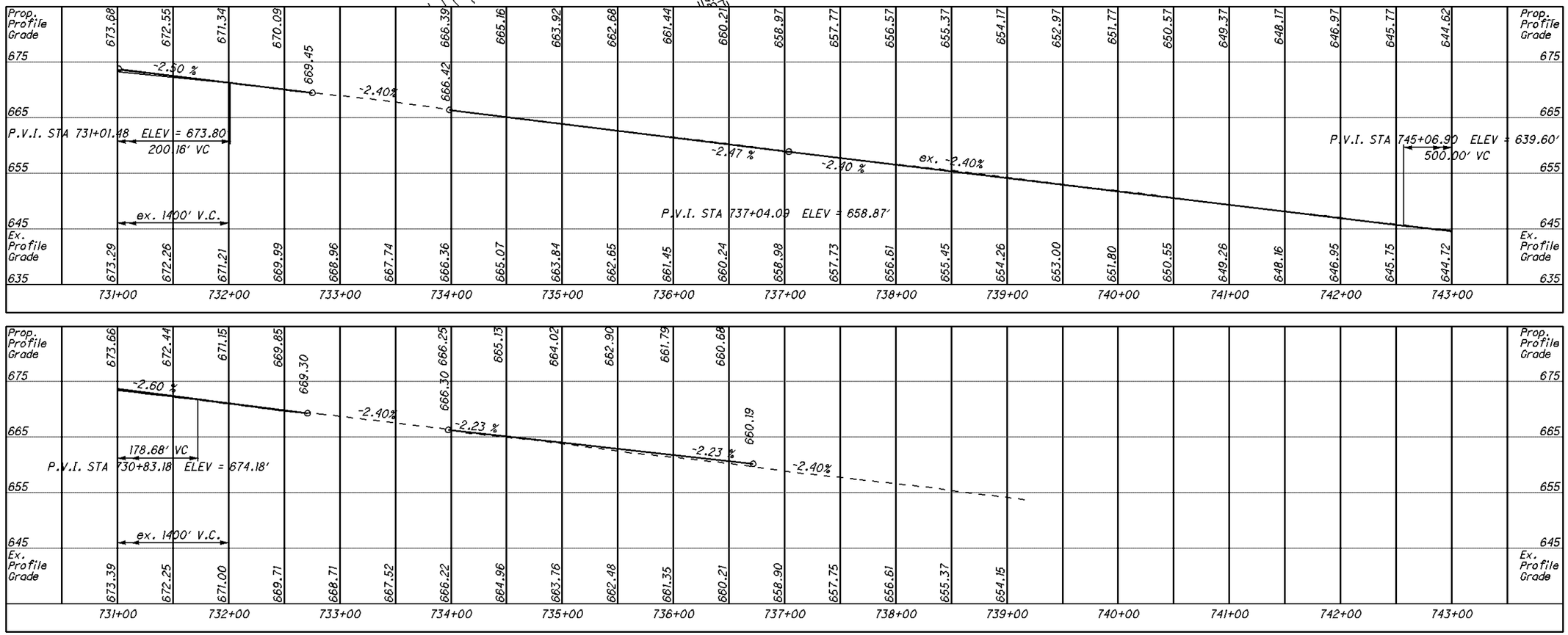
PLAN AND PROFILE
STA. 719+00 TO STA. 731+00

ATH-33/50-15.05/11.46

PAVEMENT TRANSITION, SEE SHEETS 135 & 136.

SEE SHEET 117 FOR BENCHMARK & REFERENCES.





HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JDB
CHECKED ALC

PLAN AND PROFILE
STA. 731+00 TO STA. 743+00

ATH-33/50-15.05/11.46

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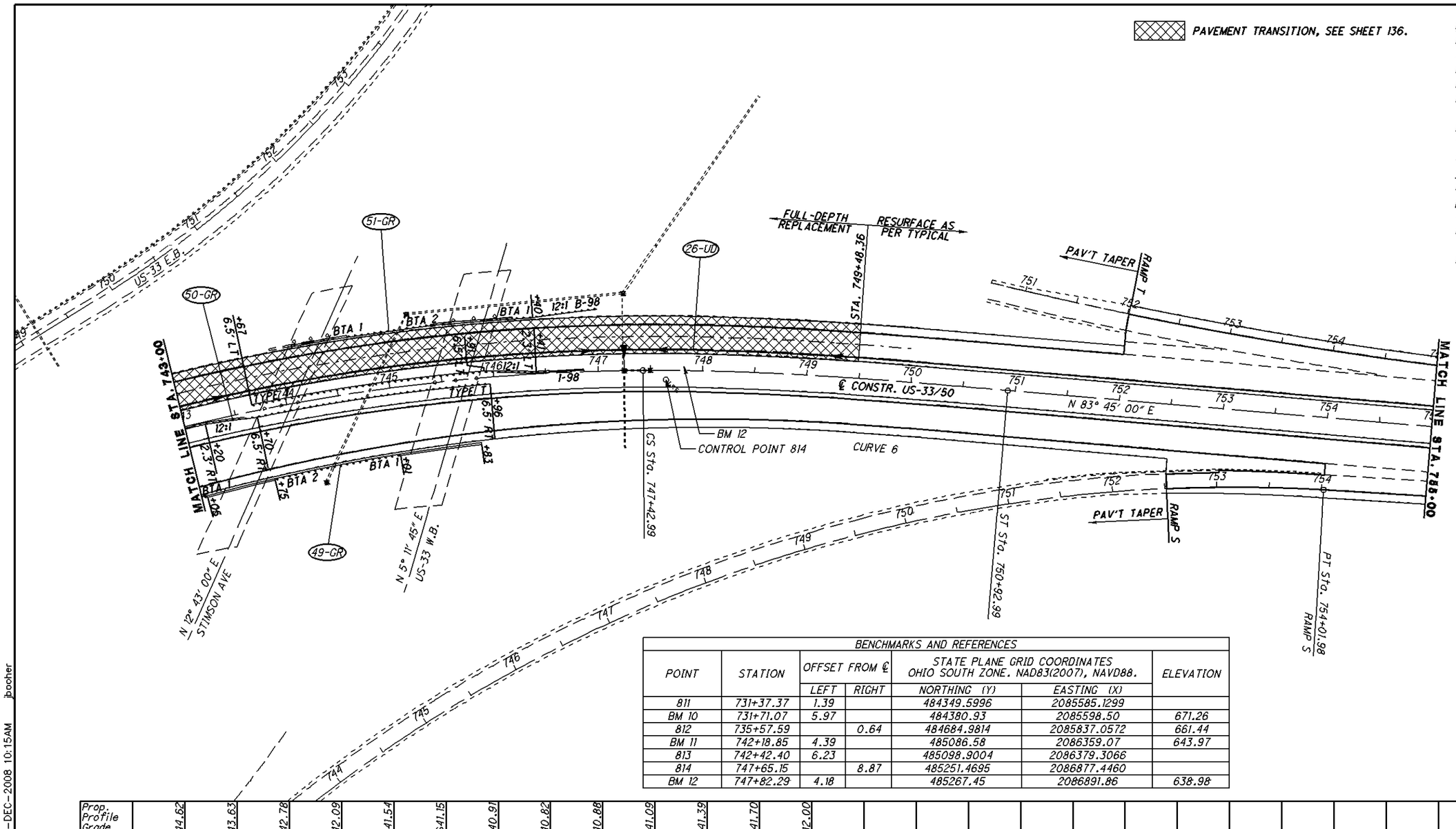
PAVEMENT TRANSITION, SEE SHEET 136.

EX. US-33/50 CURVE 6
P.I. STA. 739+82.12
Δ = 63° 45' 40" (RT)
Dc = 3° 00' 00"
R = 1,909.86'
Ls = 350.00'
θs = 5° 15' 00"
LT = 233.44'
ST = 116.76'
x = 349.71'
y = 10.68'
k = 174.95'
p = 2.67'
Δc = 53° 15' 40" (RT)
Lc = 1,775.37'
Ts = 1,364.50'
Es = 342.43'

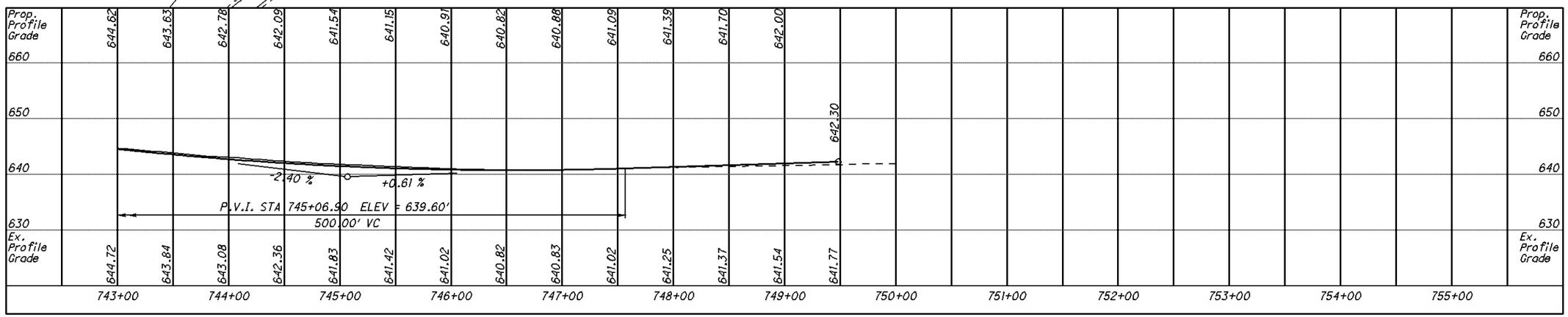
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JDB
CHECKED ALC



BENCHMARKS AND REFERENCES

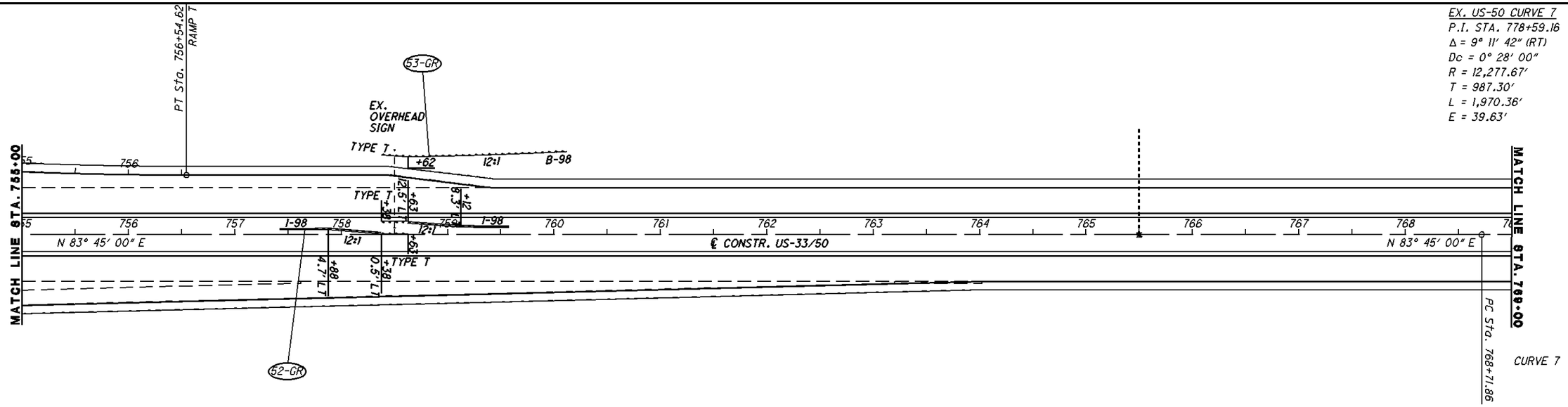
POINT	STATION	OFFSET FROM ℄		STATE PLANE GRID COORDINATES OHIO SOUTH ZONE. NAD83(2007), NAVD88.		ELEVATION
		LEFT	RIGHT	NORTHING (Y)	EASTING (X)	
811	731+37.37	1.39		484349.5996	2085585.1299	
BM 10	731+71.07	5.97		484380.93	2085598.50	671.26
812	735+57.59		0.64	484684.9814	2085837.0572	661.44
BM 11	742+18.85	4.39		485086.58	2086359.07	643.97
813	742+42.40	6.23		485098.9004	2086379.3066	
814	747+65.15		8.87	485251.4695	2086877.4460	
BM 12	747+82.29	4.18		485267.45	2086891.86	638.98

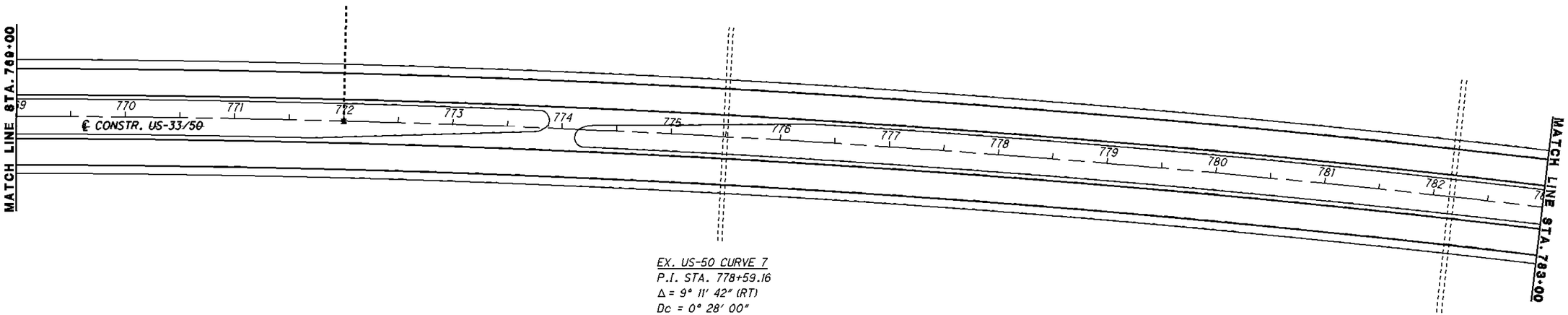


PLAN AND PROFILE
STA. 743+00 TO STA. 755+00

ATH-33/50-15.05/11.46

I:\project\ATH-33-15.05\PAVEMENT\PP4.dgn 01-DEC-2008 10:15AM jbooher





EX. US-50 CURVE 7
P.I. STA. 778+59.16
Δ = 9° 11′ 42″ (RT)
Dc = 0° 28′ 00″
R = 12,277.67′
T = 987.30′
L = 1,970.36′
E = 39.63′

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JDB
CHECKED ALC

PLAN AND PROFILE
STA. 755+00 TO STA. 783+00

ATH-33/50-15.05/11.46

118
222

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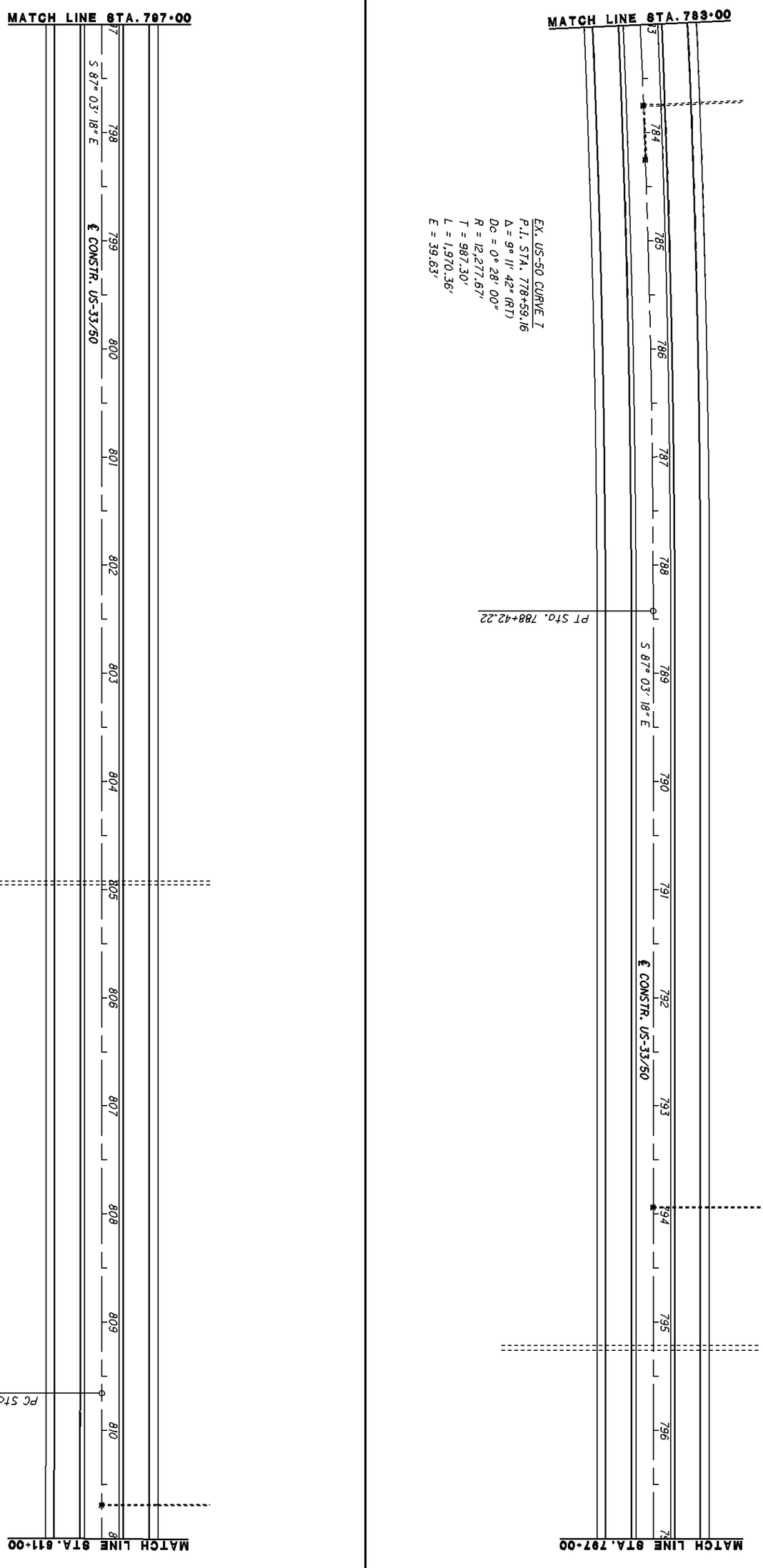
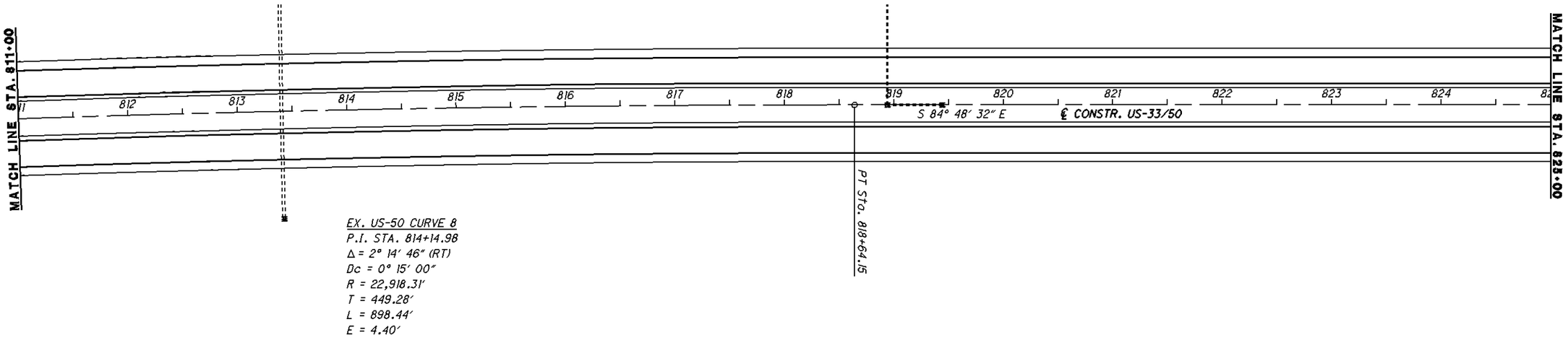


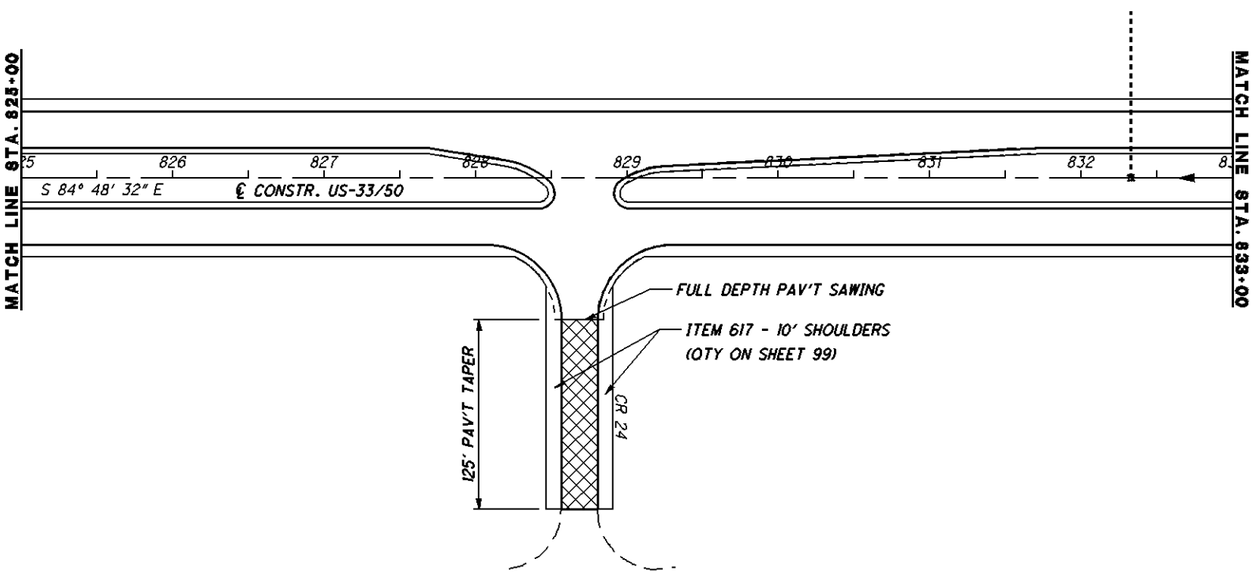
PLAN AND PROFILE
STA. 783+00 TO STA. 811+00

CALCULATED JDB
CHECKED ALC

0 50
25 100
HORIZONTAL SCALE IN FEET



PAVEMENT TRANSITION, SEE SHEETS 135.



HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JDB
CHECKED ALC

PLAN AND PROFILE
STA. 811+00 TO STA. 833+00

ATH-33/50-15.05/11.46

120
222

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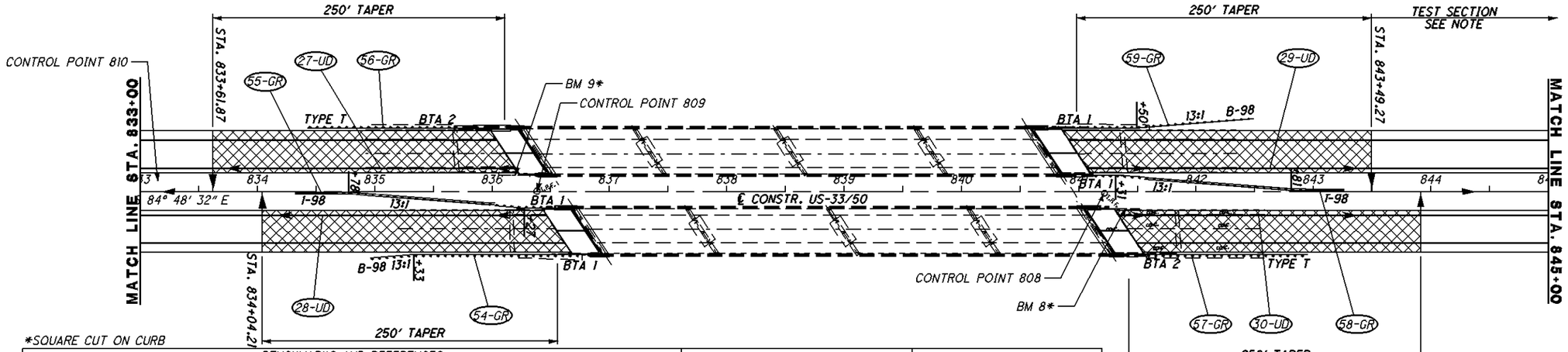
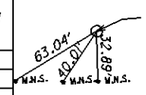
PAVEMENT TRANSITION, SEE SHEET 135.

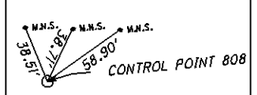


*SQUARE CUT ON CURB

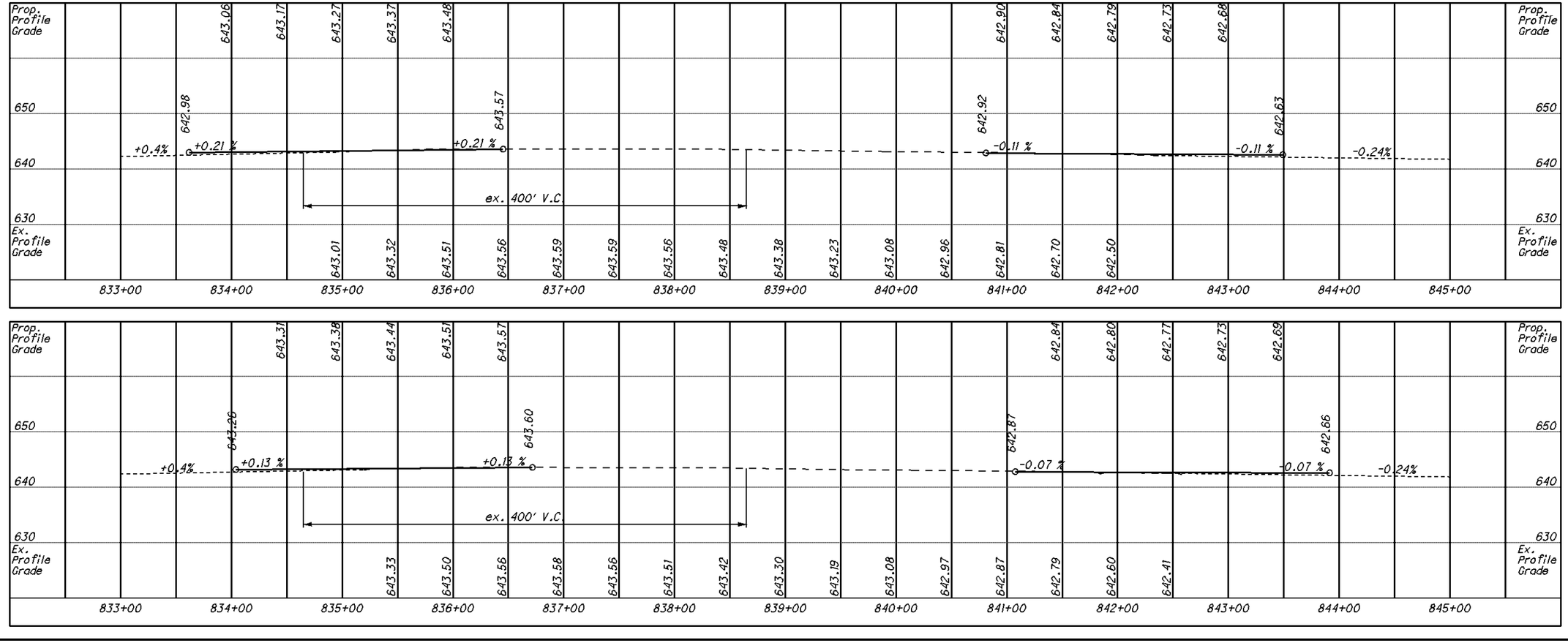
BENCHMARKS AND REFERENCES

POINT	STATION	OFFSET FROM ℄ LEFT	OFFSET FROM ℄ RIGHT	STATE PLANE GRID COORDINATES OHIO SOUTH ZONE. NAD83(2007), NAVD88. NORTHING (Y)	STATE PLANE GRID COORDINATES OHIO SOUTH ZONE. NAD83(2007), NAVD88. EASTING (X)	ELEVATION
BM 9*	836+19.47	13.79		485262.5	2095633.8	643.99
809	836+38.31	0.28		485247.3719	2095651.3494	643.04
808	841+21.91		1.33	485202.0388	2096132.8280	642.71
BM 8*	841+39.76		14.36	485187.4	2096149.4	643.10





NOTE: TEST SECTION FROM STA. 843+49.27 TO STA. 878+25.76 WEST BOUND. NO CHIP SEAL APPLIED ON WEST BOUND LANES.



HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JDB
CHECKED ALC

PLAN AND PROFILE
STA. 833+00 TO STA. 845+00

ATH-33/50-15.05/11.46

121
222

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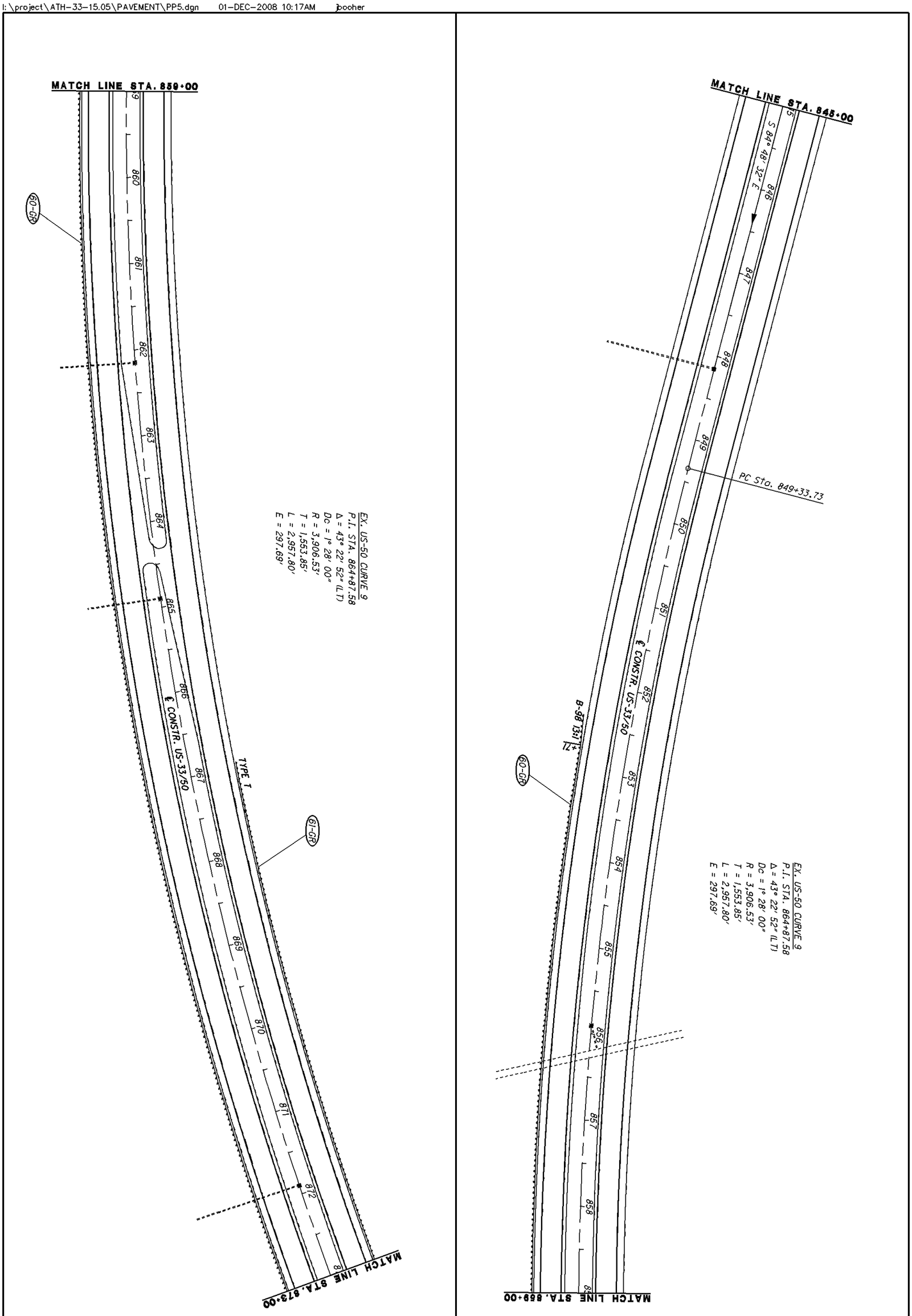
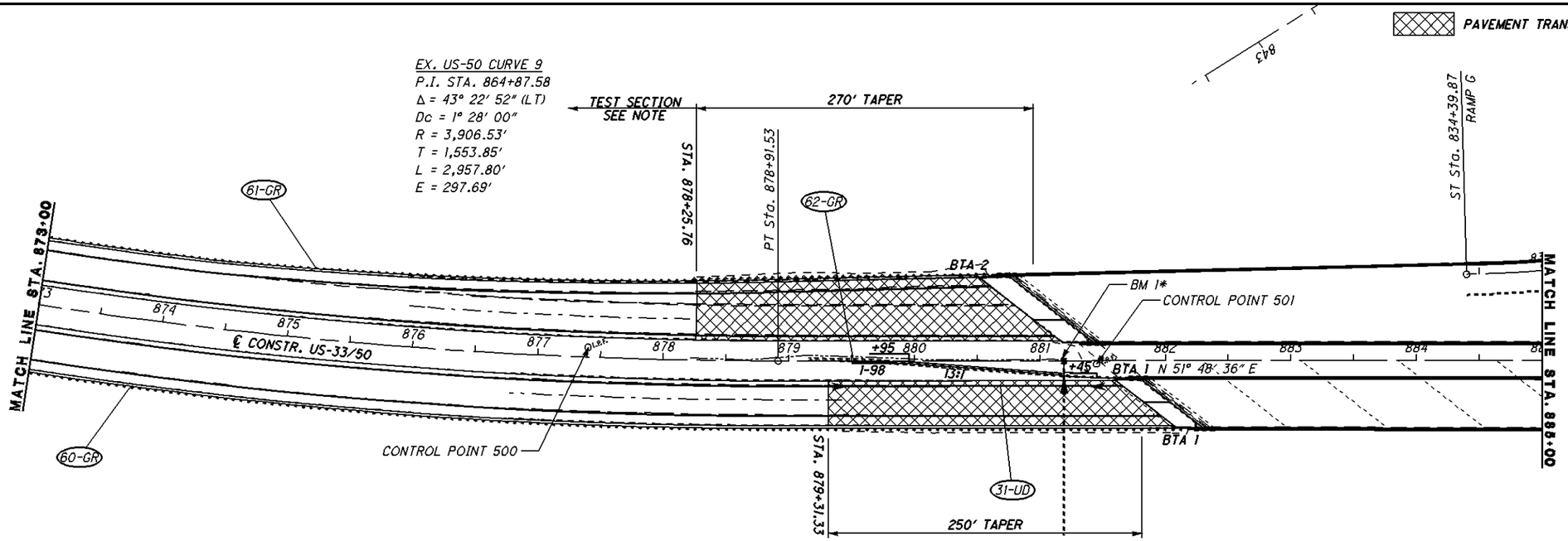


122 / 222	ATH-33/50-15.05/11.46	PLAN AND PROFILE STA. 845+00 TO STA. 873+00	CALCULATED JDB CHECKED ALC	0 50 25 100 HORIZONTAL SCALE IN FEET



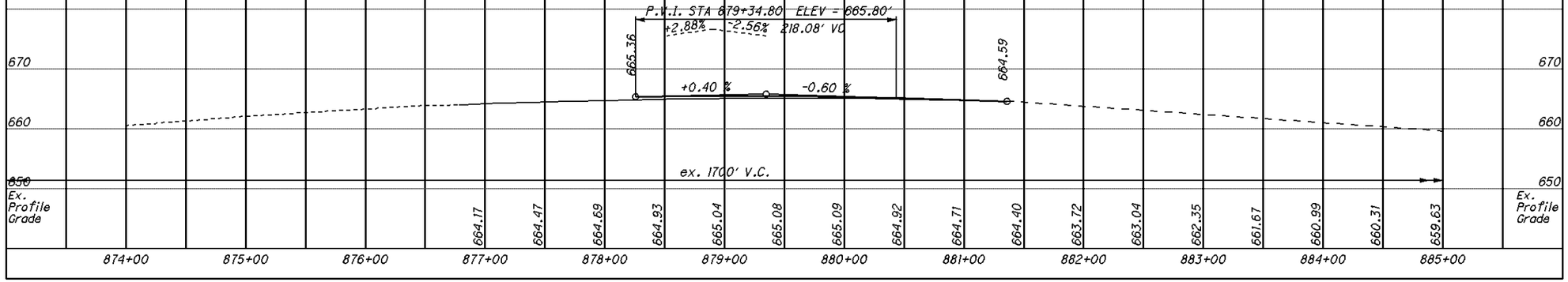
* SQUARE ON CORNER OF CATCH BASIN

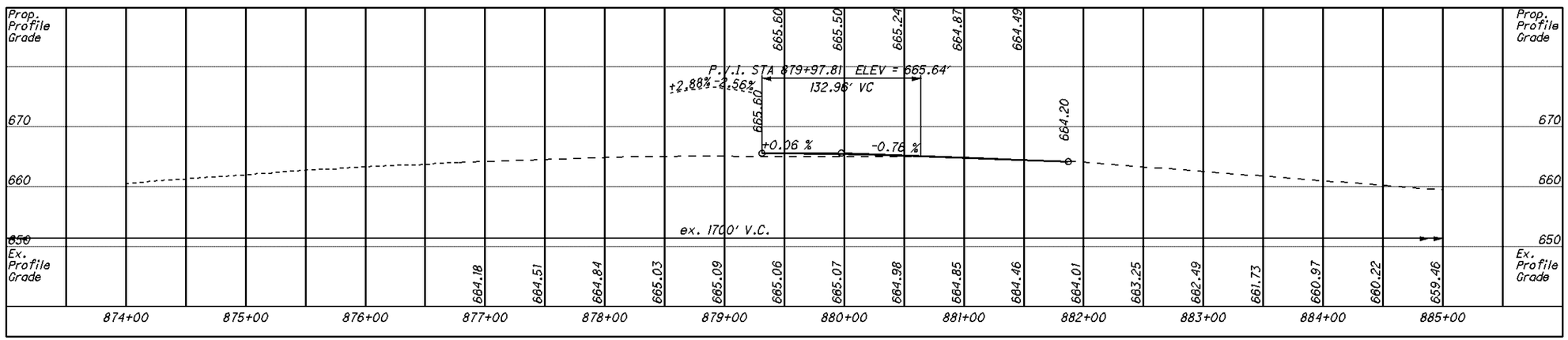
** TOP OF BOLT ON LIGHT POLE

NOTE: TEST SECTION FROM STA. 843+49.27 TO STA. 878+25.76 WEST BOUND. NO CHIP SEAL APPLIED ON WEST BOUND LANES.

BENCHMARKS AND REFERENCES

POINT	STATION	OFFSET FROM ℄ LEFT	OFFSET FROM ℄ RIGHT	STATE PLANE GRID COORDINATES OHIO SOUTH ZONE. NAD83(2007), NAVD88. NORTHING (Y)	STATE PLANE GRID COORDINATES OHIO SOUTH ZONE. NAD83(2007), NAVD88. EASTING (X)	ELEVATION
500	877+39.84	7.92		485865.1718	2099585.6743	663.28
BM 1*	881+17.47	2.28		486091.71	2099887.50	661.51
501	881+45.24		2.44	486105.1694	2099912.2521	664.38
502	886+30.17	2.51		486408.7497	2100290.4476	657.36
BM 2**	888+04.85		66.33	486455.13	2100470.00	652.19





HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JDB
CHECKED ALC

PLAN AND PROFILE
STA. 873+00 TO STA. 885+00

ATH-33/50-15.05/11.46

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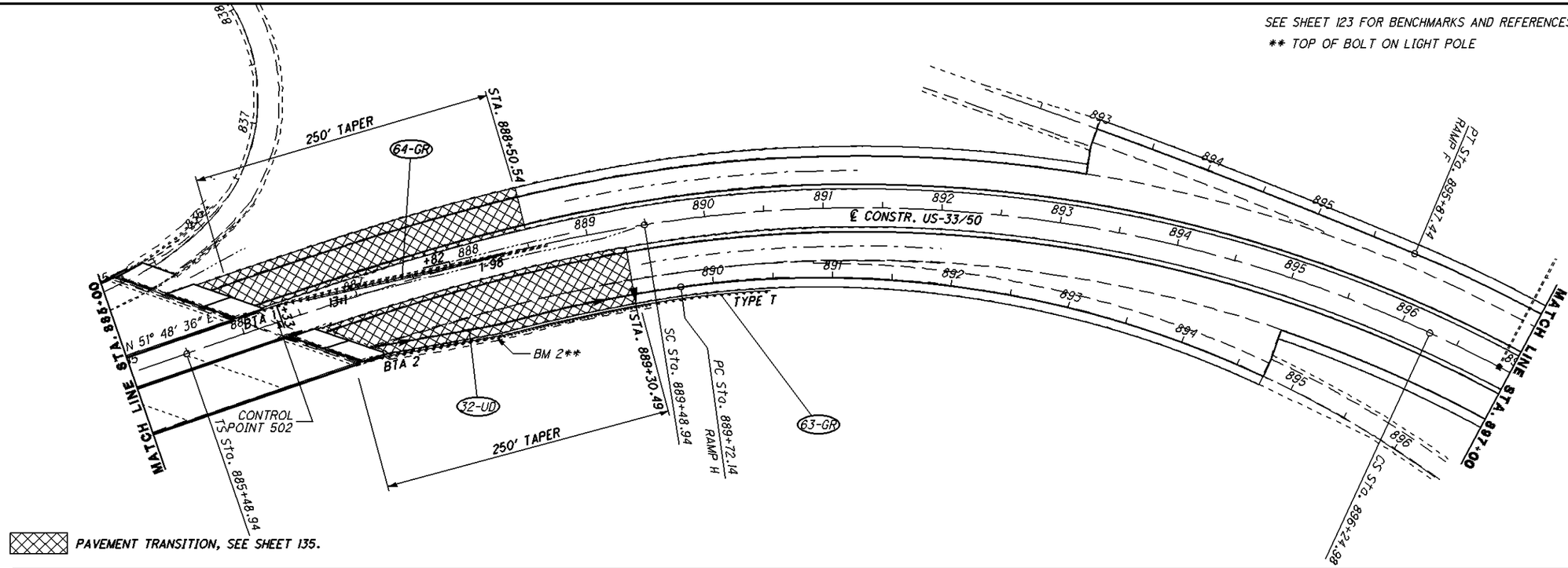
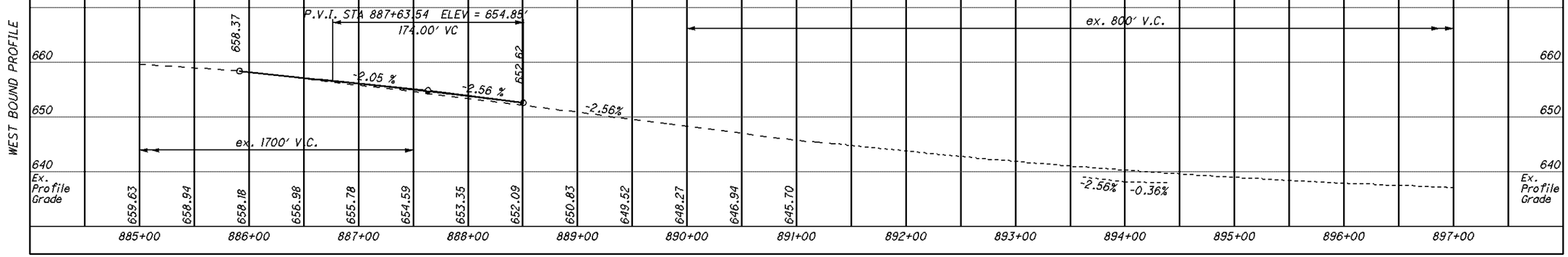
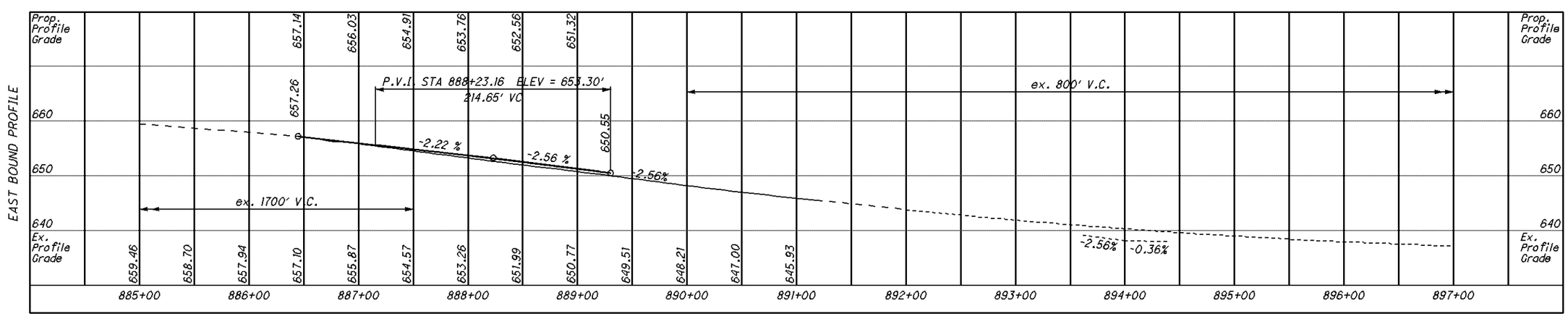
SEE SHEET 123 FOR BENCHMARKS AND REFERENCES.

** TOP OF BOLT ON LIGHT POLE

EX. US-50 CURVE 10
P.I. STA. 893+33.07
Δ = 53° 48′ 06″ (RT)
Dc = 5° 00′ 00″
R = 1,145.92′
Ls = 400.00′
θs = 10° 00′ 00″
LT = 267.09′
ST = 133.72′
x = 398.78′
y = 23.22′
k = 199.80′
p = 5.81′
Δc = 33° 48′ 06″ (RT)
Lc = 676.04′
Ts = 784.13′
Es = 145.56′







HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JDB
CHECKED ALC

PLAN AND PROFILE
STA. 885+00 TO STA. 897+00

ATH-33/50-15.05/11.46

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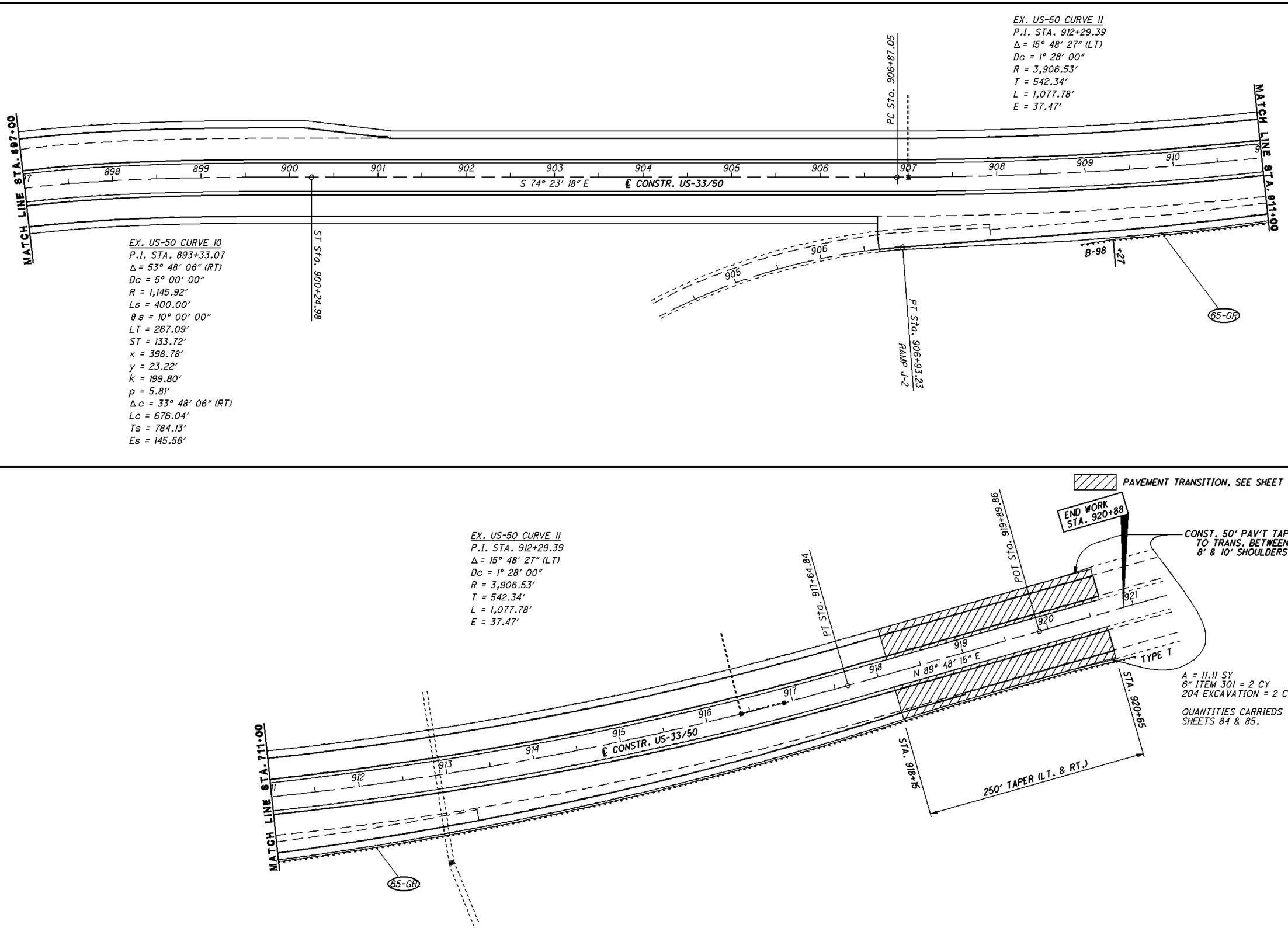
MATCH LINE STA. 897+00
898
899
900
901
902
903
904
905
906
907
908
909
910
911
S 74° 23' 18" E
℄ CONSTR. US-33/50
ST Sta. 900+24.98
PC Sta. 906+87.05
EX. US-50 CURVE 11
P.I. STA. 912+29.39
Δ = 15° 48' 27" (LT)
Dc = 1° 28' 00"
R = 3,906.53'
T = 542.34'
L = 1,077.78'
E = 37.47'
MATCH LINE STA. 911+00
EX. US-50 CURVE 10
P.I. STA. 893+33.07
Δ = 53° 48' 06" (RT)
Dc = 5° 00' 00"
R = 1,145.92'
Ls = 400.00'
θs = 10° 00' 00"
LT = 267.09'
ST = 133.72'
x = 398.78'
y = 23.22'
k = 199.80'
p = 5.81'
Δc = 33° 48' 06" (RT)
Lc = 676.04'
Ts = 784.13'
Es = 145.56'
905
906
PT Sta. 906+93.23
RAMP J-2
B-98
+27
65-GR
PAVEMENT TRANSITION, SEE SHEET 137.
END WORK
STA. 920+88
CONST. 50' PAV'T TAPER
TO TRANS. BETWEEN
8' & 10' SHOULDERS
EX. US-50 CURVE 11
P.I. STA. 912+29.39
Δ = 15° 48' 27" (LT)
Dc = 1° 28' 00"
R = 3,906.53'
T = 542.34'
L = 1,077.78'
E = 37.47'
PT Sta. 917+64.84
POT Sta. 919+89.86
MATCH LINE STA. 711+00
911
912
913
914
915
916
917
918
919
920
921
℄ CONSTR. US-33/50
N 89° 48' 15" E
TYPE T
A = 11.11 SY
6" ITEM 301 = 2 CY
204 EXCAVATION = 2 CY
QUANTITIES CARRIEDS TO
SHEETS 84 & 85.
STA. 918+15
STA. 920+65
250' TAPER (LT. & RT.)
65-GR
HORIZONTAL
SCALE IN FEET
0
25
50
100
CALCULATED
JDB
CHECKED
ALC
PLAN AND PROFILE
STA. 897+00 TO STA. 920+40
ATH-33/50-15.05/11.46
125
222
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U.S.R 50 E.B.

STATION	24' LT.	12' LT.	PROFILE GRADE
606+85.45	721.65	722.6	723.48
607+00	721.63	722.56	723.50
607+25	721.64	722.59	723.54
607+50	721.65	722.61	723.57
607+75	721.69	722.65	723.61
608+00	721.72	722.68	723.64
608+25	721.76	722.72	723.68
608+50	721.79	722.75	723.71
608+75	721.83	722.79	723.75
609+00	721.86	722.82	723.78
609+25	721.90	722.86	723.82
609+42.25	721.92	722.88	723.84
609+50	(721.96)	722.91	723.87
609+75	(722.05)	(723.02)	723.97
609+80.55	(722.06)	(723.04)	723.99
612+03.17	723.05	(723.96)	(724.90)
612+22.08	723.13	724.09	725.05
612+25	723.14	724.10	725.06
612+50	723.24	724.20	725.16
612+75	723.35	724.31	725.27
613+00	723.49	724.45	725.41
613+01.34	723.50	724.46	725.42
613+25	723.68	724.63	725.58
613+50	723.96	724.86	725.76
613+75	724.30	725.14	725.98
614+00	724.60	725.41	726.21
614+25	724.99	725.74	726.48
614+50	725.38	726.07	726.77
614+75	725.78	726.43	727.08
615+00	726.22	726.82	727.42
615+25	726.70	727.24	727.78
615+50	727.19	727.68	728.17
615+75	727.69	728.14	728.58
616+00	728.19	728.58	728.98
616+25	728.71	729.04	729.38
616+50	729.20	729.49	729.78
616+75	729.71	729.95	730.19
617+00	730.18	730.39	730.59
617+01.34	730.23	730.42	730.61
617+25	730.61	730.80	730.99
617+50	731.01	731.20	731.39
617+75	731.41	731.60	731.79
618+00	731.82	732.01	732.20
618+25	732.22	732.41	732.60
618+29.48	732.29	732.48	732.67
618+50	732.62	732.81	(732.97)
618+75	733.03	(733.19)	(733.34)
618+85.83	733.21	(733.33)	(733.50)

U.S.R 50 W.B.

STATION	PROFILE GRADE	12' RT.	24' RT.
618+16.02	732.77	733.08	733.39
618+25	732.91	733.20	733.49
618+50	733.31	733.54	733.77
618+75	733.70	733.87	734.05
619+00	734.06	734.18	734.29
619+25	734.40	734.46	734.52
619+50	734.71	734.71	734.71
619+59.62	734.82	734.80	734.77
619+75	734.99	734.93	734.87
620+00	735.25	735.13	735.00
620+25	735.47	735.28	735.10
620+50	735.68	735.49	735.31
620+69.66	735.82	735.63	735.45
620+75	735.86	735.67	(735.45)
621+00	736.04	(735.81)	(735.61)
621+25	736.23	(735.98)	(735.81)

MAINLINE LEFT

STATION	36' LT.	24' LT.	12' LT.	PROFILE GRADE
625+02.40		(736.68)	(736.47)	736.32
625+25		(736.56)	(736.42)	736.22
625+50		(736.47)	736.31	736.12
625+61.58		736.45	736.26	736.07
625+75		736.39	736.20	736.01
626+00		736.28	736.09	735.90
626+25		736.17	735.98	735.79
626+50		736.07	735.88	735.69
626+57.05		736.03	735.84	735.65
626+75		735.95	735.76	735.57
627+00		735.79	735.60	735.41
627+25		735.66	735.44	735.21
627+50		735.50	735.23	734.97
627+75		735.28	734.98	734.68
628+00		735.04	734.70	734.36
628+13.77		734.93	734.55	734.17
642+93.24	688.05	687.39	686.62	685.84
643+00	687.65	687.02	686.29	685.55
643+25	686.49	685.89	685.19	684.49
643+50	685.33	684.76	684.10	683.44
643+75	684.16	683.63	683.00	682.38
644+00	683.00	682.49	681.91	681.32
644+25	681.83	681.36	680.81	680.26
644+50	680.67	680.22	679.71	679.20
644+75	679.50	679.09	678.61	678.14
645+00	678.33	677.95	677.52	677.08
645+25	677.18	676.82	676.43	676.03
645+50	676.01	675.69	675.33	674.97
645+57.52	675.65	675.35	675.00	674.65
645+75	674.80	674.52	( )	( )
645+78.67	674.63	674.35	( )	( )
645+89.31	674.21	( )	( )	( )
647+97.03	( )	( )	( )	667.46
648+00	( )	( )	( )	667.42
648+18.32	( )	667.50	667.31	667.12
648+25	( )	667.39	667.20	667.01
648+28.89	667.14	667.33	667.14	666.95
648+50	666.90	667.09	666.90	666.71
648+75	666.66	666.85	666.66	666.47
649+00	666.48	666.67	666.48	666.29
649+25	666.35	666.54	666.35	666.16
649+50	666.28	666.47	666.28	666.09
649+75	666.26	666.45	666.26	666.07
650+00	666.30	666.49	666.30	666.11
650+25	666.39	666.58	666.39	666.20
650+50	666.54	666.73	666.54	666.35
650+75	666.72	666.91	666.70	666.53
650+83.14	666.74	666.90	666.76	666.59

MAINLINE RIGHT

STATION	PROFILE GRADE	12' RT.	24' RT.	36' RT.
623+63.62	(736.61)	(736.79)	736.92	
623+75	(736.63)	(736.79)	736.91	
624+00	(736.61)	736.71	736.90	
624+23.05	736.50	736.69	736.88	
624+25	736.49	736.68	736.87	
624+50	736.45	736.64	736.83	
624+75	736.40	736.59	736.78	
625+00	736.36	736.55	736.74	
625+25	736.31	736.45	736.59	
625+50	736.27	736.36	736.46	
625+75	736.22	736.27	736.31	
626+00	736.18	736.18	736.18	
626+25	736.11	736.06	736.01	
626+50	735.98	735.88	735.79	
626+75	735.80	735.66	735.51	
627+00	735.58	735.39	735.20	
627+25	735.29	735.05	734.81	
627+50	734.96	734.67	734.38	
642+10.15	689.17	688.25	687.32	
642+25	688.54	687.67	686.80	
642+50	687.47	686.66	685.85	
642+75	686.40	685.65	684.89	
643+00	685.34	684.64	683.94	
643+25	684.27	683.63	682.99	
643+50	683.20	682.61	682.03	
643+75	682.13	681.60	681.07	
644+00	681.07	680.60	680.12	
644+25	680.00	679.58	679.17	
644+50	678.93	678.57	678.21	
644+56.18	678.67	678.32	677.97	
644+71.55	678.05	677.72	677.39	
644+75	677.91	677.59	( )	
644+99.16	676.95	( )	( )	
647+32.05	( )	( )	( )	669.10
647+45.41	( )	( )	668.97	668.78
647+50	( )	( )	668.87	668.68
647+72.10	668.00	668.19	668.38	668.19
647+75	667.95	668.14	668.33	668.14
648+00	667.56	667.75	667.94	667.75
648+25	667.22	667.41	667.60	667.41
648+50	666.93	667.12	667.31	667.12
648+75	666.69	666.88	667.07	666.88
649+00	666.51	666.70	666.89	666.70
649+25	666.38	666.57	666.76	666.57
649+50	666.30	666.49	666.68	666.49
649+75	666.27	666.46	666.65	666.46
650+00	666.30	666.49	666.68	666.49
650+25	666.38	666.57	666.76	666.65
650+34.04	666.42	666.63	666.79	666.76

( ) = EXISTING BRIDGE ELEVATIONS

CALCULATED JDB
CHECKED ALC

SUPERELEVATION TABLE

ATH-33/50-15.05/11.46

MAINLINE LEFT				
STATION	36' LT.	24' LT.	12' LT.	PROFILE GRADE
665+50		682.76	682.57	682.38
665+75		683.32	683.16	682.99
666+00		683.88	683.74	683.60
666+25		684.47	684.35	684.23
666+50		685.12	685.02	684.93
666+75		685.76	685.69	685.62
667+00		686.40	686.36	686.31
667+25		687.05	687.02	687.00
667+50		687.69	687.69	687.69
667+75		688.32	688.35	688.38
668+00		688.94	689.01	689.07
668+25		689.57	689.66	689.76
668+50		690.19	690.32	690.45
668+66.41		690.59	690.75	690.91
730+01.40		677.38	676.54	675.70
730+25		676.92	676.08	675.24
730+50		676.42	675.58	674.74
730+75		675.90	675.06	674.22
731+00		675.36	674.52	673.68
731+25		674.80	673.96	673.12
731+50		674.22	673.38	672.54
731+75		673.62	672.78	671.94
732+00		673.01	672.17	671.33
732+25		672.39	671.55	670.71
732+50		671.76	670.92	670.08
732+75		671.14	670.30	669.46
732+75.42		671.13	670.29	669.45
732+77.79		671.11	(670.27)	(669.42)

MAINLINE RIGHT				
STATION	PROFILE GRADE	12' RT.	24' RT.	36' RT.
668+50	689.66	689.85	690.04	
668+75	690.27	690.48	690.70	
669+00	690.88	691.12	691.36	
669+25	691.49	691.75	692.02	
669+50	692.10	692.39	692.67	
669+75	692.71	693.02	693.33	
670+00	693.32	693.66	693.99	
670+25	693.93	694.29	694.65	
670+50	694.51	694.87	695.23	
670+75	695.06	695.42	695.78	
671+00	695.60	695.96	696.32	
671+25	696.10	696.46	696.82	
671+50	696.59	696.95	697.31	
671+75	697.05	697.41	697.77	
672+00	697.48	697.84	698.20	
672+25	697.89	698.25	698.61	
672+50	698.28	698.64	699.00	
672+75	698.64	699.00	699.36	
673+00	698.98	699.34	699.70	
673+25	699.29	699.65	700.01	
673+50	699.58	699.94	700.30	
673+75	699.84	700.20	700.56	
674+00	700.08	700.44	700.80	
674+25	700.30	700.66	701.02	
674+50	700.52	700.88	701.24	
674+75	700.74	701.10	701.46	
675+00	700.96	701.32	701.68	
675+25	701.18	701.54	701.90	
675+50	701.39	701.75	702.11	
675+75	701.58	701.94	702.30	
676+00	701.73	702.09	702.45	
676+25	701.85	702.21	702.57	
676+50	701.95	702.31	702.67	
676+75	702.02	702.38	702.74	
677+00	702.05	702.41	702.77	
677+25	702.06	702.42	702.78	
677+50	702.04	702.40	702.76	
677+75	701.99	702.35	702.71	
677+84.54	701.96	702.33	702.70	
729+93.84	675.97	675.17	674.36	
730+00	675.84	675.04	674.23	
730+25	675.33	674.53	673.73	
730+50	674.79	673.99	673.19	
730+75	674.23	673.43	672.64	
731+00	673.65	672.86	672.06	
731+25	673.05	672.26	671.47	
731+50	672.43	671.64	670.85	
731+75	671.79	671.00	670.22	
732+00	671.14	670.36	669.58	
732+25	670.49	669.71	668.93	
732+50	669.84	669.06	668.29	
732+68.67	669.36	668.59	667.81	
732+71.06	669.30	(668.53)	(667.72)	

MAINLINE LEFT				
STATION	36' LT.	24' LT.	12' LT.	PROFILE GRADE
733+98.90	(668.55)	(668.02)	(667.22)	666.42
733+99.76	(668.52)	668.00	667.20	666.39
734+00	668.52	668.00	667.20	666.39
734+25	668.10	667.47	666.62	665.77
734+50	667.59	666.85	666.00	665.15
734+75	667.08	666.23	665.38	664.53
735+00	666.46	665.61	664.76	663.91
735+25	665.85	665.00	664.15	663.30
735+50	665.23	664.38	663.53	662.68
735+75	664.61	663.76	662.91	662.06
736+00	663.99	663.14	662.29	661.44
736+25	663.37	662.52	661.67	660.82
736+50	662.75	661.90	661.05	660.20
736+75	662.13	661.28	660.43	659.58
737+00	661.52	660.67	659.82	658.97
737+25	660.91	660.06	659.21	658.36
737+50		659.46	658.61	657.76
737+75		658.86	658.01	657.16
738+00		658.26	657.41	656.56
738+25		657.66	656.81	655.96
738+50		657.06	656.21	655.36
738+75		656.46	655.61	654.76
739+00		655.86	655.01	654.16
739+25		655.26	654.41	653.56
739+50		654.66	653.81	652.96
739+75		654.06	653.21	652.36
740+00		653.46	652.61	651.76
740+25		652.86	652.01	651.16
740+50		652.26	651.41	650.56
740+75		651.66	650.81	649.96
741+00		651.06	650.21	649.36
741+25		650.46	649.61	648.76
741+50		649.86	649.01	648.16
741+75		649.26	648.41	647.56
742+00		648.66	647.81	646.96
742+25		648.06	647.21	646.36
742+50		647.46	646.61	645.76
742+75		646.87	646.02	645.17
743+00		646.32	645.47	644.62
743+25		645.80	644.95	644.10
743+50		645.32	644.47	643.62
743+75		644.88	644.03	643.18
744+00		644.48	643.63	642.78
744+25		644.11	643.26	642.41
744+50		643.78	642.93	642.08
744+75		643.49	642.64	641.79
745+00		643.24	642.39	641.54
745+25		643.03	642.18	641.33
745+50		642.85	642.00	641.15
745+75		642.71	641.86	641.01
746+00		642.61	641.76	640.91
746+25		642.54	641.69	640.84
746+50		642.52	641.67	640.82
746+75		642.53	641.68	640.83
747+00		642.58	641.73	640.88
747+25		642.66	641.81	640.96
747+50		642.78	641.93	641.08

CONTINUED ON NEXT SHEET

MAINLINE RIGHT				
STATION	PROFILE GRADE	12' RT.	24' RT.	36' RT.
733+96.63	(666.63)	(665.53)	664.69	
733+97.54	666.30	665.49	664.67	
734+00	666.24	665.42	664.61	
734+25	665.68	664.86	664.04	
734+50	665.13	664.31	663.49	
734+75	664.57	663.75	662.92	
735+00	664.01	663.18	662.35	
735+25	663.46	662.63	661.80	
735+50	662.90	662.07	661.23	
735+75	662.34	661.50	660.66	
736+00	661.79	660.95	660.11	
736+25	661.23	660.39	659.54	
736+50	660.67	659.82	658.98	
736+71.83	660.19	659.34	658.49	

( ) = EXISTING BRIDGE ELEVATIONS

CALCULATED JDB
CHECKED ALC

SUPERELEVATION TABLE

ATH-33/50-15.05/11.46

MAINLINE LEFT				
STATION	36' LT.	24' LT.	12' LT.	PROFILE GRADE
747+75		642.94	642.09	641.24
748+00		643.09	642.24	641.39
748+25		643.24	642.39	641.54
748+50		643.39	642.54	641.69
748+75		643.55	642.70	641.85
749+00		643.62	642.81	642.00
749+25		643.67	642.91	642.15
749+48.36		643.72	643.01	642.30
878+25.76		664.43	664.90	665.36
878+50		664.62	665.03	665.44
878+75		664.79	665.15	665.50
879+00		664.94	665.23	665.53
879+25		665.05	665.29	665.53
879+50		665.14	665.32	665.50
879+75		665.20	665.33	665.45
880+00		665.23	665.29	665.36
880+25		665.23	665.24	665.25
880+50		665.19	665.15	665.10
880+75		665.17	665.06	664.96
881+00		665.12	664.96	664.80
881+05.88		665.12	664.94	664.77
881+25		( )	( )	664.66
881+35.98		( )	( )	664.59
885+61.28		659.35	( )	( )
885+75		659.02	( )	( )
885+91.44		658.62	658.50	658.38
886+00		658.55	658.37	658.20
886+25		658.14	657.92	657.69
886+50		657.73	657.45	657.17
886+75		657.32	656.99	656.66
887+00		656.91	656.52	656.14
887+25		656.47	656.04	655.60
887+50		656.02	655.53	655.04
887+75		655.56	655.01	654.47
888+00		655.06	654.47	653.87
888+25		654.56	653.91	653.26
888+50		654.03	653.33	652.63
888+50.54		654.13	653.37	652.62

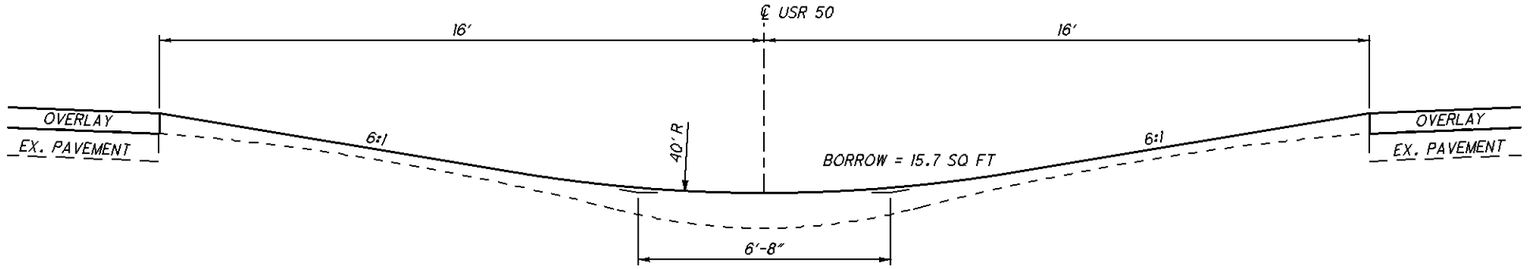
MAINLINE RIGHT				
STATION	PROFILE GRADE	12' RT.	24' RT.	36' RT.
879+31.33	665.60	665.85	666.10	
879+50	665.60	665.81	666.01	
879+75	665.57	665.76	665.95	
880+00	665.50	665.69	665.88	
880+25	665.39	665.58	665.77	
880+50	665.24	665.43	665.62	
880+75	665.06	665.25	665.44	
881+00	664.87	665.06	665.25	
881+25	664.68	664.87	665.06	
881+50	664.49	664.68	664.87	
881+75	664.30	664.49	664.68	
881+87.44	664.19	664.38	664.57	
882+00	( )	664.30	664.49	
882+17.64	( )	( )	664.37	
886+44.90	657.26	( )	( )	
886+50	657.14	( )	( )	
886+75	656.59	( )	( )	
886+75.91	656.57	656.18	655.79	
887+00	656.03	655.59	655.15	
887+25	655.48	654.99	654.51	
887+50	654.91	654.37	653.84	
887+75	654.34	653.76	653.17	
888+00	653.76	653.13	652.49	
888+25	653.16	652.48	651.80	
888+50	652.56	651.83	651.10	
888+75	651.95	651.17	650.39	
889+00	651.32	650.49	649.67	
889+25	650.69	649.81	648.94	
889+30.49	650.55	649.63	648.70	

( ) = EXISTING BRIDGE ELEVATIONS

CALCULATED JDB
CHECKED ALC

SUPERELEVATION TABLE

ATH-33/ 50-15.05/ 11.46

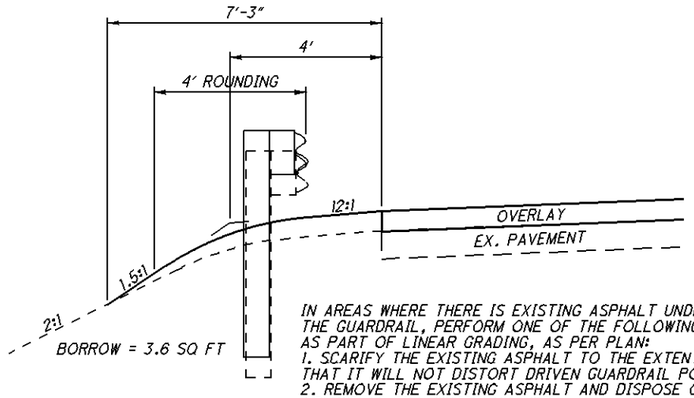


MEDIAN GRADING DETAIL

SEE THE DETAILS BELOW FOR GRADING THE WIDE MEDIAN DOWN STATION OF STA. 620+75.

