E-1

T-1

CONVENTIONAL SIGNS

Center Line	—·—	Existing Sewer	— — —
Existing R/W	———	Proposed Sewer	———
Proposed R/W	———	Existing Manhole	○
Limited Access Line	—LA—	Proposed Manhole	●
Temporary R/W	—T—	Existing Catch Basin	⊕
Work Agreement Line	— — —	Proposed Catch Basin	■
Property Line	—PL—	Manhole Abandoned	⊠
Original Lot Line	O.L. 78 / O.L. 79	Catch Basin Abandoned	⊠
Water Line	—W—	Existing Guard Rail	
Water Valve	—⋈—	Proposed Guard Rail	
Water Hydrant		Fence	—×—×—
Gas Line	—G—	Existing Retaining Wall	
Gas Valve	—⋈—	Railroad	
Telephone Underground	—T—	Existing Trees Removed	⊠
Electric Underground	—E—		
Power Pole			
Light Pole			
Telephone Pole			

SHEETS ADDED TO PLAN.
No's. 231A, 265A, 265B

SHEETS DELETED FROM PLAN.
No's. 24, 185 thru 195, 216 thru 229, 329 330

MICROFILMED AUG 19 1982

MICROFILMED JUN 27 1984

INDEX OF SHEETS

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General Summary	13-16	Temporary Road, Plan & Profile	63-64
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Ramp C-1 Plan & Profile	44	Traffic Control	162-184
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LINE DATA

Begin Project ~ Sta. 357+00.00 to
End Project ~ Sta. 442+32.50 = 8532.50 Lin. Ft. or 1.616 Miles

ADD FOR WORK

Mainline I-480 Sta. 355+43.00 to Sta. 357+00.00	= 157.00 Lin. Ft.
Clague Road ~ Sta. 0+38.26 to Sta. 16+27.00	= 1,588.74 Lin. Ft.
W. 227th. Street ~ Sta. 10+36.20 to Sta. 21+29.00	= 1,092.80 Lin. Ft.
Maple Drive ~ Sta. 8+90.00 to Sta. 15+40.00 (-24 ft. ~ W. 227th.)	= 626.00 Lin. Ft.
* Mastick Road ~ Sta. 7+50.75 to Sta. 15+40.00	= 789.25 Lin. Ft.
Temp. Road W. 220th. St. ~ Sta. 7+20.00 to Sta. 17+65.00	= 1,045.00 Lin. Ft.
Total "Add for Work"	= 5,298.79 Lin. Ft.

TOTAL WORK = 13,831.29 Lin. Ft. or 2.619 Miles

* Length adjusted for work on temporary road.

FILE NUMBER	CUYAHOGA COUNTY CUY-480-4.86 00392
	DATE OF LETTING
	CONTRACT NUMBER

PLANS PREPARED BY
ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
75 PUBLIC SQUARE
CLEVELAND, OHIO
FOR
STATE OF OHIO

Sh. No. 273 revised 9-7-78 WTF
Sh. No. 297 revised 9-12-78 EBL
Sh. Nos. 243 & 271 revised 10-2-78 WTF
Sh. Nos. 298, 305, 307 & 310 revised 10-12-78 WTF
Sh. Nos. 268 & 271 revised 1-4-79 EBL
Sheets 305 & 306 revised 10-24-79 EBL

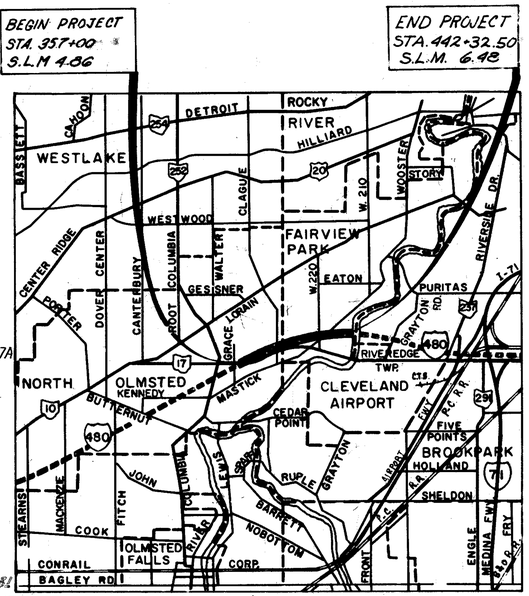
SUPPLEMENTAL SPECIFICATIONS	
NUMBER	DATE
808	1-1-71
836	3-12-75
843	10-23-75
846	4-25-77
948	2-19-74
839	11-25-70
842	8-23-74
844	11-8-74
801	4-25-77
1001	1-3-77
950	4-25-77
951	4-25-77
5625	1-11-74
5713	1-11-74
934	1-1-69

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUY-480-4.86
CUYAHOGA COUNTY
CITY OF NORTH OLMSTED
CITY OF FAIRVIEW PARK

BEGIN PROJECT
STA. 357+00
S.L.M 4.86

END PROJECT
STA. 442+32.50
S.L.M. 6.48



LOCATION MAP

SCALE OF MILES 0 1 2 3

Portion To Be Improved
State Routes
U.S. Routes
Interstate Routes
City Streets
To Be Improved Under Separate Contract

SCALES

PLAN	1" = 50'
PROFILE: HORIZ.	1" = 50'
VERT.	1" = 20'
CROSS SECTIONS	1" = 10'
PAVEMENT DETAILS	1" = 10'
	1" = 20'

STANDARD	DRAWINGS
BP-1	6-1-65
BP-2	12-6-76
BP-3	12-6-76
BP-4	12-6-76
BP-5	8-11-75
BP-7	12-6-76
BP-9	12-6-76
BP-10	1-3-75
CB-2-2-A&B	6-1-65
CB2-3&2-4	6-1-65
CB-3	1-1-76
CB-3A	1-1-76
CB-5	9-1-69
CB-458A	6-6-68
CB-6	6-1-65
BP-6	6-1-65
F-1	5-1-76
F-3	5-1-76
F-6	5-1-76
GR-1	12-6-76
GR-2B	12-6-76
GR-3	12-6-76
GR-4	12-6-76
GR-5	1-1-71
GR-6	1-1-71
GR-4A	7-26-76
HW-4	1-1-70
MH-4	6-12-75
L-1	6-1-73
MH-1	6-12-75
MH-3	6-12-75
MH-2	6-12-75
MH-5	6-12-75
MC-1	6-13-69
MC-3	6-1-73
MC-4	7-26-76
MC-6	6-1-65
MC-7	10-15-76
MC-10	5-1-76

HL-1	3-6-73	HL-15	1-21-76
HL-2	7-27-73	HL-22	11-9-77
HL-3	7-27-73	HL-17A	4-6-73
HL-4	1-21-76	HL-17B	4-6-73
HL-5	9-6-73		
HL-6	1-21-76	TC-7.65	10-1-74
HL-7	1-21-76	TC-12.30	10-1-74
HL-8	1-21-76	TC-15.115	10-1-74
HL-9	1-21-76	TC-18.26	10-1-74
HL-10	1-21-76	TC-21.10	10-1-74
HL-11	4-6-73	TC-21.20	4-18-77
HL-12	4-6-73	TC-21.90	8-19-77

I-480-4(14)-158

FHWA REGION	STATE	PROJECT	
5	OHIO	I-480-4(14)-158	

1/347

CUYAHOGA COUNTY
CUY-480-4.86

"LIMITED ACCESS"

This improvement is especially designed for thru traffic and has been declared a Limited Access Highway or Freeway by action of the Director of Transportation, in accordance with the provisions of Sec. 5511.02 of The Revised Code of Ohio.

1977 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.

The Right of Way for this improvement will be provided by the State of Ohio.

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

Approved _____ Thomas M. Krall _____
Date 5-22-75 DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

Approved _____
Date _____ Engineer, Bureau of Bridges and Structural Design

OK DGG
Approved _____ R.E. Kathman
Date 4-14-78 Chief Engineer, Planning and Design

Approved _____ David L. Weir
Date 4-14-78 Director, Department of Transportation

STANDARD	DRAWINGS
TC-22.20	8-18-77
TC-31.21	8-27-76
TC-32.10	8-27-76
TC-32.11	8-27-76
TC-41.10	8-19-77
TC-41.20	4-1-77
TC-41.50	4-1-77
TC-42.10	8-19-77
TC-42.20	4-1-77
TC-51.10	6-2-75
TC-51.11	6-2-75
TC-52.10	4-1-77
TC-52.20	4-1-77
TC-61.10	8-19-77
TC-71.10	12-1-75
TC-72.20	8-29-77
TC-81.10	4-18-77
TC-83.10	9-5-75
TC-83.20	9-5-75
TC-84.20	9-5-75
TC-85.10	9-5-75
TC-85.20	9-5-75

STANDARD	DRAWINGS
SD-1-69	6-12-69
BR-1-67	10-15-71
RD-1-35	2-2-59
AS-1-72	6-30-72

DESIGN DESIGNATION
1969 A.D.T. = 37,500
1987 A.D.T. = 73,200
D.H.V. = 4,800
D. (directional distribution) 67%
T. (percent B&C trucks) 4%
V. (design speed) 60 M.P.H.

NOTE: • PROJECT DESIGNATION CUY-80 APPEARING THROUGHOUT THIS PLAN SHALL BE CONSIDERED TO READ CUY-480

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

_____ _____ _____ _____
DIVISION ADMINISTRATOR DATE:

SCHEMATIC PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

2/347

CUYAHOGA COUNTY
CUY-480-4.86

N

COE AVE.
GEORGETTE AVE.
MICHAEL AVE.
WEST 237th ST.
COLUMBIA ROAD
ELM ROAD
CITY OF NORTH OLMSTED
LUCILE AVE.
MARGO
BROOKPARK ROAD
17
GRACE AVE.
PARK LANE
SHEPHERD HILL RD.
MASTICK ROAD
METROPOLITAN PARK DRIVE
CLAGUE ROAD
NORTH OLMSTED FAIRVIEW PARK
I-480
MATCH LINE STA. 395+00
RAMP C-1 (1470) 12,200
RAMP C-2 12,200 (1470)
CUY-480-0540
CUY-480-0499
(1480) 36,600
36,600
36,600
End Work Sta. 16+27 Clague Rd.
Begin Work Sta. 0+38.26 Clague Rd.
Begin Work Sta. 355+43±
BEGIN PROTECT STA. 357+00
F480-4(14)(158)
S.L.M. 4.86
F80-4(12)156
Sta. 14+00
Sta. 14+00
0' 200' 400'
Scale 1" = 200'

SCHEMATIC PLAN

SCHEMATIC PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

3/347

CUYAHOGA COUNTY
CUY-480-4.86

N

ESTHER AVE.
CITY OF FAIRVIEW PARK
HABER DR.
227th ST.
WEST 229th ST.
SYCAMORE DR.
WEST 224th ST.
MAPLE DR.
I-480
NORTH OLMSTED
FAIRVIEW PARK
MATCH LINE STA. 395+00
RAMP C-1
RAMP C-2
MASTICK ROAD
WEST 220th ST.
BROOKPARK ROAD
BROOKWAY DRIVE
WEST 217th ST.
WEST 215th ST.
DRIVE
PATH
PARK
BRIDLE
ROAD
BROOKPARK
METROPOLITAN
FAIRVIEW PARK
CLEVELAND
RIVEREDGE TOWNSHIP
N. A. S. A.
ROCKY
RIVER
RIVIERA DR.
FAIRVIEW PARK
CLEVELAND

Begin Work
Sta. 8+90.00
Maple Dr.

End Work
Sta. 21+29.00
West 227th. St.

End Work
Sta. 15+10.00
Reloc. Maple Dr.

End Work
Sta. 18+20.00
West 224th. St.

End Work
Sta. 13+50.00
West 220th. St.

End Work
Sta. 17+65.00
Temp. Road

End Work
Sta. 15+40.00
Mastick Rd.

West 220th. St.
Temporary Rd.

CUY-480-0612

CUY-480-0614

CUY-480-0573

Mastick Rd.
Temporary Rd.

Begin Work
Sta. 13+57.76
West 224th. St.

Begin Work
Sta. 7+50.75
Mastick Rd.

Begin Work
Sta. 8+00.00
West 220th. St.

Begin Work
Sta. 7+20.00
Temp Road

Begin Work
Sta. 10+36.2
West 227th. St.

I-480-4(14)158
I-80-4(16)(161)
S.L.M. 6.48
END PROJECT & WORK
STA. 442+32.5

(6,520)
48,800
48,800

0' 200' 400'
Scale 1" = 200'

Rev. L.J.P. 12-14-77

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

4/347

CUYAHOGA COUNTY
CUY-480-4.86

TYPICAL SECTIONS

TYPE 404 ON 801

UNDERDRAIN NOTES

Median underdrain location varies 3'-0" Lt. or Rt. of ℄. See Plan & Profile sheets for location.

Omit underdrain on high side of superelevation when in fill.

NORMAL SECTION-6 LANES

Sta. 357 + 00.00 to 364+ 18.63
(Sta. 364 + 18.63 to 369 + 34.01 Structure & App. Slabs)
Sta. 369 +34.01 to 376 +50.00

WESTBOUND

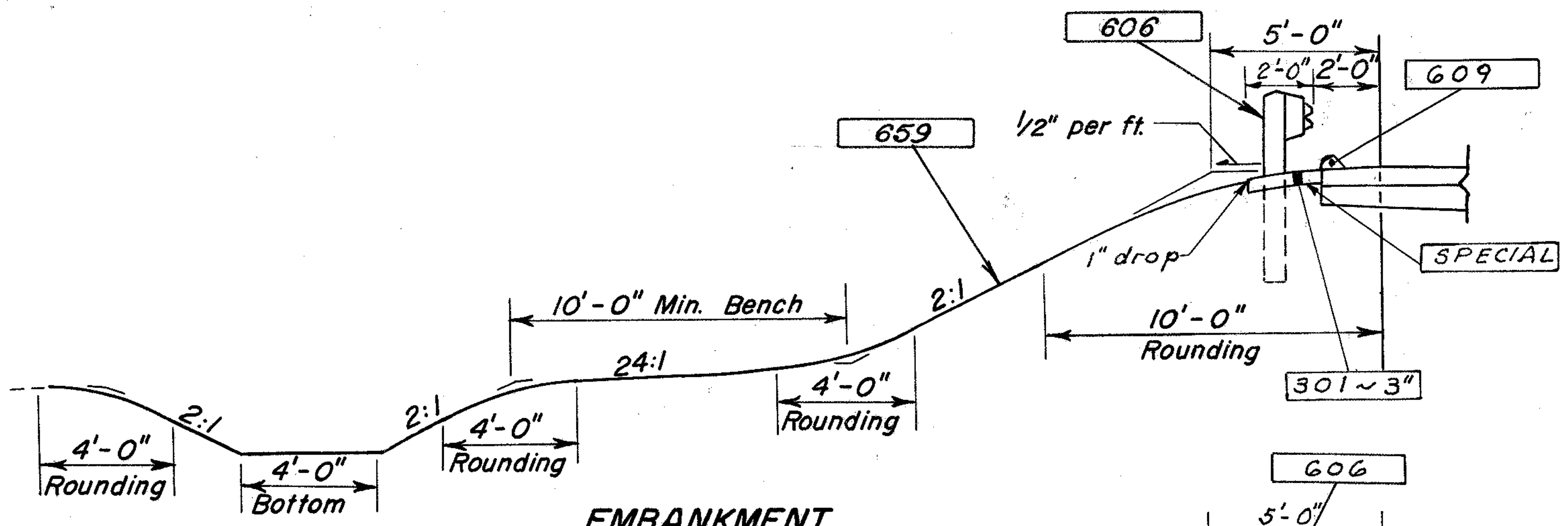
Sta. 376+50.00 to 385+02.54
Sta. 387+36.80 to 387+95.64
Sta. 387+95.64 to 403+00.00 ✱ See Pvt. Details Sht. No. 56 for width of Pvt. and Shoulders.

SUPERELEVATED SECTION-6 LANES

(Sta. 385+02.54 to Sta. 387+36.80
Structure & Approach Slabs)

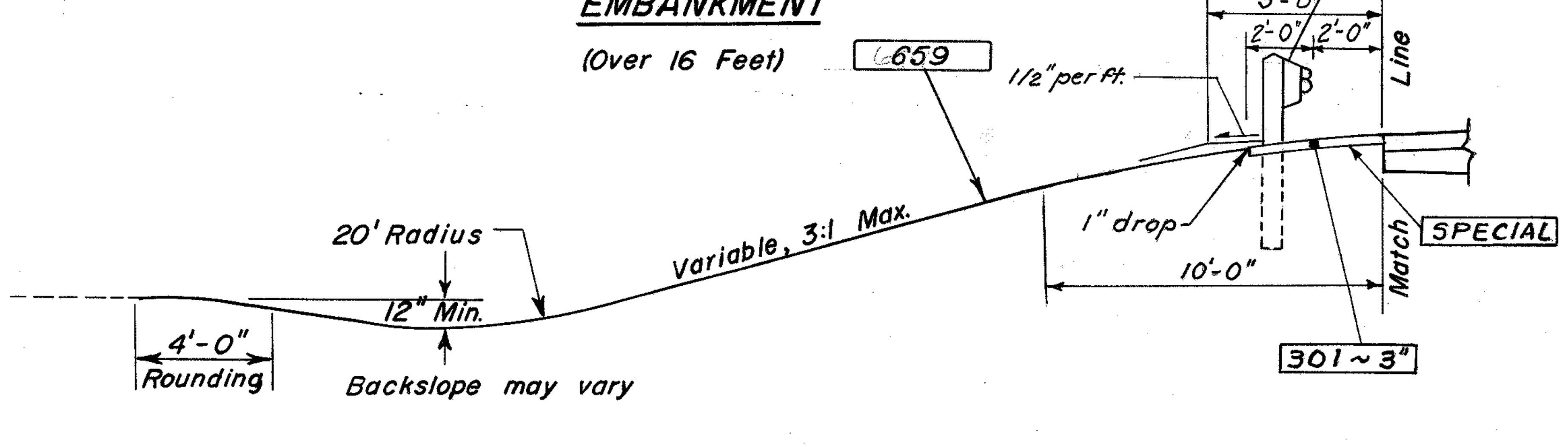
EASTBOUND

Sta. 376+50.00 to 385+02.54
Sta. 387+36.80 to 398+00.00
Sta. 398+00.00 to 403+20.00 ‡ See Pvt. Details Sht. No. 57 for width of Pvt. and Shoulders.



EMBANKMENT

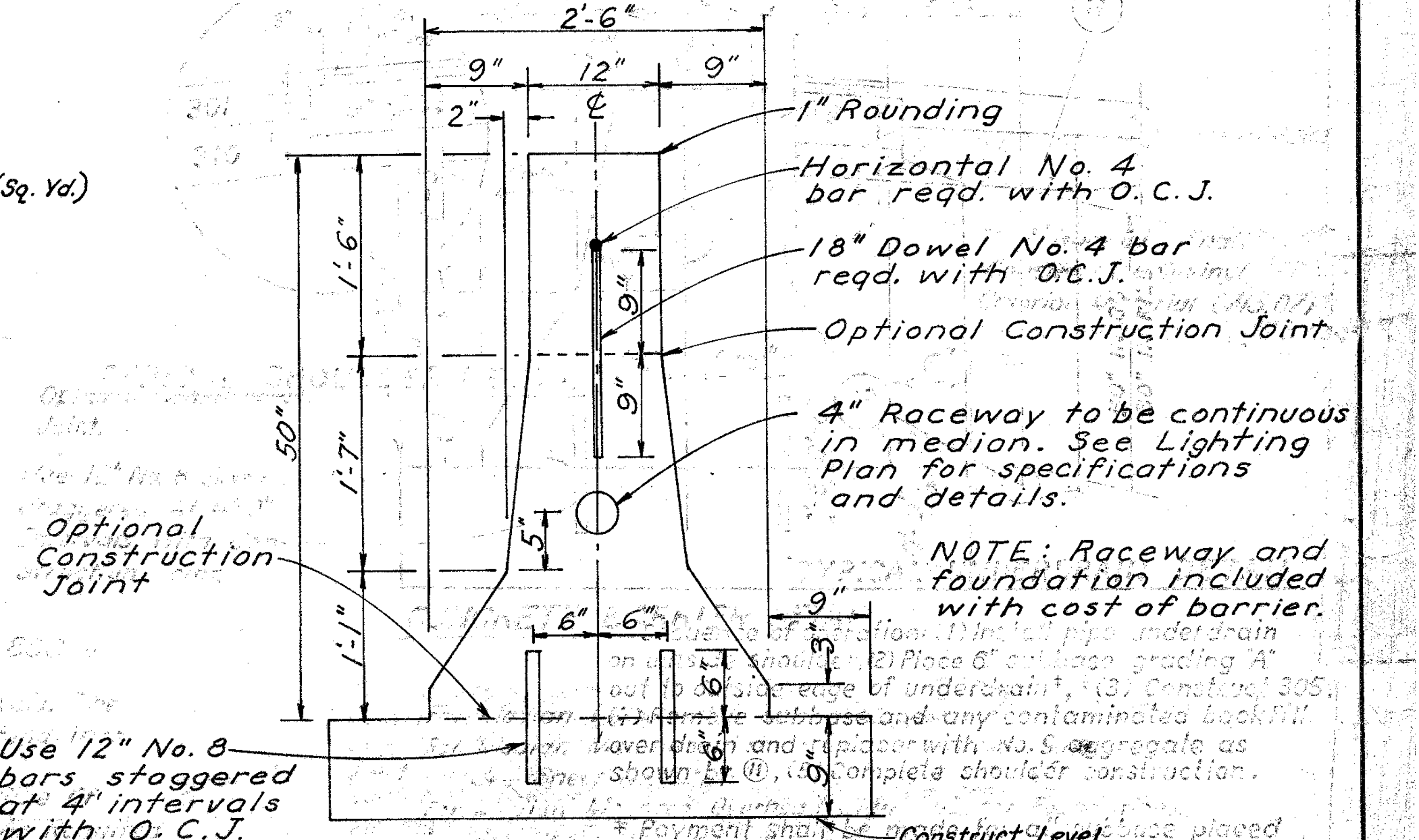
(Over 16 Feet)



EMBANKMENT

(16 Feet & Under)

ITEM	LEGEND
404~1¼	1¼" Asphalt Concrete
402~1¾	1¾" Asphalt Concrete
407	Tack Coat (0.10 Gal./Sq. Yd.) and Cover Aggregate
801~9	9" Portland Cement Concrete Base
310~A	Subbase, Grading A, as per plan; Thickness as shown
409	Seal Coat Bit. Mat. (0.20 Gal./Sq. Yd.) and Seal Coat Cover Agg. No. 9 (0.005 Cu. Yd./Sq. Yd.)
301~6	6" Bituminous Aggregate Base
622	Concrete Barrier, Type H
606	Guardrail, Type 5
605	6" Underdrain, (30" Shallow ~ 50" Deep)
659	Seeding and Mulching
Ⓛ	Standard Longitudinal Joint
Ⓟ	Profile Grade
◕	Hot Longitudinal Joint (See Proposal Note)
(1")	Drop Shoulder 1"
301-3"	3" Bituminous Aggregate Base (Weed Control)
SPECIAL	Herbicide for Weed Control



CONCRETE BARRIER
TYPE H

TYPICAL SECTIONS I-480-6 LANES

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

5
347

CUYAHOGA COUNTY
CUY-480-4.86

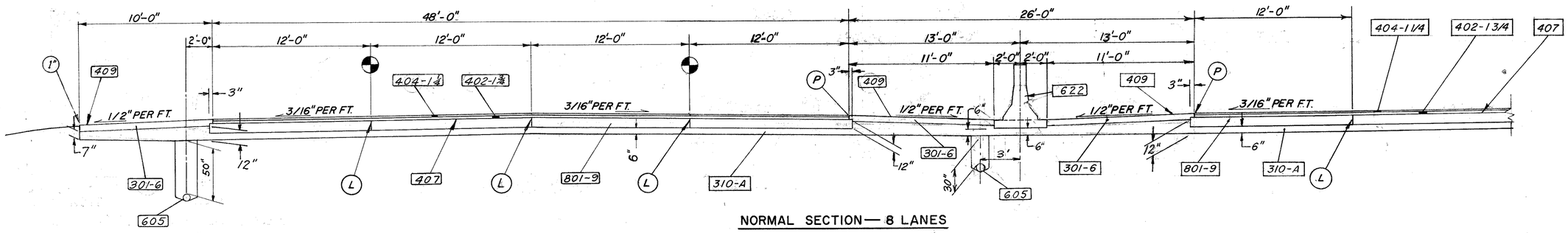
TYPICAL SECTIONS

TYPE 404 on 801

UNDERDRAIN NOTES

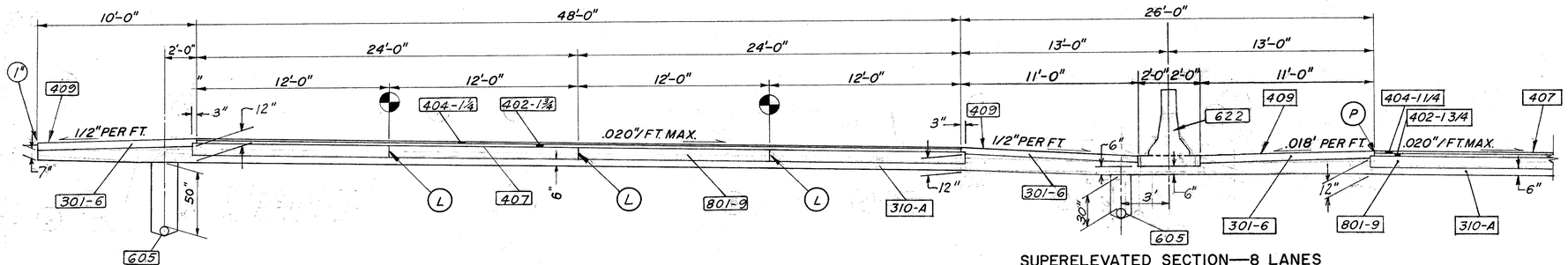
Median underdrain location varies 3'-0" Lt. or Rt. of ℄. See Plan & Profile sheets for location.

Omit underdrain on high side of superelevation when in fill.



NORMAL SECTION— 8 LANES

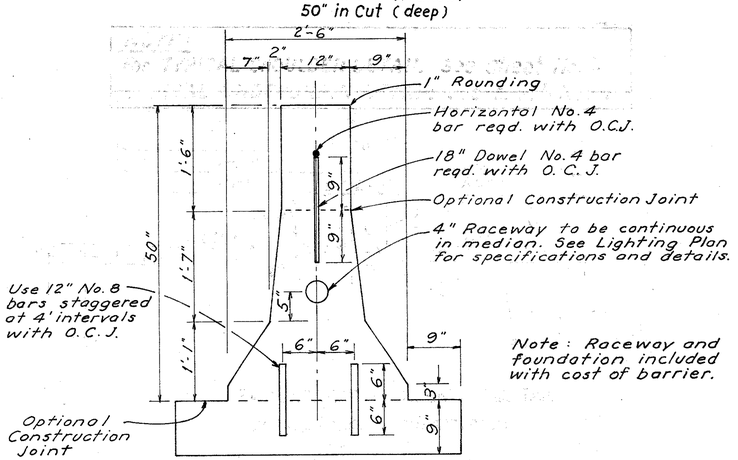
Sta. 435 + 50.00 to 442 + 07.50 Westbound Lanes
Sta. 435 + 50.00 to 441 + 71.50 Eastbound Lanes



SUPERELEVATED SECTION—8 LANES

Sta. 403 + 00.00 to 435 + 50.00 Westbound Lanes
Sta. 403 + 20.00 to 435 + 50.00 Eastbound Lanes

* 30" in Fill (Shallow)
50" in Cut (deep)



Note: Raceway and foundation included with cost of barrier.

CONCRETE BARRIER, TYPE H AS PER PLAN

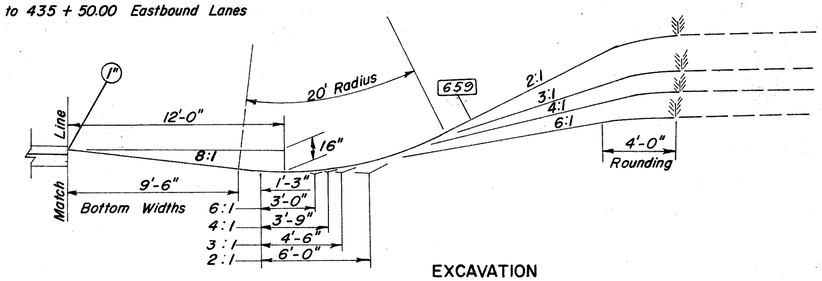
ITEM	LEGEND
404-1 1/4	1-1/4" Asphalt Concrete
402-1 3/4	1-3/4" Asphalt Concrete
301-6	Bituminous Aggregate Base, 6" Thickness
605	6" Underdrain (30" Shallow - 50" Deep)
622	Concrete Barrier, Type H
407	Tack Coat, (0.10 Gal./Sq.Yd.) and Cover Aggregate
409	Seal Coat, Bit. Mat. (0.20 Gal./Sq.Yd. and Seal Coat Cover Aggregate No. 9 (0.005 Cu.Yd./Sq.Yd.
801-9	9" Portland Cement Concrete Base
310-A	Subbase, Grading A as per Plan, (Thickness as shown)
659	Seeding and Mulching

Hot Longitudinal Joint, See Proposal note

(L) Standard Longitudinal Joint

(P) Profile Grade

(1") Drop Shoulder 1"



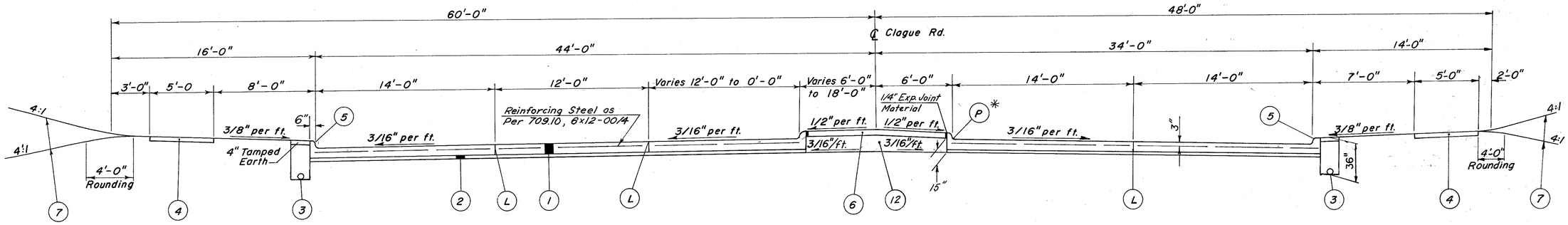
EXCAVATION

TYPICAL SECTIONS
TYPE 451 & 404

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

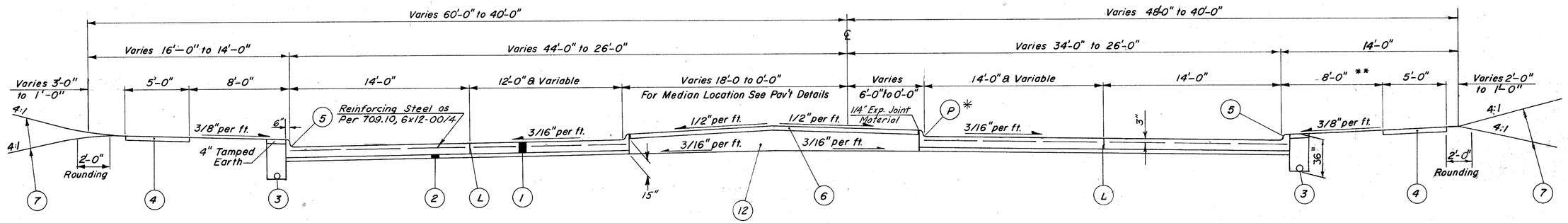
6
347



SOUTHBOUND LANES
Sta. 0+38.3 to Sta. 8+35.00

CLAGUE ROAD

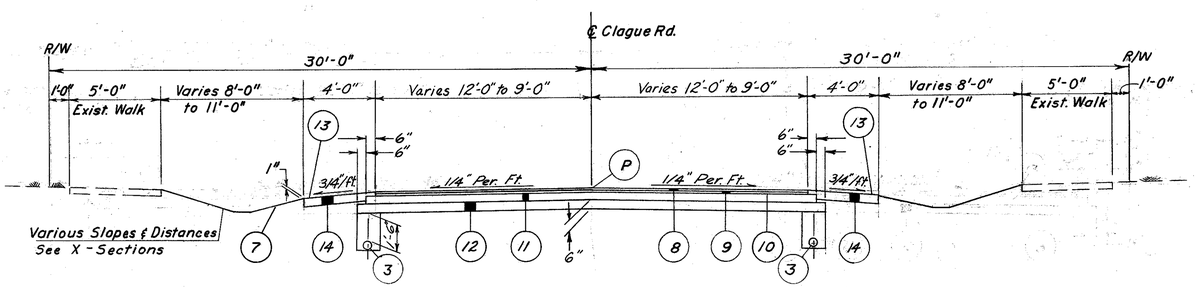
NORTHBOUND LANES
Sta. 0+38.3 to Sta. 9+55.00



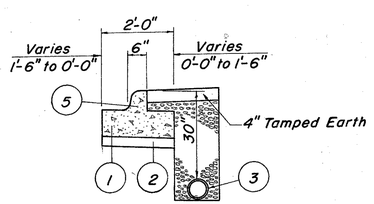
SOUTHBOUND LANES
Sta. 8+35.00 to Sta. 11+95.00

Sta. 11+95.00 to Sta. 15+55.00
See Sheet No. 60 For Typical Section

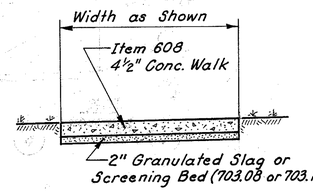
NORTHBOUND LANES
Sta. 9+55.00 to Sta. 11+95.00



Sta. 15+55.00 to Sta. 16+27.00



CURB MERGER DETAIL



ITEM 608
4½" Concrete Walk
As Per Plan

(L) Standard Longitudinal Joint
(P) Profile Grade

	ITEM	DESCRIPTION
(1)	451	9" Reinforced Portland Cement Concrete Pavement. as per Plan (See General Notes)
(2)	310	3" Subbase 703.08 or 703.10.
(3)	605	6" Underdrain 706.08 as per plan (See Sht. 9)
(4)	608	4 1/2" Concrete Sidewalk, As Per Plan.
(5)	609	Concrete Curb, Type 2-A, Modified As Per Plan. See Detail Sht. No. 9.
(6)	612	4" Concrete Traffic Island
(7)	659	Seeding and Mulching.
(8)	404	1" Asphalt Concrete, AC-20.
(9)	402	2" Asphalt Concrete, AC-20.
(10)	408	Bituminous Prime Coat: 702.09, RT-2 or RT-3; 702.02, MC-30 or MC-70; or 702.03, primer 20, applied at the rate of 0.40 gal. per sq. yd.
(11)	304	6" Aggregate Base.
(12)	310	Subbase Grading "A", As Per Plan (See Gen. Notes)
(13)	409	Seal Coat, using 0.008 cu. yd. No 9 cover aggregate per sq. yd. and 0.30 gal. bituminous material; 702.09, RT-9 or RT-10; 702.02 MC-800 or MC-3000; 702.04, RS-1, RS-2, CRS-1 or CRS-2; or 702.03, CBAE 800
(14)	411	6" Stabilized Crushed aggregate.

** Sta. 9+55.00 to Sta. 9+85.00 Varies 7'-0" to 8'-0"

* Sta. 0+38.26 to Sta. 11+95.00 Profile Grade at 6'-0" Left & Right of ℄

TYPICAL SECTION CLAGUE RD.

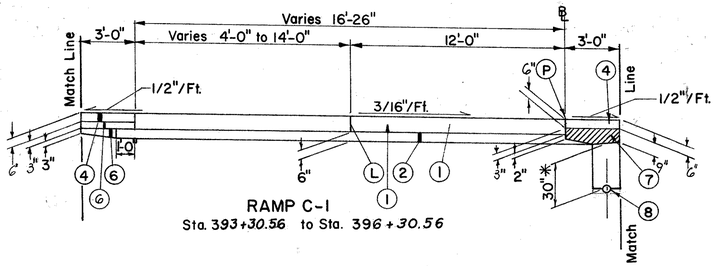
Rev. D.R.S. 1-9-78

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

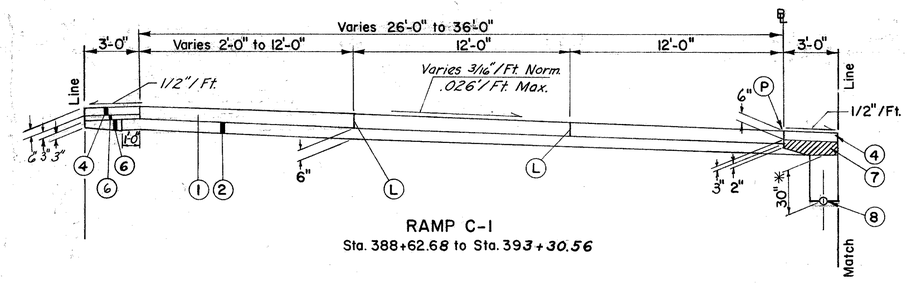
7
347

CUYAHOGA COUNTY
CUY-480-4.86

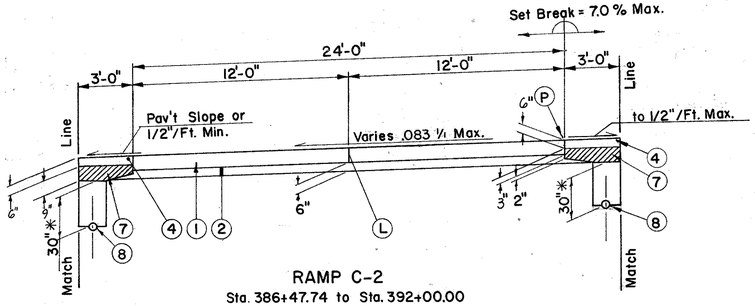
TYPICAL SECTION
TYPE 451



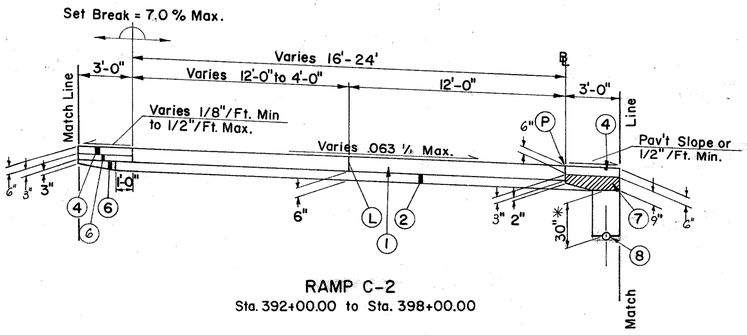
RAMP C-1
Sta. 393+30.56 to Sta. 396+30.56



RAMP C-1
Sta. 388+62.68 to Sta. 393+30.56



RAMP C-2
Sta. 386+47.74 to Sta. 392+00.00



RAMP C-2
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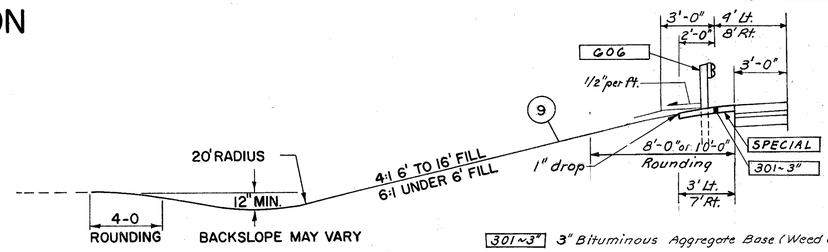
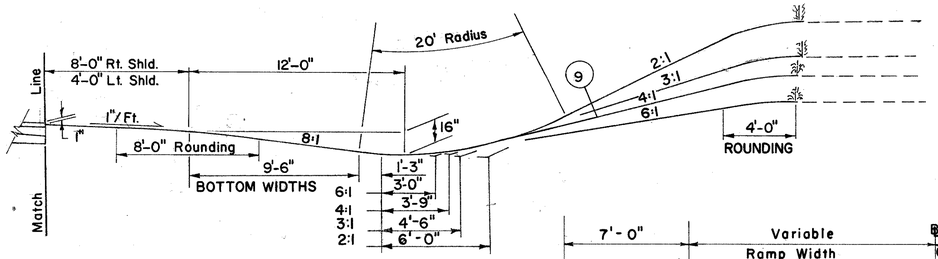


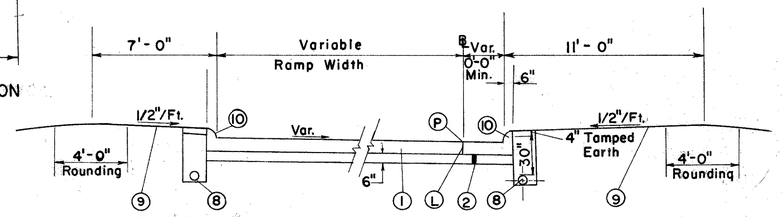
EMBANKMENT

301~3" 3" Bituminous Aggregate Base (Weed Control)

SPECIAL Herbicide for Weed Control



EXCAVATION



RAMP INTERSECTION DETAIL
Sta. 387+55.3 to Sta. 388+62.68 Ramp C-1
Sta. 385+61.6 to Sta. 386+47.74 Ramp C-2

LEGEND

(1) Item 451 9" Reinforced Portland Cement Concrete Pavement.
(2) Item 310 Subbase Grading "A" as Per Plan (See General Notes)
(4) Item 301 6" Bituminous Aggregate Base, 702.01, AC-20 or 702.09 RT-11 or RT-12.
(6) Item 310 Subbase (Thickness as Shown)
(7) Item SPECIAL Drainage Connection, using No. 8 Aggregate. (See Note in Proposal)
(8) Item 605 6" Underdrain, Shallow 30" Cover-Deep 50" Cover, Subgrade to Top of Pipe
(9) Item 659 Seeding & Mulching
(10) Item 609 Concrete Curb, Type 2-A, Modified As Per Plan (See Detail Sht. No. 9.
(P) Profile Grade.
(L) Standard Longitudinal Joint

(7) SEQUENCE OF OPERATIONS FOR PLACING PIPE UNDERDRAIN

(1) Install pipe underdrains on outside shoulders.
(2) Place subbase out to outside edge of underdrain or to one foot beyond edge of pavement where no underdrain is present.
(3) Construct Item 451
(4) Remove subbase and any contaminated backfill over drain and replace with No.8 or No. 78 Aggregate as shown by (7)
(5) Complete shoulder construction.
(6) Payment shall be made for all subbase placed under this operation

NOTES:

(1) For additional details see Standard Drawing No. MC-1
(2) Earth berm shall be finished 1" below edge of paved shoulder except where berm slopes toward shoulder.
* 50" in cut.

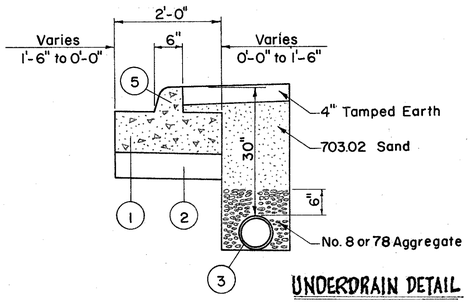
RAMP TYPICAL SECTIONS

TYPICAL SECTIONS
TYPE 451

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

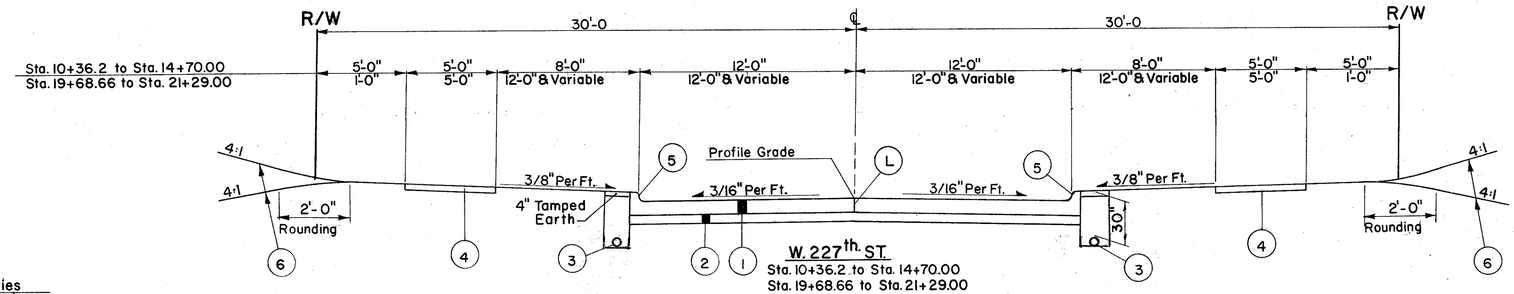
8
347

CUYAHOGA COUNTY
CUY- 480-4.86

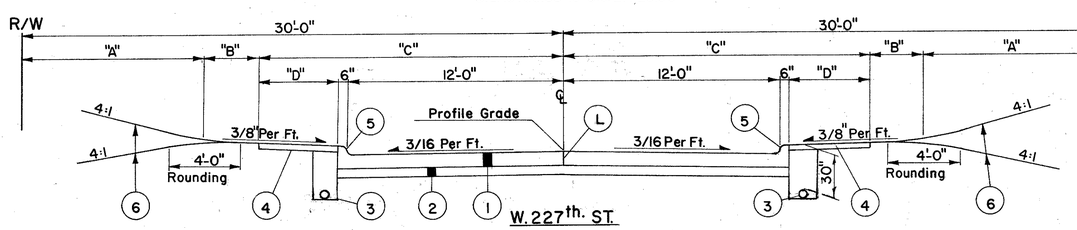


UNDERDRAIN DETAIL

CURB MERGER DETAIL

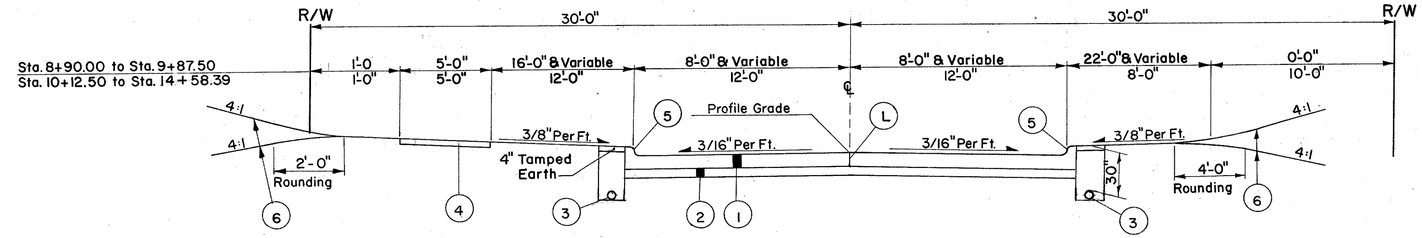


W. 227th. ST.
Sta. 10+36.2 to Sta. 14+70.00
Sta. 19+68.66 to Sta. 21+29.00



W. 227th. ST.

	A	B	C	D
Sta. 14+70.00 to Sta. 15+50.00	0'-0" to 10'-0"	5'-0" to 3'-0	25'-0" to 17'-0"	5'-0" & Variable
Sta. 15+50.00 to Sta. 15+62.64	10'-0"	3'-0"	17'-0"	4'-6"
Sta. 18+94.38 to Sta. 19+68.66	10'-0"	3'-0"	17'-0"	4'-6"



MAPLE DR.
Sta. 8+90.00 to Sta. 9+87.50
Sta. 10+12.50 to Sta. 14+58.39

	ITEM	DESCRIPTION
(1)	451	9" Reinforced Portland Cement Concrete Pavement.
(2)	310	6" Subbase Grading "A", As Per Plan (See Gen. Notes)
(3)	605	6" Underdrain (Shallow)
(4)	608	4 1/2" Concrete Sidewalk, As Per Plan (See Sht. 6)
(5)	609	Curb Type 2-A
(6)	659	Seeding and Mulching
(L)		Standard Longitudinal Joint.

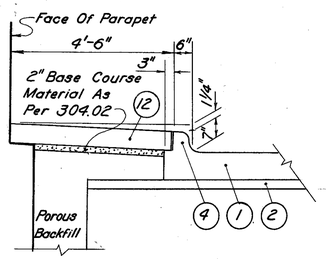
TYPICAL SECTION MAPLE DR. & W. 227th. ST.

TYPICAL SECTIONS
TYPE 451

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

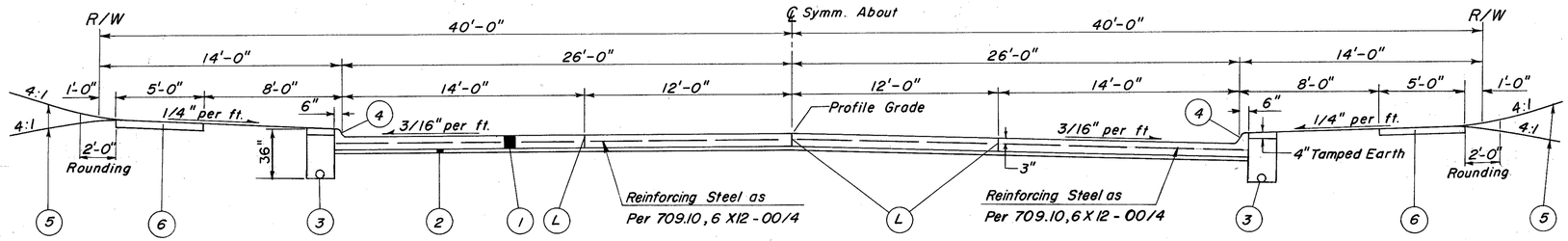
9
347

CUYAHOGA COUNTY
CUY-480-4.86



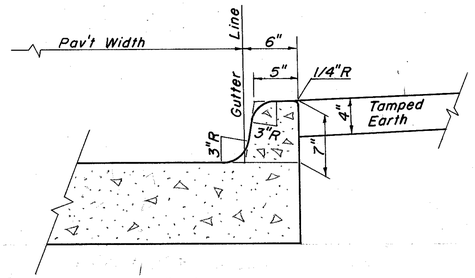
CURB AND SIDEWALK DETAIL

Sta. 8+83.00 to Sta. 9+14.20 Mastick Rd.
For Additional Details See Bridge No. Cuy. I-80-0614

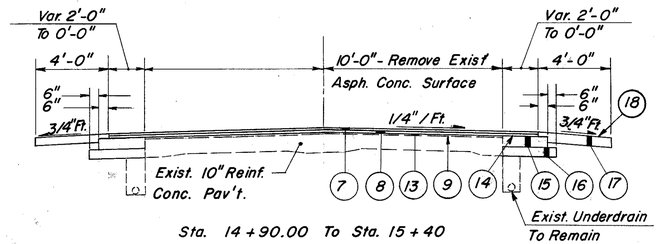


W. 220th St.

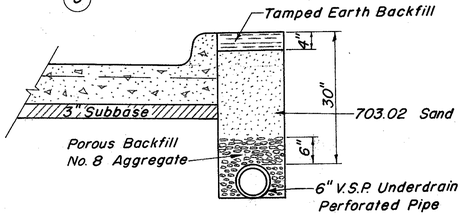
Sta. 11+62.97 To Sta. 13+50.00



CONCRETE CURB, TYPE 2-A MODIFIED AS PER PLAN



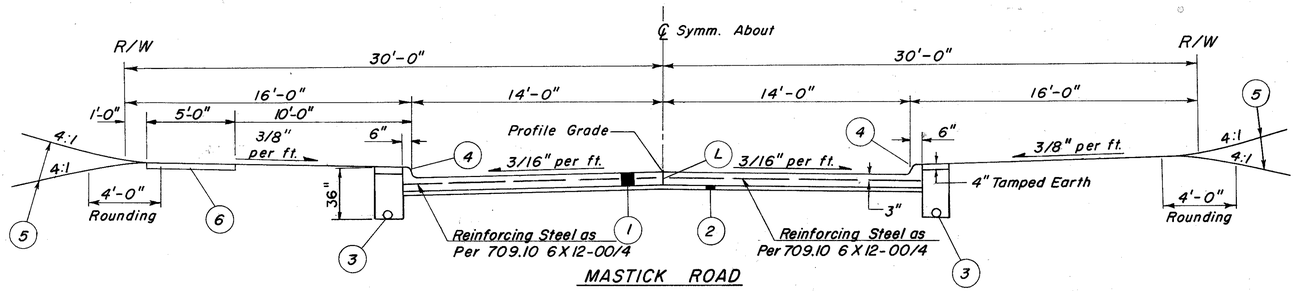
Sta. 14+90.00 To Sta. 15+40



CURB & UNDERDRAIN DETAIL
Concrete Curb Type 2-A (Mod.) & 2-B (Mod.)

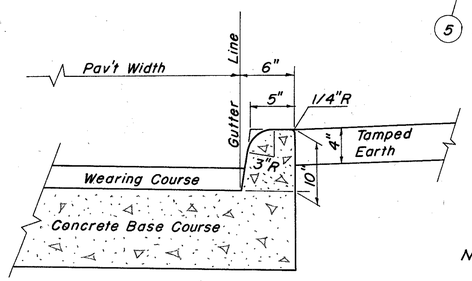
NOTE: 706.08 Perforated Bell & Spigot Vitrified Clay Pipe with perforations in accordance with AASHO M 65 shall be used for pipe underdrains. In addition, three lugs designed to center and align the pipe and provide a 3/8" gap between pipe lengths shall be provided in the bell end of each pipe.

ITEM 605 ~ 6" Underdrain, 706.08 As Per Plan



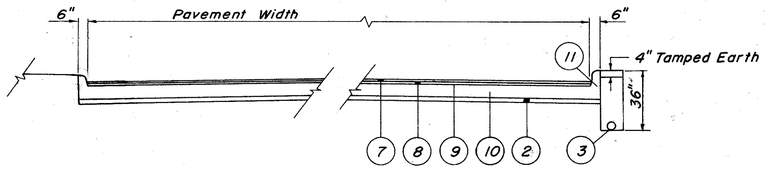
MASTICK ROAD

Sta. 8+83.00 To Sta. 9+14.20 (See Curb & Sidewalk Detail)
Sta. 13+52.37 To Sta. 14+90.00



CONCRETE CURB, TYPE 2-B MODIFIED AS PER PLAN

NOTE:
All item 609 appearing on this plan as "Special" 6"x7", 6"x10" Concrete Curb Shall read as follows: Concrete Curb, Type 2-A, 2-B, Modified As Per Plan.



W. 220th. ST. – MASTICK RD. INTERSECTION

Sta. 8+00.00 To Sta. 8+64.45 (W. 220 th St.)
Sta. 7+50.75 To Sta. 8+83.00 (Mastick Rd.)

ITEM		DESCRIPTION
(1)	451	9" Reinforced Portland Cement Concrete Pavement. as Per Plan (See General Notes)
(2)	310	3" Subbase 703.08 or 703.10
(3)	605	6" Underdrain, 706.08, as per plan
(4)	609	Concrete Curb, Type 2-A Modified As Per Plan (See Detail this Sheet).
(5)	659	Seeding and Mulching.
(6)	608	4 1/2" Concrete Sidewalk, As Per Plan (See Sht. 6)
(7)	404	1" Asphalt Concrete, AC-20
(8)	402	1 1/2" Asphalt Concrete, AC-20
(9)	407	Tack Coat 702.04, SS-1, SS-1h, MS-2 or RS-1; or 702.02 RC-250, Applied at 0.10 Gal./Sq. Yd. And Cover Aggregate.
(10)	305	9" Portland Cement Concrete Base - Reinforced, As Per Item 451
(11)	609	Concrete Curb, Type 2-B Modified As Per Plan (See Detail this Sheet)
(12)	608	6" Reinforced Concrete Sidewalk See Detail Bridge No. CUY. I-80-0614
(13)	402	Variable Depth Asphalt Concrete, AC-20
(14)	408	Bituminous Prime Coat: 702.04, RT-2 or RT-3; 702.02, MC-30 or MC-10; or 702.03, primer 20, applied at the rate of 0.40 gal. per sq. yd.
(15)	304	6" Aggregate Base
(16)	310	Subbase
(17)	411	6" Stabilized Crushed Aggregate
(18)	409	Seal Coat Applied at 0.40 Gal./Sq.Yd. No. 8 Aggregate .008 Per Sq. Yd.
(L)		Standard Longitudinal Joint.

TYPICAL SECTION W. 220th. & MASTICK RD.

GENERAL NOTES

ITEM 619, FIELD OFFICE

The Contractor shall provide a minimum of 800 sq. ft. of floor space for the field office and in addition the requirements of Item 619, shall provide and maintain sanitary provisions as per 107.06. All the above is included in the lump sum price bid for Item 619, Field Office.

SEEDING

Quantities for seeding are calculated for the soil areas between the right-of-way fence lines, between the right-of-way lines in unfenced areas, and within the work limits for areas outside the right-of-way lines covered by work agreement or slope easement.

UNDERGROUND UTILITIES

The locations of the underground utilities shown on the plans have been obtained by diligent field checks and searches of available records. It is believed that they are essentially correct, but the State of Ohio does not guarantee their accuracy or completeness.

ESTIMATED QUANTITIES

Specific locations and usage of estimated quantities set up on this plan to be used "as directed by the Engineer" shall be made a matter of record by incorporation into the final change order governing completion of this project. *Estimated quantities of materials shall not be ordered for delivery to the project unless authorized by the Engineer.*

EROSION CONTROL:

Items 601, 660, 667 are provided in the plans for erosion control. Rock or turf of a stable nature will not be removed in order to place any of this items. The Engineer shall check and non-perform quantities or adjust locations and quantities for these items where indicated by field conditions during construction.

622 CONCRETE BARRIER, TYPE H

The 50" high concrete barrier shall be built to the dimensions shown in the plan details. The upper 18" may be constucted integrally with the bottom, or separately with #4 rebar dowels at 4' max. spacing. Start and end dowels 6" from barrier vertical joints. Barrier foundation shall be 9" deep and 18" wider than the base of the barrier. The top width shown on the details is minimum and shall vary with transitions around sign support foundations and bridge piers. At end terminals taper the upper 18" to 0" in 6'.

Concrete barrier if constructed on top of an approach slab shall omit the 9" deep foundation. Dowels shall be retained to tie the barrier to the approach slab.

ELEVATION DATUM

All elevations are based on U.S.G.S. datum.

ITEM 203 PROOF ROLLING

An estimated quantity for this item has been provided in the general summary for use in proof rolling of subgrade for the mainline and ramp pavements, and for paved shoulders.

REMOVAL OF TREES AND STUMPS

All trees and stumps specifically marked for removal within the construction limits of this project shall be removed under the lump sum price bid for Item 201 Clearing and Grubbing, except that those trees for which protection and preservation work is indicated elsewhere in these plans shall not be removed.

The following is an approximate estimate of the number of trees and stumps to be removed.

SIZES	No. TREES	No. STUMPS
18"	127	
30"	8	
48"	1	
60"	0	

The above estimate is approximate and the State of Ohio reserves the right to order the removal of additional trees or stumps outside of the limits of construction but within the right-of-way and/or easement lines. Payment for the removal of these additional trees or stumps shall be included in the lump sum price bid for Item 201 Clearing and Grubbing.

UTILITIES

The Contractor shall notify, at least two working days before breaking ground, all public service corporations having wire, poles pipe, conduits, manholes or other structures which may be affected by this operation, including all structures which are affected and not shown on these plans. He shall conduct his operations in such a manner as to avoid damages to any and all utilities, and all work required for public or private utilities will be done by and at the expense of their respective owners, unless otherwise noted on these plans.

UTILITY OWNERSHIP

East Ohio Gas Co.
1201 East 55th Street
Cleveland, Ohio 44103

Ohio Bell Telephone Co.
820 West Superior Ave., Room 703
Cleveland, Ohio 44113

Cleveland Electric Illuminating Co.
Illuminating Building, 55 Public Square
Cleveland, Ohio 44113

City of Cleveland
Div. of Utilities Engineering
1201 Lakeside Avenue
Cleveland, Ohio 44114

City of North Olmsted
Engineering Department
5252 Dover Center Rd.
North Olmsted, Ohio 44070

City of Fairview Park
20777 Lorain Rd.
Fairview Park Ohio 44126

DUST CONTROL

10 Tons of 616 Calcium Chloride for dust control & 500 M gallons of water, 616 for dust control are to be used at the direction of and in amounts requested by the engineer for dust control within the limits of the project.

MONUMENTS

Monuments shall be constructed in accordance with details shown on Standard Drawing MC-1. For locations, see Sheet No. 331.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

The rounded corners shown on *the typical sections* apply to all cross sections, even though otherwise shown on these plans.

PAVEMENT ELEVATIONS

Pavement edge elevations where curb is used are at the face of the curb unless otherwise indicated.

LOCATIONS OF GUARDRAIL

The locations of guardrail runs as shown in these plans are subject to adjustment to assure that the planned installations will afford maximum protection for traffic.

CONTRACTION JOINTS IN 801 CONCRETE BASE.

In lieu of spacing requirements of Standard Construction Drawing BP-4, contraction joints without dowels shall be spaced at 20' intervals and shall be skewed right edge forward at a rate of 1' in 6' of width except for the first 25 joints away from the pressure relief joints. These joints shall not be skewed and shall be dowelled. Dowels shall meet the requirements of BP-4.

COATED DOWEL BARS

Dowel bars required on Standard Drawing BP-4 shall be coated in accordance with supplemental Specification 948.

FENCE ERECTION--SCHEDULE OF OPERATIONS.

For the protection of pedestrians, children, and animals, the Contractor shall, so schedule and prosecute the work that the erection of the right-of-way fence shall be performed prior to any other operation in the area.

In his Progress Schedule, the Contractor shall include a complete schedule of how he proposes to erect the right-of-way fence.

PART-WIDTH CONSTRUCTION

Because of the necessity of building portions of this project under traffic and constructing the pavement part at a time, extreme care shall be taken to prevent the construction of a butt joint on centerline in the 304 and 310 courses.

This shall be accomplished by building the 304 and 310 courses placed with the first portion of the pavement built, at least eighteen (18) inches beyond the centerline and by surfacing no closer than eighteen (18) inches to this edge of the above courses. When the second portion of the pavement is built, at least twelve (12) inches of these projecting courses shall be broken down and thoroughly keyed in with the newly placed corresponding courses in the second portion of pavement built. Payment for this operation shall be included in the unit prices bid for the pertinent pavement items.

ITEM 310 SUBBASE, GRADING A AS PER PLAN

Material for this item shall meet the requirements of grading A of 310.02 after all operations of placing and compacting have been completed.

STATION MARKING The Contractor shall stencil station numbers onto the top of the concrete barrier before it takes its final set. The complete station number is to be marked each 100 ft. The numerals shall be 3 to 4 inches in height and 1/4 inch in depth. The station numbers shall be placed parallel with the pavement edge and centered on the top of the concrete barrier. Payment shall be included in the contract price bid per Item 622 ~ Concrete Barrier.

CALC. BY J.L. DATE 7/71
CHKD. BY T.R.B. DATE 7/71
Rev. L.J.P. 12-14-77.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

GENERAL NOTES

REVIEW OF DRAINAGE FACILITIES :

Before any work is started on the project, AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR ALONG WITH LOCAL REPRESENTATIVES SHALL MAKE AN INSPECTION OF THE EXISTING SEWERS WITHIN THE WORK LIMITS WHICH ARE TO REMAIN ON SERVICE AND WHICH MAYBE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.
ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.
ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTION PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTORS OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL OPERATION DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE PERTINENT 603 CONDUIT ITEMS OF THE CONTRACT.

EXISTING UNDERDRAINS

Where existing underdrains are encountered and no provision has been made for new underdrains, they shall be connected to new inlet with 6 inch Type "F" pipe. A quantity of 100 feet has been provided in the general summary to be used as directed by the engineer for that purpose. The materials shall not be order by the contractor unless prior approval is received from the project engineer.

24" CONDUIT, TYPE C, 706.02, D-2000 (EPOXY COATED) WITH 706.11 JOINTS, AS PER PLAN.

The interior barrel and joint surface areas of the concrete pipe shall be prepared so as to remove all forms of oil, laitance and other deleterious materials and then be lined around with a high build, polyamide-cured 2 component coal tar epoxy coating, Military Specification MIL-P-23236.

The lining compound shall be sprayed so as to obtain a continuous and relatively uniform and smooth lining with a minimum dry film thicknes of 0.03 inches. All interior barrel surface shall be thoroughly inspected for holidays, utilizing an electrical instrument specially designed for that purpose. Just prior to installation of each joint of pipe in the field, a fibrated coal tar joint compound shall be applied around the inside corner of the bell or groove in accordance with the manufacturer's recommendations. Coating of the conduit shall be a plant operation.

Cost of labor and materials for coating the pipe shall be included in the unit price bid per lineal foot for the Item 603 Conduit.

WEED CONTROL BENEATH GUARD RAIL.

Guard Rail located on I-480 shall not be erected until the Contractor has prepared the subgrade and paved the area beneath the guard rail run as shown in the typical sections. Special care shall be exercised by coordination between the Contractors, to insure the 301 bituminous aggregate base is installed in the proper locations prior to erecting the guard rail runs.

Preparation of the subgrade shall include an application of Simazine pre-emergance herbicide. The rate and method of application shall be in strict conformance with the manufacturer's instructions. The Contractor shall have the necessary permit from the the Ohio Deparment of Agriculture before applying herbicide.

After setting the guard rail posts but before attaching the rail elements, any damage to the pavement resulting from the post-setting operations shall be repaired and additional paving material shall be compacted around the posts sufficient to prevent water from collecting.

Cost of all materials, equipment, and labor necessary to accomplish the above shall be included in the unit prices bid for Item 301 ~ Bituminous Aggregate Base (Weed Control) and Item Special ~ Herbicides for Weed Control.

Estimated quantities for these Items are calculated on Sheet No. 18.

TRENCH FOR WIDENING

Trench excavation for base widening shall be performed only on one side of the pavement at a time. The open trench shall be adequafely maintained and protected with drums or barricades at all times. Placement of proposed subbase and base material shall follow as closely as possible behind the excavation operations. The length of widening trench which is open at any one time shall be held to a minimum and shall at all times be subject to approval of the Engineer.

CONNECTIONS TO EXISTING *PIPE*

When the plans provide for proposed drainage pipe 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.

CONTRACTION AND EXPANSION JOINTS IN 305, 451 AND 452

Although specific locations of certain expansion and contraction joints have been detailed on this plan, no waiver of the specifications is intended. Provisions of expansion joints or pressure relief joints at all major structures and the maximum spacing between contraction joints shall in all cases be in accordance with Standard Construction Drawings and the Specifications.

MANHOLE COVERS

The contractor shall set the frames for manhole covers at such an elevation and inclination as to place the surface of the cover in the plane of the finished surface except on slopes steeper than I on 4.

REMOVAL OF EXISTING PIPE

The removal of all existing pipe drains which would normally be removed in various excavation items shall be included for payment in the unit prices bid for the respective excavation items, unless otherwise itemized in the plans.

SANITARY FLOW INTO HIGHWAY DRAINAGE SYSTEMS

This plan makes no provision for connecting, nor shall the engineer or contractor connect, any existing or new drainage into the highway drainage system when such drains carry flow from any plumbing fixtures including floor drains and sink drains or drains from livestock lots

Existing pipe carrying flow which comes within the category outlined above shall be plugged with Class "C" concrete at the right-of-way line. Payment for said plugging shall be included in the unit price bid for item 203 excavation.

LOCATION AND SIZE OF EXISTING PIPES

The location, type, depth, and size of all existing pipes are shown as near exact as the available information will permit. The state will not be responsible for any variations found during construction.

SPECIAL DITCHES

For special ditch grades, see cross sections.

CATCH BASIN LOCATION

The location of a C.B. as shown on the plans is the center of grate.

INLET LOCATION

The location of an inlet as shown on the plans is to the center of the grate.

SPRING DRAINS

Reference is made to the detailed drawing on Sheet No. *21* showing the method of draining any spring that may be shown on the plan or encountered during construction as determined by the engineer. The following estimated quantities have been included in the general summary for this purpose:

Item 605 – 6" Unclassified Pipe Underdrain, 707.01, Type III or 707.12, Type III, as per plan 360 L.F.

Item 605 – Aggregate Drains for springs, as per plan 12 L.F.

The contractor shall not order materials for "Spring Drains" until authorized by the engineer and in the event no springs are encountered, the item shall be nonperformed.

REINFORCED CONCRETE CATCH BASINS

Catch basins over 12 ft. in depth shall be built of Class C Concrete reinforced by placing 1/2" diameter bars 12" center to center both vertically and horizontally with a 2" clearance from the inside face of the wall. Payment for furnishing and placing the reinforcing steel shall be included in the unit price bid for Item 604, reinforced concrete catch basin.

BULKHEAD

Bulkheads shall be constructed by the contractor at the locations shown on the plans and as directed by the Engineer. Bulkheads shall be contructed either of shale brick meeting the requirements of Section 704.01 and using portland cement mortar, or of vitrified stoppers of the proper size to fit the pipe. The work shall include all necessary excavation and backfill operations to properly construct the bulkheads. Cost to be Included in the unit Price Bid for Pertinent 603 Conduit Item.

WATERING AND MOWING PERMANENT SEEDED AREAS.

The following estimated quantities are 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	200	M. Gals.
659	MOWING	400	M. Sq. Ft.

WATER POLLUTION, SOIL EROSION AND SILTATION CONTROL

The following estimated quantities have been included in the general summary and are to be used as directed by the Engineer for *erosion and siltation control measures:*

Item 207 –	Straw or Hay Bales	500	E A.
Item 207 –	Temporary, Seeding and Mulching	33,000	S.Y.
Item 659 –	Commercial Fertilizer (12-12-12)	7	Tons
Item 659 –	Water	71	M Gal.
Item 207 –	Temporary Slope Drains	1,500	L.F.
Item 207 –	Temporary Benches, Dikes, Dams and Sediment Basins	350	C.Y.
Item 659 –	Mowing	370	M. Sq. Ft.
Item 659 –	Repair Seeding and Mulching	8,200	Sq. Yds.

CHK. BY TRB DATE 10/70
CHD. BY HJH DATE 1/71

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GENERAL NOTES

CLAGUE ROAD – WEST 220th STREET & MASTICK ROAD

ITEM 451, 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT AS PER PLAN

All applicable provisions of Item 451 as set forth in the Construction and and Material Specifications shall apply unless modified herein and the following shall be considered as supplemental to the provisions set forth therein.

Curing material for exposed concrete shall conform to Interim Federal Specification TT-C00800 Type 1 (chlorinated rubber liquid membrane forming compound).

High Early Strength Portland Cement shall be used for base or pavement replacement unless otherwise directed by the Engineer.

Bituminous Material (451.08) ---------- 702.01, 702.02, and 702.04.

The placing of reinforcement by vibratory means will not be permitted.

JOINTS: Longitudinal key joints and vertical faces of existing rigid pavement shall be cleaned of foreign material and given an application of bituminous material in a manner which results in a residual coating of 1/4 gallon per square yard before the adjoining slab is poured.

When not shown on the Plans, or provided for elsewhere, joints in the pavement within intersections shall be of the type, and at such locations, as designated by the Engineer.

In those areas where a pavement is being widened using a section consisting of a Portland Cement Concrete Pavement with or without an Asphalt Concrete Surface Course, traverse joints shall be placed in the base to match joints in the original concrete base, as shown on the Plans and/or as directed by the Engineer.

(d) Contraction Joint. The location of the joints should be clearly marked on the forms in such a manner that the center line can be readily determined for the sawing operation.

Unless otherwise approved by the Engineer the following method should be used. Immediately after the finishing machine has cleared the joint, and prior to any hand finishing, a transverse slot 2" in depth shall be cut into the plastic concrete with a steel plate 3/8" thick and of sufficient length to cut a slot the total width of the pavement in one operation. The plate shall have the cutting edge serrated and shall be moved longitudinally in such a manner as to provide a sawing action while it is being forced into the concrete. The plate shall be reinforced in such a manner as will keep it rigid and in straight alignment and it shall be suspended and guided from a movable bridge, of an approved design, so that the plate will be held rigidly perpendicular to the surface of the slab and at right angles to the center line of the pavement when it is inserted in the concrete.

Immediately following the removal of the steel cutting plate, a 1/4" x 2" premolded joint filler meeting the requirements of 705.03 shall be inserted in the slot so that the top edge of the filler is flush with the top of the concrete slab. The pavement shall then be finished as required elsewhere.

This joint shall be sawed within 3 days with a 5/16" thick blade cutting a kerf 2" deep. Any residual joint filler remaining in the slot shall be removed by a suitable means and the joint cleaned, protected and sealed as provided elsewhere.

(f) Hinge Joint. When called for on the Plans or in the Proposal, two hinge joints shall be sawed into the pavement, at the 1/3 points, between successive contraction joints or between adjacent contraction and expansion joints. Hinge joints shall not be placed as an extension of either a contraction, expansion or construction joint in an adjacent slab, but may be used to extend a longitudinal tied joint of a more or less perpendicular intersecting roadway when approved by the Engineer. In order to insure the correct indentification of the sawed joint for extension when adjacent or future lanes are placed, a 3" block letter, C, for contraction or construction and H. for hinge, shall be impressed 1/4" into the finished slab adjacent to and at each end of the joint. If it is not possible to place two successive hinge joints as herein specified, the sawed contraction joint described herein shall be used. When hinged joints are used the spacing between successive contraction and/or expansion joints shall not generally exceed 75 feet and the intermediate hinge joint spacing shall not exceed 25 feet except as approved by the Engineer.

Hinge joints shall be constructed in the same manner as the contraction joint described in (d) above except that no dowel assembly is required and the reinforcing mesh in the pavement or base shall be carried through the joint. Care shall be taken that the mesh reinforcement is not cut when the joint is being sawed.

CONSOLIDATING AND FINISHING: Vibratory finishing will not be permitted.

Unless otherwise specified the pavement shall be given a broom finish using a broom of an approved type, not less than 18 inches in width of bass or bassine fiber not more than 5 inches in length. The strokes shall be from edge to edge of the slab, one stroke per width of broom with adjacent strokes slightly overlapped and shall be drawn without "tearing" of the concrete and so as to produce regular corrugations approximately 1/16 inch depth.

Brooms shall be washed thoroughly at frequent intervals during each day. Any coarse or long bristles which cause irregularities shall be trimmed or removed.

CURING: The curing of concrete, which is to be covered with asphalt concrete, may be accomplished thru the use of an approved Asphalt Membrane Curing Compound which meets the moisture retention properties set forth in 705.07. The use of asphalt membrane curing compound on exposed surfaces will not be permitted.

PROTECTION AGAINST RAIN: In order that the concrete may be properly protected against the effects of rain before the concrete is sufficiently hardened, the Contractor will be required to have available at all times materials for the protection of the surface of the unhardened concrete. Such protective materials shall consist of standard covering material such as burlap or cotton mats, curing paper, or plastic sheeting material for the protection of the surface of the pavement. When rain appears imminent, all paving operations shall stop and all available personnel shall begin covering the surface of unhardened concrete with the protective covering.

SURFACE SMOOTHNESS: All sections of pavement that have been ground, repaired or replaced by the contractor shall be given a protective application of the specified curing compound.

ITEM 451 REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (TEXTURED)

For Ramp C-1 & C-2 the pavement surface shall be textured by use of a burlap drag in the longitudinal direction followed by an approved device that will produce a relatively uniform pattern of grooves in the transverse direction. The grooves shall be spaced at approximately 1/2 inch between centers and shall be 0.10 inch to 0.20 inch deep and 0.08 inch to 0.12 inch wide.

MAINTENANCE OF TRAFFIC

Where the work called for under this contract involves the closing of streets or the re-routing of traffic the Contractor shall prosecute to the fullest extent the work involved so as to reduce to a minimum the length of time the roadway will be closed to the traffic. No street will be closed until necessary for construction as determined by the Engineer. The Contractor is required to notify the City of North Olmsted and the City of Fairview Park in writing fourteen (14) days in advance of closing of an existing street.

In order to maintain traffic and provide the necessary temporary pavement for this contract, the following items of work are required:

BROOKPARK ROAD (S.R. 17)

Two way traffic shall be maintained at all times by the use of the existing pavement.

CLAGUE ROAD

Two way traffic shall be maintained at all times by the use of the existing pavement, the proposed pavement or temporary roadway. Temporary concrete walks are to be provided as directed by the Engineer.

W 227th St. AND MAPLE DR.

The Contractor shall provide for and maintain local traffic with safe and satisfactory access to abutting properties at all times.

W 224th St.

Two way traffic shall be maintained at all time by use of the existing pavement until West 227th St. extension to Brookpark Rd. is opened to traffic.

W 220th St.

The Contractor shall at all times maintain four lanes of traffic (two lanes in each direction) on either existing pavement or temporary pavement as per plan.

MASTICK ROAD

The Contractor shall at all times maintain two lanes of traffic (one lane in each direction) on either existing pavement or temporary pavement as per plan.

All of the above are included in the lump sum price bid for Item 614 Maintaining Traffic except that the cost of the temporary detour roads for W. 220th St. and Mastick Rd. shall be paid for as Item 615 Temporary Pavement, Class B and Item 615 Temporary Roads.

Estimated quantities of the following items have been included in the General Summary for use as directed by the Engineer.

Item 410	Traffic Compacted Surface Type A or B –	250 Cu. Yd.
Item 404	Asphalt Concrete or an Approved Bituminous Pre-mixed Surface Course for Maintaining Traffic –	200 Cu. Yd.

CALC. BY J.L. DATE 7/4/71
CHKD. BY TRB DATE 7/13/71
Rev. L.J.P. 12-14-77
Rev. D.R.S. ~ 1-17-78

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GENERAL SUMMARY

TYPE CODE 6707 UNLESS OTHERWISE NOTED

ITEM	SHEET NUMBERS																																					100% State of Ohio		PARTICIPATION 100% STATE OF OHIO	PARTICIPATION INTER-STATE	GRAND TOTAL	UNIT	ITEM	DESCRIPTION
	10-12	17-18	30	31	32	33	34	35	36	37	38	39	40	41	42	43	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	331	335	335							ROADWAY
201	Lump																																								Lump	Lump	Lump	201	Clearing and Grubbing
Special		2,249																																							2,249	2,249	Sq. Yds.	Special	Herbicides for Weed Control
301		187																																							187	187	Cu. Yds.	301	Bituminous Aggregate Base (Weed Control); 702.01 AC-20 or 702.09 Rt-11 or RT-12.
202																								9									132								141	141	Sq. Yds.	202	Wearing Course Removed.
202				18	10								18																												46	46	Lin. Ft.	202	Sandstone Curb removed for storage
202																					132	340										333									805	805	Lin. Ft.	202	Curb Removed
202											295																														295	295	Lin Ft	202	Fence Removed for Storage
202				52	29								993	900	987	697			125	228	86	104	941	1561	1311	889															8903	8903	Sq. Yds	202	Pavement Removed
202								655	4150				3430	4390	4500	2550			2310	2250	2315	1680	1620	2380	1070	1950															35,250	35,250	Sq. Ft.	202	Sidewalk Removed
203		42																																							42	42	Hours	203	Proof Rolling.
203	112,991																				415	356		1119			5984	3472	4677	6417	2706	3114	1395								142,646	142,646	Sq. Yds.	203	Subgrade Compaction
203	572,190																																								572,190	572,190	Cu. Yds.	203	Excavation Not Including Embankment Construction,
203	308,119																																								308,119	308,119	Cu. Yds.	203	Embankment
404	200																																								200	200	Cu. Yds	404	Asph. Conc. or an approved Bituminous Pre-Mixed Surface Course for Maintaining Traffic
410	250																																								250	250	Cu. Yds.	410	Traffic Compacted Surface, Type A or B
608													3031	6486	3706	2255	3380	1892	2690	1380	690	905	172	1702		916															29,205	29,205	Sq. Ft.	608	4½" Concrete Walk, as per plan
608																		343					66	148	255	278															1,090	1,090	Sq. Ft.	608	6" Reinforced Concrete Walk, as per plan
604																																				11					11	11	Each	604	Standard Monument Assembly
604																							1																		1	1	Each	604	Monument Box Adjusted to Grade
606			1	1	3	1	2	2	2	2	1																														15	15	Each	606	Anchor Assembly, Type A
606				3	1	4						2																													10	10	Each	606	Bridge Terminal Assembly, TYPE A
606			201.5	2885.5	385.5	971	254	325	250	837.5	3.5	334									50	50																			6547.5	6547.5	Lin. Ft.	606	Guard Rail, Type 5
606				2																																					2	2	Each	606	Anchor Assembly, Type A, barrier design
606			1	2	2	2	1	2	2	2		1																													15	15	Each	606	Anchor Assembly, Type T
607																																					15,678	1025		1025	15,678	16,703	Lin. Ft.	607	Fence, Type CL
607																																					2				2	2	Each	607	14' Gate, Type CL
615																																		3980	1612						5592	5592	Sq. Yds.	615	Temporary Pavement Class B
515																																		Lump	Lump						Lump	Lump	Lump	615	Temporary Roads
616	500																																								500	500	M. Gals.	616	Water
616	10																																								10	10	Tons	616	Calcium Chloride
																																													PAVEMENT
301		5,697																									306	197		27											6,227	6,227	Cu. Yds	301	Bituminous Aggregate Base, 702.01 AC-20 or 702.09, RT-11 or RT-12
304															6	29					67	59	10	5		3					30		3								212	212	Cu. Yds	304	Aggregate Base
305																																	649								649	649	Sq. Yds	305	9" Portland Cement Concrete Base Reinforced as per 451
310		23,224		9	5																69	59					1117	635	292	606	40	520									26,576	26,576	Cu. Yds	310	Subbase, Grading "A" , As Per Plan.
310													5														30	24		13			4								76	76	Cu. Yds	310	Subbase
310																								93					548	330	207		102								1280	1280	Cu. Yds	310	Subbase, 703.08 or 703.10
801		73068																									2507	1076													76651	76651	Sq. Yds	801	9" Portland Cement Concrete Base as per plan
402		3,512																			14	12					119	52			10		38								3757	3757	Cu. Yds	402	Asphalt Concrete AC-20
404		2,510																			14	12					86	37			5		21								2685	2685	Cu. Yds	404	Asphalt Concrete. AC-20
404															2	6							3	2		1															14	14	Cu Yds.	404	Asphalt Concrete, AC-20 (Driveways)
Spec.		80																									39	44		17											180	180	Cu. Yds.	Spec.	Drainage Connection Using No. 8 Aggregate
407		256																									9	4													269	269	Tons	407	Cover Aggregate
407		7307																						1			265	107					77								7757	7757	Gals.	407	Tack Coat: 702.02, RC-250; or 702.04, MS-2, RS-1, SS-1 or SS-1h
408															11	51					156	143	19	8		8					72		4								472	472	Gals.	408	Bituminous Prime Coat: 702.02, MC-30 or MC-70; 702.03, primer 20; or 702.09, RT-2 or RT-3
409		10,265													3	25											335	152			21		15								10,816	10,816	Gals.	409	Seal Coat Bituminous Material: 702.02, MC-800 or MC-3000; 702.03, CBAE-800;
409		274																									9	5			1										289	289	Cu. Yds.	409	Seal Coat Cover Aggregate No. 9 702.04, RS-1, RS-2, CRS-1, or CRS-2; or
411																															9		7								16	16	Cu. Yds	411	Stabilized Crushed Aggregate 702.09, RT-9 or RT-10.
451													20										32																		52	52	Sq. Yds	451	8" Reinforced Portland Cement Concrete Pavement.
451																								1001					3767	3964	2489		579								11,800	11,800	Sq. Yds	451	9" Reinforced Portland Cement Concrete Pavement, As Per Plan.
451		2868		52	29								36														1456	1252	392	1575		3114									10,774	10,774	Sq. Yds	451	9" Reinforced Portland Cement Concrete Pavement.
452															94	49			131	167	74	113		170		16															814	814	Sq. Yds	452	6" Plain Portland Cement Concrete Pavement.
Spec.				108	36	144						96						25	25				63	53		29															579	579	Lin. Ft.	Spec.	Pressure Relief Joint, Type A
609		1004																														2030									3,034	3,034	Lin. Ft.	609	Concrete Curb, Standard Type 2-A
609																								374					1908	2255	712		376								5625	5625	Lin. Ft.	609	Concrete Curb, Standard Type 2-A, Modified as per plan.
609																																	153								153	153	Lin. Ft.	609	Concrete Curb, Standard Type 2-B, Modified as per plan.
609																						196									372										568	568	Lin. Ft.	609	Concrete Curb, Standard Type 6
609																					214																				214	214	Lin. Ft.	609	Asphalt Concrete Curb, AC-20, Standard Type 1
609				18	10								18																												46	46	Lin. Ft.	609	Sandstone Curb
611																								118									275								393	393	Sq. Yds.	611	Reinforced Concrete Approach Slab (T=14")
611		806																																							806	806	Sq. Yds.	611	Reinforced Concrete Approach Slabs. (T=15")
611		487																																							487	487	Sq. Yds	611	Reinforced Concrete Approach Slabs. (T=17")
612																															24										24	24	Sq. Yds	612	Concrete Median, Standard Type
612																													518	720	12										1250	1250	Sq. Yds.	612	4" Concrete Traffic Island
622		7380																																							7380	7380	Lin. Ft.	622	Concrete Barrier, Type H

GENERAL SUMMARY

CALC. BY J.L. CHKD 7/14/71
CHK'D BY TRB DATE 7/13/71
Rev. D.R.S. 5-17-78

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ITEM	SHEET NUMBERS 10-12	17-18	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	52	53	54	55	COST PARTICIPATION 100 % STATE	COST PARTICIPATION INTER-STATE	GRAND TOTAL	UNIT	ITEM	DESCRIPTION
																																	DRAINAGE
202																						1							1	1	Each	202		Manhole Removed
202													288	450	727	78						56		25					1624	1,624	Lin.Ft.	202		Pipe Removed 24" and Under
202				1									3	2	4	1									1	1			13	13	Each	202		Catch Basin or Inlet Removed
202				Lump																									Lump	Lump	Lump	202		Structures Removed
602			03		03	03				03																			1.2	1.2	Cu.Yd.	602		Concrete Masonry.
603																									27				27	27	Lin.Ft.	603	6"	Conduit, Type "C," 706.02 with Class "C" Bedding or 706.08 Encased
603														17	38										30				85	85	Lin.Ft.	603	6"	Conduit, Type "C," 706.01, 706.02 or 706.08 with Class "C" Bedding
603	100		50	10	70	40	50	90	30	90	60			10	10		10	70	50	40	70	60							910	910	Lin.Ft.	603	6"	Conduit, Type "F."
603				54															73	96	365	220	144						952	952	Lin.Ft.	603	12"	Conduit, Type "B"
603													108			5								04		89	94		360	360	Lin.Ft.	603	12"	Conduit, Type "C" 706.02 with Class "C" Bedding or 706.08 Encased
603																			47	60	33	6							146	146	Lin.Ft.	603	12"	Conduit, Type "C"
603													108	124	446	6								15			110		809	809	Lin.Ft.	603	12"	Conduit, Type "C" 706.01, 706.02 or 706.08 with Class "C" Bedding
603			62	82	150	157	250	270	167	269	337			54	30		128						56						2,006	2,006	Lin.Ft.	603	15"	Conduit, Type "B"
603																								55					55	55	Lin.Ft.	603	15"	Conduit, Type "C" 706.02 with Class "C" Bedding or 706.08 Encased
603						14		70					77				338			167	62	145							873	873	Lin.Ft.	603	15"	Conduit, Type "C"
603														226	273														499	499	Lin.Ft.	603	15"	Conduit, Type "C," 706.01, 706.02 or 706.08 with Class "C" Bedding
603			53	17		185		107		63													52	65					544	544	Lin.Ft.	603	15"	Conduit, Type "F," 707.05
603					97			166		83			63				71												480	480	Lin.Ft.	603	18"	Conduit, Type "B"
603														109															109	109	Lin.Ft.	603	18"	Conduit, Type "C" 706.02 with Class "C" Bedding or 706.08 Encased
603							363																						363	363	Lin.Ft.	603	18"	Conduit, Type "B," 706.02 D-2000 or 707.13
603													265	244															509	509	Lin.Ft.	603	18"	Conduit, Type "C" 706.02 with Class "C" Bedding
603									70																			70		70	Lin.Ft.	603	18"	Conduit, Type "C" 706.02 D-1750 or 707.13
603													56																56	56	Lin.Ft.	603	21"	Conduit, Type "B"
603																	340												340	340	Lin.Ft.	603	21"	Conduit, Type "C"
603																	186												186	186	Lin.Ft.	603	24"	Conduit, Type "C"
603				224	284																								508	508	Lin.Ft.	603	27"	Conduit, Type "C"
603							143																						143	143	Lin.Ft.	603	27"	Conduit, Type "C," 706.02, 706.08 E.S. or 707.13
603							326																						326	326	Lin.Ft.	603	27"	Conduit, Type "C," 706.02 D-1500 or 707.13
603																	340												340	340	Lin.Ft.	603	27"	Conduit, Type "C" 706.02 D-1250, 706.08 E.S. or 707.13
603					85																								85	85	Lin.Ft.	603	30"	Conduit, Type "B"
603				43																									43	43	Lin.Ft.	603	30"	Conduit, Type "B," 706.02 D-1500 or 707.13.
603				245																									245	245	Lin.Ft.	603	30"	Conduit, Type "C," 706.02 D-1250, 706.08 E.S. or 707.13
603							60																						60		60	Lin.Ft.	603	30"	Conduit, Type "C" 706.02 D-1500 or 707.13
603								60																					60		60	Lin.Ft.	603	36"	Conduit, Type "C," 706.02 D-1500 or 707.13
603							57	121																					478	478	Lin.Ft.	603	42"	Conduit, Type "C"
603								487																					487	487	Lin.Ft.	603	48"	Conduit, Type "C"
603								88	790																				878	878	Lin.Ft.	603	54"	Conduit, Type "C," 706.02 D-1500 or 707.14
603											450																		450	450	Lin.Ft.	603	60"	Conduit, Type "C," 706.02 D-1500 or 707.14
603									200	998	10																		1208	1208	Lin.Ft.	603	60"	Conduit, Type "C."
603											440																		440	440	Lin.Ft.	603	60"	Conduit, Type "C", 706.02 D-1250 or 707.14
604																2					2		2			2			8	8	Each	604		Catch Basin, Standard No. 2-2-B
604				1																									1	1	Each	604		Catch Basin, Standard No. 2-3
604				1																									1	1	Each	604		Catch Basin, Standard No. 2-3, Reinforced
604																		2											2	2	Each	604		Catch Basin, Standard No. 3
604																			4	2	4	6	2						18	18	Each	604		Catch Basin, Standard No. 3-A
604													6	4	6	4								1	2	2	2		27	27	Each	604		Catch Basin, No. 3-C

GENERAL SUMMARY

CALC. BY J.L. DATE 7/9/71
CHKD. BY T.R.B. DATE 7/13/71

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CUYAHOGA COUNTY
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TYPE CODE 6707 UNLESS OTHERWISE NOTED

ITEM	SHEET NUMBERS 10-12	17-18	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	80	81	COST PARTICIPATION INTER-STATE	GRAND TOTAL	UNIT	ITEM	DESCRIPTION
																																			DRAINAGE
604				3	1			1	1	1	2						1	2													12	12	Each	604	Catch Basin, Standard No.5
604						2							1				1		2	2											8	8	Each	604	Catch Basin, Standard No.5 using Grate B
604							1	1										2													4	4	Each	604	Catch Basin, Standard No.5-A
604							1																								1	1	Each	604	Catch Basin, Standard No. 6
604								1	1	1	2																				5	5	Each	604	Catch Basin, Standard No. 5-A, Reinforced
604			1		3	2	2	4	1	3	2																				18	18	Each	604	Median Inlet, No. I-3H
604															2											2					4	4	Each	604	Inlet, No. A-I-1
604													4	4	7					1	1	1	1		1			1			21	21	Each	604	Manhole, Standard No. 1
604								1					1																		2	2	Each	604	Manhole, Standard No. 3
604				1	1		3																		1						6	6	Each	604	Manhole, Standard No. 2
604				2					1	1																					4	4	Each	604	Manhole, Standard No.5
604														1										1	1						3	3	Each	604	Manhole adjusted to grade.
604				1																											1	1	Each	604	Manhole Reconstructed, to grade as per plan, (Detail "C")
604																			2							1					3	3	Each	604	Catch Basin Reconstructed to Grade with No 1 Manhole Frame & Cover
605																	50														50	50	Lin.Ft.	605	6" Unclassified pipe underdrains.
605							540	2038	1974	2038	1979	375						1715													10,659	10,659	Lin.Ft.	605	6" Deep pipe underdrains
605			1215	1627	2751	1634	1733	920	980	940	960	292					762		604	332	699	869									16,378	16,378	Lin.Ft.	605	6" Shallow pipe underdrains
605													922	986	910	666									162	405	91	313			4,455	4,455	Lin.Ft.	605	6" Underdrain, 706.08 as per plan
605	12																														12	12	Lin.Ft.	605	Aggregate drains for Springs, as per plan.
605	360																														360	360	Lin.Ft.	605	6" Unclassified Pipe Underdrain, 707.01, Type III or 707.12, Type III, as per plan
																																		SANITARY - TYPE CODE Y060
603																													157		157	157	Lin.Ft.	603	8" Conduit, Type "B" 706.08 with 706.12 Joints
603																													280		280	280	Lin.Ft.	603	8" Conduit, Type "C" 706.08 E.S. with 706.12 Joints
603																													56		56	56	Lin.Ft.	603	10" Conduit, Type "B" 706.08 with 706.12 Joints
603																													946		946	946	Lin.Ft.	603	10" Conduit, Type "C" 706.08 E.S. with 706.12 Joints
603				365	280																										645	645	Lin.Ft.	603	24" Conduit, Type "C" 706.02 D-2000 (Epoxy coated) with 706.11 Joints, as per plan
604				2	1									1		1				3	2									10	10	Each	604	Manhole, Standard No.3, with 706.11 joints
604													1																	1	1	Each	604	Manhole Reconstructed to grade with 706.11 Joints
604														1	2	1				1	1									7	7	Each	604	Manhole adjusted to grade.
604																					1									1	1	Each	604	Manhole Reconstructed as per plan (Detail "A")
604													1						1											2	2	Each	604	Manhole Reconstructed to grade, As per plan (Detail "B")

GENERAL SUMMARY

CALC. BY J.L. DATE 7/4/71
CHKD. BY T.R.B. DATE 7/13/71
Rev. L.J.P. 12-14-77

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

GENERAL SUMMARY

ITEM	SHEET NUMBERS																						COST PARTICIPATION 100% STATE	COST PARTICIPATION 100% CITY OF	COST PARTICIPATION INTERSTATE	GRAND TOTAL	UNIT	ITEM	DESCRIPTION
	10-12	17-18	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48								TYPE CODE 6707 UNLESS OTHERWISE NOTED.
																													EROSION CONTROL TYPE CODE Y005
601			2.0		5.4	2.0				4.7															19	19	Cu. Yds.	601	Rock Channel Protection, Type "B" with Bedding
659	7	13																							20	20	Ton	659	Commercial Fertilizer (12-12-12)
659		65																							65	65	Ton	659	Agricultural Liming
659		140,086																							140,086	140,086	Sq. Yds.	659	Seeding and Mulching.
660																		7							7	7	Sq. Yds.	660	Sodding.
660				150	28	214																			392	392	Sq. Yds.	660	Reinforced Sodding
667			135	384	117	250	125	459	308	500	625						375	467		134					3,879	3,879	Sq. Yds.	667	Seeding and Jute Matting.
207	33,000																								33,000	33,000	Sq. Yds.	207	Temporary Seeding and Mulching.
659	271																								271	271	M. Gal.	659	Water
207	1,500																								1,500	1,500	Lin. Ft.	207	Temporary Slope Drains
207	350																								350	350	Cu. Yds.	207	Temporary Benches, Dikes, Dams and Sediment Basins.
207	500																								500	500	Each	207	Straw or Hay Bales
659	770																								770	770	M. Sq. Ft.	659	Mowing
659	8200																								8,200	8,200	Sq. Yds.	659	Repair Seeding and Mulching
																													WATER LINE WORK - TYPE CODE Y-060
																													See Sheet No. 135 For Quantities
																													STRUCTURES OVER 20' SPAN
																													Structure No. CUY-480-0499 See Sheet No. 231 For Quantities
																													Structure No. CUY-480-0540 See Sheet No. 277 For Quantities
																													Structure No. CUY-480-0573 See Sheet No. 293 For Quantities
																													Structure No. CUY-480-0612 See Sheet No. 303 For Quantities
																													Structure No. CUY-480-0614 See Sheet No. 315 For Quantities
																													TRAFFIC CONTROL
																													See Sheet No. 162 For Quantities
																													LIGHTING
																													See Sheet No's. 197, 197A for Quantities
																													TRAFFIC SIGNALS
																													See Sheet No. 163 for Quantities
619	Lump																								Lump	Lump	619	Field Office	
623	Lump																								Lump	Lump	623	Construction Layout Stakes	
614	Lump																								Lump	Lump	614	Maintaining Traffic	

PAVEMENT CALCULATIONS

FED. RD. DIVISION	STATE	PROJECT		17 / 347
2	OHIO			

CUYAHOGA COUNTY
CUY-480-4.86

404 - 1¼ ASPHALT CONCRETE

Sta. 357+00.00 to Sta. 364+18.63 = 718.63 x 36 x 2 = 51741.36 S.F.
Sta. 369+34.01 to Sta. 385+02.54 = 1568.53 x 36 x 2 = 112934.16 S.F.
Sta. 387+36.80 to Sta. 403+00.00 (Lt) = 1563.20 x 36 = 56275.20 S.F.
Sta. 387+36.80 to Sta. 403+20.00 (Rt) = 1583.20 x 36 = 56995.20 S.F.
Sta. 403+00.00 to Sta. 442+07.50 (Lt) = 3907.50 x 48 = 187560.00 S.F.
Sta. 403+20.00 to Sta. 441+71.50 = 3851.50 x 48 = 184872.00 S.F.
A2 Total = 650,377.92 S.F.

650,377.92 x 1¼ ÷ (12 x 27) = 2509.9 C.Y.
TOTAL 404 - 1¼" ASPHALT CONCRETE TO GENERAL SUMMARY = 2510 C.Y.

611 - APPROACH SLAB

(T=17) Bridge No. Cuy I-480-0499 = 30 x 36.5 x 4 ÷ 9 = 486.7 S.Y.
(T=15) Bridge No. Cuy I-480-0540 = 25 x 36.5 x 4 ÷ 9 = 405.6 S.Y.
(T=15) Bridge No. Cuy I-480-0573 = 25 x 24 x 2 ÷ 9 = 133.3 S.Y.
(T=15) Bridge No. Cuy I-480-0648 = 25 x 48 x 2 ÷ 9 = 266.7 S.Y.

Total 611 Approach Slab (T=17) to General Summary = 487 S.Y.
Total 611 Approach Slab (T=15) to General Summary = 806 S.Y.

407 - TACK COAT

FROM ITEM 801 = 657610.11 S.F.

657,610.11 ÷ 9 x .1 = 7306.8 GAL.
657,610.11 ÷ 9 x 7 ÷ 2000 = 255.7 TON
TOTAL 407 - TACK COAT TO GENERAL SUMMARY = 7307 GAL. - TACK COAT
= 256 TON - COVER AGGR.

409 - SEAL COAT BITUMINOUS MATERIAL

FROM ITEM 301 A4 = 307,955 S.F.
307,955 ÷ 9 x .3 = 10265 GAL.
307,955 ÷ 9 x .008 = 273.9 C.Y.

TOTAL 409 - SEAL COAT BIT. MATERIAL TO GEN. SUMMARY = 10265 GAL. - SEAL COAT
= 274 C.Y. - COVER AGGR.

SPECIAL - DRAINAGE CONNECTION USING NO. 8 AGGREGATE

Sta. 386+47.74 to Sta. 392+00.00 (Ramp C-2):
(545.76 x 2 x 1.972 □' ÷ 27 = 79.7 C.Y.
Total Special Drainage Connection Using No 8 Aggregate to General Summary = 80 C.Y.

402 - 1¾" ASPHALT CONCRETE

FROM ITEM 404 A2 = 650,377.92 S.F.
650,377.92 x 1¾ ÷ (12 x 27) = 3512.0 C.Y.
TOTAL 402 - 1¾" ASPHALT CONCRETE TO GENERAL SUMMARY = 3512 C.Y. ✓

301 - BIT. AGGREGATE BASE

Sta. 357+00 to Sta. 364+48.63 = 748.63 x [(10 x 2) + (11 x 2)] = 31,442.46 S.F.
Sta. 369+04.01 to Sta. 385+27.54 = 1623.53 x 42 = 68,188.26 S.F.
Sta. 387+11.80 to Sta. 387+95.64 (Lt. Shld) = 83.84 x 10 = 838.40 S.F.
Sta. 387+11.80 to Sta. 396+09.00 (Rt. Shld) = 897.20 x 10 = 8972.00 S.F.
Sta. 387+11.80 to Sta. 423+77.34 (Med.) = 3665.54 x 11 x 2 = 80,641.88 S.F.
Sta. 403+00 to Sta. 442+32.50 (Lt) = 3932.50 x 10 = 39,325.00 S.F.
Sta. 403+20.00 to Sta. 441+96.50 (Rt) = 3876.50 x 10 = 38,765.00 S.F.
Deduct for W. 227th Pier Protection: (37+60) x 3 = -291.00 S.F.
Deduct for W. 220th Pier Protection: (55+60) x 3 = -345.00 S.F.
Sta. 423+77.34 to Sta. 442+32.50 (Lt. Med) = 1855.16 x 11 = 20,406.75 S.F.
Sta. 423+77.34 to Sta. 441+96.50 (Rt. Med) = 1819.16 x 11 = 20,010.75 S.F.
SUB-TOTAL A4 = 307,954.5 S.F.

307,954.5 x 0.50 ÷ 27 = 5,702.9 C.Y.

DEDUCTION FOR 801 AND APPROACH SLABS
FROM ITEM 801
APPROACH SLABS: BRIDGE No. CUY-480-0499 = 30 x 4 = 120.00 L.F.
BRIDGE No. CUY-480-0540 = 25 x 4 = 100.00 L.F.
L3 = 28928.77 L.F.
L4 = 29148.77 L.F.

29,148.77 x .0625 ÷ 27 = -67.5 C.Y.
I-480 SUB-TOTAL = 5,635.4 C.Y.
STA. 386+47.74 TO STA. 392+00.00 (RAMP C-2) = 552.26 x 3 x 2 = 3313.56 S.F.
3313.56 x 0.50 ÷ 27 = 61.4 C.Y.
TOTAL = 5,696.8 C.Y.
TOTAL 301 - BIT. AGGR. BASE TO GENERAL SUMMARY = 5,697 C.Y. ✓

801 - 9" PORTLAND CEMENT CONCRETE BASE

SHOULDER LENGTH ADJACENT TO 801
STA. 357+00.00 TO STA. 364+18.63 = 718.63 L.F.
STA. 369+34.01 TO STA. 385+02.54 = 1568.53 L.F.
STA. 387+36.80 TO STA. 441+89.50 = 5452.70 L.F.
L1 = 7739.86 L.F.

7739.86 x 4 SHOULDERS L2 = 30959.44 L.F.

DEDUCT FOR RAMPS
(C-1) STA. 387+95.64 TO STA. 403+00 = 1504.36 x 7688.44 ÷ 7639.44 = -1514.01 L.F.
(C-2) STA. 398+00.00 TO STA. 403+20.00 = 520.00 x 7590.44 ÷ 7639.44 = -516.66 L.F.
L3 = 28928.77 L.F.

28928.77 x 3"/12" = 7232.19 S.F.
FROM ITEM 404 A2 = 650377.92 S.F.
TOTAL A3 = 657610.11 S.F.

657,610.11 ÷ 9 = 73067.79 S.Y.
TOTAL 801 - 9" PORTLAND CEMENT CONCRETE BASE TO GENERAL SUMMARY = 73068 S.Y.

622 CONCRETE BARRIER, TYPE H

Sta 357+00.00 to Sta 364+48.63 = 748.63 L.F.
Deduct for Light Pole Foundations = 3 x 2.5' = -7.50 L.F.
Deduct for Inlet = 1 x 20 = -20.00 L.F.
Sta 369+04.01 to Sta 385+27.54 = 1623.53 L.F.
Deduct for Light Pole Foundations = 7 x 2.5' = -17.50 L.F.
Deduct for Inlets = 4 x 20 = -80.00 L.F.
Sta 387+11.80 to Sta 423+72.34 = 3660.54 L.F.
Deduct for Inlet = 9 x 20.00 = -180.0 L.F.
Deduct for Light Pole Foundations = 16 x 2.5' = -40.0 L.F.
Deduct for Overhead Sign Supports = 2 x 10.00 = -20.0 L.F.
Sta 423+72.34 to Sta 441+96.5 = 1824.16 L.F.
Deduct for Inlet = 4 x 20.00 = -80.0 L.F.
Deduct for Light Pole Foundation = 9 x 2.5' = -22.5 L.F.
Deduct for Overhead Sign Supports = 1 x 10.00 = -10.0 L.F.
7379.36 L.F.

Total 622 Concrete Barrier to General Summary = 7380 L.F. ✓

203 - SUBGRADE COMPACTION

Sta. 357+00.00 to Sta. 364+48.63 = 118 x 748.63 ÷ 9 = 9815.4 S.Y.
Sta. 369+04.01 to Sta. 385+27.54 = 1623.53 x 118 ÷ 9 = 21286.3 S.Y.
Sta. 387+11.80 to Sta. 387+95.64 = 83.84 x 118 ÷ 9 = 1,099.2 S.Y.
Sta. 387+95.64 to Sta. 396+09.00 = 813.36 x 108 ÷ 9 = 9,760.3 S.Y.
Sta. 396+09.00 to Sta. 403+20.00 = 711.00 x 98 ÷ 9 = 7,742.0 S.Y.

Sta 403+20.00 to Sta. 441+96.50 = 3876.50 x 142 ÷ 9 = 61,162.6 S.Y.
Sta 441+96.50 to Sta. 442+32.50 (Lt) = 36 x 71 ÷ 9 = 284.0 S.Y.
Sta. 386+47.74 to Sta. 392+00.00 (Ramp C-2) = 552.26 x 30.0 ÷ 9 = 1,840.9 S.Y.
Total = 112,990.7 S.Y.
Total 203 - Subgrade Compaction to General Summary = 112,991 S.Y. ✓

310 - SUBBASE (GRADING A), AS PER PLAN

FROM ITEM 404 A2 = 650,377.9 S.F.
STA. 386+47.74 TO STA. 392+00.00 (RAMP C-2) = 545.76 x 25.11 = 13,704.0 S.F.
STA. 10+92.87 TO STA. 15+87.64 (W. 227th) = 494.77 x 25.00 = 12,369.2 S.F.
STA. 18+69.38 TO STA. 19+26.64 (W. 227th) = 57.26 x 25.00 = 1,431.5 S.F.
TOTAL = 677,882.6 S.F.

677,882.6 x .5 ÷ 27 = 12,553.4 C.Y.

MEDIAN
STA. 357+00.00 TO STA. 364+48.63 = 748.63 L.F.
STA. 369+04.01 TO STA. 385+27.54 = 1623.53 L.F.
STA. 387+11.80 TO STA. 442+32.50 = 5520.70 L.F.
TOTAL = 7892.86 L.F.

7892.86 x 2 x [(11 x .5) + (10.75 x .3750) + (4 x .50)] ÷ 27 = 6,741.1 C.Y.
DEDUCT FOR W. 227th PIERS = 3 x π x 1.5² x .5 ÷ 27 = -0.4 C.Y.
DEDUCT FOR MASTICK RD. PIERS = 5 x π x 1.5² x .5 ÷ 27 = -0.7 C.Y.
6,740.0 C.Y.

NORMAL SECTION

LT. SHOULDER
STA. 357+00.00 TO STA. 370+71.62 = 1371.62 L.F.
DEDUCT FOR BRIDGE No. CUY-480-0499 = -455.38 L.F.
916.24 L.F.

916.24 x 12223.67 ÷ 12277.67 = 912.2 L.F.
STA. 370+71.62 TO STA. 376+50.00 = 578.4 L.F.
STA. 435+50.00 TO STA. 442+32.50 = 682.5 L.F.

RT. SHOULDER
STA. 357+00.00 TO STA. 370+71.62 = 1371.62 L.F.
DEDUCT FOR BRIDGE No. CUY-480-0499 = -455.38 L.F.
916.24 L.F.

916.24 x 12331.67 ÷ 12277.67 = 920.3 L.F.
STA. 370+71.62 TO STA. 376+50.00 = 578.4 L.F.
STA. 435+50.00 TO STA. 441+96.50 = 646.5 L.F.
TOTAL = 4318.3 L.F.

4318.3 x [(10 x .5) + (9.75 x .2917)] ÷ 27 = 1,254.5 C.Y.

HIGH SIDE - SUPER

LT. SHOULDER
STA. 376+50.00 TO STA. 378+83.81 = 233.8 L.F.
STA. 378+83.81 TO STA. 387+95.64 = 911.83 L.F.
DEDUCT FOR BRIDGE No. CUY-480-0540 = -184.26 L.F.
727.57 L.F.

727.57 x 7693.44 ÷ 7639.44 = 732.7 L.F.
STA. 403+00.00 TO STA. 432+98.99 = 2998.99 L.F.
2998.99 x 7705.44 ÷ 7639.44 = 3024.9 L.F.
STA. 432+98.99 TO STA. 435+50.00 = 251.0 L.F.

4242.4 x [(10 x .5) + (9.75 x .2917)] ÷ 27 = 1,232.5 C.Y.

LOW SIDE - SUPER

RT. SHOULDER
STA. 376+50.00 TO STA. 378+83.81 = 233.8 L.F.
STA. 378+83.81 TO STA. 396+09.00 = 1725.19 L.F.
DEDUCT FOR BRIDGE No. CUY-480-0540 = -184.26 L.F.
1540.93 L.F.

1540.93 x 7585.44 ÷ 7639.44 = 1530.0 L.F.
STA. 403+20.00 TO STA. 432+98.99 = 2978.99 L.F.
2978.99 x 7573.44 ÷ 7639.44 = 2953.3 L.F.
STA. 432+98.99 TO STA. 435+50.00 = 251.0 L.F.
4968.1 L.F.

4968.1 x [(10 x .5) + (9.75 x .2917)] ÷ 27 = 1,443.3 C.Y.
23,223.7 C.Y.

Rev. D.R.S. 1-17-78 TOTAL 310 - SUBBASE (GRADING "A") TO GENERAL SUMMARY = 23,224 C.Y. ✓

Des.	J.L.H.	Date	5/16/78
Det.	T.R.B.	Date	5/16/78
Chkd.	L.J.P.	Date	11-1-77

PAVEMENT CALCULATIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

451-9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT.

Sta 386+47.74 to Sta. 392+00.00 (Ramp C-2) = 552.26 x 24 ÷ 9 = 1472.7 S.Y.
Sta. 10 +92.87 to Sta. 15 +62.64 (W.227th St.) = 469.77 x 25 ÷ 9 = 1304.9 S.Y.
Sta. 18 +94.38 to Sta. 19 +26.64 (W.227th St.) = 32.26 x 25 ÷ 9 = 89.6 S.Y.
Total = 2867.2 S.Y.

Total 451-9 REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT to General Summary = 2868 S.Y. ✓

609 CURB, TYPE "2A"

Sta. 10 + 92.87 to Sta. 15 + 62.64 (W.227th St.) = 469.77 x 2 = 939.54 L.F.
Sta. 18 + 94.38 to Sta. 19 + 26.64 (W.227th St.) = 32.26 x 2 = 64.52 L.F.
Total = 1004.06 L.F.

Total 609 CURB, TYPE 2A to General Summary = 1004 L.F. ✓

203 PROOF ROLLING

Sheet No.	203 Subgrade Compaction	
17	112,991	S.Y.
56	5,984	S.Y.
57	3,472	S.Y.
58	392	S.Y.
59	1733	S.Y.
Total	124,572	S.Y.

Total 203 PROOF ROLLING = $\frac{124,572 \text{ S.Y.}}{3000 \text{ S.Y./Hr.}}$ = 41.5 Hrs.

Total to General Summary = 42 Hrs. ✓

203 EARTHWORK & 659 SEEDING & MULCHING

SHT. No.	Location	203 Excavation Not Including Embankment	203 Embankment	659 Seeding & Mulching
	Sta. to Sta.	C.Y.	C.Y.	S.Y.
	I-480			
30	350+00 to 360+00	549	29,033	5,868
31	360+00 to 370+00	1,523	67,362	14,481
32	370+00 to 380+00	1,845	64,384	14,436
33	380+00 to 390+00	740	96,032	14,667
34	390+00 to 400+00	18,411	32,812	10,045
35	400+00 to 410+00	105,286	~0	13,057
36	410+00 to 420+00	84,165	0	12,688
37	420+00 to 430+00	198,952	0	10,348
38	430+00 to 440+00	145,971	0	13,666
39	440+00 to 450+00	1,602	0	0
	Clague Rd.			
40	0+00 to 4+00	1,426	46	650
41	4+00 to 8+50	729	551	962
42	8+50 to 13+00	1,032	222	1,033
43	13+00 to 17+50	651	5	992
44	Ramp C-1	1873	7787	6965
45	Ramp C-2	5,293	3,051	10,912
	W.227th ST.			
46	10+00 to 14+00	430	3,847	3,900
47	14+00 to 19+00	122	1,340	1,462
48	19+00 to 23+00	126	930	1,196
	Maple Dr.			
49	11+00 to 15+10	938	81	1,257
	W.224th ST.			
50	12+50 to 16+50	183	20	322
51	16+50 to 19+50	179	13	414
	W.220th ST.			
52	6+50 to 10+50	51 ✓	0	0
53	10+50 to 14+00	41	312	740
	Mastick Rd.			
54	7+00 to 11+00	42	0	0
55	11+00 to 16+00	80	291	616
	TOTAL	572,190 ✓	308,119 ✓	146,727
	Subtotal Seeding & Mulching			146,727
	Deduct 601			14
	Deduct 660			399
	Deduct 667			3,979
18	Deduct for Paving Under Guard Rail			2,249
	Total Seeding & Mulching to General Summary			140,086

659 COMMERCIAL FERTILIZER

Total 659 Seeding & Mulching = 146,727 S.Y.
Deduct D.R.C.P. = 14.1 C.Y ÷ 18/32 = - 14 S.Y.
Deduct for Paving Under Guard Rail = - 2,249 S.Y.
Total = 144,464 S.Y.

Total 659 COMMERCIAL FERTILIZER to General Summary
144,464 S.Y. x 9 x 20 lbs./1000 S.F. ÷ 2000 lbs./Ton = 13.0 Tons

659 AGRICULTURAL LIMING

Total 659 AGRICULTURAL LIMING to General Summary
144,464 S.Y. x 9 x 100 lbs./1000 S.F. ÷ 2000 lbs./Ton = 65.1 Tons ✓

QUANTITIES FOR PAVING BENEATH GUARD RAIL.

I-480
Sta. 358+00 to Sta. 380+00 = 1,710.0 L.F.
Sta. 380+00 to Sta. 400+00 = 1,337.5 L.F.
Sta. 400+00 to Sta. 420+00 = 725.0 L.F.
Sta. 420+00 to Sta. 442+32.50 = 1,287.5 L.F.
TOTAL = 5,060.0 L.F.

5,060.0 L.F. x 9' x .25 x 27 = 187.4 C.Y.

TOTAL ITEM 301 ~ BITUMINOUS AGGREGATE BASE (WEED CONTROL) TO GENERAL SUMMARY = 187 CU. YDS.

5,060.0 L.F. x 4' ÷ 9 = 2,248.9 Sq. Yds.

TOTAL ITEM SPECIAL ~ HERBICIDES FOR WEED CONTROL TO GENERAL SUMMARY = 2,249 SQ. YDS.

Rev. L.J.P. 12-14-77
DRWN. BY J.L. DATE 5-2-68
CHKD. BY T.R.B. DATE 5-6-68
Chkd. L.J.P. 11-1-77

SUPERELEVATION TABLES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

I-480

Dc = 0°45'00" CURVE RT. MAX. SUPER = 0.020 ft/ft

WESTBOUND LANES				REMARKS		STATION	PROFILE GRADE ℄	EASTBOUND LANES		
49' LT.	37' LT.	25' LT.	13' LT.				13' RT.	25' RT.	37' RT.	49' RT.
760.38	760.57	760.76	760.57			376 +00	760.57	760.76	760.57	760.38
760.49	760.68	760.87	760.68			+25	760.68	760.87	760.68	760.49
760.65	760.84	761.03	760.84			+50	760.84	761.03	760.84	760.65
760.88	761.05	761.22	761.03			+75	761.03	761.22	761.03	760.85
761.19	761.33	761.46	761.27			377 +00	761.27	761.46	761.28	761.09
761.54	761.65	761.75	761.56			+25	761.56	761.75	761.57	761.39
761.92	762.00	762.07	761.88			+50	761.88	762.07	761.88	761.70
762.35	762.40	762.44	762.25			+75	762.25	762.43	762.24	762.01
762.82	762.83	762.84	762.65			378 +00	762.64	762.76	762.57	762.32
763.36	763.32	763.28	763.09			+25	763.03	763.01	762.82	762.63
763.95	763.85	763.75	763.56			+50	763.42	763.28	763.09	762.94
764.56	764.40	764.23	764.04			+75	763.81	763.67	763.48	763.25
764.76	764.58	764.39	764.20		P.C.	+83.81	763.94	763.75	763.56	763.36
765.10	764.90	764.68	764.46			379 +00	764.20	763.99	763.77	763.56
765.57	765.33	765.09	764.85			+25	764.59	764.35	764.11	763.87
765.96	765.72	765.48	765.24			+50	764.98	764.74	764.50	764.26
766.35	766.11	765.87	765.63			+75	765.37	765.13	764.89	764.65
766.74	766.50	766.26	766.02			380 +00	765.76	765.52	765.28	765.04
767.13	766.89	766.65	766.41			+25	766.15	765.91	765.67	765.43
767.52	767.28	767.04	766.80			+50	766.54	766.30	766.06	765.82
767.91	767.67	767.43	767.19			+75	766.93	766.69	766.45	766.21
768.30	768.06	767.82	767.58			381 +00	767.32	767.08	766.84	766.60
768.69	768.45	768.21	767.97			+25	767.71	767.47	767.23	766.99
769.08	768.84	768.60	768.36			+50	768.10	767.86	767.62	767.38
769.46	769.22	768.98	768.74			+75	768.48	768.24	768.00	767.76
769.81	769.57	769.33	769.09			382 +00	768.83	768.59	768.35	768.11
770.13	769.89	769.65	769.41			+25	769.15	768.91	768.67	768.43
770.42	770.18	769.94	769.70			+50	769.44	769.20	768.96	768.72
770.69	770.45	770.21	769.97			+75	769.71	769.47	769.23	768.99
770.93	770.69	770.45	770.21			383 +00	769.95	769.71	769.47	769.23
771.14	770.90	770.66	770.42			+25	770.16	769.92	769.68	769.44
771.32	771.08	770.84	770.60			+50	770.34	770.10	769.86	769.62
771.48	771.24	771.00	770.76			+75	770.50	770.26	770.02	769.78
771.61	771.37	771.13	770.89			384 +00	770.63	770.39	770.15	769.91
771.71	771.47	771.23	770.99			+25	770.73	770.49	770.25	770.01
771.78	771.54	771.30	771.06			+50	770.80	770.56	770.32	770.08
771.83	771.59	771.35	771.11			+75	770.85	770.61	770.37	770.13
771.85	771.61	771.37	771.13			385 +00	770.87	770.63	770.39	770.15
771.84	771.60	771.36	771.12			+25	770.86	770.62	770.38	770.14
771.80	771.56	771.32	771.08			+50	770.82	770.58	770.34	770.10
771.73	771.49	771.25	771.01			+75	770.75	770.51	770.27	770.03
771.64	771.40	771.16	770.92			386 +00	770.66	770.42	770.18	769.94
771.52	771.28	771.04	770.80			+25	770.54	770.30	770.06	769.82
771.38	771.14	770.90	770.66			+50	770.40	770.16	769.92	769.68
771.21	770.97	770.73	770.49			+75	770.23	769.99	769.75	769.51
771.01	770.77	770.53	770.29			387 +00	770.03	769.79	769.55	769.31
770.78	770.54	770.30	770.06			+25	769.80	769.56	769.32	764.08
770.52	770.28	770.04	769.80			+50	769.54	769.30	769.06	768.82
770.24	770.00	769.76	769.52			+75	769.26	769.02	768.78	768.54
769.93	769.69	769.45	769.21			388 +00	768.95	765.71	768.47	768.23
769.59	769.35	769.11	768.87			+25	768.61	768.37	768.13	767.89
769.22	768.98	768.74	768.50			+50	768.24	768.00	767.76	767.52
768.83	768.59	768.35	768.11			+75	767.85	767.61	767.37	767.13
768.41	768.17	767.93	767.69			389 +00	767.43	767.19	766.95	766.71
767.96	767.72	767.48	767.24			+25	766.98	766.74	766.50	766.26
767.48	767.24	767.00	766.76			+50	766.50	766.26	766.02	765.78
766.98	766.74	766.50	766.26			+75	766.00	765.76	765.52	765.28
766.45	766.21	765.97	765.73			390 +00	765.47	765.23	764.99	764.75
765.89	765.65	765.41	765.17			+25	764.91	764.67	764.43	764.19
765.30	765.06	764.82	764.58			+50	764.32	764.08	763.84	763.60
764.70	764.46	764.22	763.98			+75	763.72	763.48	763.24	763.00
764.10	763.86	763.62	763.38			391 +00	763.12	762.88	762.64	762.40
763.50	763.26	763.02	762.78			+25	762.52	762.28	762.04	761.80
762.90	762.66	762.42	762.18			+50	761.92	761.68	761.44	761.20
762.30	762.06	761.82	761.58			+75	761.32	761.08	760.84	760.60

Transition

Full Super = 0.020 ft/ft

I-480

Dc = 0°45'00" CURVE RT. MAX. SUPER = 0.020 ft/ft

WESTBOUND LANES					REMARKS		STATION	PROFILE GRADE ℄	EASTBOUND LANES			
61' LT.	49' LT.	37' LT.	25' LT.	13' LT.				13' RT.	25' RT.	37' RT.	49' RT.	61' RT.
	761.70	761.46	761.22	760.98			392 +00	760.72	760.48	760.24	760.00	
	761.10	760.86	760.62	760.38			+25	760.12	759.88	759.64	759.40	
	760.50	760.26	760.02	759.78			+50	759.52	759.28	759.04	758.80	
	759.90	759.66	759.42	759.18			+75	758.92	758.68	758.44	758.20	
	759.30	759.06	758.82	758.58			393 +00	758.32	758.08	757.84	757.60	
	758.70	758.46	758.22	757.98			+25	757.72	757.48	757.24	757.00	
	758.10	757.86	757.62	757.38			+50	757.12	756.88	756.64	756.40	
	757.50	757.26	757.02	756.78			+75	756.52	756.28	756.04	755.80	
	756.90	756.66	756.42	756.18			394 +00	755.92	755.68	755.44	755.20	
	756.30	756.06	755.82	755.58			+25	755.32	755.08	754.84	754.60	
	755.70	755.46	755.22	754.98			+50	754.72	754.48	754.24	754.00	
	755.10	754.86	754.62	754.38			+75	754.12	753.88	753.64	753.40	
	754.50	754.26	754.02	753.78			395 +00	753.52	753.28	753.04	752.80	
	753.90	753.66	753.42	753.18			+25	752.92	752.68	752.44	752.20	
	753.30	753.06	752.82	752.58			+50	752.32	752.08	751.84	751.60	
	752.70	752.46	752.22	751.98			+75	751.72	751.48	751.24	751.00	
	752.10	751.86	751.62	751.38			396 +00	751.12	750.88	750.64	750.40	
	751.50	751.26	751.02	750.78			+25	750.52	750.28	750.04	749.80	
	750.90	750.66	750.42	750.18			+50	749.92	749.68	749.44	749.20	
	750.30	750.06	749.82	749.58			+75	749.32	749.08	748.84	748.60	
	749.70	749.46	749.22	748.98			397 +00	748.72	748.48	748.24	748.00	
	749.10	748.86	748.62	748.38			+25	748.12	747.88	748.64	747.40	
	748.50	748.26	748.02	747.78			+50	747.52	747.28	747.04	746.80	
	747.90	747.66	747.42	747.18			+75	746.92	746.68	746.44	746.20	
	747.30	747.06	746.82	746.58			398 +00	746.32	746.08	745.84	745.60	
	746.70	746.46	746.22	745.98			+25	745.72	745.48	745.24	745.00	
	746.10	745.86	745.62	745.38			+50	745.12	744.88	744.64	744.40	
	745.50	745.26	745.02	744.78			+75	744.52	744.28	744.04	743.80	
	744.90	744.66	744.42	744.18			399 +00	743.92	743.68	743.44	743.20	
	744.30	744.06	743.82	743.58			+25	743.32	743.08	742.84	742.60	
	743.70	743.46	743.22	742.98			+50	742.72	742.48	742.24	742.00	
	743.10	742.86	742.62	742.38			+75	742.12	741.88	741.64	741.40	
	742.50	742.26	742.02	741.78			400 +00	741.52	741.28	741.04	740.80	
	741.92	741.68	741.44	741.20			+25	740.94	740.70	740.46	740.22	
	741.37	741.13	740.89	740.65			+50	740.39	740.15	739.91	739.67	
	740.86	740.62	740.38	740.14			+75	739.88	739.64	739.40	739.16	
	740.38	740.14	739.90	739.66			401 +00	739.40	739.16	738.92	738.68	
	739.94	739.70	739.46	739.22			+25	738.96	738.72	738.48	738.24	
	739.54	739.30	739.06	738.82			+50	738.56	738.32	738.08	737.84	
	739.17	738.93	738.69	738.45			+75	738.19	737.95	737.71	737.47	
	738.83	738.59	738.35	738.11			402 +00	737.85	737.61	737.37	737.13	
	738.53	738.29	738.05	737.81			+25	737.55	737.31	737.07	736.83	
	738.27	738.03	737.79	737.55			+50	737.29	737.05	736.81	736.57	
	738.04	737.80	737.56	737.32			+75	737.06	736.82	736.58	736.34	
738.09	737.85	737.61	737.37	737.13			403 +00	736.87	736.63	736.39	736.15	
737.93	737.69	737.45	737.21	736.97			+25	736.71	736.47	736.23	735.99	735.75
737.81	737.57	737.33	737.09	736.85			+50	736.59	736.35	736.11	735.87	735.63
737.72	737.48	737.24	737.00	736.76			+75	736.50	736.26	736.02	735.78	735.54
737.67	737.43	737.19	736.95	736.71			404 +00	736.45	736.21	735.97	735.73	735.49
737.66	737.42	737.18	736.94	736.70			+25	736.44	736.20	735.96	735.72	735.48
737.68	737.44	737.20	736.96	736.72			+50	736.46	736.22	735.98	735.74	735.50
737.73	737.49	737.25	737.01	736.77			+75	736.51	736.27	736.03	735.79	735.55
737.82	737.58	737.34	737.10	736.86			405 +00	736.60	736.36	736.12	735.88	735.64
737.95	737.71	737.47	737.23	736.99			+25	736.73	736.49	736.25	736.01	735.77
738.11	737.87	737.63	737.39	737.15			+50	736.89	736.65	736.41	736.17	735.93
738.31	738.07	737.83	737.59	737.35			+75	737.09	736.85	736.61	736.37	736.13
738.54	738.30	738.06	737.82	737.58			406 +00	737.32	737.08	736.84	736.60	736.36
738.79	738.55	738.31	738.07	737.83			+25	737.57	737.33	737.09	736.85	736.61
739.04	738.80	738.56	738.32	738.08			+50	737.82	737.58	737.34	737.10	736.86
739.29	739.05	738.81	738.57	738.33			+75	738.07	737.83	737.59	737.35	737.11
739.54	739.30	739.06	738.82	738.58			407 +00	738.32	738.08	737.84	737.60	737.36
739.79	739.55	739.31	739.07	738.83			+25	738.57	738.33	738.09	737.85	737.61
740.04	739.80	739.56	739.32	739.08			+50	738.82	738.58	738.34	738.10	737.86
740.29	740.05	739.81	739.57	739.33			+75	739.07	738.83	738.59	738.35	738.11

Full Super = 0.020 ft/ft

SUPERELEVATION TABLES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

I-480

Dc = 0° 45' 00" — CURVE RT. — MAX. SUPER = 0.020 ft/ft

WESTBOUND LANES					REMARKS	STATION	PROFILE GRADE ℄	EASTBOUND LANES			
61' LT.	49' LT.	37' LT.	25' LT.	13' LT.			13' RT.	25' RT.	37' RT.	49' RT.	61' RT.
740.54	740.30	740.06	739.82	739.58		408 + 00	739.32	739.08	738.84	738.60	738.36
740.79	740.55	740.31	740.07	739.83		+ 25	739.57	739.33	739.09	738.85	738.61
741.04	740.80	740.56	740.32	740.08		+ 50	739.82	739.58	739.34	739.10	738.86
741.29	741.05	740.81	740.57	740.33		+ 75	740.07	739.83	739.59	739.35	739.11
741.54	741.30	741.06	740.82	740.58		409 + 00	740.32	740.08	739.84	739.60	739.36
741.79	741.55	741.31	741.07	740.83		+ 25	740.57	740.33	740.09	739.85	739.61
742.04	741.80	741.56	741.32	741.08		+ 50	740.82	740.58	740.34	740.10	739.86
742.29	742.05	741.81	741.57	741.33		+ 75	741.07	740.83	740.59	740.35	740.11
742.54	742.30	742.06	741.82	741.58		410 + 00	741.32	741.08	740.84	740.60	740.36
742.78	742.54	742.30	742.06	741.82		+ 25	741.56	741.32	741.08	740.84	740.60
742.99	742.75	742.51	742.27	742.03		+ 50	741.77	741.53	741.29	741.05	740.81
743.18	742.94	742.70	742.46	742.22		+ 75	741.96	741.72	741.48	741.24	741.00
743.35	743.11	742.87	742.63	742.39		411 + 00	742.13	741.89	741.65	741.41	741.17
743.50	743.26	743.02	742.78	742.54		+ 25	742.28	742.04	741.80	741.56	741.32
743.62	743.38	743.14	742.90	742.66		+ 50	742.40	742.16	741.92	741.68	741.44
743.72	743.48	743.24	743.00	742.76		+ 75	742.50	742.26	742.02	741.78	741.54
743.79	743.55	743.31	743.07	742.83		412 + 00	742.57	742.33	742.09	741.85	741.61
743.84	743.60	743.36	743.12	742.88		+ 25	742.62	742.38	742.14	741.90	741.66
743.86	743.62	743.38	743.14	742.90		+ 50	742.64	742.40	742.16	741.92	741.68
743.87	743.63	743.39	743.15	742.91		+ 75	742.65	742.41	742.17	741.93	741.69
743.85	743.61	743.37	743.13	742.89		413 + 00	742.63	742.39	742.15	741.91	741.67
743.81	743.57	743.33	743.09	742.85		+ 25	742.59	742.35	742.11	741.87	741.63
743.74	743.50	743.26	743.02	742.78		+ 50	742.52	742.28	742.04	741.80	741.56
743.65	743.41	743.17	742.93	742.69		+ 75	742.43	742.19	741.95	741.71	741.47
743.53	743.29	743.05	742.81	742.57		414 + 00	742.31	742.07	741.83	741.59	741.35
743.39	743.15	742.91	742.67	742.43		+ 25	742.17	741.93	741.69	741.45	741.21
743.23	742.99	742.75	742.51	742.27		+ 50	742.01	741.77	741.53	741.29	741.05
743.05	742.81	742.57	742.33	742.09		+ 75	741.83	741.59	741.35	741.11	740.87
742.84	742.60	742.36	742.12	741.88		415 + 00	741.62	741.38	741.14	740.90	740.66
742.62	742.38	742.14	741.90	741.66		+ 25	741.40	741.16	740.92	740.68	740.44
742.40	742.16	741.92	741.68	741.44		+ 50	741.18	740.94	740.70	740.46	740.22
742.18	741.94	741.70	741.46	741.22		+ 75	740.96	740.72	740.48	740.24	740.00
741.96	741.72	741.48	741.24	741.00		416 + 00	740.74	740.50	740.26	740.02	739.78
741.74	741.50	741.26	741.02	740.78		+ 25	740.52	740.28	740.04	739.80	739.56
741.52	741.28	741.04	740.80	740.56		+ 50	740.30	740.06	739.82	739.58	739.34
741.30	741.06	740.82	740.58	740.34		+ 75	740.08	739.84	739.60	739.36	739.12
741.08	740.84	740.60	740.36	740.12		417 + 00	739.86	739.62	739.38	739.14	738.90
740.86	740.62	740.38	740.14	739.90		+ 25	739.64	739.40	739.16	738.92	738.68
740.64	740.40	740.16	739.92	739.68		+ 50	739.42	739.18	738.94	738.70	738.46
740.42	740.18	739.94	739.70	739.46		+ 75	739.20	738.96	738.72	738.48	738.24
740.20	739.96	739.72	739.48	739.24		418 + 00	738.98	738.74	738.50	738.26	738.02
739.98	739.74	739.50	739.26	739.02		+ 25	738.76	738.52	738.28	738.04	737.80
739.76	739.52	739.28	739.04	738.80		+ 50	738.54	738.30	738.06	737.82	737.58
739.54	739.30	739.06	738.82	738.58		+ 75	738.32	738.08	737.84	737.60	737.36
739.32	739.08	738.84	738.60	738.36		419 + 00	738.10	737.86	737.62	737.38	737.14
739.10	738.86	738.62	738.38	738.14		+ 25	737.88	737.64	737.40	737.16	736.92
738.88	738.64	738.40	738.16	737.92		+ 50	737.66	737.42	737.18	736.94	736.70
738.66	738.42	738.18	737.94	737.70		+ 75	737.44	737.20	736.96	736.72	736.48
738.44	738.20	737.96	737.72	737.48		420 + 00	737.22	736.98	736.74	736.50	736.26
738.22	737.98	737.74	737.50	737.26		+ 25	737.00	736.76	736.52	736.28	736.04
738.00	737.76	737.52	737.28	737.04		+ 50	736.78	736.54	736.30	736.06	735.82
737.78	737.54	737.30	737.06	736.82		+ 75	736.56	736.32	736.08	735.84	735.60
737.56	737.32	737.08	736.84	736.60		421 + 00	736.34	736.10	735.86	735.62	735.38
737.34	737.10	736.86	736.62	736.38		+ 25	736.12	735.88	735.64	735.40	735.16
737.12	736.88	736.64	736.40	736.16		+ 50	735.90	735.66	735.42	735.18	734.94
736.91	736.67	736.43	736.19	735.95		+ 75	735.69	735.45	735.21	734.97	734.73

Full Super = 0.020 ft/ft

I-480

Dc = 0° 45' 00" — CURVE RT. — MAX. SUPER = 0.020 ft/ft

WESTBOUND LANES					REMARKS	STATION	PROFILE GRADE ℄	EASTBOUND LANES			
61' LT.	49' LT.	37' LT.	25' LT.	13' LT.			13' RT.	25' RT.	37' RT.	49' RT.	61' RT.
736.72	736.48	736.24	736.00	735.76		422 + 00	735.50	735.26	735.02	734.78	734.54
736.54	736.30	736.06	735.82	735.58		+ 25	735.32	735.08	734.84	734.60	734.36
736.39	736.15	735.91	735.67	735.43		+ 50	735.17	734.93	734.69	734.45	734.21
736.25	736.01	735.77	735.53	735.29		+ 75	735.03	734.79	734.55	734.31	734.07
736.13	735.89	735.65	735.41	735.17		423 + 00	734.91	734.67	734.43	734.19	733.95
736.02	735.78	735.54	735.30	735.06		+ 25	734.80	734.56	734.32	734.08	733.84
735.94	735.70	735.46	735.22	734.98		+ 50	734.72	734.48	734.24	734.00	733.76
735.87	735.63	735.39	735.15	734.91		+ 75	734.65	734.41	734.17	733.93	733.69
735.83	735.59	735.35	735.11	734.87		424 + 00	734.61	734.37	734.13	733.89	733.65
735.80	735.56	735.32	735.08	734.84		+ 25	734.58	734.34	734.10	733.86	733.62
735.79	735.55	735.31	735.07	734.83		+ 50	734.57	734.33	734.09	733.85	733.61
735.79	735.55	735.31	735.07	734.83		+ 75	734.57	734.33	734.09	733.85	733.61
735.82	735.58	735.34	735.10	734.86		425 + 00	734.60	734.36	734.12	733.88	733.64
735.86	735.62	735.38	735.14	734.90		+ 25	734.64	734.40	734.16	733.92	733.68
735.92	735.68	735.44	735.20	734.96		+ 50	734.70	734.46	734.22	733.98	733.74
735.99	735.75	735.51	735.27	735.03		+ 75	734.77	734.53	734.29	734.05	733.81
736.06	735.82	735.58	735.34	735.10		426 + 00	734.84	734.60	734.36	734.12	733.88
736.13	735.89	735.65	735.41	735.17		+ 25	734.91	734.67	734.43	734.19	733.95
736.20	735.96	735.72	735.48	735.24		+ 50	734.98	734.74	734.50	734.26	734.02
736.27	736.03	735.79	735.55	735.31		+ 75	735.05	734.81	734.57	734.33	734.09
736.34	736.10	735.86	735.62	735.38		427 + 00	735.12	734.88	734.64	734.40	734.16
736.41	736.17	735.93	735.69	735.45		+ 25	735.19	734.95	734.71	734.47	734.23
736.48	736.24	736.00	735.76	735.52		+ 50	735.26	734.02	734.78	734.54	734.30
736.55	736.31	736.07	735.83	735.59		+ 75	735.33	735.09	734.85	734.61	734.37
736.62	736.38	736.14	735.90	735.66		428 + 00	735.40	735.16	734.92	734.68	734.44
736.69	736.45	736.21	735.97	735.73		+ 25	735.47	735.23	734.99	734.75	734.51
736.76	736.52	736.28	736.04	735.80		+ 50	735.54	735.30	735.06	734.82	734.58
736.83	736.59	736.35	736.11	735.87		+ 75	735.61	735.37	735.13	734.89	734.65
736.90	736.66	736.42	736.18	735.94		429 + 00	735.68	735.44	735.20	734.96	734.72
736.97	736.73	736.49	736.25	736.01		+ 25	735.75	735.51	735.27	735.03	734.79
737.04	736.80	736.56	736.32	736.08		+ 50	735.82	735.58	735.34	735.10	734.86
737.11	736.87	736.63	736.39	736.15		+ 75	735.89	735.65	735.41	735.17	734.93
737.18	736.94	736.70	736.46	736.22		430 + 00	735.96	735.72	735.48	735.24	735.00
737.25	737.01	736.77	736.53	736.29		+ 25	736.03	735.79	735.55	735.31	735.07
737.32	737.08	736.84	736.60	736.36		+ 50	736.10	735.86	735.62	735.38	735.14
737.39	737.15	736.91	736.67	736.43		+ 75	736.17	735.93	735.69	735.45	735.21
737.46	737.22	736.98	736.74	736.50		431 + 00	736.24	736.00	735.76	735.52	735.28
737.53	737.29	737.05	736.81	736.57		+ 25	736.31	736.07	735.83	735.59	735.35
737.60	737.36	737.12	736.88	736.64		+ 50	736.38	736.14	735.90	735.66	735.42
737.67	737.43	737.19	736.95	736.71		+ 75	736.45	736.21	735.97	735.73	735.49
737.74	737.50	737.26	737.02	736.78		432 + 00	736.52	736.28	736.04	735.80	735.56
737.81	737.57	737.33	737.09	736.85		+ 25	736.59	736.35	736.11	735.87	735.63
737.85	737.62	737.39	737.15	736.92		+ 50	736.66	736.42	736.18	735.95	735.71
737.85	737.64	737.43	737.21	736.99		+ 75	736.73	736.50	736.28	736.07	735.86
737.81	737.64	737.47	737.27	737.06	P.T.	+ 98.99	736.80	736.61	736.43	736.24	736.05
737.81	737.64	737.47	737.27	737.06		433 + 00	736.80	736.62	736.44	736.25	736.06
737.75	737.63	737.51	737.32	737.12		+ 25	736.87	736.75	736.63	736.44	736.25
737.67	737.61	737.55	737.36	737.17		+ 50	736.94	736.88	736.82	736.63	736.44
737.61	737.60	737.58	737.39	737.20		+ 75	737.01	737.01	737.00	736.81	736.62
737.56	737.59	737.62	737.43	737.24		434 + 00	737.08	737.11	737.15	736.96	736.77
737.53	737.59	737.66	737.47	737.28		+ 25	737.15	737.22	737.28	737.09	736.90
737.50	737.60	737.70	737.51	737.32		+ 50	737.22	737.32	737.41	737.22	737.03
737.48	737.61	737.73	737.54	737.35		+ 75	737.29	737.42	737.54	737.35	737.16
737.46	737.62	737.77	737.58	737.39		435 + 00	737.36	737.51	737.67	737.48	737.29
737.45	737.68	737.82	737.63	737.44		+ 25	737.43	737.61	737.79	737.60	737.41
737.50	737.69	737.88	737.69	737.50		+ 50	737.50	737.69	737.88	737.69	737.50

Full Super = 0.020 ft/ft

Transition

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
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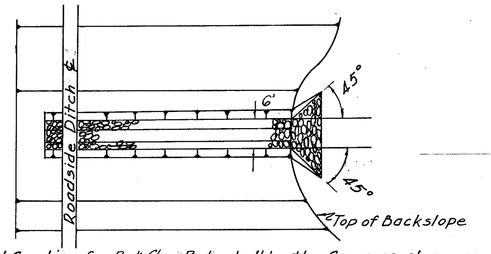
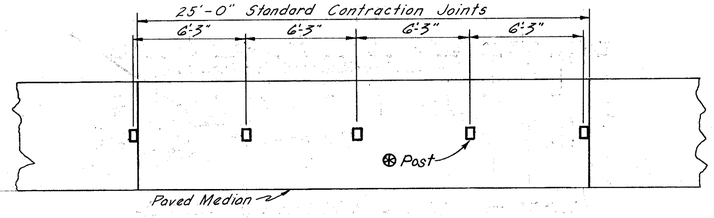


Typical Section for Rock Chan. Prot. shall be the Same as shown on The Roadside Ditch Rock Chan. Prot. Detail with 2:1 Slopes Ditch Flow Line shall be 3" to 6" below backslope plane.



JOINT DETAIL AT GUARD RAIL POSTS

Notes

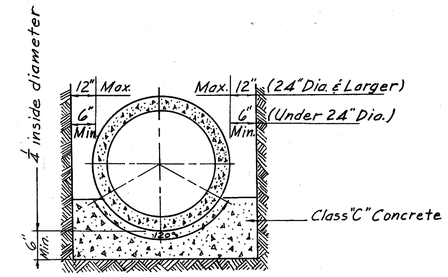
In liew of the spacing requirements of Standard Drawing MC-6, expansion and contraction joints shall be provided in the concrete median as required hereon whenever guardrail is specified.

1/4" expansion joints, 705.03, shall be provided at each construction joint, at each end of each inlet and approximately 20 feet and 60 feet beyond each approach slab; cost included with 612 for payment.

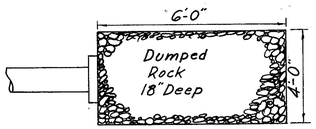
Contraction joints shall conform with details shown on Standard Drawing BP-4, 305 Base, except that spacing shall be 25'. Joint opening shall not extend below surface of shoulder paving.

Circular or square openings may be cast in the median paving so that guardrail posts may be installed later. Maximum dimensions for openings shall be 18" diameter or 18" square. Remaining space shall be filled with 1:3 grout or Class C concrete.

⊛ For square-sawed wood posts 1/4" 705.03 expansion joint material shall be used on all four sides for the depth of median. When steel posts are used, a coating of an oil such as S.A.E. 140 or other "bond-breaking" material shall be applied to the depth of median prior to placing the concrete. Payment shall be included in 612.

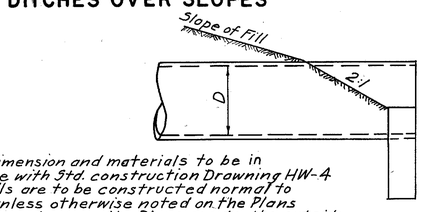


CLASS "A" BEDDING DETAIL



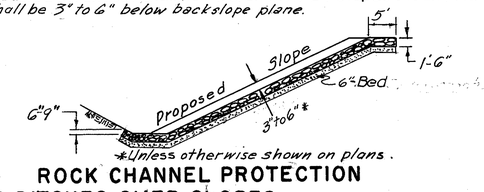
To be used as noted in areas where no ditches are to be constructed

MEDIAN OUTLET PROTECTION



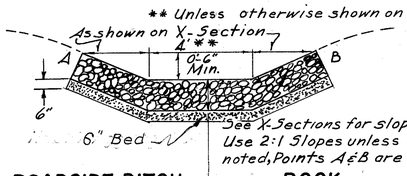
All other dimension and materials to be in accordance with Std. construction Drawning HW-4
All Endwalls are to be constructed normal to the pipe, unless otherwise noted on the Plans
Dimensions shown on the Plans are to the outside face of headwalls.

HW-4 HEADWALL



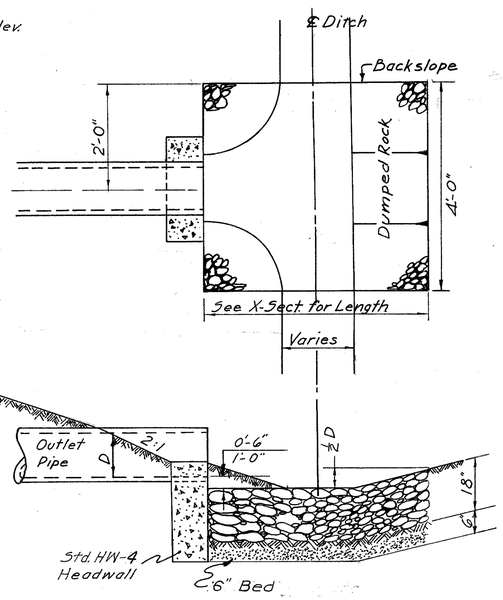
*Unless otherwise shown on plans.

ROCK CHANNEL PROTECTION FOR DITCHES OVER SLOPES

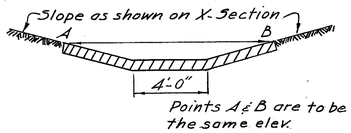


See X-Sections for slopes
Use 2:1 Slopes unless otherwise noted, Points A & B are to be the same elev.

ROADSIDE DITCH ROCK CHANNEL PROTECTION

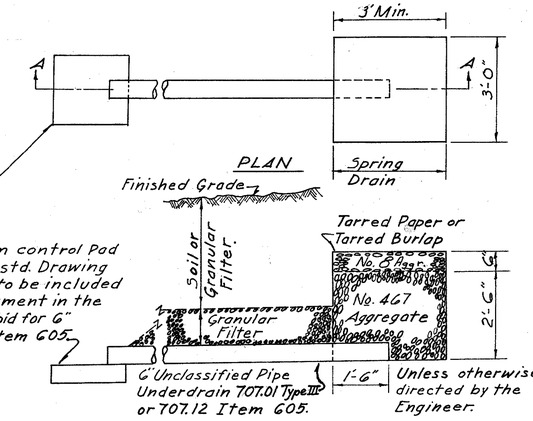


ROCK CHANNEL PROTECTION



Points A & B are to be the same elev.

ROADWAY DITCH SOD & J.M. DETAIL



SECTION-A-A

NOTE:

Aggregates, Tarred Paper or Tarred Burlap, and necessary excavation for spring drains shall be included for payment in the unit price bid per Lin. Ft. for "Item 605, Aggregate Drains for Springs, as per plan."

The 6" pipe 707.01 Type III or 707.12 Type III shall be covered with granular filter material (605.03 (c)) to a height of 1 foot above the top of the pipe. The remainder of the backfill for this item shall be soil or granular filter backfill placed in accordance with 603.08.

Spring drains shall be built in reasonably close conformity with the detail shown above. The lengths and exact locations of the drains shall be determined by the Engineer.

See note on Sheet No. 11

SPRING DRAIN DETAIL

NOTE: One Spring drain shall consist of 3 L.F. 605, Aggregate Drains for Springs, as per plan.

SPECIAL DETAIL

FED. RD. DIVISION	STATE	PROJECT	
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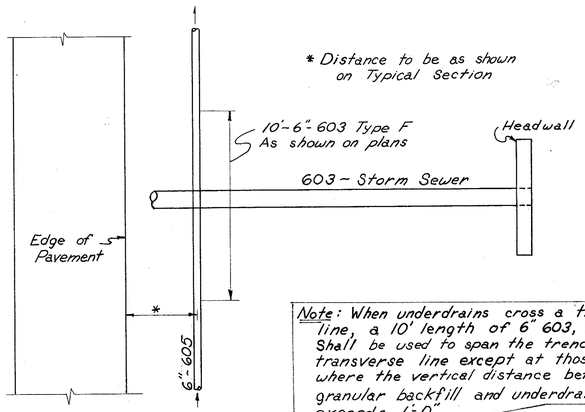
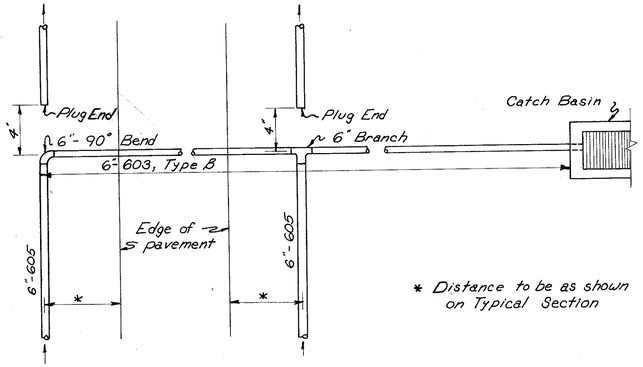
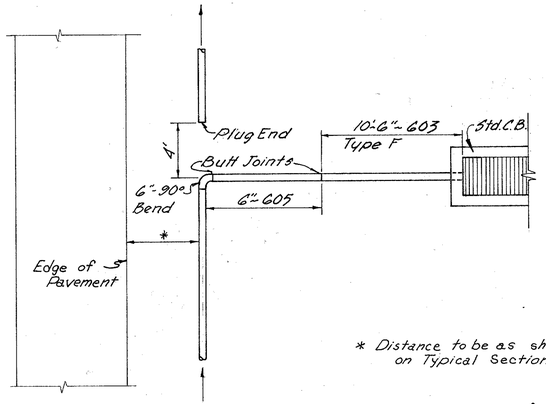


Note: When underdrains cross a transverse line, a 10' length of 6" 603, Type F pipe shall be used to span the trench of the transverse line except at those locations where the vertical distance between the granular backfill and underdrain pipe exceeds 1'-0"

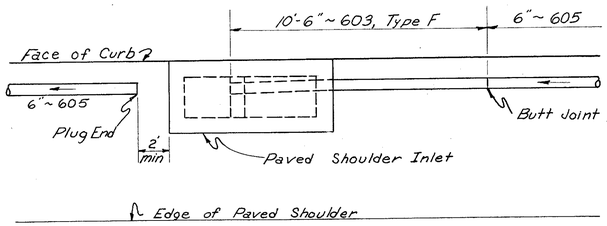
UNDERDRAIN CROSSOVER DETAIL 'A'



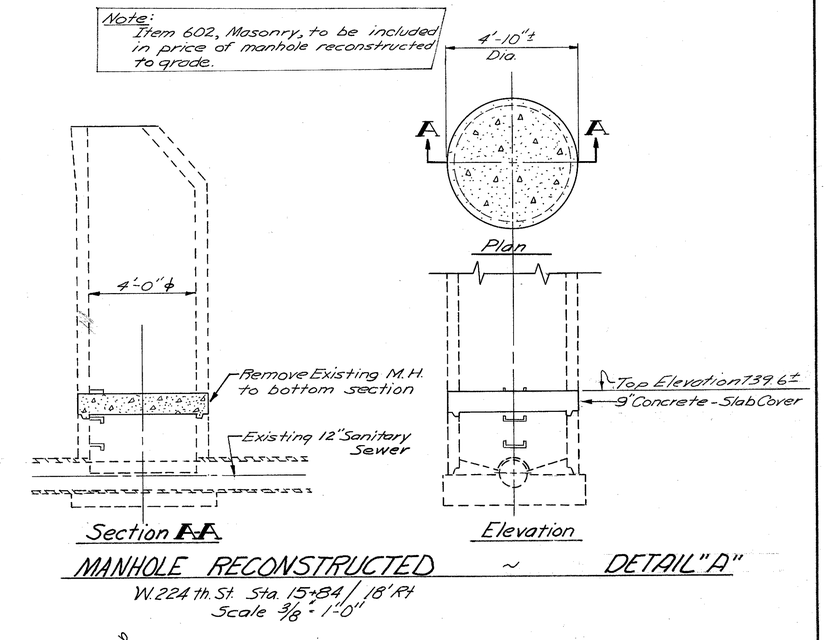
UNDERDRAIN OUTLET DETAIL 'D'



UNDERDRAIN OUTLET DETAIL 'B'

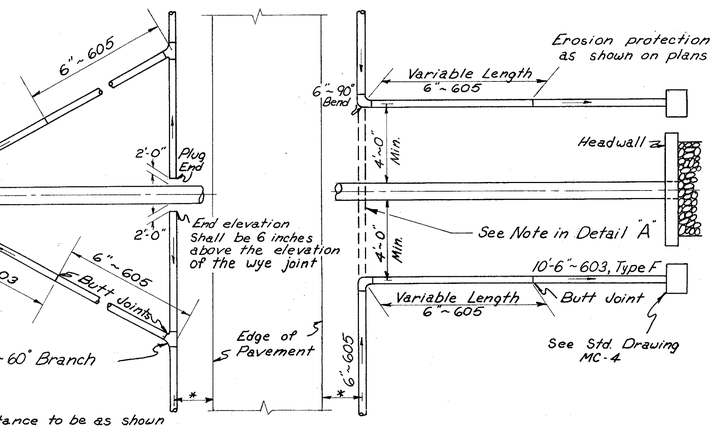


UNDERDRAIN OUTLET DETAIL 'E'

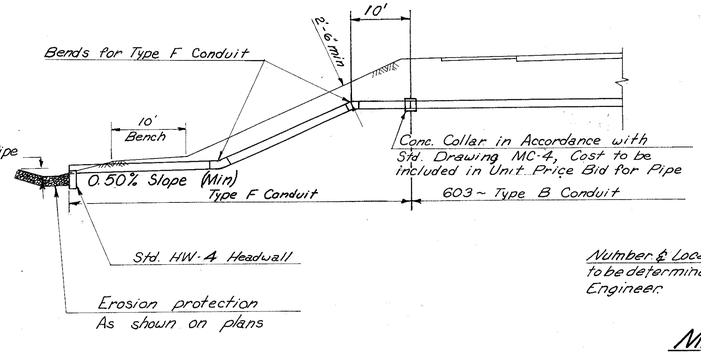


MANHOLE RECONSTRUCTED ~ DETAIL "A"

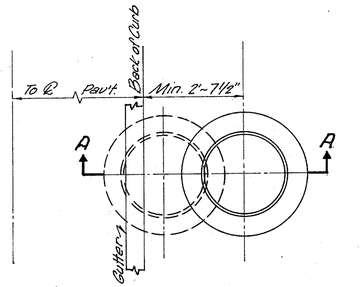
W. 224th St. Sta. 15+84 / 18' Rt
Scale 3/8" = 1'-0"



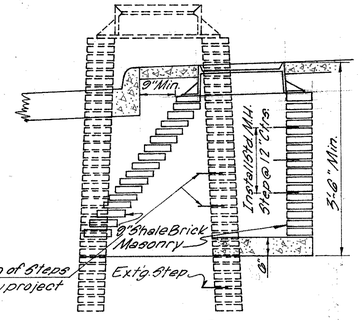
UNDERDRAIN OUTLET DETAIL 'C'



STORM SEWER OUTLET DETAIL IN HIGH FILL



NOTES:
(1) The Engineer shall investigate the field conditions governing the existing Manhole with respect to the new line and elevation of pavement at curb.
(2) Field conditions will govern the amount of structure to be demolished and rebuilt. Corbelling of the brick shall not exceed 1½ inches for each course.



MANHOLE RECONSTRUCTED TO GRADE ~ DETAIL "B"

Scale: 1/2" = 1'-0"

Location to be used
1. Clague Rd., Sta. 3+05 - 12' Lt
2. Mastick Rd., Sta. 14+09 - 11'± Rt

SPECIAL DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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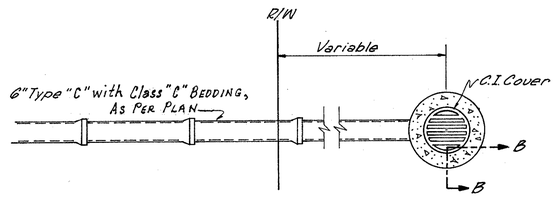
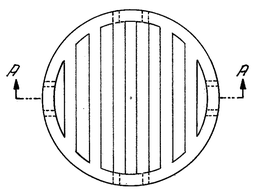
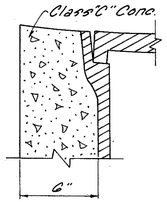


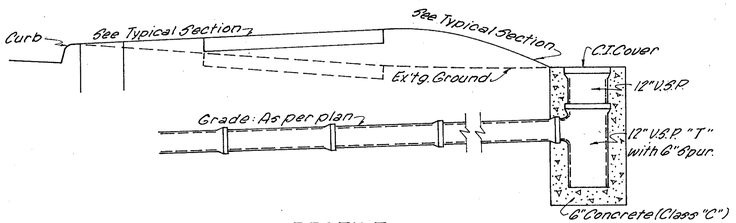
PLAN
Scale: 1/2" = 1'-0"



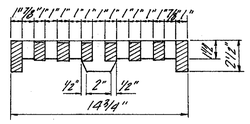
PLAN



SECTION B-B
Scale: 1" = 0'-6"



PROFILE
Scale: 1/2" = 1'-0"



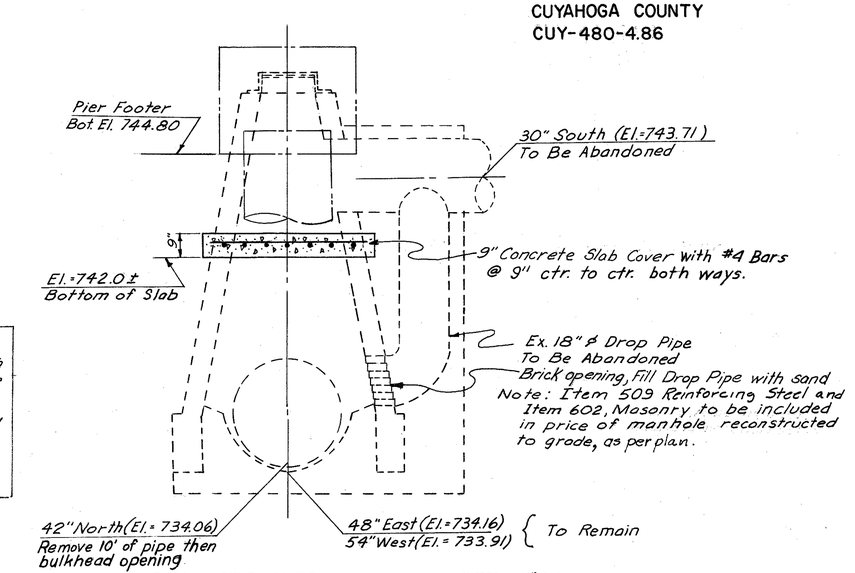
SECTION A-A
Scale: 1" = 0'-6"

NOTES

(1.) CASTINGS shall be of cast iron in accordance with Item 604. The design shall be essentially the same and equally as strong as the one shown hereon.

(2.) CONCRETE casing for riser may be square, round or octagonal in shape and shall be Class "C."

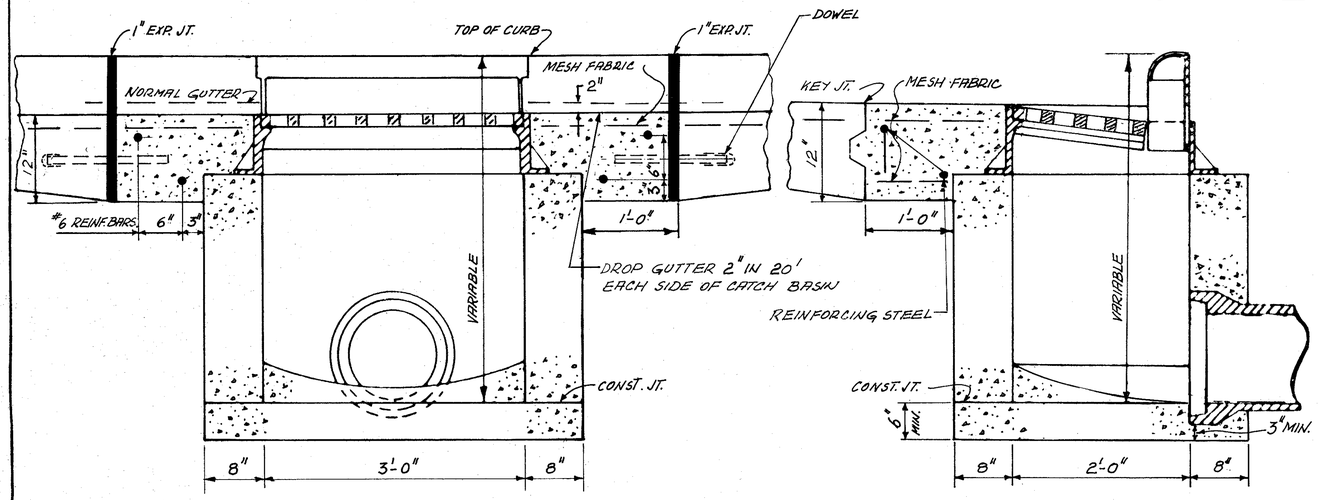
(3.) RISER PIPE in all cases shall be 12 inches in diameter regardless of size of outlet line.



MANHOLE RECONSTRUCTED ~ DETAIL "C"
Sta. 17+50± ℄ Brookpark Road
Scale 3/8" = 1'-0"

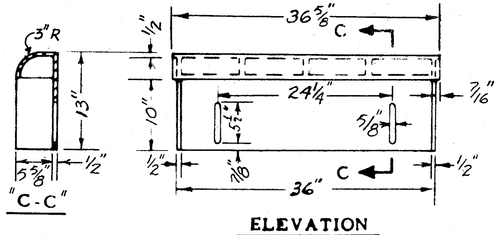
TYPE A-I-1 INLET

3-C CATCH BASIN

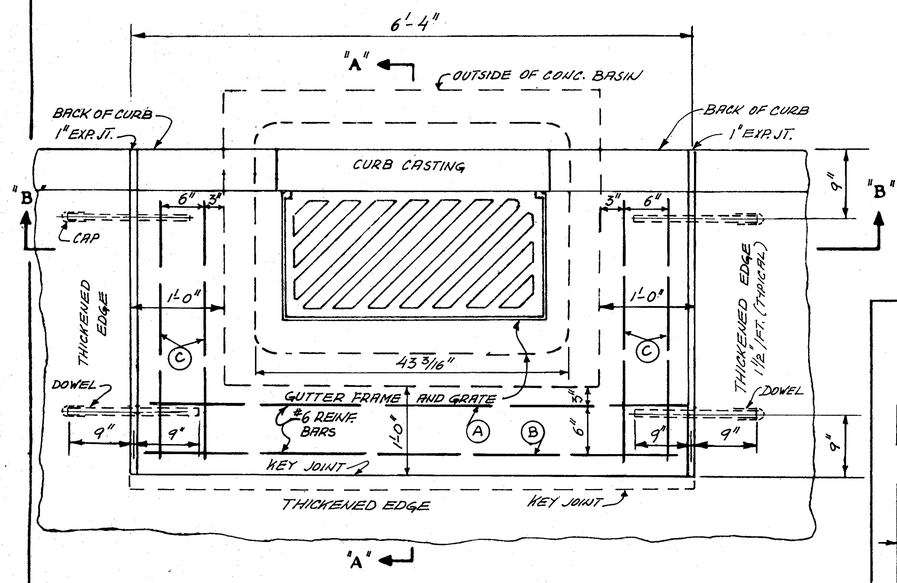


SECTION "B-B"

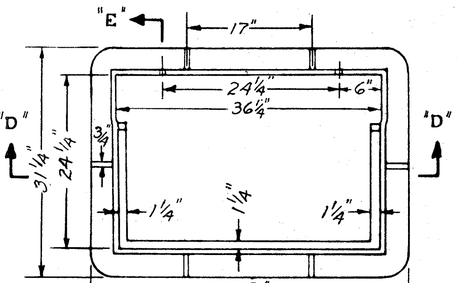
SECTION "A-A"



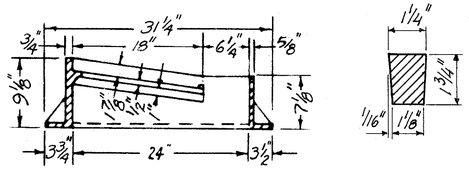
ELEVATION
RADIUS CURB BOX



PLAN OF CATCH BASIN

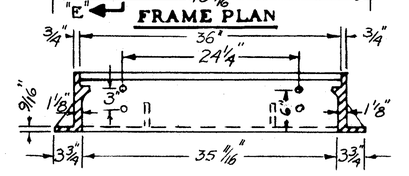


FRAME PLAN



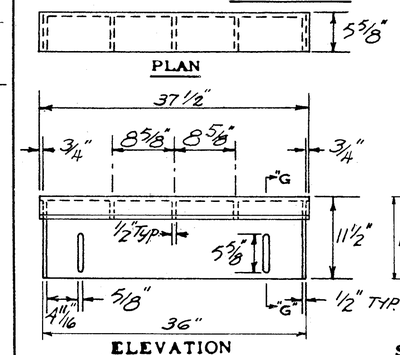
SECTION "E-E"

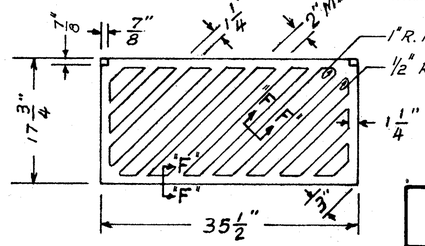
SECTION "F-F"



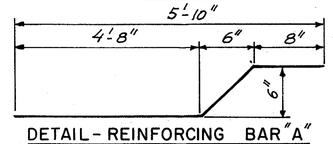
SECTION "D-D"

CURB CASTING FOR CURB CUT IN DRIVEWAYS TYPE "A-2"





GRATE PLAN



DETAIL - REINFORCING BAR "A"
BAR "B" OPPOSITE HAND

NOTES

CASTINGS shall meet the requirements of 604, except that the grate material shall be restricted to 711.13 ASTM A536 Grade 65-45-12. Exposed part of curb casting to be thoroughly cleaned and given one coat of asphalt varnish or coal tar pitch paint.

WEIGHTS minimum -

Curb casting	100 pounds
Gutter grate	130 pounds
Gutter frame	300 pounds

BEARING AREAS or frame and grate shall be so fitted and finished as to provide a firm and even seat for the portions of the grate in the frame. No projections shall exist on bearing areas of either casting and the grate shall seat in its frame without rocking. The frame and grate shall be fitted, matched and marked before delivery to the project.

DOWELS shall be 1 1/8 inch round, smooth bars 18 inches long spaced as shown hereon and greased.

PAVEMENT: The portion blocked out of the pavement shall be placed after the casting has been set but shall be paid for as part of the pavement.

CONCRETE for brick and cast in place or precast chambers shall be CLASS "C".

EXPANSION JOINT - The elastomeric Expansion Joint seal shall be omitted when an asphalt concrete surface is part of pavement. The 1" expansion joint material shall be omitted when a flexible base is used.

BAR LIST

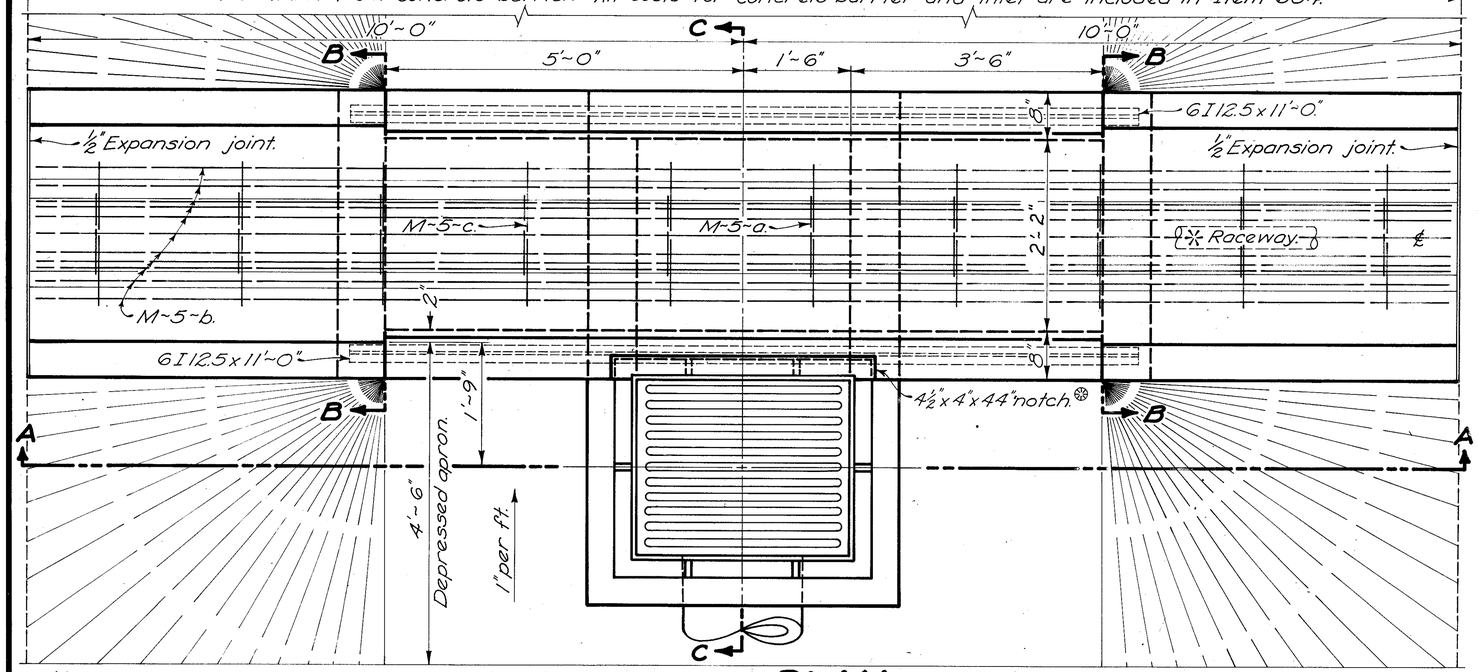
MARK	NO. REQ'D.	SHAPE	LENGTH	WT.
A	1	BENT	5'-10"	9 #
B	1	BENT	5'-10'	9 #
C	4	STR.	2'-10"	4.25 #

CATCH BASIN

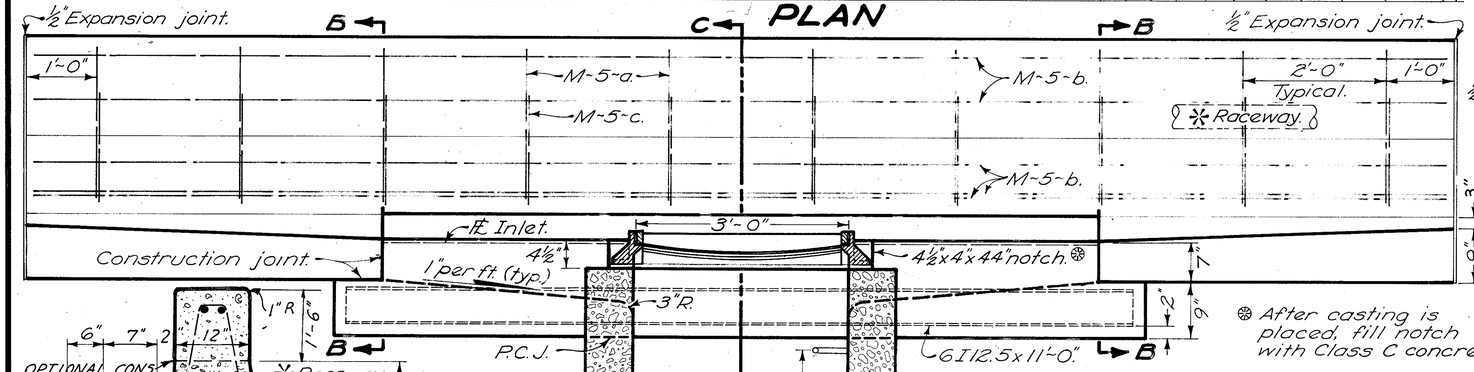
C.B. 3-C

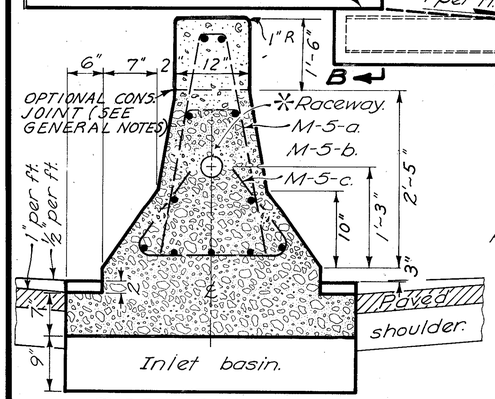
Rev. 5-4-78

Deduct 20 lin. ft. from concrete barrier. All costs for concrete barrier and inlet are included in Item 604.

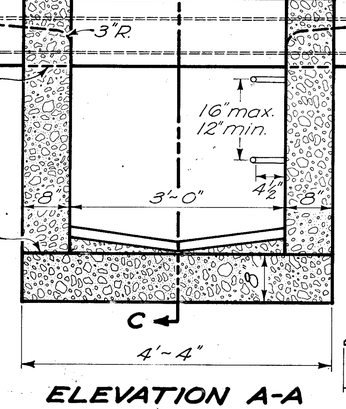


PLAN

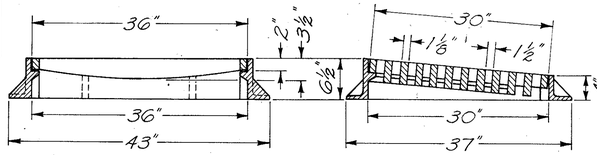




SECTION B-B



ELEVATION A-A



CASTING DETAILS

NOTES

WALLS: The sections between the base and the upper permissible construction joint may be built of brick, concrete block, or cast-in-place concrete, 8" nominal thickness, for depths of 12' or less.

The unit above the upper permissible construction joint may be precast or cast-in-place.

Concrete for precast or cast-in-place construction shall meet the requirements of 511 Class C.

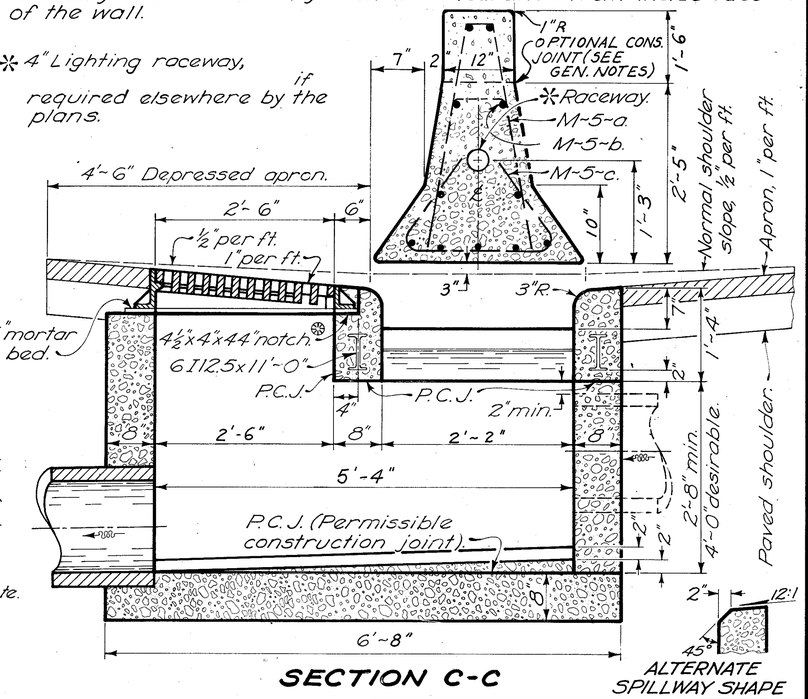
If a skewed pipe protrudes more than 2" inside a wall, the pipe shall be trimmed flush and finished to produce a neat appearance.

STEPS shall be in accordance with Standard Drawing MH-1. Minimum weight of frame and cover shall be 540 pounds.

GRATE LOCATION: In superelevated curves or at other locations where there is unequal discharge from the directional roadways, the inlet grating shall be located in the roadway which discharges the major flow.

INLETS OVER 12 FEET IN DEPTH shall be built of Class C concrete reinforced by placing ½" bars 12" center-to-center both vertically and horizontally with a 2" clearance from inside face of the wall.

✲ 4" Lighting raceway, if required elsewhere by the plans.



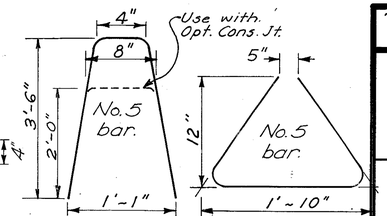
SECTION C-C

ALTERNATE SPILLWAY SHAPE

✲ After casting is placed, fill notch with Class C concrete.

STEEL LIST

INLET No.	W	M-5-a		M-5-b		M-5-c		6 I 12.5	
		No.	Lin. Ft.	No.	Lin. Ft.	No.	Lin. Ft.	No.	Lin. Ft.
OPT. C.Jt.	→	4'-6							
I-3H	12"	10	7'-4"	11	19'-8"	10	4'-1"	2	11'-0"

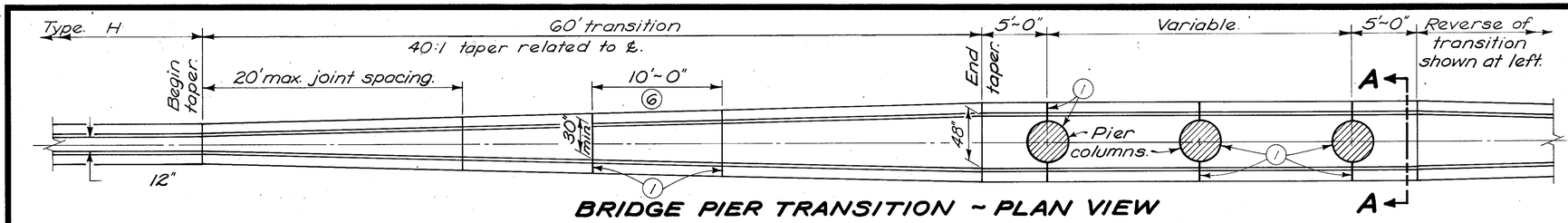


I-3H

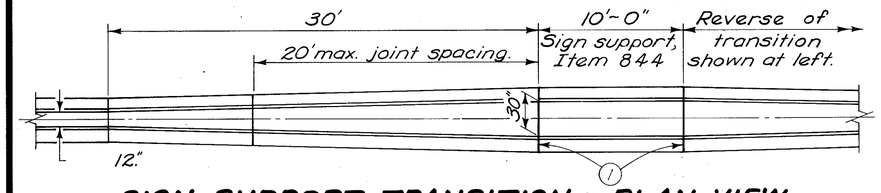
MEDIAN INLETS

NOTE: Drawing not to scale, dimensions govern. See General Notes for optional top construction.

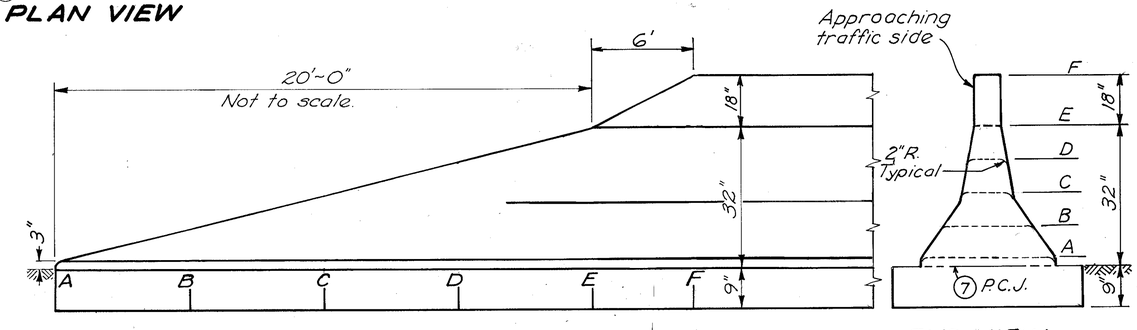
MEDIAN INLET DETAILS



BRIDGE PIER TRANSITION ~ PLAN VIEW

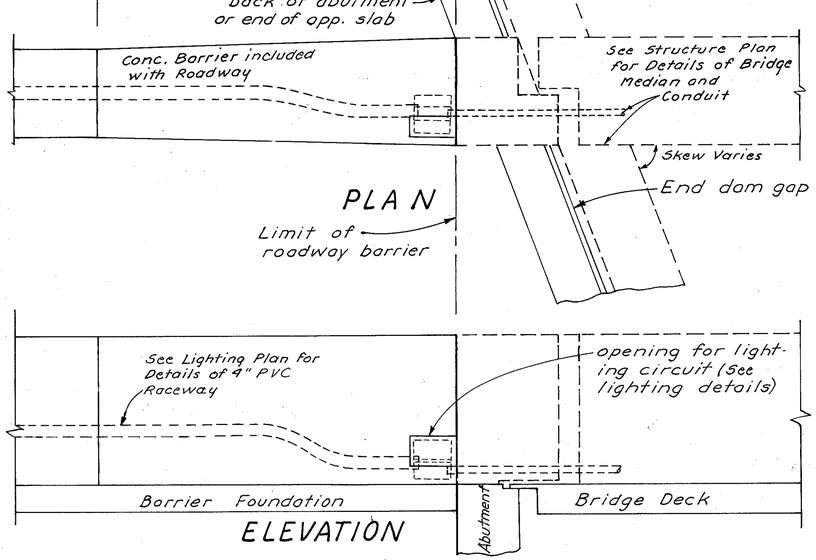


SIGN SUPPORT TRANSITION ~ PLAN VIEW



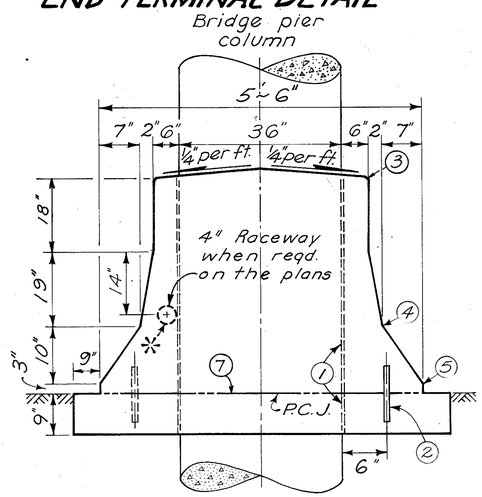
PROFILE VIEW

END VIEW



BRIDGE MEDIAN TRANSITION DETAIL

END TERMINAL DETAIL



BRIDGE PIER TRANSITION SECTION A-A

NOTES

JOINTS: Unsealed contraction joints spaced at 20' max. shall be constructed throughout the run of Concrete Barrier except that expansion joints shall be used at the center line of and around each bridge pier column and on either side of overhead sign supports. See 625 Light pole foundation drawing for other joint details.

Contraction joints may be constructed with metal inserts inside the forms, preformed full width joint filler, a grooving tool, or by sawing. Inserts or tooled or sawed joints shall have a 1½" min. depth. All joints shall be constructed for the full height of the barrier including the base.

LIGHTING: The 4" polyvinyl chloride raceway shall be included in the unit price bid for 622.

MEASUREMENT: 622 Concrete Barrier, including transitions and end terminals and pier sections, is paid for in linear feet with the following deductions for structures covered under other items.

604 I-3 Median inlets _____ 20 Lin. Ft.
625 Light pole foundation _____ 2.5 Lin. Ft.
844 Overhead sign support foundation _ 10 Lin. Ft.

The following table gives information to compute the volume of the various type barriers:

CUBIC YARDS PER LINEAR FOOT

Barrier	Top	Base
TYPE H	0.206	0.111
SECTION A-A‡	0.672	0.194

‡ Deduct 1.3 Cu. Yd. for each 36" dia. pier column.

1. Expansion joint, ¾" min. Preformed Filler 705.03.
2. No. 8 deformed steel bars, 12" long, spaced on staggered 4' centers. The End Terminal will require shorter dowels between points A & C. Omit dowels when top is constructed integral with the base.
3. 1" Radius or ¾" chamfer.
4. Permissible 10" radius.
5. Permissible 1" radius
6. 844 Overhead Sign Support Foundation, if specified in the plan.
7. Permissible construction joint.

NOTE: Drawing not to scale, dimensions govern. See General Notes for optional top construction.

CONCRETE BARRIER DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

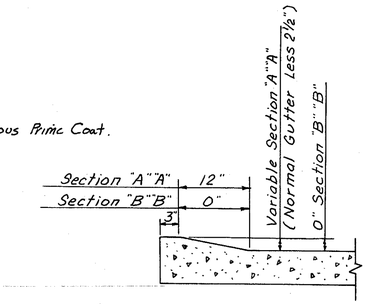
28
347

CUYAHOGA COUNTY
CUY-480-4.86

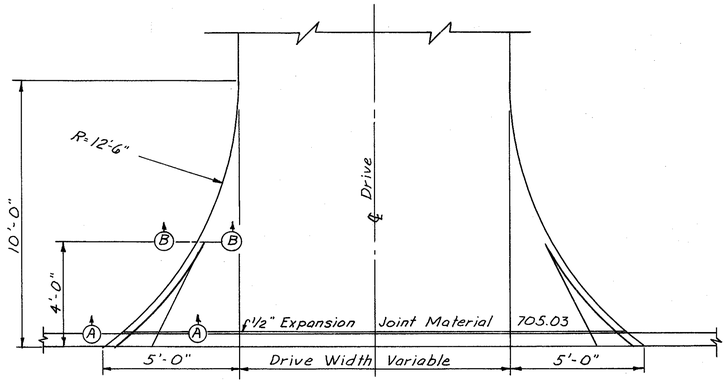
Notes:
Residence drives having an existing hard surface or existing aggregate surface shall be replaced with a pavement of similar type in so far as practicable, using one of the following design for the portion beyond the flared apron.
(a) 6" Plain Portland Cement, Item 452.
(b) 6" Item 304 Aggregate Base surfaced with a 2" course of Asphaltic Concrete, Item 404 & 408 Bituminous Prime Coat.
(c) 6" Item 304 Aggregate Base.

For Asphaltic Concrete and Slag drives, the plan view shown, shall be used. Shape drive section to provide for proper drainage, as directed, by the Engineer.

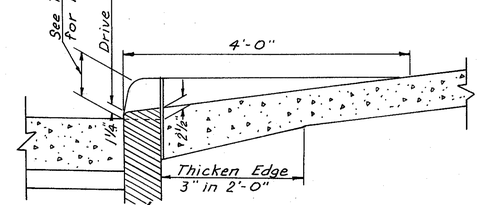
Commercial Drives:
(a) 8" Reinforced Portland Cement Concrete, Item 451
(b) 8" Item 304 Aggregate Base Surfaced With 408 Bituminous Prime Coat And a 2" Course of Item 404 Asphalt Concrete AC-20.



APRON CURB DETAIL
SECTION A-A SECTION B-B



CONCRETE DRIVE DETAIL



See Typical Section for Curb Specified. When the drive abuts a pavement, with no curb, the Drive Apron Curb Section shall be omitted.

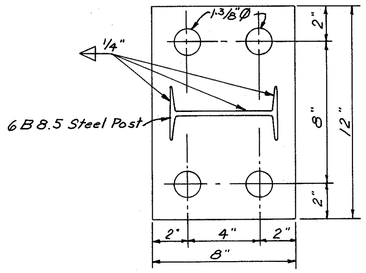
APRON CURB TRANSITION

SPECIAL DETAIL

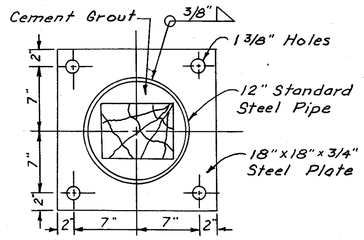
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

29
347

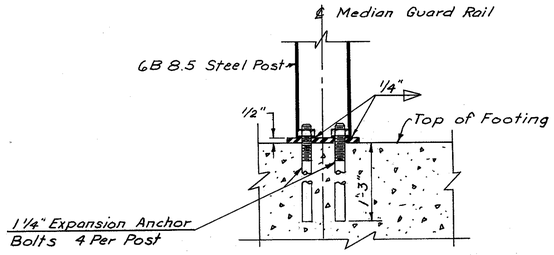
CUYAHOGA COUNTY
CUY-480-4.86



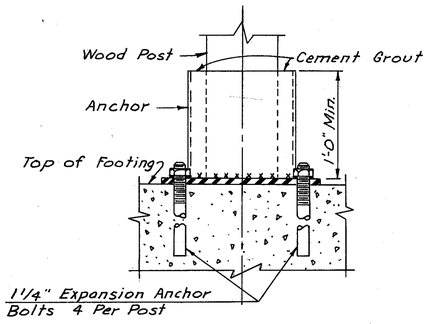
Steel Post Baseplate



Wood Post Baseplate



Note: Anchor bolt holes shall be located and drilled after footing is placed.



Note: Where connection to pier footing is required, payment for all material, work and incidentals involved to provide installation of guard rail as detailed above shall be included in unit price bid for the pertinent Item 606 Guard Rail.

BARRIER GUARD RAIL DETAIL AT BRIDGE PIERS

SPECIAL DETAIL

1	OHIO			30
2				347

CUYAHOGA COUNTY

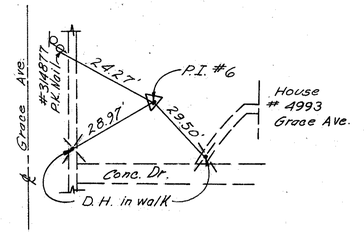
CUY-480-4.86

CROSS REFERENCE	
Sht. No.	Item
82-83	Cross Sections

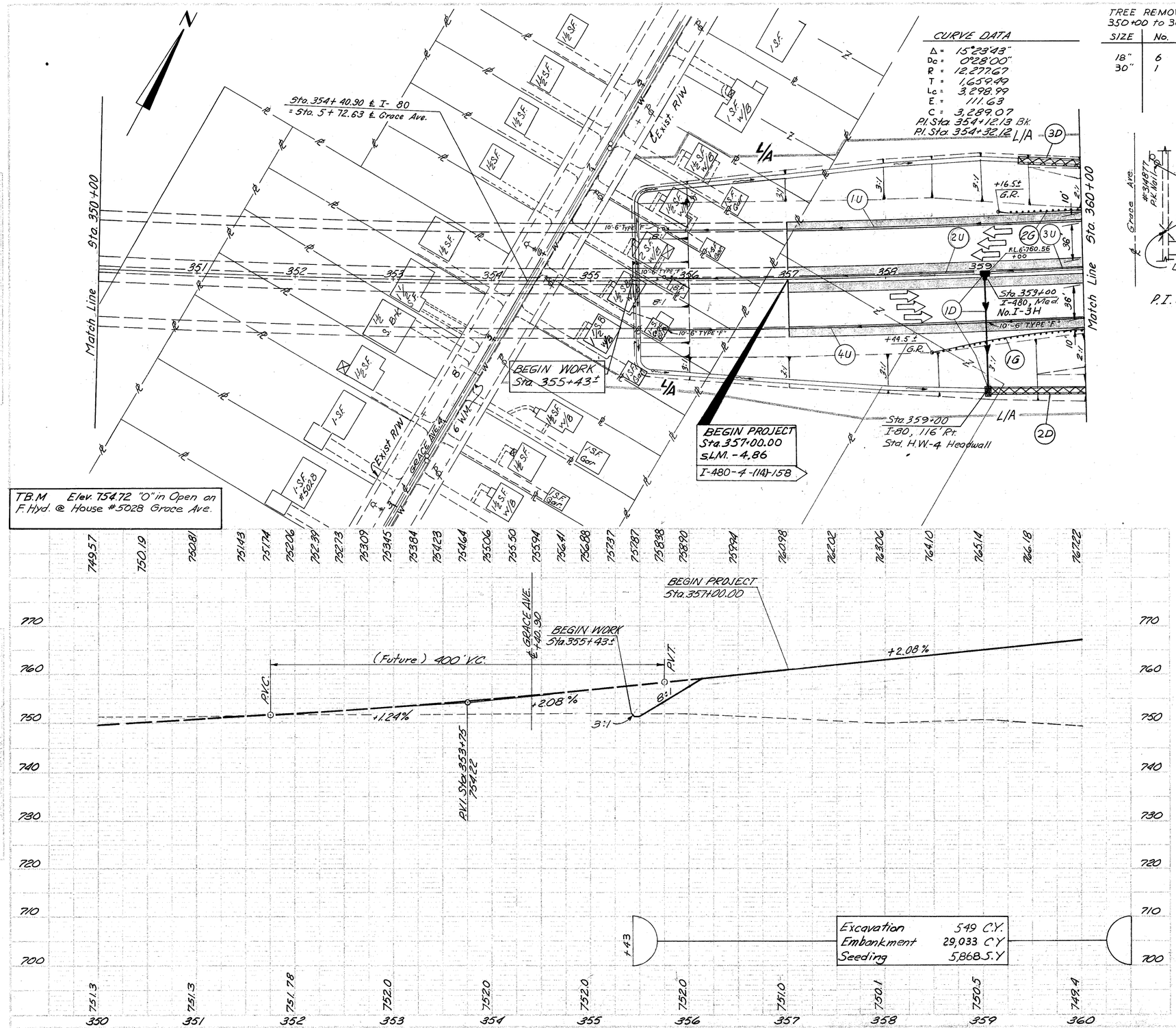
TREE REMOVAL
350+00 to 360+00

SIZE	No.
18"	6
30"	1

CURVE DATA
Δ = 15°23'43"
Dc = 0°28'00"
R = 12,277.67
T = 1,659.49
Lc = 3,298.99
E = 111.63
C = 3,289.07
P.I. Sta. 354+12.13 Bk.
P.I. Sta. 354+32.12 Ahd.



P.I. Sta. 354+32.12 (Fwd)



Estimated Quantities	Ref. No.	Slope	Location	Storm Sewer Profile Sht.# 85	Seeding & Jute Matting S.Y.	Guard Rail, Type 5 L.F.	Anchor Ass. Type T Ea.	Anchor Ass. Type A	Shallow 6" L.F.	No. I-3H Inlet Ea.	Type "B" 15" L.F.	Type "F" 6" L.F.	Type "F" 15" L.F.	Concrete Masonry C.Y.	Rock Channel Protection Type "B" With BEDDING C.Y.
605															
604															
603															
602															
601															
	1D	Med.	359+00		82					1					
	2D	Rt.	359+36 to 360+00		53										
	3D	Lt.	359+02 to 360+00												
	1U	Lt.	355+75 To 360+00						413			10			
	2U	Med.	355+75 To 358+90						305			10			
	3U	Med.	359+00 To 360+00						90			10			
	4U	Rt.	355+75 To 360+00						407			20			
	1G	Rt.	358+44 To 360+00			180.5		1							
	2G	Lt.	359+16 To 360+00			71.0		1							
			TOTAL	135		201.5	1	1	1215	1	62	50	53	0.3	2.0

EJK 4-8-68
AJH 6-6-68

PLAN & PROFILE STA. 350+00 360+00

2 OHIO

CUYAHOGA COUNTY

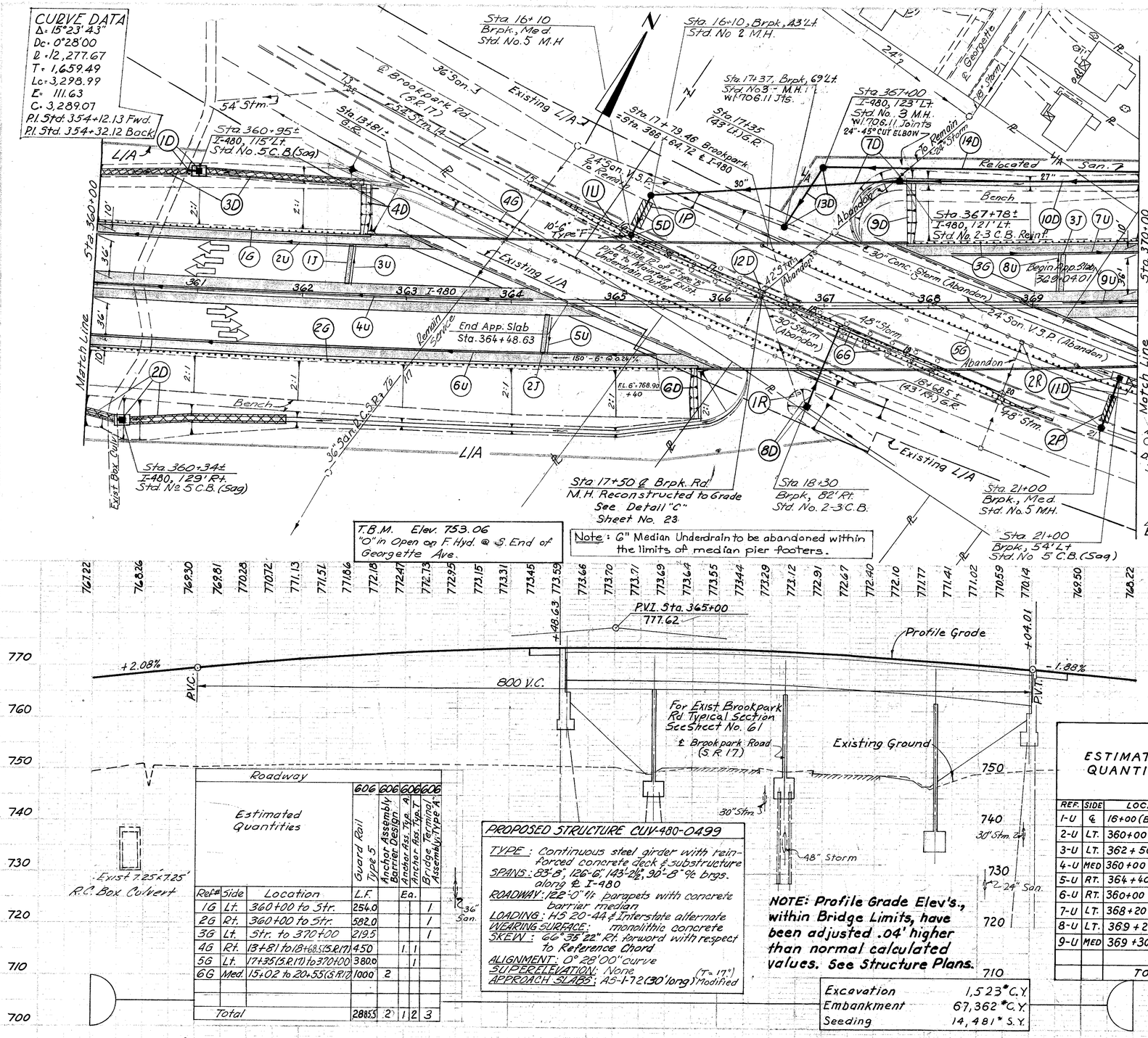
CUY-480-4.86

CURVE DATA
Δ= 15°23'43"
Dc= 0°28'00
R =12,277.67
T= 1,659.49
Lc=3,298.99
E= 111.63
C= 3,289.07
P.I. Std: 354+12.13 Fwd.
P.I. Std. 354+32.12 Back

TREE REMOVAL
360+00 to 370+00

SIZE	No.
	NONE

CROSS REFERENCE	
Sht. No.	Item
83-86	Cross Sections
230	Structure
79	Reloc. 24" San. Sewer
23	M.H. Reconstruct, Det. "C"
106-110	Brookpark X-Sections



T.B.M. Elev. 753.06
"O" in Open on F. Hyd. @ S. End of Georgette Ave.

Note: 6" Median Underdrain to be abandoned within the limits of median pier footers.

Roadway			606	606	606	606	606
Estimated Quantities			Guard Rail Type 5	Anchor Assembly Barrier Design	Anchor Ass. Typ. A	Anchor Ass. Typ. T	Bridge Terminal Assembly, Type "A"
Ref#	Side	Location	L.F.		Ea.		
1G	Lt.	360+00 to Str.	254.0				1
2G	Rt.	360+00 to Str.	582.0				1
3G	Lt.	Str. to 370+00	219.5				1
4G	Rt.	13+81 to 18+68.5 (S.R. 17)	450		1	1	
5G	Lt.	17+35 (S.R. 17) to 370+00	380.0			1	
6G	Med.	15+02 to 20+55 (S.R. 17)	1000	2			
Total			2885.5	2	1	2	3

PROPOSED STRUCTURE CUY-480-0499

TYPE: Continuous steel girder with reinforced concrete deck & substructure
SPANS: 83'-8", 126'-6", 143'-2½", 90'-8" c/c brgs. along ℄ I-480
ROADWAY: 122'-0" f/f parapets with concrete barrier median
LOADING: HS 20-44 & Interstate alternate
WEARING SURFACE: monolithic concrete
SKEW: 66°35'22" Rt. forword with respect to Reference Chord
ALIGNMENT: 0°28'00" curve
SUPERELEVATION: None
APPROACH SLABS: AS-1-72 (30' long) (T = 17") Modified

NOTE: Profile Grade Elev's., within Bridge Limits, have been adjusted .04' higher than normal calculated values. See Structure Plans.

Excavation	1,523* C.Y.
Embankment	67,362* C.Y.
Seeding	14,481* S.Y.

