

DESIGN DESIGNATION

CURRENT A.D.T. (1989) 31049
 DESIGN A.D.T. (2009) 40229
 D.H.V. (2009) 4023
 D 55%
 T 6%
 DESIGN SPEED 55 MPH
 LEGAL SPEED 55 MPH
 FUNCTIONAL CLASSIFICATION: URBAN-INTERSTATE
 DESIGN EXCEPTION: BRIDGE WIDTH (APPVD. 10-19-87)

MICROFILMED
 MAR 18 1994

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION

HAM-74-11.10

CITY OF CINCINNATI
 GREEN TOWNSHIP
 HAMILTON COUNTY

OHIO
 FHWA REGION 5
 FEDERAL PROJECT
 HAM-74-11.10
 IR -74 - (130)II
 IR -74 - (130)II

862
 RED
 1-64

CONVENTIONAL SIGNS

State Line -----
 County Line -----
 Township Line -----
 Section Line -----
 Corporation Line -----
 Fence Line x x Existing x x Proposed
 Center Line -----
 Trees (to be removed) X X
 Utility Poles: Telephone T, Power P, Light L
 Limited Access (only) LA
 Right Of Way (only) RW
 Limited Access and Right Of Way LA/RW
 Existing Right Of Way RW
 Property Line P
 Railroad R
 Guardrail (existing) (proposed)
 Underground Utilities: W Water, E Electric, G Gas, T Telephone

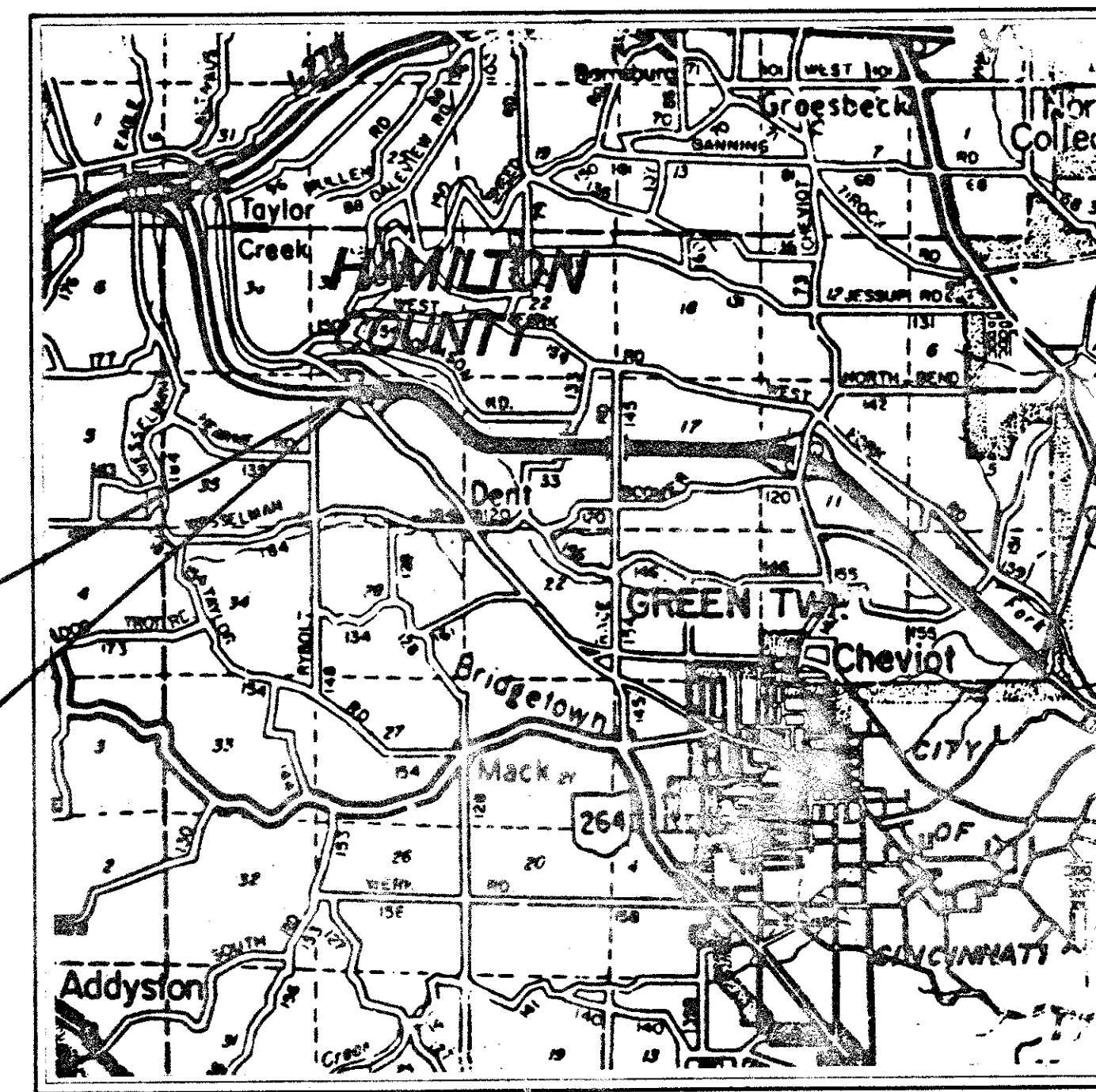
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Structure Over 20' Span	

SHEET NUMBER NOT USED: 19,121

LINE DATA

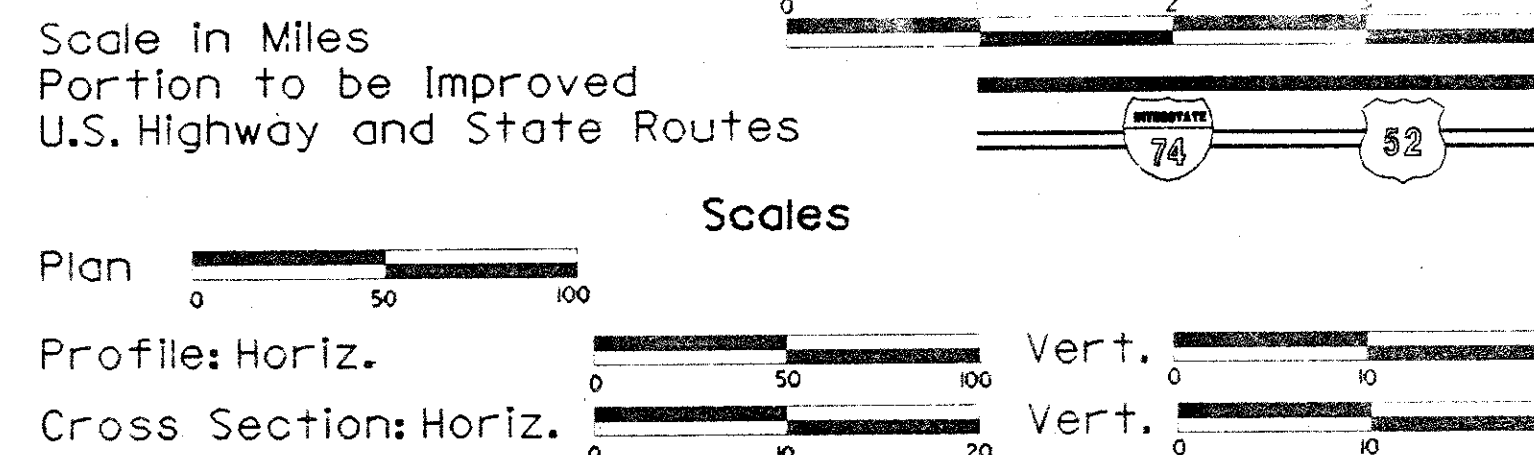
Begin Project: Sta. 601+70.00 @ I-74 (SLM 11.10)
 Station Equations: Sta. 897+87.92 @ I-74 (Back) = Sta. 897+87.92 EB I-74 (Ahead)
 Sta. 910+00.00 EB I-74 (Back) = Sta. 913+35.99 EB I-74 (Ahead)
 End Project: Sta. 917+28.14 EB (SLM 17.02)
 Length of Project (EB): 31,222.15 Lin. Ft. or 5.913 Miles
 Begin Work: Sta. 588+95.00 @ I-74
 Station Equations: Sta. 910+00.00 @ I-74 (Back) = Sta. 913+35.99 EB I-74 (Ahead)
 Sta. 913+35.99 WB I-74 (Ahead)
 End Work: IR-74 33,527.01 LIN. FT. or 6.35 Miles Sta. 927+ 58 WB I-74
 RACE RD. STA. 18+04 to 22+33 429 Lin. Ft.
 HARRISON RD. 56+80 to 82+00 2520 Lin. Ft.
 North Bend Road Sta. 12+40 to Sta. 26+70 1430 Lin. Ft.
 Net Length of Work: 37,906.01 Lin. Ft. or 7.179 Mi.



BEGIN PROJECT
 STA. 603+35

END PROJECT
 STA. 919+40.64 EB

LOCATION MAP



SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

BP-2	1-11-85	GR-4	2-5-82	F-6	5-1-76	RB-1-55	2-2-59	HL-20.11	5-1-87	MT-95.30	10-10-88
BP-3	17-6-76	GR-4A	1-30-84	EXJ-4-87	1-5-89	TC-42.20	3-26-79	HL-20.13	5-1-87	MT-95.31	10-10-88
BP-4	10-1-87	GR-5	2-5-82	SD-1-69	6-12-69	TC-51.10	1-20-84	HL-20.14	5-1-87	MT-96.10	9-9-88
BP-5	10-1-87	GR-6	2-5-82	I-3A & B	4-1-80	TC-51.11	1-20-84	HL-20.15	5-1-87	MT-96.20	9-9-88
BP-7	10-1-87	GR-6A	2-5-82	TC-35.10	8-29-84	TC-52.10	4-3-79	HL-20.31	5-1-87	MT-96.25	9-9-88
BP-9	12-6-76	MC-4	7-26-76	TC-41.10	8-29-84	TC-52.20	4-3-79	HL-30.11	5-1-87	MT-97.10	4-29-88
BP-13	1-23-90	MC-9	1-30-84	TC-41.20	3-26-79	TC-61.10	4-5-82	HL-30.21	5-1-87	MT-98.12	8-25-89
HL-60.31	5-1-87	MC-10	5-1-76	TC-41.50	3-26-79	TC-71.10	4-9-79	HL-30.22	5-1-87	MT-98.13	8-25-89
GR-1	1-11-85	MC-11	8-1-78	TC-42.10	8-19-77	TC-72.20	2-26-82	HL-30.31	5-1-87	MT-98.14	8-25-89
GR-2B	2-5-82	F-1	11-10-83	MC-5	6-12-75	TC-82.10	8-29-84	HL-40.10	5-1-87	MT-98.15	8-25-89
GR-3	2-22-90	F-2	5-1-76	MC-9A	1-11-85	HL-10.11	5-1-87	HL-50.21	5-1-87	MT-99.10	11-14-86
GR-3A	2-5-82	F-3	5-1-76	MC-6	1-30-84	HL-10.12	5-1-87	HL-60.11	5-1-87	MT-99.20	4-29-88
GR-3B	1-21-85	F-5	5-1-76	HW-3	6-1-65	HL-10.13	5-1-87	BR-1	5-29-79	MT-102.20	8-25-89

LIMITED ACCESS

This improvement is especially designed for through traffic and has been declared a limited access highway or freeway by the action of the Director, Department of Transportation in accordance with the provisions of Section 5511.02 of the Revised Code of Ohio.

1989 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.

UNDER AUTHORITY OF SECTION 4511.21, DIVISION (I) OF THE REVISED CODE OF OHIO, 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.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved: L.H. Wallace
 Date: 4-26-90 District Deputy Director of Transportation
 Approved: B.D. Hanlon
 Date: 5/14/90 Engineer, Bureau of Bridges and Structural Design
 Approved: Charles J. Still
 Date: 7/22/90 Chief Engineer, Planning and Design
 Approved: Edward O. Hunt
 Date: 7/22/90 Director, Department of Transportation

SUPPLEMENTAL SPECIFICATIONS

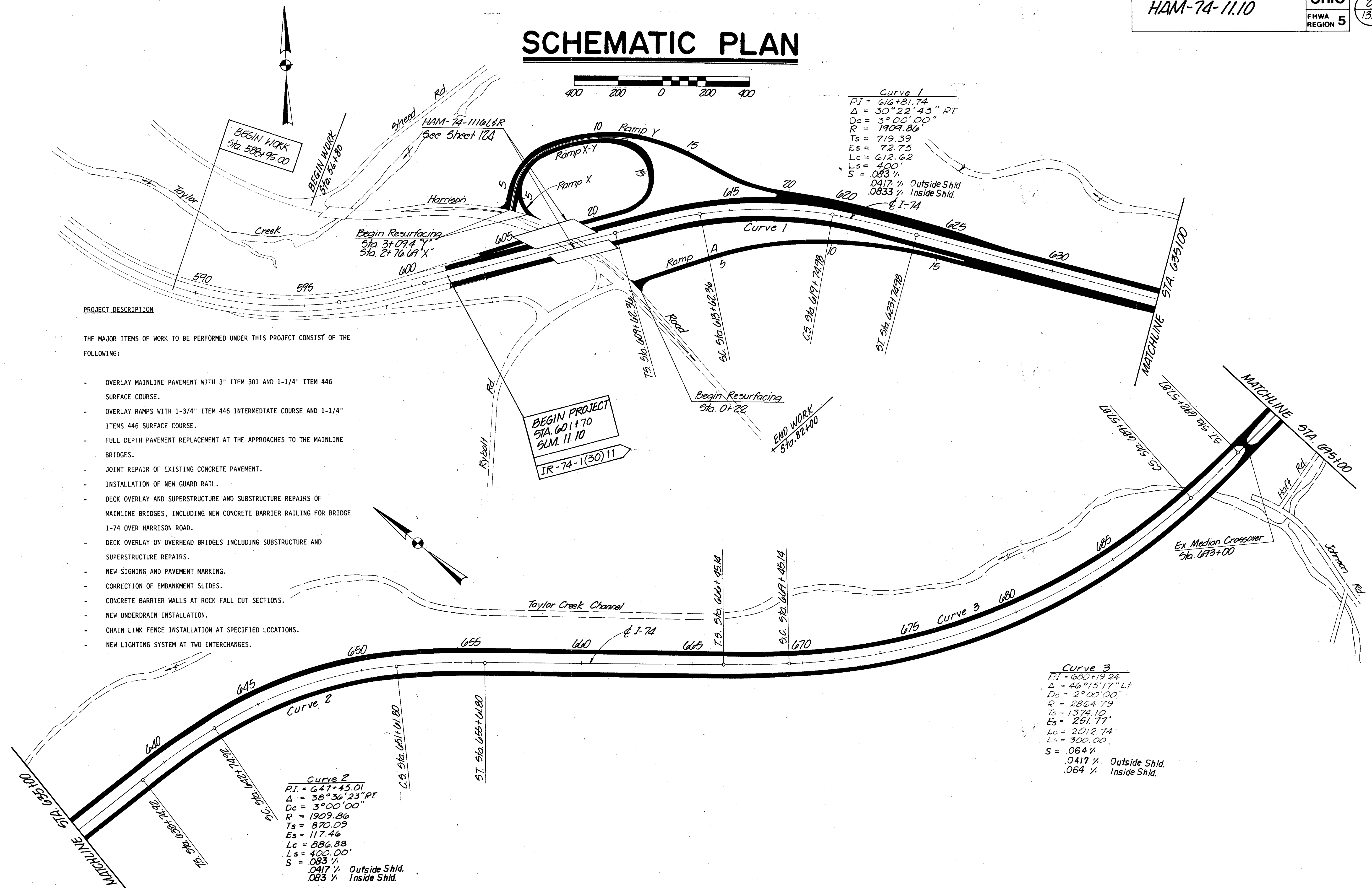
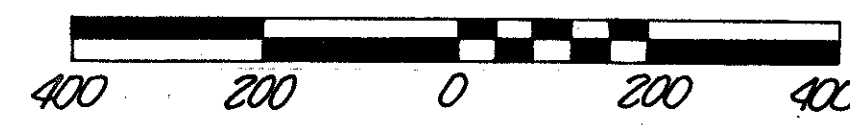
841	5-16-84	843	7-29-88
802	4-13-90	853	6-26-78
803	10-2-89	931	6-18-85
812	8-8-88	947	10-17-83
836	11-12-85	905	5-2-89
847	10-17-83	952	12-14-88
850	5-31-88	825	10-2-89
852	6-10-87	956	6-26-78

K|Z|F ARCHITECTS ENGINEERS INTERIOR DESIGNERS
 655 Eden Park Drive, Cincinnati, Ohio 45202
 *2650
 File No. HAMILTON COUNTY
 Project: HAM-74-11.10
 Date Of Letting:
 Contract No.

UNDERGROUND UTILITIES
 BEFORE YOU DIG
 2 WORKING DAYS
 Call 800-362-2764
 OHIO UTILITIES PROTECTION SERVICE
 Non-Members
 Must Be Called Directly

DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY DIVISION
 APPROVED
 DIVISION ADMINISTRATOR DATE

SCHEMATIC PLAN



Curve 1
 PI = 616+81.74
 $\Delta = 30^\circ 22' 43''$ RT.
 Dc = 3° 00' 00"
 R = 1909.86
 Ts = 719.39
 Es = 72.75
 Lc = 612.62
 Ls = 400'
 S = .083 %
 .0417 % Outside Shld.
 .0833 % Inside Shld.

Curve 2
 PI = 647+45.01
 $\Delta = 38^\circ 36' 23''$ RT.
 Dc = 3° 00' 00"
 R = 1909.86
 Ts = 870.09
 Es = 117.46
 Lc = 886.88
 Ls = 400.00'
 S = .083 %
 .0417 % Outside Shld.
 .083 % Inside Shld.

Curve 3
 PI = 650+19.24
 $\Delta = 46^\circ 15' 17''$ Lt.
 Dc = 2° 00' 00"
 R = 2864.79
 Ts = 1374.10
 Es = 251.77'
 Lc = 2012.74'
 Ls = 300.00'
 S = .064 %
 .0417 % Outside Shld.
 .064 % Inside Shld.

PROJECT DESCRIPTION

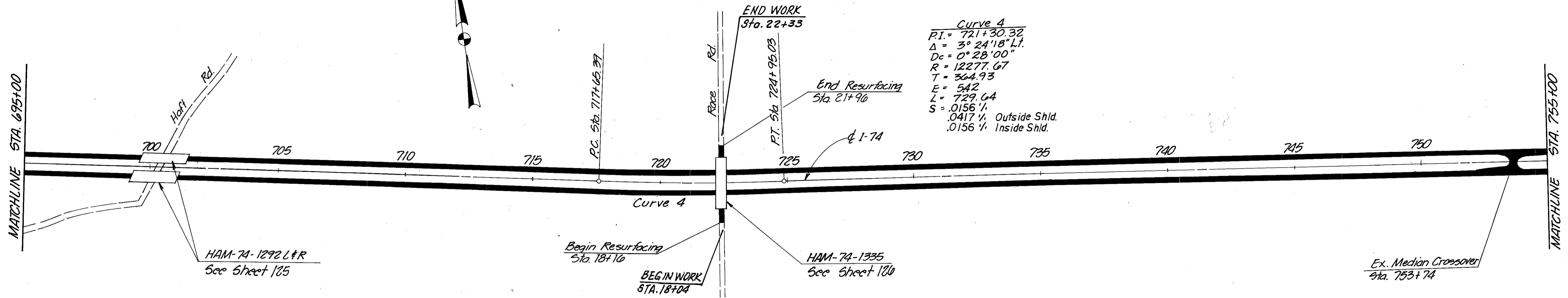
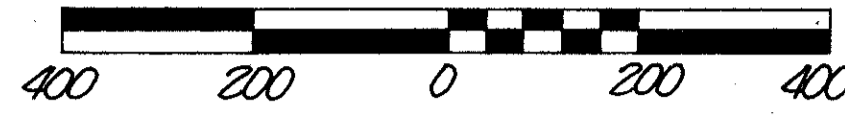
THE MAJOR ITEMS OF WORK TO BE PERFORMED UNDER THIS PROJECT CONSIST OF THE FOLLOWING:

- OVERLAY MAINLINE PAVEMENT WITH 3" ITEM 301 AND 1-1/4" ITEM 446 SURFACE COURSE.
- OVERLAY RAMP WITH 1-3/4" ITEM 446 INTERMEDIATE COURSE AND 1-1/4" ITEMS 446 SURFACE COURSE.
- FULL DEPTH PAVEMENT REPLACEMENT AT THE APPROACHES TO THE MAINLINE BRIDGES.
- JOINT REPAIR OF EXISTING CONCRETE PAVEMENT.
- INSTALLATION OF NEW GUARD RAIL.
- DECK OVERLAY AND SUPERSTRUCTURE AND SUBSTRUCTURE REPAIRS OF MAINLINE BRIDGES, INCLUDING NEW CONCRETE BARRIER RAILING FOR BRIDGE I-74 OVER HARRISON ROAD.
- DECK OVERLAY ON OVERHEAD BRIDGES INCLUDING SUBSTRUCTURE AND SUPERSTRUCTURE REPAIRS.
- NEW SIGNING AND PAVEMENT MARKING.
- CORRECTION OF EMBANKMENT SLIDES.
- CONCRETE BARRIER WALLS AT ROCK FALL CUT SECTIONS.
- NEW UNDERDRAIN INSTALLATION.
- CHAIN LINK FENCE INSTALLATION AT SPECIFIED LOCATIONS.
- NEW LIGHTING SYSTEM AT TWO INTERCHANGES.

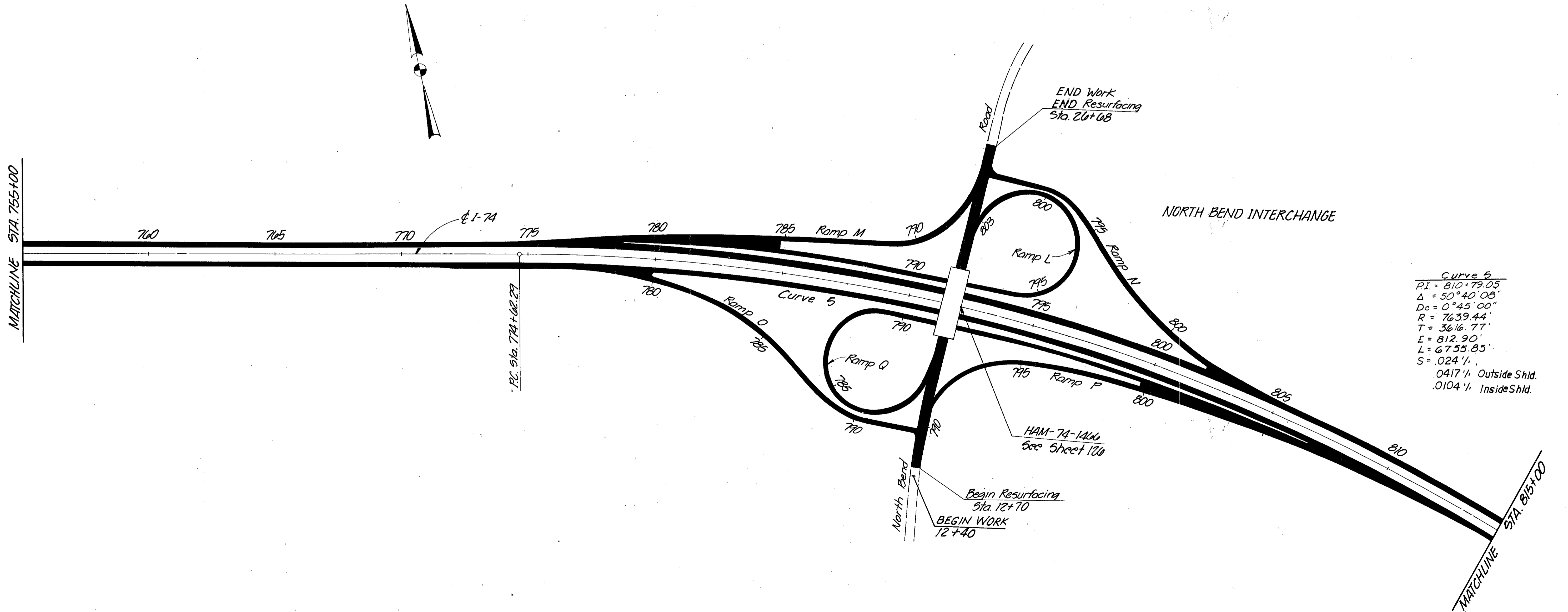
BEGIN PROJECT
 STA. 601+70
 SLM. 11.10
 IR-74-1(30)11

END WORK
 STA. 82+00

SCHEMATIC PLAN

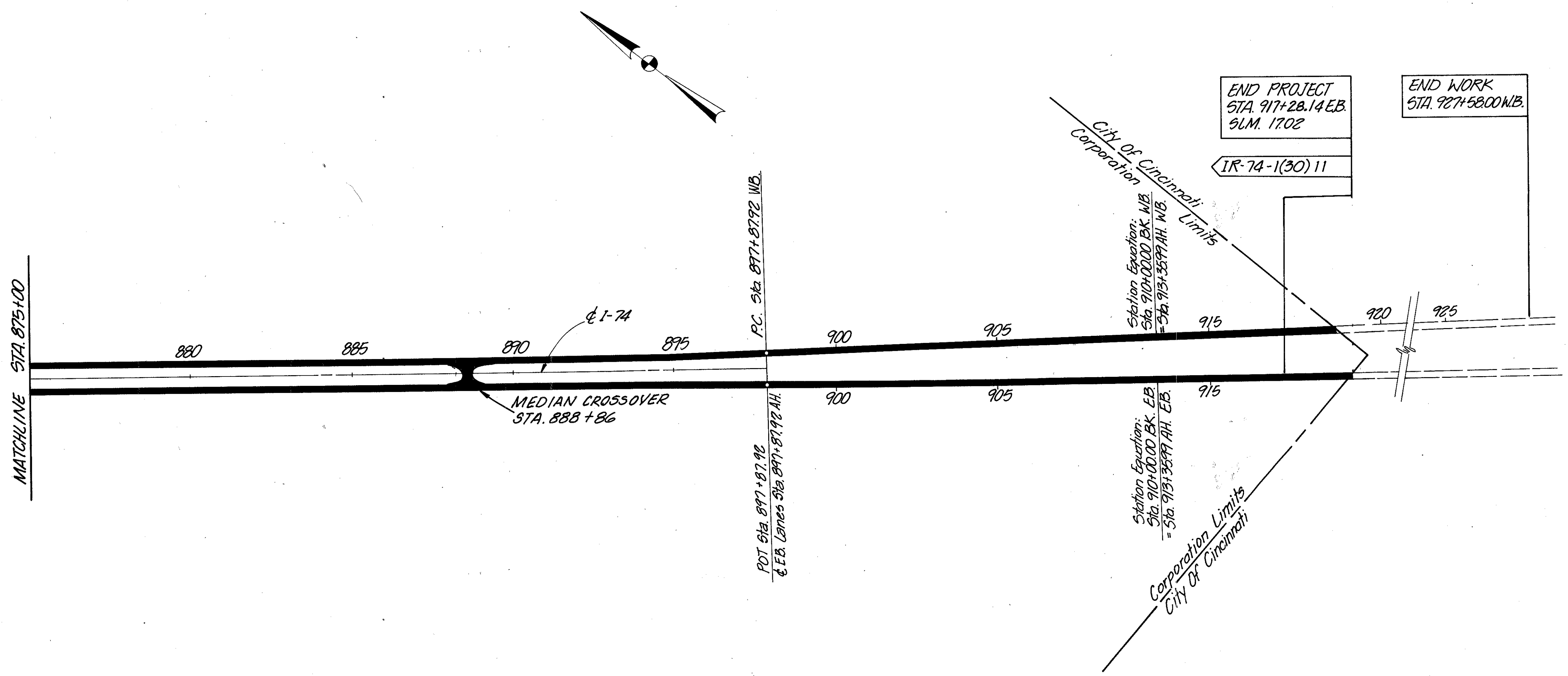
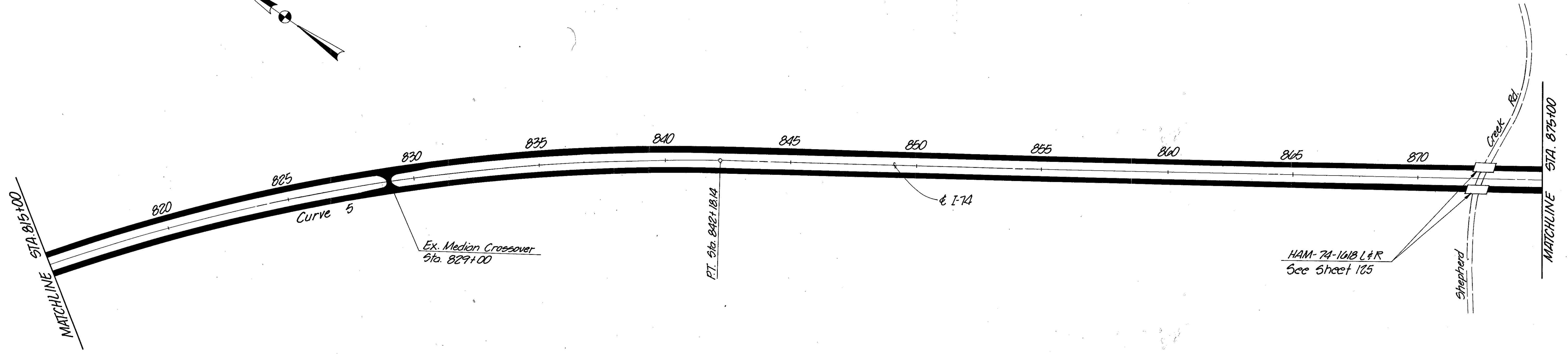
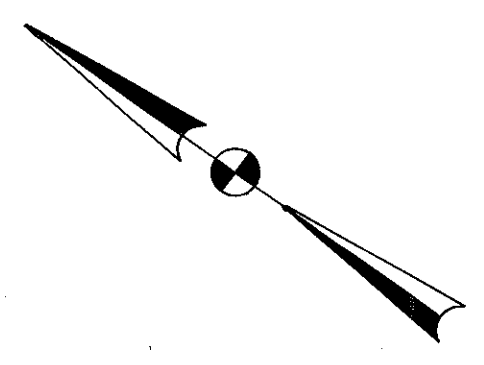
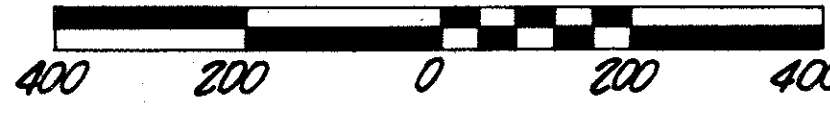


Curve 4
 P.I. = 721+30.32
 $\Delta = 3^{\circ} 24' 18''$ L.I.
 Dc = 0° 28' 00"
 R = 12277.67
 T = 364.93
 E = 542
 L = 729.64
 S = .0156 %
 .0417 % Outside Shld.
 .0156 % Inside Shld.



Curve 5
 P.I. = 810+79.05
 $\Delta = 50^{\circ} 40' 08''$
 Dc = 0° 45' 00"
 R = 7639.44'
 T = 3616.77'
 E = 812.90'
 L = 6755.85'
 S = .024 %
 .0417 % Outside Shld.
 .0104 % Inside Shld.

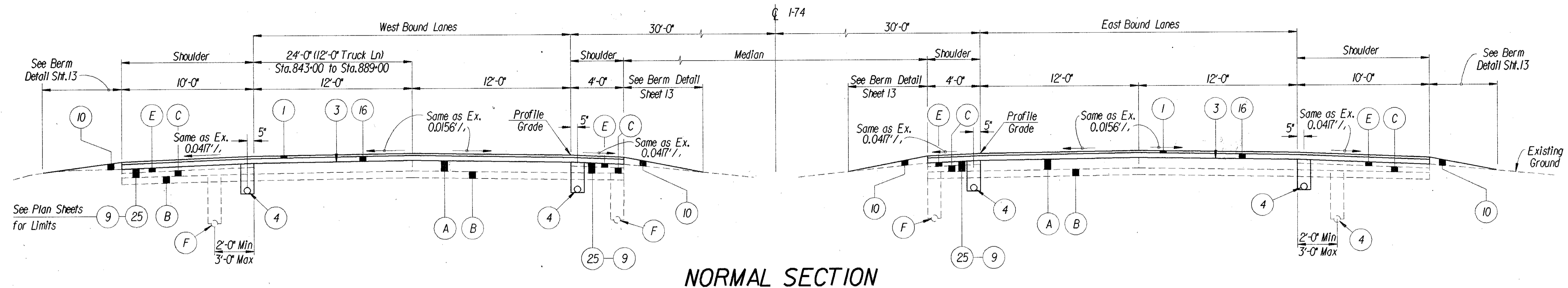
SCHEMATIC PLAN



74562

TYPICAL SECTIONS

TYPE 446 ON 301



NORMAL SECTION

WEST BOUND LANES

Sta. 697+00.00 to Sta. 698+41.45 = 141.45 LF (Rock Section)
Sta. 702+72.37 to Sta. 709+25.00 = 652.63 LF (Rock Section)
Sta. 709+25.00 to Sta. 716+00.00 = 675.00 LF (Rock Section)
Sta. 716+00.00 to Sta. 717+00.00 = 100.00 LF (Rock Section)
Sta. 717+00.00 to Sta. 724+28.00 = 728.00 LF (Rock Section)
Sta. 724+28.00 to Sta. 730+50.00 = 622.00 LF (Rock Section)
Sta. 730+50.00 to Sta. 733+50.00 = 300.00 LF (Rock Section)
Sta. 733+50.00 to Sta. 735+50.00 = 200.00 LF (Rock Section)
Sta. 735+50.00 to Sta. 750+50.00 = 1500.00 LF (Rock Section)

Sta. 750+50.00 to Sta. 751+50.00 = 100.00 LF (Rock Section)
Sta. 751+50.00 to Sta. 756+50.00 = 500.00 LF (Rock Section)
Sta. 756+50.00 to Sta. 763+16.80 = 666.80 LF (Rock Section)
Sta. 763+16.80 to Sta. 773+12.29 = 995.49 LF (Rock Section)
Sta. 843+68.11 to Sta. 851+00.00 = 731.89 LF (Rock Section)
Sta. 851+00.00 to Sta. 858+00.00 = 700.00 LF (Rock Section)
Sta. 858+00.00 to Sta. 868+64.00 = 1064.00 LF (Rock Section)
Sta. 868+64.00 to Sta. 870+30.02 = 166.02 LF (Rock Section)
Sta. 874+86.98 to Sta. 889+00.00 = 1413.02 LF (Rock Section)

TOTAL W.B. = 11,256.30 LF

EAST BOUND LANES

Sta. 697+00.00 to Sta. 698+29.32 = 129.32 LF (Rock Section)
Sta. 702+91.74 to Sta. 709+25.00 = 633.26 LF (Rock Section)
Sta. 709+25.00 to Sta. 716+00.00 = 675.00 LF (Rock Section)
Sta. 716+00.00 to Sta. 717+00.00 = 100.00 LF (Rock Section)
Sta. 717+00.00 to Sta. 724+28.00 = 728.00 LF (Rock Section)
Sta. 724+28.00 to Sta. 730+50.00 = 622.00 LF (Rock Section)
Sta. 730+50.00 to Sta. 733+50.00 = 300.00 LF (Rock Section)
Sta. 733+50.00 to Sta. 735+50.00 = 200.00 LF (Rock Section)
Sta. 735+50.00 to Sta. 750+50.00 = 1500.00 LF (Rock Section)

Sta. 750+50.00 to Sta. 751+50.00 = 100.00 LF (Rock Section)
Sta. 751+50.00 to Sta. 756+50.00 = 500.00 LF (Rock Section)
Sta. 756+50.00 to Sta. 763+16.80 = 666.80 LF (Rock Section)
Sta. 763+16.80 to Sta. 773+12.29 = 995.49 LF (Rock Section)
Sta. 843+68.11 to Sta. 851+00.00 = 731.89 LF (Rock Section)
Sta. 851+00.00 to Sta. 858+00.00 = 700.00 LF (Rock Section)
Sta. 858+00.00 to Sta. 868+64.00 = 1064.00 LF (Rock Section)
Sta. 868+64.00 to Sta. 870+49.64 = 185.64 LF (Rock Section)
Sta. 874+56.36 to Sta. 889+00.00 = 1443.64 LF (Rock Section)

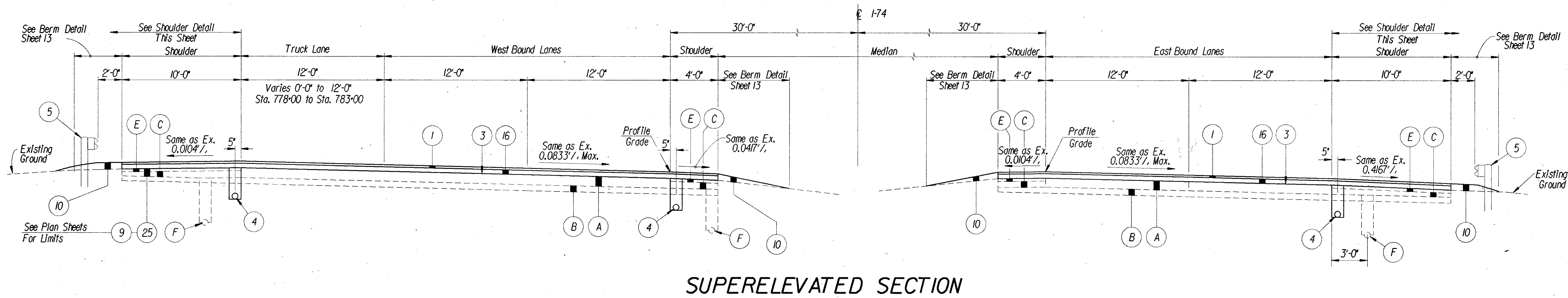
TOTAL E.B. = 11,275.04 LF

ITEM LEGEND

- | | | | |
|---|---|--|--|
| 1 ITEM 446 - 1 1/4" Asphalt Concrete, Surface Course Type 1, AC-20 | 14 ITEM 446 - 1 1/2" Asphalt Concrete Surface Course Type 1, AC-20 | 26 ITEM 252 - Full Depth Pavement Sawing | G Existing 9" RPC Concrete Pavement |
| 2 ITEM 446 - 1 3/4" Asphalt Concrete, Intermediate Course Type 2, AC-20 | 15 ITEM 622 - Concrete Barrier, Type D-50, As Per Plan (See Sheet 17) | 27 ITEM 254 - Pavement Planing, Portland Cement Concrete | H Existing 3" Aggregate Base |
| 3 ITEM 407 - Tack Coat | 16 ITEM 301 - 3" Bituminous Aggregate Base, AC-20 | 28 ITEM 612 - Concrete Median | I Existing Concrete Curb Type 2A |
| 4 ITEM 605 - Shallow Underdrain, As Per Plan (See Sheet 93) | 17 ITEM 622 - Concrete Barrier, Type A | 29 ITEM 254 - Pavement Planing, Bituminous | J Existing 4" Concrete Median |
| 5 ITEM 606 - Guardrail, Type 5 | 18 ITEM 301 - Bituminous Aggregate Base, AC-20, Variable Thickness | 30 ITEM 612 - Concrete Median, As Per Plan | K Existing 9" Concrete Median |
| 6 ITEM 304 - Aggregate Base, Depth As Shown | 19 ITEM 622 - Concrete Barrier, Type B-50 (For Limits of 4" Raceway, See Lighting Plans) | 31 ITEM 609 - Curb, Type 2B, As Per Plan | L Existing Curb, Type 6 |
| 7 ITEM 301 - 5 1/2" Bituminous Aggregate Base, AC-20 | 20 ITEM 659 - Seeding and Mulching | 32 ITEM 608 - 4" Concrete Walk | M Not Used |
| 8 ITEM 301 - 6" Bituminous Aggregate Base, AC-20 | 21 ITEM 203 - Embankment | A Existing 10" RPC Concrete Pavement | N Existing Guardrail, Barrier Type |
| 9 ITEM 203 - Linear Grading (See General Note) | 22 ITEM 203 - Excavation, not incl. Embankment Construction | B Existing 6" Subbase | P Existing Concrete Walk |
| 10 ITEM 617 - Compacted Aggregate, Type B and Water, Depth as Shown | 23 ITEM 605 - 4" Unclassified Pipe Underdrain | C Existing Aggregate Base, Variable Thickness | Q Existing Concrete Approach Slab |
| 11 ITEM 301 - 12" Bituminous Aggregate Base, AC-20 | 24 ITEM 202 - Pavement Removed | D Existing Barrier Curb | R Existing 1 1/2" Asphalt Concrete |
| 12 ITEM 408 - Bituminous Prime Coat | 25 ITEM 301 - 9" Bituminous Aggregate Base, AC-20 (For Maint. Traffic - See Plan Sheets For Limits) | E Existing 3" Bituminous Aggregate Base | S Existing Combination Curb and Gutter |
| 13 ITEM 203 - Subgrade Compaction | | F Existing 6" Underdrains | T Existing 2 1/2" +/- Asphalt Concrete Overlay |

TYPICAL SECTIONS

TYPE 446 ON 301



SUPERELEVATED SECTION

WEST BOUND LANES

EAST BOUND LANES

Sta. 773+12.29 to Sta. 781+50.00 = 837.71 LF
 Sta. 781+50.00 to Sta. 789+50.00 = 800.00 LF (Rock Section)
 Sta. 789+50.00 to Sta. 818+00.00 = 2850.00 LF

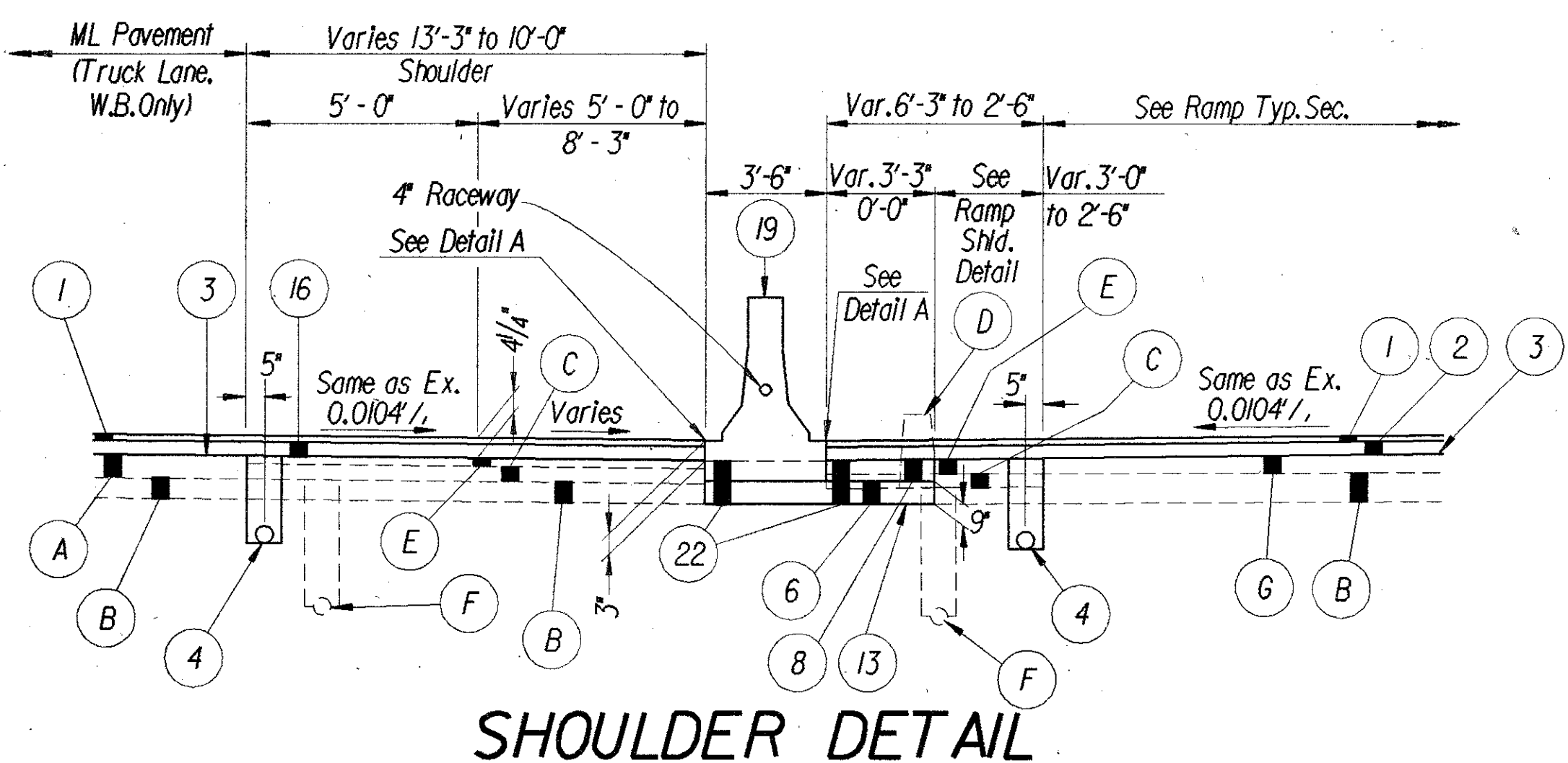
Sta. 818+00.00 to Sta. 833+00.00 = 1500.00 LF (Rock Section)
 Sta. 833+00.00 to Sta. 838+00.00 = 500.00 LF
 Sta. 838+00.00 to Sta. 843+68.11 = 568.11 LF (Rock Section)

Sta. 773+12.29 to Sta. 781+50.00 = 837.71 LF
 Sta. 781+50.00 to Sta. 789+50.00 = 800.00 LF (Rock Section)
 Sta. 789+50.00 to Sta. 818+00.00 = 2850.00 LF

Sta. 818+00.00 to Sta. 833+00.00 = 1500.00 LF (Rock Section)
 Sta. 833+00.00 to Sta. 838+00.00 = 500.00 LF
 Sta. 838+00.00 to Sta. 843+68.11 = 568.11 LF (Rock Section)

TOTAL W.B. = 7,055.82 LF

TOTAL E.B. = 7,055.82 LF



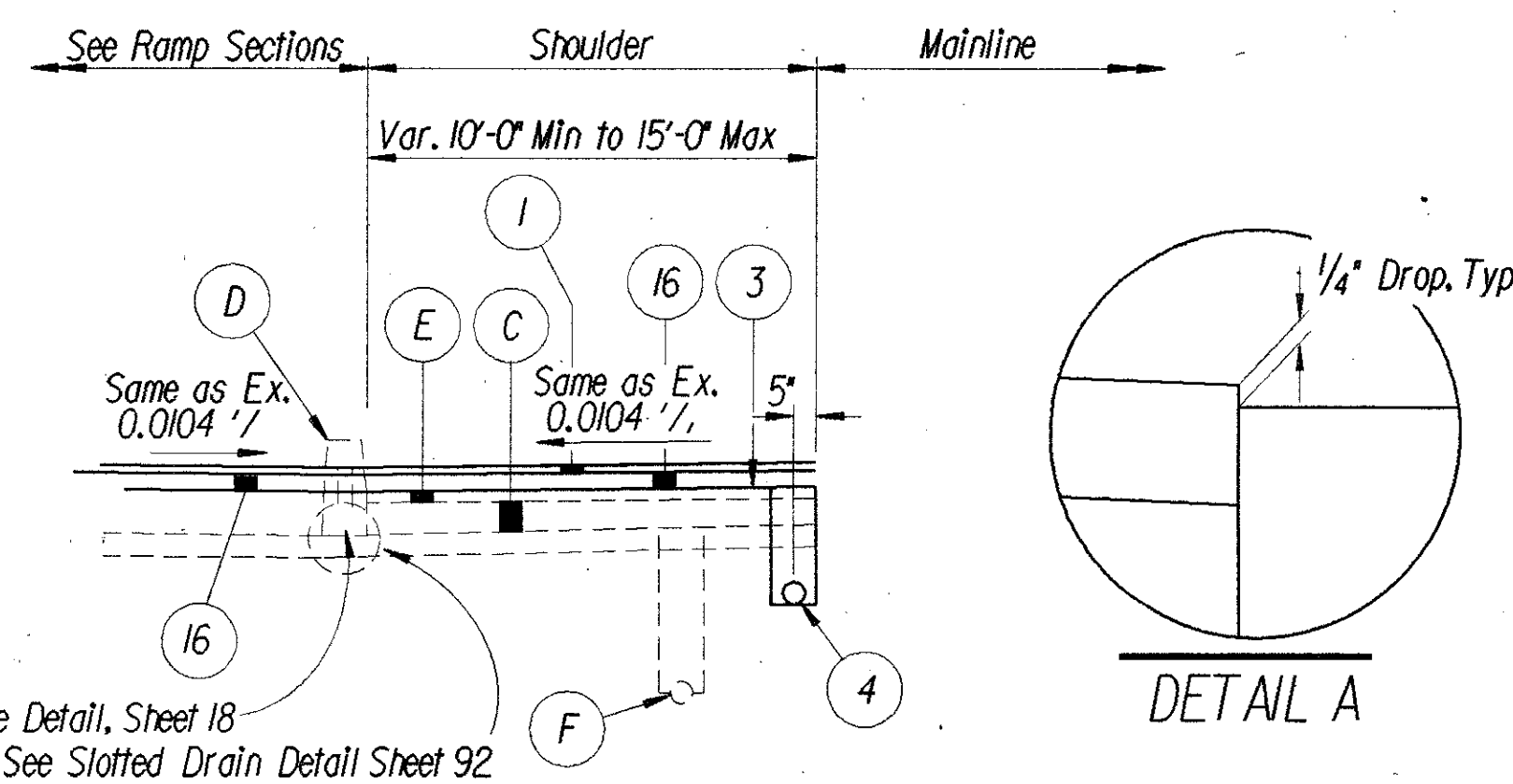
SHOULDER DETAIL

WEST BOUND LANES

EAST BOUND LANES

Sta. 779+50 to Sta. 784+20 = 470.00 LF Rt. Shldr. (Opp Hand)

Sta. 799+80 to Sta. 804+10 = 430.00 LF Rt. Shldr.



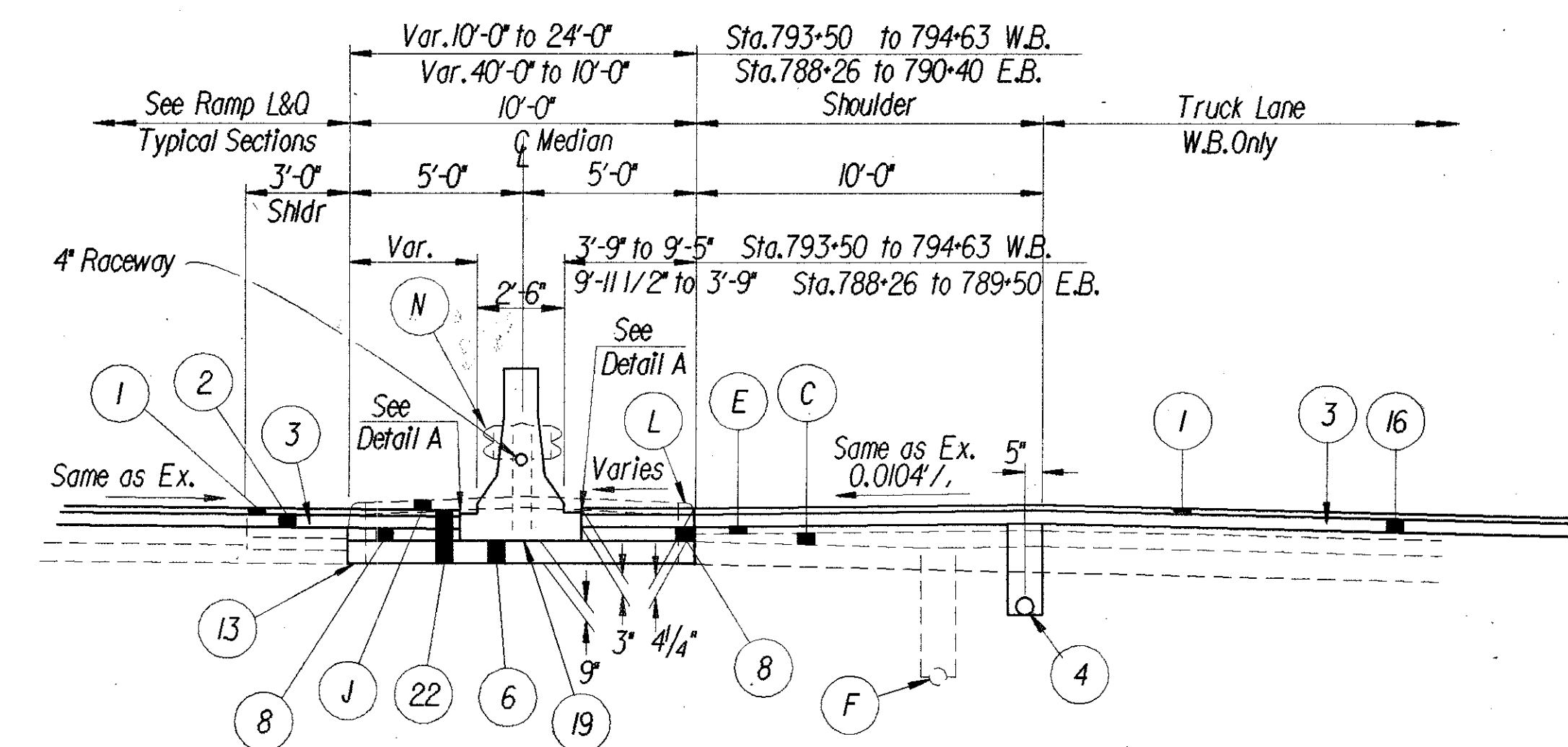
SHOULDER DETAIL

WEST BOUND LANES

EAST BOUND LANES

Sta. 777+00 to Sta. 779+50 = 250.00 LF Lt. Shldr.

Sta. 804+10 to Sta. 807+00 = 290.00 LF Rt. Shldr. (Opp. Hand)
Sta. 621+70 to Sta. 626+22 = 452.00 LF Rt. Shldr. (Opp. Hand)



SHOULDER DETAIL

WEST BOUND LANES

EAST BOUND LANES

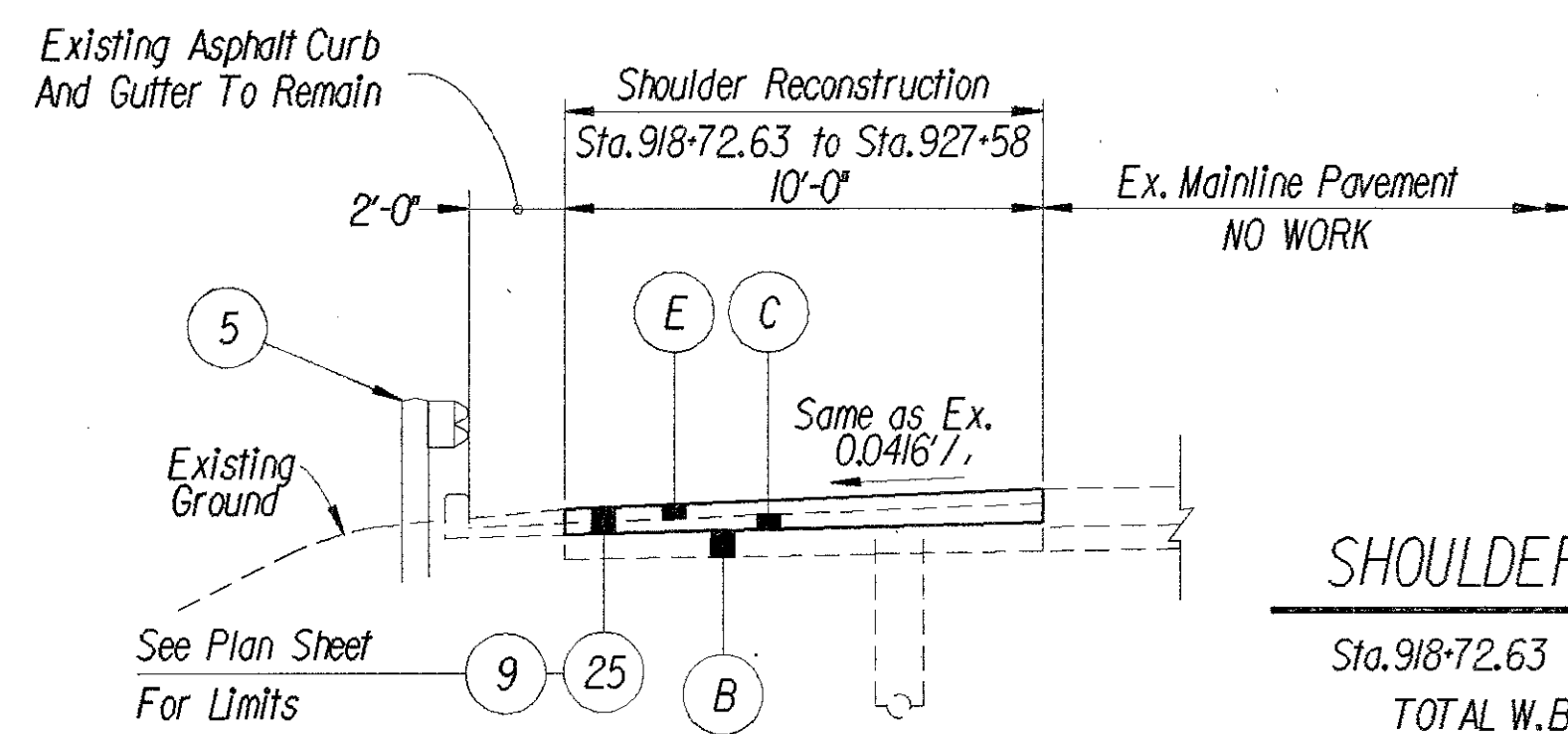
Sta. 784+20 to Sta. 794+63 = 1043.00 LF Lt. Shldr.

Sta. 788+26 to Sta. 799+80 = 1154.00 LF Rt. Shldr. (Opp. Hand)

NOTE: For Item Legend, See Sheet No. 5

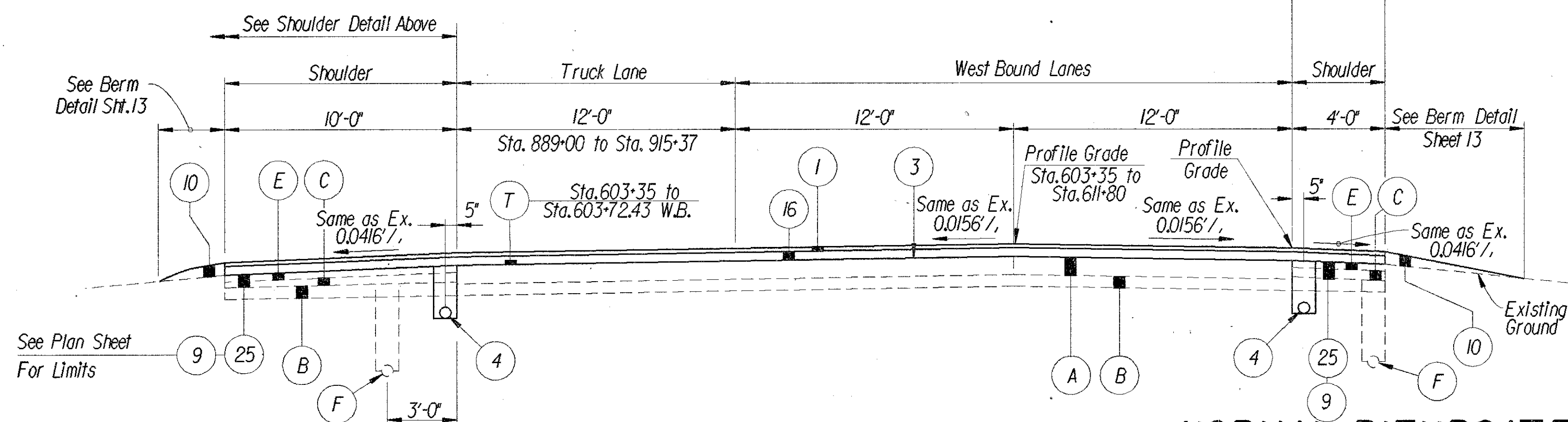
TYPICAL SECTIONS

TYPE 446 ON 301

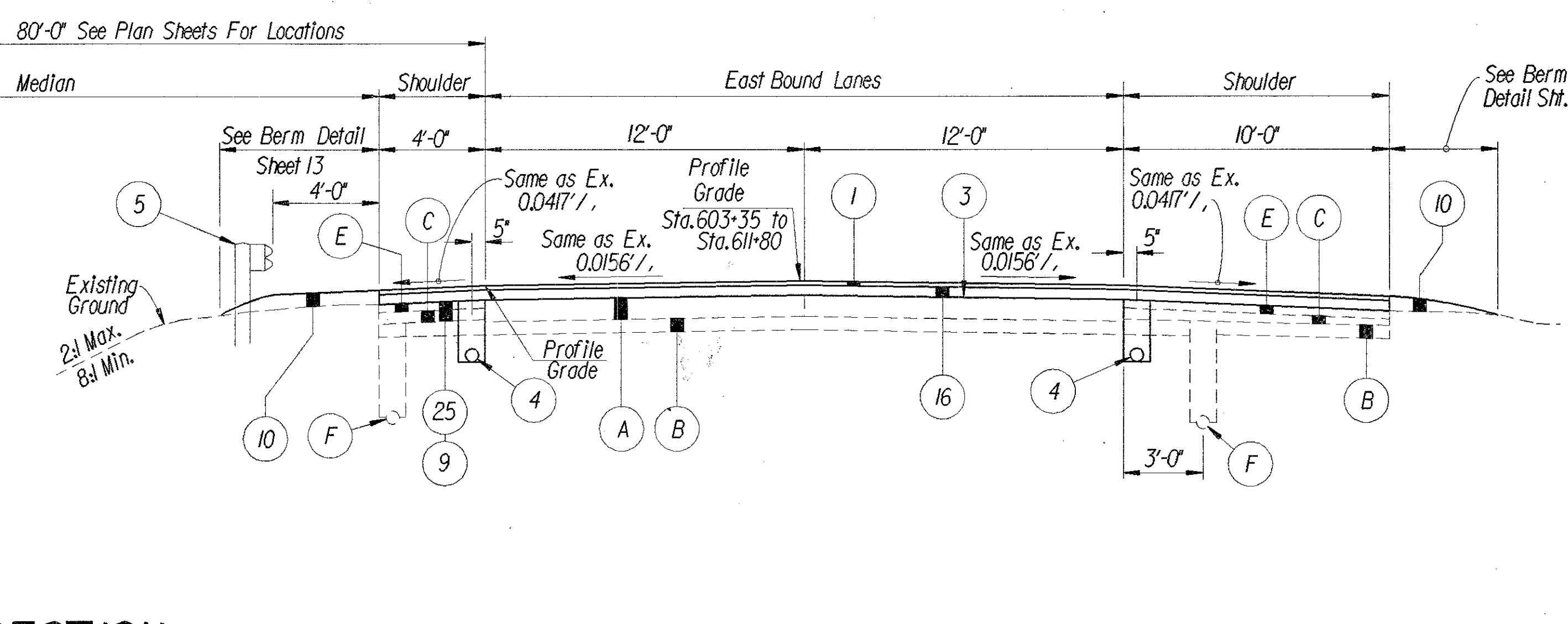


SHOULDER DETAIL

Sta. 918+72.63 to Sta. 927+58
TOTAL W.B. = 885.37'



NORMAL BIFURCATED SECTION



WEST BOUND LANES

Sta. 609+61.63 to Sta. 611+80.00 = 218.37 LF
 Sta. 623+75.00 to Sta. 629+48.00 = 573.00 LF
 Sta. 629+48.00 to Sta. 634+00.00 = 452.00 LF (Rock Section)
 Sta. 634+00.00 to Sta. 638+75.00 = 475.00 LF
 Sta. 655+61.80 to Sta. 666+45.00 = 1083.20 LF

Sta. 692+57.87 to Sta. 697+00.00 = 442.13 LF (Rock Section)
 Sta. 889+00.00 to Sta. 900+00.00 = 1100.00 LF (Rock Section)
 Sta. 900+00.00 to Sta. 910+00.00 = 1000.00 LF
 Sta. Eq. Sta. 910+00 (Back) - Sta. 913+35.99 (Ahead)
 Sta. 913+35.99 to Sta. 918+72.63 = 536.64 LF

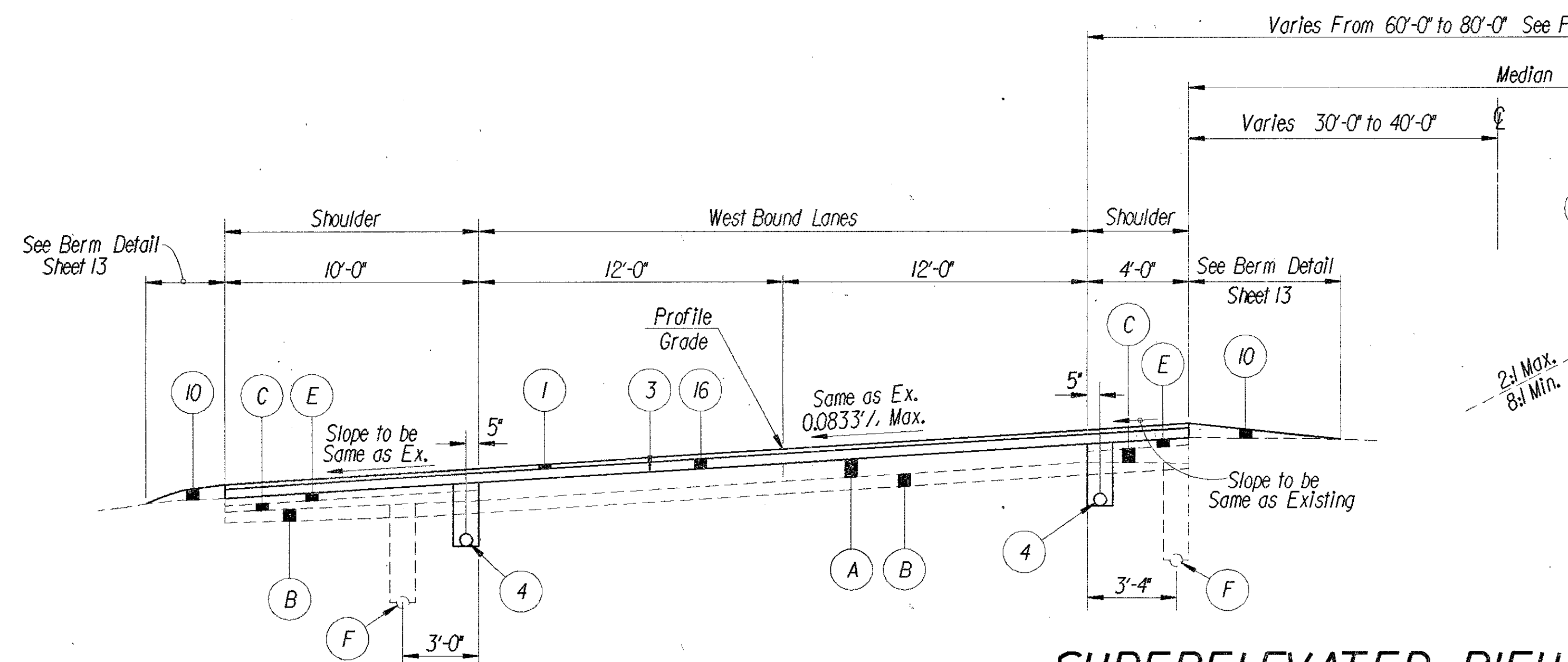
TOTAL W.B. = 5,880.34 LF

EAST BOUND LANES

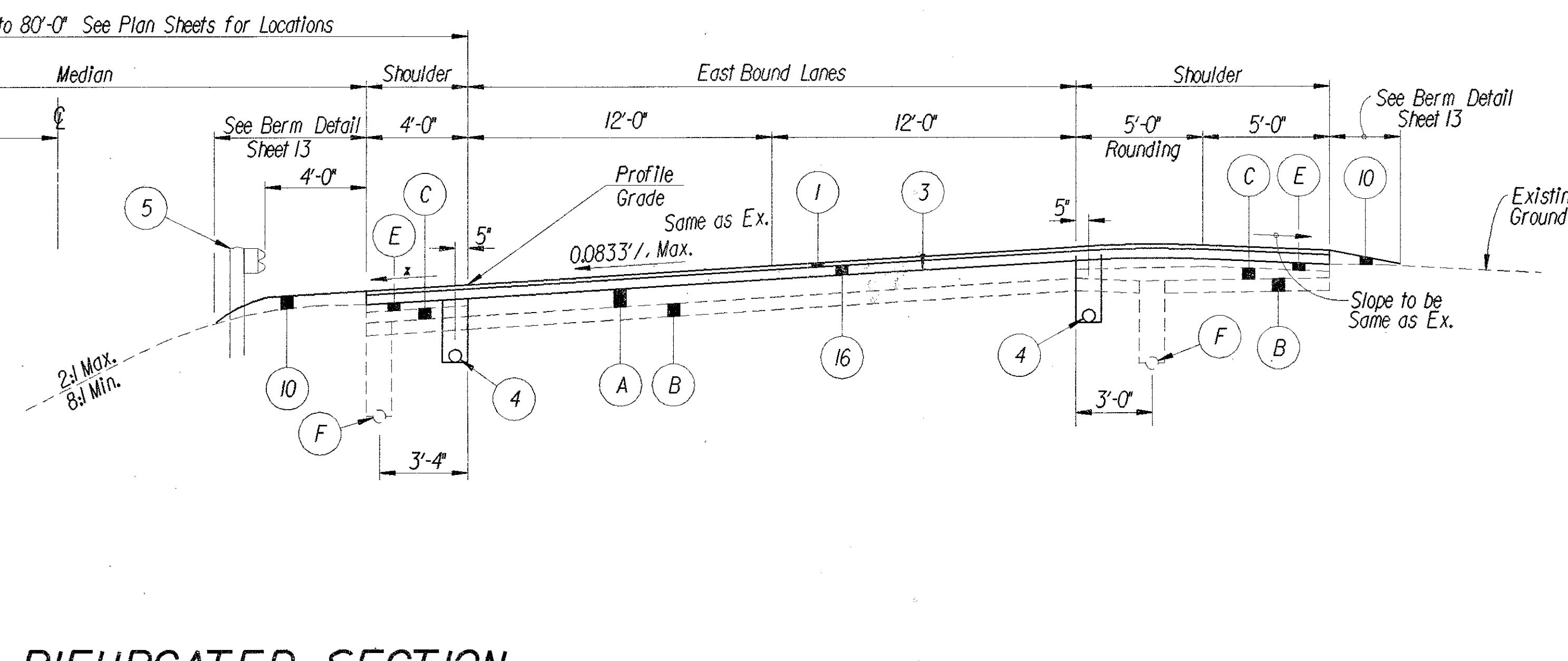
Sta. 603+35.00 to Sta. 605+49.80 = 214.80 LF
 Sta. 610+54.36 to Sta. 611+80.00 = 125.64 LF
 Sta. 623+75.00 to Sta. 629+48.00 = 573.00 LF
 Sta. 629+48.00 to Sta. 634+00.00 = 452.00 LF (Rock Section)
 Sta. 634+00.00 to Sta. 638+75.00 = 475.00 LF

Sta. 655+61.80 to Sta. 666+45.00 = 1083.20 LF
 Sta. 692+57.87 to Sta. 697+00.00 = 442.13 LF (Rock Section)
 Sta. 889+00.00 to Sta. 900+00.00 = 1100.00 LF (Rock Section)
 Sta. 900+00.00 to Sta. 910+00.00 = 1000.00 LF
 Sta. Eq. Sta. 910+00.00 (Back) - Sta. 913+35.99 (Ahead)
 Sta. 913+35.99 to Sta. 919+40.64 = 604.65 LF

TOTAL E.B. = 6,070.42 LF



SUPERELEVATED BIFURCATED SECTION



WEST BOUND LANES AND EAST BOUND LANES

Sta. 611+80.00 to Sta. 613+00.00 = 120.00 LF
 Sta. 613+00.00 to Sta. 621+00.00 = 800.00 LF (Rock Section)
 Sta. 621+00.00 to Sta. 623+75.00 = 275.00 LF
 Sta. 638+75.00 to Sta. 639+00.00 = 25.00 LF (Opp.Hand)
 Sta. 639+00.00 to Sta. 640+25.00 = 125.00 LF (Rock Section - Opp.Hand)
 Sta. 640+25.00 to Sta. 643+50.00 = 325.00 LF (Opp.Hand)
 Sta. 643+50.00 to Sta. 653+25.00 = 975.00 LF (Rock Section - Opp.Hand)

Sta. 653+25.00 to Sta. 655+61.80 = 236.80 LF (Opp.Hand)
 Sta. 666+45.00 to Sta. 668+20.00 = 175.00 LF (Rock Section)
 Sta. 668+20.00 to Sta. 670+40.00 = 220.00 LF
 Sta. 670+40.00 to Sta. 671+30.00 = 90.00 LF (Rock Section)
 Sta. 671+30.00 to Sta. 675+00.00 = 370.00 LF
 Sta. 675+00.00 to Sta. 677+68.00 = 268.00 LF (Rock Section)

Sta. 677+68.00 to Sta. 679+00.00 = 132.00 LF
 Sta. 679+00.00 to Sta. 679+56.00 = 56.00 LF (Rock Section)
 Sta. 679+56.00 to Sta. 681+55.00 = 199.00 LF
 Sta. 681+55.00 to Sta. 685+50.00 = 395.00 LF (Rock Section)
 Sta. 685+50.00 to Sta. 692+00.00 = 650.00 LF
 Sta. 692+00.00 to Sta. 692+57.87 = 57.87 LF (Rock Section)

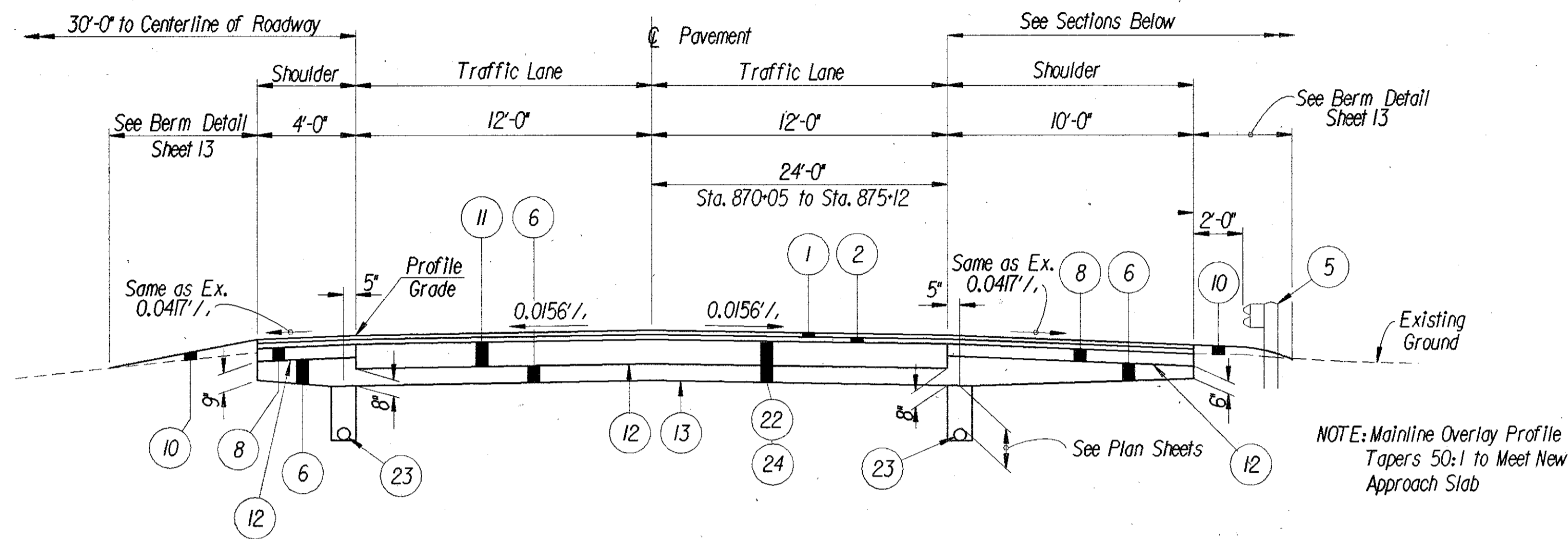
TOTAL E.B. & W.B. = 5,494.67 LF

NOTE: For Item Legend, See Sheet No. 5

REVISED
9-10-90

TYPICAL SECTIONS

TYPE 446 ON 301



FULL DEPTH PAVEMENT REPLACEMENT

WEST BOUND LANES (Opposite Hand)

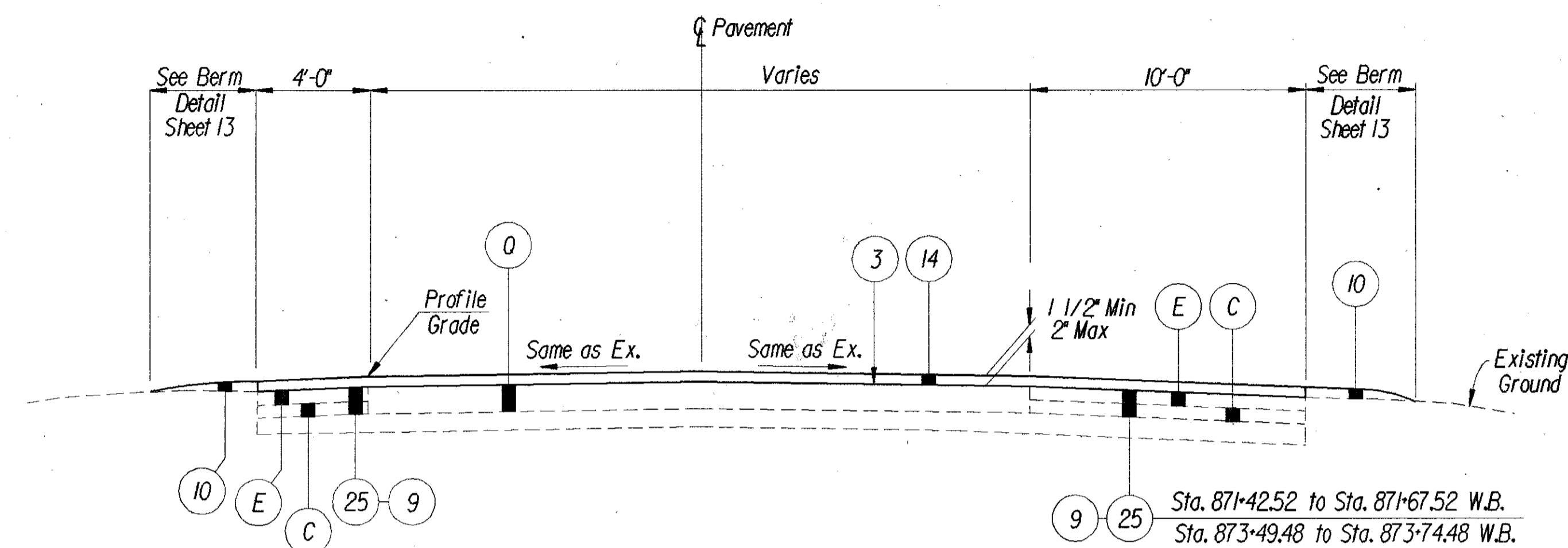
HARRISON ROAD (HAM-74-1116 L&R)	Sta. 603+34.93 to Sta. 605+09.93 = 175.00 LF Sta. 605+09.93 to Sta. 608+49.13 = -339.20 LF (Bridge & Appr. Slabs) Sta. 608+49.13 to Sta. 609+61.63 = 112.50 LF
HAFT ROAD (HAM-74-1292 L&R)	Sta. 698+41.45 to Sta. 699+53.95 = 112.50 LF Sta. 699+53.95 to Sta. 701+59.87 = -205.92 LF (Bridge & Appr. Slabs) Sta. 701+59.87 to Sta. 702+72.37 = 112.50 LF
SHEPHERD CREEK ROAD (HAM-74-1618 L&R)	Sta. 870+30.02 to Sta. 871+42.52 = 112.50 LF Sta. 871+42.52 to Sta. 873+74.48 = -231.96 LF (Bridge & Appr. Slabs) Sta. 873+74.48 to Sta. 874+86.98 = 112.50 LF

TOTAL W.B. = 737.50 LF

EAST BOUND LANES

Sta. 605+49.80 to Sta. 606+62.30 = 112.50 LF Sta. 606+62.30 to Sta. 609+41.86 = -279.56 LF (Bridge & Appr. Slabs) Sta. 609+41.86 to Sta. 610+54.36 = 112.50 LF
Sta. 698+29.32 to Sta. 699+41.82 = 112.50 LF Sta. 699+41.82 to Sta. 701+79.24 = -237.42 LF (Bridge & Appr. Slabs) Sta. 701+79.24 to Sta. 702+91.74 = 112.50 LF
Sta. 870+49.64 to Sta. 871+62.14 = 112.50 LF Sta. 871+62.14 to Sta. 873+43.86 = -181.72 LF (Bridge & Appr. Slabs) Sta. 873+43.86 to Sta. 874+56.36 = 112.50 LF

TOTAL E.B. = 675.00 LF



APPROACH SLAB

WEST BOUND

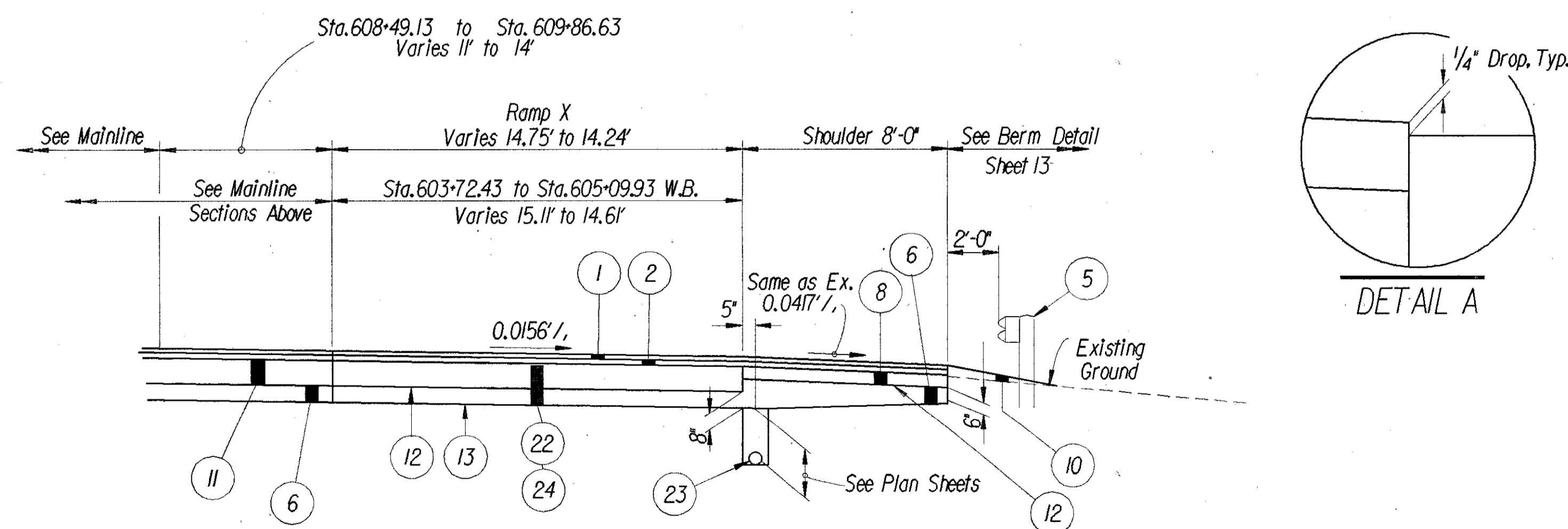
Bridge Ham-74-1116 Sta. 605+09.93 to Sta. 605+34.93 = 25.00 LF Sta. 608+24.13 to Sta. 608+49.13 = 25.00 LF Bridge Ham-74-1292 Sta. 699+53.95 to Sta. 699+78.95 = 25.00 LF Sta. 701+34.87 to Sta. 701+59.87 = 25.00 LF Bridge Ham-74-1618 Sta. 871+42.52 to Sta. 871+67.52 = 25.00 LF Sta. 873+49.48 to Sta. 873+74.48 = 25.00 LF
--

TOTAL W.B. = 150.00 LF

EAST BOUND

Bridge Ham-74-1116 Sta. 606+62.30 to Sta. 606+87.30 = 25.00 LF Sta. 609+16.86 to Sta. 609+41.86 = 25.00 LF Bridge Ham-74-1292 Sta. 699+41.82 to Sta. 699+66.82 = 25.00 LF Sta. 701+54.24 to Sta. 701+79.24 = 25.00 LF Bridge Ham-74-1618 Sta. 871+62.14 to Sta. 871+87.14 = 25.00 LF Sta. 873+18.86 to Sta. 873+43.86 = 25.00 LF
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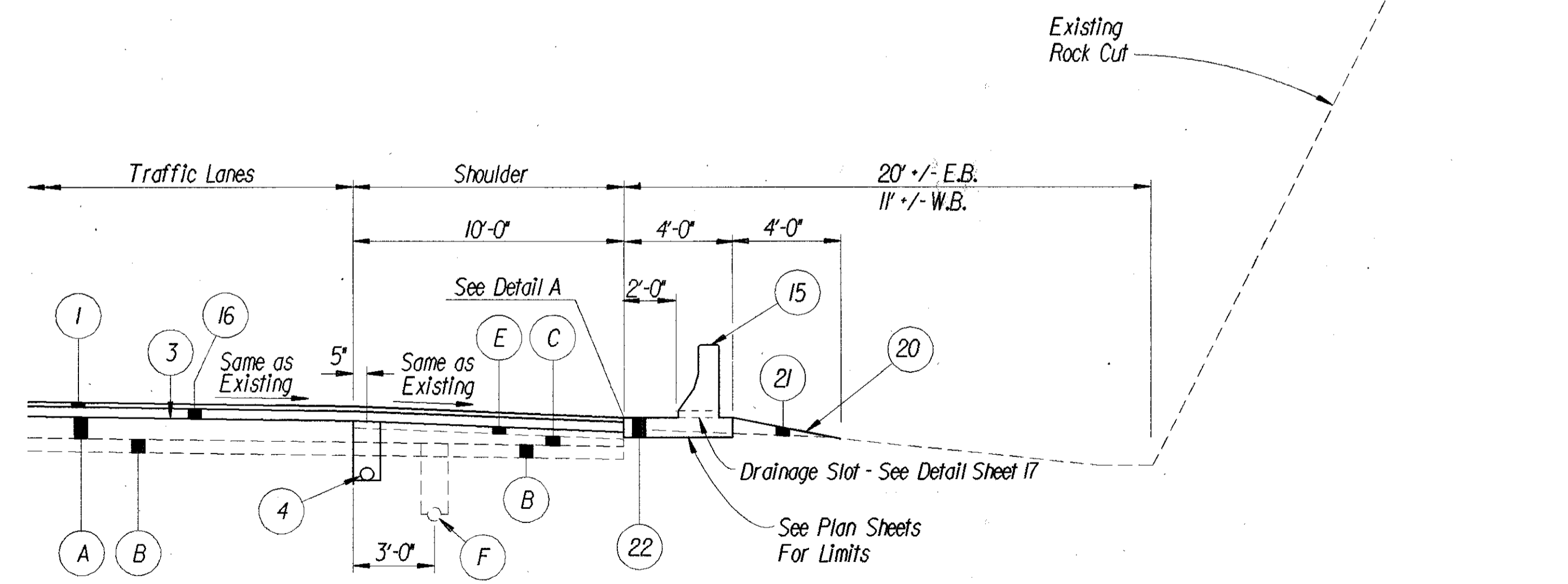
TOTAL E.B. = 150.00 LF



FULL DEPTH PAVEMENT REPLACEMENT

WEST BOUND LANES

HARRISON ROAD	Ramp X Sta. 19+33.20 to Sta. 20+70.70 = 137.50 LF
WB Mainline	Sta. 603+72.43 to Sta. 605+09.93 = 137.50 LF Opp. Hand
TOTAL = 275.00 LF	



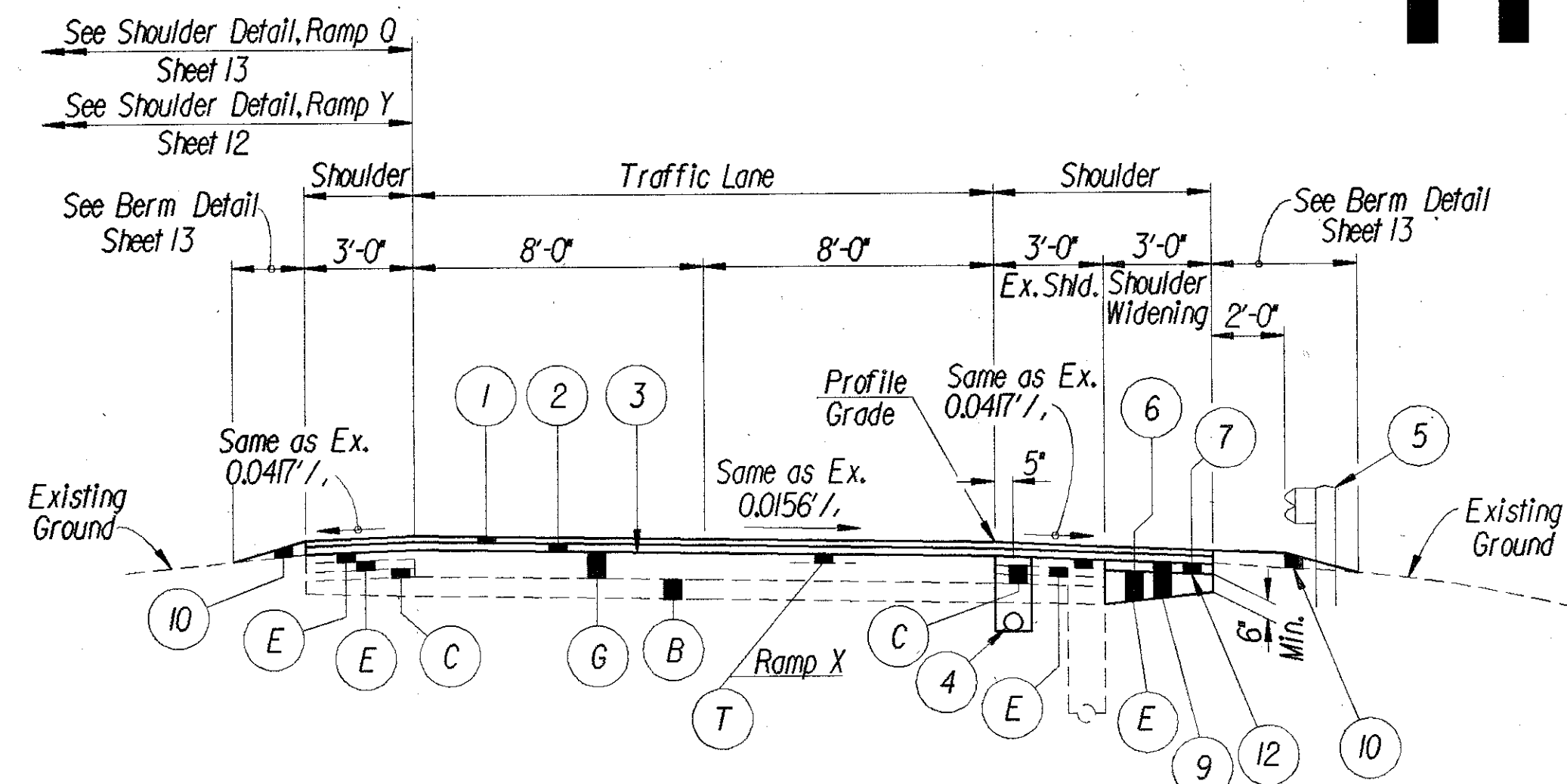
ROCK FALL AREA - SHOULDER DETAIL

E.B. Sta. 879+75 to Sta. 897+25 = 175.00 LF
W.B. Sta. 880+00 to Sta. 900+26.5 = 2026.50 LF

NOTE: For Item Legend, See Sheet No. 5

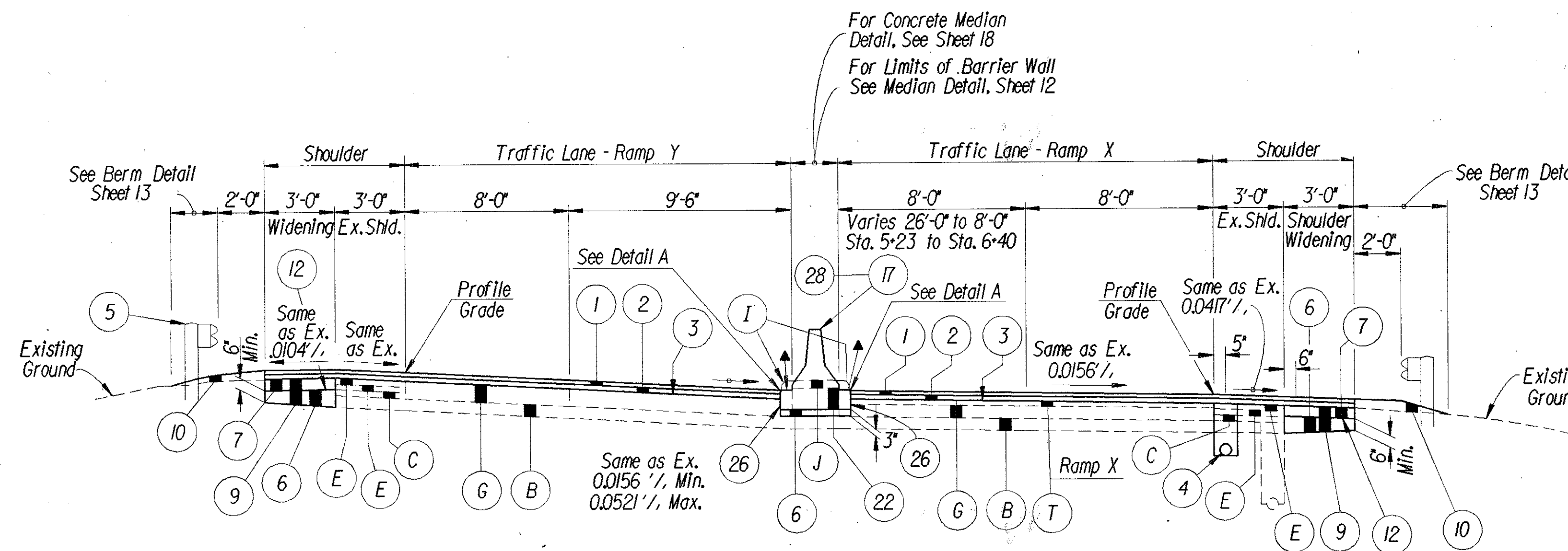
TYPICAL SECTIONS

TYPE 446 ON 301



NORMAL RAMP SECTION

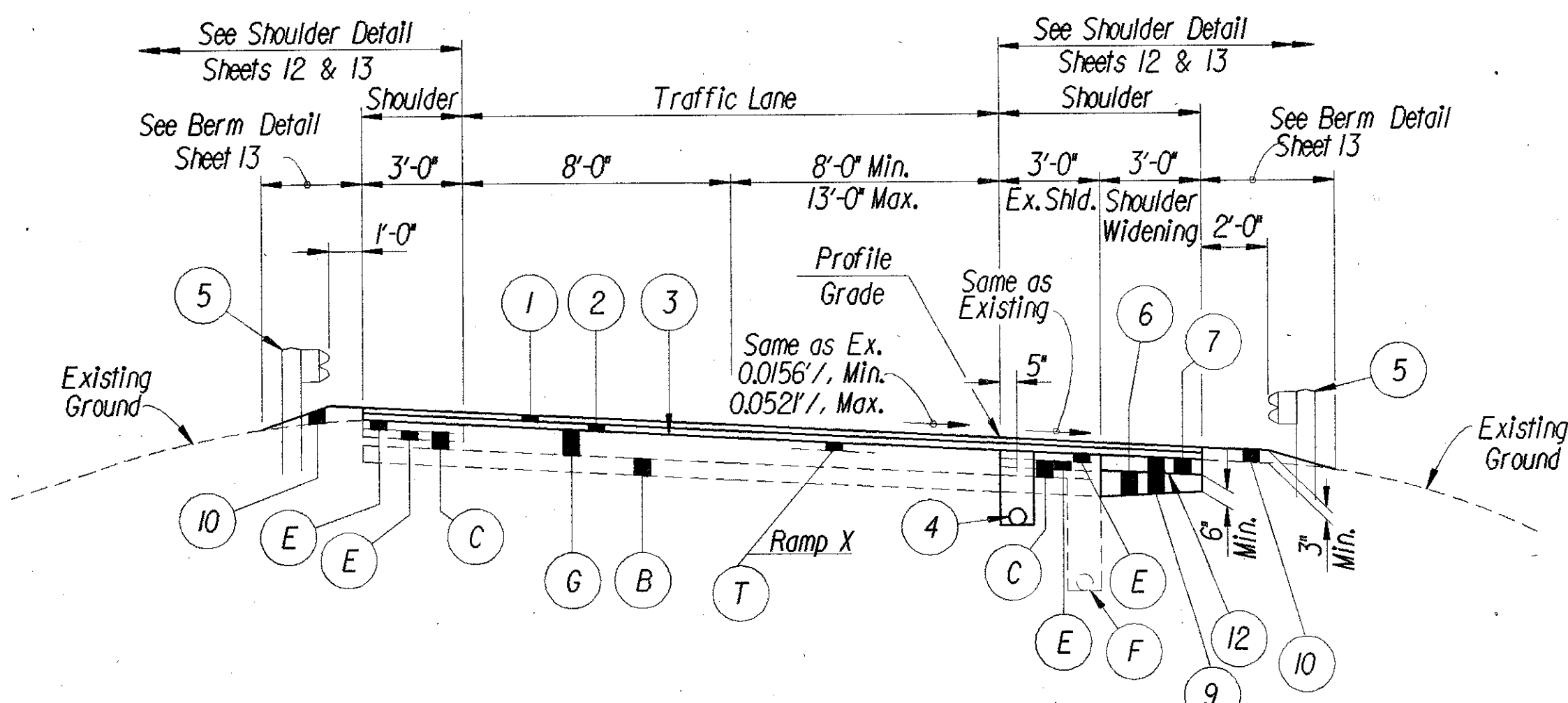
HARRISON ROAD		NORTH BEND ROAD	
RAMP Y	Sta. 14+58 to Sta. 16+25 = 167.00 LF (Opp.Hand)	RAMP L	Sta. 783+00 to Sta. 793+12 = 1012.00 LF (Opp.Hand)
RAMP A	Sta. 0+22 to Sta. 1+34.5 = 112.50 LF Sta. 12+92 to Sta. 15+92 = 300.00 LF	RAMP M	Sta. 783+00 to Sta. 788+51 = 551.00 LF (Opp.Hand)
	TOTAL = 579.50 LF	RAMP N	Sta. 790+47 to Sta. 792+14 = 166.00 LF (Opp.Hand) Sta. 794+97 to Sta. 797+25 = 228.00 LF
		RAMP O	Sta. 790+50 to Sta. 792+07 = 157.00 LF (Opp.Hand)
		RAMP Q	Sta. 791+10 to Sta. 801+00 = 989.00 LF
			TOTAL = 3,103.00 LF



SUPERELEVATED RAMP SECTION

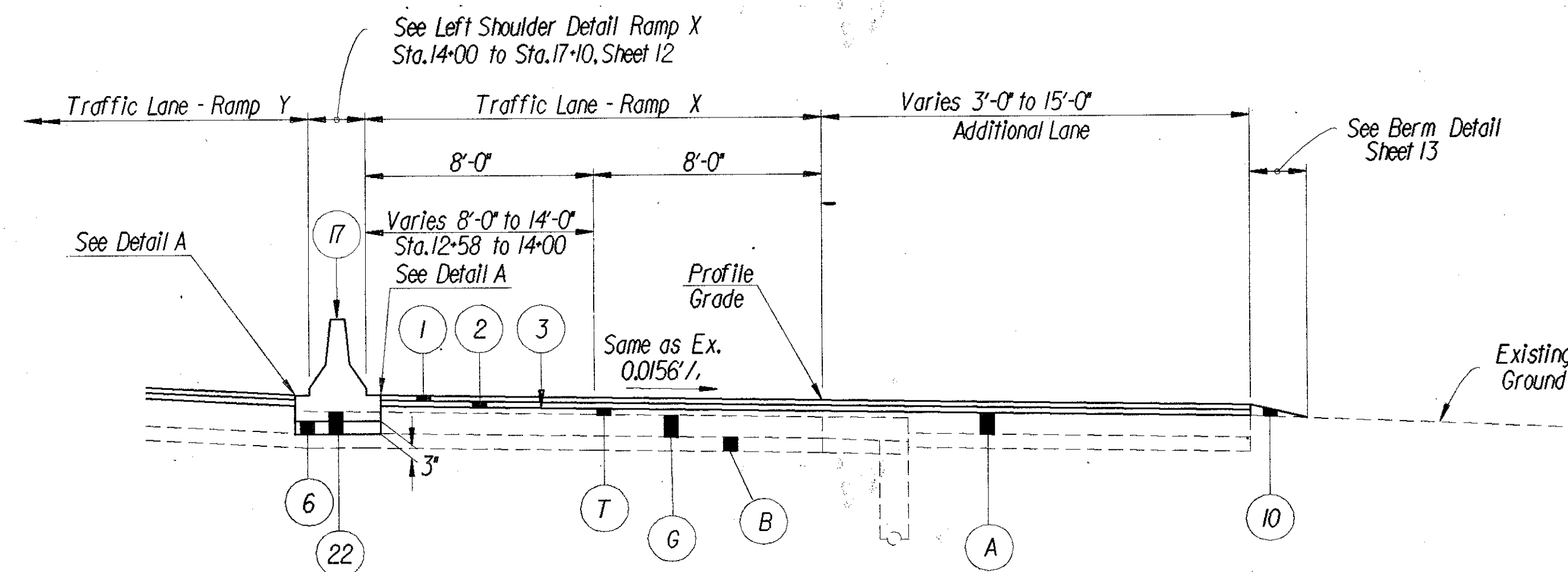
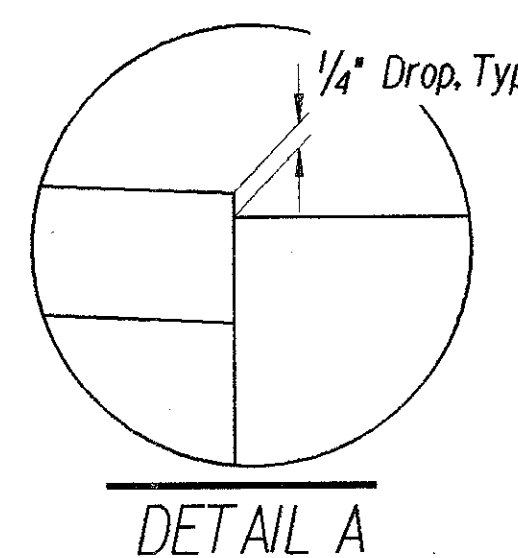
HARRISON ROAD	
RAMP Y	Sta. 3+08.00 to Sta. 14+00.00 = 1092.00 LF (Opp.Hand)
RAMP X	Sta. 3+08 to Sta. 12+58 = 950.00 LF
	TOTAL = 2,042.00 LF

▲ For Median Detail Between Sta. 3+25 to 5+00 See Sheet 18



SUPERELEVATED RAMP SECTION

HARRISON ROAD		NORTH BEND ROAD	
RAMP Y	Sta. 14+00 to Sta. 14+58 = 58.00 LF (Opp.Hand) Sta. 16+25 to Sta. 20+80 = 455.00 LF (Opp.Hand)	RAMP L	Sta. 793+12 to Sta. 798+89 = 577.00 LF (Opp.Hand) Sta. 800+57 to Sta. 802+45 = 188.00 LF (Opp.Hand)
RAMP XI	Sta. 2+77 to Sta. 5+39 = 262.00 LF	RAMP M	Sta. 788+51 to Sta. 792+47 = 396.00 LF (Opp.Hand)
RAMP A	Sta. 1+34.5 to Sta. 12+92 = 1157.50 LF	RAMP N	Sta. 794+12 to Sta. 794+97 = 85.00 LF Sta. 797+25 to Sta. 802+46 = 521.00 LF (Opp.Hand)
	TOTAL = 1932.50 LF	RAMP O	Sta. 780+20 to Sta. 786+26 = 606.00 LF Sta. 786+26 to Sta. 788+72 = 246.00 LF (Opp.Hand)
		RAMP P	Sta. 791+87 to Sta. 801+00 = 913.00 LF
		RAMP Q	Sta. 781+36 to Sta. 783+16 = 180.00 LF Sta. 784+68 to Sta. 791+11 = 643.00 LF
			TOTAL = 4,355.00 LF



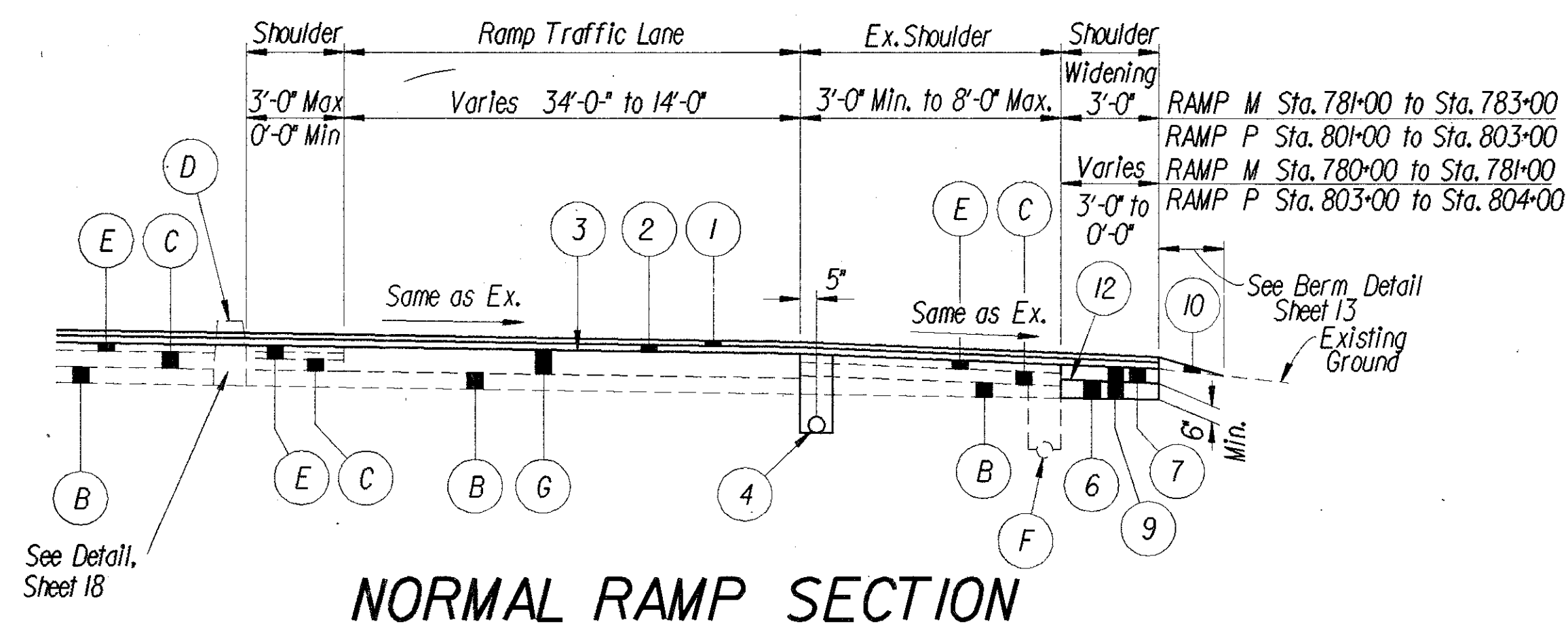
SUPERELEVATED RAMP SECTION

HARRISON ROAD	
RAMP X	Sta. 12+58 to Sta. 17+90 = 532.00 LF

NOTE: For Item Legend, See Sheet No. 5

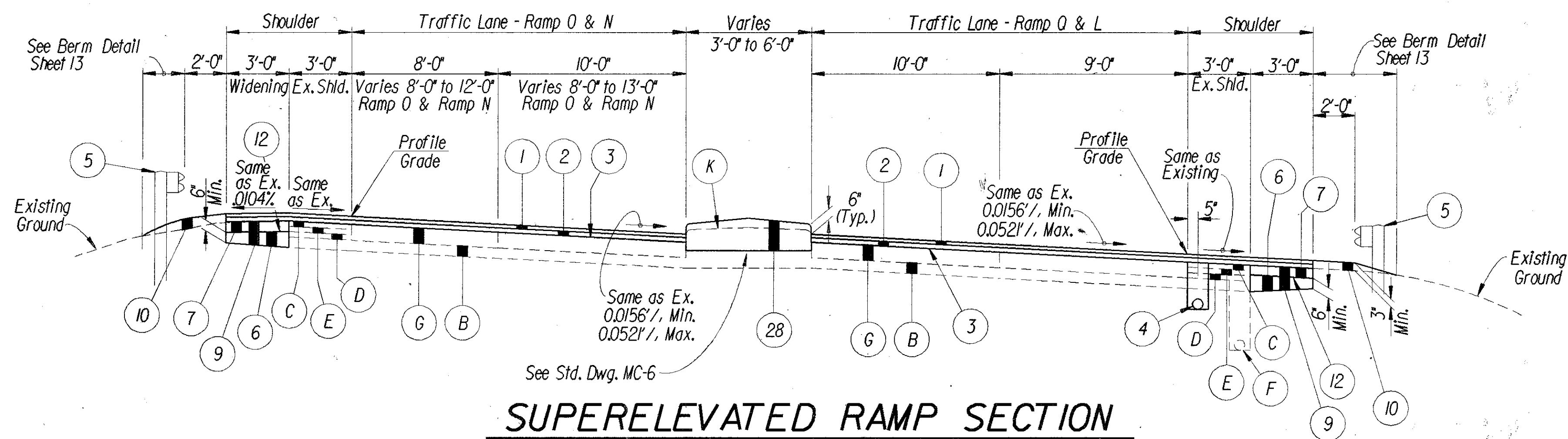
TYPICAL SECTIONS

TYPE 446 ON 301



NORTH BEND ROAD INTERCHANGE

RAMP P Sta. 801+00 to Sta. 807+00 = 600.00 LF
RAMP M Sta. 779+50 to Sta. 783+00 = 600.00 LF (Opp. Hand)
TOTAL = 1,200.00 LF



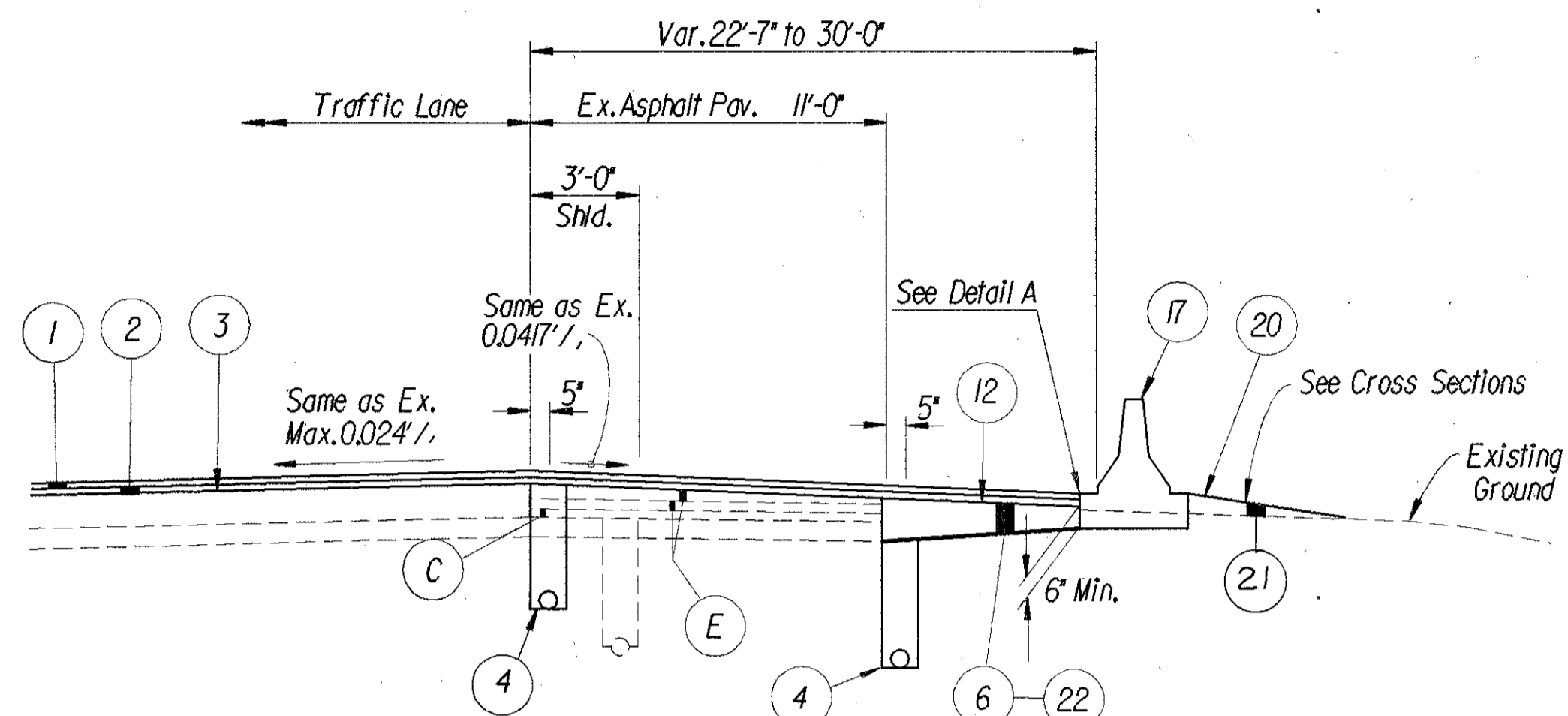
NORTH BEND ROAD

RAMP L Sta. 798+89 to Sta. 800+57 = 168.00 LF (Opp. Hand)
RAMP N Sta. 792+14 to Sta. 794+12 = 198.00 LF
RAMP O Sta. 788+72 to Sta. 790+50 = 178.00 LF (Opp. Hand)
RAMP Q Sta. 783+16 to Sta. 784+68 = 152.00 LF
TOTAL = 696.00 LF

NOTE: For Item Legend, See Sheet No. 5

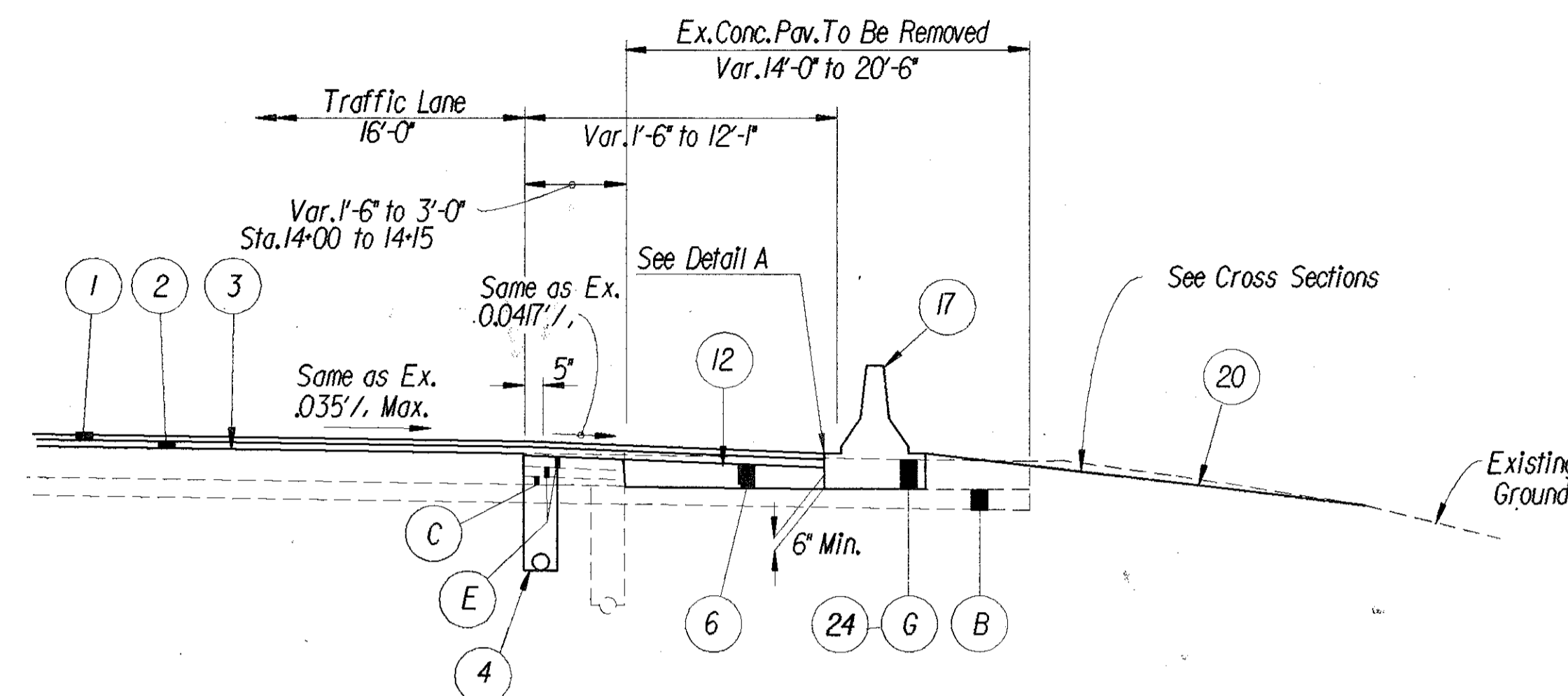
TYPICAL SECTIONS

TYPE 446 ON 301



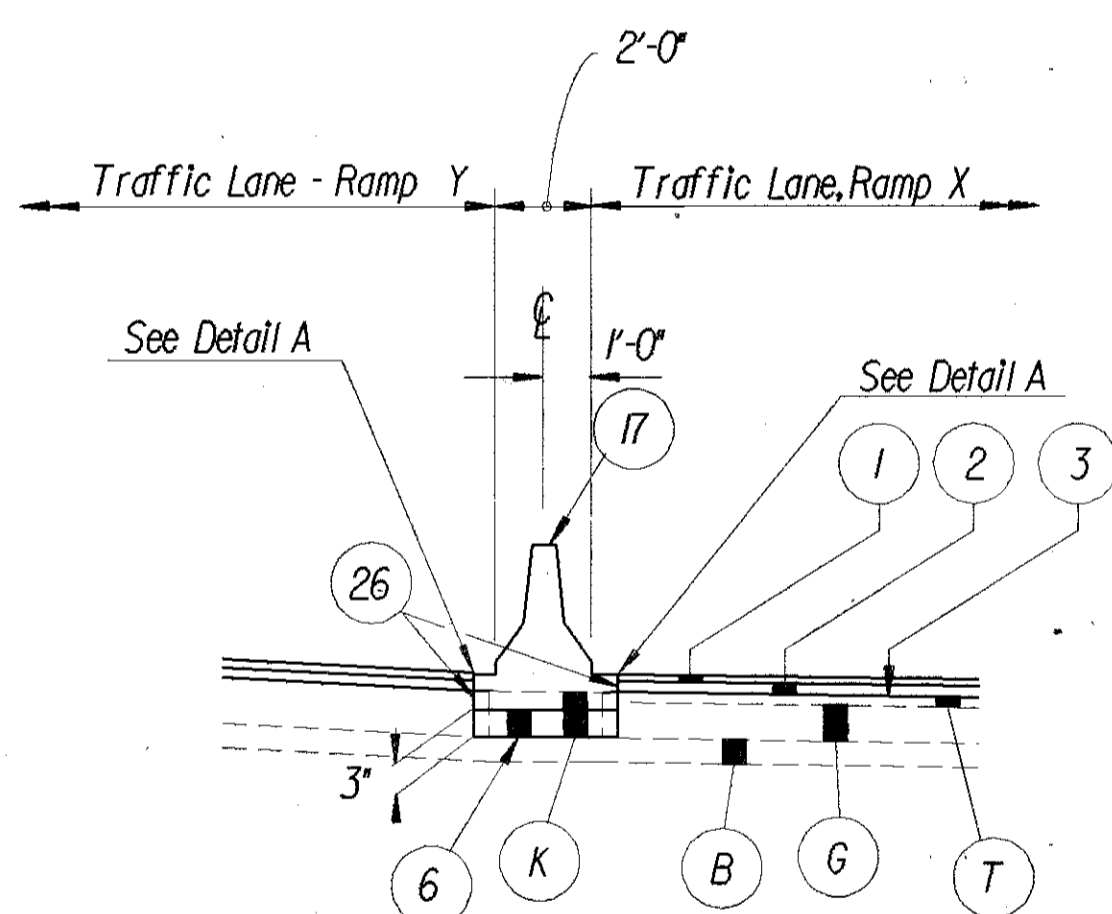
RT. SHOULDER DETAIL, RAMP Y

HARRISON ROAD
RAMP Y Sta.16+11 to Sta.16+85 Rt.



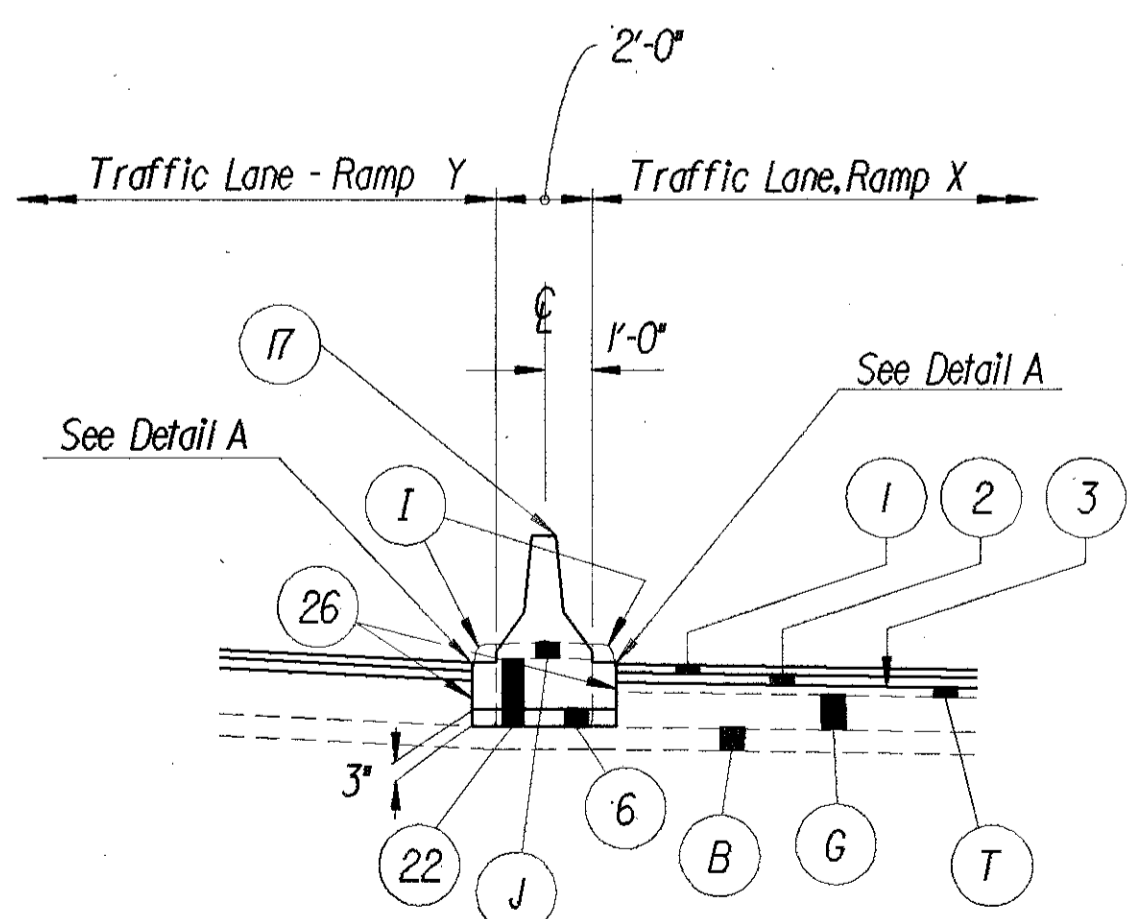
RT. SHOULDER DETAIL, RAMP Y

HARRISON ROAD
RAMP Y Sta.14+00 to Sta.15+06 Rt.



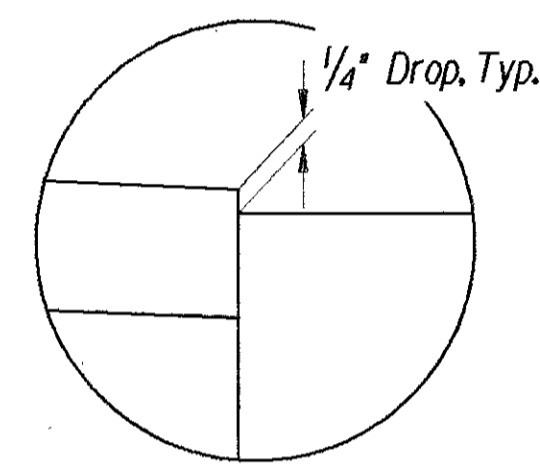
MEDIAN DETAIL, RAMP X,Y

HARRISON ROAD
Ramp Y Sta.10+00 to Sta.14+00
Ramp X Sta.10+00 to Sta.12+58

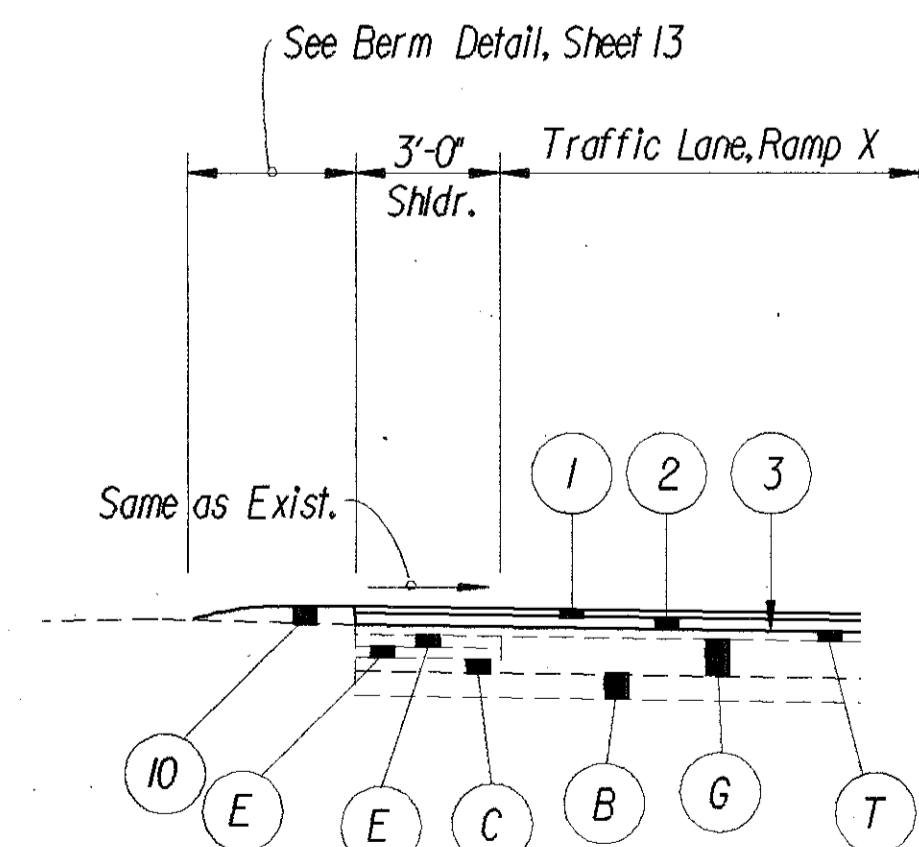


MEDIAN DETAIL, RAMP X,Y

HARRISON ROAD
Ramp Y Sta.5+00 to Sta.10+00
Ramp X Sta.5+00 to Sta.10+00

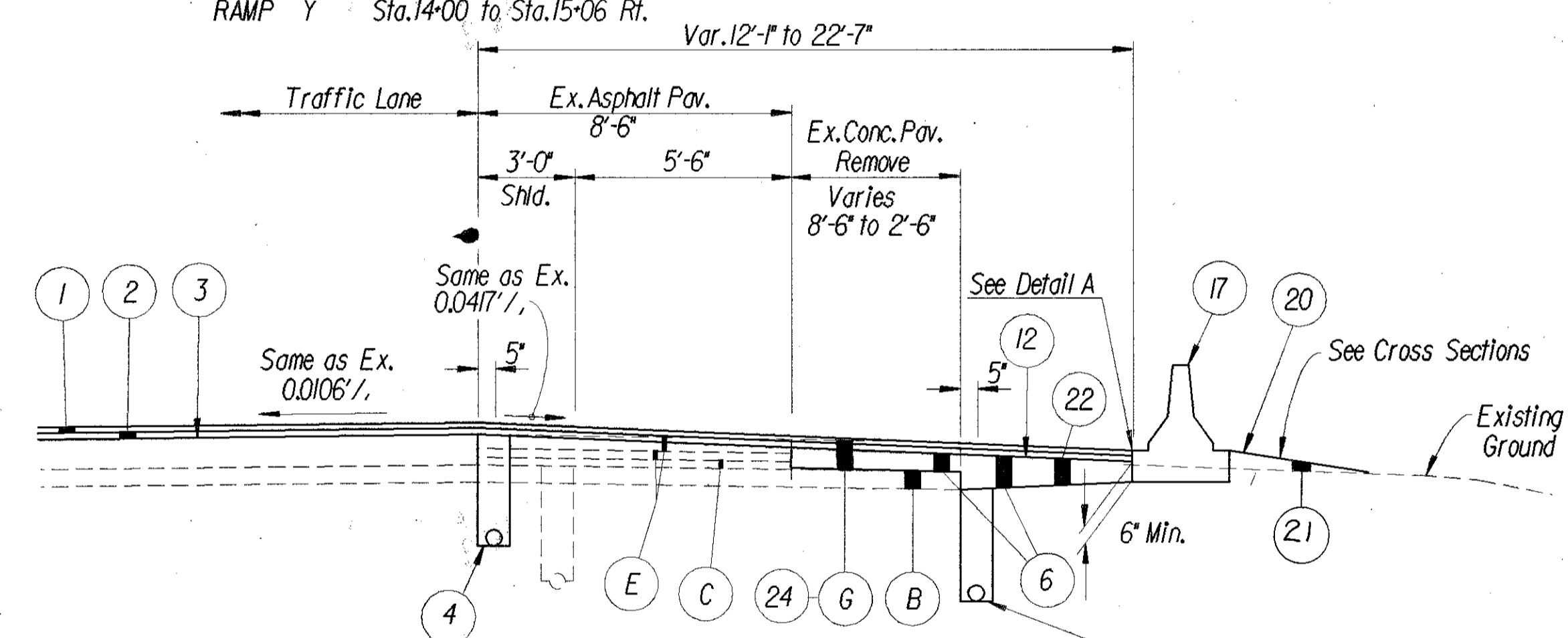


DETAIL A



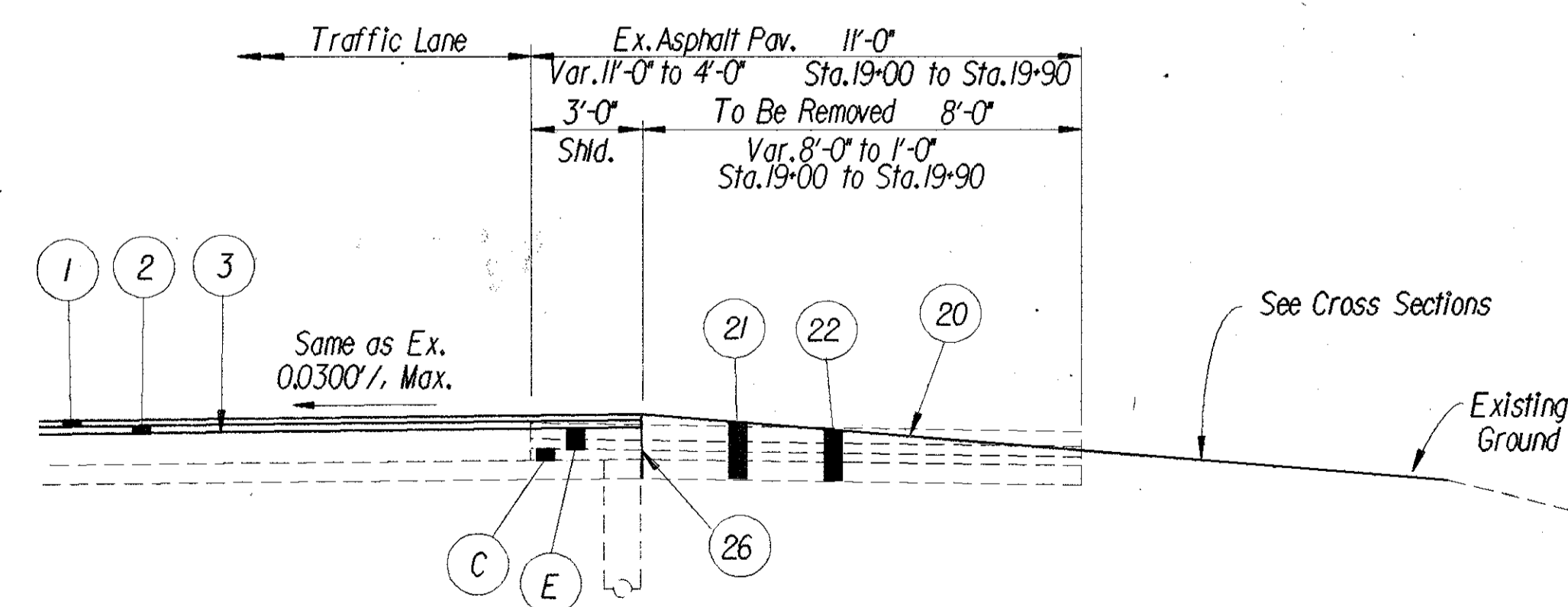
LT. SHOULDER DETAIL, RAMP X

HARRISON ROAD
Ramp X Sta.14+00 to Sta.17+10 Lt.