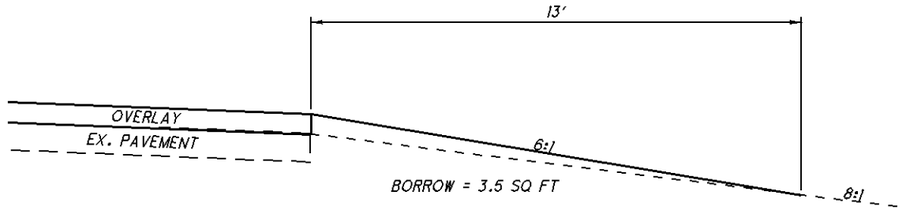
SEE STANDARD DRAWINGS GR-6.1 & GR-6.2 FOR GRADING AT BRIDGES AND OVERHEAD SIGN SUPPORTS.

SEE STANDARD DRAWINGS GR-5.2 & GR-5.3 FOR GRADING AT THE BEGINNING OF GUARDRAIL RUNS.



IN AREAS WHERE THERE IS EXISTING ASPHALT UNDER THE GUARDRAIL, PERFORM ONE OF THE FOLLOWING AS PART OF LINEAR GRADING, AS PER PLAN:
1. SCARIFY THE EXISTING ASPHALT TO THE EXTENT THAT IT WILL NOT DISTORT DRIVEN GUARDRAIL POSTS.
2. REMOVE THE EXISTING ASPHALT AND DISPOSE OF OR USE AS FILL WHERE ALLOWED.
3. DRILL HOLES THROUGH THE EXISTING ASPHALT WHEN INSTALLING NEW POSTS.

SHOULDER WITH GUARDRAIL GRADING DETAIL



SHOULDER GRADING DETAIL

209, LINEAR GRADING, AS PER PLAN

USE THIS WORK ITEM TO RECONSTRUCT THE SHOULDERS AND MEDIAN TO MATCH THE NEW PAVEMENT SURFACE ELEVATION. CONSTRUCT THE EARTHWORK AS PER CMS 203.

PAYMENT WILL BE MADE FOR THE LEFT OUTSIDE SHOULDER, RIGHT OUTSIDE SHOULDER, AND CENTER MEDIAN (THE MEDIAN LENGTH WILL BE COUNTED ONCE UP STATION OF 620+75, GAPS SUCH AS BRIDGES WILL NOT BE DEDUCTED). GRADING FOR THE ASPHALT TAPERS (250' AVG. LENGTH) NEAR THE RAMP GORES SHALL BE CONSIDERED INCIDENTAL AND NOT INCLUDED IN THE PAY LENGTH. PAYMENT WILL ALSO INCLUDE GRADING AROUND SIGN POSTS OR ALTERNATIVELY REMOVING AND RESETING SIGN ASSEMBLIES TO ALLOW FOR GRADING.

BORROW WILL BE NEEDED AND WILL BE PAID FOR BY THE CUBIC YARD. WASTE WAS PLACED ALONG RAMP S AT THE STIMSON AVENUE INTERCHANGE FROM A PREVIOUS PROJECT WHICH THE CONTRACTOR MAY USE. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE AMOUNT OF MATERIAL AVAILABLE AND ITS SUITABILITY AS PART OF THE BIDDING. THE $0.50 PER CUBIC YARD FEE IN CMS 107.11 AND THE HIRING OF AN ECOLOGICAL ENVIRONMENTAL CONSULTANT IN CMS 105.16 WILL BE WAIVED FOR THIS SITE. FINAL SLOPES SHALL BE SAFE FOR TRAFFIC AND SLOPED TO DRAIN. PROVIDE SEEDING AND MULCHING IF THE SITE IS USED. PROVIDE A MAINTENANCE OF TRAFFIC PLAN FOR APPROVAL AND ANY NECESSARY TRAFFIC CONTROL DEVICES IF THE SITE IS USED.

THE BORROW SITE MAY ALSO BE USED TO DISPOSE OF CONCRETE PAVEMENT AS LONG AS THE CONCRETE IS COVERED WITH SOIL AND SEEDED. FOLLOW THE GUIDELINES FOR IDENTIFYING ACCEPTABLE LOCATIONS FOR THE DISPOSAL OF WASTE MATERIAL AND CONSTRUCTION DEBRIS OR THE EXCAVATION OF BORROW MATERIAL WITHIN ODOT RIGHT OF WAY IN THE LOCATION AND DESIGN MANUAL, VOLUME 1 FOR PLACEMENT INFORMATION.

CALCULATIONS AND QUANTITIES

LINEAR GRADING CALCULATION:
USR 50 MEDIAN EB STA. 598+12 TO 620+75 = 2263'
USR 50 MEDIAN WB STA. 606+43 TO 620+75 = 1432'
USR 50 MEDIAN STA. 620+75 TO STA. 920+65 = 29990'
USR 50 LEFT OUTSIDE SHOULDER STA. 606+43 TO STA. 920+65 = 31422'
USR 50 RIGHT OUTSIDE SHOULDER STA. 598+12 TO STA. 920+65 = 32253'
USR 33 WB LEFT SHOULDER STA. 946+25 TO STA. 957+00 = 1075'
USR 33 WB RIGHT SHOULDER STA. 946+25 TO STA. 954+50 = 825'
USR 33 EB LEFT & RIGHT SHOULDERS STA. 941+00 TO STA. 952+25 = 1125' x 2 = 2250'
GRAND TOTAL = 101510' = 19.23 MILES
209, LINEAR GRADING, AS PER PLAN = 19.23 MILES

BORROW CALCULATION:
USR 50 MEDIAN STA. 620+75 TO STA. 920+65 (GAPS DEDUCTED) = 27977' x 15.7 SF = 439238.9 CF
(USR 50 MEDIAN DOWN STATION OF STA. 620+75 INCLUDED BELOW)
USR 33 & 50 SHOULDERS WITHOUT GUARDRAIL = 49746' x 3.5 SF = 174111 CF
USR 33 & 50 SHOULDERS WITH GUARDRAIL = 18595' x 3.6 SF = 66942 CF
TOTAL = 680291.9 CF ÷ 27 = 25196 CY
ADDITIONAL FOR MISCELLANEOUS GUARDRAIL GRADING, ETC. = 1800 CY
209, BORROW = 26996 CY

EROSION CONTROL CALCULATIONS:
AREA = 27977' x 32' + 49746' x 13' + 18595 x 7.25' = 1676775.75 SF
659, SEEDING & MULCHING = 1676775.75 SF ÷ 9 = 186309 SY
659, REPAIR SEEDING & MULCHING = 9300 SY
659, LIME = 1676775.75 SF ÷ 43560 = 38.50 ACRES
659, COMMERCIAL FERTILIZER = 1676775.75 SF x 30 LB/1000 SF ÷ 2000 = 25.15 TONS
659, WATER = 1676775.75 SF x 120 GAL/1000 SF ÷ 1000 = 202 MGAL

QUANTITIES CARRIED TO SHEET 84.

ITEM 625, PULL BOX, 725.08, 24", AS PER PLAN

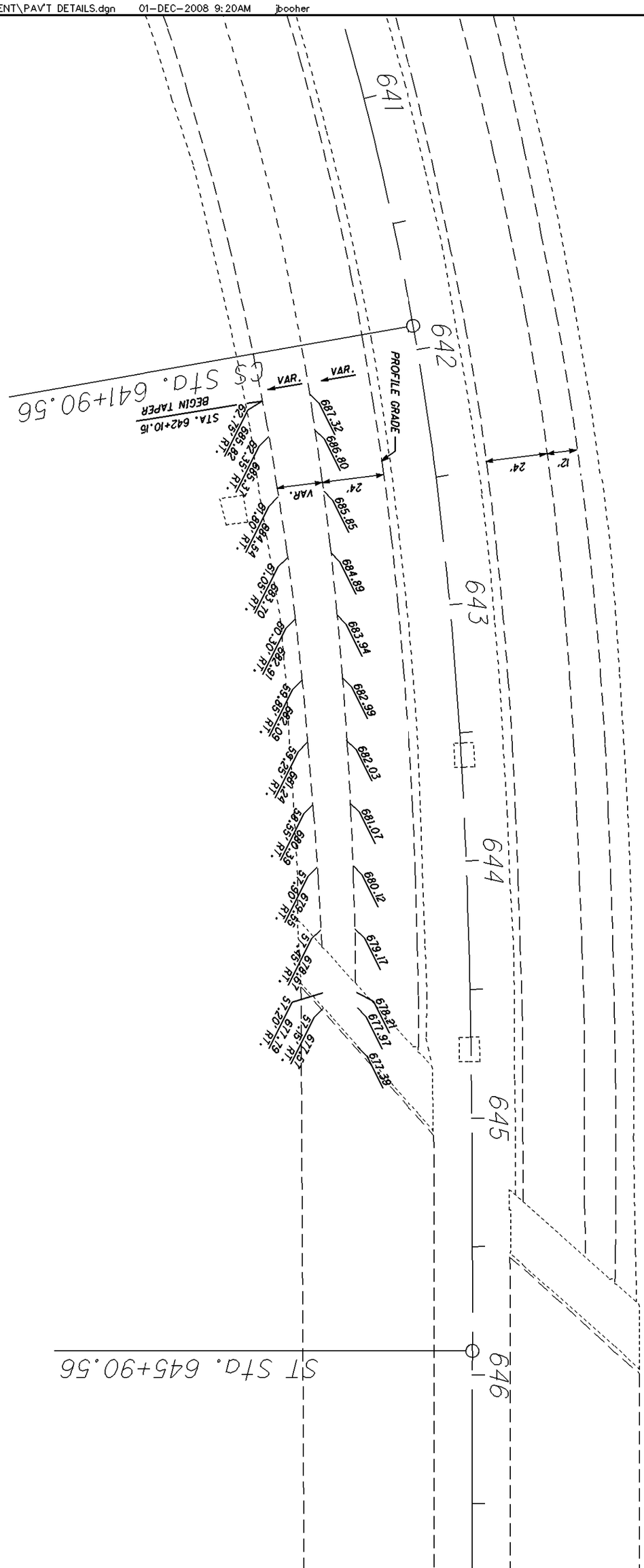
THE FOLLOWING QUANTITIES ARE FOR USE AS DIRECTED BY THE ENGINEER TO INSTALL NEW PULL BOXES AT THE NEW GROUND SURFACE ELEVATION WHEN THE EXISTING PULL BOXES WOULD BE BURIED BY PLACEMENT OF THE BORROW. THIS ITEM SHALL INCLUDE REMOVING AND DISPOSING OF THE EXISTING PULL BOX AND INSTALLING THE NEW BOX WHILE NOT DAMAGING THE EXISTING WIRING.

625, PULL BOX, 725.08, 24", AS PER PLAN = 25 EACH
QUANTITY CARRIED TO SHEET 85.

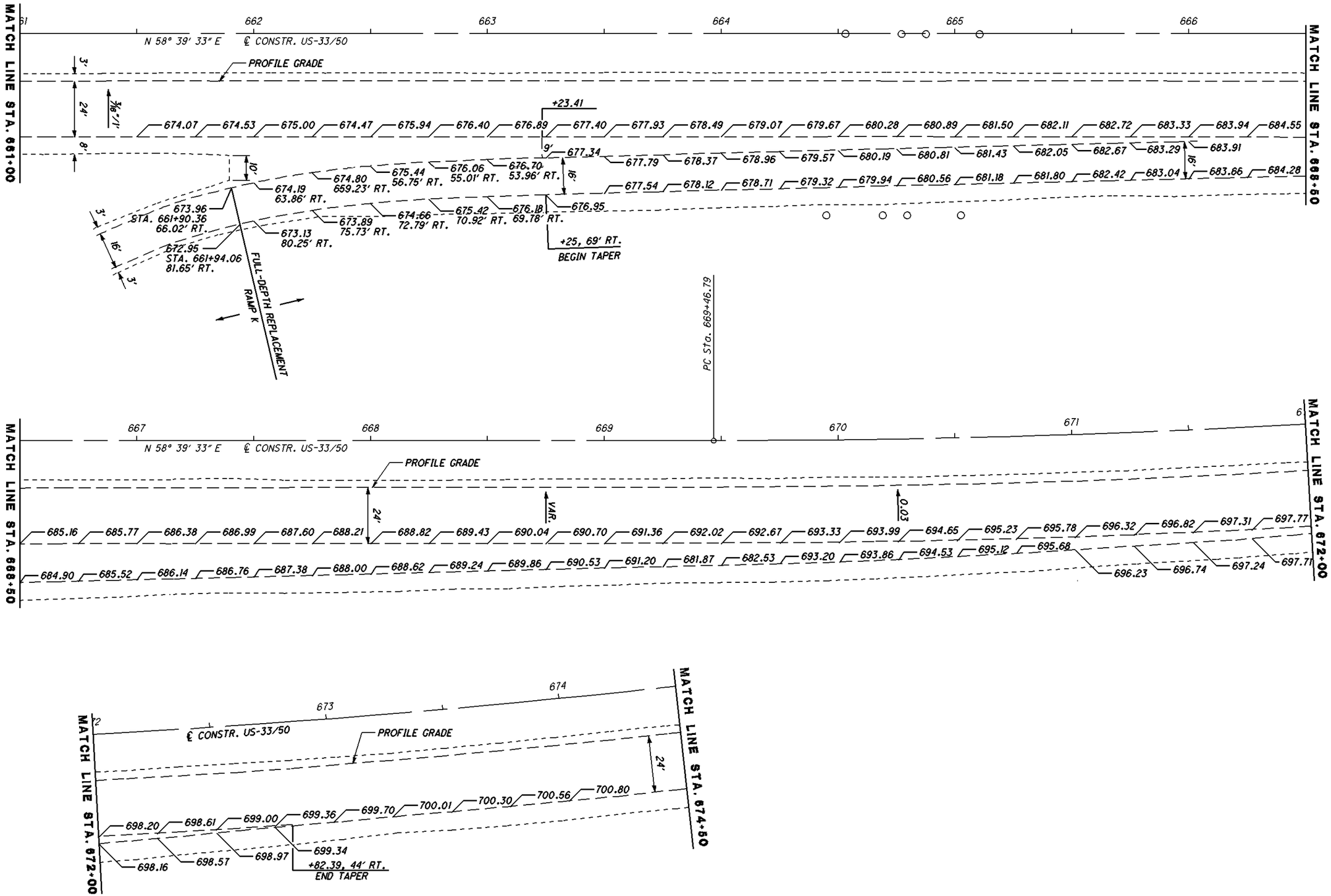
CALCULATED ALC
CHECKED ALC

LINEAR GRADING DETAIL

ATH-33/50-15.05/11.46



130 / 222	ATH-33/ 50-15.05/ 11.46	**PAVEMENT DETAIL** **JCT. US-33/ 50**	CALCULATED JDB CHECKED ALC	0 10 20 40 HORIZONTAL SCALE IN FEET



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JDB
CHECKED ALC

PAVEMENT DETAIL RAMP K

ATH-33/50-15.05/11.46

131
222

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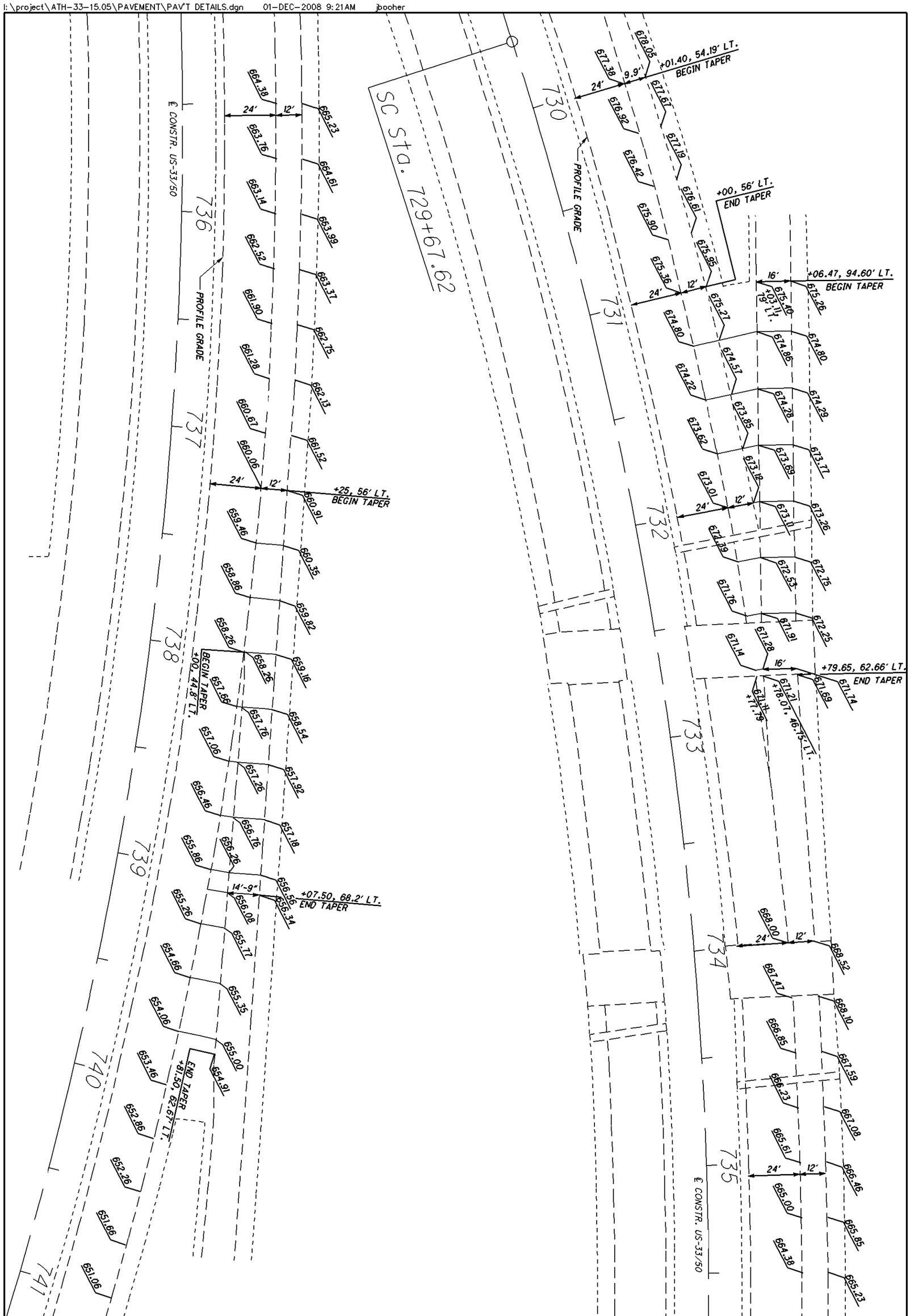

132/222	ATH-33/50-15.05/11.46	**PAVEMENT DETAIL** **RAMPS R & US-33 E.B.**	CALCULATED JDB CHECKED ALC 0 10 20 40 HORIZONTAL SCALE IN FEET

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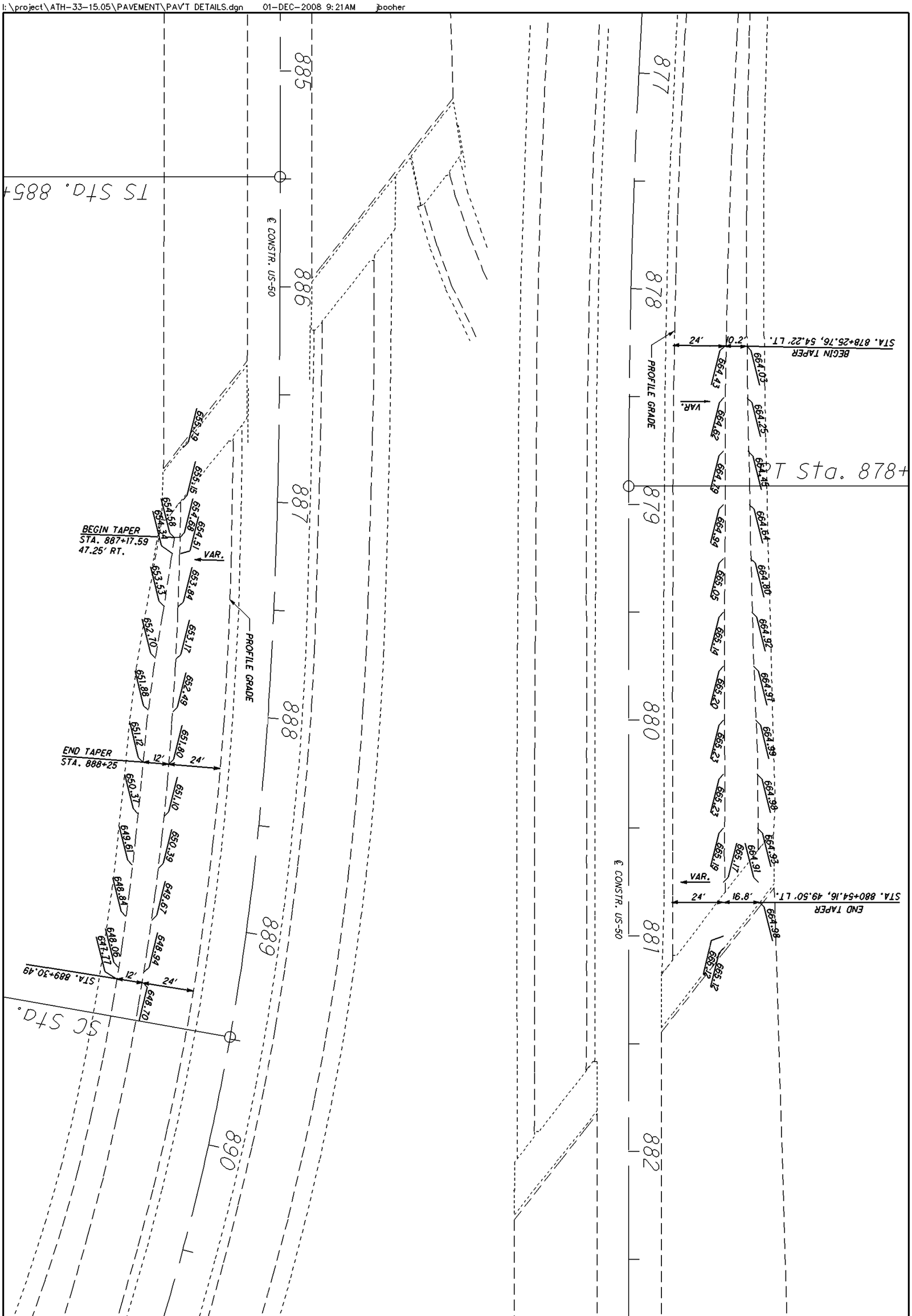
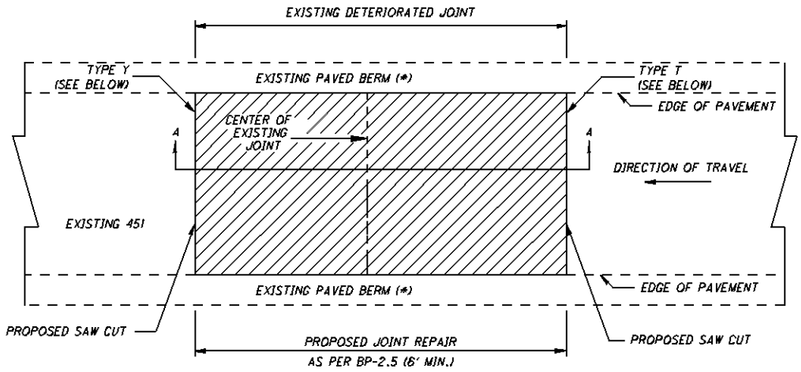
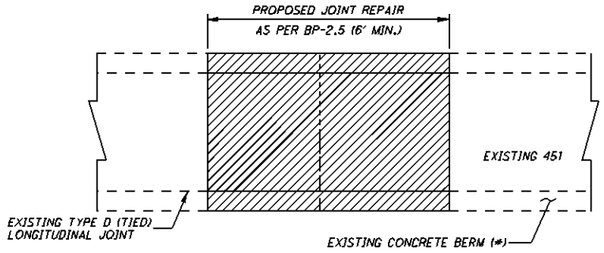
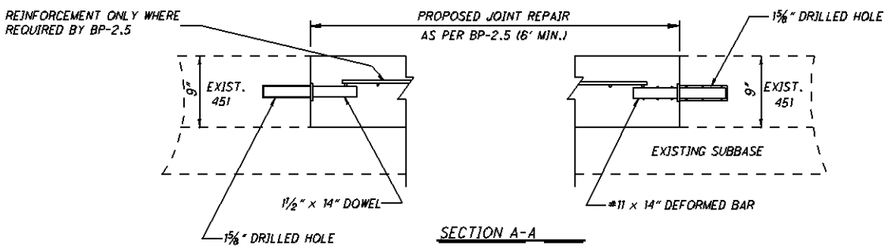


133 / 222	ATH-33/ 50-15.05/ 11.46	**PAVEMENT DETAIL RAMPS G AND H**	CALCULATED JDB / CHECKED ALC	0 20 / 10 40 HORIZONTAL SCALE IN FEET

ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS FS, AS PER PLAN A (TRANSVERSE JOINT)







SECTION A-A

NOTE

ACTUAL LENGTH TO BE DETERMINED BY THE ENGINEER.

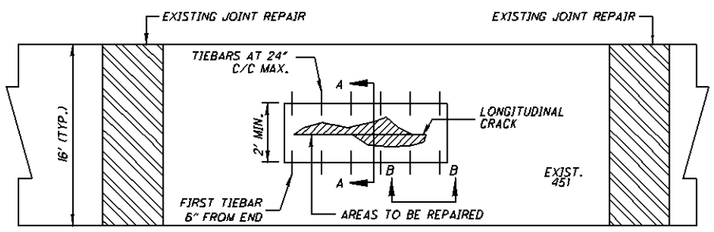
JOINT REPLACEMENT WILL BE DONE USING CLASS FS CONCRETE.

ALL REINFORCING STEEL SHALL BE EPOXY COATED AND CONFORMING TO C.M.S. 709.00.

(*) EXISTING BERM TYPES:
CONCRETE: ATH-33-15.05 TO 16.31
ATH-50-14.14 TO 17.50
ASPHALT: ATH-33-16.31 TO 17.99
ATH-50-11.46 TO 12.71

▨ - PROPOSED JOINT REPAIR LIMITS

ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS FS, AS PER PLAN B (LONGITUDINAL CRACK)



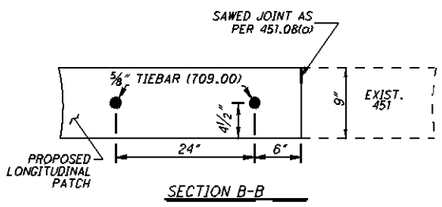
NOTE

THE LONGITUDINAL JOINT REPAIRS ARE TO BE COMPLETED AFTER THE TRANSVERSE JOINTS ARE REPLACED. CONCRETE WILL BE CLASS FS.

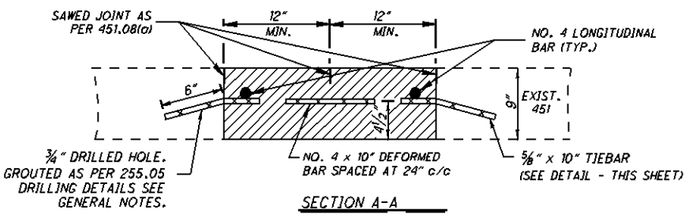
ACTUAL LENGTH AND ANY WIDTH OVER THE 2' MINIMUM, WILL BE DETERMINED BY THE ENGINEER DURING LAYOUT.

IF THE LONGITUDINAL JOINT REPAIR IS WITHIN 5' FEET OF AN EXISTING TRANSVERSE JOINT THAT HAS BEEN REPAIRED THEN THE LONGITUDINAL JOINT WILL BE EXTENDED TO THE NEAREST REPAIRED JOINT.

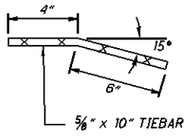
ALL REINFORCING STEEL SHALL BE EPOXY COATED AND CONFORMING TO C.M.S. 709.00.



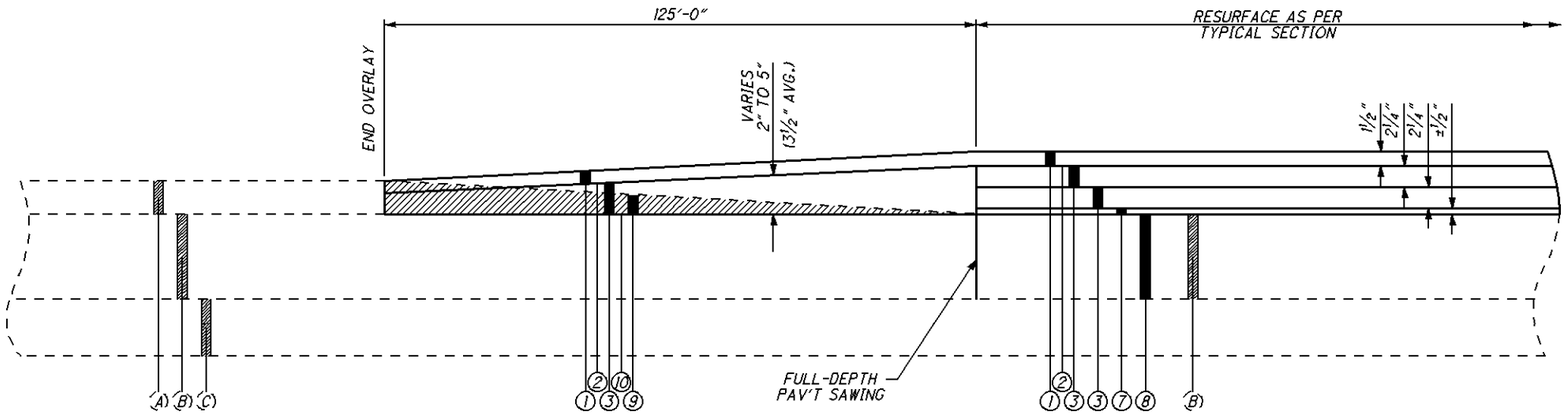
SECTION B-B



SECTION A-A

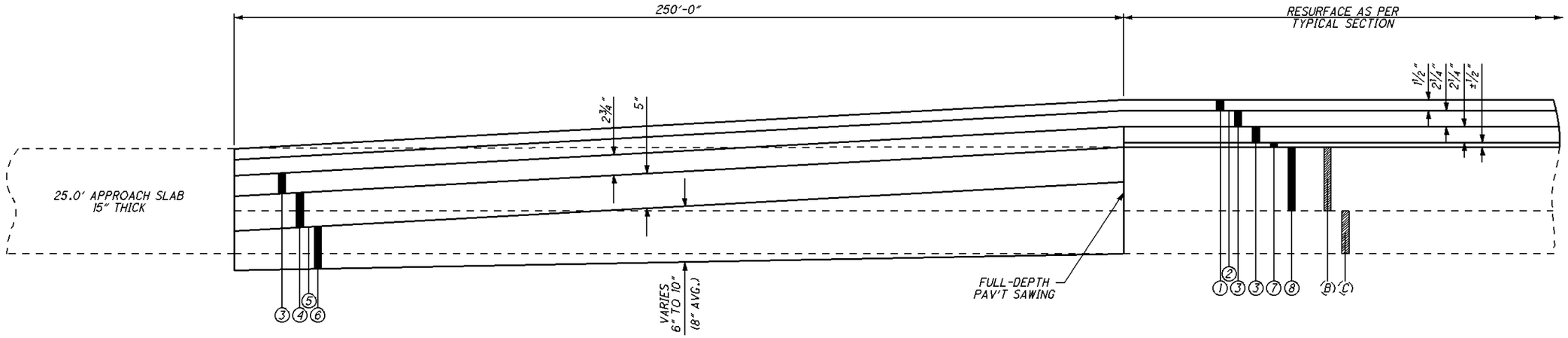


TIEBAR



PAVEMENT TRANSITION AT BEGIN/END PAVEMENT

DETAIL APPLIES AT:
ATH-50-11.46 E.B. (STA. 598+11.84)
ATH-50-11.62 W.B. (STA. 606+42.82)
CR-24



PAVEMENT TRANSITION AT STRUCTURES

DETAIL APPLIES AT STRUCTURE:
ATH-50-1168 (FWD. ONLY)
ATH-50-1185 RT.(REAR ONLY)
ATH-50-1185 LT.(FWD. & REAR)
ATH-33-1760 RT. & LT. (FWD. & REAR)
ATH-33-1631 RT. & LT. (FWD. & REAR)
ATH-33-1600 RT. (REAR ONLY)
ATH-33-1600 LT. (FWD. & REAR)
ATH-50-1592 RT. & LT. (FWD. & REAR)
ATH-50-1681 RT. & LT. (FWD. & REAR)

LEGEND

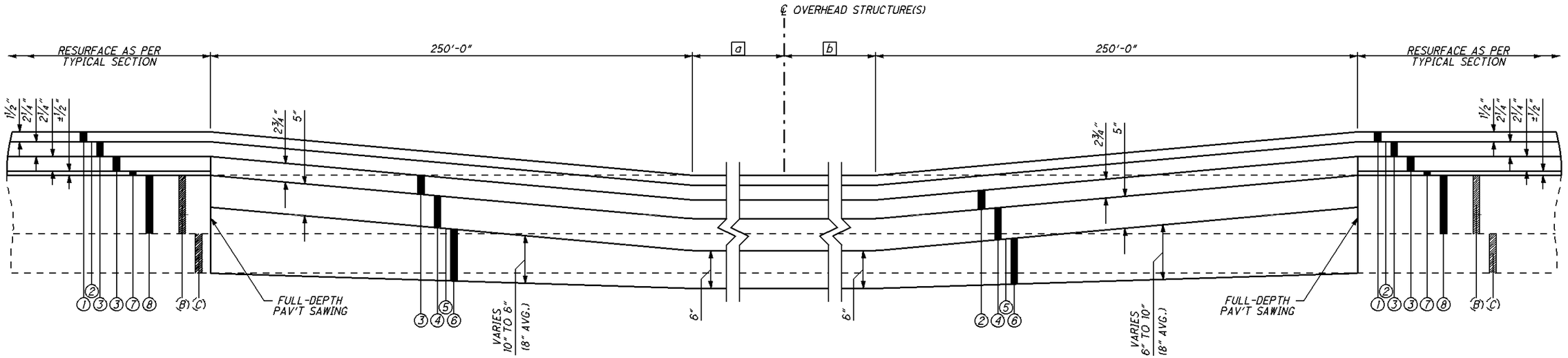
1. *ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)*
2. *ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE*
3. *ITEM 442 - ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446), THICKNESS AS SHOWN*
4. *ITEM 301 - 5" ASPHALT CONCRETE BASE, PG64-22*
5. *ITEM 408 - PRIME COAT*
6. *ITEM 304 - AGGREGATE BASE, DEPTH AS SHOWN*
7. *ITEM 422 - DOUBLE CHIP SEAL, AS PER PLAN*
8. *ITEM 451 - REINFORCED CONCRETE PAVEMENT MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT*
9. *ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE*
10. *ITEM 407 - TACK COAT*

EXISTING LEGEND

- *(A) 3½" ASPHALT CONCRETE*
- *(B) 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT*
- *(C) 6" SUBBASE*
- *= ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE*

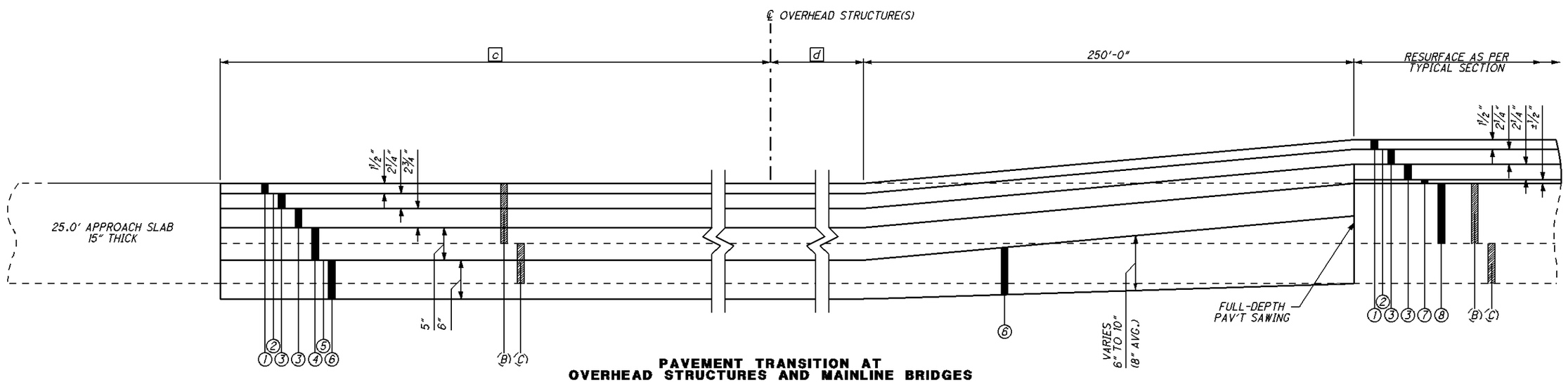
PAVEMENT TRANSITION DETAILS

ATH-33/50-15.05/11.46



PAVEMENT TRANSITION AT OVERHEAD STRUCTURES

DETAIL APPLIES AT STRUCTURE:
ATH-682-0004 (LT. & RT.)
ATH-33-1713 (RT. ONLY)



PAVEMENT TRANSITION AT OVERHEAD STRUCTURES AND MAINLINE BRIDGES

DETAIL APPLIES AT STRUCTURE:
ATH-50-1420 (LT. ONLY)
ATH-33-1580 (LT. ONLY)

LEGEND

① ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)
② ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE
③ ITEM 442 - ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446), THICKNESS AS SHOWN
④ ITEM 301 - 5" ASPHALT CONCRETE BASE, PG64-22
⑤ ITEM 408 - PRIME COAT
⑥ ITEM 304 - AGGREGATE BASE, DEPTH AS SHOWN
⑦ ITEM 422 - DOUBLE CHIP SEAL, AS PER PLAN
⑧ ITEM 451 - REINFORCED CONCRETE PAVEMENT MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT
⑨ ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE
⑩ ITEM 407 - TACK COAT

EXISTING LEGEND

(A) 3½" ASPHALT CONCRETE
(B) 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
(C) 6" SUBBASE
▨ = ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE

STRUCTURE	a	b	c	d
ATH-682-0004 (LT.)	133'	133'	-	-
ATH-682-0004 (RT.)	133'	*	-	-
ATH-33-1713 (RT.)	*	119'	-	-
ATH-50-1420 (LT.)	-	-	1003'	*
ATH-33-1580 (LT.)	-	-	*	112'

* = PAVEMENT REMAINS FULL-DEPTH REPLACEMENT BETWEEN STRUCTURES

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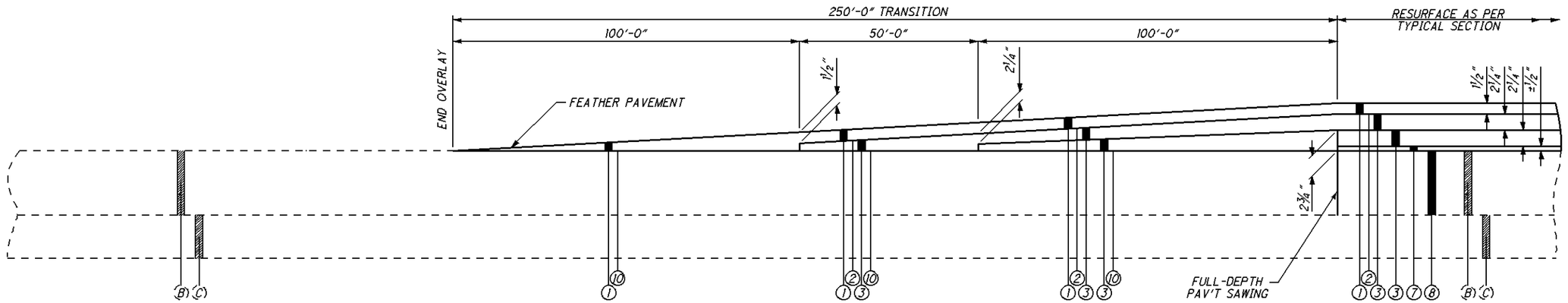
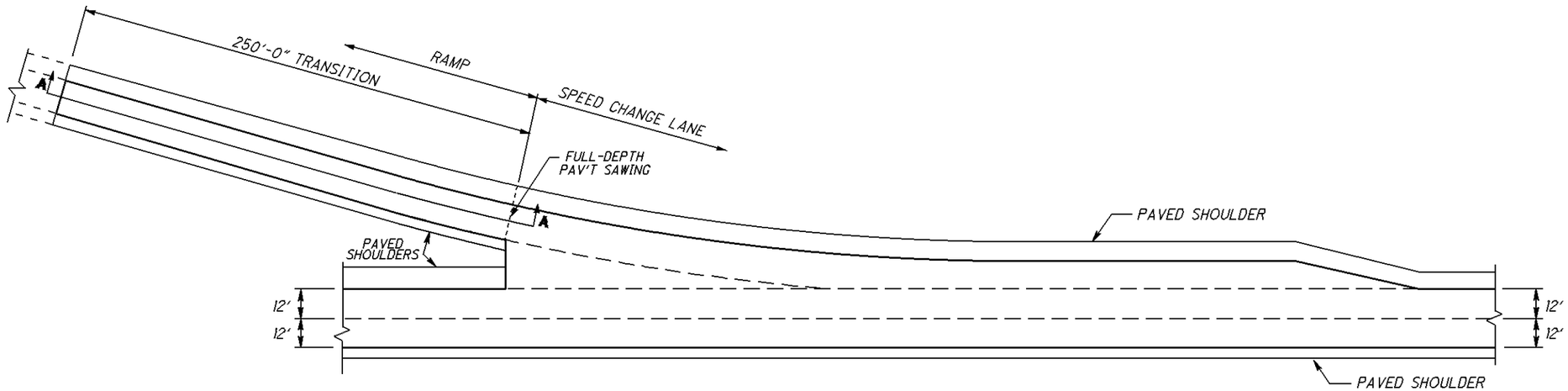
PAVEMENT TRANSITION DETAILS

ATH-33/50-15.05/11.46



SECTION A-A



PLAN VIEW

LEGEND

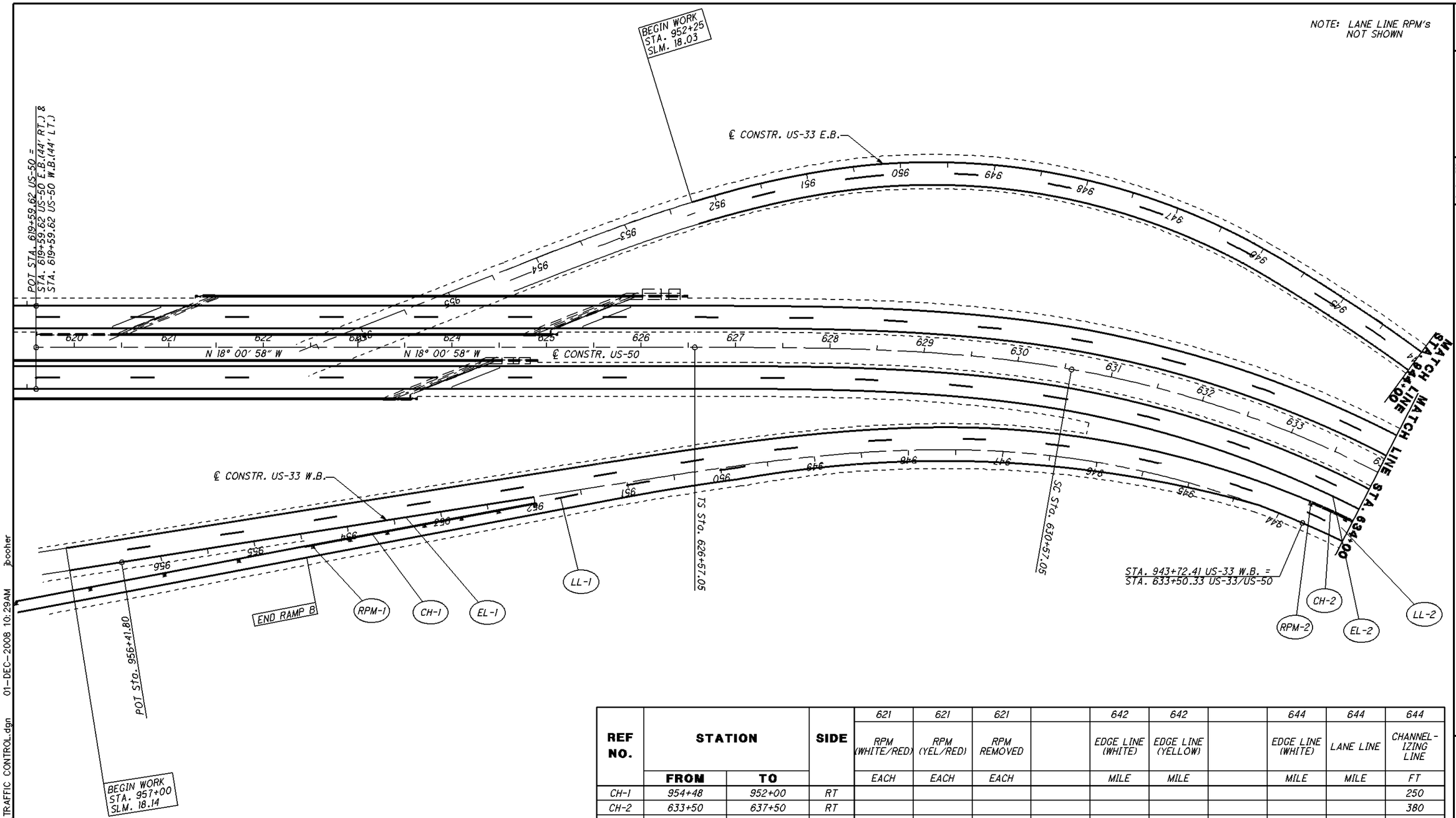
1. ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)
2. ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE
3. ITEM 442 - ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446), THICKNESS AS SHOWN
4. ITEM 301 - 5" ASPHALT CONCRETE BASE, PG64-22
5. ITEM 408 - PRIME COAT
6. ITEM 304 - AGGREGATE BASE, DEPTH AS SHOWN
7. ITEM 422 - DOUBLE CHIP SEAL, AS PER PLAN
8. ITEM 451 - REINFORCED CONCRETE PAVEMENT MISC.: BREAKING AND SEATING EXISTING REINFORCED CONCRETE PAVEMENT
9. ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE
10. ITEM 407 - TACK COAT

EXISTING LEGEND

(A) 3½" ASPHALT CONCRETE
(B) 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
(C) 6" SUBBASE
▨ = ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE

PAVEMENT TRANSITION AT BEGIN/END PAVEMENT & ENTRANCE/EXIT RAMP DETAIL

DETAIL APPLIES AT:
US-33-18.14 W.B. (STA. 957+00)
US-33-18.03 E.B. (STA. 952+25)
US-33-16.08 W.B. (STA. 728+48.97)
US-50-17.55 (STA. 920+65)
RAMPS: B, F, H, J-1, J-2, M, N, P, Q, S, T & U



REF NO.	STATION		SIDE	621	621	621		642	642		644	644	644
	FROM	TO		RPM (WHITE/RED)	RPM (YEL/RED)	RPM REMOVED		EDGE LINE (WHITE)	EDGE LINE (YELLOW)		EDGE LINE (WHITE)	LANE LINE	CHANNEL-IZING LINE
				EACH	EACH	EACH		MILE	MILE		MILE	MILE	FT
CH-1	954+48	952+00	RT										250
CH-2	633+50	637+50	RT										380
EL-1	954+48	952+00	RT								0.047		
EL-2	633+50	637+50	RT								0.072		
LL-1	952+00	950+19	RT									0.034	
LL-2	633+50	652+23	RT									0.355	
RPM-1	954+48	952+00	RT	7		7							
RPM-2	633+50	637+50	RT	10		10							
	RAMP B				88	88		1.320	1.320				
TOTALS CARRIED TO SHEET 91				17	88	105		1.320	1.320		0.119	0.389	630

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JDB
CHECKED ALC

PAVEMENT MARKING PLAN

ATH-33/50-15.05/11.46

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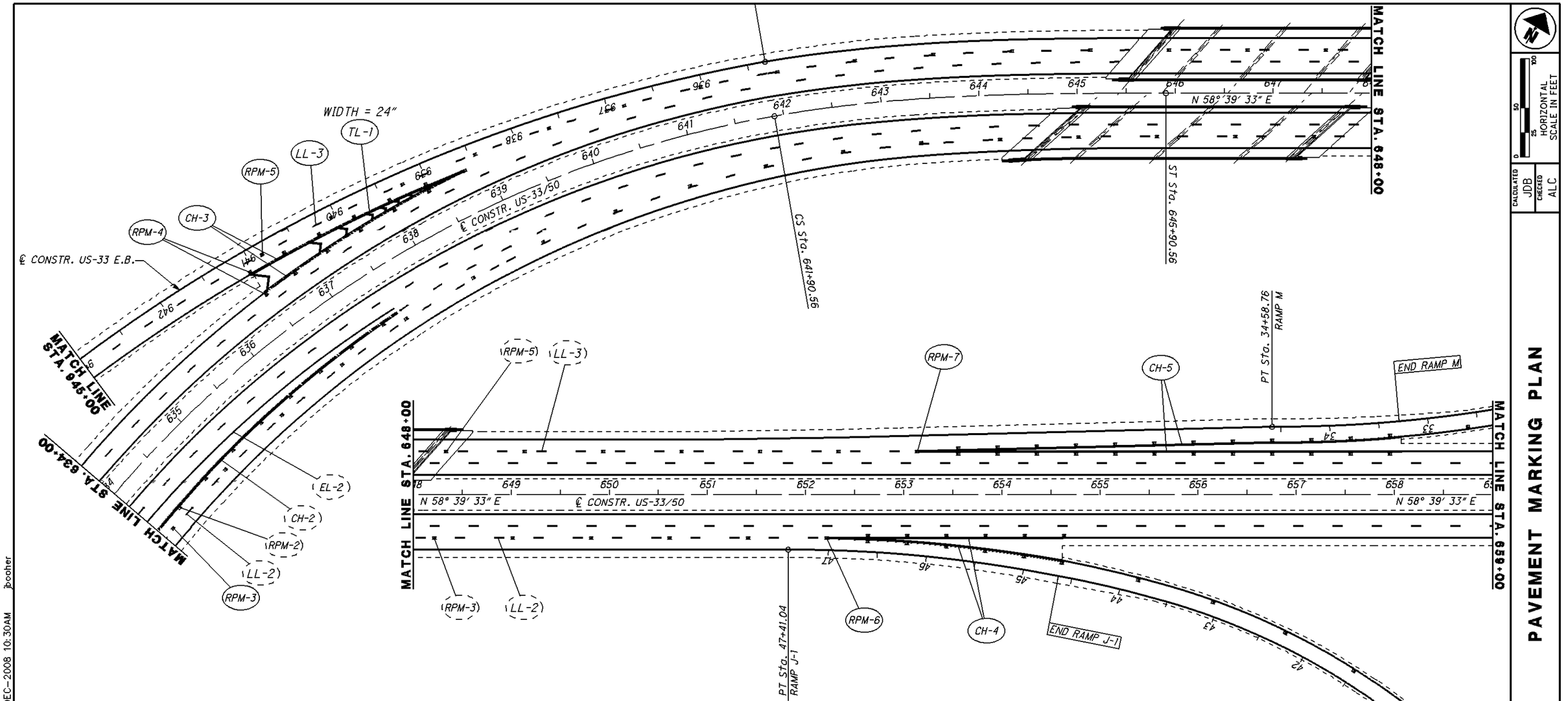

REF NO.	STATION		SIDE	621	621	621		642	642		644	644	644
				RPM (WHITE/RED)	RPM (YEL/RED)	RPM REMOVED		EDGE LINE (WHITE)	EDGE LINE (YELLOW)		LANE LINE	CHANNEL-IZING LINE	TRANS./ DIAGONAL LINE
	FROM	TO		EACH	EACH	EACH		MILE	MILE		MILE	FT	FT
CH-3	636+48	638+76	LT									480	
CH-4	652+23	654+62	RT									480	
CH-5	653+16	658+07	LT									990	
LL-3	636+48	653+16	LT								0.316		
RPM-3	633+50	652+23	RT	24		24							
RPM-4	636+48	638+76	LT	13		13							
RPM-5	636+48	653+16	LT	22		22							
RPM-6	652+23	654+62	RT	13		13							
RPM-7	653+16	658+07	LT	25		25							
TL-1	636+48	638+76	LT										120
	RAMP J-1				18	18		0.259	0.259				
	RAMP M				13	13		0.185	0.185				
TOTALS CARRIED TO SHEET 91				97	31	128		0.444	0.444		0.316	1950	120

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JDB
CHECKED ALC

PAVEMENT MARKING PLAN

ATH-33/50-15.05/11.46

2 / 8

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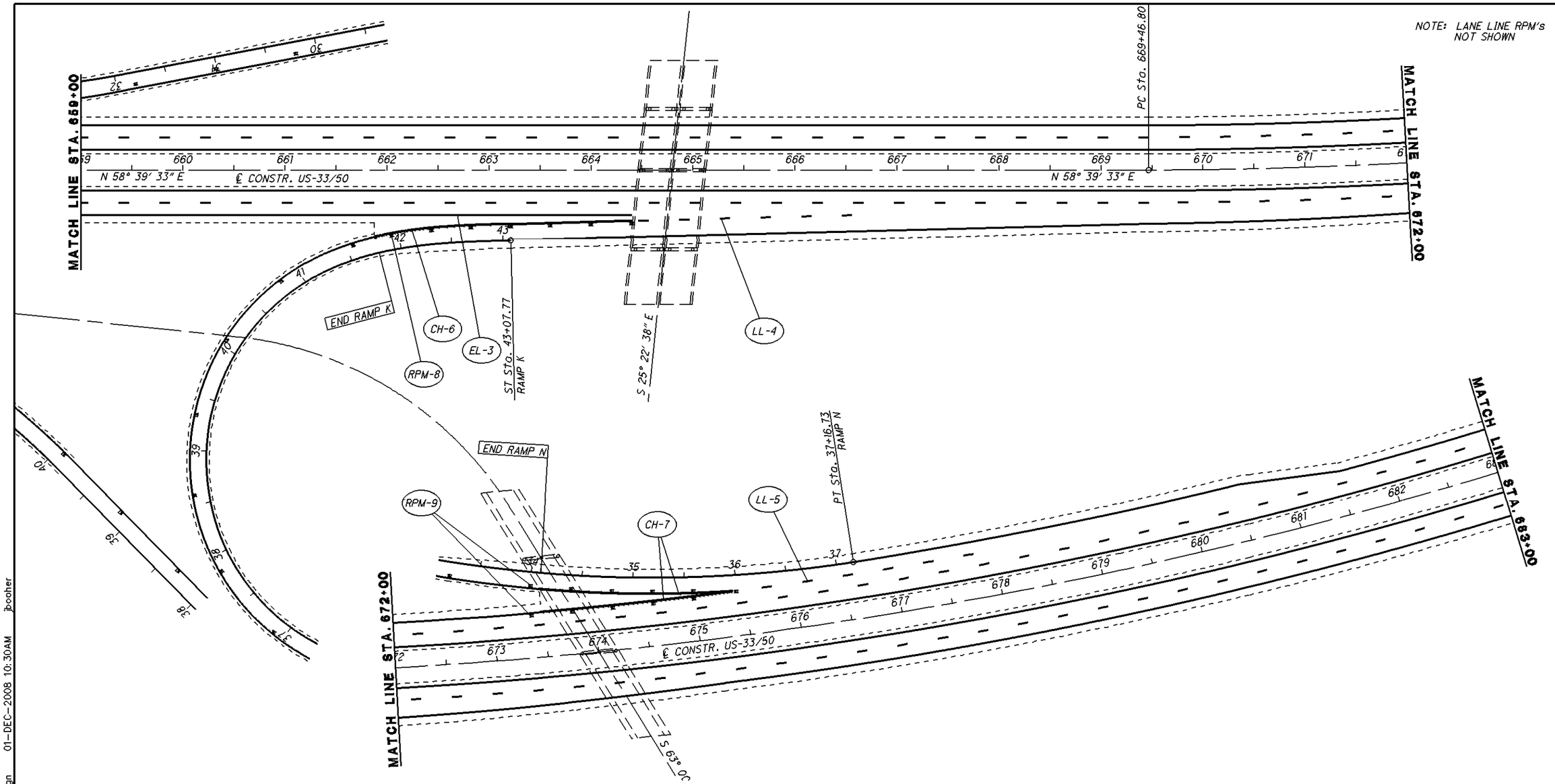

REF NO.	STATION		SIDE	621 RPM (WHITE/RED)	621 RPM (YEL/RED)	621 RPM REMOVED		642 EDGE LINE (WHITE)	642 EDGE LINE (YELLOW)		644 EDGE LINE (WHITE)	644 LANE LINE	644 CHANNEL-IZING LINE
	FROM	TO		EACH	EACH	EACH		MILE	MILE		MILE	MILE	FT
CH-6	661+88	664+40	RT										255
CH-7	673+47	675+39	LT										385
EL-3	661+88	664+40	RT								0.048		
LL-4	664+40	666+72	RT									0.044	
LL-5	675+39	677+98	LT									0.049	
RPM-8	661+88	664+40	RT	7		7							
RPM-9	673+47	675+39	LT	11		11							
	RAMP K				15	15		0.208	0.208				
	RAMP N				13	13		0.186	0.186				
TOTALS CARRIED TO SHEET 91				18	28	46		0.394	0.394		0.048	0.093	640

HORIZONTAL SCALE IN FEET
0 25 50 100
CALCULATED JDB
CHECKED ALC

PAVEMENT MARKING PLAN

ATH-33/50-15.05/11.46

3 / 8

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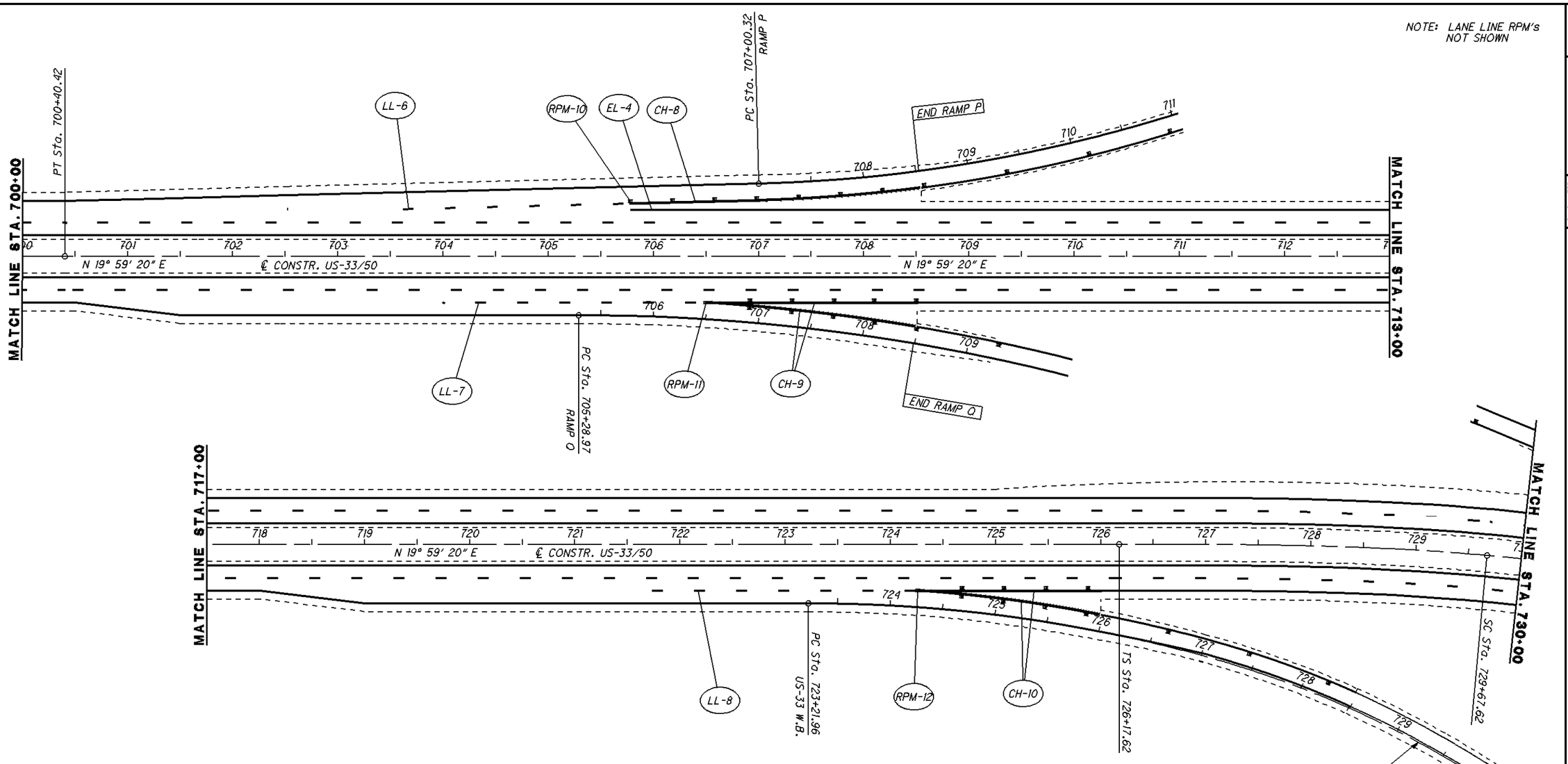
NOTE: LANE LINE RPM's NOT SHOWN