ESTIMATED QUANTITIES			603	605	605	605
			TYPE "F" 6"	SHALLOW 6"		BENDS & BRANCHES
REF.	SIDE	LOCATION	L.F.	L.F.		Ea.
1-U	℄	16+00 (BROOKPARK)	10			
2-U	LT.	360+00 to 363+00		299		
3-U	LT.	362+50		39		1
4-U	MED	360+00 to 364+20		420		
5-U	RT.	364+40		39		1
6-U	RT.	360+00 to 365+40		542		
7-U	LT.	368+20 to 370+00		179		
8-U	LT.	369+25		39		1
9-U	MED	369+30 to 370+00		70		
		TOTAL	10	1627		

	Storm Sewer Profiles		Sht.#	75	75			72		72	75		72	72									79	79	☒
SPEC.	Pressure Relief Joint, Type "A"		L.F.													36	36	36							108
202	Structure Removed		Lump																Lump						Lump
202	Catch Basins or Inlet Removed		Ea.																	1					1
667	Seeding and Jute Matting		S.Y.		180	196								8											384
660	Reinforced Sodding		S.Y.				47		50			53													150
609	Sandstone Curb		L.F.																		10	8			18
451	9" Reinforced Conc. Pavement		S.Y.																		29	23			52
310	Subbase, "A" As Per Plan.		C.Y.																		4.81	3.85			9
202	Existing Pavement Removed		S.Y.																		29	23			52
202	Existing Curb Removed for Storage		L.F.																		10	8			18
604	STD. No. 2 M.H.		Ea.					1																	1
	M.H. Reconst. to Grade (DETAIL "C")		Ea.												1										1
	No. 5 C.B		Ea.	1	1									1											3
	Std. No. 3 M.H. w/ 706.11 joints		Ea.																				2		2
	No. 2-3 C.B.		Ea.								1														1
	24"-45° CUT ELBOW		Ea.							1															☒
	Std. No. 5 M.H							1						1											2
	No. 2-3 C.B. Reinforced		Ea.							1															1
603	Type "C" 706.02 D-1250, 706.08 E.S. or 707.13.	30"	L.F.							245															245
	Type "B" 706.02 D-1500 or 707.13	30"	L.F.					43																	43
	Type "C"	27"	L.F.										224												224
	Type "C" 706.02 D-2000 (fully epoxy lined) * with 706.11 Jts.	24"	L.F.																				65	300	365
																									70
	Type "F" 707.05	15"	L.F.	12	5																				17
	Type "B"	15"	L.F.								82														82
	Type "B"	12"	L.F.											54											54
	Type "B"	6"	L.F.												12										⊗
	Estimated Quantities		Location	360+85± to 360+95	360+00 to 361+90	360+00 to 362+52	362+57	16+10 (Brookpark)	365+75	16+10 (Brp'k) to 367+78	18+30 (Brookpark)	367+85	367+78 to 370+00	21+00 (Brookpark)	17+50± (Brookpark)	362+45	364+35	369+30	18+14 (Brookpark)	20+00 (Brookpark)			17+37 (Brpk) to 367+00	367+00 to 370+00	TOTALS
			Side	Lt.	Rt.	Lt.	Lt.	Lt.	Rt.	Lt.	Rt.	Lt.	Lt.	Rt.	℄	LT.	RT.	LT.	Rt.	Rt.			Lt.	Lt.	
			Ref. No.	1D	2D	3D	4D	5D	6D	7D	8D	9D	10D	11D	12D	1J	2J	3J	1R	2R	1P	2P	13D	14D	

SANITARY SEWER

* As per plan

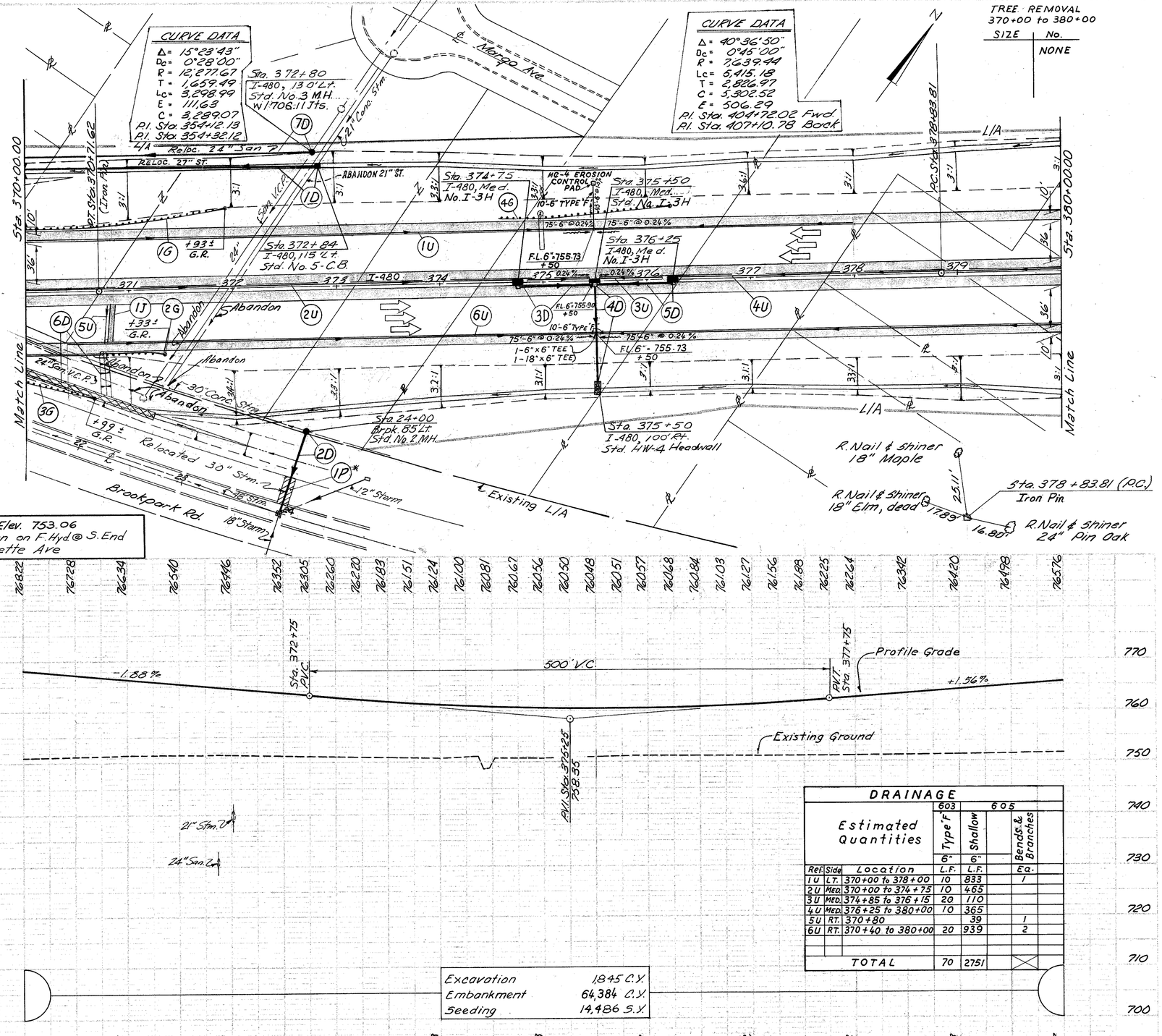
⊗ = Cost to be included in Price Bid for Item 12D & performed Only if directed by the Project Engineer.

* Includes Earthwork & Seeding for Brookpark Rd. Sta. 13+50 to Sta 23+50

** Guard Rail Post Spacing to be Adjusted to Clear Foundation Cross Beams.

EJK 4-8-68
HJH 6-6-68

PLAN & PROFILE STA. 360+00 370+00



CURVE DATA
Δ = 15°23'43"
Dc = 0°28'00"
R = 12,277.67
T = 1,659.49
Lc = 3,298.99
E = 111.63
C = 3,289.07
P.I. Sta. 354+12.13
P.I. Sta. 354+32.12

CURVE DATA
Δ = 40°36'50"
Dc = 0°45'00"
R = 7,639.44
Lc = 5,415.18
T = 2,826.97
C = 5,302.32
E = 506.29
P.I. Sta. 404+72.02 Fwd.
P.I. Sta. 407+10.78 Back

T.B.M. Elev. 753.06
"O" in Open on F. Hyd. @ S. End of Georgette Ave

Excavation 1,845 C.Y.
Embankment 64,384 C.Y.
Seeding 14,486 S.Y.

TREE REMOVAL
370+00 to 380+00

SIZE	No.
	NONE

CROSS REFERENCE	
Sht. No.	Item
86-88	Cross Sections
230	Structure @ Brookpark Rd
79	Reloc. 24" San. Sewer

DRAINAGE						
Estimated Quantities			603	605		
			Type "F"	Shallow		Bends & Branches
			6"	6"		
Ref.	Side	Location	L.F.	L.F.		Ea.
1U	LT.	370+00 to 378+00	10	833		1
2U	MED.	370+00 to 374+75	10	465		
3U	MED.	374+85 to 376+15	20	110		
4U	MED.	376+25 to 380+00	10	365		
5U	RT.	370+80		39		1
6U	RT.	370+40 to 380+00	20	939		2
TOTAL			70	2751		☒

Estimated Quantities

Item	Description	Size	Unit	1D	2D	3D	4D	5D	6D		1P	1J		1G	2G	3G	4G	SANITARY SEWER	7D			Total
Side				LT.	Lt.	Med	Rt.	Med	Rt.		Lt.	Rt.		Lt.	Rt.	Rt.	Lt.		Lt.			
Location				370+00 to 372+84	24+00 Brookpark	374+75 to 375+50	375+50	375+50 to 376+25	370+00 to 371+20		24+00 Brookpark	370+85		370+00 to 371+93	Str. to 371+33	370+00 to 22+99(B.R.)	374+62.5 to 376+25		370+00 to 372+80			Total
609	Sandstone Curb		L.F.								10											10
451	9" Reinforced Conc. Pavement		S.Y.								29											29
310	Subbase "A" As Per Plan		C.Y.								4.81											4.81
202	Existing Pavement Removed		S.Y.								29											29
202	Existing Curb Removed for Storage		L.F.								10											10
606	Anchor Ass. Typ. T		Ea.												1		1					2
606	Anchor Ass. Typ. A		Ea.											1		1	1					3
606	Bridge Terminal Assembly, Type "A"														1							1
606	Guard Rail Type 5		L.F.											168.0	47.5	45.0	125.0					385.5
	Storm Sewer Profile		Sht#	72	72	65	65	65														☒
667	Seeding & Jute Matting		S.Y.						117													117
660	Reinforced Sodding		S.Y.						28													28
Drainage 604	Std. No. 3 M.H. w/ 706.11 Joints		Ea.																1			1
Drainage 604	STD. No 2 M.H.		Ea.		1																	1
Drainage 604	No. I-3H Inlet		Ea.			1	1	1														3
Drainage 604	No. 5-C.B.		Ea.	1																		1
Drainage 603	Type "B"	30"	L.F.		85																	85
Drainage 603	Type "C"	27"	L.F.	284																		284
Drainage 603	Type "C" 706.02 D-2000, (fully epoxy lined) * with 706.11 Jts.	24"	L.F.																280			280
Drainage 603	Type "B"	18"	L.F.				97															97
Drainage 603	Type "B"	15"	L.F.			75		75														150
Spec.	Pressure Relief Joint, Type "A"		L.F.									36										36
602	Concrete Masonry		C.Y.				.30															0.3
601	Rock Channel Protection Type "B" WITH BEDDING		C.Y.				5.4															5.4

* As per plan

* For Existing Brookpark Rd Typical Section See Sheet No 61

EJK 4-12-68
HJH 6-8-68

CUYAHOGA COUNTY

CUY-480-4.86

T.B.M. Elev. 752.72
"O" in Open on F. Hyd. @ House #4564 Clague Rd.

Sta. 385+93, 109' Lt.
Std. No. 5 C.B. "B" Grate

Sta. 386+29.21 ℄ I-480 = Sta. 5+45.93 ℄ Clague Rd.

Elm Road
Exist. 8" San. To Remain
℄ Relocated 8" San.
℄ To Be Abandoned
Exist. 8" San.
R/W
R/W

L/A
Bench
+97± G.R.
Sta. 380+00.00
Sta. 380+75, Med. Std. No. I-3H
385+27.31 End App. Slab
Sta. 389+90, Med. Std. No. I-3H
Sta. 390+00.00
F.L. 6" = 762.61 +75
F.L. 6" = 762.20 +90
10'-6" TYPE 'F'
+52± G.R.
Match Line
Match Line
Bench
L/A
Sta. 384+80, 120' Rt. Std. No. 5 C.B. "B" Grate
Sta. 380+75, 117' Rt. Std HW-4 Headwall
1½ Sty. Br.
1½ Sty. Fr.
2.5 Sty. Fr.
Ramp C-1
Ramp C-2
I-480
℄ Clague Rd.
24" C.M.P.
36" C.M.P.
Sty. Br.
2 cor. ½ Gar.
2 cor. Gar.
+98± End G.R.
388'-1.80 Beam App. Slab

CURVE DATA	
Δ	= 40° 36' 50"
Dc	= 0° 45' 00"
R	= 7,639.44
Lc	= 5,415.18
T	= 2,826.97
C	= 5,302.52
E	= 506.29
P.I. Sta.	404+72.02 Fwd.
P.I. Sta.	407+10.78 Back

765.76 766.54 766.32 768.10 768.48 768.83 769.15 769.44 769.71 769.95 770.16 770.34 770.50 770.63 770.78 770.80 770.85 770.87 770.86 770.82 770.75 770.66 770.54 770.40 770.33 770.25 769.80 769.24 768.96 768.85 768.64 768.24 767.85 767.43 766.98 766.50 766.00 765.47

+27.54 +1.56%+ P.V.I. Sta. 786+00 775.12 -2.40%- +11.80
+1.56%
P.V.T.
900' V.C.
Profile Grade
Existing Ground
℄ Clague Rd.
15" Stm.
2-15" Stm.
42" W.M.
℄ 12" W
2-8" San.

770 760 750 740 730 720 710 700

751.7 751.8 752.2 751.7 751.4 751.1 750.0 750.3 749.5 749.0

380 381 382 383 384 385 386 387 388 389 390

PROPOSED STRUCTURE CUY. No. 480-0540

TYPE: Continuous steel beam with reinforced Concrete deck and substructure
SPANS: 42'-9", 55'-9", 44'-6", 35'-6" c/c brgs. on local tangent.
ROADWAY: 122'-11" Concrete parapets, with Concrete barrier median.
LOADING: HS 20-44 and Interstate alternate loading.
WEARING SURFACE: monolithic concrete.
SKEW: 27° 21' 46" L.F. with Reference Chord.
ALIGNMENT: 0° 45' 00" curve. (T=15")
APPROACH SLAB: AS-1-72 (25' long) Modified
SUPERELEVATION: 0.02' /ft.

Excavation	740 C.Y.
Embankment	96,032 C.Y.
Seeding	14,667 S.Y.

TREE REMOVAL
380+00 to 390+00

SIZE	No.
18"	52
30"	1
48"	1

CROSS REFERENCE	
Sht. No.	Item
88-91	Cross Sections
41	Clague Rd. Plan & Profile
276	Structure @ Clague Rd.
81	Reloc. 8" San. Sewer

UNDERDRAINS

ESTIMATED QUANTITIES			603 TYPE "F" 6"	605 SHALLOW 6"	BENDS & BRANCHES
Ref.	Side	Location	L.F.	L.F.	Each
1-U	Lt.	384+90		48	1
2-U	Lt.	387+80		48	1
3-U	Med.	380+00 to 380+65		65	
4-U	Med.	380+75 to 385+00	10	415	
5-U	Med.	387+35 to 389+90	10	245	
6-U	Rt.	384+55		39	1
7-U	Rt.	387+50		39	1
8-U	Rt.	380+00 to 384+70	10	457	
9-U	Rt.	387+10 to 390+00	10	278	
TOTAL			40	1634	X

	Spec.																	
Roadway		Pressure Relief Joint, Type "A"	L.F.							36	36	36	36					144
	606	Bridge Terminal Assembly, Type "A"	Ea.							1		1		1				4
	606	Anchor Ass. Typ. T	Ea.							1		1						2
	606	Anchor Ass. Typ. A												1				
		Guard Rail, Type 5	L.F.							300.0		337.5		246.0		87.5		971.0
		Storm Sewer Profiles	Sht.	65	73			74			67							X
	660	Seeding & Jute Matting	S.Y.	S.Y.	125				125									250
	660	Reinforced Sodding	S.Y.			52			44					37		81		214
	604	No. 5 C.B. WITH "B" GRATE	Ea.			1								1				2
		No. I-3H Inlet	Ea.			1												2
Drainage	603	TYPE "F" 707.05	15"	L.F.		52								133				185
	603	Type "C"	15"	L.F.					14									14
		Type "B"	15"	L.F.		67								84				151
	602	Concrete Masonry	C.Y.	C.Y.		20	.26											2.0
	601	Rock Channel Protection Type "B" WITH BEDDING	C.Y.															0.3

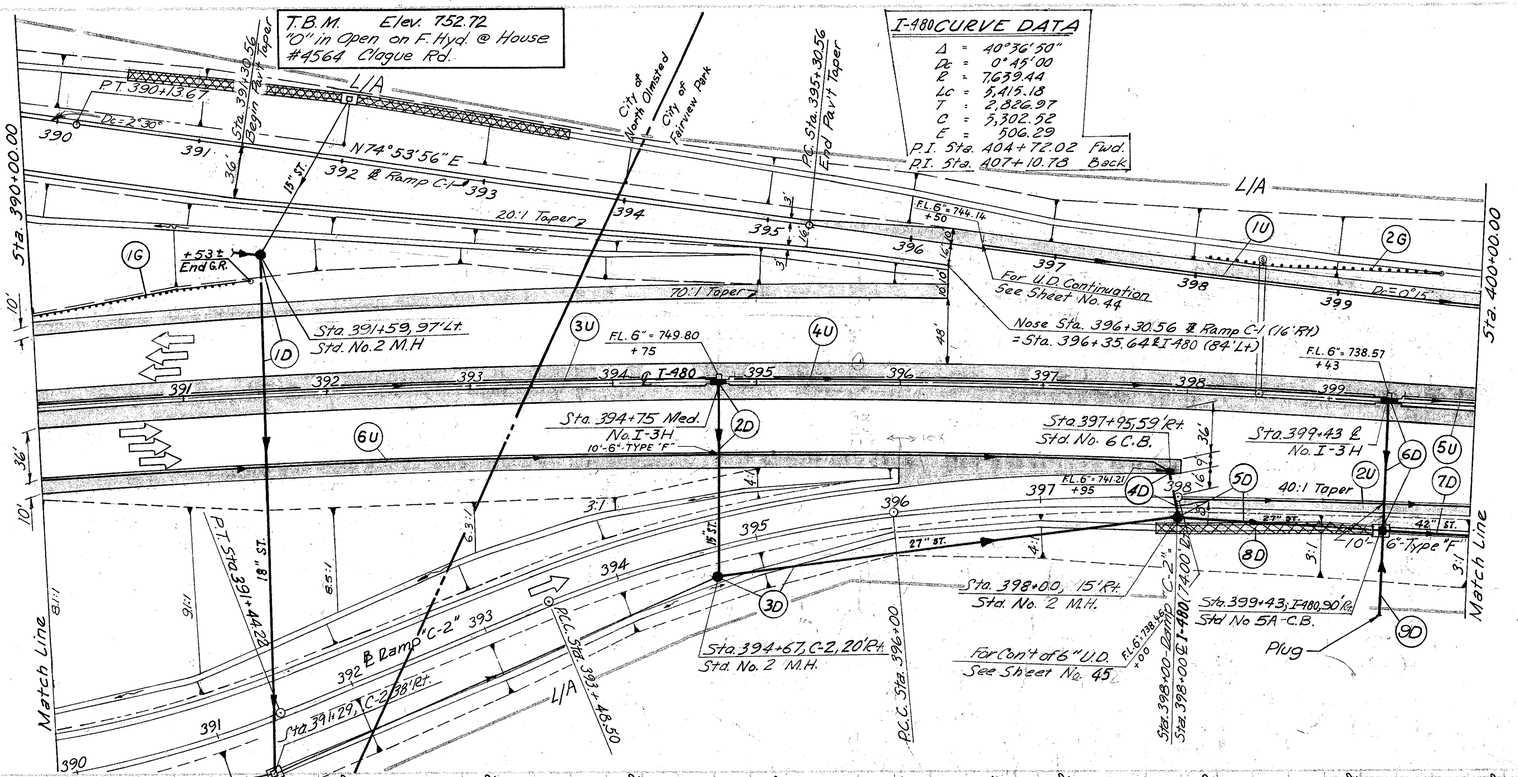
Estimated Quantities

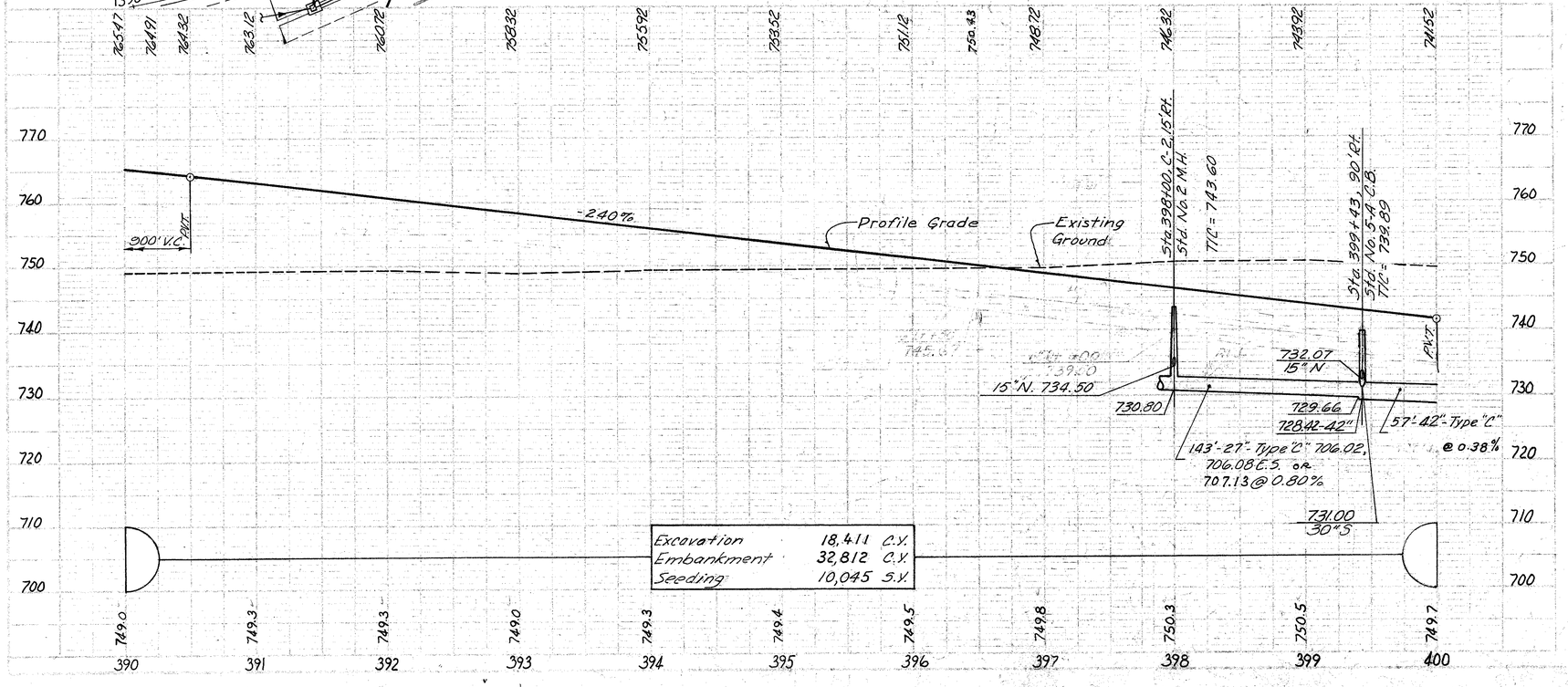
Ref.	Side	Location
1D	Rt.	380+75
2D	Rt.	384+80 @ 3.25% Clogging
3D	Rt.	384+80
4D	Lt.	385+42
5D	Lt.	385+93 to 386+29.21 Clogged
6D	Rt.	387+00
7D	Lt.	387+60
8D	Rt.	389+90 to 389+50.42
1J	Rt.	384+50
2J	Lt.	384+85
3J	Rt.	387+55
4J	Lt.	387+85
1G	Rt.	381+52 to Str.
2G	Lt.	381+97 to Str.
3G	Lt.	Str. to 390+00
4G	Rt.	Str. to 387+98

Total

DES. BY EJK 4-23-68
DWG. BY HJH 6-10-68

PLAN & PROFILE STA. 380+00 TO STA. 390+00





FED. RD. DIVISION	STATE	PROJECT	TOTAL PAGES
2	OHIO		

CUYAHOGA COUNTY

CUY-480-4.86

Excavation	18,411 C.Y.
Embankment	32,812 C.Y.
Seeding	10,045 S.Y.

TREE REMOVAL
390+00 to 400+00

SIZE	No.
18"	8

CROSS REFERENCE	
Sht. No.	Item
56	Ramp C-1 Pav't Detail
57	Ramp C-2 Pav't Detail
44	Ramp C-1 Plan & Profile
45	Ramp C-2 Plan & Profile
91-93	Cross Sections

	Estimated Quantities				1D	2D	3D	4D	5D	6D	7D	8D	9D			1G	2G	1U	2U	3U	4U	5U	6U	TOTAL
	Side				Lt/Rt.	Rt.	Rt.	Rt.	Rt.	Rt.	Rt.	Rt.	Rt.			Lt.	Lt.	Lt.	Rt.	Med.	Med.	Med.	Rt.	
	Location				391+59 to 391+29 (C-2)	394+75 to 394+67 (C-2)	394+67 (C-2) to 398+00 (C-2)	397+95 to 398+00	398+00 to 399+43	399+43	399+43 to 400+00	397+86 to 399+36	399+43			390+00 to 391+53	398+01 to 399+75	396+50 to 400+00 (C-1)	398+00 to 400+00	390+00 to 394+75	394+85 to 399+43	399+53 to 400+00	390+00 to 397+95	
	Storm Sewer Profiles		Sht. No.		67	68	66	68	34	68	34		68											X
606	Guard Rail Type 5		L.F.													129	125							254
606	Anchor Ass. Typ. A		Ea.													1	1							2
606	Anchor Ass. Typ. T		Ea.														1							1
667	Seeding and Jute Matting		S.Y.									125												125
605																								
	Bends & Branches																						1	X
	Shallow	6"	L.F.																	465	448	47	773	1733
	Deep	6"	L.F.															350	190					540
604																								
	No. I-3H Inlet					1				1														2
	No. 2 M.H.		Ea.		1		1		1															3
	No. 6 C.B.		Ea.					1																1
	No. 5A C.B.		Ea.							1														1
603	Type "C"	42"	L.F.								57													57
	Type "C" 706.02, D-1500, or 707.13	30"	L.F.										60#											60#
	Type "C" 706.02, D-1500, or 707.13	27"	L.F.				326																	326
	Type "C" 706.02, 706.08 E.S. or 707.13	27"	L.F.						143															143
	Type "B" 706.02, D-2000, or 707.13	18"	L.F.		363																			363
	Type "B"	15"	L.F.			130		32		88														250
	Type "F"	6"	L.F.																10	10	10		20	50
	Ref. No.				1D	2D	3D	4D	5D	6D	7D	8D	9D			1G	2G	1U	2U	3U	4U	5U	6U	TOTAL

100% State of Ohio

EJK 4-23-68
HJH 6-16-68

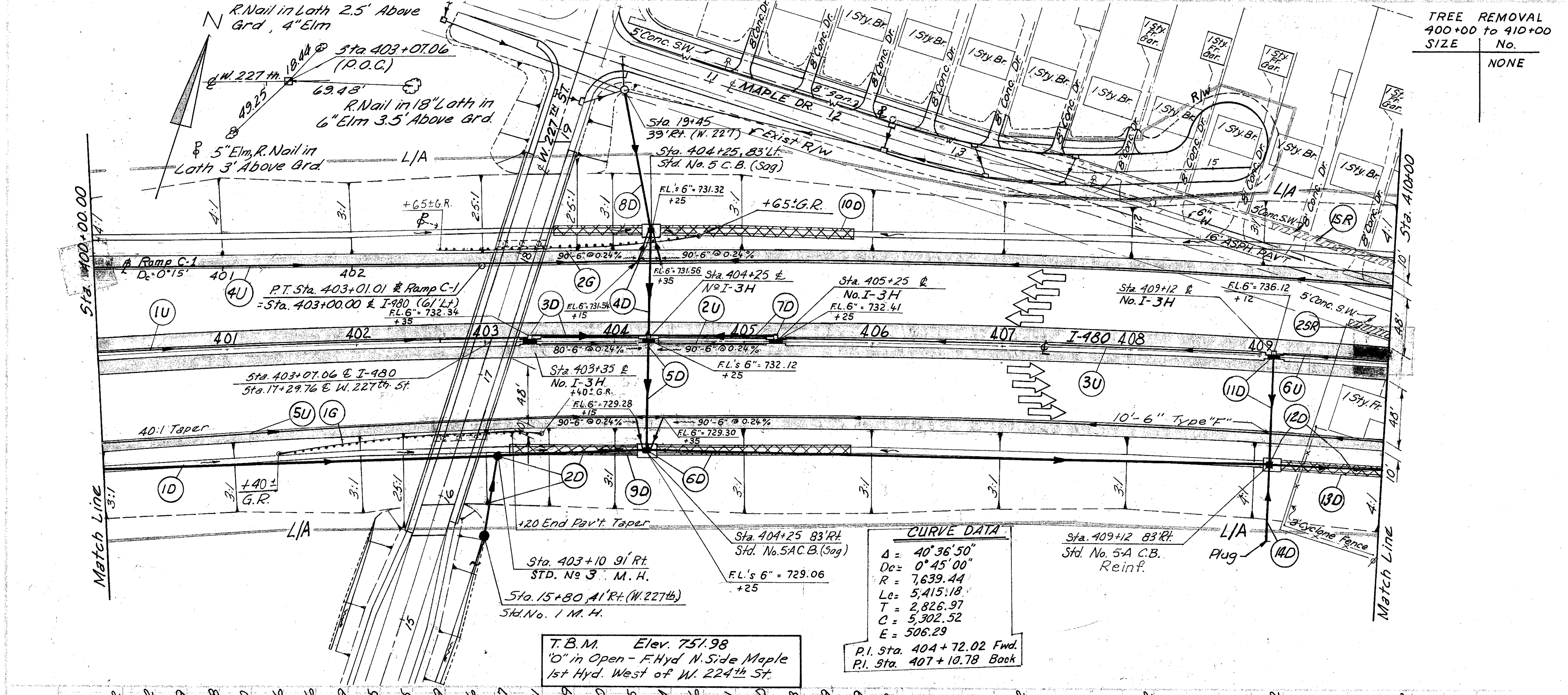
Revised~D.R.S 5-17-78

PLAN & PROFILE STA. 390+00 TO STA. 400+00

STATE OF OHIO
CUYAHOGA COUNTY
CUY-480-4.86

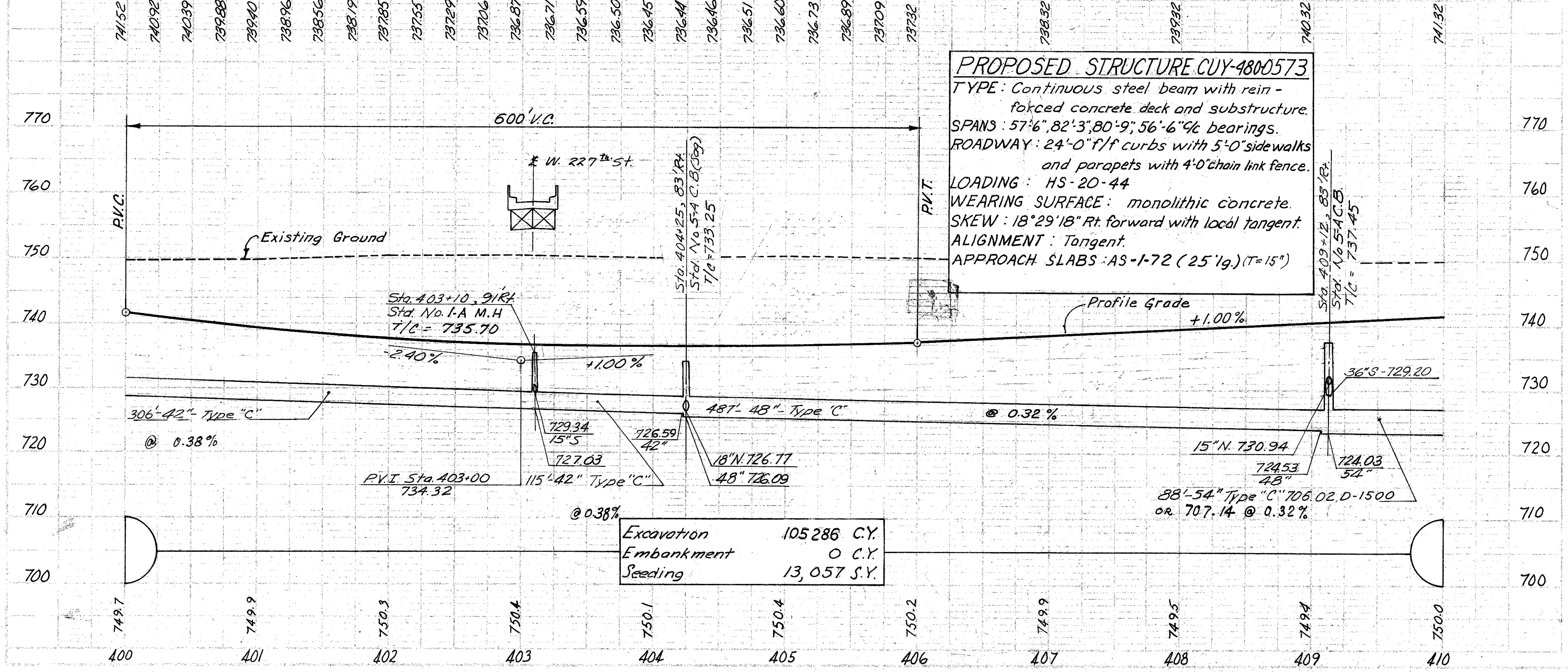
TREE REMOVAL 400+00 to 410+00 SIZE	No.
	NONE

CROSS REFERENCE Sht. No.	Item
47	W. 227th Plan & Profile
93-96	Cross Sections
292	Structure
48-49	Maple Drive
57	Ramp C2 Details



T.B.M. Elev. 751.98
"O" in Open - F. Hyd. N. Side Maple
1st Hyd. West of W. 224th St.

CURVE DATA
Δ = 40°36'50"
Dc = 0°45'00"
R = 7,639.44
Lc = 5,415.18
T = 2,826.97
C = 5,302.52
E = 506.29
P.I. Sta. 404+72.02 Fwd.
P.I. Sta. 407+10.78 Back



PROPOSED STRUCTURE CUY-480-0573
TYPE: Continuous steel beam with reinforced concrete deck and substructure.
SPANS: 57'-6", 82'-3", 80'-9", 56'-6" c/c bearings.
ROADWAY: 24'-0" f/f curbs with 5'-0" sidewalks and parapets with 4'-0" chain link fence.
LOADING: HS-20-44
WEARING SURFACE: monolithic concrete.
SKEW: 18°29'18" Rt. forward with local tangent.
ALIGNMENT: Tangent.
APPROACH SLABS: AS-1-72 (25' lg.) (T=15")

Excavation	105 286	C.Y.
Embankment	0	C.Y.
Seeding	13,057	S.Y.

Estimated Quantities

Participation 100% State of Ohio

Ref. No.	Side	Location	Storm Sewer Profiles Sht. No.	606 Guard Rail, Type 5 L.F.	606 Anchor Ass. Typ. T Ea.	606 Anchor Ass. Typ. A Ea.	202 Exist. S.W. Removed S.F.	667 Seeding and Jute Matting S.Y.	605 Bends & Branches Ea.	605 Shallow 6" L.F.	605 Deep 6" L.F.	604 No 5-A C.B. Reinforced Ea.	604 No 5-A C.B. Ea.	604 STD. No 3 M.H. Ea.	604 No. I-3H Inlet Ea.	604 No. 5 C.B. Ea.	603 Type "C" 15" L.F.	603 Type "C"-706.02, D-1500 or 707.14 54" L.F.	603 Type "C" 48" L.F.	603	603 Type "C" 42" L.F.	603 Type "C" 706.02, D-1500, or 707.13 36" L.F.	603 Type "B" 18" L.F.	603	603 Type "B" 15" L.F.	603 Type "F" 707.05 15" L.F.	603 Type "F" 6" L.F.
1D	Rt.	400+00 to 403+10	35																		306						
2D	Rt.	16+00 (W.227) to 404+25	35 & 68											1							115					65	
3D	Med.	403+35 to 404+25	68												1										90		
4D	Lt.	404+25	68													1							86				
5D	Rt.	404+25	68												1								80				
6D	Rt.	404+25 to 409+12	35										1						487								
7D	Med.	404+25 to 405+25	68												1										100		
8D	Lt.	19+45 (W.227) to 404+25	77														70									42	
9D	Rt.	403+18 to 405+85	-					209																			
10D	Lt.	403+55 to 405+85	-					183																			
11D	Rt.	409+12	69												1										80		
12D	Rt.	409+12 to 410+00	35									1						88									
13D	Rt.	409+17 to 410+00	-					67																			
14D	Rt.	409+12	69																			60#					
1U	Med.	400+00 to 403+35								325																	10
2U	Med.	403+45 to 405+15								150																	20
3U	Med.	405+25 to 409+02								367																	10
4U	Lt.	400+00 to 410+00							2		1032																20
5U	Rt.	400+00 to 410+00							2		1006																30
6U	Med.	409+12 to 410+00								78																	
1G	Rt.	401+40 to 403+40		162.5	1	1																					
2G	Lt.	402+65 to 404+65		162.5	1	1																					
15R	Lt.	15+50 (Maple) to 410+00					490																				
25R	Lt.	16+31 (Maple) to 410+00					165																				
		Total	╳	325	2	2	655	459	╳	920	2038	1	1	1	4	1	70	88	487		421	60#	166		270	107	90

EJK 4-25-68
HJH 6-16-68
Revised ~ D.R.S. 5-17-78

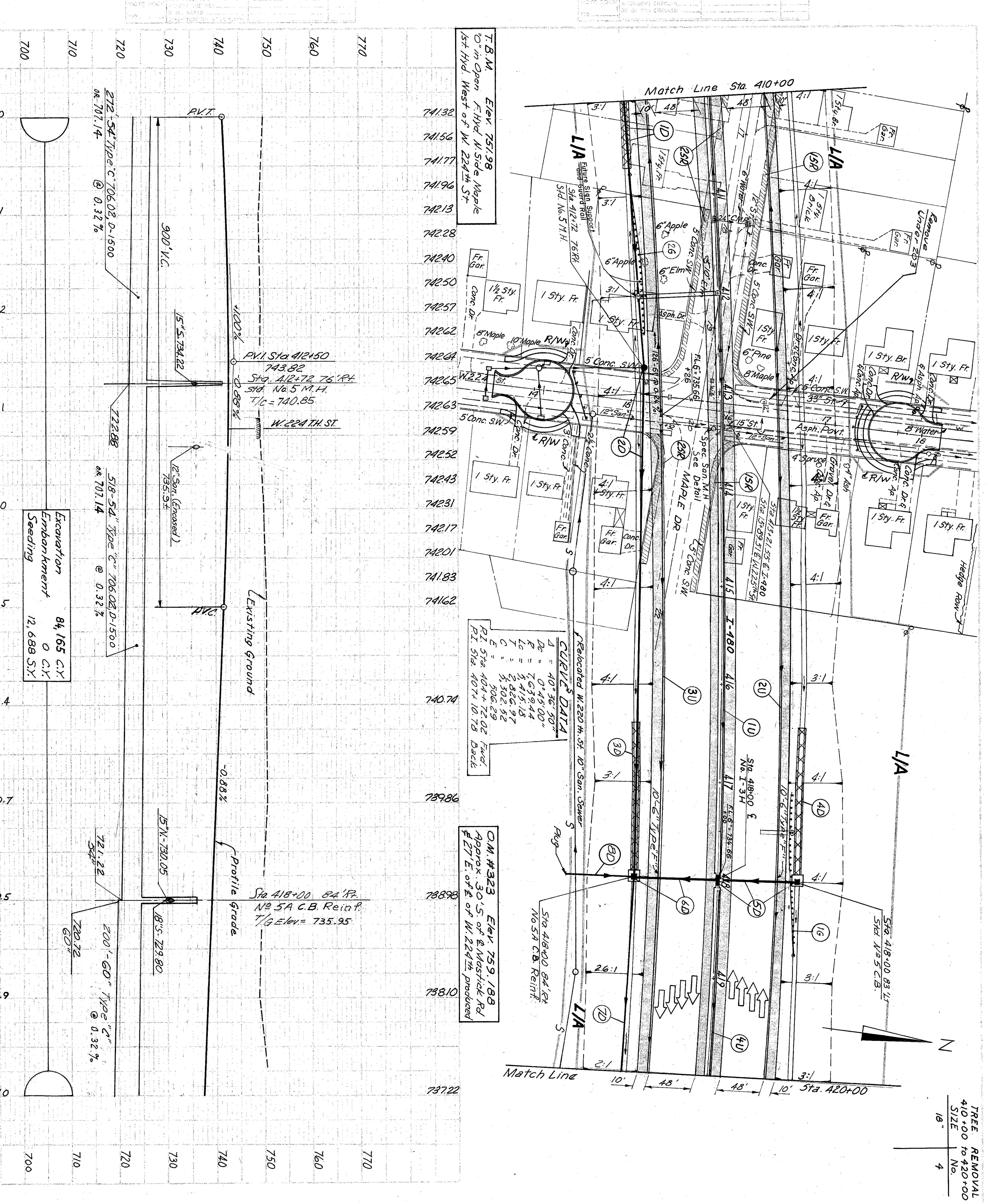
PLAN & PROFILE STA. 400+00 TO 410+00

CUYAHOGA COUNTY

CUY-480-4.86

TREE REMOVAL 410+00 to 420+00 SIZE	No.
18"	4

CROSS REFERENCE Sht. No.	Item
96-98	Cross Sections
50-51	W. 224 Cul-de Sac Details
80	Reloc. 10" San. Sewer
21	Spec. San. M.H. Det. (W. 224)

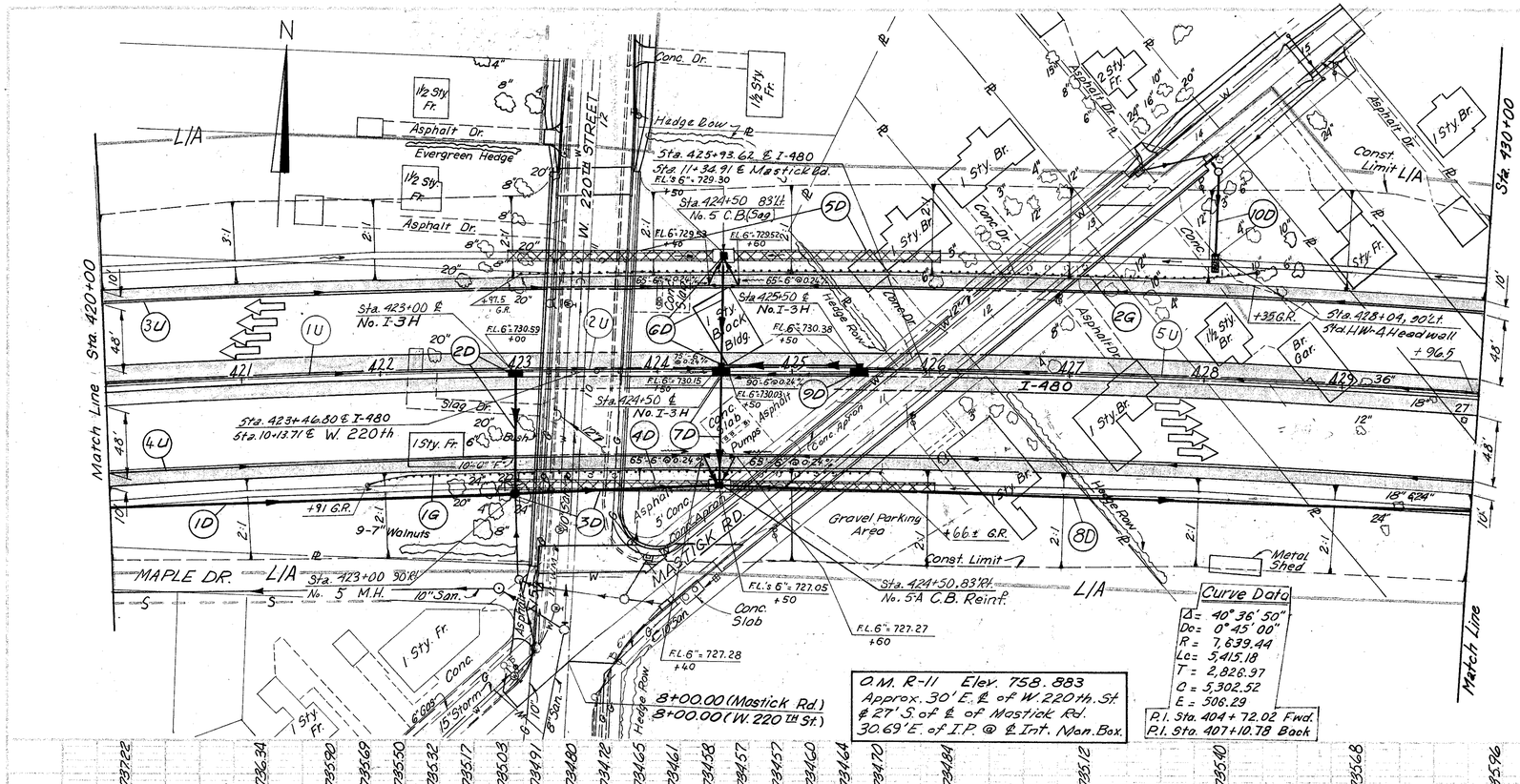


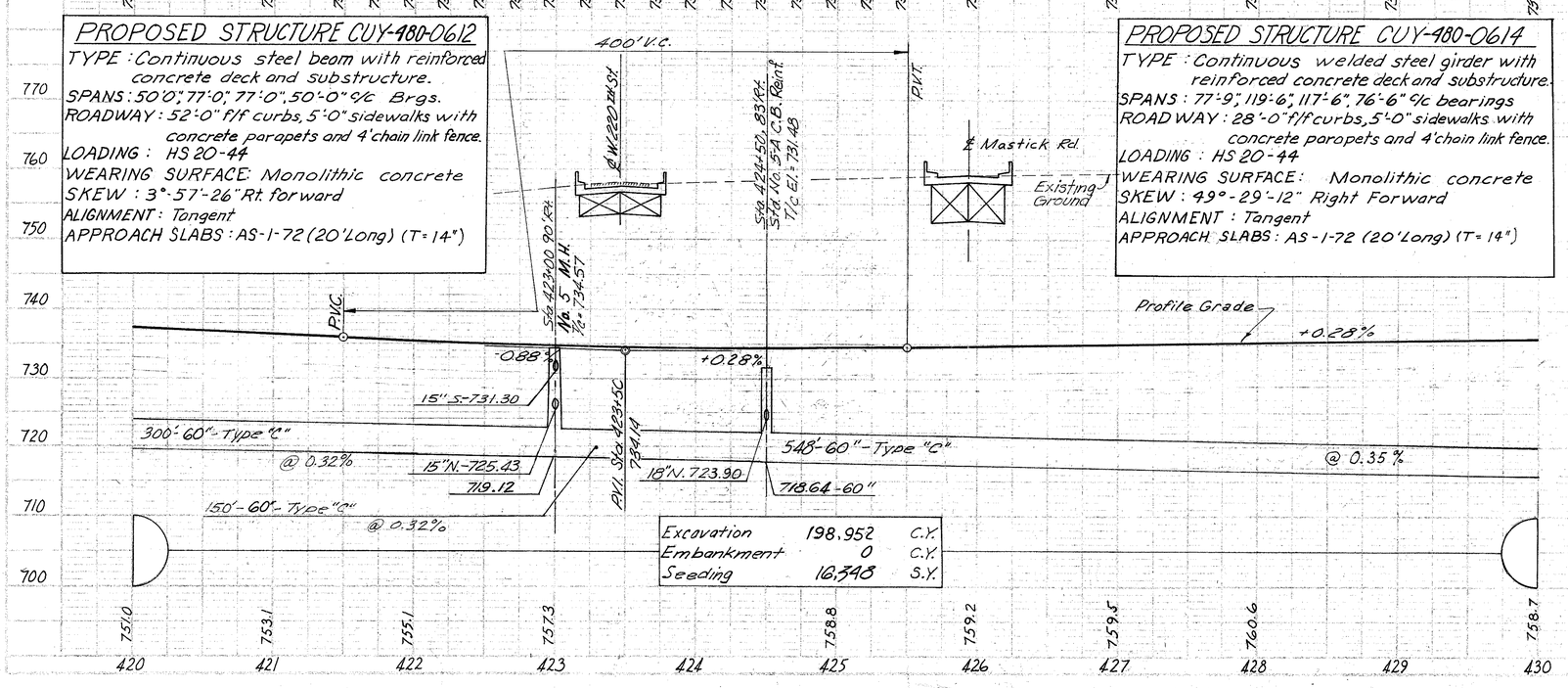
Participation 100% State of Ohio

Estimated Quantities			603					604					605		606			667	202	
			Type "F"	Type "B"	Type "C" 706.02, D-1750 or 707.13	Type "C" 706.02, D-1500 or 707.14	Type "C"	No. 5-A C.B. Reinforced	No. 5 C.B.	No. I-3H Inlet	No. 5 M.H.		Deep	Shallow	Guard Rail Type 5	Anchor Ass. Typ. T	Anchor Ass. Typ. A	Seeding Jute Matting	Exist. S.W. Removed	Storm Sewer Profiles
			6"	15"	18"	54"	60"						6"	6"						
Ref. No.	Side	Location	L.F.	L.F.	L.F.	L.F.	L.F.	Ea.	Ea.	Ea.	Ea.		L.F.	L.F.	L.F.	Ea.		S.Y.	S.F.	Sht. #
1D	Rt.	410+00 to 412+72				272												58		36
2D	Rt.	412+72 to 418+00				518					1									36
3D	Rt.	416+44 to 417+94																125		—
4D	Lt.	416+44 to 417+94																125		
5D	Lt.	418+00		87					1	1										69
6D	Rt.	418+00		80				1												69
7D	Rt.	418+00 to 420+00					200													36
8D	Rt.	418+00			70±															69
1-G	Lt.	417+12.5 to 418+75													125	1	1			
2-G	Rt.	410+75 to 412+37.5													125	1	1			
15R		Maple Dr. (North)																	2350	
25R		Maple Dr. (South)																	1800	
1U	Med.	410+00 to 418+00	10											790						
2U	Lt.	410+00 to 420+00	10										998							
3U	Rt.	410+00 to 420+00	10										976							
4U	Med.	418+10 to 420+00												190						
		TOTAL	30	167	70±	790	200	1	1	1	1		1974	980	250	2	2	308	4150	

EJK 4-29-68
HJH 6-21-68

Revised ~ D.R.S. 5-17-78





TREE REMOVAL
420+00 to 430+00

SIZE	No.
18"	56
30"	5

CROSS REFERENCE	
Sht No.	Item
52-54	Intersection Details
98-102	Cross Sections
80	Reloc. 10" San. Sewer
302	Structure (W. 220th)
314	Structure (Mastick Rd.)
63-64	Temporary Road

	Storm Sewer Profiles	Sht #	37	70	-			70	70	70	70	70					X
606	Guard Rail Type 5	L.F.												13375			
606	Anchor Ass. Typ. A	Ea												1			2
606	Anchor Ass. Typ. T													1			2
667	Seeding and Jute Matting	S.Y.			250	250											500
605	Bends & Branches											2	2				X
	Shallow	6" L.F.										290	210				500
	Deep	6" L.F.									1032		1006	440	2038	940	4456
	No. 5-A C.B. Reinforced	Ea.				1											1
	STANDARD No. 5 M.H.	Ea.		1													1
604	No. I-3H Inlet	Ea.		1				1		1							3
	No. 5 C.B.	Ea.						1									1
603	Type "C"	60" L.F.	300		150												150
	Type "F" 707.05	15" L.F.							548								548
	Type "B"	18" L.F.			86			83									169
	Type "B"	15" L.F.						83				100					183
	Type "F"	8" L.F.											65				65
802	Concrete Masonry	C.Y.															0
601	Rock Channel Protection Type "B" With Bedding	C.Y.											208	487	028	03	726

Estimated Quantities

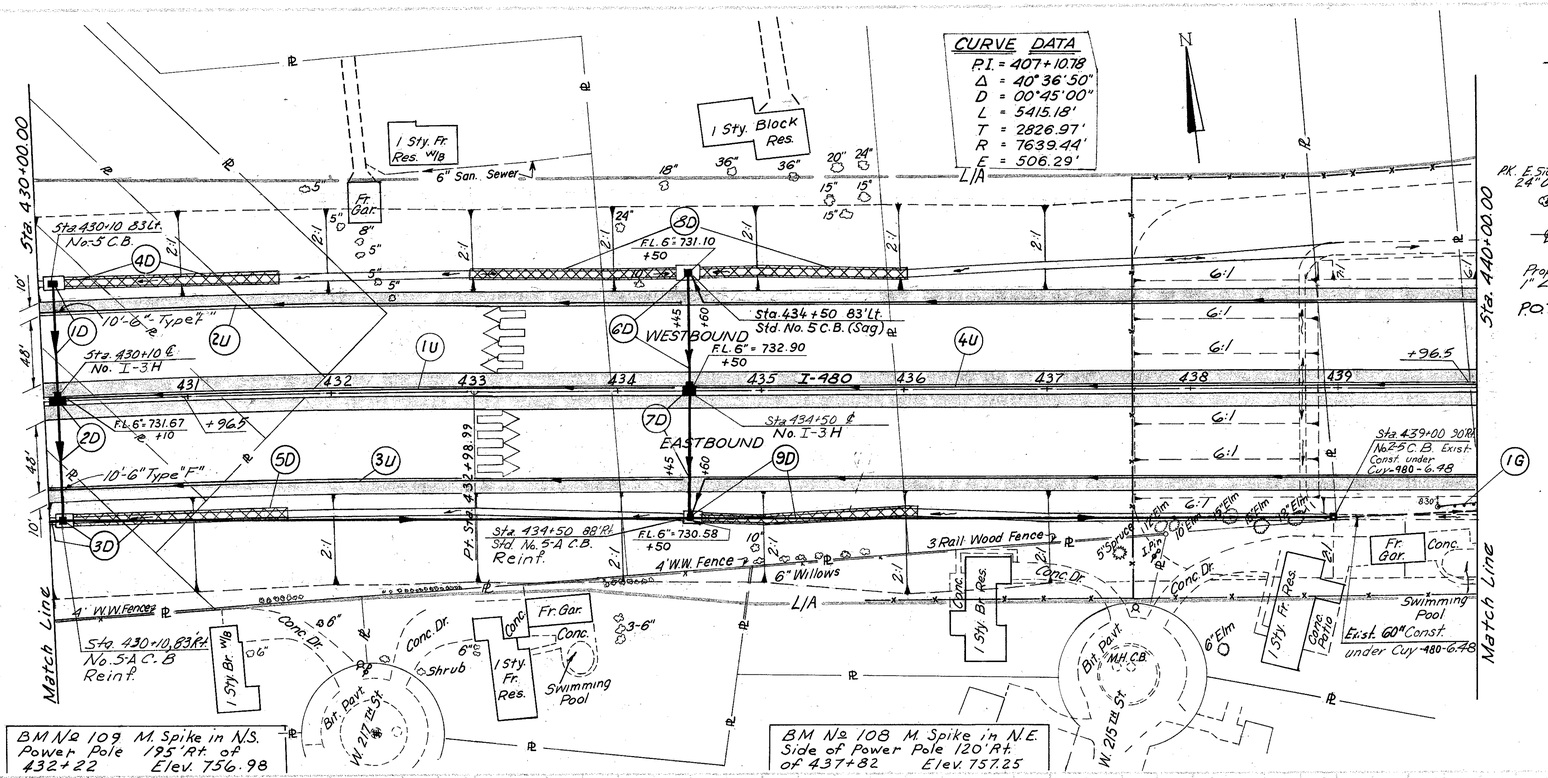
Est. Ass.	Side	Location	Total
1D	Rt.	420+00 to 423+00	10
2D	Rt.	423+00	20
3D	Rt.	423+00 to 424+50	30
4D	Rt.	422+93 to 426+07	10
5D	Lt.	422+93 to 426+07	83
6D	Med.	424+50	05
7D	Lt.	424+50 to 425+50	998
8D	Rt.	424+50 to 430+00	83
9D	Med.	424+50 to 425+50	05
10D	Lt.	428+04	223
1G	Rt.	421+91 to 425+46.6	9.0
2G	Lt.	422+49.5 to 428+35	0.3
1U	Med.	420+00 to 423+00	4.7
2U	Med.	423+10 to 425+40	
3U	Lt.	420+00 to 430+00	
4U	Rt.	420+00 to 430+00	
5U	Med.	425+50 to 430+00	
		Total	

EJK 4-29-68
AJH 6-21-68

420+00 430+00

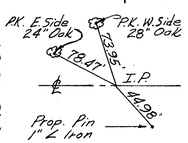
37
347

CUYAHOGA COUNTY
CUY-480-4.86



TREE REMOVAL
420+00 TO 430+00

SIZE	NO.
18"	1
30"	1



P.O.T. 431+21.82

CROSS REFERENCE	
Sht. No.	Item
102-104	Cross Sections

FED.	STATE	PROJECT	FED.
2	OHIO		

38
347

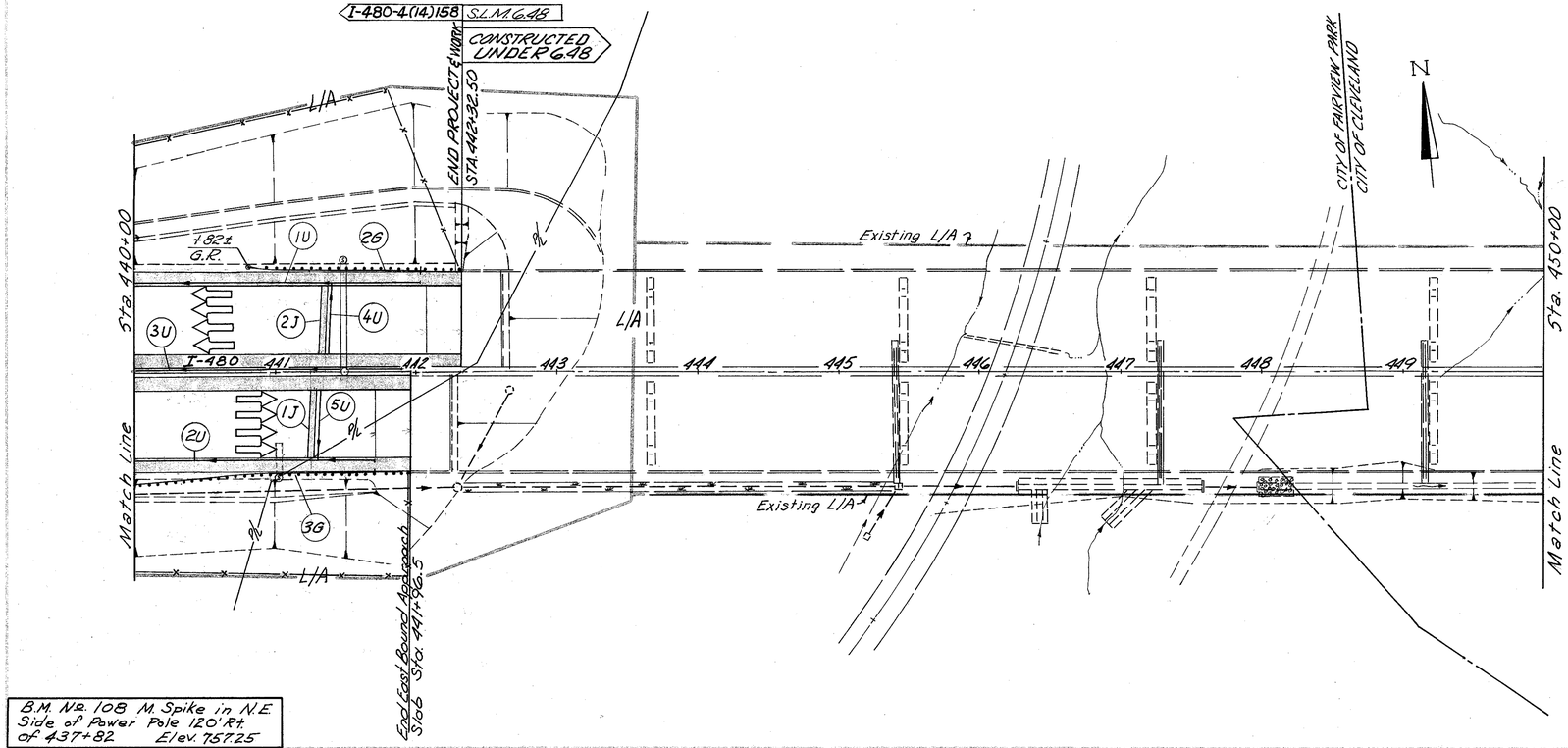
CUYAHOGA COUNTY
CUY-480-4.86

	Storm Sewer Profiles		Sht #					70	70	38		71	71	71	38						
606	Anchor Ass. Typ. A		Each															1			1
	Guardrail, Type 5		L.F.															3.5			3.5
667	Seeding and Jute Matting		SY.						125	125			250	125						625	3.5
	Bends & Branches																	1	1		
605	Shallow		6"	L.F.														420			540
	Deep		6"	L.F.														929	990		1919 960
604	No I-3H Inlet			Ea.					1					1							2
	No. 5-A C.B. Reinforced			Ea.						1					1						2
	No. 5- C.B.			Ea.	1								1								2
603	Type "C" 706.02 D-1500 or 707.14		60"	L.F.												450					450
	Type "C" 706.02 D-1250 or 707.14		60"	L.F.					10	440											10 440
	Type "C"		60"	L.F.																	
	Type "B"		15"	L.F.					83				85								337
	Type "F"		6"	L.F.					83				85								
202	Fence Removed for Re-use or Storage			L.F.								295								295	60

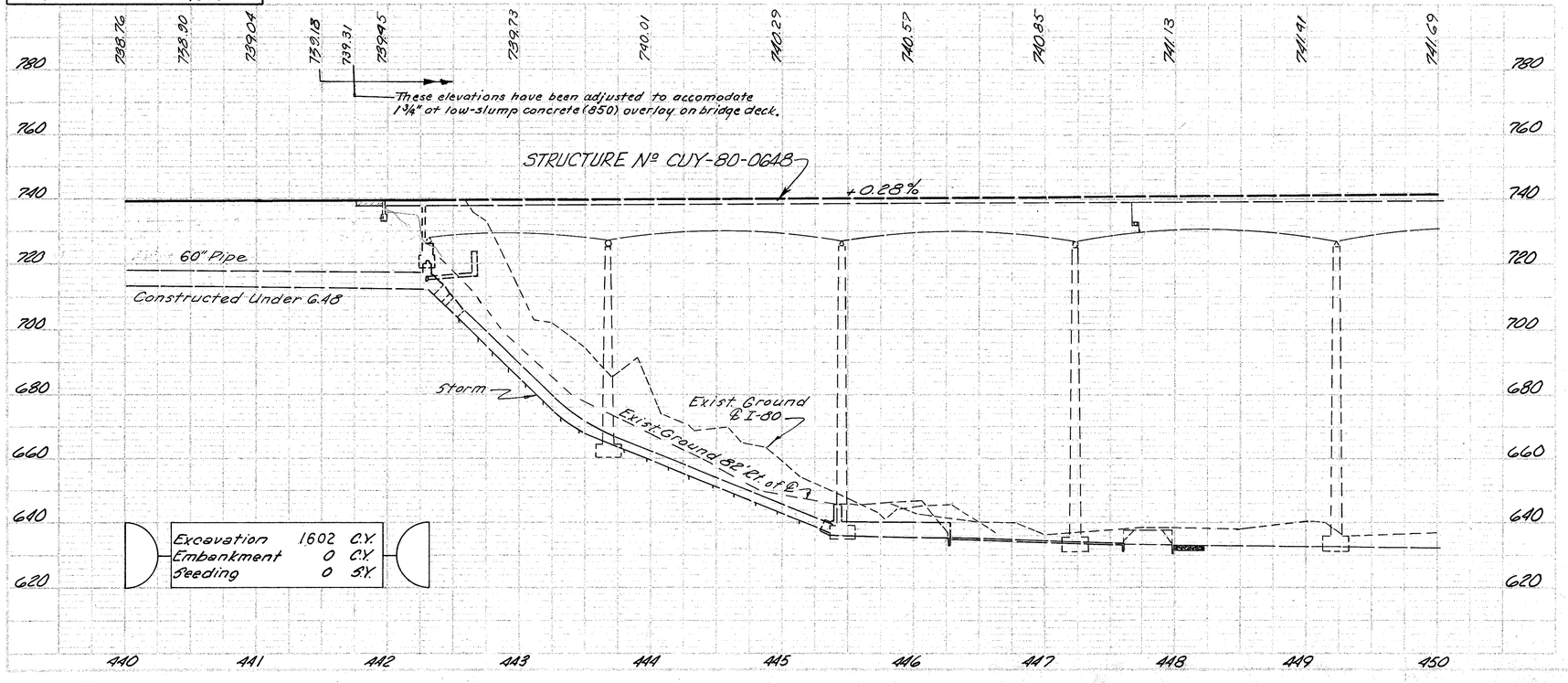
Estimated Quantities	Item #	Side	Location																		
	1D	Lt.	430+10																		
	2D	Rt.	430+10																		
	3D	Rt.	430+00 to 434+00																		
	4D	Lt.	430+17 to 431+67																		
	5D	Rt.	430+17 to 431+67																		
	6D	Lt.	434+50																		
	7D	Med. & Rt.	434+50																		
	8D	Lt.	432+95 to 436+07																		
	9D	Rt.	434+50 to 439+00																		
	1F		437+60									295									
	1G	Rt.	439+71 to 440+00																		
	1U	Med.	430+10 to 434+40														10				
	2U	Lt.	430+00 to 440+00														20				
	3U	Rt.	430+00 to 440+00														20				
	4U	Med.	434+50 to 440+00														10				
	Total																				

EJK 4-30-68
HJH 6-22-68

PLAN & PROFILE STA 430+00 TO STA 440+00



B.M. No. 108 M. Spike in N.E. Side of Power Pole 120' Rt. of 437+82 Elev. 757.25



CROSS REFERENCE	
Sht. No	Item
104-105	Cross Sections

STATE	DIST.	PROJECT	SHEET	39
2	OHIO			347

CUYAHOGA COUNTY

CUY-480-4.86

Estimated Quantities			605			Spec	606	606	606
			Deep	Shallow	Bends & Branches	Pressure Relief Joint, Type A	Guard Rail Type 5	Bridge Terminal Assembly, Type A	Anchor Ass. Typ. T
			6"	6"					
Ref.	Side	Location	L.F.	L.F.	Ea.	Ea.	L.F.	Ea.	Ea.
1U	Lt.	440+00 to 442+05	205						
2U	Rt.	440+00 to 441+70	170						
3U	Med.	440+00 to 441+90		190					
4U	Lt.	441+40		51	1				
5U	Rt.	441+30		51	1				
2G	Lt.	82± to Str.					137.5	1	1
3G	Rt.	58± to Str.					196.5	1	
1J	Rt.	441+25				48			
2J	Lt.	441+35				48			
TOTAL			375	292		96	334	2	1

EJK 4-30-68

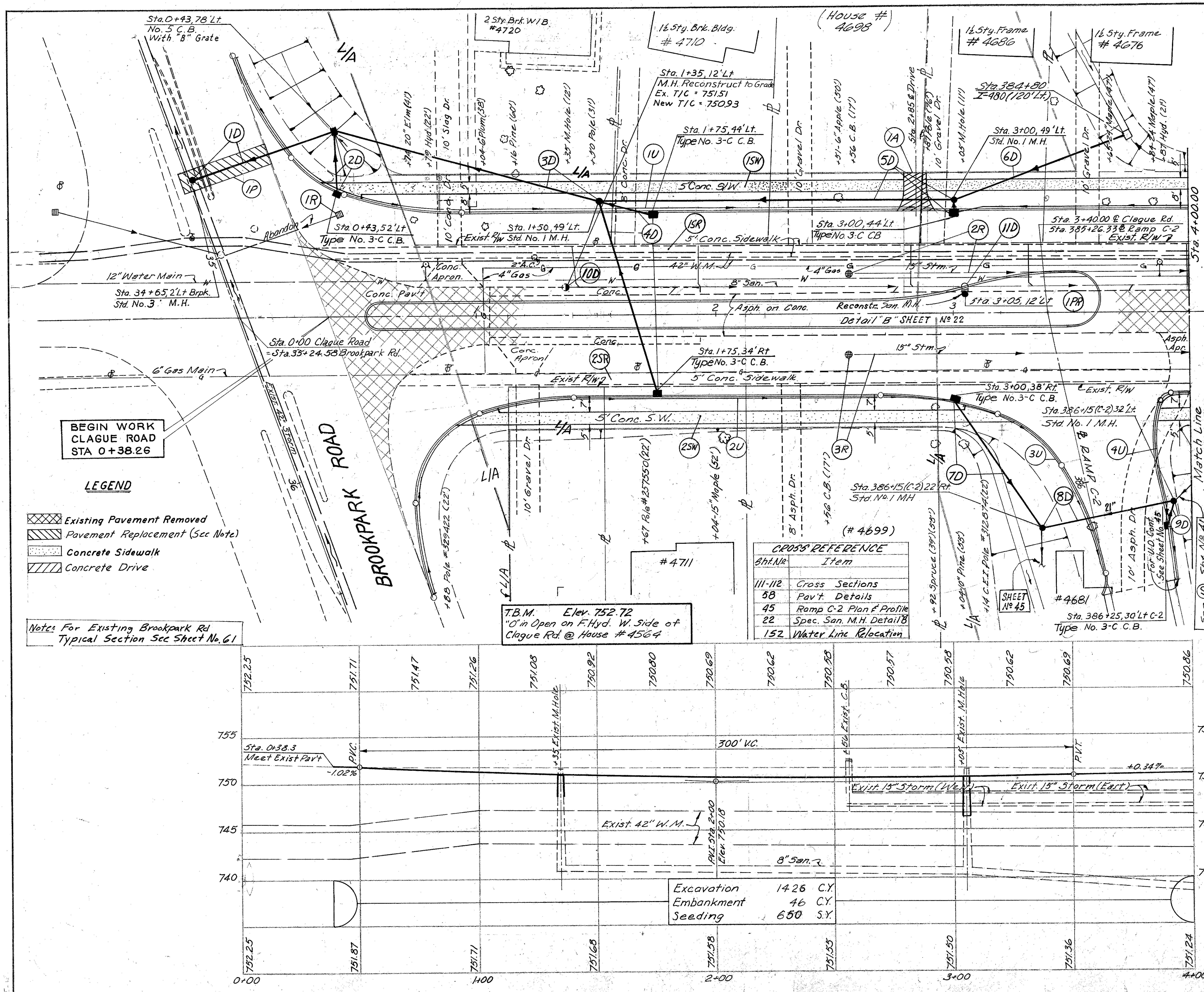
HJH 6-22-68

PLAN & PROFILE STA. 440+00 TO STA. 450+00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

40
347

CUYAHOGA COUNTY
CUY-480-4.86



LEGEND

- ⊠ Existing Pavement Removed
- ▨ Pavement Replacement (See Note)
- ░ Concrete Sidewalk
- ▨ Concrete Drive

Note: For Existing Brookpark Rd Typical Section See Sheet No. 61

T.B.M. Elev. 752.72
"O" in Open on F.Hyd. W. Side of Clague Rd. @ House #4564

CROSS REFERENCE	
Sht. №	Item
111-112	Cross Sections
58	Pav't. Details
45	Ramp C-2 Plan & Profile
22	Spec. San. M.H. Detail "B"
152	Water Line Relocation

Excavation	1426	C.Y.
Embankment	46	C.Y.
Seeding	650	S.Y.

ROADWAY Estimated Quantities			608 4½" Concrete Sidewalk	202 Exist. Curb Removed For Storage	202 Exist. Pav't Removed	202 Exist. S/W Removed	310 6" Subbase	451 8" Reinforced P.C. Conc. Pav't	451 9" Reinf. Conc. Pav't.	609 Sandstone Curb
Ref#	Side	Location	S.F.	L.F.	S.Y.	S.F.	C.Y.	S.Y.	S.Y.	L.F.
1SW	Lt.	0+34 to 4+00	1806							
2SW	Rt.	0+90 to 4+00	1225							
1SR	Lt.	0+36 to 4+00				1820				
2SR	Rt.	0+69 to 4+00				1610				
1PR	Lt/Rt	0+38.3 to 4+00			957					
1P				18	36		4.74		36	18
1A	Lt	2+85						20		
TOTAL			3031	18	993	3430	5	20	36	18

DRAINAGE Estimated Quantities			Storm Sewer Profiles	605 Perf. B.&S. V.C.P. with Lugs 6"	604 Std. № 1 M.H.	604 M.H. Reconstruct as in Detail "B"	604 M.H. Reconstruct to Grade with 706.11 Jts.	604 No. 5 C.B. With "B" Grate	604 № 3-C C.B.	604 Std. № 3 M.H.	603 Class Bedding "C" = + Type "B" 21"	603 Type "C" 706.02 + 18"	603 Type "B" 18"	603 Type "C" 15"	603 Type "C" 706.01, 706.08 or 706.02 + 12"	603 Type "C" 706.02 or 706.08 + Enc 12"	202 Catch Basins or Inlet Removed	202 Pipe Removed 24" and under
Ref#	Side	Location	Sht#	L.F.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	Ea.	L.F.
1D	Lt.	34+65 (Brpk) to 0+43	73							1			63					
2D	Lt.	0+43	75					1	1						26			
3D	Lt.	0+43 to 1+50	73		1							115						
4D	Lt/Rt	1+50 to 1+75	73						2							108		
5D	Lt.	1+50 to 3+00	73		1				1			150			6			
6D	Lt.	3+00 to 384+80 (I-80)	73											77				
7D	Lt.	3+00 to 386+15 (C-2)	73						1						66			
8D	Rt.	386+15 (C-2)	73		1						56							
9D	Rt.	386+15 to 386+25 (C-2)	75		1				1						10			
1U	Lt.	34+19 (Bpk) to 4+00		435														
2U	Rt.	36+63 (Bpk) to 3+00		290														
3U	Rt.	3+00 to 386+48 (C-2)		110														
4U	Rt.	4+00 to 386+51 (C-2)		87														
1R	Lt.	0+43															1	
2R	Lt.	2+56 to 4+00															1	144
3R	Rt.	2+56 to 4+00															1	144
SANITARY SEWER																		
10D	Lt.	1+35					1											
11D	Lt.	3+05				1												
TOTAL				922	4	1	1	1	6	1	56	265	63	77	108	108	3	288

J.L. 5-13-68
A.DeL. 5-14-68

CLAGUE RD. PLAN & PROFILE STA.0+00 TO STA.4+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

41 / 347

CUYAHOGA COUNTY

CUY-480-4.86

CROSS REFERENCE	
Sht. No.	Item
152-153	Water Works
112-114	Cross Sections
58-59	Pavement Details
81	Reloc. 8" San. Sewer
276	Structure
44	Ramp C-1 Plan & Profile

ROADWAY Estimated Quantities			608	202								
			4½" Concrete Sidewalk	Exist. Pvmt. Removed	Exist. Sw. Removed							
Ref.#	Side	Location	S.F.	S.Y.	S.F.							
1SP	Lt.	4+00 to 8+50			2250							
2SP	Rt.	4+00 to 8+50			2140							
1SW	Lt.	4+00 to 8+50	3388									
2SW	Rt.	4+00 to 8+18	3098									
1PR	Lt./Rt.	4+00 to 8+50		900								
TOTAL			6486	900	4390							

Estimated Quantities			Sht. #													
Storm Sewer Profiles				73	73	73	73	74	74	74	73	74	74			
Bends & Branches																
605 Perf. B. & S. V.C.P. with Lugs	6"	LF												450	536	986
Manhole Adjust to Grade		Ea														/
A-T-1 Inlet		Ea						/								1
604 No. 3-C C.B.		Ea		/			/		/	/						4
Std. No. 1 M.H.		Ea		/			/		/	/						4
603 CLASS BEDDING "C" + Type "C" 706.02 + 706.08	18"	LF		44												44
Type "C" 706.02 or 706.01 + 706.08	18"	LF			109			200								309
Type "C" 706.01 or 706.08 + Type "B"	15"	LF					62									62
Type "C" 706.01 or 706.08 + 706.02	15"	LF			22		20									42
Type "C" 706.08 + 706.01 or 706.08	12"	LF				17	6		76		54		64			217
Type "F"	6"	LF												10		10
Catch Basins or Inlet Removed		Ea														2
202 Pipe Removed 24" and Under		LF														450

Estimated Quantities DRAINAGE																
Ref.#	Side	Location														
1D	Rt.	4+00 to 4+25											50	1		
2D	Rt.	4+25 to 4+38											200	1		
3D	Lt./Rt.	4+25 to 4+38											100			
4D	Lt.	4+25 to 6+25														
5D	Lt.	4+25 to 6+25														
6D	Lt.	6+25 to 7+86														
7D	Lt.	7+86 to 388+20(C-1)														
8D	Rt.	388+20(C-1) to 8+50														
9D	Rt.	7+86 to 8+50														
10D	Rt.															
1R	Lt.	4+00 to 5+50											50	1		
2R	Rt.	4+00 to 6+00											200	1		
3R	Lt.	7+50 to 8+50											100			
1U	Lt.	4+00 to 8+50														
2U	Rt.	4+00 to 388+20(C-1)														
12D	Lt.	5+61														
TOTAL																

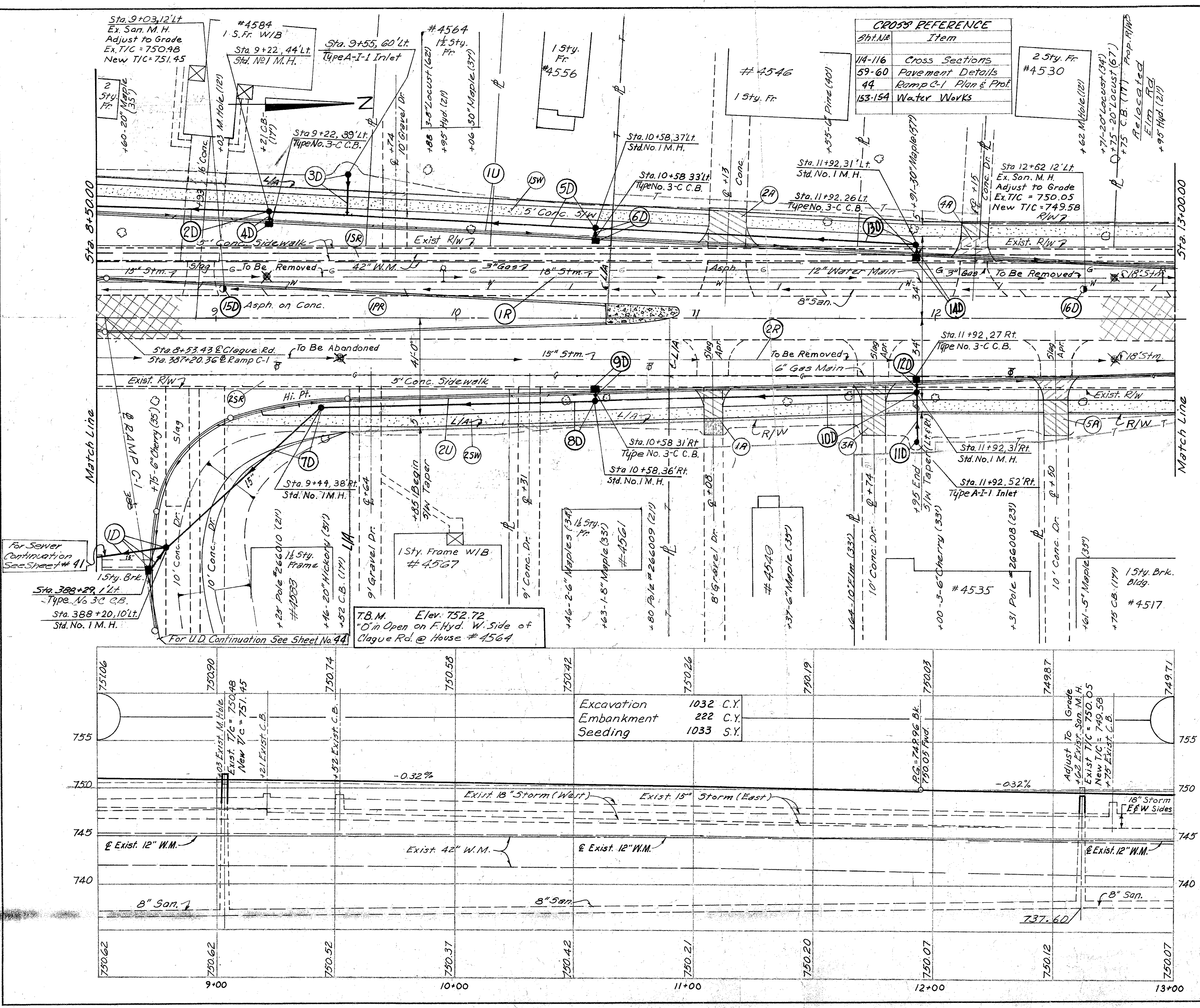
BY J.L. DATE 5-13-68

CKD. BY A.DeL. DATE 5-14-68

CLAGUE RD. PLAN & PROFILE STA. 4+00 TO STA. 8+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86



CROSS REFERENCE	
Sht. No	Item
114-116	Cross Sections
59-60	Pavement Details
44	Ramp C-1 Plan & Prof.
153-154	Water Works

T.B.M. Elev. 752.72
"O" in Open on F. Hyd. W. Side of Clague Rd. @ House #4564

Excavation	1032	C.Y.
Embankment	222	C.Y.
Seeding	1033	S.Y.

⊗ Driveway Quantities

ROADWAY			202		409	304	404	408	452	608	409
Estimated Quantities			Exist. Pavement Removed	Existing S/W Removed	Seal Coat Cover Aggregate No. 8	6" Aggregate Base	2" Asphalt ⊗ Conc. AC-20	Prime Coat @ 0.40 gal/S.Y.	6" Plain P.C. Concrete Pav't	4½" Concrete Sidewalk	Bituminous Material 0.40 gal/S.Y.
Ref#	Side	Location	S.Y.	S.F.	C.Y.	C.Y.	C.Y.	Gal.	S.Y.	S.F.	Gal.
1 A	Rt.	11+08			0.1	1			13		3
2 A	Lt.	11+13	30						30		
3 A	Rt.	11+74	22						28		
4 A	Lt.	12+15	13			3	1	6	6		
5 A	Rt.	12+50	22			2	1	5	17		
1SR	Lt.	8+50 to 13+00		2250							
2SR	Rt.	8+50 to 13+00		2,250							
1SW	Lt.	8+50 to 13+00								1990	
2SW	Rt.	9+18 to 13+00								1,716	
1PR	Lt./Rt.	8+50 to 13+00	900								
TOTAL			987	4500	╳	6	2	11	94	3706	3

DRAINAGE			202			603					604					605		
							CLASS BEDDING			"C"+								
Estimated Quantities			Pipe Removed 24" and Under	Catch Basins or Inlet Removed		Type "F"	Type "C" 706.01 706.02 or 706.08 +	Type "C" 706.01 706.02 or 706.08 +	Type "B"	Type "C" 706.01 706.02 or 706.08 +	Std No 1 M.H.	No 3-C C.B.	A-I-1 Inlet	Manhole Adjust to Grade		Perf. B.&S. V.C.P. with Lugs	Bends & Branches	Storm Sewer Profiles
						6"	6"	12"	15"	15"						6"		
Ref#	Side	Location	L.F.	Ea.		L.F.	L.F.	L.F.	L.F.	L.F.	Ea.	Ea.	Ea.	Ea.		L.F.		Sht#
1D	Rt.	8+50 to 388+20 (C-1)						12	30		1	1						72/74
2D	Lt.	8+50 to 9+22								72	1							74
3D	Lt.	9+55					17						1				1	74
4D	Lt.	9+22						6				1						74
5D	Lt.	9+22 to 10+58						136			1							74
6D	Lt.	10+58						6				1						74
7D	Rt.	388+20 (C-1) to 9+44								87	1							74
8D	Rt.	9+44 to 10+58								114	1							74
9D	Rt.	10+58						6				1						74
10D	Rt.	10+58 to 11+92						134			1							74
11D	Rt.	11+92					21						1					74
12D	Rt.	11+92						6				1						74
13D	Lt.	10+58 to 11+92						134			1							74
14D	Lt.	11+92						6				1						74
1R	Lt.	9+21 to 13+00	379	2														
2R	Rt.	9+52 to 13+00	348	2														
1U	Lt.	8+50 to 13+00														450		
2U	Rt.	388+28 (C-1) to 13+00				10										460		
SANITARY SEWER																		
15D	Lt.	9+03												1				
16D	Lt.	12+62												1				
TOTAL			727	4		10	38	446	30	273	7	6	2	2		910	╳	╳

CALC. BY J.L. DATE 5-13-68
CHKD. BY A. DeL. DATE 5-14-68

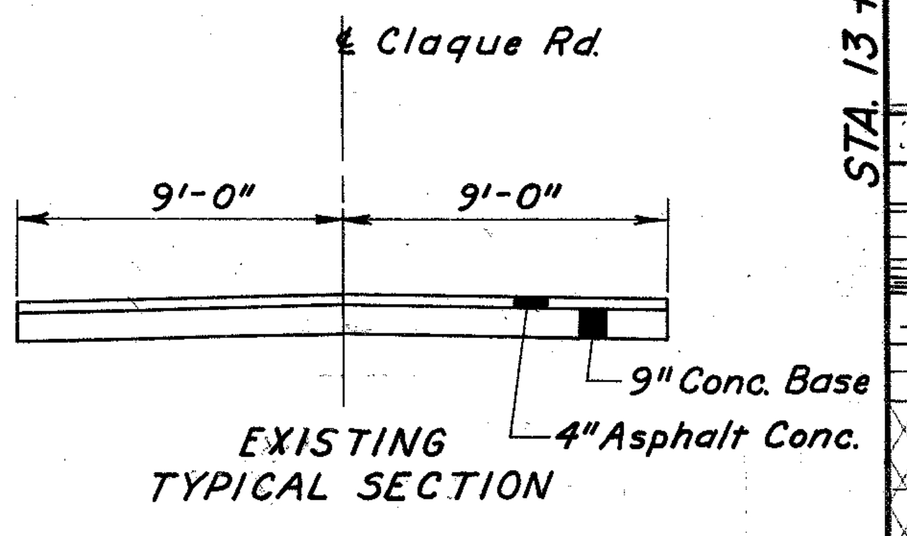
CLAGUE RD. PLAN & PROFILE STA. 8+50 TO STA. 13+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

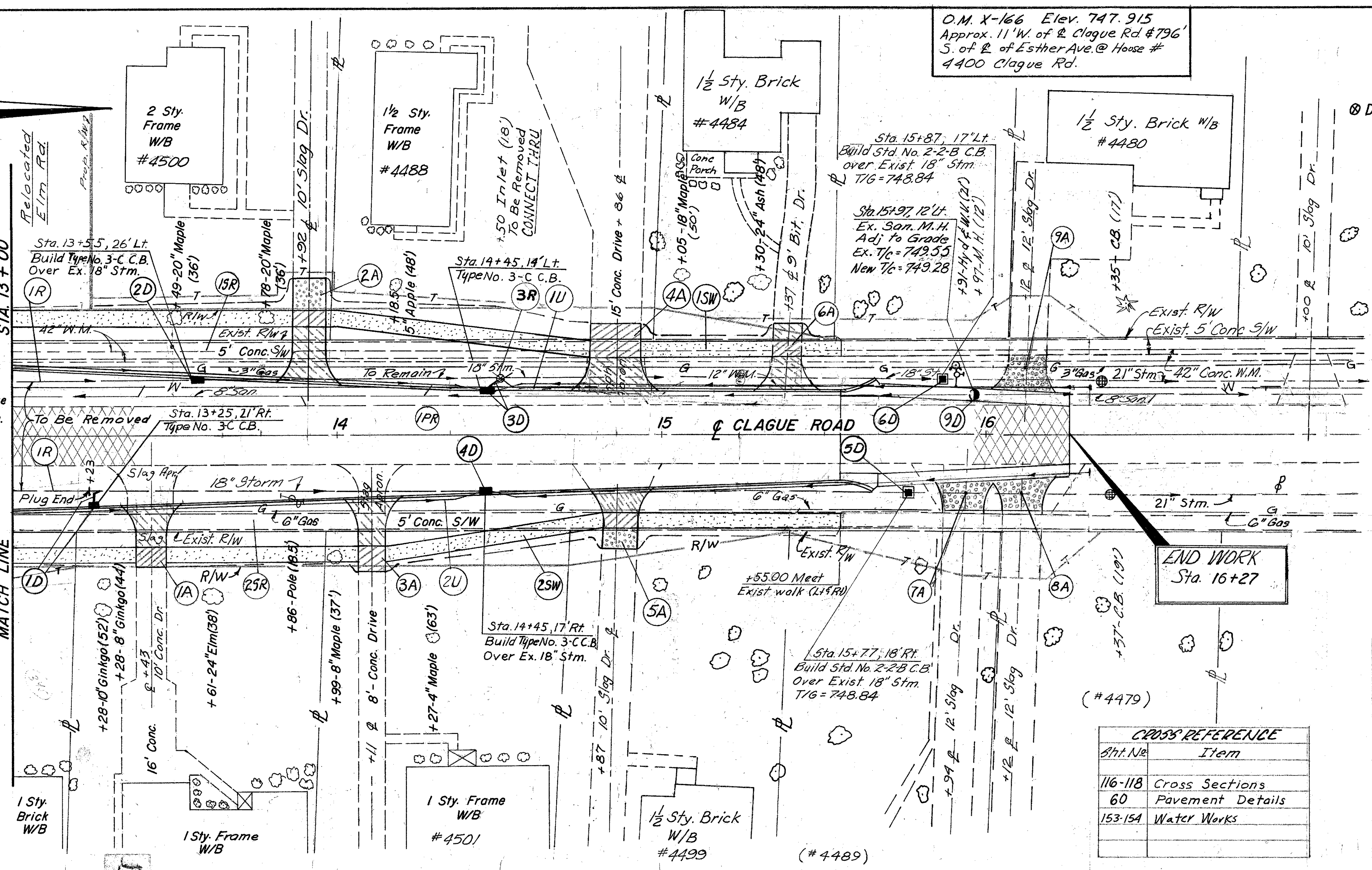
43/347

CUYAHOGA COUNTY
CUY-480-4.86

O.M. X-166 Elev. 747.915
Approx. 11' W. of ℄ Clague Rd. & 796' S. of ℄ of Esther Ave. @ House # 4400 Clague Rd.



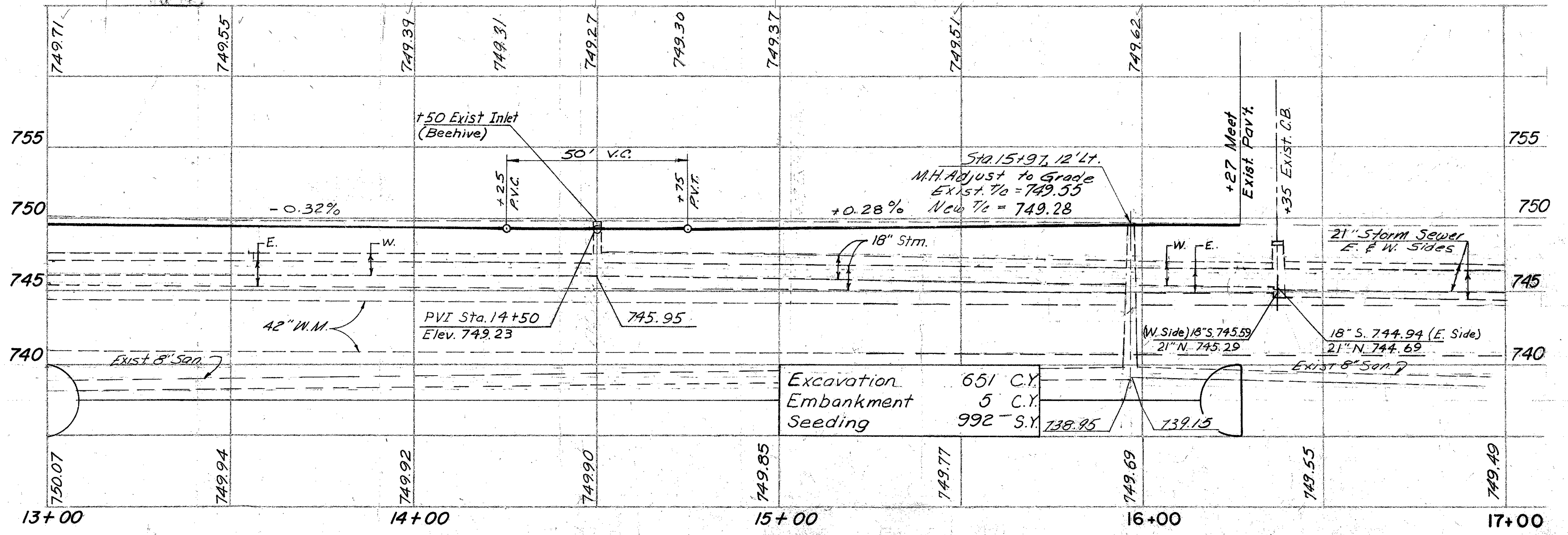
EXISTING
TYPICAL SECTION



CROSS REFERENCE	
Sht. No.	Item
116-118	Cross Sections
60	Pavement Details
153-154	Water Works

LEGEND

- ▩ Existing Pavement Removed
- ░ Concrete Sidewalk
- ▨ Concrete Drive
- ▧ Asphalt Concrete Drive
- ⁘ Gravel Drive



Excavation	651	C.Y.
Embankment	5	C.Y.
Seeding	992	S.Y.

⊗ Driveway Quantities

ROADWAY Estimated Quantities			202 Exist. Pav't. Removed	202 Exist. S/W Removed	304 6" Aggregate Base	404 2" Asphalt ⊗ Conc. AC-20	408 Prime Coat @ 0.40 gal/S.Y.	452 6" Plain P.C. Concrete Pav't.	608 4½" Concrete Sidewalk	409 Seal Coat Bituminus Material	409 Seal Coat Cover Aggregate No. 8
Ref#	Side	Location	S.Y.	S.F.	C.Y.	C.Y.	Gal.	S.Y.	S.F.	Gal.	C.Y.
1PR	Lt./Rt.	13+00 to 16+27	654								
1SR	Lt.	13+00 to 15+55		1275							
2SR	Rt.	13+00 to 15+55		1275							
1SW	Lt.	13+00 to 15+55							1105		
2SW	Rt.	13+00 to 15+55							1150		
1A	Rt.	13+43	13		3	1	6	7			
2A	Lt.	13+92			5	1	13	6		4	0.1
3A	Rt.	14+11	12		3	1	6	7			
4A	Lt.	14+86	18		4	1	9	18			
5A	Rt.	14+87			3	1	7	6		3	
6A	Lt.	15+37			4	1	10	5			
7A	Rt.	15+94			2					6	0.1
8A	Rt.	16+12			3					7	0.1
9A	Lt.	16+12			2					5	0.1
TOTAL			697	2550	29	6	51	49	2255	25	☒

DRAINAGE Estimated Quantities			Storm Sewer Profiles	605 Bends & Branches	605 Perf. B&S. V.C.P. With Lugs 6"	604 Std. No. 2-2-B Catch Basin	604 Manhole Adj to Grade	604 No. 3-C C.B.	202 Catch Basin or Inlet Removed	603 Cl. "C" Bedding Type "C" 706.01, 706.02 or 706.08 12"	603 Cl. "C" Bedding Type "C" 706.02 or 706.08 Enc. 12"	202 Pipe Removed 24" & Under
Ref#	Side	Location	Sht#	Ea.	L.F.	Ea.	Ea.	Ea.	Ea.	L.F.	L.F.	L.F.
1D	Rt.	13+25	75	1				1			5	
2D	Lt.	13+55	75					1				
3D	Lt.	14+45	75	1				1		6		
4D	Rt.	14+45	75					1				
5D	Rt.	15+77	75			1						
6D	Lt.	15+87	75	1		1						
1R	Lt.	13+00 to 13+55										55
2R	Rt.	13+00 to 13+23										23
3R	Lt.	14+50							1			
1U	Lt.	13+00 to 16+33			333							
2U	Rt.	13+00 to 16+33			333							
SANITARY SEWER												
9D	Lt.	15+97					1					
TOTAL			☒	☒	666	2	1	4	1	6	5	78

J.L. 5-13-68
A. Del. 5-14-68

CLAGUE RD. PLAN & PROFILE STA. 13+00 TO STA. 17+10

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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347

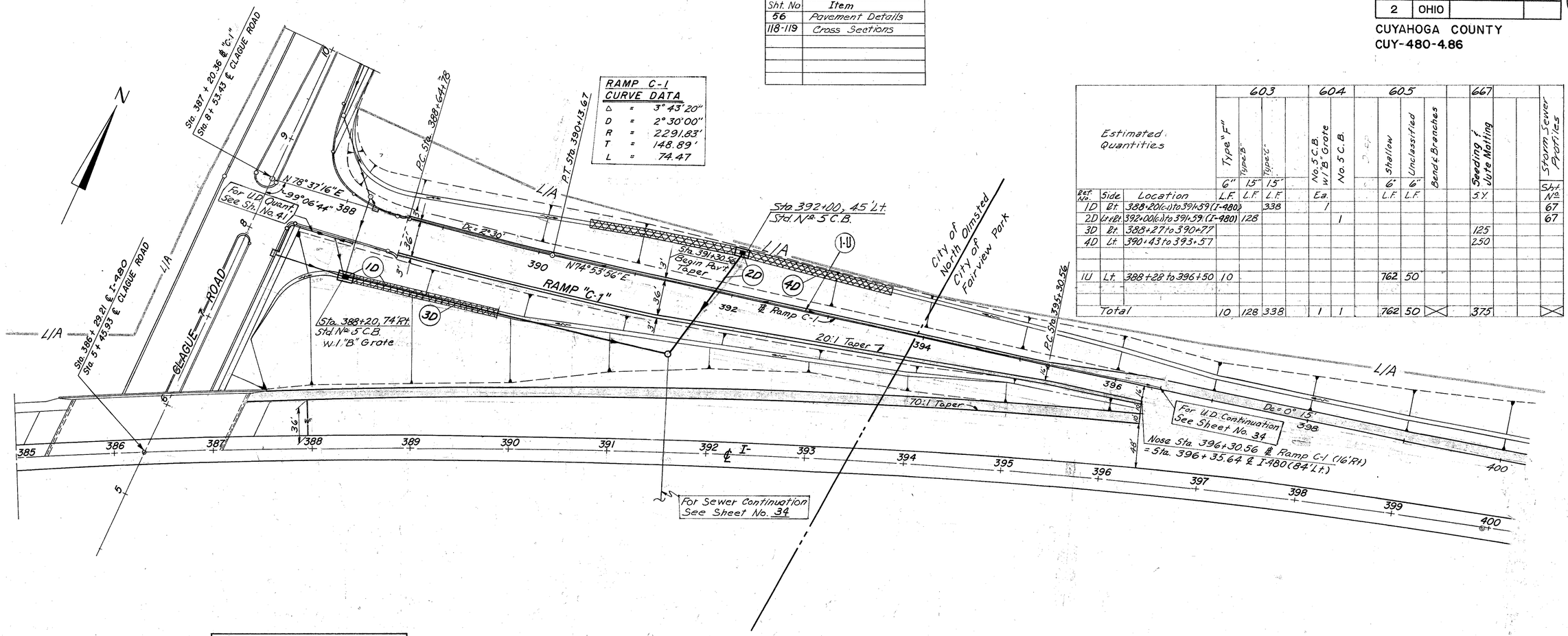
CUYAHOGA COUNTY
CUY-480-4.86

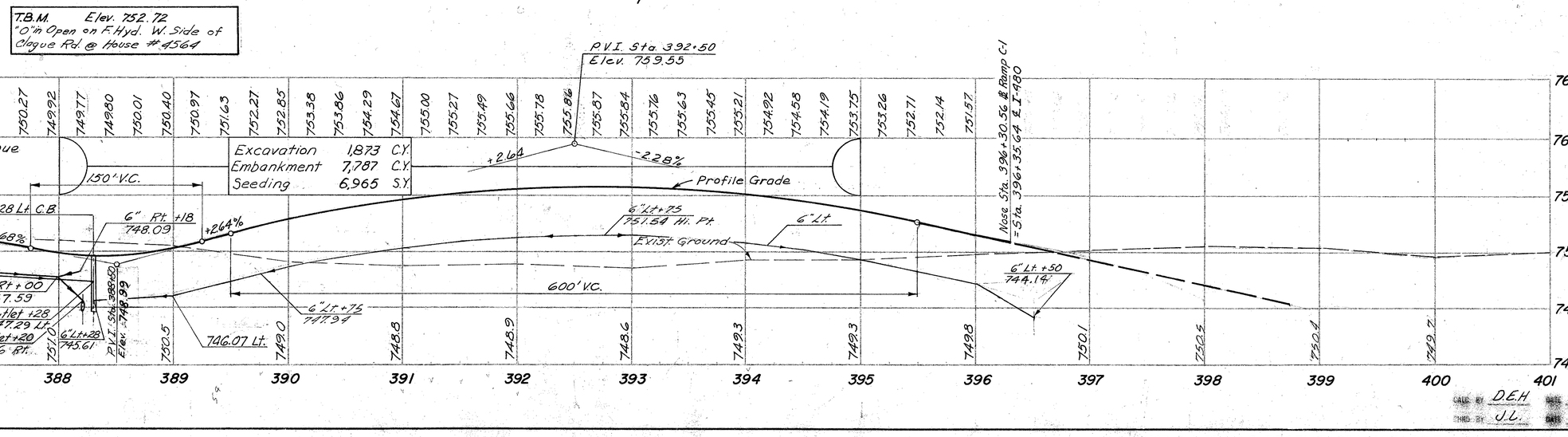
CROSS REFERENCE	
Sht. No.	Item
56	Pavement Details
118-119	Cross Sections

RAMP C-1 CURVE DATA

Δ	=	3° 43' 20"
D	=	2° 30' 00"
R	=	2291.83'
T	=	148.89'
L	=	74.47

Estimated Quantities			603 Type "F" 6"	603 Type "B" 15"	603 Type "C" 15"	604 No. 5 C.B. w/ "B" Grate	604 No. 5 C.B.	605 Shallow 6"	605 Unclassified 6"	605 Bend & Branches	667 Seeding & Jute Matting		667	Storm Sewer Profiles
Ref. No.	Side	Location	L.F.	L.F.	L.F.	Ea.		L.F.	L.F.		S.Y.			Sht. No.
1D	Rt.	388+20(C-1) to 391+59 (I-480)		338		1								67
2D	Lt & Rt.	392+00(C-1) to 391+59 (I-480)	128				1							67
3D	Rt.	388+27 to 390+77									125			
4D	Lt.	390+43 to 393+57									250			
1U	Lt.	388+28 to 396+50	10					762	50					
Total			10	128	338	1	1	762	50		375			





CALC. BY D.E.H DATE 1-24-68
CHKD. BY J.L. DATE 1-26-68

RAMP C-1 PLAN & PROFILE STA. 387+20.36 TO STA. 400+25.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

CROSS REFERENCE	
Sht No.	Item
57	Pavement Details
120-121	Cross Sections

T.B.M. Elev. 752.72
"O" in Open on F. Hyd. W. Side of Clague Rd. @ House #4564

N

RAMP C-2
CURVE DATA
Δ = 31°01'57"
D = 8°00'00"
R = 716.20'
T = 198.84'
L = 387.91'
C = 383.18'
P.I. Sta. = 389+55.17 (Ahead)

For Sewer Continuation See Sheet No. 34

CLAGUE ROAD

℄ I-480

City of North Olmsted

City of Fairview Park

Sta. 386+29.31 ℄ I-480
Sta. 5+45.93 ℄ CLAGUE RD.

P.C. Sta. 387+56.33

Sta. 389+50, 45' Lt.
Std. No. 5 C.B. (Sag)

P.I. Sta. 391+44.24

RAMP "C-2"

Sta. 394+67
20' Rt.

Sta. 396+00

Sta. 398+00 - Ramp "C-2" = Sta. 74+00 (74.00 Rt.)

Sta. 391+29, 38' Rt.
Std. No. 5A C.B.

Sta. 389+50 26' Rt.
Std No. 5A C.B.

Sta. 387+25, 35' Rt.
Std No. 5 C.B.

Sta. 385+26.33 ℄ Ramp "C-2"
Sta. 3+40.00 ℄ CLAGUE RD.

10'-6" Type F

L/A

R/W

RAMP C-2 CURVE DATA			
Δ =	15°05'23"	Δ =	8°00'00"
D =	6°00'00"	D =	4°00'00"
R =	954.93'	R =	1432.39'
T =	126.48'	T =	100.16'
L =	251.50'	L =	200.00'
C =	250.77'	C =	199.84'
P.I. Sta. = 394+74.99 (Bk)		P.I. Sta. = 397+00.16	

Storm Sewer Profiles		Sht.	119	73	66		67		66	66					
Seeding & Jute Matting	667	S.Y.	92			125	125		125						467
Sodding	660	S.Y.								7					7
Bends & Branches	605												2	1	
Deep		6'	L.F.										565	1150	1715
No. 5 C.B.	604	Ea.		1			1								2
No. 5-A C.B.		Ea.							1	1					2
Type "C" 706.02 D-1250, 706.08 E.S. or 707.13		27"	L.F.						340						340
Type "C"		24"	L.F.						186						186
Type "C"	603	21"	L.F.	110	230										340
Type "B"		18"	L.F.				71								71
Type "F"		6"	L.F.										20	50	70

Estimated Quantities

Ref. No.	Side	Location	Total
1D	Rt.	386+09 to 387+17	
2D	Rt.	387+25 to 389+50	
3D	Rt.	387+32 to 388+80	
4D	Lt.	387+80 to 389+42	
5D	Lt. & Rt.	389+50	
6D	Rt.	389+57 to 391+15	
7D	Rt.	389+50 to 394+99	
8D	Lt.	391+29 to 394+67	
9D	Lt.	386+30 to 388+67	
1U	Lt.	386+47 to 392+00	
2U	Rt.	386+47 to 398+00	

Excavation 5,293 C.Y.
Embankment 3,051 C.Y.
Seeding 10,912 S.Y.

100' V.C.
-1.52%
+0.48%
350' V.C.
-2.00%
P.V.I. Sta. 394+50
El. 751.75
Profile Grade
Existing Ground

6"Rt+50 742.99
6"Rt+25 742.41 Outlet
6"Rt+40 742.43
6"Lt+50 742.54
P.V.I. Sta. 387+00 El. 748.15
6"Lt+40 741.00
6"Lt+50 740.70 Outlet
6"Lt+60 741.30
6"Lt
6"Lt+00 749.03
6"Rt+50 745.09 H.I. Pt.
6"Rt+00 738.46

	Left Edge	748.54	748.06	747.72	747.51	747.42	747.40	747.38	747.36	747.34	747.32	747.31	747.32	747.38	747.48	747.63	747.81	748.02	748.36	748.69	749.03	749.36	749.70	750.08
	Profile Grade	748.91	748.59	748.40	748.33	748.39	748.51	748.63	748.75	748.87	748.98	749.11	749.23	749.35	749.47	749.59	749.71	749.83	748.95	750.07	750.19	750.31	750.43	750.55

	750.79	750.91	751.01	751.06	751.07	751.04	750.96	750.83	750.66	750.45	750.20	749.90	749.55	749.16	748.73	748.25	747.75	746.75	745.75	744.75
760	755	750	745	740	735	385+26.33	386	387	388	389	390	391	392	393	394	395	396	397	398																

For Pav't Edge Elev. See Sheet No. 54

DRAWN BY D.E.H. DATE 2-5-6
CHKD. BY J.L. DATE 2-5-

RAMP C-2 PLAN & PROFILE STA. 385+26.33 TO STA. 398+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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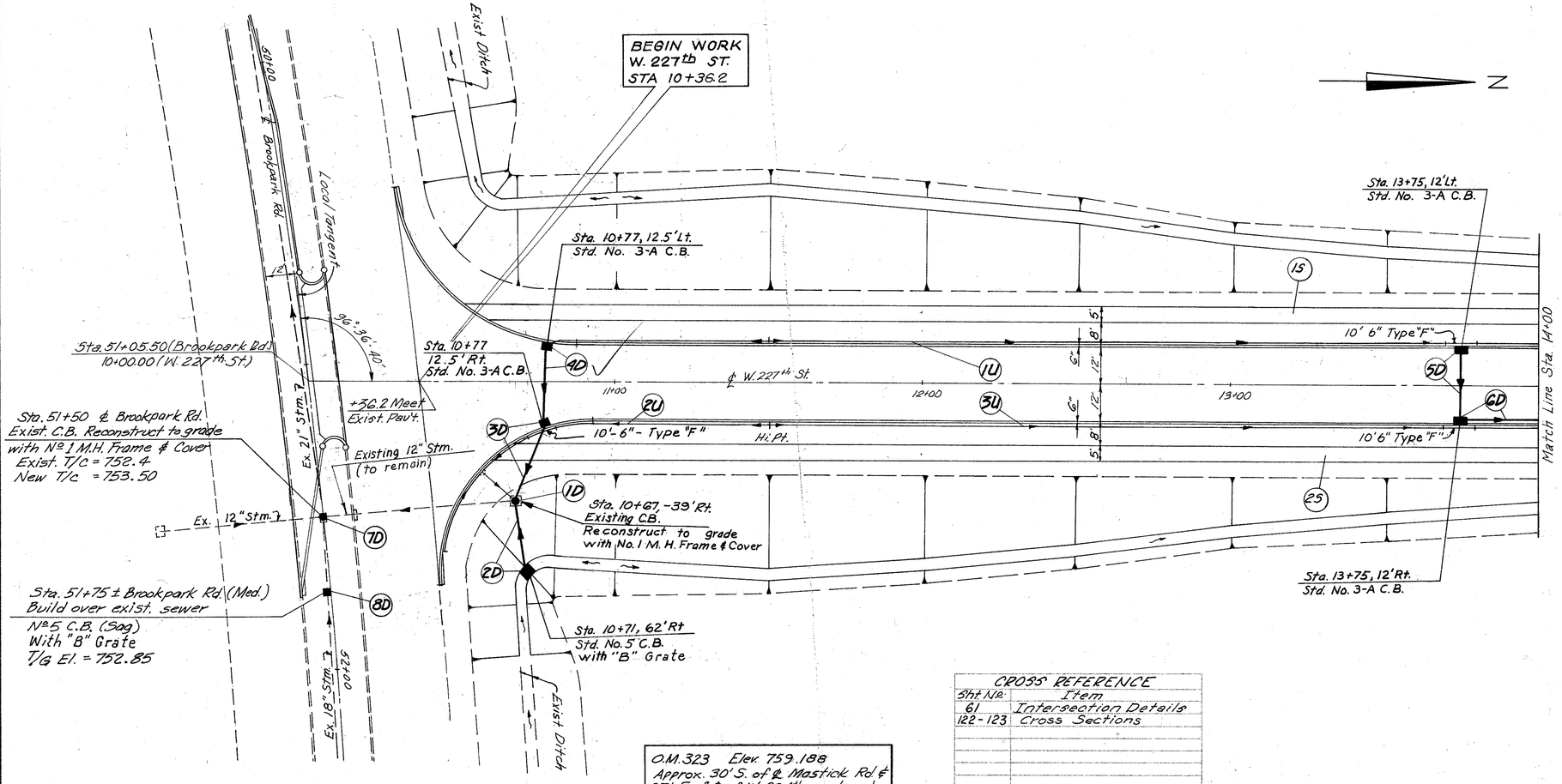
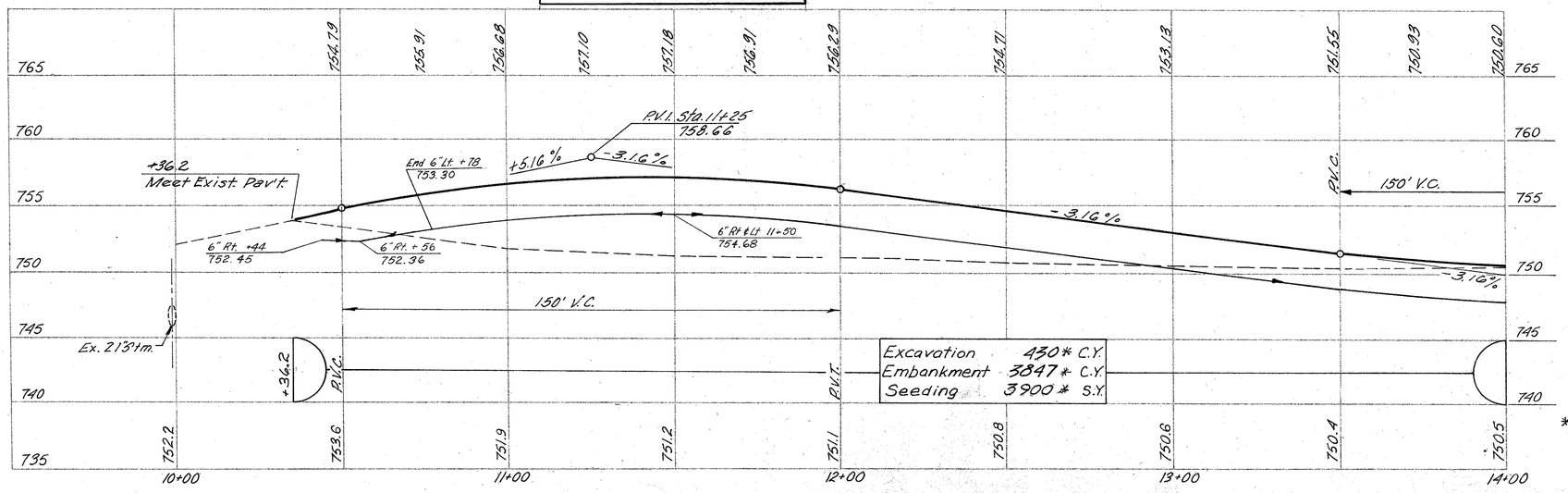
CUYAHOGA COUNTY
CUY-480-4.86



CROSS REFERENCE	
Sht. No.	Item
61	Intersection Details
122-123	Cross Sections

O.M. 323 Elev. 759.188
Approx. 30' S. of ℄ Mastick Rd. ℄
27' E. of ℄ of W. 224th produced.



Excavation	430*	C.Y.
Embankment	3847*	C.Y.
Seeding	3900*	S.Y.

ROADWAY Estimated Quantities

Item	Description	Unit	15 Lt. Sta. 10+66 to 14+00	25 Rt. Sta. 10+66 to 14+00	Total
608	4½" Conc. Sidewalk	S.F.	1705	1675	3380

DRAINAGE Estimated Quantities

Ref. No.	Side	Location
1D	Rt.	10+67
2D	Rt.	10+67 to 10+71
3D	Rt.	10+67 to 10+77
4D	Lt./Rt.	10+77
5D	Lt./Rt.	13+75
6D	Rt.	13+75 to 14+00
7D	℄	51+50 (Brookpark)
8D	℄	51+75± (Brookpark)
1U	Lt.	10+77 to 14+00
2U	Rt.	10+44 to 11+50
3U	Rt.	11+50 to 14+00
TOTAL		

Item	Description	Size	Unit	1D	2D	3D	4D	5D	6D	7D	8D		1U	2U	3U	TOTAL
	Storm Sewer Profile		Sht#	76	76	76	76	76	77	46	46					☒
605	Bend & Branches												1	1		☒
605	Shallow	6"	L.F.										303	121	240	664
604	C.B. Reconstruct to grade with No. 1 M.H. frame & Cover		Ea.	1						1						2
604	Nº 5 C.B. With "B" Grate		Ea.		1						1					2
604	Nº 3-A C.B.		Ea.			1	1	1	1							4
603	Type "C"	12"	L.F.		21	26										47
603	Type "B"	12"	L.F.				25	23	25							73
603	Type "F"	6"	L.F.										20	20	10	50

*Includes Earthwork & Seeding 49+00 to 51+75 Brookpark Rd.

T.R.B. 5-27-68
J.L. 5-28-68

W.227th. PLAN & PROFILE STA. 9+50 TO STA. 14+00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

47
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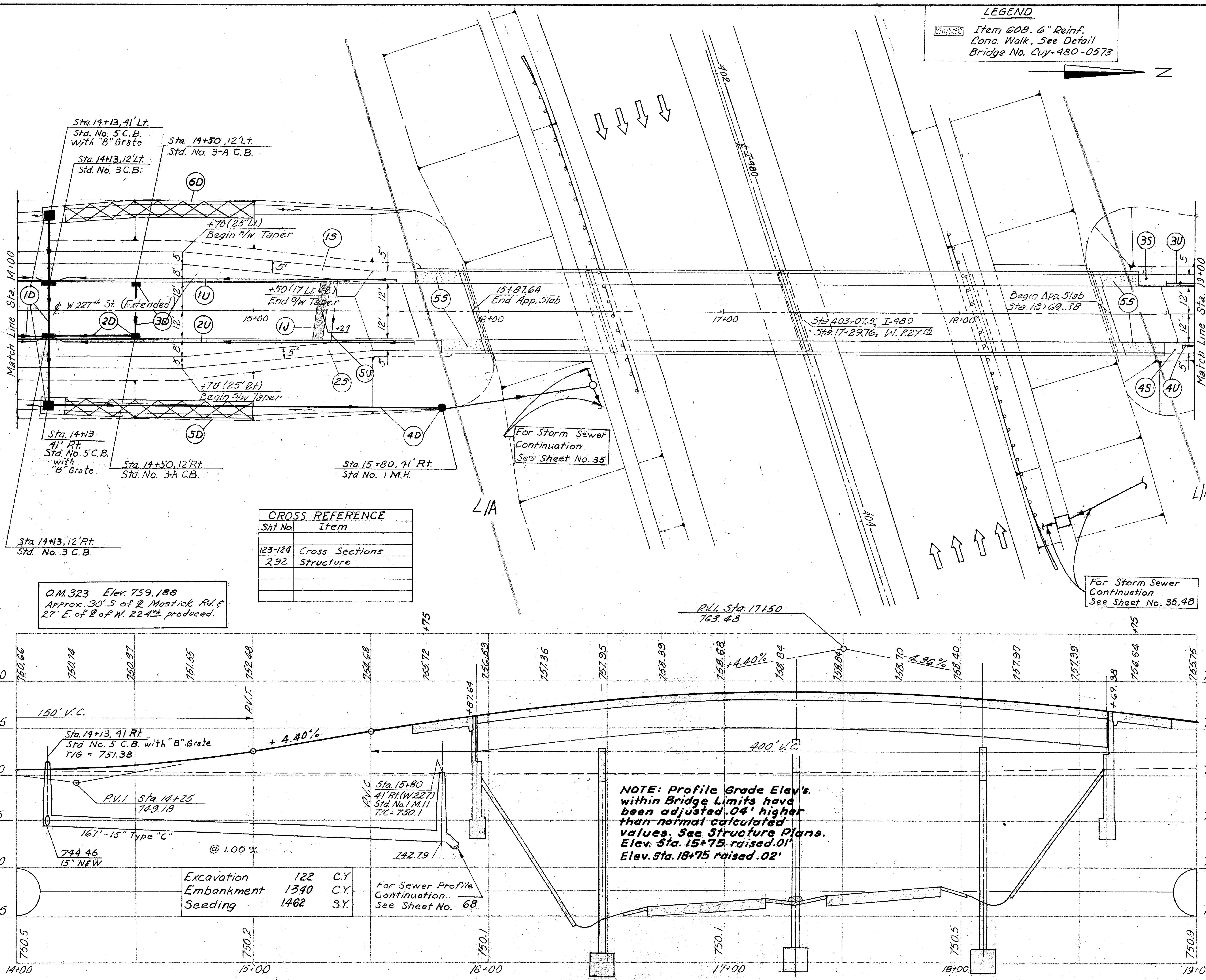
CUYAHOGA COUNTY
CUY-480-4.86

LEGEND

▨	Item 608, 6" Reinf. Conc. Walk, See Detail Bridge No. Cuy-480-0573



CROSS REFERENCE	
Sht. No.	Item
123-124	Cross Sections
292	Structure

Excavation	122	C.Y.
Embankment	1340	C.Y.
Seeding	1462	S.Y.

NOTE: Profile Grade Elev's. within Bridge Limits have been adjusted .04' higher than normal calculated values. See Structure Plans. Elev. Sta. 15+75 raised .01' Elev. Sta. 18+75 raised .02'

ROADWAY Estimated Quantities

Item		Unit	15	2S	3S	4S	5S	1J	Total
608	6" Reinf. Conc. Walk, As per plan.	S.F.					343		343
608	4½" Conc. Sidewalk	S.F.	838	887	108	59			1892
SPEC.	Pressure Relief Joint, Type A	L.F.						25	25

Ref.#	Side	Location
1S	Lt.	Sta. 14+00 to Structure
2S	Rt.	Sta. 14+00 to Structure
3S	Lt.	Structure to 19+00
4S	Rt.	Structure to 19+00
5S	Lt./Rt.	As Indicated
1J	Rt./Lt.	15+29
		Total

DRAINAGE Estimated Quantities

Item		Size	Unit	1D	2D	3D	4D	5D	6D		1U	2U	3U	4U	5U	Total
	Storm Sewer Profile		Sht.#	76/77	77	76	47									☒
667	Seeding & Jute Matting		S.Y.					67	67							134
605	Bends & Branches		Ea.												1	☒
605																
605	Shallow	6"	L.F.								140	148	12	5	27	332
605																
604																
604	No. 1 M.H.		Ea.				1									1
604	No 5 C.B. with "B" Grate		Ea.	2												2
604	No. 3-A C.B.		Ea.		1	1										2
604	No. 3 C.B.		Ea.	2												2
603																
603	Type "C"	15"	L.F.				167									167
603	Type "C"	12"	L.F.	60												60
603	Type "B"	12"	L.F.	36	37	23										96
603	Type "F"	6"	L.F.								20	20				40

Ref. No.	Side	Location
1D	Rt./Lt.	14+00 to 14+13
2D	Rt.	14+13 to 14+50
3D	Rt./Lt.	14+50
4D	Rt.	14+13 to 16+00
5D	Rt.	14+20 to 15+00
6D	Lt.	14+20 to 14+50
1U	Lt.	14+00 to 15+60
2U	Rt.	14+00 to 15+60
3U	Lt.	18+88 to 19+00
4U	Rt.	18+95 to 19+00
5U	Rt./Lt.	15+34
		Total

BY T.R.B. DATE 5-27-68
BY J.L. DATE 5-28-68

W. 227th. PLAN & PROFILE STA. 14+00 TO STA. 19+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

48/347

CROSS REFERENCE	
Sht. No.	Item
61	Intersection Details
124-125	Cross Section (W. 227)
126-127	Cross Section (Maple Dr.)
49	Maple Drive (Cont'd.)
155	Water Line Relocation

N

BEGIN WORK
Sta. 8+90.00
Maple Dr.

Sta. 8+88, 19' Lt.
Std. No. 2-2-B C.B.

Sta. 8+88, 17' Rt.
Std. No 2-2-B C.B.

Sta. 19+25 12' Lt
Std. No. 3-A C.B.

Sta. 19+25, 12' Rt.
Std. No. 3-A C.B.

Sta. 10+38, 24.5' Rt. (Maple)
= Sta. 19+45, 39' Rt. (W 227)
Std. No. 1 M.H.

For Storm Sewer
Continuation
See Sheet Nos. 35, 47

Match Line Sta. 11+00 (See Maple Drive Plan & Profile)
Sheet No. 49

1 Sty. Fr. House
w/ basement

1 Sty. Brk. w/basement
#22706

1 S.F. Gar.

26" Cottonwood

18" Cotton wd.

Exist. R/W

Sta. 20+75, 10' Lt.
Std. No. 3-A C.B.

Sta. 20+75, 10' Rt.
Std. No. 3-A C.B.

19+65.66 ℄ W. 227th St.
= 10+00.00 ℄ Maple Dr.

℄ W. 227th St. (Asph. Pav't.)

℄ Maple Drive (Asph. Pav't.)

Match Line Sta 19+00

10'-6" - Type "F"

12" Cmp.

10" Cmp.

8" San.

4" Gas

6" W.M.

+07 ℄ 8" Conc. Dr.

Sta. 21+29.00
West Exist. R/W (Lt. & Rt.)

END WORK
Sta 21+29.00
West 227th St.

1 Sty. Fr. Gar.

1 Sty. Fr. House

Spec.	Pressure Relief Joint, Type A											2.5	2.5
608	4 1/2" Conc. Sidewalk	S.F.					306	314	1010	1060			2690
452	6" Plain P.C. Conc. Pav't.	S.Y.	20	58	53								131
202	Exist. S/W Removed	S.F.									1150	1160	2310
202	Exist. Pav't. Removed	S.Y.	20	53	52								125
ROADWAY	Estimated Quantities	Location											
	Ref.#	Side											
	1A	Lt.	9+07 Maple Dr.			15	Lt.	19+00 to 9+60 Maple					
	2A	Lt.	Sta. 21+05			25	Rt.	19+00 to 10+42 Maple					
	3A	Rt.	Sta. 20+98			35	Lt.	9+11 Maple to 21+29					
						45	Rt.	11+00 Maple to 21+29					
						15R	Lt.	9+03 Maple to 21+29					
						25R	Rt.	11+00 Maple to 21+29					
						1T	Rt. & Lt.	19+10					Total

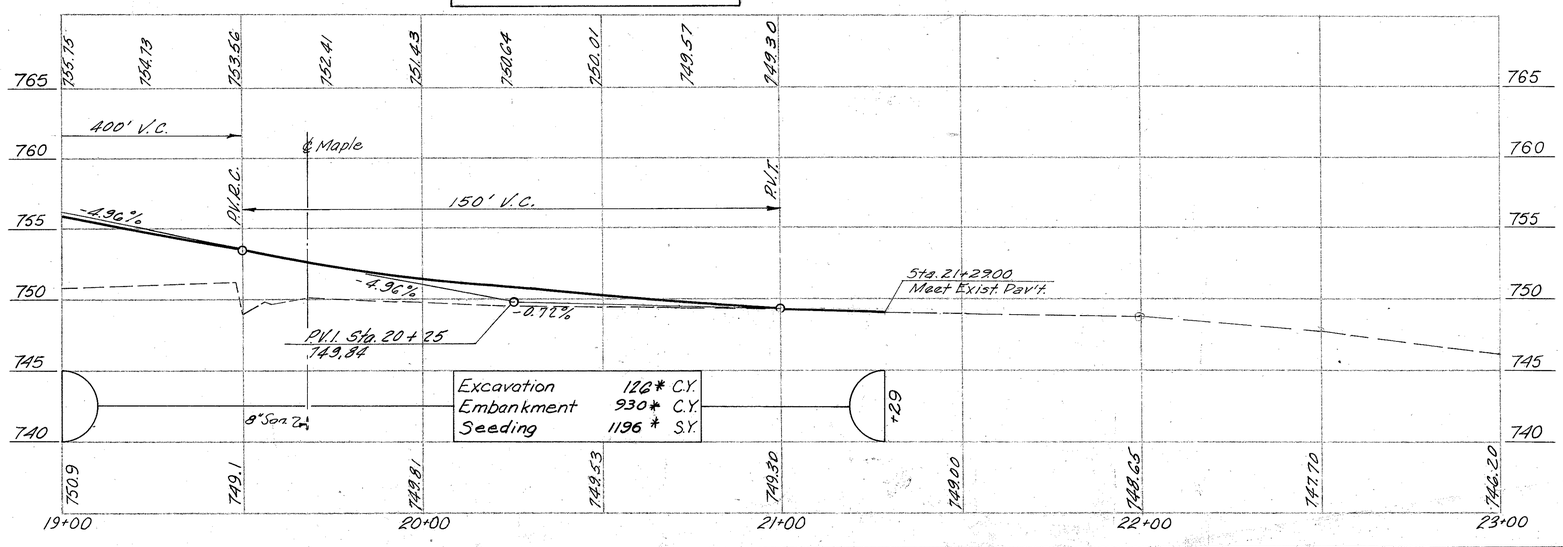
Storm Sewer Profile	Sht.#	76	77	77	76	76	77						
Bends & Branches												1	
605 Shallow	6" L.F.							148	121	201	202	27	699
604 No. 1 M.H.	Ea.	1											1
604 No. 3-A C.B.	Ea.	2			1		1						4
604 No. 2-2-B C.B.	Ea.				1		1						2
603 Type "C"	15" L.F.						62						62
603 Type "C"	12" L.F.	24	33										57
603 Type "B"	12" L.F.		152		36		20						208
603 Type "F"	6" L.F.						133						133
DRAINAGE Estimated Quantities	Ref. No.	Location											
	1D	Lt.	19+25 to 19+45										
	2D	Rt.	8+88 Maple Dr. to 19+45 W. 227th.										
	3D	Lt.	8+88 (Maple Dr.)										
	4D	Lt.	20+75 (W. 227th)										
	5D	Rt.	19+45 to 20+75										
	6D	Rt.	10+38 to 11+00										
	1U	Lt. & Rt.	19+00 W. 227th St. to 8+88 Maple Dr.					10					
	2U	Rt.	19+00 W. 227th St. to 11+00 Maple Dr.					10					
	3U	Lt. & Rt.	11+00 Maple Dr. to 21+29 W. 227th St.						20				
	4U	Lt.	8+88 Maple Dr. to 21+29 W. 227th St.							80			
	5U	Lt. & Rt.	19+05								10		
			TOTAL					70	365	33	62	4	1

*Includes Earthwork & Seeding Sta. 8+90 to Sta. 11+00 Maple Dr.

EXISTING TYPICAL SECTION
W. 227th St. & Maple Dr.

8'-0" ℄ 8'-0"
1 1/2" Asph. Conc.
Aggregate Base

T.B.M. Elev. 751.98
"O" in Open - F. Hyd. N. Side Maple
1st Hyd. West of W. 224th St.



J.L. DATE 4-24-68
APPD. BY A. Del DATE 5-9-68

W. 227th. PLAN & PROFILE STA. 19+00 TO STA. 23+50

E-1

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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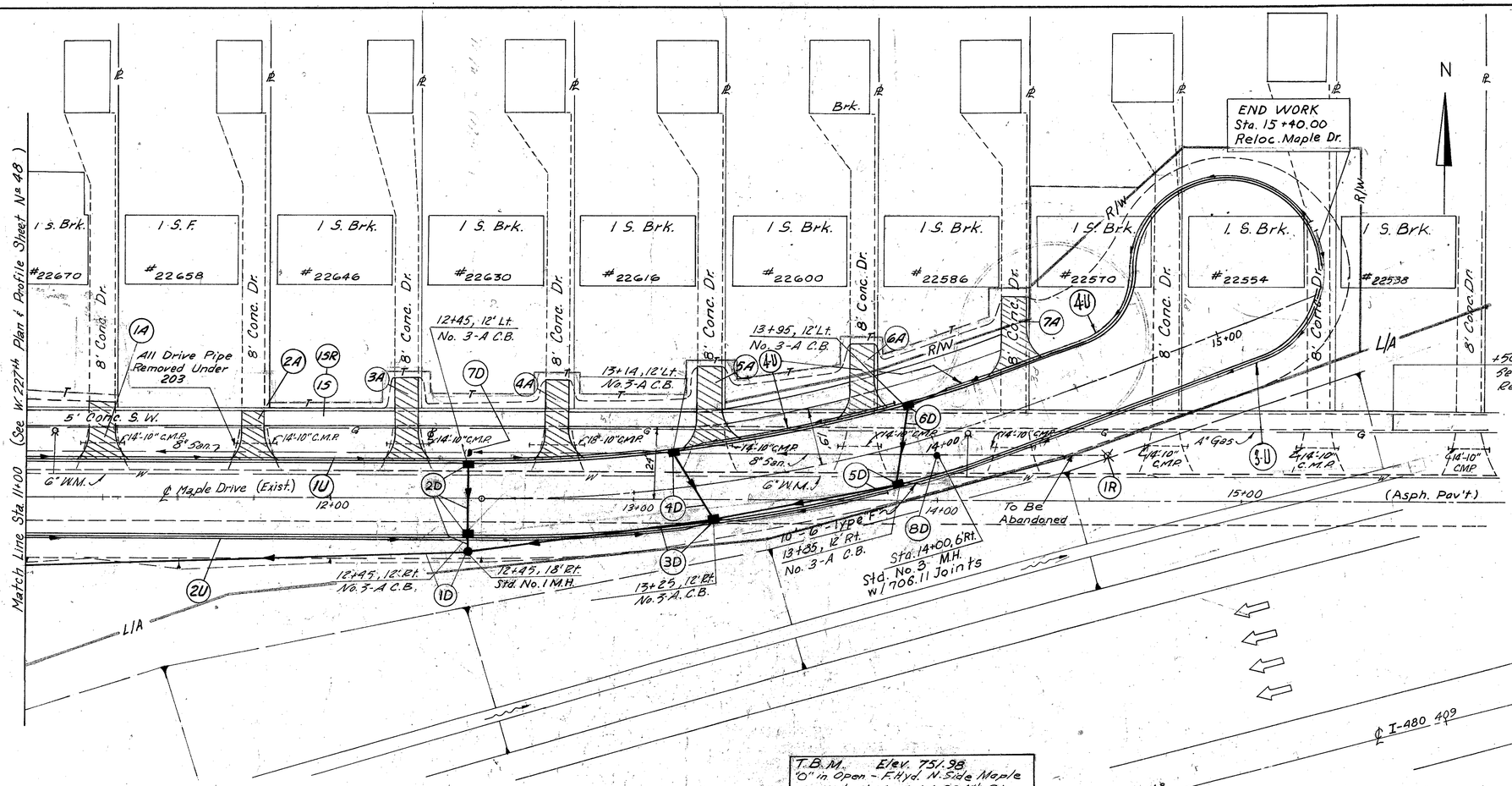
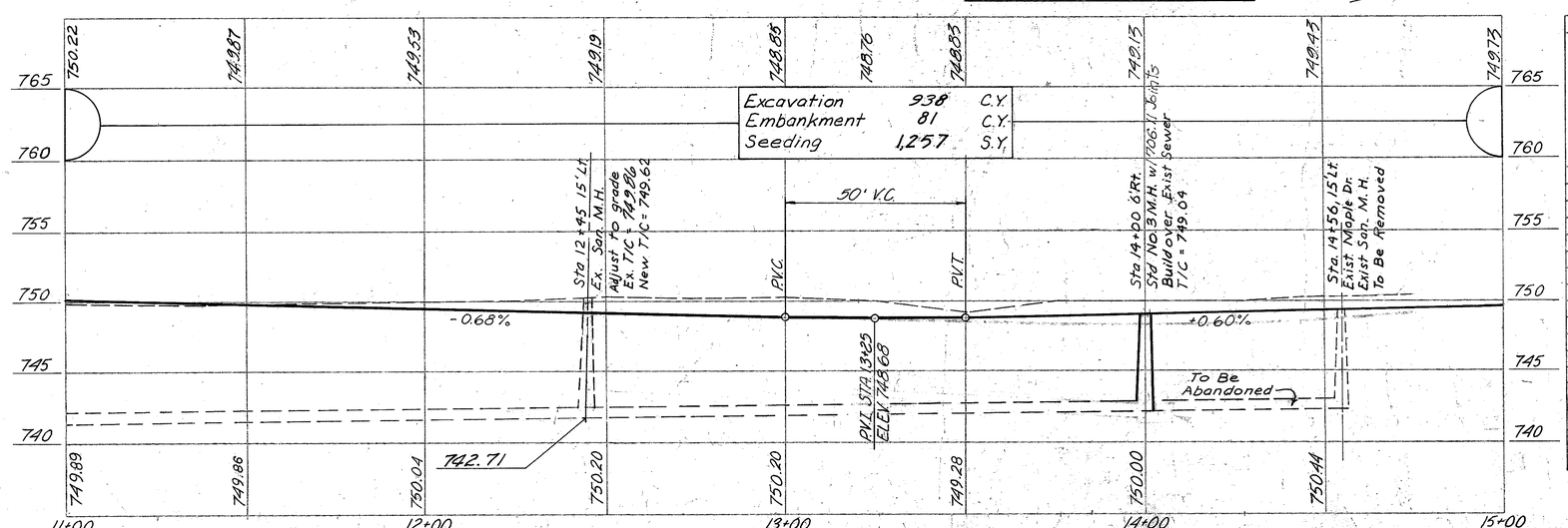
CUYAHOGA COUNTY
CUY-480-4.86

CROSS REFERENCE	
Sht. No.	Item
G1	Pavement Detail
127-128	Cross Sections
156	Water Line Relocation



T.B.M. Elev. 751.98
"O" in Open - F.Hyd. N. Side Maple 1st Hyd West of W. 224th St.



ROADWAY			202		452		608
Estimated Quantities			Existing Pav't Removed / Existing S/W Removed		6" Plain P.C. Concrete Pav't.		4½ Concrete Sidewalk
Ref.	Side	Location	S.Y.	S.F.	S.Y.		S.F.
1A	Lt.	Sta. 11+25	20		21		
2A	Lt.	Sta. 11 75	20		16		
3A	Lt.	Sta. 12 25	28		26		
4A	Lt.	Sta. 12 75	28		27		
5A	Lt.	Sta. 13 25	32		27		
6A	Lt.	Sta. 13 75	90		26		
7A	Lt.	Sta. 14 25	60		24		
1J	Lt.	Sta. 11+00 to 14+21					1380
1JR	Lt.	Sta. 11+00 to 15+50		2250			
Total			228	2250	167		1380

DRAINAGE			603	603		604				605		202		
Estimated Quantities			Type "F"	Type "S"	Type "C"	Type "C"	No. 3-A C.B.	No. 1 M.H.	M.H. Adjust to Grade	Std No. 3 M.H. w/ 706.11 Joints	Shallow		M.H. Removed	Pipe Removed 24" & Under	Storm Sewer Profile
			6"	12"	12"	15"					6"				
	Side	Location	L.F.	L.F.	L.F.	L.F.	Ea.	Ea.	Ea.	Ea.	L.F.		Ea.	L.F.	Sht. #
1D	Rt.	11+00 to 12+45				145		1							77
2D	Rt./Lt.	12+45		24	6		2								77
3D	Rt.	12+45 to 13+25		81			1								77
4D	Rt./Lt.	13+14 to 13+25		26			1								77
5D	Rt.	13+25 to 13+85		62			1								77
6D	Rt./Lt.	13+85 to 13+95		27			1								77
1U	Lt.	11+00 to 13+14	10								204				
2U	Rt.	11+00 to 13+25	10								215				
3U	Rt.	13+25 to CUL DE SAC	20								298				
4-U	Lt.	13+14 to CUL DE SAC	20								212				
1R	Rt.	14+00 to 14+56											1	56	
		SANITARY SEWER													
7D	Lt.	12+45							1						
8D	Rt.	14+00								1			1	56	
Total			60	220	6	145	6	1	1	1	869		1	56	

Des. by J.L. Date 4-23-68
Chkd. by A.DeL. Date 4-24-68

MAPLE DR. PLAN & PROFILE STA. 11+00 TO STA. 15+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
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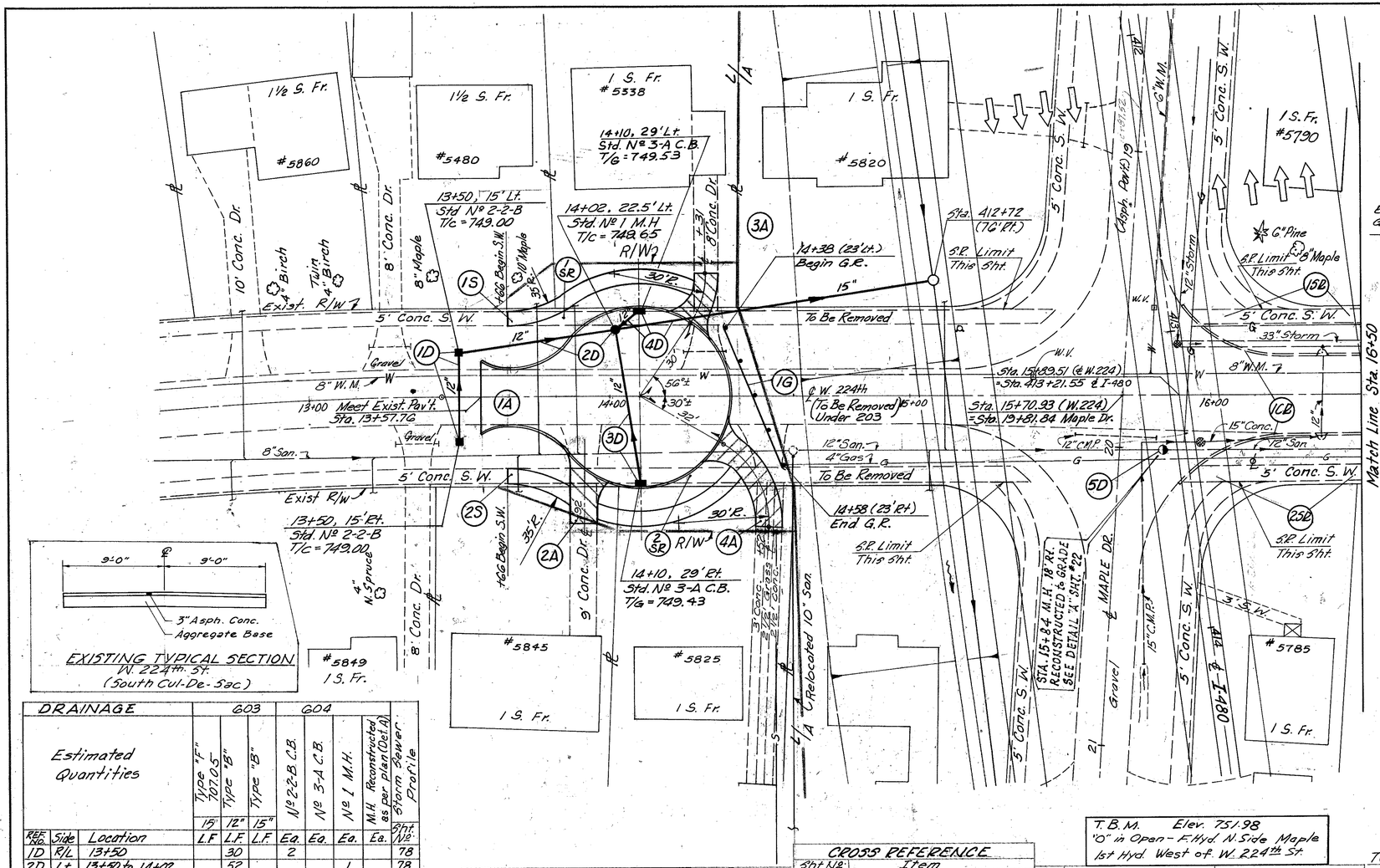
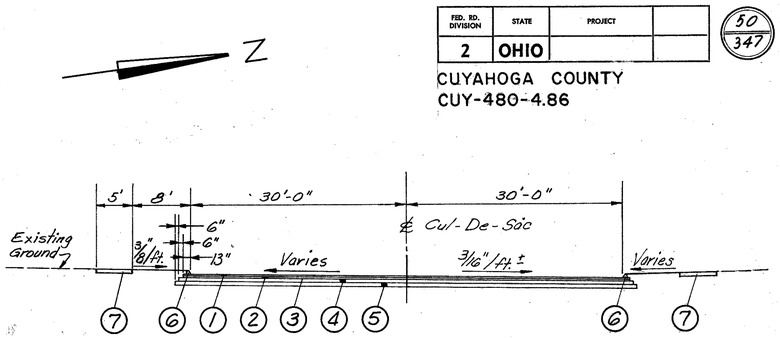
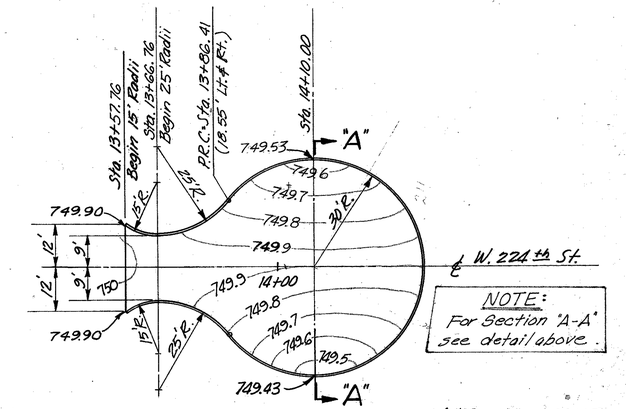


EXISTING TYPICAL SECTION
IN 224th. ST.
(South Cul-De-Sac)



SECTION "A-A"
Scale : 1" = 10'-0"

1. 1¼" 404 Asphalt Concrete AC-20
2. 1¼" 402 Asphalt Concrete AC-20
3. 408 - Bituminous Prime Coat; 702.09, RT-2 or RT-3; 702.02, MC-30 or MC-70; or 702.03, primer 20, applied at the rate of 0.40 Gal. per sq. yd.
4. 6" 304 Aggregate Base Course
5. 6" 310 Subbase Grading "A"
6. 609 Asphalt Concrete Curb - Type 1
7. 4½" 608 Concrete Walk



NOTE:
For Section "A-A" see detail above.

PAVEMENT DETAIL
Scale : 1" = 20'-0"

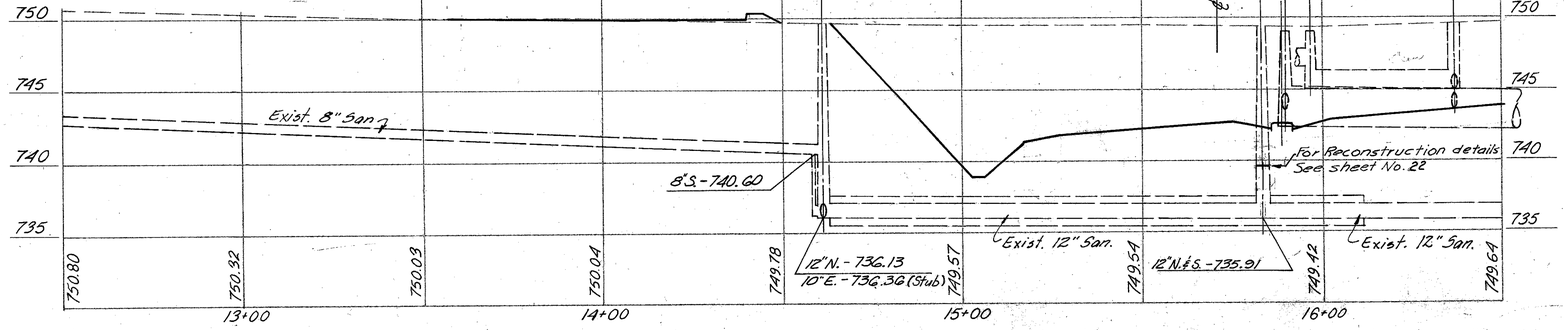
CALC. BY A.J.F. DATE 11-20-67
CHKD. BY R.A.T. DATE 1-29-68

DRAINAGE			603			604				
Estimated Quantities			Type "F" 707.05	Type "B"	Type "B"	№2-2-B C.B.	№3-A C.B.	№1 M.H.	M.H. Reconstructed as per plan (Det A)	Storm Sewer Profile
			15"	12"	15"					Sht. №
REF. No.	Side	Location	L.F.	L.F.	L.F.	Ea.	Ea.	Ea.	Ea.	
1D	R/L	13+50		30		2				78
2D	Lt.	13+50 to 14+02		52				1		78
3D	R/L	14+02 to 14+10		52				1		78
4D	Lt.	14+02 to 412+72 Bk.	52	10	56		1			69/78
		SANITARY								
5D	Rt	15+84 18' Rt.							1	
TOTAL			52	144	56	2	2	1	1	

Excavation	183 C.Y.
Embankment	20 C.Y.
Seeding	322 S.Y.

CROSS REFERENCE	
Sht. №.	Item
36	Storm Sewer Continuation
69, 78	Storm Sewer Profiles
80	Sanitary Sewer Profile
22	M.H. Reconst. to Grade
129	Cross Sections

T.B.M. Elev. 751.98
"O" in Open - F. Hyd. N. Side Maple
1st Hyd. West of W. 224th St.



ROADWAY			202		304	310	402	404	408	452	606	608	609	202	203
Estimated Quantities			Curb Removed	Exist. Sidewalk Removed	6" Agg. Base Course	6" Subbase "A" As Per Plan	1½" Asphalt Concrete AC-20	1¼" Asphalt Concrete AC-20	Prime Coat	6" Plain Portland Cement Conc. Pav't.	Guard Rail Type 5	4½" Concrete Walk	Asphalt Concrete Curb - Type 1	Exist. Pavement Removed	Subgrade Compaction
REF. No.	Side	Location	L.F.	S.F.	C.Y.	C.Y.	C.Y.	C.Y.	Gal.	S.Y.	L.F.	S.F.	L.F.	S.Y.	S.Y.
1A	—	Cul-De-Sac			67	69	14	14	156				214		415
2A	Rt.	13+92								19				27	
3A	Lt.	14+31								18				28	
4A	Rt.	14+52								37				31	
1G	R/L	14+38 to 14+58									50				
1S	Lt.	13+66 to 14+27										325			
2S	Rt.	13+66 to 14+42										365			
1SR	Lt.	13+66 to 16+50		1175											
2SR	Rt.	13+66 to 16+50		1140											
1CB	Rt/Lt	15+90 to 16+50	132												
TOTAL			132	2315	67	69	14	14	156	74	50	690	214	86	415

W. 224th. PLAN & PROFILE STA. 12+50 TO STA. 16+50 (SOUTH CUL-DE-SAC)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

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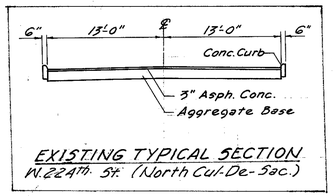
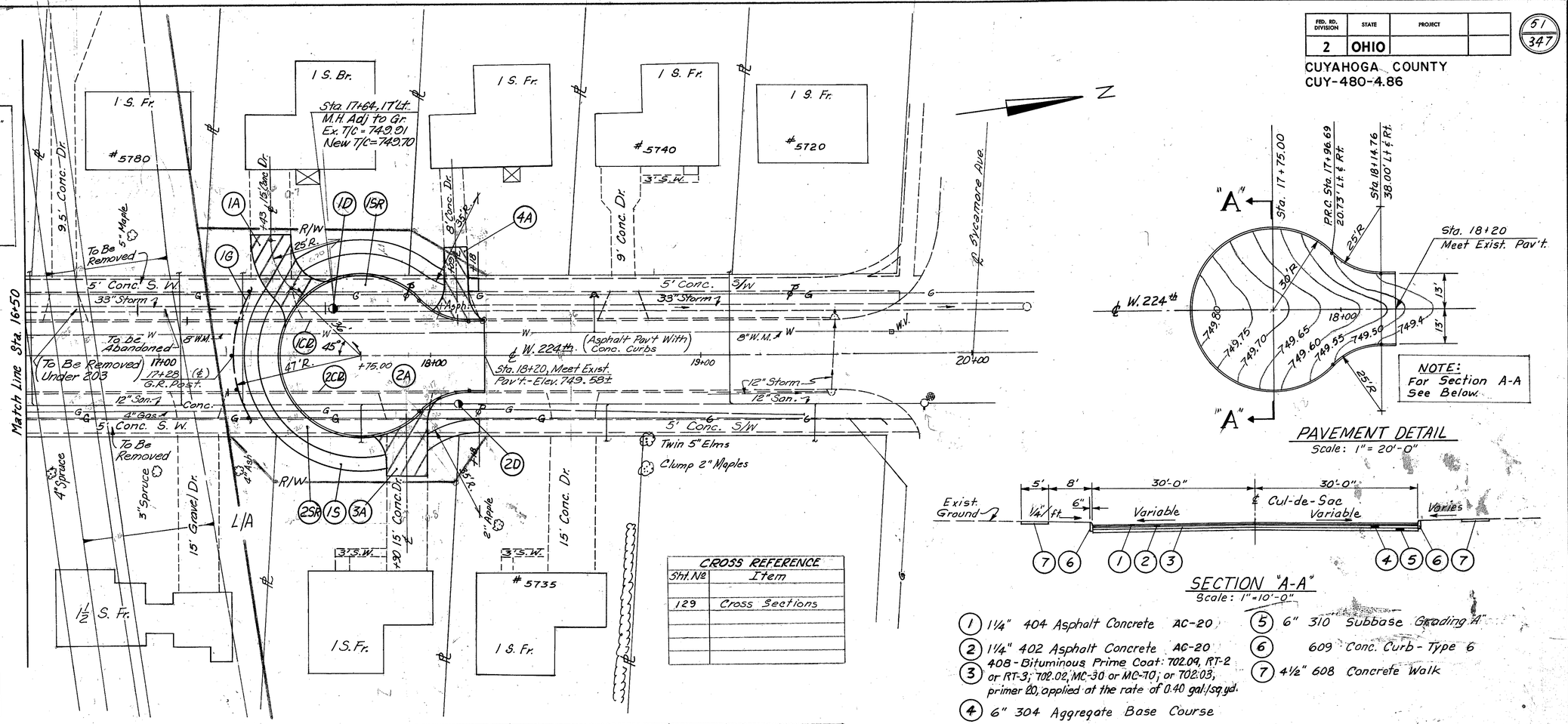
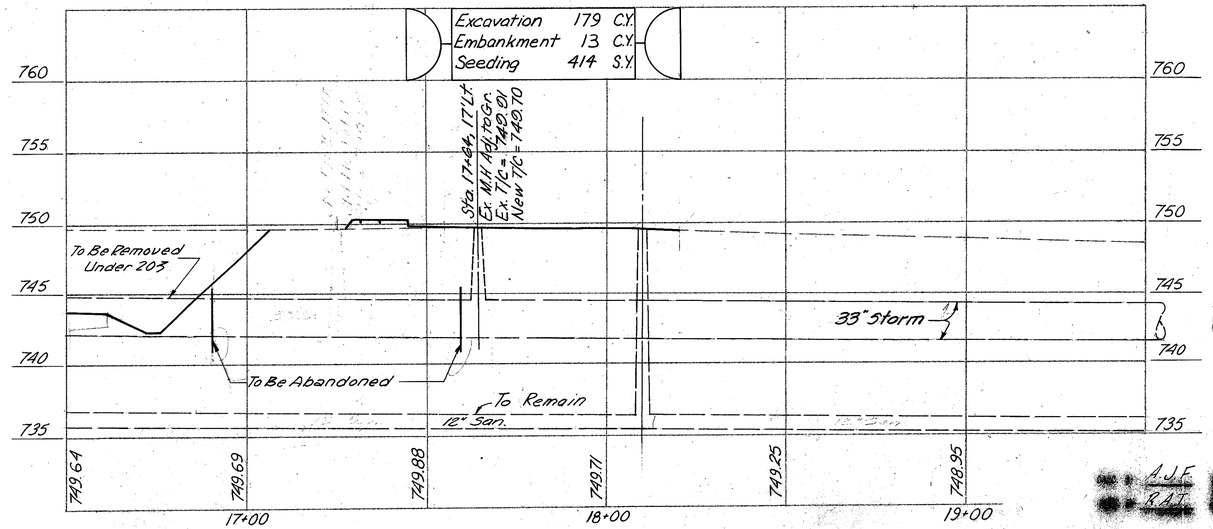


EXISTING TYPICAL SECTION
W. 224th St. (North Cul-De-Sac.)



CROSS REFERENCE	
Sht. №	Item
129	Cross Sections

T.B.M. Elev. 751.98
"O" in Open - F. Hyd. N. Side Maple 1st Hyd. West of W. 224th St.



NOTE:
For Section A-A
See Below.

PAVEMENT DETAIL
Scale: 1" = 20'-0"

SECTION "A-A"
Scale: 1" = 10'-0"

(1) 1¼" 404 Asphalt Concrete AC-20
(2) 1¼" 402 Asphalt Concrete AC-20
(3) 408 - Bituminous Prime Coat: 702.09, RT-2 or RT-3; 702.02, MC-30 or MC-70; or 702.03, primer 20, applied at the rate of 0.40 gal./sq.yd.
(4) 6" 304 Aggregate Base Course
(5) 6" 310 Subbase Grading A"
(6) 609 Conc. Curb - Type 6
(7) 4½" 608 Concrete Walk

Estimated Quantities			DRAINAGE	ROADWAY														
			604	202				304	310	402	404	408	452	606	608	609	203	
			M.H. Adjust to Grade	Exist. Sidewalk Removed	Curb Removed	Exist. Pavement Removed	6" Aggregate Base	6" Subbase "A" As Per Plan	6" Subbase Grading A"	1¼" Asphalt Conc. AC-20	1¼" Asphalt Conc. AC-20 Prime Coat 702.09 RT-2 RT-3	6" Plain Portland Cement Conc. Pav't.	Guard Rail Type 5	Concrete Curb Type 6	4½" Concrete walk	Subgrade Compaction		
REF. No.	Side	Location	Ea.	S.F.	L.F.	S.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	Gal	S.Y.	L.F.	S.F.	L.F.	S.Y.	
1D	Lt	17+64 ±	1															
1A	Lt.	17+43				48							47					
2A	—	Cul-de-Sac					59	59	12	12	143					196	356	
3A	Rt.	17+90				46							37					
4A	Lt.	18+09				10							29					
1G	R/L	17+28 to 17+35												50				
1CQ	Lt.	16+50 to 18+20			170													
2CQ	Rt.	16+50 to 18+20			170													
1S	R/L	17+32 to 18+18													905			
1SR	Lt.	16+30 to 18+18		340														
2SR	Rt.	16+30 to 18+18		340														
SANITARY SEWER																		
2-D	Rt.	18+10	1															
TOTAL			2	1680	340	104	59	59	12	12	143	113	50	905	196	356		

A.J.F. 11-20-67
R.A.T. 12-2-68

W. 224th. PLAN & PROFILE STA. 16+50 TO STA. 19+50 (NORTH CUL-DE-SAC)

3

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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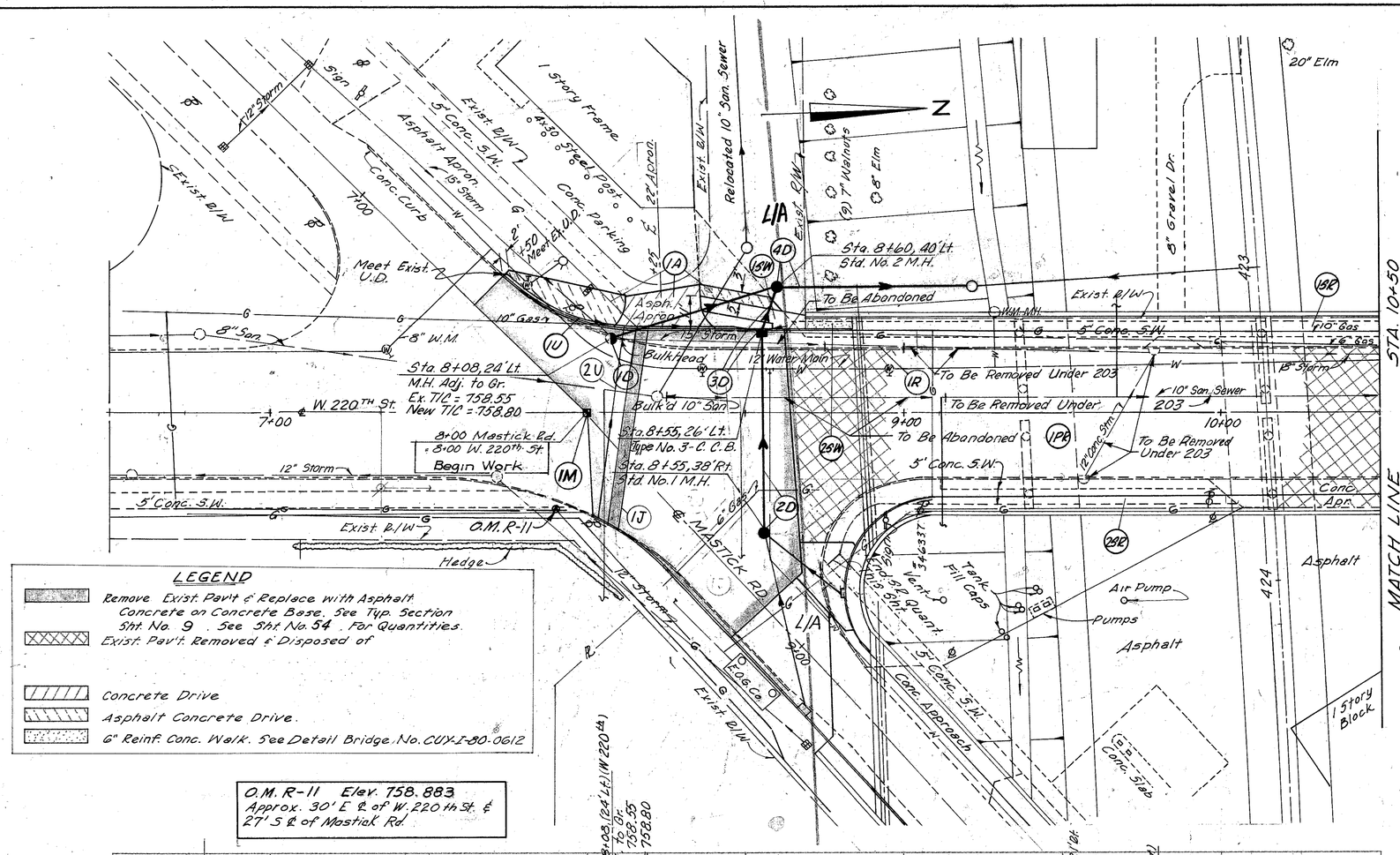
CUYAHOGA COUNTY
CUY-480-4.86

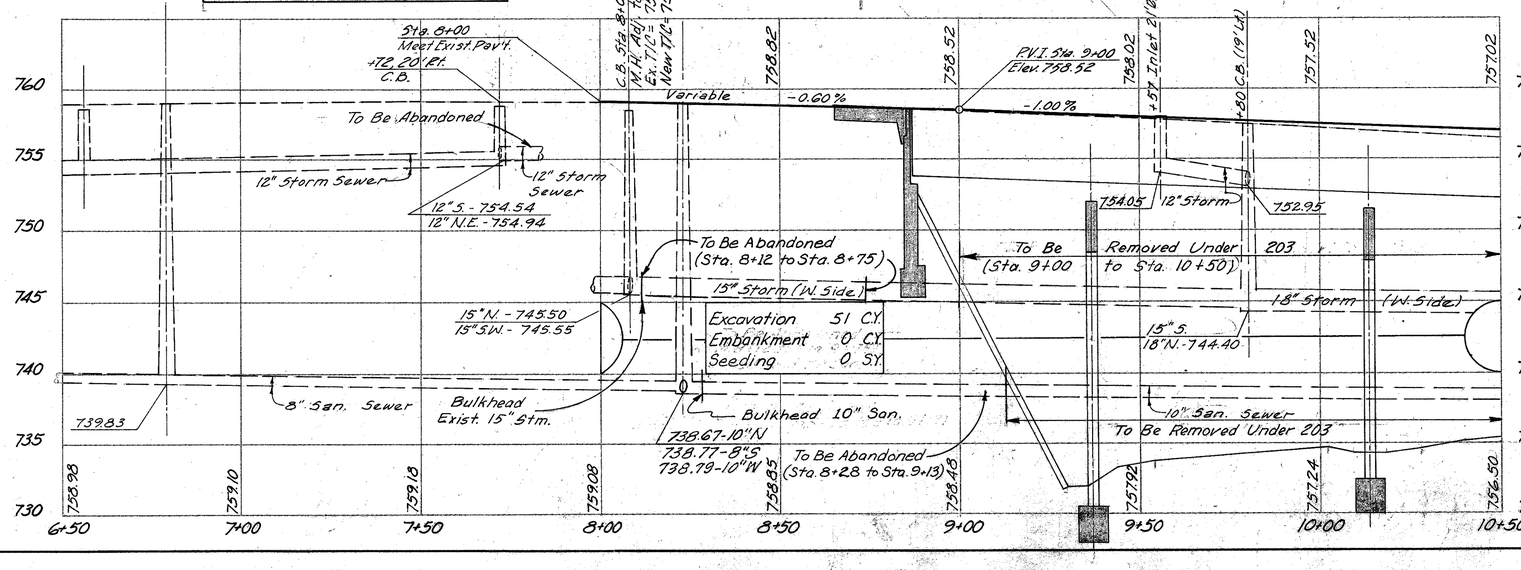
CROSS REFERENCE	
Sht. No	Item
37,54	Storm Sewer Continuation
80	Sanitary Sewer Relocation
130	Cross Sections
54	Intersection Details
302	Structure
159	Reloc. 12" Water Mains
69, 70	Temporary Roadways



LEGEND

▓	Remove Exist. Pav't. & Replace with Asphalt Concrete on Concrete Base. See Typ. Section Sht. No. 9. See Sht. No. 54. For Quantities.
▨	Exist. Pav't. Removed & Disposed of
▧	Concrete Drive
▧	Asphalt Concrete Drive.
░	6" Reinf. Conc. Walk. See Detail Bridge No. CUY-I-80-0612

O.M.R-11 Elev. 758.883
Approx. 30' E £ of W. 220th St. & 27' S £ of Mastick Rd.



⊗ Driveway Quantities

ROADWAY & PAVEMENT Estimated Quantities

Ref. #	Side	Location	604 Monument Box Adjust to Grade (Ea.)	608 6" Reinf. Conc. Walk (S.F.)	608 4½" Conc. Sidewalk (S.F.)	451 8" Reinf. P.C. Conc. Pav't. (S.Y.)	408 Prime Coat @0.40 Gal./S.Y. (Gal.)	404 2" Asph. Conc. ⊗ AC-20 (C.Y.)	304 8" Aggregate Base (C.Y.)	Spec. Pressure Relief Joint, Type A (L.F.)	202 S/W Removed (S.F.)	202 Pav't. Removed (S.Y.)
1A	Lt.	Sta. 8+25				32	19	3	10			
1J	Lt./Rt.	Sta. 8+14 (as Shown)								63		
1M	£	Sta. 8+00	1									
1PR	Lt./Rt.	8+64.45 to 10+50										941
1SR	Lt.	8+67 to 10+50									915	
2SR	Rt.	8+75 to 10+05									705	
1SW	Lt.	8+36 to Str.			172							
2SW	L/R	As Indicated		66								
		Total	1	66	172	32	19	3	10	63	1620	941

DRAINAGE Estimated Quantities

Ref. #	Side	Location	Storm Sewer Profiles Sht. No.	603 Bulkhead (Ea.)	605 Bends & Branches	605 Perf. B & S. V.C.P. with Lugs 6" (L.F.)	604 M.H. Adjusted to Grade (Ea.)	604 No. 1 M.H. (Ea.)	604 No. 2 M.H. (Ea.)	604 No. 3-C C.B. (Ea.)	603 Type "F" 707.05 15" (L.F.)	603 "C" + Type "C" 706.02 W/ Cl. "C" Bedding or 706.08 Encased 15" (L.F.)	603 CL. BEDDING Type "C" 706.01, 706.02 or 706.08 + 12" (L.F.)	603 CL. BEDDING Type "C" 706.02 or 706.08 Enc. + 12" (L.F.)	202 Pipe Removed 24 & Under (L.F.)
1D	Lt.	8+08 to 8+60	70	1			1					55			
2D	Lt.	8+55	78					1						64	
3D	Lt.	8+55 to 8+60	78							1			15		
4D	Lt.	8+60 to 423+00 I-80	70						1		65				
1R	Lt.	8+75 to 9+00													25
1U	Lt.	7+50 (Mastick) to 8+63				97									
2U	Rt./Lt.	8+09 (as Shown)			1	65									
		Total				162	1	1	1	1	65	55	15	64	25

CALC. BY T.R.B. DATE 4-12-68
CHKD. BY J.L. DATE 4-15-68

W. 220th. PLAN & PROFILE STA. 6+50 TO STA. 10+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

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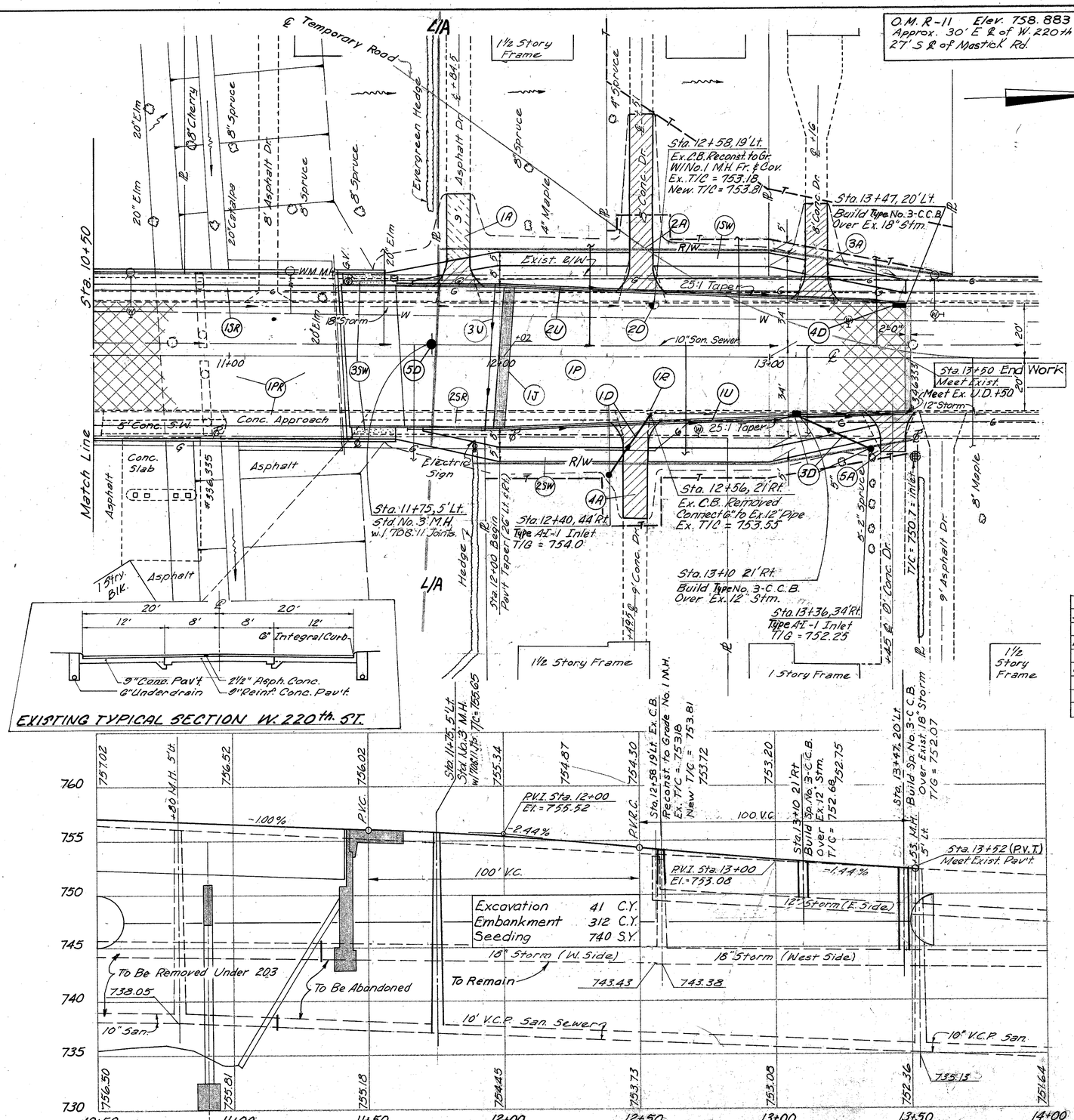
O.M.R-11 Elev. 758.883
Approx. 30' E & of W. 220th St. & 27' S & of Mastick Rd.

LEGEND
- Exist. Pav't. Removed & Disposed of
- Concrete Drive
- Asphalt Concrete Drive
- 6" Reinf. Conc. Walk See Detail Bridge No. CUY-I-80-0612
- Remove & Replace Exist. Wearing Course



EXISTING TYPICAL SECTION W. 220th ST.

* (Driveways)

Estimated Quantities			202 Pav't Removed	202 Exist. S/W Removed	202 Existing Wearing Course Rem. & Disp. of	304 6" Aggregate Base	310 3" Subbase 703.08 or 703.10	404 2" Asphalt Conc. AC-20 *	408 Prime Coat 0.40 gal./sq. yd.	407 Tack Coat @ 0.10 Gal./S.Y.	451 9" Rein. P.C. Conc. Pav't.	452 6" Plain P.C. Conc. Pav't.	608 4½" Concrete W/A	608 6" Reinforced Conc. Walk As Per Bridge Plan	609 Conc. Curb, Type 2-4 Modified Per Plan	611 Approach S/Lab (7"×12'-0")	Spec. Pressure Relief Joint, Type A	203 Subgrade Preparation
Ref.#	S/de.	Location	S.Y.	S.F.	S.Y.	C.Y.	C.Y.	C.Y.	Gal.	Gal.	S.Y.	S.Y.	S.F.	S.F.	L.F.	S.Y.	L.F.	S.Y.
1P	Lt./Rt.	11+42.97 to 13+50			9		93	1		1	1001				374	118		1119
1A	Lt.	Sta. 11+84.5				5		1	8			13						
2A	Lt.	Sta. 12+51	46									63						
3A	Lt.	Sta. 13+16	30									36						
4A	Rt.	Sta. 12+49.5	44									40						
5A	Rt.	Sta. 13+45	22									18						
1S/W	Lt.	Structure to 13+50											840					
2S/W	Rt.	Structure to 13+41											862					
3S/W	Lt./Rt.	As Indicated												148				
1PR	Lt./Rt.	10+50 to 13+50	1419															
1SR	Lt.	Sta. 10+50 to 13+50		1265														
2SR	Rt.	Sta. 10+50 to 13+50		1115														
1J	Lt./Rt.	Sta. 12+02															53	
		Total	1561	2380	9	5	93	2	8	1	1001	170	1702	148	374	118	53	1119

CROSS REFERENCE	
Sht. No.	Item
130-131	Cross Sections
302	Structure
G3-G4	Temporary Road

DRAINAGE Estimated Quantities				Sht. No.	202 Catch Basin or Inlet Removed Ea.	603 12" Storm (E. Side) L.F.	603 18" Storm (W. Side) L.F.	603 18" Storm (West Side) L.F.	604 Ex. C.B. Reconst. to Gr. W/No.1 M.H. Fr. & Cov. Ea.	604 No. 3-C C.B. Ea.	604 Std. No. 3 M.H. w/ 706.11 Joints Ea.	604 No. A1-1 Inlet Ea.	605 Perf. B & S. V.C.P. with Lugs 6" L.F.	605 Bends & Branches	605 Storm Sewer Profile
Ref.#	Side	Location													
1D	Rt.	12+40 to 12+56		72								1			
2D	Lt.	12+58		53											
3D	Rt.	13+36 to 13+10		72								1			
4D	Lt.	13+47		53											
1E	Rt.	12+56			1										
1U	Rt.	11+67 to 13+50						178							
2U	Lt.	11+63 to 13+50						172							
3U	Lt./Rt.	11+97						55	1						
5D	Lt.	11+75													
		Total			1	30	27	405	2	1	1	2	SANITARY SEWER		

DRAWN BY T.R.B. DATE 4-12-68
CHKD. BY J.L. DATE 4-15-68

W. 220th. PLAN & PROFILE STA. 10+50 TO STA. 14+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

CURVE DATA
R = 60.00'
Δ = 45°47'20"
T = 25.34'
A_L = 47.95'
C = 46.68'

LEGEND
- Remove Existing Pavement & Replace with Asphalt Concrete on Concrete Base. See Typical Section Sht. No. 9
- Exist. Pavement Removed & Disposed of.
- 6" Reinf. Conc. Walk See Detail Bridge No. CUY.-80-0612

Sta. 7+50.75 BEGIN WORK

O.M. R-11 Elev. 758.883
Approx. 30' E ℄ of W. 220th St. & 27' S ℄ of Mastick Rd.

CURVE DATA
R = 75.00'
Δ = 23°04'26"
T = 15.31'
A_L = 30.20'
C = 30.00'

CROSS REFERENCE

Sht. No.	Item
7B	Storm Sewer Profiles
7B	Storm Sewer Continuation
13Z	Cross Sections
3T4	Structure (Mastick Rd.)
8S	Reloc. 10" San. Sewer
6Z	Pav't Details
6A	Temporary Roadways

Excavation 42 C.Y.
Embankment 0 C.Y.
Seeding 0 S.Y.

MASTICK RD. PLAN & PROFILE STA. 6+00 TO STA. 11+00

ROADWAY — Estimated Quantities

Item		Unit	Total	Location	Ref. Sht.	Side
608	6" Reinforced Concrete Walk	S.F.	255	255	7PP	Rt.
202	Existing B/W Removed	S.Y.	1311	1070	19P	Lt.
	Existing Pav't Removed	S.Y.		1311	13M	Rt.

DRAINAGE — Estimated Quantities

Item		Unit	Total	Location	Ref. Sht.	Side
	Storm Sewer Profiles	Sht. No.	7B	7B		
605	Bend & Branches					
	Perf. B.E.S. V.C.P. with Lugs 6"	L.F.	91	91		
604	No. 3-C C.B.	Ea.	2	2		
603	Type "C" 702.02 or 702.08 Enc. Cl. "C" Bed. 12"	L.F.	89	89		
202	Catch Basin or Inlet Removed	Ea.	1	1		
				8+99.5	1D	Lt.
				8+75 to 9+15	2D	Lt.
				9+25	1P	Rt.
				8+25 to 9+15	1U	Rt.

CALC. BY W.A.B. 4-12-68
CHK. BY J.L. 4-15-68

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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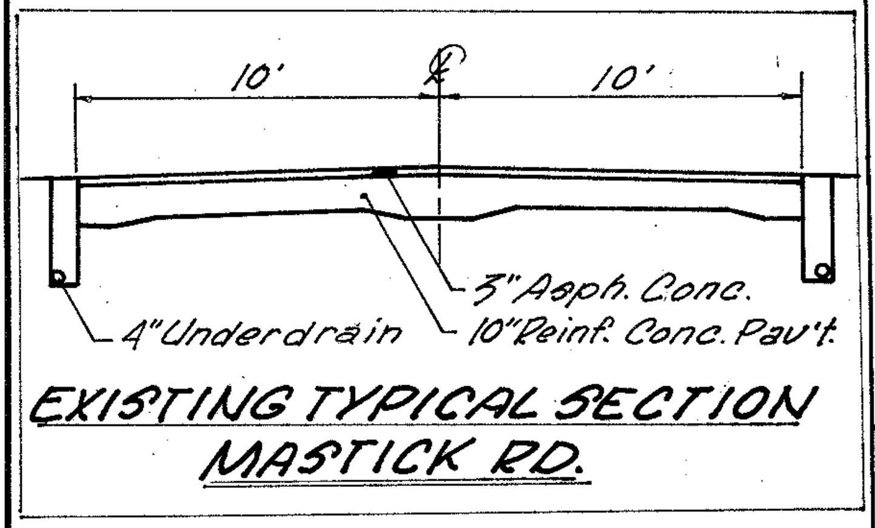


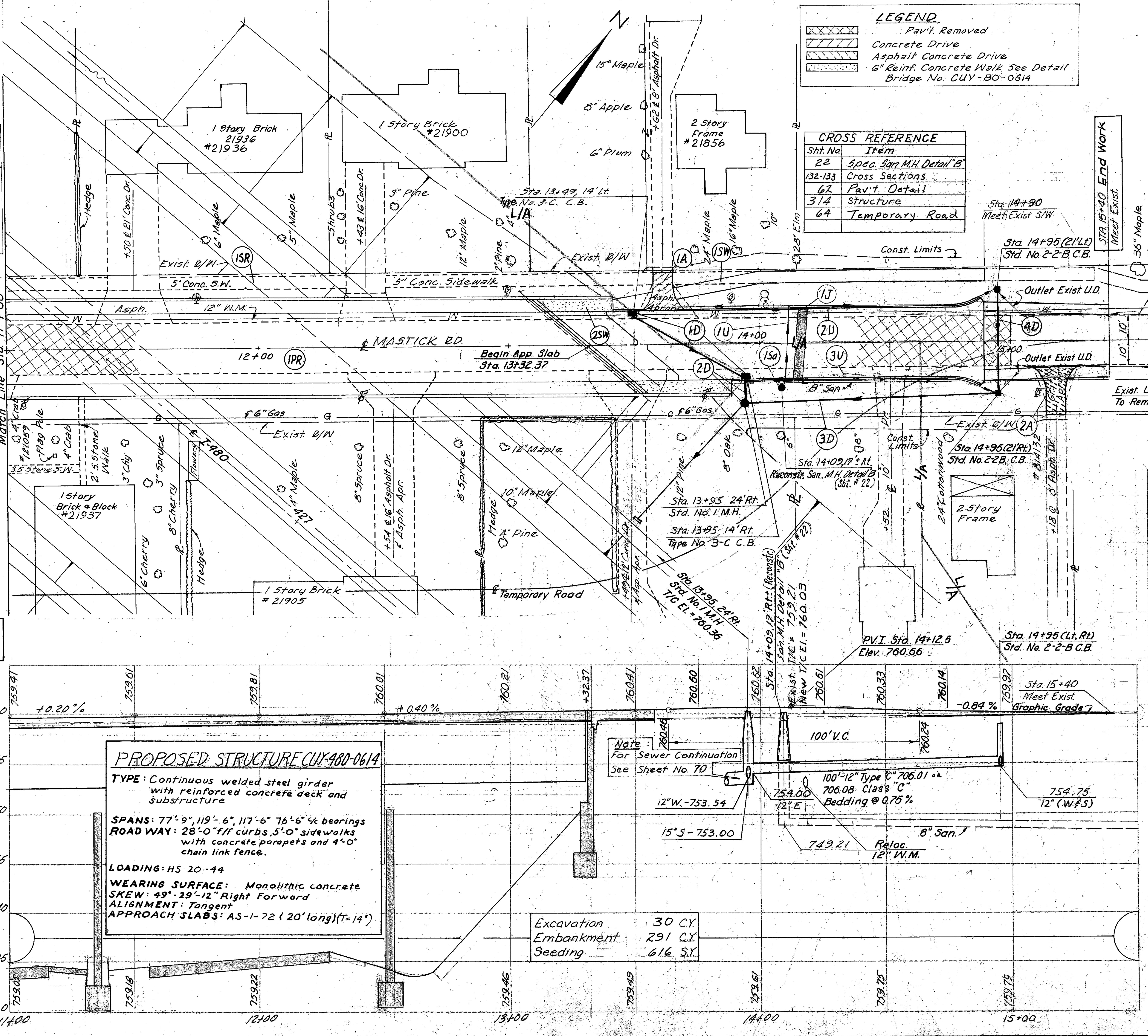
EXISTING TYPICAL SECTION
MASTICK RD.

LEGEND

☒	Pav't Removed
▨	Concrete Drive
▩	Asphalt Concrete Drive
░	6" Reinf. Concrete Walk See Detail Bridge No. CUY-80-0614

CROSS REFERENCE

Sht. No.	Item
22	Spec. San. M.H. Detail "B"
132-133	Cross Sections
62	Pav't Detail
314	Structure
64	Temporary Road



O.M. R-11 Elev. 758.883
Approx. 30' E ℄ of W. 220th St. &
27' S ℄ of Mastick Rd.

PROPOSED STRUCTURE CUY-480-0614

TYPE: Continuous welded steel girder with reinforced concrete deck and substructure

SPANS: 77'-9", 119'-6", 117'-6" 76'-6" c/c bearings

ROAD WAY: 28'-0" f/f curbs, 5'-0" sidewalks with concrete parapets and 4'-0" chain link fence.

LOADING: HS 20-44

WEARING SURFACE: Monolithic concrete

SKEW: 49°-29'-12" Right Forward

ALIGNMENT: Tangent

APPROACH SLABS: AS-1-72 (20' long) (T = 14")

Excavation	30	C.Y.
Embankment	291	C.Y.
Seeding	616	S.Y.

DRAINAGE
Estimated Quantities

Ref. No.	Side	Location	Storm Sewer Profile Sht. #	605 Bends & Branches Ea.	605 Perf. Bell & Spigot V.C.P. with Lugs 6" L.F.	604 No. 3-C C.B. Ea.	604 No. 2-2-B C.B. Ea.	604 No. 1 M.H. Ea.	604 M.H. Reconstructed as per Detail ("B") Ea.	603 Cl. "C" Bdg. Type "C" 706.01, 706.02 or 706.08 12" L.F.	603 Cl. "C" Bdg. Type "C" 706.02 or 706.08 Enc. 12" L.F.
1D	Lt./Rt.	13+49 to 13+95	78			2					52
2D	Rt.	13+95	78					1		10	
3D	Rt.	13+95 to 14+95	55							100	
4D	Lt./Rt.	14+95	133				2				42
1U	Rt./Lt.	14+12		1	31						
2U	Lt.	13+49 to 15+15			164						
3U	Rt.	13+98 to 15+15			118						
SANITARY SEWER											
1Sa	Rt.	14+09							1		
TOTAL			☒	☒	313	2	2	1	1	110	94

ROADWAY
Estimated Quantities

Ref. No.	Side	Location	Spec Pressure Relief Joint, Type A L.F.	608 6" Reinf. Conc. Walk, As Per Plan S.F.	608 4½" Concrete Sidewalk S.F.	452 6" Plain P.C. Conc. Pav't S.Y.	408 Prime Coat @ 0.40 gal./s.y. Gal.	404 2" Asph. Conc. AC-20 (Driveways) C.Y.	304 6" Aggregate Base C.Y.	202 S/W Removed S.F.	202 Pav't Removed S.Y.
1A	Lt.	Sta. 13+62				16					
2A	Rt.	Sta. 15+18					78	1	3		
1J	Lt./Rt.	Sta. 14+17	29								
1PR	Lt./Rt.	11+00 to 15+00									889
1SR	Lt.	11+00 to 14+90								1950	
1SW	Lt.	Struct. to 14+90			916						
2SW	Lt./Rt.	As Indicated		278							
TOTAL			29	278	916	16	78	1	3	1950	889

W.A.S. 4-12-68
J.L. 4-15-68

MASTICK RD. PLAN & PROFILE STA. 11+00 TO STA. 15+40

FED. RD. DIVISION	STATE	PROJECT	
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Extend 801 Concrete Base 2' from edge of pavement and surface with 3" of 301. No deduction in normal shoulder quantities shall be made for this area.

RAMP C-1 CURVE DATA
Δ = 1° 55' 34"
D = 0° 15' 00"
R = 22918.31
L = 770.45'
T = 385.26'

Ramp C-1 Pavement Widths

Station	Widths	Station	Widths	Station	Widths
391+00	36.00	393+00	27.53	394+50	20.03
+25	36.00	+25	26.28	+75	18.78
+30.56	36.00	+30.56	26.00	395+00	17.53
+50	35.03	+50	25.03	+25	16.28
+75	33.78	+75	23.78	P.C. +30.56	16.00
392+00	32.53	394+00	22.53		
+25	31.28	+25	21.28		
+50	30.03				
+75	28.78				

Westbound I-480 Pavement Widths

Station	Widths	Station	Widths	Station	Widths
387+75	36.00	390+75	39.99	394+00	44.63
+95.64	36.00	391+00	40.35	+25	44.99
388+00	36.06	+25	40.70	+50	45.35
+25	36.42	+50	41.06	+75	45.70
+50	36.78	+75	41.42	395+00	46.06
+75	37.13	392+00	41.78	+25	46.42
389+00	37.49	+25	42.13	+50	46.78
+25	37.85	+50	42.49	+75	47.13
+50	38.20	+75	42.85	396+00	47.49
+75	38.56	393+00	43.20	+25	47.85
390+00	38.92	+25	43.56	+35.64	48.00
+25	39.28	+50	43.92		
+50	39.63	+75	44.28		

Joint Legend
L - Standard Longitudinal Joint
P - Pressure Relief Joint, Type A
C - Standard Contraction Joint
E - Standard Expansion Joint

	Ref. No.	451 9" Reinf. Port. Cem. Concrete Pavement	402 Asphalt Concrete	310 Subbase Grading "A" Subbase		301 Bituminous Aggregate Base	801 9" Portland Cement Concrete Base		Spec. 203 Drainage Conn.	203 Subgrade Compaction	404 Asphalt Concrete Seal Coat	409 No. 9 Aggregate		407 Tack Coat	Cover Aggregate
		SY	C.Y.	C.Y.	C.Y.	C.Y.	S.Y.		C.Y.	S.Y.	C.Y.	GAL.	C.Y.	GAL.	TON
1P			27	337		133	599			1493	20	187	5	74	2
2P			92	508		108	1908			2628	66	148	4	191	7
3P		1456		272	30	65			39	1863					
Total		1456	119	1117	30	306	2507		39	5984	86	335	9	265	9

Rev. D.R.S. 1-17-78
Rev. L.J.P. 10-11-77
B.I.P. 8-25-70
J.L. 9-1-70

For 622 Quantities, See Sheet No.

RAMP C-1 PAVEMENT DETAIL

FED. RD. DIVISION	STATE	PROJECT	
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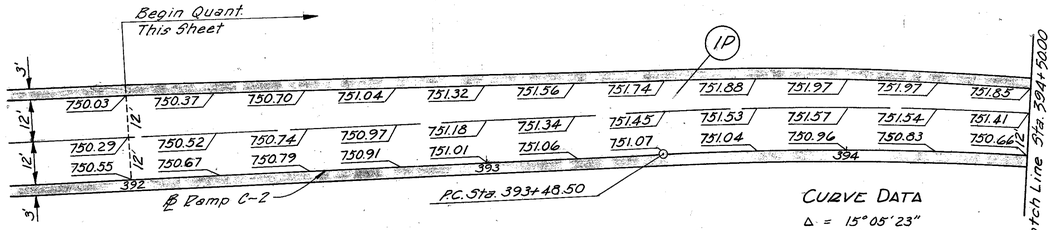
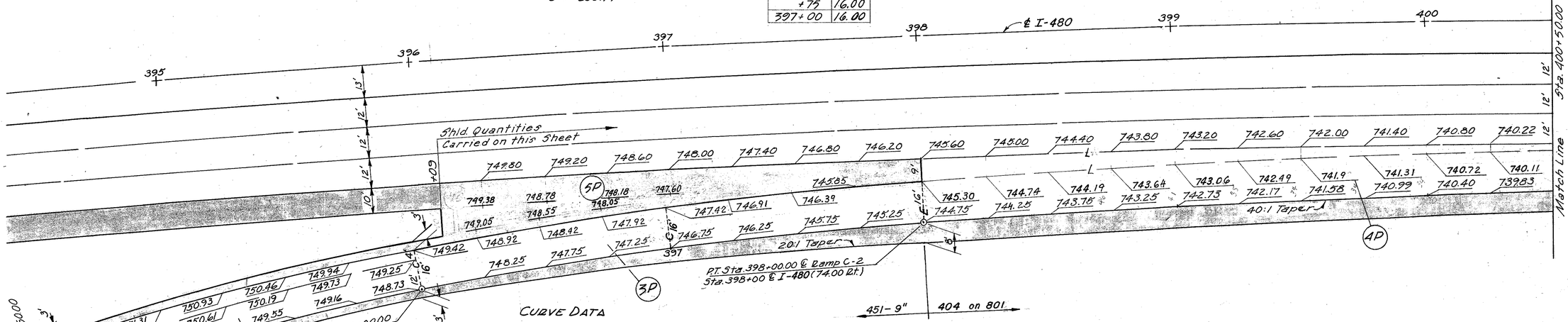
TABLE OF PAV'T WIDTH	
Ramp C-2	
Station	Width
392+00	24.00
+25	23.50
+50	23.00
+75	22.50
393+00	22.00
+25	21.50
+50	21.00
+75	20.50
394+00	20.00
+25	19.50
+50	19.00
+75	18.50
395+00	18.00
+25	17.50
+50	17.00
+75	16.50
396+00	16.00
+25	16.00
+50	16.00
+75	16.00
397+00	16.00

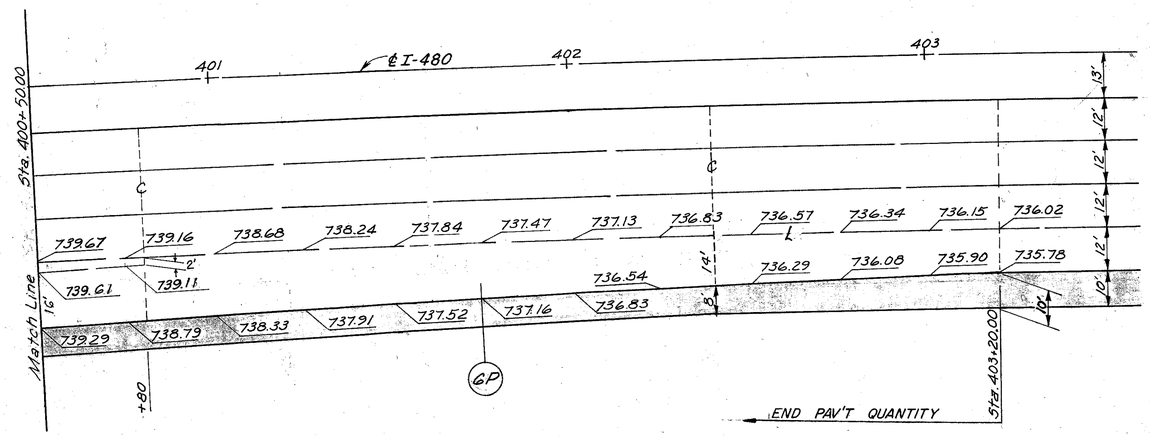


CURVE DATA
Δ = 15°05'23"
D = 6°00'
R = 954.93'
T = 126.49'
L = 251.50'
C = 250.77'

For 622 Quantities, See Sheet No. 17



CURVE DATA
Δ = 8°00'00"
D = 4°00'00"
R = 1432.394
T = 100.16'
L = 200.00'
C = 199.84



Ref. No.	451 9" Reinf. Port. Cem. Concrete Pavement		310 Subbase grading "A"	310 Subbase	402 Asphalt Concrete	404 Asphalt Concrete	301 Bituminous Aggregate Base	Spec.	409 Drainage Conn.	409 Seal Coat			801 9" Portland Cement Concrete Base	203 Subgrade Compaction	409 No. 9 Aggregate	407 Tack Coat	407 Cover Aggregate
	S.Y.		C.Y.	C.Y.	C.Y.	C.Y.	C.Y.		C.Y.	GAL.			S.Y.	S.Y.	C.Y.	GAL.	TON.
1P	599		107	14			28		18					764			
2P	295		54	9			17		11					395			
3P	358		71	1			21		15					487			
4P			165		30	21	37			45			615	850	1	61	2
5P			92				53			57				250	2		
6P			146		22	16	41			50			461	708	2	46	2
Total	1252		635	24	52	37	197		44	152			1076	3472	5	107	4

NOTE: For Joint Legend See Detail Sheet No. 58

DEH 2-5-68
JL 2-5-68
Rev. L.J.P. 10-12-77
Rev. D.R.S. 1-17-78

RAMP C-2 PAVEMENT DETAIL

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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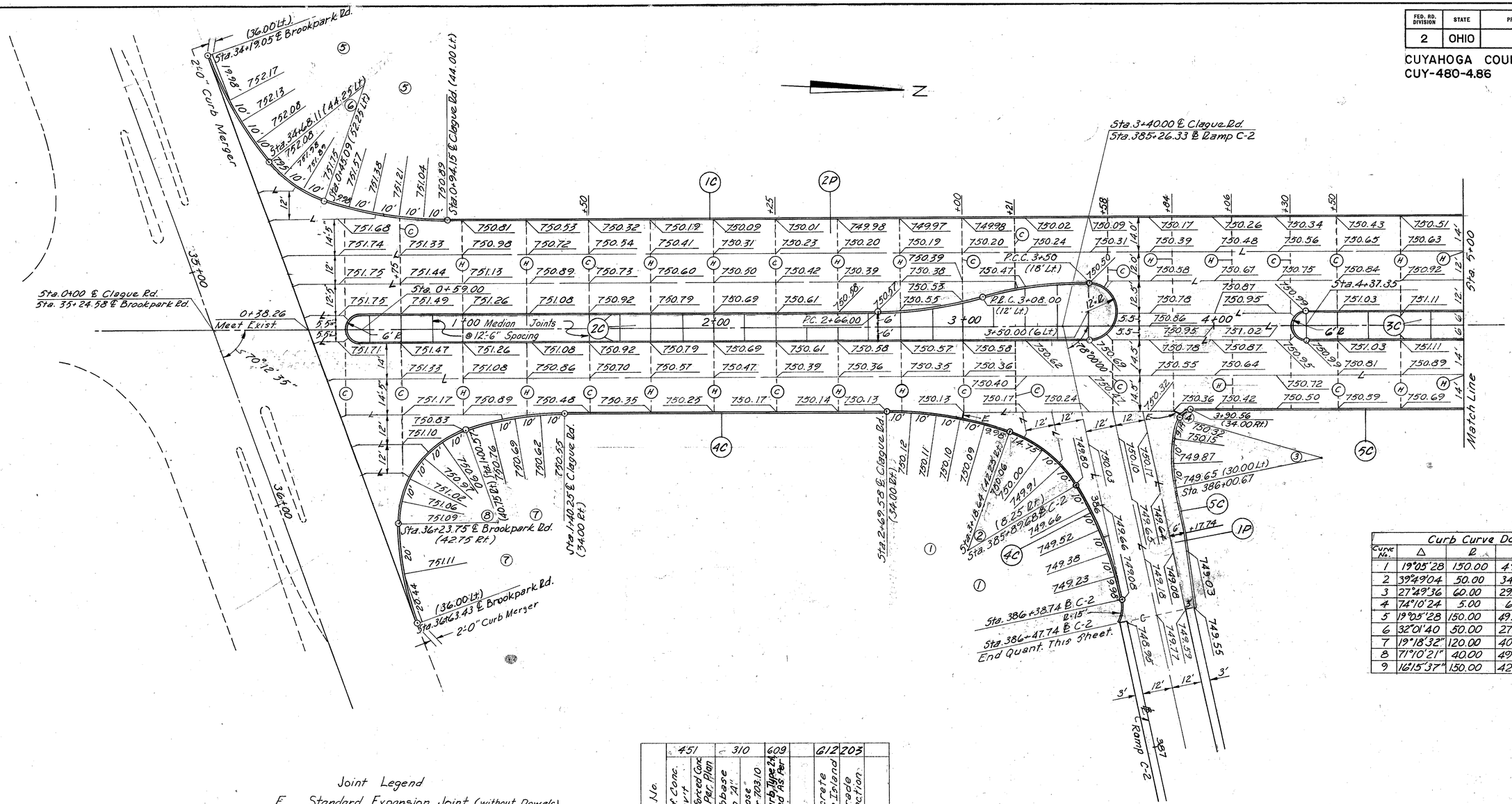
CUYAHOGA COUNTY
CUY-480-4.86



Curb Curve Data

Curve No.	Δ	R	L	C
1	19°05'28	150.00	49.98	49.75
2	39°49'04	50.00	34.75	34.05
3	27°49'36	60.00	29.14	28.85
4	74°10'24	5.00	6.47	6.03
5	19°05'28	150.00	49.98	49.75
6	32°01'40	50.00	27.95	27.25
7	19°18'32"	120.00	40.44	40.25
8	71°10'21"	40.00	49.69	46.55
9	16°15'37"	150.00	42.57	42.43

Joint Legend

E Standard Expansion Joint (without Dowels)
C Standard Contraction Joint
L Standard Longitudinal Joint

A Standard Construction Joint
H Hinge Joint, see General Note Sheet No. 10

Ref. No.	9" Reinf. Conc. Pavt	9" Reinforced Conc. Pav't As Per Plan	Subbase grading 21"	3" Subbase 703.08 or 703.10	Conc. Curb Type 2, Modified As Per Std. Dr.		4" Concrete Traffic Island	Subgrade Compaction	
	451		310		609		612	203	
	S.Y.	S.Y.	C.Y.	C.Y.	L.F.		S.Y.	S.Y.	
1P	392		58					392	
Sub Tot.	392		58					392	← For Proof Rolling
1C					554				
2C			197		635		456	436	
3C			37		143		82	82	
4C					404				
5C					192				
2P		3767		548				3767	
Total	392	3767	292	548	1908		518	4077	

NOTE:
For Curb Meger Detail See Typical Section Sheet No. 6

L.J.P. 5-13-68
A.D.L. 5-14-68
Rev. L.J.P. 10-13-77

CLAGUE RD. STA. 0+00 TO STA. 5+00 PAVEMENT DETAIL

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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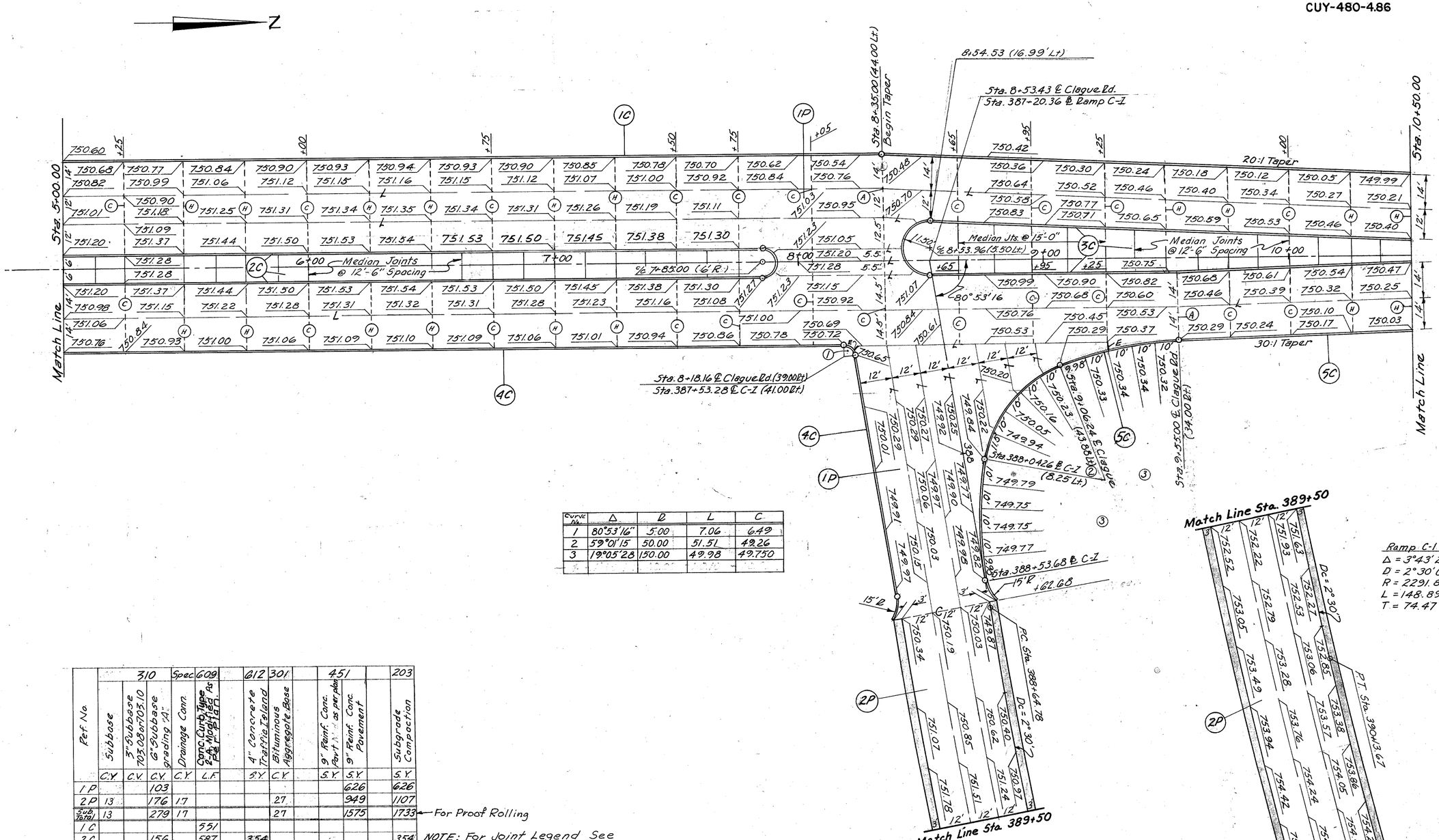

Curve No.	Δ	R	L	C
1	80°53'16"	5.00	7.06	6.49
2	59°01'15	50.00	51.51	49.26
3	19°05'28	150.00	49.98	49.750

Ramp C-1 Curve Data.
Δ = 3°43'20"
D = 2°30'00"
R = 2291.83'
L = 148.89'
T = 74.47'

Ref. No.	310 Subbase	3" Subbase 703.08or703.10	6" Subbase grading 'A'	Spec Drainage Conn.	609 Conc. Curb Type 2A Modified As Per Plan	612 4" Concrete Traffic Island	301 Bituminous Aggregate Base	451 9" Reinf. Conc. Pavement as per plan Part 1	9" Reinf. Conc. Pavement	203 Subgrade Compaction
	C.Y.	C.Y.	C.Y.	C.Y.	L.F.	S.Y.	C.Y.	S.Y.	S.Y.	S.Y.
1P			103						626	626
2P	13		176	17			27		949	1107
Sub Total	13		279	17			27		1575	1733
1C					551					
2C			156		587	354				354
3C			171		427	366				366
4C					434					
5C					256					
3P		330						3964		3964
Total	13	330	606	17	2255	720	27	3964	1575	6417

For Proof Rolling

NOTE: For Joint Legend See Detail Sheet No. 58

Des. By J.L. 5-13-68
Chkd. By A.DeL. 5-14-68
Rev. L.J.P. 10-13-77
Rev. D.R.S. 1-17-78

CLAGUE RD. STA. 5+00 TO STA. 10+50 PAVEMENT DETAIL

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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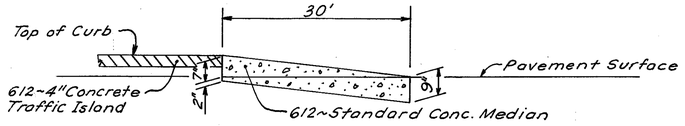
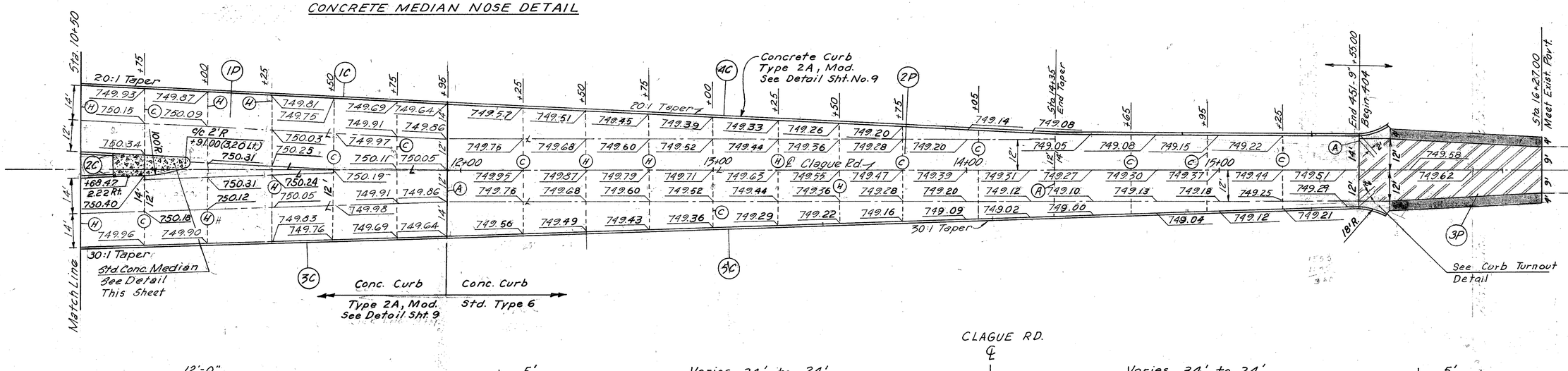
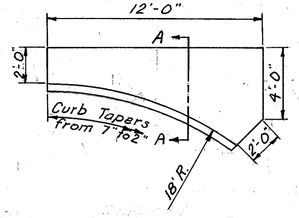
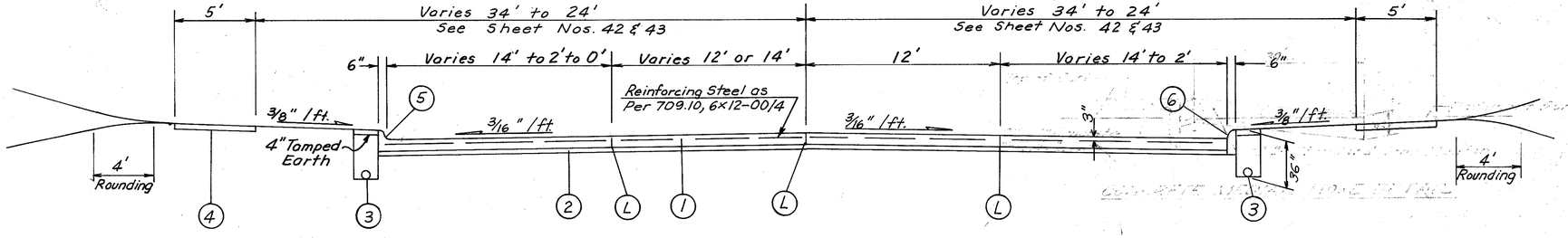
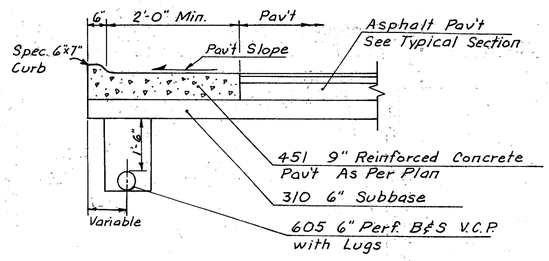


CONCRETE MEDIAN NOSE DETAIL









SECTION A-A

CURB TURNOUT DETAIL

LEGEND

1. 9" Reinforced Portland Cement Concrete Pavement, Modified as per plan
2. 3" Subbase, 703.08 or 703.10
3. 6" Perforated B&S V.C.P. with Lugs, See Sht. No. 9
4. 4½" Concrete Sidewalk
5. Concrete Curb, Type 2A Modified, See Sht. No. 9
6. Concrete Curb, Standard Type 6
- L. Standard Longitudinal Joint

NOTE: For Joint Legend See Detail Sheet No. 58

NOTE: Defer installation of Std. Type 6 Curb on east side to facilitate Traffic Maintenance as directed by the Engineer.