RT. SHOULDER DETAIL, RAMP Y

HARRISON ROAD
RAMP Y Sta.15+06 to Sta.16+11 Rt.



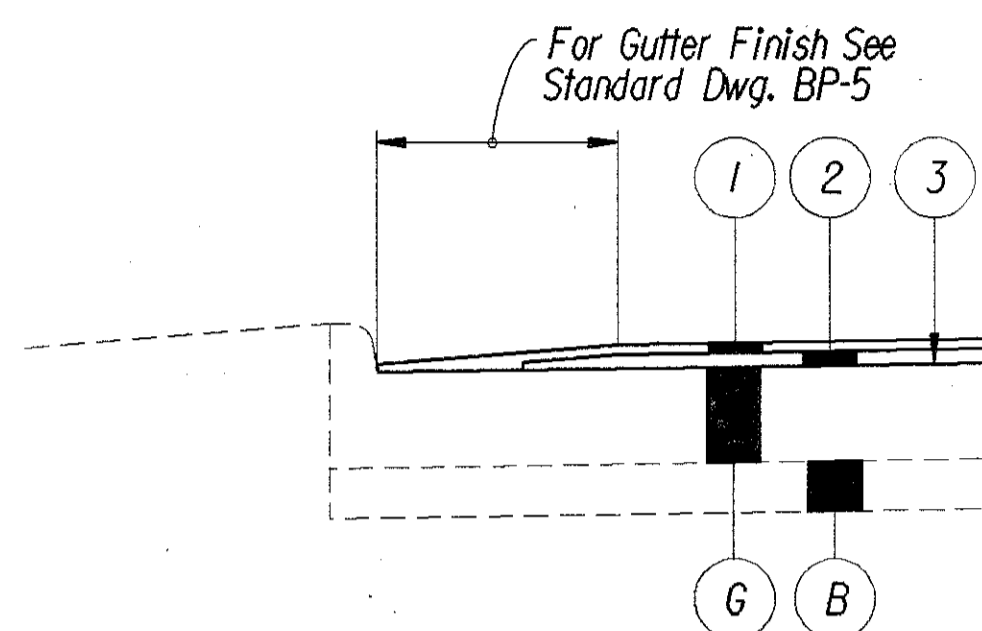
RT. SHOULDER DETAIL, RAMP Y

HARRISON ROAD
RAMP Y Sta.16+85 to Sta.19+90 Rt.

NOTE: For Item Legend, See Sheet No. 5

TYPICAL SECTIONS

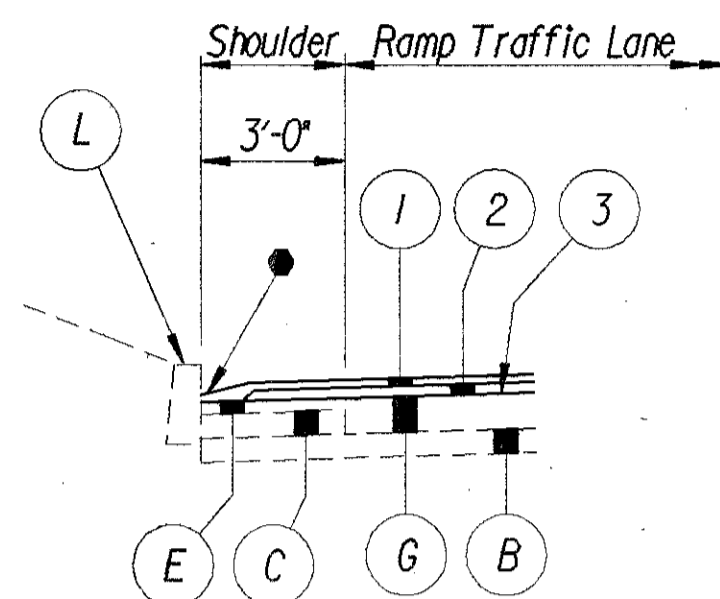
TYPE 446 ON 301



RAMP GUTTER DETAIL

NORTH BEND ROAD INTER.

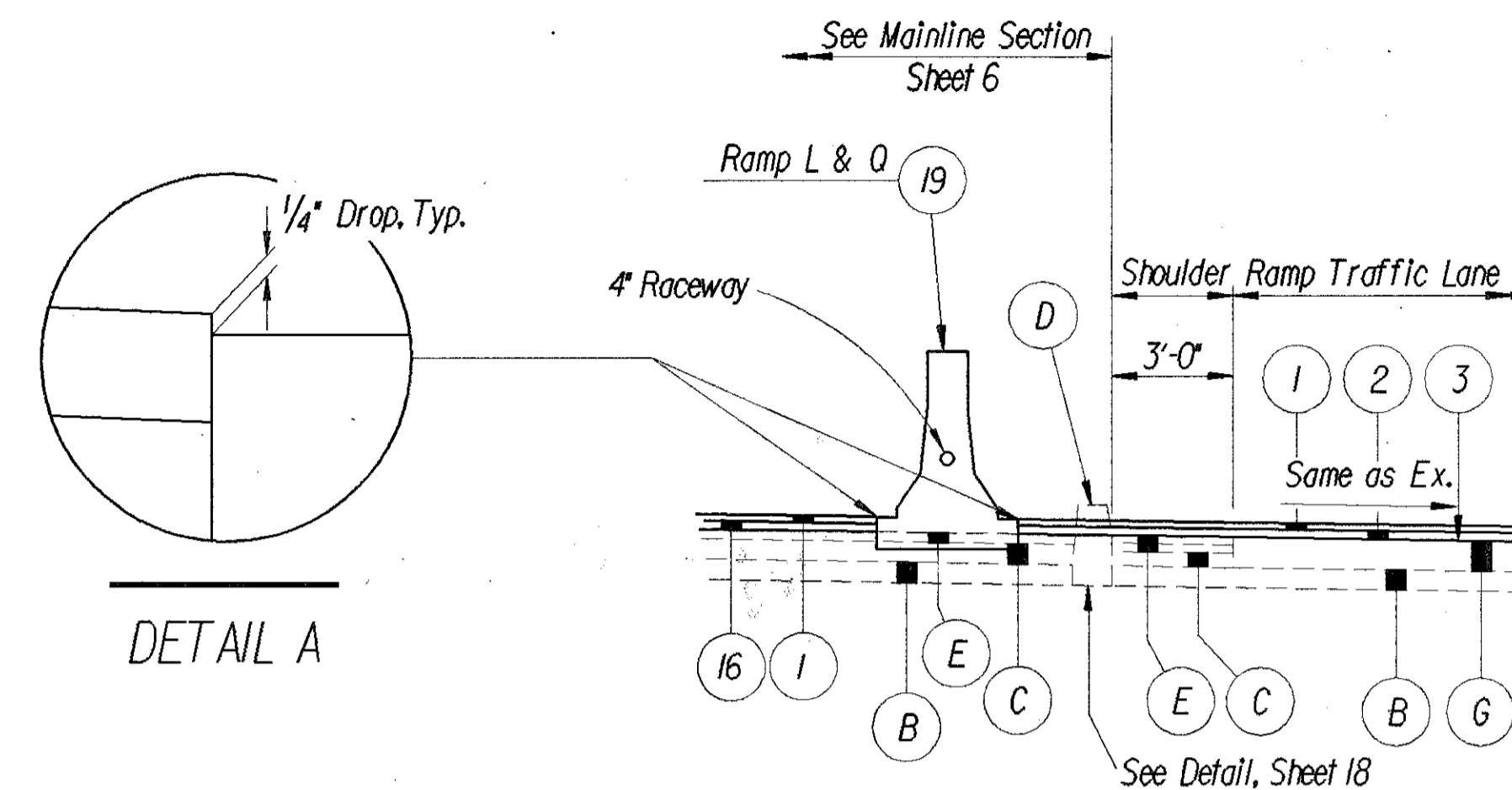
RAMP L	Sta. 801+43 to Sta. 802+45	Lt. Shldr.
RAMP M	Sta. 791+47 to Sta. 792+47	Lt. Shldr. (Opp.Hand) Sta. 791+47 to Sta. 792+47
RAMP N	Sta. 790+47 to Sta. 791+05	Lt. Shldr.
RAMP O	Sta. 791+52 to Sta. 792+07	Rt. Shldr. (Opp.Hand)
RAMP P	Sta. 791+87 to Sta. 793+16	Lt. Shldr. Sta. 791+87 to Sta. 792+87
RAMP Q	Sta. 781+36 to Sta. 782+36	Rt. Shldr. (Opp.Hand)



RAMP SHOULDER DETAIL

NORTH BEND ROAD INTERCHANGE

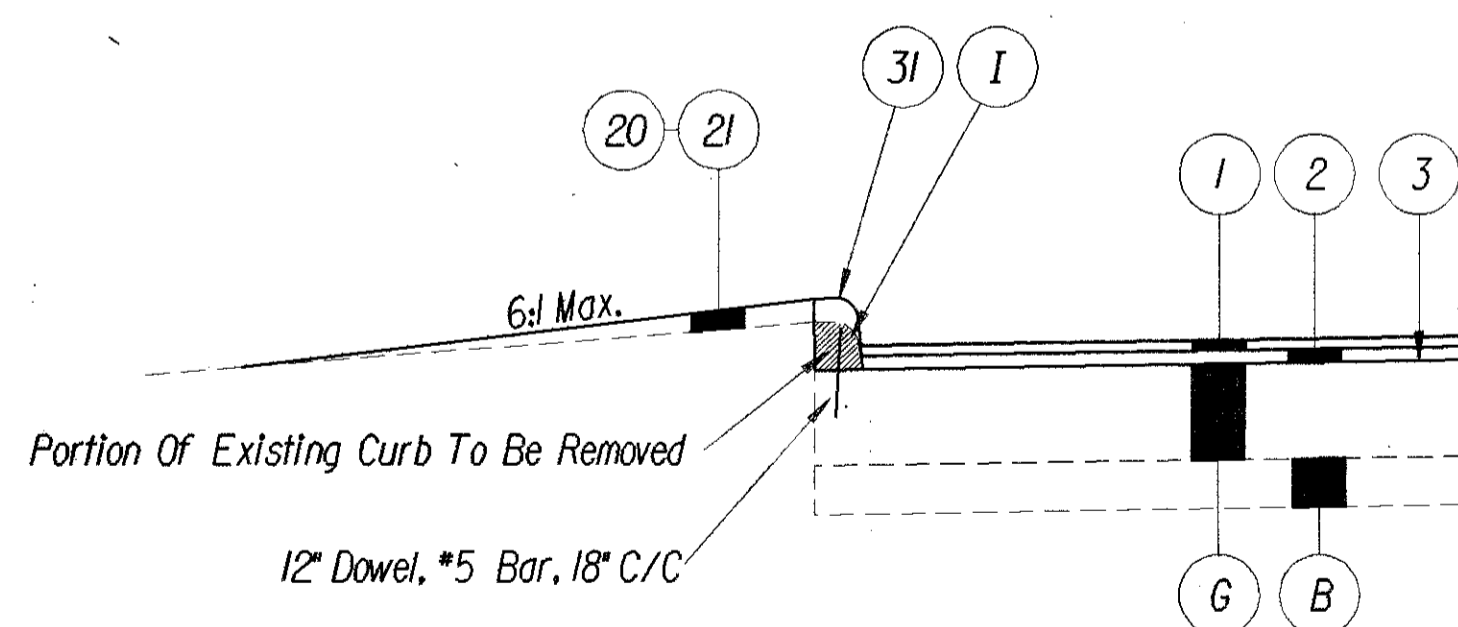
RAMP L	Sta. 790+90 to Sta. 793+22	Lt. Shldr. (Opp.Hand)
RAMP O	Sta. 791+40 to Sta. 792+60	Rt. Shldr.



RAMP SHOULDER DETAIL

NORTH BEND ROAD INTERCHANGE

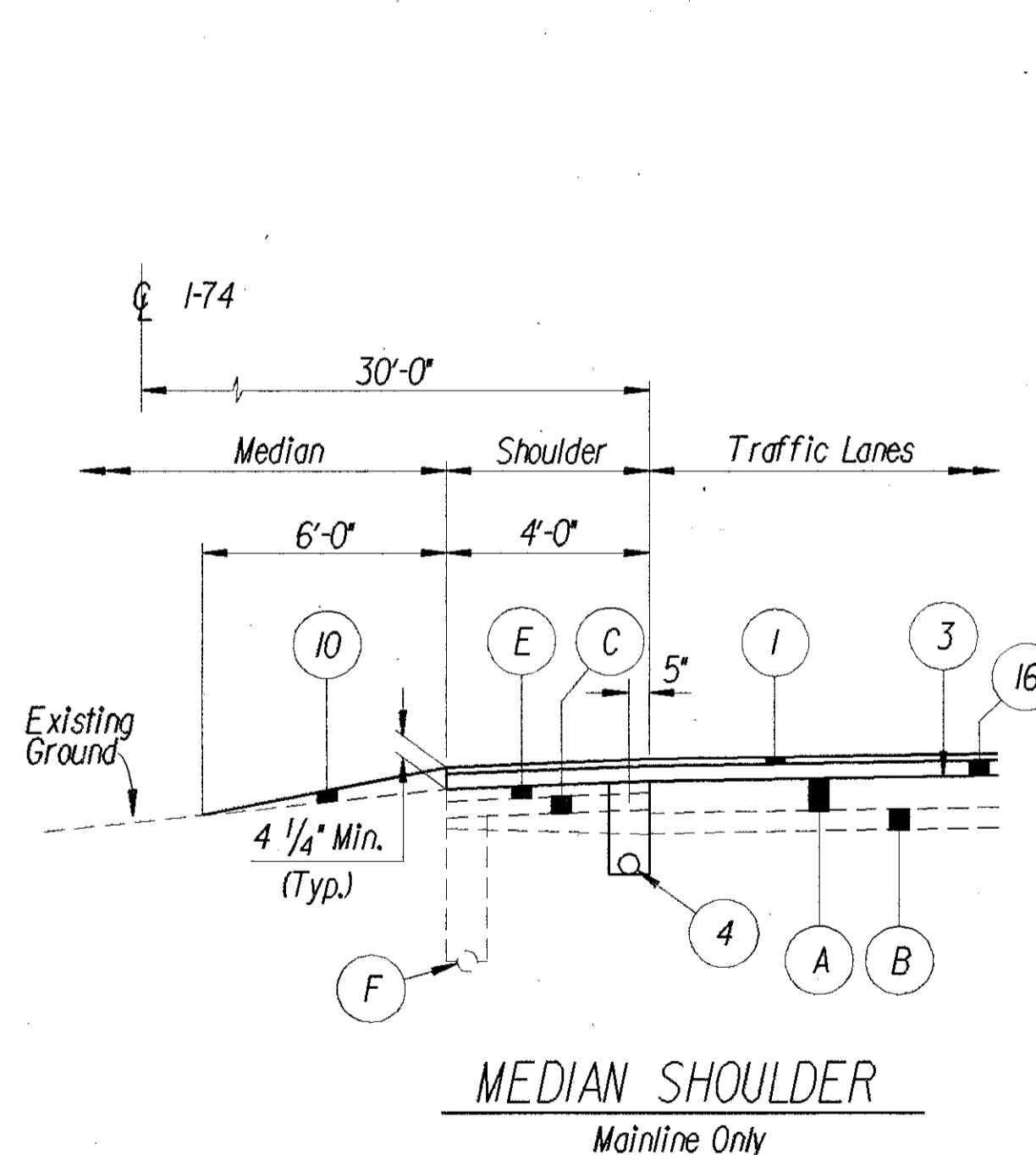
RAMP L	Sta. 783+00 to Sta. 784+20	Rt. Shldr. (Opp.Hand)
RAMP M	Sta. 783+00 to Sta. 784+00	Rt. Shldr. (Opp.Hand)
RAMP P	Sta. 800+00 to Sta. 801+00	Lt. Shldr.
RAMP Q	Sta. 799+80 to Sta. 801+00	Lt. Shldr.



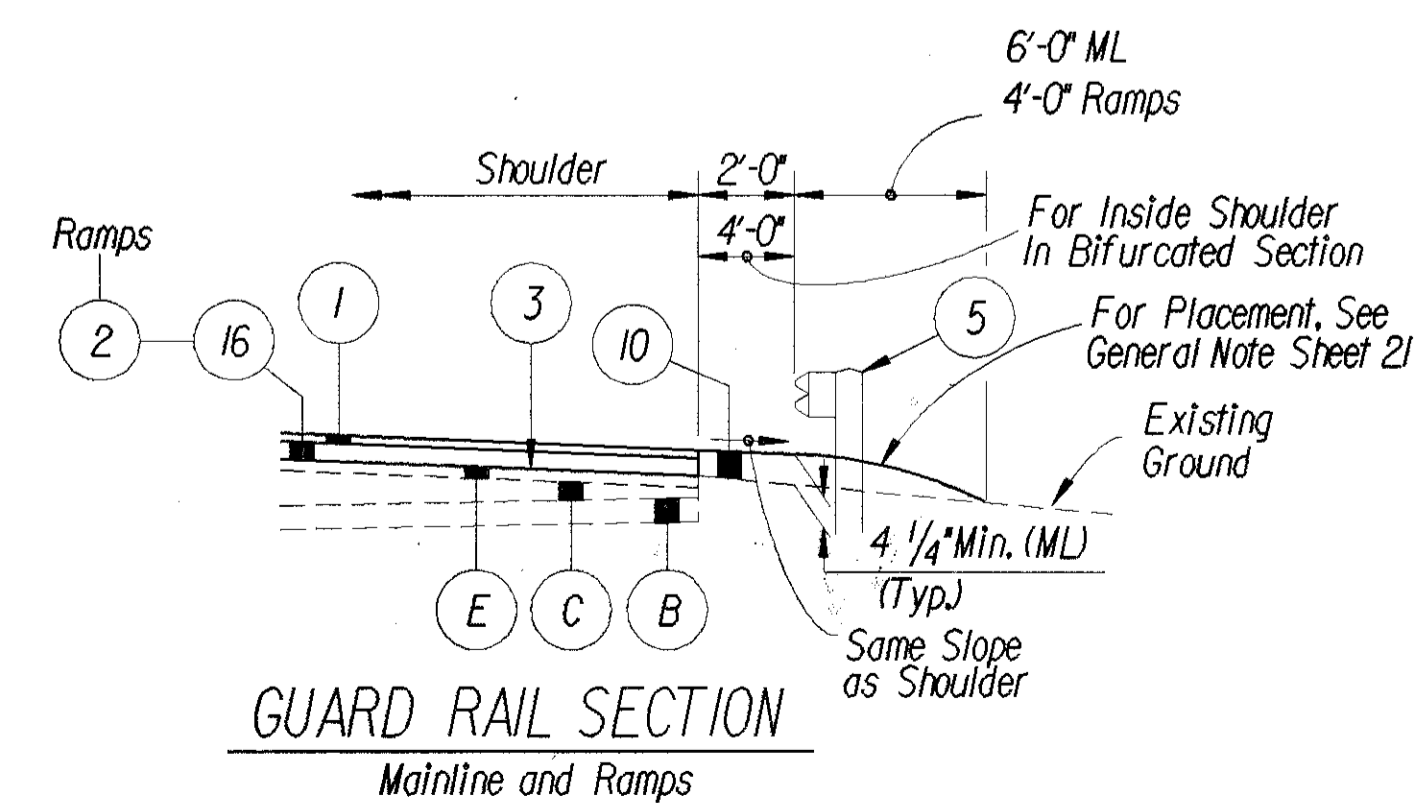
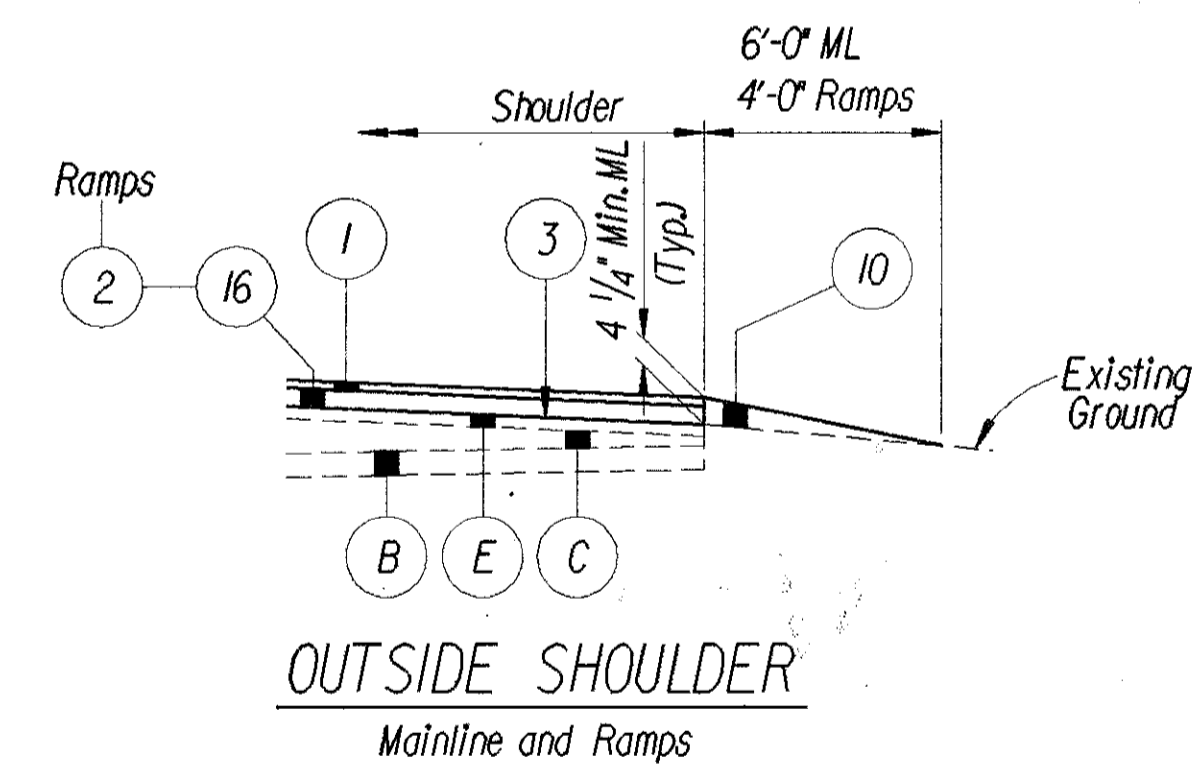
RAMP CURB DETAIL

NORTH BEND ROAD INTER.

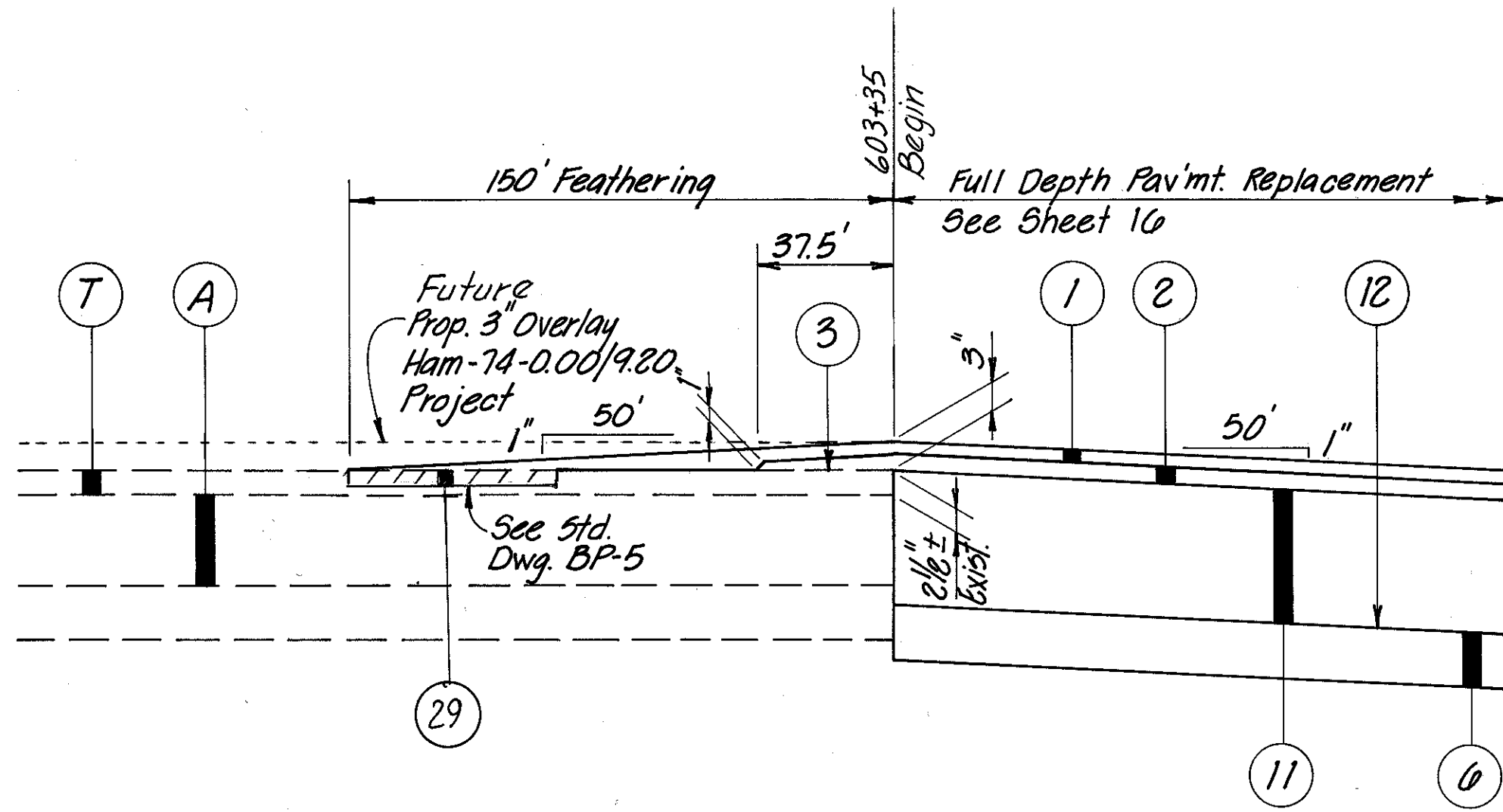
RAMP L	Sta. 797+85 to Sta. 798+89	Rt. Shldr. (Opp.Hand) Sta. 800+57 to Sta. 802+45
RAMP N	Sta. 790+47 to Sta. 792+07	Rt. Shldr. (Opp.Hand) Sta. 794+12 to Sta. 795+23
RAMP O	Sta. 787+62 to Sta. 788+72	Lt. Shldr. Sta. 790+50 to Sta. 792+07
RAMP Q	Sta. 781+36 to Sta. 783+15	Lt. Shldr. Sta. 784+90 to Sta. 785+73



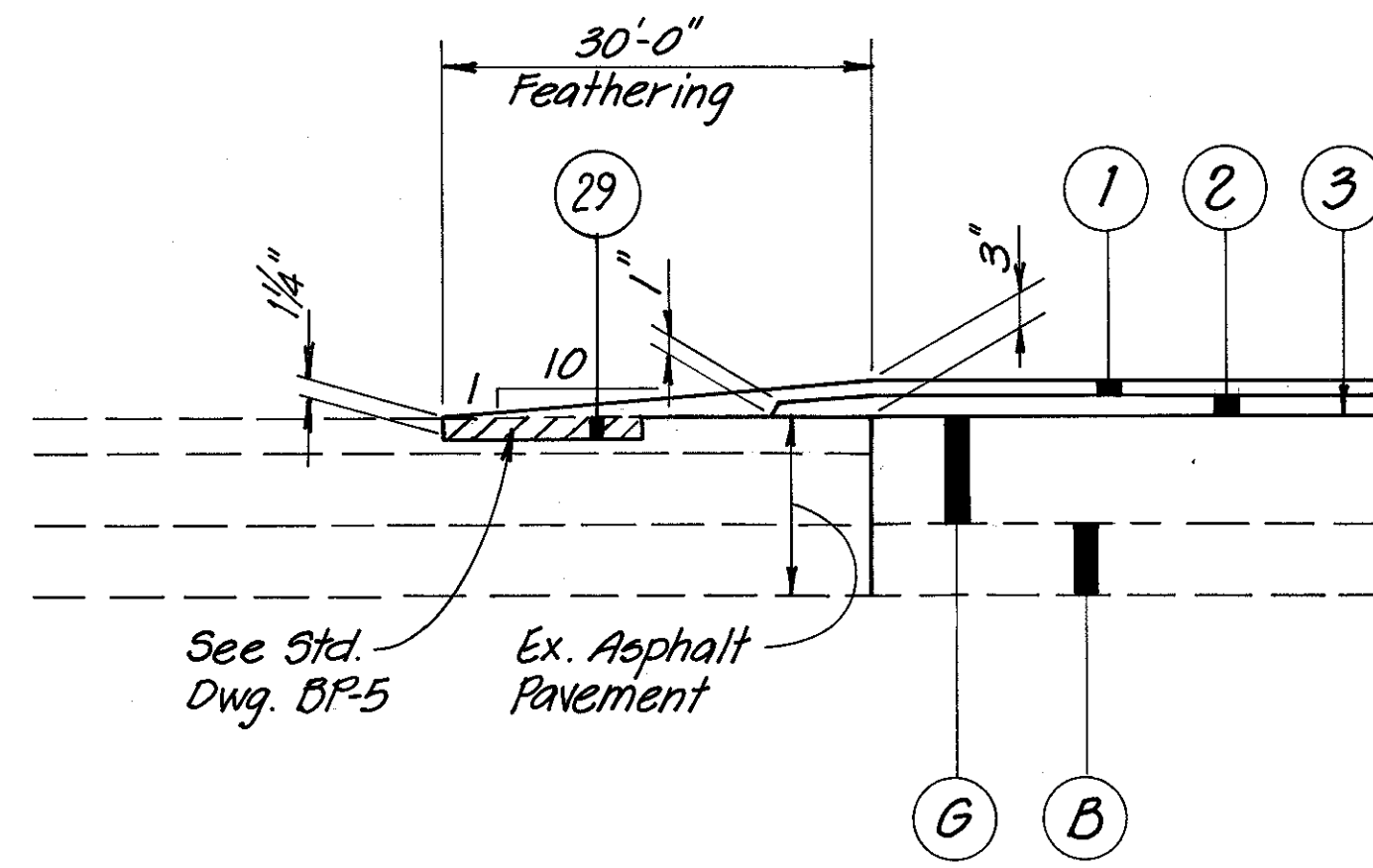
TYPICAL BERM DETAILS



NOTE: For Item Legend, See Sheet No. 5

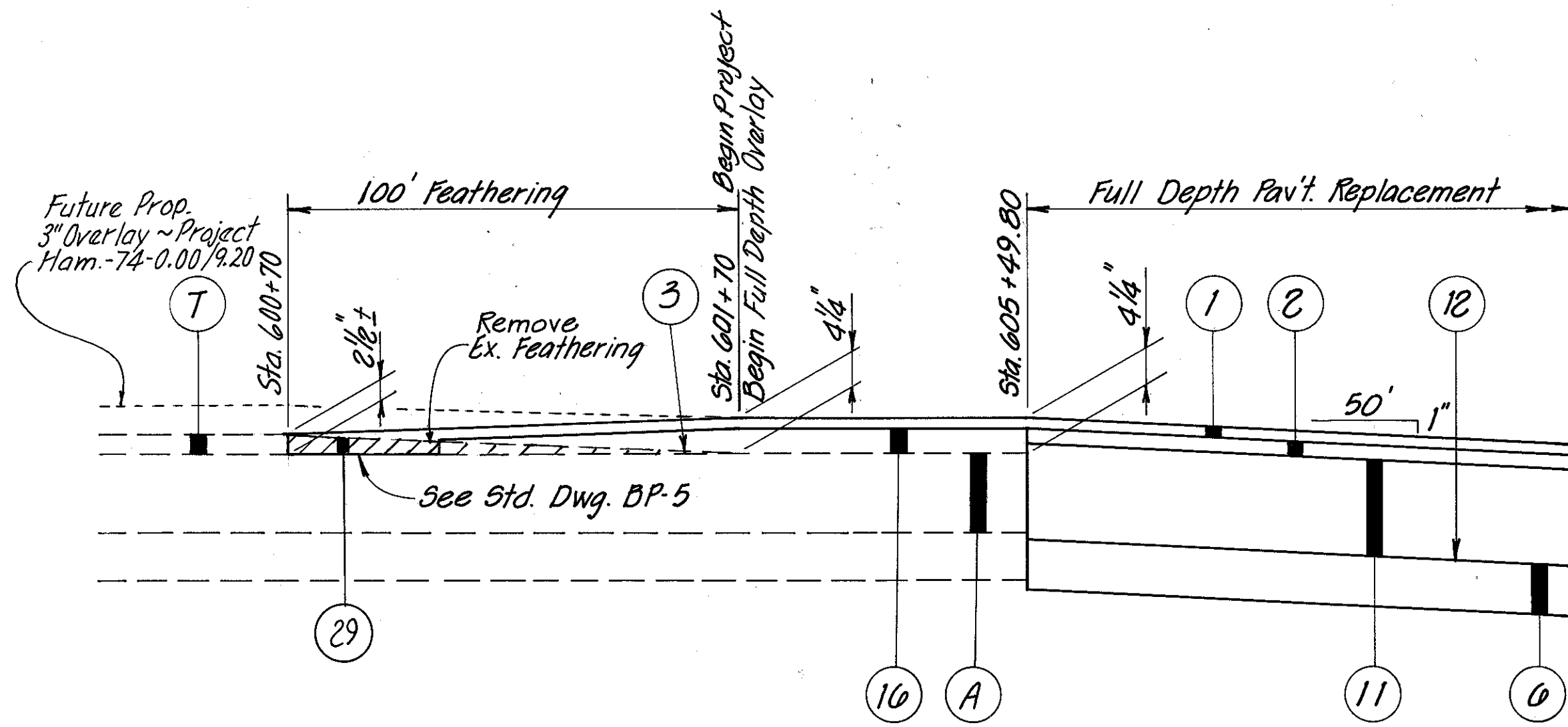


FEATHERING AT BEGIN PROJECT - W.B.

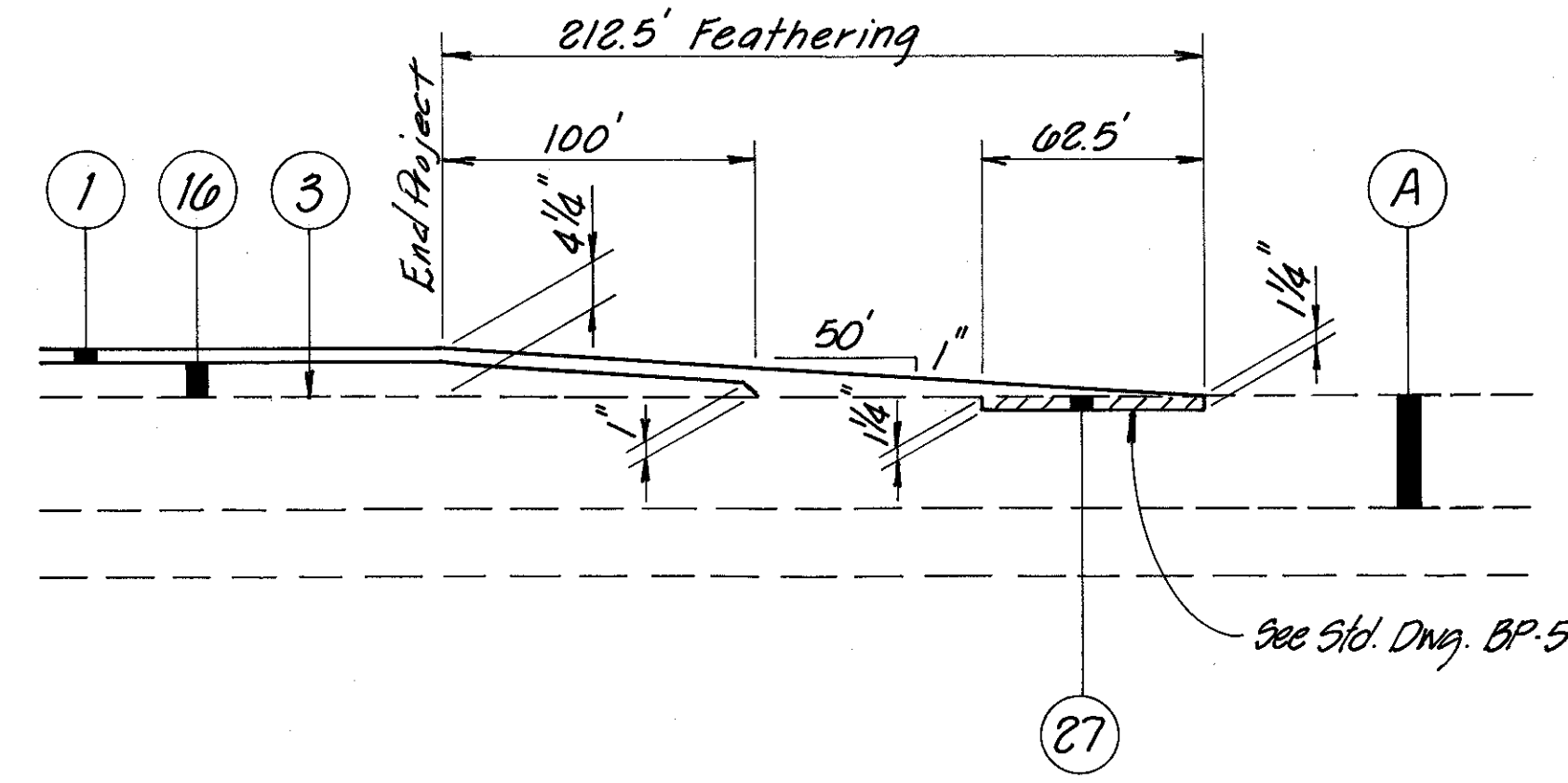


FEATHERING AT NORTH BEND ROAD

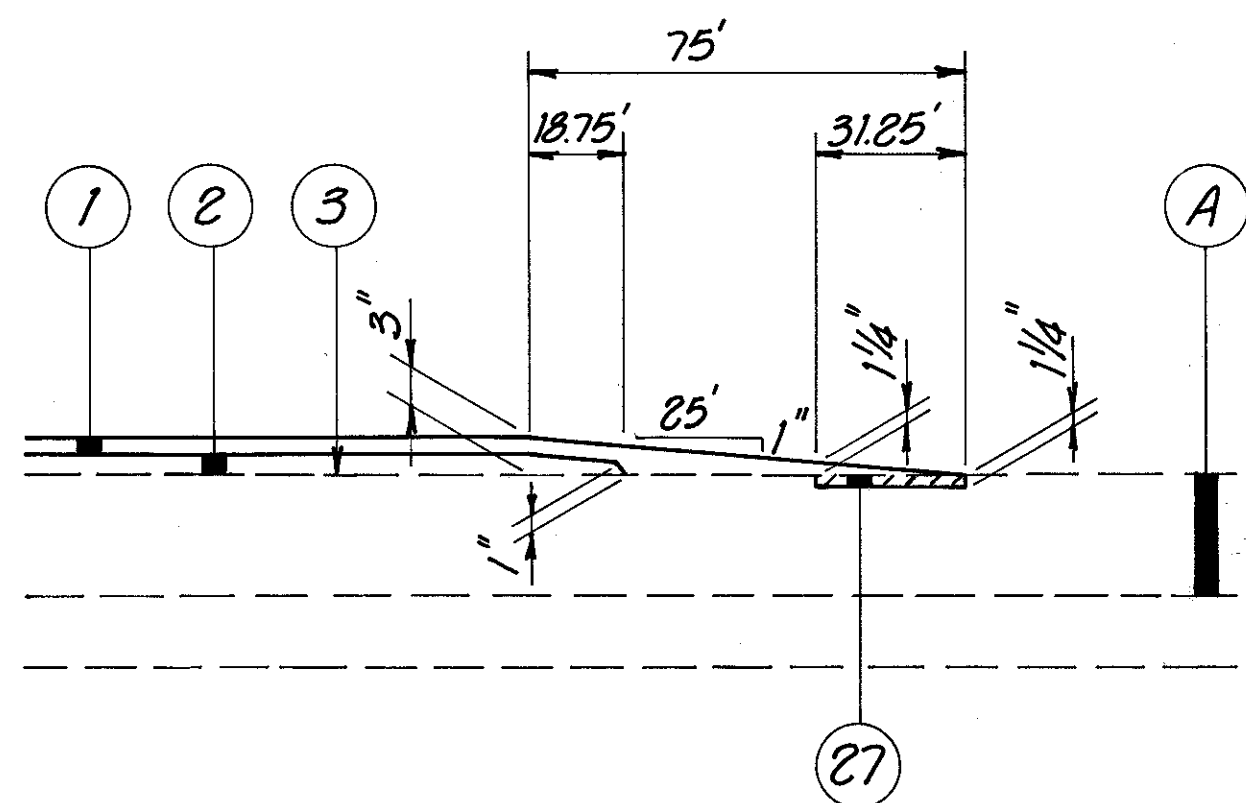
Sta. 12+70 to 13+00
Sta. 26+38 to 26+68



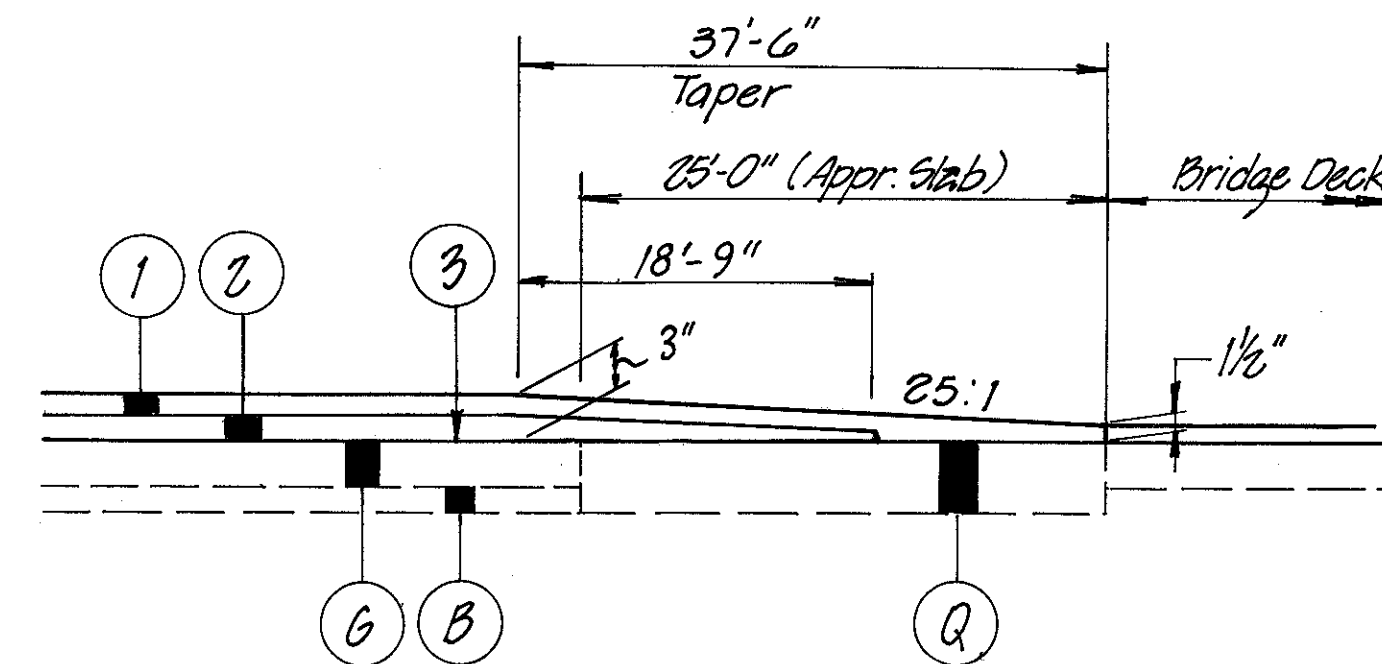
FEATHERING AT BEGIN PROJECT - E.B.



FEATHERING AT END PROJECT - ML

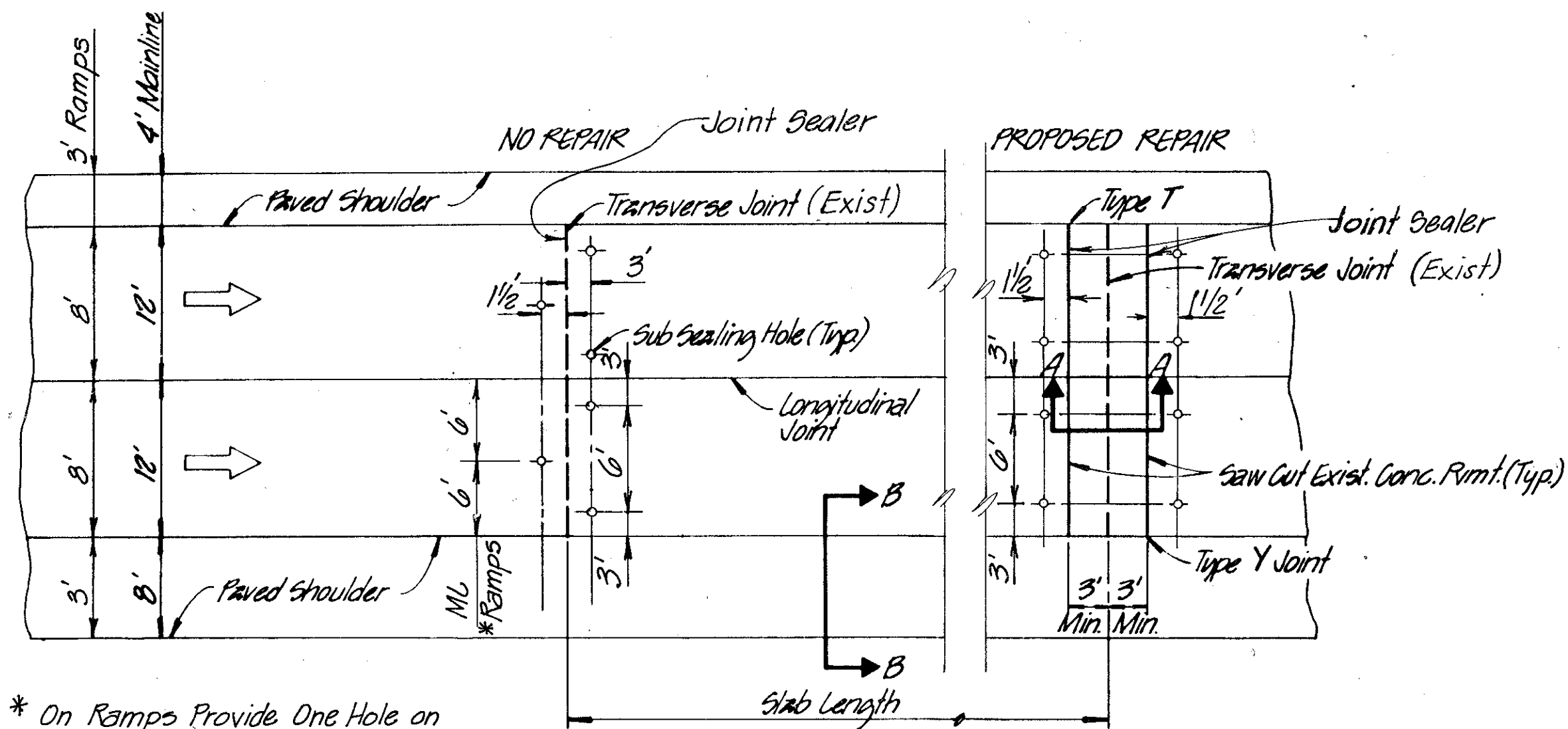


FEATHERING AT RAMP
Harrison Road Interchange



FEATHERING AT NORTH BEND ROAD (BRIDGE)
Sta. 18+35 to Sta. 18+72
Sta. 21+41 to Sta. 21+78

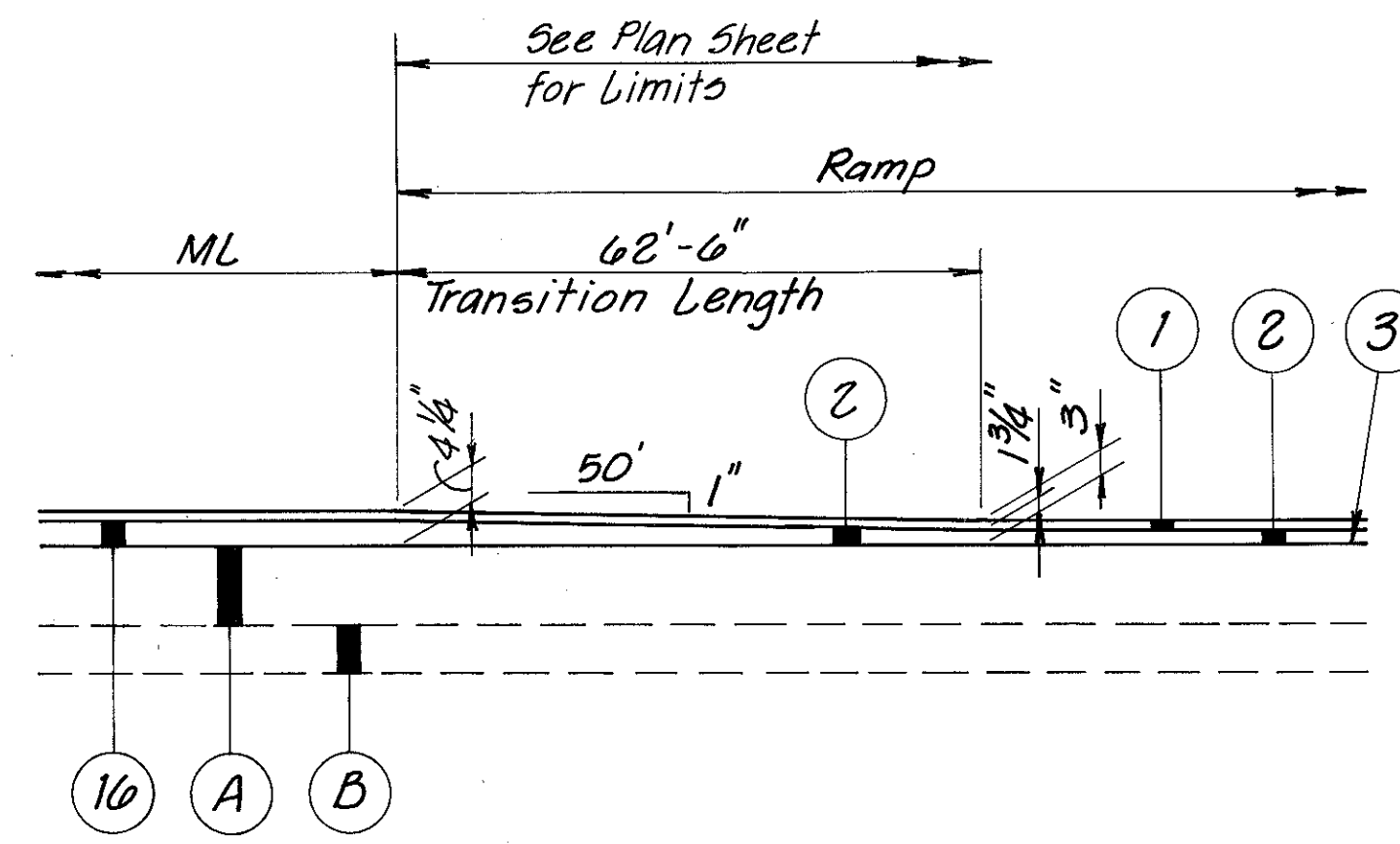
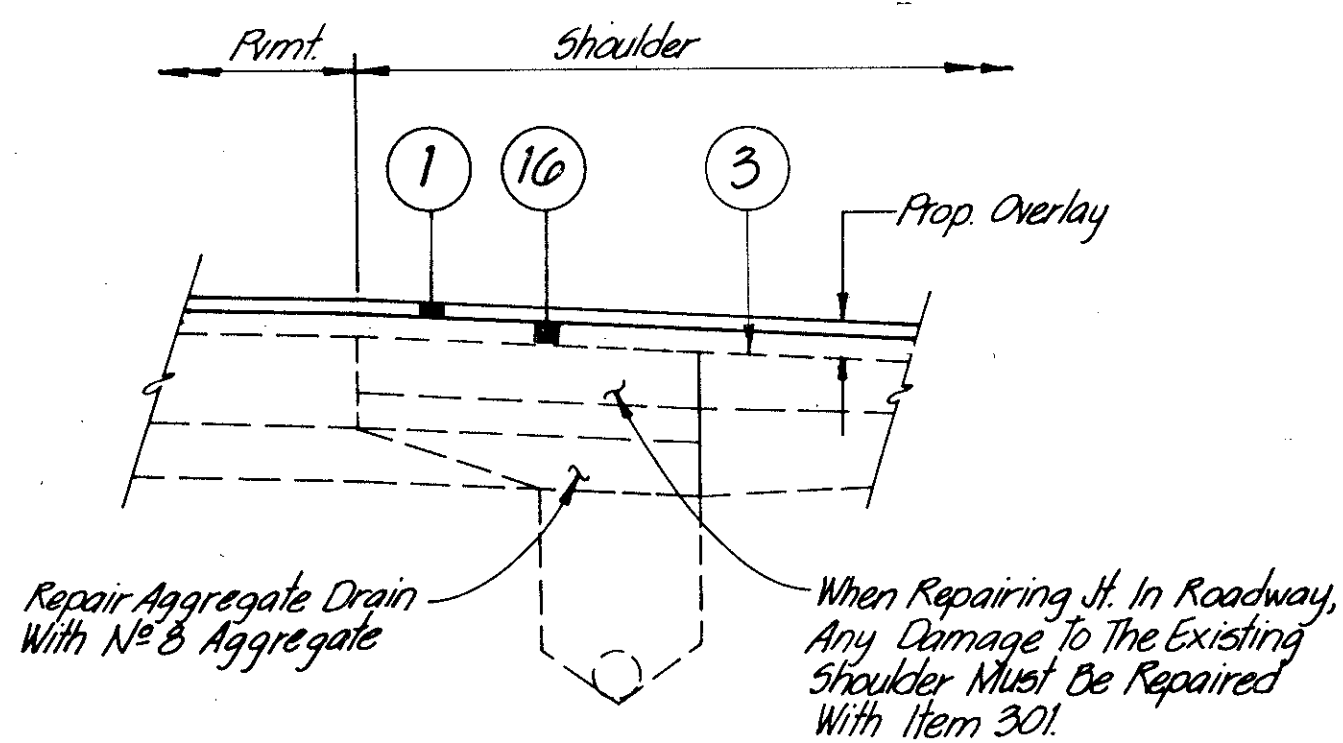
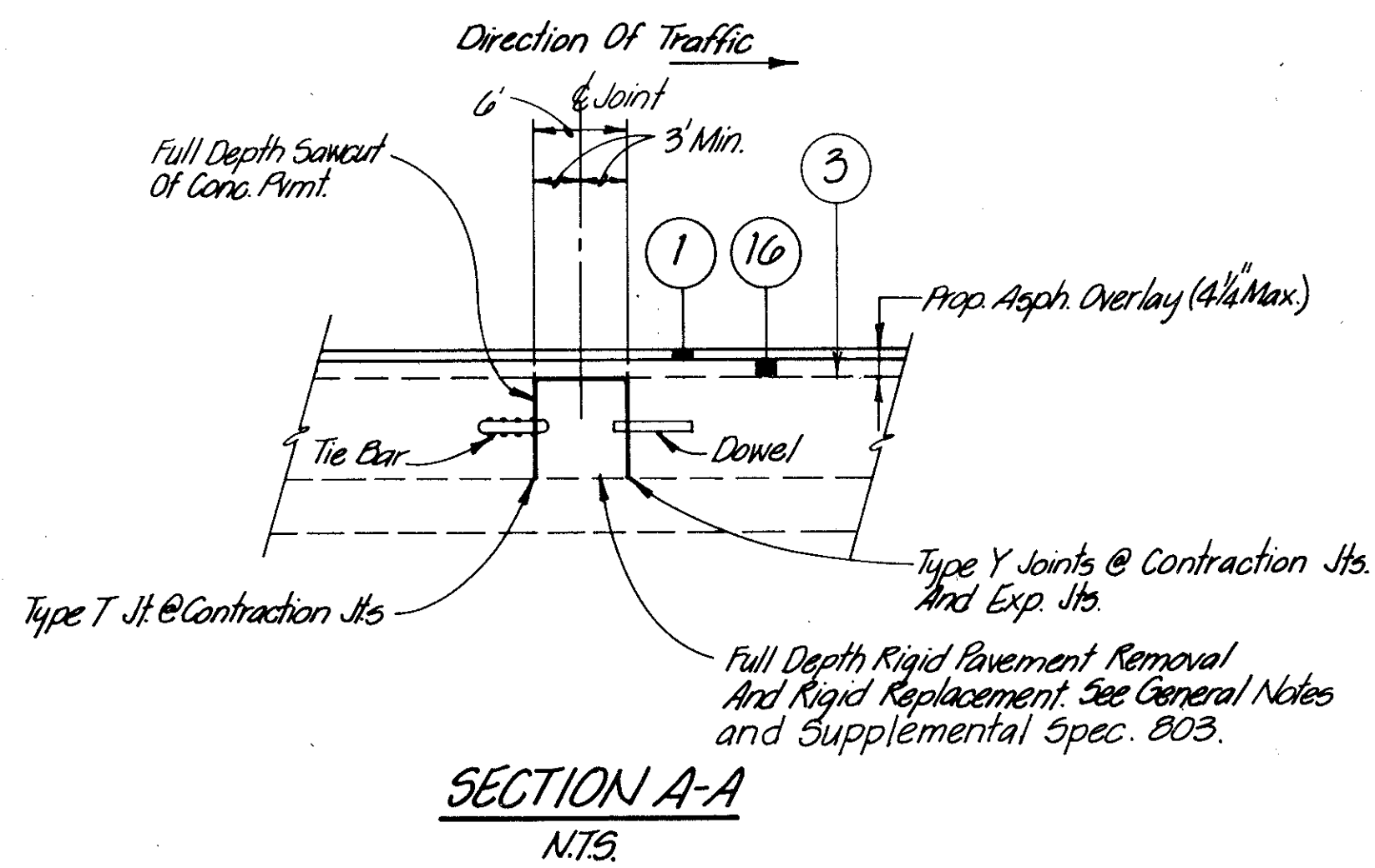
NOTE: For Item Legend, See Sheet 5



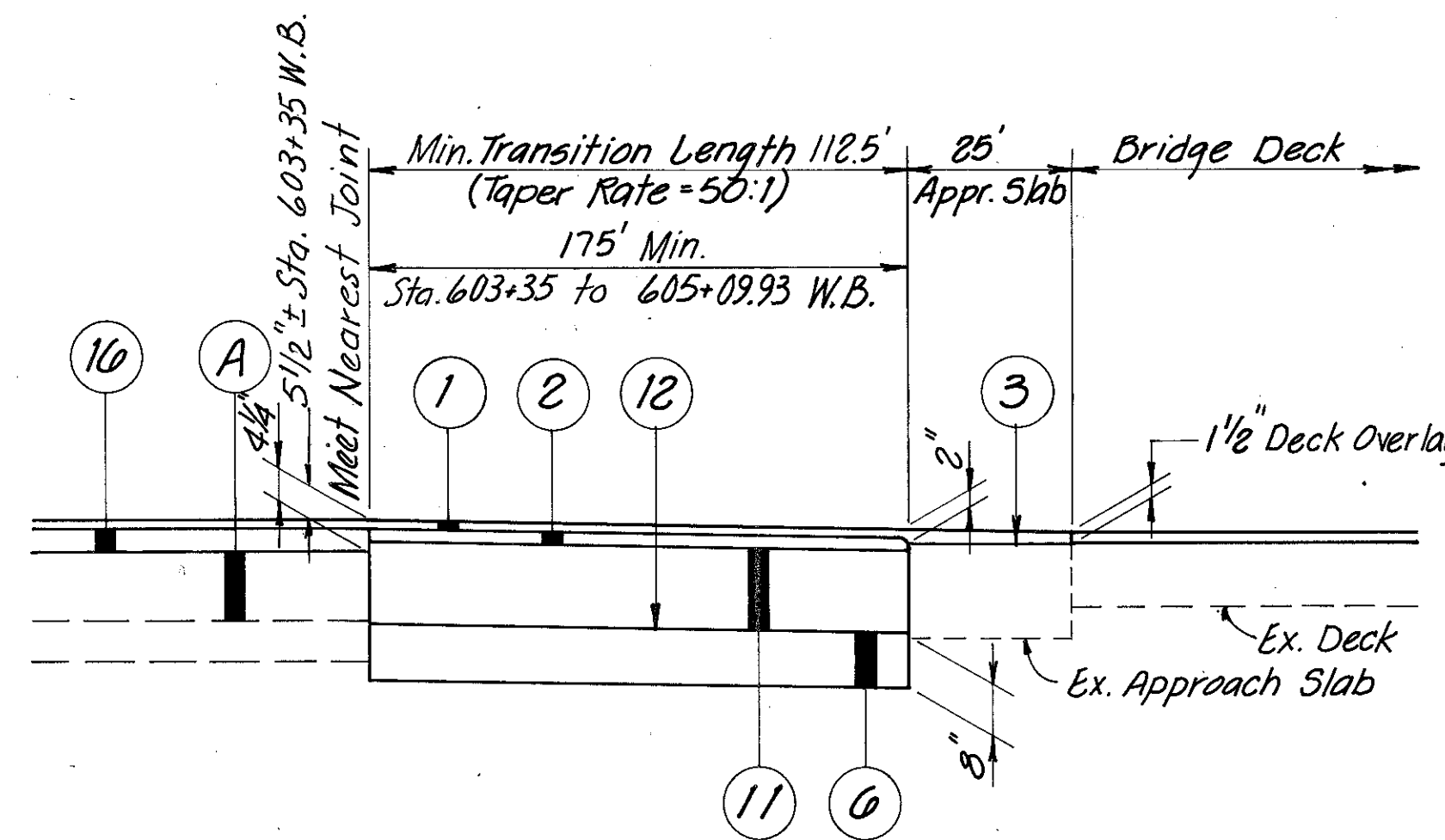
* On Ramps Provide One Hole on Approach Panel and One Hole on Leave Panel, Including Full Depth Repair Joints.

SUBSEALING HOLE PATTERN AND JOINT REPAIR DETAIL

NOTES: 1.) Above Detail Shows Suggested Sub Sealing Hole Patterns @ Existing Transverse Joint Locations. These Hole Patterns Are Subject To Change As Directed By The Engineer.
2.) For Additional Joint Repair Details, See BR13.
3.) For Subsealing See S.S. 812

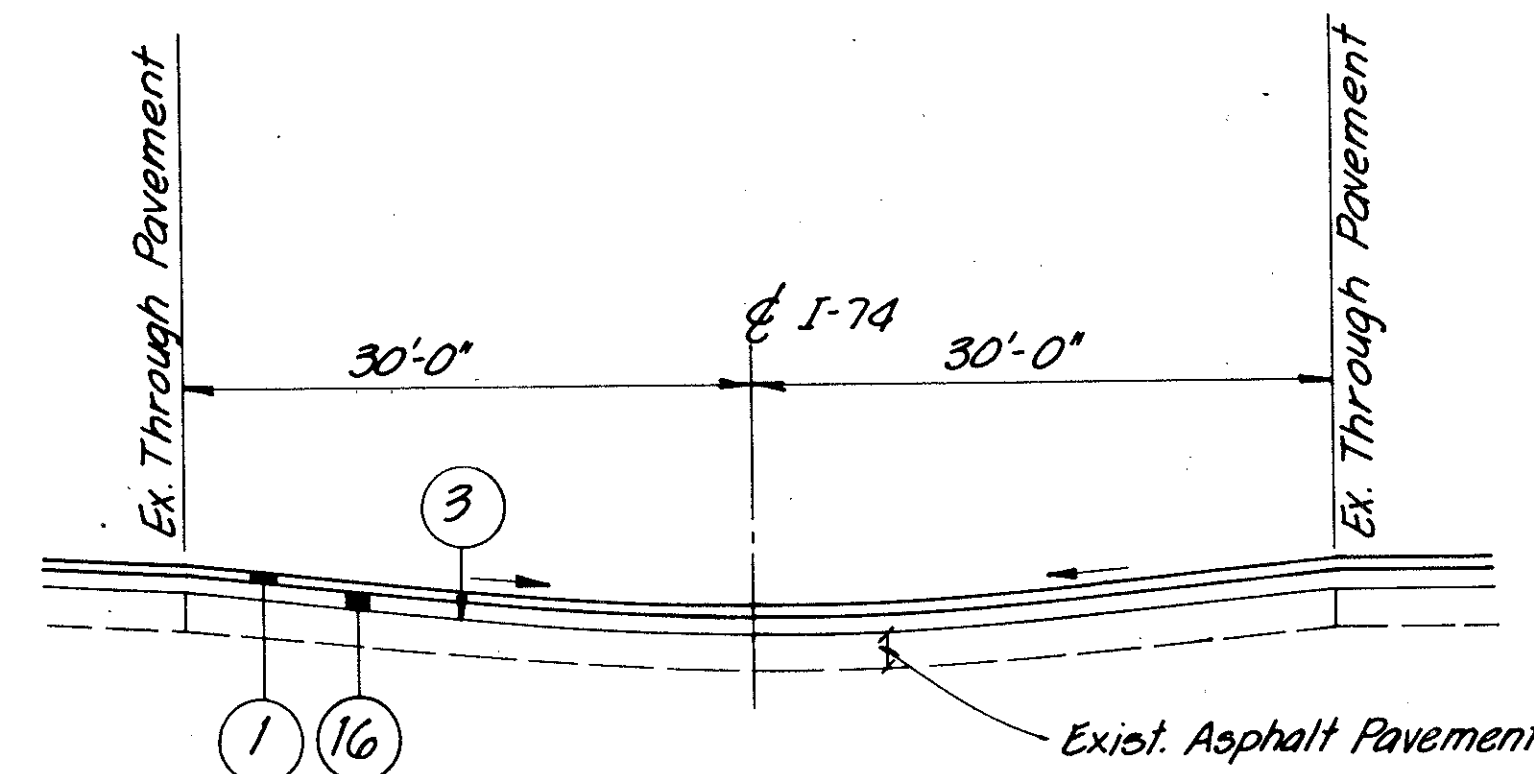


OVERLAY TRANSITION AT RAMP GORE



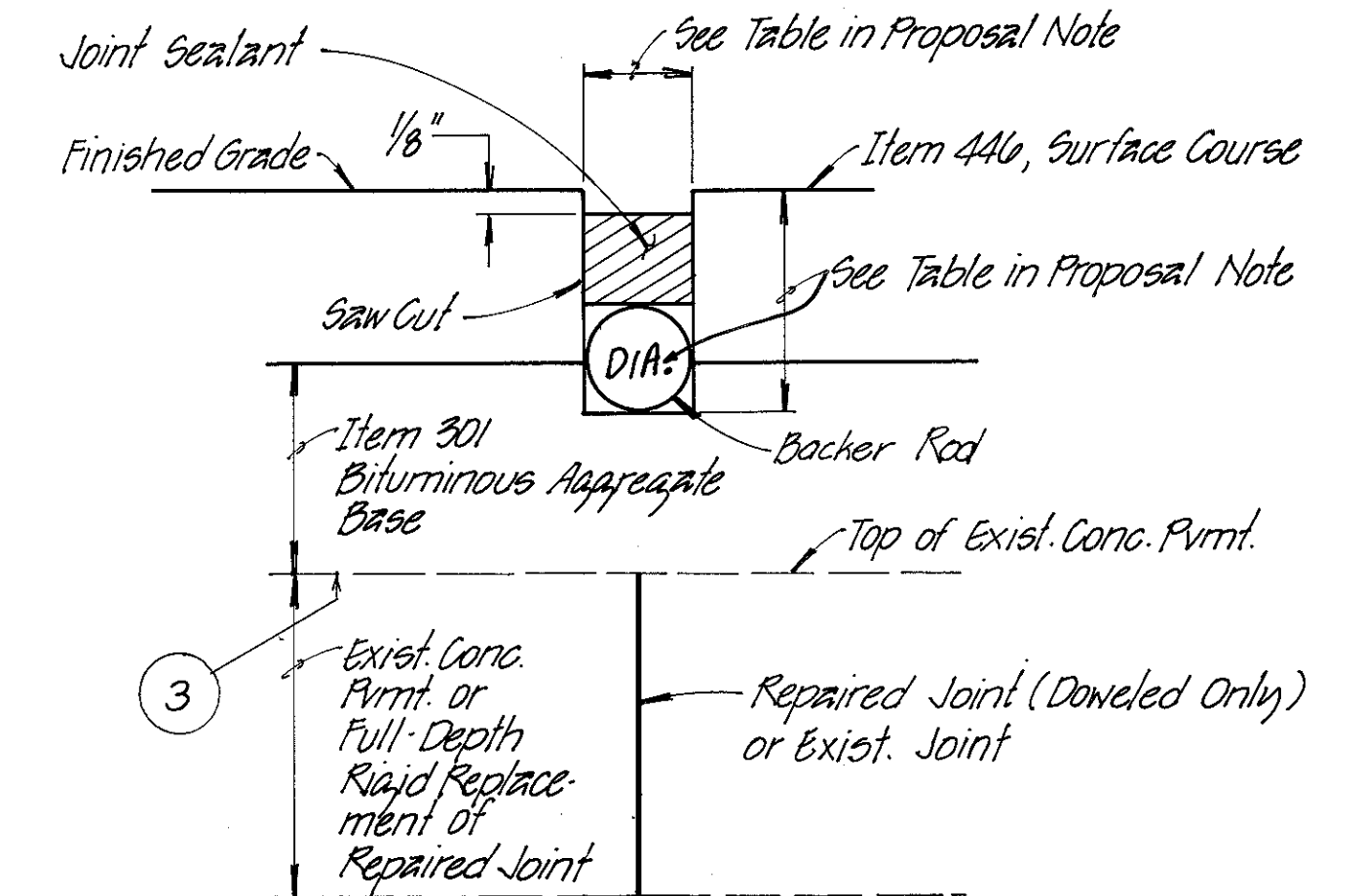
TRANSITION PROFILE AT MAIN LINE BRIDGES

(Full Depth Pavement Replacement)
Ham - 74 - 1116 L & R
Ham - 74 - 1292 L & R
Ham - 74 - 1618 L & R

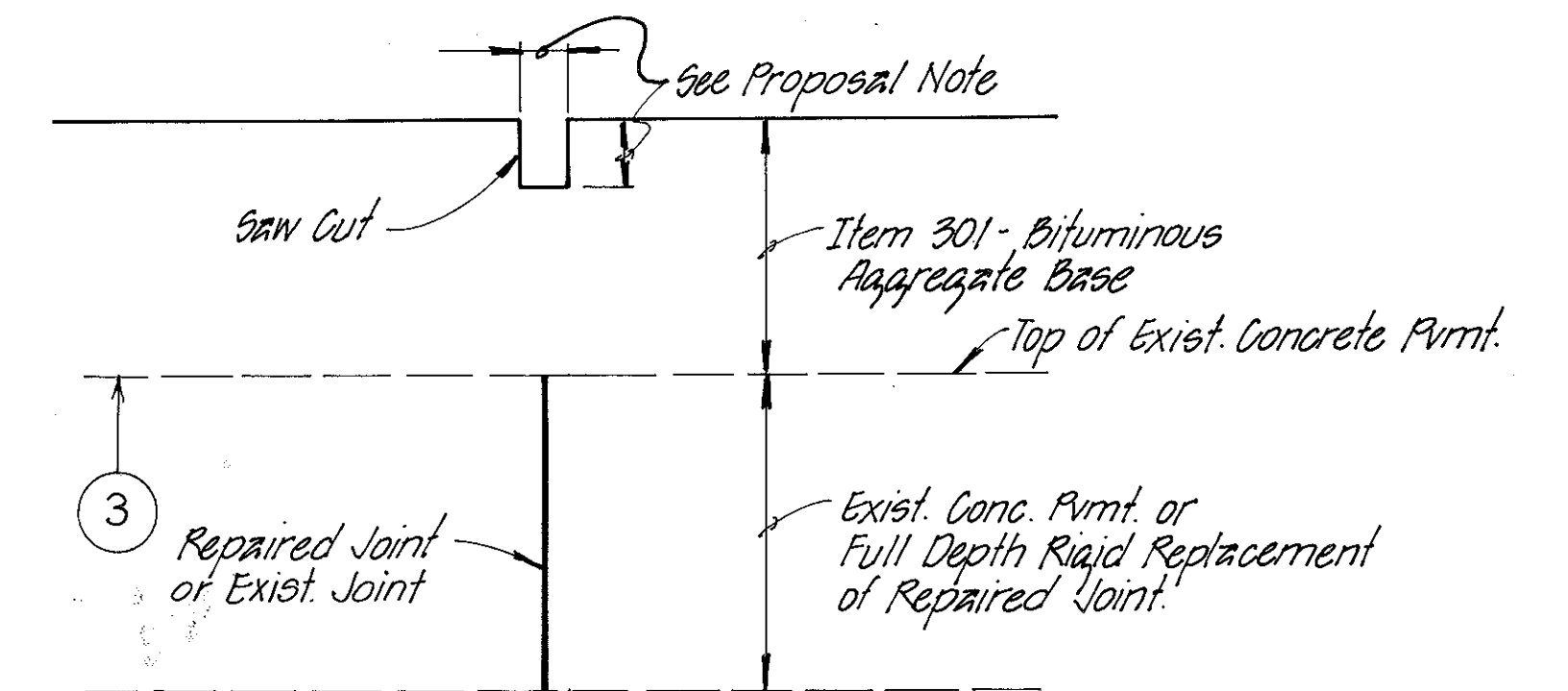


MEDIAN CROSS-OVER

STA. 693 + 00
STA. 753 + 74
STA. 829 + 00
STA. 888 + 86



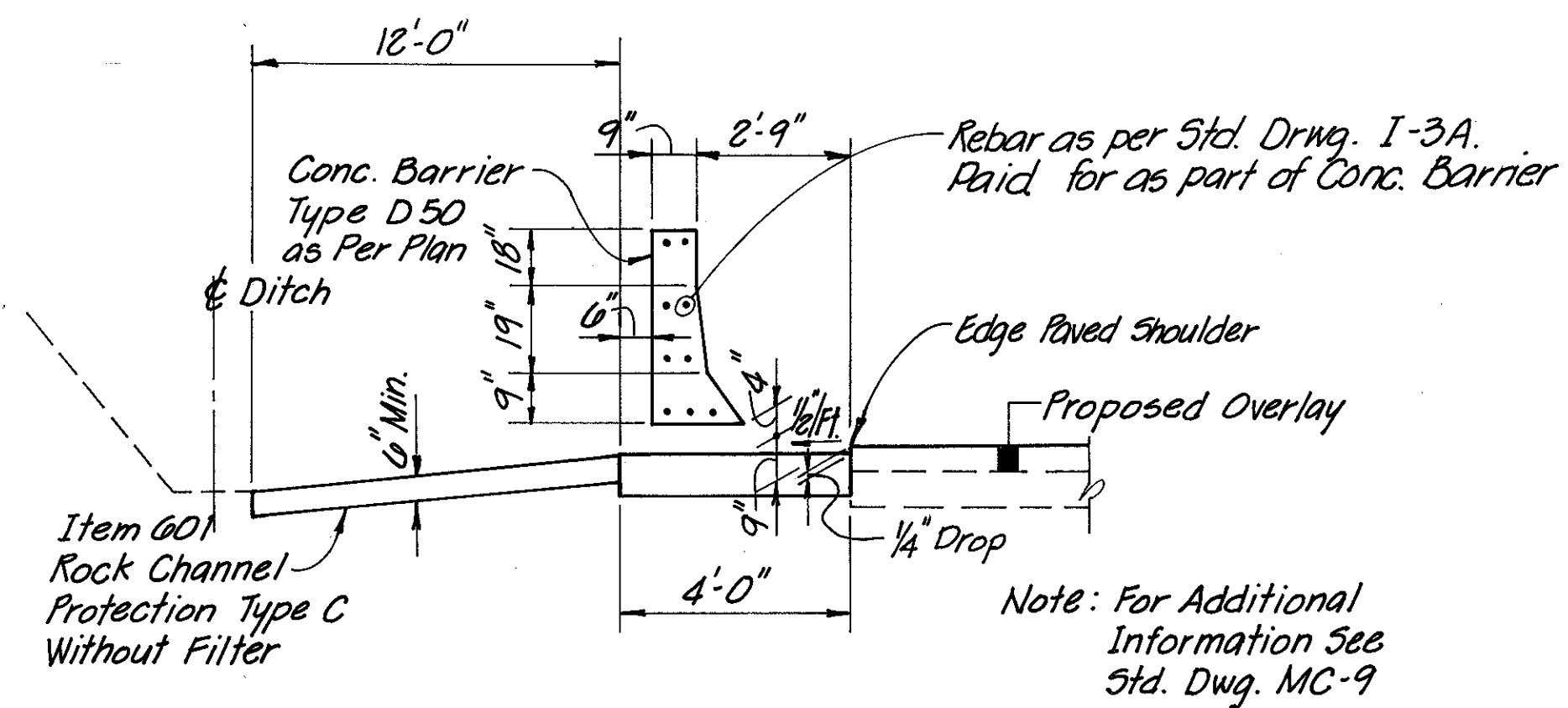
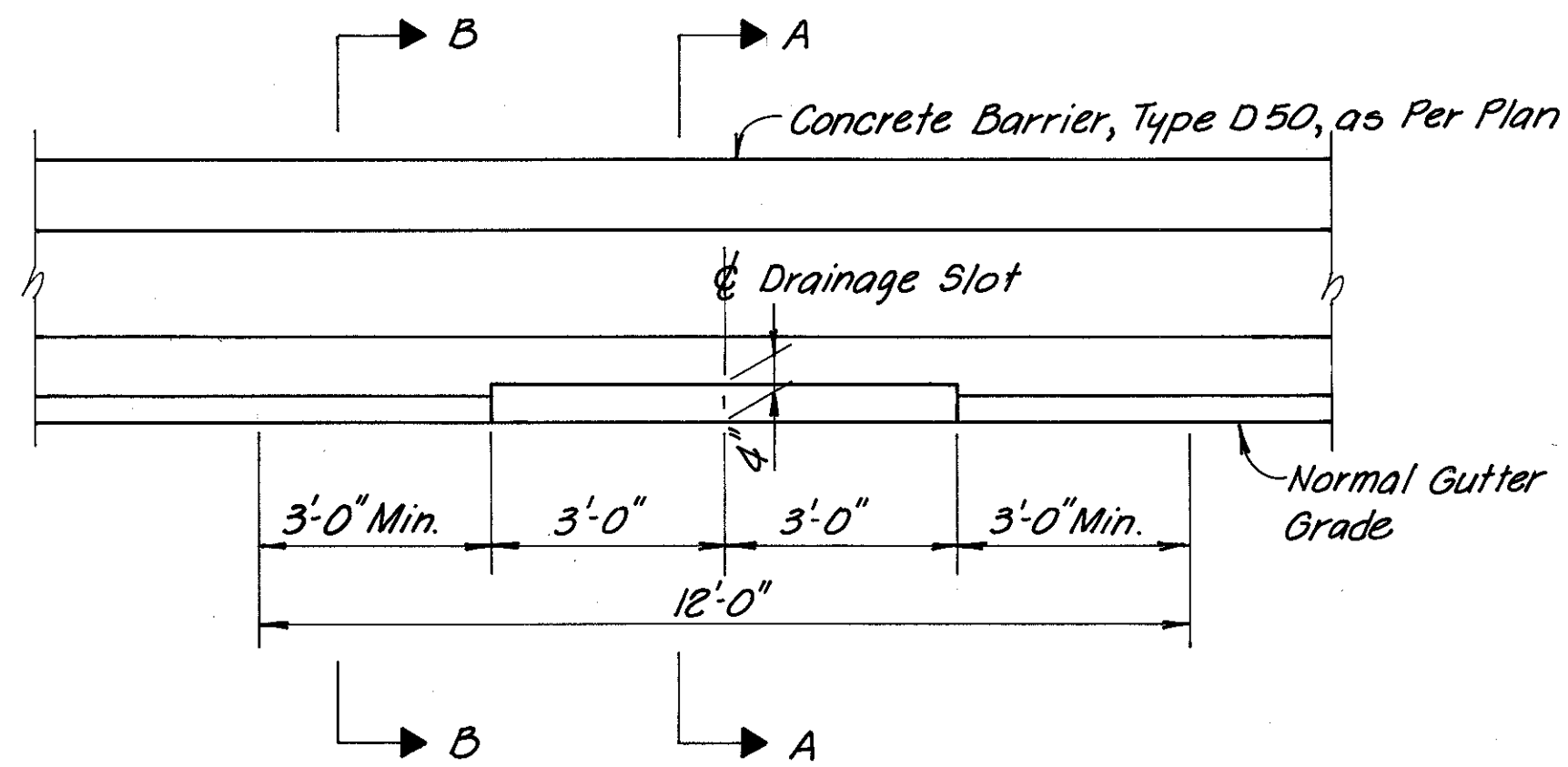
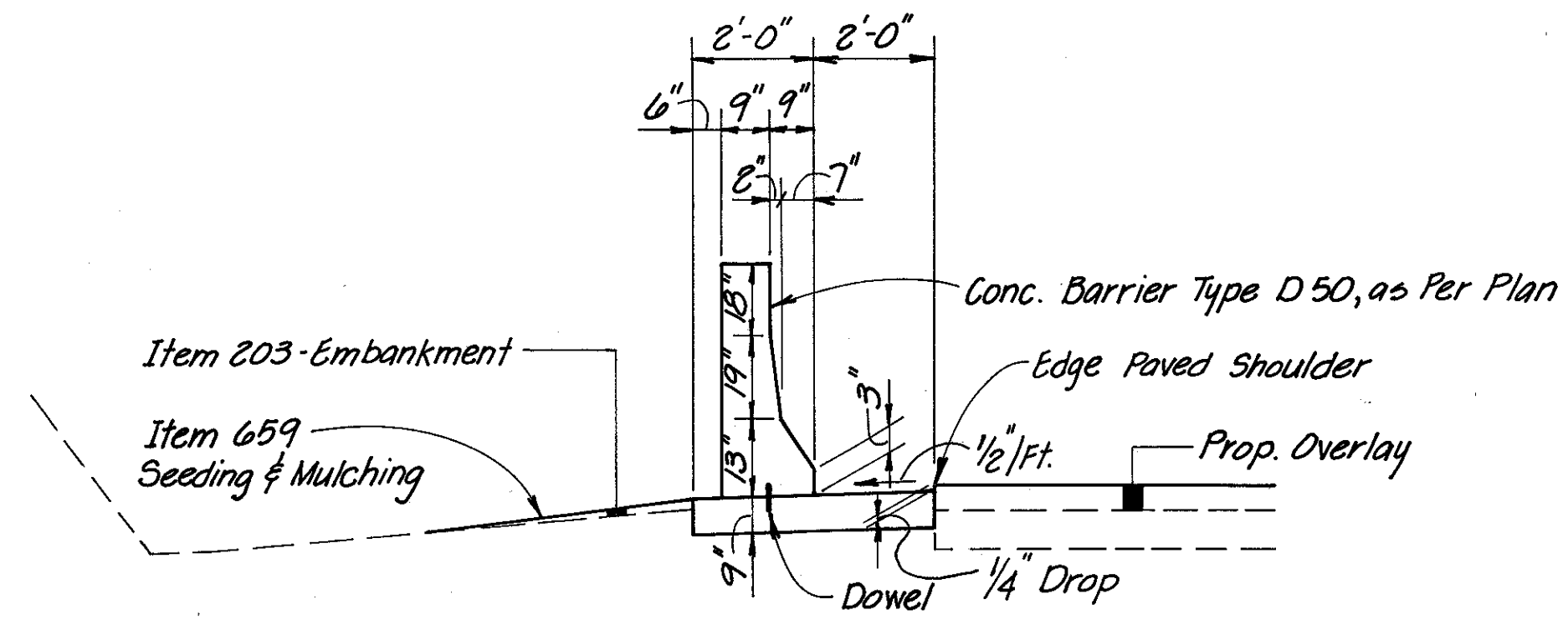
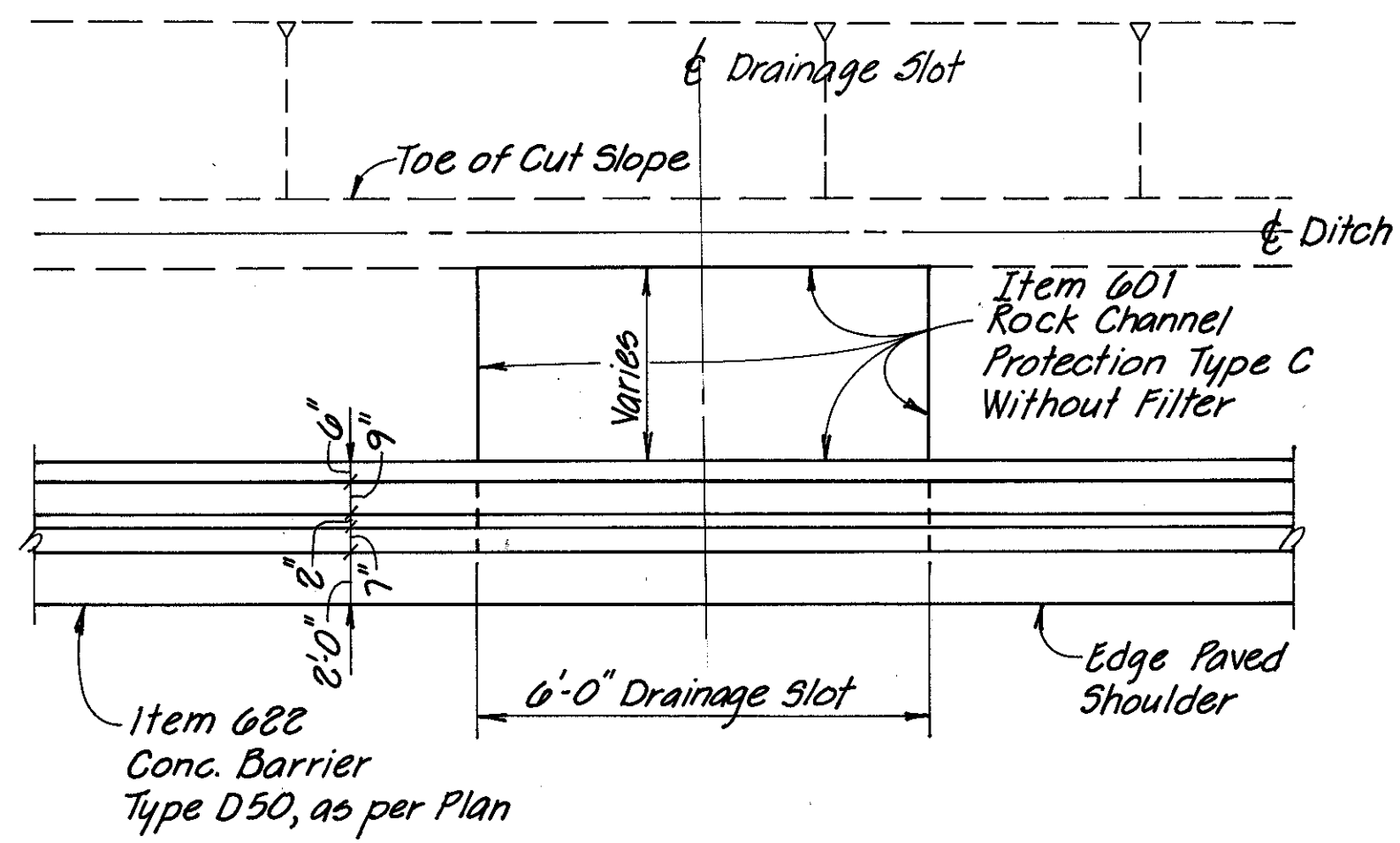
FINISH SURFACE



BASE COURSE

ITEM SPECIAL - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS 705.04

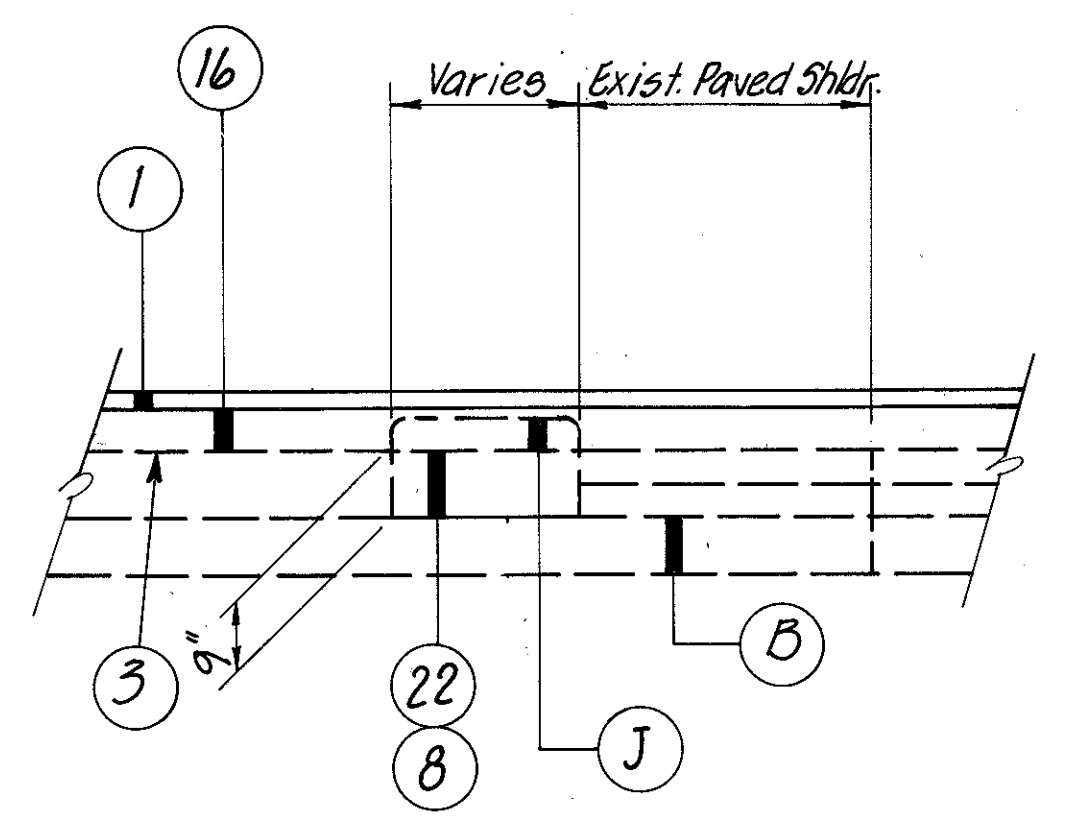
NOTE: For Item Legend, See Sheet 5



Note: For Additional Information See Std. Dwg. MC-9

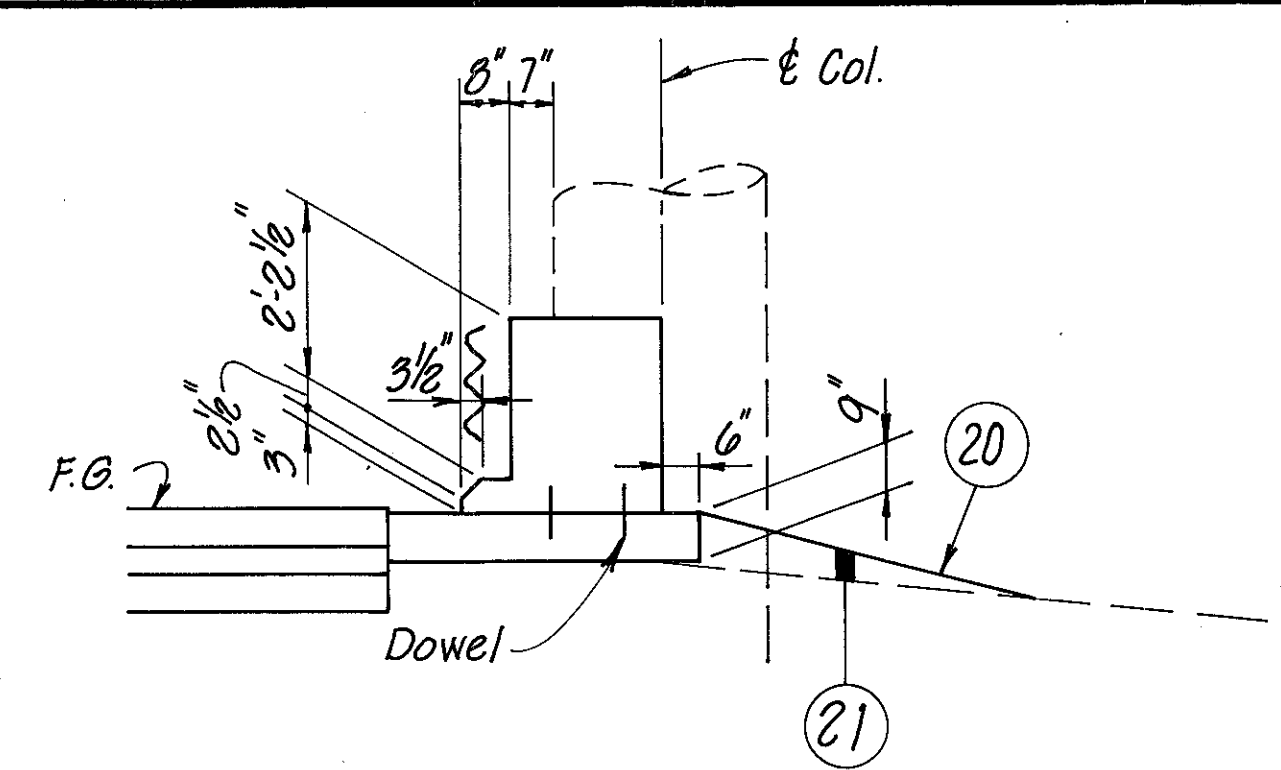
CONCRETE BARRIER, TYPE D50, AS PER PLAN

Sta. 880+00 to Sta. 900+26.5 W.B.
Sta. 879+75 to Sta. 897+25 E.B.

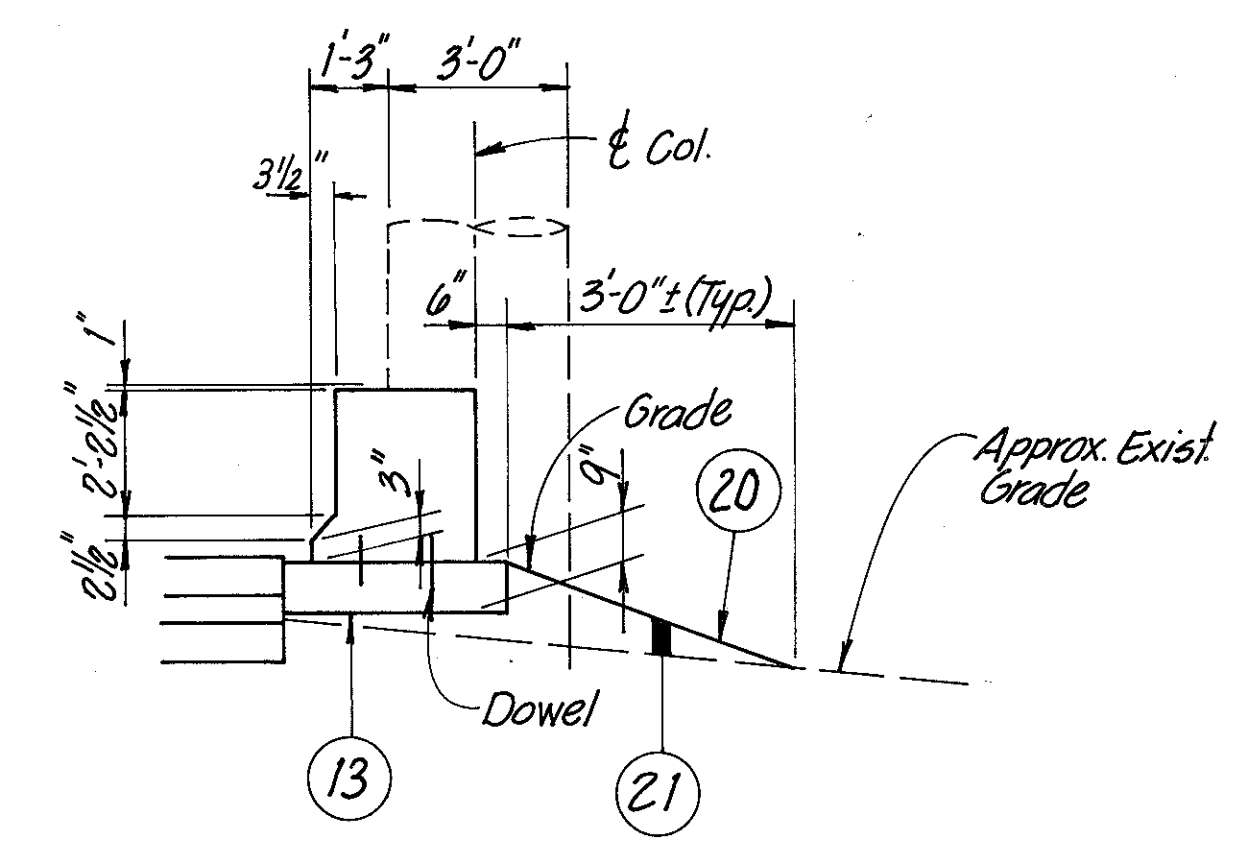


Use Type 5 Guardrail with 3'-1 1/2" Post Spacing from 12'-6" in Advance of Existing Sign Support to End of Each. Cost Included with Item 606 - Guard Rail Type 5

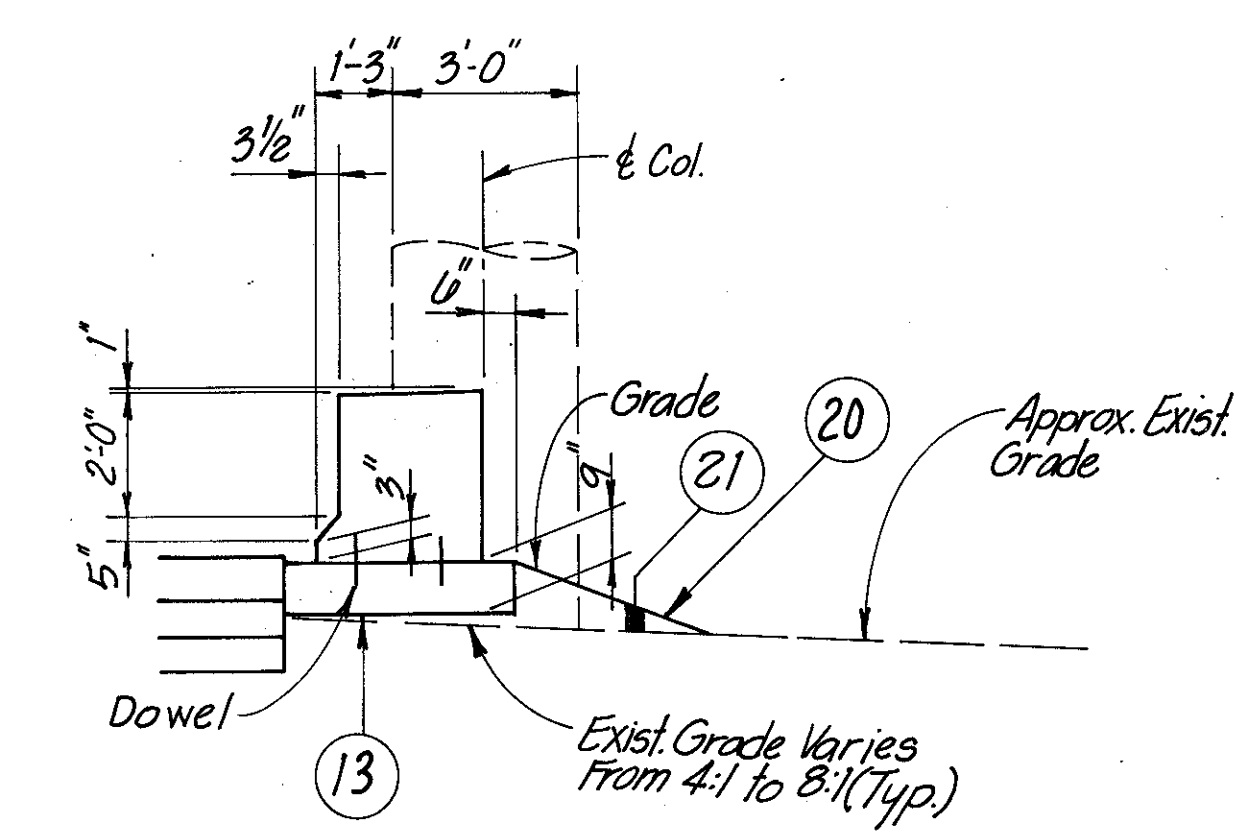
GUARDRAIL POST DETAIL @ EX. SIGNS
3'-1 1/2" POST SPACING



SECTION D-D

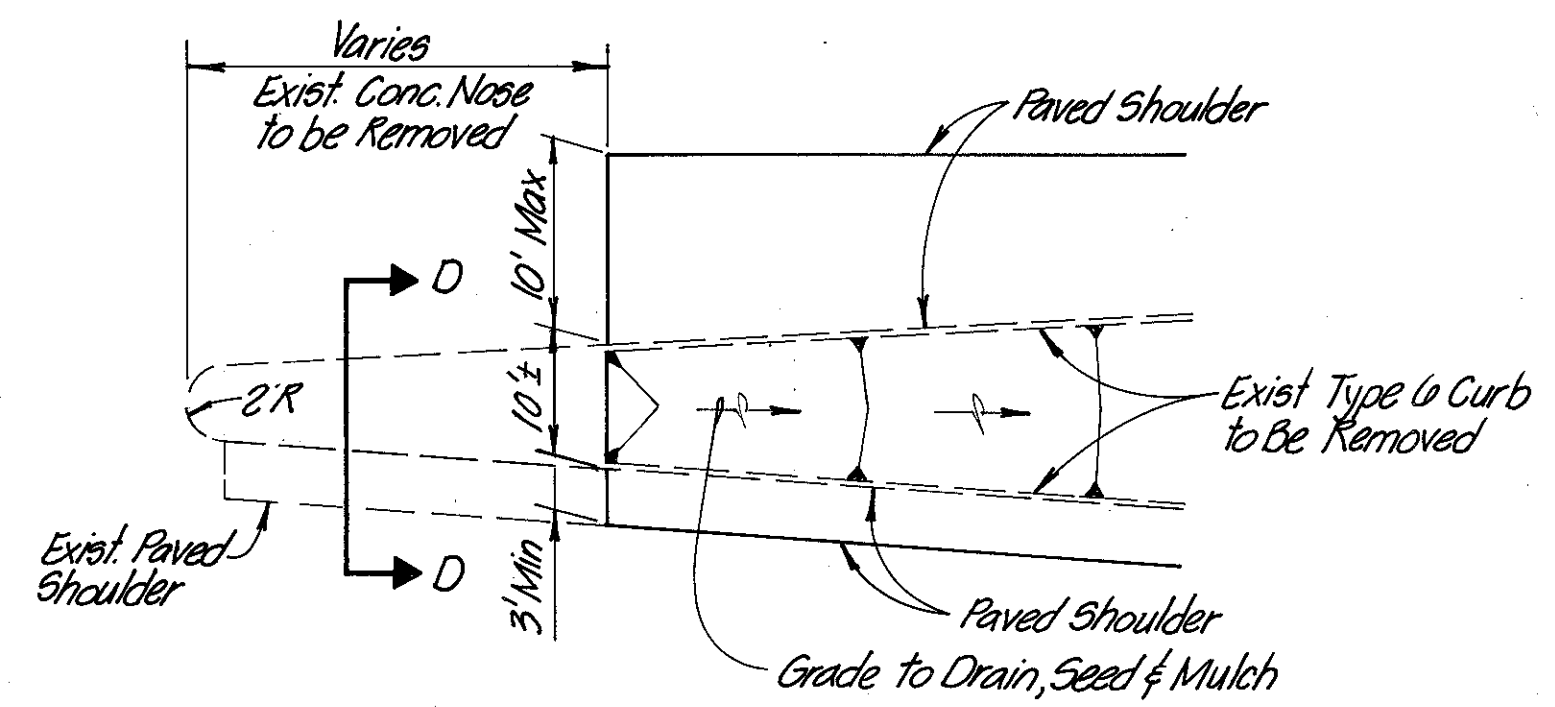


SECTION C-C'

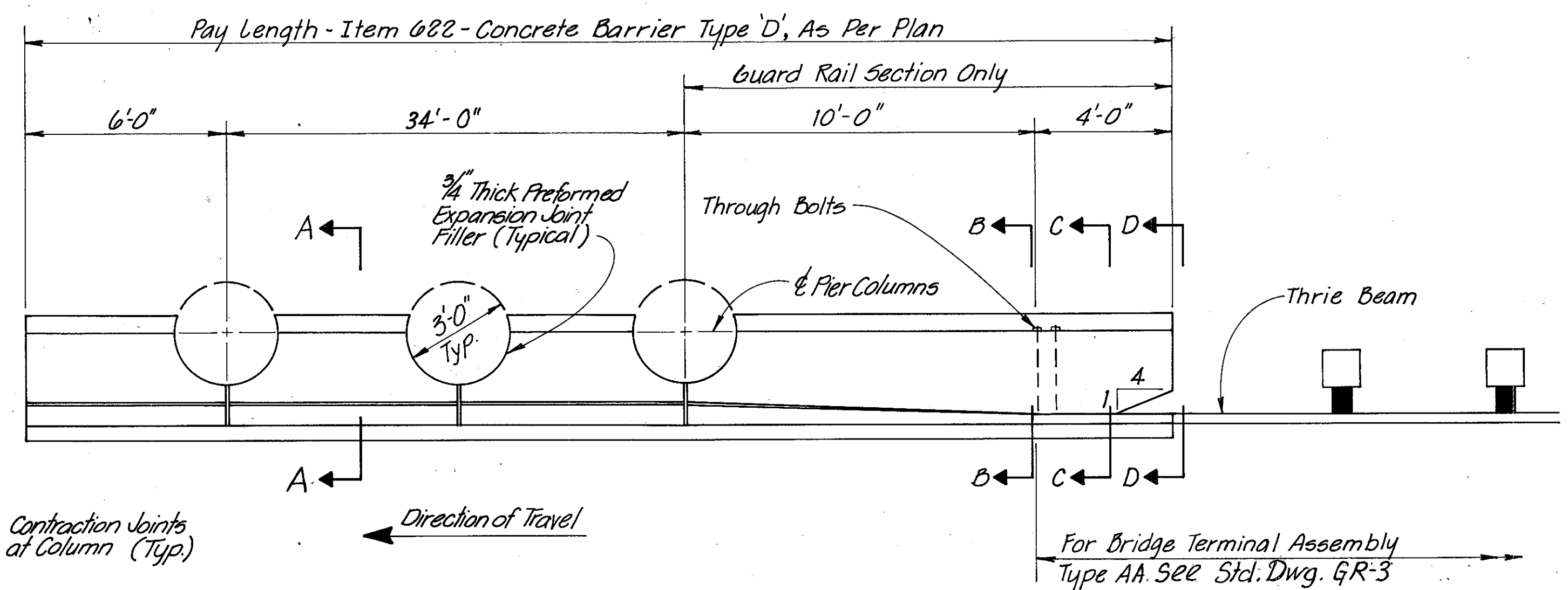


SECTION B-B'

SECTION D-D

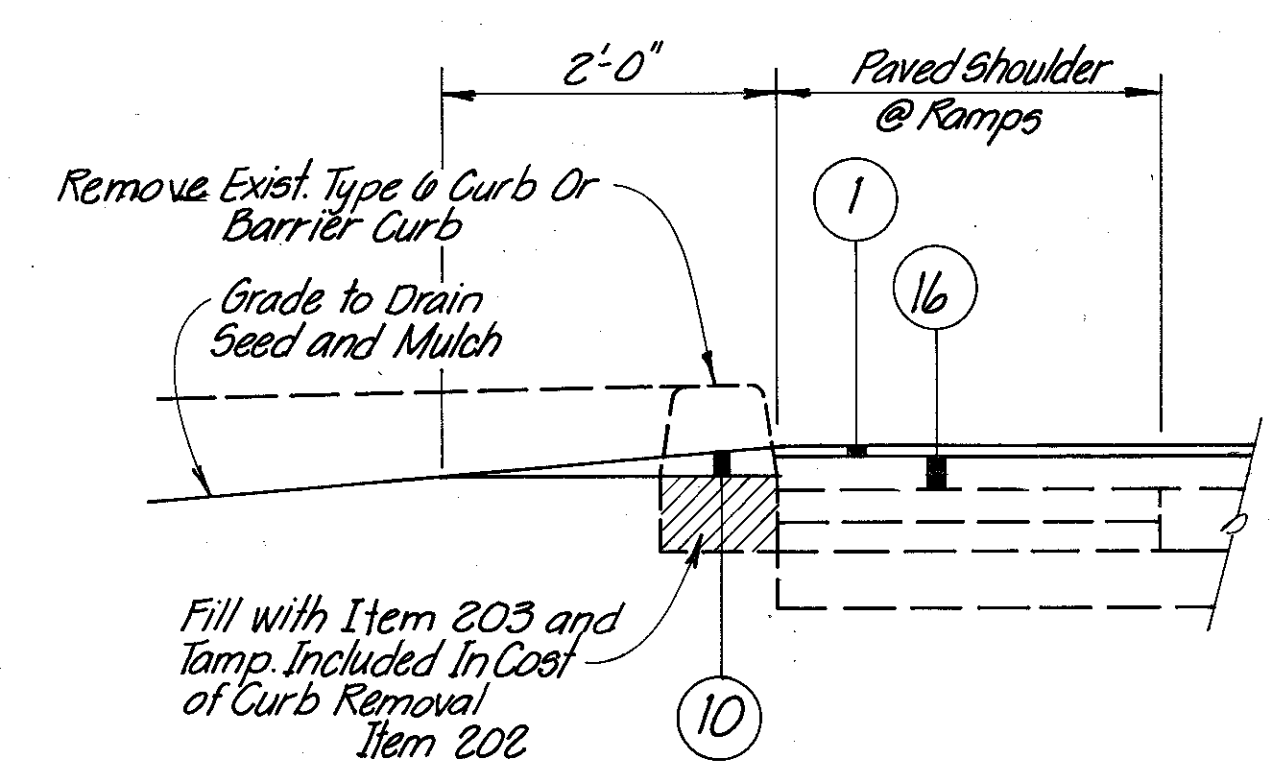


TYPICAL NOSE REMOVAL

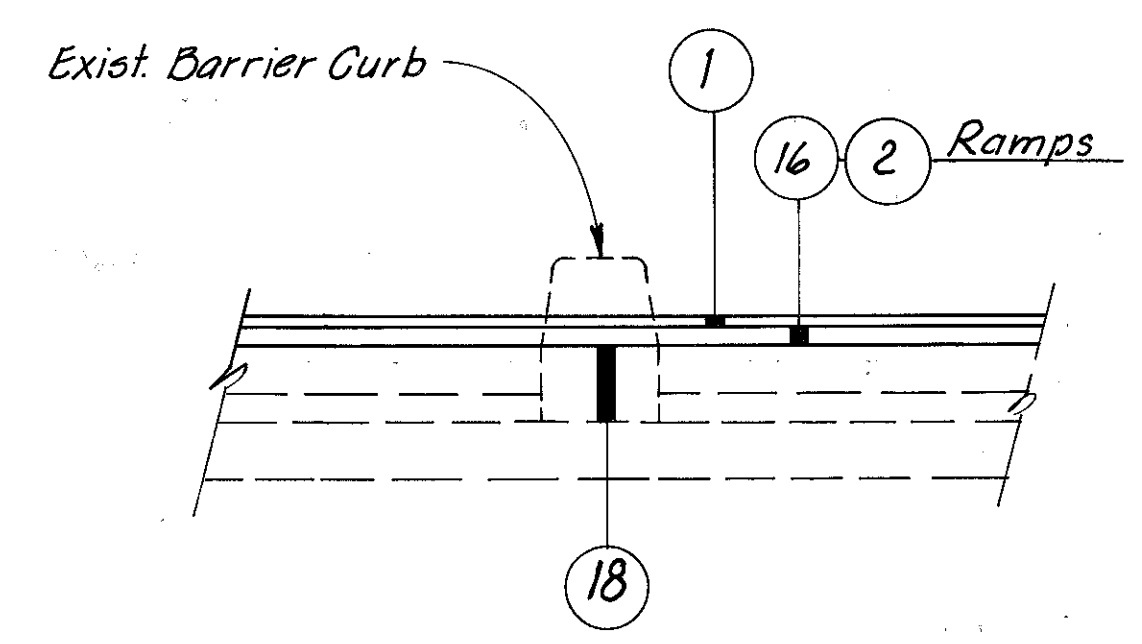


CONCRETE BARRIER TYPE 'D', AS PER PLAN

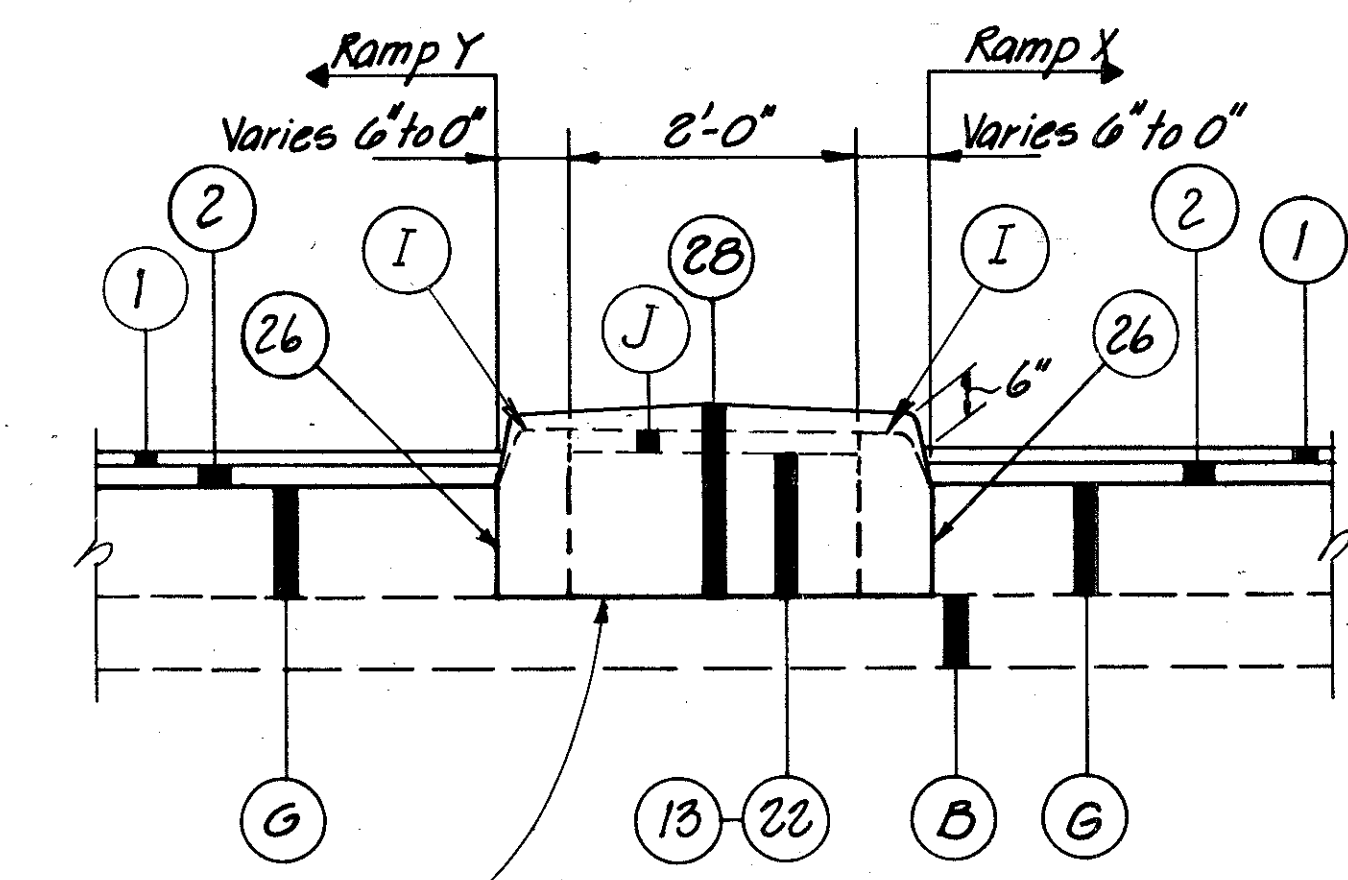
Ham-74-1335 E.B. Rt. Shldr.



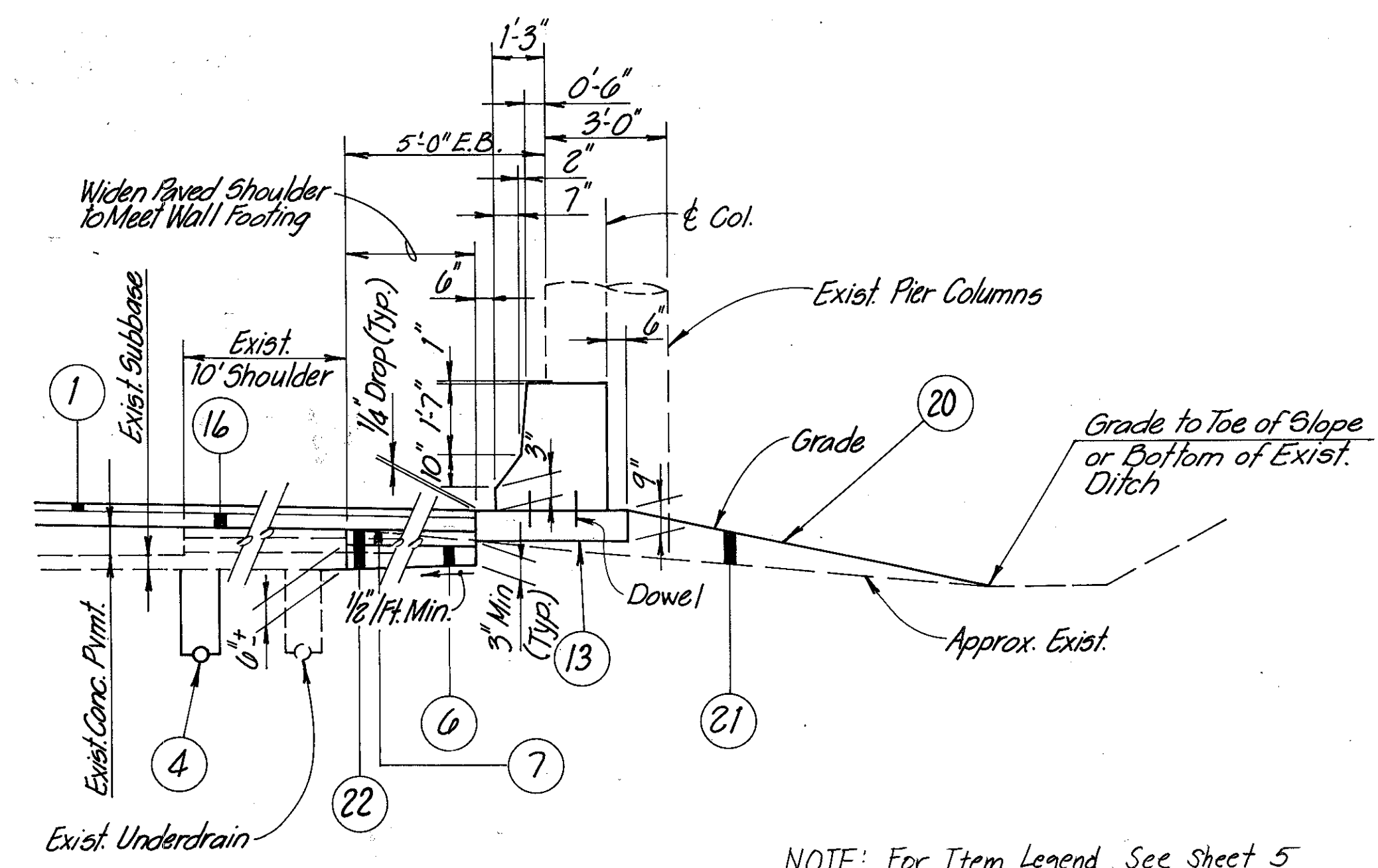
TYPICAL TYPE 6 CURB AND BARRIER CURB REMOVAL
(EARTH BERM)



Item 202 - Curb Removed As Per Plan



CONCRETE MEDIAN
Sta. 3+25 to 5+00 Ramps X,Y



SECTION A-A'

NOTE: For Item Legend, See Sheet 5

GENERAL NOTES

UTILITY OWNERSHIP

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT:

ELECTRIC: CINCINNATI GAS & ELECTRIC COMPANY
139 E. FOURTH STREET
CINCINNATI, OHIO 45201 PHONE: (513) 397-4664

GAS: CINCINNATI GAS & ELECTRIC COMPANY
139 E. FOURTH STREET
CINCINNATI, OHIO 45201 PHONE: (513) 397-4664

WATER: CINCINNATI WATER WORKS
4747 SPRING GROVE AVENUE
CINCINNATI, OHIO 45232 PHONE: (513) 352-4636

TELEPHONE: CINCINNATI BELL
201 E. FOURTH STREET
CINCINNATI, OHIO 45201 PHONE: (513) 397-4664

SANITARY SEWER: METROPOLITAN SEWER DISTRICT
1600 GEST STREET
CINCINNATI, OHIO 45204 PHONE: (513) 352-4800

OIL: SOHIO PIPE LINE
12011 HAMILTON AVE.
CINCINNATI, OHIO 45231 PHONE: (513) 825-5250

UNDERGROUND UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY, AS REQUIRED BY SECTION 153.64 OR C.

FIELD OFFICE

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 800 SQ. FT. OF FLOOR SPACE. PAYMENT SHALL BE AT THE LUMP SUM BID PRICE FOR ITEM 619 - FIELD OFFICE.

EXISTING DATUM

ELEVATIONS SHOWN ON THESE PLANS ARE BASED ON THE ORIGINAL CONSTRUCTION DRAWINGS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THESE ELEVATIONS AND MAKE ADJUSTMENTS WHERE NECESSARY.

PROFILE AND ALIGNMENT

THE PROPOSED PAVEMENT RESURFACING COURSE SHALL FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. PREVIOUS CONSTRUCTION PLANS SHOWING THE ORIGINAL ALIGNMENT AND PROFILE GRADE ARE ON FILE FOR INSPECTION IF NECESSARY AT THE ODOT DISTRICT 8 OFFICE AS PROJECT NO. HAM-74-11.37, HAM-74-14.83. THE STATION LIMITS OF THIS PROJECT ARE BASED ON THE ORIGINAL PLANS. THE PROPOSED ASPHALT CONCRETE OVERLAY SHALL HAVE A UNIFORM THICKNESS OF APPROXIMATELY 4-1/4 INCHES ON THE MAINLINE AND 3 INCHES ON THE RAMPS EXCEPT AT SPECIFIED PAVEMENT TRANSITIONS.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED AS DIRECTED BY THE ENGINEER UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

DIMENSIONS AND CONDITIONS

DIMENSIONS AND CONDITIONS AT THE SITE SHALL BE VERIFIED BY THE CONTRACTOR AS PER 102.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS. PLANS OF THE EXISTING BRIDGES, ROADWAY, AND CULVERTS SHOULD BE UTILIZED AND ARE AVAILABLE FOR REFERENCE AT THE DISTRICT 8 OFFICE OF THE OHIO DEPARTMENT OF TRANSPORTATION, LEBANON, OHIO.

GUARDRAIL REPLACEMENT

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

LOCATION OF GUARDRAIL

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

GUARDRAIL AT EXISTING OVERHEAD SIGNS

WHERE TYPE 5 GUARDRAIL AT EXISTING OVERHEAD SIGNS IS INDICATED ON THE PLANS, THE COST OF THE POST INSTALLATION AT THE 3 FOOT - 1/2 INCHES SPACING SHALL BE INCLUDED WITH THE UNIT BID PRICE FOR ITEM 606 GUARDRAIL TYPE 5. FOR DETAIL SEE SHEET 18.

EROSION CONTROL

ITEM 670 IS PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE THIS ITEM, AND TURF OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE ITEM 670. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION. IN ADDITION, THIS ITEM SHALL MEET THE REQUIREMENTS OF ITEM 108.04.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

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

207	STRAW OR HAY BALES	200	EACH
659	COMMERCIAL FERTILIZER	0.04	TON
659	REPAIR SEEDING AND MULCHING	201	SQ. YDS.
659	WATER	0.87	M. GAL.
207	TEMPORARY SEEDING AND MULCHING	802	SQ. YDS.

WATERING PERMANENT SEEDED AREAS

THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH AND TO CARE FOR THE PERMANENT SEEDED AREAS, AS PER 659.09.

659	WATER	4.33	M. GAL.
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(CALCULATIONS SHOWN ON SHEET 65 AND 79) QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY SHEET 42.

CONNECTION TO EXISTING PIPE

WHERE THE PLANS PROVIDE FOR PROPOSED CONDUIT TO BE CONNECTED TO, OR TO CROSS EITHER OVER OR UNDER AN EXISTING SEWER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE HE STARTS TO LAY THE PROPOSED CONDUIT. PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT 603 CONDUIT ITEMS.

CONDUIT END TREATMENT

IMMEDIATELY AFTER PLACEMENT OF ANY CONDUITS, THE CONTRACTOR SHALL CONSTRUCT THE END TREATMENTS REQUIRED BY THE PLANS AT BOTH THE OUTLET AND INLET ENDS. THIS SHALL INCLUDE HEADWALLS, CONCRETE RIPRAP, ROCK CHANNEL PROTECTION, SODDING, ETC..

MEDIAN CONSTRUCTION EQUIPMENT CROSSINGS

CONSTRUCTION EQUIPMENT SHALL CROSS THE MEDIAN ONLY AT THE LEGAL CROSSOVERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIRS TO THE CROSSOVERS RESULTING FROM HIS USE.

RESURFACING OF SHOULDERS

TO COMPENSATE FOR THE SETTLEMENT AND UNEVEN SURFACE OF THE EXISTING OUTSIDE AND MEDIAN SHOULDER PAVEMENT, AN ADDITIONAL ONE INCH OF ITEM 301 FOR THE FULL WIDTH OF THE SHOULDER HAS BEEN INCLUDED IN THE QUANTITIES. THIS DOES NOT INCLUDE THOSE SHOULDER SECTIONS WHICH ARE BEING RECONSTRUCTED FOR THE PURPOSE OF MAINTAINING TRAFFIC. FOR LIMITS AND QUANTITY CALCULATIONS, SEE PAVEMENT CALCULATION SHEET 39.