REF NO.	STATION FROM	STATION TO	SIDE	621 RPM (WHITE/RED) EACH	621 RPM (YEL/RED) EACH	621 RPM REMOVED EACH		642 EDGE LINE (WHITE) MILE	642 EDGE LINE (YELLOW) MILE	642 STOP LINE FT		644 EDGE LINE (WHITE) MILE	644 LANE LINE MILE	644 CHANNELIZING LINE FT	
CH-8	705+78	708+55	LT											385	
CH-9	706+52	708+51	RT											400	
CH-10	724+28	726+00	RT											350	
EL-4	705+78	708+55	LT									0.073			
LL-6	703+34	705+78	LT										0.046		
LL-7	704+00	706+52	RT										0.048		
LL-8	721+68	724+28	RT										0.049		
RPM-10	705+78	708+55	LT	8		8									
RPM-11	706+52	708+51	RT	11		11									
RPM-12	724+28	726+00	RT	9		9									
TL-2	724+28	726+00	RT												
	RAMP P				12	12		0.160	0.160						
	RAMP Q			16	10	26		0.136	0.136	20					
TOTALS CARRIED TO SHEET 91				44	22	66		0.296	0.296	20		0.073	0.143	1135	

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JDB
CHECKED ALC

PAVEMENT MARKING PLAN

ATH-33/50-15.05/11.46

4 / 8

141 / 222

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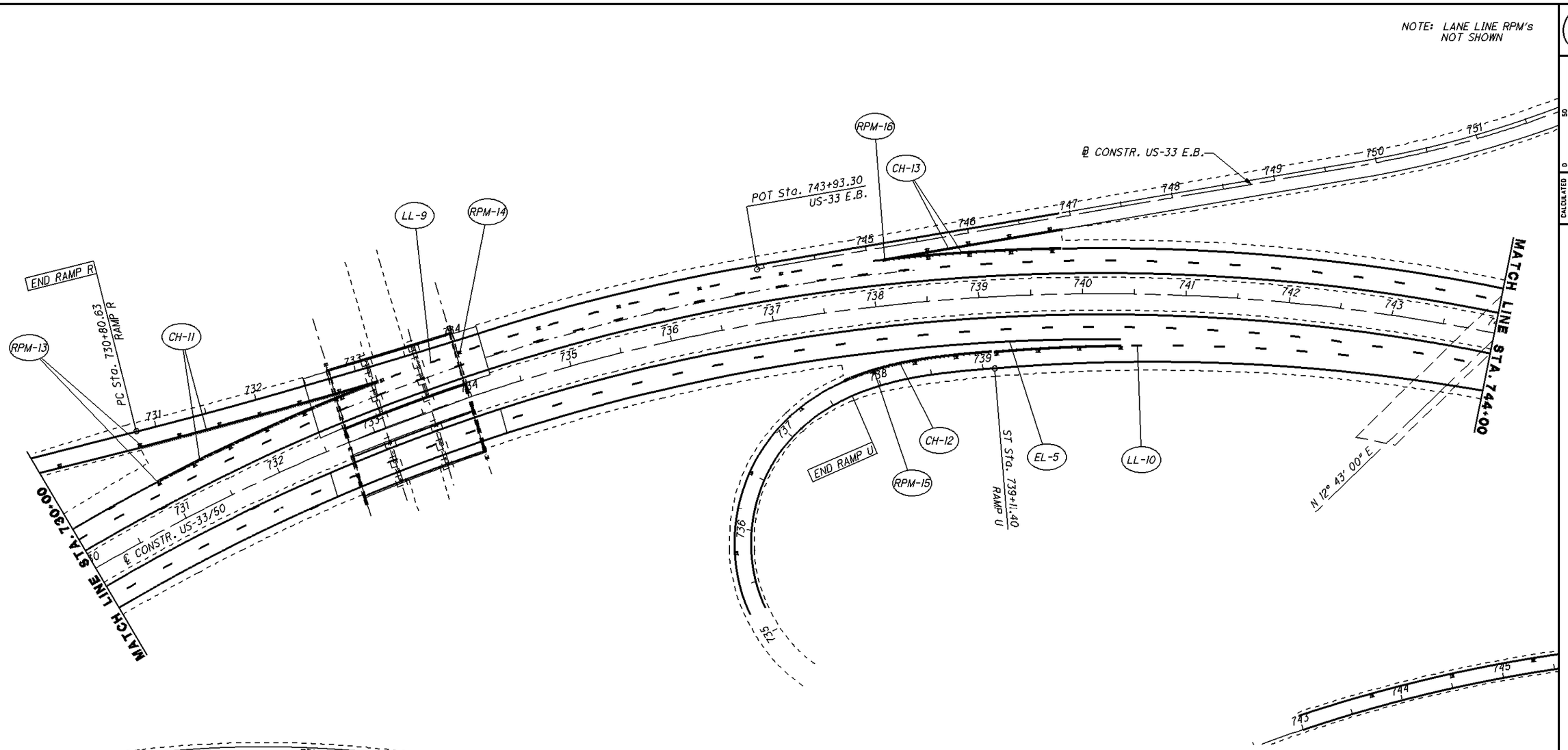
NOTE: LANE LINE RPM's NOT SHOWN



REF NO.	STATION FROM	STATION TO	SIDE	621 RPM (WHITE/RED) EACH	621 RPM (YEL/RED) EACH	621 RPM REMOVED EACH		642 EDGE LINE (WHITE) MILE	642 EDGE LINE (YELLOW) MILE	642 STOP LINE FT		644 EDGE LINE (WHITE) MILE	644 LANE LINE MILE	644 CHANNEL-IZING LINE FT
CH-11	730+92	733+22	LT											475
CH-12	737+61	740+37	RT											280
CH-13	738+16	739+82	LT											350
EL-5	737+61	740+37	RT									0.053		
LL-9	733+22	738+16	LT										0.094	
LL-10	740+37	742+72	RT										0.045	
RPM-13	730+92	733+22	LT	13		13								
RPM-14	733+22	738+16	LT	5		5								
RPM-15	737+61	740+37	RT	7		7								
RPM-16	738+16	739+82	LT	9		9								
	RAMP R			16	13	29		0.190	0.190	24				
	RAMP U				8	8		0.114	0.114					
TOTALS CARRIED TO SHEET 91				50	21	71		0.304	0.304	24		0.053	0.139	1105

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JDB
CHECKED ALC

PAVEMENT MARKING PLAN

ATH-33/50-15.05/11.46

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142 / 222

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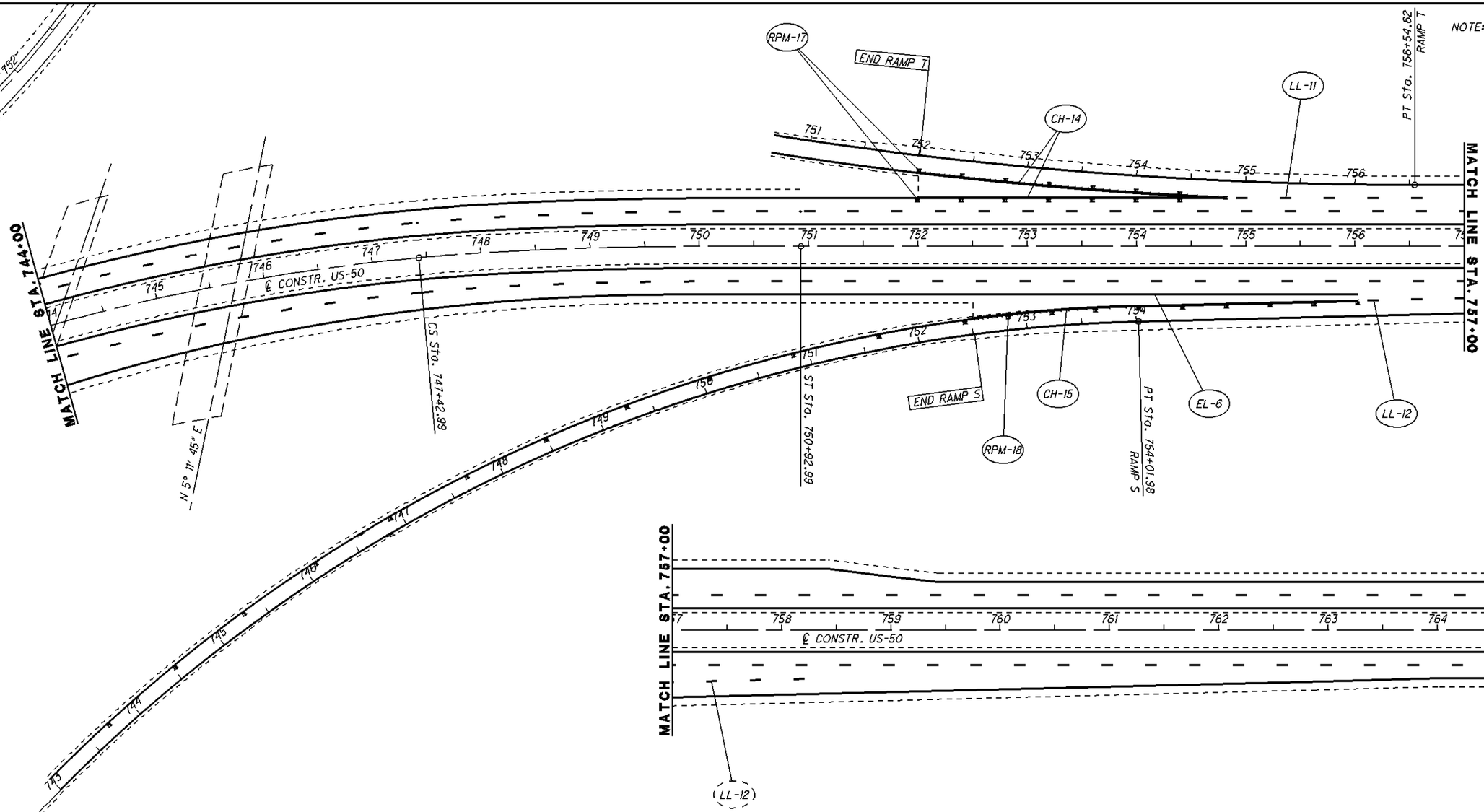

REF NO.	STATION		SIDE	621 RPM (WHITE/RED)	621 RPM (YEL/RED)	621 RPM REMOVED		642 EDGE LINE (WHITE)	642 EDGE LINE (YELLOW)		644 EDGE LINE (WHITE)	644 LANE LINE	644 CHANNEL-IZING LINE	
	FROM	TO		EACH	EACH	EACH		MILE	MILE		MILE	MILE	FT	
CH-14	752+00	754+80	LT										560	
CH-15	752+50	756+02	RT										355	
EL-6	752+50	756+02	RT								0.067			
LL-11	754+80	756+63	LT									0.035		
LL-12	756+02	758+42	RT									0.045		
RPM-17	752+00	754+80	LT	15		15								
RPM-18	752+50	756+02	RT	10		10								
TL-3	752+00	754+80	LT											
	RAMP S				13	13		0.195	0.195					
	RAMP T				9	9		0.133	0.133					
TOTALS CARRIED TO SHEET 91				25	22	47		0.328	0.328		0.067	0.080	915	

HORIZONTAL SCALE IN FEET
0 25 50 100
CALCULATED JDB
CHECKED ALC

PAVEMENT MARKING PLAN

ATH-33/50-15.05/11.46

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143 / 222

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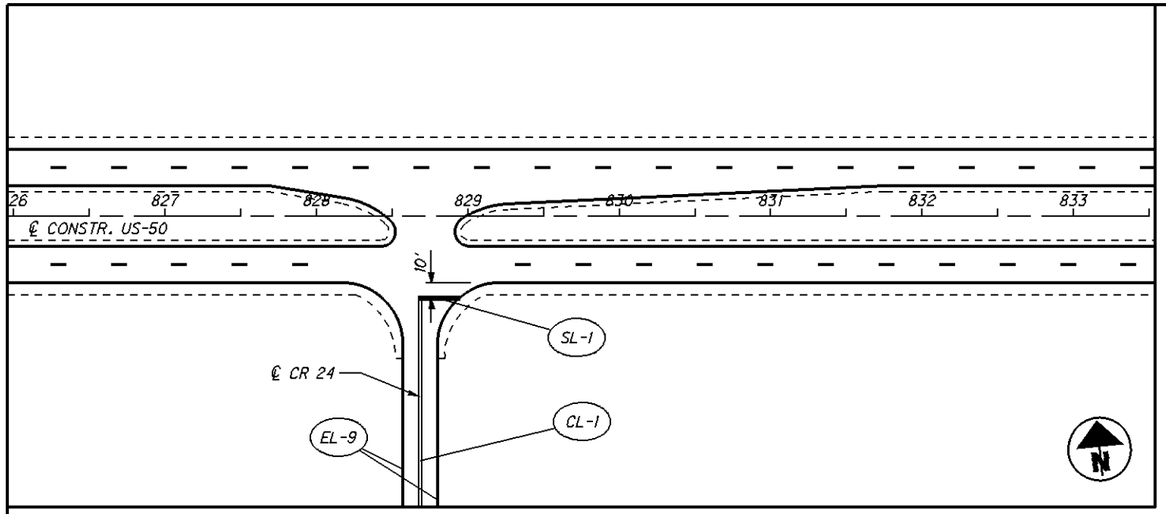
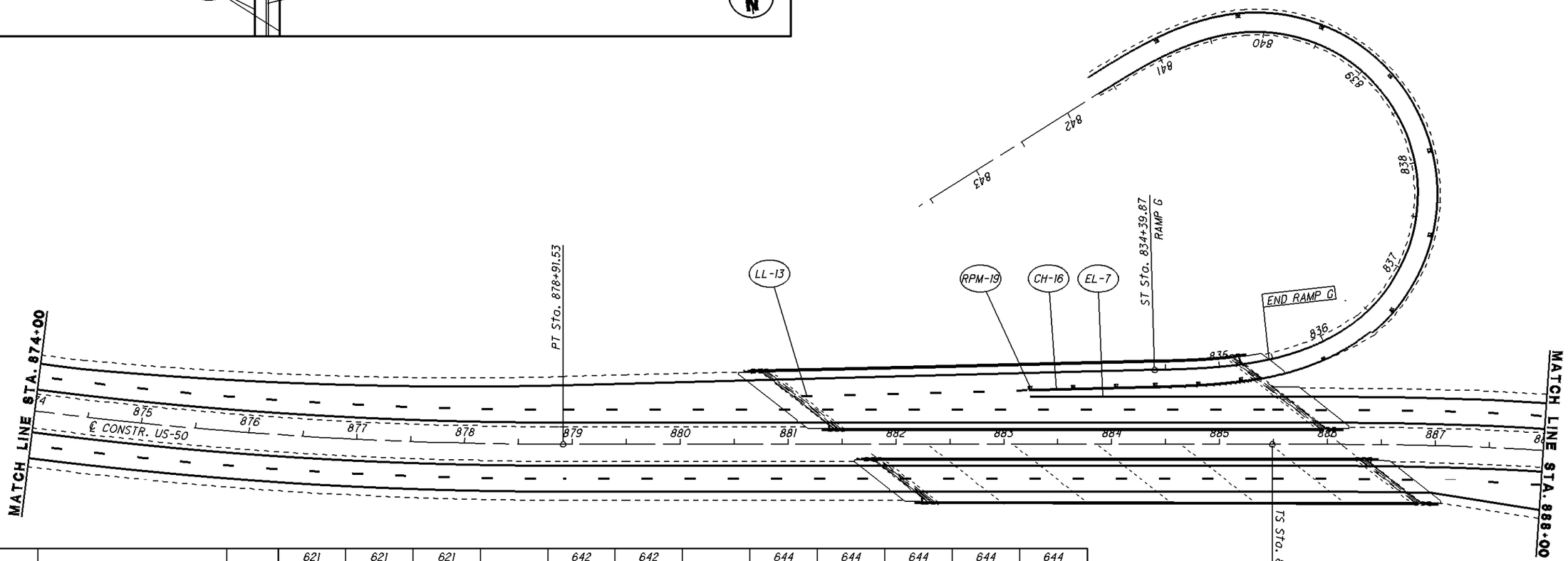


NOTE: LANE LINE RPM's NOT SHOWN



REF NO.	STATION		SIDE	621	621	621		642	642		644	644	644	644	644
				RPM (WHITE/RED)	RPM (YEL/RED)	RPM REMOVED		EDGE LINE (WHITE)	EDGE LINE (YELLOW)		EDGE LINE (WHITE)	LANE LINE	CENTER LINE	CHANNEL-IZING LINE	STOP LINE (24" WIDE)
	FROM	TO		EACH	EACH	EACH		MILE	MILE		MILE	MILE	MILE	FT	FT
CL-1	CR-24												0.047		
CH-16	883+24	885+49	LT											225	
EL-7	883+24	885+49	LT								0.043				
EL-9	CR-24										0.094				
LL-13	880+92	883+24	LT									0.044			
SL-1	CR-24														25
RPM-19	883+24	885+49	LT	6		6									
	RAMP G				10	10		0.156	0.156						
TOTALS CARRIED TO SHEET 91				6	10	16		0.156	0.156		0.137	0.044	0.047	225	25

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JDB
CHECKED ALC

PAVEMENT MARKING PLAN

ATH-33/50-15.05/11.46

7 / 8

144 / 222

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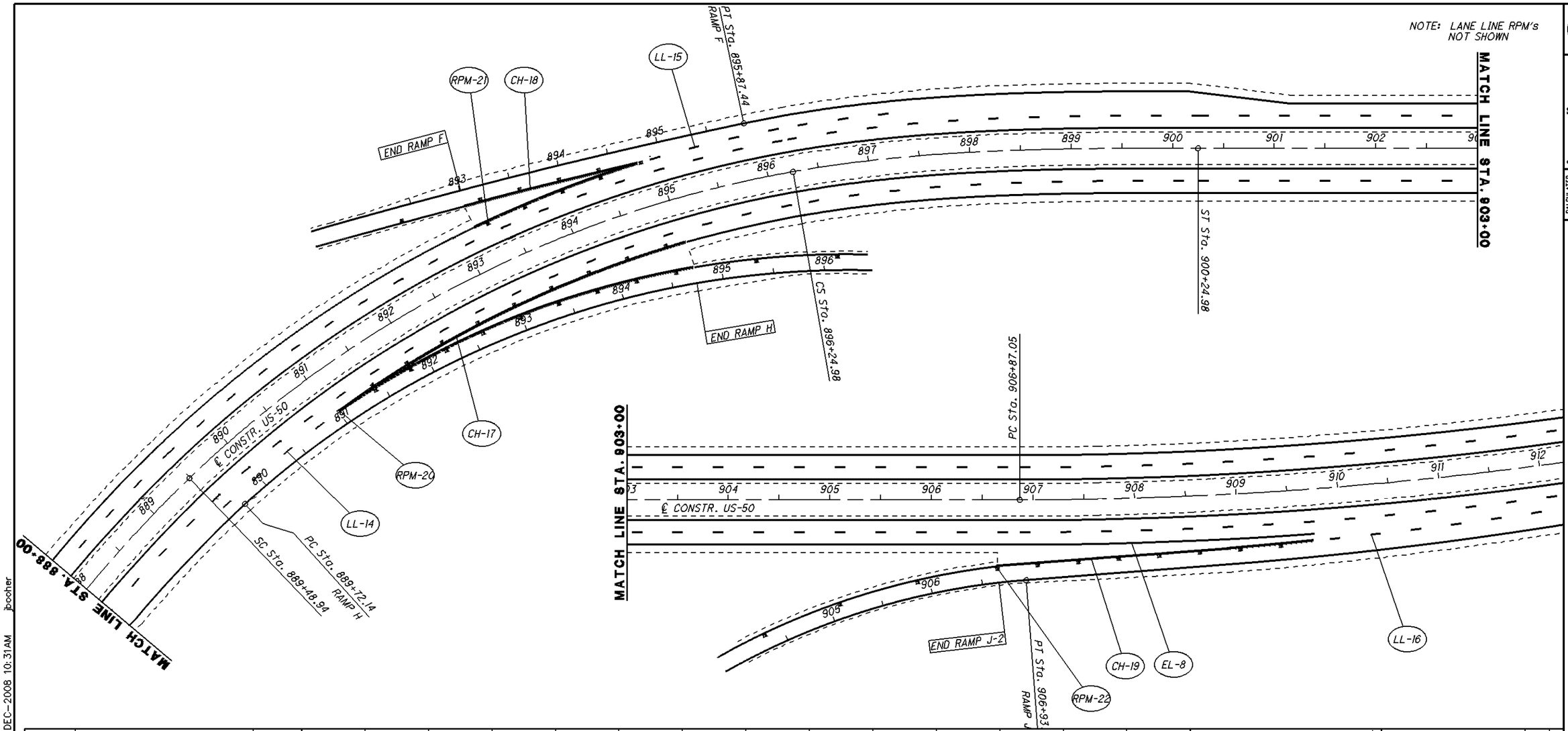

REF NO.	STATION FROM	STATION TO	SIDE	621 RPM (WHITE/RED) EACH	621 RPM (YEL/RED) EACH	621 RPM REMOVED EACH		632 DETECTOR LOOP EACH		642 EDGE LINE (WHITE) MILE	642 EDGE LINE (YELLOW) MILE	642 CHANNEL-IZING LINE FT	642 STOP LINE FT	642 LANE ARROW EA	644 EDGE LINE (WHITE) MILE	644 LANE LINE MILE	644 CHANNEL-IZING LINE FT
CH-17	891+09	895+05	RT														760
CH-18	893+15	894+82	LT														350
CH-19	906+65	909+74	RT														315
EL-8	906+65	909+74	RT												0.059		
LL-14	889+53	891+09	RT													0.030	
LL-15	894+82	897+46	LT													0.050	
LL-16	909+74	912+47	RT													0.052	
RPM-20	891+09	895+05	RT	19		19											
RPM-21	893+15	894+82	LT	9		9											
RPM-22	906+65	909+74	RT	8		8											
	RAMP F			16	22	38				0.322	0.322		20				
	RAMP H			16	7	23				0.104	0.104		20				
	RAMP J-2				12	12				0.180	0.180						
	RAMP D			16	20	36		1		0.303	0.303	350	40	2			
TOTALS CARRIED TO SHEET 91				84	61	145		1		0.909	0.909	350	80	2	0.059	0.132	1425

RAMP D:
1 EA. - LOOP DETECTOR
350 FT. - CHANNELIZING LINE
40 FT. - STOP LINE
2 EA. - LANE ARROW

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JDB
CHECKED ALC

PAVEMENT MARKING PLAN

ATH-33/50-15.05/11.46

8 / 8

145 / 222

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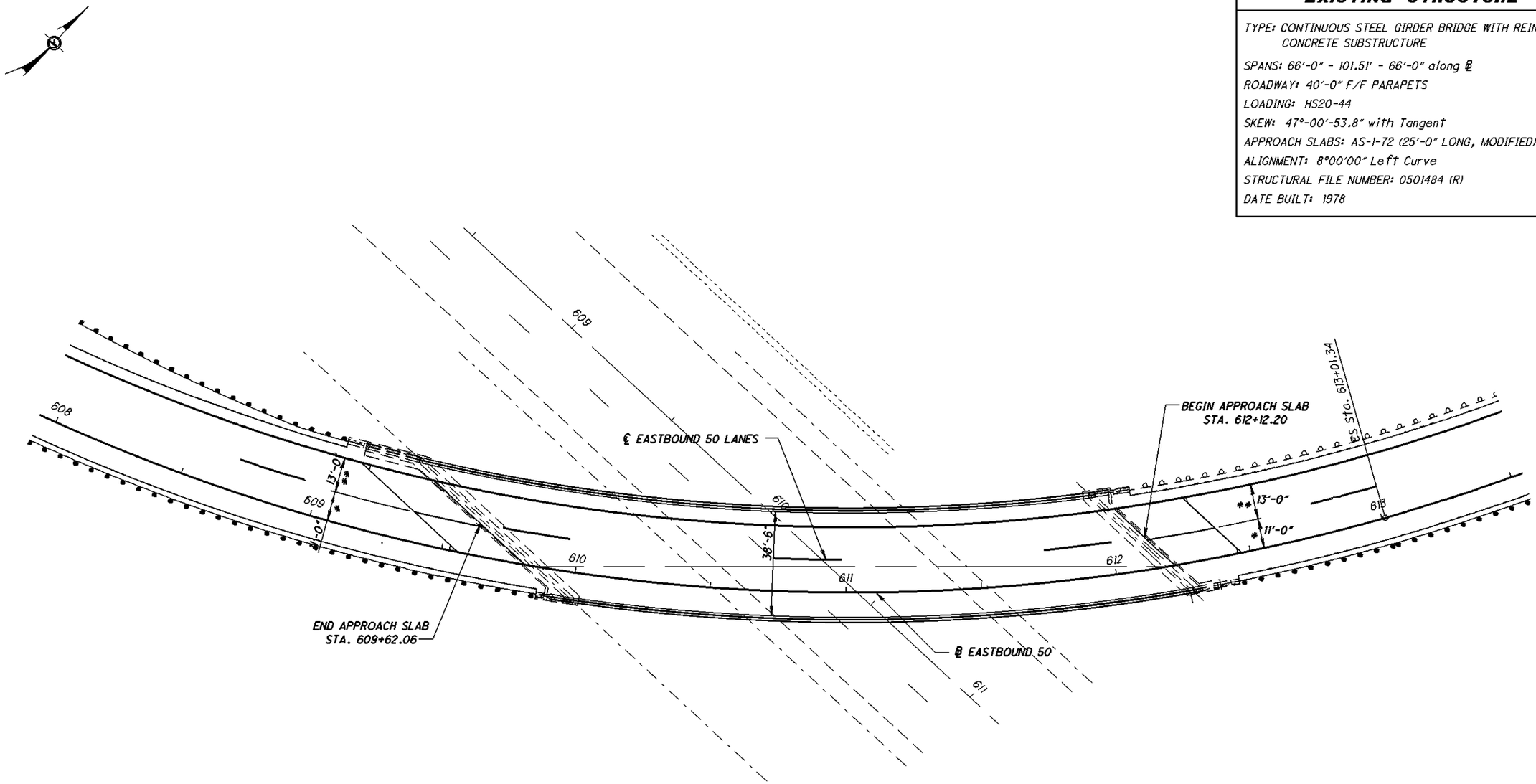
EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE SUBSTRUCTURE
SPANS: 66'-0" - 101.51' - 66'-0" along ℄
ROADWAY: 40'-0" F/F PARAPETS
LOADING: HS20-44
SKEW: 47°-00'-53.8" with Tangent
APPROACH SLABS: AS-1-72 (25'-0" LONG, MODIFIED)
ALIGNMENT: 8°00'00" Left Curve
STRUCTURAL FILE NUMBER: 0501484 (R)
DATE BUILT: 1978



PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE SUBSTRUCTURE
SPANS: 66'-0" - 101.51' - 66'-0" along ℄
ROADWAY: 40'-0" F/F PARAPETS
LOADING: HS20-44
SKEW: 47°-00'-53.8" with Tangent
APPROACH SLABS: AS-1-81 (T=15")
ALIGNMENT: 8°00'00" Left Curve
STRUCTURAL FILE NUMBER: 0501484 (R)
COORDINATES: LATITUDE 39°-18'-00" N
LONGITUDE 82°-7'-00" E

LEGEND
* - PHASE 1 CONSTRUCTION
** - PHASE 2 CONSTRUCTION

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	CAK	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE No.	
ALC		0501484 RT.	

BRIDGE LIMITS
Sta. 609+62.06
Sta. 612+12.20

SITE PLAN
Bridge No. ATH-50-1168
USR-50 Over Albany Road

ATH-33/50-15.05/11.46
PID No. 21904

1 / 6

146
222

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PROPOSED WORK

REHABILITATION OF THE EXISTING BRIDGE STRUCTURE SHALL INCLUDE: REPLACING THE APPROACH SLABS, REPAIRING THE TOPS OF EXISTING BACKWALLS AND SEALING OF CONCRETE SURFACES.

REFERENCES

REFERENCE SHALL BE MADE TO STD. DWG'S:

AS-1-81	7-19-02
PCB-91	7-19-02

AND TO SUPPLEMENTAL SPECIFICATIONS:

DESIGN DATA

CONCRETE; CLASS S-COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

REINFORCING STEEL:
ASTM A615, A616, OR A617, GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

MECHANICAL CONNECTORS

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES, LENGTHS FOR BARS WITH MECHANICAL CONNECTORS ARE DIMENSIONED TO THE CONSTRUCTION JOINT. CONNECTORS USED WITH EPOXY COATED BARS SHALL BE EPOXY COATED. COATING FOR CONNECTORS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWIZE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY, AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS. CONNECTORS SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 509 - EPOXY COATED REINFORCING STEEL.

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

PORTIONS OF THE STRUCTURE REMOVED, AS PER PLAN SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT.
ITEMS TO BE REMOVED INCLUDE APPROACH SLABS AND 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. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO 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.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

CUT LINE CONSTRUCTION JOINT PREPARATION

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, SHALL BE LEFT 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. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED 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 ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES WHICH NEW CONCRETE WILL BE PLACED AGAINST SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

COFFERDAMS, CRIBS, AND SHEETING, AS PER PLAN

TEMPORARY SHORING MAY BE USED TO ACCOMPLISH THE PROPOSED CONSTRUCTION IN STAGES. THE DESIGN OF THE TEMPORARY SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER AND CONFORM WITH 501.05 FOR APPROVAL. PORTIONS OF THE TEMPORARY SHORING COMPOSED OF STEEL OR CONCRETE MAY BE LEFT IN PLACE AT THE DISCRETION OF THE ENGINEER. PORTIONS COMPOSED OF OTHER MATERIALS SHALL BE REMOVED PRIOR TO COMPLETION OF THE WORK.

REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN

ANY EXISTING REINFORCING BARS DEEMED THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW REINFORCING STEEL. ANY EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW REINFORCING STEEL OF THE SAME SIZE AT THE CONTRACTOR'S COST. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER.

THE NUMBER OF POUNDS OF REINFORCING STEEL PAID FOR AT CONTRACT PRICES SHALL BE THE ACTUAL POUNDS OF REPLACEMENT REINFORCING STEEL SPECIFIED BY THE ENGINEER DUE TO CORROSION AND SHALL INCLUDE PLACEMENT, DOWELING, BENDING, SUPPORTING, TIE WIRES AND TYING OF THAT SPECIFIED REINFORCING STEEL.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE ESTIMATED QUANTITIES ON SHEET 3 OF 6.

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN 50 lb.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUANTLY, 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 102.05, 105.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

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 ITEM 626 EXCEPT THAT THE SPACING SHALL BE 25 FEET.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), A SEALER SHALL BE APPLIED TO THE CONCRETE SURFACES AS SHOWN ON THE TYPICAL SECTION FOR THE FULL LENGTH OF THE BRIDGE.

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0501484 (RT.)	

GENERAL NOTES

BRIDGE No. ATH-50-1168

ATH-33/50-15.05/11.46

PID No. 21904

ESTIMATED QUANTITIES

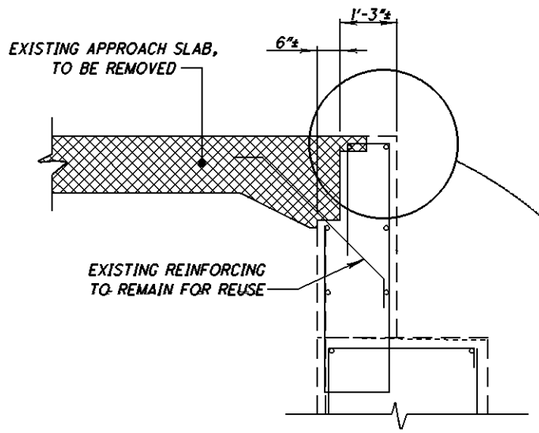
ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SFN 0501484 (Rt.) ABUT.	PIER	SUPER-STRU.	GRNL
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP
503	11101	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN				LUMP
509	20001	50	LB.	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				50
511	34000	4.64	CU. YDS.	CLASS S CONCRETE, SUPERSTRUCTURE	0.56			4.08
512	10100	542	SQ. YDS.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)				542
516	31000	77	FT.	JOINT SEALER				77
519	11100	49	SQ. FT.	PATCHING CONCRETE STRUCTURE				49
526	25000	134	SQ. YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")				134

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED JDC | DRAWN JDC | REVIEWED JPH | DATE 11-18-08
CHECKED ALC | REVISED | STRUCTURE FILE NUMBER 0501484

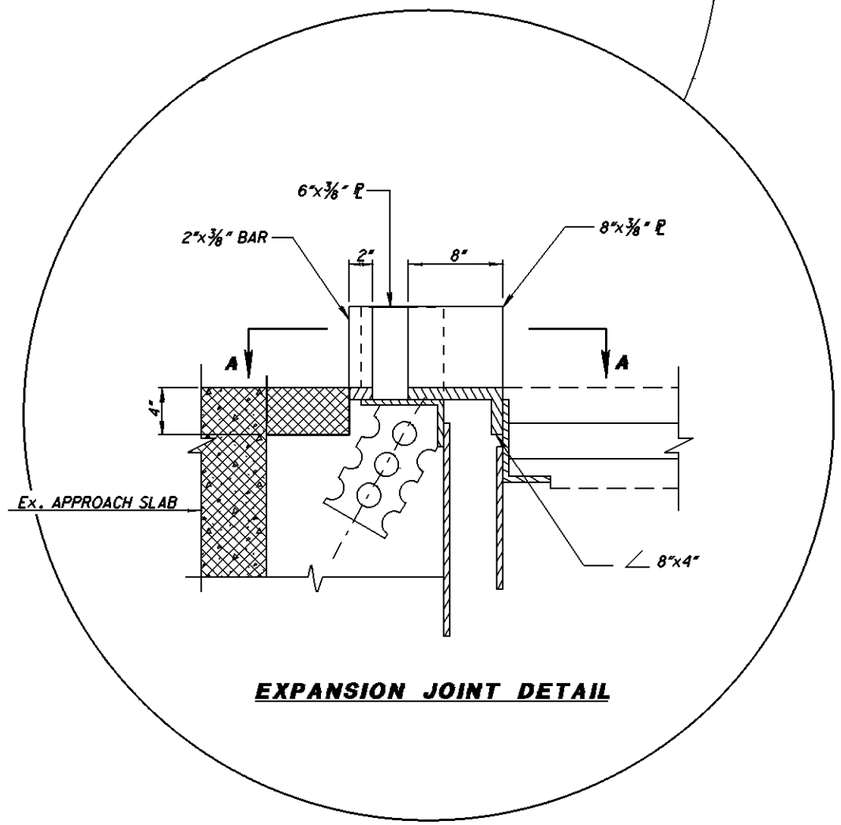
ESTIMATED QUANTITIES
BRIDGE No. ATH-50-1168

ATH-33/50-15.05/11.46
PID No. 21904

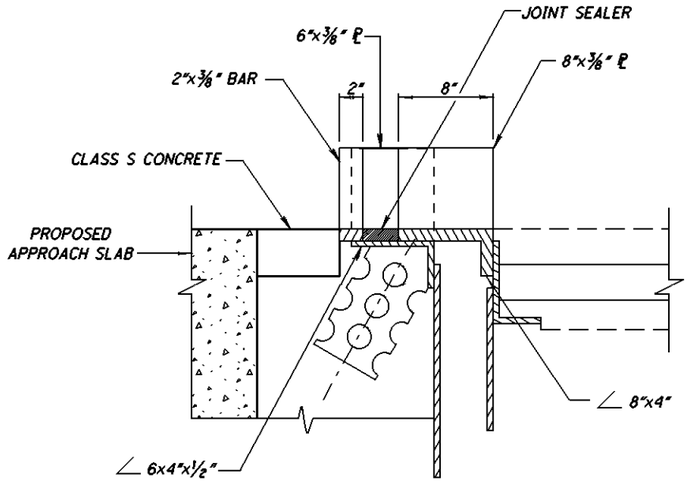


- REMOVAL LIMITS

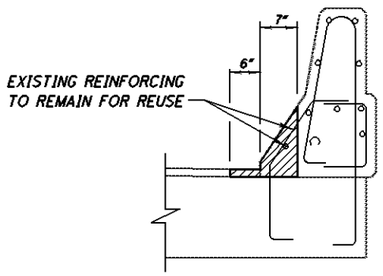
ABUTMENT SECTION



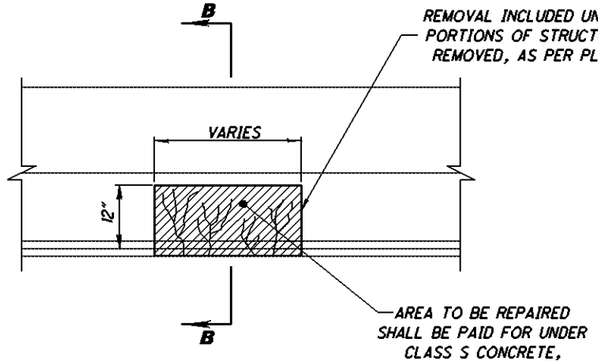
EXPANSION JOINT DETAIL



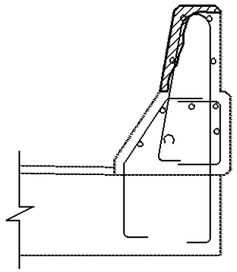
EXPANSION JOINT DETAIL



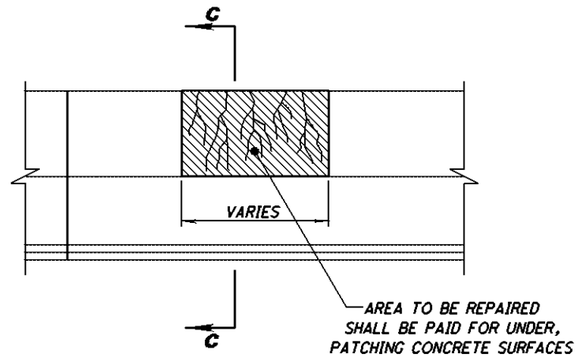
Section B-B



BARRIER REPAIR DETAIL



Section C-C



BARRIER PATCHING DETAIL

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

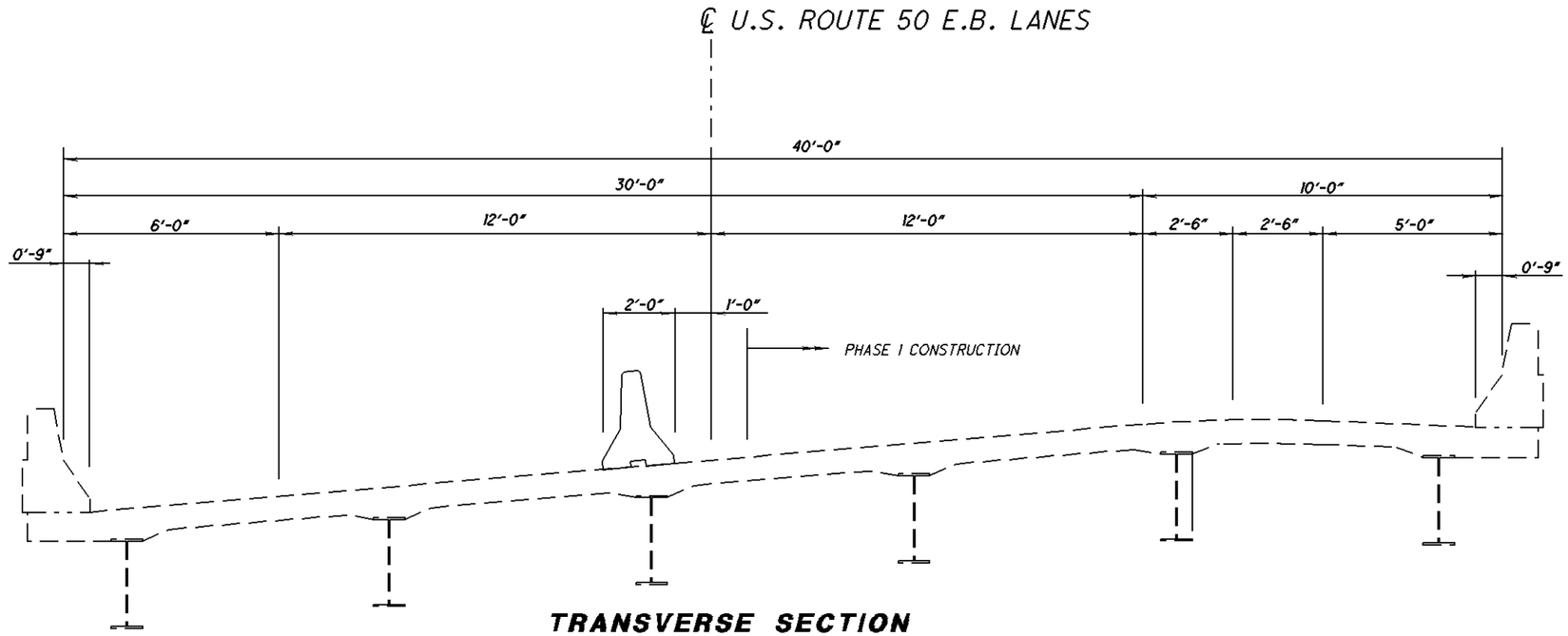
DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		050148 4 (R+I)	

EXPANSION JOINT DETAIL

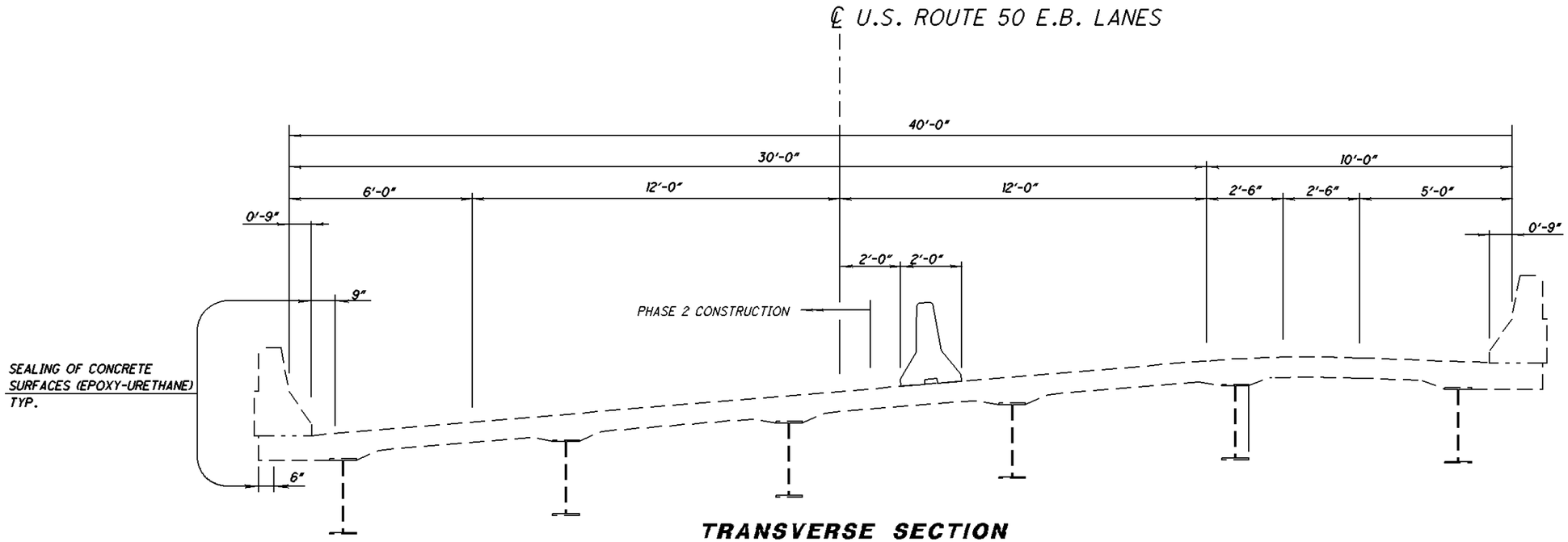
BRIDGE No. ATH-50-1168

ATH-33/50-15.05/11.46

PID No. 21904



TRANSVERSE SECTION
PHASE 1



TRANSVERSE SECTION
PHASE 2

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0501484 RT.	

TRANSVERSE SECTION
BRIDGE No. ATH-50-1168

ATH-33/50-15.05/11.46
PID No. 21904

5 / 6

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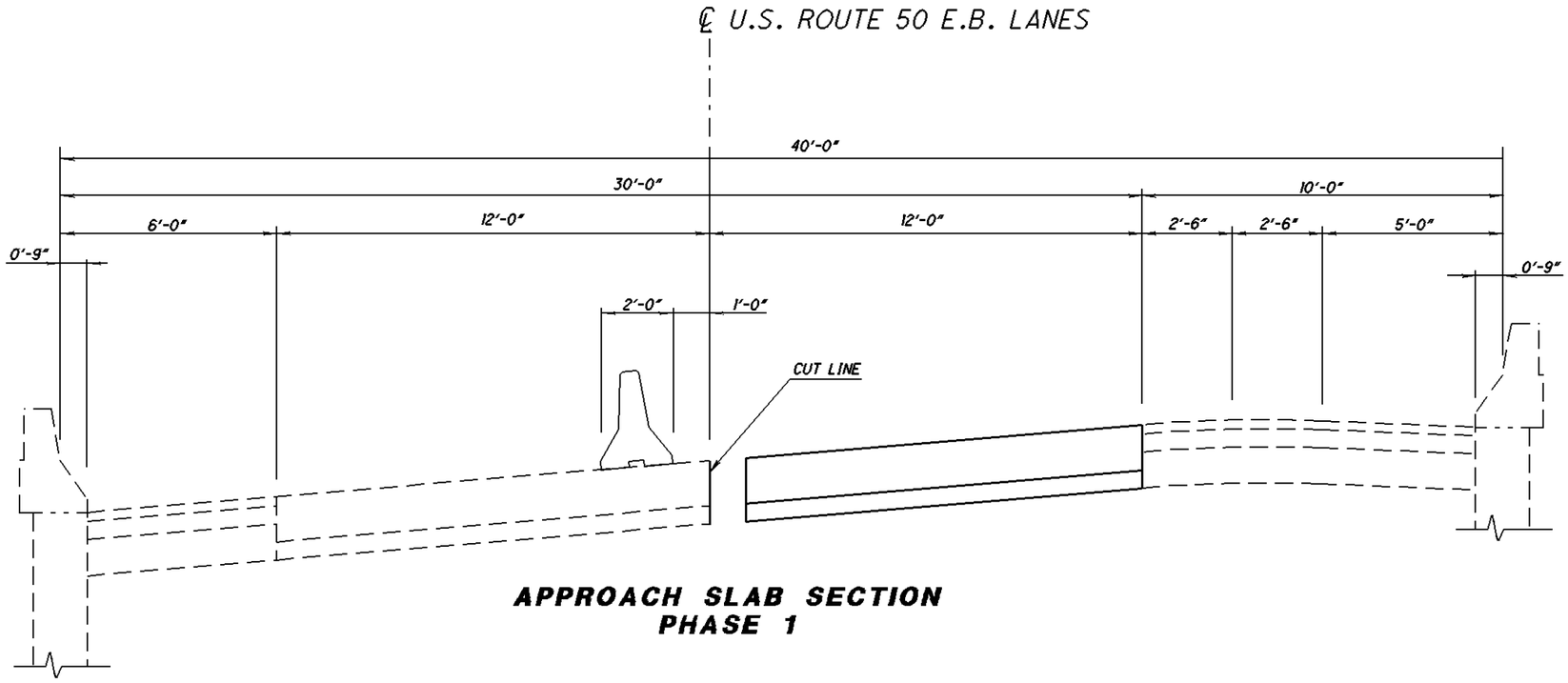
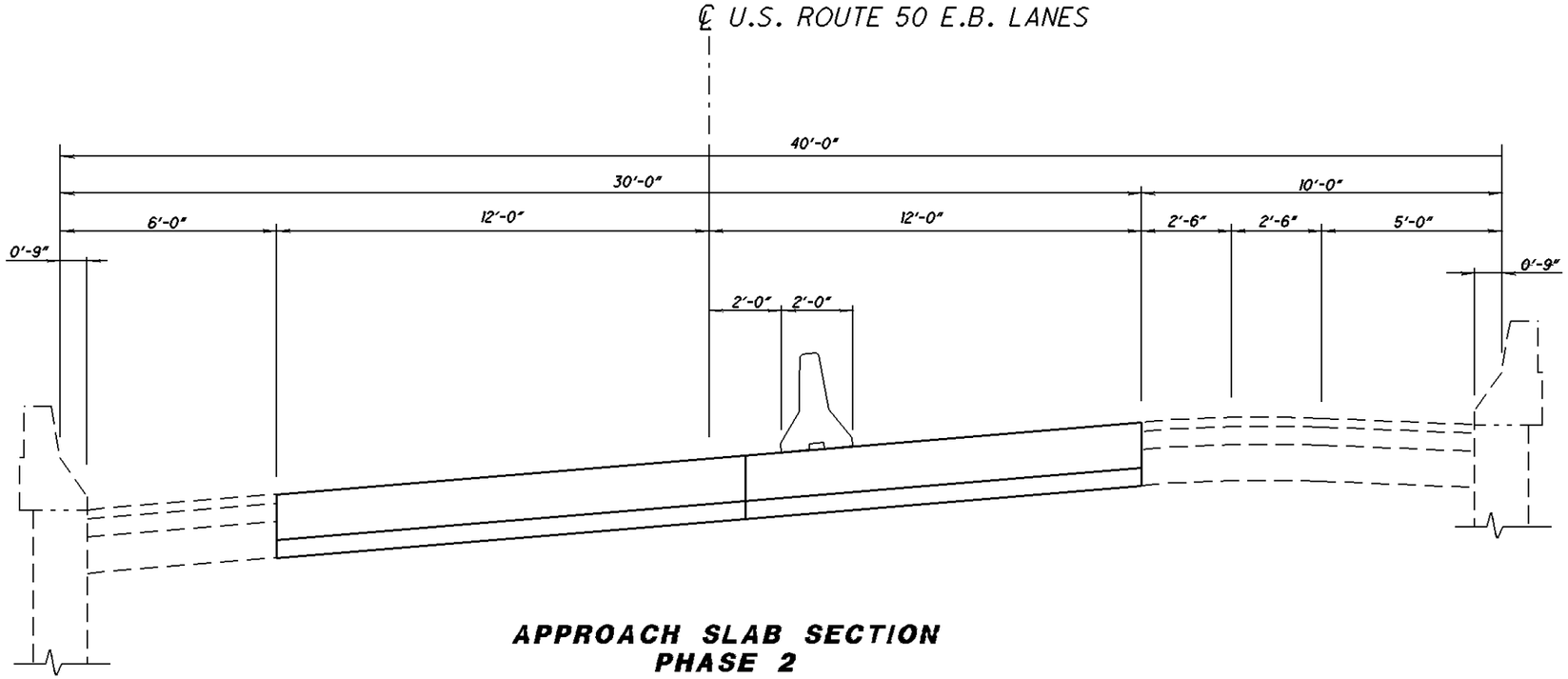


APPROACH SLAB SECTION
PHASE 1



APPROACH SLAB SECTION
PHASE 2

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0501484 R1.	

APPROACH SLAB SECTION
BRIDGE No. ATH-50-1168

ATH-33/50-15.05/11.46
PID No. 21904

6 / 6

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222

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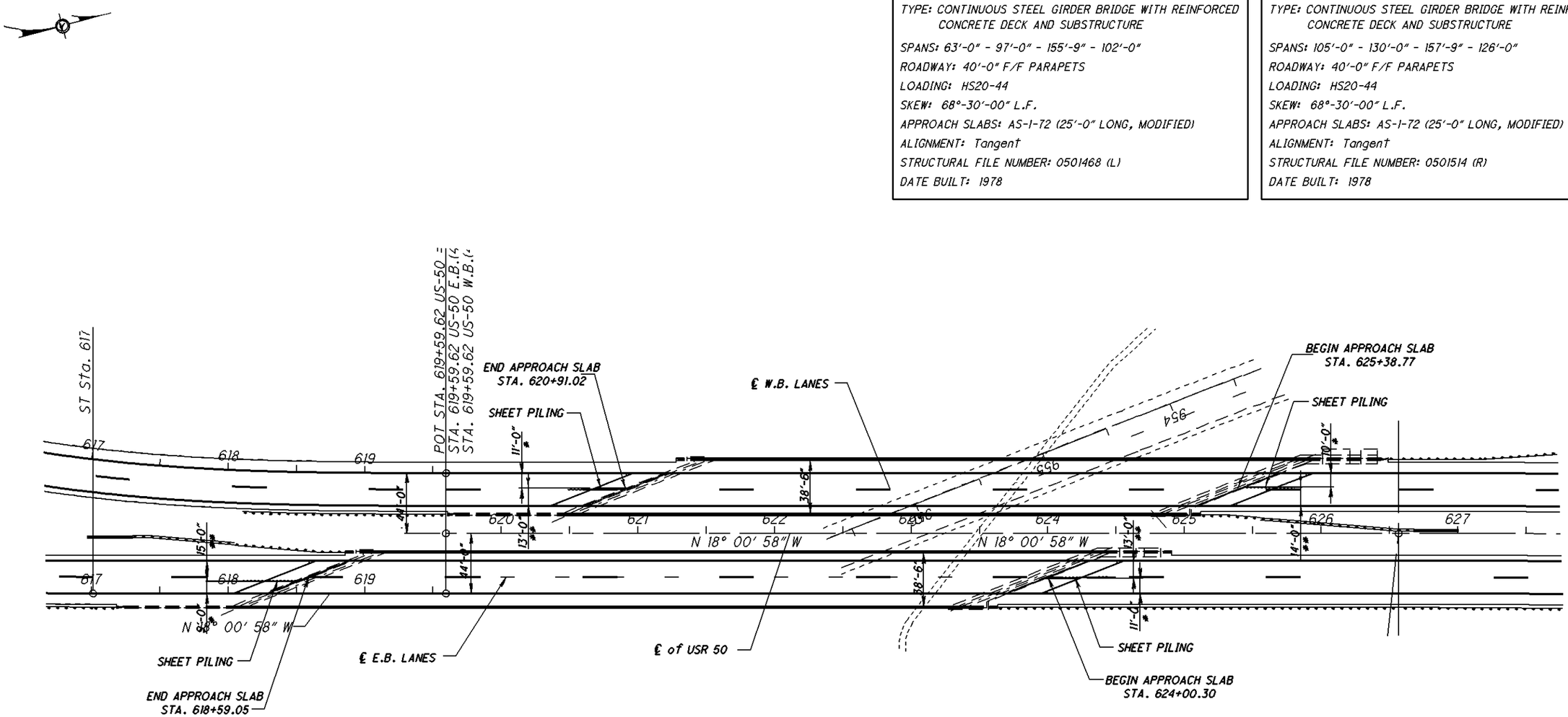
EXISTING STRUCTURE (Lt.)

TYPE: CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 63'-0" - 97'-0" - 155'-9" - 102'-0"
ROADWAY: 40'-0" F/F PARAPETS
LOADING: HS20-44
SKEW: 68°-30'-00" L.F.
APPROACH SLABS: AS-1-72 (25'-0" LONG, MODIFIED)
ALIGNMENT: Tangent
STRUCTURAL FILE NUMBER: 0501468 (L)
DATE BUILT: 1978

EXISTING STRUCTURE (Rt.)

TYPE: CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 105'-0" - 130'-0" - 157'-9" - 126'-0"
ROADWAY: 40'-0" F/F PARAPETS
LOADING: HS20-44
SKEW: 68°-30'-00" L.F.
APPROACH SLABS: AS-1-72 (25'-0" LONG, MODIFIED)
ALIGNMENT: Tangent
STRUCTURAL FILE NUMBER: 0501514 (R)
DATE BUILT: 1978



PROPOSED STRUCTURE (Lt.)

TYPE: CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 63'-0" - 97'-0" - 155'-9" - 102'-0"
ROADWAY: 40'-0" F/F PARAPETS
LOADING: HS20-44
SKEW: 68°-30'-00" L.F.
APPROACH SLABS: AS-1-81 (T-15")
ALIGNMENT: Tangent
STRUCTURAL FILE NUMBER: 0501468 (L)
COORDINATES: LATITUDE 39°-18'-00" N
LONGITUDE 82°-6'-00" E

PROPOSED STRUCTURE (Rt.)

TYPE: CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 105'-0" - 130'-0" - 157'-9" - 126'-0"
ROADWAY: 40'-0" F/F PARAPETS
LOADING: HS20-44
SKEW: 68°-30'-00" L.F.
APPROACH SLABS: AS-1-72 (25'-0" LONG
ALIGNMENT: Tangent
STRUCTURAL FILE NUMBER: 0501514 (R)
COORDINATES: LATITUDE 39°-18'-00" N
LONGITUDE 82°-6'-00" E

LEGEND
* - PHASE 1 CONSTRUCTION
** - PHASE 2 CONSTRUCTION

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	CAK	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE No. 0501468 Lt. 0501514 Rt.	
ALC			

BRIDGE LIMITS (Right)
Sta. 618+59.05
Sta. 624+00.30

BRIDGE LIMITS (Left)
Sta. 620+91.02
Sta. 625+38.77

SITE PLAN
Bridge No. ATH-50-1185 Lt. & Rt.
US-50 Over S.B. U.S.-33 & Ramp 41

ATH-33/50-15.05/11.46
PID No. 21904

1 / 11

152
222

050_1184CSP001

PROPOSED WORK

REHABILITATION OF THE EXISTING BRIDGE STRUCTURE SHALL INCLUDE: REPLACING THE APPROACH SLABS, REPAIRING THE TOPS OF EXISTING BACKWALLS AND SEALING OF CONCRETE SURFACES.

REFERENCES

REFERENCE SHALL BE MADE TO STD. DWG'S:

AS-1-81 7-19-02
PCB-91 7-19-02

AND TO SUPPLEMENTAL SPECIFICATIONS:

DESIGN DATA:

CONCRETE; CLASS S-COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

REINFORCING STEEL:
ASTM A615, A616, OR A617, GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

MECHANICAL CONNECTORS

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES, LENGTHS FOR BARS WITH MECHANICAL CONNECTORS ARE DIMENSIONED TO THE CONSTRUCTION JOINT. CONNECTORS USED WITH EPOXY COATED BARS SHALL BE EPOXY COATED. COATING FOR CONNECTORS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWIZE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY, AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS. CONNECTORS SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 509 - EPOXY COATED REINFORCING STEEL.

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

PORTIONS OF THE STRUCTURE REMOVED, AS PER PLAN SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT.
ITEMS TO BE REMOVED INCLUDE APPROACH SLABS AND 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. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO 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.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, SHALL BE LEFT 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. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED 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 ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES WHICH NEW CONCRETE WILL BE PLACED AGAINST SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

COFFERDAMS, CRIBS, AND SHEETING, AS PER PLAN

TEMPORARY SHORING MAY BE USED TO ACCOMPLISH THE PROPOSED CONSTRUCTION IN STAGES. THE DESIGN OF THE TEMPORARY SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER AND CONFORM WITH 501.05 FOR APPROVAL. PORTIONS OF THE TEMPORARY SHORING COMPOSED OF STEEL OR CONCRETE MAY BE LEFT IN PLACE AT THE DISCRETION OF THE ENGINEER. PORTIONS COMPOSED OF OTHER MATERIALS SHALL BE REMOVED PRIOR TO COMPLETION OF THE WORK.

REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN:

ANY EXISTING REINFORCING BARS DEEMED THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW REINFORCING STEEL. ANY EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW REINFORCING STEEL OF THE SAME SIZE AT THE CONTRACTOR'S COST. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER.

THE NUMBER OF POUNDS OF REINFORCING STEEL PAID FOR AT CONTRACT PRICES SHALL BE THE ACTUAL POUNDS OF REPLACEMENT REINFORCING STEEL SPECIFIED BY THE ENGINEER DUE TO CORROSION AND SHALL INCLUDE PLACEMENT, DOWELING, BENDING, SUPPORTING, TIE WIRES AND TYING OF THAT SPECIFIED REINFORCING STEEL.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE ESTIMATED QUANTITIES ON SHEET 3 OF 6.

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN 50 lb.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUANTLY, 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 102.05, 105.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

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 ITEM 626 EXCEPT THAT THE SPACING SHALL BE 25 FEET.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), A SEALER SHALL BE APPLIED TO THE CONCRETE SURFACES AS SHOWN ON THE TYPICAL SECTION FOR THE FULL LENGTH OF THE BRIDGE.

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		050154 (R1)	

GENERAL NOTES

BRIDGE NO. ATH-50-1185 L&R

ATH-33/50-15.05/11.46

PID No. 21904

ESTIMATED QUANTITIES

SFN 0501468 (Lt.)

ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRU.	GRNL
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP
503	11101	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN				LUMP
509	20001	50	LB.	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				50
511	34000	14.36	CU. YDS.	CLASS S CONCRETE, SUPERSTRUCTURE	2.53			11.83
512	10100	1056	SQ. YDS.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)				1056
516	10900	25	FT.	ELASTOMERIC COMPRESSION SEAL	25			
516	31000	130	FT.	JOINT SEALER				130
519	11100	22	SQ. FT.	PATCHING CONCRETE STRUCTURE				22
526	25000	134	SQ. YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")				134

ESTIMATED QUANTITIES

SFN 0501514 (Rt.)

ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRU.	GRNL
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP
503	11101	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN				LUMP
509	20001	50	LB.	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				50
511	34000	9.39	CU. YDS.	CLASS S CONCRETE, SUPERSTRUCTURE	2.53			6.86
512	10100	1230	SQ. YDS.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)				1230
516	10900	25	FT.	ELASTOMERIC COMPRESSION SEAL	25			
516	31000	129	FT.	JOINT SEALER				129
519	11100	84	SQ. FT.	PATCHING CONCRETE STRUCTURE				84
526	25000	134	SQ. YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")				134

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08

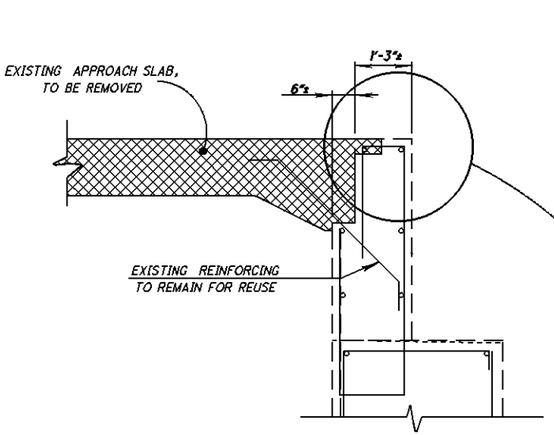
CHECKED | REVISED | STRUCTURE FILE NUMBER 0501468 (Lt.) 0501514 (Rt.)