Ref. No.	451 9" Reinf. Conc. Pav't. as per plan	310 3" Subbase 703.08 or 703.10	310 6" Subbase grading 2A	402 2" Asphalt Concrete AC-20	304 6" Aggregate Base	408 Bituminous Prime Coat	609 Concrete Curb Standard Type 6	404 1¼ Asphalt Concrete AC-20	409 Seal Coat B.H. Material	409 Seal Coat Cover Aggregate No. 9	609 Concrete Curb Type 2-A As Per Plan	411 6" Stabilized Crushed Aggr.	203 Subgrade Compaction	612 4" Concrete Traffic Island	612 Standard Conc. Median
	S.Y.	C.Y.	C.Y.	C.Y.	C.Y.	Gal.	L.F.	C.Y.	Gal.	C.Y.	L.F.	C.Y.	S.Y.	S.Y.	S.Y.
1P	919	77											919		
2P	1560	130											1560		
3P	10		33	10	30	72		5	21	1	24	9	195		
1C											145				
2C			7								26		32	12	24
3C											145				
4C											372				
5C							372								
Total	2489	207	40	10	30	72	372	5	21	1	712	9	2706	12	24

Rev. D.R.S. 9-16-77
B.I.P. 8-26-70
I.R.B. 8-26-70

CLAGUE RD. STA. 10+50 TO STA. 17+05.00 PAVEMENT DETAIL

FED. RD. DIVISION	STATE	PROJECT	
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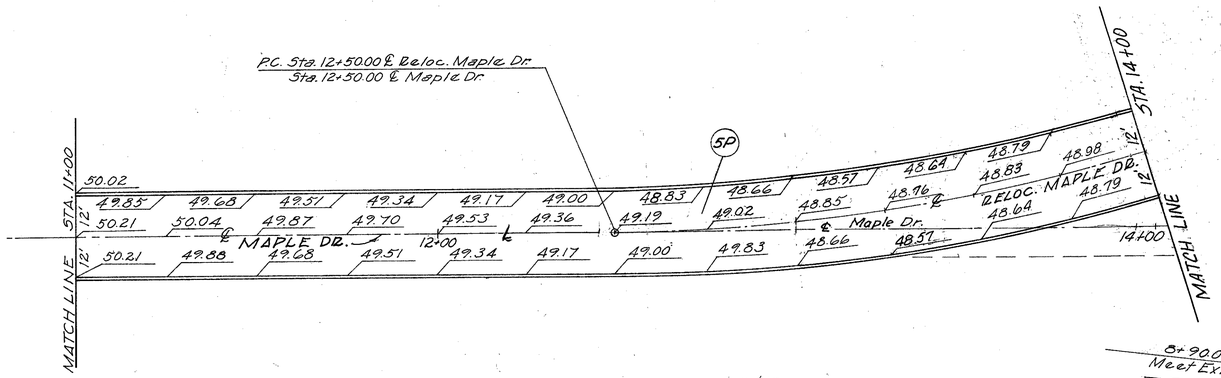
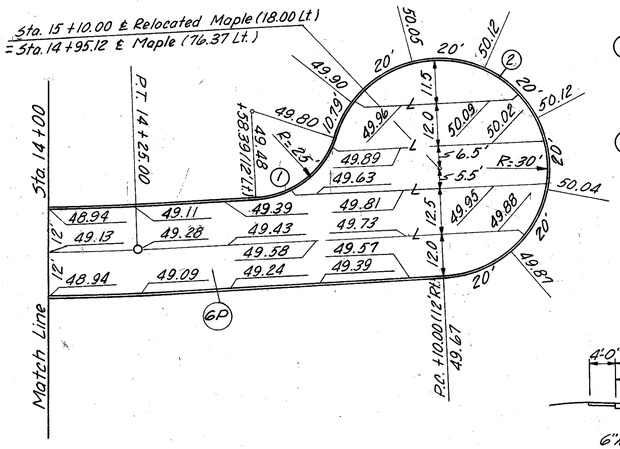
CROSS REFERENCE	
Sht. No.	Item
8	Curb Merger Detail

℄ CURVE DATA
Δ = 20°03'13"
R = 500.00'
D = 11°27'33"
L = 175.00'
C = 174.11
T = 88.40





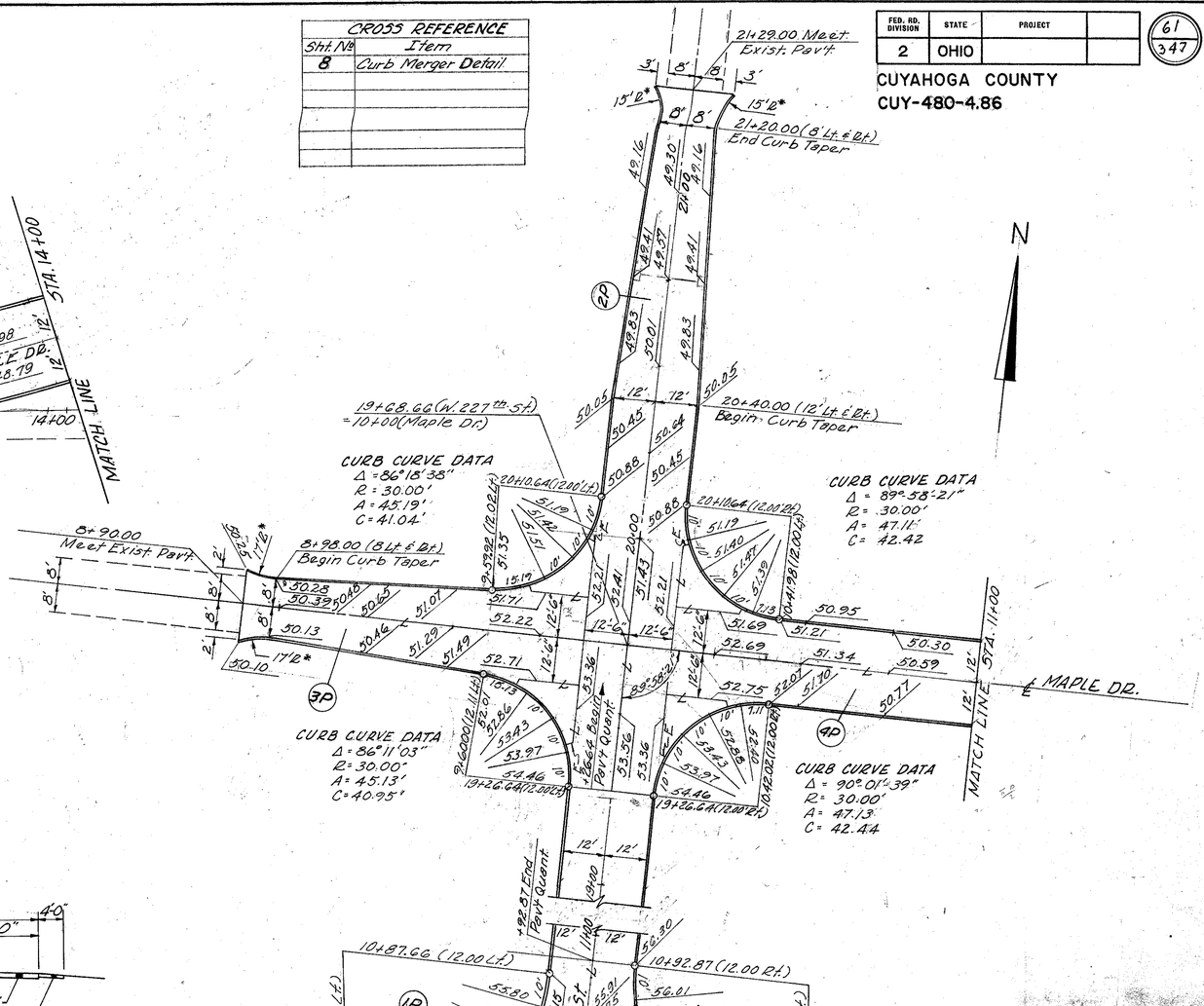
CURB CURVE DATA
① Δ = 69°47'26"
R = 25.00'
L = 30.45'
C = 28.60

② Δ = 249°47'26"
R = 30.00'
L = 130.79

EXISTING TYPICAL SECTION
BROOKPARK RD. (S.R. 17)

Ref. No.	310 6" Subbase	451 9" Rein. P.C. Conc. Pavt.		609 Curb Type 2-A	202 Curb Removed	203 Subgrade Compaction
	C.Y.	S.Y.		S.Y.	L.F.	L.F.
1P	30	291		174		297
2P	87	522		238		522
3P	46	276		232		276
4P	49	292		210		292
5P	139	833		600		833
6P	96	576		330		576
7P	53	318		246		318
ICR					333	
Total	520	3114		2030	333	3114

NOTE: For Joint Legend See Detail Sheet No. 58



W. 227th ST. & MAPLE DR. PAVEMENT DETAIL

T.R.B. 5-27-68
J.L. 5-28-68

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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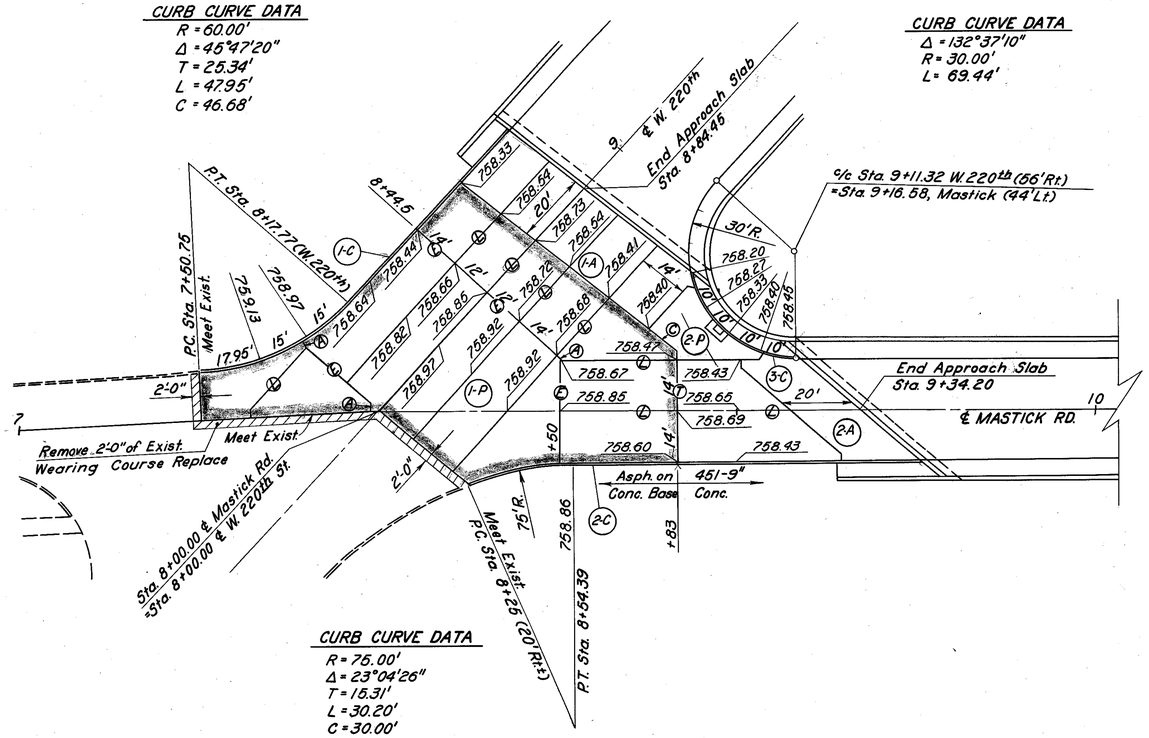
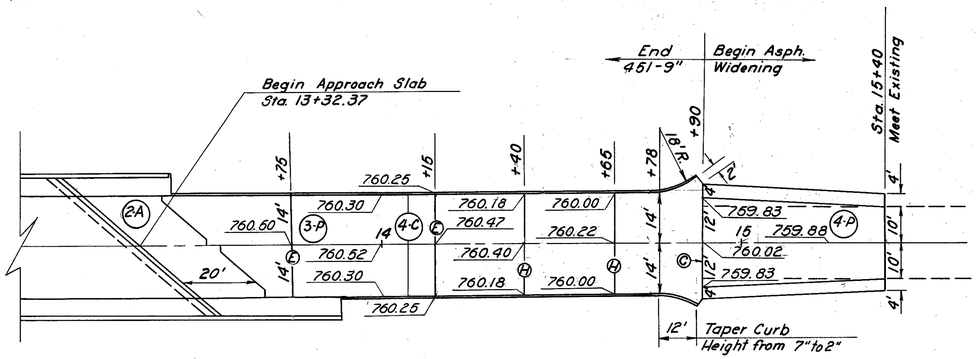
CUYAHOGA COUNTY
CUY-480-4.86

CURB CURVE DATA
R = 60.00'
Δ = 45°47'20"
T = 25.34'
L = 47.95'
C = 46.68'

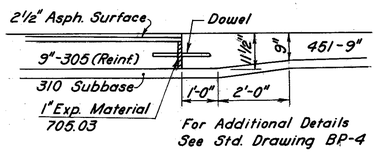
CURB CURVE DATA
Δ = 132°37'10"
R = 30.00'
L = 69.44'





JOINT LEGEND

L - Longitudinal Joint
C - Contraction Joint
E - Expansion Joint
A - Expansion Joint Without Dowels
T - Thickened Edge Expansion Joint, See Detail
H - Hinge Joint (See General Note)



THICKENED EDGE EXPANSION JOINT
STA. 8+83 MASTICK RD.

J.L. 7-14-71
W.A.M. 7-15-71
Chkd. L.J.P. 10-13-71

* As Per Item 451 (Modified As Per Plan)

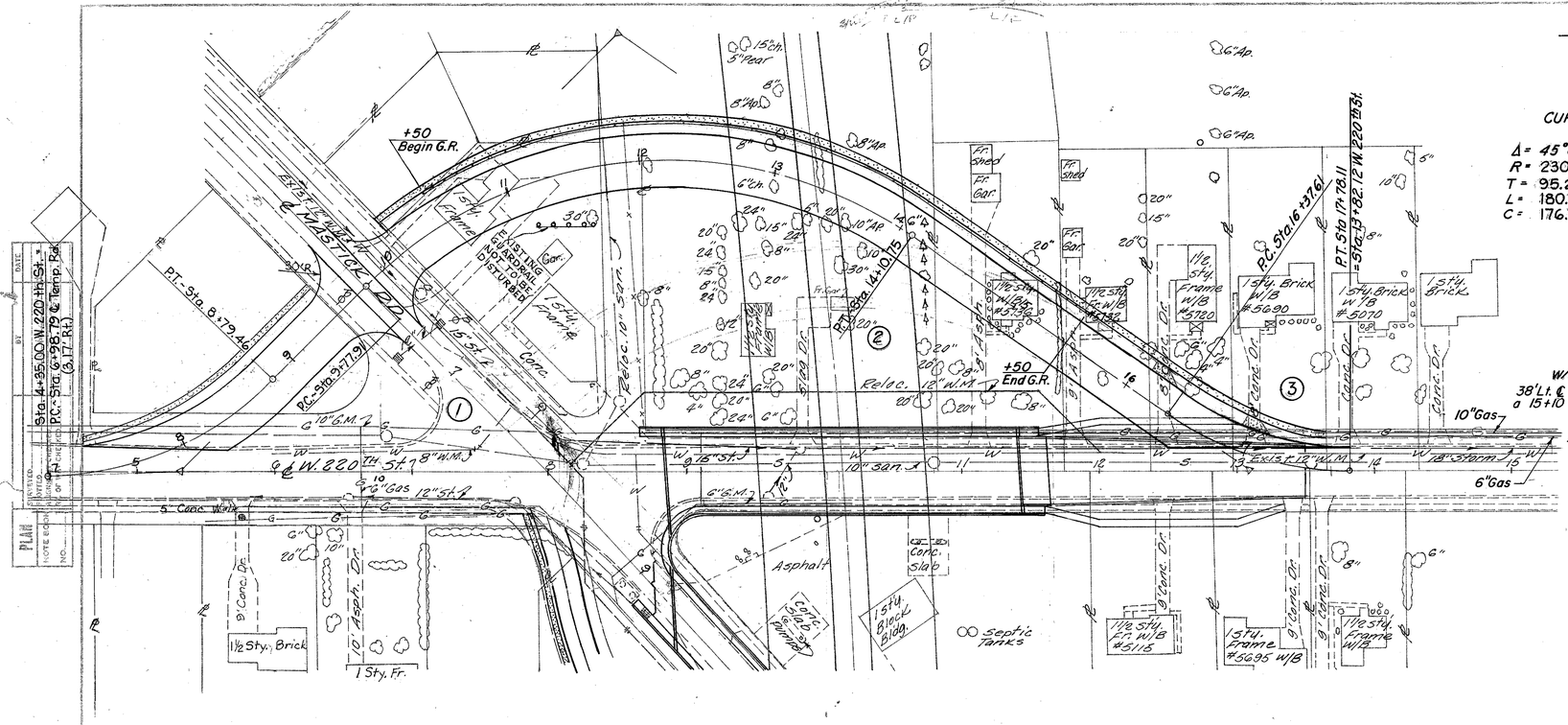
REFERENCE No.	203	304	305	310	310	402		404	407	408	409		411	451	202	609		611
	Subgrade Compaction	6" Aggregate Base	9" Rein. P.C. Conc. Base *	3" Subbase 703.08 or 703.10	6" Subbase	1½" Asph. Conc. AC-20	Asph. Conc. Leveling AC-20	1" Asph. Conc. AC-20	Tack Coat	Prime Coat	Seal Coat Bituminous Matl.	Seal Coat, Cover Aggr. No. 9	6" Stabilized Crushed Aggr.	9" Rein. P.C. Conc. Pav't, As Per Plan	Wearing Course Removed	Concrete Curb, Type 2-A, Mod. As Per Plan	Concrete Curb, Type 2-B, As Per Plan	Approach Slab (T-1.4)
	S.Y.	C.Y.	S.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	Gal.	Gal.	Gal.	C.Y.	C.Y.	S.Y.	S.Y.	L.F.	L.F.	S.Y.
1-P	649		649	54		28		18	66						21			
2-P	136			11										136				
3-P	443			37										443				
4-P	167	3			4	5	5	3	11	4	15	0.3	7		111			
1-A																		148
2-A																		127
1-C																20	95	
2-C																68	58	
3-C																40		
4-C																248		
Total	1396	3	649	102	4	33	5	21	77	4	15	⨯	7	579	132	376	153	275

MASTICK ROAD - PAVEMENT DETAILS

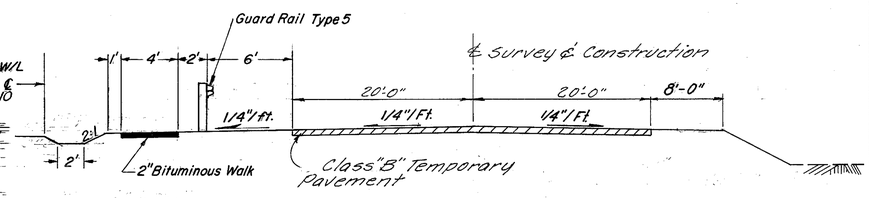
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

63
347

CUYAHOGA COUNTY
CUY-480-4.86

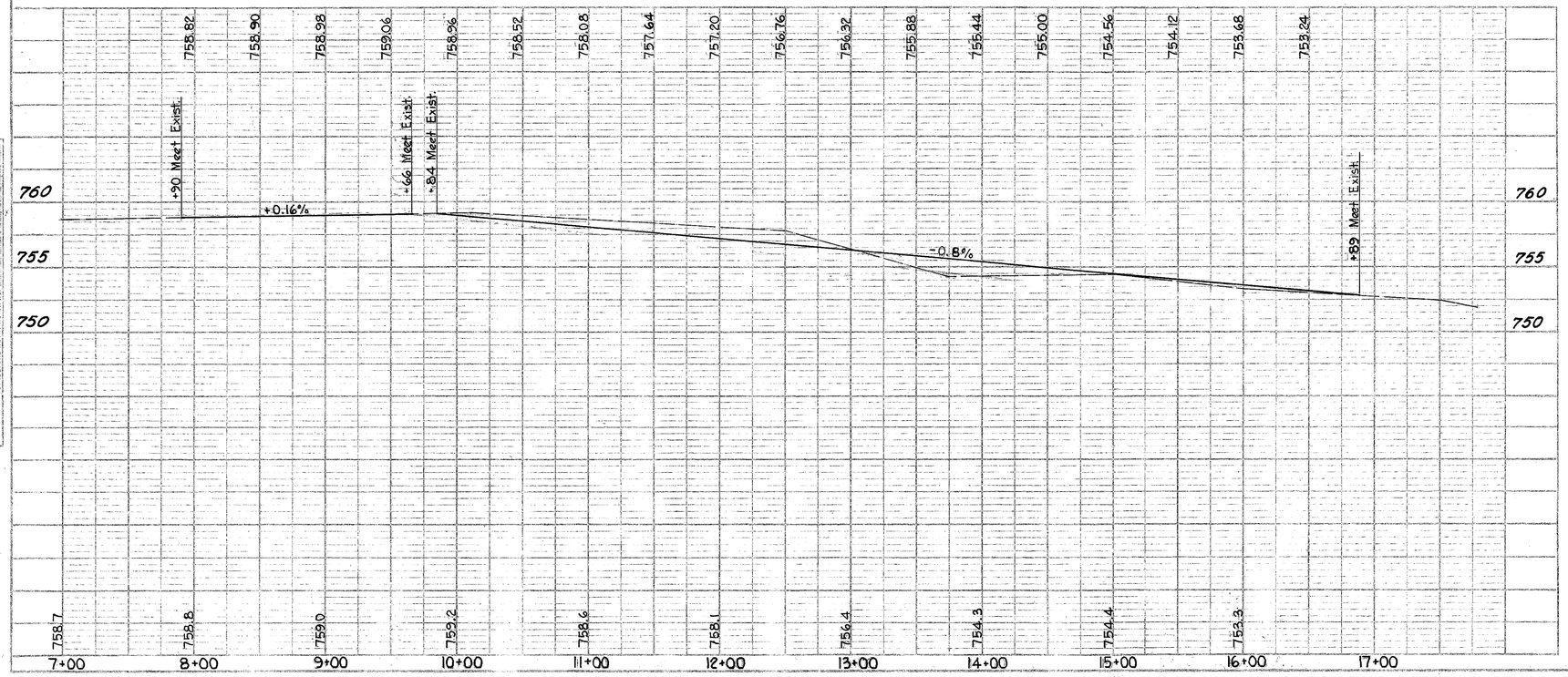


CURVE ①	CURVE ②	CURVE ③
Δ = 45°00'00"	Δ = 80°00'00"	Δ = 35°00'00"
R = 230'	R = 310'	R = 230'
T = 95.21'	T = 260.12'	T = 72.52'
L = 180.64'	L = 432.84'	L = 140.50'
C = 176.03'	C = 398.53'	C = 138.32'



TYPICAL SECTION
TEMPORARY ROAD

QUANTITIES		
Item 615	Class "B" Temporary Pavement	3,980 S.Y.
Item 615	Temporary Roads	Lump



CROSS REFERENCE	
52-53	Plan & Profile
80	San. Sewer
159	Water Works
62	Pav't. Detail
181	Pav't Marking

NOTE: Guard Rail, Type 5 and 2" Bituminous Walk are to be included in the Unit Price for Item 615-Temporary Road. The Contractor shall maintain all pavement markings as per 614.03 which cost shall be included in lump sum price for Item 614-Maintaining Traffic.

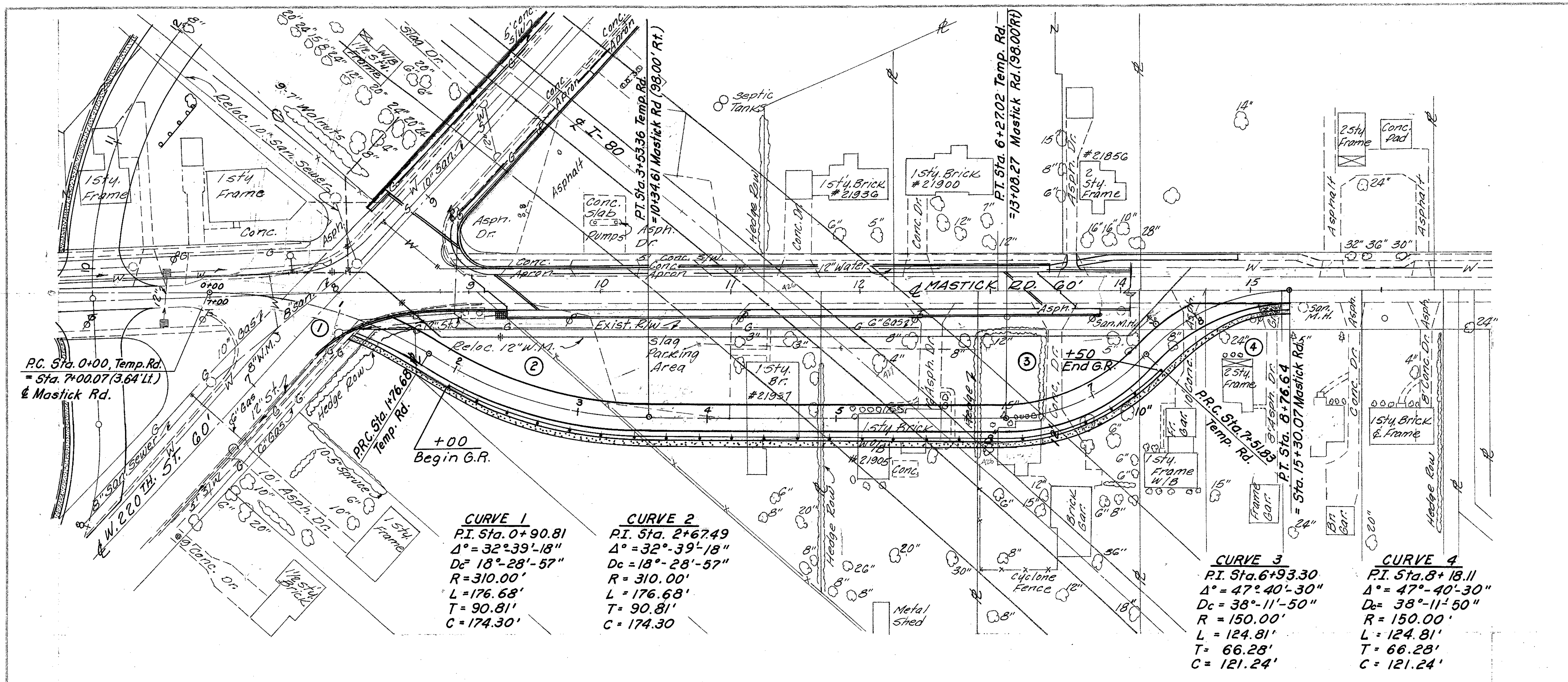
W.A.R. 10-16-70
T.R.B. 10-23-70

W. 220 TH ST. TEMPORARY ROAD — PLAN & PROFILE STA. 6+98.79 TO STA. 17+78.11

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

64
347

CUYAHOGA COUNTY
CUY-480-4.86

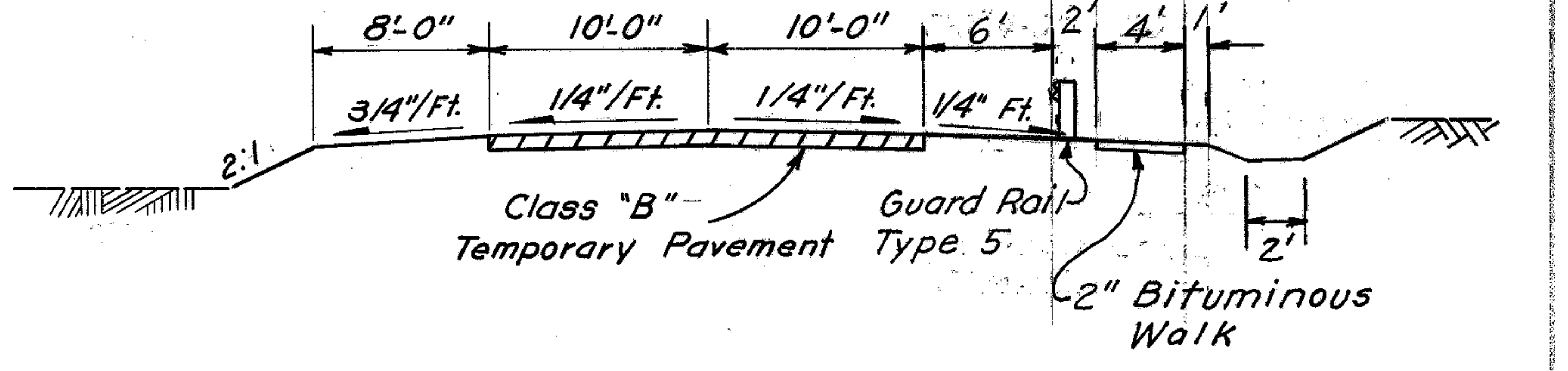


CURVE 1
P.I. Sta. 0+90.81
Δ° = 32°-39'-18"
Dc = 18°-28'-57"
R = 310.00'
L = 176.68'
T = 90.81'
C = 174.30'

CURVE 2
P.I. Sta. 2+67.49
Δ° = 32°-39'-18"
Dc = 18°-28'-57"
R = 310.00'
L = 176.68'
T = 90.81'
C = 174.30

CURVE 3
P.I. Sta. 6+93.30
Δ° = 47°-40'-30"
Dc = 38°-11'-50"
R = 150.00'
L = 124.81'
T = 66.28'
C = 121.24'

CURVE 4
P.I. Sta. 8+18.11
Δ° = 47°-40'-30"
Dc = 38°-11'-50"
R = 150.00'
L = 124.81'
T = 66.28'
C = 121.24'

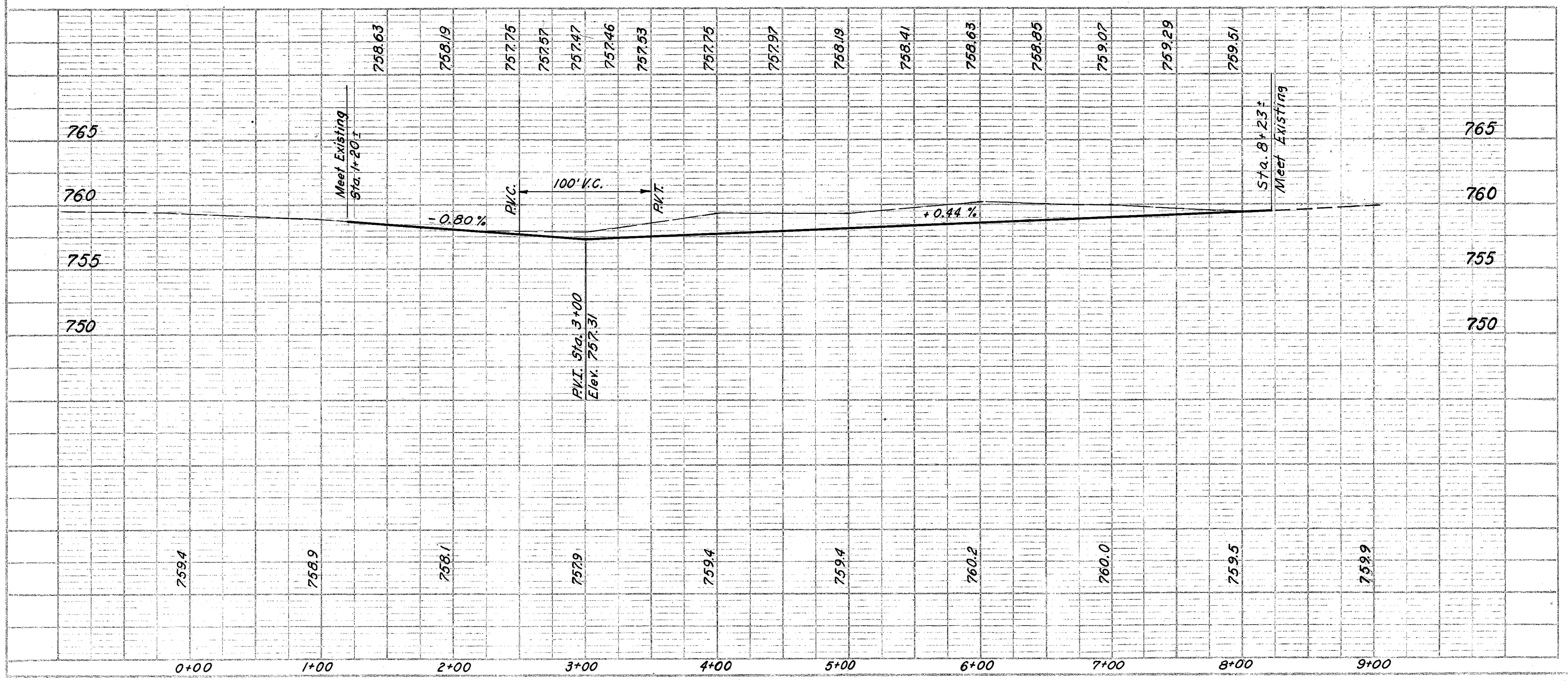


TYPICAL SECTION
TEMPORARY ROAD

QUANTITIES		
Item 615 Class "B" Temporary Pavement	1612 S.Y.	
Item 615 Temporary Road	Lump	

CROSS REFERENCE	
Sht. No.	ITEM
62	Pav't. Detail
54-55	Plan & Profile
160	Water Work
225	Lighting
181	Pavement Marking

NOTE- Guard Rail, Type 5 and 2" Bituminous Walk are to be included in the unit price for Item 615 "Temporary Road". The Contractor shall maintain all pavement markings as per 614.03 which cost shall be included in the lump sum price for Item 614 "Maintaining Traffic."



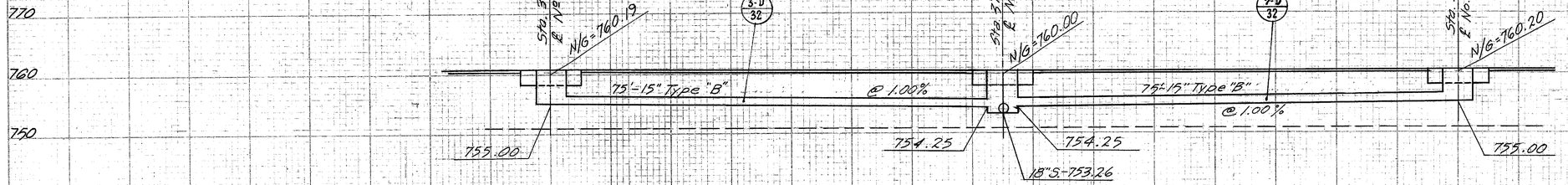
W.A.R. 10-9-70
TRB 10-23-70

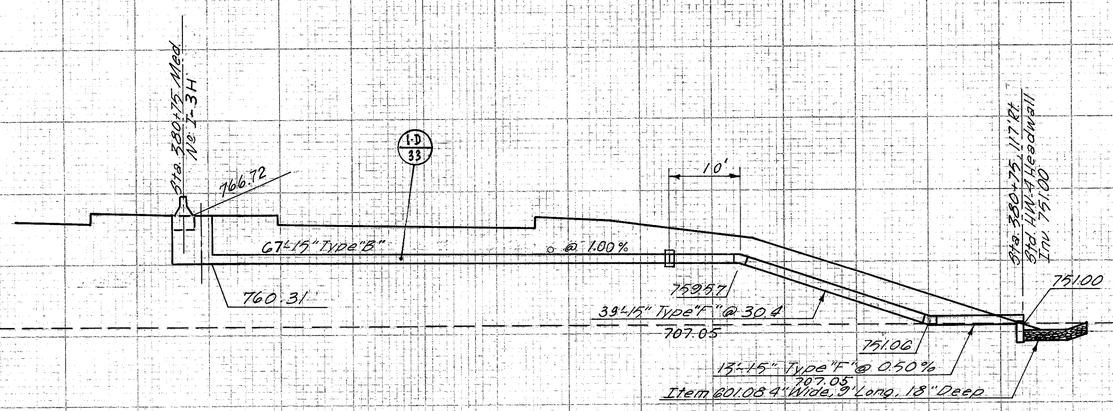
MASTICK ROAD TEMPORARY PAVEMENT PLAN & PROFILE STA. 0+00 TO STA. 8+76.64

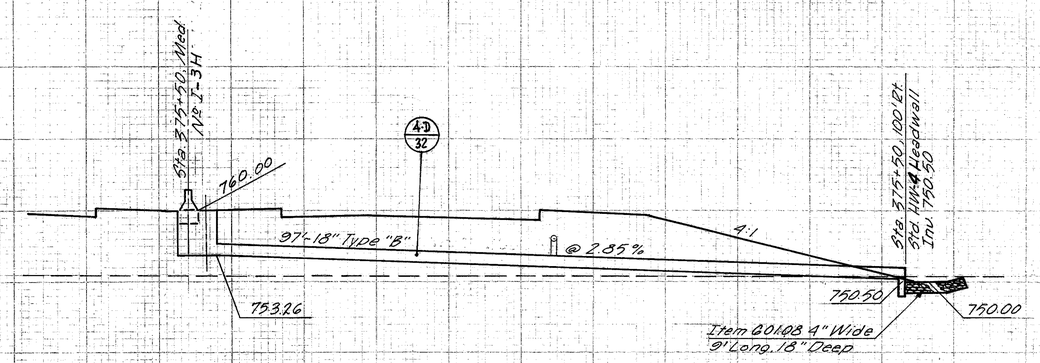
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

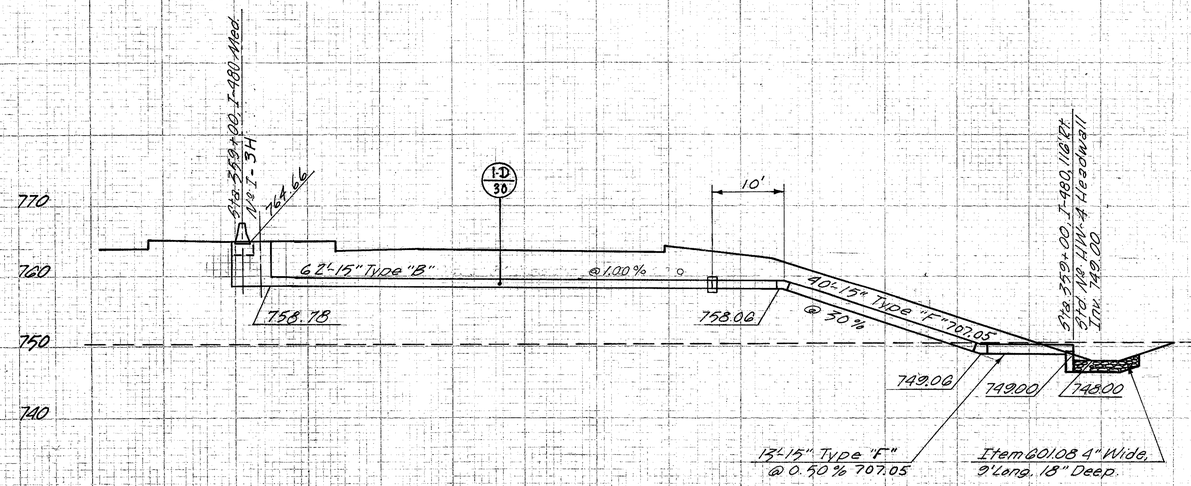
65
347

CUYAHOGA COUNTY
CUY-480-4.86









STORM SEWER PROFILES

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

66
347

CUYAHOGA COUNTY
CUY-480-4.86

Sta. 387+85, C-2, 35' Rt.
Std. No. 5 C.B. (Sag)
T/G. = 745.15

230'-21" Type "C" @ 0.44 %

739.22
21" E & W

20 / 45

Sta. 389+50, C-2, 26' Rt.
Std. No. 5A C.B. (Sag)
T/G. Elev. = 745.75

TD / 45

739.15
18" N.

738.21

737.96

A

TD / 45

Sta. 391+29, C-2, 38' Rt.
Std. No. 5A C.B.
T/G. = 746.85

186'-24" Type "C" @ 0.82 %

736.43

738.13
18" N.

736.18

340'-27" Type "C" 706.02 D-1250, 706.08 E.S. or 707.13 @ 0.82 %

80 / 45

B

Sta. 394+67, C-2, 20' Rt.
Std. No. 2 M.H.
T/C = 748.80

80 / 45

741.69
15" N.

735.39

326'-27" Type "C" 706.02 D-1500 or 707.13 @ 0.80 %

30 / 34

C

Sta. 398+00, C-2, 15' Rt.
Std. No. 2 M.H.
T/C = 743.60

30 / 34

For Sewer Profile Continuation
See Sheet No. 34

730.80
27" E & W.

734.50
15" N.

STORM SEWER PROFILES

FED. NO. DIVISION	STATE	PROJECT	
2	OHIO		

67
347

CUYAHOGA COUNTY
CUY-480-4.86

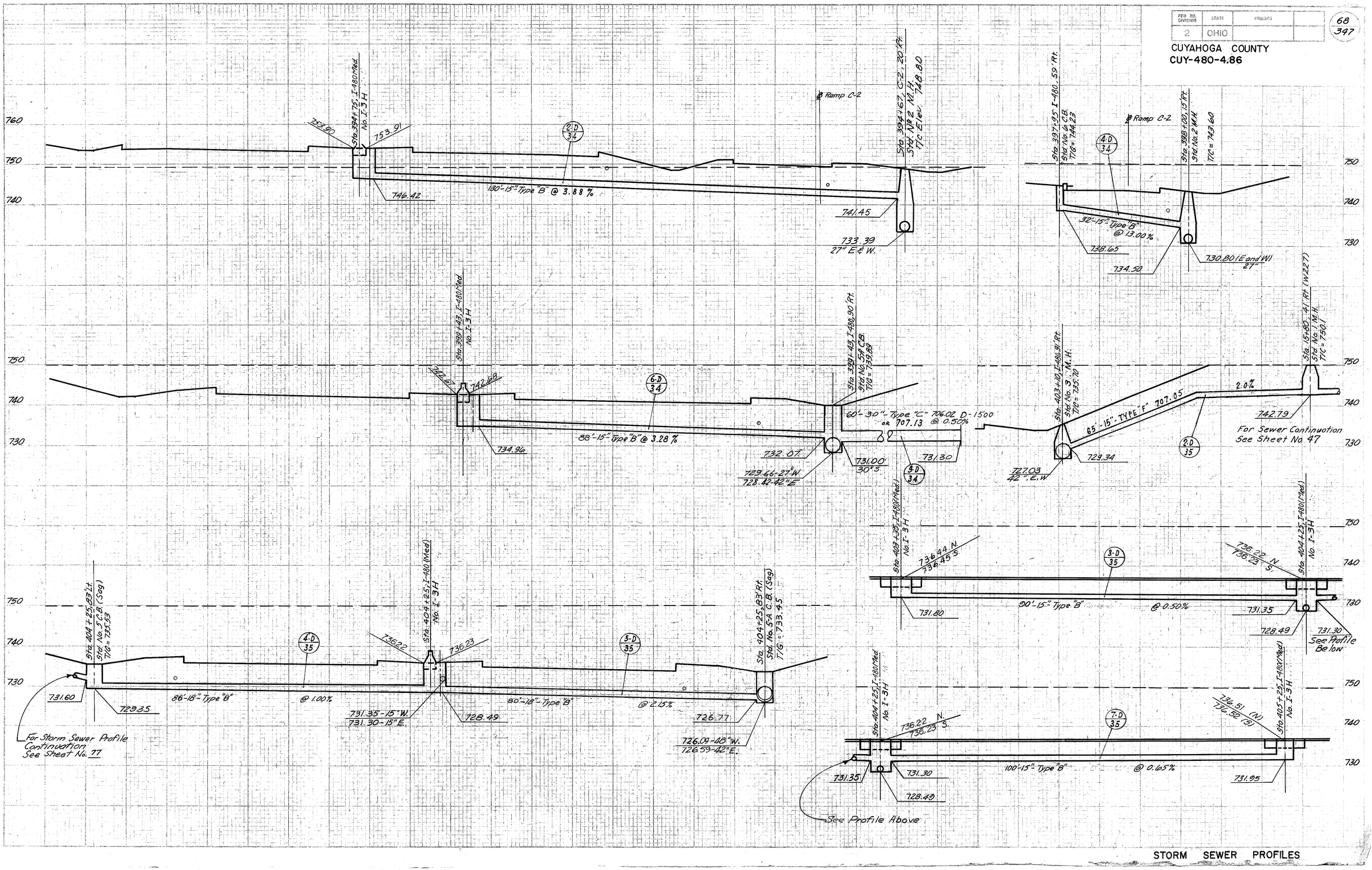
Sta. 389+90 (I-480 E)
No. I-3H
765.46
765.41
759.62
10"
8-D / 33
756.50
84'-15" Type 'B' @ 3.32%
133'-15" Type 'F' 707.05 @ 12.60%
Sta. 389+20 C-1 (74RT)
Std. No. S.C.B. w/B Grate
Tc = 747.26
1-D / 44
743.92
15"
743.67
18"
A
338'-15" Type 'C'
@ 0.68%
Sta. 389+50 C-2 45Lt
Std. No. S.C.B. (Sag)
Tc = 745.20
741.00
740.00
71'-18" Type 'B' @ 1.20%
5-D / 45
℄ Ramp C-2
Sta. 389+50 C-2 26Rt
Std. No. S-A C.B.
TC = 746.15
739.15
21"W. = 738.21
24"E = 737.06
Sta. 391+59 I-480 (97Lt)
Std. No. 2 M.H.
Tc = 755.86
741.40
740.20 15"N
739.95 18"S
Sta. 392+00 C-1 45Lt
Std. No. S.C.B.
Tc = 746.55
℄ Ramp C-1
2-D / 44
128'-15" Type "B" @ 1.46%
742.07
℄ I-80
1-D / 34
363'-18" Type "B" 706.02 D-2000, or 707.13 @ 0.50%
740.20
739.95
741.40
18" W
℄ Ramp C-2
Sta. 391+29 C-2 38Rt.
Std. No. S-A C.B.
TC Elev. 745.85
738.13
736.43 - 24"
736.18 - 27"

STORM SEWER PROFILES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

68
347

CUYAHOGA COUNTY
CUY-480-4.86

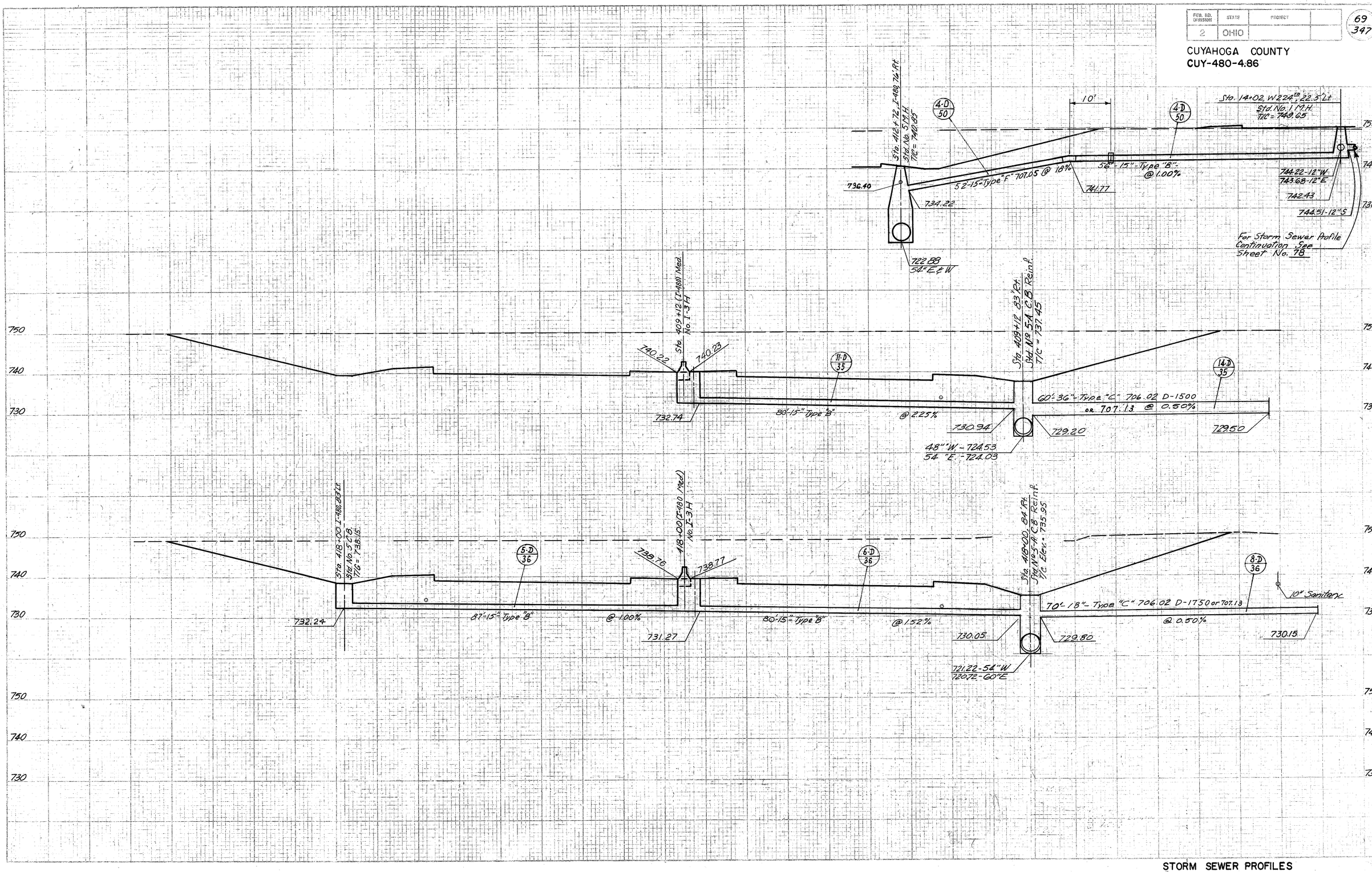


STORM SEWER PROFILES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

69
347

CUYAHOGA COUNTY
CUY-480-4.86



STORM SEWER PROFILES

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

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347

CUYAHOGA COUNTY
CUY-480-4.86

760
750
740
730
720

Sta. 423+00 I-480(Med.)
I-3H
734.69
734.70
729.00
2-D 37
86'-15"-Type "B" @ 5.48%
724.30
Sta. 423+00 (1480') 90° Rt.
Std. No. 5 M.H.
T/C = 734.57
731.30
719.12
60" E&W
65'-15" Type "F" 707.05 @ 40.04%
4-D 52
@ 1.00%
744.07
752.61-15" E.
55'-15" Type "C," 700.02
706.03
744.40
End-Class "C" Bedding @ 1.00%
738.7±
10" San
744.95
Sta. 8+60.40 Lt. (W 220°)
Std. No. 2 M.H.
T/C = 758.66
Exist. Storm M.H.
Sta. 8+08, 24' Lt. (W. 220°)
M.H. Adj. to Gr.
Exist. T/C = 758.85
New T/C = 758.89
± 22' Apron
1-D 52
or
745.55 Exist. 15" Storm (W.)
745.50 (Exist. 15" N.)
To be Bulkheaded
(See Plan & Profile
Sheet No. 52.)

750
740
730
720

Sta. 424+30, 83' Lt.
Std. No. 5 C.B. (Bag)
T/G = 733.66
Sta. 424+50 I-480(Med.)
I-3H
6-D 37
734.35
734.36
15" E. = 729.29
727.74
83'-15"-Type "B"
@ 1.00%
726.91
726.66
7-D 37
83'-18"-Type "B"
@ 3.32%
723.90
Sta. 424+32, 83' Rt.
Std. No. 5-A C.B. Reinf.
T/G = 731.48
718.64
60" E&W

750
740
730

Sta. 424+30 I-480(Med.)
I-3H
Pav't. Rt = 734.36
Pav't. Lt. = 734.35
9-D 37
100'-15"-Type "B" @ 1.00%
726.66
729.29
730.29
Sta. 425+30 Mad
I-3H
Pavt. Rt = 734.49
Pavt. Lt. = 734.48

750
740
730

Sta. 430+10.83' Lt.
Std. No. 5 C.B.
T/G = 735.05
Sta. 430+10 Med
I-3H
1-D 38
735.77
735.78
729.13
83'-15"-Type "B" @ 1.00%
728.30
728.30
2-D 38
83'-15"-Type "B" @ 3.50%
725.40
Sta. 430+10.83' Rt.
Std. No. 5-A C.B. Reinf.
T/G = 732.87
716.69
60" E&W

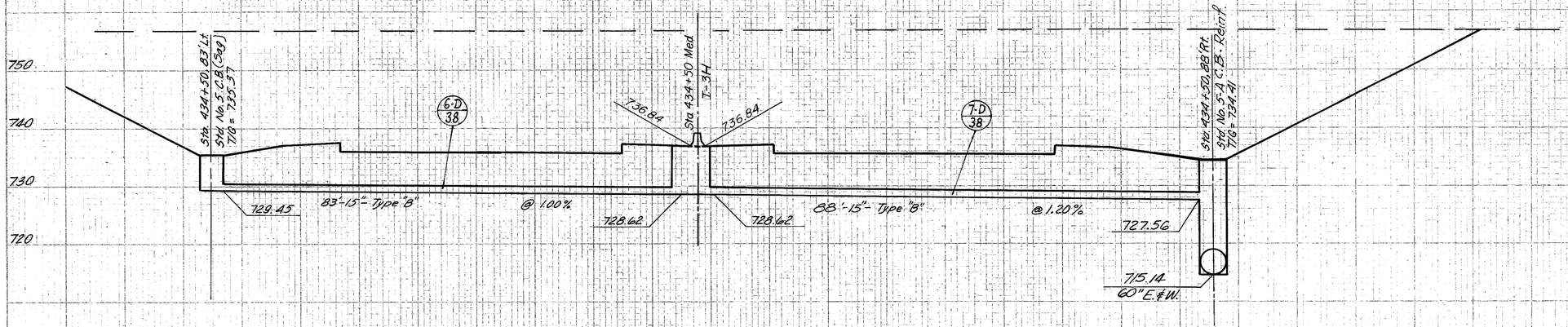
Sta. 13+95, 24' Rt. (Mastick) = Sta. 428+04, 152.24' Lt. (Z-480)
Sta. 428+04, I-480, 90' Lt.
Std. No. 1 M.H.
T/C Et. = 760.36
Sta. H.W. 4 Headwall
760
750
740
730
12" E-754.00
12" N-753.54
753.00
12'-15" Type "F" @ 1.00% 707.05
752.88
42'-15" Type "F" @ 40.44%
10-D 37
735.90
11'-15" Type "F" @ 0.50% 707.05
735.85
734.9
Item 601.08
4' W x 12' Lg. x 18" Deep

STORM SEWER PROFILES

FED. ROAD SYSTEM	STATE	PROJECT	
2	OHIO		

71
347

CUYAHOGA COUNTY
CUY-480-4.86

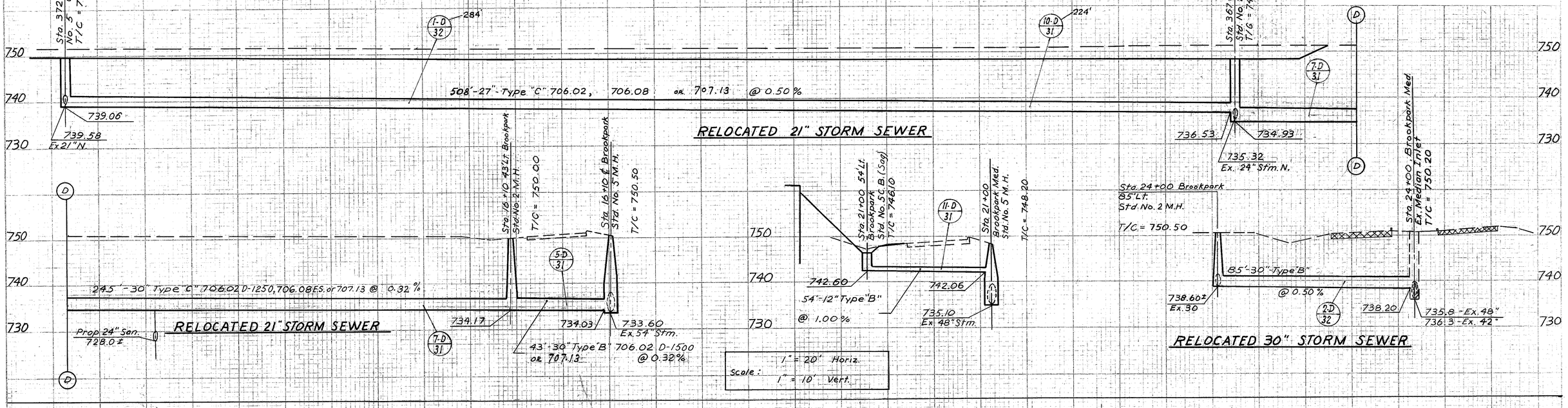


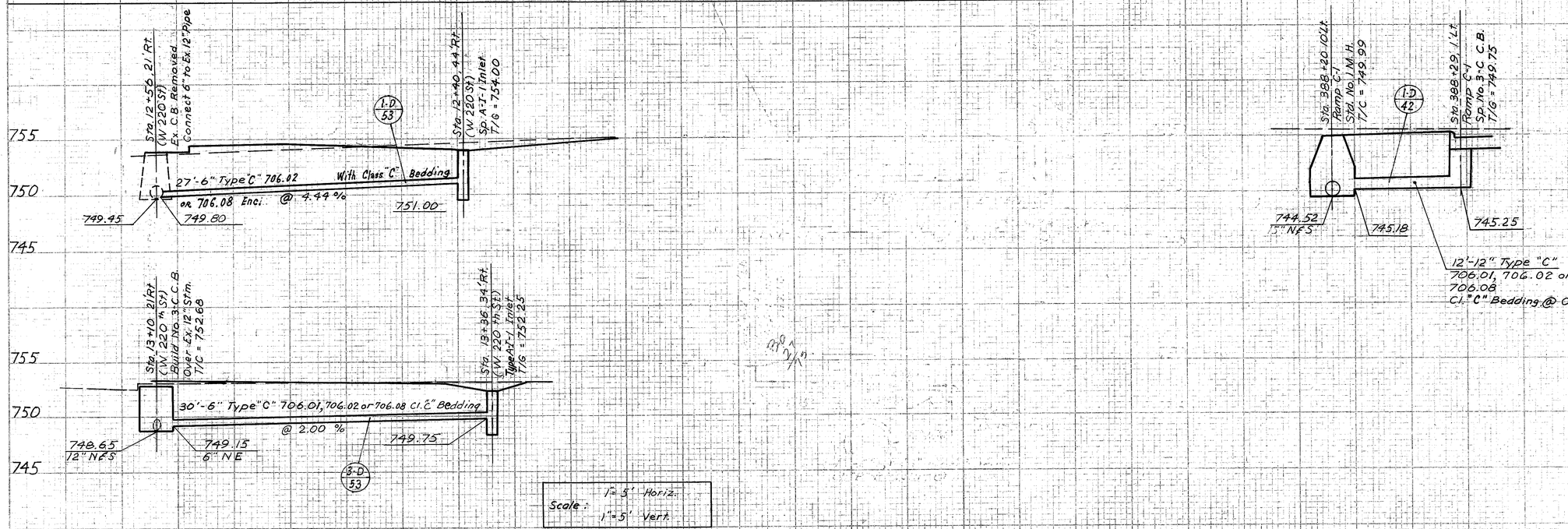
STORM SEWER PROFILES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

72
66

CUYAHOGA COUNTY
CUY-480-4.86





STORM SEWER PROFILE

FED. ROAD DESIGNATION	STATE	PROJECT	
2	OHIO		

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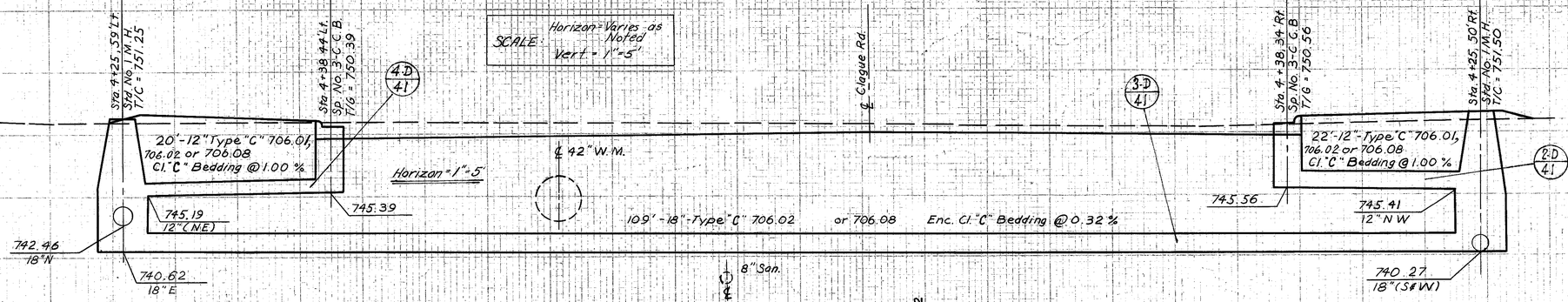
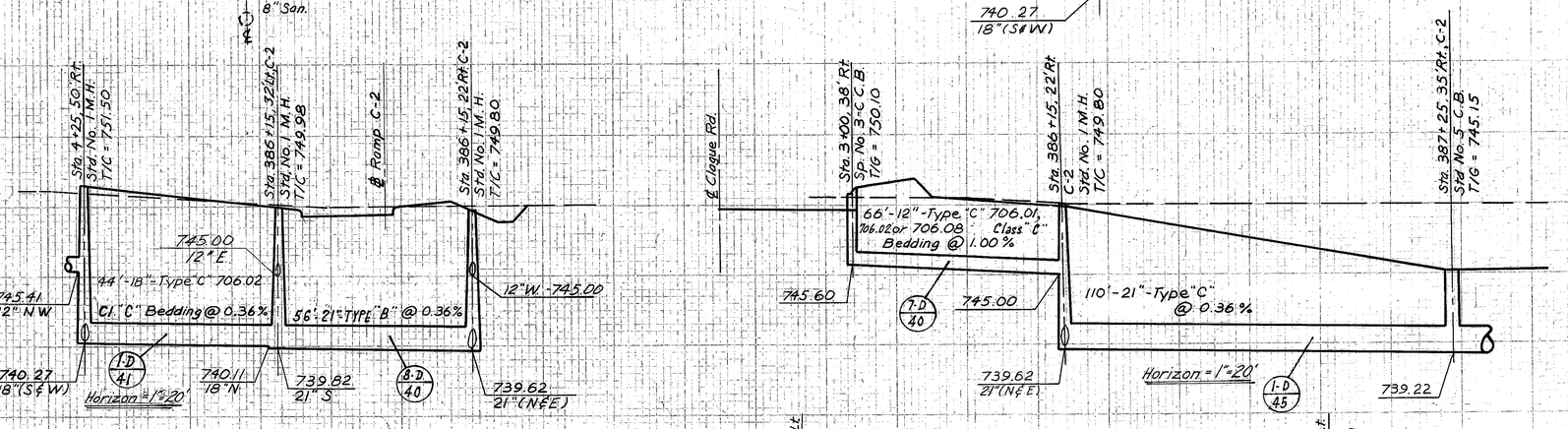
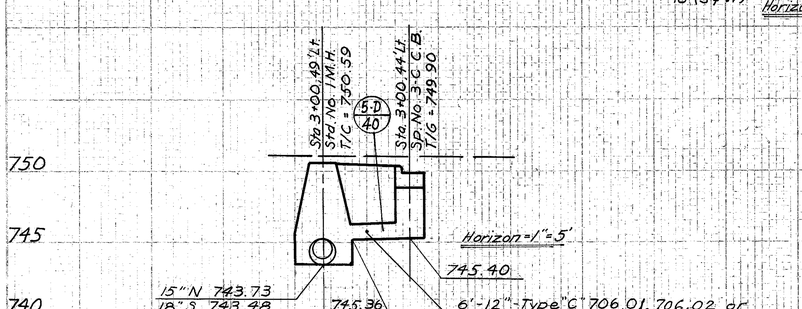
367

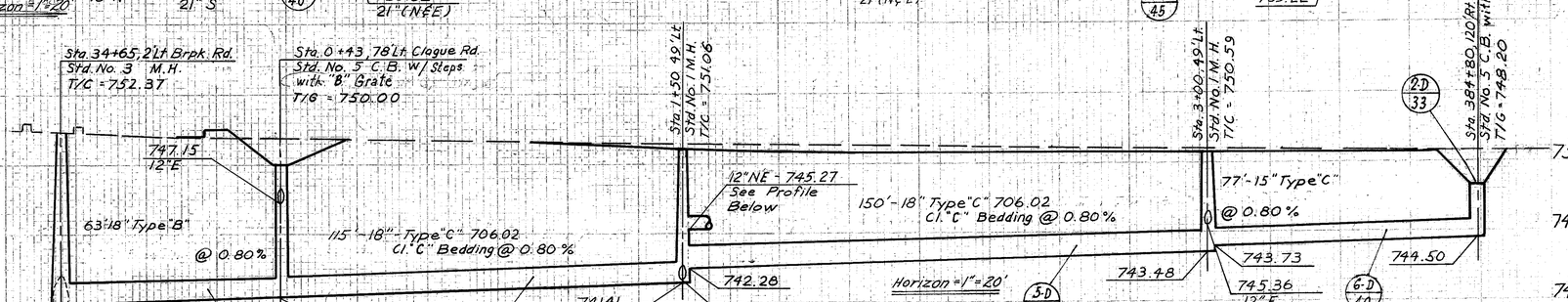
CUYAHOGA COUNTY
CUY-480-4.86

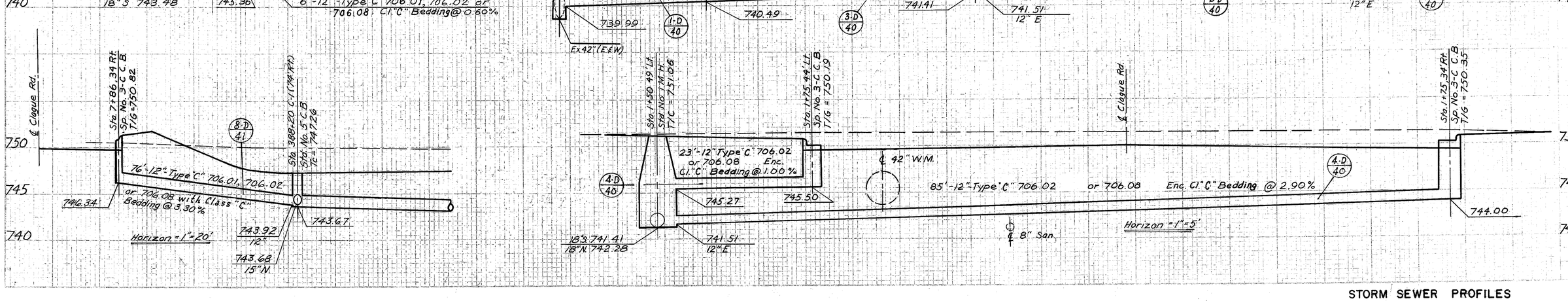
SCALE: Horizon = Varies as Noted
Vert = 1"=5'











STORM SEWER PROFILES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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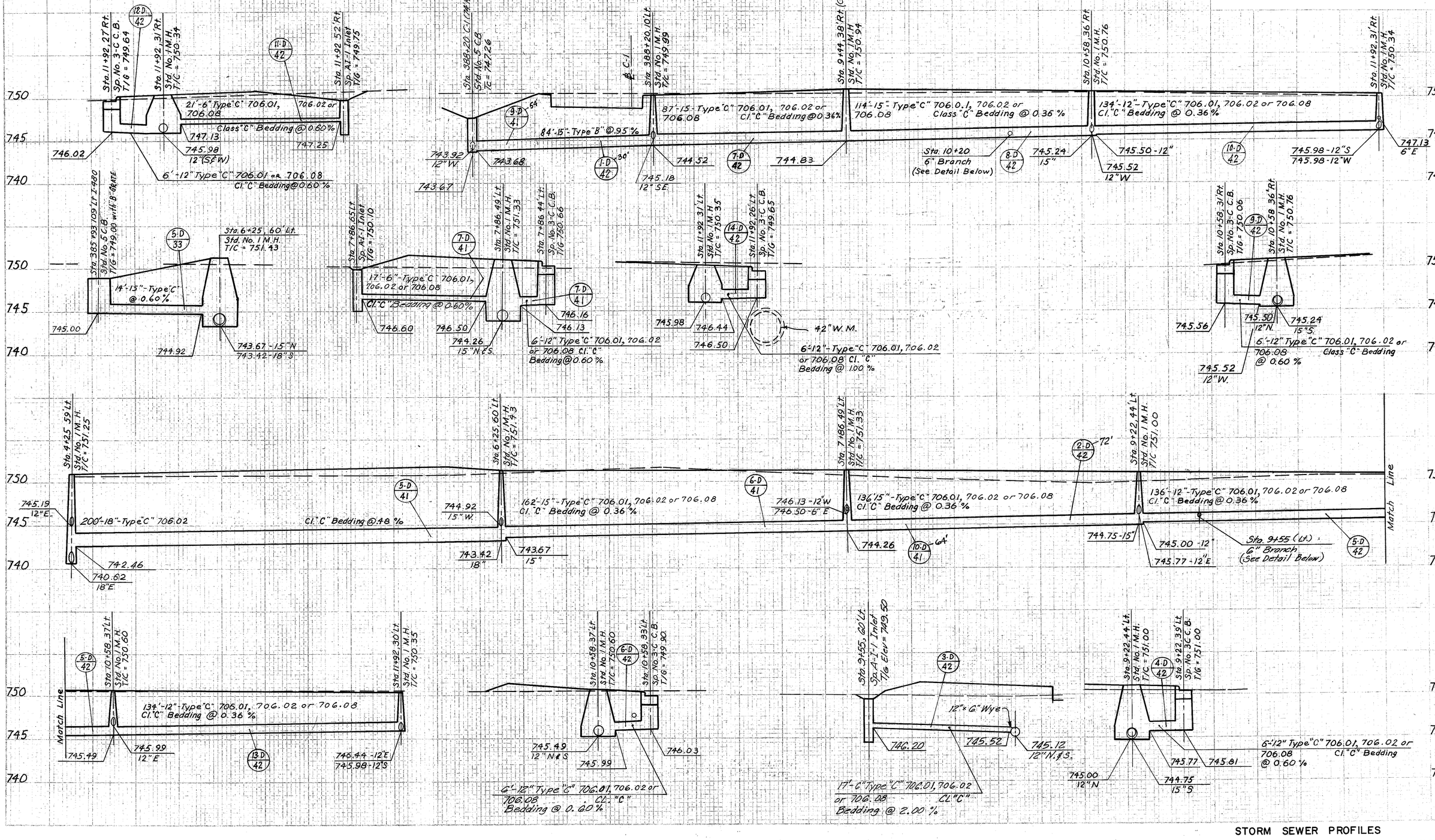
347

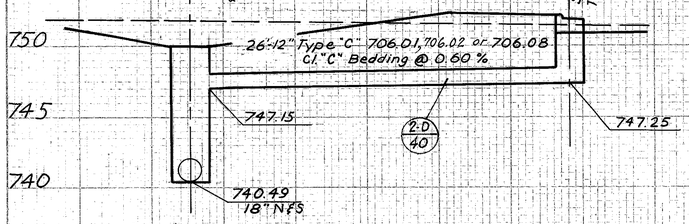
CUYAHOGA COUNTY
CUY-480-4.86

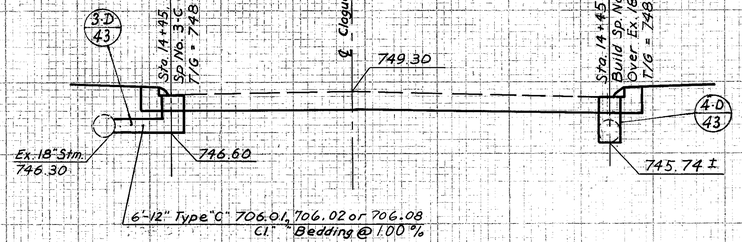


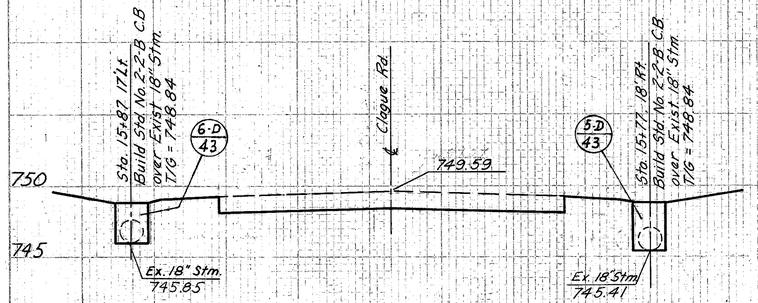
STORM SEWER PROFILES

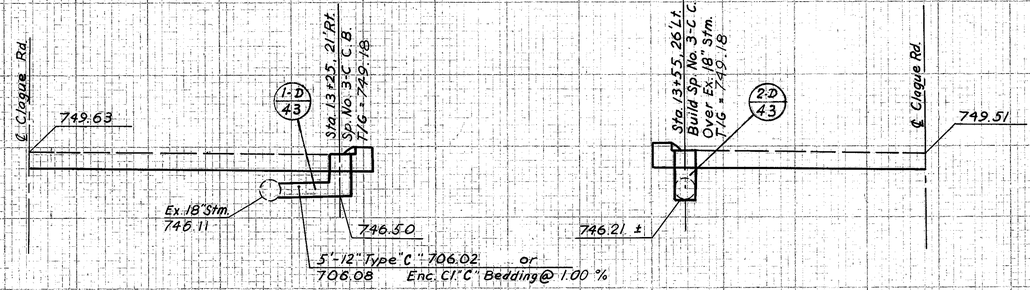
FED. RD. DIVISION	STATE	PROJECT		75 347
2	OHIO			

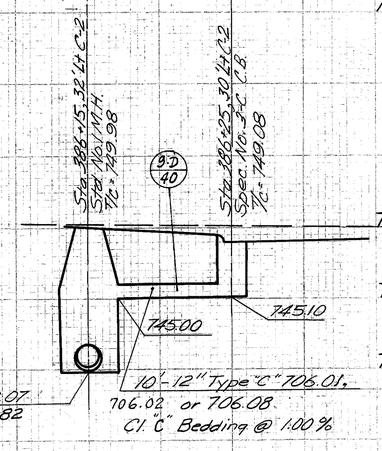
CUYAHOGA COUNTY
CUY-480-4.86

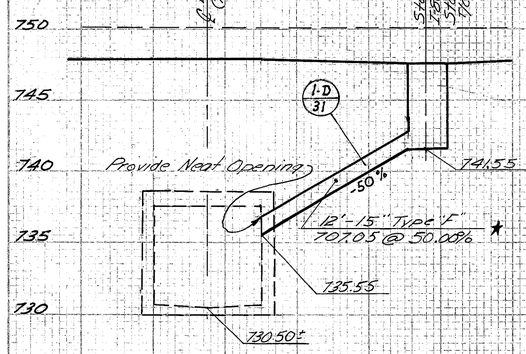


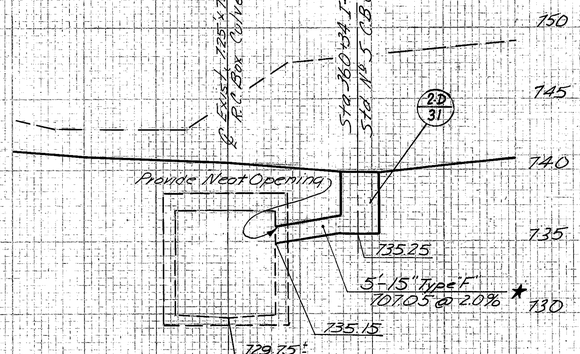


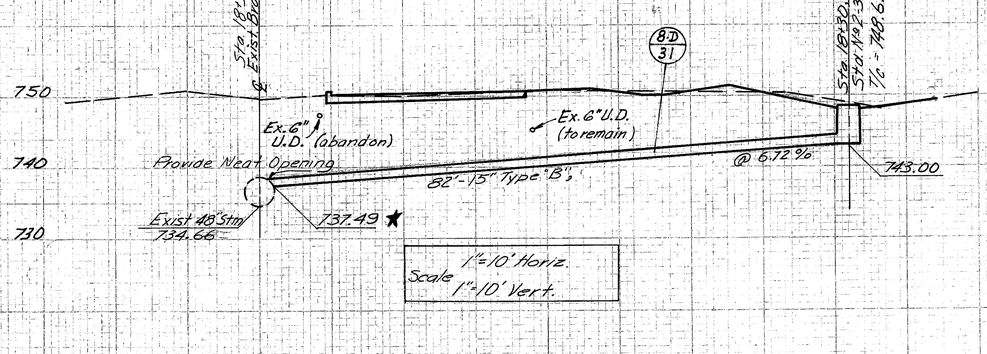












★ Note: Cost of grouted opening into existing culvert to be included in price bid for lin. ft. of pipe.

STORM SEWER PROFILES

FED. ROAD SYSTEM	STATE	PROJECT	
2	OHIO		

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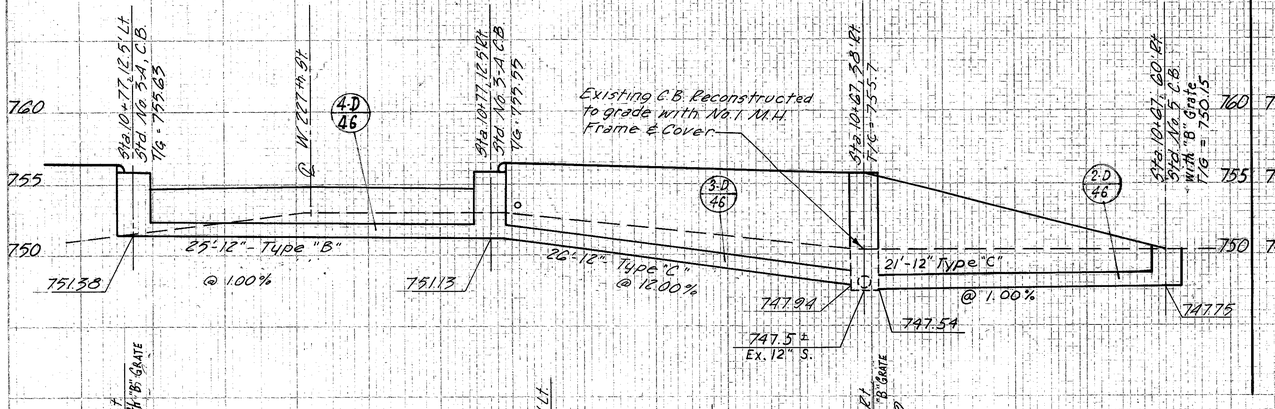
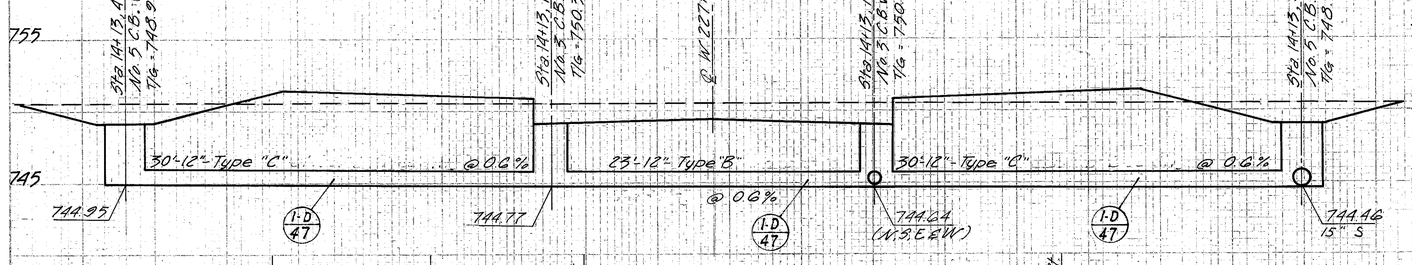
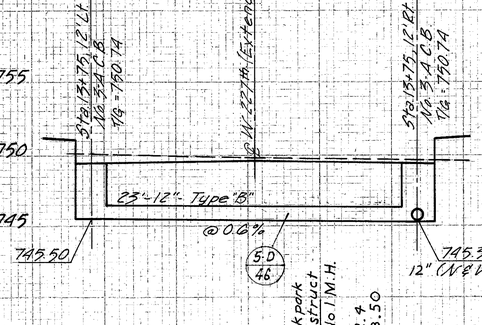
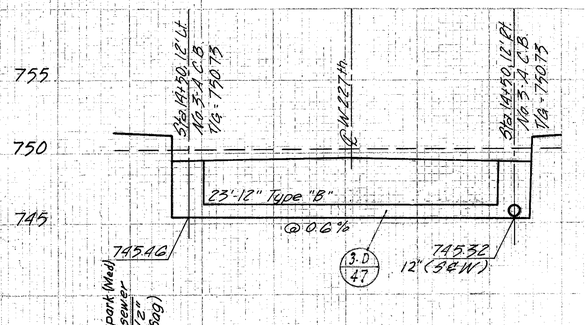
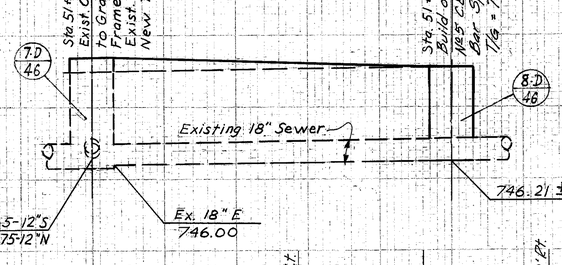
CUYAHOGA COUNTY
CUY-480-4.86

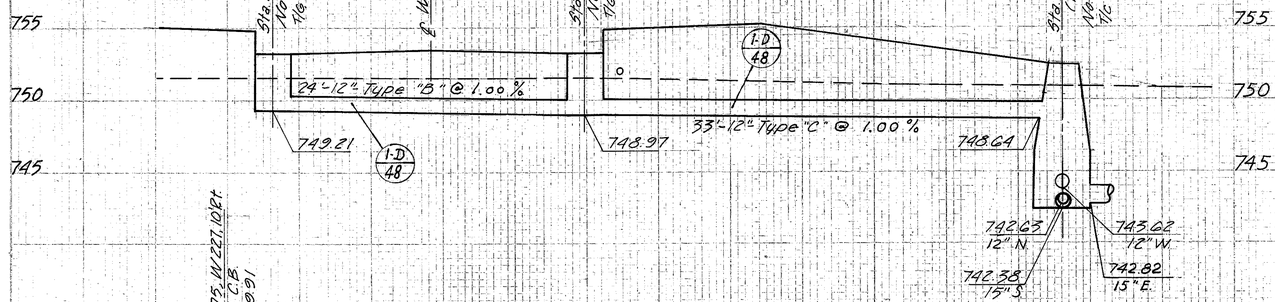


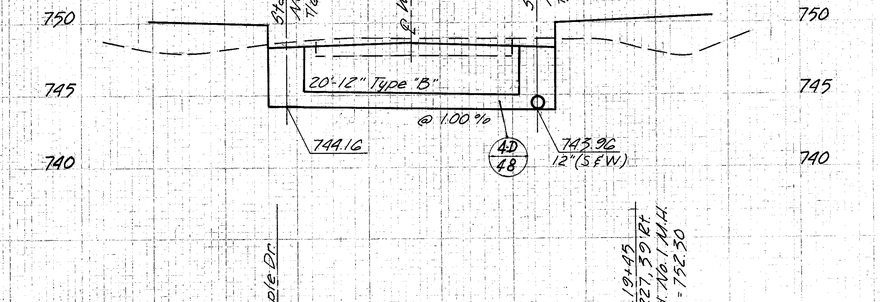


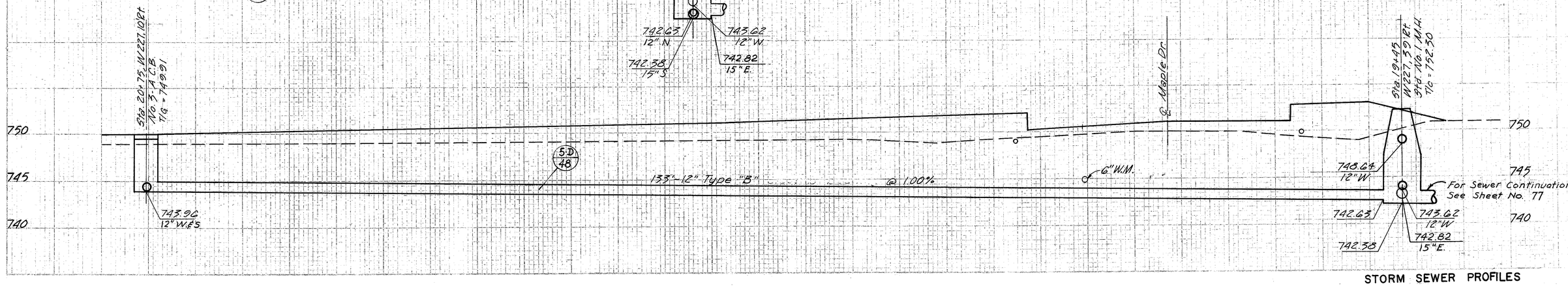












STORM SEWER PROFILES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
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SCALE : 1"=20' Horiz.
1"=5' Vert.

Sta 3+88 Maple Dr. 19'Lt.
Std No 2-2.8 C.B.
T/G = 749.00

Maple Dr.

3-D 48

36'-12"- Type "B" @ 1.00%

745.50

745.14
12" E F N

Sta 3+88 Maple Dr. 17'Rt.
Std No 2-2.8 C.B.
T/G = 749.00

Sta 13+14, 12'Lt.
No 3A C.B.
T/G = 748.97

26'-12" Type "B" @ 0.60%

744.61

2 Ex. 8" San. Sewer

4-D 49

744.47
12" N.E.F.W

Sta 13+35, 12'Rt.
No 3-A C.B.
T/G = 748.97

Storm Sewer Profile
Continued this Sheet

Sta. 12+45, 18'Rt. (Maple Dr.)
Std. No. 1 M.H.
T/C = 749.76

744.86 - 12 N

81'-12" Type B

743.73
15" W

743.98

@ 0.60 %

3-D 49

Sta. 13+25, 12'Rt. (Maple Dr.)
No. 3A C.B.
T/G = 748.57

744.47
12" N.E.F.W

62'-12" Type "B"

@ 0.60%

Sta. 13+85, 12'Rt. (Maple Dr.)
No. 3-A C.B.
T/G = 748.86

5-D 49

744.84
12" N.E.F.W

Sta 12+45, 12'Lt.
No 3-A, C.B.
T/G = 749.04

2-D 49

Maple Dr.

Sta 12+45, 12'Rt.
No 3-A C.B.
T/G = 749.04

2-D 49

Sta 12+45, 18' Rt.
Std. No. 1 M.H.
T/C = 749.76

24'-12" Type "B"

745.04

@ 0.60%

744.90

6'-12" Type C
@ 0.60%

744.86
12" N.

743.73 - 15" W.
743.98 - 12" E

Sta 13+95, 12'Lt.
No 3A C.B.
T/C = 748.91

Maple Dr.

6-D 49

Sta 13+95, 12'Rt.
No 3-A C.B.
T/G = 748.86

27'-12" Type "B" Class "B"

745.00

Bedding @ 0.60%

Ex. 8" San. Sewer

744.89
12" W.F.N

Sta 13+75, 12'Rt. (W 227.7m)
Std. No 3-A C.B.
T/G = 750.74

6-D 46

38'-12" - Type "B" @ 2.00 %

745.37
12" N.F.W.

1-D 47

Sta 14+13, 12'Rt. (227.7m)
Std. No. 3-A C.B.
T/G = 750.39

744.64
12" N F S

37'-12" - Type "B" @ 1.80%

2-D 47

Sta 14+50, 12'Rt. (W 227.7m)
Std No 3-A C.B.
T/G = 750.73

745.32
12" W F S

Sta. 19+45 39 Rt (W 227.7m)
Std. No. 1 M.H.
T/C = 752.30

748.64
12" W

For Storm Sewer Profile
Continuation
See Sheet No. 76

70'-15"- Type "C" @ 1.00%

742.63
12" N.

743.62
12" W

742.38

742.82
15" E.

Sta. 19+45
W 227.39 Rt.
Std No. 1 M.H.
T/C. 752.30

Sta. 10+38 24.5 Rt.
(Maple) =
Sta 19+45
W 227.39 Rt.
Std No. 1 M.H.
T/C: 752.30

8-D 35

10'

741.58

42.15'- Type "F" 70.705 @ 31.20%

Sta 12+45, 18' Rt. (Maple)
Std. No. 1 M.H.
T/C = 749.76

Sta 10+25.1 480.83 Lt.
Std. No. 6 C.B. (Sag)
T/G = 735.55

731.60

729.35

For Storm Sewer Profile
Continuation
See Sheet No. 68

For Storm Sewer Profile Continuation
See Profile this Sheet (77)

Sta. 10+38 24.5' Rt. (Maple)
= Sta 19+45 W 227.7m 5.92 Rt.
Std No. 1 M.H.
T/G = 752.30

748.64
12" W

743.62

742.63
12" N.

742.38
19" S

742.82
15" E

Sta 8+88 Maple Dr. 17' Rt.
Std No 2-2.8 C.B.
T/G = 749.00

12" W - 748.64

6-D 48

42'

207'- 15" Type C @ 0.44 %

1-D 49

744.86
12" N

743.98 - 12" W

12" W - 743.62

742.82

742.63 12" N
742.38 15" S

743.73

C.W 227.7m Sta

152'-12" - Type "B" @ 1.00%

2-D 48

745.19
12" E E N

STORM SEWER PROFILES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
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Sta. 13+50.15 Lt. (W.224th.)
Std. No. 2-2 C.B.
T/G = 749.00

℄ W. 224th St.

Sta. 13+50.15 Rt. (W.224th.)
Std. No. 2-2 C.B.
T/G = 749.00

Sta. 13+50.15 Lt. (W.224th.)
Std. No. 2-2 C.B.
T/G = 749.00

2-D / 50

Sta. 14+02.22 Lt. (W.224th.)
Std. No. 1 M.H.
T/C = 749.65

Sta. 14+10.29 Lt.
Std. No. 3-A C.B.
T/G = 749.53

4-D / 50

Sta. 14+02.22 Rt.
Std. No. 1 M.H.
T/C = 749.65

℄ W. 224th St.

Sta. 14+10.29 Rt. (W.224th.)
Std. No. 3-2 C.B.
T/G = 749.43

3-D / 50

744.51 – 12" S.

30'-12" Type "B" @ 0.60%

52'-12" Type "B" @ 0.60%

52'-12" Type "B" @ 0.60%

744.82
12" N.

1-D / 50

745.0

744.82
12" W

744.51

744.22-12" W
743.68-12" E

742.43

744.28

744.22

743.68

742.43 15" N.

10'-12" Type "B"
@ 0.60%

743.99

For Strom Sewer Profile
Continuation See Sheet
No. 69

Sta. 8+60.40 Lt. (E.W.220th.)
Std. No. 2 M.H.
T/C = 758.66

Sta. 8+55.28 Lt. (E.W.220th.)
S.P. No. 3-C C.B.
T/G = 758.39

℄ W. 220th St.

Sta. 8+55.38 Rt.
W. 220th St.
Std. No. 1 M.H.
T/C = 758.50

Mastick Rd.

Sta. 9+15.14 Rt. (Mastick Rd.)
S.P. No. 3-C C.B.
T/G = 758.45

3-D / 52

64'-12" Type "C" 706.02 or 706.08 Enc. Class "C" Bedding @ 1.00%

58'-12" Type "C" 706.02 or 706.08 Enc. Class "C" Bedding @ 1.00%

753.38

753.73
12" N

753.95

2-D / 52

2-D / 54

752.61

752.76

15'-12" Type "C"
706.01, 706.02 or 706.08
Class "C" Bedding @ 1.00%

744.95

Sta. 8+95.5, 22.5 Lt. (Mastick Rd.)
S.P. No. 3-C C.B.
T/G = 758.31

Sta. 8+55.38 Rt. (W. 220 St.)
Std. No. 1 M.H.
T/C = 758.54

1-D / 54

753.92

753.73

31'-12" Type "C" 706.02 or 706.08
Enc. Class "C" Bedding @ 0.60%

753.38
12" E. & W.

Sta. 13+49.14 Lt.
Sp. No. 3-C C.B.
T/G = 759.39

℄ Mastick Rd

Sta. 13+95.14 Rt.
Sp. No. 3-C C.B.
T/G = 759.39

Sta. 13+95.24 Rt.
Std. No. 1 M.H.
T/C = 760.36

759.00
12" E.

52'-12" Type "C" 706.02 or 706.08 Enc. Class "C" Bedding @ 1.00%

754.39

1-D / 55

753.89

753.64

753.54

2-D / 55

753.00

10'-12" Type "C" 706.01, 706.02 or 706.08
Class "C" Bedding @ 1.00%

For Sewer Continuation
See Sheet No. 70

STORM SEWER PROFILE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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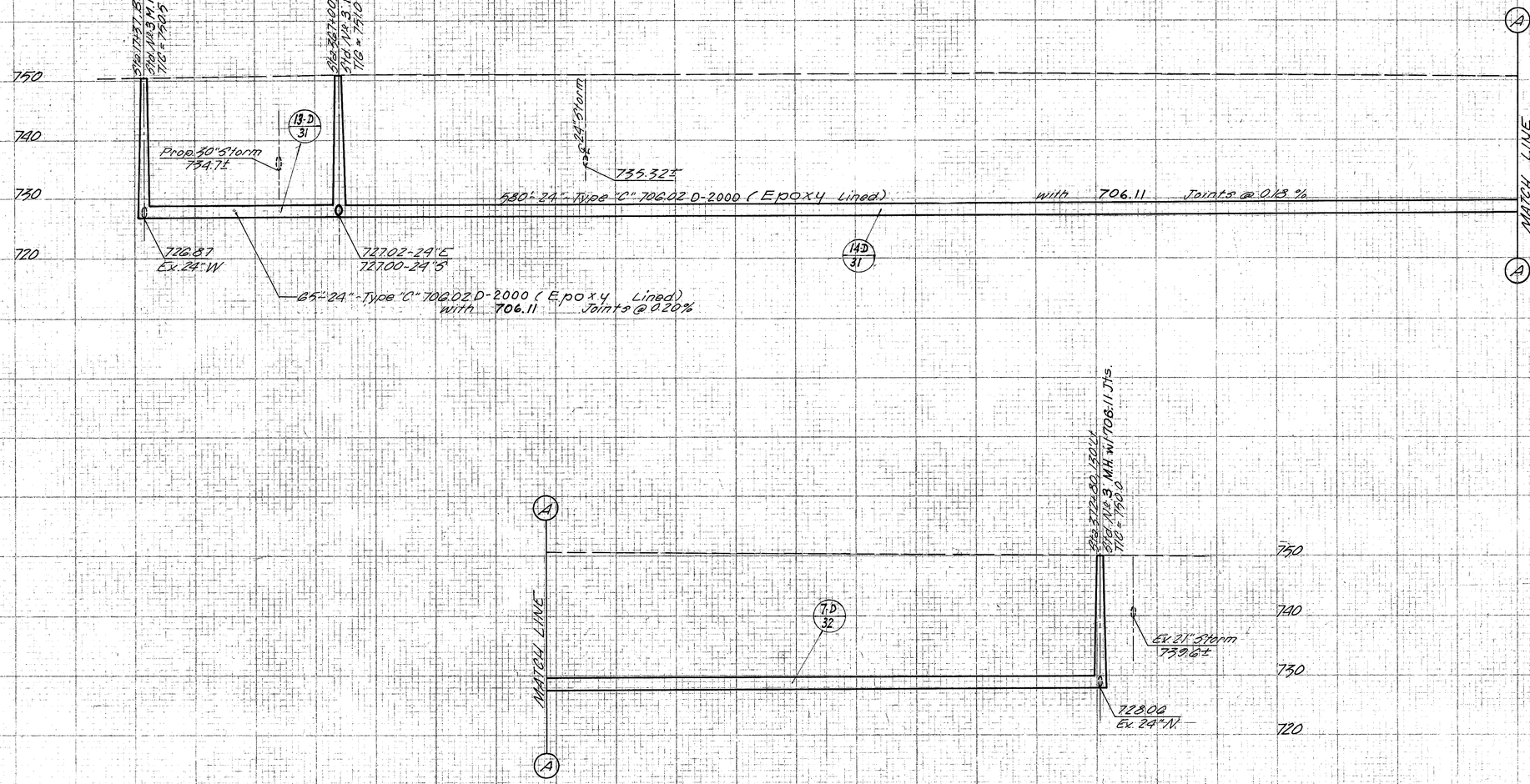
CUYAHOGA COUNTY
CUY-480-4.86



NOTE: For Plan Location see Sheets Nos. 31 & 32

Scale: 1" = 20' Horiz.
1" = 10' Vert.

RELOCATED 24" SANITARY SEWER

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

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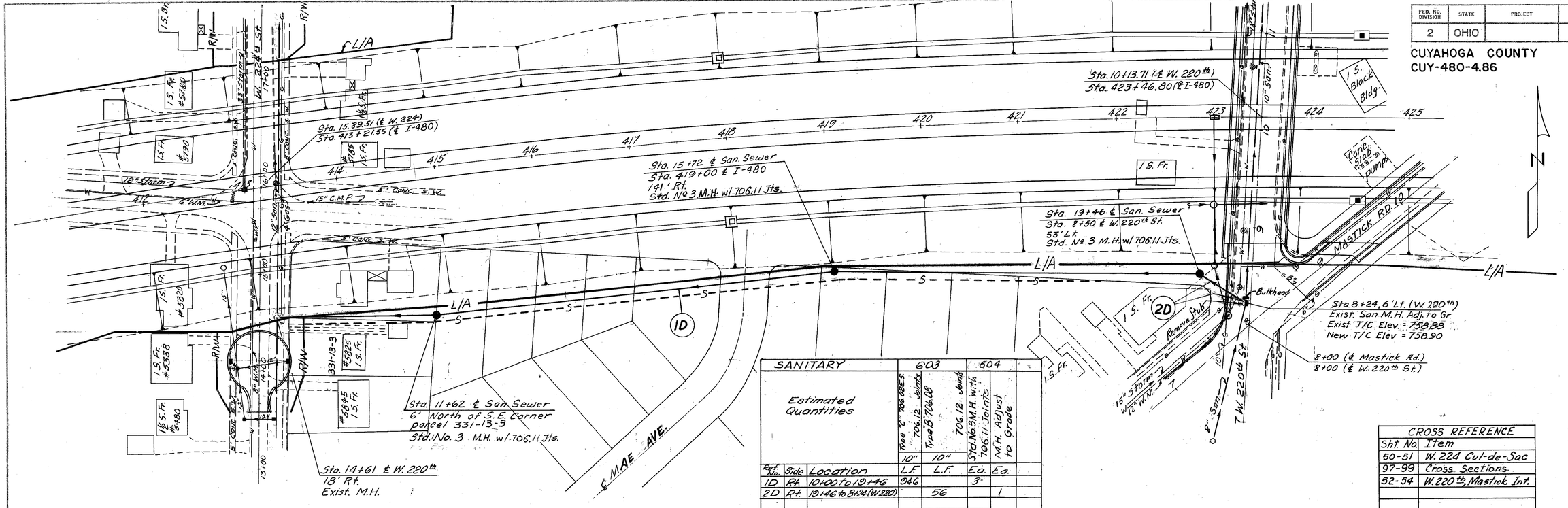
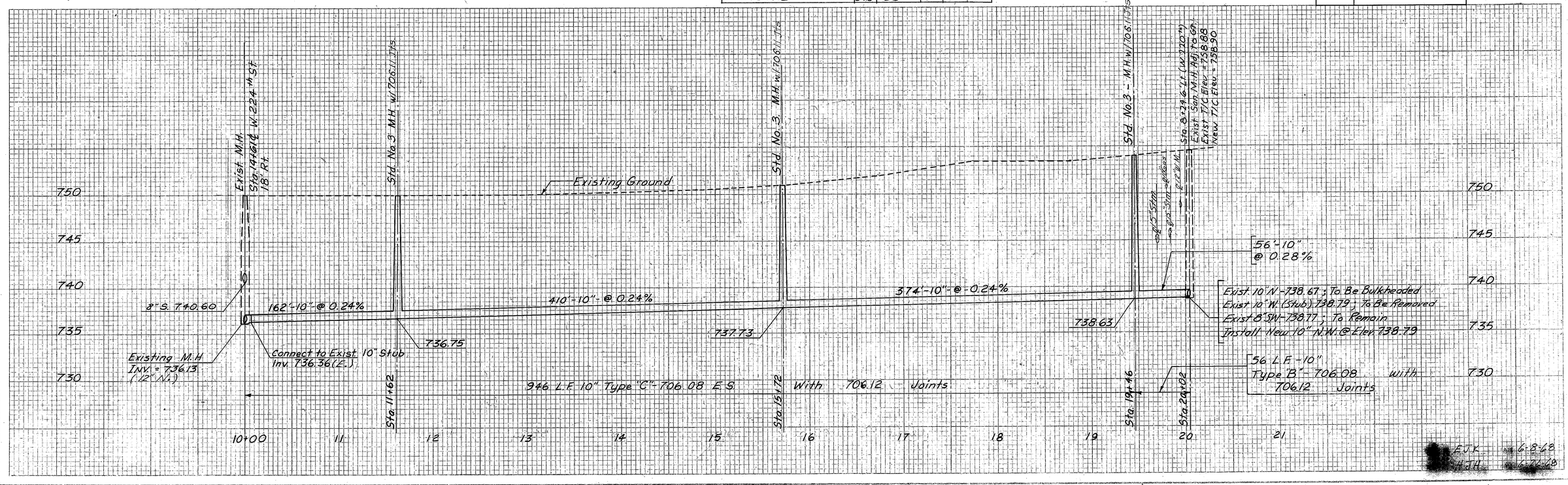
CUYAHOGA COUNTY
CUY-480-4.86



SANITARY			603		604	
Estimated Quantities			Type "C" 706.08 E.S. 706.12 Joints 10"	Type "B" 706.08 706.12 Joints 10"	Std. No. 3 M.H. with 706.11 Joints	M.H. Adjust to Grade
Ref. No.	Side	Location	L.F.	L.F.	Ea.	Ea.
1D	Rt.	10+00 to 19+46	946		3	
2D	Rt.	19+46 to 8+24 (W 220)		56		1
TOTAL			946	56	3	1

CROSS REFERENCE	
Sht. No.	Item
50-51	W. 224 Cul-de-Sac
97-99	Cross Sections.
52-54	W. 220th, Mastick Int.



F.J.K. 6-8-68
W.H.H. 6-8-68

RELOCATED WEST 220th. ST. 10" SANITARY SEWER STA. 10+00 TO STA. 20+02

CROSS REFERENCE	
Sht. No.	Item
41	Clague Rd. Plan & Profile
59	" " Pavt. Details
113	" " Cross Sections
276	Structure

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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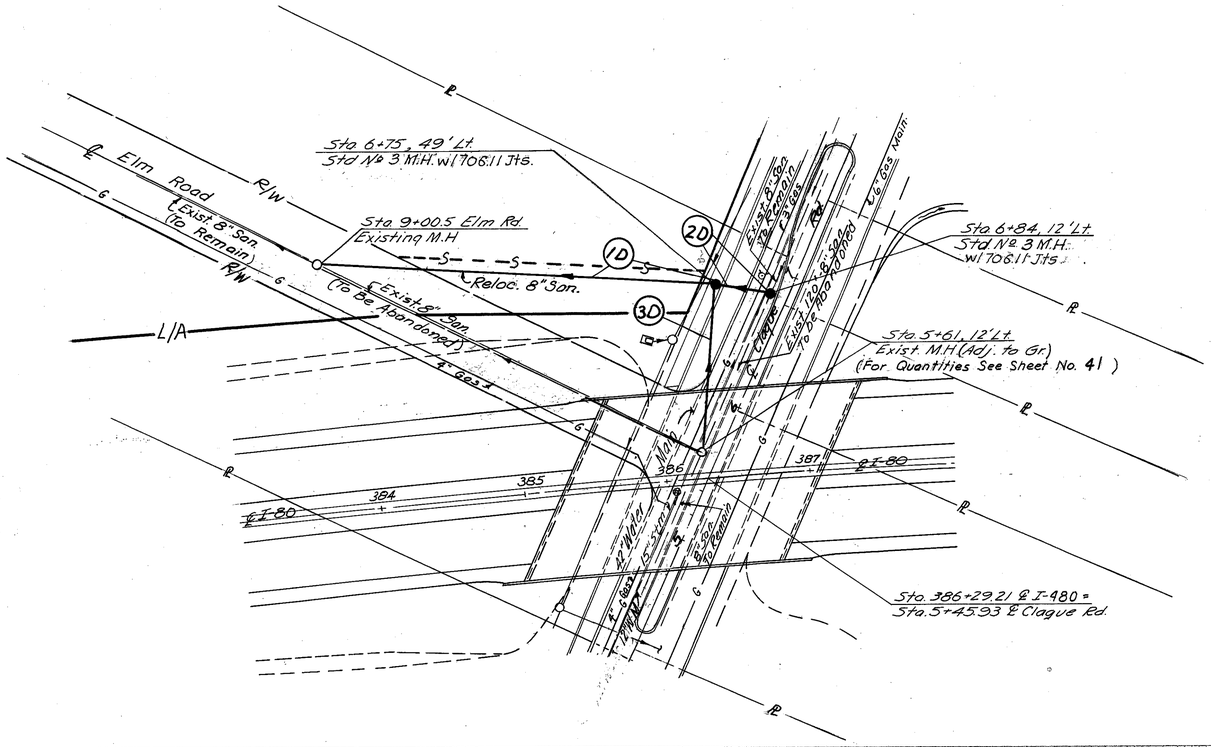
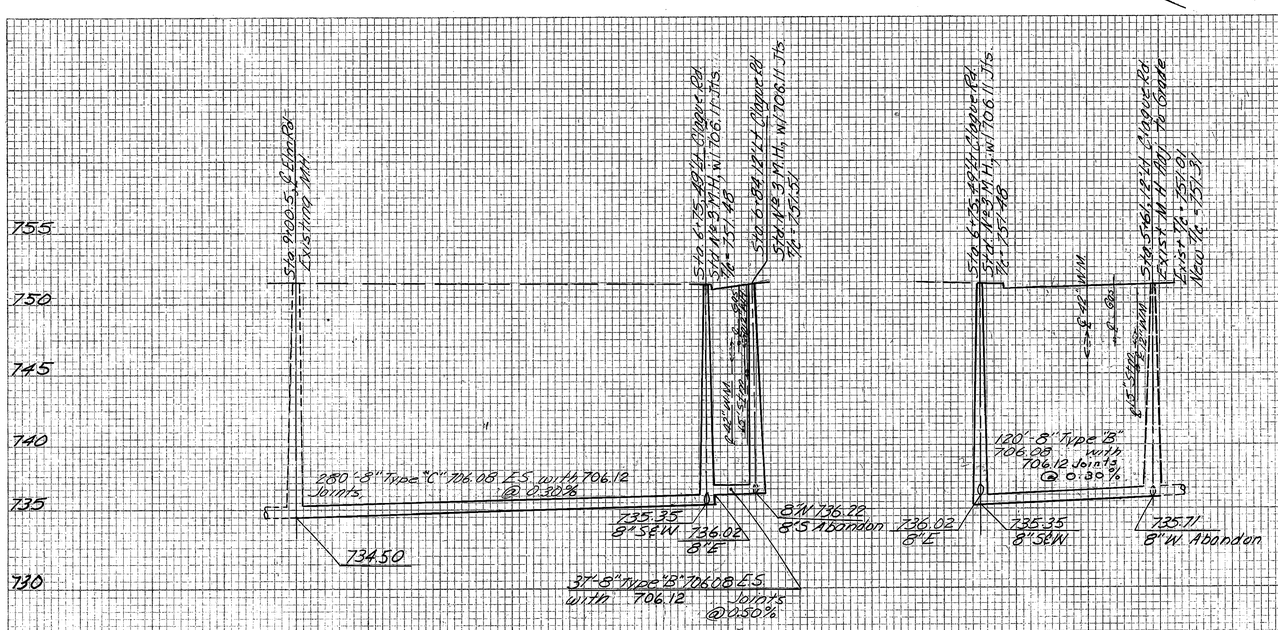
CUYAHOGA COUNTY
CUY-480-4.86



SANITARY			603		604
Estimated Quantities			Type "B" 706.08 with 706.12 Jts	Type "C" 706.08 ES with 706.12 Jts	Std No 3 M.H. w/ 706.11 Jts.
			8"	8"	
Ref #	Side	Location	L.F	L.F	
1D	Lt.	9+00 (Elm) to 6+75		280	1
2D	Lt.	6+75 to 6+84 (Clague)	37		1
3D	Lt.	5+61 to 6+75 (Clague)	120		
TOTAL			157	280	2



RELOCATED 8" SANITARY SEWER (CLAGUE RD.)

FED. RD. DIV. NO.	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

SEEDING		END AREA		VOLUME	
END WIDTH	LB YDS	CUT	FILL	CUT	FILL
111				23/360	
1117					8.1 4000
90				10 800	
285					17 847

760.98
357+00
751.0

758.90
356+00
752.0

Begin WORK
Sta. 355+43

Sta. 355+43

756.88
355+00
752.0

755.06
354+00
752.0

753.45
353+00
752.0

℄

140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

A. Oel. 12-18-67
J.L. 1-2-68

STA. 355+43 TO STA. 357+00

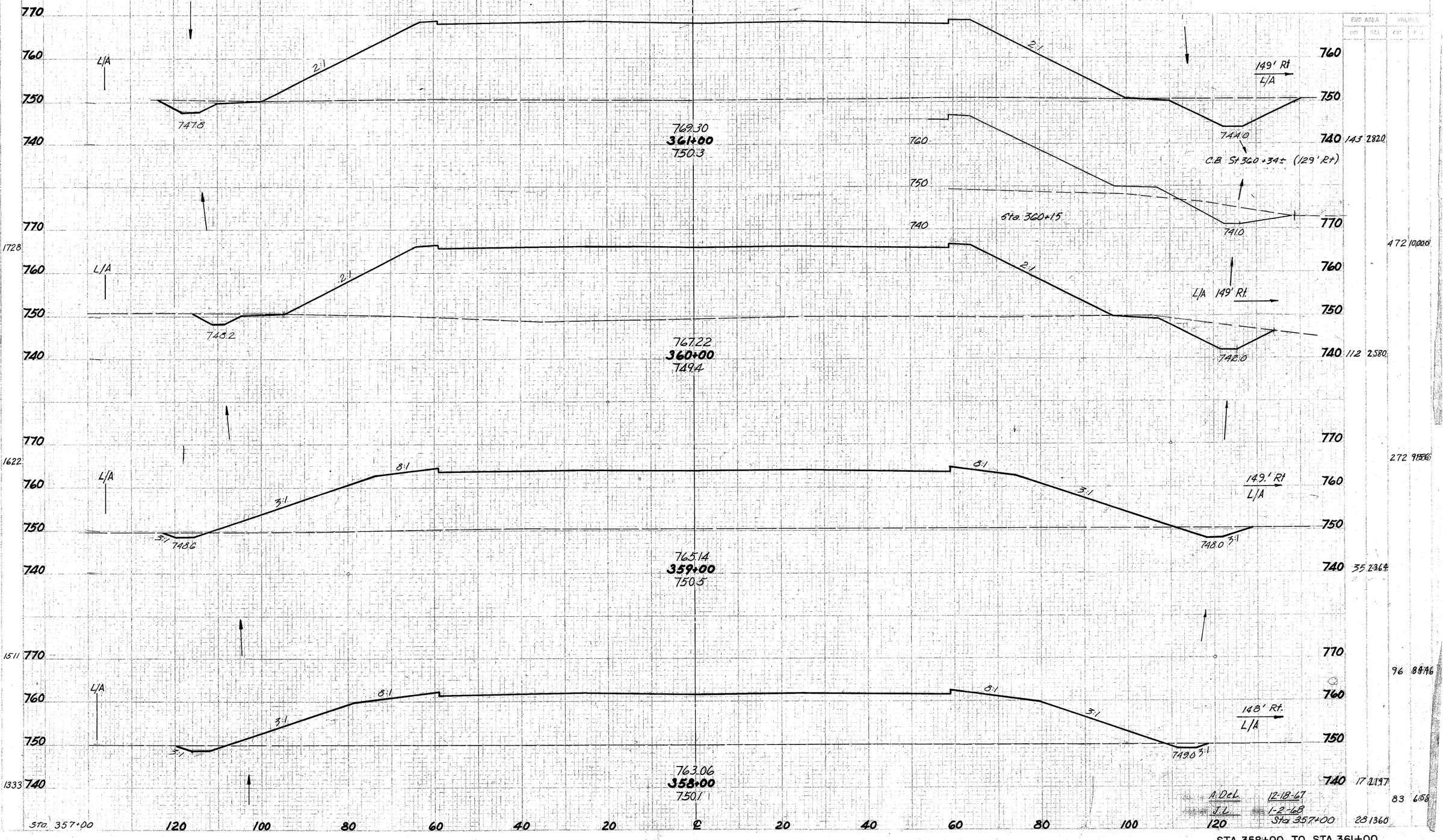
FED. RD. DIVISION	STATE	PROJECT		83 347
2	OHIO			

CUYAHOGA COUNTY
CUY-480-4.86

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL

SECTIONS

END NOTES	TO VOL.



A.D.cL 12-18-67
J.L 1-2-68

STA. 358+00 TO STA. 361+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
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SEEDING

EMB. (ACRE)	SD. (YDS.)
108	
1228	
113	
1317	
124	
1511	
148	
1722	
162	

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
20	1625		
65	7554		
15	2454		
46	10263		
10	3088		
106	11424		
47	3081		
352	10928		
143	2820		

Match Line Brookpark Rd.

773.66
365+00
750.8

L/A 152' Rt.
749.1

Match Line Brookpark Rd.

773.31
364+00
751.0

L/A 152' Rt.
748.7

Match Line Brookpark Rd.

772.47
363+00
750.9

L/A
748.3

Match Line Brookpark Rd.

771.13
362+00
750.9

L/A 149' Rt.
748.8
747.5

770
760
750
740

2:1

Sta. 361+00 120 100 80 60 40 20 ℄ 20 40 60 80 100 120

Sta. 362+00 TO Sta. 365+00

CHK. A.DeL 12-18-67
DR. J.L. 1-2-68

FED. RD. DIVISION	STATE	PROJECT		85 397
2	OHIO			

CUYAHOGA COUNTY
CUY-480-4.86

SECOND

END FROM	END TO

	EMB. AREA		WORK AREA	
	CUT	FILL	CUT	FILL

℄

770
760
750
740

489 L/A 2:1 748.2

111

Brookpark Rd.
Match Line

770.10
369+00
750.5

760
750
740 30 1601

770
760
750
750 42 951

1300 L/A 2:1 747.8

123

Match Line Brookpark Rd.

771.73
368+00
747.0

133 4726

47 1057

410 C.B. Sta. 367+78 (121' Lt.)

0 Sta. 367+40

760
750

Structure No. Cuy.-80-0499
See Site Plan Sheet No. 230

Sta. 367+40 0 0

760 0 0
750

0 Sta. 13+00 to 23+50
2818 Brookpark Rd

772.87
367+00
749.7

Sta. 13+00 to 23+50
Brookpark Rd 120 119

740 0 0

0 Sta. 366+30

0 0

Sta. 366+30 0 0

770
760
750

152

Match Line Brookpark Rd.

L/A

7498

773.51
366+00
750.8

770
760
750
740

8 319

91 1106

740

14 574 63 4072

A.DeL. 12-18-67
J.L. 1-2-68

108 Sta. 365+00 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 Sta. 365+00 20 1625

STA. 366+00 TO STA. 369+00

SEEDING	
SQ. YD.	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

86
397

CUYAHOGA COUNTY
CUY-480-4.86

END AREA		VOLUME	
CUT	FILL	CUT	FILL

147 1656 151 1506 120 1239 103 1189 111

770 760 750 740

L/A

3:1 3:1 8:1 3:1 747.6

C.B. Sta. 372-84

762.60
373+00
751.1

L/A

3:1 3:1 8:1 3:1 749.4

764.46
372+00
751.5

L/A

3:1 3:1 8:1 3:1 749.0

766.34
371+00
751.5

L/A

2.5:1 2.5:1 748.6

768.22
370+00
751.1

L/A 154' Rt.

8:1 3.5:1 3.5:1 748.6

8:1 3.4:1 3.4:1 748.0

Brookpark Rd.

Match Line

Match Line Brookpark Rd.

88 1728
272 6989
59 2030
165 7628
30 2089
111 7863
30 2125
111 6900
30 1601

Sta. 369+00 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 Sta. 369+00

A. DeL 12-18-67
J.L. 1-2-68

STA. 370+00 TO STA. 373+00

SEEDING	
END WIDTH	SQ YDS

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

8.7
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CUYAHOGA COUNTY
CUY-480-4.86

END AREA		VOLUME	
CUT	FILL	CUT	FILL

℄

770 / 760 / 750 / 740

L/A

8:1 — 3.6:1 — 3.2:1 — 749.2

8:1 — 3:1 — 3:1 — 750.2

761.27
377+00
751.2

122 — 39 1426

770 / 760 / 750 / 740

L/A

8:1 — 3.2:1 — 3.2:1 — 748.8

8:1 — 3:1 — 3:1 — 749.8

760.57
376+00
751.3

1345 — 165 5011

120 — 50 1280

770 / 760 / 750 / 740

L/A

8:1 — 3.3:1 — 3.3:1 — 748.4

8:1 — 3:1 — 3:1 — 749.4

760.56
375+00
750.8

1361 — 185 4913

125 — 50 1373

770 / 760 / 750 / 740

L/A

8:1 — 3.3:1 — 3.5:1 — 748.0

8:1 — 3.2:1 — 3.2:1 — 749.0 — L/A 152' Rt.

766.24
374+00
750.8 ✓

1456 — 217 5389

137 — 67 1526

1578 — 287 6026

147 — 85 1728

Sta 373+00 — 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 — Sta 373+00

DRAWN BY	A DeL	DATE	12-18-67
CHKD BY	J L	DATE	1-2-68

STA. 374+00 TO STA. 377+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

SEEDING

END WIDTH	SQ. YDS.
146	1589
140	1533
136	1445
124	1367

END AREA		VOLUME	
CUT	FILL	CUT	FILL
132705			
61 9239			
202284			
157 7828			
65 1943			
167 6872			
65 1768			
119 5915			
39 1926			

767.32
381+00
751.8

765.76
380+00
751.7

764.20
379+00
751.3

762.64
378+00
751.2

L/A 8:1 3:1 3:1 750.8

L/A 8:1 3:1 3:1 750.0

L/A 8:1 3:1 3:1 750.4

L/A 8:1 3:1 3:1 750.6

L/A 8:1 3:1 3:1 750.0

L/A 8:1 3:1 Var 751.0

L/A 8:1 3:1 3:1 749.6

L/A 8:1 3:1 3:3:1 750.6

770 760 750 740

Sta. 377+00 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 Sta. 377+00

A. Del. 12-18-67
JL 1-2-68

STA. 378+00 TO STA. 381+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

89
347

CUYAHOGA COUNTY
CUY-480-4.86

SEEDING	
SYD WIDTH	SY YDS.

END AREA		VOLUMES	
CUT	FILL	CUT	FILL

℄

770
760
750
740

L/A
C.B. Sta 385+93 (109' Lt)
2:1
749.5
Fwd. 740 Back
0 128
770.87
385+00
Variable
749.01
C.B. Sta 384+80 (120' Rt)
L/A
Fwd 0 0
Back 5 2701

1511
L/A
2:1
750.1
770.63
384+00
751.4
749.8
89 10404
83 2917.1

1561
L/A
2:1
750.6
769.95
383+00
751.7
749.2
150 10381
38 2688.5

1617
L/A
3:1
8:1
731.2
768.83
382+00
752.2
749.6
124 11330
29 3430
78 11361
13 2705

144
137
154
146
1667

Sta. 381+00 120 100 80 60 40 20 0 20 40 60 80 100 120 Sta. 381+00

A. DeL 12-19-67
J.L. 1-3-68

STA. 382+00 TO STA. 385+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

90
347

CUYAHOGA COUNTY
CUY-480-4.86

SEEDING

END WIDTH	SQ. YDS.
160	
187	
994	
171	
0	
1218	
0	
871	
0	

Ramp "C-1"
Match Line
4.5:1
7.3:1
Match Line
Ramp "C-2"
760
750
740
770
760
750
740

76743
389+00
749.5

Match Line
5:1
6.3:1
Match Line
Ramp "C-2"
1978
770
760
750
740

768.95
388+00
750.6

Match Line Ramp C-1
5:1
Match Line
180
160
140
760
750

Clague Rd.
3.5:1
4.7:1
Match Line
770
760
750

770.03
387+50
750.0

Fwd.
Back
Add For Structure (East)

Structure No. Cuy-80-0540
See Site Plan Sheet No. 276

770.66
386+00
751.1

Add For Structure (west)

Sta. 385+00
120
100
80
60
40
20
℄
20
40
60
80
100
120

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	0	3427	
	0	13381	
	0	3799	
	0	6795	
Fwd.	0	3540	
Back	0	0	
Add for Structure (east)		196	5112
	0	0	
	0	0	
Add for Structure (west)		42	5744
Sta. 385+00	0	0	

A.DeL. 12-19-67
J.O 1-3-68

STA. 386+00 TO STA. 389+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUY	FILL
87		0	1407		
1117		0	6243		
114		0	1964		
1350		0	8326		
129		0	2532		
1489		0	10628		
139		0	3207		
1661		0	12285		
160		0	3427		

Match Line Ramp "C-1"
3:1
8:1
758.32
393+00
749.0
Match Line Ramp "C-2"
8:1
6.3:1

Match Line Ramp "C-1"
3.5:1
8:1
760.72
392+00
749.3
Match Line Ramp "C-2"
8:1

Match Line Ramp "C-1"
3.3:1
8:1
763.12
391+00
749.4
Match Line Ramp "C-2"
8:1

Match Line Ramp "C-1"
3.6:1
8:1
765.47
390+00
749.0
Match Line Ramp "C-2"
8:1

DES. A.DeL 12-19-67
DWN. J.L. 1-3-68

STA. 389+00 TO STA. 390+00

STA. 390+00 TO STA. 393+00

FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

92
347

CUYAHOGA COUNTY
CUY-480-4.86

SEEDING
END WIDTH | SQ. YDS.

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
686	0		
1498	272		
Fwd. 123	147		
Back 6	72		
11	898		
0	413		
6	2302		
3	830		
6	4143		
0	1407		

℄ Ramp "C-1"
℄ Ramp "C-2"
Match Line Ramp C-1
Match Line Ramp C-2
L/A
158' LT
Fwd
Back
748.0
747.7
751.2
749.6
745.0
747.2
749.3
748.9
748.72 397+00 749.8
751.12 396+00 749.5
755.52 395+00 749.4
755.92 394+00 749.3
Sta. 393+00
STA. 394+00 TO STA. 397+00
A.DeL 12-19-67
J.C. 1-3-68

SEEDING	
END WIDTH	SQ. YDS.
132	
1400	
120	
1189	
94	
1089	
102	
1039	
85	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		2749	0
		9311	0
		2279	0
		7457	0
		1748	0
		5708	0
		1330	0
		3733	0
		686	0

760 750 740 730

L/A

℄ Ramp "C-1"

4:1 8:1 738.6 (Normal)

739.40
401+00
749.1

8:1 736.7 3:1

760 750 740 730

L/A

℄ Ramp "C-1"

4:1 8:1 740.7

741.52
400+00
749.7

8:1 739.6 3:1

760 750 740 730

L/A

℄ Ramp "C-1"

4:1 8:1 743.0

743.92
399+00
750.50

8:1 740.8 3:1

760 750 740 730

L/A

℄ Ramp "C-1"

4:1 8:1 745.3

℄ Ramp C-2

3:1 743.0 4:1

746.32
398+00
750.3

Sta. 391+00 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 Sta. 397+00

A. DeL. 12-19-67
J.L. 1-3-68

STA. 398+00 TO STA. 401+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

94
397

CUYAHOGA COUNTY
CUY-480-4.86

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
132	146			3390	0
131	139			12507	0
119	133			3369	0
118	138			12404	0
132	131			3334	0
				11633	0
				2948	0
				10550	0
				2749	0

736.60
405+00
750.4

C.L. 404+25

736.45
404+00
750.1

736.87
403+00
750.4

737.85
402+00
750.3

℄ Ramp C-1

STA. 401+00

STA. 402+00 TO STA. 405+00

LAID BY A.D.L. 12-13-67
CHKD BY J.C. 1-3-68

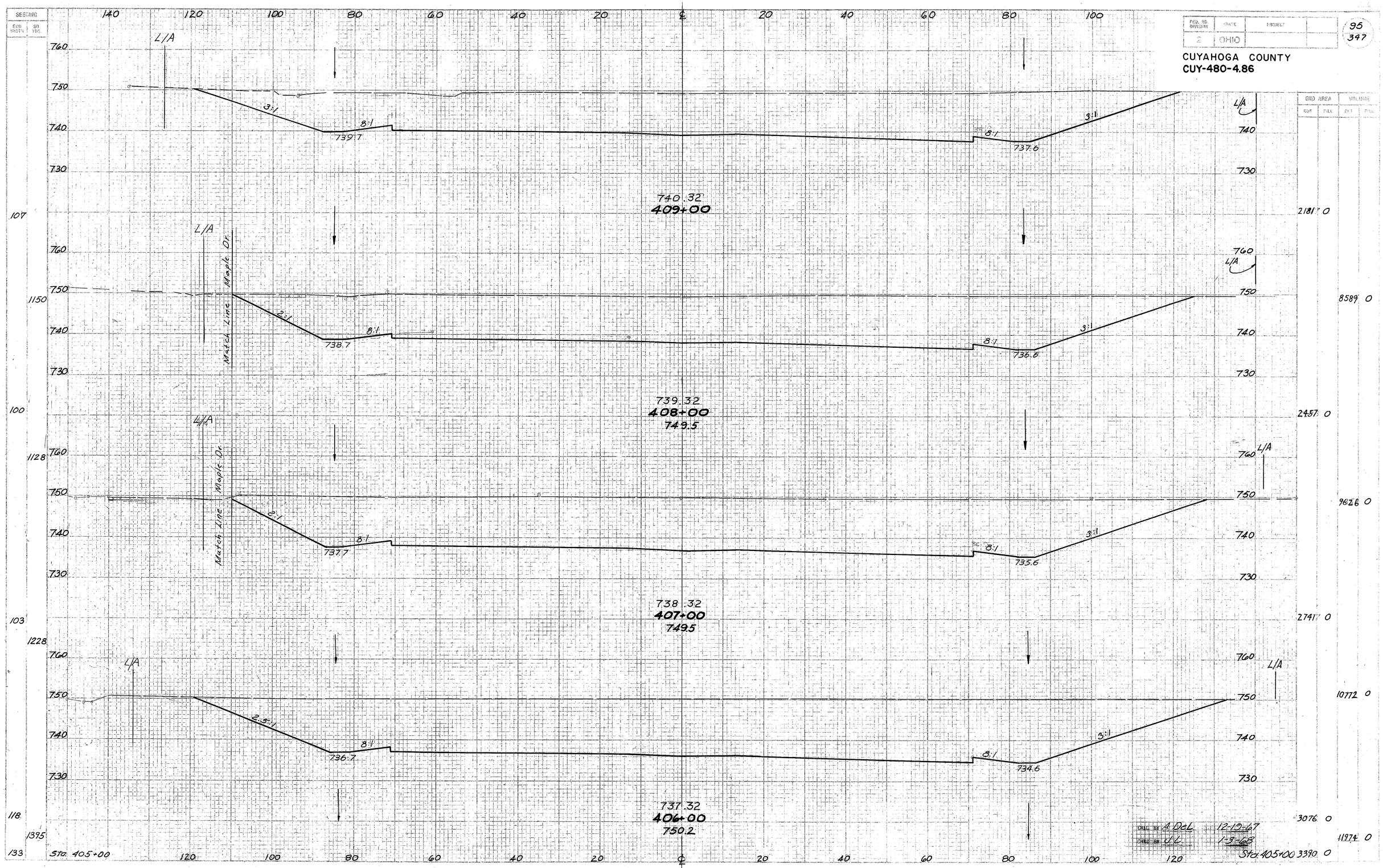
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

95
397

CUYAHOGA COUNTY
CUY-480-4.86

SEEDING	
END SHOT'S	SQ YDS.
107	1150
100	1128
103	1228
118	1395
133	

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		2181	0
		8589	0
		2457	0
		9626	0
		2741	0
		10772	0
		3076	0
		11974	0
		3390	0



CALC. BY A DeL 12-19-67
CHKD. BY [illegible] 1-3-68

STA. 406+00 TO STA. 409+00

SEEDING	
END WIDTH	SQ. YDS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

96
347

CUYAHOGA COUNTY
CUY-480-4.86

END AREA		VOLUME	
CUT	FILL	CUT	FILL

℄

760 750 740 730

L/A

4:1 8:1

742.3

Bldg.

8:1 3:1

739.8

742.57
412+00
748.6

102

1834.0

760 750 740 730

L/A

1139

Bldg.

4:1 8:1

741.9

8:1 3:1

739.4

6833.0

742.13
411+00
749.1

103

1856.0

770 760 750 740

L/A

1178

Bldg.

4:1 8:1

741.1

Bldg.

8:1 3:1

738.5

7318.0

741.32
410+00
750.0

109

2096.0

1200

7920.0

107

Sta. 409+00

120 100 80 60 40 20 20 40 60 80 100 120

℄

Sta. 409+00

2181.0

CALC. BY	A. DeL	12-19-67
CHKD. BY	J.L.	1-9-68

STA. 410+00 TO STA. 412+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

97
347

CUYAHOGA COUNTY
CUY-480-4.86

SEEDING

FED. (YDS²)	SO. YDS.
113	1283
118	1278
112	1211
106	1156
102	

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		2253	0
		8250	0
		2202	0
		7789	0
		2004	0
		7007	0
		1780	0
		6693	0
		1834	0

L/A 188' Lt.

740.74
416+00
750.4

741.62
415+00
750.5

742.31
414+00
750.0

742.63
413+00
749.1

740.5 · 741.4 · 742.1 · 742.4 · 738.9 · 739.6 · 739.9

Bldg.

760 750 740 730

Sta. 412+00 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 Sta. 413+00

STA. 413+00 TO STA. 416+00

ALD BY A.P.L. 12-20-67
MKD BY C.L. 1-4-68

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

SEEDING

BASE WIDTH	SQ. YDS.
123	
1355	
121	
1400	
131	
1394	
120	
1294	
113	

L/A 178' Lt
3:1
8:1
736.6
734.4
2:1
L/A
737.22
420+00
751.0

L/A 180' Lt
8:1
8:1
737.5
735.2
2.6:1
L/A
738.10
419+00
748.9

L/A 182' Lt
4:1
8:1
738.4
8:1
736.2
3:1
L/A
738.98
418+00
749.5

L/A 185' Lt
4:1
8:1
739.3
8:1
737.1
3:1
L/A
739.86
417+00
749.4

760 750 740 730

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		3348	0
		11633	0
		2934	0
		10548	0
		2761	0
		9518	0
		8578	0
		2253	3

Sta. 416+00 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 Sta. 416+00

ALC BY A. DeL 12-20-67
MD. BY J.L. 1-4-68

STA. 417+00 TO STA. 420+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

99
397

CUYAHOGA COUNTY
CUY-480-4.86

SEEDING

END WIDTH	SQ. YDS.
140	1539
137	1506
134	1428
123	

END AREA		VOLUMES	
CUT	FILL	CUT	FILL
5396	0		
18674	0		
4688	0		
16033	0		
3970	0		
3348	0		
135552			

L/A 166' Lt.
760
750
740
730
2:1
8:1
734.3
734.91
423+00
757.3
6:1
732.1
L/A
760
750
740
730

L/A 173' Lt.
Bldg.
760
750
740
730
2:1
8:1
735.2
735.50
422+00
755.1
8:1
732.7
(Normal)
2:1
L/A
760
750
740
730

L/A 179' Lt.
760
750
740
730
3:1
8:1
735.8
736.34
421+00
753.00
8:1
733.5
2:1
L/A
760
750
740
730

Sta. 420+00 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 Sta. 420+00

DRG. BY A.DeL 12-20-67
CHKD. BY D.L. 1-4-68

STA. 421+00 TO STA. 423+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

100
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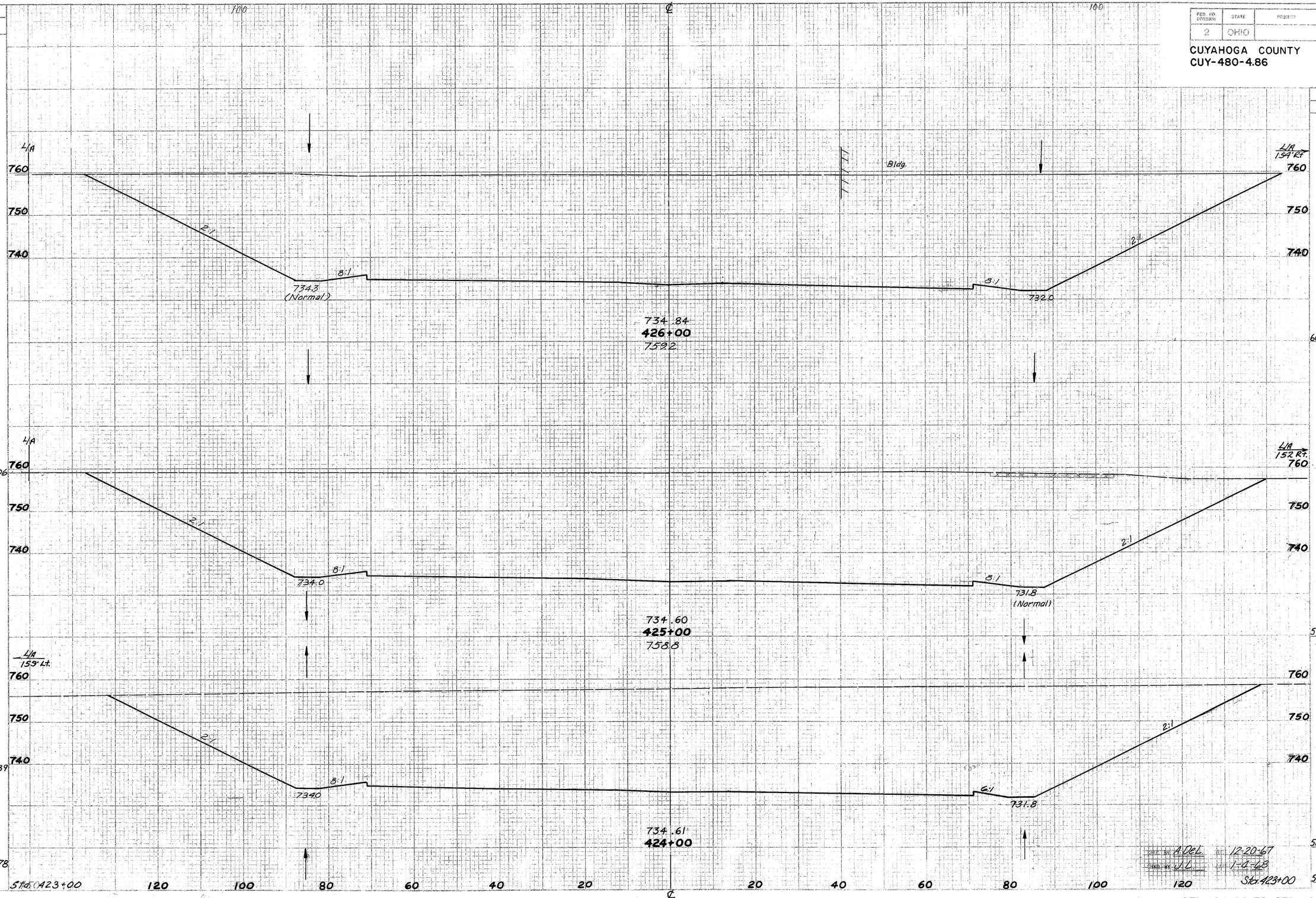
CUYAHOGA COUNTY
CUY-480-4.86

SEEDING	
END WIDTH	SQ. YDS.
186	
151	
144	
140	

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		6009	0
		22120	0
		5936	0
		21422	0
		5632	0
		20422	0
		5396	0



DRN. BY ADEL 12-20-67
CHKD. BY JL 1-2-68

STA. 424+00 TO STA. 426+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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347

CUYAHOGA COUNTY
CUY-480-4.86

SEEDING
CHG WIDTH | SQ. YDS.

END AREA: CUT | FILL
VOLUME: CUT | FILL

100 ℄ 100

L/A 156' LT

760
750
740
730

2:1
8:1
735.1

735.75
429+25

L:A 156' RT.

760
750
740
730

2:1
8:1
732.9

5137 | 0

158

2188

Bldg.

760
750
740
730

2.25:1
8:1
734.9

735.40
428+00
760.6

2:1
8:1
732.6

27206 | 0

156

6016 | 0

L/A

760
750
740
730

2.25:1
8:1
734.6

735.12
427+00
759.5

2:1
8:1
732.3

22230 | 0

1756

1750

159

5988 | 0

22222 | 0

6009 | 0

156

Sta. 426+00 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 Sta 426+00

DRAWN BY ADeL 12-20-67
CHKD BY JL 1-4-68

STA. 427+00 TO STA. 429+25

SLOPING

END AREA		VOLUME	
CUT	FILL	CUT	FILL

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

℄

4/A
760
750
2:1
8:1
735.9
736.52
432+00
757.3
8:1
733.6
2:1
L.A.
760
750
137
4723.0

4/A
750
740
1544
2:1
8:1
735.6
736.24
431+00
758.0
8:1
733.6
2:1
L.A.
150' Rt.
750
740
18350
141
5186.0

4/A
750
740
1583
2:1
8:1
735.3
(Normal)
735.75
430+00
758.7
8:1
733.08
2:1
L/A
153' Rt.
750
740
19082.0
144
1258
5188.0
15076.0
158
Sta. 429+25
120
100
80
60
40
20
℄
20
40
60
80
100
120
Sta. 429+25
5137.0

CALC. BY A.Del DATE 12-20-67
CHKD. BY J.L. DATE 1-4-68

STA. 430+00 TO STA. 432+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	–	

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CUYAHOGA COUNTY
CUY-480-4.86

SEEDING	
END WIDTH	SQ. YDS.
146	
	1576
138	
	1539
139	
	1517
134	
	1506
137	

END AREA		VOLUME	
CUT	FILL	CUT	FILL
4778	0		
		17622	0
4738	0		
		17589	0
4760	0		
		17428	0
4651	0		
		17359	0
4723	0		

CALC. BY A. DeL. DATE 12-20-67
CHKD. BY J.L. DATE 1-4-68

STA. 433+00 TO STA. 436+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

SHEETING

END	WIDTH	CO.	TOPS

END AREA		VOLUME	
CUT	FILL	CUT	FILL
306	0		
		1131	0
305	0		
		5361	0
2590	0		
		4890	0
		4320	0
		9931	0
			0
4471			
		17228	0
9778	0		

℄

738.76
440+00
740.0

735.0 — 736.6 — Constructed Cuy 480-6.48

738.48
439+00
739.8

735.8 — 736.3 — Constructed Cuy 480-6.48

738.20
438+00
749.8

736.1 — 736.1 — 2:1 — 8:1 — 1½"/Ft.

738.09
437+61

736.0 — 735.8 — 2:1 — 8:1 — 1½"/Ft.

737.92
437+00
756.8

735.9 — 735.7 — 2:1 — 8:1

L/A

140 1350 103 524 139 942 139 1583 146

120 100 80 60 40 20 20 40 60 80 100 120

STA. 436+00 ℄ Sta. 436+00

ADeL 12-20-67
CHKD. BY J.L. 1-4-68

STA. 437+00 TO STA. 440+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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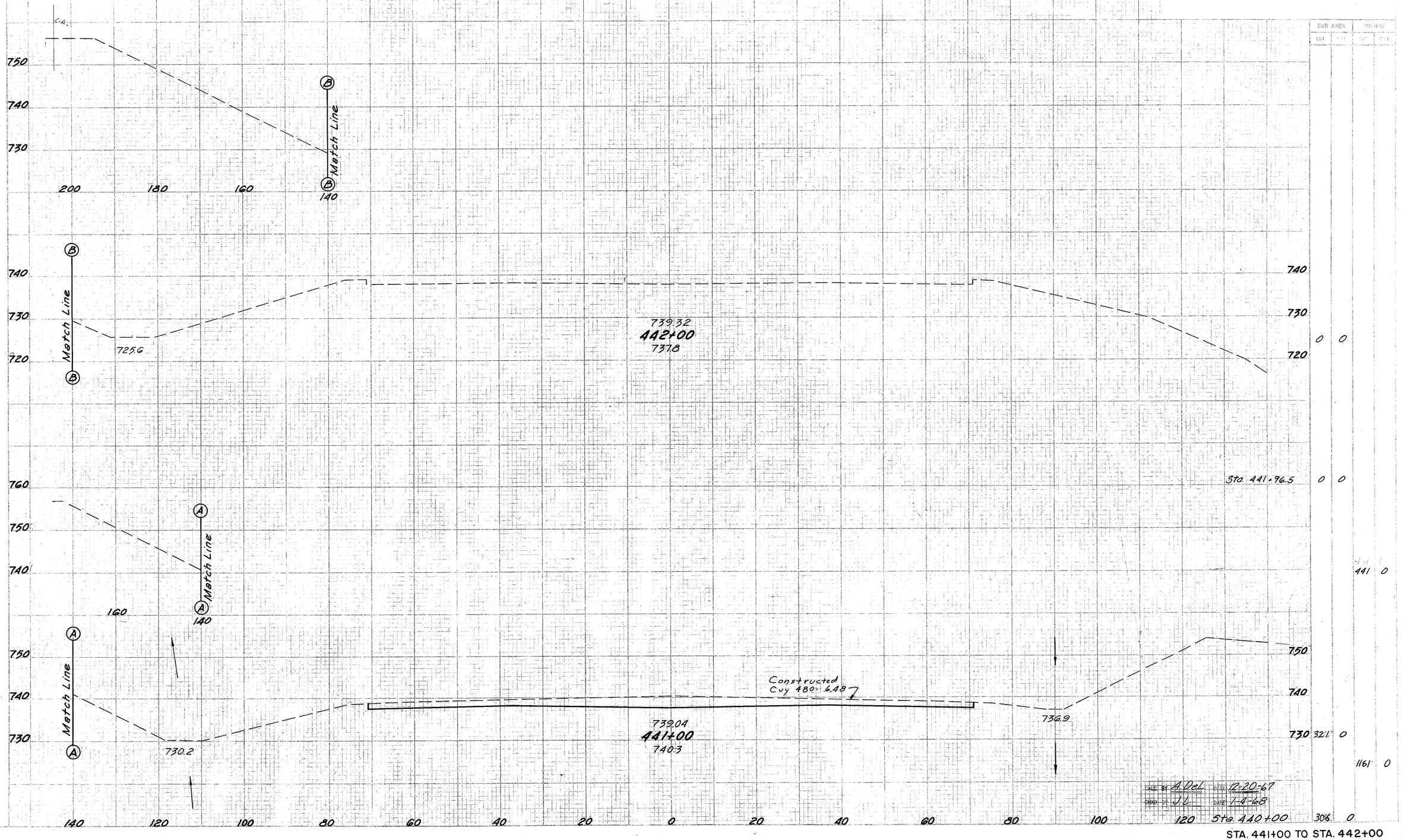
CUYAHOGA COUNTY
CUY-480-4.86

CROSSING		END AREA		TON MILE	
END WIDTH	TON MILE	CUT	FILL	CUT	FILL



CALC. BY A.Del DATE 12-20-67
CHKD. BY J.L. DATE 1-4-68

STA. 441+00 TO STA. 442+00

E-1

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

END AREA		VOLUME	
CUT	FILL	CUT	FILL
19	0		
106	0	6	0
19	0	10	0
53	0	4	0
0	0	4	0
0	0	0	0
0	0		
0	0		

℄

755
750
745

14+00
750.6

13+50
750.3

13+00
749.8

12+50
750.0

12+00
749.8

Z-80
Match Line

4:1
749.6

4:1
749.6

755
750
745

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60

BY JL DATE 12-22-67
CHD BY AJDL DATE 12-27-67

BROOKPARK RD. STA.12+00 TO STA.14+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
19	106	0		0	
19	106	4	0	4	0
19	106	5	1	5	1
19	108	1	1	1	1
20	106	1	4	1	4
19	106	0	3	0	3
		1	5	1	5
		1	2	1	2
		6	2	6	2
		5	0	5	0
		10	0	10	0
		6	0	6	0

755 750 745 740

℄

16+50
750.5

16+00
750.5

15+50
750.7

15+00
750.9

14+50
750.6

1/2"/Ft.
3.5:1
749.4
3.5:1
749.6
3.5:1
749.8
3.5:1
750.0
1/2"/Ft.
3.5:1
750.0

Match Line I-80

Sta. 14+00 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 Sta. 14+00

CALC. BY J.C. DATE 12-22-67
CHKD. BY A.DeL DATE 12-27-67

BROOKPARK RD. STA.14+50 TO STA.16+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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347

CUYAHOGA COUNTY
CUY-480-4.86

SEEDING		END AREA		VOLUME	
END WIDTH	SQ YDS	CUT	FILL	CUT	FILL
19	178	0	9		
45	269	1	6	1	14
52	267	2	2	3	8
45	250	2	3	4	5
45	178	3	2	5	5
19		4	0	7	2

Totals Carried to I-80 X-Section Sht. 16.85
Excavation 120 C.Y.
Embankment 119 C.Y.
Seeding 2818 S.Y.

Match Line I-80

Watch Line I-80

19+00 748.3
18+50 749.5
18+00 749.8
17+50 749.9
17+00 750.2

6:1 747.4 1/2"/Ft.
4:1 6:1 746.6 1/2"/Ft.
5:1 6:1 747.8
3.5:1 6:1 748.8
5:1 6:1 748.1
3.5:1 749.0
4:1 6:1 748.3 1/2"/Ft.
3.5:1 749.2 1/2"/Ft.

CALC. BY J.L. 12-22-67
CHK. BY A.DeL. 12-27-67

Sta. 16+50 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 Sta. 16+50

BROOKPARK RD. STA.17+00 TO STA.19+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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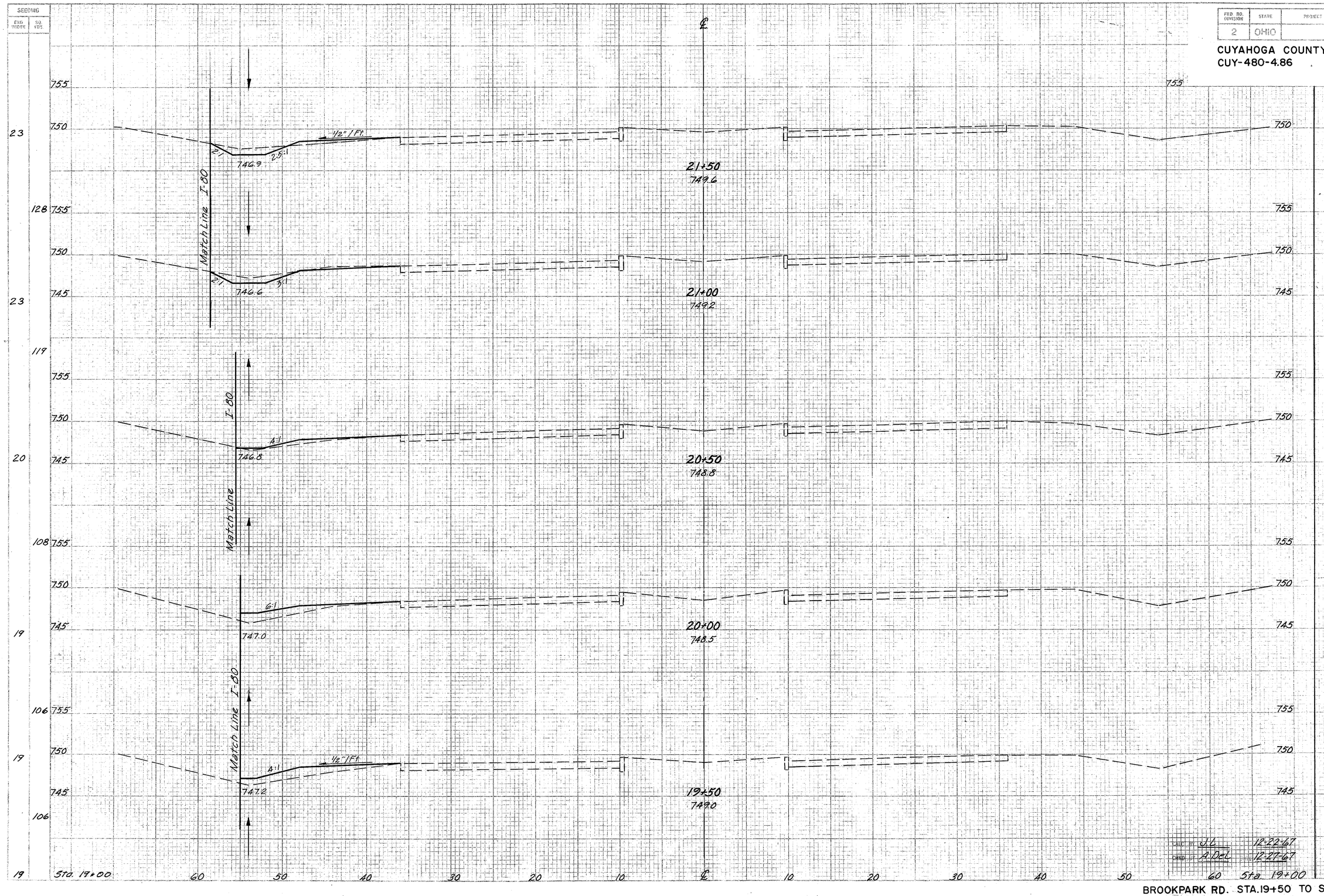
CUYAHOGA COUNTY
CUY-480-4.86

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
23					
	128			5	3
23					
	119			M	3
20				7	0
	108			7	9
19				0	4
	106			0	14
19				0	11
				0	22
				0	13
				0	21
				0	9



CALC. BY JJC 12-22-67
CHKD. ADeL 12-27-67

BROOKPARK RD. STA. 19+50 TO STA. 21+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
0	0				
0	42				
15	111				
25	133				
23	128				
23					

℄

755
750
745

24+00
750.2

23+50
750.4

23+00
750.1

22+50
750.0

22+00
749.7

Sta. 21+50

3:1
747.8
A:1

I-80
Match Line
3:1
5:1
1/2"/Ft.
747.5

I-80
Match Line
3:1
A:1
1/2"/Ft.
747.2

60 50 40 30 20 10 ℄ 10 20 30 40 50 60 Sta. 21+50

+50	0	0			
			9	0	
	9	0			
			15	3	
	7	3			
			1	11	3
	5	0			
	5	3	10	3	

CALC. BY CC DATE 12-22-67
CHKD. BY ADC DATE 12-27-67

BROOKPARK RD. STA. 22+00 TO STA. 24+00

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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CUYAHOGA COUNTY
CUY-480-4.86

CALC. BY J.L. DATE 12-22-67
CHKD. BY A. DeL. DATE 12-27-67

CLAGUE RD. STA. 1+00 TO STA. 2+50

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

SEGOING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
0					
7	Fwd.				
	Back				
64		69	12		
16				141	25
27	Fwd.				
	Back	83	15		
153				156	22
28	Fwd.				
15	Back	Fwd. 85	8		
		Back 85	5		
78				180	5
13		109	0		
72				212	0
13		120	0		
72				232	0
13		Sta. 2+50 130	0		

Match Line L-80

Match Line Ramp C-2

755 / 750

751.20 — 5+00 — 751.13

751.08 — 4+50 — 751.21

750.86 — 4+00 — 751.24

750.69 — 3+50 — 751.36

750.53 — 3+00 — 751.50

15"S/m. 12"W/M. 42"W/M. 8"San. 4:1

Sta. 2+50 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60

CALC. BY J.L. 12-22-67
CHKD. BY J.Del. 12-27-67

CLAGUE RD. STA. 3+00 TO STA. 5+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

SEEDING			END AREA		VOLUME	
END WIDTH	SQ YDS		CUT	FILL	CUT	FILL
44		755				
		750				
		745	24	55		
189		755			53	80
		750				
24		745	33	31		
139		755			47	80
		750				
26	Fwd.	745	18	55		
19	Back					
100		755			54	82
		750				
17.	Fwd.	745	40	33		
0	Back					
0		755			76	56
		750				
0		745	42	27		
0					103	36
0	Sta. 5+00			Sta 5+00	69	12

7+50
750.82

7+00
750.83

6+50
751.00

6+00
751.02

5+50
751.04

751.38
751.50
751.54
751.50
751.37

4:1
8:1
7500
60
70
15"St/m.
12"X/M.
42"X/M.
8"San
Match Line
L=80

CALC. BY S.L. DATE 12-22-67
CHKD. BY A.D.L. DATE 12-27-67

CLAGUE RD. STA. 5+50 TO STA. 7+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

SEEDING	
ENG. WIDTH	SQ. YDS.
28	97
14	
21	108
18	89
14	89
18	228
38	
44	

END AREA		VOLUME	
CUT	FILL	CUT	FILL
Fwd 46	22		
Back 46	14		
		77	48
37	38		
		73	50
42	16		
		58	52
21	40		
		48	69
Fwd 31	34		
Back 31	54		
		51	101
Sta. 7+50		24	55

Ramp C-1 Match Line

750.58 — 4:1 — 18"Stm. — 12"WM. — 42"WM. — 15"Stm.
10+00
751.37

8"San.

750.74 — 4:1 — 15"Stm. — 12"WM. — 42"WM. — 15"Stm.
9+50
750.52

8"San.

Ramp C-1 Match Line

750.90 — 4:1 — 15"Stm. — 12"WM. — 42"WM. — 15"Stm.
9+00
750.62

8"San.

751.06 — 4:1 — 15"Stm. — 12"WM. — 42"WM. — 15"Stm.
8+50
750.62

8"San.

Ramp C-1 Match Line

751.22 — 4:1 — 8:1 — 15"Stm. — 12"WM. — 42"WM. — 15"Stm.
8+00
750.68

8"San.

755 / 750 / 745

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60

CALC. BY J.L. 12-22-67
CHKD. BY A.D.L. DATE 12-27-67

CLAGUE RD. STA. 8+00 TO STA. 10+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

SEEDING
END WIDTH 20 705

20

℄

755
750
745

750.37 750.27 749.87 750.27 750.37 4:1

18" St.m. 12" W.M. 42" W.M. 8" San. 15" St.m.

12+50
750.1

748.37

Meet Exist 750.49 750.38 749.59 N.G. -15 Drive Sta. 12+15

Drive 12+15

40 30 20

750.53 750.43 750.03 750.43 750.53 4:1

18" St.m. 12" W.M. 42" W.M. 8" San. 15" St.m.

12+00
750.1

28 -22 Drive Sta. 11+74

749.69 N.G. 750.50 750.60 6.7% Meet Exist

Drive 11+74

750.10 4:1 4:1

18" St.m. 12" W.M. 42" W.M. 8" San. 15" St.m.

11+50
750.2

29 Meet Exist. 750.75 +6.6% 750.65 749.84 N.G. 158 -22 Drive Sta. 11+13

Drive 11+13

749.88 N.G. 750.69 750.79 -6.6% Meet Exist.

Drive 11+08

755 -14 Drive Sta. 11+08

Meet Exist. 750.76 4:1

18" St.m. 12" W.M. 42" W.M. 8" San. 15" St.m.

11+00
750.2

28

144

750.42

18" St.m. 12" W.M. 42" W.M. 8" San. 15" St.m.

10+50
750.4

24 144 28 Sta. 10+00

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 Sta. 10+00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
745	61	6		
Drive Sta. 12+15			3	-2
755			38	16
750			115	10
745	63	5		
Drive Sta. 11+74				-5
755			128	12
750				
745	75	8		
Drive Sta. 11+13			2	-3
Drive Sta. 11+08			2	-2
755			130	14
750				
745	65	7		
755			122	9
750				
745	67	2		
			105	22
	46	22		

DES. BY J.L. 12-22-67
QUAN. BY A.D.C. 12-27-67

CLAGUE RD. STA. 10+50 TO STA. 12+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

SEEDING			END AREA		VOLUME	
END WIDTH	SQ YDS		CUT	FILL	CUT	FILL
26		15+00 749.85	40	0		
-13		Drive Sta. 14+87			97	0
-27		Drive Sta. 14+86			5	-1
178					2	-7
38		14+50 749.9	65	0		
-19		Drive Sta. 14+11			134	0
222					4	-1
42		14+00 749.9	79	0		
-29		Drive Sta. 13+98			135	1
219						
37		13+50 749.9	67	1		
-17		Drive Sta. 13+43			2	-4
189					123	2
31		13+00 750.1	66	1		
169					118	7
-22		Drive Sta. 12+50			1	-6
		Sta. 12+50	61	6		

CLAGUE RD. STA. 13+00 TO STA. 15+00

FED. DIV.	STATE	PROJECT	
2	OHIO		

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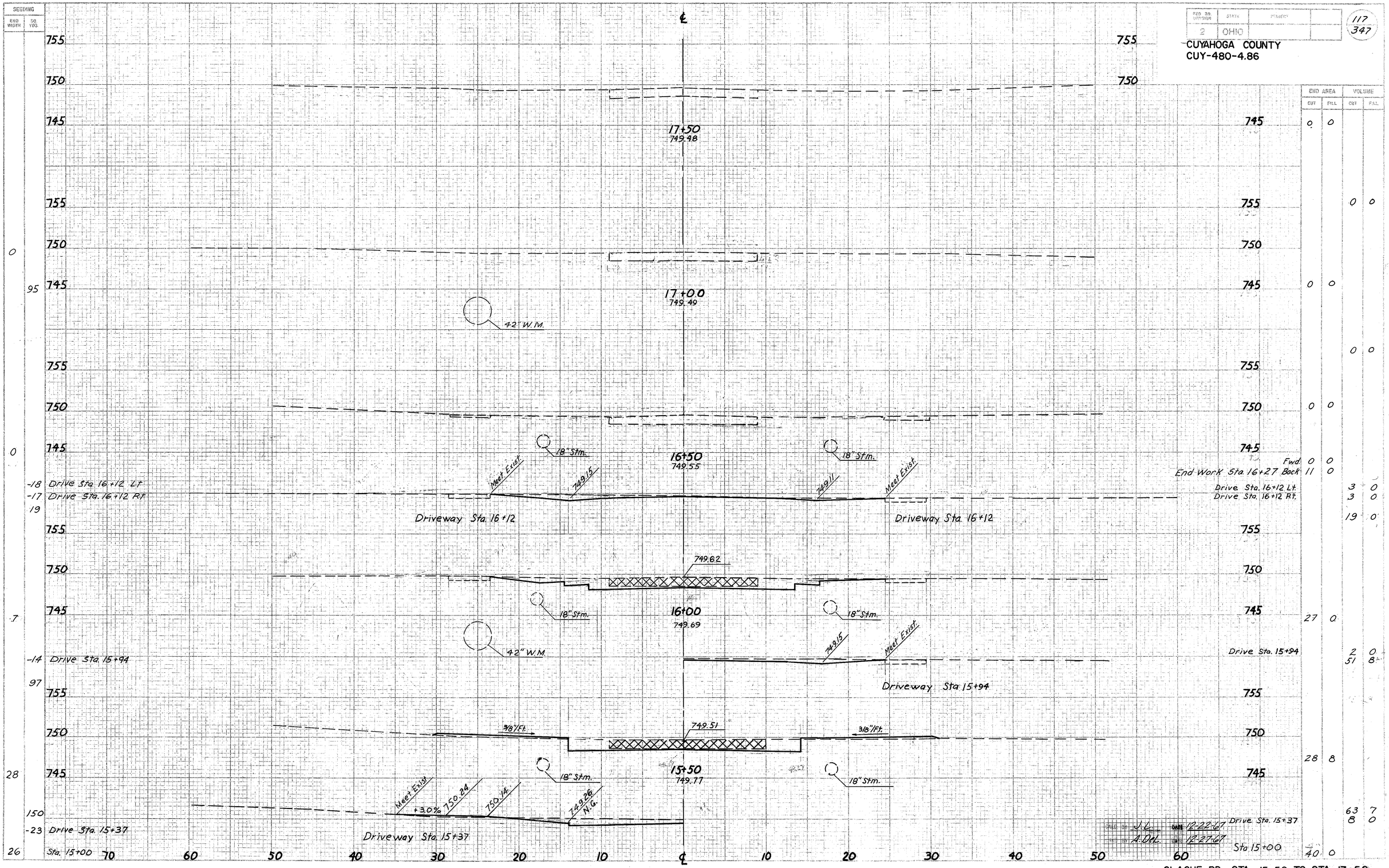
CUYAHOGA COUNTY
CUY-480-4.86

SEEDING END WIDTH	SEEDING SQ. YDS.
0	95
0	
7	97
28	150
26	

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	0		
		0	0
0	0		
		0	0
0	0		
0	0		
Fwd. 0	0		
End Work Sta 16+27 Back 11	0		
Drive Sta. 16+12 Lt.		3	0
Drive Sta. 16+12 Rt.		3	0
		19	0
		27	0
Drive Sta. 15+94		2	0
		51	8
		28	8
Drive Sta. 15+37		63	7
		8	0
Sta 15+00		40	0



DRAWN BY J.L. DATE 12-22-67
TRACED BY A.D.L. DATE 12-27-67

CLAGUE RD. STA. 15+50 TO STA. 17+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
		760				
		750				
83		740	35	398		
97	2	760				
		750			117	1120
92		740	28	207		
99	4	760				
		750			291	389
87		740	129	3		
106	7	760				
		750			733	7
105		Fwd.		Fwd. 267	1	
0		Back.		Back 0	0	
506		Add for Clague Rd. Intersection			388	0

L/A
4:1
747.1
754.67
391+00
748.8
750.5
Match Line I-80
5:1
747.4
752.85
390+00
749.0
748.2
6:1
8:1
747.7
750.40
389+00
750.5
747.5
4.5:1
Variable — Variable
749.6
749.92
388+00
751.0
747.2

80 60 40 20 ℄ 20 40 60 80 100 120 140

CALC. B. A.D.C.L. DATE 12-18-67
CHKD. J.L. DATE 12-26-67

RAMP C-I STA. 388+00 TO STA. 391+00

SEEDING	
CUBIC YARDS	SQ. YDS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

END AREA		VOLUME	
CUT	FILL	CUT	FILL

℄

4A

760
750
740

297 Add for I-80 Merger

Fwd 0
Back 64

4:1
24:1
753.6
Match Line I-80
36:1
747.7
753.75
395+00
749.3

760
750
Add for I-80 Merger
Fwd. 0 0
Back 14 228
760 89 304

706 760

LA

4:1
6:1
753.4
Match Line I-80
2:1
747.4
755.21
394+00
749.2

760
750
740
63
760 56 1054
750
740 16 341

739 760

L/A

4:1
4.6:1
753.2
Match Line I-80
2:1
747.1
755.84
393+00
748.6

760
750
740
70
760 54 1502
750
740 13 470

806 760

L/A

4:1
6:1
753.0
Match Line I-80
2:1
746.8
755.66
392+00
749.9

760
750
740
75
878
83
760 52 1772
750
740 15 487
93 1639
35 398

Sta. 391+00

80 60 40 20 ℄ 20 40 60 80 100

DES. BY	A. DeL	12-18-67
TRACED BY	JL	12-26-67

Sta. 391+00
Ramp C-1

RAMP C-1 STA.392+00 TO STA.395+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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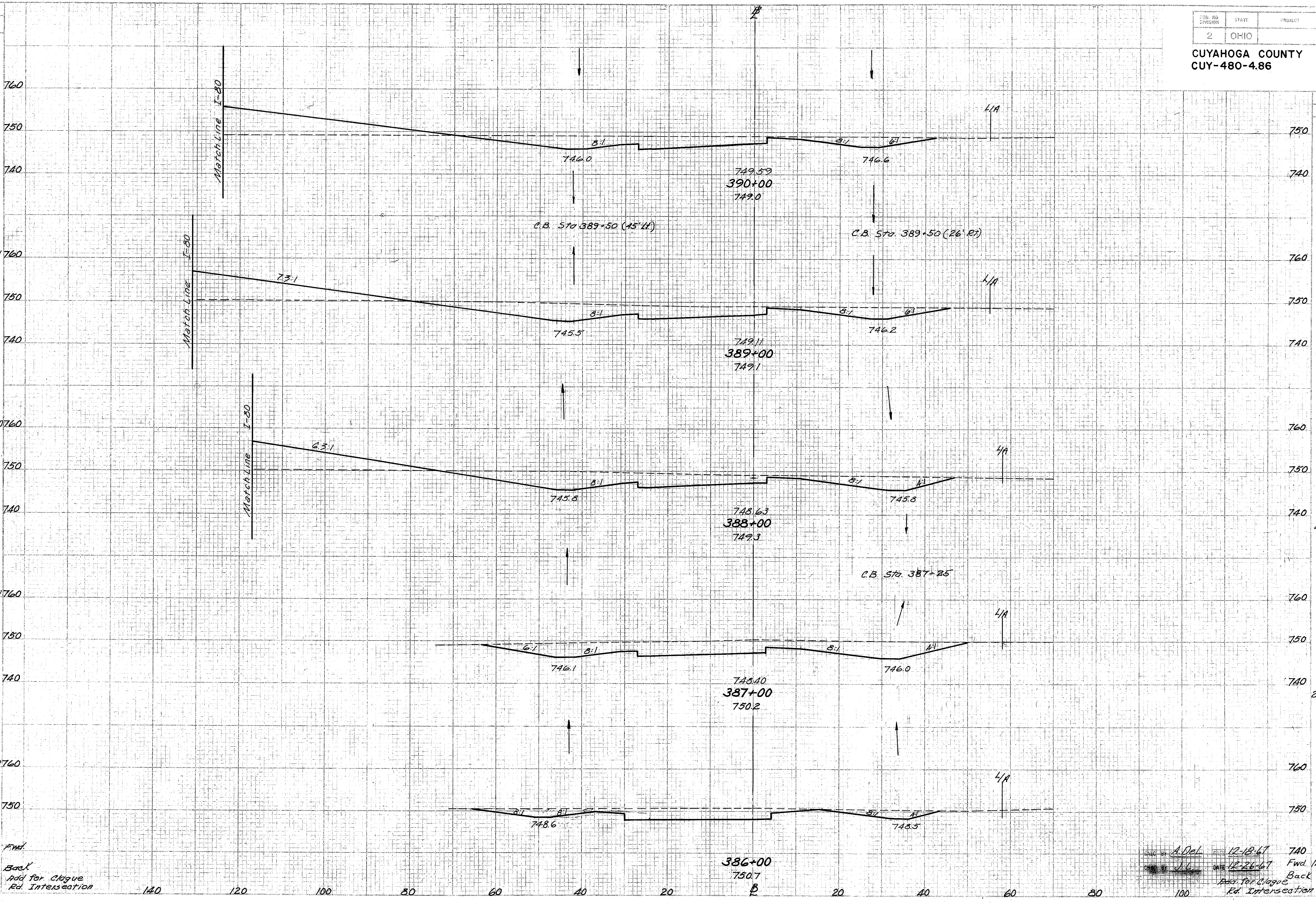
CUYAHOGA COUNTY
CUY-480-4.86



SEEDING	
SHD WIDTH	SQ YDS.
140	
	1611
150	
	1600
138	
	1261
89	
	900
73 (Fwd.)	
0 (Back)	
	263 (Add for Clague Rd. Intersection)

END AREA		VOLUME	
CUT	FILL	CUT	FILL
208	189		
		867	687
260	182		
		972	622
265	154		
		1035	285
294	0		
		817	0
Fwd. 147	0		
Back 0	0		
		175	5

Add for Clague Rd. Intersection

CALC BY A.DeL. DATE 12-18-67
CHKD BY J.L. DATE 12-26-67

RAMP C-2 STA.386+00 TO STA.390+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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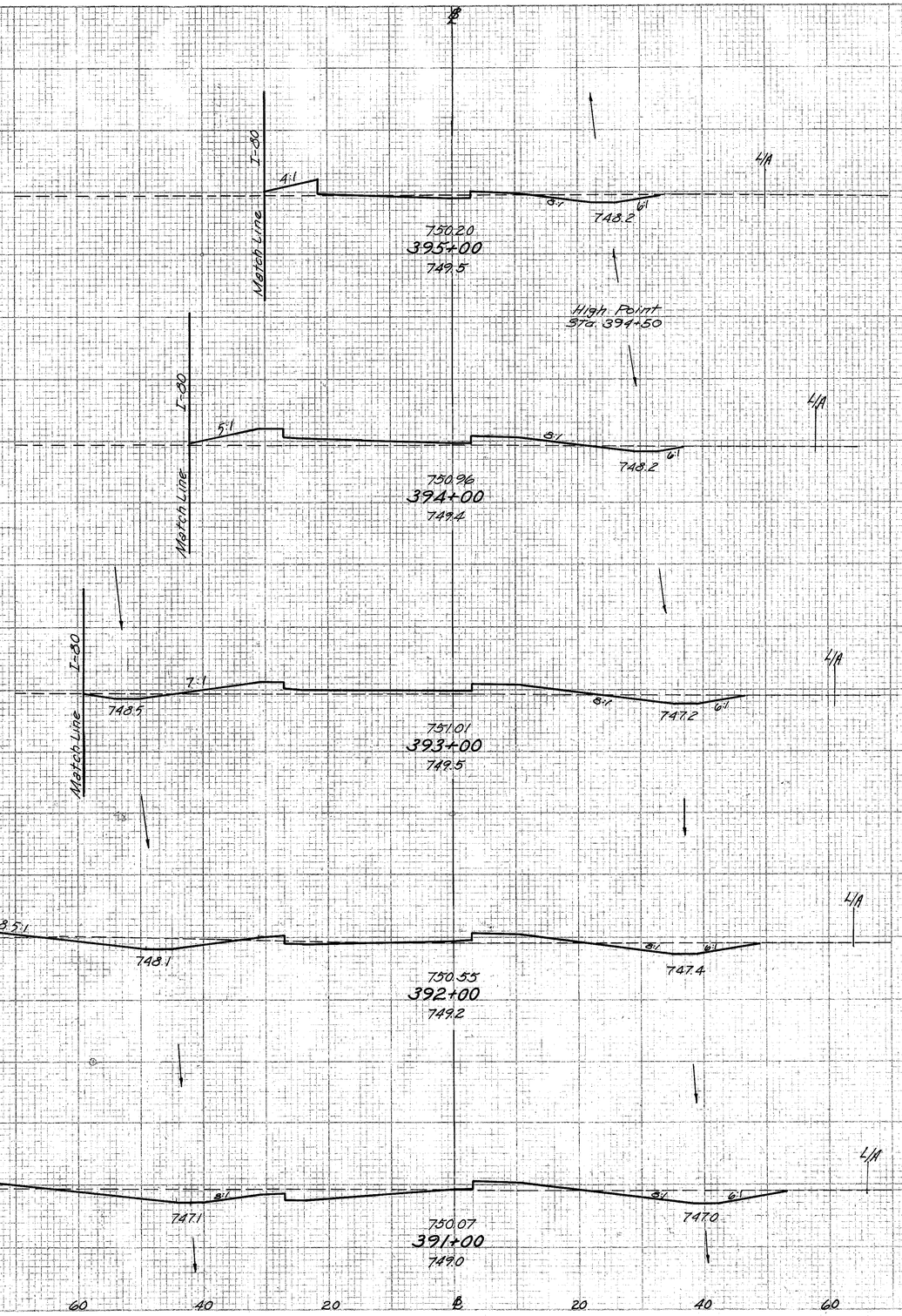
CUYAHOGA COUNTY
CUY-480-4.86

SEEDING END WIDTH	SEEDING SQ. YDS.
760	
255	Add for I-80 Merger
750	
0	Fwd.
42	Back
760	
522	
750	
52	
740	
760	
728	
750	
79	
740	
760	
972	
750	
96	
740	
760	
1278	
750	
134	
740	
1522	
140	



	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
750				
Add for I-80 Merger			185	48
Fwd.	0	0		
Back	23	25		
760			61	174
750				
740	10	69		
760			72	241
750				
740	29	61		
760			185	174
750				
740	71	33		
760			335	263
750				
740	110	109		
			589	552
Sta. 390+00	208	189		
Ramp C-2				

CALC. BY A.DeL 12-18-67
CHKD. BY JL 12-26-67

RAMP C-2 STA.391+00 TO STA.395+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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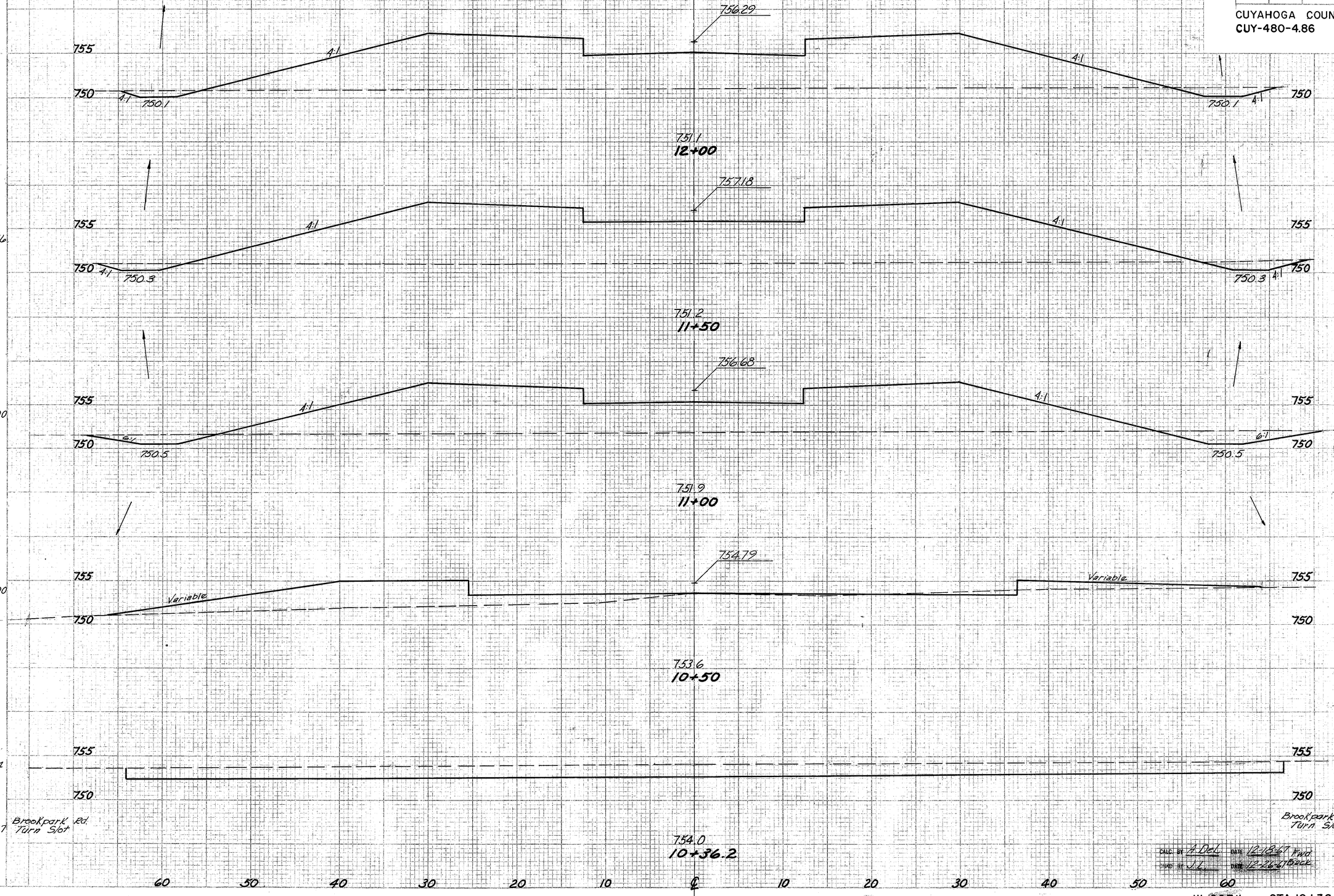
CUYAHOGA COUNTY
CUY-480-4.86

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
102	586	14*	161		26 927
109	600	14	540		39 877
107	500	28	107		30 493
73	54	5	126		45 33
357	0	170	0		145 26

*Brookpark Rd. Turn Slot



CALC BY A.D.L. DATE 12/8/67 Final
CHKD BY J.L. DATE 12/26/67 Final

W. 227th. STA. 10+36.2 TO STA. 12+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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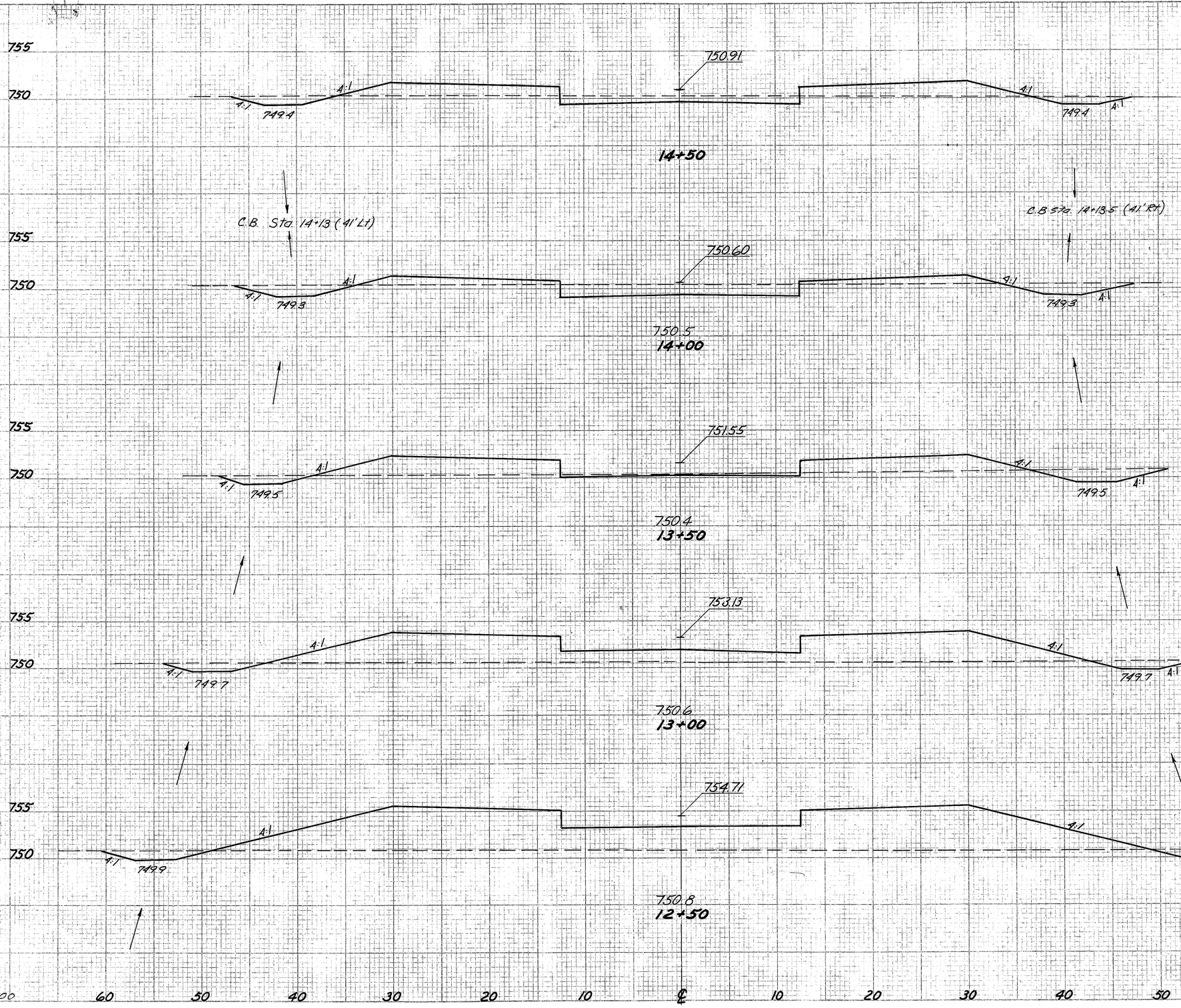
CUYAHOGA COUNTY
CUY-480-4.86

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
64	358	31	54	76	76
65	375	47	24	61	89
70	414	19	72	30	229
79	475	14	175	27	454
92	539	15	316	27	719
102		14	461		



CALC. BY A.DeL DATE 12-18-67
CHKD. BY J.L. DATE 12-26-67

W. 227th. STA. 12+50 TO STA. 14+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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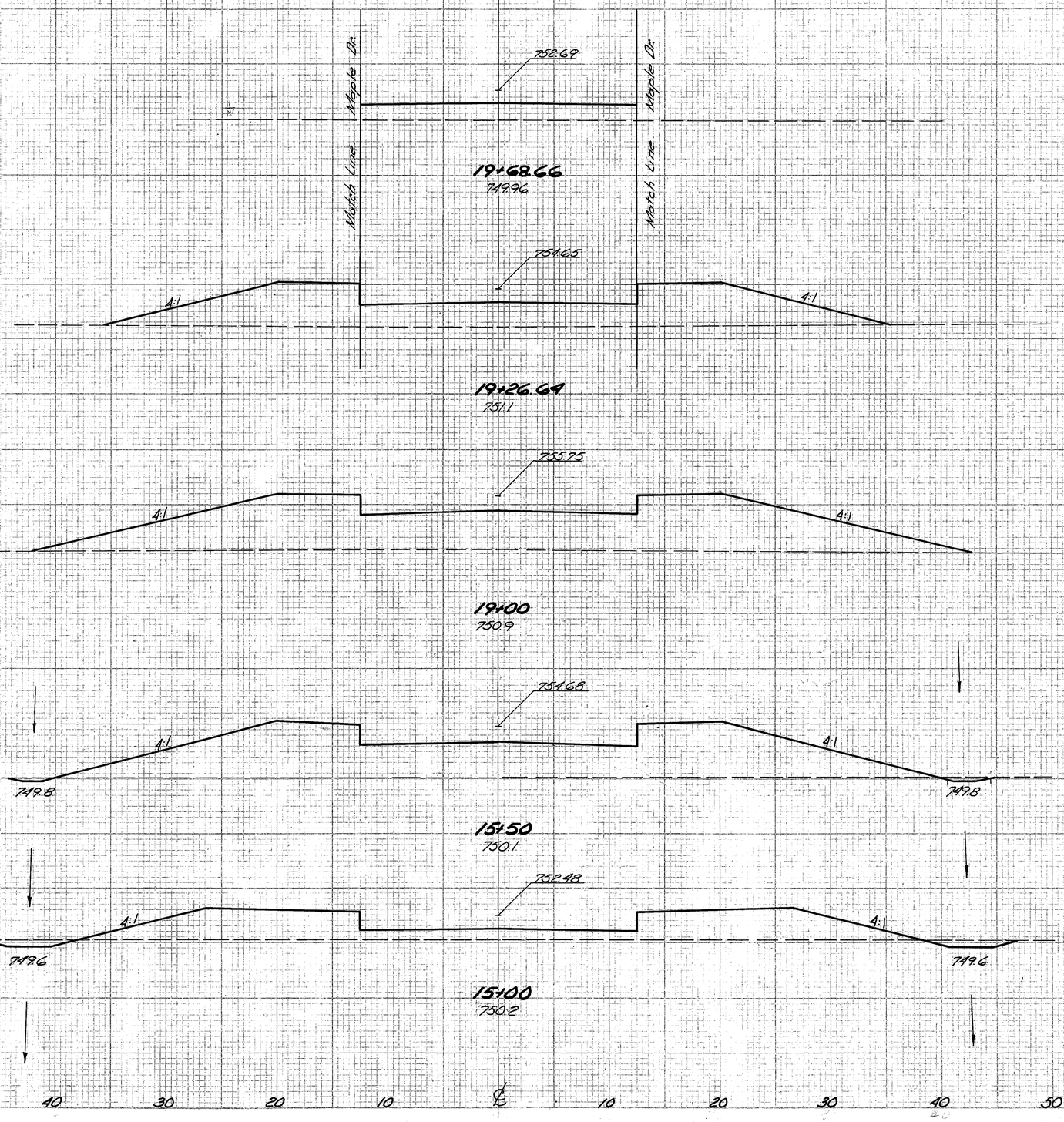
CUYAHOGA COUNTY
CUY-480-4.86

SEEDING		END AREA		VOLUME	
SEED YIELDS	SQ. YDS	CUT	FILL	CUT	FILL
0				0	36
634	Sta. 8+90 to 11+00 Maple Dr.				58 427
0	755				0 73
	750				
0	Fwd.			0	56
42	Back			0	179
145	755				0 226
	750				
56				Fwd.	0 280
174				Back	0 0
46	Fwd. Sta. 18+69.38				
0	Back			Add for Structure	1 734
0	Fwd.				
0	755 Sta. 15+87.64				
50	Back				0 0
230	750				
				Fwd.	0 0
60				Back	6 251
	755				
344					11 356
	750				
64					6 134
356					34 174
64					



CALC BY AOeL 12-18-67
CHKD BY JL 12-26-67

W. 227th. STA. 15+00 TO STA. 19+69.66

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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CUYAHOGA COUNTY
CUY-480-4.86

W. 227th. STA. 20+10.64 TO STA. 21+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

SEEDING END WIDTH	SEEDING SQ. YDS		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		755				
		750				
0		Fwd.	0	0		
0		Back	0	100		
	98	755			1	117
		750				
47			2	69		
	225	755				
-15		Drive Sta 9+07			29	73
		750				
39			29	10		
	26	755			11	2
		750				
8		Fwd.	29	0		
0		Back	0	0		
		755				
		750				

9+87.5
750.0
752.49
E.P.
W. 227 th St.
Match Line

9+50
750.17
751.0
751.29
E.P.
E.P.

Meet Exist.
750.84
750.28
N.6
Sta 9+07 DRIVEWAY
750
Drive Sta 9+07
14"/Ft.
750.39
E.P.
E.P.

9+00
750.0

Meet Exist.
E.P.
E.P.

8+90
750.4

E.P.
E.P.

8+50
750.57

60 50 40 30 20 10 0 10 20 30 40 50 60

CALC. BY J.C. DATE 5-6-68
CHECKED J.D.L. DATE 5-7-68

MAPLE DR. STA. 8+50 TO STA. 9+87.5

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

SEEDING		END AREA		VOLUME	
END WIDTH	30 YDS.	CUT	FILL	CUT	FILL
	750				
25	745				
		58	1		
-13	Drive Sta. 12+25				
150				3	-1
	750				
				94	6
26	745				
		43	5		
-11	Drive Sta. 11+75			3	0
158	750			72	22
31	745				
		35	19		
-6	Drive Sta. 11+25			3	-2
169					
	750			52	35
30	745				
		18	19		
	Total 8+90 to 11+00 634 to W227 St. Sht No.12A			Total 8+90 to 11+00 to W227St. Sht. No. 12A	58 427
207	750			17	96
44	745				
		0	85		
93					
	750			0	144
0	Fwd. 745				
0	Back	Fwd. 0	122		
		Back 0	0		
				0	0
				0	0

749.19
E.P.
4:1
750.2
12+50
West Exist.
× 6.2%
750.13
750.03
749.17 N.G.
749.36
Drive 12+25
749.53
750.0
12+00
749.61 N.G.
749.70
Drive 11+75
750.2
749.87
Var.
749.9
11+50
749.85 N.G.
750.04
Drive 11+25
750.5
750.21
749.9
11+00
750.8
751.34
749.8
10+50
752.49
Match Line W.227 th St.
749.9
10+12.5

60 50 40 30 20 10 ℄ 10 20 30 40 50 60 Sta. 9+87.5

MAPLE DR. STA. 10+12.5 TO STA. 12+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

SEEDING

END WIDTH	SQ. YDS.
26	203
35	-13
	172
27	-9
	153
28	-10
	164
31	164
	-14
28	

Drive Sta. 14+28

Drive Sta. 13+76

Drive Sta. 13+25

Drive Sta. 12+75

Sta. 12+50

749.79
15+10
749.9
24:1
MATCH LINE I-80
749.43
4:1
℄ EX. MAPLE DR.
E.P.
E.P.
24:1
MEET EXIST.
+10%
750.03
749.92
749.09 N.G.
749.30
14+50
750.6
DRIVE 14+28
749.13
4:1
℄ EX. MAPLE DR.
E.P.
E.P.
24:1
MEET EXIST.
+10%
749.64
749.53
748.80 N.G.
748.99
14+00
750.0
DRIVE 13+76
MATCH LINE I-80
748.83
℄ EX. MAPLE DR.
4:1
E.P.
E.P.
24:1
MEET EXIST.
+10%
749.37
749.27
748.57 N.G.
E.P.
748.76
13+50
749.7
DRIVE 13+25
℄ EX. MAPLE DR.
748.85
4:1
E.P.
E.P.
24:1
MATCH LINE I-80
MEET EXIST.
+10%
749.79
749.69
748.83 N.G.
E.P.
749.02
13+00
750.1
DRIVE 12+75
750
745

	END AREA CUY	END AREA FILL	VOLUME CUY	VOLUME FILL
	84	6		
			172	14
	11	7		
			3	
			127	6
	66	0		
			3	
			137	0
	82	0		
			4	
			142	0
	71	0		
			4	0
			119	1
	58	1		

CALC. BY JC DATE 5-6-69
CHKD. BY ADC DATE 5-9-69

MAPLE DR. STA. 13+00 TO STA. 15+10

FED. RD. DIVISION	STATE	PROJECT	
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CUYAHOGA COUNTY
CUY-480-4.86

SEEDING
END WIDTH | SQ. YDS.

70 60 50 40 30 20 10 ℄ 10 20 30 40 50

END WORK
Sta. 18+20.00

Exist. R/W

Exist. R/W

750

745

Lump
4.1

750

18+18
749.67

Meet Exist.
750.30±

2.48%

℄ 749.63

749.42

749.53

℄ 749.74

2.84%

Meet Exist.
750.51±

18+09 ℄ 8' Conc. Dr.
27'

17+90 ℄ 15' Conc. Dr.
20'

750

745

17+75
749.78

Meet Exist.
750.46±

℄ 749.96

749.75

750

0.54%

BEGIN CUL-DE-SAC PAV'T
Sta. 17+45

17+43 ℄ 15' Conc. Dr.
28'

4.1 North Total

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
Misc.			2	0
750				
745	36	0		
Drive, Sta. 18+09 Lt.	—	—	4	0
Drive, Sta. 17+90 Rt.	—	—	8	0
			96	0
750				
745	84	0		
Misc.			66	20
Drive, Sta. 17+43 Lt.	—	—	3	-7
NORTH CUL-DE-SAC TOTAL			179	13

749.74

℄ 749.95

Meet Exist.
750.22±

750

0.80%

35'

30 40 50 60

Sta. 14+52 ℄ of (2) Conc. Drive Strips

END CUL-DE-SAC PAV'T.
Sta. 14+40

Meet Exist.

℄ 749.88

749.67

750

2.84%

18'

14+31 ℄ 8' Conc. Dr.

750

745

Lump
3.2.2

14+10
749.99

749.77

℄ 749.98

Meet Exist.

750

0.44%

19'

Sta. 13+92 ℄ (9' Conc. Dr.)

Exist. R/W

Exist. R/W

750

745

Slope to C.B.

749.98

13+67
750.03

Slope to C.B.

BEGIN NEW PAV'T.
Sta. 13+57.76
ELEV. 750.00±

3.2.2 South Total

Misc.			72	19
Dr. Sta. 14+52 Rt.	—	—	3	-2
Dr. Sta. 14+31 Lt.	—	—	3	0
750				
745	89	0		
Drive, Sta. 13+92 Rt.	—	—	3	0
			92	2
750				
745	26	3		
Misc.			10	1
SOUTH CUL-DE-SAC TOTAL			183	20

CALC. BY: J.L. DATE: 5-6-68
CHKD. BY: A. Dec. DATE: 5-9-68

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

W. 224 th.

(NORTH CUL-DE-SAC
SOUTH CUL-DE-SAC)

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2	OHIO		

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SEEDING

END WIDTH	SQ. YDS
44	122
-8	
0	

40 30 20 10 0 10 20 30 40

760 755 750

759.34

4:1

12+00
759.22

Meet Exist.

759.92

759.81

759.13
M.G.

Drive Sta. 11+84.5 755

Sta. 11+50

Drive Sta. 11+84.5

3/8" F.F.

759.82

Match Line

Mastick Rd.

Meet Exist.

758.64
M.G.

8+50
758.85

Drive Apron Sta. 8+25

Meet Exist.

Meet Exist.

8+00
759.08

7+50
759.18

7+00
759.10

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
Fwd.	8	84		
			8	78
			2	-7
Sta. 11+43.0	0	0		
			0	0
Sta. 8+94.5 Fwd.	0	0		
Back	9	0	17	1
Back	18	2		
Drive Sta. 8+25			18	-5
			1/6	4
Fwd.	2	3		
Back	0	0		

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

CALC. BY JL DATE 5-6-68
CHKD. BY A.D.L. DATE 5-9-68

W. 220th. ST. STA. 7+00 TO STA. 12+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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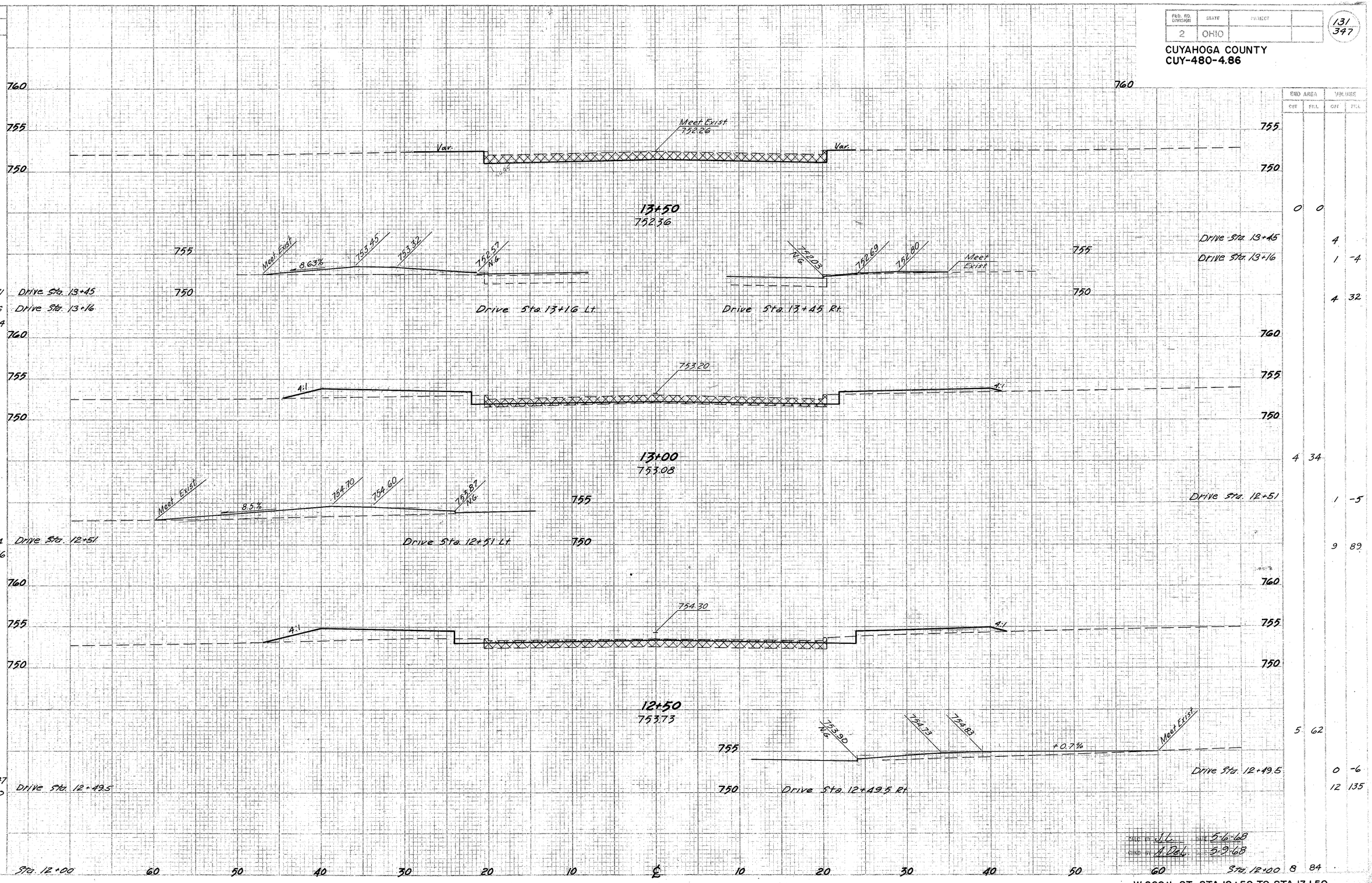
SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
6		0	0		
				4	
				1	-4
				4	32
				4	34
				1	-5
				9	89
				5	62
				0	-6
				12	135
				8	84



CALC. BY JL DATE 5-6-68
CHKD. BY [illegible] DATE 5-9-68

W. 220th. ST. STA. 12+50 TO STA. 13+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
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SEEDING

END WIDTH	SQ. YDS.
23	0
	0
	0
	0
	0
	0
	0

760.41
A:1
℄ Structure
13+50
Fwd.
Back
13+00
758.81
9+50
758.65
Structure 2
9+00
758.91
758.85
Mtch. Line
At 220 th. St.
8+50
759.11

	END AREA CUT	END AREA FILL	VOLUMES CUT	VOLUMES FILL
	0	44		
			1	14
Fwd. Sta. 13+32.4 Back	3	0		
	0	0		
			0	0
Sta. 9+34.2 Back	0	0		
	13	0		
			18	0
			15	0
			24	0
Fwd.	11	0		
Back	0	0		

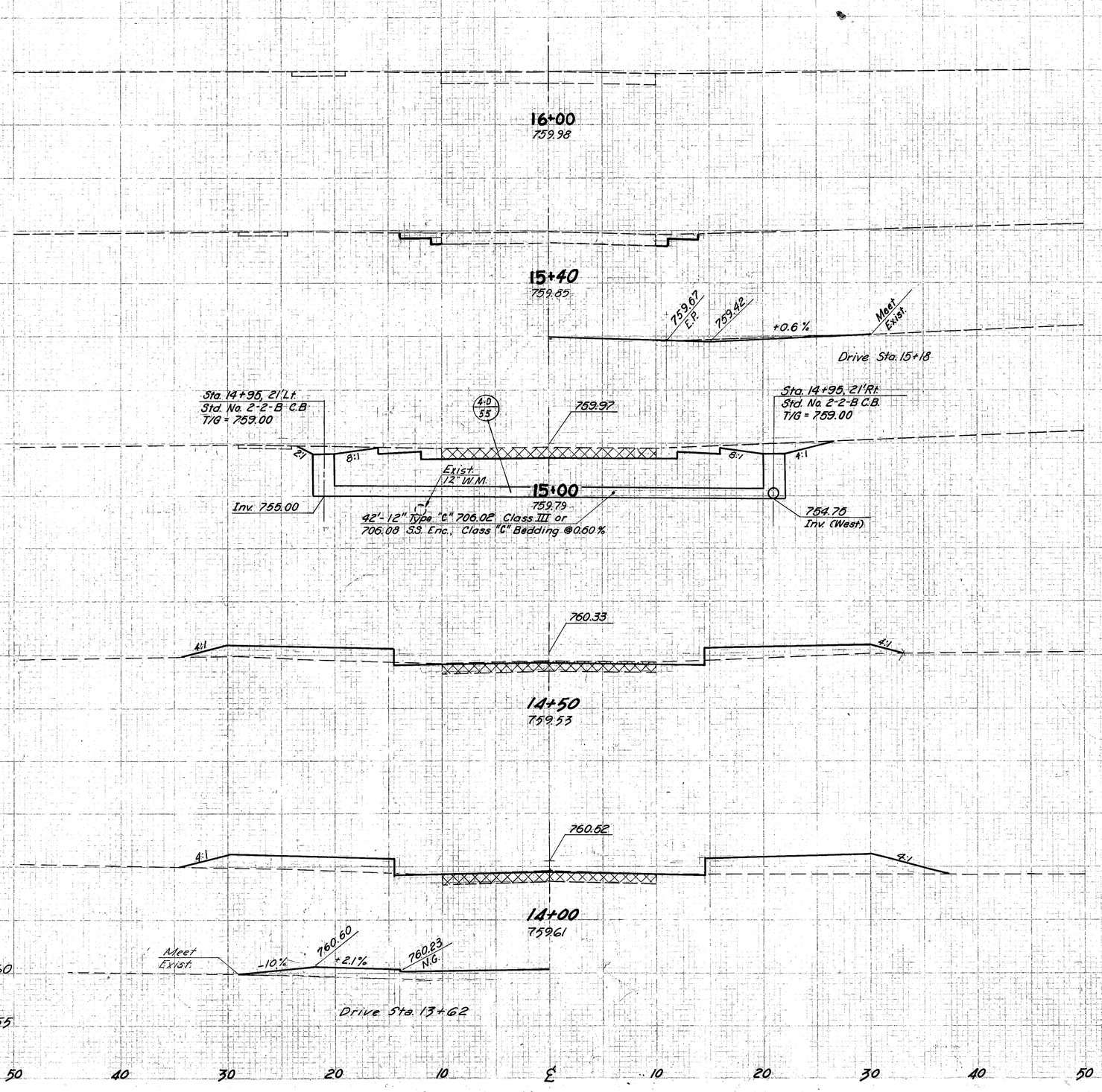
50 40 30 20 10 ℄ 10 20 30 40 50

CALC. BY JJL DATE 7-8-71
CHKD. BY TLB DATE 7-20-71

MASTICK RD. STA. 8+50 TO STA. 13+50

REG. NO.	SHEET NO.	TOTAL SHEETS
2	OHIO	133 347

CUYAHOGA COUNTY
CUY-480-4.86



		CUT AREA		VOLUME	
		CUT	FILL	CUT	FILL
0	765				
	760				
	755	0	0		
0					
	760			0	0
0	755				
-20	750 Drive Sta. 15+18				
44					
	760				
20	755				
	750				
172					
	760				
42	755			3	55
	750				
244				3	122
	760				
46	755			0	76
-16	Drive Sta. 13+62 750			1	-5
192				0	111
	760				
	755				
23	Sta. 13+50			0	44

FWD Back 755 0 0 / 5 0

Drive Sta. 15+18 750 4 -2 / 10 0

755 9 0

750 11 51

Drive Sta. 13+62 750

CALC. BY J.L. 7-8-71
CHKD. T.R.B. 7-20-71

MASTICK RD. STA. 14+00 TO STA. 16+00

WATER LINE WORK

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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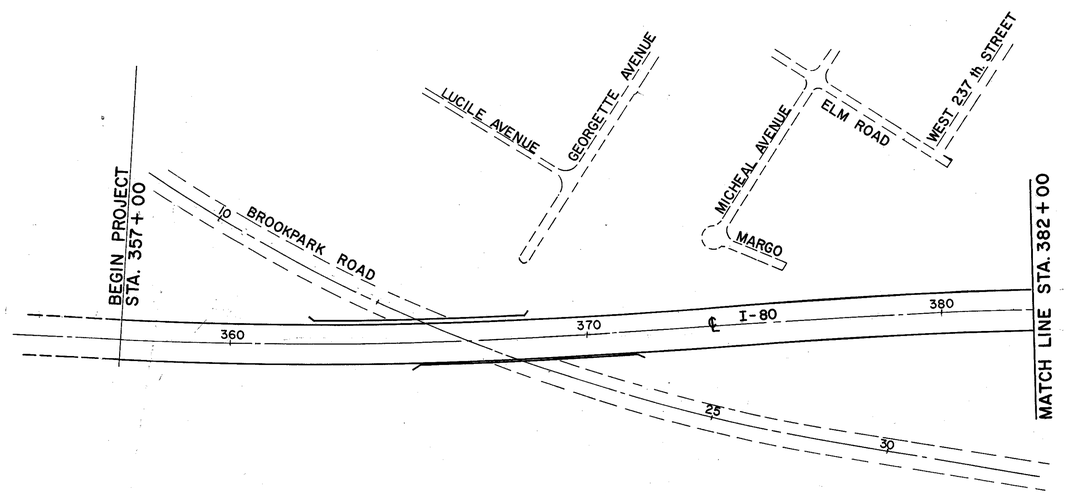

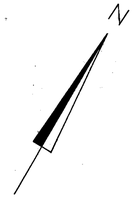

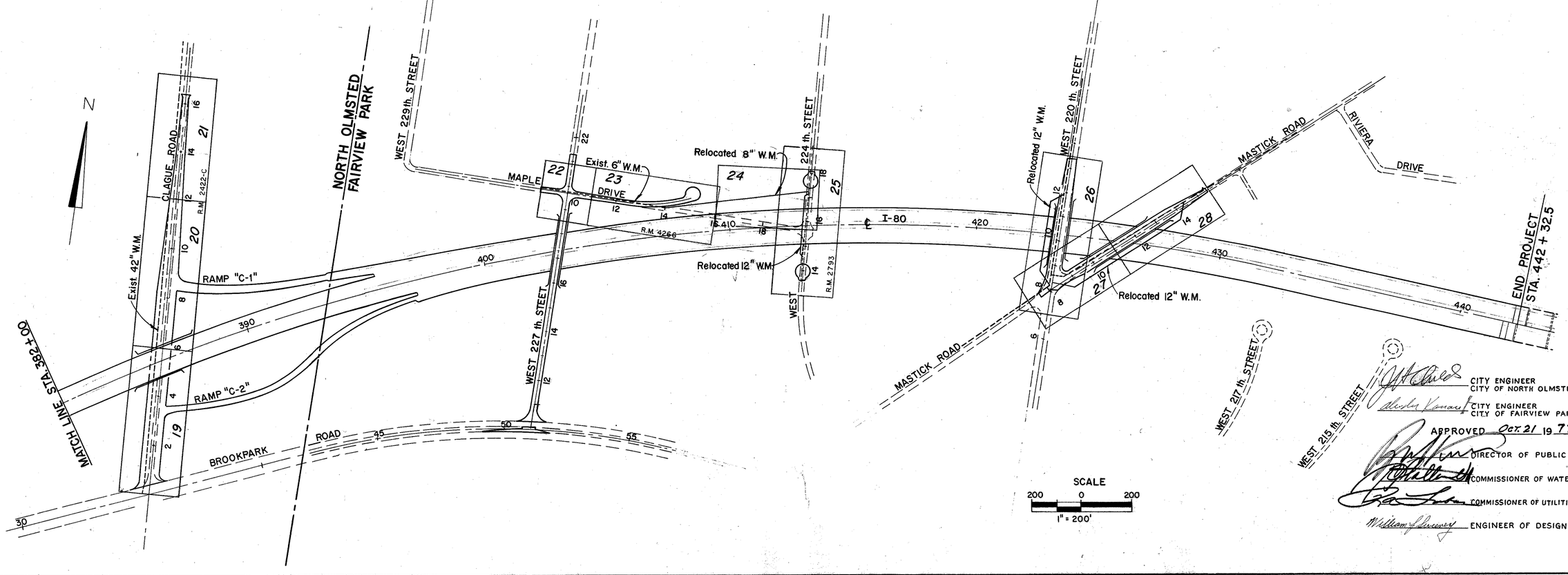

CITY ENGINEER
CITY OF NORTH OLMSTED

CITY ENGINEER
CITY OF FAIRVIEW PARK

APPROVED Oct 21 1977

DIRECTOR OF PUBLIC UTILITIES

COMMISSIONER OF WATER AND HEAT

COMMISSIONER OF UTILITIES ENGINEERING

ENGINEER OF DESIGN REVIEW

WATER LINE WORK-SCHEMATIC PLAN

FED. RD. DIVISION	STATE	PROJECT	
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CUYAHOGA COUNTY
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WATERWORK SUMMARY

TYPE CODE Y060

SHEET NUMBER												TOTAL QUANT	UNIT	ITEM	DESCRIPTION
138	152	153	154	155	156	157	158	159	160	161					
							290	368	192	332		1182	Lin. Ft.	Special	12" Water Main Ductile Iron Pipe ASA Class 6 with Ductile Iron Fittings Class D, Cement Lined, with Boltless Restrained Push-On Joints
								97	131	45		273	Lin. Ft.	Special	12" Water Main Cast Iron Pipe ASA Class 25 and Cast Iron Fittings Class D, Cement Lined
								2		1		3	Each	Special	12" Cutting-in Valve & Box Complete
					52	386						438	Lin. Ft.	Special	8" Water Main Ductile Iron Pipe ASA Class 6 with Ductile Iron Fittings Class D, Cement Lined
					148							148	Lin. Ft.	Special	8" Water Main Cast Iron Pipe ASA Class 25 and Cast Iron Fittings Class D, Cement Lined
							2					2	Each	Special	8" Cutting-in Valve & Box Complete
					30					17		47	Lin. Ft.	Special	6" Water Main Cast Iron Pipe ASA Class 25 and Cast Iron Fittings Class D, Cement Lined, all lead Joints
					1							1	Each	Special	6" Cutting-in Valve & Box Complete
					1					1		2	Each	Special	6" Hub Valve & Box Complete
	2	2	1									5	Each	Special	Extend 4" Hydrant Branch, Reset Hydrant
			1		1							2	Each	Special	Adjust Fire Hydrant and Valve Box to Grade
	4	3	2	2				4				12	Each	Special	Adjust Valve Box to Grade
	1	10	3		1		3	2		1		21	Each	Special	Extend Connection, Reset Valve Box To Grade
					4		1			1		6	Each	Special	Relocate, Retap & Reconnect Existing Service Connection
1												1	MFBM	Special	Sheeting Left in Place
			6	3	4		2	3				18	Each	Special	Adjust Curb Cock Valve Box to Grade
					1					1		2	Each	Special	Furnishing and Setting 6" Fire Hydrant
							1	2	2	1		6	Each	Special	12" Hub Valve & Box, Complete
					2	1						3	Each	Special	8" Hub Valve & Box, Complete
							2	2	1	1		6	Each	Special	2" Air Cock and No. 7 Valve Box Complete
9	6						1					16	Each	Special	Plug Connections at Main, Abandon Curb Box
										1		1	Each	Special	12" Plugging Existing Water Main
								1				1	Each	Special	Temporary Service Connection

CALC BY FJC DATE 7-8-69
CHKD BY HH DATE 10-9-69

WATERWORK NOTES

FED. RD. DIVISION	STATE	PROJECT	
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SCOPE OF WORK

The work contemplated under this contract comprises the furnishing and installing complete with valves, fire hydrants and other appurtenances, the following water main relocations and performing other incidental work necessary to abandon existing water facilities.