JOINT SEALERS

ALL REFERENCES TO 705.01 OR 705.02, APPEARING ON STANDARD DRAWINGS OR ON THE PLANS, SHALL BE CONSIDERED TO READ 705.04.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES AND/OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THIS PROJECT, A LUMP SUM QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

ITEM 203, LINEAR GRADING

THIS WORK SHALL CONSIST OF PREPARING A SUBGRADE FOR THE WIDTH OF THE WIDENING PORTION OF THE OUTSIDE SHOULDER OF THE RAMPS, AND WHERE SHOULDER RECONSTRUCTION FOR MAINTAINING TRAFFIC IS SPECIFIED IN THE PLANS. THE SUBGRADE PREPARATION INCLUDES EXCAVATING THE EXISTING SHOULDER MATERIAL TO THE DEPTH SHOWN IN THE PLAN, OR AS DIRECTED BY THE ENGINEER, TO REMOVE ANY UNSTABLE MATERIAL AND BY SHAPING AND COMPACTING THE SUBGRADE. THE UNSOUND OR BROKEN EDGE OF BITUMINOUS PAVEMENTS SHALL FIRST BE TRIMMED TO A LINE ESTABLISHED BY THE ENGINEER. THE EXISTING SHOULDER THEN SHALL BE EXCAVATED AND THE SUBGRADE SHAPED AND COMPACTED. COMPACTION SHALL BE CARRIED OUT TO THE SATISFACTION OF THE ENGINEER BY MEANS OF TRENCH ROLLER, 40 I.I. AREAS GRADED IN EXCESS OF DEPTHS SPECIFIED OR DIRECTED BY THE ENGINEER SHALL BE BACKFILLED TO DESIRED GRADE USING 617 COMPACTED AGGREGATE AT THE CONTRACTOR'S EXPENSE. EXCAVATED MATERIAL SHALL BE DISPOSED OF AS INDICATED IN THE PLAN. AN ESTIMATED QUANTITY OF EXCAVATION HAS BEEN CALCULATED AS SHOWN ON THE PAVEMENT CALCULATION SHEETS AND IS TO BE USED FOR ESTIMATING PURPOSES ONLY.

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR

IN ADDITION TO THE REQUIREMENTS OF ITEM 251, THE PAVEMENT SHALL BE REPAIRED TO AN AVERAGE DEPTH OF FOUR INCHES.

TRAFFIC CONTROL GENERAL NOTES

CALC. BY _____
DATE _____
CHKD. BY _____
DATE _____

HAM - 74 - 11.10

OHIO
FHWA
REGION 5

22
132

ITEM 614 - MAINTAINING TRAFFIC

THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 614. IT IS THE INTENTION TO PERFORM THE REQUIRED WORK WITH THE LEAST INCONVENIENCE TO, AND THE MAXIMUM SAFETY OF, THE CONTRACTOR AND THE TRAVELING PUBLIC. ANY VARIANCES FROM THE INTENT OF THESE MAINTENANCE OF TRAFFIC NOTES MUST BE APPROVED IN ADVANCE IN WRITING BY THE DIRECTOR, EXCEPT AS MODIFIED BELOW OR AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS. THE REQUIREMENTS FOR MAINTAINING TRAFFIC AS INDICATED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, AND PERTINENT ITEMS OF THE SPECIFICATIONS AND PROPOSAL SHALL APPLY.

GENERAL REQUIREMENTS

THE CONTRACTOR SHALL SUBMIT A WRITTEN SCHEDULE OF OPERATION, EVERY MONTH, TO THE PROJECT ENGINEER FOR HIS APPROVAL. THE SCHEDULE SHALL BE SUBMITTED TO THE ENGINEER AND THE HAMILTON COUNTY ENGINEER AT LEAST TWO (2) WEEKS PRIOR TO ANY TRAFFIC RESTRICTION OR CLOSURE OF ANY LANE OF THE INTERSTATE, RAMP OR CROSSROAD. BEFORE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAMES AND TELEPHONE NUMBERS OF A PERSON OR PERSONS WHO CAN BE CONTACTED 24 HOURS PER DAY BY THE OHIO DEPARTMENT OF TRANSPORTATION AND ALL INTERESTED POLICE AGENCIES. THIS PERSON OR PERSONS SHALL BE RESPONSIBLE FOR PLACING OR REPLACING NECESSARY TRAFFIC CONTROL DEVICES.

DURING ALL HOURS WHEN TRAFFIC IS RESTRICTED TO LESS THAN THE NUMBER OF EXISTING LANES IN ANY DIRECTION, THE CONTRACTOR SHALL EMPLOY AT LEAST ONE QUALIFIED PERSON TO CONTINUOUSLY PATROL 24 HOURS A DAY THE RESTRICTED AREAS TO MAINTAIN ALL LIGHTS, DRUMS, SIGNS, BARRICADES, ETC. IN ORDER TO PROVIDE A SAFE FACILITY FOR THE TRAVELING PUBLIC HE SHALL HAVE AVAILABLE ALL TOOLS AND MATERIALS NECESSARY TO PERFORM THIS FUNCTION AT ALL TIMES. TRAFFIC IS TO BE MAINTAINED IN A UNIFORM PATTERN THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT INCLUDING CROSSROADS AND IS NOT TO BE SUBJECTED TO CONSTANT LANE SHIFTS. WORK CAN BE PERFORMED SIMULTANEOUSLY IN THE EASTBOUND AND WESTBOUND LANES PROVIDED THE OPERATIONS DO NOT INTERFERE WITH EACH OTHER. CHANGES IN THE TRAFFIC PATTERN MAY INITIALLY BE ESTABLISHED WITH 28" DAY-GLO CONES FORMING THE TRANSITION LINES FOR LANE CLOSURES. HOWEVER, IF THE ESTABLISHED PATTERN REQUIRES DRUMS IN THE TRANSITION, THE DRUMS SHALL BE USED TO REPLACE THE CONES IN THE TRANSITION AFTER THE PATTERN HAS BEEN ESTABLISHED AND VEHICULAR TRAFFIC HAS STABILIZED. THE CONTRACTOR SHALL ARRANGE HIS OPERATIONS SO AS TO PREVENT ANY INTERFERENCE TO THE CONTINUOUS FLOW OF TRAFFIC. ALL VEHICLES, EQUIPMENT, WORKERS, AND THEIR ACTIVITIES ARE RESTRICTED AT ALL TIMES TO ONE SIDE OF THE DIRECTIONAL PAVEMENT UNLESS OTHERWISE APPROVED BY THE ENGINEER.

VEHICLES AND EQUIPMENT SHALL ALWAYS MOVE WITH, AND NOT ACROSS OR AGAINST THE FLOW OF TRAFFIC. VEHICLES AND EQUIPMENT SHALL NOT PARK OR STOP EXCEPT WITHIN DESIGNATED WORK AREAS, AND SHALL ENTER AND LEAVE WORK AREAS IN A MANNER WHICH WILL NOT BE HAZARDOUS TO, OR INTERFERE WITH, THE NORMAL RIGHT-OF-WAY EXCEPT IN SPECIFIC AREAS DESIGNATED BY THE ENGINEER.

THE USE OF THE SHOULDERS TO MAINTAIN TRAFFIC IS PROHIBITED, EXCEPT AT THE MAINLINE BRIDGES, ON RAMP, AND ON THE SHOULDER ADJACENT TO THE WB TRUCK LANE WITHIN THE LIMITS INDICATED IN THE PLANS. SHOULD ANY EXISTING OR NEW SHOULDER AREAS BECOME DAMAGED OR DESTROYED DUE TO THE CONTRACTOR'S NEGLIGENCE OR FAILURE TO PROVIDE ADEQUATE SIGNS, DRUMS OR OTHER TRAFFIC CONTROL DEVICES, THE RESTORATION OF THE SHOULDER WILL BE AT THE CONTRACTOR'S EXPENSE.

ONE LANE OF TRAFFIC SHALL BE OPEN AT ALL TIMES IN EACH DIRECTION, AND ALL RAMP, SHALL BE MAINTAINED AT ALL TIMES EXCEPT FOR ONE OVERNIGHT RAMP CLOSURE. (SEE STAGES OF CONSTRUCTION SHEET 23) TRAFFIC ON THE ROADS CROSSING THE INTERSTATE SHALL ALSO BE MAINTAINED.

TRAFFIC TO AND FROM I-74 SHALL BE MAINTAINED AT ALL TIMES AT THE HARRISON ROAD AND NORTH BEND ROAD INTERCHANGES. "ROAD CONSTRUCTION AHEAD" SIGN (OM-128) SHALL BE PLACED ON ALL RAMP, LEADING TO I-74 AT THE CROSSROAD.

THE CONTRACTOR SHALL ESTABLISH A CONSTANT SYSTEM OF COMMUNICATION BETWEEN THE CONTRACTOR AND THE ENGINEER FOR THE PURPOSE OF TRAFFIC CONTROL. THIS SYSTEM OF COMMUNICATION SHALL BE 2-WAY RADIOS OR EQUIVALENT FURNISHED AND SERVICED BY THE CONTRACTOR. THE COST OF FURNISHING AND SERVICING THE RADIOS OR EQUIVALENT SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

ALL TRAFFIC CONTROL DEVICES SHALL BE SPACED AS SHOWN ON THE CLOSURE DETAILS. TEMPORARY TRAFFIC SIGNALS SHALL BE INSTALLED TO MAINTAIN TRAFFIC ON RACE ROAD FOR THE DURATION OF THE WORK ON THE BRIDGE AND APPROACHES. SEE SHEET 24.

THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE, ERECT, MAINTAIN (IN PROPER POSITION, CLEAN, LEGIBLE, AND GOOD WORKING CONDITION) AND REMOVE ALL TEMPORARY LIGHTS, SIGNS, TEMPORARY TRAFFIC SIGNALS, BARRICADES, AND ALL OTHER TRAFFIC CONTROL DEVICES NECESSARY FOR THE MAINTENANCE OF TRAFFIC, INCLUDING REGULATORY SIGNS AND PAVEMENT MARKINGS. ALL POST MOUNTED SIGNS SHALL USE POSTS 4 LBS. PER FT. OR LESS. PLACEMENT OF ALL TRAFFIC CONTROL DEVICES SHALL START AND PROCEED IN THE DIRECTION OF THE FLOW OF TRAFFIC. REMOVAL OF TRAFFIC CONTROL DEVICES SHALL START AT THE END OF THE CONSTRUCTION AREA AND PROCEED TOWARD ONCOMING TRAFFIC. THE CONTRACTOR SHALL PROVIDE FOR THE INSTALLATION OF ALL NECESSARY TRAFFIC CONTROL DEVICES BEFORE BEGINNING WORK AND THEIR IMMEDIATE REMOVAL AS SOON AS WORK IS SUSPENDED OR COMPLETED.

AT ANY LOCATION, WHERE TRAFFIC IS REQUIRED TO MOVE FROM OR ONTO A NEW PAVEMENT SURFACE, THE CONTRACTOR SHALL BE REQUIRED TO PLACE, MAINTAIN AND REMOVE TEMPORARY WEDGES IN FRONT OF OR ALONG THE EDGE OF THE OVERLAY AS APPROVED BY THE ENGINEER FOR SMOOTH AND SAFE TRAFFIC FLOW DURING ROADWAY CONSTRUCTION. THE WEDGES SHOULD HAVE A CROSS SLOPE OF ONE INCH PER FOOT OF OVERLAY THICKNESS.

AT NIGHT, THE CONTRACTOR SHALL PROVIDE 12 VOLT FLASHING YELLOW LIGHTS, ON THE OM-128-48 SIGNS IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS CURRENT EDITION. STEADY BURNING LAMPS SHALL BE PROVIDED ON THE DRUMS OR BARRICADES FOR NIGHT TIME.

THERE SHALL BE AVAILABLE ON THE JOB AT ALL TIMES SIX (6) SPECIAL BLACK AND ORANGE "WATCH FOR STOPPED TRAFFIC" SIGNS (48" X 48"). THERE SHALL BE TWO FOR EACH DIRECTION OF TRAFFIC AND TWO SPARES. THESE SIGNS SHALL BE MOUNTED ON A PORTABLE BARRICADE AND ARE TO BE USED IN THE EVENT THAT TRAFFIC BACKS UP. THEY WILL BE LOCATED APPROXIMATELY 1/4 MILE IN ADVANCE OF THE BACKUP AND WILL BE MOVED BACK AS THE BACKUP INCREASES. ADVANCED WARNING SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE DETAIL AND GENERAL NOTE INCLUDED IN THESE PLANS.

REFERENCE IS MADE TO THE CLOSURE DETAILS PROVIDED IN THE PLANS. THE COST FOR COMPLETING ALL OF THE ABOVE REQUIREMENTS SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 614 MAINTAINING TRAFFIC, WITH THE EXCEPTION OF ITEM 614 - TEMPORARY PAVEMENT MARKING, ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC, ITEM SPECIAL - LAW ENFORCEMENT OFFICER WITH PATROL CAR (SEE NOTE), ITEM 614 - TEMPORARY RAISED PAVEMENT MARKERS ITEM 622 - TEMPORARY CONCRETE BARRIER, AS PER PLAN, ITEM 622 - TEMPORARY CONCRETE BARRIER, BRIDGE MOUNTED AS PER PLAN, AND ITEM 614 - BARRIER REFLECTORS.

ITEM SPECIAL - REPLACEMENT SIGNS

FLAT SHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS, AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. PAYMENT SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED SIGNS, HARDWARE AND SUPPORTS, AND PROVIDING NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC. REPLACEMENT SIGNS SHALL BE NEW. PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE BID PRICE PER SQUARE FOOT FOR ITEM SPECIAL - REPLACEMENT SIGNS, FOR WHICH AN ESTIMATED QUANTITY OF 200 SQUARE FEET HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ITEM SPECIAL - REPLACEMENT DRUMS

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSALS WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER, AND SHALL BE PAID FOR UNDER ITEM SPECIAL - REPLACEMENT DRUMS. PAYMENT FOR EACH NEW DRUM SHALL INCLUDE: (1) THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUMS, AND (2) PROVIDING, MAINTAINING AND REMOVING THE REPLACEMENT DRUMS IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS OF THE ORIGINAL DRUMS. ESTIMATED QUANTITY OF 500 EACH REPLACEMENT DRUMS HAS BEEN PROVIDED IN GENERAL SUMMARY.

ITEM SPECIAL - LAW ENFORCEMENT OFFICER WITH PATROL CAR

THE CONTRACTOR SHALL PROVIDE AND PAY ALL COSTS FOR THE SERVICES OF ONE (1) LAW ENFORCEMENT WITH PATROL CAR FOR THE EXCLUSIVE PURPOSE OF CONTROLLING TRAFFIC FOR EACH LANE BEING CLOSED OR REOPENED ON I-74 ONLY. ALL PATROLMEN AND CARS SHALL WORK UNDER AND REPORT TO THE PROJECT ENGINEER.

LAW ENFORCEMENT OFFICERS WITH PATROL CAR REQUIRED BY THE PLAN TRAFFIC MAINTENANCE PROVISIONS SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM SPECIAL - LAW ENFORCEMENT OFFICER WITH PATROL CAR. AN ESTIMATED 400 HOURS HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

RESTRICTIONS TO ACCELERATION OR DECELERATION LANES

ALL WORK IN THE VICINITY OF RAMP, FOR WHICH THE TRAFFIC CONTROL CAUSES A LANE RESTRICTION OR SHORTENS THE NORMAL ACCELERATION, DECELERATION LANES SHALL BE EXPEDITED AND COMPLETED AS QUICKLY AS POSSIBLE SO AS TO MINIMIZE THE DISRUPTION TO TRAFFIC. ANY TRAFFIC CONTROL WHICH AFFECTS RAMP USAGE SHALL BE PLACED ONLY IMMEDIATELY PRIOR TO STARTING WORK IN THE RAMP VICINITY OR AT ANY OTHER TIME THAT THE TRAFFIC MAY SAFELY USE THE RAMP IN ITS NORMAL FASHION. SCHEDULING OF WORK AND/OR TRAFFIC CONTROL WHICH MAY AFFECT RAMP USAGE SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER AND SHALL BE MADE A PART OF THE PROGRESS SCHEDULE. THIS SCHEDULE AND ANY MODIFICATIONS THERETO SHALL BE STRICTLY ADHERED TO. THE CONTRACTOR SHALL WORK 24 HOURS A DAY ON THE ACCELERATION AND DECELERATION LANES, UNTIL SUCH WORK AFFECTING RAMP USAGE IS COMPLETED TO THE SATISFACTION OF THE ENGINEER. THE ADDITIONAL COST INCURRED FOR WORKING 24 HOURS SHALL BE PAID FOR UNDER ITEM 614 - MAINTAINING TRAFFIC.

MAINTAINING TRAFFIC ON EXISTING RAMP SHOULDER

DURING ANY STAGE OF CONSTRUCTION WHERE TRAFFIC IS TO BE MAINTAINED ON THE EXISTING RAMP SHOULDERS, THE FOLLOWING WORK SHALL BE COMPLETED PRIOR TO MAINTAINING TRAFFIC ON ANY SHOULDER: REMOVE ALL CONCRETE CURBS AND NOSES IN GORES OF EXIT AND ENTRANCE RAMP, ACCORDING TO THE PLANS. REGRADE GORE AREAS, ADJUST OR ABANDON CATCH BASINS AS SHOWN IN THE PLANS, AND REMOVE ALL GROUND MOUNTED SIGNS LOCATED IN THE GORES. TEMPORARILY MOVE GORE SIGNS ONTO OUTSIDE SHOULDER AND MOUNT ON TEMPORARY SUPPORTS. PAYMENT INCLUDED IN BID PRICE FOR ITEM 614 - MAINTAINING TRAFFIC, UPGRADE ALL SIGNS NOT BEHIND GUARDRAIL ALONG THE EXISTING BERM, ACCORDING TO THE SIGNING PLAN. ANY SIGN TEMPORARILY REMOVED BY THE CONTRACTOR SHALL BE RE-ERECTED AT THE CONTRACTOR'S EXPENSE UNLESS THE SIGN HAS BEEN ERECTED ACCORDING TO THE SIGNING PLAN. ALL EXISTING CATCH BASINS AND INLET GRATES MUST BE IN PLACE. REMOVE EXISTING EDGE LINE AND PLACE NEW EDGE LINE ALONG OUTSIDE EDGE OF PAVED SHOULDER.

PERMANENT SIGNING AND PAVEMENT MARKING

PRIOR TO OPENING ANY COMPLETED RAMP, CROSSROAD, OR MAINLINE SECTION TO NORMAL FLOW TRAFFIC, THE CONTRACTOR SHALL HAVE COMPLETED THE INSTALLATION OF ALL PERMANENT SIGNING AND PAVEMENT MARKING PERTINENT TO THE SAFE OPERATION OF THE TRAFFIC. IF PERMANENT PAVEMENT MARKINGS CAN NOT BE PLACED AT THIS TIME, TEMPORARY CLASS I AND CLASS II PAVEMENT MARKINGS SHALL BE PLACED.

TEMPORARY LANE LINES

THE ESTIMATED QUANTITY LISTED FOR ITEM 614 - TEMPORARY LANE LINE HAS BEEN PROVIDED TO BE USED WHERE TWO LANE DIRECTIONAL TRAFFIC HAS OBLITERATED THE EXISTING LANE LINE AND RESURFACING IS NOT IMMINENT. THIS QUANTITY SHALL BE USED AS DIRECTED BY THE ENGINEER.

ITEM 614 WORK ZONE SPEED LIMIT SIGNS 27 EACH
SEE PROPOSAL NOTE

TRAFFIC CONTROL GENERAL NOTES

EXISTING PAVEMENT MARKINGS

IF DURING THE DURATION OF THE CONTRACT THE CONTRACTOR HAS TO ALTER THE PAVEMENT MARKINGS OUTSIDE THE PROJECT LIMITS TO COMPLETE THE WORK WITHIN THE LIMITS, THEY SHALL BE REQUIRED TO REPLACE ALL SUCH MARKINGS WITH THE SAME MATERIAL OR IF THE STATE OR ANY OTHER MAINTAINING AGENCY IS CALLED TO SUSPEND PAINTING OPERATION DUE TO THE EXISTING CONSTRUCTION, THE CONTRACTOR SHALL BE REQUIRED TO REPAINT THE EXISTING PAVEMENT MARKINGS WHICH THE MAINTAINING AGENCY WAS UNABLE TO PAINT. PAYMENT OF THIS WORK SHALL BE INCLUDED UNDER ITEM 614 MAINTENANCE OF TRAFFIC.

ITEM 614 - TEMPORARY PAVEMENT MARKINGS

THE FOLLOWING TEMPORARY PAVEMENT MARKING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

614	129 LF.	TEMPORARY STOP LINES, CLASS I, 947.03, TYPE C
614	2.6 MILES	TEMPORARY LANE LINES, CLASS II
614	0J MILES	TEMPORARY CENTER LINES, CLASS I, 947.03, TYPE C
614	40.4 MILES	TEMPORARY EDGE LINES, CLASS I
614	1980 LF.	TEMPORARY GORE MARKINGS, CLASS II, 947.03, TYPE C
614	1 EACH	TEMPORARY SCHOOL SYMBOL MARKINGS, 72" CLASS I, 947.03 TYPE C
614	66 LF.	TEMPORARY CROSSWALK LINE, CLASS I, 947.03, TYPE C
614	625 LF.	TEMPORARY CHANNELIZING LINE, CLASS I

RESURFACING OPERATIONS

PRIOR TO COMMENCING RESURFACING OPERATIONS, THE CONTRACTOR SHALL REFERENCE BOTH EDGES OF THE MAINLINE AND RAMP TRAVELED PAVEMENT ON BOTH SIDES OF THE ROADWAY IN A MANNER SATISFACTORY TO THE ENGINEER. MAINLINE PAVEMENT SHALL BE REFERENCED A MAXIMUM OF 1,000 FEET IN TANGENT SECTIONS AND 200 FEET IN CURVE SECTIONS. RAMP PAVEMENT SHALL BE REFERENCED A MAXIMUM OF 200 FEET IN TANGENT SECTIONS AND 50 FEET IN CURVE SECTIONS. THESE REFERENCE POINTS SHALL BE USED TO RE-ESTABLISH THE TRAVELED LANES DURING AND AT THE CONCLUSION OF THE RESURFACING OPERATIONS TO PROVIDE THE NECESSARY CONTROL FOR PAVEMENT MARKING LAYOUT.

ALL MATERIAL USED IN REFERENCING THE ABOVE SHALL BE REMOVED AT THE COMPLETION OF THE WORK. THE INDISCRIMINATE APPLICATION OF ITEM 407 TACK COAT WILL NOT BE PERMITTED UNLESS A LANE WILL REMAIN CLOSED TO TRAFFIC UNTIL THE PRELEVELING COURSE IS PLACED. TRAFFIC SHALL NOT BE PERMITTED ON ANY TACKED AREAS.

TRAFFIC SHALL NOT BE MAINTAINED ON A LANE ADJACENT TO A SHOULDER DURING RESURFACING OPERATIONS UNLESS THE INTERMEDIATE COURSE OR SURFACE COURSE HAS BEEN PLACED ON BOTH LANE AND SHOULDER. THE SURFACE COURSE CANNOT BE PLACED ON A LANE UNTIL THE INTERMEDIATE COURSE HAS BEEN PLACED ON THE ADJACENT LANE AND SHOULDER. TEMPORARY WEDGES ALONG THE LONGITUDINAL EDGES OF THE PAVEMENT SHALL BE PROVIDED AT ALL TIMES WHERE TRAFFIC IS REQUIRED TO TRAVEL FROM OR ONTO A PAVEMENT SURFACE OF DIFFERENT ELEVATION. THESE WEDGES SHALL BE REMOVED PRIOR TO PLACING THE SPECIFIED PAVEMENT COURSES. THE MINIMUM LENGTH OF THE WEDGES SHALL BE BASED ON A CROSS SLOPE OF ONE INCH PER FOOT PER INCH OF OVERLAY THICKNESS, UNLESS APPROVED OTHERWISE BY THE PROJECT ENGINEER. COST FOR THESE WEDGES SHALL BE INCLUDED IN ITEM 614 - MAINTAINING TRAFFIC.

ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC

AN ESTIMATED QUANTITY OF ITEM 404 BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC IS INCLUDED IN THE GENERAL SUMMARY. THIS QUANTITY IS PROVIDED FOR USE AS DIRECTED BY THE ENGINEER TO PATCH CHUCK HOLES, AND FOR OTHER SUCH PLACES AS MAY BE NECESSARY, AS DIRECTED BY THE ENGINEER, TO MAINTAIN SAFE TRAFFIC FLOW, WHERE MATERIALS ARE TO BE PLACED IN SMALL QUANTITIES OR UNDER ADVERSE CONDITIONS THE COMPOSITION MAY BE EITHER ITEM 404 - ASPHALT CONCRETE AC-20, OR A BITUMINOUS PREMIXED SURFACE COURSE APPROVED BY THE ENGINEER. SPECIFICATION REQUIREMENTS FOR PLACING AND FINISHING MAY BE WAIVED IF, IN THE JUDGMENT OF THE ENGINEER, IT IS DETERMINED THAT SATISFACTORY RESULTS CAN BE OBTAINED IN PROVIDING A SMOOTH AND DURABLE PAVEMENT SURFACE, WHERE PREMIXED SURFACE COURSE IS USED THE CONVERSION OF WEIGHT TO CUBIC YARDS SHALL BE IN ACCORDANCE WITH THE CONVERSION TABLE UNDER 401.7.

A QUANTITY OF 150 CU.YD. FOR ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC, HAS BEEN INCLUDED IN THE GENERAL SUMMARY.

RESTRICTIONS

- NO WORK SHALL BE PERFORMED ON I-74 AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS	NEW YEARS
MEMORIAL DAY	FOURTH OF JULY
LABOR DAY	THANKSGIVING
INDIANAPOLIS 500 CAR RACE	

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

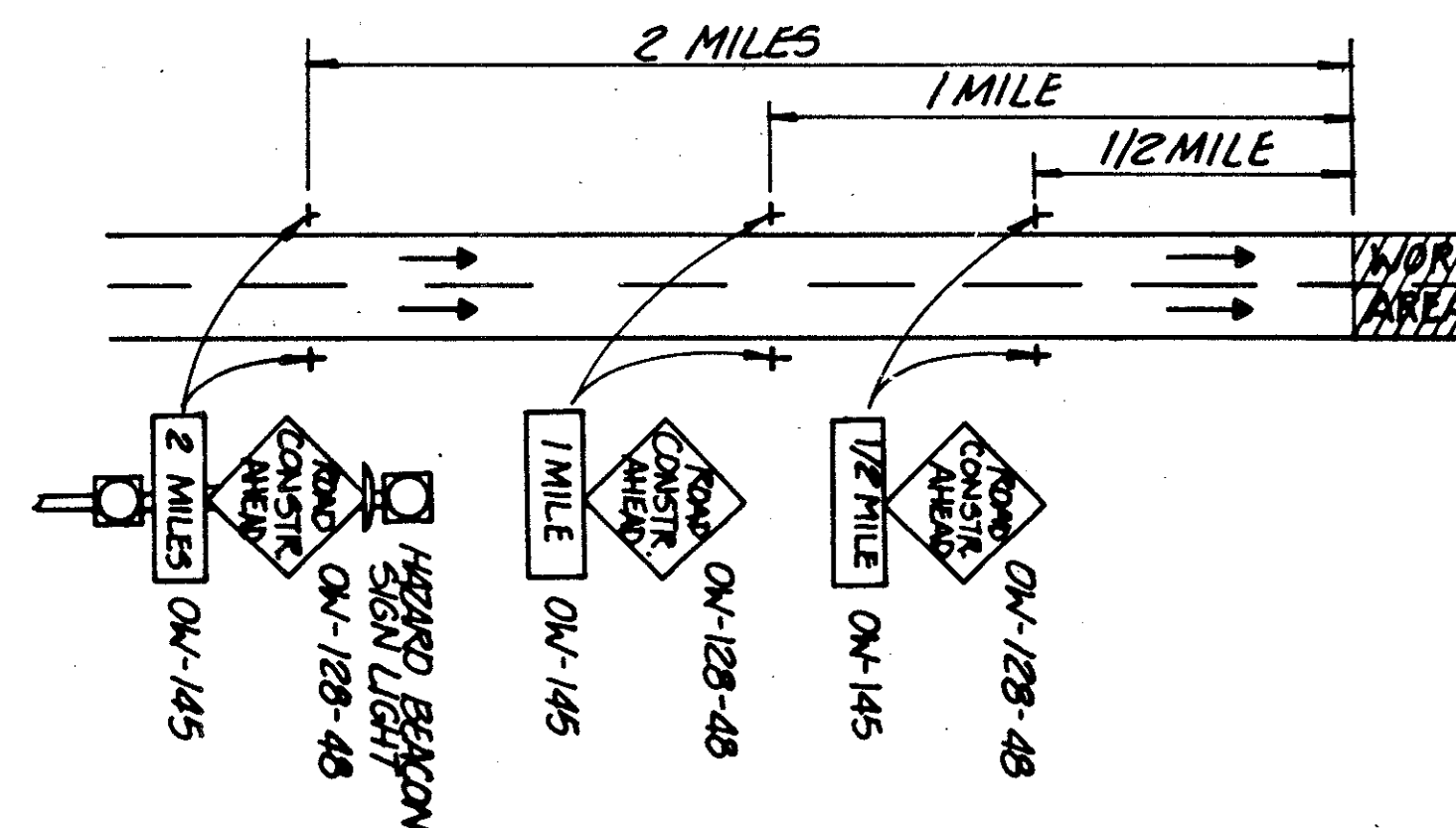
DAY OF THE WEEK	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	FROM 12:00 NOON ON THE FRIDAY BEFORE, THROUGH 12:00 NOON MONDAY FOLLOWING.
MONDAY	FROM 12:00 NOON ON THE FRIDAY BEFORE, THROUGH 12:00 NOON TUESDAY FOLLOWING.
TUESDAY	FROM 12:00 NOON ON THE MONDAY BEFORE, THROUGH 12:00 NOON WEDNESDAY FOLLOWING.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

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

- THE CONTRACTOR SHALL SCHEDULE HIS WORK IN A MANNER WHICH WILL PERMIT THE OPENING OF BOTH LANES OF I-74 MAINLINE PAVEMENT EASTBOUND AND WESTBOUND ON A UNIFORM SURFACE COURSE, BETWEEN THE DATES OF DECEMBER 1 AND MARCH 1, DURING THIS PERIOD, DAILY LANE CLOSURE DURING OFF-PEAK HOURS WILL BE PERMITTED SUBJECT TO THE APPROVAL OF THE PROJECT ENGINEER. LIQUIDATED DAMAGES IN THE AMOUNT OF \$3000.00 FOR EACH CALENDAR DAY WILL BE ASSESSED IF THE CONTRACTOR FAILS TO COMPLY WITH ITEMS 1 AND 2 ABOVE.
- IF THE CONTRACTOR ELECTS TO MAINTAIN TRAFFIC ADJACENT TO THE BACKFILLED TRENCH FOR THE NEW UNDERDRAIN, THE TOP 3" OF THE TRENCH MUST BE SURFACED WITH ITEM 301 WITHIN 24 HOURS OF PLACEMENT.
- TO LIMIT THE LENGTH OF A SINGLE LANE OF TRAFFIC TO A REASONABLE DISTANCE, THE MAXIMUM CONTINUOUS LENGTH OF A LANE CLOSURE SHALL NOT EXCEED 3.0 MILES, WHICH IS APPROXIMATELY HALF THE LENGTH OF THE PROJECT. THE MINIMUM DISTANCE BETWEEN THE CLOSURES SHALL BE ONE MILE.

ADVANCE WARNING SIGNS

THE FOLLOWING WORK AREA TRAFFIC CONTROL SIGNING SCHEMATIC SHALL BE EMPLOYED ON MAINLINE I-74 AS ADVANCED WARNING OF THE PROJECT. THE SIGNS SHALL BE COORDINATED WITH OTHER APPLICABLE CLOSURE DETAILS AS NOTED. THE ADVANCED WARNING SIGNS SHOWN SHALL BE INSTALLED AT BOTH ENDS OF THE PROJECT, LOCATIONS AS SHOWN OR AS APPROVED BY THE ENGINEER. HAZARD IDENTIFICATION BEACONS SHALL BE IN ACCORDANCE WITH PLATE C-9 OF THE "OHIO MANUAL" AND SHALL HAVE TWO (2) HAZARD BEACONS PER INSTALLATION. COST OF PROVIDING AND MAINTAINING THESE ADVANCED WARNING SIGNS SHALL BE INCLUDED IN ITEM 614, MAINTAINING TRAFFIC.



ADVANCE WARNING SIGNS SCHEMATIC

PLACEMENT OF HAZARD BEACON, OW -128 - 48 AND OW -145 SIGNS (2 MILE WARNING)
 EB I-74 STA. 506+00 ± EB, JUST AFTER I-275 EB / I-74 EB SPLIT
 WB I-74 STA. 1010+00 ± WB, MOUNT TO PIER OF EXISTING PEDESTRIAN OVERPASS

STAGES OF CONSTRUCTION - I-74

GENERAL

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TRAFFIC CONTROL DEVICES REQUIRED BY THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" CURRENT EDITION, THESE PLANS, AND PERTINENT ITEMS OF THE SPECIFICATIONS AND PROPOSAL SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE LIMITS. THE CONTRACTOR CAN WORK ON ONE OR MORE THAN ONE AREA WITHIN THE WORK LIMITS. HOWEVER, THE TRAFFIC ON ANY ADJACENT AREA SHALL UTILIZE IDENTICAL LANE CLOSURES. A MINIMUM WIDTH OF 110 FEET SHALL BE MAINTAINED FOR ALL MAINLINE LANES OPEN TO TRAFFIC, UNLESS OTHERWISE SPECIFIED IN THE NOTES.

STA 603+35 TO STA 916+05

STAGE 1

CLOSE THE INSIDE (HIGH SPEED) LANE IN ADVANCE OF THE MAINLINE BRIDGES OVER HARRISON ROAD, HAFT ROAD AND SHEPHERD CREEK ROAD IN ACCORDANCE WITH THE MAINTENANCE OF TRAFFIC NOTES AND CLOSURE DETAILS. TRAFFIC IS TO BE MAINTAINED ON THE OUTSIDE LANE ONLY.

RECONSTRUCT THE INSIDE (MEDIAN) SHOULDER ACCORDING TO THE TYPICAL SECTION AND WITHIN THE LIMITS SHOWN ON THE PLANS. AT THE BRIDGE APPROACHES, REMOVE THE LAST FOUR SECTIONS OF THE MEDIAN GUARDRAIL AND REPLACE WITH TEMPORARY CONCRETE BARRIER SECTIONS. THE FACE OF THE CONCRETE BARRIER SHALL MEET THE FACE OF THE EXISTING BRIDGE CURB. THE CONCRETE BARRIER WALL SECTIONS MUST BE SECURED BY PLACING POSTS BEHIND THE WALL SECTIONS OR BY ANY OTHER MEANS APPROVED BY THE ENGINEER. PLACE THE FIRST CONCRETE BARRIER WALL SECTION BEHIND THE MEDIAN GUARDRAIL, SO THAT THE RAIL IS OVERLAPPING THE FRONT FACE OF THE WALL.

STAGE 2

CLOSE THE OUTSIDE LANE AND SHOULDER IN ACCORDANCE WITH THE MAINTENANCE OF TRAFFIC NOTES, BETWEEN STA. 778+00 W.B. AND STA. 915+37 W.B. CLOSE THE TRUCK LANE AND SHOULDER ONLY. MAINTAIN TRAFFIC ON THE INSIDE (HIGH SPEED) LANE AND CENTER LANE ADJACENT TO THE TRUCK LANE. TEMPORARY RAISED PAVEMENT MARKERS MUST BE IN PLACE AT THE LANE TAPERS, WITH TRAFFIC IN THIS PATTERN. REPAIR JOINTS, INSTALL UNDERDRAIN, GUARD RAIL, LIGHTING, REMOVE AND REPLACE THE EXISTING PAVEMENT AND UNDERDRAIN AT THE MAINLINE BRIDGES. RECONSTRUCT THE EXISTING SHOULDER ADJACENT TO THE TRUCK LANE ACCORDING TO THE TYPICAL SECTION AND WITHIN THE LIMITS SHOWN ON THE PLANS. PLACE THE INTERMEDIATE COURSE AND SAW ALL TRANSVERSE JOINTS IN THE INTERMEDIATE COURSE PRIOR TO MAINTAINING TRAFFIC, BUT WITHIN THE GUIDELINES OF THE PROPOSAL.

AT THE RAMP TERMINALS OF THE HARRISON ROAD AND NORTH BEND ROAD INTERCHANGES, AN UNPAVED ACCESS AREA SHALL BE PROVIDED FOR TRAFFIC TO EXIT OR ENTER AT THE RAMPS. SEE CLOSURE DETAILS FOR REQUIRED LENGTH OF THE ACCESS AREA. THESE ACCESS AREAS SHALL NOT BE PAVED (FILLED IN) UNTIL THE RESURFACING WORK UNDER STAGE THREE, BELOW, IS COMPLETED.

IN ORDER TO PAVE THE ACCESS AREAS, THE CONTRACTOR MAY CLOSE BOTH OF THE ONE DIRECTIONAL EXIT OR ENTRANCE RAMPS FOR ONE NIGHT ONLY BETWEEN THE HOURS OF 9:00 P.M. UNTIL 6:00 A.M. OF THE MORNING WHEN THE OUTSIDE LANE AND SHOULDER ARE BEING OPENED TO TRAFFIC. DURING THE RAMP CLOSURES ANY NECESSARY OVERLAY TAPERS MUST BE CONSTRUCTED USING A 50:1 TAPER LENGTH. ALL EXIT OR ENTRANCE DIRECTION SIGNS SHALL BE PROPERLY MARKED "CLOSED" WITH BLACK ON ORANGE OVERLAY SHEETS.

COMPLETE THE MAINLINE BRIDGE DECK AND RAILING WORK. ADD TEMPORARY EDGE LINE ALONG THE OUTSIDE EDGE OF THE PAVEMENT AND ALL OTHER REQUIRED TEMPORARY PAVEMENT MARKINGS.

STAGE 3

CLOSE THE INSIDE (HIGH SPEED) LANE AND CENTER LANE ADJACENT TO THE W.B. TRUCK LANE AND MAINTAIN TRAFFIC ON THE OUTSIDE LANE. BETWEEN STA. 778+00 W.B. AND STA. 915+37 W.B. MAINTAIN TRAFFIC ON THE TRUCK LANE AND ON THE OUTSIDE SHOULDER. REPAIR ALL JOINTS, INSTALL UNDERDRAIN AND SIGNS. REPLACE APPROACH PAVEMENT AT THE MAINLINE BRIDGES AND PLACE THE INTERMEDIATE AND SURFACE COURSE, SAW AND SEAL TRANSVERSE JOINTS IN FINISHED OVERLAY. COMPLETE THE BRIDGE DECK AND RAILING WORK. INSTALL NEW MEDIAN GUARDRAIL AND COMPLETE THE BERM WORK. INSTALL EXPANSION JOINT STRIP SEAL AT BRIDGES. PAINT PERMANENT EDGE LINES.

STAGE 4

CLOSE THE OUTSIDE LANE AND SHOULDER IN ACCORDANCE WITH THE MAINTENANCE OF TRAFFIC NOTES. CLOSE THE TRUCK LANE AND SHOULDER ONLY BETWEEN STA. 778+00 W.B. AND STA. 915+37 W.B. MAINTAIN TRAFFIC ON THE INSIDE (HIGH SPEED) LANE AND CENTER LANE ADJACENT TO THE TRUCK LANE. TEMPORARY RAISED PAVEMENT MARKERS MUST BE IN PLACE AT THE LANE TAPERS, WITH TRAFFIC IN THIS PATTERN. PLACE THE SURFACE COURSE AND COMPLETE THE BERM WORK. SAW AND SEAL TRANSVERSE JOINTS IN FINISHED OVERLAY. INSTALL EXPANSION JOINT STRIP SEAL AT BRIDGES. ADD PERMANENT PAVEMENT MARKING AND OPEN ALL LANES TO TRAFFIC.

TRAFFIC CONTROL GENERAL NOTES

CALC. BY _____
DATE _____
CHKD. BY JCM
DATE 2/20/99

HAM -74 -11.10

OHIO
FHWA
REGION 5

24
132

STAGES OF CONSTRUCTION-RAMPS

HARRISON ROAD INTERCHANGE RAMPS

THE TERMS LEFT AND RIGHT PERTAIN TO THE DIRECTION OF TRAVEL, NOT STATIONING.

STAGE 1

DURING THE STAGE 2 MAINLINE CLOSURE, CLOSE THE RIGHT SIDE OF RAMP L AND Y AND THE RIGHT SIDE OF RAMP X AND MAINTAIN TRAFFIC ON THE LEFT HALF OF THE PAVEMENT. ON RAMP L USE THE LEFT SHOULDER, BUT NOT UNTIL TEMPORARY EDGELINES ARE PLACED. COMPLETE THE JOINT REPAIR, UNDERDRAIN INSTALLATION, WIDEN AND REPAIR THE RIGHT SHOULDER, PERFORM GUARDRAIL WORK, AND INSTALL TRAFFIC CONTROL AND LIGHTING ITEMS. ADD TEMPORARY EDGE LINE.

STAGE 2

CLOSE THE LEFT SIDE OF RAMP L AND Y AND THE LEFT SIDE OF RAMP X. MAINTAIN TRAFFIC ON PAVEMENT AND SHOULDER. COMPLETE JOINT REPAIR, UNDERDRAIN AND GUARDRAIL WORK AND CONSTRUCT PERMANENT CONCRETE BARRIER BETWEEN THE RAMPS. REFER TO THE PLAN NOTE "RESTRICTIONS TO ACCELERATION AND DECELERATION LANES."

STAGE 3

PLACE THE INTERMEDIATE AND SURFACE COURSES IN CONJUNCTION WITH THE MAINLINE PAVING OPERATIONS BY MAINTAINING TRAFFIC AS OUTLINED ABOVE. THE PERMANENT PAVEMENT MARKING AND SIGNING SHALL BE IN PLACE BEFORE OPENING THE ENTIRE RAMP TO TRAFFIC.

NORTH BEND ROAD INTERCHANGE RAMPS

STAGE 1

DURING THE STAGE 2 MAINLINE CLOSURE, CLOSE THE RIGHT SIDE OF RAMPS M, N, O AND P AND MAINTAIN TRAFFIC ON THE LEFT HALF OF THE PAVEMENT AND THE LEFT SHOULDER. IT IS NOT NECESSARY THAT ALL RAMPS ARE RESTRICTED SIMULTANEOUSLY; HOWEVER, ONCE A RAMP IS RESTRICTED, WORK MUST TAKE PLACE. THE RIGHT SIDE OF RAMPS O AND L CAN ALSO BE RESTRICTED, BUT ONLY IF THE RIGHT SIDE OF N.B. AND S.B. NORTH BEND ROAD IS RESTRICTED. REPAIR ALL JOINTS, INSTALL GUARDRAIL, UNDERDRAIN, LIGHTING AND TRAFFIC CONTROL ITEMS. PLACE TEMPORARY CONCRETE BARRIER ALONG THE EMBANKMENT SLIDE REPAIR AREA OF RAMP M AS SHOWN ON THE CLOSURE DETAIL. ADD TEMPORARY EDGE LINE.

STAGE 2

CLOSE THE LEFT SIDE OF RAMPS M, N, O AND P AND MAINTAIN TRAFFIC ON THE RIGHT HALF OF THE PAVEMENT AND SHOULDER. SIMULTANEOUSLY WITH THE LANE RESTRICTIONS OF RAMP O OR N, CLOSE THE LEFT SIDE OF RAMP O AND L. THE LANE RESTRICTION OF RAMP O AND L, HOWEVER, SHOULD BE IN CONJUNCTION WITH THE LEFT LANE CLOSURE OF NORTH BEND ROAD. COMPLETE ALL OF THE JOINT REPAIR, BARRIER WALL INSTALLATION, LIGHTING WORK AND UNDERDRAIN INSTALLATION. PLACE THE INTERMEDIATE AND SURFACE COURSE AND PERMANENT PAVEMENT MARKING.

STAGE 3

PLACE THE INTERMEDIATE AND SURFACE COURSES ON THE RIGHT SIDE OF THE RAMPS AND COMPLETE ALL OF THE BERM WORK. ADD PERMANENT PAVEMENT MARKING AND ALL TRAFFIC CONTROL DEVICES BEFORE OPENING RAMP TO TRAFFIC.

STAGES OF CONSTRUCTION-NORTH BEND ROAD (REFER TO CLOSURE DETAIL SHEETS 25 AND 26)

BEFORE WORKING ON NORTH BEND ROAD IN EITHER DIRECTION, THE CONTRACTOR IS REQUIRED TO NOTIFY THE ENGINEER AND THE DISTRICT 8 TRAFFIC ENGINEER TWO WEEKS IN ADVANCE FOR THE PURPOSE OF ADJUSTING THE EXISTING TRAFFIC SIGNALS.

THE CONTRACTOR SHALL WORK ONLY BETWEEN JUNE 1 AND AUGUST 31 AND SHALL COMPLETE ALL OF THE WORK ON NORTH BEND RD., WHICH REQUIRES LANE CLOSURES, WITHIN THIS PERIOD. FAILURE TO COMPLY WILL BE SUBJECT TO LIQUIDATED DAMAGES AS PER 108.06.

STAGE 1a

CLOSE THE RIGHT (OUTSIDE) LANE OF NORTH BEND ROAD IN THE N.B. DIRECTION. COORDINATE THIS CLOSURE WITH THE STAGE CONSTRUCTION SEQUENCE OF THE RAMPS. MAINTAIN TRAFFIC ON A 10 FOOT MINIMUM LANE IN EACH DIRECTION. ALL EXISTING DRIVEWAYS MUST REMAIN OPEN. DURING THIS CLOSURE, REPAIR THE BRIDGE DECK, SIDEWALK, PAVEMENT JOINTS AND INSTALL GUARDRAIL, LIGHTING AND TRAFFIC CONTROL DEVICES. PLACE THE INTERMEDIATE COURSE ONLY. ADD TEMPORARY PAVEMENT MARKING.

STAGE 1b

CLOSE THE INSIDE (MEDIAN) N.B. LANE OF NORTH BEND ROAD AND MAINTAIN ONE 10 FOOT LANE ON THE OUTSIDE. COMPLETE THE BRIDGE DECK AND ROADWAY PAVEMENT WORK. INSTALL EXPANSION JOINT STRIP SEAL AT BRIDGE. PLACE THE INTERMEDIATE AND SURFACE COURSE AND PERMANENT PAVEMENT MARKING.

STAGE 1c

MAINTAIN TRAFFIC ON THE COMPLETED INSIDE N.B. LANE AND PLACE THE SURFACE COURSE ON THE OUTSIDE LANE. INSTALL EXPANSION JOINT STRIP SEAL AT BRIDGE. ADD ALL PERMANENT PAVEMENT MARKINGS PRIOR TO OPENING ALL N.B. LANES TO TRAFFIC.

STAGE 2a

CLOSE THE RIGHT (OUTSIDE) LANE OF NORTH BEND ROAD IN THE S.B. DIRECTION. COORDINATE THIS CLOSURE WITH THE STAGE CONSTRUCTION SEQUENCE OF THE RAMPS. MAINTAIN TRAFFIC ON A 10 FOOT MINIMUM LANE IN EACH DIRECTION. ALL EXISTING DRIVEWAYS MUST REMAIN OPEN. DURING THIS CLOSURE, REPAIR THE BRIDGE DECK, SIDEWALK, PAVEMENT JOINTS AND INSTALL GUARDRAIL, LIGHTING AND TRAFFIC CONTROL DEVICES. PLACE THE INTERMEDIATE COURSE ONLY AND TEMPORARY PAVEMENT MARKING.

STAGE 2b

CLOSE THE INSIDE (MEDIAN) S.B. LANE AND MAINTAIN ONE 10 FOOT LANE ON THE OUTSIDE. COMPLETE THE BRIDGE DECK AND ROADWAY PAVEMENT WORK. PLACE THE INTERMEDIATE AND SURFACE COURSE AND PERMANENT PAVEMENT MARKING. INSTALL EXPANSION JOINT STRIP SEAL AT BRIDGE.

STAGE 2c

MAINTAIN TRAFFIC ON THE COMPLETED INSIDE S.B. LANE AND COMPLETE THE SURFACE COURSE ON THE OUTSIDE LANE. INSTALL EXPANSION JOINT STRIP SEAL AT BRIDGE. ADD ALL PERMANENT PAVEMENT MARKINGS PRIOR TO OPENING ALL S.B. LANES TO TRAFFIC.

RACE ROAD

INSTALL TEMPORARY TRAFFIC SIGNALS, SIGNS AND PLACE TEMPORARY PAVEMENT MARKINGS AS PER STANDARD DRAWING MT-96.10.

MAINTAIN ONE 10 FOOT LANE OF THE TWO LANE HIGHWAY. THE USE OF THE BRIDGE SHALL NOT BE PERMITTED. DURING EACH LANE CLOSURE WORK SHALL ONLY BE PERFORMED ON THE CORRESPONDING HALF SECTION OF THE BRIDGE. DRIVEWAYS WITHIN THE WORK AREA SHALL BE MAINTAINED AT ALL TIMES.

THE TEMPORARY STOP LINE SHALL BE LOCATED AT STA. 16+40 FOR THE NORTHBOUND TRAFFIC AND AT STA. 23+46 FOR THE SOUTHBOUND TRAFFIC. DURING EACH CLOSURE COMPLETE ALL OF THE BRIDGE WORK. INSTALL EXPANSION JOINT STRIP SEAL, APPROACH SLAB, GUARDRAIL AND PAVEMENT FEATHERING WORK.

FOR THE SIGNAL TIMING, SEE TIMING CHART BELOW.

PHASE	1	2	3	4
GREEN	19	33	19	33
YELLOW CLEARANCE	4.0	4.0	4.0	4.0

ITEM 614 - BARRIER REFLECTORS

THESE REFLECTORS AND THEIR MOUNTING SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 802 EXCEPT THAT SPACING SHALL BE AS SHOWN ON THE PLAN. (50% OF S.S. 802 SPACING WHICH WILL DOUBLE THE NUMBER OF REFLECTORS.)

STATIONING	SIDE	SPACING	TYPE B
HARRISON ROAD HAM-74-1116 L&R	RT< OF C	50'	LT. 19 EA. SIDE OF BARRIER = 38 RT. 17 EA. SIDE OF BARRIER = 34
HAFT ROAD HAM-74-1292 L&R	RT< OF C	50'	LT. 15 EA. SIDE OF BARRIER = 30 RT. 16 EA. SIDE OF BARRIER = 32
SHEPHERD CREEK ROAD HAM-74-1618 L&R	RT< OF C	50'	LT. 16 EA. SIDE OF BARRIER = 32 RT. 15 EA. SIDE OF BARRIER = 30
RAMP M (SLIDE CORRECTION) STA. 772+00 ± TO 782+00 ±	RT< OF C	50'	19 ONE SIDE = 19
			TOTALS CARRIED TO GENERAL SUMMARY = 215

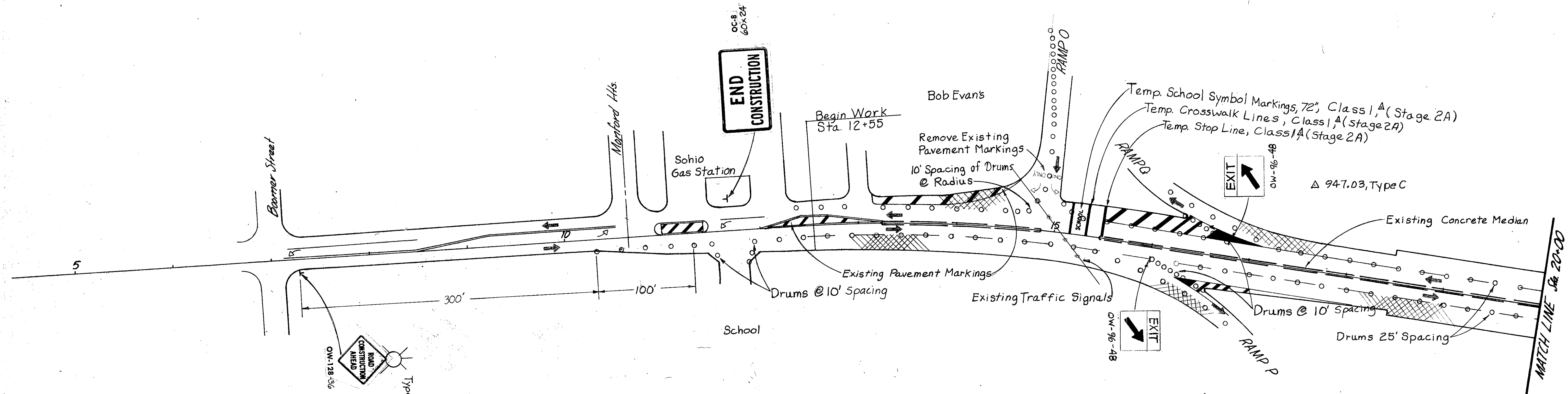
ITEM 622 - TEMPORARY CONCRETE BARRIER, AS PER PLAN AND

ITEM 622 - TEMPORARY CONCRETE BARRIER BRIDGE MOUNTED, AS PER PLAN
THE QUANTITIES SHOWN IN THE PLANS FOR ITEM 622 - TEMPORARY CONCRETE BARRIER, AS PER PLAN AND ITEM 622 - TEMPORARY CONCRETE BARRIER BRIDGE MOUNTED, AS PER PLAN, REFLECT THE ACTUAL PHYSICAL LENGTH REQUIRED DURING STAGE II, BASED ON ONE TIME USAGE ONLY, AND INCLUDES MOVING THE TEMPORARY CONCRETE BARRIER FROM ONE STAGE TO ANOTHER.

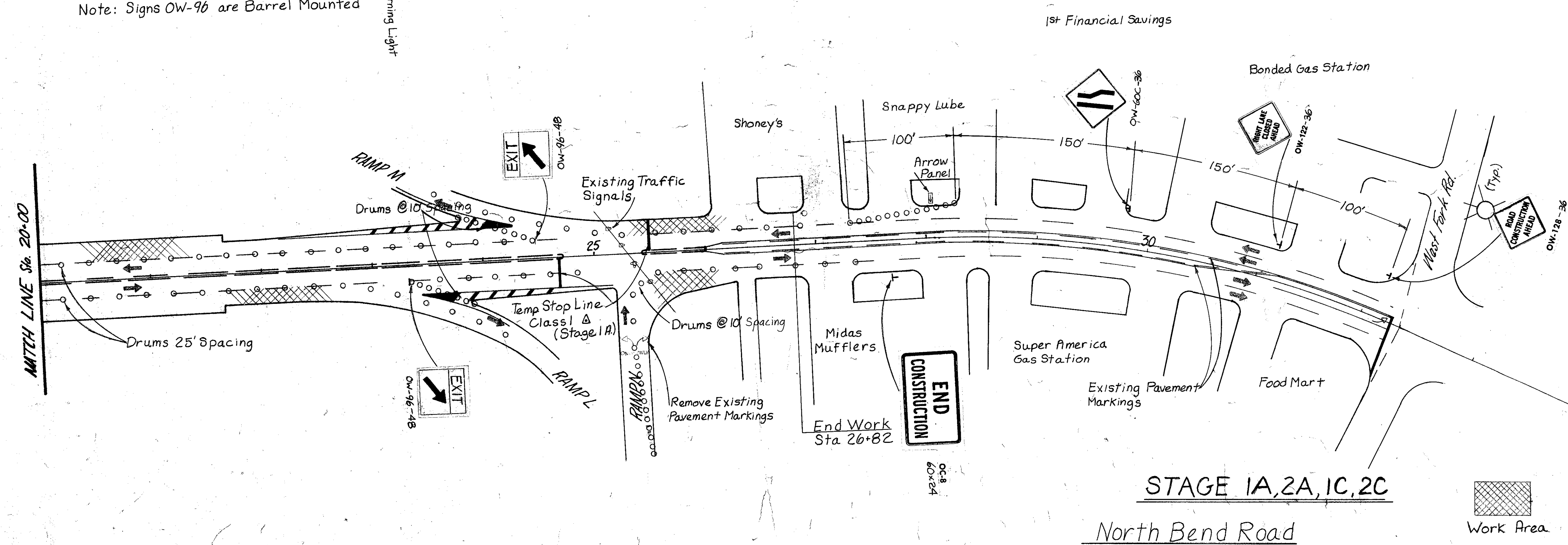
THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:
ITEM 622 - TEMPORARY CONCRETE BARRIER, AS PER PLAN 4450 LIN. FT.
ITEM 622 - TEMPORARY CONCRETE BARRIER BRIDGE MOUNTED, AS PER PLAN 1178 LIN. FT.

ITEM 616 - DUST CONTROL

A QUANTITY OF 50 M. GALLONS WATER AND 10 TONS OF CALCIUM CHLORIDE HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THE PURPOSE OF DUST CONTROL.



Note: Signs OW-96 are Barrel Mounted

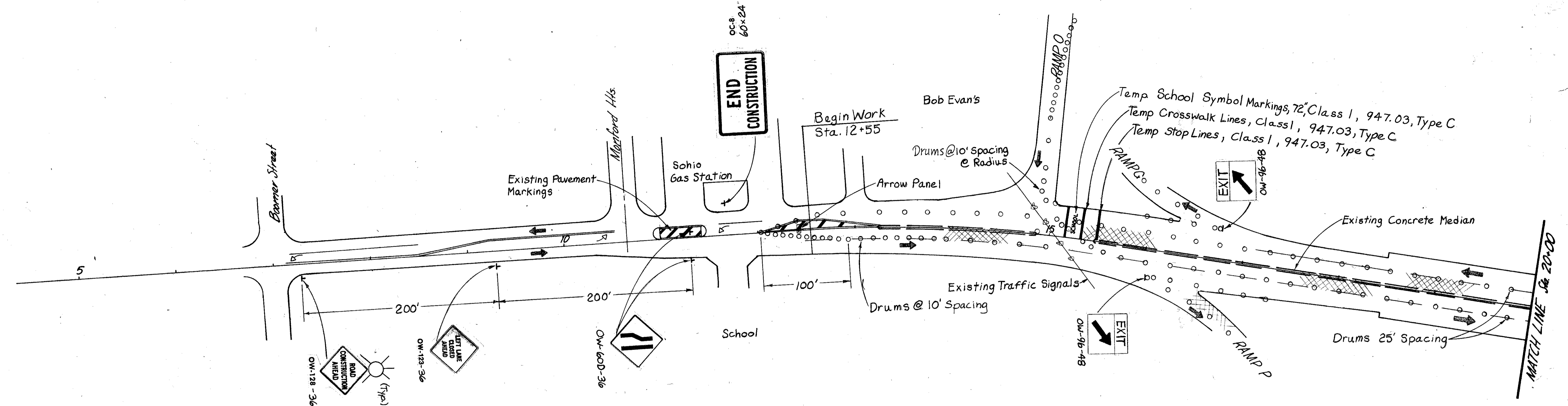


STAGE 1A, 2A, 1C, 2C

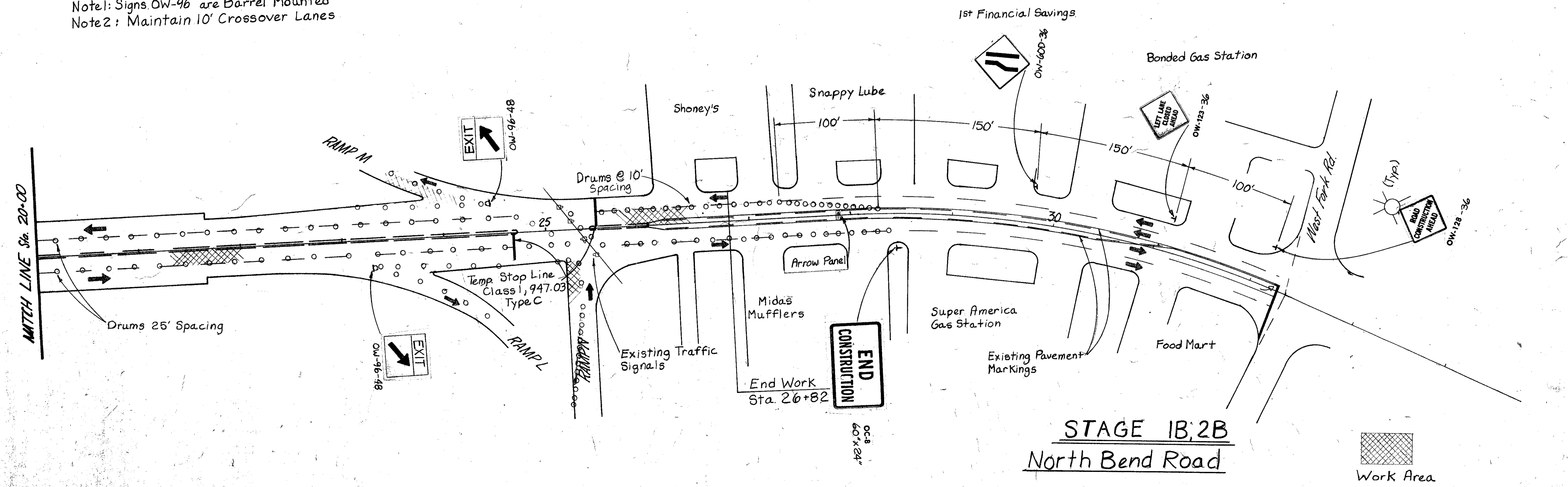
North Bend Road



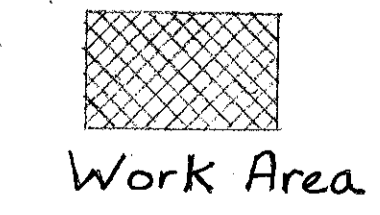
Work Area

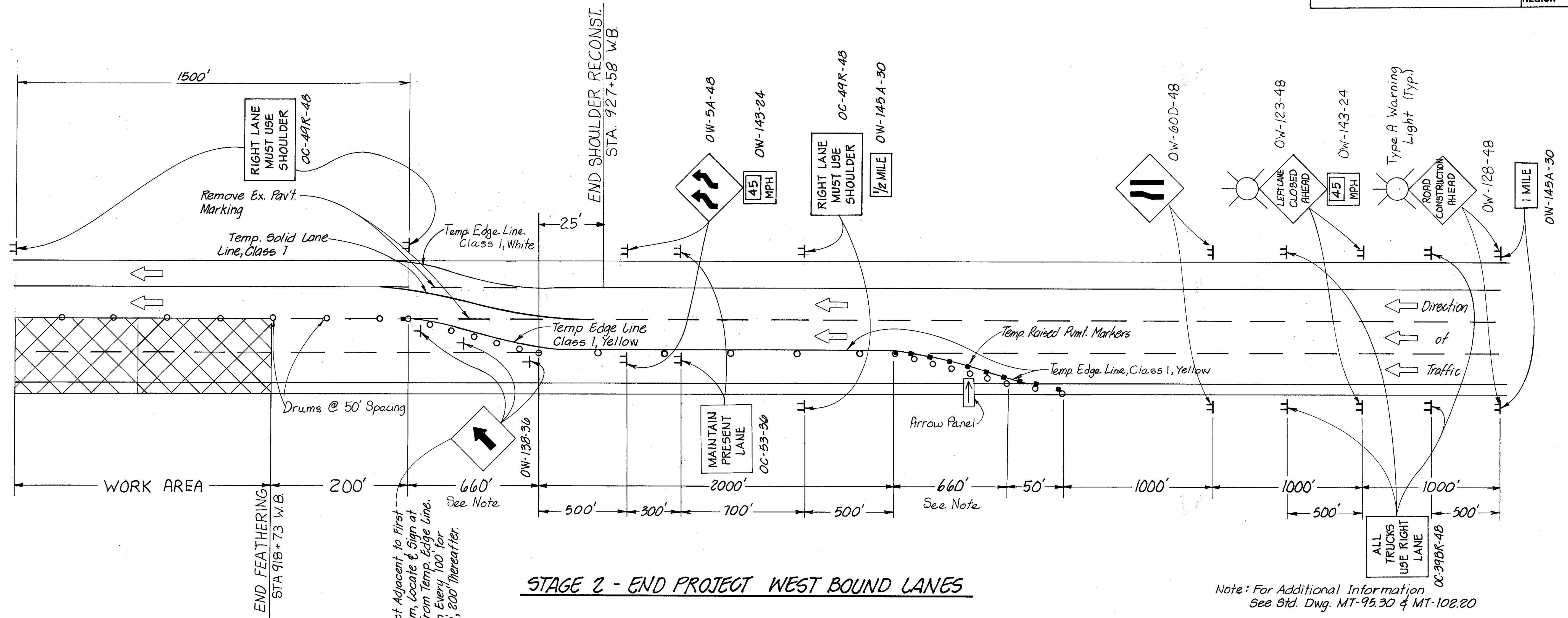


Note 1: Signs OW-96 are Barrel Mounted
 Note 2: Maintain 10' Crossover Lanes



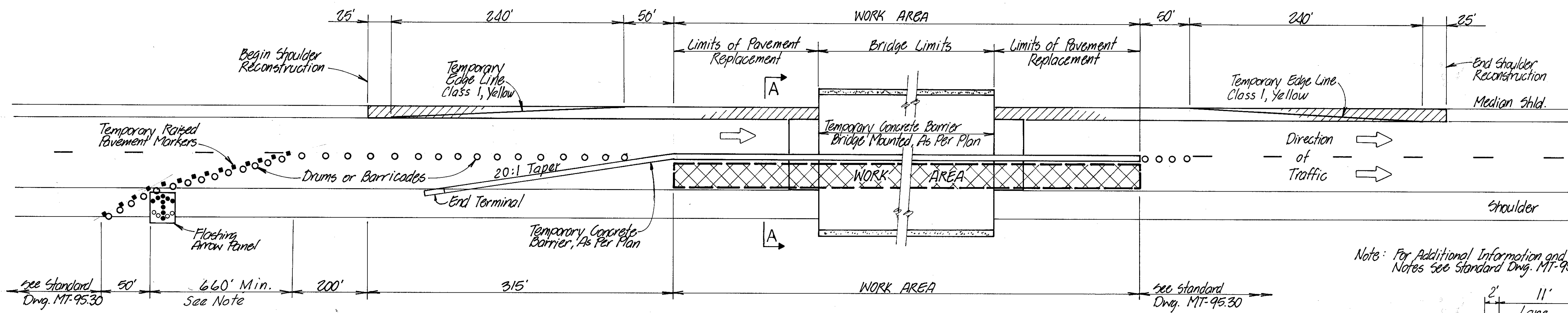
STAGE 1B, 2B
North Bend Road





STAGE 2 - END PROJECT WEST BOUND LANES

Note: For Additional Information See Std. Dwg. MT-95.30 & MT-102.20



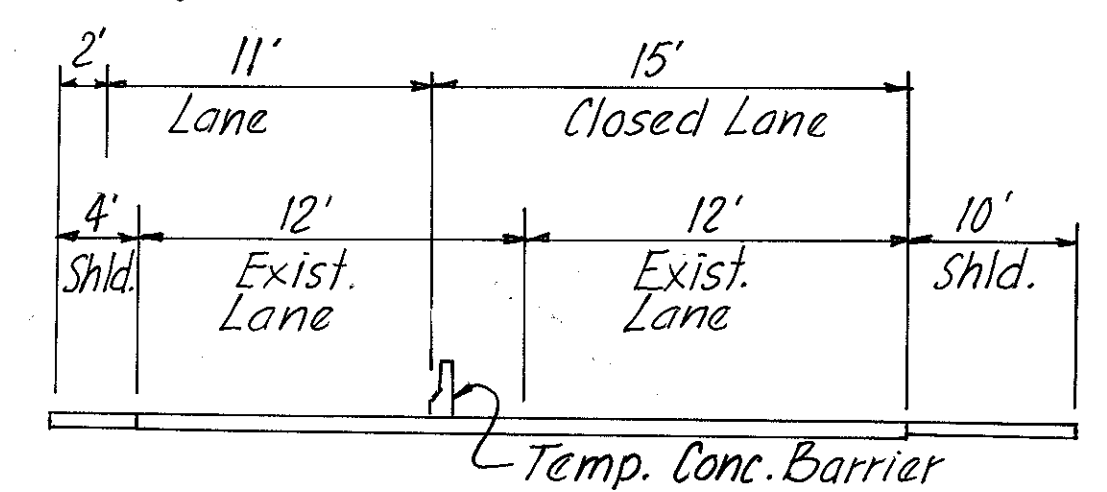
TRANSITION PLAN FOR USE OF SHOULDER AT MAIN LINE BRIDGES

HAM-74-1116 R&L (HARRISON ROAD)
HAM-74-1303 R&L (HAFT ROAD)
HAM-74-1618 R&L (SHEPHERD CREEK ROAD)

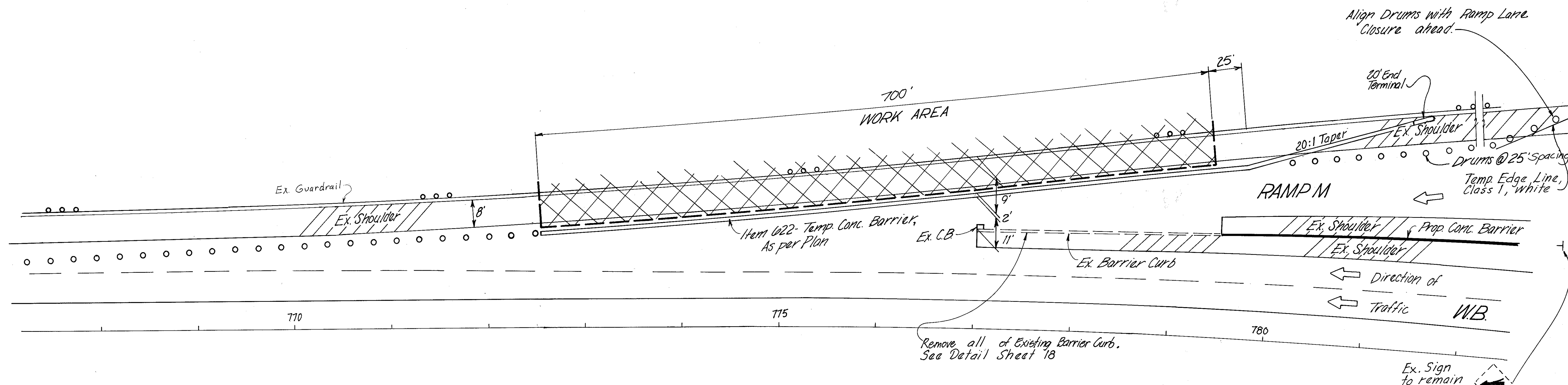
LOCATION	622 Temporary Concrete Barrier, As Per Plan	622 Temp. Concrete Barrier, Bridge Mounted, As Per Plan
Harrison Road	1220	520
Haft Road	1160	346
Shepherd Creek Road	1160	312
TOTALS	3540	1178

Totals Carried to General Note Sheet 24

Note: For Additional Information and Notes See Standard Dwg. MT-95.30



A-A



RAMP-M TRANSITION PLAN FOR SLIDE #11 & #12 CORRECTION WORK
(NORTH BEND ROAD INTERCHANGE)

Note: A quantity of 910 LF Temporary Conc. Barrier As-Per Plan, has been carried to General Note Sheet 04

For information not shown, See Std. Dwg. MT-98.15, Plan B

TEMPORARY CONCRETE BARRIER, BRIDGE MOUNTED,
AS PER PLAN

2 ANCHORS PER 10' BARRIER SEGMENT. (NOT REQUIRED)

NOTES

USE OF THE EXISTING OHIO BARRIER:

THE MODIFICATIONS TO BE MADE TO THE EXISTING BARRIER, PRIOR TO ITS USE ON OHIO BRIDGE DECKS, ARE LISTED BELOW.

1. REPLACE CONNECTION PINS WITH 1-1/4 INCH DIA. HIGH STRENGTH BOLTS.

2. FURTHER STIFFEN THE CONNECTION BY FASTENING AN ANGLE (4"x4"x3/4") TO THE BACK FACE OF JOINT.

3. LIMIT THE SLACK IN JOINTS BETWEEN SEGMENTS TO A MAXIMUM OF 3 DEGREES BY SHIMMING AND/OR GROUTING THE JOINT.

BRIDGE DECK SURFACE PREPARATION:

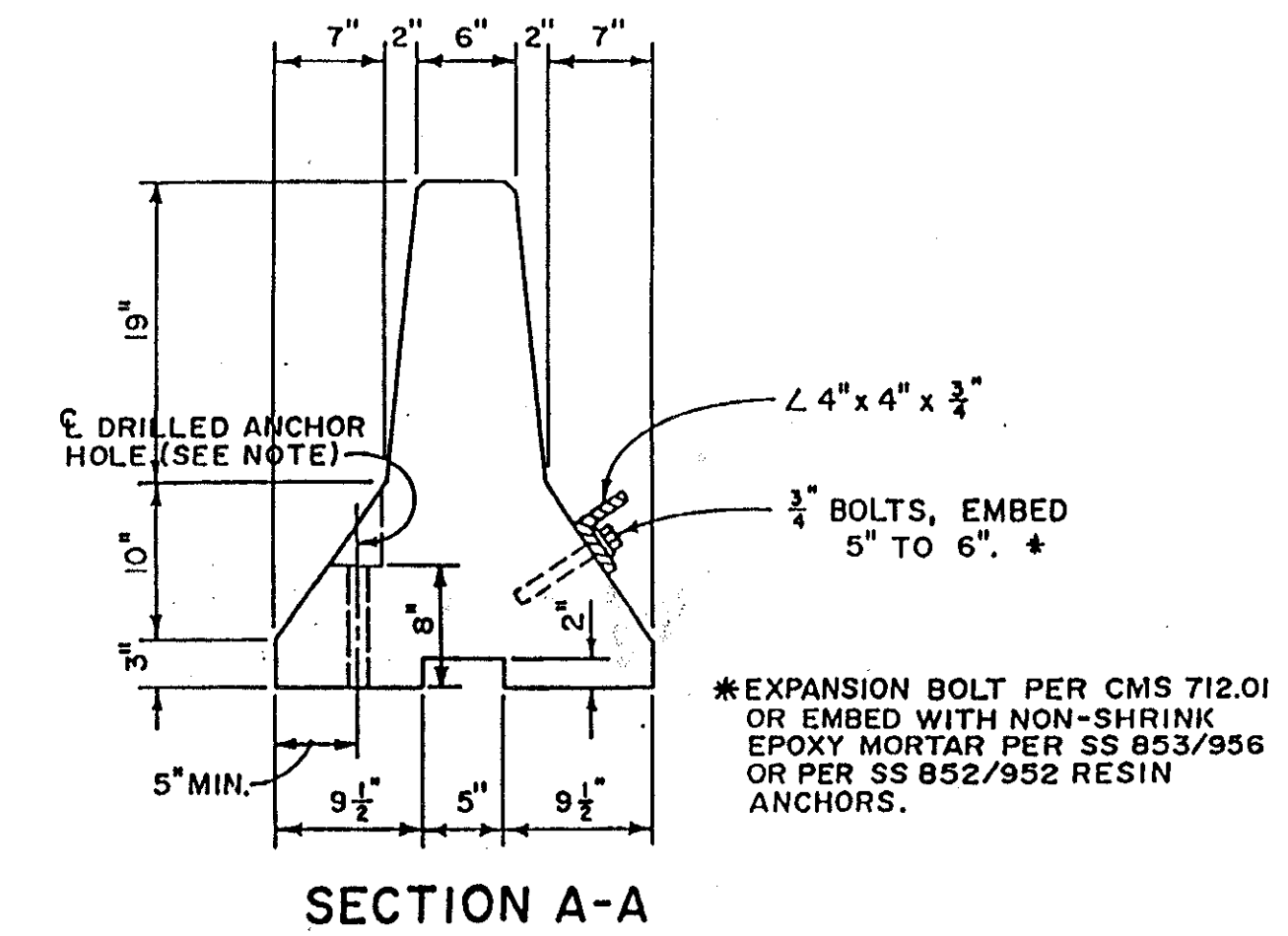
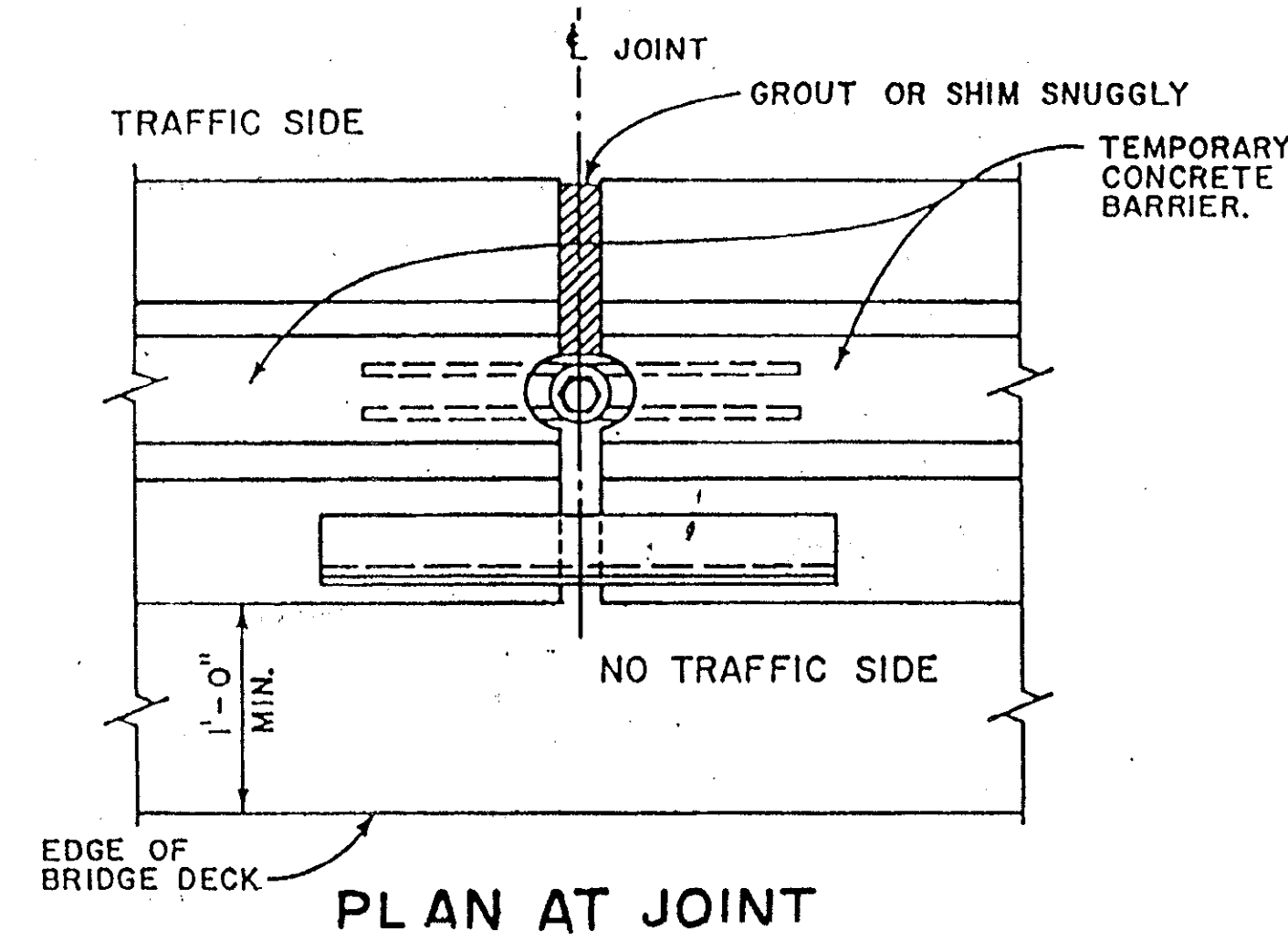
THE PROCEDURES WHICH SHALL BE FOLLOWED WHEN INSTALLING ALL TEMPORARY PRECAST CONCRETE BARRIERS ON OHIO BRIDGE DECKS ARE GIVEN BELOW.

- A. THE BRIDGE DECK SURFACE AREA ON WHICH THE TEMPORARY CONCRETE BARRIERS WILL REST SHALL BE CLEARED OF ALL LOOSE SAND, GRAVEL, DIRT AND DEBRIS.

- B. ANY IRREGULARITIES IN THE BRIDGE DECK AREA, UNLESS JUDGED BY THE ENGINEER TO BE INCONSEQUENTIAL, SHALL BE LEVELED WITH GROUT AND/OR ASPHALT.

- C. ASPHALT ROLL ROOFING SHALL BE PLACED ON THOSE BRIDGE DECK AREAS, AS JUDGED BY THE ENGINEER, TO HAVE A SURFACE ROUGHNESS WHICH WOULD INHIBIT FRICTION CONTACT BETWEEN BARRIER SEGMENTS AND DECK.

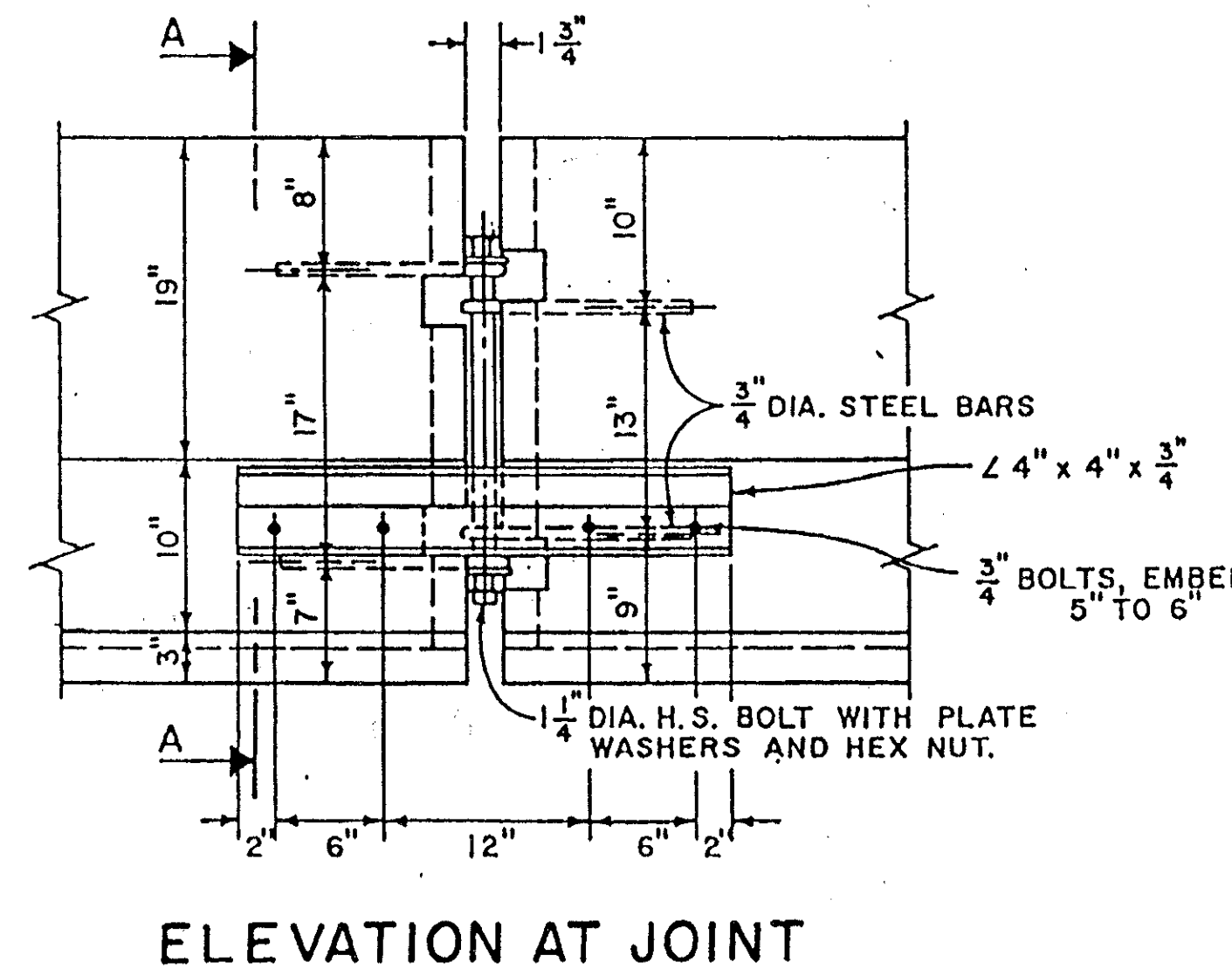
TEMPORARY CONCRETE BARRIER DETAILS



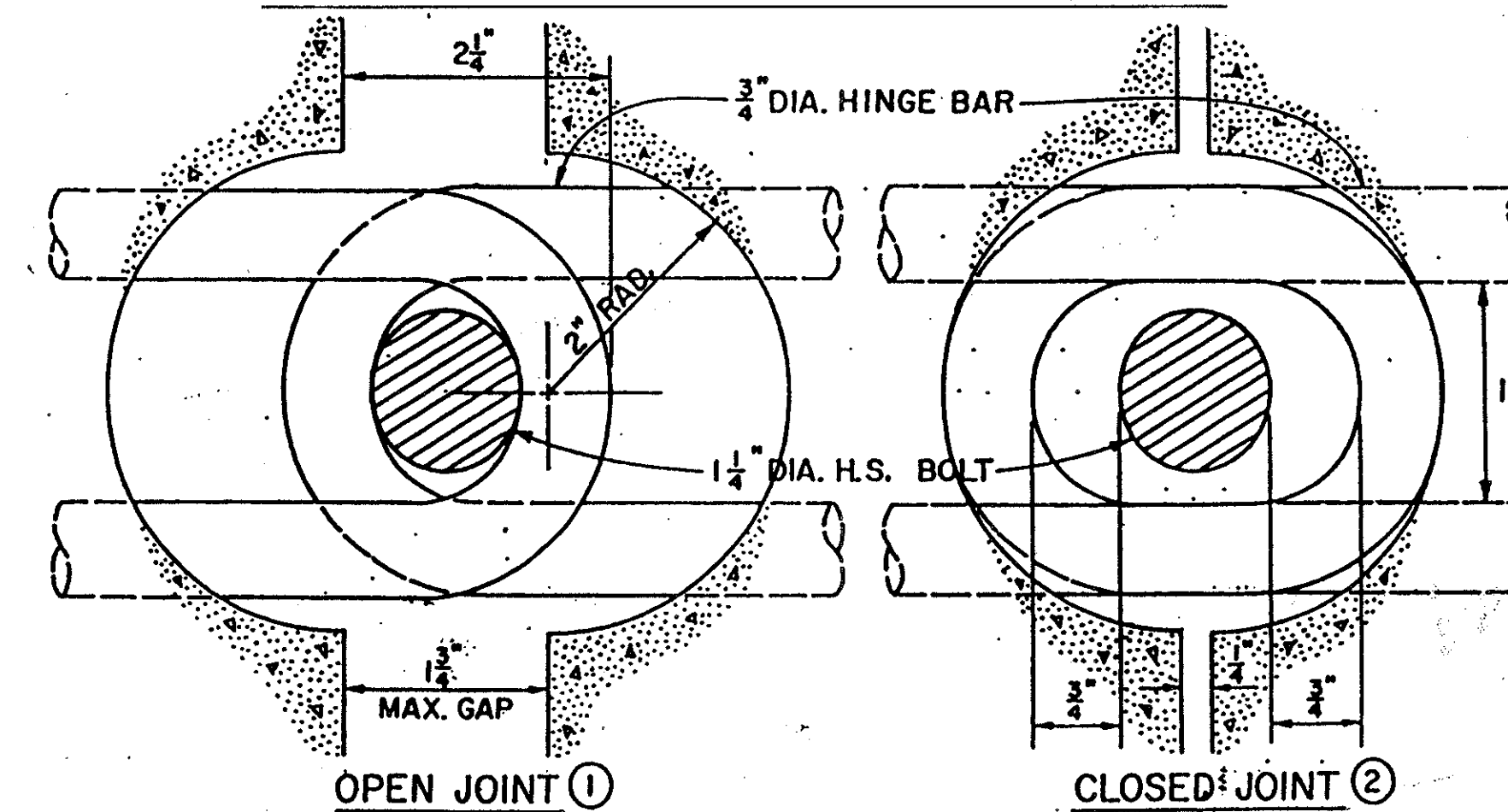
NOTES:

IN ORDER TO ANCHOR THE TEMPORARY CONCRETE BARRIER TO THE BRIDGE DECK, WHERE ANCHORING IS REQUIRED, 1-1/4" MIN. DIAMETER HOLES MUST BE DRILLED THROUGH THE BARRIER TOE AT THE LOCATION SHOWN IN THE ABOVE SECTION. GREAT CARE MUST BE USED IN DRILLING AND INSTALLING THE BARRIER SEGMENTS, AS ANY DAMAGE TO THEM WILL BE CONSIDERED CAUSE FOR THEIR REJECTION.

ALL BARRIER SEGMENTS WHERE REQUIRED SHALL BE FASTENED TO THE BRIDGE DECK USING ONE INCH DIAMETER HIGH STRENGTH THRU BOLTS OR APPROVED RESIN ANCHORS. GENERALLY, ALL ANCHORS SHALL BE PLACED ON THE TRAFFIC SIDE OF THE BARRIER. THE ANCHOR PATTERN SHALL BE SYMMETRICAL ABOUT THE CENTER OF EACH TEN FOOT BARRIER SEGMENT. WHEN RESIN ANCHORS ARE USED, THEY MUST BE EMBEDDED A MINIMUM OF 6" INTO FIRM CONCRETE. EVEN THOSE PRECAST CONCRETE BARRIER SEGMENTS NOT OTHERWISE REQUIRING ANCHORING SHALL, WHEN LOCATED ON BRIDGE DECKS CROSSING OVER ROADWAYS, RAILROADS AND/OR RECREATIONAL AREAS, BE SECURED BY NO LESS THAN TWO ANCHORS.



TYPICAL BARRIER DETAILS



① BARRIER JOINTS MUST BE FULLY OPEN BEFORE NUT IS TIGHTENED ONTO BOLT AND OPENING IS EITHER GROUTED OR SHIMMED.

② BARRIERS SHOULD INITIALLY BE PLACED CLOSER TOGETHER SO THAT BOLTS CAN BE EASILY INSERTED THROUGH HINGE BAR LOOPS.

**TEMP. CONCRETE
BARRIER
BRIDGE MOUNTED,
AS PER PLAN**

CLOSURE DETAIL

PAVEMENT CALCULATIONS

CALC. BY MKG
DATE 7/1/89
CHKD. BY JCM
DATE 2/2/90

HAM-74-11.10

OHIO
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REGION 5
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PAVEMENT AREAS

PAVEMENT TRANSITIONS (BEGIN & END PROJECT)

STA. 601+85 TO 603+34.93	ML (WB) $\frac{35+40}{2} \times 147.93' \times \frac{1}{4}$	= 605 SY
RT. SHR.	$4' \times 149.93' \times \frac{1}{4}$	= 67 SY
LT. SHR.	$10' \times 149.93' \times \frac{1}{4}$	= 167 SY
STA. 600+70 TO 601+70	ML (EB) $24' \times 100' \times \frac{1}{4}$	= 267 SY
RT. SHR.	$10' \times 100' \times \frac{1}{4}$	= 111 SY
LT. SHR.	$4' \times 100' \times \frac{1}{4}$	= 44 SY
STA. 916+60.13 TO 918+72.63	ML (WB) $36' \times 212.50' \times \frac{1}{4}$	= 850 SY
RT. SHR.	$4' \times 212.50' \times \frac{1}{4}$	= 94 SY
LT. SHR.	$10' \times 212.50' \times \frac{1}{4}$	= 236 SY
STA. 917+28.14 TO 919+40.64	ML (EB) $24' \times 212.50' \times \frac{1}{4}$	= 567 SY
RT. SHR.	$10' \times 212.50' \times \frac{1}{4}$	= 236 SY
LT. SHR.	$4' \times 212.50' \times \frac{1}{4}$	= 94 SY

MEDIAN CROSSOVERS

STA. 693+00	2230.19 SF $\times \frac{1}{4}$ (PLANIMETER)	= 248 SY
EB SHR	$(\frac{8'+10'}{2}) \times 200' \times \frac{1}{4}$	= 89 SY
WB SHR	$(\frac{8'+10'}{2}) \times 200' \times \frac{1}{4}$	= 89 SY
STA. 753+74	2230.19 SF $\times \frac{1}{4}$ (PLANIMETER)	= 248 SY
EB & WB SHR	$2[(\frac{8'+10'}{2}) \times 200'] \times \frac{1}{4}$	= 178 SY
STA. 829+00	(SAME AS STA. 753+74)	= 426 SY
STA. 888+86	(SAME AS STA. 753+74)	= 426 SY

RECONSTRUCTED SHOULDERS

STA. 600+19.93 TO STA. 605+09.93	ML (WB) $4' \times (490) \times \frac{1}{4}$	= 217 SY
STA. 602+ TO STA. 606+62.30	ML (EB) $4' \times (315' + 112.5') \times \frac{1}{4}$	= 190 SY
STA. 608+49.13 TO STA. 612+76.63	ML (WB) $4' \times (315.37' + 112.5') \times \frac{1}{4}$	= 190 SY
STA. 609+41.86 TO STA. 613+69.86	ML (EB) $4' \times (315' + 112.5') \times \frac{1}{4}$	= 190 SY
STA. 695+26 TO STA. 699+78.95	ML (WB) $4' \times (315.45' + 112.5' + 25') \times \frac{1}{4}$	= 201 SY
STA. 695+14 TO STA. 699+66.82	ML (EB) $4' \times (315.32' + 112.5' + 25') \times \frac{1}{4}$	= 201 SY
STA. 701+34.87 TO STA. 705+88	ML (WB) $4' \times (315.63' + 112.5' + 25') \times \frac{1}{4}$	= 201 SY
STA. 701+54.24 TO STA. 706+06	ML (EB) $4' \times (315.26' + 112.5' + 25') \times \frac{1}{4}$	= 201 SY
STA. 867+35 TO STA. 871+87.14	ML (WB) $4' \times (314.64' + 112.5' + 25') \times \frac{1}{4}$	= 201 SY
STA. 867+15 TO STA. 871+67.52	ML (EB) $4' \times (315.02' + 112.5' + 25') \times \frac{1}{4}$	= 201 SY

PAVEMENT AREAS

STA. 873+49.48 TO STA. 878+02	ML (WB) $4' \times (315.02' + 112.5' + 25') \times \frac{1}{4}$	= 201 SY
STA. 873+18.36 TO STA. 877+71	ML (EB) $4' \times (315.14' + 112.5' + 25') \times \frac{1}{4}$	= 201 SY

FULL-DEPTH PAVEMENT REPLACEMENT (BRIDGE HAM-74-1116 R&L)

STA. 603+34.93 TO STA. 605+09.93	ML (WB) $24' \times 175.0' \times \frac{1}{4}$	= 467 SY
	$15.11' \pm 14.61' \times 175.0' \times \frac{1}{4}$	= 289 SY
	$8' \text{ SHR } [(\frac{8' \times 125.0'}{2}) + (\frac{8' \times 5' \times 50.0'}{2})] \times \frac{1}{4}$	= 147 SY
STA. 605+49.80 TO STA. 606+62.30	ML (EB) $24' \times 112.5' \times \frac{1}{4}$	= 300 SY
	$10' \text{ SHR } 10' \times 62.5' \times \frac{1}{4}$	= 69 SY
	$(\frac{10' \pm 7'}{2}) \times 50' \times \frac{1}{4}$	= 47 SY
STA. 608+49.13 TO STA. 609+61.63	ML (WB) $24' \times 112.5' \times \frac{1}{4}$	= 300 SY
	$10' \text{ SHR } 11' \pm 14' \times 112.5' \times \frac{1}{4}$	= 156 SY

STA. 609+41.86 TO STA. 610+54.36	ML (EB) $24' \times 112.5' \times \frac{1}{4}$	= 300 SY
	$10' \text{ SHR } 10' \times 62.5' \times \frac{1}{4}$	= 69 SY
	$(\frac{10' \pm 5'}{2}) \times 50' \times \frac{1}{4}$	= 42 SY

(BRIDGE HAM-74-1292 L&R)

STA. 698+41.48 TO STA. 699+53.95	ML (WB) $24' \times 112.5' \times \frac{1}{4}$	= 300 SY
	$10' \text{ SHR } 10' \times 112.5' \times \frac{1}{4}$	= 125 SY
STA. 698+29.32 TO STA. 699+41.82	ML (EB) $24' \times 112.5' \times \frac{1}{4}$	= 300 SY
	$10' \text{ SHR } 10' \times 112.5' \times \frac{1}{4}$	= 125 SY

STA. 701+59.87 TO STA. 702+72.37	ML (WB) $24' \times 112.5' \times \frac{1}{4}$	= 300 SY
	$10' \text{ SHR } 10' \times 112.5' \times \frac{1}{4}$	= 125 SY

STA. 701+79.24 TO STA. 702+91.74	ML (EB) $24' \times 112.5' \times \frac{1}{4}$	= 300 SY
	$10' \text{ SHR } 10' \times 112.5' \times \frac{1}{4}$	= 125 SY

(BRIDGE HAM-74-1618 L&R)

STA. 870+30.02 TO STA. 871+42.52	ML (WB) $36' \times 112.5' \times \frac{1}{4}$	= 450 SY
	$10' \text{ SHR } 10' \times 112.5' \times \frac{1}{4}$	= 125 SY
STA. 870+49.64 TO STA. 871+62.14	ML (EB) $24' \times 112.5' \times \frac{1}{4}$	= 300 SY
	$10' \text{ SHR } 10' \times 112.5' \times \frac{1}{4}$	= 125 SY

STA. 873+74.48 TO STA. 874+86.98	ML (WB) $36' \times 112.5' \times \frac{1}{4}$	= 450 SY
	$10' \text{ SHR } 10' \times 112.5' \times \frac{1}{4}$	= 125 SY

STA. 873+43.86 TO STA. 874+56.36	ML (EB) $24' \times 112.5' \times \frac{1}{4}$	= 300 SY
	$10' \text{ SHR } 10' \times 112.5' \times \frac{1}{4}$	= 125 SY

(RAMP X) - STA. 19+58.20 TO STA. 20+70.70	ML $14.50 \times 112.5' \times \frac{1}{4}$	= 181 SY
	$8' \text{ SHR } 8' \times 87.5' \times \frac{1}{4}$	= 78 SY
	$\frac{8' \pm 5'}{2} \times 25' \times \frac{1}{4}$	= 18 SY

PAVEMENT AREAS

MAINLINE PAVEMENT - WESTBOUND

STA. 605+09.93 TO STA. 605+34.93	APPR. SLAB $76' \times 16' \times \frac{1}{4}$	= 135 SY
STA. 608+24.13 TO STA. 608+49.13	APPR. SLAB $[(78 \times 18) + (\frac{15'}{2})] \times \frac{1}{4}$	= 169 SY
STA. 609+61.63 TO STA. 617+00	$24' \times 738.37' \times \frac{1}{4}$	= 1969 SY

- EASTBOUND

STA. 601+70 TO STA. 605+49.80	$24' \times 379.8' \times \frac{1}{4}$	= 1013 SY
STA. 606+62.30 TO STA. 606+87.30	APPR. SLAB $[(\frac{31+50}{2} \times 17) + 2 \times (\frac{25+5}{2})] \times \frac{1}{4}$	= 90 SY
STA. 609+16.86 TO STA. 609+41.86	APPR. SLAB $[(47 \times 20) + (\frac{5 \times 5}{2})] \times \frac{1}{4}$	= 106 SY
STA. 610+54.36 TO STA. 617+00	$24' \times 645.64' \times \frac{1}{4}$	= 1722 SY

MAINLINE PAVEMENT - WB & EB

STA. 617+00 TO STA. 622+00	$24' \times 1500' \times 2 \times \frac{1}{4}$	= 8000 SY
STA. 622+00 TO STA. 647+00	$24' \times 1500' \times 2 \times \frac{1}{4}$	= 8000 SY
STA. 647+00 TO STA. 676+50	$24' \times 2950' \times 2 \times \frac{1}{4}$	= 15,733 SY
STA. 676+50 TO STA. 691+00	$24' \times 1450' \times 2 \times \frac{1}{4}$	= 7733 SY

MAINLINE PAVEMENT - EB

STA. 691+00 TO STA. 698+29.32	$24' \times 789.32' \times \frac{1}{4}$	= 1945 SY
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STA. 699+41.82 TO STA. 699+66.82	APPR. SLAB $24' \times 25' \times \frac{1}{4}$	= 67 SY
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STA. 701+54.24 TO STA. 701+79.24	APPR. SLAB $24' \times 25' \times \frac{1}{4}$	= 67 SY
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STA. 702+91.74 TO STA. 706+00	$24' \times 308.26' \times \frac{1}{4}$	= 822 SY
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MAINLINE PAVEMENT - WB

STA. 691+00 TO STA. 698+41.48	$24' \times 744.48' \times \frac{1}{4}$	= 1977 SY
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STA. 699+53.95 TO STA. 699+78.95	APPR. SLAB $24' \times 25' \times \frac{1}{4}$	= 67 SY
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STA. 701+34.87 TO STA. 701+59.87	APPR. SLAB $24' \times 25' \times \frac{1}{4}$	= 67 SY
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STA. 702+72.37 TO STA. 706+00	$24' \times 327.63' \times \frac{1}{4}$	= 874 SY
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MAINLINE PAVEMENT - WB & EB

STA. 706+00 TO STA. 721+00	$24' \times 1500' \times 2 \times \frac{1}{4}$	= 8000 SY
STA. 721+00 TO STA. 736+00	$24' \times 1500' \times 2 \times \frac{1}{4}$	= 8000 SY
STA. 736+00 TO STA. 767+00	$24' \times 3100' \times 2 \times \frac{1}{4}$	= 16,533 SY

STA. 767+00 TO STA. 782+50	WB $[(24' \times 1550') + (\frac{10.8 \times 0 \times 450}{2})] \times \frac{1}{4}$	= 4403 SY
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	EB $24' \times 1550' \times \frac{1}{4}$	= 4133 SY
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STA. 782+50 TO STA. 797+00	WB $[(24' \times 1400') + (\frac{10.8 \times 12 \times 50}{2})] \times \frac{1}{4}$	= 5663 SY
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	EB $24' \times 1450' \times \frac{1}{4}$	= 3867 SY
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STA. 797+00 TO STA. 812+00	WB $36' \times 1500' \times \frac{1}{4}$	= 6000 SY
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	EB $24' \times 1500' \times \frac{1}{4}$	= 4000 SY
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PAVEMENT AREAS

STA. 812+00 TO STA. 842+00	WB $36' \times 3000' \times \frac{1}{4}$	= 12000 SY
	EB $24' \times 3000' \times \frac{1}{4}$	= 8000 SY
STA. 842+00 TO STA. 857+00	WB $36' \times 1500' \times \frac{1}{4}$	= 6000 SY
	EB $24' \times 1500' \times \frac{1}{4}$	= 4000 SY

MAINLINE PAVEMENT - WB

STA. 857+00 TO STA. 870+30.02	$36' \times 1330.02' \times \frac{1}{4}$	= 5320 SY
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STA. 871+40.52 TO STA. 871+67.52	APPR. SLAB $36' \times 25' \times \frac{1}{4}$	= 100 SY
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STA. 873+49.48 TO STA. 873+74.48	APPR. SLAB $36' \times 25' \times \frac{1}{4}$	= 100 SY
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STA. 874+86.98 TO STA. 887+00	$36' \times 1213.02' \times \frac{1}{4}$	= 4852 SY
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MAINLINE PAVEMENT - EB

STA. 857+00 TO STA. 870+49.64	$24' \times 1349.64' \times \frac{1}{4}$	= 3599 SY
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STA. 871+62.14 TO STA. 871+87.14	APPR. SLAB $24' \times 25' \times \frac{1}{4}$	= 67 SY
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STA. 873+18.86 TO STA. 873+43.86	APPR. SLAB $24' \times 25' \times \frac{1}{4}$	= 67 SY
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STA. 874+56.36 TO STA. 887+00	$24' \times 1243.64' \times \frac{1}{4}$	= 3316 SY
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MAINLINE PAVEMENT - WB & EB

STA. 887+00 TO STA. 903+00	WB $36' \times 1600' \times \frac{1}{4}$	= 6400 SY
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	EB $24' \times 1600' \times \frac{1}{4}$	= 4267 SY
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STA. 903+00 TO STA. 910+00	WB $36' \times 700' \times \frac{1}{4}$	= 2800 SY
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	EB $24' \times 700' \times \frac{1}{4}$	= 1867 SY
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MAINLINE PAVEMENT - WB

STA. 913+35.99 TO STA. 916+60.13	$36' \times 324.14' \times \frac{1}{4}$	= 1297 SY
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MAINLINE PAVEMENT - EB

STA. 913+35.99 TO STA. 917+28.14	$24' \times 392.15' \times \frac{1}{4}$	= 1046 SY
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RECONSTRUCTED SHOULDER - TRUCK LANE

STA. 777+00 TO STA. 927+50	ML (WB) $[10' \times (300+1450+449+154.41+3000+3000 + 1320.52+1600+700+1414)] \times \frac{1}{4}$	= 14875 SY
	$[(250 \times \frac{10' \pm 15'}{2}) + (470 \times \frac{0' \pm 3.25'}{2})] \times \frac{1}{4}$	= 432 SY

PAVEMENT CALCULATIONS

CALC. MKG
BY DATE 7/1/82
CHKD BY JCH
DATE 2/2/90

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OHIO
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PAVEMENT AREAS

SHOULDER PAVEMENT -

STA. 609+61.62 TO STA. 617+00		
WB-10' SHR $(10' + \frac{20 \pm 13}{2}) \times 738.37 \times 1/9$	= 2174	SY
4' SHR $4' \times 423.37 \times 1/9$	= 188	SY
STA. 610+54.36 TO STA. 617+00		
EB-4' SHR $4' \times 330 \times 1/9$	= 147	SY
10' SHR $10' \times 645.64 \times 1/9$	= 717	SY
STA. 617+00 TO STA. 632+00		
WB-10' SHR $(61.11 + 500.0') \times 10' \times 1/9$	= 646	SY
4' x 1500' x 1/9	= 667	SY
EB-10' SHR $10' \times 922' \times 1/9$	= 1024	SY
$(10' \pm 0') \times 575.05' \times 1/9$	= 320	SY
4' SHR $4' \times 1500' \times 1/9$	= 667	SY
STA. 632+00 TO STA. 647+00		
WB-10' SHR $10' \times 1500' \times 1/9$	= 1667	SY
4' SHR $4' \times 1500' \times 1/9$	= 667	SY
EB-10' SHR $10' \times 877.95' \times 1/9$	= 976	SY
4' SHR $4' \times 1500' \times 1/9$	= 667	SY
STA. 647+00 TO STA. 676+50		
WB-10' SHR $10' \times 2950' \times 1/9$	= 3278	SY
4' SHR $4' \times 2950' \times 1/9$	= 1311	SY
EB-10' SHR $10' \times 2950' \times 1/9$	= 3278	SY
4' SHR $4' \times 2950' \times 1/9$	= 1311	SY
STA. 676+50 TO STA. 691+00		
WB-10' SHR $10' \times 1450' \times 1/9$	= 1611	SY
4' SHR $4' \times 1450' \times 1/9$	= 644	SY
EB-10' SHR $10' \times 1450' \times 1/9$	= 1611	SY
4' SHR $4' \times 1450' \times 1/9$	= 644	SY
STA. 691+00 TO STA. 706+00		
WB-10' SHR $10' \times (741.45 + 327.63' + 25' + 25') \times 1/9$	= 1243	SY
4' SHR $4' \times 438 \times 1/9$	= 195	SY
EB-10' SHR $10' \times (729.32' + 308.26' + 25' + 25') \times 1/9$	= 1208	SY
4' SHR $4' \times 414 \times 1/9$	= 184	SY
STA. 706+00 TO STA. 721+00		
WB-10' SHR $10' \times 1500' \times 1/9$	= 1667	SY
4' SHR $4' \times 1500' \times 1/9$	= 667	SY
EB-10' SHR $10' \times 1500' \times 1/9$	= 1667	SY
4' SHR $4' \times 1494 \times 1/9$	= 664	SY
STA. 721+00 TO STA. 736+00		
WB & EB 10' SHR $10' \times 1500' \times 2 \times 1/9$	= 3333	SY
4' SHR $4' \times 1500' \times 2 \times 1/9$	= 1333	SY
STA. 736+00 TO STA. 751+50		
WB-10' SHR $10' \times 1550' \times 1/9$	= 1722	SY
4' SHR $4' \times 1550' \times 1/9$	= 689	SY
EB-10' SHR $10' \times 1550' \times 1/9$	= 1722	SY
4' SHR $4' \times 1550' \times 1/9$	= 689	SY

PAVEMENT AREAS

(SHR'S CONT.)

STA. 751+00 TO STA. 767+00		
WB-10' SHR $10' \times 1350' \times 1/9$	= 1500	SY
4' SHR $4' \times (1550) \times 1/9$	= 689	SY
EB-10' SHR $10' \times 1550' \times 1/9$	= 1722	SY
4' SHR $4' \times 1550 \times 1/9$	= 689	SY
STA. 767+00 TO STA. 782+50		
WB-4' SHR $4' \times 1550' \times 1/9$	= 689	SY
EB-10' SHR $10' \times (124.04 + 525.96) \times 1/9$	= 722	SY
$(10' \pm 2.84') \times 71' \times 1/9$	= 90	SY
4' SHR $4' \times 1550' \times 1/9$	= 689	SY
STA. 782+50 TO STA. 797+00		
WB-4' SHR $4' \times 1450' \times 1/9$	= 644	SY
EB-10' SHR $10' \times 1450' \times 1/9$	= 1611	SY
$(10' \pm 20') \times 20' \times 1/9$	= 335	SY
4' SHR $4' \times 1450' \times 1/9$	= 644	SY
WB-10' SHR $(9' \pm 20' \times 212) \times 1/9$	= 396	SY
STA. 797+00 TO STA. 812+00		
WB-4' SHR $4' \times 1500' \times 1/9$	= 667	SY
EB-10' SHR $[10' \times 280' + (10' \pm 13.75' \times 720')] \times 1/9$	= 1261	SY
4' SHR $4' \times 1500' \times 1/9$	= 667	SY
WB-10' SHR $10' \pm 14' \times 100 \times 1/9$	= 133	SY
STA. 812+00 TO STA. 842+00		
WB-4' SHR $4' \times 3000 \times 1/9$	= 1333	SY
EB-10' SHR $10' \times 2300' \times 1/9$	= 2556	SY
4' SHR $4' \times (3000) \times 1/9$	= 1333	SY
STA. 842+00 TO STA. 857+00		
EB 10' SHR $10' \times 1500' \times 1/9$	= 1666	SY
WB & EB 4' SHR $4' \times 1500' \times 2 \times 1/9$	= 1333	SY
STA. 857+00 TO STA. 872+00		
WB-4' SHR $4' \times 1015.0' \times 1/9$	= 451	SY
EB-10' SHR $10' \times (1330.02 + 25') \times 1/9$	= 1506	SY
4' SHR $4' \times 1035.0' \times 1/9$	= 460	SY
STA. 872+00 TO STA. 887+00		
WB-4' SHR $4' \times 898.0' \times 1/9$	= 399	SY
EB-10' SHR $10' \times (1234.64 + 25') \times 1/9$	= 1400	SY
4' SHR $4' \times 928.6 \times 1/9$	= 413	SY
STA. 887+00 TO STA. 903+00		
WB-4' SHR $4' \times (1600) \times 1/9$	= 711	SY
EB-10' SHR $10' \times 1600' \times 1/9$	= 1778	SY
4' SHR $4' \times 1600 \times 1/9$	= 711	SY
STA. 903+00 TO STA. 917+28.14		
WB-4' SHR $4' \times 1224.14 \times 1/9$	= 544	SY
EB-10' SHR $10' \times 1092.15 \times 1/9$	= 1214	SY
4' SHR $4' \times 1092.15' \times 1/9$	= 485	SY

PAVEMENT AREA

RAMP X

STA. 2109.4 TO STA. 5+22.80		
FEATHERING ML $[(17' \times 75.4') + (\frac{11' \times 11')}{2}] \times 1/9$	= 153	SY
RT SHR $[(\frac{2 \pm 6' \times 20'}{2}) + (6' \times 55')] \times 1/9$	= 47	SY
ML $(\frac{17.5 \pm 14}{2}) \times 138.4' \times 1/9$	= 242	SY
RT SHR $6' \times 138.4' \times 1/9$	= 92	SY
STA. 2+76.61 TO STA. 5+29.38		
FEATHERING ML $(\frac{18' \pm 16.5' \times 75}{2}) \times 1/9$	= 144	SY
RT SHR $6' \times 75' \times 1/9$	= 50	SY
LT SHR $3' \times 75' \times 1/9$	= 25	SY
ML $[(16.5' \pm 16' \times 23.31') + (16' \times 164.38')] \times 1/9$	= 334	SY
RT SHR $6' \times 187.69' \times 1/9$	= 125	SY
LT SHR $3' \times 187.69' \times 1/9$	= 63	SY
STA. 5+39.38 TO STA. 19+58.20		
ML $[(\frac{33 \pm 16}{2} \times 100.6') + (16' \times 618.62) + (\frac{3 \pm 5' \times 368.0'}{2}) + (15' \times 245.0')] \times 1/9$	= 3533	SY
RT SHR $[(6' \times 442.62') + (\frac{2 \pm 0' \times 99.0'}{2}) + (\frac{2 \pm 0' \times 37.5'}{2}) + (\frac{4 \pm 10' \times 213.20'}{2})] \times 1/9$	= 507	SY
STA. 2109 TO STA. 2184.40		
FEATHERING ML $[(17.5 \times 75') + (\frac{30 \pm 30}{2})] \times 1/9$	= 196	SY
LT SHR $[(\frac{6 \pm 3' \times 40'}{2}) + (6' \times 37.4')] \times 1/9$	= 45	SY
STA. 2184.40 TO STA. 14+00		
ML $17' \times 1015.60' \times 1/9$	= 1918	SY
LT SHR $6' \times 1015.60' \times 1/9$	= 677	SY
STA. 14+00 TO STA. 20+17.03		
ML $16' \times 617 \times 1/9$	= 1097	SY
RT SHR $(\frac{15 \pm 20' \times 285.0'}{2}) + (3' \times 332) \times 1/9$	= 609	SY
LT SHR $6' \times 617.42' \times 1/9$	= 411	SY
STA. 20+17.03 TO STA. 20+79.53		
FEATHERING ML $(\frac{16' \pm 17.34'}{2}) \times 62.5' \times 1/9$	= 116	SY
LT SHR $(\frac{16 \pm 7.35'}{2}) \times 62.5' \times 1/9$	= 46	SY
RT SHR $3' \times 62.5' \times 1/9$	= 21	SY

PAVEMENT AREA

RAMP A

STA. 0+22 TO STA. 0+97		
FEATHERING ML $[(\frac{60 \times 65' + 75 \times 5' + (16 \times 750')}{2})] \times 1/9$	= 352	SY
RT SHR $6' \times 85' \times 1/9$	= 57	SY
LT SHR $3' \times 80' \times 1/9$	= 27	SY
STA. 0+97 TO STA. 10+25		
ML $16' \times 928 \times 1/9$	= 1650	SY
RT SHR $6' \times 928 \times 1/9$	= 619	SY
LT SHR $3' \times 928 \times 1/9$	= 309	SY
STA. 10+25 TO STA. 15+92		
ML $[(267 \times 16') + (\frac{14 \pm 16' \times 300}{2})] \times 1/9$	= 975	SY
RT SHR $[(6' \times 207) + (\frac{6 \pm 8' \times 60'}{2}) + (8' \times 300.17')] \times 1/9$	= 451	SY
LT SHR $(113 \times 3') \times 1/9$	= 39	SY
RAMP M		
STA. 777+00 TO STA. 779+50		
ML $(\frac{14' \pm 22.33}{2}) \times 250.0' \times 1/9$	= 505	SY
LT SHR $8' \times 250.0' \times 1/9$	= 222	SY
STA. 779+50 TO STA. 780+12.5		
FEATHERING ML $(\frac{22.33 \pm 24.4}{2}) \times 62.50' \times 1/9$	= 162	SY
LT SHR $8' \times 62.50' \times 1/9$	= 56	SY
RT SHR $3' \times 62.50' \times 1/9$	= 21	SY
STA. 780+12.5 TO STA. 783+00		
ML $(\frac{24.4 \pm 34.0' \times 287.50'}{2}) \times 1/9$	= 993	SY
LT SHR $[(7.75' \pm 6.0' \times 87.50') + (6' \times 200')] \times 1/9$	= 200	SY
RT SHR $3' \times 287.50' \times 1/9$	= 96	SY
RAMP L		
STA. 783+00 TO STA. 803+97.14		
ML $[(16' \times 1012) + (\frac{16 \pm 19' \times 577}{2}) + (19' \times 168.00) + (\frac{19' \pm 21' \times 188.00}{2}) + (\frac{105' \times 25'}{2})] \times 1/9$	= 3839	SY
LT SHR $[(\frac{3 \pm 10' \times 200.0'}{2}) + (6' \times 590.0') + (3' \times 237.27') + (\frac{2 \pm 6' \times 94.73'}{2}) + (6' \times 721.50)] \times 1/9$	= 1145	SY
RT SHR $(3' \times 1365.0') \times 1/9$	= 455	SY
RAMP M		
STA. 783+00 TO STA. 793+50		
ML $[(\frac{14' \pm 16' \times 100.0' \times 2}{2}) + (16' \times 351) + (\frac{100 \times 25}{2}) + (\frac{16 \pm 21' \times 396}{2})] \times 1/9$	= 1910	SY
LT SHR $6' \times 847.27' \times 1/9$	= 565	SY
RT SHR $(3' \times 747.0') \times 1/9$	= 249	SY
RAMP N		
STA. 710+50 TO STA. 801+83.09		
ML $(\frac{6 \pm 0' \times 500.0'}{2}) + (\frac{40'}{2} \times 45.0') + (25' \times 362') + (40' \times 60) + (\frac{9 \pm 0' \times 150'}{2}) + (16' \times 583.60') + (16' \pm 16.75' \times 37.49') \times 1/9$	= 2570	SY

PAVEMENT CALCULATIONS

PAVEMENT AREAS

PAVEMENT AREA	SY	SY
RAMP N (CONT)		
LT SHR $[(\frac{3}{2} \times 6' \times 100') + (6' \times 941.0')] + (6' \times 6.75' \times 37.49') \times \frac{1}{9}$	= 704	SY
RT SHR $3' \times 686.20' \times \frac{1}{9}$	= 229	SY
STA. 801+83.09 TO STA. 802+45.59		
FEATHERING ML $(16.75' \pm 18') \times 62.5' \times \frac{1}{9}$	= 121	SY
RT SHR $3' \times 62.5' \times \frac{1}{9}$	= 21	SY
LT SHR $(6.75' \pm 8') \times 62.5' \times \frac{1}{9}$	= 51	SY
RAMP O		
STA. 780+45 TO STA. 781+08		
FEATHERING ML $[(17.3 \pm 16' \times 45) + (16' \times 18)] \times \frac{1}{9}$	= 115	SY
LT SHR $3' \times 62.5' \times \frac{1}{9}$	= 21	SY
RT SHR $[(7.3 \pm 6' \times 45) + (6' \times 18)] \times \frac{1}{9}$	= 45	SY
STA. 781+08 TO STA. 782+07		
ML $[(16' \times 518.11) + (\frac{16' \pm 25' \times 160.95')}{2}] + (25' \times 49.94') + (\frac{30' \times 25')}{2} + (\frac{91.33 \times 20')}{2} \times \frac{1}{9}$	= 2597	SY
LT SHR $3' \times 653.5' \times \frac{1}{9}$	= 218	SY
RT SHR $[(6' \times 999) + (\frac{6' \pm 3' \times 100.0')}{2}] \times \frac{1}{9}$	= 716	SY
RAMP P		
STA. 791+00 TO STA. 801+00		
ML $[(\frac{90' \times 24')}{2} + (\frac{21' \pm 18' \times 220.78')}{2} + (16' \times 584.22')] + (\frac{16' \pm 14' \times 100.0' \times 2')}{2} \times \frac{1}{9}$	= 1980	SY
LT SHR $[(3' \times 584.22') + (\frac{3' \pm 2' \times 100.0')}{2}] \times \frac{1}{9}$	= 223	SY
RT SHR $6' \times 784.22' \times \frac{1}{9}$	= 523	SY
RAMP Q		
STA. 779+86.16 TO STA. 801+00		
ML $(\frac{90' \times 24')}{2} + (\frac{19' \pm 16' \times 643')}{2} + (\frac{19' \times 332')}{2} + (\frac{16' \times 989')}{2} \times \frac{1}{9}$	= 3829	SY
LT SHR $3' \times 1527.0' \times \frac{1}{9}$	= 509	SY
RT SHR $(6' \times 804.0') + (\frac{6' \pm 3' \times 100.0')}{2} + (\frac{3' \times 120.0')}{2} + (\frac{3' \pm 6' \times 100.0')}{2} + (6' \times 508.0') + (\frac{13' \pm 3' \times 232.0')}{2} \times \frac{1}{9}$	= 1221	SY
RAMP R		
STA. 801+00 TO STA. 803+47.50		
ML $(\frac{24' \pm 26' \times 247.5')}{2} \times \frac{1}{9}$	= 825	SY
LT SHR $(3' \times 247.5') \times \frac{1}{9}$	= 83	SY
RT SHR $[(6' \times 247.5') \times \frac{1}{9}]$	= 165	SY
STA. 803+47.50 TO STA. 804+10		
FEATHERING ML $(\frac{26' \pm 23.67')}{2} \times 62.5' \times \frac{1}{9}$	= 172	SY
RT SHR $[(\frac{6.95' \pm 8' \times 62.5')}{2} + (8' \times 10')] \times \frac{1}{9}$	= 52	SY
LT SHR $3' \times 62.5' \times \frac{1}{9}$	= 21	SY

PAVEMENT AREA

PAVEMENT AREA	SY	SY
ENTRANCE & EXIT PAVEMENT		
RAMP A		
STA. 15+92(A) TO STA. 638+22.05 (I-74 ML)		
ML $(\frac{25' \pm 0' \times 1200.0' \times \frac{1}{9}}{2})$	= 1667	SY
RT SHR $[(\frac{8' \pm 0' \times 165.78')}{2} + (10' \times 1034.22')] \times \frac{1}{9}$	= 1215	SY
RAMP M		
STA. 765+00 TO STA. 777+00		
ML $(\frac{0' \pm 25' \times 1200.0' \times \frac{1}{9}}{2})$	= 1667	SY
LT SHR $[(\frac{10' \pm 8' \times 96.0')}{2} + (8' \times 1104.0')] \times \frac{1}{9}$	= 1077	SY
RAMP O		
STA. 772+25.96 (I-74 ML) TO STA. 780+55 (I-74 ML)		
ML $(\frac{0' \pm 12' \times 100.0')}{2} + (12' \times 274.0') + (\frac{39' \pm 12' \times 425.96')}{2} + (\frac{18' \pm 17.57' \times 25'')}{2} + (\frac{14' \pm 12.84' \times 29.0')}{2} \times \frac{1}{9}$	= 1732	SY
RT SHR $[(\frac{10' \pm 8' \times 100.0')}{2} + (8' \times 694.05')] + (\frac{8' \pm 7.8' \times 25'')}{2} \times \frac{1}{9}$	= 739	SY
LT SHR $3' \times 25' \times \frac{1}{9}$	= 8	SY
RAMP N		
STA. 800+45.59 (N) TO STA. 810+45.59 (I-74 ML)		
ML $[(\frac{39' \pm 12' \times 454.41')}{2} + (\frac{12' \times 245.59')}{2} + (\frac{12' \pm 0' \times 100.0')}{2}] \times \frac{1}{9}$	= 1682	SY
LT SHR $[(8' \times 700.0') + (\frac{8' \pm 10' \times 100.0')}{2}] \times \frac{1}{9}$	= 722	SY
RAMP P		
STA. 807+00 (I-74 ML) TO STA. 819+00 (I-74 ML)		
ML $(\frac{25' \pm 0' \times 1200.0' \times \frac{1}{9}}{2})$	= 1667	SY
RT SHR $[(8' \times 1100.0') + (\frac{8' \pm 10' \times 100.0')}{2}] \times \frac{1}{9}$	= 1077	SY
STA. 804+10 (I-74 ML) TO STA. 807+00 (I-74 ML)		
ML $[(\frac{23.67' \pm 20' \times 110')}{2} + (\frac{20' \pm 18' \times 60')}{2} + (\frac{20' \pm 14' \times 120.0')}{2}] \times \frac{1}{9}$	= 600	SY
RT SHR $8' \times 290.0' \times \frac{1}{9}$	= 258	SY
LT SHR $(\frac{3' \pm 2' \times 170' \times \frac{1}{9}}{2})$	= 47	SY
RAMP Y		
STA. 20+79.53 (Y) TO STA. 627+00 (I-74 ML)		
ML $[(\frac{39' \pm 12' \times 505.17')}{2} + (\frac{12' \times 225.02')}{2} + (\frac{12' \pm 0' \times 100.0')}{2} + (\frac{17.34' \pm 18' \times 32.62')}{2}] \times \frac{1}{9}$	= 1862	SY
LT SHR $(8' \times 730.19') + (\frac{7.25' \pm 8' \times 32.62')}{2} + (\frac{8' \pm 0' \times 100.0')}{2} \times \frac{1}{9}$	= 777	SY
RT SHR $(3' \times 32.62') \times \frac{1}{9}$	= 11	SY

PAVEMENT AREA

PAVEMENT AREA	SY	SY
CROSS ROADS		
NORTHBEND ROAD		
FEATHERING (SOUTH END)		
$20' \times 60' \times \frac{1}{9}$	= 167	SY
FEATHERING (NORTH END)		
$30' \times 57' \times \frac{1}{9}$	= 190	SY
APPROACH SLABS (SOUTH END)		
$25' \times 57' \times \frac{1}{9}$	= 158	SY
APPROACH SLABS (NORTH END)		
$25' \times 57' \times \frac{1}{9}$	= 158	SY
STA. 19+00.0 TO STA. 26+38.0 (NB)		
$[(\frac{26' \pm 27' \times 83.67')}{2} + (\frac{27' \pm 33' \times 279.33')}{2} + (\frac{33' \pm 27' \times 57')}{2} + (\frac{27' \pm 33' \times 243.5')}{2} + (\frac{33' \pm 28.5' \times 259')}{2} + (3 \times 70) + (\frac{37 \times 3')}{2} + (27 \times 127)] \times \frac{1}{9}$	= 3475	SY
STA. 19+00.0 TO STA. 26+38.0 (SB)		
$[(\frac{25' \pm 27' \times 83.67')}{2} + (\frac{27' \pm 33' \times 230.33')}{2} + (\frac{33' \pm 27' \times 90')}{2} + (\frac{28.5' \pm 35' \times 213.0')}{2} + (\frac{35' \pm 28.5' \times 259')}{2} + (3 \times 60) + (27 \times 127.33)] \times \frac{1}{9}$	= 3430	SY
RACE ROAD		
FEATHERING		
$(\frac{24' \pm 30' \times 38' \times 2' \times \frac{1}{9}}{2})$	= 228	SY
APPROACH SLABS		
$30' \times 25' \times 2 \times \frac{1}{9}$	= 167	SY

PAVEMENT AREA

PAVEMENT AREA	SY	SY
SHOULDER WIDENINGS		
RAMP X		
STA. 2176.69 TO STA. 9+82		
$3' \times 705.31' \times \frac{1}{9}$	= 235	SY
STA. 9+82 TO STA. 10+81		
$\frac{3' \pm 0' \times 99.0' \times \frac{1}{9}}{2}$	= 17	SY
STA. 16+82 TO STA. 17+20		
$\frac{0' \pm 3' \times 38.0' \times \frac{1}{9}}{2}$	= 6	SY
STA. 21+09.40 TO STA. 51+22.80		
$[(\frac{0' \pm 3' \times 20')}{2} + (3' \times 193)] \times \frac{1}{9}$	= 68	SY
RAMP Y		
STA. 21+09.40 TO STA. 21+41		
$\frac{0' \pm 3' \times 40' \times \frac{1}{9}}{2}$	= 7	SY
STA. 21+41 TO STA. 20+17.03		
$3' \times 1610.03' \times \frac{1}{9}$	= 557	SY
STA. 20+17.03 TO STA. 21+12.15		
$\frac{0' \pm 3' \times 95.12' \times \frac{1}{9}}{2}$	= 16	SY
RAMP A		
STA. 0+22 TO STA. 12+21.83		
$3' \times 1209.83' \times \frac{1}{9}$	= 403	SY
STA. 12+21.83 TO STA. 12+91.83		
$\frac{0' \pm 3' \times 69' \times \frac{1}{9}}{2}$	= 10	SY
RAMP Q		
STA. 782+36 TO STA. 791+40		
$[(804 \times 3) + (\frac{3' \pm 0' \times 100')}{2}] \times \frac{1}{9}$	= 285	SY
STA. 792+60 TO STA. 798+68		
$[(508 \times 3) + (\frac{3' \pm 0' \times 100')}{2}] \times \frac{1}{9}$	= 186	SY
RAMP L		
STA. 785+00 TO STA. 710+90		
$2' \times 590.0' \times \frac{1}{9}$	= 197	SY
STA. 792+27.27 TO STA. 794+22		
$\frac{0' \pm 3' \times 94.73' \times \frac{1}{9}}{2}$	= 16	SY
STA. 794+22 TO STA. 801+43.5		
$3' \times 721.50' \times \frac{1}{9}$	= 241	SY
RAMP M		
STA. 780+00 TO STA. 791+47.27		
$[(3' \times 1047.27) + (\frac{0' \pm 3' \times 100')}{2}] \times \frac{1}{9}$	= 366	SY
RAMP N		
STA. 791+00 TO STA. 792+04.6		
$\frac{0' \pm 3' \times 100' \times \frac{1}{9}}{2}$	= 17	SY
STA. 792+04.6 TO STA. 801+45.6		
$3' \times 941.0' \times \frac{1}{9}$	= 314	SY
STA. 801+45.6 TO STA. 802+45.6		
$\frac{3' \pm 0' \times 100.0' \times \frac{1}{9}}{2}$	= 17	SY
RAMP O		
STA. 780+00 TO STA. 78+90		
$\frac{0' \pm 3' \times 100.0' \times \frac{1}{9}}{2}$	= 17	SY
STA. 780+90 TO STA. 710+51.88		
$3' \times 961.88' \times \frac{1}{9}$	= 321	SY
STA. 710+51.88 TO STA. 711+51.88		
$\frac{3' \pm 0' \times 100.0' \times \frac{1}{9}}{2}$	= 17	SY
RAMP P		
STA. 712+15.78 TO STA. 801+00		
$3' \times 784.22' \times \frac{1}{9}$	= 261	SY
STA. 801+00 TO STA. 803+00		
$3' \times 200.0' \times \frac{1}{9}$	= 67	SY
STA. 802+00 TO STA. 804+00		
$\frac{3' \pm 0' \times 100.0' \times \frac{1}{9}}{2}$	= 17	SY

PAVEMENT CALCULATIONS

ITEM 202 - PAVEMENT REMOVED

MAINLINE NB- STA. 603+34.93 TO STA. 605+09.93 = 756 SY
 STA. 608+49.13 TO STA. 609+61.63 = 300 SY
 STA. 698+41.48 TO STA. 699+53.95 = 300 SY
 STA. 701+59.87 TO STA. 702+72.37 = 300 SY
 STA. 870+30.02 TO STA. 871+42.52 = 450 SY
 STA. 873+74.48 TO STA. 874+86.98 = 450 SY

MAINLINE EB - STA. 605+49.80 TO STA. 606+62.30 = 300 SY
 STA. 609+41.86 TO STA. 610+54.36 = 300 SY
 STA. 698+29.32 TO STA. 699+41.82 = 300 SY
 STA. 701+79.24 TO STA. 702+91.74 = 300 SY
 STA. 870+49.64 TO STA. 871+62.14 = 300 SY
 STA. 873+43.86 TO STA. 874+56.36 = 300 SY

RAMP Y STA. 14+00 TO STA. 16+11
 $[(20.5+14 \times 106) + (8.5+25 \times 105)] \times \frac{1}{4} = 267$ SY
 RAMP X STA. 19+58.20 TO STA. 20+70.70 = 181 SY
 GRAND TOTAL = 4804 SY

ITEM 203 - EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION

MAINLINE NB- STA. 603+34.93 TO STA. 605+09.93 = 756 SY
 $756 \text{ SY} \times 9' \times (0.917 \pm 0.708) \times \frac{1}{27} = 205$ CY
 - STA. 608+49.13 TO STA. 609+61.63 = 75 CY
 $300 \text{ SY} \times 9' \times 0.75 \times \frac{1}{27} = 75$ CY
 - STA. 698+41.48 TO STA. 699+53.95 = 75 CY
 $300 \text{ SY} \times 9' \times 0.75 \times \frac{1}{27} = 75$ CY
 - STA. 701+59.87 TO STA. 702+72.37 = 75 CY
 $300 \text{ SY} \times 9' \times 0.75 \times \frac{1}{27} = 75$ CY
 - STA. 870+30.02 TO STA. 871+42.52 = 112.5 CY
 $450 \text{ SY} \times 9' \times 0.75 \times \frac{1}{27} = 112.5$ CY
 - STA. 873+74.48 TO STA. 874+86.98 = 112.5 CY
 $450 \text{ SY} \times 9' \times 0.75 \times \frac{1}{27} = 112.5$ CY

MAINLINE EB - STA. 605+49.80 TO STA. 606+62.30 = 78 CY
 $300 \text{ SY} \times 9' \times (1.825 \pm 1.75) \times \frac{1}{27} = 78$ CY
 - STA. 609+41.86 TO STA. 610+54.36 = 75 CY
 $300 \text{ SY} \times 9' \times 0.75 \times \frac{1}{27} = 75$ CY
 - STA. 698+29.32 TO STA. 699+41.82 = 75 CY
 $300 \text{ SY} \times 9' \times 0.75 \times \frac{1}{27} = 75$ CY
 - STA. 701+79.24 TO STA. 702+91.74 = 75 CY
 $300 \text{ SY} \times 9' \times 0.75 \times \frac{1}{27} = 75$ CY
 - STA. 870+49.64 TO STA. 871+62.14 = 75 CY
 $300 \text{ SY} \times 9' \times 0.75 \times \frac{1}{27} = 75$ CY
 - STA. 873+43.86 TO STA. 874+56.36 = 75 CY
 $300 \text{ SY} \times 9' \times 0.75 \times \frac{1}{27} = 75$ CY

MAINLINE SHOULDERS
 WB $4' \times [(4 \times 25) + (5 \times 112.5)] \times (1.25 \pm 1.67) \times \frac{1}{27} = 143$ CY
 $10' \times (4 \times 25) \times (1.25 \pm 1.67) \times \frac{1}{27} = 54$ CY
 $11 \times 14 \times 1.56 \pm 1.75 \times 112.5 \times \frac{1}{27} = 86$ CY
 $147 \times (1.67 \pm 1.75) \times 9 \times \frac{1}{27} = 84$ CY
 $4 \times 175 \times (1.67 \pm 1.25) \times \frac{1}{27} = 38$ CY

MAINLINE SHOULDERS (Cont)
 EB $[(69+47+69+42+(4 \times 125))] \text{ SY} \times 9' \times (1.25 \pm 1.67) \times \frac{1}{27} = 354$ CY
 $10' \times (4 \times 25) \times (1.25 \pm 1.67) \times \frac{1}{27} = 54$ CY
 $4' \times [(6 \times 112.5) + (4 \times 25)] \times (1.25 \pm 1.67) \times \frac{1}{27} = 168$ CY
 RAMP X $181 \text{ SY} \times 9' \times 0.75 \times \frac{1}{27} = 45$ CY
 $[(8 \times 87.5) + (8 \pm 5 \times 25) \times (1.67 \pm 1.0)] \times \frac{1}{27} = 43$ CY
 RAMP Y $[(11.58 \pm 19 \times 74) + (8 \pm 1 \times 90) + (215 \times 8)] \times 1.25 \times \frac{1}{27} = 151$ CY
 GRAND TOTAL = 2328 CY

ITEM 203 - LINEAR GRADING

MAINLINE- STA. 600+19.93 TO STA. 612+76.63
 RT SHR (490 + 427.5) ÷ 100 FT/STA = 9.2 STA
 EB- LT SHR (427.5 + 428) ÷ 100 FT/STA = 8.6 STA
 STA. 691+00 TO STA. 701+00
 WB- LT SHR (112.50' + 112.50') ÷ 100 FT/STA = 2.3 STA
 RT SHR (452.95' + 453.13') ÷ 100 FT/STA = 9.1 STA
 EB- LT SHR (452.82' + 452.76') ÷ 100 FT/STA = 9.1 STA
 RT SHR (112.50' + 112.50') ÷ 100 FT/STA = 2.2 STA
 STA. 767+00 TO STA. 930+00
 WB- LT SHR (Truck Lane) 13640 ÷ 100 FT/STA = 136.4 STA
 RT SHR (452.14' + 452.54') ÷ 100 FT/STA = 9.0 STA
 EB- LT SHR (452.52' + 452.64') ÷ 100 FT/STA = 9.1 STA
 RT SHR (112.5' + 25' + 112.5' + 25') ÷ 100 FT/STA = 2.8 STA

RAMP X
 STA. 3+09.40 TO STA. 5+22.80 RT 213.40' ÷ 100 FT/STA = 2.1 STA
 STA. 2+76.69 TO STA. 10+81 RT 797.31' ÷ 100 FT/STA = 8.0 STA
 STA. 16+82.50 TO STA. 19+58.20 RT 250.50' ÷ 100 FT/STA = 2.8 STA
 RAMP Y
 STA. 2+09.40 TO STA. 2+12.15 LT 1802.75' ÷ 100 FT/STA = 18.0 STA
 STA. 14+00.00 TO STA. 19+90 RT 590' ÷ 100 FT/STA = 6 STA
 RAMP A
 STA. 00+22 TO STA. 12+91.63 RT 1269.83' ÷ 100 FT/STA = 12.7 STA

RAMP L
 STA. 785+00 TO STA. 790+90 LT 590.0' ÷ 100 FT/STA = 5.9 STA
 STA. 793+27.27 TO STA. 801+43.5 RT 816.23' ÷ 100 FT/STA = 8.2 STA

RAMP M
 STA. 780+00 TO STA. 791+47.27 LT 1147.27' ÷ 100 FT/STA = 11.5 STA

RAMP N
 STA. 791+04.60 TO STA. 802+45.99 LT 1140.99' ÷ 100 FT/STA = 11.4 STA

RAMP O
 STA. 780+90 TO STA. 791+51.88 RT 1061.88' ÷ 100 FT/STA = 10.6 STA

RAMP P
 STA. 793+15.78 TO STA. 801+00 RT 787.22' ÷ 100 FT/STA = 7.8 STA
 STA. 801+00 TO STA. 804+00 RT 300.0' ÷ 100 FT/STA = 3.0 STA

RAMP Q
 STA. 782+36 TO STA. 791+40 RT 904.0' ÷ 100 FT/STA = 9.0 STA
 STA. 792+60 TO STA. 798+68 RT 608.0' ÷ 100 FT/STA = 6.1 STA

GRAND TOTAL = 320.9 STA.
 = 321 STA.