ESTIMATED QUANTITIES

BRIDGE No. ATH-50-1185 L&R

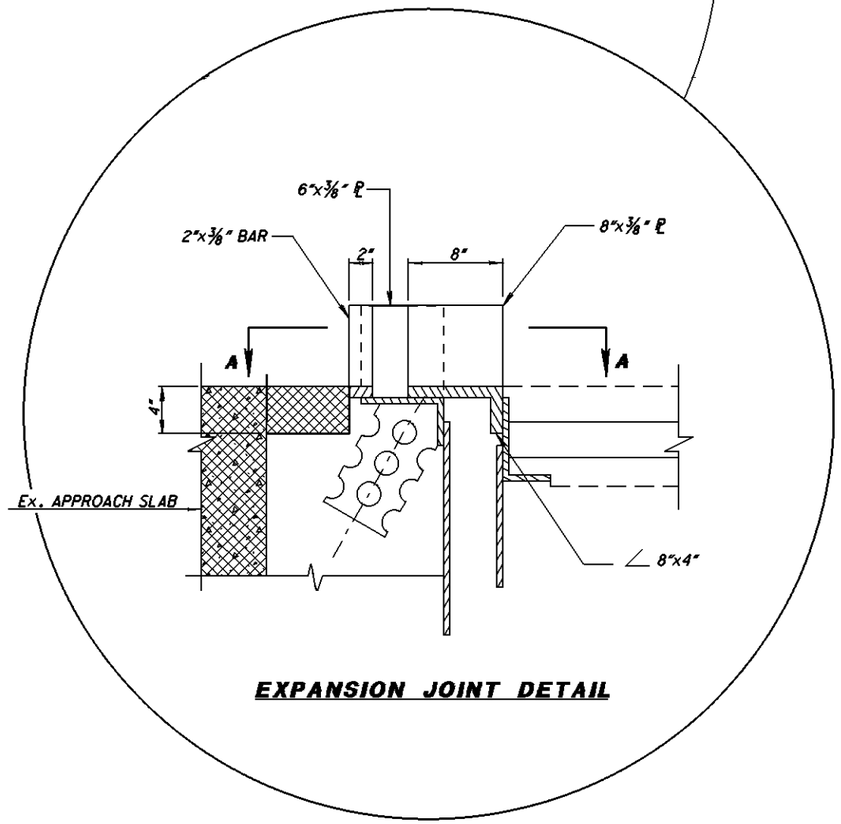
ATH-33/50-15.05/11.46

PID No. 21904

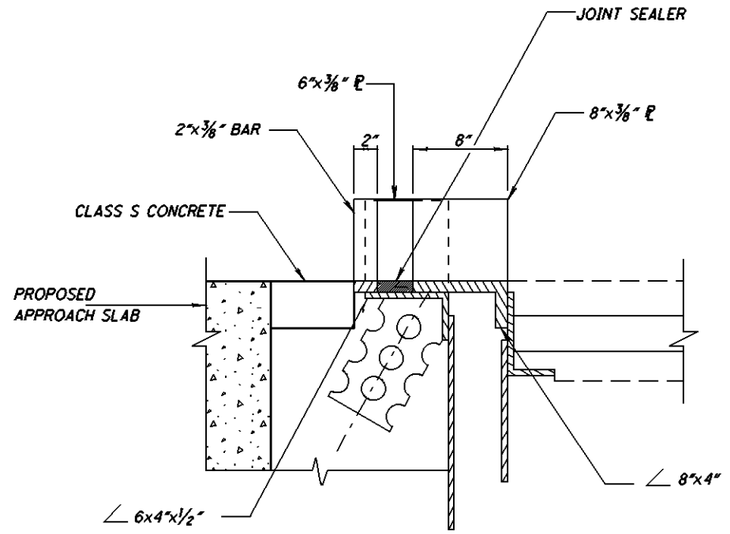


- REMOVAL LIMITS

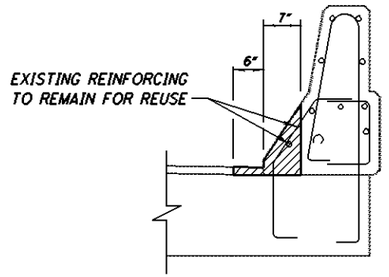
ABUTMENT SECTION



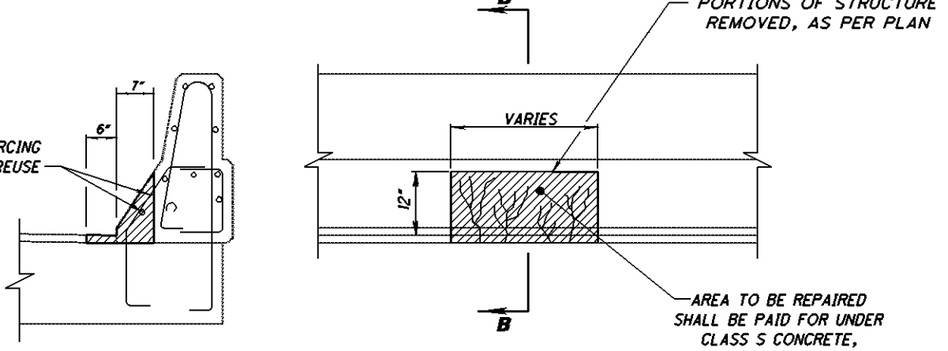
EXPANSION JOINT DETAIL



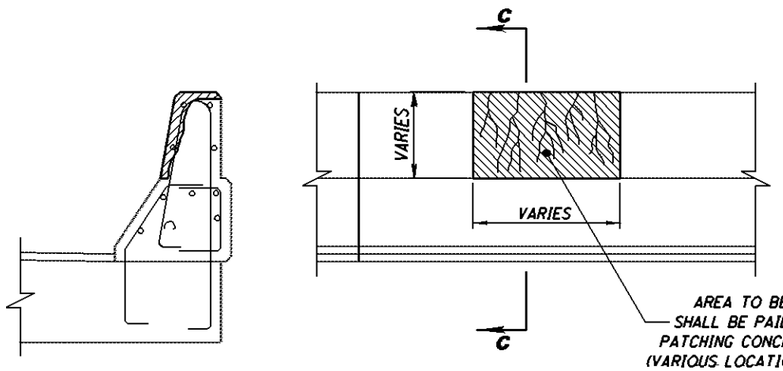
EXPANSION JOINT DETAIL



Section B-B



BARRIER REPAIR DETAIL



BARRIER PATCHING DETAIL

Section C-C

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

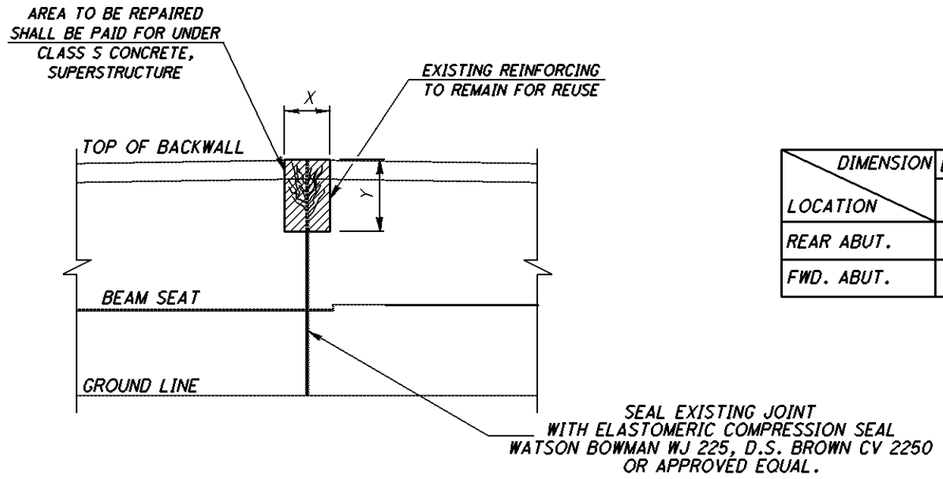
DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0500154 (BT)	

EXPANSION JOINT DETAIL

BRIDGE NO. ATH-50-1185 L&R

ATH-33/50-15.05/11.46

PID No. 21904



DIMENSION / LOCATION	LT. BRIDGE		RT. BRIDGE	
	X	Y	X	Y
REAR ABUT.	4′	2.5′	4′	2′
FWD. ABUT.	4′	3.5′	4′	4′

PARTIAL ABUTMENT ELEVATION

VERTICAL EXPANSION JOINT REPAIR
AND SEALING

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		050154 (1)	
		050154 (R1)	

ABUTMENT JOINT DETAIL

BRIDGE NO. ATH-50-1185 L&R

ATH-33/50-15.05/11.46

PID No. 21904

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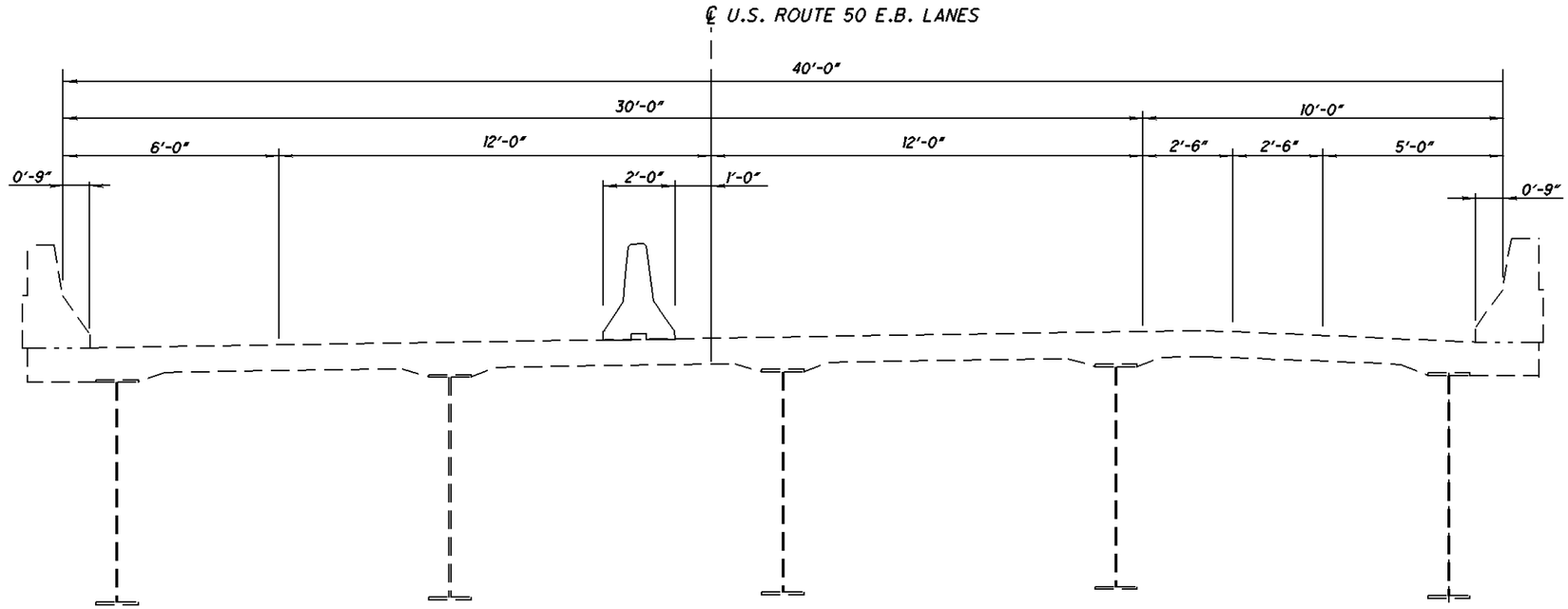
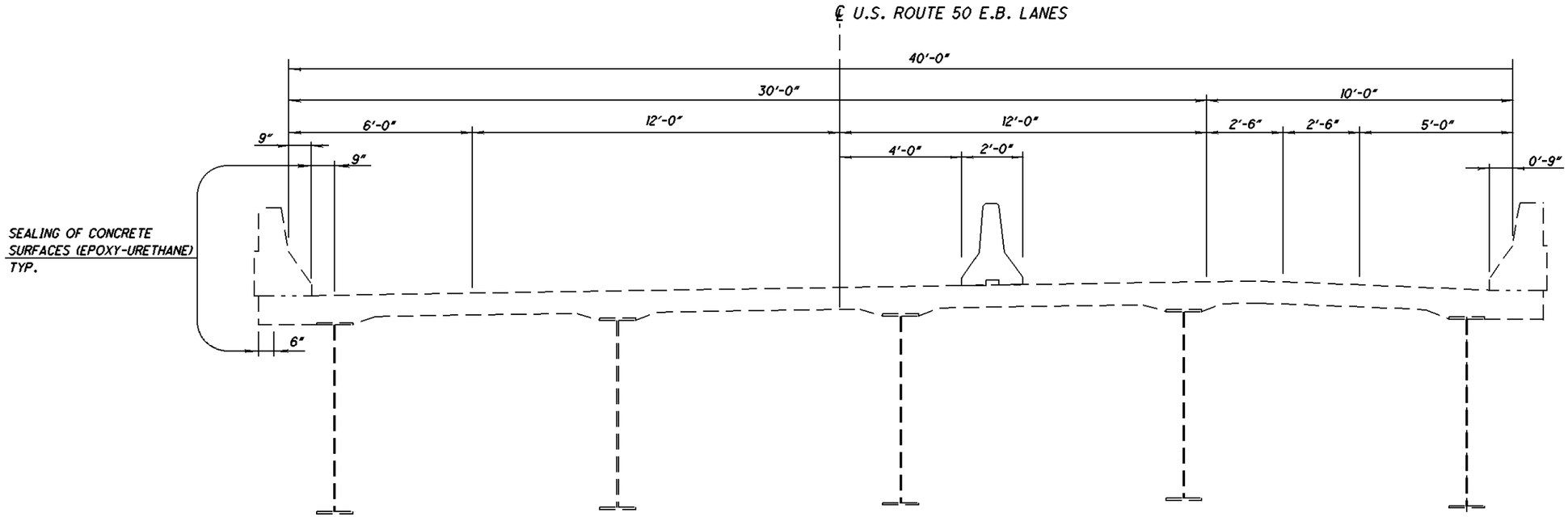


TRANSVERSE SECTION
PHASE 1
RIGHT BRIDGE



TRANSVERSE SECTION
PHASE 2
RIGHT BRIDGE

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER (0501514 (RT.) 0501514 (RT.)	
ALC			

TRANSVERSE SECTION
BRIDGE No. ATH-50-1185 RT.

ATH-33/50-15.05/11.46
PID No. 21904

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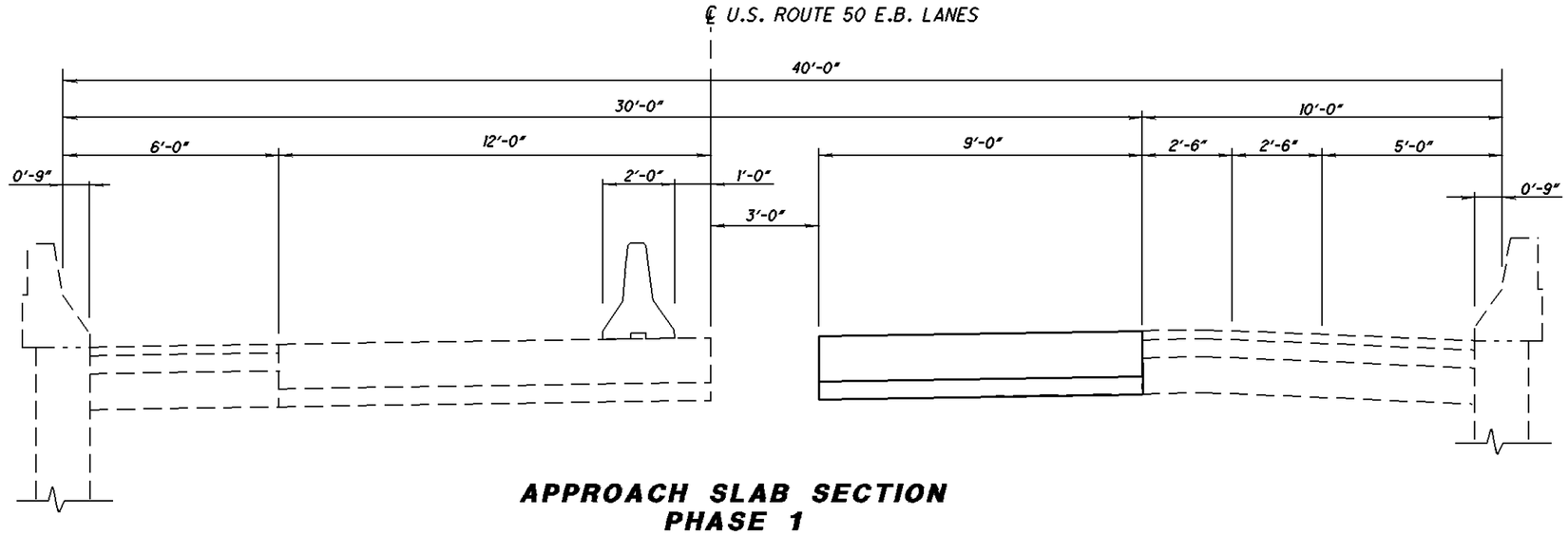
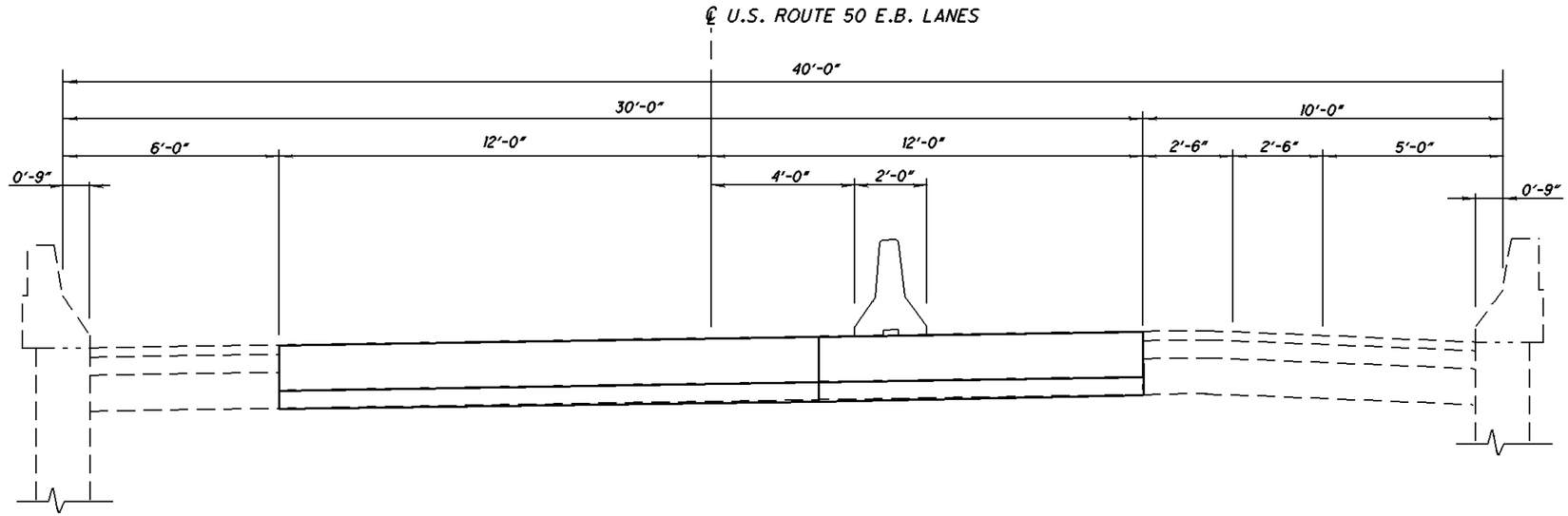


APPROACH SLAB SECTION
PHASE 1
RIGHT REAR



APPROACH SLAB SECTION
PHASE 2
RIGHT REAR

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER 050154 (RT.) 050154 (RT.)	
ALC			

APPROACH SLAB SECTION
BRIDGE No. ATH-50-1185 RT.

ATH-33/50-15.05/11.46
PID No. 21904

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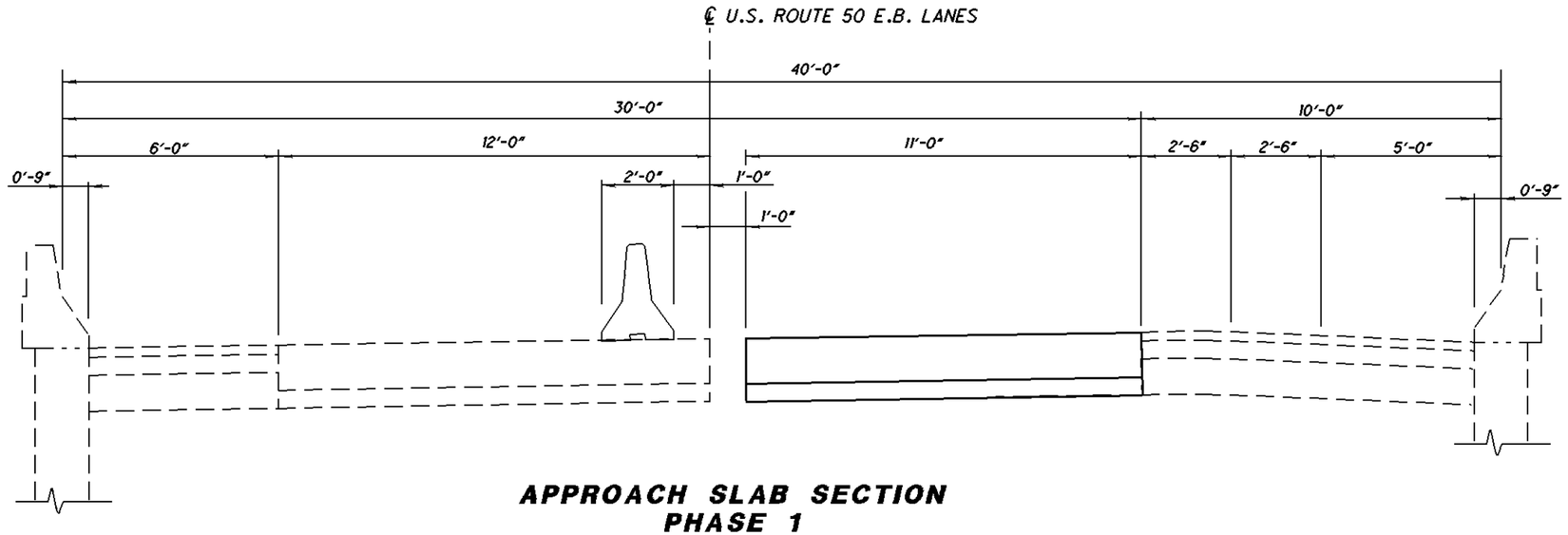
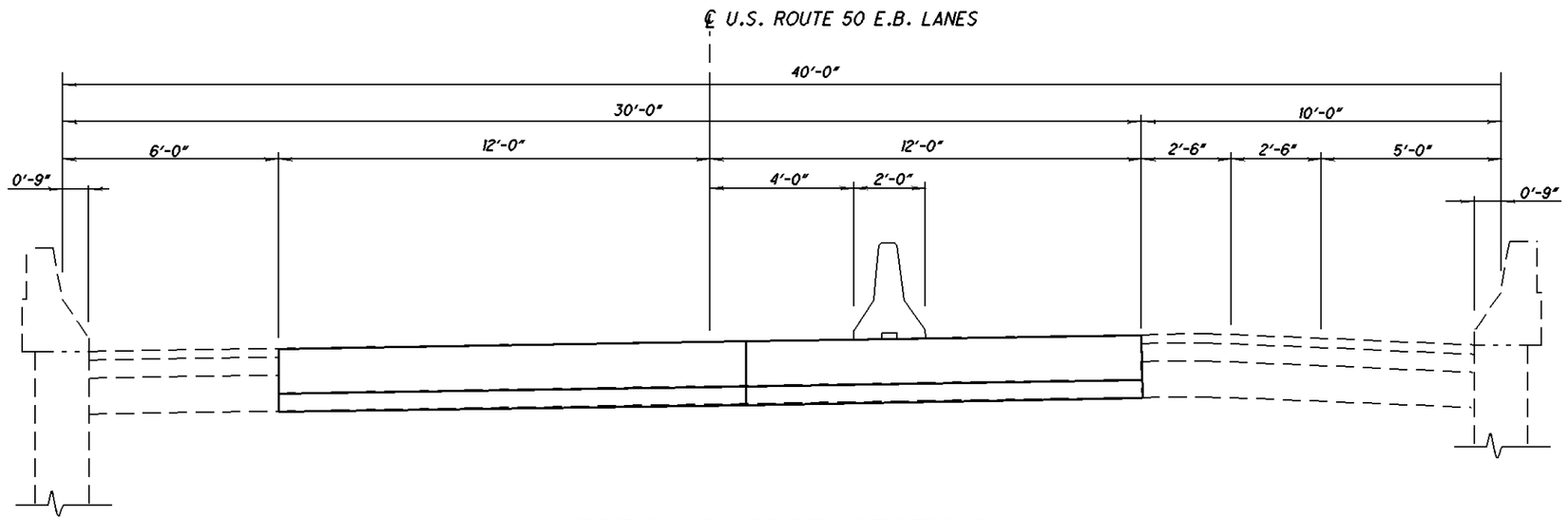


APPROACH SLAB SECTION
PHASE 1
RIGHT FORWARD



APPROACH SLAB SECTION
PHASE 2
RIGHT FORWARD

DESIGN AGENCY	DISTRICT 10 PRODUCTION DEPARTMENT MARIETTA, OHIO
DESIGNED	JDC
DRAWN	JDC
REVIEWED	JPH
DATE	11-18-08
CHECKED	ALC
REVISED	STRUCTURE FILE NUMBER 0501514 (RT.) 0501514 (RT.)

APPROACH SLAB SECTION
BRIDGE No. ATH-50-1185 RT.

ATH-33/50-15.05/11.46
PID No. 21904

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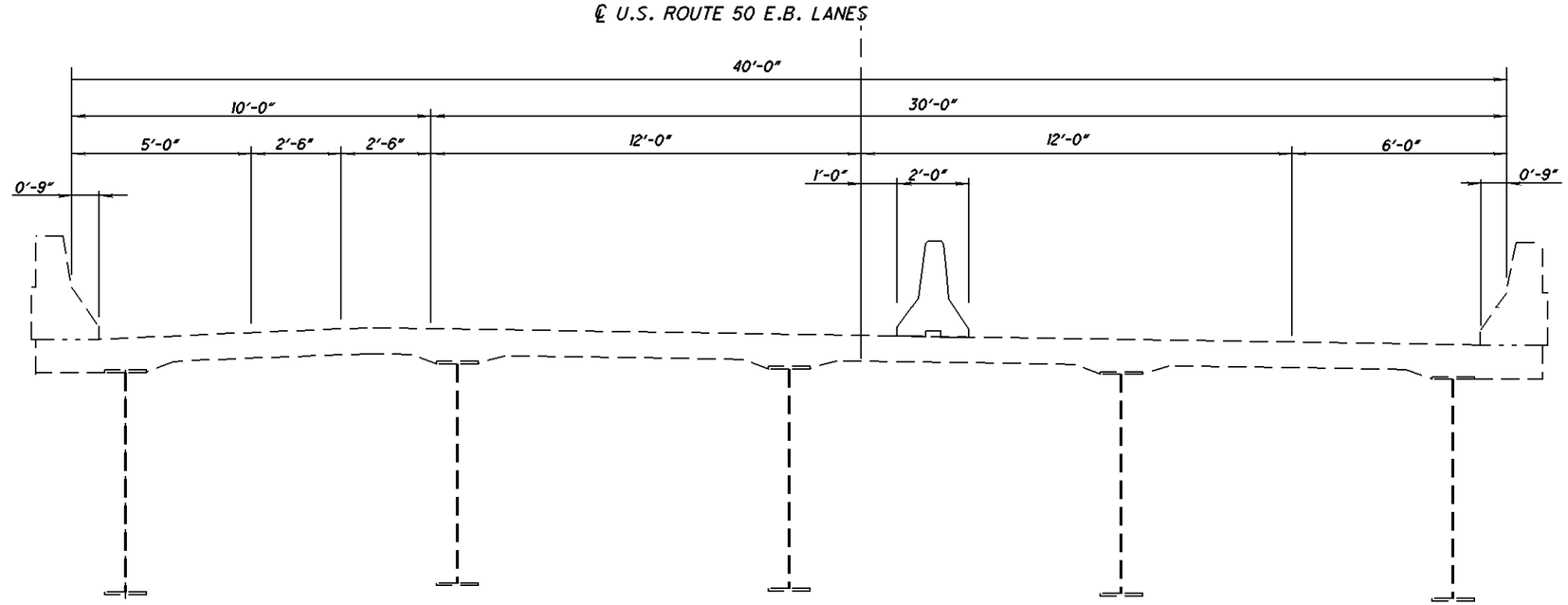
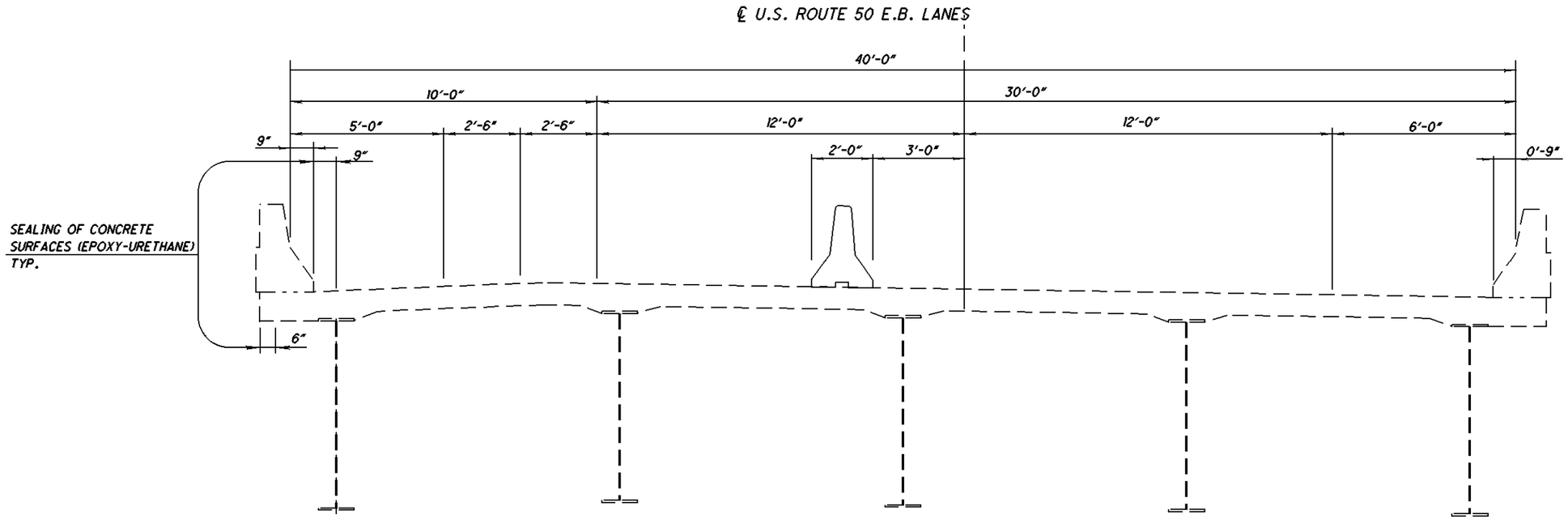


TRANSVERSE SECTION
PHASE 1
LEFT BRIDGE



TRANSVERSE SECTION
PHASE 2
LEFT BRIDGE

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0501514 (R1)	

TRANSVERSE SECTION
BRIDGE No. ATH-50-1185 L.T.

ATH-33/50-15.05/11.46
PID No. 21904

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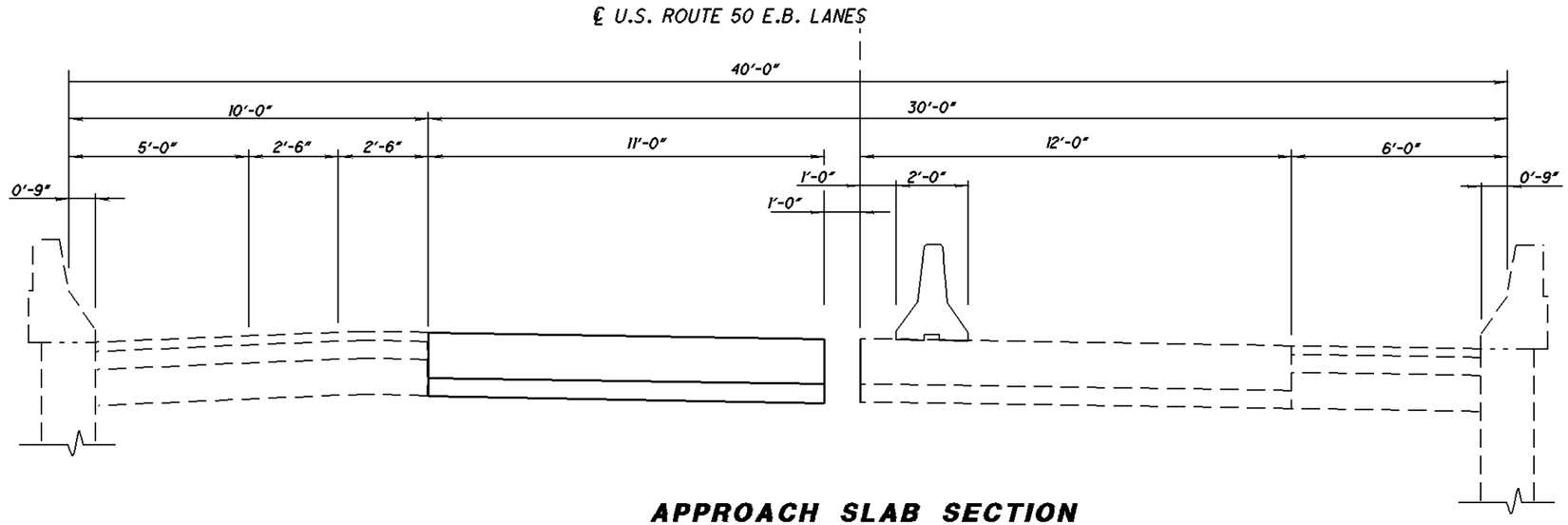
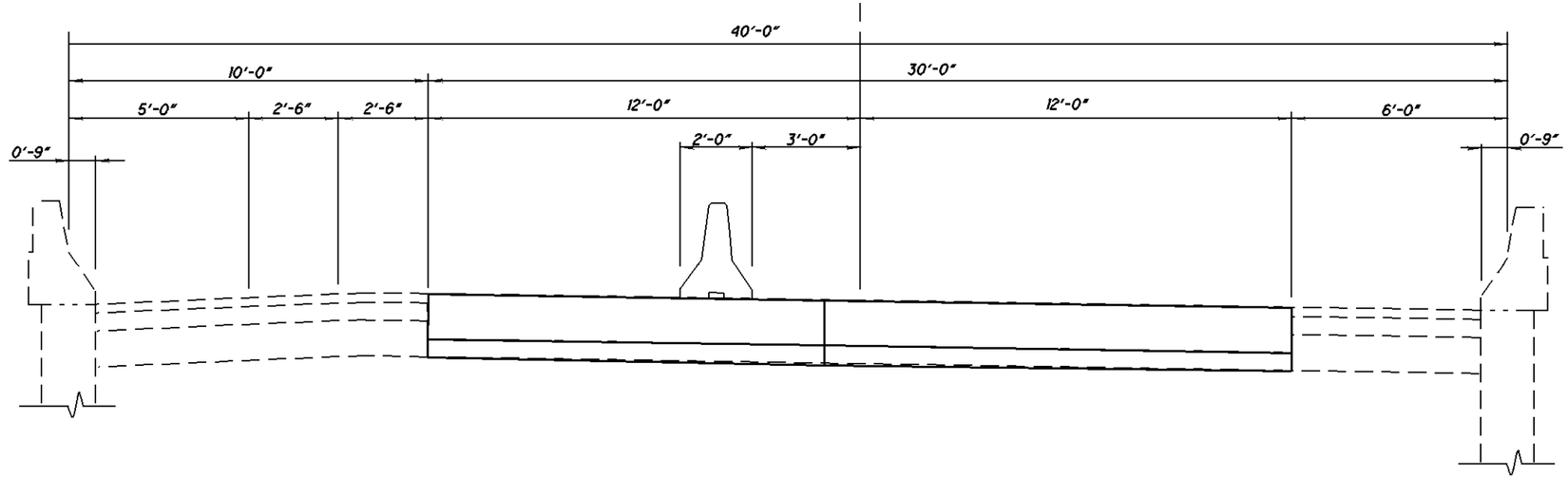


APPROACH SLAB SECTION
PHASE 1
LEFT REAR



APPROACH SLAB SECTION
PHASE 2
LEFT REAR

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER (10-0501-0050)	
ALC		050154 (B1)	

APPROACH SLAB SECTION
BRIDGE No. ATH-50-1185 LT.

ATH-33/50-15.05/11.46
PID No. 21904

10/11

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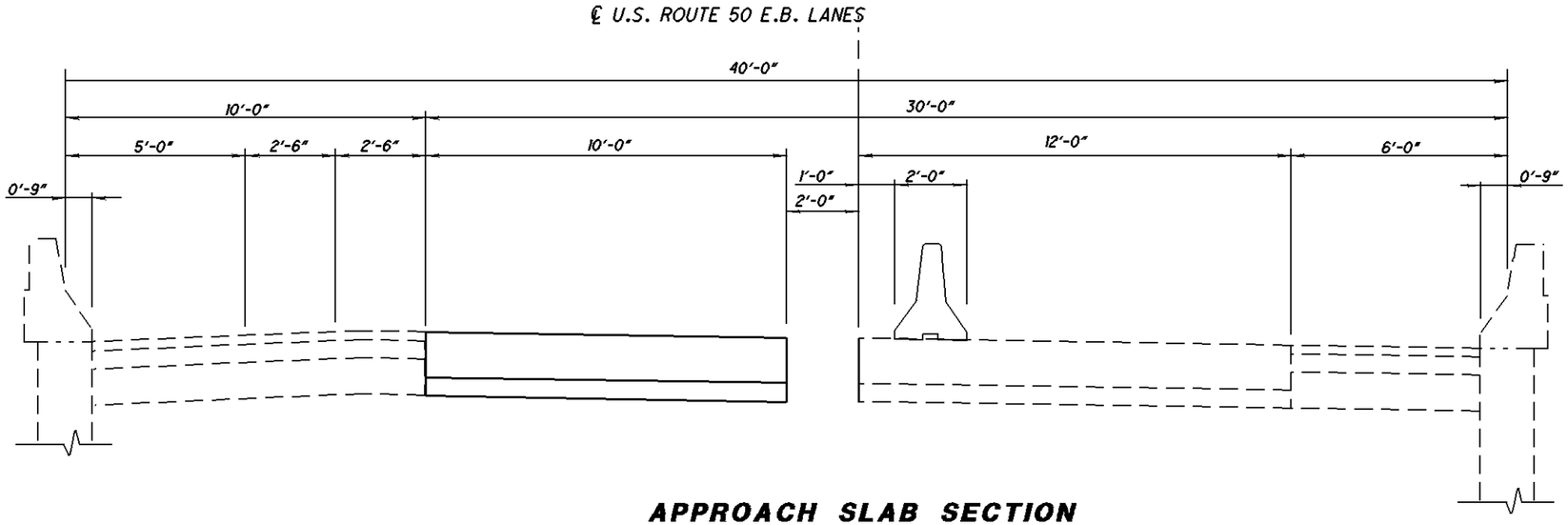
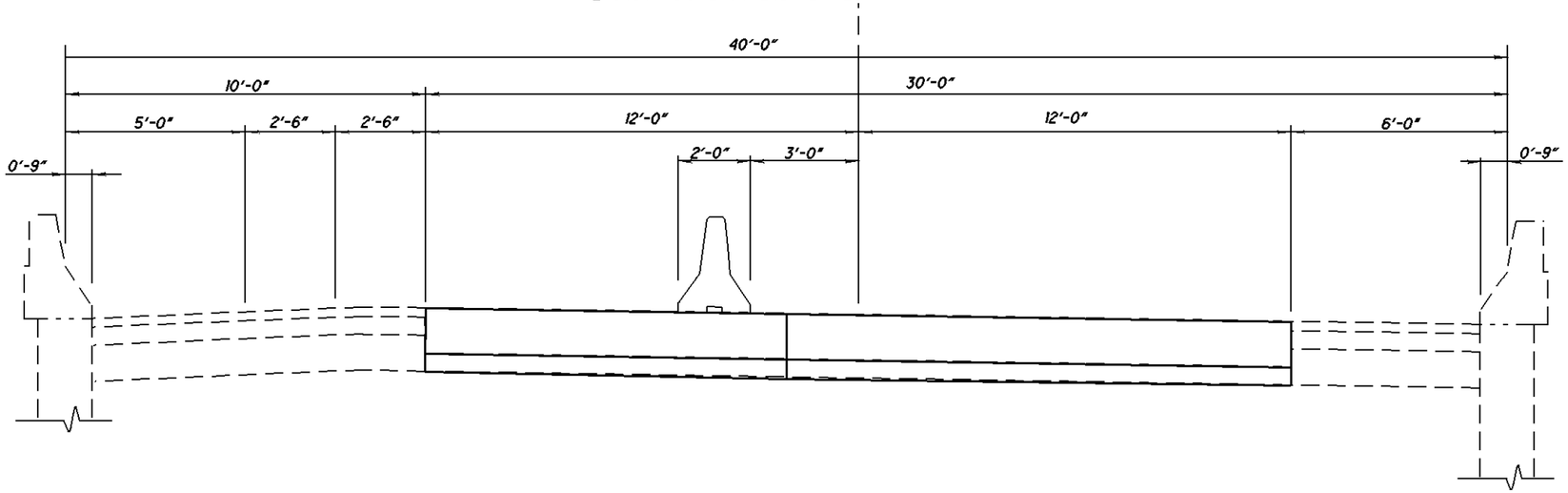


APPROACH SLAB SECTION
PHASE 1
LEFT FORWARD



APPROACH SLAB SECTION
PHASE 2
LEFT FORWARD

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVISED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER (ATH-50-1185 L) 0501514 (R1)	
ALC			

APPROACH SLAB SECTION
BRIDGE No. ATH-50-1185 L.T.

ATH-33/50-15.05/11.46
PID No. 21904

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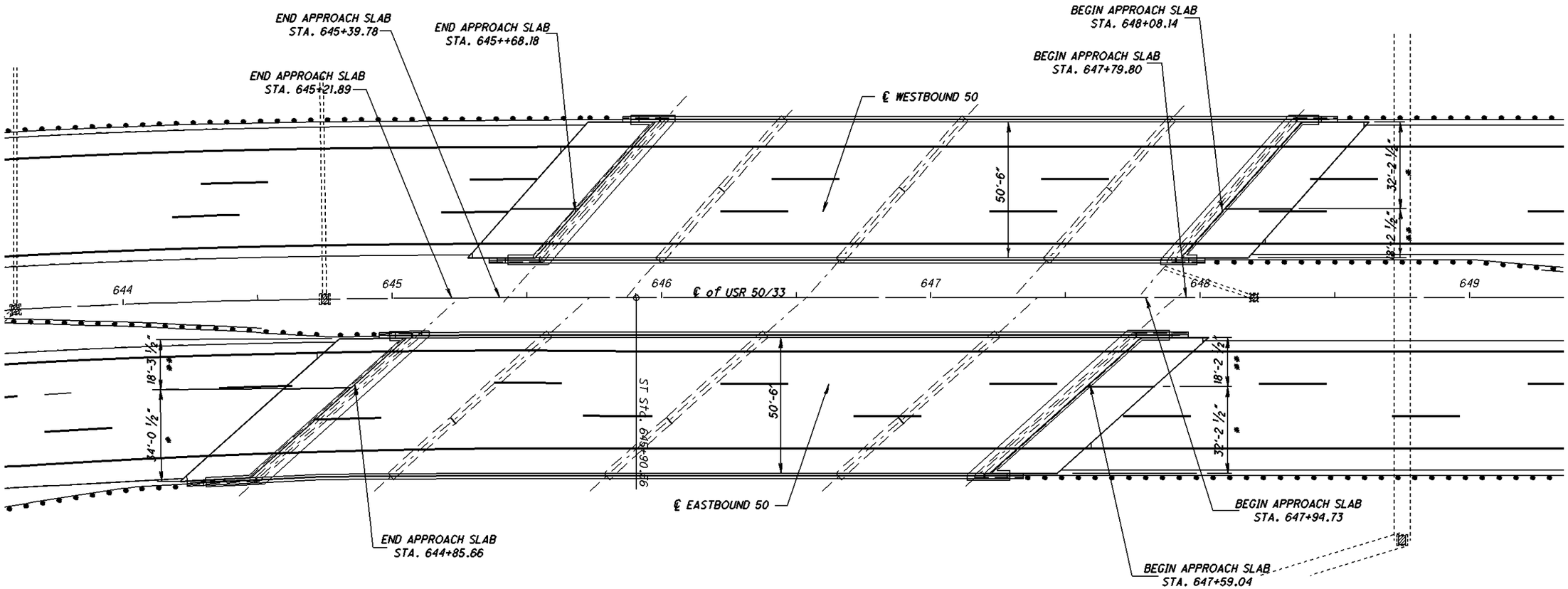
EXISTING STRUCTURE (Rt.)	EXISTING STRUCTURE (Lt.)
TYPE: CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES	TYPE: CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES
SPANS: 48'-3" - 80'-3" - 86'-1½" - 51'-5⅜" c/c Brgs.	SPANS: 44'-0" - 67'-0" - 77'-0" - 46'-0" c/c Brgs.
ROADWAY: 52'-0" F/F PARAPETS	ROADWAY: 52'-0" F/F PARAPETS
LOADING: HS20-44	LOADING: HS20-44
SKEW: 48°-07'-00" L.F.	SKEW: 41°-32'-00" L.F.
APPROACH SLABS: AS-1-72 (25'-0" LONG)	APPROACH SLABS: AS-1-72 (25'-0" LONG)
ALIGNMENT: SPIRAL AND TANGENT	ALIGNMENT: SPIRAL AND TANGENT
STRUCTURAL FILE NUMBER: 0500941 (L)	STRUCTURAL FILE NUMBER: 0501018 (R)
DATE BUILT: 1978	DATE BUILT: 1978



PROPOSED STRUCTURE (Rt.)	PROPOSED STRUCTURE (Lt.)
TYPE: CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES	TYPE: CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES
SPANS: 48'-3" - 80'-3" - 86'-1½" - 51'-5⅜" c/c Brgs.	SPANS: 44'-0" - 67'-0" - 77'-0" - 46'-0" c/c Brgs.
ROADWAY: 52'-0" F/F PARAPETS	ROADWAY: 52'-0" F/F PARAPETS
LOADING: HS20-44	LOADING: HS20-44
SKEW: 48°-07'-00" L.F.	SKEW: 41°-32'-00" L.F.
APPROACH SLABS: AS-1-81 (T=15")	APPROACH SLABS: AS-1-81 (T=15")
ALIGNMENT: SPIRAL AND TANGENT	ALIGNMENT: SPIRAL AND TANGENT
STRUCTURAL FILE NUMBER: 0500941 (L)	STRUCTURAL FILE NUMBER: 0501018 (R)
COORDINATES: LATITUDE 39°-19'-00" N LONGITUDE 82°-6'-00" E	COORDINATES: LATITUDE 39°-19'-00" N LONGITUDE 82°-6'-00" E

LEGEND

* - PHASE 1 CONSTRUCTION

** - PHASE 2 CONSTRUCTION

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DATE 11-18-08 | REVIEWED JPH | DRAWN CAK | DESIGNED JDC | CHECKED ALC | REVISED

STRUCTURE FILE No. 0500941 Lt. & 0501018 Rt.

BRIDGE LIMITS (Right)
Sta. 644+85.66
Sta. 647+59.04

BRIDGE LIMITS (Left)
Sta. 645+68.18
Sta. 648+08.14

SITE PLAN

Bridge No. ATH-33-1760 Lt. & Rt.
Over Richland Ave.

ATH-33/50-15.05/11.46
PID No. 21904

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033_1760CSP001

PROPOSED WORK

REHABILITATION OF THE EXISTING BRIDGE STRUCTURE SHALL INCLUDE: REPLACING THE APPROACH SLABS, REPAIRING THE TOPS OF EXISTING BACKWALLS AND SEALING OF CONCRETE SURFACES.

REFERENCES

REFERENCE SHALL BE MADE TO STD. DWG'S:

AS-1-81	7-19-02
PCB-91	7-19-02

AND TO SUPPLEMENTAL SPECIFICATIONS:

DESIGN DATA

CONCRETE; CLASS S-COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

REINFORCING STEEL:
ASTM A615, A616, OR A617, GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

MECHANICAL CONNECTORS

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES, LENGTHS FOR BARS WITH MECHANICAL CONNECTORS ARE DIMENSIONED TO THE CONSTRUCTION JOINT. CONNECTORS USED WITH EPOXY COATED BARS SHALL BE EPOXY COATED. COATING FOR CONNECTORS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWIZE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY, AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS. CONNECTORS SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 509 - EPOXY COATED REINFORCING STEEL.

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

PORTIONS OF THE STRUCTURE REMOVED, AS PER PLAN SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT.
ITEMS TO BE REMOVED INCLUDE APPROACH SLABS AND 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. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO 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.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

GENERAL: THIS WORK CONSISTS OF RAISING OR RE-POSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMITTAL REQUIREMENTS: AN OHIO REGISTERED ENGINEER SHALL PREPARE, SEAL AND DATE PLANS FOR A JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS, SUFFICIENT TO PERFORM THE WORK DESCRIBED IN THE PLANS. SUBMIT THREE SETS OF THESE PLANS TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE OHIO REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSES OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

JACKING SYSTEM REQUIREMENTS: THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS. FOR LIFTS GREATER THAN 1 INCH, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT. JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK. DO NOT USE JACKS ALONE TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. USE TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR. DO NOT USE SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM. HAVE SPARE EQUIPMENT AVAILABLE ON SITE IN ORDER TO PROCEED WITH THE JACKING IN THE EVENT OF BREAKDOWN. PROVIDE A LIST OF SPARE EQUIPMENT TO THE ENGINEER.

JACKING OPERATION REQUIREMENTS: AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1/4 INCH. THE MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1 INCH OR LESS. IF THIS 1 INCH LIMIT IS TO BE EXCEEDED, PROVIDE CALCULATIONS SHOWING THAT THE SUPERSTRUCTURE COMPONENTS WILL NOT BE TEMPORARILY STRESSED BEYOND ALLOWABLE STRESSES AND THAT NO PERMANENT STRESSES WILL BE INDUCED IN THE COMPONENTS AFTER THEY OBTAIN THEIR FINAL POSITION. 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 ODOT'S PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". 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.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0501018 (RT.)	

GENERAL NOTES

BRIDGE NO. ATH-33-1760 L&R

ATH-33/50-15.05/11.46

PID No. 21904

164
222

ESTIMATED QUANTITIES (RT.)

SFN 0500941

ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRU.	GRNL
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP
503	11101	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN				LUMP
509	20001	50	LB.	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				50
511	34000	2.05	CU. YDS.	CLASS S CONCRETE, SUPERSTRUCTURE	0.97			1.08
512	10100	524	SQ. YDS.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)				524
516	13200	65	SQ. FT.	½" PREFORMED EXPANSION JOINT FILLER				65
516	31000	135	FT.	JOINT SEALER				135
516	46701	5	EACH	RESET BEARING, AS PER PLAN			5	
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN			LUMP	
526	25000	280	SQ. YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")				280

ESTIMATED QUANTITIES (LT.)

SFN 0501081

ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRU.	GRNL
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP
503	11101	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN				LUMP
509	20001	50	LB.	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				50
511	34000	1.41	CU. YDS.	CLASS S CONCRETE, SUPERSTRUCTURE	1.11			0.30
512	10100	602	SQ. YDS.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)				602
516	13200	80	SQ. FT.	½" PREFORMED EXPANSION JOINT FILLER				80
516	31000	154	FT.	JOINT SEALER				154
516	46701	2	EACH	RESET BEARING, AS PER PLAN			2	
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN			LUMP	
526	25000	286	SQ. YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")				286

CUT LINE CONSTRUCTION JOINT PREPARATION

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, SHALL BE LEFT 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. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED 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 ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES WHICH NEW CONCRETE WILL BE PLACED AGAINST SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), A SEALER SHALL BE APPLIED TO THE CONCRETE SURFACES AS SHOWN ON THE TYPICAL SECTION FOR THE FULL LENGTH OF THE BRIDGE.

COFFERDAMS, CRIBS, AND SHEETING, AS PER PLAN

TEMPORARY SHORING MAY BE USED TO ACCOMPLISH THE PROPOSED CONSTRUCTION IN STAGES. THE DESIGN OF THE TEMPORARY SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER AND CONFORM WITH 501.05 FOR APPROVAL. PORTIONS OF THE TEMPORARY SHORING COMPOSED OF STEEL OR CONCRETE MAY BE LEFT IN PLACE AT THE DISCRETION OF THE ENGINEER. PORTIONS COMPOSED OF OTHER MATERIALS SHALL BE REMOVED PRIOR TO COMPLETION OF THE WORK.

ITEM 516, RESET BEARING, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS. INCLUDED SHALL BE THE REPLACEMENT OF ANY DAMAGED SHEET LEAD WITH PREFORMED BEARING PADS (711.21), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60 DEGREES F, LUBRICAT SLIDING SURFACES. ASSURE ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". AT NO ADDITIONAL COST TO THE STATE, THE CONTRACTOR MAY INSTALL NEW BEARINGS OF THE SAME TYPE AS THE EXISTING IN PLACE OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. THE FOLLOWING ARE THE LOCATIONS OF THE BEARINGS THAT ARE TO BE RESET:

LT. BRIDGE
- REAR ABUTMENT BEAMS 3 AND 8.
- PIER 1 BEAMS 3 AND 8.
- FWD. ABUTMENT BEAM 5.

RT. BRIDGE
- REAR ABUTMENT BEAM 3
- FWD. ABUTMENT BEAM 7

PAYMENT FOR ALL OF THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 - RESET BEARING, AS PER PLAN.

REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN

ANY EXISTING REINFORCING BARS DEEMED THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW REINFORCING STEEL. ANY EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW REINFORCING STEEL OF THE SAME SIZE AT THE CONTRACTOR'S COST. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER.

THE NUMBER OF POUNDS OF REINFORCING STEEL PAID FOR AT CONTRACT PRICES SHALL BE THE ACTUAL POUNDS OF REPLACEMENT REINFORCING STEEL SPECIFIED BY THE ENGINEER DUE TO CORROSION AND SHALL INCLUDE PLACEMENT, DOWELING, BENDING, SUPPORTING, TIE WIRES AND TYING OF THAT SPECIFIED REINFORCING STEEL.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE ESTIMATED QUANTITIES ON SHEET 3 OF 6.

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN 50 lb.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUANTLY, 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 102.05, 105.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

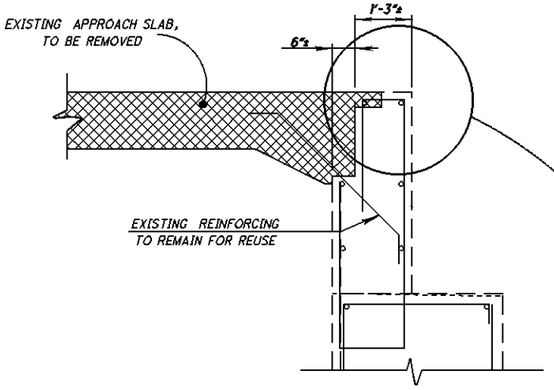
DESIGNED JDC
DRAWN JDC
REVIEWED JPH
DATE 11-18-08
STRUCTURE FILE NUMBER 033-1760 (RT.) 033-0100R (RT.)
CHECKED ALC
REVISED

GENERAL NOTES

BRIDGE No. ATH-33-1760 L&R

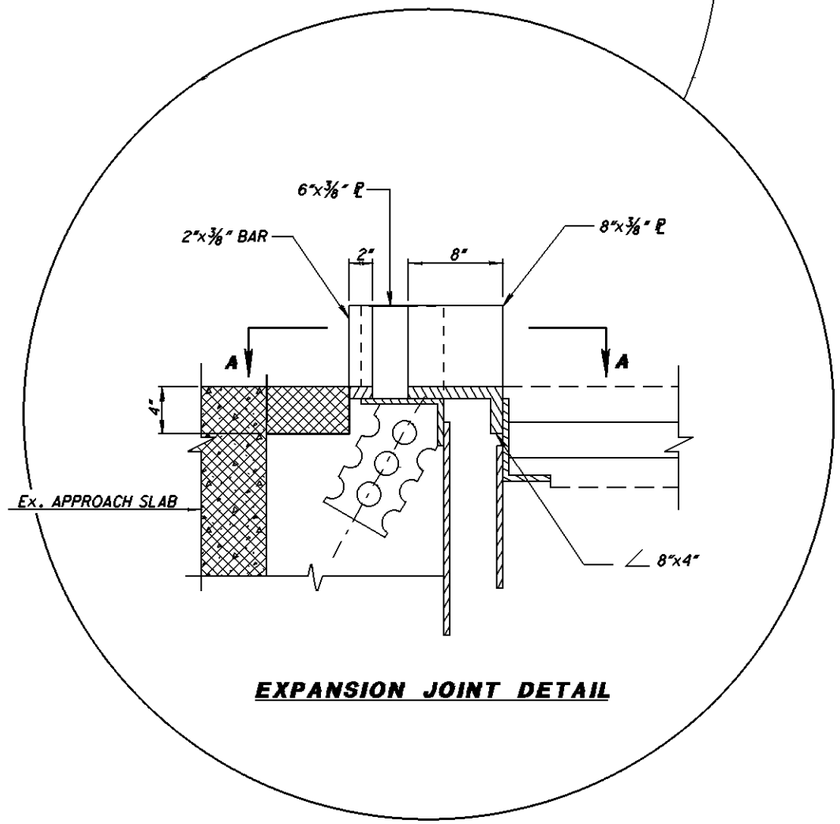
ATH-33/50-15.05/11.46

PID No. 21904

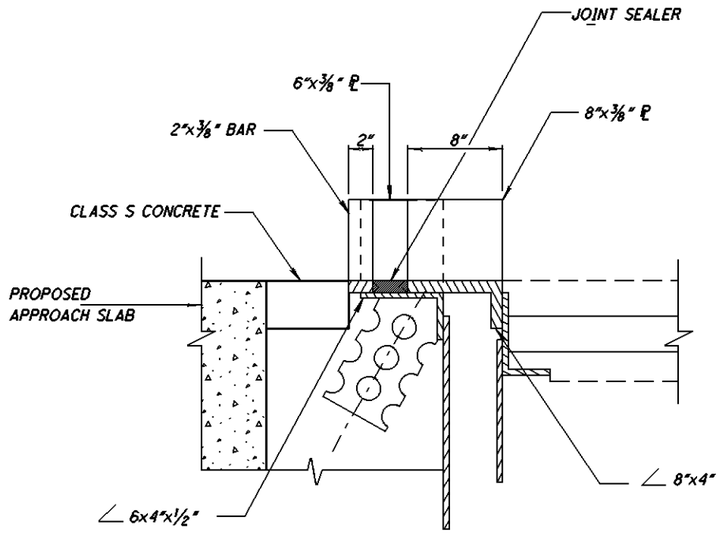


- REMOVAL LIMITS

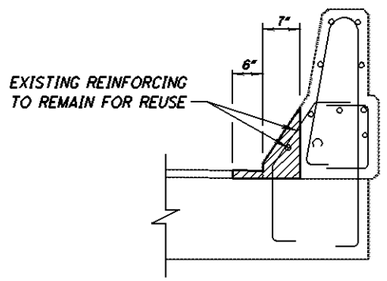
ABUTMENT SECTION



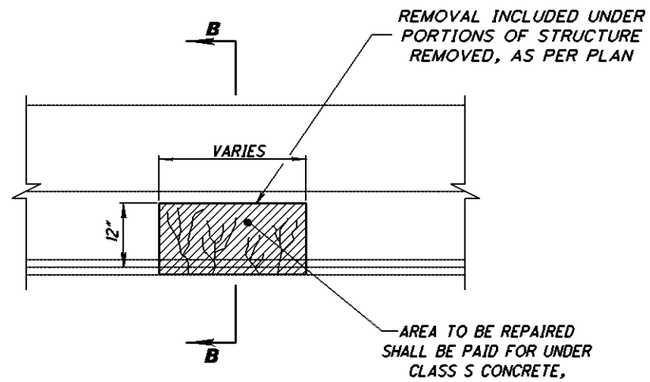
EXPANSION JOINT DETAIL



EXPANSION JOINT DETAIL



Section B-B



BARRIER REPAIR DETAIL

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

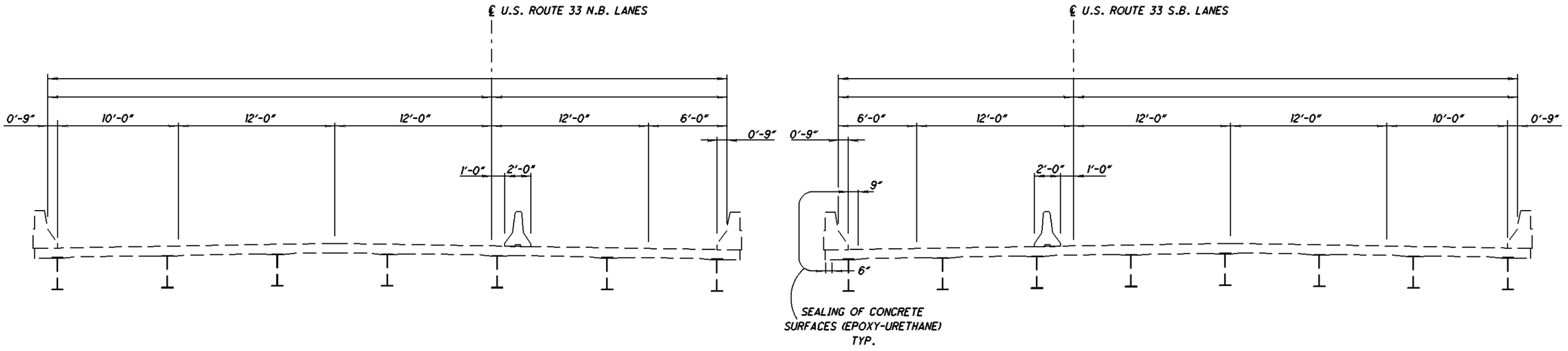
DESIGNED JDC
DRAWN JDC
REVIEWED JPH
DATE 11-18-08
STRUCTURE FILE NUMBER 0501018 (RT.)
CHECKED ALC
REVISED

EXPANSION JOINT DETAIL

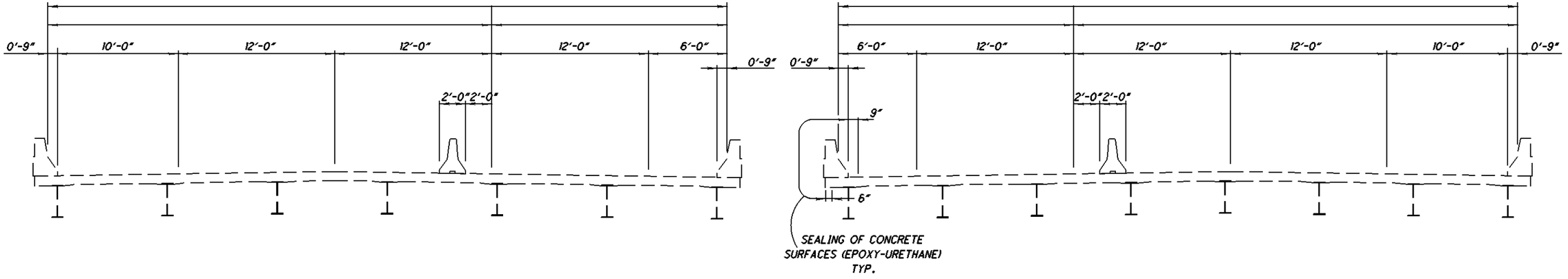
BRIDGE NO. ATH-33-1760 L&R

ATH-33/50-15.05/11.46

PID No. 21904



TRANSVERSE SECTION
PHASE 1



TRANSVERSE SECTION
PHASE 2

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVISED	DATE
JDC	JDC	JPH	10-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER 033-1760 (L.) 0501008 (R.)	
ALC			

TRANSVERSE
BRIDGE No. ATH-33-1760 L&R

ATH-33/50-15.05/11.46
PID No. 21904

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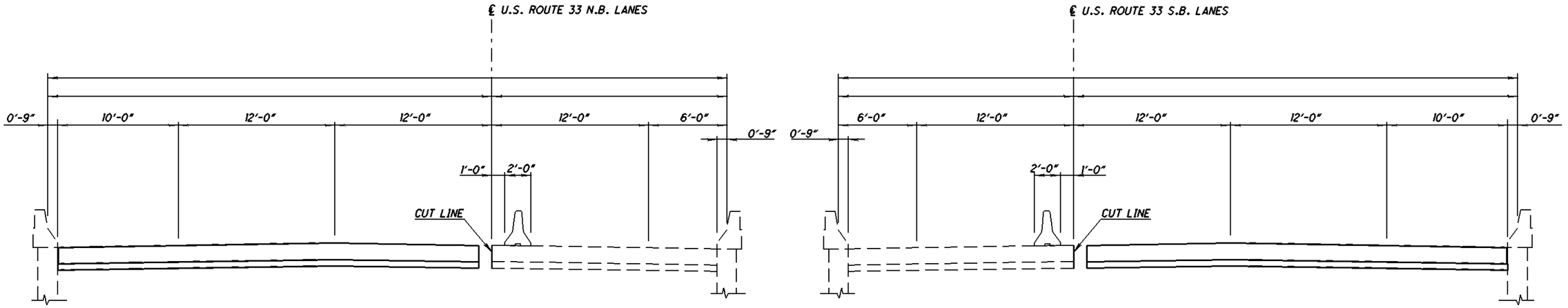
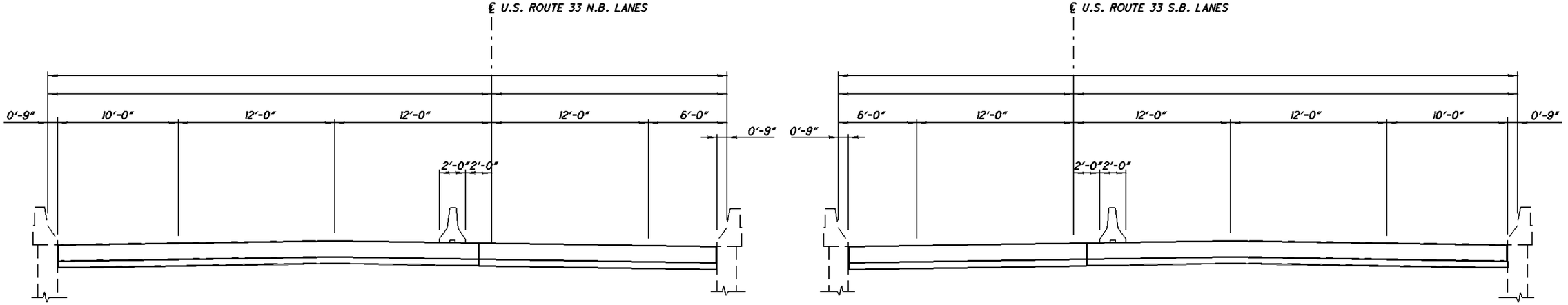


APPROACH SLAB SECTION
PHASE 1



APPROACH SLAB SECTION
PHASE 2

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	10-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		050108 (R1.)	

APPROACH SLAB SECTION

BRIDGE No. ATH-33-1760 L&R

ATH-33/50-15.05/11.46

PID No. 21904

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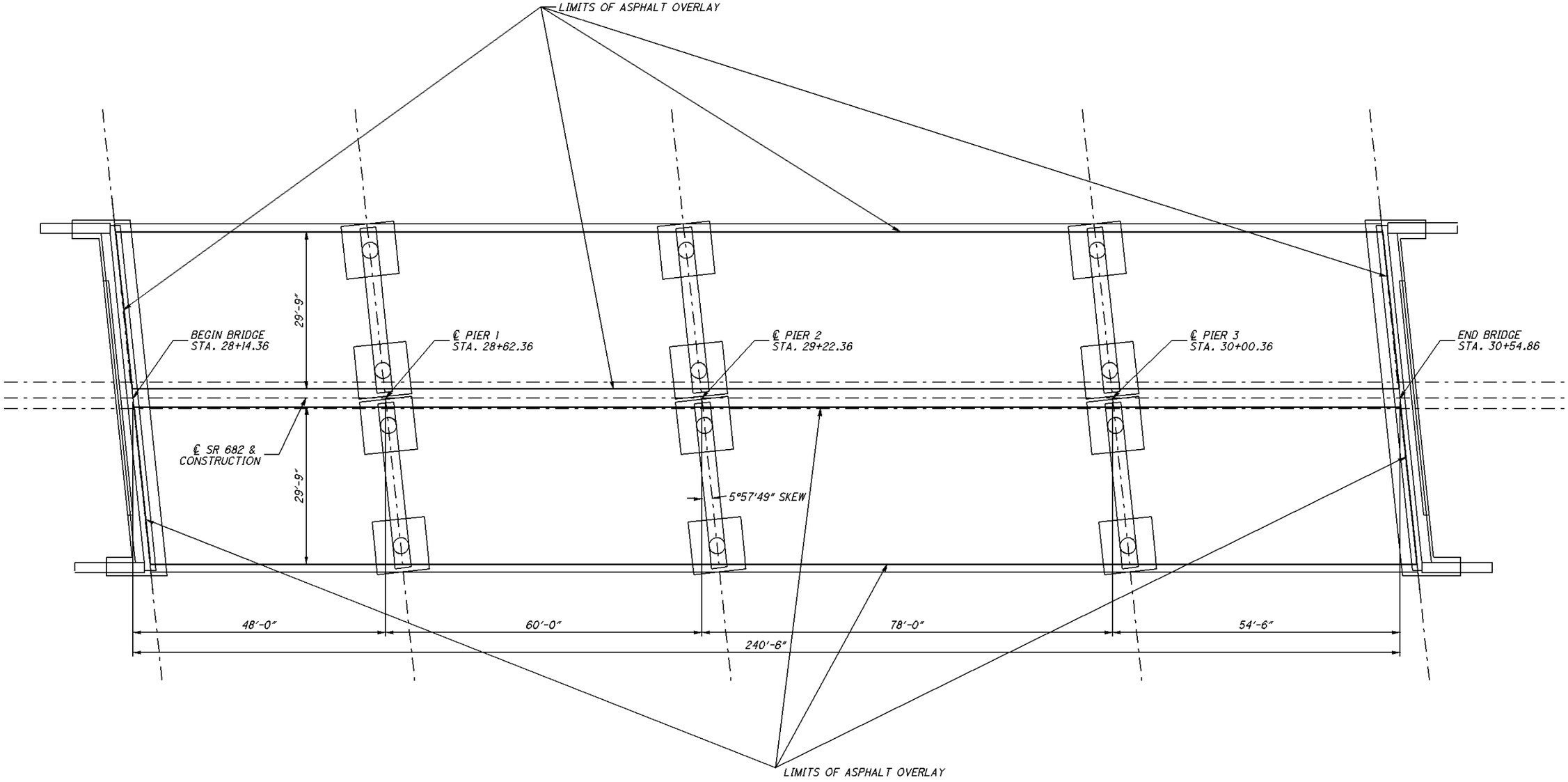
EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM BRIDGE
WITH REINFORCED CONCRETE
SUPERSTRUCTURE
SPANS: 48'-0 ", 60'-0", 78'-0 ", 54'-6"
ROADWAY: 64'-0" f/f PARAPET
LOAD FREQUENCY: HS 20-44
SKEW: 5°57'49" RT. FORWARD
WEARING SURFACE: ASPHALT CONCRETE
APPROACH SLABS: AS-1-72 (25' LONG)
ALIGNMENT: TANGENT



DESIGN AGENCY
Production Department
District 10
Marietta, Ohio

DESIGNED	DRAWN	REVIEWED	DATE
JAM	JAM	JPH	8/24/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0600825	

SITE PLAN
Bridge No. ATH-682-0.04
Over US 33

ATH-33/50-13.05/11.46

1 / 7

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PROPOSED WORK

REHABILITATION OF THE EXISTING BRIDGE STRUCTURE SHALL INCLUDE: OVERLAYING WITH ASPHALT CONCRETE.