1. 8" Ductile Iron Pipe - Permanent relocation on the north side of Maple Drive to reconnect the main to W. 224 th. Street.
2. 12" Ductile Iron Pipe - Permanent relocation on the west side of W. 224 th. Street and under I-80.
3. 12" Ductile Iron Pipe - Permanent relocation on the west side of W. 220 th. Street around the W. 220 th. Street overpass of I-80.
4. 12" Ductile Iron Pipe - Permanent relocation on the east side of Mastick Road around the Mastick Road overpass of I-80.

The Contractor shall do all the work and furnish all the labor and material necessary for the final completion of this contract in the manner and under the conditions herein specified and provided and in accordance with the contract drawings.

DEFINITIONS

Whenever in these specifications or in any documents or instructions in construction where these specifications govern, the following terms are used, (or pronouns in place of them). The intent and meaning shall be interpreted as follows:

THE STATE

The State is the State of Ohio acting through its authorized representative.

ENGINEER

The Engineer is the District Deputy Director or District Engineer, The District Construction Engineer or the DISTRICT Maintenance Engineer, or the Project Engineer assigned to administer the contract.

THE CITY, OR THE CITY OF CLEVELAND

The City, or the City of Cleveland, is the Director, Department of Public Utilities, of the City of Cleveland.

STATUS OF CITY INSPECTOR

Inspectors as designated by the Director of Public Utilities shall be authorized to inspect all work done and materials furnished. Such inspection may extend to all or any part of the waterworks, and to the preparation or manufacture of the materials to be used in the waterworks. The city inspector as designated by the Director of Public Utilities shall make work instructions through the Project Engineer.

ACCESS TO WORK AND PLACE OF MANUFACTURE

The Contractor shall notify the Engineer and Director of Public Utilities, at least seven (7) days previous to the commencement of the manufacture of any materials, of the time and place where the manufacture is to commence, in order that a representative of the Engineer and Director may be present to inspect the manufacture. The Contractor shall provide, without charge or expense to the State and City, all necessary assistance to the Engineer and Director when required for inspection or verification of work done.

DIMENSIONS, DETAILED DRAWINGS AND ELEVATIONS

Figured dimensions on drawings shall take precedence over measurements by scale, and detailed drawings are to take precedence over general drawings and shall be considered as explanatory of them and not as indicating extra work. If, however, any of the detailed drawings show more elaborate or expensive work than is specified and indicated by the contract drawings, notice thereof must be given to the Engineer by the Contractor within ten (10) days after the receipt of such detailed drawings in order that the drawings may be amended or the additional expense on account of such work may be adjusted and authorized. If the Engineer does not receive such notice from the Contractor within ten (10) days after detailed drawings have been received by him, it is hereby agreed that the Contractor accepts the drawings and will execute them without claim for extra compensation.

FLOODS AND FREEZING WEATHER

Proper facilities shall be provided for protecting the work from damage by flood, rain or frost, and work done in freezing weather shall be done in such manner as the Engineer may approve. Valves shall be protected from freezing until backfilled in the completed work.

ADDITIONAL WORK

(A) - Attention is called to the fact that the work of this contract includes certain performances as incidental to the itemized requirements hereof, though not exclusive as follows: To perform all excavation, backfilling, sheeting, shoring, temporary and final repaving and to test the installation. Sand backfill shall be placed under existing and proposed pavement. For the performances herein described and for other incidental performances of like nature, the State will make no specific or separate payment or allowance, but the cost thereof shall be included in the prices stipulated to be paid for the various items of the work to be done under this contract.

(B) - Preliminary flushing: Before being placed in service all dirt and foreign matter shall be removed from the new water main or extensions to existing mains by a thorough flushing through the hydrants or by other approved means. Each valved section of newly laid pipe shall be flushed independently. This shall be done after the pressure test and may be done before or after the trench shall have been backfilled.

(C) - Chlorination: Following the preliminary flushing, the newly laid water pipe shall be chlorinated. The process of chlorinating, the method of procedure, the chlorinating agent and the rate of application shall be determined by the Engineer. The City of Cleveland will furnish the necessary labor and material required for such chlorination and install the necessary taps at the ends of the water main sections to be chlorinated. No charge will be assessed the Contractor for any material, labor, tools, equipment and incidentals furnished by the City of Cleveland, Division of Water. The Contractor shall furnish the necessary labor for excavating and backfilling which will be required for the installation of taps for injecting the chlorine solution, operating pumps and flushing mains.

(D) - Final flushing and test: Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipe at its extremities until the replacement water throughout its length shall, upon test, both chemically and bacteriologically, be proven equal to the water quality served the public from the existing water supply system.

(E) - For the performances described in paragraphs B, C and D, the State will make no specific or separate payment or allowances, but the cost thereof shall be included in the prices stipulated to be paid for each linear foot of pipe furnished and installed.

MAINTENANCE OF SERVICE AND CONNECTING RELOCATED MAINS

The Contractor shall follow strictly the sequence of construction shown on the plans. All existing fire hydrant leads and house services shall be hand tunneled using special care to avoid any damage which might require shutting down the existing main until the new main is ready to be placed in service.

When the new mains have been tested and chlorinated and are ready to be connected to the old main, the Contractor shall make such connections at a time designated by the City. Prior to shutting down the existing mains, the Contractor shall take suitable precautions to assure a minimum interruption to service, including the following:

1. Perform all necessary excavation, including bell holes exposing the existing main sufficiently for the operation of the pipe saw by the City.
2. Remove the cap or plug from the end of the new main.
3. Swab the inside of all pipes, bends and sleeves to be used in connection thoroughly with a chlorine solution of at least 100 p.p.m.
4. Make-up as much of the connection as possible outside the ditch to eliminate the need for caulking most of the necessary joints during the shutdown. By careful measurement all pipe cuts can be made by the Contractor prior to shutting down.
5. Have sufficient manpower and equipment on the site to perform the operation in a minimum of time.

PAINTING

(A) - It is the intention of these specifications to provide that all metal work subject to corrosion shall be satisfactorily protected by a durable coating of paint or other approved material and that all metal surfaces not buried in earth, or in concrete, shall be left clean and well painted at the completion of the contract. Unless otherwise specified, the protection shall be at least that given by three (3) coats of approved paint. The first coat is to be applied at the shop before the metal has rusted and after all grease, dirt and scale has been removed. Bolts and nuts shall not be shop coated, but shall receive three (3) coats of approved paint after installation.

APPROVED 10/21 1977

CITY ENGINEER
CITY OF NORTH OLMSTED

CITY ENGINEER
CITY OF FAIRVIEW PARK

ENGINEER OF DESIGN REVIEW

1st HIGH SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATER WORK NOTES FOR INTERSTATE ROUTE 80 -

WATERWORK NOTES

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2	OHIO		

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(B) - All metal work which has not been coated before the arrival on the job shall be given a temporary protective coating of such a nature as to permit the ready adherence of future coatings. The temporary coating shall be a good grade asphaltic paint or other approved material. This temporary protection shall apply particularly to the valve boxes and covers, manhole rings and covers, ladders and ladder rungs and elsewhere when in the opinion of the Engineer, such protection is necessary.

(C) - All surfaces of metal which will be in contact after assembling shall be painted, at least one coat, before assembling. The final coat of paint on all exposed work shall be given shortly before the completion of the contract.

(D) - Where painting clauses appear hereinafter, they shall take precedence over this section, except that temporary protection herein described may be required.

(E) - All of this work shall be included in the price bid for the particular item requiring the painting.

TESTS, INSPECTION AND REPORTS

Notwithstanding the requirements of any other provisions of these specifications, the Contractor shall arrange for and pay all costs involved for shop inspection of all materials furnished, manufacture of all pipe, valves, fittings, etc., field and shop welds and welding, and furnish to the State and the City of Cleveland copies of all shop, fabrication, manufacture and other related inspection reports of materials furnished. This inspection shall be done by a recognized inspection laboratory approved by the City of Cleveland. In the case of any item not specifically mentioned in the "Waterwork Notes", the State of Ohio Department of Transportation "Construction and Material Specifications - Jan. 1, 1977" shall govern.

HANDLING PIPE AND ACCESSORIES

(A) - Unloading: Pipe, fittings, valves, hydrants, and other accessories shall, unless otherwise directed, be unloaded at the point of delivery, hauled to and distributed at the site of the project by the Contractor. They shall at all times be handled with care to avoid damage. In loading and unloading they shall be lifted by hoists or slid, or rolled on skidways in such manner as to avoid shock. Under no circumstances shall they be dropped. Pipe handled on skidways must not be skidded or rolled against pipe already on the ground.

(B) - At site of work: In distributing the material at the site of the work, each piece shall be unloaded opposite or near the place where it is to be laid in the trench.

(C) - Protection of pipe coating: Pipe shall be handled in such manner that a minimum amount of damage to the coating will result. Any cast iron pipe or fitting, the coat of which has been damaged in shipping or handling, shall have the damaged portion well cleaned and covered with an asphalt paint, approved by the Engineer, before being placed in the work. The Contractor shall thoroughly coat all exposed parts of bolts and nuts with an approved asphalt paint, after all pipe has been laid and before backfilling has been placed. All field coating shall be furnished by the Contractor.

(D) - Pipe kept clean: The interior of the pipe, fittings, and other accessories shall be kept free from dirt and foreign matter at all times.

(E) - Frost protection: Valves and hydrants before installation shall be drained and stored in a manner that will protect them from damage by freezing.

CHANGES IN WATER PIPES

(A) - Wherever it becomes necessary in the opinion of the Engineer to change the location of house connections, such changes will be made as work to be done by the City. The Contractor shall notify the City in ample time to permit the City to make such changes and avoid unnecessary delay in the completion of the work. The Contractor shall also cooperate with the City in making these changes and shall supply all materials, do all excavating, backfilling and repaving as may be required. The City will furnish the labor and equipment only for making the changes required, including tapping, in the location of existing house service connections and meters.

(B) - Wherever it becomes necessary, in the opinion of the Engineer, to change the location or elevation of water mains and hydrants, and where connections are to be made between existing distribution mains and water mains under this contract, the Contractor shall remove and dispose of all existing water line materials required to make the connection, and shall furnish and install complete, all the cast iron or ductile iron pipe, fittings and valves to make the connections indicated; Branch sleeves and valves shall be furnished by the Contractor, but will be installed by the City. The Contractor shall also furnish all necessary labor, materials, tools and equipment and make the excavation, backfill and repaving for such connections. Payment for this will be included in price bid under appropriate item for size of water main or connection to be installed. All pipes, valves, hydrants and appurtenances removed shall become the property of the Contractor.

WORK TO BE DONE BY THE CITY

(A)- The Contractor will furnish the piping material for, and the City will make all changes required, including tapping, in the location of existing house service connections and meters. The Contractor shall do all the necessary excavation, backfilling and repaving required therefore. No charge will be assessed the Contractor for any of the labor furnished by the City.

(B) The City will install all tapping sleeves and valves, but the Contractor shall supply the tapping sleeves and valves, lead, and do all the necessary excavation, backfilling and repaving required therefore. In addition to the above requirements, the Contractor shall furnish all air compressors required for the work under the specified item.

(C) In locations shown on the plans the Contractor will be required to sleeve-in to the existing mains. To speed up this operation, it is called to the Contractor's attention that the water department has on hand at Harvard Yards motor operated pipe cutters which are available for cutting pipe by city forces. THE CHARGES include cost of labor, use of pipe cutting machine, and truck. The Contractor shall do all necessary excavation, backfilling and repaving and all air compressor equipment shall be furnished by the Contractor. Charges may be obtained from the Permit-Sales Section of the Division of Water and Heat.

EXCAVATION

(A) - The Contractor shall remove all existing structures, roadways, driveways and other similar materials and make to the lines and grades given, all excavation necessary for the proper construction of the water main, pipe connections and appurtenant structures, including tunnel and shaft excavation. The excavation shall include the removal, handling, rehandling and disposal of materials encountered in the work and shall include all pumping, bailing, draining, sheeting and bracing. Moreover, the Contractor must assume all responsibility for any added expense or other liability which may arise by means of quicksand, obstacles or conditions foreseen or unforeseen and encountered in the work of this contract.

(B) - Trenches shall in every case be of sufficient width to permit solid packing of backfill under and around pipes, and satisfactory construction of all appurtenances and for such sheeting and shoring, pumping and draining as may be necessary.

(C) - The trench shall be dug to the alignment and depth required and only so far in advance of pipe laying as the Engineer shall permit. The trench shall be so braced and drained that workmen may work therein safely and efficiently. It is essential that the discharge from pumps be led to natural drainage channels, to drains, or to sewers.

(D) - The trench width may vary with and depend upon the depth of trench and the nature of the excavated material encountered; but in any case shall be of ample width to permit the pipe to be laid and jointed properly and the backfill to be placed and compacted properly. The minimum width of unsheeted trench shall be eighteen (18) inches and for pipe ten (10) inches or larger, at least twelve (12) inches larger than the outside diameter of the pipe for concrete pipe and eighteen (18) inches larger than the outside diameter of the pipe for cast iron and steel pipe, except by consent of the Engineer; the maximum clear width of trench shall be not more than two (2) feet greater than the outside pipe diameter. When sheeting and bracing is used, the trench width shall be increased accordingly.

(E) - The trench, unless otherwise specified, shall have a flat bottom conforming to the grade to which the pipe is to be laid. The pipe shall be laid upon sound soil cut true and even, so that the barrel of the pipe will have a bearing for its full length.

(F) - Any part of the trench excavated below grade shall be corrected with approved material, thoroughly compacted.

(G) - When the uncovered trench bottom at subgrade is soft and in the opinion of the Engineer cannot support the pipe, a further depth and/or width shall be excavated and refilled to pipe foundation grade as required under (F), or other approved means shall be adopted to assure a firm foundation for the pipe.

(H) - Ledge rock, boulders, large stones, and shale shall be removed to provide a clearance of at least six (6) inches below all parts of the pipe, valves, or fittings and to a clear width of six (6) inches on each side of all concrete pipe and nine (9) inches on each side of all cast iron and steel pipe shall be provided.

(I) - Excavation below subgrade in rock, shale or in boulders shall be refilled to subgrade with approved material, thoroughly compacted.

(J) - Bell holes of ample dimensions shall be dug in earth trenches at each joint to permit the jointing to be made properly. Adequate clearance for properly jointing pipe laid in rock shall be provided at bell holes.

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1st HIGH SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

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(K) - The use of excavating machinery will be permitted except in places where operation of same will cause damage to trees, buildings, or existing structures above or below ground; in which case hand methods shall be employed.

(L) - Trees, fences, poles and all other property shall be protected unless their removal is authorized; Any property damaged shall be satisfactorily restored by the Contractor.

(M) - Hydrants under pressure, valve pit covers, valve boxes, curb stop boxes, fire or police call boxes, or other utility controls shall be left unobstructed and accessible during the construction period.

(N) - The Contractor shall maintain all excavations in good order during the construction, so as not to hinder or injure the pipe laying, masonry or other work. He shall take all reasonable precautions to prevent movement of the sides of such excavation, and shall remove at his own expense any material sliding into the excavation.

SHEETING AND BRACING

(A) - The Contractor shall furnish and put in place such sheeting and bracing as may be required to support the sides of trenches or other excavation and shall remove such sheetings and bracings, as the trench or excavation is filled up, unless the Engineer shall order it left in place, in which case the Contractor shall cut the plank off at a height as ordered by the Engineer, or as called for on the contract drawings. A quantity of 1-M.F.B.M. has been provided in the General Summary for Item Special – Sheeting Left in Place.

(B) - Whenever the excavations for the work herein to be done are immediately adjacent to other subsurface structures, the Contractor shall furnish and place sheeting and bracing where noted on contract drawings and as may be necessary so as to reduce to a minimum the possibility of injuring or damaging the same.

(C) - If the Engineer is of the opinion that at any point sufficient or proper supports, sheeting, or bracings have not been provided, he may order additional supports, sheeting or bracing, at the expense of the Contractor, and the compliance with such orders by the Contractor shall not relieve or release him from his responsibility for sufficiency of such supports.

REMOVAL OF EXCAVATED MATERIAL

(A) - All surplus material and such other material as the Engineer may deem unfit for use as backfill shall be disposed of by the Contractor so as to give a minimum of inconvenience to the public. In case of settlement after backfill, the Contractor shall supply sufficient material satisfactory to the Engineer to make up for the deficiency.

(B) - In the storing of excavated material, which is to be used as a backfill, the Contractor shall exercise care so as to avoid inconveniencing the public. If, in the opinion of the Engineer, it is necessary to remove this excavated material from the streets or lots, the Contractor shall be required to do so.

(C) - Any material which may spill or drip from vehicles by hauling in the streets, shall be removed and the streets cleaned by the Contractor, to the satisfaction of the Director of Public Service of the City of Cleveland or the proper officials of the municipality or township in which the work is being done.

(D) - When so directed by the Engineer, the Contractor shall immediately remove all excavated materials from the site and dispose of the same.

LAYING PIPE

(A) - Proper implements, tools, and facilities, satisfactory to the Engineer shall be provided and used by the Contractor for the safe and convenient prosecution of the work. All pipe, fittings, and valves shall be carefully lowered into the trench piece by piece by means of derrick, proper slings, and other suitable tools or equipment, in such manner as to prevent damage to pipe or coating, under no circumstances shall pipe or accessories be dropped or dumped into the trench. If any defective piece be discovered while pipe is suspended or after being laid, a new piece shall be furnished and installed by the Contractor at the site of the work.

(B) - All foreign matter or dirt shall be removed from the inside of the pipe before it is lowered into its position in the trench, and it shall be kept clean by approved means during and after laying.

(C) - At times when pipe laying is not in progress, the open ends of pipe shall be closed by approved means, and no trench water shall be permitted to enter the pipe. No pipe shall be laid in water, or when the trench conditions or the weather is unsuitable for such work, except by permission of the Engineer.

(D) - Wherever necessary to deflect pipe from a straight line, either in the vertical or horizontal plane to avoid obstructions, to plumb stems, or for other reasons, the degree of deflection shall be approved by the Engineer.

(E) - Before laying cast iron or ductile iron pipe, all lumps, blisters and excess coal tar coating shall be removed from the bell and spigot ends of each pipe, the pipe ends shall then be kept clean until joints are made.

FLOATING

The Contractor shall take every precaution against the floating of the pipe due to water coming into the trench, or through caving in, flushing or puddling. In case of such floating the Contractor shall replace the pipe at his own expense, and make wholly good any injury or damage which may have resulted.

TESTING MAINS

(A) - All pipes, valves, fittings, etc., shall be laid in such a manner as to leave all joints watertight. After the pipe is laid, and before backfilling is placed around the joints, such lengths of the water main as the Engineer may determine, shall be tested under a hydrostatic pressure of seventy-five (75) pounds per square inch above the static pressure, but nowhere less than 100 pounds per square inch.

(B) - The test shall be under the direction of the Engineer and Director of Public Utilities or his designate. The Contractor may obtain water for testing by observing the rules and regulations enforced in the municipalities or Townships in which the work is being done. The City will furnish a pressure gage for measuring the pressure on the water main, but the Contractor shall furnish a suitable pump, pipes, test heads and all appliances, labor, fuel and other appurtenances necessary to make these tests.

(C) - The test pressure shall be maintained for a sufficient length of time to allow for a thorough examination of joints and elimination of leakage where necessary. The pipe lines shall be made absolutely tight under the test pressure.

(D) - After a section of the water main has been tested, the Contractor shall drain same. In case the drains are connected to valve or drain vaults, then the Contractor shall within reasonable time after the test has been completed pump all water out of the vaults.

(E) - In cold weather immediately after testing a section of the water main, the Contractor is to open all valves, air cocks, by-passes and drains and properly drain bonnets of all valves in the section of the water main, and take all other precautions necessary to prevent injury to water main and appurtenances due to freezing.

(F) - As an alternate for testing concrete and steel mains other than by the preceding method, the Contractor may choose the following procedure.

The water main shall be tested under the same hydrostatic pressure as previously noted. The test pressure shall be maintained for a period of two (2) hours by pumping additional water into the main, if necessary. The quantity of water thus pumped into the main multiplied by twelve (12) shall be taken as the leakage per twenty-four (24) hours.

(G) - The permitted leakage shall not exceed a rate of seventy-five (75) gallons per twenty-four (24) hours per mile of pipe per inch of nominal diameter.

(H) - In calculating leakage, the Engineer will make allowance for any leakage at the valves, the removeable bulkheads, etc.

(I) - In using this method of testing, the Contractor may backfill the pipe except at lead joints, flanged joints, victaulic couplings, and drain connections immediately following the laying and before the actual test has been made. In case the leakage exceeds the permissible amount mentioned above, the Contractor shall find the leak and make the joints tight. The Contractor shall furnish suitable means for determining the quantity of water lost by leakage during the test.

(J) - In order to be able to make proper allowances for leakage at valves, etc., previously noted, only such sections of water main may be selected for test as will have such valves, removable bulkheads, etc., accessible.

(K) - The evaluation of actual leakage to standard pressure (150 lbs.) leakage is calculated by the application of the ratio determined from the square root of respective pressures, other factors being equal.

CLOSING VALVES

The closing of all gate valves on water mains for making connections, tests, or for any other cause, shall be done by the City of Cleveland. The Contractor shall notify the Cleveland Water Department three (3) weeks in advance of the shutdown and they will specify the time and/or special conditions, hours, etc.

PLUGGING DEAD ENDS

Standard plugs with clamps shall be inserted into the bells of all dead ends of pipes, tees, or crosses, and spigot ends capped and clamped by the Contractor , on all mains constructed by him and on existing water mains where indicated in the contract drawings. Concrete piers shall be

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placed when called for on the contract drawings, or ordered by the Engineer. The cost of furnishing and installing the plugs shall be included in the per linear foot price bid for the various sizes of new water mains.

ITEM SPECIAL- PLUGGING EXISTING WATER MAINS AND BRANCHES AND PLUGGING SERVICE CONNECTIONS

WORK INCLUDED

The work included under these items shall consist of the plugging of existing water mains and branches, and the plugging of service connections at the locations shown on the drawings or as ordered, including cast iron plugs or caps with clamps and concrete piers, all excavation, sheeting and bracing, concrete, sand backfill, backfill, temporary repaving and permanent repaving, all as required for the proper completion of the work included under this contract.

(A) - Plugging Mains and Branches:
When indicated on the plans or as ordered, the Contractor shall make pipe cuts, remove pipe and fittings and shall plug or cap mains, tees or crosses, plug connections at main or branches, shall do all the excavating, backfilling and repaving, all as required.

(B) - Plugging Service Connections:
The Contractor shall do all necessary excavation, sheeting and bracing, sand backfilling, backfilling and repaving required for this item, but the Cleveland Water Department will plug the service connection.

The Contractor shall arrange with the Cleveland Water Department for the necessary work under this item.

MEASUREMENT

The existing water mains and branches plugged or service connections plugged to be paid for shall be the actual number of each listed and estimated separately, completed and accepted.

BASIS OF PAYMENT

The unit price stipulated for (A) "Item Special-Plugging Existing Water Mains and Branches" shall constitute full compensation for performing all the requirements of this item including furnishing all necessary materials, labor, tools, equipment and incidentals to make this a complete item of work. The item shall be paid for on per "Each" basis.

The unit price stipulated for (B) "Item Special- Plugging Service Connections" shall constitute full compensation for performing all the requirements of this item including furnishing all necessary materials,labor, tools, equipment and incidentals to make this a complete item of work. The item shall be paid for on per "Each" basis.

The labor, tools, equipment and incidentals furnished by the City of Cleveland, Division of Water, will be at no expense to the Contractor. The work performed by the City of Cleveland applies to (B) Plugging Service Connections.

BACKFILLING

(A) - This work includes all backfilling, together with ramming, puddling, and rolling, as required; the grading of grounds; the replacing of surface and subsurface structures; the placing and maintaining of temporary sidewalks, and driveways; the furnishing of suitable material for backfill, reseeding lawns and replacing trees and shrubbery damaged by the Contractor; and all appurtenant work incidental thereto. Pavements, curbs, sidewalk and driveways within the limits of the work shall be temporarily surfaced, maintained and finally replaced or repaved as set forth under roads, surfaces, sidewalks, driveways and curbing.

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(B) - Backfill, unless otherwise specified, may be made with material excavated from the trenches, providing same is satisfactory to the Engineer. If, in the opinion of the Engineer, the material excavated is unsatisfactory, then the Contractor shall furnish at his own expense other material suitable for backfill. All backfill shall be free from slag, cinders, rubbish and other objectionable material.

(C) - Before laying the pipe, the bottom of the trench shall be brought to the grade of the bottom of the pipe, except at field joints. Wherever the bottom of the trench has been excavated below the bottom of the pipe, the Contractor shall place sand, or other material satisfactory to the Engineer to bring the bottom of the trench to the grade of the bottom of the pipe. This bed shall be thoroughly tamped before the pipe is laid.

(D) - Unless otherwise specified, the backfill under, around and to a depth of one (1) foot above the top of all pipe, shall be made with material satisfactory to the Engineer, which material shall be free from stone and other objectionable material noted above. The Contractor must use special care in placing this portion of the backfill, so as to avoid injuring, distorting or moving the pipe when compacting same. Above this level the backfill shall be made with material satisfactory to the Engineer. However, where specified, sand shall be used for the entire portion of the backfill. See below.

(E) - Backfilling as noted in paragraph (D) shall be tamped in thin layers, simultaneously on each side of the pipe, and thoroughly compacted so as to provide a solid backing against the external surface of the pipe.

(F) - Only after the backfill previously mentioned has been satisfactorily compacted, may work proceed in placing the remaining backfill which must be carefully placed and compacted by tamping, puddling, or rolling. All precautions must be taken to eliminate future settlement. The number of men tamping shall be not less than the number backfilling and additional men shall be kept in the trench to spread the material.

(G) - Backfilling shall not be done in freezing weather, except by permission of the Engineer, and it shall not be made with frozen material, nor shall any fill be made where the material already in the ditch is frozen.

(H) - The entire backfill shall be made with sand where permanent pavements, curbs, driveways, or sidewalks, have been opened for or undercut by the excavation.

(I) - All sand to be used for backfill shall be as specified in Sec. 703.02 of the "State of Ohio Department of Transportation Construction and Material Specifications".

(J) - Special treatment of the trench will be required where cinder excavation exceeding one foot measured from the top surface is encountered. Before laying the pipe, the bottom of the trench shall be dug below grade and then brought to the grade of the pipe in the following manner, a four (4) inch layer of crushed limestone shall be placed on the entire width of the bottom of the trench followed by a filler of hydrated lime and a layer of three (3) inches of sand. The crushed limestone shall be well graded from fine to coarse and free from slag, cinders, ashes, rubbish or other objectionable material. All limestone must be capable of being passed through a 3/4 inch sieve. On top of this layer of crushed stone, hydrated lime shall be supplied in the amount of 3/8 of a pound per square foot of trench. This bed of crushed limestone shall be thoroughly tamped before the 3 inch layer of sand is placed. The backfill around and to the depth of three (3) inches above the top of the pipe shall be made with sand. The Contractor must use special care in placing this portion of the backfill so as to avoid injuring or moving the pipe when compacting same. On top of the sand the Contractor shall place another layer of crushed limestone five (5) inches thick on the entire width of the trench. On top of the compacted layer of limestone hydrated lime shall be then applied in the amount of 3/4 of a pound per square foot of trench. The remaining backfill shall be made with sand, carefully placed and compacted by tamping, puddling, or rolling. All precautions shall be taken to eliminate future settlement. The treatment of the trench bottom, previously described, may be omitted where the cinder depth, measured from the top surface does not exceed 2'-6".

ROAD SURFACES, SIDEWALKS, DRIVEWAYS AND CURBING

(A) - The Contractor shall remove all pavements and road surfaces within the lines of excavation. After the pipe has been laid, all appurtenant work constructed and backfill completed, he shall furnish, place and maintain, wherever the pavement of road surface has been removed or damaged by him, a temporary pavement in the paved portion of streets, or a temporary road surface in the unpaved portion of streets so as to provide a safe and passable roadway until such time as the final pavement or road surface is completed.

(B) - When only a portion of the street is paved and the lines of excavation are in the unpaved portion of same, the Contractor shall use the utmost care in preventing injury to the pavement. If, in making the excavation or for any other cause the pavement is removed or injured by the Contractor, he shall furnish, place and maintain a temporary pavement wherever the pavement has been removed or damaged, so as to provide a safe and passable roadway until such time as the final pavement is completed.

(C) - All final paving of road surfaces, if so noted on the contract drawings, shall be done by the Contractor to the satisfaction of the Engineer and in conformity to the City of Cleveland "Standards and Specifications for Construction of Pavements, Sidewalks and Sewers" of the most recent issue.

The Contractor shall bear the entire cost of the work. The base of concrete pavement, Item 305, shall be installed on a carefully prepared bed level with the bottom of the abutting base over disturbed areas and shall be of the thickness specified, but in no case less than 7 inches thick. Where pavement or base of pavement has been damaged by cave-in, or by trench cut leaving a portion or portions of pavement 18 inches or less in width between such cut or damage to curb or other substructure, that remaining portion of pavement shall be removed and restored monolithic with the type and kind of pavement specified for the adjacent trench area. The wearing course over trench or other disturbed areas shall be restored to match existing pavement unless otherwise specified. Asphaltic concrete wearing course over such areas shall be neatly and squarely cut,
before the installation of a carefully toothed-in-to

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adjacent pavement, unless otherwise specified. Expansion joints shall be installed between brick wearing course (if ground) and curb or other substructure, where such restoration is required by these specifications.

(D) - All damaged or displaced curb shall be renewed or reset to the satisfaction of the Engineer. No faulty curb or curb less than 30 inches long will be permitted for re-use.

(E) - At locations not specifically mentioned, the Contractor shall restore the same type of pavement as encountered.

(F) - If prior to the expiration of this contract, any of the pavements or road surfaces within the lines of excavation or adjacent thereto, shall have been damaged or injured, due to undermining, or for any other cause which may be attributed to the work which is being done by the Contractor, then the Contractor shall remove such damaged or injured pavements or road surfaces, foundations of same and all loose final pavement or road surface, he shall then backfill with sand properly rammed and replace the final pavement or road surface.

(G) - If any sidewalks, driveways or curbs, are removed or injured by the Contractor in the course of making excavation or handling materials, or for any other reason which may be attributed to work which has been done by the Contractor, then he shall relay same after all work, including backfilling, has been completed. If any stone sidewalks, driveways, or curbs which have been removed or injured, are unfit to be relaid, then the Contractor shall furnish new material and relay same. All concrete or cement sidewalks, driveways or curbs, which are removed or injured by the Contractor shall be broken up by him and he shall furnish all labor and materials and construct new sidewalks, driveways or curbs, to replace those removed or injured. At intersecting walks, drives, etc., additional concrete slabs beyond the excavation limits shall be removed and replaced with new material, in order to avoid having more joints than in the original work. All slabs replaced shall be of full width. The Contractor shall furnish, place and maintain, wherever the sidewalk has been removed or damaged by him, a temporary sidewalk so as to provide a safe and passable sidewalk until such time as the final sidewalk is completed.

(H) - All pavements, road surfaces, sidewalks, driveways, or curbs, which the Contractor is required to replace or to have replaced, shall, at the expiration of this contract, be in at least as good condition as at the time of awarding the contract.

(I) - All work which the Contractor may do in connection with the opening up or replacing of pavements, road surfaces, sidewalks, driveways, or curbs, as well as the final repaving, shall be done at his expense, in accordance with the rules and requirements of the Street or Sidewalk Departments of the City of Cleveland, and in accordance with the additional requirements of these specifications. And the Contractor shall furnish evidence to the Engineer that the work has been completed to their satisfaction.

(J) - Tunneling will not be permitted without permission of the Engineer. In backfilling tunnels, sand shall be used as far as possible and balance of backfilling made with Class "C" concrete, rammed in place.

(K) - The Contractor shall make all pavement cuts by channeling machine, hand-operated pneumatic tools or by such other methods as will furnish a clean cut in the pavement and pavement base without undue shattering. The use of ball or weight to break the pavement will not be permitted.

WATERWORK NOTES

(L) - No specific or separate payment will be made for all of this work, but the cost thereof shall be included in the prices bid for the various items of the work to be done under this contract. Restoration as noted above will only be required in areas where the plans do not otherwise propose new construction of pavement sidewalks and curbs, except that temporary restoration in such areas may be required by the Engineer in order to maintain traffic or local access per Sec. 104.04 and 107.10 of the State of Ohio Department of Transportation "Construction and Material Specifications."

LIST AND INVOICES

(A) - The Contractor shall furnish the Engineer and the City with the list in duplicate of pieces in each shipment of pipe and specials, giving the serial number and designation of each pipe and special sent at that time.

(B) - The material shall be shipped in such sections as the Engineer may order.

ITEM SPECIAL — WATER MAINS

WORK INCLUDED

The Contractor shall furnish all the materials for and shall properly construct and connect in place, at the locations shown on the drawings or as directed, all cast iron or ductile iron pipe and fittings, including all excavation work, the cutting into and removal of existing pipe, backfilling, sand backfill, and repaving, all as required for the proper completion of the work included under this contract.

CAST IRON AND DUCTILE IRON PIPE AND FITTINGS

(A) - All pit cast pipe shall be manufactured in all respects in accordance with, and shall meet the requirements of the latest "Standard Specifications for Cast Iron Pipe and Special Fittings" as adopted by the American Water Works Association which specifications except as herein modified are made a part of these specifications.

(B) - All pit cast pipe and fittings shall be cement lined and of the size and classes noted on the respective contract drawings.

(C) - In lieu of pit cast pipe above the Contractor will be permitted to furnish either centrifugal or high strength cement lined pipe. The metal shall have a modulus of rupture of not less than 40,000 pounds and a tensile strength of not less than 18,000 pounds and shall be for class noted on the contract drawings. Pipe may be furnished in 12, 16, or 18 foot lengths. The centrifugally cast pipe shall conform to the American Standard Specification A21.6-1952 and all subsequent amendments thereto.

When noted on the contract drawings ductile iron pipe shall be supplied. All ductile iron pipe shall be manufactured in accordance with A.S.A. A21.51-1965

All ductile iron fittings shall be manufactured in accordance with A.S.A. A21.10 or AWWA C 100-55. Ductile iron shall have a minimum of 60,000 psi ultimate tensile strength; 42,000 psi yield point and 10% elongation. The chemical analysis shall be as follows: Carbon 3% minimum, Phosphorus .08% maximum and Silicon 2.75% maximum.

(1)-The minimum thickness of the centrifugally cast iron and ductile iron pipe shall conform to the following table:

STANDARD THICKNESS OF CENTRIFUGALLY CAST IRON PIPE AND DUCTILE IRON PIPE

DUCTILE IRON PIPE

Size	Working Pressure	Standard Thickness	Class
12"	350 p.s.i.	0.49 in.	6
8"	350 p.s.i.	0.45 in.	6
6"	350 p.s.i	0.43 in.	6

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CAST IRON PIPE

Size	Working Pressure	Thickness	Class
6"	250 p.s.i.	0.48 in.	25
8"	250 p.s.i.	0.52 in.	25
12"	250 p.s.i.	0.60 in.	25
4"	250 p.s.i.	0.44 in.	25

(2) - All fittings, such as bends, tees, crosses, offsets, hydrant branches, etc., shall have bell and bell or bell and spigot ends with cast lead joints. Pipe between offsets or bends and on hydrant branches, shall also be of bell and spigot type with lead joints. Joints for fittings may be of the boltless restrained push-on type if approved by the Engineer. Drawings and assembly instructions along with pipe and fittings layout and schedule must be furnished. A minimum length of 18 feet of boltless restrained push-on pipe shall be used on both sides of boltless restrained push-on fittings.

(D) – All pipe shall have bell and spigot ends for cast lead joints or a slip-on type joint with compressed rubber ring inserts. All pipe and fittings shall be cement lined.

(E) – Gaskets shall be of rubber or other equally effective protection against uneven distortion of the gasket.

(F) - Where fittings are shown which are not covered by the above specifications, they in such particulars as are lacking thereon, shall conform to the dimensions and otherwise meet the specifications for the respective type which are carried in the latest revisions to the current edition of the "Handbook of Cast Iron Pipe" by the Cast Iron Pipe Research Association or which are otherwise shown on the contract drawings.

(G) - Wherever changes in line and grades of the main as shown on the drawings are not standard fitting deflections, the Contractor will be permitted to submit details using combinations of standard fittings and small deflections (not to exceed a maximum of one half (½) inch joint opening) in the adjoining lengths of pipe. Pipe to be installed with air cocks or drains shall be cast with bosses thereon, and drilled and tapped for two (2) inch connections, and plugged in the shop with cast iron threaded plugs, before shipment.

(H) - Plugs for bell and spigot pipe and caps for lugged pipe shall be furnished with two (2) plugged two (2") inch taps for drain and air cock connections.

(I) - Closure pieces shall be accurately measured and cut in the field and installed using solid type pattern sleeves as shown or as required.

(J) - Tests, inspection, reports and analyses of tests of samples for all materials shall be furnished as set forth elsewhere in these notes.

(K) – Bitumastic coating shall be applied on the exterior of all cast iron pipe and fittings in accordance with AWWA specifications. All ductile water main pipe and fittings shall be given, in addition to that specified, protection with polyethylene encasement in accordance with ANSI A21.5-1972 (AWWA C105-72), Class "C" installation method "B". All fittings shall have ANSI A21.5-1972 protection.

CEMENT LINING

All cast iron or ductile iron pipe and fittings shall be given a cement mortar lining at the point of manufacture. The lining shall conform to the American Standard Specification A 21.4-1964 and all subsequent amendements thereto.

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MARKING
All cast iron or ductile iron pipe and fittings shall be suitably marked to denote the manufacturer, class, date, weight and other elements of identification.

LAYING
(A) - Proper and suitable tools and appliances for the safe and convenient handling and laying of the pipes and fittings shall be used. Great care shall be taken to prevent the pipe coating from being damaged, particularly on the inside of pipes and fittings and any such damage shall be remedied as directed. All pipes and fittings shall be carefully examined by the Contractor for defects just before laying and no pipe or fitting shall be laid which is known to be defective.

(B) - If any defective pipe is discovered after having been laid, it shall be removed and replaced with a sound pipe or fitting in a satisfactory manner by the Contractor at his own expense. All pipes and fittings shall be thoroughly cleaned before they are laid, shall be kept clean until they are used in the completed work, and when laid, shall conform to the lines and grades given by the Engineer. Open ends of pipes shall be kept plugged with a bulkhead during construction. In no event shall any portion of the damaged pipe be permitted to remain in the line. Any approval stamps found on the pipe shall be removed or the pipe broken up for scrap.

(C) - Pipe laid in trench shall be laid to a firm and even bearing for its full length. Precautions shall be taken against floating.

(D) - It is the intention of these specifications to secure first class workmanship in the placing of pipe and accessories. In such details as are not specifically mentioned herein or called for on the drawings, the Contractor will be required to conform with the applicable sections of the latest "Standard Specifications for Laying Cast Iron Pipe" as adopted by the American Water Works Association.

CUTTING PIPE
Whenever the pipes require cutting to fit into the lines, the work shall be done in a satisfactory manner so as to leave a smooth end at right angles to the axis of the pipe. In no event shall flame cutting be used. When a piece of pipe is cut to fit into the line, no payment will be made for the portion cut off and not used in the line.

JOINTS
(A) - Lead joints: In jointing all bell and spigot pipe and fittings having lead joints, the spigot of each pipe shall be properly seated in the bell of the next adjacent piece and adjusted so as to give a uniform annular space. The joint shall be made with twisted hard jute and soft pig lead. Before placing the jute, it shall be sterilized either by boiling or by dipping in a concentrated solution of "HTH". The jute shall be twisted and thoroughly driven into the bell, so that the lead, after having been caulked, shall have a depth of 2½ inches.

The furnace and melting pot shall be kept near the joint to be poured and each joint shall be made with one pouring. Dross shall not be allowed to accumulate in the melting pot. The joints shall be thoroughly caulked by competent pipe joiners and in such manner as will secure a tight joint without overstraining the iron of the bell.

PAINTING
After erection, all exposed or damaged coatings and all bolts for lugged joints shall be cleaned and painted with three (3) field coats of Inertol 50 or Bitumastic 50 or approved equal.

DRAWINGS
(A) - The Contractor shall submit to the Engineer for approval duplicate prints of all shop drawings for pit cast iron pipe and fittings and miscellaneous details which are not standard construction, and are not mentioned in the regular catalogue of the company furnishing the pipe. No work shall be done in the shop until after the drawings have been approved.

(B) - The approval of the drawings by the Engineer shall not relieve the Contractor of any of his obligations in connection with this contract.

MEASUREMENT
The number of lineal feet of cast iron pipe and ductile iron pipe line and connections to be paid for shall be the actual number of lineal feet furnished and placed in accordance with these specifications as measured along the axis of the piping including fittings and valves connected up in place. For connections between new and existing mains, measurement shall be the distance from centerline to centerline of mains and the actual length of existing main ordered to be removed to make the connection.

BASIS OF PAYMENT
The footage measured as provided above shall be paid for at the contract price bid per linear foot for "Item Special-Water Main" classified as to size and type, which price and payment shall constitute full compensation for excavating and for furnishing, hauling, placing, cutting into and connecting the pipe, pipe bends, C.I. plug and clamps at dead ends, concrete piers, sheeting and bracing, sand backfill, water used for compaction, incidental concrete, the removal of all surplus excavation and discarded material, repaving, and for the furnishing of all labor, materials, equipment, tools and incidentals necessary to complete this item, except for the items specifically listed as separate pay items.

The chlorination of the newly laid water mains by the City of Cleveland, Division of Water, will be at no expense to the Contractor.

PUSH-ON & BOLTLESS RESTRAINED JOINTS
(A) - Where lugged or restrained joints are used in place of bell & bell or bell and spigot joints for cast lead joints as indicated or shown on the drawings. The Contractor shall supply pipe and fittings having lugged joints or positive restrained compression locked joint in push-on or slip-on joint. Lugged joints shall in all respects, comply to the Standard A.W.W.A. Specifications and dimensions for the class of pipe and fittings specified. Positive restrained compression locked joint push-on or slip-on joint shall have ends with positive compression locked joint in push-on or slip-on joint providing a restrained flexible joint using corrosion resistant locking so as to provide a minimum of stress in the joint, but providing a minimum of 400 lbs. per inch of pipe circumference resistance to separation of joint.
Locking grooves or slots will be allowed in plain end of pipe; however, thickness of pipe shall be not less than that for:
(1) U.S.A.S. A21.6 (A.W.W.A. C106) Class 26 for Cast Iron Pipe. *
(2) U.S.A.S. A21.51 (A.W.W.A. C151) Class 57 for Ductile Iron Pipe. *

* No minus casting tolerances will be permitted.

All bolt dimensions and other features shall strictly comply with those which have been established under the American Water Works Association Standards. Drawings shall be furnished in accordance with section C-2, sheet №140, drawings, fully and distinctly illustrating and describing and giving complete layout and assembly direction for the joint to be furnished. Approval of The City of Cleveland, Division of Water will be required. Coating and protection shall be required in accordance with Section K, Cast Iron and Ductile Iron Pipe and Fittings. If grooved, joint must be polyethylene wrapped, as described in Section K.

ITEM SPECIAL-TEMPORARY SERVICE CONNECTION

WORK INCLUDED
The Contractor shall furnish the piping material, but the City shall make all changes necessary to connect Temporary Service. The Contractor shall furnish all materials and do all necessary excavation, backfilling, seeding sodding and repaving required in making these Temporary Service Connections. Work shall be done in accordance with the requirements specified in the Waterwork Notes for "Relocate, Retap and Reconnect Service Connection." This Item includes reconnecting to existing water main.

PAYMENT
The work included in this item shall be paid for at the contract unit price per each for "Item Special-Temporary Service Connection." This price and payment shall constitute full compensation for the furnishing of all labor, materials, small tools and equipment required to complete work as specified or as shown in the plans. The labor, tools, equipment and incidentals furnished by the City of Cleveland, Division of Water, will be at no expense to the Contractor.

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dimensions to be according to American Standard Heavy. Bolts and nuts shall be delivered to the field free from grease, rust and dirt and shall be properly protected from moisture and dirt in the field. Gaskets for flanged pipe shall be 5X manila rope pattern or other approved type.

(C) - In place of flanged joints, on concrete pipe between vertical bends on tied distances, and elsewhere as shown on the drawings, the use of butt welded joints will be permitted, unless specifically prohibited on the drawings. The steel cylinder shall be reinforced having a thickness of not less than that called for in detail Z. The ends of the steel cylinders shall be beveled. The weld material and the welding procedure shall conform to the AWWA C-206-62 "Tentative Standard Specifications for Field Welding of Steel Water Pipe Joints" and any subsequent amendments thereto. The annular recesses at the joint, both inside and outside of the pipe shall be protected against corrosion by an approved method. All exposed steel surfaces, both inside and outside of the pipe, shall be coated in accordance with the coating requirements of these specifications.

FLANGED JOINTS

(A) - Flanged joints shall be installed as shown on the drawings. Flanges shall be either cast steel, forged or rolled steel, or properly welded and machine fabricated steel plates, welded to pipe with two continuous welds. They shall have plain faces and shall be faced true and smooth at right angles to the axis of the pipe and shall be spot faced on the back. Drilling shall conform to "American 1948 Standard" B-16.1.

(B) - All bolts used in the finished work for flanges and tied joints for concrete pipe shall be of medium open hearth steel. The ends of all bolts must be finished to standard radius in acceptable manner. All screw threads shall be American Standard Course Thread (N.C.). Stud bolts double end (rod) shall be used to make the flanged joints on pipe. All nuts shall be hexagonal, cold-pressed semi-finished and made of medium open hearth steel. All

SHOP COATING AND PAINTING

(A) - The exposed surface of the steel ends of spigot, bell, victaulic or flanged steel outlet connections and the flanged ends of concrete pipe, etc., shall be cleaned, primed, and enameled inside and outside in accordance with the AWWA Specifications C 203-62 and C 204-62. The enamel shall be Type A. The coating may be applied by brush or spray. All coatings shall be applied in the shop before shipment. The outside coating shall stop against the flanges at ends of pipe sections.

(B) - Zinc coated pipe ends for rubber gasket joints are not to be coated.

(C) - No primer or coating is required for the grooved steel bands at the ends of the concrete cylinder pipe to receive victaulic type couplings.

(D) - All finished surfaces shall be coated with white lead and tallow or equal and not primed.

(E) - After erection all exposed or damaged coatings on surfaces buried under ground, all bolts on flanges and victaulic couplings shall be cleaned and painted with three field coats of Inertol 50 or Bitumastic 50 or approved equal.

TRANSPORTATION AND DELIVERY

(A) - The Contractor shall transport, deliver and distribute along the line of the work, the pipe, specials and appurtenances.

(B) - Pipe shall be loaded for shipment upon suitable cars or trucks which shall be provided with wooden skids. In loading and unloading the pipe, more than ordinary care must be taken to prevent any injury to the concrete cylinder pipe, steel and pipe ends and protuberant steel connections. Such work must be done slowly with the pipe at all times under perfect control, and under no condition shall the pipe be dropped.

(C) - In distributing the pipe in the field, each pipe must be placed as nearly as possible to the point where it is to be laid, and facing in the proper direction. Suitable skids or blocks must also be left under each pipe, and the pipe securely wedged in place to prevent its being moved until required. A steel cable sling shall be used for rolling or lifting pipe. No iron chains shall be used. Pipe which has been improperly distributed and which must be moved longitudinally along the trench shall be reloaded on a wagon, or lifted and swung by a derrick or moved by such means as may be satisfactory to the Director.

(D) - If, in the process of manufacture, transportation, or handling, any concrete pipe or special receives any indentation or deformation to the concrete, steel ends or connections, the removal of which will in any degree injure it, such pipe or special shall be rejected and replaced at the Contractor's expense.

(E) - Pipe which is placed in storage, streets or drives must be so arranged so as not to cause undue inconvenience to traffic and must be protected sufficiently to prevent injury to the concrete cylinder pipe, and the coating of the steel ends and connections.

DRAWINGS

(A) - The Contractor shall submit to the Director for approval, duplicate prints of all shop drawings as developed by the fabricator, for concrete pipe, fittings and specials, and miscellaneous details, such as air cock and drain forgings, castings, etc.

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(B) - One print of each of the drawings submitted will be returned with the criticisms or approval of the Director. In case the drawings are not approved, the Contractor shall again send for approval duplicate revised prints of the drawings to take care of the criticisms noted, and after the drawings have been finally approved, the Contractor shall again furnish to the Director ten (10) additional prints, eight (8) on paper and two (2) on cloth, of each drawing. No work shall be done in the shop until after the drawings have been finally approved.

(C) - The approval of the drawings by the Director shall not relieve the Contractor of any of his obligations in connection with this contract.

(D) - The Contractor shall submit to the Director a copy of the manufacturer's design calculations.

EXPERIENCE QUALIFICATIONS

All bidders will be required to show to the satisfaction of the Director that the type and size of pipe and fittings he proposes to furnish, will be made by a manufacturer whose pipe has been successfully used for like work outside of the builder's works for a period of not less than five (5) years.

FURNISHING AND SETTING 6" FIRE HYDRANTS

WORK INCLUDED

The Contractor shall furnish all hydrants, caulking material, labor, tools and equipment for and shall properly connect at the location shown on the contract drawings, 6" hydrants, complete, as required for the proper completion of the work included under this contract.

HYDRANTS

The 6"fire hydrants shall be City of Cleveland Standard and shall conform to the City's specifications on file at 1201 Lakeside Avenue Cleveland 14, Ohio and the Fire Hydrant Detail shown on sheet No. 151

SETTING

(A) - General Location: Hydrant shall be located in a manner to provide complete accessibility, and in such manner that the possibility of damage from vehicles or injury to pedestrians will be minimized. Unless otherwise directed, the setting of any hydrant shall conform to the following:

(B) - Location Regarding Curb Lines: When placed behind curb the hydrant barrel shall be set so that center of barrel will be no less than 3 feet from the gutter face of the curb, or deviate from location indicated on contract drawings, except by consent of the Engineer.

(C) - Location Regarding Sidewalk: When set in the lawn space between the curb and the sidewalk, or between the sidewalk and the property line, no portion of the hydrant or nozzle cap shall be within 6 inches of the sidewalk.

(D) - Position of Nozzles: The hydrant shall stand plumb, with the nozzles pointing toward the road and at an angle of forty-five degrees therefrom. Where hydrant branch piping is parallel with, or not at right-angles to the curb, the Contractor shall release swivel head bolts and adjust the hydrant nozzles to face the road at the proper angle. A hydrant without swivel heads will be adjusted by the City where necessary to correct the angle on nozzles. The elevation shall conform to the established grade with tops of frost casing at least four (4) inches above grade.

(E) - Connection to Main: The hydrant shall be connected to the main pipe with a cast iron branch controlled by the independent gate valve of the same size as hydrant, except as otherwise directed.

(F) - Drainage at Hydrant: Drainage shall be provided at the base of the hydrant by filling around the elbow with coarse gravel or crushed stone to at least six (6) inches above the waste opening. Wherever a hydrant is set in rock, clay or other impervious soil, the trench shall be widened and deepened on each side of the hydrant base, which space shall be filled compactly with coarse gravel or broken stone mixed with coarse sand of sufficient quantity to absorb all water to be drained from the hydrant when the valve is closed.

(G) - Anchorage for Hydrant: The hydrant shall be set on a stone slab or similar foundation and base of hydrant and hydrant tee well braced against unexcavated earth at the end of the trench with concrete backing, or it shall be tied to the pipe with suitable rods or clamps as directed by the Engineer.

(H) - Cleaning: The hydrant shall be thoroughly cleaned of dirt or foreign matter before setting.

BASIS OF PAYMENT

(A) - The unit price for each "Item Special- Furnishing and Setting 6" Fire Hydrant" shall include furnishing the 6" fire hydrant, in accordance with respective specification set forth elsewhere in these notes, setting, testing, painting, the excavation, sheeting and shoring, backfilling, and the furnishing of all labor, materials, equipment, tools and appliances necessary to complete the work as specified or as shown.

(B) - The cast iron pipe will be paid for under cast iron pipe and fittings.

(C) - The valves and valve boxes will be paid for under valves.

FIRE HYDRANTS RELOCATED

WORK INCLUDED

The Contractor shall remove the hydrants and properly set in place and connect at the locations shown on the drawings or as directed by the Engineer. This shall include all excavation, backfilling, seeding and sodding, and repaving required for the proper completion of the work included under this contract.

MATERIALS

All hydrants to be relocated must be in good condition. All other materials and appurtenances necessary for the proper completion of this item shall be of the kind and grade called for in these notes for the particular kind of construction in which the materials are to be used.

CONSTRUCTION METHODS

The construction methods shall conform to the requirements of Item Special-"Furnishing and Setting 6" Fire Hydrants", as set forth elsewhere in these notes.

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BASIS OF PAYMENT

The work included in this item shall be paid for at the contract unit price bid for each "Item Special- Fire Hydrants Relocated", which price and payment shall constitute full compensation for removing, resetting and reconnecting according to the provisions of these specifications for the particular type of construction called for on the plans, and for all excavation, backfilling, seeding and sodding and repaving, and the furnishing of all material, labor, equipment, tools and appliances necessary to complete the work as specified or as shown.

FIRE HYDRANTS ABANDONED

Where fire hydrants are indicated to be abandoned (not indicated for removal), the hydrant becomes the property of the Contractor and shall be disposed of as he sees fit. The cost of such disposal shall be included in the price for Item 203 Excavation, not including Embankment Construction.

2-INCH GALVANIZED BLACK IRON AND BRASS PIPE FOR FLUSHING CONNECTIONS, AIR COCKS AND DRAINS

PAYMENT

No separate payment shall be made for 2- inch pipe. Payment shall be made at the contract unit price bid for the item with which the pipe is used.

WORK INCLUDED

The Contractor shall furnish all the materials for and shall properly connect in place at the locations shown on the drawings or as ordered, all 2-inch extra strong brass pipe and fittings, and all 2-inch extra strong galvanized black iron pipe and fittings respectively, which are necessary for the proper completion of the work included under this contract.

BRASS PIPE AND FITTINGS

All brass pipe and fittings shall be extra strong, 2-inch pipe size and the pipe shall conform to A.S.T.M. Specifications B 43-42. Fittings shall be extra strong weight and shall have sound, well fitting threads.

GALVANIZED BLACK IRON PIPE AND FITTINGS

All galvanized black iron pipe, nipples and couplings shall be extra strong black iron pipe A.S.T.M. Designation A – 120 . The fittings shall be beaded, of malleable iron, extra heavy weight. All pipe and fittings shall be hot dipped zinc coated inside and outside, and shall have sound, well-fitting threads.

ERECTION

All pipe shall be carefully placed to the proper lines and grades, and shall be connected up, unless otherwise shown, with screw fittings. Screw joints shall be made tight with a graphite paste and screwed home. A liberal number of unions shall be used to permit the ready removal of any section.

VALVES

WORK INCLUDED

The Contractor shall furnish all the materials for, and shall properly set in place and connect, at the locations shown on the drawings or as directed, all air cocks, drain valves, gate valves and valve boxes and covers, of the various sizes and types specified or ordered as required for the proper completion of the work included under this contract.

AIR COCKS

All air cocks or air vent valves shall be 2-inch brass angle type globe valves. 2-inch air cocks shall be equal in all respects to the Farnan "Cleveland Standard" Brass Air Vent Valve No. W-4695, as manufactured by the Farnan Brass Works.

GATE VALVES

(A) - Type of Valves: The gate valves shall be manufactured in full compliance with the Standard Specifications for Gate Valves for Ordinary Water Works Service of the American Water Works Association AWWA C-500-61 or latest revision thereof and in addition shall comply with the following supplementary requirements. All gate valves shall be of the non-revolving double disc parallel seat bottom wedge or side wedge type. All gate valves 20 inches and over in size shall include by-pass valves attached thereto. In opening or closing the valve, the gates shall be forced to ascend or descend by reason of the thrust exerted upon them by the valve stem nut; this thrust being generated by the rotation of the valve stem. In closing the valve, the discs when opposite the ports, shall be pressed firmly against the body seats by wedges or some other device equally suitable to the Engineer.

(B) - Valves with Stationary Stems: All gate valves, unless otherwise ordered, shall be made with single, non-rising stems.

(C) - Hub Ends: The dimensions of the bells on valves up to and including 24 in. in diameter shall conform to those for Class D pressure fittings, as required by AWWA C 100. On valves 30 in. and larger in size, the bell dimensions shall be for the classes ordered.

(D) - Victaulic Ends: Victaulic ends shall conform to the dimensions given on the contract drawings.

(E) - Flange Ends: The end flanges of flanged end gate valves shall conform in dimensions and drilling to the "American 125 pound Cast Iron Flanges Standard", unless otherwise ordered.

(F) - Screw Ends: All 2-inch gate valves and under shall be made with screw ends, unless otherwise specified.

(G) - Vertical and Horizontal Valves: All gate valves 16 inches and under, shall be constructed to work vertically. Valves over 16 inch waterway shall be constructed to work horizontally.

(H) - By-Passes: By passes with gate valves shall be provided on valves 20 inches and larger. The by-passes shall be located on or below the horizontal centerline of the valves. By-pass valves shall be of the same size as the by-pass and shall conform to the requirement of these specifications for the specific valve used. The size requirements of by-passes shall be as follows: 20-inch valves shall be provided with 3-in. by-passes; valves 24-in. to 30 in., inclusive, shall be provided with 4-in. by-passes; valves 36-in. to 42-in., inclusive, shall be provided with 6-in. by-passes; 48 in. valves shall be provided with 8-in. by-passes.

(I) - Flanges: When flanged valves are required, the flanges shall be faced and drilled. Bolt holes shall be spot faced on the back when necessary to secure an even bearing. All bolt holes shall be of the size shown on the drawings to be submitted and approved, shall be accurately drilled from templates, spaced equal distances apart and shall straddle horizontal and vertical axis, all as shown on the drawings. The dimensions and drilling of all end flanges shall conform to the spacing indicated on the drawings which shall be the American 125 pounds Cast Iron Flange Standard. Flanges shall be plain face with a smooth finish.

(J) - Marking: All gate valves 3 inches and over shall have the identity of maker, size and the year when made and also the letters "C.W.D." cast upon its body or dome in raised letters.

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(K) - Stuffing Boxes: The stuffing box on each gate valve 3 inches or over, must be separate from the dome and fastened to it by bolts. For 2 inch valves and under, the stuffing boxes may be formed in the dome of the valve. When required by the Director, valves 16 inches and smaller shall be furnished with "O" ring type seal plate. The seal plate shall be fitted with at least two "O" rings, the lower "O" ring serving as the pressure seal and the upper "O" ring as a combined dirt and moisture seal. The "O" rings shall be Precision Rubber Corporation Quality Compound No. 122-70, Garlock No. 8990, or National No. 622731, or approved equal.

(L) - Seat and Gate Rings: Dimensions of the bronze seat and gate rings shall be proportioned to fit the test pressure required, and shall meet the approval of the Engineer. The rings shall be firmly secured in place by an approved device, which will prevent them from working loose, particularly when the valve is left partly open. Dimensions of the bronze seat and gate rings for gate valves shall be not less than that specified in the following tables. Body seat rings shall be made of Grade One Bronze. Gate seat rings shall be made of Grade Five Bronze.

	BODY RINGS		BODY AND GATE RINGS			GATE RINGS	
				BOTTOM WEDGE			
VALVE SIZE	FACE	DEPTH	THICKNESS AT BASE OF THREADS	FACE THICKNESS	FACE	FACE THICKNESS	DEPTH
3"	9/16	9/16	3/16	3/16	5/8	5/32	1/4
4"	9/16	9/16	3/16	3/16	5/8	5/32	5/16
6"	11/16	9/16	3/16	5/32	11/16	5/32	5/16
8"	3/4	5/8	3/16	7/32	13/16	5/32	5/16
10"	3/4	5/8	3/16	7/32	13/16	5/32	11/32
12"	7/8	5/8	7/32	7/32	1	5/32	11/32
16"	1-1/8	3/4	1/4	9/32	1-1/4	13/16	1/2
20"	1-3/8	1-1/8	5/16	3/8	1-3/8	3/8	5/8
24"	1-3/8	1-1/8	5/16	3/8	1-3/8	3/8	5/8
30"	1-1/2	1-1/4	3/8	7/16	1-1/2	7/16	3/4

SIDE WEDGE

					ALL BRONZE DISC		
3"	13/32	1/2	3/16	3/16	1/2	5/32	21/64
4"	7/16	9/16	3/16	3/16	1/2	5/32	21/64
6"	1/2	11/16	9/32	1/4	5/8	5/32	21/64
8"	17/32	11/16	9/32	1/4	11/16	5/32	21/64
10"	5/8	13/16	3/8	5/16	13/16	5/32	21/64
12"	5/8	13/16	3/8	5/16	13/16	5/32	21/64
16"	3/4	1	15/32	3/8	7/8	3/16	13/32
20"	7/8	1-5/16	17/32	7/16	1	1/4	17/32
24"	1-1/16	1-3/8	21/32	1/2	1-3/16	5/16	19/32
30"	1-5/16	1-1/2	25/32	1/2	1-7/16	5/16	19/32

DIMENSIONS IN INCHES

(M) - Valve Stem: All gate valves shall be of the single screw type. The stems shall be of Grade Three Bronze. The threads of stems and stem nuts shall be of Acme, modified Acme or one-half V type. If requested, a manufacturer's certificate of test shall be furnished with all bronze stems. All stem collars shall be cast integral with stems. The diameters of

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stems at the base of the thread shall not be less than those shown below. The stem opening and thrust-bearing recess shall be Grade One, bronze bushed. The number of threads per inch shall be as given below.

SIZE OF VALVE INCHES	DIAMETER OF STEM AT BASE OF THREAD - INCHES	NO.OF THREADS PER INCH
2	0.469	4
3	0.859	4
4	0.859	3
6	1.000	3
8	1.000	3
10	1.125	3
12	1.188	3
16	1.438	3
20	1.896	3
24	1.980	2
30	2.480	2

(N) - Wrench Caps: The wrench caps and retaining nuts on heads of valve stems and pinion shafts shall be of Grade Three Bronze. On valves 24 inches and over, wrench caps shall be 2 inches square and 2 inches deep. On valves 4 inches to 20 inches, inclusive, they shall be 1-3/4 inches square on top, 1-7/8 inches square at base and 1-3/4 inches deep. On 3 inch valves and under, they shall be 1-1/4 inches square on top, 1-3/8 inches square at base and 1-1/2 inches deep. Machined wrench caps for valves 3 inches to 48 inches inclusive shall be fitted to a machined square stem or pinion shaft and held in place by a retaining nut. Wrench caps shall have a cut-away skirt to permit easy access to gland bolts.

(O) - Valves to open clockwise except 2 inches and under. All gate valves 3 inches and over including by-pass valves, shall be made to open by turning in a clockwise direction. All valves to be so made that they can be easily operated.

(P) - Facing of Gates: All discs or gates and threads for seat rings in the body shall be machined true and a groove or grooves shall be machined in each disc or gate for the reception of the face ring. The disc and seat rings shall be securely and rigidly attached to the discs or body seats in a manner approved by the Engineer, and the rings are to be finished to a true surface.

(Q) - Rollers and Scrapers: In all valves 20 inches in diameter and larger designed to lie horizontally, each gate or disc shall be provided with two bronze rollers travelling on bronze-faced tracks and provided with suitable bronze scrapers or two stainless steel rollers travelling on stainless steel-faced tracks and provided with suitable stainless steel scrapers. The thickness of the facing of the tracks shall be not less than 1/4 inch. The bronze shall be Class 1 and the stainless steel shall be ASTM A 276-55, Type 302.

(R) - Valve Guides: All valves 20 inches in diameter and larger shall be provided with guides or tracks which shall be made straight and true, and all irregularities must be machined off. The guides or tracks of horizontal valves shall be substantially faced with a minimum of 1/4 inches of Grade One Bronze, or stainless steel ASTM A 276-55, Type 302, satisfactory to the Engineer, securely fastened and planed off smooth and true.

(S) - Gearing: All valves 20 inches in diameter and larger shall be equipped with enclosed cut tooth steel gears. Gears, shafts and bearings shall be such as to provide easy operation without bending or twisting.

(T) - Dowel Pins: All gear valves shall have two dowel pins set in the flanges connecting the dome and body. Size of the pins to be shown in plans.

(V) - Grease Cases: All valves 20 inches in diameter and larger shall have water tight grease cases installed. The grease cases shall be of the extended type and shall be made of cast iron conforming to ASTM specifications, serial designation A 126, Class B, or any subsequent amendment thereto. Bearing surfaces for valve stem and pinion shaft shall be bronze bushed with Grade One Bronze. The grease cases shall be securely bolted to the valve bonnet through a heavy cast iron yoke. The yoke shall be of sufficient length to provide space for repacking valve and grease case stuffing boxes. All grease cases shall be provided with a removable cover securely bolted in place to allow easy access to the gears. There shall also be provided convenient filling and draining plugs and sufficient oil to fully submerge the pinion gear. The valves shall be delivered with the grease cases filled with the proper oil as recommended by the manufacturer.

(W) - Indicators: All valves 20 inches in diameter and over, shall be equipped with indicators denoting the positions of the gate. The moving part and bearings to be of bronze or bronze-lined.

(AA) - Bronze Parts: The stems, stem nuts, operating nuts, retaining nuts, disc and seat rings, shall be of solid bronze. Other parts such as wedges, glands, thrust bearings, gear spindles, rollers, scrapers and tracks, and all other parts coming together in operation, shall be of bronze, or substantially lined with bronze or stainless steel of a thickness not less than 1/4 of an inch and as shown on drawings submitted and approved. All 2 inch valves and under shall be made entirely of bronze, except handwheels which shall be of malleable iron.

(BB) - Cast Iron Parts: The bodies, covers, discs, frames, etc., of all gate valves 3 inches and over, shall be of cast iron.

(CC) - Waterway Opening: With the valve open, an unobstructed waterway shall be afforded, the diameter of which is not to be less than the full nominal diameter of the valve.

MATERIAL SPECIFICATIONS

(A) - Strength of Valves: The gate valve shall be designed for 150 lb. working pressure and shall withstand an internally applied hydrostatic pressure at all points of at least 300 lbs. per square inch. A factor of safety of not less than 10 shall be used on the design. Should tests develop any weakness, the valves from that design shall be rejected and a new design made.

(B) - Reinforcement at Flanges: All valve flanges shall be reinforced by fillets in accordance with the manufacturer's practice proven satisfactory in actual service.

(C) - Joints: All joints of the valves shall be faced true in a lathe or planer, and put together with a gasket of some material acceptable to the Engineer.

(D) - Bolt Holes: All bolt holes shall be accurately drilled from templates and spaced equal distances apart.

(E) - Bolts and Nuts: All bolts and nuts shall be made of silicone bronze (ASTM B 98-55, Alloy A) or stainless steel (ASTM A 276-55, Type 302).

(F) - Parts to be Interchangeable: All parts of valves of the same size and make must be perfectly interchangeable and all work done in a thorough and workmanlike manner.

(G) - Castings: All castings, whether of bronze, iron or steel, shall be sound and smooth without cold shuts, swells, lumps, scabs, blisters, sand holes or other imperfections, and shall be made in accordance with the best modern foundry practice to obtain castings of the best quality and of uniform thickness. No welding, plugging, or filling of holes or other defects will be permitted. For parts whose thickness is less than one (1) inch, casting being thinner than the specified thickness by .06 of an inch or more shall be rejected, and for parts whose thickness is one (1) inch or more, castings being thinner than specified by .08 of an inch or more shall be rejected.

(H) - Bronze Parts: (1) Bronze for parts, other than those listed below, shall be Grade One. (2) Valve stems, pinion shafts, stem nuts, wrench caps and retaining nuts shall be made of Grade Three Bronze. (3) Disc rings shall be made of Grade Five Bronze.

(I) - Tests of Bronze: (1) If demanded, a manufacturer's certificate of test shall be furnished with all bronze stems. (2) The certificate shall describe the method of test.

(J) - Cast Iron: (1) Quality: Cast iron shall conform to ASTM Specifications A 126, Class B, or latest revision thereof. All iron castings shall be tough and without brittleness, such as may be cut drilled and chipped by hand with due ease. A blow from a hammer shall produce an indentation on the edge of the casting without flaking the metal.

(2) - Tests: Bars from the molten metal from which the valves are being made shall be tested at such time and in such manner as the Engineer may require. The requirements of ASTM Specifications A 126 shall govern testing procedures to determine the physical and chemical characteristics of the iron castings. Should the result obtained from the bar tested fail to show that the cast iron meets the requirements herein specified, the entire melt will be rejected. Test bars, however, whose failure is due to inherent defects shall not be considered. All valves made from iron showing less strength than called for in the ASTM Specifications shall be rejected.

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ENGINEER OF DESIGN REVIEW

1st HIGH SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATER WORK NOTES FOR INTERSTATE ROUTE 80

(L) - Quality of Materials: Grade One cast bronze shall conform to the properties of ASTM B 62.

Grade Two cast bronze shall conform to the properties of ASTM B 132, Alloy A.

Grade Three cast bronze shall conform to the properties of ASTM B 132, Alloy B.

Grade Four rolled bronze shall conform to the properties of ASTM B 21, Alloy A (one-half hard).

Grade Five bronze shall be sufficiently malleable to conform to dovetailed grooves when peened or rolled, and shall have a minimum compressive strength, without deformation, of 4,000 PSI, and shall have the following chemical composition:

Copper, per cent	91.0
Tin, per cent	0.0
Zinc, per cent	5.0
Lead, per cent	4.0

Silicon Bronze - This bronze shall conform to ASTM Specification B 98, Alloy A.

Stainless Steel - The stainless steel shall conform to ASTM Specifications A 276, Type 302.

Cast Iron - The cast iron shall conform to ASTM Specification A 126, Class B.

(M) - Other Materials: All other materials used in the manufacture of these valves and not specified in the specifications shall be of the best quality of their respective kinds, and subject to inspection, tests, and approval by the Engineer.

(N) - Chemical Analysis: Chemical analysis of the material used shall be furnished by the Contractor whenever required by the Engineer.

(O) - Cleaning of Castings: All iron castings shall be thoroughly cleaned on the outside and inside surfaces, and protected from rain or moisture until they are painted.

(P) - Hydrostatic Tests at Shop: All gate valves shall be tested in the shop by hydrostatic pressure, by closing the valve and applying the required test pressure in the body and dome of the valve as specified below.

3" and under	300 PSI -	No time requirement
4" through 12"	400 PSI -	No time requirement
14" through 20"	300 PSI -	for 15 minutes, drop pressure to 150 PSI, then elevate again to 300 PSI for 15 minutes - a total of 1/2 hour
24" through 48"	300 PSI -	for 1/2 hour, drop pressure to 150 PSI, then elevate again to 300 PSI for 30 minutes - a total of 1 hour

This is a modification of Section 29 of the "Standard Specifications AWWA Designation C 500-61". All leaks, flaws or other defects developed in making these tests shall be corrected to the satisfaction of the Engineer or the entire piece shall be rejected. After testing, all valves shall be thoroughly drained. All equipment for testing and all tests shall be made at the Contractor's expense.

(Q) - Performance Tests: Each valve shall be operated in the posision that it will assume in service and for the full length of gate travel in both directions, to demonstrate the free and perfect functioning of all parts in the intended manner. Any defects of workmanship shall be corrected and the test repeated until satisfactory performance is demonstrated.

WATERWORK NOTES

PLACING AND TESTING

(A) - All valves shall be set accurately and carefully to the lines and grades given. All connections to pipe shall have the necessary flanged lead or screwed ends as required under the following items: Cast iron pipe and fittings, furnishing and setting 6" (six inch) hydrants, and 2-inch galvanized black iron pipe and brass pipe and as shown on the valve schedule.

(B) - After the valves are set in place and ready to operate, the Contractor shall test them under working pressure and conditions herein specified under the Specification "Testing Mains", and any valve found to leak shall be made water-tight and, if found to be of faulty design, shall be satisfactorily repaired or replaced by the Contractor.

PAINTING

(A) - Iron body valves shall either be dipped in asphalt paint and all bronze parts cleaned, or all iron castings shall be painted inside before assembling with two (2) coats of an approved paint and, after passing the hydraulic test, shall be given at least two (2) coats of approved paint outside.

(B) - After erection, all exposed metal surfaces of valves except brass or bronze shall be painted with two (2) field coats of coal tar pitch paint equal to Inertol 66 or Koppers Bitumastic 50, or approved equal.

INSPECTION

The Engineer or his authorized designate will inspect the material and work done, as the interests of the City or State may require. Such officer shall have unrestricted access to the Contractor's plant, and to all parts of the work, and other places at which the preparation of the material and the construction of the different parts of the work to be done under these specifications are carried on, and he shall receive all facilities and assistance to carry out his work of inspection and testing in a manner satisfactory to the Engineer. Such inspection shall not relieve the Contractor from any obligation to perform said work strictly in accordance with the specifications, or any modifications thereof as herein provided, and work not so constructed shall be removed and made good by the Contractor at his own expense.

DRAWINGS

(A) - Prior to the manufacture of any valves, the Contractor shall submit for the approval of the Engineer and Director of Public Utilities of the City of Cleveland, complete working, detail, and dimension drawings showing thicknesses and kinds of material, and similar information.

(B) - One print of each of the drawings submitted will be returned with the criticisms or approval of the Engineer. In case the drawings are not approved, the Contractor shall again send for approval duplicate revised prints of the drawings to take care of the criticisms noted, and after the drawings have been finally approved, the Contractor shall again furnish to the Engineer fourteen additional prints, six of which shall be furnished to the Director of Public Utilities of the City of Cleveland, of each drawing. No work shall be done in the shop until after the drawings have been finally approved.

BASIS OF PAYMENT

The unit price stipulated for each "Item Special – Valves", classified as to size and type shall include the furnishing, placing, testing and painting of the air cock, drain valves, check and gate valves, including by-pass valves, operating nuts, valve boxes and other accessories and appurtenances and the furnishing of all labor, tools, materials and appliances necessary to complete the work as specified or as shown.

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NOTE: Air Cock is included for payment in Item Special – 2" Air Cock and Valve Box Complete.

TAPPING SLEEVE AND VALVES

WORK INCLUDED

(A) The Contractor shall furnish the tapping sleeve, valve and valve boxes for the locations shown on the drawings or as directed by the Engineer, of the sizes shown or required for the proper completion of the work included under this contract.

(B) In general, the work of this item contemplates the furnishing and delivery of the material to the proper location on the job. The City of Cleveland, Division of Water, will install the tapping sleeves and valves, but the Contractor shall do all the necessary excavation and backfilling required therefor and repaving if so noted on the contract drawings.

QUALITY OF VALVES

The tapping sleeve and valves shall be A.P. Smith Manufacturing Company or approved equal. All sleeves shall be of the class and size as shown or as directed and shall conform for materials, tests, painting, drawings, etc., to the requirements of the item cast iron pipes and fittings, of these specifications, insofar as they apply. The valves furnished and used under this item shall comply with the requirements of the item valves of this contract, whenever the same may be pertinent. The provisions of the sections (U), (V) and (W) of the item on valves pertaining to grease cases shall apply to the tapping sleeves and valves.

BASIS OF PAYMENT

The unit price stipulated for each "Item Special - Tapping Sleeve and valve and valve box" furnished under this item shall include the furnishing and delivery to the proper location and shall include all excavation, sheeting and shoring, backfilling, sand backfilling, seeding and sodding and repaving, if so noted on the contract drawings and the furnishing of all labor, equipment, materials, tools and appliances necessary to complete the work as specified or as shown. The installation of the tapping sleeves and valves by the City of Cleveland, Division of Water, will be at no expense to the Contractor.

ITEM SPECIAL-CUTTING IN VALVE AND VALVE BOX COMPLETE

WORK INCLUDED

Due to operating pressures, class of cast iron pipe and use demand, it is necessary that a hub valve be cut-in by the Contractor.

The time of installation will be set by the Division of Water and Heat. The Contractor will do all pipe cutting and installing.

The Contractor shall furnish the hub valve, valve box complete, Standard 38 Dresser or Smith-Blair Couplings, or approved equal, cast iron pipe and lead for the instal-

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William J. Sweeney ENGINEER OF DESIGN REVIEW

1st HIGH SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
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SUBJECT WATER WORK NOTES FOR INTERSTATE ROUTE 80 -

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lation. The Contractor shall excavate, tight sheet and shore as necessary the work, pit, backfill and repave as necessary. The work shall be performed under the supervision of the Division of Water and Heat.

BASIS OF PAYMENT

The work included in this item shall be paid for at the unit price bid for each "Item Special-Cutting-In-Valves and Valve Box,Complete" and classified as to size. The price and payment shall constitute full compensation for performing all excavation, sheeting, shoring, backfilling and repaving as necessary and the furnishing of all materials, labor, tools, equipment and incidentals necessary to complete this item.

BRICK AND PLAIN CONCRETE MASONRY

WORK INCLUDED

Under these items the Contractor shall furnish all necessary labor, materials, tools and equipment for the construction, complete, of all miscellaneous masonry structures and including all water main drain and pitometer vaults, access and anchorage manholes, valve chambers, anchors, piers at pipe bends and under line valves, floors for drain and valve vaults, and other appurtenant work together with the hauling, mixing, placing, forms, scaffolding, sheeting and bracing, grouting, plastering, curing, etc., all as specified, required or shown on the contract drawings.

BRICK AND MASONRY MATERIAL

The material furnished by the Contractor for the various kinds of masonry construction to be constructed shall conform to the following Ohio Department of Transportation (O.D.O.T.) Specifications.

(A) All brick furnished and used shall be No. 2 shale brick, O.D.O.T. Section 704.01, or concrete brick, O.D.O.T. Section 704.02.

(B) Portland cement shall conform to the requirements of O.D.O.T. Section 701.04 (ASTM C-150 Type I).

(C) Fine aggregate for mortar or grout shall conform to the requirements of O.D.O.T. Section 703.03.

(D) Aggregate for portland cement concrete shall conform to the requirements of O.D.O.T. Section 703.02.

(E) All water shall be clean and accurately measured for each batch of concrete.

(F) All plain concrete shall be O.D.O.T. Section 499 Class "C".

(G) All cement mortar shall be mixed in the proportion of one (1) part of cement to three (3) parts of sand, except the mortar for manholes, which shall be 1:2 mix.

MANHOLE CONSTRUCTION

(A) All brick manholes, brick necks and extensions shall be built in accordance with the contract drawings.

(B) The walls of manholes shall be built of brick laid in 1:3 portland cement mortar, with brick arranged radially as headers, forming a wall nine (9) inches thick. In deep manholes, the wall shall be 13 inches thick below a point 12 feet from the surface. All of the brick composing said manholes shall be laid in full mortar beds and joints, with no mortar joints appearing on the inner surface of the manhole exceeding three-eighths inches (3/8") thick.

(C) The top of the walls of manholes shall be properly leveled off with mortar so as to form a flat surface upon which the cast iron manhole ring is to rest, and said manhole shall be carried to a proper height as indicated by the contract drawings.

(D) The entire outer surface of all brick manholes shall be plastered with a smooth coating of 1:3 portland cement mortar, at least one-half (½) inch thick.

BASIS OF PAYMENT

Payment for brick or plain concrete masonry shall be included in the unit price bid for the item in which it is used. Payment for concrete piers and anchors shall be included in the unit price bid for Item Special - Water Mains.

MISCELLANEOUS METAL WORK

WORK INCLUDED

(A) The Contractor shall furnish and install all miscellaneous metal work which is required for the proper completion of the work included under this contract and is not specifically included under the other items of these specifications.

(B) In general, the work shall include the furnishing and installing of manhole frames and covers, manhole steps, valve boxes and covers, extension stems and brace, structural members, bronze bolts, and other similar items required for the proper completion of the work.

MATERIALS

All castings shall conform to the requirements of Item 604 of the State of Ohio, Department of Transportation, "Construction and Materials Specifications", except that:

(A) Manhole frame and covers cast iron shall conform to ASTM Designation 48 Class No. 30.

(B) Valve boxes and covers shall be gray iron castings, in which appearance and dimension tolerances are primary considerations and strength is not a primary or major consideration. Valve boxes and covers shall be ASTM Designation A-48 with no specific requirement as to Class. Chemical composition shall not be considered, but the material shall be of good quality and of such character as shall make the metal of the castings strong, tough and of even grain. The metal shall be made without any admixture of cinder iron or other inferior metal.

Workmanship and finish shall conform substantially to the dimensions on the Contract Drawings or furnished drawings. The castings shall be free from injurious defects, cracks, gas holes, flaws, and excessive shrinkage. Additional inspection may be made at the project or work site. Inspection shall be visual inspection for appearance and surface smoothness in comparison with samples accepted as standard.

Sample castings from each pattern, when required by the Engineer, shall be submitted by the manufacturer for the purpose of establishing standards of appearance and dimensional tolerances. The manufacturer shall certify that his product conforms to these specifications. Each certification so furnished shall be signed by an authorized agent of the manufacturer.

(C) All structural steel shall meet the requirements of the ASTM Designation A-7-46.

(D) All bronze bolts and nuts shall conform to the U.S. Standard sizes, and shall be clean cut and have well fitted threads. All bronze bolts and nuts shall be of Tobin or Manganese Bronze, or of similar approved materials.

CLEANING AND TESTING

All castings shall be thoroughly cleaned and subjected to a careful hammer test. No castings shall be coated unless clean and free from rust, and approved in these respects by the Engineer or his authorized inspector immediately before being dipped.

COATING

Each casting shall be sprayed or brushed inside and out with one coat of asphaltic compound varnish. The varnish shall be made of high grade asphalt fluxed and blended with properly treated drying oils and thinned to a proper consistency with a volatile solvent. The varnish shall be as specified in Federal Specification 77-V-51a or Joint Army-Navy Specification JAN-P-450.

Other methods of coating and types of coating materials shall be subject to the approval of the Engineer; in addition to the shop coat the castings shall receive two (2) coats of approved paint.

INSPECTION

The Engineer or his authorized assistant shall have the right to inspect the material and work done, as the interests of the City or State may require. Such inspection shall not relieve the Contractor from any obligation to perform said work strictly in accordance with the specifications, or any modification thereof, as herein provided, and work not so constructed shall be removed and made good by the Contractor, at his own expense. All manhole rings and covers must be sound and shall conform to these specifications, and any defective castings which may have passed the inspector at the works, or elsewhere, shall be at all times liable to rejection when discovered, until the date of final payment under this contract.

VALVE BOXES AND COVERS

The Contractor shall furnish and install, over each vertically set valve at the locations shown on the drawings, or as required, valve boxes and covers of the types and sizes indicated on the contract plans. These shall be carefully located over the valve nuts, and shall be set plumb and true to elevation as required.

J.K. CITY ENGINEER
CITY OF FAIRVIEW PARK

CITY ENGINEER
CITY OF NORTH OLMSTED

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William J. Sweeney ENGINEER OF DESIGN REVIEW

1st HIGH SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
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SUBJECT WATER WORK NOTES FOR INTERSTATE ROUTE 80-

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DETAILED DRAWINGS

Complete detailed drawings of miscellaneous metal work shall be submitted to the Engineer for approval, prior to the manufacture of any work to be furnished under this item, in accordance with these specifications unless shown in details on the contract drawings.

PAINTING

All miscellaneous metal work not galvanized shall be thoroughly cleaned and given three (3) field coats of coal tar pitch equal to Inertol 50 or Bitumastic 50 or approved equal.

STEPS AND LADDERS

Ductile iron steps and ladders of the size and shape shown on the contract drawings shall be built into the brick and concrete masonry of the manholes as indicated on the drawings and be in accordance with the requirements of Section 711.13 of The State of Ohio D.O.T. Construction and Materials Specifications.

RIMS AND COVERS

(A) All cast iron manhole rims and covers of the forms, dimensions and details shown on the contract drawings shall be furnished and installed as directed.

(B) The rims shall be properly set in place in a full bed of mortar or poured monolithic in the masonry, at such elevation as to make the top of the rim conform to the finished surfaces of the structures or the finished grade as established by the Engineer.

BASIS OF PAYMENT

No separate payment will be made for Miscellaneous Metal Work. The furnishing, erecting, machining, fitting, adjusting, bolting, cleaning and painting of all Miscellaneous Metal Work and the furnishing of all labor, materials, tools and equipment shall be included in the contract unit prices bid for the pertinent "Item Special - Masonry Structures" and "Item Special - Valves."

ITEM SPECIAL-ADJUST FIRE HYDRANT AND VALVE BOX TO GRADE

WORK INCLUDED

The Contractor shall perform all operations necessary to the adjusting of the existing Hydrant and Valve Box to the new grade at the locations shown on Sheet Nos. 152 through 161. The work shall include excavating, tamping earth under the valve box, backfilling, inserting extension sections on the hydrants, seeding and sodding required for the proper completion of the work under this contract.

The adjusted height of the hydrant hose connection above the ground or pavement grade shall be in accordance with the requirements of the City of Cleveland Fire Department.

BASIS OF PAYMENT

The work included in this item shall be paid for at the contract unit price bid for each "Item Special - Adjust Fire Hydrant and Valve Box to Grade". This price and payment shall constitute full compensation for performing all of the requirements of this item, furnishing all necessary materials, labor, tools, equipment, supplies and incidentals.

ITEM SPECIAL-ADJUST WATERWORKS STRUCTURES TO GRADE

WORK INCLUDED

The Contractor shall raise or lower the existing waterworks structures to fit the revised grade.

BASIS OF PAYMENT

The work included in this item shall be paid for at the contract unit price bid for each "Item Special - Adjust Existing Waterworks Structures to Grade", which price and payment shall constitute full compensation for adjusting valve boxes, vaults, access manholes and any required excavation, backfilling, tamping, seeding and sodding, pavement restoration and for the furnishing of all labor, equipment, materials, tools and incidentals necessary to complete this item.

ITEM SPECIAL-REMOVE ABANDONED CURB COCK AND VALVE BOX

WORK INCLUDED

The Contractor shall either remove or leave in place the abandoned curb cock. The valve box shall either be removed or broken off at least 1' below the ground surface and backfilled. If the valve box is in a paved area, the area shall be restored to match the existing pavement.

BASIS OF PAYMENT

The work included in this item shall be paid for at the contract unit price bid for each "Item Special - Remove Abandoned Curb Cock and Valve Box", which price and payment shall constitute full compensation for abandoning the valve and removing the valve box, backfilling, seeding, repaving, and for the furnishing of all materials, labor, equipment, tools and incidentals necessary to complete this item. All removed materials shall become the property of the Contractor.

ITEM SPECIAL-"SERVICE CONNECTION EXTENDED"

The Contractor will furnish the piping material for and the City shall make all changes required in the relocation of existing house connections and meters from the corporation cock to the curb cock. The Contractor shall do all the necessary excavation, backfilling and repaving required. Materials to be furnished by the Contractor are listed on Sheet No. 150.
The Contractor shall do all work from Curb Cock Box to the dwelling where necessary.

BASIS OF PAYMENT

The actual number of "Item Special - Service Connection Extended" shall be paid for at the contract unit price. The price and payment shall constitute full compensation for performing all of the requirements of the item including the furnishing of all materials, labor, tools, equipment and incidentals.

The labor, tools, equipment and incidentals furnished by the City of Cleveland, Division of Water, will be at no expense to the Contractor.

ITEM SPECIAL - RELOCATE, RETAP AND RECONNECT SERVICE CONNECTION

A tap is to be made on the new water main and the existing service connection shall be connected to the new water main. Materials to be furnished by the Contractor are listed on Sheet No. 150.

The Contractor shall furnish the piping materials and the City shall make all changes necessary to reconnect. The Contractor shall do all excavation, backfilling and repaving. The Contractor shall do all work from Curb Cock Box to the dwelling where necessary.

BASIS OF PAYMENT

The actual number of "Item Special - Relocate, Retap and Reconnect Service Connections", shall be paid for at the contract unit price. This price and payment shall constitute full compensation for performing all of the requirements of this item, including furnishing all necessary materials, labor, tools, equipment, supplies and incidentals.

The labor, tools, equipment and incidentals furnished by the City of Cleveland, Division of Water, will be at no expense to the Contractor.

GENERAL NOTES

The exact location of existing underground structures, utilities, etc. is not known and the information shown on the plans is to be used at the contractors risk.

The water line stationing is along horizontal centerlines of the pipe. The elevations are based on sea level datum.

The static head used for both design and testing shall be measured from elevation 927.00. The field testing head shall be 75 p.s.i. plus that due to the static head, but in no case less than 100 p.s.i..

The Contractor shall notify R.J. METTLER INSP. & ENFORC'T. Three (3) working days prior to starting any water works construction. Call 694-3065

ITEM SPECIAL - ADJUST CURB COCK VALVE BOX TO GRADE
ITEM SPECIAL - ADJUST VALVE BOX TO GRADE

WORK INCLUDED

The Contractor shall raise or lower the existing valve box to fix the new grade by using appropriate extension stem sections, if needed, or by excavating under or tamping backfill under the valve box to insure that the box has a firm footing.

PAYMENT

The work included in this item will be paid for at the contract unit price bid for each "Item Special - Adjust Valve Box to Grade"* which price and payment shall constitute full compensation for adjusting the valve box, excavation, tamping earth under valve box, backfilling, seeding and sodding and repaving and for the furnishing of all labor, materials, small tools, equipments and incidentals necessary to complete this item.

* "or Item Special - Adjust Curb Cock Valve Box to Grade."

ITEM SPECIAL-2" AIR COCK AND VALVE BOX COMPLETE

WORK INCLUDED

The Contractor shall furnish pipe with 2" air cock connection and furnish and install the 2" Air Cock and Valve Box as shown in the "Water Work Details," at the locations shown in the plans.

PAYMENT

The work include in this item shall be paid for at the contract unit price bid for each "Item Special-2" Air Cock and Valve Box Complete," which price and payment shall constitute full payment for the furnishing and installing of all materials, labor, equipment, tools and appliances necessary to complete this item of work in place.

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ENGINEER OF DESIGN REVIEW

1st HIGH SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATER WORK NOTES FOR INTERSTATE ROUTE 80 -

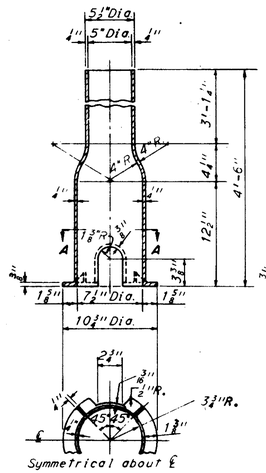
WATER WORK NOTES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

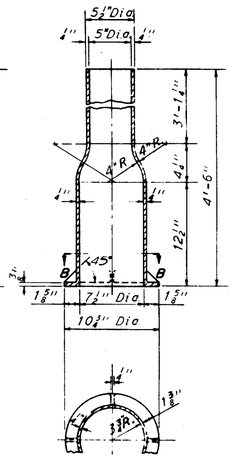
149/347

16/28

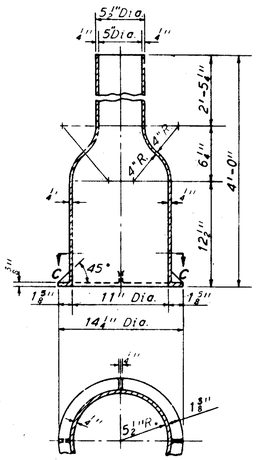
CUYAHOGA COUNTY
CUY-480-4.86



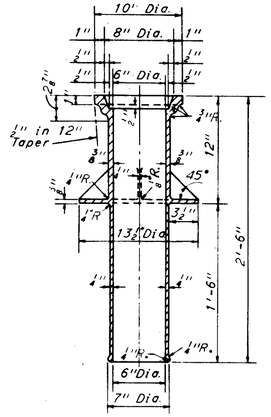
SECTION A-A
Base No. 1 for 1½" and 2" Valves
Est. Wt. 69#



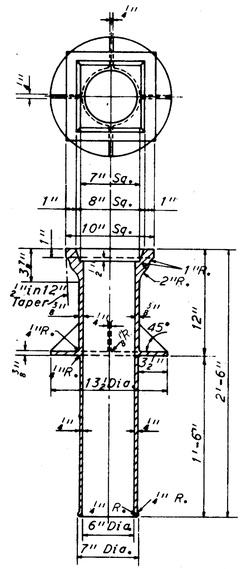
SECTION B-B
Base No. 2 and 3 for 3", 4", 6" and 8" Valves
Est. Wt. 71#



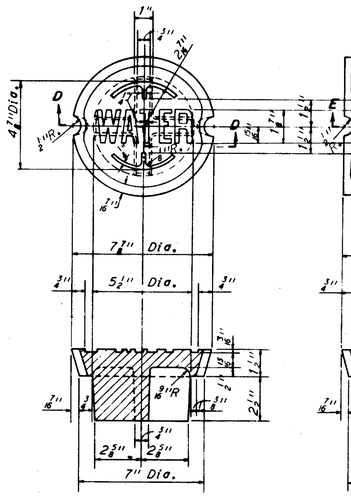
SECTION C-C
Base No. 4 for 10", 12" and 16" Valves
Est. Wt. 79#



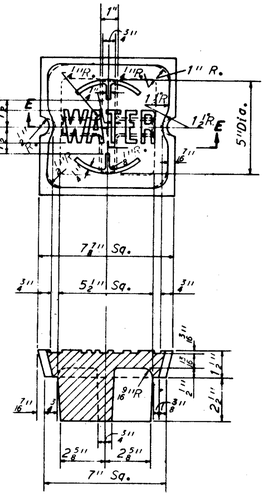
SECTION OF TOP WITH ROUND HEAD NO. 1 AND 2
Est Wt. 73#



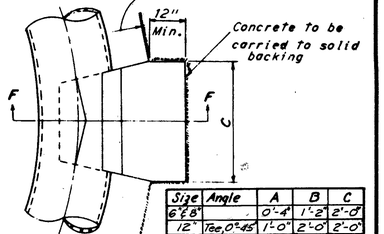
SECTION OF TOP WITH SQUARE HEAD NO. 3 AND 4
Est. Wt. 85#



SECTION D-D
Detail of round cover for No. 1 and 2 top
Est. Wt. 20#

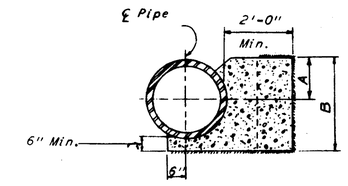


SECTION E-E
Detail of square cover for No. 3 and 4 top
Est. Wt. 23#

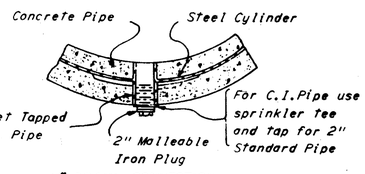


Size	Angle	A	B	C
6"&8"		0'-4"	1'-2"	2'-0"
12"	Tee,0°-45°	1'-0"	2'-0"	2'-0"
12"	90°	1'-6"	3'-2"	2'-0"

PLAN



SECTION-FF CONCRETE PIER FOR BENDS
Scale ½" = 1'-0"



2" DRAIN CONNECTION

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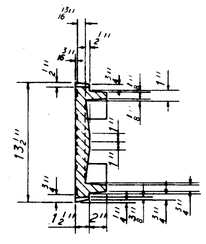
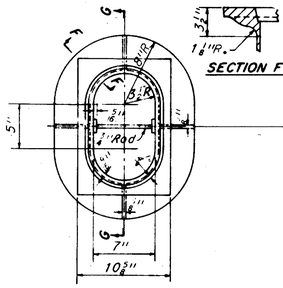
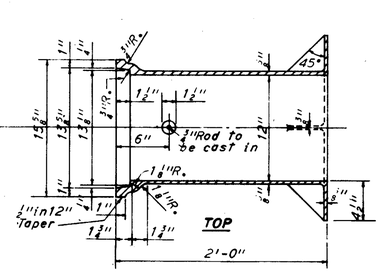
ENGINEER OF DESIGN REVIEW



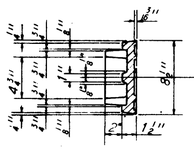
SECTION K-K
Est. Wt. 37#



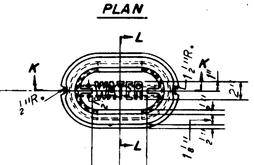
PLAN



SECTION G-G
Air Cock Box No.5 is Top and Cover
Air Cock Box No.6 is Top, Base 2'-6" Long and Cover
Flushing Box No.7 is Top, Base 5'-0" Long and Cover
Est. Wt. 128#

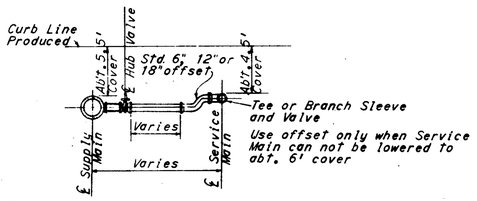


SECTION L-L

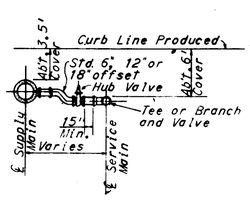


COVER

STANDARD DETAILS - VALVE AND AIR COCK BOXES

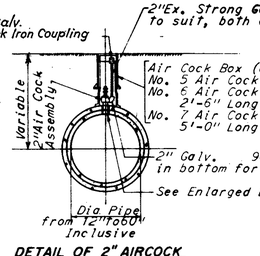


Typical Offset Connection Where Supply Main Is Lower Than Service Main

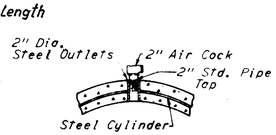


Typical Offset Connection Where Supply Main Is Higher Than Service Main

TYPICAL OFFSET CONNECTIONS



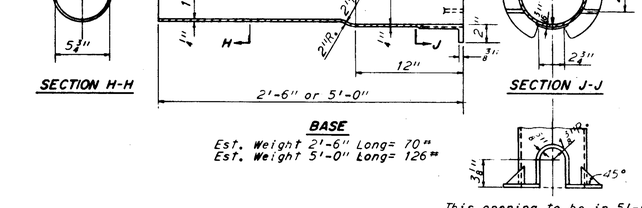
DETAIL OF 2" AIRCOCK INSTALLATION FOR CONCRETE MAINS



ENLARGED DETAIL SHOWING CONNECTION FOR AIRCOCK OR PITOMETER

For Cast Iron or Ductile Iron Pipe use Sprinkler Tee and Tapped for 2" I.D. Standard Thread.

For Steel Pipe, Steel forgings shall be welded to pipe and tapped for 2" Standard Pipe.



SECTION H-H **SECTION J-J**

BASE
Est. Weight 2'-6" Long= 70#
Est. Weight 5'-0" Long= 126#

This opening to be in 5'-0" base only.

STANDARD DETAILS - AIR COCK AND CONNECTIONS FOR VARIOUS PIPE

1st HIGH SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT: WATER WORK DETAILS FOR INTERSTATE 80

SCALE AS SHOWN

NO.

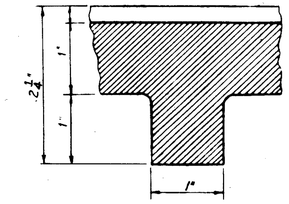
WATER WORK DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

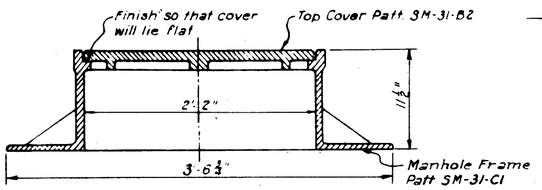
150/347

CUYAHOGA COUNTY
CUY-480-4.86

17/28



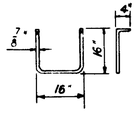
FULL SIZE SECTION B-B



MANHOLE FRAME AND COVER MARK NO. 3

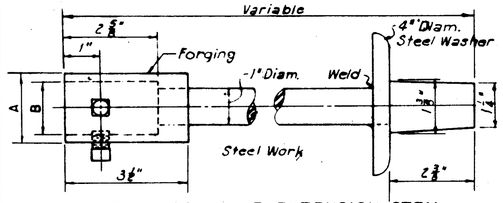
Consisting of { C.I. Manhole Frame Patt SM-31-C1
C.I Top Cover Patt SM-31-B2
(Dimensions not given are the same as those shown for Manhole Frame Patt. Mark SM-31-B1)
Approximate Weight = 602#

Scale : 1½"=1'-0"

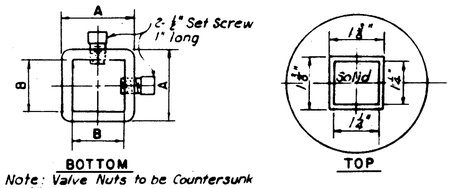


DETAIL OF MANHOLE STEP (W 1)

Number required depends on the depth of vault



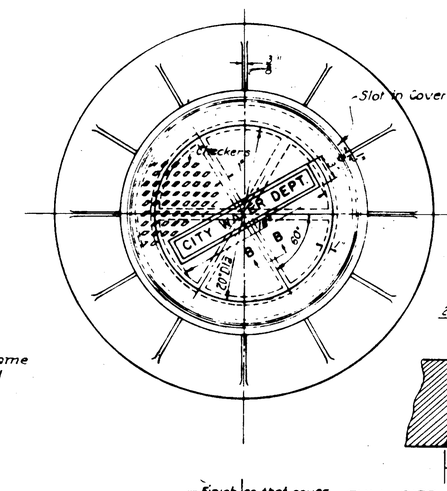
DETAIL OF VALVE EXTENSION STEM

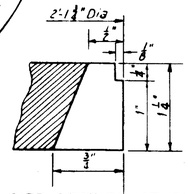


Note: Valve Nuts to be Countersunk ⅛" to receive Set Screws.

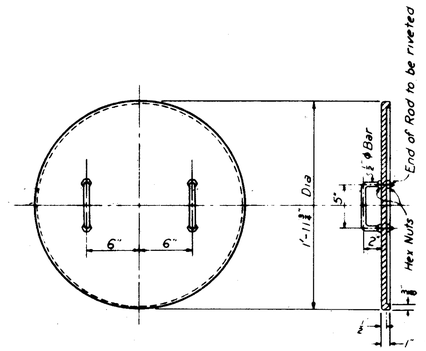
Scale : 6"=1'-0"

VALVE SIZE	A	B
2" and smaller	2"	1½"
4" to 20"	2½"	2"





FULL SIZE SECTION AT SLOT

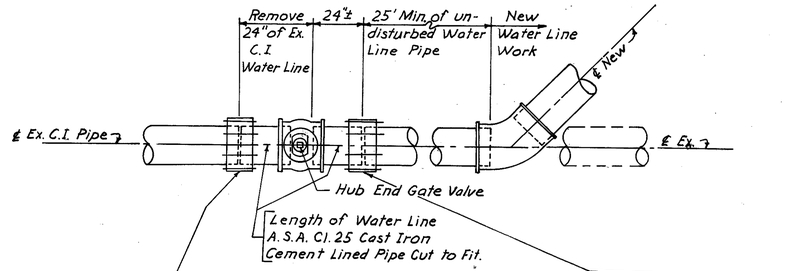


INSIDE COVER (C.I.) PATT. SM-31-B3

MANHOLE FRAME AND COVERS MARK SM-31B

Consisting of { C.I. Manhole Frame Patt SM-31-B1
C.I Top Cover Patt SM-31-B2
C.I Inside Cover Patt SM-1-B3
Approximate Weight = 766#

Scale : 1½"=1'-0"



CUTTING-IN VALVE & BOX DETAIL

Scale : ½"=1'-0"

MATERIALS REQUIRED FOR
ITEM SPECIAL - SERVICE CONNECTION EXTENDED

3/4" OR 1" GENERAL SUPPLY WATER CONNECTION

ON CAST IRON PIPE

1	3/4" or 1"	Curb Cock — Copper to Iron
1		Curb Cock Box Bottom
1		Curb Cock Box Top
X #	feet 3/4" or 1"	Copper Tubing
		or
1	3/4" or 1"	Compression Corporation Stop
1	3/4" or 1"	Oraseal Compression Valve
1		Oraseal Box
1		Oraseal Box Footpiece
X #	feet 3/4" or 1"	Copper Tubing
2	3/4" or 1"	Flare Couplings Copper to Iron Female
2	3/4" or 1"	Flare Couplings Copper to Iron Male
2	3/4" or 1"	Flare Couplings Copper to Copper

MATERIALS REQUIRED FOR
ITEM SPECIAL- RELOCATE, RETAP AND RECONNECT SERVICE CONNECTIONS

3/4" OR 1" GENERAL SUPPLY WATER CONNECTION

ON CAST IRON PIPE

1	3/4" or 1"	Corporation Cock — Copper to Iron
1	3/4" or 1"	Curb Cock — Copper to Iron
1		Curb Cock Box Bottom
1		Curb Cock Box Top
X #	feet 3/4" or 1"	Copper Tubing
		or
1	3/4" or 1"	Compression Corporation Stop
1	3/4" or 1"	Oraseal Compression Valve
1		Oraseal Box
1		Oraseal Box Footpiece
X #	feet 3/4" or 1"	Copper Tubing

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APPROVED 10/21 1977

ENGINEER OF DESIGN REVIEW

1st HIGH SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATER WORK DETAILS FOR INTERSTATE 80

SCALE AS SHOWN | NO.

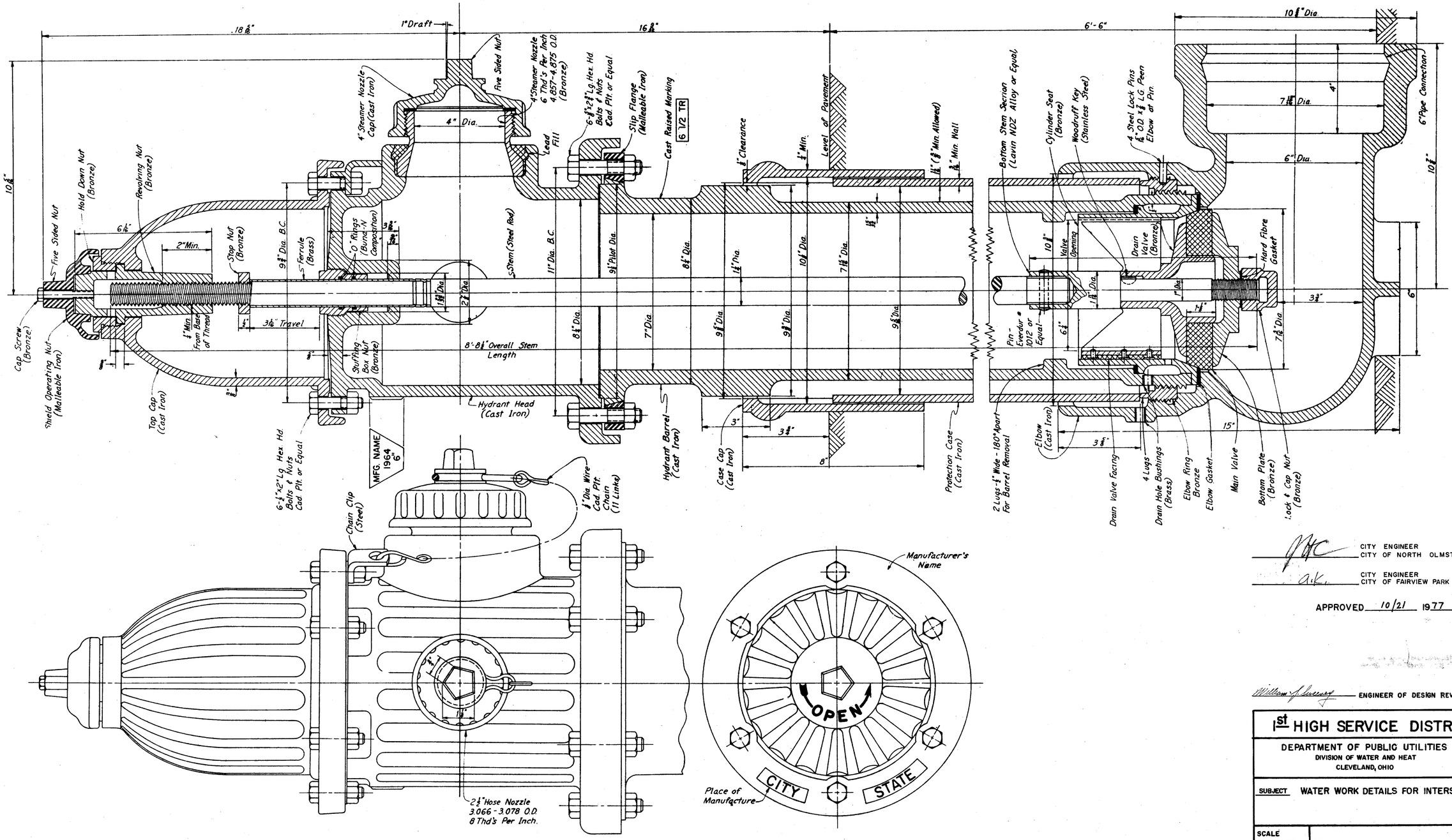
WATER WORK DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

151/347

CUYAHOGA COUNTY
CUY-480-4.86

18/28



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CITY OF FAIRVIEW PARK

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1st HIGH SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATER WORK DETAILS FOR INTERSTATE 80

SCALE	NO.
AS SHOWN	

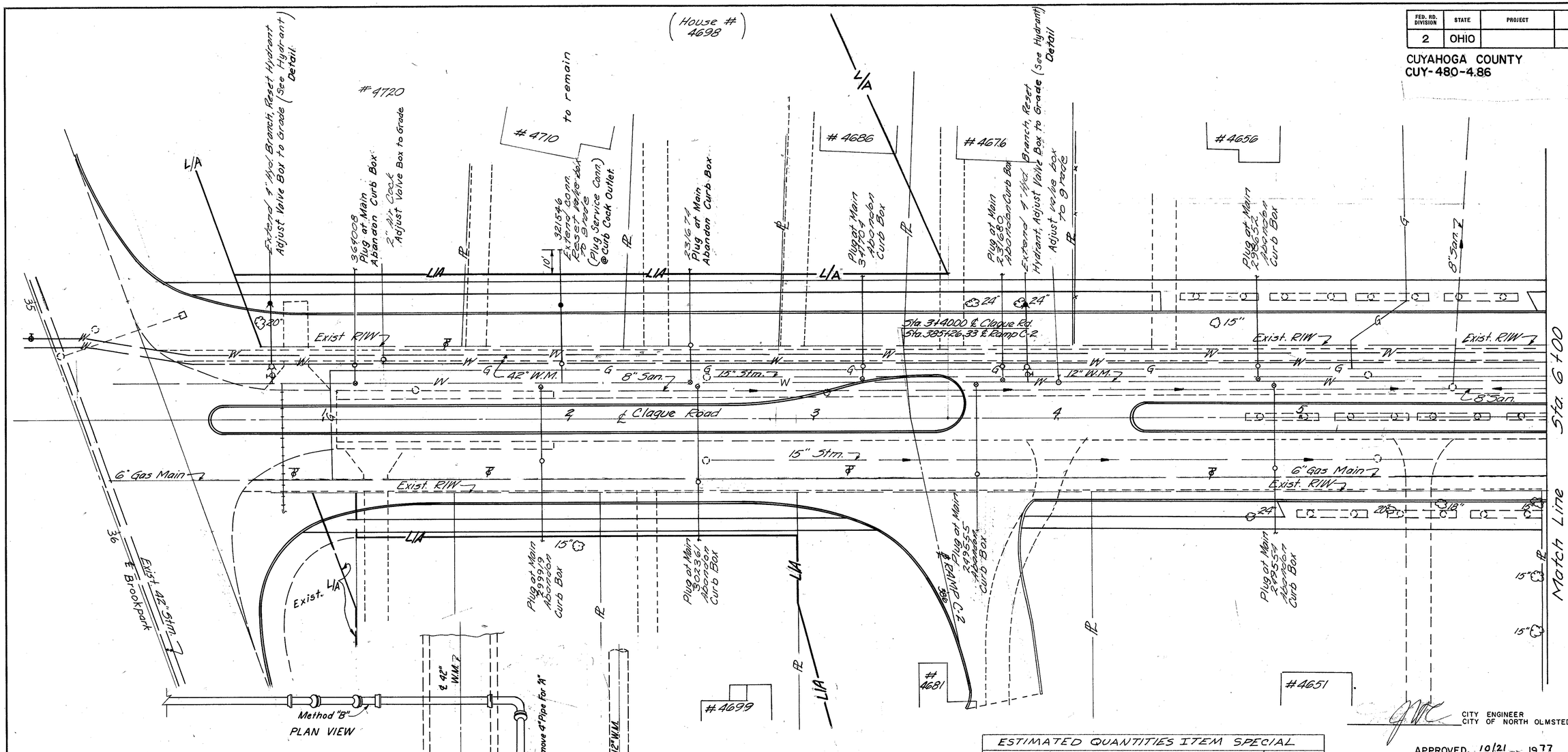
WATERWORK DETAILS

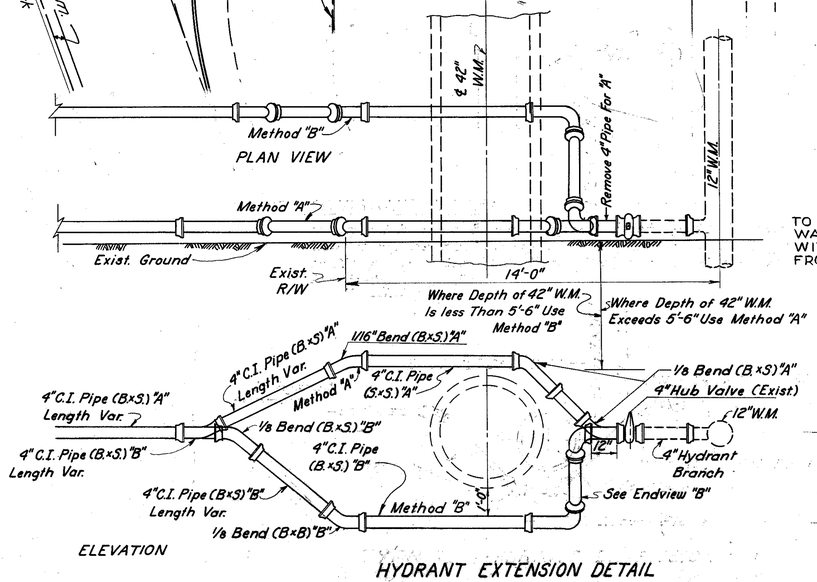
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

152 / 347

19 / 28



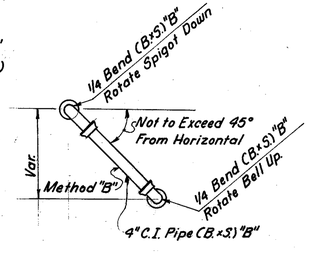


HYDRANT EXTENSION DETAIL

HYDRANT NOTE:

TO EXTEND HYDRANT BRANCH BEYOND EXISTING 42" WATER MAIN IT WILL BE NECESSARY TO USE ⅛ BENDS WITH LUGS OR CLAMPS AND TIE RODS WITH CLAMPS FROM 4" BELL OF TEE TO HYDRANT BELL.

(SEE NOTE BELOW)



ESTIMATED QUANTITIES ITEM SPECIAL	
Description	Quantity
Extend connection & Reset valve box to grade	1 Ea.
Adjust valve box to grade	4 Ea.
Extend 4" Hydrant Branch, Reset Hydrant	2 Ea.
Plug Connection at Main, Abandon Curb Box	9 Ea.

NOTE: There shall be 6' cover on all service connections.

NOTE: The 4" cast iron pipe and fittings, the resetting of the hydrant at the proper location, and all excavation and backfill are included in the unit price bid for "Item Special-Extend 4" Hydrant Branch, Reset Hydrant."

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ENGINEER OF DESIGN REVIEW

REVISIONS

1st. HIGH SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT CLAGUE ROAD WATER WORK

DRAWN BY N.M.
TRACED BY B.B.
CHECKED BY E.J.G. DATE 1-7-69
SCALE 1" = 20'
NO.

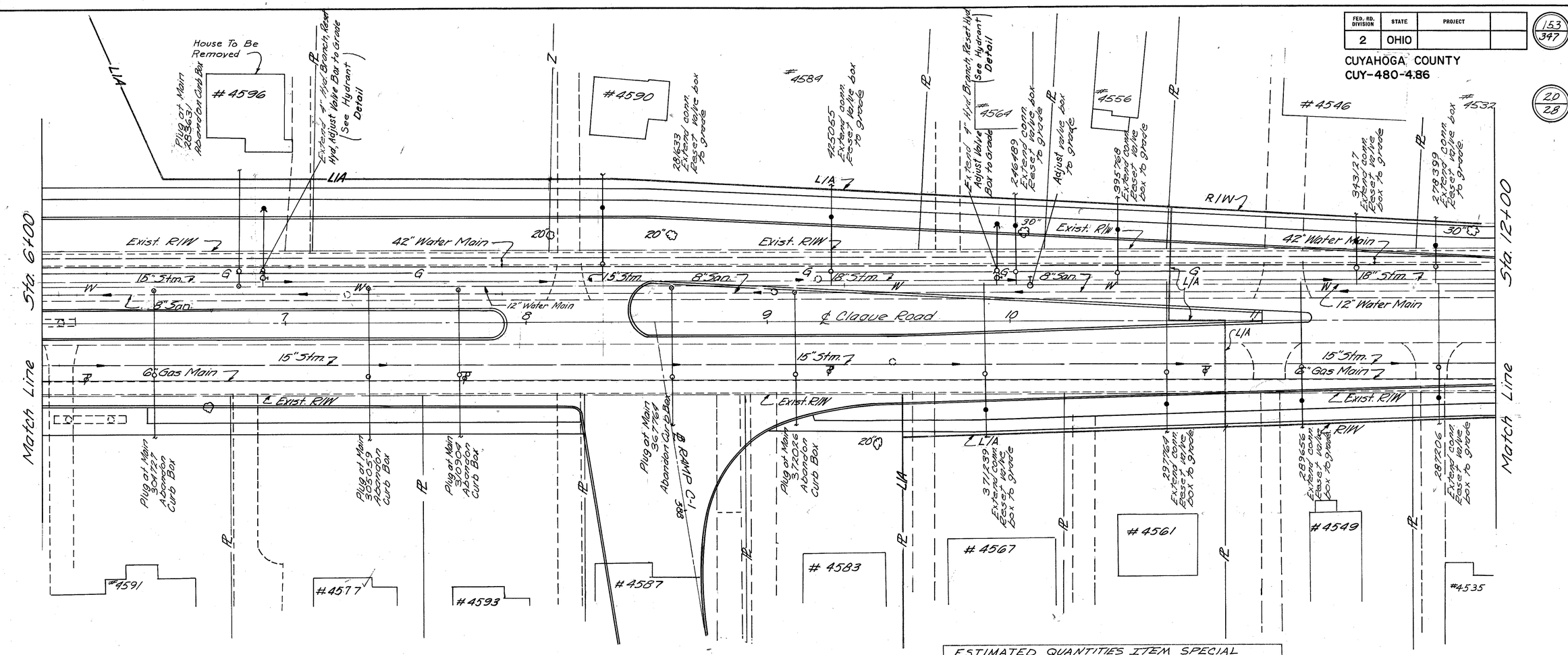
CLAGUE ROAD STA. 0+00 TO STA. 6+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

153/347

CUYAHOGA COUNTY
CUY-480-4.86

20/28



For Hydrant Extension Note & Detail, See Sheet No. 19/28

ESTIMATED QUANTITIES ITEM SPECIAL	
Description	Quantity
Extend connection & Reset Valve Box to Grade	10 Ea.
Adjust valve box to grade	3 Ea.
Extend 4" Hyd., Reset Hydrant	2 Ea.
Plug Connections at Main, Abandon Curb Box	6 Ea.

NOTE: There shall be 6' cover on all service connections.

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CITY OF NORTH OLMSTED

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COMMISSIONER, DIVISION OF UTILITIES ENGINEERING

ENGINEER OF DESIGN REVIEW

REVISIONS	

1st HIGH SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT CLAGUE ROAD WATER WORK

DRAWN BY N.M
TRACED BY B.B
CHECKED BY E.J.C.
SCALE 1"=20'
DATE 2-7-69
NO.

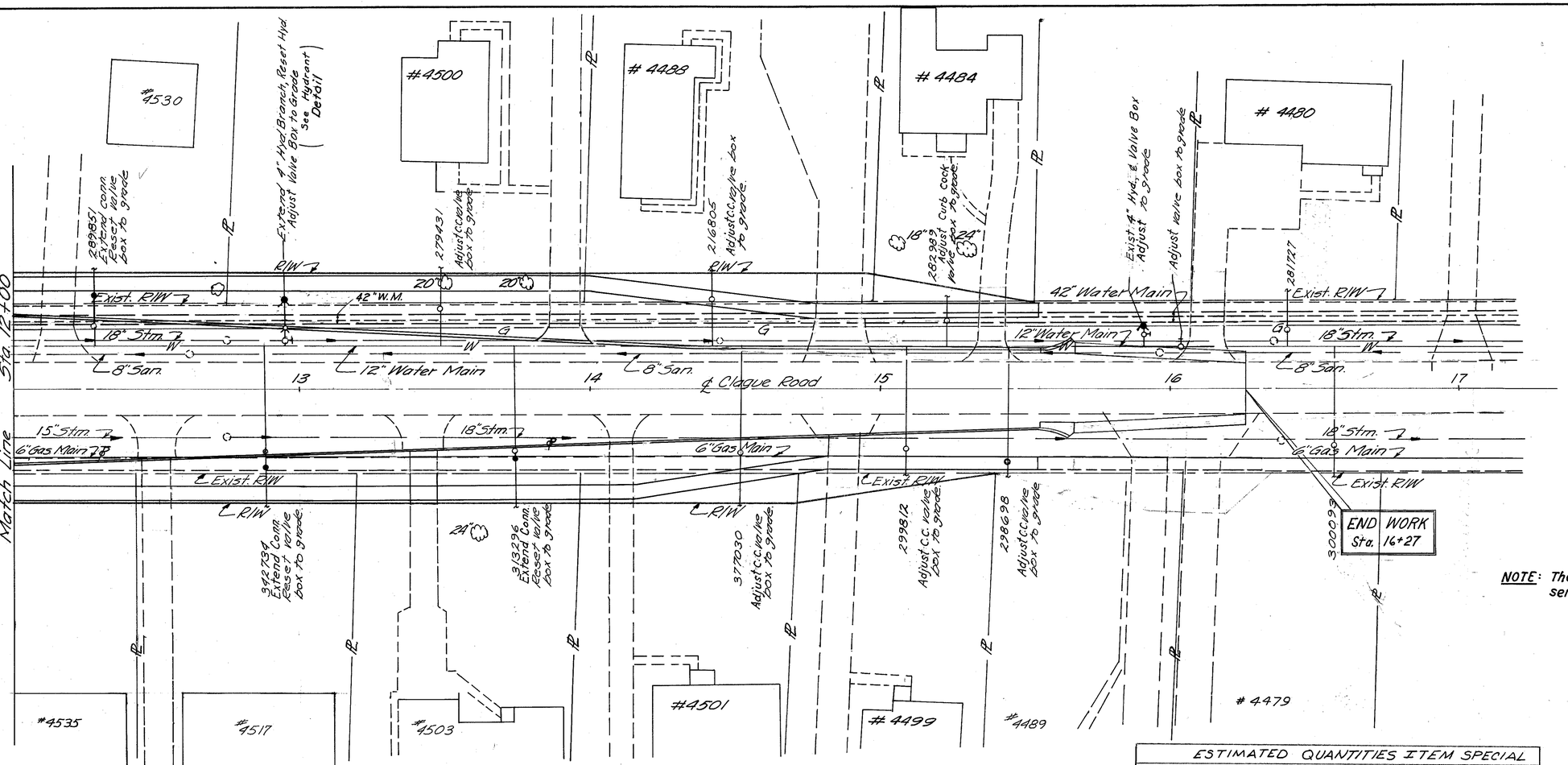
CLAGUE ROAD STA. 6+00 TO STA. 12+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

154/347

CUYAHOGA COUNTY
CUY-480-4.86

21/28



NOTE: There shall be 6' cover on all service connections.

For Hydrant Extension Note & Detail, See Sheet No. 19/28

ESTIMATED QUANTITIES ITEM SPECIAL

Description	Quantity
Extend connection & Reset valve box to grade	3 Ea.
Adjust valve box to grade	2 Ea.
Extend 4" Hydrant Branch, Reset Hydrant	1 Ea.
Adjust Fire Hydrant and Valve Box to Grade	1 Ea.
Adjust Curb Cock Valve Box to Grade	6 Ea.

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ENGINEER OF DESIGN REVIEW

REVISIONS	

1st. HIGH SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT CLAGUE ROAD WATER WORK

DRAWN BY N.M.
TRACED BY B.B.
CHECKED BY E.J.C. DATE 2-7-69
SCALE 1"=20'
NO.

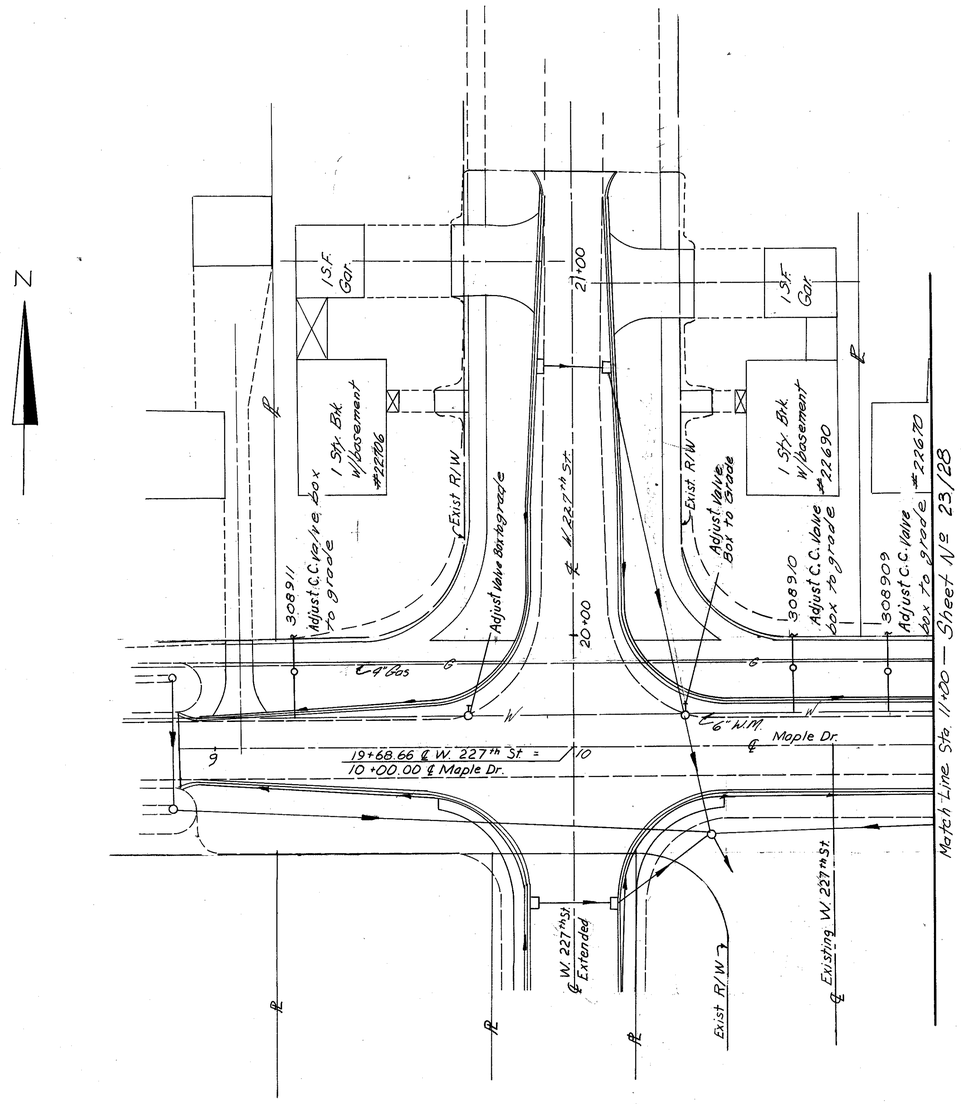
CLAGUE ROAD STA. 12+00 TO STA. 17+05

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

155/347

CUYAHOGA COUNTY
CUY-480-4.86

22/28



ESTIMATED QUANTITIES ITEM SPECIAL	
DESCRIPTION	Quantity
Adjust valve box to grade.	2 Ea.
Adjust Curb Cock Valve Box to Grade	3 Ea.

CITY ENGINEER
CITY OF FAIRVIEW PARK

APPROVED 10/21 19 77

William J. Lucarelli — ENGINEER OF DESIGN REVIEW

REVISIONS

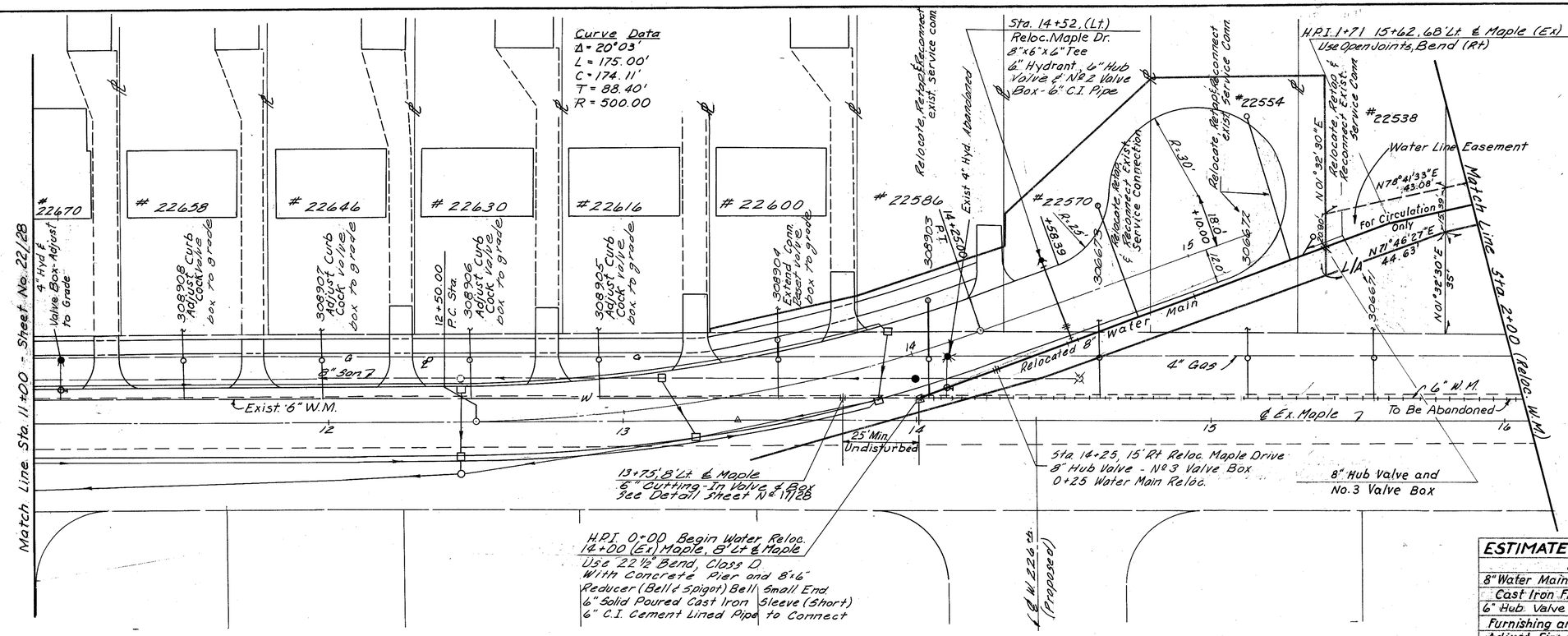
1st. HIGH SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT: Water Work - W. 227th & Reloc. Maple Dr. Interstate Route 80

DRAWN BY G.M.K. 8/4/68
TRACED BY B.B. 9-5-68
CHECKED BY E.J.C. DATE 7-7-69
SCALE. 1" = 20'
NO.

Water Line Work, W. 227th & Maple Drive (Reloc.)



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

156/347

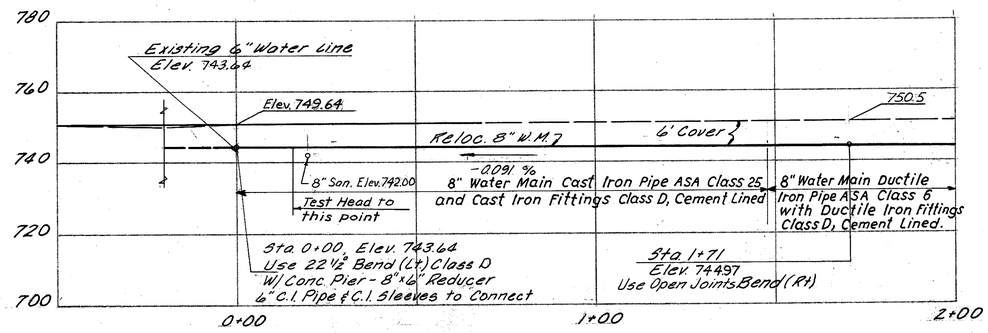
CUYAHOGA COUNTY
CUY-480-4.86

23/28

N

NOTE: There Shall be 6' Cover on all Service Connections.

NOTE: For Pipe with Boltless Restrained Push-On Joints, see Note on Sheet No. 141



PROFILE RELOCATED 8" WATER LINE

ESTIMATE QUANTITIES ITEM SPECIAL

DESCRIPTION	Quantity
8" Water Main Cast Iron Pipe ASA Class 25 and Cast Iron Fittings Class D, Cement Lined	148 L.F.
6" Hub Valve & No. 2 Box Complete	1 Ea.
Furnishing and Setting 6" Fire Hydrant	1 Ea.
Adjust Fire Hydrant and Valve Box to Grade	1 Ea.
Extend conn. Reset valve box to grade.	1 Ea.
Relocate, Retap & Reconnect Exist. Service Conn.	4 Ea.
6" Cut-In Valve, No 3 Box Complete	1 Ea.
8" Hub Valve & No. 3 Box Complete	2 Ea.
Adjust Curb Cock Valve Box to Grade	4 Ea.
8" Water Main Ductile Iron Pipe ASA Class 6 with Ductile Iron Fittings Class D, Cement Lined	52 L.F.
6" Water Main Cast Iron Pipe ASA Class 25 and Cast Iron Fittings Class D, Cement Lined, all Lead Joints.	30 L.F.

CITY ENGINEER
CITY OF FAIRVIEW PARK

APPROVED 10/21 19 77

ENGINEER OF DESIGN REVIEW

REVISIONS

1st HIGH SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT: 8" Water main relocation along relocated Maple Dr. - Interstate-Route 80

DRAWN BY A.B. 9/14/76
TRACED BY A.B.
CHECKED BY F.J.C. DATE 7-7-69
SCALE 1" = 20'
NO.

Water Line Relocation - Maple Drive (Reloc.)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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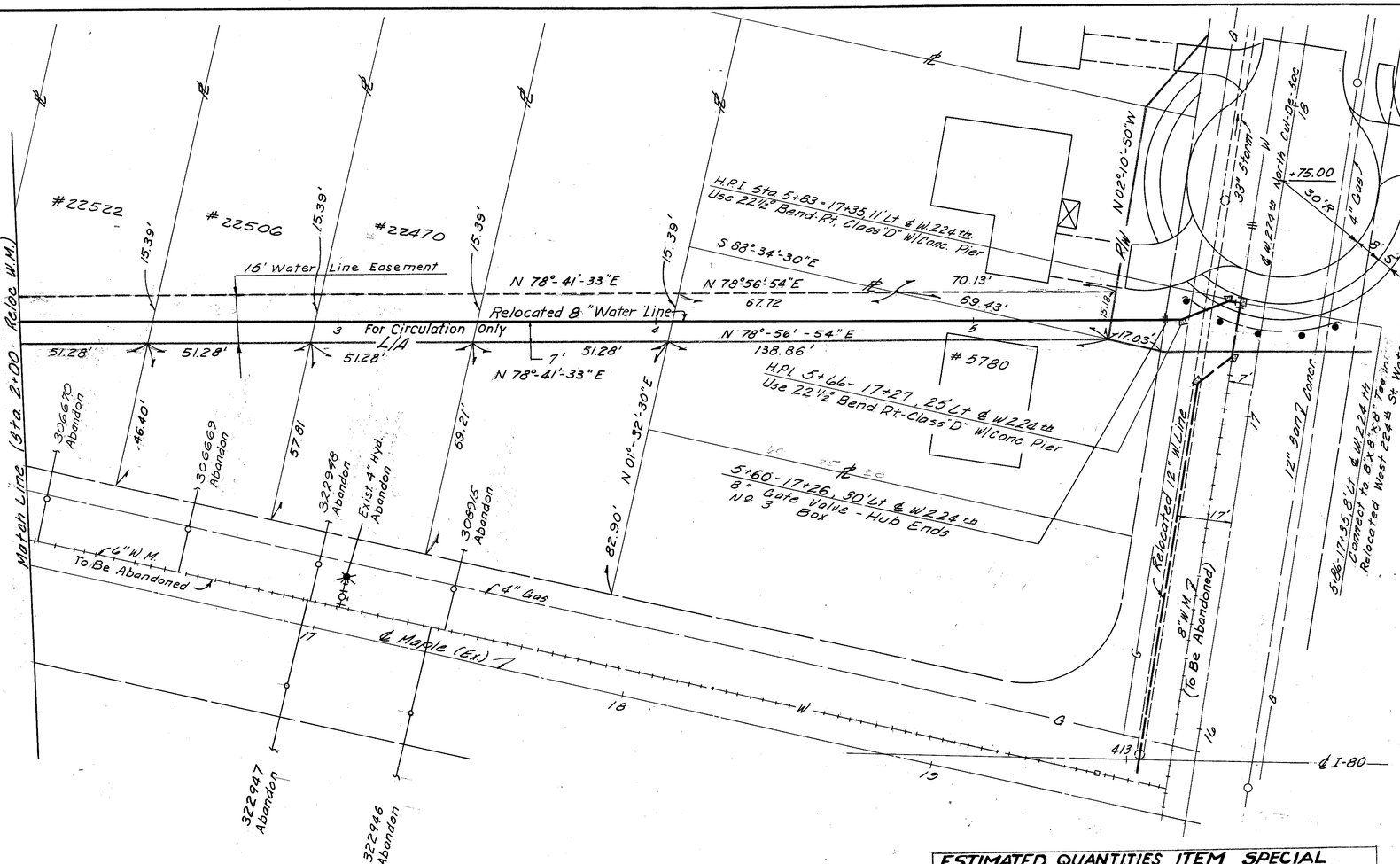
CUYAHOGA COUNTY
CUY-480-4.86

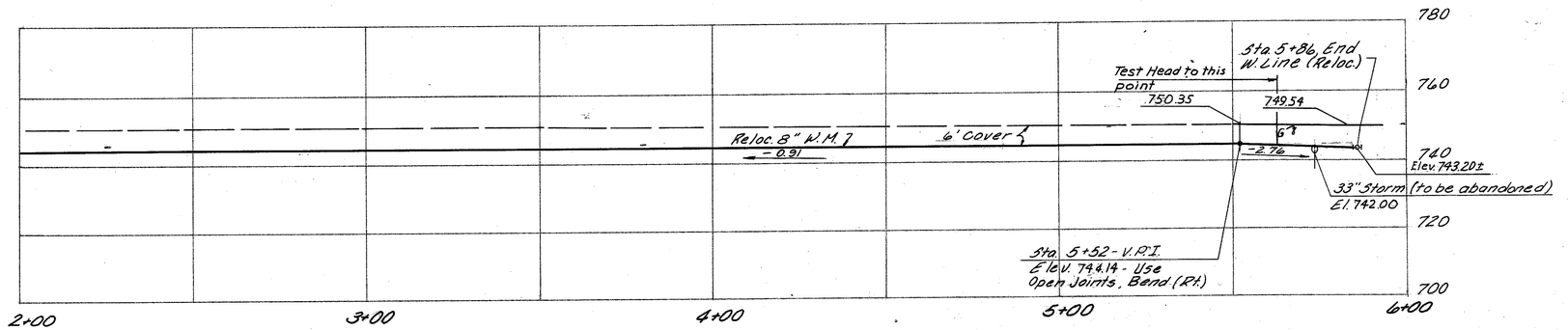
24 / 28



ESTIMATED QUANTITIES ITEM SPECIAL

DESCRIPTION	Quantity
8" Water Main Ductile Iron Pipe ASA Class 6 with Ductile Iron Fittings Class D, Cement Lined	386 L.F.
8" Hub Valve & No. 3 Box Complete	1 Ea.

NOTE: For pipe with boltless restrained Push-On Joints, see note on sheet No. 141



PROFILE RELOCATED 8" WATER LINE

A.K. CITY ENGINEER
CITY OF FAIRVIEW PARK

APPROVED 10/21 19 77

COMMISSIONER-DIVISION OF WATER & HEAT

William J. Sweeney ENGINEER OF DESIGN REVIEW

REVISIONS	1st. HIGH SERVICE DISTRICT
	DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER AND HEAT CLEVELAND, OHIO
	SUBJECT: 8" Relocated Maple Drive Water Main in Easement From Water Main Relocation 1st Relocated Maple Dr. to West 224th Street Along Interstate-Route 80
	DRAWN BY A.B 7/29/69 · SCALE 1"=20'
	TRACED BY A.B.
	CHECKED BY E.J.C. DATE 7-7-69 · NO.

Water Line Relocation - Maple Drive (Reloc.)

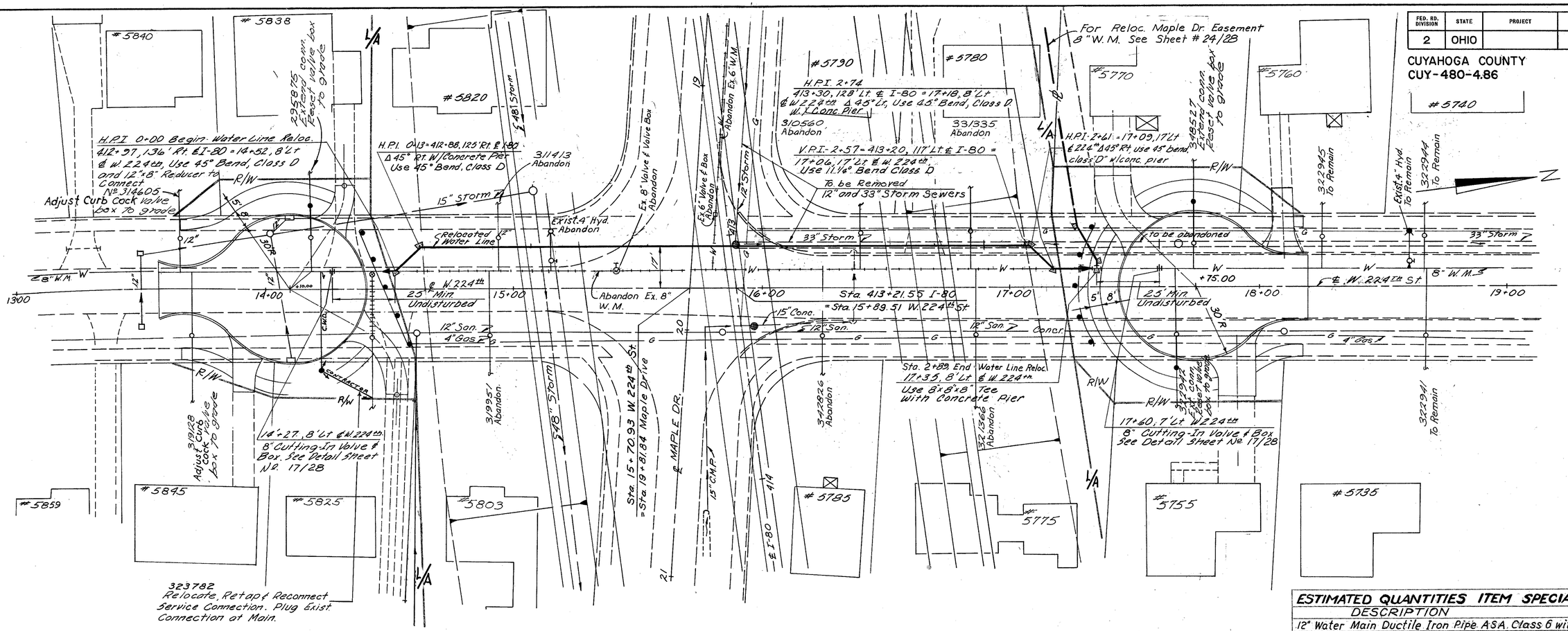
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

158/347

25/28

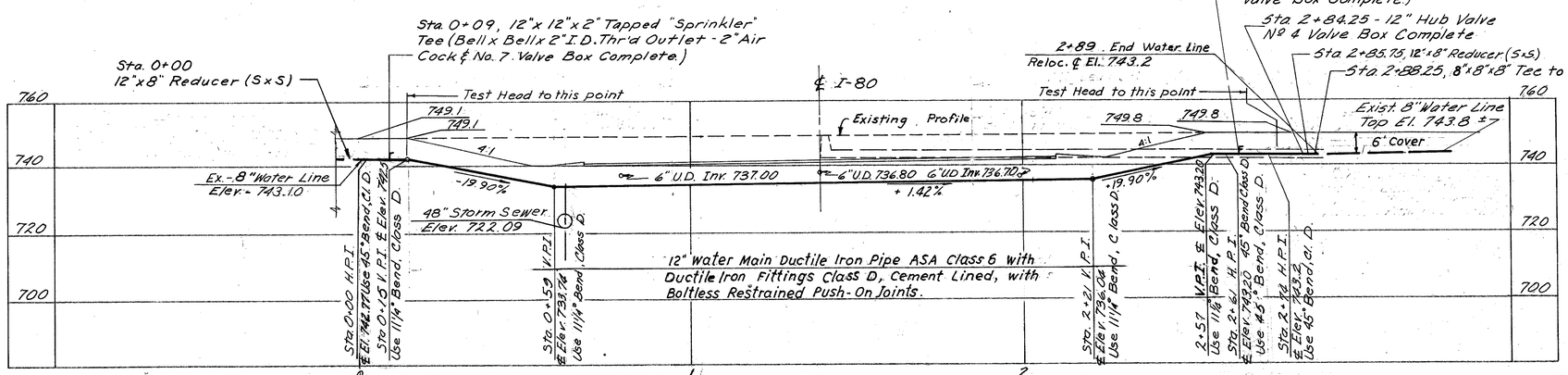
CUYAHOGA COUNTY
CUY-480-4.86

#5740



Note: There shall be 6' cover on all service connections.

Note: For pipe with boltless Restrained Push-on joints, see note on sheet No. 141



PROFILE RELOC. 12" WATER MAIN

ESTIMATED QUANTITIES ITEM SPECIAL

DESCRIPTION	Quantity
12" Water Main Ductile Iron Pipe ASA Class 6 with Ductile Iron Fittings Class D, Cement Lined, with Boltless Restrained Push-On Joints.	290 L.F.
8" Cutting-in valve & box, complete.	2 Ea.
Extend connection. Reset Valve Box to Grade	3 Ea.
12" Hub Valve and № 4 Box Complete	1 Ea.
2" Air Cock & No. 7 Valve Box Complete	2 Ea.
Relocate, Retap & Reconnect Service Connection	1 Ea.
Plug Existing Connection at Main	1 Ea.
Adjust Curb Cock Valve Box to Grade	2 Ea.

APPROVED 10/21 19.77

CITY ENGINEER, CITY OF FAIRVIEW PARK

ENGINEER OF DESIGN REVIEW

REVISIONS

1st HIGH SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT: 12" Water main relocation along W. 224th st. Interstate - Route 80

DRAWN BY J.L.
TRACED BY S.M.K.
CHECKED BY E.J.C. DATE 7-7-69
SCALE 1" = 20'
NO.

Relocated W. 224th St. W.M.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

H.P.I. 0+26 = 8+05, 16' Lt. ℄ Mastick
Δ 90° Lt. W/Concrete Pier
Use 12" x 12" x 12" Tee

H.P.I. 0+00 Begin W.L. Reloc.
7+78, 16' Lt. ℄ Mastick Rd.

H.P.I. 1+02 = 422+75.141' Rt. ℄ I-80
Δ 42° 37' Rt. W/Concrete Pier
Use 45° Bend, Class D.

H.P.I. 3+87 = 422+95.141' Lt. ℄ I-80
Δ 45° Rt. W/Concrete Pier
Use 45° Bend, Class D.

H.P.I 4+54 End Water Line Reloc.
12+00, 15' Lt. ℄ W. 220th St.
Δ 45° Lt. Use 45° Bend, Class D
Use 6 Sleeve & Stub to make Conn.

0-18 = 7+60, 16' Lt. ℄ Mastick Road
12" Cutting-In Valve & Box Complete
(See Sheet 160)

0+50 - 8+32.24' Lt. ℄ W. 220th
12" Gate Valve - Hub Ends No. 4 Box

Sta. 423+46.80 I-80
= Sta. 10+13.71 W. 220th St.

4+30 - 11+84.30' Lt. ℄ W. 220th
12" Gate Valve - Hub Ends No. 4 Box

Sta. 12+25 19' Lt. W. 220th
12" Cutting in Valve & Box Complete
See Detail Sheet No. 17/28

Relocated 12" Water Line

Relocated 10" San. Sewer

Temporary Rd.

Exist. R/W

Abandon Ex. Valve Box

Abandon 12" W.M.

Exist 4" Hyd. Abandon

Abandon 12" x 20" x 20" Tee

Abandon 12" x 12" x 2" Tee

Exist 12" x 12" x 2" Tee

Exist 12" x 12" Cross

Exist 12" Valve & Box

Adjust Curb Cock Valve Box to Grade

W. Valve Box - Adjust to Grade

Exist Comb. Curb & Gate Valve & Box to Grade

Exist Curb Cock & Valve & Box to Grade & Provide Temp. Service Conn.

Exist Comb. Curb & Gate Valve & Box to Grade

Exist Curb Cock Valve & Box to Grade

Tangent

Local

423

424

93° 57' 26"

25' Min. Undisturbed

To be Abandoned

To be Abandoned

8" San. Sewer

10" San. Sewer

6" Gas

12" Storm

15" Storm

MASTICK RD.

W. 220th St.

O.M. R-11

For Mastick Rd. Relocated 12" Water Main, See Sheets 27 of 28

#5784 #5736 #5732 #5720 #5690 #5715 #5695

NOTE: There shall be 6' cover on all service connections.

NOTE: For pipe with boltless restrained push-on joints, see note on sheet No. 141

ESTIMATED QUANTITIES ITEM SPECIAL

DESCRIPTION	Quantity
12" Water Main Ductile Iron Pipe ASA Class 6 with Ductile Iron Fittings Class D, Cement Lined, with Boltless Restrained Push-On Joints	368 L.F.
12" Water Main Cast Iron Pipe ASA Class 25 and Cast Iron Fittings Class D, Cement Lined	97 L.F.
12" Hub Valve & No. 4 Box Complete	2 Ea.
12" Cutting in valve & box, complete	2 Ea.
Adjust Valve Box to Grade	1 Ea.
Extend Conn. & Reset valve box to grade.	2 Ea.
2" Air Cock & No. 7 Valve Box Complete	2 Ea.
Adjust Curb Cock Valve Box to Grade	3 Ea.
Temporary Service Connection	1 Ea.

Sta. 0+40, 12" x 12" x 2" Tapped "Sprinkler" Tee (Bell x Bell x 2" I.D. Thr'd Outlet - 2" Air Cock & No. 7 Valve Box Complete)

Sta. 4+40, 12" x 12" x 2" Tapped "Sprinkler" Tee (Bell x Bell x 2" I.D. Thr'd Outlet - 2" Air Cock & No. 7 Valve Box Complete)

Test Head to this point

Exist 12" Water Line Elev. 754.3 ±

758.80

MASTICK RD.

2 Lengths 36' Minimum

758.5

-2.25 % — 6' Cover

℄ 15" Strm. El. 744.57

℄ 10" San. El. 738.72

Line Valve

Sta. 0+00 H.P.I. ℄ Elev. 754.3 ±

Sta. 0+26 Tee Lt. ℄ Elev. 753.98

Sta. 0+26 12" x 12" x 12" Tee ℄ Elev. 753.74 Use 12" x 12" x 12" Tee

92° Inv. 719.20 D.

6" U.D. Inv. 727.73

-48.27 %

+0.34 %

6" U.D. Inv. 730.02

757.50

℄ I-80

Temporary Profile

754.6

6" U.D. Inv. 730.00

+50.45 %

Test Head to this point

Exist. 12" Water L. Elev. 747.70 ±

754.20

2 Lengths 36' Min.

W. 220th St.

Line Valve

760 / 750 / 740 / 730 / 720 / 710

0 — 2 — 3 — 4 — 4+54

Sta. 1+02 H.P.I. ℄ Elev. 752.00

Sta. 1+04 V.P.I. ℄ Elev. 751.94 Use 22½° Bend, Class D and Open Joints

Sta. 1+56 V.P.I. ℄ Elev. 726.9 Use 22½° Bend Class D and Open Joints

Sta. 3+35 V.P.I. ℄ Elev. 727.54 Use 22½° Bend Class D & Open Joints

Sta. 3+77 V.P.I. ℄ Elev. 734.77 Use 22½° Bends, Class D & Open Joints

Sta. 3+87 H.P.I. ℄ Elev. 747.70 ±

12" Water Main Ductile Iron Pipe ASA Class 6 with Ductile Iron Fittings Class D, Cement Lined, with Boltless Restrained Push-On Joints.

12" Water Main Cast Iron Pipe ASA Class 25 and Cast Iron Fittings Class D, Cement Lined

12" Water Main Cast Iron Pipe ASA Class 25 and Cast Iron Fittings Class D, Cement Lined.

PROFILE RELOCATED 12" WATER LINE

APPROVED 10/21 1977

CITY ENGINEER
CITY OF FAIRVIEW PARK

ENGINEER OF DESIGN REVIEW

REVISIONS

1st HIGH SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT 12" Water Main Relocation along W. 220th St. Interstate Route 80

DRAWN BY T.L.
TRACED BY S.M.K.
CHECKED BY E.J.C. DATE 7-7-69
SCALE 1"=20'
NO.

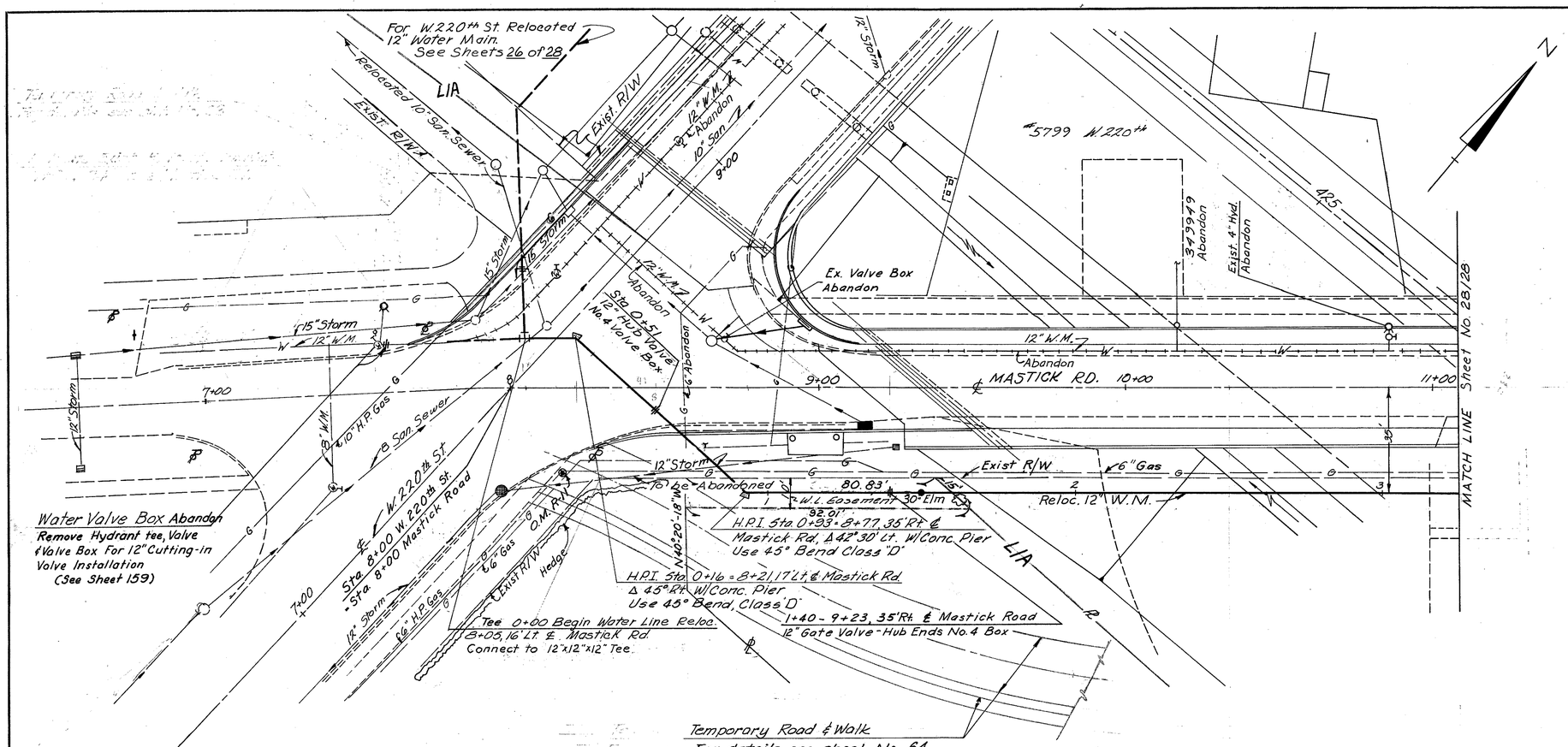
RELOCATED W. 220th ST. 12" W.M.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

160 / 397

27 / 28

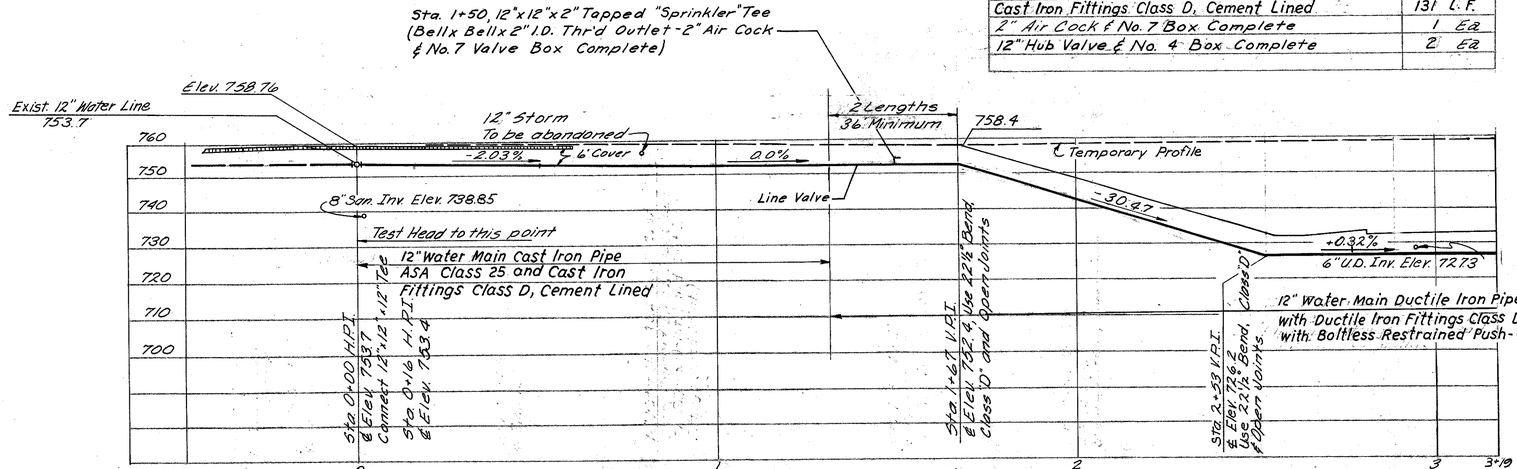


Water Valve Box Abandon
Remove Hydrant tee, Valve & Valve Box For 12" Cutting-in Valve Installation
(See Sheet 159)

ESTIMATED QUANTITIES ITEM SPECIAL

DESCRIPTION	Quantity
12" Water Main Ductile Iron Pipe ASA Class 6 with Ductile Iron Fittings Class D, Cement Lined, with Boltless Restrained Push-On Joints	192 L. F.
12" Water Main Cast Iron Pipe ASA Class 25 and Cast Iron Fittings Class D, Cement Lined	131 L. F.
2" Air Cock & No. 7 Box Complete	1 Ea
12" Hub Valve & No. 4 Box Complete	2 Ea

NOTE: For pipe with boltless restrained push-on joints, see note on sheet No. 141



PROFILE RELOCATED 12" WATER LINE

CITY ENGINEER
CITY OF FAIRVIEW PARK

APPROVED 10/21 1977

ENGINEER OF DESIGN REVIEW

REVISIONS

1st. HIGH SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT 12" Water Main Relocation along Mastick Road - Interstate Route 80

DRAWN BY T.L. 7/29/68
TRACED BY S.M.K.
CHECKED BY F.V.C. DATE 7-7-69
SCALE 1"=20'
NO.

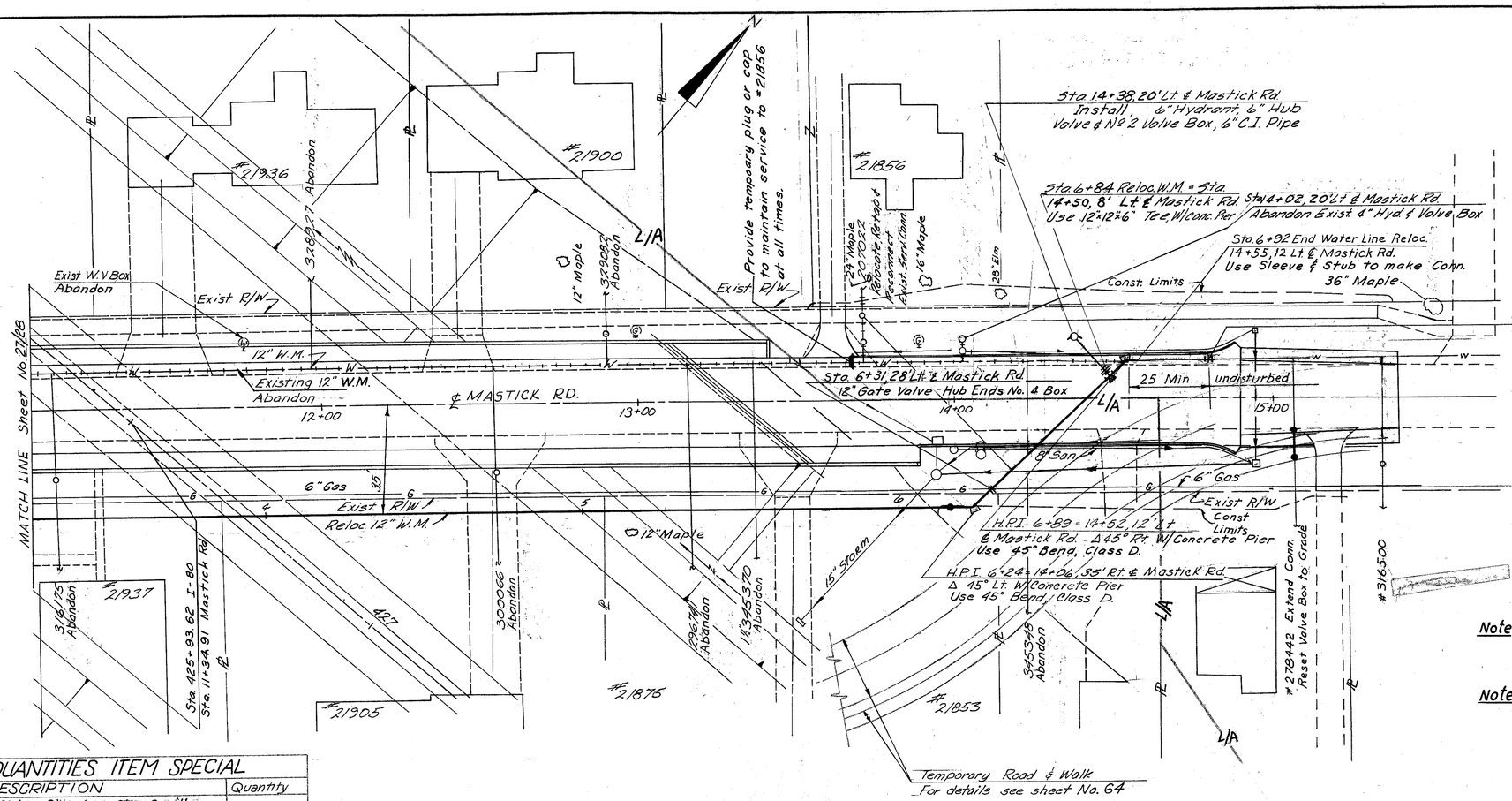
RELOCATED MASTICK RD. 12" W.M.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

161/347

28/28

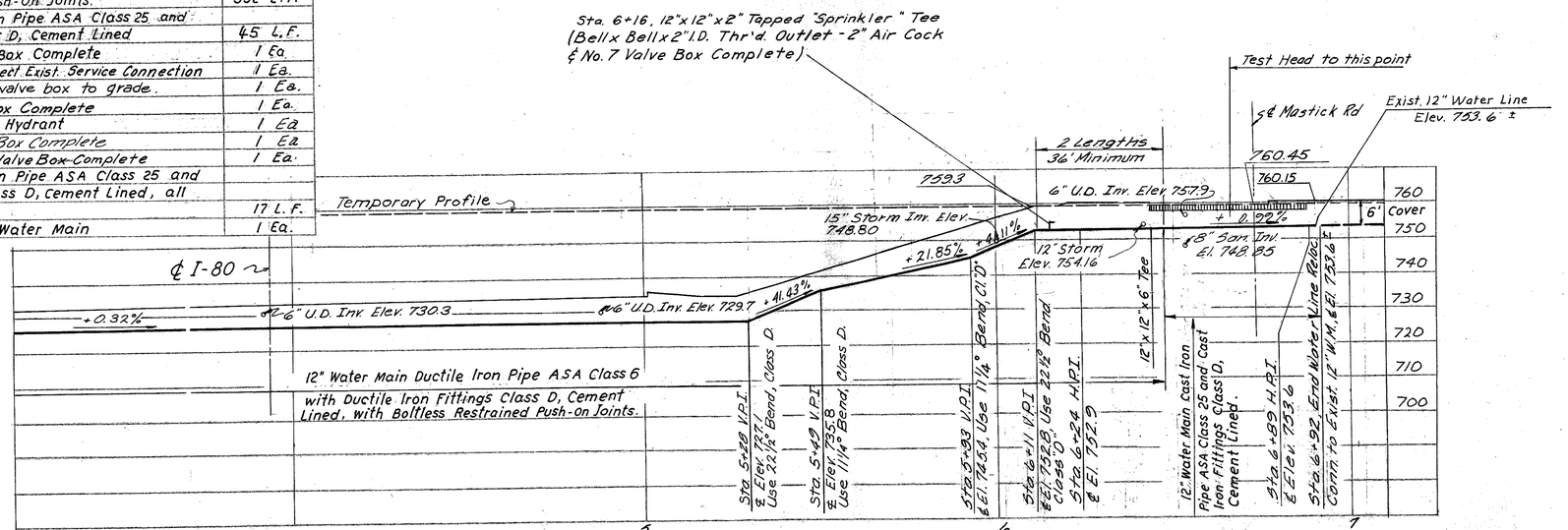


Note: For pipe with boltless restrained push-on joints, see note on sheet No. 141

Note: There shall be 6' cover on all service connections.

ESTIMATED QUANTITIES ITEM SPECIAL

DESCRIPTION	Quantity
12" Water Main Ductile Iron Pipe ASA Class 6 with Ductile Iron Fittings, Class D, Cement Lined, with Boltless Restrained Push-On Joints.	332 L.F.
12" Water Main Cast Iron Pipe ASA Class 25 and Cast Iron Fittings Class D, Cement Lined	45 L.F.
12" Cutting-In Valve & Box Complete	1 Ea.
Relocate, Retop & Reconnect Exist. Service Connection	1 Ea.
Extend conn. & Reset valve box to grade.	1 Ea.
12" Hub Valve & No. 4 Box Complete	1 Ea.
Furnish and set 6" Fire Hydrant	1 Ea.
6" Hub Valve & No 2 Box Complete	1 Ea.
2" Air Cock & No. 7 Valve Box Complete	1 Ea.
6" Water Main Cast Iron Pipe ASA Class 25 and Cast Iron Fittings Class D, cement Lined, all Lead Joints.	17 L.F.
12" Plugging Existing Water Main	1 Ea.



PROFILE RELOCATED 12" WATER LINE

a.k. CITY ENGINEER
CITY OF FAIRVIEW PARK

APPROVED 10/21 19 77

William J. Sweeney ENGINEER OF DESIGN REVIEW

REVISIONS

1st HIGH SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT 12" Water Main Relocation along Mastick Road - Interstate Route 80

DRAWN BY T.L. 7/28/69
TRACED BY G.M.K.
CHECKED BY E.V.C. DATE 7-7-69
SCALE 1" = 20'
NO.

RELOCATED MASTICK RD. 12" W.M.

E-1

CALC. BY CE DATE 9-3-70
CHKD. BY OGF DATE 9/8/70
Rev. L.J.P. 12-15-77

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

162
347

GENERAL SUMMARY

TRAFFIC CONTROL

ITEM	SHEET NUMBERS							COST PARTICIPATION 100 % STATE OF OHIO		INTER-STATE	GRAND TOTAL	UNIT	ITEM	DESCRIPTION TYPE CODE G707 UNLESS OTHERWISE NOTED
	164	165	160	168	178	179								
			4							4	4	Each	620	Delineators, Type D, Post Mounted
			33							33	33	Each	G20	Delineators, Type C, Post Mounted
			75							75	75	L.F.	621	4" Dashed Line, As Per Plan
			7.57							7.57	7.57	Miles	621	4" Edge Lines
			0.85							0.85	0.85	Miles	621	4" Lane Lines
			8.07							8.07	8.07	Miles	621	6" Lane Lines
			0.60							0.60	0.60	Miles	621	6" Center Lines
			910							910	910	L.F.	621	8" Channelizing Lines
			436							436	436	L.F.	621	6" Crosswalk Lines
			242							242	242	L.F.	621	24" Stop Lines
			304							304	304	L.F.	621	24" Broad Transverse Lines
			791							791	791	S.F.	621	Island Marking
			21							21	21	Ea.	621	Lane Arrows
			4							4	4	Ea.	621	Word on Pavement
10										10	10	Each	844	Ballast Type CMRI-175-(a)
14										14	14	Each	844	Ballast Type CMRI-250-(a)
8										8	8	Each	844	Disconnect Switch with Enclosure, Type "X"
8										8	8	Each	S625	Ground Rod
12										12	12	Each	844	Signs Wired
8										8	8	Each	844	Sign Service
1										1	1	Each	844	Signs Wired Overpass structure Mounted
10										10	10	Each	844	Mercury Vapor Luminaire with Type 175 W Lamp
14										14	14	Each	844	Mercury Vapor Luminaire with Type 250 W Lamp
2										2	2	Each	844	Disconnect Switch Enclosure Mounting Bracket
2367		263					105			2525	2635	Sq.Ft.	844	Signs Erected Extrusheet
		232			4	4				240	240	Sq.Ft.	844	Signs Erected Flat Sheet
				400			100			300	400	Sq.Ft	844	INTERIM COVERING OF SIGNS
		271								271	271	L.F.	844	Ground Mounted Support No.3 Post, Driven
		144								144	144	L.F.	844	Ground Mounted Support No.4 Post, Driven
		90								90	90	L.F.	844	Ground Mounted Support No.6 Post, Driven
		28								28	28	L.F.	844	Ground Mounted Support No.4 Post, as per Plan.
					1	1				2	2	Each	844	Mast Arm Mounted Sign Attachment
53.6										53.6	53.6	Cu.Yd.	844	Concrete for Anchor Base Foundation
		3.7					2			1.7	3.7	Cu.Yd	844	Concrete for Embedded Foundation
2										2	2	Each	844	Overhead Sign Support Type 7.65 Design 8, Mod. 78' Span
1										1	1	Each	844	Overhead Sign Support Type 9.12 Design 2, Mod. 22'-6" Pole
1										1	1	Each	844	Overhead Sign Support Type 12.30 Design 12, Mod. 30' Arms
2										2	2	Each	844	Overhead Sign Support Type 12.30 Design 10, Mod. 30' Arms
1										1	1	Each	844	Overhead Sign Support Type 15.115 Mod. 96'-6" Span
1										1	1	Each	844	Overhead Sign Support Type 18.26 Design 7
						2				2	2	EACH	202	REMOVAL OF GROUND MOUNTED SIGN FOR STORAGE
						1				1	1	EACH	202	REMOVAL OF GROUND MOUNTED SIGN SUPPORT FOR STORAGE
		208					142			66	208	L.F.	844	Structural Support S4X7.7 Beam
		30								30	30	L.F.	844	Structural Support W6X8.5 Beam
		14					8			6	14	Each	844	Breakaway Beam Connection

Subtract From G.T. for INTERSTATE

CALC. BY AGF DATE 4-13-71
CHKD. BY J.L. DATE 7-5-71

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

163
347

GENERAL SUMMARY
TRAFFIC CONTROL

ITEM	SHEET NUMBERS 178	179	181	182	COST PARTICIPATION 100% STATE OF OHIO	INTER-STATE	GRAND TOTAL	UNIT	ITEM	DESCRIPTION
										TYPE CODE C707 UNLESS OTHERWISE NOTED
										TRAFFIC SIGNALS
				1	1		1	Each	202	Removal of Existing Signal Installation
		Lump				Lump	Lump	Lump	842	Revising Existing Signal Installation, as Per Plan
	1					1	1	Each	843	Semi-Actuated, Two Phase Signal Controller, Solid State Modular, with Cabinet, As Per Plan
	6					6	6	Each	842	Vehicular Signal Head, 3 Section, 12" Lens, One Way
				1		1	1	Each	842	Vehicular Signal Head, 3 Section, 8" Lens, Three Way
				5		5	5	Each	842	Vehicular Signal Head, 3 Section, 8" Lens, One Way
				136		136	130	L.F.	842	Messenger Wire, 3/8" Dia. x 7 Strand with accessories
	485	500		285		1270	1270	L.F.	842	Signal Cable, 5 Conductor #14 AWG
	932					932	932	L.F.	842	Interconnect Cable, 5 Conductor, #14 AWG
	940					940	940	L.F.	842	Power Cable, 3/c #8 AWG
	648	30				678	678	L.F.	S625	Conduit, 2" S713.04 Type III
	196	30				226	226	L.F.	S625	Conduit, 3" S713.04 Type III
	2	1		1		4	4	Each	S625	Ground Rod
	760	60				820	820	L.F.	S625	Trench
	7	2				9	9	Each	S625	Pullbox, 18" Circular S713.09
	2	1				3	3	Each	842	Cable Support Assembly
	126					126	126	L.F.	S625	Conduit, Jacked Under Pavement, 3" S713.04 Type III
	1					1	1	Each	842	Loop Detector Amplifier
	152	200				352	352	L.F.	842	Loop Detector Wire,
	124	150				274	274	L.F.	842	Loop Detector Lead-in-Cable,
	86	90				176	176	L.F.	842	Loop Detector Pavement Cutting
	0.4					0.4	0.4	C.Y.	842	Concrete for Embedded Foundations
	1					1	1	Each	842	Pedestal 3' 6"
	2.1	2.5				4.6	4.6	C.Y.	842	Concrete for Anchor Base Foundations
		1				1	1	Each	842	Combination Signal and Luminaire Support OGa 16"x32' Pole with OGa 13"x19'-6" + 7Ga 10.84"x34' Mast Arm
				1		1	1	Each	842	Wood Strain Pole 35', CLASS 2, as per plan
	1					1	1	Each	842	Combination Signal Pole 0.2391" x 11.0" x 32' with Mast Arms 0.1793" x 8" x 34' and 0.1793" x 8" x 24'
	1					1	1	Each	842	Signal Support 0.1793" x 10.0" x 21' with Mast Arm 0.1793" x 7" x 26'
				1		1	1	Each	842	Power Service
				1		1	1	Each	842	Weatherhead and Conduit Riser
				1		1	1	Each	842	Re-install Traffic Signal Controller

CHKD. BY JAF DATE 8-11-70
CHKD. BY JAF DATE 9/4/70

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OVERHEAD SIGNS SUB-SUMMARY

Support No.	Station	844 Overhead Sign Support Type 12-30 Des. No. 8 Mod. 28'-6" Pole, 30' Arm (1-9) Ea.		844 Overhead Sign Support Type 7.65 Des. No. 8 Mod. 78' Span (3) 1 B (1) Ea.	844 No. 9.12 Des. No. 2 Mod. 22'-6" Pole (128) Ea.	844 Overhead Sign Support Type 12-30 Des. No. 10 Mod. 28'-6" Pole, 30' Arm (1A) & (3A) Ea.		844 Overhead Sign Support Type 15.115 Mod. 96'-6" Span (126) Ea.	844 Overhead Sign Support Type 18.26 Des. No. 7 (127) Ea.	844 Concrete For Anchor Base Foundation Cu. Yd.	844 Signs Erected Extrusheet Sq. Ft.		844 Mercury Vapor Luminaire With Type 175 W. Lamp Ea.	844 Mercury Vapor Luminaire With Type 250 W. Lamp Ea.	844 Ballasts Type CRMI-175-(a) Ea.	844 Ballasts Type CRMI-250-(a) Ea.						844 Disconnect Switch With Enclosure, Type X Ea.		S625 Ground Rod Ea.	844 Signs Wired Ea.	844 Sign Service Ea.	844 Sign Wired, Overpass Structure Mounted Ea.		844 Switch Enclosure Mounting Bracket Ea.			Support No.
79	I-480 375+00 (W.B.)	1								4.9	254.0			2		2							1		1	1	1					79
128	Clague Rd 3+20 (Rt)				1					1.7	198.0		2		2								1		1	2	1					128
127	I-480 386+50.5 (W.B.)								1	—	91.0		2		2								1		1		1	1		2		127
126	I-480 398+50 (W.B.)							1		12.6	493.0		3	2	3	2							1		1	3	1					126
1	I-480 412+00 (E.B.)			1						12.6	404.0			4		4							1		1	2	1					1
1A	I-480 417+50 (W.B.)					1				4.6	222.0			2		2							1		1	1	1					1-A
3	I-480 441+50 (W.B.)			1						12.6	482.5		3	2	3	2							1		1	2	1					3
3A	I-480 441+00 (E.B.)					1				4.6	222.0			2		2							1		1	1	1					3A
Project Total		1		2	1	2		1	1	53.6	2366.5		10	14	10	14							8		8	12	8	1		2		

GROUND MOUNTED SIGNS SUB-SUMMARY

DATE 8-26-70
DATE 9/3/70

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	Station	Distance Rt or Lt of Survey to ℄ Post or ℄ Nearest Post of the Sign	Type of Sign	Sign Number		Number of Supports Ea.		Signs Erected Extrusheet Sq. Ft.	Signs Erected Flat Sheet Sq. Ft.	Ground Mounted Support No. 3 Post Lin. Ft.	Ground Mounted Support No. 4 Post Lin. Ft.	Ground Mounted Support No. 6 Post Lin. Ft.	Ground Mounted Support No. 4 Post as per Plan Lin. Ft.	Structural Support 5#7.7 Beam Lin. Ft.	Structural Support W8X8.5 Beam	Breakaway Connection	Concrete for Embedded Foundation			Remarks
▲	S.R. 17 29+35	48.0' Rt.	M-45-42 (3'-6"×6'-0")	131		2		21.0						35		2	0.5			
▲	S.R. 17 34+35	42.0' Rt.	M-45-42 (3'-6"×6'-0")	130		2		21.0						35		2	0.5			
▲	S.R. 17 36+20	48.5' Lt.	M-45-42 (3'-6"×6'-0") 2 each	132		2		42.0						37		2	0.5			(Back to Back)
▲	S.R. 17 41+15	40.0' Lt.	M-45-42 (3'-6"×6'-0")	129		2		21.0						35		2	0.5			
	Clague Rd. 3+50	6.0' Lt.	IM-39-24, M-5-24-3, IM-24-21 (24"x12") (30"x24") (21"x15")			1			9.2		14									
	Clague Rd. 4+40	℄	R-37R-24 (24"x30")			1			5.0	12										No Concrete
	Clague Rd. 6+00	48.0' Lt.	M-17-21, M-2-36 (21"x15") (36"x36")			1			18.2			14								
	Clague Rd. 7+85	℄	R-37R-24 (24"x30")			1			5.0	12										No Concrete
	Clague Rd. 8+18	55.0' Rt.	R-43R-36, R-43L-36, R-41B-362 (36"x12") (36"x36)			2			15.0		14		14							SOW
	Clague Rd. 8+92	60.0' Rt.	R-43R-36, R-43L-36, R-41B-362 (36"x12") (36"x36)			2			15.0		14		14							SOW
	Clague Rd. 11+20	10' Lt.	R-38R-24 (24"x30")			1			5.0	12										
	Clague Rd. 12+00	31.0' Rt.	W-60-36 (36"x36")			1			9.0		13									
	Clague Rd. 13+00	25.0' Lt.	IM-17-21, IM-39-24, M-5-24-3 (21"x15") (24"x12") (30"x24")			1			9.2		13									
	Clague Rd. 15+98	18.0' Lt.	W-85-36 (36"x36")			1			9.0		14									
	Ramp C-1 390+00	12.2' Lt. ℄	D-4-2 (10'x4'), R-41A-36 (36"x24")			2		40.0	6.0						30	2	0.7			(Back to Back)
	Ramp C-1 393+00	33.7' Rt. ℄	R-31-Mod. (48"x30")			2			10.0	25										
	Ramp C-1 393+00	6.2' Lt. ℄	R-31-Mod. (48"x30")			2			10.0	25										
	Ramp C-1 396+30	15.5' Rt. ℄ C-1	W-47-48 & WP-47-24)			1			19.0		32									
	Ramp C-2 387+00	7' Rt. ℄ C-2	R-15B-30 (30"x18")			1			3.75	13										
	I-480, 369+36	69' Rt & Lt	W-41-12 (12"x12")			1/1			20/20	11/11										Field Locate
	I-480, 393+42	64.0' Rt.	GK (9'x3')			2		27.0				30								
	I-480, 393+42	71.5' Lt.	GK (9'x3')			2		27.0				30								
	I-480, 395+50	65.0' Rt.	W-49-48 (48"x48")			1			16.0		30									
	I-480 422+15	64' Rt & Lt	W-41-12			1/1		30.0	20/20	11/11										Field Locate
	Ramp C-1 390+00	Rt.	R-41A-36 (36"x24")			2			6.0	28										
	I-480, 407+00	75.5' Rt.	IM-39-36, M-5-36-3 (36"x18") (48"x36")			1			16.5			16								
	I-480, 423+00	74.0' Rt.	R-7B-48 (48"x96")			2		32.0						33	16.0	2	0.5			
										26.0										
	W. 227, 10+70	17.5' Lt.	R-1-30 (30"x30")			1			6.25	12										
	I-480, 436+50	62.0' Lt.	R-7B-48 (48"x96")			2		32.0						33	16.0	2	0.5			
														22.0						
	Maple Dr. 9+70	24.0' Rt.	R-1-30 (30"x30")			1			6.25	13										
	Maple Dr. 10+35	17.0' Lt.	R-1-30 (30"x30")			1			6.25	13										
	Clague Rd. 2+50	47.2' Lt. ℄	R-31-Mod. (48"x30")			2			10.0	25										
	Clague Rd. 0+50	0.0 ℄	R-38R-24 (24x30)			1			5.0	12										
	Clague Rd. 0+70	47.2' Lt	R-31-Mod (48"x30")			2			10.0	25										
	PROJECT TOTAL					263		281.6	271	144	90	28	208	30	14	3.7				
	INTERSTATE TOTAL					158		231.6	271	144	90	28	66	30	6	1.7				
	▲ 100% STATE OF OHIO TOTAL					105.0		—	—	—	—	—	142	—	8	2.0				

CHKD. BY [redacted] DATE 7-22-70
CHKD. BY ODF DATE 9/4/70
Rev. L.J.P. 12-15-77

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TRAFFIC CONTROL SUB-SUMMARY

621 Pavement Marking

Roadway	Station	to Station	Side	4" Edge Line White L.F.	4" Edge Line Yellow L.F.	6" Dou Yellow Center Line L.F.	6" Lane Line L.F.	4" Dashed Line* L.F.	8" Channel Line L.F.	24" Stop Line L.F.	6" Crosswalk Line L.F.	[redacted]	Island Marking Sq. Ft	24" Broad Transverse Lines L.F.	Lane Arrow Ea.	4" Lane Line	Word "Only"
I-480(E.B.)	357+00	398+00	Rt.	4100	4100		8200										
" " "	398+00	400+70	Rt.	540	270		540		270							270	
" " "	400+70	402+40	Rt.	170	170		340										
" " "	402+40	442+32	Rt.	3992	3992		11976										
I-480(W.B.)	357+00	396+35	Lt.	3935	3935		7870										
" " "	396+35	398+50	Lt.	215	215		645		440					304			
" " "	398+50	441+96	Lt.	4346	4346		13038										
Clague Rd.	0+53	3+62	Lt/Rt		583								350				
" " "	0+59	2+60	Lt.						200	40					9		2
" " "	0+59	11+95	Lt/Rt													2260	
" " "	4+31	7+91	Lt/Rt		696					27			161				
" " "	4+31	7+91	Lt.												3	360	
" " "	8+46	11+24	Lt/Rt		501					27			280				
" " "	11+25	11+95	Lt.														
" " "	11+25	16+27	℄			502											
" " "	3+21	3+85	Rt.								128						
" " "	8+24	9+03	Rt.								158						
Ramp C-1	387+76	388+45	Rt/Lt					75									
" " " "	388+63	396+30	Rt/Lt	767	767												
" " " "	387+72	391+30	Rt/Lt							62					9	716	2
" " " "	391+30	393+30	Rt.													200	
Ramp C-2	386+48	398+00	Rt/Lt	1152	1152												
[redacted]																	
WEST 220th	8+40	13+52	Lt/℄			512				26							
" " " "	8+40	12+00	Lt.													360	
" " " "	8+75	12+00	Rt.													325	
WEST 227th	10+59		Lt/Rt								60						
" " " "	10+65	19+30	Lt/℄			865				12							
" " " "	13+94		Lt/Rt								90						
" " " "	20+08	21+29	℄			121											
Maple Drive	8+90	9+78	Rt/℄			88				12							
" " " "	10+23	14+60	Lt/℄			437				12							
Mastick Rd.	8+75	15+40	℄			665											
" " "	8+88		Lt.							24							
PROJECT TOTAL				19217	20727	3,190	42,609	75*	910	242	436	[redacted]	791	304	21	4491	4
				39944													

620 Delineators

Roadway	Station	to Station	Side	Interval	C Post	D Post	
Ramp C-1	389+00	402+00	Lt.	100'	14		
Ramp C-2	387+20	392+00	Rt.	60'	9		
Ramp C-2	392+00	392+70	Rt.	70'	1		
Ramp C-2	392+70	393+50	Rt.	80'	1		
Ramp C-2	393+50	395+90	Lt.	80'		4	
Ramp C-2	395+90	402+90	Rt.	100'	8		
PROJECT TOTAL					33	4	

Item 621 - Pavement Marking

4" Edge Lines = 39,944 ÷ 5,280 = 7.57 Mi.
4" Lane Lines = 4491 ÷ 5,280 = 0.85 Mi.
6" Lane Lines = 42,609 ÷ 5,280 = 8.07 Mi.
6" CenterLines = 3,190 ÷ 5,280 = 0.60 Mi.

* = For Application, see Sheet No. 178

TRAFFIC CONTROL NOTES

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EXISTING SIGNS

EXISTING SIGNS LOCATED WITHIN THE ROADWORK AREAS WHICH ARE NECESSARY FOR INTERIM OR PERMANENT TRAFFIC CONTROL SHALL BE REMOVED AND RE-ERECTED IN LOCATIONS INDICATED BY THE PLANS OR AS APPROVED BY THE ENGINEER. STOP SIGNS WILL BE MAINTAINED AT ALL TIMES WHILE TRAFFIC IS MAINTAINED. THE COST OF REMOVAL, RE-ERECTION AND SUBSEQUENT REMOVAL IF REQUIRED SHALL BE CONSIDERED A SUBSIDIARY WORK ITEM, THE COST OF WHICH SHALL BE INCLUDED IN THE PRICE BID FOR THE ROADWAY WORK ITEMS. THE SIGNS WHICH ARE TO BE RE-ERECTED ON THE BERMS SHALL BE LOCATED WITH THE CENTER LINE OF SUPPORT ON THE P.I. OF THE SHOULDER.

844 ALTERNATE DESIGNS FOR SIGN SUPPORTS

IF THE CONTRACTOR DESIRES TO FURNISH AN ALTERNATE DESIGN(S) OR MATERIALS FOR SIGN SUPPORTS, THE ALTERNATE DESIGN(S) MUST BE SUBMITTED TO THE STATE AT LEAST 21 DAYS PRIOR TO OPENING OF BIDS. THE BIDDER WILL BE NOTIFIED AS TO ACCEPTANCE OR REJECTION OF ALTERNATE DESIGN AT LEAST 7 DAYS BEFORE BIDS ARE TO BE OPENED. SUBMISSIONS SHALL BE MADE TO OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF DESIGN SERVICES, 25 SOUTH FRONT STREET, COLUMBUS, OHIO, 43215

844 GROUND MOUNTED SUPPORT No. 4 POST, AS PER PLAN

THIS ITEM SHALL CONSIST OF THE FURNISHING, ASSEMBLY, AND INSTALLATION OF TWO (2) No. 2 POSTS (No. 4 POST) IN COMBINATION WITH A SQUARE WELDED OR SEAMLESS GALVANIZED TUBULAR POST EXTENSION SPLICED TO THE TOP OF THE No. 4 POST.

SQUARE TUBULAR POST MATERIAL SHALL CONFORM TO ASTM A 570 GRADE B.

WORK SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND HARDWARE NECESSARY TO PERFORM THE REQUIRED ITEM OF WORK.

BASIS OF PAYMENT SHALL BE FOR 844 GROUND MOUNTED SUPPORTS No. 4 POST, AS PER PLAN PER LINEAR FOOT MEASURED BY THE TOTAL OVERALL LENGTH OF COMBINATION POST.

844 SIGNS FURNISHED BY THE STATE

THE CONTRACTOR SHALL SUBMIT, IN TRIPLICATE, A SCHEDULE FOR SIGN ERECTION TO THE ENGINEER AT LEAST 120 CALENDAR DAYS PRIOR TO THE START OF ANY SCHEDULED ERECTION WORK. THE SCHEDULE SHALL INCLUDE PROPOSED DATES, SIGN NUMBERS AND DELIVERY POINT. THE ENGINEER WILL FURNISH COPIES OF THE SCHEDULE TO THE DISTRICT TRAFFIC ENGINEER AND TO THE ENGINEER OF DESIGN SERVICES, 25 SOUTH FRONT STREET, COLUMBUS, OHIO 43215.

844 MILE MARKER LOCATION

THE LOCATIONS SHOWN IN THE PLANS FOR MILE MARKERS ARE APPROXIMATE. THE BUREAU OF TRANSPORTATION TECHNICAL SERVICES WILL LOCATE THE LONGITUDINAL POSITION OF THE MILE MARKERS BY A PAINT MARK ON THE COMPLETED PAVEMENT EDGE. ON DIVIDED HIGHWAYS ONLY ONE PAVEMENT EDGE WILL BE MARKED. MARKERS FOR THE OPPOSITE DIRECTION SHALL BE SET ACROSS FROM THOSE ON THE MARKED EDGE. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER 30 DAYS IN ADVANCE OF THE PLANNED MARKER INSTALLATION. THE PROJECT ENGINEER WILL THEN NOTIFY THE BUREAU OF TRANSPORTATION TECHNICAL SERVICES. ANY DELINEATOR WITHIN 50 FEET OF A MILE MARKER SHALL BE OMITTED.

BALLASTS

IN ADDITION TO THE REQUIREMENTS OF 844.10, BALLASTS FOR MERCURY VAPOR LUMINAIRES SHALL BE LOCATED WITHIN THE LUMINAIRE HOUSING OR CONTAINED IN A WEATHERPROOF HOUSING CONTIGUOUS TO THE LUMINAIRE.

844 PADLOCKS AND KEYS

PADLOCKS FURNISHED SHALL BE EITHER BRASS OR BRONZE PADLOCKS EQUAL TO MASTER No. 4 BKA OR WILSON BOHANNAN 660 AND SHALL BE KEYED IN ACCORDANCE WITH 844.10.

PAYMENT WILL BE INCLUDED IN THE BID FOR THE ITEM(S) BEING LOCKED.

620 DELINEATORS, AS PER PLAN

THE CONTRACTOR SHALL HAVE THE OPTION OF DRIVING OR CONCRETE EMBEDDING THE DELINEATOR POST IN ACCORDANCE WITH DETAILS OF TC-61.10

POSTS MAY BE TRIMMED ON THE EMBEDDED ENDS TO ADJUST FOR GRADE AND REQUIRED DELINEATOR MOUNTING HEIGHT. CONCRETE SHALL BE CLASS "C".

IN EITHER CASE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO UNDERGROUND UTILITIES OR CABLE DURING PERFORMANCE OF THIS ITEM OF WORK.

THE QUANTITY FURNISHED AND INSTALLED SHALL BE PAID FOR AT THE PRICE BID PER EACH WHICH PRICE SHALL BE FULL COMPENSATION FOR EITHER TYPE OF INSTALLATION.

202 REMOVAL OF GROUND MOUNTED SIGN SUPPORTS FOR STORAGE

THIS ITEM OF WORK SHALL CONSIST OF THE REMOVAL OF GROUND MOUNTED SIGN SUPPORTS AND FOUNDATIONS AS INDICATED IN THE PLANS.

ALL GROUND MOUNTED SIGN SUPPORT TO BE REMOVED UNDER THIS ITEM SHALL BECOME THE PROPERTY OF THE CITY OF NORTH OLMSTED AND SHALL BE STORED WITHIN THE PROJECT FOR REMOVAL BY CITY FORCES.

THE WORK SHALL INCLUDE THE REMOVAL OF SUPPORTS IN SUCH A MANNER AS TO AVOID BENDING, TWISTING OR OTHER DEFORMATION DAMAGE. THE FOUNDATIONS SHALL BE REMOVED TO A MINIMUM OF ONE FOOT BELOW THE GROUND SURFACE. BACKFILLING, RESTORATION AND DISPOSAL OF SURPLUS MATERIAL WILL ALSO BE INCLUDED IN THIS WORK.

BASIS OF PAYMENT WILL BE AS FOLLOWS WHICH PRICE WILL INCLUDE ALL LABOR AND EQUIPMENT NECESSARY TO PERFORM THE REQUIRED ITEM OF WORK:

1) 202 REMOVAL OF GROUND MOUNTED SIGN SUPPORTS, No. 8 POSTS AND SMALLER, AT THE CONTRACT BID PRICE PER EACH.

2) 202 REMOVAL OF GROUND MOUNTED SIGN SUPPORTS, BEAMS LARGER THAN No. 8 POSTS, AT THE CONTRACT BID PRICE PER EACH.

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TRAFFIC CONTROL NOTES

202 REMOVAL OF GROUND MOUNTED SIGNS FOR STORAGE

This work shall consist of the removal of ground mounted signs as shown on the plans.

All signs removed shall become the property of the City of North Olmsted and shall be stored within the limits of the project at locations approved by the Engineer for removal by City forces.

To assure maintenance of adequate traffic control at all times, no signs shall be removed without the approval of the Engineer.

Payment for removal of signs will include all necessary labor and equipment required to perform the required work as indicated above.

1) Basis of payment will be as follows for signs forty (40) square feet or greater:

   202 Removal of ground mounted major signs for storage, at the contract bid price per each.

2) Basis of payment will be as follows for all other signs:

   202 Removal of ground mounted signs for storage, at the contract bid price per each.

844 DISCONNECT SWITCH ENCLOSURE MOUNTING BRACKETS

This work shall include the fabricating, furnishing and installation of Disconnect Switch Enclosure Mounting Brackets when enclosures are mounted on existing overhead sign supports (Not part of this project) or attached to concrete bridge columns or abutments.

Work shall consist of field drilling, attachment and hardware as detailed on sheet 186.

Basis of payment will be at the contract bid price per each, "844 Disconnect Switch Enclosure Mounting Bracket" which price will be full compensation for furnishing, fabrication and installation including all labor, material and incidentals necessary to complete this work.