ITEM 203 - SUBGRADE COMPACTION

MAINLINE NB - STA. 603+34.93 TO STA. 605+09.93 = 756 SY
 STA. 608+49.13 TO STA. 609+61.63 = 300 SY
 STA. 698+41.48 TO STA. 699+53.95 = 300 SY
 STA. 701+59.87 TO STA. 702+72.37 = 300 SY
 STA. 870+30.02 TO STA. 871+42.52 = 450 SY
 STA. 873+74.48 TO STA. 874+86.98 = 450 SY

MAINLINE EB - STA. 605+49.80 TO STA. 606+62.30 = 300 SY
 STA. 609+41.86 TO STA. 610+54.36 = 300 SY
 STA. 698+29.32 TO STA. 699+41.82 = 300 SY
 STA. 701+79.24 TO STA. 702+91.74 = 300 SY
 STA. 870+49.64 TO STA. 871+62.14 = 300 SY
 STA. 873+43.86 TO STA. 874+56.36 = 300 SY

MAINLINE SHOULDERS
 STA. 600+19.93 TO STA. 612+76.63
 WB- LT (147 SY + 156 SY) = 303 SY
 RT (190 SY + 190 SY) = 380 SY
 EB- LT (190 SY + 190 SY) = 380 SY
 RT (116 SY + 111 SY) = 227 SY

STA. 695+26 TO STA. 706+07
 WB LT (125 SY + 125 SY) = 250 SY
 RT (201 SY + 201 SY) = 402 SY
 EB LT (201 SY + 201 SY) = 402 SY
 RT (125 SY + 125 SY) = 250 SY

STA. 867+35 TO STA. 877+11
 WB LT (125 SY + 125 SY) = 250 SY
 RT (201 SY + 201 SY) = 402 SY
 EB LT (201 SY + 201 SY) = 402 SY
 RT (125 SY + 125 SY) = 250 SY

TRUCK LANE - SHOULDER
 STA. 777+00 TO STA. 927+50 = 15307 SY

RAMP X - STA. 19+33 TO STA. 20+70.70
 ML = 181 SY
 8' SHR = 96 SY
 GRAND TOTAL = 28,838 SY

ITEM 254 - PAVEMENT PLANING, CONCRETE

RAMP X STA. 2+76.69 TO STA. 3+07.94
 $31.25' \times 18.0' \times \frac{1}{4} = 63$ SY
 STA. 3+09.40 TO STA. 3+40.65
 $[(31.25' \times 17.5') + (11' \times 11')] \times \frac{1}{4} = 67$ SY

RAMP A STA. 0+22 TO STA. 0+53.25
 $[(31.25' \times 16) + (31.25 \times 65) + (75 \times 5)] \times \frac{1}{4} = 170$ SY

MAINLINE NB STA. 918+10.13 TO STA. 918+72.63
 $62.50' \times 36' \times \frac{1}{4} = 250$ SY
 - EB STA. 918+78.14 TO STA. 919+40.64
 $62.50' \times 24' \times \frac{1}{4} = 167$ SY

RAMP Y STA. 3+09.4 TO STA. 3+40.65
 $[(31.25 \times 17) + (32 \times 30)] \times \frac{1}{4} = 109$ SY
 GRAND TOTAL = 826 SY

ITEM 254 - PAVEMENT PLANING, BITUMINOUS

NORTH BEND - STA. 12+70 TO STA. 13+00
 $104' \times 12.5' \times 50' \times \frac{1}{4} = 7$ SY
 STA. 26+38 TO STA. 26+68
 $104' \times 12.5' \times 57' \times \frac{1}{4} = 8$ SY

MAINLINE-NB STA. 601+85 TO STA. 603+34.93
 $62.50' \times 35' \times \frac{1}{4} = 243$ SY
 RACE ROAD STA. 18+16 TO STA. 18+54 = 114 SY
 STA. 21+58 TO STA. 21+96 = 114 SY
 GRAND TOTAL = 486 SY

ITEM 301 - 3" BITUMINOUS AGGREGATE BASE, AC-20

STA. 609+61.63 TO STA. 617+00
 WB- ML 1969 SY x 9' x .25 x 1/27 = 164 CY
 10' SHR 2174 SY x 9' x .25 x 1/27 = 181 CY
 4' SHR (188) SY x 9' x .25 x 1/27 = 16 CY
 EB- ML (1013 SY + 1722 SY) x 9' x .25 x 1/27 = 228 CY
 10' SHR 717 SY x 9' x .25 x 1/27 = 60 CY
 4' SHR (147) SY x 9' x .25 x 1/27 = 12 CY
 ML (137.5 + 214.8 + 22.5/2) x .25 x 1/27 = 4 CY
 STA. 691+00 TO STA. 692+00

WB- ML 4000 SY x 9' x .25 x 1/27 = 333 CY
 10' SHR 646 SY x 9' x .25 x 1/27 = 54 CY
 4' SHR 667 SY x 9' x .25 x 1/27 = 56 CY
 EB- ML 4000 SY x 9' x .25 x 1/27 = 333 CY
 10' SHR (320 + 1024) SY x 9' x .25 x 1/27 = 113 CY
 4' SHR 667 SY x 9' x .25 x 1/27 = 56 CY

STA. 692+00 TO STA. 697+00
 WB- ML 4000 SY x 9' x .25 x 1/27 = 333 CY
 10' SHR 1667 SY x 9' x .25 x 1/27 = 139 CY
 4' SHR 667 SY x 9' x .25 x 1/27 = 56 CY
 EB- ML 4000 SY x 9' x .25 x 1/27 = 333 CY
 10' SHR 976 SY x 9' x .25 x 1/27 = 81 CY
 4' SHR 667 SY x 9' x .25 x 1/27 = 56 CY

STA. 697+00 TO STA. 696+50
 WB- ML 7866.5 SY x 9' x .25 x 1/27 = 656 CY
 10' SHR 3278 SY x 9' x .25 x 1/27 = 273 CY
 4' SHR 1311 SY x 9' x .25 x 1/27 = 109 CY
 EB- ML 7866.5 SY x 9' x .25 x 1/27 = 656 CY
 10' SHR 3278 SY x 9' x .25 x 1/27 = 273 CY
 4' SHR 1311 SY x 9' x .25 x 1/27 = 109 CY

STA. 696+50 TO STA. 691+00
 WB- ML 3866.5 SY x 9' x .25 x 1/27 = 322 CY
 10' SHR 1611 SY x 9' x .25 x 1/27 = 134 CY
 4' SHR 644 SY x 9' x .25 x 1/27 = 54 CY
 EB- ML 3866.5 SY x 9' x .25 x 1/27 = 322 CY
 10' SHR 1611 SY x 9' x .25 x 1/27 = 134 CY
 4' SHR 644 SY x 9' x .25 x 1/27 = 54 CY

STA. 691+00 TO STA. 706+06
 EB- ML (1945 + 822) SY x 9' x .25 x 1/27 = 231 CY
 10' SHR 1153 SY x 9' x .25 x 1/27 = 96 CY
 4' SHR (324 + 137) SY x 9' x .25 x 1/27 = 38 CY
 WB- ML (1977 + 874) SY x 9' x .25 x 1/27 = 238 CY
 10' SHR 1188 SY x 9' x .25 x 1/27 = 99 CY
 4' SHR (330 + 146) SY x 9' x .25 x 1/27 = 40 CY

TOTALS CARRIED TO GENERAL SUMMARY

PAVEMENT CALCULATIONS

CALC. BY MKG
DATE 9/4/89
CHKD. BY JCM
DATE 2/2/90

HAM-74-11.10

OHIO
FHWA
REGION 5
35
132

ITEM 301 - 3" BITUMINOUS AGGREGATE BASE, AC-20 (CONT.)

STA. 706+00 TO STA. 721+00		
WB-ML	4000 SY x 9 x .25 x 1/27	= 333 CY
10' SHR	1667 SY x 9 x .25 x 1/27	= 139 CY
4' SHR	667 SY x 9 x .25 x 1/27	= 56 CY
EB-ML		
4000 SY x 9 x .25 x 1/27	= 333 CY	
10' SHR	1667 SY x 9 x .25 x 1/27	= 139 CY
4' SHR	667 SY x 9 x .25 x 1/27	= 56 CY
STA. 721+00 TO STA. 736+00		
WB & EB ML	4000 SY x 2 x 9 x .25 x 1/27	= 667 CY
10' SHR	3333 SY x 2 x 9 x .25 x 1/27	= 556 CY
4' SHR	1333 SY x 2 x 9 x .25 x 1/27	= 222 CY
STA. 736+00 TO STA. 767+00		
WB ML	8266.5 SY x 9 x .25 x 1/27	= 689 CY
10' SHR	(1722+1500) SY x 9 x .25 x 1/27	= 269 CY
4' SHR	(689+689) SY x 9 x .25 x 1/27	= 115 CY
EB ML	8266.5 SY x 9 x .25 x 1/27	= 689 CY
10' SHR	(1722+1722) SY x 9 x .25 x 1/27	= 287 CY
4' SHR	(689+689) SY x 9 x .25 x 1/27	= 115 CY
STA. 767+00 TO STA. 782+50		
WB ML	4403 SY x 9 x .25 x 1/27	= 367 CY
10' SHR	[(10' x 300) + (10' x 250)] x .25 x 1/27	= 58 CY
4' SHR	689 SY x 9 x .25 x 1/27	= 57 CY
EB-ML	4133 SY x 9 x .25 x 1/27	= 344 CY
10' SHR	(722+90) SY x 9 x .25 x 1/27	= 68 CY
4' SHR	689 SY x 9 x .25 x 1/27	= 57 CY
STA. 782+50 TO STA. 797+00		
WB ML	5663 SY x 9 x .25 x 1/27	= 472 CY
10' SHR	(10' x 1450) x .25 x 1/27 + (346) SY x 9 x .25 x 1/27	= 163 CY
4' SHR	644 SY x 9 x .25 x 1/27	= 54 CY
EB ML	3867 SY x 9 x .25 x 1/27	= 322 CY
10' SHR	(1611+335) SY x 9 x .25 x 1/27	= 162 CY
4' SHR	644 SY x 9 x .25 x 1/27	= 54 CY
STA. 797+00 TO STA. 812+00		
WB ML	6000 SY x 9 x .25 x 1/27	= 500 CY
10' SHR	[(10' x 603.41) + (133 SY x 9)] x .25 x 1/27	= 67 CY
4' SHR	667 SY x 9 x .25 x 1/27	= 56 CY
EB ML	4000 SY x 9 x .25 x 1/27	= 333 CY
10' SHR	1261 SY x 9 x .25 x 1/27	= 105 CY
4' SHR	667 SY x 9 x .25 x 1/27	= 56 CY
STA. 812+00 TO STA. 842+00		
WB ML	12000 SY x 9 x .25 x 1/27	= 1000 CY
10' SHR	10' x 2000' x .25 x 1/27	= 278 CY
4' SHR	1333 SY x 9 x .25 x 1/27	= 111 CY
EB ML	8000 SY x 9 x .25 x 1/27	= 667 CY
10' SHR	2556 SY x 9 x .25 x 1/27	= 213 CY
4' SHR	1333 SY x 9 x .25 x 1/27	= 111 CY
STA. 842+00 TO STA. 857+00		
WB ML	6000 SY x 9 x .25 x 1/27	= 500 CY
10' SHR	10' x 1500' x .25 x 1/27	= 139 CY
4' SHR	667 SY x 9 x .25 x 1/27	= 56 CY
EB ML	4000 SY x 9 x .25 x 1/27	= 333 CY
10' SHR	1666 SY x 9 x .25 x 1/27	= 139 CY
4' SHR	1333 SY x 9 x .25 x 1/27	= 111 CY

STA. 857+00 TO STA. 872+00		
WB-ML	5320 SY x 9 x .25 x 1/27	= 443 CY
10' SHR	10' x 1330.02' x .25 x 1/27	= 123 CY
4' SHR	(591+140) SY x 9 x .25 x 1/27	= 61 CY
EB-ML	3599 SY x 9 x .25 x 1/27	= 300 CY
10' SHR	1506 SY x 9 x .25 x 1/27	= 126 CY
4' SHR	(460+140) SY x 9 x .25 x 1/27	= 50 CY
STA. 872+00 TO STA. 887+00		
WB-ML	4852 SY x 9 x .25 x 1/27	= 404 CY
10' SHR	10' x 1183' x .25 x 1/27	= 110 CY
4' SHR	(399+140) SY x 9 x .25 x 1/27	= 45 CY
EB-ML	3316 SY x 9 x .25 x 1/27	= 276 CY
10' SHR	1400 SY x 9 x .25 x 1/27	= 117 CY
4' SHR	(413+140) SY x 9 x .25 x 1/27	= 46 CY
STA. 887+00 TO STA. 903+00		
WB-ML	6400 SY x 9 x .25 x 1/27	= 533 CY
10' SHR	10' x 1600' x .25 x 1/27	= 148 CY
4' SHR	711 SY x 9 x .25 x 1/27	= 59 CY
EB-ML	4267 SY x 9 x .25 x 1/27	= 356 CY
10' SHR	1778 SY x 9 x .25 x 1/27	= 148 CY
4' SHR	711 SY x 9 x .25 x 1/27	= 59 CY
STA. 903+00 TO STA. 927+50		
WB-ML	(2800+1297) SY x 9 x .25 x 1/27	= 241 CY
10' SHR	10' x 1224.14 x .25 x 1/27	= 113 CY
4' SHR	544 SY x 9 x .25 x 1/27	= 45 CY
EB-ML	(1867+1046) SY x 9 x .25 x 1/27	= 243 CY
10' SHR	1214 SY x 9 x .25 x 1/27	= 101 CY
4' SHR	485 SY x 9 x .25 x 1/27	= 40 CY
ENTRANCE & EXIT PAVEMENT		
RAMP Y		
ML	1862 SY x 9 x .25 x 1/27	= 155 CY
LT SHR	777 SY x 9 x .25 x 1/27	= 65 CY
RT SHR	11 SY x 9 x .25 x 1/27	= 1 CY
RAMP A		
ML	(975+1667) SY x 9 x .25 x 1/27	= 220 CY
RT SHR	(451+1315) SY x 9 x .25 x 1/27	= 147 CY
LT SHR	(39) SY x 9 x .25 x 1/27	= 3 CY
RAMP M		
ML	(1667+505) SY x 9 x .25 x 1/27	= 181 CY
LT SHR	(1077+222) SY x 9 x .25 x 1/27	= 108 CY
RAMP O		
ML	1732 SY x 9 x .25 x 1/27	= 144 CY
RT SHR	729 SY x 9 x .25 x 1/27	= 62 CY
LT SHR	8 SY x 9 x .25 x 1/27	= 1 CY
RAMP N		
ML	1682 SY x 9 x .25 x 1/27	= 140 CY
LT SHR	722 SY x 9 x .25 x 1/27	= 60 CY
RAMP P		
ML	(1667+620) SY x 9 x .25 x 1/27	= 191 CY
RT SHR	(1077+258) SY x 9 x .25 x 1/27	= 111 CY
LT SHR	47 SY x 9 x .25 x 1/27	= 4 CY
END PROJECT - MAINLINE		
WB - STA. 916+00.13 TO STA. 918+72.63		
ML	36' x 100' x (.25 ± .083) x 1/27	= 22 CY
RT SHR	4' x 100' x (.25 ± .083) x 1/27	= 3 CY
LT SHR	10' x 100' x (.25 ± .083) x 1/27	= 6 CY
EB - STA. 917+28.14 TO STA. 919+40.64		
ML	24' x 100' x (.25 ± .083) x 1/27	= 15 CY
RT SHR	10' x 100' x (.25 ± .083) x 1/27	= 6 CY
LT SHR	4' x 100' x (.25 ± .083) x 1/27	= 2 CY

ITEM 301 - 5 1/2" BITUMINOUS AGGREGATE BASE, AC-20

RAMP X - STA. 2176.61 TO STA. 9+82		
3' x 705.31' x .46 x 1/27	= 36 CY	
STA. 9+82 TO STA. 10+81		
3' x 720' x .46 x 1/27	= 3 CY	
STA. 16+82 TO STA. 17+22		
0 ± 3' x 38.0' x .46 x 1/27	= 1 CY	
STA. 31+91.40 TO STA. 51+22.80		
[(0 ± 3' x 20) + (3' x 19.3)] x .46 x 1/27	= 10 CY	
RAMP Y - STA. 3+09.4 TO STA. 3+47		
0 ± 3' x 40' x .46 x 1/27	= 1 CY	
STA. 3+47 TO STA. 20+17.03		
3' x 1670.03' x .46 x 1/27	= 85 CY	
STA. 20+17.03 TO STA. 21+12.15		
0 ± 3' x 95.12' x .46 x 1/27	= 2 CY	
RAMP A - STA. 0+22 TO STA. 12+31.83		
3' x 1209.83' x .46 x 1/27	= 62 CY	
STA. 12+31.83 TO STA. 12+91.83		
0 ± 3' x 60' x .46 x 1/27	= 2 CY	
RAMP M - STA. 780+00 TO STA. 781+00		
0 ± 3' x 100.0' x .46 x 1/27	= 3 CY	
STA. 781+00 TO STA. 783+00		
3' x 200.0' x .46 x 1/27	= 10 CY	
RAMP L - STA. 785+00 TO STA. 790+90		
3' x 590.0' x .46 x 1/27	= 30 CY	
STA. 793+27.27 TO STA. 794+22		
0 ± 3' x 94.73' x .46 x 1/27	= 2 CY	
STA. 794+22 TO STA. 801+45.3		
3' x 721.50' x .46 x 1/27	= 37 CY	
RAMP M - STA. 783+00 TO STA. 791+47.27		
3' x 847.27' x .46 x 1/27	= 43 CY	
RAMP N - STA. 791+00 TO STA. 792+04.6		
0 ± 3' x 104.60' x .46 x 1/27	= 3 CY	
STA. 792+04.6 TO STA. 801+45.6		
3' x 941.0' x .46 x 1/27	= 48 CY	
STA. 801+45.6 TO STA. 802+45.6		
3' x 100.0' x .46 x 1/27	= 3 CY	
RAMP O - STA. 780+90 TO STA. 781+90		
0 ± 3' x 100.0' x .46 x 1/27	= 3 CY	
STA. 781+90 TO STA. 790+51.88		
3' x 861.88' x .46 x 1/27	= 44 CY	
STA. 790+51.88 TO STA. 791+51.88		
3' x 100.0' x .46 x 1/27	= 3 CY	

RAMP P - STA. 803+00 TO STA. 804+00		
3' x 100' x .46 x 1/27	= 3 CY	
STA. 801+00 TO STA. 803+00		
3' x 200' x .46 x 1/27	= 10 CY	
- STA. 793+15.78 TO STA. 801+00		
3' x 784.22' x .46 x 1/27	= 40 CY	
RAMP Q - STA. 782+36 TO STA. 791+40		
285 SY x 9 x .46 x 1/27	= 44 CY	
STA. 792+60 TO STA. 792+68		
186 SY x 9 x .46 x 1/27	= 29 CY	
SUB TOTAL = 557 CY		

ITEM 301 - 3" BITUMINOUS AGGREGATE BASE, AC-20 (CONT.)

MEDIAN CROSSOVERS		
STA. 692+00	(248+89) SY x 9 x .25 x 1/27	= 36 CY
STA. 753+74	(208+178) SY x 9 x .25 x 1/27	= 36 CY
STA. 889+00	42.6 SY x 9 x .25 x 1/27	= 36 CY
STA. 888+86	42.6 SY x 9 x .25 x 1/27	= 36 CY
SUB TOTAL = 144 CY		

ITEM 301 - 18" BITUMINOUS AGGREGATE BASE, AC-20

BRIDGE HAM-74-1116 R&L		
ML WB	(756+300) SY x 9 x 1.0' x 1/27	= 450 CY
EB	(300+300) SY x 9 x 1.0' x 1/27	= 200 CY

BRIDGE HAM-74-1292 R&L		
ML WB	(300+300) SY x 9 x 1.0' x 1/27	= 200 CY
EB	(300+300) SY x 9 x 1.0' x 1/27	= 200 CY

BRIDGE HAM-74-1618 R&L		
ML WB	(450+450) SY x 9 x 1.0' x 1/27	= 300 CY
EB	(300+300) SY x 9 x 1.0' x 1/27	= 200 CY

RAMP X - STA. 19+58.20 TO STA. 20+70.70		
ML	181 SY x 9 x 1.0 x 1/27	= 60 CY
8' SHR	96 SY x 9 x 1.0 x 1/27	= 32 CY
SUB TOTAL = 194 CY		

ITEM 301 - 9" BITUMINOUS AGGREGATE BASE, AC-20 (FOR MAINTENANCE OF TRAFFIC)

BRIDGE HAM-74-1116		
WB & EB	(190+217 SY x 3) x 9 x .75 x 1/27	= 305 CY

BRIDGE HAM-74-1292		
WB & EB	(201 SY x 4) x 9 x .75 x 1/27	= 201 CY
APPR. SLABS	(67 x 4) SY x 9 x .75 x 1/27	= 67 CY

BRIDGE HAM-74-1618		
WB & EB	(201 SY x 4) x 9 x .75 x 1/27	= 201 CY
APPR. SLABS	(100+100+67+67) SY x 9 x .75 x 1/27	= 84 CY

TRUCK LANE - STA. 777+00 TO STA. 927+58		
15307 SY x 9 x .75 x 1/27	= 3827 CY	
SUB TOTAL = 4685 CY		

GRAND TOTAL ITEM 301 = 30,927 CY

ITEM 304 AGGREGATE BASE, DEPTH AS SHOWN

BRIDGE HAM-74-1116		
ML WB	(756+300+156) SY x 9 x .67 x 1/27	= 271 CY
EB	(300+300) SY x 9 x .67 x 1/27	= 134 CY

BRIDGE HAM-74-1292		
ML WB	(300+300) SY x 9 x .67 x 1/27	= 134 CY
EB	(300+300) SY x 9 x .67 x 1/27	= 134 CY

BRIDGE HAM-74-1618		
ML WB	(450+450) SY x 9 x .67 x 1/27	= 201 CY
EB	(300+300) SY x 9 x .67 x 1/27	= 134 CY
SUB TOTAL = 1008 CY		

SUB TOTAL = 23,997 CY

TOTALS CARRIED TO GENERAL SUMMARY

20 JUN 1989 10:45
OSCAR WARTON
DESIGNER
FILED 0524 C30-10210PC.DGN:1

PAVEMENT CALCULATIONS

CALC. BY MKG
DATE 4/4/88
CHKD. BY JCM
DATE 2/2/90

HAM-74-11.10

OHIO
FHWA REGION 5

36
132

ITEM 304 - AGGREGATE BASE, DEPTH AS SHOWN

BRIDGE HAM-74-1116	
NB 10' SHR.	$147 \text{ SY} \times 9' \times (1.17 \pm .5) \times \frac{1}{27} = 41 \text{ CY}$
4' SHR.	$4' \times (175 + 112.5) \text{ LF} \times (1.17 \pm .5) \times \frac{1}{27} = 41 \text{ CY}$
EB 10' SHR.	$(69 + 47 + 69 + 42) \text{ SY} \times 9' \times (1.17 \pm .5) \times \frac{1}{27} = 63 \text{ CY}$
4' SHR.	$4' \times (112.5 + 112.5) \text{ LF} \times (1.17 \pm .5) \times \frac{1}{27} = 32 \text{ CY}$
BRIDGE HAM-74-1292	
NB 10' SHR.	$(125 + 125) \text{ SY} \times 9' \times (1.17 \pm .5) \times \frac{1}{27} = 70 \text{ CY}$
4' SHR.	$4' \times (112.5 + 112.5) \text{ LF} \times (1.17 \pm .5) \times \frac{1}{27} = 28 \text{ CY}$
EB 10' SHR.	$(125 + 125) \text{ SY} \times 9' \times (1.17 \pm .5) \times \frac{1}{27} = 70 \text{ CY}$
4' SHR.	$4' \times (112.5 + 112.5) \text{ LF} \times (1.17 \pm .5) \times \frac{1}{27} = 28 \text{ CY}$
BRIDGE HAM-74-1618	
NB 10' SHR.	$(125 + 125) \text{ SY} \times 9' \times (1.17 \pm .5) \times \frac{1}{27} = 70 \text{ CY}$
4' SHR.	$4' \times (112.5 + 112.5) \text{ LF} \times (1.17 \pm .5) \times \frac{1}{27} = 28 \text{ CY}$
EB 10' SHR.	$(125 + 125) \text{ SY} \times 9' \times (1.17 \pm .5) \times \frac{1}{27} = 70 \text{ CY}$
4' SHR.	$4' \times (112.5 + 112.5) \text{ LF} \times (1.17 \pm .5) \times \frac{1}{27} = 28 \text{ CY}$
RAMP X - STA. 19+58.20 TO STA. 20+45.70	
ML	$181 \text{ SY} \times 9' \times .67 \times \frac{1}{27} = 40 \text{ CY}$
B' SHR	$96 \text{ SY} \times 9' \times (1.16 \pm .5) \times \frac{1}{27} = 27 \text{ CY}$
- STA. 20+4.9 TO STA. 17+20	$(235 + 17 + 6 + 68) \text{ SY} \times 9' \times (.8 \pm .5) \times \frac{1}{27} = 71 \text{ CY}$
RAMP Y - STA. 21+09.4 TO STA. 21+12.15	
4'	$(601) \text{ SY} \times 9' \times (.8 \pm .5) \times \frac{1}{27} = 130 \text{ CY}$
RAMP A - STA. 0+22 TO STA. 12+91.83	
	$(403 + 10) \text{ SY} \times 9' \times (.8 \pm .5) \times \frac{1}{27} = 29 \text{ CY}$
RAMP L - STA. 780+00 TO STA. 801+45.3	
	$(197 + 16 + 241) \text{ SY} \times 9' \times (.8 \pm .5) \times \frac{1}{27} = 98 \text{ CY}$
RAMP M - STA. 780+00 TO STA. 791+47.27	
	$366 \text{ SY} \times 9' \times (.8 \pm .5) \times \frac{1}{27} = 79 \text{ CY}$
RAMP N - STA. 791+04.6 TO STA. 802+45.6	
	$(17 + 214 + 17) \text{ SY} \times 9' \times (.8 \pm .5) \times \frac{1}{27} = 75 \text{ CY}$
RAMP O - STA. 780+90 TO STA. 791+51.88	
	$(17 + 221 + 17) \text{ SY} \times 9' \times (.8 \pm .5) \times \frac{1}{27} = 77 \text{ CY}$
RAMP P - STA. 793+15.78 TO STA. 801+00	
	$261 \text{ SY} \times 9' \times (.8 \pm .5) \times \frac{1}{27} = 57 \text{ CY}$
STA. 801+00 TO STA. 804+00	
	$(67 + 17) \text{ SY} \times 9' \times (.8 \pm .5) \times \frac{1}{27} = 18 \text{ CY}$
RAMP Q - STA. 782+36 TO STA. 791+40	
	$(285) \text{ SY} \times 9' \times (.8 \pm .5) \times \frac{1}{27} = 62 \text{ CY}$
STA. 792+60 TO STA. 798+68	
	$(186) \text{ SY} \times 9' \times (.8 \pm .5) \times \frac{1}{27} = 40 \text{ CY}$
RAMP Y - STA. 14+00 TO STA. 16+85	
RT	$\left\{ \left[\frac{(1.25 \pm .5) \times (3 \pm 9) \times 106}{2} \right] + \left[\frac{(2.5 \pm .5 \times 5) \times 105}{2} \right] + \left[\frac{1.25 \pm .5 \times 116 + 19 \times 179}{2} \right] \right\} \times \frac{1}{27} = 115 \text{ CY}$
SUB TOTAL = 1547 CY	
GRAND TOTAL ITEM 304 = 2555 CY	

ITEM 407 - TACK COAT

PAVEMENT TRANSITION (BEGIN & END PROJECT)	
MAINLINE - NB	
STA. 601+85 TO STA. 603+34.93	$625 \text{ SY} \times .075 \text{ GAL/SY} = 47 \text{ GAL}$
	$67 \text{ SY} \times .075 \text{ GAL/SY} = 5 \text{ GAL}$
	$167 \text{ SY} \times .075 \text{ GAL/SY} = 13 \text{ GAL}$
STA. 916+60.13 TO STA. 918+72.63	$850 \text{ SY} \times .075 \text{ GAL/SY} = 64 \text{ GAL}$
	$94 \text{ SY} \times .075 \text{ GAL/SY} = 7 \text{ GAL}$
	$236 \text{ SY} \times .075 \text{ GAL/SY} = 18 \text{ GAL}$
MAINLINE - EB	
STA. 600+70 TO STA. 601+70	$267 \text{ SY} \times .075 \text{ GAL/SY} = 20 \text{ GAL}$
	$111 \text{ SY} \times .075 \text{ GAL/SY} = 8 \text{ GAL}$
	$44 \text{ SY} \times .075 \text{ GAL/SY} = 3 \text{ GAL}$
STA. 917+28.14 TO STA. 919+40.64	$567 \text{ SY} \times .075 \text{ GAL/SY} = 43 \text{ GAL}$
	$236 \text{ SY} \times .075 \text{ GAL/SY} = 18 \text{ GAL}$
	$94 \text{ SY} \times .075 \text{ GAL/SY} = 7 \text{ GAL}$
SUB TOTAL = 253 GAL	
MEDIAN CROSSOVERS	
STA. 643+00 ML	$248 \text{ SY} \times .075 \text{ GAL/SY} = 19 \text{ GAL}$
RT/UT SHR (89+89)SY	$\times .075 \text{ GAL/SY} = 14 \text{ GAL}$
STA. 753+74 ML	$248 \text{ SY} \times .075 \text{ GAL/SY} = 19 \text{ GAL}$
RT/UT SHR 178 SY	$\times .075 \text{ GAL/SY} = 14 \text{ GAL}$
STA. 829+00 ML	$248 \text{ SY} \times .075 \text{ GAL/SY} = 19 \text{ GAL}$
RT/UT SHR 178 SY	$\times .075 \text{ GAL/SY} = 14 \text{ GAL}$
STA. 888+86 ML	$248 \text{ SY} \times .075 \text{ GAL/SY} = 19 \text{ GAL}$
RT/UT SHR 178 SY	$\times .075 \text{ GAL/SY} = 14 \text{ GAL}$
SUB TOTAL = 132 GAL	
RECONSTRUCTED SHOULDERS (INCL APPR. SLAB SHRS)	
STA. 600+19.93 TO STA. 603+34.93 (NB)	
4' x 315 x 1/9 x .075 GAL/SY	= 11 GAL
STA. 602+34.8 TO STA. 606+62.30 (EB)	
4' x 315 x 1/9 x .075 GAL/SY	= 11 GAL
STA. 608+49.13 TO STA. 612+76.63 (NB)	
4' x 315.37' x 1/9 x .075 GAL/SY	= 11 GAL
STA. 609+41.86 TO STA. 613+69.85 (EB)	
4' x 315 x 1/9 x .075 GAL/SY	= 11 GAL
STA. 695+26 TO STA. 699+78.95 (NB)	
4' x (315.45' + 25') x 1/9 x .075 GAL/SY	= 11 GAL
STA. 694+14 TO STA. 699+66.82 (EB)	
4' x (315.45' + 25') x 1/9 x .075 GAL/SY	= 11 GAL
STA. 701+34.87 TO STA. 705+88 (NB)	
4' x (315.63' + 25') x 1/9 x .075 GAL/SY	= 11 GAL
STA. 701+54.24 TO STA. 706+06 (EB)	
4' x (315.26 + 25') x 1/9 x .075 GAL/SY	= 11 GAL
STA. 867+35 TO STA. 871+87.14 (NB)	
4' x (314.64' + 25') x 1/9 x .075 GAL/SY	= 11 GAL
STA. 867+15 TO STA. 871+61.52 (EB)	
4' x (315.02' + 25') x 1/9 x .075 GAL/SY	= 11 GAL
STA. 873+49.48 TO STA. 878+02 (NB)	
4' x (315.02' + 25') x 1/9 x .075 GAL/SY	= 11 GAL
STA. 873+18.36 TO STA. 877+71 (EB)	
4' x (315.14' + 25') x 1/9 x .075 GAL/SY	= 11 GAL
STA. 777+00 TO STA. 921+50 (NB/TRUCKLANE)	
15307 SY x .075 GAL/SY	= 1148 GAL
SUB TOTAL = 1280 GAL	

MAINLINE PAVEMENT - NB

STA. 603+09.93 TO STA. 605+24.93	$135 \text{ SY} \times .075 \text{ GAL/SY} = 11 \text{ GAL}$
STA. 608+24.13 TO STA. 608+49.13	$169 \text{ SY} \times .075 \text{ GAL/SY} = 13 \text{ GAL}$
STA. 609+61.63 TO STA. 617+00	$1969 \text{ SY} \times .075 \text{ GAL/SY} = 148 \text{ GAL}$
MAINLINE PAVEMENT - EB	
STA. 603+35 TO STA. 605+49.80	$1013 \text{ SY} \times .075 \text{ GAL/SY} = 76 \text{ GAL}$
STA. 606+62.30 TO STA. 606+87.30	$90 \text{ SY} \times .075 \text{ GAL/SY} = 7 \text{ GAL}$
STA. 609+16.86 TO STA. 609+41.86	$106 \text{ SY} \times .075 \text{ GAL/SY} = 8 \text{ GAL}$
STA. 610+54.36 TO STA. 617+00	$1722 \text{ SY} \times .075 \text{ GAL/SY} = 129 \text{ GAL}$
MAINLINE PAVEMENT - NB & EB	
STA. 617+00 TO STA. 632+00	$8000 \text{ SY} \times .075 \text{ GAL/SY} = 600 \text{ GAL}$
STA. 632+00 TO STA. 647+00	$8000 \text{ SY} \times .075 \text{ GAL/SY} = 600 \text{ GAL}$
STA. 647+00 TO STA. 676+50	$15733 \text{ SY} \times .075 \text{ GAL/SY} = 1180 \text{ GAL}$
STA. 676+50 TO STA. 691+00	$7733 \text{ SY} \times .075 \text{ GAL/SY} = 580 \text{ GAL}$
MAINLINE PAVEMENT - EB	
STA. 691+00 TO STA. 696+23.32	$1945 \text{ SY} \times .075 \text{ GAL/SY} = 146 \text{ GAL}$
STA. 699+41.82 TO STA. 699+66.82	$67 \text{ SY} \times .075 \text{ GAL/SY} = 5 \text{ GAL}$
STA. 701+54.24 TO STA. 701+79.24	$67 \text{ SY} \times .075 \text{ GAL/SY} = 5 \text{ GAL}$
STA. 702+91.74 TO STA. 706+00	$822 \text{ SY} \times .075 \text{ GAL/SY} = 62 \text{ GAL}$
MAINLINE PAVEMENT - NB	
STA. 691+00 TO STA. 698+41.45	$1977 \text{ SY} \times .075 \text{ GAL/SY} = 149 \text{ GAL}$
STA. 699+63.95 TO STA. 699+78.95	$67 \text{ SY} \times .075 \text{ GAL/SY} = 5 \text{ GAL}$
STA. 701+34.87 TO STA. 701+59.87	$67 \text{ SY} \times .075 \text{ GAL/SY} = 5 \text{ GAL}$
STA. 702+72.37 TO STA. 706+00	$874 \text{ SY} \times .075 \text{ GAL/SY} = 65 \text{ GAL}$
MAINLINE PAVEMENT - NB & EB	
STA. 706+00 TO STA. 721+00	$8000 \text{ SY} \times .075 \text{ GAL/SY} = 600 \text{ GAL}$
STA. 721+00 TO STA. 736+00	$8000 \text{ SY} \times .075 \text{ GAL/SY} = 600 \text{ GAL}$
STA. 736+00 TO STA. 767+00	$16533 \text{ SY} \times .075 \text{ GAL/SY} = 1240 \text{ GAL}$
STA. 767+00 TO STA. 782+50 (NB)	$4403 \text{ SY} \times .075 \text{ GAL/SY} = 330 \text{ GAL}$
(EB)	$4133 \text{ SY} \times .075 \text{ GAL/SY} = 310 \text{ GAL}$
STA. 782+50 TO STA. 797+00 (NB)	$5663 \text{ SY} \times .075 \text{ GAL/SY} = 425 \text{ GAL}$
(EB)	$3867 \text{ SY} \times .075 \text{ GAL/SY} = 290 \text{ GAL}$
STA. 797+00 TO STA. 812+00 (NB)	$6000 \text{ SY} \times .075 \text{ GAL/SY} = 450 \text{ GAL}$
(EB)	$4000 \text{ SY} \times .075 \text{ GAL/SY} = 300 \text{ GAL}$
STA. 812+00 TO STA. 842+00 (NB)	$12000 \text{ SY} \times .075 \text{ GAL/SY} = 900 \text{ GAL}$
(EB)	$8000 \text{ SY} \times .075 \text{ GAL/SY} = 600 \text{ GAL}$
STA. 842+00 TO STA. 857+00 (NB)	$6000 \text{ SY} \times .075 \text{ GAL/SY} = 450 \text{ GAL}$
(EB)	$4000 \text{ SY} \times .075 \text{ GAL/SY} = 300 \text{ GAL}$
MAINLINE PAVEMENT - NB	
STA. 857+00 TO STA. 870+20.02	$5320 \text{ SY} \times .075 \text{ GAL/SY} = 399 \text{ GAL}$
STA. 871+42.52 TO STA. 871+67.52	$100 \text{ SY} \times .075 \text{ GAL/SY} = 8 \text{ GAL}$
STA. 873+49.48 TO STA. 873+74.48	$100 \text{ SY} \times .075 \text{ GAL/SY} = 8 \text{ GAL}$
STA. 873+74.48 TO STA. 881+00	$4852 \text{ SY} \times .075 \text{ GAL/SY} = 364 \text{ GAL}$
MAINLINE PAVEMENT - EB	
STA. 862+00 TO STA. 870+49.64	$3599 \text{ SY} \times .075 \text{ GAL/SY} = 270 \text{ GAL}$
STA. 871+62.14 TO STA. 871+87.14	$67 \text{ SY} \times .075 \text{ GAL/SY} = 5 \text{ GAL}$
STA. 873+18.86 TO STA. 873+43.86	$67 \text{ SY} \times .075 \text{ GAL/SY} = 5 \text{ GAL}$
STA. 874+56.36 TO STA. 881+00	$2316 \text{ SY} \times .075 \text{ GAL/SY} = 299 \text{ GAL}$
MAINLINE PAVEMENT - NB & EB	
STA. 887+00 TO STA. 903+00 (NB)	$6400 \text{ SY} \times .075 \text{ GAL/SY} = 480 \text{ GAL}$
(EB)	$4267 \text{ SY} \times .075 \text{ GAL/SY} = 320 \text{ GAL}$
STA. 903+00 TO STA. 910+00 (NB)	$2800 \text{ SY} \times .075 \text{ GAL/SY} = 210 \text{ GAL}$
(EB)	$1867 \text{ SY} \times .075 \text{ GAL/SY} = 140 \text{ GAL}$
STA. 913+35.99 TO STA. 916+60.13 (NB)	$1297 \text{ SY} \times .075 \text{ GAL/SY} = 98 \text{ GAL}$
STA. 913+35.99 TO STA. 917+28.14 (EB)	$1046 \text{ SY} \times .075 \text{ GAL/SY} = 79 \text{ GAL}$
SUB TOTAL = 13224 GAL	

MAINLINE SHOULDERS

STA. 609+61.63 TO STA. 617+00 (NB)	$(2174 + 188) \text{ SY} \times .075 \text{ GAL/SY} = 177 \text{ GAL}$
STA. 610+54.36 TO STA. 617+00 (EB)	$(147 + 717) \text{ SY} \times .075 \text{ GAL/SY} = 65 \text{ GAL}$
STA. 617+00 TO STA. 632+00 (NB)	$(646 + 667) \text{ SY} \times .075 \text{ GAL/SY} = 98 \text{ GAL}$
(EB)	$(320 + 667) \text{ SY} \times .075 \text{ GAL/SY} = 74 \text{ GAL}$
STA. 632+00 TO STA. 647+00 (NB)	$(1667 + 667) \text{ SY} \times .075 \text{ GAL/SY} = 175 \text{ GAL}$
(EB)	$(976 + 667) \text{ SY} \times .075 \text{ GAL/SY} = 123 \text{ GAL}$
STA. 647+00 TO STA. 676+50 (NB)	$(3278 + 1311) \text{ SY} \times .075 \text{ GAL/SY} = 344 \text{ GAL}$
(EB)	$(3278 + 1311) \text{ SY} \times .075 \text{ GAL/SY} = 344 \text{ GAL}$
STA. 676+50 TO STA. 691+00 (NB)	$(1611 + 644) \text{ SY} \times .075 \text{ GAL/SY} = 170 \text{ GAL}$
(EB)	$(1611 + 644) \text{ SY} \times .075 \text{ GAL/SY} = 170 \text{ GAL}$
STA. 691+00 TO STA. 706+00 (NB)	$(1243 + 195) \text{ SY} \times .075 \text{ GAL/SY} = 108 \text{ GAL}$
(EB)	$(1208 + 184) \text{ SY} \times .075 \text{ GAL/SY} = 104 \text{ GAL}$
STA. 706+00 TO STA. 721+00 (NB)	$(1667 + 667) \text{ SY} \times .075 \text{ GAL/SY} = 175 \text{ GAL}$
(EB)	$(1667 + 667) \text{ SY} \times .075 \text{ GAL/SY} = 175 \text{ GAL}$
STA. 721+00 TO STA. 736+00 (NB)	$(1667 + 667) \text{ SY} \times .075 \text{ GAL/SY} = 175 \text{ GAL}$
(EB)	$(1667 + 667) \text{ SY} \times .075 \text{ GAL/SY} = 175 \text{ GAL}$
STA. 736+00 TO STA. 751+50 (NB)	$(1722 + 689) \text{ SY} \times .075 \text{ GAL/SY} = 181 \text{ GAL}$
(EB)	$(1722 + 689) \text{ SY} \times .075 \text{ GAL/SY} = 181 \text{ GAL}$
STA. 751+50 TO STA. 767+00 (NB)	$(1500 + 689) \text{ SY} \times .075 \text{ GAL/SY} = 164 \text{ GAL}$
(EB)	$(1722 + 689) \text{ SY} \times .075 \text{ GAL/SY} = 181 \text{ GAL}$
STA. 767+00 TO STA. 782+50 (NB)	$689 \text{ SY} \times .075 \text{ GAL/SY} = 52 \text{ GAL}$
(EB)	$(722 + 90 + 689) \text{ SY} \times .075 \text{ GAL/SY} = 113 \text{ GAL}$
STA. 782+50 TO STA. 797+00 (NB)	$(644 + 346) \text{ SY} \times .075 \text{ GAL/SY} = 74 \text{ GAL}$
(EB)	$(1611 + 335 + 644) \text{ SY} \times .075 \text{ GAL/SY} = 194 \text{ GAL}$
STA. 797+00 TO STA. 812+00 (NB)	$(667 + 133) \text{ SY} \times .075 \text{ GAL/SY} = 60 \text{ GAL}$
(EB)	$(1261 + 667) \text{ SY} \times .075 \text{ GAL/SY} = 145 \text{ GAL}$
STA. 812+00 TO STA. 842+00 (NB)	$1333 \text{ SY} \times .075 \text{ GAL/SY} = 92 \text{ GAL}$
(EB)	$(2556 + 1333) \text{ SY} \times .075 \text{ GAL/SY} = 283 \text{ GAL}$
STA. 842+00 TO STA. 857+00 (NB)	$667 \text{ SY} \times .075 \text{ GAL/SY} = 50 \text{ GAL}$
(EB)	$(1666 + 667) \text{ SY} \times .075 \text{ GAL/SY} = 175 \text{ GAL}$
STA. 857+00 TO STA. 872+00 (NB)	$451 \text{ SY} \times .075 \text{ GAL/SY} = 34 \text{ GAL}$
(EB)	$(1527 + 460) \text{ SY} \times .075 \text{ GAL/SY} = 149 \text{ GAL}$
STA. 872+00 TO STA. 887+00 (NB)	$399 \text{ SY} \times .075 \text{ GAL/SY} = 30 \text{ GAL}$
(EB)	$(1400 + 413) \text{ SY} \times .075 \text{ GAL/SY} = 136 \text{ GAL}$
STA. 887+00 TO STA. 903+00 (NB)	$711 \text{ SY} \times .075 \text{ GAL/SY} = 53 \text{ GAL}$
(EB)	$(1778 + 711) \text{ SY} \times .075 \text{ GAL/SY} = 187 \text{ GAL}$
STA. 903+00 TO STA. 917+28.14 (NB)	$544 \text{ SY} \times .075 \text{ GAL/SY} = 41 \text{ GAL}$
(EB)	$(1214 + 485) \text{ SY} \times .075 \text{ GAL/SY} = 128 \text{ GAL}$
SUB TOTAL = 5356 GAL	
RAMP Y	
STA. 3+09 TO STA. 3+84.40	$(196 + 45) \text{ SY} \times .075 \text{ GAL/SY} = 18 \text{ GAL}$
STA. 3+84.40 TO STA. 14+00	$(1918 + 671) \text{ SY} \times .075 \text{ GAL/SY} = 195 \text{ GAL}$
STA. 14+00 TO STA. 20+17.03	$(1097 + 609 + 411) \text{ SY} \times .075 \text{ GAL/SY} = 159 \text{ GAL}$
STA. 20+17.03 TO STA. 20+79.53	$(116 + 96 + 21) \text{ SY} \times .075 \text{ GAL/SY} = 14 \text{ GAL}$
RAMP X	
STA. 3+09.4 TO STA. 5+22.80	$(153 + 47 + $

PAVEMENT CALCULATIONS

ITEM 407 - TACK COAT (CONT.)

RAMP M

STA. 777+00 TO STA. 779+50	(505 + 222) SY X .075 GAL/SY = 55 GAL
STA. 779+50 TO STA. 780+12.5	(162 + 56 + 21) SY X .075 GAL/SY = 18 GAL
STA. 780+12.5 TO STA. 783+00	(933 + 200 + 96) SY X .075 GAL/SY = 92 GAL
STA. 783+00 TO STA. 803+17.14	(3839 + 1145 + 455) SY X .075 GAL/SY = 408 GAL

RAMP N

STA. 783+00 TO STA. 793+50	(1910 + 565 + 249) SY X .075 GAL/SY = 204 GAL
STA. 790+50 TO STA. 801+83.09	(2304 + 704 + 229) SY X .075 GAL/SY = 243 GAL
STA. 801+83.09 TO STA. 802+45.59	(121 + 21 + 5) SY X .075 GAL/SY = 19 GAL

RAMP O

STA. 780+45 TO STA. 781+08	(115 + 21 + 45) SY X .075 GAL/SY = 14 GAL
STA. 781+08 TO STA. 792+07	(2597 + 218 + 716) SY X .075 GAL/SY = 265 GAL

RAMP P

STA. 790+00 TO STA. 801+00	(1980 + 223 + 523) SY X .075 GAL/SY = 205 GAL
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RAMP Q

STA. 779+16 TO STA. 801+00	(3829 + 509 + 1221) SY X .075 GAL/SY = 417 GAL
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RAMP R

STA. 801+00 TO STA. 803+47.50	(825 + 83 + 165) SY X .075 GAL/SY = 90 GAL
STA. 803+47.50 TO STA. 804+10	(172 + 52 + 21) SY X .075 GAL/SY = 19 GAL
SUB TOTAL = 3146 GAL	

ENTRANCE & EXIT PAVEMENT

RAMP A -	(1667 + 1315) SY X .075 GAL/SY = 224 GAL
RAMP M -	(1667 + 1077) SY X .075 GAL/SY = 206 GAL
RAMP O -	(87 + 1732 + 739) SY X .075 GAL/SY = 186 GAL
RAMP N -	(1682 + 722) SY X .075 GAL/SY = 180 GAL
RAMP P -	(1667 + 1077 + 620 + 258 + 47) SY X .075 GAL/SY = 275 GAL
RAMP Y -	(11 + 1862 + 777) SY X .075 GAL/SY = 199 GAL
SUB TOTAL 1270 GAL	

CROSS ROADS

NORTHBEND -	(167 + 190 + 158 + 158 + 3475 + 3430) SY X .075 GAL/SY = 568 GAL
RACE -	(1228 + 167) SY X .075 GAL/SY = 30 GAL
SUB TOTAL 598 GAL	

GRAND TOTAL ITEM 407 = 25,259 GAL

ITEM 408 - BITUMINOUS PRIME COAT

BRIDGE HAM-74-1116

STA. 603+34.93 TO STA. 605+09.93 (NB)	ML (467 + 289) SY X .35 GAL/SY = 265 GAL
	8' SHR 147 SY X .35 GAL/SY = 52 GAL
	4' SHR 4' X 176.5' X 1/4 X .35 GAL/SY = 27 GAL
STA. 605+49.80 TO STA. 606+62.30 (EB)	ML 300 SY X .35 GAL/SY = 105 GAL
	10' SHR (69 + 47) SY X .35 GAL/SY = 41 GAL
	4' SHR 4' X 112.5' X 1/4 X .35 GAL/SY = 18 GAL
STA. 608+49.13 TO STA. 609+61.63 (WB)	ML 300 SY X .35 GAL/SY = 105 GAL
	10' SHR 156 SY X .35 GAL/SY = 55 GAL
	4' SHR 4' X 112.5' X 1/4 X .35 GAL/SY = 18 GAL
STA. 609+41.86 TO STA. 610+54.36	ML 300 SY X .35 GAL/SY = 105 GAL
	10' SHR (69 + 42) SY X .35 GAL/SY = 31 GAL
	4' SHR 4' X 112.5' X 1/4 X .35 GAL/SY = 18 GAL

BRIDGE HAM-74-1292

STA. 698+41.48 TO STA. 699+53.95 (NB)	ML 300 SY X .35 GAL/SY = 105 GAL
	10' SHR 125 SY X .35 GAL/SY = 44 GAL
	4' SHR 4' X 112.5' X 1/4 X .35 GAL/SY = 18 GAL
STA. 698+29.32 TO STA. 699+41.82 (EB)	ML 300 SY X .35 GAL/SY = 105 GAL
	10' SHR 125 SY X .35 GAL/SY = 44 GAL
	4' SHR 4' X 112.5' X 1/4 X .35 GAL/SY = 18 GAL
STA. 701+59.87 TO STA. 702+72.37 (NB)	ML 300 SY X .35 GAL/SY = 105 GAL
	10' SHR 125 SY X .35 GAL/SY = 44 GAL
	4' SHR 4' X 112.5' X 1/4 X .35 GAL/SY = 18 GAL
STA. 701+79.24 TO STA. 702+91.74 (EB)	ML 300 SY X .35 GAL/SY = 105 GAL
	10' SHR 125 SY X .35 GAL/SY = 44 GAL
	4' SHR 4' X 112.5' X 1/4 X .35 GAL/SY = 18 GAL

BRIDGE HAM-74-1618

STA. 870+20.02 TO STA. 871+42.52 (NB)	ML 450 SY X .35 GAL/SY = 158 GAL
	10' SHR 125 SY X .35 GAL/SY = 44 GAL
	4' SHR 4' X 112.5' X 1/4 X .35 GAL/SY = 18 GAL
STA. 870+49.44 TO STA. 871+62.14 (EB)	ML 300 SY X .35 GAL/SY = 105 GAL
	10' SHR 125 SY X .35 GAL/SY = 44 GAL
	4' SHR 4' X 112.5' X 1/4 X .35 GAL/SY = 18 GAL
STA. 873+74.48 TO STA. 874+86.98 (WB)	ML 450 SY X .35 GAL/SY = 158 GAL
	10' SHR 125 SY X .35 GAL/SY = 44 GAL
	4' SHR 4' X 112.5' X 1/4 X .35 GAL/SY = 18 GAL

RAMP X

STA. 19+58.20 TO STA. 20+70.70	ML 181 SY X .35 GAL/SY = 63 GAL
	8' SHR 96 SY X .35 GAL/SY = 34 GAL

BRIDGE HAM-74-1618

STA. 873+43 TO STA. 874+56.36	ML 300 SY X .35 GAL/SY = 105 GAL
	10' SHR 125 SY X .35 GAL/SY = 44 GAL
	4' SHR 4' X 112.5' X 1/4 X .35 GAL/SY = 18 GAL

SHOULDER WIDENING

RAMP Y	$[(\frac{3+9}{2} \times 106) + (\frac{2.5+8.5}{2} \times 108) + (\frac{11.58+19}{2} \times 179)] \times .35 \text{ GAL/SY} = 1383 \text{ GAL}$
RAMP X	$(125 + 17 + 6 + 68) \text{ SY} \times .35 \text{ GAL/SY} = 114 \text{ GAL}$
RAMP Y	$(7 + 557 + 16) \text{ SY} \times .35 \text{ GAL/SY} = 203 \text{ GAL}$
RAMP A	$(403 + 10) \text{ SY} \times .35 \text{ GAL/SY} = 145 \text{ GAL}$
RAMP L	$(197 + 16 + 24) \text{ SY} \times .35 \text{ GAL/SY} = 159 \text{ GAL}$
RAMP M	$366 \text{ SY} \times .35 \text{ GAL/SY} = 128 \text{ GAL}$
RAMP N	$(17 + 314 + 17) \text{ SY} \times .35 \text{ GAL/SY} = 122 \text{ GAL}$
RAMP O	$(17 + 321 + 17) \text{ SY} \times .35 \text{ GAL/SY} = 124 \text{ GAL}$
RAMP P	$24 \text{ SY} \times .35 \text{ GAL/SY} = 9 \text{ GAL}$
RAMP Q	$(285 + 186 + 67 + 17) \text{ SY} \times .35 \text{ GAL/SY} = 194 \text{ GAL}$
GRAND TOTAL = 5050 GAL	

ITEM 446 - 1 3/4" ASPHALT CONCRETE, INTERMEDIATE COURSE TYPE 2, AC-20

MAINLINE - NB

STA. 603+34.93 TO STA. 605+09.93	ML $\frac{35+46}{2} \times 27.5 \times (.146 \pm .083) \times 1/27 = 6 \text{ CY}$
	RT SHR $4' \times 37.5' \times (.146 \pm .083) \times 1/27 = 1 \text{ CY}$
	LT SHR $4' \times 37.5' \times (.146 \pm .083) \times 1/27 = 1 \text{ CY}$

BRIDGE HAM-74-1116

STA. 603+34.93 TO STA. 605+09.93 (NB)	ML (467 + 289) SY X 9 X .15 X 1/27 = 30 CY
	8' SHR 147 SY X 9 X .15 X 1/27 = 7 CY
	4' SHR 4' X 176.5' X .15 X 1/27 = 4 CY
STA. 605+49.80 TO STA. 606+62.30 (EB)	ML 300 SY X 9 X .15 X 1/27 = 15 CY
	10' SHR (69 + 47) SY X 9 X .15 X 1/27 = 6 CY
	4' SHR 4' X 112.5' X .15 X 1/27 = 3 CY
STA. 608+49.13 TO STA. 609+61.63 (WB)	ML 300 SY X 9 X .15 X 1/27 = 15 CY
	10' SHR 156 SY X 9 X .15 X 1/27 = 8 CY
	4' SHR 4' X 112.5' X .15 X 1/27 = 3 CY
STA. 609+41.86 TO STA. 610+54.36 (EB)	ML 300 SY X 9 X .15 X 1/27 = 15 CY
	10' SHR (69 + 42) SY X 9 X .15 X 1/27 = 6 CY
	4' SHR 4' X 112.5' X .15 X 1/27 = 3 CY

BRIDGE HAM-74-1292

STA. 698+41.48 TO STA. 699+53.95 (NB)	ML 300 SY X 9 X .15 X 1/27 = 15 CY
	10' SHR 125 SY X 9 X .15 X 1/27 = 6 CY
	4' SHR 4' X 112.5' X .15 X 1/27 = 3 CY
STA. 698+29.32 TO STA. 699+41.82 (EB)	ML 300 SY X 9 X .15 X 1/27 = 15 CY
	10' SHR 125 SY X 9 X .15 X 1/27 = 6 CY
	4' SHR 4' X 112.5' X .15 X 1/27 = 3 CY

BRIDGE HAM-74-1618

STA. 701+59.87 TO STA. 702+72.37 (NB)	ML 300 SY X 9 X .15 X 1/27 = 15 CY
	10' SHR 125 SY X 9 X .15 X 1/27 = 6 CY
	4' SHR 4' X 112.5' X .15 X 1/27 = 3 CY
STA. 701+79.24 TO STA. 702+91.74 (EB)	ML 300 SY X 9 X .15 X 1/27 = 15 CY
	10' SHR 125 SY X 9 X .15 X 1/27 = 6 CY
	4' SHR 4' X 112.5' X .15 X 1/27 = 3 CY

BRIDGE HAM-74-1346

STA. 870+20.02 TO STA. 871+42.52 (NB)	ML 450 SY X 9 X .15 X 1/27 = 23 CY
	10' SHR 125 SY X 9 X .15 X 1/27 = 6 CY
	4' SHR 4' X 112.5' X .15 X 1/27 = 3 CY
STA. 870+49.44 TO STA. 871+62.14 (EB)	ML 300 SY X 9 X .15 X 1/27 = 15 CY
	10' SHR 125 SY X 9 X .15 X 1/27 = 6 CY
	4' SHR 4' X 112.5' X .15 X 1/27 = 3 CY
STA. 873+74.48 TO STA. 874+86.98 (WB)	ML 450 SY X 9 X .15 X 1/27 = 23 CY
	10' SHR 125 SY X 9 X .15 X 1/27 = 6 CY
	4' SHR 4' X 112.5' X .15 X 1/27 = 3 CY
STA. 873+43 TO STA. 874+56.36 (EB)	ML 300 SY X 9 X .15 X 1/27 = 15 CY
	10' SHR 125 SY X 9 X .15 X 1/27 = 6 CY
	4' SHR 4' X 112.5' X .15 X 1/27 = 3 CY

RAMP X

STA. 19+58.20 TO STA. 20+70.70	ML 181 SY X 9 X .15 X 1/27 = 9 CY
	8' SHR (78 + 18) SY X 9 X .15 X 1/27 = 5 CY
STA. 3109.4 TO STA. 3122	ML $\{[(17.5' \times 18.75' \times (.146 \pm .083))] + (242 \text{ SY} \times 9 \times .15)\} / 27 = 13 \text{ CY}$
	RT SHR $\{[4' \times 18.75' \times (.146 \pm .083)] + (92 \text{ SY} \times 9 \times .15)\} / 27 = 5 \text{ CY}$
STA. 2176.69 TO STA. 2139.38	ML $\{[725 \times 18.75' \times (.146 \pm .083)] + (334 \text{ SY} \times 9 \times .15)\} / 27 = 18 \text{ CY}$
	RT SHR $\{[6' \times 18.75' \times (.146 \pm .083)] + (125 \text{ SY} \times 9 \times .15)\} / 27 = 7 \text{ CY}$
	LT SHR $\{[3' \times 18.75' \times (.146 \pm .083)] + (63 \text{ SY} \times 9 \times .15)\} / 27 = 3 \text{ CY}$
STA. 2139.38 TO STA. 19+58.20	ML 35.33 SY X 9 X .15 X 1/27 = 177 CY
	RT SHR 507 SY X 9 X .15 X 1/27 = 25 CY

RAMP Y

STA. 3109 TO STA. 3184.40	ML $17.5' \times 18.75' \times (.146 \pm .083) \times 1/27 = 1 \text{ CY}$
	LT SHR $6' \times 18.75' \times (.146 \pm .083) \times 1/27 = 1 \text{ CY}$
STA. 3184.40 TO STA. 14+00	ML 1918 SY X 9 X .15 X 1/27 = 96 CY
	LT SHR 677 SY X 9 X .15 X 1/27 = 34 CY
STA. 14+00 TO STA. 20+17.03	ML 1097 SY X 9 X .15 X 1/27 = 55 CY
	RT SHR 609 SY X 9 X .15 X 1/27 = 30 CY
	LT SHR (411) SY X 9 X .15 X 1/27 = 21 CY
STA. 20+17.03 TO STA. 20+79.53	ML 116 SY X 9 X .15 X 1/27 = 8 CY
	LT SHR 46 SY X 9 X .15 X 1/27 = 3 CY
	RT SHR 21 SY X 9 X .15 X 1/27 = 1 CY

RAMP A

STA. 0422 TO STA. 0497	ML $18.75' \times 16' \times (.083 \pm .146) \times 1/27 = 1 \text{ CY}$
	RT SHR $18.75' \times 6' \times (.083 \pm .146) \times 1/27 = 1 \text{ CY}$
	LT SHR $18.75' \times 3' \times (.083 \pm .146) \times 1/27 = 1 \text{ CY}$
STA. 0497 TO STA. 10+25	ML $\{[(1539) \text{ SY} \times 9 \times .15] + [(111) \text{ SY} \times 9 \times (.15 \pm .25)]\} / 27 = 84 \text{ CY}$
	RT SHR $\{[(577) \text{ SY} \times 9 \times .15] + [(42) \text{ SY} \times 9 \times (.15 \pm .25)]\} / 27 = 32 \text{ CY}$
	LT SHR $\{[(288) \text{ SY} \times 9 \times .15] + [(21) \text{ SY} \times 9 \times (.15 \pm .25)]\} / 27 = 16 \text{ CY}$

TOTALS CARRIED TO GENERAL SUMMARY

PAVEMENT CALCULATIONS

ITEM 446 - 1 3/4" ASPHALT CONC., INTERMEDIATE COURSE TYPE 2, AC-20 (CONT.)

RAMP M

STA. 779+50 TO STA. 780+12.5
 ML 162 SY x 9 x (.25 ± .146) x 1/27 = 11 CY
 LT SHR 56 SY x 9 x (.25 ± .146) x 1/27 = 4 CY
 RT SHR 21 SY x 9 x (.25 ± .146) x 1/27 = 1 CY

STA. 780+12.5 TO STA. 783+00
 ML 933 SY x 9 x .15 x 1/27 = 47 CY
 LT SHR 200 SY x 9 x .15 x 1/27 = 10 CY
 RT SHR 96 SY x 9 x .15 x 1/27 = 5 CY

RAMP L

STA. 783+00 TO STA. 797+85
 ML [(16 x 1012) + (16 ± 19' x 473)] x .15 x 1/27 = 136 CY

LT SHR [(3 ± 10 x 200.0) + (6 x 590.0) + (3 x 237.27) + (3 ± 16 x 94.73) + (6 x 361.2)] x .15 x 1/27 = 46 CY
 RT SHR 455 SY x 9 x .15 x 1/27 = 23 CY

STA. 797+85 TO STA. 803+97.14
 ML [(16 ± 19 x 104) + (19 ± 21 x 188) + (105 ± 25)] x .15 x 1/27 = 46 CY

LT SHR 6 x 360.30' x .15 x 1/27 = 12 CY

RAMP M

STA. 783+00 TO STA. 791+47.27
 ML [(14 ± 16 x 100.0) + (14 x 647.27)] x .15 x 1/27 = 66 CY

LT SHR 565 SY x 9 x .15 x 1/27 = 26 CY
 RT SHR 249 SY x 9 x .15 x 1/27 = 12 CY

STA. 791+47.27 TO STA. 792+41
 ML [(16 ± 28 x 100) + (23 ± 100)] x .15 x 1/27 = 17 CY

RAMP N

STA. 790+50 TO STA. 801+83.09
 ML (2570) SY x 9 x .146 x 1/27 = 125 CY
 LT SHR (704) SY x 9 x .146 x 1/27 = 34 CY
 RT SHR (229) SY x 9 x .146 x 1/27 = 11 CY

STA. 801+83.09 TO STA. 802+45.59
 ML (121) SY x 9 x (.25 ± .146) x 1/27 = 5 CY
 LT SHR 51 SY x 9 x (.25 ± .146) x 1/27 = 3 CY
 RT SHR 21 SY x 9 x (.25 ± .146) x 1/27 = 1 CY

RAMP O

STA. 780+45 TO STA. 781+08
 ML 115 SY x 9 x (.25 ± .146) x 1/27 = 8 CY
 LT SHR 21 SY x 9 x (.25 ± .146) x 1/27 = 1 CY
 RT SHR 45 SY x 9 x (.25 ± .146) x 1/27 = 3 CY

STA. 781+08 TO STA. 787+61.5
 ML [(16 x 518.11) + (23.57 ± 16' x 160.95)] x .15 x 1/27 = 54 CY
 LT SHR 218 SY x 9 x .15 x 1/27 = 10 CY
 RT SHR 6 x 653.5 x .15 x 1/27 = 22 CY

STA. 787+61.5 TO STA. 792+07
 ML [(23.57 ± 25 x 25.56) + (25 x 445.5) + (30 ± 25) + (91.33 ± 20)] x .15 x 1/27 = 72 CY

RT SHR [(6' x 290.38) + (6 ± 3' x 100.0)] x .15 x 1/27 = 12 CY

RAMP P

STA. 790+00 TO STA. 801+00
 ML 1980 SY x 9 x .15 x 1/27 = 99 CY

LT SHR 223 SY x 9 x .15 x 1/27 = 11 CY
 RT SHR 523 SY x 9 x .15 x 1/27 = 26 CY

RAMP Q

STA. 779+26.16 TO STA. 801+00
 ML [(90 ± 24) + (19 ± 16' x 643) + (19 x 332) + (16' x 989')] x .15 x 1/27 = 191 CY
 LT SHR 509 SY x 9 x .15 x 1/27 = 26 CY
 RT SHR [(6' x 204) + (6 ± 3' x 100.0) + (3 x 120.0) + (3 ± 6' x 100.0) + (6' x 508.0) + (13 ± 3' x 232.0)] x .15 x 1/27 = 61 CY

RAMP R

STA. 801+00 TO STA. 803+47.50
 ML 825 SY x 9 x .15 x 1/27 = 41 CY
 LT SHR 83 SY x 9 x .15 x 1/27 = 4 CY
 RT SHR 165 SY x 9 x .15 x 1/27 = 8 CY

STA. 803+47.50 TO STA. 804+10
 ML 178 SY x 9 x (.25 ± .146) x 1/27 = 11 CY
 RT SHR 52 SY x 9 x (.25 ± .146) x 1/27 = 3 CY
 LT SHR 21 SY x 9 x (.25 ± .146) x 1/27 = 2 CY

NORTHBEND ROAD

STA. 13+00 TO STA. 26+68.0 (NB)
 [(3475 SY x 9 x .15) - (1049.5 LF x 2.5' x .15)] x 1/27 = 159 CY

STA. 13+00 TO STA. 24+68.0 (SB)
 [(3430 SY x 9 x .15) - (1019 LF x 2.5' x .15)] x 1/27 = 157 CY

FEATHERING
 (50+57) x 7.5 x (.083 ± .146) x 1/27 = 3 CY

GRAND TOTAL 1 3/4" ITEM 446 = 2615 CY

ITEM 446 - 1 1/4" ASPHALT CONCRETE SURFACE COURSE TYPE 1, AC-20

RAMP X

STA. 3107.4 TO STA. 3122.80
 ML [(153+242) SY x 9 x .104] + (17.5' x 25' x .083) x 1/27 = 15 CY

RT SHR [(47+92) SY x 9 x .104] + (6 x 25' x .083) x 1/27 = 5 CY

STA. 2176.69 TO STA. 19+58.20
 ML [(3533+144+234) SY x 9 x .104] + [(6.65 ± 7.96 x 25) x .083] x 1/27 = 140 CY
 LT SHR [(25+55) SY x 9 x .104] + (3 x 25' x .083) x 1/27 = 3 CY
 RT SHR [(50+507) SY x 9 x .104] + (6 x 25' x .083) x 1/27 = 20 CY

RAMP Y

STA. 3109 TO STA. 20+79.53
 ML (196+198+1097+116) SY x 9 x .104 x 1/27 = 115 CY
 LT SHR (45+677+411+46) SY x 9 x .104 x 1/27 = 41 CY
 RT SHR (609+21) SY x 9 x .104 x 1/27 = 22 CY

RAMP A

STA. 0122 TO STA. 15+92
 ML (352+1650+975) SY x 9 x .104 x 1/27 = 103 CY
 LT SHR (27+39+309) SY x 9 x .104 x 1/27 = 13 CY
 RT SHR (57+619+451) SY x 9 x .104 x 1/27 = 39 CY

RAMP L

STA. 777+00 TO STA. 803+97.14
 ML [(505+162+933+2839) SY x 9] x .104 x 1/27 = 189 CY

RT SHR (21+96+455) SY x 9 x .104 x 1/27 = 20 CY
 LT SHR (222+56+200+1145) SY x 9 x .104 x 1/27 = 56 CY

RAMP M

STA. 783+00 TO STA. 793+06.24
 ML (1910 SY x 9 x .104) x 1/27 = 66 CY
 LT SHR 565 SY x 9 x .104 x 1/27 = 20 CY
 RT SHR 277 SY x 9 x .104 x 1/27 = 10 CY

RAMP N

STA. 790+50 TO STA. 802+45.59
 ML [(2570+121) SY x 9 x .104] x 1/27 = 93 CY
 LT SHR (704+51) SY x 9 x .104 x 1/27 = 26 CY
 RT SHR (229+21) SY x 9 x .104 x 1/27 = 9 CY

RAMP O

STA. 780+45 TO STA. 792+07
 ML [(115+2597) SY x 9 x .104] x 1/27 = 94 CY

LT SHR (21+218) SY x 9 x .104 x 1/27 = 8 CY
 RT SHR (45+716) SY x 9 x .104 x 1/27 = 26 CY

RAMP P

STA. 790+00 TO STA. 801+00
 ML [(1980 SY x 9 x .104) x 1/27 = 67 CY
 LT SHR 223 SY x 9 x .104 x 1/27 = 8 CY
 RT SHR 523 SY x 9 x .104 x 1/27 = 18 CY

STA. 801+00 TO STA. 804+10
 ML (1579+171) SY x 9 x .104 x 1/27 = 61 CY
 LT SHR (151+23) SY x 9 x .104 x 1/27 = 6 CY
 RT SHR (478+53) SY x 9 x .104 x 1/27 = 18 CY

RAMP Q - STA 779+16 TO STA 801+00

ML (3829) SY x 9 x .104 x 1/27 = 133 CY
 LT SHR (509) SY x 9 x .104 x 1/27 = 18 CY
 RT SHR (1221) SY x 9 x .104 x 1/27 = 42 CY

MEDIAN CROSSOVERS

STA. 613+00 (248+89+89) SY x 9 x .104 x 1/27 = 20 CY
 STA. 753+74 (248+178) SY x 9 x .104 x 1/27 = 15 CY
 STA. 804+00 426 SY x 9 x .104 x 1/27 = 15 CY
 STA. 888+86 426 SY x 9 x .104 x 1/27 = 15 CY

NORTHBEND ROAD

STA. 13+00 TO STA. 26+68 (NB)
 [(3475 SY x 9 x .104) + (1049.5 x .13 SF)] x 1/27 = 126 CY

STA. 13+00 TO STA. 24+68 (SB)
 [(3430 SY x 9 x .104) + (1019 x .13 SF)] x 1/27 = 124 CY

FEATHERING
 [(50' x 10' x .083) + (167 SY x 9 x .104) + (50 x 12.5 x .104)] x 1/27 = 9 CY
 [(57' x 10' x .083) + (190 SY x 9 x .104) + (57 x 12.5 x .104)] x 1/27 = 9 CY

BEGIN AND END PROJECT

MAINLINE - WB
 STA. 600+79.73 TO STA. 603+34.93
 ML [(27.06 ± 40.0) x 37.5 x .104] + [(35 ± 37.08) x 62.50 x .21 ± .104] + [(38.75 ± 37.08) x 50' x .183 ± .104] x 1/27 = 29 CY
 RT SHR (4' x 315' x .104) x 1/27 = 5 CY

LT SHR [(10' x 87.64' x .104) + (10' x 62.36' x .104) + (10' x 50' x .183 ± .104)] x 1/27 = 7 CY

STA. 916+00.12 TO STA. 918+72.63
 ML [(36' x 50.60' x .104) + (36' x 62.5' x .104)] x 1/27 = 28 CY
 RT SHR (4' x 150.60' x .104) + (4' x 62.5' x .104) + (36' x 50.60' x .083) x 1/27 = 6 CY
 LT SHR [(10' x 150.60' x .104) + (10' x 62.5' x .104) + (36' x 50.60' x .083)] x 1/27 = 13 CY

MAINLINE - EB

STA. 600+70 TO STA. 601+70
 ML 267 SY x 9 x .104 x 1/27 = 9 CY
 RT SHR 111 SY x 9 x .104 x 1/27 = 4 CY
 LT SHR 44 SY x 9 x .104 x 1/27 = 2 CY

STA. 917+28.14 TO STA. 919+40.64

ML [(24' x 150.60' x .104) + (24' x 62.5' x .104) + (24' x 50.60' x .083)] x 1/27 = 19 CY
 RT SHR [(4' x 150.60' x .104) + (4' x 62.5' x .104) + (24' x 50.60' x .083)] x 1/27 = 6 CY
 LT SHR [(10' x 150.60' x .104) + (10' x 62.5' x .104) + (24' x 50.60' x .083)] x 1/27 = 9 CY

MAINLINE - WESTBOUND

STA. 603+35 TO STA. 927+50
 ML (15556+1602+1667+1682) SY x 9 x .104 x 1/27 = 3493 CY
 LT SHR (31601+10771+722+777) SY x 9 x .104 x 1/27 = 1185 CY
 RT SHR (12489+11) SY x 9 x .104 x 1/27 = 433 CY

MAINLINE - EASTBOUND

ML (79598+1667+1732+1667+620) SY x 9 x .104 x 1/27 = 2957 CY
 LT SHR (29397+1315+789+1077+258) SY x 9 x .104 x 1/27 = 1137 CY
 RT SHR (12398+47+8) SY x 9 x .104 x 1/27 = 432 CY

SUB TOTAL = 11610 CY

TOTALS CARRIED TO GENERAL SUMMARY

PAVEMENT CALCULATIONS

CALC. BY MKG
DATE 7/6/99
CHKD. BY JCM
DATE 2/2/99

HAM-74-11.10

OHIO
FHWA REGION 5
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ITEM 446 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE TYPE 1, AC-20

MAINLINE - WB			
STA. 605+09.93 TO STA. 605+24.93	ML	135 SY x 9' x (.125 ± .167) x 1/27	= 7 CY
STA. 608+24.13 TO STA. 608+44.13	ML	169 SY x 9' x (.125 ± .167) x 1/27	= 8 CY
STA. 699+53.95 TO STA. 699+78.95	ML	67 SY x 9' x (.125 ± .167) x 1/27	= 3 CY
	4' SHR	4' x 25' x (.125 ± .167) x 1/27	= 1 CY
	10' SHR	10' x 25' x (.125 ± .167) x 1/27	= 1 CY
STA. 701+34.87 TO STA. 701+59.87	ML	67 SY x 9' x (.125 ± .167) x 1/27	= 3 CY
	4' SHR	4' x 25' x (.125 ± .167) x 1/27	= 1 CY
	10' SHR	10' x 25' x (.125 ± .167) x 1/27	= 1 CY
STA. 871+40.52 TO STA. 871+67.52	ML	100 SY x 9' x (.125 ± .167) x 1/27	= 6 CY
	4' SHR	4' x 25' x (.125 ± .167) x 1/27	= 1 CY
	10' SHR	10' x 25' x (.125 ± .167) x 1/27	= 1 CY
STA. 873+49.88 TO STA. 873+78.88 SAME AS ABOVE (5+1+1)			= 7 CY
MAINLINE - EB			
STA. 606+62.90 TO STA. 606+87.90	ML	90 SY x 9' x (.125 ± .167) x 1/27	= 4 CY
STA. 609+16.86 TO STA. 609+41.86	ML	106 x 9' x (.125 ± .167) x 1/27	= 5 CY
STA. 699+41.82 TO STA. 699+66.82	ML	67 SY x 9' x (.125 ± .167) x 1/27	= 3 CY
	4' SHR	4' x 25' x (.125 ± .167) x 1/27	= 1 CY
	10' SHR	10' x 25' x (.125 ± .167) x 1/27	= 1 CY
STA. 871+62.14 TO STA. 871+87.14	ML	67 SY x 9' x (.125 ± .167) x 1/27	= 3 CY
	4' SHR	4' x 25' x (.125 ± .167) x 1/27	= 1 CY
	10' SHR	10' x 25' x (.125 ± .167) x 1/27	= 1 CY
STA. 873+18.86 TO STA. 873+43.86	ML	67 SY x 9' x (.125 ± .167) x 1/27	= 3 CY
	4' SHR	4' x 25' x (.125 ± .167) x 1/27	= 1 CY
	10' SHR	10' x 25' x (.125 ± .167) x 1/27	= 1 CY
STA. 701+54.24 TO STA. 701+79.24	ML	67 SY x 9' x (.125 ± .167) x 1/27	= 3 CY
	4' SHR	4' x 25' x (.125 ± .167) x 1/27	= 1 CY
	10' SHR	10' x 25' x (.125 ± .167) x 1/27	= 1 CY
NORTHBEND ROAD			
STA. 18+47 TO STA. 18+72		158 SY x 9' x (.125 ± .25) x 1/27 = 10 CY	
STA. 21+40.73 TO STA. 21+65.73		158 SY x 9' x (.125 ± .25) x 1/27 = 10 CY	
RACE ROAD			
APPROACH SLABS		167 SY x 9' x .125 x 1/27 = 7 CY	
FEATHERING		228 SY x 9' x (.125 ± .167) x 1/27 = 5 CY	
SUB TOTAL = 180			CY
GRAND TOTAL ITEM 446 SURFACE COURSE = 11,703 CY			

ITEM 617 - COMPACTED AGGREGATE, TYPE B AND WATER, DEPTH AS SHOWN

MAINLINE			
STA. 600+19.93 TO STA. 671+00	WB - O/GR	325' x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 21 CY	
	O	520' x (6' x .354 ± 0') x 1/27 = 20 CY	
	MED	(490+850.87) x (.354 ± 0') x 1/27 = 53 CY	
	EB - O/GR	425.6 x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 28 CY	
	O	(527+332.50) x (6' x .354 ± 0') x 1/27 = 34 CY	
	MED	(527+460) x (6' x .354 ± 0') x 1/27 = 39 CY	
	M/GR	298' x [(4' x .354) + (6' x .354 ± 0')] x 1/27 = 27 CY	
STA. 671+00 TO STA. 632+00	WB - O/GR	500 x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 33 CY	
	O	81.11 x (6' x .354) x 1/27 = 6 CY	
	MED	1500' x (6' x .354 ± 0') x 1/27 = 59 CY	
	O	347 x (6' x .354) x 1/27 = 27 CY	
	M/GR	1500' x [(4' x .354) + (6' x .354 ± 0')] x 1/27 = 188 CY	
STA. 632+00 TO STA. 647+00	WB - O/GR	1297.5 x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 85 CY	
	MED	1500' x (6' x .354 ± 0') x 1/27 = 59 CY	
	O	202.5 x (6' x .354 ± 0') x 1/27 = 8 CY	
	EB - O/GR	528 x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 35 CY	
	M/GR	1500' x [(4' x .354) + (6' x .354 ± 0')] x 1/27 = 138 CY	
	O	(350) x (6' x .354 ± 0') x 1/27 = 14 CY	
STA. 647+00 TO STA. 676+50	WB - O	275' x (6' x .354 ± 0') x 1/27 = 11 CY	
	O/GR	267.5' x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 175 CY	
	MED	2950' x (6' x .354 ± 0') x 1/27 = 116 CY	
	EB - O	2227.5' x (6' x .354 ± 0') x 1/27 = 88 CY	
	O/GR	712.5' x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 47 CY	
	MED/GR	2950' x [(4' x .354) + (6' x .354 ± 0')] x 1/27 = 271 CY	
STA. 676+50 TO STA. 706+00	WB - O	1276 x (6' x .354 ± 0') x 1/27 = 50 CY	
	O/GR	1487.5 x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 98 CY	
	MED	2763 x (6' x .354 ± 0') x 1/27 = 109 CY	
	EB - O	1905 x (6' x .354 ± 0') x 1/27 = 75 CY	
	O/GR	857 x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 56 CY	
	M/GR	1446' x [(4' x .354) + (6' x .354 ± 0')] x 1/27 = 131 CY	
	MED	1338 x [(4' x .354) + (6' x .354 ± 0')] x 1/27 = 123 CY	
STA. 706+00 TO STA. 721+00	WB - O	1187.5' x (4' x .354) x 1/27 = 62 CY	
	O/GR	312.5' x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 20 CY	
	MED	1500' x (6' x .354) x 1/27 = 59 CY	
	EB - O	1023 x (6' x .354) x 1/27 = 40 CY	
	O/GR	477' x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 31 CY	
	MED	1500' x (6' x .354) x 1/27 = 59 CY	
STA. 721+00 TO STA. 736+00	WB - O	862.50' x (6' x .354/2) x 1/27 = 34 CY	
	O/GR	636.50' x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 42 CY	
	MED	1500' x (6' x .354 ± 0') x 1/27 = 59 CY	
	EB	O/GR 736 x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 48 CY	
	O	714 x (6' x .354 ± 0') x 1/27 = 28 CY	
	MED	1500' x (6' x .354 ± 0') x 1/27 = 59 CY	
STA. 736+00 TO STA. 761+00	WB - O	1212.5 x (6' x .354) x 1/27 = 95 CY	
	O/GR	1887.5' x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 124 CY	
	MED	3100' x (6' x .354 ± 0') x 1/27 = 122 CY	
	EB - O	775 x (6' x .354 ± 0') x 1/27 = 30 CY	
	O/GR	2275' x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 149 CY	
	MED	3100' x (6' x .354 ± 0') x 1/27 = 122 CY	
STA. 761+00 TO STA. 782+50	WB - O/GR	1000' x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 66 CY	
	MED	1550' x (6' x .354 ± 0') x 1/27 = 61 CY	
	EB - O/GR	1088' x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 71 CY	
	O	458' x (6' x .354/2) x 1/27 = 18 CY	
	MED	1550' x (6' x .354 ± 0') x 1/27 = 61 CY	
STA. 782+50 TO STA. 797+00	WB - O	25' x (6' x .354/2) x 1/27 = 1 CY	
	MED	1450' x (6' x .354/2) x 1/27 = 57 CY	
	EB - O	375' x (6' x .354/2) x 1/27 = 15 CY	
	MED	1450' x (6' x .354/2) x 1/27 = 57 CY	
STA. 797+00 TO STA. 812+00	WB - O	549 x (6' x .354/2) x 1/27 = 22 CY	
	O/GR	150 x [(2' x .354) + (6' x .354 ± 0')] x 1/27 = 10 CY	
	MED/GR	150' x [(4' x .354) + (6' x .354 ± 0')] x 1/27 = 14 CY	
	MED	1500' x (6' x .354/2) x 1/27 = 59 CY	
	EB - O	37.5' x (6' x .354/2) x 1/27 = 1 CY	
	O/GR	462.5' x [(2' x .354) + (6' x .354/2)] x 1/27 = 30 CY	
	MED	1500' x (6' x .354/2) x 1/27 = 59 CY	
STA. 812+00 TO STA. 842+00	WB - O	325' x (6' x .354/2) x 1/27 = 13 CY	
	O/GR	267.5' x [(2' x .354) + (6' x .354/2)] x 1/27 = 175 CY	
	MED	2850' x (6' x .354/2) x 1/27 = 112 CY	
	M/GR	150' x [(4' x .354) + (6' x .354/2)] x 1/27 = 14 CY	
	EB - O	2342.5' x (6' x .354) x 1/27 = 186 CY	
	O/GR	637.50' x [(2' x .354) + (6' x .354/2)] x 1/27 = 42 CY	
	MED	3000' x (6' x .354/2) x 1/27 = 118 CY	
STA. 842+00 TO STA. 872+00	WB - O	2075 x (6' x .354/2) x 1/27 = 82 CY	
	O/GR	925 x [(2' x .354) + (6' x .354/2)] x 1/27 = 61 CY	
	MED	2968' x (6' x .354/2) x 1/27 = 117 CY	
	EB - O	2163 x (6' x .354/2) x 1/27 = 85 CY	
	O/GR	803' x [(2' x .354) + (6' x .354/2)] x 1/27 = 53 CY	
	MED	2975 x (6' x .354/2) x 1/27 = 117 CY	

STA. 872+50 TO STA. 887+00	WB - O	620' x (6' x .354/2) x 1/27 = 24 CY	
	MED	1340' x (6' x .354/2) x 1/27 = 69 CY	
	EB - O	667 x (6' x .354/2) x 1/27 = 26 CY	
	MED	1382' x (6' x .354) x 1/27 = 109 CY	
STA. 887+00 TO STA. 903+00	WB - O/GR	273.5 (6' x .354/2) x 1/27 = 11 CY	
	MED	1600' x (6' x .354/2) x 1/27 = 69 CY	
	EB - O/GR	575 x [(2' x .354) + (6' x .354/2)] x 1/27 = 38 CY	
	MED	750' x (6' x .354/2) x 1/27 = 30 CY	
	M/GR	850' x [(4' x .354) + (6' x .354/2)] x 1/27 = 78 CY	
STA. 903+00 TO STA. 927+58	WB - O/GR	1237 x [(2' x .354) + (6' x .354/2)] x 1/27 = 81 CY	
	MED	1237 x (6' x .354) x 1/27 = 97 CY	
	EB - O	704.65 x (6' x .354/2) x 1/27 = 28 CY	
	O/GR	600' x [(2' x .354) + (6' x .354/2)] x 1/27 = 39 CY	
	M/GR	1305 x [(4' x .354) + (6' x .354/2)] x 1/27 = 120 CY	
RAMP X -		(23.4 + 235.1 + 705.31 + 976.2 + 310) x (4 x .25) x 1/27 = 90 CY	
RAMP Y -		37.5' x (4 x .25) x 1/27 = 1 CY	
		(1765.15' + 496') x [(2' x .25) + (4 x .25/2)] x 1/27 = 84 CY	
RAMP A -		((452.5 + 325) x [(2' x .25) + (4 x .25/2)] + (1129 + 697) x 4 x .25/2) x 1/27 = 37 CY	
		{197 x [(2 x .354) + (6 x .354/2)]} x 1/27 = 34 CY	
		{849.83 x 6 x .354/2} x 1/27 = 13 CY	
		{2649.83 x 6 x .354/2} x 1/27 = 34 CY	
RAMP L -		1716 x (4 x .25/2) x 1/27 = 32 CY	
RAMP M -		1075' x (4 x .25/2) x 1/27 = 20 CY	
		{725 x [(2' x .25) + (4 x .25/2)]} x 1/27 + 2250 x [(2 x .354) + (.354/2 x 4)] x 1/27 = 40 CY	
RAMP N -		1054 x (4 x .25/2) x 1/27 = 20 CY	
		6875 x [(2' x .25) + (4 x .25/2)] x 1/27 = 25 CY	
		{695.59 x [(2 x .354) + (6 x .354/2)]} x 1/27 = 46 CY	
		{704.4 x (6 x .354/2)} x 1/27 = 4 CY	
RAMP O -		1316' x (4 x .25/2) x 1/27 = 24 CY	
		512.5 x [(2' x .25) + (4 x .25/2)] x 1/27 = 19 CY	
RAMP P -		786' x (4 x .25/2) x 1/27 = 15 CY	
		1150 x [(2' x .25) + (4 x .25/2)] x 1/27 = 43 CY	
RAMP Q -		1794 x (4 x .25/2) x 1/27 = 33 CY	
RACE ROAD -		2.5 x 38 x .125/2 x 4 x 1/27 = 1 CY	
GRAND TOTAL = 6492			CY

ITEM 617 - WATER
6492 CY x 20 GAL/CY ÷ 1000 GAL/MEAL = 130 M.GAL

ITEM 301 - 1" BITUMINOUS AGGREGATE PAVE - AC 20
(1" THICKNESS, ADDED TO LEVEL SETTLED SHOULDER AREAS ON MAINLINE, EXCLUDING RECONSTRUCTED SHOULDER AREAS)
78,315 SY x 9' x .0833 x 1/27 = 2175 CY

TOTALS CARRIED TO GENERAL SUMMARY

PAVEMENT CALCULATIONS

CALC. MKG
DATE 9/14/89
CHKD. JCM
BY JCM
DATE 2/19/90

HAM-74-11.10

OHIO
FHWA
REGION 5

40
132

1P CONCRETE BARRIER TYPE A & CONC. MEDIAN
RAMP Y - STA. 3+25 - STA. 5+00

ITEM 202(CR)	175 x 2	= 350	LF
ITEM 202(PR)	175 x 2' x 1/4	= 39	SY
ITEM 203(SC)	(175 x 3) x 1/9	= 58	SY
ITEM 203(EX)	39 SY x 9 x .9167 x 1/27	= 12	CY
ITEM 612(CM)	(175 x 3 x 1.5) x 1/27	= 29	CY
ITEM 252(PS)	175 x 2	= 350	LF
RAMP Y - STA. 5+00 - STA. 10+00			
ITEM 202(CR)	500' x 2	= 1000	LF
ITEM 202(PR)	500' x 2' x 1/4	= 111	SY
ITEM 203(SC)	500' x 3' x 1/9	= 167	SY
ITEM 203(EX)	111 SY x 9 x .9167 x 1/27	= 34	CY
ITEM 304(AB)	167 SY x 9 x .25 x 1/27	= 14	CY
ITEM 622(CB)	500'	= 500	LF
ITEM 252(PS)	500' x 2	= 1000	LF

RAMP Y, STA. 10+00 - STA. 14+00

ITEM 202(CR)	400' x 2	= 800	LF
ITEM 202(PR)	[(258' x 2) + (142' x 2 1/4)] x 1/4	= 176	SY
ITEM 203(SC)	(258' x 3) + (142' x 3 1/4) x 1/9	= 220	SY
ITEM 252(PS)	400' x 2	= 800	LF
ITEM 304(AB)	400' x 3' x .9167 x 1/27	= 41	CY
ITEM 622(CB)	400'	= 400	LF
ITEM 622(BR)	258'	= 258	LF

RAMP X, STA. 12+58 TO STA. 14+50

ITEM 622(BR)	FR'	= 192	LF
ITEM 203(SC)	192' x 2.08' x 1/9	= 44	SY
RAMP Y, STA. 14+00 TO STA. 16+85			
ITEM 622(CR)	285'	= 285	LF
ITEM 203(SC)	285' x 2.08' x 1/9	= 66	SY

3P CONCRETE CURB AND NOSE REMOVAL - RAMP Y

ITEM 202(CR)	67.11 x 2	= 134	LF
ITEM 202(PR)	[32.62' x (10 1/4)] + 6.28 SF x 1/4	= 26	SY
ITEM 203(SC)	[32.62' x (10 3/4)] + 6.28 SF x 1/9	= 26	SY
ITEM 203(EX)	26 SY x 9 x .75 x 1/27	= 7	CY
ITEM 301(BAB)	26 SY x 9 x .75 x 1/27	= 7	CY
ITEM 301(3' BIT)	26 SY x 9 x .25 x 1/27	= 2	CY
ITEM 446(1/4 AC)	26 SY x 9 x .104 x 1/27	= 1	CY

5P CONCRETE BARRIER TYPE 'D' - RACE ROAD

ITEM 203(EX)	(968 ± 25) x 3.25 x 54 x 1/27	= 4	CY
ITEM 203(SC)	7' x 54 x 1/9	= 42	SY
ITEM 301(5/2 BIT)	3.25' x 54 x .458 x 1/27	= 3	CY
ITEM 304(AB)	3.25' x 54 x (5 ± 25) x 1/27	= 2	CY
ITEM 622(CB)	54	= 54	LF
ITEM 203(EMB)	54 x [(25 ± 10' x 375) + (10 ± 0' x 3')] x 1/27	= 4	CY
ITEM 659(SM)	54 x 3' x 1/9	= 18	SY

7P CONCRETE BARRIER TYPE B50
RAMP L STA. 779+50 TO STA. 784+20

ITEM 202(CR)	470'	= 470	LF
ITEM 203(LG)	470' + 100 STA/FT	= 4.7	STA
ITEM 301(6' BIT)	470' x (325 ± 0) x .5 x 1/27	= 16	CY
ITEM 304(AB)	[(470' x (375 ± 0) + (3.5 x 75 x 470)] x 1/27	= 490	CY
ITEM 622(CB)	470'	= 470	LF

CONC. BARRIER RAMP L STA. 784+20 TO STA. 794+63

ITEM 202(CR)	1040' x 2	= 2080	LF
ITEM 202(PR)	1040' x 9' x 1/4	= 1040	SY
ITEM 203(EX)	[(930 x 9' x 1.5') + (9 ± 23 x 1.5 x 110')] x 1/27	= 563	CY
ITEM 203(SC)	[(1040' x 10') + (10 ± 24 x 110')] x 1/9	= 1364	SY
ITEM 304(AB)	[(930' x 10' x .75) + (110' x 10 ± 24 x .75)] x 1/27	= 310	CY
ITEM 301(6' BIT)	[(930' x 3.25) + (110' x 3.25 ± 11.5)] x .5 x 1/27	= 71	CY
ITEM 622(CB)	1040'	= 1040	LF
ITEM 446(AC)	[(930' x 3.25) + (110' x 3.25 ± 11.5)] x 1.04 x 1/27	= 15	CY
	[(930' x 3.25) + (110' x 3.25 ± 11.5)] x 1.04 x 1/27	= 14	CY

CONC. BARRIER I-74(WB) STA. 794+63 TO STA. 796+75

ITEM 202(CR)	60+62	= 122	LF
ITEM 622(CB)	215'	= 215	LF
ITEM 659(SM)	215 x 6' x 1/9	= 143	SY
ITEM 304(AB)	[(9.4 ± 20) x 212 x (1 ± 25)] x 1/27	= 101	CY

8P CONCRETE CURB AND NOSE REMOVAL / RAMP O

ITEM 202(CR)	(25' x 2) + 6.28'	= 56	LF
ITEM 202(PR)	[25' x (1 ± 10)] + 1.57 SF x 1/4	= 13	SY
ITEM 203(EX)	13 SY x 9 x .75 x 1/27	= 3	CY
ITEM 203(SC)	[25' x (1 ± 10)] + 6.28 SF x 1/9	= 16	SY
ITEM 301(BAB)	16 SY x 9 x .75 x 1/27	= 4	CY
ITEM 301(3' BIT)	16 SY x 9 x .25 x 1/27	= 1	CY
ITEM 446(1/4 AC)	16 SY x 9 x .104 x 1/27	= 1	CY

10P CONCRETE BARRIER TYPE B50 - RAMP Q STA. 788+26 TO 788+26

ITEM 202(CR)	6	= 6	LF
ITEM 304(AB)	[(10 ± 20) x 20] x (1 ± 25) x 1/27	= 98	CY

ITEM 622(CB)	201'	= 201	LF
ITEM 659(SM)	201' x 6' x 1/9	= 134	SY
CONC. BARRIER RAMP Q STA. 788+26 TO STA. 791+80			
ITEM 202(CR)	1154' x 2	= 2308	LF
ITEM 202(PR)	1154' x 9' x 1/4	= 1154	SY
ITEM 203(EX)	[940 x 9' x 1.5' + (214 x 39 ± 9 x 1.5)] x 1/27	= 755	CY
ITEM 203(SC)	[940 x 10' + (214 x 40 ± 10)] x 1/9	= 1639	SY
ITEM 304(AB)	[(214 x 40 ± 10 x .75) + (940 x 10 x .75)] x 1/27	= 410	CY
ITEM 622(CB)	1154'	= 1154	LF
ITEM 301(6' BIT)	[(940 x 3.25) + (214 x 9.4 ± 3.25)] x .5 x 1/27	= 82	CY
	[(940 x 3.25) + (214 x 9.4 ± 3.25)] x .5 x 1/27	= 118	CY
ITEM 446(AC)	[(940 x 3.25) + (214 x 9.4 ± 3.25)] x 1.04 x 1/27	= 17	CY
	[(940 x 3.25) + (214 x 9.4 ± 3.25)] x 1.04 x 1/27	= 24	CY

CONC. BARRIER I-74 STA. 799+80 TO STA. 804+10

ITEM 202(CR)	430'	= 430	LF
ITEM 203(LG)	430' + 100 STA/FT	= 4.3	STA
ITEM 301(6' BIT)	430' x (325 ± 0) x .5 x 1/27	= 13	CY
ITEM 304(AB)	430' x (325 ± 0) x 2.36 x 1/27	= 61	CY
ITEM 622(CB)	430'	= 430	LF

12P CONCRETE BARRIER TYPE D50
STA. 880+00 TO STA. 900+26.5

ITEM 622(CB)	2027'	= 2027	LF
ITEM 203(EX)	2026.5' x 4 x .75 x 1/27	= 225	CY
ITEM 203(SC)	2026.5' x 4 x 1/9	= 901	SY
ITEM 203(EMB)	2008.5 x 4 x (25 ± 0) x 1/27	= 35	CY
ITEM 659(SM)	2008.5 x 4' x 1/9	= 893	SY
ITEM 601(RCP)	3(6 x (62 ± 5) x 12) x 1/27	= 5	CY

13P CONCRETE BARRIER TYPE D50 WITH DRAINAGE SLOTS
STA. 879+15 TO STA. 871+25 (ML/EB)

ITEM 203(EX)	1750' x 4.5' x (.35 ± .25) x 1/27	= 88	CY
ITEM 203(SC)	1750' x 4.5' x 1/9	= 875	SY
ITEM 203(EMB)	1732' x 4' x (.25 ± 0) x 1/27	= 32	CY
ITEM 659(SM)	1732' x 4' x 1/9	= 770	SY
ITEM 622(CB)	1750'	= 1750	LF
ITEM 601(RCP)	3(6 x (62 ± 5) x 12) x 1/27	= 5	CY

2P CURB REMOVAL - STA. 9+75 (A) TO STA. 15+91.83 (A)

ITEM 202(CR)		= 617	LF
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4P CURB REMOVAL - STA. 771+00 (M) TO STA. 779+50 (M)

ITEM 202(CR)	250'	= 250	LF
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11P CURB REMOVAL - STA. 804+10 TO STA. 807+00

ITEM 202(CR)	290'	= 290	LF
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4P CURB REMOVAL - STA. 16+10 (X) TO STA. 10+65 (X)

ITEM 202(CR)	455'	= 455	LF
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9P CURB REMOVAL - STA. 783+00 (M) TO STA. 785+00 (M)

ITEM 202(CR)	200'	= 200	LF
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14P CONCRETE MEDIAN - STA. 788+72 (O) TO STA. 790+50 (O)

ITEM 202(PR)	2(3 1/2 x 89) x 1/4	= 89	SY
ITEM 612(CM)	89 SY x 1/9 x 1' x 1/27	= 30	CY

15P CURB REMOVAL - STA. 787+61.5 (O) TO STA. 785+73 (Q)

ITEM 202(PCR)	110.5 + 83	= 194	LF
ITEM 609(C)	110.5 + 83	= 194	LF
ITEM 203(EMB)	[(2 x 25/2 x 83) + (2 x 25/2 x 110.5)] x 1/27	= 2	CY
ITEM 659(SM)	[(2 x 83) + (2 x 110.5)] x 1/9	= 43	SY

16P CONCRETE CURB & NOSE - STA. 75+00 (NB) TO STA. 16+14 (NB)

ITEM 202(PCR)	157+96+159	= 412	LF
ITEM 202(PR)	[(4+15/2 x 18) + 6.28 SF] x 1' x 1/27	= 7	CY
ITEM 609(C)	157+96+159	= 412	LF
ITEM 612(TI)	[(4+15/2 x 18) + 6.28 SF] x 1' x 1/9	= 16	CY
ITEM 203(EMB)	[(15 x 25 x 96) + (2 x 25/2 x 157) + (2 x 25/2 x 159)] x 1/27	= 16	CY
ITEM 659(SM)	[(15 x 96) + (2 x 157) + (2 x 154)] x 1/9	= 230	SY

17P CONCRETE WALK - STA. 15+00 (NB) TO STA. 781+63 (Q)

ITEM 202(WR)	(77 x 4) + 2(10 x 7)	= 448	SF
ITEM 608(CW)	83 x 4	= 332	SF
ITEM 608(CRP)		= 2	EA
ITEM 203(EMB)	93 x 2 x 25/2 x 1/27	= 1	CY
ITEM 659(SM)	93 x 2 x 1/9	= 21	SY

18P CONCRETE MEDIAN - STA. 15+48 (NB) TO STA. 18+72 (NB)

ITEM 202(PR)	3 x 324 x 1/9	= 108	SY
ITEM 612(CM)	[(289 x 3 x 1') + (10 x 1 ± 45 x 3)] x 1/27	= 33	CY
ITEM 612(M)	(25 x 3 x 75 ± 5) x 1/27	= 2	CY

19P CONCRETE MEDIAN - STA. 13+50 (NB) TO STA. 14+85 (NB)

ITEM 202(PR)	3 x 135 x 1/9	= 45	SY
ITEM 612(CM)	[(10 x (1 ± 45) x 3) + (125 x 3 x 1)] x 1/27	= 15	CY

20P CONCRETE CURB - STA. 794+12 (N) TO STA. 797+85 (L)

ITEM 202(PCR)	111 + 103	= 214	LF
ITEM 609(C)	111 + 103	= 214	LF
ITEM 203(EMB)	[(2 x 25/2 x 111) + (2 x 25/2 x 103)] x 1/9	= 6	CY
ITEM 659(SM)	[(2 x 111) + (2 x 103)] x 1/9	= 48	SY

21P CONCRETE MEDIAN - STA. 792+07 (N) TO STA. 794+12 (N)

ITEM 202(PCR)	2(3+6/2 x 103) x 1/9	= 103	SY
ITEM 612(CM)	2(3+6/2 x 103) x 1' x 1/27	= 34	CY

22P CONCRETE CURB & NOSE - STA. 23+94 (NB) TO STA. 25+20 (NB)

ITEM 202(PCR)	108 + 160 + 168	= 436	LF
ITEM 202(PR)	[4 ± 15 x 18] + 6.28 SF x 1/4	= 20	SY
ITEM 609(C)	108 + 160 + 168	= 436	LF
ITEM 612(TI)	[(4 ± 15 x 18) + 6.28 SF] x 1' x 1/27	= 7	CY

ITEM 203(EMB)	[(15 x 25 x 108) + (2 x 25/2 x 160) + (2 x 25/2 x 168)] x 1/27	= 18	CY
ITEM 659(SM)	[(15 x 108) + (2 x 160) + (2 x 168)] x 1/9	= 253	SY

23P CONCRETE WALK - STA. 25+20 (NB) TO STA. 801+86 (L)

ITEM 202(WR)	(82 x 4) + 2(10 x 7)	= 468	SF
ITEM 608(CW)	88 x 4	= 352	SF
ITEM 608(CRP)		= 2	EA
ITEM 203(EMB)	98 x 2 x 25/2 x 1/27	= 1	CY
ITEM 659(SM)	98 x 2 x 1/9	= 22	SY

24P CONCRETE MEDIAN - STA. 21+4 (NB) TO STA. 24+71 (NB)

ITEM 202(PR)	3 x 330 x 1/9	= 110	SY
ITEM 612(CM)	[(295 x 3 x 1') + (10 x 1 ± 45 x 3)] x 1/27	= 34	CY
ITEM 612(M)	(25 x 3 x 75 ± 5) x 1/27	= 2	CY

ABBREVIATIONS

- CR - CURB REMOVED
- PR - PAVEMENT REMOVED
- EX - EXCAVATION
- SC - SUBGRADE COMPACTION
- AB - AGGREGATE BASE
- CB - CONC. BARRIER
- BR - BARRIER REMOVED
- PS - PAVEMENT SAWING
- CM - CONC. MEDIAN
- BAB - BIT. AGGR. BASE
- EMB - EMBANKMENT
- PC - PRIME COAT
- SM - SEEDING AND MULCHING
- BIT - BITUMINOUS
- AC - ASPHALT CONCRETE
- LG - LINEAR GRADING
- C - CURB, TYPE 2B
- TI - CONCRETE TRAFFIC ISLAND
- WR - CONCRETE WALK REMOVED
- CW - 4" CONCRETE WALK
- CRP - CURB RAMP, TYPE 2
- M - CONCRETE MEDIAN, AS PER PLAN
- RCP - ROCK CHANNEL PROTECTION, TYPE C
- PCR - PORTION OF CURB REMOVED

TOTALS CARRIED TO SHEET 63

PAVEMENT CALCULATIONS

CALC.
BY: MKG
DATE 7/6/99
CHKD.
BY: JLM
DATE 2/14/00

HAM-74-11.10

OHIO

FHWA
REGION 5

41
132

(25P) CONCRETE MEDIAN - STA 25+45(NB) TO STA 26+00(NB)

ITEM 202 (PR) $3 \times 55 \times 1/9$ = 18 SY
ITEM 612 (CM) $[(10 \times (1.45 \times 3) + (45 \times 3 \times 1))] \times 1/27$ = 6 CY

(26P) CONCRETE CURB RAMP - STA 781+63(Q)

ITEM 202 (PCR) 5' = 5 LF
ITEM 202 (WR) $(7 \times 7.5) + (2.5 \times 3)$ = 60 SF
ITEM 608 (CRP) 5x7 = 35 SF
ITEM 659 (SM) $2(2.5 \times 7) \times 1/9$ = 4 SY

(27P) CONCRETE CURB RAMP - STA 14+53(NB)

ITEM 202 (PCR) 9' = 9 LF
ITEM 202 (WR) $10 \times 12 \times 1/2$ = 60 SF
ITEM 608 (CRP) $(5 \times 5) + (7 \times 5 \times 1/2)$ = 43 SF
ITEM 203 (EMB) $[(12 \times 2.5 \times 33) + (5 \times 2.5 \times 33)] \times 1/27$ = 1 CY
ITEM 659 (SM) $[(12 \times 2.5) + (5 \times 2.5)] \times 1/9$ = 5 SY

(28P) CONCRETE CURB RAMP - STA 802+11(N)

ITEM 202 (CR) 5' = 5 LF
ITEM 202 (WR) $(7 \times 7.5) + (2.5 \times 3)$ = 60 SF
ITEM 608 (CRP) 5x7 = 35 SF
ITEM 659 (SM) $2(2.5 \times 7) \times 1/9$ = 4 SY

(29P) CONCRETE CURB RAMP - STA 25+75(NB)

ITEM 202 (CR) 9' = 9 LF
ITEM 202 (WR) $10' \times 12' \times 1/2$ = 60 SF
ITEM 608 (CRP) $(5 \times 5) + (7 \times 5 \times 1/2)$ = 43 SF
ITEM 203 (EMB) $[(12 \times 2.5 \times 33) + (5 \times 2.5 \times 33)] \times 1/27$ = 1 CY
ITEM 659 (SM) $[(12 \times 2.5) + (5 \times 2.5)] \times 1/9$ = 5 SY

(34P) CURB REMOVAL - STA 798+25 'P' TO STA 801+00 'P'

ITEM 202 (CR) 275' = 275 LF

(35P) CONCRETE RIPRAP REMOVED (SHT. 85)

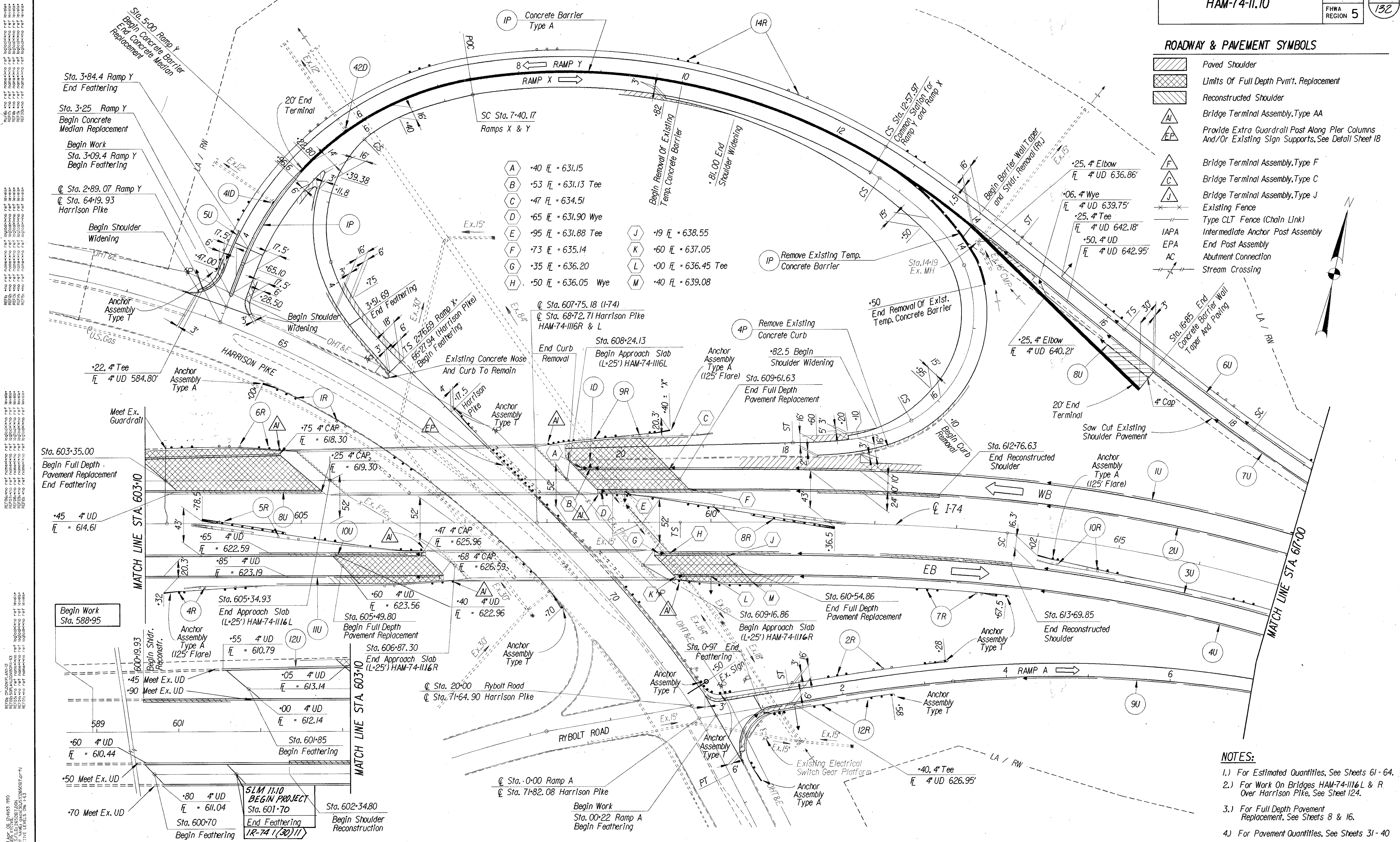
ITEM 202 (CR) = 56 SY

TOTALS CARRIED TO SHEET 63

CALCULATIONS

ROADWAY & PAVEMENT SYMBOLS

- Paved Shoulder
- Limits Of Full Depth Pmnt. Replacement
- Reconstructed Shoulder
- Bridge Terminal Assembly, Type AA
- Provide Extra Guardrail Post Along Pier Columns And/Or Existing Sign Supports, See Detail Sheet 18
- Bridge Terminal Assembly, Type F
- Bridge Terminal Assembly, Type C
- Bridge Terminal Assembly, Type J
- Existing Fence
- Type CLT Fence (Chain Link)
- IAPA Intermediate Anchor Post Assembly
- EPA End Post Assembly
- AC Abutment Connection
- Stream Crossing



A	+40 FL = 631.15	J	+19 FL = 638.55
B	+53 FL = 631.13 Tee	K	+60 FL = 637.05
C	+47 FL = 634.51	L	+00 FL = 636.45 Tee
D	+65 FL = 631.90 Wye	M	+40 FL = 639.08
E	+95 FL = 631.88 Tee		
F	+73 FL = 635.14		
G	+35 FL = 636.20		
H	+50 FL = 636.05 Wye		

REVISIONS AND NOTES:
 1. SEE SHEET 61-64 FOR ESTIMATED QUANTITIES.
 2. SEE SHEET 8 & 16 FOR FULL DEPTH PAVEMENT REPLACEMENT QUANTITIES.
 3. SEE SHEET 31-40 FOR PAVEMENT QUANTITIES.
 4. SEE SHEET 124 FOR BRIDGE WORK OVER HARRISON PIKE.

- NOTES:**
- 1.) For Estimated Quantities, See Sheets 61 - 64.
 - 2.) For Work On Bridges HAM-74-II(L & R Over Harrison Pike, See Sheet 124.
 - 3.) For Full Depth Pavement Replacement, See Sheets 8 & 16.
 - 4.) For Pavement Quantities, See Sheets 31 - 40

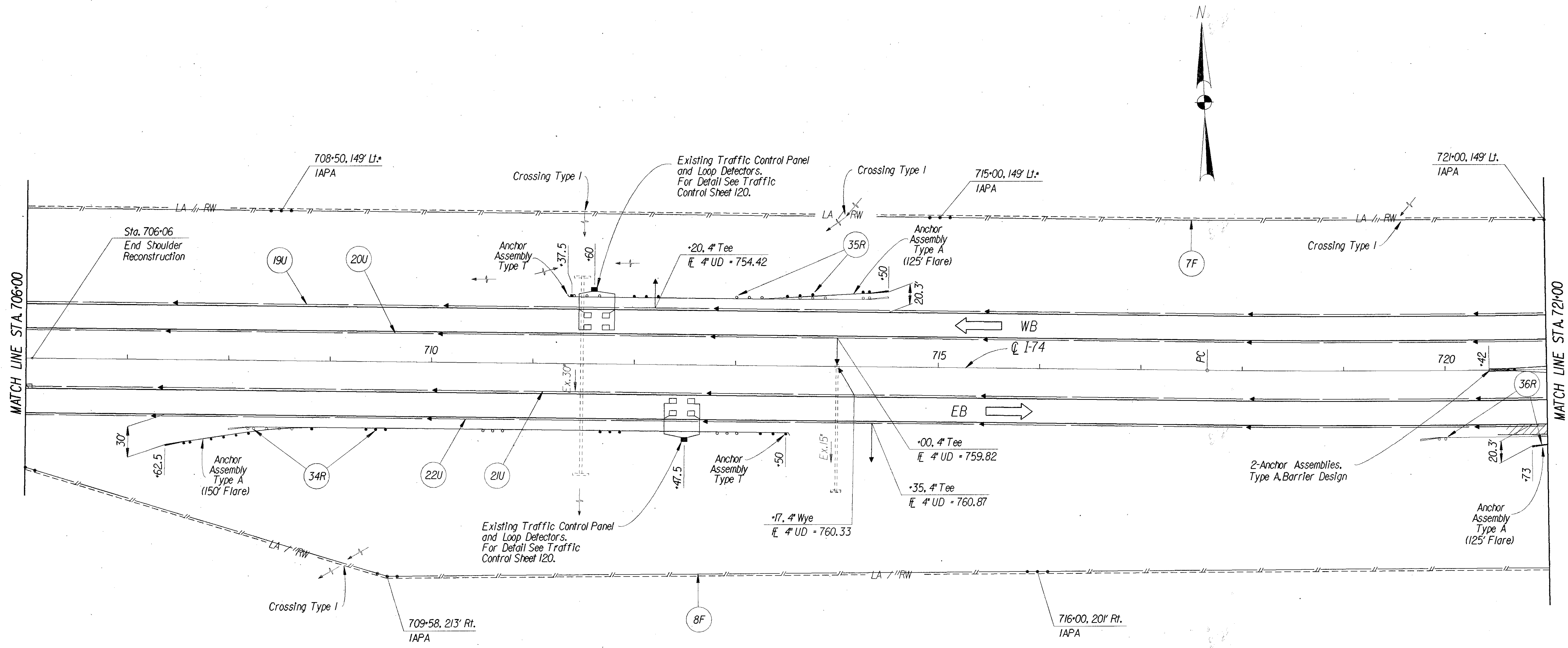
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NOTES:
 1.) For Estimated Quantities, See Sheets 61 - 64.
 2.) For Pavement Quantities, See Sheets 31 - 40.

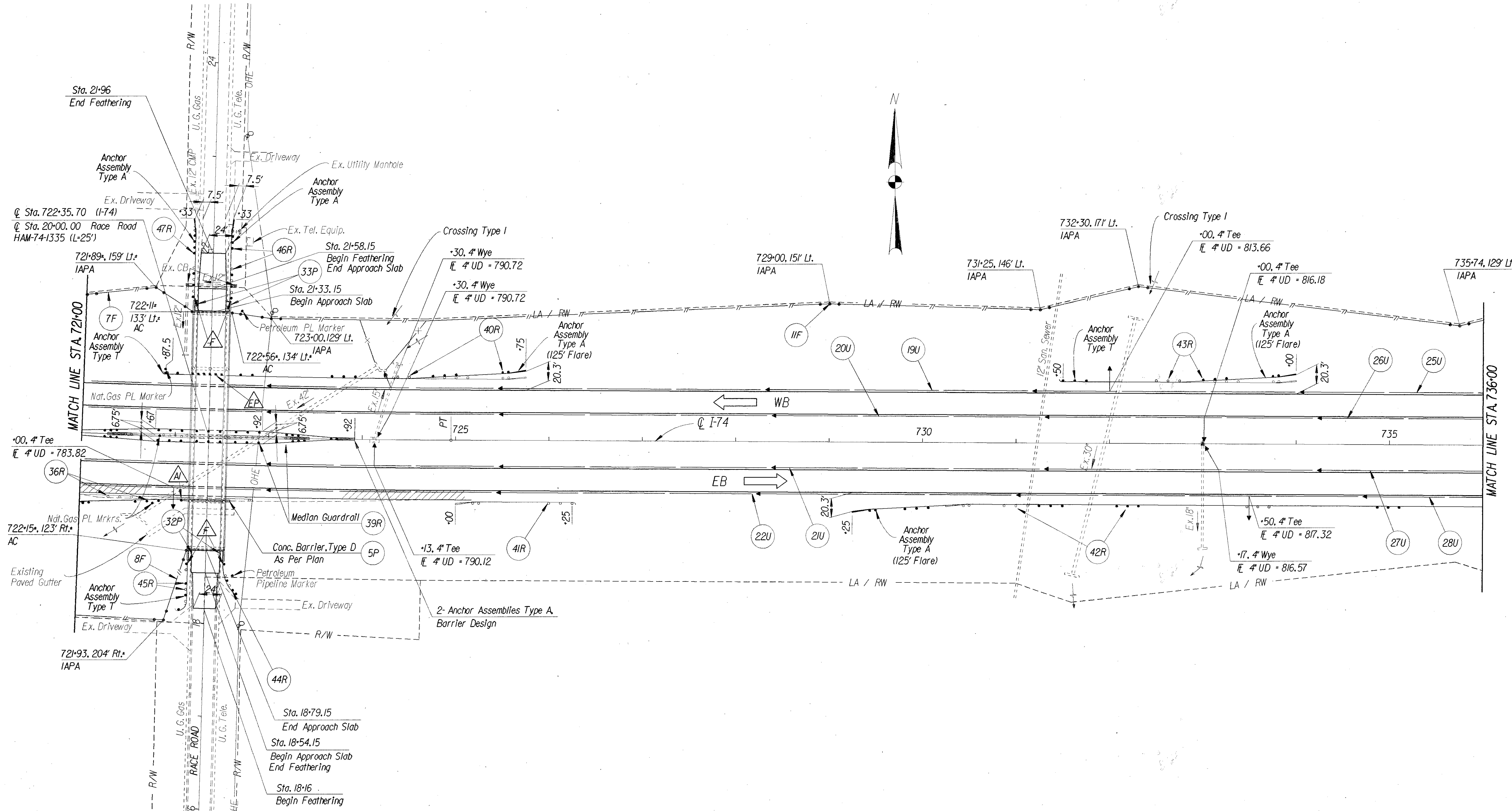
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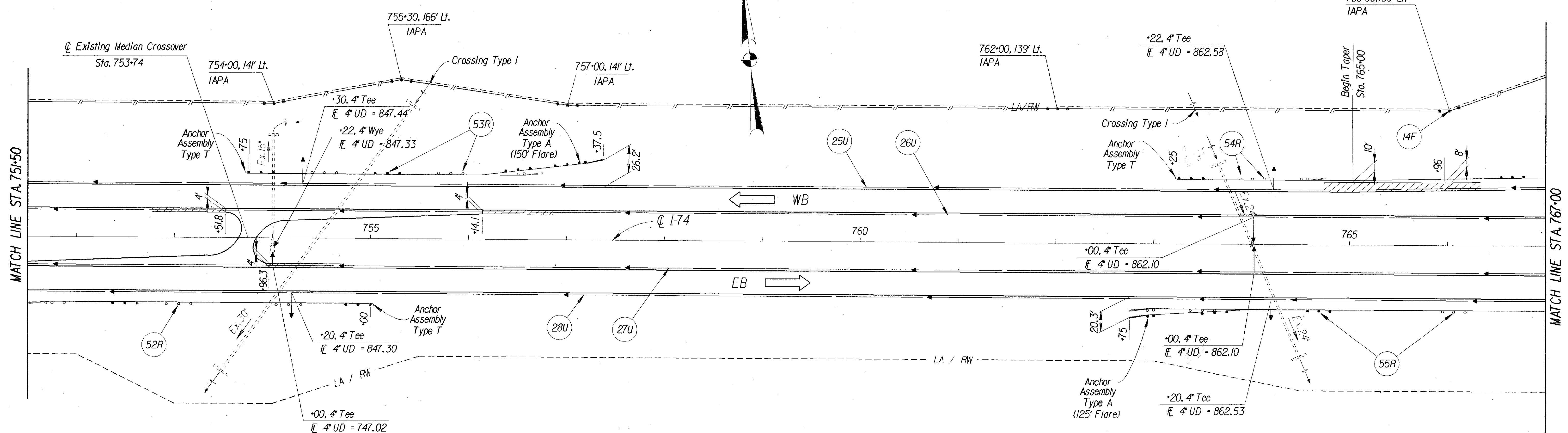
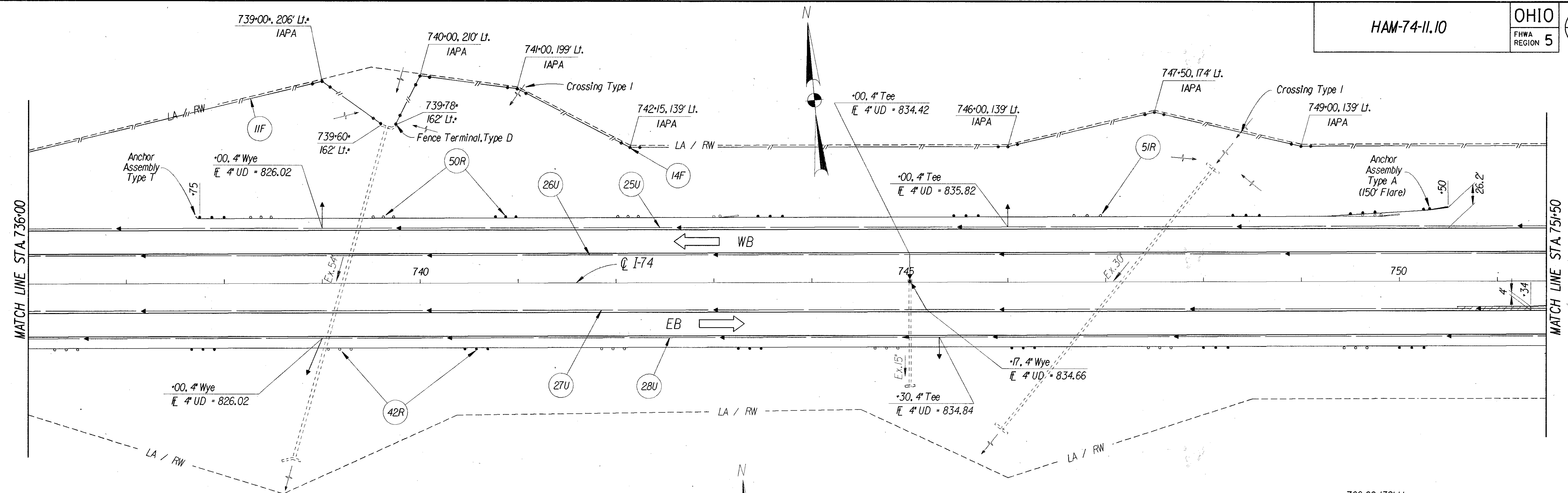
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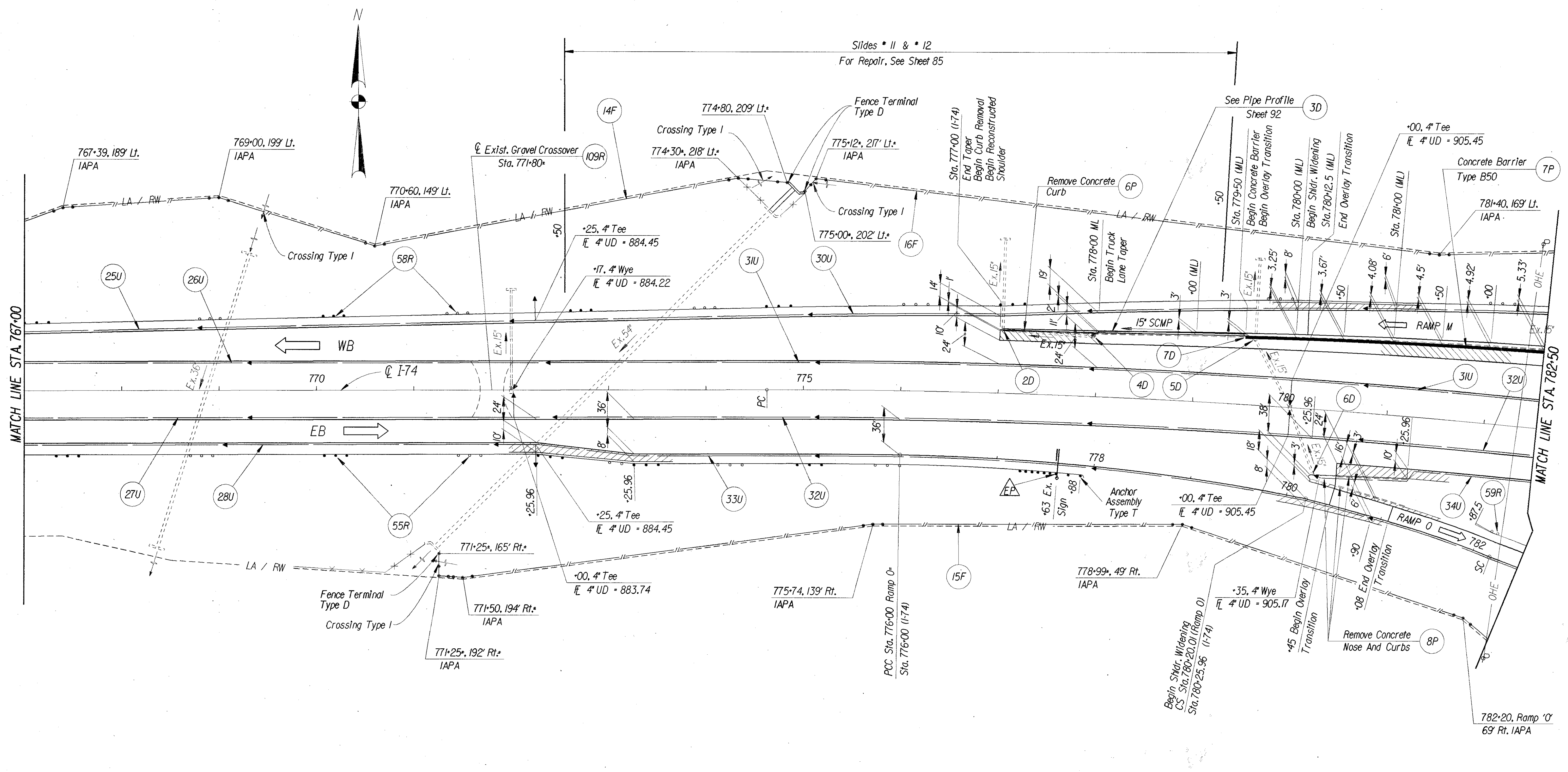
- NOTES:**
- 1.) For Estimated Quantities, See Sheets 61 - 64.
 - 2.) For Work On Bridge HAM-74-1335 Over I-74, See Sheet 126.
 - 3.) For Concrete Barrier Detail At Bridge Piers, See Sheet 18.
 - 4.) For Pavement Quantities, See Sheets 31 - 40.