CALCULATIONS

ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE
(240'-6" x 29'-6") / 9 = 789 SQ. YDS. PER BRIDGE
TOTAL= 1578 SQ. YDS. (LEFT & RIGHT)

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5 MM TYPE B (446)
(240'-6" x 29'-6" x 1.25"/12)/27 = 27.4 CU. YDS. PER BRIDGE
TOTAL= 54.8 CU. YDS. (LEFT & RIGHT)

ITEM 446 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28
(240'-6" x 29'-6" x 1.75"/12)/27 = 38.3 CU. YDS.
TOTAL= 76.6 CU. YDS. (LEFT & RIGHT)

REFERENCES

REFERENCE SHALL BE MADE TO STANDARD DRAWING MT 95.30
EXCEPTION: SIGN W1-4 SHALL BE USED IN PLACE OF SIGN W20-5-48

ESTIMATED QUANTITIES

SFN 0504750

ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRU.	GRNL
254	01000	1578	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE			1578	
442	10050	55	CU YD	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE B (446)			55	
446	46040	77	CU YD	1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28			77	
512	10100	651	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)			651	
SPECIAL	53000800	1578	SQ YD	SPECIAL- STRUCTURE, MISC.: SURFACE PREPARATION OF CONCRETE SURFACES			1578	
SPECIAL	53000800	1578	SQ YD	SPECIAL- STRUCTURE, MISC.: PRIMER FOR SPRAY-APPLIED ELASTOMERIC WATERPROOFING MEMBRANE			1578	
SPECIAL	53000800	1578	SQ YD	SPECIAL- STRUCTURE, MISC.: SPRAY-APPLIED ELASTOMERIC WATERPROOFING MEMBRANE			1578	
SPECIAL	53000400	1	EACH	SPECIAL- STRUCTURE, MISC.: TESTING WITH REPAIR			1	

ITEM SPECIAL- STRUCTURES MISC., SPRAY APPLIED MEMBRANE SYSTEM (SAMS)

1.0 Description. This work consists of applying spray-applied membrane system (SAMS), to all horizontal bridge surfaces that are to be overlaid with asphalt and the following surfaces.

On bridges with curbs, apply the SAMS coat 3 inches (75 mm) up the curb face.

On bridges with approaches to be overlaid with asphalt, apply SAMS 2 feet (600 mm) past the bridge limits.

This work includes: removing existing asphalt wearing course; surface preparation; application of primers; preparation of transverse construction joints in concrete and longitudinal keyways, application of spray applied membrane; testing with repairs and applying tack coats for application of a separately specified asphalt overlay.

2.0 Materials. Supply a Spray Applied Membrane System (SAMS) consisting of: a primer; a membrane; and a tack coat from a single manufacturer, meeting the properties specified below as verified by certified test data from an independent testing laboratory.

A. Primer, Supply a 100% solids, two component reactive resin primer, capable of curing at substrate temperatures between 32°F and 120°F with Gel Times, Cure Times and Temperature Range according to the table in section B.

B. Membrane, Supply a color coded, multi coat, cold spray-applied elastomeric membrane system according to the following table. Sheet materials or systems that require protection boards or special sand overlays are not applicable.

Property	Test	Required Values
Gel Time (maximum) (Rainproof)	Manufactures data & field sample verification	6 to 11 minutes @ 70°F (21°C)
Cure Time (maximum) (Recoat Time)	Manufactures data & field sample verification	40 minutes @ 70°F (21°C)
Curing Temperature Range (min to max)	Manufactures data	32° to 120° F (0° to 49° C)
Crack Bridging Ability	ASTM C1305-05	Pass (No damage)
Puncture Resistance Membrane	ASTM D1709-04, Test method B	40 lbs (18 Kg) min.
Water Vapor Transmission	ASTM E 96, procedure B or BW	Equal to or less than 0.06 perms [3.4 x 10-9 g/PA.s.m]
Tensile Strength (minimum)	ASTM D 638-03 & field sample verification	1700 psi (11.8 MPa)
Elongation at Break (minimum)	ASTM D 638-03 & field sample verification	130%
Adhesion to Concrete (minimum)	ASTM D 4541	100 psi [689 kPa]
First coat of 50 mils (minimum) Federal Standard number	FS-595B-33434	Yellow or accepted equal bold color
Second coat of 50 mils (minimum) Federal Standard number	FS-595B-36559	Light Gray or accepted equal light contrasting color to first coat
Dry Film Thickness (minimum)	ASTM D6132 or D1005 Procedure D	Total thickness of 100 mils (2540 um) minimum above surface peaks.
Wet Film Thickness (minimum)	ASTM D4414	Total thickness of 100 mils (2540 um) minimum above surface peaks.

C. Tack Coat. Supply tack coat that is certified by the SAMS; meets the requirements of 702.13 and is completely compatible to the SAMS waterproofing membrane.

D. Product Qualification Test. All manufactures not certified by the British Board of Agrement (www.bbacerts.co.uk), or validated by AREMA, FAST Test installations must be qualified by producing a product qualification test. Perform a product qualification test at least 30 days prior to the application of the SAMS.

Produce a trial 8' x 8' (2.4 m x 2.4 m) SAMS to a concrete substrate supplied by the department. Prepare the surface, apply and test the SAMS according to this specification. Overlay the membrane with an asphalt wearing surface with compaction verified by applicable tests specified in CMS 448 as follows:

1½ inches [38 mm] minimum thickness of CMS 448 Asphalt Concrete Intermediate Course, Type 2, PG64-28 or the asphalt intermediate course specified in the contract.

Use asphalt compaction equipment representative of the equipment being used for the contract work. Supply the equipment manufactures weight and compaction force data.

The rolling equipment and rolling temperatures used in the trial will establish the maximum limits allowed on the contract.

Core drill the test area in five locations. Drill 2.5 inch [63 mm] diameter cores through the asphalt, SAMS and penetrate at least 0.5 inches [13mm] into the existing concrete surface without removing or damaging the core. Test each core using a 2inch [51 mm] adhesion dolly adhered to the asphalt concrete according to ASTM D 4541. The department will accept the SAMS system if all adhesion tests exceed 100psi [689 kPa].

DESIGN AGENCY
Production Department
DisTrict 10
Marietta, Ohio

DESIGNED	DRAWN	REVIEWED	DATE
JAM	JAM	JPH	8/24/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0500825	

GENERAL NOTES & CALCULATIONS
Bridge No. ATH-682-0.04
Over US 33

ATH-33/50-15.08/11.48

Carefully remove three each 18 inch by 18 inch [457mm x 457mm] areas of the asphalt overlays and tack coat without damaging the SAMS. Means and methods for removal are the responsibility of the Contractor and his SAMS representative. Examine the SAMS for damage caused by the compaction of the asphalt. Perform a water permeation test (EN-ISO 7031), using the Germann Instruments GWT-4000 test kit or equal. The water permeation flux rate at 5 Bar = 73 psi [500 kPa], shall not exceed a control sample without the tack coat and asphalt overlay. Test these areas for thickness. The department will accept the SAMS system if these three test areas are not damaged by the compaction of the asphalt, are waterproof and meet the specified thickness.

The SAMS manufacture can submit written test results and photographs of successful product qualification tests from other Ohio Department of Transportation projects. Do not place any SAMS until the Engineer and the manufactures representative accepts the product qualification test.

E. Manufactures Shipping Record. Provide manufacturer batch numbers, shipping invoices and mark each container of all components as follows:

1. Number of gallons (liters)
2. Net weight of material
3. Batch number
4. Date of production
5. Effective shelf life of the product
6. Company name and address
7. Component trade name as given in the material test data
8. MSDS Sheets

3.0 Testing Equipment. For the project duration provide the Engineer with the test equipment listed below for the type of work at each work site with ongoing work. The contractor shall maintain all testing equipment in good working order. When no test equipment is available, no work shall be performed.

A. ASTM D4541, Type IV Self-Alignment Adhesion Tester.

B. ASTM D4541, Type IV Self-Alignment Adhesion, 2 inch [50mm] diameter adhesion dollies on the project at all times.

C. Two-component epoxy adhesive on the project at all times. The adhesive shall be capable of adhering 2 inch [50mm] diameter Type IV Self-Alignment Adhesion dollies at 100 psi [3.4 MPa] within 1 hr. Adhesive shall be Hardman Double/Bubble Epoxy or equal.

D. International Concrete Repair Institute (ICRI) Guide No. 03732 concrete surface profiles (CSP): CSP -3 through CSP-6.

E. Digital camera with 5.0 Mega pixel or greater resolution.

F. Germann Instruments GWT-4000 test kit if performing qualification tests.

G. Sling Psychrometer including Psychometric tables

H. ASTM E1907 Electrical resistance or impedance gages and applicable calibration standards.

I. ASTM D6132 or D1005 procedure D film thickness gages and applicable calibration standards.

J. ASTM D4414 wet film thickness gages.

4.0 General. Supply a SAMS that consists of a primer, membrane and tack coat certified by the SAMS manufacture.

Provide all necessary materials, equipment, labor and quality control checks to perform this work.

Apply the SAMS to a uniform specified thickness.

Ensure that the edge of any exposed application is sharply defined true to line with a uniform exposure. Spray to a tape or masking board line.

Comply with all manufactures guidelines concerning overcoating time limits and surface preparation necessary should the overcoating time limits be exceeded.

Provide a manufacturers representative to physically supervise all aspects of the installation and testing.
Before proceeding with the application of each coat of the SAMS provide the Engineer with quality assurance documentation signed and dated by the manufacturer's representative. Include all: material, physical and environmental test data; photographs; and written acceptance for the: surface preparation, primer, membrane and tack coat. Correct all conditions or coatings the Engineer or the manufacturer's representative does not accept before proceeding.

The manufacturer's representative is responsible for performing in process testing or quality control steps as necessary to achieve the adhesion, thickness and continuity values specified in section 11.

5.0 Work Limitations. The plans may require additional work limitations for specific bridges or projects.

A. Temperature. Perform the work between 32° to 120° F (0° to 49° C).

B. Moisture. Do not waterproof:

1. If the concrete surface is wet, damp, frosted, or ice-coated.
2. During periods of rain, fog, or mist.
3. If the concrete temperature is less than 5°F (3°C) above the dew point unless otherwise allowed or restricted by the manufacturer's representative or
4. If the relative humidity is greater than 85 percent unless otherwise allowed or restricted by the manufactures printed instructions.
manufacturer's representative or the

6.0 Protection of Persons and Property. Collect, remove, and dispose of all buckets, rags, or other discarded materials and leave the job site in a clean condition.

Protect all portions of the structure that are not to be waterproofed from damage or disfigurement by splashes, spatters, overspray and smirches of waterproofing materials.

If the Contractor causes direct or indirect damage or injury to public or private property, the Contractor shall restore the property, to a condition similar or equal to the condition existing before the damage or injury.

7.0 Pollution Control. Comply with pollution control laws, rules, or regulations of Federal, State, or local agencies and requirements of this specification.

8.0 Safety Requirements and Precautions. Comply with applicable safety requirements of the Ohio Industrial Commission and OSHA. Provide Material Safety Data Sheets (MSDS) at the preconstruction meeting for all materials and abrasives used on this project. Do not begin work until submitting the MSDS to the Engineer. Warning SAMS containing isocyanates pose a significant heath risk.

9.0 Removal of Existing Asphalt Wearing Course. Remove any existing asphalt concrete wearing surface in the contract limits including any waterproofing material to depth of the existing concrete. Comply with the requirements of CMS 202.

10.0 Preparation of Surface. Remove all unsound concrete. Repair any unsound concrete according to CMS 519 or a department proposal note titled: ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECKS, to the satisfaction of the Engineer and the SAMS manufacturer.

Repair surface depressions that will cause a depression deeper than ¼ inch [6 mm] in the finished installation of a SAMS. Perform concrete repairs according to CMS 519 or Proposal Note: Patching Concrete Bridge Decks, to the satisfaction of the engineer and the SAMS manufacturer.

Prepare transverse construction joints at the abutment or in the bridge deck according to supplemental specification 801 classes III or IV unless otherwise specified in the contract.

Remove visible contaminations of oil, grease or other contamination considered detrimental by the SAMS manufacture prior to abrasive cleaning according to ASTM D4258 Detergent Cleaning or Steam Cleaning.

Abrasively clean surfaces according to ASTM D4259 using self-contained recirculating blast-cleaning apparatus capable of production rates exceeding 6,000 square feet per hour. Smaller equipment may be required to access localized areas for preparation or small areas if accepted by the Engineer. Develop a surface profile and degree of cleaning necessary to achieve the adhesion values specified in section 11. Create a minimum surface profile equivalent to the international Concrete Repair Institute (ICRI) Guide No. 03732 concrete surface profiles (CSP): CSP -3 through CSP- 6 and provide a macro texture depth of at least 0.06 inch (ASTM E 965) over the area to be prepared. The Contractor shall use the sand patch procedure (ASTM E965) to demonstrate that the required texture is achieved prior to placing the waterproofing. Do not exceed the concrete surface profiles CSP- 6 without obtaining written acceptance from the SAMS manufacture. Maintain the surface in the approved condition until application of the SAMS.

Measure the moisture content using ASTM E1907 Electrical resistance or impedance gages. Dry concrete with a moisture content exceeding 6% unless otherwise directed by the manufacturer's representative in accordance with the manufactures printed instructions and accepted by the Engineer.

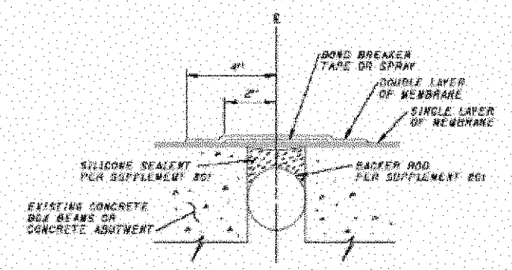
Do not permit vehicles other than approved construction equipment on those sections of the deck being prepared for the SAMS. Protect or shield the deck from contamination by fluids leaking from construction equipment or from any other source.

Clean and dry the concrete if the surface becomes contaminated, is not primed within forty eight (48) hours or if it rains between cleaning and application of the primer.

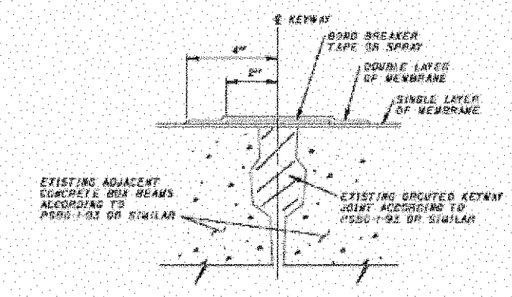
11.0 SAMS Application. Apply and test the SAMS as directed by the manufacturer's representative in accordance with the manufactures printed instructions and this specification.

A. Transverse Expansion or Construction joints. Install a 4 inch [100mm] wide, PVC bond breaker tape or PTFE bond breaker spray, centered over each transverse joint as detailed in figure 1 unless specified separately in the contract. Adhere the PVC or PTFE to the membrane surface or as directed by the manufacturers representative in accordance with the manufactures printed instructions and this specification. Apply a double layer of membrane, 8 inches [203 mm] wide centered over the PVC or PTFE bond breaker.

B. Longitudinal keyways between adjacent pre-cast sections or beams. Install a 4 inch [100mm] wide, PVC bond beaker tape or PTFE bond beaker spray, centered over each longitudinal keyway as detailed in figure 2. Adhere the PVC or PTFE to the membrane surface or as directed by the manufacturers representative in accordance with the manufactures printed instructions and this specification. Apply a double layer of membrane, 8 inches [203 mm] wide centered over the PVC or PTFE bond breaker.



TRANSVERSE CONSTRUCTION OR EXPANSION JOINT
FIGURE 1



LONGITUDINAL KEYWAY JOINT
FIGURE 2

DESIGN AGENCY
Production Department
District 10
Marietta, Ohio

DESIGNED JAM | DRAWN JAM | REVIEWED JPH | DATE 8/24/07
CHECKED ALC | REVISED | STRUCTURE FILE NUMBER 0500825

GENERAL NOTES & CALCULATIONS
Bridge No. ATH-682-0.04
Over US 33

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C. Dry Film Thickness Tests. Test the SAMS thickness according ASTM D6132 or D1005 procedure D and this specification prior to application of the tack coat. Note: ASTM D1005 procedure D requires removal of a 3 inch x 3 inch (75 mm x 75 mm) sample from the SAMS. Measure the dry film thickness, at locations randomly selected by the Engineer in each 500-square feet (46 m2) area waterproofed prior to application of the tack coat. Do not select areas directly above construction joints or keyways detailed according to section 11. At each randomly selected location, take three thickness gage readings. Move the gage 1 to 3 inches (25 to 75 mm) for each new gage reading. The spot thickness measurement is the average of the three gage readings. Perform the test in the presence of the Engineer.

The average of three spot measurements (nine gage reading) in any 1500-square foot (9 m2) area shall not be less than the specified thickness of 100mils (2.54 mm). No single spot measurement in any 500-square foot (46 m2) area shall be less than 80 mils (2.03 mm) thickness. Repairs tested areas according to section 12.0.

If test values are less than specified: perform additional test as necessary to identify the limits of the defective membrane. Perform any remedial work necessary to achieve the specified thickness values.

The manufacturer's representative is responsible for performing testing or quality control steps as necessary to assure that the SAMS exceeds specified thickness values.

D. Adhesion Tests. Perform adhesion tests in accordance with ASTM D 4541 at locations randomly selected by the Engineer in each 500-square feet (46 m2) area waterproofed prior to application of the tack coat. Do not select areas directly above construction joints or keyways detailed according to section 11. Perform the test in the presence of the Engineer or inspector. Perform three pull off adhesion tests according to ASTM D4541 on each test section. No adhesion test value will be below 100 psi [689 kPa] for concrete. Repairs tested areas according to section 12.0.

If test values are less than specified: perform additional test as necessary to identify the limits of the defective membrane. Remove and replace the SAMS according to this specification to the limits of the defective membrane. Perform any remedial work necessary to achieve the specified adhesion values.

The manufacturer's representative is responsible for performing testing or quality control steps as necessary to assure that the SAMS exceeds specified adhesion values.

E. Holiday Test. Visually inspect all waterproofed surfaces for cracks, pin holes, holidays, blisters or lack of bonding. Perform any remedial work necessary to correct cracks, pin holes, blisters, lack of bonding, discontinuities or holidays to the satisfaction of the engineer and the SAMS manufacturer.

F. Field Samples. During the application, produce three samples out of representative material from each manufactures testing lot for the departments verification of ASTM D 638-03 Tensile Strength and Elongation. Supply three or more 12 inch x 12 inch (305 mm x 305 mm) forms or other methods of making field samples at least 100 mils (2540 (m) thick. Produce three or more 12 inch x 12 inch (305 mm x 305 mm) x 100 mils (2540 (m) thick samples during the SAMS application using production equipment.

12.0 Repairs. Repair and test the waterproofing membrane as directed by the manufacturer's representative in accordance with the manufactures printed instructions and this specification.

A. If an area is left untreated or the SAMS are damaged, a patch repair shall be carried out to restore the integrity of the SAMS. Remove the damaged area. Clean the damaged area plus a 4 inch (100 mm) wide periphery around the repair with solvent to remove any contaminants. Prime the substrate as necessary. Prepare overlap areas as necessary. Apply the SAMS over the substrate with a 4-inch (100 mm) overlap onto existing membrane.

B. Where the membrane is to be joined to existing cured material and at day or phase joints, the new application shall overlap the existing one by at least 4 inch (100 mm). Prepare surfaces and overlap areas as above.

C. Comply with all manufactures concerning overcoating time limits and surface preparation necessary should the overcoating time limits be exceeded.

D. The manufacturers representative is responsible for performing testing or quality control steps as necessary to assure that repaired or overlapped SAMS exceed the specified thickness and adhesion values.

E. Perform thickness and adhesion test to at least one randomly selected repair or overlap areas. Perform the test in the presence of the Engineer.

13.0 Tack Coat Apply a tack coat according to CMS 407 as modified by the manufactures recommendation or printed instructions.

The membrane to be tack coated shall be clean and free from loose debris, moisture or other contaminants. Oil, diesel or grease shall be removed with solvent approved by the Manufacturer.

Test the tack coat as directed by the manufacturers representative in accordance with the manufactures printed instructions.

14.0 Method of Measurement. The Department will measure removal of wearing course by the number of square feet (square meters) of concrete waterproofed.

The Department will measure surface preparation by the number of square feet (square meters) of concrete waterproofed.

The Department will measure preparation of transverse construction joints and longitudinal keyways by the number of linear feet (linear meters) of joints and keyways.

The Department will measure Spray Applied Membrane System (SAMS) by the number of square feet (square meters) of concrete waterproofed.

The Department will measure tack coat by the number of gallons according to CMS 407.

15.0 Basis of Payment. The Department will pay for accepted quantities at the Contract prices as follows:

If the Contractor causes damage or injury public or private property, the Department will not pay for restoring the property to its original condition.

The Department will not pay for repairing adjacent coatings damaged during the removal, surface preparation or waterproofing operations.

The Department will not pay for repairing areas of coating because of low coating thickness or low adhesion values.

The Department will not pay for additional testing required by any hauler, treatment facility, disposal facility or landfill.

The cost of material and producing field samples is considered incidental to the cost of the Spray-Applied Elastomeric Waterproofing Membrane.

If concrete patching and keyway repairs are required for section 10.0, the department will pay for this as extra work according to CMS 109.05.

The Department will pay for one product qualification test unless product qualification is certified by the British Board of Agrement or successful product qualification tests from other Ohio Department of Transportation projects.

The Department will pay for inspection access; test area preparation; destructive testing; and test area repair as 1 each for every 500 square foot area of concrete waterproofed, under Testing with Repair. The Department will not pay for accessing, inspecting, and repairing areas that are not found to be in conformance with the specifications and pertinent contract documents.

All other requirements of this specification are considered incidental to the work.

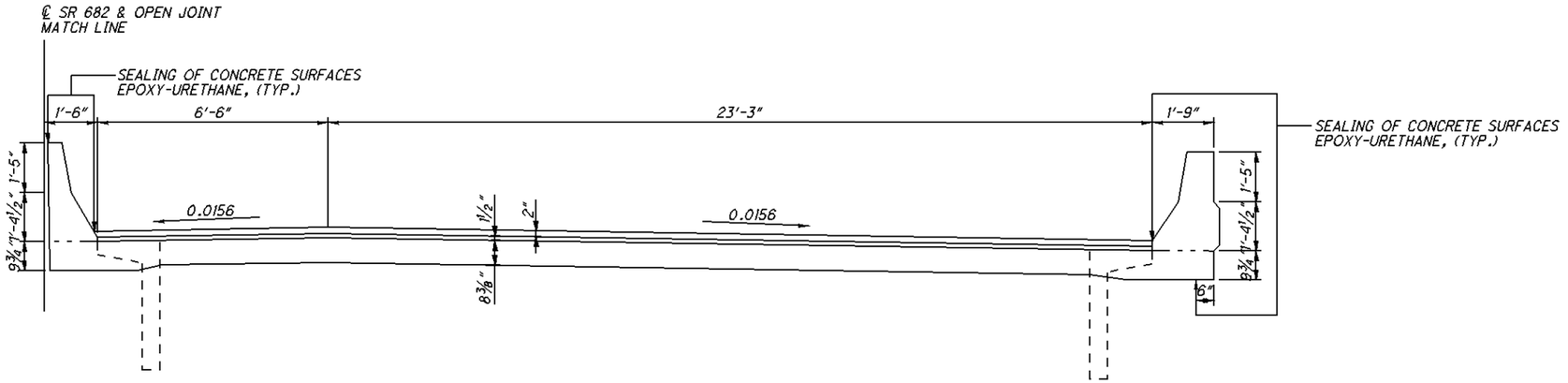
Item	Unit	Description
Special	Each	Product Qualification Test
Special	Square Foot (Square Meter)	Wearing Course Removed, Asphalt
Special	Square Foot (Square Meter)	Surface Preparation of Concrete Surfaces
Special	Liner Foot (Linear Meter)	Preparing Transverse Construction Joints and Longitudinal Keyways
Special	Square Foot (Square Meter)	Primer for Spray-Applied Elastomeric Waterproofing Membrane
Special	Square Foot (Square Meter)	Spray-Applied Elastomeric Waterproofing Membrane
Special	Each	Testing with Repair
Special	Gallons	Tack Coat for Spray-Applied Elastomeric Waterproofing Membrane

DESIGN AGENCY
Production Department
DisTrict 10
Marietta, Ohio

DESIGNED	DRAWN	REVIEWED	DATE
JAM	JAM	JPH	8/24/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0500825	

GENERAL NOTES & CALCULATIONS
Bridge No. ATH-682-0.04
Over US 33

ATH-33/50-16.05/11.46



EXISTING TRANSVERSE SECTION

(RIGHT BRIDGE SHOWN, LEFT BRIDGE OPPOSITE HAND)

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DESIGN AGENCY
Production Department
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Marietta, Ohio

DESIGNED	DRAWN	REVIEWED	DATE
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CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0500925	

EXISTING TRANSVERSE SECTION
Bridge No. ATH-682-0.04
Over US 33

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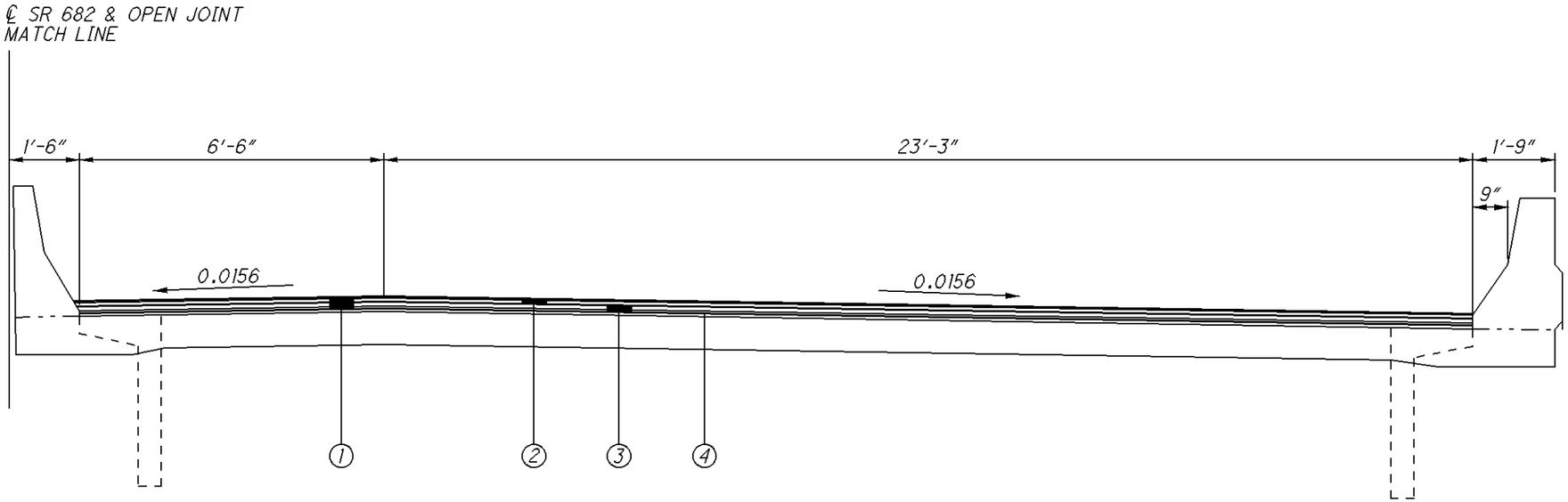

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LEGEND

1. *ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE*
2. *ITEM 448 - 1.25" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE B (446)*
3. *ITEM 448 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28*
4. *ITEM SPECIAL - SPRAY APPLIED MEMBRANE SYSTEM*

CALCULATED JAM
CHECKED JPH

OVERLAY DETAIL
Bridge No. ATH-682-0.04

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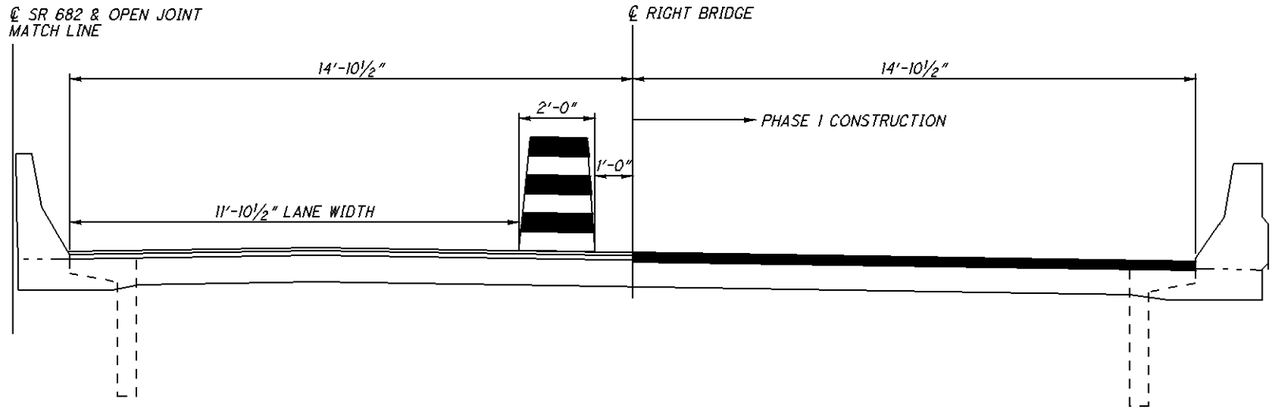

TRANSVERSE SECTION PHASE 1

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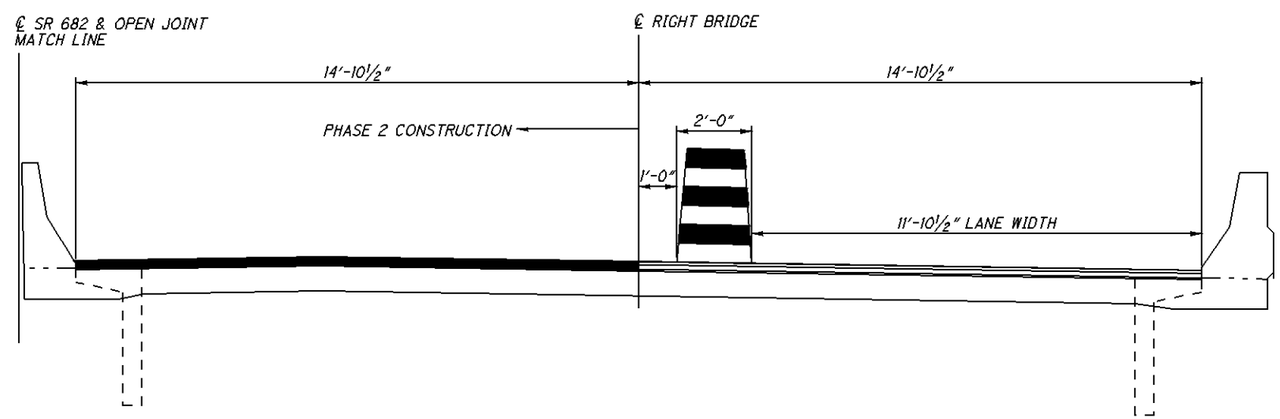

TRANSVERSE SECTION PHASE 2

(RIGHT BRIDGE SHOWN, LEFT BRIDGE OPPOSITE HAND)

DESIGN AGENCY
Production Department
District 10
Marietta, Ohio

DESIGNED	DRAWN	REVIEWED	DATE
JAM	JAM	JPH	8/24/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0506925	

PHASE CONSTRUCTION DETAILS
Bridge No. ATH-682-0.04
Over US 33

ATH-33/50-15.05/11.46

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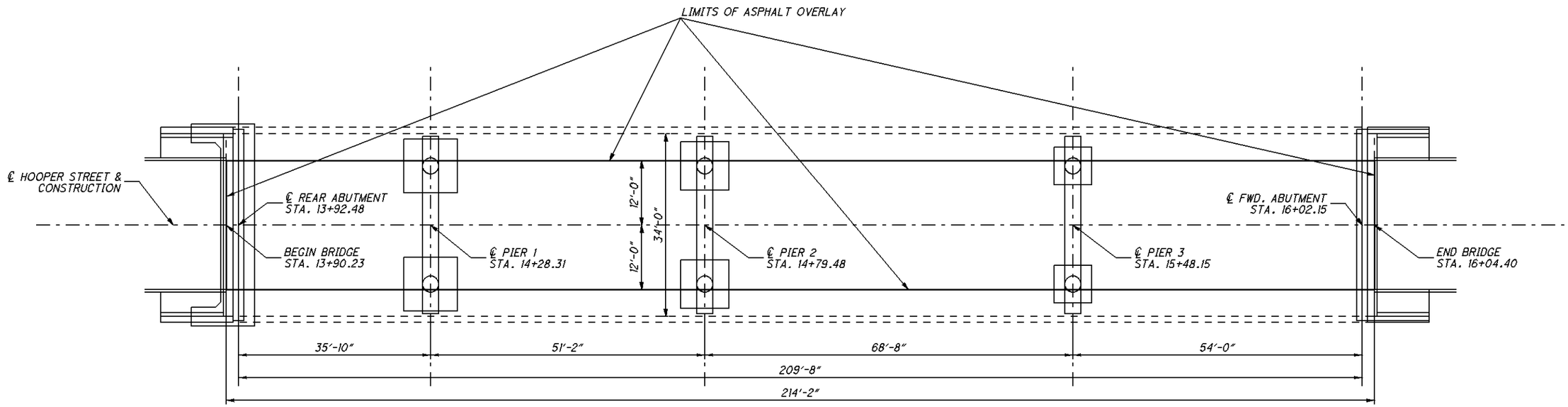
EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM BRIDGE
WITH REINFORCED CONCRETE DECK
AND SUBSTRUCTURES
SPANS: 35'-10"; 51'-2"; 68'-8"; 54'-0" c/c BRGS.
ROADWAY: 34'-0" f/f PARAPETS WITH
5'-0" SIDEWALKS ON BOTH SIDES
LOAD FREQUENCY: HS 20-44
SKEW: NONE
WEARING SURFACE: ASPHALT CONCRETE
APPROACH SLABS: AS-1-72 (25' LONG, MODIFIED)
ALIGNMENT: TANGENT



DESIGN AGENCY
Production Department
District 10
Marietta, Ohio

DESIGNED	DRAWN	REVIEWED	DATE
JAM	JAM	JPH	8/24/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0504750	

SITE PLAN
Bridge No. ATH-682-0.14
Hooper Street over SR 682

ATH-33/50-18.08/11.46

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PROPOSED WORK

REHABILITATION OF THE EXISTING BRIDGE STRUCTURE SHALL INCLUDE: OVERLAYING WITH ASPHALT CONCRETE.

CALCULATIONS

ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE
(214'-2" x 24') / 9 = 571 SQ. YDS.

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5 MM TYPE B (446)
(214'-2" x 24' x 1.25"/12)/27 = 19.83 CU. YDS.

ITEM 446 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28
(214'-2" x 24' x 1.75"/12)/27 = 27.76 CU. YDS.

REFERENCES

REFERENCE SHALL BE MADE TO:
STANDARD DRAWING MT 97.10

ESTIMATED QUANTITIES					SFN 0504750			
ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRU.	GRNL
254	01000	571	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE			571	
442	10050	20	CU YD	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE B (446)			20	
446	46040	28	CU YD	1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28			28	
512	10100	356	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)			356	
SPECIAL	53000800	571	SQ YD	SPECIAL- STRUCTURE, MISC.: SURFACE PREPARATION OF			571	
				CONCRETE SURFACES				
SPECIAL	53000800	571	SQ YD	SPECIAL- STRUCTURE, MISC.: PRIMER FOR SPRAY-APPLIED			571	
				ELASTOMERIC WATERPROOFING MEMBRANE				
SPECIAL	53000800	571	SQ YD	SPECIAL- STRUCTURE, MISC.: SPRAY-APPLIED ELASTOMERIC			571	
				WATERPROOFING MEMBRANE				
SPECIAL	53000400	1	EACH	SPECIAL- STRUCTURE, MISC.: TESTING WITH REPAIR			1	

ITEM SPECIAL- STRUCTURES MISC., SPRAY APPLIED MEMBRANE SYSTEM (SAMS)

1.0 Description. This work consists of applying spray-applied membrane system (SAMS), to all horizontal bridge surfaces that are to be overlaid with asphalt and the following surfaces.

On bridges with curbs, apply the SAMS coat 3 inches (75 mm) up the curb face.

On bridges with approaches to be overlaid with asphalt, apply SAMS 2 feet (600 mm) past the bridge limits.

This work includes: removing existing asphalt wearing course; surface preparation; application of primers; preparation of transverse construction joints in concrete and longitudinal keyways, application of spray applied membrane; testing with repairs and applying tack coats for application of a separately specified asphalt overlay.

2.0 Materials. Supply a Spray Applied Membrane System (SAMS) consisting of: a primer; a membrane; and a tack coat from a single manufacturer, meeting the properties specified below as verified by certified test data from an independent testing laboratory.

A. Primer, Supply a 100% solids, two component reactive resin primer, capable of curing at substrate temperatures between 32°F and 120°F with Gel Times, Cure Times and Temperature Range according to the table in section B.

B. Membrane, Supply a color coded, multi coat, cold spray-applied elastomeric membrane system according to the following table. Sheet materials or systems that require protection boards or special sand overlays are not applicable.

Property	Test	Required Values
Gel Time (maximum) (Rainproof)	Manufactures data & field sample verification	6 to 11 minutes @ 70°F (21°C)
Cure Time (maximum) (Recoat Time)	Manufactures data & field sample verification	40 minutes @ 70°F (21°C)
Curing Temperature Range (min to max)	Manufactures data	32° to 120° F (0° to 49° C)
Crack Bridging Ability	ASTM C1305-05	Pass (No damage)
Puncture Resistance Membrane	ASTM D1709-04, Test method B	40 lbs (18 Kg) min.
Water Vapor Transmission	ASTM E 96, procedure B or BW	Equal to or less than 0.06 perms [3.4 x 10-9 g/PA.s.m]
Tensile Strength (minimum)	ASTM D 638-03 & field sample verification	1700 psi (11.8 MPa)
Elongation at Break (minimum)	ASTM D 638-03 & field sample verification	130%
Adhesion to Concrete (minimum)	ASTM D 4541	100 psi [689 kPa]
First coat of 50 mils (minimum) Federal Standard number	FS-595B-33434	Yellow or accepted equal bold color
Second coat of 50 mils (minimum) Federal Standard number	FS-595B-36559	Light Gray or accepted equal light contrasting color to first coat
Dry Film Thickness (minimum)	ASTM D6132 or D1005 Procedure D	Total thickness of 100 mils (2540 um) minimum above surface peaks.
Wet Film Thickness (minimum)	ASTM D4414	Total thickness of 100 mils (2540 um) minimum above surface peaks.

C. Tack Coat. Supply tack coat that is certified by the SAMS; meets the requirements of 702.13 and is completely compatible to the SAMS waterproofing membrane.

D. Product Qualification Test. All manufactures not certified by the British Board of Agrement (www.bbacerts.co.uk), or validated by AREMA, FAST Test installations must be qualified by producing a product qualification test. Perform a product qualification test at least 30 days prior to the application of the SAMS.

Produce a trial 8' x 8' (2.4 m x 2.4 m) SAMS to a concrete substrate supplied by the department. Prepare the surface, apply and test the SAMS according to this specification. Overlay the membrane with an asphalt wearing surface with compaction verified by applicable tests specified in CMS 448 as follows:

1½ inches [38 mm] minimum thickness of CMS 448 Asphalt Concrete Intermediate Course, Type 2, PG64-28 or the asphalt intermediate course specified in the contract.

Use asphalt compaction equipment representative of the equipment being used for the contract work. Supply the equipment manufactures weight and compaction force data.

The rolling equipment and rolling temperatures used in the trial will establish the maximum limits allowed on the contract.

Core drill the test area in five locations. Drill 2.5 inch [63 mm] diameter cores through the asphalt, SAMS and penetrate at least 0.5 inches [13mm] into the existing concrete surface without removing or damaging the core. Test each core using a 2inch [51 mm] adhesion dolly adhered to the asphalt concrete according to ASTM D 4541. The department will accept the SAMS system if all adhesion tests exceed 100psi [689 kPa].

DESIGN AGENCY
Production Department
District 10
Marietta, Ohio

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ALC		0504750	

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Carefully remove three each 18 inch by 18 inch [457mm x 457mm] areas of the asphalt overlays and tack coat without damaging the SAMS. Means and methods for removal are the responsibility of the Contractor and his SAMS representative. Examine the SAMS for damage caused by the compaction of the asphalt. Perform a water permeation test (EN-ISO 7031), using the Germann Instruments GWT-4000 test kit or equal. The water permeation flux rate at 5 Bar = 73 psi [500 kPa], shall not exceed a control sample without the tack coat and asphalt overlay. Test these areas for thickness. The department will accept the SAMS system if these three test areas are not damaged by the compaction of the asphalt, are waterproof and meet the specified thickness.

The SAMS manufacture can submit written test results and photographs of successful product qualification tests from other Ohio Department of Transportation projects. Do not place any SAMS until the Engineer and the manufactures representative accepts the product qualification test.

E. Manufactures Shipping Record. Provide manufacturer batch numbers, shipping invoices and mark each container of all components as follows:

1. Number of gallons (liters)
2. Net weight of material
3. Batch number
4. Date of production
5. Effective shelf life of the product
6. Company name and address
7. Component trade name as given in the material test data
8. MSDS Sheets

3.0 Testing Equipment. For the project duration provide the Engineer with the test equipment listed below for the type of work at each work site with ongoing work. The contractor shall maintain all testing equipment in good working order. When no test equipment is available, no work shall be performed.

A. ASTM D4541, Type IV Self-Alignment Adhesion Tester.

B. ASTM D4541, Type IV Self-Alignment Adhesion, 2 inch [50mm] diameter adhesion dollies on the project at all times.

C. Two-component epoxy adhesive on the project at all times. The adhesive shall be capable of adhering 2 inch [50mm] diameter Type IV Self-Alignment Adhesion dollies at 100 psi [3.4 MPa] within 1 hr. Adhesive shall be Hardman Double/Bubble Epoxy or equal.

D. International Concrete Repair Institute (ICRI) Guide No. 03732 concrete surface profiles (CSP): CSP -3 through CSP-6.

E. Digital camera with 5.0 Mega pixel or greater resolution.

F. Germann Instruments GWT-4000 test kit if performing qualification tests.

G. Sling Psychrometer including Psychometric tables

H. ASTM E1907 Electrical resistance or impedance gages and applicable calibration standards.

I. ASTM D6132 or D1005 procedure D film thickness gages and applicable calibration standards.

J. ASTM D4414 wet film thickness gages.

4.0 General. Supply a SAMS that consists of a primer, membrane and tack coat certified by the SAMS manufacture.

Provide all necessary materials, equipment, labor and quality control checks to perform this work.

Apply the SAMS to a uniform specified thickness.

Ensure that the edge of any exposed application is sharply defined true to line with a uniform exposure. Spray to a tape or masking board line.

Comply with all manufactures guidelines concerning overcoating time limits and surface preparation necessary should the overcoating time limits be exceeded.

Provide a manufacturers representative to physically supervise all aspects of the installation and testing.

Before proceeding with the application of each coat of the SAMS provide the Engineer with quality assurance documentation signed and dated by the manufacturer's representative. Include all: material, physical and environmental test data; photographs; and written acceptance for the: surface preparation, primer, membrane and tack coat. Correct all conditions or coatings the Engineer or the manufacturer's representative does not accept before proceeding.

The manufacturer's representative is responsible for performing in process testing or quality control steps as necessary to achieve the adhesion, thickness and continuity values specified in section 11.

5.0 Work Limitations. The plans may require additional work limitations for specific bridges or projects.

A. Temperature. Perform the work between 32° to 120° F (0° to 49° C).

B. Moisture. Do not waterproof:

1. If the concrete surface is wet, damp, frosted, or ice-coated.
2. During periods of rain, fog, or mist.
3. If the concrete temperature is less than 5°F (3°C) above the dew point unless otherwise allowed or restricted by the manufacturer's representative or the manufacturers printed instructions.
4. If the relative humidity is greater than 85 percent unless otherwise allowed or restricted by the manufacturer's representative or the manufactures printed instructions.

6.0 Protection of Persons and Property. Collect, remove, and dispose of all buckets, rags, or other discarded materials and leave the job site in a clean condition.

Protect all portions of the structure that are not to be waterproofed from damage or disfigurement by splashes, spatters, overspray and smirches of waterproofing materials.

If the Contractor causes direct or indirect damage or injury to public or private property, the Contractor shall restore the property, to a condition similar or equal to the condition existing before the damage or injury.

7.0 Pollution Control. Comply with pollution control laws, rules, or regulations of Federal, State, or local agencies and requirements of this specification.

8.0 Safety Requirements and Precautions. Comply with applicable safety requirements of the Ohio Industrial Commission and OSHA. Provide Material Safety Data Sheets (MSDS) at the preconstruction meeting for all materials and abrasives used on this project. Do not begin work until submitting the MSDS to the Engineer. Warning SAMS containing isocyanates pose a significant heath risk.

9.0 Removal of Existing, Asphalt Wearing Course. Remove any existing asphalt concrete wearing surface in the contract limits including any waterproofing material to depth of the existing concrete. Comply with the requirements of CMS 202.

10.0 Preparation of Surface. Remove all unsound concrete. Repair any unsound concrete according to CMS 519 or a department proposal note titled: ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECKS, to the satisfaction of the Engineer and the SAMS manufacturer.

Repair surface depressions that will cause a depression deeper than ¼ inch [6 mm] in the finished installation of a SAMS. Perform concrete repairs according to CMS 519 or Proposal Note: Patching Concrete Bridge Decks, to the satisfaction of the engineer and the SAMS manufacturer.

Prepare transverse construction joints at the abutment or in the bridge deck according to supplemental specification 801 classes III or IV unless otherwise specified in the contract.

Remove visible contaminations of oil, grease or other contamination considered detrimental by the SAMS manufacture prior to abrasive cleaning according to ASTM D4258 Detergent Cleaning or Steam Cleaning.

Abrasively clean surfaces according to ASTM D4259 using self-contained recirculating blast-cleaning apparatus capable of production rates exceeding 6,000 square feet per hour. Smaller equipment may be required to access localized areas for preparation or small areas if accepted by the Engineer. Develop a surface profile and degree of cleaning necessary to achieve the adhesion values specified in section 11. Create a minimum surface profile equivalent to the international Concrete Repair Institute (ICRI) Guide No. 03732 concrete surface profiles (CSP): CSP -3 through CSP- 6 and provide a macro texture depth of at least 0.06 inch (ASTM E 965) over the area to be prepared. The Contractor shall use the sand patch procedure (ASTM E965) to demonstrate that the required texture is achieved prior to placing the waterproofing. Do not exceed the concrete surface profiles CSP- 6 without obtaining written acceptance from the SAMS manufacture. Maintain the surface in the approved condition until application of the SAMS.

Measure the moisture content using ASTM E1907 Electrical resistance or impedance gages. Dry concrete with a moisture content exceeding 6% unless otherwise directed by the manufacturer's representative in accordance with the manufactures printed instructions and accepted by the Engineer.

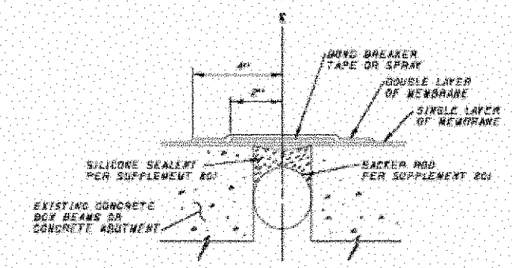
Do not permit vehicles other than approved construction equipment on those sections of the deck being prepared for the SAMS. Protect or shield the deck from contamination by fluids leaking from construction equipment or from any other source.

Clean and dry the concrete if the surface becomes contaminated, is not primed within forty eight (48) hours or if it rains between cleaning and application of the primer.

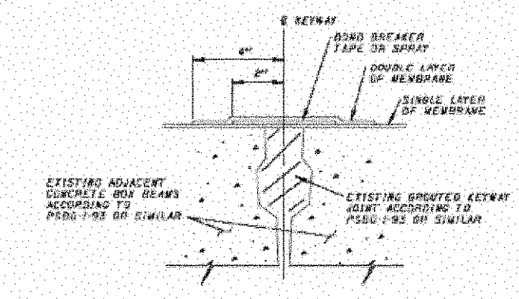
11.0 SAMS Application. Apply and test the SAMS as directed by the manufacturer's representative in accordance with the manufactures printed instructions and this specification.

A. Transverse Expansion or Construction joints. Install a 4 inch [100mm] wide, PVC bond breaker tape or PTFE bond breaker spray, centered over each transverse joint as detailed in figure 1 unless specified separately in the contract. Adhere the PVC or PTFE to the membrane surface or as directed by the manufacturers representative in accordance with the manufactures printed instructions and this specification. Apply a double layer of membrane, 8 inches [203 mm] wide centered over the PVC or PTFE bond breaker.

B. Longitudinal keyways between adjacent pre-cast sections or beams. Install a 4 inch [100mm] wide, PVC bond beaker tape or PTFE bond beaker spray, centered over each longitudinal keyway as detailed in figure 2. Adhere the PVC or PTFE to the membrane surface or as directed by the manufacturers representative in accordance with the manufactures printed instructions and this specification. Apply a double layer of membrane, 8 inches [203 mm] wide centered over the PVC or PTFE bond breaker.



TRANSVERSE CONSTRUCTION OR EXPANSION JOINT
FIGURE 1



LONGITUDINAL KEYWAY JOINT
FIGURE 2

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GENERAL NOTES & CALCULATIONS

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C. Dry Film Thickness Tests. Test the SAMS thickness according ASTM D6132 or D1005 procedure D and this specification prior to application of the tack coat. Note: ASTM D1005 procedure D requires removal of a 3 inch x 3 inch (75 mm x 75 mm) sample from the SAMS. Measure the dry film thickness, at locations randomly selected by the Engineer in each 500-square feet (46 m2) area waterproofed prior to application of the tack coat. Do not select areas directly above construction joints or keyways detailed according to section 11. At each randomly selected location, take three thickness gage readings. Move the gage 1 to 3 inches (25 to 75 mm) for each new gage reading. The spot thickness measurement is the average of the three gage readings. Perform the test in the presence of the Engineer.

The average of three spot measurements (nine gage reading) in any 1500-square foot (9 m2) area shall not be less than the specified thickness of 100mils (2.54 mm). No single spot measurement in any 500-square foot (46 m2) area shall be less than 80 mils (2.03 mm) thickness. Repairs tested areas according to section 12.0.

If test values are less than specified: perform additional test as necessary to identify the limits of the defective membrane. Perform any remedial work necessary to achieve the specified thickness values.

The manufacturer's representative is responsible for performing testing or quality control steps as necessary to assure that the SAMS exceeds specified thickness values.

D. Adhesion Tests. Perform adhesion tests in accordance with ASTM D 4541 at locations randomly selected by the Engineer in each 500-square feet (46 m2) area waterproofed prior to application of the tack coat. Do not select areas directly above construction joints or keyways detailed according to section 11. Perform the test in the presence of the Engineer or inspector. Perform three pull off adhesion tests according to ASTM D4541 on each test section. No adhesion test value will be below 100 psi [689 kPa] for concrete. Repairs tested areas according to section 12.0.

If test values are less than specified: perform additional test as necessary to identify the limits of the defective membrane. Remove and replace the SAMS according to this specification to the limits of the defective membrane. Perform any remedial work necessary to achieve the specified adhesion values.

The manufacturer's representative is responsible for performing testing or quality control steps as necessary to assure that the SAMS exceeds specified adhesion values.

E. Holiday Test. Visually inspect all waterproofed surfaces for cracks, pin holes, holidays, blisters or lack of bonding. Perform any remedial work necessary to correct cracks, pin holes, blisters, lack of bonding, discontinuities or holidays to the satisfaction of the engineer and the SAMS manufacturer.

F. Field Samples. During the application, produce three samples out of representative material from each manufactures testing lot for the departments verification of ASTM D 638-03 Tensile Strength and Elongation. Supply three or more 12 inch x 12 inch (305 mm x 305 mm) forms or other methods of making field samples at least 100 mils (2540 (m) thick. Produce three or more 12 inch x 12 inch (305 mm x 305 mm) x 100 mils (2540 m) thick samples during the SAMS application using production equipment.

12.0 Repairs. Repair and test the waterproofing membrane as directed by the manufacturer's representative in accordance with the manufactures printed instructions and this specification.

A. If an area is left untreated or the SAMS are damaged, a patch repair shall be carried out to restore the integrity of the SAMS. Remove the damaged area. Clean the damaged area plus a 4 inch (100 mm) wide periphery around the repair with solvent to remove any contaminants. Prime the substrate as necessary. Prepare overlap areas as necessary. Apply the SAMS over the substrate with a 4-inch (100 mm) overlap onto existing membrane.

B. Where the membrane is to be joined to existing cured material and at day or phase joints, the new application shall overlap the existing one by at least 4 inch (100 mm). Prepare surfaces and overlap areas as above.

C. Comply with all manufactures concerning overcoating time limits and surface preparation necessary should the overcoating time limits be exceeded.

D. The manufacturers representative is responsible for performing testing or quality control steps as necessary to assure that repaired or overlapped SAMS exceed the specified thickness and adhesion values.

E. Perform thickness and adhesion test to at least one randomly selected repair or overlap areas. Perform the test in the presence of the Engineer.

13.0 Tack Coat Apply a tack coat according to CMS 407 as modified by the manufactures recommendation or printed instructions.

The membrane to be tack coated shall be clean and free from loose debris, moisture or other contaminants. Oil, diesel or grease shall be removed with solvent approved by the Manufacturer.

Test the tack coat as directed by the manufacturers representative in accordance with the manufactures printed instructions.

14.0 Method of Measurement. The Department will measure removal of wearing course by the number of square feet (square meters) of concrete waterproofed.

The Department will measure surface preparation by the number of square feet (square meters) of concrete waterproofed.

The Department will measure preparation of transverse construction joints and longitudinal keyways by the number of linear feet (linear meters) of joints and keyways.

The Department will measure Spray Applied Membrane System (SAMS) by the number of square feet (square meters) of concrete waterproofed.

The Department will measure tack coat by the number of gallons according to CMS 407.

15.0 Basis of Payment. The Department will pay for accepted quantities at the Contract prices as follows:

If the Contractor causes damage or injury public or private property, the Department will not pay for restoring the property to its original condition.

The Department will not pay for repairing adjacent coatings damaged during the removal, surface preparation or waterproofing operations.

The Department will not pay for repairing areas of coating because of low coating thickness or low adhesion values.

The Department will not pay for additional testing required by any hauler, treatment facility, disposal facility or landfill.

The cost of material and producing field samples is considered incidental to the cost of the Spray-Applied Elastomeric Waterproofing Membrane.

If concrete patching and keyway repairs are required for section 10.0, the department will pay for this as extra work according to CMS 109.05.

The Department will pay for one product qualification test unless product qualification is certified by the British Board of Agrement or successful product qualification tests from other Ohio Department of Transportation projects.

The Department will pay for inspection access; test area preparation; destructive testing; and test area repair as 1 each for every 500 square foot area of concrete waterproofed, under Testing with Repair. The Department will not pay for accessing, inspecting, and repairing areas that are not found to be in conformance with the specifications and pertinent contract documents.

All other requirements of this specification are considered incidental to the work.

Item	Unit	Description
Special	Each	Product Qualification Test
Special	Square Foot (Square Meter)	Wearing Course Removed, Asphalt
Special	Square Foot (Square Meter)	Surface Preparation of Concrete Surfaces
Special	Liner Foot (Linear Meter)	Preparing Transverse Construction Joints and Longitudinal Keyways
Special	Square Foot (Square Meter)	Primer for Spray-Applied Elastomeric Waterproofing Membrane
Special	Square Foot (Square Meter)	Spray-Applied Elastomeric Waterproofing Membrane
Special	Each	Testing with Repair
Special	Gallons	Tack Coat for Spray-Applied Elastomeric Waterproofing Membrane

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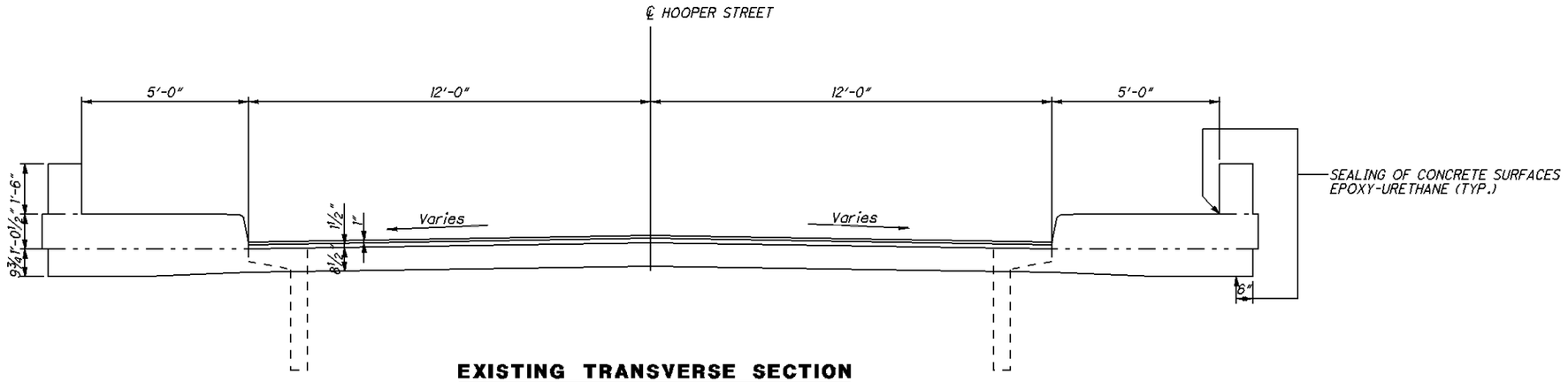
GENERAL NOTES & CALCULATIONS
Bridge No. ATH-682-0.14
Hooper STreet over SR 682

ATH-33/80-15.05/11.46



EXISTING TRANSVERSE SECTION

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EXISTING TRANSVERSE SECTION
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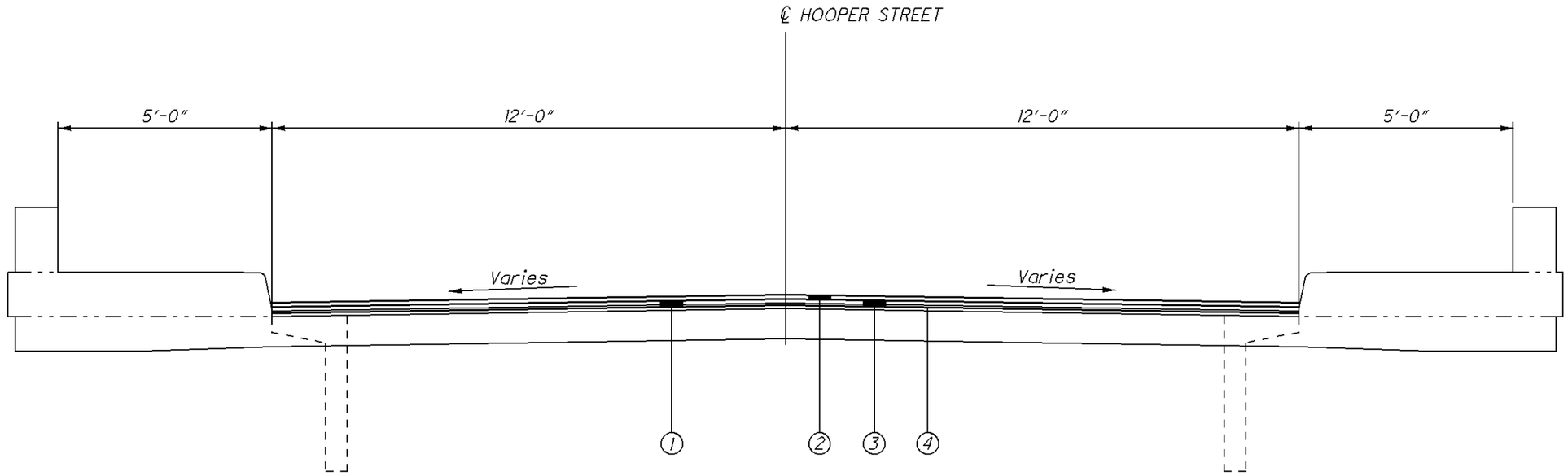

LEGEND

(1) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE

(2) ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE B (446)

(3) ITEM 446 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28

(4) ITEM SPECIAL - SPRAY APPLIED MEMBRANE WATERPROOFING

CALCULATED JAM
CHECKED JPH

OVERLAY DETAIL

Bridge No. ATH-682-0.14

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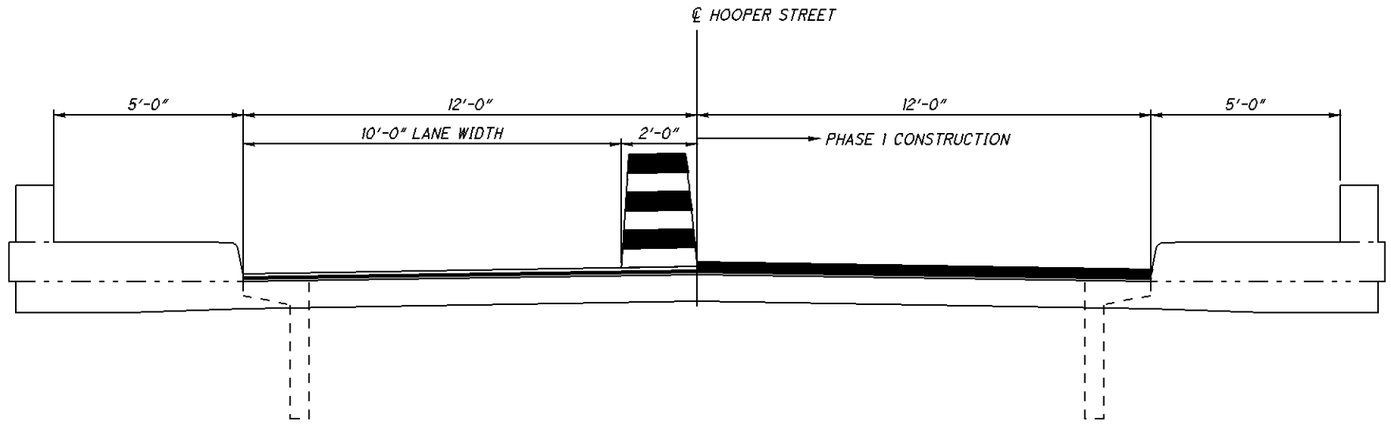
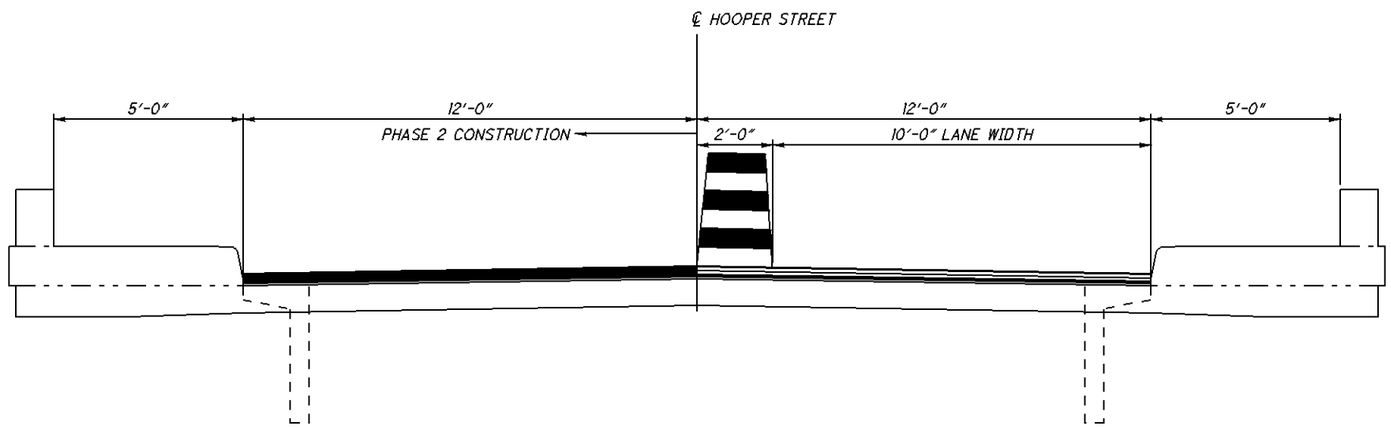


TRANSVERSE SECTION PHASE 1



TRANSVERSE SECTION PHASE 2

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Marietta, Ohio

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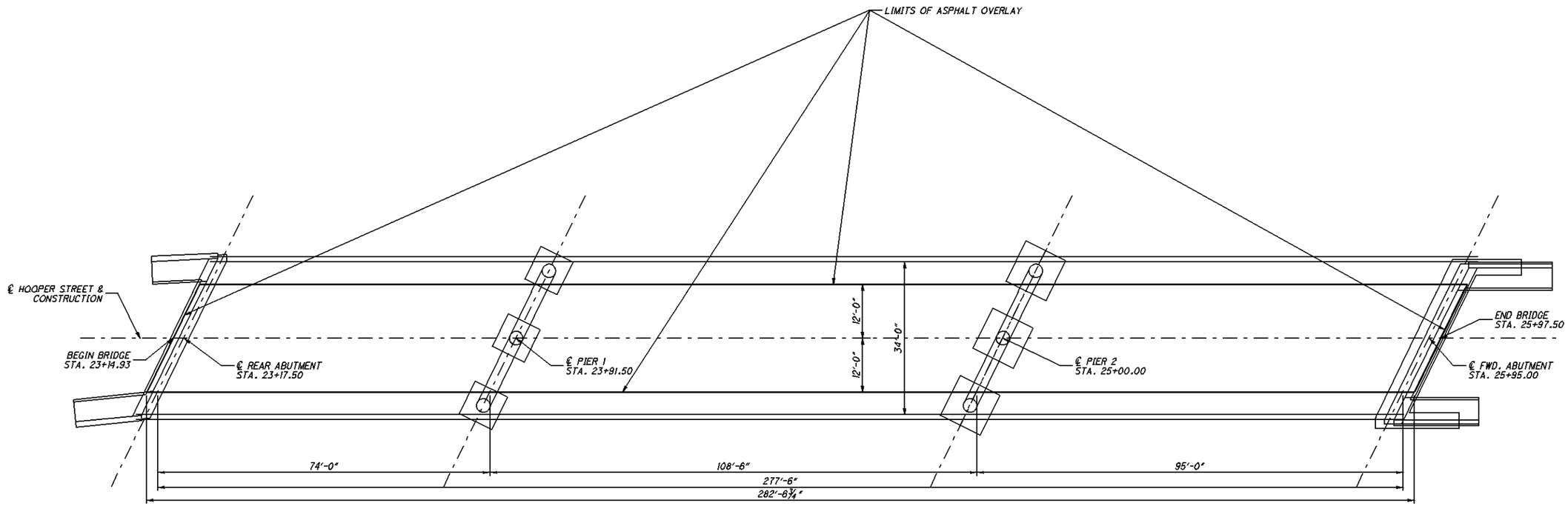
PHASE CONSTRUCTION DETAILS
Bridge No. ATH-682-0.14
Hooper Street over SR 682

ATH-33/50-18.08/11.48

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM BRIDGE
WITH REINFORCED CONCRETE DECK
AND SUBSTRUCTURES
SPANS: 74'-0"; 108'-6"; 95'-0" c/c BRGS.
ROADWAY: 34'-0" f/f PARAPETS WITH
5'-0" SIDEWALKS ON BOTH SIDES
LOAD FREQUENCY: HS 20-44
SKEW: 22°00'00" L.F.
WEARING SURFACE: ASPHALT CONCRETE
APPROACH SLABS: AS-1-72 (25' LONG, MODIFIED)
ALIGNMENT: TANGENT



DESIGN AGENCY
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SITE PLAN
Bridge No. ATH-33-17.13
Hooper Street over US 33

ATH-33/80-15.06/11.46

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PROPOSED WORK

REHABILITATION OF THE EXISTING BRIDGE STRUCTURE SHALL INCLUDE: OVERLAYING WITH ASPHALT CONCRETE.