844 SPAN WIRE MOUNTED SIGN ATTACHMENT

This work shall consist of the furnishing and installation of span wire hanger and sign hanger brace as detailed on sheet 177.

Basis of payment will be at the contract bid price per each, "844 Span Wire Mounted Sign Attachment", which price will include all labor, material, equipment and incidentals necessary to perform the required work.

844 MAST ARM MOUNTED SIGN ATTACHMENT

This work shall consist of the furnishing and installation of the mast arm attachment and sign hanger bracket as detailed on sheet 177.

Basis of payment will be at the contract bid price per each, "844 Mast Arm Mounted Sign Attachment", which price will include all labor, material, equipment and incidentals necessary to perform the required work.

844 SIGNS MOUNTED ON SPAN WIRES OR MAST ARMS

In addition to 844.07, all signs mounted on span wires or mast arms should be field drilled.

844 DRIVE POSTS

DRIVE POSTS SHALL BE STEEL AS PER 712.20.

844 INTERIM COVERING

400 SQUARE FEET OF INTERIM COVERING IS HEREBY PROVIDED TO COVER SIGNS AS DIRECTED BY THE ENGINEER

842 Signal Cable

Signal cable shall be ~~stranded~~ conductor type.

MAINTENANCE OF NEW OR TEMPORARY TRAFFIC SIGNAL INSTALLATIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF EACH TRAFFIC SIGNAL HE HAS IN PART OR FULLY CONSTRUCTED UNTIL SUCH TIME AS THE TESTING REQUIREMENTS ARE SATISIFIED AND THE SIGNAL INSTALLATION IS COMPLETED AND ACCEPTED BY THE ENGINEER.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE CITY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES ARE LOCATED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO TROUBLE CALLS. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAULTS, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISIFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTORS NOTIFICATION OF THE OUTAGE.

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

ALL POLES AND CONTROL EQUIPMENT WHICH ARE DAMAGED AND WHICH WHICH MUST BE REPLACED SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTORS NOTIFICATION OF THE OUTAGE.

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

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

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

THE CONTRACTOR SHALL PROVIDE MAINTENANCE SERVICE IN ONE OR MORE OF THE FOLLOWING MANNERS:

1. 7:00 AM - 7:00 PM WITH THE CITY PROVIDING COVERAGE FROM 7:00 PM - 7:00 AM AT THE CONTRACTORS EXPENSE, AS PREVIOUSLY PROVIDED HEREIN.
2. 24-HOUR SERVICE BY THE CONTRACTOR.
3. COMPLETE CITY MAINTENANCE AT THE CONTRACTORS EXPENSE, AS PREVIOUSLY PROVIDED HEREIN.

THE CONTRACTOR SHALL INDICATE THE MANNER IN WHICH HE PROPOSES TO PROVIDE THE ABOVE SERVICE.

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

THIS ITEM SHALL BE CONSIDERED A SUBSIDARY WORK ITEM AND THE COST THEREOF INCLUDED IN THE PRICE BID FOR THE RESPECTIVE TRAFFIC SIGNAL BID ITEMS.

TRAFFIC SIGNAL NOTES

SEMI ACTUATED, TWO PHASE SIGNAL CONTROLLER, SOLID STATE MODULAR

In Addition to 843 the controller shall meet the following requirments,

The contractor shall furnish and install a fully actuated two phase traffic signal controller. The controller shall consist of completely interchangeable phase modules as tabulated. It shall be capable of providing the basic signal sequence in accordance with signal operation drawings.

The controller shall be one moduvac multi-phase traffic signal controller contained in one completely wired type EL-343 cabinet as manufactured by Eagle Signal Company, a Division of E. W. Bliss Company, Davenport, Iowa or one Traf-O-Matic multi-phase traffic signal controller contained in one completely wired G cabinet as manufactured by Automatic Signal Company, a Division of Laboratories for Electronics, Inc., Norwalk, Connecticut, or an approved equal.

Controller cabinets shall be as specified above and shall be manufactured by the controller supplier. The cabinet shall be prewired at the factory. The cabinet shall be equipped with screened vents and large (6 inch minimum diameter) fans with thermostatic control. The cabinets shall contain a separate jack mounted flashing unit complete with separate jack mounted load relays, radio interference filter and fuse cutout switch. The cabinets shall be installed with necessary equipment to insure that conflicting green indications cannot occur.

The large cabinet doors shall be fitted with a smaller door which shall contain a main on-off switch and an automatic flash switch. The lock on the large cabinet door and the lock on the small door shall be keyed to the City of North Olmsted Police Master. Two keys shall be furnished with each lock. All equipment required for a satisfactory operation shall be furnished completely installed.

Two coats of federal yellow paint shall be applied to the traffic signal controller cabinet. Cabinets shall be painted after installation. Twenty-four hours shall elapse before the second coat of paint is applied to any equipment. Payment for painting shall be included in the contract unit bid price. The contractor shall exercise due caution to protect vehicles during application of paint and shall erect and remove "Fresh Paint" signs on equipment as required.

Payment for Item 843 "Semi Actuated, Two Phase, Signal Controller, Solid State Modular, " will be made at the contract price for each controller by type complete and in place, including prewired cabinet, all connections and testing.

202 REMOVAL OF EXISTING SIGNAL INSTALLATION

This work shall consist of the removal of the Signal Heads, Controller, Strain Poles, Pole Foundations, Cables, Messenger Wires and all other portions of the existing traffic signal installation.

With the exception of items to be relocated and incorporated into new installations or whose removal is otherwise necessary to permit the installation of the new signal equipment, no item shall be removed until the new installation is in full operation, unless otherwise directed by the Engineer. (See 614 Maintenance of Existing Signal Installation)

The signal controller and cabinet shall be removed, cleaned, repaired and erected as a part of the new signal installation.

The remaining items shall be removed and stored on the project at a location approved by the Engineer for removal by the City of North Olmsted.

Payment for 202 removal of existing signal installation will be made at the contract unit price bid per each installation wherein existing signal equipment is to be removed.

WOOD STRAIN POLES

Wood strain poles shall be of the size and class required in the plans and shall be reasonably straight without pronounced sweep or short crooks. They shall be Western Red Cedar or Southern Yellow Pine and shall be full length pressure treated according to the provisions of 713.19. Poles shall meet the minimum standards specified by A.N.S.I. 05.1-1963 "Specifications and Dimensions for Wood Poles."

Wood strain poles shall be set in augered holes to a depth of at least 6 feet or deeper as required by A.N.S.I. 05.1-1963. Holes shall be approximately 4 inches larger in diameter than the pole butt. Poles shall be held in a vertical position; or raked a maximum of 12-inches to compensate for horizontal loading, while backfill is tamped into place. Backfill shall be a granular material approved by the Engineer with no particles greater than 1½ inches and shall be thoroughly tamped in lifts not exceeding 6 inches in a manner acceptable to the Engineer.

Attachment of all messenger and guy wires shall be made by means of 5/8-inch thimble eye, thru bolts with 3-inch washers. All field bored holes shall be liberally coated with an approved creosote base paint. Ground wire shall be firmly attached to the pole and shall be protected with wood or plastic ground wire moulding up to a distance of 12 feet above ground.

Payment will be made per each Wood Strain Pole, by size complete, accepted and including: pole, thru-bolts, ground wire moulding, excavation, backfill and tamping.

842 RE-INSTALL TRAFFIC SIGNAL CONTROLLER

This work shall consist of installing traffic signal equipment complete and ready for service. The equipment installed shall be those items removed under "202 Removal of Existing Signal Installation" that are indicated on the plans as items to be re-used.

Work shall also include cleaning of the items as directed by the Engineer and furnishing and installing of new signal lamps.

Payment for 842 Re-Install Signal Controller will be made at the contract unit price bid per each, which price will be full compensation for cleaning and re-erecting removed traffic signal equipment.

842 REVISING EXISTING SIGNAL INSTALLATION, AS PER PLAN

This work shall consist of the removal and relocation of existing signal heads, , the removal and replacement of existing associated wire, cable and hardware. New equipment to be installed will be paid separately.

Payment for 842 Revising Existing Signal Installation, as Per Plan will be made at the contract lump sum and will include cost of all labor and incidentals required for a complete revised functioning signal installation.

S 625 CONDUIT JACKED UNDER PAVEMENT, BY SIZE

This item shall consist of installing conduit of the size or sizes indicated under existing pavement and contiguous shoulders by an approved method such as "drilling" or "jacking

The Contractor shall place the conduit with the least amount of disturbance to the existing pavement, subbase, berm pavement or shoulders of the roadway. All push pits or any necessary excavations shall be backfilled and restored in accordance with 603.09.

Measurement of the conduit shall be the actual amount of lineal feet furnished and installed under pavement and shoulders, measured in place, as accepted by the Engineer. The unit price bid for Item S 625 "Conduit Jacked Under Pavement, by Size" shall be full compensation for excavation, drilling or jacking, backfilling, compaction, restoration, and all labor, material, equipment and incidentals necessary to complete the work as specified.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

NOTE - Signs shown dashed to be Constructed under Contract No. Cuy-480-1.90

N

BEGIN SHEET

STA. 340+00

N-12 & 96 EXIT 6B

252

NORTH Olmsted NEXT RIGHT Sta. 341+00

24

19x9.5

SPEED LIMIT 55 MINIMUM 40 Sta. 352+00

R-17B-48

FIELD LOCATE NO OUTLET W-48-30

GRACE AVE.

BROOKPARK ROAD S.R. 17

LUCILLE AVE

GEORGETTE AVE

Begin Project Cuy 480-4.86 Sta. 357+00

STA. 370+00

MATCH LINE

350

18,750

360

18,750

20

MILE 7

4-41-12

Sta 369+36

SPEED LIMIT 55 MINIMUM 40 Sta. 346+00

R-78-48

GRACE AVE

FIELD LOCATE NO OUTLET W-48-30

MASTICK ROAD

Sign sizes shown on this sheet are effective and do not include the 1'-0" for glare shields.

SIGNING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

Sign sizes shown on this sheet are effective and do not include the 1'-0" for glare shields.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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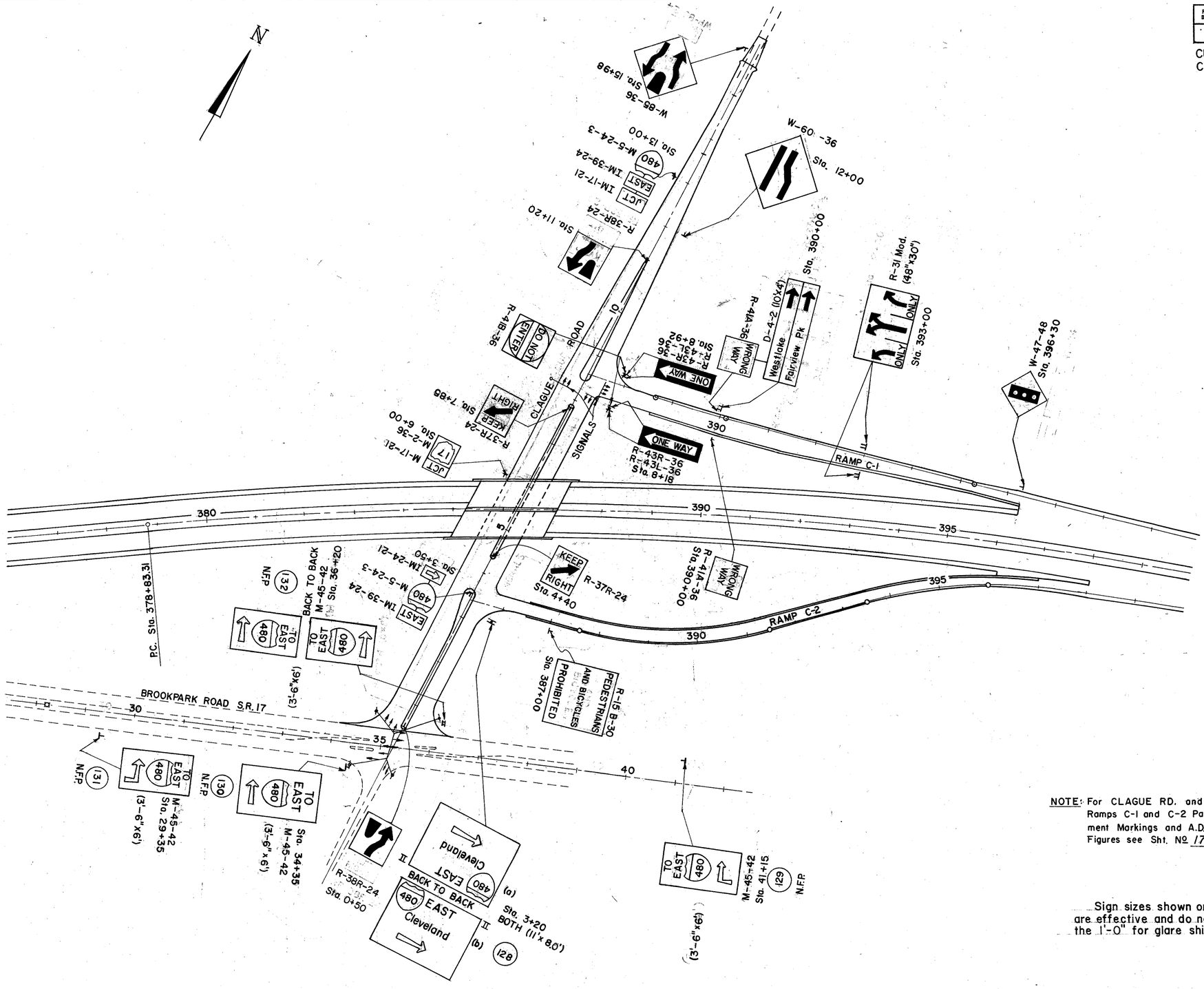
CUYAHOGA COUNTY
CUY-480-4.86



NOTE: For CLAGUE RD. and Ramps C-1 and C-2 Pavement Markings and A.D.T. Figures see Sht. No. 171

Sign sizes shown on this sheet are effective and do not include the 1'-0" for glare shields.

SIGNING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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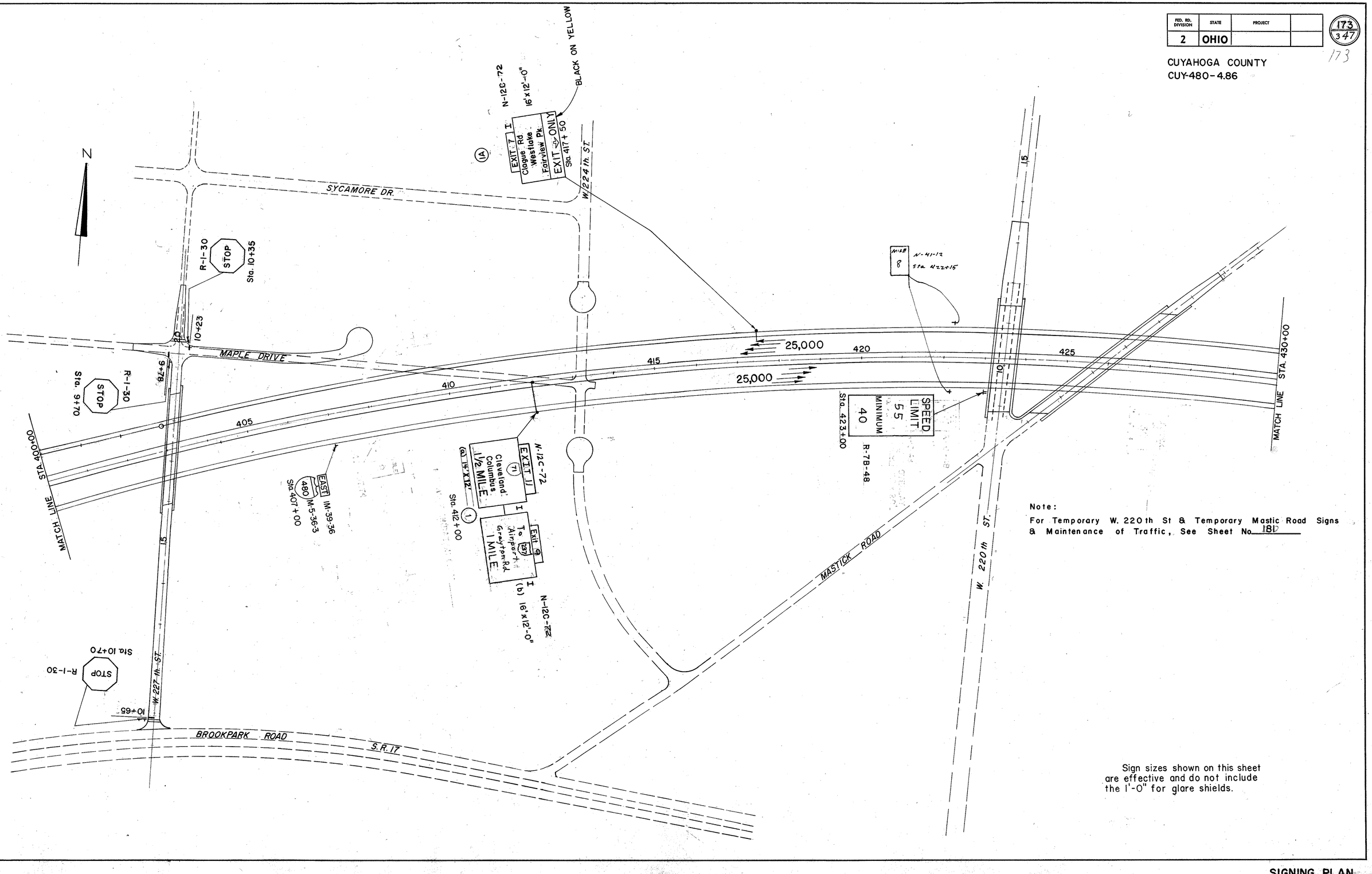
CUYAHOGA COUNTY
CUY-480-4.86



Note:
For Temporary W. 220th St & Temporary Mastic Road Signs & Maintenance of Traffic, See Sheet No. 181

Sign sizes shown on this sheet are effective and do not include the 1'-0" for glare shields.

SIGNING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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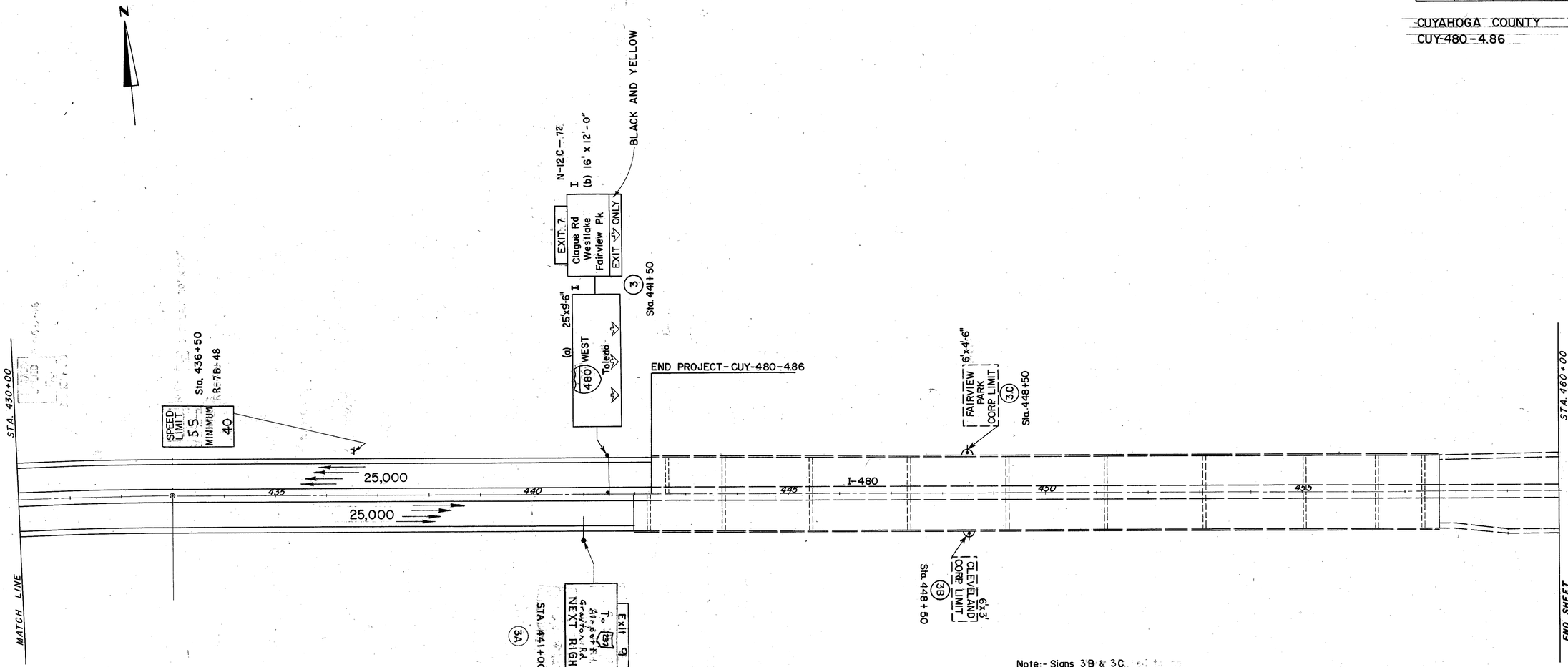
CUYAHOGA COUNTY
CUY-480-4.86



END SHEET

Note:- Signs 3B & 3C constructed under contract CUY-480-6.48

Sign sizes shown on this sheet are effective and do not include the 1'-0" for glare shields.

SIGNING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY. 480 - 4.86

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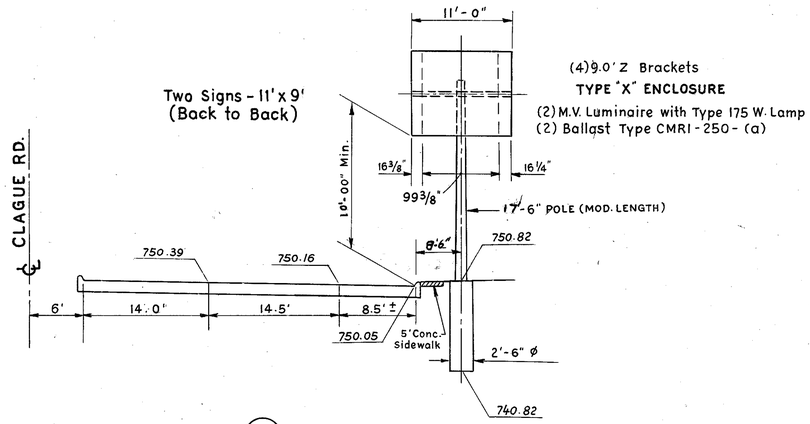
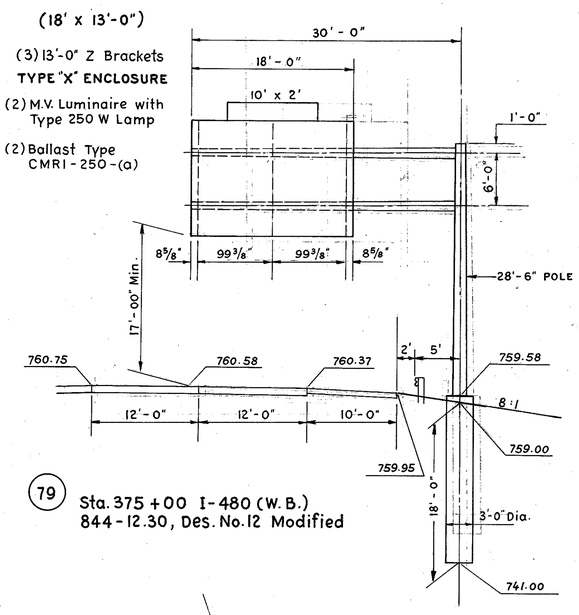
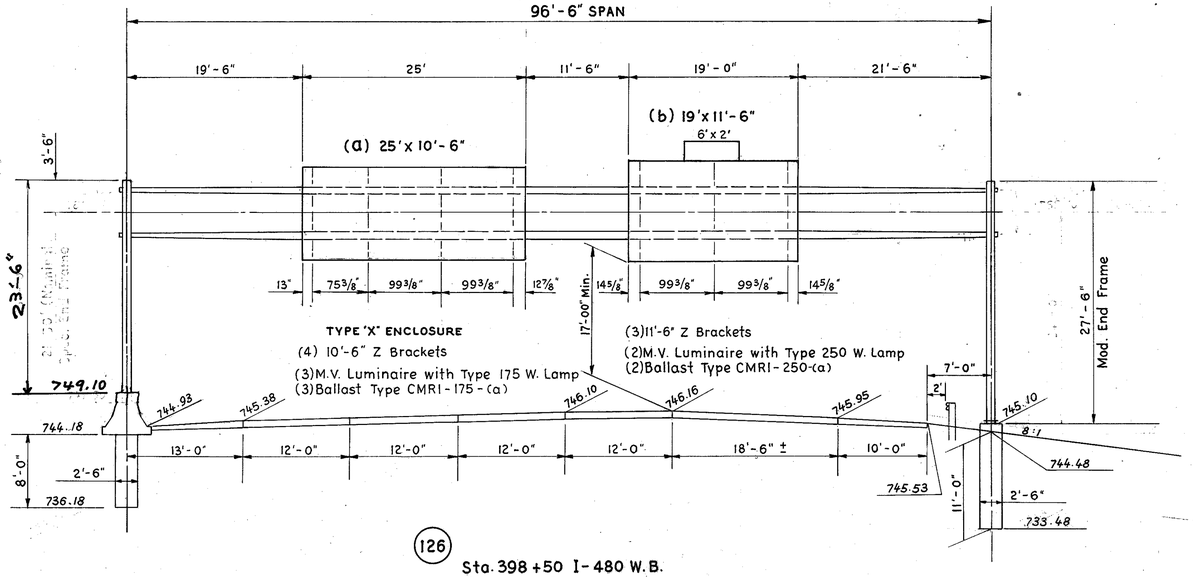


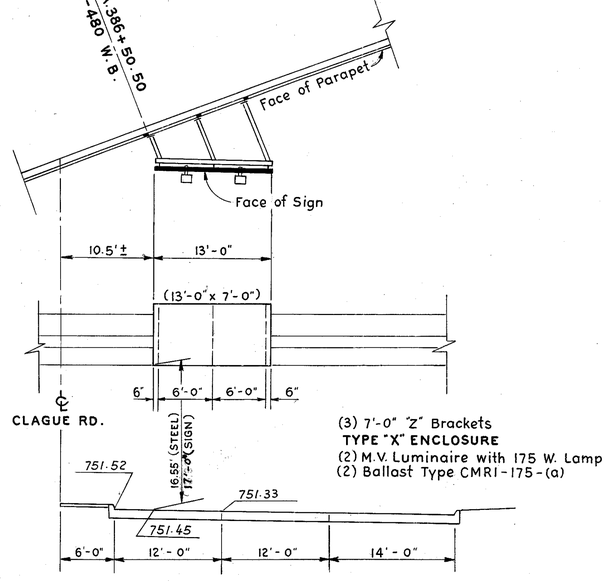
128 Sta. 3+20, Clague Rd. (50' Rt.)
844 - 9.12 Des. No. 2 Modified



79 Sta. 375 + 00 I-480 (W.B.)
844 - 12.30, Des. No. 12 Modified



126 Sta. 398 + 50 I-480 W.B.
844 - 15.115



127 Sta. 386 + 50.5 I-480 W.B.
844 - 18.26 Design No. 7

SIGNING ELEVATION

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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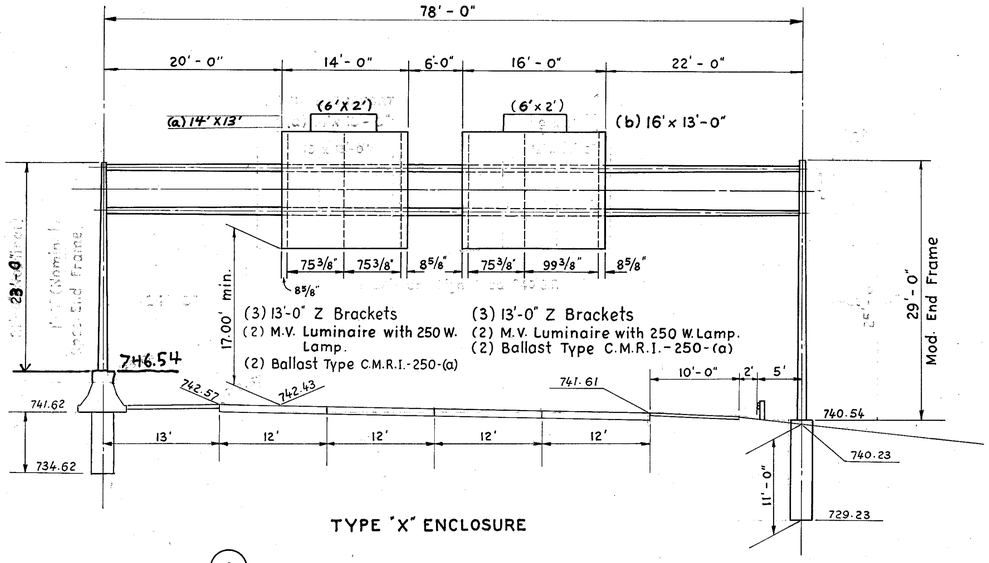
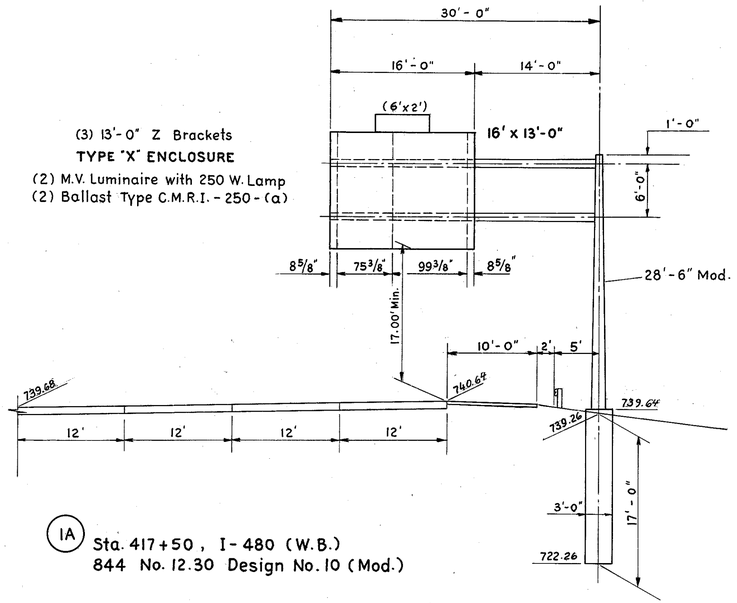
CUYAHOGA COUNTY
CUY - 480 - 4.86

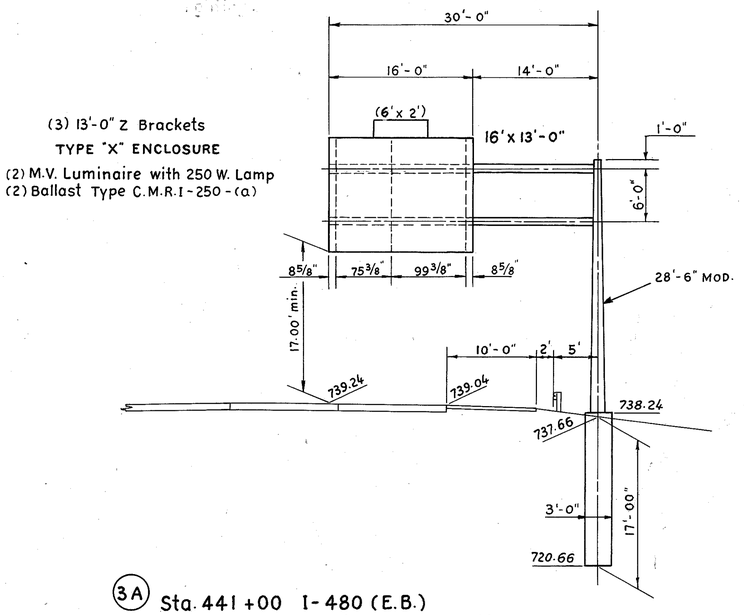


TYPE "X" ENCLOSURE

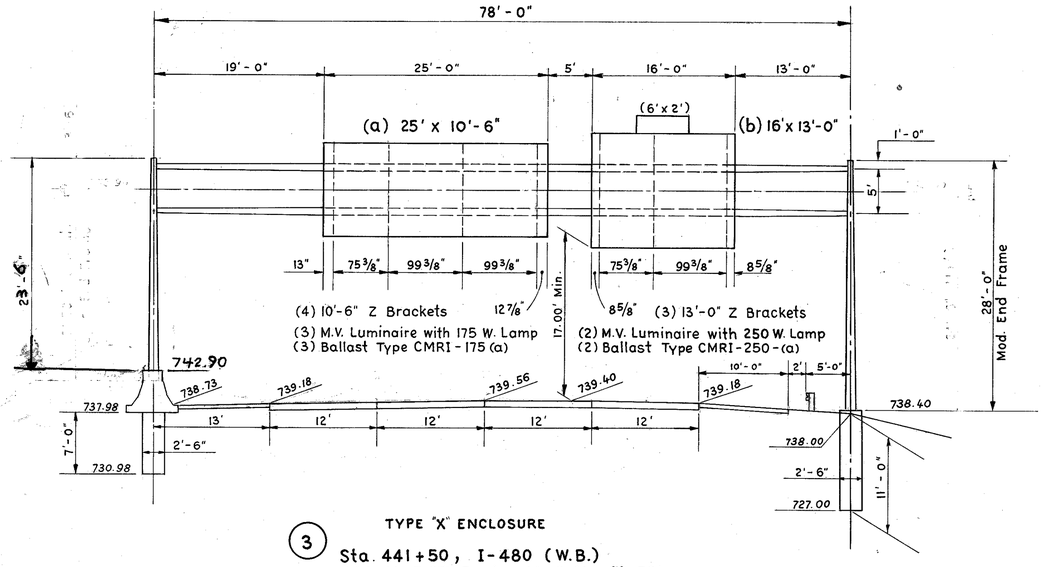
(1) Sta. 412+00, I-480 (E.B.)
844 No. 7.65 Design No. 8 (Mod.), 78' Span



(1A) Sta. 417+50, I-480 (W.B.)
844 No. 12.30 Design No. 10 (Mod.)



(3A) Sta. 441+00 I-480 (E.B.)
844 No. 12.30 Design No. 10 (Mod.)



(3) TYPE "X" ENCLOSURE

Sta. 441+50, I-480 (W.B.)
844 No. 7.65 Design No. 8 (Mod.), 78' span

SIGNING ELEVATION

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
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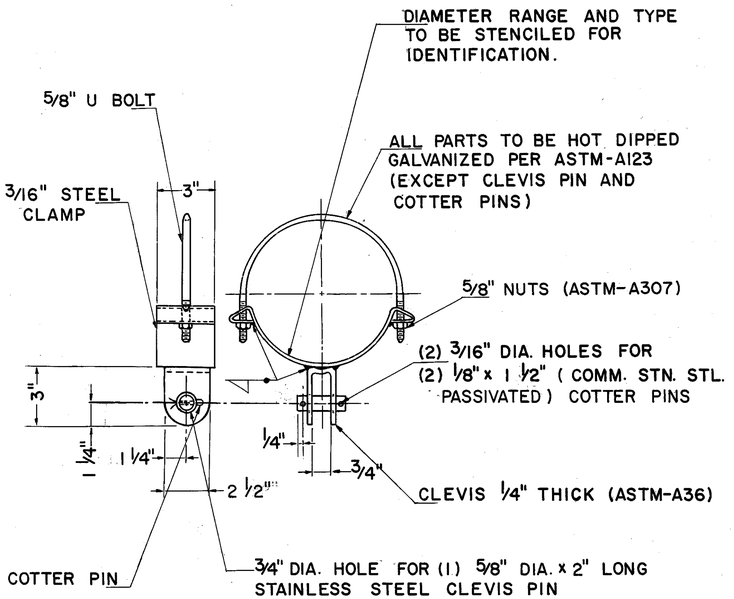
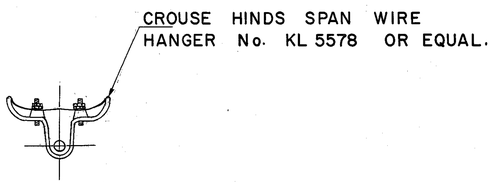
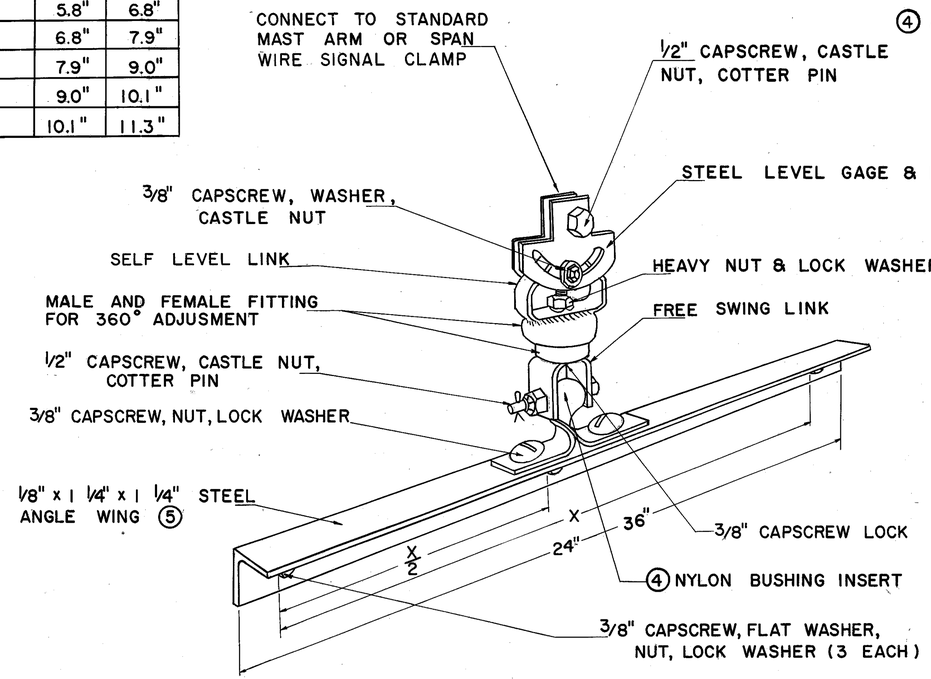


MAST ARM TRAFFIC SIGNAL CLAMP DETAILS

TYPE	CLAMP DIA. RANGE	
	MIN.	MAX.
A	3.6"	4.4"
B	4.4"	5.2"
C	5.2"	5.8"
D	5.8"	6.8"
E	6.8"	7.9"
F	7.9"	9.0"
G	9.0"	10.1"
H	10.1"	11.3"

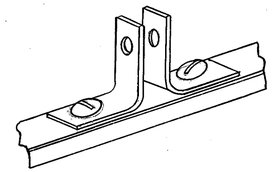


SPAN WIRE TRAFFIC SIGNAL CLAMP DETAIL



MAST ARM AND SPAN WIRE MOUNTED SIGN ATTACHMENT

(4) ALT: 2 CLIP ANGLES ⌋ ⌊



NOTES:

1. ALL STEEL PARTS SHALL BE GALVANIZED AND/OR CADMIUM PLATED.
2. THE ONLY DIFFERENCE IN THE TWO SIGN BRACKETS (24" AND 36") IS THE LENGTH OF THE WINGS.
3. ALL HARDWARE SHALL BE FURNISHED WITH THE BRACKETS.
4. ALT: 2 CLIP ANGLES ⌋ ⌊
5. ALT: 3 ⊓ 4.1 USE WHEN TWO SIGNS ARE HUNG BACK TO BACK.
6. IN LIEU OF THE DETAIL SHOWN, ANY SIGN ATTACHMENT ASSEMBLY MEETING ALL OF THE ABOVE REQUIREMENTS MAY BE USED IF, IN THE OPINION OF THE ENGINEER, IT WILL PROVIDE THE SAME RESULTS.

WING LENGTH	X MIN.	X MAX.
24"	19"	21"
36"	29"	32"

ADF 12/21/70
HJH 4/27/71

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
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SIGNAL HEAD TYPE

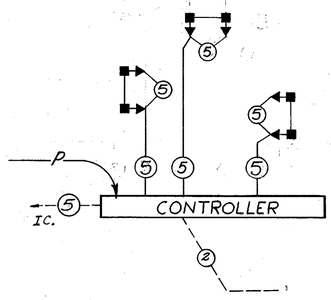
	ALL HEADS	
	R Y G	
	12" Lens	

SIGNAL PHASES		TIMING
θ	A	G-22 Sec.
θ	B	G-26 Sec.

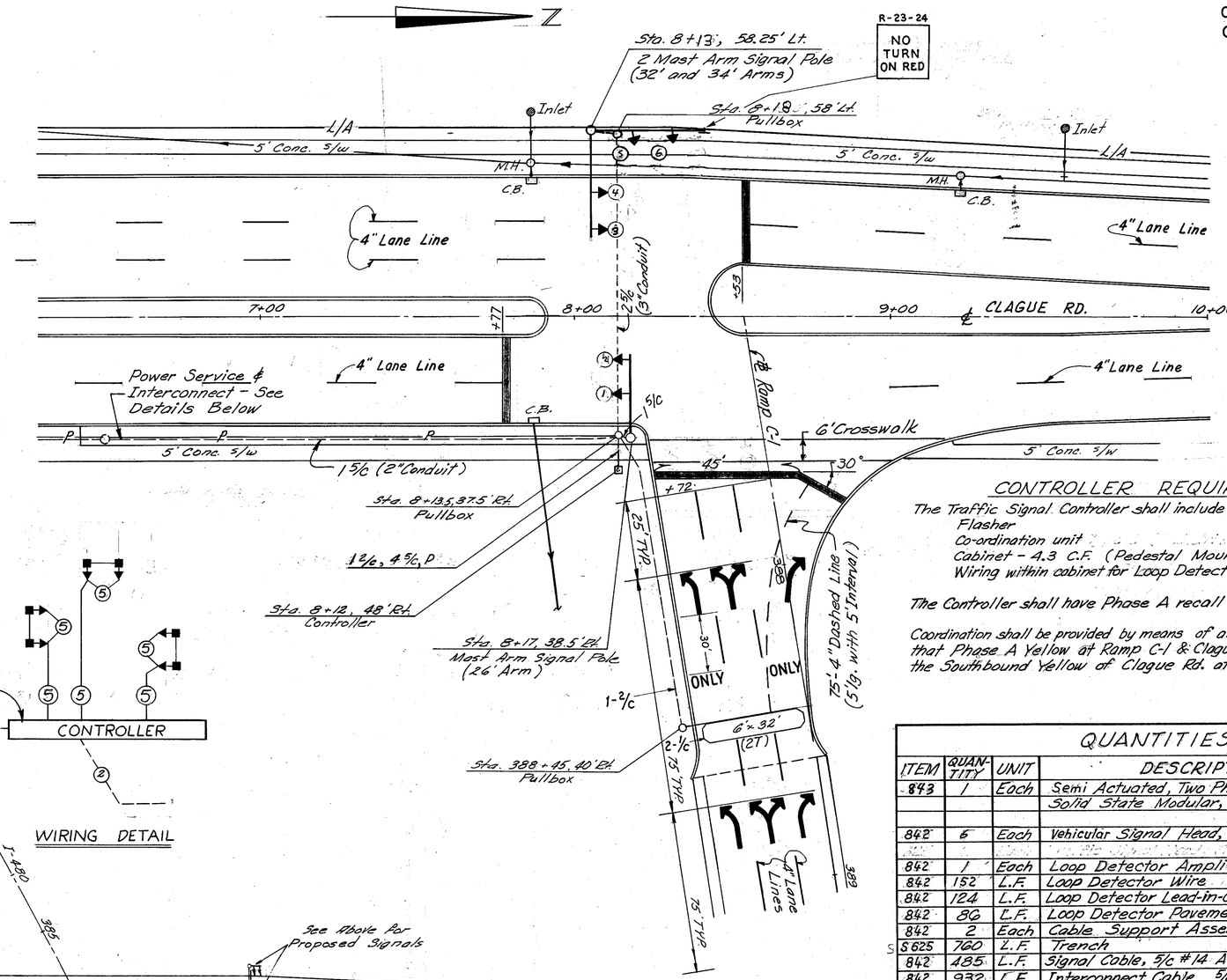
3 Sec. Amber
3 Sec. All Red

SIGNAL DISPLAY SCHEDULE

PHASE		θ A		θ B							FLASH
MOVEMENT		R/W	C	R/W	C						
SIGNAL HEADS	1,3,4	G	Y	R	R						Y
	5,6	R	R	G	Y						R



WIRING DETAIL



LEGEND

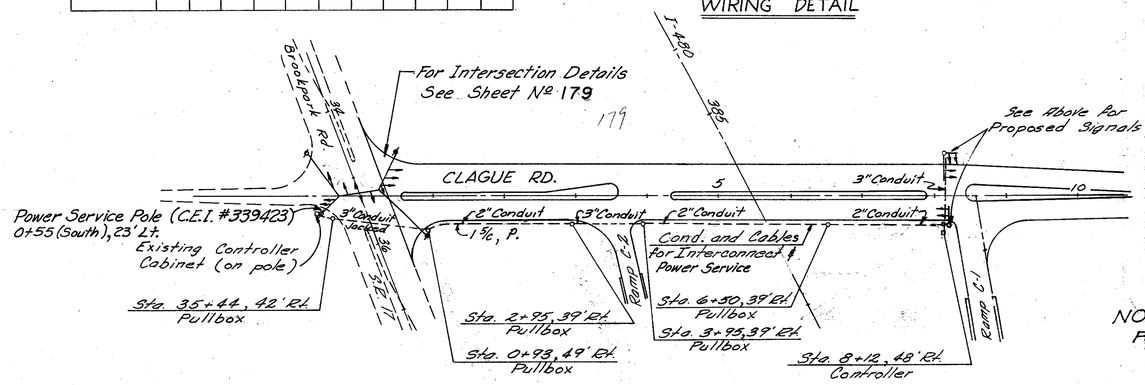
- Signal Head
- P — Power Cable
- Conduit (As Noted)
- Pullbox, Single
- Controller
- Loop Detector

CONTROLLER REQUIREMENTS

The Traffic Signal Controller shall include the following:
Flasher
Co-ordination unit
Cabinet - 4.3 C.F. (Pedestal Mounted)
Wiring within cabinet for Loop Detector

The Controller shall have Phase A recall on for semi-actuated operation.

Coordination shall be provided by means of an Offset coordination unit to assure that Phase A Yellow at Ramp C-1 & Clague Rd. will occur simultaneously with the Southbound Yellow of Clague Rd. at Brookpark Rd.



INTERCONNECT PLAN

NOTE:
For Pedestal Mount Detail & Signal Pole Elevations, See Sheet No. 180

QUANTITIES

ITEM	QUANTITY	UNIT	DESCRIPTION
843	1	Each	Semi Actuated, Two Phase Traffic Signal Controller, Solid State Modular, with Cabinet, As Per Plan
842	6	Each	Vehicular Signal Head, 3 Section, 12" Lens, One Way
842	1	Each	Loop Detector Amplifier
842	152	L.F.	Loop Detector Wire
842	124	L.F.	Loop Detector Lead-in-Cable,
842	86	L.F.	Loop Detector Pavement Cutting
842	2	Each	Cable Support Assembly
S 625	760	L.F.	Trench
842	485	L.F.	Signal Cable, 5/C #14 AWG
842	932	L.F.	Interconnect Cable 5/C #14 AWG
842	940	L.F.	Power Cable 3/C #8
S 625	648	L.F.	Conduit, 2" 713.04 Type III
S 625	196	L.F.	Conduit, 3" 713.04 Type III
S 625	126	L.F.	Conduit Jacked Under Pavement, 3" 713.04 Type 3
S 625	2	Each	Ground Rod
S 625	7	Each	Pullbox, 18" Circular 713.09
842	2.12	C.Y.	Concrete for Anchor Base Foundations
842	1	Each	Pedestal 3'6"
842	1	Each	Combination Signal Pole, 0.2391" x 11.0" x 32' with Mast Arms 0.1793" x 8" x 34' and 0.1793" x 8" x 24'
842	1	Each	Signal Support, 0.1793" x 10.0" x 21' Pole with Mast Arm 0.1793" x 7" x 26'
842	0.35	C.Y.	Concrete for Embedded Foundations
844	4	Sq.Ft.	Signs Erected, Flat Sheet
844	1	Each	Mast Arm Mounted Sign Attachment

CLAGUE RD. & RAMP C-1 INTERSECTION DETAIL

DQF 12/22/70
HJH 1/27/71

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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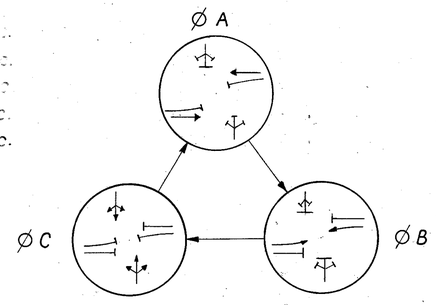
CUYAHOGA COUNTY
CUY-480-4.86

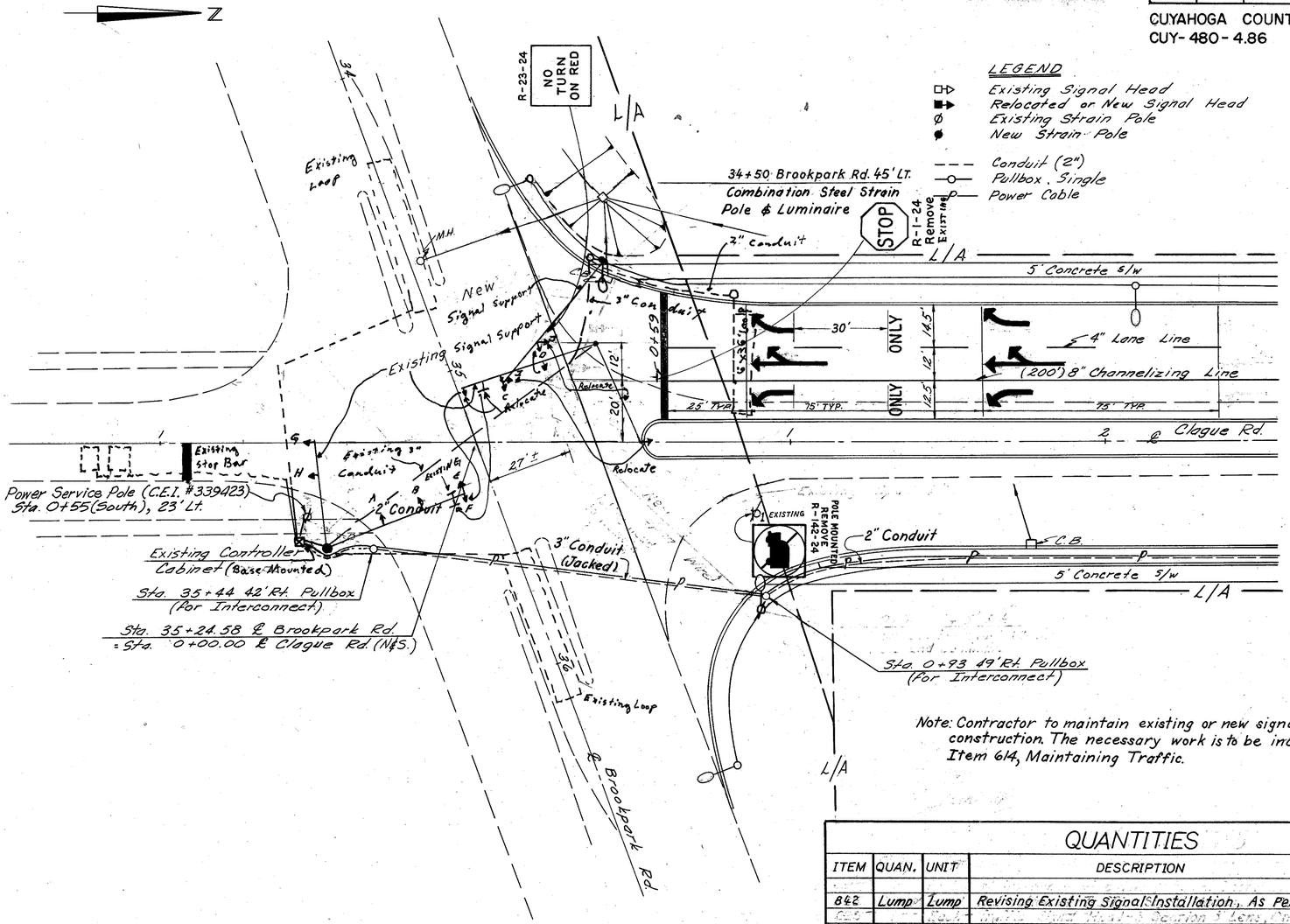
SIGNAL HEAD TYPE		
R A G	R A G	R A G
G, H, I, J	A, B, C, D	E, F
8" LENS	12" LENS	12" LENS

Phasing & Timing
Existing & Future

Sta. 0+55 Sec.
Ø B 7 Sec.
Ø C 30 Sec.
Amber 3 Sec.
All Red 1 Sec.



Timing to remain as existing



LEGEND
- Existing Signal Head
- Relocated or New Signal Head
- Ø Existing Strain Pole
- Ø New Strain Pole
- Conduit (2")
- Pullbox, Single
- P Power Cable

Note: Contractor to maintain existing or new signals during construction. The necessary work is to be included in Item 614, Maintaining Traffic.

Note:
For Power Service & Interconnect Quantities See Sheet No. 178
For Span Wire Mounting Elevations and Combination Steel Strain Pole and Luminaire Detail See Sht. No 180

For Mast Arm Sign Attachment Assembly See Sheet No. 177

Extend Existing 3" Conduit from Old support Location to pull box adjacent to new support Using Swept Head and 3" Conduit

Relocate Existing Sign & signal Heads using new hardware as needed

Rewire with new cables from controller to signal Heads

QUANTITIES

ITEM	QUAN.	UNIT	DESCRIPTION
842	Lump	Lump	Revising Existing Signal Installation, As Per Plan
842	90	L.F.	Loop Detector Pavement Cutting
842	200	L.F.	Loop Detector Wire
842	150	L.F.	Loop Detector Lead-in Cable
842	500	L.F.	Signal Cable, 5 Conductor #14 AWG
842	1	Each	Cable Support Assembly
5626	60	L.F.	Trench
S 625	1	Each	Ground Rod
5626	30	L.F.	Conduit 2" 713.04 TYPE III
5628	30	L.F.	Conduit 3" 713.04 TYPE III
5625	2	Each	Pullbox 712.09 18" Circular
842	2.50	C.Y.	Concrete For Anchor Base Foundation
842	1	Each	Combination Signal & Luminaire Support, 0Ga-16"x32'-0" Pole, 30 Feet 0Ga-13"x19'-6" + 7Ga-10.84"x34' Arm
844	4	S.F.	Signs Erected, Flat Sheet
202	2	Each	Removal of Ground Mounted Sign for Storage
202	1	Each	Removal of Ground Mounted Sign Support for Storage
844	1	Each	Mast Arm Mounted Sign Attachment

CLAGUE RD. & S.R. 17 INTERSECTION DETAIL

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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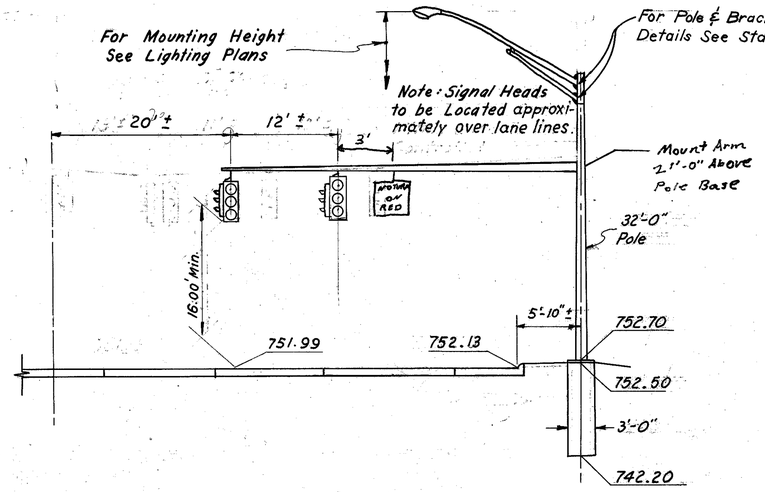
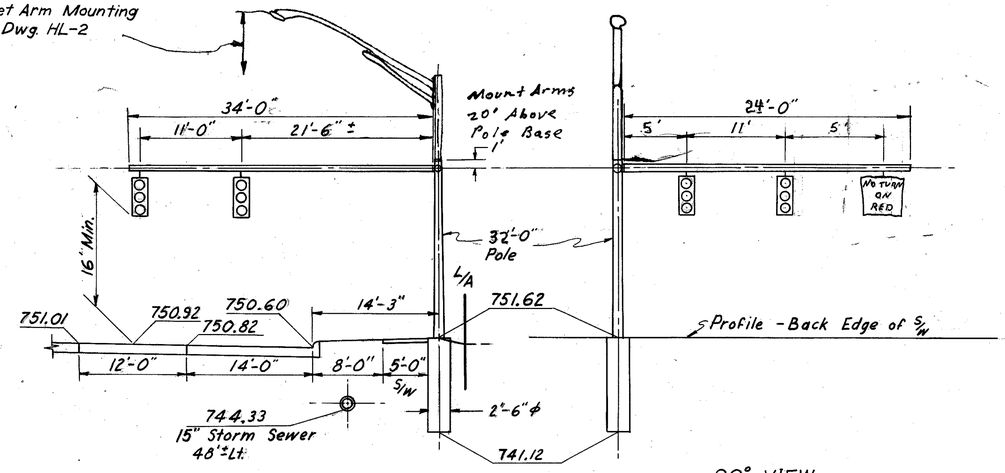
CUYAHOGA COUNTY
CUY-480-4.86

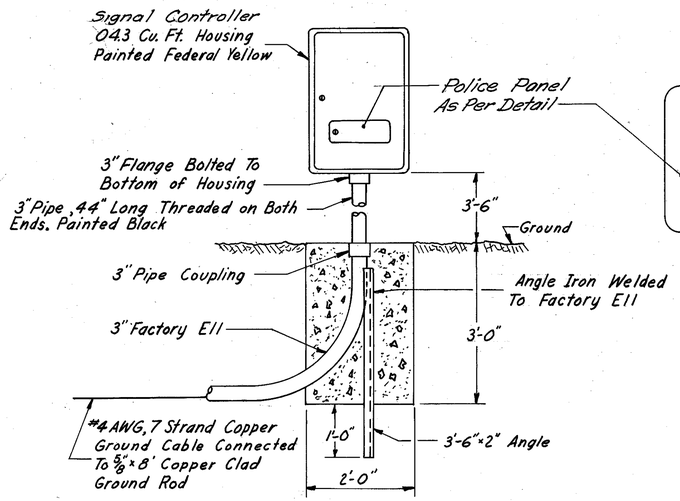


Sta. 0+40 58' Lt. Clague Road
Combination Signal & Luminaire Support
Pole #0 Ga. - 16.0" ϕ Base x 32'-0" Lg.
Arm #0 Ga. - 13" x 10.27" x 19'-6" + 7 ga. 10.84" x 6.08" x 34'
Base Data - (4) 2¼" x 98" A. Bolts on 23½" B.C.

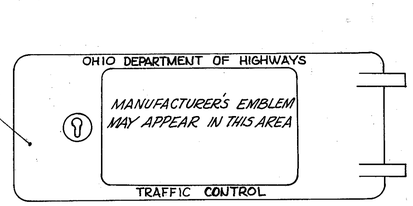


Pole: 3 GA. - 11.0" x 8.06" x 32'-0"
Arm: 7 GA. - 8.0" x 3.24" x 34'-0"
Arm: 7 GA. - 8.0" x 3.48" x 24'-0"
Base Data: (4) 1¾" x 90" A. Bolts on 15" B.C.
Sta. 8+13 Clague Rd., 58.25' Lt.

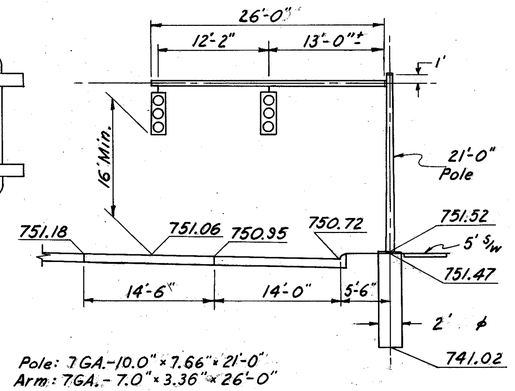
90° VIEW



DETAILS FOR PEDESTAL MOUNTED 043 CU. FT. HOUSING

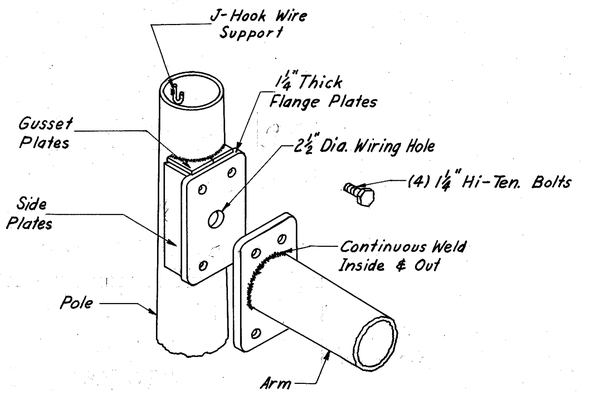


POLICE PANEL DETAIL



Pole: 7 GA. - 10.0" x 7.66" x 21'-0"
Arm: 7 GA. - 7.0" x 3.36" x 26'-0"
Base Data: (4) 1½" x 60" A. Bolts on 13½" B.C.

Sta. 8+17 Clague Rd., 38.5' Rt.



SIGNAL ARM ATTACHMENT TO SIGNAL POLE

CALC. BY GMK DATE 12/17/70
CHKD. BY GAF DATE 4-7-71

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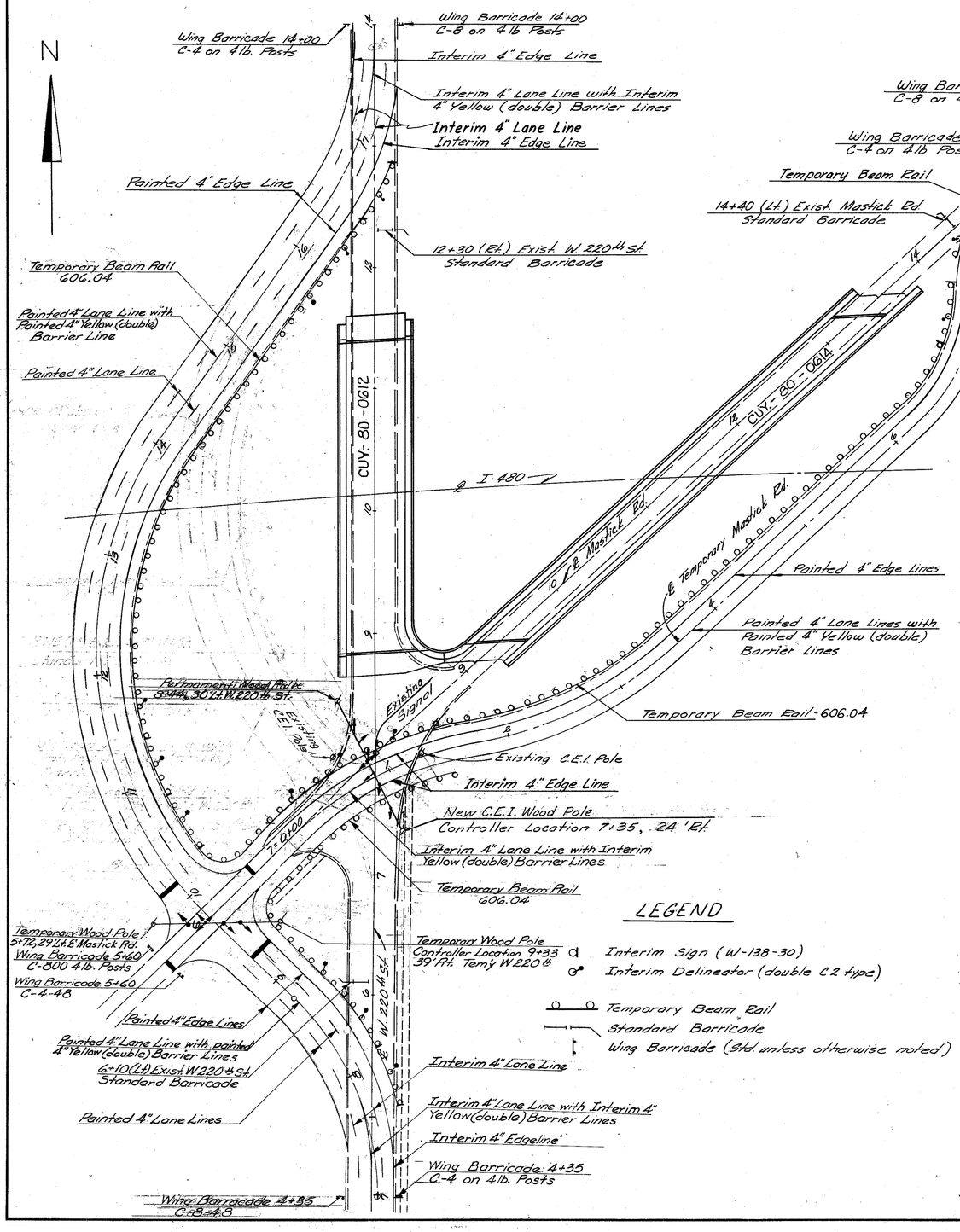

Note: Quantities shown on this sheet are for information only and the cost to furnish, erect, maintain and subsequently remove same shall be included under 614 - Maintaining Traffic. Station limits for items on this sheet are approximate only and may be revised as required by the Engineer.

Interim pavement marking shall be used on all permanent pavement and removed prior to completion of the project. Painted pavement marking shall be used on all temporary pavement or pavement to be removed or resurfaced. Quantities and locations of pavement marking shown are approximate only.

Modifying Specification 614, the Contractor shall furnish, erect, maintain and subsequently remove all signs listed on this sheet unless otherwise noted.

TEMPORARY & PERMANENT TRAFFIC SIGNAL WORK

The traffic signal at West 220th St. and Mastic Road intersection will consist of both a temporary and permanent installation as follows:

A. After temporary pavement and pertinent items have been completed, install (2) two temporary wood poles, support cable, messenger wire, etc., relocate exist. controller and install signal heads as shown on Sht. No. 182 to provide a complete Temporary Signal installation.

B. Upon completion of both structures along with all other necessary items and pertinent work, install (1) permanent pole, support cable, messenger wire, etc. and relocate signal heads and controller to permanent location as shown on Sht. No. 182 182

Quantities necessary for the Temporary Traffic Signal Work items shall be included in the unit price bid for Item 614 - Maintaining Traffic except for items included in the Permanent installation as shown on Sht. No. 182. 182

Sign and Support Summary

Stations	Side	Signs Each: C-4-48	C-8-48	W-1-30	W-2-30	W-127-36	W-128-36	W-143-18		Total Sign Area	Supports: 4 lb. Post	6 lb. Beam
										S.F.	L.F.	L.F.
Temp. W. 220th 7+65	Rt.							1		2.25		
Exist. W. 220th 15+00	Lt.			1				1		8.5		15
" " 4+35	Rt.	1	1									
" " 14+00	Rt.	1	1									
" " 0+00	Rt.						1			9.0	15	
" " 2+00	Rt.					1				9.0	15	
" " 19+00	Lt.						1			9.0	15	
" " 16+50	Lt.					1				9.0	15	
Temp. Mastick 0+00	Lt.							1		2.25		
Exist. Mastick 5+60	Rt.	1	1									
" " 16+00	Lt.				1			1		8.5		15
" " 15+55	Rt.		1									
" " 0+50	Rt.						1			9.0	15	
" " 2+60	Rt.					1				9.0	15	
" " 20+00	Lt.						1			9.0	15	
" " 18+00	Lt.					1				9.0	15	
" " 15+30	Lt.	1										
TOTAL		4	4		1	1	4	4	4	93.5	120	30

Stations	Side	Interval	Painted 4" Edge Line L.F.	Interim 4" Edge Line L.F.	Painted 4" Lane Line L.F.	Interim 4" Lane Line L.F.	Painted 4" Yellow Barrier Line L.F.	Interim 4" Yellow Barrier Line L.F.	Painted 24" Stop Line L.F.	Interim 24" Stop Line L.F.	Sign Area S.F.	Interim Steel Drive Post 4 lb/ft L.F.	Interim Sign W-138-30 Ea.	Interim Delineator As Per Plan Ea.	Interim Steel Drive Post 2 lb/ft L.F.	Temporary Beam Rail 606.04 L.F.	Wing Barricade Ea.	Standard Barricade Ea.
Temporary W. 220th St. 7+65 to 9+50	Rt.	12.5														200		
" " 7+00 to 8+40	Lt./Rt.			150		100		200										
" " 8+00 to 9+25	Lt.				47		250		20									
" " 7+40 to 9+65	Rt./Lt.		365		100													
" " 16+85 to 17+75	Rt./Lt.			130		100		180										
" " 7+65 to 8+55	Rt.	50									18.75	33.0	3					
" " 10+30 to 11+40	Rt.	50									18.75	33.0	3					
" " 15+85 to 16+85	Rt.	50									18.75	33.0	3					
" " 9+85 to 16+85	Rt./Lt.		1480															
" " 10+00 to 16+80	Rt.	12.5														662.5		
" " 10+15 to 16+85	Lt./Rt.				755		1340		20									
" " 7+90 to 8+80	Rt.	50												3	12			
" " 10+60 to 11+70	Rt.	50												3	12			
" " 15+60 to 16+60	Rt.	50												3	12			
Existing W. 220th St. 14+00	Rt./Lt.																2	
" " 6+10	Lt.																	1
" " 12+30	Rt.																	1
" " 4+35	Rt./Lt.																2	
Temporary Mastick Rd. 0+00 to 1+50	Rt.	12.5														137.5		
" " " 0+00 to 7+45	Lt.	12.5														737.5		
" " " 7+70 to 8+50	Lt.	12.5														87.5		
" " " 0+00 to 1+30	Rt./Lt.			260		47		260										
" " " 1+25 to 8+65	Rt./Lt.		1490		280		1490											
" " " 0+00 to 1+00	Lt.	50									18.75	33	3					
" " " 6+90 to 7+45	Lt.	50									12.50	22	2	1	4			
" " " 0+50 to 1+50	Lt.	50												3	12			
" " " 7+85 to 8+55	Lt.	50									12.50	22	2	2	8			
Existing Mastick Rd 5+60	Rt.									10								
" " " 5+60	Rt./Lt.																2	
" " " 14+40	Lt.																	1
" " " 15+30	Lt.																1	
" " " 15+55	Rt.																1	
" " " 6+60	Lt.									10								
" " " 6+625 to 7+00	Lt.	12.5														37.5		
" " " 6+50 to 7+00	Rt.	12.5														50		
TOTAL			3335 ✓	540 ✓	1182 ✓	247 ✓	3080	640 ✓	40 ✓	20 ✓	100.00	176 ✓	16 ✓	15 ✓	60 ✓	1912.5	8 ✓	3 ✓

TRAFFIC CONTROL FOR MAINTAINING TRAFFIC - WEST 220th & MASTICK RD.

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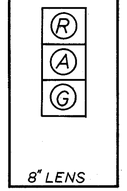
SIGNAL	PHASES	TIMING
A		31 SEC.
B		27 SEC.

3 SEC. AMBER
3 SEC. ALL RED

SIGNAL FACES

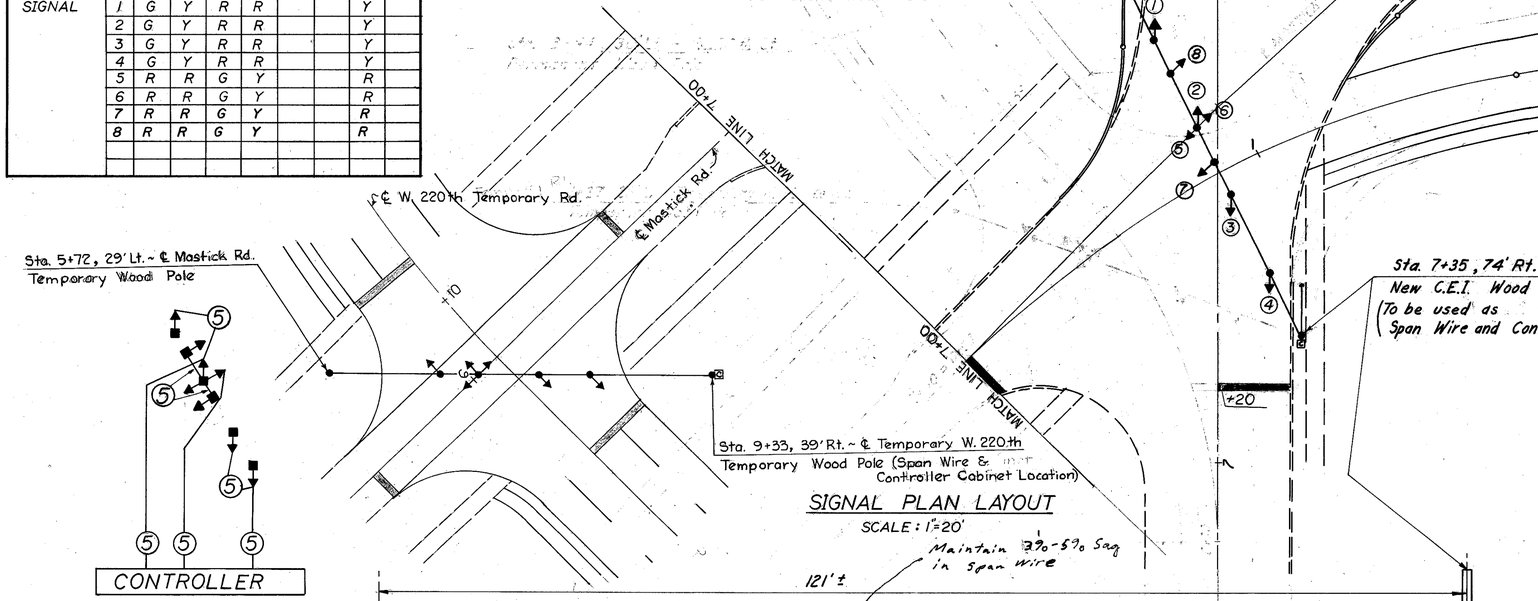


TYPICAL-ALL HEADS

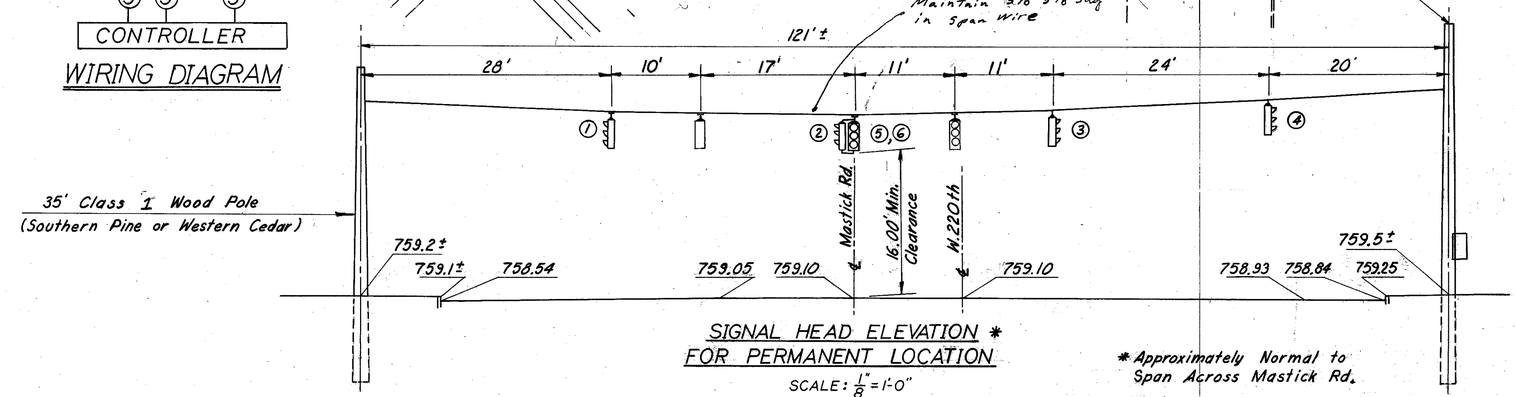
SIGNAL DISPLAY SCHEDULE

PHASES		A		B				FLASH	
MOVEMENT		R/W	C	R/W	C				
SIGNAL	1	G	Y	R	R			Y	
	2	G	Y	R	R			Y	
	3	G	Y	R	R			Y	
	4	G	Y	R	R			Y	
	5	R	R	G	Y			R	
	6	R	R	G	Y			R	
	7	R	R	G	Y			R	
	8	R	R	G	Y			R	

WIRING DIAGRAM



SIGNAL PLAN LAYOUT
SCALE: 1"=20'



SIGNAL HEAD ELEVATION *
FOR PERMANENT LOCATION
SCALE: 1/8"=1'-0"

* Approximately Normal to Span Across Mastick Rd.

NOTE:
For Temporary Pavement Marking & Quantities, See Sheet No. 181

▲ 100 % State of Ohio

QUANTITIES

QUAN.	ITEM	UNIT	DESCRIPTION
1	842	Ea.	Vehicular Signal Head, 3 Section 8" Lens, Three Way
5	842	Ea.	Vehicular Signal Head, 3 Section 8" Lens, One Way
285	842	L.F.	Signal Cable, 5 Conductor #14 AWG-600 Volt IMSA 19-1-67
130	842	L.F.	Messenger Wire, 3/8 Dia. x 7 Strand, with accessories
1	842	Ea.	Ground Rod
1	842	Ea.	Power Service
1	842	Ea.	Wood Strain Pole, 35' Class 1 as per plan
1	202	Ea.	Removal of Existing Signal Installation
1	842	Ea.	Weatherhead and Conduit Riser
1	842	Ea.	Re-Install Traffic Signal Controller

TRAFFIC SIGNALS W220TH AND MASTICK RD.

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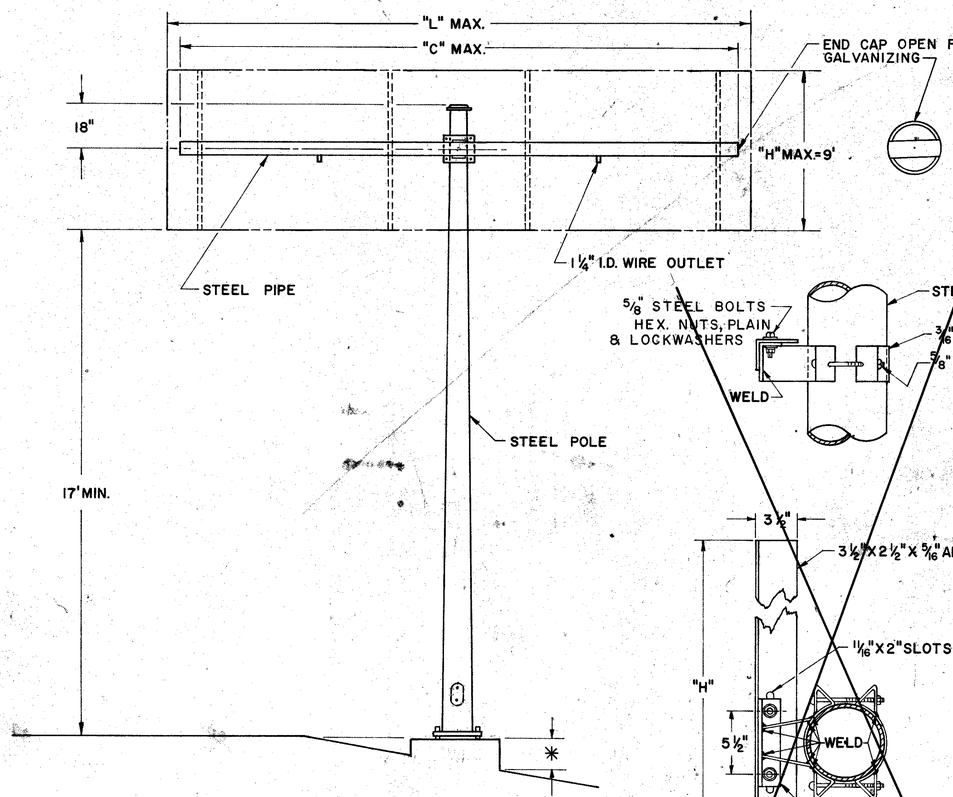
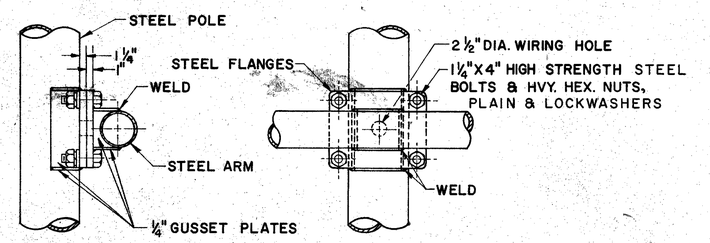
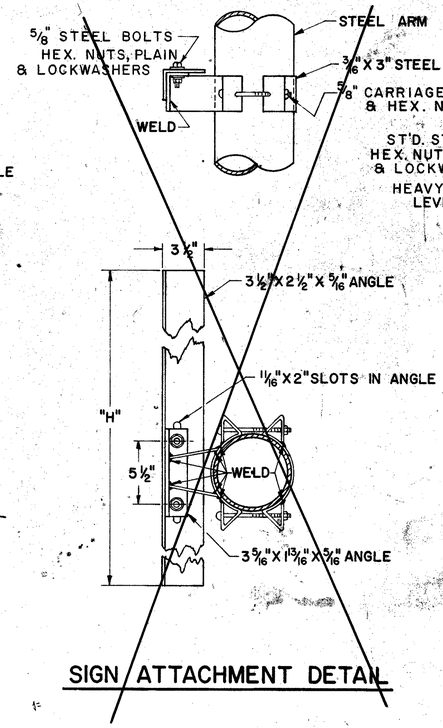
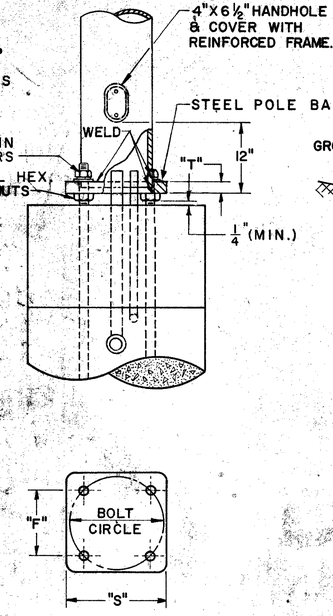




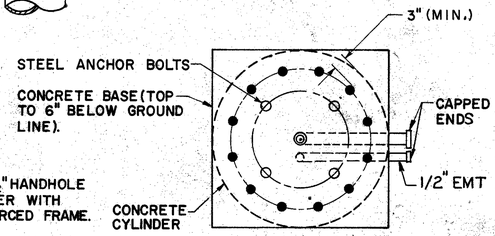
ARM ATTACHMENT

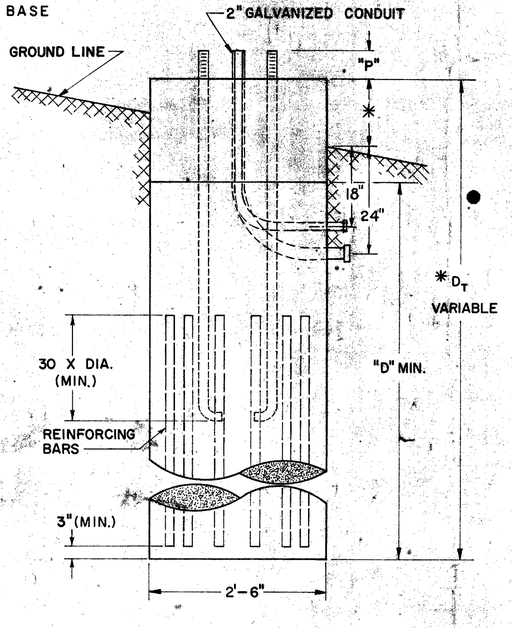


SIGN ATTACHMENT DETAIL



POLE DETAIL





FOUNDATION DETAIL

NOTES

FABRICATION – ALL PORTIONS OF THE SIGN SUPPORT, INCLUDING SIGN ATTACHMENTS, SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF A.S.T.M. DESIGNATIONS A-123 AND A-153. THE CONDUIT SHALL BE GALVANIZED IN ACCORDANCE WITH SEC. 625.13 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS FOR PAYMENT.

* FOUNDATION – THE TOP ELEVATION OF FOUNDATIONS SHALL BE VARIED SO AS TO MAINTAIN A MINIMUM CLEARANCE OF 17' BETWEEN THE BOTTOM OF THE SIGN AND THE HIGHWAY CROWN.

MATERIAL – STEEL POLE BASES, FLANGES, AND END CAPS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 30 GRADE B. HIGH STRENGTH STEEL BOLTS SHALL CONFORM TO ASTM SPECIFICATION A 193 GRADE B7. AFTER FABRICATION TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

SOILS – THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY). FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL – REINFORCING STEEL AS SHOWN IN TABLE SHALL BE INSTALLED WHEN "D_T" EXCEEDS THE ANCHOR BOLT LENGTH BY MORE THAN 3 FT. THE COST AND PLACEMENT OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR 816 CONCRETE FOR SIGN SUPPORT FOUNDATION.

DESIGN NO.	POLE SIZE	PIPE SIZE	DIM C	DIM F	DIM P	DIM S	DIM T	BOLT CIRCLE	ANCHOR BOLT SIZE	MAX SIGN AREA	MAX. "L" WITH MAX. SIGN AREA	"D" MIN.	REINF. BARS	
													TYPE	NO.
1	7ga,11"X7.99X21'-6"	4"SCH.40 GRADE A	18'	10 5/8"	6½"	15 5/8"	1½"	15"	1¼"X60"	60	24'-9"	7'-0"	#6	8
2	3ga,13"X9.99X21'-6"	4"SCH.80 GRADE A	14'	12¾"	7¾"	18½"	2"	18"	¾"X90"	120	16'-9"	8'-6"	#7	12
3	3ga,13"X9.99X21'-6"	6"SCH.40 GRADE A	20'	12¾"	7¾"	18½"	2"	18"	¾"X90"	120	24'-0"	9'-0"	#7	12

DESIGN
THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORT	816 No.9.12	DATE 1-19-62 3-30-62

APPROVED Robert E. Comer
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
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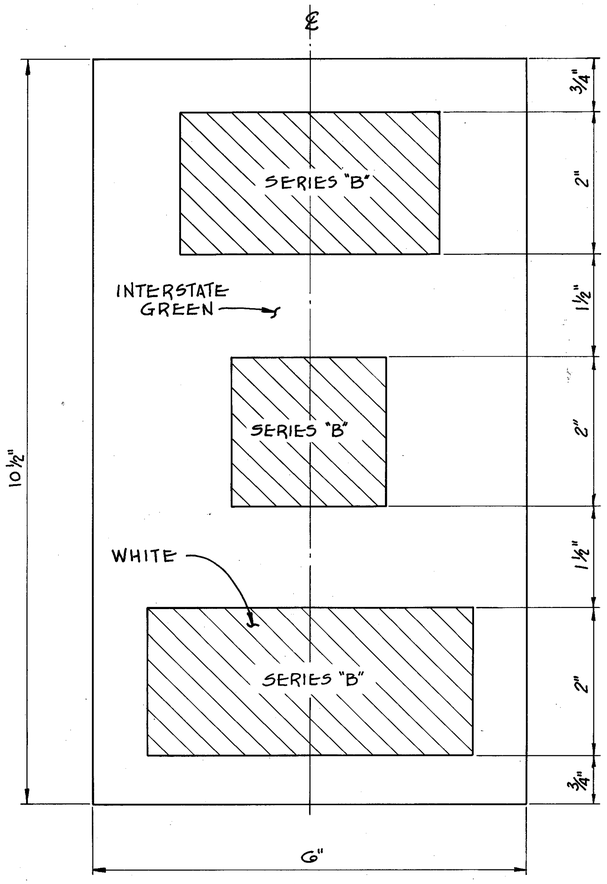

LEGEND VARIES, SEE TABLE

CUY
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5.20

EXAMPLE

SUPPORT NO.	STATION	LOCATION	DIRECTION	DECAL LEGENDS		
				COUNTY	RT	MILEAGE
79	375+00	I-480	W.B.	CUY	480	5.20
128	385+75	I-480	RT.	CUY	480	5.40
126	398+50	I-480	W.B.	CUY	480	5.64
1	412+00	I-480	E.B.	CUY	480	5.90
1a	417+50	I-480	W.B.	CUY	480	6.00
3	441+50	I-480	W.B.	CUY	480	6.46
3A	441+00	I-480	E.B.	CUY	480	6.45

8/6 SIGN SUPPORT INDENTIFICATION DECALS

LAID BY T.R.B. DATE 6/76
CHK'D BY W.A.M. DATE 6/76

FHWA REGION	STATE	PROJECT	
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LIGHTING GENERAL NOTES

SPECIFICATIONS
THESE NOTES ARE SUPPLEMENTAL TO ITEMS 625 AND 713 OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.
REFER TO STANDARD CONSTRUCTION DRAWINGS LISTED ON THE TITLE SHEET.

PLAN SPECIFICATION REFERENCES
ALL REFERENCES TO ITEM 625 AND 713 IN THESE PLANS SHALL BE CONSIDERED TO READ AS RESPECTIVE REFERENCES TO ITEMS S625 AND S713.

625.03 - GENERAL
THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS
THE CLEVELAND ELECTRIC ILLUMINATING CO.
ILLUMINATING BUILDING
CLEVELAND, OHIO 44113

THE PROJECT HAS BEEN DESIGNED ON THE BASIS OF 5% VOLTAGE DROP PERMISSIBLE ON BRANCH CIRCUITS. THE PROJECT WILL RECEIVE 480 VOLT TWO WIRE SECONDARY SERVICE ONE SIDE GROUNDED, *CONTROLLED* FROM THE CLEVELAND ELECTRIC ILLUMINATING CO.

THE PROJECT HAS BEEN DESIGNED ON THE BASIS OF FULL LIGHTING WITH 1.2 FOOT CANDLE AVERAGE INITIAL ILLUMINATION WITH A MAXIMUM UNIFORMITY RATIO OF 4.0 TO 1.0.

CONNECTOR KITS
AT THE OPTION OF THE CONTRACTOR, TYPE IX CABLE CONNECTIONS MAY BE SUBSTITUTED WHERE TYPE II OR TYPE III CABLE CONNECTIONS ARE SPECIFIED IN HAND HOLES OR TRANSFORMER BASES OF LIGHT POLES.
TYPE I THRU TYPE VII CABLE CONNECTIONS IN PULL BOXES, JUNCTION BOXES AND OTHER ENCLOSURES BELOW GROUND MAY BE ACCOMPLISHED BY THE USE OF EITHER OF THE FOLLOWING:
(1) A SLEEVE OR TEE CABLE CONNECTOR CONFORMING TO THE GENERAL REQUIREMENTS OF STYLE 'S' OR 'H' OR OTHER CONNECTING DEVICE APPROVED BY THE ENGINEER. THE CONNECTOR SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS AND THE CONNECTION SHALL BE SEALED AND WATERPROOFED WITH A HI-DIELECTRIC COMPOUND SUCH AS "AQUA SEAL" AS MANUFACTURED BY KEARNEY, THE SCOTCH NO. 2200 COMPOUND MANUFACTURED BY 3-M COMPANY, OR KIT AS MANUFACTURED BY BLACKBURN, OR EQUAL APPROVED BY THE ENGINEER. THE SEALING MATERIAL SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS TO MAKE WATER-TIGHT CONNECTION. CONNECTIONS NOT ACCOMPLISHED IN-LINE OR IN-TEE FORM SHALL BE ADDITIONALLY PROTECTED BY USE OF A HI-DIELECTRIC PVC OR OTHER APPROVED MATERIAL, BOOT WITH AN APPROVED FASTENING DEVICE.
(2) A PREASSEMBLED KIT, AS MANUFACTURED BY JOY OR BUSSMAN OR APPROVED EQUAL, WITH A WATERPROOF OR WATER-TIGHT RATING ACCEPTABLE TO THE ENGINEER.

625.07 - 713.13 UNDERPASS LUMINAIRES
UNDERPASS LUMINAIRES SHALL BE HOLOPHANE "UNDERPASS WALLPACK" OR EQUAL WESTINGHOUSE, MCGRAW EDISON, OR GENERAL ELECTRIC UNDERPASS UNIT APPROVED BY THE ENGINEER, AND SHALL BE FURNISHED WITH AN INTEGRAL FUSE HOLDER AND 10-AMPERE FUSE. THE INTEGRAL BALLAST SHALL BE OF A *REGULATOR* TYPE, SINGLE RATED 480 VOLTS, AND DESIGNED FOR USE WITH A 100 WATT HIGH PRESSURE SODIUM LAMP AND EQUIPPED WITH A POLYCARBONATE LENS.

LIGHT POLE ANCHOR BOLTS FOR BRIDGES AND RETAINING WALLS
ANCHOR BOLTS FOR MOUNTING LIGHT POLES ON BRIDGES AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF 713.01 AND DETAILS SHOWN ON THE PLANS AND STANDARD DRAWINGS, OR THE APPROVED SHOP DRAWINGS FOR THE RESPECTIVE POLES TO BE PLACED THEREON. PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR EACH SET OF THE SIZE REQUIRED AND NECESSARY TO INSTALL ONE POLE, AND THIS PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING AND PLACING THE BOLTS.

STANDARD CONSTRUCTION DRAWING HL-3
POLE BASE DETAILS SHOWN ON THIS DRAWING ARE ESSENTIALLY FOR GALVANIZED STEEL POLES. FOR ALUMINUM DESIGNS, OR OTHER PERMITTED STEEL MATERIAL DESIGNS, VARIATIONS FROM THESE DETAILS WILL BE ACCEPTABLE, AS APPROVED BY THE ENGINEER.

CONDUIT ON STRUCTURES
EXPANSION FITTINGS FOR CONDUIT ON STRUCTURES SHALL BE OZ TYPE AX, CROUSE-HINDS TYPE XJ-4, APPLETON TYPE XJ-4, OR EQUAL APPROVED BY THE ENGINEER.
EACH EXPANSION FITTING SHALL HAVE A COPPER EXTERNAL BONDING JUMPER.

ELECTRICAL SERVICE FOR ILLUMINATED SIGNS
THE PAY ITEMS IN THE LIGHTING GENERAL SUMMARY INCLUDE THE PULL BOX OR JUNCTION BOX ADJACENT TO EACH LIGHTED SIGN AND THE ELECTRICAL SERVICE CONNECTIONS LEADING INTO THE BOX, INCLUDING CONNECTOR KITS IN THE PULL BOX OR JUNCTION BOX. QUANTITIES FOR ELECTRICAL SERVICE FROM THE CONNECTOR KITS IN THE PULL BOX OR JUNCTION BOX TO THE SIGN ARE INCLUDED IN THE TRAFFIC CONTROL GENERAL SUMMARY.

ITEM 625 - SERVICE TO UNDERPASS LIGHTING, AS PER PLAN
THIS ITEM SHALL CONSIST OF PROVIDING COMPLETE ELECTRICAL SERVICE, EXCEPT FOR LUMINAIRES, LAMPS, AND STRUCTURE GROUNDING SYSTEMS, FOR AN UNDERPASS LIGHTING SYSTEM ON BRIDGE NO. CUY 480-0499 AND CUY 480-0540. THE INSTALLATION WORK SHALL INCLUDE CONDUITS, MOUNTINGS, FITTINGS, JUNCTION BOXES, CABLES, AND ALL INCIDENTALS NECESSARY TO COMPLETE, READY FOR USE, THE SERVICE AS DETAILED ON SHEETS 209-210.

THE LUMP SUM PRICE BID FOR '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.

HIGH VOLTAGE DIRECT CURRENT TESTS
A HIGH VOLTAGE TEST, AS DESCRIBED IN SUPPLEMENTAL SPECIFICATION 839 SHALL BE PERFORMED ON ALL DISTRIBUTION CABLE AND DUCT-CABLE SYSTEMS TO BE INSTALLED ON THIS PROJECT. THE TEST SHALL NOT BE PERFORMED UNTIL AFTER ALL NEW CONSTRUCTION, SUCH AS GUARD RAIL, FENCES, DELINEATOR POSTS, SIGNS ET CETERA, IN THE IMMEDIATE VICINITY OF THE LOCATION OF THE CABLE RUN BEING TESTED HAS BEEN COMLETED. THE TESTING REQUIREMENTS OF 625.22(b) ARE HEREBY WAIVED FOR THOSE CIRCUITS ON WHICH THE HIGH VOLTAGE TEST IS TO BE PERFORMED.

TRANSITION JUNCTION BOX
THE UNIT PRICE BID FOR EACH "ITEM 625, TRANSITION JUNCTION BOX" SHALL BE FULL COMPENSATION FOR FURNISHING AND PLACING THE JUNCTION BOX AS SHOWN IN THE DETAIL ON SHEET 214, AND ALL LABOR, MATERIAL, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED.

713.07 POLYVINYL CHLORIDE PLASTIC CONDUIT.
THIS SPECIFICATION COVERS POLYVINYL CHLORIDE CONDUIT FOR EITHER DIRECT BURIAL IN EARTH OR FOR ENCASEMENT IN CONCRETE AND SHALL BE OF THE SIZE AND TYPE SPECIFIED.
CONDUIT FURNISHED UNDER THIS SPECIFICATION SHALL CONFORM TO NEMA STANDARDS PUBLICATION No. TC6-74 WITH THE EXCEPTION THAT CONDUIT AND CONDUIT FITTINGS COMPOSED OF ACRYLONITRILE-BUTADIENE-STYRENE (ABS) SHALL NOT BE ACCEPTABLE.
AS AN ALTERNATE TO POLYVINYL CHLORIDE, CORRUGATED COILABLE POLYPROPYLENE CONFORMING TO NEMA STANDARDS PUBLICATION NO. TC 5 MAY BE USED.

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

CONTROL CENTER
A 20 AMP BY-PASS SWITCH RATED 240 VOLTS, COMPLETE WITH WIRE AND CONDUIT SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

THE CLEVELAND ELECTRIC ILLUMINATING CO. WILL MAKE FINAL CONNECTION TO THE SWITCH FOR MANUAL BY-PASS CONTROL OF THE LIGHTING CONTROLLER.

COST OF SWITCH TO BE INCLUDED IN THE UNIT PRICE BID FOR CONTROL CENTER, AS PER PLAN. FOR DETAILS, SEE SHEET NO. 212.

ESTIMATED QUANTITIES
AN ESTIMATED QUANITY OF **458** LIN- FT. OF 605, 4-INCH SHALLOW PIPE UNDERDRAINS IS PROVIDED IN THE LIGHTING GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER IN PROVIDING POSITIVE DRAINAGE FOR PULL BOXES.
IT IS INTENDED THAT ALL PULL BOXES BE PROVIDED WITH SUCH DRAINAGE, PROVIDED THE LENGTH OF UNDERDRAIN NECESSARY TO OBTAIN A SATISFACTORY OUTFALL DOES NOT EXCEED 45 FEET APPROXIMATELY. A PERFORATED PVC PIPE OR CONDUIT MATERIAL APPROVED BY THE ENGINEER MAY BE USED IN THE CONSTRUCTION OF THIS ITEM. FOR INDIVIDUAL LENGTHS AND LOCATIONS SEE SHEET NO. 212.

625.07-713.11 HIGH PRESSURE SODIUM LUMINAIRES
25,000 LUMEN HORIZONTAL STYLE B LUMINAIRES, DESIGNED FOR USE WITH 150 WATT HIGH PRESSURE SODIUM LAMPS, SHALL HAVE SINGLE RATED 120 OR 480 VOLT, 150 WATT INTEGRAL REGULATOR BALLASTS. STYLE B LUMINAIRES SHALL BE GENERAL ELECTRIC M-400, WESTINGHOUSE OV-25, MCGRAW EDISON "UNISTYLE-400," OR EQUAL APPROVED BY THE ENGINEER. A P.E. CELL IS REQUIRED ON ALL 120 V. UNITS.

25,000 LUMEN HORIZONTAL STYLE B LUMINAIRES, DESIGNED FOR USE WITH 200 WATT HIGH PRESSURE SODIUM LAMPS, SHALL HAVE SINGLE RATED 480 VOLT, 200 WATT INTEGRAL REGULATOR BALLASTS. STYLE B LUMINAIRES SHALL BE GENERAL ELECTRIC M 400, WESTINGHOUSE OV-25, MCGRAW EDISON "UNISTYLE- 400," OR EQUAL APPROVED BY THE ENGINEER.

25,000 LUMEN HORIZONTAL STYLE B LUMINAIRES, DESIGNED FOR USE WITH 310 WATT HIGH PRESSURE SODIUM LAMPS, SHALL HAVE SINGLE RATED 480 VOLT, 310 WATT INTEGRAL REGULATOR BALLASTS. STYLE B LUMINAIRES SHALL BE GENERAL ELECTRIC M-400, WESTINGHOUSE OV-25, MCGRAW- EDISON "UNISTYLE-400," OR EQUAL APPROVED BY THE ENGINEER.

S713.02 ELECTRICAL CABLES

IN LIEU OF THE REQUIREMENTS LISTED UNDER S713.02, PARAGRAPHS 2(a) AND 2(b), ALL CABLE TO BE USED FOR 300 AND 600 VOLT SERVICE SHALL BE UL TYPE RHH, OR RHW, OR RHH/RHW AND FURTHER MEET THE REQUIREMENTS OF UL TYPE USE.

ALL SINGLE CONDUCTOR CABLES TO BE USED FOR 300 AND 600 VOLT SERVICE SHALL NOT HAVE A SEPARATE OUTER COVERING. ALTERNATE BIDS FOR 5 KV CABLE *SHALL BE FOR AN XLP TYPE UL MV-90, DRY.*

W. 220th STREET TEMPORARY LIGHTING

THE CONTRACTOR WILL ENTER INTO AN AGREEMENT WITH THE CLEVELAND ELECTRIC ILLUMINATING COMPANY FOR THE INSTALLATION, OPERATION AND SUBSEQUENT REMOVAL OF TEMPORARY LIGHTING ON THE W. 220th STREET RUN-AROUND.

THIS ITEM OF WORK WILL BE REQUIRED FOR THE DURATION OF TIME WHEN THROUGH-TRAFFIC IS DETOURED ONTO TEMPORARY W. 220th STREET.

THE ILLUMINATION WILL BE PHOTO-CONTROLLED AND ALL EQUIPMENT, INCLUDING WOOD POLES, WILL BE OWNED, OPERATED AND REMOVED BY C.E.I.

THERE WILL BE APPROXIMATELY 7-150 WATT H.P.S. LUMINAIRES REQUIRED FOR THIS ROADWAY; ALL POWER CHARGES WILL BE PAID BY THE CONTRACTOR.

THE ABOVE WILL CONSTITUTE THE BASIS FOR THE LUMP SUM BID PRICE FOR "W. 220th STREET TEMPORARY LIGHTING, AS PER PLAN".

MASTICK ROAD TEMPORARY LIGHTING

TEMPORARY LIGHTING FOR MASTICK ROAD WILL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS AS DETAILED ON SHEET 211.

FHWA REGION	STATE	PROJECT	
5	OHIO		

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CUY - 480 - 4.86

LIGHTING GENERAL NOTES

ALUMINUM TRANSFORMER BASES.

WHERE INDICATED IN THE PLANS, LIGHT POLES SHALL BE EQUIPPED WITH CAST ALUMINUM TRANSFORMER BASES CONFORMING TO THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS AS INSTRUCTED BY FHWA NOTICE N5040-20. THE CONTRACTOR SHALL SUBMIT A CERTIFICATION FROM THE MANUFACTURER THAT THE BASE MEETS THE AASHTO CRITERIA. THE CERTIFICATION SHALL BE ACCOMPANIED BY REPORTS OF TESTS PERFORMED BY THE MANUFACTURER OR OTHER AGENCIES. IF TEST RESULTS HAVE BEEN EVALUATED AND FOUND ACCEPTABLE BY FHWA, A COPY OF THE APPROVAL LETTER FROM FHWA SHALL ACCOMPANY THE CERTIFICATION.

TRANSFORMER BASES SHALL BE PERMANENTLY MARKED OR LABELED TO IDENTIFY THAT THEY MEET THE REQUIREMENTS OF FHWA NOTICE N5040-20.

PULL BOX COVERS

SUPPLEMENTING S713.09(3), COVERS FOR CIRCULAR PULLBOXES SHALL BE PRECAST, STEEL REINFORCED CONCRETE OF THE SIZE AND DIMENSIONS DETAILED IN THE PLANS, WITH TWO (2) No. 4 GA. GALVANIZED STEEL LIFTING EYES RECESSED FLUSH WITH THE TOP OF THE COVER. THE COVER SHALL BE CONSTRUCTED WITH 4 x 4/6 REINFORCING MESH AND CLASS C CONCRETE WITH No. 4 AGGREGATE CONFORMING TO ITEM 499 OF THE SPECIFICATIONS.

PAYMENT FOR PULLBOX COVERS FOR CIRCULAR PULLBOXES, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 625- "PULLBOX, BY SIZE, CIRCULAR, WITH CONCRETE COVER, AS PER PLAN."

LIGHT POLES

THE REQUIREMENTS OF S713.01, PARAGRAPH 2(a) REQUIRING CIRCULAR CROSS SECTIONS FOR POLE SHAFTS IS HEREBY WAIVED. THE CROSS SECTION OF THE SHAFT MAY BE CIRCULAR OR MULTISIDED (WITH NO LESS THAN 8 SIDES) AND THE DIAMETERS OR ACROSS THE FLAT DIMENSIONS MEASURED AT ANY POINT ALONG THE LONGITUDINAL AXIS SHALL NOT VARY FROM EACH OTHER MORE THAN 3/16 INCH. THE CROSS SECTION OF THE BRACKET ARMS SHALL BE COMPATIBLE WITH THAT OF THE POLE. ALL OTHER REQUIREMENTS OF S713.01 SHALL APPLY.

MEDIAN LIGHT POLE FOUNDATION ON STRUCTURE

THE UNIT PRICE BID FOR EACH "ITEM S625, MEDIAN LIGHT POLE FOUNDATION ON STRUCTURE" SHALL BE FULL COMPENSATION FOR FURNISHING AND PLACING ANCHOR BOLTS, REINFORCING, TYPE III JUNCTION BOX, GROUNDING PER HL-7, AND ALL LABOR, MATERIAL, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED ON SHEET 215.

GENERAL SUMMARY - LIGHTING QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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REF.	STRUCTURES 0499 202	0540 204	0573 205	0612 206	0614 206	ROADWAY 202	203	204	205	206	207	211	196	GRAND TOTAL	ITEM	UNIT	DESCRIPTION		REF.
1								2						2	S625	Each	Light Pole Foundation, 24"x 8'		1
1A							4	22						26	S625	Each	Light Pole Foundation, 24"x 6'		1.1
1B								1						1	S625	Each	Bracket Arm, 15', As Per Plan		1.2
1C						5	4	7	7	6	6			35	S625	Each	Median Light Pole Foundation		1.3
2	1					5	4	7	7	6	6			36	S625	Each	Light Pole, Design A12B837.5 (MEDIAN MOUNTED)	A	2
3								2						2	S625	Each	Light Pole, Design AT15B41.7	B	3
4																		C	4
5								12						12	S625	Each	Light Pole, Design AT12B34.2	D	5
6							1							1	S625	Each	Light Pole, Design ST18B34.2	E	6
7							3	10						13	S625	EACH	Light Pole, Design ST15B34.2	F	7
8				3	3									6	S625	Each	Light Pole, Design A12B32.5 (BRIDGE MOUNTED)	G	8
9	1													1	S625	Each	Median Light pole Foundation On Structure		9
10								10						10	S625	EACH	Style B Luminaire, Type II, w/200 Watt High Pressure Sodium Ballast		10
11	2					10	8	16	14	12	12			74	S625	EACH	Style B Luminaire, Type III, w/310 Watt High Pressure Sodium Ballast		11
12							3	13						16	S625	Each	Style B Luminaire, Type III, w/150 Watt High Pressure Sodium Ballast		12
13							1							1	S625	Each	Style B Luminaire, Type II, w/150 Watt High Pressure Sodium Ballast		13
14				3										3	S625	Each	Style B Luminaire, Type III, w/150 Watt High Pressure Sodium Ballast, With P.E. Cell		14
15					3									3	S625	Each	Style B Luminaire, Type II, w/150 Watt High Pressure Sodium Ballast, With P.E. Cell		15
16	36	18												54	S625	EACH	Luminaire, Underpass, w/100 Watt High Pressure Sodium Ballast, As Per Plan		16
17	2					10	8	16	14	12	12			74	S625	Each	Lamp 310 WATT HIGH PRESSURE SODIUM		17
18								10						10	S625	Each	Lamp 200 WATT HIGH PRESSURE SODIUM		18
19	36	18												54	S625	Each	Lamp 100 WATT HIGH PRESSURE SODIUM		19
20									2	1				3	S625	Each	Glare Shield S713.11, For Style B Luminaire		20
21				3	3		4	13						23	S625	Each	Lamp 150 Watt High Pressure Sodium		21
22						2		2						4	S625	Each	Transition Junction Box		22
23							1	2	1	2	1			7	S625	Each	Median Pull Box		23
24			2	3		1	1	10	1	2	2			22	S625	Each	Pull Box, 18" Circular, S713.09, With Concrete Cover, As Per Plan		24
25								2						2	S625	Each	Pull Box, 24" Circular, S713.09, With Concrete Cover, As Per Plan		25
26	1	1				5	8	31	7	6	6			65	S625	Each	Ground Rod		26
27							672	4,774	76	373	150			6,045	S625	Lin. Ft.	Trench 24" Deep		27
28			2	3	3									8	S625	Sets	Light Pole Anchor Bolts for Structure, S713.01		28
29							64	1,092	76	315	150			1,697	S625	Lin. Ft.	Conduit 3" S713.04		29
30	444	191	322	391	382			155		93				1,978	S625	Lin. Ft.	Conduit 2" S713.04		30
31																			31
32																			32
33	2,012	804		842	824	3,106	5,348	10,146	4,794	7,256	4,835			39,967	S625	Lin. Ft.	No. 4 AWG 600 Volt Distribution Cable		33
34	155			276	276	775	1,018	3,493	1,085	930	930			8,938	S625	Lin. Ft.	No. 10 AWG Pole and Bracket Cable		34
35													458	458	605	Lin. Ft.	4-inch Shallow Pipe Underdrain		35
36							638	4,291						4,929	S625	Lin. Ft.	1½" Duct-Cable w/2 No. 4 AWG, 600 Volt Cables		36
37																			37
38																			38
39				3	3		4	25						35	S625	Each	Connector kit, Type II, As Per Plan		39
40				3	3		4	25						35	S625	Each	Connector kit, Typ III, As Per Plan		40
41	2					10	8	14	14	12	12			72	S625	Each	Connector Kit, Type VI, As Per Plan		41
42	2					10	8	14	14	12	14			74	S625	Each	Connector Kit, Type VII C, As Per Plan		42
43	8			2	2	4	2	26	2	6	4			56	S625	Each	Connector Kit, Type VIII, As Per Plan		43
44				1	1		2	22	2	6				34	S625	Each	Connector Kit, Type IX, As Per Plan		44
45														LUMP	839	LUMP	High Voltage Test		45
46																			46
47								Lump						Lump	S625	Lump	Control Center #1, Sta. 34+40 S.R.17-76' Lt.		47
48										Lump				Lump	S625	Lump	Control Center #2 Sta. 428+44 I-480-175' Lt.		48
49						Lump								Lump	S625	Lump	Control Center #5 Sta. 17+49 S.R.17-40' Lt.		49
50										Lump				Lump	S625	Lump	Service Pole #1 Sta. 12+00 W. 220th St. (RT)		50
51										Lump				Lump	S625	Lump	Service Pole #2, Sta. 14+20 Mastick Rd. (Rt.)		51
52	1													1	S625	Each	Structure Grounding System, Bridge No. CUY 480-0499		52
53			1											1	S625	Each	Structure Grounding System, Bridge No. CUY 480-0573		53
54				1										1	S625	Each	Structure Grounding System, Bridge No. CUY 480-0612		54
55					1									1	S625	Each	Structure Grounding System, Bridge No. CUY 480-0614		55
		1												1	S625	Each	Structure Grounding System, Bridge No. CUY 480-0540		56

BRUNING 44-560 10943

T.R.B 6-29-71
J.L. 7-2-71

GENERAL SUMMARY

CALC. BY / DATE		OHIO
CHKD. BY / DATE		FHWA REGION 5

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STRUCTURES									ROADWAY												GRAND TOTAL	ITEM	UNIT	DESCRIPTION
0499	0540	0573	0612	0614					202		203		204		205		206		207	211				
202	204	205	206	206																				
LUMP																					LUMP	S625	LUMP	Service to Underpass Lighting, Bridge No. CUY- 480-0499
	LUMP																				LUMP	S625	LUMP	Service to Underpass Lighting, Bridge No. CUY- 480-0540
		2	3	3																	8	S625	EACH	Type I Junction Box 18"x8"x6"
																				LUMP	LUMP	S625	LUMP	W. 220th St. Temporary Lighting, As Per Plan
																				LUMP	LUMP	S625	LUMP	Mastick Rd. Temporary Lighting, As Per Plan
																								ALTERNATE BID ITEMS
2012	804		842	824					3106		5348		10146		4794		7256		4835		39 967	S625	Lin.Ft.	No.4 AWG, 5000 Volt Distribution Cable
											638		4291								4 929	S625	Lin.Ft.	1½" Duct Cable with 2 No.4 5000 Volt Cables
			3	3							4		25								35	S625	Each	Connector Kit, Type II, for 5000 Volt Cable, As Per Plan
			3	3							4		25								35	S625	Each	Connector Kit, Type III, for 5000 Volt Cable, As Per Plan
2									10		8		14		14		12		12		72	S625	Each	Connector Kit, Type VI, for 5000 Volt Cable, As Per Plan
2									10		8		14		14		12		14		74	S625	Each	Connector Kit, Type VIII-C, for 5000 Volt Cable, As Per Plan
8			2	2					4		2		26		2		6		4		56	S625	Each	Connector Kit, Type VIII, for 5000 Volt Cable, As Per Plan
			1	1							2		22		2		6				34	S625	Each	Connector Kit, Type IX, for 5000 Volt Cable, As Per Plan

FHWA REGION	STATE	PROJECT	
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CUYAHOGA COUNTY
CUY-480-4.86

LIGHTING QUANTITIES SUB-SUMMARY

Reference No		Station	Station	Light Pole Design A (12BB3.75 D	Light Pole Design S (15B34.2	Light Pole Design A (15B34.2	Light Pole Design S (18B34.2	Luminaire, Underpass 100 Watt H.P.S. S713.13	Median Light Pole Foundation 24"x6"	Luminaire Type II 150 Watt H.P.S.	Luminaire Type III 310 Watt. H.P.S.	Luminaire Type III 150 Watt. H.P.S.	Lamp 310 Watt High Pressure Sodium	Lamp 150 Watt High Pressure Sodium	Lamp 100 Watt Median	Pull Box. Pull Box 18"Dia. S713.09	Pole & Bracket Cable No.10 A.W.G	Ground Rod	Structure Grounding System CUY-480-0439	Connector Kits Type II	Type III	Type VI	Type VII-C	Type VIII	Type IX	Service to Underdeck Lighting CUY-480-0439	No. 4 A.W.G. 600 Volts Distribution Cable	1½ Duct Cable ⅔ #4 A.W.G. 600 Volt Cable	Control Center #5	Conduit 3" Diameter S713.04	Trench 24" Deep	TRANSITION JUNCTION BOX	Conduit 2" Diameter S713.04
				Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	L.F.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Lump	L.F.	L.F.	Lump	L.F.	L.F.	Ea.	L.F.
1	℄	358+80	1-480	1							2		2				155	1					2	2			540						
2	℄	358+80	361+40																													
3	℄	361+40		1					1		2		2				155	1					2	2			1080						
4	℄	361+40	364+00		-																											
5	℄	364+00		1					1		2		2				155	1					2	2			1080						
6	℄	364+00	364+44.5																													
7	℄	364+44.5																						4						1		
8	℄	364+44.5	364+54.7																								80					
9	℄	364+54.7																														
10	℄	364+54.7	366+60																								860					205
11	℄	366+60		1							2		2				155						2	2			996					
12	℄	366+60	368+98.5																													239
13	℄	368+98.5																														
14	℄	368+98.5	369+07.6																								76					
15	℄	369+07.6																						4						1		
16	℄	369+07.6	369+20																								88					
17	℄	369+20		1					1		2		2				155	1					2	2			1040					
18	℄	369+20	371+70																													
19	℄	371+70		1					1		2		2				155	1					2	2			1040					
20	℄	371+70	372+00																								140					
21	Lt./Rt.	BROOKPARK RD. 15+50	20+00			36						36				1	1									Lump						
22	Lt.	17+49	BROOKPARK RD.															1						4					Lump			
23	ROADWAY TOTALS SHEET No. 202			5					5		10		10				1	775	5				10	10	4		3106		Lump			
24	STRUCTURE TOTALS SHEET No. 202			1				36			2		2		36			155	1	1			2	2	8	Lump	2012				2	444
25	℄	I-480 372+00	374+20																								900					
26	℄	374+20		1					1		2		2				155	1					2	2			280					
27	℄	374+20	374+80																													
28	℄	374+80														1									2		840					
29	℄	374+80	376+80																													
30	℄	376+80		1					1		2		2				155	1					2	2			1080					
31	℄	376+80	379+40																													
32	℄	379+40		1					1		2		2				155	1					2	2			1080					
33	℄	379+40	382+00																													
34	℄	382+00		1					1		2		2				155	1					2	2			1020					
35	℄	382+00	384+50																													
36	℄/Lt.	374+80	374+80																								148			64	64	
37	Lt.	374+80	I-480															1						2								
38	Rt.	CLAGUE RD. 10+00	10+80																									85		80		
39	Rt	10+80	CLAGUE RD.		1					1			1		1			98	1		1	1											
40	Lt	CLAGUE RD. 10+60	11+62																									167		162		
41	Lt.	11+62	CLAGUE RD.		1					1			1		1			98	1		1	1											
42	Lt.	CLAGUE RD 11+62	13+23																									171		161		
43	Lt.	13+23	CLAGUE RD		1					1			1		1			98	1		1	1											
44	Lt.	CLAGUE RD. 13+23	15+28																									215		205		
45	Lt.	15+28	CLAGUE RD.				1			1	1		1		1			104	1		1	1											
46	ROADWAY TOTALS SHEET No. 203			4	3		1		4	4	1	8	3	8	4		1	1018	8		4	4	8	8	2	2	5348	638		64	672	

Reference No.		Station	Station	Light Pole Design A (12BB3.75 D	Light Pole Design S (15B34.2	Light Pole Design A (15B34.2	Service to Underdeck Lighting CUY-480-0540	Median Light Pole Foundation 24"x6"	Luminaire Type III 310 Watt. H.P.S.	Luminaire Type III 150 Watt. H.P.S.	Lamp 310 Watt High Pressure Sodium	Lamp 150 Watt High Pressure Sodium	Lamp 100 Watt Median	Pull Box. Pull Box 18"Dia. S713.09	Pole & Bracket Cable No.10 A.W.G.	Ground Rod	Pull Box 24"Diameter S713.09	Connector Kits Type II	Type III	Type VI	Type VII-C	Type VIII	Type IX	Structure Grounding System CUY-480-0540	No. 4 A.W.G. 600 Volts Distribution Cable	1½ Duct Cable ⅔ #4 AWG. 600 Volt Cable	Conduit 2" Diameter S713.04	Conduit 3" Diameter S713.04	Trench 24" Deep	Transition Junction Box
				Ea.	Ea.	Ea.	Lump	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	L.F.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	L.F.	L.F.	L.F.	L.F.	L.F.	Ea.
47	℄	I-480 384+50	384+60																					60					
48	℄	384+60			1				1		2		2			155	1			2	2			540					
49	℄	384+60	384+70																					80					
50	℄	384+70												1								4							
51	℄	384+70	385+24																					250					
52	℄	385+24																											1
53	℄	385+24	387+15																					804		191			
54	℄	387+15																											1
55	℄	387+15	387+20																					60					
56	℄	387+20			1				1		2		2			155	1			2	2								
57	℄	387+20	389+73																					1052					
58	℄	389+73			1				1		2		2			155	1			2	2								
59	℄	389+73	392+37																					1096					
60	℄	392+37			1				1		2		2			155	1			2	2								
61	℄	392+37	395+00																					1092					
62	℄	395+00			1				1		2		2			155	1			2	2								
63	℄	395+00	397+60																					1080					
64	℄	397+60			1				1		2		2			155	1			2	2								
65	℄	397+60	398+40																					360					
66	℄	398+40												1								4							
67	℄	398+40	400+20																					760					
68	℄	400+20			1				1		2		2			155	1			2	2								
69	℄	400+20	400+50																					140					
70	℄/Rt.	384+70	384+70																					296		64	64		
71	Rt.	384+70												1								4							
72	Rt./Lt.	I-480 384+70	CLAGUE RD. 4+65																					300		65	65		
73	℄/Rt.	I-480 398+40	398+40																					194		87	87		
74	Rt.	398+40												1								2							
75	Rt.	398+40	398+90																							60		50	
76	Rt.	398+90				1				1	1		1			113	1		1	1									
77	℄/Lt.	398+40	398+40																					194		87	87		
78	Lt.	398+40	I-480																										
79	Rt.	0+80	CLAGUE RD.											1								2							
80	Rt.	CLAGUE RD. 0+80	1+00																							40		30	
81	Rt.	1+00	CLAGUE RD		1					1			1		1			98	1		1	1								
82	Rt.	CLAGUE RD. 1+00	2+50																							160		150	
83	Rt.	2+50	CLAGUE RD.		1					1			1		1			98	1		1	1								
84	Rt.	CLAGUE RD. 2+50	"RAMP "C-2" 385+90																							120		110	
85	Rt.	385+90	RAMP "C-2"											1								2							
86	Rt./Lt.	RAMP "C-2" 385+90	385+85																					100		40	40		
87	Lt.	385+85	RAMP "C-2"											1								2							
88	Lt./Rt.	RAMP "C-2" 385+85	CLAGUE RD. 4+30																							63		53	
89	Rt.	4+30	CLAGUE RD.		1					1			1		1			98	1		1	1								
90	Rt.	CLAGUE RD. 4+30	7+50																							330		320	
91	Rt.	7+50	CLAGUE RD.		1					1			1		1			98	1		1	1								
92	Rt.	CLAGUE RD. 7+50	8+10																							70		60	
93	Rt.	8+10	CLAGUE RD.											1								2							
94	Rt./Lt.	CLAGUE RD. 8+10	RAMP "C-1" 387+90																					200		90	90		
95	Lt.	387+90	RAMP "C-1"											1								2							
96	Lt./Rt.	RAMP "C-1" 387+90	CLAGUE RD. 9+05																							42		32	
97	Rt.	9+05	CLAGUE RD.		1					1			1		1			98	1		1	1								
98	Rt.	CLAGUE RD. 9+05	10+00																							100		95	

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LIGHTING QUANTITIES SUB – SUMMARY

Reference No		Station	Station	Light Pole Design A12B83'5.D Ea.	Light Pole Design ST 12B34.2 Ea.	Light Pole Design ST 15B34.2 Ea.	Service Pedestal Ea.	Lighting CUY-480-0540 Ea.	Luminaire Underpass 100 Watt H.P.S. Ea.	Median Light Pole Foundation Ea.	Light Pole Foundation 24"x6' Ea.	Light Pole Foundation 24"x8' Ea.	Luminaire Type III 310 Watt. H.P.S. Ea.	Luminaire Type III 150 Watt. H.P.S. Ea.	Lamp 310 Watt High Pressure Sodium Ea.	Lamp 150 Watt High Pressure Sodium Ea.	Lamp 100 Watt High Pressure Sodium Ea.	Median Pull Box. Ea.	Pull Box 18" Dia. S 713.09 Ea.	Pole & Bracket Cable, No. 10 A.W.G L.F.	Ground Rod Ea.	Pull Box 24" Diameter S 713.09 Ea.	Connector Kits: Type II Ea.	Type III Ea.	Type VI Ea.	Type VIII-C Ea.	Type VIII Ea.	Type IX Ea.	Structure Grounding System CUY-480-0540 Ea.	No. 4 A.W.G. 600 Volts Distribution Cable L.F.	1½" Duct Cable 3/c #4 A.W.G. 600 Volt Cable L.F.	Conduit 2" Diameter S 713.04 L.F.	Conduit 3" Diameter S 713.04 L.F.	Trench 24" Deep L.F.	Light Pole Design AT 12B34.2 Ea.	Bracket (1½") Arm Ea.	Control Center #1 Lump	Luminaire Type II 200 Watt H.P.S. Ea.	Transition Junction Box Ea.
99	Lt.	0 + 39	CLAGUE RD.		1						1		1		1					98	1		1	1					564	151			141	141					
100	Lt.	CLAGUE RD. 0 + 39	1 + 80								1		1		1					98	1		1	1					500	130			120	120					
101	Lt.	1 + 80	CLAGUE RD.		1						1		1		1					98	1		1	1					500	130			120	120					
102	Lt.	CLAGUE RD. 1 + 80	3 + 00																						6													
103	Lt.	3 + 00	CLAGUE RD.																1										260	70			60	60					
104	Lt.	CLAGUE RD. 3 + 00	3 + 60																	98	1		1	1															
105	Lt.	3 + 60	CLAGUE RD.		1						1		1		1			18			1						1	360	95			85	85					
106	Lt.	CLAGUE RD 3 + 60	4 + 45				Lump	18														1				4	2											
107	Lt.	4 + 45	CLAGUE RD																										330	165	155		155						
108	Lt.	CLAGUE RD. 4 + 45	6 + 00																								2											
109	Lt.	6 + 00	CLAGUE RD.																1											100			90						
110	Lt.	CLAGUE RD. 6 + 00	6 + 90																																			
111	Lt.	6 + 90	CLAGUE RD.		1						1		1		1					98	1		1	1						133			123						
112	Lt.	CLAGUE RD. 6 + 90	8 + 13																																	1		
113	Lt.	8 + 13	CLAGUE RD.										1		1					98			1	1						177			167						
114	Lt.	CLAGUE RD. 8 + 13	CLAGUE RD. 9 + 80																																			
115	Lt.	9 + 80	CLAGUE RD.		1						1		1		1					98	1		1	1						25			20						
116	Lt.	CLAGUE RD. 9 + 80	10 + 00																																	1		1
117	Lt.	388 + 55	RAMP "C-1"								1		1		1					92	1		1	1						180			170						
118	Lt.	RAMP "C-1" 388 + 55	390 + 25																																	1		1
119	Lt.	390 + 25	RAMP "C-1"								1		1		1					92	1		1	1						200			190						
120	Lt.	RAMP "C-1" 390 + 25	392 + 15																																	1		1
121	Lt.	392 + 15	RAMP "C-1"								1		1		1					92	1		1	1						210			200						
122	Lt.	RAMP "C-1" 392 + 15	394 + 15																																	1		1
123	Lt.	394 + 15	RAMP "C-1"								1		1		1					92	1		1	1						225			215						
124	Lt.	RAMP "C-1" 394 + 15	396 + 30																																	1		1
125	Lt.	396 + 30	RAMP "C-1"			1				1	1		1							113	1		1	1						220			210						
126	Lt.	RAMP "C-1" 396 + 30	I – 480 398 + 40																																	1		1
127	Rt.	386 + 20	RAMP "C-2"								1		1		1					92	1		1	1						225			215						
128	Rt.	RAMP "C-2" 386 + 20	388 + 35																																	1		1
129	Rt.	388 + 35	RAMP "C-2"								1		1		1					92	1		1	1						225			215						
130	Rt.	RAMP "C-2" 388 + 35	390 + 50																																	1	1	1
131	Rt.	390 + 50	RAMP "C-2"								1		1		1					92	1		1	1						220			210						
132	Rt.	RAMP "C-2" 390 + 50	392 + 60																																	1		1
133	Rt.	392 + 60	RAMP "C-2"								1		1		1					92	1		1	1						210			200						
134	Rt.	RAMP "C-2" 392 + 60	394 + 60																																	1		1
135	Rt.	394 + 60	RAMP "C-2"								1		1		1					92	1		1	1						220			210						
136	Rt.	RAMP "C-2" 394 + 60	396 + 70																																	1		1
137	Rt.	396 + 70	RAMP "C-2"								1		1		1					92	1		1	1						180			170						
138	Rt.	RAMP "C-2" 396 + 70	398 + 40																																	1	Lump	
139	Lt.	34 + 40	BROOKPARK RD.								1		1		1					92	1		1	1					360	32			70	57					
140	Lt.	BROOKPARK RD. 34 + 40	CLAGUE RD. 0 + 22																			1				6	2											
141	Lt.	0 + 22	CLAGUE RD.																										112	33			23	23					
142	Lt.	CLAGUE RD. 0 + 22	0 + 39																										340				160	160				
143	Lt./Rt.	CLAGUE RD. 0 + 22	0 + 80																											45			35					
144	Rt./Lt.	CLAGUE RD. 0 + 80	BROOKPARK RD. 36 + 50								1		1		1					92	1		1	1													1		
145	Lt.	36 + 5	BROOKPARK RD.																																			
146	ROADWAY TOTALS	SHEET No. 204		7	10	2				7	22	2	16	13	16	23		2	10	3493	31	2	25	25	14	14	26	22	10146	4291	155	1092	4774	12	1	Lump	10	2
147	STRUCTURE TOTALS	SHEET No. 204					Lump	18									18					1					1	804		191							

Reference No.		Station	Station	Light Pole Design A12B83'5.D Ea.	Light Pole Design ST 12B34.2 Ea.	Glare Shield ST 713.11 for Style B Luminaires Ea.	Median Light Pole Foundation Ea.	Luminaire Type III 310 Watt. H.P.S. Ea.	Lamp 310 Watt High Pressure Sodium Ea.	Light Pole Anchor Bolts for Structures Sets	Median Pull Box Ea.	Pull Box 18" Dia. S 713.09 Ea.	Pole & Bracket Cable, No. 10 A.W.G. L.F.	Ground Rod Ea.	Control Center #2 Lump	Connector Kits: Type II Ea.	Type III Ea.	Type VI Ea.	Type VIII-C Ea.	Type VIII Ea.	Type IX Ea.	Structure Grounding System CUY-480-0573 Ea.	No. 4 A.W.G. 600 Volts Distribution Cable L.F.	Conduit 2" Diameter S 713.04 L.F.	Conduit 3" Diameter S 713.04 L.F.	Trench 24" Deep L.F.	Type I Junction Box Eq.
148	℄	I – 480 400 + 50	402 + 45																				800			
149	℄	402 + 45		1			1	2	2				155	1				2	2				940			
150	℄	402 + 45	404 + 70																							
151	℄	404 + 70		1			1	2	2				155	1				2	2				478			
152	℄	404 + 70	406 + 99																							
153	℄	406 + 99		1			1	2	2				155	1				2	2							
154	℄	409 + 29		1			1	2	2				155	1				2	2				460			
155	℄	409 + 29	411 + 49																							
156	℄	411 + 49		1			1	2	2				155	1				2	2				304			
157	℄	411 + 49	412 + 15								1									2						
158	℄	412 + 15																					660			
159	℄	412 + 15	413 + 70																							
160	℄	413 + 70		1			1	2	2				155	1				2	2				940			
161	℄	413 + 70	415 + 95																							
162	℄	415 + 95	I – 480	1			1	2	2				155	1				2	2				40			
163	℄	415 + 95	416 + 00																				172		76	76
164	℄ Rt.	412 + 15	412 + 15									1							2							
165	Rt.	412 + 15	I – 480									1											322			2
166	Lt.	15 + 58	W. 227th St.																							
167	Lt.	W. 227th St. 15 + 58	16 + 42								1	1														
168	Lt.	16 + 42	W. 227th St.																	1			133			1
169	Lt.	W. 227th St. 16 + 42	17 + 75								1															
170	Lt.	17 + 75	W. 227th St.																				105			
171	Lt	W. 227th St. 17 + 75	18 + 80																							
172	Lt.	18 + 80	W. 227th St.								1															
173	ROADWAY TOTALS	SHEET No. 205		7			2	7		14	14		1	1	1085	7			14	14	2	2	4794		76	76
174	STRUCTURE TOTALS	SHEET No. 205										2	2								1		322			2
175	℄	I – 480 416 + 00	417 + 30																				540			
176	℄	417 + 30										1									2					
177	℄	417 + 30	418 + 17																				388			
178	℄	418 + 17		1			1	2	2				155	1				2	2							
179	℄	418 + 17	420 + 22																				860			
180	℄	420 + 22		1			1	2	2				155	1				2	2							
181	℄	420 + 22	422 + 30																				872			
182	℄	422 + 30		1			1	2	2				155	1				2	2							
183	℄	422 + 30	424 + 67																				988			
184	℄	424 + 67		1			1	2	2				155	1				2	2							
185	℄	424 + 67	426 + 72																				860			
186	℄	426 + 72		1			1	2	2				155	1				2	2							
187	℄	426 + 72	428 + 44																				728			
188	℄	428 + 44										1								4						
189	℄	428 + 44	428 + 77																				172			
190	℄	428 + 77		1			1	2	2				155	1				2	2							
191	℄	428 + 77	430 + 00																				512			
192	℄ Lt.	417 + 30	417 + 30																				170		75	75
193	Lt.	417 + 30										1							2							
194	℄ Lt.	428 + 44	428 + 44																				340		75	75
195	Lt.	428 + 44										1							4							
196	Lt.	428 + 44	428 + 44											Lump									440		100	100

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LIGHTING QUANTITIES SUB-SUMMARY

Reference No		Station	Station	Light Pole Design A12BB37SD			Light Pole Design A12B32.5	Glare Shield S713.11 for Style B Luminaires	Mast Arm Light Pole Foundation	Luminaire Type II 250 Watt H.P.S. with P.E. Cell	Service Pole #1	Luminaire Type III 310 Watt, H.P.S.	Luminaire Type III 250 Watt H.P.S. with P.E. Cell	Lamp 310 Watt High Pressure Sodium	Lamp 150 Watt High Pressure Sodium	Light Pole Anchor Bolts for Structure, S713.01	Median Pull Box	Pull Box 18" Dia. S713.09	Pole & Bracket Cable, No. 10 A.W.G.	Ground Rod	Control Center #2	Connector Kits: Type II	Type III	Type VI	Type VIII-C	Type VIII	Type IX	No. 4 A.W.G. 600 Volts Distribution Cable	Conduit 2" Diameter S713.04	Conduit 3" Diameter S713.04	Trench 24" Deep	Type I Junction Box	Structure Grounding System CUY-480-0612	Structure Grounding System CUY-480-0614	Service Pole #2
				Ea.			Ea.	Ea.	Ea.	Ea.	Lump	Ea.	Ea.	Ea.	Ea.	Sets	Ea.	Ea.	L.F.	Ea.	Lump	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	L.F.	L.F.	L.F.	L.F.	Ea.	Ea.	Ea.	Lump
197	Lt.	10+29	W. 220th St.				1						1		1	1			92			1	1					302	141			/	/	
198	Lt.	W. 220th St. 10+29	11+70																							2								
199	Lt.	11+70	W. 220th St.				1																					150		65	65				
200	Lt./Rt.	W. 220th St. 11+70	11+70																																
201	Rt.	11+70	W. 220th St.				1																				2	120	50		30				
202	Rt.	W. 220th St. 11+70	12+00								Lump																	88	34						
203	Rt.	W. 220th St. 11+70	11+36																																
204	Rt.	11+36	W. 220th St.				1						1		1	1			92			1	1					452	216			1			
205	Rt.	W. 220th St. 11+36	9+20																																
206	Rt.	9+20	W. 220th St.				1						1		1	1			92			1	1									1			
207	Rt.	10+10	MASTICK RD.				1			1					1	1			92			1	1									1			
208	Rt.	MASTICK RD. 10+10	11+53																									306	143						
209	Rt.	11+53	MASTICK RD.				1			1					1	1			92			1	1									1		1	
210	Rt.	MASTICK RD. 11+53	13+00																									314	147						
211	Rt.	13+00	MASTICK RD.				1			1					1	1			92			1	1									1			
212	Rt.	MASTICK RD. 13+00	13+92																									204	92						
213	Rt.	13+92	MASTICK RD.				1																			2									
214	Rt.	MASTICK RD. 13+92	14+20																									116	48		28				Lump
215	ROADWAY TOTALS SHEET No. 206			6				1	6		Lump	12		12			2	2	930	6	Lump			12	12	6	6	7256	93	315	373				Lump
216	STRUCTURE TOTALS SHEET No. 206				6					3			3		6	6		3	552			6	6			4	2	1666	773			6	1	1	
217	℄	I-420 430+00	430+87																									368							
218	℄	430+87		1					1			2		2					155	1				2	2										
219	℄	430+87	432+97																									880							
220	℄	432+97		1					1			2		2					155	1				2	2										
221	℄	432+97	435+12																									900							
222	℄	435+12		1					1			2		2					155	1				2	2										
223	℄	435+12	437+37																									940							
224	℄	437+37		1					1			2		2					155	1				2	2										
225	℄	437+37	439+48																									884							
226	℄	439+48		1					1			2		2					155	1				2	2										
227	℄	439+48	441+25																									374							
228	℄	441+25															1									2									
229	℄	441+25	441+89.5																									149							
230	℄	441+89.5		1					1			2		2					155	1				2	2										
231	℄/Lt.	441+25	441+25																									170		75	75				
232	Lt.	441+25															1									2									
233	℄/Rt.	441+25	441+25																									170		75	75				
234	Rt.	441+25	I-480														1									2									
235	ROADWAY TOTALS SHEET No. 207			6					6			12		12			1	2	930	6				12	14	4		4835		150	150				

Reference No.	Station	Station	Light Pole Design A12BB37SD	Light Pole Design A12B32.5	Light Pole Design A12B37.5		Barrier Section for Light Pole Foundation	Light Pole Foundation 24"x6'	Light Pole Foundation 24"x8'	Luminaire Type III 310 Watt, H.P.S.	Luminaire Type II 150 Watt, H.P.S.	Lamp 310 Watt High Pressure Sodium	Lamp 150 Watt High Pressure Sodium		Median Barrier Pull Box, As Per Plan	Pull Box 18" Dia. S713.09	Pole & Bracket Cable, No. 10 A.W.G.	Ground Rod		Connector Kits: Type II	Type III	Type VI	Type VIII-C	Type VIII	Type IX		No. 4 A.W.G. 600 Volts Distribution Cable	1½" Duct Cable ¾"#4 AWG 600 Volt Cable		Conduit 3" Diameter S713.04	Trench 24" Deep
			Ea.	Ea.	Ea.		Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.		Ea.	Ea.	L.F.	Ea.		Ea.	Ea.	Ea.	Ea.	Ea.	Ea.		L.F.	L.F.		L.F.	L.F.

FED. RD. DIVISION	STATE	PROJECT	
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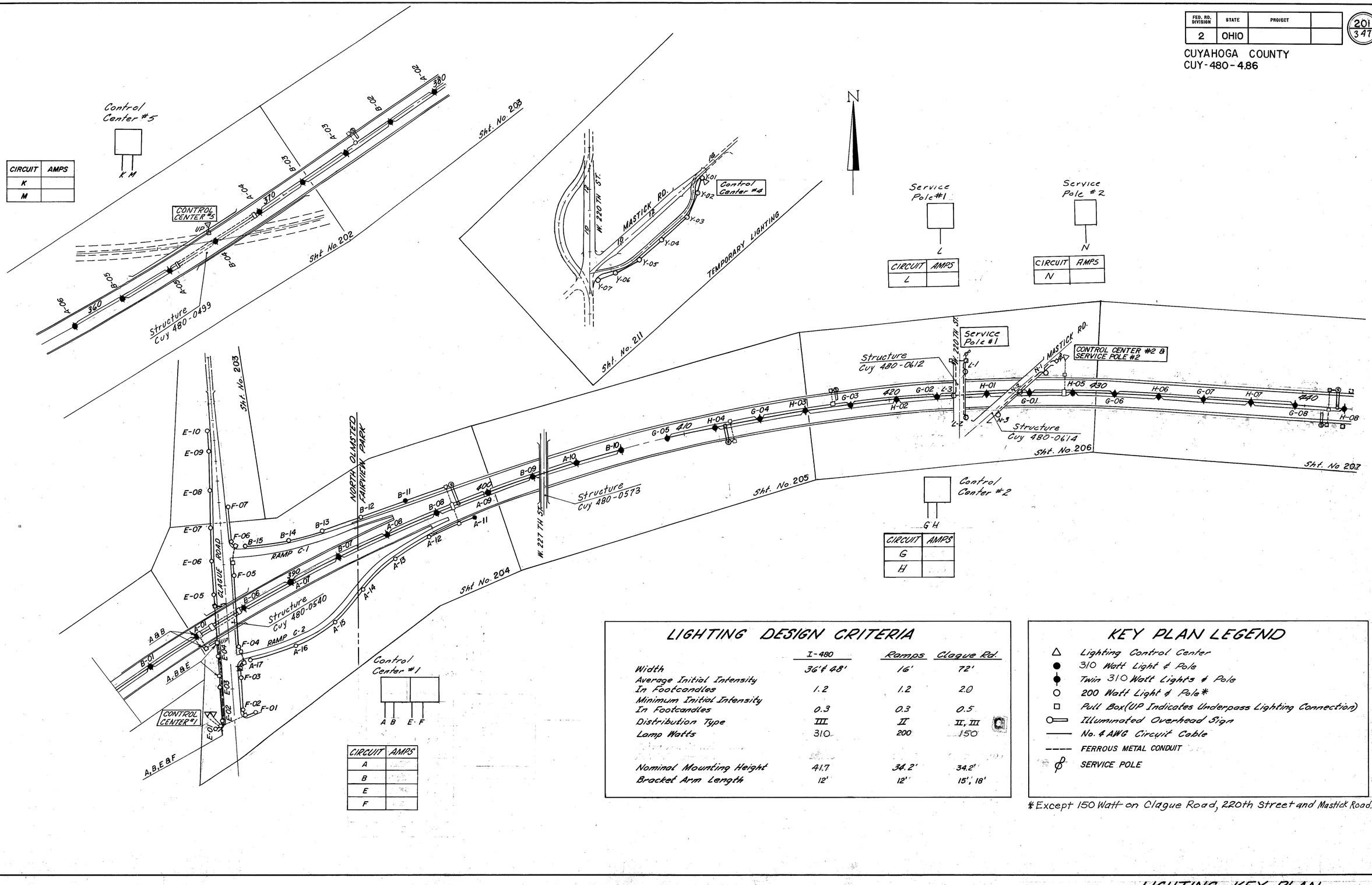

LIGHTING DESIGN CRITERIA

	I-480	Ramps	Clague Rd.
Width	36'& 48'	16'	72'
Average Initial Intensity In Footcandles	1.2	1.2	2.0
Minimum Initial Intensity In Footcandles	0.3	0.3	0.5
Distribution Type	III	II	II, III
Lamp Watts	310	200	150
Nominal Mounting Height	41.7	34.2'	34.2'
Bracket Arm Length	12'	12'	15', 18'

KEY PLAN LEGEND

- △ Lighting Control Center
- ● 310 Watt Light & Pole
- ⬮ Twin 310 Watt Lights & Pole
- ○ 200 Watt Light & Pole*
- □ Pull Box (UP Indicates Underpass Lighting Connection)
- ⊖ Illuminated Overhead Sign
- —— No. 4 AWG Circuit Cable
- ---- FERROUS METAL CONDUIT
- ϕ SERVICE POLE

*Except 150 Watt on Clague Road, 220th Street and Mastick Road.

LIGHTING KEY PLAN

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CUYAHOGA COUNTY
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15+58 BROOKPARK RD. 14' LT.
C.E.I. POLE #650651 - POWER SUPPLY

17+49-S.R.17-35' LT.
UNDERPASS PULLBOX CIRC. K-M

17+49-S.R.17-40' LT.
CONTROL CENTER #5

Georgette Ave.

℄ BROOKPARK ROAD

W.B. I-480 36,600

E.B. I-480 36,600

2 #4 AWG

4 #4 AWG

369+07.6 I-480
TRANSITION JUNCTION BOX
CIRCS. A&B

370+71.62
P.T. S.C.

STRUCTURE
CUY 480-0499

BEGIN PROJECT
Sta. 357+00.00
S.L.M. - 4.86

358+80 I-480
A-06-A12BB375D-310-III

361+40 I-480
B-05-A12BB375D-310-III

364+00 I-480
A-05-A12BB375D-310-III

364+445 I-480
TRANSITION JUNCTION BOX CIRCS. A&B

366+60 I-480
B-04-A12BB375D-310-III

369+20 I-480
A-04-A12BB375D-310-III

371+70 I-480
B-03-A12BB375D-310-III

STA. 372+00 SEE SHEET 203

LEGEND

- Control Center
- Pull Box
- Overhead Sign Connection
- 36,600 — 1969 Average Daily Traffic
- Underpass Luminaire
- Ferrous Metal Conduit
- Cable Duct
- Light Pole & Luminaire (Arm Perpendicular to Stationing)

358+80 I-80 15' Station Location - Offset
A-01-AT15B41.7-310-III Pole & Luminaire Description

- IES Distribution Type
- Lamp Watts
- Luminaire Mounting Height
- Bracket (B-Single, BB-Double)
- Bracket Arm Length
- Base (A-Anchor AT-Transformer)
- Pole Number
- Circuit Number

GLARE SHIELD

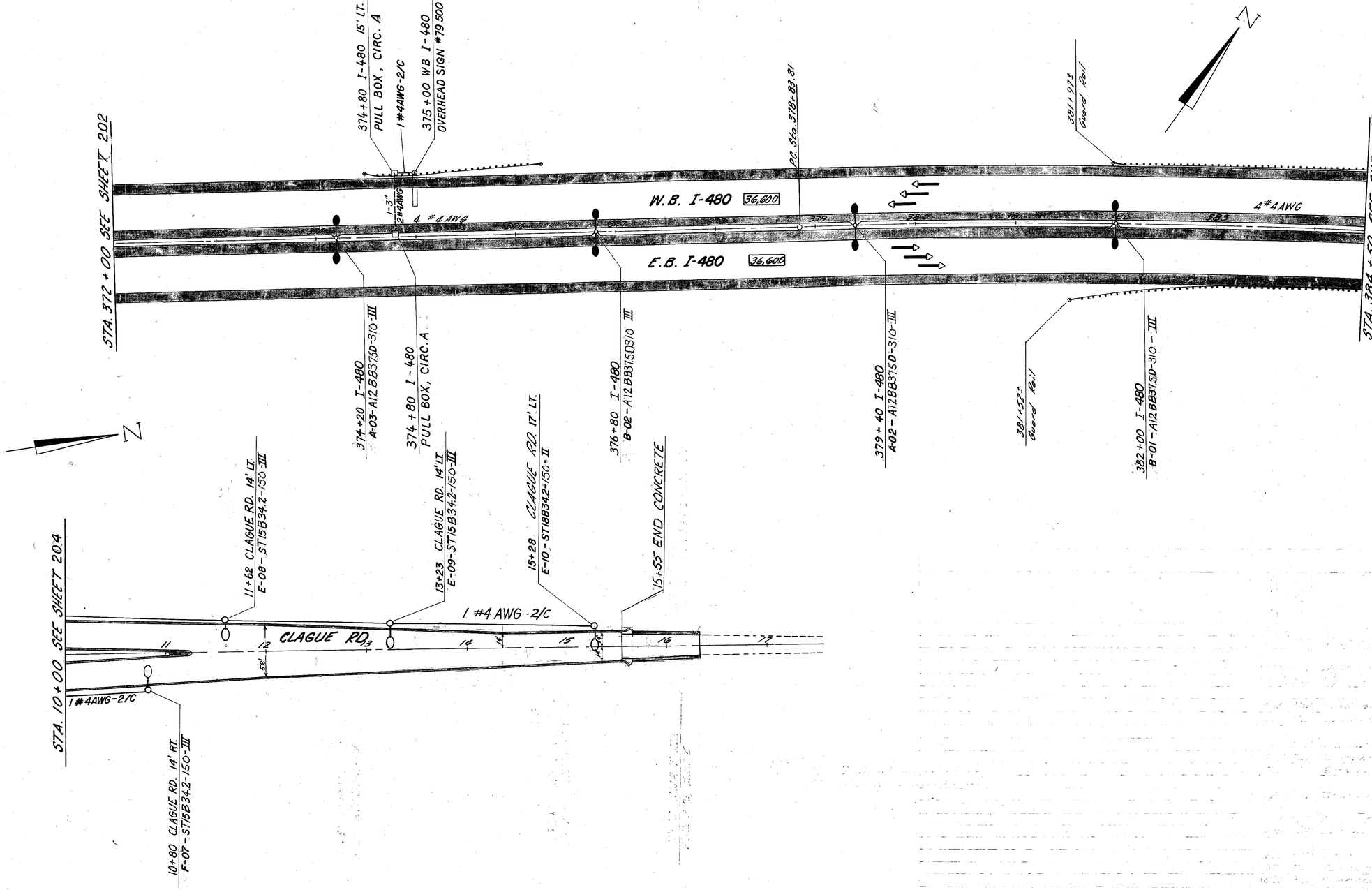
POWER SUPPLY OR SERVICE POLE

LIGHTING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

203
347

CUYAHOGA COUNTY
CUY- 480 - 4.86



LIGHTING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

204
347

CUYAHOGA COUNTY
CUY-480-4.86

N

STA. 10+00 SEE SHEET 203

8+13 CLAGUE RD. 14' LT.
COMBINE. SIGNAL AND LUMINAIRE SUPP.
E-06 - 15B34.2-150-III

9+80 CLAGUE RD. 14' LT.
E-07 - ST15B34.2-150-III

9+05 CLAGUE RD. 6' RT.
F-06 - ST15B34.2-150-III

387+90 RAMP "C-1" 5' LT.
PULLBOX CIRC. F

388+55 RAMP "C-1" 11' LT.
B-15 - AT12B34.2-200-II

390+25 RAMP "C-1" 11' LT.
B-14 - AT12B34.2-200-II

392+15 RAMP "C-1" 11' LT.
B-13 - AT12B34.2-200-II

394+15 RAMP "C-1" 11' LT.
B-12 - AT12B34.2-200-II

NORTH OLMSTED
FAIRVIEW PARK

396+30 RAMP "C-1" 25' LT.
B-11 - AT15B41.7 - 310 - III

397+60 I-480
B-08 - A12BB375D-310-III

398+40 I-480
PULL BOX, CIRCS. A&B

398+40 I-480 35' LT.
PULL BOX, CIRC. B

398+50 I-480
OVERHEAD SIGN, #126, 1025 Watts

STA. 400+50 SEE SHEET 205

400+20 I-480
A-09 - A12BB375D-310-III

1-#4 AWG 2/C

Ramp C-1

12,200

8+10 CLAGUE RD. 15' RT.
PULLBOX CIRC. F

395+00 I-480
A-08 - A12BB375D-310-III

392+37 I-480
B-07 - A12BB375D-310-III

W.B. I-480

E.B. I-480

36,600

4 #4 AWG

1-3" 2 #4 AWG

7+50 CLAGUE RD. 15' RT.
F-05 - ST15B34.2-150-III

BRIDGE No. 480-0540

389+73 I-480
A-07 - A12BB375D-310-III

387+20 I-480
B-06 - A12BB375D-310-III

387+15 I-480
TRANSITION JUNCTION BOX CIRCS. A&B

398+40 I-480 30' RT.
PULL BOX CIRC. A

398+90 I-480 15' RT.
A-11 - AT15B41.7 - 310 - III

394+60 RAMP "C-2" 11' RT.
A-13 - AT12B34.2-200-II

396+70 RAMP "C-2" 11' RT.
A-12 - AT12B34.2-200-II

384+60 I-480
A-01 - A12BB375D-310-III

384+70 I-480
PULL BOX CIRCS. A&B

386+50.5 I-480
OVERHEAD SIGN #127, 350 Watts

6+90 CLAGUE RD. 15' LT.
E-05 - ST15B34.2-150-III

6+00 CLAGUE RD. 15' LT.
PULL BOX CIRCS. E

4+45 CLAGUE RD 15' LT.
PULLBOX, UNDERPASS, CIRCS. A, B, & E

4+30 CLAGUE RD. 15' RT.
F-04 - ST15B34.2-150-III

3+60 CLAGUE RD. 15' LT.
E-04 - ST15B34.2-150-III

385+85 RAMP "C-2" 5' LT.
PULL BOX CIRC. F

384+70 I-480 15' RT.
PULLBOX, CIRCS. A&B

385+24 I-480
TRANSITION JUNCTION BOX CIRCS. A&B

3+00 CLAGUE RD. 15' LT.
PULLBOX CIRC. A, B, & E

0.39 CLAGUE RD 60' LT.
E-02 - ST15B34.2-150-III

34+40 BROOKPARK RD. 76' LT.
CONTROL CENTER #1 - PULLBOX, CIRCS. A, B, E, & F

386+20 RAMP "C-2" 11' RT.
A-17 - AT12B34.2-200-II

385+90 RAMP "C-2" 5' RT.
PULL BOX, CIRC. F

388+35 RAMP "C-2" 11' RT.
A-16 - AT12B34.2-200-II

390+50 RAMP "C-2" 11' RT.
A-15 - AT12B34.2-200-II

392+60 RAMP "C-2" 11' RT.
A-14 - AT12B34.2-200-II

3+20 CLAGUE RD.
OVERHEAD SIGN #128, 350 WATTS

2+50 CLAGUE RD. 13' RT.
F-03 - ST15B34.2-150-III
CAUTION - O.B.T. DUCT - 13' RT. - 70" DEPTH

1+80 CLAGUE RD. 15' LT.
E-03 - ST15B34.2-150-III

1+00 CLAGUE RD. 54.5 RT.
F-02 - ST15B34.2-150-III

0+80 CLAGUE RD. 5' RT.
PULL BOX CIRC. F

36+50 BROOKPARK RD. 7' LT.
F-01 - AT12B34.2-150-III

BROOKPARK RD. (S.R. 17)

34+40 BROOKPARK RD. 7' LT.
E-01 - AT12B34.2-150-III

0+22 CLAGUE RD. 5' LT.
PULLBOX, CIRCS. A, B, E, & F

34+53 BROOKPARK RD. 49' LT.
C.E.I. POLE #650611 - POWER SUPPLY

1-3" 2 #4 AWG

1-2" 3 #4 AWG

1-3" 4 #4 AWG

1-3" 2 #4 AWG

1-3" 2 #4 AWG

1-3" 2 #4 AWG

1-3" 2 #4 AWG

1 #4 AWG 2/C

4 #4 AWG UP

4 #4 AWG

2-3" 8 #4 AWG

1-2" 3 #4 AWG

LIGHTING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

205
347

CUYAHOGA COUNTY
CUY- 480 - 4.86

N

18+90 W. 227th ST.
(FOR FUTURE CONNECTION)

17+75 W. 227th ST. (PILASTER)
(FOR FUTURE CONNECTION)

17+75 W. 227th ST.
TYPE I JUNCTION BOX
(FOR FUTURE CONNECTION)

9 20 21 11 12 13 14 ℄ Maple Dr.

W.B. I-480 48,800

E.B. I-480 45,500

STA. 400+50 SEE SHEET 204

STA. 416+00 SEE SHEET 206

402 #4AWG

403 2#4AWG

404

405 2#4AWG

406

407

408

409

410 2#4AWG

411

412 2#4AWG

1-3" 2#4AWG

4/5+95 I-480
H-03-A12BB375D-310-III

402+45 I-480
B-09-A12BB375D-310-III
With 6 Bare Shields (2)

16+42 W. 227th ST. (PILASTER)
(FOR FUTURE CONNECTION)

14 ℄ W. 227th ST. 15

15+58 W. 227th ST.
(FOR FUTURE CONNECTION)

STRUCTURE
CUY-480-0573

16+42 W. 227th ST.
TYPE I JUNCTION BOX
(FOR FUTURE CONNECTION)

404+70 I-480
A-10-A12BB375D-310-III

406+99 I-480
B-10-A12BB375D-310-III

409+29 I-480
G-05-A12BB375D-310-III

411+49 I-480
H-04-A12BB375D-310-III

412+00 I-480
OVERHEAD SIGN #1000 Mo/15
1 #4AWG 2/C

412+15 I-480 30' RT.
PULLBOX CIRC. G

412+15 I-480
PULLBOX CIRC. G

413+70 I-480
G-04-A12BB375D-310-III

LIGHTING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

206
347

CUYAHOGA COUNTY
CUY-480-486

N

STA. 416+00 SEE SHEET 205

STA. 430+00 SEE SHEET 207

W.B. I-480

E.B. I-480

18.800

43.800

417+30 W.B. I-480 30' LT.
Pull Box, Circ. G

1 #4 AWG 2/C

417+50 W.B. I-480
OVERHEAD SIGN #1A 500 Watts

420+22 I-480
H-02-A12BB375D-310-III

422+30 I-480
G-02-A12BB375D-310-III

10+29 W. 220th ST. LT.
TYPE I JUNCTION BOX

10+29 W. 220 TH ST. LT.
L-3 - A12B32.5-150 - III

11+70 W. 220 th ST. RT.
PULL BOX CIRC. L

EXISTING CEI POWER POLE
SERVICE POLE # 1

BRIDGE Nº 480-0612

W. 220 TH STREET

1-2" #346 334

11+70 W. 220 th ST. RT.
PULL BOX, CIRC. L

11+36 W. 220 TH ST. RT.
L-1 - A12B32.5-150 - III

11+36 W. 220th. ST. RT.
TYPE I JUNCTION BOX

424+67 I-480
H-01-A12BB375D-310-III

13+98 MASTICK RD. RT.
PULLBOX CIRC. N

13+00 MASTICK RD. RT.
N-1 - A12B32.5-150-II

13+00 MASTICK RD. RT.
TYPE I JUNCTION BOX

MASTICK RD.

STA. 14+20 MASTICK RD. RT.
POWER SUPPLY FOR CONTROL CENTER #2
SERVICE POLE #2 CEI POLE #678178
CIRC. N 120V.

STA. 428+44 I-480 175' LT.
CONTROL CENTER #2 CIRCS. G & H

BRIDGE Nº 480-0614

1-2" 2 #4 AWG

1-3" 2 #4 AWG

1-3" 4 #4 AWG

4 #4 AWG

417 418 419 420 421 422 423 424 425 426 427 428 429

417+30 I-480
PULL BOX, CIRC. G

418+17 I-480
G-03 - A12BB375D-310-III

9+20 W. 220 TH ST. RT.
L-2 - A12B32.5-150-III

9+20 W. 220th ST. RT.
TYPE I JUNCTION BOX

10+10 MASTICK RD. RT.
N-3 - A12B32.5-150 - II

10+10 MASTICK RD. RT.
TYPE I JUNCTION BOX

11+53 MASTICK RD. RT.
TYPE I JUNCTION BOX

11+53 MASTICK RD. RT.
N-2 - A12B32.5-150-II

426+72 I-480
G-01 - A12 BB375D-310-III
WITH GLARE SHIELD (1)

428+44 I-480
PULL BOX CIRCS. G & H

428+44 I-480 30' LT.
PULLBOX CIRCS. G & H

428+77 I-480
H-05 - A12 BB375D-310-III

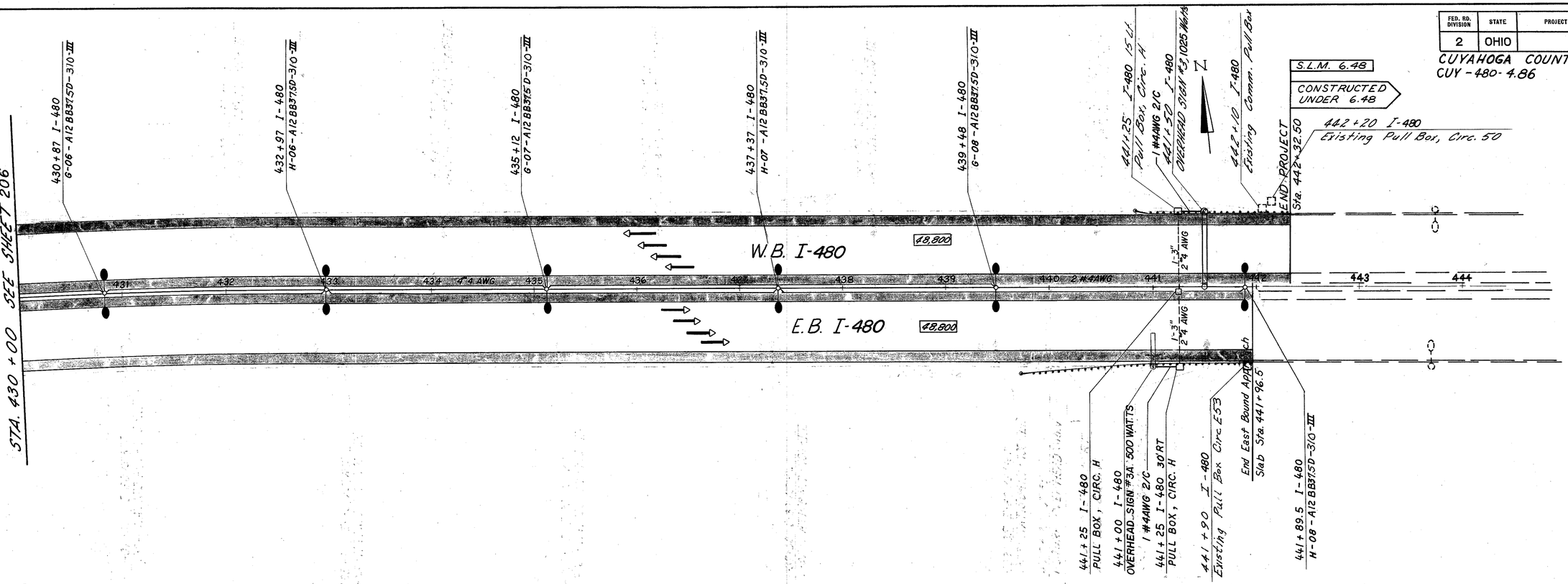
FOR RUN-AROUND
TEMPORARY LIGHTING
SEE SHEET 211

LIGHTING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
CUY - 480 - 4.86

207
347

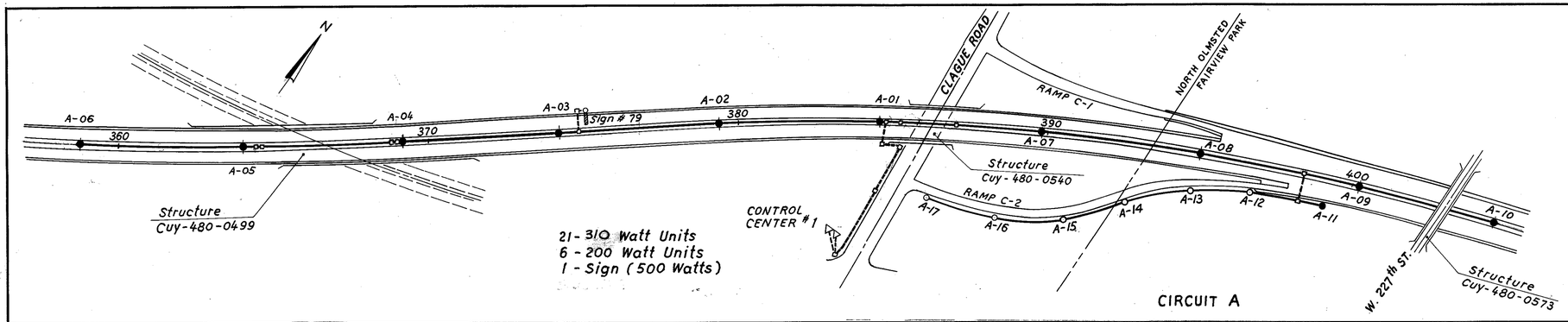


LIGHTING PLAN

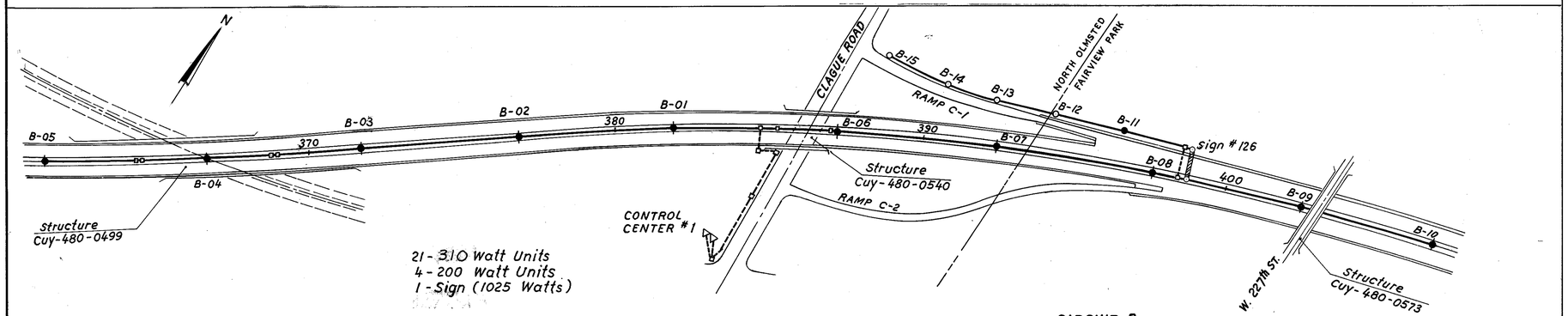
FHWA REGION	STATE	PROJECT	
5	OHIO		

208
347

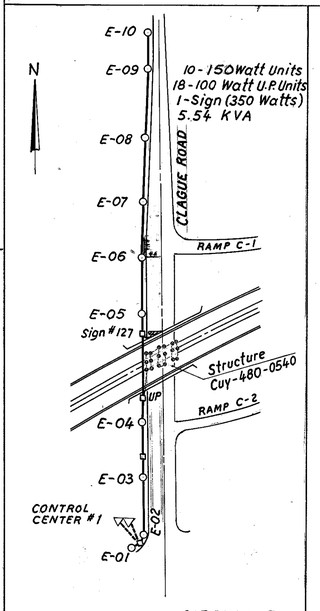
CUYAHOGA COUNTY
CUY – 480 – 4.86



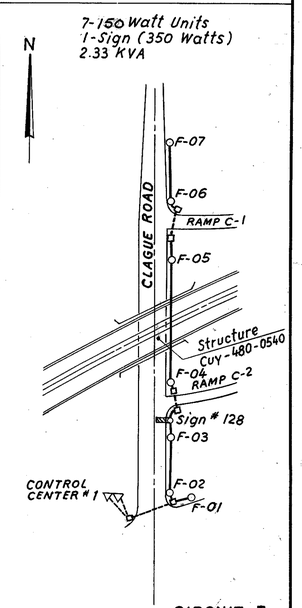
CIRCUIT A



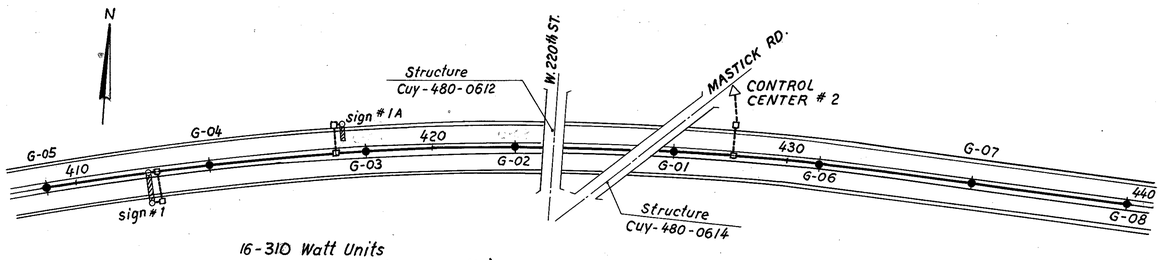
CIRCUIT B



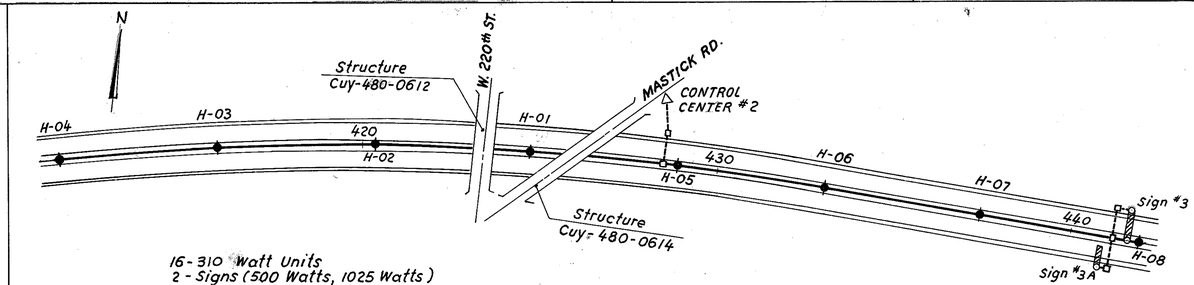
CIRCUIT E



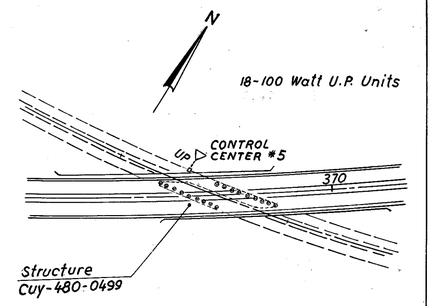
CIRCUIT F



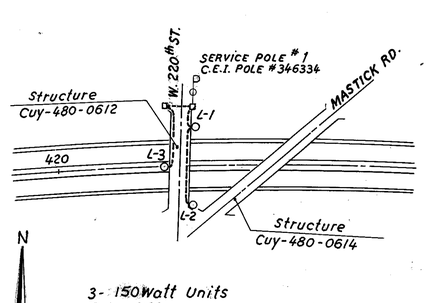
CIRCUIT G



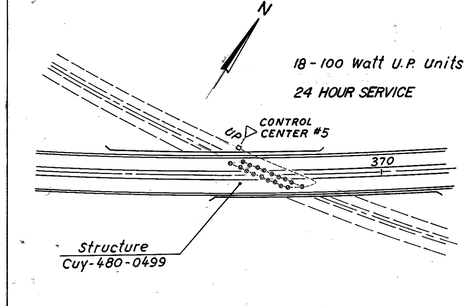
CIRCUIT H



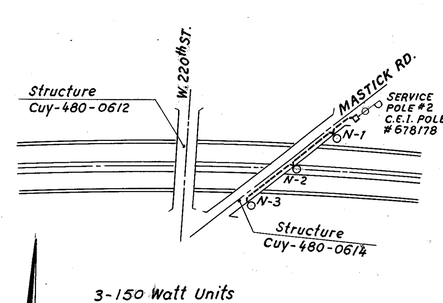
CIRCUIT K



CIRCUIT L



CIRCUIT M



CIRCUIT N

KEY PLAN LEGEND

- △ LIGHTING CONTROL CENTER
- ● 310 WATT LIGHT & POLE
- ● TWIN 310 WATT LIGHTS & POLE
- ○ 200 WATT LIGHT & POLE *
- □ PULLBOX (U.P. INDICATES UNDERPASS LIGHTING CONN.)
- ILLUMINATED OVERHEAD SIGN
- —— NO. 4 AWG CIRCUIT CABLE
- – – – RIGID FERROUS METAL CONDUIT WITH NO. 4 CABLE
- ○ COMBINATION SIGNAL AND LUMINAIRE
- Ⓤ UNDERPASS LUMINAIRE

* Except 150 WATT on Clague Road, Mastick Road, and W. 220th Street.

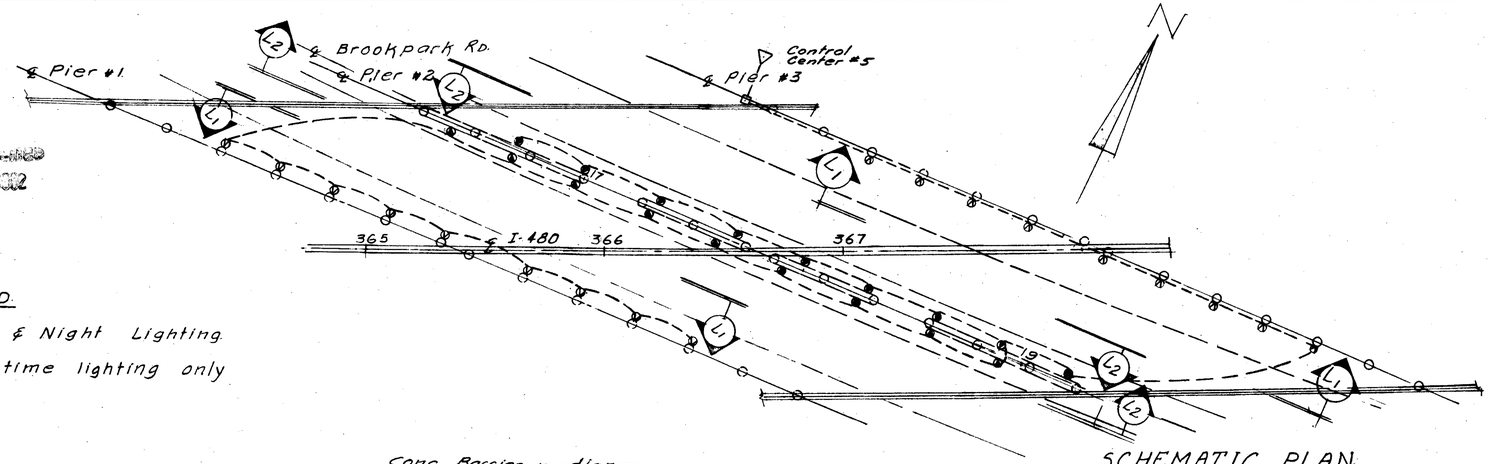
CIRCUIT MAPS

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

209
347

CUYAHOGA COUNTY
CUY. 480 - 4.86

RECEIVED
AUG 19 2002

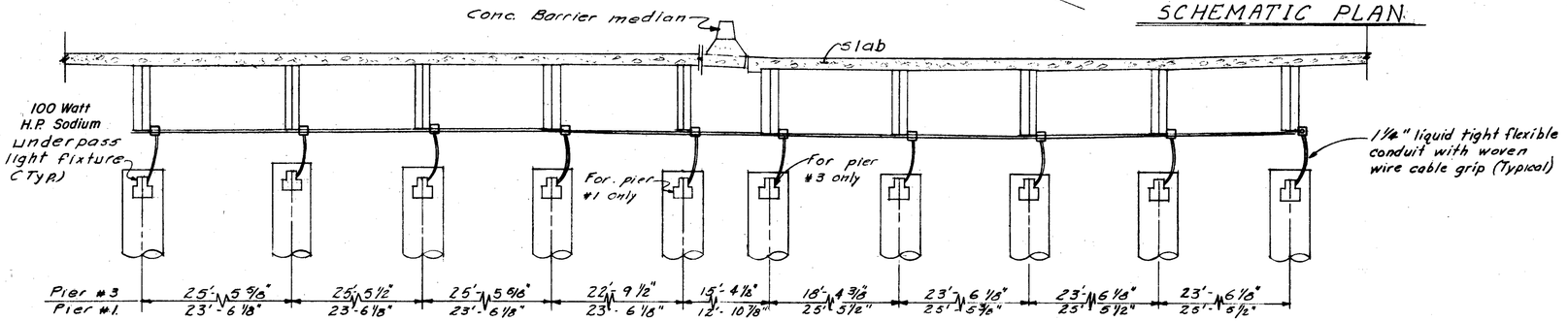


LEGEND

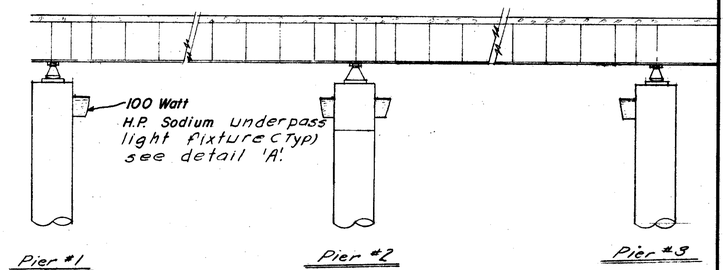
● Day & Night Lighting.

⊗ Daytime lighting only

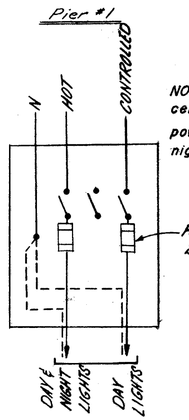
SCHEMATIC PLAN



SECTION L_1-L_1

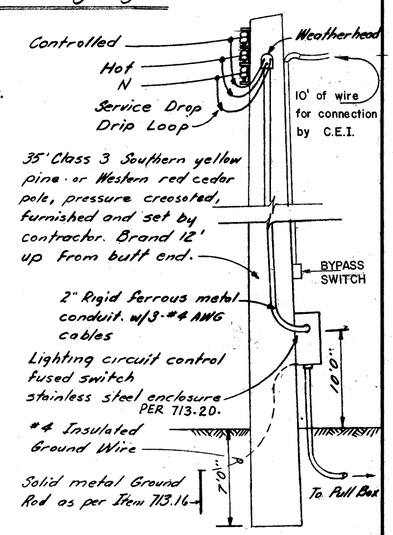


SECTION L3-L3

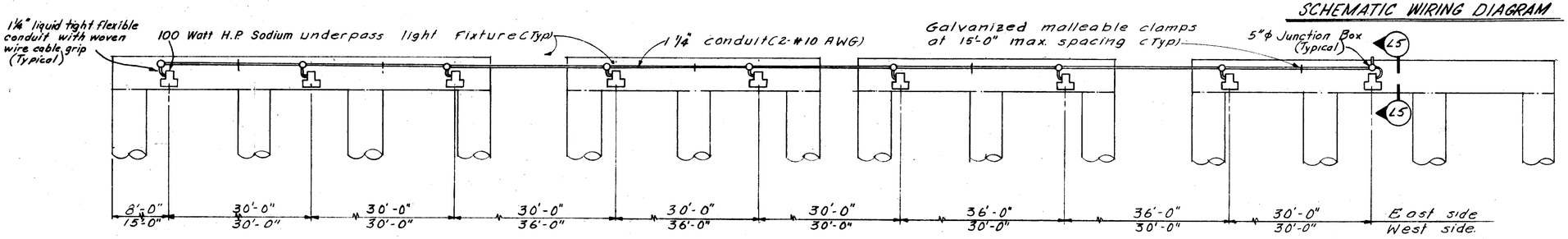


NOTE: For this control center only, controlled power will be off at night, on during the day.

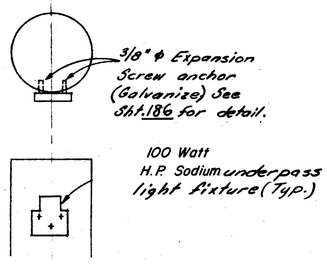
SCHEMATIC WIRING DIAGRAM



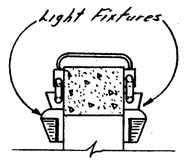
CONTROL CENTER
* 5- Sta 17+49 Brookpark Rd



SECTION L_2-L_2



DETAIL "A"



SECTION L-5-L-5

Note:- For underpass lighting notes, Mounting details and service switch details see sht. 210.

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

UNDERPASS LIGHTING DETAILS
BRIDGE Nº CUY. 480 - 0499
I-480 OVER BROOKPARK RD.

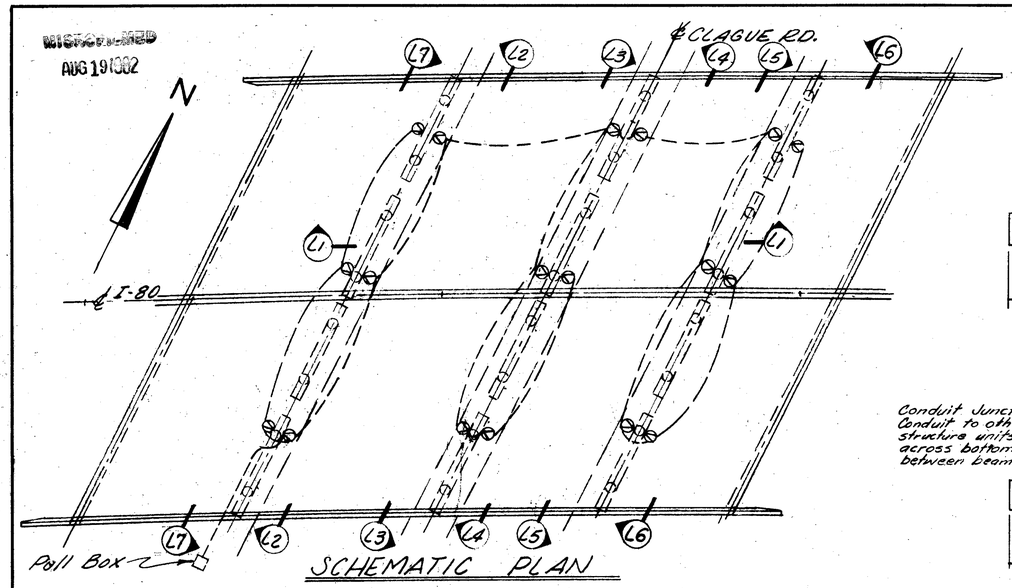
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.S.S.		TRB			

RECEIVED
AUG 19 1982

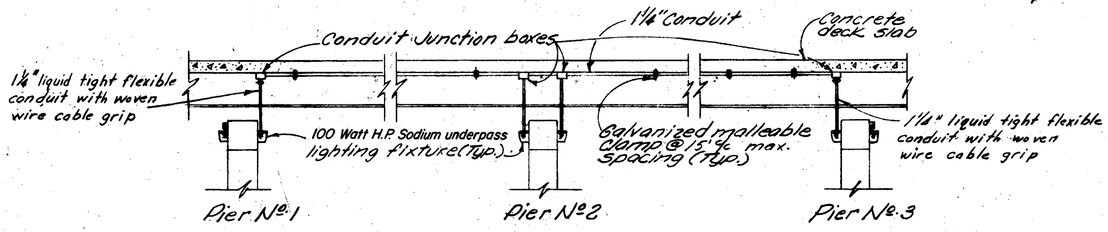
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

210
347

CUYAHOGA COUNTY
CUY. 480 - 4.86



SCHEMATIC PLAN



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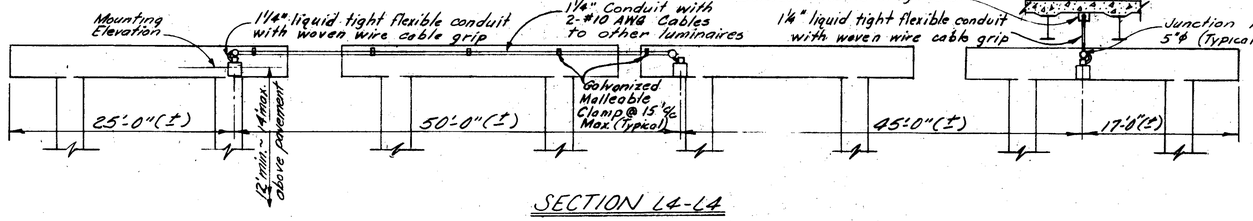
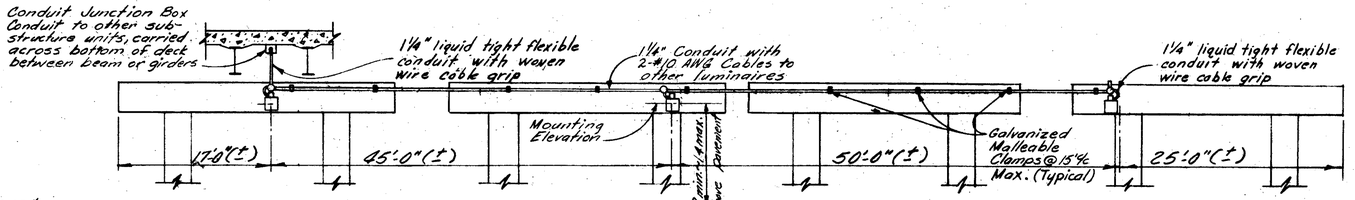
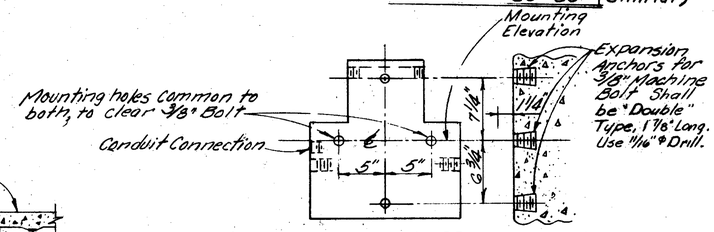


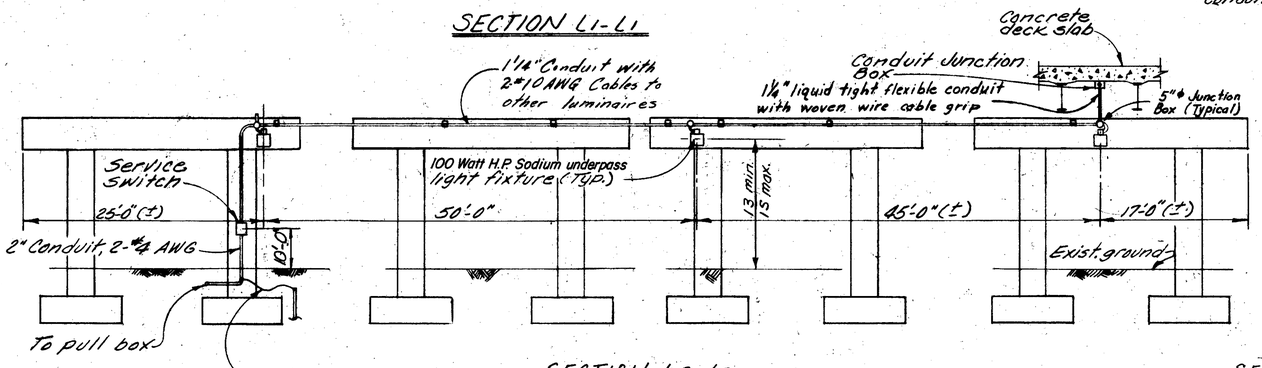
SECTION L4-L4



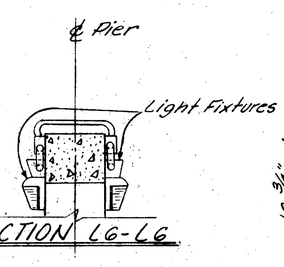
SECTION L5-L5
SECTION L6-L6 (Similar)



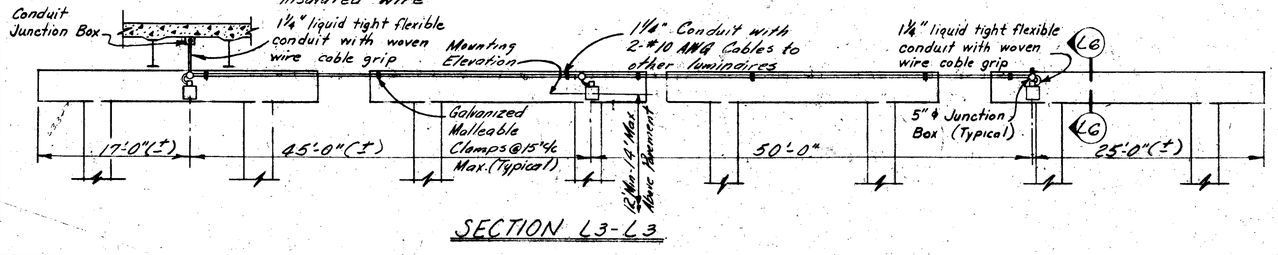
UNDERPASS LUMINAIRE MOUNTINGS



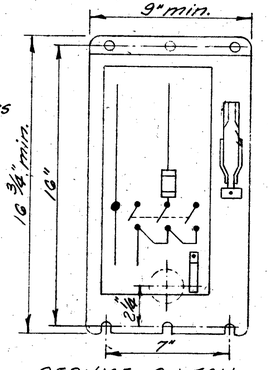
SECTION L2-L2
SECTION L7-L7 (Similar)



SECTION L6-L6



SECTION L3-L3



SERVICE SWITCH

Enclosure Nema 4 Water-tight AISI 302 or 303 Stainless steel with Flange mounted switch handle. Space provided for knockout for wiring direct into structure. 480 Volt
30 Amp switch
20 Amp Fuse

UNDERPASS LIGHTING NOTES

Conduit - All conduit shall be rigid ferrous metal, S 713.04

Junction Boxes - All junction boxes shall be cast 5" water proof boxes, galvanized in accordance with Item 711.02. Payment for all junction boxes shall be included with service to underdeck lighting.

Light Fixture Location - For location of light fixtures see (General Plan)(Abutment Details)(Pier Details), sheet.
All underpass lights are to have a 70° beam angle.
Anchorage - The conduit and junction boxes shall be attached to the concrete with ¼" flat head drive pins.

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CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

UNDERPASS LIGHTING DETAILS
BRIDGE No. CUY-480-0540
I-480 OVER CLAGUE RD.
CUYAHOGA COUNTY STA. 385+27.54
STA. 387+11.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		TRB			

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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LEGEND

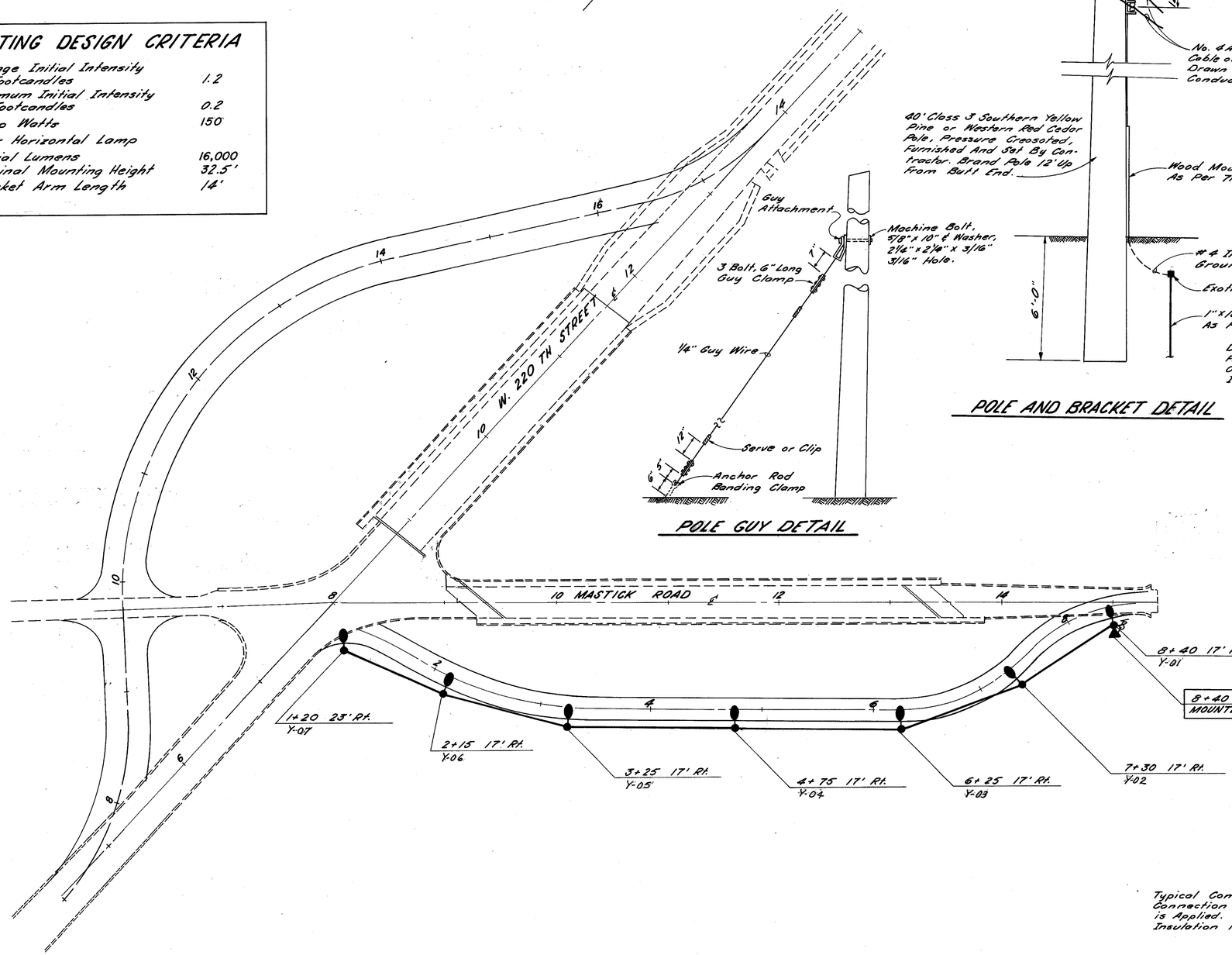
Control Center
150 Watt Luminaire at 32.5' Mounting Height
3+25 — Station Number
5-A — Light Number & Circuit

TEMPORARY LIGHT PLAN NOTES

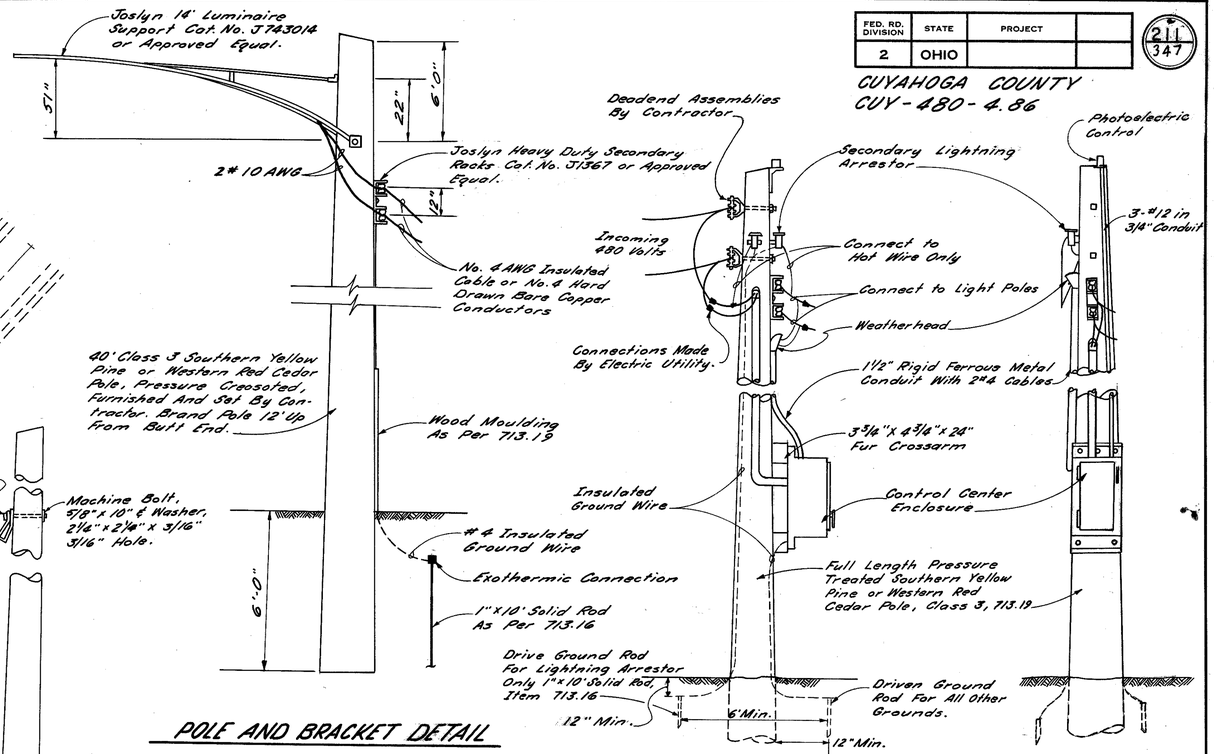
1. Electrical Power Shall Be Fed By Overhead Cable
2. All Poles Shall Be Wood
3. Luminaires : 150 Watt, Type II, High Pressure Sodium

LIGHTING DESIGN CRITERIA

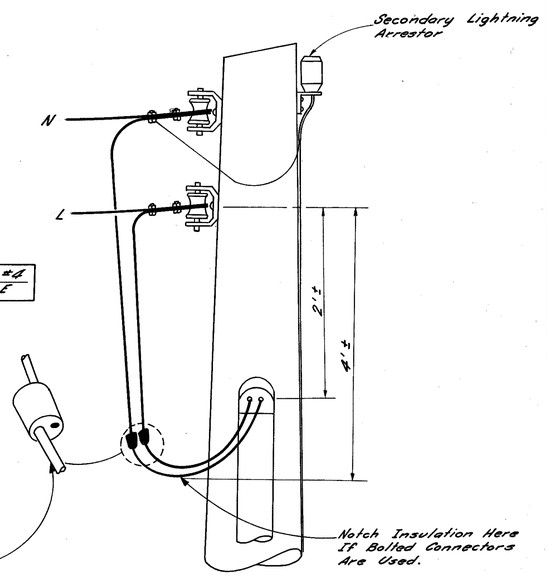
Average Initial Intensity In Footcandles	1.2
Minimum Initial Intensity In Footcandles	0.2
Lamp Watts	150
Clear Horizontal Lamp Initial Lumens	16,000
Nominal Mounting Height	32.5'
Bracket Arm Length	14'



POLE GUY DETAIL



POLE AND BRACKET DETAIL



CONTROL CENTER DETAIL

SERVICE DROP DRIP-LOOP

TEMPORARY LIGHTING PLAN

LIGHTING DETAILS

FHWA REGION	STATE	PROJECT	
5	OHIO		

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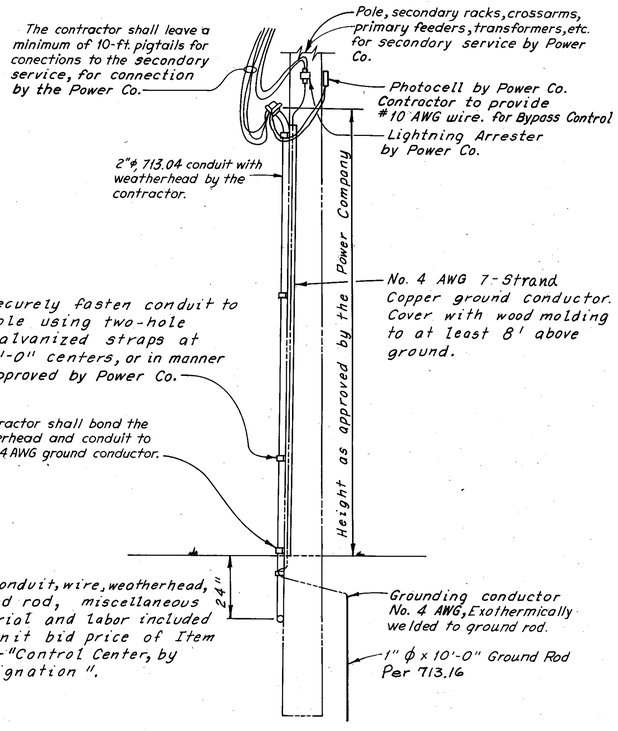
CUYAHOGA COUNTY
CUY-480-4.86

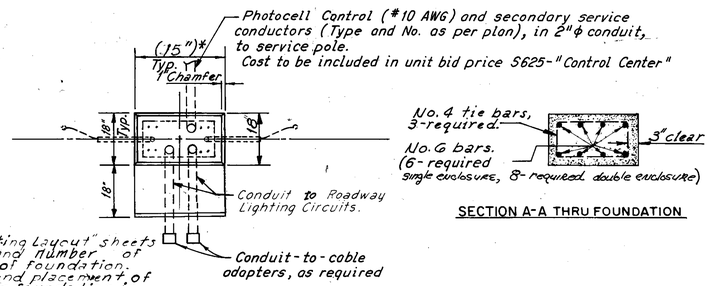
BYPASS SWITCH

A 20 Ampere by-pass switch rated at 240 volts, complete with #10 wire and conduit, shall be furnished and installed by the Contractor. The Cleveland Electric Illuminating Company will make final connection to the switch for manual bypass control of their lighting controller.



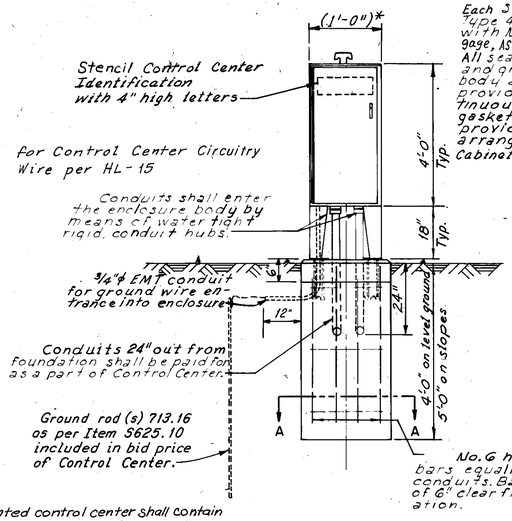
Note:
Conduit, wire, weatherhead, ground rod, miscellaneous material and labor included in unit bid price of Item 5625-"Control Center, by Designation".

POWER SERVICE
Scale 3/8" = 1'-0"



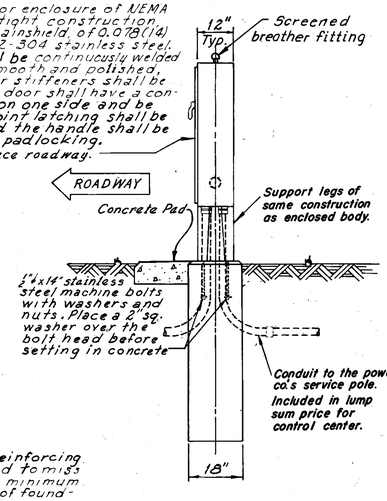
Notes:
See "Lighting Layout" sheets for direction and number of conduits out of foundation.
Spacing and placement of anchor bolts in foundation is dependent upon the enclosure manufacturers dimensions. Enclosure dimensions are inside measurements.

SECTION A-A THRU FOUNDATION



FRONT VIEW

Each Single door enclosure of NEMA Type 4 water tight construction, with NEMA 3 rainshield, of 0.078(14) gage, ASTM-A, 302-304 stainless steel. All seams shall be continuously welded and ground smooth and polished. body and door stiffeners shall be provided. The door shall have a continuous hinge on one side and be gasketed 3-point latching shall be provided and the handle shall be arranged for padlocking. Cabinet shall face roadway.



SIDE VIEW

CONTROL CENTER DETAILS
Scale: 1/2"=1'-0"

Note:
Each pad mounted control center shall contain two 50 watt, 300 VAC lamps in porcelain sockets with metal lamp guards. Install lamps in series to operate at 240 volts for increased lamp life.
For control centers with two enclosures, the contractor may install one lamp in each enclosure, with the two lamps operating in series. For control centers with single enclosures, both lamps shall be installed inside the enclosure.

Note:
Dimensions shown as ( )* are typical for single unit Control Center where a double Control Center is required (Control Center #1), the dimension ( )* shall be doubled (2x).