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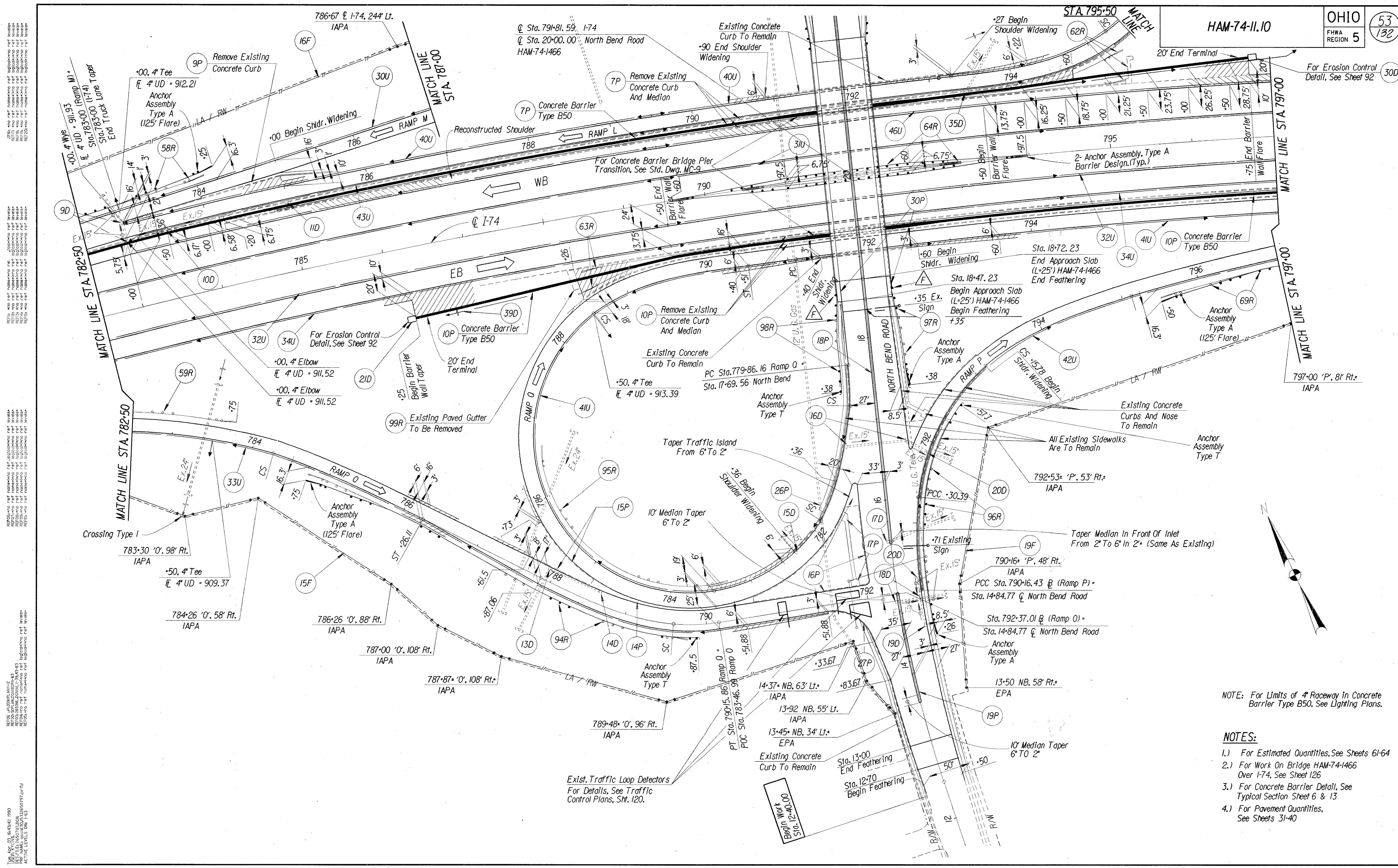
- NOTES:**
- 1.) For Estimated Quantities, See Sheets 61 - 64.
 - 2.) For Median Crossover Resurfacing, See Sheet 16.
 - 3.) For Pavement Quantities, See Sheets 31 - 40.

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NOTE: For Limits of 4" Raceway In Concrete Barrier Type B50, See Lighting Plans.d1-20

- NOTES:**
- 1.) For Estimated Quantities, See Sheets 61 - 64.
 - 2.) For Concrete Barrier Detail, See Typical Section Sheet 6.



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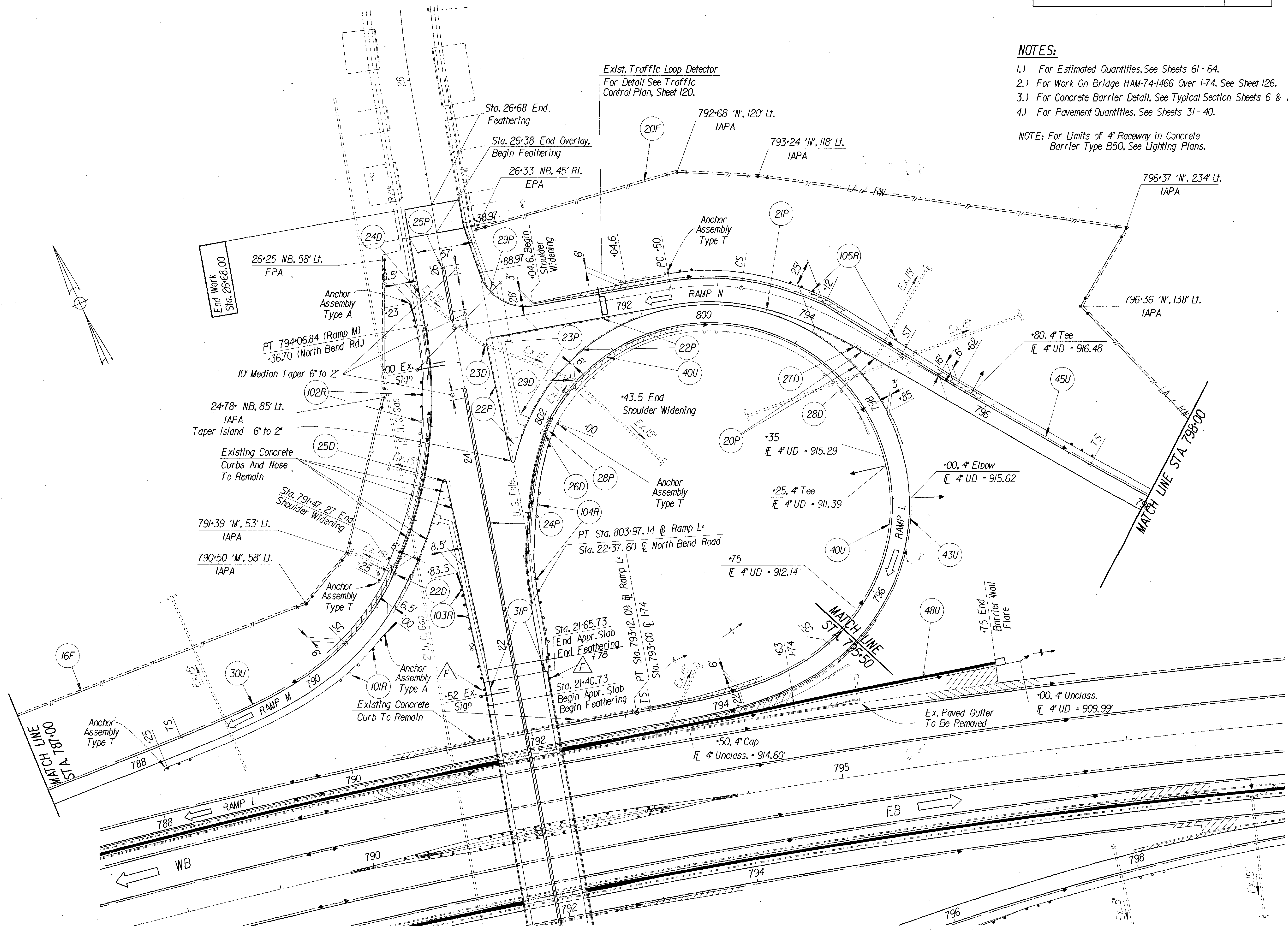
NOTE: For Limits of Raceway in Concrete Barrier Type B50. See Lighting Plans.

- NOTES:
- 1.) For Estimated Quantities, See Sheets 61-64
 - 2.) For Work On Bridge HAM-74-I466 Over I-74, See Sheet 126
 - 3.) For Concrete Barrier Detail, See Typical Section Sheet 6 & 13
 - 4.) For Pavement Quantities, See Sheets 31-40

NOTES:

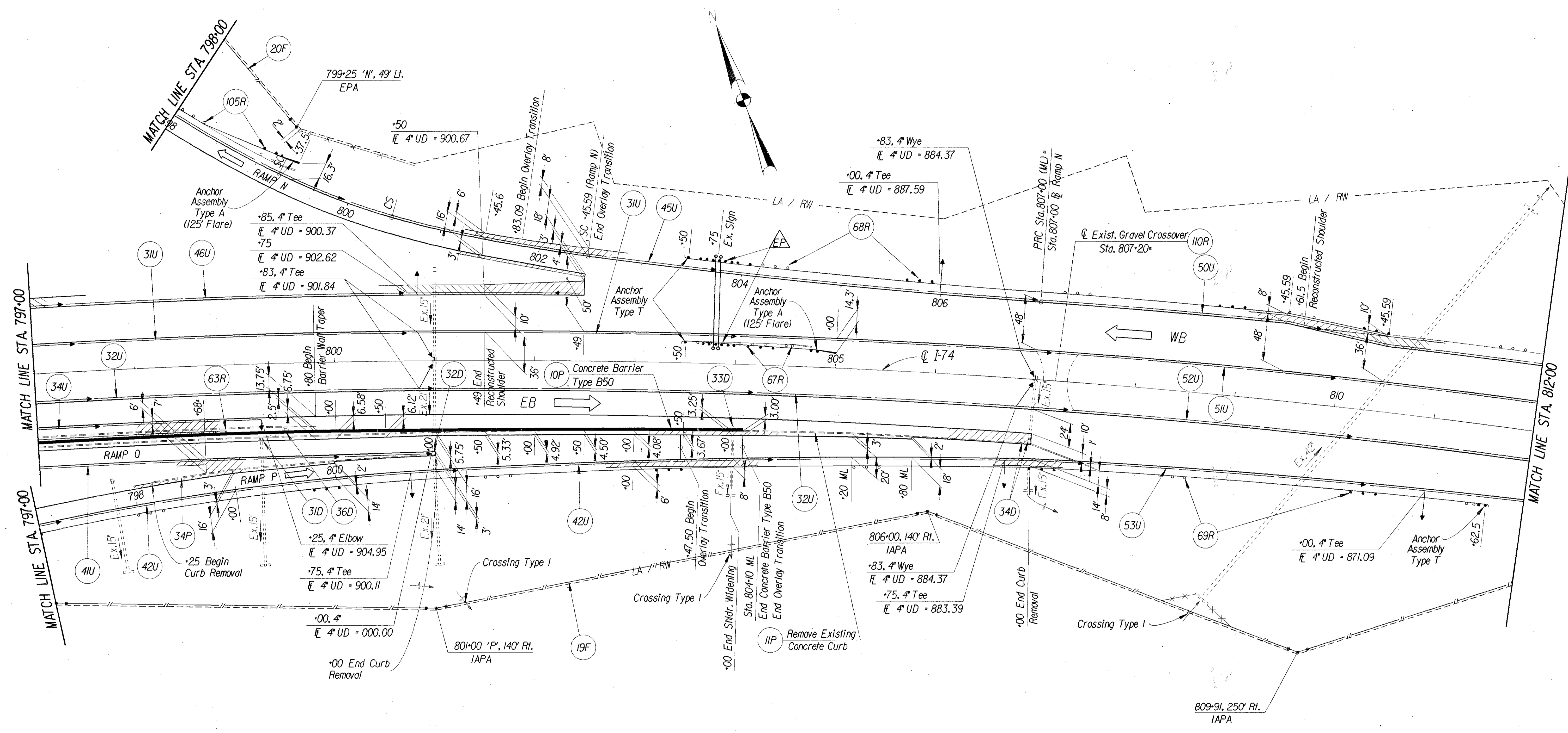
- 1.) For Estimated Quantities, See Sheets 61 - 64.
- 2.) For Work On Bridge HAM-74-1466 Over I-74, See Sheet 126.
- 3.) For Concrete Barrier Detail, See Typical Section Sheets 6 & 13.
- 4.) For Pavement Quantities, See Sheets 31 - 40.

NOTE: For Limits of 4' Raceway in Concrete Barrier Type B50, See Lighting Plans.



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 83. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
 84. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 85. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
 86. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 87. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
 88. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 89. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
 90. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 91. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
 92. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 93. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
 94. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 95. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
 96. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 97. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
 98. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 99. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
 100. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.

THIS SHEET IS A PART OF A CONTRACT DOCUMENT AND IS NOT TO BE SEPARATED FROM IT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL NECESSARY INFORMATION FROM THE CONTRACT DOCUMENTS AND TO VERIFY THE ACCURACY OF THE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY INFORMATION FROM THE CONTRACT DOCUMENTS AND TO VERIFY THE ACCURACY OF THE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY INFORMATION FROM THE CONTRACT DOCUMENTS AND TO VERIFY THE ACCURACY OF THE INFORMATION.



- NOTES:**
- 1.) For Estimated Quantities, See Sheets 61 - 64.
 - 2.) For Concrete Barrier Detail, See Sheet 6.
 - 3.) For Pavement Quantities, See Sheets 31 - 40.

ESTIMATED QUANTITIES

CALC. MKG
BY DATE
CHKD. BY XM
DATE 3/17/82

HAM-74-11.10

OHIO
FHWA REGION 5

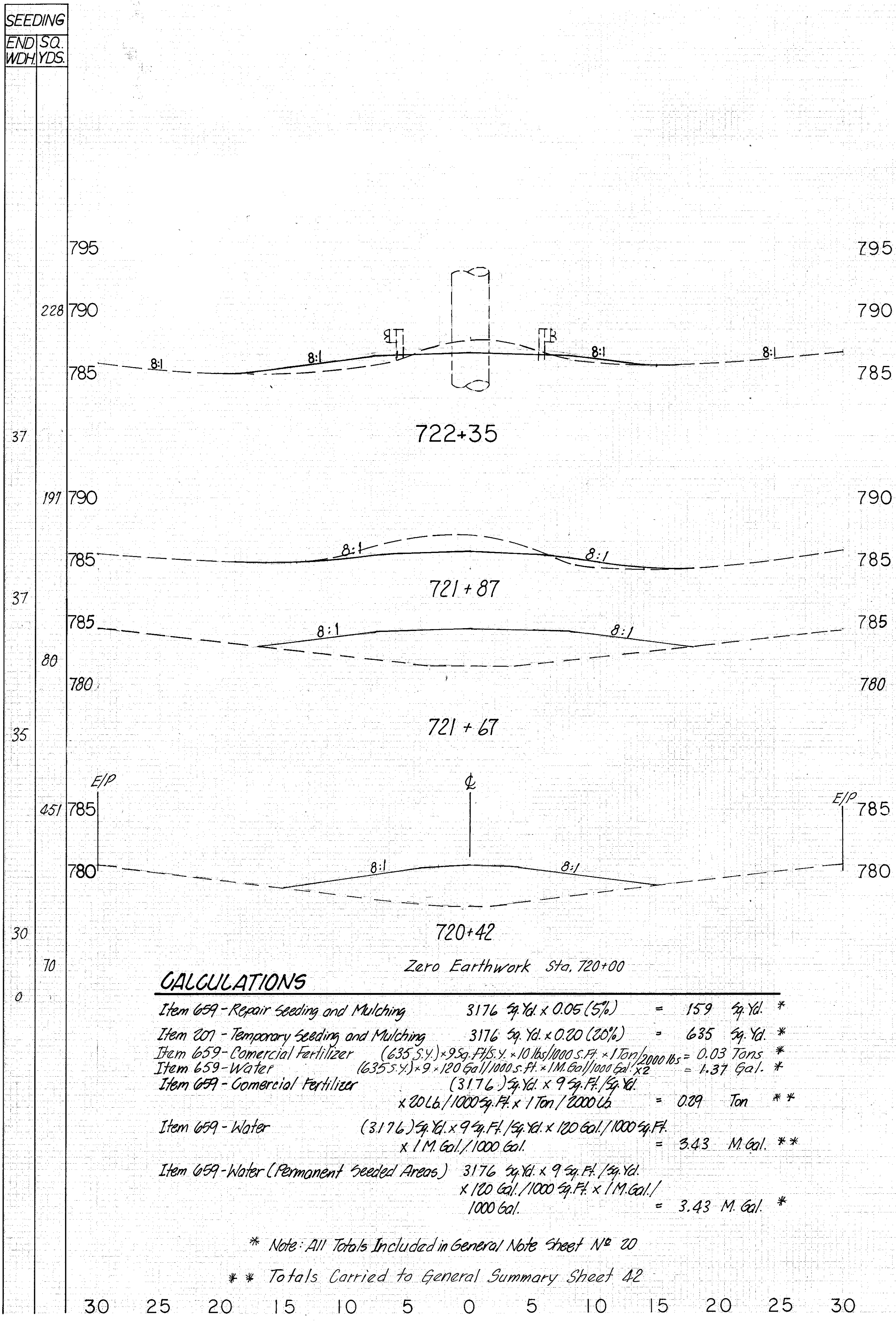
03
132

SHT. NO.	REF. NO.	STATION	SIDE	202	202	202	202	202	203	203	203	252	301	301	301	301	304	202	612	446	601	612	202	622	622	622	659	609	622	612	602	608	608			
				Barrier Removed As Per Plan Lin. Ft.	Concrete Median Removed (9" Thk.) Sq. Yd.	Pavement Removed (4" Thk.) Sq. Yd.	Curb Removed Lin. Ft.	Portion of Curb Removed As Per Plan Lin. Ft.	Excavation Not Including Embankment Construction Cu. Yd.	Embankment Cu. Yd.	Subgrade Compaction Sq. Yd.	Linear Grading Sta.	Full Depth Pavement Sawing Lin. Ft.	3" Bituminous Aggregate Base AC-20 Cu. Yd.	5 1/2" Bituminous Aggregate Base AC-20 Cu. Yd.	6" Bituminous Aggregate Base AC-20 Cu. Yd.	Bituminous Aggregate Base AC-20 Variable Thickness Cu. Yd.	Aggregate Base Depth As Shown Cu. Yd.	Walk Removed Sq. Ft.	Concrete Median As Per Plan Cu. Yd.	1/4" Asphalt Concrete Surface Course Type 1, AC-20 Cu. Yd.	Rock Channel Protection, Type C Without Filter Cu. Yd.	Concrete Median Cu. Yd.	Curb Removed As Per Plan Lin. Ft.	Concrete Barrier Type A Lin. Ft.	Concrete Barrier Type D As Per Plan Lin. Ft.	Concrete Barrier Type D50 As Per Plan Lin. Ft.	Seeding And Mulching Sq. Yd.	Curb, Type B As Per Plan Lin. Ft.	Concrete Barrier Type B50 Lin. Ft.	Concrete Traffic Island Cu. Yd.	4" Concrete Walk Sq. Ft.	Curb Ramp Type E Sq. Ft.	Curb Ramp Type E Sq. Ft.		
44	1P	3+25 (Y) to 16+85 (Y)	Rt	450		326	2150		40		555					55						29		1185												
45	2P	9+75 (A) to 15+91.83 (A)	Lt				50																567													
45	3P	6+8+81.11	Lt			26	134		7		26					7																				
44	4P	16+10 (X) to 20+65 (X)	Lt				100																355													
50	5P	722+35.70	Rt						4	4	42					2									54		18									
50	6P	777+00 (M) to 799+50 (M)	Rt																				250													
50	7P	779+50 to 796+75	Lt			1040	2672		563		1364	47			156	901				29							143				1725					
50	8P	780+25.96	Rt			13	56		3		16		1		4				1																	
53	9P	783+00 (M) to 785+00 (M)	Rt				50																200													
53	10P	781+25 to 804+10	Rt			1154	2744		755		1639	43			213	569				41																
55	11P	804+10 to 807+00	Rt																				290													
58	12P	880+00 to 900+26.5	Lt						225	35	901																									
58	13P	879+75 to 897+25	Rt						86	32	875															2027	893									
53	14P	788+72 (O) to 790+50 (O)	Lt	89																						1750	770									
53	15P	787+61.5 (O) to 785+73 (Q)	Lt				194				2																	43	194							
53	16P	15+00 (N.B) to 16+14 (N.B)	Lt			16	412				10																230	412								
53	17P	15+00 (N.B) to 781+63 (Q)	Lt								1												448				21	412					332		2	
53	18P	15+48 (N.B) to 18+72 (N.B)	Med	108																			2													
53	19P	13+50 (N.B) to 14+85 (N.B)	Med	45																																
54	20P	794+12 (N) to 797+85 (L)	Lt				214				6																									
54	21P	792+07 (N) to 794+12 (N)	Lt																																	
54	22P	23+94 (N.B) to 25+20 (N.B)	Rt			20	436				18																									
54	23P	25+20 (N.B) to 201+86 (L)	Rt								1												468													
54	24P	21+41 (N.B) to 24+71 (N.B)	Med	110																			2													
54	25P	25+45 (N.B) to 26+00 (N.B)	Med	18																																
53	26P	781+63 (Q)	Rt				5																												35	
53	27P	14+53 (N.B)	Lt				9				1																								43	
54	28P	802+11 (N)	Rt			5																													35	
54	29P	25+75 (N.B)	Rt			9					1																								43	
NORTH BEND RD																																				
53	30P	18+47± to 18+72	Rt/Lt				50																													
54	31P	21+40± to 21+65±	Rt/Lt				50																													
RACE RD																																				
50	32P	18+67± to 18+79±	Rt/Lt																																	96
50	33P	21+33± to 21+45±	Rt/Lt																																96	
55	34P	798+25(P) to 801+00(P)	Lt			50																														

TOTALS CARRIED TO GENERAL SUMMARY 450 473 2595 8020 1370 1691 117 5418 9.0 2150 3 3 369 11 1527 1748 4 72 10 181 1887 1185 54 3777 2593 1356 3510 14 1276 156 4

659 Comm. Fert = 0.23 ton
659 Water = 6 M.Gal.

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USER: T06UC
DES: NET 052430.02:RCD:05082



CALCULATIONS

- Item 659 - Repair Seeding and Mulching $3176 \text{ sq. Yd.} \times 0.05 (5\%) = 159 \text{ sq. Yd.} *$
- Item 207 - Temporary Seeding and Mulching $3176 \text{ sq. Yd.} \times 0.20 (20\%) = 635 \text{ sq. Yd.} *$
- Item 659 - Commercial Fertilizer $(635 \text{ sq. Yd.}) \times 9 \text{ sq. Ft./sq. Yd.} \times 10 \text{ lbs./1000 sq. Ft.} \times 1 \text{ Ton/2000 lbs.} = 0.03 \text{ Tons} *$
- Item 659 - Water $(635 \text{ sq. Yd.}) \times 9 \times 120 \text{ Gal./1000 sq. Ft.} \times 1 \text{ M. Gal./1000 Gal.} = 1.37 \text{ Gal.} *$
- Item 659 - Commercial Fertilizer $(3176 \text{ sq. Yd.}) \times 9 \text{ sq. Ft./sq. Yd.} \times 20 \text{ Lb./1000 sq. Ft.} \times 1 \text{ Ton/2000 Lb.} = 0.29 \text{ Ton} **$
- Item 659 - Water $(3176 \text{ sq. Yd.}) \times 9 \text{ sq. Ft./sq. Yd.} \times 120 \text{ Gal./1000 sq. Ft.} \times 1 \text{ M. Gal./1000 Gal.} = 3.43 \text{ M. Gal.} **$
- Item 659 - Water (Permanent Seeded Areas) $3176 \text{ sq. Yd.} \times 9 \text{ sq. Ft./sq. Yd.} \times 120 \text{ Gal./1000 sq. Ft.} \times 1 \text{ M. Gal./1000 Gal.} = 3.43 \text{ M. Gal.} *$

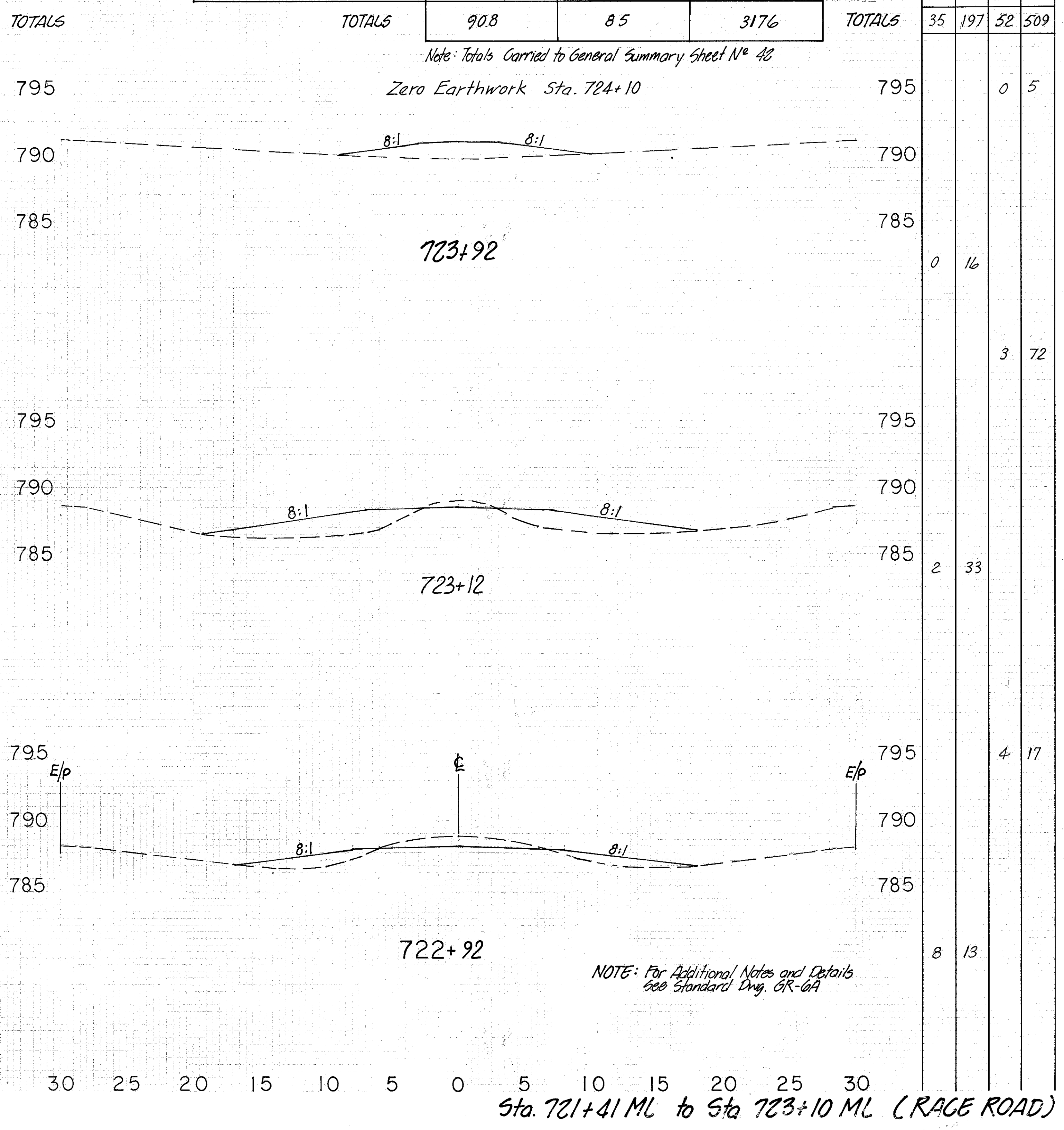
* Note: All Totals Included in General Note Sheet No 20
 ** Totals Carried to General Summary Sheet 42

END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	END WDH	SQ YDS
		17	25	231	1377
				0	
8	10			19	
		22	12		
				19	
17	3			251	
		6	51		
0	65				
		0	283		
				38	
0	57				
0	0			0	44
				81	
					35

MEDIAN EARTHWORK QUANTITIES

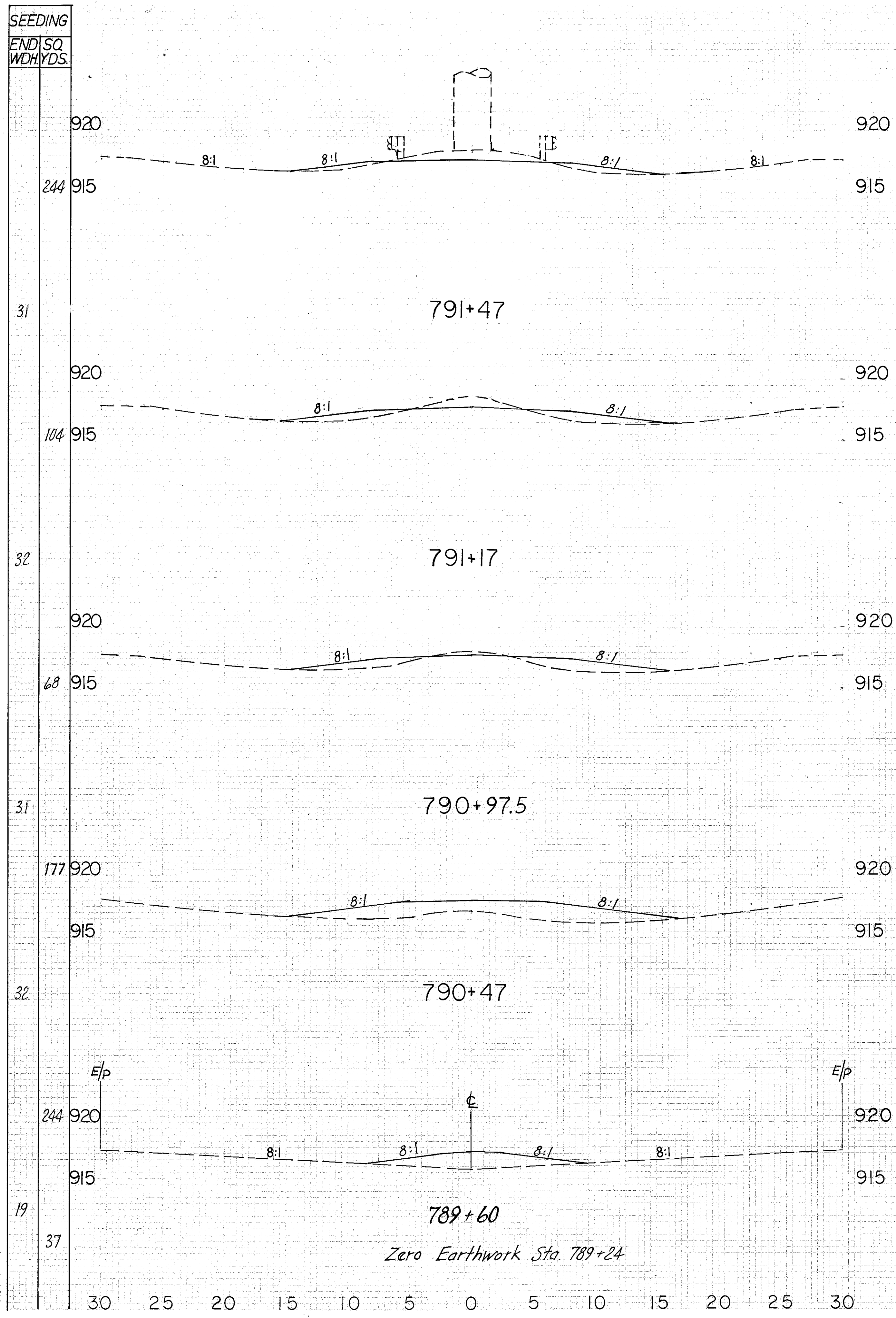
LOCATION	ITEM 203	ITEM 203	ITEM 659
	Embankment	Excavation, Not Including Embankment Const.	Seeding and Mulching
	Cu. Yd.	Cu. Yd.	Sq. Yd.
Sta. 721+41 ML to Sta. 723+10 ML RAGE ROAD	509	52	1377
Sta. 790+00 ML to Sta. 793+20 ML NORTH BEND ROAD	399	33	1799
TOTALS	908	85	3176

Note: Totals Carried to General Summary Sheet No 42
 Zero Earthwork Sta. 724+10

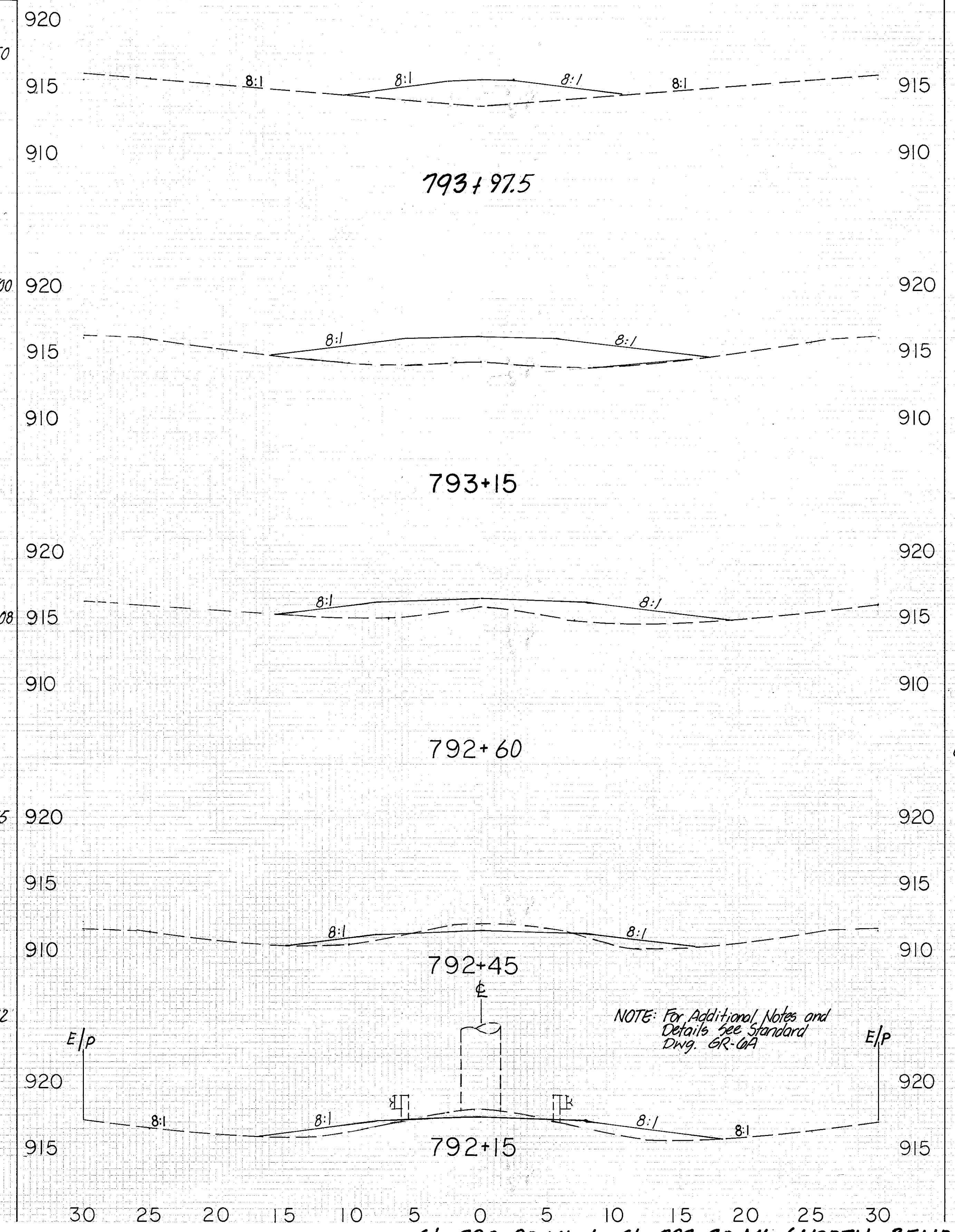


END AREA	VOLUME	
	CUT	FILL
	35	197
		52
		509
		0
		16
		3
		72
		2
		33
		4
		17
		8
		13

NOTE: For Additional Notes and Details see Standard Dwg. CR-6A



Zero Earthwork Sta. 794+40
TOTALS CARRIED TO SHT. 65

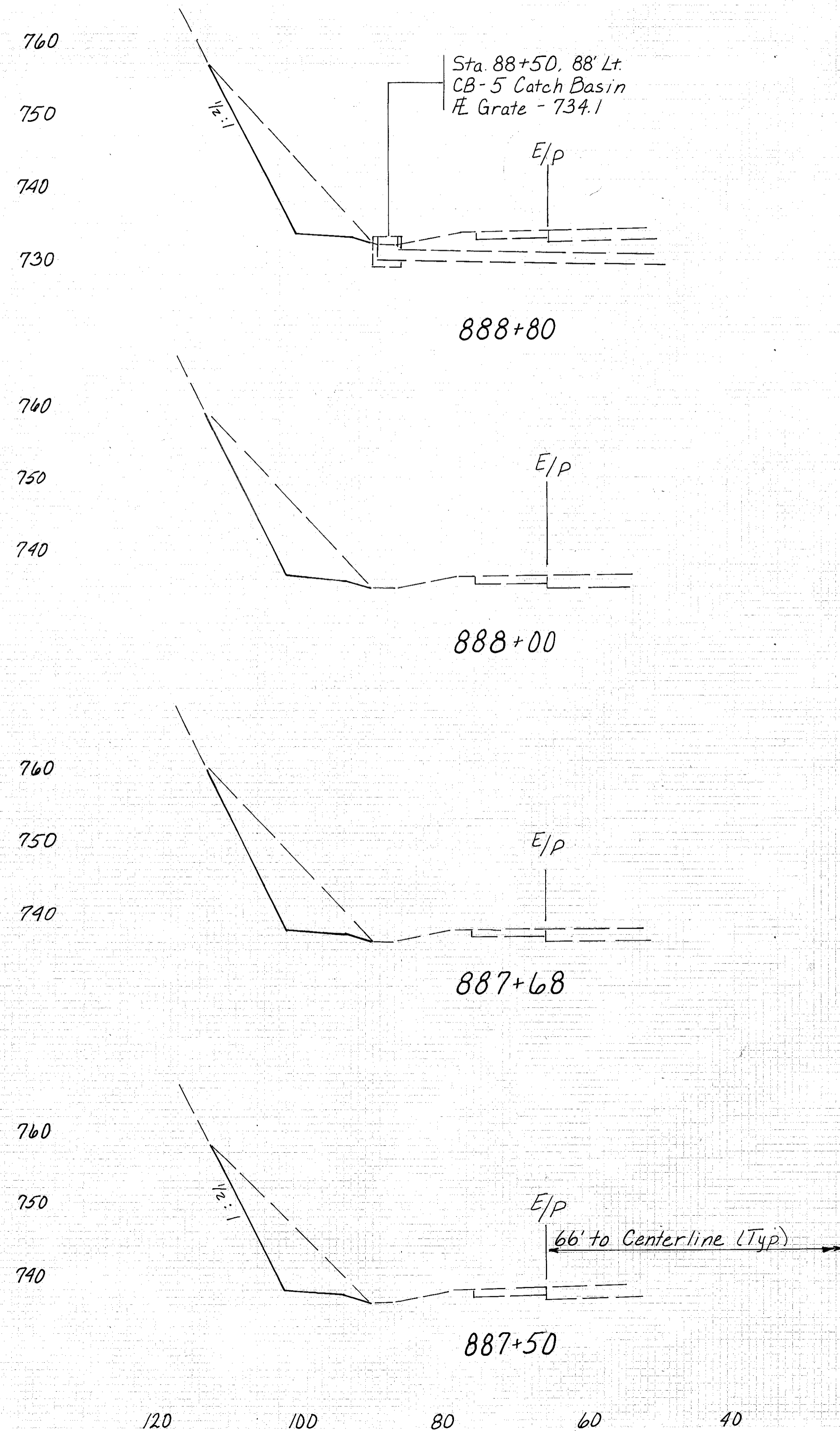


END AREA		VOLUME	
CUT	FILL	CUT	FILL
25	200	33	399

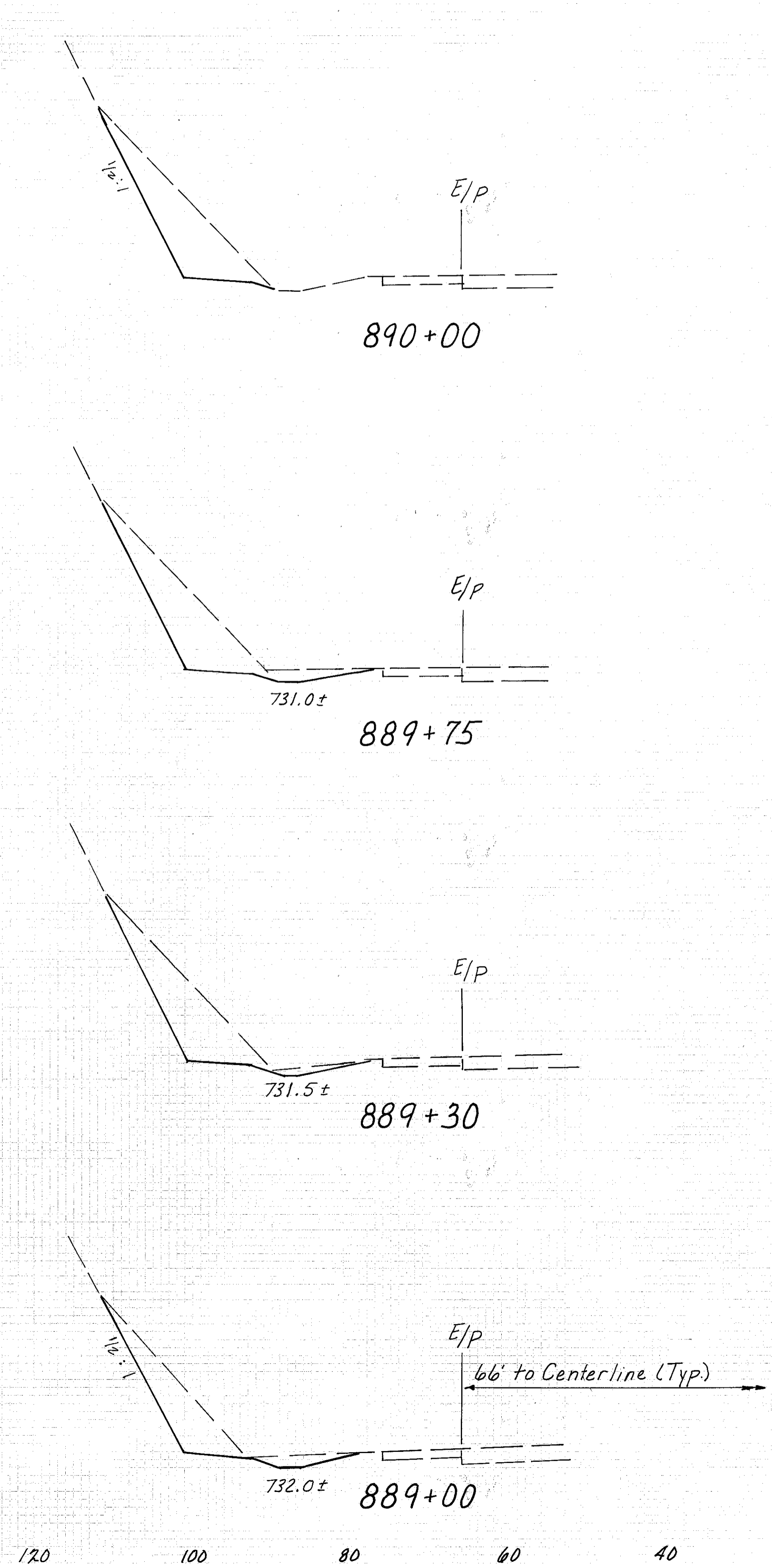
Sta. 790+00 ML to Sta. 793+20 ML (NORTH BEND ROAD)

NOTE: For Additional Notes and Details see Standard Dwg. 6R-6A

Seeding	
End Wdh.	Sq. Yds.

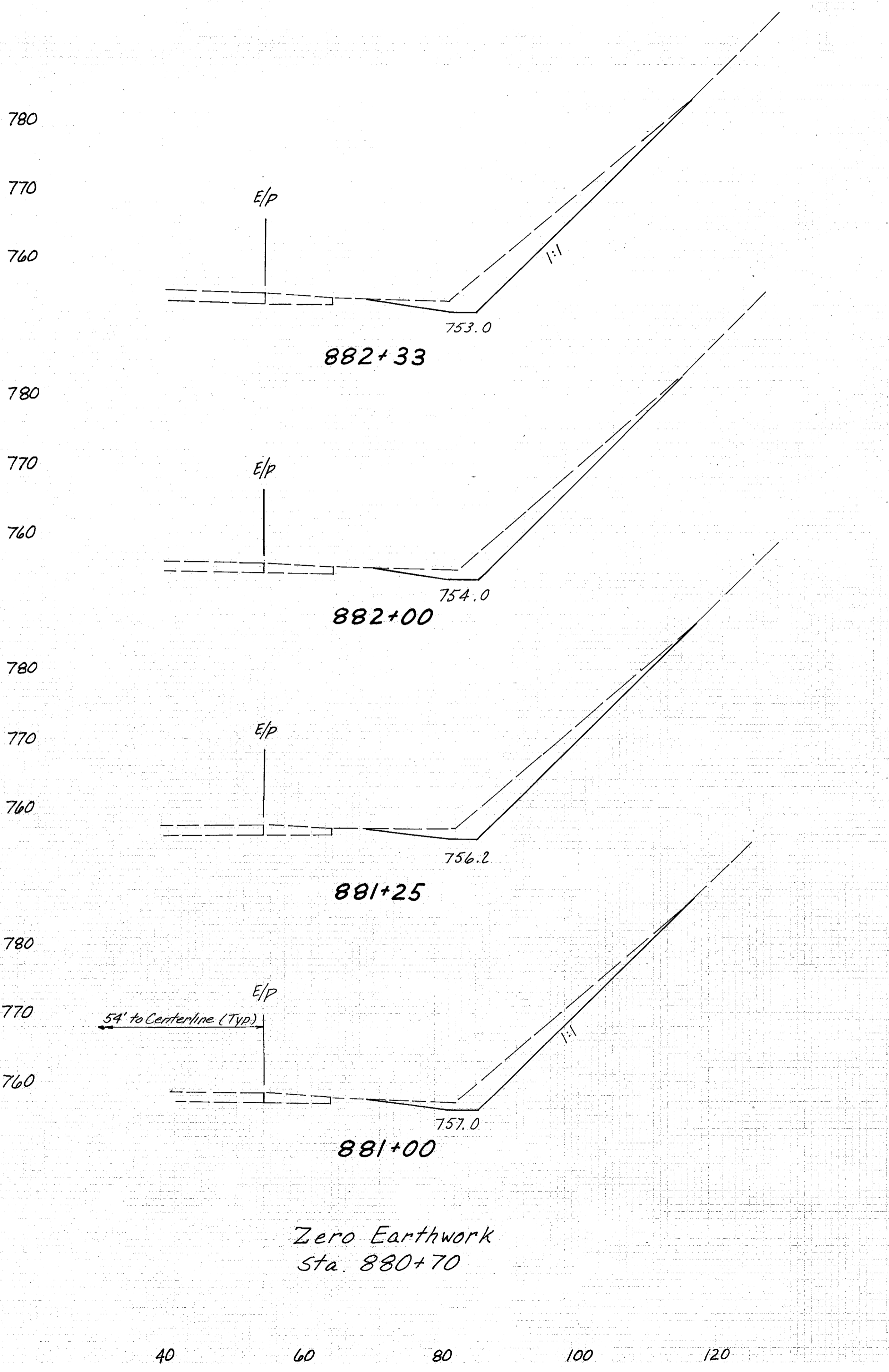


End Area		Volume		Seeding	
Cut	Fill	Cut	Fill	End Wdh.	Sq. Yds.
			74	0	
112	0				
		345	0		
121	0				
		146	0		
125	0				
		78	0		
110	0				



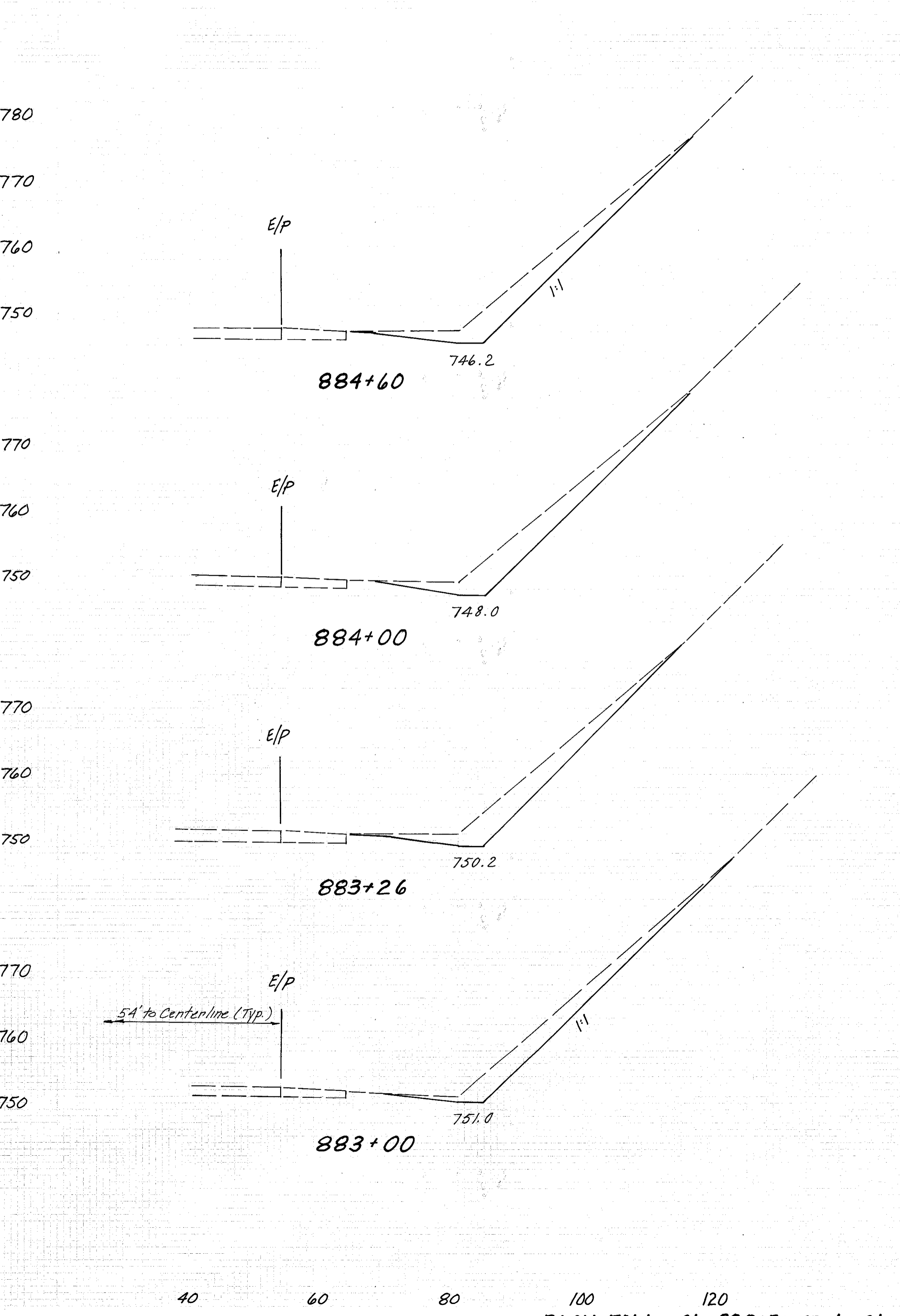
End Area		Volume	
Cut	Fill	Cut	Fill
			65
111	0		
		167	0
121	0		
		195	0
113	0		
		112	0
88	0		

SEEDING	
END SQ	WDH YDS



END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	WDH	YDS

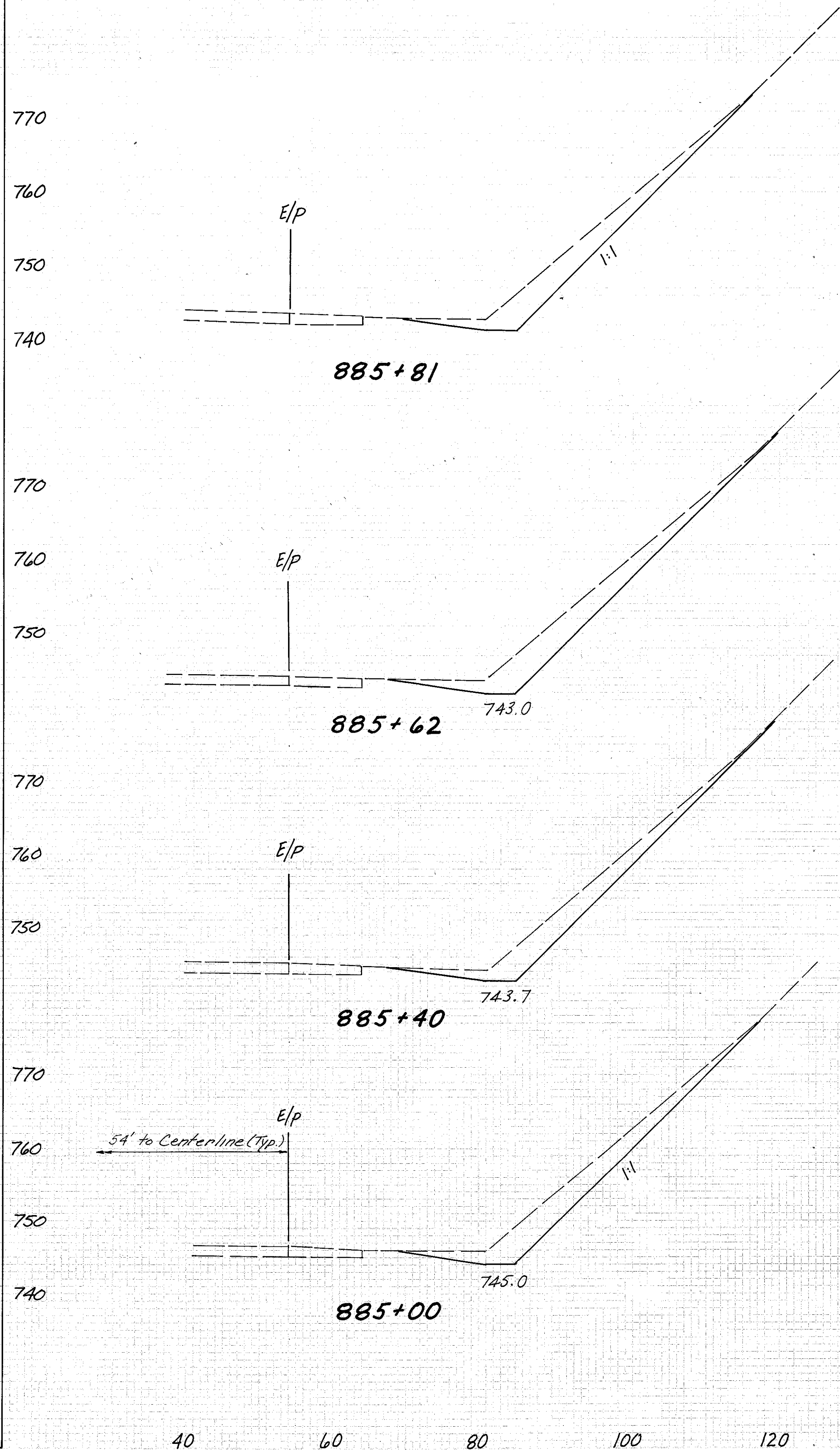
					233 0
		99 0			
					112 0
		85 0			
					240 0
		88 0			
					81 0
		86 0			
					48 0
		0 0			



END AREA		VOLUME	
CUT	FILL	CUT	FILL

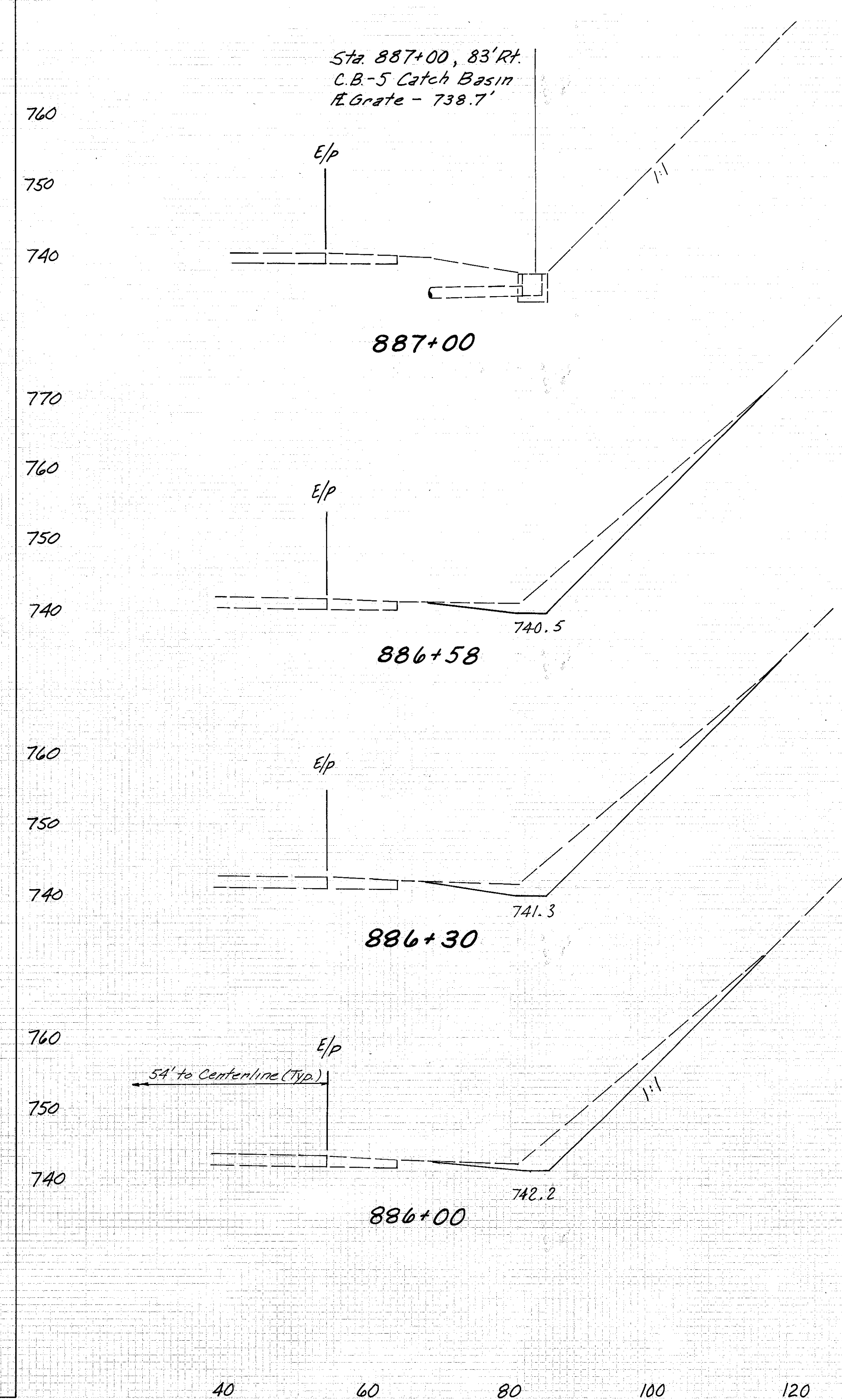
				156 0
		105 0		
				237 0
		108 0		
				282 0
		98 0		
				90 0
		89 0		

SEEDING	
END SQ	WDH YDS



END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	END SQ	WDH YDS

				70	0
101	0				
		78	0		
120	0				
		91	0		
103	0				
		154	0		
105	0				

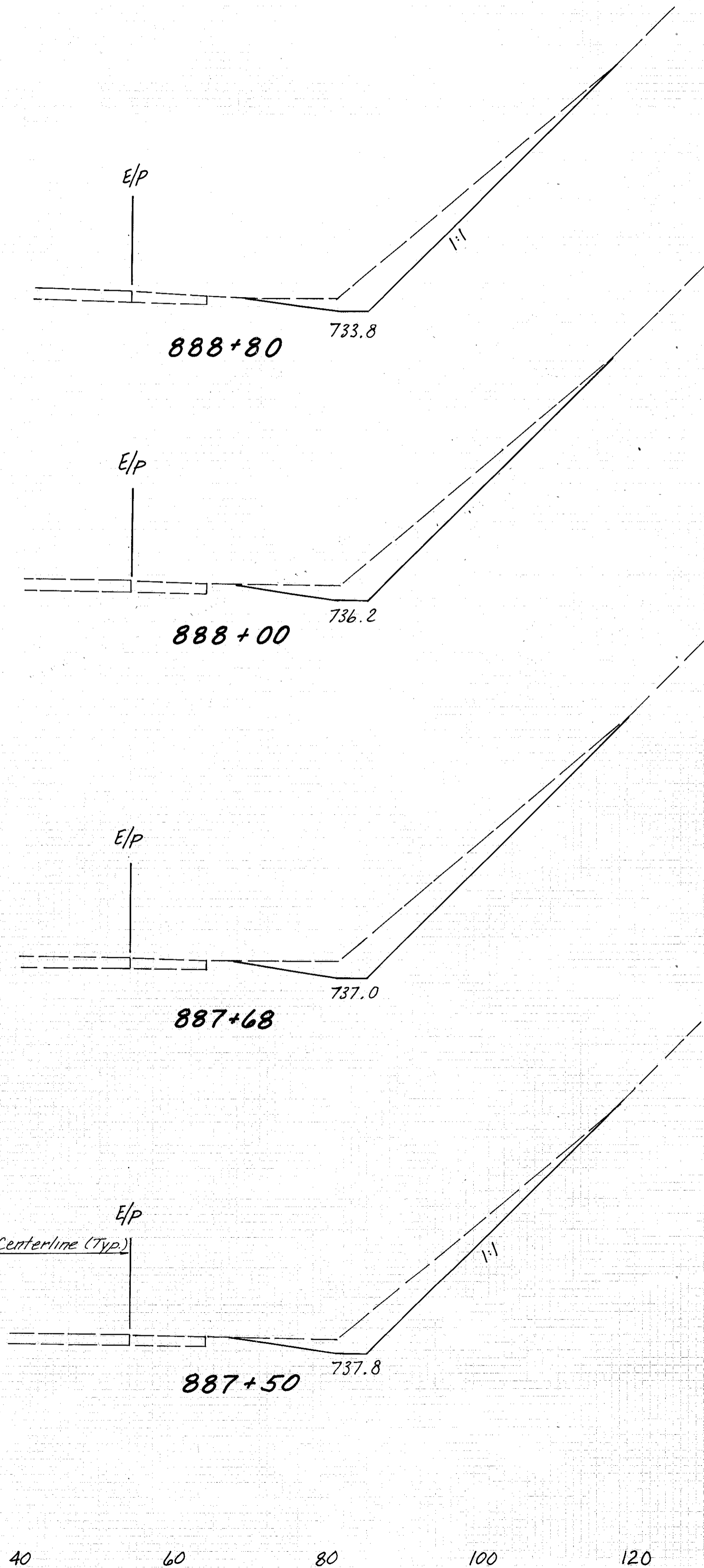


END AREA		VOLUME	
CUT	FILL	CUT	FILL

				95	0
0	0				
				70	0
				90	0
				101	0
				105	0
				109	0
				92	0

SEEDING
END SQ
WDH YDS

760
750
740
760
750
740
770
760
750
740
770
760
750
740



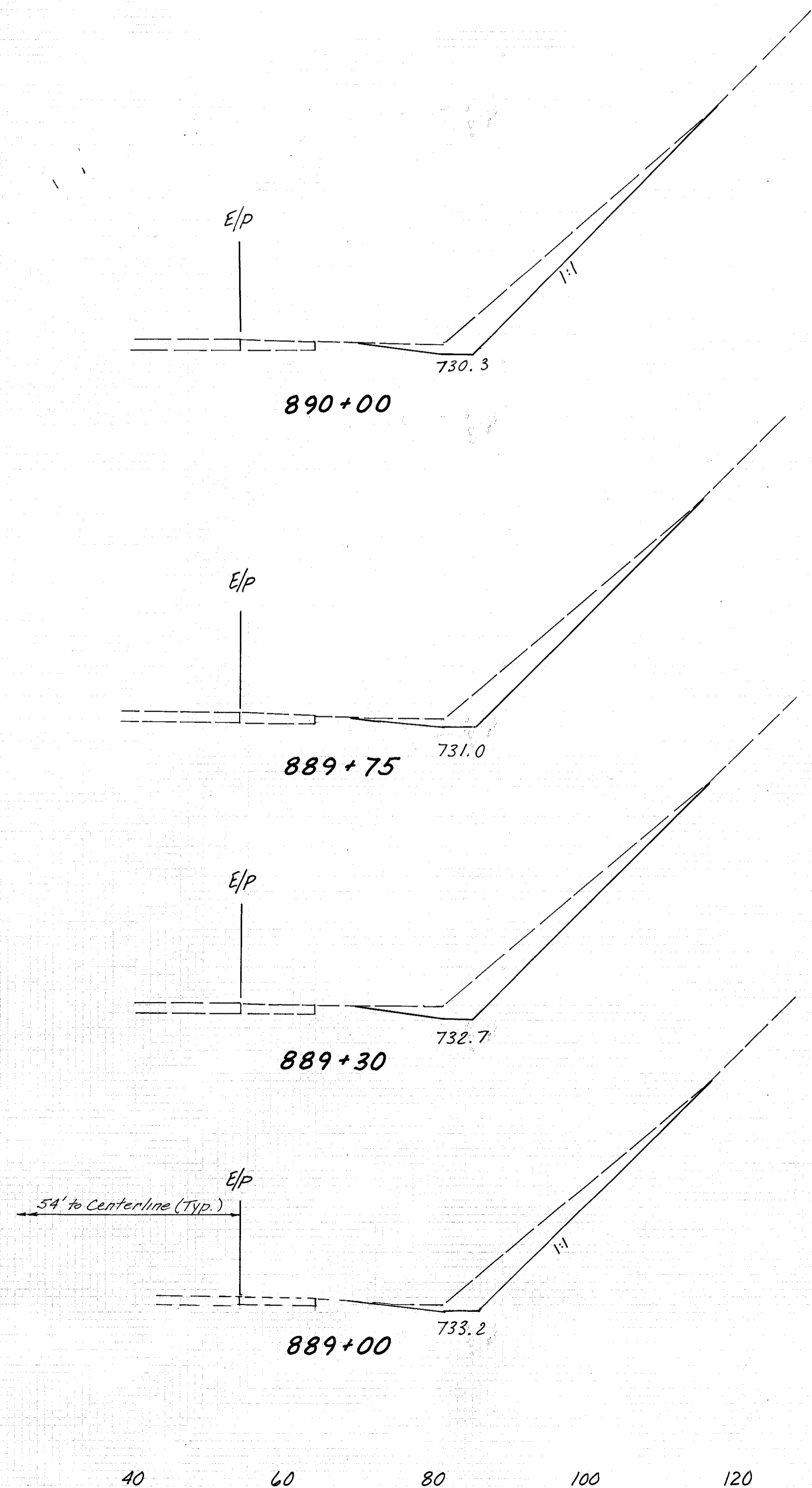
END AREA	VOLUME	SEEDING			
CUT	FILL	CUT	FILL	END SQ	WDH YDS

		75	0		
103	0				
		307	0		
104	0				
		130	0		
116	0				
		73	0		
103	0				

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75
132

760
750
740
730
760
750
740
730
750
740
730
750
740
730



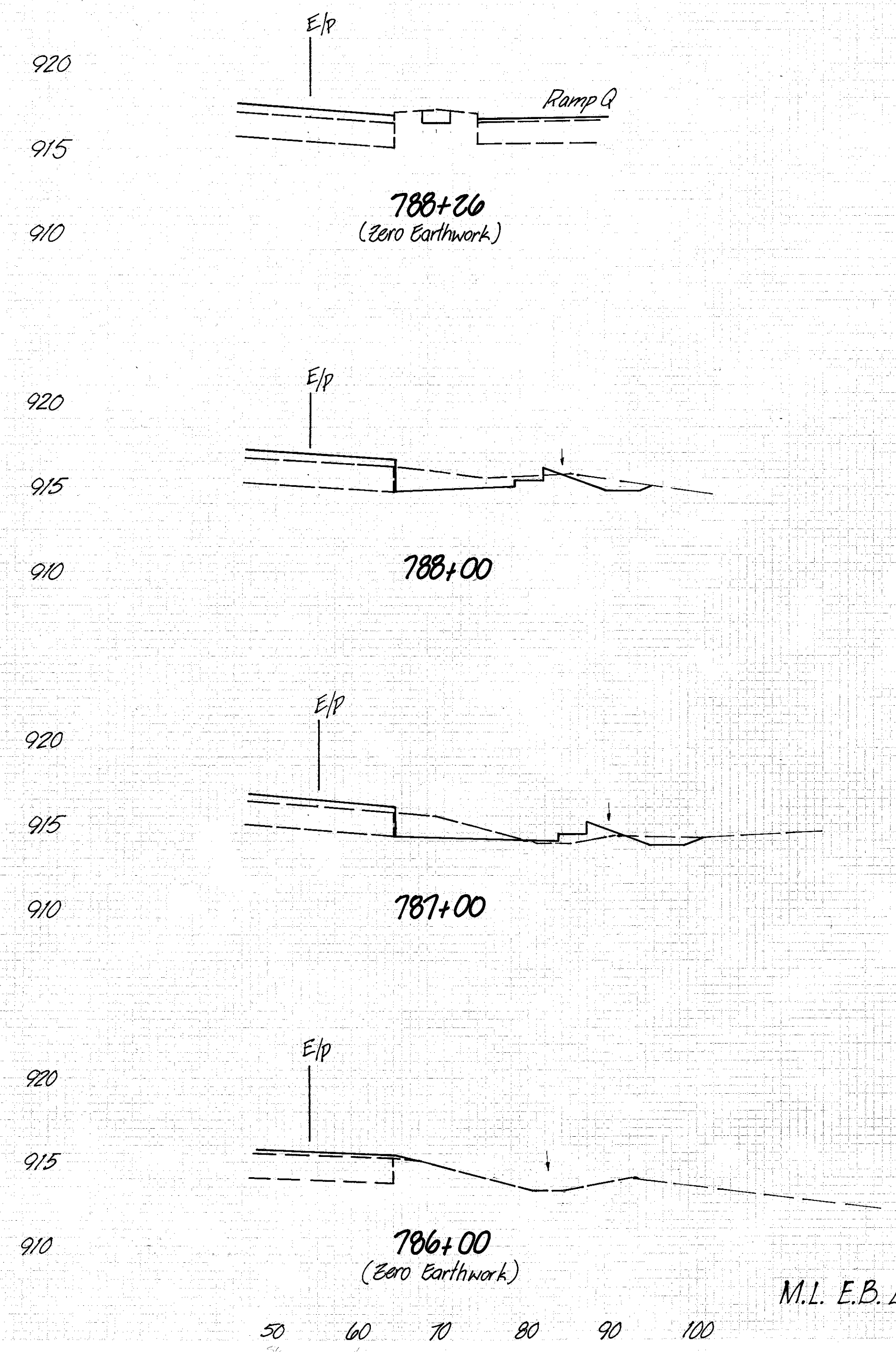
END AREA	VOLUME		
CUT	FILL	CUT	FILL

		84	0
95	0		
		86	0
90	0		
		157	0
98	0		
		110	0
100	0		

ROCK FALL - Sta. 887+50 EB to Sta. 890+00 EB

SEEDING	
END SR	WCH VDS
242	

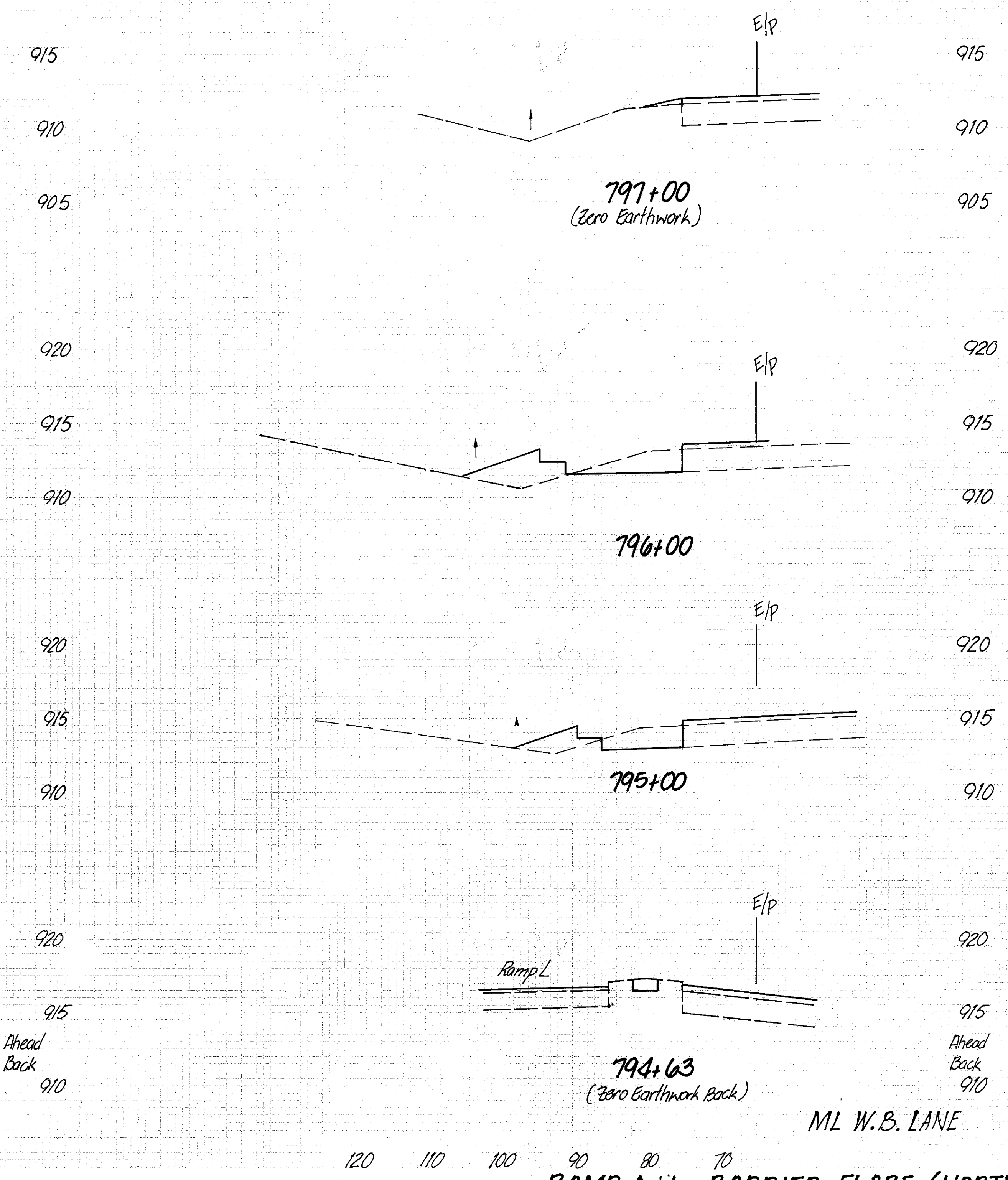
TOTAL Carried to Stt. 79



TOTAL Carried to Stt. 79

END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	END SR	WCH VDS
		102	20	226	
0	0	0	0	0	
		8	0	67	
17	1				
		63	11	182	
17	5				
		31	9	37	
0	0			8	
				0	

TOTAL Carried to Stt. 79

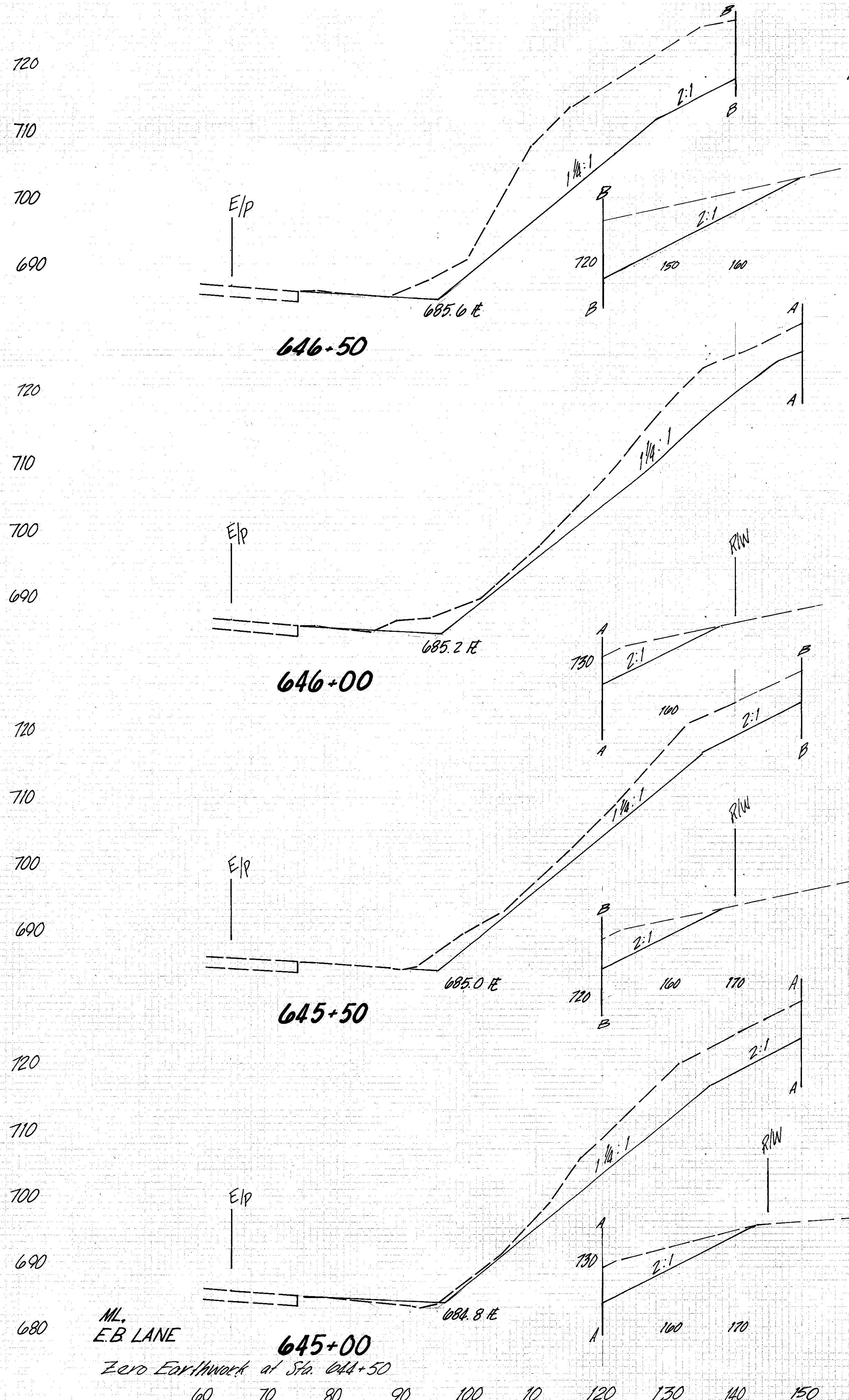


TOTAL Carried to Stt. 79

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		112	103
0	0		
		33	39
18	21		
		65	57
17	10		
		14	7
3	0		
0	0		

RAMP Q & L BARRIER FLARE (NORTH BEND ROAD)

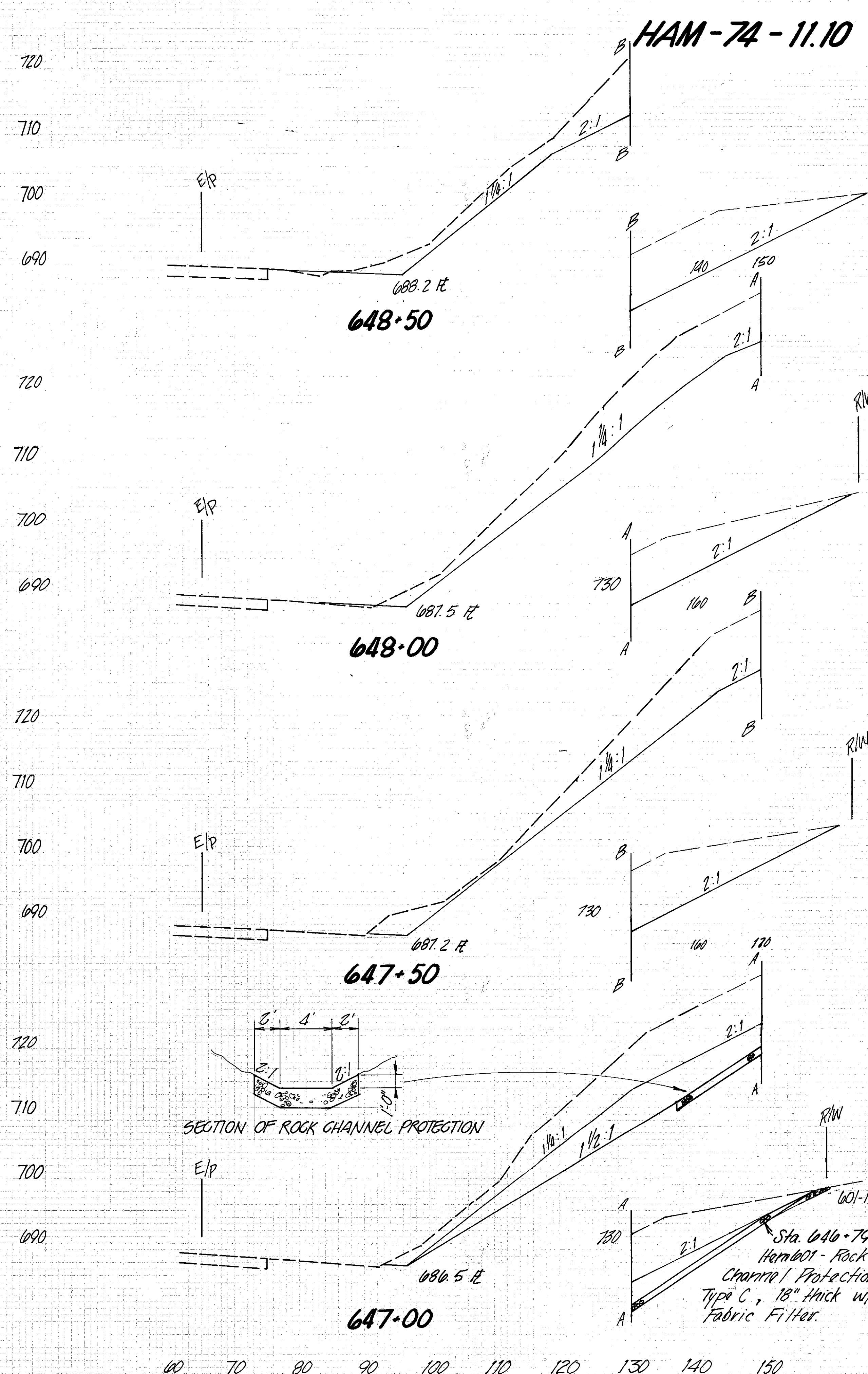
SEEDING
END SQ. WDH. YDS.
107
603
110
561
92
572
114
317
0



END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	END SQ. WDH. YDS.	SEEDING
583	0			103	
811	0			625	
293	0			122	
524	0			639	
273	0			108	
533	5			575	
303	5			99	
281	5			572	
0	0				

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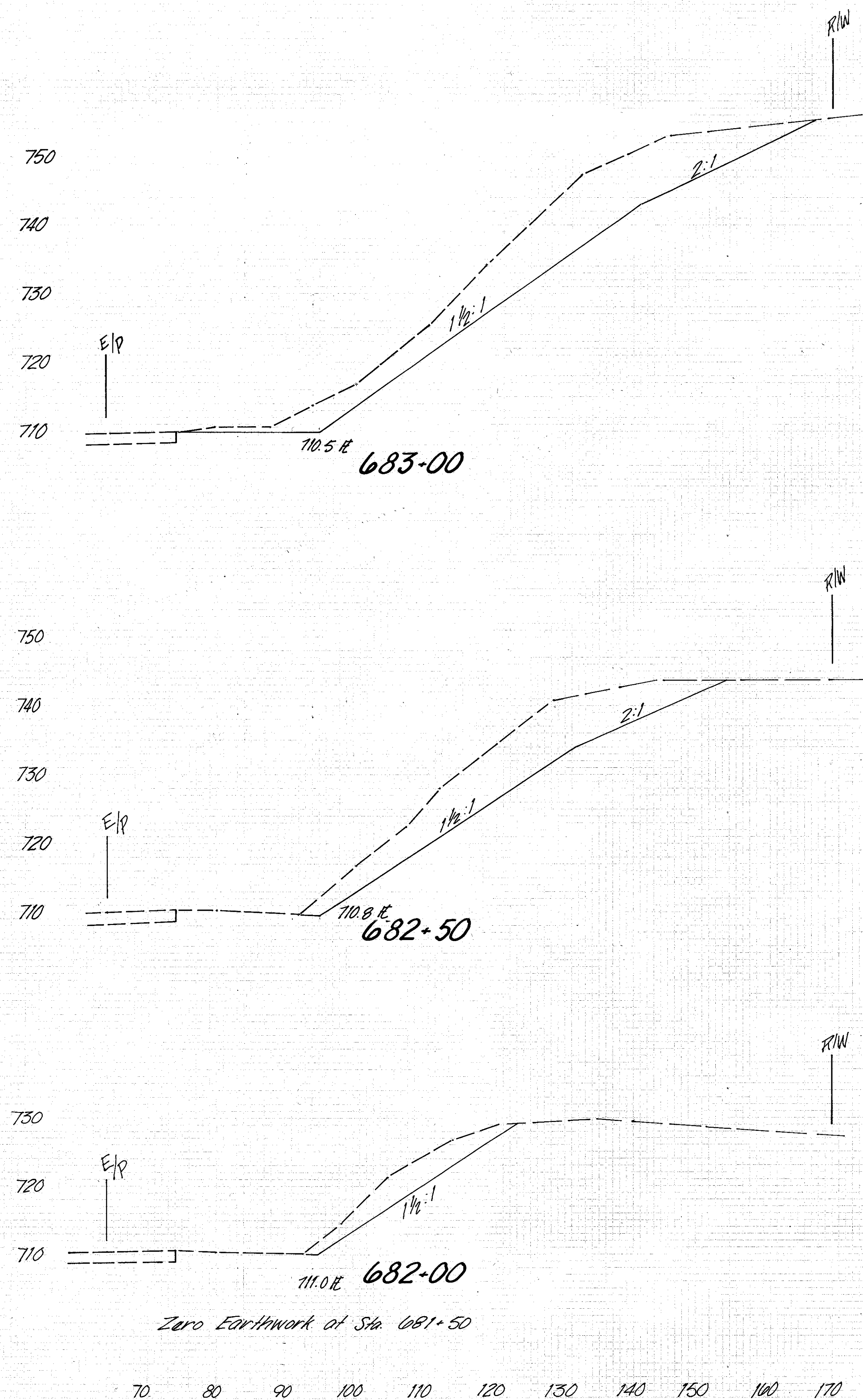
81
132



END AREA		VOLUME	
CUT	FILL	CUT	FILL
375	2		
		774	3
461	1		
		848	1
455	0		
		826	0
437	0		
		23	
944	0		

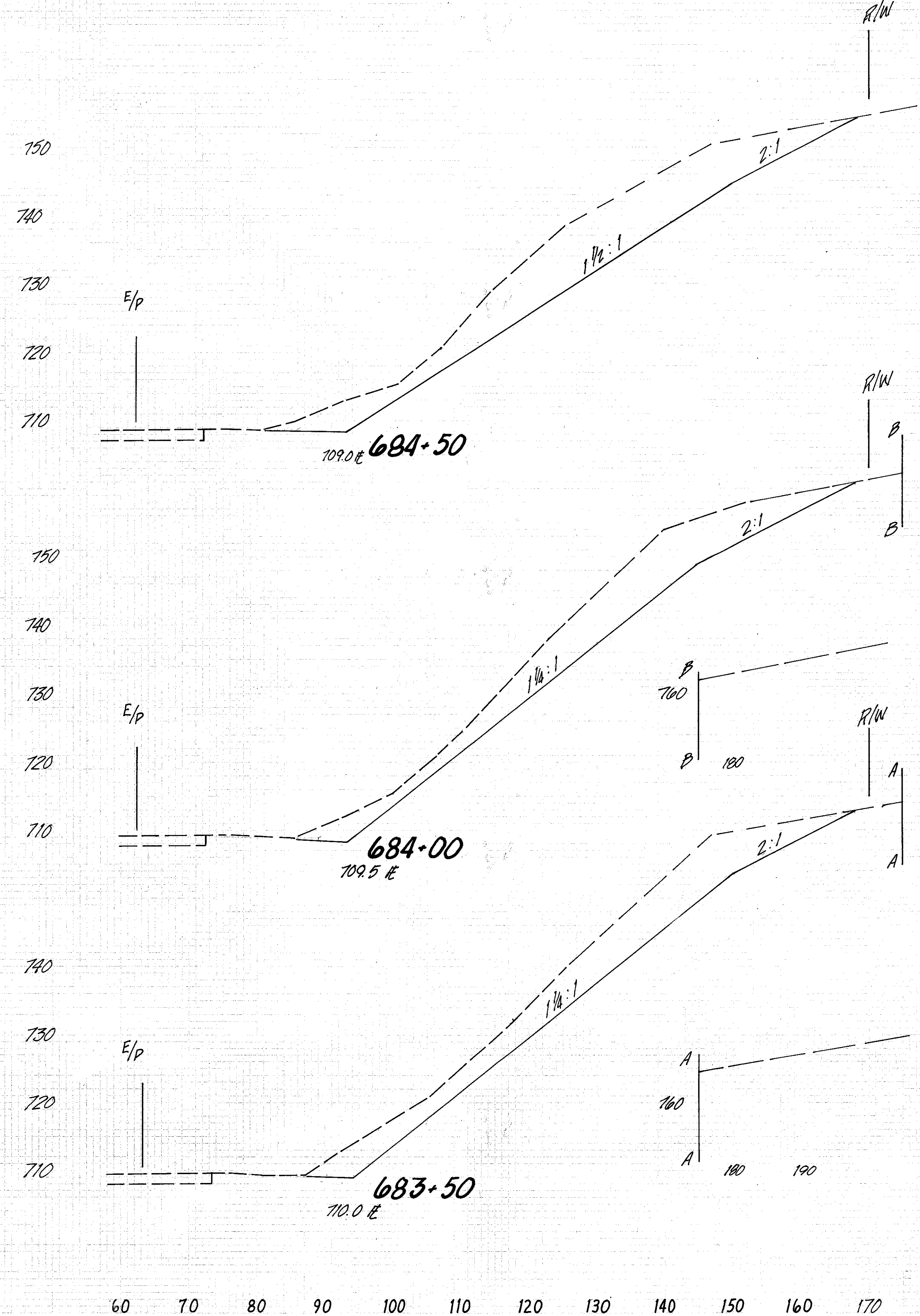
SLIDE #9 I-74 EB Sta. 644+50 to Sta. 648+50

SEEDING
END SQ. WD. YDS.
564
105
486
70
297
37
103
0



Zero Earthwork of Sta. 681+50

END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	END SQ. WD. YDS.	SR. YDS.
470	0			98	
		756	0		
347	0			97	
		49	0		
105	0			98	
0	0	97	0		

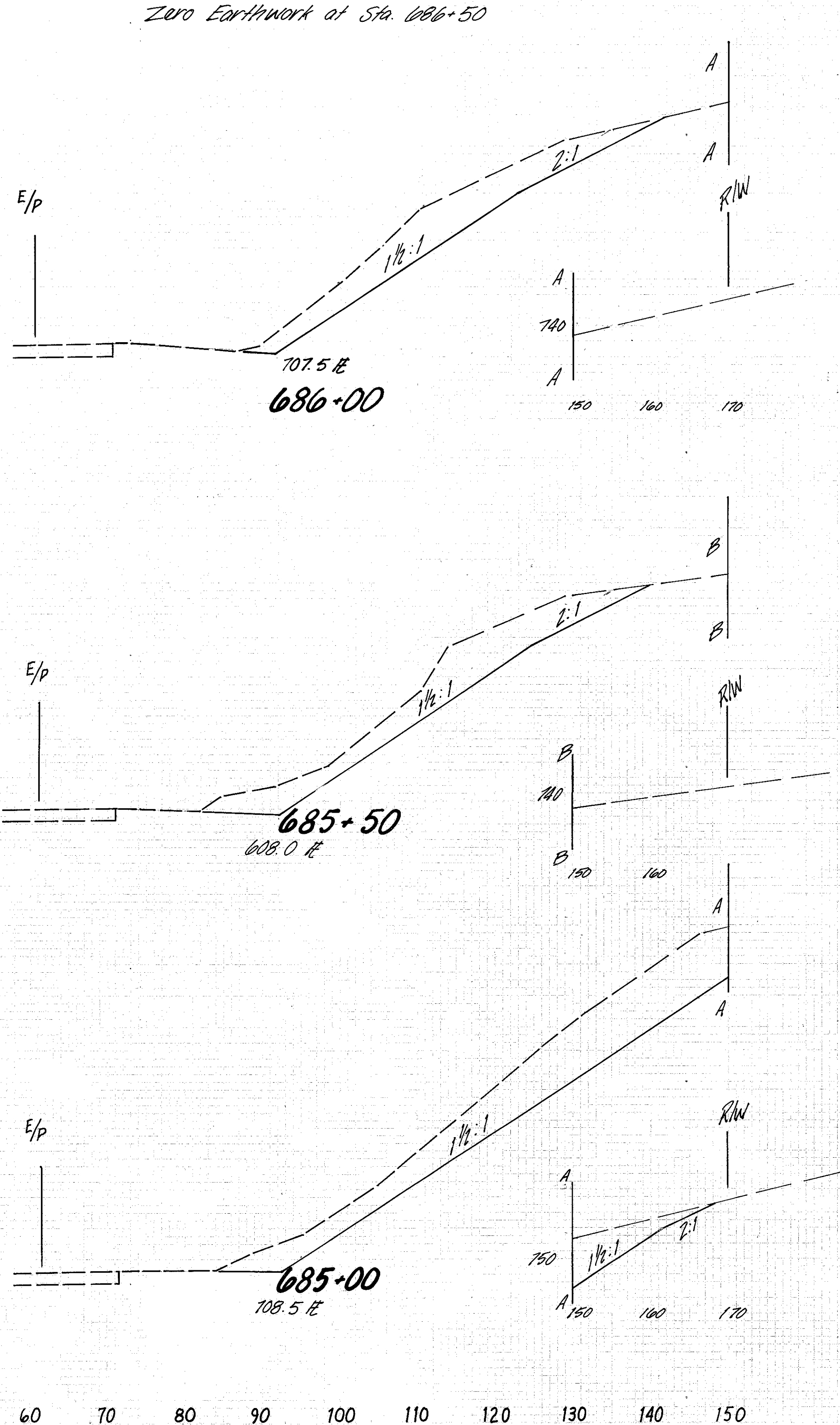


END AREA		VOLUME	
CUT	FILL	CUT	FILL
442	0		
		790	0
411	0		
		755	0
404	0		
		809	0

SLIDE #10 I-74 EB Sta. 681+50 to Sta. 684+50

SEEDING	END SQ. WDH. YDS.
4060	TOTALS Carried to Sheet 85
0	750
172	740
62	730
358	720
67	710
456	750
97	740
542	730

750
740
730
720
710
750
740
730
720
710
750
740
730
720
710



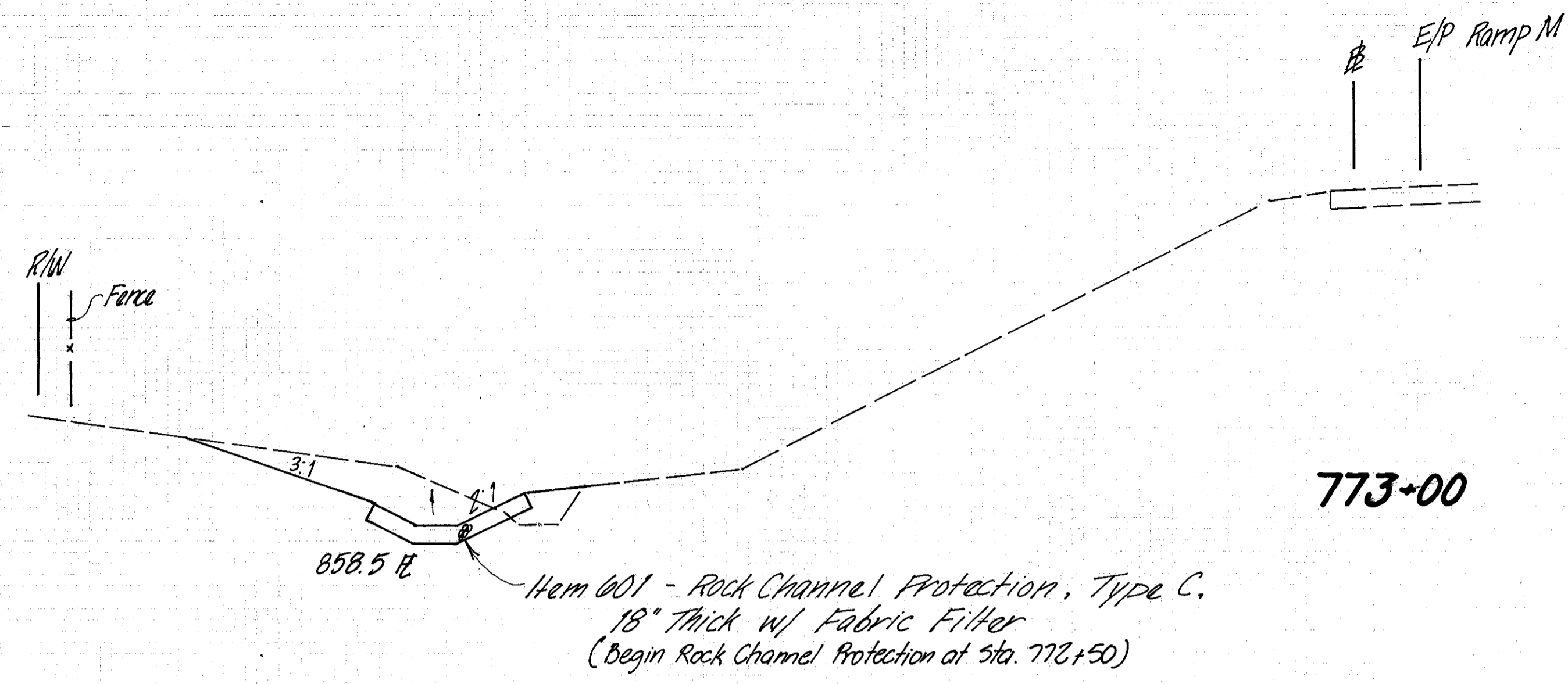
TOTALS Carried to sheet 85

END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	END SQ. WDH. YDS.	
		5555	-		
0	0				
107	0	180	0		
		375	0		
		208	0		
		578	0		
		416	0		
		794	0		

END AREA		VOLUME	
CUT	FILL	CUT	FILL

SEEDING
END 30
WD 7 1205

22	890
	880
	870
78	860
	850
0	Ahead Back



773+00

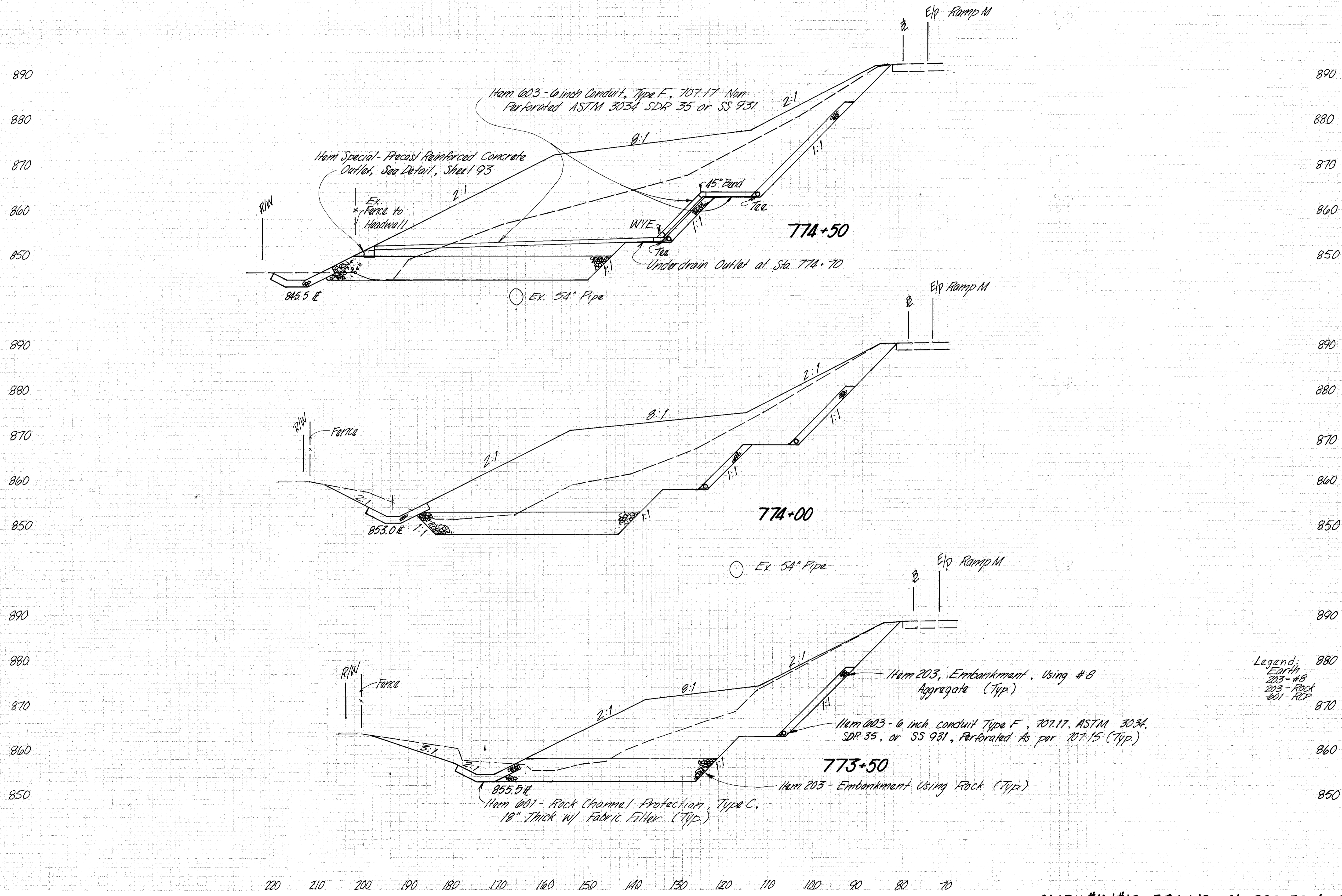
Begin Earthwork at Sta. 772+50

* 601 - RCP

END AREA	VOLUME	
	CUT	FILL
890		
880	93	11
870		23
860		107
850		21
23	0	

220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70

SEEDING	
END	SQ.
WDT.	YDS.
132	
708	
123	
656	
113	
375	

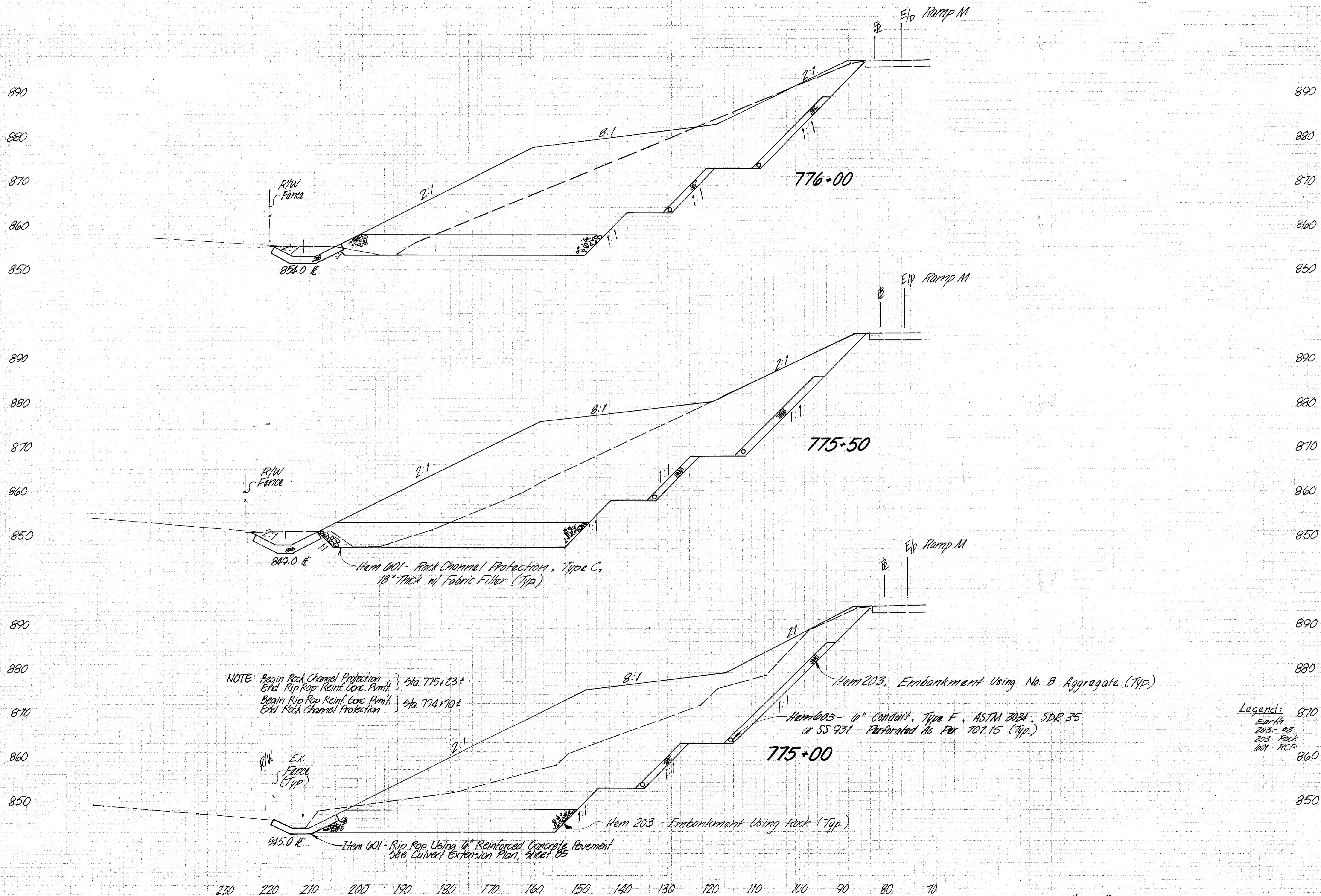


END AREA	VOLUME	
	CUT	FILL
890		
880		
870	1163	
860		
850		
890		1873
880	860	
870		
860		
850		
890		
880		702
870		
860		
850		

Legend:
 Earth
 203 - #8
 203 - Rock
 001 - RCP

SLIDE #11 & #12 I-74 WB Sta. 773+50 to Sta. 774+50

SEEDING	
END SQ. WICH.	SQ. YDS.
126	
772	
134	
783	
130	
788	



NOTE: Begin Rock Channel Protection } Sta. 775+23±
 End Rip Rap Reinf. Conc. Pmt. }
 Begin Rip Rap Reinf. Conc. Pmt. } Sta. 774+70±
 End Rock Channel Protection }

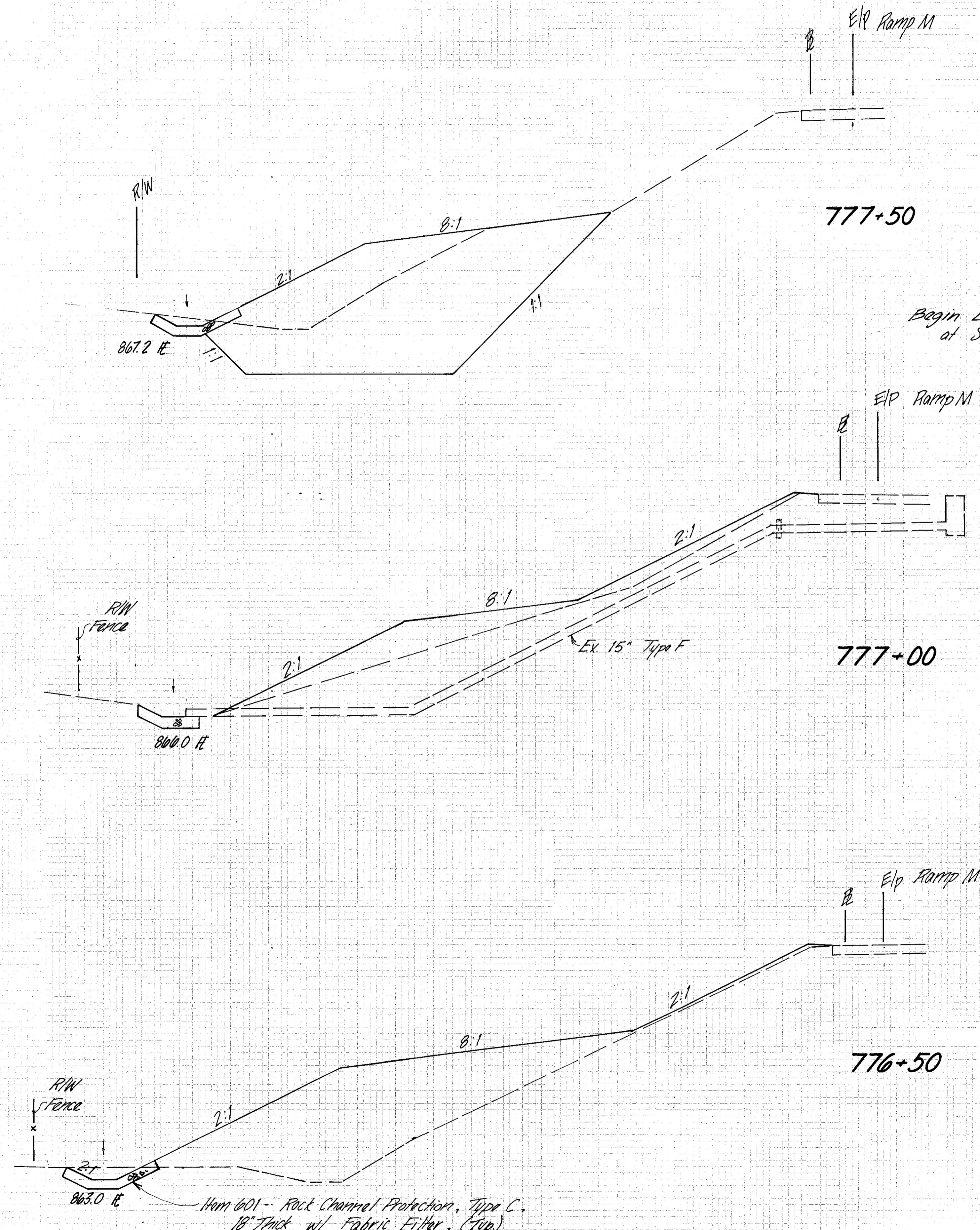
Legend:
 870 Earth
 203-#8
 203-Rock
 601-RCP

ELEVATION	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
890				
880				
870	1245		1434	
860			54	
			275	
			23	
850				
				2254
				2787
				105
				579
				43
890				
880	1189		1576	
870			59	
			285	
			23	
860				
850				
				2163
				3010
				99
				505
				21
890				
880				
870	1147		1685	
			48	
			260	
			0	
860				
850				
				2139
				3067
				106
				534
				21

SLIDE #11 & #12 I-74 WB Sta. 775+00 to Sta. 776+00

SEEDLING	END	SP.
WDT.	YDS.	YDS.
61		
447		
100		
589		
112		
661		

900
890
880
870
860
900
890
880
870
860
900
890
880
870
860
900
890
880
870
860



END AREA	VOLUME	
	CUT	FILL
900		
890		
880	74	902 + 23
870		
860		685 + 35
900		
890		
880	26	232 + 15
870		
860		63 + 35
900		
890	42	685 + 23
880		
870		1182
860		1962 + 50 + 255 + 43

Earth * 001 - RCP
Earth * 003 - #8
203 - Rock
001 - RCP

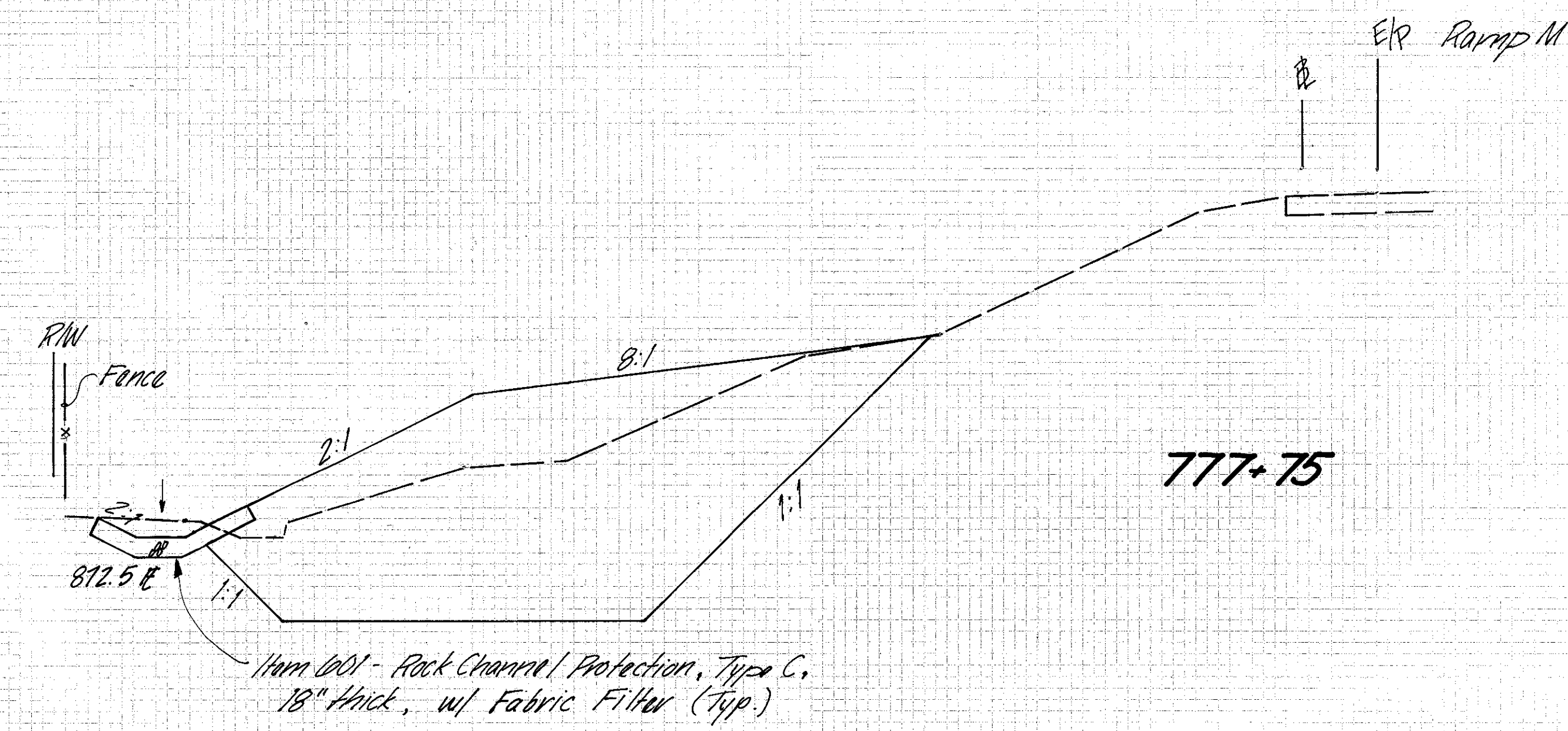
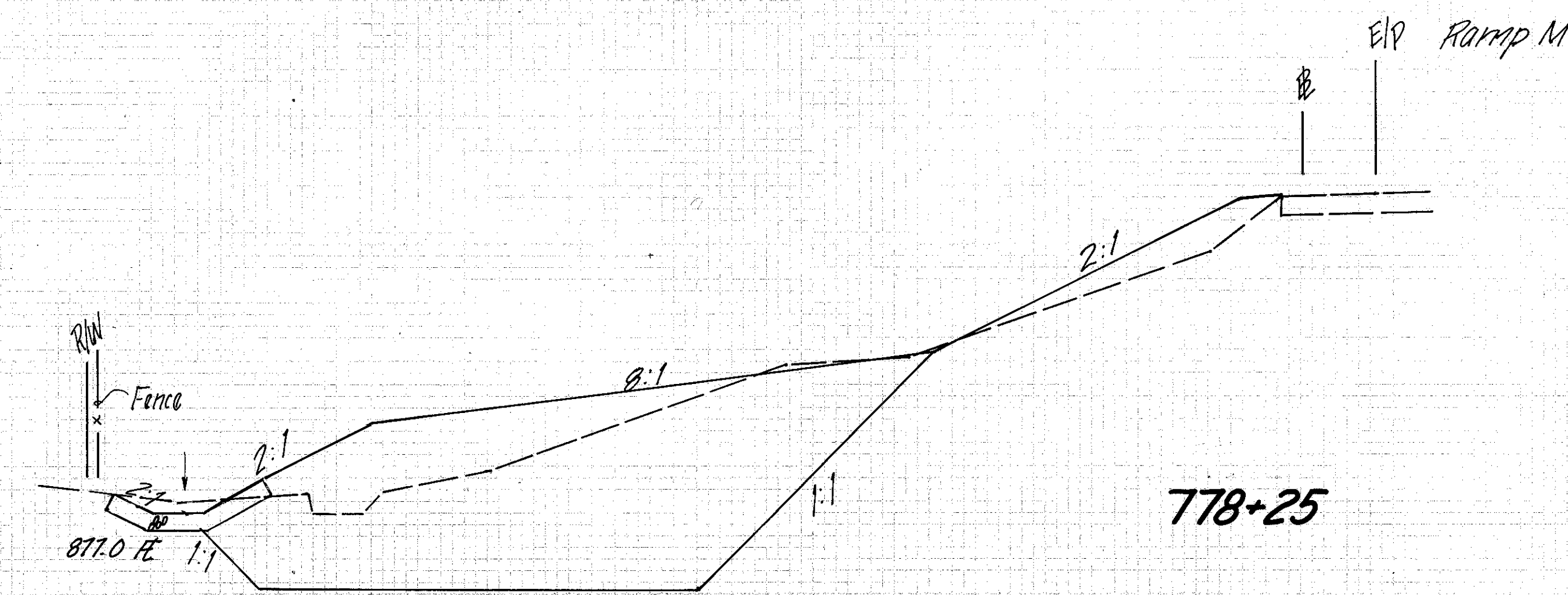
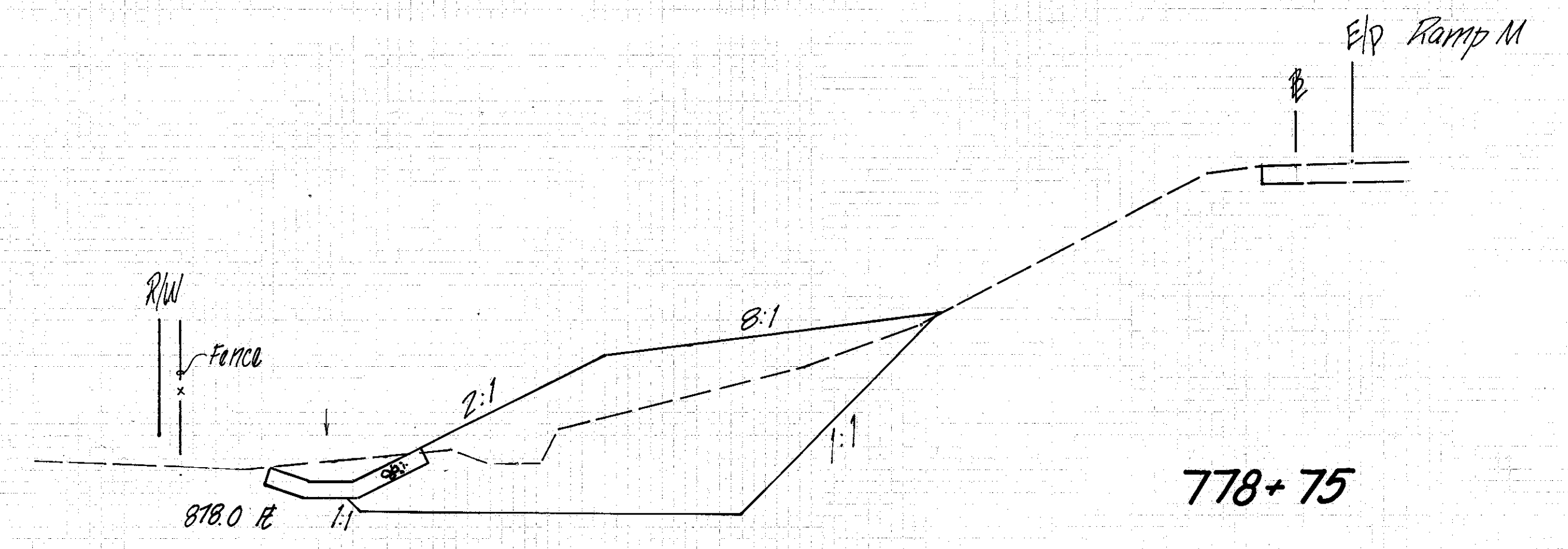
240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70

SLIDE #11 & #12 I-74 WB Sta. 776+50 to Sta. 777+50

SEEDING	
END WDH	SQ. YDS
47	389
93	436
64	174

910
900
890
880
870
900
890
880
870
860
900
890
880
870
860

230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70



END AREA	VOLUME	
	CUT	FILL
910		
900		
890	374	487
880	*	23
870		934
		*
		1209
900	635	819
890	*	23
880		
870		
860		1268
		*
		1612
900		
890	734	923
880	* 601-RCP	* 23
870		
860		870
		*
		844
		21

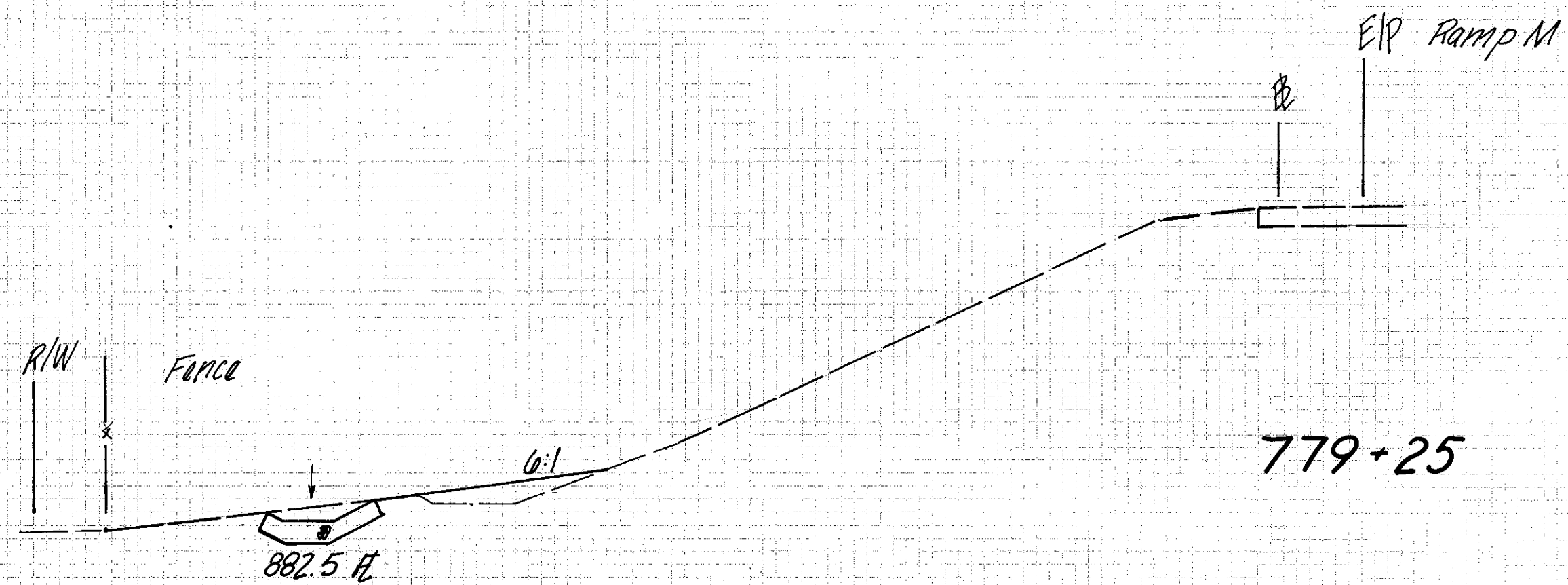
SEEDING	
END WDH.	SQ. YDS.
0	4
30	
22	
190	

TOTALS Carried to sheet 85

Ahead Back

Zero Earthwork at Sta. 779+50

Ahead Back



TOTALS Carried to sheet 85

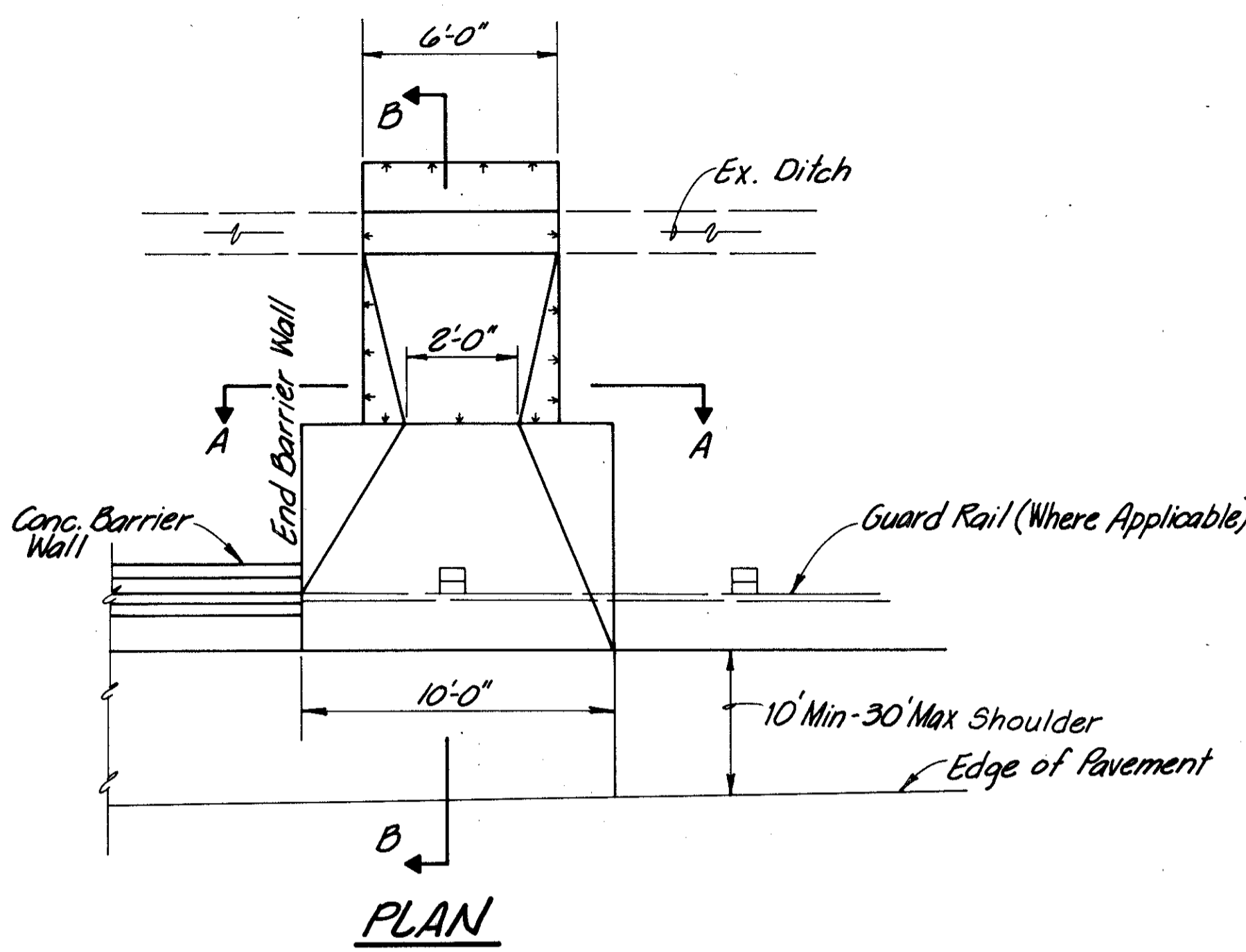
203-Emb.
203-#B
203-Rock
601-RCP

15974

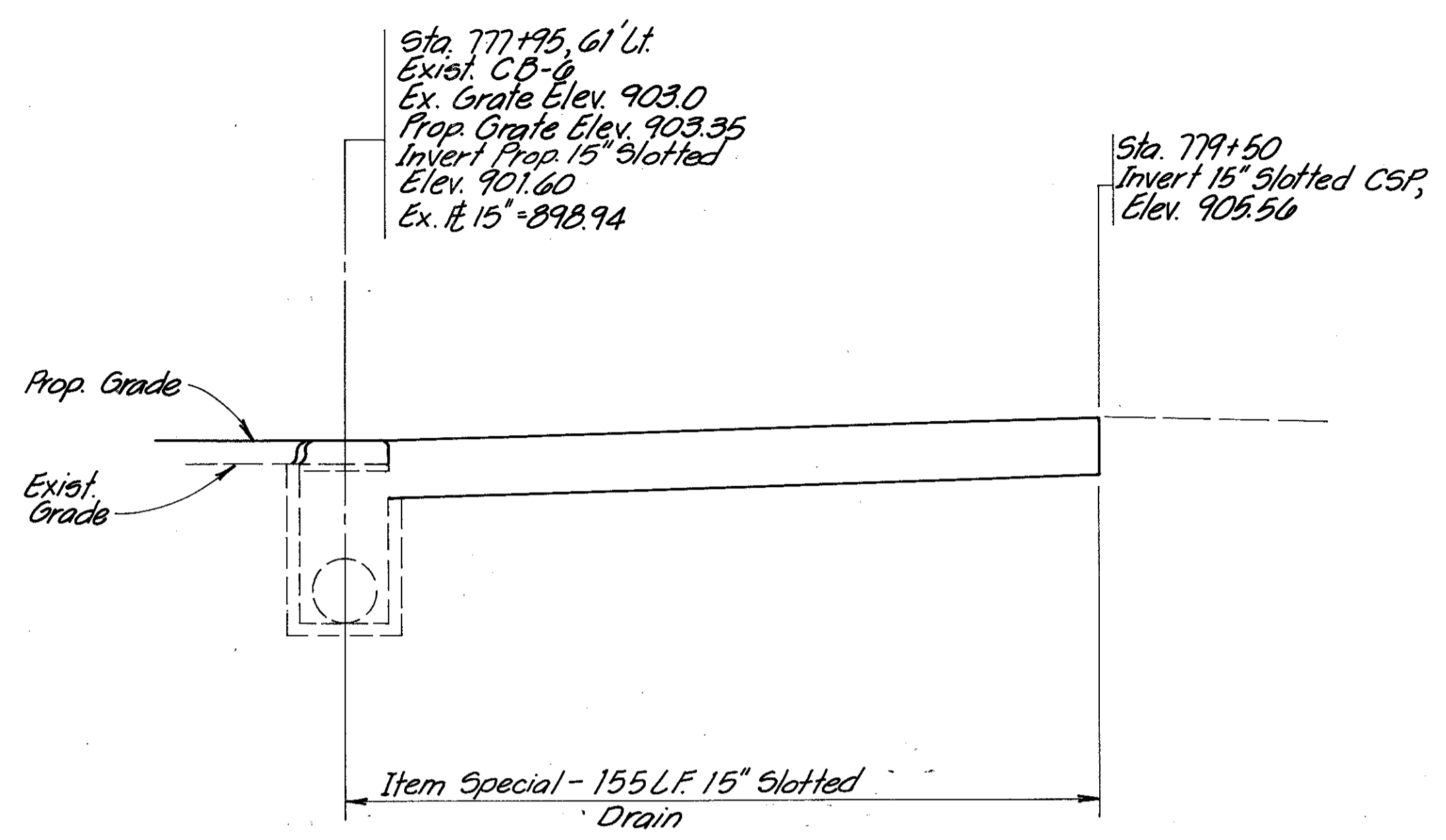
10047
572
1930
541

END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	23		
* 23			
		24	11
		* 43	
		28	12
		* 23	
		372	468
		* 43	

SLIDE #11 & #12 I-74 WB Sta. 779+25 to Sta. 779+50



PLAN

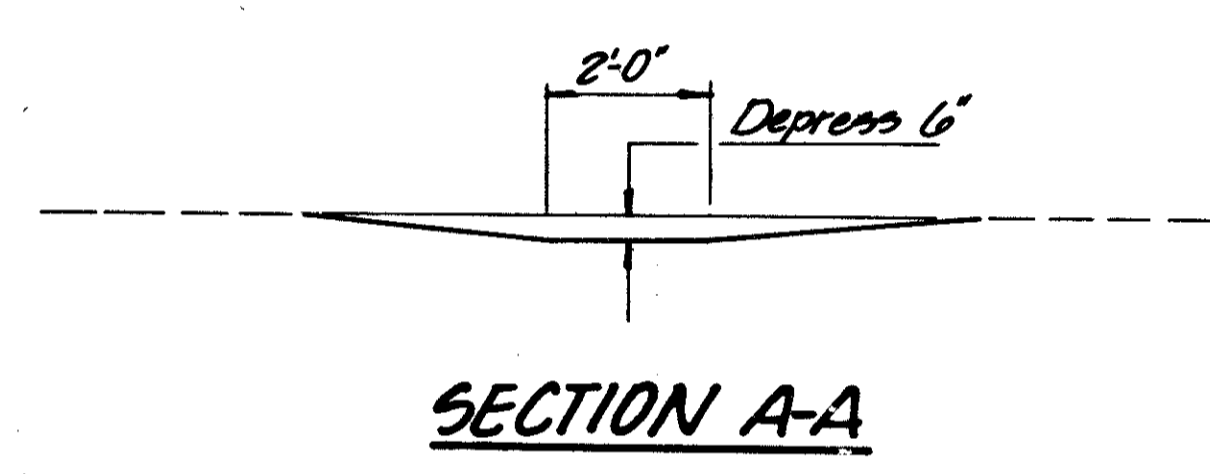


PIPE PROFILE 3D

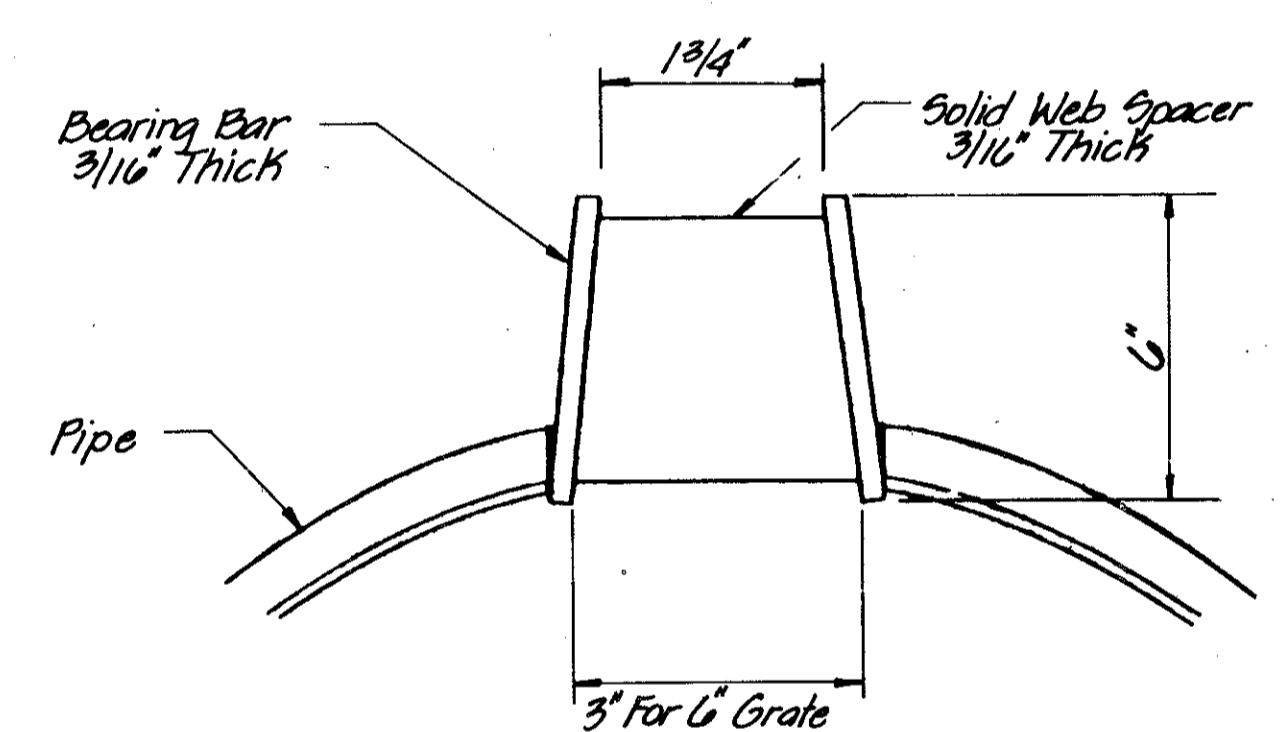
ITEM SPECIAL-SLOTTED DRAIN

This item shall consist of 15" diameter slotted drain bituminous coated steel conduit 707.05 (0.079) with 6" by 3/16" galvanized solid bar grate as approved by the Engineer. All costs for labor and materials including bedding and backfilling as detailed shall be included in the price bid for item Special, Slotted Drain.