CALCULATIONS

ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE
(282'-6 3/4" x 24') / 9 = 753 SQ. YDS.

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5 MM TYPE B, 446
(282'-6 3/4" x 24' x 1.25"/12)/27 = 26.16 CU. YDS.

ITEM 446 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28
(282'-6 3/4" x 24' x 1.75"/12)/27 = 36.63 CU. YDS.

REFERENCES

REFERENCE SHALL BE MADE TO STANDARD DRAWING:
MT 97.10

ESTIMATED QUANTITIES					SFN 0500917			
ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRU.	GRNL
254	01000	753	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE			753	
442	10050	27	CU YD	ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (446)			27	
446	46040	37	CU YD	1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28			37	
512	10100	465	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)			465	
SPECIAL	53000800	753	SQ YD	SPECIAL- STRUCTURE, MISC.: SURFACE PREPARATION OF			753	
				CONCRETE SURFACES				
SPECIAL	53000800	753	SQ YD	SPECIAL- STRUCTURE, MISC.: PRIMER FOR SPRAY-APPLIED			753	
				ELASTOMERIC WATERPROOFING MEMBRANE				
SPECIAL	53000800	753	SQ YD	SPECIAL- STRUCTURE, MISC.: SPRAY-APPLIED ELASTOMERIC			753	
				WATERPROOFING MEMBRANE				
SPECIAL	53000400	1	EACH	SPECIAL- STRUCTURE, MISC.: TESTING WITH REPAIR			1	

ITEM SPECIAL- STRUCTURES MISC., SPRAY APPLIED MEMBRANE SYSTEM (SAMS)

1.0 Description. This work consists of applying spray-applied membrane system (SAMS), to all horizontal bridge surfaces that are to be overlaid with asphalt and the following surfaces.

On bridges with curbs, apply the SAMS coat 3 inches (75 mm) up the curb face.

On bridges with approaches to be overlaid with asphalt, apply SAMS 2 feet (600 mm) past the bridge limits.

This work includes: removing existing asphalt wearing course; surface preparation; application of primers; preparation of transverse construction joints in concrete and longitudinal keyways, application of spray applied membrane; testing with repairs and applying tack coats for application of a separately specified asphalt overlay.

2.0 Materials, Supply a Spray Applied Membrane System (SAMS) consisting of: a primer; a membrane; and a tack coat from a single manufacturer, meeting the properties specified below as verified by certified test data from an independent testing laboratory.

A. Primer, Supply a 100% solids, two component reactive resin primer, capable of curing at substrate temperatures between 32°F and 120°F with Gel Times, Cure Times and Temperature Range according to the table in section B.

B. Membrane, Supply a color coded, multi coat, cold spray-applied elastomeric membrane system according to the following table. Sheet materials or systems that require protection boards or special sand overlays are not applicable.

Property	Test	Required Values
Gel Time (maximum) (Rainproof)	Manufactures data & field sample verification	6 to 11 minutes @ 70°F (21°C)
Cure Time (maximum) (Recoat Time)	Manufactures data & field sample verification	40 minutes @ 70°F (21°C)
Curing Temperature Range (min to max)	Manufactures data	32° to 120° F (0° to 49° C)
Crack Bridging Ability	ASTM C1305-05	Pass (No damage)
Puncture Resistance Membrane	ASTM D1709-04, Test method B	40 lbs (18 Kg) min.
Water Vapor Transmission	ASTM E 96, procedure B or BW	Equal to or less than 0.06 perms [3.4 x 10-9 g/PA.s.m]
Tensile Strength (minimum)	ASTM D 638-03 & field sample verification	1700 psi (11.8 MPa)
Elongation at Break (minimum)	ASTM D 638-03 & field sample verification	130%
Adhesion to Concrete (minimum)	ASTM D 4541	100 psi [689 kPa]
First coat of 50 mils (minimum) Federal Standard number	FS-595B-33434	Yellow or accepted equal bold color
Second coat of 50 mils (minimum) Federal Standard number	FS-595B-36559	Light Gray or accepted equal light contrasting color to first coat
Dry Film Thickness (minimum)	ASTM D6132 or D1005 Procedure D	Total thickness of 100 mils (2540 um) minimum above surface peaks.
Wet Film Thickness (minimum)	ASTM D4414	Total thickness of 100 mils (2540 um) minimum above surface peaks.

C. Tack Coat. Supply tack coat that is certified by the SAMS; meets the requirements of 702.13 and is completely compatible to the SAMS waterproofing membrane.

D. Product Qualification Test. All manufactures not certified by the British Board of Agrement (www.bbacerts.co.uk), or validated by AREMA, FAST Test installations must be qualified by producing a product qualification test. Perform a product qualification test at least 30 days prior to the application of the SAMS.

Produce a trial 8' x 8' (2.4 m x 2.4 m) SAMS to a concrete substrate supplied by the department. Prepare the surface, apply and test the SAMS according to this specification. Overlay the membrane with an asphalt wearing surface with compaction verified by applicable tests specified in CMS 448 as follows:

1½ inches [38 mm] minimum thickness of CMS 448 Asphalt Concrete Intermediate Course, Type 2, PG64-28 or the asphalt intermediate course specified in the contract.

Use asphalt compaction equipment representative of the equipment being used for the contract work. Supply the equipment manufactures weight and compaction force data.

The rolling equipment and rolling temperatures used in the trial will establish the maximum limits allowed on the contract.

Core drill the test area in five locations. Drill 2.5 inch [63 mm] diameter cores through the asphalt, SAMS and penetrate at least 0.5 inches [13mm] into the existing concrete surface without removing or damaging the core. Test each core using a 2inch [51 mm] adhesion dolly adhered to the asphalt concrete according to ASTM D 4541. The department will accept the SAMS system if all adhesion tests exceed 100psi [689 kPa].

DESIGN AGENCY
Production Department
District 10
Marietta, Ohio

DESIGNED	DRAWN	REVIEWED	DATE
JAM	JAM	JPH	8/24/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0500917	

GENERAL NOTES & CALCULATIONS
Bridge No. ATH-33-17.13
Hooper STreet over US 33

ATH-33/50-15.08/11.46

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Carefully remove three each 18 inch by 18 inch [457mm x 457mm] areas of the asphalt overlays and tack coat without damaging the SAMS. Means and methods for removal are the responsibility of the Contractor and his SAMS representative. Examine the SAMS for damage caused by the compaction of the asphalt. Perform a water permeation test (EN-ISO 7031), using the Germann Instruments GWT-4000 test kit or equal. The water permeation flux rate at 5 Bar = 73 psi [500 kPa], shall not exceed a control sample without the tack coat and asphalt overlay. Test these areas for thickness. The department will accept the SAMS system if these three test areas are not damaged by the compaction of the asphalt, are waterproof and meet the specified thickness.

The SAMS manufacture can submit written test results and photographs of successful product qualification tests from other Ohio Department of Transportation projects. Do not place any SAMS until the Engineer and the manufactures representative accepts the product qualification test.

E. Manufactures Shipping Record. Provide manufacturer batch numbers, shipping invoices and mark each container of all components as follows:

1. Number of gallons (liters)
2. Net weight of material
3. Batch number
4. Date of production
5. Effective shelf life of the product
6. Company name and address
7. Component trade name as given in the material test data
8. MSDS Sheets

3.0 Testing Equipment. For the project duration provide the Engineer with the test equipment listed below for the type of work at each work site with ongoing work. The contractor shall maintain all testing equipment in good working order. When no test equipment is available, no work shall be performed.

A. ASTM D4541, Type IV Self-Alignment Adhesion Tester.

B. ASTM D4541, Type IV Self-Alignment Adhesion, 2 inch [50mm] diameter adhesion dollies on the project at all times.

C. Two-component epoxy adhesive on the project at all times. The adhesive shall be capable of adhering 2 inch [50mm] diameter Type IV Self-Alignment Adhesion dollies at 100 psi [3.4 MPa] within 1 hr. Adhesive shall be Hardman Double/Bubble Epoxy or equal.

D. International Concrete Repair Institute (ICRI) Guide No. 03732 concrete surface profiles (CSP): CSP -3 through CSP-6.

E. Digital camera with 5.0 Mega pixel or greater resolution.

F. Germann Instruments GWT-4000 test kit if performing qualification tests.

G. Sling Psychrometer including Psychometric tables

H. ASTM E1907 Electrical resistance or impedance gages and applicable calibration standards.

I. ASTM D6132 or D1005 procedure D film thickness gages and applicable calibration standards.

J. ASTM D4414 wet film thickness gages.

4.0 General. Supply a SAMS that consists of a primer, membrane and tack coat certified by the SAMS manufacture.

Provide all necessary materials, equipment, labor and quality control checks to perform this work.

Apply the SAMS to a uniform specified thickness.

Ensure that the edge of any exposed application is sharply defined true to line with a uniform exposure. Spray to a tape or masking board line.

Comply with all manufactures guidelines concerning overcoating time limits and surface preparation necessary should the overcoating time limits be exceeded.

Provide a manufacturers representative to physically supervise all aspects of the installation and testing.

Before proceeding with the application of each coat of the SAMS provide the Engineer with quality assurance documentation signed and dated by the manufacturer's representative. Include all: material, physical and environmental test data; photographs; and written acceptance for the: surface preparation, primer, membrane and tack coat. Correct all conditions or coatings the Engineer or the manufacturer's representative does not accept before proceeding.

The manufacturer's representative is responsible for performing in process testing or quality control steps as necessary to achieve the adhesion, thickness and continuity values specified in section 11.

5.0 Work Limitations. The plans may require additional work limitations for specific bridges or projects.

A. Temperature. Perform the work between 32° to 120° F (0° to 49° C).

B. Moisture. Do not waterproof:

1. If the concrete surface is wet, damp, frosted, or ice-coated.
2. During periods of rain, fog, or mist.
3. If the concrete temperature is less than 5°F (3°C) above the dew point unless otherwise allowed or restricted by the manufacturer's representative or the manufacturers printed instructions.
4. If the relative humidity is greater than 85 percent unless otherwise allowed or restricted by the manufacturer's representative or the manufactures printed instructions.

6.0 Protection of Persons and Property. Collect, remove, and dispose of all buckets, rags, or other discarded materials and leave the job site in a clean condition.

Protect all portions of the structure that are not to be waterproofed from damage or disfigurement by splashes, spatters, overspray and smirches of waterproofing materials.

If the Contractor causes direct or indirect damage or injury to public or private property, the Contractor shall restore the property, to a condition similar or equal to the condition existing before the damage or injury.

7.0 Pollution Control. Comply with pollution control laws, rules, or regulations of Federal, State, or local agencies and requirements of this specification.

8.0 Safety Requirements and Precautions. Comply with applicable safety requirements of the Ohio Industrial Commission and OSHA. Provide Material Safety Data Sheets (MSDS) at the preconstruction meeting for all materials and abrasives used on this project. Do not begin work until submitting the MSDS to the Engineer. Warning SAMS containing isocyanates pose a significant heath risk.

9.0 Removal of Existing, Asphalt Wearing Course. Remove any existing asphalt concrete wearing surface in the contract limits including any waterproofing material to depth of the existing concrete. Comply with the requirements of CMS 202.

10.0 Preparation of Surface. Remove all unsound concrete. Repair any unsound concrete according to CMS 519 or a department proposal note titled: ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECKS, to the satisfaction of the Engineer and the SAMS manufacturer.

Repair surface depressions that will cause a depression deeper than ¼ inch [6 mm] in the finished installation of a SAMS. Perform concrete repairs according to CMS 519 or Proposal Note: Patching Concrete Bridge Decks, to the satisfaction of the engineer and the SAMS manufacturer.

Prepare transverse construction joints at the abutment or in the bridge deck according to supplemental specification 801 classes III or IV unless otherwise specified in the contract.

Remove visible contaminations of oil, grease or other contamination considered detrimental by the SAMS manufacture prior to abrasive cleaning according to ASTM D4258 Detergent Cleaning or Steam Cleaning.

Abrasively clean surfaces according to ASTM D4259 using self-contained recirculating blast-cleaning apparatus capable of production rates exceeding 6,000 square feet per hour. Smaller equipment may be required to access localized areas for preparation or small areas if accepted by the Engineer. Develop a surface profile and degree of cleaning necessary to achieve the adhesion values specified in section 11. Create a minimum surface profile equivalent to the international Concrete Repair Institute (ICRI) Guide No. 03732 concrete surface profiles (CSP): CSP -3 through CSP- 6 and provide a macro texture depth of at least 0.06 inch (ASTM E 965) over the area to be prepared. The Contractor shall use the sand patch procedure (ASTM E965) to demonstrate that the required texture is achieved prior to placing the waterproofing. Do not exceed the concrete surface profiles CSP- 6 without obtaining written acceptance from the SAMS manufacture. Maintain the surface in the approved condition until application of the SAMS.

Measure the moisture content using ASTM E1907 Electrical resistance or impedance gages. Dry concrete with a moisture content exceeding 6% unless otherwise directed by the manufacturer's representative in accordance with the manufactures printed instructions and accepted by the Engineer.

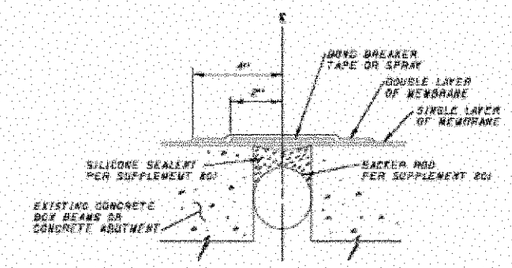
Do not permit vehicles other than approved construction equipment on those sections of the deck being prepared for the SAMS. Protect or shield the deck from contamination by fluids leaking from construction equipment or from any other source.

Clean and dry the concrete if the surface becomes contaminated, is not primed within forty eight (48) hours or if it rains between cleaning and application of the primer.

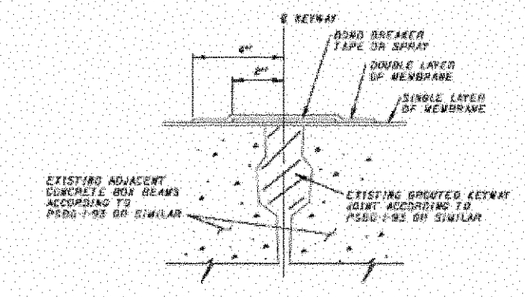
11.0 SAMS Application. Apply and test the SAMS as directed by the manufacturer's representative in accordance with the manufactures printed instructions and this specification.

A. Transverse Expansion or Construction joints. Install a 4 inch [100mm] wide, PVC bond breaker tape or PTFE bond breaker spray, centered over each transverse joint as detailed in figure 1 unless specified separately in the contract. Adhere the PVC or PTFE to the membrane surface or as directed by the manufacturers representative in accordance with the manufactures printed instructions and this specification. Apply a double layer of membrane, 8 inches [203 mm] wide centered over the PVC or PTFE bond breaker.

B. Longitudinal keyways between adjacent pre-cast sections or beams. Install a 4 inch [100mm] wide, PVC bond beaker tape or PTFE bond beaker spray, centered over each longitudinal keyway as detailed in figure 2. Adhere the PVC or PTFE to the membrane surface or as directed by the manufacturers representative in accordance with the manufactures printed instructions and this specification. Apply a double layer of membrane, 8 inches [203 mm] wide centered over the PVC or PTFE bond breaker.



TRANSVERSE CONSTRUCTION OR EXPANSION JOINT
FIGURE 1



LONGITUDINAL KEYWAY JOINT
FIGURE 2

DESIGN AGENCY
Production Department
District 10
Marietta, Ohio

DESIGNED	DRAWN	REVIEWED	DATE
JAM	JAM	JPH	8/24/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0600917	

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Bridge No. ATH-33-17.13
Hooper Street over US 33

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C. Dry Film Thickness Tests. Test the SAMS thickness according ASTM D6132 or D1005 procedure D and this specification prior to application of the tack coat. Note: ASTM D1005 procedure D requires removal of a 3 inch x 3 inch (75 mm x 75 mm) sample from the SAMS. Measure the dry film thickness, at locations randomly selected by the Engineer in each 500-square feet (46 m2) area waterproofed prior to application of the tack coat. Do not select areas directly above construction joints or keyways detailed according to section 11. At each randomly selected location, take three thickness gage readings. Move the gage 1 to 3 inches (25 to 75 mm) for each new gage reading. The spot thickness measurement is the average of the three gage readings. Perform the test in the presence of the Engineer.

The average of three spot measurements (nine gage reading) in any 1500-square foot (9 m2) area shall not be less than the specified thickness of 100mils (2.54 mm). No single spot measurement in any 500-square foot (46 m2) area shall be less than 80 mils (2.03 mm) thickness. Repairs tested areas according to section 12.0.

If test values are less than specified: perform additional test as necessary to identify the limits of the defective membrane. Perform any remedial work necessary to achieve the specified thickness values.

The manufacturer's representative is responsible for performing testing or quality control steps as necessary to assure that the SAMS exceeds specified thickness values.

D. Adhesion Tests. Perform adhesion tests in accordance with ASTM D 4541 at locations randomly selected by the Engineer in each 500-square feet (46 m2) area waterproofed prior to application of the tack coat. Do not select areas directly above construction joints or keyways detailed according to section 11. Perform the test in the presence of the Engineer or inspector. Perform three pull off adhesion tests according to ASTM D4541 on each test section. No adhesion test value will be below 100 psi [689 kPa] for concrete. Repairs tested areas according to section 12.0.

If test values are less than specified: perform additional test as necessary to identify the limits of the defective membrane. Remove and replace the SAMS according to this specification to the limits of the defective membrane. Perform any remedial work necessary to achieve the specified adhesion values.

The manufacturer's representative is responsible for performing testing or quality control steps as necessary to assure that the SAMS exceeds specified adhesion values.

E. Holiday Test. Visually inspect all waterproofed surfaces for cracks, pin holes, holidays, blisters or lack of bonding. Perform any remedial work necessary to correct cracks, pin holes, blisters, lack of bonding, discontinuities or holidays to the satisfaction of the engineer and the SAMS manufacturer.

F. Field Samples. During the application, produce three samples out of representative material from each manufactures testing lot for the departments verification of ASTM D 638-03 Tensile Strength and Elongation. Supply three or more 12 inch x 12 inch (305 mm x 305 mm) forms or other methods of making field samples at least 100 mils (2540 (m) thick. Produce three or more 12 inch x 12 inch (305 mm x 305 mm) x 100 mils (2540 (m) thick samples during the SAMS application using production equipment.

12.0 Repairs. Repair and test the waterproofing membrane as directed by the manufacturer's representative in accordance with the manufactures printed instructions and this specification.

A. If an area is left untreated or the SAMS are damaged, a patch repair shall be carried out to restore the integrity of the SAMS. Remove the damaged area. Clean the damaged area plus a 4 inch (100 mm) wide periphery around the repair with solvent to remove any contaminants. Prime the substrate as necessary. Prepare overlap areas as necessary. Apply the SAMS over the substrate with a 4-inch (100 mm) overlap onto existing membrane.

B. Where the membrane is to be joined to existing cured material and at day or phase joints, the new application shall overlap the existing one by at least 4 inch (100 mm). Prepare surfaces and overlap areas as above.

C. Comply with all manufactures concerning overcoating time limits and surface preparation necessary should the overcoating time limits be exceeded.

D. The manufacturers representative is responsible for performing testing or quality control steps as necessary to assure that repaired or overlapped SAMS exceed the specified thickness and adhesion values.

E. Perform thickness and adhesion test to at least one randomly selected repair or overlap areas. Perform the test in the presence of the Engineer.

13.0 Tack Coat Apply a tack coat according to CMS 407 as modified by the manufactures recommendation or printed instructions.

The membrane to be tack coated shall be clean and free from loose debris, moisture or other contaminants. Oil, diesel or grease shall be removed with solvent approved by the Manufacturer.

Test the tack coat as directed by the manufacturers representative in accordance with the manufactures printed instructions.

14.0 Method of Measurement. The Department will measure removal of wearing course by the number of square feet (square meters) of concrete waterproofed.

The Department will measure surface preparation by the number of square feet (square meters) of concrete waterproofed.

The Department will measure preparation of transverse construction joints and longitudinal keyways by the number of linear feet (linear meters) of joints and keyways.

The Department will measure Spray Applied Membrane System (SAMS) by the number of square feet (square meters) of concrete waterproofed.

The Department will measure tack coat by the number of gallons according to CMS 407.

15.0 Basis of Payment. The Department will pay for accepted quantities at the Contract prices as follows:

If the Contractor causes damage or injury public or private property, the Department will not pay for restoring the property to its original condition.

The Department will not pay for repairing adjacent coatings damaged during the removal, surface preparation or waterproofing operations.

The Department will not pay for repairing areas of coating because of low coating thickness or low adhesion values.

The Department will not pay for additional testing required by any hauler, treatment facility, disposal facility or landfill.

The cost of material and producing field samples is considered incidental to the cost of the Spray-Applied Elastomeric Waterproofing Membrane.

If concrete patching and keyway repairs are required for section 10.0, the department will pay for this as extra work according to CMS 109.05.

The Department will pay for one product qualification test unless product qualification is certified by the British Board of Agrement or successful product qualification tests from other Ohio Department of Transportation projects.

The Department will pay for inspection access; test area preparation; destructive testing; and test area repair as 1 each for every 500 square foot area of concrete waterproofed, under Testing with Repair. The Department will not pay for accessing, inspecting, and repairing areas that are not found to be in conformance with the specifications and pertinent contract documents.

All other requirements of this specification are considered incidental to the work.

Item	Unit	Description
Special	Each	Product Qualification Test
Special	Square Foot (Square Meter)	Wearing Course Removed, Asphalt
Special	Square Foot (Square Meter)	Surface Preparation of Concrete Surfaces
Special	Liner Foot (Linear Meter)	Preparing Transverse Construction Joints and Longitudinal Keyways
Special	Square Foot (Square Meter)	Primer for Spray-Applied Elastomeric Waterproofing Membrane
Special	Square Foot (Square Meter)	Spray-Applied Elastomeric Waterproofing Membrane
Special	Each	Testing with Repair
Special	Gallons	Tack Coat for Spray-Applied Elastomeric Waterproofing Membrane

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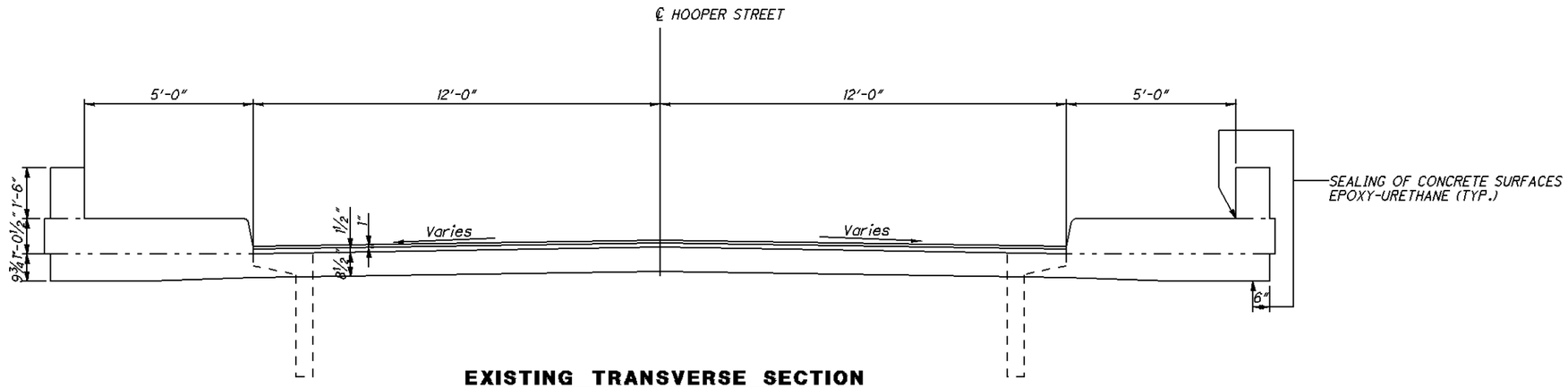
DESIGN AGENCY
Production Department
District 10
Marietta, Ohio

DESIGNED JAM | DRAWN JAM | REVIEWED JPH | DATE 8/24/07
CHECKED ALC | REVISED | STRUCTURE FILE NUMBER 060087

GENERAL NOTES & CALCULATIONS
Bridge No. ATH-33-17.13
Hooper Street over US 33



EXISTING TRANSVERSE SECTION

DESIGNED JAM
DRAWN JAM
REVIEWED JPH 8/24/07
CHECKED ALC
REVISED
STRUCTURE FILE NUMBER 0509317

DESIGN AGENCY
Production Department
District 10
Marietta, Ohio

EXISTING TRANSVERSE SECTION
Bridge No. ATH-33-17.13
Hooper Street over US 33

ATH-33/50-15.05/11.46

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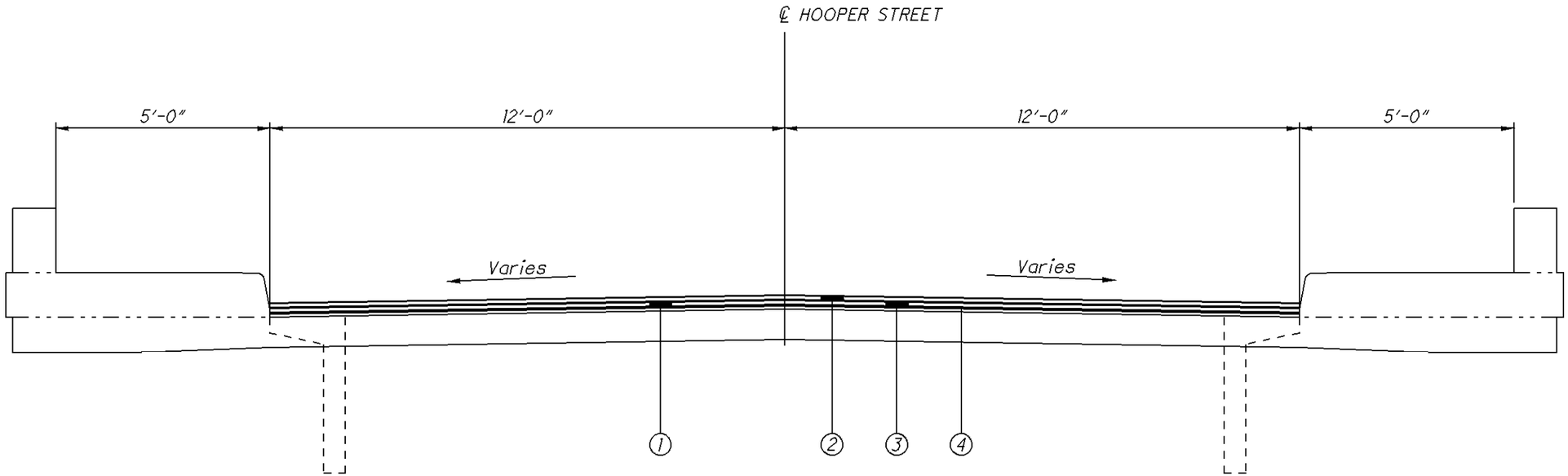

LEGEND

(1) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE

(2) ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE B, (446)

(3) ITEM 446 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28

(4) ITEM SPECIAL - SPRAY APPLIED MEMBRANE SYSTEM

CALCULATED JAM
CHECKED JPH

OVERLAY DETAIL

Bridge No. ATH-33-17.13

ATH-33/50-15.05/11.46

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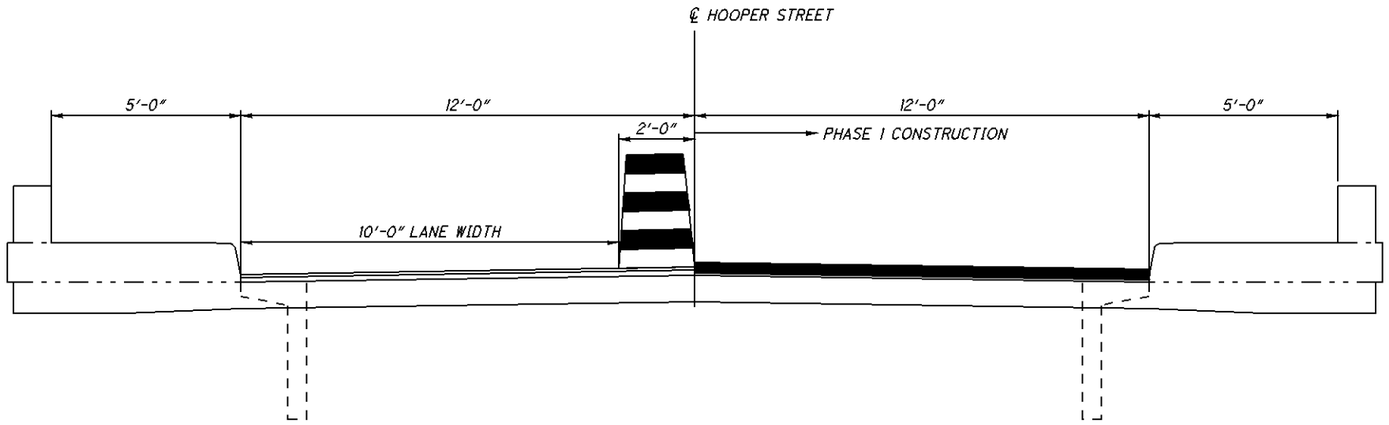
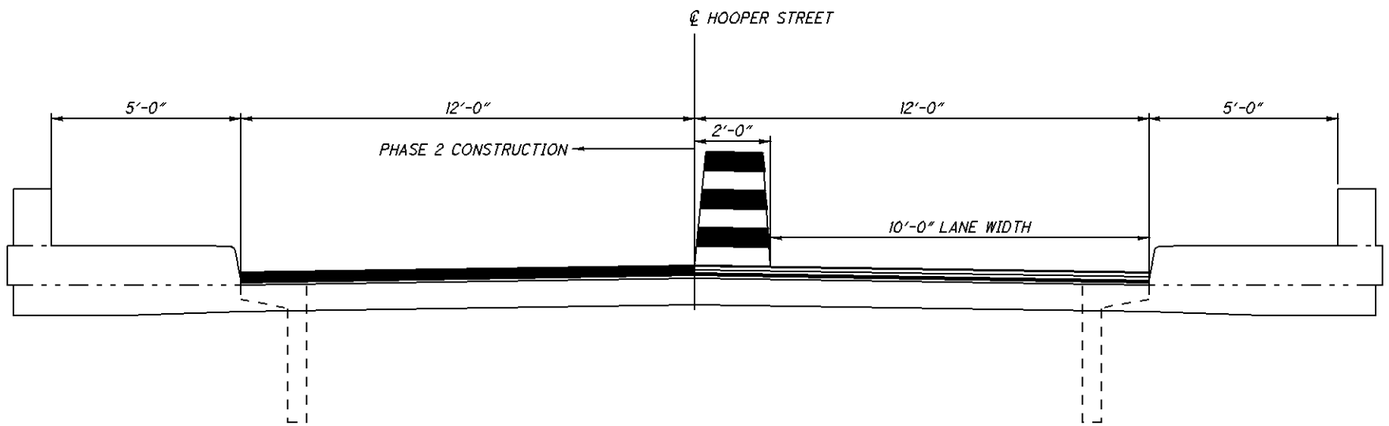


TRANSVERSE SECTION PHASE 1



TRANSVERSE SECTION PHASE 2

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DESIGN AGENCY
Production Department
District 10
Marietta, Ohio

DESIGNED	DRAWN	REVIEWED	DATE
JAM	JAM	JPH	8/24/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0500917	

PHASE CONSTRUCTION DETAILS
Bridge No. ATH-33-17.13
Hooper Street over US 33

ATH-33/30-15.05/11.46

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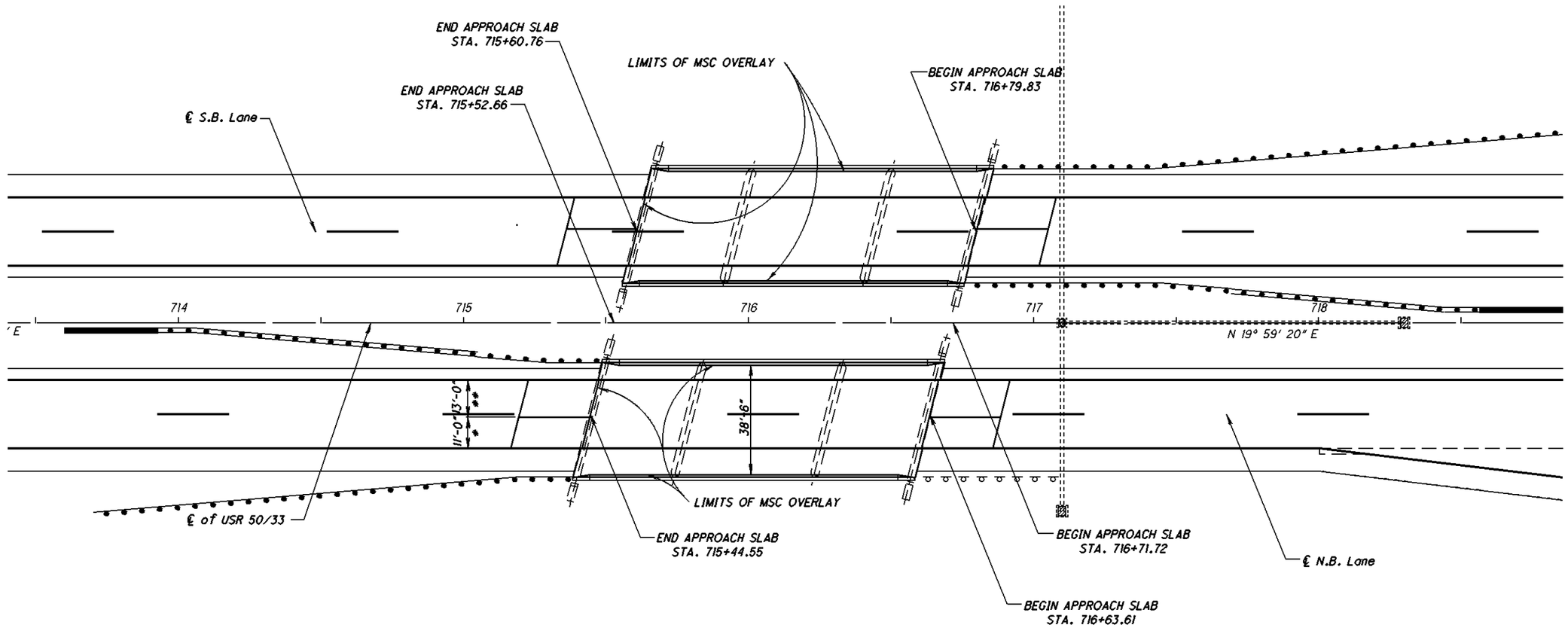
EXISTING STRUCTURE (Rt.)

TYPE: CONTINUOUS STEEL BEAM BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES
SPANS: 34'-0" - 49'-0" - 34'-0" c/c Brgs.
ROADWAY: 40'-0" f/f Parapets
LOADING: HS20-44
SKEW: 14°-13'-01" L.F.
APPROACH SLABS: AS-1-72 (25'-0" LONG, MODIFIED)
ALIGNMENT: Tangent
STRUCTURAL FILE NUMBER: 0500852 (Lt)
DATE BUILT: 1978

EXISTING STRUCTURE (Lt.)

TYPE: CONTINUOUS STEEL BEAM BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES
SPANS: 34'-0" - 49'-0" - 34'-0" c/c Brgs.
ROADWAY: 40'-0" f/f Parapets
LOADING: HS20-44
SKEW: 14°-13'-01" R.F.
APPROACH SLABS: AS-1-72 (25'-0" LONG, MODIFIED)
ALIGNMENT: Tangent
STRUCTURAL FILE NUMBER: 0500860 (Rt)
DATE BUILT: 1978



PROPOSED STRUCTURE (Rt.)

TYPE: CONTINUOUS STEEL BEAM BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES
SPANS: 34'-0" - 49'-0" - 34'-0" c/c Brgs.
ROADWAY: 40'-0" f/f Parapets
LOADING: HS20-44
SKEW: 14°-13'-01" L.F.
APPROACH SLABS: AS-1-81 (T=15")
ALIGNMENT: Tangent
STRUCTURAL FILE NUMBER: 0500852 (Lt)
COORDINATES: LATITUDE 39°-20'-00" N
LONGITUDE 82°-5'-00" E

PROPOSED STRUCTURE (Lt.)

TYPE: CONTINUOUS STEEL BEAM BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES
SPANS: 34'-0" - 49'-0" - 34'-0" c/c Brgs.
ROADWAY: 40'-0" f/f Parapets
LOADING: HS20-44
SKEW: 14°-13'-01" R.F.
APPROACH SLABS: AS-1-81 (T=15")
ALIGNMENT: Tangent
STRUCTURAL FILE NUMBER: 0500860 (Rt)
COORDINATES: LATITUDE 39°-20'-00" N
LONGITUDE 82°-5'-00" E

LEGEND
* - PHASE 1 CONSTRUCTION
** - PHASE 2 CONSTRUCTION

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	CAK	JDC	10-18-08
CHECKED	REVISED	STRUCTURE FILE No.	
ALC	XXX	0500852 Lt. & 0500860 Rt.	

BRIDGE LIMITS (Rt. & Lt.)
Sta. 715+44.55
Sta. 716+63.61
Sta. 715+60.76
Sta. 716+79.83

SITE PLAN
Bridge No. ATH-33-1631 Lt. & Rt.
Over County Road 25

ATH-33/50-15.05/11.46
PID No. 21904

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REFERENCES

REFERENCE SHALL BE MADE TO SUPPLEMENTAL SPECIFICATIONS:
848 DATED 4-15-05

STANDARD DRAWINGS:
SBR-1-99 DATED 7-19-02
PCB-91 DATED 7-19-02

DESIGN DATA:

REINFORCING STEEL:
ASTM A615, A616, OR A617, GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

DECK PROTECTION METHOD:

SEALING OF CONCRETE SURFACES
MSC OVERLAY.
EPOXY COATED REINFORCING STEEL

MECHANICAL CONNECTORS

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES, LENGTHS FOR BARS WITH MECHANICAL CONNECTORS ARE DIMENSIONED TO THE CONSTRUCTION JOINT. CONNECTORS USED WITH EPOXY COATED BARS SHALL BE EPOXY COATED. COATING FOR CONNECTORS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWIZE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY, AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS. CONNECTORS SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 509 - EPOXY COATED REINFORCING STEEL.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUANTLY, 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 102.05, 105.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

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 ITEM 626 EXCEPT THAT THE SPACING SHALL BE 25 FEET.

CUT LINE CONSTRUCTION JOINT PREPARATION

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, SHALL BE LEFT 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. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED 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 ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES WHICH NEW CONCRETE WILL BE PLACED AGAINST SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

PORTIONS OF THE STRUCTURE REMOVED, AS PER PLAN SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT.
ITEMS TO BE REMOVED INCLUDE APPROACH SLABS AND 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. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO 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.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

DESIGN AGENCY
Production Department
District 10
Marietta, Ohio

DESIGNED	DRAWN	REVIEWED	DATE
CAK	CAK	JPH	10-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0500852 Lt. & 0500880 Rt.	

GENERAL NOTES
Bridge No. ATH-33-1631 Lt. & Rt.
Over County Road 25

ATH-33/50-15.05/11.46
PID No. 21904

PROPOSED WORK

REHABILITATION OF THE EXISTING BRIDGE STRUCTURE SHALL INCLUDE: OVERLAYING WITH MICRO-SILICA MODIFIED CONCRETE, SEALING OF CONCRETE SURFACES, AND NEW APPROACH SLABS.

REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN

ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW REINFORCING STEEL. ANY EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW REINFORCING STEEL OF THE SAME SIZE AT THE CONTRACTOR'S COST. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER.
THE NUMBER OF POUNDS OF REINFORCING STEEL PAID FOR AT CONTRACT PRICES SHALL BE THE ACTUAL POUNDS OF REPLACEMENT REINFORCING STEEL SPECIFIED BY THE ENGINEER DUE TO CORROSION AND SHALL INCLUDE PLACEMENT, DOWELING, BENDING, SUPPORTING, TIE WIRES AND TYING OF THAT SPECIFIED REINFORCING STEEL.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE ESTIMATED QUANTITIES ON THIS SHEET.

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN 50 lb. PER BRIDGE

CALCULATIONS

ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (2 1/4")

QUANTITY FROM FIELD MEASUREMENTS:

4611 / 9 = 512 SQ. YDS. (Left)
4611 / 9 = 512 SQ. YDS. (Right)

TOTAL = 1024 SQ. YDS.

ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY (Variable Thickness), MATERIAL ONLY

SQ. YDS. QUANTITY MEASUREMENTS USE 3" THICK:

(25.6 SQ. YDS. x 3"/12) / 3 = 2.1 CU. YDS. (Left)
(25.6 SQ. YDS. x 3"/12) / 3 = 2.1 CU. YDS. (Right)

TOTAL = 4.2 CU. YDS.

ITEM 848 - HAND CHIPPING

CALCULATED AS TEN PERCENT OF REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY (LMC).

0.10 x 26 SQ. YDS. = 2.6 SQ. YDS. (Left)
0.10 x 26 SQ. YDS. = 2.6 SQ. YDS. (Right)

TOTAL = 5.2 SQ. YDS.

ITEM 848 - FULL DEPTH REPAIR

(5.1 SQ. YDS. x 10 5/8"/12) / 3 = 1.5 CU. YDS. (Left)
(5.1 SQ. YDS. x 10 5/8"/12) / 3 = 1.5 CU. YDS. (Right)

TOTAL = 3.0 CU. YDS.

ITEM 848 - REMOVAL OF DEBONDED OR DETERIORATED EXISTING VAIABLE THICKNESS CONCRETE OVERLAY (LMC)

26 SQ. YDS. (Left)
26 SQ. YDS. (Right)

TOTAL = 52 SQ. YDS.

ESTIMATED QUANTITIES (RT) — SFN 0500852

ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRU.	GRNL
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP
503	11101	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN				LUMP
509	20001	50	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	50			
512	10100	237	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)				237
SPECIAL	516E31250	50	FOOT	SAWING AND SEALING CONCRETE JOINTS			50	
526	25000	134	SQ.YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")				134
848	10000	512	SQ.YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (2¼") THICK			512	
848	20000	512	SQ.YD.	SURFACE PREPARATION USING HYDRODEMOLITION			512	
848	30000	2.1	CU.YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY			2.1	
848	50000	2.6	SQ.YD.	HAND CHIPPING			2.6	
848	50100	LUMP		TEST SLAB			LUMP	
848	50200	1.5	CU.YD.	FULL-DEPTH REPAIR			1.5	
848	50320	512	SQ.YD.	EXISTING CONCRETE OVERLAY REMOVED (1¼" NOMINAL THICKNESS)			512	
848	50340	26	SQ.YD.	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY (LMC)			2.6	

ESTIMATED QUANTITIES (LT) — SFN 0500860

ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRU.	GRNL
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP
503	11101	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN				LUMP
509	20001	50	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	50			
512	10100	237	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)				237
SPECIAL	516E31250	50	FOOT	SAWING AND SEALING CONCRETE JOINTS			50	
519	11100	6	SQ.FT.	PATCHING CONCRETE STRUCTURE				6
526	25000	134	SQ.YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")				134
848	10000	512	SQ.YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (2¼") THICK			512	
848	20000	512	SQ.YD.	SURFACE PREPARATION USING HYDRODEMOLITION			512	
848	30000	2.1	CU.YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY			2.1	
848	50000	2.6	SQ.YD.	HAND CHIPPING			2.6	
848	50100	LUMP		TEST SLAB			LUMP	
848	50200	1.5	CU.YD.	FULL-DEPTH REPAIR			1.5	
848	50320	512	SQ.YD.	EXISTING CONCRETE OVERLAY REMOVED (1¼" NOMINAL THICKNESS)			512	
848	50340	26	SQ.YD.	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY (LMC)			2.6	

ITEM 512 - SEALING OF CONCRETE SURFACES

146' x 6.29' = 918 SQ. FT. = 102 SQ. YDS.

102 SQ. YDS. x 4 = 408 SQ. YDS.

TOTAL = 408 SQ. YDS. (LEFT & RIGHT)

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), A SEALER SHALL BE APPLIED TO THE CONCRETE SURFACES AS SHOWN ON THE TYPICAL SECTION FOR THE FULL LENGTH OF THE BRIDGE.

COFFERDAMS, CRIBS, AND SHEETING, AS PER PLAN

TEMPORARY SHORING MAY BE USED TO ACCOMPLISH THE PROPOSED CONSTRUCTION IN STAGES. THE DESIGN OF THE TEMPORARY SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER AND CONFORM WITH 501.05 FOR APPROVAL. PORTIONS OF THE TEMPORARY SHORING COMPOSED OF STEEL OR CONCRETE MAY BE LEFT IN PLACE AT THE DISCRETION OF THE ENGINEER. PORTIONS COMPOSED OF OTHER MATERIALS SHALL BE REMOVED PRIOR TO COMPLETION OF THE WORK.

DESIGN AGENCY
Production Department
District 10
Marietta, Ohio

DESIGNED CAK | DRAWN CAK | REVIEWED JPH | DATE 10-18-08
CHECKED ALC | REVISED | STRUCTURE FILE NUMBER 0500852 Lt. & 0500860 Rt.

GENERAL NOTES & CALCULATIONS
Bridge No. ATH-33-1631 Lt. & Rt.
Over County Road 25

ATH-33/50-15.05/11.46
PID No. 21904

3 / 7

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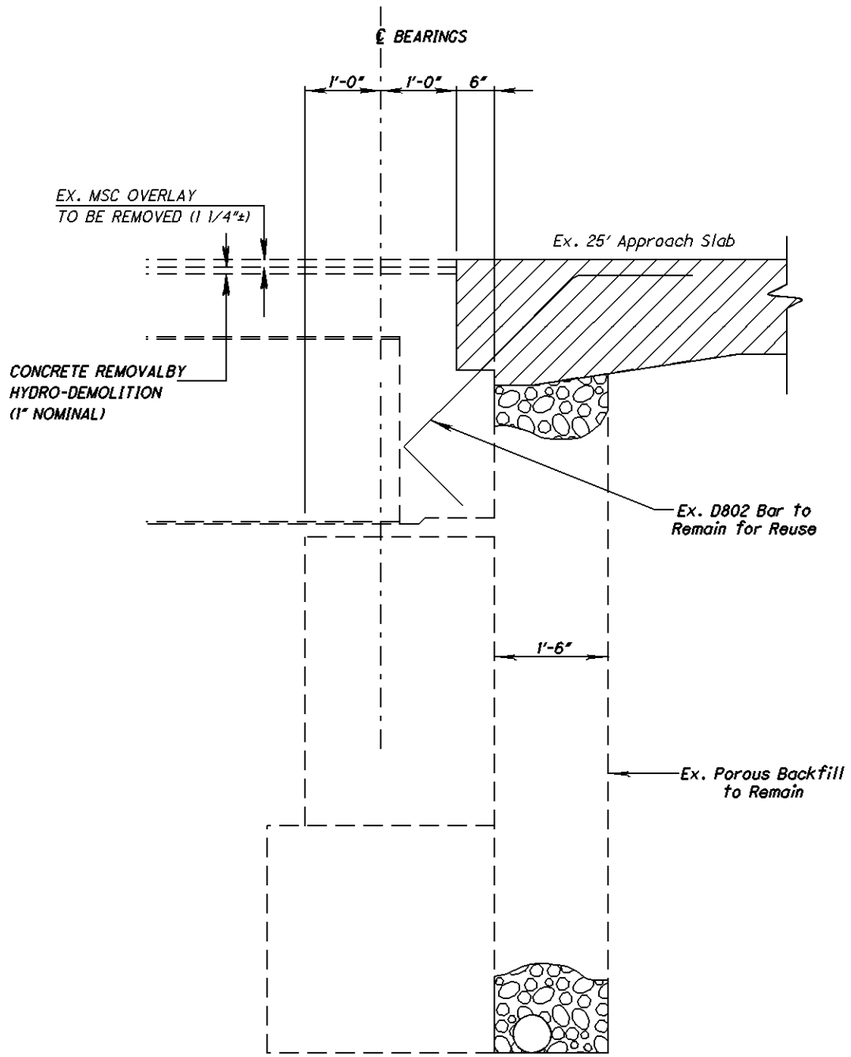
222



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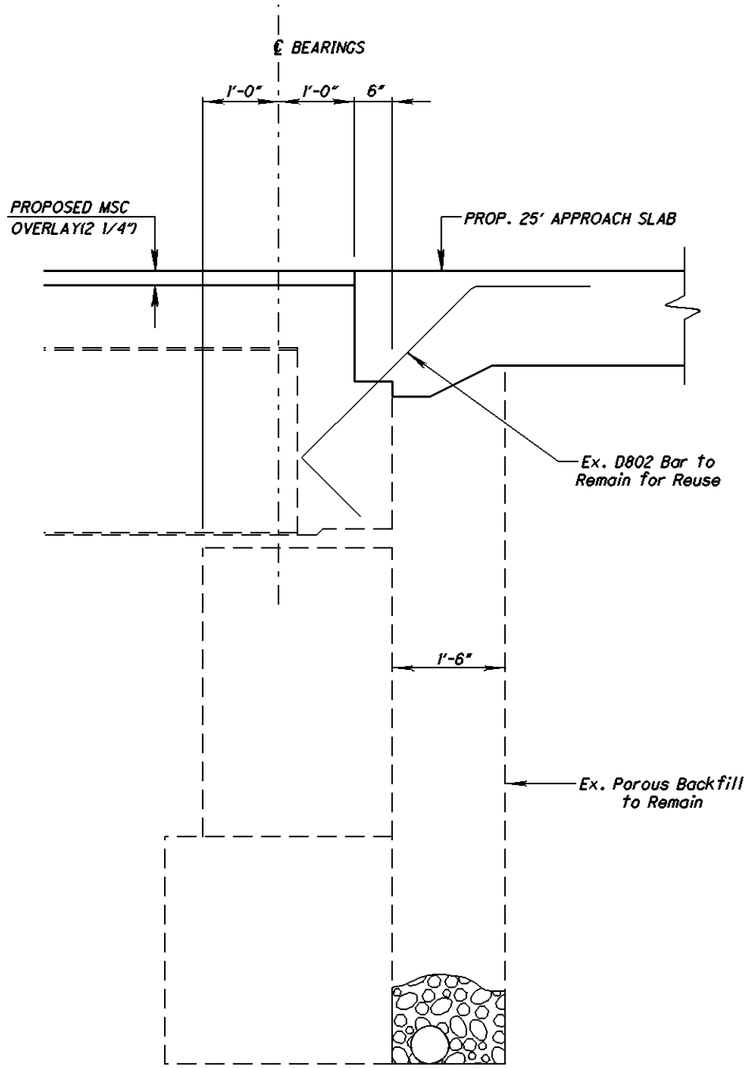

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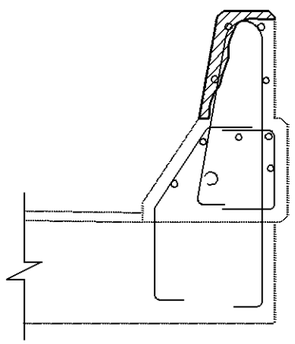

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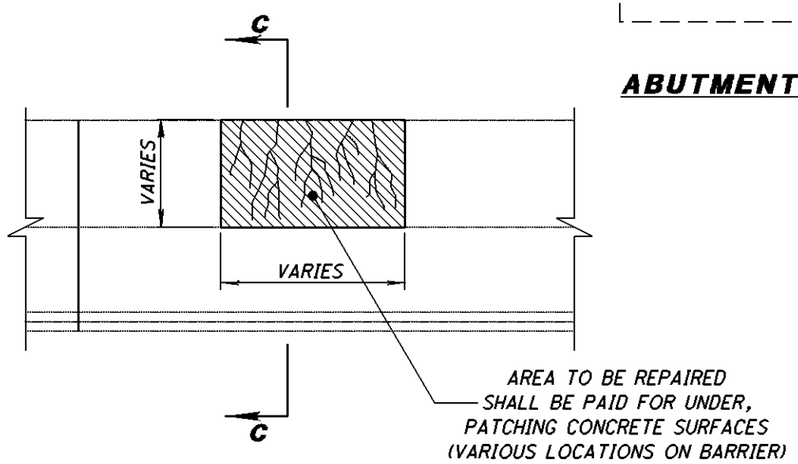

BARRIER PATCHING DETAIL

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	CAK	JDC	10-18-08
CHECKED	REVISED	STRUCTURE FILE No.	
XXX	XXX	0500852 Lt. & 0500860 Rt.	

DETAILS

ABUTMENT DETAILS

Bridge No. ATH-33-1631 Lt. & Rt.

ATH-33/50-15.05/11.46

PID No. 21904

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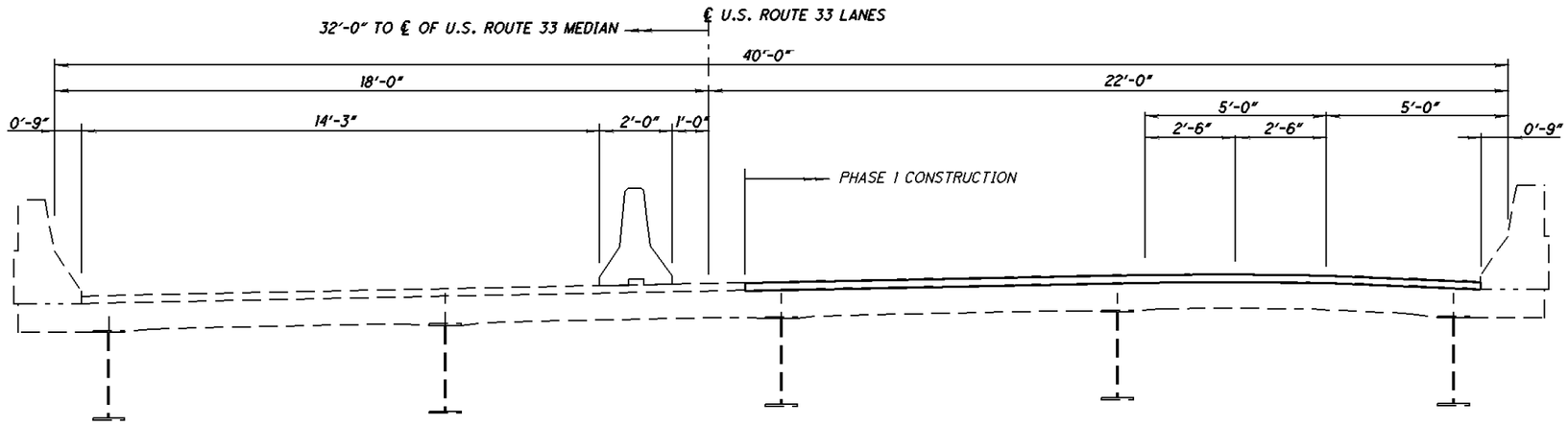
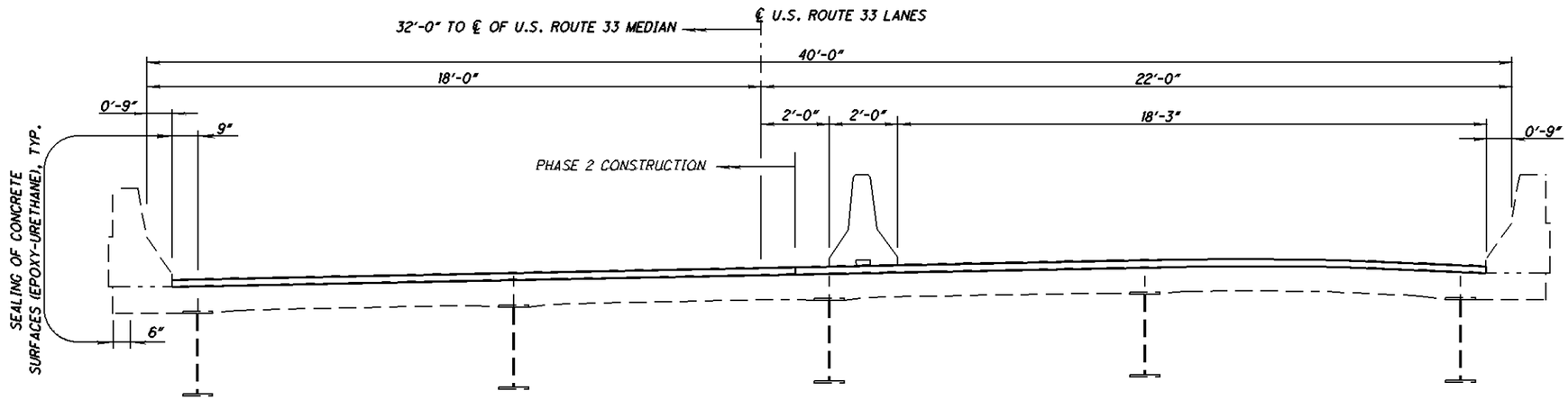


TRANSVERSE SECTION
PHASE 1

RIGHT BRIDGE SHOWN
LEFT BRIDGE OPPOSITE HAND



TRANSVERSE SECTION
PHASE 2

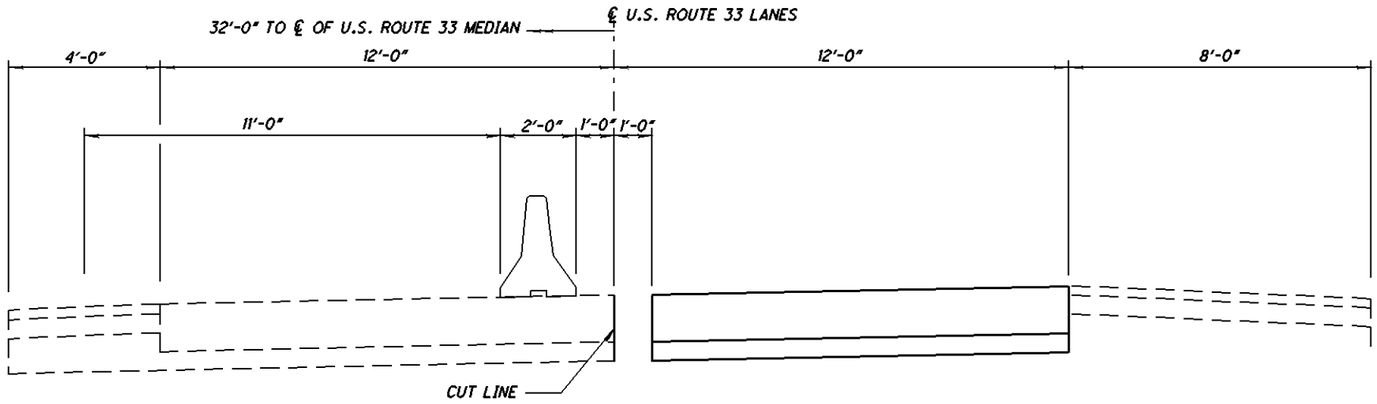
RIGHT BRIDGE SHOWN
LEFT BRIDGE OPPOSITE HAND

DESIGN AGENCY
Production Department
District 10
Marietta, Ohio

DESIGNED	DRAWN	REVIEWED	DATE
CAK	CAK	JPH	10-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0500852 LT. & 0500860 RT.	

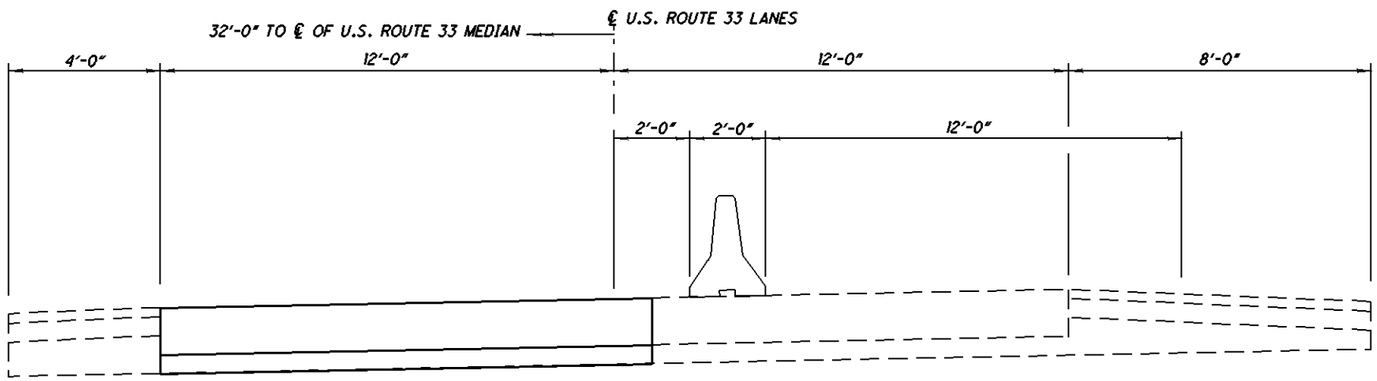
TRANSVERSE SECTION
Bridge No. ATH-33-1631 Lt. & Rt.
Over County Road 25

ATH-33/50-15.05/11.46
PID No. 21904



APPROACH SLAB SECTION
PHASE 1

RIGHT BRIDGE SHOWN
LEFT BRIDGE OPPOSITE HAND



APPROACH SLAB SECTION
PHASE 2

RIGHT BRIDGE SHOWN
LEFT BRIDGE OPPOSITE HAND

DESIGN AGENCY
Production Department
District 10
Marietta, Ohio

DESIGNED	DRAWN	REVIEWED	DATE
CAK	CAK	JPH	10-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0500852 Lt. & 0500860 Rt.	

APPROACH SLAB SECTION
Bridge No. ATH-33-1631 Lt. & Rt.
Over County Road 25

ATH-33/50-15.05/11.46
PID No. 21904

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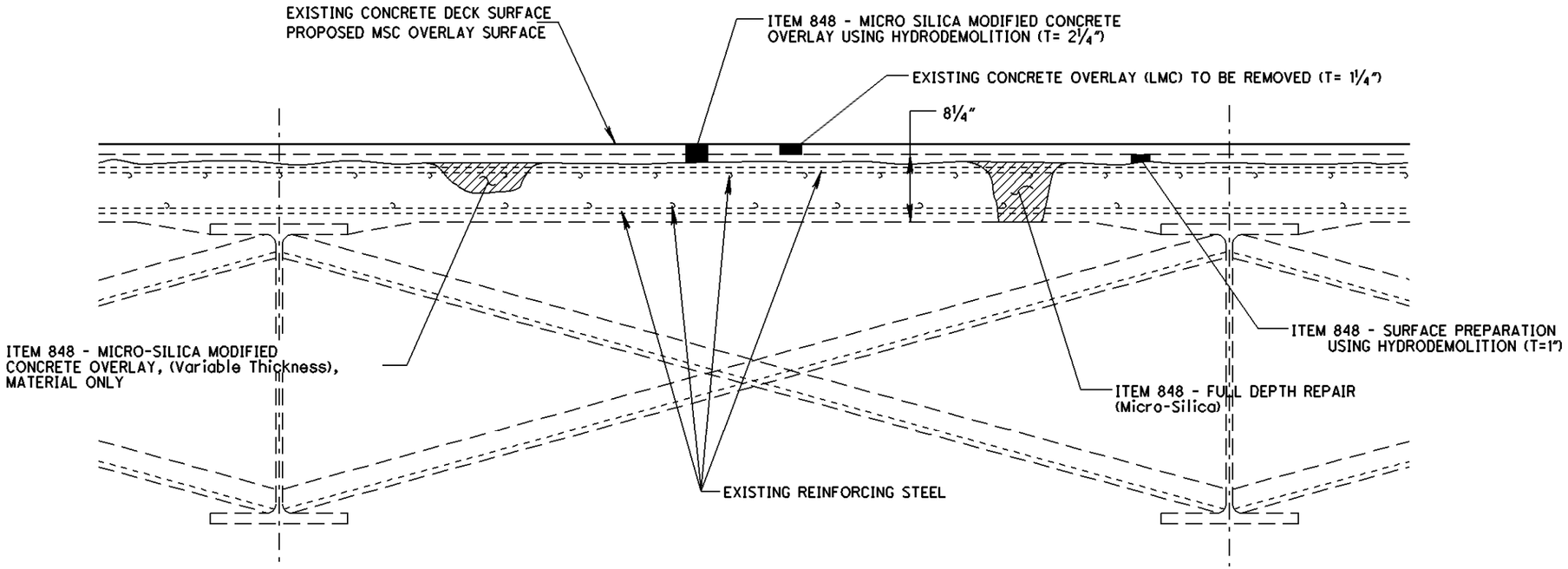

OVERLAY DETAIL

BRIDGE No. ATH-33-1631 Lt. & Rt.