PULLBOX SUMMARY

LOCATION	4" U.D.	TYPE	CONNECTOR KITS
364+44.5 I-480 ℄	NOT REQ.	SPECIAL BRIDGE BARRIER	4 TYPE VIII
369+07.6 I-480 ℄	NOT REQ.	SPECIAL BRIDGE BARRIER	4 TYPE VIII
17+49 S.R. 17 35' LT.	NOT REQ.	18" DIA.	4 TYPE VIII
374+80 I-480 15' LT.	14'	18" DIA.	2 TYPE VIII
374+80 I-480 ℄	NOT REQ.	SPECIAL MEDIAN BARRIER	2 TYPE IX
384+70 I-480 ℄	NOT REQ.	SPECIAL MEDIAN BARRIER	4 TYPE IX
384+70 I-480 15' RT.	14'	18" DIA.	4 TYPE VIII
385+24 I-480 ℄	NOT REQ.	SPECIAL MEDIAN BARRIER	
387+15 I-480 ℄	NOT REQ.	SPECIAL MEDIAN BARRIER	
0+22 CLAGUE RD. 5' LT. (1)	20'	24" DIA.	6 TYPE VIII 2 TYPE IX
0+80 CLAGUE RD. 5' RT.	NOT REQ.	18" DIA.	2 TYPE IX
3+00 CLAGUE RD. 15' LT. (2)	11'	18" DIA.	6 TYPE VIII
4+45 CLAGUE RD. 15' LT. (3)	18'	24" DIA.	4 TYPE VIII 2 TYPE IX
6+00 CLAGUE RD. 15' LT. (4)	35'	18" DIA.	2 TYPE IX
8+10 CLAGUE RD. 15' RT. (5)	29'	18" DIA.	2 TYPE VIII
387+90 RAMP C-1 5' LT. (6)	40'	18" DIA.	2 TYPE VIII
385+85 RAMP C-2 5' LT. (7)	30'	18" DIA.	2 TYPE VIII
385+90 RAMP C-2 5' RT. (8)	25'	18" DIA.	2 TYPE IX
398+40 I-480 35' LT.	14'	18" DIA.	2 TYPE IX
398+40 I-480 ℄	NOT REQ.	SPECIAL MEDIAN BARRIER	4 TYPE IX
398+40 I-480 30' RT.	14'	18" DIA.	2 TYPE IX
15+58 W. 227th ST. 9' LT.	22'	18" DIA.	NONE REQUIRED
18+80 W. 227th ST. 9' LT.	22'	18" DIA.	NONE REQUIRED
412+15 I-480 ℄	NOT REQ.	SPECIAL MEDIAN BARRIER	2 TYPE IX
412+15 I-480 30' RT.	13'	18" DIA.	2 TYPE VIII
417+30 I-480 30' LT.	14'	18" DIA.	2 TYPE VIII
417+30 I-480 ℄	NOT REQ.	SPECIAL MEDIAN BARRIER	2 TYPE IX
11+70 W. 220th ST. 9' LT.	40'	18" DIA.	2 TYPE VIII
11+70 W. 220th ST. 9' RT.	40'	18" DIA.	2 TYPE IX
13+92 MASTICK RD. 9' RT. (9)	8'	18" DIA.	2 TYPE VIII
428+44 I-480 30' LT.	10'	18" DIA.	4 TYPE VIII
428+44 I-480 ℄	NOT REQ.	SPECIAL MEDIAN BARRIER	4 TYPE IX
441+25 I-480 15' LT.	15'	18" DIA.	2 TYPE VIII
441+25 I-480 ℄	NOT REQ.	SPECIAL MEDIAN BARRIER	2 TYPE VIIC
441+25 I-480 30' RT.	10'	18" DIA.	2 TYPE VIII

(1) EMPTY INTO C.B. AT STA. 0+43 LT. CLAGUE RD.
(2) EMPTY INTO C.B. AT STA. 3+00 LT. CLAGUE RD.
(3) EMPTY INTO C.B. AT STA. 4+38 LT. CLAGUE RD.
(4) EMPTY INTO C.B. AT STA. 385+93 109' LT. I-480 ℄
(5) EMPTY INTO C.B. AT STA. 7+86 RT. CLAGUE RD.
(6) EMPTY INTO C.B. AT STA. 388+29 LT. RAMP C-1
(7) EMPTY INTO M.H. AT STA. 386+15 32' LT. RAMP C-2 ℄
(8) EMPTY INTO M.H. AT STA. 386+15 22' RT. RAMP C-2 ℄
(9) EMPTY INTO C.B. AT STA. 13+95 RT. MASTICK RD.

MADE _____ DATE _____
TRACED _____ DATE _____
CHECKED _____ DATE _____
SCALE AS SHOWN

Rev 5-17-77

FHWA REGION	STATE	PROJECT	
5	OHIO		

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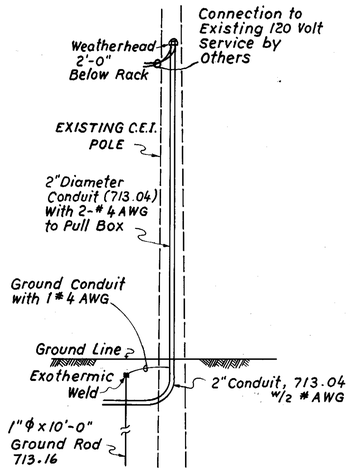
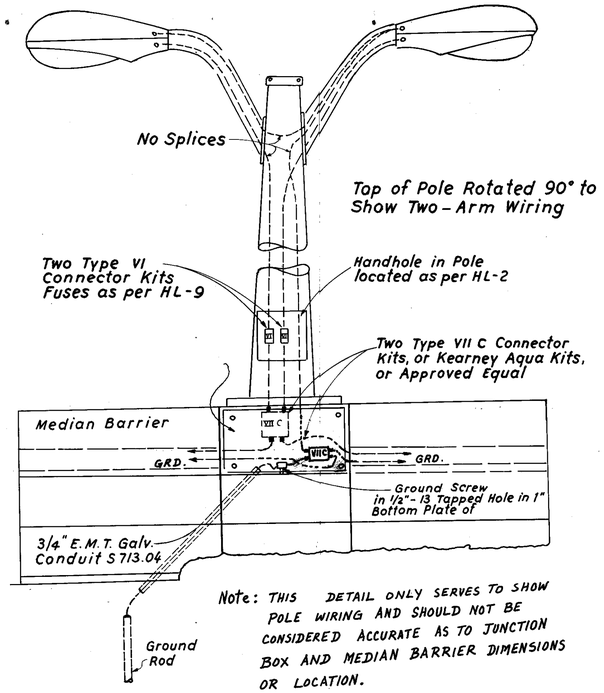
CUYAHOGA COUNTY
CUY – 480 – 4.86

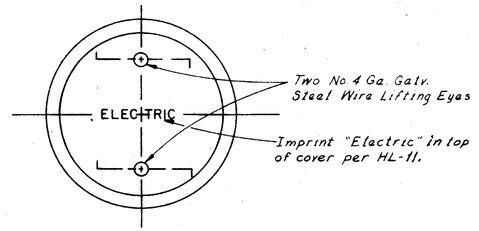


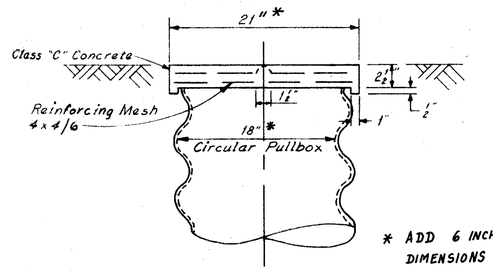
SERVICE POLE

#1 C.E.I. POLE #346334 STA. 12+00 W. 220th ST. (RT.)
#2 C.E.I. POLE #678178 STA. 14+20 MASTICK RD. (RT.)



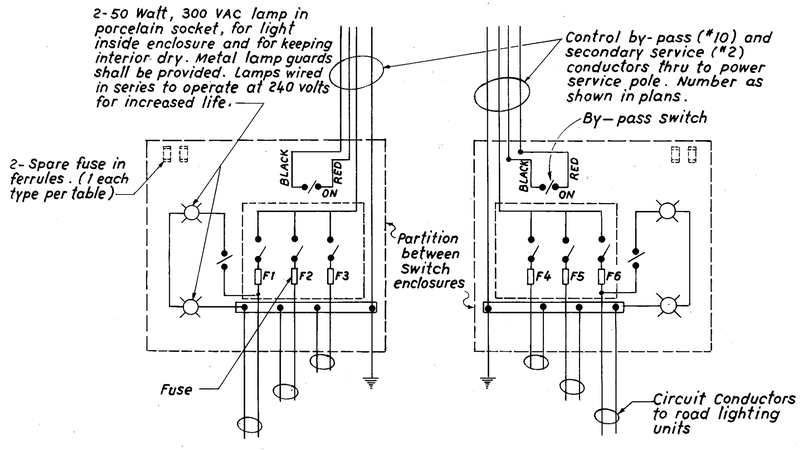
Note: THIS DETAIL ONLY SERVES TO SHOW POLE WIRING AND SHOULD NOT BE CONSIDERED ACCURATE AS TO JUNCTION BOX AND MEDIAN BARRIER DIMENSIONS OR LOCATION.





* ADD 6 INCHES TO THESE DIMENSIONS FOR THE 24" PULL BOX.

PULL BOX COVER DETAIL

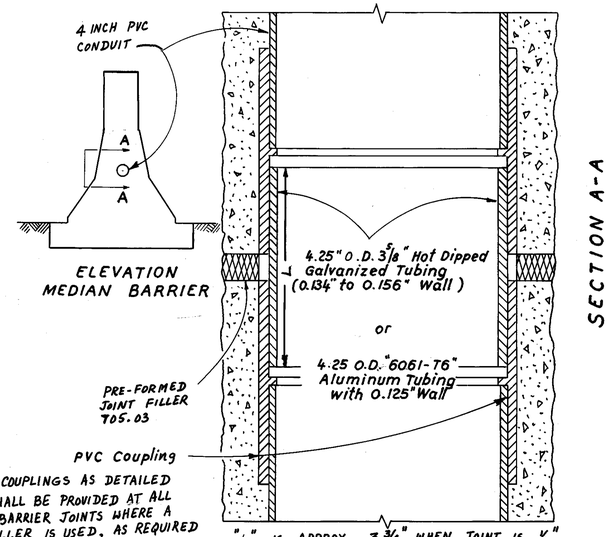


TYPICAL WIRING DIAGRAM

DOUBLE ENCLOSURE SHOWN

LIGHT POLE DATA

REFERENCE LETTER	DESIGN NUMBER	FOUNDATION ANCHOR BOLTS		TRANSFORMER BASE STYLE
		SIZE DIAM. x LENGTH	BOLT CIRCLE DIAMETER	
A	A12BB 37.5D	1¼" x 70"	18"x8"	NONE
B	AT15B 41.7	1" x 40"	12½"	AT- X
C	AT15B34.2	1" x 40"	12½"	AT- X
D	AT12B34.2	1" x 40"	12½"	AT- X
E	ST18B34.2	1" x 40"	15"	STEEL
F	ST15B34.2	1" x 40"	15"	STEEL
G	A12B32.5	1¼" x 100	12½"	None



NOTE: CONDUIT COUPLINGS AS DETAILED HEREIN SHALL BE PROVIDED AT ALL MEDIAN BARRIER JOINTS WHERE A JOINT FILLER IS USED, AS REQUIRED OR PERMITTED BY ITEM 622 OR STANDARD CONSTRUCTION DRAWING MC-9.

DETAILS OF CONSTRUCTION JOINT 4" PVC COUPLING IN MEDIAN CONCRETE BARRIER

FHWA REGION	STATE	PROJECT	
5	OHIO		

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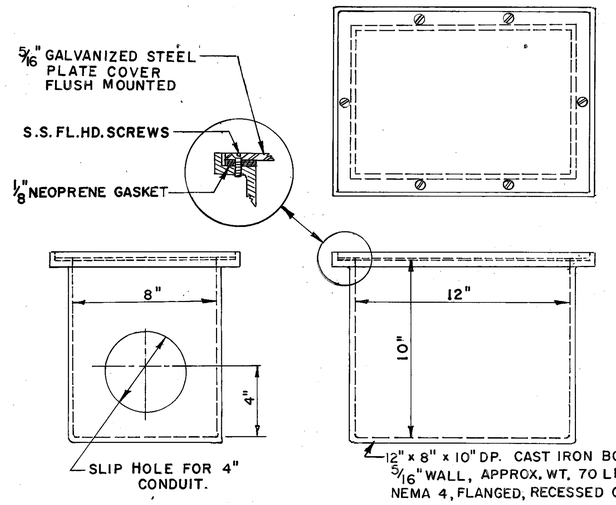
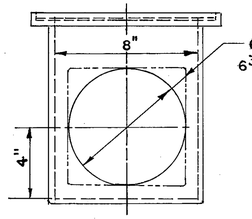
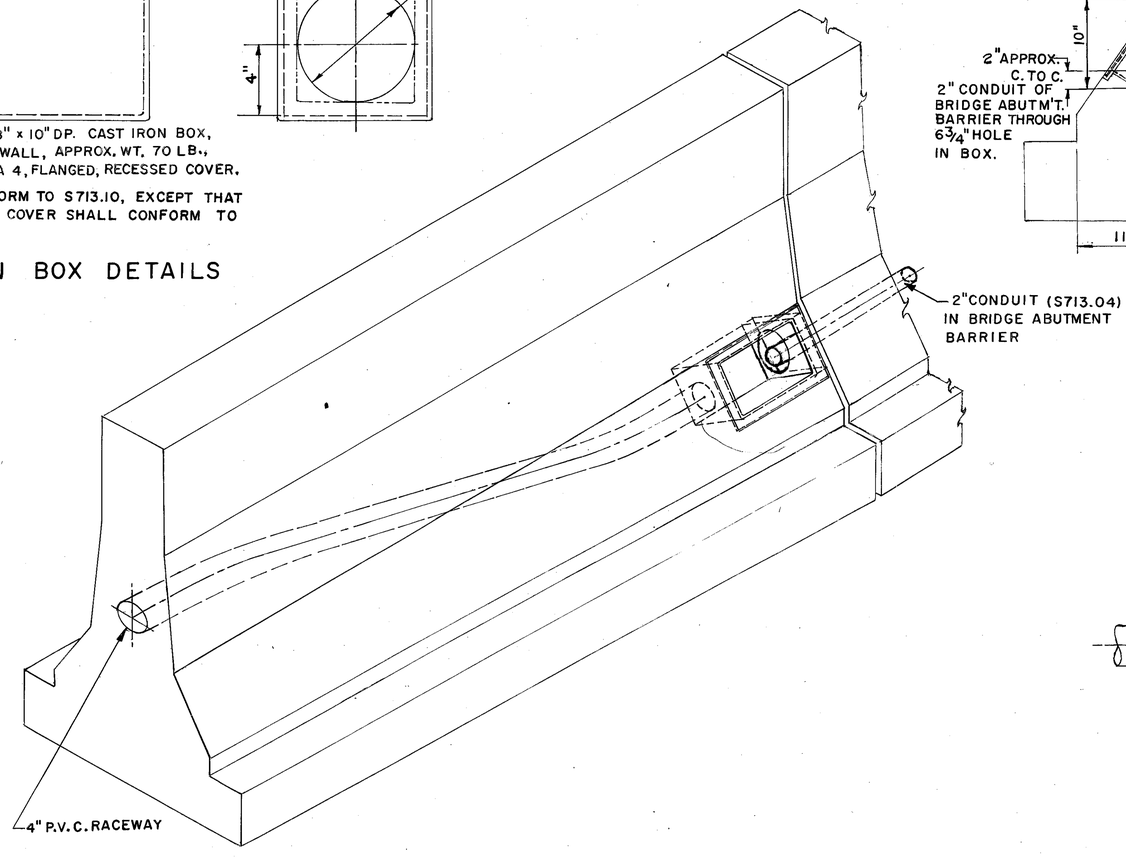
CUY-480-4.86

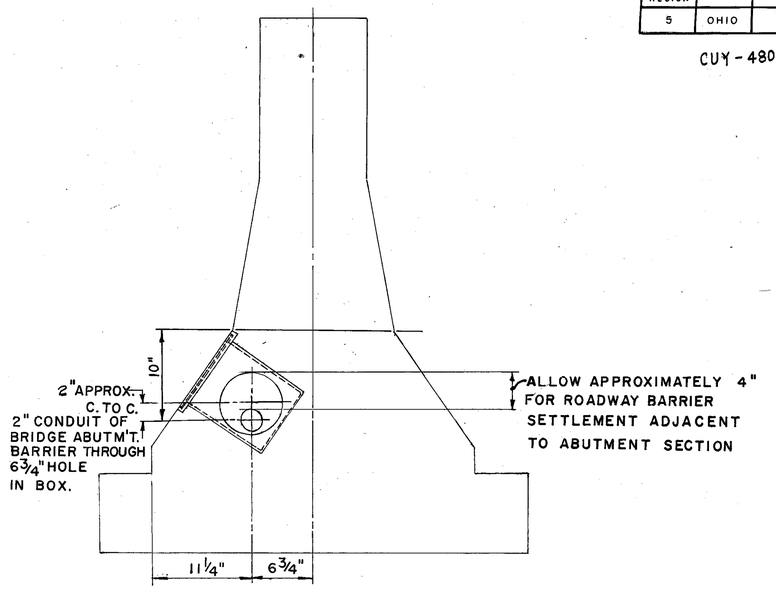




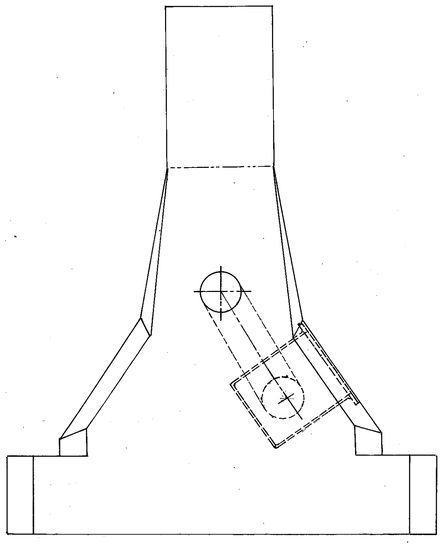
JUNCTION BOX SHALL CONFORM TO S713.10, EXCEPT THAT THE GALVANIZED STEEL PLATE COVER SHALL CONFORM TO ASTM A-242 OR A-36.

TRANSITION JUNCTION BOX DETAILS

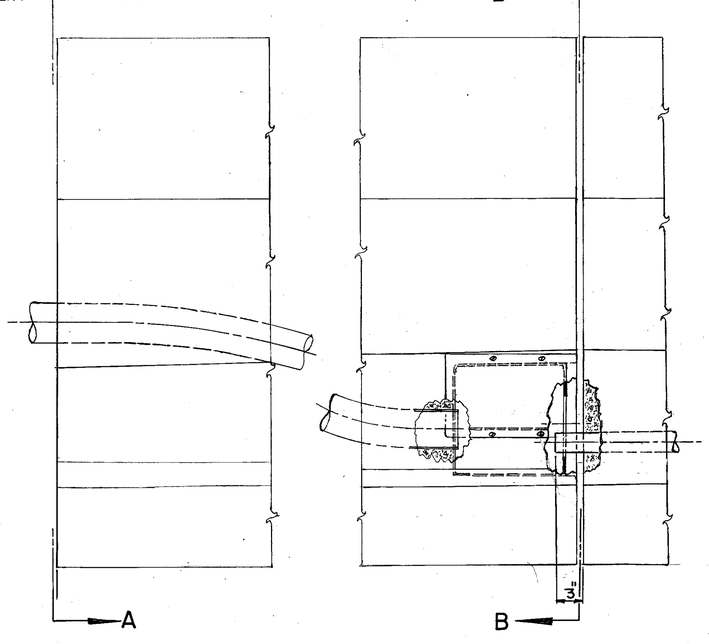




END ELEV. B-B



END ELEV. A-A



SIDE ELEVATION, TRANSITION BARRIER FROM ROADWAY TO BRIDGE CONFIGURATIONS

FHWA DIVISION	STATE	PROJECT	
5	OHIO		

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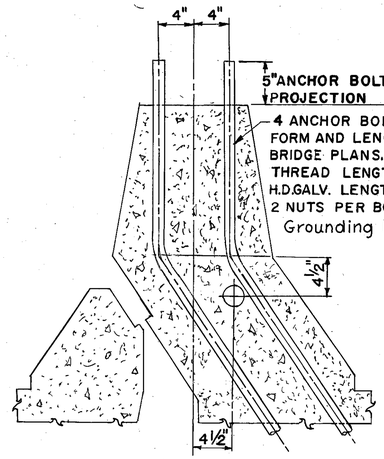
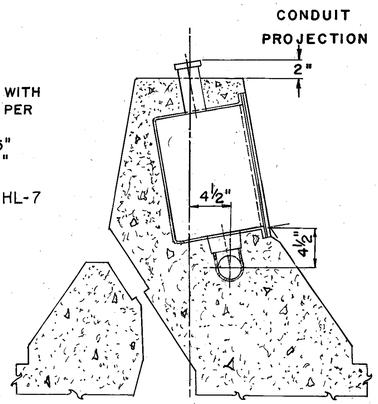
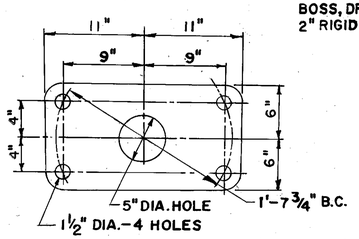
CUY-480-4.86



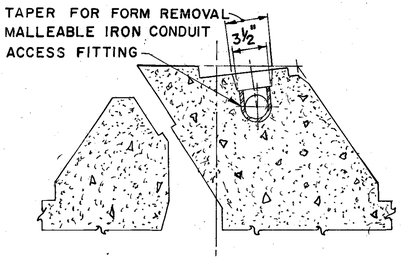
SECTION B-B



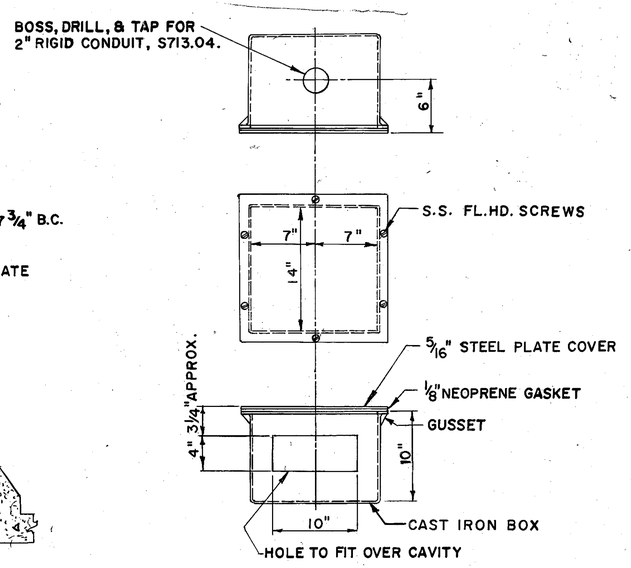
SECTION C-C



MEDIAN BARRIER LIGHT POLE BASE PLATE

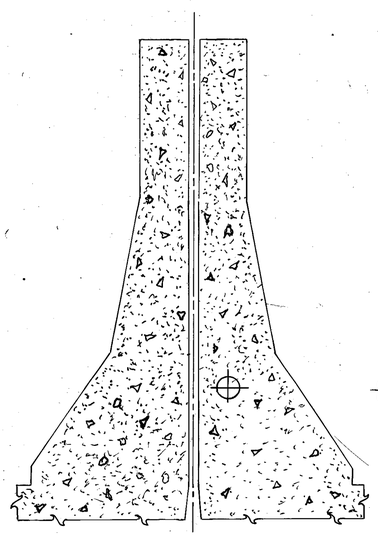


DETAIL OF CONCRETE POUR
BELOW JUNCTION BOX, SECTION C-C.

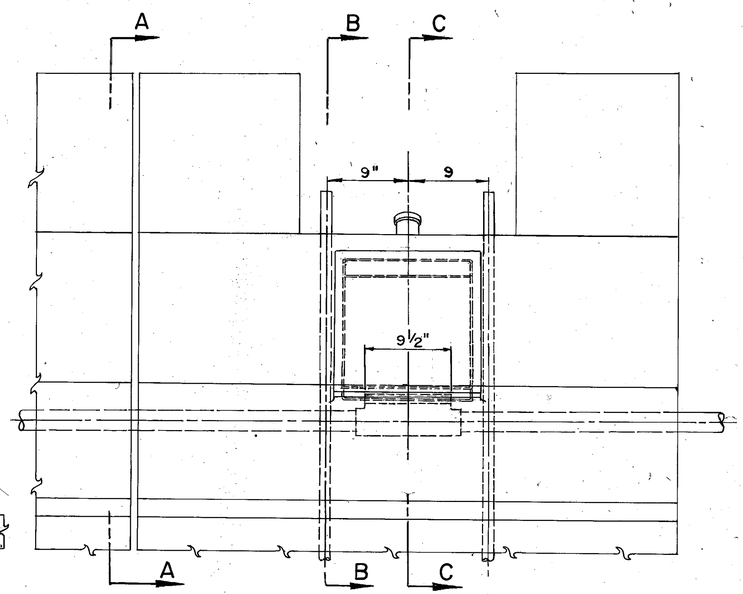


JUNCTION BOX SHALL CONFORM TO S713.10 EXCEPT THAT THE GALVANIZED STEEL PLATE COVER SHALL CONFORM TO ASTM A-242 OR A-36.

JUNCTION BOX DETAILS



SECTION A-A



STRUCTURE BARRIER POLE MOUNTING DETAILS

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY.-480 - 4.86

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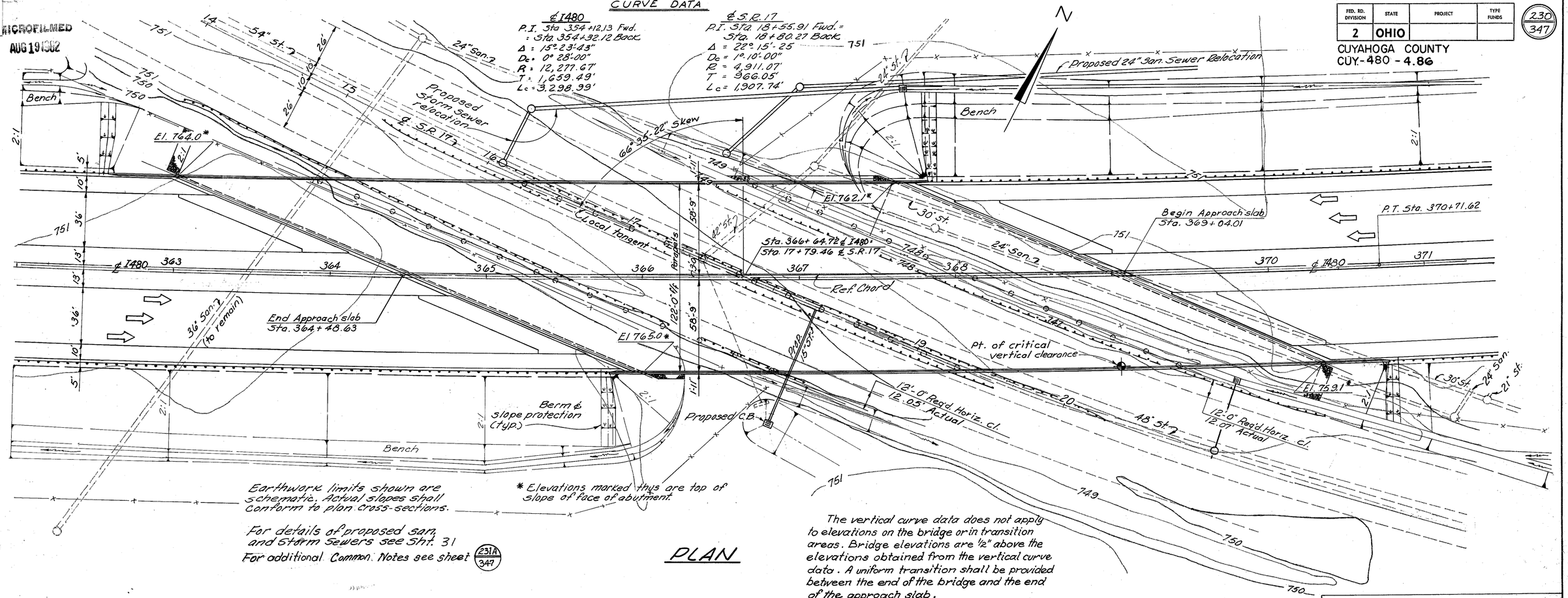
CURVE DATA

℄ I480
P.I. Sta 354+12.13 Fwd.
= Sta. 354+32.12 Back.
Δ = 15°23'43"
D_c = 0°28'00"
R = 12,277.67'
T = 1,659.49'
L_c = 3,298.99'

℄ S.R. 17
P.T. Sta. 18+55.91 Fwd. =
Sta. 18+80.27 Back.
Δ = 22°15'25"
D_c = 1°10'00"
R = 4,911.07'
T = 966.05'
L_c = 1,907.74'



Earthwork limits shown are schematic. Actual slopes shall conform to plan cross-sections.

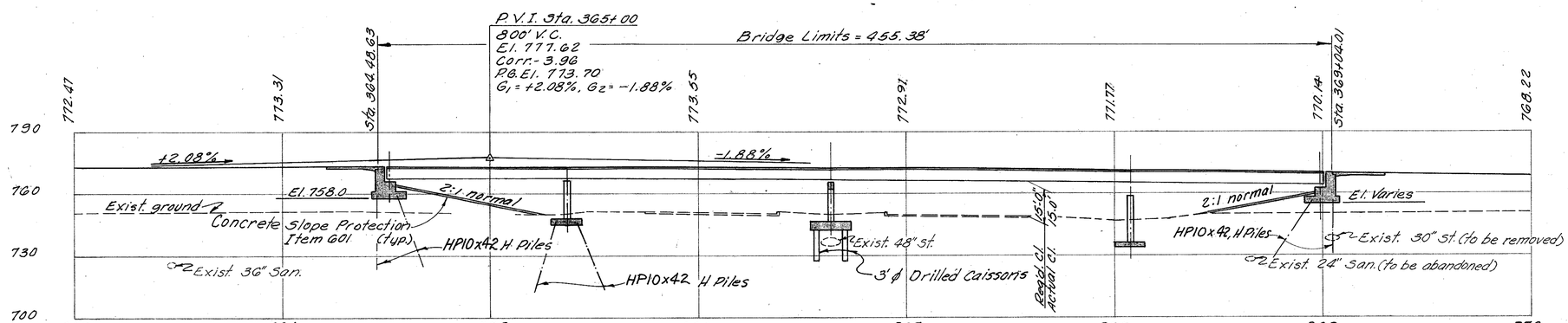
For details of proposed san. and storm sewers see Sht. 31
For additional Common Notes see sheet 231A/347

* Elevations marked thus are top of slope of face of abutment.

PLAN

The vertical curve data does not apply to elevations on the bridge or in transition areas. Bridge elevations are 1/2" above the elevations obtained from the vertical curve data. A uniform transition shall be provided between the end of the bridge and the end of the approach slab.

TRAFFIC ESTIMATE
Design Year - 1987
Total A.D.T. 73,200



Pile estimated avg. pay length
West abut. - 28'
East abut. - 22'
Pier #1 - 15'

PROFILE ALONG ℄ I-480

Caisson estimated Avg. pay length
4'-0" Dia - 21'
3'-0" Dia - 16'

PROPOSED STRUCTURE
TYPE: Continuous steel girder with reinforced concrete deck & substructure
SPANS: 83'-8", 126'-6" 143'-2½" 90'-8" c/c brgs. along ℄ I-480
ROADWAY: 122'-0" f/f parapets with concrete barrier median
LOADING: HS 20-44 & Interstate Alternate
WEARING SURFACE: monolithic concrete
SKEW: 66°35'22" Rt forward with respect to Reference Chord
ALIGNMENT: 0°28'00" curve Left
SUPERELEVATION: None
APPROACH SLABS: AS-1-72 (Modified) (30' long)

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ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SITE PLAN

BRIDGE Nº CUY-480-0499
I-480-OVER S.R. 17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.W.M.	G.W.M.	R.T.	R.J.P.	G.W.M.	1/7/69	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

231 / 347

CUYAHOGA COUNTY
CUY.-480-4.86

STANDARD DRAWING REFERENCES

DESCRIPTION	DWG. NO.	SHT.	DATE
END DAM AND END CROSSFRAME	SD-1-69	1-2	6-12-69
SCUPPERS	SD-1-69	3	6-12-69
BRIDGE ROADWAY RAILING	BR-1-67	1	10-15-71 R
ROCKERS AND BOLSTERS	RB-1-55		2- 2-59 R
APPROACH SLABS	AS-1-72		6-30-72
HIGHWAY LIGHTING	HL-4		1- 4 -76
BRIDGE TERMINAL ASSEMBLIES	GR-3		12- 6 -76

(R INDICATES REVISED DATE)

STANDARD DRAWING REFERENCES

DESCRIPTION	DWG. NO.	DATE
HIGHWAY LIGHTING DWG.	HL-3	REV. 7-27-73
" " "	HL-5	" 9-6-73
" " "	HL-6	" 9-6-73
" " "	HL-7	" 1-1-76
" " "	HL-17A	4-6-73
" " "	HL-17B	4-6-73

SUPPLEMENTAL SPECIFICATION REFERENCES

DESCRIPTION	NO.	DATE
CHEMICAL ADMIXTURE FOR CONCRETE, TYPE A, B OR D	808	1- 1-71
CONCRETE CURING AND PROTECTIVE MEMBRANE	836	3-12-75

COMMON DETAIL REFERENCES

CONTRACTION JOINTS	SHEET 328
EXPANSION JOINTS	SHEET 328

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE 'STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES' ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS, 1969, INCLUDING THE OHIO 'SUPPLEMENT' TO THESE SPECIFICATIONS.

DESIGN DATA

DESIGN LOADING - HS20-44 AND THE INTERSTATE ALTERNATE LOADING
CONCRETE CLASS C - UNIT STRESS 1200 PSI FOR SUPERSTRUCTURE
UNIT STRESS 1333 PSI FOR SUBSTRUCTURE
STRUCTURAL STEEL - ASTM A36 - UNIT STRESS 20000 PSI
REINFORCING STEEL - ASTM A615, A616 OR A617 - UNIT STRESS 20000 PSI.
SPIRAL REINFORCEMENT MAY BE PLAIN BARS ASTM A82 OR A615.

EMBANKMENT CONSTRUCTION

THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET BACK OF THE ABUTMENTS. EXCAVATION SHALL THEN BE MADE FOR THE ABUTMENTS.

SUPPLEMENTAL SPECIFICATION REFERENCES

DESCRIPTION	NO.	DATE
PAINTING FOR NEW STRUCTURAL STEEL	846	4-25-77
INORGANIC ZINC SILICATE PAINT	950	4-25-77
BLUE-GREEN VINYL PAINT	951	4-25-77

PILES SHALL BE DRIVEN TO BEDROCK. THE BEARING CAPACITY SHALL BE CONSIDERED OBTAINED BY REFUSAL ON HARD BEDROCK OR BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH. THE DESIGN LOAD IS 45 TONS PER PILE FOR THE ABUTMENTS AND WINGWALLS AND 35 TONS PER PILE FOR PIER #1 PILES.

FOUNDATION BEARING PRESSURE

CAISSONS FOR PIER NO.2 ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 20 TONS PER SQ. FT.

PIER NO. 3 FOOTINGS ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 5 TONS PER SQ. FT.

PIER NO. 3 FOOTINGS

FOOTINGS SHALL EXTEND A MINIMUM OF 3 INCHES INTO BEDROCK. IF NECESSARY, THE FOOTINGS SHOULD BE LOWERED. HOWEVER, IF THE LOW POINT OF THE SURFACE OF THE BEDROCK OCCURS 2 FEET OR MORE ABOVE PLAN ELEVATION, THE FOOTINGS MAY BE RAISED, AFTER APPROVAL BY THE DIRECTOR, BUT TO AN ELEVATION NOT HIGHER THAN 734.5

STEPPING OF INDIVIDUAL FOOTINGS WILL NOT BE PERMITTED UNLESS SHOWN ON THE PLANS.

MAINTENANCE OF TRAFFIC

TWO LANES OF TRAFFIC WITH A MINIMUM HORIZONTAL WIDTH OF 26'-9 AND A MINIMUM VERTICAL CLEARANCE OF 13'-6" SHALL BE MAINTAINED ON S.R. 17 AT ALL TIMES

PARAPET TRANSITIONS AND WINGWALL ENDS SHALL BE AS SHOWN ON STANDARD DRAWING BR-1-67 REVISED 10-15-71. REINFORCING STEEL SHALL BE FIELD BENT OR CUT TO FIT THE REVISED SHAPE.

FOR ADDITIONAL COMMON NOTES SEE SHEET 231A / 347

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	PIERS	SUPER	GENERAL
503	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING				LUMP
503	3807	C.Y.	UNCLASSIFIED EXCAVATION	1533	2274		
503	89	C.Y.	SHALE EXCAVATION		89		
505	LUMP	SUM	TEST PILE	LUMP			
506	LUMP	SUM	PILE TEST LOAD				LUMP
507	5820	L.F.	STEEL PILES, HP10X42	4500	1320		
507	182	L.F.	PREBORED HOLES	101	81		
506	1	EACH	SUBSEQUENT PILE TEST LOAD				1
509	599,800	LB	REINFORCING STEEL	77,085	239620	283,095	
SPECIAL	284,963	LB	EPOXY COATED REINFORCING STEEL (SEE PROPOSAL NOTE)	3,103		281,860	
511	1792	C.Y.	CLASS C CONCRETE, SUPERSTRUCTURE (SEE PROPOSAL NOTE)			1792	
511	747	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS	747			
511	1167	C.Y.	CLASS C CONCRETE, FOOTINGS	535	632		
511	315	C.Y.	CLASS C CONCRETE, PIERS ABOVE FOOTINGS		315		
512	171	L.F.	PREMOLDED SEALING STRIP	171			
513	1,908,700	LB	STRUCTURAL STEEL, PRIMER PER 846 (SEE PROPOSAL NOTES)			1,908,700	
846	1,908,700	LB	FIELD PAINTING OF STRUCTURAL STEEL			1,908,700	
516	5	LIN.FT.	PREFORMED ELASTOMERIC JOINT SEALER, 705.11			5	
516	222	S.F.	1 INCH PREFORMED EXPANSION JOINT FILLER	222			
516	350	S.F.	1/2 INCH PREFORMED EXPANSION JOINT FILLER, AS PER PLAN				350
518	404	C.Y.	POROUS BACKFILL	404			
518	34	EA	STANDARD SCUPPERS INCLUDING SUPPORTS			34	
518	11	EA	TYPE 3 SCUPPERS INCLUDING SUPPORTS, AS PER PLAN			11	
518	658	L.F.	6 INCH PERFORATED, HELICAL CSP, 707.01	658			
518	387	L.F.	6 INCH NON-PERFORATED, HELICAL CSP, INCLUDING	387			
			SPECIALS, 707.01				
601	2418	S.Y.	CONCRETE SLOPE PROTECTION				2418
S625			SEE SHEET 213 FOR LIGHTING SUMMARY				
808	1792	UNIT	CHEMICAL ADMIXTURE FOR CONCRETE, TYPE A,B OR D			1792	
SPEC	90	L.F.	DRILLED CAISSONS 4 FT. 0 IN. DIA.		90		
SPEC	346	L.F.	DRILLED CAISSONS 3 FT. 0 IN. DIA.		346		

2/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

GENERAL NOTES AND ESTIMATED QUANTITIES

BRIDGE NO. CUY-480-0499
I-480 OVER S.R. 17 (BROOKPARK ROAD)
CUYAHOGA COUNTY STA. 364 + 48.63
STA. 369 + 04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.			B.S.D.	G.W.M.	1/7/69	

FHWA REGION	STATE	PROJECT	
5	OHIO		

23IA / 347

CUYAHOGA COUNTY
CUY-480-4.86

ADDITIONAL GENERAL NOTES COMMON TO ALL BRIDGES

NOTES	BRIDGE AND PAGE NUMBERS				
	CUY-480-0499	CUY-480-0540	CUY-480-0573	CUY-480-0612	CUY-480-0614
Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08. Sufficient additional reinforcing steel shall be provided for sampling.	275/347	291/347	301/347	313/347	327/347
BRIDGE SEAT REINFORCING: Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of bearing anchor holes or the presetting of the bearing anchors. BEARING ANCHORS: At the option of the Contractor, bearing anchors (or formed holes), located and supported by templates, may be cast in place.	257/347	286/347 Thru 287/347	297/347	309/347	322/347
BACKWALL CONCRETE In addition to the provisions of 511.08, backwall concrete above the optional construction joint at the approach slab seat shall not be placed until after the deck concrete in the span adjacent to the abutment has been placed.	235/347 Thru 238/347 & 245/347	283/347	295/347	308/347	317/347
SCUPPERS shall be in accordance with Standard Drawing SD-1-69 except that scupper pipes shall extend 8" below the bottom of the beams instead of 2".	270/347		298/347	310/347	323/347
STEEL ERECTION: During the erection of end dams and crossframes care shall be taken to insure that stringers, bearing parts and bridge seats remain in bearing contact. END DAMS AND SCUPPERS: Steel bar stock utilized for end dams and scuppers may be any weldable grade of low or mild carbon steel available commercially. This material is to be excluded from the requirements of 501.07 for test reports.	268/347 Thru 270/347 & 273/347	290/347	293/347 And 300/347	311/347	315/347 AND 325/347
APPROACH SLABS shall be in accordance with Standard Drawing AS-1-72 except that the clearance of top steel shall be 3" instead of 2" and the width shall be 36'-0".	231/347	277/347			
JACKING HOLES as shown on AS-1-72 shall not be provided.	231/347	277/347			
Where "(CVN)" follows a shape or plate size designation, the material shall meet specified minimum notch toughness requirements.	268/347 & 272/347	290/347	300/347	311/347	326/347

NOTES	BRIDGE AND PAGE NUMBERS				
	CUY-480-0499	CUY-480-0540	CUY-480-0573	CUY-480-0612	CUY-480-0614
SHOP WELDED SPLICES shall be made with complete penetration butt welds. GRINDING OF SHOP WELDS: Flange butt welds shall be ground flush in tension areas only. Except for webs of fascia beams (girders), web welds shall be ground flush from the neutral axis of the web to the flange which is in tension. Webs of fascia beams (girders) shall be ground flush for their full depth. Grinding shall be done in the direction of stress. Web butt welds in contraflexure zones shall be ground flush for their full depth.	272/347		328/347	328/347	326/347
LAP all reinforcing bars 30 diameters (min.) for all bridges.					
MONOLITHIC WEARING SURFACE is assumed to be 1" for all bridges.					
PREFORMED BEARING PADS: In lieu of the hardness requirement of 711.21, preformed bearing pads for all bridges shall have a shore A durometer of 80 ± 10.					
ATTACHMENT OF GUARD RAIL TO CONCRETE PARAPETS: Concrete insert anchor assemblies per Standard Construction Drawings GR-1 and GR-3 shall be placed during construction for all bridges.					
DECK PROTECTION METHOD: Epoxy coated reinforcing steel, top mat only, for all bridges.					
BRIDGE DECK FINISH: In lieu of being finished as specified in 516.11 the bridge deck shall be textured transversely to provide a relatively uniform pattern of grooves spaced on approximately 3/4" centers. Grooves shall be approximately 0.15 inches deep and 0.10 inches wide. A strip of surface 9 to 12 inches wide adjacent to curbs and barriers shall not be textured.					

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BUREAU OF BRIDGES

2A / 46

ADDITIONAL COMMON GENERAL NOTES
BRIDGE NUMBERS
CUY-480-0499
CUY-480-0540
CUY-480-0573
CUY-480-0612
CUY-480-0614

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.	GFJ	WTF			

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

232
347

CUYAHOGA COUNTY
CUY 480-4.86

Caissons. This item shall consist of furnishing and installing caissons of the kind and size called for on the Plans and in the following Specifications. It shall be the Contractor's responsibility to furnish all labor, materials, tests and appurtenances required to complete the work as specified. In no way will the Contractor's responsibility be affected if the estimated pay length of the caissons shown on the Plans is different from that found at the site.

Location of the caissons as shown on the plans is set to allow a minimum clearance between the caisson and the existing storm sewer. Prior to drilling the caissons the contractor shall uncover the sewer or otherwise locate it to the satisfaction of the Engineer so as to verify the plan locations.

If field inspection proves that adequate clearance cannot be obtained consistent with plan locations permission for relocation or redesign of the caissons shall be submitted to the Director for approval.

The top elevation of each caisson shall be as established by the contract drawings. Upon the completion of a caisson, the Engineer shall record its location, size, depth of penetration, method of installation, and behavior during installation. For each caisson, a record of the location, size, depth of penetration, method of installation and behavior of each caisson during installation shall be kept. This deta shall be recorded by the Engineer upon completion of the installation of a caisson. During the installation of a caisson, no jetting to aid in the penetration of the caisson shall be permitted without the approval of the Director.

The caissons shall be installed plumb or at the specified batter and shall not deviate more than one-sixteenth of an inch per foot from the specified axis. If the caisson axis varies more than this, the alignment of the caisson shall be corrected or if necessary, additional caissons shall be installed at no additional cost to the State. Where obstacles such as large boulders are encountered, they shall be removed. If water is encountered during the installation of any caisson, or if the nature of the excavation is such that there is danger of foreign substances, earth, or other debris contaminating or falling into the concrete mix during the placing operations, then the Contractor shall use steel shells for the placing of the caisson concrete. These steel shells may be left in place, or withdrawn, as the concrete is placed provided the concrete completely fills the excavated space to the top of the caissons. The concrete for the caissons is intended to be placed against the existing subsoils without the use of permanent forms, provided the following conditions are met: The earth excavation is clean, there is no excessive loss of concrete, and the diameter of the excavation is maintained at all times. If an artesian water condition is encountered during the installation of any caisson, the Contractor shall be responsible for any special procedures necessary to accomplish the installation, to the satisfaction of the Director.

If two caissons are spaced relatively close together, one of the holes shall be drilled, poured, and the concrete permitted to set, prior to drilling the other hole.

Depth of Caissons. Each caisson shall penetrate to the plan elevation or a minimum of 30 inches into firm shale whichever is lower. This depth shall be confirmed by the Engineer after inspection of each hole.

Examination of Caissons. Before the placing of the ciasson concrete, the caisson excavation shall be clean and free from all foreign matter. In all cases, the excavation shall be inspected and approved by the Engineer. Upon his approval, the reinforcement may then be installed and the concrete placed. There shall be no water in the hole when the concrete is placed, except under certain conditions when artesian water is encountered.

Materials. Concrete for all caissons shall be Class "C" concrete and shall be controlled and placed according to the requirements of Item 511 for structures over 20 feet. Reinforcing steel shall meet the requirements of Item 509 and the vertical bars shall be deformed. Metal shells shall be water-tight and shall be of sufficient strength to withstand the earth pressures during the installation procedures.

Method of Measurement. The length of each caisson to be paid for shall be the completed and accepted length, measured along the axis of the caisson from the bottom of the drilled hole to the elevation of the top of the caisson.

Basis of Payment. The quantity of drilled caissons, measured as described above, shall be paid for at the contract unit price per linear foot bid under "Special Items - Drilled Caissons," complete in place. This unit price and payment thereof shall constitute full compensation for furnishing all materials, except reinforcing steel, for all labor, the use of tools and equipment, and all incidentals necessary to complete this item.

Reinforcing Steel. The reinforcing steel shall not be included in the unit price bid per linear foot of caissons, but shall be paid for under Item 509.

3/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

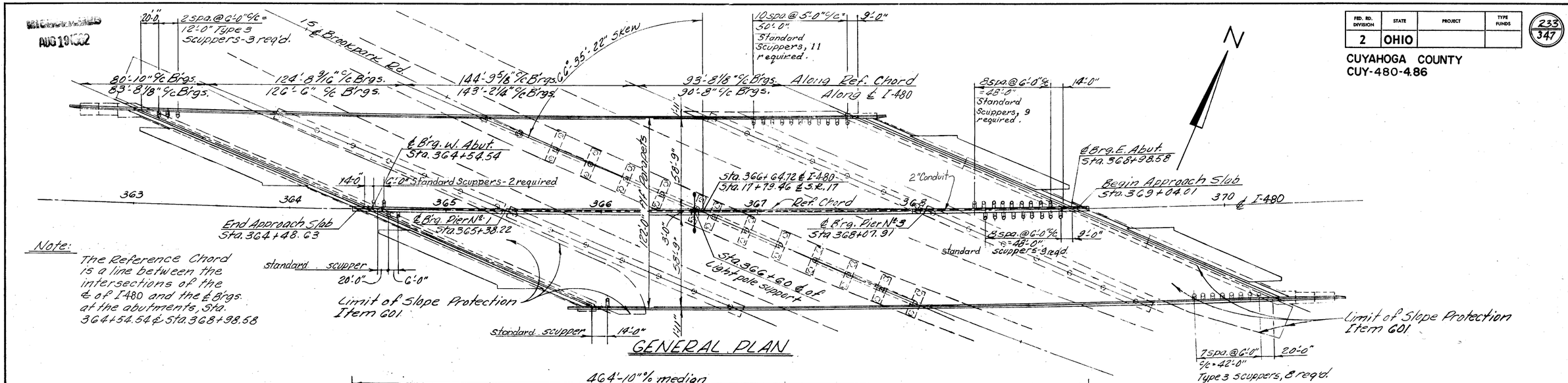
CAISSON NOTES
BRIDGE Nº CUY 480-0499
I480 OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
				G.W.M.	1/7/69	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

233/347

CUYAHOGA COUNTY
CUY-480-4.86



GENERAL PLAN

SOUTH ELEVATION

Note:
The Reference Chord is a line between the intersections of the ℄ of I-480 and the ℄ Brgs. at the abutments, Sta. 364+54.54 & Sta. 368+98.58

Notes:
For Details of Scuppers see Sht. 41/46

Scupper spacing shall be adjusted to clear intermediate cross frames by a minimum of six inches.

Scupper spacing is along face of curb.

For underpass lighting location and details see sht. 223/347 and Highway Lighting Drawings HL-6 & HL-7.

For Details of Median Light Pole Support see shts. 265A/347 & 265B/347

4/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

GENERAL PLAN
BRIDGE № CUY-480-0499
I480 OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.W.M.	R.T.		R.S.S.	G.W.M.	1/7/69	

RECEIVED
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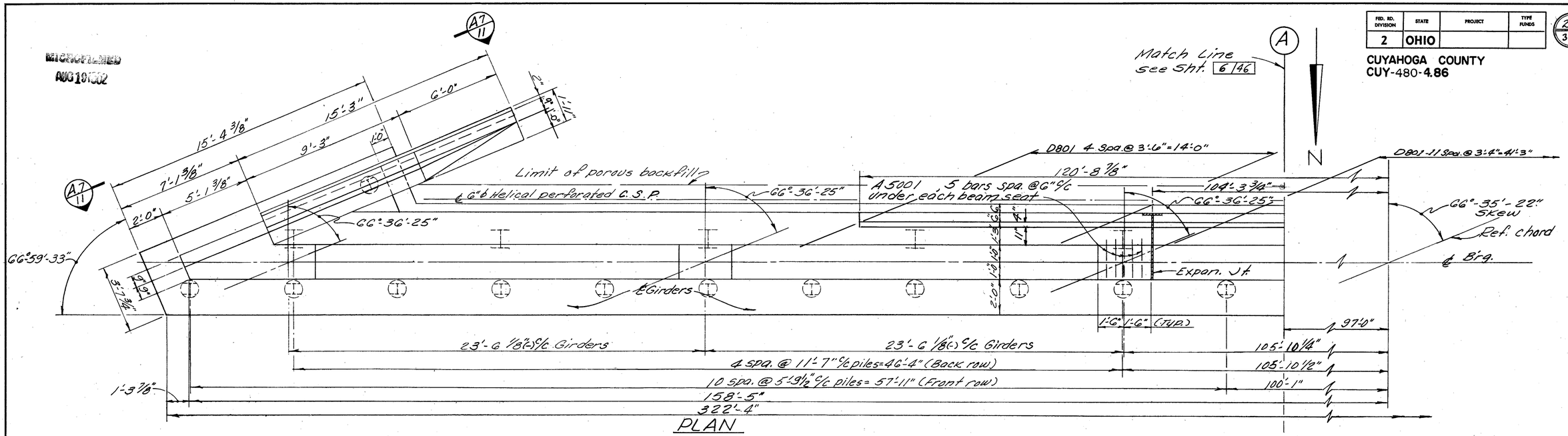
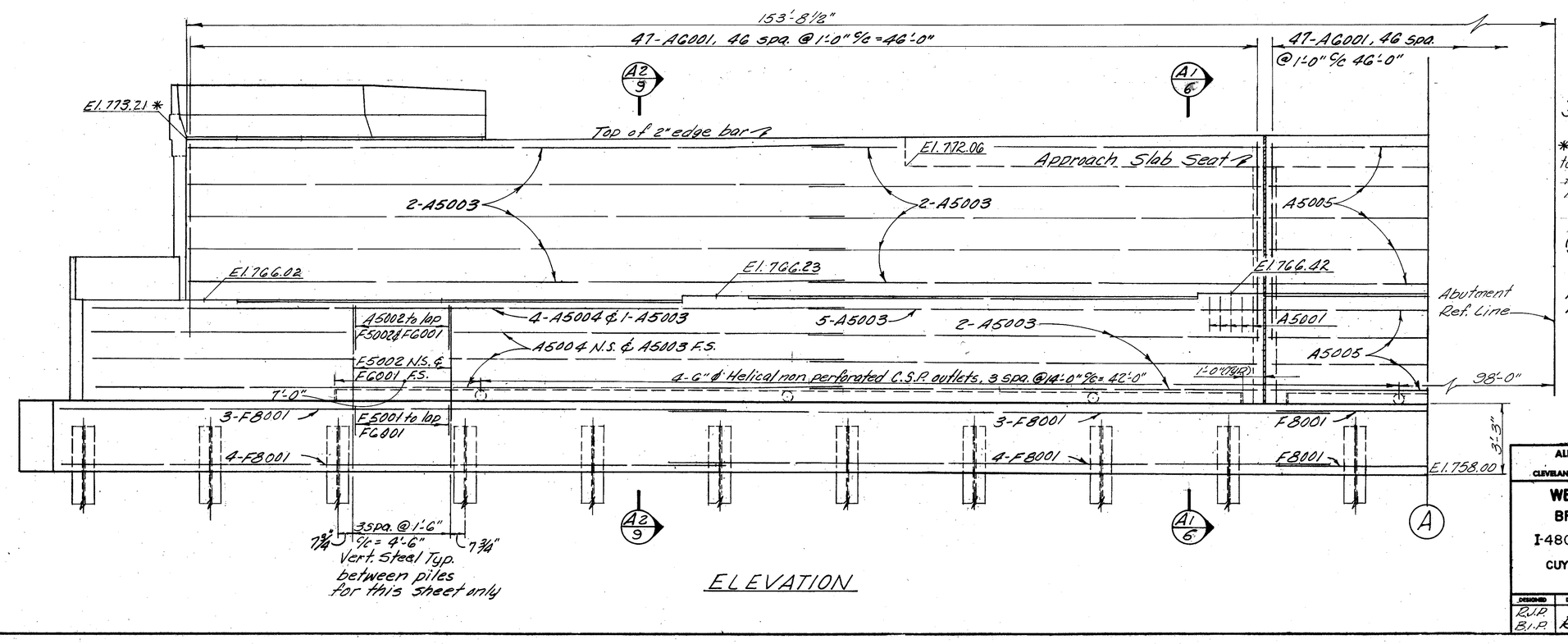
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

234 / 347

CUYAHOGA COUNTY
CUY-480-4.86





NOTES:

For additional notes see Shts. 12/46 & 234A/347

*Elevations shown thus are top of edge bar elevations at the face of backwall and the point indicated.

All piles are HP10x42 H-piles.
⊤ indicates vertical piles.
⊤ indicates piles battered 1:4

In reinforcing bar callouts:
N.S. indicates near side.
F.S. indicates far side.

5/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

WEST ABUTMENT DETAILS

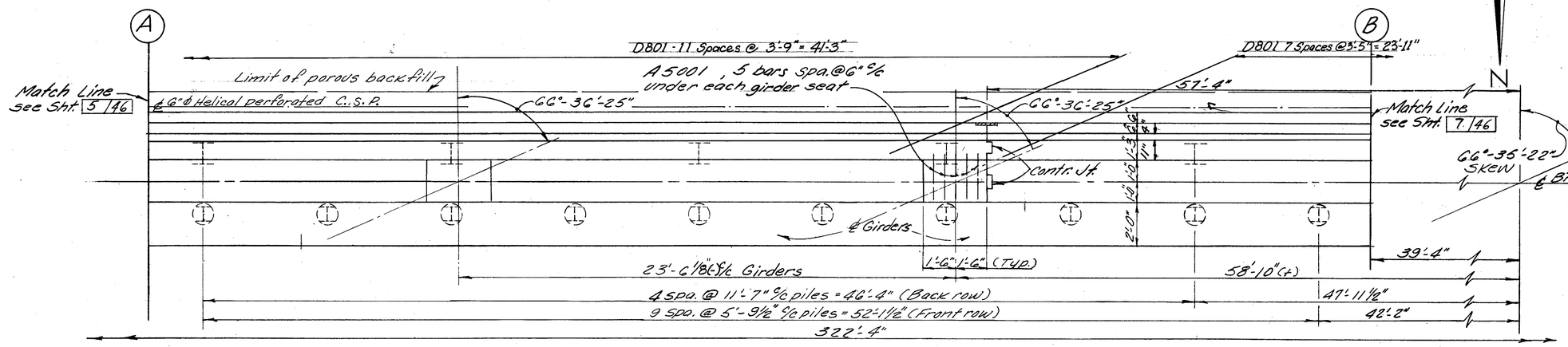
BRIDGE Nº CUY-480-0499
I-480 OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P. B.I.P.	R.T.		R.S.S.	G.W.M.	11/7/69	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

235 / 347

CUYAHOGA COUNTY
CUY-480-4.86



PLAN

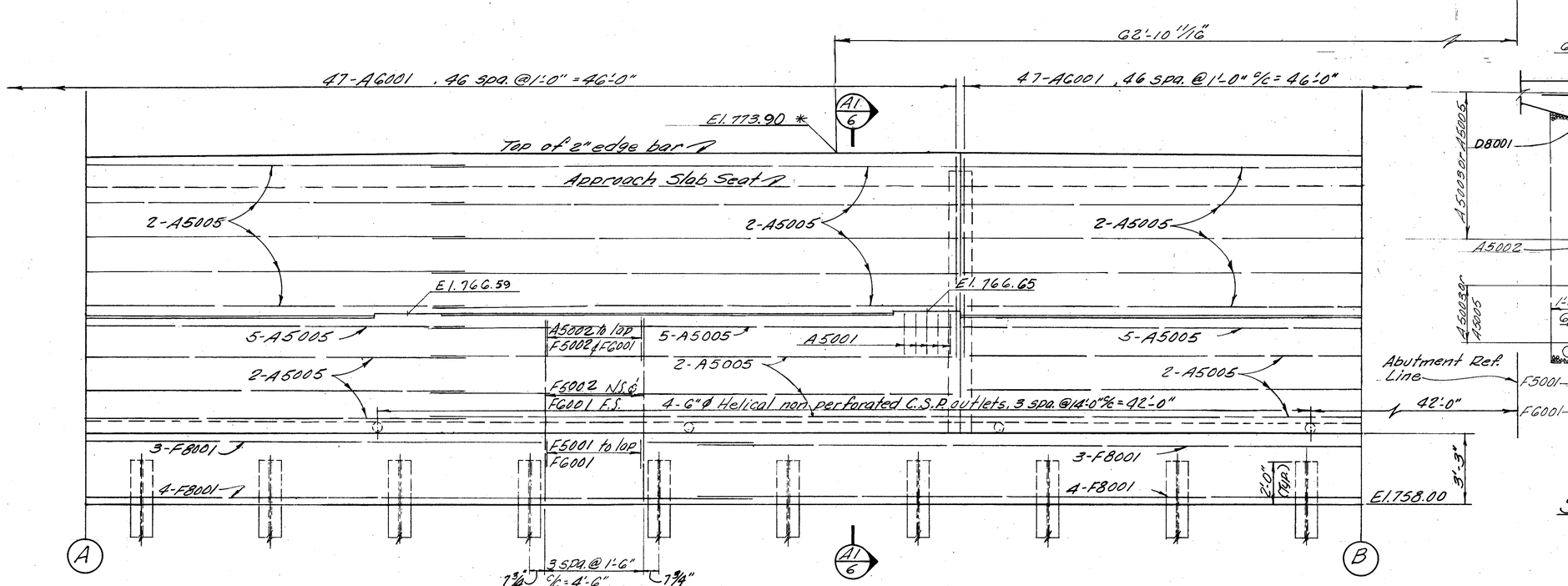
NOTES:

For additional notes see Shts. 12/46 & 231A/347

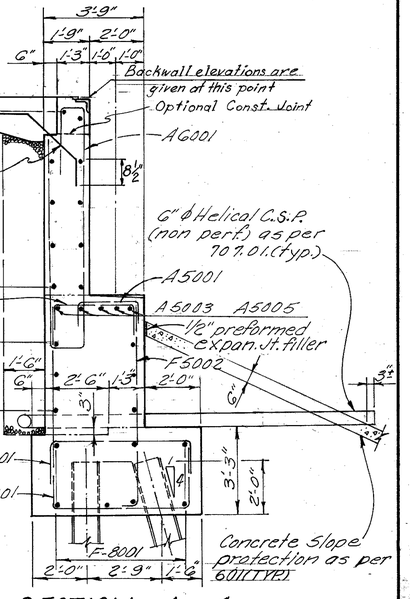
All piles are HP10x42, H-piles.
indicates vertical piles.
indicates piles battered 1:4

In reinforcing bar callouts:
N.S. indicates near side.
F.S. indicates far side.

*Elevations shown thus are top of edge bar elevations at the face of backwall and the point indicated.



ELEVATION



SECTION A1-A1

6/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

WEST ABUTMENT DETAILS

BRIDGE NO CUY-480-0499
I-480 OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

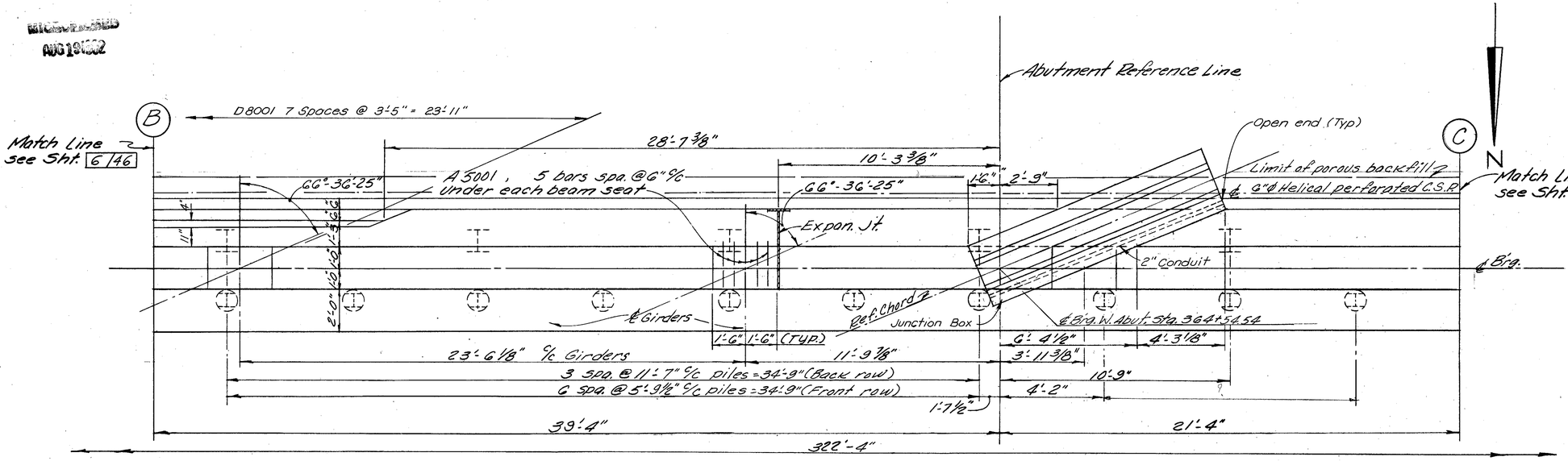
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P. B.I.P.	R.T.		R.S.S.	G.W.M.	1/7/69	

RECEIVED
AUG 19 1968

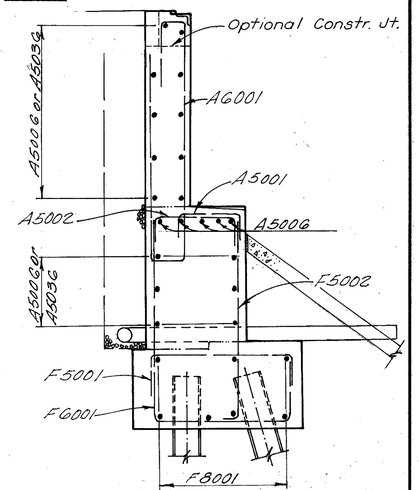
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

236
347

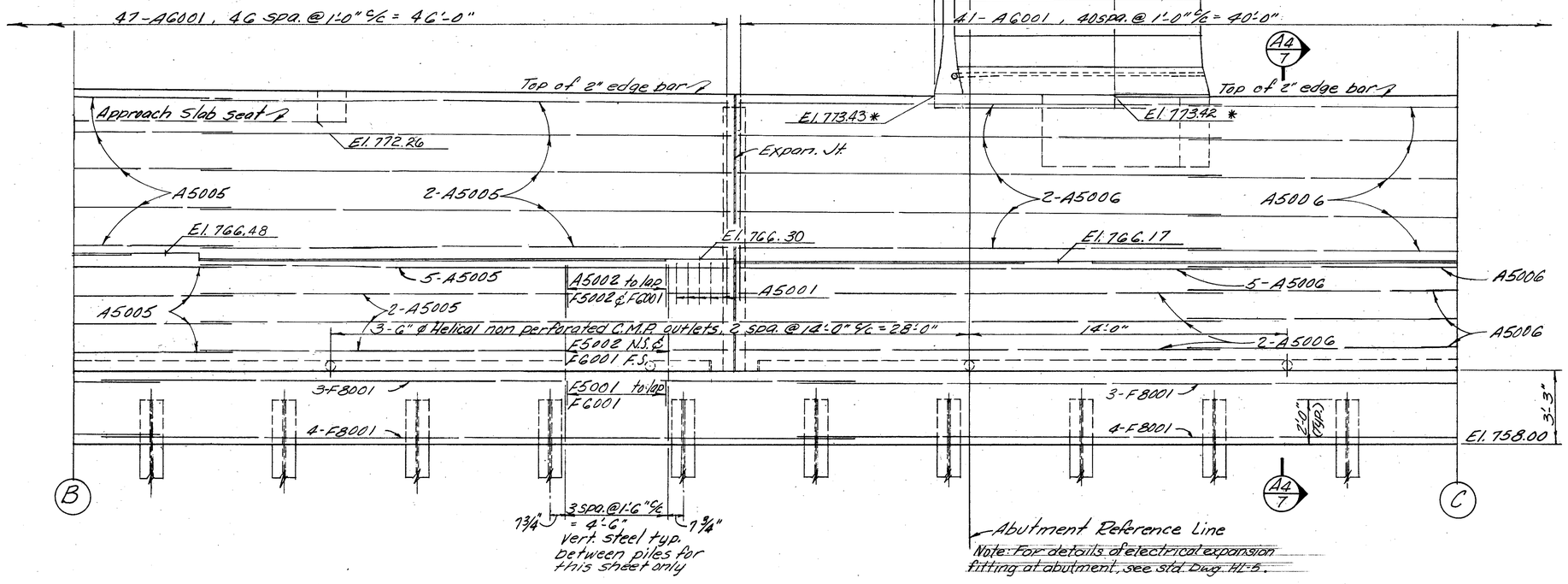
CUYAHOGA COUNTY
CUY-480-4.86



PLAN



SECTION A4 - A4



ELEVATION

Notes:

* Elevations shown thus are T/edge bar elevations at the face of backwall and the point indicated.

For Details of abut. median see sht. 19/46

The shape of the median on the abut. shall match the shape of the median on the superstructure.

For additional notes see shts. 12/46 & (231A/347)

All piles are HP10x42 H-piles
I indicates vertical piles.
(I) indicates piles battered 1:4

In reinforcing bar callouts:
N.S. indicates near side.
E.S. indicates far side.

7/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

WEST ABUTMENT DETAILS

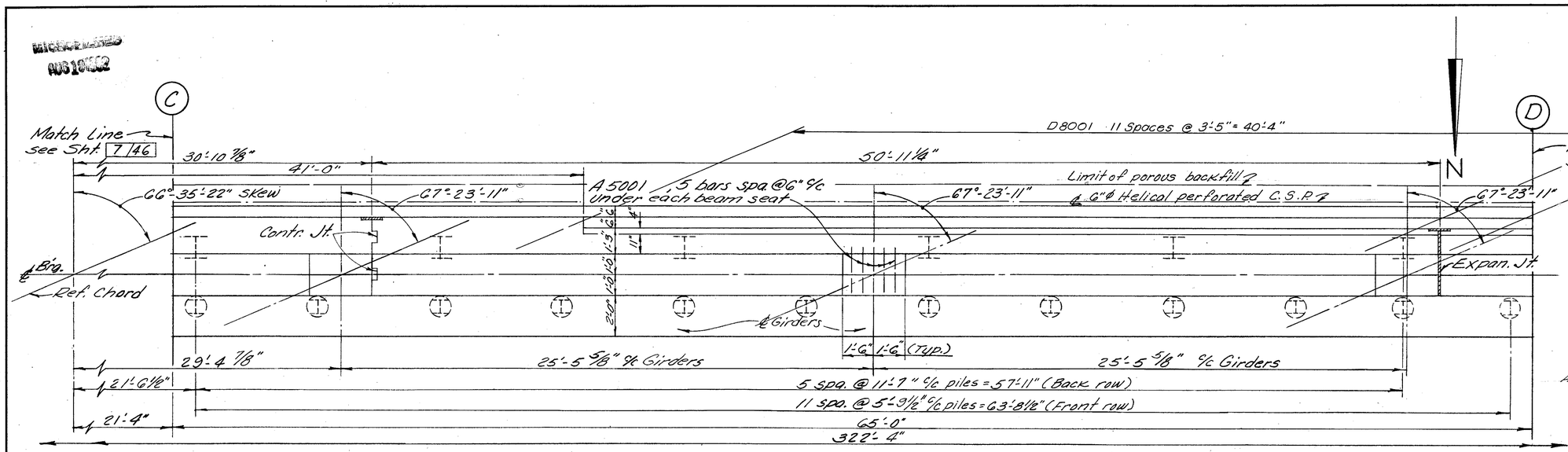
BRIDGE NO. CUY-480-0499
I-480-OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364 + 48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.J.P. B.I.P.	C.B.C.		P.S.S.	G.W.M.	1/1/69	

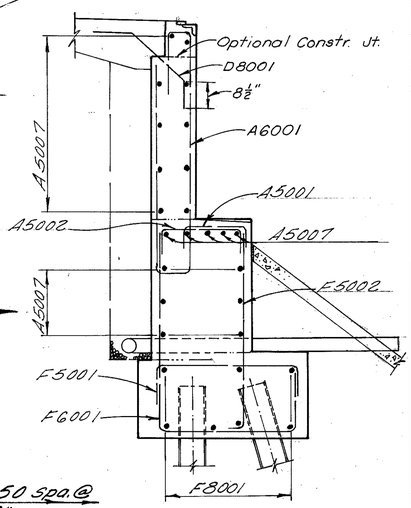
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

231 / 347

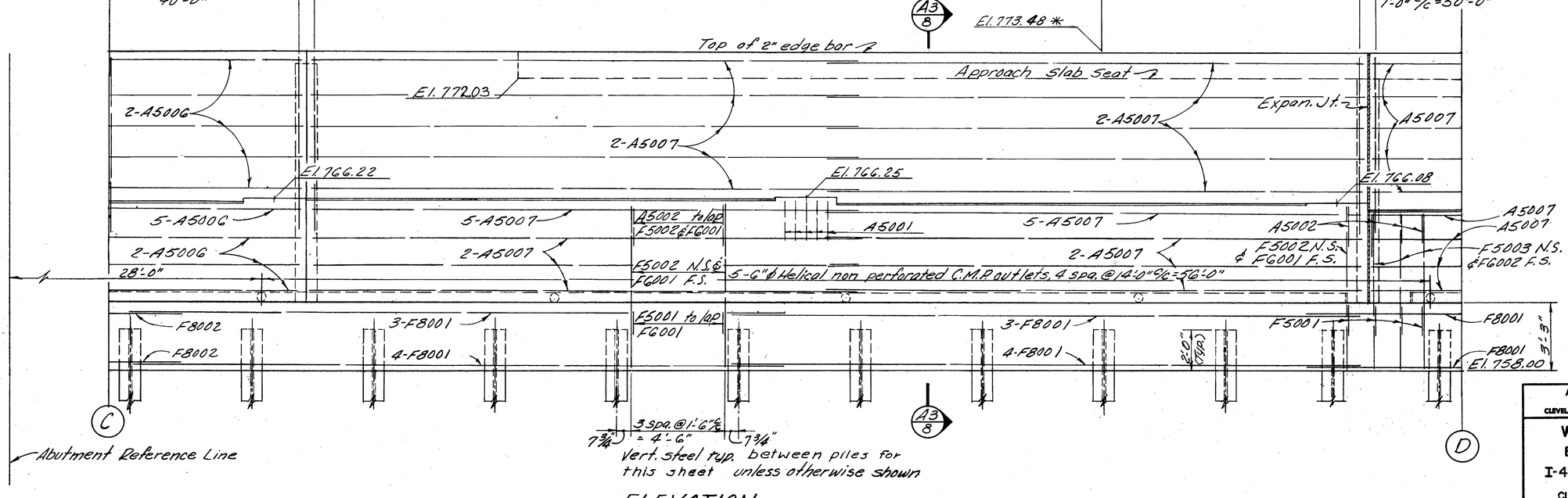
CUYAHOGA COUNTY
CUY-480-4.86



PLAN



SECTION A3-A3



ELEVATION

NOTES:

For additional notes see Shts. 12/46 & 231A/347

*Elevations shown thus are T edge bar elevations at the face of backwall and the point indicated.

All piles are HP 10×42, H-piles. ⊕ indicates vertical piles. ⊖ indicates piles battered 1:4.

In reinforcing bar callouts: N.S. indicates near side. F.S. indicates far side.

8/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

WEST ABUTMENT DETAILS

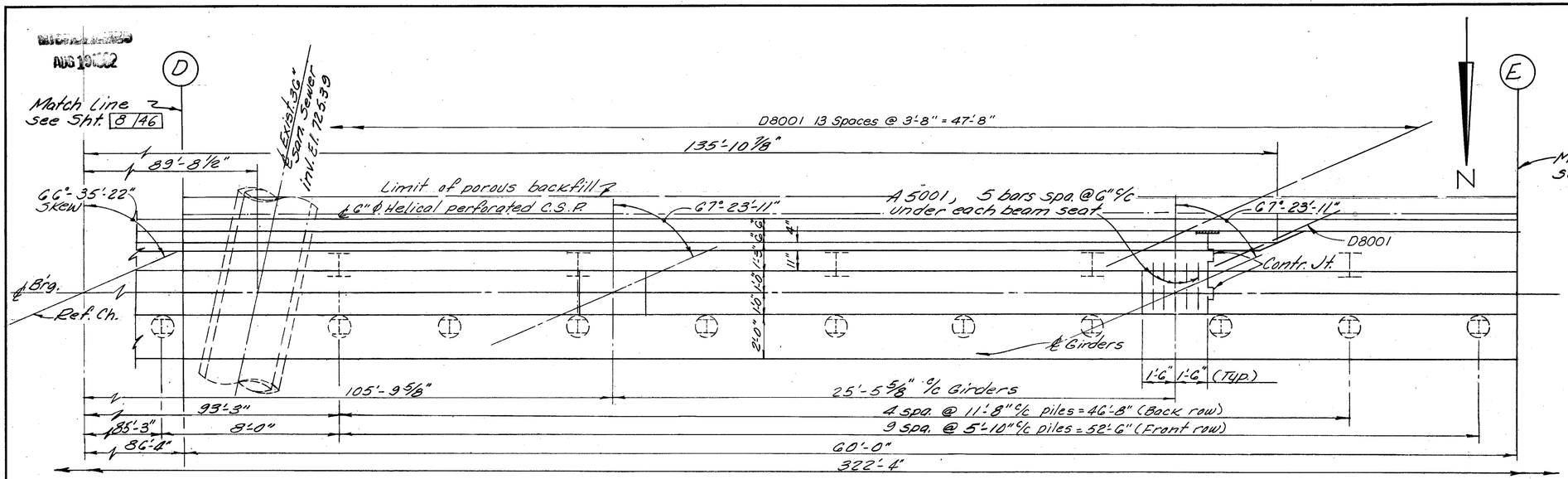
BRIDGE Nº CUY-480-0499
I-480-OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.J.P. B.I.P.	R.T.		R.S.S.	G.W.M.	1/7/69	

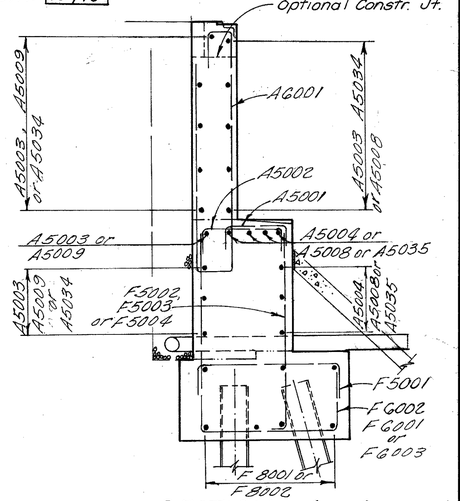
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

238
347

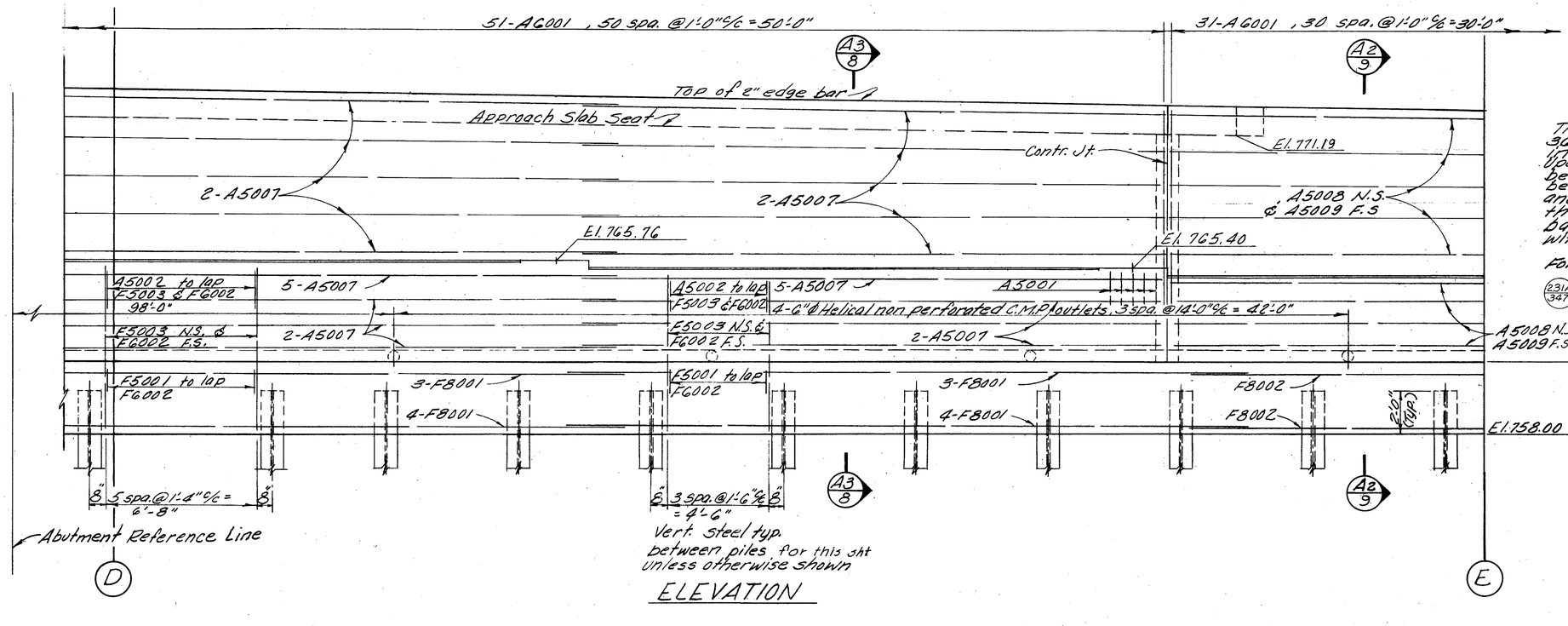
CUYAHOGA COUNTY
CUY-480-4.86



PLAN



SECTION A2-A2



Vert. steel typ. between piles for this sht unless otherwise shown

ELEVATION

Notes:

The three piles adjacent to the existing 30" Sanitary Sewer shall be driven in holes prebored to El. 725.0 ± Upon completion of driving, the voids between the pile & prebored material shall be backfilled with concrete to Elev. 733.00 ± and with granular backfill to the top of the hole. The concrete and granular backfill shall be included for payment with Item 507, Prebored Holes.

For additional notes see shts. 12/46 &

231A/347

All piles are HP10×42 H-piles.
○ indicates vertical piles.
⊕ indicates piles battered 1:4.

In reinforcing bar callouts:
N.S. indicates near side.
F.S. indicates far side.

9/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

WEST ABUTMENT DETAILS

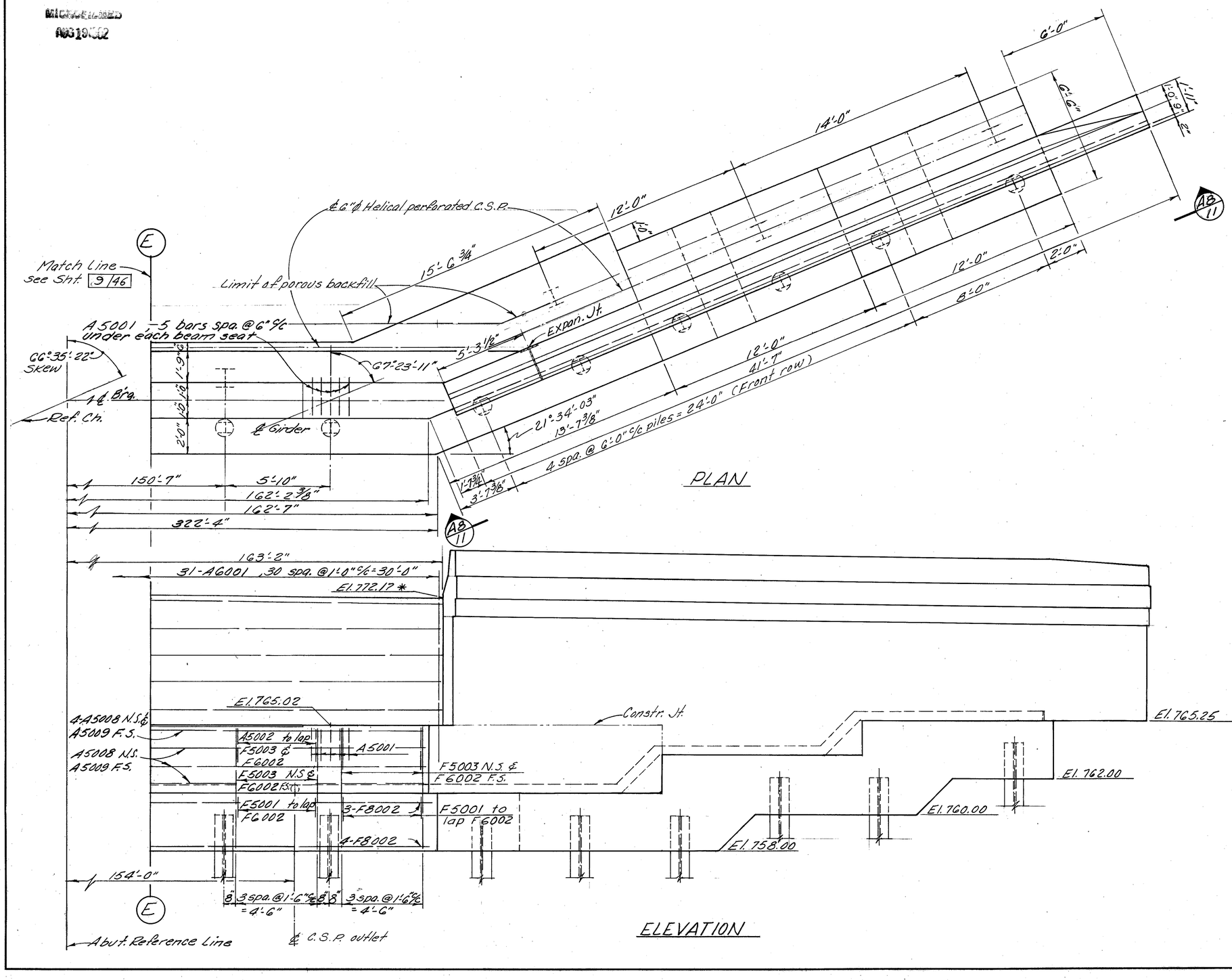
BRIDGE NO CUY-480-0499
I 480 OVER S.R. 17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P. B.I.P.	R.T.		R.S.S.	G.W.M.	1/1969	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

229
347

CUYAHOGA COUNTY
CUY-480-4.86



PLAN

ELEVATION

N

NOTES:

* Elevations shown thus are T/ledge bar elevations at the face of backwall and the point indicated.

For additional notes see Sht. 12 46

All piles are HP 10x42 H-piles.
T indicates vertical piles
(T) indicates piles battered 1:4

In reinforcing bar callouts:
N.S. indicates near side.
F.S. indicates for side.

10 46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

WEST ABUTMENT DETAILS

BRIDGE № CUY-480-0499
I-480 OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY STA. 364+48.63 STA. 369+04.01

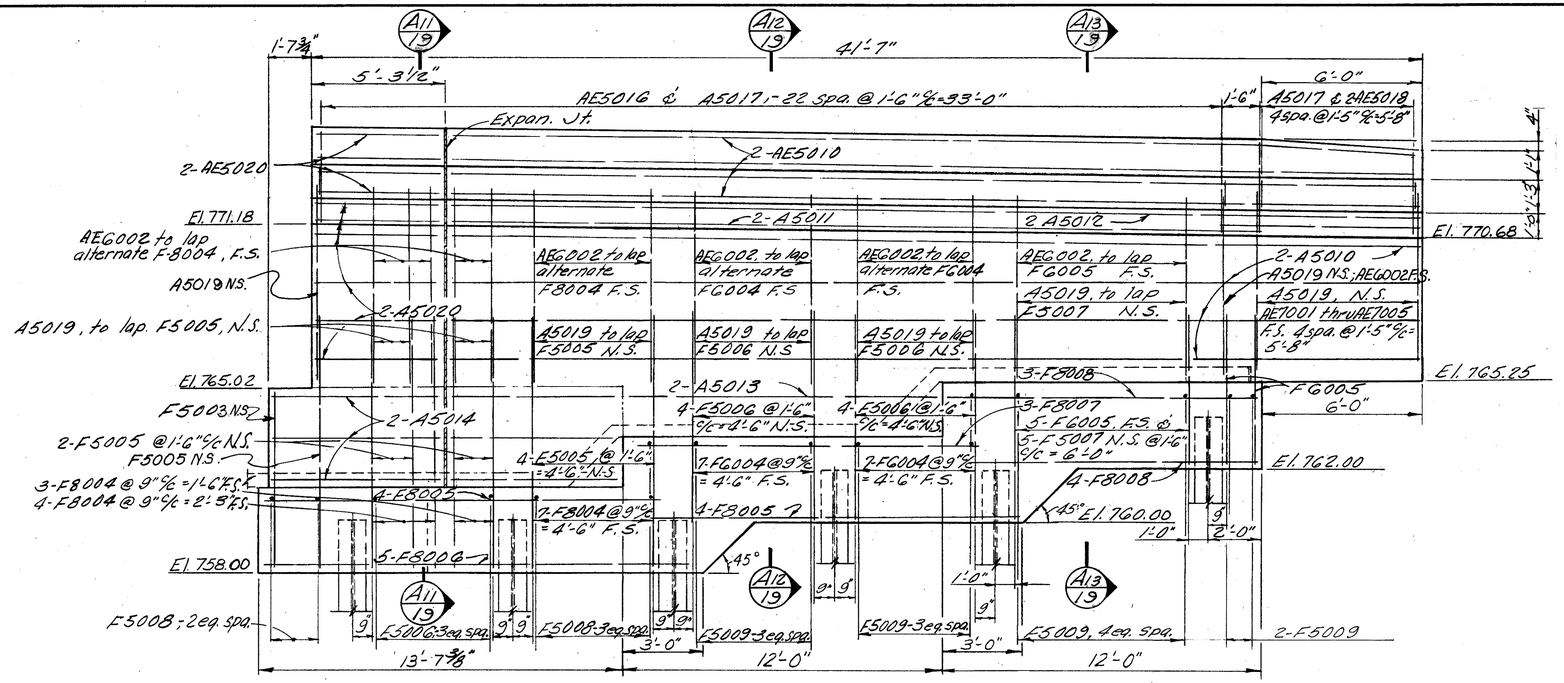
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P. B.I.R.	R.T.		R.S.S.	G.H.M.	1/3/69	

RECEIVED
AUG 10 1982

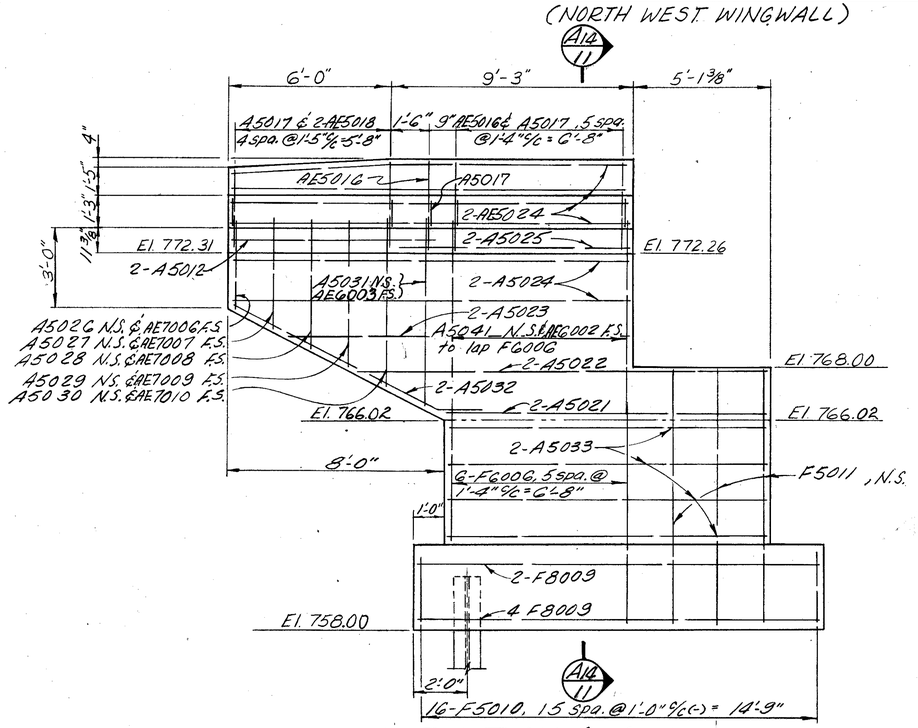
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

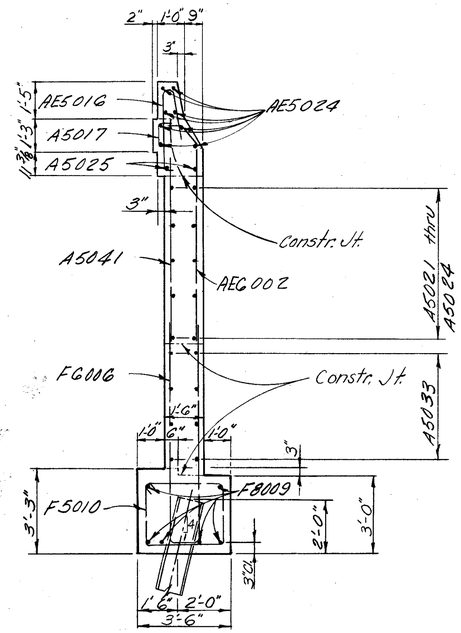
240
347

CUYAHOGA COUNTY
CUY-480-4.86



ELEVATION A8-A8 10/46
(NORTH WEST WINGWALL)





ELEVATION A7-A7 5/46 (SOUTH WEST WINGWALL) SECTION A14-A14

NOTES:

For additional notes see Sht. 12/46

In reinforcing bar callouts:
N.S. indicates near side.
F.S. indicates far side.

11/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

WEST ABUTMENT DETAILS

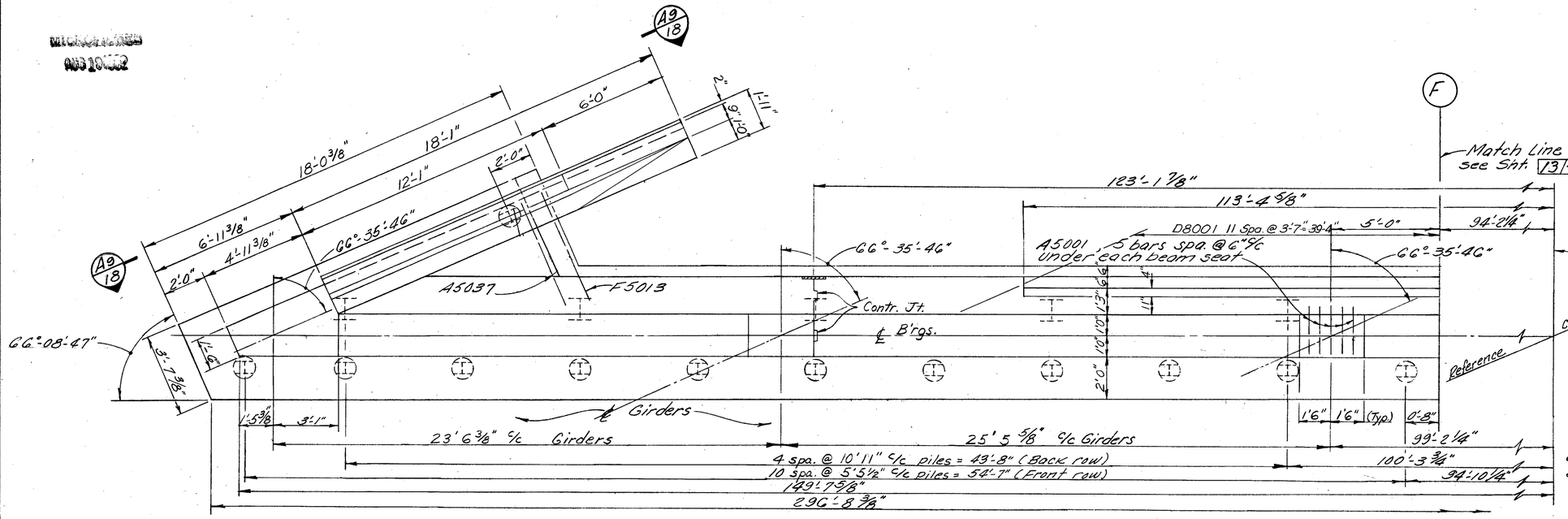
BRIDGE № CUY-480-0499
I-480 OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.J.P. B.I.P.	R.T.		R.S.S.	G.W.M.	1/9/69	

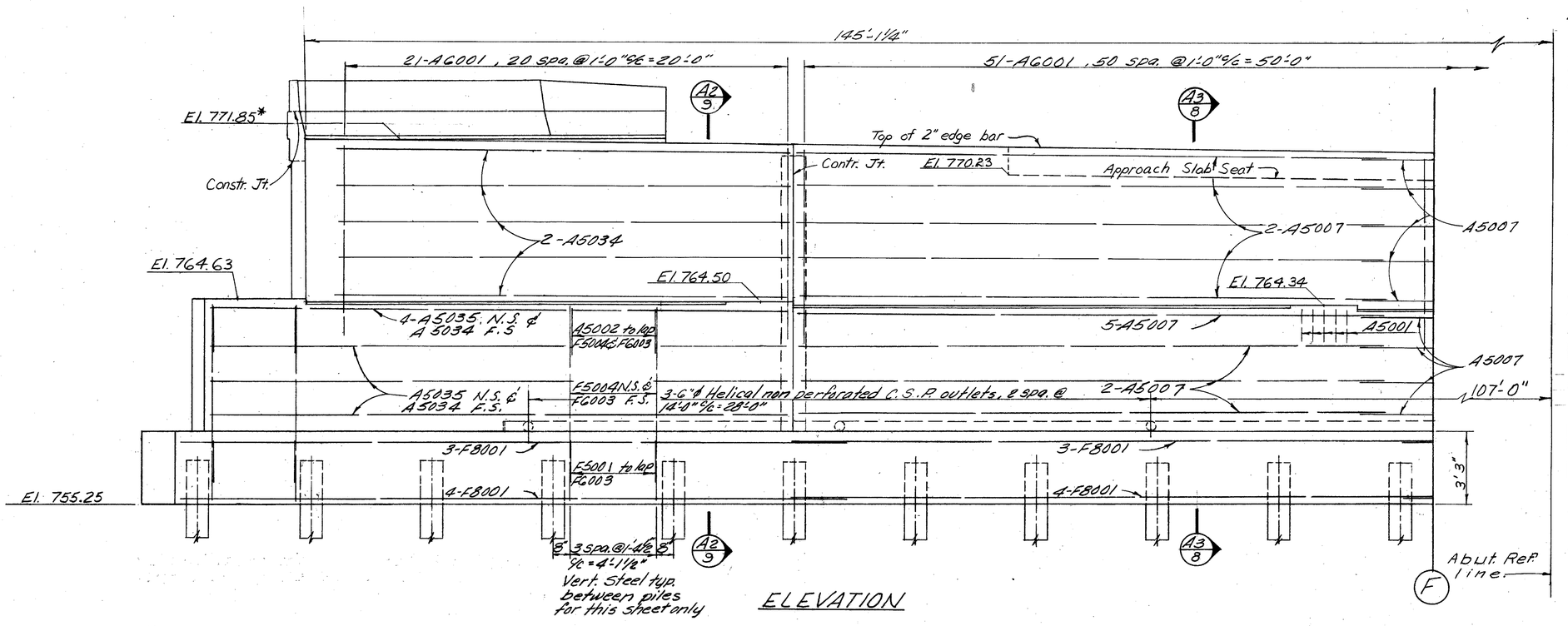
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

241/347

CUYAHOGA COUNTY
CUY-480-4.86



PLAN



ELEVATION

Notes:

All piles shall be HP10×42 H Piles

⊥ Indicates Vertical Pile

Ⓟ Indicates piles battered 1:4

Porous Backfill 1'-6" thick, full length of abutment and wings, shall extend up to the subgrade or to the finished ground surface. Excavation therefor in excess of that required for construction of the abutment shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

A joint shall be provided in the abutment portion of the end dam at contraction & expansion joints.

6"℄ Helical Perforated C.S.P. shall have all ends capped.
6"℄ Helical non-perforated C.S.P. shall extend into crushed aggregate.

For details of expansion and contraction joints see Common Details Sht. No. 328

In reinforcing steel call outs:
N.S. indicates near side.
F.S. indicates far side.

Concrete and reinforcing steel for parapets and barrier median are included for payment with Item 511 concrete and 509 Reinforcing Steel.

* Elevations shown thus are T/ edge bar elevations at the face of backwall and the point indicated.

12/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

EAST ABUTMENT DETAILS

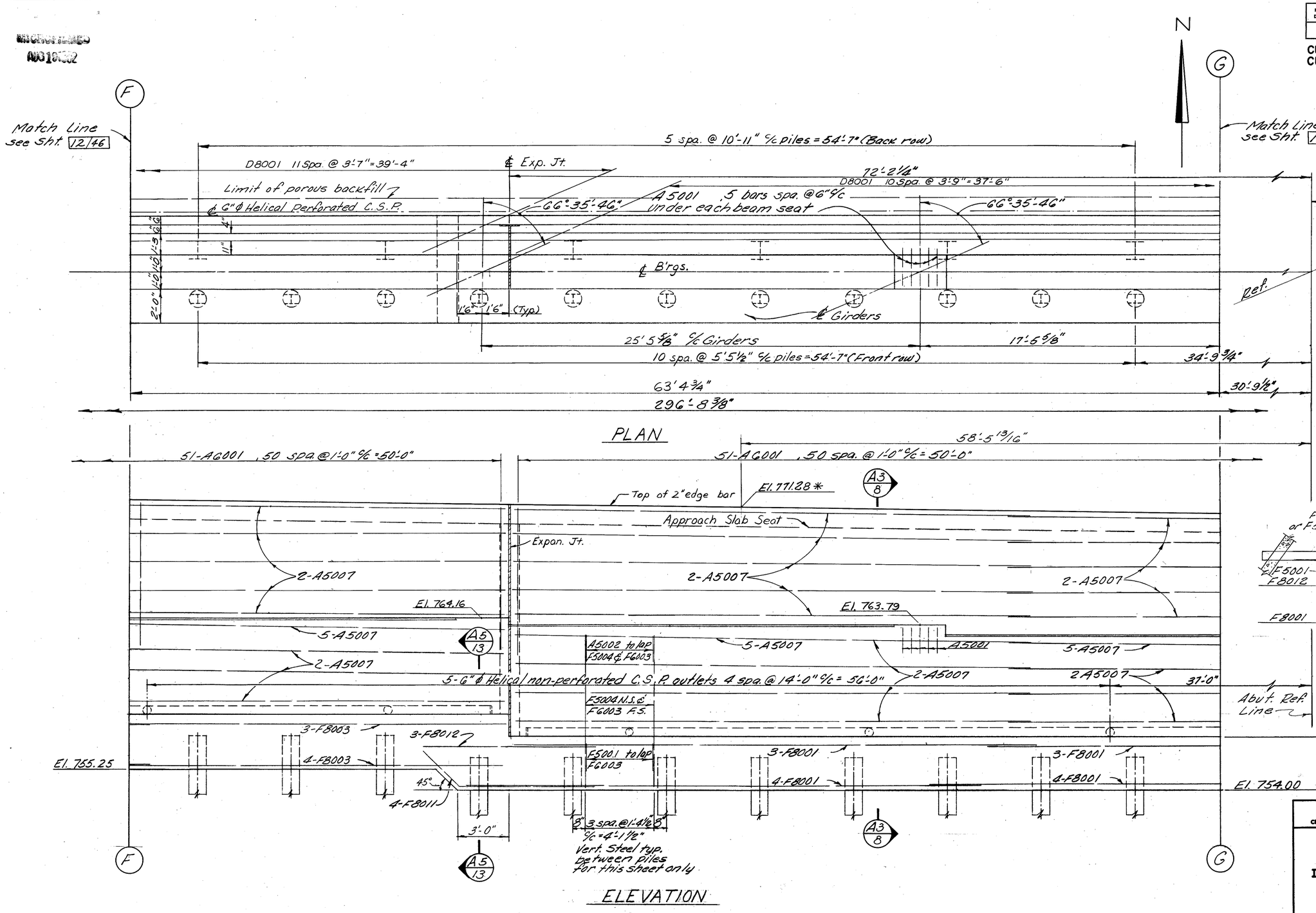
BRIDGE No. CUY-480-0499
I-480-OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	C.B.C.		R.S.S.	C.W.M.	11/6/46	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

242
347

CUYAHOGA COUNTY
CUY-480-4.86



13/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

EAST ABUTMENT DETAILS

BRIDGE Nº CUY-480-0499
I-480-OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

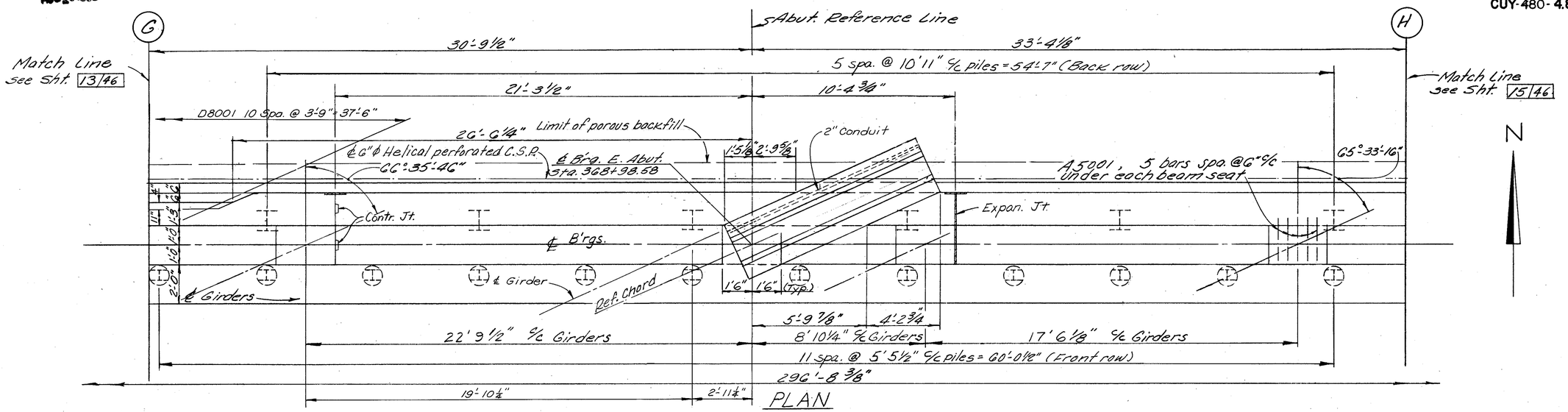
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P. B.I.P.	C.B.C.		R.S.S.	G.W.M.	1/3/69	

MICROFILMED
AUG 19 1982

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

243
347

CUYAHOGA COUNTY
CUY-480-4.86



Notes:

* Elevations shown thus are T/edge bar elevations at the face of back-wall and the point indicated.

For Details of abut. median see Sht. 19/46

The shape of the median on the abut. shall match the shape of the median on the superstructure.

For additional notes see Sht. 12/46

All piles are HP10×42 H-piles.
T indicates vertical piles.
(T) indicates piles battered 1:4.

In reinforcing bar callouts:
N.S. indicates near side.
F.S. indicates far side.

Note: For details of electrical expansion fitting at abutment see standard Drawing HL-5.

14/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

EAST ABUTMENT DETAILS

BRIDGE NO CUY-480-0499
I-480-OVER S.R. 17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P. B.I.P.	C.B.C.		R.S.S.	G.W.M.	1/8/69	

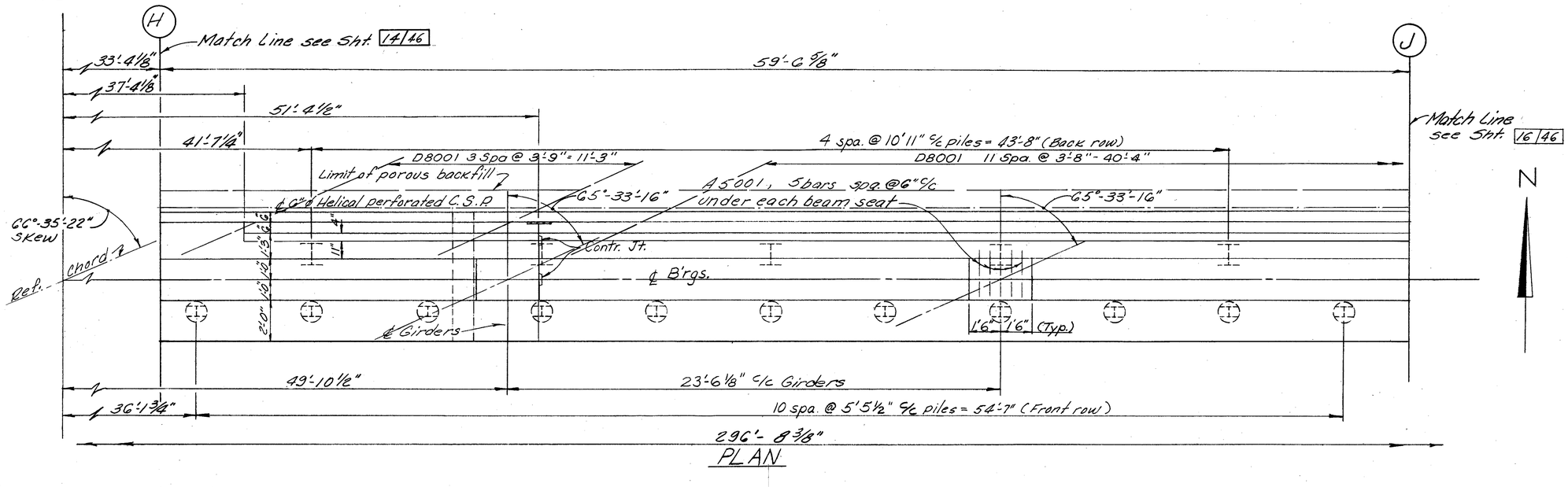
REV. 10-2-78

MICROFILMED
AUG 19 '02

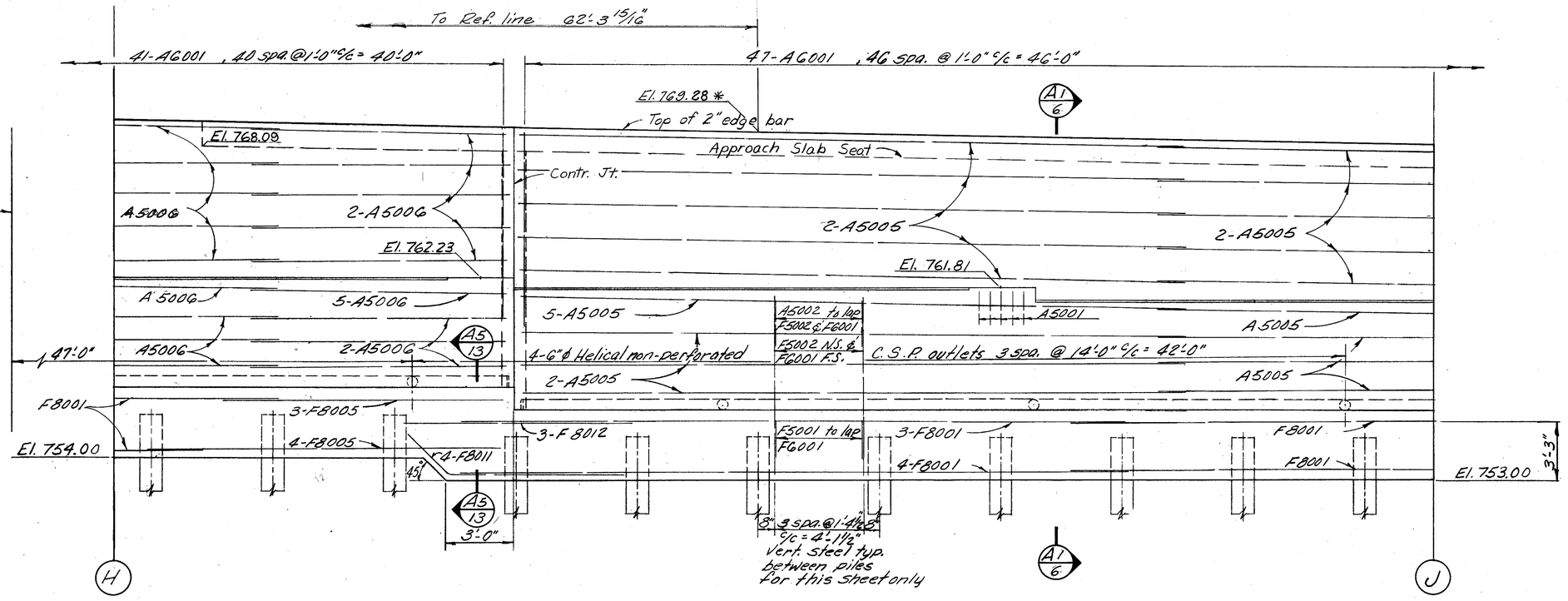
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

244
347

CUYAHOGA COUNTY
CUY-480-4.86



PLAN



ELEVATION

NOTES:

All piles are HP 10x42 H-piles.
I indicates vertical piles.
(I) indicates piles battered 1:4

In reinforcing bar callouts
N.S. indicates near side.
F.S. indicates far side.

For additional notes see Sht. 12/46

* Elevations shown thus are T/edge bar elevations at the face of backwall and the point indicated.

15/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

EAST ABUTMENT DETAILS

BRIDGE Nº CUY-480-0499
I-480 OVER S.R. 17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

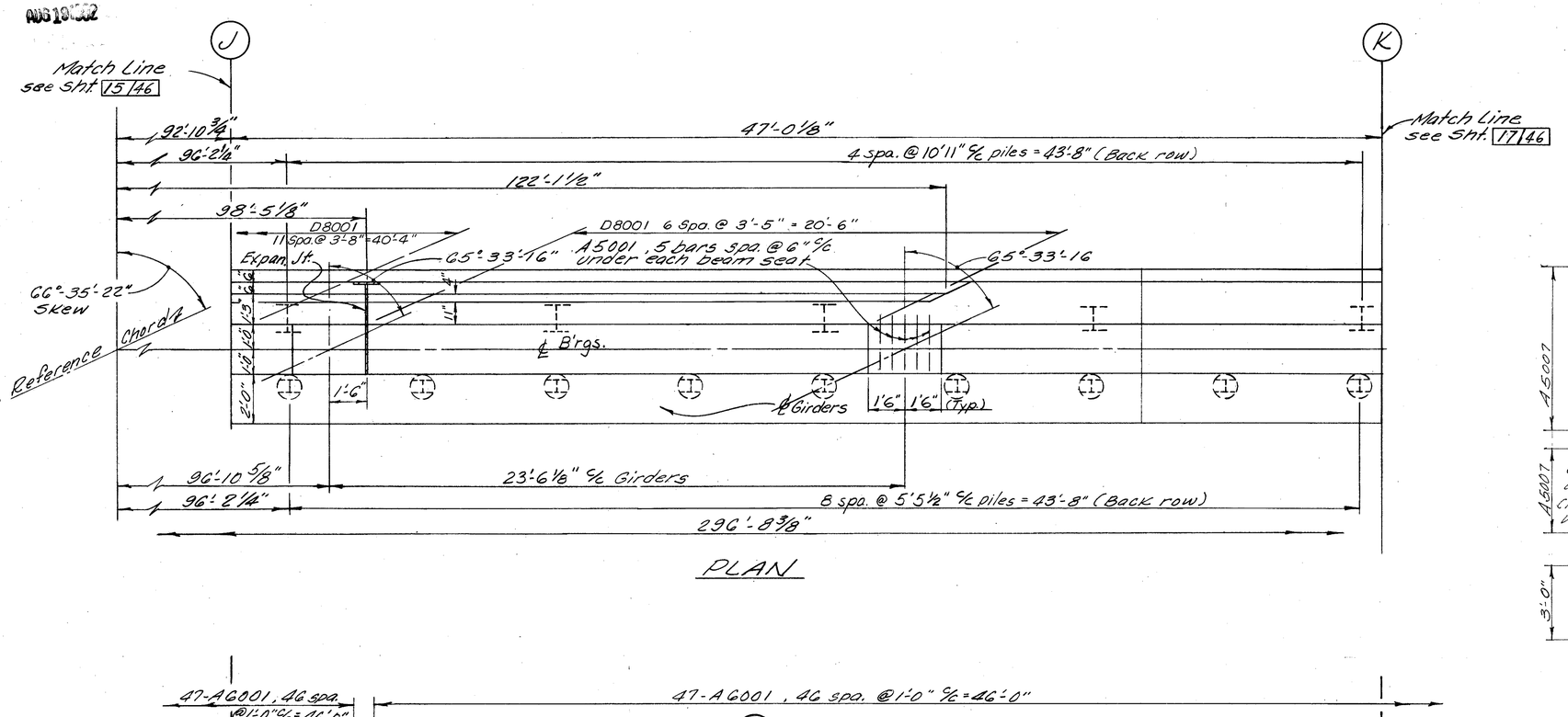
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P. B.I.P	C.B.C.		R.S.S.	G.W.M.	1/8/69	

RECEIVED
AUG 19 1968

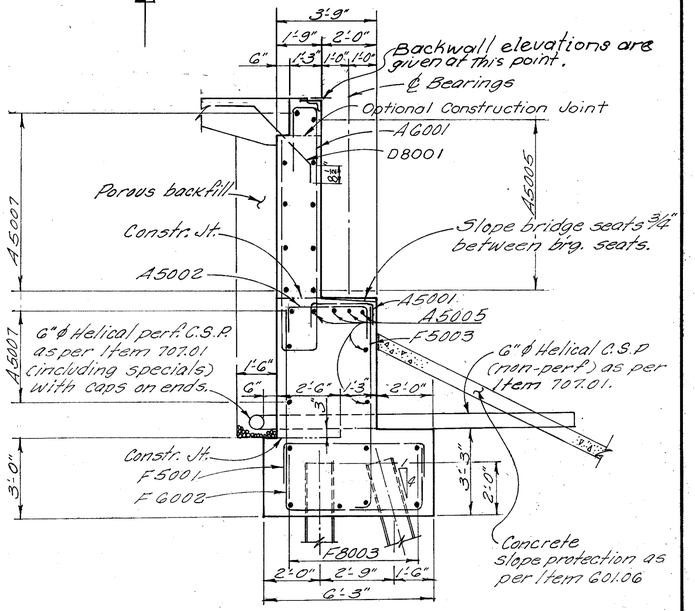
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

245/347

CUYAHOGA COUNTY
CUY-480-4.86



PLAN



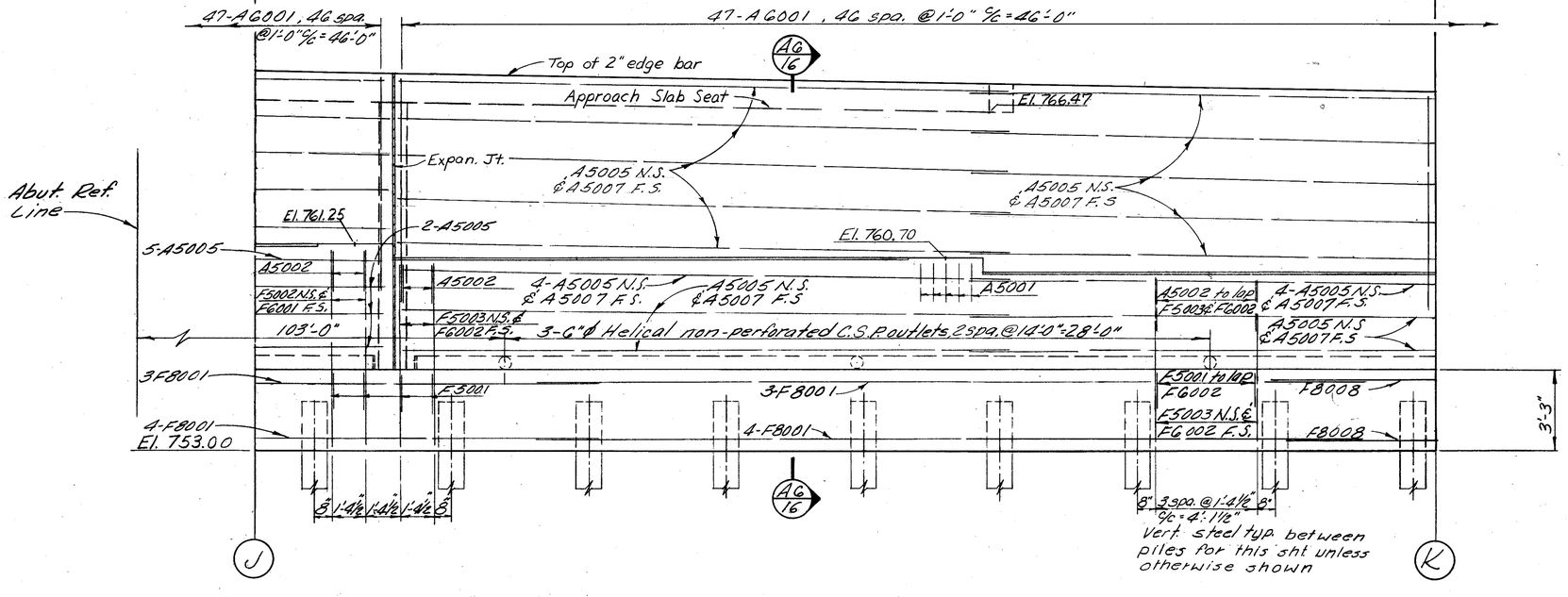
SECTION A6-A6

NOTES:

All piles are HP 10x42 H-piles
⊥ indicates vertical piles
⊕ indicates piles battered 1:4

In reinforcing bar callouts
N.S. indicates near side.
F.S. indicates far side.

For additional notes see Shts. 12/46 & (231A/347)



ELEVATION

16/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

EAST ABUTMENT DETAILS

BRIDGE Nº CUY-480-0499
I-480-OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

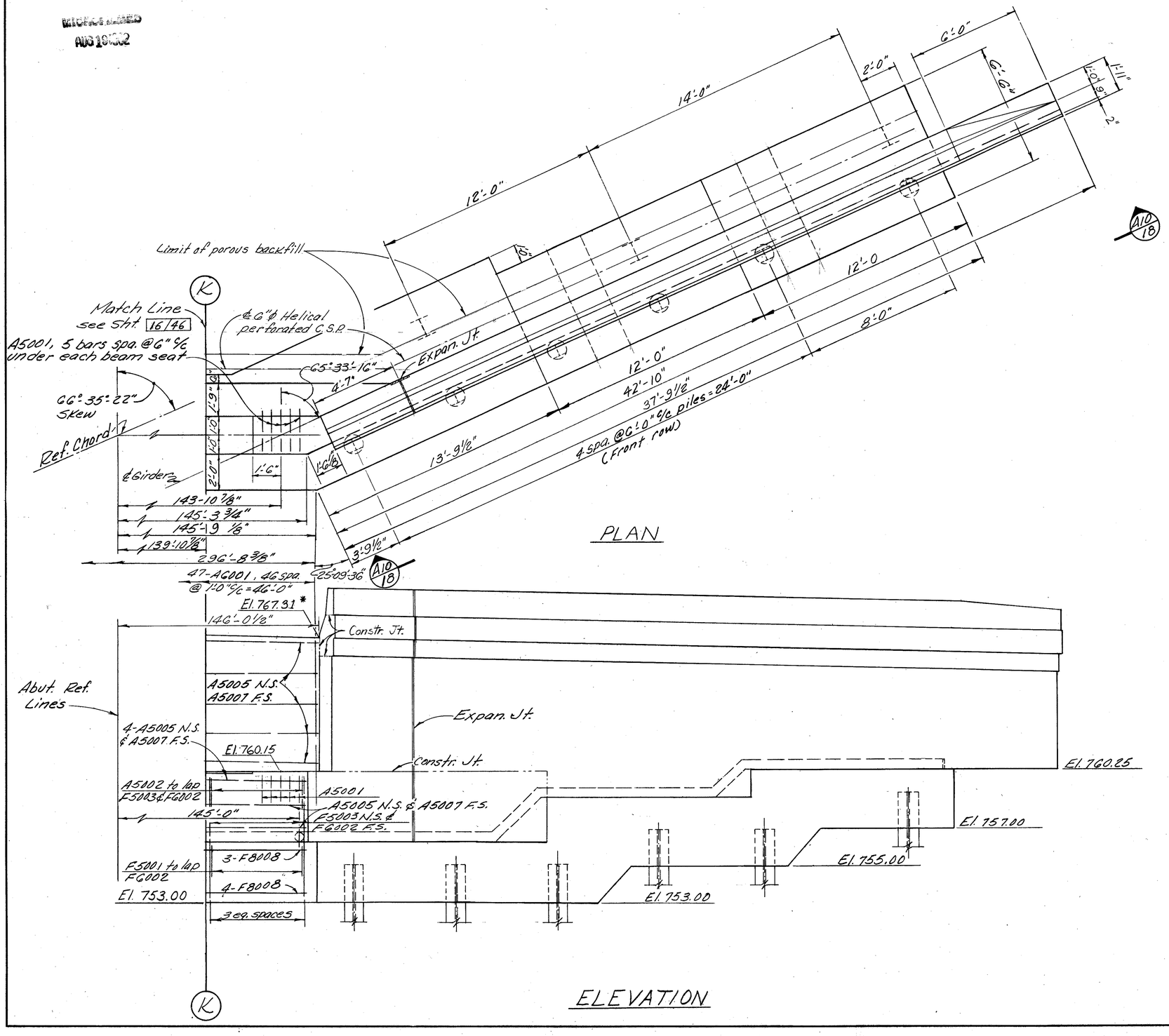
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P. B.I.P.	C.B.C.		R.S.S.	G.W.M.	1/6/69	

RECEIVED
AUG 19 1982

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

246/347

CUYAHOGA COUNTY
CUY-480-4.86



PLAN

ELEVATION

N

Notes:

All piles are HP10×42 H-piles
⊥ indicates Vertical piles
(T) indicates piles battered 1:4

In reinforcing bar callouts
N.S. indicates near side
F.S. indicates far side

For additional notes see Sht. 12/46

* Elevations shown thus are T/edge bar elevations at the face of backwall and the point indicated.

17/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

EAST ABUTMENT DETAILS

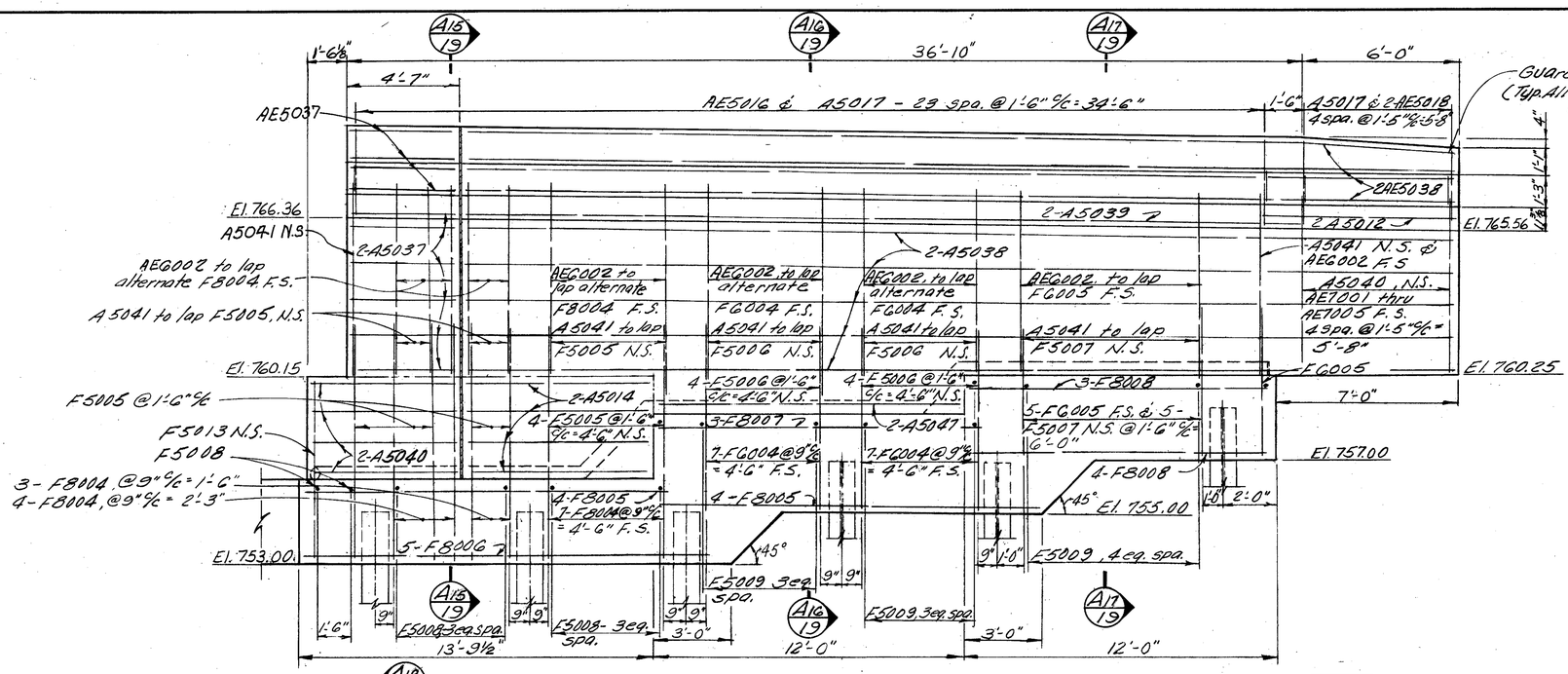
BRIDGE Nº CUY-480-0499
I-480-OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P. B.I.P.	C.B.C.		R.S.S.	G.W.M.	1/3/29	

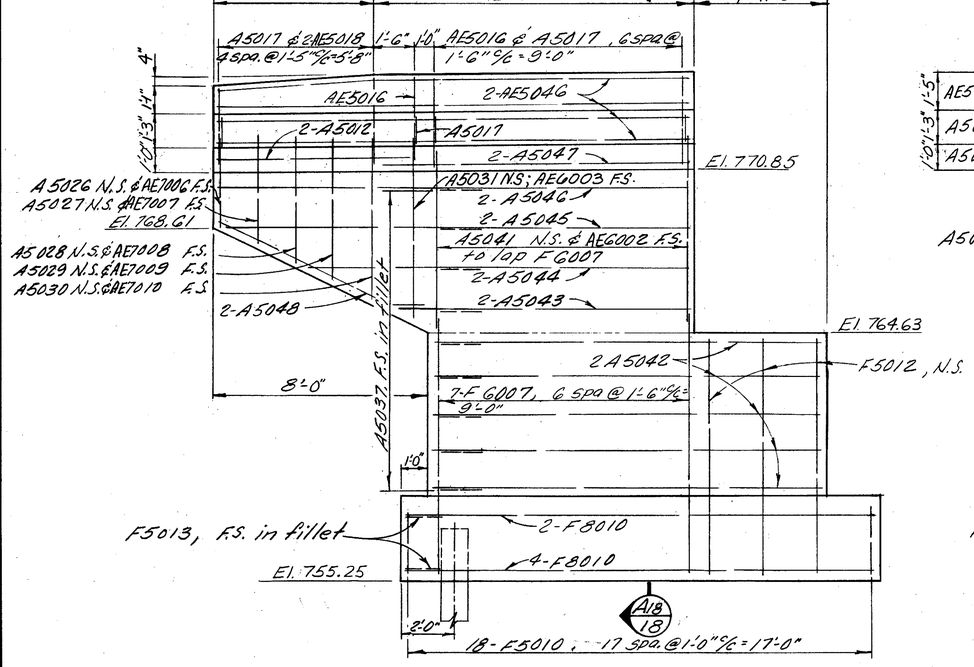
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

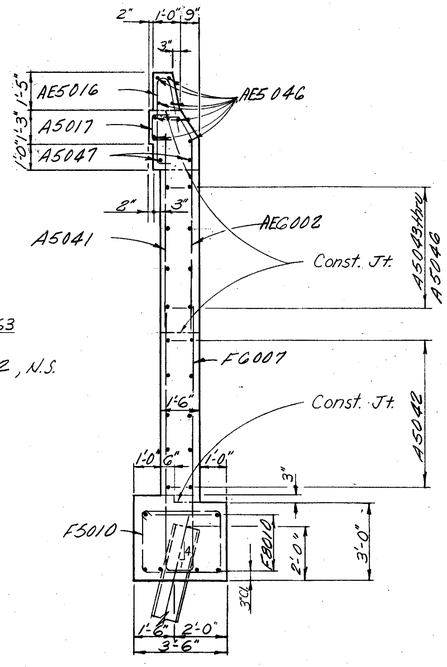
247
347



ELEVATION A10-A10 7/46



ELEVATION A9-A9 12/46



SECTION A18-A18

18/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

EAST ABUTMENT DETAILS

BRIDGE Nº CUY-480-0499
I-480-OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364 + 48.63
STA. 369 + 04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P. B.I.P.	C.B.C.		R.S.S.	G.W.M.	11/0/69	

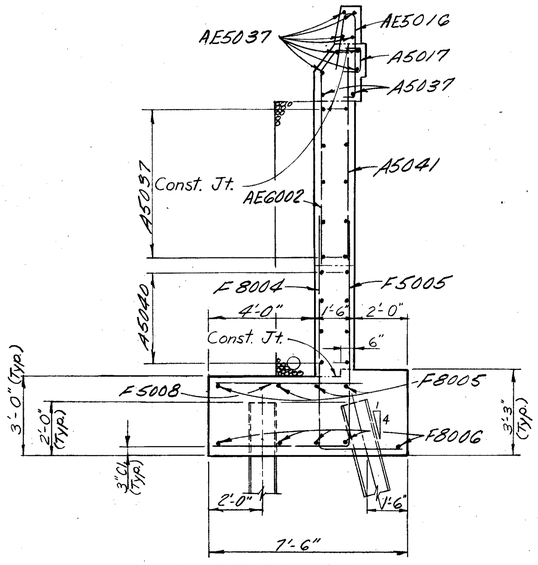
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

248
347

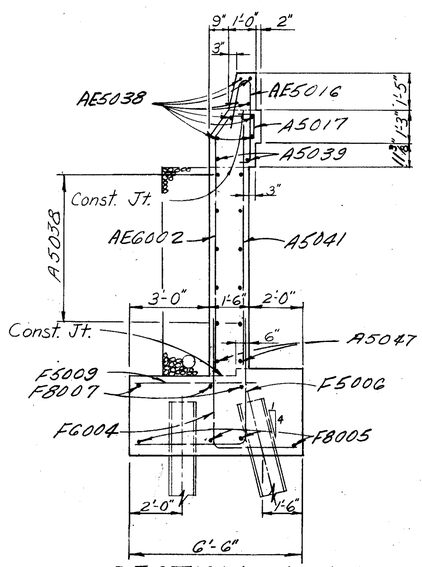
CUYAHOGA COUNTY
CUY.-480- 4.86

NOTE: All parapets shall have dimensions shown below.

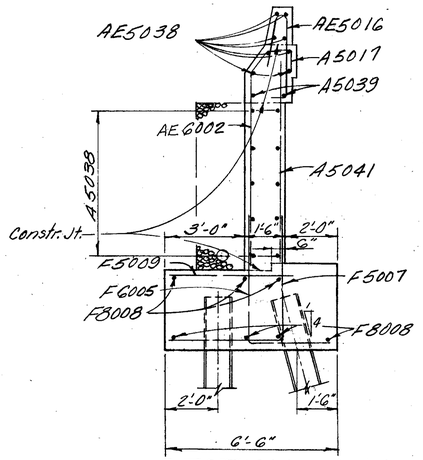
Conduit location for west Abutment is opposite hand. See sht. 36A/46



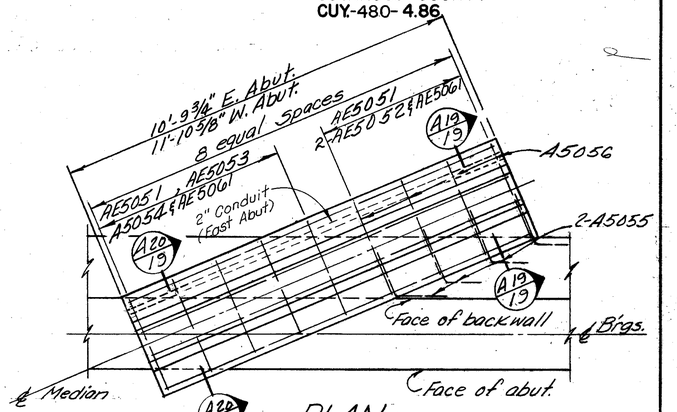
SECTION A15-A15 18/46



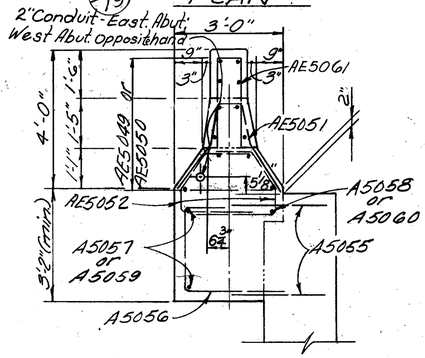
SECTION A16-A16 18/46



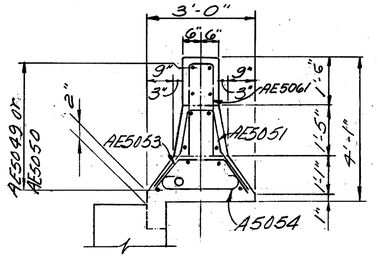
SECTION A17-A17 18/46



PLAN



SECTION A19 - A19

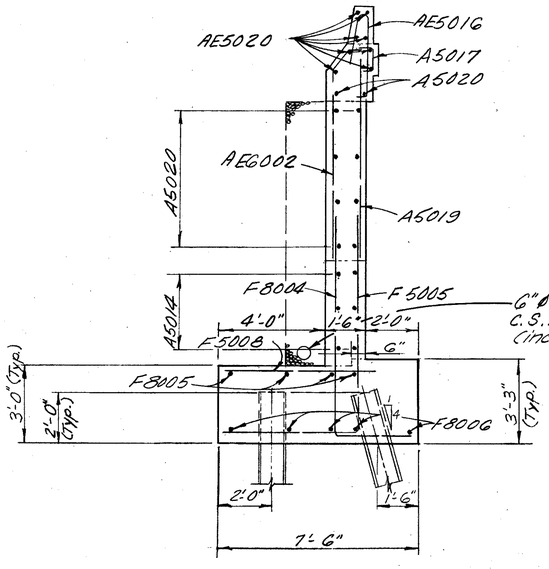


SECTION A20 - A20

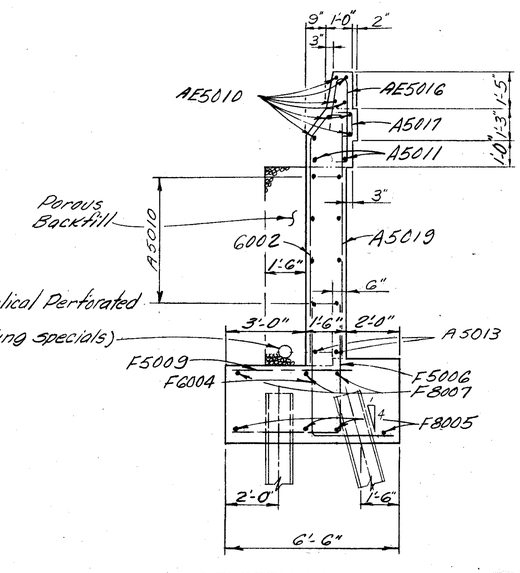
ABUTMENT MEDIAN DETAILS

19/46

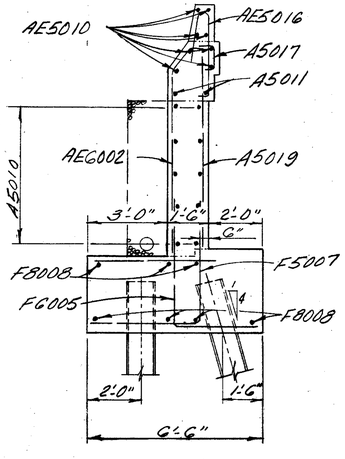
NOTE: All parapets shall have dimensions shown below.



SECTION A11-A11 11/96



SECTION A12-A12 11/96



SECTION A13-A13 11/46

Note: For details of electrical expansion fitting at abutment see Standard Drawing HL-5.

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

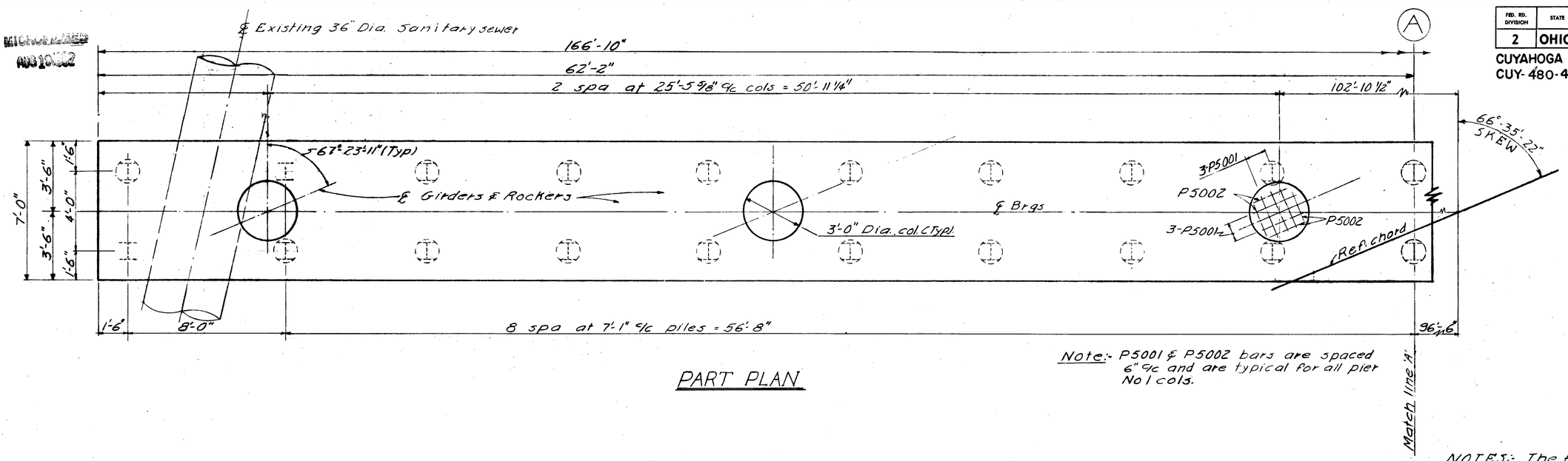
ABUTMENT DETAILS
BRIDGE Nº CUY.-480-0499
I 480 OVER S.R. 17 (BROOKPARK ROAD)
CUYAHOGA COUNTY STA. 364+48.63 STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P. B.I.P.	R.T.		R.S.S.	G.W.M.	1/10/97	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

249
347



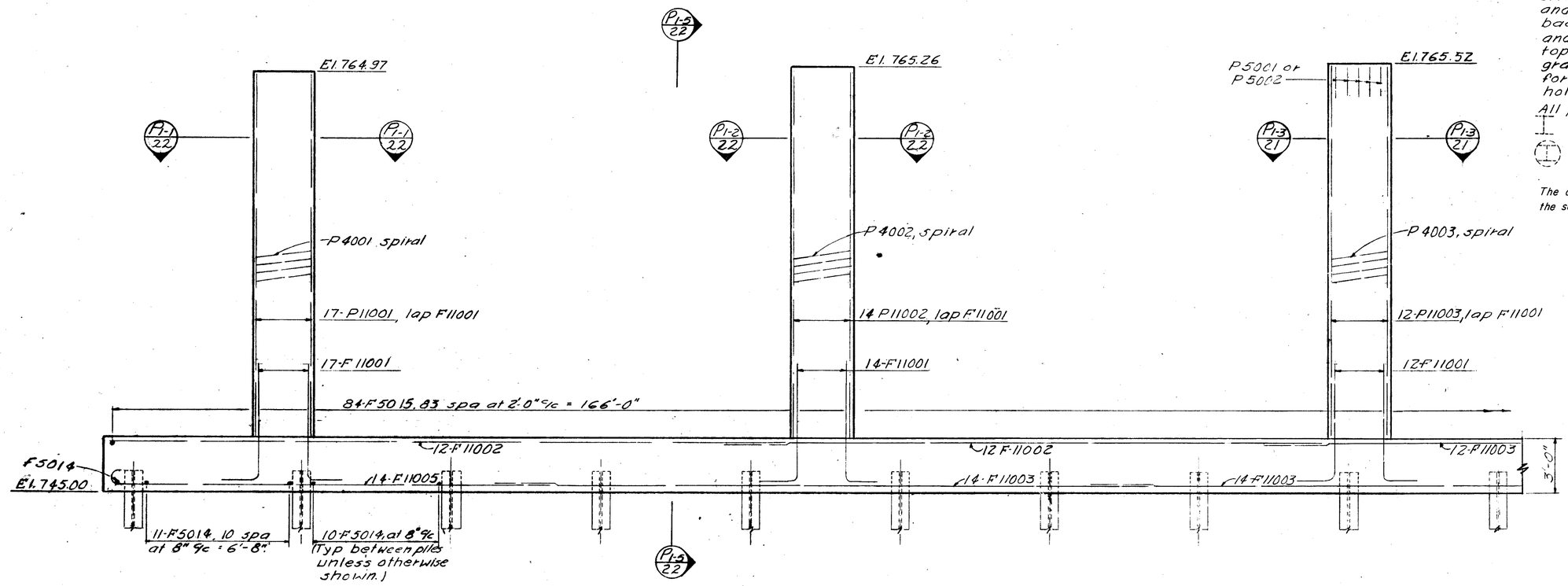
PART PLAN

Note:- P5001 & P5002 bars are spaced 6" c/c and are typical for all pier No 1 cols.

NOTES:- The four piles adjacent to the Exist. 36"ϕ sanitary sewer shall be driven in holes prebored to Elev. 725.00. Upon completion of driving, the voids between the pile and prebored material shall be backfilled with concrete to El. 733.00± and with granular backfill to the top of the hole. The concrete and granular backfill shall be included for payment with Item 507, prebored holes.

All piles are HP10x42 steel H piles.
| indicates vertical piles
/ indicates pile battered 1:4

The clearance between footing reinforcing steel and the surface of the concrete shall be 3 inches.



ELEVATION

20/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER Nº 1 DETAILS

BRIDGE Nº CUY-480-0499
I-480-OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

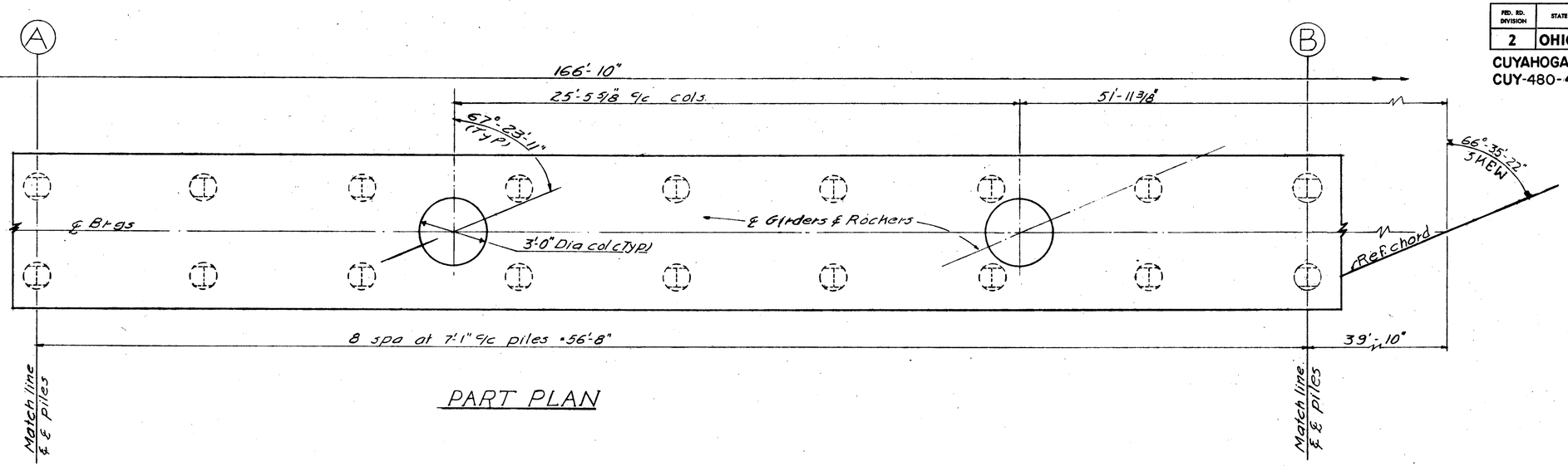
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.K R.S.S.		G.W.M.	G.W.M.	1/10/69	

RECEIVED
AUG 18 1969

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

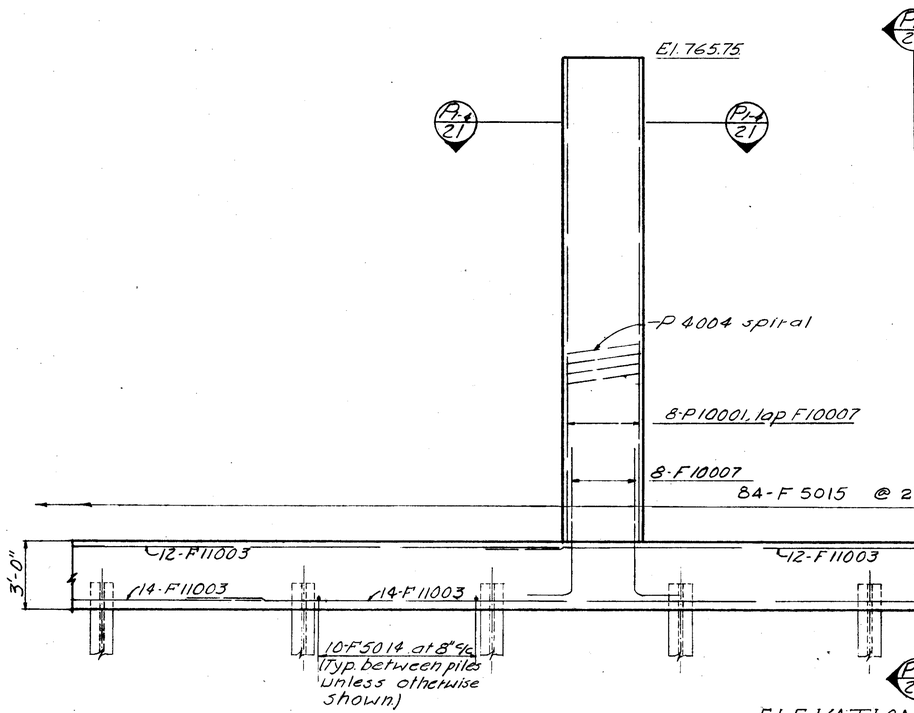
250
347

CUYAHOGA COUNTY
CUY-480-4.86

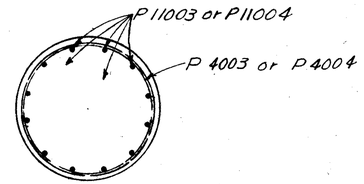


PART PLAN

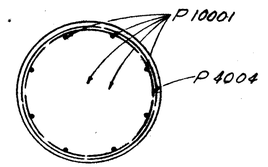
N



ELEVATION



SECTION P_{1-3} - P_{1-3}



SECTION P_{1-4} - P_{1-4}

Note:-
T indicates pile battered 1:4

27/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER Nº 1 DETAILS

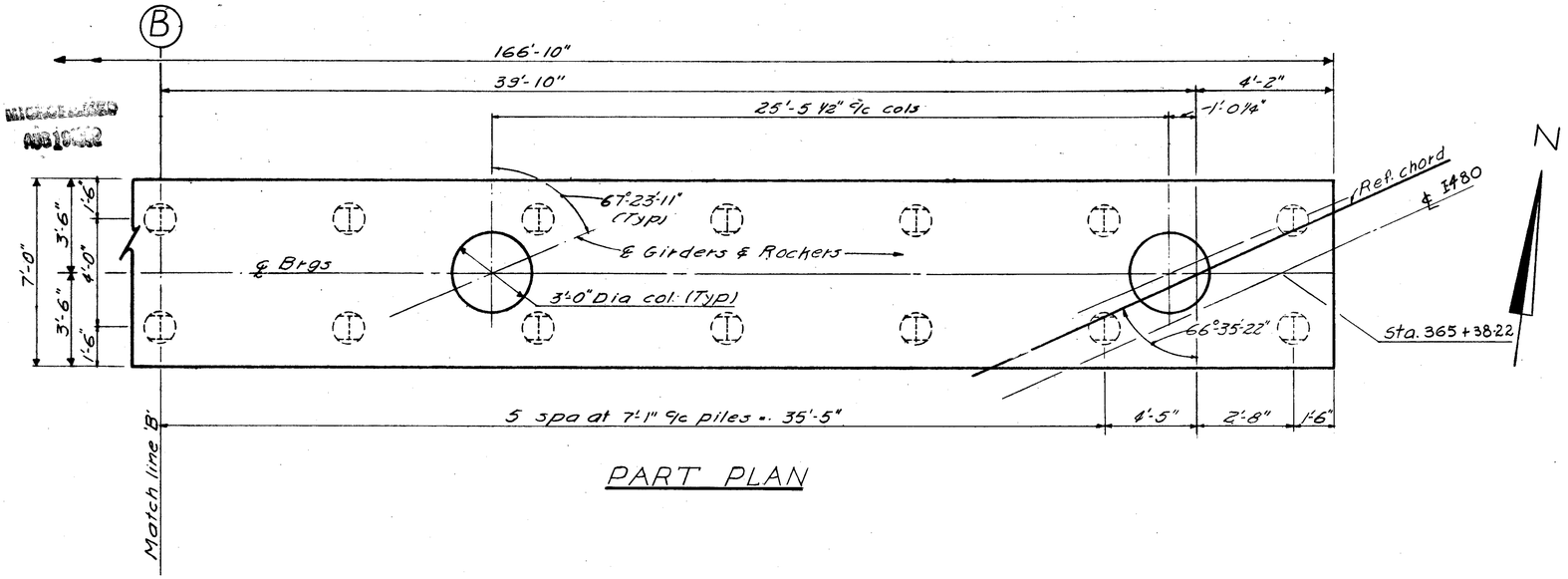
BRIDGE Nº CUY-480-0499
I-480-OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.K. R.S.S.		G.W.M.	G.W.M.	1/10/69	

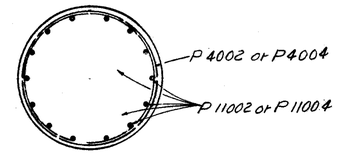
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

251
347

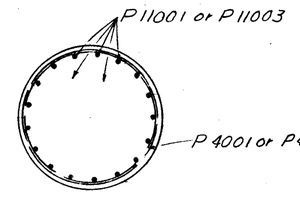
CUYAHOGA COUNTY
CUY-480-4.86



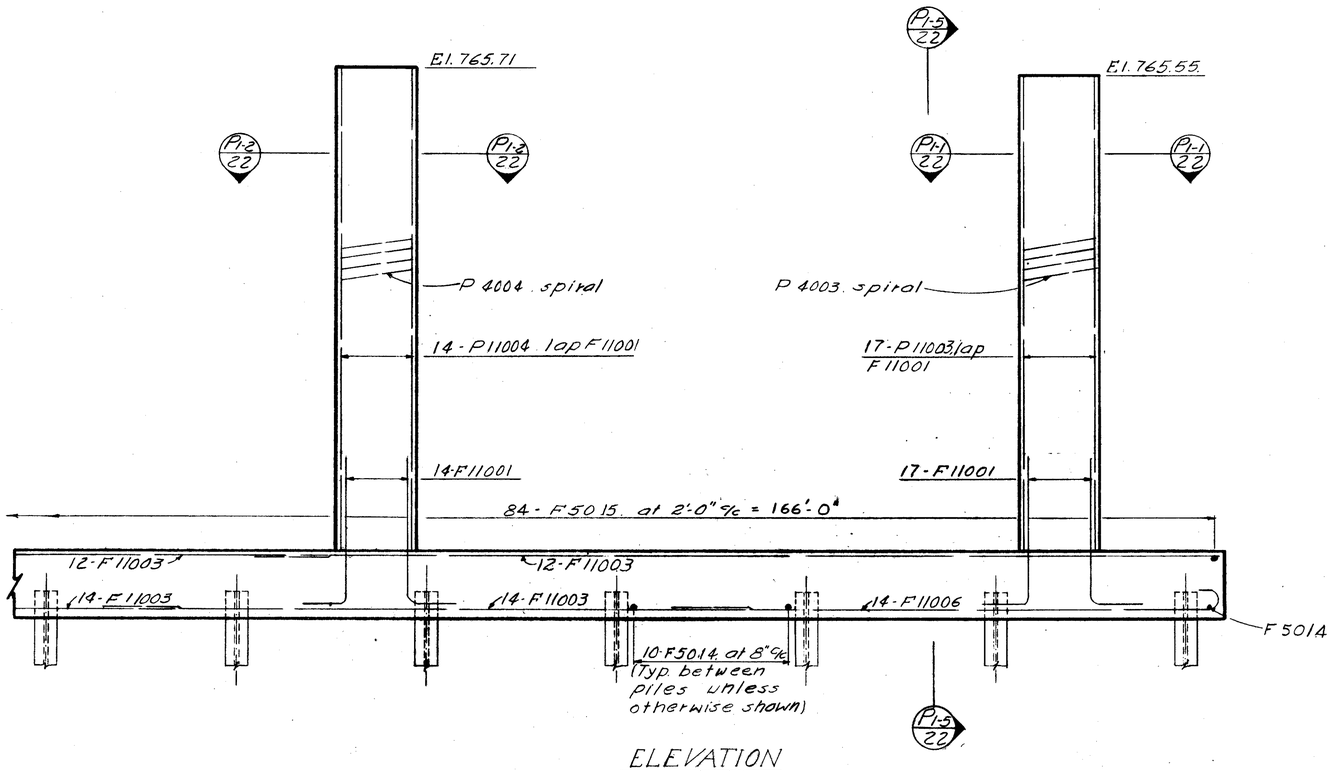
PART PLAN



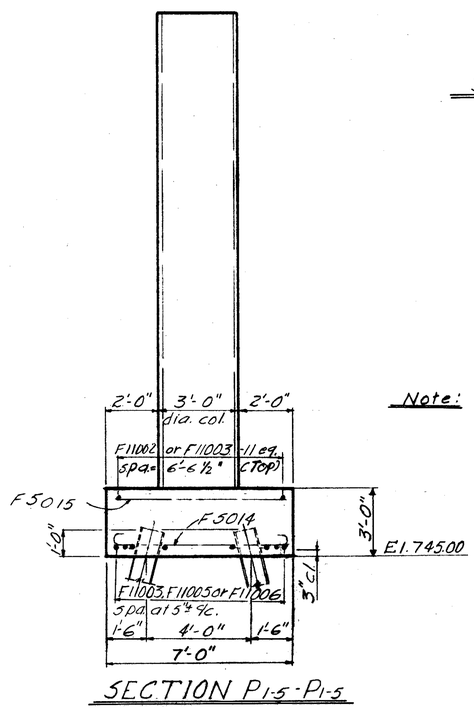
SECTION P1-2 - P1-2



SECTION P1-1 - P1-1



ELEVATION



SECTION P1-5 - P1-5

Note: (I) indicates pile battered 1:4

22/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER Nº 1 DETAILS

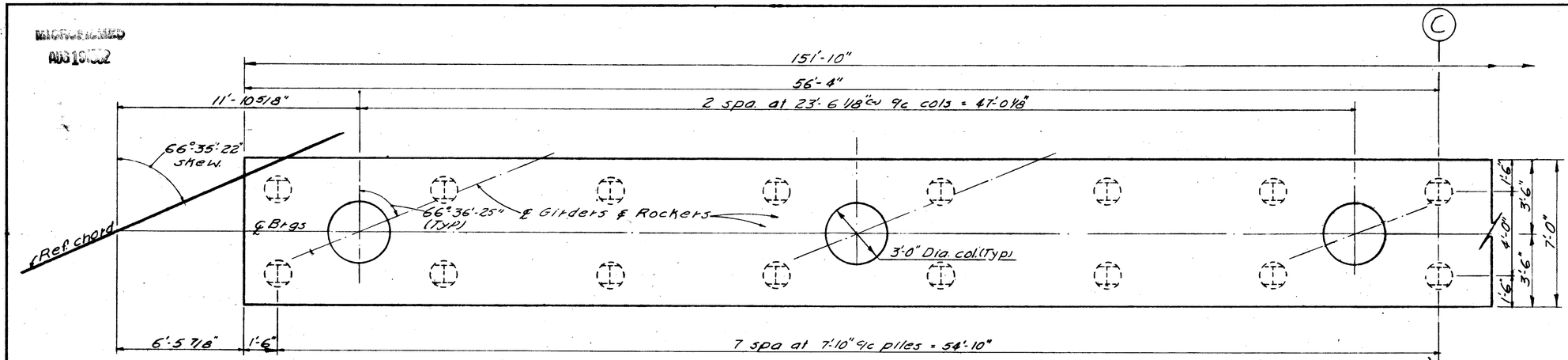
BRIDGE Nº CUY-480-0499
I-480-OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.K. R.S.S.		G.W.M.	G.W.M.	1/12/69	

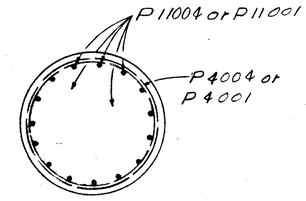
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

252
347

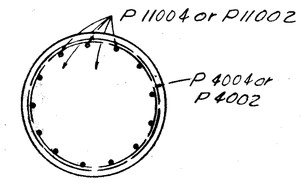
CUYAHOGA COUNTY
CUY-480-4.86



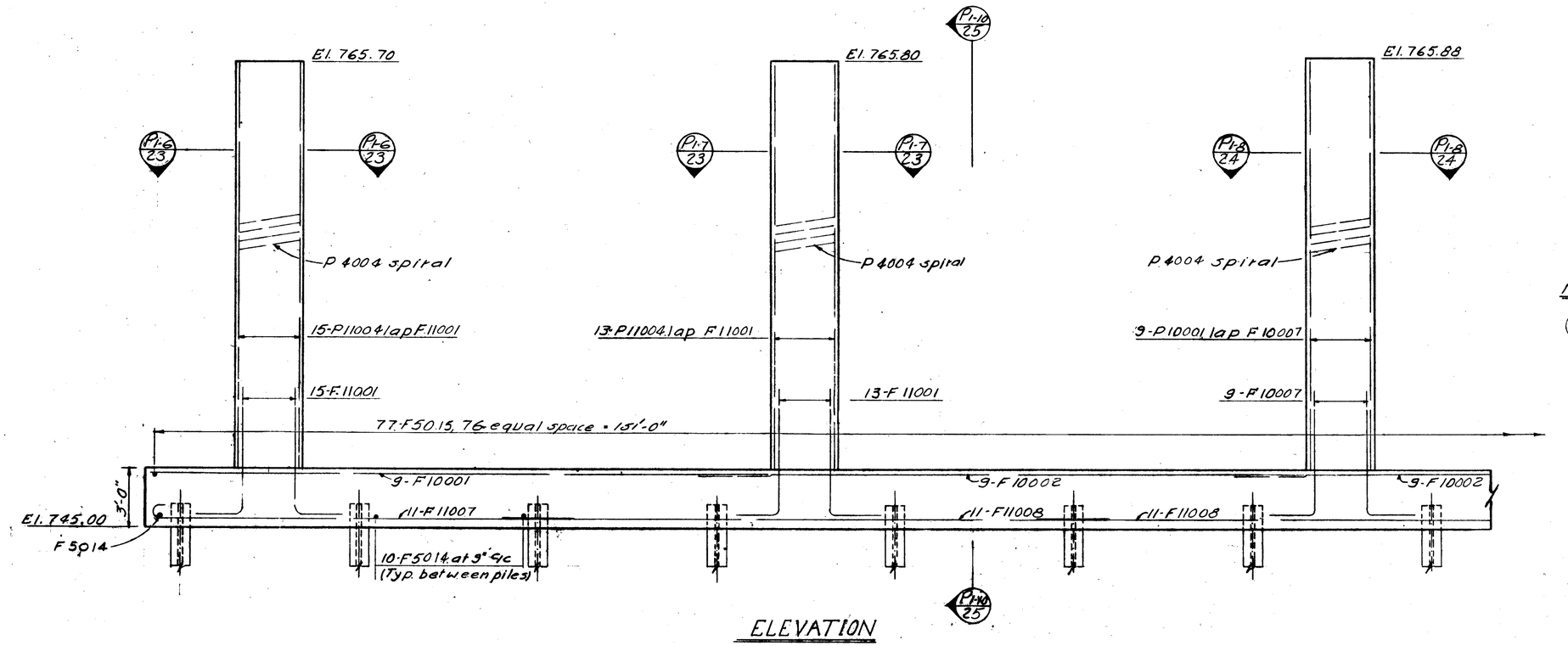
PART PLAN



SECTION P1-6-P1-6



SECTION P1-7-P1-7



ELEVATION

Notes:- All piles are HP10x42 steel H piles.

(T) indicates piles battered 1:4.

23/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER Nº 1 DETAILS

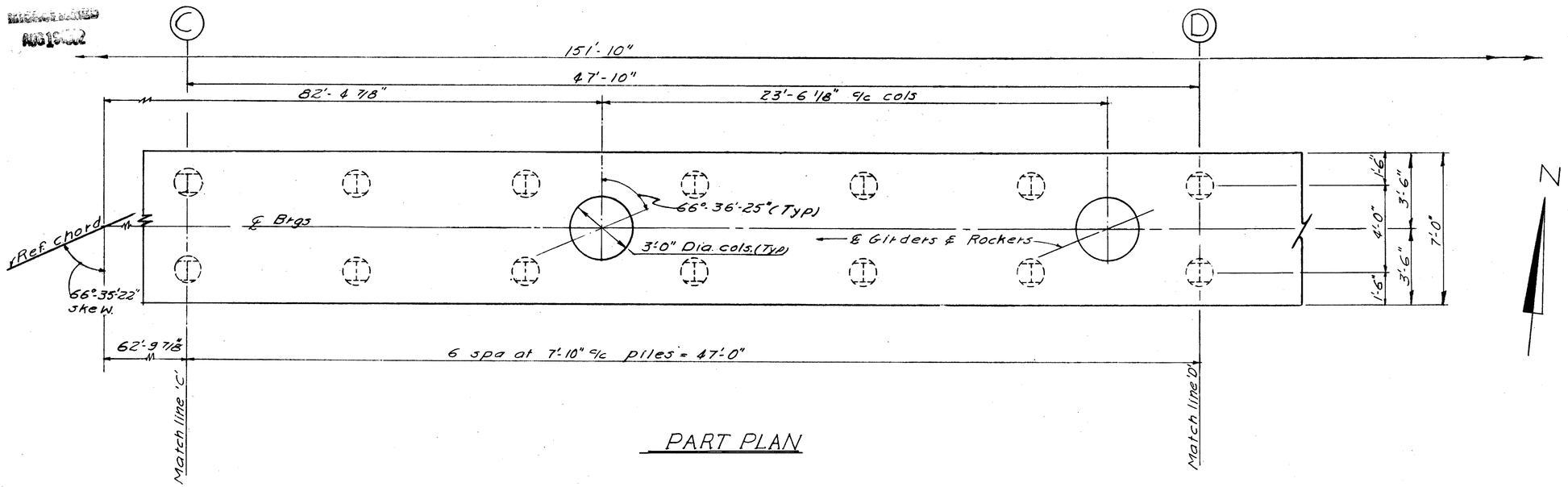
BRIDGE Nº CUY-480-0499
I-480-OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY STA. 364+48.63 STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.K. R.S.S.		G.W.M.	G.W.M.	1/10/63	

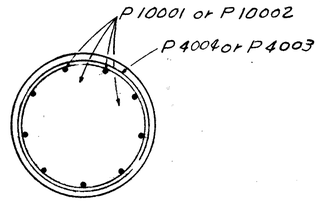
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

253
347

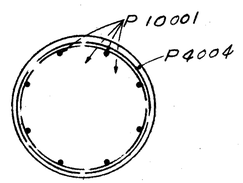
CUYAHOGA COUNTY
CUY-480-4.86



PART PLAN



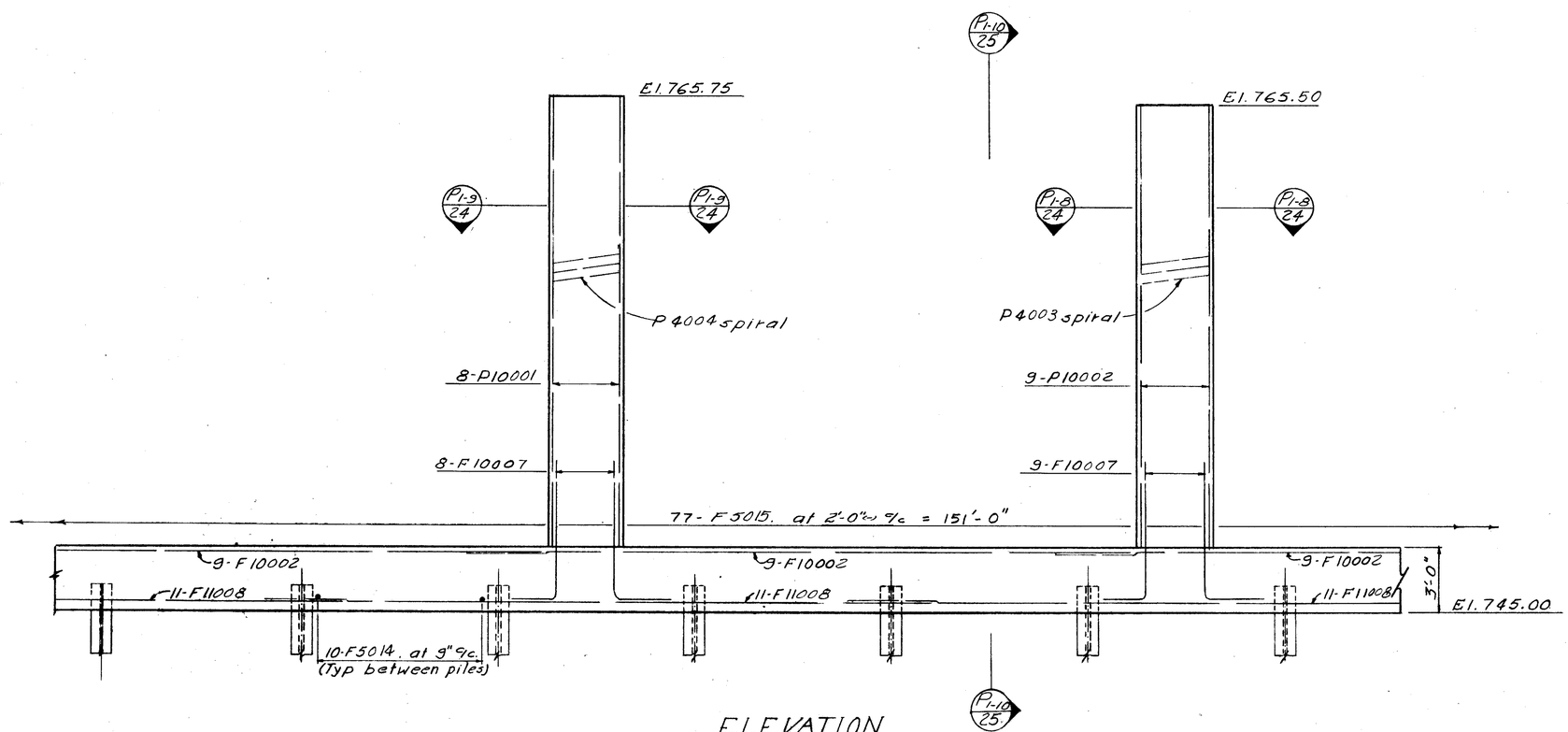
SECTION P1-8 - P1-8



SECTION P1-9 - P1-9

Note :

Indicates pile battered 1:4



ELEVATION

24/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER Nº 1 DETAILS

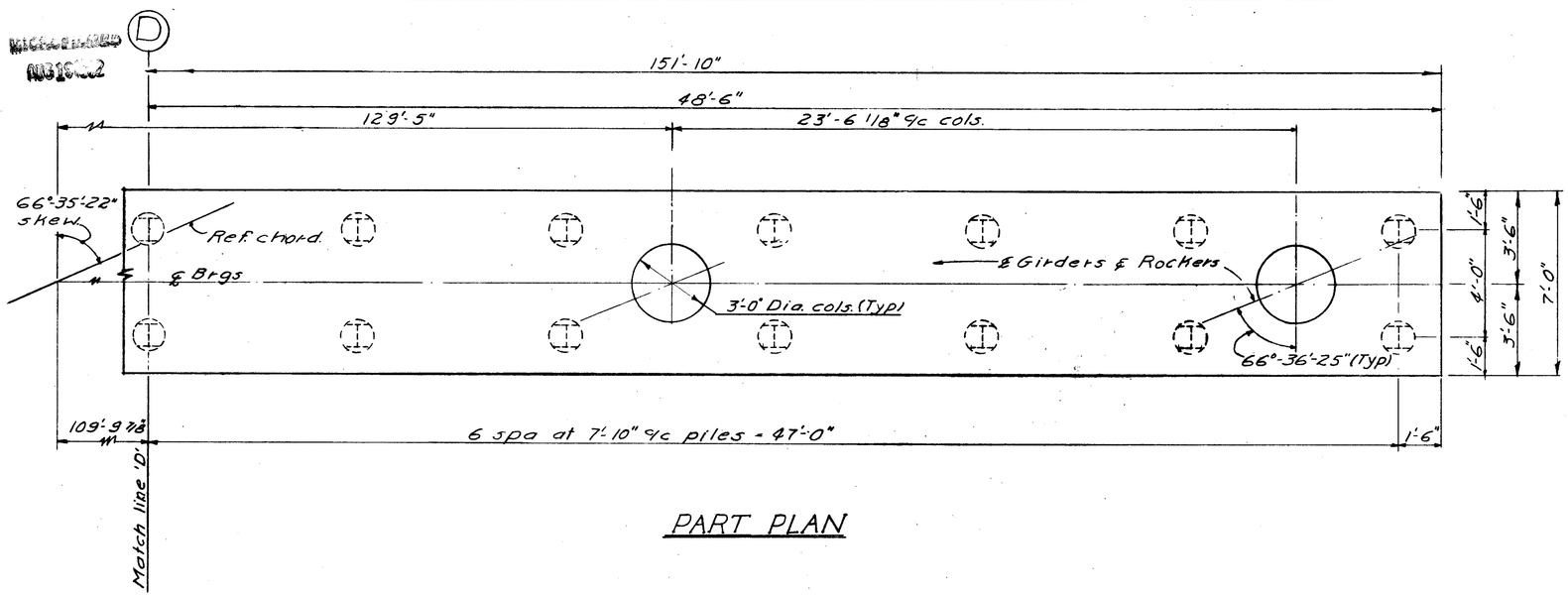
BRIDGE Nº CUY-480-0499
I-480 OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.K. R.S.S.		G.W.M.	G.W.M.	1/10/69	

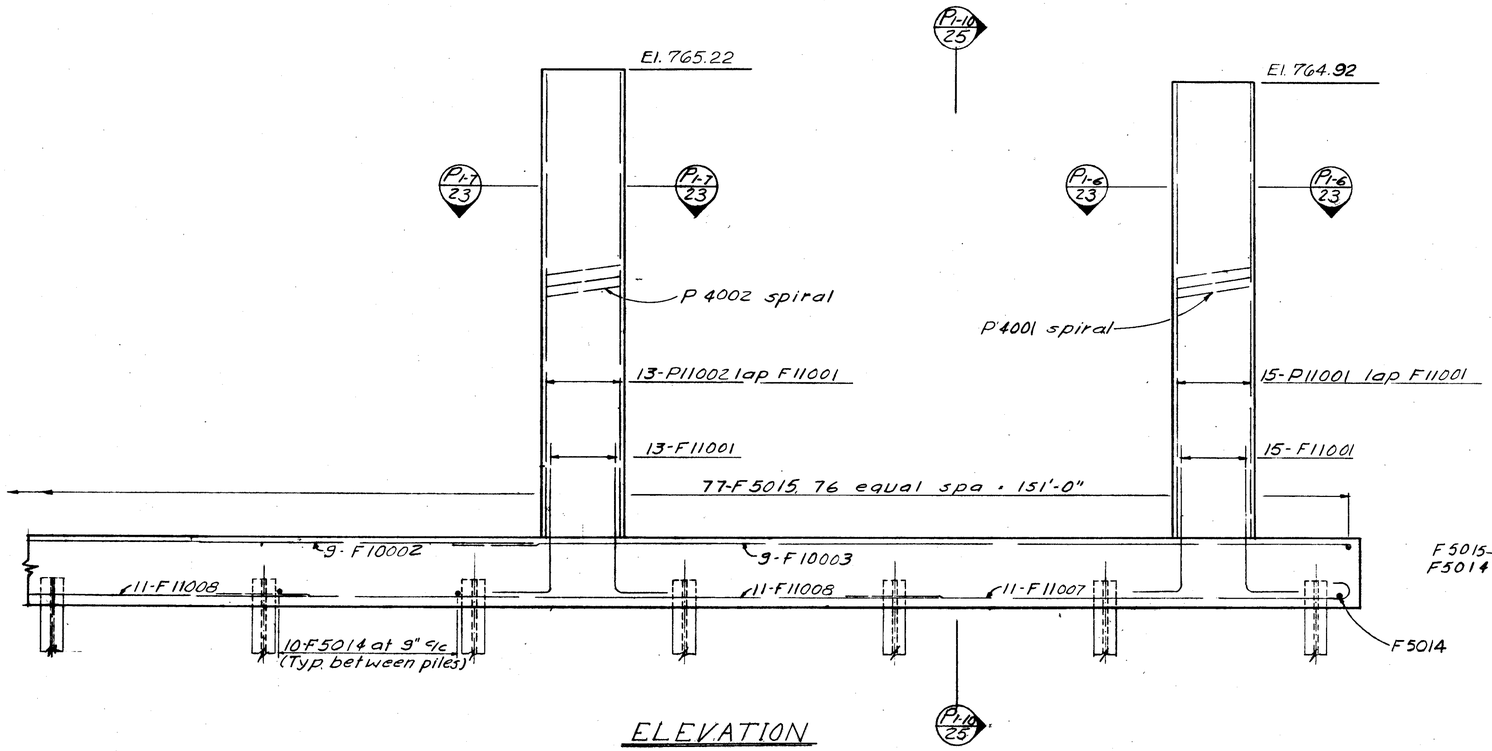
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

254/347

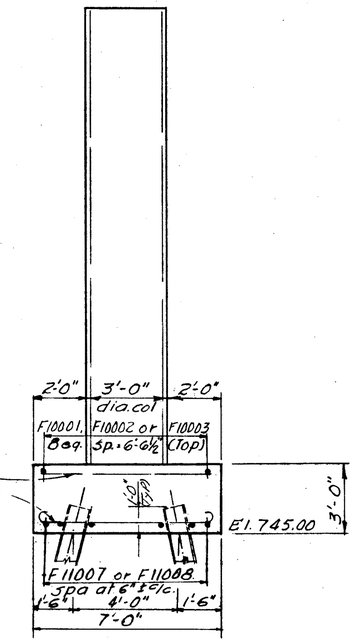
CUYAHOGA COUNTY
CUY-480-4.86



PART PLAN



ELEVATION



SECTION P1-10 - P1-10

Note:

(1) indicates pile battered 1:4

25/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER Nº1 DETAILS
BRIDGE Nº CUY. 480 0499

I480-OVER S.R. 17 (BROOKPARK ROAD)

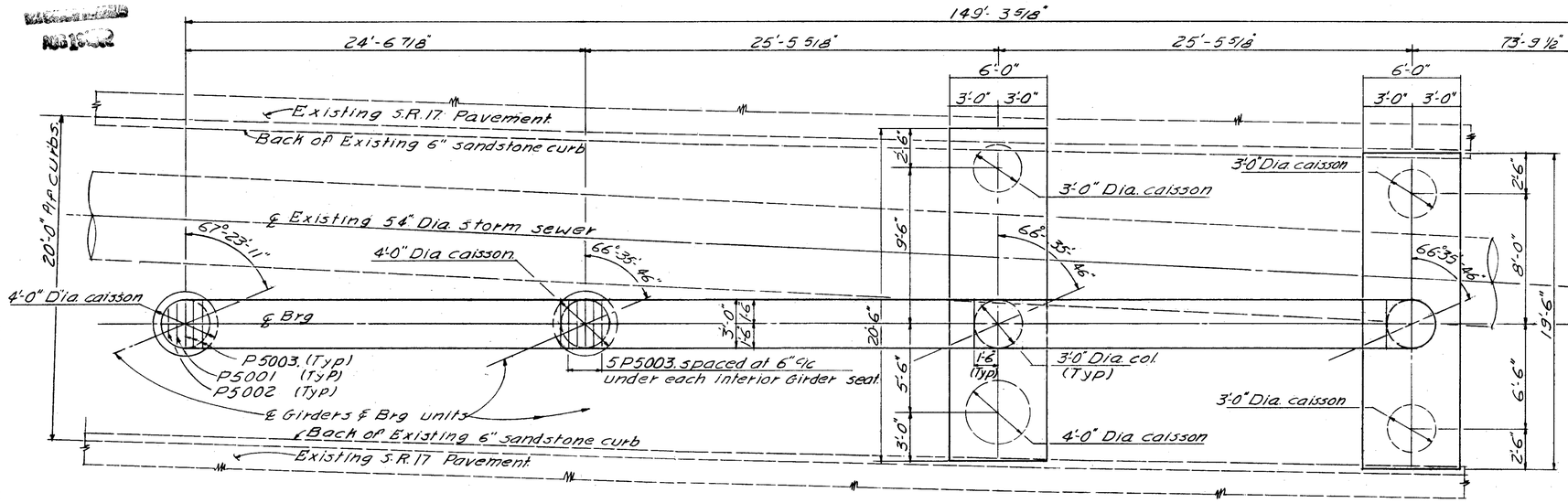
CUYAHOGA COUNTY STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.K. R.S.S.		G.W.M.	G.W.M.	1/10/69	

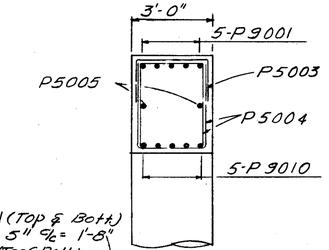
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

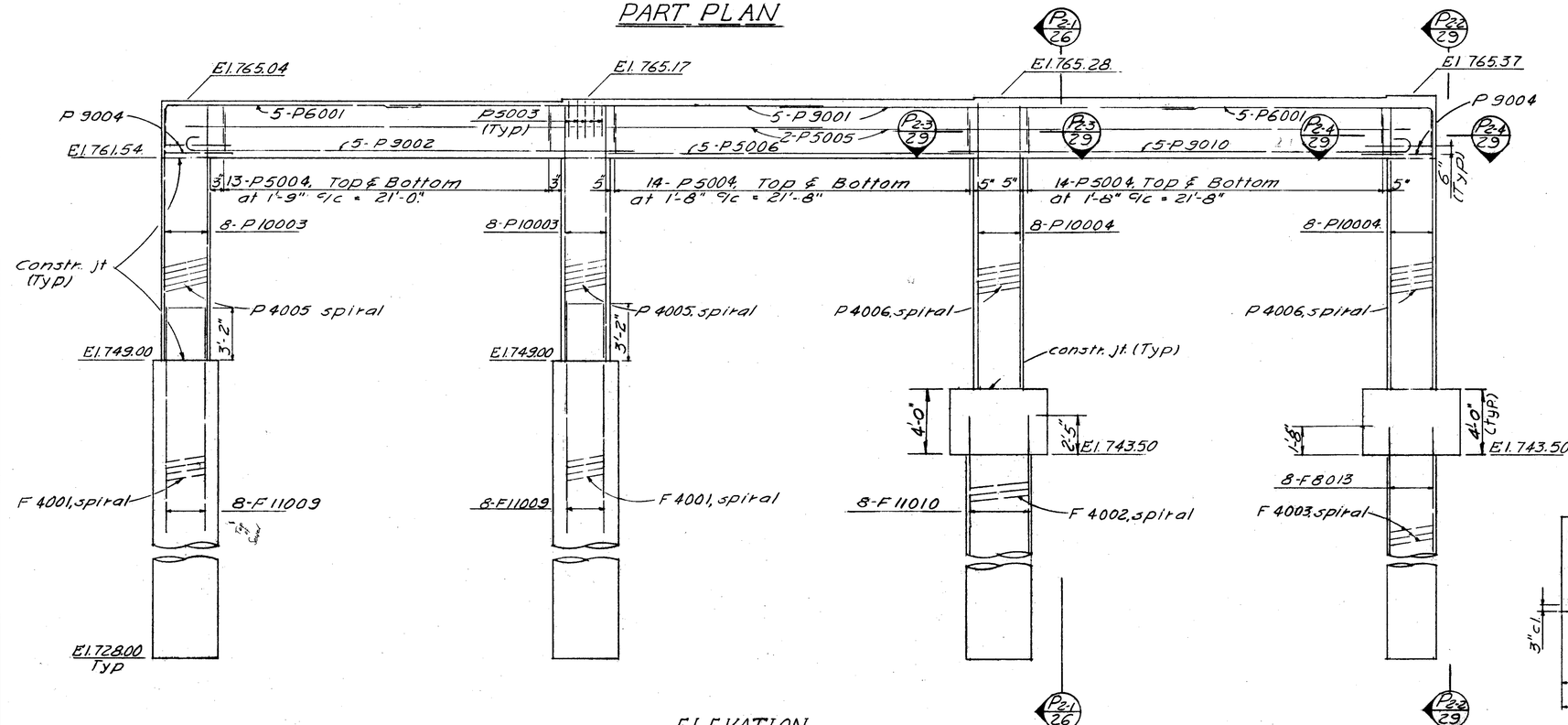
255/347

CUYAHOGA COUNTY
CUY-480-4.86

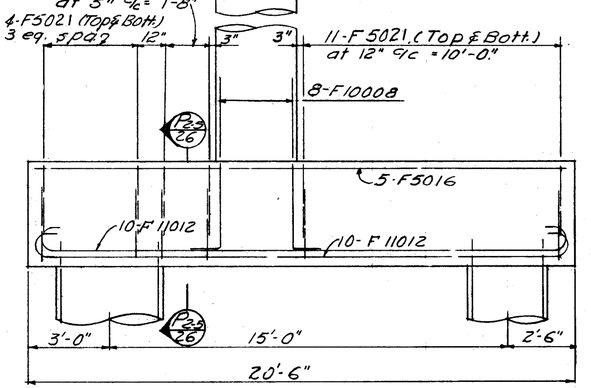


PART PLAN

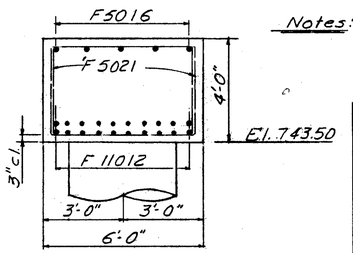




ELEVATION



SECTION P2-1 - P2-1



SECTION P2-5 - P2-5

Notes:- For Bolster anchor bolt hole location plan see sht. 28/46

26/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER Nº 2 DETAILS

BRIDGE Nº CUY-480-0499
I 480 OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.S.S.		B.I.P.	G.W.M.	1/13/69	

PED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

256/347

CUYAHOGA COUNTY
CUY-480-4.86

N

& column & caissons

5'-0" (Typ)
2'-6" 2'-6"

℄ Existing 42" Dia storm sewer (to be abandoned) Remove as req'd. to install Caisson.

← Existing S.R.17 Pavement

Back of existing 6" sandstone curb

Existing 54" Dia storm sewer

66°35'46"

Exist. Manhole

℄ Brg.

66°35'46" Existing 48"ϕ storm sewer

66°35'22" SAE'W

Rep. chord ℄ ABO

66°36'25"

3'-0" Dia col. (Typ)

1'6" Typ

Existing 48" Dia storm sewer

℄ Brg.

P-5002 (Typ)
P-5001 (Typ)
P-5003 (Typ)

℄ Girders ℄ Brg. units

66°36'25"

66°36'25"

3'-0" Dia caisson (Typ)

5-P5003 (Typ.) For interior seats)

66°35'46"

Existing 30" Dia storm sewer (to be abandoned)

Sta. 366+64.72 ℄ ABO = Sta 17+79.46 ℄ S.R.17.

20'-0" Fr. curbs.

Back of existing 6" sandstone curb

← Existing S.R.17 Pavement

℄ col. ℄ Ref. line

25'-5 3/8" | 22'-9 1/2" | 0'-0 7/8" | 11'-10 7/8" | 23'-6 1/8" | 23'-6 1/8"

48'-3 1/8" | 11'-11 3/4" | 47'-0 1/4"

PART PLAN

P26 29

E1. 765.30 | E1. 765.02. | E1. 764.75 | E1. 764.84 | E1. 764.82 | E1. 764.77.

P 9004 E1. 761.25

4-P 7001 | 4-P9006 | 5-P9005 | 2-P5007 | 4-P 7001 | 2. P5008 | 5 P 9003 | P 9004 | 4-P7001 | 2-P5009 | 5-P9006 | 4-P9007 | 4-P7001 | 5-P9008 | 2-P5010 | P 9004 E1. 761.27.

5' | 13-P5004 Top & Bottom 12 equal spa = 21'-7" | 5" 5" | 11-P5004 Top & Bottom 10 equal spa. = 17'-11" | 5" | 5' | 12-P5004 Top & Bottom 11 equal spa = 19'-8" | 5" 5" | 12-P5004 Top & Bottom 11 equal spa = 19'-8" | 5"

8-P 10003 (Typ)

P 4005 spiral (Typ)

4'-0" (Typ)

1'8" (Typ)

E1. 744.80 (Typ)

F 4004 (Typ)

8-F 8014 (Typ)

EL. 728.0 (Typ.)

E1. 744.80

4'-0" (Typ)

E1. 728.0 (Typ.)

P26 29

ELEVATION

For Grounding Details, See Stl. Dwg. HL-7.

Notes:

Upper portion of exist. manhole to be removed and capped. For details see sht. 23

2746

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER Nº 2 DETAILS

BRIDGE Nº CUY-480-0499

I 480-OVER S.R.17 (BROOKPARK RD.)

CUYAHOGA COUNTY

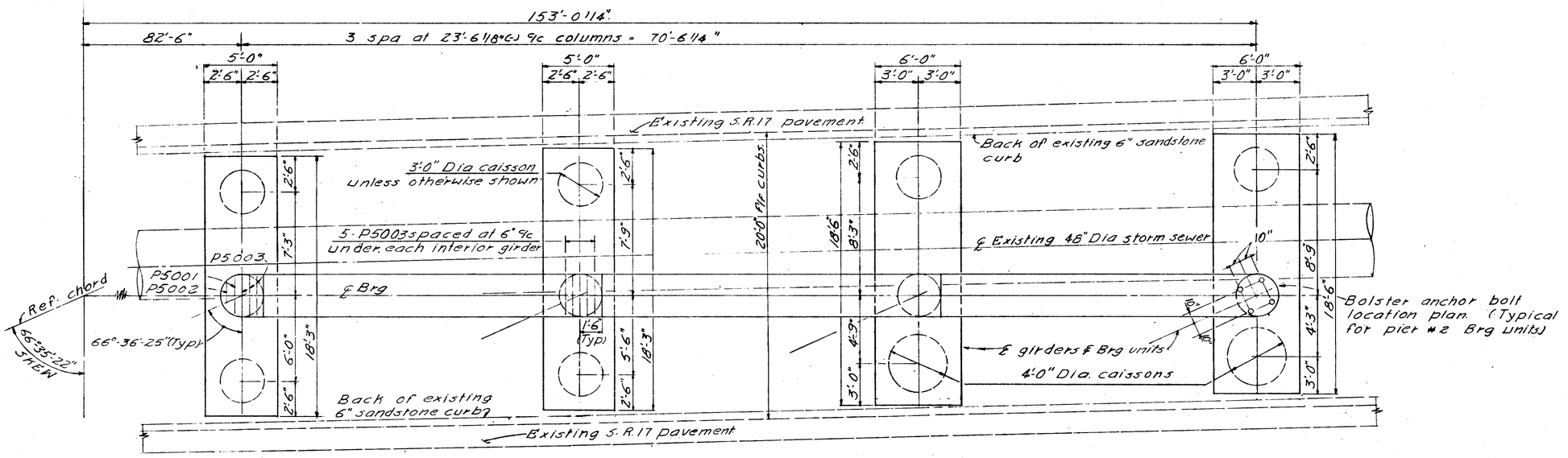
STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.S.S.		B.I.P.	G.W.M.	1-12-65	

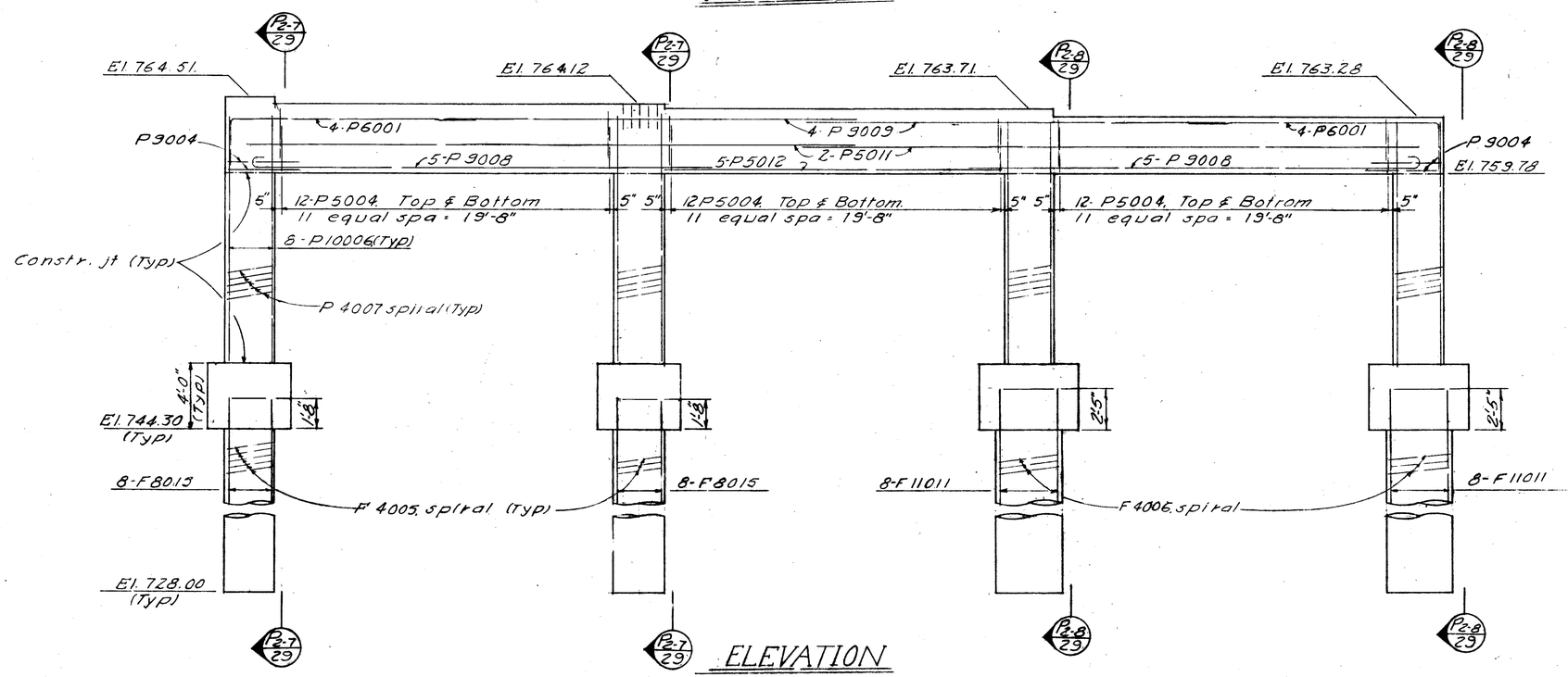
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

257/347

CUYAHOGA COUNTY
CUY-480-4.86



PART PLAN



ELEVATION

Notes:

For additional General Notes See Sheet 23.1A / 347

For caisson notes see sheet No. 3/46

28/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO · COLUMBUS, OHIO · WHEELING, W. VA.

PIER Nº 2 DETAILS

BRIDGE Nº CUY-480-0499

I 480 OVER S.R.17 (BROOKPARK RD.)

CUYAHOGA COUNTY

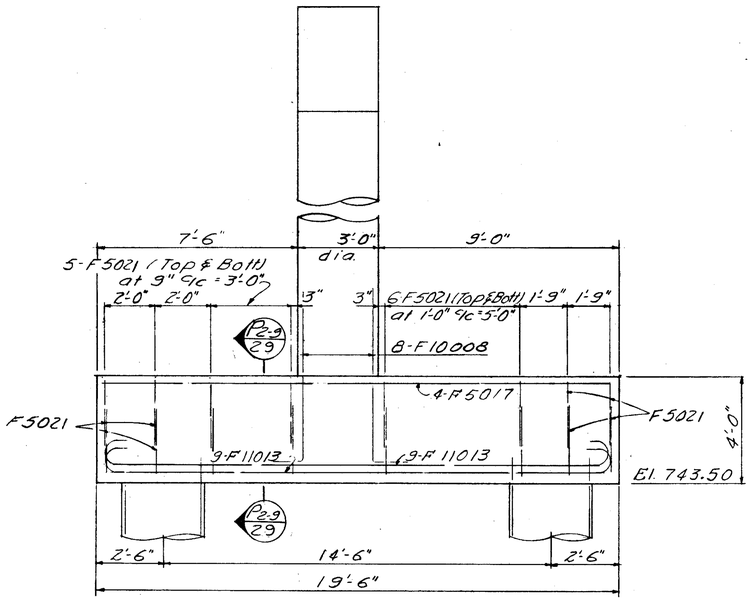
STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.S.S.		B.I.P.	G.W.I.	1/13/03	

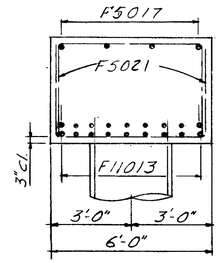
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

258/347

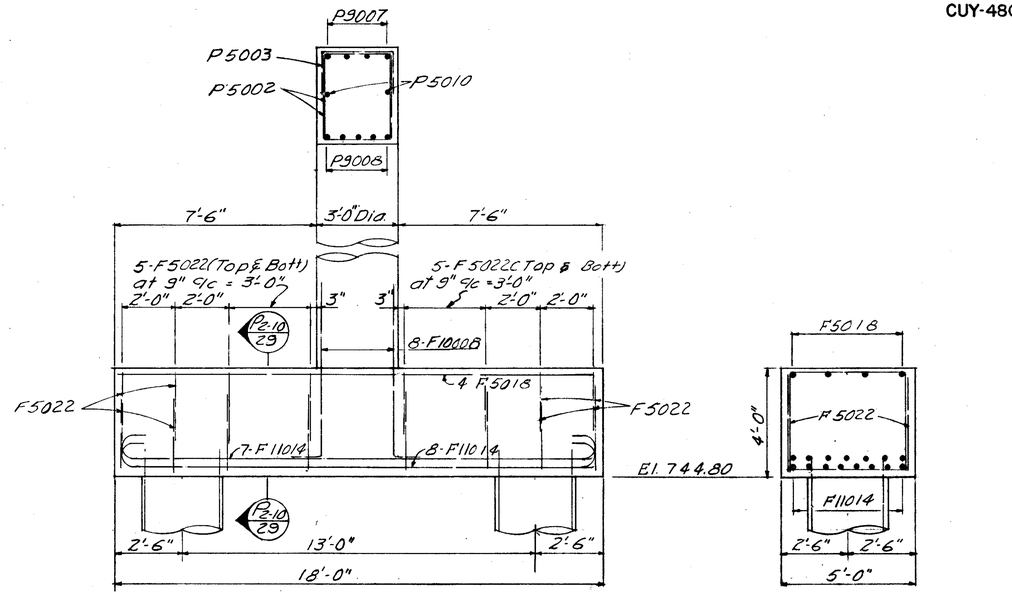
CUYAHOGA COUNTY
CUY-480-4.86



SECTION P2-2-P2-2

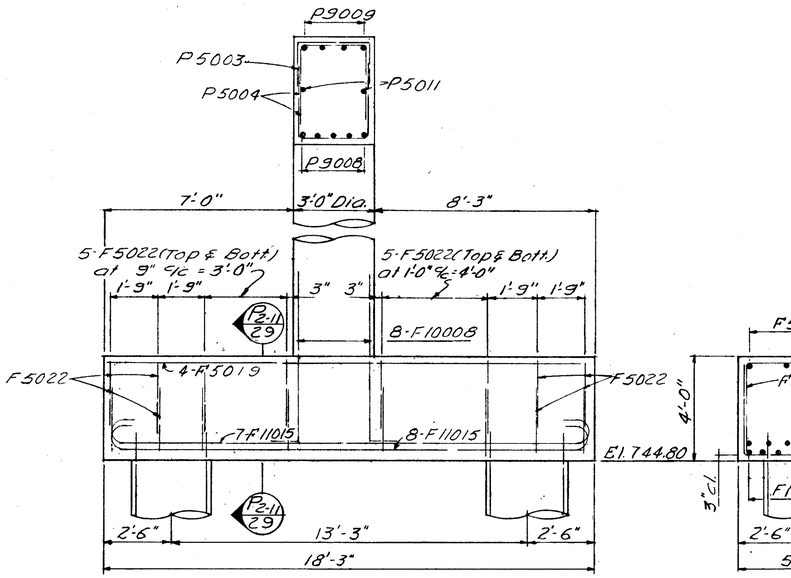


SECTION P2-9-P2-9

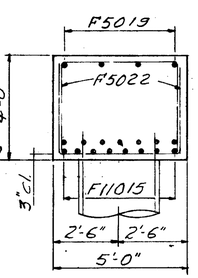


SECTION P2-6-P2-6

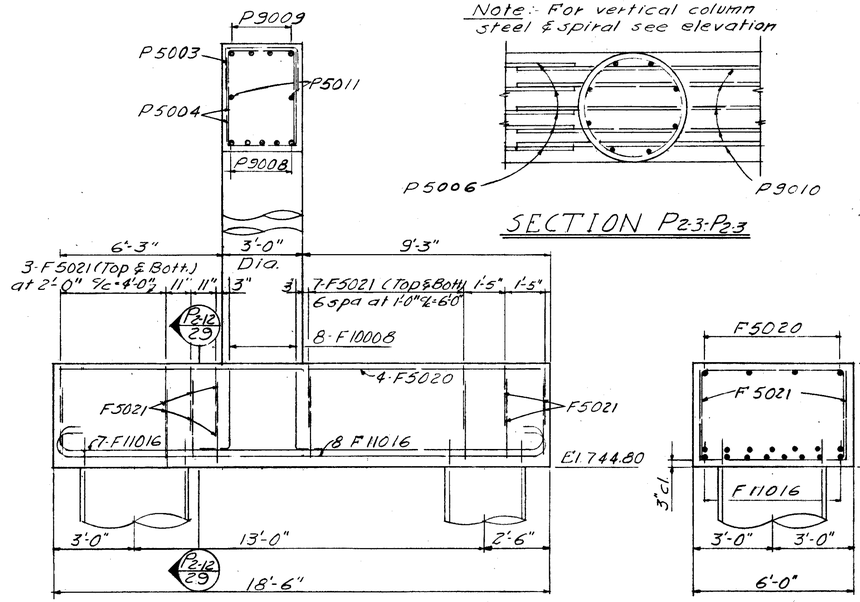
SECTION P2-10-P2-10



SECTION P2-7-P2-7



SECTION P2-11-P2-11



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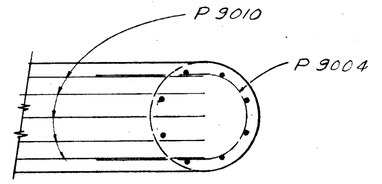
SECTION P2-3-P2-3



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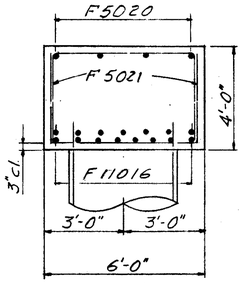


SECTION P2-12-P2-12

29/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER NO 2 - DETAILS

BRIDGE NO CUY-480-0499
I 480-OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

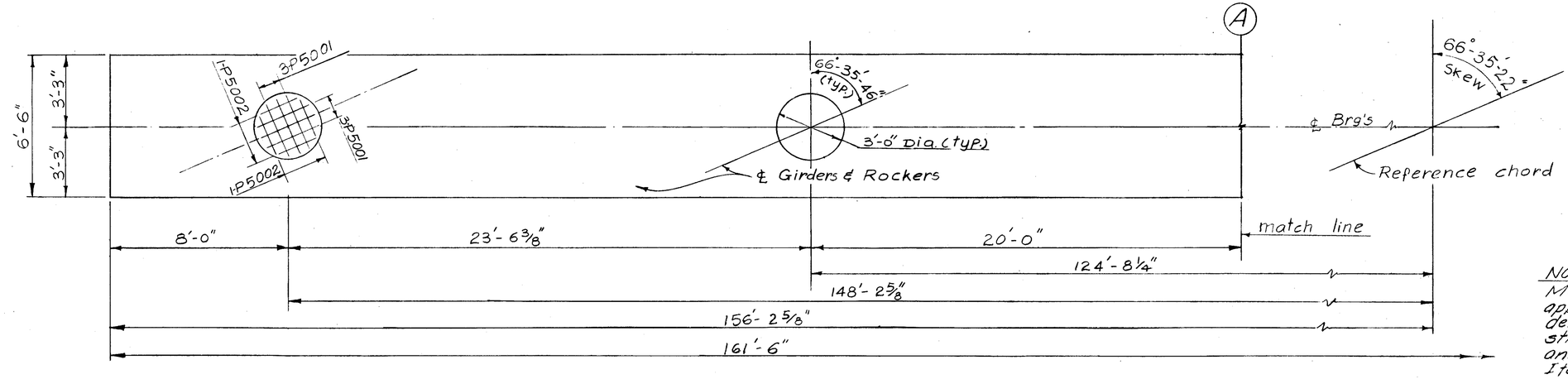
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.S.S.		B.I.P.	G.W.M.	1/8/69	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

259
347

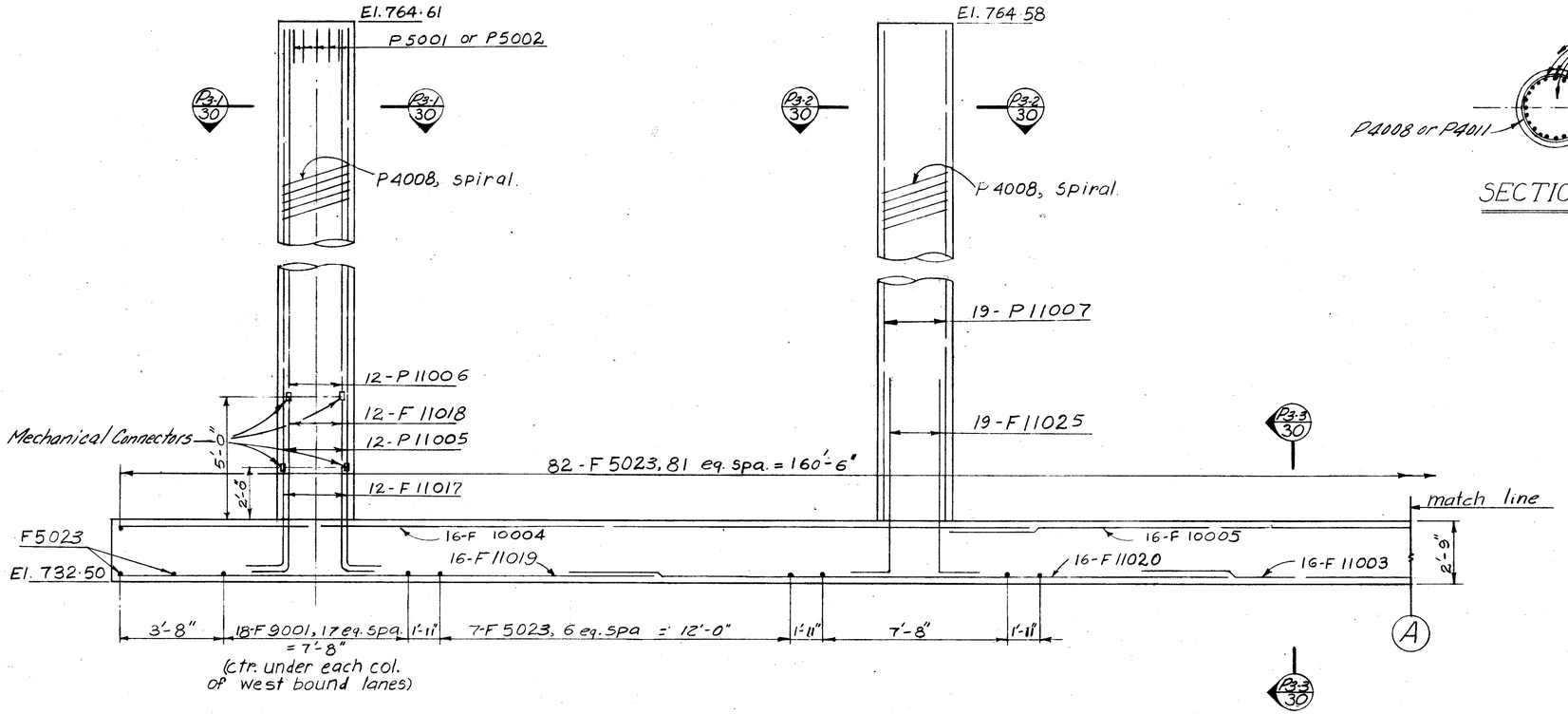
CUYAHOGA COUNTY
CUY-480-4.86

Note: P5001 & P5002 bars are spaced 6" c/c and are typical for all pier No. 3 columns.