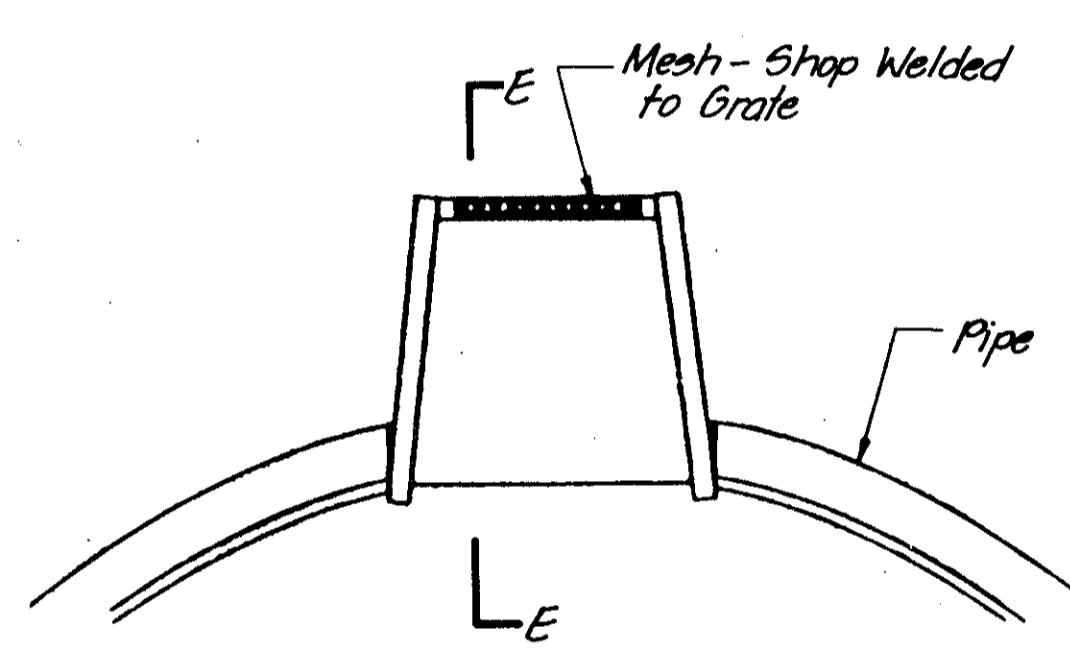
The conduit shall be provided with at least two circumferential corrugations at each end of each pipe length. The pipe lengths shall be jointed with coupling bands which have at least one circumferential corrugation that indexes into the inboard corrugations of the pipe. Bands with projections, i.e. dimple bands shall not be used.



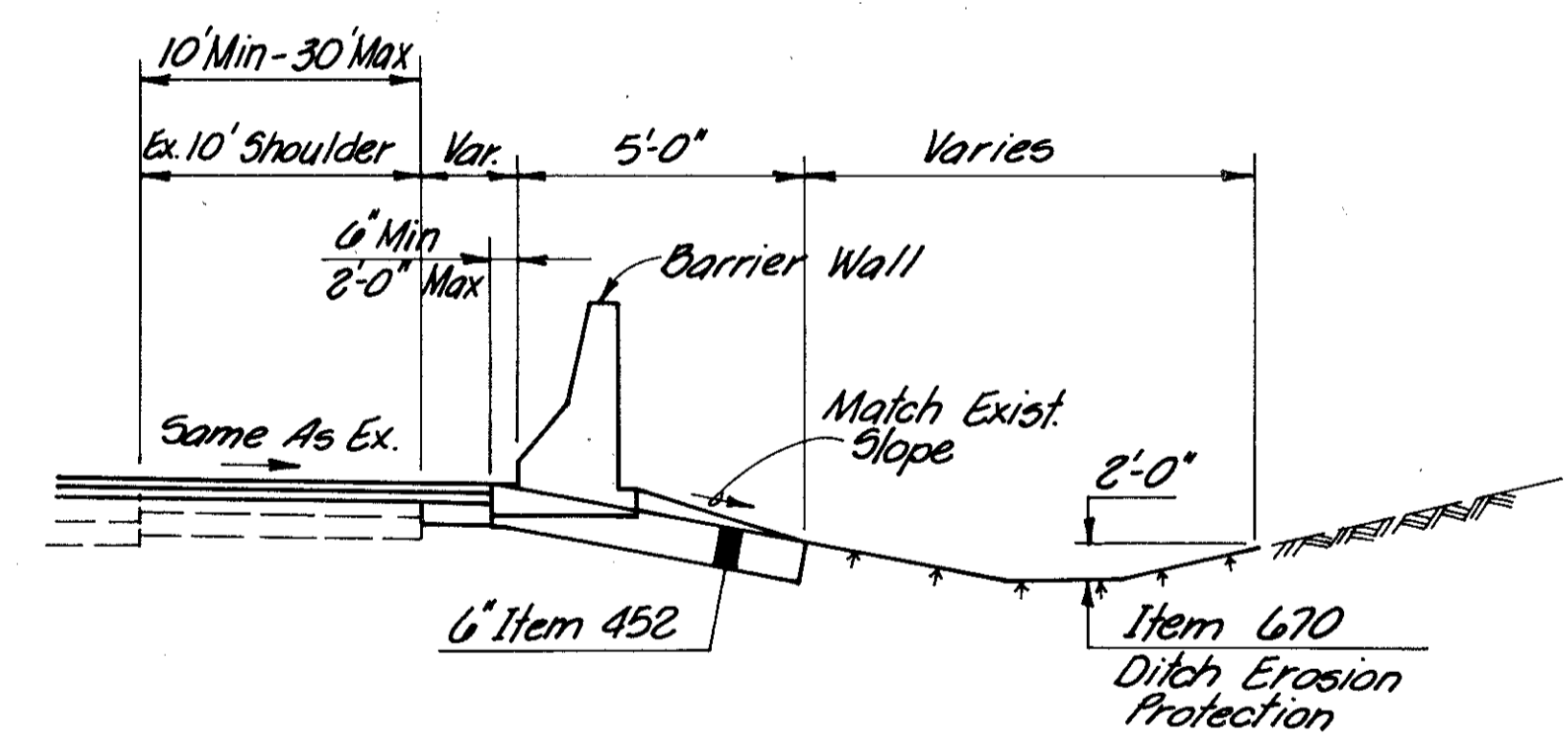
SECTION A-A



SECTION D-D
STANDARD GRATE DETAIL

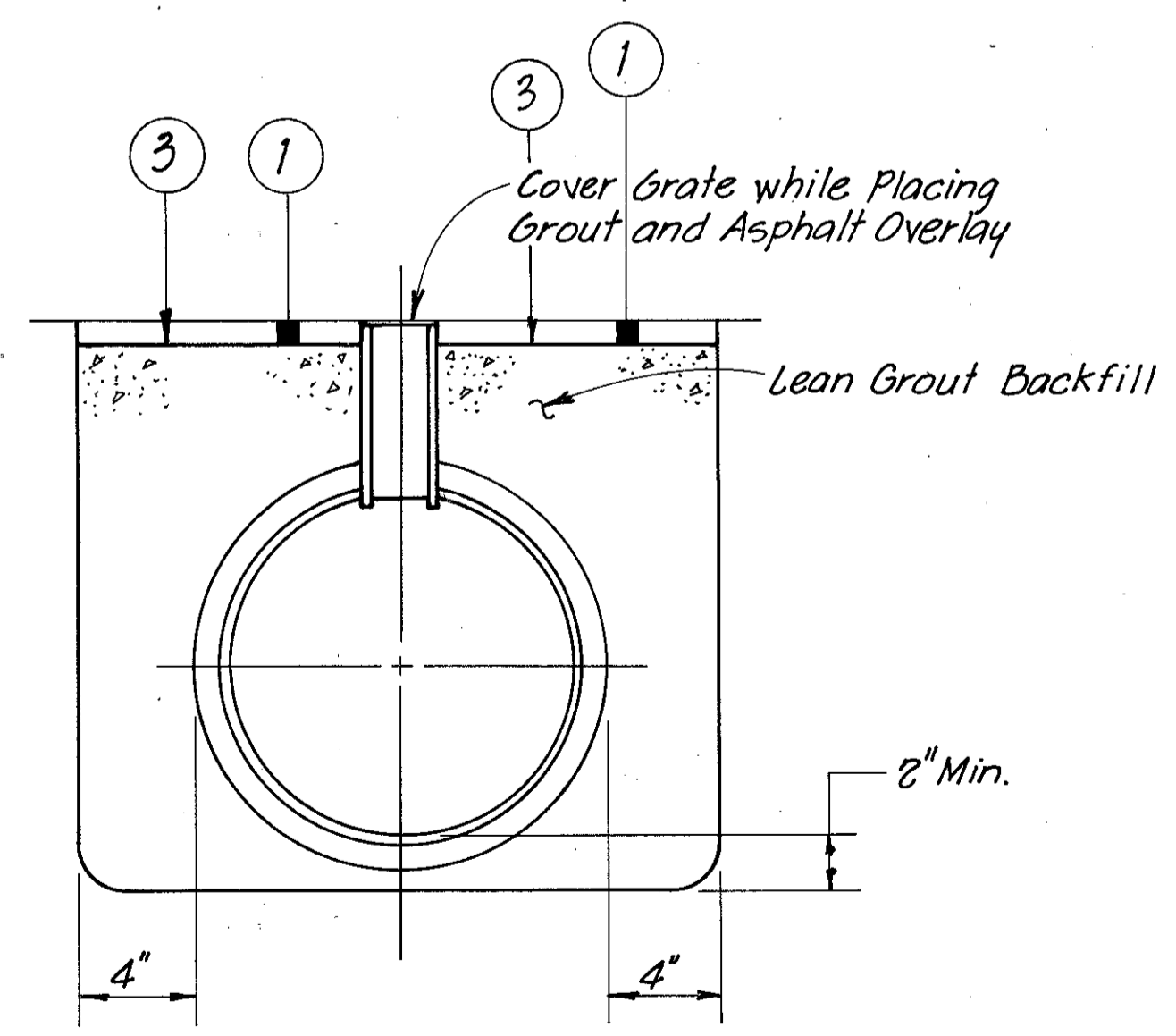


SECTION D-D
GRATE DETAIL WITH MESH

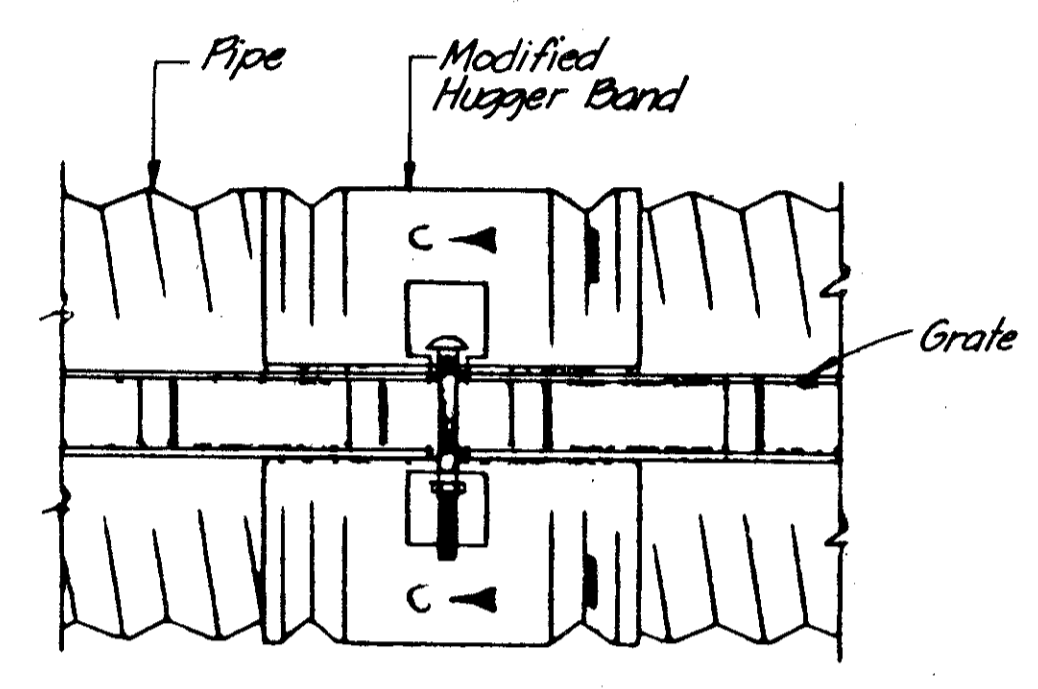


SECTION B-B

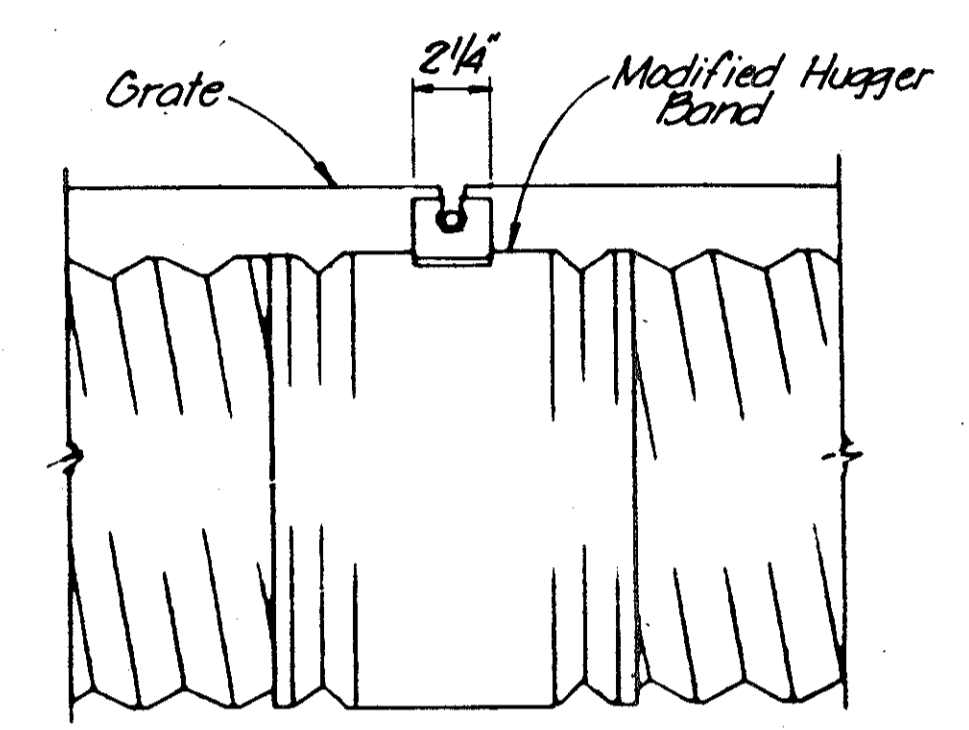
EROSION PROTECTION DETAIL



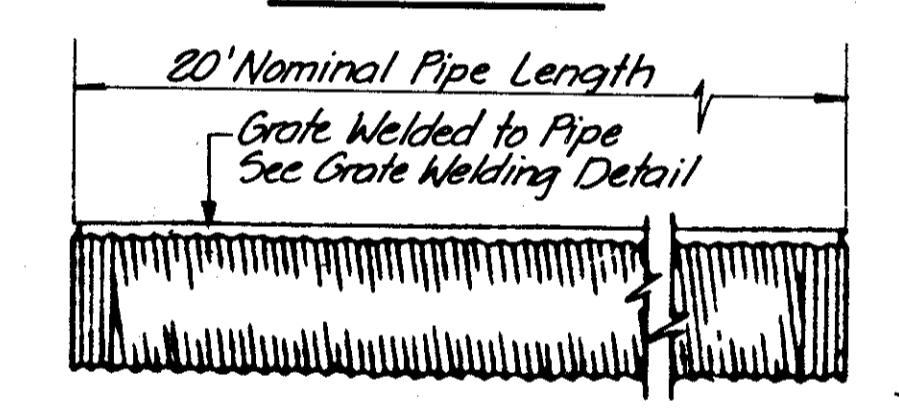
TRENCH INSTALLATION
For Item Legend See Sheet 5



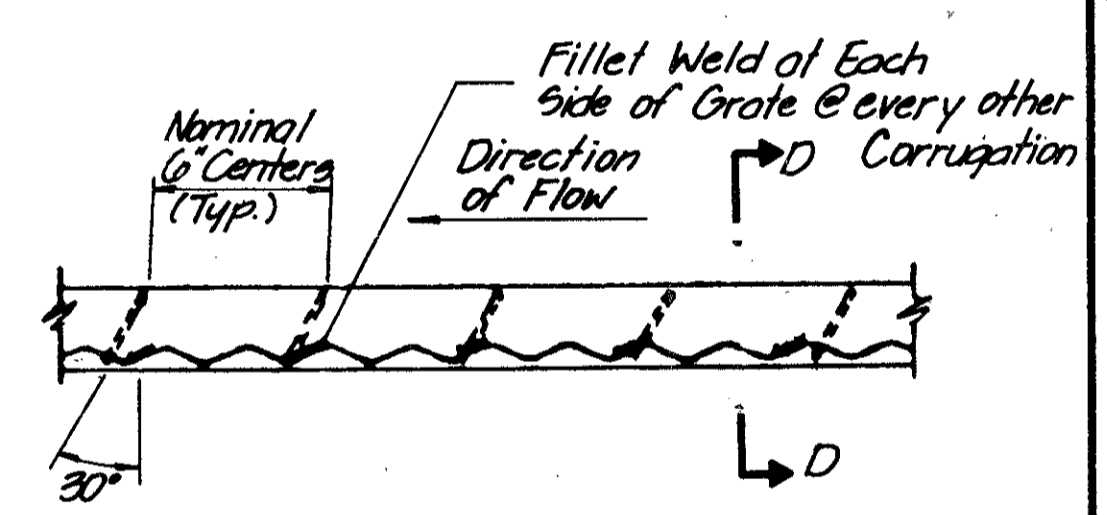
MODIFIED HUGGER BAND
TOP VIEW



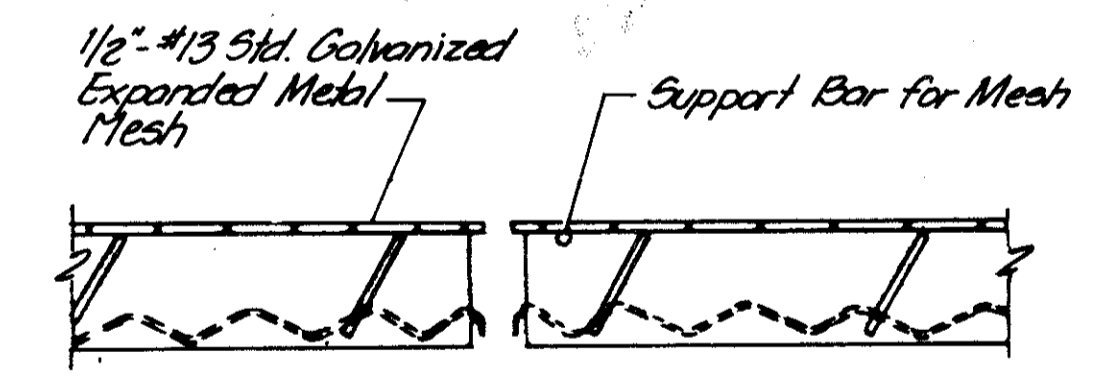
MODIFIED HUGGER BAND
SIDE VIEW



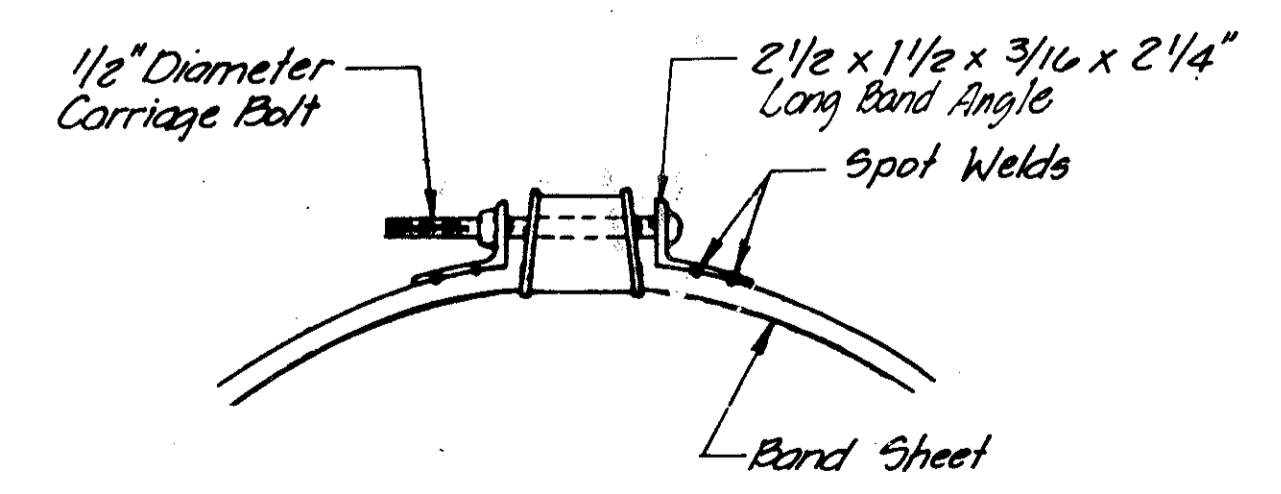
TYPICAL PIPE SECTION



GRATE WELDING DETAIL



SECTION E-E



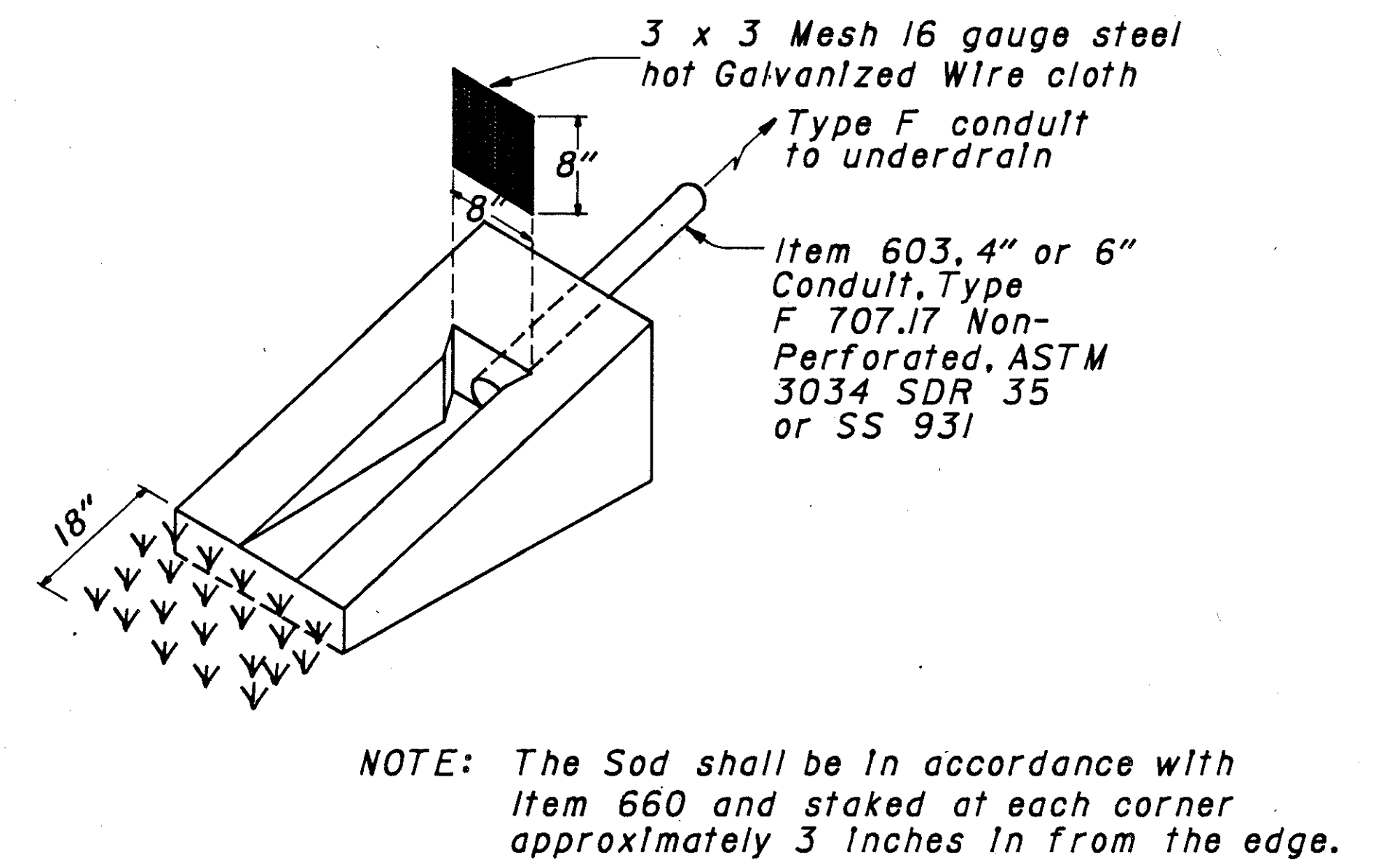
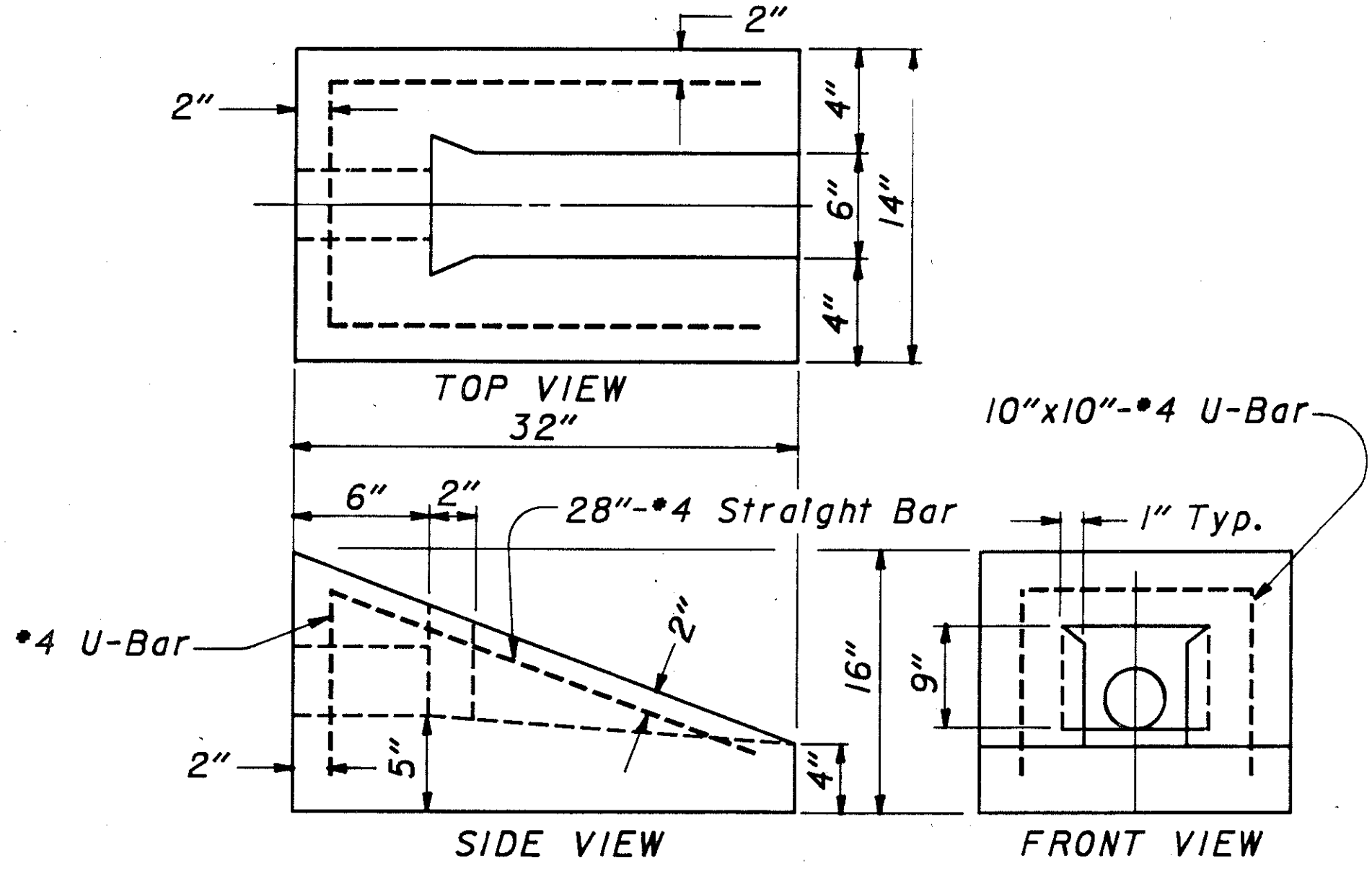
SECTION C-C

SLOTTED DRAIN DETAIL

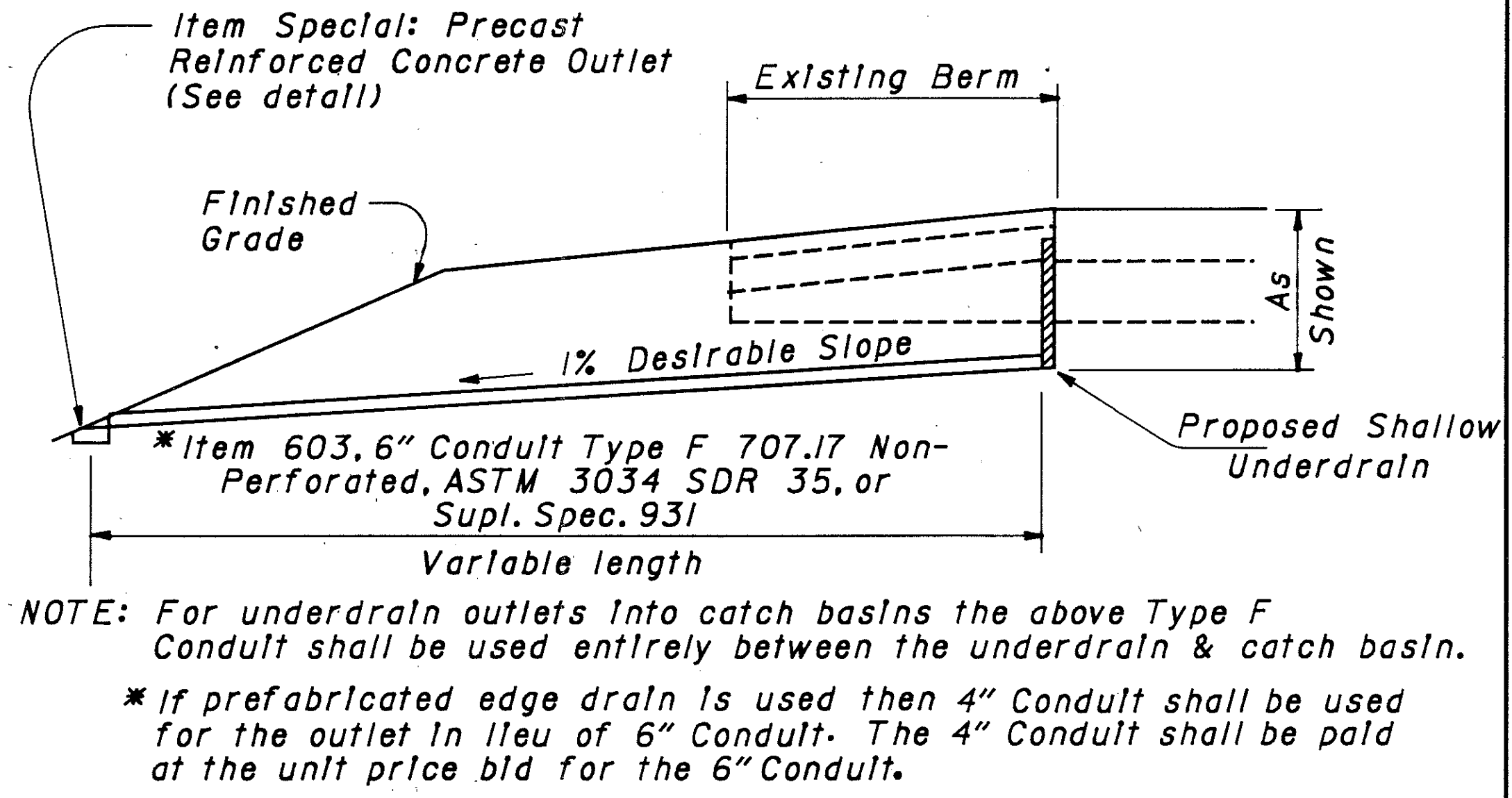
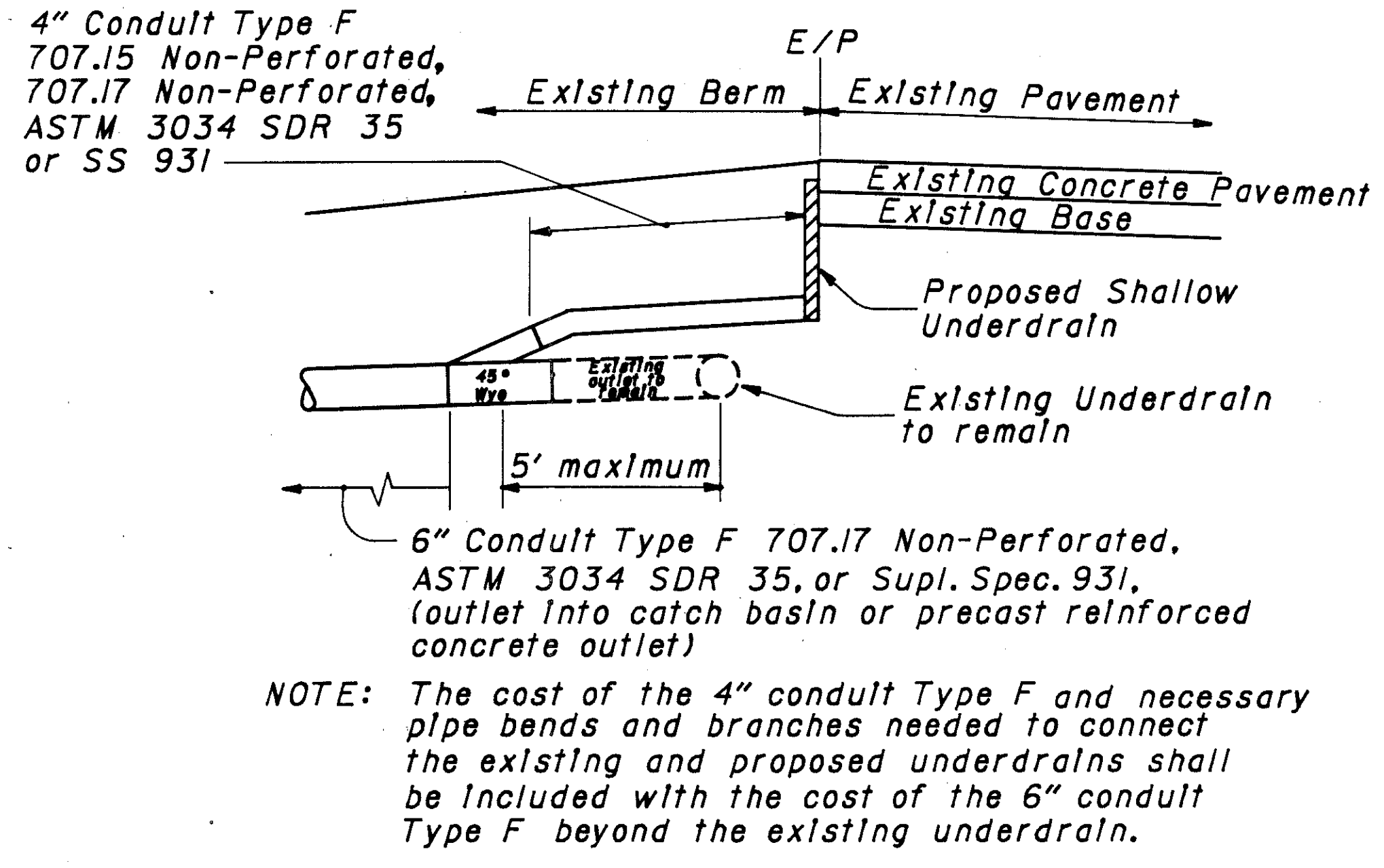
HAM-74-11.10

ITEM SPECIAL - PRECAST REINFORCED CONCRETE OUTLET

The Concrete outlet shall meet the requirements of Item 604 in the Construction & Materials Specifications. Payment shall be made on an Each basis. Payment shall include the cost of the Sod & Wire Cloth.



OUTLET DETAILS



DESCRIPTION: The Item shall consist of furnishing and installing a pipe underdrain system or prefabricated edge drain system in accordance with the specifications, details as shown on the plans, and as directed by the Engineer.

MATERIALS: The underdrain shall be a pipe underdrain system per Item 605 or a prefabricated edge drain system meeting the following requirements. The prefabricated edge drain shall consist of a polymeric core with a minimum thickness of one inch wrapped in fabric meeting 712.09 Type A. The drain shall be flexible, rectangular in shape and of hollow construction. The core material shall be resistant to petroleum based chemicals, natural occurring soil chemicals, and road de-icing agents.

The core shall provide a minimum of 100 square inches unobstructed (one side only) drainage area per foot of width. Side walls of the core shall provide at least 5% open area to permit unobstructed flow through the filter and wall to the core.

The prefabricated edge drain shall have a minimum compressive strength of 6000 pounds per square foot with a maximum 20% compression in a parallel plate compression test (ASTM-D 695). The minimum (single side) core flow capacity shall be 10 gallons per minute per foot of width for a 0.1 gradient at 10 pounds per square inch bladder load per ASTM D 4716

In lieu of the above requirements the following products are acceptable prefabricated edge drains:
Hydraway Drain by Monsanto Company
PDS 30 by Prodrain Systems
Strip Drain 100 by Contech Construction Products, Inc.

CONSTRUCTION: The prefabricated edge drain shall be installed in a trench as shown on the plans and in accordance with the manufacturer's recommendations. The trench shall be backfilled with the excavated trench material placed in two (2) layers and each layer compacted to a density of not less than 90% of the maximum dry weight density. The first layer of the backfill material shall be placed simultaneously with the trenching operation to hold the edge drain flush against the trench wall.

The prefabricated edge drain shall be spliced as required prior to placement in the trench, using material furnished by the manufacturer and in accordance with the manufacturer's directions. All material required for the splices will be supplied by the manufacturer, but any equipment required shall be furnished by the Contractor.

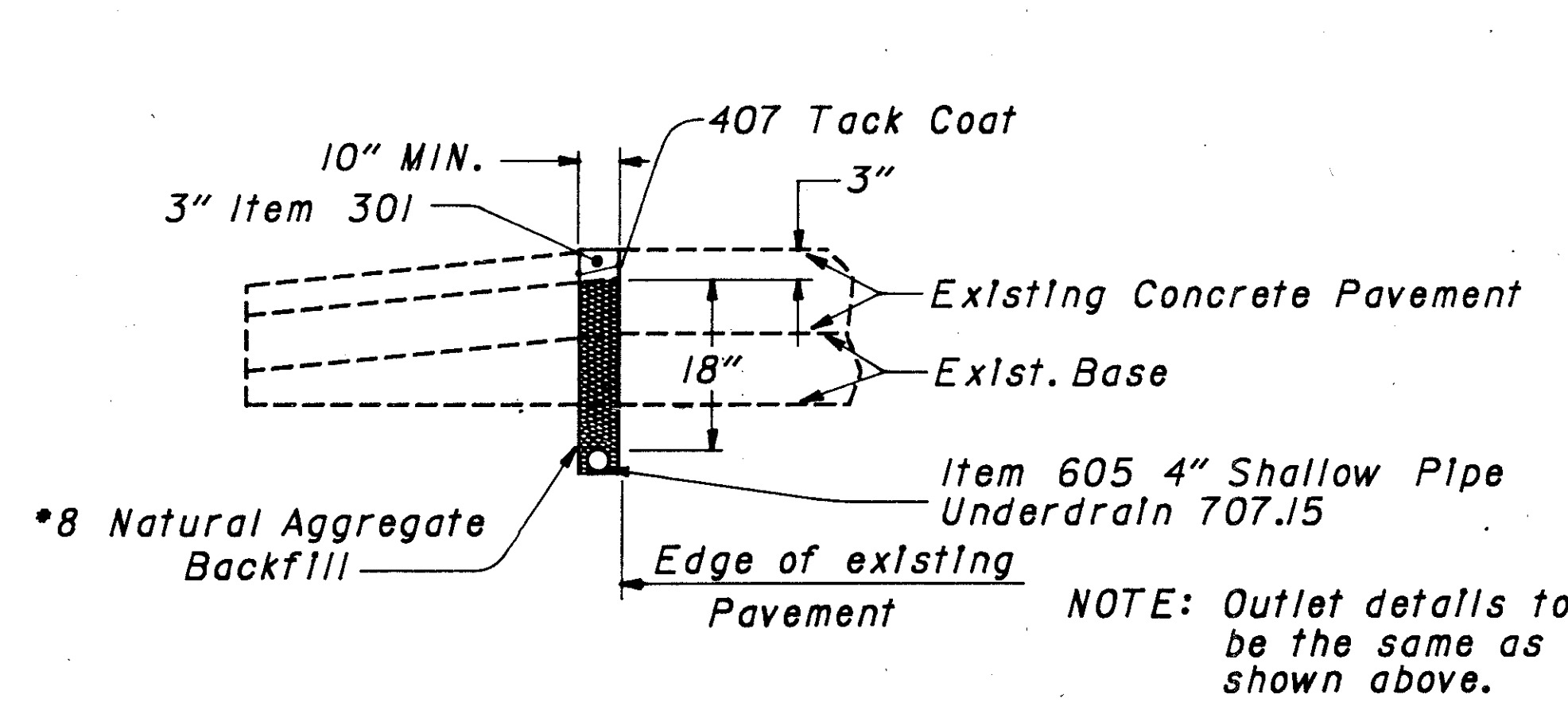
The underdrain outlets shall be placed in accordance with Item 603 as directed by the Engineer, using outlet fittings. The manufacturer shall supply outlet fittings which will make the transition between the prefabricated edge drain and the outlet pipe. Fittings shall be installed as recommended by the manufacturer.

The outlets for the underdrain system shall be constructed as soon as possible after placement of the underdrain. The outlets on crack & seat projects shall be in place and functional prior to cracking and seating the existing pavement.

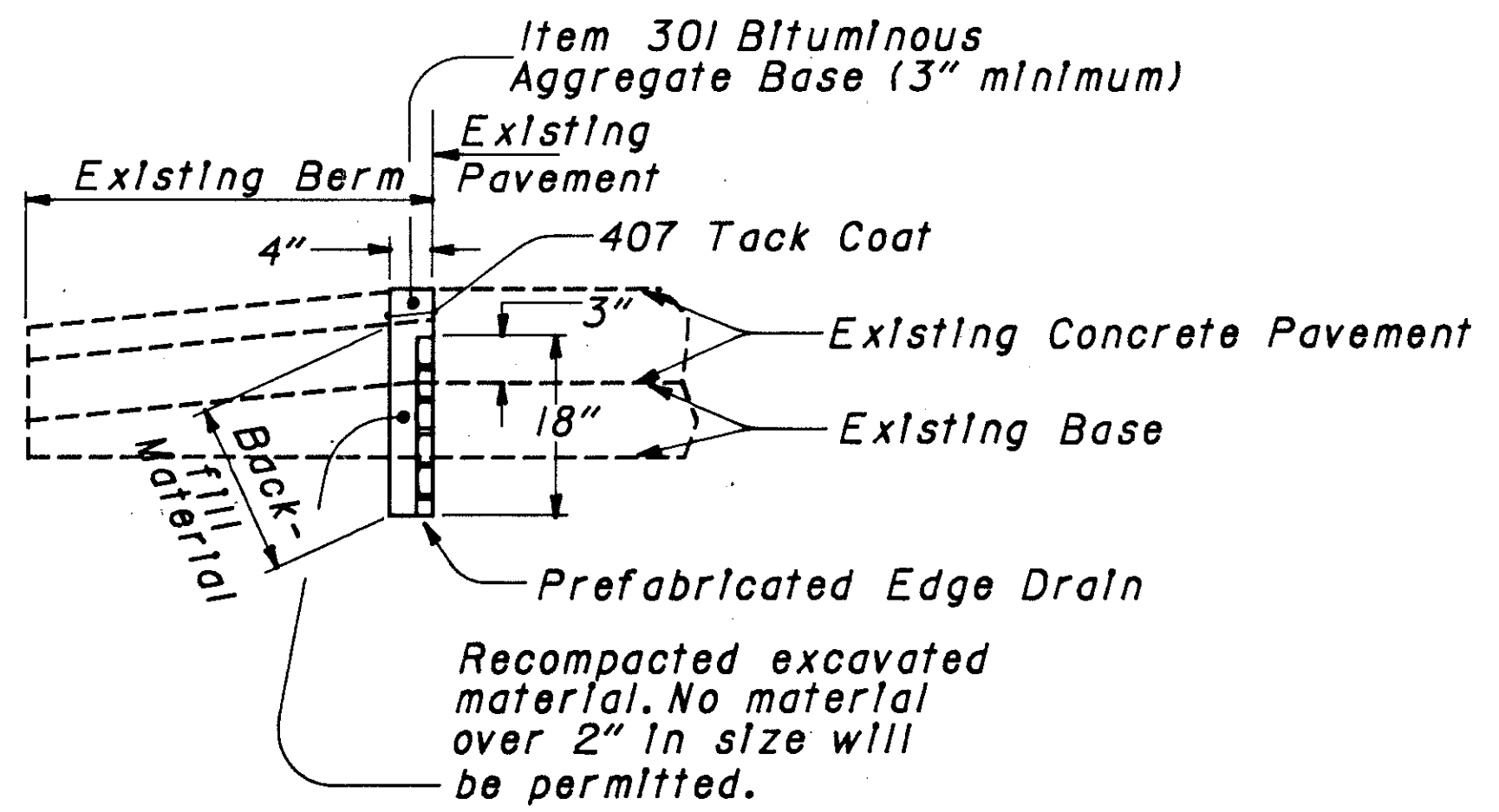
METHOD OF MEASUREMENT: Completed and accepted underdrains will be measured by the linear foot in place.

BASIS OF PAYMENT: Work completed and accepted under this Item and measured will be paid for at the contract unit price bid per linear foot for Item 605 - Shallow Underdrain, as per plan. Which price shall be full compensation for excavation and backfill; for furnishing materials, including material for splices; outlet fittings and Item 301; for all labor, tools, equipment, and incidentals necessary to complete the work.

PIPE UNDERDRAIN SYSTEM



PREFABRICATED EDGE DRAIN SYSTEM



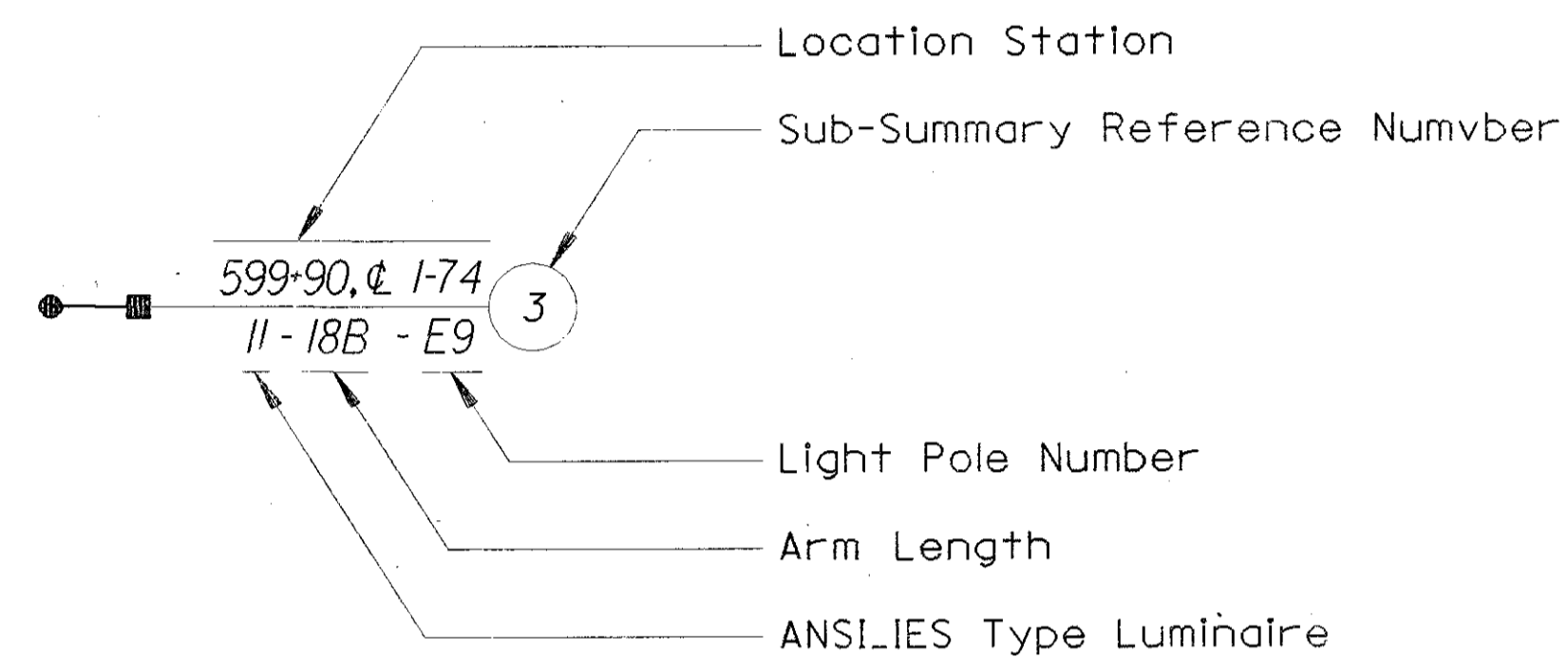
ITEM 605-SHALLOW UNDERDRAIN, AS PER PLAN

LIGHTING INDEX SHEET

LEGEND

- Light Pole, 200 Watt HPS, 41.7' Mounting height
- ✕—■ Light Pole, 200 Watt HPS, 50' Mounting height
- Light Pole, 200 Watt HPS, 37.5' Mounting height, Double Arm
- Existing Light Pole
- ⌒ Underpass Luminaire, 150 Watt HPS
- Power Service 480 Volts, 2 Wire Grounded Neutral
- Proposed Pull Box
- ▣ Existing Pull Box
- Proposed Cable
- Existing Cable
- ≡ Cable in Conduit
- Sub-Summary Reference Number
- A— Circuit Number
- ⌚ Existing Service Pole and Control Center

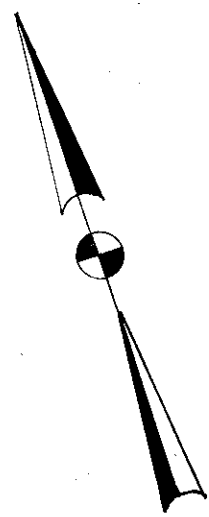
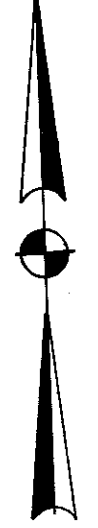
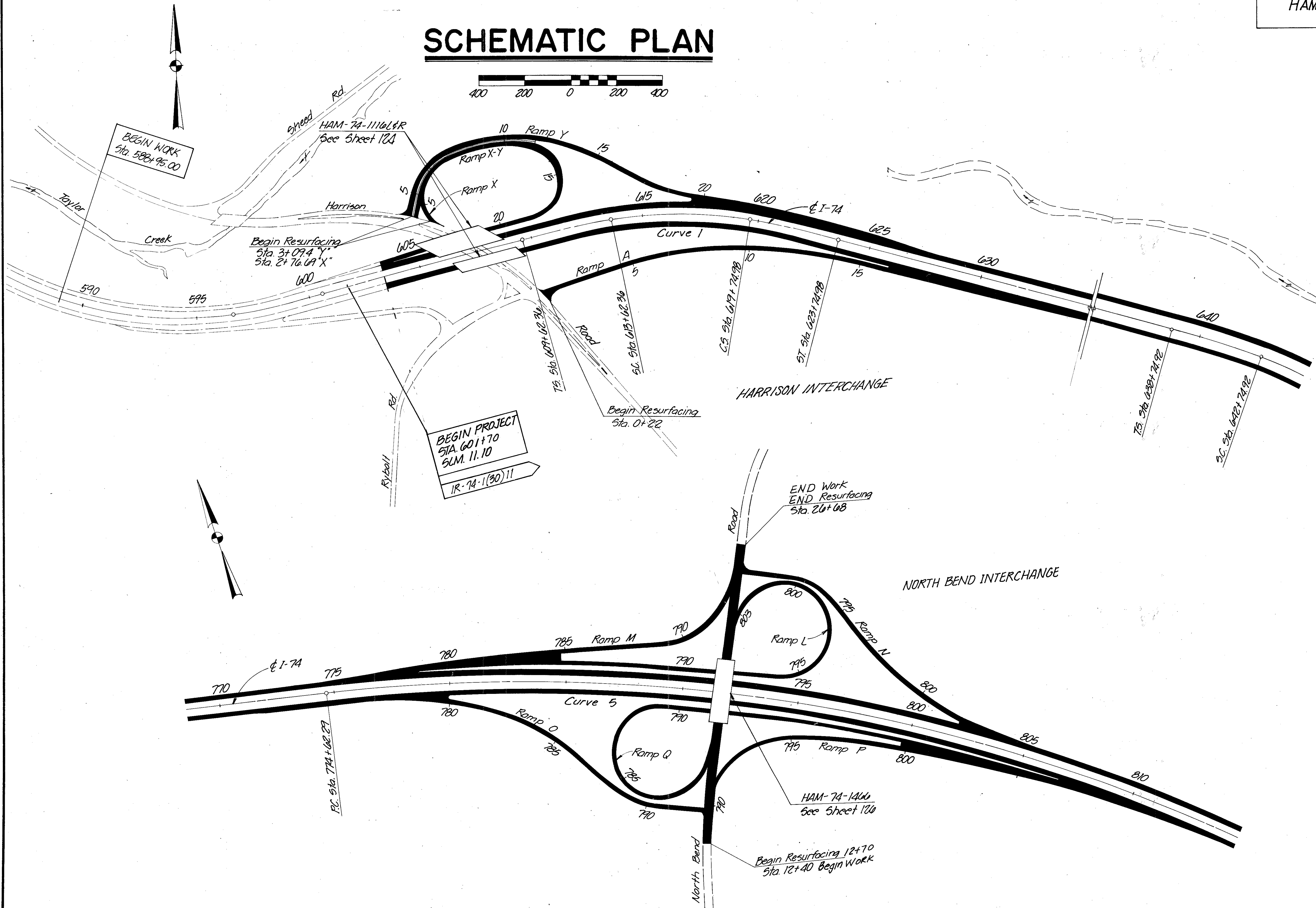
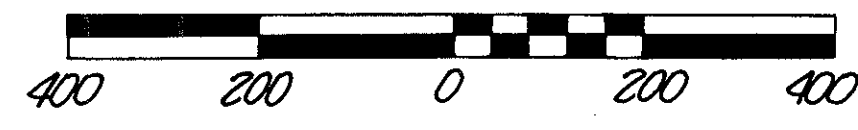
TYPICAL POLE IDENTIFICATION



INDEX OF SHEETS

Lighting Index Sheet	1
Schematic	2
General Notes	3
General Summary Quantities	4
Sub-Summary Quantities	5-7
Plan Sheets	8-13
Lighting Details	14

SCHEMATIC PLAN



LIGHTING GENERAL NOTES

HAM - 74 - II.10

OHIO
FHWA
REGION 5

94B
132

POWER SERVICE

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:

CINCINNATI GAS & ELECTRIC COMPANY
FOURTH AND MAIN STREETS
CINCINNATI, OHIO 45202 PHONE 397-4664

SERVICE 480V, 2-WIRE, GROUNDED NEUTRAL.

UPON COMPLETION OF THE PROJECT, THE ENERGY ACCOUNT FOR EACH POWER SERVICE SHALL BE ASSIGNED AS SHOWN IN THE DATA TABLE.

ITEM 202 - LUMINAIRES REMOVED AS PER PLAN

THIS ITEM SHALL CONSIST OF THE REMOVAL AND STORAGE OF THE EXISTING LUMINAIRES. THE EXISTING LUMINAIRES SHALL BE STORED AWAY FROM TRAFFIC ON THE PROJECT SITE FOR REMOVAL BY STATE FORCES. THE UNIT BID PRICE SHALL INCLUDE ALL LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

PAYMENT SHALL BE MADE UNDER THE UNIT BID PRICE FOR EACH ITEM 202 - LUMINAIRES REMOVED AS PER PLAN.

ITEM 202 - LIGHT POLE REMOVED, AS PER PLAN

THIS ITEM SHALL CONSIST OF THE REMOVAL AND STORAGE OF THE EXISTING LIGHT POLES AND BRACKET ARMS AS INDICATED ON THE PLANS. THE EXISTING POLE AND ARM WIRING SHALL BE REMOVED AND DISPOSED OF. THE POLES AND ARMS AND TRANSFORMER BASES (WHEN USED) SHALL BE SEPARATED AND STORED A SAFE DISTANCE AWAY FROM TRAFFIC ON THE PROJECT SITE FOR REMOVAL BY STATE FORCES. THE UNIT BID PRICE FOR ITEM 202 - LIGHT POLE REMOVED AS PER PLAN SHALL INCLUDE ALL LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

ITEM 202 - LIGHT POLE FOUNDATION REMOVED, AS PER PLAN

THIS ITEM SHALL CONSIST OF THE REMOVAL OF LIGHT POLE FOUNDATIONS TO A MINIMUM OF ONE FOOT BELOW FINAL GRADE, BACKFILLING THE RESULTING HOLES WHERE REQUIRED AND RESTORING THE SURFACE TO MATCH SURROUNDING AREA. CABLE BETWEEN REMOVED FOUNDATIONS SHALL BE ABANDONED (LEFT IN PLACE).

PAYMENT AT THE UNIT PRICE BID PER EACH UNDER ITEM 202 - LIGHT POLE FOUNDATION REMOVED AS PER PLAN, SHALL INCLUDE ALL EQUIPMENT, LABOR AND MATERIAL NECESSARY TO COMPLETE THE WORK.

ITEM 202 - PULL BOX REMOVED, AS PER PLAN

WHERE INDICATED IN THE PLANS, THE EXISTING PULL BOXES SHALL BE REMOVED AND THE RESULTANT DEPRESSION BACKFILLED WITH SUITABLE COMPACTED MATERIAL ITEM 203 AND THE SURFACE RESTORED TO MATCH THE SURROUNDING AREA.

PAYMENT SHALL BE MADE FOR EACH ITEM 202 - PULL BOX REMOVED AS PER PLAN.

UNDERDRAINS FOR PULL BOXES

REFERENCE IS MADE TO STANDARD DRAWINGS FOR DETAILS OF DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED APPROXIMATELY 20 FEET. UNDERDRAIN QUANTITIES ARE INCLUDED IN THE LIGHTING GENERAL SUMMARY UNDER ITEM 603 - 4" CONDUIT TYPE E.

PULL BOXES, 18" CONCRETE

LOCATIONS AND OFFSETS FOR PULL BOXES AS SHOWN ON THE PLANS SHALL BE USED AS A GUIDE ONLY. THE EXACT LOCATION AND OFFSET SHALL BE DETERMINED BY THE PROJECT ENGINEER TO AVOID INTERFERENCE WITH EXISTING OR PROPOSED GUARD RAIL INSTALLATION, EXISTING CIRCUITS OR OTHER OBSTRUCTIONS.

REMOVAL OF EXISTING CIRCUITRY ON BRIDGES

AT THE HARRISON/RVBOLT ROAD INTERCHANGE, THE COST FOR THE REMOVAL OF THE EXISTING CIRCUIT CABLES, CONDUITS, PULL BOXES AND JUNCTION BOXES IS INCLUDED WITH THE UNIT BID PRICE FOR BRIDGE RAILING. SEE BRIDGE PLANS.

ITEM 625 - SERVICE TO UNDERPASS LIGHTING, AS PER PLAN

THIS ITEM SHALL CONSIST OF PROVIDING COMPLETE ELECTRICAL SERVICE, EXCEPT FOR LUMINAIRES, STRUCTURE GROUNDING, AND PULL BOX AT BASE OF PIER COLUMN FOR AN UNDERPASS LIGHTING SYSTEM ON BRIDGE NO. HAM 74 1116 L&R.

THE INSTALLATION WORK SHALL INCLUDE CONDUITS, CONDUIT GROUNDING, MOUNTINGS, FITTINGS, JUNCTION BOXES, CABLES AND ALL INCIDENTALS NECESSARY TO COMPLETE. READY FOR USE, THE SERVICE AT THE LOCATIONS SHOWN IN THE PLANS AND ACCORDING TO THE DETAILS. THE CONTRACTOR SHALL USE NO. 10 AWG, 5000 VOLT WIRE. THE UNIT BID PRICE PER EACH UNDER ITEM 625 - SERVICE TO UNDERPASS LIGHTING, AS PER PLAN, SHALL INCLUDE PAYMENT FOR ALL EQUIPMENT, LABOR AND MATERIALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED. COMPONENT PARTS NOT SPECIFICALLY MENTIONED BUT REQUIRED FOR SATISFACTORY OPERATION OF THIS ITEM SHALL BE FURNISHED AND CONSIDERED PAID FOR AS PART OF THE ITEM.

ITEM 625.07 - 713.11 LUMINAIRES

STYLE B LUMINAIRES FOR 200 WATT LAMPS SHALL HAVE SINGLE RATED 480 VOLT, 200 WATT INTEGRAL REGULATOR BALLASTS FOR USE WITH HIGH PRESSURE SODIUM LAMPS AND SHALL BE GENERAL ELECTRIC M400, CROUSE-HINDS OVM, AMERICAN 327-328 OR EQUAL APPROVED BY THE ENGINEER.

ITEM 625.07 - 713.13 UNDERPASS LUMINAIRES

UNDERPASS LUMINAIRES SHALL BE HOLOPHANE "UNDERPASS WALLPACK", WESTINGHOUSE, OR GENERAL ELECTRIC WL-250 UNDERPASS UNIT OR EQUAL APPROVED BY THE ENGINEER, AND SHALL BE FURNISHED WITH AN INTEGRAL FUSE HOLDER AND 10-AMPERE FUSE. THE INTEGRAL HIGH PRESSURE SODIUM BALLAST SHALL BE OF A REGULATOR TYPE RATED FOR 480 VOLTS, 160 WATTS.

ITEM 631 - SIGN SERVICE, AS PER PLAN

WHERE A NEW SERVICE FOR EXISTING LIGHTED SIGN IS PROVIDED AND THE EXISTING PULL BOX IS SPECIFIED TO BE REUSED, ANY UNUSED CONDUITS AND CONDUCTORS SHALL BE REMOVED AND THE RESULTANT OPENINGS IN THE PULL BOX SEALED WITH CONCRETE GROUT. THE COST SHALL BE INCLUDED WITH ITEM 631 - SIGN SERVICE, AS PER PLAN.

THE CONTRACTOR SHALL FIELD LOCATE ALL OF THE EXISTING SIGN CIRCUITRY. DAMAGE INFLECTED BY THE CONTRACTOR TO ANY EXISTING SIGN OR SIGN CIRCUIT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

ITEM 713J4 - LAMPS

HIGH PRESSURE SODIUM LAMPS SHALL BE GENERAL ELECTRIC "LUCALOX", WESTINGHOUSE "CERAMALUX", SYLVANIA "LUMALUX" OR EQUAL APPROVED BY THE ENGINEER.

ITEM SPECIAL - MAINTAIN EXISTING LIGHTING

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

BEFORE ANY WORK IS STARTED IN THE IMMEDIATE VICINITY OF ANY EXISTING LIGHTING CIRCUITS, REPRESENTATIVES OF THE STATE, THE MAINTAINING AGENCY, AND THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE EXISTING ROADWAY LIGHTING CIRCUITS TO BE MAINTAINED. DURING THIS INSPECTION, A WRITTEN RECORD OF THE CONDITION OF THE EXISTING LIGHTING SHALL BE MADE BY THE STATE'S REPRESENTATIVE. THIS WRITTEN REPORT SHALL NOTE INDIVIDUAL LUMINAIRES WHICH ARE NOT IN WORKING ORDER, INDIVIDUAL POLES WHICH ARE NOT STANDING, AND INDIVIDUAL CIRCUITS WHICH ARE NOT IN WORKING ORDER. THE COMPLETED REPORT SHALL BE SIGNED BY THE REPRESENTATIVES OF THE STATE, THE MAINTAINING AGENCY, AND THE CONTRACTOR.

IF, AS A RESULT OF THIS INSPECTION, IT IS DETERMINED THAT THE CONDITION OF THE EXISTING SYSTEM IS BELOW THAT REQUIRED FOR THE SAFETY OF THE TRAVELLING PUBLIC, THEN THE MAINTAINING AGENCY SHALL MAKE REPAIRS NECESSARY TO RETURN THE SYSTEM TO AN ACCEPTABLE CONDITION. FOLLOWING THESE REPAIRS, THE SYSTEM SHALL AGAIN BE INSPECTED AND A REPORT MADE AND SIGNED AS OUTLINED HEREIN.

WHEN THE EXISTING SYSTEM IS IN AN ACCEPTABLE CONDITION, IT SHALL BE TURNED OVER TO THE CONTRACTOR WHO SHALL THEN BE REQUIRED TO MAINTAIN THE EXISTING LIGHTING TO THE CONDITION OUTLINED IN THIS REPORT WITH THE EXCEPTION OF KNOCKDOWNS DUE TO TRAFFIC ACCIDENTS.

REPLACEMENT OF KNOCKED DOWN UNITS SHALL BE DONE ONLY WHEN THE ENGINEER HAS DETERMINED THAT THE REPLACEMENT OF THE KNOCKED DOWN UNIT IS NECESSARY AND SHALL BE PAID SEPARATELY ON A UNIT BASIS.

BETTERMENTS SHALL BE COVERED IN ITEMS OF WORK PERTAINING TO THE CONSTRUCTION OF PERMANENT IMPROVEMENTS.

SHOULD THE CONTRACTOR DESIRE THE REMOVAL OF THE EXISTING LIGHTING BEFORE THE NEW LIGHTING IS OPERATIONAL, THE CONTRACTOR SHALL THEN BE RESPONSIBLE FOR ADEQUATE TEMPORARY LIGHTING OF THAT PORTION OF THE EXISTING ROADWAY AFFECTED BY THE REMOVAL OF THE EXISTING LIGHTING.

PRIOR TO INSTALLING SUCH LIGHTING, THE CONTRACTOR SHALL PREPARE AND SUBMIT FOUR (4) SETS OF THE TEMPORARY LIGHTING PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL.

THIS PLAN SHALL SHOW LOCATION OF POLES, LENGTH OF BRACKET ARMS, STYLE OF LUMINAIRES, MOUNTING HEIGHT, WIRING METHODS, AND OTHER PERTINENT INFORMATION. THE TEMPORARY LIGHTING SHALL PROVIDE AN AVERAGE INITIAL INTENSITY OF 12 FOOT CANDLES WITH AN AVERAGE TO MINIMUM UNIFORMITY NOT TO EXCEED 4:1. MOUNTING HEIGHT FOR TEMPORARY LUMINAIRES SHALL NOT BE LESS THAN 27 FEET AND MINIMUM OVERHEAD CONDUCTOR CLEARANCE SHALL BE 20 FEET. TEMPORARY OVERHEAD CONSTRUCTION SHALL NOT BE LESS THAN GRADE "A" FOR STRENGTH REQUIREMENTS AS DEFINED BY THE NATIONAL ELECTRIC SAFETY CODE. WOOD POLES WITH OVERHEAD WIRING MAY BE USED, HOWEVER, TEMPORARY LIGHTING SHALL MEET FEDERAL AND STATE SAFETY CRITERIA. IF BREAKAWAY POLES ARE USED TO MEET THESE CRITERIA, THEN UNDERGROUND WIRING SHALL BE USED. RECONDITIONED OR USED MATERIALS MAY BE FURNISHED FOR TEMPORARY LIGHTING.

ALL MATERIALS NECESSARY TO COMPLETE THE TEMPORARY LIGHTING SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. WHEN NO LONGER NEEDED, THE TEMPORARY LIGHTING INSTALLATION SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.

THE MAINTAINING AGENCY WILL PAY FOR ELECTRICAL ENERGY CONSUMED BY EXISTING POWER SERVICES AND BY PROPOSED PERMANENT POWER SERVICES AFTER ACCEPTANCE. THE CONTRACTOR WILL PAY FOR ELECTRICAL ENERGY, INSTALLATION, REMOVAL, AND MAINTENANCE OF ANY TEMPORARY POWER SERVICES.

THE LUMP SUM PRICE BID FOR ITEM SPECIAL "MAINTAIN EXISTING LIGHTING" SHALL INCLUDE PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIALS, AND INCIDENTALS NECESSARY TO MAINTAIN THE EXISTING LIGHTING, AS SPECIFIED HEREIN.

THE UNIT PRICE BID FOR ITEM SPECIAL "REPLACEMENT OF EXISTING LIGHTING UNIT" SHALL BE FULL PAYMENT FOR THE REPLACEMENT OF AN EXISTING LIGHTING UNIT WHICH HAS BEEN KNOCKED DOWN AFTER THE AFOREMENTIONED INSPECTION AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO PROVIDE A REPLACEMENT FOR SUCH UNIT. A TOTAL OF 5 EACH HAS BEEN CARRIED TO THE GENERAL SUMMARY.

GENERAL SUMMARY LIGHTING QUANTITIES

CALC. BY MKG
DATE 1/5/90
CHKD. BY HJZ
DATE 3/9/90

HAM-74-II.10

OHIO
FHWA
REGION 5

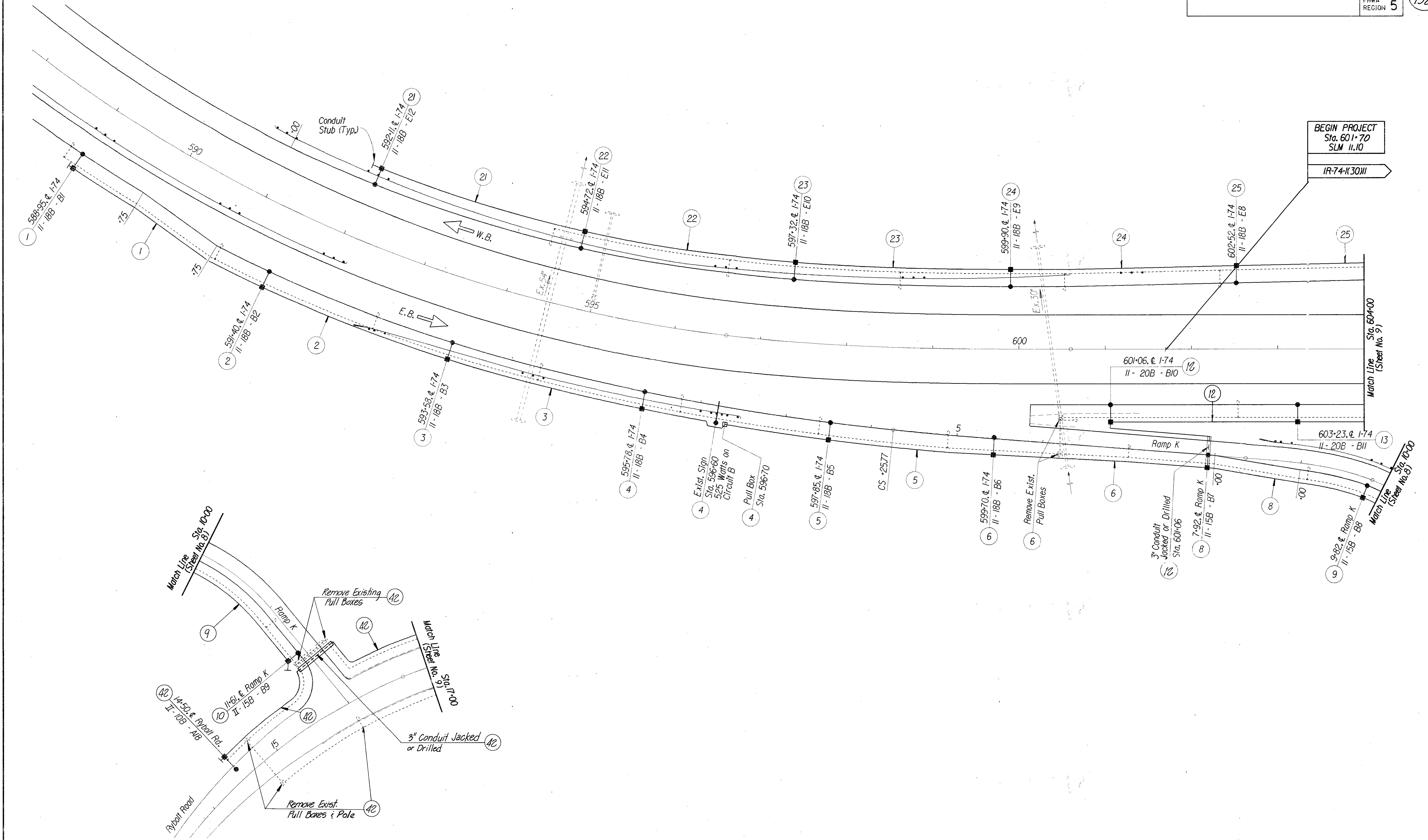
95
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SUB SUMMARY SHEET NUMBERS

PARTICIPATION

SUB SUMMARY SHEET NUMBERS					PARTICIPATION	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
3	5	6	7							
	66	53	54		202	75401	173	Each	Light Pole Removed, As Per Plan	
	66	58	58		202	98100	182	Each	Luminaire Removed, As Per Plan	
	66	53	54		202	75501	173	Each	Light Pole Foundation Removed, As Per Plan	
	24	13	9		202	75301	46	Each	Pull Box Removed, As Per Plan	
		1	1		625	10500	2	Each	Light Pole Design, ST 25B 41.7	
	20	3	10		625	06200	39	Each	Light Pole Design, AT 10B 41.7	
	9	7	11		625	06400	27	Each	Light Pole Design, AT 15B 41.7	
	13	22	13		625	06500	43	Each	Light Pole Design, AT 18B 41.7	
	3				625	10500	3	Each	Light Pole Design, ST 10B 39.0	
		1	1		625	08200	2	Each	Light Pole Design, A 10B 50	
		6	7		625	10500	13	Each	Light Pole Design, A 6B15B 37.5	
	10	5	4		625	06600	19	Each	Light Pole Design, AT 20B 41.7	
	52	42	47		625	26200	141	Each	Luminaire Style B, Type II, 200 Watt HPS, 480 Volts (713.11)	
	3	9	13		625	26300	25	Each	Luminaire Style B, Type III, 200 Watt HPS, 480 Volts (713.11)	
	4				625	27500	4	Each	Underpass Luminaire, 150 Watt HPS, 480 Volts (713.13)	
	51	37	44		625	14100	132	Each	Light Pole Foundation, 24" Dia. 8' Depth	
		8	9		625	14500	17	Each	Median Light Pole Foundation, Type 3	
	12				625	10600	12	Each	Light Pole Anchor Bolts	
	56	45	53		625	32000	154	Each	Ground Rod	
	10	3	2		625	30700	15	Each	Pull Box, 18" Concrete	
		1	1		625	31500	2	Each	Median Pull Box	
	11,082	8369	8545		625	29002	27,996	Lin. Ft.	Trench, 24" Depth	
	12,328	9129	9800		625	24100	31,257	Lin. Ft.	1/2" Duct Cable #2 No. 4 AWG, 5000 Volts Cables	
	1420	3387	4379		625	23200	9186	Lin. Ft.	Distribution Cable, 1/2" No. 4, 5000 Volts	
	6100	5398	6130		625	23400	17,634	Lin. Ft.	Pole and Bracket Cable, No. 10 AWG	
		8	8		625	25500	16	Lin. Ft.	Conduit 3" Galvanized Rigid Steel	
	543	387	585		625	25900	1515	Lin. Ft.	Conduit 3", Jacked or Drilled Under Pavement	
	655				625	25400	655	Lin. Ft.	Conduit 2", Galvanized Rigid Steel	
	55	44	55		625	00500	154	Each	Connector Kit, Type II	
	55	44	55		625	00600	154	Each	Connector Kit, Type III	
	10	4	10		625	01004	24	Each	Connector Kit, Type VIIIB	
		1	1		625	29900	2	Each	Junction Box, Type III	
	18	8	11		625	01500	37	Each	Cable Splicing Kit	
	2		1		625	34000	3	Each	Power Service	
	Lump Sum		Lump Sum		625	38000	Lump Sum		High Voltage Test	
	2				625	33000	2	Each	Structure Grounding System	
	4				625	37101	4	Each	Service to Underpass Lighting, As Per Plan	
		190	55		603	00400	245	Lin. Ft.	Conduit 4", Type E	
		2	3	4	631	84001	9	Each	Sign Service, As Per Plan	
	Lump Sum				Special	625 40000	Lump Sum		Maintain Existing Lighting	
	5				Special	625 98000	5	Each	Replacement of Existing Lighting Unit	

REF ID: A66330 080
USER: YJL
DATE: 1/5/90
PROJECT: HAM-74-II.10
SHEET: 5
ACTIVE LEVELS: ON: T-63



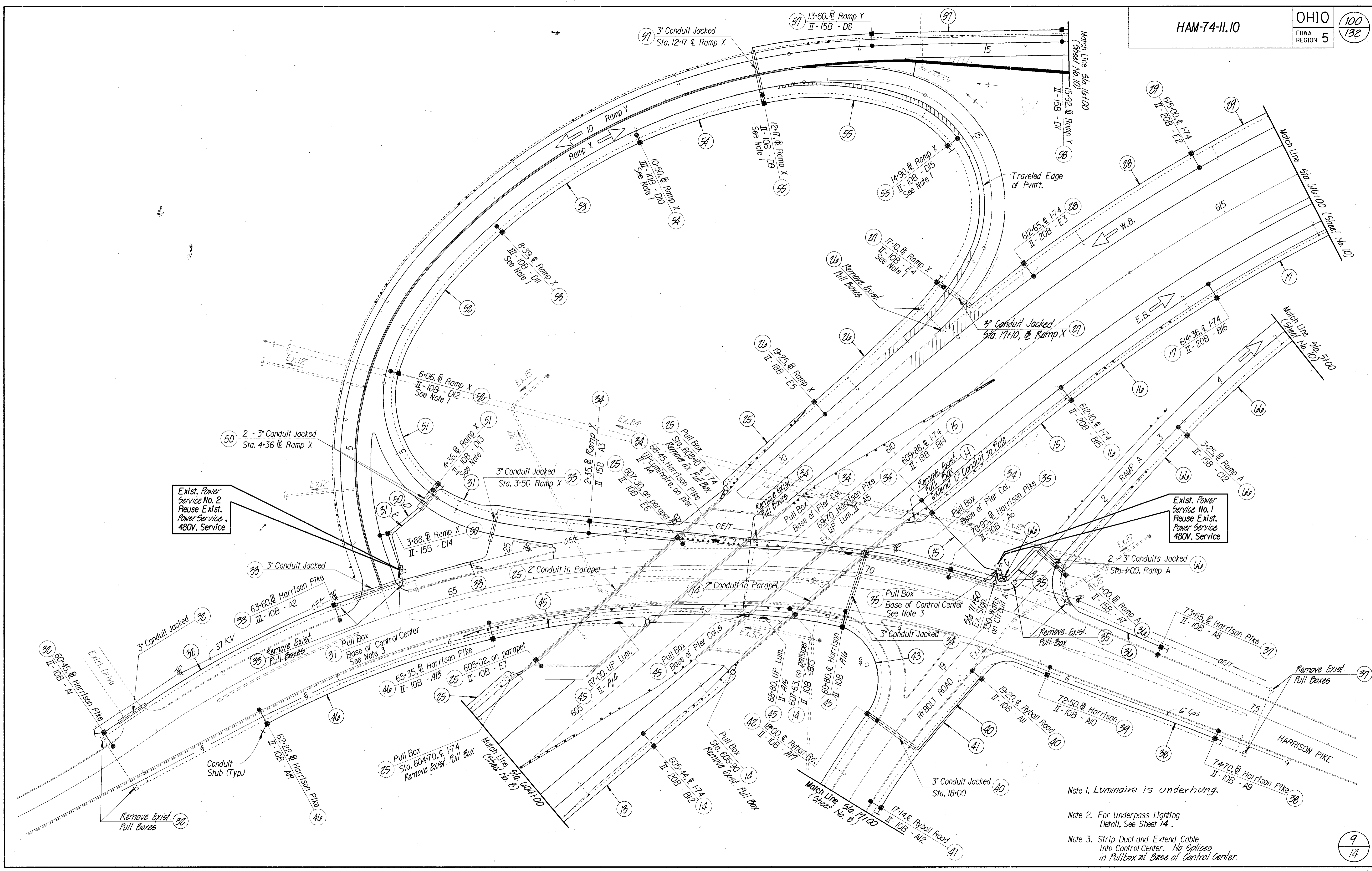
BEGIN PROJECT
Sta. 601+70
SLM II.10

IR-74-II(30)II

Match Line
Sta. 604+00
(Sheet No. 9)

Match Line
Sta. 10+00
(Sheet No. 8)

TUE APR 02 09:30:06 1990
USER: MARION
DES: FILE: OSK30J5312850HLDGNI

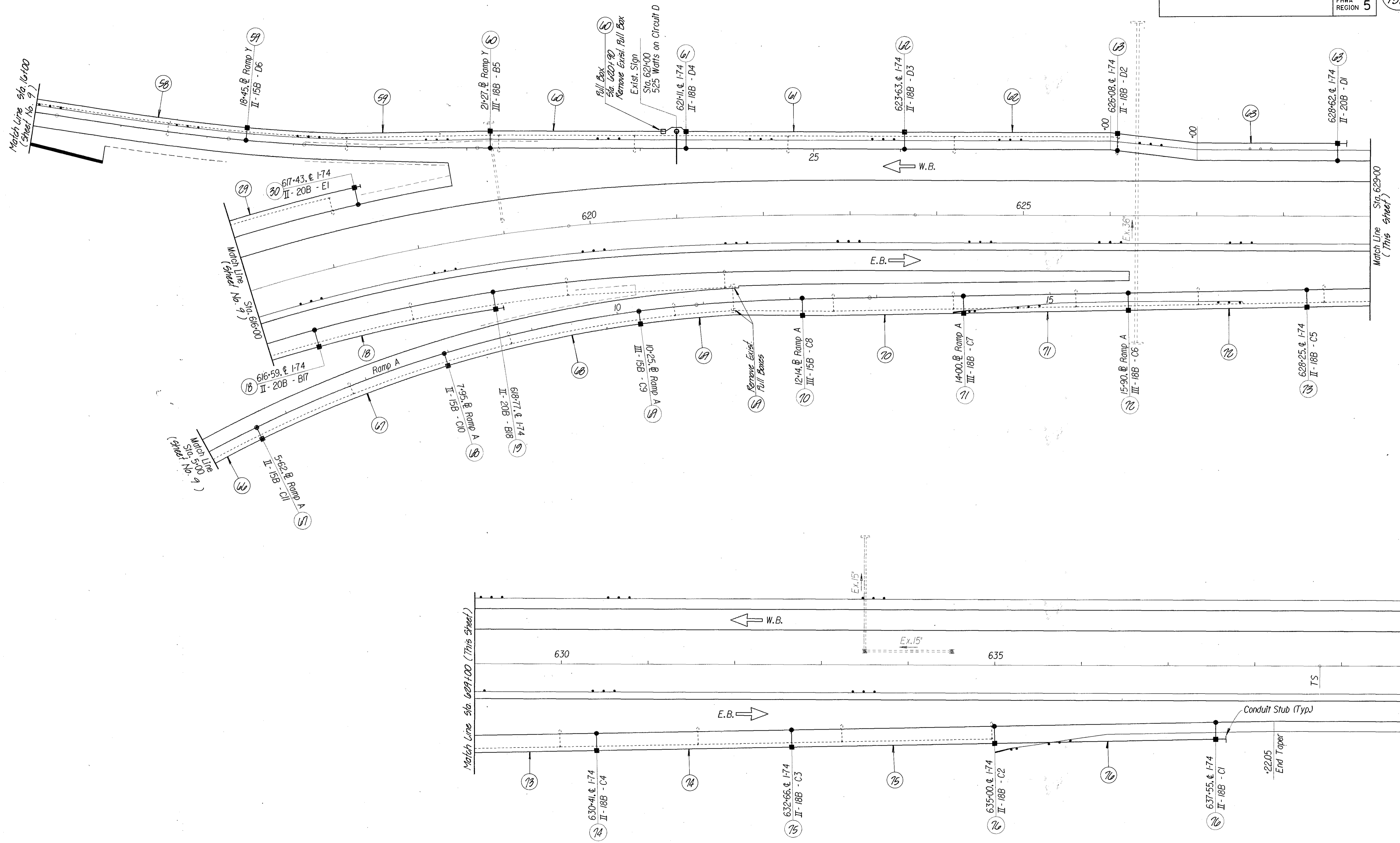


Exist. Power Service No. 2
Reuse Exist. Power Service.
480V. Service

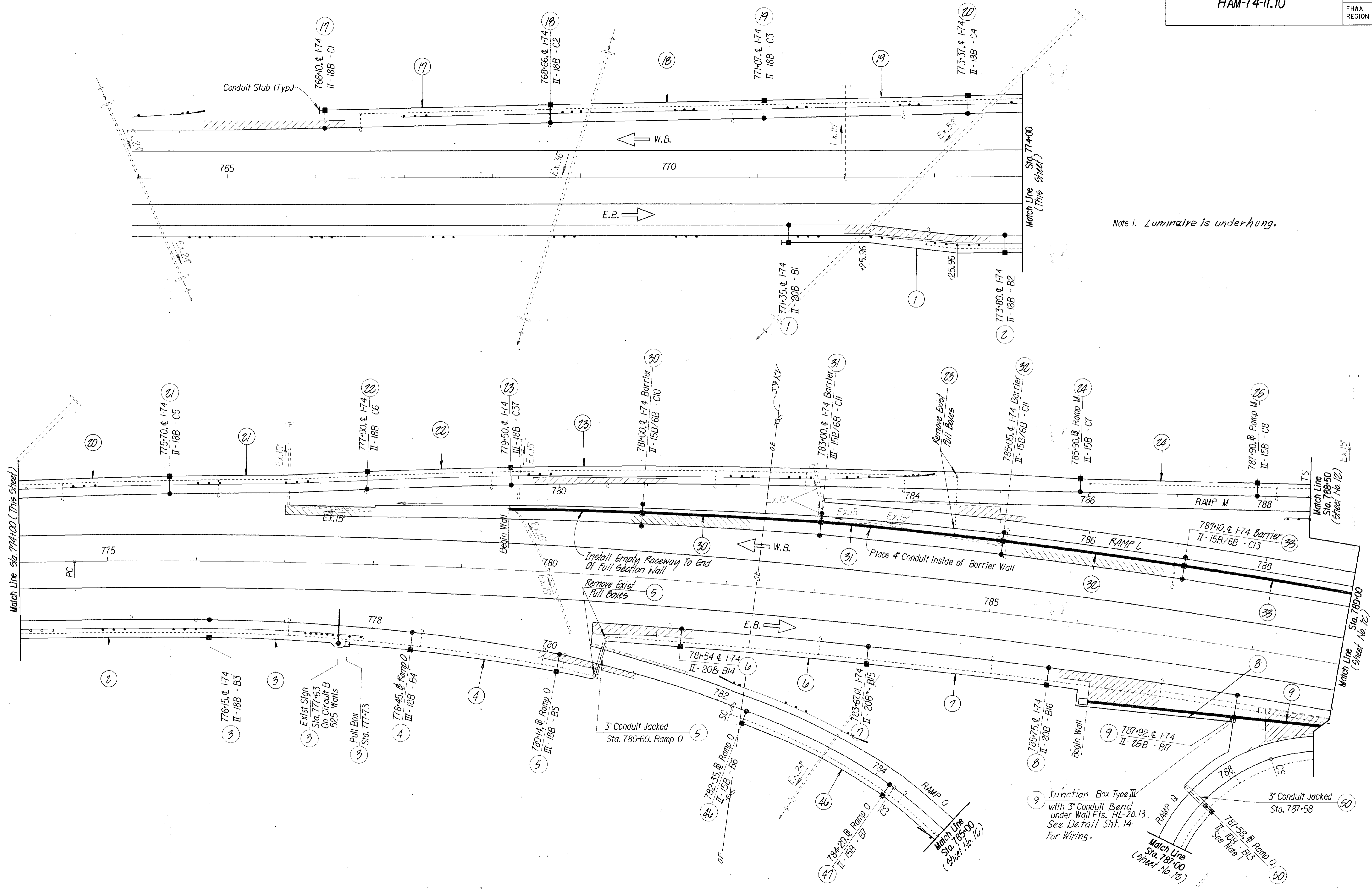
Exist. Power Service No. 1
Reuse Exist. Power Service.
480V. Service

- Note 1. Luminaire is underhung.
- Note 2. For Underpass Lighting Detail, See Sheet 14.
- Note 3. Strip Duct and Extend Cable into Control Center. No splices in Pullbox at Base of Control Center.

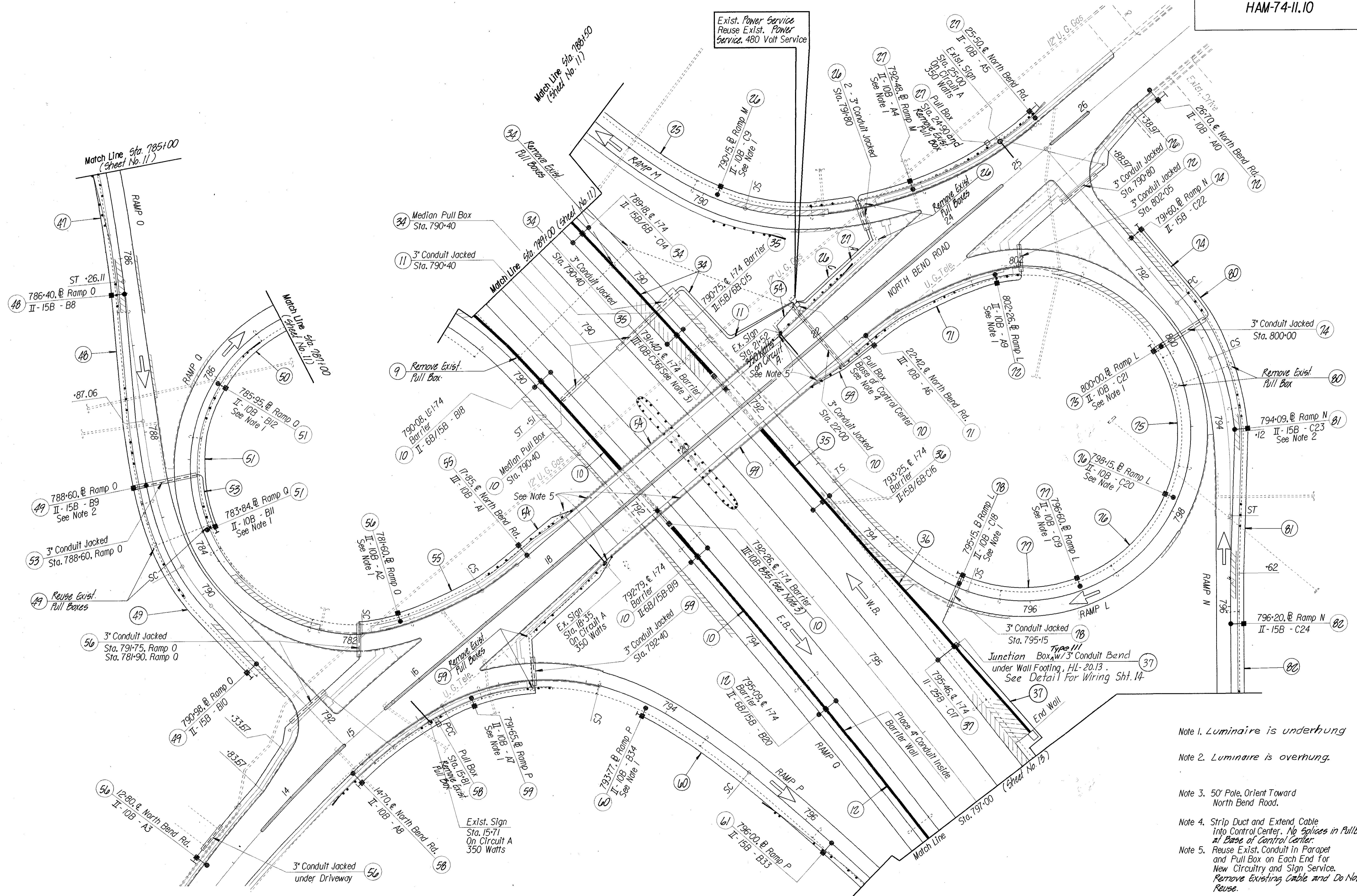
DATE: 05/17/05
 USER: CARLTON
 DES: FILE: OSK30\132650HL2.DGN



Thu Oct 17 09:07:40 1989
USER: MARION
DES: ALR 03K504532650HL3.DGN

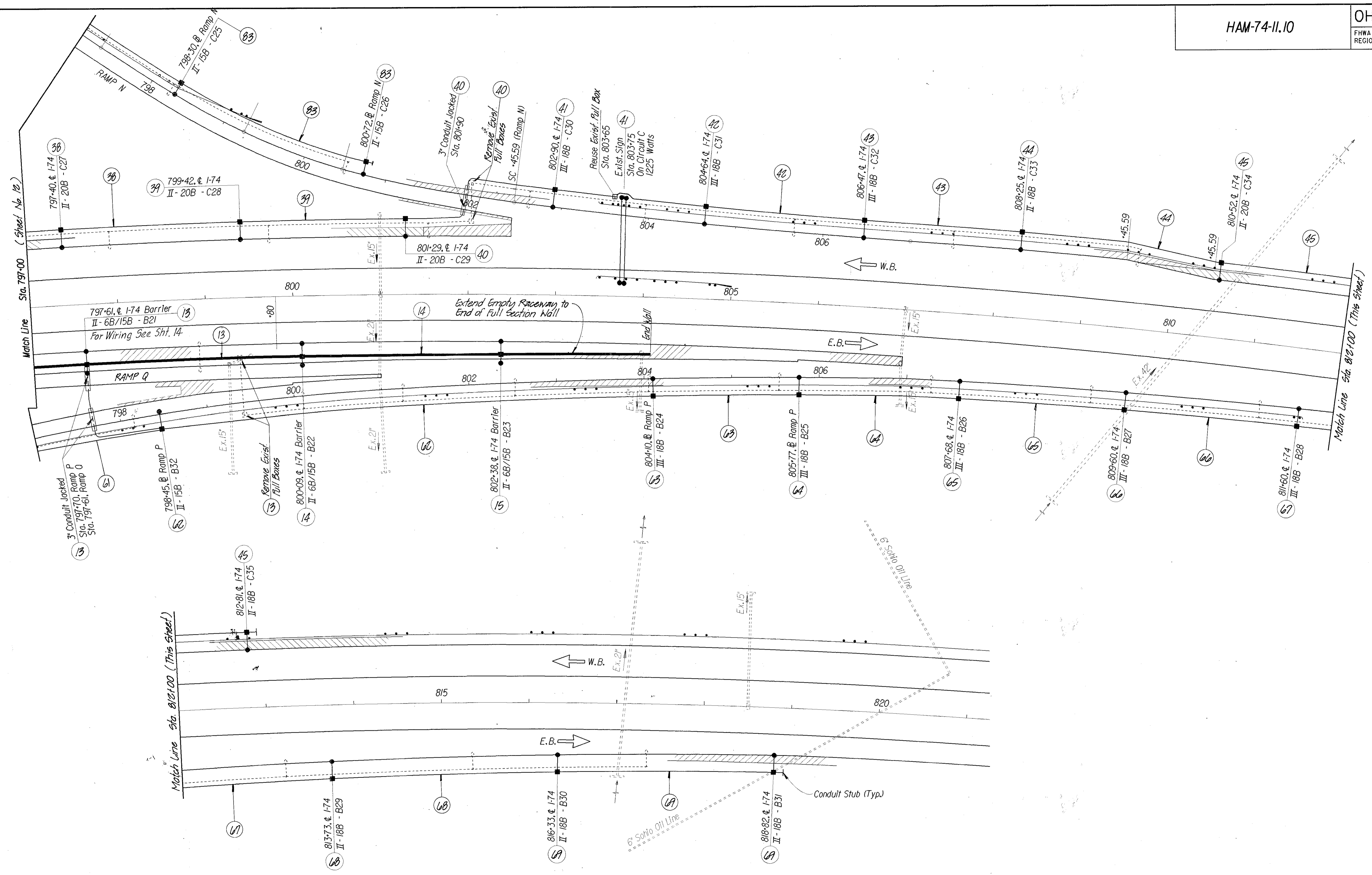


MSR: 05/16/99 13:42:59 1999
DES: FILE: 05H1301532650NBL1.DGN

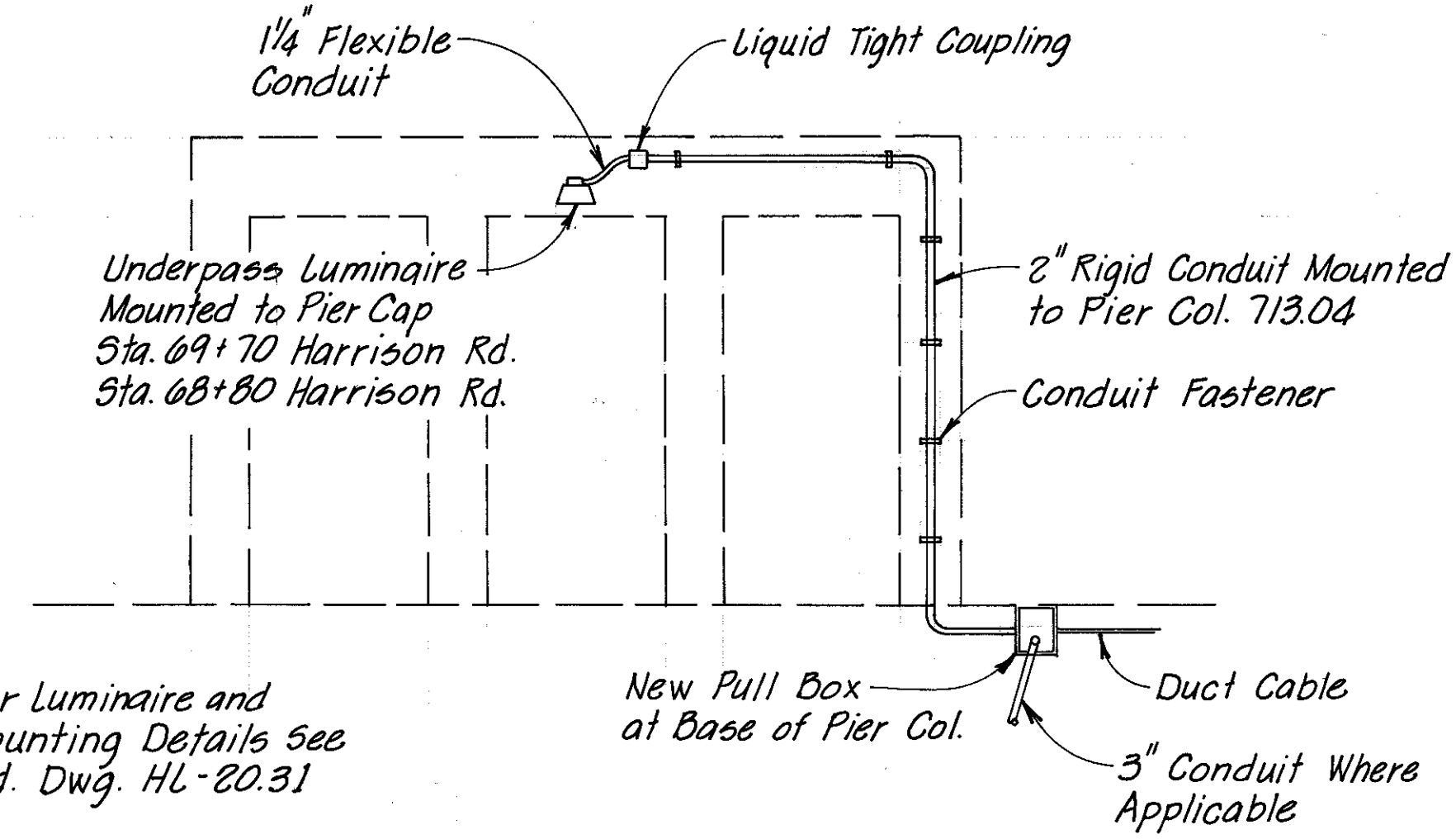


- Note 1. Luminaire is underhung
- Note 2. Luminaire is overhung.
- Note 3. 50' Pole, Orient Toward North Bend Road.
- Note 4. Strip Duct and Extend Cable into Control Center. No Splices in Pullbox at Base of Control Center.
- Note 5. Reuse Exist. Conduit in Parapet and Pull Box on Each End for New Circuitry and Sign Service. Remove Existing Cable and Do Not Reuse.

TUE OCT 17 09:35:15 1989
 USER: MARION
 DES: FILE: OSK130151269NBL2.DGN



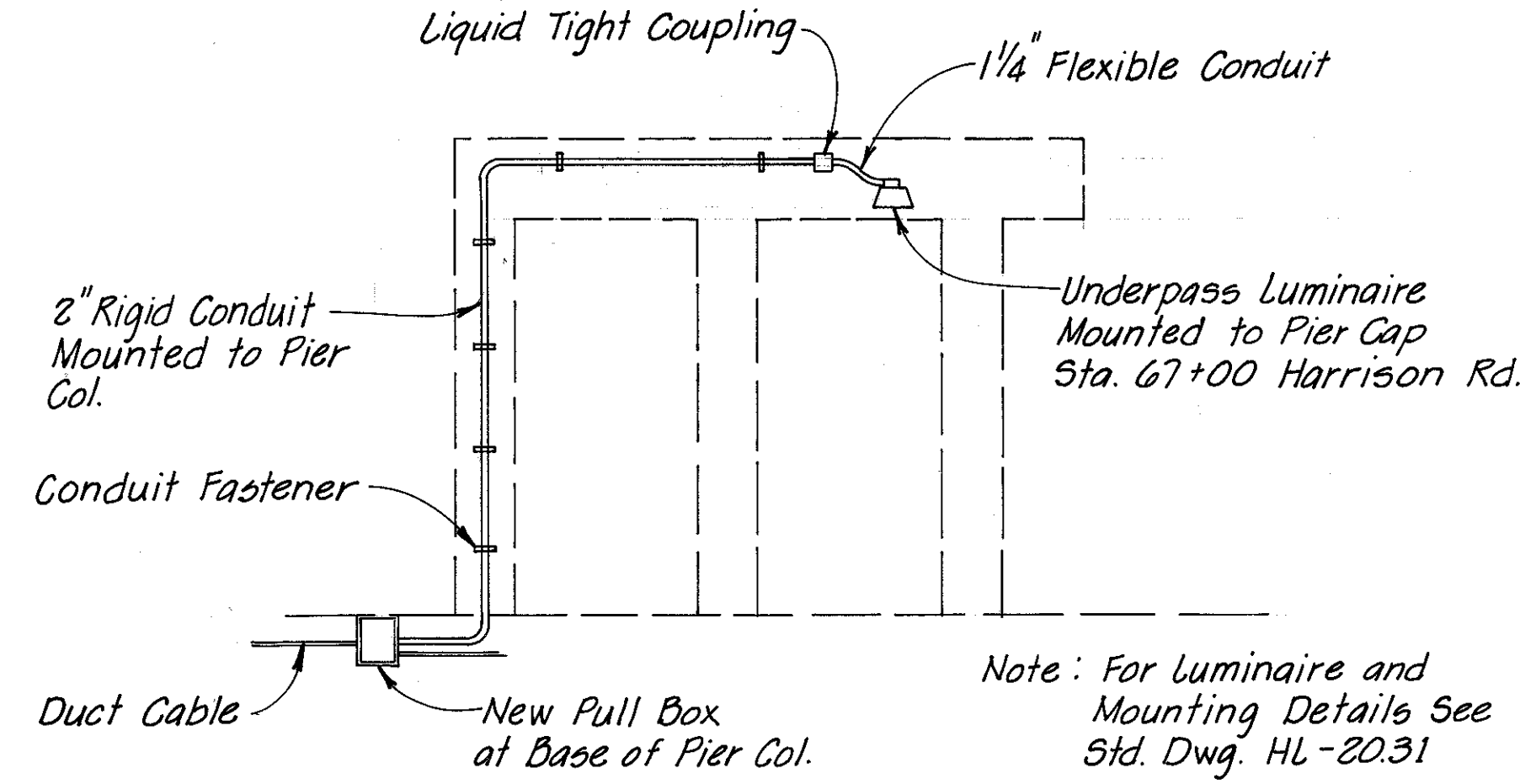
THE DATE: 04/17/1993
DESIGNER: OSWALDO/S3266ONBL3.DWG



Note: For Luminaire and Mounting Details See Std. Dwg. HL-20.31

UNDERPASS LIGHTING DETAIL

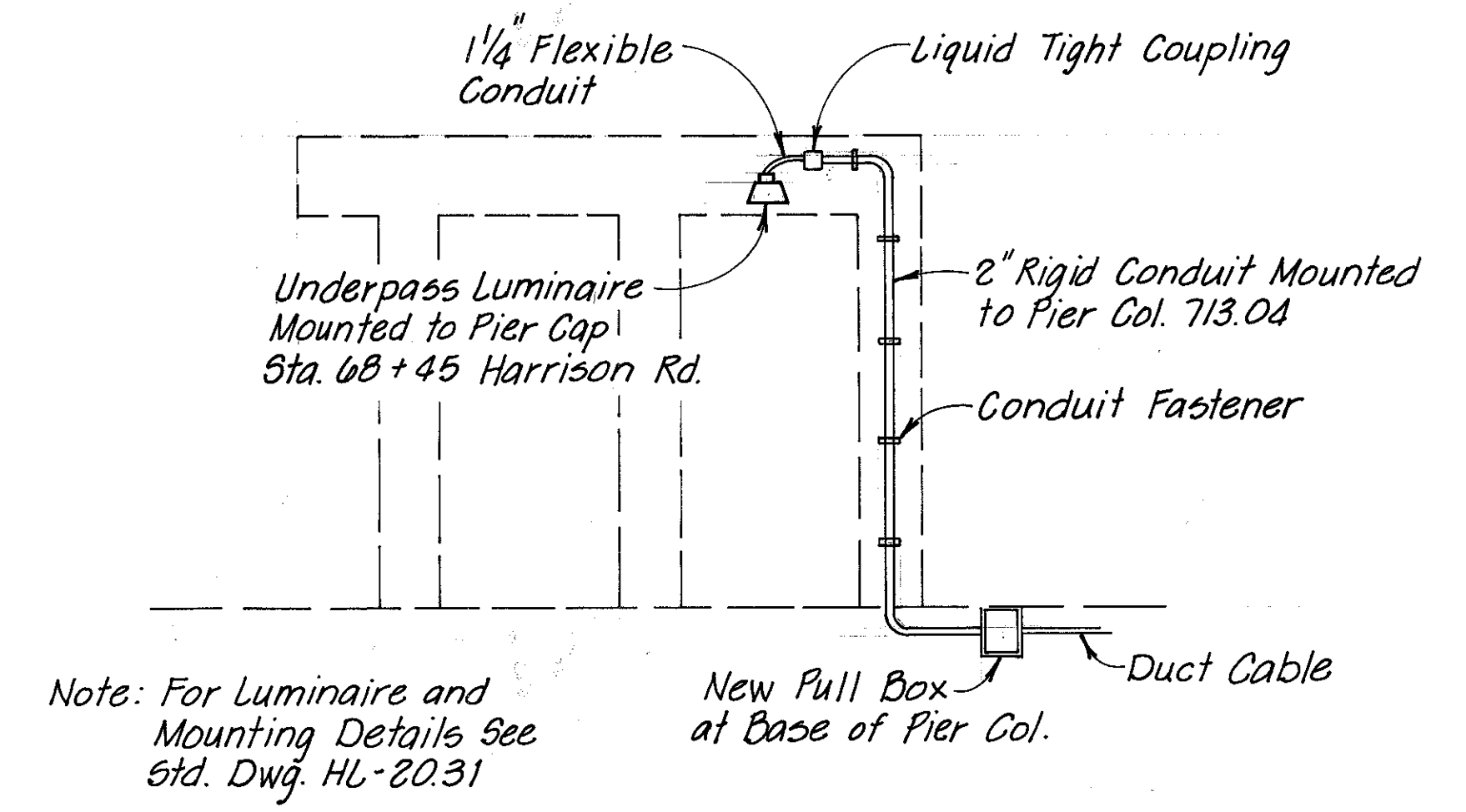
PIER 3 - E.B.
Looking East
PIER 1 - E.B. Similar
Looking West
Harrison Road Interchange



Note: For Luminaire and Mounting Details See Std. Dwg. HL-20.31

UNDERPASS LIGHTING DETAIL

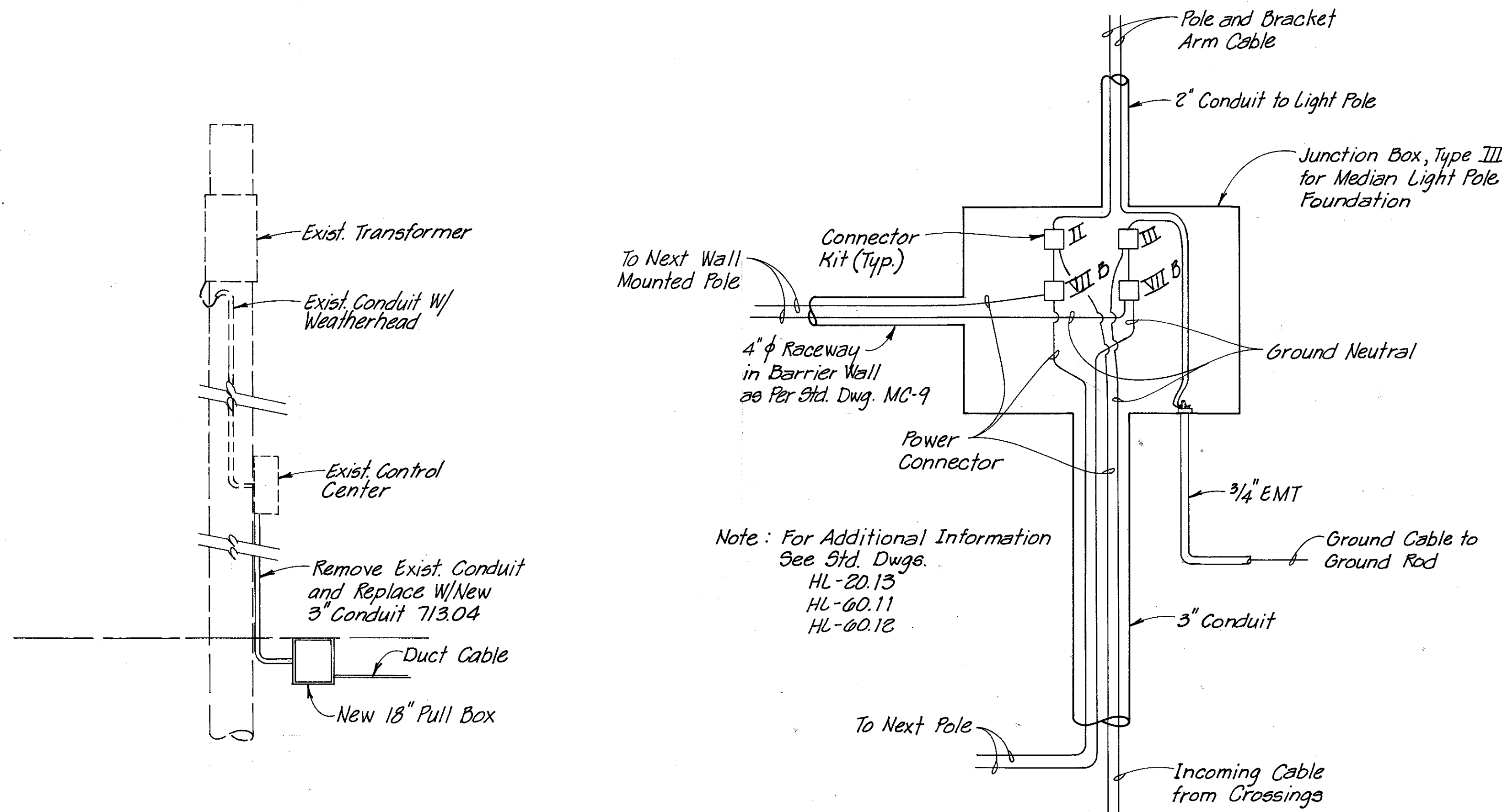
PIER 1 - W.B.
Looking West
Harrison Road Interchange



Note: For Luminaire and Mounting Details See Std. Dwg. HL-20.31

UNDERPASS LIGHTING DETAIL

PIER 3 - W.B.
Looking East
Harrison Rd. Interchange



Note: For Additional Information See Std. Dwgs. HL-20.13 HL-60.11 HL-60.12

DETAIL - POWER SERVICE

Harrison Road
North Bend Road

CROSS OVER WIRING DETAIL
WALL MOUNTED POLE

POWER SERVICE DATA										
Power Service Number	Power Service	Connected Load KVA	Control Panel	Service Entr. Conductor Size AWG	Existing Enclosure Rating Amps	Circuit Number	Circuit Load AMPS	Circuit Fuse Size AMPS	Maintaining Agency	Remarks
1	480 Volt 2 Wire Grounded Neutral	10.64	Exist.	#4	100	A	5.0	30	ODOT	
						B	10.8	30		
2		7.43				D	9.11	30		
						E	6.36	30		
1		27.30				A	8.66	30		
						B	22.52	30		
						C	25.73	40		

North Bend Rd, Harrison Rd.