ATH-33/50-15.05/11.46

PID No. 21904

DESIGNED JDC
DRAWN JDC
CHECKED ALC
REVISED

REVIEWED JPH DATE 10-18-08
STRUCTURE FILE NUMBER 0500852 Lt. 0500860 Rt.

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

7 / 7

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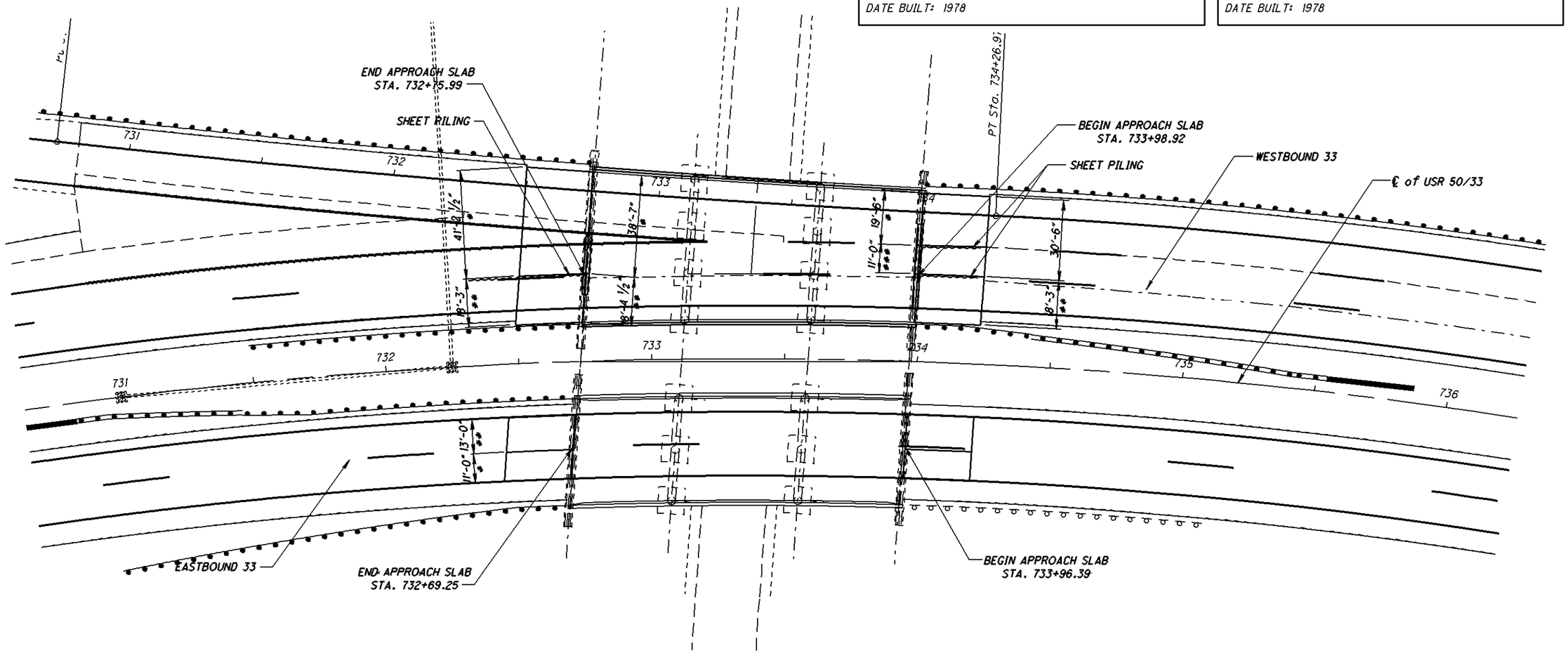
EXISTING STRUCTURE (Lt.)

TYPE: CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE
SPANS: 38'-0" - 47'-6" - 38'-0" ℄ of Survey
ROADWAY: 52'-0" F/F PARAPETS
LOADING: HS20-44
SKEW: 4°-07'-59.8" L.F. w/Tangent
APPROACH SLABS: AS-1-72 (25'-0" LONG, MODIFIED)
ALIGNMENT: 3°00'00" Curve Rt.
STRUCTURAL FILE NUMBER: 0500887 (L)
DATE BUILT: 1978

EXISTING STRUCTURE (Rt.)

TYPE: CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE
SPANS: 38'-0" - 47'-6" - 38'-0" ℄ of Survey
ROADWAY: 40'-0" F/F PARAPETS
LOADING: HS20-44
SKEW: 4°-07'-59.8" L.F. w/Tangent
APPROACH SLABS: AS-1-72 (25'-0" LONG, MODIFIED)
ALIGNMENT: 3°00'00" Curve Rt.
STRUCTURAL FILE NUMBER: 0500895 (R)
DATE BUILT: 1978



PROPOSED STRUCTURE (Lt.)

TYPE: CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE
SPANS: 38'-0" - 47'-6" - 38'-0" ℄ of Survey
ROADWAY: 52'-0" F/F PARAPETS
LOADING: HS20-44
SKEW: 4°-07'-59.8" L.F. w/Tangent
APPROACH SLABS: AS-1-81 (T=15")
ALIGNMENT: 3°00'00" Curve Rt.
STRUCTURAL FILE NUMBER: 0500887 (L)
COORDINATES: LATITUDE 39°-20'-00" N
LONGITUDE 82°-05'-00" E

PROPOSED STRUCTURE (Rt.)

TYPE: CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE
SPANS: 38'-0" - 47'-6" - 38'-0" ℄ of Survey
ROADWAY: 40'-0" F/F PARAPETS
LOADING: HS20-44
SKEW: 4°-07'-59.8" L.F. w/Tangent
APPROACH SLABS: AS-1-81 (T=15")
ALIGNMENT: 3°00'00" Curve Rt.
STRUCTURAL FILE NUMBER: 0500895 (R)
COORDINATES: LATITUDE 39°-20'-00" N
LONGITUDE 82°-05'-00" E

LEGEND

* - PHASE 1 CONSTRUCTION
*** - PHASE 1A CONSTRUCTION
** - PHASE 2 CONSTRUCTION

DESIGN AGENCY: DISTRICT 10 PRODUCTION DEPARTMENT MARIETTA, OHIO
DESIGNED: JDC | DETAILED: ALC | DRAWN: CAK | REVISED: XXX
REVIEWED: JPH | DATE: 10-18-08 | STRUCTURE FILE No.: 0500887 & 0500895
BRIDGE LIMITS (Eq'n?): Sta. 732+69.25 Sta. 733+96.39 | Sta. 732+75.99 Sta. 733+98.92

SITE PLAN

Bridge No. ATH-33-1627 Lt. & Rt.
Over Stimson Ave.

ATH-33/50-15.05/11.46
PID No. 21904

1 / 14

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222

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PROPOSED WORK

REHABILITATION OF THE EXISTING BRIDGE STRUCTURE SHALL INCLUDE: REPLACING THE APPROACH SLABS, REPAIRING THE TOPS OF EXISTING BACKWALLS AND SEALING OF CONCRETE SURFACES AND A MICRO-SILICA MODIFIED CONCRETE OVERLAY..

REFERENCES

REFERENCE SHALL BE MADE TO STD. DWG'S:

AS-1-81 7-19-02
PCB-91 7-19-02

AND TO SUPPLEMENTAL SPECIFICATIONS:

DESIGN DATA:

CONCRETE; CLASS S-COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

CONCRETE; CLASS C-COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL:

ASTM A615, A616, OR A617, GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

DECK PROTECTION METHOD:

SEALING OF CONCRETE SURFACES
MSC OVERLAY.
EPOXY COATED REINFORCING STEEL

MECHANICAL CONNECTORS

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES, LENGTHS FOR BARS WITH MECHANICAL CONNECTORS ARE DIMENSIONED TO THE CONSTRUCTION JOINT. CONNECTORS USED WITH EPOXY COATED BARS SHALL BE EPOXY COATED. COATING FOR CONNECTORS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWIZE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY, AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS. CONNECTORS SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 509 - EPOXY COATED REINFORCING STEEL.

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

PORTIONS OF THE STRUCTURE REMOVED, AS PER PLAN SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT.
ITEMS TO BE REMOVED INCLUDE APPROACH SLABS AND 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. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO 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.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, SHALL BE LEFT 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. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED 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 ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES WHICH NEW CONCRETE WILL BE PLACED AGAINST SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

COFFERDAMS, CRIBS, AND SHEETING, AS PER PLAN

TEMPORARY SHORING MAY BE USED TO ACCOMPLISH THE PROPOSED CONSTRUCTION IN STAGES. THE DESIGN OF THE TEMPORARY SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER AND CONFORM WITH 501.05 FOR APPROVAL. PORTIONS OF THE TEMPORARY SHORING COMPOSED OF STEEL OR CONCRETE MAY BE LEFT IN PLACE AT THE DISCRETION OF THE ENGINEER. PORTIONS COMPOSED OF OTHER MATERIALS SHALL BE REMOVED PRIOR TO COMPLETION OF THE WORK.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUANTLY, 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 102.05, 105.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), A SEALER SHALL BE APPLIED TO THE CONCRETE SURFACES AS SHOWN ON THE TYPICAL SECTION FOR THE FULL LENGTH OF THE BRIDGE.

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	10-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0500860	

GENERAL NOTES

BRIDGE NO. ATH-33-1600 L&R

ATH-33/50-15.05/11.46

PID No. 21904

REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN

ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW REINFORCING STEEL. ANY EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW REINFORCING STEEL OF THE SAME SIZE AT THE CONTRACTOR'S COST. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER.
THE NUMBER OF POUNDS OF REINFORCING STEEL PAID FOR AT CONTRACT PRICES SHALL BE THE ACTUAL POUNDS OF REPLACEMENT REINFORCING STEEL SPECIFIED BY THE ENGINEER DUE TO CORROSION AND SHALL INCLUDE PLACEMENT, DOWELING, BENDING, SUPPORTING, TIE WIRES AND TYING OF THAT SPECIFIED REINFORCING STEEL.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE ESTIMATED QUANTITIES ON THIS SHEET.

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN 50 lb. PER BRIDGE

CALCULATIONS

ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (2 1/4")

QUANTITY FROM FIELD MEASUREMENTS:

6463 / 9 = 718 SQ. YDS. (Left)
4821 / 9 = 536 SQ. YDS. (Right)

TOTAL = 1248 SQ. YDS.

ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY (Variable Thickness), MATERIAL ONLY

SQ. YDS. QUANTITY FROM FIELD MEASUREMENTS USE 3" THICK:

(35.9 SQ. YDS. x 3"/12) / 3 = 3.0 CU. YDS. (Left)
(26.8 SQ. YDS. x 3"/12) / 3 = 2.2 CU. YDS. (Right)

TOTAL = 5.2 CU. YDS.

ITEM 848 - HAND CHIPPING

CALCULATED AS TEN PERCENT OF REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY (LMC).

0.10 x 36 SQ. YDS. = 3.6 SQ. YDS. (Left)
0.10 x 27 SQ. YDS. = 2.7 SQ. YDS. (Right)

TOTAL = 6.3 SQ. YDS.

ITEM 848 - FULL DEPTH REPAIR

QUANTITY FROM FIELD MEASUREMENTS:

(7.2 SQ. YDS. x 22.25"/12) / 3 = 4.5 CU. YDS. (Left)
(15.4 SQ. YDS. x 22.25"/12) / 3 = 3.3 CU. YDS. (Right)

TOTAL = 7.8 CU. YDS.

ESTIMATED QUANTITIES (RT.) — SFN 0500887

ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRU.	GRNL
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP
503	11101	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN				LUMP
509	20001	50	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				50
512	10100	204	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)			204	
SPECIAL	516E31250	48	FOOT	SAWING AND SEALING CONCRETE JOINTS			48	
519	11100	50	SQ.FT.	PATCHING CONCRETE STRUCTURE	42		8	
526	25000	134	SQ.YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")				134
848	10000	536	SQ.YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION			536	
				(2 1/4") THICK				
848	20000	536	SQ.YD.	SURFACE PREPARATION USING HYDRODEMOLITION			536	
848	30000	2.2	CU.YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS),			2.2	
				MATERIAL ONLY				
848	50000	2.7	SQ.YD.	HAND CHIPPING			2.7	
848	50100	LUMP		TEST SLAB			LUMP	
848	50200	3.3	CU.YD.	FULL-DEPTH REPAIR			3.3	
848	50320	536	SQ.YD.	EXISTING CONCRETE OVERLAY REMOVED (1 1/4" NOMINAL THICKNESS)			536	
848	50340	27	SQ.YD.	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE			27	
				THICKNESS CONCRETE OVERLAY (LMC)				

ESTIMATED QUANTITIES (LT.) — SFN 0500895

ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRU.	GRNL
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP
503	11101	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN				LUMP
509	10000	2469	POUND	EPOXY COATED REINFORCING STEEL	2469			
509	20001	50	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				50
510	10000	28	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT				
511	34400	4.7	CU.YD.	CLASS S CONCRETE, SUPERSTRUCTURE			4.7	
511	45700	6.1	CU.YD.	CLASS C CONCRETE, ABUTMENT	6.1			
512	10100	204	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)			204	
512	44400	13	SQ.YD.	TYPE B WATERPROOFING	13			
SPECIAL	516E31250	106	FOOT	SAWING AND SEALING CONCRETE JOINTS			106	
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN			LUMP	
519	11100	65	SQ.FT.	PATCHING CONCRETE STRUCTURE	29		36	
526	25000	294	SQ.YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")				294
848	10000	718	SQ.YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (2 1/4") THICK			718	
848	20000	718	SQ.YD.	SURFACE PREPARATION USING HYDRODEMOLITION			718	
848	30000	2.2	CU.YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS),			2.2	
				MATERIAL ONLY				
848	50000	3.6	SQ.YD.	HAND CHIPPING			3.6	
848	50100	LUMP		TEST SLAB			LUMP	
848	50200	4.5	CU.YD.	FULL-DEPTH REPAIR			4.5	
848	50320	718	SQ.YD.	EXISTING CONCRETE OVERLAY REMOVED (1 1/4" NOMINAL THICKNESS)			718	
848	50340	36	SQ.YD.	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE			36	
				THICKNESS CONCRETE OVERLAY (LMC)				

ITEM 848 - REMOVAL OF DEBONDED OR DETERIORATED EXISTING VAIABLE THICKNESS CONCRETE OVERLAY (LMC)

QUANTITIES FROM FIELD MEASUREMENTS:

36 SQ. YDS. (Left)
27 SQ. YDS. (Right)

TOTAL = 63 SQ. YDS.

ITEM 512 - SEALING OF CONCRETE SURFACES

146' x 6.29' = 918 SQ. FT. = 102 SQ. YDS.

102 SQ. YDS. x 4 = 408 SQ. YDS.

TOTAL = 408 SQ. YDS. (LEFT & RIGHT)

DESIGN AGENCY
Production Department
District 10
Marietta, Ohio

DESIGNED	DRAWN	REVIEWED	DATE
JDC	CAK		
DETAILED	REVISED		
ALC			

STRUCTURE FILE NUMBER 0500887 Lt. & 0500895 Rt.

GENERAL NOTES & CALCULATIONS
Bridge No. ATH-33-1600 Lt. & Rt.
Over Stimson Ave.

ATH-33/50-15.05/11.46
PID No. 21904

3 / 14

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ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

GENERAL: THIS WORK CONSISTS OF RAISING OR RE-POSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMITTAL REQUIREMENTS: AN OHIO REGISTERED ENGINEER SHALL PREPARE, SEAL AND DATE PLANS FOR A JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS, SUFFICIENT TO PERFORM THE WORK DESCRIBED IN THE PLANS. SUBMIT THREE SETS OF THESE PLANS TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE OHIO REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.

2. CALCULATIONS AND ANALYSES OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE JACKING POINTS.

3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.

4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.

5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.

6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.

7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.

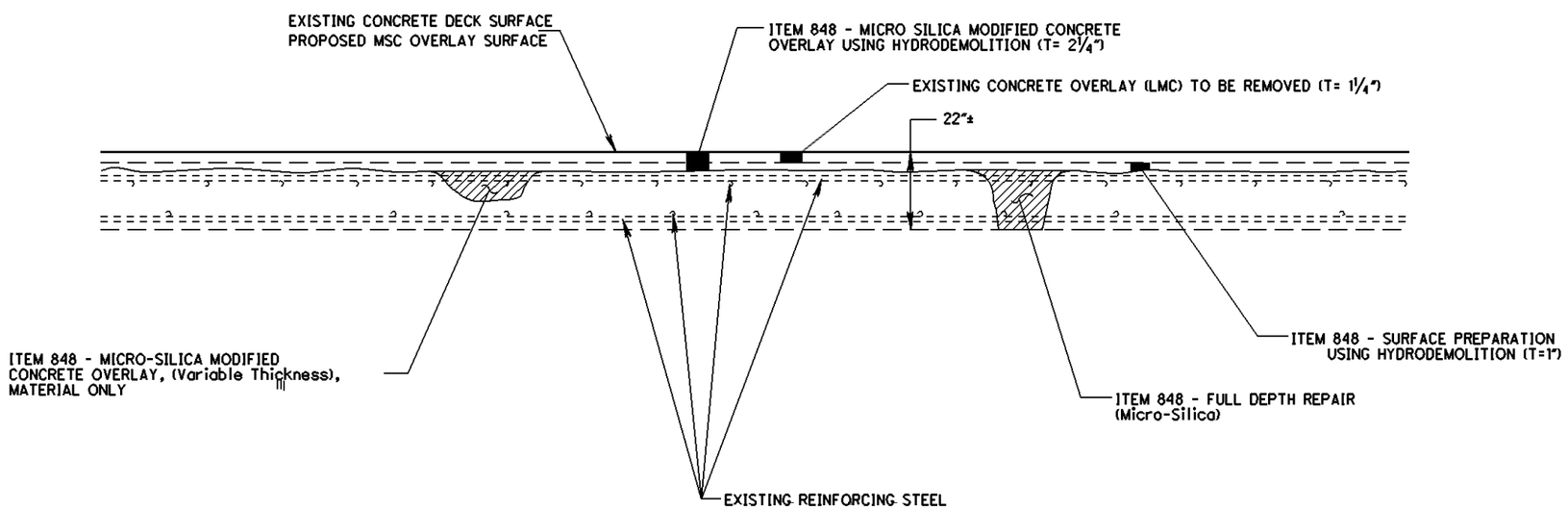
8 METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

JACKING SYSTEM REQUIREMENTS: THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS. FOR LIFTS GREATER THAN 1 INCH, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT. JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK. DO NOT USE JACKS ALONE TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. USE TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR. DO NOT USE SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM. HAVE SPARE EQUIPMENT AVAILABLE ON SITE IN ORDER TO PROCEED WITH THE JACKING IN THE EVENT OF BREAKDOWN. PROVIDE A LIST OF SPARE EQUIPMENT TO THE ENGINEER.

JACKING OPERATION REQUIREMENTS: AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1/4 INCH. THE MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1 INCH OR LESS. IF THIS 1 INCH LIMIT IS TO BE EXCEEDED, PROVIDE CALCULATIONS SHOWING THAT THE SUPERSTRUCTURE COMPONENTS WILL NOT BE TEMPORARILY STRESSED BEYOND ALLOWABLE STRESSES AND THAT NO PERMANENT STRESSES WILL BE INDUCED IN THE COMPONENTS AFTER THEY OBTAIN THEIR FINAL POSITION. 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 ODOT'S PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". 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.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.



DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

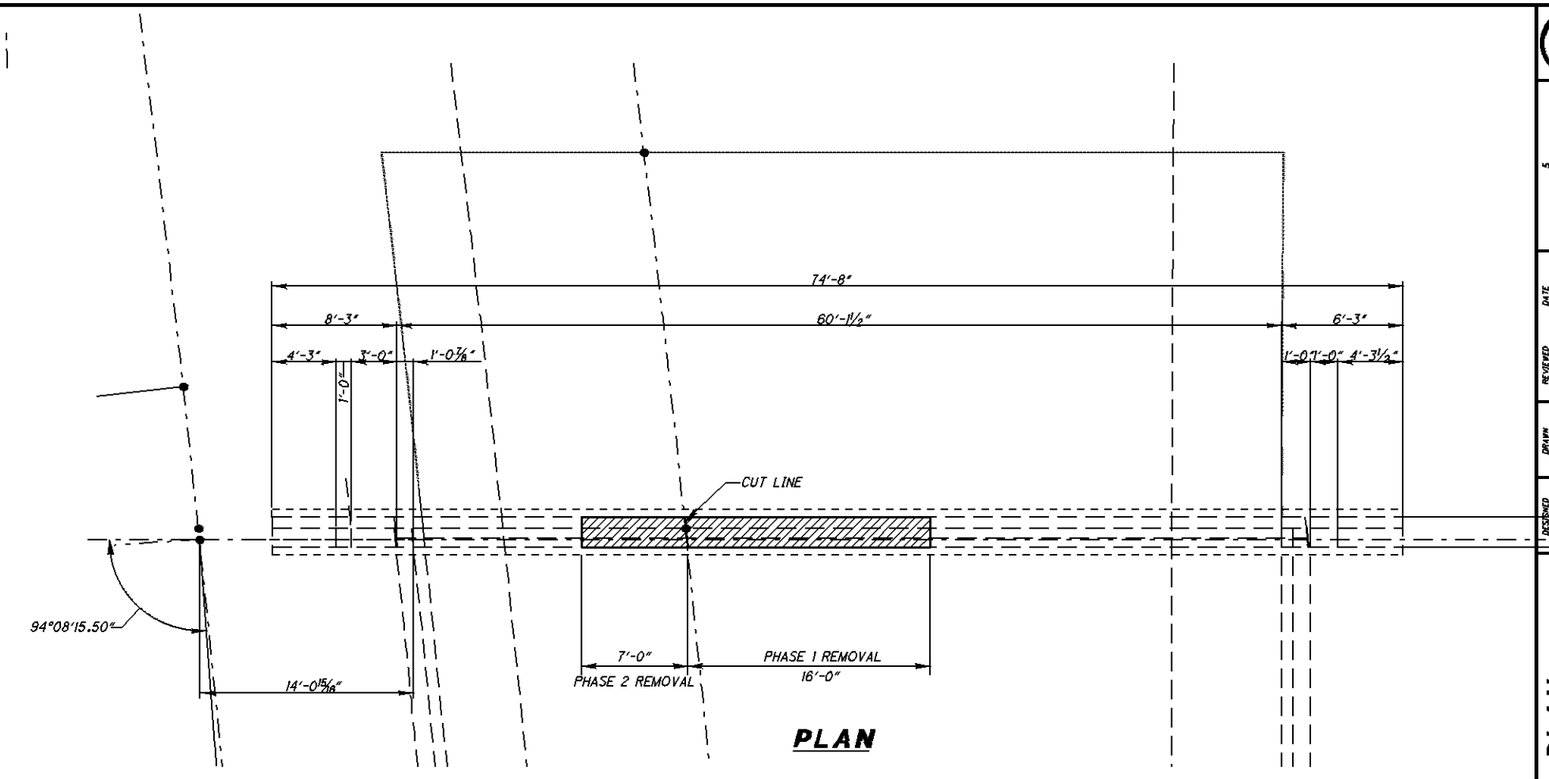
DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	10-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		033-0060	

GENERAL NOTES & DETAILS
BRIDGE No. ATH-33-1600 L&R

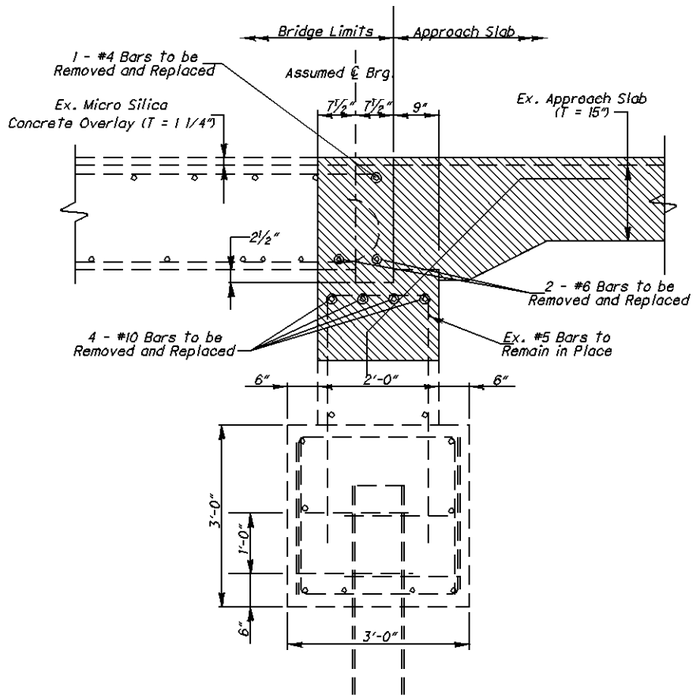
ATH-33/50-15.05/11.46
PID No. 21904

Legend

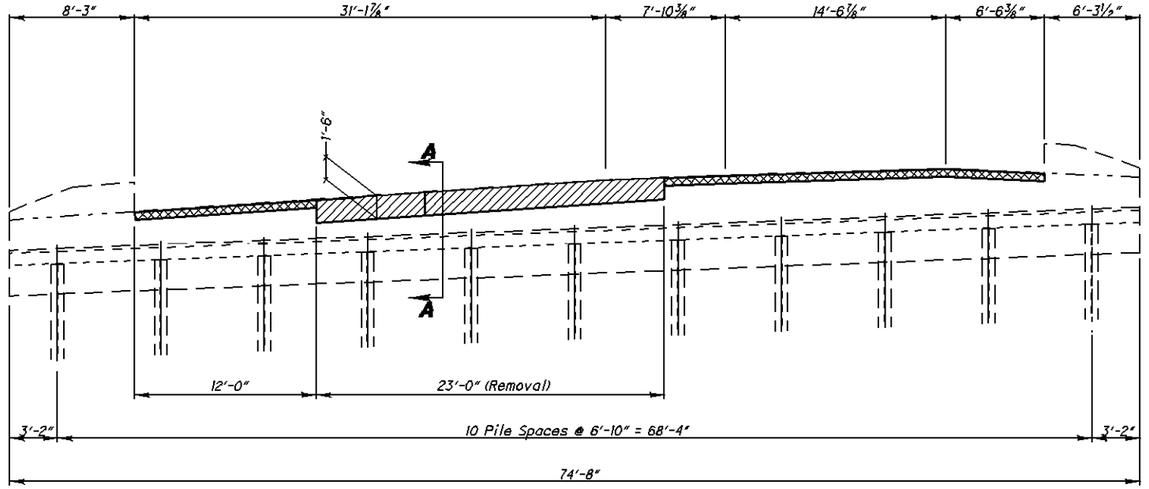
1.) ▨ - Portions of Structure Removed
2.) ▩ - Patching of Concrete Surfaces
3.) P.E.J.F. - Preformed Expansion Joint Filler
4.) E.F. - Each Face
5.) ═ - Mechanical Connector
6.) ▭ - Dowel Holes
7.) Const. Jt. - Contruction Joint
8.) Ser. - Series of
9.) Clr. - Clear



PLAN



SECTION A-A



ELEVATION
Rear Abutment - Left Bridge

Note:

1.) For, Transverse Section, Slab Section See Sheet 11-13 of 14.

HORIZONTAL SCALE IN FEET
0 5 10

DESIGNED	DRAWN	REVISED	DATE
CAK	CAK	XXX	11-18-08
CHECKED	REVIEWED	STRUCTURE FILE NO.	
ALC	JPH	0600860	

ABUTMENT PLAN
Bridge No. ATH-33-1600
Over Stimson Avenue

ATH-33/50-15.05/11.46
PID No. 21904

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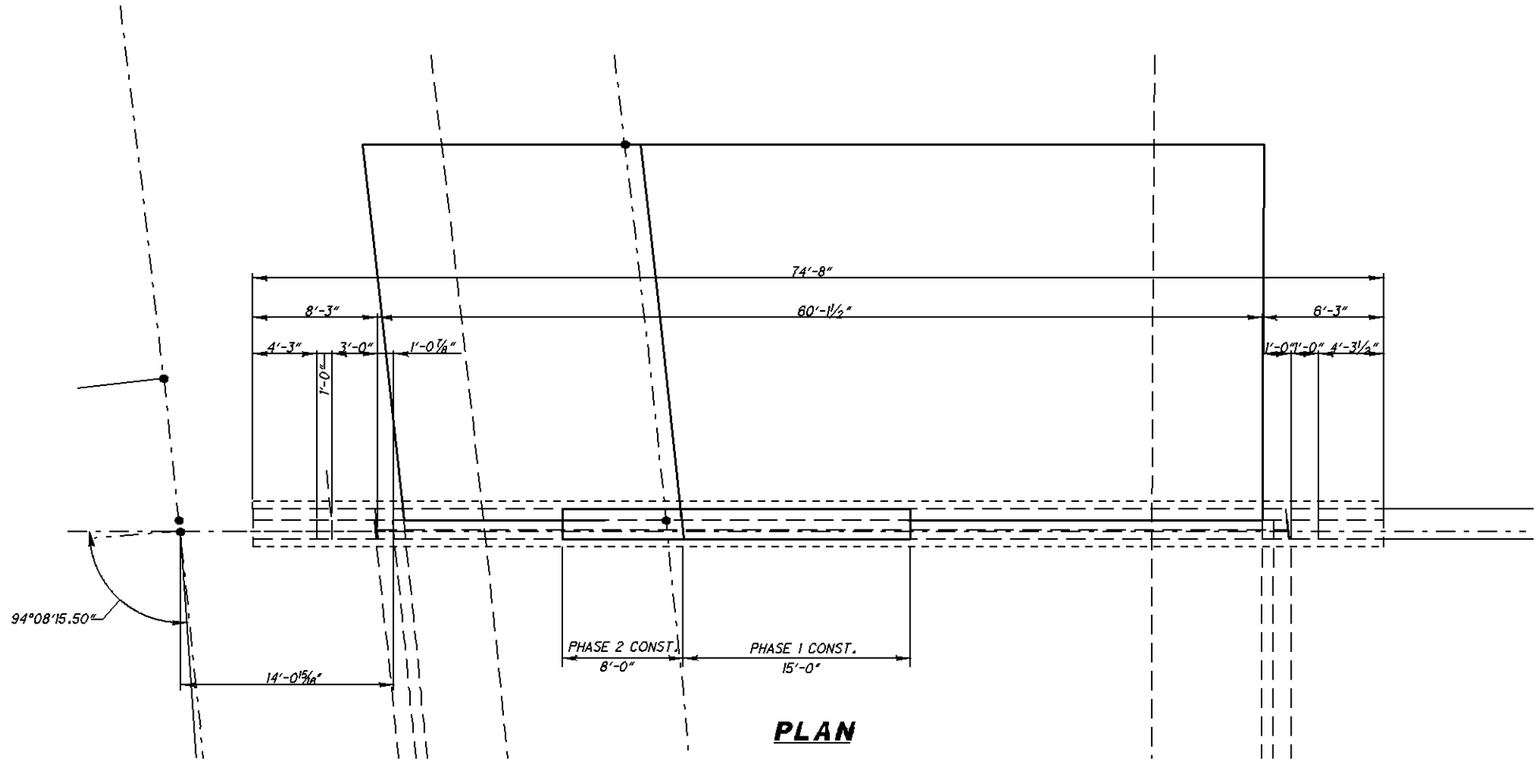
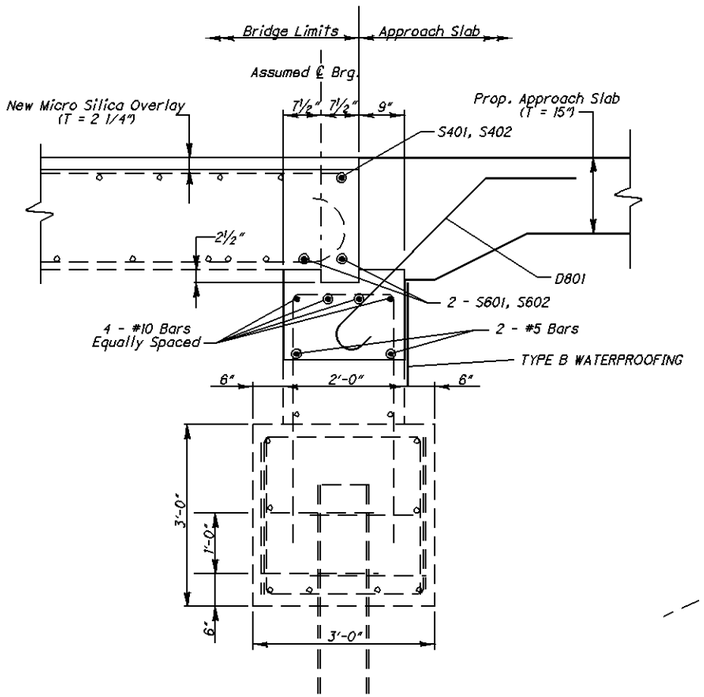
Legend

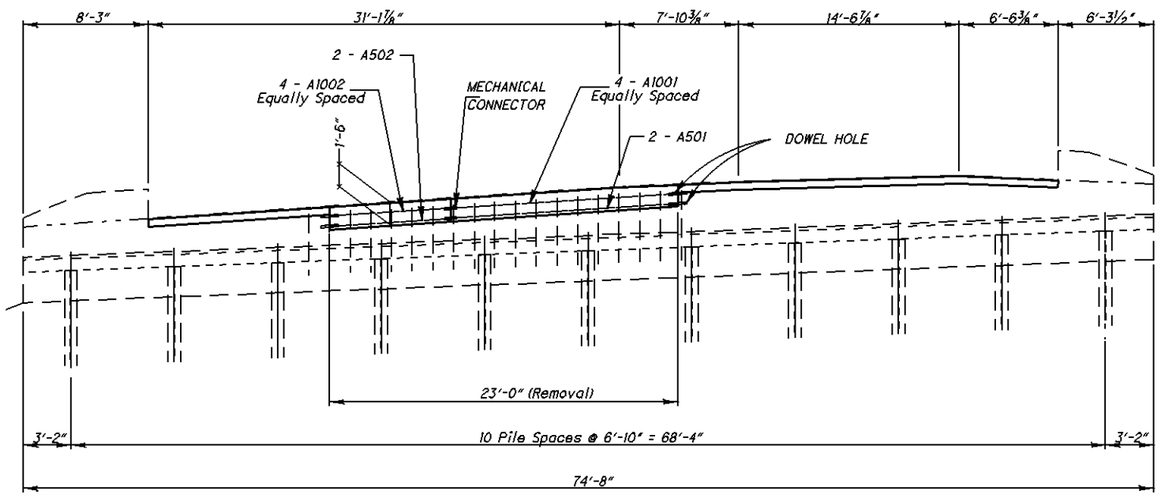
1.) ▬ - Mechanical Connector
2.) ▭ - Dowel Holes



PLAN



SECTION A-A



ELEVATION
Rear Abutment - Left Bridge

Note:

1.) Reinforcing Steel List, Sht. 13 of 14.
2.) ◉ Dowel Hole Locations

HORIZONTAL SCALE IN FEET
0 5 10

DESIGNED CAK
DRAWN CAK
CHECKED ALC
REVISED XXX
REVIEWED JPH
DATE 11-18-08
STRUCTURE FILE NO. 0500860

ABUTMENT PLAN
Bridge No. ATH-33-1600
Over Stimson Avenue

ATH-33/50-15.05/11.46
PID No. 21904

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202
222

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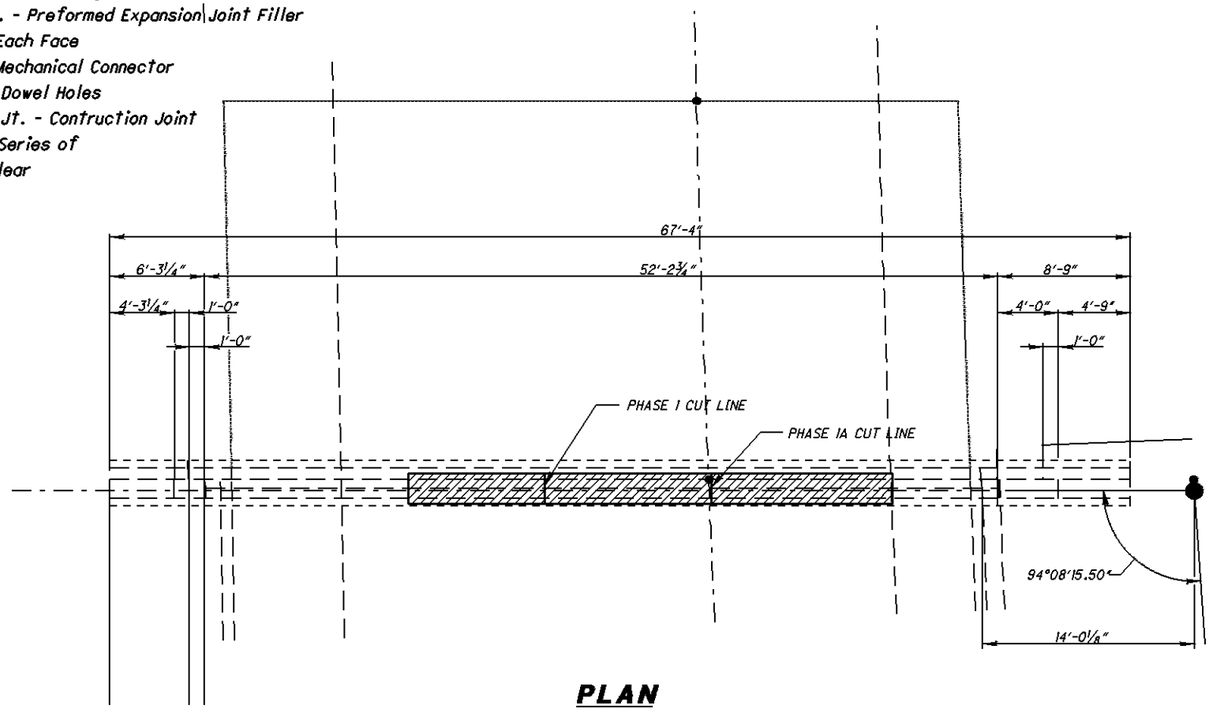
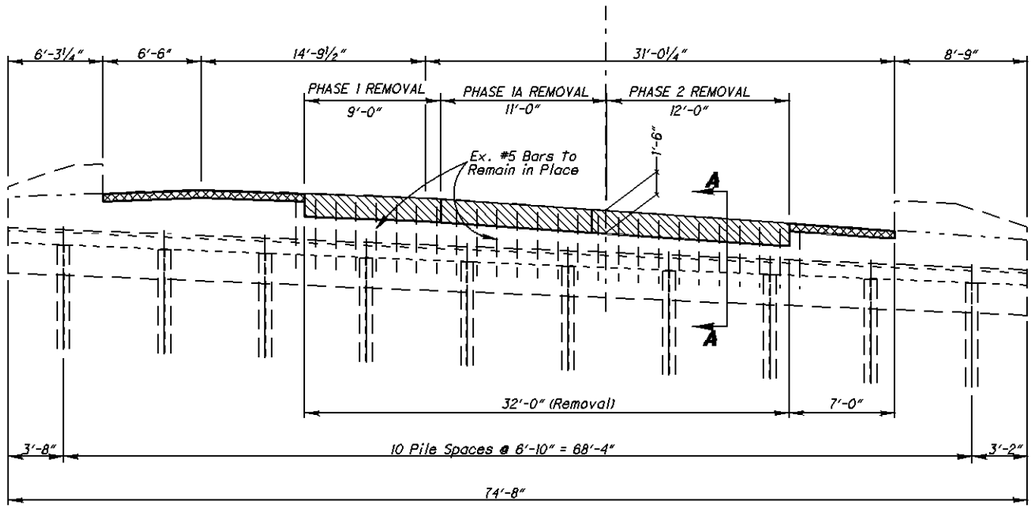
Legend

1.) ▨ - Portions of Structure Removed
2.) ▩ - Patching of Concrete Surfaces
3.) P.E.J.F. - Preformed Expansion Joint Filler
4.) E.F. - Each Face
5.) ═ - Mechanical Connector
6.) ⊏⊐ - Dowel Holes
7.) Const. Jt. - Contruction Joint
8.) Ser. - Series of
9.) Clr. - Clear

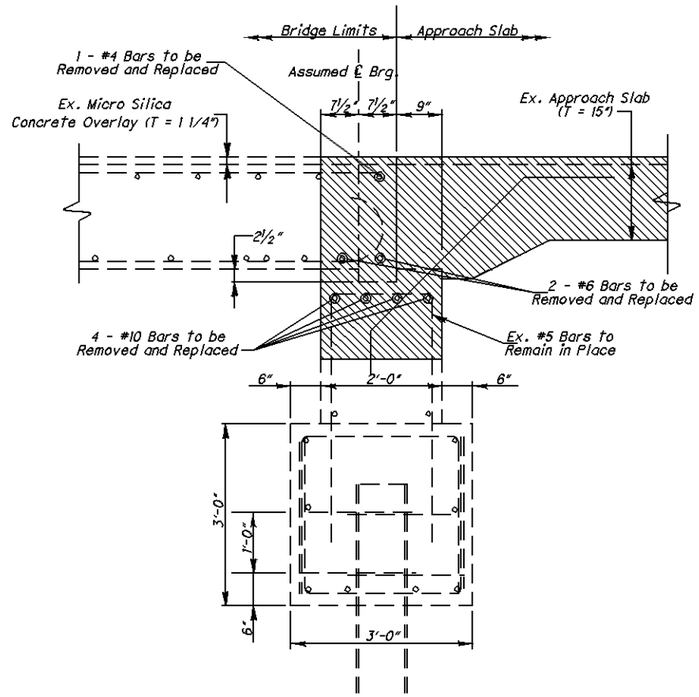


PLAN



ELEVATION

Fwd. Abutment - Left Bridge



SECTION A-A

Note:

1.) For, Transverse Section, Slab Section See Sheet 11-13 of 14.

HORIZONTAL SCALE IN FEET
0 5 10

DESIGNED	DRAWN	REVIEWED	DATE
CAK	CAK	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE No.	
ALC	XXX	0500860	

ABUTMENT PLAN

Bridge No. ATH-33-1600
Over Stimson Avenue

ATH-33/50-15.05/11.46
PID No. 21904

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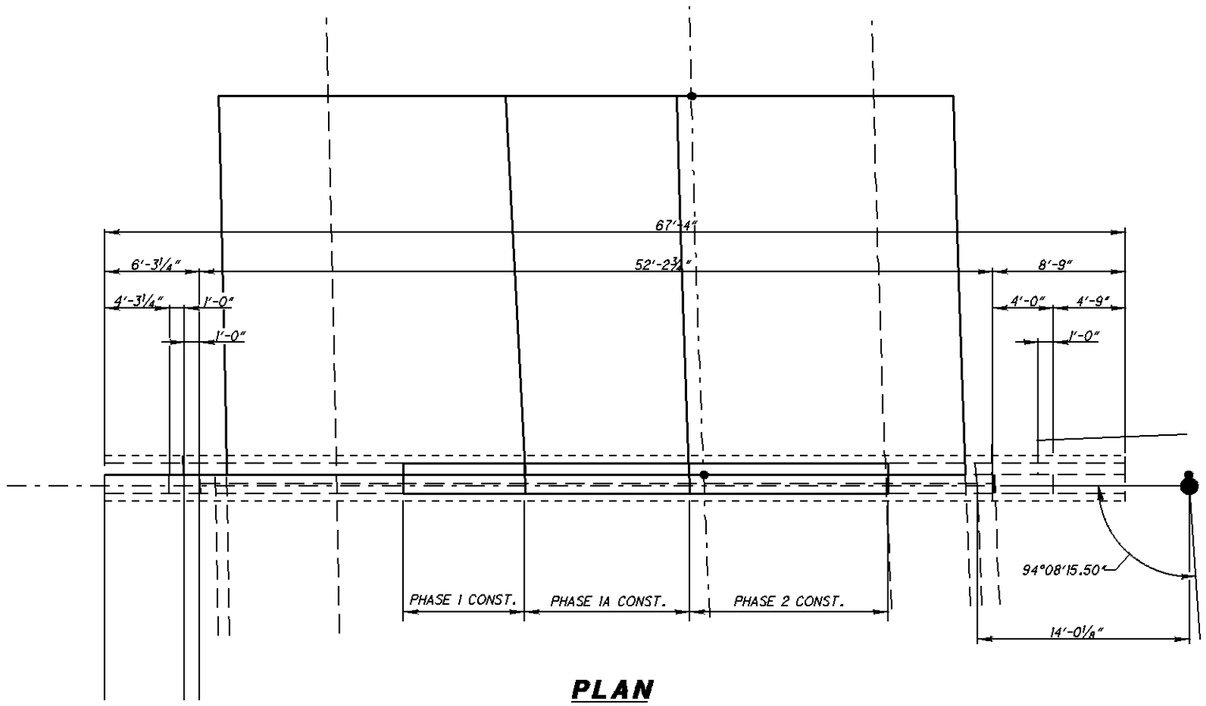
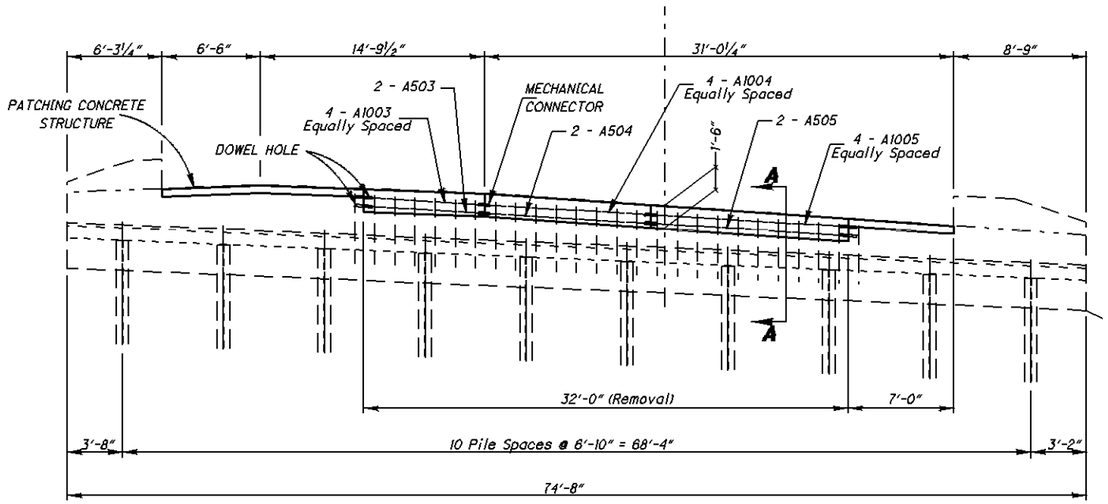
Legend

1.) ▬ - Mechanical Connector

2.) ▭ - Dowel Holes

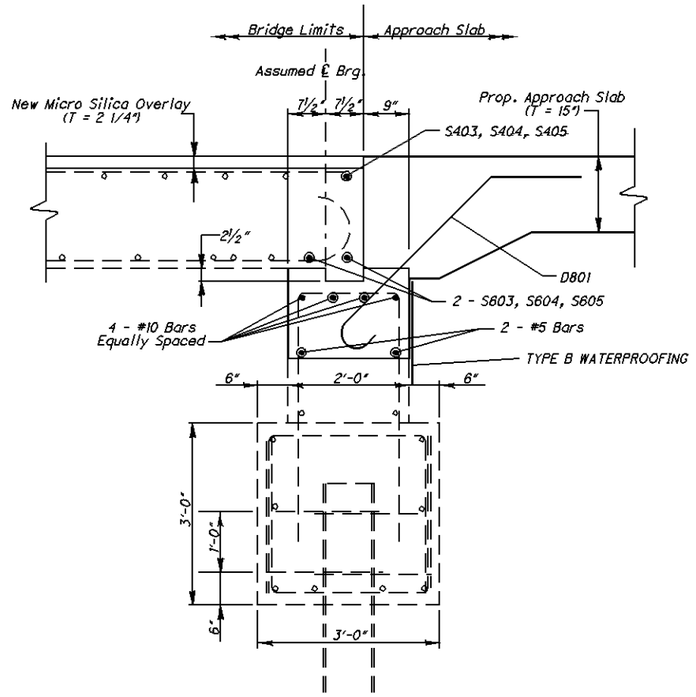


PLAN



ELEVATION

Fwd. Abutment - Left Bridge



SECTION A-A

Note:

1.) Reinforcing Steel List, Sht. 14 of 14.

2.) ◉ Dowel Hole Locations

HORIZONTAL SCALE IN FEET
0 5 10

DESIGNED	DRAWN	REVISED	DATE
CAK	CAK	XXX	11-18-08
CHECKED	REVIEWED	STRUCTURE FILE NO.	
ALC	JPH	0500860	

ABUTMENT PLAN

Bridge No. ATH-33-1600
Over Stimson Avenue

ATH-33/50-15.05/11.46

PID No. 21904

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222

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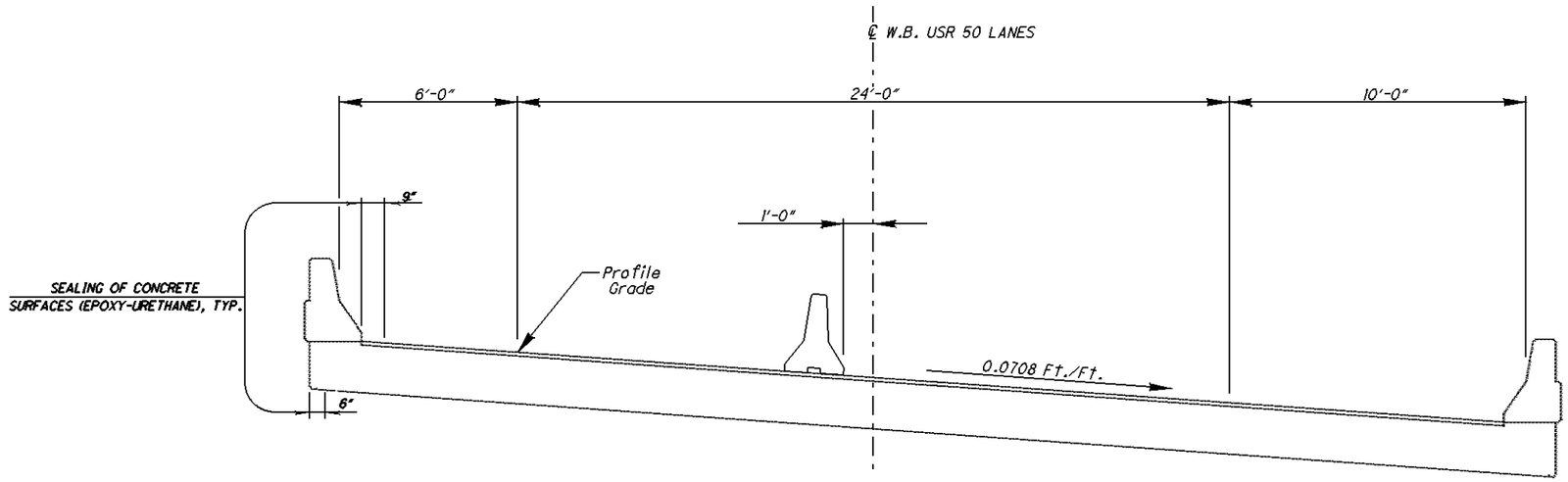
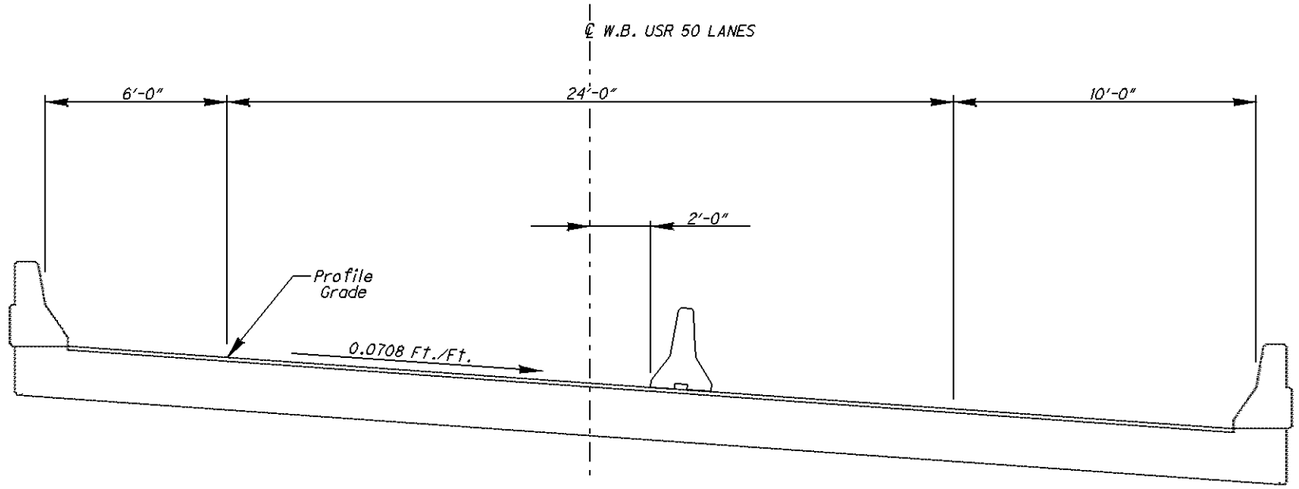


TRANSVERSE SECTION
PHASE 1
RIGHT BRIDGE



TRANSVERSE SECTION
PHASE 2
RIGHT BRIDGE

HORIZONTAL SCALE IN FEET
0 5 10

DESIGNED	DRAWN	REVIEWED	DATE
CAK	CAK	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE No.	
ALC	xxx	0500852	

TRANSVERSE SECTION
Bridge No. ATH-33-1600
Over Stimson Avenue

ATH-33/50-15.05/11.46
PID No. 21904

9 / 14

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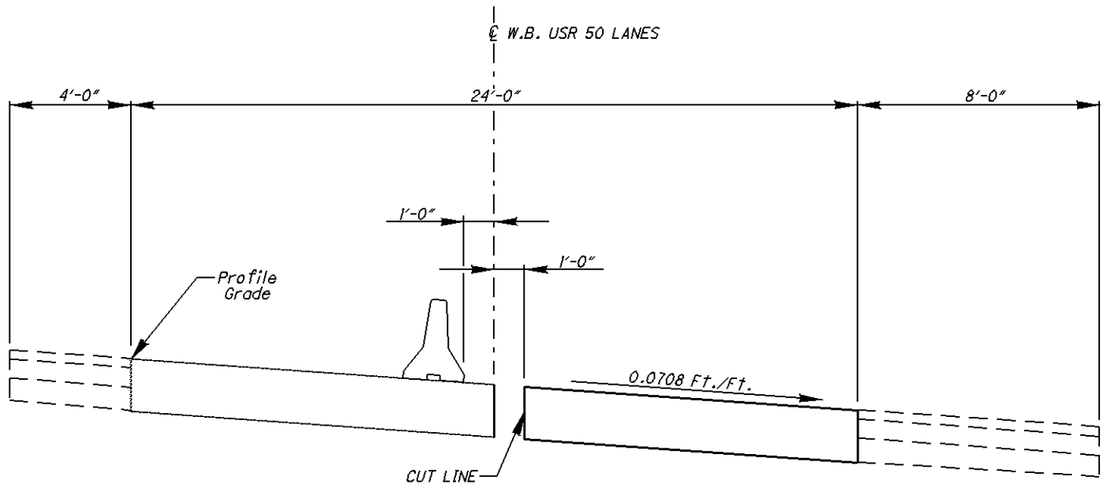
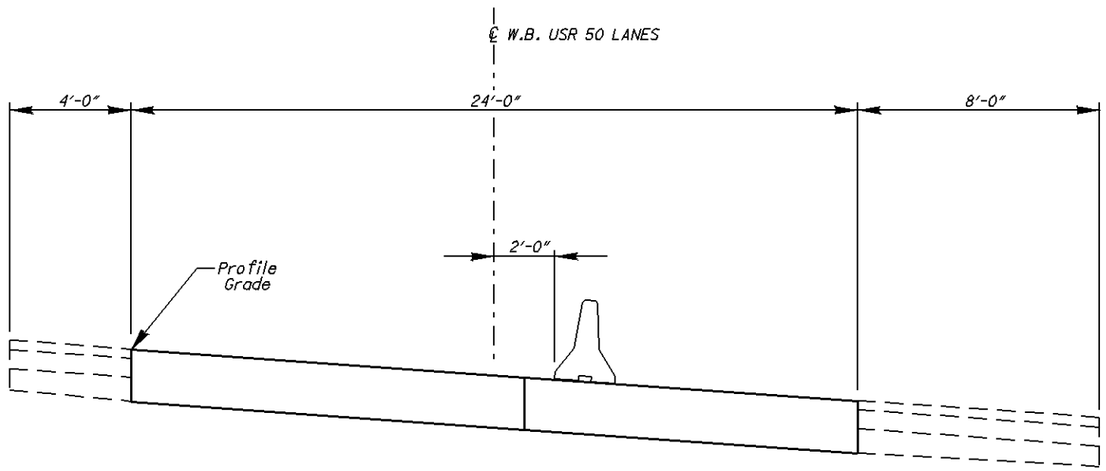
222



APPROACH SLAB SECTION
PHASE 1
RIGHT BRIDGE



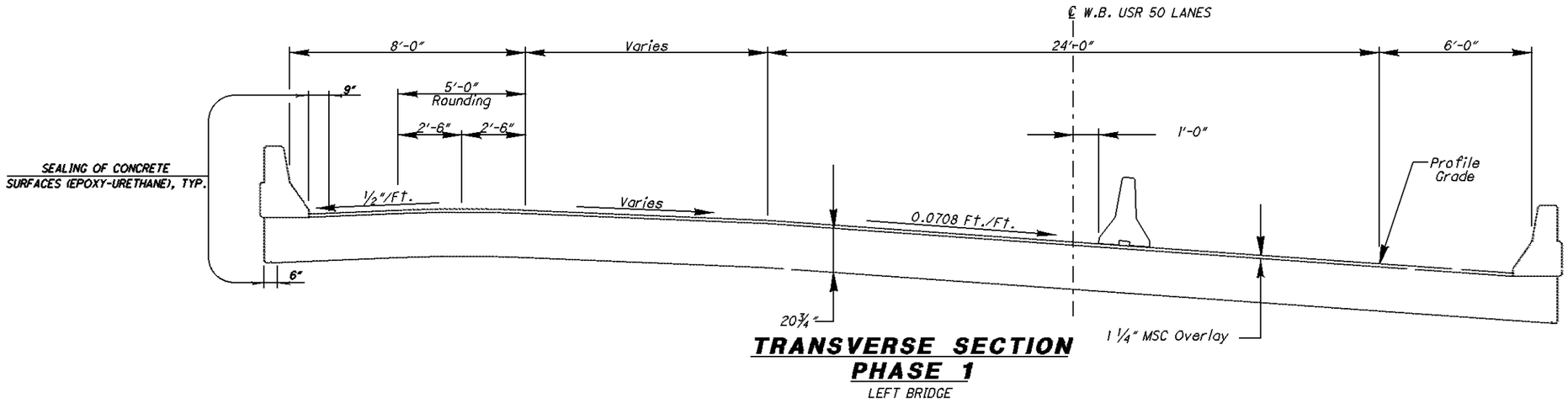
APPROACH SLAB SECTION
PHASE 2
RIGHT BRIDGE

HORIZONTAL SCALE IN FEET
0 5 10

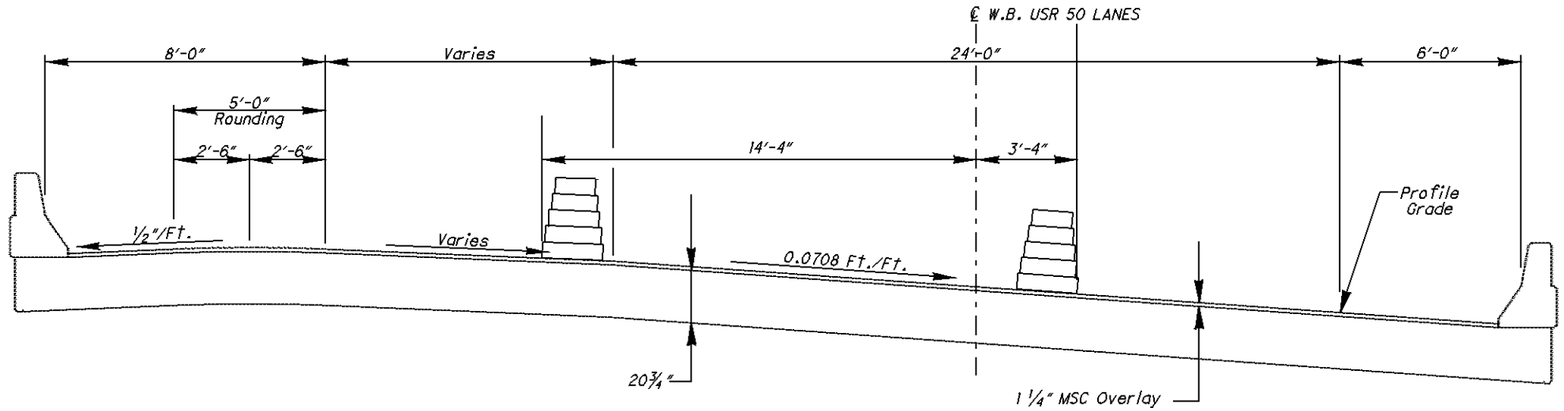
DESIGNED	DRAWN	REVIEWED	DATE
CAK	CAK	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE No.	
ALC	xxx	0500852	

APPROACH SLAB SECTION
Bridge No. ATH-33-1600
Over Stimson Avenue

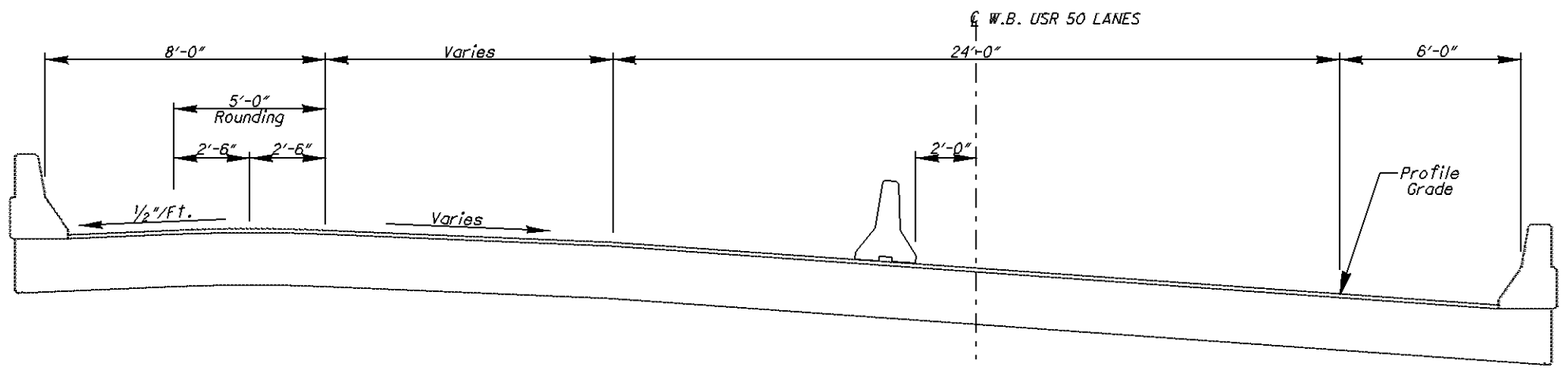
ATH-33/50-15.05/11.46
PID No. 21904



TRANSVERSE SECTION
PHASE 1
LEFT BRIDGE



TRANSVERSE SECTION
PHASE 1A
LEFT BRIDGE



TRANSVERSE SECTION
PHASE 2
LEFT BRIDGE

HORIZONTAL SCALE IN FEET
0 5 10

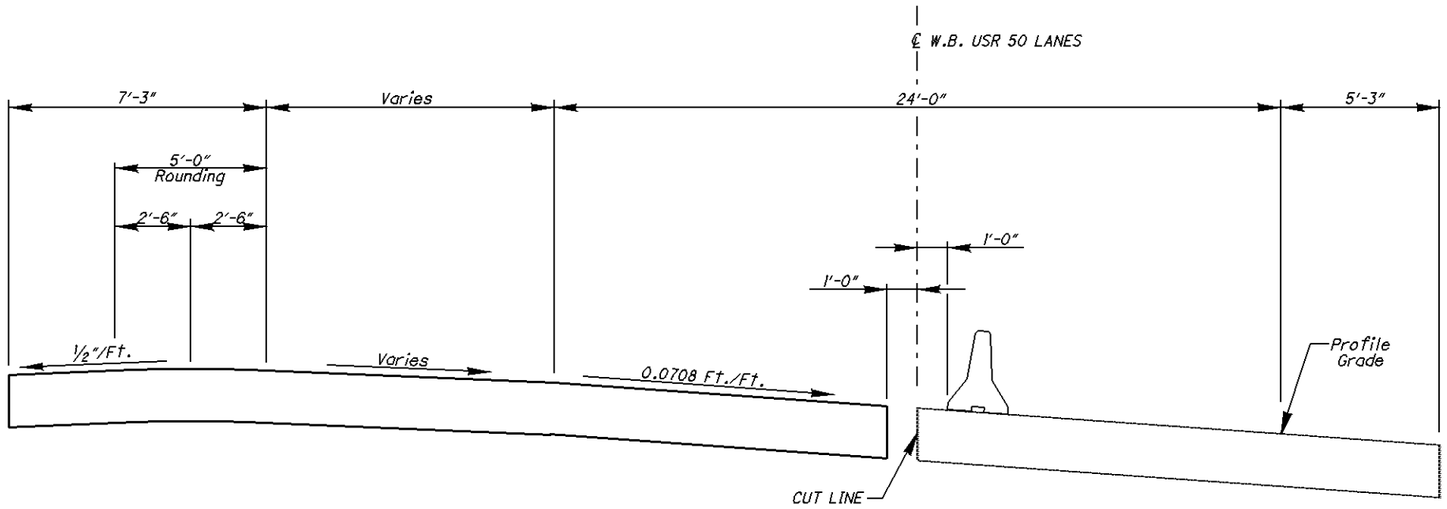
DESIGNED	DRAWN	REVIEWED	DATE
CAK	CAK	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE No.	
ALC	xxx	0500860	