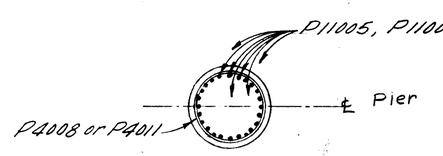
PART PLAN

NOTE:
Mechanical connectors shall be of an approved positive type designed to develop 125% of the specified yield strength of the bar. Cost of the mechanical connectors shall be included with Item 509 for payment.

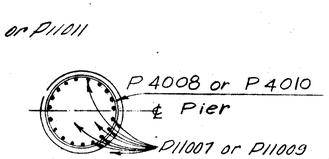


Note: Alternate F11017 with F11018

ELEVATION



SECTION P_{3-1}-P_{3-1}



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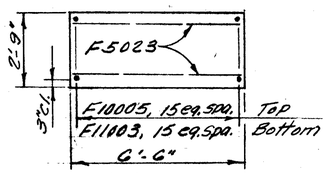


SECTION P_{3-3}-P_{3-3}

30/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

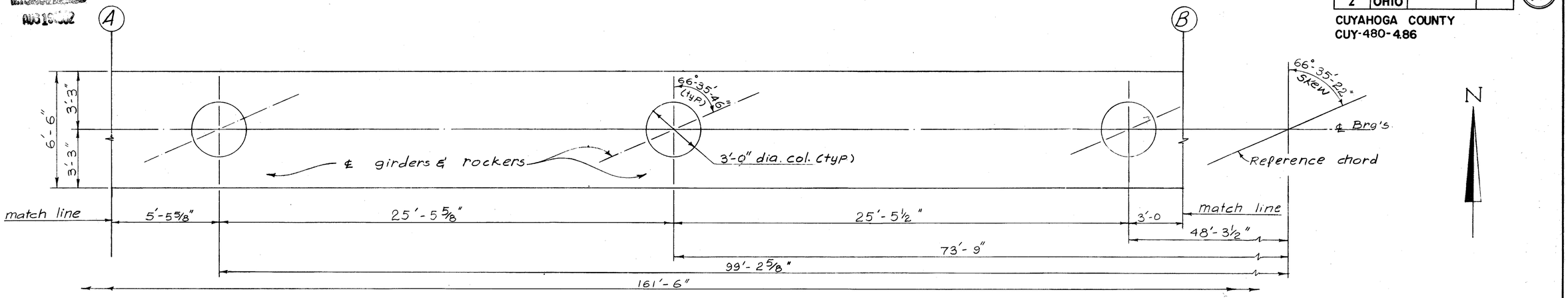
PIER No 3 DETAILS
BRIDGE No CUY-480-0499
I 480 OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.I.P.	B.I.P.		R. S.S	G.W.M.	1/8/69	

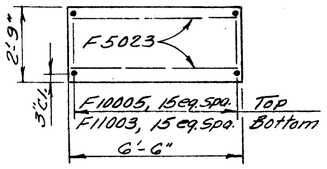
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

260/347

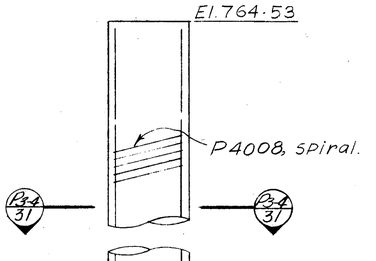
CUYAHOGA COUNTY
CUY-480-4.86

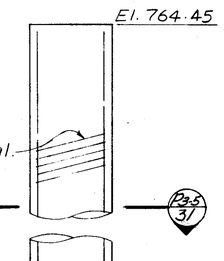


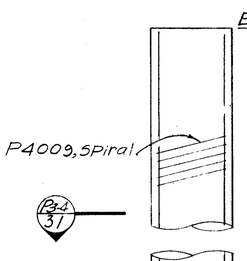
PART PLAN

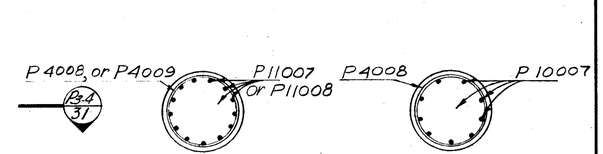


SECTION P3-6 — P3-6

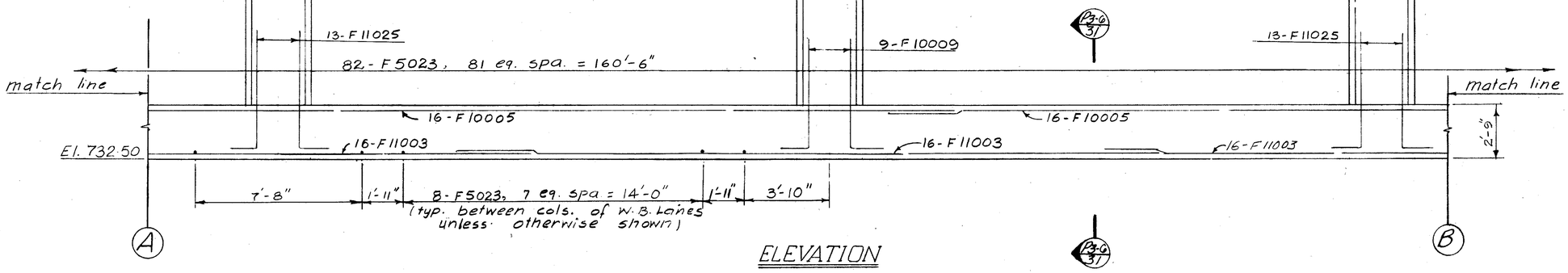








SECTION P3-4 P3-4 SECTION P3-5 P3-5



ELEVATION

31/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER Nº 3 DETAILS

BRIDGE Nº CUY-480-0499

I-480-OVER S.R.17 (BROOKPARK RD.)

CUYAHOGA COUNTY

STA. 364+48.63

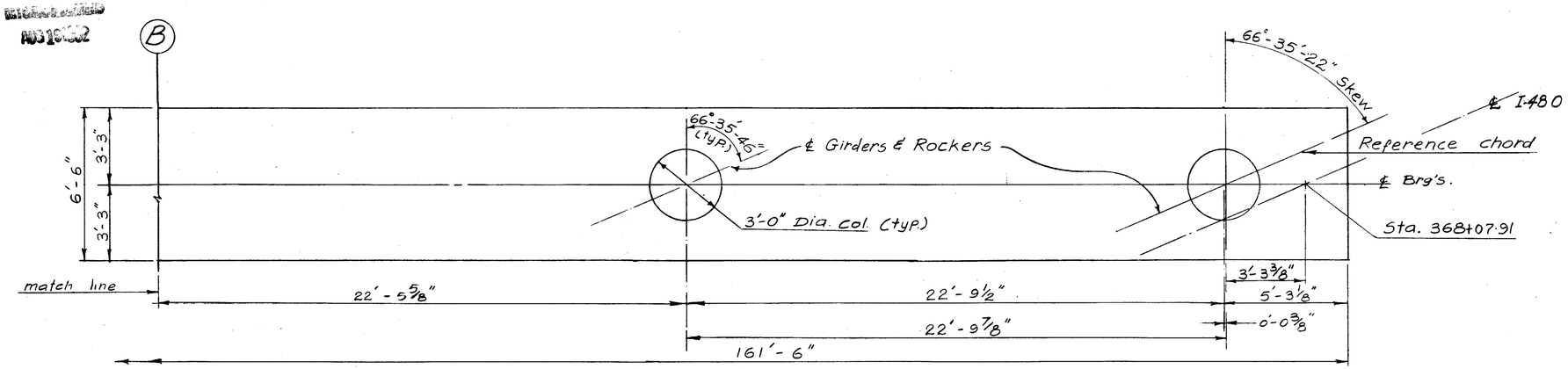
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.I.P.	B.I.P.		R.S.S.	G.W.M.	1/13/69	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

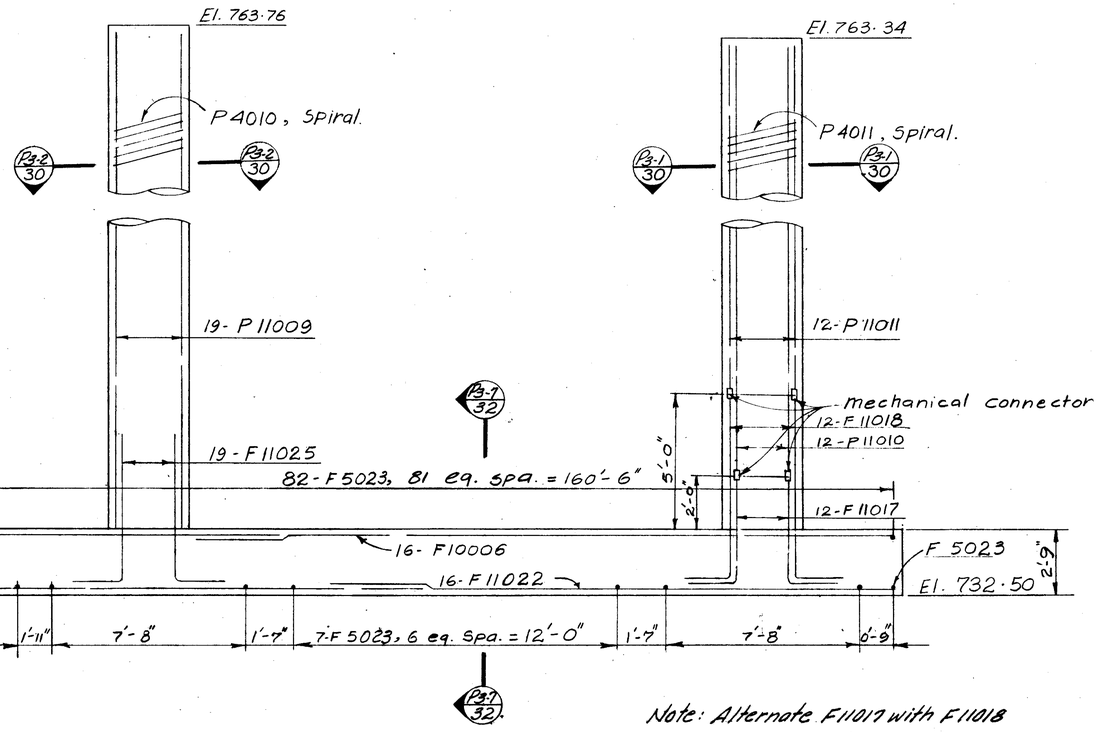
261/347

CUYAHOGA COUNTY
CUY-480-4.86



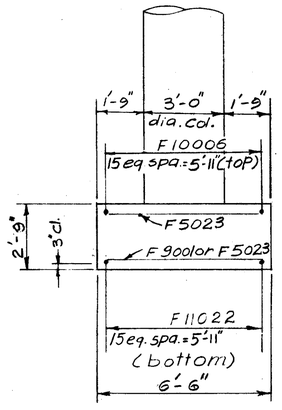
PART PLAN

N



ELEVATION

Note: Alternate F11017 with F11018



SECTION P3-7 P3-7

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ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER NO 3 DETAILS

BRIDGE NO CUY-480-0499

I 480-OVER S.R.17 (BROOKPARK RD.)

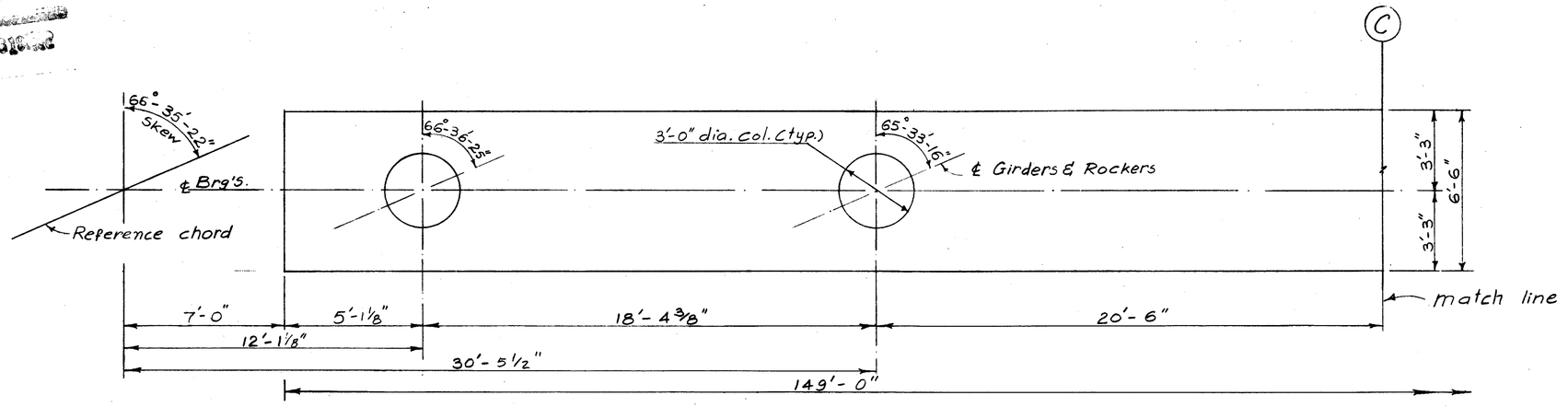
CUYAHOGA COUNTY STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.I.P	B.I.P		R.S.S	G.W.M.	11/13/69	

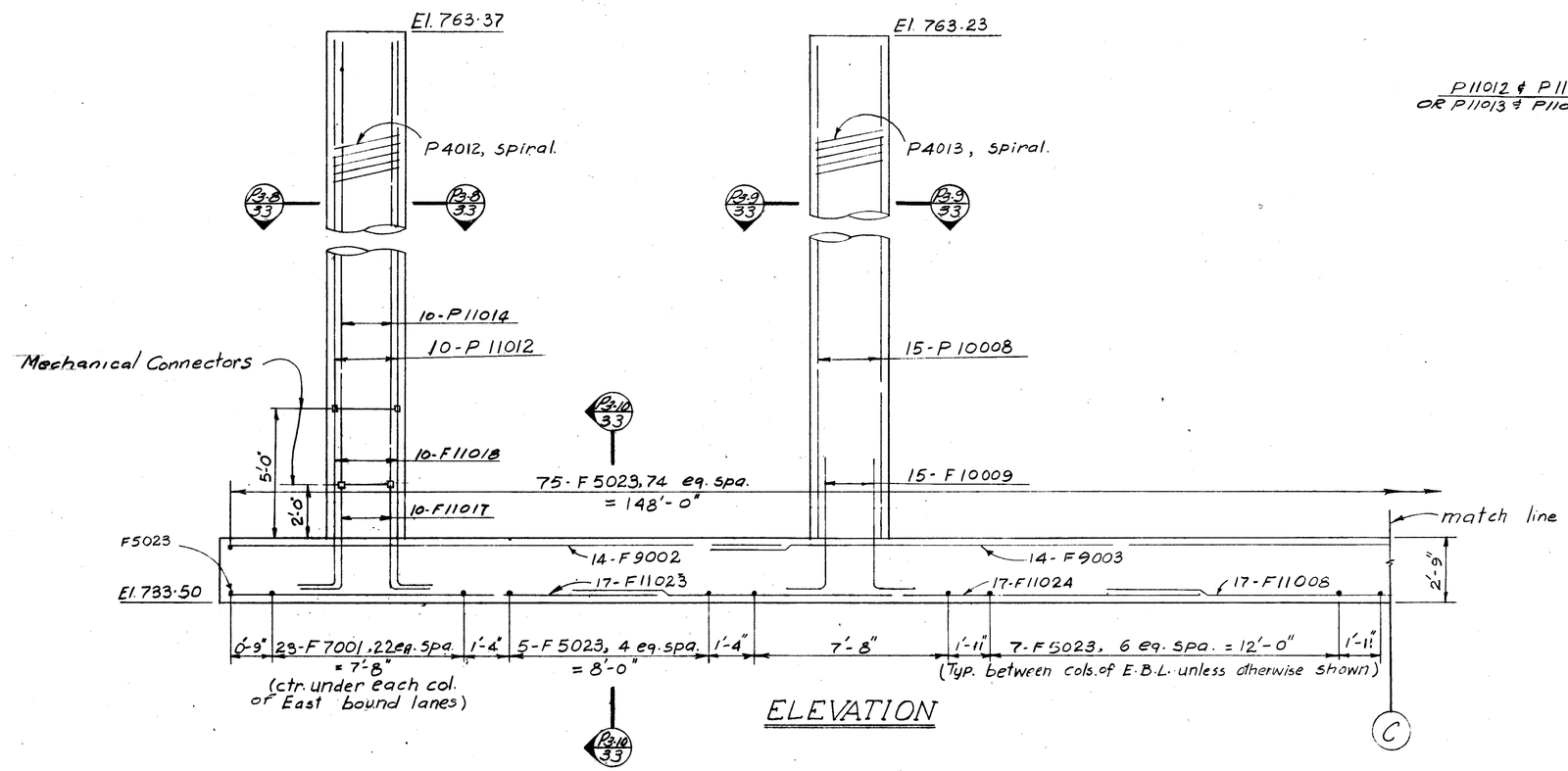
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

262/347

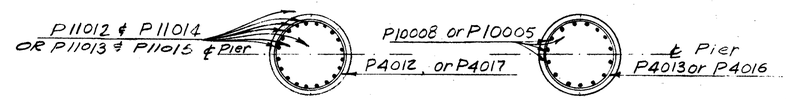
CUYAHOGA COUNTY
CUY-480-4.86



PART PLAN

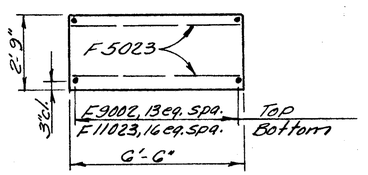


ELEVATION



SECTION P3-8 P3-8

SECTION P3-9 P3-9



SECTION P3-10 – P3-10

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ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER Nº 3 DETAILS

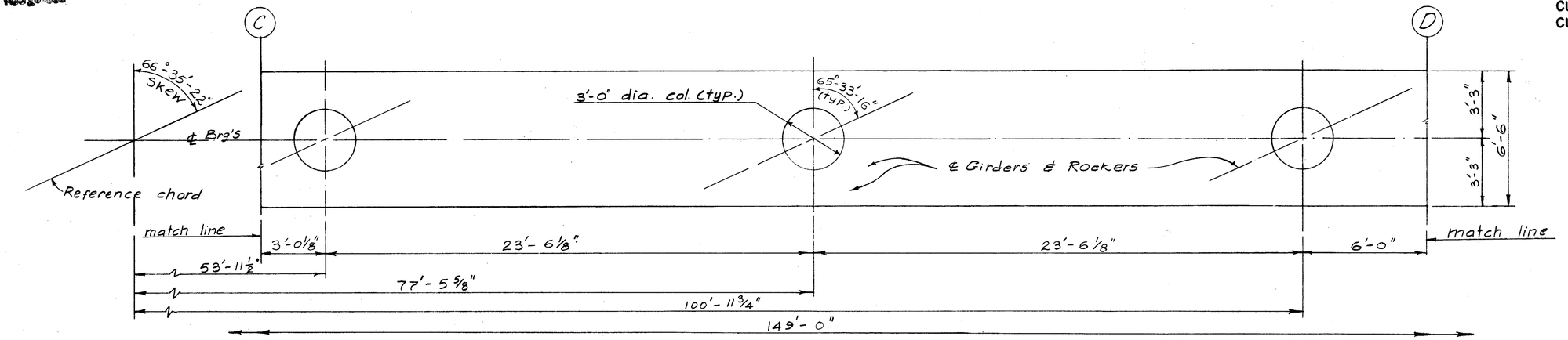
BRIDGE Nº CUY-480-0499
I-480 OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.I.P	B.I.P.		R.S.S.	G.W.M.	11.3.69	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

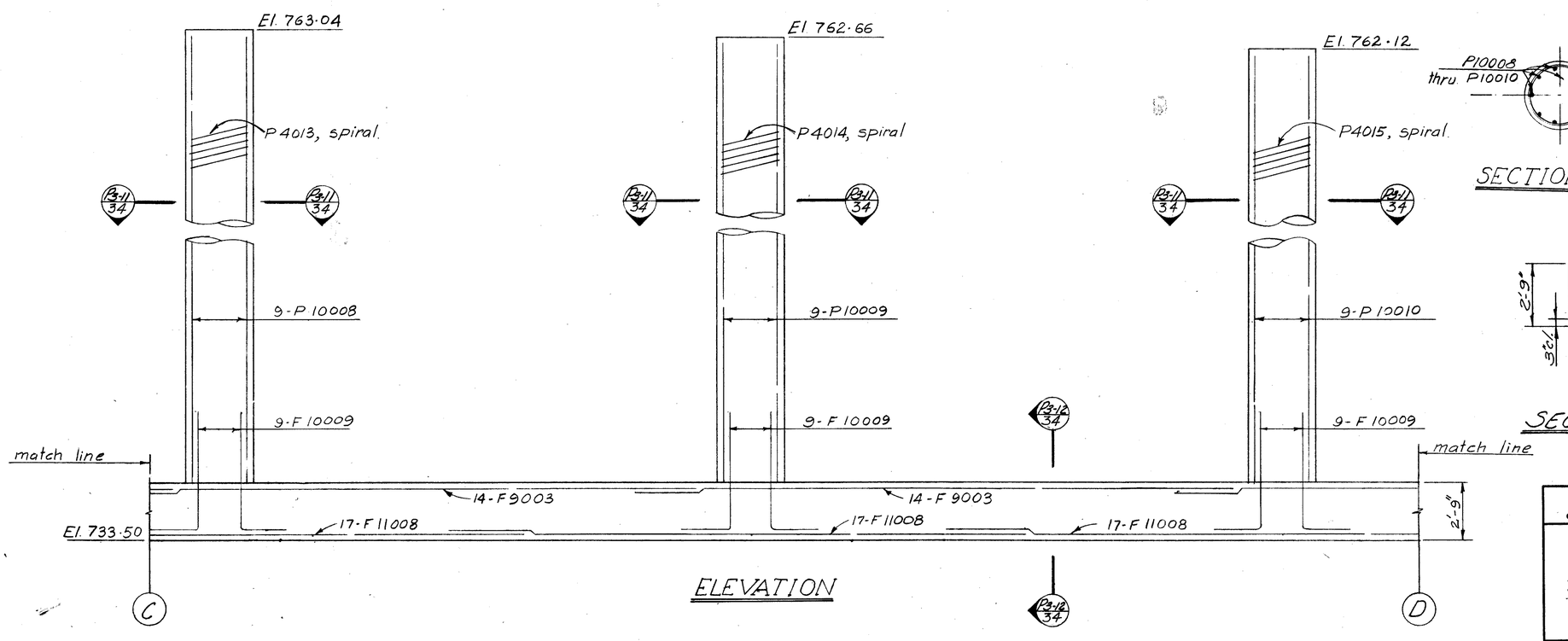
263/347

CUYAHOGA COUNTY
CUY-480-4.86



N

PART PLAN



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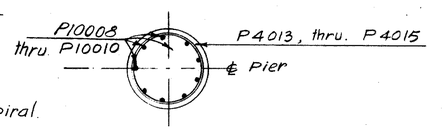
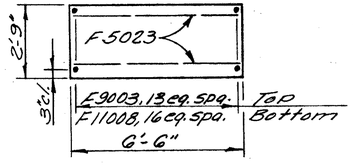


SECTION P_{3-11}-P_{3-11}



SECTION P_{3-12}–P_{3-12}

34/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER No 3 DETAILS

BRIDGE No CUY 480 0499

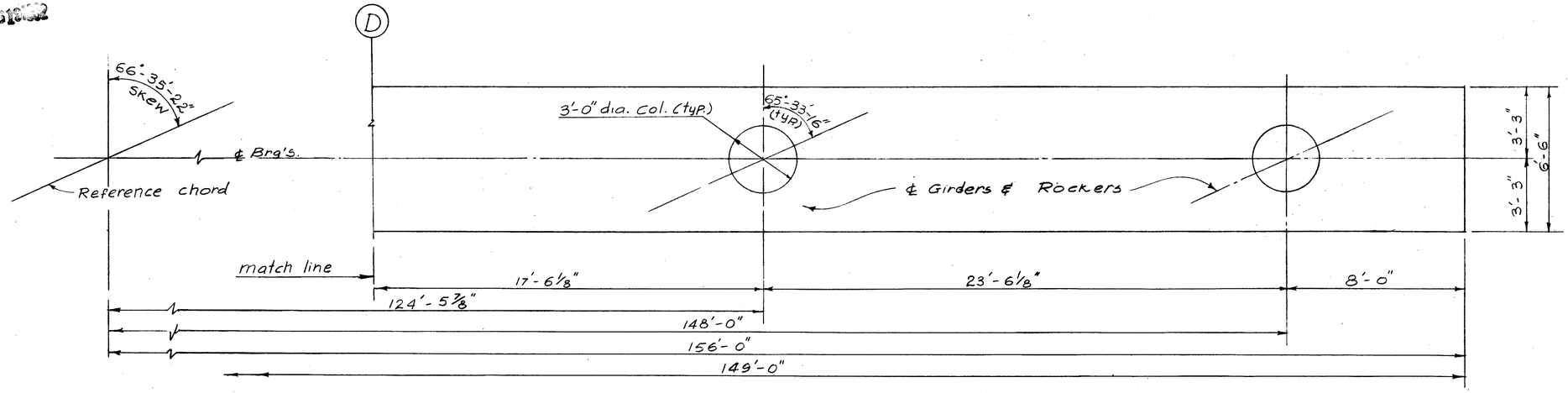
I-480 OVER S.R.17 (BROOKPARK RD.)

CUYAHOGA COUNTY STA. 364+48.63 STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.I.P.	B.I.P.		R.S.S.	G.W.M.	11/13/69	

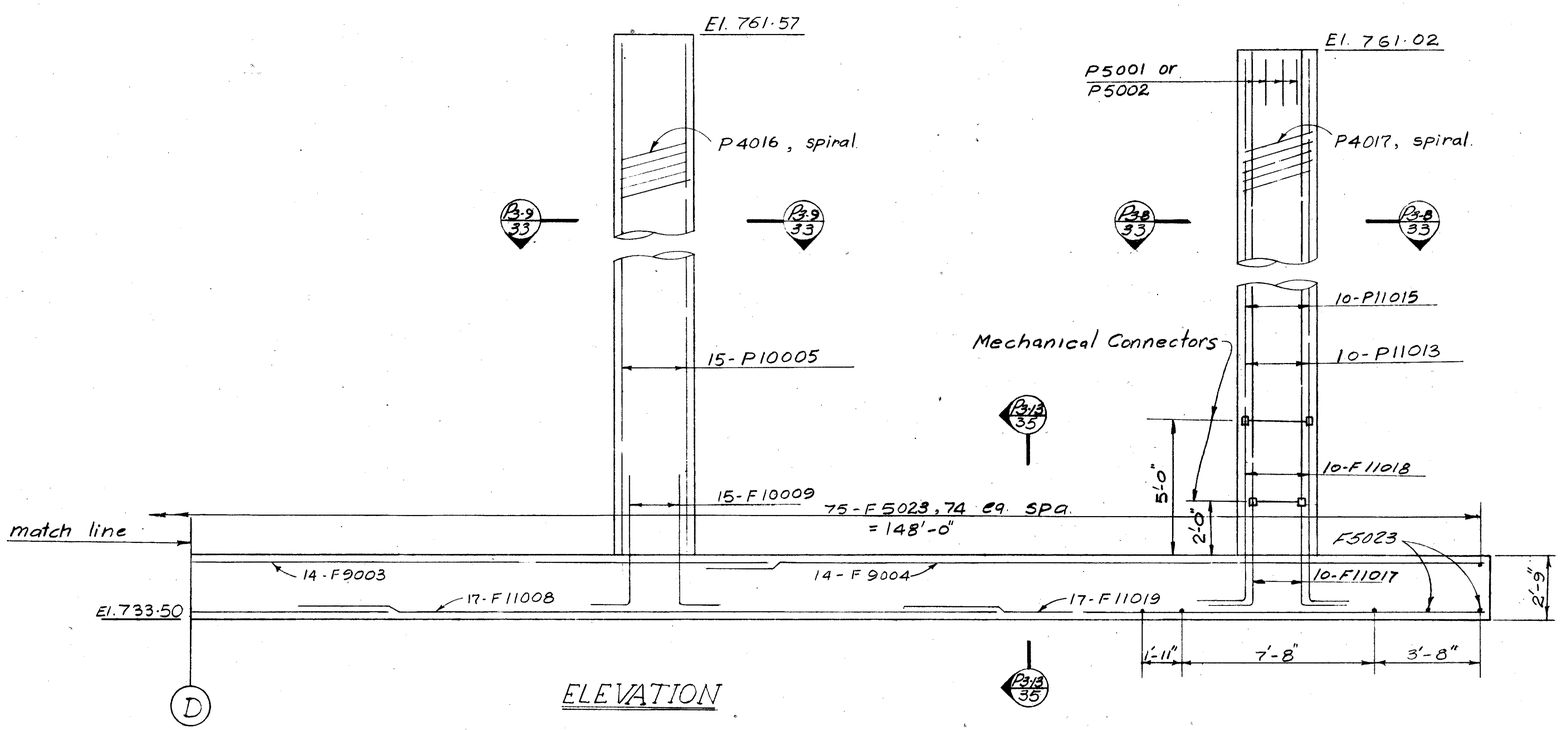
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

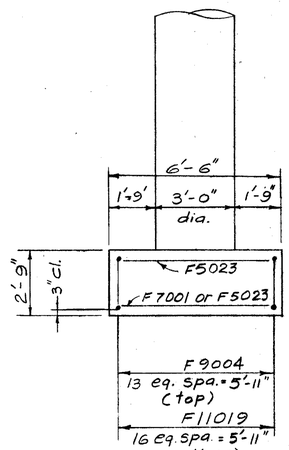


PART PLAN

N



ELEVATION



SECTION P-P 3-13 3-13

35/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER Nº 3 DETAILS

BRIDGE Nº CUY-480-0499

I-480-OVER S.R.17 (BROOKPARK RD.)

CUYAHOGA COUNTY STA. 364+48.63 STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.I.P.	B.I.P.		R.S.S.	G.W.M.	1/13/69	

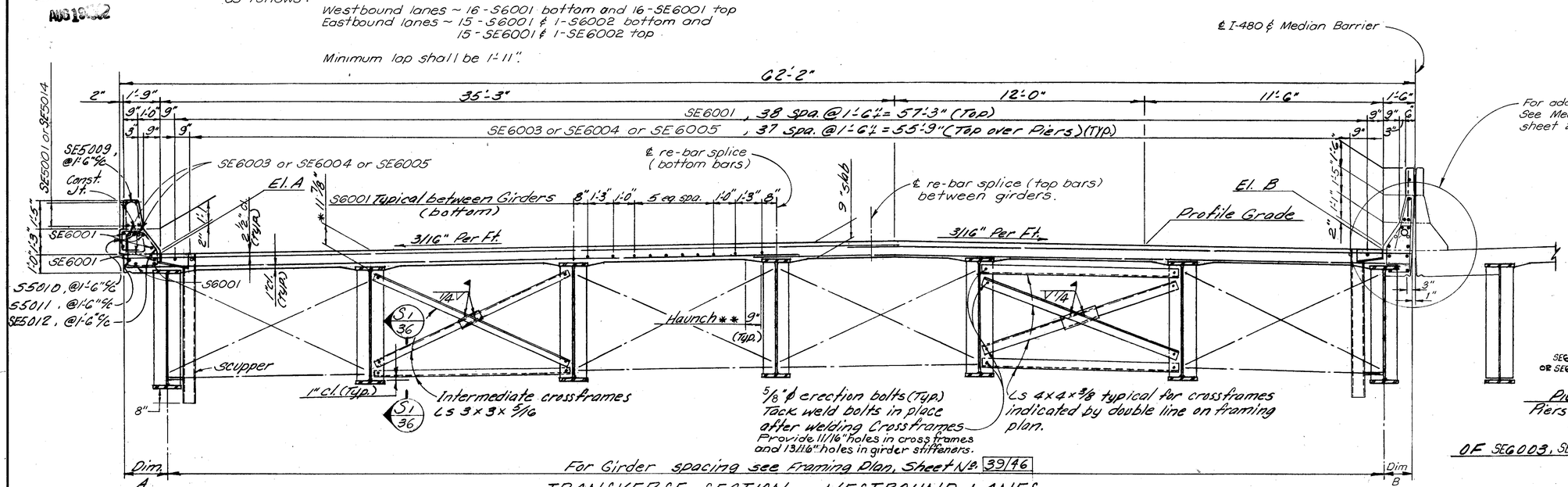
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

265/347

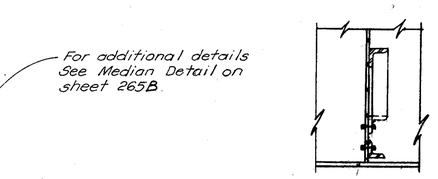
CUYAHOGA COUNTY
CUY-480-4.86

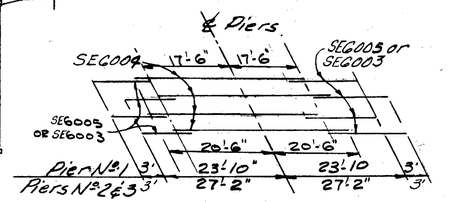
Note: Each longitudinal run of deck reinforcing, excluding SE6003, SE6004 & SE6005 bars over Piers shall be as follows:
Westbound lanes ~ 16 - S6001 bottom and 16 - SE6001 top
Eastbound lanes ~ 15 - S6001 & 1 - S6002 bottom and 15 - SE6001 & 1 - SE6002 top

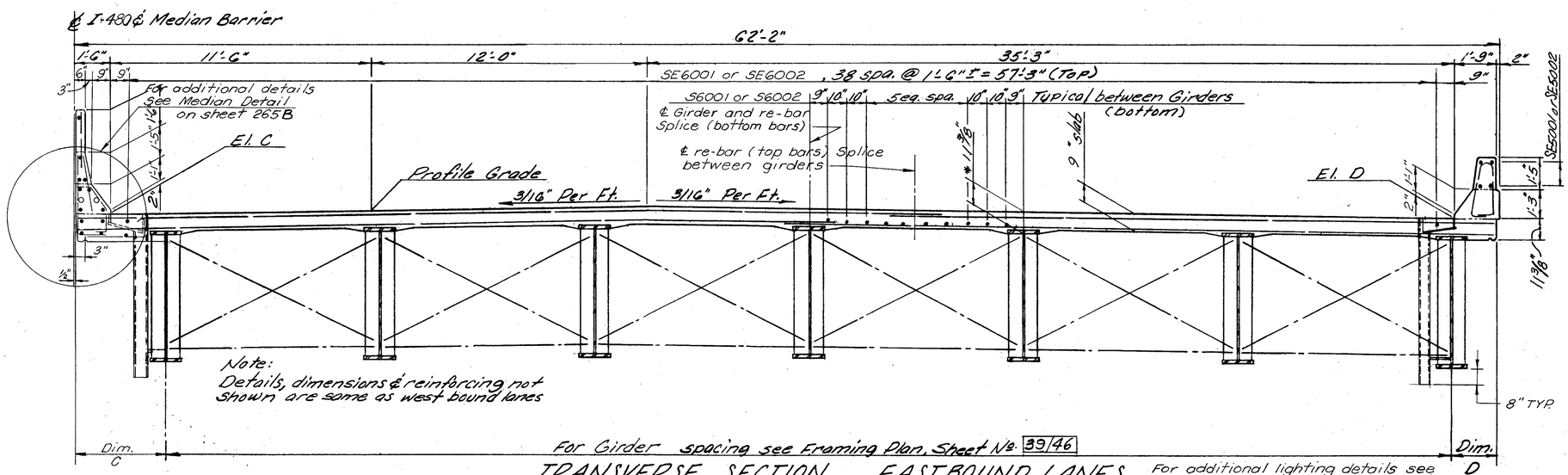
Minimum lap shall be 1'-11".



TRANSVERSE SECTION WESTBOUND LANES







TRANSVERSE SECTION EASTBOUND LANES

For additional lighting details see Std. Constr. Drwgs. HL-3, HL-4, HL-5, HL-7, HL-17A & HL-17B and sht No. 96/347 for Lighting General Notes.

*This dimension is from the top of the slab to the top of the girder web and is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deductions shall be made for volume of encased steel plates as per article 511.15 of the Construction and Material Specifications.

**A typical haunch width of 9" shall be used for all girders in computing quantity of concrete. However the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For transverse slab reinforcing see 37 & 38/46

Concrete and reinforcing steel for parapets and median barrier shall be included for payment with their respective items, Item 511 Superstructure Concrete and Item 509 reinforcing steel.

For Scupper Details see Sht. 41/46

Longitudinal reinforcing steel shall be field cut as necessary to avoid interference with scuppers. Also, epoxy coated bars that are field cut shall be end treated as per approved manufacturers recommendations. 36/46

TABLE OF SLAB CANTILEVERS

Locations	Span 1				Span 2						Span 3						Span 4				
	℄ Brg. W. Abut.	1/4 Pt.	1/2 Pt.	3/4 Pt.	℄ Brg. Pier No 1	Splice No. 1	1/3 Pt.	1/2 Pt.	2/3 Pt.	Splice No. 2	℄ Brg. Pier No 2	Splice No. 3	1/3 Pt.	1/2 Pt.	2/3 Pt.	Splice No. 4	℄ Brg. Pier No 3	Splice No. 5	1/2 Pt.	3/4 Pt.	℄ Brg. E. Abut.
Dim. A	3'-2 3/16"	2'-10 5/16"*	2'-7 1/2"	2'-4 1/4"	2'-1 3/4"	1'-11 1/16"	1'-9 7/8"	1'-8 5/8"	1'-7 1/2"	1'-7 5/8"	1'-7 3/8"	1'-8 5/16"	1'-6 1/2"	1'-4 5/8"	1'-2 3/16"	1'-1 7/8"	1'-1 1/4"	1'-1 3/8"	1'-2 1/8"	1'-3 1/4"	1'-5"
Dim. B	1'-5 1/2"	1'-6 3/8"	1'-6 1/8"	1'-7"	1'-6 3/8"	1'-5 1/2"	1'-7 1/8"	1'-8 1/8"	1'-10 3/16"	1'-11 1/8"	1'-11 3/4"	1'-11 3/4"	1'-11 3/8"	1'-10 1/4"	1'-8 5/8"	1'-7"	1'-3 3/16"	1'-1 1/8"	1'-1 1/16"	1'-2 5/16"	1'-2 1/8"
Dim. C	4'-5 1/2"	4'-1 3/8"	3'-11 1/8"	3'-7 1/8"	3'-4 3/8"	3'-1 1/2"	3'-0 1/8"	2'-10 1/2"	2'-9 1/2"	2'-8 1/8"	2'-8 1/2"	2'-8 7/8"	2'-9 3/8"	2'-11"	3'-1"	3'-2 7/8"	3'-6 3/8"	3'-9 3/8"	3'-8 1/8"	3'-7 5/8"	3'-7 1/2"
Dim. D	3'-0"	3'-1 3/8"*	3'-2 1/4"	3'-2 3/4"	3'-3"	3'-2 5/16"	3'-2"	3'-0 7/8"	2'-11 3/8"	2'-9 3/4"	2'-7"	2'-5"	2'-4"	2'-5"	2'-5 3/8"	2'-5 1/4"	2'-4 1/2"	2'-3 3/8"	2'-1 3/8"	1'-11 3/8"	1'-9"

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS

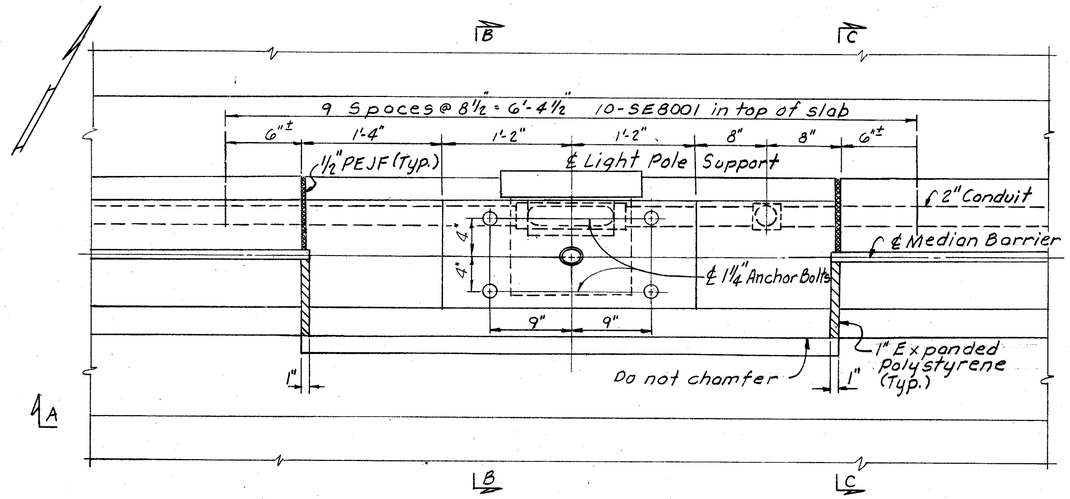
BRIDGE No CUY-480-0499
I-480 OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	P.T.		B.I.P.	G.W.M.	1/14/69	

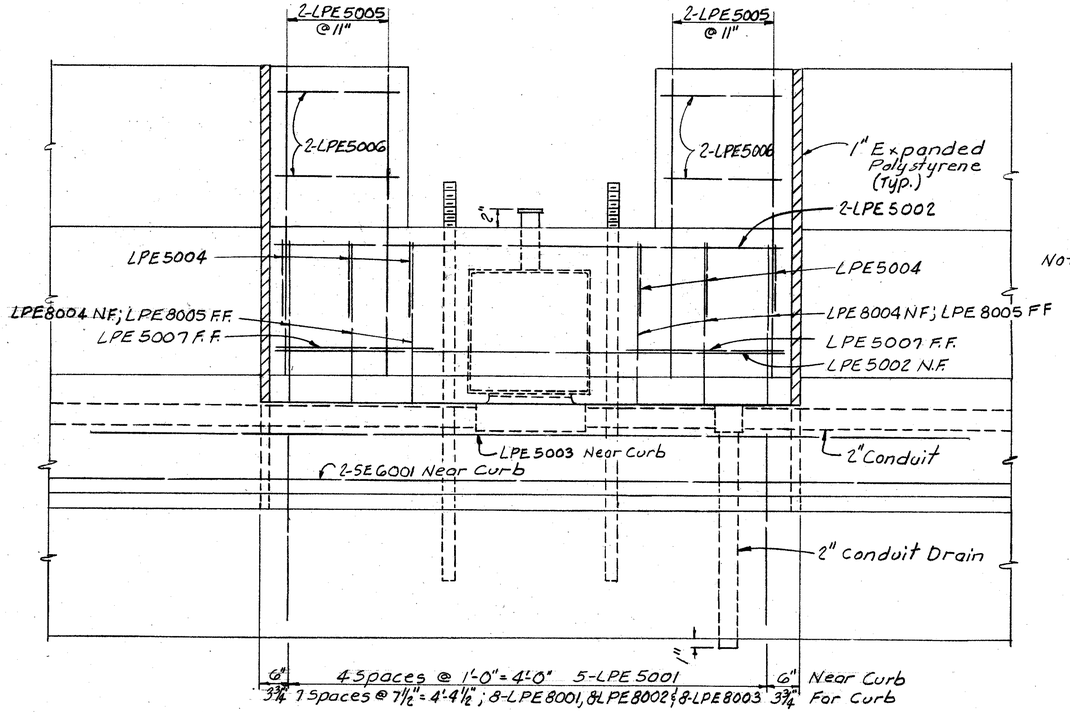
FHWA REGION	STATE	PROJECT	
5	OHIO		

265A 347

CUY-480-4.86

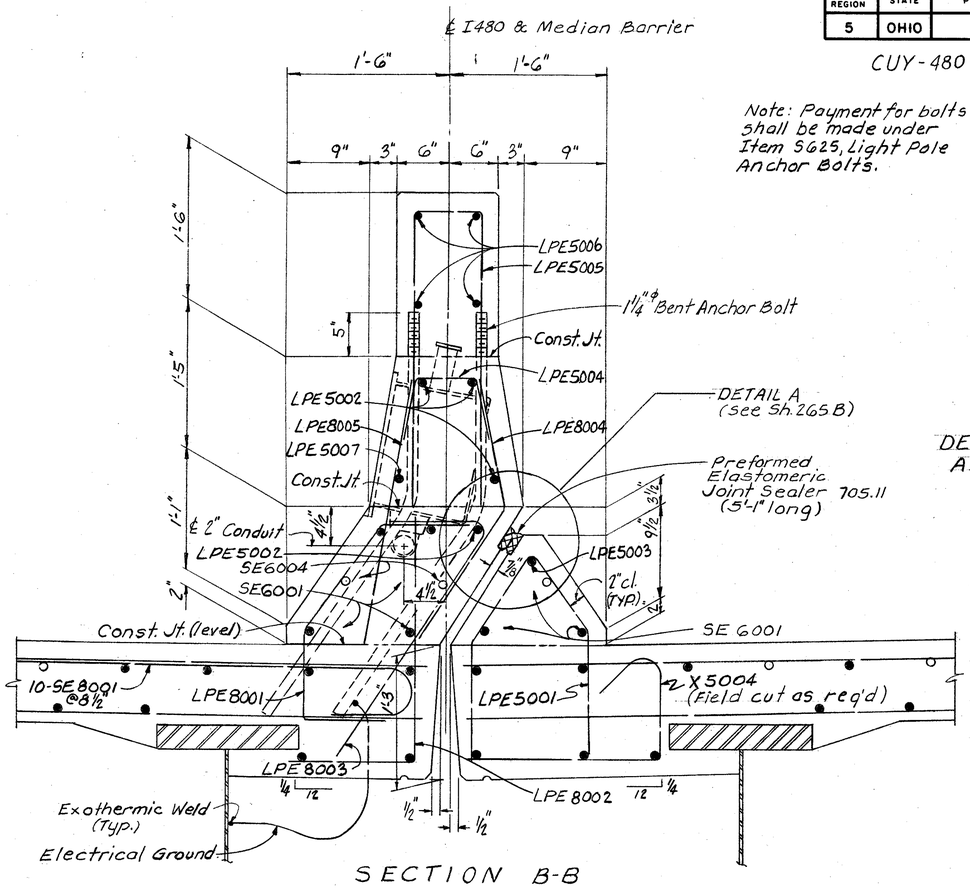


PLAN
LIGHT POLE SUPPORT
AT STA. 366+60



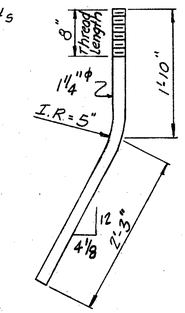
SECTION A-A

Note: Not all horizontal reinforcing bars shown

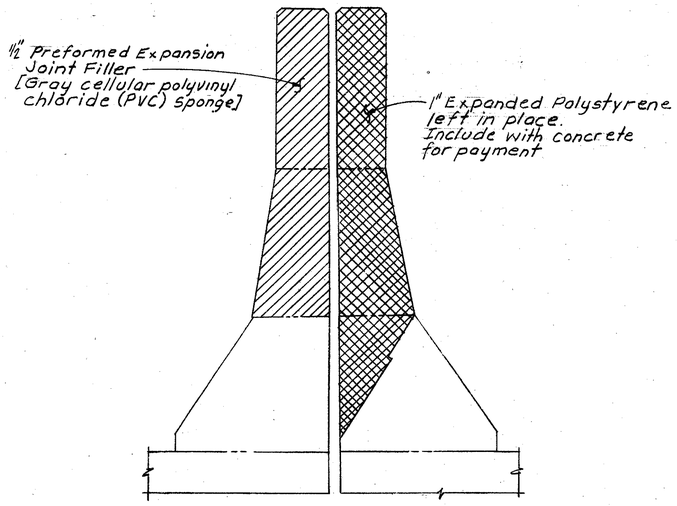


SECTION B-B

Note: Payment for bolts shall be made under Item SG25, Light Pole Anchor Bolts.



DETAIL OF BENT ANCHOR BOLT



SECTION C-C

LEGEND
N.F. ~ Near Face
F.F. ~ Far Face

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

36A 46

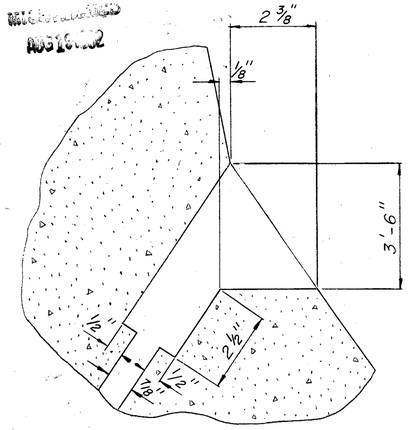
MEDIAN DETAILS
BRIDGE NO. CUY-480-0499
I-480 OVER S.R. 17 (BROOKPARK ROAD)
CUYAHOGA COUNTY STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF			WJJ	3-16-78	

FHWA REGION	STATE	PROJECT	
5	OHIO		

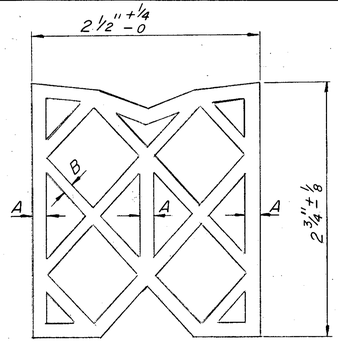
265B
347

CUY-480-4.86



DETAIL-A
(Sheet 265A)

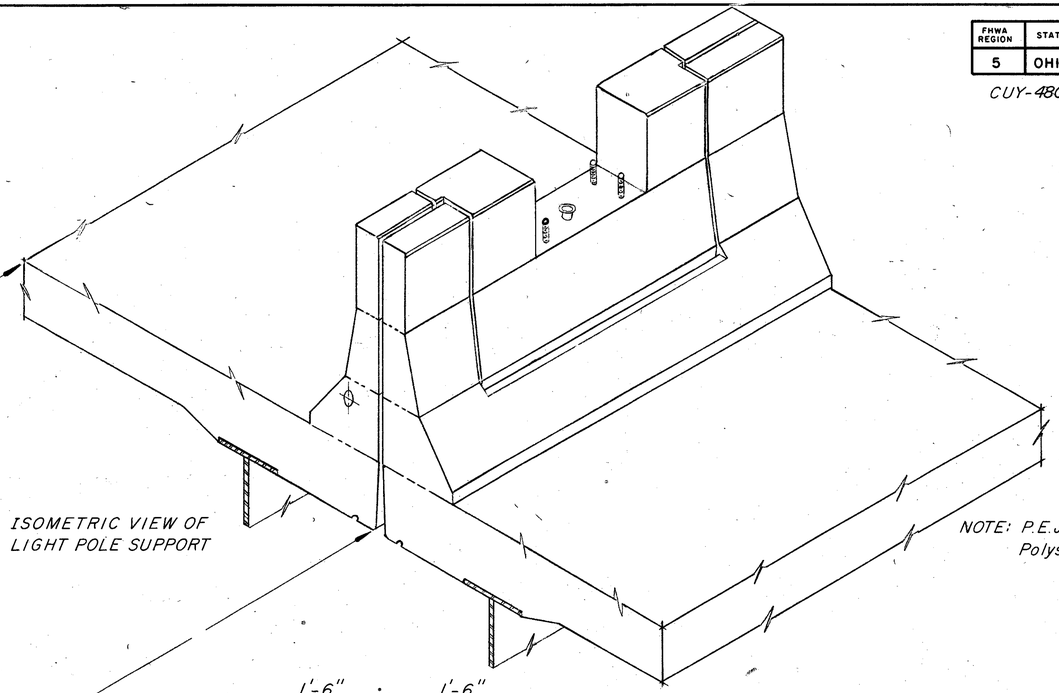
Note: Preformed Elastomeric Joint Sealer, 705.11 not shown.



PREFORMED ELASTOMERIC JOINT SEAL

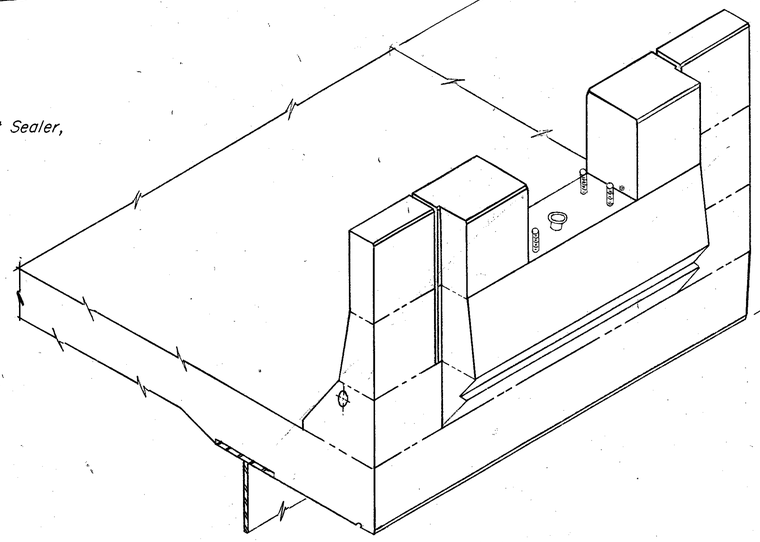
$A = \frac{3}{16} \pm \frac{3}{64} - \frac{1}{64}$

$B = \frac{3}{32} + \frac{1}{32} - \frac{1}{64}$



ISOMETRIC VIEW OF LIGHT POLE SUPPORT

NOTE: P.E.J.F. and Epanded Polystyrene not shown.



LIGHT POLE SUPPORT NOTES

Longitudinal steel shall be field cut as required.

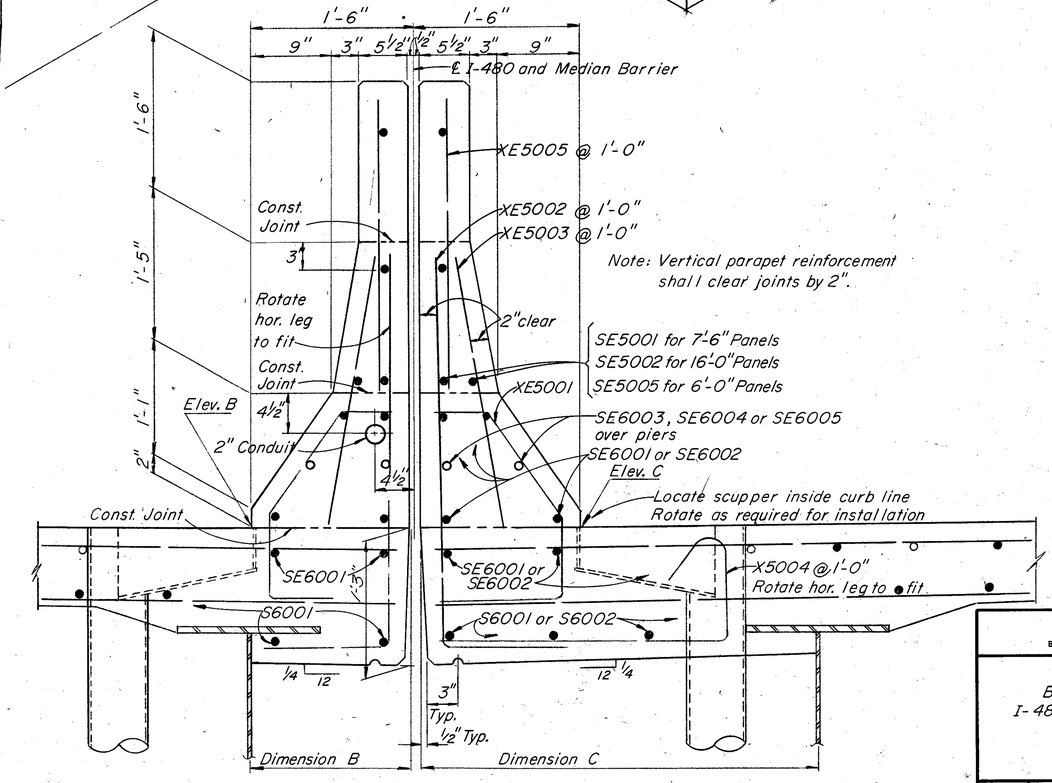
Provide reverse bends in Conduit within a distance of 10'-0" from each end of deck to change its location in the deck median to run it into the abutment median.

Field bending of conduit shall be permitted.

PREFORMED ELASTOMERIC JOINT SEALER NOTES

The Elastomeric Joint Sealer shall be made by Watson Bowman Associates Inc. of Buffalo, New York, Acme Highway Products Corporation of Buffalo, New York or D.S. Brown of North Baltimore, Ohio.

The adhesive shall be "Bon Lastic" distributed by Watson Bowman Associates Inc. of Buffalo, New York, "Prima Lube" distributed by Acme Highway Products Corp. of Buffalo, New York or approved equal.



Note: Vertical parapet reinforcement shall clear joints by 2".

MEDIAN DETAIL

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

36B 46

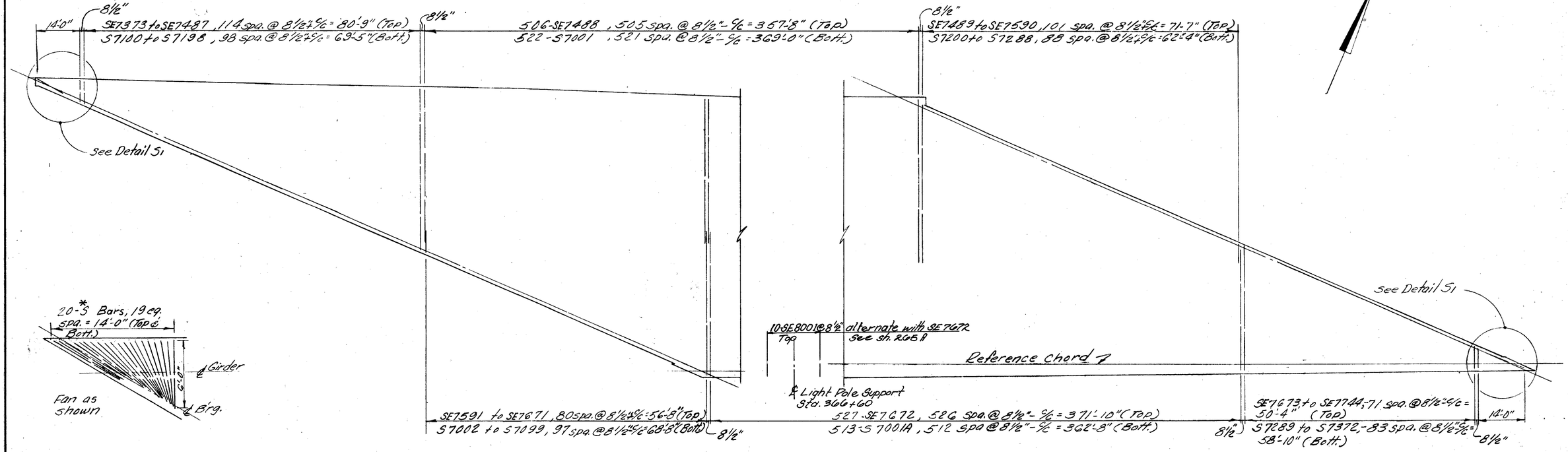
MEDIAN DETAILS
BRIDGE NO. CUY-480-0499
I-480 over S.R. 17 (BROOKPARK ROAD)
CUYAHOGA COUNTY
Sta. 364+48.63
Sta. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	GFJ			WJJ	3-16-78	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

266/347

CUYAHOGA COUNTY
CUY-480-4.86



DETAIL S1

* WESTBOUND LANES	* EASTBOUND LANES
West Abutment	West Abutment
SE 7199 Top	SE 7199B Top
S 7199 Bottom	S 7199B Bottom
East Abutment	East Abutment
SE 7199C Top	SE 7199 Top
S 7199A Bottom	S 7199 Bottom

Note: Transverse reinforcing steel shall be placed normal to the reference chord except at acute corners of slab where the bars shall be fanned.

TRANSVERSE SLAB REINFORCING

WESTBOUND LANES

37/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

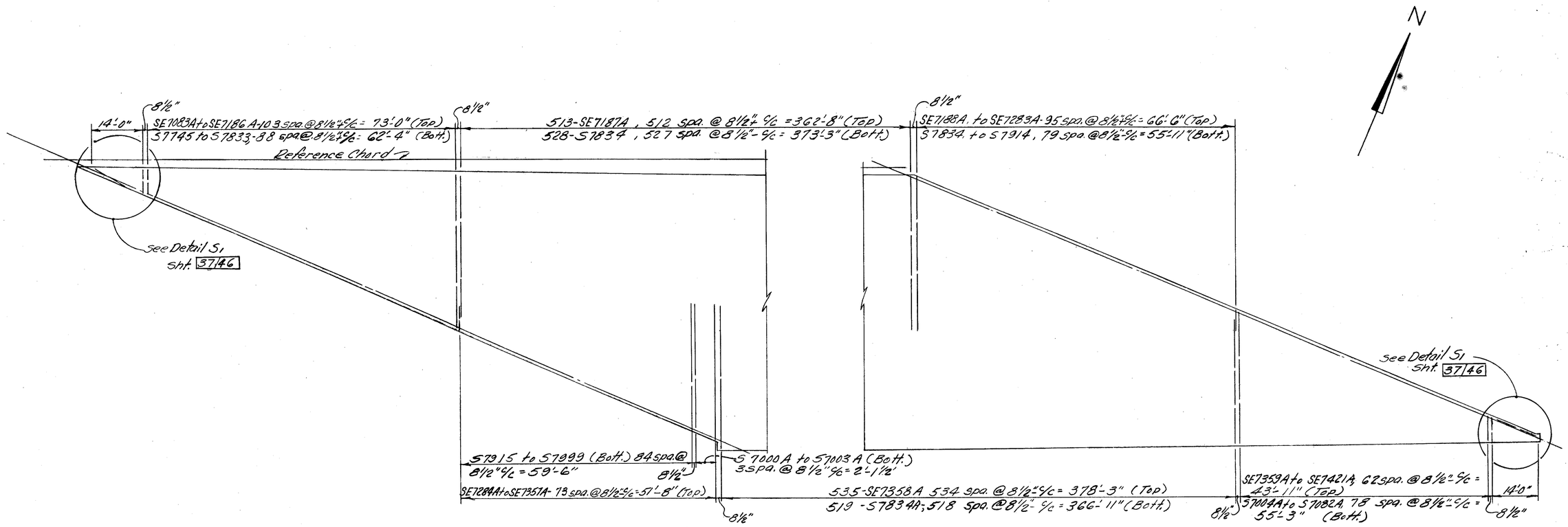
SUPERSTRUCTURE DETAILS
BRIDGE NO CUY-480-0499
I 480-OVER S.R. 17 (BROOKPARK RD.)
CUYAHOGA COUNTY STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.I.P.	R.T.		R.S.S.	G.W.M.	11/4/69	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

267
347

CUYAHOGA COUNTY
CUY-480-4.86



TRANSVERSE SLAB REINFORCING

EASTBOUND LANES

38/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

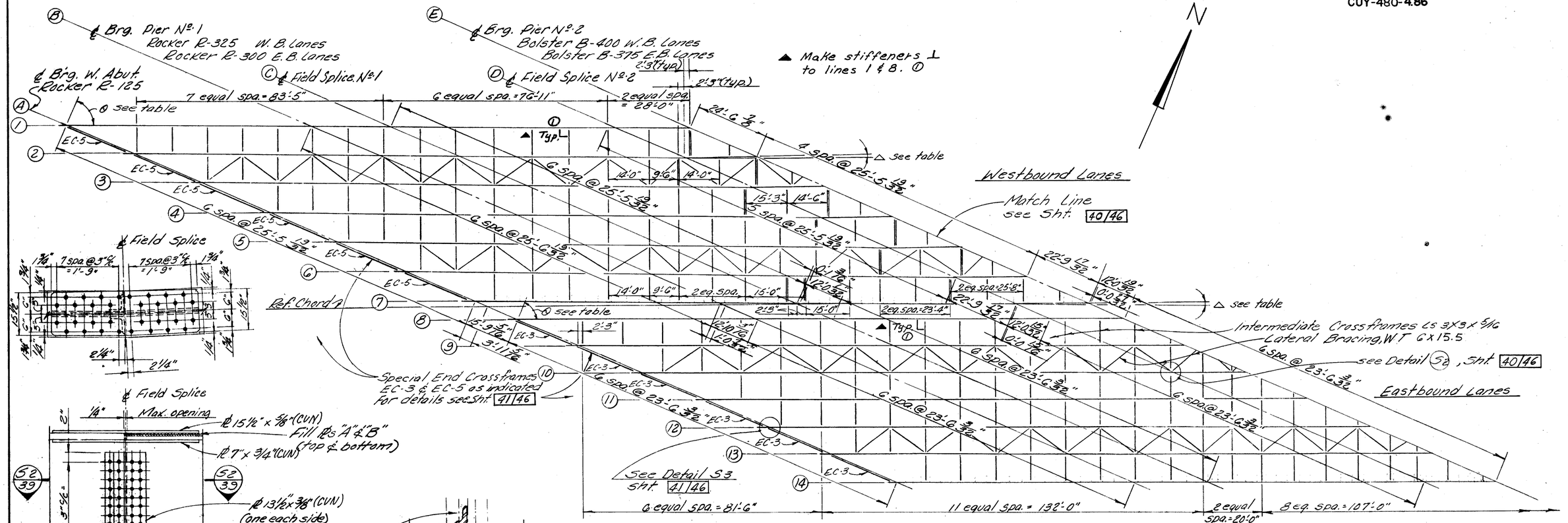
SUPERSTRUCTURE DETAILS
BRIDGE Nº CUY-480-0499
I 480 OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY STA. 364+48.63
STA. 369+04.01

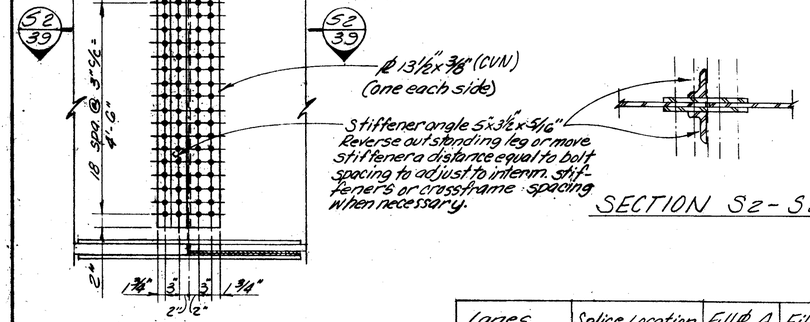
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.I.P.	R.T.		R.S.S.	G.W.M.	11/4/69	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

(368) 347

CUYAHOGA COUNTY
CUY-480-4.86





SECTION S2-S2

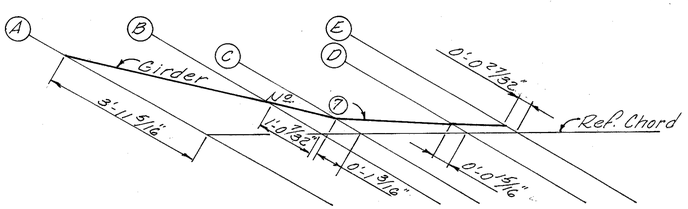
GIRDER FIELD SPLICE DETAIL

NOTES:

1" ℄ High strength bolts shall be used at field splices. Bolt heads on exterior girder web splices shall be on fascia side. Bolts shall conform to A 325 steel.

Lanes	Splice Location	Fill ℄ A	Fill ℄ B
Westbound	⑦	1"	13/16"
	⑨	1"	5/8"
Eastbound	⑦	1"	9/16"
	⑨	1"	3/8"

PART FRAMING PLAN



SCHEMATIC LOCATION PLAN

TABLE OF DEFLECTION ANGLES & GIRDER LENGTHS

Bearing Point or Splice Point		Girder Row ①	Girder Row ② thru ⑥	Girder Row ⑦	Girder Row ⑧	Girder Row ⑨ thru ⑫
	∅	67°-23'-11"	67°-23'-11"	67°-23'-11"	66°-36'-25"	66°-36'-25"
A	Length Ⓐ Ⓑ	83'-6 5/16"	83'-6 5/16"	83'-6 5/16"	80'-10 11/16"	80'-10 11/16"
	△	0	0	0	0	0
B	Length Ⓑ Ⓒ	26'-2 13/16"	26'-2 13/16"	26'-2 13/16"	25'-4 7/8"	25'-4 7/8"
	△	0	0	0°-47'-25"	0°-~~47'-25"~~ ①	0°-~~47'-25"~~ ①
C	Length Ⓒ Ⓓ	76'-11"	76'-11"	74'-5 11/16"	74'-5 5/16"	74'-5 5/16"
	△	0	0°-47'-25"	0	0	0
D	Length Ⓓ Ⓔ	25'-8 9/16	24'-10 3/4"	24'-10 3/4"	24'-10 7/8"	24'-10 7/8"
	△	0	0	0	0	0
E						

TABLE OF BEARING UNIT DIMENSIONS *

Bolster Nº.	Rocker Nº.	Dimensions (inches) A	B	C	D	F	G	H	K	L	M	R	T	Y
	R-325	3½	21	3½	3¼	¾	12	19⅜	15	29	26	13	3¼	1 1/16
	R-350	3½	22	3½	3¼	¾	12	20⅜	16	30	27	13½	3½	1 1/16
B-375	R-375	4½	24	3½	4	¾	12	21⅜	14½	24	21	14	4	1 5/16
B-400		4½	24	4	-	¾	-	22⅝	14½	24	-	14½	4	1 5/16

3 3/4" ①

2 3/16" ①

* For detail drawing and location of dimensions see Std. Dwg. RB-1-55. For additional Notes see sheet (231A) 347

① Revision 1-4-79

39/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS

BRIDGE Nº CUY-480-0499

I 480-OVER S.R.17 (BROOKPARK RD.)

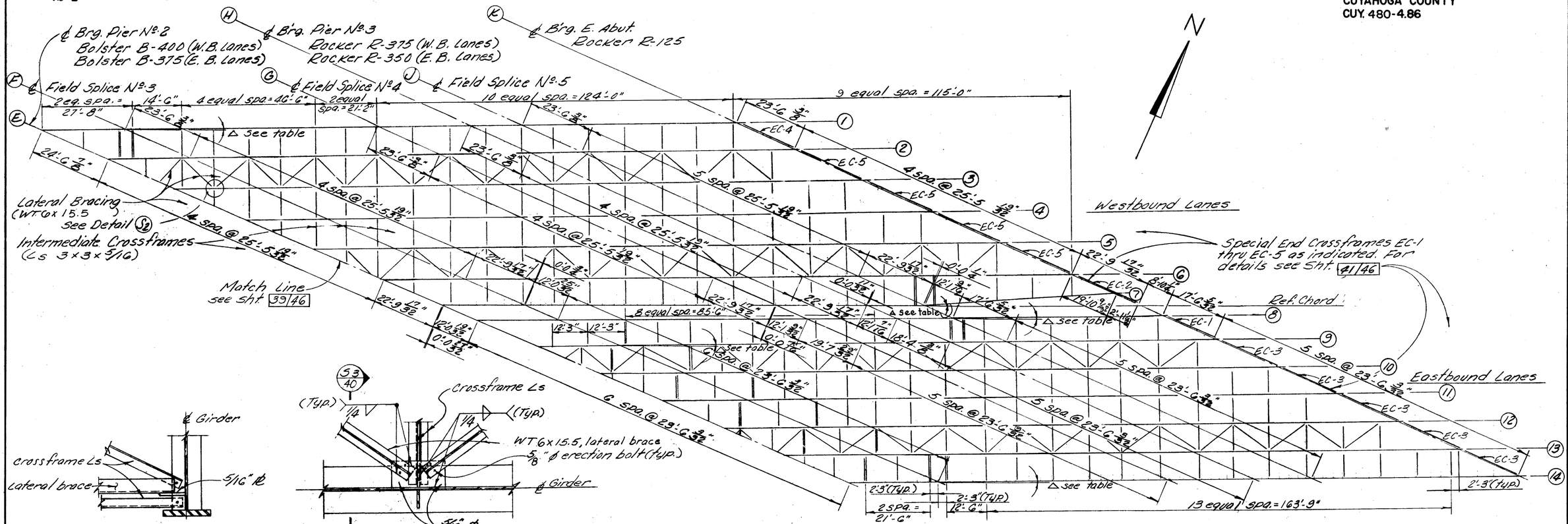
CUYAHOGA COUNTY STA. 364+48.63 STA. 369+04.01

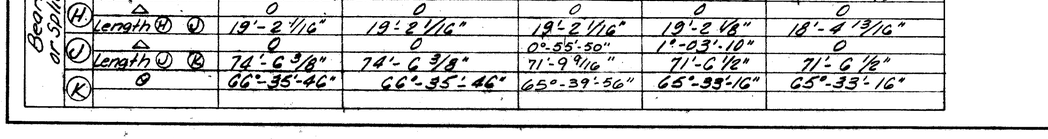
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		B.I.P	G.N.M. 1/14/69	1-4-79	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

269
347

CUYAHOGA COUNTY
CUY. 480-4.86



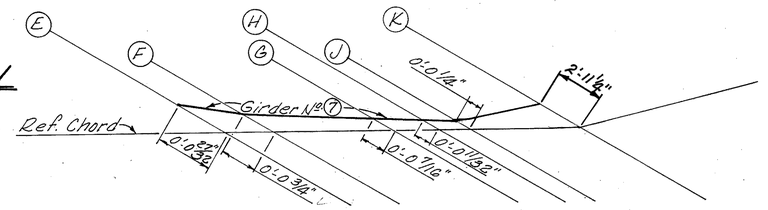


SECTION S3-S3

DETAIL S2

TYPICAL LATERAL BRACING CONNECTION

PART FRAMING PLAN



SCHEMATIC LOCATION PLAN

TABLE OF DEFLECTION ANGLES & GIRDER LENGTHS

Bearing Point or Splice Point		Girder Row ①	Girder Row ② thru ⑥	Girder Row ⑦	Girder Row ⑧	Girder Row ⑨ thru ⑭
(E)	∅	67°-23'-11"	66°-35'-46"	66°-35'-46"	66°-36'-25"	66°-36'-25"
	Length (E) (F)	29'-11 13/16"	29'-0 5/16"	29'-0 5/16"	29'-0 7/16"	29'-0 7/16"
(F)	△	0°-47'-25"	0	0	0	1°-03'-10"
	Length (F) (G)	86'-8 3/16"	86'-8 3/16"	86'-8 3/16"	86'-8 3/16"	83' 2 3/8"
(G)	△	0	0	0	0	0
	Length (G) (H)	29'-1 3/8"	29'-1 5/8"	29'-1 5/8"	29'-1 13/16"	27'-11 9/16"
(H)	△	0	0	0	0	0
	Length (H) (J)	19'-2 1/16"	19'-2 1/16"	19'-2 1/16"	19'-2 1/8"	18'-4 13/16"
(J)	△	0	0	0°-55'-50"	1°-03'-10"	0
	Length (J) (K)	74'-6 3/8"	74'-6 3/8"	71'-9 9/16"	71'-6 1/2"	71'-6 1/2"
(K)	∅	66°-35'-46"	66°-35'-46"	65°-39'-56"	65°-39'-16"	65°-33'-16"

For additional General Notes, see sht 23/A 347

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ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

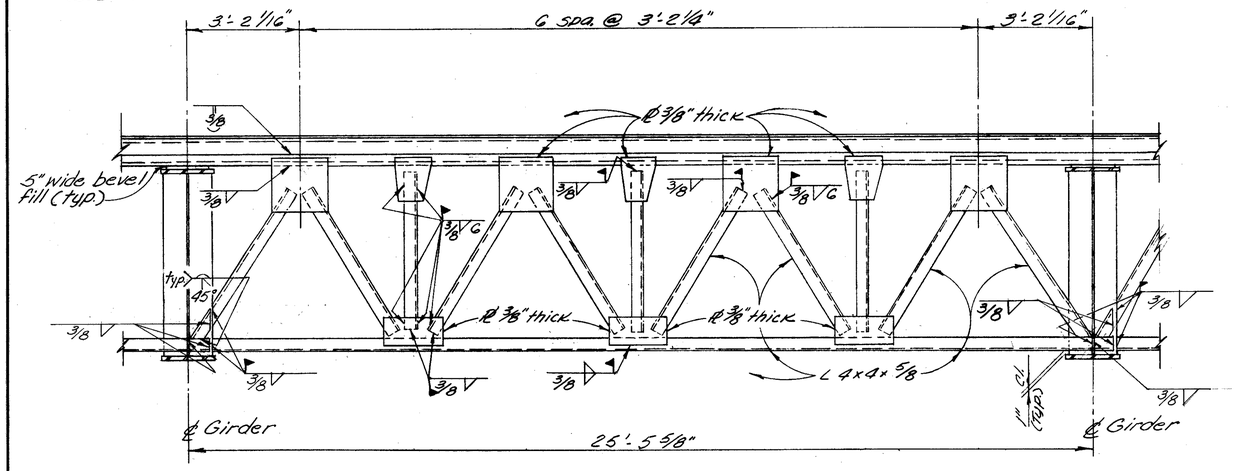
SUPERSTRUCTURE DETAILS

BRIDGE No CUY.-480-0499

I 480 OVER S.R. 17 (BROOKPARK ROAD)

CUYAHOGA COUNTY STA. 364+48.63
STA. 369+04.01

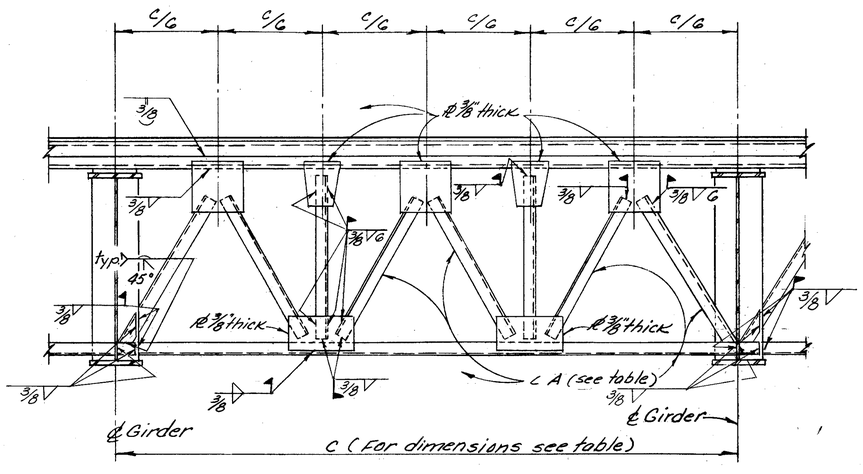
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		B.I.P.	G.W.M.	1/14/69	



SPECIAL END CROSSFRAME

TYPE: EC-5

(For additional details see Std. Dwg. SD-1-69, Sht. 1)



SPECIAL END CROSSFRAME

TYPES: EC-1, EC-2, EC-3, EC-4

(For additional details see Std. Dwg. SD-1-69 Sht. 1)

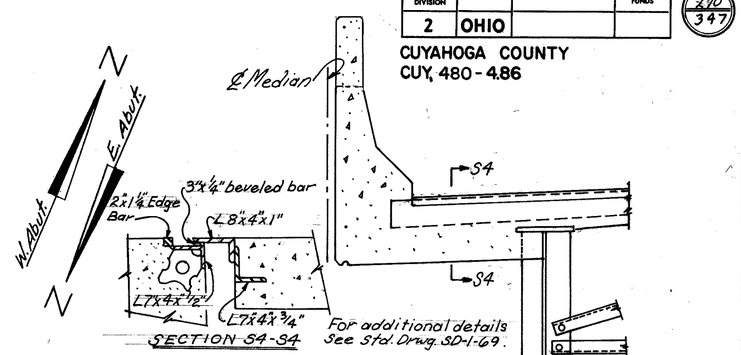
TABLE OF DIMENSIONS FOR SPECIAL END CROSSFRAMES		
Type	Dim C	Angle A
EC-1	17'-6 1/4"	L 4x4x 3/8
EC-2	19'-10 1/4"	L 4x4x 1/2
EC-3	23'-6 1/8"	L 4x4x 1/2
EC-4	23'-6 3/8"	L 4x4x 1/2

NOTE: For locations and type of special end crossframes see sheet 39/46 & 40/46

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

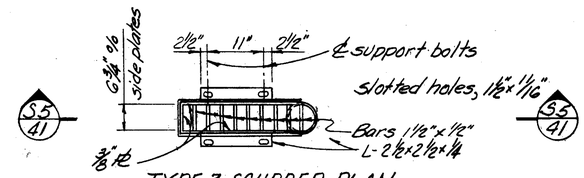
270/347

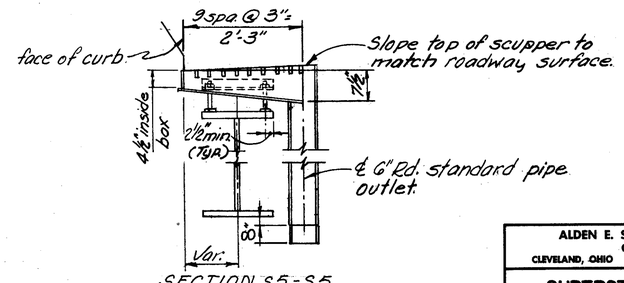
CUYAHOGA COUNTY
CUY, 480 - 4.86



DETAIL S3 39/46

Showing special end crossframe treatment at bearing stiffener.





Notes:

For additional Notes see sht. 231A/347

For additional scupper details see Std. Drg. SD-1-69

For Standard Scupper Details see Std. Drg. SD-1-69

For spacing see General Plan Sht. 4/46

41/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS

BRIDGE Nº CUY 480 0499

I 480 OVER S.R. 17 (BROOKPARK ROAD)

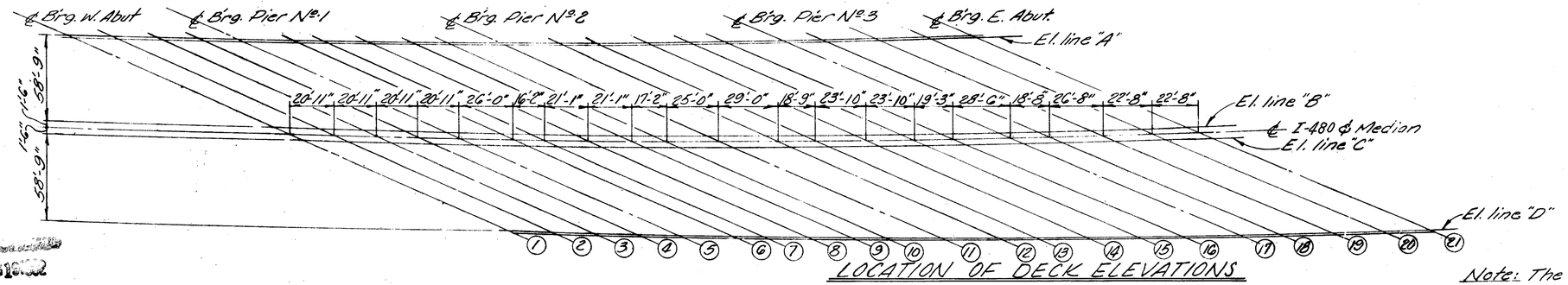
CUYAHOGA COUNTY STA. 364+48.63 STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BIP	R.T.		R.S.S.	G.W.M.	1/14/69	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

271/347

CUYAHOGA COUNTY
CUY-480-4.86



LOCATION OF DECK ELEVATIONS

N

Note: The deck elevations shown are those which are required prior to placing of the concrete deck. Proper allowance has been made for the dead load deflection caused by the weight of the concrete.

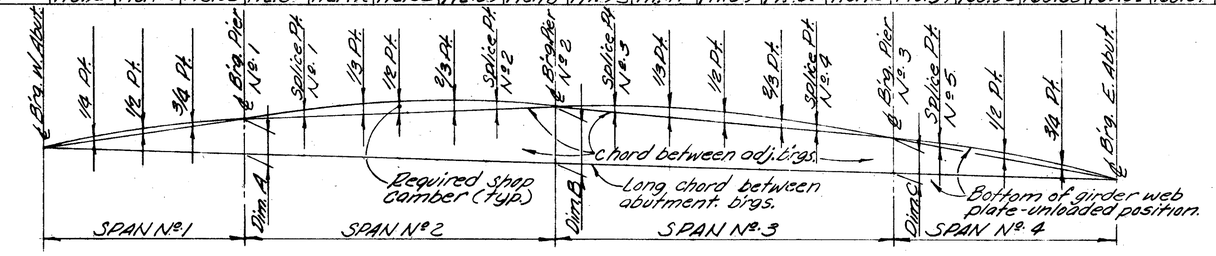
TABLE OF DECK ELEVATIONS

Line	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
El. A	772.21	772.45	772.64	772.80	772.94	773.11	773.21	773.29	773.34	773.34	773.35	773.36	773.35	773.30	773.18	774.04	772.80	772.65	772.41	772.17	771.88
El. B	773.41	773.49	773.54	773.54	773.53	773.52	773.50	773.43	773.32	773.21	773.04	772.86	772.73	772.52	772.23	771.96	771.53	771.26	770.86	770.49	770.05
El. C	773.43	773.50	773.68	773.54	773.51	773.49	773.45	773.41	773.29	773.16	772.99	772.79	772.64	772.41	772.12	771.85	771.44	771.16	770.75	770.35	769.92
El. D	773.21	773.12	773.03	772.87	772.72	772.53	772.39	772.18	771.93	771.71	771.39	771.01	770.76	770.39	769.96	769.58	769.01	768.67	768.19	767.78	767.35

770.05
769.92

BLOCKING DIMENSIONS

Girder No.	Dim. A	Dim. B	Dim. C
1	3 1/16"	1'-3 1/8"	10"
2	3 1/16"	1'-3"	9 7/8"
3	3"	1'-2 15/16"	9 13/16"
4	3"	1'-2 15/16"	9 13/16"
5	3 1/16"	1'-3 3/16"	10 1/8"
6	3 1/16"	1'-3 1/8"	10 1/8"
7	3"	1'-3"	9 15/16"
8	3 1/16"	1'-2 3/8"	9 3/8"
9	3 1/8"	1'-1 15/16"	9 1/16"
10	3 5/16"	1'-1 11/16"	8 11/16"
11	3 5/16"	1'-1 7/16"	8 1/4"
12	3 1/8"	1'-0 15/16"	7 1/2"
13	2 15/16"	1'-0 3/8"	6 5/8"
14	2 5/8"	11 3/8"	5 3/4"



CAMBER & BLOCKING DIAGRAM

DEFLECTION AND CAMBER

LOCATION	SPAN No. 1										SPAN No. 2																					
	1/4 Pt.				1/2 Pt.				3/4 Pt.			Splice Pt. No. 1				1/3 Pt.						1/2 Pt.						2/3 Pt.						Splice Pt. No. 2			
	1 & 7	2 thru 6	8 thru 13	14	1 & 7	2 thru 6	8 & 14	9 thru 13	1 & 7	2 thru 6	8 thru 14	1	2 thru 6	7	8	9 thru 14	1	2 thru 6	7	8	9 & 10	11 thru 13	14	1	2 thru 6	7	8	9 thru 10	11 thru 14	1	2 thru 6	7	8	9 & 10	11 thru 14	1	2 thru 4	5 thru 7	8 thru 14
Deflection due to weight of steel	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	0	1/16	1/16	1/16	1/16	1/16	1/8	1/8	1/8	1/8	1/8	1/8	1/8	3/16	3/16	3/16	3/16	3/16	3/16	1/8	1/8	1/8	1/8	1/8	1/8	0	0	0	0
Deflection due to remaining dead load	1/4	5/16	5/16	1/4	1/4	5/16	1/4	5/16	1/16	1/8	1/16	1/4	3/8	5/16	5/16	3/8	1/2	5/8	9/16	7/16	5/8	5/8	9/16	9/16	11/16	5/8	9/16	11/16	11/16	5/16	7/16	3/8	5/16	7/16	7/16	1/16	1/8	1/8	1/8
Adjustment req'd for vertical curve	3/8	3/8	3/8	3/8	1/2	1/2	1/2	1/2	3/8	3/8	3/8	13/16	13/16	3/4	3/4	3/4	1 1/16	1 1/16	1	1	1	1 1/16	1 1/16	1 1/16	1 1/16	1	1	1	1 1/16	13/16	13/16	3/4	3/4	3/4	3/4	1/16	1/16	1	1
Required shop camber	11/16	3/4	3/4	11/16	13/16	7/8	13/16	7/8	7/16	1/2"	7/16	1/8	1/4	1/8	1/8	13/16	1 11/16	1 13/16	1 11/16	1 9/16	1 3/4	1 13/16	1 3/4	2	2 1/8	2	1 7/8	2	2 1/16	1 1/2	1 7/8	1 1/8	1 7/16	1 9/16	1 5/8	7/8	15/16	7/8	7/8

LOCATION	SPAN No. 3																															
	Splice Pt. No. 3							1/3 Pt.							1/2 Pt.						2/3 Pt.							Splice Pt. No. 4					
	1	2 thru 6	7	8	9 & 10	11 thru 13	14	1	2 thru 4	5 & 6	7	8	9 & 10	11 thru 13	14	1 & 7	2 thru 6	8	9 thru 12	13	14	1	2 thru 4	5 & 6	7	8	9 thru 12	13	14	1	2 thru 6	7	8	9 thru 12	13	14
Deflection due to weight of steel	3/16	3/16	3/16	3/16	3/16	3/16	3/16	5/16	5/16	5/16	5/16	1/4	1/4	1/4	1/2	3/8	3/8	3/8	3/8	3/8	3/8	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16
Deflection due to remaining dead load	7/16	11/16	9/16	1/2	5/8	5/8	1/2	13/16	13/16	13/16	11/16	7/8	11/16	11/16	15/16	1 1/16	1 9/16	1 1/8	1 7/16	1 7/8 ①	1 3/16	7/8	1 1/4	1 1/4	1 1/8	15/16	1 1/8	1 1/8	15/16	1/2	3/4	5/8	9/16	11/16	11/16	9/16
Adjustment req'd for vertical curve	1	1	1	1	1	7/8	13/16	1 3/8	1 3/8	1 7/16	1 3/8	1 5/16	1 1/4	1 1/8	1 1/8	1 9/16	1 9/16	1 1/2	1 7/16	1 3/8	1 3/16	1 3/8	1 3/8	1 7/16	1 3/8	1 3/8	1 5/16	1 1/2	1	1	1	1	1	15/16	7/8	5/8
Required shop camber	1 5/8	1 7/8	1 3/4	1 11/16	1 13/16	1 11/16	1 1/2	2 1/2	2 7/8	1 13/16	2 3/4	2 1/2	2 5/8	2 9/16	2 5/16	3	3 1/2	3	3 1/4	3 3/16	2 3/4	2 3/16	2 15/16	②	2 13/16	2 5/8	2 3/4	2 13/16	2 1/4	1 11/16	1 15/16	1 13/16	1 3/4	1 13/16	1 3/4	1 3/8

② $2\frac{15}{16}$ ① + $2\frac{5}{8}$ ① + $2\frac{9}{16}$ ① + 3 ①

LOCATION	SPAN No. 4																						
	Splice Pt. No. 5							1/2 Pt.							3/4 Pt.								
	1 thru 7	8	9	10	11	12 & 13	14	1 & 7	2 thru 6	8	9	10	11	12 & 13	14	1	2 thru 6	7	8	9	10	11	12 thru 14
Deflection due to weight of steel	0	0	0	0	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16
Deflection due to remaining dead load	-1/16	-1/16	-1/16	-1/16	-1/16	-1/16	-1/16	3/16	1/4	3/16	1/4	1/4	1/4	1/4	3/16	3/16	3/16	1/4	1/4	1/4	1/4	1/4	1/4
Adjustment req'd for vertical curve	7/16	7/16	3/8	1/4	1/8	0	0	5/8	5/8	5/8	1/2	5/16	1/8	0	0	1/2	1/2	1/2	7/16	5/16	1/8	1/16	0
Required shop camber	3/8	3/8	5/16	3/16	1/16	-1/16	-1/16	7/8	15/16	7/8	13/16	5/8	7/16	5/16	1/4	3/4	7/8	13/16	3/4	5/8	7/16	3/8	5/16

① Revision 1-4-79

42146

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS
BRIDGE No CUY-480-0499

I 480 OVER S.R. 17 (BROOKPARK ROAD)

CUYAHOGA COUNTY STA. 364+48.63
STA. 369+04.01

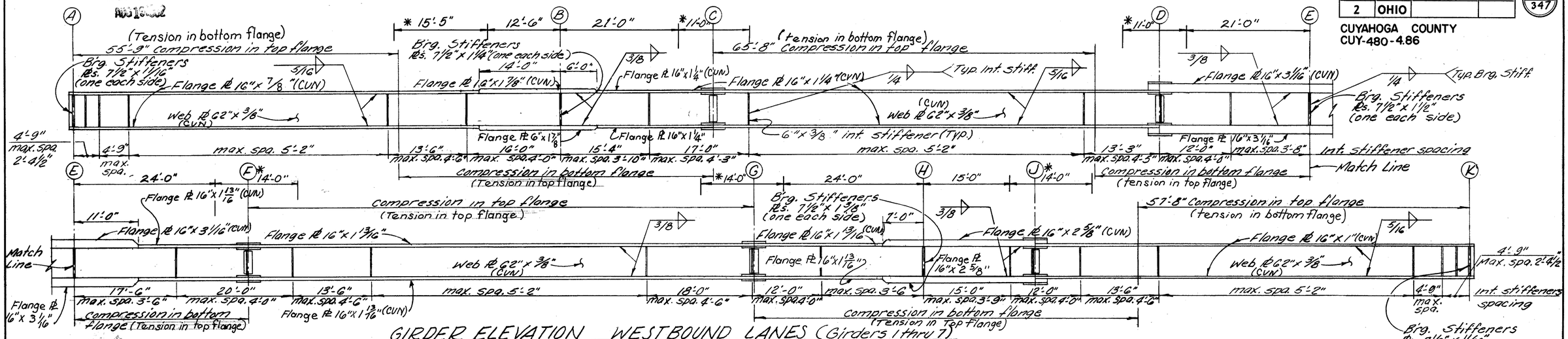
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		B.I.P.	G.W.M. 11/16/78	10-2-78	1-4-79

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

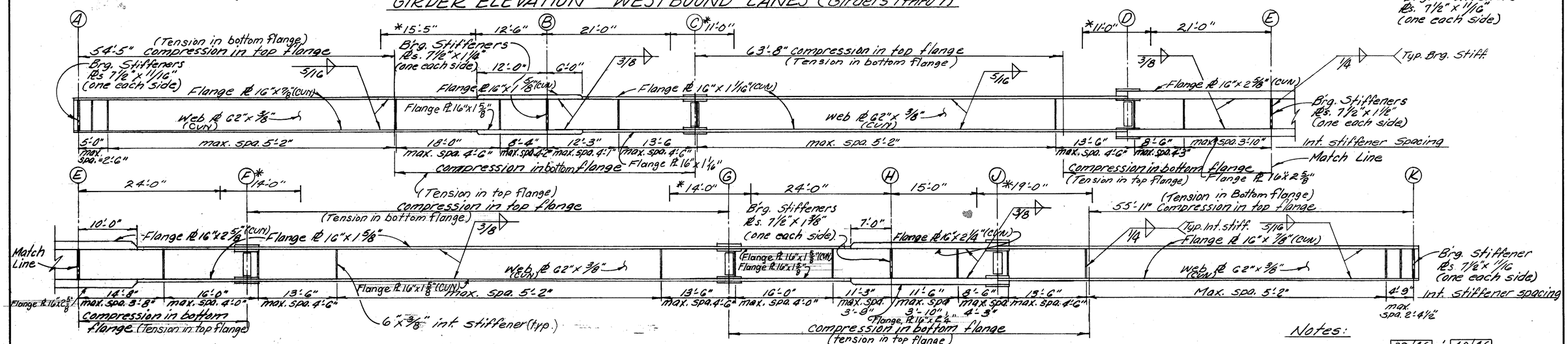
CUYAHOGA COUNTY
CUY-480-4.86

272
347

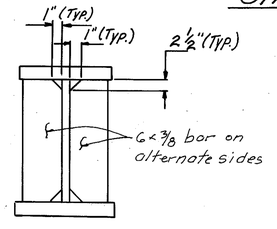
* Indicates contraflexure zones.



GIRDER ELEVATION WESTBOUND LANES (Girders 1 thru 7)



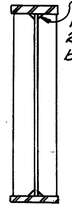
GIRDER ELEVATION EASTBOUND LANES (Girders 8 thru 14)



INTERMEDIATE STIFFENERS

*Indicates, contraflexure zones.

Intermediate Web stiffeners: Instead of the pairs of transverse intermediate web stiffeners, single 6"x 3/8" transverse intermediate web stiffeners shall be used on alternate sides of the web of interior girders and on the inside of the web of fascia girders at the spacing shown for transverse intermediate web stiffeners. Transverse web stiffeners shall be provided for the attachment of deck crossframes.



TYPICAL SECTION
THRU GIRDER AT BEARING

Notes:

1. For Girder lengths see table Sht. 39/46 & 40/46
2. Locate intermediate stiffeners to serve as attachment for intermediate crossframes.
3. For additional Notes see sh. 23/A 34/7
4. Butt welds on girder flange plates shall be ground flush, in tension area only, the finished grinding being parallel to the direction of stress.
5. For bolted field splice detail see sht. 39/46 43/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS

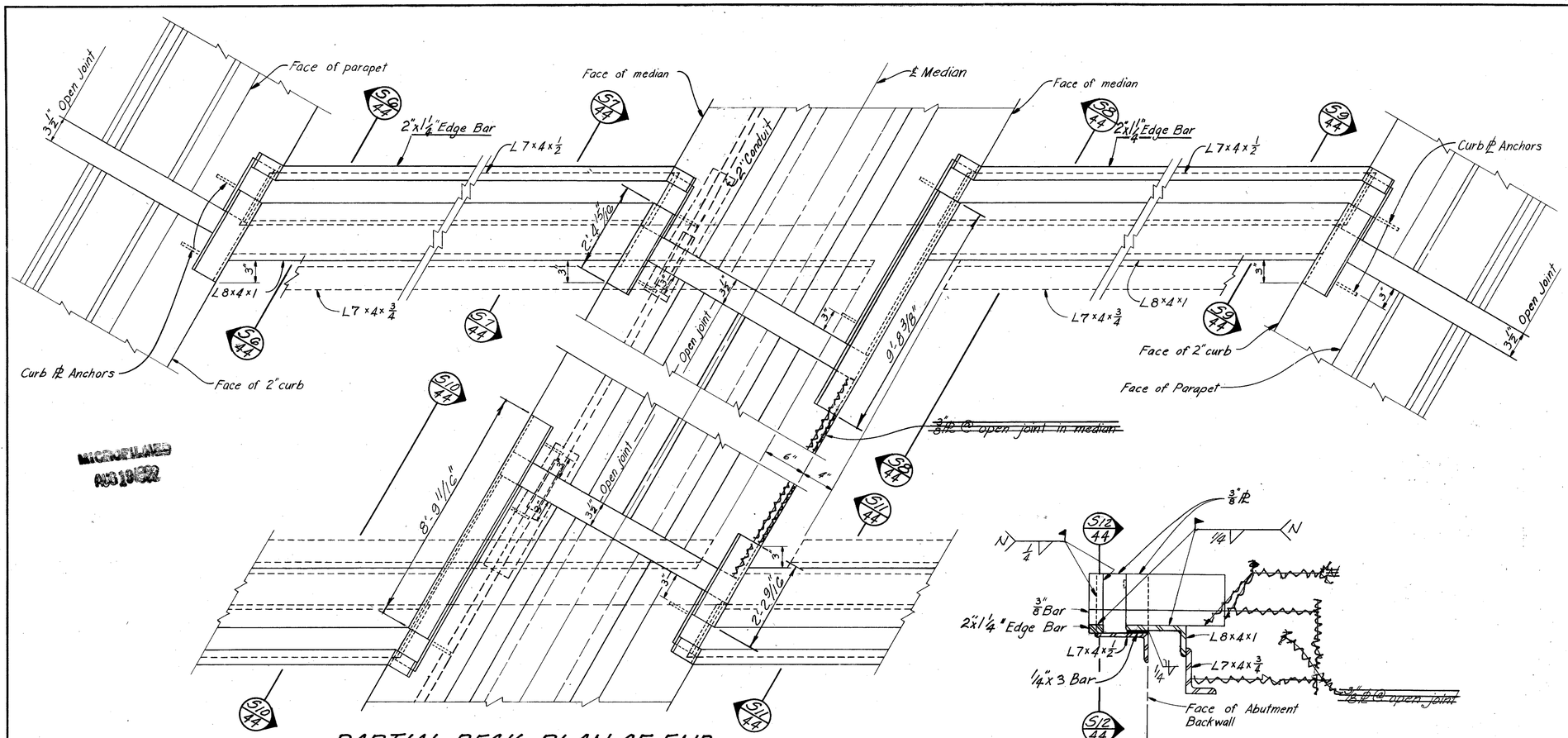
BRIDGE Nº CUY-480-0499
I 480 OVER S.R. 17 (BROOKPARK RD.)
CUYAHOGA COUNTY
STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		B.I.P.	G.W.M.	1/14/69	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

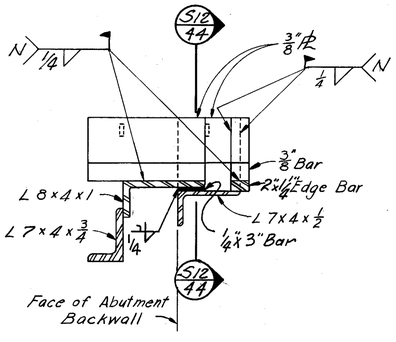
273/347

CUYAHOGA COUNTY
CUY-480-4.86

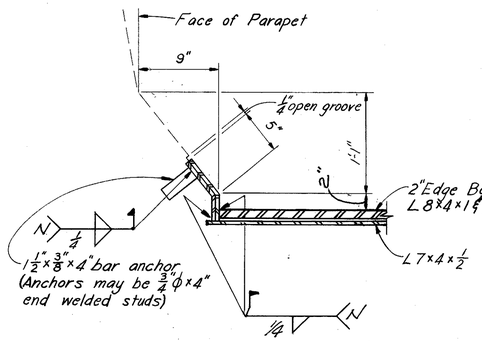


PARTIAL DECK PLAN OF END FINISH AND CURB PLATES

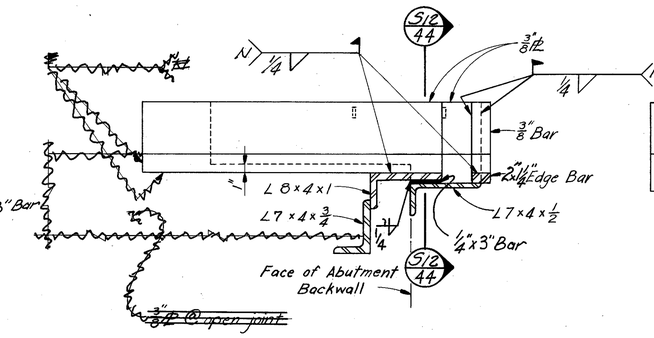
SECTION S11-S11



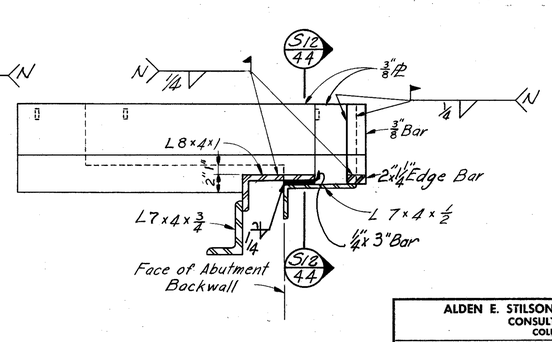
SECTION S6-S6
(Sections S7-S7 & S9-S9 are similar)



SECTION S12-S12



SECTION S8-S8



SECTION S10-S10

Note:
For details of anchor bars, bevel plates, welding of angles and end crossframes, see Std. Dwg. SD-1-69.

For additional notes see sh. 231A/347

44/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

SUPERSTRUCTURE DETAILS

BRIDGE № CUY-480-0499
I-480-OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY STA. 364 + 48.63 STA. 369 + 04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	R.T.		G.W.M.	G.W.M.	1/15/69	

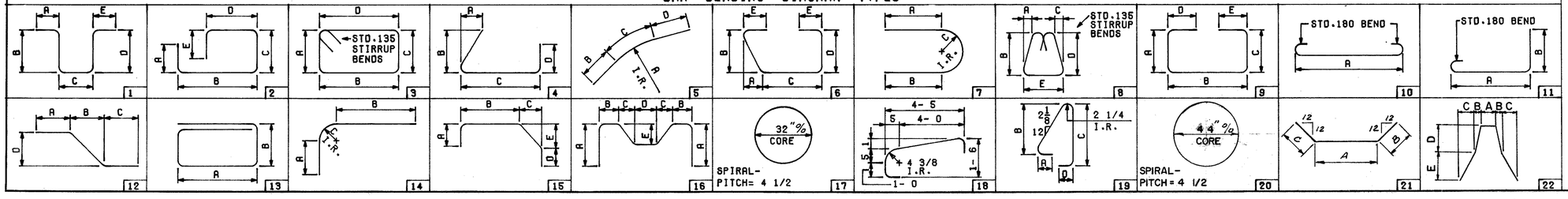
REV. 9-7-78

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				ABUTMENTS						
A 5001	140	4-11	718	2	1- 6	2- 2	1- 6			
A 5002	441	7-10	3603	2	2- 4	3- 5	2- 4			
A 5003	35	25- 3	922	ST						
A 5004	7	28- 5	207	ST						
A 5005	148	24- 2	3730	ST						
A 5006	84	21- 3	1862	ST						
A 5007	184	26- 2	5022	ST						
A 5008	12	30-10	386	ST						
A 5009	9	35- 1	329	ST						
A 5010	8	36- 0	300	ST						
A 5011	2	30- 2	63	ST						
A 5012	8	7- 5	62	ST						
A 5013	4	18- 0	75	ST						
A 5014	14	6- 7	96	ST						
A 5015	2	6- 0	13	ST						
A 5017	81	1- 9	148	2	0- 6	1- 0	0- 6			
A 5019	28	6- 5	187	ST						
A 5020	12	4-11	62	ST						
A 5021	2	12- 6	26	ST						
A 5022	2	15- 6	32	ST						
A 5023	2	13- 0	27	ST						
A 5024	4	14-11	62	ST						
A 5025	2	9- 1	19	ST						
A 5026	2	3- 2		ST						1
THRU			62		VARY	LENGTH	BY	0- 8	5/ 8	
A 5031	2	6- 9		ST						1
A 5032	2	10- 0	21	12	8- 6	1- 4		0- 9		
A 5033	8	12- 0	100	ST						
A 5034	14	21- 8	316	ST						
A 5035	7	25- 0	183	ST						
A 5036	21	31- 4	686	ST						
A 5037	21	4- 3	93	ST						
A 5038	10	37-11	395	ST						
A 5039	2	32- 1	67	ST						
A 5040	13	5- 9	78	ST						
A 5041	41	7- 3	310	ST						
A 5042	10	14- 8	153	ST						
A 5043	2	11- 0	23	ST						
A 5044	2	14- 0	29	ST						
A 5045	2	17- 0	35	ST						
A 5046	2	17- 9	37	ST						
A 5047	4	11- 6	48	ST						
A 5048	2	8- 7	18	12	7- 0	1- 5		0- 8		
A 5054	10	3- 3	34	10	2- 1					
A 5055	16	3- 1	51	12	1- 5	0- 6		1-8		
A 5056	8	7- 9	65	2		2- 9	2- 6	2- 9		
A 5057	2	11- 3	23	ST						
A 5058	1	5- 0	5	ST						
A 5059	2	10- 3	21	ST						
A 5060	1	4- 0	4	ST						
A 6001	605	20-10	18931	2	7- 5	1- 5	8-10	0-11	2-11	

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				ABUTMENTS						
D 8001	98	8-7	2246	21	6-6	0-8½	1-6½			
F 5001	441	8- 4	3833	2	1- 7	5- 5	1- 7			
F 5002	255	8- 0	2128	2	7- 6	0- 8				
F 5003	91	7- 0	664	2	6- 6	0- 8				
F 5004	95	9- 3	917	2	8- 9	0- 8				
F 5005	18	12-11	242	2	8- 1	5- 0				
F 5006	16	9-11	165	2	6- 1	4- 0				
F 5007	10	8- 5	88	2	4- 7	4- 0				
F 5008	21	5- 6	120	ST						
F 5009	30	4- 6	141	ST						
F 5010	34	12- 1	428	3	2- 7	3- 2	2- 7	3- 2		
F 5011	3	10- 0	31	2	9- 6	0- 8				
F 5012	3	8- 6	27	2	8- 0	0- 8				
F 5013	4	5- 0	21	ST						
F 6001	255	15- 2	5809	2	7- 6	5- 5	2- 7			
F 6002	91	14- 2	1936	2	6- 6	5- 5	2- 7			
F 6003	95	16- 5	2342	2	8- 9	5- 5	2- 7			
F 6004	28	8-11	375	2	6- 1	3- 0				
F 6005	13	6-11	135	2	4- 1	3- 0				
F 6006	6	19- 6	176	2	9- 4	1- 2	9- 4			
F 6007	7	22-10	240	2	11- 0	1- 2	11- 0			
F 8001	140	30- 0	11214	ST						
F 8002	7	17- 0	318	ST						
F 8003	7	23- 6	439	ST						
F 8004	28	10-10	810	2	8- 1	3- 0				
F 8005	15	13- 9	551	ST						
F 8006	5	15- 6	207	ST						
F 8007	6	12- 0	192	ST						
F 8008	21	11- 6	645	ST						
F 8009	6	14- 9	236	ST						
F 8010	6	17- 6	280	ST						
F 8011	8	10- 9	230	12		2- 0	8- 0	2- 0		
F 8012	6	10- 0	160	ST						
				PIERS						
P 4001	2	16- 9	637	17	NO. TURNS= 48		NO. SPACERS= 8			6
P 4002	2	17- 1	650	17	NO. TURNS= 49		NO. SPACERS= 8			6
P 4003	3	17- 4	977	17	NO. TURNS= 49		NO. SPACERS= 12			6
P 4004	7	17- 6	2322	17	NO. TURNS= 50		NO. SPACERS= 28			6
P 4005	8	12- 5	1906	17	NO. TURNS= 36		NO. SPACERS= 32			6
P 4006	2	14- 0	531	17	NO. TURNS= 40		NO. SPACERS= 8			6
P 4007	4	11- 6	897	17	NO. TURNS= 34		NO. SPACERS= 16			6
P 4008	4	29- 0	2136	17	NO. TURNS= 80		NO. SPACERS= 16			6
P 4009	1	28- 9	533	17	NO. TURNS= 80		NO. SPACERS= 4			6
P 4010	1	28- 4	526	17	NO. TURNS= 79		NO. SPACERS= 4			6
P 4011	1	27-11	514	17	NO. TURNS= 77		NO. SPACERS= 4			6
P 4012	1	26-11	500	17	NO. TURNS= 75		NO. SPACERS= 4			6
P 4013	2	26- 7	986	17	NO. TURNS= 74		NO. SPACERS= 8			6
P 4014	1	26- 3	487	17	NO. TURNS= 73		NO. SPACERS= 4			6
P 4015	1	25- 8	474	17	NO. TURNS= 71		NO. SPACERS= 4			6
P 4016	1	25- 2	467	17	NO. TURNS= 70		NO. SPACERS= 4			6
P 4017	1	24- 7	459	17	NO. TURNS= 69		NO. SPACERS= 4			6

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				PIERS					(CONTINUED)	
P 5001	176	5- 1	933	1		1- 6	2- 4	1- 6		
P 5002	120	4- 5	553	1		1- 6	1- 8	1- 6		
P 5003	54	5- 5	305	1		1- 6	2- 8	1- 6		
P 5004	250	8- 9	2282	1		3- 2	2- 8	3- 2		
P 5005	4	38- 6	161	ST						
P 5006	5	22- 6	117	1	22- 6					
P 5007	2	24- 0	50	ST						
P 5008	2	25-10	54	ST						
P 5009	2	21-11	46	ST						
P 5010	2	25- 1	52	ST						
P 5011	4	36- 0	150	ST						
P 5012	5	20- 6	107	ST						
P 6001	18	18-10	509	1	3- 2	15-10				
P 7001	16	19- 1	624	1	3- 2	16- 1				
P 9001	10	26- 2	890	ST						
P 9002	5	28-11	492	11	27- 8					
P 9003	5	28- 4	482	11	27- 1					
P 9004	16	8-11	485	7	2-10	2-10	1- 0			
P 9005	5	25- 3	429	11	24- 0					
P 9006	5	23- 3	395	11	22- 0					
P 9007	4	21- 8	295	ST						
P 9008	15	29- 1	1483	11	27-10					
P 9009	8	24- 1	655	ST						
P 9010	5	29- 9	506	11	28- 6					
P10001	25	17- 6	1883	ST						
P10002	9	17- 4	671	ST						
P10003	64	15- 6	4269	ST						
P10004	16	17- 0	1170	ST						
P10005	15	25- 2	1624	ST						
P10006	32	14- 6	1997	ST						
P10007	9	29- 0	1123	ST						
P10008	24	26- 7	2745	ST						
P10009	9	26- 3	1017	ST						
P10010	9	25- 8	994	ST						
P11001	32	16- 9	2848	ST						
P11002	27	17- 1	2451	ST						
P11003	29	17- 4	2671	ST						
P11004	54	17- 6	5021	ST						
P11005	12	27- 0	1721	ST						
P11006	12	24- 0	1530	ST						
P11007	32	29- 0	4930	ST						
P11008	13	28- 9	1986	ST						
P11009	19	28- 4	2860	ST						
P11010	12	25-11	1652	ST						
P11011	12	22-11	1461	ST						
P11012	10	21-11	1164	ST						
P11013	10	19- 7	1040	ST						
P11014	10	24-11	1324	ST						
P11015	10	22- 7	1200	ST						
F 4001	2	10- 6	409	17	NO. TURNS= 31		NO. SPACERS= 8			6
F 4002	1	7- 9	207	20	NO. TURNS= 24		NO. SPACERS= 4			6
F 4003	3	7- 9	471	17	NO. TURNS= 24		NO. SPACERS= 12			6
F 4004	12	8- 6	2047	17	NO. TURNS= 26		NO. SPACERS= 48			6
F 4005	8	8- 2	1312	17	NO. TURNS= 25		NO. SPACERS= 32			6
F 4006	2	8- 2	11	ST						
F 5014	425	7- 8	3398	10	6- 6					
F 5015	161	6- 6	1091	ST						
F 5016	5	20- 0	104	ST						

BAR BENDING DIAGRAM TYPES



FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

274/347

CUYAHOGA COUNTY
CUY.-480 - 4.86

NOTES

1. INDICATES SERIES BAR. EACH BAR VARIES FROM ADJACENT BAR(S) BY TABULATED AMOUNT(S), CALCULATED TO NEAREST 1/8 INCH. WEIGHT SHOWN IS FOR ENTIRE SERIES UTILIZING AVERAGE LENGTH.
2. BARS INCLUDED WITH ITEM 517, RAILING, FOR PAYMENT.
3. COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.
4. LIGHT POLE SUPPORT BARS INCLUDED WITH ITEM 509 FOR PAYMENT.
6. 'LENGTH' SHOWN FOR SPIRAL BARS IS DISTANCE FROM TOP OF FOOTING TO BOTTOM OF PIER CAP.
'NO. TURNS' SHOWN IS 'LENGTH' DIVIDED BY PITCH, PLUS 3 TURNS (NUMBER OF CLOSED COILS), EXPRESSED AS NEAREST WHOLE NUMBER.
SPIRAL BARS MAY HAVE DEFORMATIONS AND SHALL IN OTHER RESPECTS CONFORM TO ITEM 509. 1 1/2 CLOSED COILS SHALL BE PROVIDED AT ENDS OF EACH SPIRAL UNIT. FOUR STEEL CHANNEL, TEE OR ANGLE SPACERS, WEIGHING APPROXIMATELY 0.80 LB. PER LIN. FT. OF SPACER SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG PERIPHERY OF COIL. WEIGHT OF SPACERS, AT 0.80 LB. PER LIN. FT. WILL BE PAID FOR AS REINFORCING STEEL AND IS INCLUDED IN TABULATED WEIGHT.
OTHER DETAILS SHALL BE IN ACCORDANCE WITH CRSI STANDARD PRACTICE.

BAR SIZE DESIGNATION

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE FOUR DIGITS ARE USED, AND FIRST TWO DIGITS WHERE FIVE DIGITS ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A7001 IS A NO. 7 SIZE BAR AND A10140 IS A NO. 10 SIZE.

45/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

REINFORCING STEEL LIST

BRIDGE NO. CUY. 480 - 0499
I-480 OVER S.R. 17 (BROOKPARK RD.)

CUYAHOGA COUNTY STA. 364 + 48.63
STA. 369 + 04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.			B.I.P.	G.W.M.	11/15/69	

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				PIERS					(CONTINUED)	
F 5017	4	19- 0	79	ST						
F 5018	24	17- 6	438	ST						
F 5019	8	17- 9	148	ST						
F 5020	8	18- 0	150	ST						
F 5021	126	12- 3	1610	2	3- 6	5- 6	3- 6			
F 5022	224	11- 3	2628	2	3- 6	4- 6	3- 6			
F 5023	249	6- 0	1558	ST						
F 7001	161	6- 0	1975	ST						
F 8013	24	9- 5	603	ST						
F 8014	96	10- 2	2606	ST						
F 8015	46	9-10	1208	ST						
F 9001	126	6- 0	2570	ST						
F 9002	14	22- 0	1047	ST						
F 9003	56	26- 4	5014	ST						
F 9004	14	35- 6	1690	ST						
F10001	9	27- 3	1055	ST						
F10002	36	36- 8	5680	ST						
F10003	9	33- 4	1291	ST						
F10004	16	29- 9	2048	ST						
F10005	64	28- 8	7895	ST						
F10006	16	32- 5	2232	ST						
F10007	34	7- 1	1036	1	1- 5	6- 0				
F10008	96	8- 1	3339	1	1- 5	7- 0				
F10009	66	6-10	1941	1	1- 5	5- 9				
F11001	142	7- 8	5784	1	1- 8	6- 4				
F11002	12	32- 7	2077	ST						
F11003	166	29- 0	25577	ST						
F11004	12	35- 8	2274	ST						
F11005	14	24- 8	1835	11	23- 1					
F11006	14	21- 1	1568	11	19- 6					
F11007	22	20- 3	2367	11	18- 8					
F11008	123	27- 0	17644	ST						
F11009	16	13- 8	1162	ST						
F11010	8	10- 2	432	ST						
F11011	16	10- 7	900	ST						
F11012	20	22- 8	2409	10	19- 6					
F11013	18	22- 2	2120	10	19- 0					
F11014	90	20- 8	9882	10	17- 6					
F11015	30	20-11	3334	10	17- 9					
F11016	30	21- 2	3374	10	18- 0					
F11017	44	5-10	1364	1	1- 8	4-.6				
F11018	44	8-10	2065	1	1- 8	7- 6				
F11019	33	21- 3	3726	ST						
F11020	16	28- 0	2380	ST						
F11021	16	27- 8	2352	ST						
F11022	16	18- 2	1544	ST						
F11023	17	15- 9	1423	ST						
F11024	17	24- 5	2205	ST						
F11025	64	7- 5	2522	1	1- 8	6- 1				

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				SUPERSTRUCTURE						
S 5010	601	1- 9	1097	2	0- 6	1- 0	0- 6			
S 5011	601	2- 0	1254	2	1-10	0- 4				
S 6001	2402	30- 0	108234	ST						
S 6002	78	15- 0	1757	ST						
S 7001	522	32- 9	34943	ST						
S 7002	1	32- 5		ST						1
THRU			3697		VARY	LENGTH	BY	0- 3	1/ 2	
S 7099	1	4- 6		ST						1
S 7100	1	34- 5		ST						1
THRU			4123		VARY	LENGTH	BY	0- 3	1/ 2	
S 7198	1	6- 4		ST						1
S 7199	40	6- 0	491	ST						
S 7200	1	32- 5		ST						1
THRU			3358		VARY	LENGTH	BY	0- 3	3/ 4	
S 7288	1	4- 6		ST						1
S 7289	1	33-1		ST						1
THRU			3269		VARY	LENGTH	BY	0- 4		
S 7372	1	5-0		ST						1
S 7001A	513	31-5	32943	ST						
S 7199A	20	4-8	191	ST						
S 7199B	20	7-5	303	ST						
S 7834A	519	32-7	34566	ST						
S 7745	1	7-9		ST						1
THRU			3896		VARY	LENGTH	BY	0- 3	3/ 4	
S 7833	1	35-1		ST						1
S 7834	528	31- 2	33636	ST						
S 7835	1	31- 1		ST						1
THRU			2909		VARY	LENGTH	BY	0- 4		
S 7914	1	4- 6		ST						1
S 7915	1	31- 1		ST						1
THRU			3178		VARY	LENGTH	BY	0- 3	5/ 8	
S 7999	1	5- 6		ST						1
S 7000A	1	5- 3		ST						1
THRU			40		VARY	LENGTH	BY	0- 3		
S 7003A	1	4- 6		ST						1
S 7004A	1	33- 8		ST						1
THRU			3230		VARY	LENGTH	BY	0- 4	1/ 4	
S 7082A	1	6- 4		ST						1
				MEDIAN	STEEL					
X 5002	882	4-8	4293	23	1-2½	3-7				
X 5004	441	3-8	1687	3	0-11	2-6	0	0		

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
		EPOXY	COATED	REINFORCING-SUPERSTRUCTURE						
SE 6001	1612	30-0	72637	ST						7
SE 6002	52	15-0	1172	ST						7
SE 6003	336	11-7	5846	ST						7
SE 6004	252	38-0	14383	ST						7
SE 6005	168	8-3	2082	ST						7
SE 7083A	1	7-9		ST						1,7
THRU			5022		VARY LENGTH BY 0-3¾					
SE 7186A	1	39-6		ST						1,7
SE 7187A	513	37-10	39671	ST						7
SE 7188A	1	36-1		ST						1,7
THRU			3982		VARY LENGTH BY 0-4					
SE 7283A	1	4-6		ST						1,7
SE 7199	40	6-0	491	ST						7
SE 7199B	20	7-5	303	ST						7
SE 7199C	20	4-8	191	ST						7
SE 7284A	1	4-6		ST						1,7
THRU			2338		VARY LENGTH BY 0-3⅝					
SE 7357A	1	26-5		ST						1,7
SE 7358A	535	26-3	28705	ST						7
SE 7359A	1	28-9		ST						1,7
THRU			2259		VARY LENGTH BY 0-4¾					
SE 7421A	1	6-4		ST						1,7
SE 7373	1	39-7		ST						1,7
THRU			5377		VARY LENGTH BY 0-3½					
SE 7487	1	6-2		ST						1,7
SE 7488	506	37-8	38958	ST						7
SE 7489	1	37-4		ST						1,7
THRU			4361		VARY LENGTH BY 0-3⅞					
SE 7590	1	4-6		ST						1,7
SE 7591	1	27-5		ST						1,7
THRU			2642		VARY LENGTH BY 0-3⅜					
SE 7671	1	4-6		ST						1,7
SE 7672	527	26-5	28456	ST						7
SE 7673	1	28-7		ST						1,7
THRU			2471		VARY LENGTH BY 0-4					
SE 7744	1	5-0		ST						1,7
		EPOXY	COATED	LIGHT POLE SUPPORT						
LPE5001	5	3-10	20	25	1-1	1-0	0-10	1-2		4
LPE5002	4	4-6	19	ST						4
LPE5003	1	8-2	9	ST						4
LPE5004	6	1-7	10	16	0	0	0-1	0-8	0-7	4
LPE5005	4	5-11	25	1	0	2-9	0-8	2-9	0	4
LPE5006	8	0-11	8	ST						4
LPE5007	2	1-6	3	ST						4
LPE8001	8	3-4	71	15	0-9	0-10	1-0	0-10	0-8½	4
LPE8002	8	3-4	71	23	1-2	2-4				4
LPE8003	8	3-5	73	24	0-11	2-7				4
LPE8004	8	2-8	57	15	0	1-6	0-10½	0	0-10½	4
LPE8005	6	2-7	41	ST						4

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

275/347

CUYAHOGA COUNTY
CUY-480-4.86

RECEIVED
AUG 19 1969

NOTES

1. INDICATES SERIES BAR. EACH BAR VARIES FROM ADJACENT BAR(S) BY TABULATED AMOUNT(S), CALCULATED TO NEAREST 1/8 INCH. WEIGHT SHOWN IS FOR ENTIRE SERIES UTILIZING AVERAGE LENGTH.
2. BARS INCLUDED WITH ITEM 517, RAILING, FOR PAYMENT.
3. COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.
4. LIGHT POLE SUPPORT BARS INCLUDED WITH ITEM 509 FOR PAYMENT.
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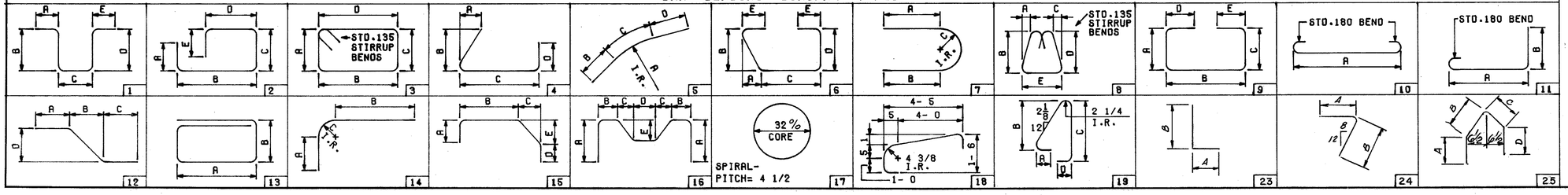
'NO. TURNS' SHOWN IS 'LENGTH' DIVIDED BY PITCH, PLUS 3 TURNS (NUMBER OF CLOSED COILS), EXPRESSED AS NEAREST WHOLE NUMBER.
SPIRAL BARS MAY HAVE DEFORMATIONS AND SHALL IN OTHER RESPECTS CONFORM TO ITEM 509. 1 1/2 CLOSED COILS SHALL BE PROVIDED AT ENDS OF EACH SPIRAL UNIT. FOUR STEEL CHANNEL, TEE OR ANGLE SPACERS, WEIGHING APPROXIMATELY 0.80 LB. PER LIN. FT. OF SPACER SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG PERIPHERY OF COIL. WEIGHT OF SPACERS, AT 0.80 LB. PER LIN. FT. WILL BE PAID FOR AS REINFORCING STEEL AND IS INCLUDED IN TABULATED WEIGHT.
7. BARS WITH PREFIX SE ARE TO BE EPOXY COATED AS PER PROPOSAL NOTE.
8. FOR ADDITIONAL NOTES SEE SHEET 231A/347

BAR SIZE DESIGNATION

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE FOUR DIGITS ARE USED, AND FIRST TWO DIGITS WHERE FIVE DIGITS ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A7001 IS A NO. 7 SIZE BAR AND A10140 IS A NO. 10 SIZE.

BAR BENDING DIAGRAM TYPES



46/46

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

REINFORCING STEEL LIST

BRIDGE NO CUY-480-0499
I 480 OVER S.R.17 (BROOKPARK RD.)
CUYAHOGA COUNTY STA. 364 + 48.63
STA. 369 + 04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.			B.I.P.	G.W.M.	1/15/69	

MICROFILMED
AUG 19 1982

FHWA REGION	STATE	PROJECT	
5	OHIO		

2754
347

CUYAHOGA COUNTY
CUY-480-4.86

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
		EPOXY COATED REINFORCING – SUPERSTRUCTURE (CON'T)								
SE5001	260	7-2	1944	ST						
SE5002	272	15-8	4445	ST						
SE5005	56	5-9	335	ST						
SE5009	601	5-4	3343	19	0-8	2-5	2-2			
SE5012	601	3-2	1985	15	0-6	0-10	1-0	0-9	0-9	
SE5014	40	6-6	271	ST						
SE5015	32	6-2	206	ST						
XE5001	882	2-10	2606	15	0-7½	0-11	1-0	0-5½	0-8½	
XE5003	882	2-6	2300	ST						
XE5005	882	2-9	2530	ST						
SE8001	10	6-7	141	11	5-6	0				
		EPOXY COATED REINFORCING – ABUTMENTS								
AE5010	8	36-0	300	ST						
AE5016	62	5-4	345	19	0-8	2-5	2-2	0-6		
AE5018	40	3-0	125	ST						
AE5020	8	4-11	41	ST						
AE5024	8	14-11	124	ST						
AE5037	8	4-3	35	ST						
AE5038	8	37-11	316	ST						
AE5046	8	17-9	148	ST						
AE5049	12	10-6	131	ST						
AE5050	12	11-7	145	ST						
AE5051	18	5-0	94	22	0-8	0-3	0-7	1-3	0-11	
AE5052	16	3-11	65	15	1-6	0-8	0-11	0-9	0-9	
AE5053	10	3-6	37	16			0-9	1-2	0-11	
AE5061	18	5-11	111	1		2-9	0-8	2-9		
AE6002	56	9-2	771	15		7-2	0-9	1-0	0-9	
AE6003	2	8-10	26	15		6-10	0-9	1-0	0-9	
AE7001	2	7-3	30	ST						
AE7002	2	7-11		15		0-9	0-2	6-3	1-0	1
THRU			131		VARY LENGTH BY 0-0⅝					
					VARY DIM. C BY 0-2⅜					
AE7005	2	8-1		15		0-9	0-9	6-3	1-0	1
AE7006	2	4-4	18	ST						
AE7007	2	5-0		15		3-3	1-0	0-9	0-2	1
THRU			110		VARY LENGTH BY 1-2					
					VARY DIM. E BY 0-2⅜					
					VARY DIM. B BY 0-11⅝					
AE7010	2	8-6		15		6-2	1-0	0-9	0-9	1

For notes and bar diagrams, see sheet 275

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BUREAU OF BRIDGES

46A946

REINFORCING STEEL LIST
BRIDGE NO CUY-480-0499

I480 OVER S.R. 17 (BROOKPARK ROAD)

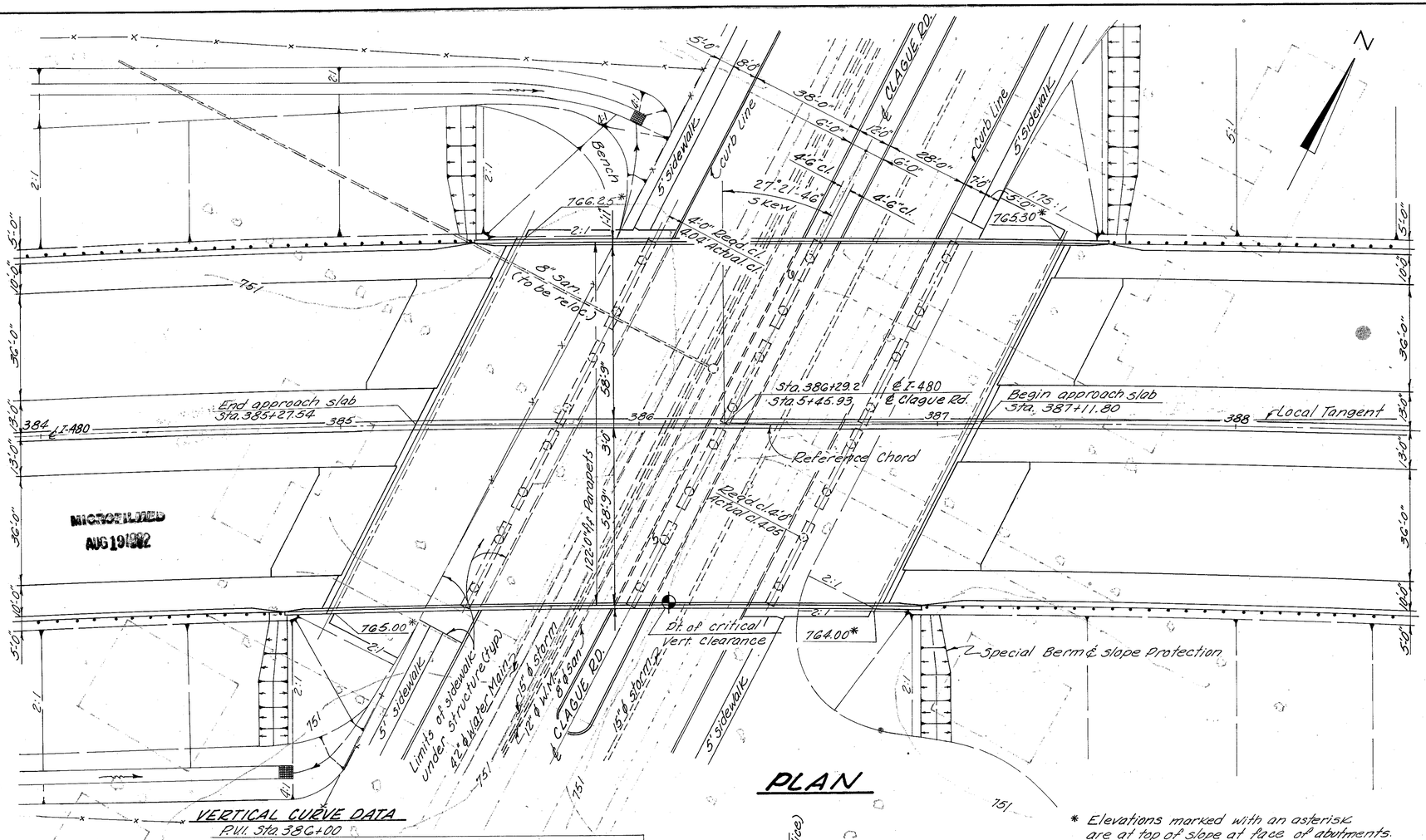
CUYAHOGA COUNTY STA. 364+48.63
STA. 369+04.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	GFJ		WTF			

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

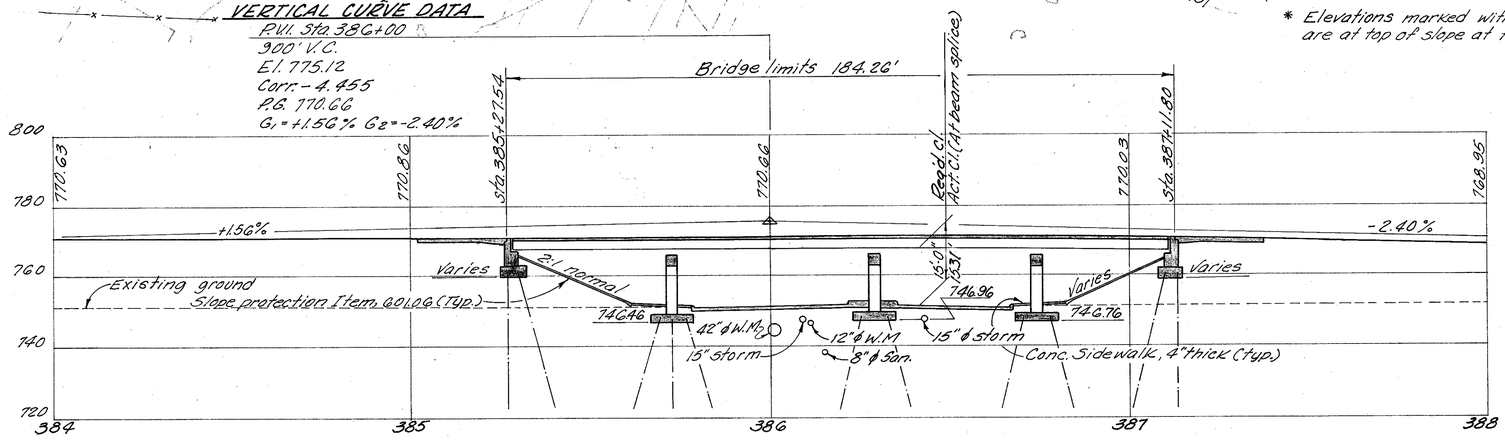
276
347

CUYAHOGA COUNTY
CUY-480-4.86



PLAN

VERTICAL CURVE DATA
P.V.I. Sta. 386+00
900' V.C.
El. 775.12
Corr. - 4.455
P.G. 770.66
G_1 = +1.56% G_2 = -2.40%



PROFILE ALONG ℄ I-480

Note: All piles are HP10×42 H-Piles.
Estimated average pay lengths.
Abutments - 39'
Piers - 28'

* Elevations marked with an asterisk are at top of slope at face of abutments.

CURVE DATA
Δ = 40°36'-40"
Dc = 0°45'-00"
R = 7639.44'
Lc = 5415.18'
T = 2826.97'
P.I. Sta. 404+72.02 Fwd.
P.I. Sta. 407+10.78 Back

TRAFFIC ESTIMATES
Design Year - 1987
Total A.D.T. = 73,200

NOTES:

Earthwork limits shown are schematic.
Actual slopes shall conform to plan cross-sections.
For drainage details see Sheet No. 33

For additional General Notes see sheet 231A / 347

PROPOSED STRUCTURE

TYPE: Continuous steel beam with reinforced concrete deck and substructure.
SPANS: 42'-9", 55'-9", 44'-6", 35'-6" ℄ brgs. on local tangent.
ROADWAY: 122'-0" concrete parapets with concrete barrier median.
LOADING: H-S 20-44 and Alternate Military Loading
WEARING SURFACE: monolithic concrete.
SKEW: 27°-21'-46" L.F. with Reference Chord
ALIGNMENT: 0°-45'-00" curve right
APPROACH SLAB: AS-1-72 (Modified) (25' long)
SUPERELEVATION: 0.02'/Ft.

1 / 16

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

SITE PLAN
BRIDGE NO. CUY-480-0540
I 480-OVER CLAGUE ROAD
CUYAHOGA COUNTY
STA. 385+27.54
STA. 387+11.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		G.W.M.	G.W.M.	6/13/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

277/347

CUYAHOGA COUNTY
CUY-480-4.86

STANDARD DRAWING REFERENCES

DESCRIPTION	DWG. NO.	SHT.	DATE
END DAM AND END CROSSFRAME	SD-1-69	1-2	6-12-69
CURB PLATES	SD-1-69	2	6-12-69
BOLTED SPLICES	SD-1-69	4	6-12-69
BRIDGE ROADWAY RAILING	BR-1-67	1	10-15-71 R
ROCKERS AND BOLSTERS	RB-1-55		2- 2-59 R
BRIDGE TERMINAL ASSEMBLIES	GR-3		11-9-71
APPROACH SLAB	AS-1-72		6-30-72

(R INDICATES REVISED DATE)

SUPPLEMENTAL SPECIFICATION REFERENCES

DESCRIPTION	NO.	DATE
CHEMICAL ADMIXTURE FOR CONCRETE, TYPE A, B OR D	808	1- 1-71
CONCRETE CURING AND PROTECTIVE MEMBRANE	836	3-12-75

COMMON DETAIL REFERENCES

CONTRACTION JOINTS	SHEET 328
EXPANSION JOINTS	SHEET 328

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE 'STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES' ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS, 1969, INCLUDING THE OHIO 'SUPPLEMENT' TO THESE SPECIFICATIONS.

DESIGN DATA

DESIGN LOADING - HS20-44 AND THE ALTERNATE MILITARY LOADING

CONCRETE CLASS C - UNIT STRESS 1200 PSI FOR SUPERSTRUCTURE
UNIT STRESS 1333 PSI FOR SUBSTRUCTURE

STRUCTURAL STEEL - ASTM A36 - UNIT STRESS 20000 PSI

REINFORCING STEEL - ASTM A615, A616 OR A617 - UNIT STRESS 20000 PSI.
SPIRAL REINFORCEMENT MAY BE PLAIN BARS ASTM A82 OR A615.

EMBANKMENT CONSTRUCTION

THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET BACK OF THE ABUTMENTS. EXCAVATION SHALL THEN BE MADE FOR THE ABUTMENTS.

SUPPLEMENTAL SPECIFICATION REFERENCES (CONTINUED)

DESCRIPTION	NO.	DATE
PAINTING FOR NEW STRUCTURAL STEEL	846	
INORGANIC ZINC SILICATE PAINT	950	
BLUE-GREEN VINYL PAINT	951	

Standard Drawing References (Con't.)

Description	Drawing No.	Date
Standard Construction Dwg.	HL-5	9-6-73R
" " "	HL-6	1-21-76 R
" " "	HL-7	1-21-76 R
" " "	HL-17A	4-6-73R
" " "	HL-17B	4-6-73R

MAINTENANCE OF TRAFFIC

TWO LANES OF TRAFFIC WITH A MINIMUM HORIZONTAL WIDTH OF 26'-0 AND A MINIMUM VERTICAL CLEARANCE OF 12'-9 SHALL BE MAINTAINED ON CLAGUE ROAD AT ALL TIMES

PARAPET TRANSITIONS AND WINGWALL ENDS SHALL BE AS SHOWN ON STANDARD DRAWING BR-1-67 REVISED 1-1-71. REINFORCING STEEL SHALL BE FIELD BENT OR CUT TO FIT THE REVISED SHAPE.

For additional General Notes see sheet 231A/347

Piles shall be driven to bedrock. The bearing capacity shall be considered obtained by refusal on hard bedrock or by penetrating soft bedrock for several inches with a minimum resistance of 20 blows per inch. The design load is 45 tons per pile for both abutment and pier piles.

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	PIERS	SUPER	GENERAL
503	1158	C.Y.	UNCLASSIFIED EXCAVATION	702	456		-
506	LUMP	SUM	PILE TEST LOAD				LUMP
505	LUMP	SUM	TEST PILE	LUMP			
506	1	EACH	SUBSEQUENT PILE TEST LOAD				1
507	5330	L.F.	STEEL PILES, HP10×42	2418	2912		
SPEC	91308	LB	EPOXY COATED REINFORCING STEEL (SEE PROPOSAL NOTE)	1102		90,206	
509	199,909	LB	REINFORCING STEEL	30,475	75301	94,133	
511	688	C.Y.	CLASS C CONCRETE, SUPERSTRUCTURE (SEE PROPOSAL NOTE)			688	
511	271	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS	271			
511	236	C.Y.	CLASS C CONCRETE, PIER CAPS AND COLUMNS		236		
511	412	C.Y.	CLASS C CONCRETE, FOOTINGS	232	180		
512	47	L.F.	PREMOLDED SEALING STRIP	47			
513	456900	LB	STRUCTURAL STEEL, PRIMER AS PER 846 (SEE PROPOSAL NOTE)			456900	
846	456900	LB	FIELD PAINTING OF STRUCTURAL STEEL			456900	
516	52	S.F.	1 INCH PREFORMED EXPANSION JOINT FILLER	52			
516	155	S.F.	1/2 INCH PREFORMED EXPANSION JOINT FILLER	155			
518	112	C.Y.	POROUS BACKFILL	112			
518	259	L.F.	6 INCH PERFORATED, HELICAL CSP, 707.01	259			
518	237	L.F.	6 INCH NON-PERFORATED, HELICAL CSP, INCLUDING SPECIALS, 707.01	237			
518	126	L.F.	3 INCH DIAMETER DRAIN PIPE	126			
601	1056	S.Y.	CONCRETE SLOPE PROTECTION				1056
S625			See sheet 213 For Lighting Summary				
808	688	UNIT	CHEMICAL ADMIXTURE FOR CONCRETE, TYPE A, B OR D				688
503	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING				LUMP

2/16

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

GENERAL NOTES AND ESTIMATED QUANTITIES

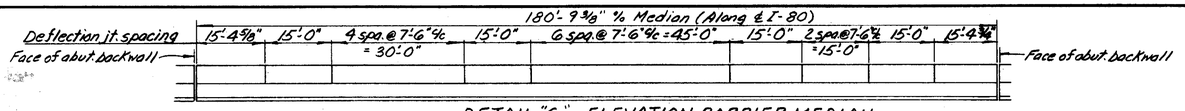
BRIDGE NO. CUY-480-0540
I 480-OVER CLAGUE ROAD
CUYAHOGA COUNTY STA. 385 + 27.54
STA. 387 + 11.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.I.P.			C.B.C.	G.W.M.	6/13/80	

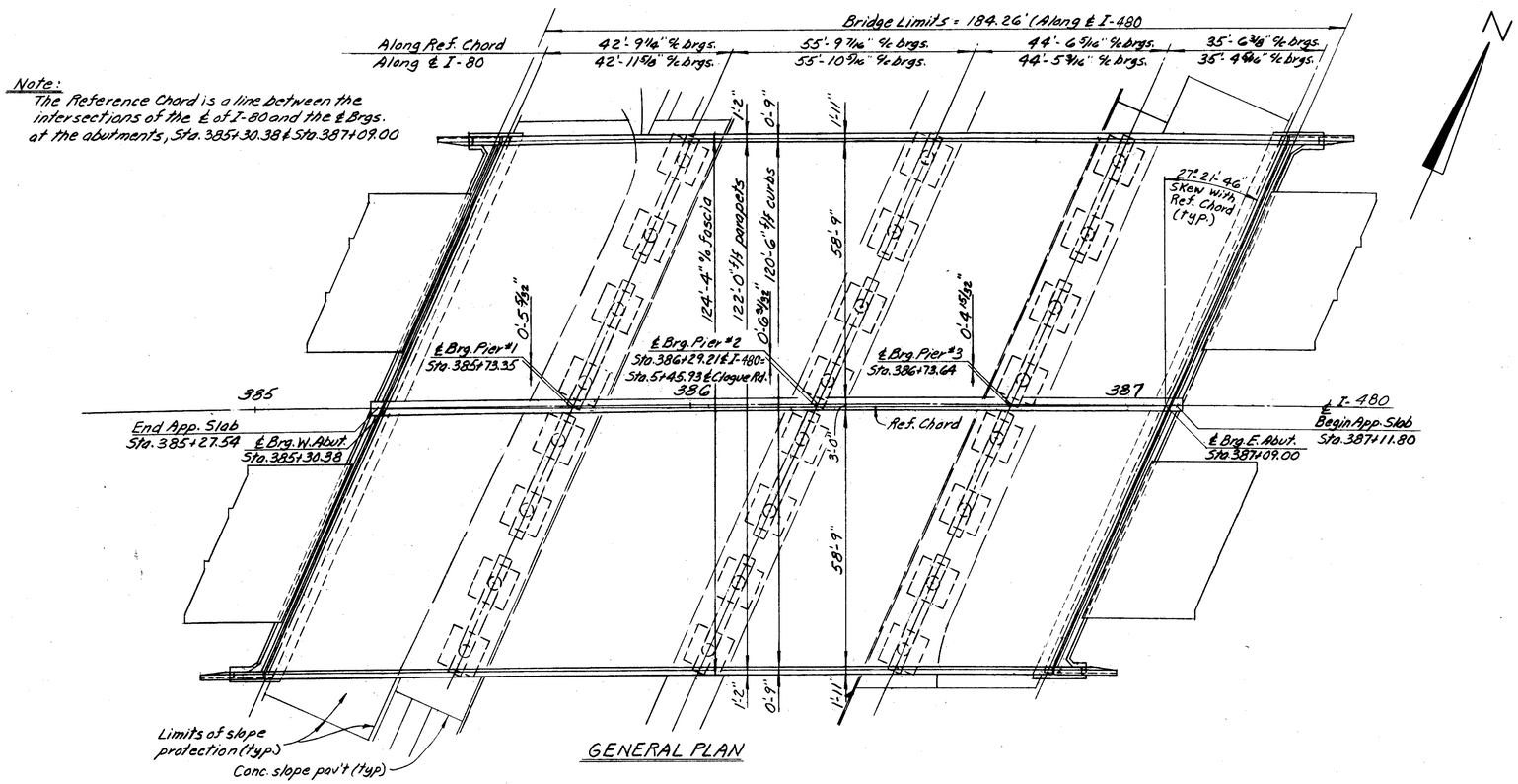
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

278/347

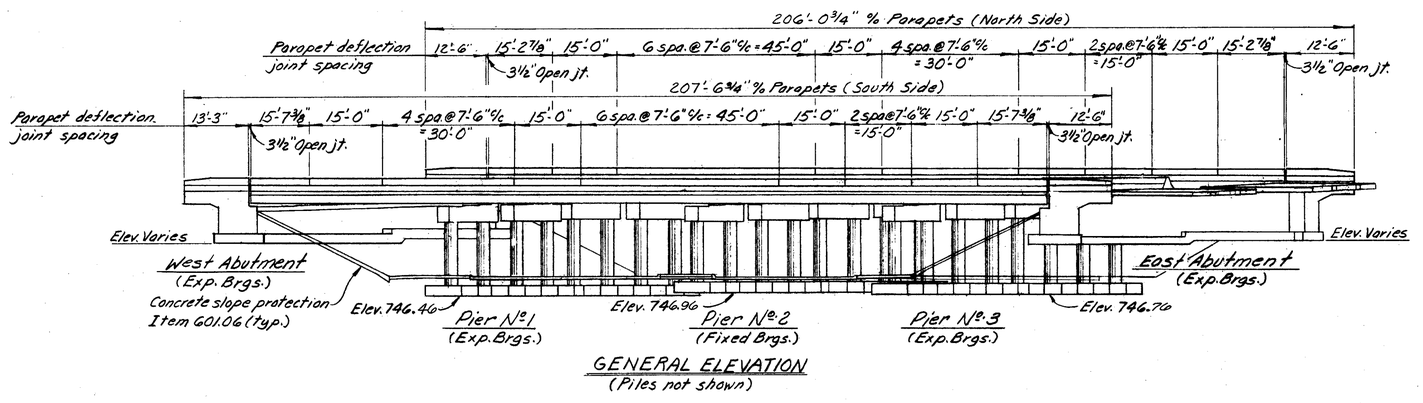
CUYAHOGA COUNTY
CUY-480-4.86



DETAIL "G," - ELEVATION BARRIER MEDIAN



GENERAL PLAN



GENERAL ELEVATION
(Piles not shown)

For location and details of underpass lighting see sheet 224/347 and standard construction Drawing HL-6.

ALDEN E. STILSON & ASSOCIATES, LIMITED 3/6
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

GENERAL PLAN

BRIDGE NO CUY-480-0540
I-480 OVER CLAGUE ROAD
CUYAHOGA COUNTY STA. 385+27.54 STA. 387+11.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.J.P.		G.W.M.	G.W.M.	6/13/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

279/347

CUYAHOGA COUNTY

CUY-480-4.86

N

1'-11" 1'-0" 9" 2"

A2

6'-0"

13'-3"

12'-5 5/8"

41°-00'-00"

7'-3"

2'-1 7/8"

2'-0" 1'-0"

F5004

A5031

A2

℄ Constr. Jt.

℄ Brgs.

℄ Beams

5-HP10×42 H Piles, 4 Spa. @ 15'-0" ℄ = 60'-0" (Back Row)

40'-6 7/8"

32'-1 7/8"

16'-4"

1'-0" 2'-0"

2'-0" 1'-6" 1'-6" 3"

5-A5001 4 spa. @ 6" ℄ under each beam seat

27° 21'-46" (Typ.)

1'-6" 1'-6" (Typ.)

7 spa. @ 9'-1 3/16" (11) ℄ ℄ beams = 63'-8 1/2"

9-HP10×42 H Piles, 8 spa. @ 7'-6" ℄ ℄ = 60'-0" (Front row)

69'-6"

69'-6 3/4"

69'-0 1/8"

Sta. 385+30.38 ℄ I-480

28°-03'-00"

2'-4 3/8"

6'-8"

3'-6 1/2"

3'-1"

A5030

AE5022

AE5023

AE5024

AE5027

AE5026

AE5025

AE5028

AE5029

1'-11 3/8"

3'-4 1/4"

6'-8"

27°-21'-46"

℄ Abutment Reference Line

℄ Reference Chord

℄ Abutment Ref. Line

PLAN

A6001, 36 Spa. @ 1'-0" ℄ = 36'-0"

A6001, 35 Spa. @ 1'-0" ℄ = 35'-0"

12'-6 3/4"

3" 3"

24 Spa - D8001 @ 1'-8 1/4" = 40'-6"

A1

4" ϕ Lighting raceway (blackout)

El. 770.91

El. 770.69

2"

El. 769.92 *

Top of 2" edge bar

El. 768.89

2-A5021 Approach slab seat

Constr. Jt.

2-A5004

El. 769.61

Expan. Jt.

El. 769.92

A5030

El. 767.69

El. 765.94

El. 766.10

El. 766.27

El. 766.42

El. 766.58

El. 766.74

El. 766.90

El. 766.72

5-A5004

5-A5001

2'-0"

A5002

F5001 N.S. & F6001 E.S.

1'-0" typ.

12'-0" ℄ 6" ϕ C.S.P.

A5002 to lap F5001 & F6001

F5001 N.S. & F6001 F.S.

4-A5003 & A5021

A5003 N.S. & A5021 F.S.

2-A5004

5-6" ϕ Helical C.S.P. Outlets, 4 Spa @ 14'-0" ℄ = 56'-0"

6" ϕ Helical perforated C.S.P.

F5002

3'-9"

El. 758.56

F5002 to lap F6001

3-F8001

4-F8001

3-F8001

4-F8001

9" 45 Spa. @ 1'-6" ℄ = 6'-0" 9"

(Vertical steel typ. between piles)

A1

NOTES:

For Section "A1"-"A1" & "A2"-"A2", see sht. No. 8/16

For additional notes see shts. No. 8/16 & (231A 347)

* Elevations marked with an asterisk are top of Edge Bar elevations at the face of backwall, median curb and at high point

ELEVATION

ALDEN E. STILSON & ASSOCIATES, LIMITED 4/16

CONSULTING ENGINEERS

CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

WEST ABUTMENT DETAILS

BRIDGE No. CUY-480-0540

I-480 OVER CLAGUE ROAD

CUYAHOGA COUNTY STA. 385+27.54 STA. 387+11.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		R.J.P.	G.W.M.	6/13/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

280
347

N

Abutment Ref. Line

Sta. 385+30.38 ℄ I-480

8"± d"

5-HP10x42 H Piles, 4 spa. @ 15'-0" ℄c = 60'-0" (Back row)

19'-4 3/4"

40'-5 3/4"

28°-03'-00"

1'-0 7/8"

37'-7 7/8"

℄ Contr. Jt.

3'-6 1/2"

℄ Expan. Jt.

℄ Brgs.

℄ Beams

2'-0" 1'-0" 1'-3" 6" 3"

5-A5001, 4 spa. @ 6" ℄c under each beam seat

27°-21'-46" (Typ.)

1'-6" 1'-6" (Typ.)

Reference Chord 27°-21'-46"

1'-11 7/16"

7 spa. @ 9'-3 7/16" ℄c beams = 65'-0 1/4"

10-HP10x42 H Piles, 9 spa. @ 7'-6" ℄c = 67'-6" (Front row)

69'-6 3/4"

70'-7 1/2"

67'-6 1/4"

PLAN

24 Spa-D8001 @ 1'-8" = 40'-0"

1'-11"
9"
2"
1'-0"
6'-0"
2'-0"
1'-0"
F5005
A5032
12'-6"
6'-6"
12'-4 5/8"
2'-6 1/2"
9"
9"
27°-51'-00"
1'-9"

A3

A3

57'-7 1/2"

Abutment Ref. Line

A6001, 33 Spa. @ 1'-0" ℄c = 33'-0"

A6001, 29 Spa. @ 1'-0" ℄c = 29'-0"

11'-2 3/4"

El. 771.06

El. 770.69 *

Top of 2" edge bar

El. 769.85

Approach slab seat

3" 3"

El. 771.84

El. 771.46 *

Const Jt.

Contr. Jt.

2-A5005

2-A5006

El. 770.54

Expan. Jt.

El. 766.70

El. 767.03

El. 767.20

El. 767.36

El. 767.32

El. 767.67

El. 767.83

El. 767.50

5-A5005

A5002 to lap F5001 & F6001

F5001 N.S. & F6001 F.S.

5-A5001

4-A5007 & A5006 A5007 N.S. & A5006 F.S.

F5001 N.S.

7'-0"

6"ϕ Helical perforated C.S.P.

2-A5005

5-6"ϕ Helical C.S.P. Outlets, 4 spa. @ 14'-0" ℄c = 56'-0"

F5002 to lap F6001

3-F8002

3-F8002

6-F5007 centered under jt.

4-F8002

4-F8002

4-F5006

45°

El. 758.56

3'-0"

9" 4 spa. @ 1'-6" ℄c 9"

(Vertical steel typ. between piles)

3'-3"

El. 759.56

ELEVATION

* Elevations marked with an osterisk are top of edgebar elevations at the face of backwall, median, curb and at high point.

NOTES:

For Section "A3-A3" see Sheet No 8 16

For additional notes see Sheet No 8 16

Parapet Transitions (and wingwall ends) shall be as shown on Std. Drwg. BR-1-67. Reinforcing steel shall be field bent or cut to fit the revised shape. (Typical for both abutments.)

ALDEN E. STILSON & ASSOCIATES, LIMITED 5/16
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

WEST ABUTMENT DETAILS

BRIDGE No CUY-480-0540

I-480 OVER CLAGUE ROAD

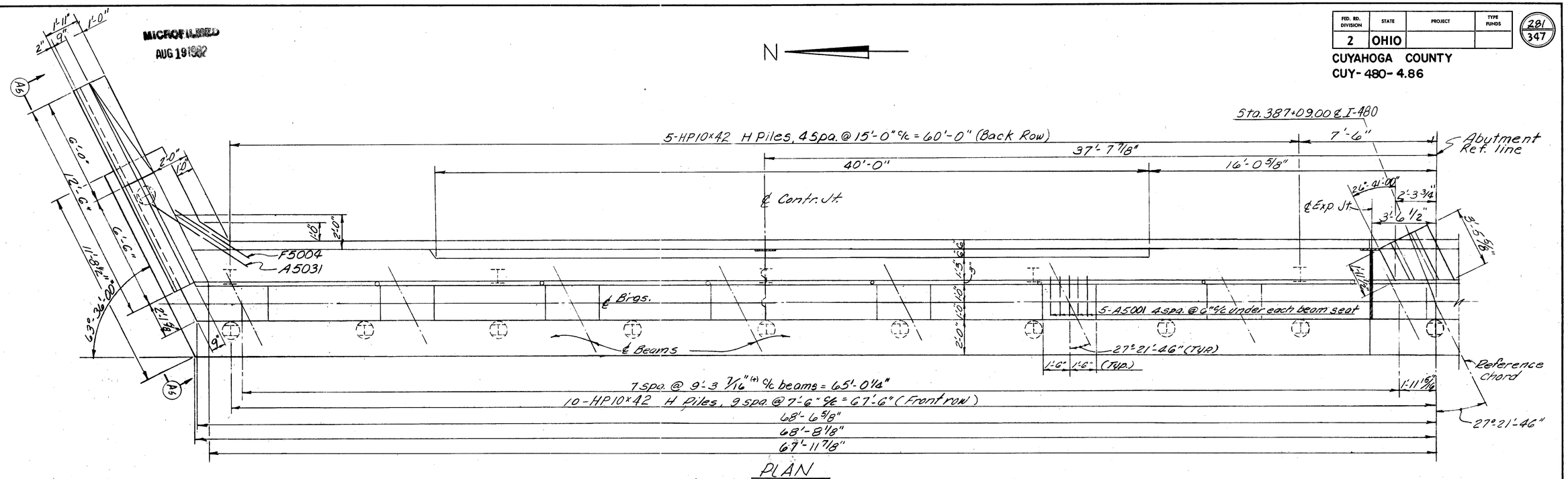
CUYAHOGA COUNTY STA. 385+27.54 STA. 387+11.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		R.J.P.	G.W.M.	6/13/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

281
347

CUYAHOGA COUNTY
CUY-480-4.86



* Elevations marked with an asterisk are Top of edgebar elevations at the face of back-wall, median, curb and at high point.

NOTES:
For section "A5-A5" see Sht. Nº 8/16
For additional notes see Sht. Nº 8/16

ALDEN E. STILSON & ASSOCIATES, LIMITED 6/16
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

EAST ABUTMENT DETAILS

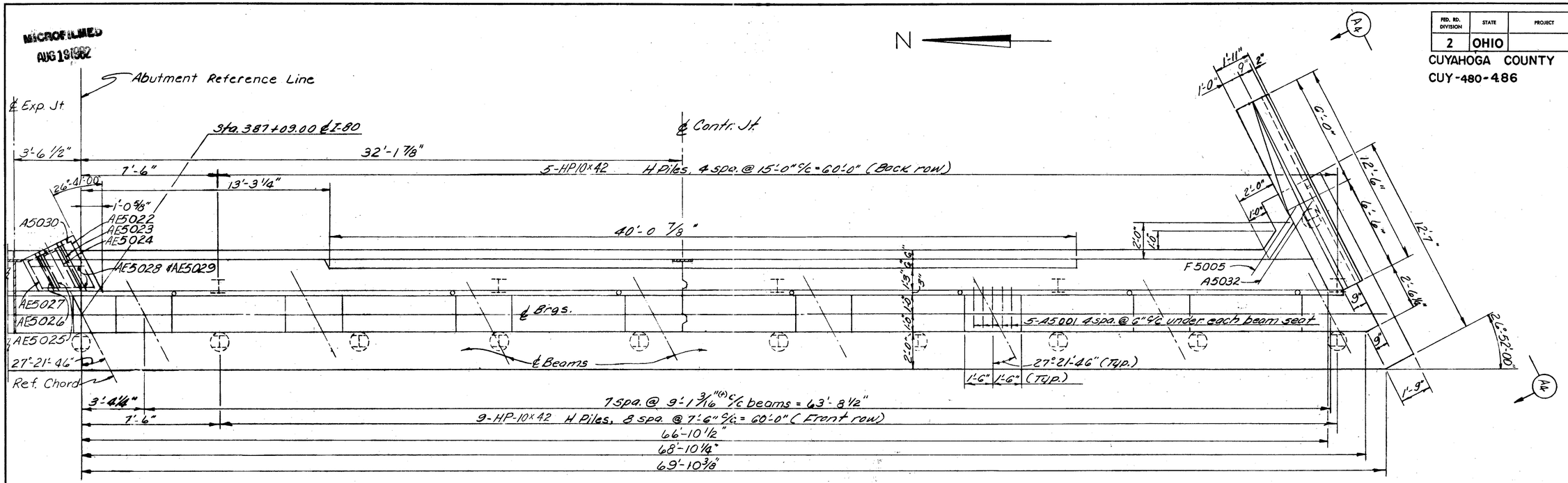
BRIDGE Nº CUY-480-0540
I480 - OVER CLAGUE ROAD
STA. 385+27.54
CUYAHOGA COUNTY
STA. 387+11.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		R.J.P.	G.W.M.	6/13/68	

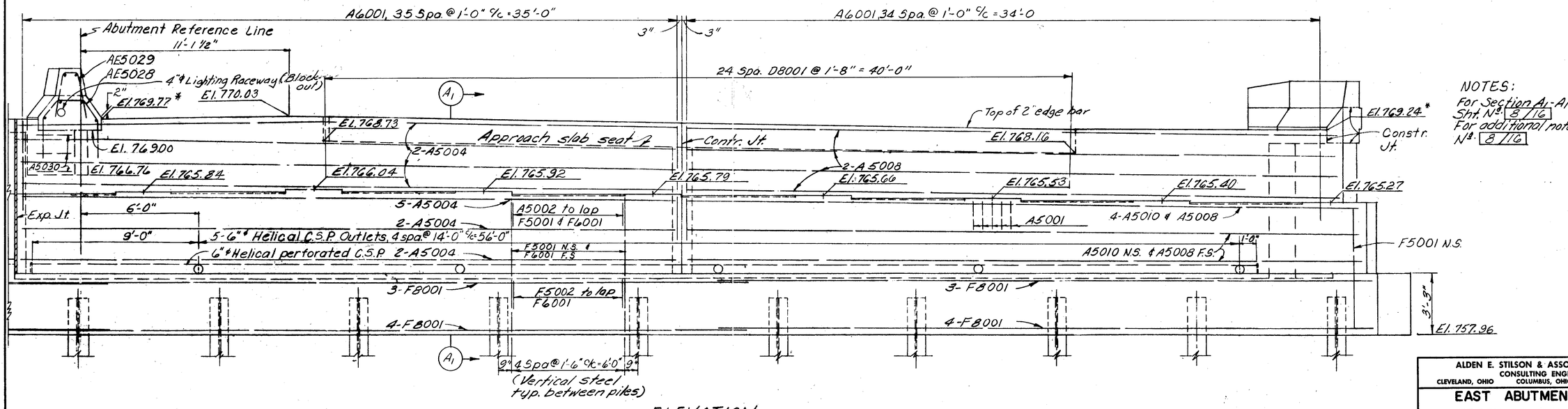
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

282
347

CUYAHOGA COUNTY
CUY-480-486



PLAN



ELEVATION

NOTES:
For Section A1-A1 & A4-A4 see Sht. No. 8 /16
For additional notes see Sht. No. 8 /16

* Elevations marked with an asterisk are Top of edge bar elevations at the face of backwall, median, curb and at high point.

ALDEN E. STILSON & ASSOCIATES, LIMITED 3 /16
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

EAST ABUTMENT DETAILS

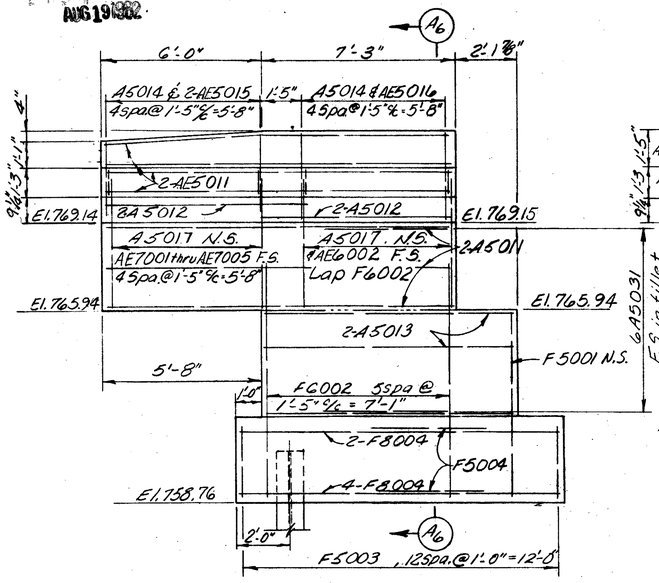
BRIDGE No. CUY-480-0540
I-480 OVER CLAGUE ROAD
CUYAHOGA COUNTY
STA. 385+2754
STA. 387+11.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		R.J.P.	G.N.M.	6/13/68	

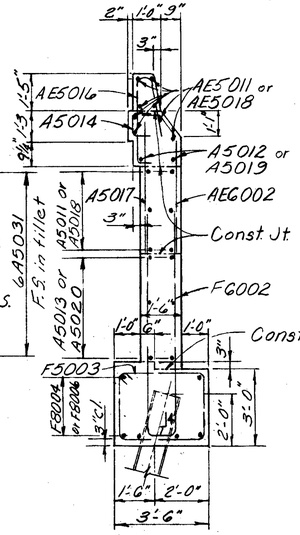
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

283
347

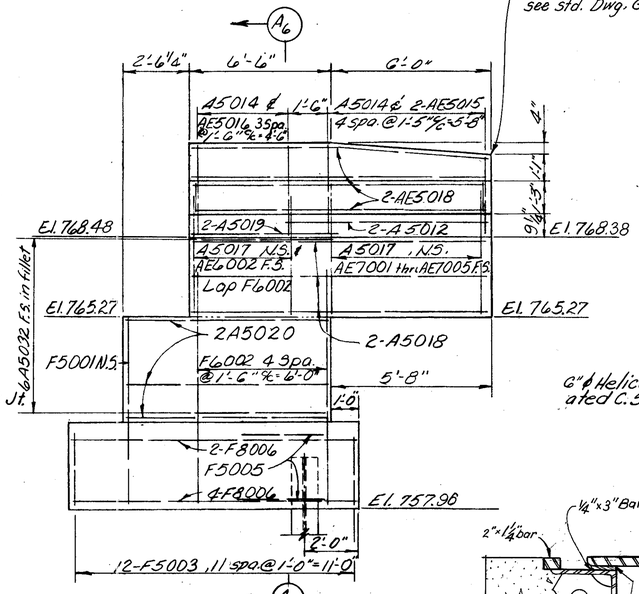
CUYAHOGA COUNTY
CUY-480-4.86



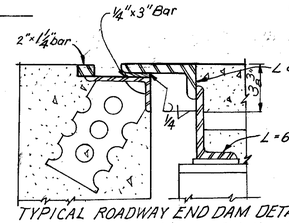
ELEVATION "A2-A2"



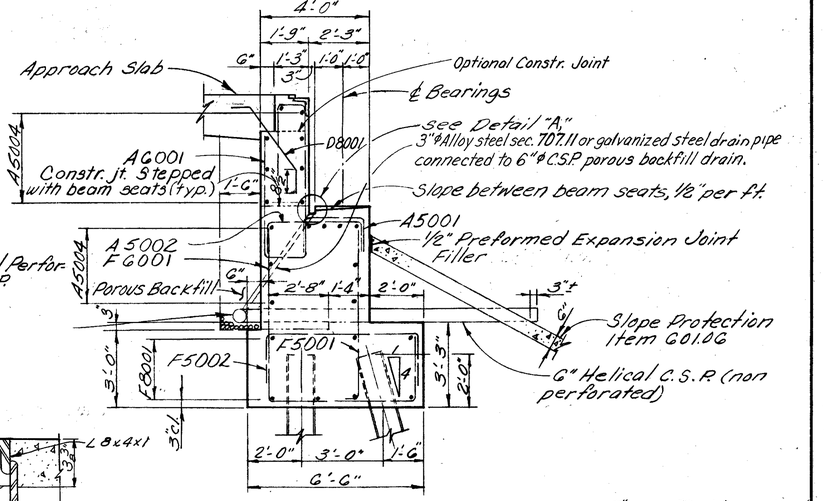
SECTION "A6-A6"



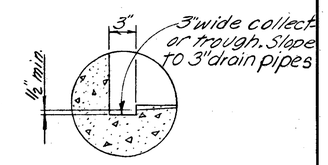
ELEVATION "A4-A4"



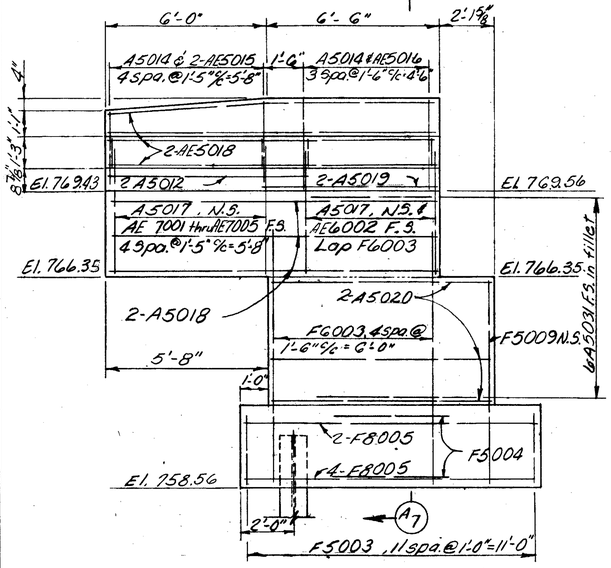
TYPICAL ROADWAY END DAM DETAILS
For Additional Details See SD-1-69 Sheet 1 of 4



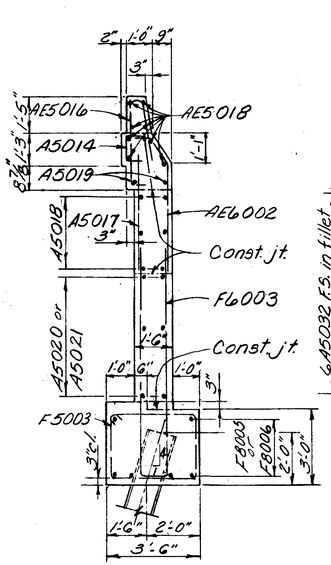
SECTION "A1-A1"



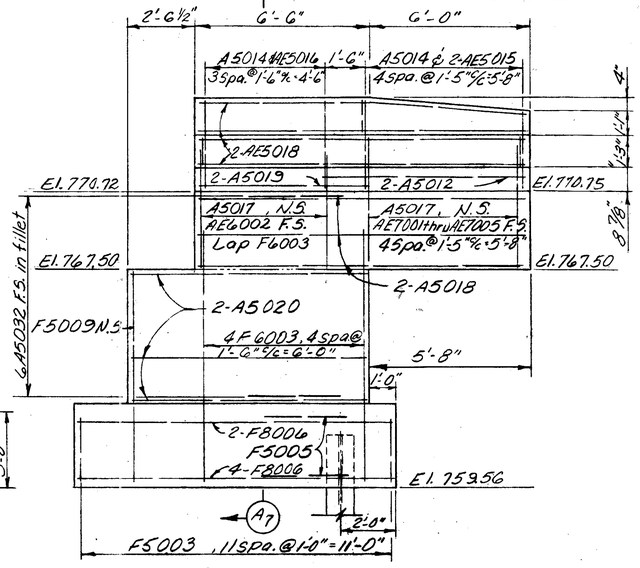
DETAIL "A"



ELEVATION "A5-A5"



SECTION "A7-A7"



ELEVATION "A3-A3"

NOTES:

Porous backfill 1'-6" thick, full length of abutment and wings, shall extend up to the subgrade or to the finished ground surface. Excavation therefor, in excess of that required for construction of the abutments shall be considered as paid for in the bid price per cu. yd. paid for pourous backfill.

The abutment end finish shall have a joint at all expansion & contraction joints.

For expansion & contraction joint details see "Common Details", Sht. No 328

For wingwall details not shown see Std. Dwg. B.R.-1-67, sheet no. 1

In reinforcing steel callouts: N.S. indicates near side
F.S. indicates far side

All piles shall be HP10×42

I Vertical piles

Batter piles 1:4

The shape of the median on the abutment shall match the shape of median on the superstructure.

For additional General Notes see sheet 231A / 347

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

8/16

ABUTMENT DETAILS

BRIDGE NO. CUY-480-0540

I-480 OVER CLAGUE ROAD

CUYAHOGA COUNTY STA. 385+27.54
STA. 387+11.80

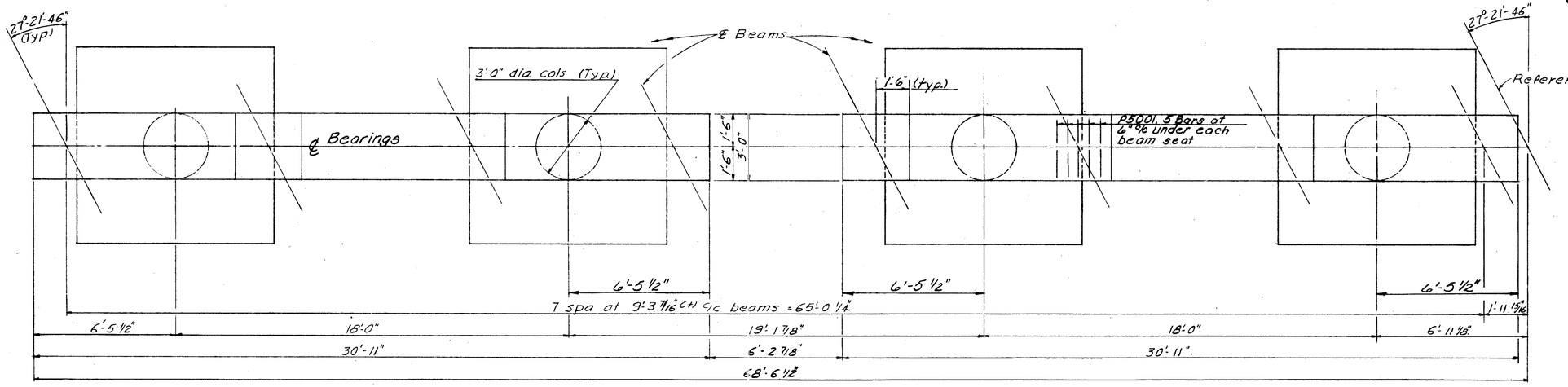
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		R.J.P.	G.N.M.	6/13/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

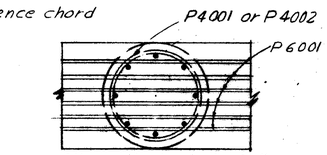
CUYAHOGA COUNTY
CUY-480-4.86

284
347

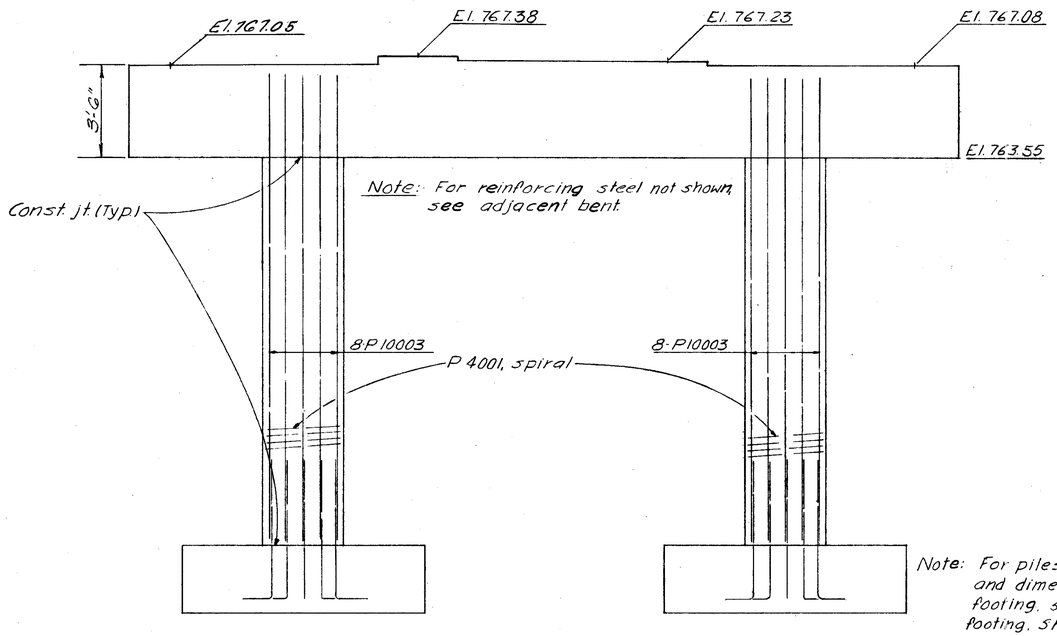
N



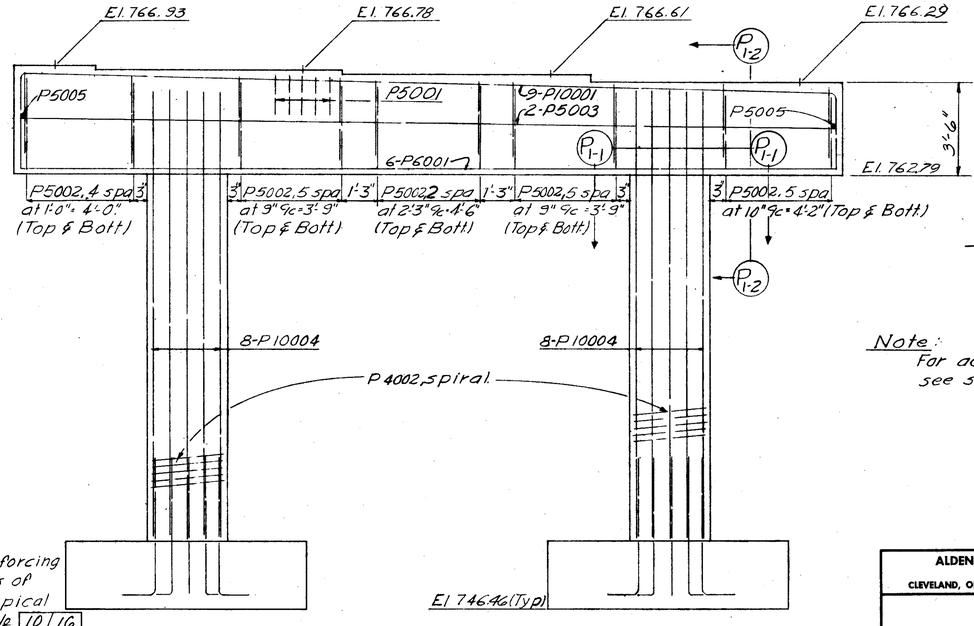
PLAN

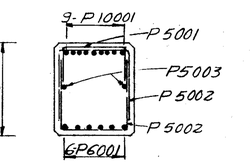


SECTION - P1-1 - P1-1



Note: For piles, reinforcing and dimensions of footing, see typical footing, Sheet No. 10/16





SECTION - P1-2 - P1-2

Note:
For additional notes & details see sheet No. 10/16

ELEVATION

ALDEN E. STILSON & ASSOCIATES, LIMITED 9/16
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

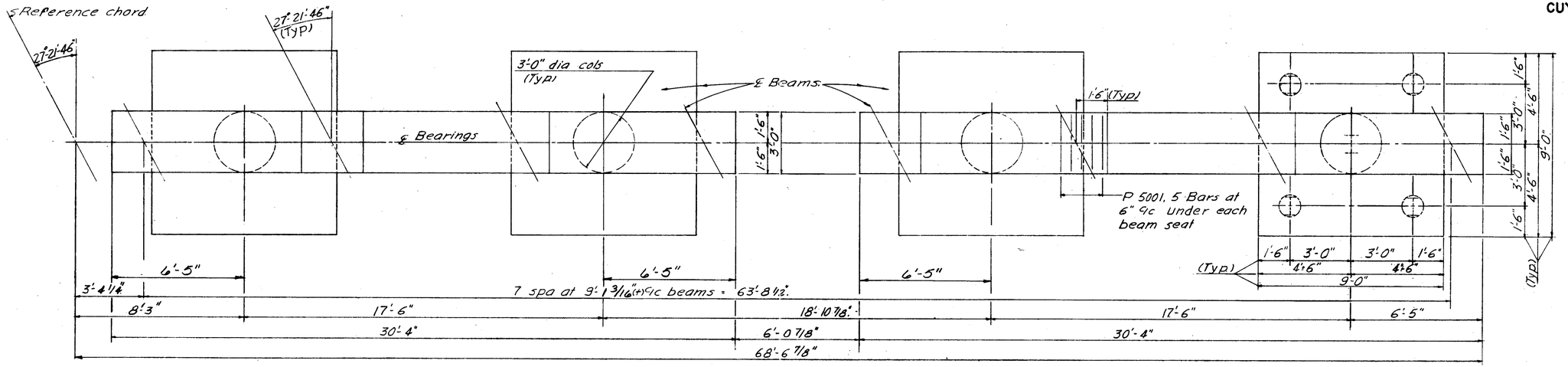
W.B. PIER Nº 1
BRIDGE Nº CUY-480-0540
I-480 OVER CLAGUE ROAD
CUYAHOGA COUNTY STA. 385+27.54
STA. 387+11.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.S.S.		R.J.P.	G.W.M.	6/1968	

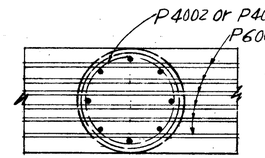
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

285/347



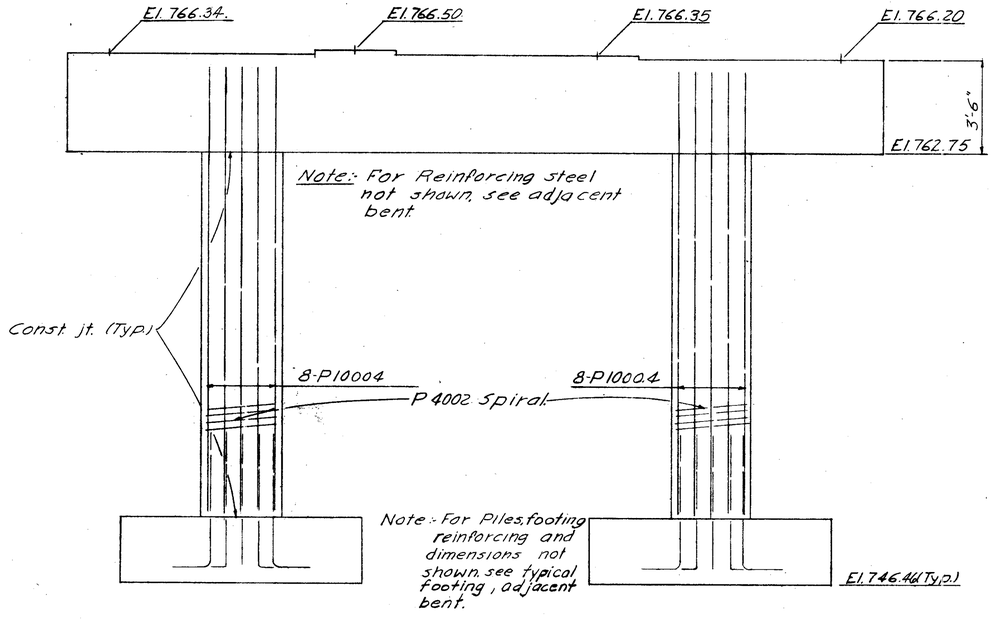
PLAN



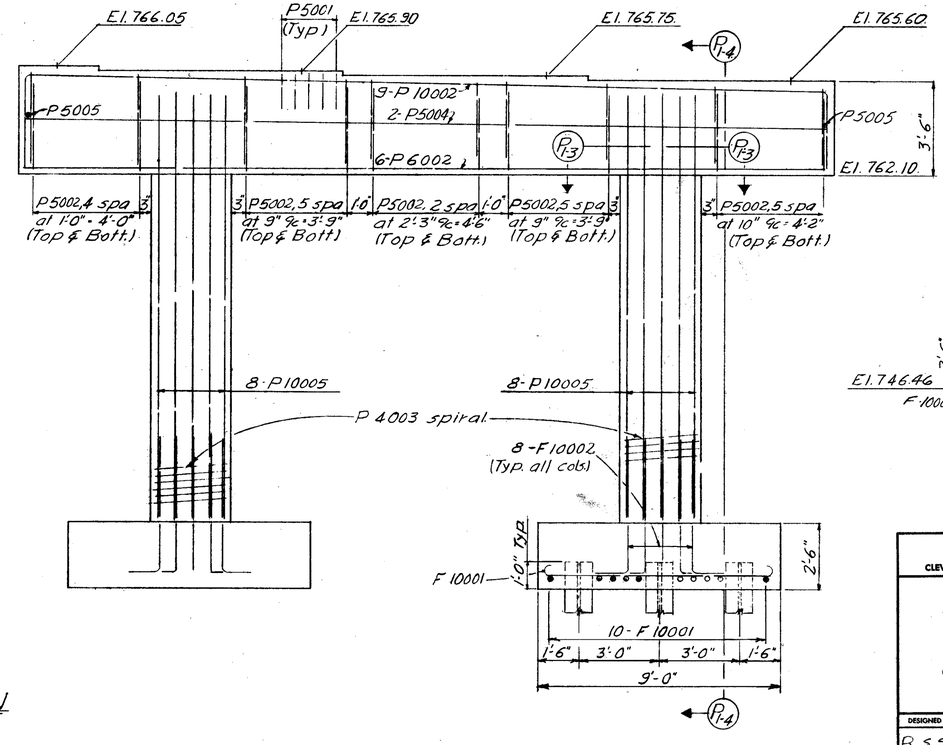
All Vertical steel shall be P 10004 or P 10005

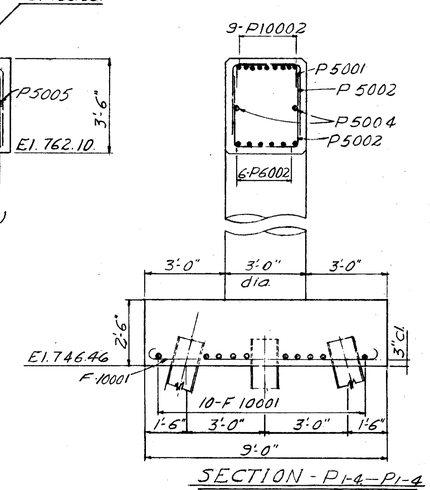
SECTION - P1-3 - P1-3

Note:-
All piles shall be HP10×42
Vertical piles.
Batter Piles 1:4



ELEVATION





SECTION - P1-4 - P1-4

ALDEN E. STILSON & ASSOCIATES, LIMITED CONSULTING ENGINEERS	10/16
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.	

E.B. PIER No 1

BRIDGE No CUY-480-0540

I-480 OVER CLAGUE ROAD

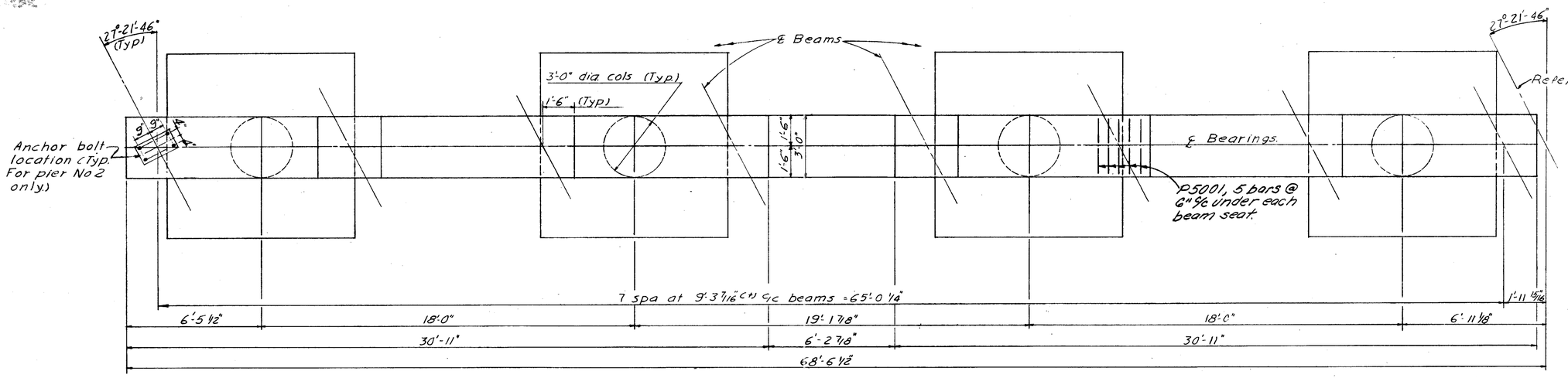
CUYAHOGA COUNTY STA. 385+27.54
STA. 387+11.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.S.S.		R.J.P.	G.W.M.	6/13/68	

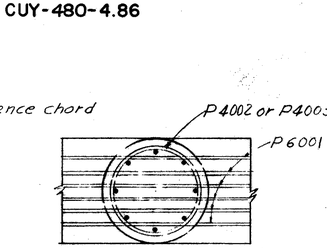
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

286/347

CUYAHOGA COUNTY
CUY-480-4.86

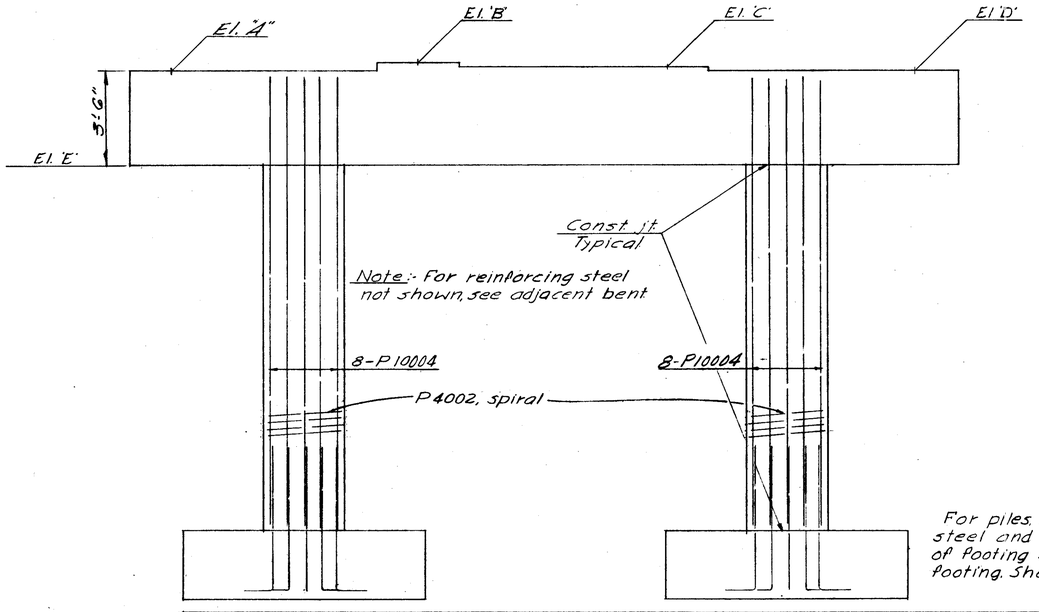


PLAN

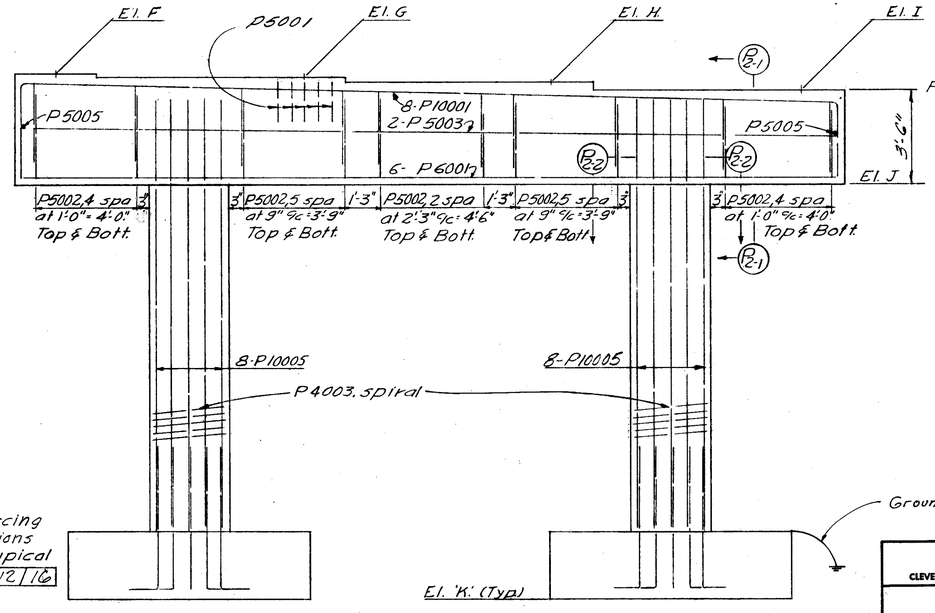


SECTION - P2-2 - P2-2

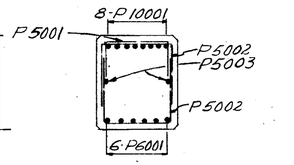
For additional General Notes see sheet 231A/347



For piles, reinforcing steel and dimensions of footing see typical footing. Sheet No 12/16



ELEVATION



SECTION P2-1 - P2-1

ELEVATION TABLE

Location	El. A	El. B	El. C	El. D	El. E	El. F	El. G	El. H	El. I	El. J	El. K
Pier No 2	766.73	767.06	766.92	766.78	763.23	766.64	766.50	766.34	766.03	762.53	746.96
Pier No 3	766.49	766.86	766.73	766.59	762.99	766.46	766.33	766.18	765.87	762.37	746.76

For Grounding Details, see std. Dwg HL-7

ALDEN E. STILSON & ASSOCIATES, LIMITED 11/16
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

W.B. PIER Nº 2 & Nº 3

BRIDGE Nº CUY-480-0540

I-480 OVER CLAGUE ROAD

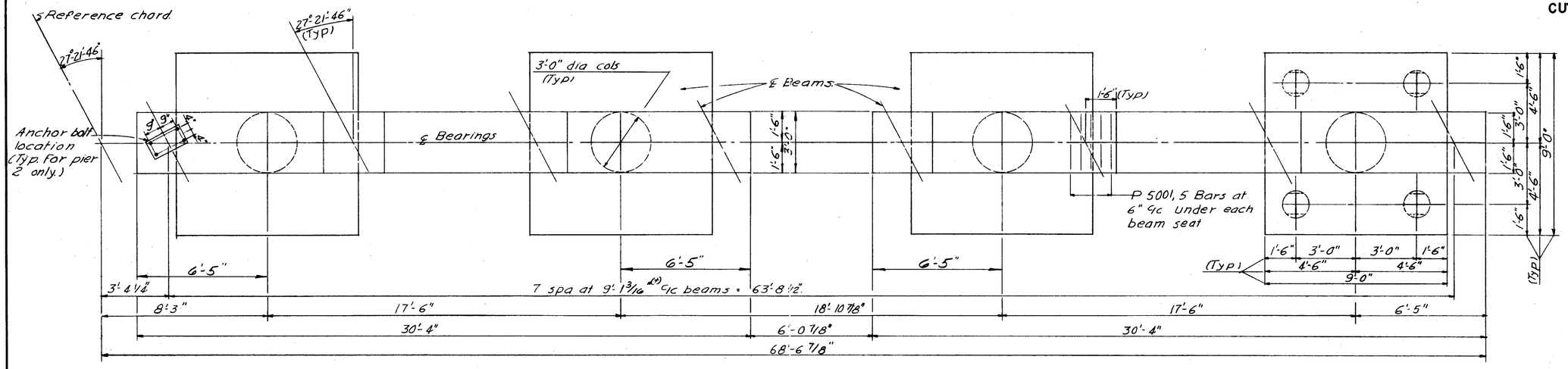
CUYAHOGA COUNTY STA. 385+27.54
STA. 387+11.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.S.S.		R.J.P.	G.W.M.	6/13/68	

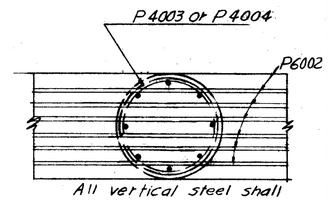
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

287
347



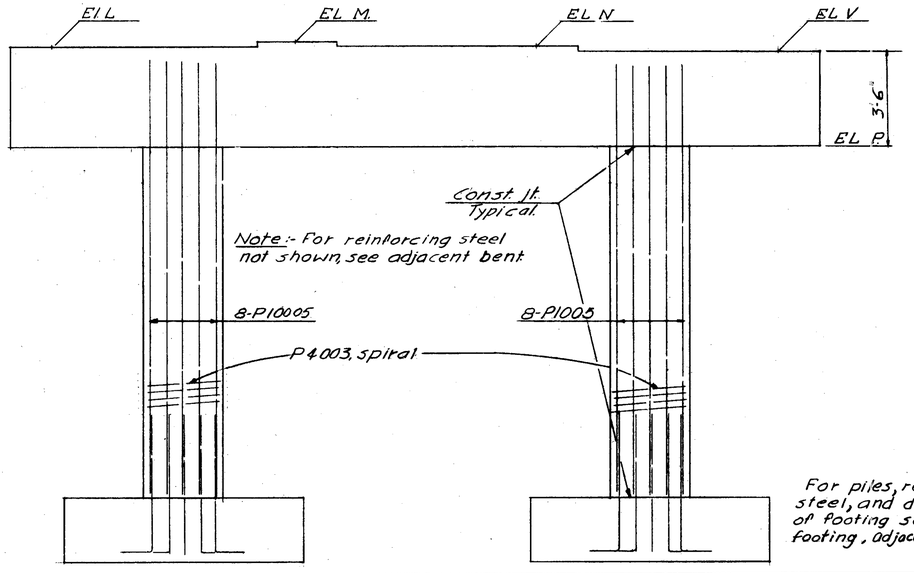
PLAN



SECTION - P2-4 - P2-4

NOTES:
All piles shall be HP 10 x 42
Batter piles 1:4

For addional General Notes see sheet 231A 347

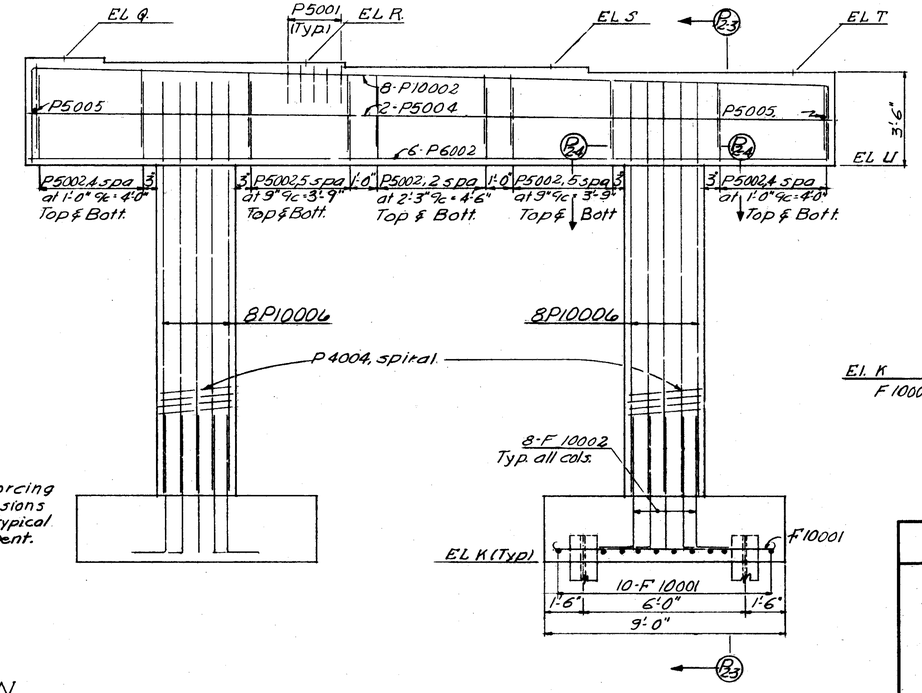


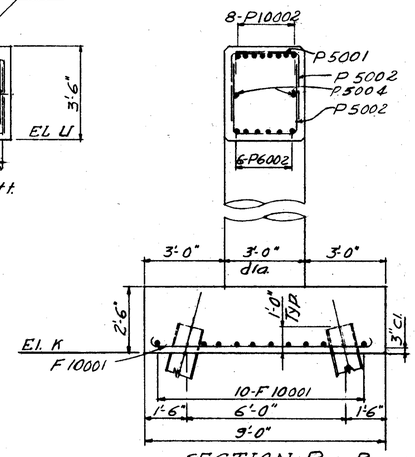
For piles, reinforcing steel, and dimensions of footing see typical footing, adjacent bent.