TRAFFIC CONTROL GENERAL SUMMARY

CALC. BY: HJZ
DATE: 3/12/80
CHKD. BY: HJZ
DATE: 3/19/80

HAM-74-11.10

OHIO
FHWA
REGION 5

106
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SHEET NUMBERS												PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
105	107	108	109	110	111	112	120	100% State										
	25	28	41	46	42							630	85000	182	Each	Removal of Ground Mounted Sign and Storage		
	9	3	2	6								630	85500	20	Each	Removal of Ground Mounted Major Sign and Storage		
	18	24	24	37	21							630	86002	124	Each	Removal of Ground Mounted Post Support and Disposal		
	17	7	6		3							630	86102	33	Each	Removal of Ground Mounted Beam Support and Disposal		
	1	6	3	1	3							630	87000	14	Each	Removal of Overhead Mounted Sign and Storage		
	196	210	241.53	196.31	192.5							630	80102	1036	Sq. Ft.	Sign, Flat Sheet, Type G		
	1067	1271.5	602	455	485							630	80204	3681	Sq. Ft.	Sign, Extru Sheet, Type G		
					58							630	08100	58	Lin. Ft.	One Way Support, N ^o 4 Post		
144	121	96	34									630	02100	395	Lin. Ft.	Ground-Mounted Supports, N ^o 2 Post		
		28.5	94	80.5	53.5							630	03100	257	Lin. Ft.	Ground-Mounted Supports, N ^o 3 Post		
	294	277	248	226	209							630	04100	1854	Lin. Ft.	Ground-Mounted Supports, N ^o 4 Post		
		68	68.5	71	33.5							630	06400	241	Lin. Ft.	Ground-Mounted Supports, 54x17 Beam		
	70	64	67.5	176.5	65							630	06500	443	Lin. Ft.	Ground-Mounted Supports, W 6x9 Beam		
	112	44		40.5	44							630	07600	241	Lin. Ft.	Ground-Mounted Supports, W 10x12 Beam		
	217.5		61									630	08000	279	Lin. Ft.	Ground-Mounted Supports, W 12x30 Beam		
	19.92	4.60	540	6.58	3.50							630	00100	40	Cu. Yd.	Concrete for Embedded Foundation		
		4	6	12	2							630	09000	24	Each	Breakaway Beam Connection		
	32	4	2	2								620	40300	40	Each	Reflector, Type D		
	25	26	40	44	39							630	97700	174	Each	Preparation and Shipment of Stored Signs, Flatsheet		
	10	13	9	9	6				174	47		630	97700	47	Each	Preparation and Shipment of Stored Signs, Extrusheet		
		2										630	83201	2	Each	Barrier Wall Assembly, Type TG-2131, Design 2, As Per Plan		
492												600	31200	492	Each	Delineator Removed for Disposal		
												600	10300	548	Each	Delineator, Type C Flexible Post Mounted		
												600	15300	323	Each	Delineator, Type D Flexible Post Mounted		
												601	50100	305	Lin. Ft.	Crosswalk Line		
												601	30100	6146	Lin. Ft.	Channelizing Line		
												601	60100	3573	Lin. Ft.	Transverse Line		
												601	20100	011	Mile	Center Line		
												601	10008	14.89	Mile	Lane Line		
												601	00100	30.70	Mile	Edge Line		
												601	40100	164	Lin. Ft.	Stop Line		
												601	76500	8	Each	Lane Arrow		
												601	80100	3	Each	Word on Pavement, 96-inch		
												601	70000	1225	Sq. Ft.	Island Marking		
												601	90400	1	Each	School Symbol Marking, 96-inch		
												632	27500	540	Lin. Ft.	Loop Detector Pavement Cutting		
												632	64900	1085	Lin. Ft.	Loop Detector Wire, Type E		
												602	00100	574	Each	Barrier Reflector, Type A		
												602	00200	202	Each	Barrier Reflector, Type B		

TRAFFIC CONTROL SUB SUMMARY

REF. NO.	SIDE	STATION	STATION	SIGN CODE	SIGN DIMENSION	SHEET NUMBER	620 Ground Mounted Support											Concrete for Embedded Foundation	Breakaway Beam Connection	Overpass Structure Mounted Sign Support, Type 10, Design 10	Reflector, Type D	Removal of Overhead Mounted Sign & Storage	Preparation and Shipment of stored Signs, Flare/Net	Preparation and Shipment of stored Signs, Extrusheet	
							Removal of Ground Mounted Major Sign and Storage	Removal of Ground Mounted Sign and Storage	Removal of Ground Mounted Sign and Storage	Removal of Ground Mounted Sign and Storage	Sign, Flat Sheet Type G	Sign, Extra Sheet Type G	One Pole Support	No 2 Post	No 3 Post	No 4 Post	5 4x7.7								W 6x9
INTERSTATE I-74																									
63a	Lt.	874+10	I-74	GEP-84	7x2'		Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each					
b				GE-220	19x8.5'		1	2																	
64	Lt.	885+00		R-35-48	48x60"				1	1															
65a	Med.	888+55		R-123-36	36x36"				1	1															
b				R-19-24	24x30"				1																
66a	Med.	889+05		R-19-24	24x30"				1	1															
b				R-123-36	36x36"				1																
67	Lt/Med	890+15		W-19AL-48	48x48"				2	2															
68	Lt.	901+00 WB		Special	10'x8'				1	1															
69	Lt.	914+25 WB		R-199A-36	36x48"				1	1															
70	Rt/Lt.	918+06 WB		W-19AL-48	48x48"				2	2															
71a	Lt.	918+91 WB		R-10-48	48x60"				1	2															
b				R-70-48	48x36"				1																
72	Rt.	919+00 EB		GN-108	108x42"				1	2															
73	Rt.	919+06 EB		N-41-12	12'x36"				1	1															
74	Lt.	919+06 WB	I-74	N-41-12	12'x36"	115			1	1															
HARRISON PIKE INTERCHANGE																									
75a	Lt.	80+00	Harrison Pike			114/17			1	1															
b									1																
c									1																
d				IM-17-24	24x10"																				
e				M-5-24-2	24x24"																				
f				M-17-24	24x10"																				
g				M-1-24-2	24x24"																				
76a	Lt.	79+60							1																
b									1																
c									1																
d				M-52A-120	10x2.5'			2	1					40	0.54	2									
e				M-52A-120	10x2.5'																				
77a	Lt.	71+50																							
b																									
c																									
d				GH-132	11'x8.5'																				
e				GH-132	11'x8.5'																				
78a	Lt.	71+00		D-14-36	36x8"				1																
b				R-95A-30	30x36"				1																
c				R-122-36	36x36"				1																
d				N-15-24	24x6"				1																
e				M-52A-108	9'x2.5'				1	2					28.5	0.54									
79a	Rt.	70+85		IM-39-24	24x12"																				
b				M-5-24-2	24x24"																				
c				IM-24-21	21x15"																				
d				D-4B-132	11'x8'		1	2							44	0.66	2								
80a	Lt.	69+75±	Bridge Mounted Harrison Pike																						
b				GE-192	10'x6'																				
81a		10+45	Rybolt Road	R-41B-36	36x36"				1	1															
b				R-2-36	36x36x36"				1																
82a	Rt.	17+40		IM-40-24	24x12"				1																
b				M-5-24-2	24x24"				1																
c				IM-21-21	21x15"				1																
d				IM-39-24	24x12"				1																
e				M-5-24-2	24x24"				1																
f				IM-26-21	21x15"				1																
g				D-4E-108	9'x3'				1	2					27	0.66	2								
h				N-19A-30	30x18"				1																
83	Rt.	10+55		R-31B-36	36x36"				1	1															
84	Rt.	13+65		W-47-48	48x48"				1	1															
85a	Lt.	14+50							1	1															
b				W-65-30	36x36"																				
c			Rybolt Road	WPC-05-24	24x18"																				
TOTALS CARRIED TO GENERAL SUMMARY																									
							2	6	41	24	241.53	602		34	94	248	68.5	67.5	61	5.40	6	2	3	40	9

7-111-1-989 12-37 USER: DDLG DES: FILE: 0524 C30: 122: 20E0TC: DGN: 1

TRAFFIC CONTROL SUB SUMMARY

CALC. BY: CLB
 DATE: 7/20/90
 CHKD. BY: JGW
 DATE: 3/14/90

HAM-74-11.10

OHIO
 FHWA
 REGION 5

111
 132

REF. NO.	SIDE	STATION	STATION	SIGN CODE	SIGN DIMENSION	SHEET NUMBER	Removal of Ground Mounted Major Sign and Storage	Removal of Ground Mounted Exam Support	Removal of Ground Mounted Sign and Storage	Removal of Ground Mounted Post Support	Sign, Flat Sheet Type G	Sign, Extra Sheet Type C	One Way Support No. of Post	Ground Mounted Support							Concrete for Embedded Foundation	Breakaway Beam Connection	Reflector, Type D	Removal of Overhead Mounted Sign & Storage	Preparation and Shipment of Stored Signs, Flare-sheet	Preparation and Shipment of Stored Signs, Extruded					
														No. 2 Post	No. 3 Post	No. 4 Post	5 4x7.7	W 6x9	W 10x12	W 12x30							Cu. Yd.	Each	Each	Each	
NORTH BEND ROAD INTERCHANGE																															
111	Rt.	791+70 P	Ramp P	W-76A-36	36"x36"		Each	Each	Each	Each	Sq. Ft.	Sq. Ft.	Lin. Ft.	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF		
112	Rt.	16+80 ±	North Bend Rd.																												
113a	Rt.	18+35																													
b			North Bend Rd.	6B-156	13x8'							104																			
114	Rt.	781+00 '0'	Ramp Q	W-76A-36	36"x36"						9																				
115	Rt.	782+10 '0'	Ramp Q	W-9B-48	48"x60"						20																				
116a	Rt.+Lt.	791+65 '0'	Ramp O	R-43R-36	36"x12"						6		28																		
b				R-41B-36	36"x36"						18																				
c				R-43L-36	36"x12"						6																				
117	Rt.+Lt.	786+81 '0'		R-41A-36	36"x24"						12																				
118a		785+56 '0'		D-4E-120	10'x3'			3				30																			
b				D-4A-120	10'x6'							20																			
c																															
d																															
e																															
f																															
119a	Lt.	21+52	Ramp O North Bend Rd.																												
b				6B-156	13x8'							104																			
120	Lt.	21+94		R-31E-30	30"x30"																										
121a	Rt.	24+15																													
b																															
c																															
d																															
e																															
f																															
g																															
122a	Lt.	25+00		LEVEL IV	9'x5.5'							49.5																			
b																															
123	Lt.	25+80	North Bend Rd.	6B-192	16'x7'																										
124	Lt.	793+25 'M'	Ramp M	R-3L-24	24"x36"						6																				
125	Lt.	802+60 'L'	Ramp L	W-76A-36	36"x36"						9																				
126	Lt.	801+50 'L'	Ramp L	W-76A-36	36"x36"						9																				
127	Rt.	794+48 'N'	Ramp N	W-9B-48	48"x60"						20																				
128a	Lt.	794+30 'N'		R-41A-36	36"x24"						6																				
b				R-31H-28	48"x30"						8.75																				
129a	Rt.	791+08 'N'		R-31H-42	48"x30"						8.75		15																		
b				R-43L-36	36"x12"						3																				
c				R-43R-36	36"x12"						3																				
d				R-41B-36	36"x36"						9																				
130a	Lt.	791+04 'N'		R-31H-42	48"x30"						8.75		15																		
b				R-43L-36	36"x12"						3																				
c				R-43R-36	36"x12"						3																				
d			Ramp N	R-41B-36	36"x36"	118					9																				
131a	Lt.	849+00	I-74	6EP-84	7'x8'	114						14																			
b				6SH-120	10'x8'	114						20																			
132	Rt.	9191.25 EB	I-74	6N-108	9'x3.5'	115						31.5																			
TOTALS CARRIED TO GENERAL SUMMARY																															
							3	40	21	192.5	485		58	53.5	209	33.5	65	44		3.52	2			3	39	6					

7-JUL-1989 12:37
 USER: DOLUC
 DES: FILE QS24 (30-102) DEOTC.DGN: 1

7
 16

TRAFFIC CONTROL SUB SUMMARY

CALC. *DLB*
 BY
 DATE *7/2/89*
 CHKD. *J&W*
 BY
 DATE *3/14/90*

HAM-74-11.10

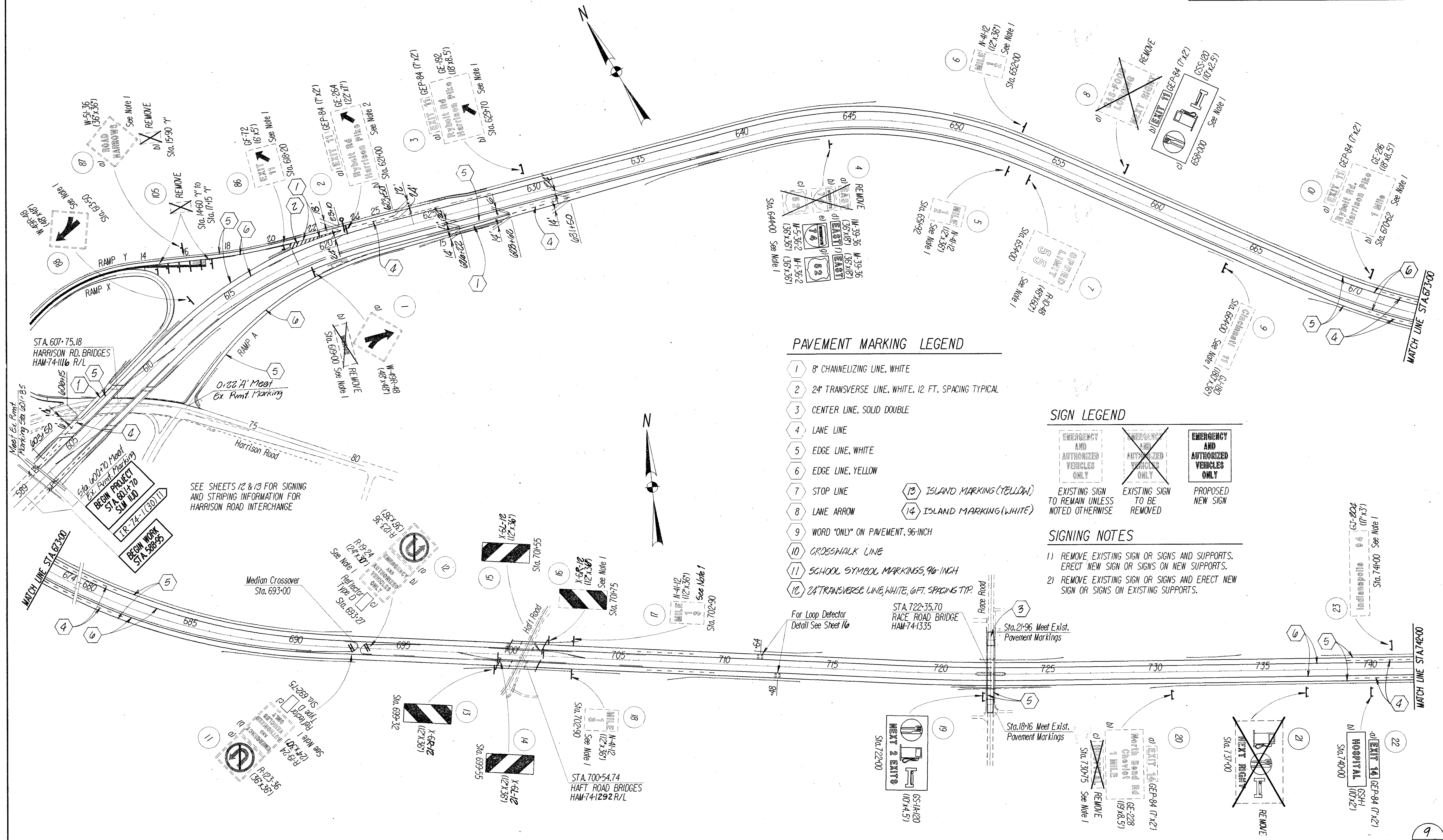
OHIO
 FHWA
 REGION 5

112
 132

REF. NO.	SIDE	STATION	STATION	SHEET NUMBER	621				620		621		800									
					8" Channelizing Line, White Lin. Ft.	24" Traverse Line, White Lin. Ft.	Center Line Solid, Double Lin. Ft.	Lane Line Lin. Ft.	Edge Line, White Lin. Ft.	Edge Line, Yellow Lin. Ft.	Stop Line Lin. Ft.	Lane Arrow Each	Word on Pavement, 9/16" Inch Each	Island Marking, Yellow Sq. Ft.	Retrol Symbol Painting 46" Trich Each	Delinicator Type C Flexible Post Mounted Each	Delinicator Type D Flexible Post Mounted Each	Grasswalk Line Lin. Ft.	Island Marking, White Sq. Ft.	Barrier Reflectors Type A Each	Barrier Reflectors Type B Each	
MAINLINE PAVEMENT																						
		Sta. 602+00	Sta. 742+00	113	960	313	380	28,930	33,030	30,070			158					306	78			
		Sta. 742+00	Sta. 859+00	114	3590	2186		30,726	30,551	29,800			100					180	74			
		Sta. 859+00	Sta. 925+00	115				17,010	11,340	11,340			38					73	50			
		HARRISON ROAD INTERCHANGE 114/17						2,644	1,603	19			30	33								
		NORTH BEND RD. INTERCHANGE 118			1596	1074	190	1964	4120	5596	145	8	3	1000	1	202	290	305	225	15	6	
TOTALS CARRIED TO GENERAL SUMMARY					6146	3573	576 LF 0.11 MI	78,090 14.89 MI	81,685 LF 16,094 LF 30.70 MI	164	8	3	1000	1	548	303	305	225	574	202		

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8/10



PAVEMENT MARKING LEGEND

- 1 8" CHANNELIZING LINE, WHITE
- 2 24" TRANSVERSE LINE, WHITE, 12 FT. SPACING TYPICAL
- 3 CENTER LINE, SOLID DOUBLE
- 4 LANE LINE
- 5 EDGE LINE, WHITE
- 6 EDGE LINE, YELLOW
- 7 STOP LINE
- 8 LANE ARROW
- 9 WORD "ONLY" ON PAVEMENT, 96-INCH
- 10 GROSSWALK LINE
- 11 SCHOOL SYMBOL MARKINGS, 96-INCH
- 12 24" TRANSVERSE LINE, WHITE, 6 FT. SPACING TYP.
- 13 ISLAND MARKING (YELLOW)
- 14 ISLAND MARKING (WHITE)

SIGN LEGEND

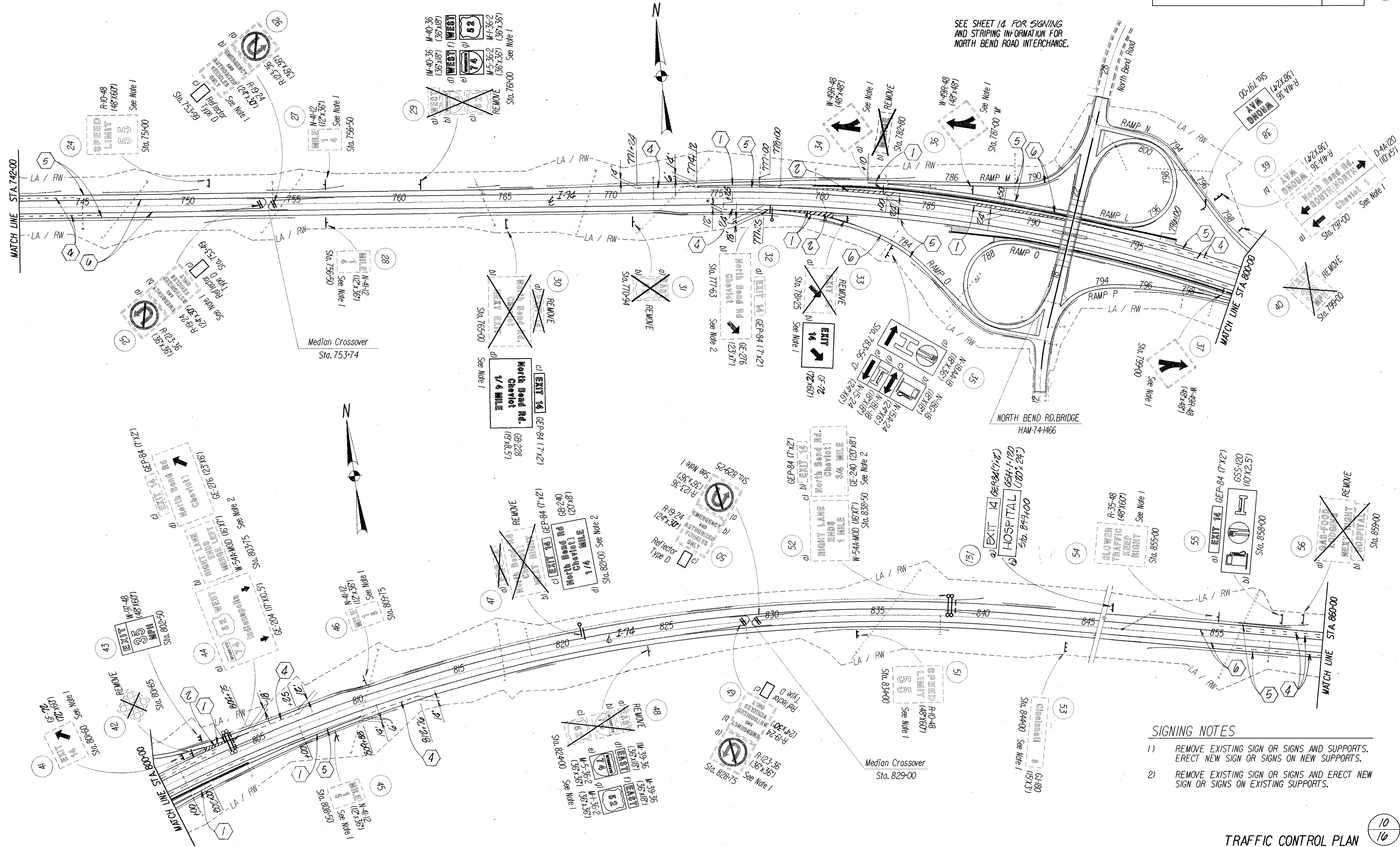
EXISTING SIGN TO REMAIN UNLESS NOTED OTHERWISE	EXISTING SIGN TO BE REMOVED	PROPOSED NEW SIGN

SIGNING NOTES

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- 2) REMOVE EXISTING SIGN OR SIGNS AND ERECT NEW SIGN OR SIGNS ON EXISTING SUPPORTS.

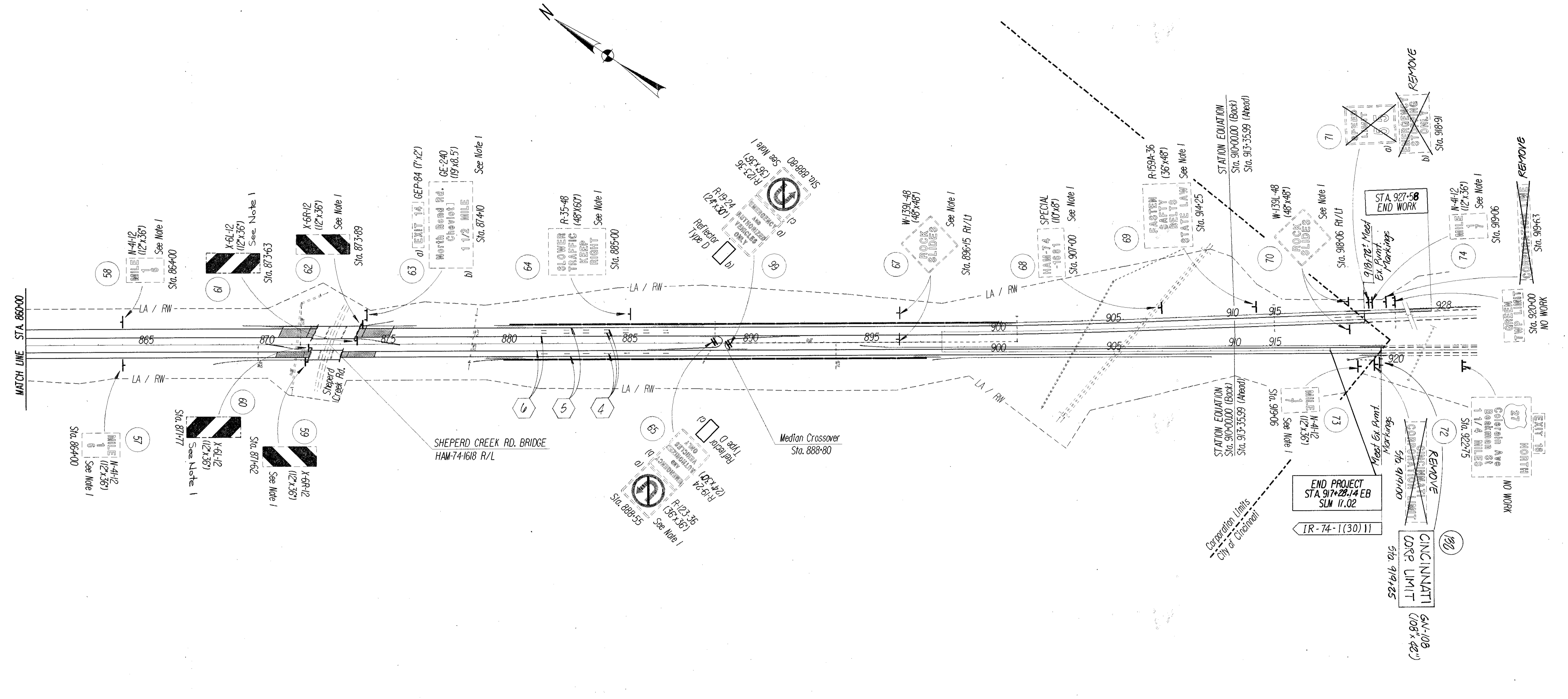
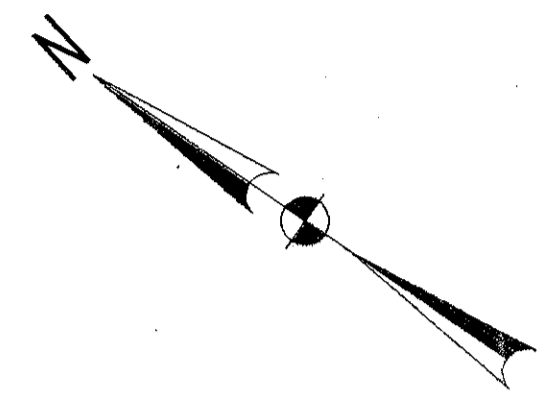
Mod. Oct. 25 10:06:00 (888)
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SEE SHEET 14 FOR SIGNING
AND STRIPING INFORMATION FOR
NORTH BEND ROAD INTERCHANGE.



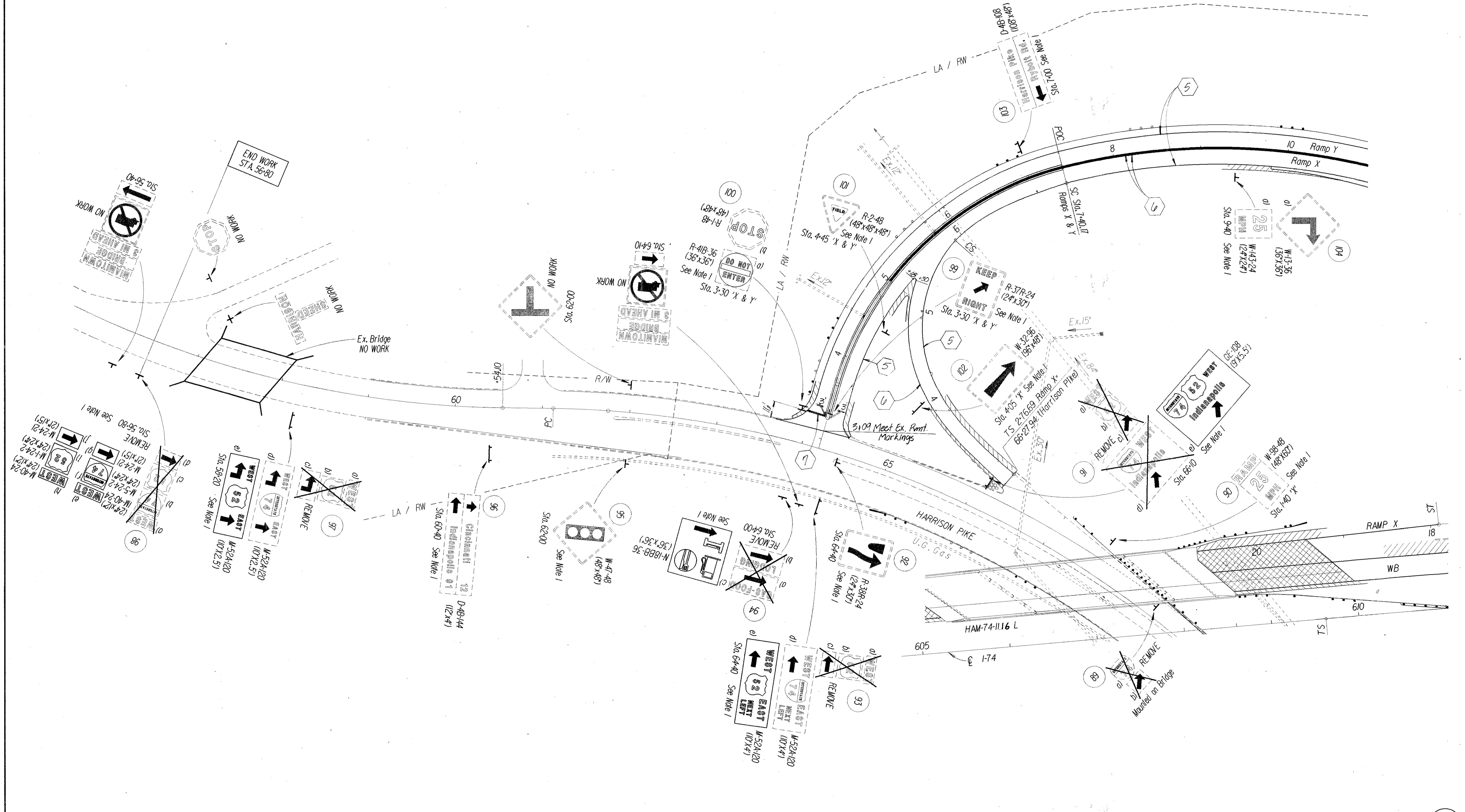
- SIGNING NOTES**
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 - 2) REMOVE EXISTING SIGN OR SIGNS AND ERECT NEW SIGN OR SIGNS ON EXISTING SUPPORTS.

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PROJECT: 054530, 05126504, 52, D2041



- SIGNING NOTES**
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 - 2) REMOVE EXISTING SIGN OR SIGNS AND ERECT NEW SIGN OR SIGNS ON EXISTING SUPPORTS.

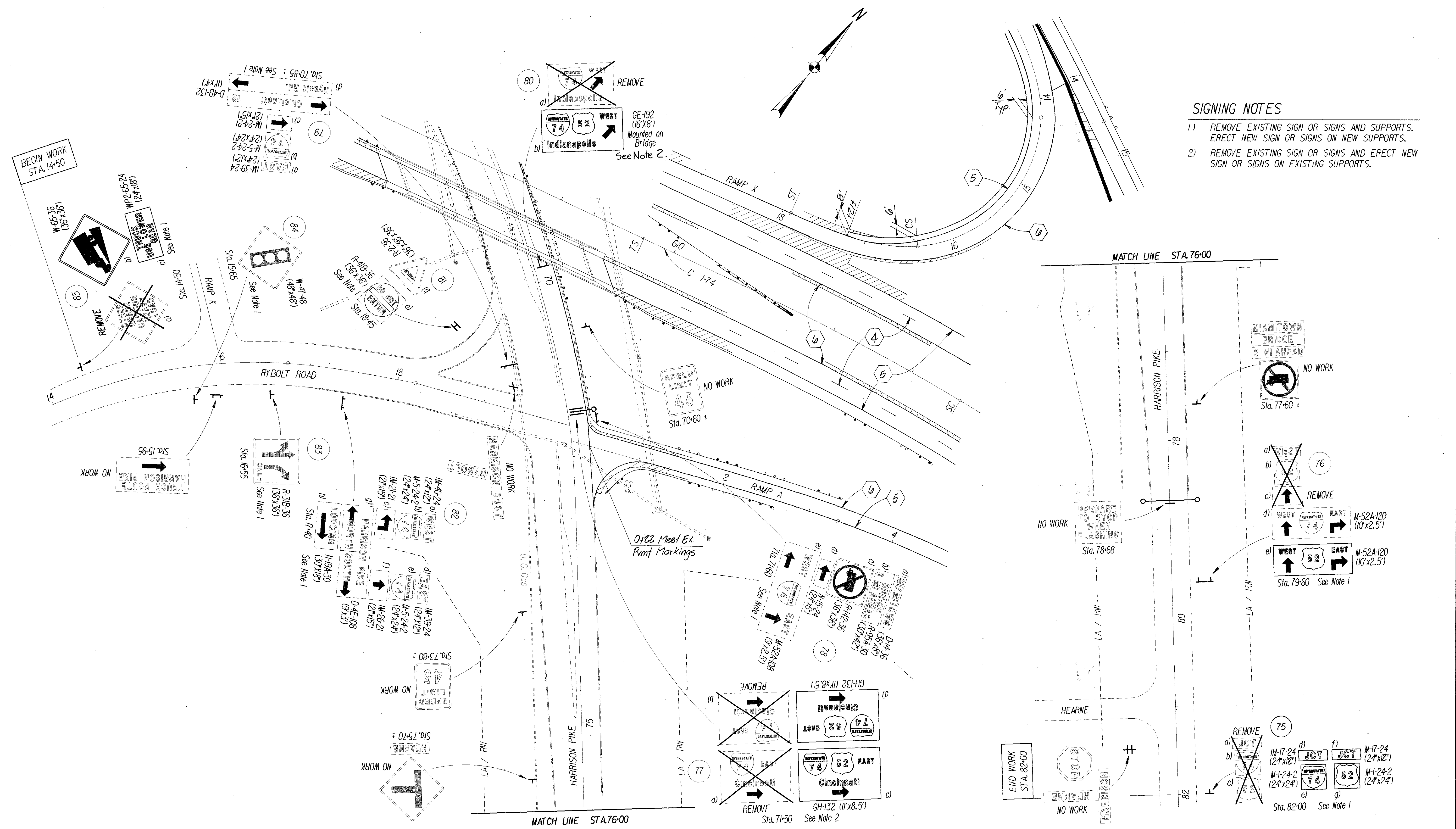
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SIGNING NOTES

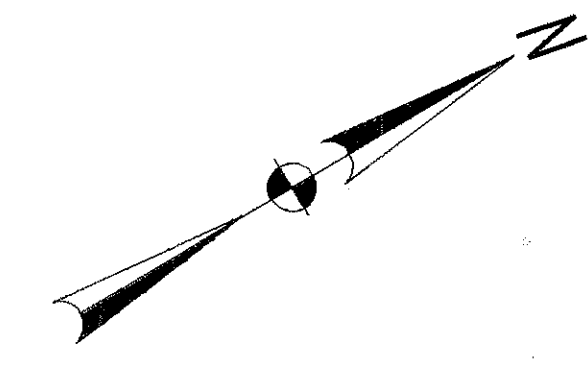
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- 2) REMOVE EXISTING SIGN OR SIGNS AND ERECT NEW SIGN OR SIGNS ON EXISTING SUPPORTS.



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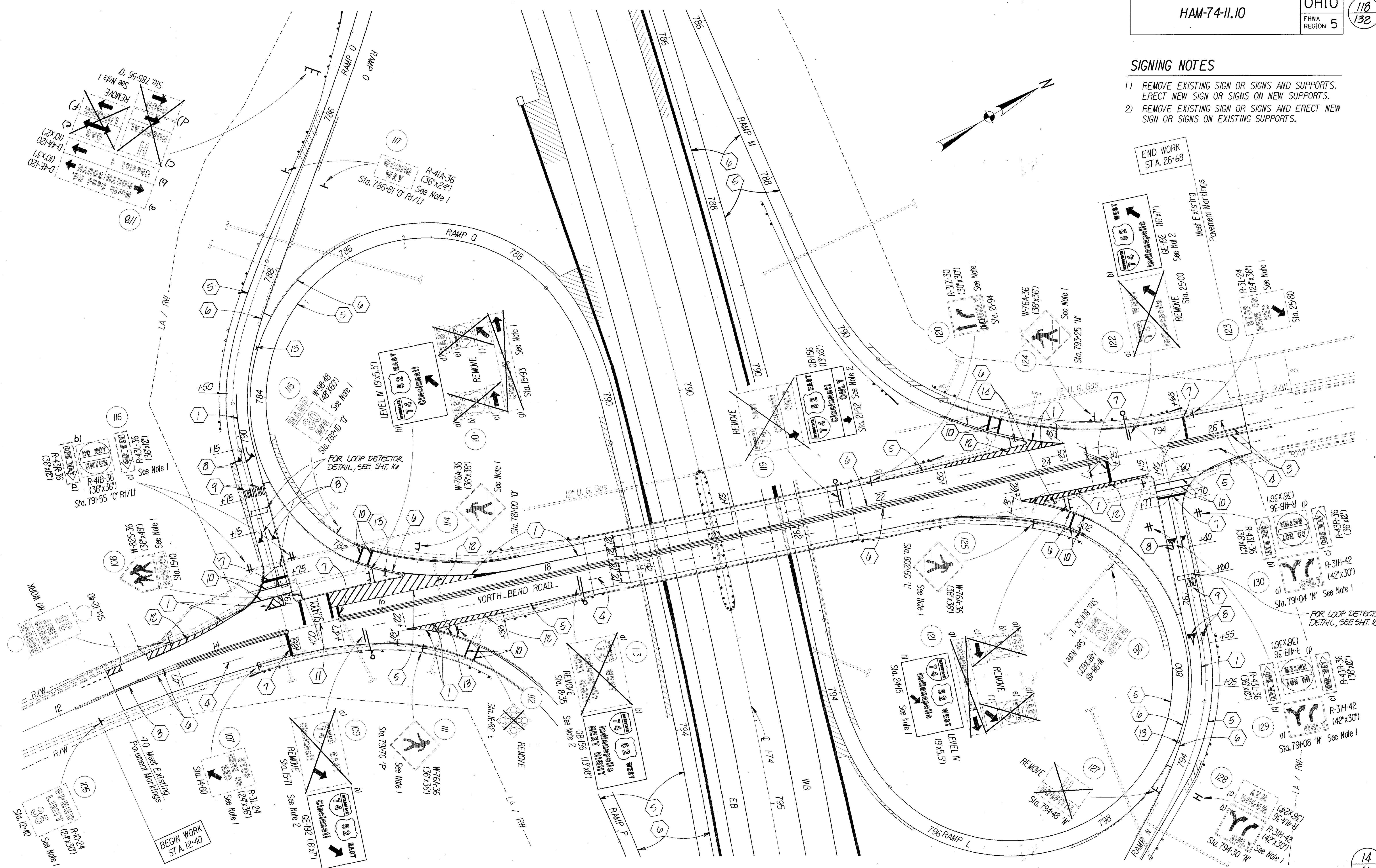
SIGNING NOTES

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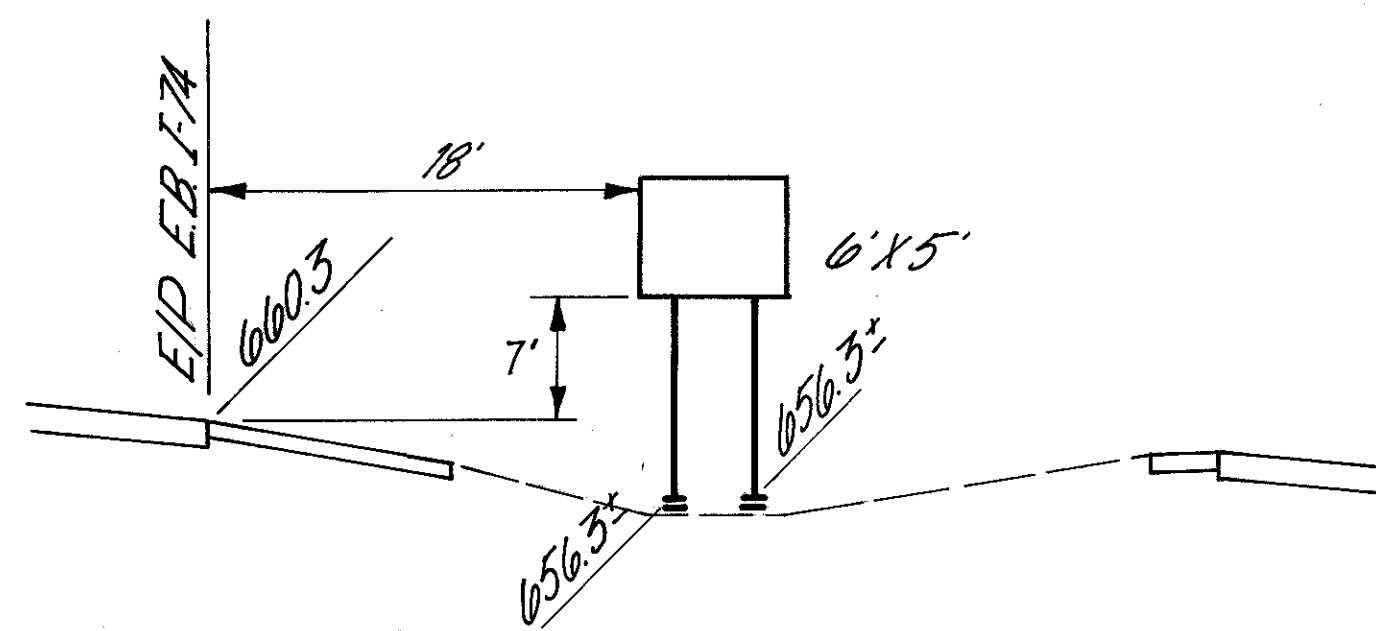
END WORK STA. 26+68

Meet Existing Pavement Markings



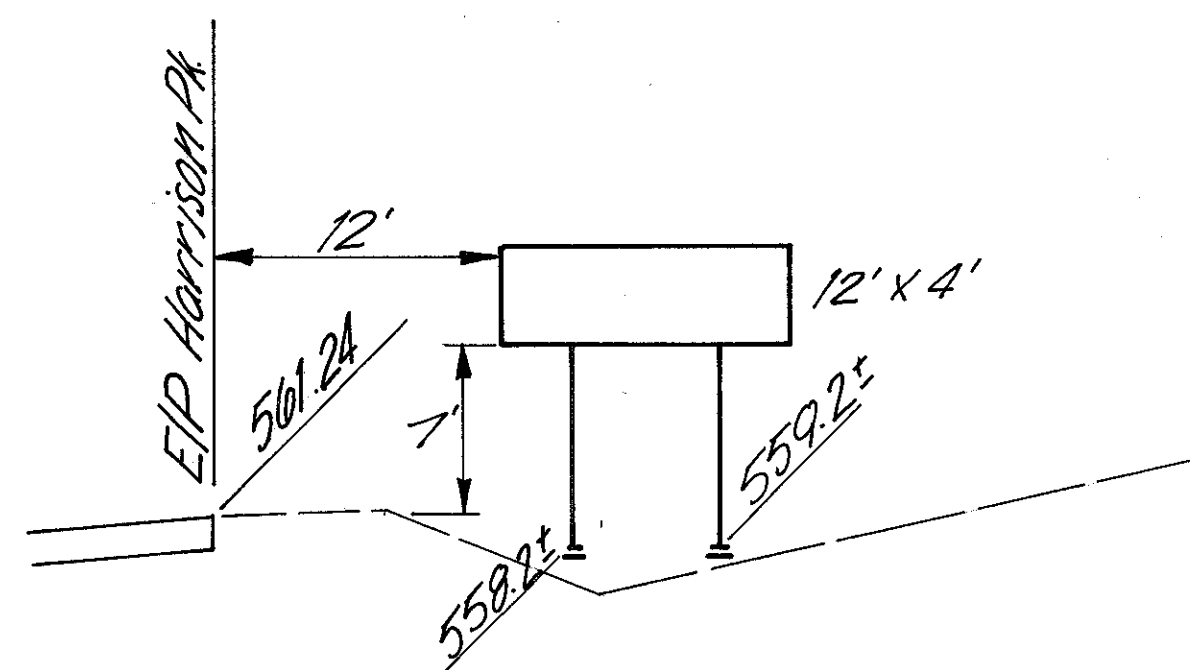
TRAFFIC CONTROL PLAN
NORTH BEND ROAD INTERCHANGE

11/28/98 02:44:11 989
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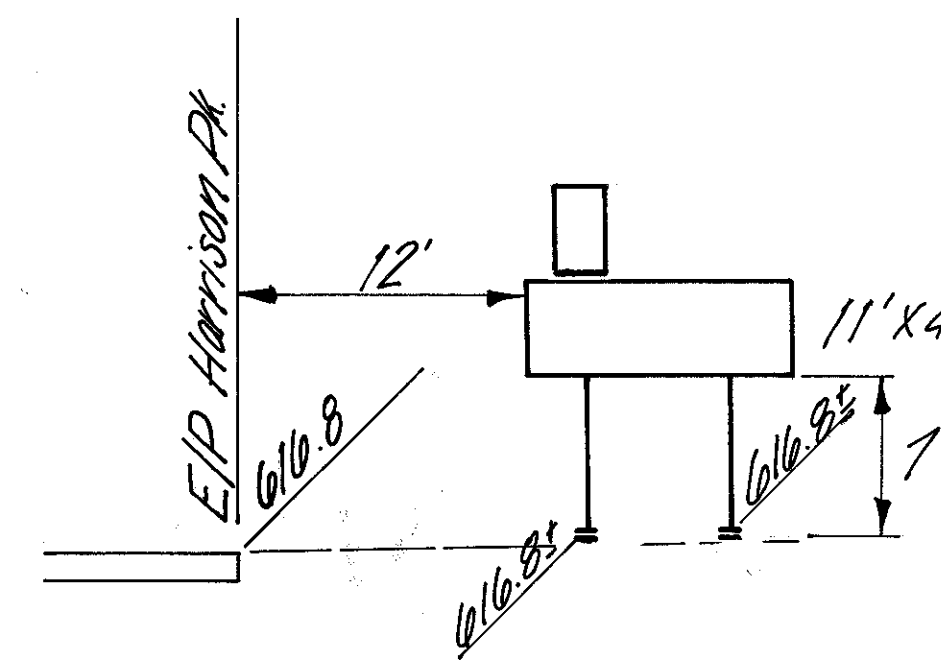
86 STA. 618+20 I-74 (EB)

S4x7.7 w/ Breakaway Connections
Supports: 20', 20'
Spacing: 1.32', 3.36', 1.32'



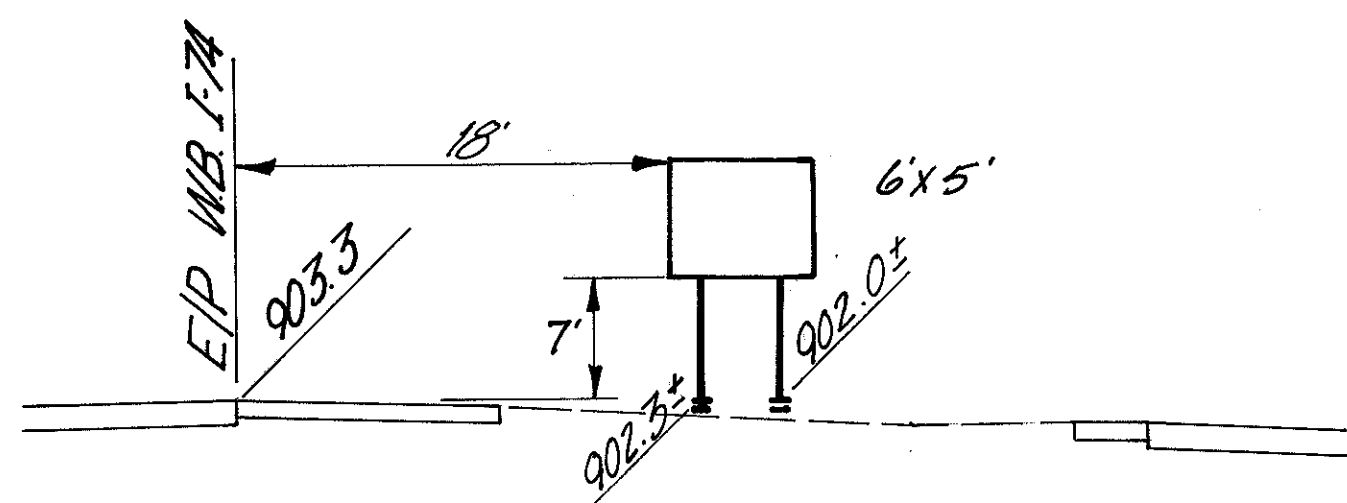
96 STA. 60+40 HARRISON PIKE (RH)

W10x9 w/ Breakaway Connections
Supports: 19', 18'
Spacing: 1.75', 9.50', 1.75'



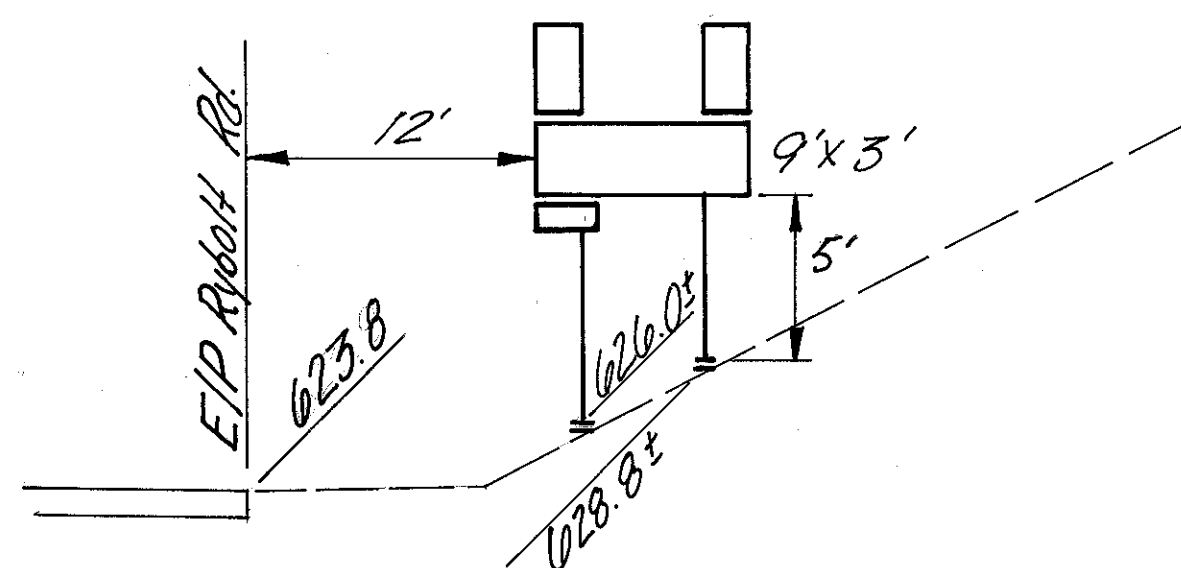
79 STA. 70+85 HARRISON PIKE (RH)

S4x7.7 w/ Breakaway Connections
Supports: 16.5', 15.0'
Spacing: 2.42', 6.16', 2.42'



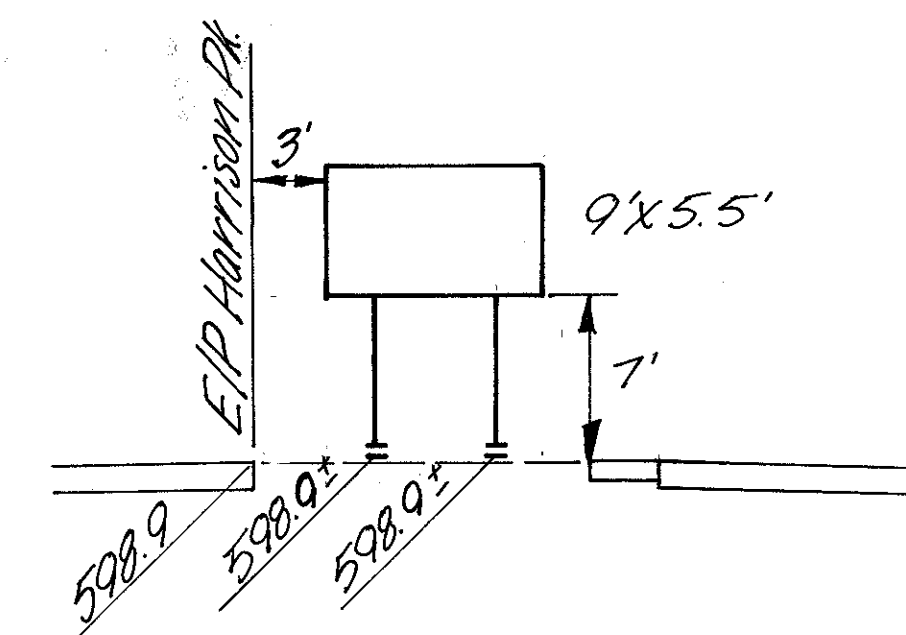
41 STA. 801+60 I-74 (WB)

S4x7.7 w/ Breakaway Connections
Supports: 17', 17'
Spacing: 1.32', 3.36', 1.32'



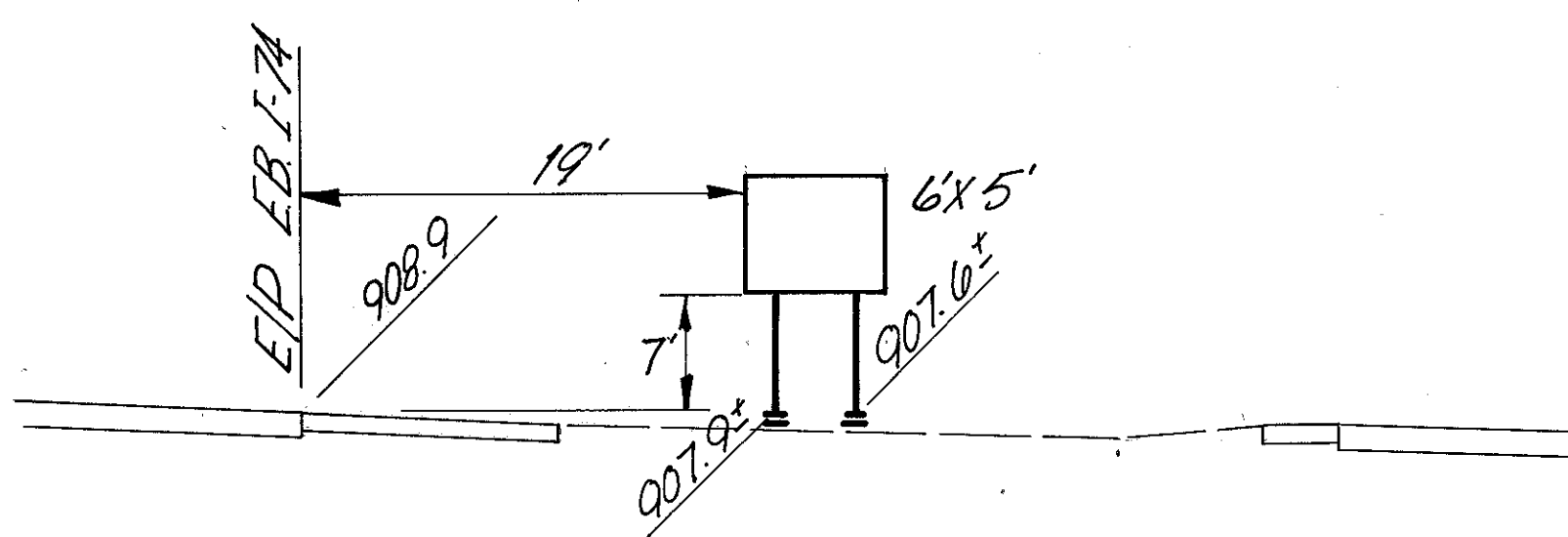
82 STA. 17+40 RYBOLT RD (RH) Harr. Int.

W10x9 w/ Breakaway Connections
Supports: 19.0', 17.0'
Spacing: 1.98', 5.04', 1.98'



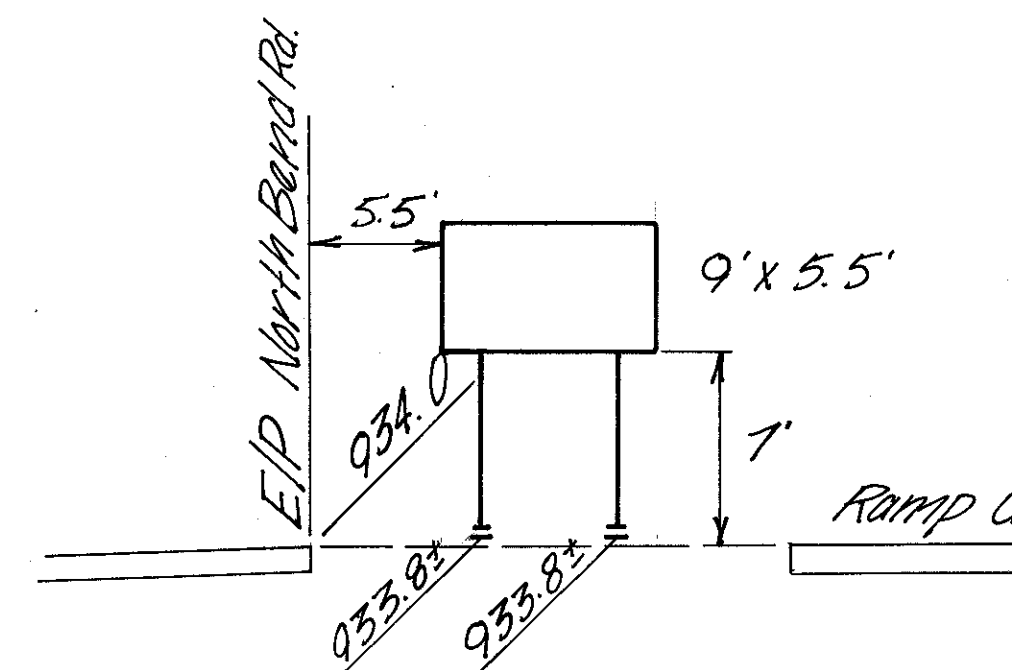
91 STA. 66+10 HARRISON PIKE (LH)

W10x9 w/ Breakaway Connections
Supports: 17.5', 17.5'
Spacing: 1.98', 5.04', 1.98'



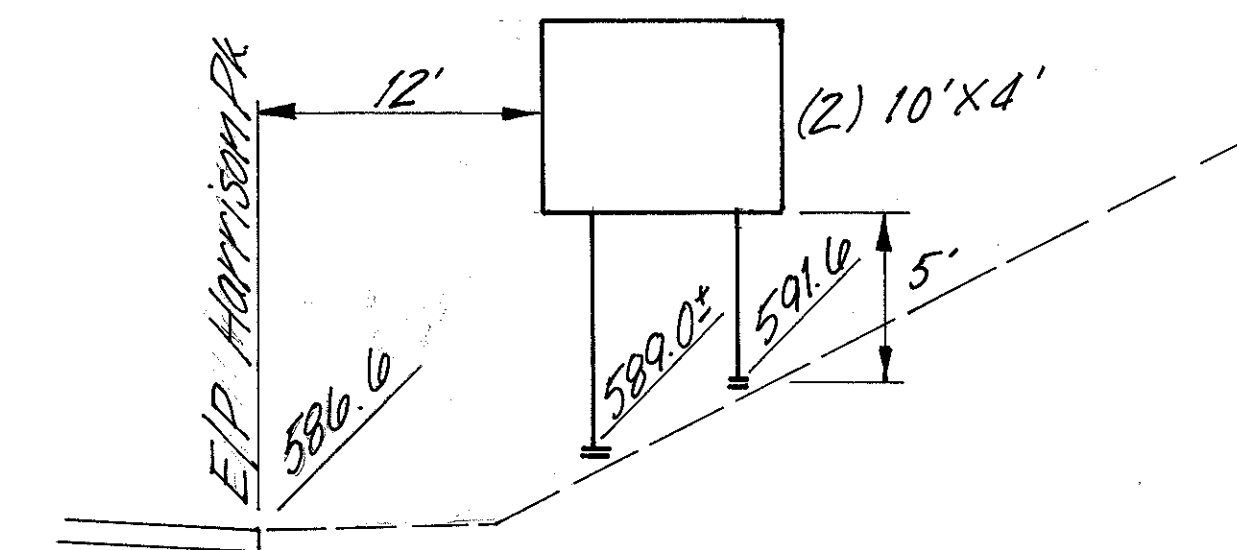
33 STA. 781+25 I-74 (EB)

S4x7.7 w/ Breakaway Connections
Supports: 17', 17'
Spacing: 1.32', 3.36', 1.32'



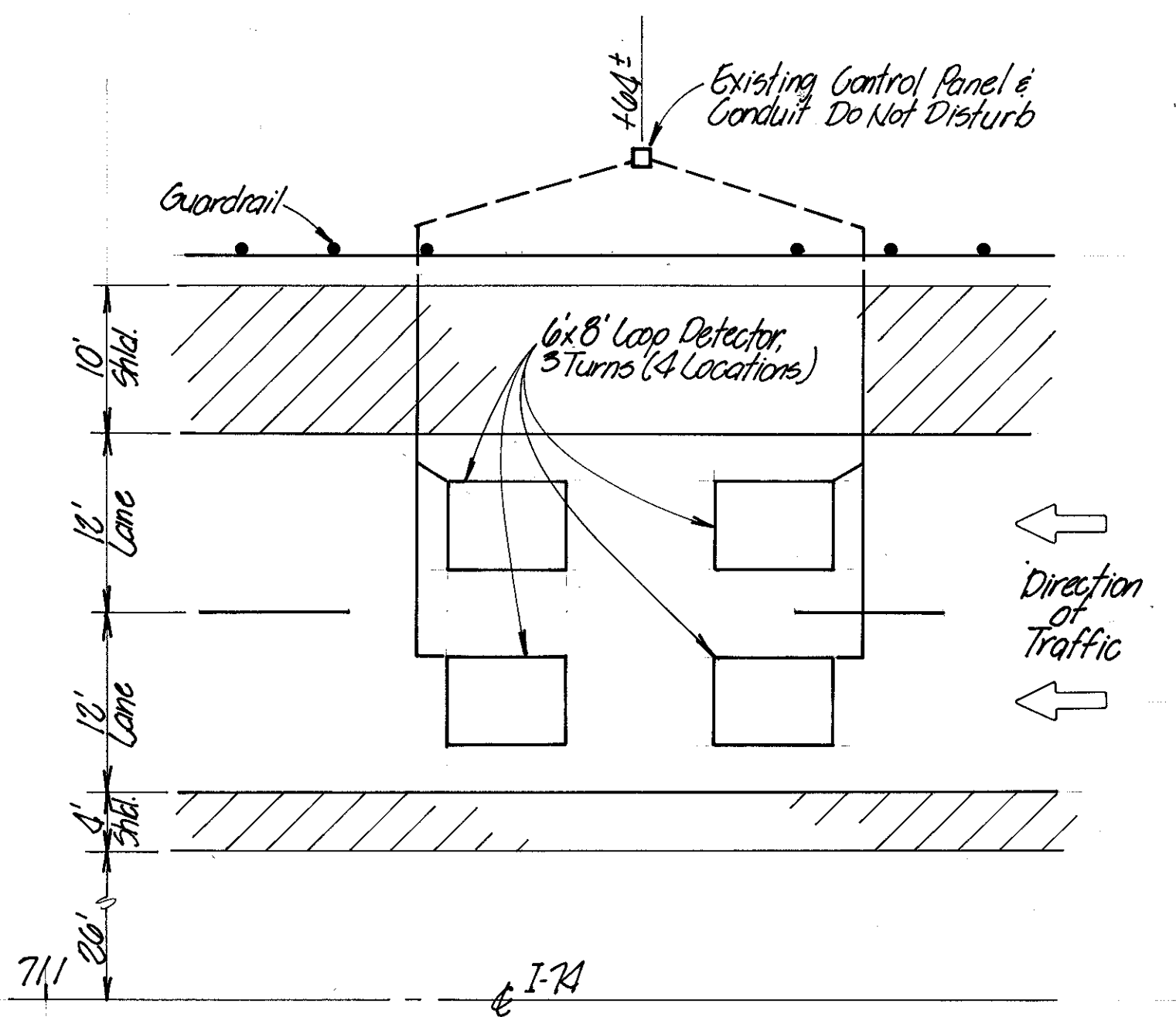
110 STA. 15+93 NORTH BEND RD (LH)

W10x9 w/ Breakaway Connections
Supports: 17.5', 17.5'
Spacing: 1.98', 5.04', 1.98'



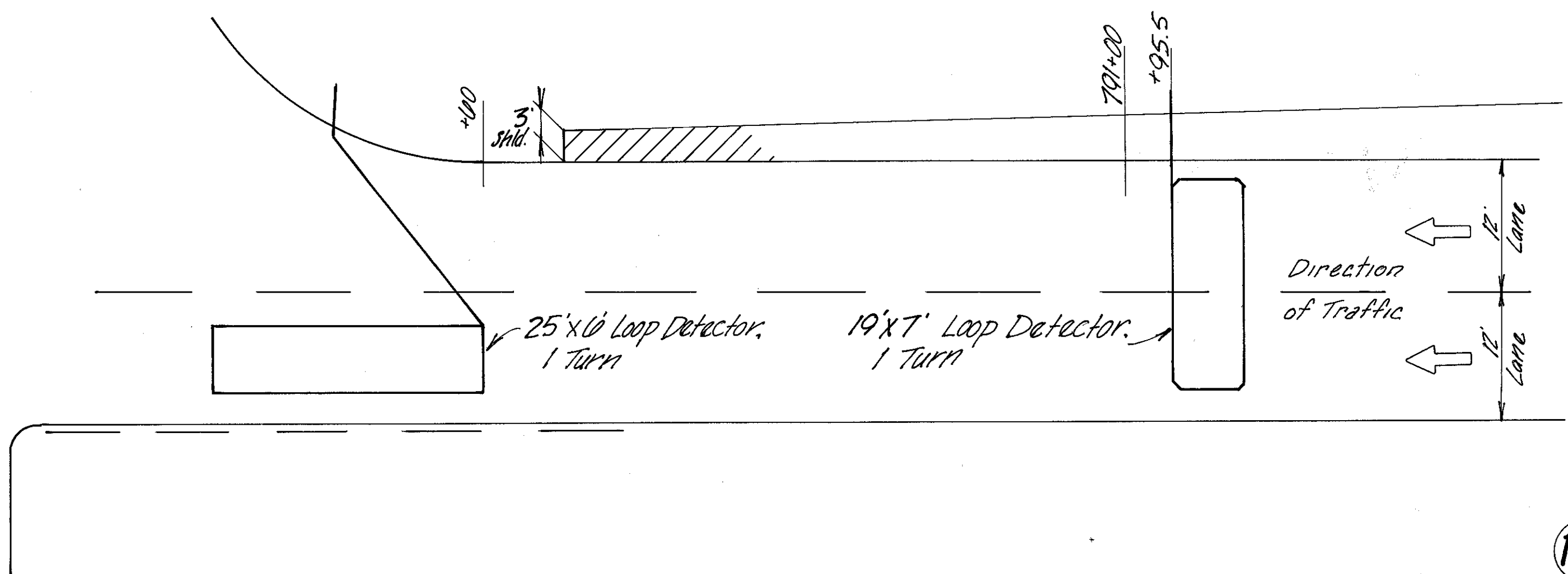
93 STA. 64+40 HARRISON PIKE (RH)

W10x12 w/ Breakaway Connections
Supports: 21.5', 19'
Spacing: 2.42', 6.16', 2.42'



LOOP DETECTOR DETAIL STA. 711+64± W.B.

Note: For Additional Notes and Details See Std. Dwg. TC82.10



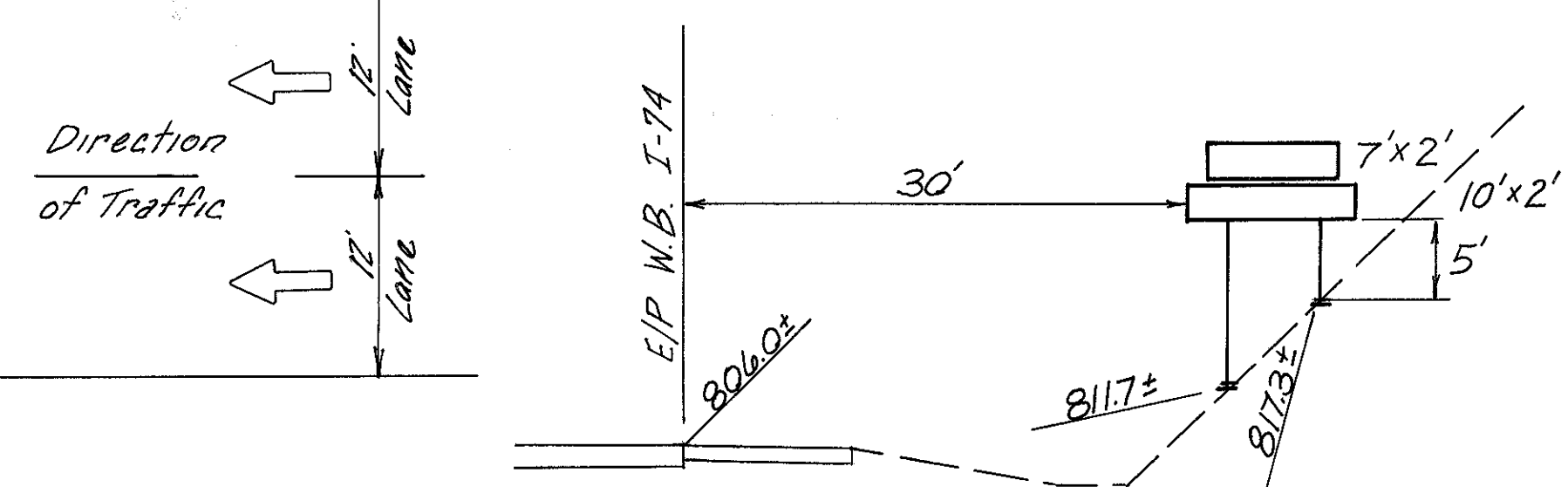
LOOP DETECTOR DETAIL STA. 790+95.5, STA. 791+60 RAMP O

Note: For Additional Notes and Details See Std. Dwg. TC82.10

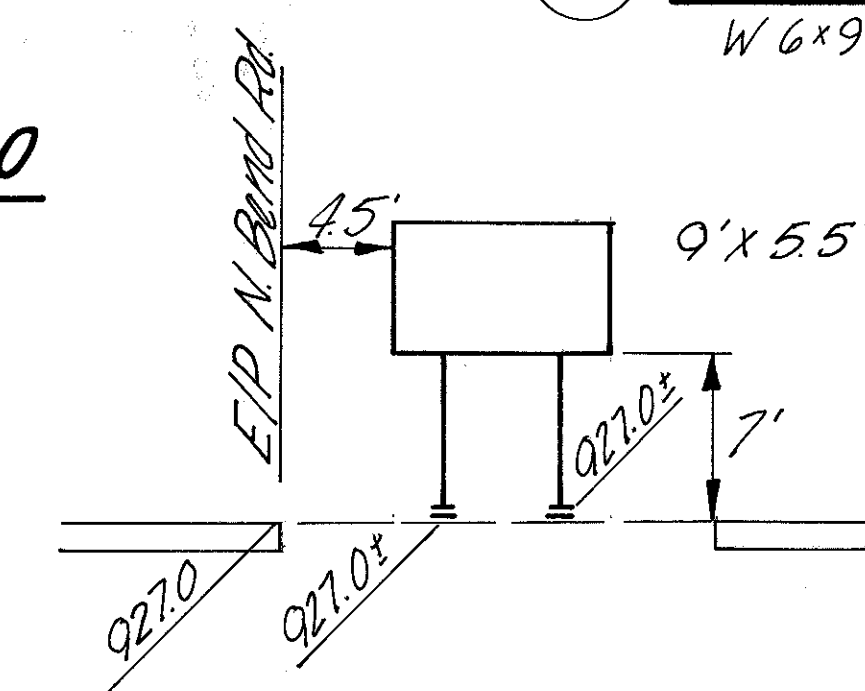
MATERIAL LIST

Qty.	Item	Unit	Description
540	632	Lin.Ft.	Loop Detector Pavement Cutting
1085	632	Lin.Ft.	Loop Detector Wire, Type E

Quantities Carried to General Summary Sheet 2



(131) STA. 849+00 I-74 (W.B.)

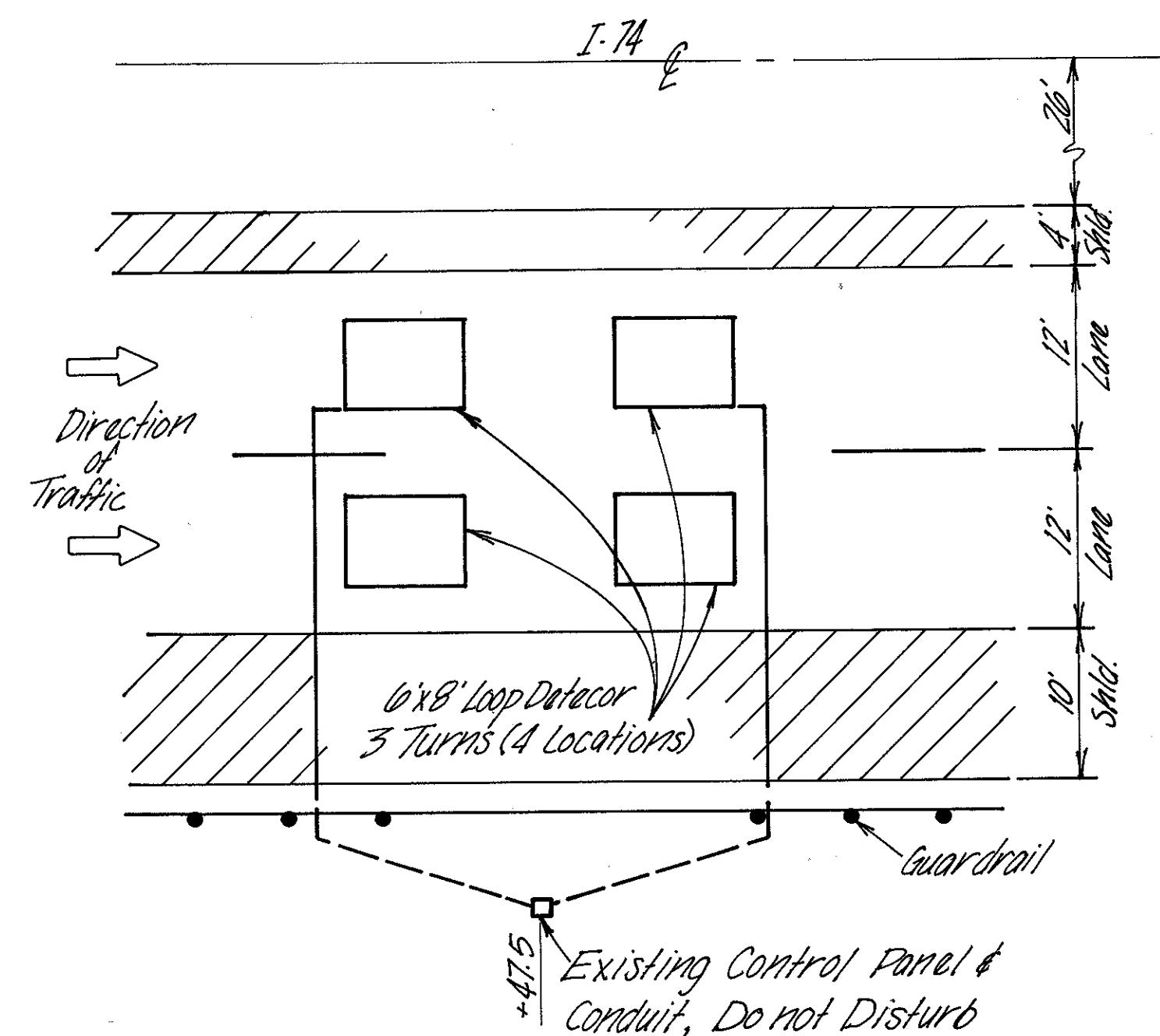


(121) STA. 24+15 NORTH BEND RD. (R.)

W6x9 w/ Breakaway Connections

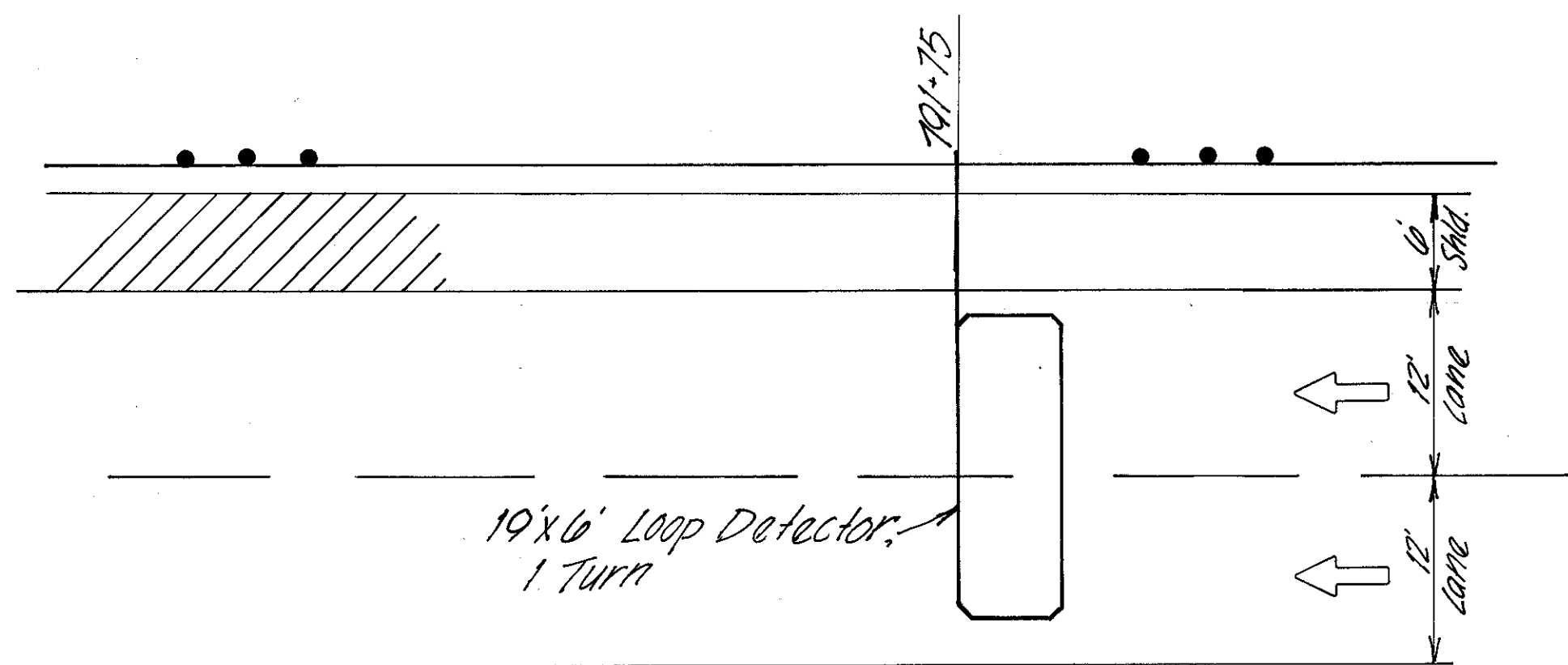
Supports: 17.5', 17.5'

Spacing: 1.98', 5.04', 1.98'

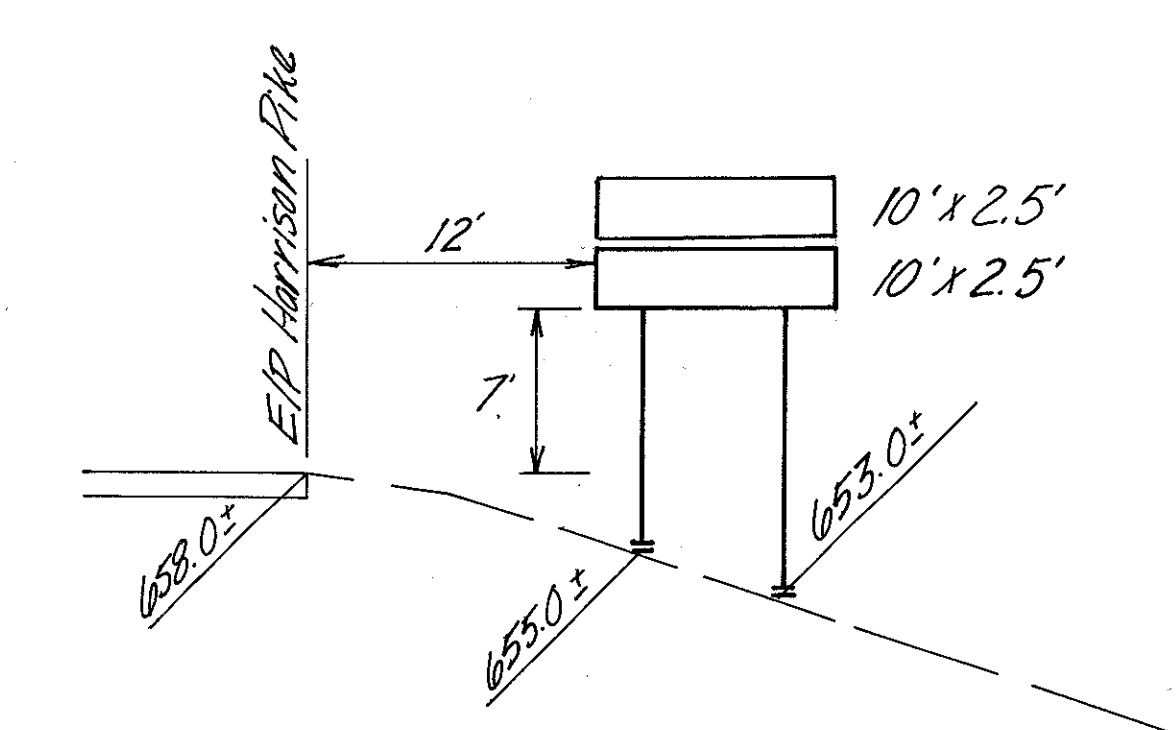


LOOP DETECTOR DETAIL STA. 712+47.5 EB.

Note: For Additional Notes and Details See Std. Dwg. TC82.10



LOOP DETECTOR DETAIL STA. 791+75 RAMP N



(76) STA. 79+60 HARRISON PIKE (L.)

Calculated by: G.WHITE
Checked by: K.Spock

HAM-74-11J0

OHIO
FHWA
REGION 5

122
132

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	BRIDGE NAME		I-74 over Harrison Rd.		I-74 over Haf1 Rd.		Race Rd. over I-74	North Bend over I-74	I-74 over Shephard Creek Rd.	
					BRIDGE NUMBER	HAM-74 1116L	HAM-74 1116R	HAM-74 1292L	HAM-74 1292R	HAM-74 1335	HAM-74 1466	HAM-74 1618L	HAM-74 1618R	
202	98200	1,154	Lin.Ft.	Aluminum Railing and Post Removed for Storage	642	512								
202	23501	1,644	Sq.Yds.	Wearing Course Removed, as per Plan	1,644	-								
202	98000	L.S.	Lump Sum	Abutment Backwall Removal, as per Plan	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.
202	98000	L.S.	Lump Sum	Removal of Existing Curbs and Parapets, as per Plan	L.S.	L.S.								
509	12400	8,000	Lbs.	Reinforcing Steel, Grade 60	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
509	15800	21,021	Lbs.	Epoxy Coated Reinforcing Steel, Grade 60	11,699	9,322								
511	34450	149	Cu.Yd.	Class S Concrete, Parapets, as per Plan	83	66								
511	45700	52	Cu.Yd.	Class C Concrete, Abutment Backwall	11	6	6	6	4	7	7	5		
516	45305	29	Each	Refurbish Bearing Devices, as per Plan	19	10								
516	11800	758	Lin.Ft.	Vertical Extension of Structural Expansion Joints.	153	81	83	83	60	108	110	80		
516	10900	266	Lin.Ft.	Elastomeric Compression Seals for Concrete Joint 3/2" Width						266				
516	11901	35	Lin.Ft.	Horizontal Extension of Structural Expansion Joint, Type I, as per Plan	18	17								
516	11901	16	Lin.Ft.	Horizontal Extension of Structural Expansion Joint, Type II, as per Plan			4	4			4	4		
516	11901	36	Lin.Ft.	Horizontal Extension of Structural Expansion Joint, Type III, as per Plan					16	20				
516	11901	6	Lin.Ft.	Horizontal Extension of Structural Expansion Joint, Type IV, as per Plan						6				
518	12801	28	Each	Scupper Modification, Type I, as per Plan	18	10								
518	12801	29	Each	Scupper Modification, Type II, as per Plan			7	8					8	6
518	12801	16	Each	Scupper Modification, Type III, as per Plan					10	6				
850	30000	4	Cu.Yd.	Full Depth Repair	1	1	0	0	1	1	0	0		
850	12000	7,794	Sq.Yd.	Superplasticized Dense Concrete Overlay (1 3/4" Thick)	1,646	750	664	776	836	1,591	990	541		
850	20000	279	Cu.Yd.	Superplasticized Dense Concrete Overlay (Variable Thickness)	76	31	23	23	25	47	38	16		
850	40000	L.S.	Lump Sum	Test Slab	L.S.									
Special	51267502	887	Sq.Yd.	Sealing of Concrete Surfaces (Epoxy) *	496	391				72	138			
Special	51267500	210	Sq.Yd.	Sealing of Concrete Surfaces *										
Special	51400100	L.S.	Lump Sum	Field Painting of Existing Steel, Surface Preparation, System OZEU *			L.S.	L.S.	L.S.					
Special	51400200	L.S.	Lump Sum	Field Painting of Existing Steel, Prime Coat, System OZEU *			L.S.	L.S.	L.S.					
Special	51400300	L.S.	Lump Sum	Field Painting of Existing Steel, Intermediate Coat, System OZEU *			L.S.	L.S.	L.S.					
Special	51400400	L.S.	Lump Sum	Field Painting of Existing Steel, Finish Coat, System OZEU *			L.S.	L.S.	L.S.					
Special	51426000	L.S.	Lump Sum	Contain, collect, store and evaluate abrasives and paint chips *			L.S.	L.S.	L.S.					
Special	51426010	L.S.	Lump Sum	Shipment and disposal of non-hazardous waste *			L.S.	L.S.	L.S.					
Special	51426020	L.S.	Lump Sum	Shipment and disposal of hazardous waste *			L.S.	L.S.	L.S.					

* See Proposal Note

K|Z|F KZF Incorporated
655 Eden Park Drive
Cincinnati, Ohio 45202
513 621-6211

Architects
Engineers
Interior Designers
Planners

ESTIMATED QUANTITIES
FOR BRIDGES

Hamilton County Ohio
DESIGNED: GTW
CHECKED: KAS
DATE: 10/11/89

REFERENCE: shall be made to Standard Drawing(s):

BR-1	Dated	5-29-79
MC-9A	Dated	1-11-85
SD-1-69	Dated	6-12-69 Sheets 1, 2 & 3
HL-10J3	Dated	5-1-87
HL-20J4	Dated	5-1-87
EXJ-4-87	Dated	1-5-89
RB-1-55	Dated	2-2-59

and to Supplemental Specification:

836	Dated	11-12-85
850	Dated	2-25-86
852	Dated	6-10-87
853	Dated	6-26-78
952	Dated	12-14-88
956	Dated	6-26-78

DESIGN SPECIFICATIONS: "Standard Specifications for Highway Bridges" adopted by AASHTO, 1989, including the Ohio "Supplement" to these specifications.

MAINTENANCE OF TRAFFIC: For maintenance of traffic and sequence of construction, see roadway general notes. All work on bridges shall be performed consistent with the roadway maintenance of traffic notes and closure details.

Item 622, temporary concrete barrier, bridge mounted, as per plan, is carried in the roadway quantities.

DESIGN STRESSES:

Concrete Class S - compressive strength 4500 p.s.i.

Concrete Class C - compressive strength 4000 p.s.i.

Reinforcing Steel - ASTM A615, A616 or A617.
Grade 60 - minimum yield strength 60,000 p.s.i.

DECK PROTECTION METHOD

Superplasticized dense concrete overlay.

EXISTING STRUCTURE VERIFICATION

Details and dimensions shown on these plans pertaining to the existing structure have been obtained from plans of the existing structure and/or from field observations and measurements. Consequently, they are indicative of the existing structure and the proposed work, but they shall be considered tentative and approximate. The contractor is referred to CMS Section 102.05, 105.02, and 513.02.

Contract bid prices shall be based upon a recognition of the uncertainties described above and upon a prebid examination of the existing structure by the Contractor. However, all project work shall be based upon actual details and dimensions which have been verified by the Contractor in the field.

REPLACEMENT OF EXISTING REINFORCING STEEL

Any existing reinforcing bars which are to be incorporated into the new work and which are made unusable by the Contractor's concrete removal operations shall be replaced with new steel at his cost. Any existing reinforcing bars deemed by the Engineer to be unusable because of corrosion shall be replaced with new steel. An allowance of 1000 pounds per Bridge is included in Item 509 for this purpose.

ITEM 202 WEARING COURSE REMOVED, AS PER PLAN

This item shall include removal of the waterproofing membrane, if it is present.

ALUMINUM RAILING REMOVED

The contractor shall carefully remove the existing aluminum railing and stack it neatly along the right-of-way, for subsequent pickup by State forces. Payment for the work described will be included in the price bid for Item 202 - lin. ft. - Aluminum Railing and Posts Removed for Storage.

REMOVAL OF EXISTING CURB AND PARAPET

This item shall include removal and disposal of existing parapet and curb down to the top of the concrete deck, removal of light pilasters, removal of the bulb angle gutter and removal of curb and parapet on abutment wingwalls to the limits shown on the plans. Removal of concrete deck for horizontal extension of expansion joints shall also be included under this item. All areas below the bridge shall be protected from falling debris.

All above mentioned removals shall conform to CMS item 202. All loose and unsound concrete in the area of the new parapet shall be removed. All remaining sound concrete, in the areas where new concrete is to be placed, shall then be roughened to a 1/4" depth. Where portions of the concrete deck or abutment are to be removed, the outline of the removal shall be saw cut. Reinforcing steel to remain shall not be damaged and shall be cleaned of all concrete and loose rust for reuse. When it is necessary to lap existing bars with new, sufficient concrete shall be removed to accommodate the required lap. The following minimum laps shall be used: *5 bar (1'-8"), *6 bar (2'-0"), *7 bar (2'-7"). Steel plates and angles shall be saw cut as indicated on the drawings and all burrs and sharp edges shall be removed. Payment for the work described will be included in the price bid for Item 202 - Lump Sum - Removal of Existing Curb and Parapet, as per plan.

ABUTMENT BACKWALL REMOVAL

This work shall include the removal and disposal of the existing backwall down to the approach slab seat. Items included are concrete, reinforcing steel, cutting of main steel joint angle, which is attached to the deck and the steel angle and anchors in the backwall. Also included under this item is the saw cutting of the railing and sidewalk joint between the deck and abutment. All removals shall conform to CMS item 202. Care shall be taken not to damage existing reinforcing steel that is to remain. Where existing reinforcing is to remain it shall be cleaned of all concrete and loose rust. Payment for the work described will be included in the price bid for item 202 - Lump Sum - Abutment Backwall Removal, as per plan.

ITEM 511 CLASS S CONCRETE, PARAPETS, AS PER PLAN

This item shall include surface preparation, drilling of dowel holes, grouting of dowels, furnishing and placing concrete. Reinforcing steel shall be paid for under item 509. Pay item will include concrete parapet, light pilasters, deck concrete and special end transitions. Cubic yards quantity includes work on bridge deck and wingwalls. The existing concrete surfaces in contact with new concrete shall be thoroughly drenched with clean water and allowed to dry to a damp condition just before placing the new concrete.

See standard drawing BR-1 for deflection joint details. The contractor is also permitted the option of sawcutting the deflection joints. One (1) inch diameter holes, 6 inches deep (minimum) shall be drilled at 15 inch c/c or as shown on the plans. The holes shall be thoroughly cleaned of all dust and deleterious material. The grout shall consist of cement and water using Type I, Type III or shrinkage compensating cement. Clean holes shall be thoroughly saturated with water for a minimum of five minutes prior to placing grout. Immediately prior to grouting, all free standing water shall be removed from holes. After initial mixing, thinning or retempering of grout with extra water shall not be allowed. Hardened or set grout which has become too stiff or dry to provide a good bond shall be discarded. Dowels shall not be installed if the mean air or grout temperature is less than 45 degrees F. Furthermore, after placing, the fresh grout shall be maintained at a temperature of not less than 45 degrees F, for 72 hours and at not less than 40 degrees F, for an additional 4 days. The temperature for the mixed grout, immediately before placing, shall not be less than 50 degrees F, nor more than 90 degrees F. The cement grout shall be cured continuously with wet rags for a minimum period of 3 days without disturbing the dowels. Grout anchoring using epoxy as per SS 853 and 956 or polyester/vinylester resin as per SS 852 and 952 may be used in lieu of the above requirements with the exception that the hole size shall remain at 1 inch diameter.

Concrete shall be as per Item 511, Class S

All of the above work and relevant plan requirements shall be included in the cubic yard price bid for Item 511 Class S Concrete Parapet, as per plan.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY)

This item shall be as described in the proposal. The face, top, and backside of the new concrete parapet shall be sealed. See the proposal for surface preparation requirements, application rates, material requirements and application procedures.

ITEM 516 VERTICAL/HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINTS

Item shall include the furnishing of all material, labor and incidentals necessary to modify, extend, and seal the existing bridge deck joints. All work shall be consistent with the maintenance of traffic and stage construction.

Deck removal for horizontal extension of joints is included under item 202 removal of existing curb and parapet. Deck concrete required for the horizontal extension of the joints shall be Class S conforming to Item 511 and include in Item 516 Horizontal Extension of Structural Expansion Joints for payment.

The strip seal gland shall be inserted in one piece across the bridge deck when the entire joint has been completed. To minimize the traffic control for this operation one half the strip seal shall be installed after the final surface course on one side of the roadway is complete and the other half during placement of the final surface course on the other side of the roadway. Cost of traffic control is included with item 614 in the roadway quantities.

Reference shall be made to standard drawings SD-1-69, Sheets 1 and 2, and EXJ-4-87 sheet 1 thru 5 for additional details, notes, specifications and installation instructions. Paint system shall be OZEU.

The contractor shall verify existing joint layout, sizes of existing structural members and prepare shop drawings showing joint modifications, curb plates, extensions, limits of removals and details of new deck, parapet, and abutment construction. Shop drawings under this item may be prepared after fabrication in order to speed construction.

The contractor shall make necessary measurements and prepare sketches, drawings, tables, etc. The engineer shall have authority and responsibility for ensuring that the fabricated steel is acceptable. Technical assistance will be provided on request by the Bureau of Bridges. Mill test reports and shipping documents shall be submitted to the engineer for review and approval prior to incorporating steel items into the work, as required by 501.07. After fabrication the contractor shall submit shop drawings to the engineer for review and approval to ensure that the drawings depict the steel as actually incorporated into the work. The engineer will then send one approved set to the Bureau of Bridges for information. The fabricator shall furnish a 35 millimeter microfilm copy of each shop drawing, which shall be mounted on an aperture card as specified in 501.05.

The quantity shall be the actual linear feet of joint extended.

Basis of payment:

Payment will be made at contract prices for:

Item 516 - Lin. Ft. - Vertical Extension of Structural Expansion Joint.

Item 516 - Lin. Ft. - Horizontal Extension of Structural Expansion Joint, Type →, **A6 PER PLAN.**

ITEM SPECIAL - SEALING OF CONCRETE SURFACES

This item shall be as described in the proposal. The entire circumference of the shoulder pier columns from the ground line to the bottom of the pier cap shall be sealed. See the proposal for surface preparation requirements, application rates, material requirements and application procedures.

ELASTOMERIC COMPRESSION SEALS FOR CONCRETE JOINT 3 1/2" WIDTH

This item shall include the furnishing of all material, labor and incidentals necessary to seal the longitudinal median joint on the North Bend Road Bridge. The compression seal shall be WJ-350 per Watson Bowman ACME, H-3500 per D.S. Brown Co. or an approved equivalent. The closed cell neoprene sponge pieces which go at the ends of the compression seal shall be provided by the compression seal manufacturer. Seal to be installed per manufacturer's installation instructions. Payment will be made per linear feet of accepted joint.

ITEM 516 - REFURBISH BEARING DEVICES, AS PER PLAN

This item shall include all work necessary to properly align bearings as well as their cleaning and painting. Included shall be the required jacking and temporary support, disassembly of the bearings, hand cleaning (grinding if necessary), sandblasting and painting (System OZEU) as required by 514, replacement of any damaged sheet lead (711J9), realignment of the upper bearing plate by removing existing welds and rewelding so that the bearings are aligned at 60 degrees F., reassembly of the bearings, and removal of the jacks. Shim plates to be used to make up for any loss of material or unevenness caused by grinding. All work shall be to the satisfaction of the project engineer. The contractor shall submit his method of jacking the bearings for prior approval. See standard drawing RB-1-55 for bearing details. At the contractor's option new bearings may be provided at no additional cost to the state. Payment for all the above described labor and materials will be made at the contract price bid for Item 516 - each - Refurbish Bearing Devices, as per plan.

SCUPPER MODIFICATION, AS PER PLAN

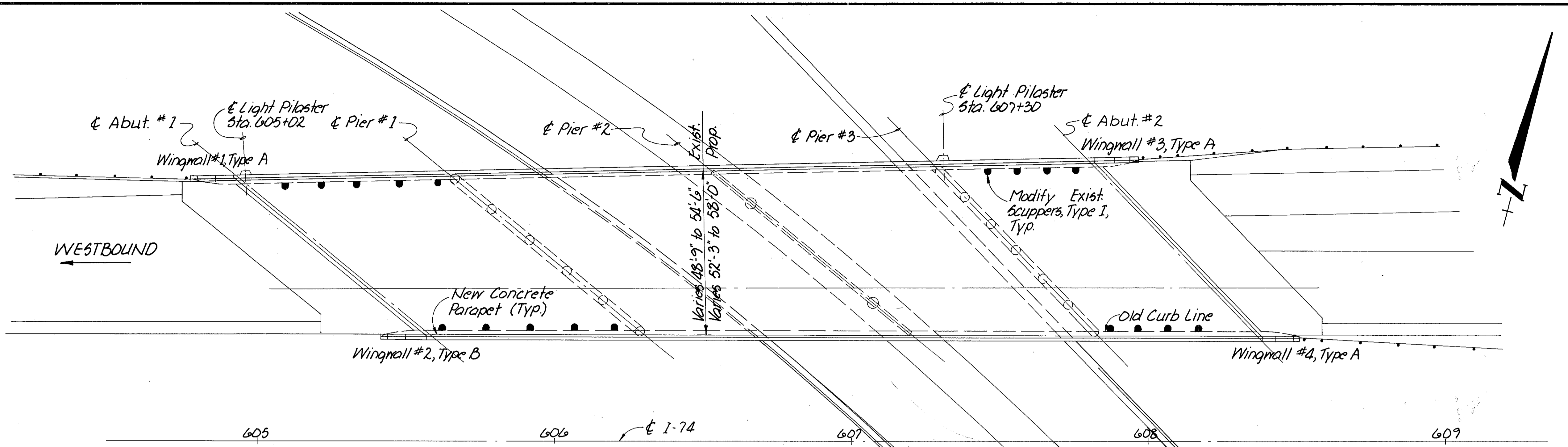
The existing scuppers shall be modified by the vertical extension of the 3/8" or 1/2" bars where indicated and removing every other existing cross bar. The bars shall be 1-1/2" high and shall conform in shape to the existing scuppers including cross bars. The contractor shall field measure the existing scuppers to provide the proper scupper modifications. The welds shall be 3/16" fillets minimum. Steel for the scupper modifications shall be galvanized. Sandblast bottom of scupper and fill with deck overlay material as shown. All work shall be to the satisfaction of the Engineer and shall be included in Item 518 - each - Scupper Modification, by Type, as per plan.

K Z F	KZF Incorporated 655 Eden Park Drive Cincinnati, Ohio 45202 513 621-6211	Architects
		Engineers Interior Designers Planners

2 | 11

GENERAL NOTES
FOR BRIDGES

Hamilton County				Ohio	
DESIGNED	DETAILED	DRAWN	CHECKED	REVIEWED DATE	REVISED
GTW	KJO	—	KAS	WBS 10/11/89	



EXISTING STRUCTURE

TYPE: Continuous Rolled Steel Beams with Reinforced Concrete Deck & Superstructure & 10" High x 2'-0" Wide (Lt. Bridge) & 2'-3" Wide (Rt. Bridge) Curb with Concrete Parapet & Aluminum Railing.

SPANS: Left Bridge - 72'-0", 90'-0", 67'-0", 53'-6"
Right Bridge - 53'-0", 66'-0", 58'-0", 46'-6"

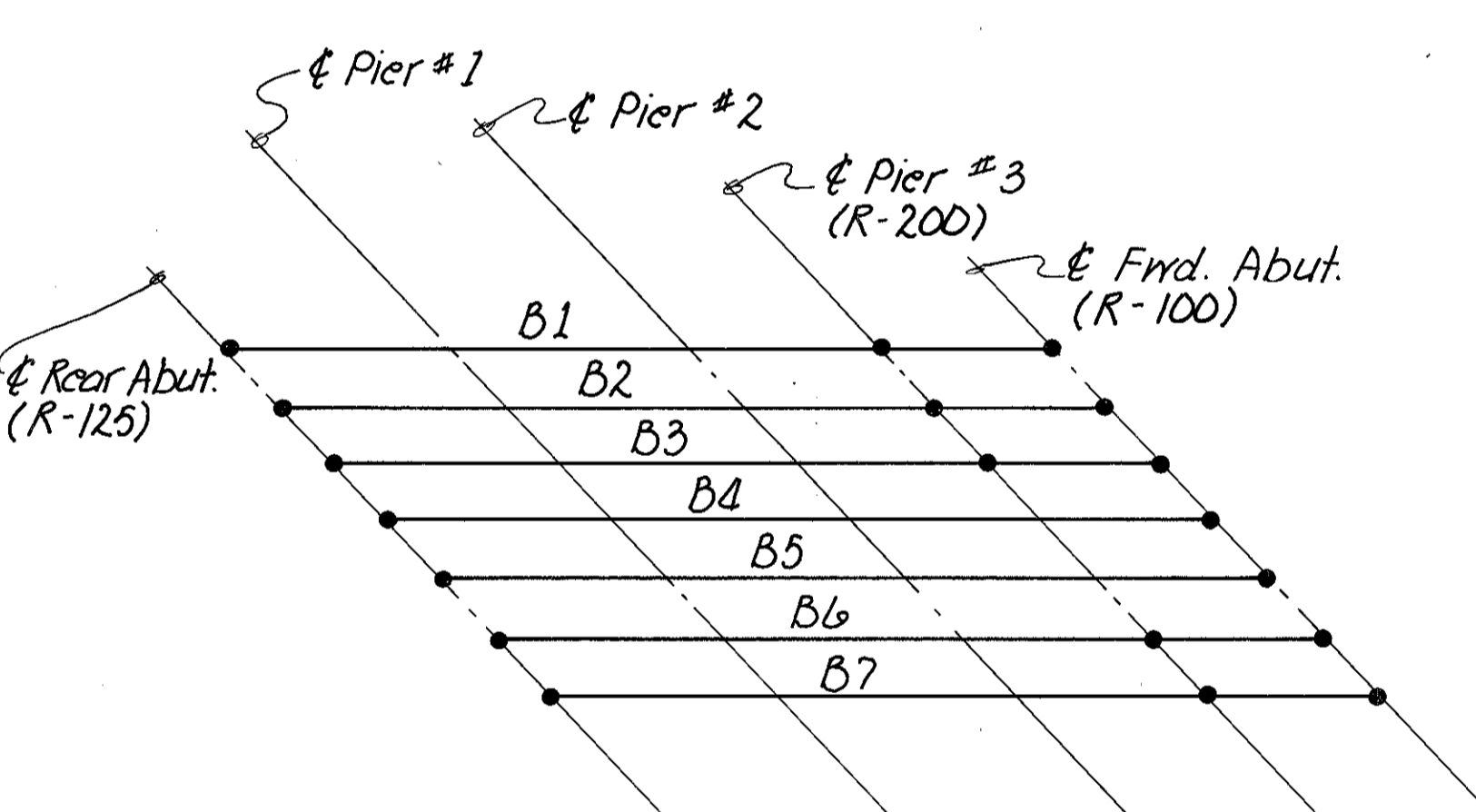
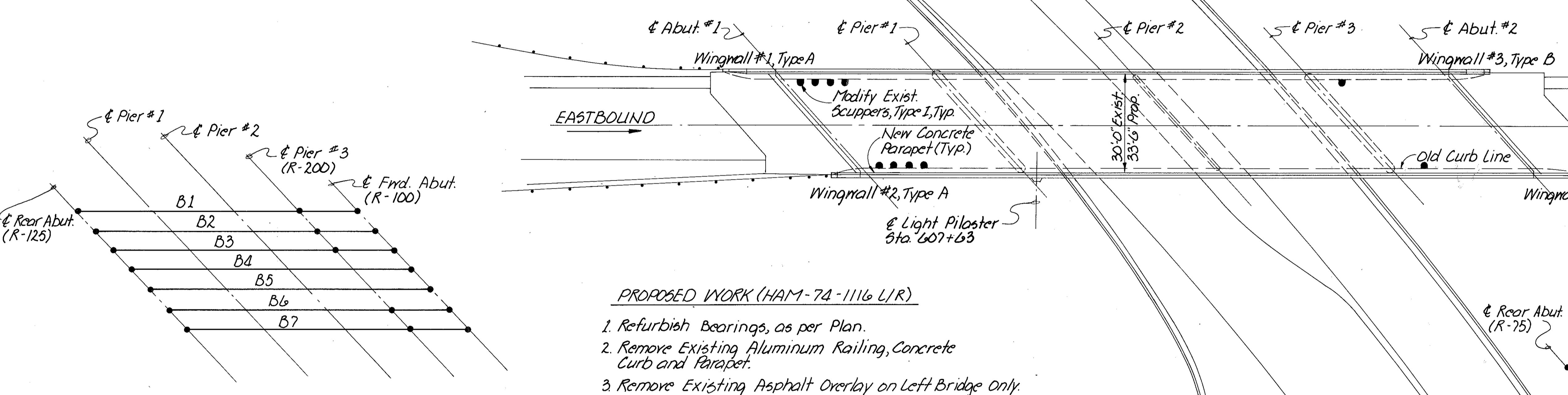
YEAR BUILT: 1964 Lt. Bridge, 1969 Rt. Bridge

WEARING SURFACE: Left Bridge - 1/2" Asphalt Overlay
Right Bridge - 1" Monolithic Concrete.

GENERAL CONDITION: Good

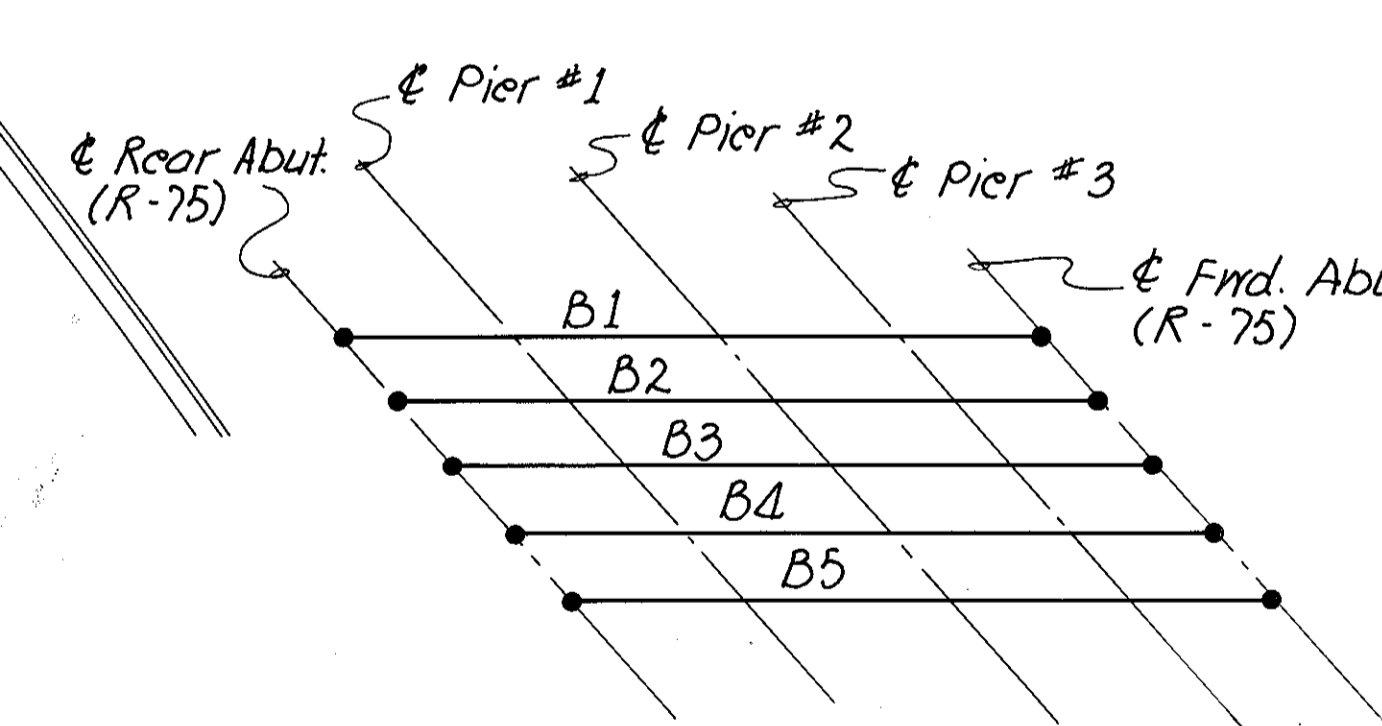
SKEW: Left Bridge - 49°19'30" R.F.
Right Bridge - 42°00'00" R.F.

ALIGNMENT: Tangent



- PROPOSED WORK (HAM-74-1116 L/R)**
1. Refurbish Bearings, as per Plan.
 2. Remove Existing Aluminum Railing, Concrete Curb and Parapet.
 3. Remove Existing Asphalt Overlay on Left Bridge Only.
 4. Vertically Extend Existing Expansion Joints.
 5. Extend Expansion Joints Horizontally to New Curb Line-Type I.
 6. Modify Existing Scuppers - Type I.
 7. Build New Concrete Parapets.
 8. Repair Deck - Per 55 850.
 9. Overlay Bridge Deck with Superplasticized Dense Concrete. Per 55 850.

GENERAL PLAN
HAM-74-1116 L & R

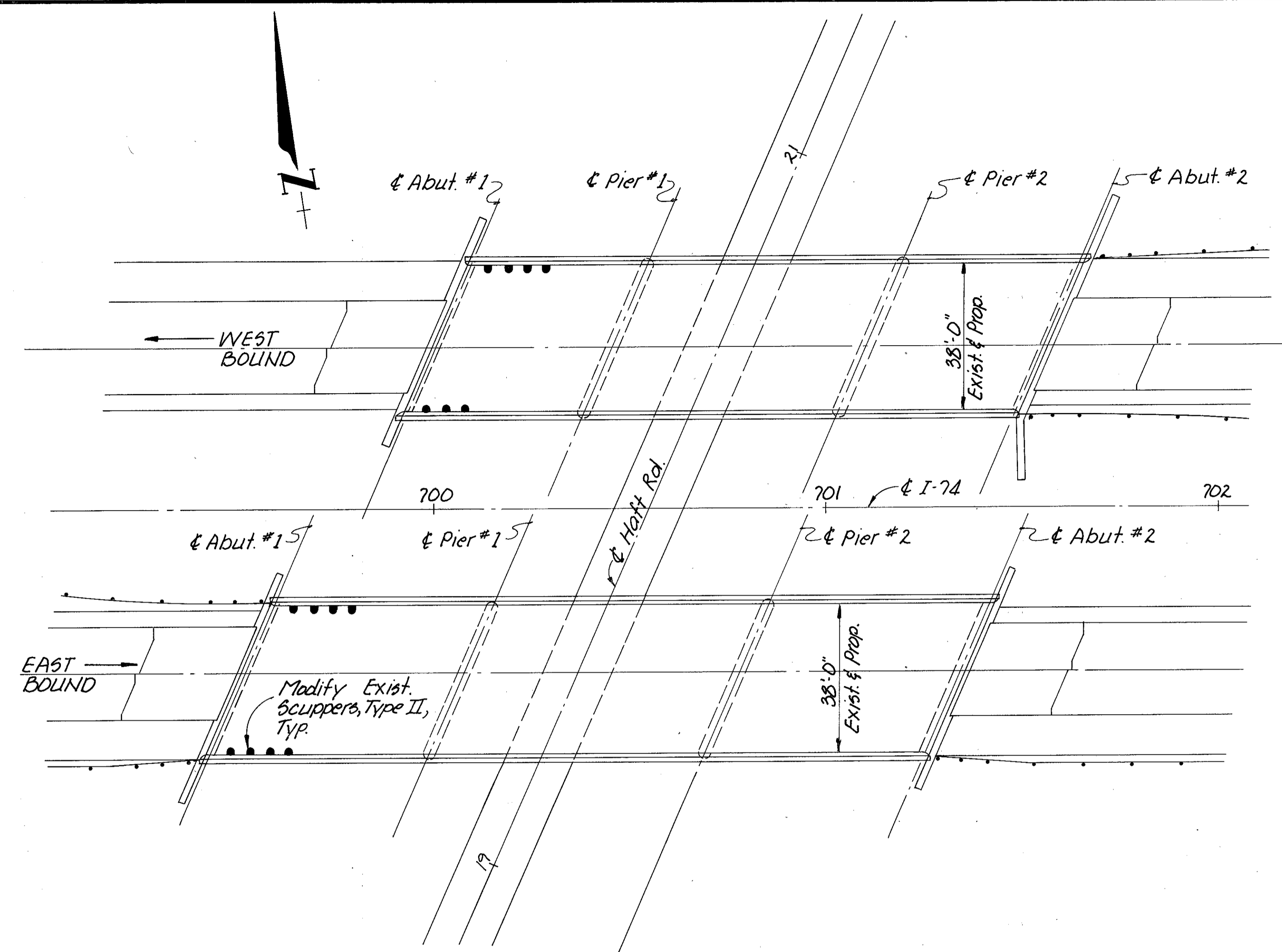


Reference Drawings

1. For Quantities, See Sheet 1111.
2. For Bridge General Notes, See Sheet 2111.
3. For Parapet Details, See Sheets 6111 & 7111.
4. For Wingwall Details, See Sheet 8111.
5. For Joint Details, See Sheet 9111.
6. For Scupper Modification Details, See Sheet 11111.
7. For Maintenance of Traffic & Stage Const. See Sheets 1321 & 1322.
8. For Closure Details See Sheets 1321 & 1322.

Indicates Which Bearings Must be Refurbished.

KZF		KZF Incorporated 635 Eden Park Drive Cincinnati, Ohio 45202 513 621-6211	Architects Engineers Interior Designers Planners
GENERAL PLAN			
BRIDGE NO. HAM-74-1116 L & R I-74 over HARRISON RD.			
DESIGNED: GTW		DETAILED: KJO	DRAWN: KAS
CHECKED: (21) (27) (32) (132)		REVIEWED DATE: 11/25/08	REVISION: 3 11

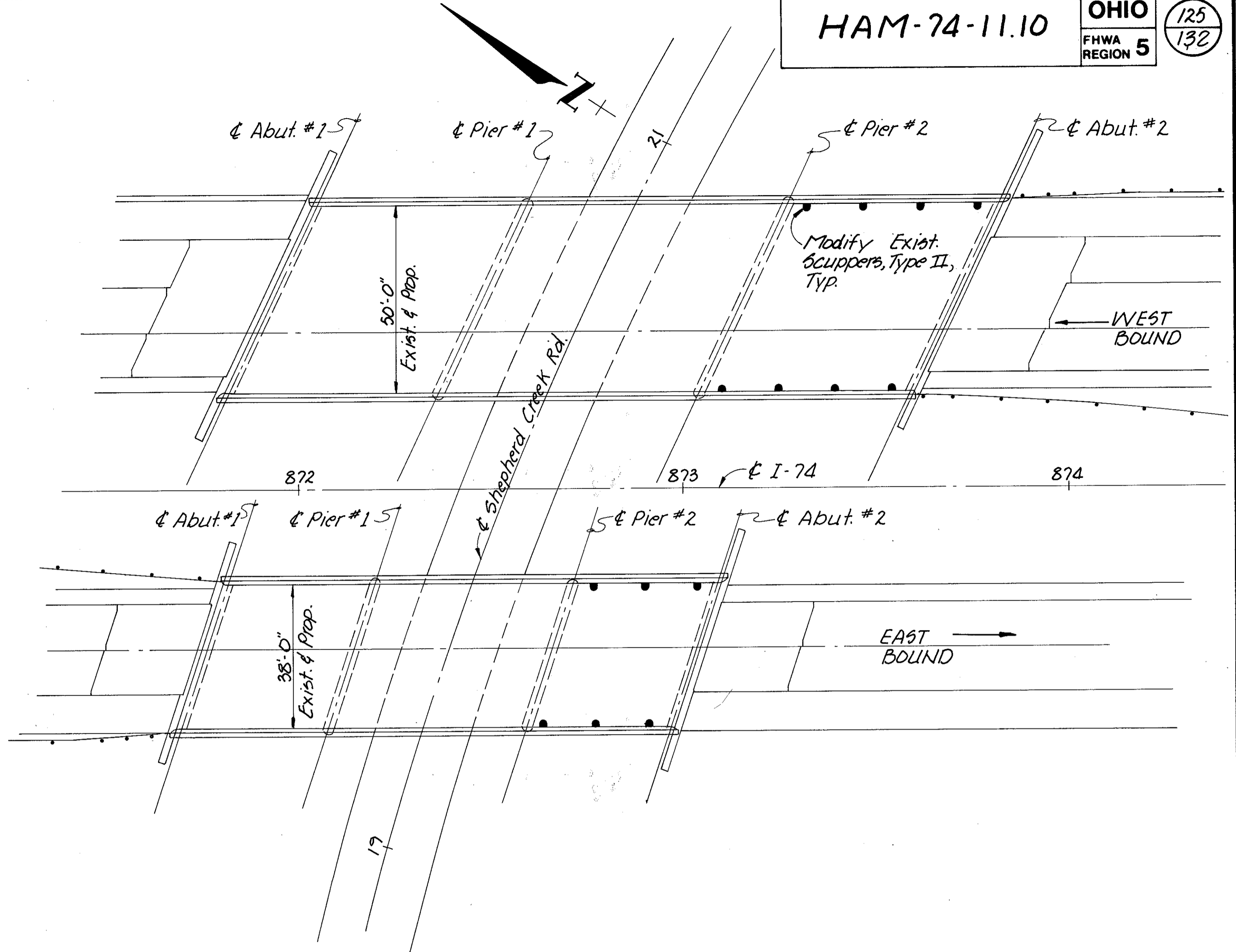


GENERAL PLAN
 HAM-74-1292 L/R

PROPOSED WORK (HAM-74-1292 L/R)

1. Repair Deck - Per 55 850.
2. Vertically Extend Existing Expansion Joints.
3. Extend Expansion Joints Horizontally - Type II.
4. Modify Existing Scuppers - Type II.
5. Overlay Bridge Deck with Superplasticized Dense Concrete per 55 850.
6. Paint Existing Structural Steel, as per Item Special, System ORELI.

EXISTING STRUCTURES	
TYPE: Continuous Rolled Steel Beams with Reinforced Concrete Deck & Superstructure & 10" High x 1'-0" Wide Safety Curb with Concrete Parapet & Aluminum Railing.	
SPANS: HAM-74-1292 Left Bridge - 45'-6", 65'-0", 45'-6" Right Bridge - 56'-0", 70'-6", 56'-0"	
HAM-74-1618 Left Bridge - 54'-6", 68'-0", 54'-6" Right Bridge - 38'-0", 51'-0", 38'-0"	
YEAR BUILT: 1969 - 1970	
WEARING SURFACE: 1" Monolithic Concrete	
GENERAL CONDITION: Good	
SKEW: HAM-74-1292 - 23° 36' 00" L.F. HAM-74-1618 - Lt. Bridge - 25° 00' 00" L.F. Rt. Bridge - 17° 46' 30" L.F.	
ALIGNMENT: Tangent	



GENERAL PLAN
 HAM-74-1618 L/R

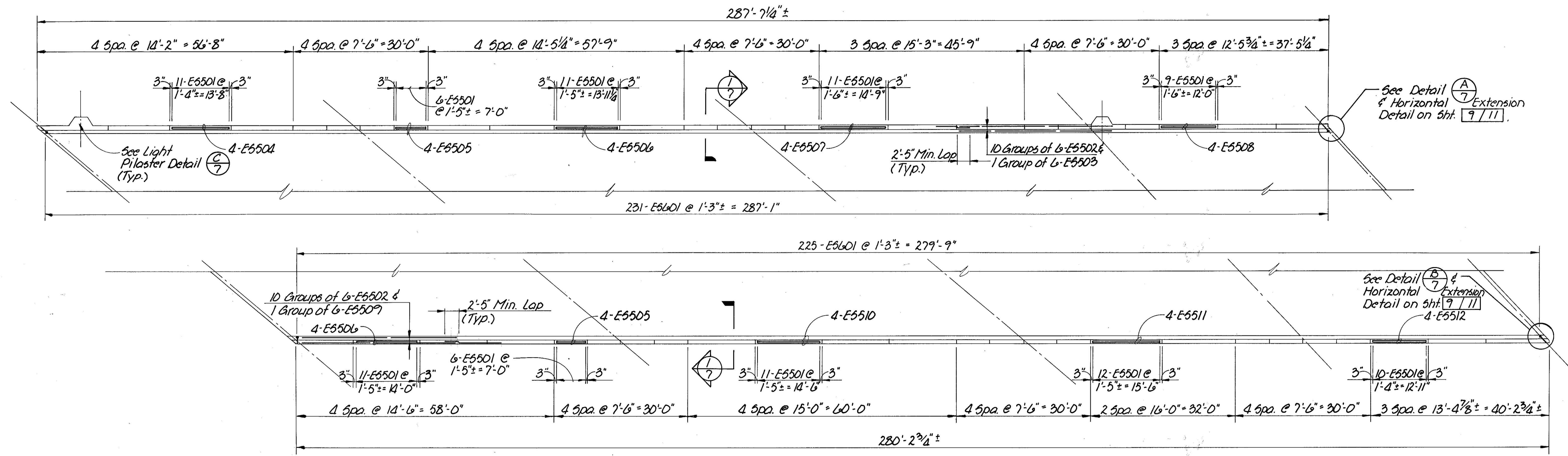
PROPOSED WORK (HAM-74-1618 L/R)

1. Repair Deck - Per 55 850.
2. Vertically Extend Existing Expansion Joints.
3. Extend Expansion Joints Horizontally - Type II.
4. Modify Existing Scuppers - Type II.
5. Overlay Bridge Deck with Superplasticized Dense Concrete per 55 850.

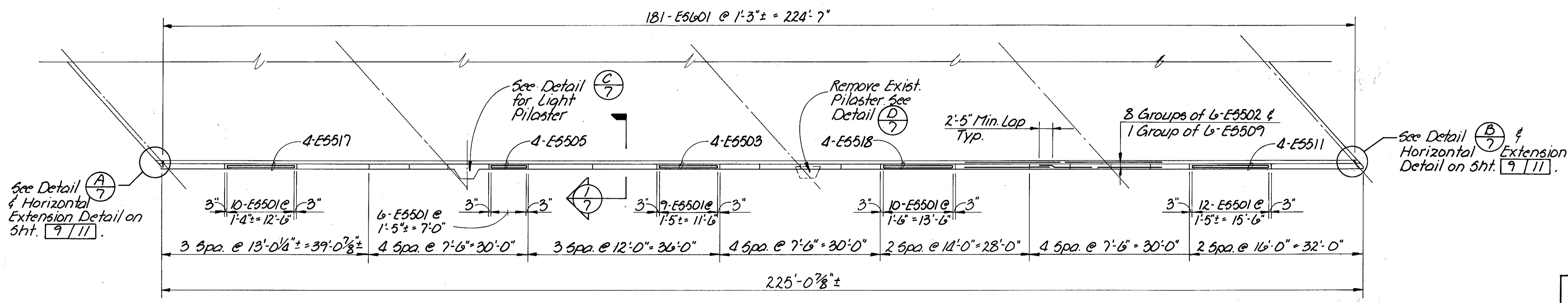
Reference Drawings

1. For Bridge General Notes, See Sheet [2/11].
2. For Quantities, See Sheet [1/11].
3. For Scupper Modification Details, See Sheet [11/11].
4. For Joint Details, See Sheet [9/11].
5. For Maintenance of Traffic & Stage Construction See Sheets (22/132) & (23/132).
6. For Closure Details See Sheets (27/132) & (29/132).

K Z F KZF Incorporated 655 Eden Park Drive Cincinnati, Ohio 45202 513 621-6211		4 11	
		Architects Engineers Interior Designers Planners	
GENERAL PLAN BRIDGE NO. HAM-74-1292 L & R I-74 over Haft Road BRIDGE NO. HAM-74-1618 L & R I-74 over Shepherd Creek Rd. HAMILTON COUNTY OHIO			
DESIGNED GTW	DETAILED KJO	DRAWN KAS	CHECKED WCS
REVIEWED DATE 10/18/89		REVISED	



DEFLECTION JOINT SPACING
(HAM-74-1116 L)

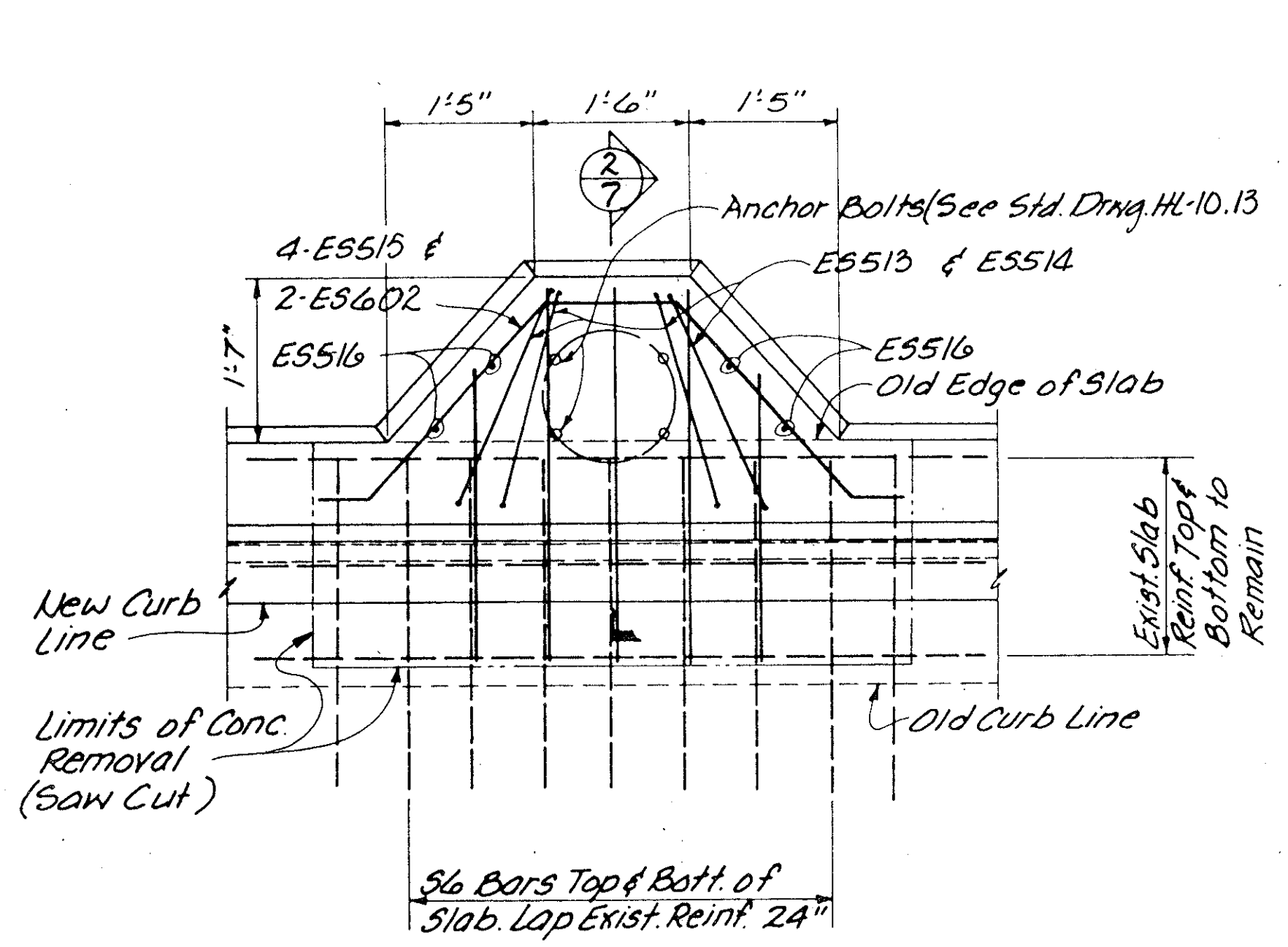


DEFLECTION JOINT SPACING
Right Parapet Shown - Left Parapet Similar Except for Light Pilaster
(HAM-74-1116 R)

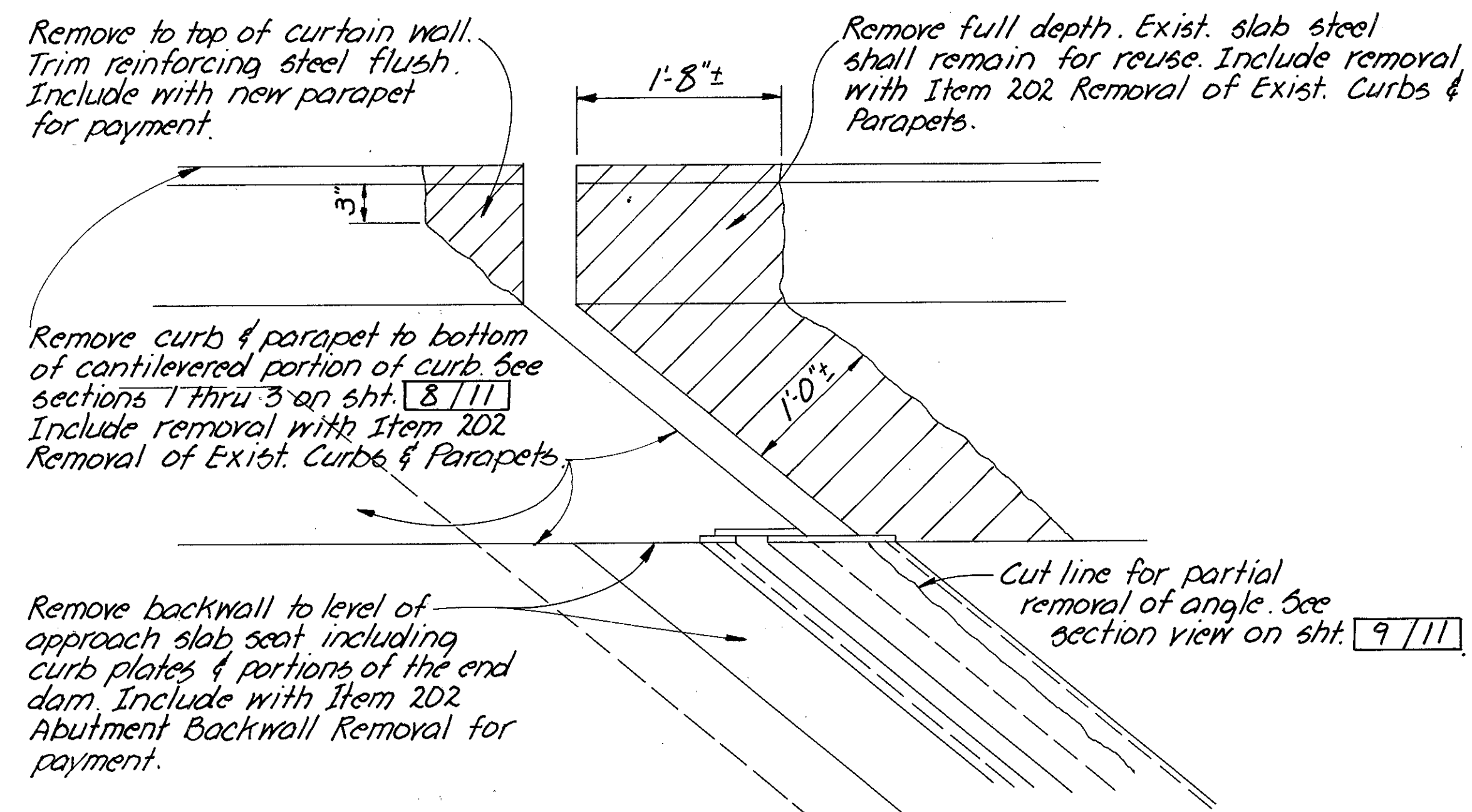
Notes:
1. For Reinforcing Steel Detail See Sheet 3/11.