TRANSVERSE SECTION
Bridge No. ATH-33-1600
Over Stimson Avenue

ATH-33/50-15.05/11.46
PID No. 21904

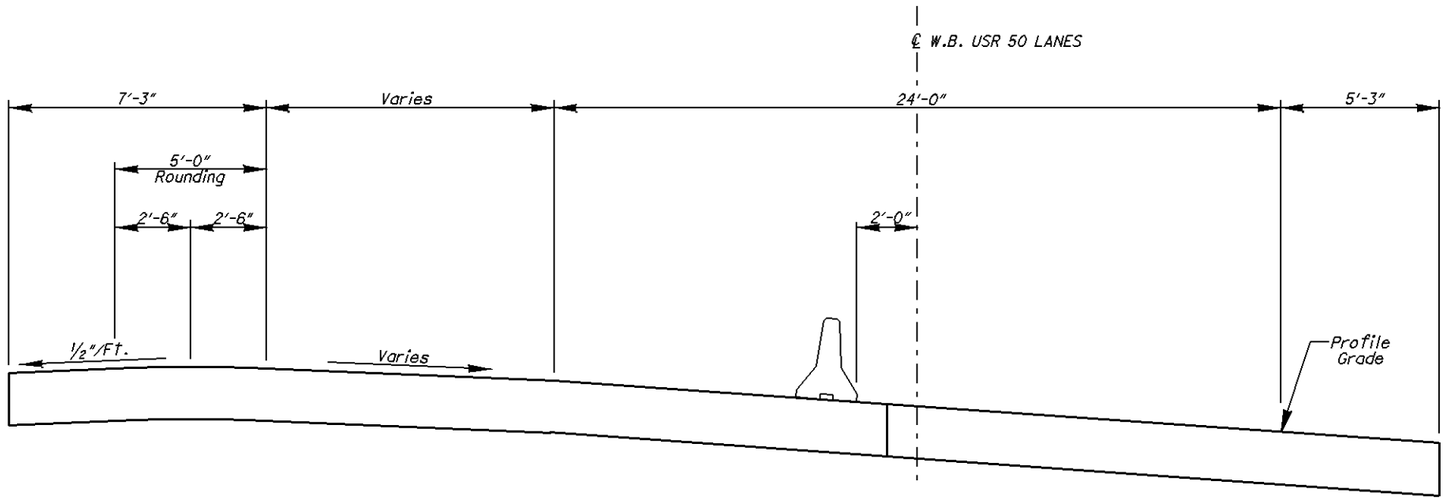
11 / 14

207
222



APPROACH SLAB SECTION
PHASE 1

LEFT BRIDGE (REAR APPROACH)



APPROACH SLAB SECTION
PHASE 2

LEFT BRIDGE (REAR APPROACH)

HORIZONTAL SCALE IN FEET
0 5 10

DESIGNED	DRAWN	REVIEWED	DATE
CAK	CAK	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE No.	
ALC	xxx	0500860	

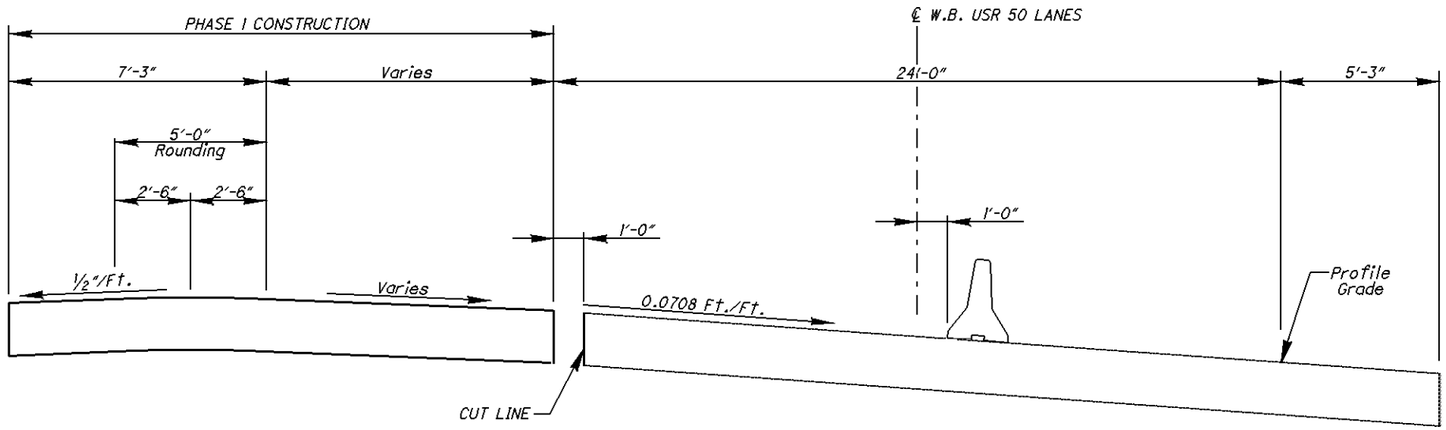
APPROACH SLAB SECTION
Bridge No. ATH-33-1600
Over Stimson Avenue

ATH-33/50-15.05/11.46
PID No. 21904

12 / 14

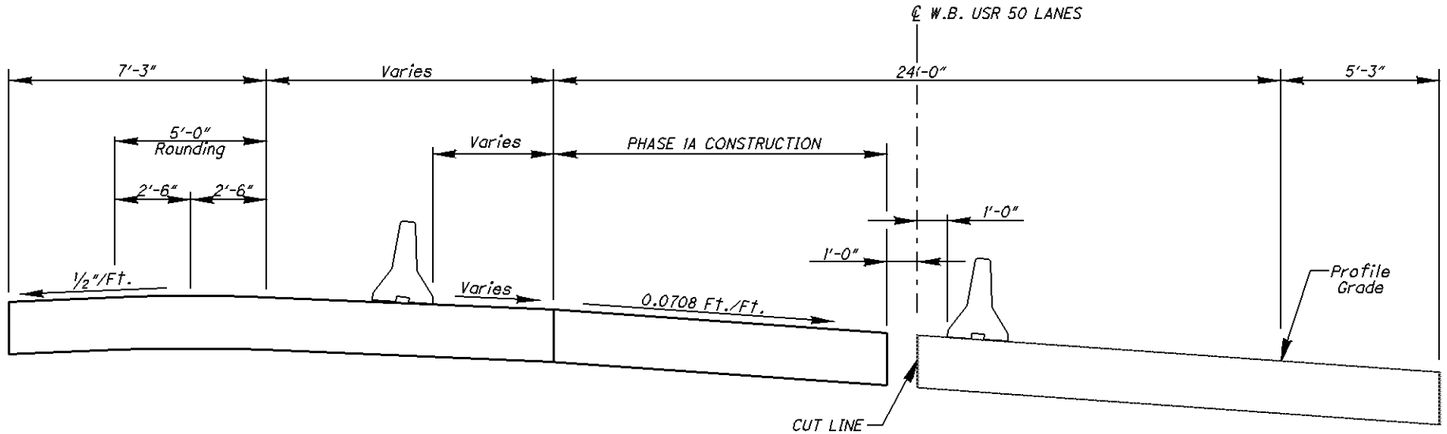
208
222

J:\projects\ATH-33-15.05\STRUCTURES\ath-33-1600\ath33i617brdet.dgn 01-DEC-2008 1:47PM jmorriso



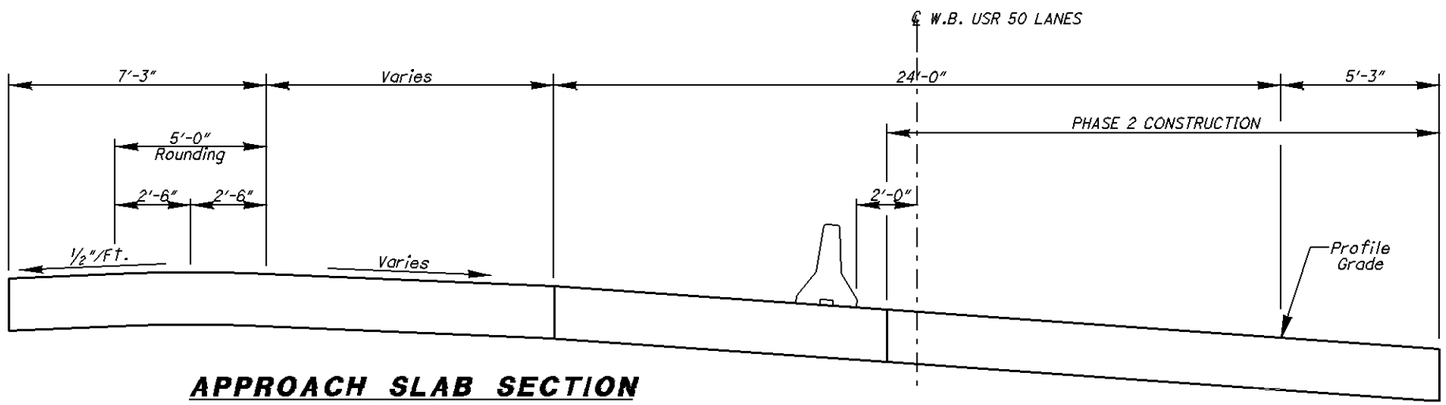
APPROACH SLAB SECTION PHASE 1

LEFT BRIDGE (FWD.APPROACH)



APPROACH SLAB SECTION PHASE 1A

LEFT BRIDGE (FWD.APPROACH)



APPROACH SLAB SECTION PHASE 2

LEFT BRIDGE (FWD.APPROACH)

HORIZONTAL SCALE IN FEET
0 5 10

DESIGNED	DRAWN	REVIEWED	DATE
CAK	CAK	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE No.	
ALC	xxx	0500860	

APPROACH SLAB SECTION
Bridge No. ATH-33-1600
Over Stimson Avenue

ATH-33/50-15.05/11.46
PID No. 21904

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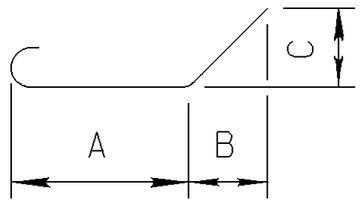

TYPE-18

REINFORCING SCHEDULE

MARK	No.	LENGTH EACH	TOTAL WEIGHT (LB)	TYPE	DIMENSIONS						
					A	B	C	D	E	F	INC
DECK											
S401	1	15'-0"	10	STR.							
S402	1	8'-0"	6	STR.							
S403	1	8'-0"	6	STR.							
S404	1	11'-0"	8	STR.							
S405	1	13'-0"	9	STR.							
S601	2	15'-0"	45	STR.							
S602	2	8'-0"	24	STR.							
S603	2	8'-0"	24	STR.							
S604	2	11'-0"	33	STR.							
S605	2	13'-0"	39	STR.							
REAR ABUTMENT											
A501	2	15'-0"	32	STR.							
A502	2	8'-0"	17	STR.							
A1001	4	15'-0"	259	STR.							
A1002	4	8'-0"	138	STR.							
D801	37	6'-6"	643	18	3'-8"	1'-0"	1'-0"				
FORWARD ABUTMENT											
A503	2	8'-0"	17	STR.							
A504	2	11'-0"	23	STR.							
A505	2	13'-0"	28	STR.							
A1003	4	8'-0"	138	STR.							
A1004	4	11'-0"	190	STR.							
A1005	4	13'-0"	224	STR.							
D801	32	6'-6"	556	18	3'-8"	1'-0"	1'-0"				
GRAND TOTAL			2469								

REINFORCING STEEL SHALL NOT BE EPOXY COATED

DESIGNED CAK | DRAWN CAK | REVIEWED JPH | DATE 11-18-08
CHECKED ALC | REVISED XXX | STRUCTURE FILE No. 0500860

REINFORCING SCHEDULE

BRIDGE NO. ATH-33-1600

ATH-33/50-15.05/11.46

PID No. 21904

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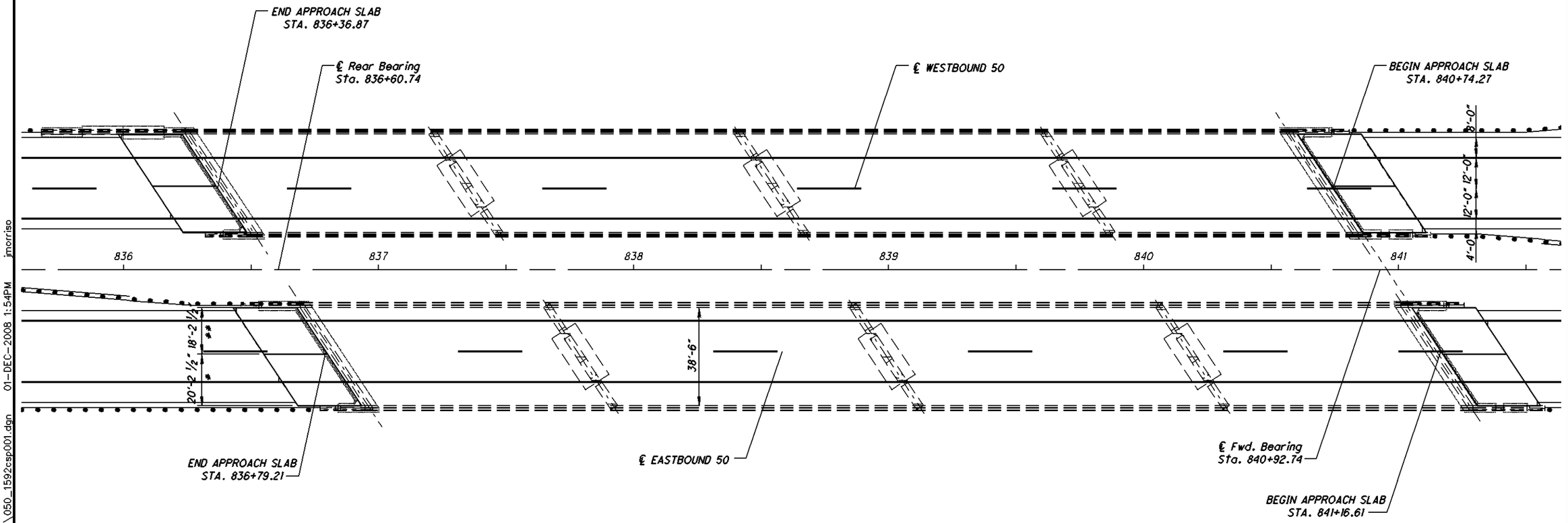
222

EXISTING STRUCTURE (Lt.)	EXISTING STRUCTURE (Rt.)
TYPE: CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES	TYPE: CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES
SPANS: 96'-0"-120'-0"-120'-0"-96'-0" C/C BEARINGS	SPANS: 96'-0"-120'-0"-120'-0"-96'-0" C/C BEARINGS
ROADWAY: 38'-6" TOE/TOE PARAPETS	ROADWAY: 38'-6" TOE/TOE PARAPETS
LOADING: HS20-44	LOADING: HS20-44
SKEW: 33°-29'-17" R.F.	SKEW: 33°-29'-17" R.F.
APPROACH SLABS: AS-1-72 (25'-0" LONG)	APPROACH SLABS: AS-1-72 (25'-0" LONG)
ALIGNMENT: TANGENT	ALIGNMENT: TANGENT
STRUCTURAL FILE NUMBER: 0501573(L)	STRUCTURAL FILE NUMBER: 0501603(R)
DATE BUILT: 1978	DATE BUILT: 1978



PROPOSED STRUCTURE (Lt.)	PROPOSED STRUCTURE (Rt.)
TYPE: CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES	TYPE: CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES
SPANS: 96'-0"-120'-0"-120'-0"-96'-0" C/C BEARINGS	SPANS: 96'-0"-120'-0"-120'-0"-96'-0" C/C BEARINGS
ROADWAY: 38'-6" TOE/TOE PARAPETS	ROADWAY: 38'-6" TOE/TOE PARAPETS
LOADING: HS20-44	LOADING: HS20-44
SKEW: 33°-29'-17" R.F.	SKEW: 33°-29'-17" R.F.
APPROACH SLABS: AS-1-81 (25'-0" LONG)	APPROACH SLABS: AS-1-81 (25'-0" LONG)
ALIGNMENT: TANGENT	ALIGNMENT: TANGENT
STRUCTURAL FILE NUMBER: 0501573(L)	STRUCTURAL FILE NUMBER: 0501603(R)
COORDINATES: LATITUDE 39°-20'-00" N LONGITUDE 82°-3' 00" E	COORDINATES: LATITUDE 39°-20'-00" N LONGITUDE 82°-3' 00" E

LEGEND
* - PHASE 1 CONSTRUCTION
** - PHASE 2 CONSTRUCTION

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED JDC | DRAWN CAK | REVIEWED JPH | DATE 11-18-08
CHECKED ALC | REVISED | STRUCTURE FILE No. 0501573 Lt. & 0501603 Rt.

BRIDGE LIMITS (Right)
Sta. 836+79.21
Sta. 841+16.61

BRIDGE LIMITS (Left)
Sta. 836+36.87
Sta. 840+74.27

SITE PLAN
Bridge No. ATH-50-1592 Lt. & Rt.
Over Hocking River

ATH-33/50-15.05/11.46
PID No. 21904

1 / 6

211
222

PROPOSED WORK

REHABILITATION OF THE EXISTING BRIDGE STRUCTURE SHALL INCLUDE: REPLACING THE APPROACH SLABS, REPAIRING THE TOPS OF EXISTING BACKWALLS AND SEALING OF CONCRETE SURFACES.

REFERENCES

REFERENCE SHALL BE MADE TO STD. DWG'S:

AS-1-81 7-19-02
PCB-91 7-19-02

AND TO SUPPLEMENTAL SPECIFICATIONS:

DESIGN DATA:

CONCRETE; CLASS S-COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

REINFORCING STEEL:
ASTM A615, A616, OR A617, GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

MECHANICAL CONNECTORS

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES, LENGTHS FOR BARS WITH MECHANICAL CONNECTORS ARE DIMENSIONED TO THE CONSTRUCTION JOINT. CONNECTORS USED WITH EPOXY COATED BARS SHALL BE EPOXY COATED. COATING FOR CONNECTORS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWIZE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY, AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS. CONNECTORS SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 509 - EPOXY COATED REINFORCING STEEL.

HOCKING RIVER PROTECTION

THE NATURE OF THIS PROJECT'S WORK DOES NOT REQUIRE ANY IN STREAM WORK. THEREFORE THE CONTRACTOR SHALL AVOID DISTURBING THE HOCKING RIVER OR ITS TRIBUTARIES AND TAKE ALL PRECAUTIONS NECESSARY TO PREVENT ANY CONSTRUCTION DEBRIS FROM FALLING INTO OR BEING PLACED IN THE WATERWAYS.

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

PORTIONS OF THE STRUCTURE REMOVED, AS PER PLAN SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT.
ITEMS TO BE REMOVED INCLUDE APPROACH SLABS AND 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. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO 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.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, SHALL BE LEFT 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. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED 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 ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES WHICH NEW CONCRETE WILL BE PLACED AGAINST SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

COFFERDAMS, CRIBS, AND SHEETING, AS PER PLAN

TEMPORARY SHORING MAY BE USED TO ACCOMPLISH THE PROPOSED CONSTRUCTION IN STAGES. THE DESIGN OF THE TEMPORARY SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER AND CONFORM WITH 501.05 FOR APPROVAL. PORTIONS OF THE TEMPORARY SHORING COMPOSED OF STEEL OR CONCRETE MAY BE LEFT IN PLACE AT THE DISCRETION OF THE ENGINEER. PORTIONS COMPOSED OF OTHER MATERIALS SHALL BE REMOVED PRIOR TO COMPLETION OF THE WORK.

REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN:

ANY EXISTING REINFORCING BARS DEEMED THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW REINFORCING STEEL. ANY EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW REINFORCING STEEL OF THE SAME SIZE AT THE CONTRACTOR'S COST. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER.

THE NUMBER OF POUNDS OF REINFORCING STEEL PAID FOR AT CONTRACT PRICES SHALL BE THE ACTUAL POUNDS OF REPLACEMENT REINFORCING STEEL SPECIFIED BY THE ENGINEER DUE TO CORROSION AND SHALL INCLUDE PLACEMENT, DOWELING, BENDING, SUPPORTING, TIE WIRES AND TYING OF THAT SPECIFIED REINFORCING STEEL.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE ESTIMATED QUANTITIES ON SHEET 3 OF 6.

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN 50 lb.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUANTLY, 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 102.05, 105.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

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 ITEM 626 EXCEPT THAT THE SPACING SHALL BE 25 FEET.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), A SEALER SHALL BE APPLIED TO THE CONCRETE SURFACES AS SHOWN ON THE TYPICAL SECTION FOR THE FULL LENGTH OF THE BRIDGE.

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0600574 (LT.) 0501603 (RT.)	

GENERAL NOTES

BRIDGE NO. ATH-50-1592

ATH-33/50-15.05/11.46

PID No. 21904

ESTIMATED QUANTITIES

SFN 0501573 (Lt.)

ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	SUPER-STRU.	GRNL
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN			LUMP
503	11101	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN			LUMP
509	20001	50	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN			50
511	34000	1.63	CU. YDS.	CLASS S CONCRETE, SUPERSTRUCTURE	0.68		0.95
512	10100	947	SQ. YDS.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)			947
516	13200	103	SQ. FT.	½" PREFORMED EXPANSION JOINT FILLER			103
516	31000	93	FT.	JOINT SEALER			93
516	46701	7	EACH	RESET BEARING, AS PER PLAN		7	
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN		LUMP	
519	11100	5	SQ. FT.	PATCHING CONCRETE STRUCTURE			5
526	25000	213	SQ. YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")			213

ESTIMATED QUANTITIES

SFN 0501603 (Rt.)

ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	SUPER-STRU.	GRNL
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN			LUMP
503	11101	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN			LUMP
509	20001	50	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN			50
511	34000	0.68	CU. YDS.	CLASS S CONCRETE, SUPERSTRUCTURE	0.68		
512	10100	947	SQ. YDS.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)			947
516	13200	103	SQ. FT.	½" PREFORMED EXPANSION JOINT FILLER			103
516	31000	93	FT.	JOINT SEALER			93
516	46701	7	EACH	RESET BEARING, AS PER PLAN		7	
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN		LUMP	
519	11100	9	SQ. FT.	PATCHING CONCRETE STRUCTURE			9
526	25000	213	SQ. YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")			213

ITEM 516, RESET BEARING, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS. INCLUDED SHALL BE THE REPLACEMENT OF ANY DAMAGED SHEET LEAD WITH PREFORMED BEARING PADS (711.21), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60 DEGREES F, LUBRICAT SLIDING SURFACES. ASSURE ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". AT NO ADDITIONAL COST TO THE STATE, THE CONTRACTOR MAY INSTALL NEW BEARINGS OF THE SAME TYPE AS THE EXISTING IN PLACE OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. THE FOLLOWING ARE THE LOCATIONS OF THE BEARINGS THAT ARE TO BE RESET:

LT. BRIDGE
REAR ABUTMENT ALL BEAMS
FWD. ABUTMENT BEAMS 1 AND 3.

RT. BRIDGE
REAR ABUTMENT BEAM 1 AND 5.
FWD. ABUTMENT ALL BEAMS

PAYMENT FOR ALL OF THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 - RESET BEARING, AS PER PLAN.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

GENERAL: THIS WORK CONSISTS OF RAISING OR RE-POSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMITTAL REQUIREMENTS: AN OHIO REGISTERED ENGINEER SHALL PREPARE, SEAL AND DATE PLANS FOR A JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS, SUFFICIENT TO PERFORM THE WORK DESCRIBED IN THE PLANS. SUBMIT THREE SETS OF THESE PLANS TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE OHIO REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.

2. CALCULATIONS AND ANALYSES OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE JACKING POINTS.

3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.

4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.

5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.

6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.

7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.

8 METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

JACKING SYSTEM REQUIREMENTS: THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS. FOR LIFTS GREATER THAN 1 INCH, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT. JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK. DO NOT USE JACKS ALONE TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. USE TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR. DO NOT USE SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM. HAVE SPARE EQUIPMENT AVAILABLE ON SITE IN ORDER TO PROCEED WITH THE JACKING IN THE EVENT OF BREAKDOWN. PROVIDE A LIST OF SPARE EQUIPMENT TO THE ENGINEER.

JACKING OPERATION REQUIREMENTS: AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1/4 INCH. THE MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1 INCH OR LESS. IF THIS 1 INCH LIMIT IS TO BE EXCEEDED, PROVIDE CALCULATIONS SHOWING THAT THE SUPER-STRUCTURE COMPONENTS WILL NOT BE TEMPORARILY STRESSED BEYOND ALLOWABLE STRESSES AND THAT NO PERMANENT STRESSES WILL BE INDUCED IN THE COMPONENTS AFTER THEY OBTAIN THEIR FINAL POSITION. 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 ODOT'S PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". 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.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

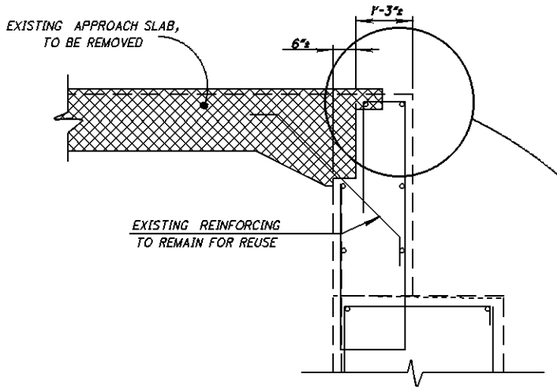
DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED		STRUCTURE FILE NUMBER
ALC			0501573 (Lt.) 0501603 (Rt.)

ESTIMATED QUANTITIES
BRIDGE No. ATH-33-0501573 (Lt.) ATH-50-1592

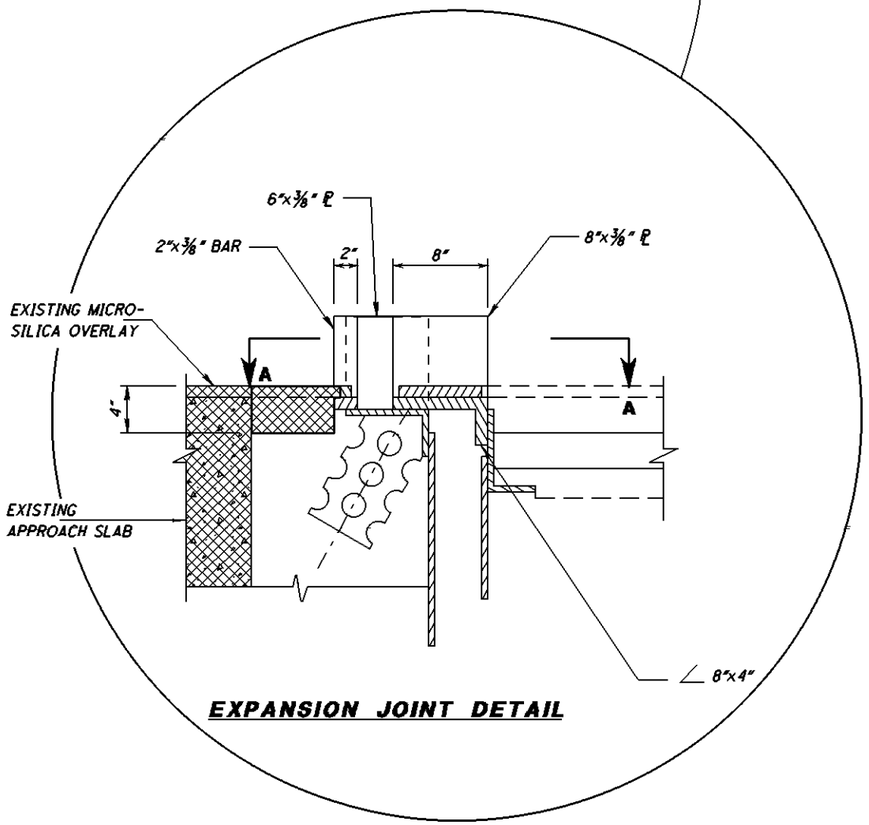
ATH-33/50-15.05/11.46
PID No. 21904

213
222

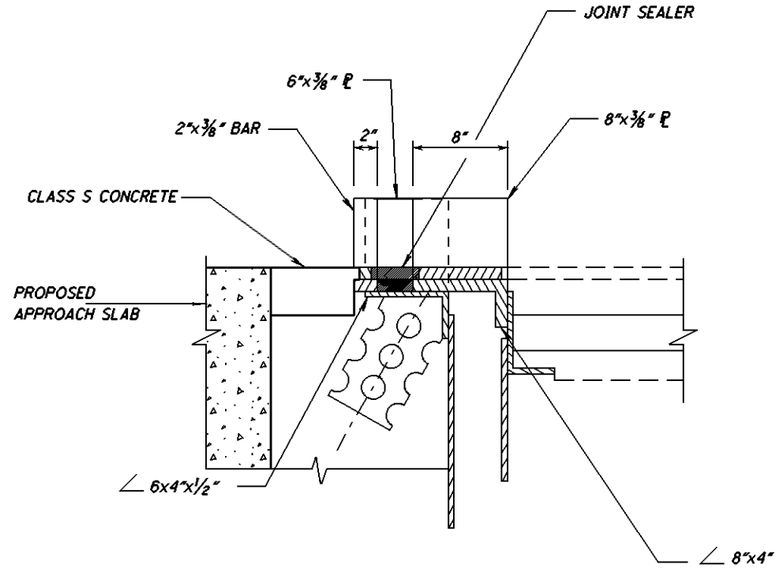


- REMOVAL LIMITS

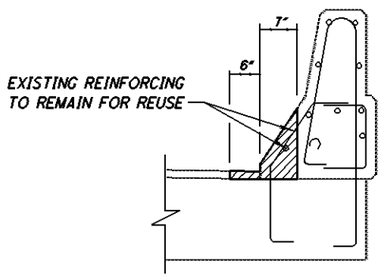
ABUTMENT SECTION



EXPANSION JOINT DETAIL



EXPANSION JOINT DETAIL



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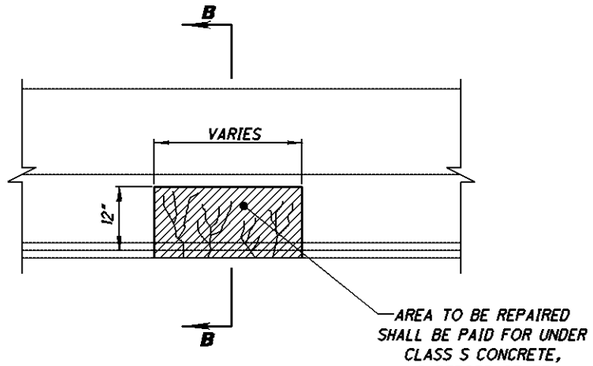


BARRIER REPAIR DETAIL

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

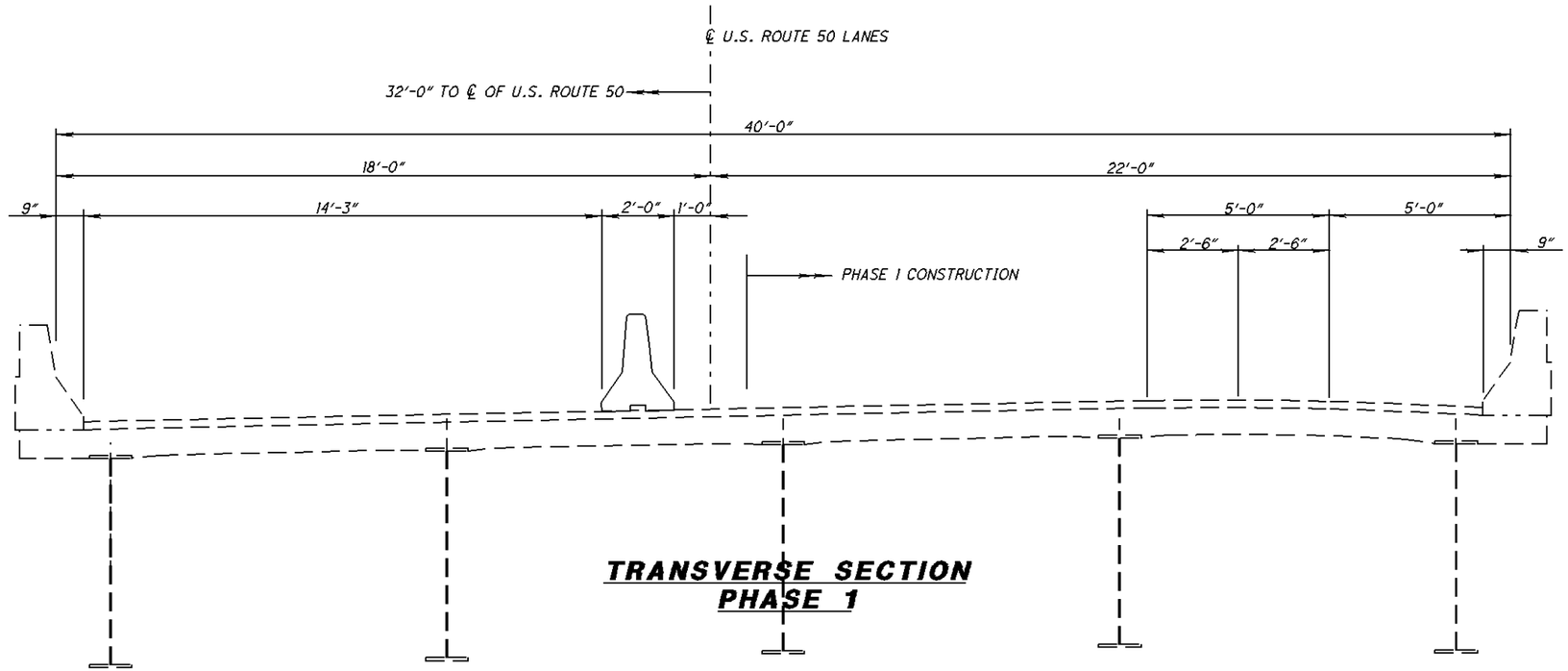
DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0500524 (LT.) 0501603 (RT.)	

EXPANSION JOINT DETAIL

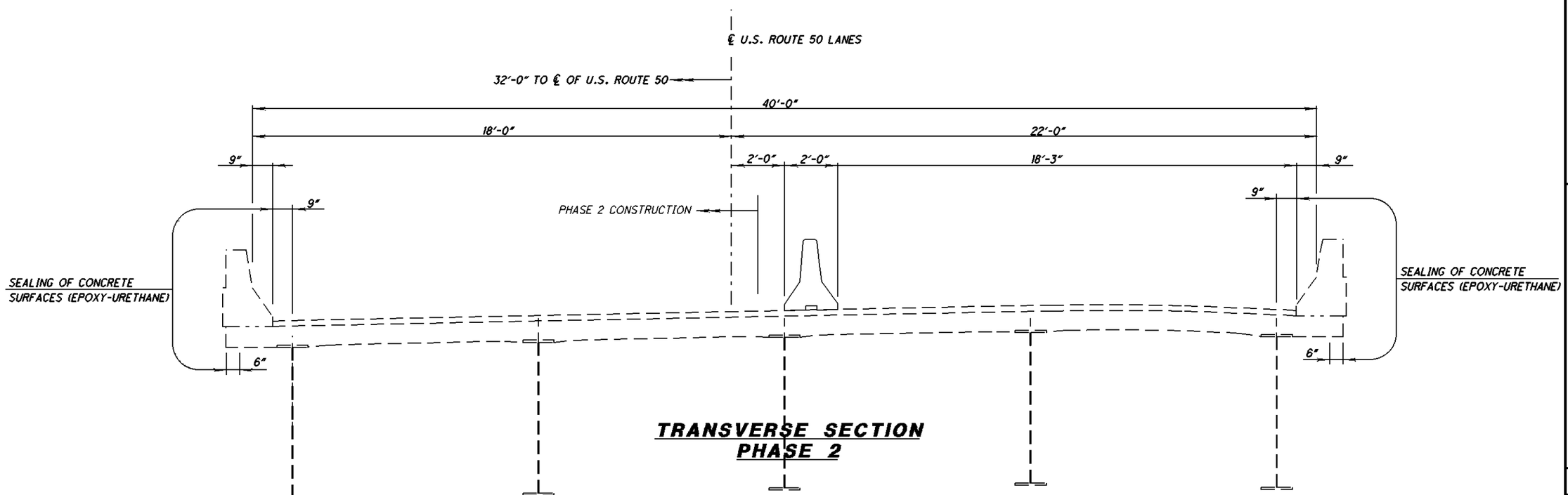
BRIDGE NO. ATH-50-1592

ATH-33/50-15.05/11.46

PID No. 21904



TRANSVERSE SECTION
PHASE 1



TRANSVERSE SECTION
PHASE 2

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		050160 3 (RT.)	

TRANSVERSE SECTION

Bridge No. ATH-50-1592 Lt. & Rt.

ATH-33/50-15.05/11.46

PID No. 21904

5 / 6

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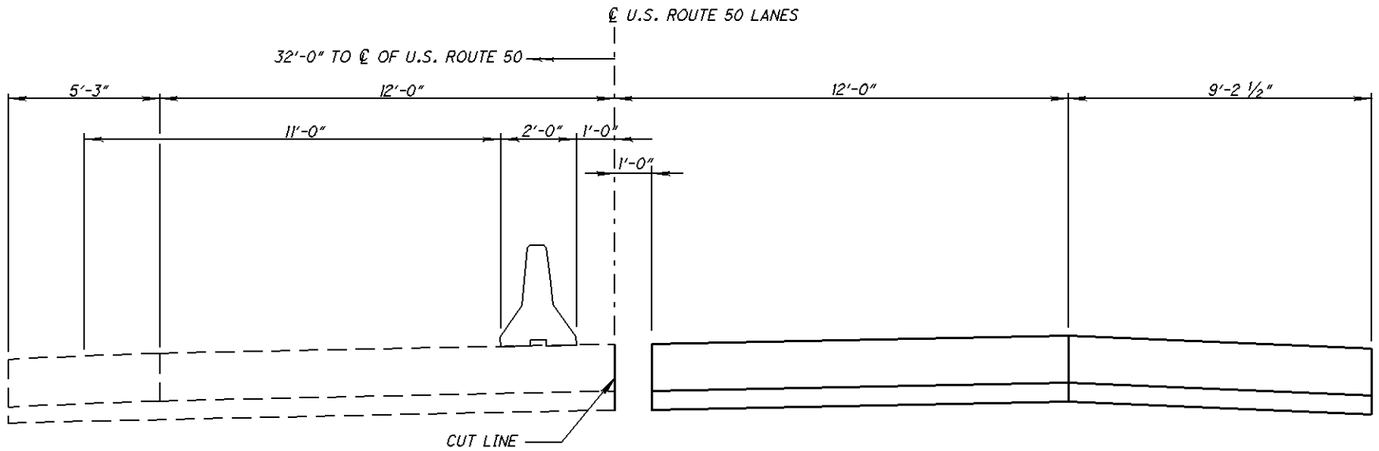
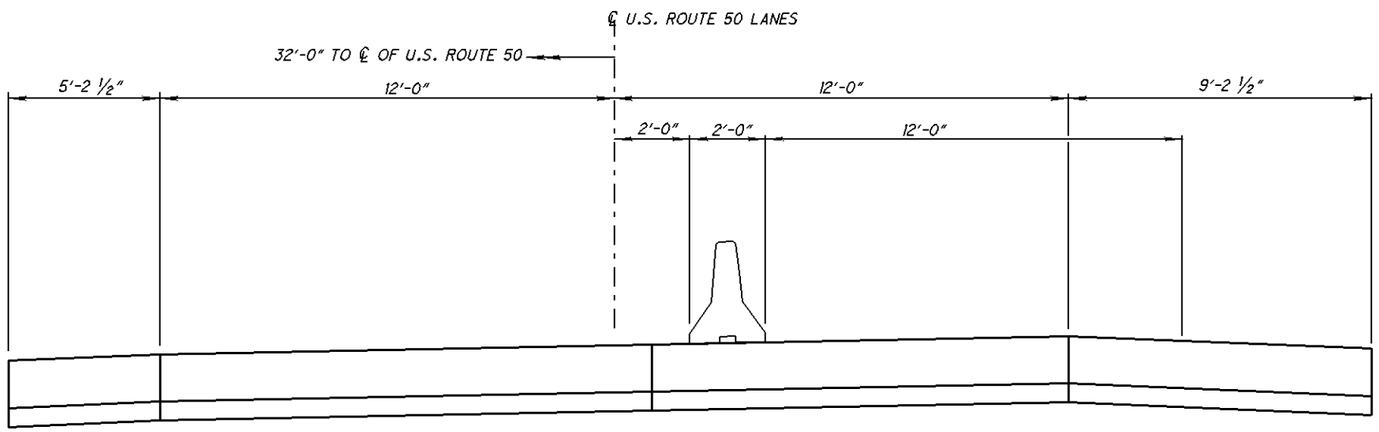
ath501593mot 2/15/08



APPROACH SLAB SECTION
PHASE 1



APPROACH SLAB SECTION
PHASE 2

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		050160 3 (R1)	

APPROACH SLAB SECTION
Bridge No. ATH-50-1592 Lt. & Rt.

ATH-33/50-15.05/11.46
PID No. 21904

6 / 6

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222

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ath501593mot 2/15/08

EXISTING STRUCTURE (Lt.)

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

SPANS: 63'-3" - 79'-3" - 77'-9" - 77'-9" - 83'-0" - 66'-6" c/c Brgs.

ROADWAY: 60'-6" Avg. Width f/f Parapets

LOADING: HS20-44

SKEW: 52°-00'-00" R.F.

APPROACH SLABS: AS-1-72 (25'-0" LONG, MODIFIED)

ALIGNMENT: Tangent, Taper & Spirals

STRUCTURAL FILE NUMBER: 0501611 (Lt)

DATE BUILT: 1978

EXISTING STRUCTURE (Rt.)

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

SPANS: 63'-3" - 79'-3" - 77'-9" - 77'-9" - 66'-6" c/c Brgs.

ROADWAY: 40'-0" F/F PARAPETS

LOADING: HS20-44

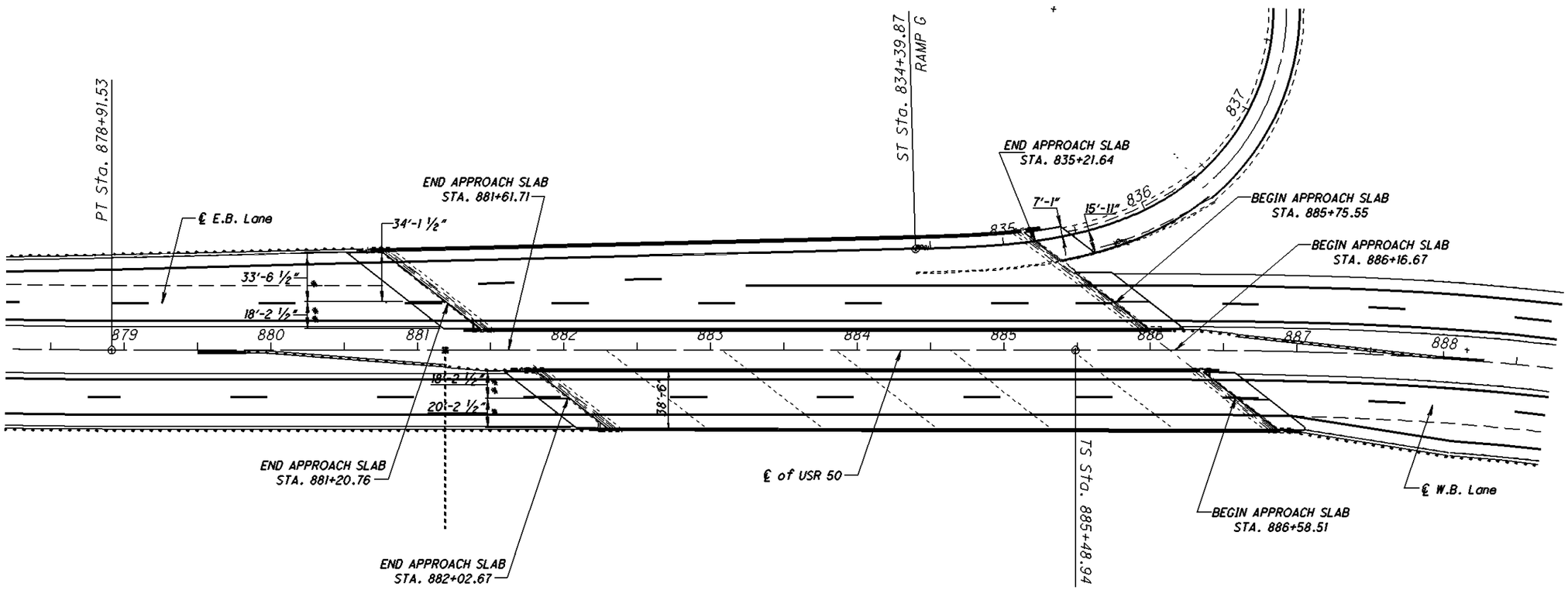
SKEW: 52°-00'-00" R.F.

APPROACH SLABS: AS-1-72 (25'-0" LONG, MODIFIED)

ALIGNMENT: Tangent & 400' Spiral

STRUCTURAL FILE NUMBER: 0501638 (Rt)

DATE BUILT: 1978



PROPOSED STRUCTURE (Lt.)

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

SPANS: 63'-3" - 79'-3" - 77'-9" - 77'-9" - 83'-0" - 66'-6" c/c Brgs.

ROADWAY: 60'-6" Avg. Width f/f Parapets

LOADING: HS20-44

SKEW: 52°-00'-00" R.F.

APPROACH SLABS: AS-1-81 (25'-0" LONG)

ALIGNMENT: Tangent, Taper & Spirals

STRUCTURAL FILE NUMBER: 0501611 (Lt)

COORDINATES: LATITUDE 39°-20'-00" N
LONGITUDE 82°-02'-00" E

PROPOSED STRUCTURE (Rt.)

TYPE: CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES

SPANS: 63'-3" - 79'-3" - 77'-9" - 77'-9" - 66'-6" c/c Brgs.

ROADWAY: 40'-0" F/F PARAPETS

LOADING: HS20-44

SKEW: 52°-00'-00" R.F.

APPROACH SLABS: AS-1-81 (25'-0" LONG)

ALIGNMENT: Tangent & 400' Spiral

STRUCTURAL FILE NUMBER: 0501638 (Rt)

COORDINATES: LATITUDE 39°-20'-00" N
LONGITUDE 82°-02'-00" E

LEGEND

* - PHASE 1 CONSTRUCTION

** - PHASE 2 CONSTRUCTION

DESIGN AGENCY: DISTRICT 10 PRODUCTION DEPARTMENT MARIETTA, OHIO

DESIGNED: JDC | DRAWN: CAK | REVIEWED: JPH | DATE: 11-18-08

CHECKED: ALC | REVISED: XXX | STRUCTURE FILE No. 0501611 Lt. 0501638 Rt.

BRIDGE LIMITS (Rt. & Lt.) Sta. 881+20.76 Sta. 885+75.55

BRIDGE LIMITS (Right) Sta. 882+02.67 Sta. 886+58.51

SITE PLAN

BRIDGE No. ATH-50-1681 L&R
US-50 OVER EAST STATE STREET

ATH-33/50-15.05/11.46
PID No. 21904

1 / 6

217 / 222

PROPOSED WORK

REHABILITATION OF THE EXISTING BRIDGE STRUCTURE SHALL INCLUDE: REPLACING THE APPROACH SLABS, REPAIRING THE TOPS OF EXISTING BACKWALLS AND SEALING OF CONCRETE SURFACES.

REFERENCES

REFERENCE SHALL BE MADE TO STD. DWG'S:

AS-1-81 7-19-02
PCB-91 7-19-02

AND TO SUPPLEMENTAL SPECIFICATIONS:

DESIGN DATA:

CONCRETE:
CLASS S-COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

REINFORCING STEEL:
ASTM A615, A616, OR A617, GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

MECHANICAL CONNECTORS

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES, LENGTHS FOR BARS WITH MECHANICAL CONNECTORS ARE DIMENSIONED TO THE CONSTRUCTION JOINT. CONNECTORS USED WITH EPOXY COATED BARS SHALL BE EPOXY COATED. COATING FOR CONNECTORS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWIZE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY, AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS. CONNECTORS SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 509 - EPOXY COATED REINFORCING STEEL.

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

PORTIONS OF THE STRUCTURE REMOVED, AS PER PLAN SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT.
ITEMS TO BE REMOVED INCLUDE APPROACH SLABS AND 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. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO 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.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, SHALL BE LEFT 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. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED 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 ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES WHICH NEW CONCRETE WILL BE PLACED AGAINST SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

COFFERDAMS, CRIBS, AND SHEETING, AS PER PLAN

TEMPORARY SHORING MAY BE USED TO ACCOMPLISH THE PROPOSED CONSTRUCTION IN STAGES. THE DESIGN OF THE TEMPORARY SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER AND CONFORM WITH 501.05 FOR APPROVAL. PORTIONS OF THE TEMPORARY SHORING COMPOSED OF STEEL OR CONCRETE MAY BE LEFT IN PLACE AT THE DISCRETION OF THE ENGINEER. PORTIONS COMPOSED OF OTHER MATERIALS SHALL BE REMOVED PRIOR TO COMPLETION OF THE WORK.

REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN:

ANY EXISTING REINFORCING BARS DEEMED THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW REINFORCING STEEL. ANY EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW REINFORCING STEEL OF THE SAME SIZE AT THE CONTRACTOR'S COST. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER.

THE NUMBER OF POUNDS OF REINFORCING STEEL PAID FOR AT CONTRACT PRICES SHALL BE THE ACTUAL POUNDS OF REPLACEMENT REINFORCING STEEL SPECIFIED BY THE ENGINEER DUE TO CORROSION AND SHALL INCLUDE PLACEMENT, DOWELING, BENDING, SUPPORTING, TIE WIRES AND TYING OF THAT SPECIFIED REINFORCING STEEL.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE ESTIMATED QUANTITIES ON SHEET 3 OF 6.

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN 50 lb.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUANTLY, 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 102.05, 105.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

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 ITEM 626 EXCEPT THAT THE SPACING SHALL BE 25 FEET.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), A SEALER SHALL BE APPLIED TO THE CONCRETE SURFACES AS SHOWN ON THE TYPICAL SECTION FOR THE FULL LENGTH OF THE BRIDGE.

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0500638 (RT.)	

GENERAL NOTES

BRIDGE NO. ATH-50-1681 Lt. & Rt.

ATH-33/50-15.05/11.46

PID No. 21904

ESTIMATED QUANTITIES

SFN 0501611 (Lt.)

ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRU.	GRNL
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP
503	11101	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN				LUMP
509	20001	50	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				50
511	34000	1.38	CU. YDS.	CLASS S CONCRETE, SUPERSTRUCTURE	1.29			0.09
512	10100	934	SQ. YDS.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)				934
516	13200	71	SQ. FT.	½" PREFORMED EXPANSION JOINT FILLER				71
516	31000	180	FT.	JOINT SEALER				180
526	25000	316	SQ. YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")				316

ESTIMATED QUANTITIES

SFN 0501638 (Rt.)

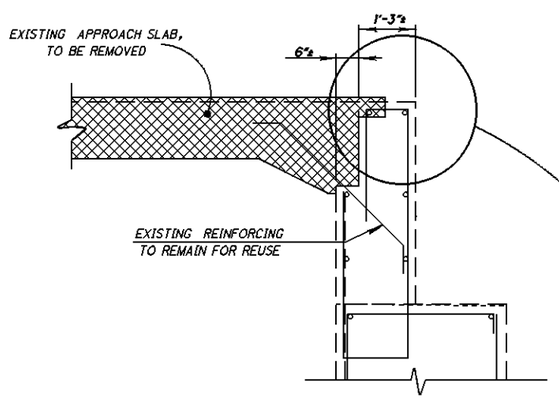
ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER-STRU.	GRNL
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP
503	11101	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN				LUMP
509	20001	50	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				50
511	34000	1.02	CU. YDS.	CLASS S CONCRETE, SUPERSTRUCTURE	0.91			0.11
512	10100	935	SQ. YDS.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)				935
516	13200	72	SQ. FT.	½" PREFORMED EXPANSION JOINT FILLER				72
516	31000	127	FT.	JOINT SEALER				127
526	25000	214	SQ. YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")				214

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0501611 (Lt.) 0501638 (Rt.)	

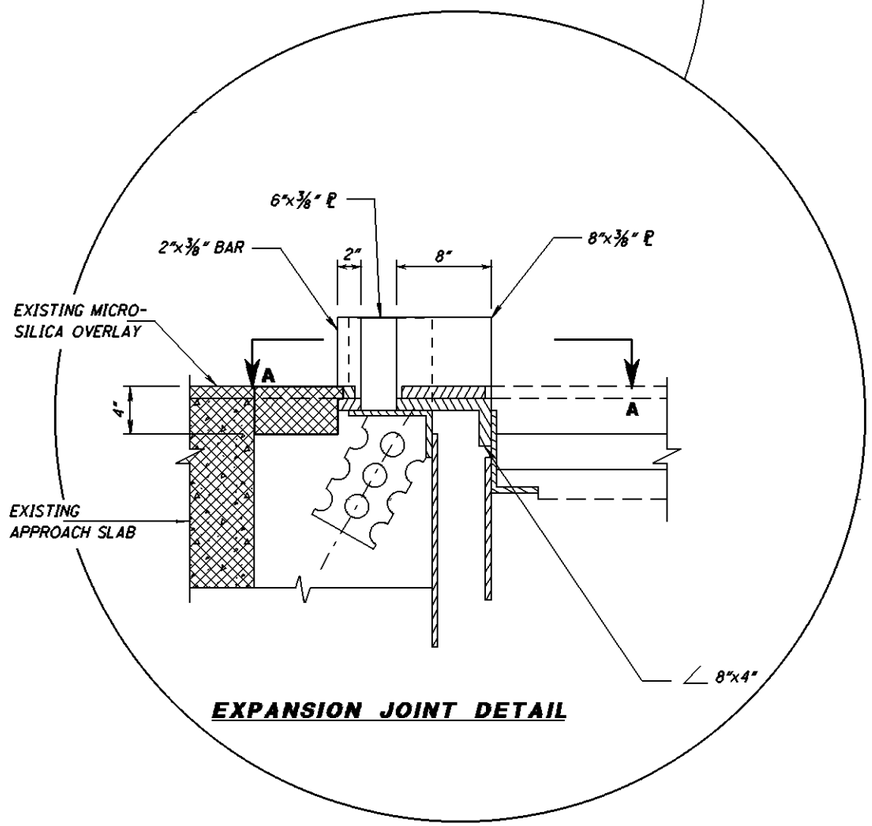
ESTIMATED QUANTITIES
BRIDGE No. ATH-50-1681 Lt. & Rt.

ATH-33/50-15.05/11.46
PID No. 21904

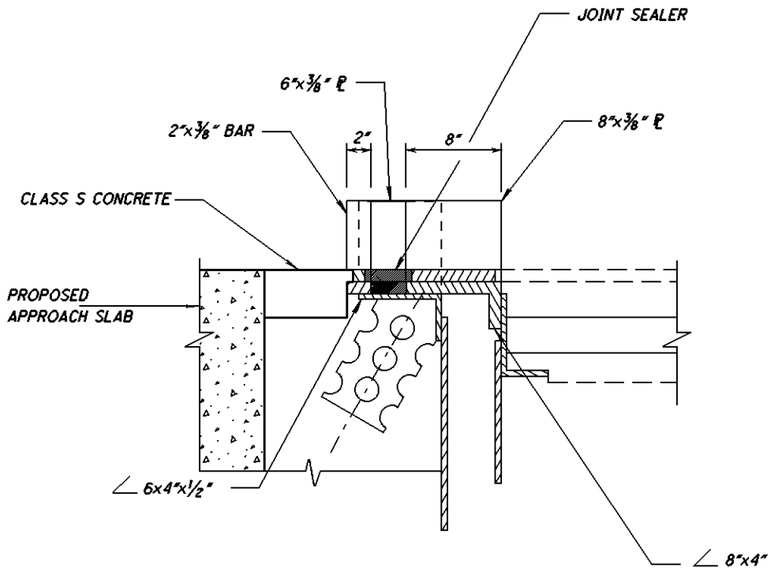


- REMOVAL LIMITS

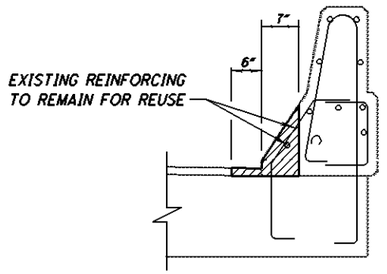
ABUTMENT SECTION



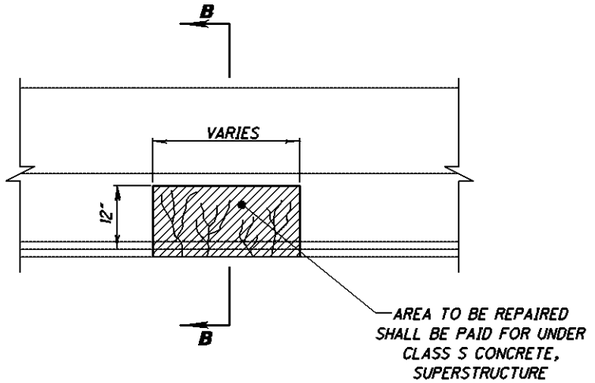
EXPANSION JOINT DETAIL



EXPANSION JOINT DETAIL



Section B-B



BARRIER REPAIR DETAIL

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

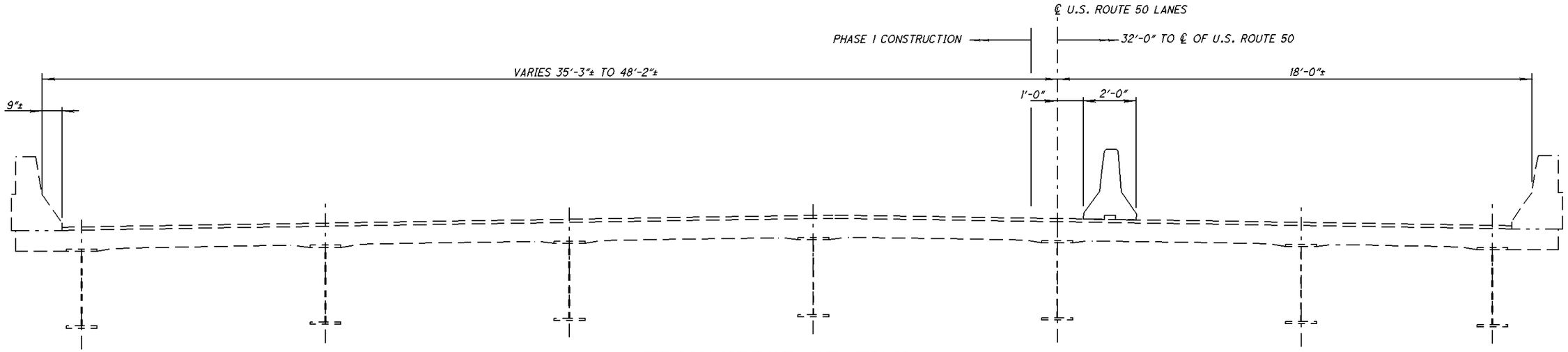
DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		050163R (Rt.)	

EXPANSION JOINT DETAIL

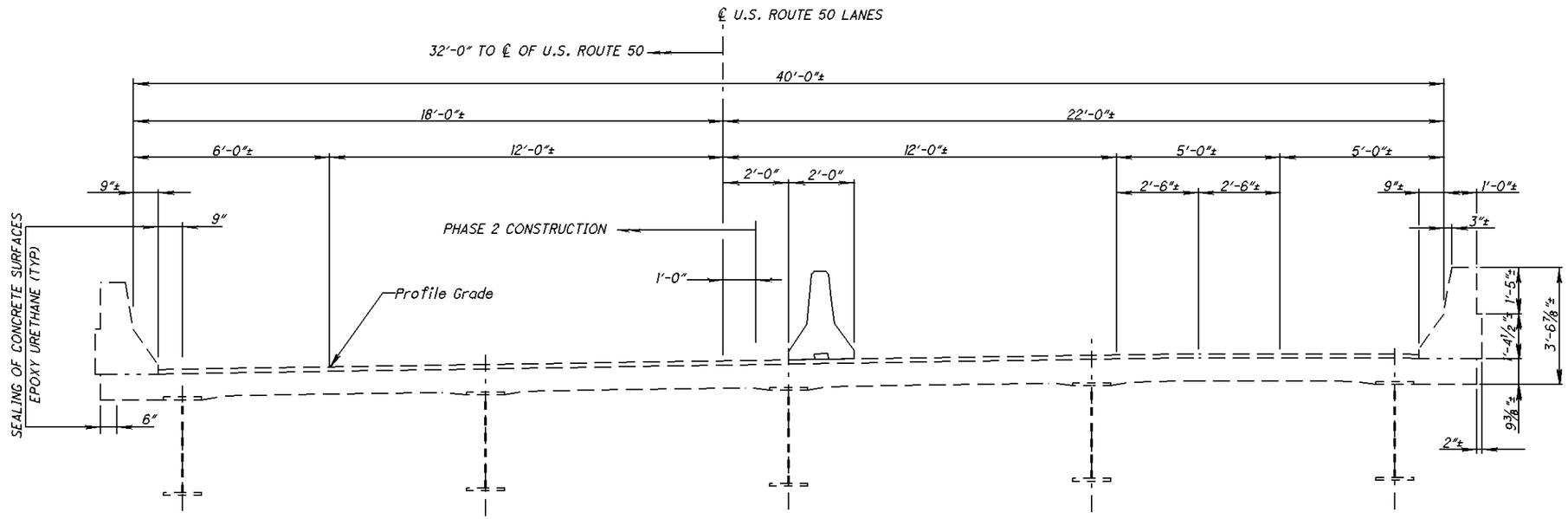
BRIDGE NO. ATH-50-1681 Lt. & Rt.

ATH-33/50-15.05/11.46

PID No. 21904



TRANSVERSE SECTION
PHASE 1
LEFT BRIDGE



TRANSVERSE SECTION
PHASE 2
RIGHT BRIDGE

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER 21904MH007 (Rt.) 0500638 (Rt.)	
ALC			

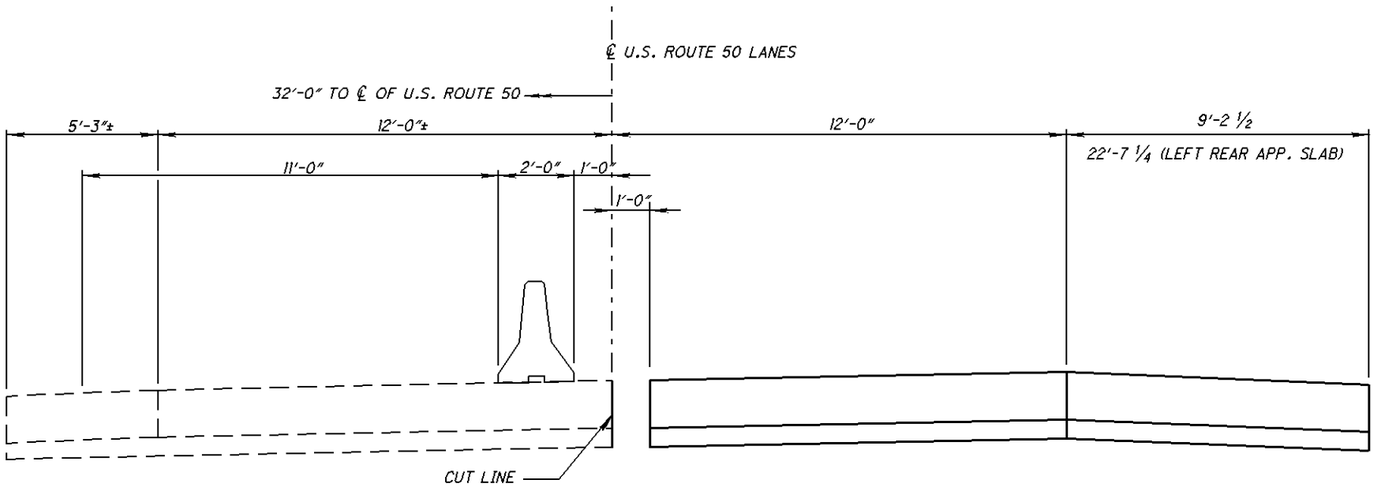
TRANSVERSE SECTION
Bridge No. ATH-50-1681 Lt. & Rt.

ATH-33/50-15.05/11.46
PID No. 21904

5 / 6

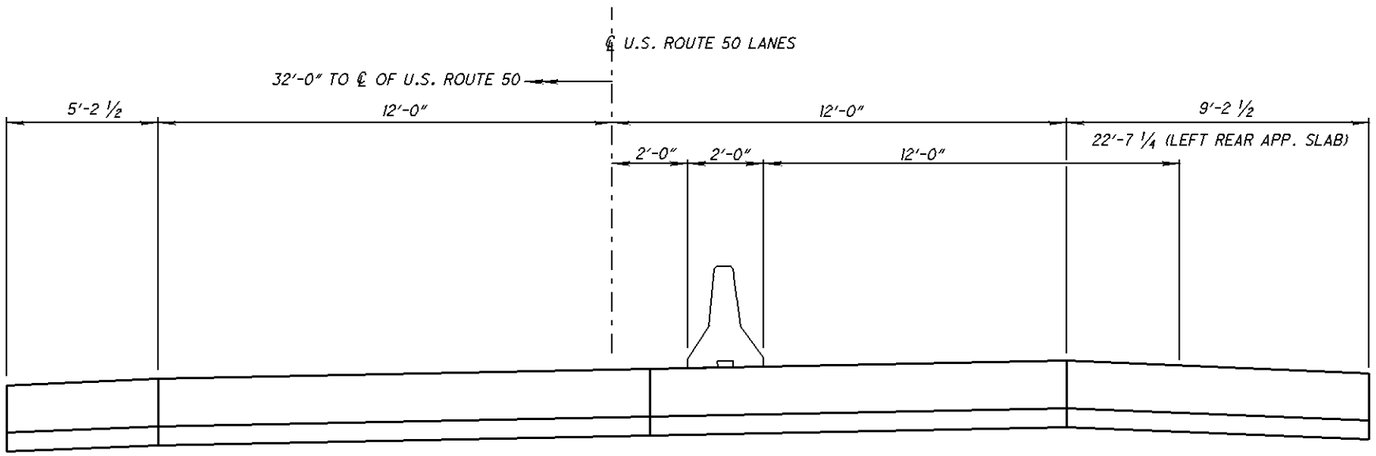
221
222

21904MH007



APPROACH SLAB SECTION
PHASE 1

RIGHT BRIDGE SHOWN
LEFT BRIDGE OPPOSITE HAND



APPROACH SLAB SECTION
PHASE 2

RIGHT BRIDGE SHOWN
LEFT BRIDGE OPPOSITE HAND

DESIGN AGENCY
DISTRICT 10
PRODUCTION DEPARTMENT
MARIETTA, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
JDC	JDC	JPH	11-18-08
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALC		0500638 (21)	

APPROACH SLAB SECTION
Bridge No. ATH-50-1681 Lt. & Rt.

ATH-33/50-15.05/11.46
PID No. 21904

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222
222

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