KZF		KZF Incorporated 655 Eden Park Drive Cincinnati, Ohio 45202 513 621-6211	Architects Engineers Interior Designers Planners
PARAPET DETAILS			
BRIDGE NO. HAM-74-1116 L BRIDGE NO. HAM-74-1116 R			
HAMILTON COUNTY		OHIO	
DESIGNED GTW	DETAILED KJD	DRAWN -	CHECKED KAS
REVIEWED DATE 10/10/89		REVISED	

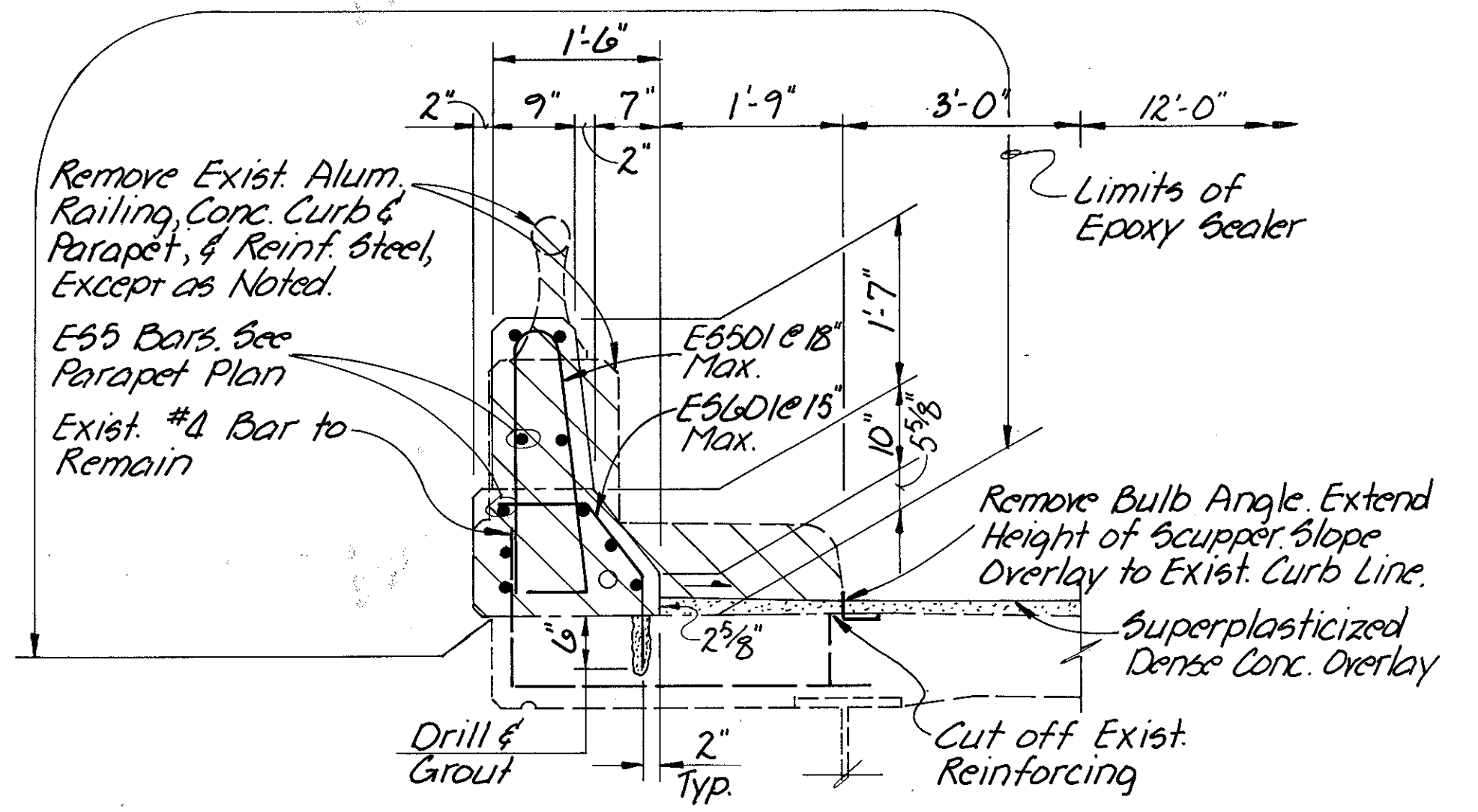
DRAWING 44-231 1116R



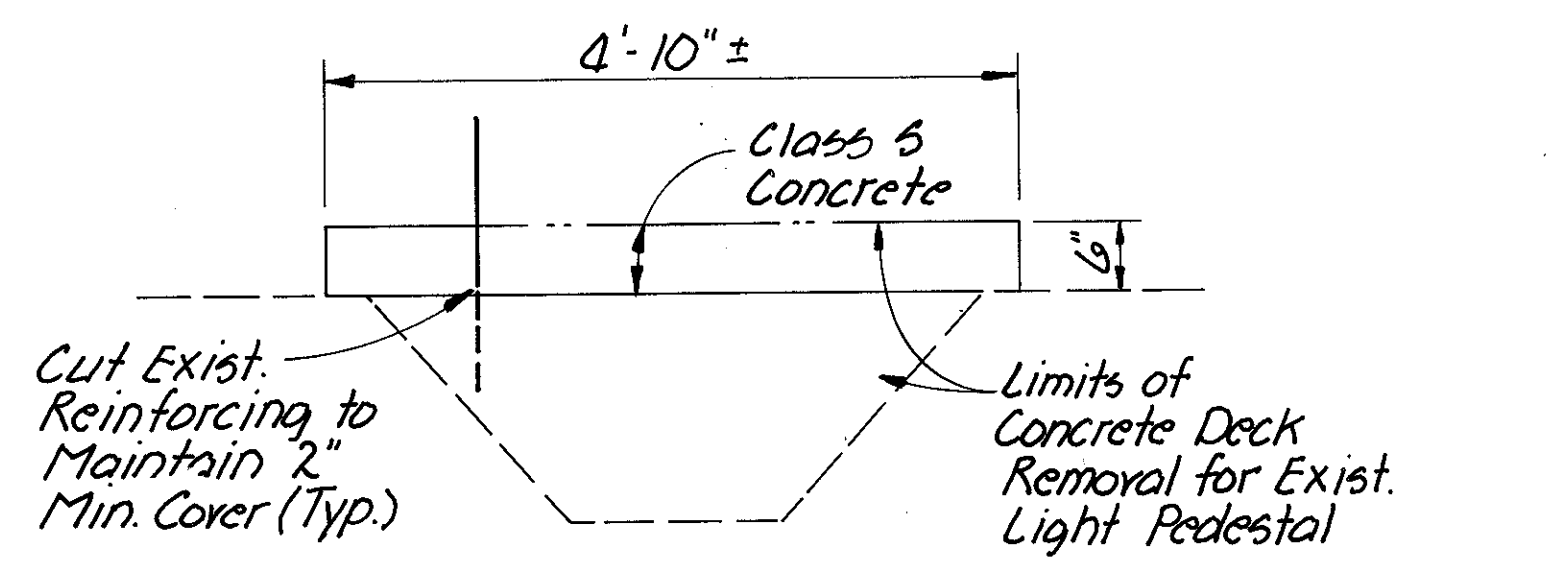
NEW LIGHT POLE PILASTER DETAIL (C)
 7



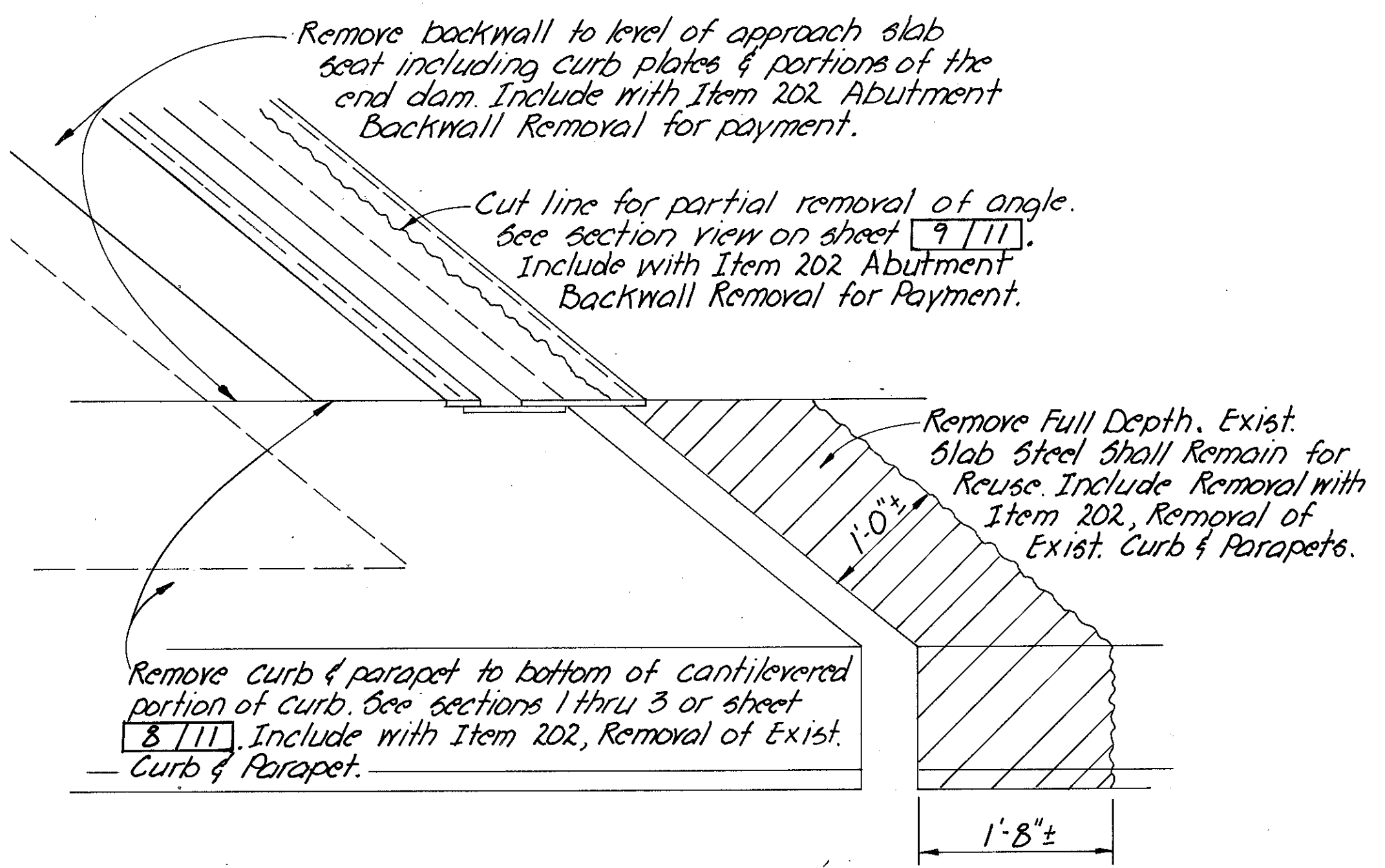
DETAIL (A)
 HAM-74-1116 1/2 R
 (See sht. 6 of 11 for location)
 7



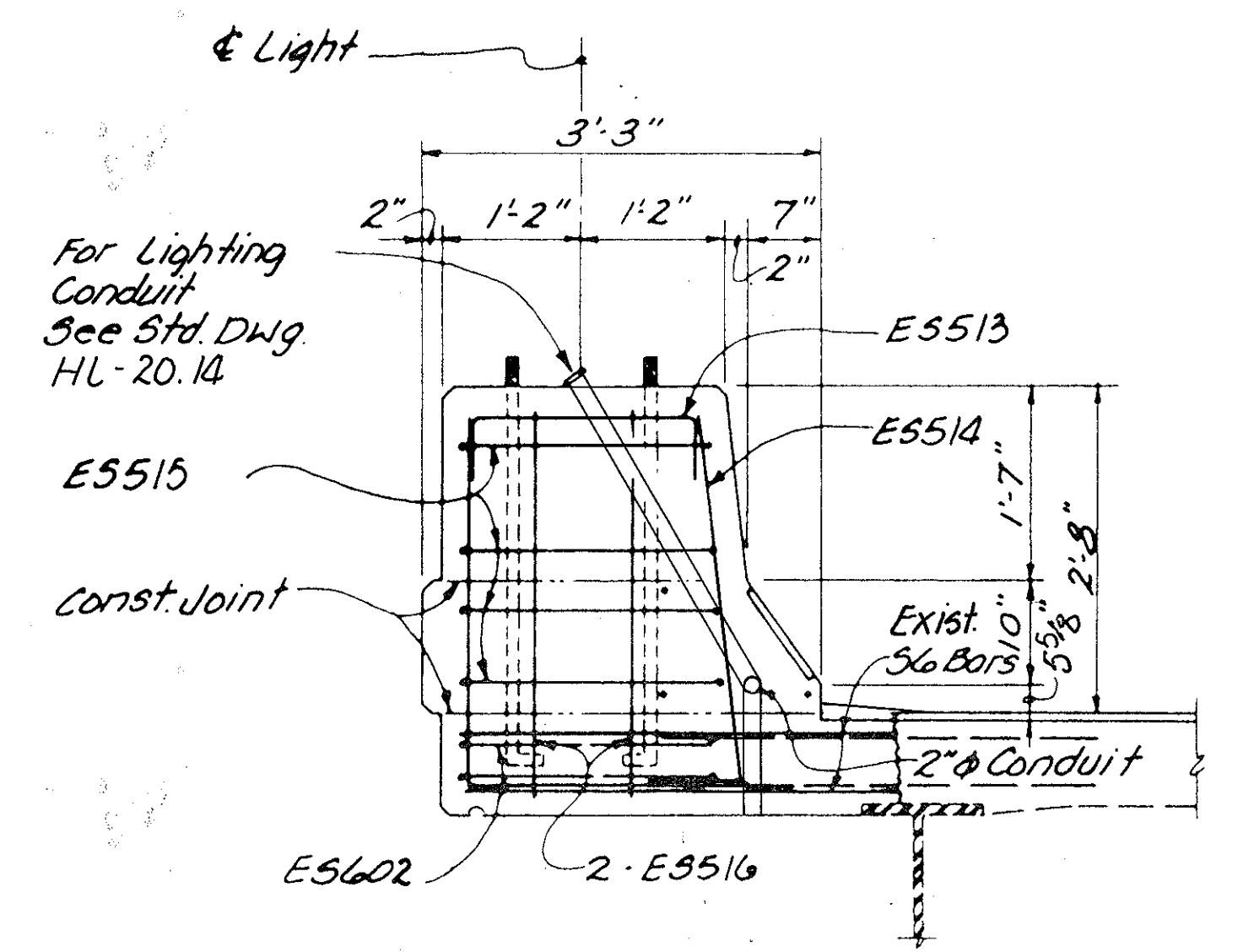
SECTION (1)
 7



LIGHT PILASTER REMOVAL DETAIL (D)
 7

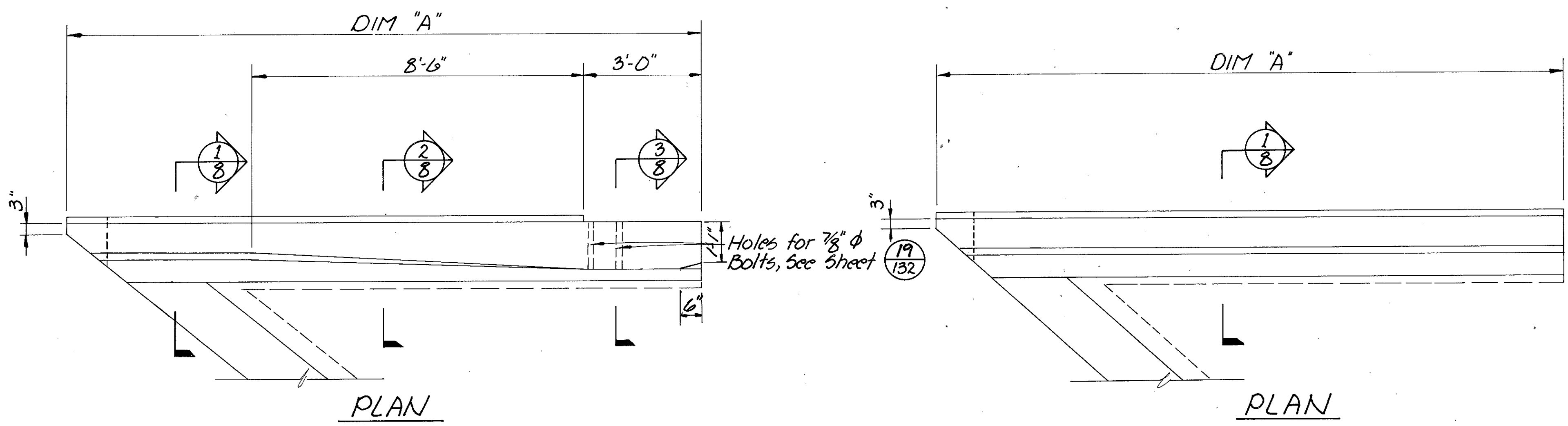


DETAIL (B)
 HAM-74-1116 1/2 R
 (See sht. 6/11 for location)
 7



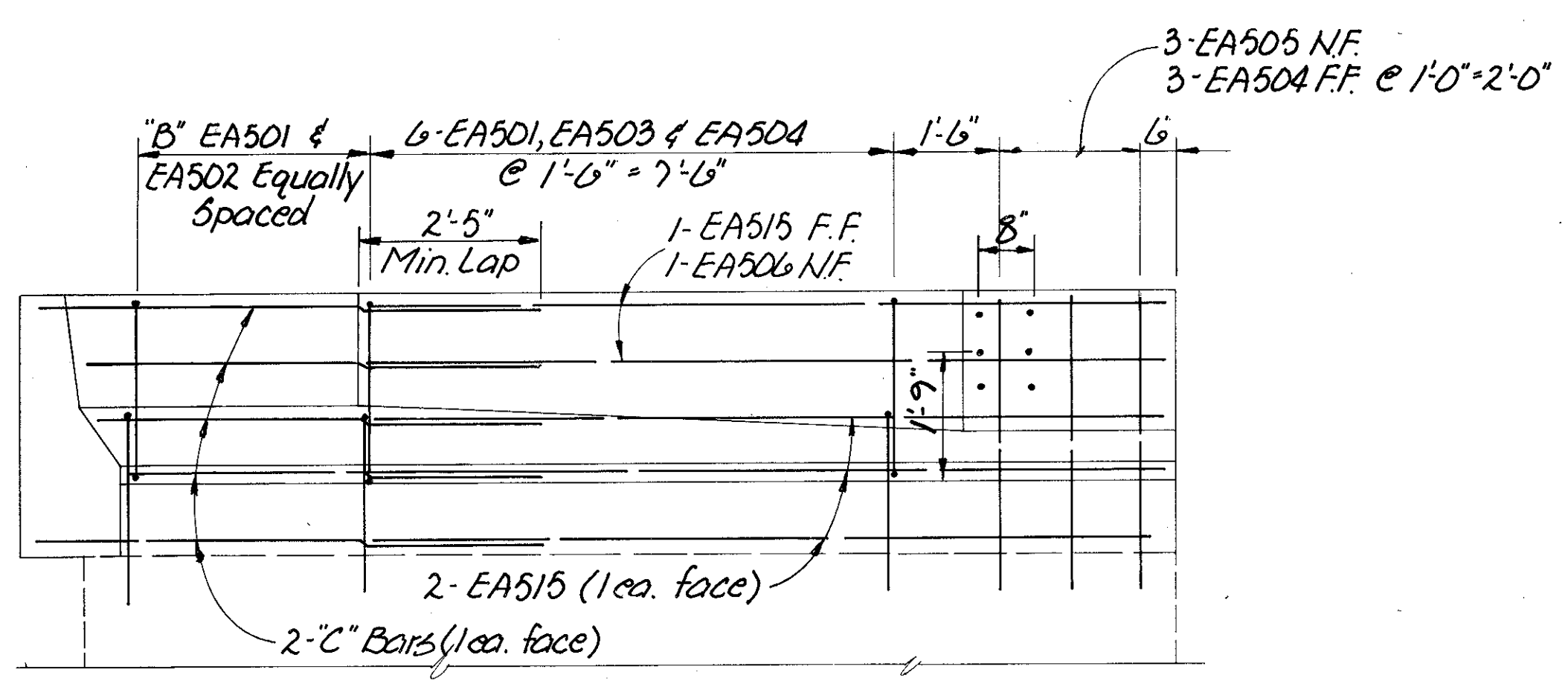
SECTION (2)
 7

KZF		KZF Incorporated 655 Eden Park Drive Cincinnati, Ohio 45202 513 621-6211	Architects Engineers Interior Designers Planners
MISCELLANEOUS DETAILS BRIDGE NO. HAM-74-1116 1/2 R			
HAMILTON COUNTY		OHIO	
DESIGNED GTW	DETAILED KJO	DRAWN -	CHECKED KAS
REVIEWED DATE WBS 10/10/87		REVISED	



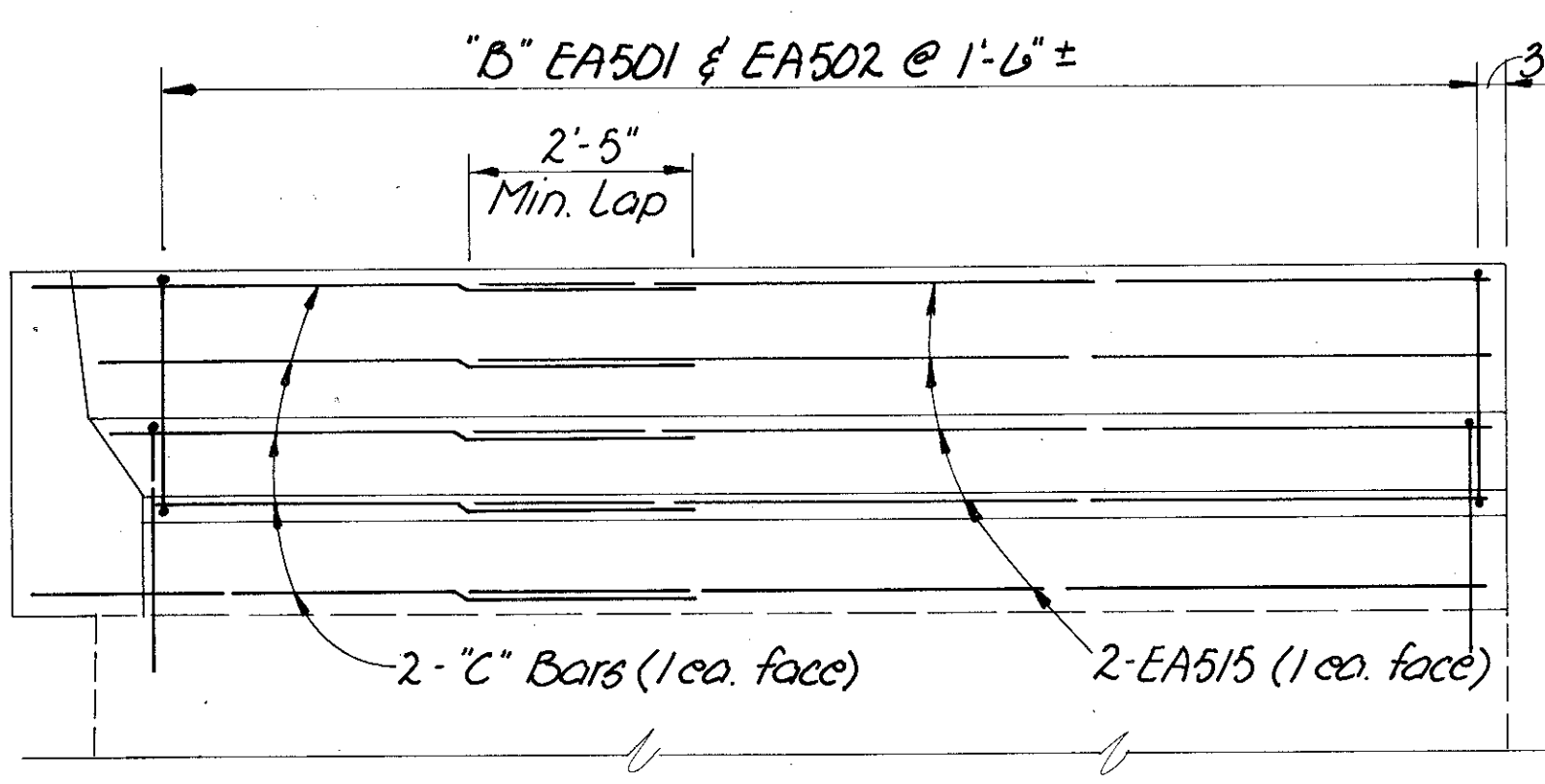
WINGWALL TABLE

BRIDGE NO.	LOCATION	DIM "A"	"B"	BAR "C"
HAM-74 1116 L	W.W. #1	21'-0"	6	EA507
	#2	19'-6 ⁷ / ₈ "	13	EA508
	#3	17'-11 ⁵ / ₈ "	4	EA509
	#4	17'-3 ¹ / ₂ "	3	EA510
HAM-74 1116 R	W.W. #1	15'-6"	2	EA511
	#2	12'-10 ¹ / ₄ "	1	EA512
	#3	18'-10 ¹ / ₄ "	13	EA513
	#4	17'-6"	3	EA514



ELEVATION

TYPE A WINGWALL



ELEVATION

TYPE B WINGWALL

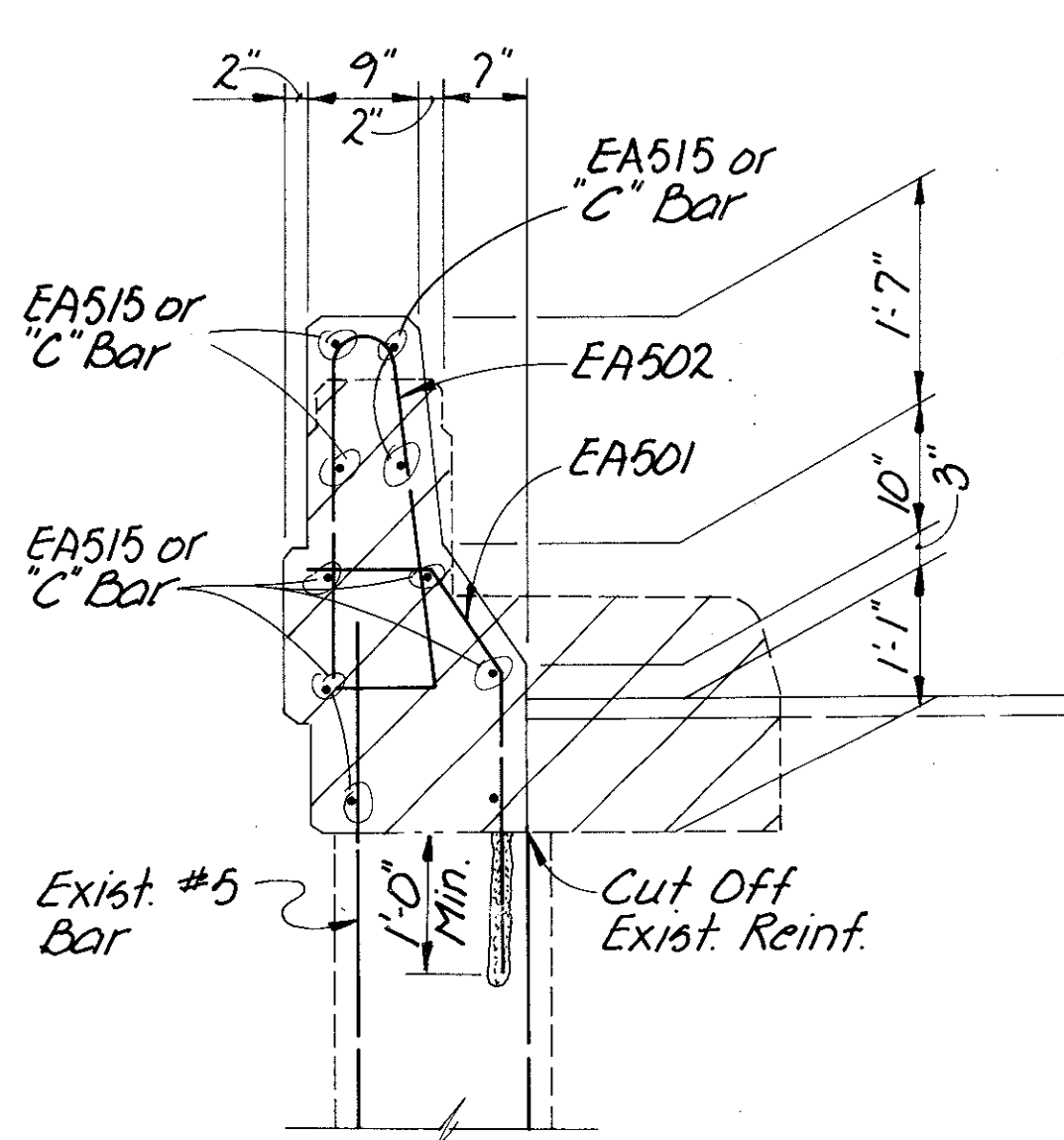
N.F. = Near Face
F.F. = Far Face

HARRISON ROAD - ABUTMENT BAR SCHEDULE

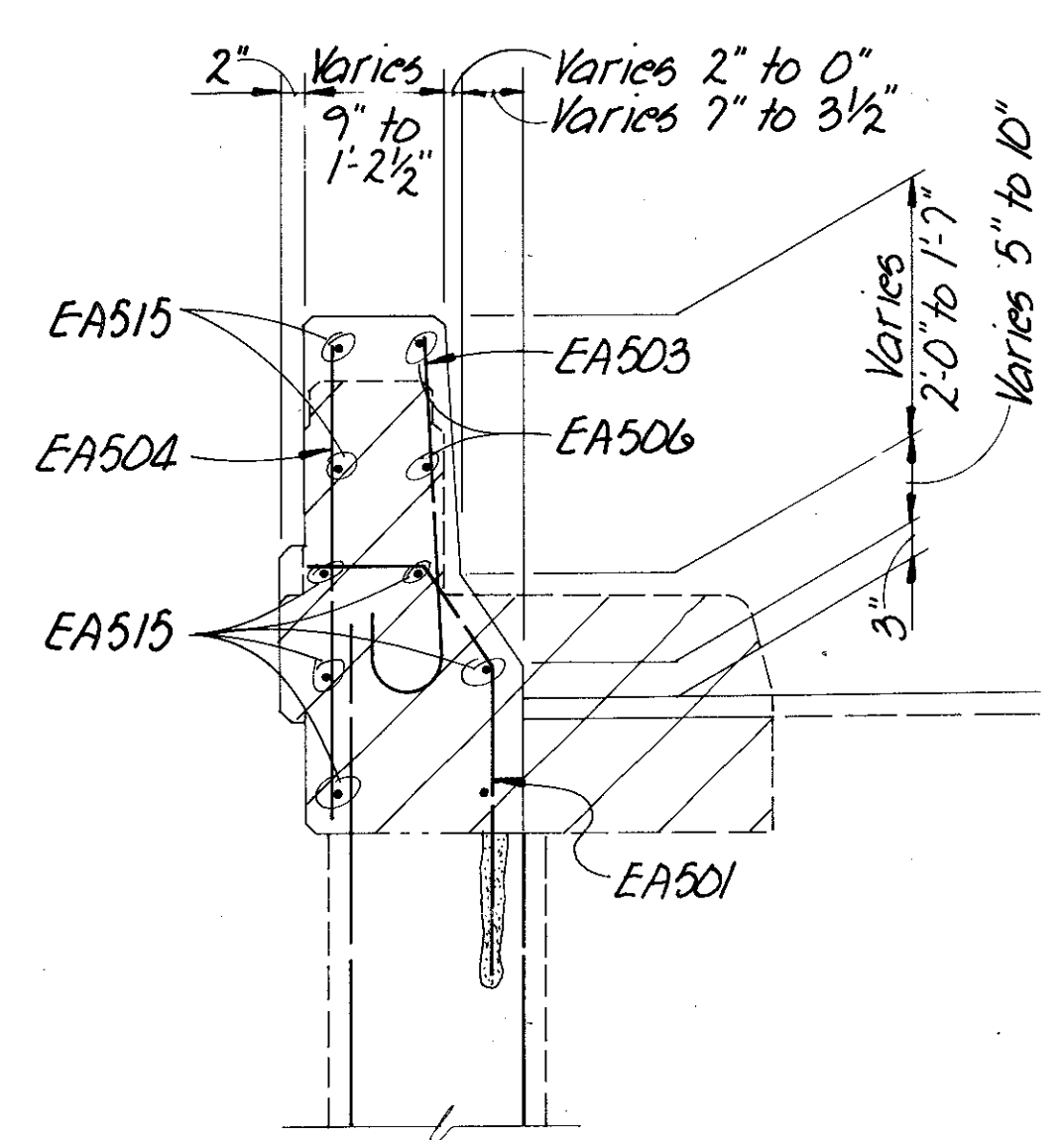
MARK	NUMBER	LENGTH	SHAPE	LEFT BRIDGE	WEIGHT	RIGHT BRIDGE	WEIGHT
EA 501	81	3 - 10	BT	44	176	37	148
EA 502	45	5 - 3	BT	26	142	19	104
EA 503	36	3 - 0	BT	18	56	18	56
EA 504	54	3 - 7	STR	27	101	27	101
EA 505	18	4 - 7	STR	9	43	9	43
EA 506	12	11 - 3	BT	6	70	6	70
EA 507	10	11 - 8	STR	10	122	0	0
EA 508	10	10 - 3	STR	10	107	0	0
EA 509	10	8 - 8	STR	10	90	0	0
EA 510	10	8 - 0	STR	10	83	0	0
EA 511	10	6 - 2	STR	0	0	10	64
EA 512	10	3 - 6	STR	0	0	10	37
EA 513	10	9 - 6	STR	0	0	10	99
EA 514	10	8 - 2	STR	0	0	10	85
EA 515	68	11 - 3	STR	34	399	34	399
TOTAL WT =					1,389		1,206

HARRISON ROAD - SUPERSTRUCTURE BAR SCHEDULE

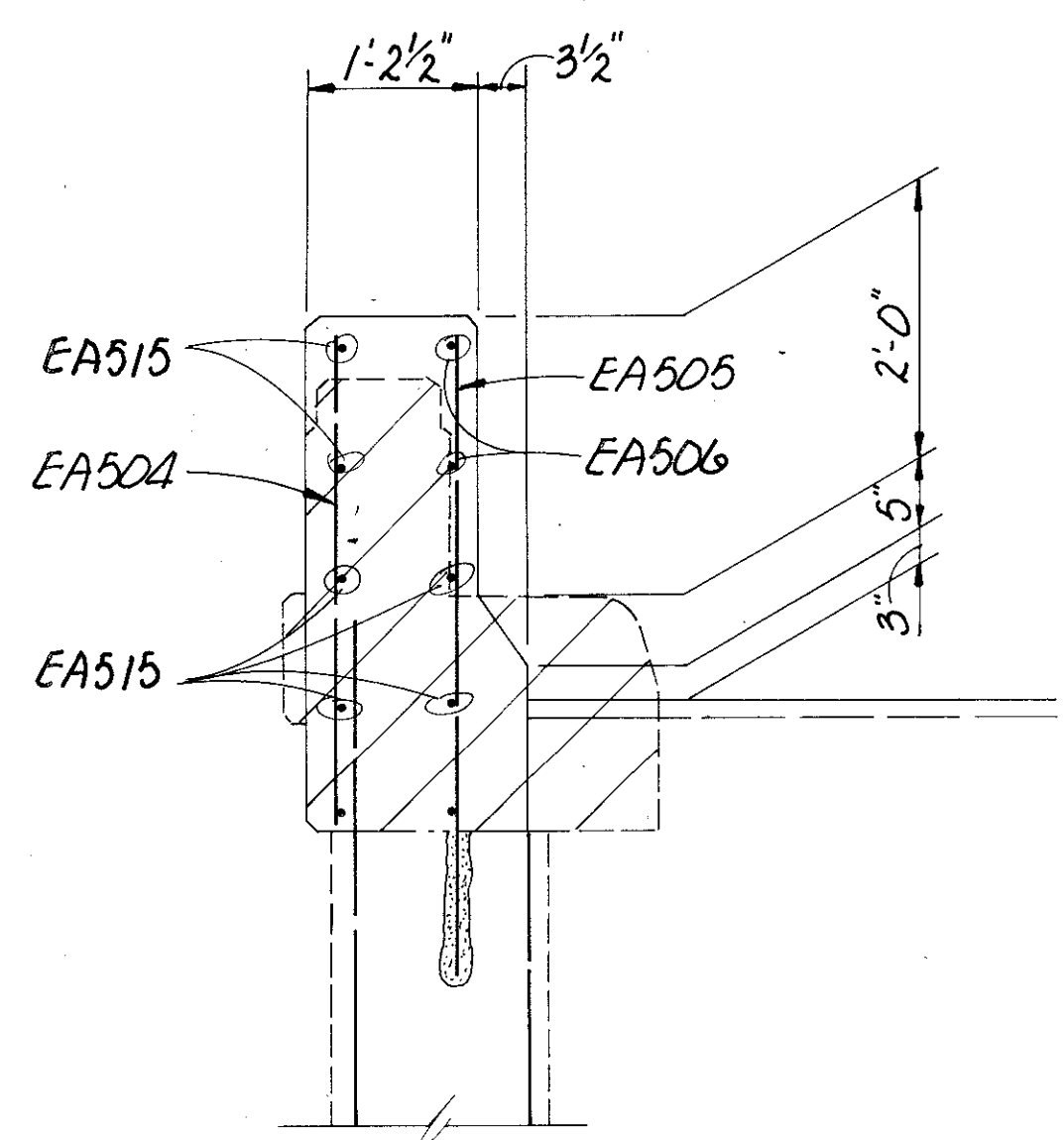
MARK	NUMBER	LENGTH	SHAPE	LEFT BRIDGE	WEIGHT	RIGHT BRIDGE	WEIGHT
ES 801	818	2 - 4	BT	456	1,598	382	1,269
ES 802	6	7 - 2	BT	4	43	2	22
ES 501	780	5 - 3	BT	434	2,376	346	1,895
ES 502	216	30 - 0	STR	120	3,755	96	3,004
ES 503	30	11 - 6	STR	6	72	24	288
ES 504	16	13 - 8	STR	16	228	8	0
ES 505	192	7 - 0	STR	96	701	96	701
ES 506	32	13 - 11	STR	32	484	0	0
ES 507	12	14 - 9	STR	12	185	0	0
ES 508	12	12 - 0	STR	12	150	0	0
ES 509	18	4 - 0	STR	6	25	12	50
ES 510	16	14 - 8	STR	16	242	0	0
ES 511	24	15 - 6	STR	8	129	16	259
ES 512	12	12 - 11	STR	12	162	0	0
ES 513	12	2 - 10	BT	8	24	4	12
ES 514	12	8 - 5	BT	8	70	4	35
ES 515	12	7 - 3	BT	8	80	4	30
ES 516	12	3 - 2	STR	8	28	4	13
ES 517	24	12 - 6	STR	0	0	24	313
ES 518	16	13 - 6	STR	0	0	16	225
TOTAL WT =					10,310		8,116



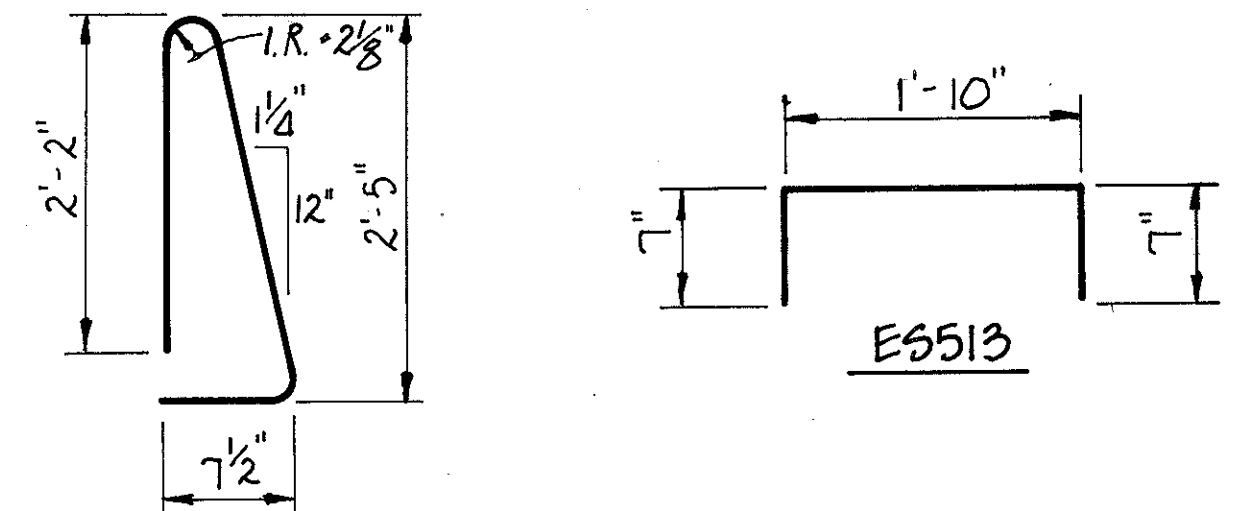
SECTION 1/8



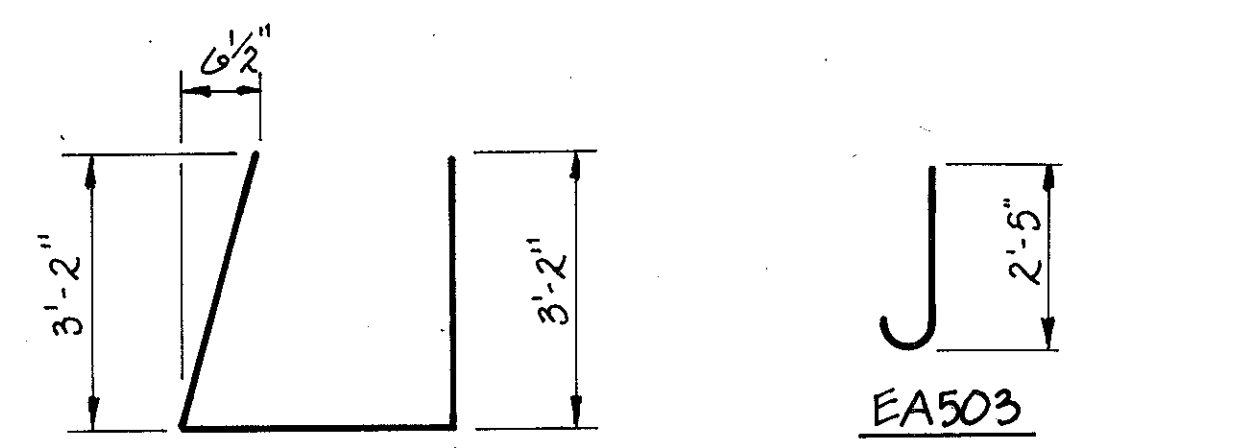
SECTION 2/8



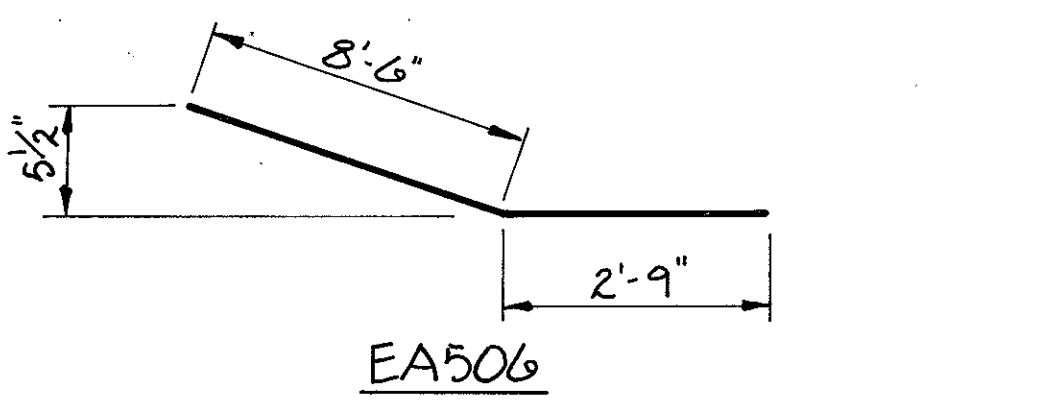
SECTION 3/8



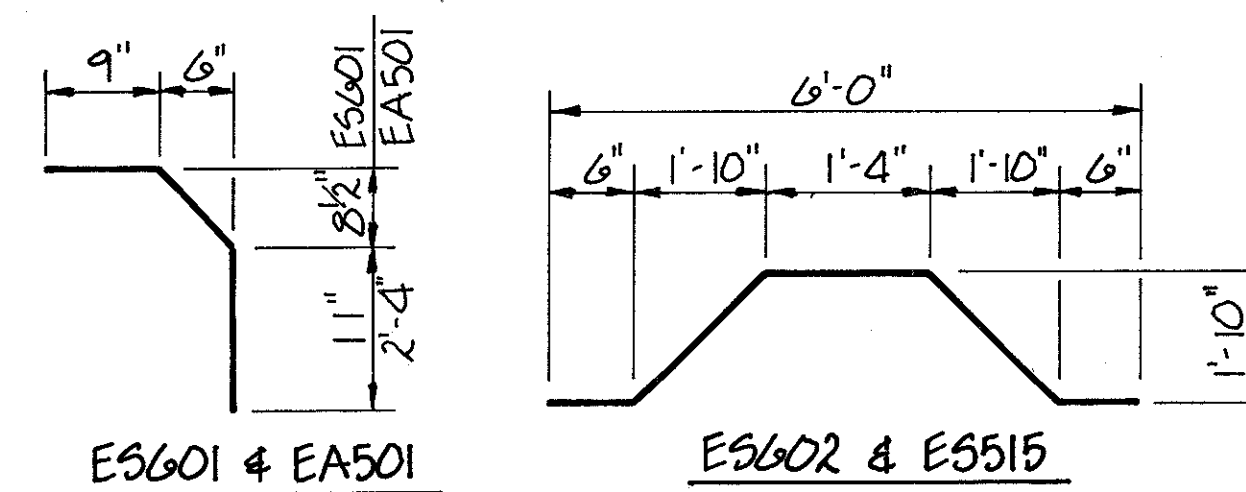
E5501 & EA502



E5514



EA506



ES601 & EA501

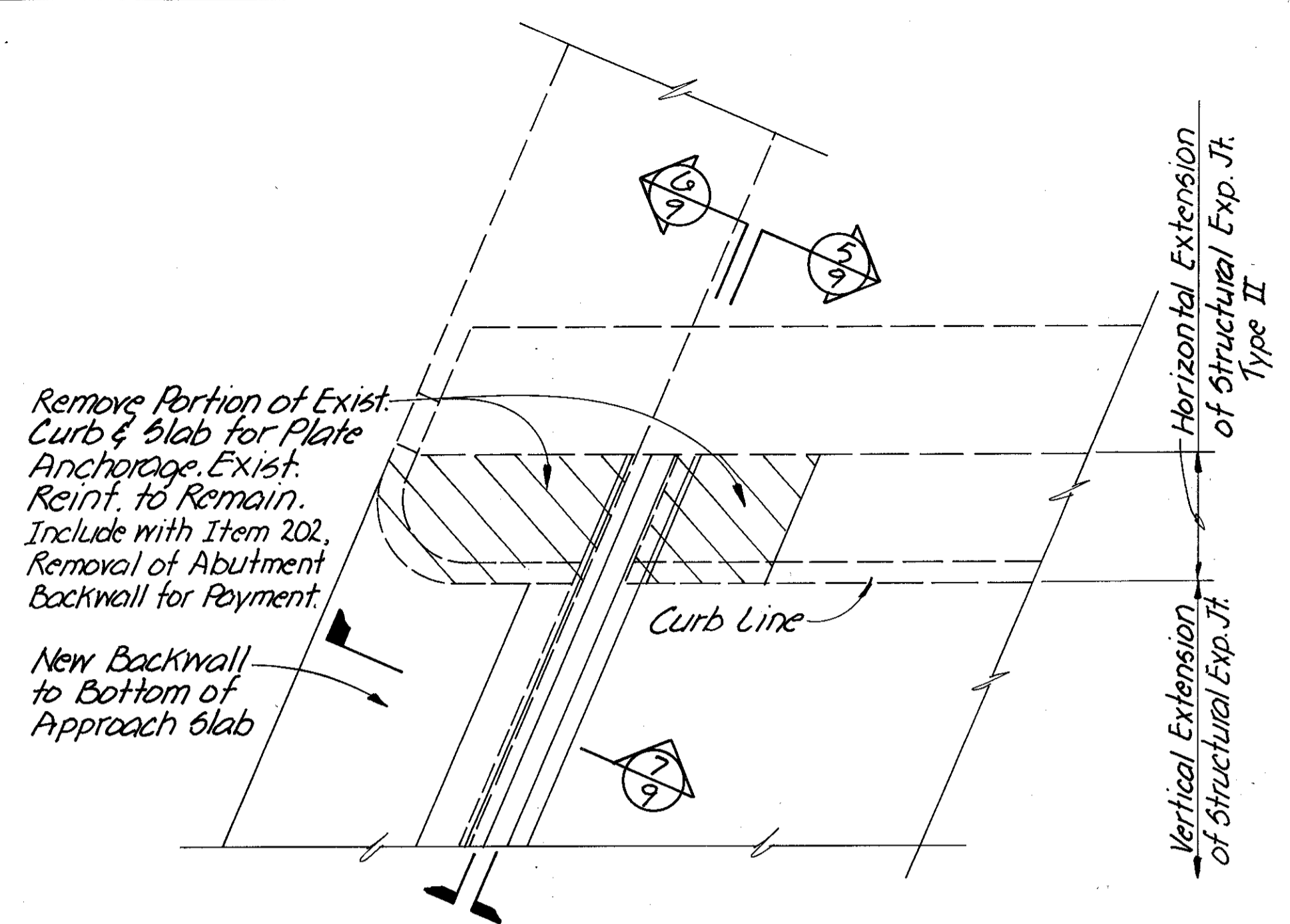
ES602 & ES515

KZF KZF Incorporated
655 Eden Park Drive
Cincinnati, Ohio 45202
513 621-6211

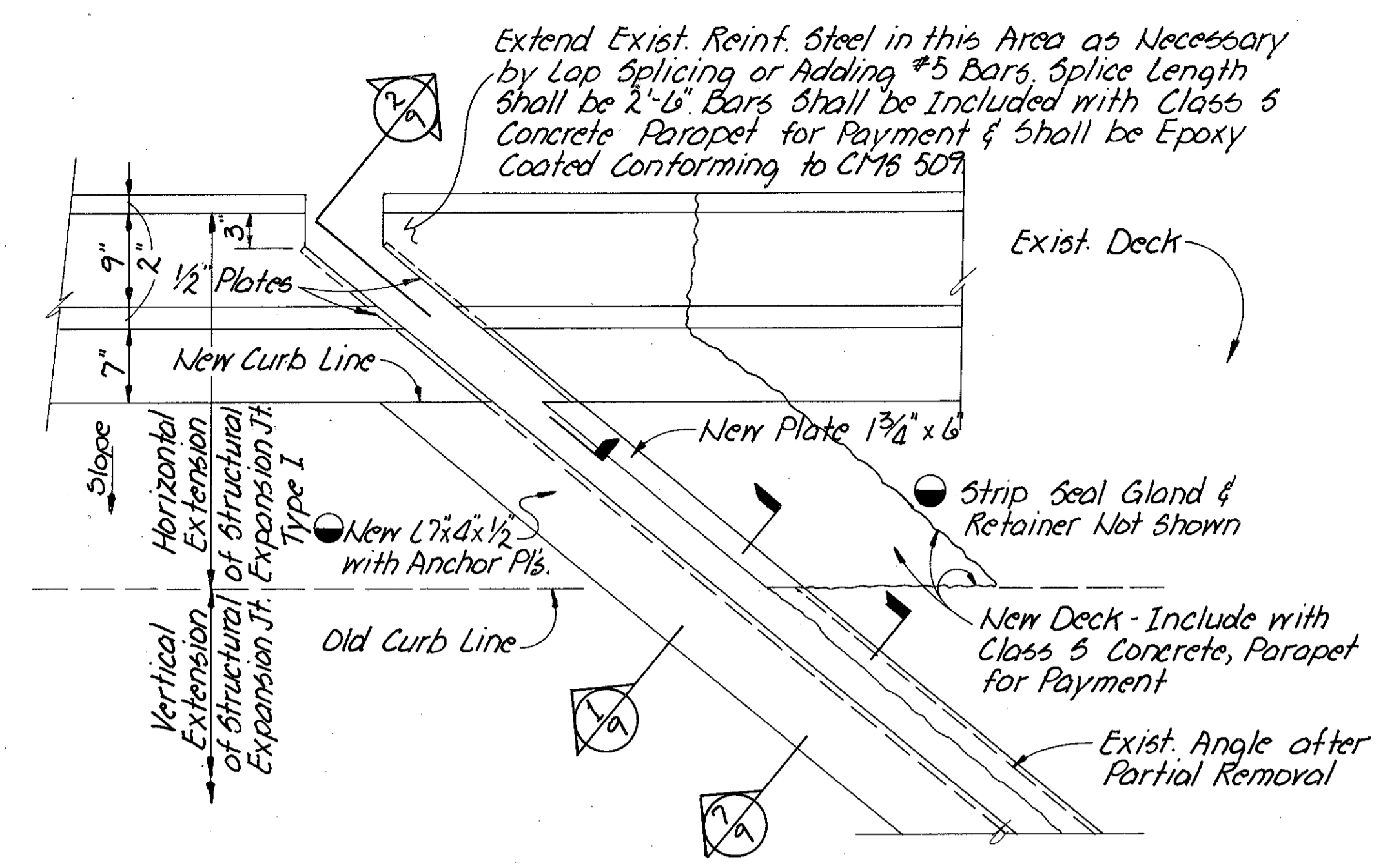
Architects
Engineers
Interior Designers
Planners

WINGWALL & REINFORCING STEEL DETAILS
BRIDGE NO. HAM-1116 L & R
HAMILTON COUNTY OHIO

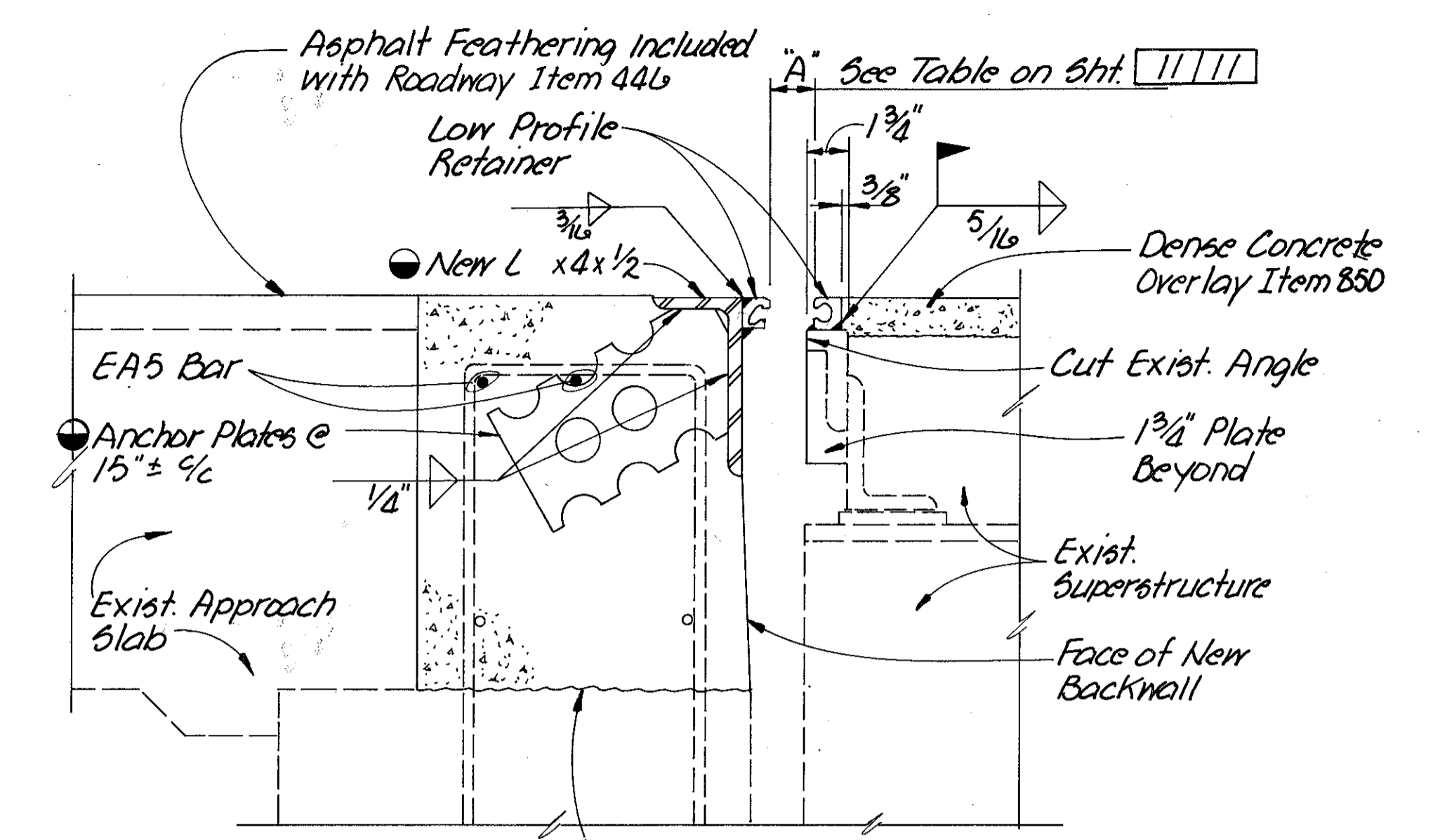
DESIGNED: GTW
CHECKED: KAS
DRAWN: KJD
REVIEWED DATE: WBS 10/10/89



HORIZONTAL EXTENSION OF STRUCTURAL EXP. JT. - TYPE II
 HAM-74-1292 L/R & HAM-74-1618 L/R

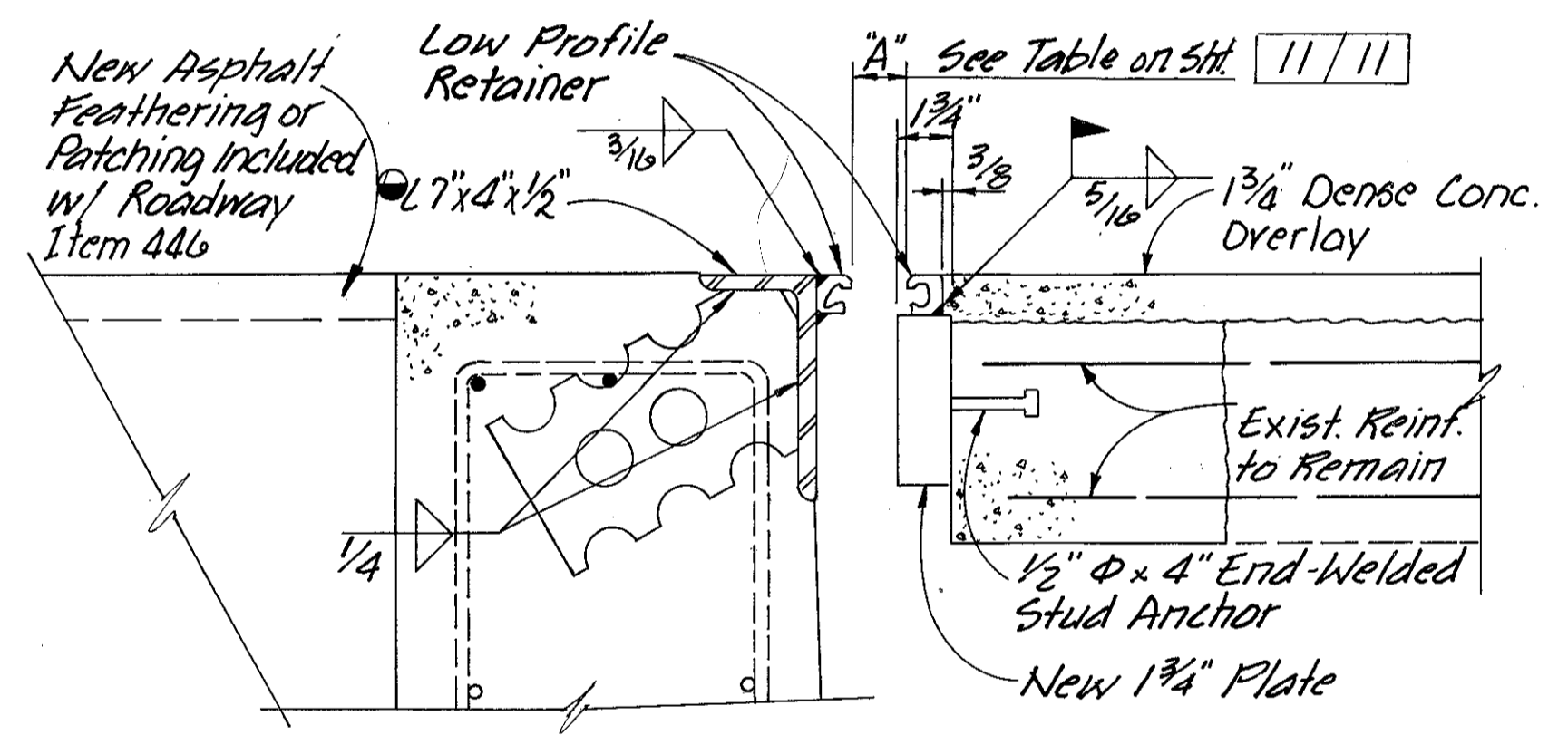


HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINTS - TYPE I
 HAM-74-1116 L/R (Work with Detail A)



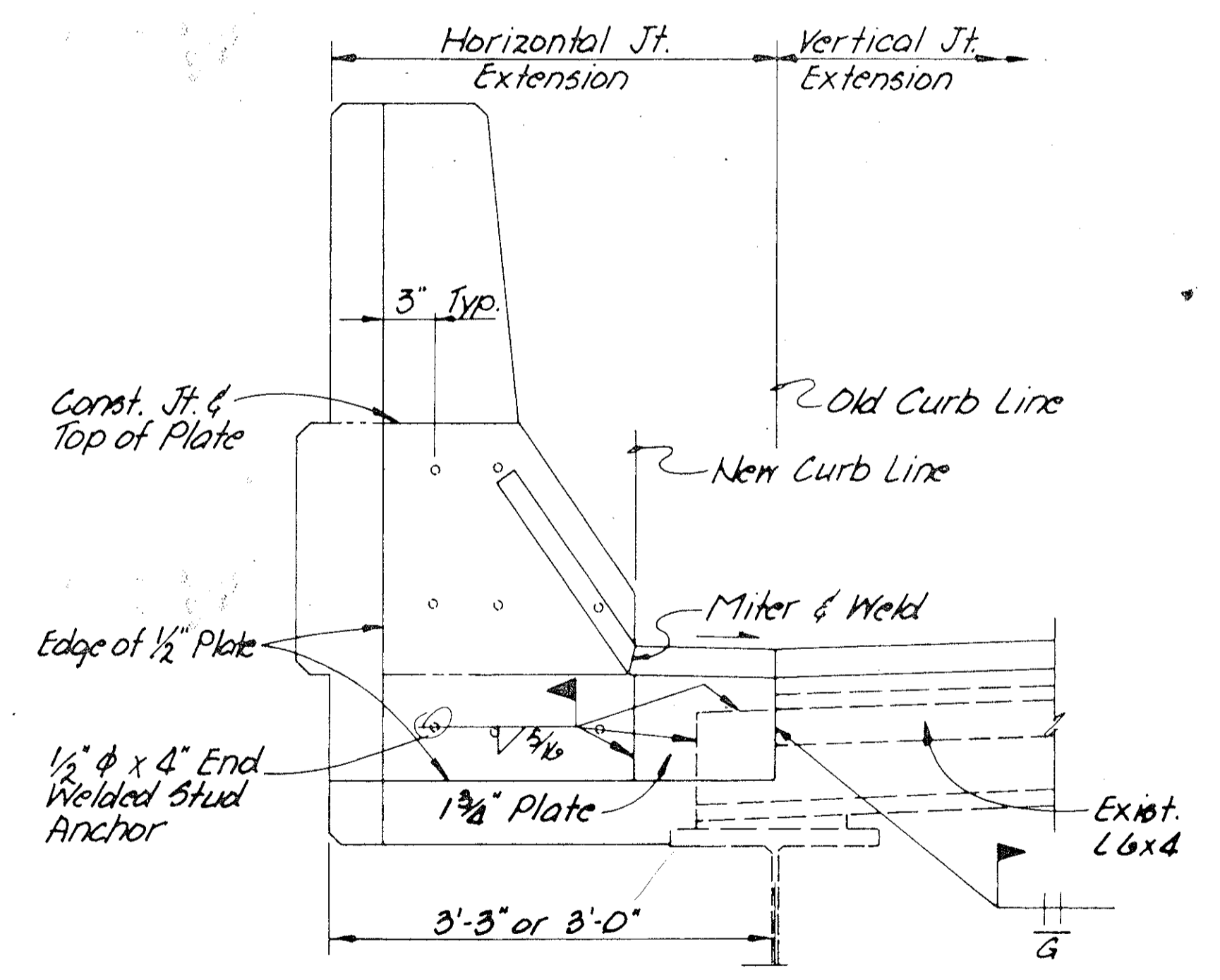
Replace Conc. Backwall & Include with Item 511, Class C Conc. Abut. Backwall for Payment. Limits for this Pay Item shall be betw. the New Parapet Gutter Lines. See Sheet 7/11 for Removal Details.

See Std. Dwg. EXJ-4-87 & SD-1-69 for Additional Details & Notes.

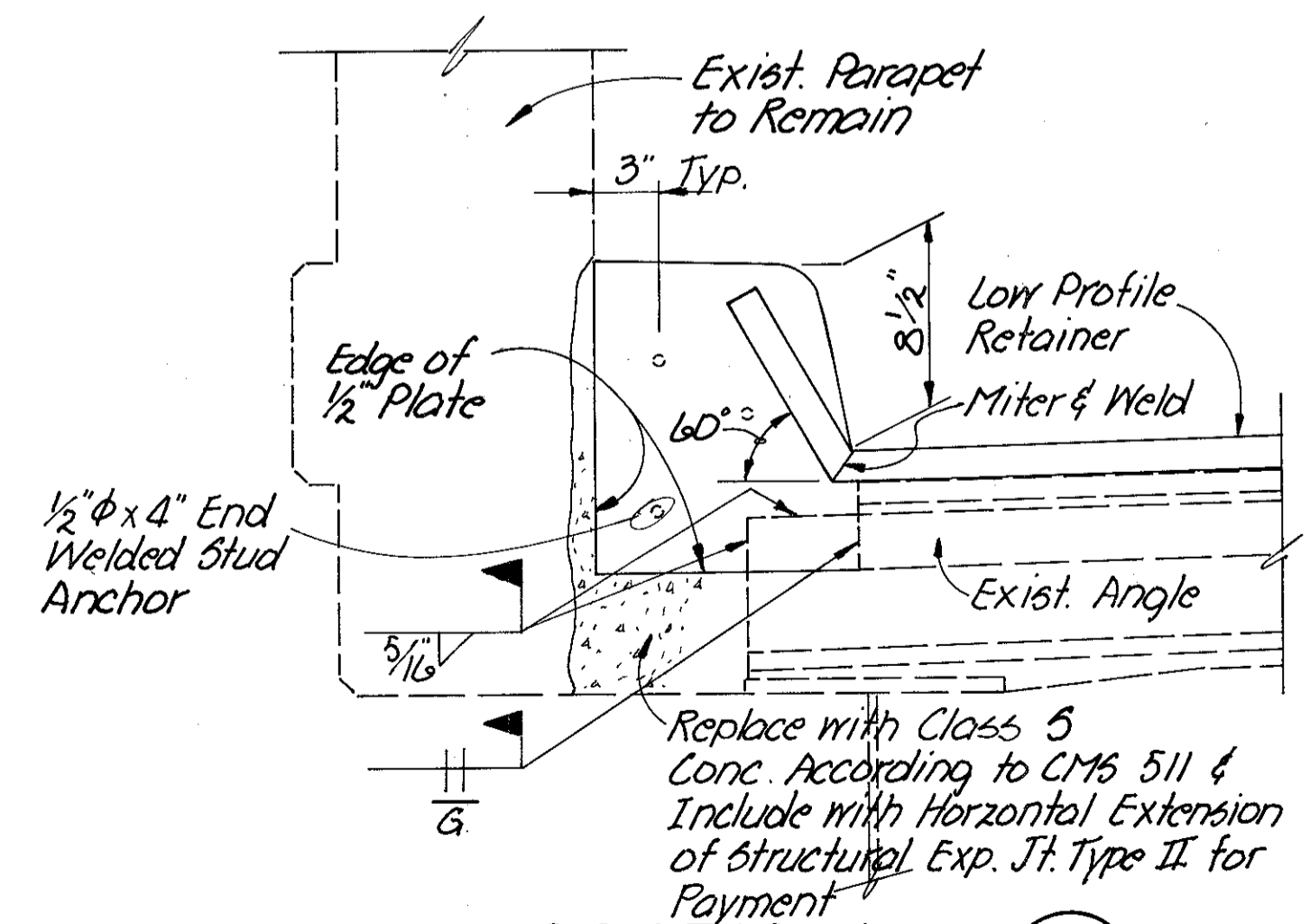


SECTION 1
 9

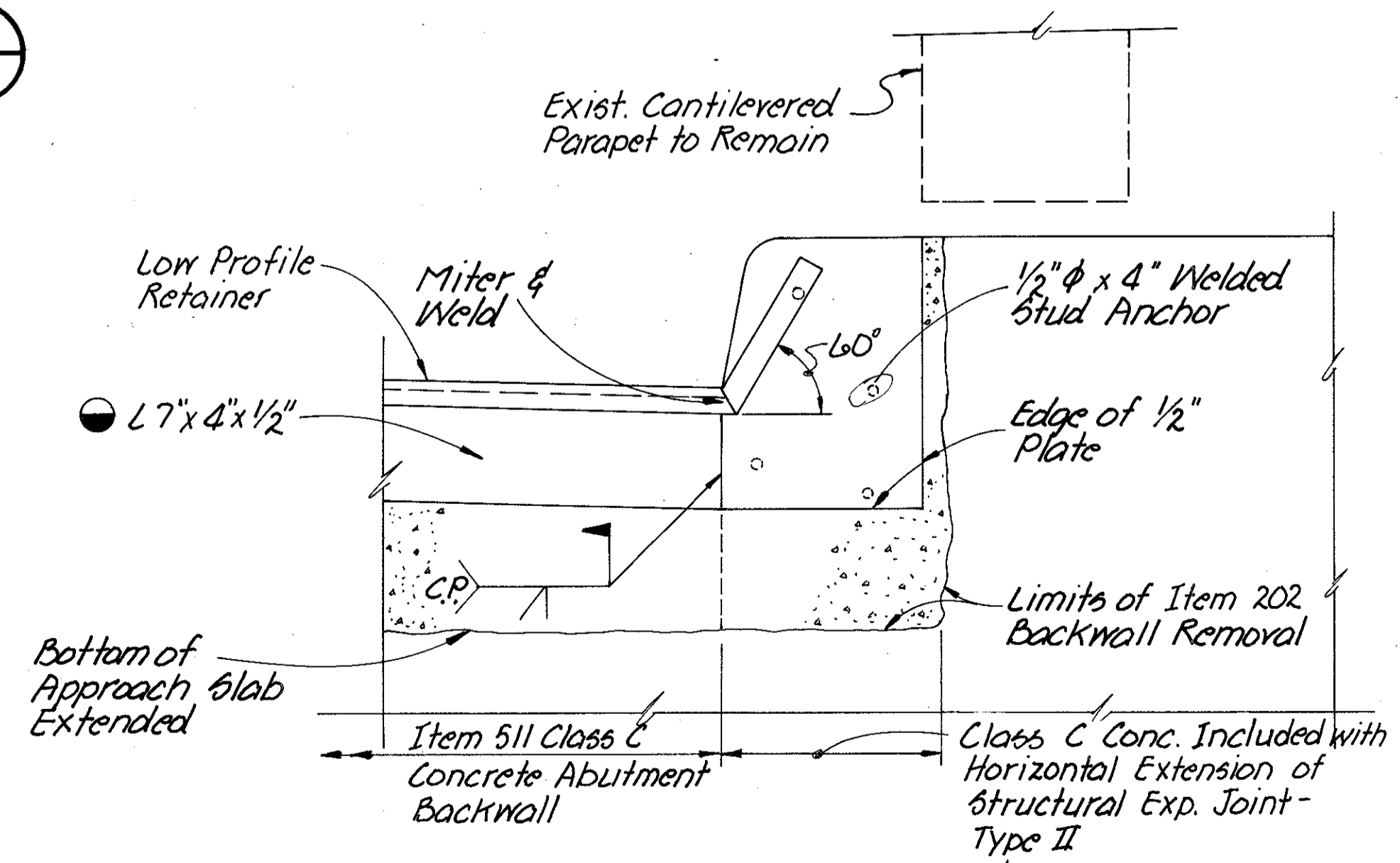
SECTION 7
 Vertical Extension of Structural Exp. Jt.
 9



SECTION 2
 9



SECTION 5
 9

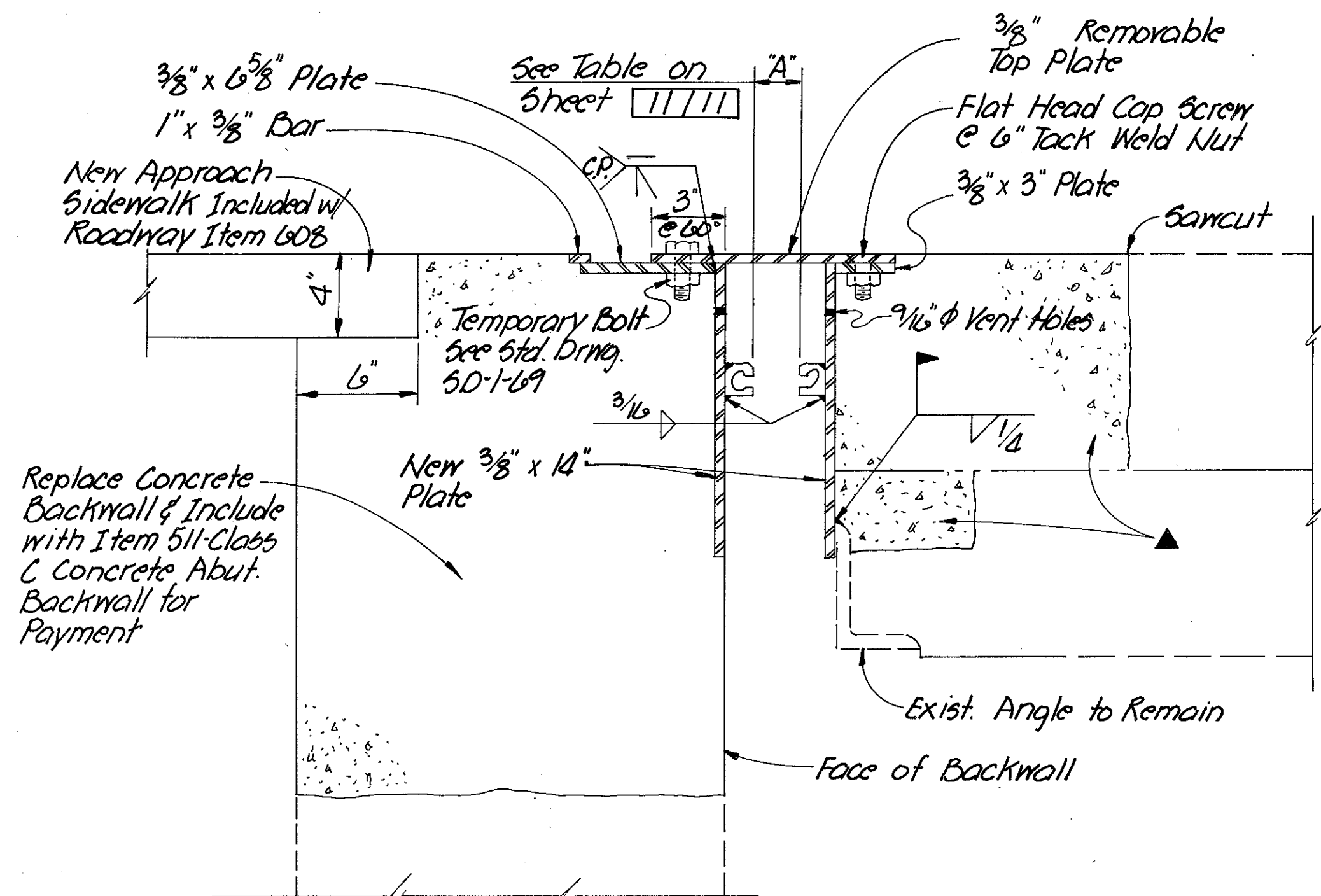


SECTION 6
 9

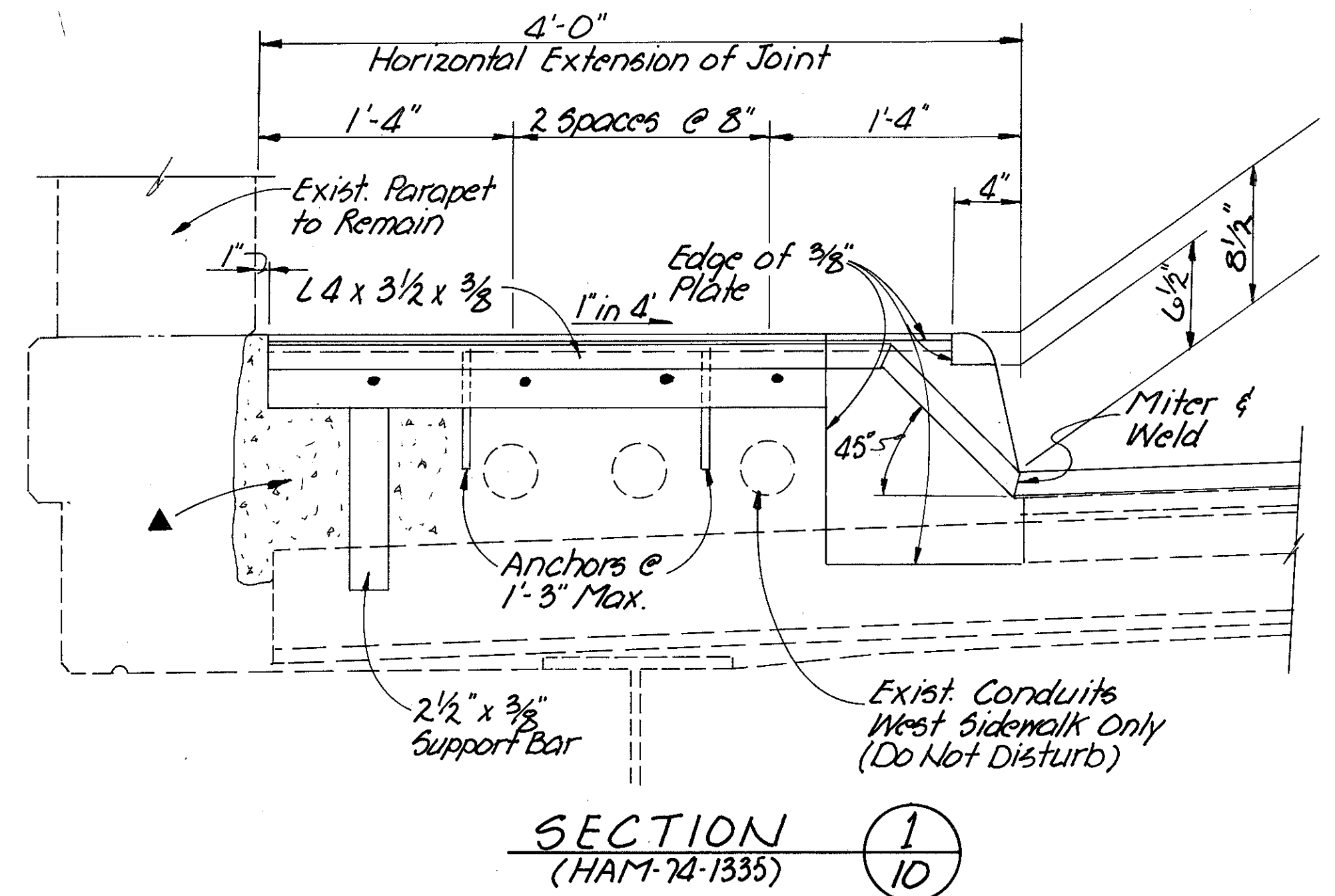
- Notes:
 1. Elastomeric Strip Seal not Shown.
 2. For Anchor Plate Details & Welds See Std. Dwg. SD-1-69.
 3. See General Note for Field Verification of Dimensions.

KZF KZF Incorporated 655 Eden Park Drive Cincinnati, Ohio 45202 513 621-6211		Architects Engineers Interior Designers Planners	
		JOINT DETAILS	
HAMILTON COUNTY OHIO		DESIGNED: GTW DETAILED: KJO DRAWN: - CHECKED: KAS REVIEWED DATE: 10/19/89	

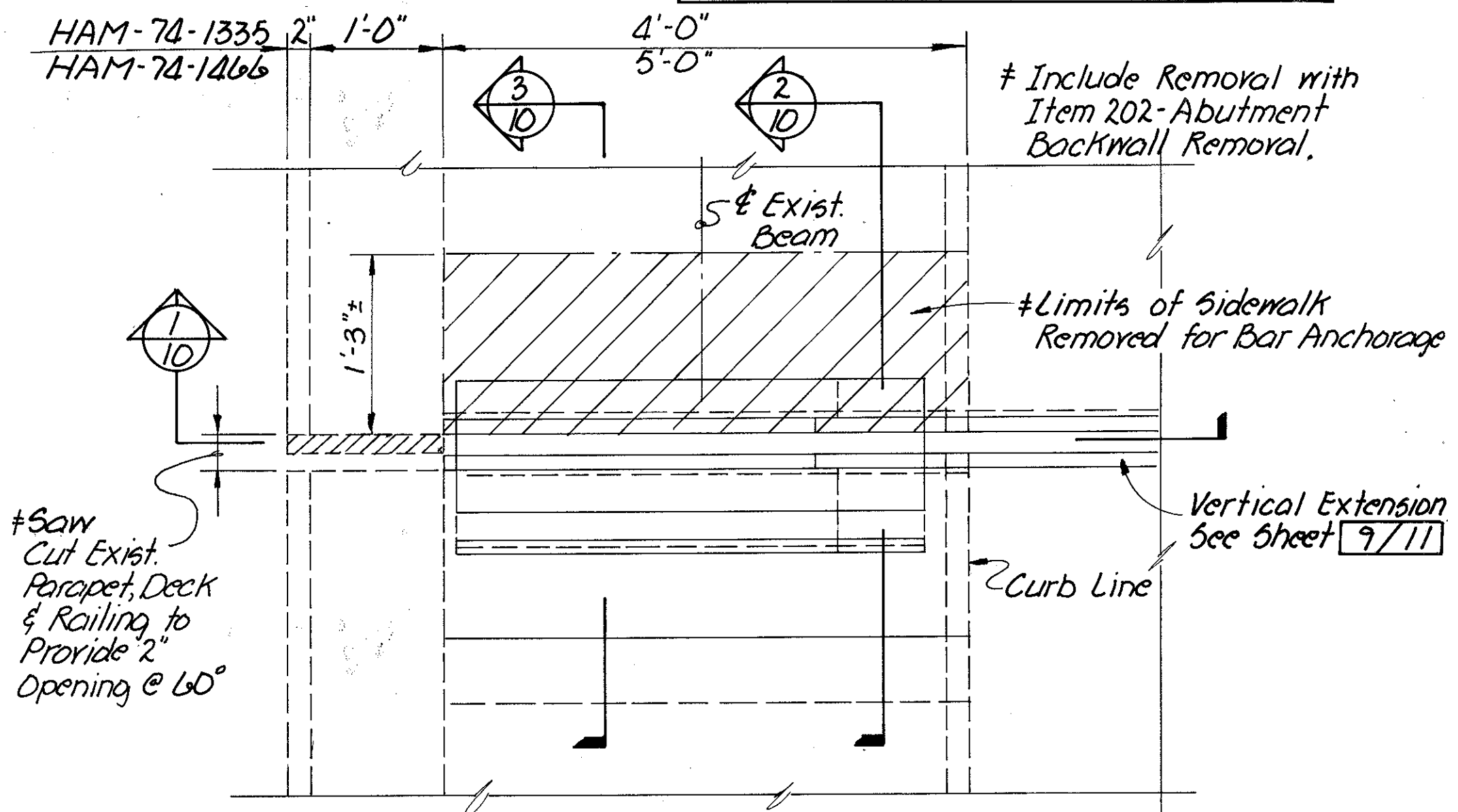
BUILDING 44 231 11/89



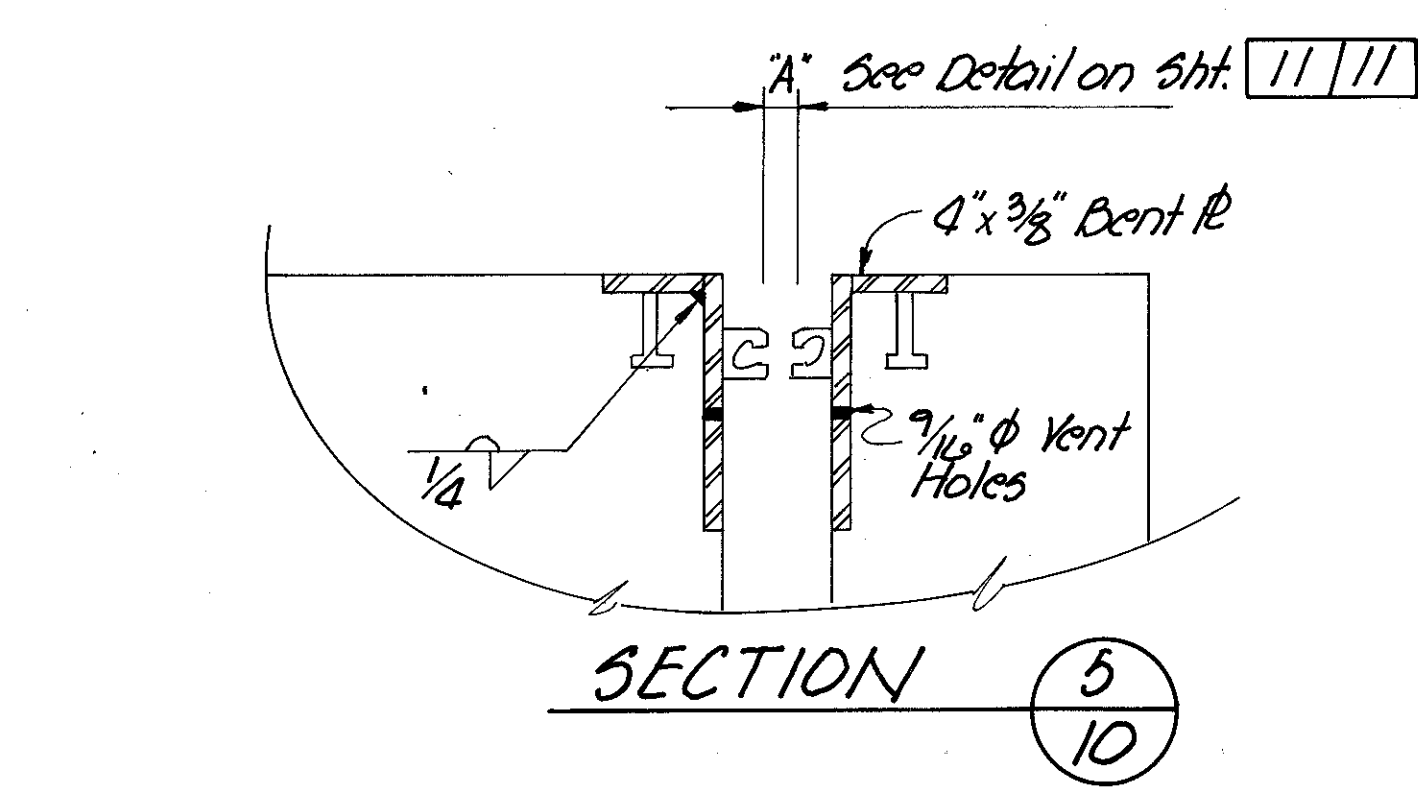
SECTION 2
 (HAM-74-1335)



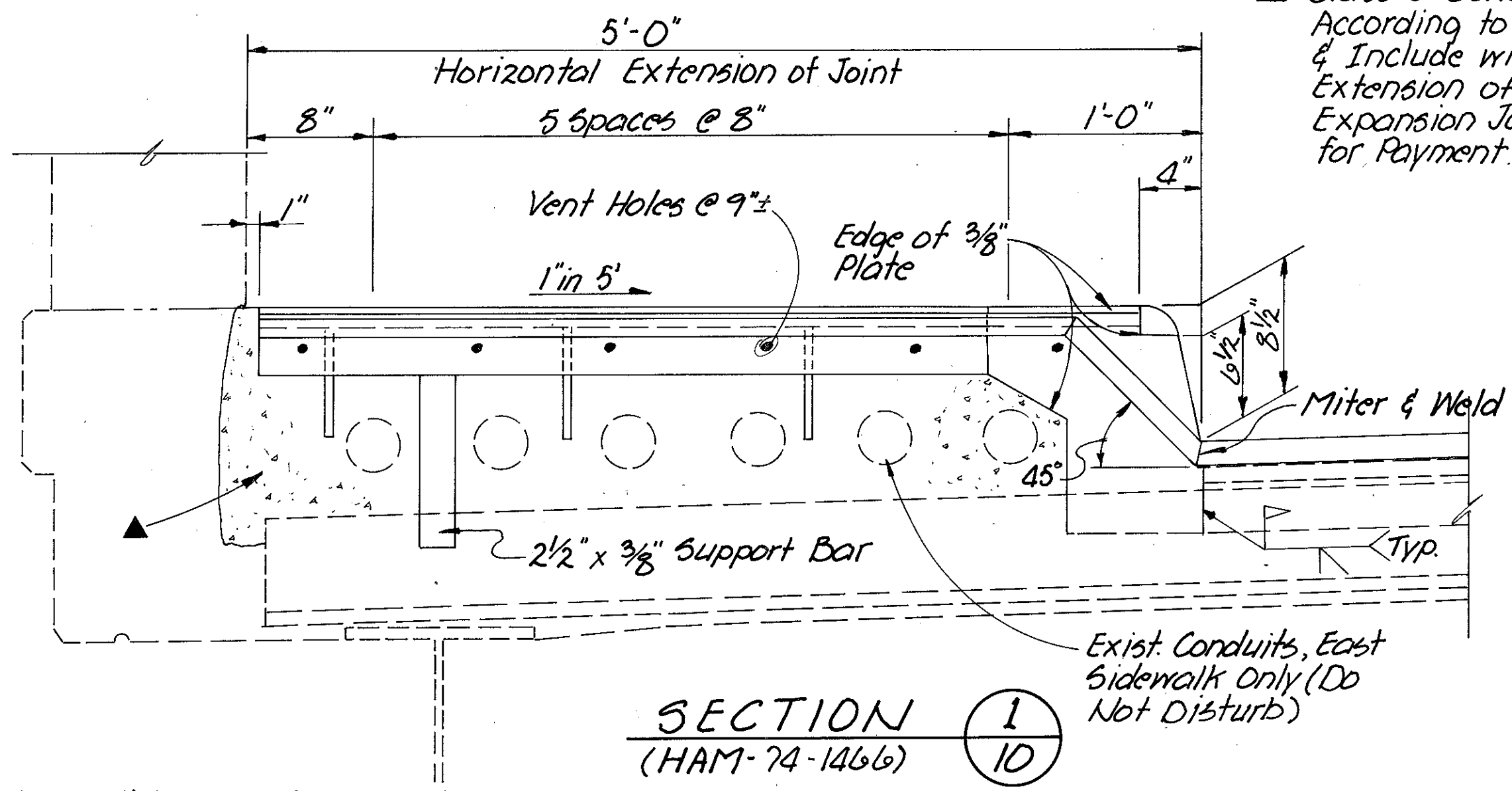
SECTION 1
 (HAM-74-1335)



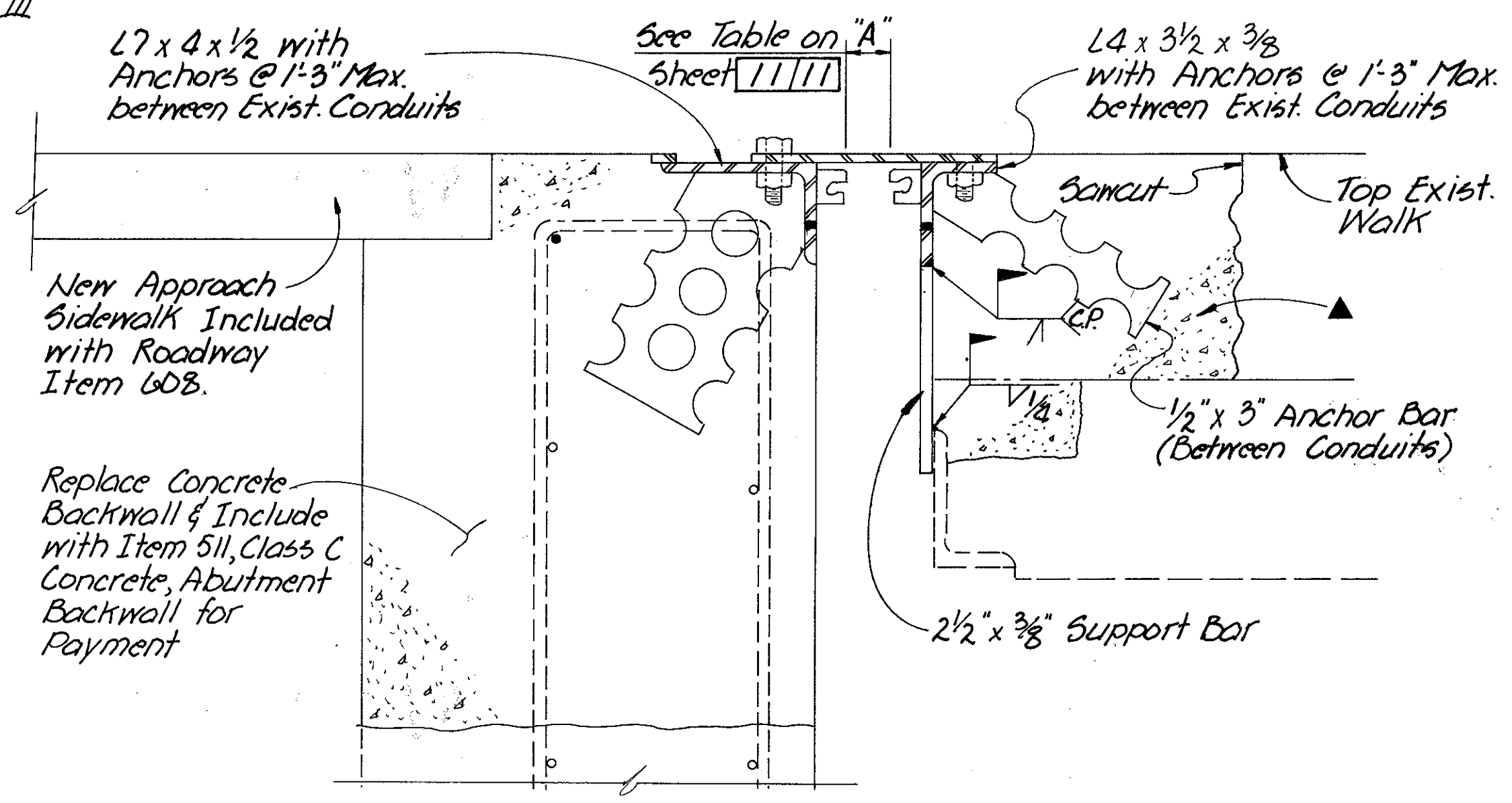
HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JT. - TYPE III
 HAM-74-1335 & HAM-74-1466



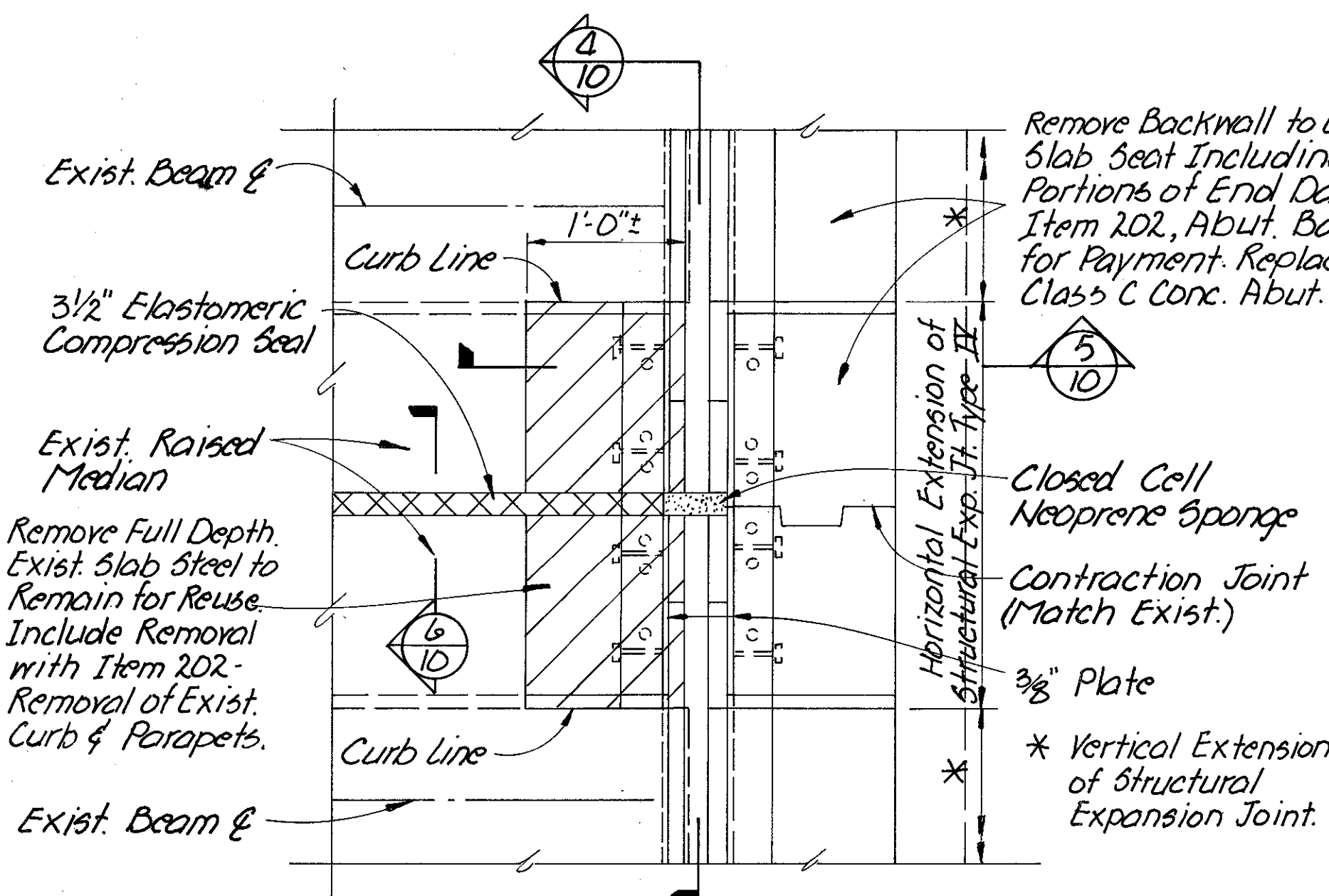
SECTION 5
 (HAM-74-1335)



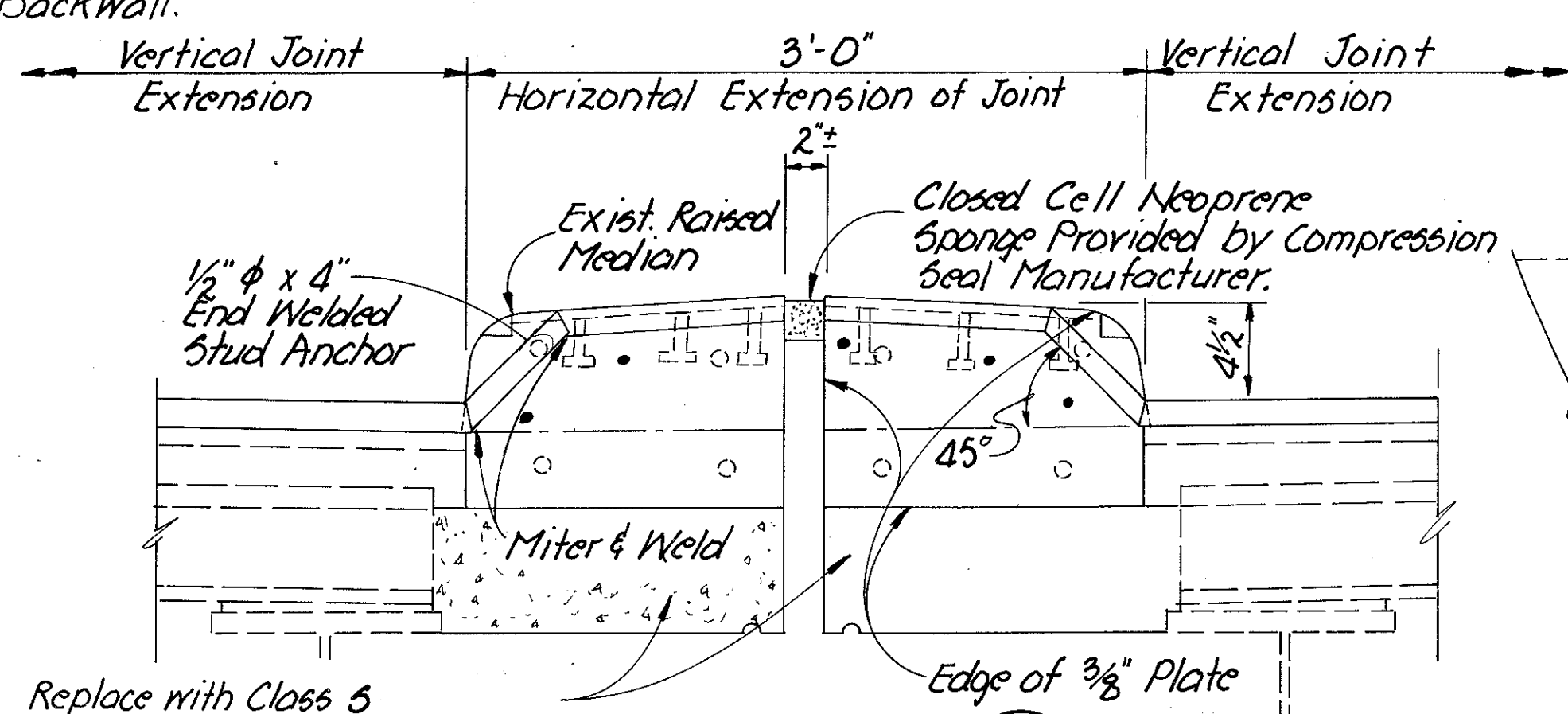
SECTION 1
 (HAM-74-1466)



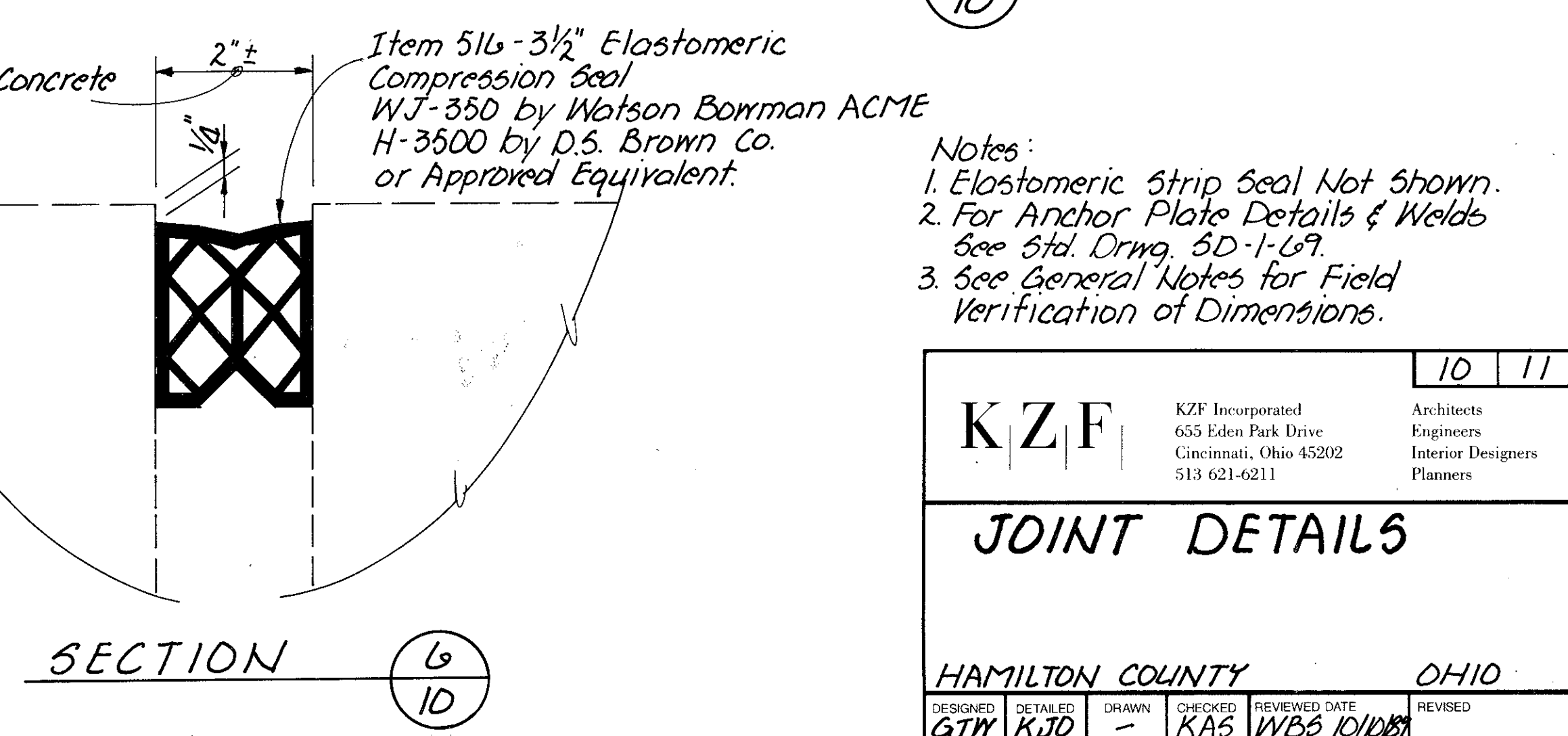
SECTION 3
 (HAM-74-1466)



HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JT. TYPE IV
 HAM-74-1466



SECTION 4
 (HAM-74-1466)



SECTION 6
 (HAM-74-1466)

▲ Class 5 Concrete According to CM5 511 & Include with Horizontal Extension of Structural Expansion Joints-Type III for Payment.

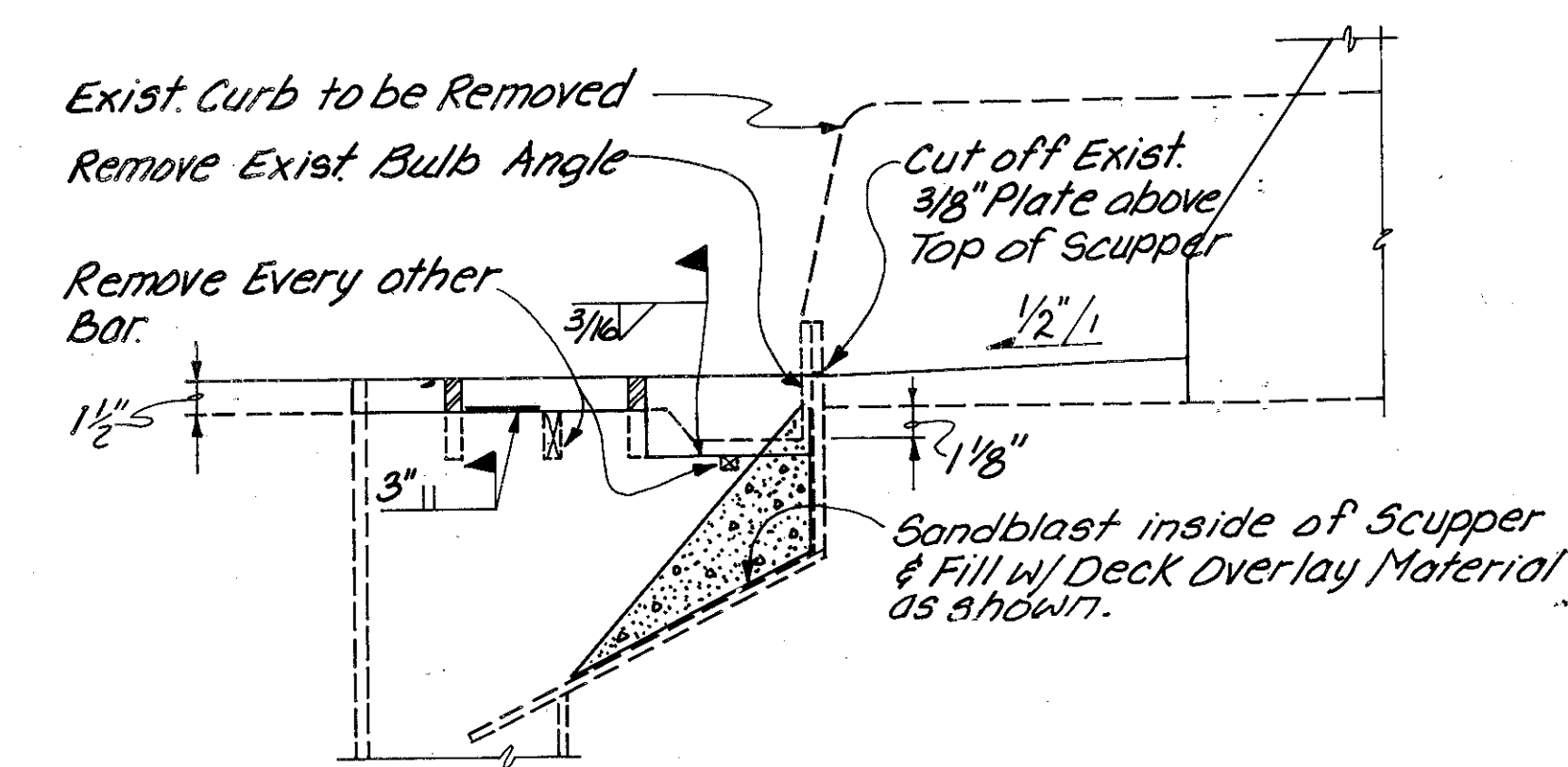
- Notes:
1. Elastomeric Strip Seal Not Shown.
 2. For Anchor Plate Details & Welds See Std. Drwg. 5D-1-69.
 3. See General Notes for Field Verification of Dimensions.

KZF		KZF Incorporated 655 Eden Park Drive Cincinnati, Ohio 45202 513 621-6211		Architects Engineers Interior Designers Planners	
JOINT DETAILS					
HAMILTON COUNTY				OHIO	
DESIGNED	DETAILS	DRAWN	CHECKED	REVIEWED DATE	REVISION
GTY	KJD	-	KAS	WBS 10/20	

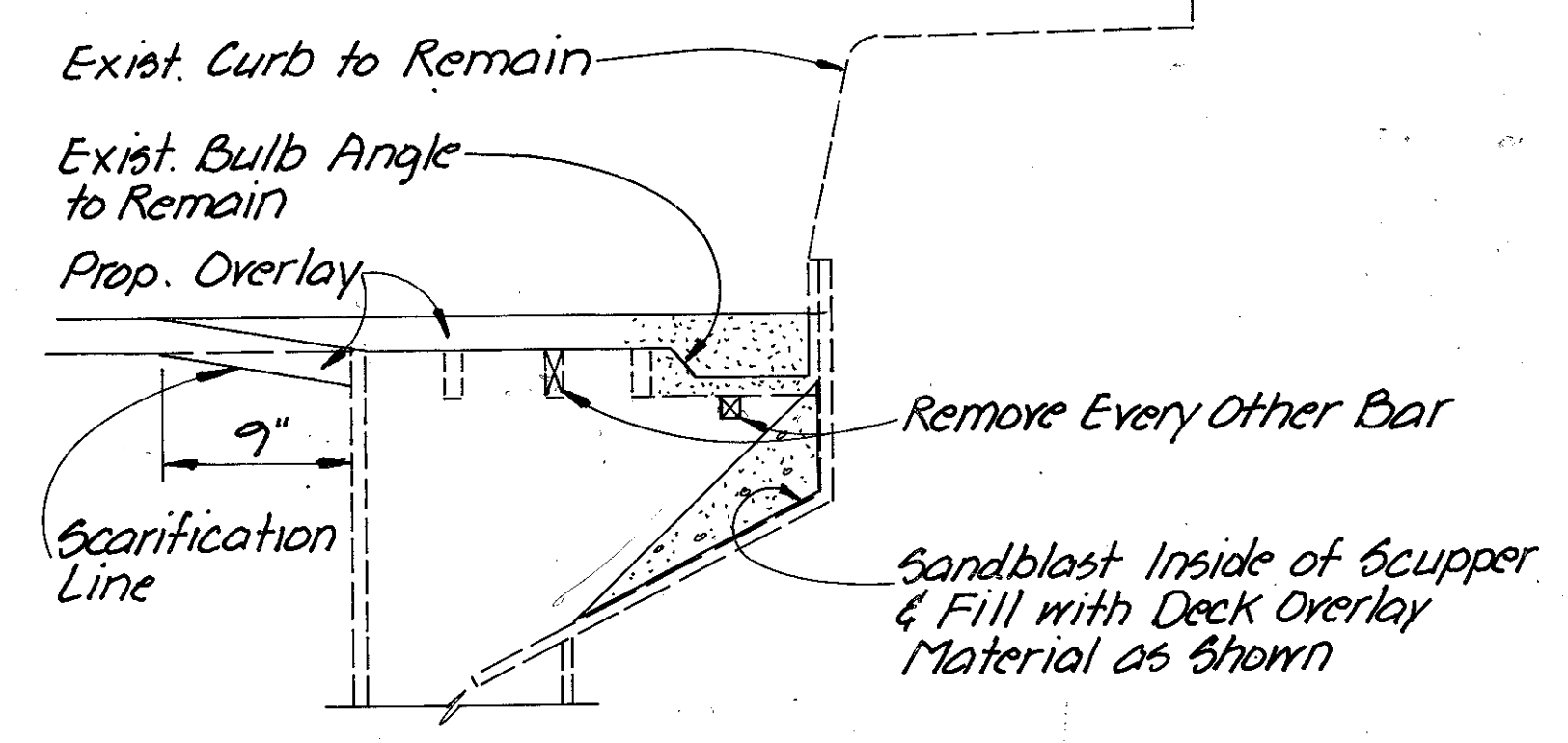
DRAWING 44 231 31895

Bridge No.	Joint Location	Temperature						
		30°	40°	50°	60°	70°	80°	90°
Harrison Rd. HAM-74-1116L	Abutment #1	2 1/4	2 3/16	2 1/8	2	1 5/16	1 3/16	1 3/4 *
	Abutment #2	2 5/16	2 3/16	2 1/8	2	1 7/8	1 5/16	1 1/16 *
Harrison Rd. HAM-74-1116R	Abutment #1	2 3/16	2 1/8	2 1/16	2	1 5/16	1 7/8	2 13/16 *
	Abutment #2	2 5/16	2 3/16	2 1/8	2	1 7/8	1 3/16	1 1/16 *
Haft Rd. HAM-74-1292L	Abutment #1	1 5/8	1 9/16	1 9/16	1 1/2	1 7/16	1 7/16	1 3/8
	Abutment #2	1 3/4	1 11/16	1 9/16	1 1/2	1 7/16	1 5/16	1 1/4
Haft Rd. HAM-74-1292R	Abutment #1	1 5/8	1 9/16	1 9/16	1 1/2	1 7/16	1 7/16	1 3/8
	Abutment #2	1 3/4	1 11/16	1 9/16	1 1/2	1 7/16	1 5/16	1 1/4
Race Rd. HAM-74-1335	Abutment #1	1 3/4	1 11/16	1 9/16	1 1/2	1 7/16	1 5/16	1 1/4
	Abutment #2	1 13/16	1 11/16	1 5/8	1 1/2	1 3/8	1 5/16	1 3/16
North Bend HAM-74-1466	Abutment #1	1 13/16	1 11/16	1 5/8	1 1/2	1 3/8	1 5/16	1 3/16
	Abutment #2	1 13/16	1 11/16	1 5/8	1 1/2	1 3/8	1 5/16	1 3/16
Shephard Creek Rd. HAM-74-1618L	Abutment #1	1 3/4	1 11/16	1 9/16	1 1/2	1 7/16	1 5/16	1 1/4
	Abutment #2	1 5/8	1 9/16	1 9/16	1 1/2	1 7/16	1 7/16	1 3/8
Shephard Creek Rd. HAM-74-1618R	Abutment #1	1 11/16	1 5/8	1 9/16	1 1/2	1 7/16	1 3/8	1 5/16
	Abutment #2	1 7/16	1 9/16	1 1/2	1 1/2	1 1/2	1 7/16	1 7/16

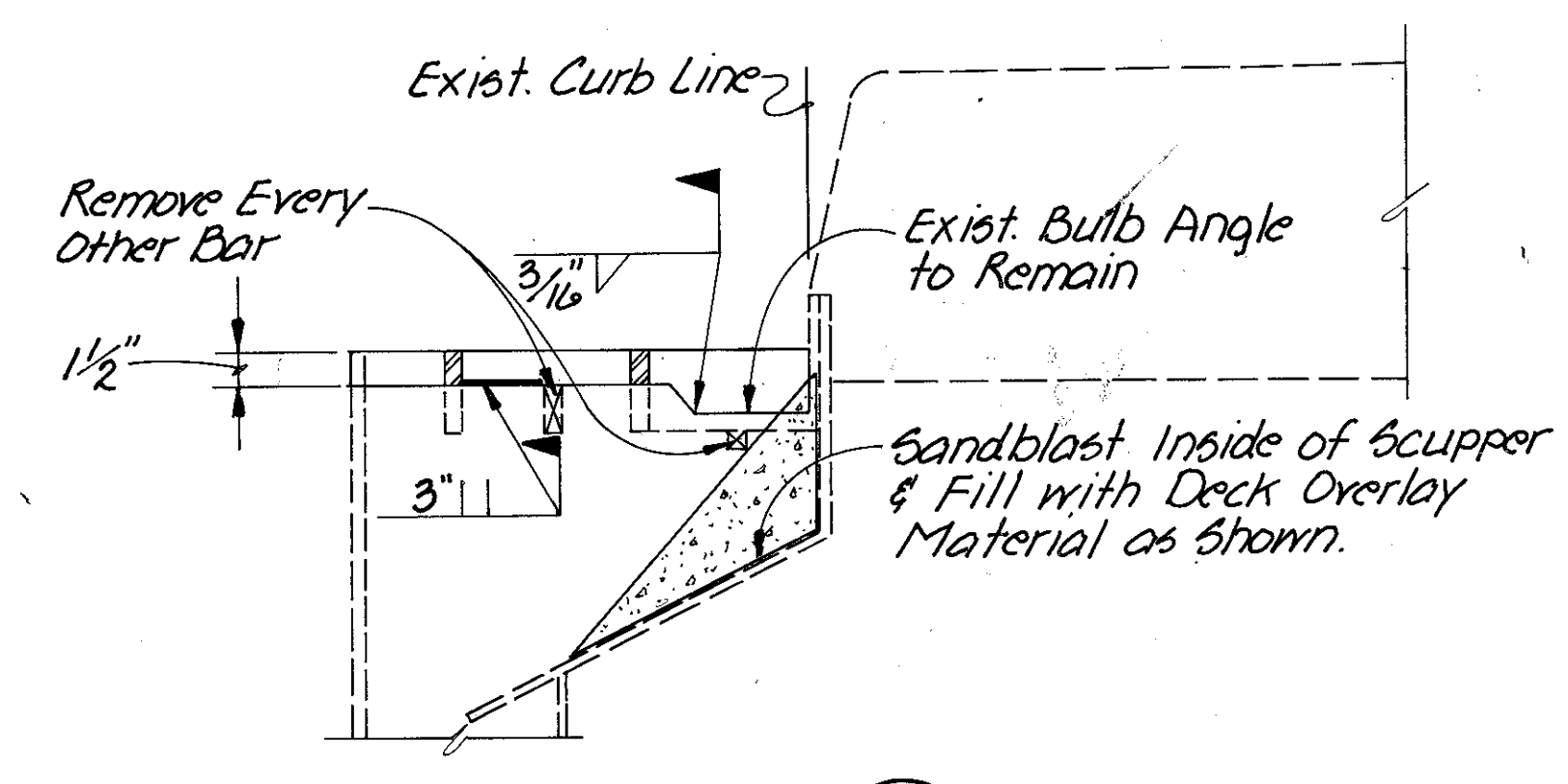
* Strip Seal to have 4" Movement Rating - All Others 3"



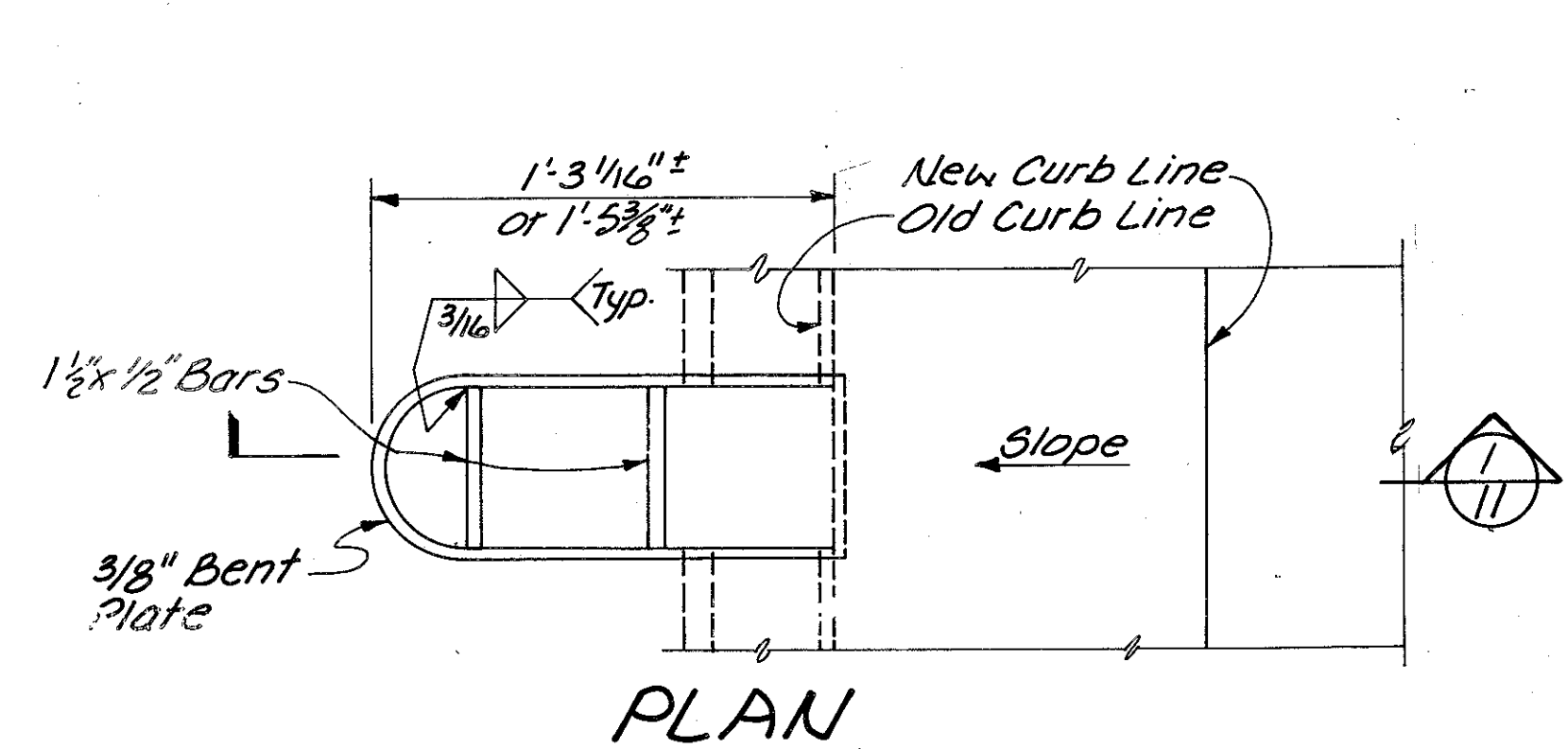
SECTION 1
(Item 518)



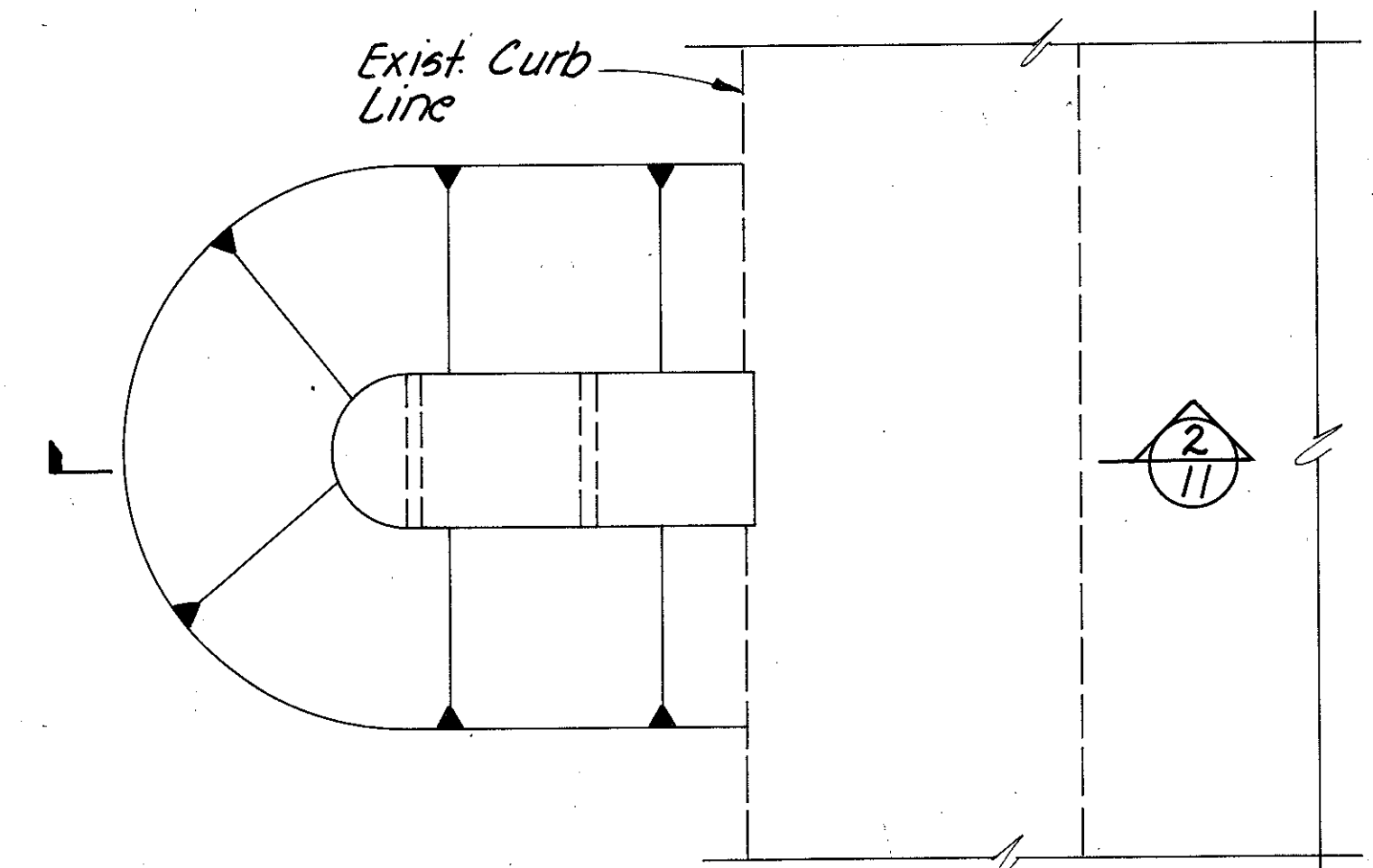
SECTION 2
(Item 518)



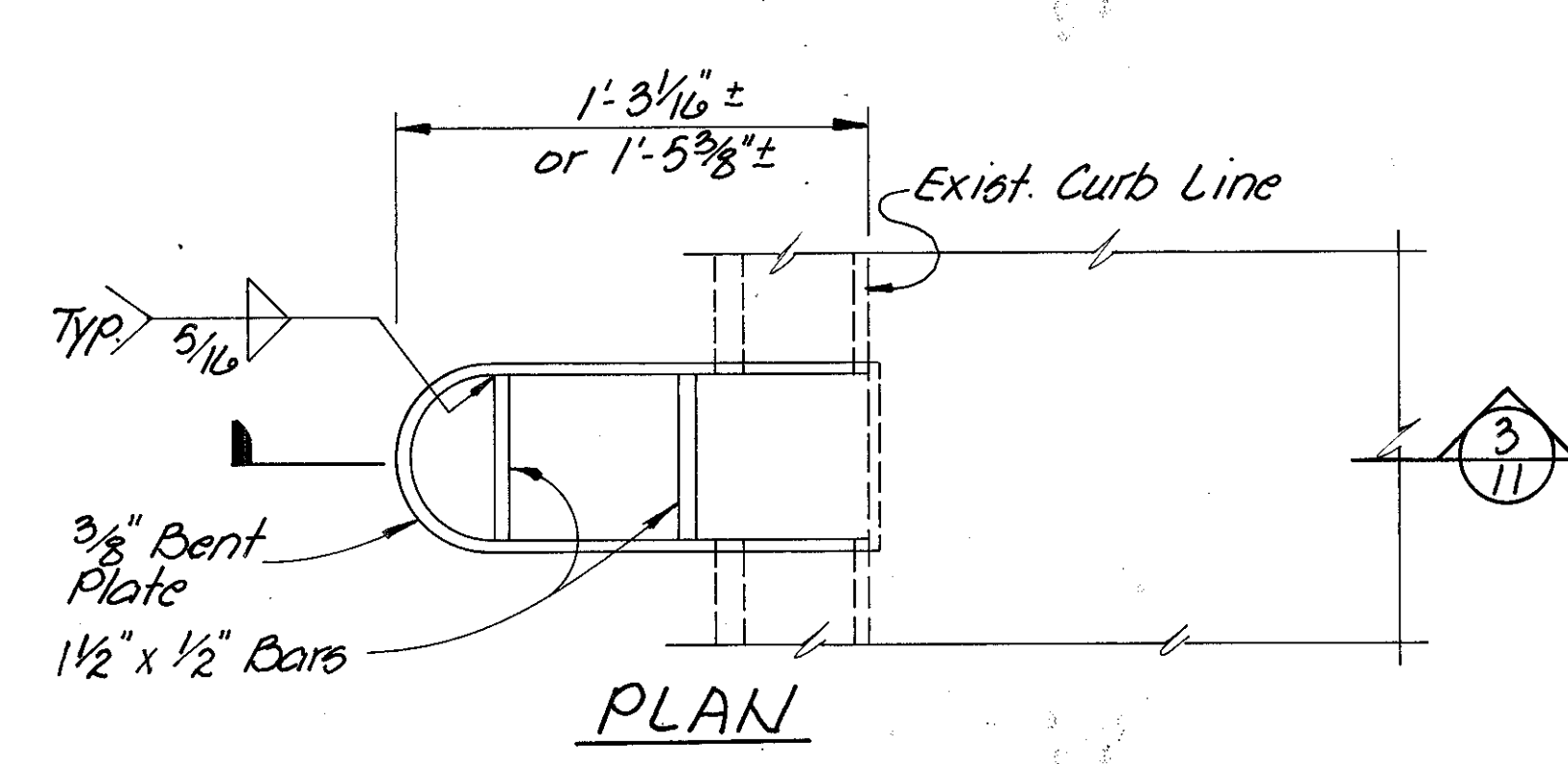
SECTION 3
(Item 518)



PLAN 1



PLAN 2



PLAN 3

SCUPPER MODIFICATION-TYPE I

SCUPPER MODIFICATION-TYPE II

SCUPPER MODIFICATION-TYPE III

KZF KZF Incorporated
 655 Eden Park Drive
 Cincinnati, Ohio 45202
 513 621-6211

Architects
 Engineers
 Interior Designers
 Planners

SCUPPER MODIFICATIONS

HAMILTON COUNTY OHIO

DESIGNED: GTH
 DETAILED: KJD
 DRAWN: KAS
 CHECKED: MBS
 REVIEWED DATE: 11/08/87