ELEVATION TABLE

Location	El:L	El:M	El:N	El:V	El:P	El:Q	El:R	El:S	El:T	El:U	El:K
Pier No 2	766.09	766.26	766.12	765.98	762.48	765.84	765.69	765.50	765.41	761.91	746.96
Pier No 3	765.93	766.11	765.98	765.85	762.35	765.71	765.58	765.44	765.31	761.81	746.76

ELEVATION





SECTION - P2-3 - P2-3

ALDEN E. STILSON & ASSOCIATES, LIMITED 12/16
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

E.B. PIER Nº 2 & Nº 3
BRIDGE Nº CUY-480-0540
I-480 OVER CLAGUE ROAD
CUYAHOGA COUNTY STA. 385+27.54
STA. 387+11.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.S.S.		R.J.P.	G.W.M.	6/13/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

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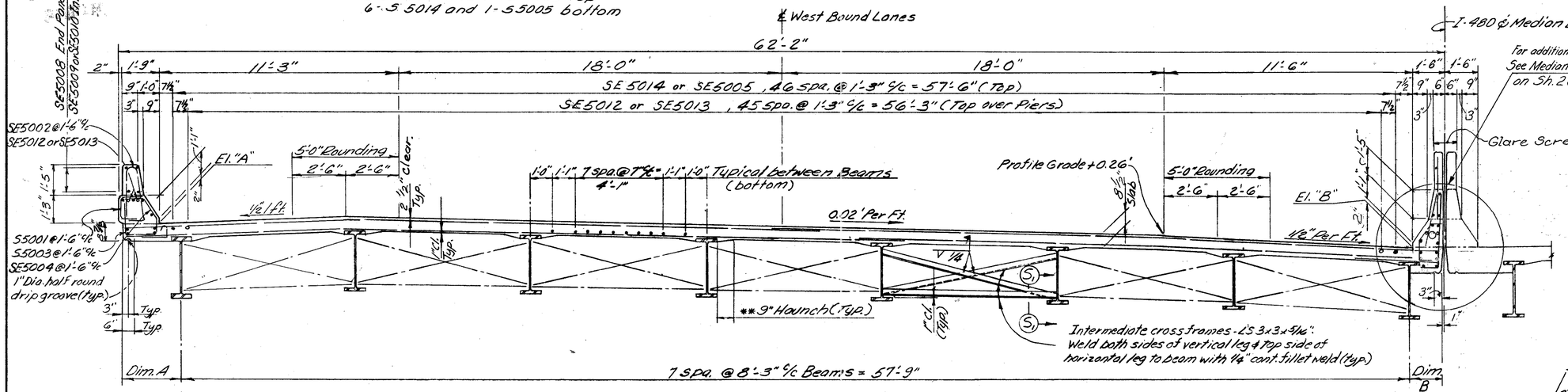
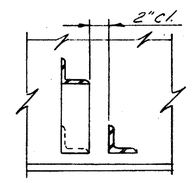
347

NOTE: Each longitudinal run of deck reinforcing, excluding SE5012 & SE5013 bars over the piers shall be as follows:
6-SE5014 and 1-SE5005 top
6-S5014 and 1-S5005 bottom



TRANSVERSE SECTION - WEST BOUND LANES

Note: The first and last 1'-6" length of the superstructure median lighting raceway shall be increased to 6" ℄ to accomodate coupling and or expansion devices.



SECTION S₁-S₁

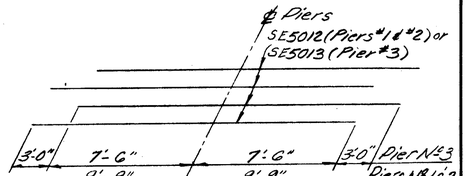
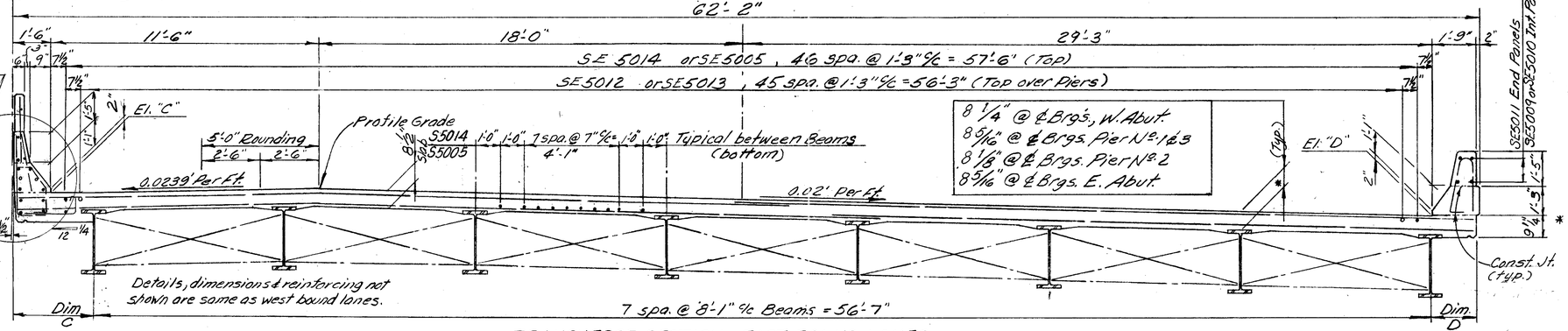
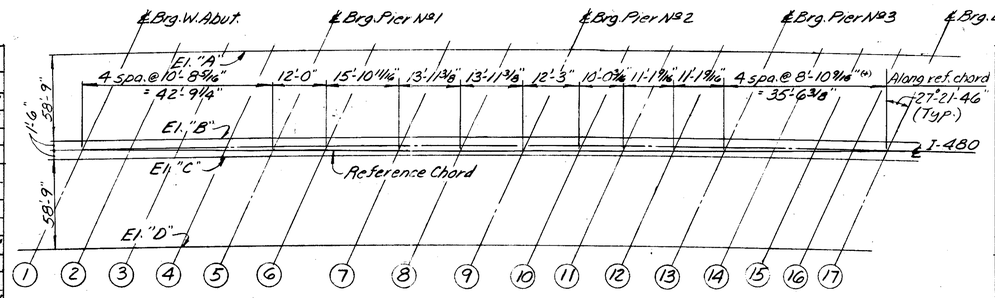


DIAGRAM SHOWING STAGGER OF SE5012, ℄ SE5013 BARS OVER PIERS



TRANSVERSE SECTION - EAST BOUND LANES

TABLE OF SLAB CANTILEVERS				
LOCATION	DIM. A	DIM. B	DIM. C	DIM. D
℄ Brg. W. Abut	2'-9 3/8"	1'-8 5/8"	2'-11"	2'-10 3/8"
1/4 Point Span 1	2'-10 1/4"	1'-7 1/4"	3'-0 1/2"	2'-8 1/2"
1/2 Point " "	2'-11"	1'-6"	3'-1 3/4"	2'-6 3/4"
3/4 Point " "	2'-11 1/2"	1'-5"	3'-2 3/4"	2'-5 1/8"
℄ Brg. Pier N°1	2'-11 7/8"	1'-4 1/8"	3'-3 3/4"	2'-3 3/4"
Splice Point N°1	3'-0"	1'-3 3/8"	3'-4 1/2"	2'-2 3/8"
1/2 Point Span 2	2'-11 7/8"	1'-2 3/4"	3'-5 1/4"	2'-0 7/8"
3/4 Point " "	2'-11 1/8"	1'-2 1/2"	3'-5 1/2"	2'-0"
℄ Brg. Pier N°2	2'-10 3/4"	1'-2 5/8"	3'-5 1/2"	1'-11 3/8"
Splice Point N°2	2'-9 7/8"	1'-2 7/8"	3'-5 1/4"	1'-11"
1/2 Point Span 3	2'-9"	1'-3 1/8"	3'-4 3/4"	1'-11"
3/4 Point " "	2'-7 3/8"	1'-4"	3'-4 1/8"	1'-11 1/8"
℄ Brg. Pier N°3	2'-6 1/2"	1'-4 7/8"	3'-3 3/8"	1'-11 3/8"
1/4 Point Span 4	2'-5 1/8"	1'-5 3/8"	3'-2 5/8"	1'-11 3/4"
1/2 Point " "	2'-3 7/8"	1'-6 5/8"	3'-1 3/8"	2'-0 1/4"
3/4 Point " "	2'-2 3/8"	1'-7 5/8"	3'-0 3/8"	2'-0 7/8"
℄ Brg. E. Abut.	2'-0 3/4"	1'-8 7/8"	2'-11 1/2"	2'-1 3/4"



DECK ELEVATIONS

NOTE: The deck elevations shown are those which are required prior to placing of the concrete deck. Proper allowance has been made for the dead load deflection caused by the weight of the concrete.

DECK ELEVATIONS				
Point	El. "A"	El. "B"	El. "C"	El. "D"
1	771.46	770.68	770.69	769.92
2	771.44	770.68	770.68	769.93
3	771.40	770.66	770.66	769.92
4	771.36	770.63	770.63	769.91
5	771.31	770.60	770.60	769.89
6	771.27	770.57	770.57	769.88
7	771.20	770.52	770.52	769.84
8	771.11	770.45	770.45	769.79
9	771.00	770.37	770.37	769.73
10	770.92	770.29	770.30	769.68
11	770.85	770.23	770.24	769.63
12	770.75	770.15	770.17	769.57
13	770.66	770.07	770.08	769.50
14	770.58	770.00	770.02	769.45
15	770.51	769.93	769.95	769.39
16	770.42	769.86	769.88	769.33
17	770.32	769.77	769.79	769.25

NOTES:

* This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

* * A typical haunch width of 9" shall be used for all beams in computing quantity of concrete. However the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less then 9" in width.

Field bend transverse bars to fit crown

For transverse slab reinforcing see Sht. 14 | 16

Epoxy coated bars damaged by field bending shall be repaired as per approved manufacturer's recommendations.

ALDEN E. STILSON & ASSOCIATES, LIMITED 13 | 16
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SUPERSTRUCTURE DETAILS

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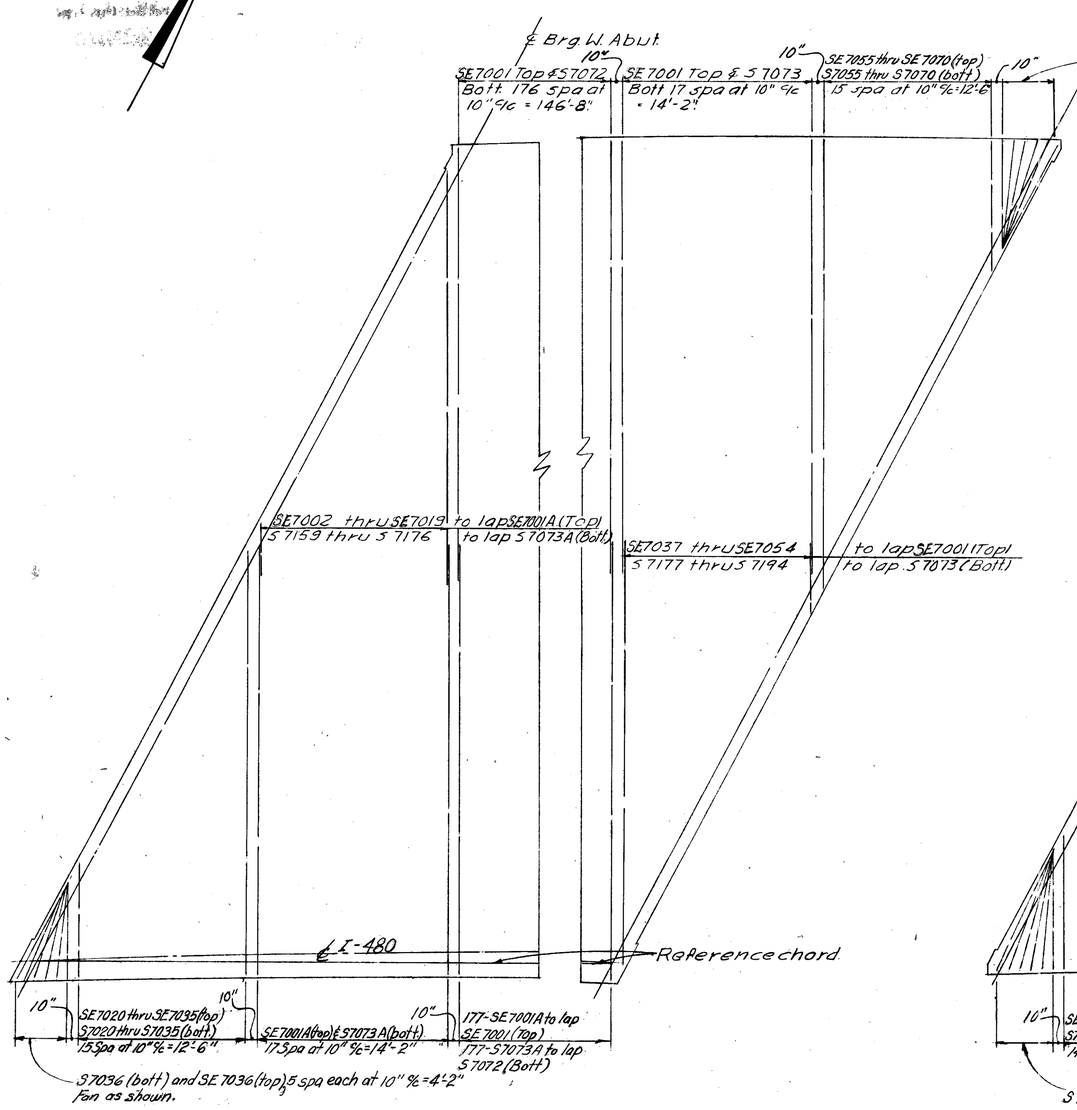
I-480 OVER CLAGUE ROAD
CUYAHOGA COUNTY STA. 385+27.54 STA. 387+11.80

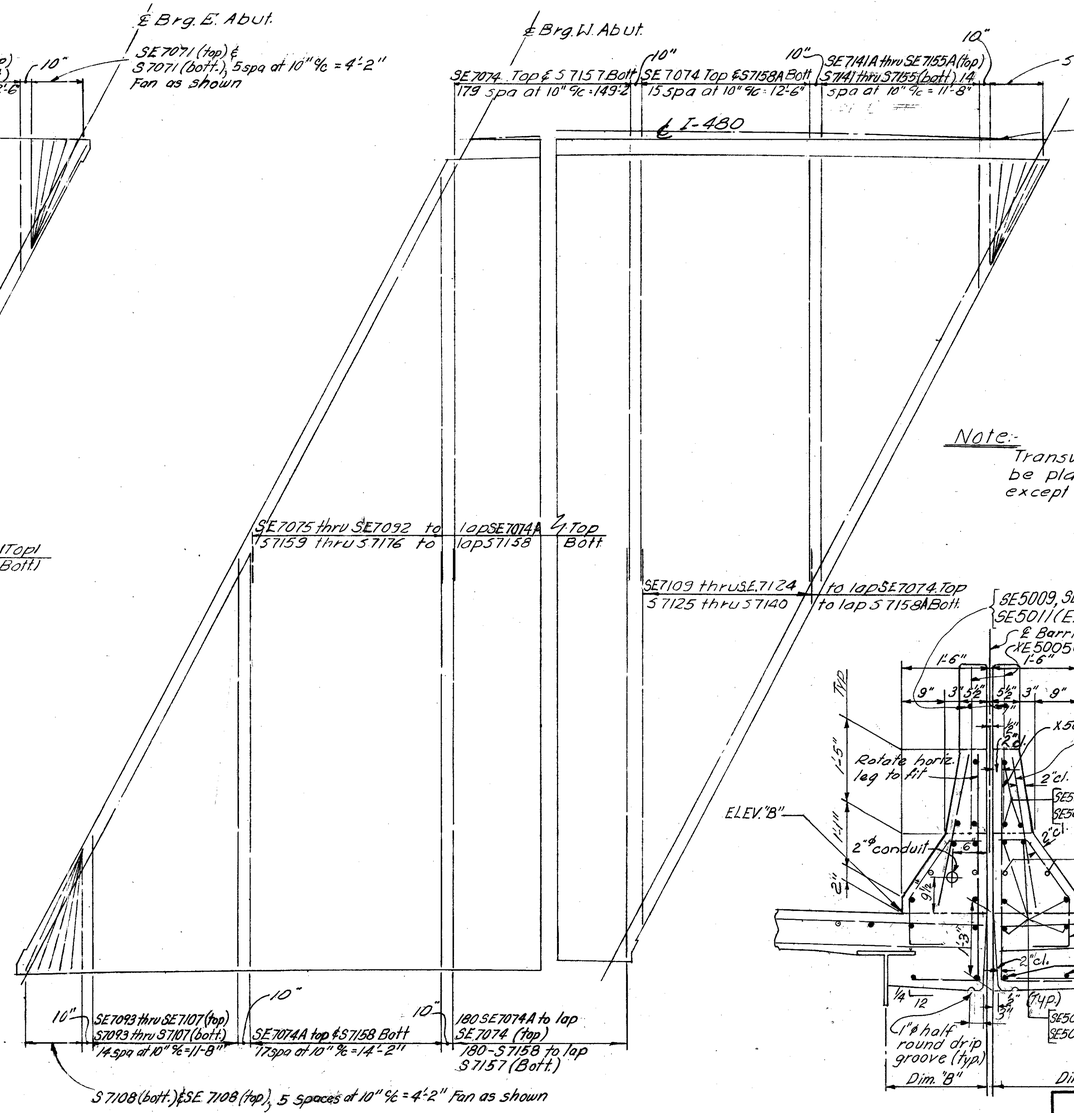
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		R.J.P.	G.W.M.	6/13/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

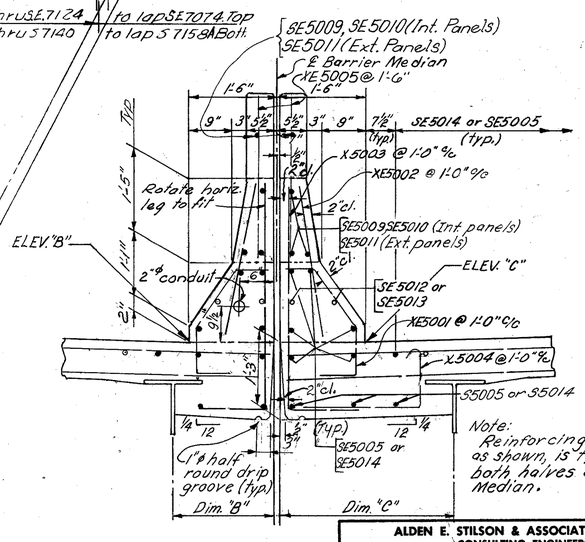


WEST BOUND LANES



EASTBOUND LANES

Note:-
Transverse slab reinforcing bars shall be placed normal to reference chord except at acute corners of slab



Note:
Reinforcing steel, as shown, is typical, both halves of Barrier Median.

MEDIAN DETAIL

TRANSVERSE SLAB REINFORCING

ALDEN E. STILSON & ASSOCIATES, LIMITED 14/16
CONSULTING ENGINEERS
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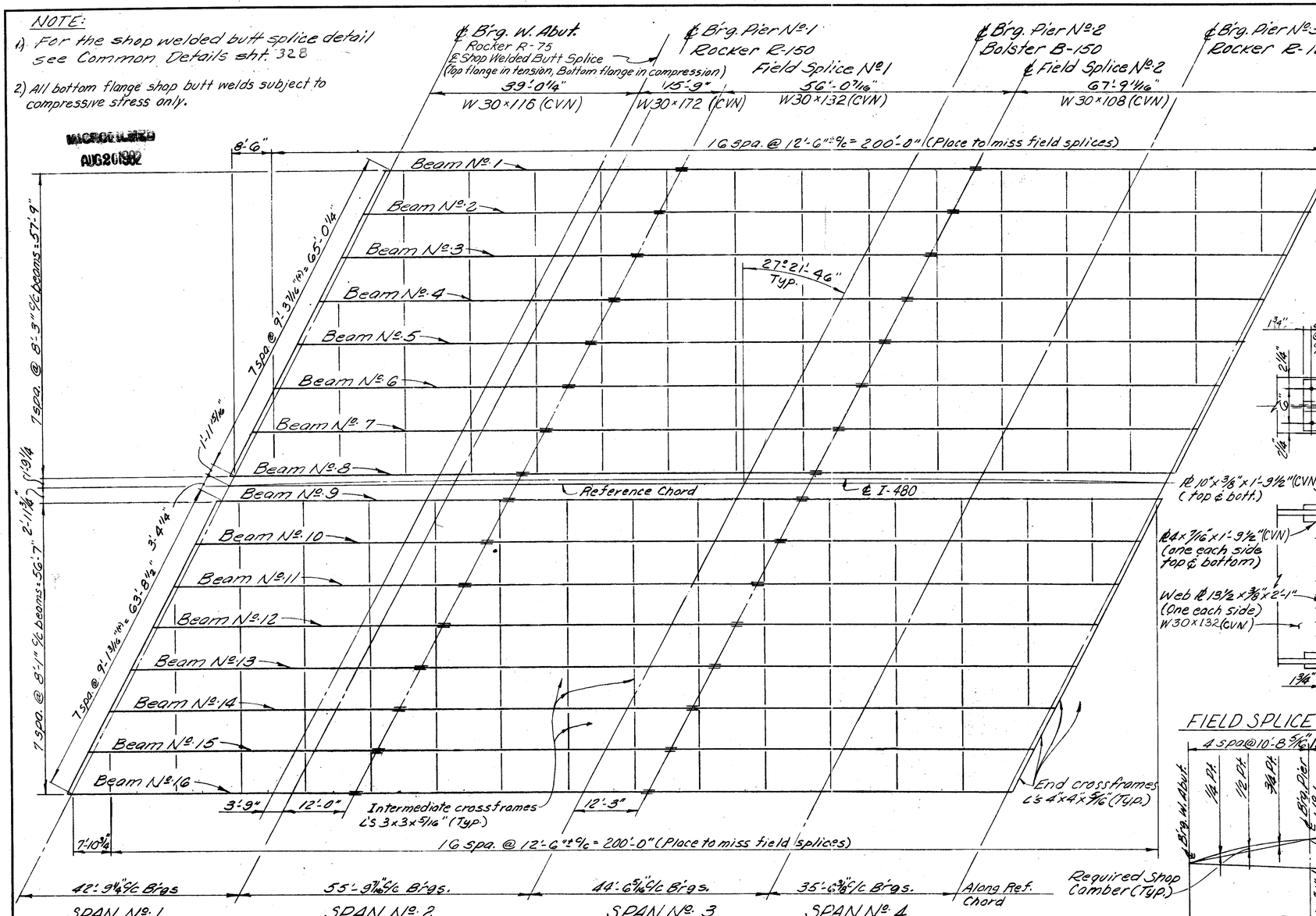
R.S.S.	R.S.S.		R.J.P.	G.W.M.	6/13/62	

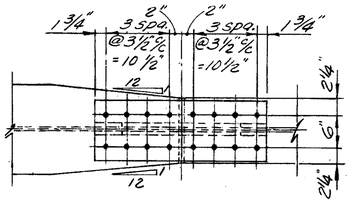
NOTE:

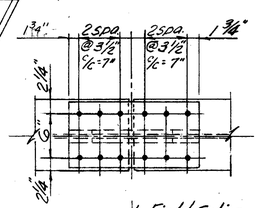
1) For the shop welded butt splice detail see Common Details sht. 328

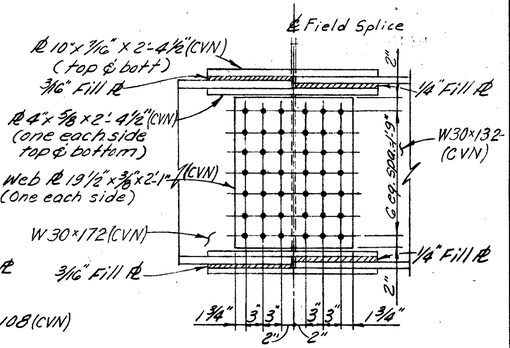
2) All bottom flange shop butt welds subject to compressive stress only.

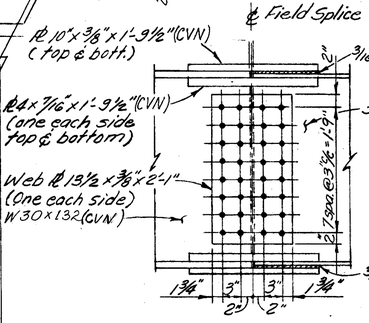


FRAMING PLAN









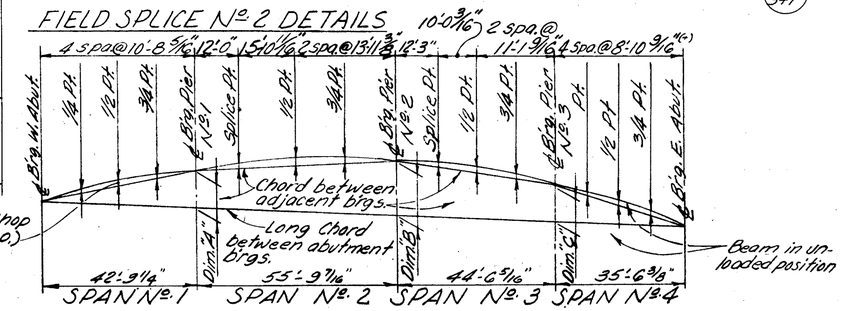
FIELD SPLICE No. 1 DETAILS

NOTES:

1" ℄ high strength bolts shall be used at the Field Splices. Bolt heads shall placed on fascia side of exterior beam webs and bottom side of bottom flange. Holes shall be 1 1/16" ℄. Bolts shall conform to A-325 steel. For details & notes not shown see Std. Dwg. SD-1-63, sheet #4.

For additional notes see sheet (23A/347)

FIELD SPLICE No. 2 DETAILS



CAMBER & BLOCKING DIAGRAM

DEFLECTION AND CAMBER

BEAM	SPAN No. 1						SPAN No. 2									SPAN No. 3						SPAN No. 4					
	ALL BEAMS EXCEPT No. 8			No. 8			ALL BEAMS EXCEPT No. 9 & 16			No. 9			No. 16			No. 1			No. 2 THRU No. 16			No. 1, 9 & 16			ALL BEAMS EXCEPT No. 1, 9 & 16		
LOCATION	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.	Sp. Pt.	1/2 Pt.	3/4 Pt.	Sp. Pt.	1/2 Pt.	3/4 Pt.	Sp. Pt.	1/2 Pt.	3/4 Pt.	Sp. Pt.	1/2 Pt.	3/4 Pt.	Sp. Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.
Deflection due to weight of steel	0	0	0	0	0	0	0	1/16	1/16	0	1/16	1/16	0	1/16	1/16	0	0	0	0	0	0	0	0	0	0	0	0
Deflection due to remaining dead load	1/8	1/8	1/16	1/8	1/8	1/16	1/8	1/4	3/16	1/8	1/4	3/16	1/8	3/16	1/8	0	1/16	0	0	1/16	0	1/16	1/16	1/16	1/16	1/8	1/16
Adjustment due to Vertical Curve	1/16	1/8	1/16	1/16	1/16	1/16	1/8	3/16	1/8	1/8	1/4	3/16	1/8	3/16	1/8	1/8	1/8	1/16	1/8	1/8	1/8	1/16	1/16	1/16	1/16	1/16	1/16
Required Shop Camber	3/16	1/4	1/8	3/16	3/16	1/8	1/4	1/2	3/8	1/4	9/16	7/16	1/4	7/16	5/16	1/8	3/16	1/16	1/8	3/16	1/8	1/8	1/8	1/8	1/8	3/16	1/8

BLOCKING DIMENSIONS

Beam No.	Dim. "A"	Dim. "B"	Dim. "C"
3 thru 6	1 3/16"	1 15/16"	1 1/4"
7	1 5/16"	1 13/16"	1 3/16"
8	1 3/8"	1 15/16"	1 3/16"
9	1 5/8"	2 1/4"	1 7/16"
10 & 11	1 7/16"	1 15/16"	1 1/4"
12 thru 16	1 7/16"	2"	1 1/4"
1	1 11/16"	2 5/16"	1 1/2"
2	1 7/16"	2"	1 5/16"

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

290/347

CUYAHOGA COUNTY
CUY-480-4.86

ALDEN E. STILSON & ASSOCIATES, LIMITED 15/16
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS

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I-480 OVER CLAGUE ROAD
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STA. 385+27.54
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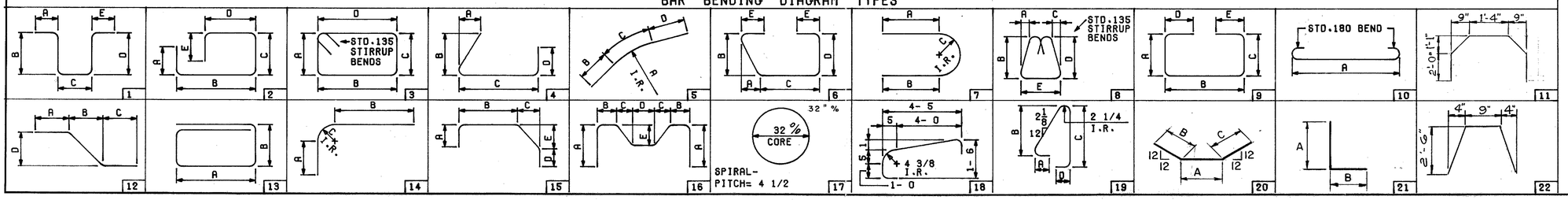
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S	R.T.		R.J.P	G.W.M.	6/13/68	

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				ABUTMENT						
A 5001	160	4-11	820	1		1- 6	2- 2	1- 6		
A 5002	182	8- 7	1629	1		2- 7	3- 8	2- 7		
A 5003	6	37- 0	232	ST						
A 5004	34	35- 4	1253	ST						
A 5005	34	33- 9	1197	ST						
A 5006	11	30- 0	344	ST						
A 5007	17	31- 2	553	ST						
A 5008	11	35- 0	402	ST						
A 5009	6	30- 6	191	ST						
A 5010	6	36- 0	225	ST						
A 5011	6	12-11	81	ST						
A 5012	10	7- 3	76	ST						
A 5013	6	9- 5	59	ST						
A 5014	37	1- 9	68	1		0- 6	1- 0	0- 6		
	40	2- 9	115	ST						
A 5017	37	4- 4	167	ST						
A 5018	18	11-11	224	ST						
A 5019	6	6- 4	40	ST						
A 5020	18	8- 8	163	ST						
A 5021	11	38- 0	436	ST						
A 5030	6	2- 4	15	ST						
A 5031	12	6- 3	78	ST						
A 5032	12	5- 3	66	ST						
A 6001	273	14- 2	5809	2	4- 2	1- 5	5- 6	0-11	2-10	
D 8001	100	5-10	1557	20	3-8	1-6½	0-8½			
F 5001	186	7- 3	1406	1		6- 9	0- 8			
F 5002	182	8- 7	1629	1		1- 7	5- 8	1- 7		
F 5003	49	12- 1	618	3	2- 7	3- 2	2- 7	3- 2		
F 5004	4	5- 6	23	ST						
F 5005	4	4- 6	19	ST						
F 5006	4	10-10	45	12		2- 0	8- 0	2- 0		
F 5007	12	10- 0	125	ST						
F 5008	4	12- 5	52	12		1- 9	10- 0	1- 9		
F 5009	2	8- 3	17	1		7- 9	0- 8			
F 6001	182	14- 8	4009	1		6- 9	5- 8	2- 7		
F 6002	11	18-10	311	1		9- 0	1- 2	9- 0		
F 6003	10	20-10	313	1		10- 0	1- 2	10- 0		
F 8001	28	38-10	2903	ST						
F 8002	14	34-10	1302	ST						
F 8003	14	34- 0	1271	ST						
F 8004	6	12- 1	194	ST						
F 8005	6	11- 4	182	ST						
F 8006	12	11- 7	371	ST						
				PIER						
P 4001	2	14- 8	557	17	NO. TURNS= 42		NO. SPACERS= 8			6
P 4002	8	13- 9	2117	17	NO. TURNS= 40		NO. SPACERS= 32			6
P 4003	10	13- 0	2512	17	NO. TURNS= 38		NO. SPACERS= 40			6

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				PIER					(CONTINUED)	
P 4004	4	12- 5	953	17	NO. TURNS= 36		NO. SPACERS= 16			6
P 5001	240	5- 5	1356	1		1- 6	2- 8	1- 6		
P 5002	608	8- 9	5549	1		3- 2	2- 8	3- 2		
P 5003	12	30- 7	383	ST						
P 5004	12	30- 0	375	ST						
P 5005	24	2- 8	67	ST						
P 6001	36	30- 7	1654	ST						
P 6002	36	30- 0	1622	ST						
P10001	50	36- 4	7817	1		3- 2	30- 7	3- 2		
P10002	50	35- 9	7692	1		3- 2	30- 0	3- 2		
P10003	16	17- 7	1211	ST						
P10004	64	16- 9	4613	ST						
P10005	80	16- 0	5508	ST						
P10006	32	15- 5	2123	ST						
F10001	480	11- 6	23753	10	8- 8					
F10002	192	6- 7	5439	1		5- 6	1- 5			
				SUPERSTRUCTURE						
S 5001	242	1- 9	442	1		0- 6	1- 0	0- 6		
S 5003	242	2- 0	505	1	0- 6	1- 8				
S 5005	172	10- 4	1854	ST						
S 5014	1032	30- 0	32,291	ST						
S 7020	1	30-8		ST						
THRU			608		VARY LENGTH BY		1- 7 3/ 8			
S 7035	1	6-6		ST						
S 7036	6	4-11	60	ST						
S 7055	1	32-10		ST						1
THRU			679		VARY LENGTH BY		1- 7 3/ 8			
S 7070	1	8- 8		ST						1
S 7071	6	7- 0	86	ST						
S 7072	177	37- 0	13386	ST						
S 7073	18	28- 4	1042	ST						
S 7073A	195	27-0	10762	ST						
S 7093	1	30- 5		ST						1
THRU			587		VARY LENGTH BY		1- 7 3/ 8			
S 7107	1	7-10		ST						1
S 7108	6	6- 3	77	ST						

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				SUPERSTRUCTURE					(CONTINUED)	
S 7125	1	32- 4		ST						1
THRU			662		VARY LENGTH BY		1- 7 3/ 8			
S 7140	1	8- 2		ST						1
S 7141	1	33- 0"		ST						1
THRU			666		VARY LENGTH BY		1- 7 3/ 8			
S 7155	1	10'-5"		ST						1
S 7156	6	8'-10"	108	ST						
S 7157	180	36'-10"	13,552	ST						
S 7158	198	27- 2	10,995	ST						
S 7159	2	7-11		ST						1
THRU			1591		VARY LENGTH BY		1- 7 3/ 8			
S 7176	2	35- 4		ST						1
S 7177	1	35- 8		ST						1
THRU			809		VARY LENGTH BY		1- 7 1/ 4			
S 7194	1	8- 4		ST						1
S7158A	16	28-7	935	ST						
				MEDIAN STEEL						
X 5003	384	4'-9"	1902	21	3'-8"	1'-2½"				
X5004	192	2'-8"	534	3	0'-11"	1'-6"	0	0		
				EPOXY COATED REINFORCING STEEL-SUPERSTRUCTURE						
SE5005	94	10'-4"	1013	ST						7
SE5012	200	22'-6"	4694	ST						7
SE5013	100	18'-0"	1877	ST						7
SE5014	564	30'-0"	17,648	ST						7
SE7001	195	32'-8"	13,020	ST						7
SE7001A	195	31'-4"	12,489	ST						7
SE7002	1	31'-0"		ST						1,7
THRU			635		VARY LENGTH BY 1'-7 3/8"					
SE7019	1	3'-6"		ST						7
SE7020	1	30'-8"		ST						7
THRU			608		VARY LENGTH BY 1'-7 3/8"					
SE7035	1	6'-6"		ST						7
SE7036	6	4'-11"	60	ST						7
SE7037	1	31'-4"		ST						7
THRU			650		VARY LENGTH BY 1'-7 1/4"					
SE7054	1	4'-0"		ST						7
SE7055	1	32'-10"		ST						7
THRU			679		VARY LENGTH BY 1'-7 3/8"					
SE7070	1	8'-8"		ST						7
SE7071	6	7'-0	86	ST						7
SE7074	196	32'-9"	13,120	ST						7
SE7074A	198	31'-4"	12,681	ST						7
SE7075	1	30'-6"		ST						1,7
THRU			619		VARY LENGTH BY 1'-7 1/4"					
SE7092	1	3'-2"		ST						1,7
SE7093	1	30'-5"		ST						7
THRU			586		VARY LENGTH BY 1'-7 3/8"					
SE7107	1	7'-10"		ST						7
SE7108	6	6'-3"	76	ST						1,7
SE7109	1	28'-2"		ST	VARY LENGTH BY 1'-7 3/8"					
THRU			526							1,7
SE7124	1	4'-0"		ST						
SE7141A	1	33'-0"		ST						1,7
THRU			666		VARY LENGTH BY 1'-7 3/8"					
SE7155A	1	10'-5"		ST						1,7
SE7156A	6	8'-10"	1000	ST						7

BAR BENDING DIAGRAM TYPES



FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

291 / 347

CUYAHOGA COUNTY
CUY-480-4.86

NOTES

1. INDICATES SERIES BAR. EACH BAR VARIES FROM ADJACENT BAR(S) BY TABULATED AMOUNT(S), CALCULATED TO NEAREST 1/8 INCH. WEIGHT SHOWN IS FOR ENTIRE SERIES UTILIZING AVERAGE LENGTH.
2. BARS INCLUDED WITH ITEM 517, RAILING, FOR PAYMENT.
3. COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.
4. LIGHT POLE SUPPORT BARS INCLUDED WITH ITEM 509 FOR PAYMENT.
6. 'LENGTH' SHOWN FOR SPIRAL BARS IS DISTANCE FROM TOP OF FOOTING TO BOTTOM OF PIER CAP.
'NO. TURNS' SHOWN IS 'LENGTH' DIVIDED BY PITCH, PLUS 3 TURNS (NUMBER OF CLOSED COILS), EXPRESSED AS NEAREST WHOLE NUMBER.
SPIRAL BARS MAY HAVE DEFORMATIONS AND SHALL IN OTHER RESPECTS CONFORM TO ITEM 509. 1 1/2 CLOSED COILS SHALL BE PROVIDED AT ENDS OF EACH SPIRAL UNIT. FOUR STEEL CHANNEL, TEE OR ANGLE SPACERS, WEIGHING APPROXIMATELY 0.80 LB. PER LIN. FT. OF SPACER SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG PERIPHERY OF COIL. WEIGHT OF SPACERS, AT 0.80 LB. PER LIN. FT. WILL BE PAID FOR AS REINFORCING STEEL AND IS INCLUDED IN TABULATED WEIGHT. OTHER DETAILS IN ACCORDANCE WITH CRSI STANDARD PRACTICE.
7. BARS ARE TO BE EPOXY COATED AS PER PROPOSAL NOTE.
8. FOR ADDITIONAL NOTES SEE SHEET 231A / 347

BAR SIZE DESIGNATION

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE FOUR DIGITS ARE USED, AND FIRST TWO DIGITS WHERE FIVE DIGITS ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A7001 IS A NO. 7 SIZE BAR AND A10140 IS A NO. 10 SIZE.

16/16

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

REINFORCING STEEL LIST

BRIDGE NO CUY-480-0540
I-480 OVER CLAGUE ROAD

CUYAHOGA COUNTY STA. 385 + 27.54
STA. 387 + 11.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.			R.J.P.	G.W.M.	6/91/98	

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
EPOXY COATED REINFORCING STEEL-ABUTMENTS										
AE5011	8	12'-11"	108	ST						7
AE5015	40	2'-9"	115	ST						7
AE5016	17	6'-3"	111	19		2'-5"	3'-1"	0'-8"		7
AE5018	24	11'-11"	298	ST						7
AE5022	2	5'-8"	12	1		3'-0"	2'-10"			7
AE5023	2	6'-4"	13	1		2'-8"	3'-10"			7
AE5024	2	2'-6"	5	ST						7
AE5025	2	2'-2"	5	ST						7
AE5026	2	5'-8"	12	1		2'-0"	3'-10"			7
AE5027	2	1'-7"	3	ST						7
AE5028	4	7'-9"	32	11						7
AE5029	4	5'-9"	24	22						7
AE6002	17	5'-9"	147	15		0'-9"	0'-9"	3'-10"	1'-0"	7
AE7001	4	4'-8"	38	ST						7
AE7002	4	5'-5"	44	15		0'-9"	0'-2"	3'-9"	1'-0"	7
AE7003	4	5'-5"	44	15		0'-9"	0'-4"	3'-9"	1'-0"	7
AE7004	4	5'-6"	45	15		0'-9"	0'-6"	3'-9"	1'-0"	7
AE7005	4	5'-8"	46	15		0'-9"	0'-8"	3'-9"	1'-0"	7
EPOXY COATED REINFORCING STEEL – SUPERSTRUCTURE										
MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
SE5002	242	5'-3"	1325	19	0'-7"	2'-5"	2'-2"			7
SE5004	242	3'-0"	757	15	0'-6"	0'-9"	0'-11"	0'-9"	0'-9"	7
SE5008	8	14'-10"	124	ST						7
SE5009	56	14'-7"	852	ST						7
SE5010	168	7'-1"	1241	ST						7
SE5011	22	15'-0"	344	ST						7
XE5001	364	2'-11"	1107	15	0'-8"	10"	1'-0½"	5"	8½"	7
XE5002	384	2'-7"	1035	ST						7
XE5005	240	2'-9"	688	ST						7

FOR NOTES & BAR DIAGRAMS SEE SHEET 291

FHWA REGION	STATE	PROJECT	
5	OHIO		

291A
347

CUYAHOGA COUNTY
CUY-480-4.86

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BUREAU OF BRIDGES

16A / 16

REINFORCING STEEL LIST

BRIDGE No CUY-480-0540
I-480 OVER CLAGUE ROAD

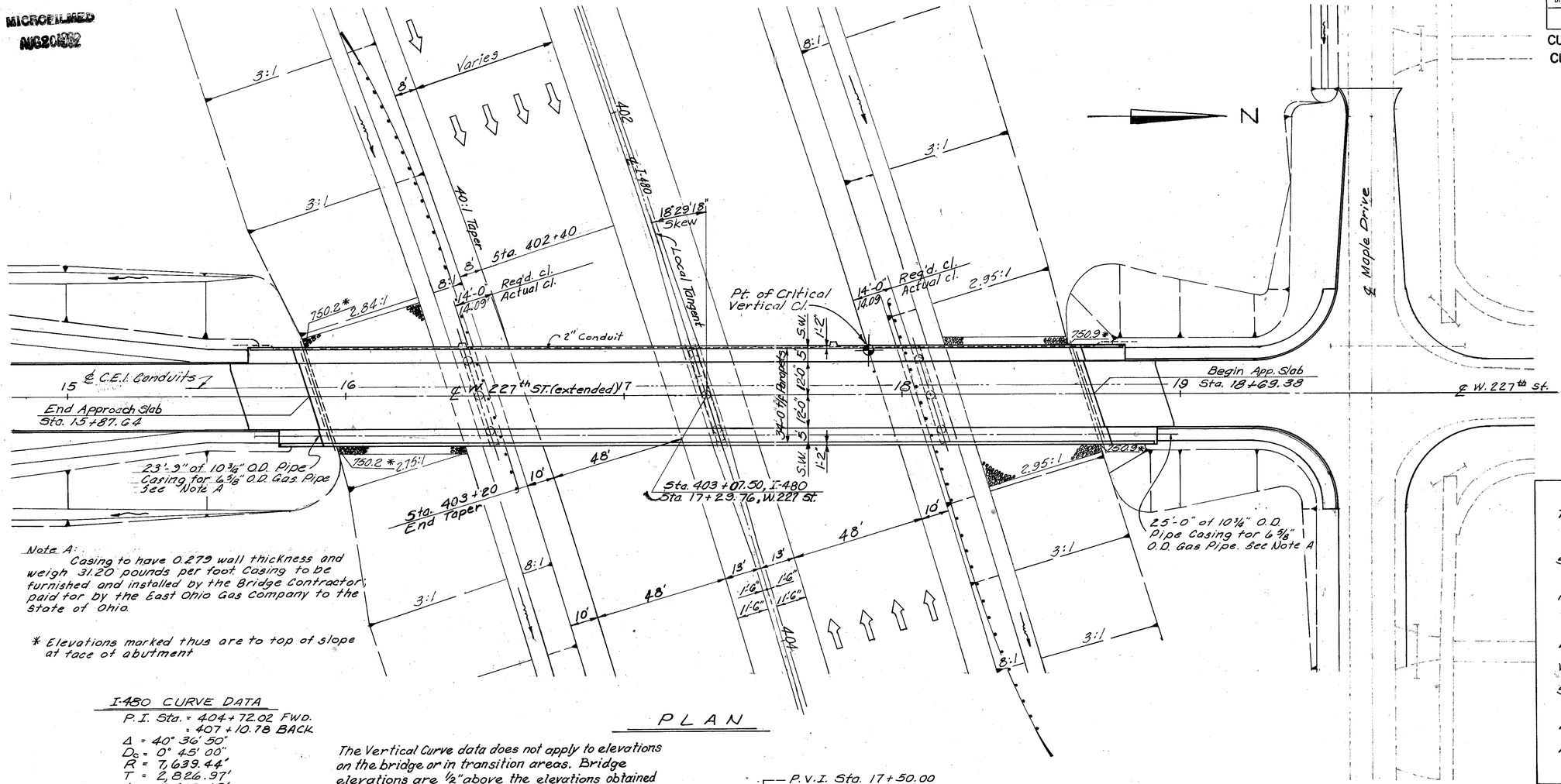
CUYAHOGA COUNTY STA. 385 + 27.54
STA. 387 + 11.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
VAD	GFJ					

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

292
347

CUYAHOGA COUNTY
CUY.-480-4.86



PLAN

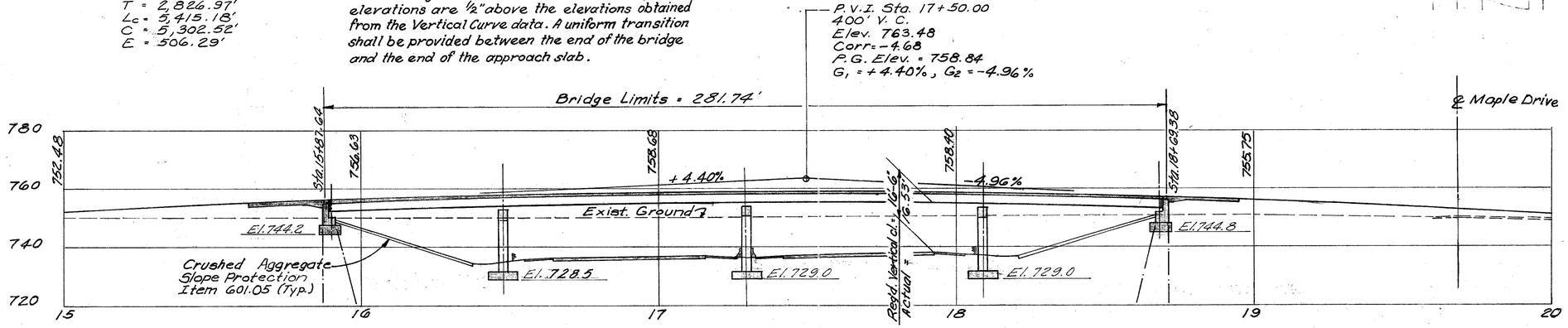
Note A:
Casing to have 0.279 wall thickness and weigh 31.20 pounds per foot. Casing to be furnished and installed by the Bridge Contractor; paid for by the East Ohio Gas Company to the State of Ohio.

* Elevations marked thus are to top of slope at face of abutment

I-480 CURVE DATA

P.I. Sta. = 404+72.02 FWD.
= 407+10.78 BACK
Δ = 40° 36' 50"
D_c = 0° 45' 00"
R = 7,639.44'
T = 2,826.97'
L_c = 5,415.18'
C = 5,302.52'
E = 506.29'

The Vertical Curve data does not apply to elevations on the bridge or in transition areas. Bridge elevations are ½" above the elevations obtained from the Vertical Curve data. A uniform transition shall be provided between the end of the bridge and the end of the approach slab.



NOTE: All piles are HP10x42 H piles. Estimated overage pay lengths for abutments-16'

PROFILE ALONG ℄ W. 227th ST.

PROPOSED STRUCTURE

TYPE: Continuous steel beam with reinforced concrete deck and substructure.

SPANS: 57'-6", 82'-3", 80'-9", 56'-6" ℅ bearings.

ROADWAY: 24'-0" f/f curbs with 5'-0" sidewalks and parapets with 4'-0" chain link fence

LOADING: HS-20-44 & The Alternate Military Loading

WEARING SURFACE: monolithic conc.

SKEW: 18°29'18" Rt. forward, with local tangent

ALIGNMENT: Tangent.

APPROACH SLABS: AS-1-72, Modified (25' long)

TRAFFIC ESTIMATE

Design Year - 1987
Total A.D.T. - 2400

1/10

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

SITE PLAN

BRIDGE № CUY.-480-0573
WEST 227th ST. (extended) OVER I-480
CUYAHOGA COUNTY STA. 15+87.64
STA. 18+69.38

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.W.M.	G.W.M.	M.D.	R.J.P.	G.W.M.	7/26/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

293/347

CUYAHOGA COUNTY
CUY.-480-4.86

STANDARD DRAWING REFERENCES

DESCRIPTION	DWG. NO.	SHT.	DATE
END DAM AND END CROSSFRAME	SD-1-69	1-2	6-12-69
CURB PLATES	SD-1-69	2	6-12-69
SCUPPERS	SD-1-69	3	6-12-69
MOMENT PLATES	SD-1-69	3	6-12-69
BOLTED SPLICES	SD-1-69	4	6-12-69
ROCKERS AND BOLSTERS	RB-1-55		2- 2-59 R
APPROACH SLABS	AS-1-72		6-30-72 R

(R INDICATES REVISED DATE)

SUPPLEMENTAL SPECIFICATION REFERENCES

DESCRIPTION	NO.	DATE
CHEMICAL ADMIXTURE FOR CONCRETE, TYPE A, B OR D	808	1- 1-71
CONCRETE CURING AND PROTECTIVE MEMBRANE	836	3-12-75

COMMON DETAIL REFERENCES

BRIDGE SIDEWALK FENCE SHEET 328

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE 'STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES' ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS, 1969, INCLUDING THE OHIO 'SUPPLEMENT' TO THESE SPECIFICATIONS.

DESIGN DATA

DESIGN LOADING - HS20-44 & ALTERNATE MILITARY LOADING
CONCRETE CLASS C - UNIT STRESS 1200 PSI FOR SUPERSTRUCTURE
UNIT STRESS 1333 PSI FOR SUBSTRUCTURE
STRUCTURAL STEEL - ASTM A36 - UNIT STRESS 20000 PSI
REINFORCING STEEL - ASTM A615, A616 OR A617 - UNIT STRESS 20000 PSI.
SPIRAL REINFORCEMENT MAY BE PLAIN BARS ASTM A82 OR A615.

EMBANKMENT CONSTRUCTION

THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET BACK OF THE ABUTMENTS. EXCAVATION SHALL THEN BE MADE FOR THE ABUTMENTS.

SUPPLEMENTAL SPECIFICATION REFERENCES (CONTINUED)

DESCRIPTION	NO.	DATE
PAINTING FOR NEW STRUCTURAL STEEL	846	4-25-77
INORGANIC ZINC SILICATE PAINT	950	4-25-77
BLUE-GREEN VINYL PAINT	951	4-25-77

STANDARD DRAWING REFERENCES

DESCRIPTION	DWG. NO.	DATE
STANDARD CONSTRUCTION DRAWING	HL-3	REV-7-27-73
STANDARD CONSTRUCTION DRAWING	HL-4	REV-1-21-76
STANDARD CONSTRUCTION DRAWING	HL-5	REV-9-6-73
STANDARD CONSTRUCTION DRAWING	HL-7	REV-1-21-76

FOUNDATION BEARING PRESSURE

PIER FOOTINGS ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 5.0 TONS PER SQ. FT.

FOOTINGS

FOOTINGS SHALL EXTEND A MINIMUM OF 3 INCHES INTO BEDROCK OR TO THE ELEVATION SHOWN, WHICHEVER IS LOWER.

UTILITY LINES

ALL EXPENSE INVOLVED IN INSTALLING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNERS. THE CONTRACTOR AND OWNERS ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WOULD BE HELD TO A MINIMUM.

FOR ADDITIONAL GENERAL NOTES SEE 231A/347

APPROACH SLABS: MODIFY AS-1-72 BY INCREASING THE COVER OVER THE TOP BARS TO 3".

PILES SHALL BE DRIVEN TO BEDROCK. THE BEARING CAPACITY SHALL BE CONSIDERED OBTAINED BY REFUSAL ON HARD BEDROCK OR BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH. THE DESIGN LOAD IS 35 TONS PER PILE FOR THE ABUTMENT AND WINGWALL PILES.

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	PIERS	SUPER	GENERAL			
503	447	C.Y.	UNCLASSIFIED EXCAVATION	280	167					
503	14	C.Y.	SHALE EXCAVATION		14					
503	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING				LUMP			
505	LUMP	SUM	TEST PILE	LUMP						
507	448	L.F.	STEEL PILES, HP10X42	448						
509	79,324	LB	REINFORCING STEEL	13355	24308	41661				
SPEC	46,933	LB	EPOXY COATED REINFORCING STEEL (SEE PROPOSAL NOTE)	360		46573				
511	383	C.Y.	CLASS C CONCRETE, SUPERSTRUCTURE (SEE PROPOSAL NOTE)			383				
511	104	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS	104						
511	87	C.Y.	CLASS C CONCRETE, PIER CAPS AND COLUMNS		87					
511	124	C.Y.	CLASS C CONCRETE, FOOTINGS	79	45					
513	325,050	LB	STRUCTURAL STEEL *PRIMER PER 846 (SEE PROPOSAL NOTE)			325,050				
846	325,050	LB	FIELD PAINTING OF STRUCTURAL STEEL *			325,050				
517	644.21	L.F.	BRIDGE RAILING (CONCRETE PARAPET WITH 4 FT.-0 INCH	86.00		558.21				
			CHAIN-LINK FENCE AS PER PLAN							
518	51	C.Y.	POROUS BACKFILL	51						
518	8	EA	SCUPPERS INCLUDING SUPPORTS			8				
518	110	L.F.	6 INCH PERFORATED, HELICAL CSP, 707.01	110						
518	57	L.F.	6 INCH NON-PERFORATED, HELICAL CSP, INCLUDING	57						
			SPECIALS, 707.01							
601	554	S.Y.	CRUSHED AGGREGATE SLOPE PROTECTION				554			
625			SEE SHEET 2/3 FOR LIGHTING SUMMARY							
808	383	UNIT	CHEMICAL ADMIXTURE FOR CONCRETE, TYPE A, B OR D			383				
SPEC	49	L.F.	10 3/4 INCH O.D. STEEL PILE 0.278 INCH WALL	49						
			THICKNESS * *							
		*	500 LBS TO BE PAID FOR BY THE EAST OHIO GAS CO.							
		**	TO BE PAID FOR BY THE EAST OHIO GAS CO.							

2/10

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

GENERAL NOTES AND ESTIMATED QUANTITIES

BRIDGE NO. CUY.480-0573
WEST 227th. (extended) OVER I-480
CUYAHOGA COUNTY STA. 15+87.64 STA. 18+69.38

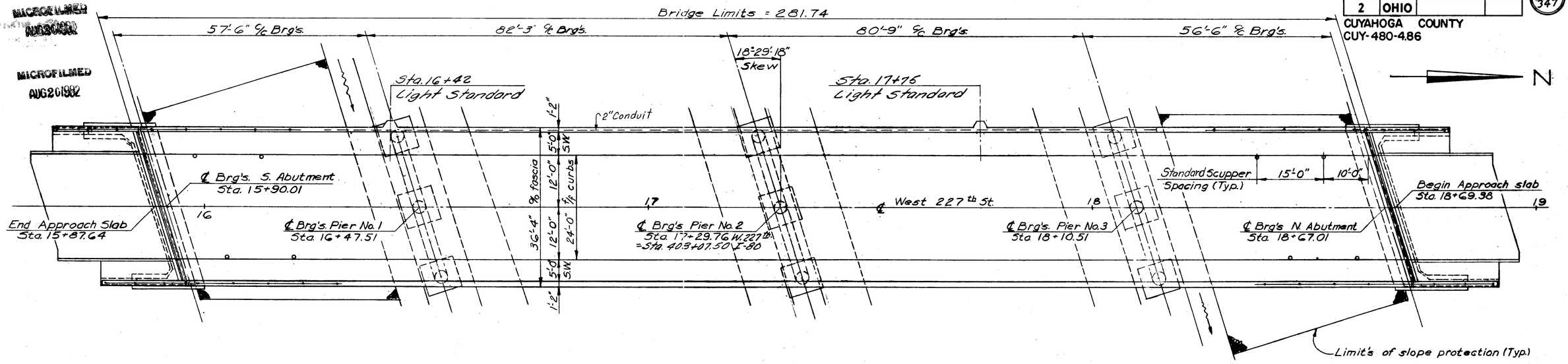
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.I.P.			C.B.C.	G.W.M. 7/26/83		

MICROFILMED
AUG 20 1982

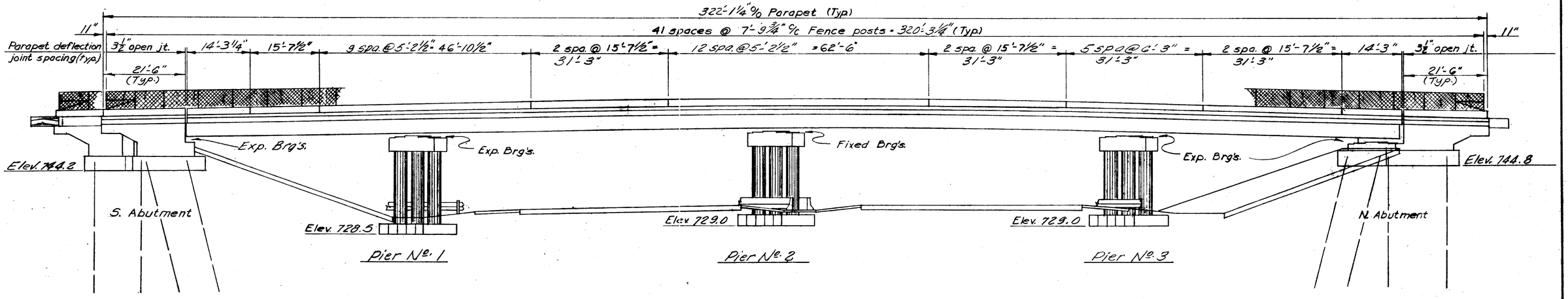
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

294
347

CUYAHOGA COUNTY
CUY-480-4.86



GENERAL PLAN



ELEVATION

Scupper spacing shall be adjusted to clear intermediate crossfromes by a minimum of six inches.

3/10

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

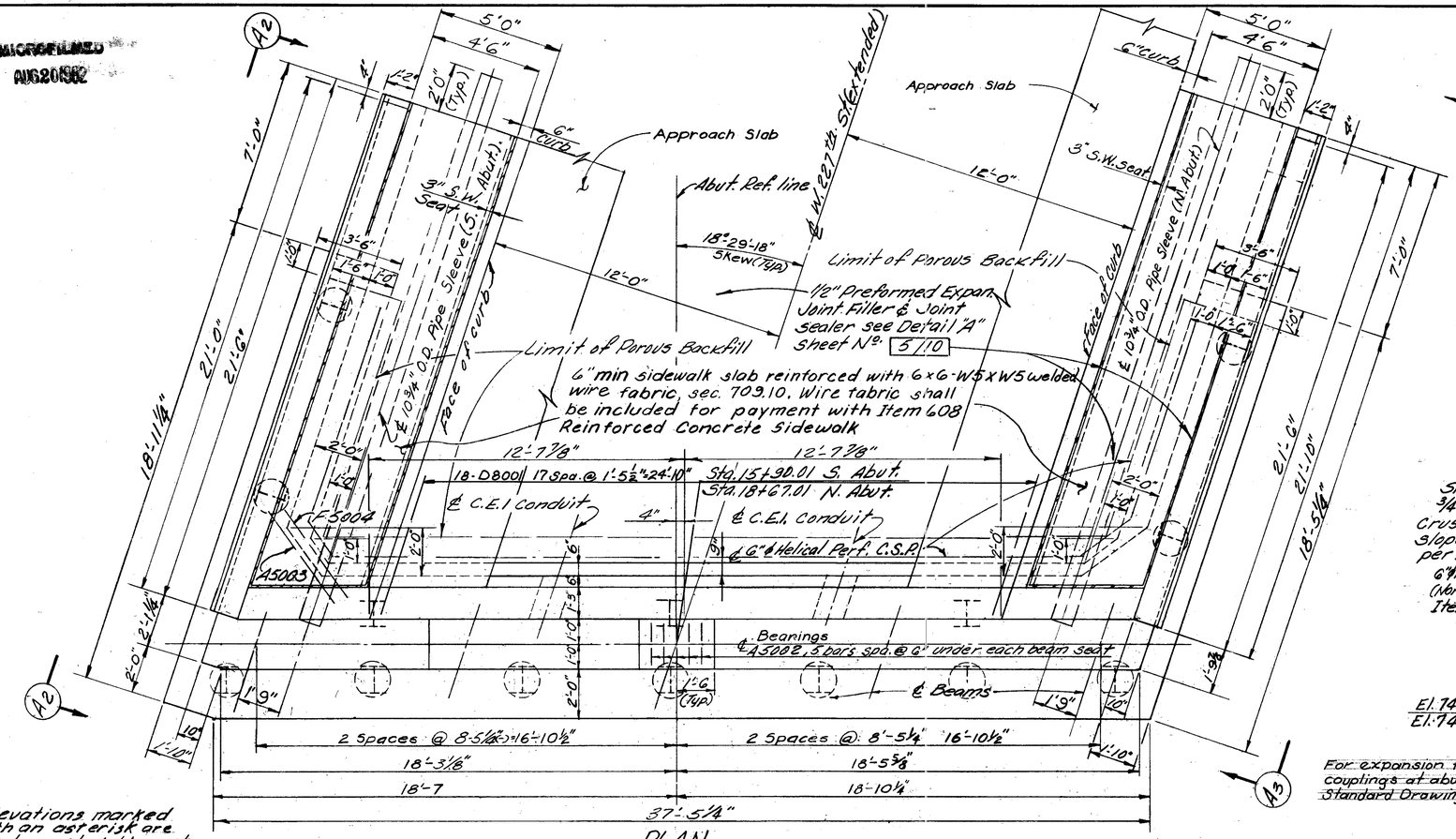
GENERAL PLAN
BRIDGE No CUY-480-0573
WEST 227th.ST (extended) OVER I-480
CUYAHOGA COUNTY STA. 15+87.64
STA. 18+69.38

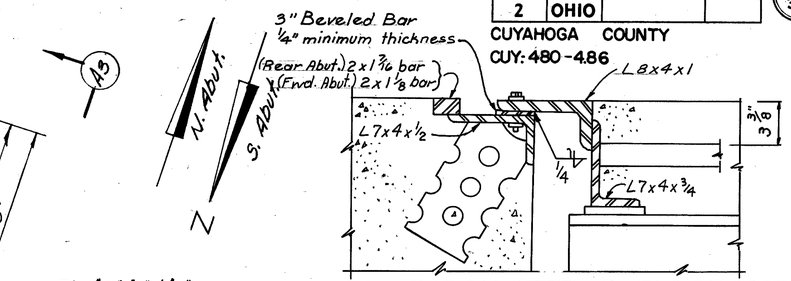
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		R.J.P.	G.W.M.	7/26/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY: 480-4.86

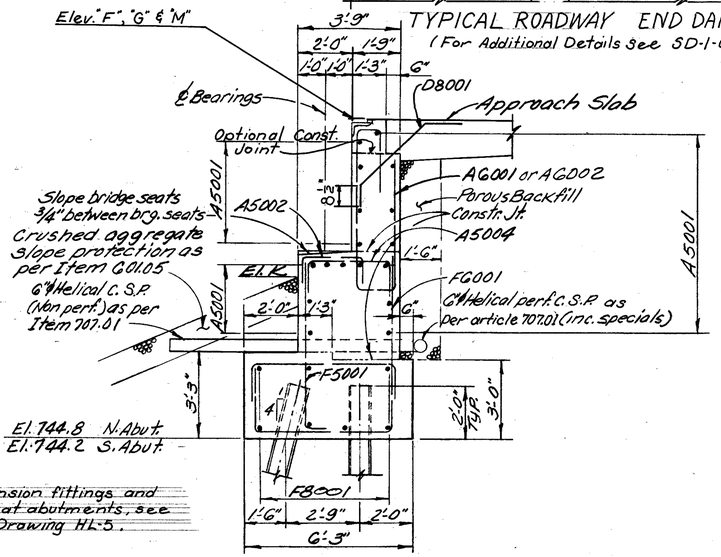
295/347





TYPICAL ROADWAY END DAM DETAILS

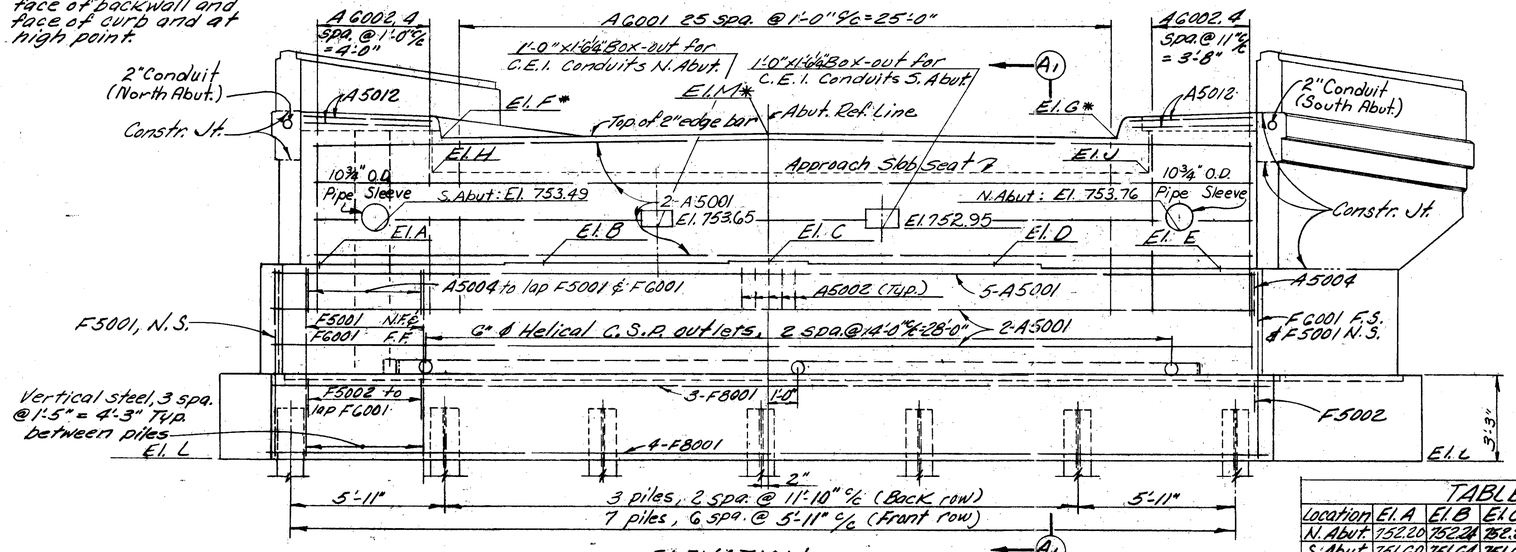
(For Additional Details see SD-1-69 Sh. 1 of 4)



For expansion fittings and couplings at abutments, see Standard Drawing HL-5.

SECTION A1-A1

* Elevations marked with an asterisk are roadway elevations at face of backwall and face of curb and at high point.



ELEVATION

PLAN

SECTION A1-A1

NOTE:

Porous backfill 1'-6" thick, full length of abutment and wings, shall extend up to the subgrade or to the finished ground surface. Excavation therefor, in excess of that required for construction of the abutment shall be considered as paid for in the price bid per Cu. Yd. paid for Porous Backfill.

6" Helical perf. C.S.P. shall have all ends capped.

6" Helical non-perf. C.S.P. shall extend into crushed aggregate.

For Elevations A_2-A_2 & A_3-A_3 see sheet No. 5/10

In reinforcing steel callouts: N.S. indicates near side, F.S. indicates far side.

All piles shall be HP 10x42 H Piles.

Vertical piles
Batter piles 1:4
} PILE LEGEND

Item 608 reinforced Concrete side walk shall be included, for payment, with roadway items.

For additional General Notes see sheet 231A/347

TABLE OF ELEVATIONS

Location	El. A	El. B	El. C	El. D	El. E	El. F	El. G	El. H	El. J	El. K	El. L	El. M
N. Abut.	752.20	752.24	752.29	752.08	751.87	756.82	756.57	755.55	755.30	750.9	744.8	756.88
S. Abut.	751.60	751.64	751.67	751.45	751.23	756.21	755.93	754.95	754.65	750.2	744.2	756.26

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

ABUTMENT DETAILS

BRIDGE No. CUY-480-0573

WEST 227th ST. (extended) OVER I-480

CUYAHOGA COUNTY STA. 15+87.64 STA. 18+69.38

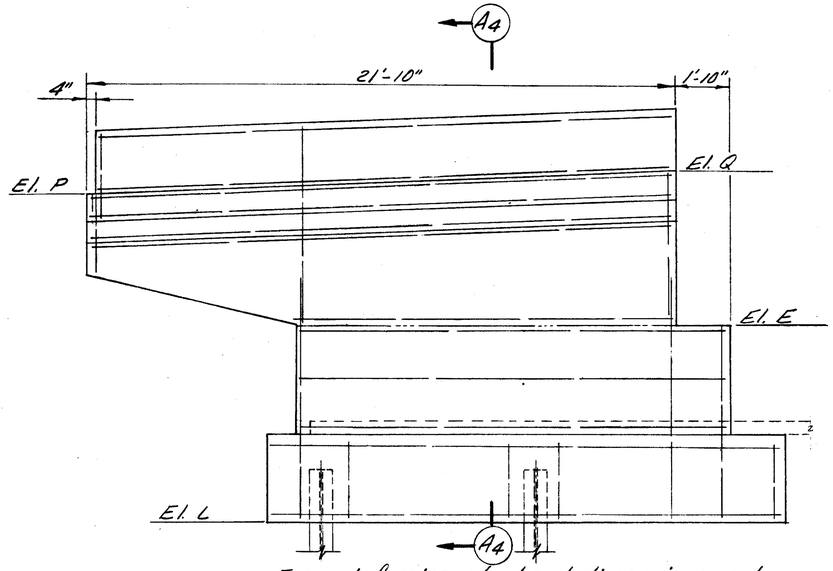
4/10

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R.T. B.V.		R.S.S.	G.W.M. T.Hughes		

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

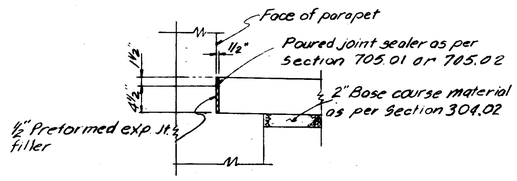
296/347

CUYAHOGA COUNTY
CUY-480-4.86



For reinforcing steel and dimensions not shown, see Elevation A3-A3

ELEVATION A2-A2



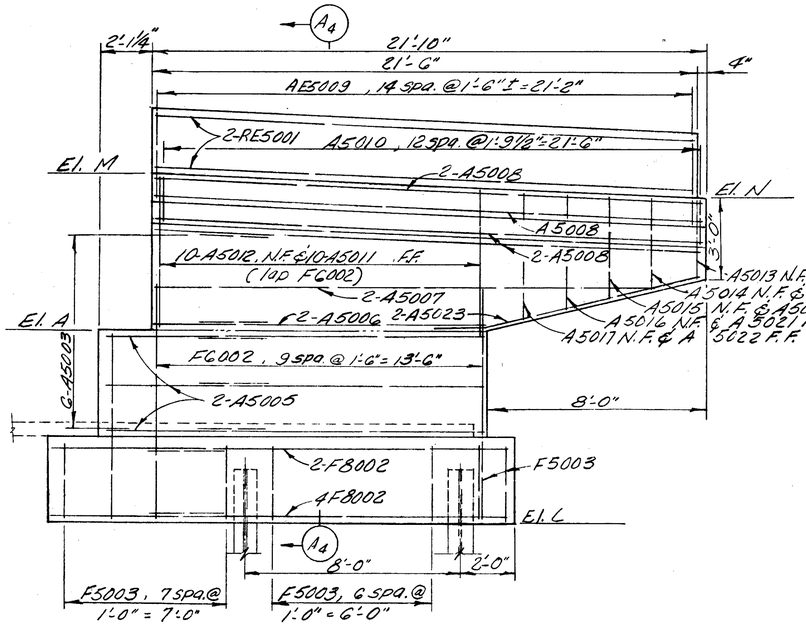
DETAIL "A1"

NOTE: Items above included for payment with Item 608, 6" Concrete Sidewalk.

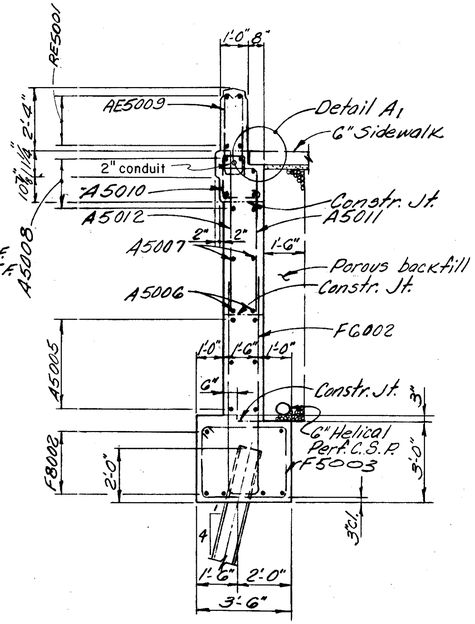
NOTE:
Concrete parapet shall be included, for payment, with Item 517 Bridge Railings.

For details of Bridge Sidewalk Fence, see Common Details, Sheet No. 328

For additional notes see Sheet No's 4|10 & (231A/347)



ELEVATION A3-A3



SECTION A4-A4

TABLE OF ELEVATIONS

Location	El. A	El. E	El. L	El. M	El. N	El. P	El. Q
N. Abut.	752.20	751.87	744.80	757.80	757.06	756.66	757.05
S. Abut.	751.60	751.23	744.20	757.20	756.31	755.92	756.81

For conduit in wingwalls, see std. dwg HL-5

5|10

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

ABUTMENT DETAILS

BRIDGE No. CUY-480-0573

WEST 227th ST. (extended) OVER I-480

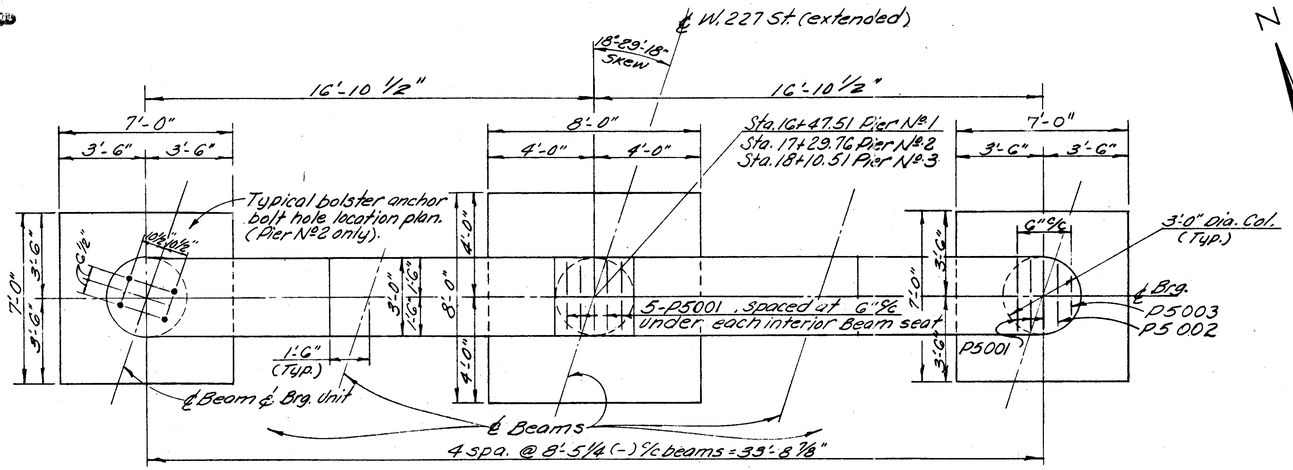
CUYAHOGA COUNTY STA. 15+87.64
STA. 18+69.38

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R.T.		R.S.S.	G.M.M.	7/24/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

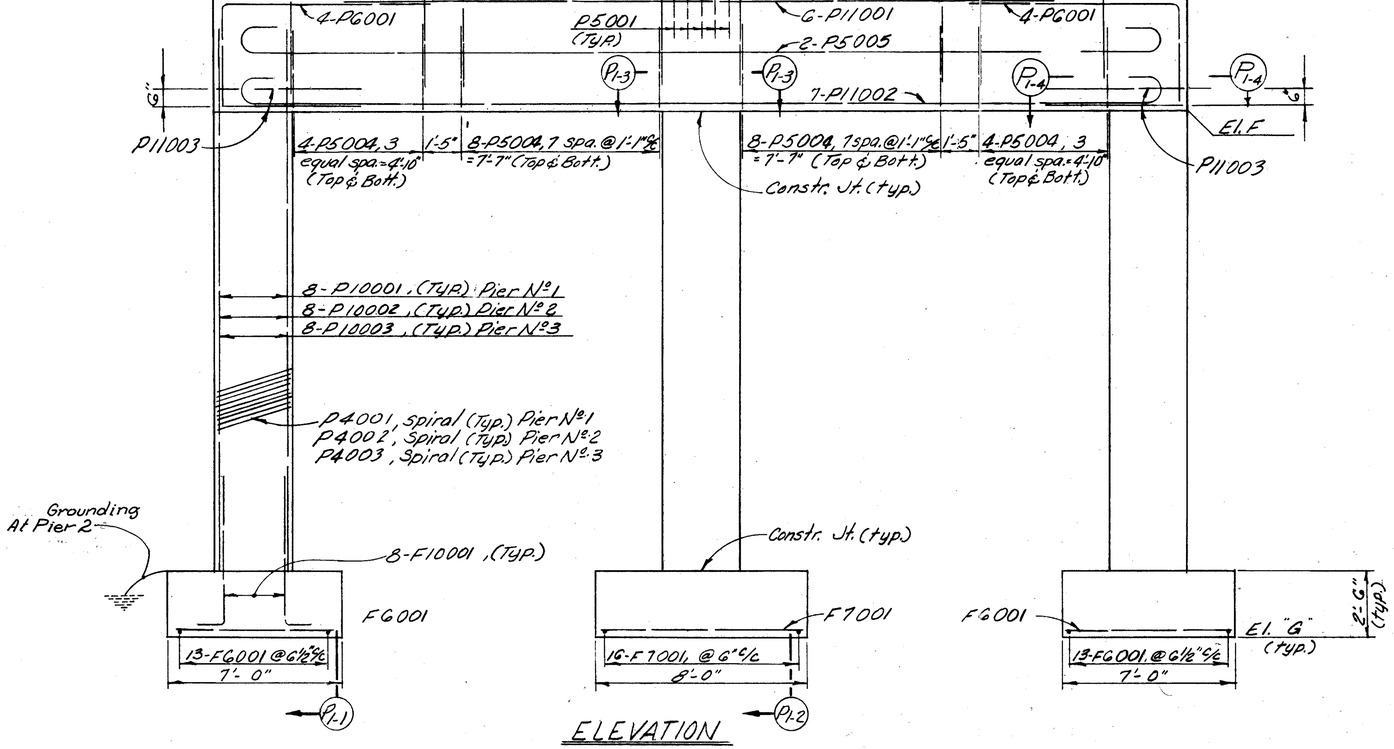
297/347

CUYAHOGA COUNTY
CUY-480-4.86



FOR ADDITIONAL GENERAL NOTES SEE SHEET 231A/347

PLAN



ELEVATION

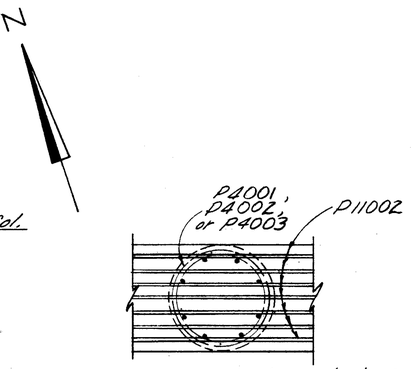
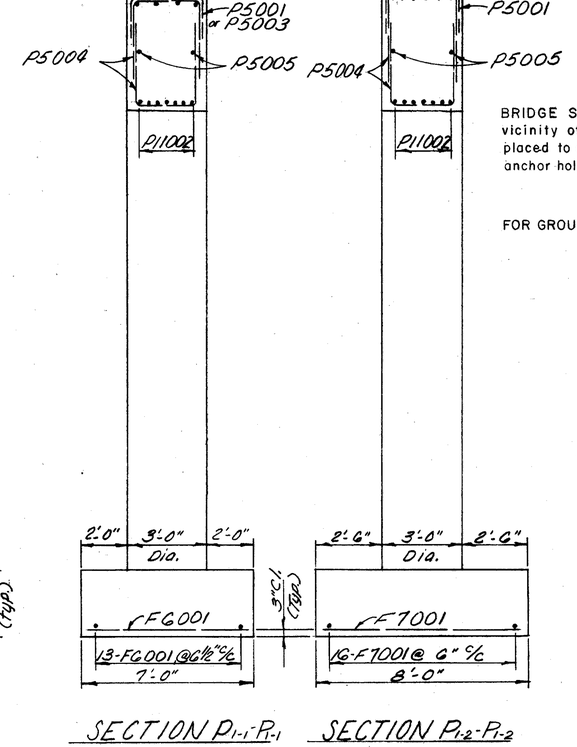


TABLE OF BEAM SEAT ELEVATIONS							
		.33	.16	.47	.35		
Location	A	B	C	D	E	F	G
Pier No. 1	752.42	752.61	752.79	752.72	752.65	748.92	728.5
Pier No. 2	753.85	753.47	753.59	753.46	753.33	749.83	729.0
Pier No. 3	752.73	752.90	753.13	753.05	752.97	749.23	729.0
		.97	753.05	752.96	.79		



SECTION P1-1-P1-1 SECTION P1-2-P1-2

BRIDGE SEAT REINFORCING: Reinforcing steel in the vicinity of the bridge seat of pier No. 2 shall be accurately placed to avoid interference with the drilling of bearing anchor holes or the pre-setting of bearing anchors

FOR GROUNDING DETAILS, SEE STD. DWG HL-7.

G 10

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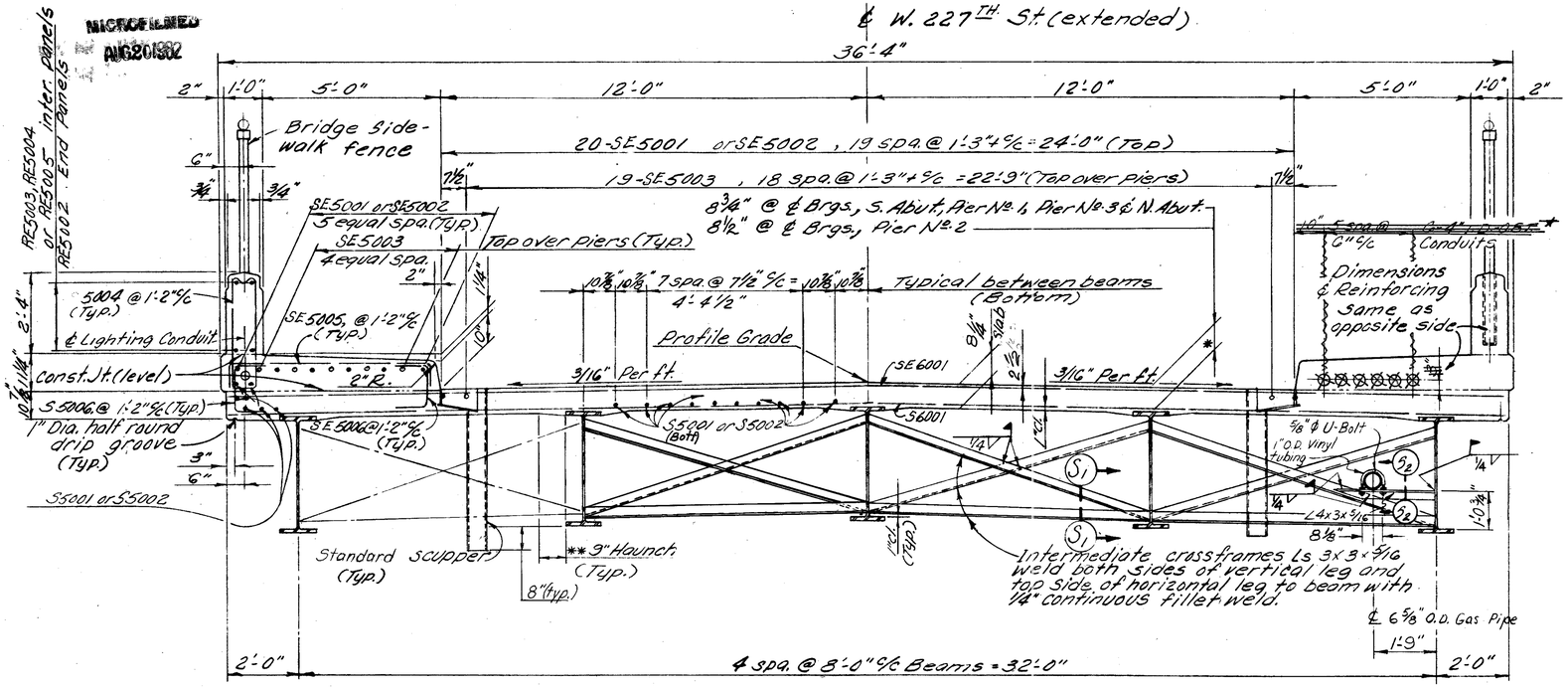
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER DETAILS

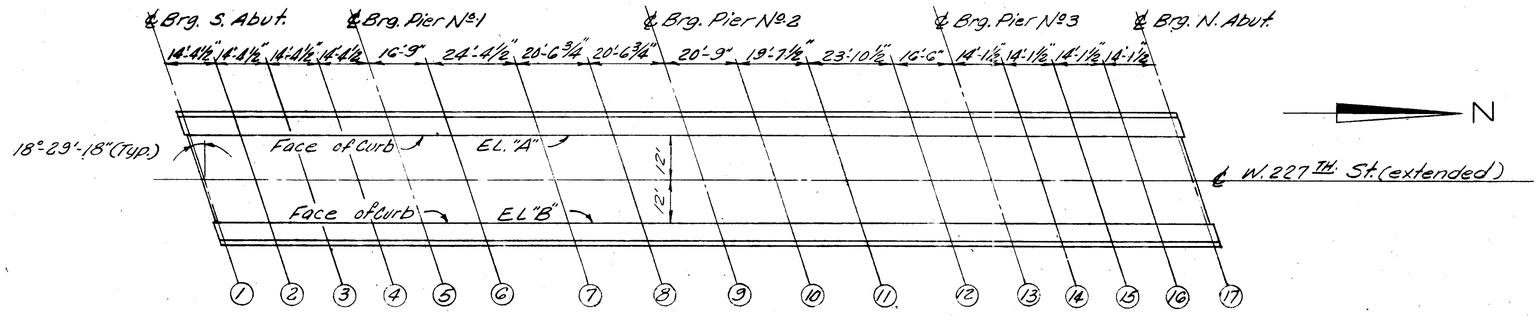
BRIDGE № CUY-480-0573
WEST 227th ST. (extended) OVER I-480
CUYAHOGA COUNTY STA. 15+87.64
STA. 18+69.38

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		G.W.M.	G.W.M.	7/26/78	9-12-78



TRANSVERSE SECTION

NOTE: 6⅝" O.D. Gas Pipe, ⅝" ℄ U-Bolt, washers, nuts, vinyl tubing, and polypropylene pad to be furnished and installed by the East Ohio Gas Company.



DECK ELEVATIONS

NOTE: The deck elevations shown are those which are required prior to placing of the concrete deck. Proper allowance has been made for the dead load deflection caused by the weight of the concrete.

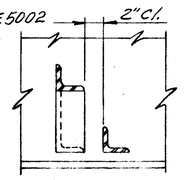
TABLE OF DECK ELEVATIONS

LINE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
ELEV. "A"	755.97	756.47	756.91	757.29	757.62	757.99	758.39	758.57	758.65	758.68	758.62	758.38	758.12	757.88	757.60	757.25	756.84
ELEV. "B"	756.84	756.72	757.14	757.49	757.79	758.12	758.48	758.62	758.67	758.66	758.56	758.27	757.99	757.72	757.41	757.04	756.60

NOTES:

~~Telephone conduit to be supplied and installed by the Ohio Bell Telephone Co.~~

Each longitudinal run of deck reinforcing, excluding SE5003 Bars over the piers, shall be comprised of 9-S5001 or SE5001 and 1-S5002 or SE5002 Bars lapped a minimum of 1'-7".



SECTION S1-S1

* This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

** A typical haunch width of 9" shall be used for all beams in computing quantity of concrete. However the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less then 9" in width.

For scupper details see Standard Dwg. SD-1-69, Sheet No. 3

Longitudinal reinforcing steel shall be field cut as necessary to avoid interference with scuppers. Also epoxy coated bars that are field cut shall be treated as per approved manufacturer's recommendations.

Concrete parapets are included for payment, with Item 511 Bridge Railing

For Bridge Sidewalk Fence Details see "Common Details" Sheet 328

For fence post spacing see sheet 3/10

For transverse slab reinforcing see sheet 8/10

Field bend transverse bars to fit crown. Field bending to be included in Item 509 for Payment. Epoxy coated bars damaged by field bending shall be repaired as per approved manufacturer's recommendations.

For lighting details see std. Constr. Drwgs. HL-3, HL-4, HL-5, HL-7 and sheet 328/347

For additional Fence Details see sh. 328/347

For additional General Notes see sh 231A/347

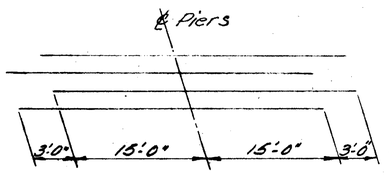


DIAGRAM SHOWING STAGGER OF SE5003, BARS OVER PIERS

7/10

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS
BRIDGE No. CUY-480-0573
WEST 227th. ST. (extended) OVER I-480
CUYAHOGA COUNTY
STA. 15+87.64
STA. 18+69.38

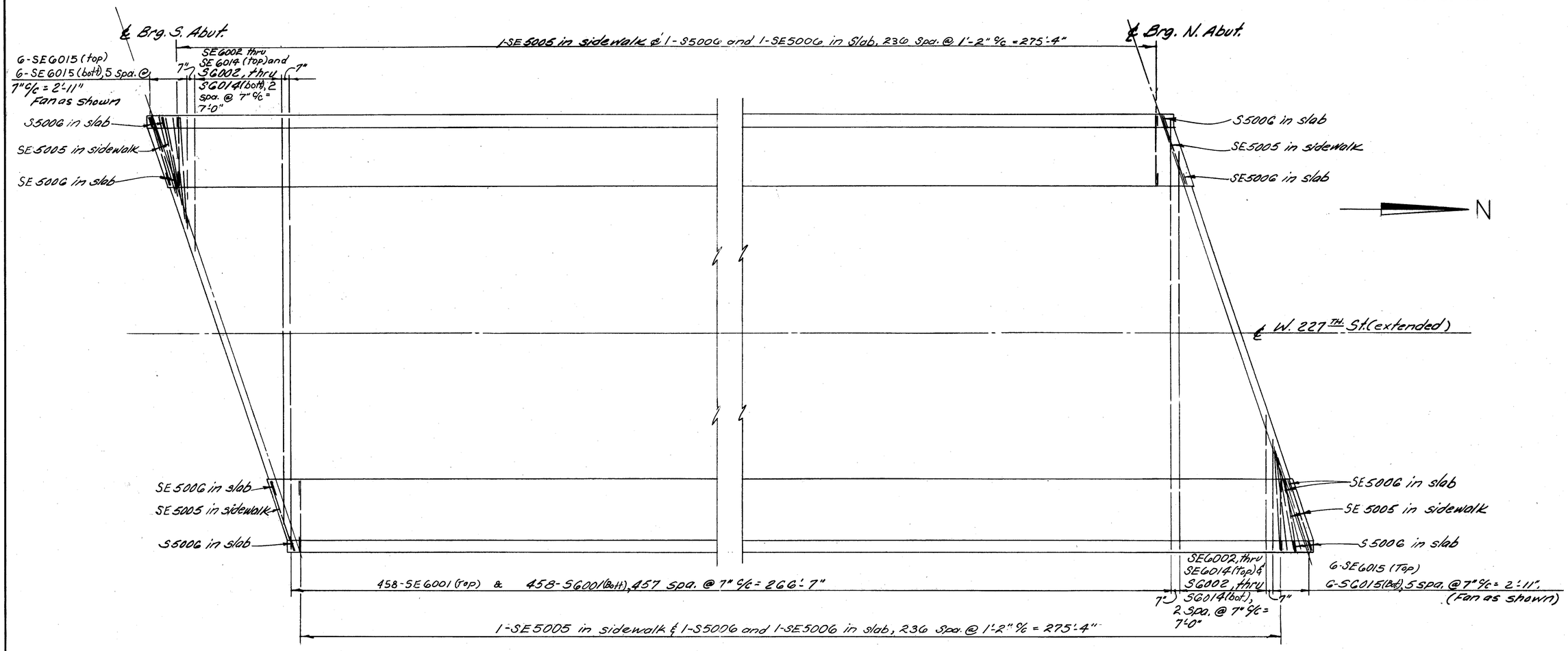
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.S.S.	R.T.		R.J.R.	G.N.M.	7/26/78	

REV. 10-12-78

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

299/347

CUYAHOGA COUNTY
CUY-480-4.86



TRANSVERSE SLAB REINFORCING

NOTE: Transverse Reinforcing Steel shall be placed normal to ℄ of W. 227TH. St. except at acute corners of Slab.

8/10

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS

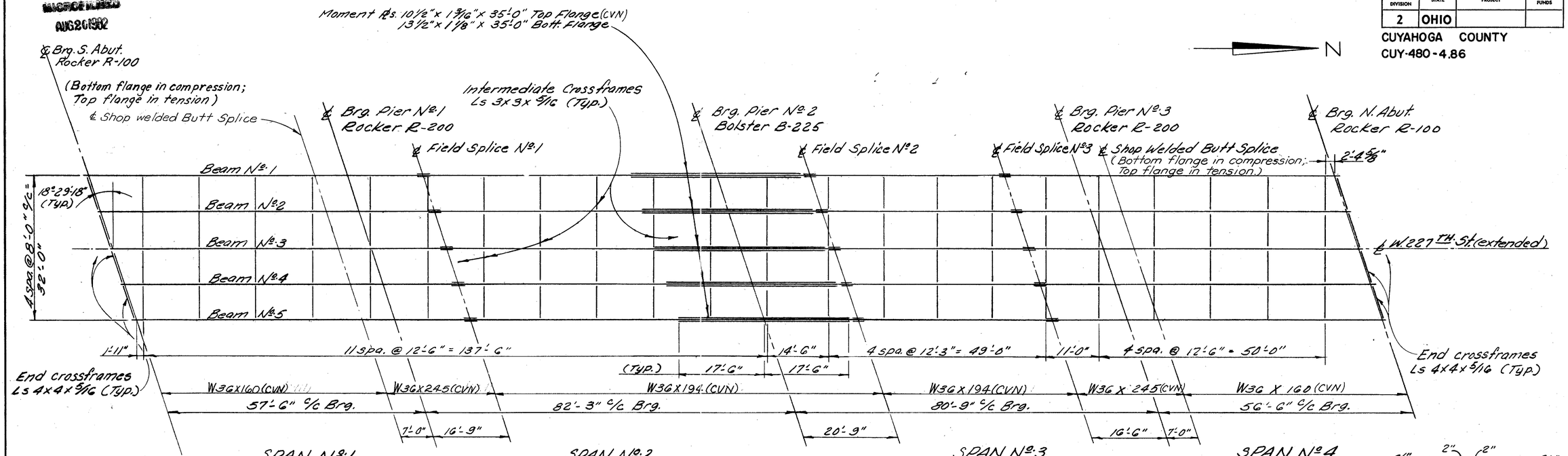
BRIDGE № CUY-480-0573
WEST 227th.ST. (extended) OVER I-480
CUYAHOGA COUNTY STA. 15+87.64 STA. 18+69.38

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		R.J.P.	G.M.M.	7/24/68	

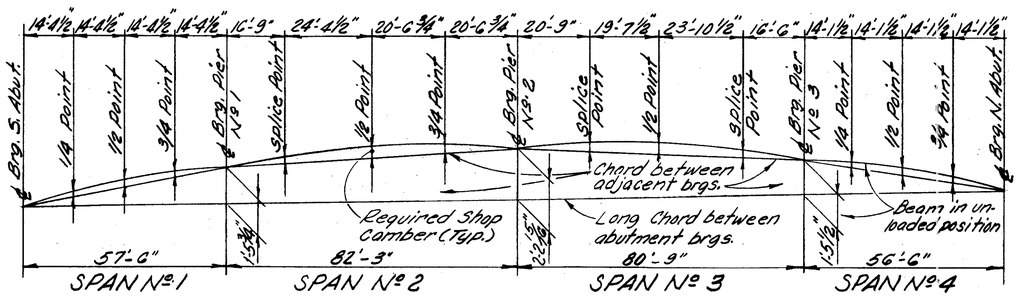
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

300/347



FRAMING PLAN



CAMBER & BLOCKING DIAGRAM

Note: For Cope Hole Detail for shop welded Butt Splice, see sh. 328/347

For additional notes see sheet 231/347

For Shop Welded Butt Splice Detail see Common Details sht. 328

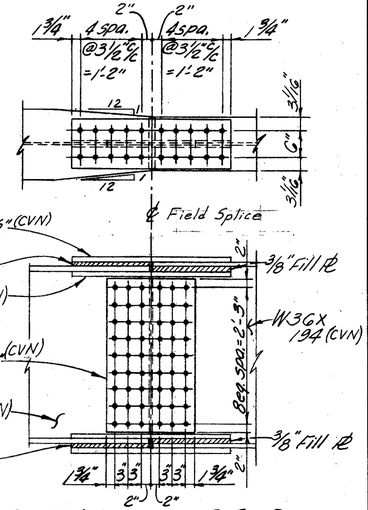
1"ϕ high strength bolts shall be used at the Field Splices. Bolt heads shall be placed on fascia side of exterior beam webs and bottom side of bottom flange. Holes shall be 1 1/16"ϕ. Bolts shall conform to A-325 steel.

Bearings shall be in accordance with std. Dwg. RB-1-55 except that upper plate element shall be beveled to match roadway grade. Tabulated plate thickness C shall apply at centerline of plate.

DEFLECTION AND CAMBER

LOCATION	SPAN No. 1						SPAN No. 2						SPAN No. 3						SPAN No. 4					
	1/4 Pt.		1/2 Pt.		3/4 Pt.		Splice Pt.		1/2 Pt.		3/4 Pt.		Splice Pt		1/2 Pt.		Splice Pt.		1/4 Pt.		1/2 Pt.		3/4 Pt.	
	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.
Deflection due to weight of steel	1/16	1/16	1/16	1/16	0	0	1/16	1/16	1/8	1/8	1/16	1/16	1/16	1/16	1/8	1/8	1/16	1/16	0	0	1/16	1/16	1/16	1/16
Deflection due to remaining dead load	1/4	1/4	1/4	5/16	1/16	1/16	5/16	5/16	5/8	11/16	5/16	5/16	1/4	1/4	1/2	9/16	1/4	1/4	1/16	1/8	1/4	1/4	1/4	1/4
Adjust. Req. for vertical Curve	7/8	7/8	1 3/16	1 3/16	7/8	7/8	1 9/16	1 9/16	2 3/8	2 3/8	1 13/16	1 13/16	1 3/4	1 3/4	2 3/16	2 5/16	1 1/2	1 1/2	13/16	13/16	1 1/8	1 1/8	13/16	13/16
Required shop camber	1 9/16	1 9/16	1 1/2	1 9/16	15/16	15/16	1 15/16	1 15/16	3 1/8	3 3/16	2 5/16	2 3/16	2 1/16	2 1/16	2 1/16	3	1 9/16	1 9/16	7/8	15/16	1 1/16	1 1/16	1 1/8	1 1/8

NOTE: For details of field splice No. 2 see Std. Dwg. No. SD-1-69 Sht. No. 4



DETAILS of FIELD SPLICE No. 1 & No. 3

9/10

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS

BRIDGE No. CUY-480-0573

WEST 227th ST (extended) OVER I-480

CUYAHOGA COUNTY STA. 15+87.64
STA. 18+69.38

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		R.J.P.	G.W.M.	7/24/82	

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				ABUTMENTS						
A 5001	34	37- 0	1312	ST						
A 5002	50	4-11	256	1		1- 6	2- 2	1- 6		
A 5003	24	5- 0	125	ST						
A 5004	50	7- 2	374	1		2- 0	3- 5	2- 0		
A 5005	24	15- 4	384	ST						
A 5006	8	13- 6	113	ST						
A 5007	8	19- 8	164	ST						
A 5008	28	21- 6	628	ST						
A 5010	52	4- 5	240	2	0-10	1- 4	1- 5	0- 8	0- 8	
A 5011	40	5- 7	233	1	1- 6	4- 3				
A 5012	48	4- 9	238	ST						
A 5013	4	2- 8		ST						1
THRU			74		VARY LENGTH BY			0- 5	1/ 4	
A 5017	4	4- 5		ST						1
A 5018	4	3- 6		1	1- 6	2- 2				1
THRU			91		VARY LENGTH BY			0- 5	1/ 4	
					VARY DIM. B BY			0- 5	1/ 4	
A 5022	4	5- 3		1	1- 6	3-11				1
A 5023	8	9- 3	77	12	7- 9	1- 6		0- 4		
A 6001	52	15- 1	1178	2	4- 6	1- 5	6- 0	0-11	2-11	
A 6002	40	16-10	1011	2	6- 4	1- 5	6-10	0-11	2- 0	
D 8001	36	5- 8	545	20	3-6	0-3½"	1-6½"			
F 5001	50	7- 0	365	1		6- 6	0- 8			
F 5002	50	8- 4	435	1		1- 7	5- 5	1- 7		
F 5003	68	12- 1	857	3	2- 7	3- 2	2- 7	3- 2		
F 5004	8	4- 3	35	ST						
F 6001	50	14- 2	1064	1		2- 7	5- 5	6- 6		
F 6002	40	16-10	1011	1		8- 0	1- 2	8- 0		
F 8001	14	37- 1	1386	ST						
F 8002	24	18- 1	1159	ST						
				PIER						
P 4001	3	17-11	1016	17	NO. TURNS= 51			NO. SPACERS= 12		6
P 4002	3	18- 4	1036	17	NO. TURNS= 52			NO. SPACERS= 12		6
P 4003	3	17- 9	998	17	NO. TURNS= 50			NO. SPACERS= 12		6
P 5001	63	5- 5	356	1		1- 6	2- 8	1- 6		
P 5002	6	5- 1	32	1		1- 6	2- 4	1- 6		
P 5003	6	4- 5	28	1		1- 6	1- 8½	1- 6		
P 5004	144	8- 9	1314	1		3- 2	2- 8½	3- 2		
P 5005	6	34-11	219	10	33- 9					
P 6001	24	11- 3	406	1	8- 3	3- 2				
P10001	24	20-11	2160	ST						
P10002	24	21- 4	2203	ST						
P10003	24	20- 9	2143	ST						
P11001	18	26-11	2574	ST						
P11002	21	36-11	4119	10	33- 9					
P11003	12	10- 6	669	7	3- 7	3- 7	1- 0			
F 6001	156	6- 6	1523	ST						
F 7001	96	7- 6	1472	ST						
F10001	72	6- 7	2040	1		5- 6	1- 5			

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				SUPERSTRUCTURE						
S 5001	432	30- 0	13517	ST						
S 5002	48	22- 6	1126	ST						
S 5006	480	2- 4	1168	1		0- 8	1- 3	0- 8		
S 6001	458	35- 8	24536	ST						
S 6002	2	32-11		ST						1
THRU			877		VARY LENGTH BY			1- 8	7/ 8	
S 6014	2	12- 0		ST						1
S 6015	12	10- 3	185	ST						
				EPOXY COATED RAILING BARS						
RE5001	16	21- 2		ST						2
RE5002	16	13-11		ST						2
RE5003	56	15- 3		ST						2
RE5004	168	4-10		ST						2
RE5005	40	5-11		ST						2
				LIGHT POLE SUPPORTS						
L 501	8	3-1	26	1		0-7½	2-1	0-7½		4
L 502	8	9-4	78	1		3-9	2-1	3-9		4
L 503	14	8-0	116	16		0-6	2-1	1-4	2-1	4
L 504	8	3-9	32	ST						4
				EPOXY COATED REINFORCING STEEL-SUPERSTRUCTURE						
SE5001	288	30-0	9012	ST						5
SE5002	32	22-6	751	ST						5
SE5003	87	33-0	2994	ST						5
SE5005	480	6-9	3379	1		0-8	5-8	0-8		5
SE5006	480	2-4	W68	1		0-8	1-3	0-8		5
SE5004	480	7-4	3671	8		3-0		3-7	0-7	
SE6001	458	35-8	24536	ST						5
SE6002	2	32-11		ST						1,5
THRU			877		VARY LENGTH BY			1-8⅞		
SE6014	2	12-0		ST						1,5
SE6015	12	10-3	185	ST						5
				EPOXY COATED REINFORCING STEEL-ABUTMENTS						
AE5009	60	5'-9"	360	8		2-2		2-2	0-8	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

301
347

CUYAHOGA COUNTY
CUY-480-4.86

NOTES

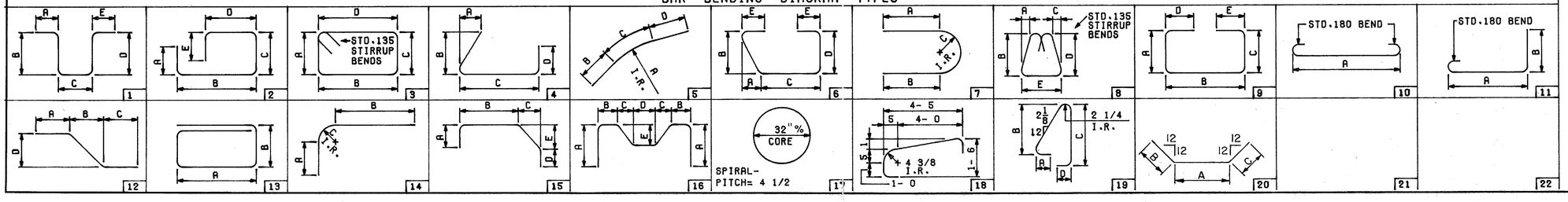
1. INDICATES SERIES BAR. EACH BAR VARIES FROM ADJACENT BAR(S) BY TABULATED AMOUNT(S), CALCULATED TO NEAREST 1/8 INCH. WEIGHT SHOWN IS FOR ENTIRE SERIES UTILIZING AVERAGE LENGTH.
2. BARS INCLUDED WITH ITEM 517, RAILING, FOR PAYMENT.
3. COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.
4. LIGHT POLE SUPPORT BARS INCLUDED WITH ITEM 509 FOR PAYMENT.
5. BARS ARE TO BE EPOXY COATED AS PER PROPOSAL NOTE.
6. 'LENGTH' SHOWN FOR SPIRAL BARS IS DISTANCE FROM TOP OF FOOTING TO BOTTOM OF PIER CAP.
'NO. TURNS' SHOWN IS 'LENGTH' DIVIDED BY PITCH, PLUS 3 TURNS (NUMBER OF CLOSED COILS), EXPRESSED AS NEAREST WHOLE NUMBER.
SPIRAL BARS MAY HAVE DEFORMATIONS AND SHALL IN OTHER RESPECTS CONFORM TO ITEM 509. 1 1/2 CLOSED COILS SHALL BE PROVIDED AT ENDS OF EACH SPIRAL UNIT. FOUR STEEL CHANNEL, TEE OR ANGLE SPACERS, WEIGHING APPROXIMATELY 0.80 LB. PER LIN. FT. OF SPACER SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG PERIPHERY OF COIL. WEIGHT OF SPACERS, AT 0.80 LB. PER LIN. FT. WILL BE PAID FOR AS REINFORCING STEEL AND IS INCLUDED IN TABULATED WEIGHT. OTHER DETAILS IN ACCORDANCE WITH CRSI STANDARD PRACTICE.

FOR ADDITIONAL GENERAL NOTES
SEE SHEET 231A 747

BAR SIZE DESIGNATION

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE FOUR DIGITS ARE USED, AND FIRST TWO DIGITS WHERE FIVE DIGITS ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A7001 IS A NO. 7 SIZE BAR AND A10140 IS A NO. 10 SIZE.

BAR BENDING DIAGRAM TYPES



10/10

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

REINFORCING STEEL LIST
BRIDGE NO. CUY-480-0573
WEST 227th.ST. (extended) OVER I-480
CUYAHOGA COUNTY STA. 15+87.64 STA. 18+69.38

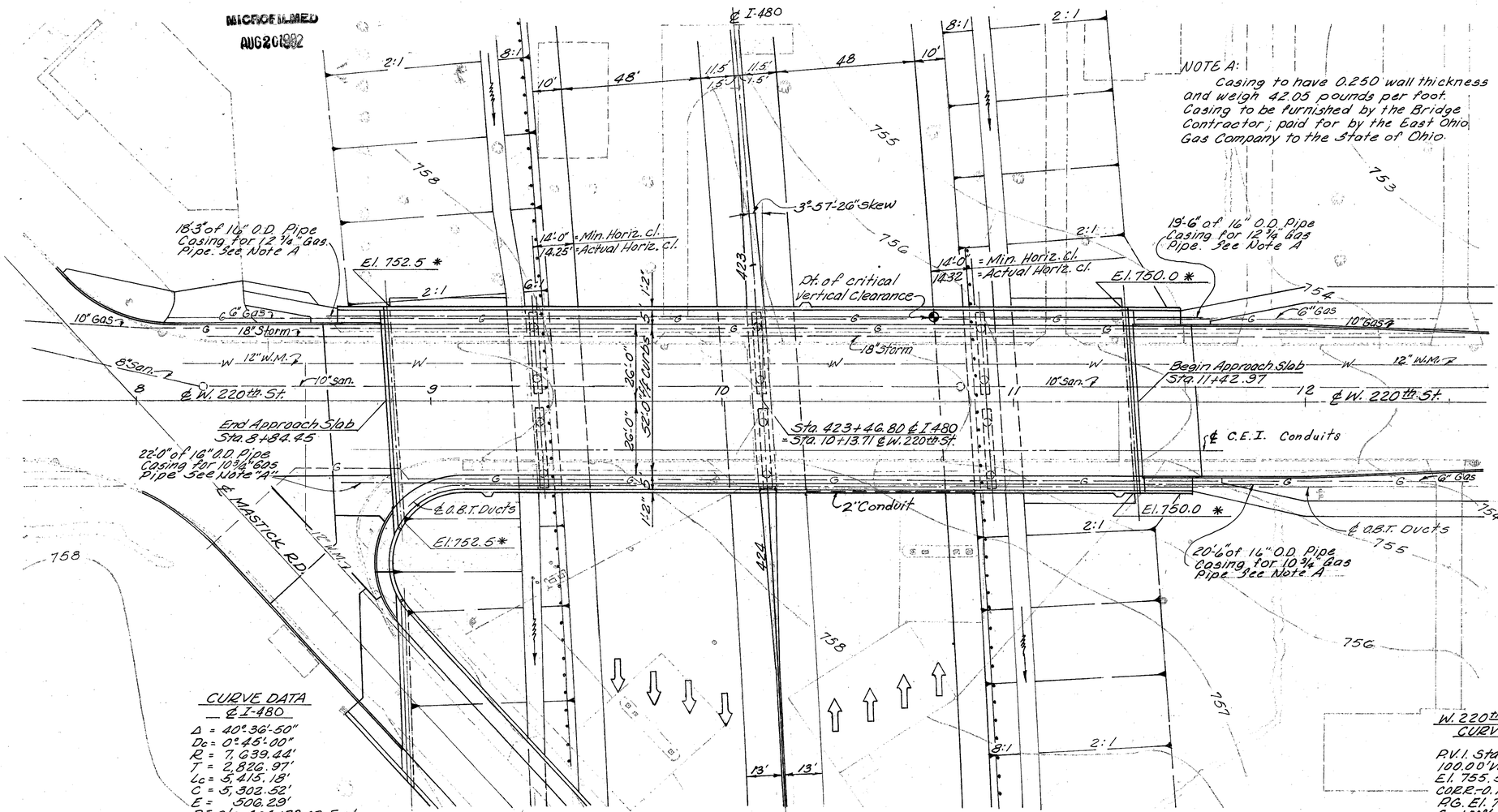
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.			R.J.P.	G.W.M.	6-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

302
347

CUYAHOGA COUNTY
CUY -480-4.86

NOTE A:
Casing to have 0.250 wall thickness and weigh 42.05 pounds per foot. Casing to be furnished by the Bridge Contractor; paid for by the East Ohio Gas Company to the State of Ohio.



NOTE:
For disposition of existing utilities see shts Nº 52&53
For additional General Notes see sheet 231A (347)

CURVE DATA ℄ I-480

Δ = 40°-36'-50"
Dc = 0°-45'-00"
R = 7,639.44'
T = 2,826.97'
Lc = 5,415.18'
C = 5,302.52'
E = 506.29'
P.I. Sta. 404+72.02 Fwd.
P.I. Sta. 407+10.78 Back

* Elevations marked thus are top of slope protection at face of Abutment Wall.

W. 220th St. VERTICAL CURVE DATA

P.V.I. Sta. 12+00
100.00' V.C.
El. 755.52
CORR.-0.18
P.G. El. 755.34
G1-1.00% G2 - 2.44%

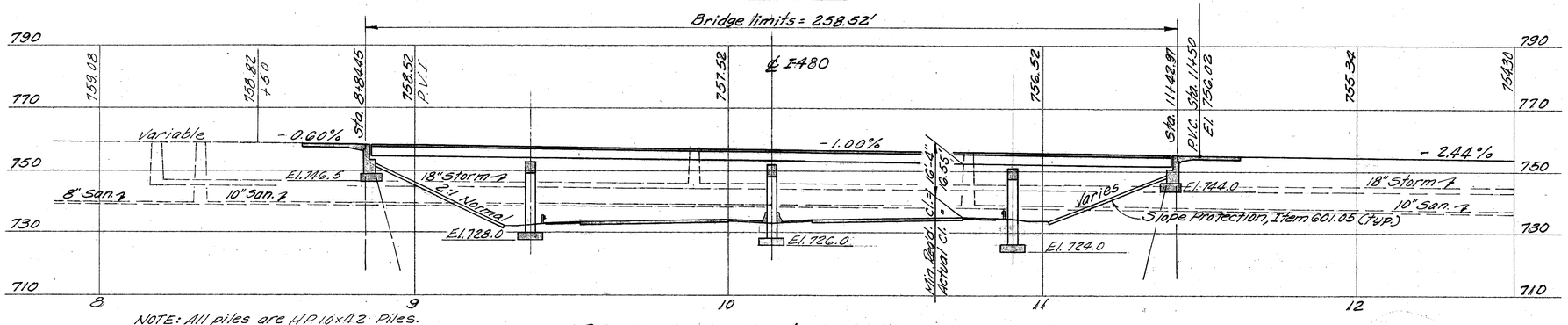
PROPOSED STRUCTURE

TYPE: Continuous steel beam with reinforced concrete deck and substructure.
SPANS: 50'-0", 77'-0", 77'-0", 50'-0" ℄ Brgs.
ROADWAY: 52'-0" f/f curbs, 5'-0" sidewalks with concrete parapets and 4' chain link fence.
LOADING: H S 20-44 and the alternate Military Loading
WEARING SURFACE: Monolithic Concrete
SKEW: 3°-57'-26" Rt. forward
ALIGNMENT: Tangent
APPROACH SLABS: AS-1-72 (20' Long) (Modified)

TRAFFIC ESTIMATE

Design Year - 1987
Total A.D.T. - 15,900

PLAN



NOTE: All piles are HP 10x42 Piles. Estimated average pay lengths for abutments - 15'-6".

PROFILE ALONG ℄ W. 220th ST.

1/12

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SITE PLAN
BRIDGE Nº CUY-480-0612
WEST 220th ST. OVER I-480
CUYAHOGA COUNTY
STA. 8+84.45
STA. 11+42.97

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.W.M.	R.T.		R.J.P.	G.W.M.	7/29/83	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

303/347

CUYAHOGA COUNTY
CUY.-480-4.86

STANDARD DRAWING REFERENCES

DESCRIPTION	DWG. NO.	DATE
STANDARD CONSTRUCTION DRAWING	HL-3	REV. 7-27-73
" " "	HL-4	REV. 1-21-76
" " "	HL-5	REV. 9-6-73
STANDARD CONSTRUCTION DRAWING	HL-7	REV. 1-21-76
" " "	HL-17A	REV. 4-6-73
" " "	HL-17B	REV. 4-6-73

SUPPLEMENTAL SPECIFICATION REFERENCES (CONTINUED)

DESCRIPTION	NO.	DATE
PAINTING FOR NEW STRUCTURAL STEEL	846	4-25-77
INORGANIC ZINC SILICATE PAINT	950	4-25-77
BLUE-GREEN VINYL PAINT	951	4-25-77

STANDARD DRAWING REFERENCES

DESCRIPTION	DWG. NO.	SHT.	DATE
END DAM AND END CROSSFRAME	SD-1-69	1-2	6-12-69
CURB PLATES	SD-1-69	2	6-12-69
SCUPPERS	SD-1-69	3	6-12-69
MOMENT PLATES	SD-1-69	3	6-12-69
BOLTED SPLICES	SD-1-69	4	6-12-69
ROCKERS AND BOLSTERS	RB-1-55		2- 2-59 R
APPROACH SLABS	AS-1-72		6-30-72 R

(R INDICATES REVISED DATE)

SUPPLEMENTAL SPECIFICATION REFERENCES

DESCRIPTION	NO.	DATE
CHEMICAL ADMIXTURE FOR CONCRETE, TYPE A, B OR D	808	1- 1-71
CONCRETE CURING AND PROTECTIVE MEMBRANE	836	3-12-75

COMMON DETAIL REFERENCES

CONTRACTION JOINTS	SHEET	328
BRIDGE SIDEWALK FENCE	SHEET	328

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE 'STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES' ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS, 1969, INCLUDING THE OHIO 'SUPPLEMENT' TO THESE SPECIFICATIONS.

DESIGN DATA

DESIGN LOADING - HS20-44 and the Alternate Military Loading
CONCRETE CLASS C - UNIT STRESS 1200 PSI FOR SUPERSTRUCTURE
UNIT STRESS 1333 PSI FOR SUBSTRUCTURE
STRUCTURAL STEEL - ASTM A36 - UNIT STRESS 20000 PSI
REINFORCING STEEL - ASTM A615, A616 OR A617 - UNIT STRESS 20000 PSI. SPIRAL REINFORCEMENT MAY BE PLAIN BARS ASTM A82 OR A615.

PILES

PILES SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF-
35 TONS PER PILE FOR THE ABUTMENTS AND WINGWALLS

FOUNDATION BEARING PRESSURE

PIER FOOTINGS ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 5.0 TONS PER SQ. FT.

FOOTINGS

FOOTINGS SHALL EXTEND A MINIMUM OF 3 INCHES INTO SOUND SHALE OR TO THE ELEVATION SHOWN, WHICHEVER IS LOWER.

UTILITY LINES

ALL EXPENSE INVOLVED IN RELOCATING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNERS. THE CONTRACTOR AND OWNERS ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WOULD BE HELD TO A MINIMUM.

FOR ADDITIONAL GENERAL NOTES SEE SHEET 231A/347

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	PIERS	SUPER	GENERAL
503	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING				LUMP
503	654	C.Y.	UNCLASSIFIED EXCAVATION	351	303		
503	12	C.Y.	SHALE EXCAVATION		12		
505	LUMP	SUM	TEST PILE				LUMP
507	525	L.F.	STEEL PILES, HP10X42	525			
SPEC	80777	LB	EPOXY COATED REINFORCING STEEL (SEE PROPOSAL NOTE)	282		80495	
509	121690	LB	REINFORCING STEEL	18823	36723	66144	
511	553	C.Y.	CLASS C CONCRETE, SUPERSTRUCTURE (SEE PROPOSAL NOTE)			553	
511	140	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS	140			
511	131	C.Y.	CLASS C CONCRETE, PIER CAPS AND COLUMNS		131		
511	182	C.Y.	CLASS C CONCRETE, FOOTINGS	119	63		
512	15	L.F.	PREMOLDED SEALING STRIP	15			
513	439800	LB	STRUCTURAL STEEL*, PRIMER AS PER 846 (SEE PROPOSAL NOTE)			439800	
846	439800	LB	FIELD PAINTING OF STRUCTURAL STEEL *			439800	
517	580.83	L.F.	BRIDGE RAILING (CONCRETE PARAPET WITH 4FT.-0 INCH CHAIN-LINK FENCE AS PER PLAN	67.04		513.79	
518	67	C.Y.	POROUS BACKFILL	67			
518	14	EA	SCUPPERS INCLUDING SUPPORTS			14	
518	145	L.F.	6 INCH PERFORATED, HELICAL CSP, 707.01	145			
518	88	L.F.	6 INCH NON-PERFORATED, HELICAL CSP, INCLUDING SPECIALS, 707.01	88			
601	817	S.Y.	CRUSHED AGGREGATE SLOPE PROTECTION				817
S625			SEE SHEET 213 FOR LIGHTING SUMMARY				
808	553	UNIT	CHEMICAL ADMIXTURE FOR CONCRETE, TYPE A, B OR D			553	
SPEC	81	L.F.	16 INCH O.D. STEEL PIPE 0.25 INCH WALL THICKNESS**				81
		*	2830 LBS. TO BE PAID FOR BY THE CLEVELAND ELECTRIC ILLUMINATING COMPANY.				
		*	450 LBS. TO BE PAID FOR BY THE EAST OHIO GAS COMPANY.				
		**	TO BE PAID FOR BY THE EAST OHIO GAS COMPANY.				

APPROACH SLABS: MODIFY AS-1-72 BY INCREASING THE COVER OVER THE TOP BARS TO 3" AND OMITTING THE JACKING HOLES.

2/12

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

GENERAL NOTES AND ESTIMATED QUANTITIES

BRIDGE NO. CUY 480-0612
WEST 220th. ST. OVER I-480
CUYAHOGA COUNTY STA. 8+84.45 STA. 11+42.97

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.B.C.			R.S.S.	G.W.M.	7/24/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

304
347

N

Bridge Limits 258'-6¼"

50'-0" c/c Brg. | 77'-0" c/c Brg. | 77'-0" c/c Brg | 50'-0" c/c Brg.

6'-0" 2 spa. @ 15'-0" c/c Standard Scuppers

3°57'26" Skew

Sta. 10+29 Light Standard

3 spa. @ 11'-6" Standard Scuppers 1'-0"

face of curb

12" 5'-0" SW

26'-0" 52'-0" Curbs @ 64'-4" %

5'-0" SW 1'-2"

℄ Brg South Abutment Sta. 8+86.71

℄ Brg Pier No. 1 Sta. 9+36.71

Sta. 423+46.80 ℄ I-480 Sta. 10+13.71 ℄ West 220th St.

℄ Brg Pier No. 3 Sta. 10+90.71

℄ Brg North Abutment Sta. 11+40.71

End Approach Slab Sta. 8+84.45

Begin Approach Slab Sta. 11+42.97

Along Tan. 6'-0" 2 spa. @ 15'-0" c/c Standard Scuppers

3 Spa. @ 11'-6" c/c Standard Scuppers 4'-0"

face of curb

2" Conduit

Sta. 11+36 Light Standard

Limits of slope protection (Typ.)

Match Line for Fence Post Spacing

42°5" PC Sta. 9+11.32

Sta. 9+20 Light Standard

Note:
Top rail of fence shall be curved to match the parapet

GENERAL PLAN

Note:
Scupper spacing shall be adjusted to clear intermediate crossfromes by a minimum of six inches.

289'-4" % West parapet

36 Spaces @ 8'-0" % Fence posts = 288'-0" (West parapet)

32 Spaces @ 8'-0" % Fence posts = 256'-0" (East parapet)

292'-8" (From match line to end of East parapet)

8" | 1'-1" Match Line | 2 spa. @ 8'-0" c/c = 16'-0" | 3 spa. @ 6'-4" c/c = 19'-0" | 8" | 7"

15'-8 5/16" | 12'-4 9/16" | 16'-0" | 7 equal spaces = 40'-0" | 2 spa. @ 16'-0" c/c = 32'-0" | 7 equal spaces = 48'-0" | 2 spa. @ 16'-0" c/c = 32'-0" | 7 equal spaces = 48'-0" | 16'-0" | 10'-7 7/16" | 17'-7 1/4" | West parapet def'lec. Joint spc'g.

3½" open Joint | 15'-0" | 16'-0" | 16'-0" | 7 equal spaces = 40'-0" | 2 spa. @ 16'-0" c/c = 32'-0" | 7 equal spaces = 48'-0" | 2 spa. @ 16'-0" c/c = 32'-0" | 7 equal spaces = 48'-0" | 16'-0" | 11'-4 3/8" | 17'-8 5/8" | East parapet def'lec. Joint spc'g.

RE-5011 F.F. RE-5012 N.F. | RE5013 F.F. RE-5014 N.F. | RE-5004 | RE-5003 | RE-5005 | RE5003 | RE-5005 | RE5003 | RE5010 | 1" open joint

Exp. Brgs. | Fixed Brgs. | Exp. Brgs.

El. 746.5 South abutment

Slope protection Item 601.05 (Typ.)

El. 728.0 Pier No. 1

El. 726.0 Pier No. 2

El. 724.0 Pier No. 3

El. 722.0 North abutment

ELEVATION

3/12

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

GENERAL PLAN
BRIDGE No. CUY-480-0612
WEST 220th ST. OVER I-480
CUYAHOGA COUNTY
STA. 8+84.45
STA. 11+42.97

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R S S	R.V.		R.J.P.	G.W.M.	7/24/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

305
347

CUYAHOGA COUNTY
CUY-480-4.86

6" min. sidewalk slab reinforced with 6×6-W5×W5 Welded wire fabric sec. 709.10. Welded wire fabric shall be included for payment with Item 608, 6" Reinforced Concrete Sidewalk.

N

6" Curb
3"-S.W. Seat
1½" preformed expansion joint filler & joint sealer See Detail A, Sht. No. 7 | 12
6'-2"
5'-0"
2"
R=30'-0" to face of curb
24°-00'-00"
15'-0" along ℄ Parapet
12'-4"
2'-0"
A4
See South Abutment Details, Cuy-480-0614, Sheet 6 | 14
A2
℄ W. 220th St.
3°-57'-26"
36'-10 3/8"
Match Line see Sht. 5 | 12
14'-0"
27°-44'-38"
3°-57'-26" ℄ Rocker
℄ beam
44-D8001 43 SPA. @ 1'-6"
64'-6"
5-A5003 @ 6" c/c Typ each beam seat
6" I.D. Pipe Sleeve
23'-3"
Abutment Ref. Line
6"
2'-0"
1'-6" 1'-6" Typ.
3½"
9'-6" c/c beams
3°-57'-26"
29'-1 1/16"
43'-5 3/4"
43'-0"
75'-8½"

PLAN

5-AG002 @ 1'-0" c/c = 4'-0"
1C-AG001 @ 1'-0" c/c = 15'-0"
6-4" PVC Conduits
2-A5001
El. 758.17 *
Approach Slab Seat
A5032 N.F. A5029 F.F.
El. 757.03
Constr. Jt.
2-A5004
El. 755.59
El. 753.63 ③
El. 753.67 ①
4-A5032 N.F. A5029 F.F.
A5032 N.F. A5029 F.F.
A5002, to lap F5002
5-A5002, to lap FG001
5-FG001 F.F.
5-F5002 N.F.
6-A5002, to lap FG001
6-FG001 F.F.
6-F5002 N.F.
5-A5004
2-A5004
3-F8004
4-F8004
5-F5001, to lap FG001
6-F5001 to lap FG001
3-F8001
4-F8001
Vert. bars @ 1'-2" c/c
Vert. bars @ 1'-4" c/c
8 spa. @ 5'-10" c/c piles, Front row = 12'-0"
11'-8" c/c piles, Back row
7'-9" c/c piles, Front row
23'-3"
1/2" Preformed expansion Joint
El. 746.5

ELEVATION

* Elevations marked with an asterisk are roadway elevations at the face of backwall and face of curb and at high point.

15'-0"
2'-0"
10 - AE5014 @ 1'-6" c/c
9 - A5015 @ 1'-10" + c/c
RE5008, N.F.
RE5009, F.F.
A7
A5008 N.F.
A5027 F.F.
A5008, N.F.
A5033, F.F.
A5033
A5027 F.F. & A5008 N.F.
10 3/8"
El. 757.45
10 3/8"
A5016 N.F. & A5017 F.F. @ 2'-0" c/c
2'-0"
5-A5016, N.F. & 5-A5017, F.F. to lap FG004
El. 753.63 ③
A5026 N.F. & A5010 F.F.
3-A5012, N.F.
3-A5030 F.F.
2 eq. spa.
FG003
5-FG004 @ 1'-6" c/c
2-F8003
El. 746.5
A7
4 F8003
2'-0" ±
9-F5004 @ 1'-0"

VIEW A4-A4

RE5008 or RE5009
2" 1'-0" 8"
AE5014
A5027
6" Conc. S.W.
A5015
2" Conduit
A5033
A5017
A5008, 2" 2"
A5033
A5008, A5016 A5008,
A5012
1'-0" Min.
1'-6"
1'-0" Min.
FG004
6"
3"
A5030
3'-3"
F8003
2'-0"
3'-0"
2'-0" ±
4'-9"
F5004

SECTION A7-A7

4 | 12

In reinforcing callouts:
N.F. indicates near face
F.F. indicates far face

For additional notes see Sht. 5 | 12 (23/A 347)
For details of electrical expansion fittings & Coupling and conduit details in wingwall, see Std. Dwg. HL-5

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SOUTH ABUTMENT DETAILS

BRIDGE Nº CUY-480-0612
WEST 220th ST. OVER I-480
CUYAHOGA COUNTY
STA. 8+84.45
STA. 11+42.97

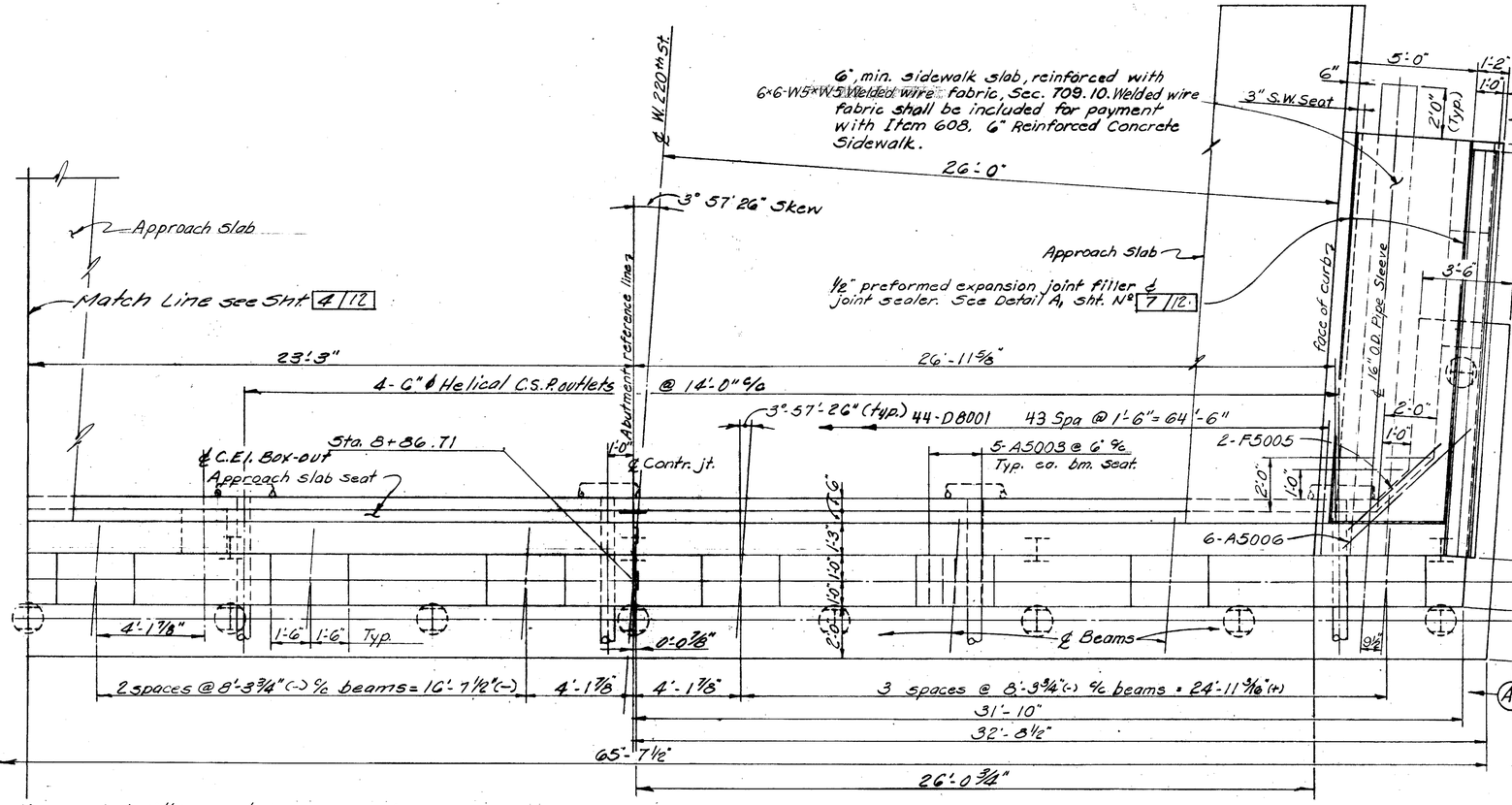
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		B.I.P.	G.W.M. 7/29/68		10-24-79

REV. 10-12-78

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

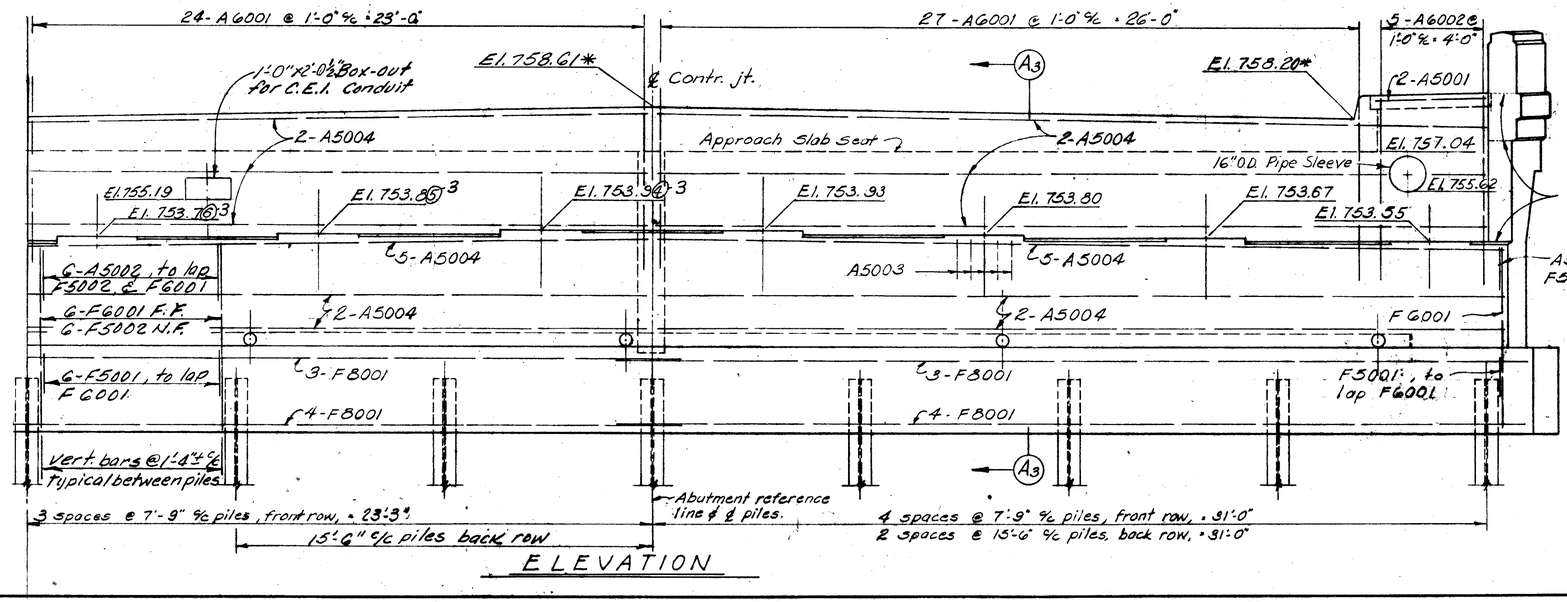
306
347

CUYAHOGA COUNTY
CUY-480-4.86



Elevations marked with an asterisk are roadway elevations at the face of backwall and face of curb and at high point.

PLAN



ELEVATION

N

NOTES:

Porous backfill 1'-6" thick, shall extend up to the plane of the subgrade and laterally to the end of the wing walls.

A joint shall be provided in the abutment portion of the end dam at the contraction joint.

For details of contraction joint see Common Detail Sheet No. 328 347

In reinforcing steel callouts:
N.F. indicates near side
F.F. indicates far side

For additional notes see sht. 6 12.

5 12

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SOUTH ABUTMENT DETAILS

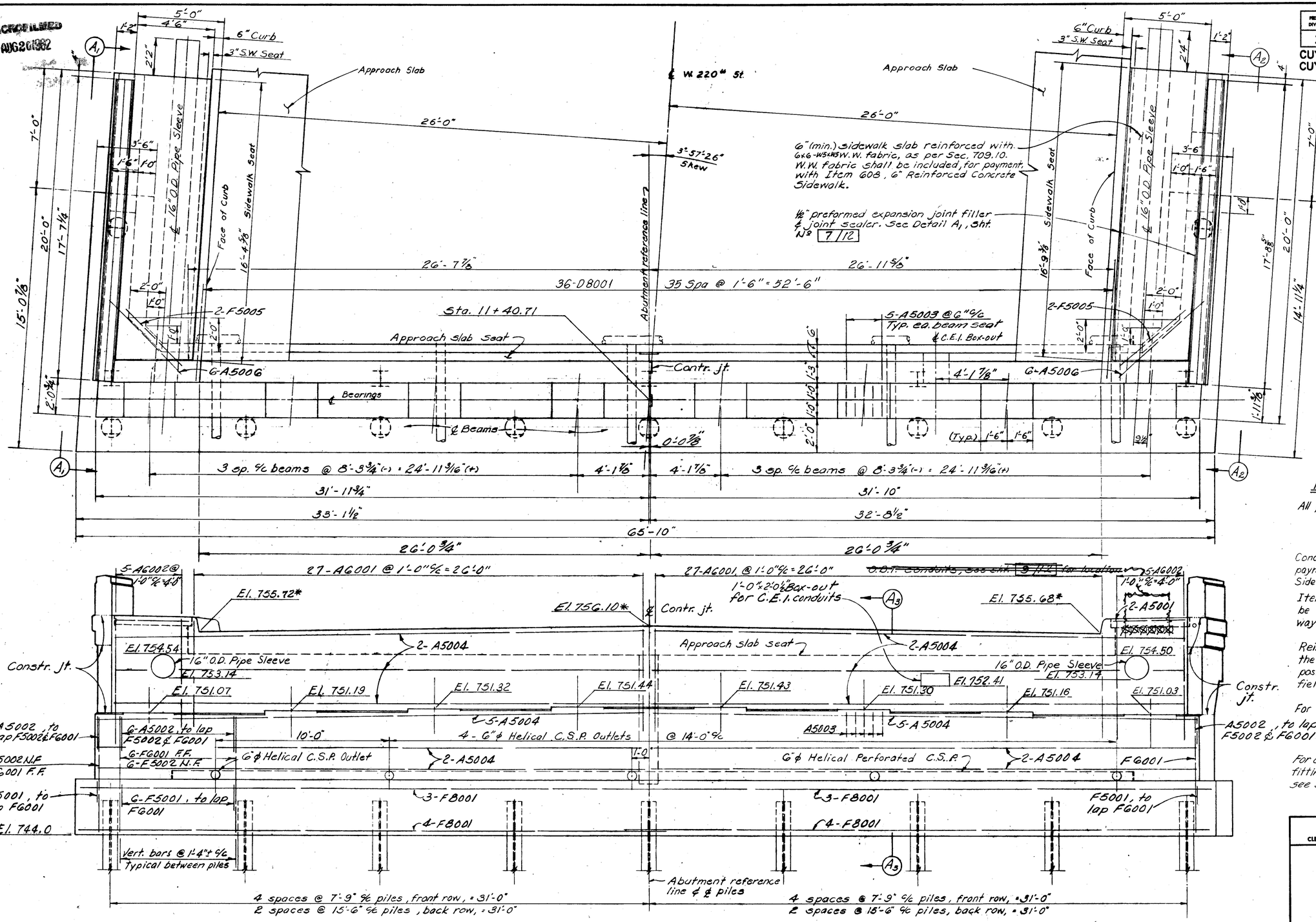
BRIDGE № CUY-480-0612
WEST 220th ST. OVER I-480
CUYAHOGA COUNTY STA. 8+84.45 STA. 11+42.97

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.W.M.	G.W.M.		R.S.S.	G.W.M.	7/20/62	10-24-79

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

307/347



* Elevations marked with an asterisk are roadway elevations at the face of backwall and face of curb and at high point.

ELEVATION

N

NOTES:

All piles shall be HP 10x42
I Vertical piles
Batter piles 1:4

Concrete parapet shall be included for payment with Item Spec., Bridge Sidewalk Fence.

Item 608, 6" concrete sidewalk shall be included for payment with roadway items.

Reinforcing steel in the vicinity of the 16" O.D. pipe sleeve shall be positioned, or cut as necessary, in the field to clear.

For sections & elevations see sht. 7/12

For details of electrical expansion fitting and coupling of abutment see Std Dwg. HL-5.

6/12

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

NORTH ABUTMENT DETAILS

BRIDGE Nº CUY-480-0612
WEST 220th ST. OVER I-480
CUYAHOGA COUNTY STA. 8+84.45 STA. 11+42.67

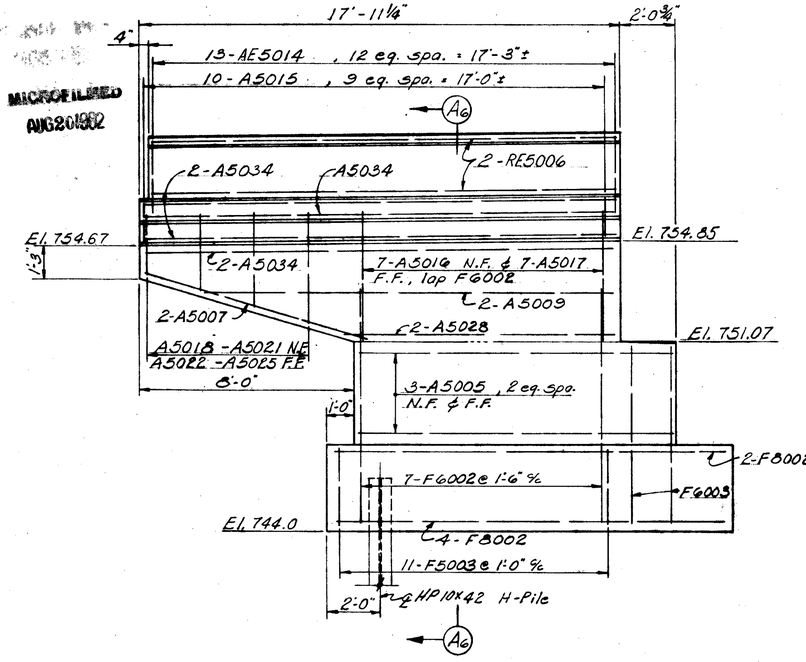
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.W.M.	G.W.M.		R.S.S.	G.W.M.	7/30/63	

REV. 10-12-78

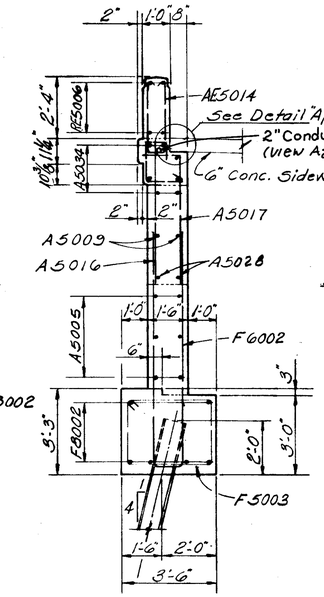
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

308
347

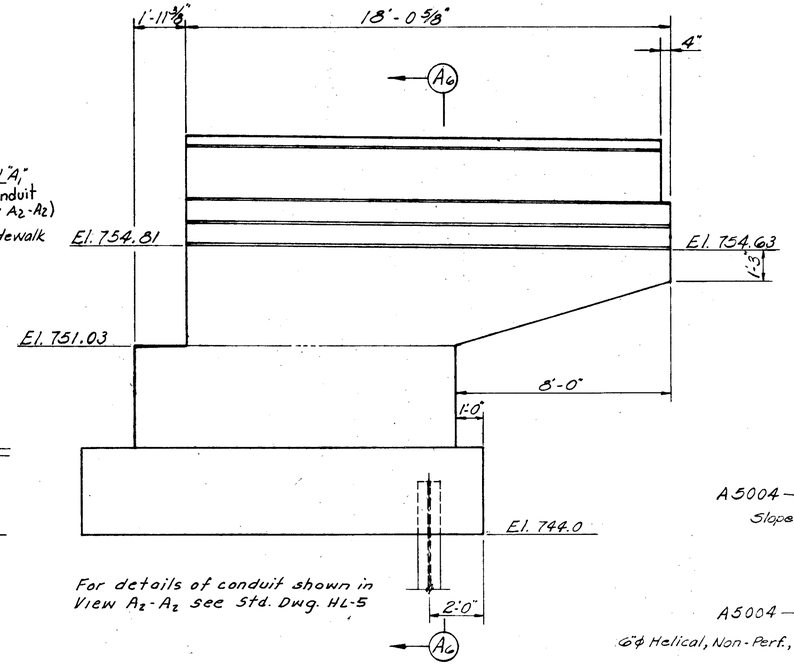
CUYAHOGA COUNTY
CUY-480-4.86



VIEW A_1-A_1



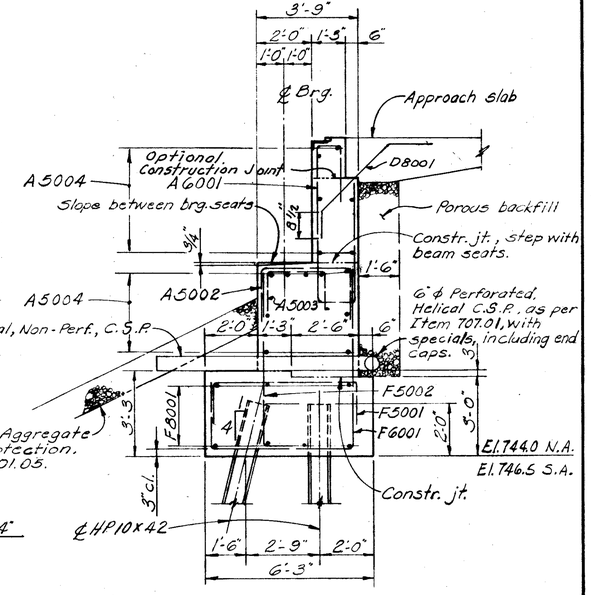
SECTION A_6-A_6



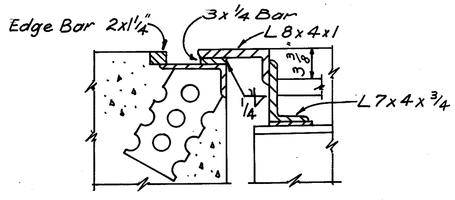
For details of conduit shown in View A_2-A_2 see Std. Dwg. HL-5

VIEW A_2-A_2

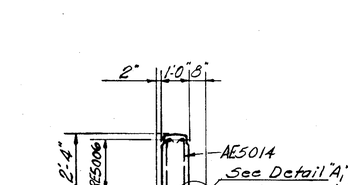
Reinforcing steel same as that shown in View A_1-A_1.



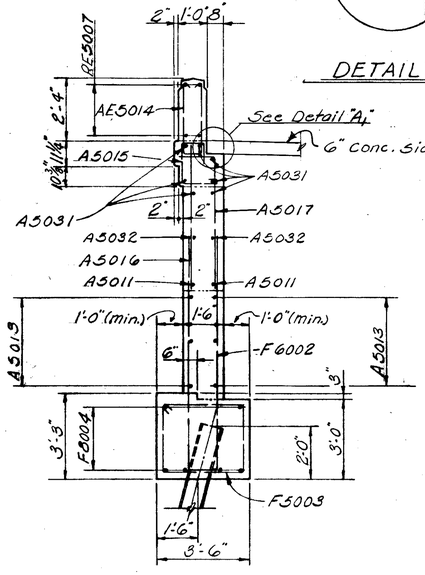
SECTION A_3-A_3



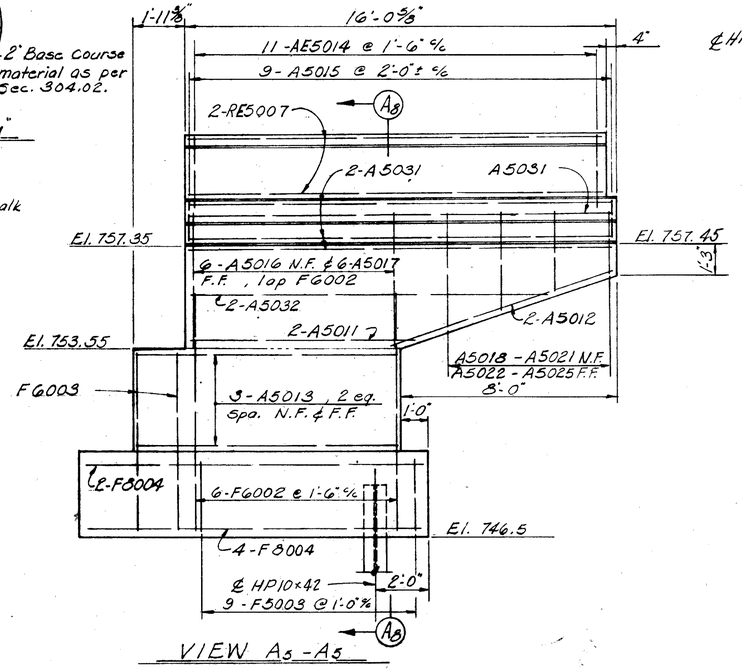
TYPICAL ROADWAY END DAM DETAIL
For additional details see Std. Dwg. BD-1-69, sh. 1 of 4.



DETAIL "A_1"



SECTION A_8-A_8



VIEW A_5-A_5

NOTES:

Items listed on Detail "A1" are included, for payment, with Item 608, 6" Concrete Sidewalk.

For additional notes see sht. 5/12, sht. 6/12 & sht. 231A (347)

7/12

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

ABUTMENT DETAILS

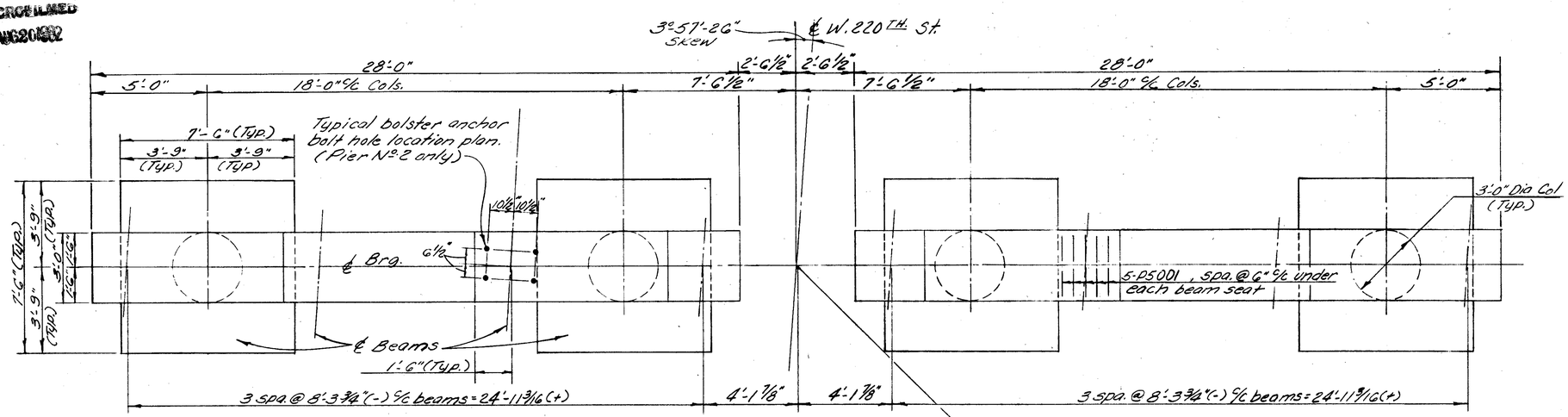
BRIDGE № CUY-480-0612
WEST 220th ST OVER I-480
CUYAHOGA COUNTY STA. 8+84.45
STA. 11+42.97

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.W.M.	G.W.M.		R.S.S.	G.W.M.	7/30/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

309
347



N

P4001, Pier No. 1
P4002, Pier No. 2
P4003, Pier No. 3

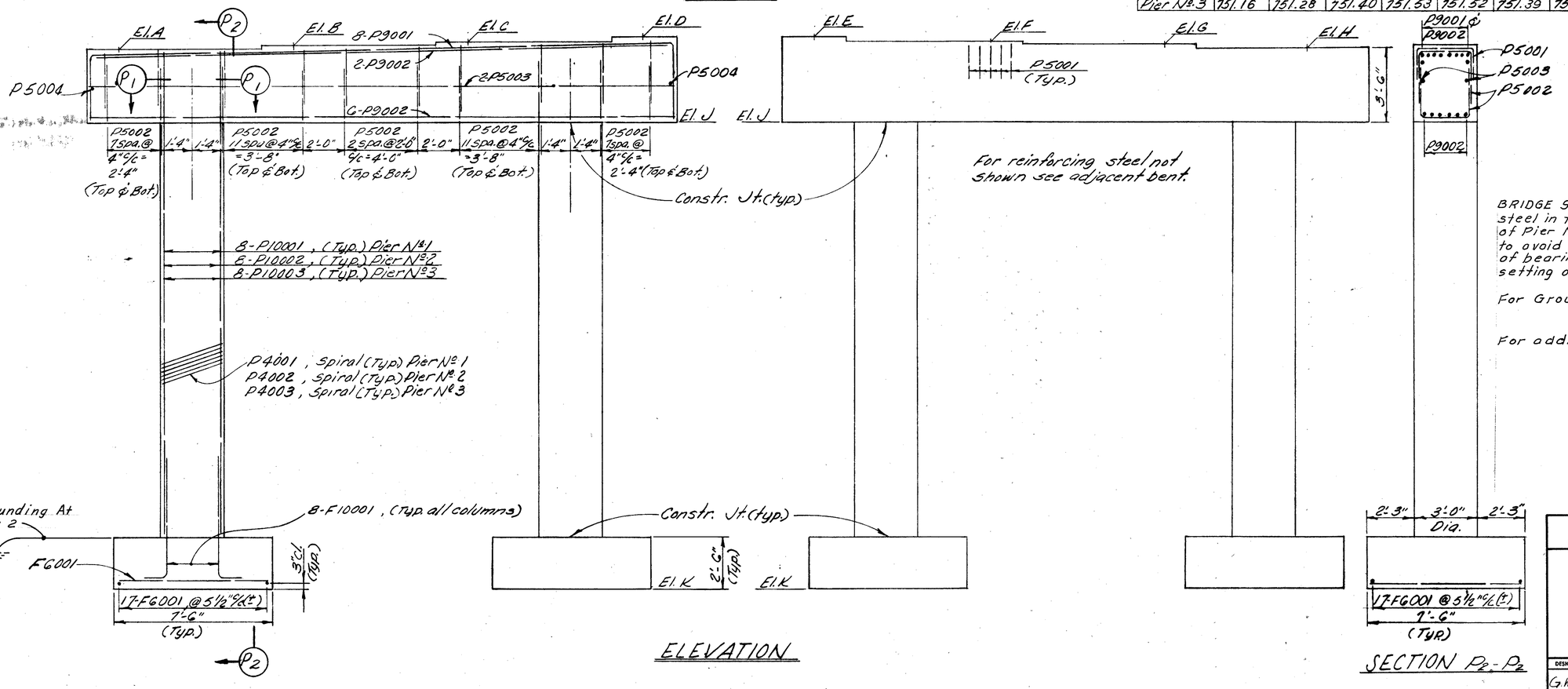
All vertical column steel - P10001, Pier No. 1
P10002, Pier No. 2
P10003, Pier No. 3

SECTION P1 - P2

TABLE OF BEAM SEAT ELEVATIONS

LOCATION	A	B	C	D	E	F	G	H	J	K
Pier No. 1	752.70	752.82	752.94	753.07	753.06	752.93	752.79	752.66	749.16	728.00
Pier No. 2	751.70	751.82	751.95	752.07	752.07	751.93	751.80	751.66	748.16	726.00
Pier No. 3	751.16	751.28	751.40	751.53	751.52	751.39	751.25	751.12	747.62	724.00

PLAN



For reinforcing steel not shown see adjacent bent.

BRIDGE SEAT REINFORCING: Reinforcing steel in the vicinity of the bridge seat of Pier No. 2 shall be accurately placed to avoid interference with the drilling of bearing anchor holes or the pre-setting of bearing anchors.

For Grounding Details, see Std. Dwg. HL-7

For additional General Notes, see Sh. 231A / 347

ELEVATION

SECTION P2 - P2

8/12

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER DETAILS

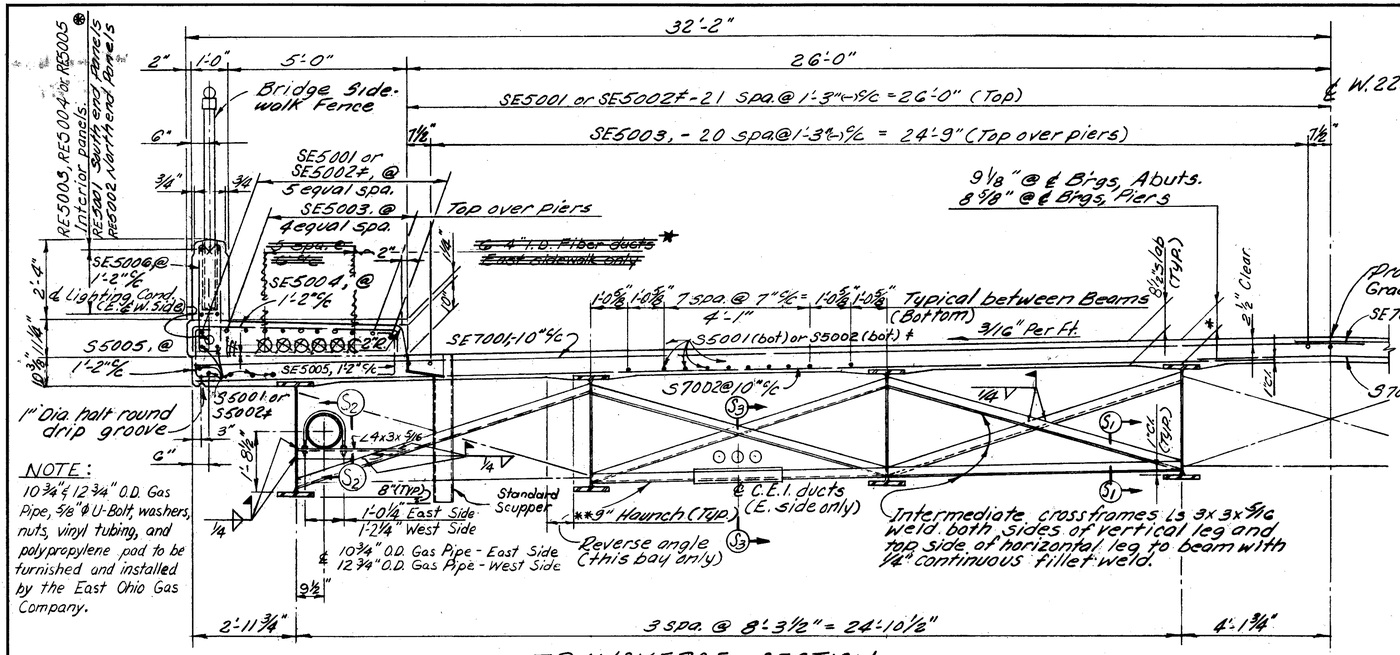
BRIDGE NO CUY-480-0612
WEST 220th ST OVER I-480
STA. 8+84.45
CUYAHOGA COUNTY STA. 11+42.97

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.W.M.	R.T.		R.J.P.	G.W.M.	7/26/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

310
347



NOTE:
10 3/4" ⌀ 12 3/4" O.D. Gas Pipe, 5/8" ⌀ U-Bolt, washers, nuts, vinyl tubing, and polypropylene pad to be furnished and installed by the East Ohio Gas Company.

~~* Ducts to be furnished and installed by the Ohio Bell Telephone Co.~~

TRANSVERSE SECTION

(Note: This Section is typical except for S.E. corner. For Deck Slab Reinforcing Details see Sht. 11/12)

NOTES:

Each longitudinal run of deck reinforcing, excluding SE5003 bars over the piers, shall be comprised of 8-S5001 or SE5001 and 1-S5002 or SE5002 bars lapped a minimum of 1'-7".

For Additional Fence Details see sheet 328/347

~~For Additional General Notes see sheet~~ 23/A 347

* This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

* * A typical haunch width of 9" shall be used for all beams in computing quantity of concrete. However the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less then 9" in width.

For scupper details see Standard Dwg. SD-1-69

Longitudinal reinforcing steel shall be field cut as necessary to avoid interference with scuppers. Also epoxy coated bars that are field cut shall be treated as per approved manufacturer's recommendations. Transverse slab reinforcing steel shall be placed parallel to the abutments.

Concrete parapet is included, for payment, with Item 517 Bridge Railing

For fence post spacing see sheet 3/12

Field bend transverse bars to fit crown. Bending to be included in Item 509 for payment. Epoxy coated bars damaged by field bending shall be repaired as per approved manufacturer's recommendations.

⊛ For longitudinal reinforcing steel in E. side parapet see Sht. 11/12

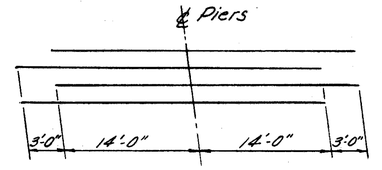
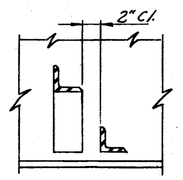
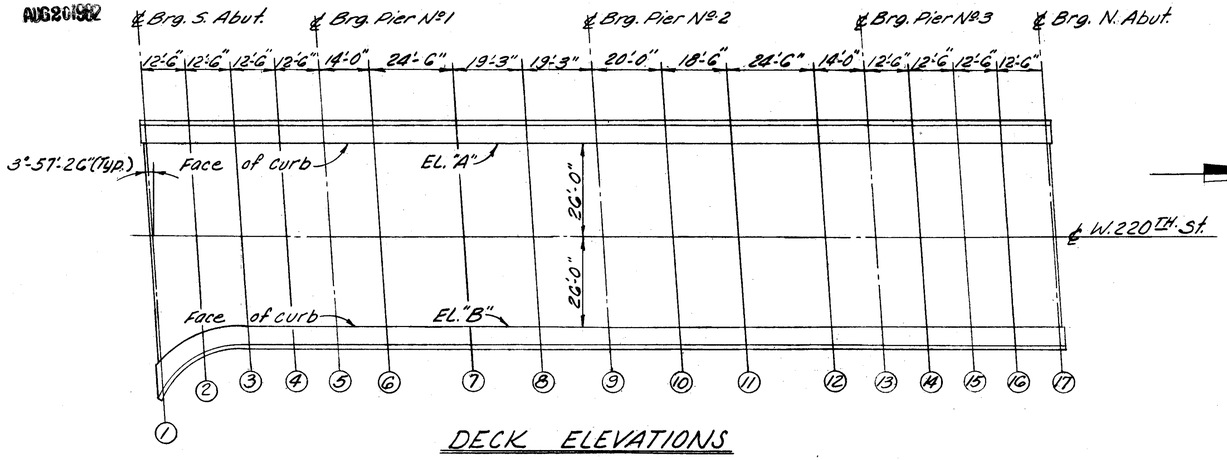


DIAGRAM SHOWING STAGGER SE5003 BARS OVER PIERS

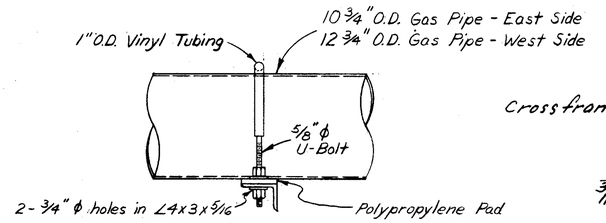


SECTION S-S

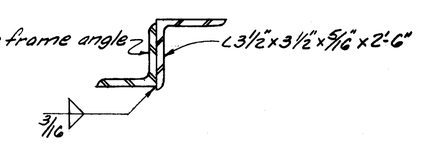


DECK ELEVATIONS

NOTE: The deck elevations shown are those which are required prior to placing of the concrete deck. Proper allowance has been made for the dead load deflection caused by the weight of the concrete.



SECTION S_2-S_2



SECTION S3-S3

TABLE OF DECK ELEVATIONS

LINE	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰
ELEV. "A"	758.20	758.14	758.03	757.89	757.77	757.65	757.43	757.21	757.00	756.82	756.66	756.38	756.23	756.10	755.99	755.86	755.73
ELEV. "B"	758.17	758.07	757.99	757.86	757.73	757.61	757.39	757.17	756.96	756.78	756.62	756.35	756.19	756.07	755.95	755.83	755.69

9/12

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS
BRIDGE № CUY: 480-0612
WEST 220th ST. OVER I-480
CUYHOGA COUNTY STA. 8+84.45
STA. 11+42.97

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		R.J.P.	G.W.M.	7/12/78	

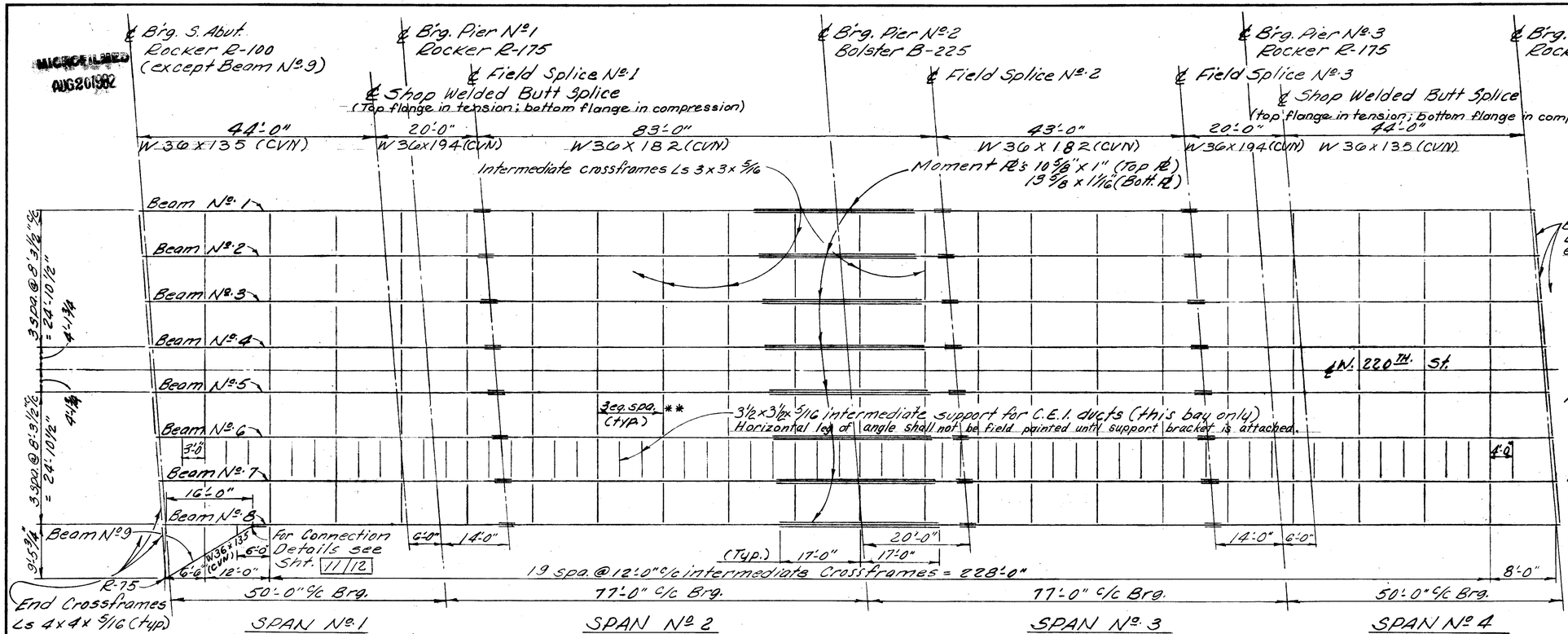
REV. 10-12-78

MICROFILMED AUG 20 1982

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

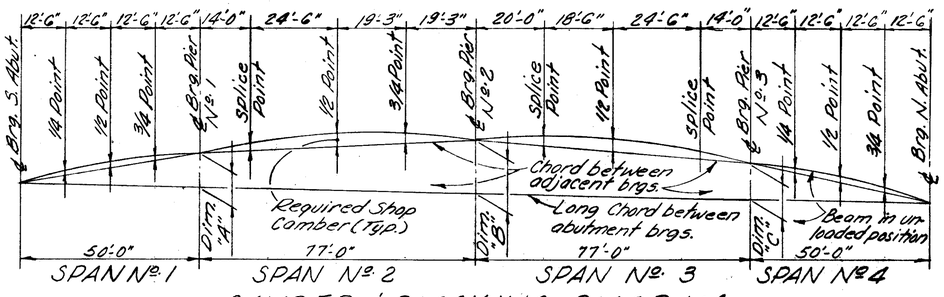
CUYAHOGA COUNTY
CUY-480-4.86

311/347



FIELD SPLICE No. 1 & No. 3 DETAILS

FRAMING PLAN



CAMBER & BLOCKING DIAGRAM

* End Crossframes in exterior bays shall have one panel point, located 4'-0" from the ℄ of the first interior stringer, to allow for passage of gas pipes. Crossframes in interior bays shall have panel points located in accordance with Std. Dwg. SD-1-69, Sheet No. 1.

** Support angles may be shifted if necessary to avoid field splices. Maintain max. spacing of 5'-0".

TABLE OF BLOCKING DIMENSIONS

BEAM No.	1	2	3	4	5	6	7	8
Dim. "A"	3/16	3/16	3/16	1/2	1/4	-1/4	-5/8	-3/8
Dim. "B"	3/8	3/8	5/16	5/16	1/8	-1/8	-3/8	-1/2
Dim. "C"	1/8	1/8	1/8	1/8	0	0	-1/8	-1/4

DEFLECTION AND CAMBER

BEAM	SPAN No. 1															SPAN No. 2						SPAN No. 3						SPAN No. 4					
	No. 1 thru 4			No. 5			No. 6			No. 7			No. 8			INT.			EXT.			INT.			EXT.			INT.			EXT.		
LOCATION	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.	SP. Pt.	1/2 Pt.	3/4 Pt.	SP. Pt.	1/2 Pt.	3/4 Pt.	SP. Pt.	1/2 Pt.	SP. PT	SP. Pt.	1/2 Pt.	SP. Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.
Deflection due to weight of steel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1/16	1/8	3/16	1/16	1/8	1/16	1/16	1/8	1/16	1/16	1/8	1/16	0	0	0	0	0	0
Deflection due to remaining dead load	3/16	3/16	0	3/16	3/16	0	3/16	3/16	0	3/16	3/16	0	1/4	5/16	1/16	1/4	3/16	1/4	1/4	3/16	1/4	1/4	3/16	1/4	5/16	3/16	1/4	0	3/16	3/16	0	3/16	3/16
Adjustment due to Vertical Curve	1/16	3/8	3/16	1/8	1/8	1/8	0	-3/8	0	-1/2	-3/8	-1/8	-5/8	1/8	3/8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Required Shop Camber	5/8	9/16	3/16	5/16	5/16	1/8	3/16	-3/16	0	-5/16	-3/16	-1/8	-3/8	7/16	7/16	5/16	11/16	5/16	5/16	11/16	5/16	5/16	11/16	5/16	3/8	11/16	5/16	0	3/16	3/16	0	3/16	3/16

NOTE: Beam No. 9 to be detailed with natural camber turned up.

NOTES:

1" ℄ high strength bolts shall be used at the field splices. Bolt heads shall be placed on fascia side of exterior beam web and bottom side of bottom flange. Holes shall be 1 1/16" ℄. Bolts shall conform to A-325 steel. For details of Field Splice No. 2 see Std. Dwg. SD-1-69 Sht. No. 4.

For Shop welded butt splice detail see Common Details Sht. 328

For additional notes see sheet 23A/347

All bottom flange shop welds are subject to compressive stress only.

End Crossframe Alternation: Diagonals in end crossframe bays through which Cleveland Electric Illuminating Co. conduits pass shall be as shown on Standard Dwg. SD-1-69 for a beam spacing of 8'-0" except that they shall be Ls 4x4x3/8". The horizontal member shall be L 4x4x3/8". 10/12

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS

BRIDGE No. CUY-480-0612
WEST 220th ST. OVER I-480
CUYAHOGA COUNTY STA. 8+84.45 STA. 11+42.97

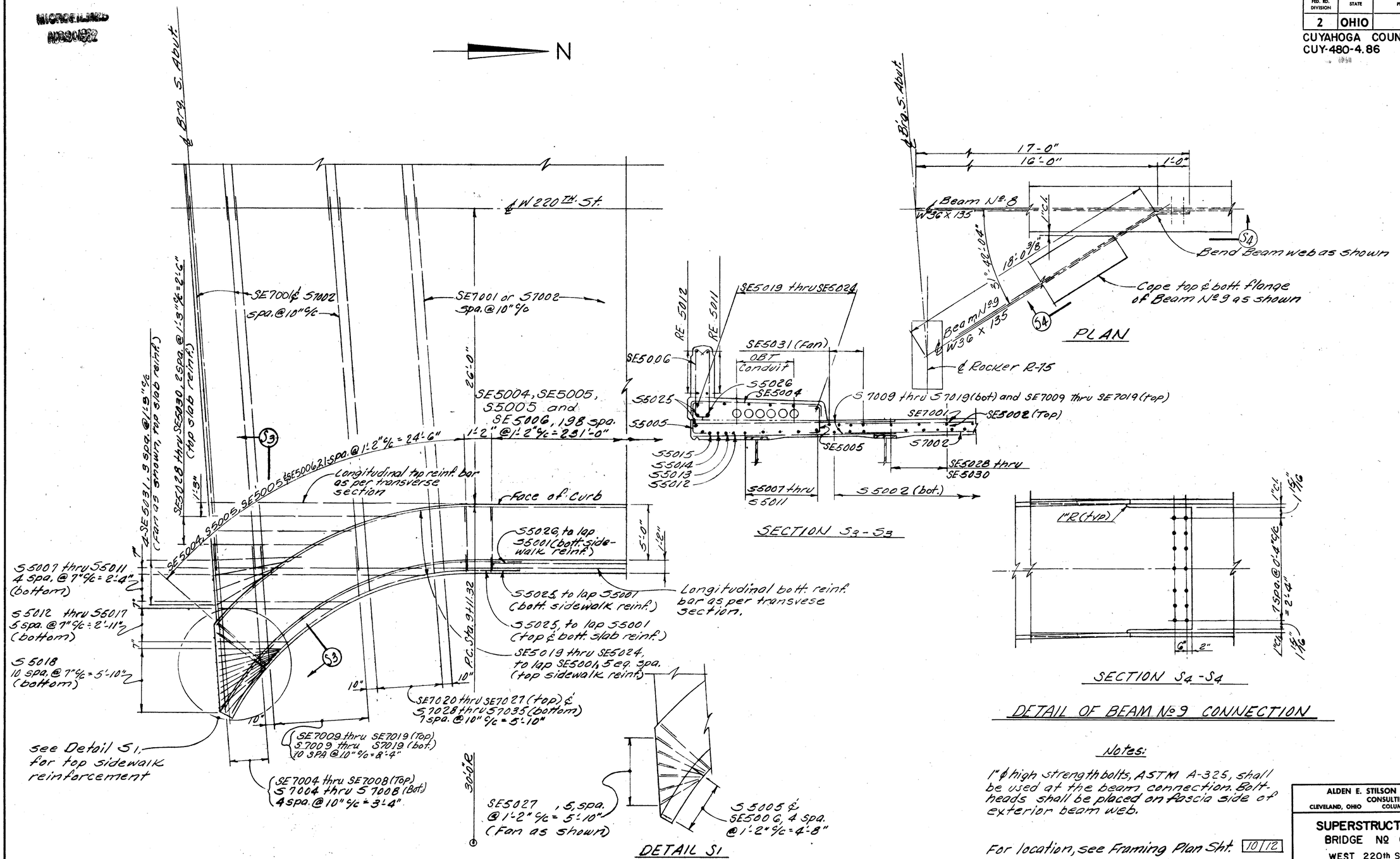
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		R.J.P.	G.W.M.	7/29/63	

MICROFILMED
AUG 01 1992

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

312
347

CUYAHOGA COUNTY
CUY-480-4.86



DECK REINFORCING DETAILS

Notes:

1" ø high strength bolts, ASTM A-325, shall be used at the beam connection. Bolt heads shall be placed on fascia side of exterior beam web.

For location, see Framing Plan Sht. 10/12

ALDEN E. STILSON & ASSOCIATES, LIMITED 11/12
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS
BRIDGE No. CUY-480-0612
WEST 220th ST. OVER I-480
STA. 8+84.45
CUYAHOGA COUNTY STA. 11+42.97

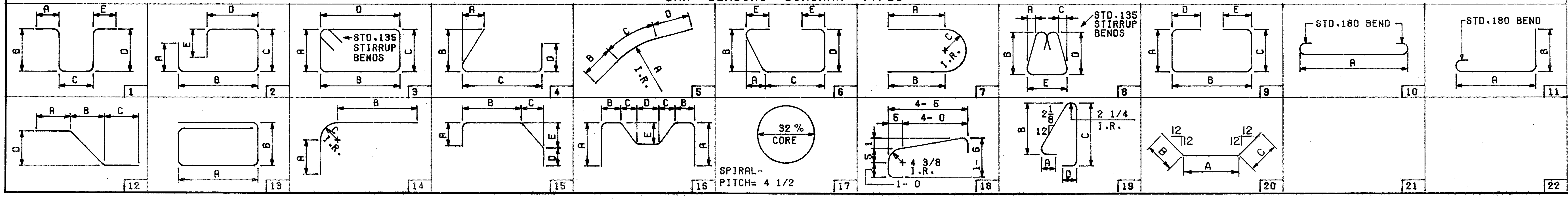
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.	R.T.		B.I.P.	G.W.M.	7/24/92	

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				ABUTMENTS						
A 5001	8	4- 3	35	ST						
A 5002	110	7- 2	822	1		2- 0	3- 5	2- 0		
A 5003	85	4-11	436	1		1- 6	2- 2	1- 6		
A 5004	60	31- 5	1966	ST						
A 5005	12	11- 6	144	ST						
A 5006	18	6- 3	117	ST						
A 5007	4	8- 8	36	ST						
A 5008	5	14- 5	75	5	24- 4		14- 5			
A 5009	4	15- 9	66	ST						
A 5010	4	10- 8	45	1	5- 9	3-11	1- 3			
A 5011	2	8- 4	17	ST						
A 5012	3	16- 6	52	5	24- 4		16- 6			
A 5013	6	9- 8	60	ST						
A 5015	38	4- 6	178	2	0-11	1- 4	1- 5	0- 8	0- 8	
A 5016	29	5- 3	159	ST						
A 5017	29	5-10	176	1		4- 9	1- 3			
A 5018	2	4- 7		ST						1
THRU			30		VARY	LENGTH	BY	0- 7	5/ 8	
A 5021	2	2- 8		ST						1
A 5022	3	5- 3		1		4- 2	1- 3			1
THRU			54		VARY	LENGTH	BY	0- 7	5/ 8	
					VARY	DIM. B	BY	0- 7	5/ 8	
A 5025	3	3- 4		1		2- 3	1- 3			1
A 5026	4	5- 6	23	ST						
A 5027	1	14-10	15	5	24-10		14-10			
A 5028	4	9- 9	41	ST						
A 5029	6	16- 6	103	ST						
A 5030	3	17- 0	53	5	25- 6		17- 0			
A 5031	7	15- 8	114	ST						
A 5032	11	14- 5	165	ST						
A 5033	5	15- 3	80	5	25- 6		15- 3			
A 5034	14	17- 7	257	ST						
A 6001	121	15- 0	2726	2	4- 2	1- 5	6- 0	0-11	3- 2	
A 6002	20	16-10	506	2	6- 4	1- 5	6-10	0-11	2- 0	
D 8001	80	5- 6	1175	20	3- 4	1-6½	0-8½			
F 5001	109	8- 3	938	1		1- 7	5- 4	1- 7		
F 5002	110	7- 1	813	1		6- 7	0- 8			
F 5003	31	11- 9	380	3	2- 7	3- 0	2- 7	3- 0		
F 5004	9	14- 3	134	3	2- 7	4- 3	2- 7	4- 3		
F 5005	8	4- 9	40	ST						
F 6001	109	14- 2	2319	1		6- 7	5- 4	2- 7		
F 6002	20	18- 2	546	1		8- 8	1- 2	8- 8		
F 6003	8	14- 2	170	1		6- 8	1- 2	6- 8		
F 6004	5	18- 6	139	1		8-10	1- 2	8-10		
F 8001	28	33-10	2529	ST						
F 8002	12	14- 4	459	ST						
F 8003	6	11-10	190	ST						
F 8004	13	12- 8	440	ST						
				PIERS						
P 4001	4	18- 8	1408	17	NO.TURNS= 53			NO.SPACERS= 16		6
P 4002	4	19- 8	1465	17	NO.TURNS= 55			NO.SPACERS= 16		6
P 4003	4	21- 2	1572	17	NO.TURNS= 59			NO.SPACERS= 16		6
P 5001	120	5- 5	678	1		1- 6	2- 8	1- 6		
P 5002	516	8- 9	4709	1		3- 2	2- 8	3- 2		
P 5003	12	27- 8	346	ST						
P 5004	12	2- 8	33	ST						
P 9001	48	33- 5	5454	1		3- 2	27- 8	3- 2		
P 9002	48	27- 8	4515	ST						

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				PIERS					(CONTINUED)	
P10001	32	21- 8	2983	ST						
P10002	32	22- 8	3121	ST						
P10003	32	24- 2	3328	ST						
F 6001	408	7- 2	4392	ST						
F10001	96	6- 7	2719	1	1- 5	5- 6				
				SUPERSTRUCTURE						
S 5001	640	30- 0	20026	ST						
S 5002		27- 8	2424	ST						
S 5005	449	2- 4	1093	1		0- 8	1- 3	0- 8		
S 5007	1	18- 6		ST						1
THRU			78		VARY	LENGTH	BY	1- 9	3/ 4	
S 5011	1	11- 3		ST						1
S 5012	1	10- 3		ST						1
THRU			52		VARY	LENGTH	BY	0- 9	5/ 8	
S 5017	1	6- 3		ST						1
S 5018	11	5- 3	60	ST						
S 5025	3	31- 0	97	5	24- 2	4- 1	26-11			
S 5026	1	31- 4	33	5	24-10	4- 1	27- 3			
S 7002	307	30- 0	18825	ST						
S 7003	299	36- 0	22002	ST						
S 7004	1	11- 0		ST						1
THRU			133		VARY	LENGTH	BY	1- 0		
S 7008	1	15- 0		ST						1
S 7009	1	4- 2		ST						1
THRU			162		VARY	LENGTH	BY	0- 7	1/ 4	
S 7019	1	10- 3		ST						1
S 7020	1	33- 3		ST						1
THRU			555		VARY	LENGTH	BY	0- 2	3/ 8	
S 7027	1	34- 8		ST						1
S 7028	1	36- 3		ST						1
THRU			604		VARY	LENGTH	BY	0- 2	3/ 8	
S 7035	1	37- 8		ST						1
		EPOXY COATED		RAILING BARS						
RE5001	4	12- 5		ST						2
RE5002	4	10- 3		ST						2
RE5003	44	15- 8		ST						2
RE5004	56	5- 4		ST						2
RE5005	112	6- 6		ST						2
RE5006	8	17- 3		ST						2
RE5007	4	15- 4		ST						2
RE5008	2	14- 5		5	24- 2		14- 5			2
RE5009	2	14-10		5	24-10		14-10			2
RE5010	4	11- 0		ST						2
RE5011	2	15-10		5	24-10		15-10			2
RE5012	2	15- 5		5	24- 2		15- 5			2

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
		EPOXY COATED		RAILING BARS					(CONTINUED)	
RE5013	2	15-10		5	24-10	4- 9	11- 1			2
RE5014	2	15- 6		5	24- 2	4- 9	10- 9			2
				LIGHT	POLE	SUPPORTS - EPOXY COATED				
LE501	12	3-1	39	1		0-7½	2-1	0-7½		4,5
LE502	12	9-4	117	1		3-9	2-1	3-9		4,5
LE503	21	8-0	174	16		0-6	2-1	1-4	2-1	4,5
LE505	12	3-9	48	ST.						4,5
		EPOXY COATED		REINFORCING STEEL - SUPERSTRUCTURE						
SE5001	440	30-0	13768	ST						5
SE5002	55	27-8	1587	ST						5
SE5003	156	31-0	5044	ST.						5
SE5004	440	6-9	3098	1		0-8	5-8	0-8		5
SE5005	443	2-4	1078	1		0-8	1-3	0-8		5
SE5019	1	29-1		5	29-10	4-1	25-0			1,5
					VARY	LENGTH	BY	0-4⅝		
THRU			188		VARY	DIM. A	BY	1-1⅝		
					VARY	DIM. C	BY	0-4⅝		
SE5024	1	31-0		5	24-2	4-1	26-11			1,5
SE5027	6	5-0	31	1		0-8	3-11	0-8		5
SE5028	1	16-6		ST						1,5
THRU			42		VARY	LENGTH	BY	3-0		
SE5030	1	10-6		ST						1,5
SE5031	4	6-6	27	ST						5
SE7001	606	33-0	40876	ST						5
SE7004	1	11-0		ST						1,5
THRU			133		VARY	LENGTH	BY	1-0		
SE7008	1	15-0		ST						1,5
SE7009	1	4-2		ST						1,5
THRU			162		VARY	LENGTH	BY	0-7¼		
SE7019	1	10-3		ST						1,5
SE7020	1	33-3		ST						1,5
THRU			555		VARY	LENGTH	BY	0-2⅜		
SE7027	1	34-8		ST						1,5
SE5006	446	29'-0	13528	8	3'-0	0'-6	3'-0			
		EPOXY COATED		REINFORCING	STEEL- ABUTMENTS					
AE5014	47	5'-9	282	8		2-2		2-2	0-8	

BAR BENDING DIAGRAM TYPES



FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

NOTES

1. INDICATES SERIES BAR. EACH BAR VARIES FROM ADJACENT BAR(S) BY TABULATED AMOUNT(S), CALCULATED TO NEAREST 1/8 INCH. WEIGHT SHOWN IS FOR ENTIRE SERIES UTILIZING AVERAGE LENGTH.
2. BARS INCLUDED WITH ITEM 517, RAILING, FOR PAYMENT.
3. COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.
4. LIGHT POLE SUPPORT BARS INCLUDED WITH ITEM 509 FOR PAYMENT.
5. BARS ARE TO BE EPOXY COATED AS PER PROPOSAL NOTE
6. 'LENGTH' SHOWN FOR SPIRAL BARS IS DISTANCE FROM TOP OF FOOTING TO BOTTOM OF PIER CAP. 'NO. TURNS' SHOWN IS 'LENGTH' DIVIDED BY PITCH, PLUS 3 TURNS (NUMBER OF CLOSED COILS), EXPRESSED AS NEAREST WHOLE NUMBER. SPIRAL BARS MAY HAVE DEFORMATIONS AND SHALL IN OTHER RESPECTS CONFORM TO ITEM 509. 1 1/2 CLOSED COILS SHALL BE PROVIDED AT ENDS OF EACH SPIRAL UNIT. FOUR STEEL CHANNEL, TEE OR ANGLE SPACERS, WEIGHING APPROXIMATELY 0.80 LB. PER LIN. FT. OF SPACER SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG PERIPHERY OF COIL. WEIGHT OF SPACERS, AT 0.80 LB. PER LIN. FT. WILL BE PAID FOR AS REINFORCING STEEL AND IS INCLUDED IN TABULATED WEIGHT. OTHER DETAILS SHALL BE IN ACCORDANCE WITH CRSI STANDARD PRACTICE.

FOR ADDITIONAL GENERAL NOTES SEE SHEET 231A/347

BAR SIZE DESIGNATION

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE FOUR DIGITS ARE USED, AND FIRST TWO DIGITS WHERE FIVE DIGITS ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A7001 IS A NO. 7 SIZE BAR AND A10140 IS A NO. 10 SIZE.

12/12

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

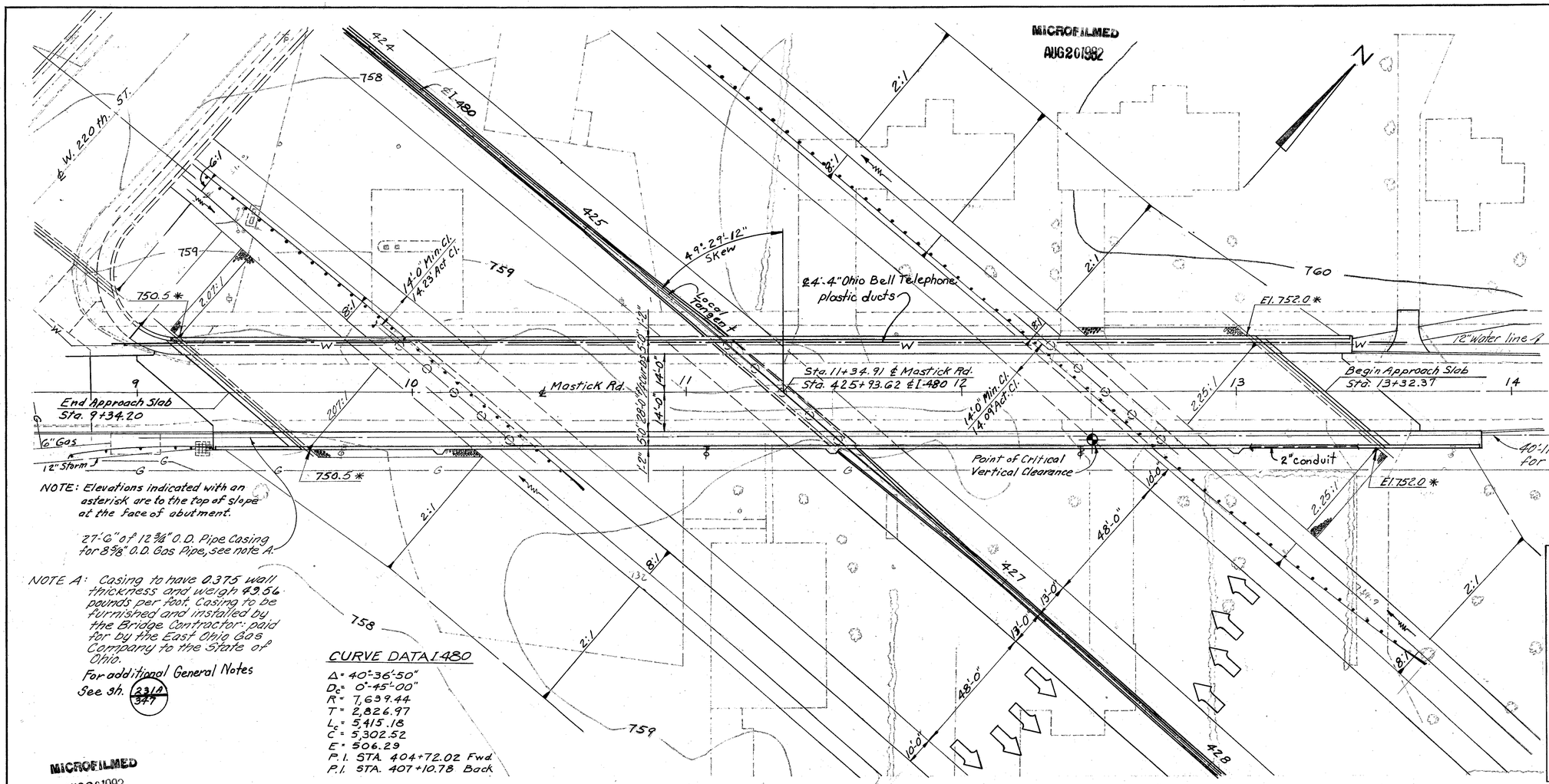
REINFORCING STEEL LIST
BRIDGE Nº CUY-480-0612
WEST 220th. ST. OVER I-480
CUYAHOGA COUNTY STA. 8+84.45 STA. 11+42.97

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.S.S.			B.I.P.	G.W.M.	7/29/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

314/347

CUYAHOGA COUNTY
CUY-480-4.86



NOTE: Elevations indicated with an asterisk are to the top of slope at the face of abutment.

27'-6" of 12 3/4" O.D. Pipe Casing for 8 5/8" O.D. Gas Pipe, see note A.

NOTE A: Casing to have 0.375 wall thickness and weigh 49.56 pounds per foot. Casing to be furnished and installed by the Bridge Contractor: paid for by the East Ohio Gas Company to the State of Ohio.

For additional General Notes See Sh. 2 3/4 3/4 7

CURVE DATA I 480

Δ = 40°-36'-50"
D_c = 0°-45'-00"
R = 7,639.44
T = 2,826.97
L_c = 5,415.18
C = 5,302.52
E = 506.29
P.I. STA. 404+72.02 Fwd.
P.I. STA. 407+10.78 Back

PLAN

NOTE: For disposition of existing utilities see sheet No. 54 & 55

VERTICAL CURVE DATA

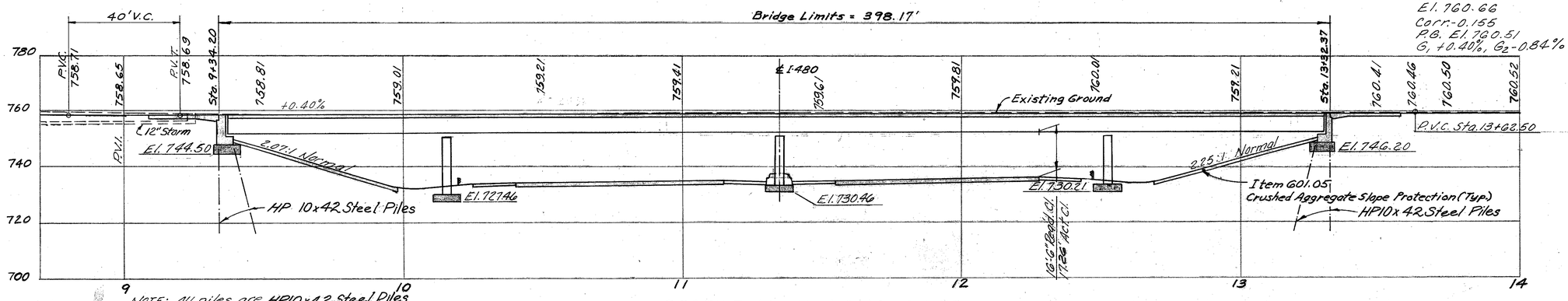
P.V.I. Sta. 14+12.50
100' V.C.
El. 760.66
Corr. -0.155
P.C. El. 760.51
G_1 +0.40%, G_2 -0.84%

PROPOSED STRUCTURE

TYPE: Continuous welded steel girder with reinforced concrete deck and substructure.
SPANS: 77'-9", 119'-6", 117'-6", 76'-6" ℄ bearings
ROADWAY: 28'-0" f/f curbs, 5'-0" sidewalks with concrete parapets and 4'-0" chain link fence
LOADING: HS 20 - 44 And the Alternate Military Loading.
WEARING SURFACE: Monolithic concrete
SKEW: 49° 29'-12" Right Forward
ALIGNMENT: Tangent
APPROACH SLABS: AS-1-72 (20' long) (Modified)

TRAFFIC ESTIMATE

Design Year - 1987
Total A.D.T. - 8,300



NOTE: All piles are HP10x42 Steel Piles
Estimated average pay lengths for abutments - 18'

PROFILE ALONG ℄ MASTICK RD.

1/14

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SITE PLAN
BRIDGE NO. CUY-480-06 14
MASTICK ROAD OVER I-480
CUYAHOGA COUNTY STA. 9+34.20 STA. 13+32.37

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R.J.P.		G.W.M.	G.W.M.	7/16/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

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CUYAHOGA COUNTY
CUY-480-4.86

STANDARD DRAWING REFERENCES

DESCRIPTION	DWG. NO.	DATE
STANDARD CONSTRUCTION DRAWING	HL-3	REV. 7-27-73
" " "	HL-4	REV. 1-21-76
" " "	HL-5	REV. 9-6-73
STANDARD CONSTRUCTION DRAWING	HL-7	REV. 1-21-76

SUPPLEMENTAL SPECIFICATION REFERENCES (CONTINUED)

DESCRIPTION	NO.	DATE
PAINTING FOR NEW STRUCTURAL STEEL	846	4-25-77
INORGANIC ZINC SILICATE PAINT	950	4-25-77
BLUE-GREEN VINYL PAINT	951	4-25-77

STANDARD DRAWING REFERENCES

DESCRIPTION	DWG. NO.	SHT.	DATE
END DAM AND END CROSSFRAME	SD-1-69	1-2	6-12-69
CURB PLATES	SD-1-69	2	6-12-69
SCUPPERS	SD-1-69	3	6-12-69
ROCKERS AND BOLSTERS	RB-1-55		2-2-59 R
APPROACH SLABS	AS-1-72		6-30-72 R

(R INDICATES REVISED DATE)

SUPPLEMENTAL SPECIFICATION REFERENCES

DESCRIPTION	NO.	DATE
CHEMICAL ADMIXTURE FOR CONCRETE, TYPE A, B OR D	808	1-1-71
CONCRETE CURING AND PROTECTIVE MEMBRANE	836	3-12-75

COMMON DETAIL REFERENCES

CONTRACTION JOINTS	SHEET 328
BRIDGE SIDEWALK FENCE	SHEET 328

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE 'STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES' ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS, 1969, INCLUDING THE OHIO 'SUPPLEMENT' TO THESE SPECIFICATIONS.

DESIGN DATA

DESIGN LOADING - HS20-44 AND THE ALTERNATE MILITARY LOADING
CONCRETE CLASS C - UNIT STRESS 1200 PSI FOR SUPERSTRUCTURE
UNIT STRESS 1333 PSI FOR SUBSTRUCTURE
STRUCTURAL STEEL - ASTM A36 - UNIT STRESS 20000 PSI
REINFORCING STEEL - ASTM A615, A616 OR A617 - UNIT STRESS 20000 PSI.
SPIRAL REINFORCEMENT MAY BE PLAIN BARS ASTM A82 OR A615.

PILES

PILES SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF-
35 TONS PER PILE FOR THE ABUTMENTS AND WINGWALLS

FOUNDATION BEARING PRESSURE

PIER FOOTINGS ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 2.5 TONS PER SQ. FT.

UTILITY LINES

ALL EXPENSE INVOLVED IN RELOCATING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNERS. THE CONTRACTOR AND OWNERS ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WOULD BE HELD TO A MINIMUM.

FOR ADDITIONAL GENERAL NOTES SEE SHEET 231A/347

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	PIERS	SUPER	GENERAL
503	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING				LUMP
503	679	C.Y.	UNCLASSIFIED EXCAVATION	410	269		
505	LUMP	SUM	TEST PILE				LUMP
507	792	L.F.	STEEL PILES, HP10X42	792			
SPEC	72,355	LB	EPOXY COATED REINFORCING STEEL (SEE PROPOSAL NOTE)	567		71788	
509	120915	LB	REINFORCING STEEL	20251	36233	64431	
511	592	C.Y.	CLASS C CONCRETE, SUPERSTRUCTURE (SEE PROPOSAL NOTE)			592	
511	174	C.Y.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS	174			
511	76	C.Y.	CLASS C CONCRETE, PIER CAPS AND COLUMNS		76		
511	240	C.Y.	CLASS C CONCRETE, FOOTINGS	121	119		
512	20	L.F.	PREMOLDED SEALING STRIP	20			
513	482300	LB	STRUCTURAL STEEL, PRIMER PER 846 *			482300	
846	482300	LB	FIELD PAINTING OF STRUCTURAL STEEL *			482300	
517	894.16	L.F.	BRIDGE RAILING (CONCRETE PARAPET WITH 4 FT.-0 INCH CHAIN-LINK FENCE AS PER PLAN	106.52		787.64	
518	105	C.Y.	POROUS BACKFILL	105			
518	12	EA	SCUPPERS INCLUDING SUPPORTS			12	
518	180	L.F.	6 INCH PERFORATED, HELICAL CSP, 707.01	180			
518	105	L.F.	6 INCH NON-PERFORATED, HELICAL CSP, INCLUDING SPECIALS, 707.01	105			
601	1001	S.Y.	CRUSHED AGGREGATE SLOPE PROTECTION				1001
S625			SEE SHEET 2/3 FOR LIGHTING SUMMARY				
808	592	UNIT	CHEMICAL ADMIXTURE FOR CONCRETE, TYPE A, B OR D			592	
SPEC	69	L.F.	12 3/4 INCH O.D. STEEL PIPE 0.375 INCH WALL THICKNESS**				69
		*	750 LBS. TO BE PAID FOR BY THE EAST OHIO GAS COMPANY.				
		* *	TO BE PAID FOR BY THE EAST OHIO GAS COMPANY.				

APPROACH SLABS: MODIFY AS-1-72 BY INCREASING THE COVER OVER THE TOP BARS TO 3".

2/14

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

GENERAL NOTES AND ESTIMATED QUANTITIES

BRIDGE NO. CUY-480-0614

MASTICK ROAD OVER I-480

CUYAHOGA COUNTY STA. 9+34.20 STA. 13+32.37

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.I.P.			R.S.S.	G.W.M.	7/16/82	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

3/6
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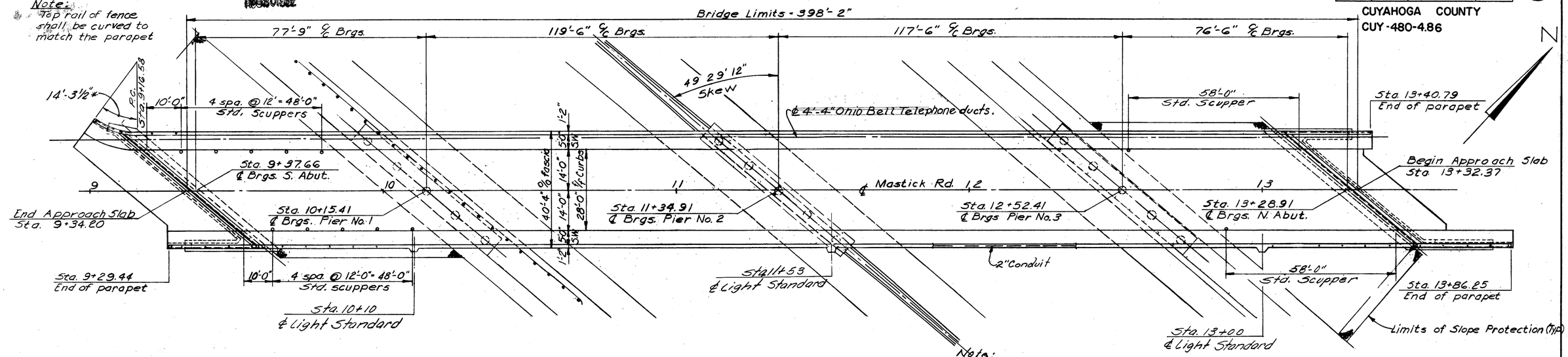
CUYAHOGA COUNTY
CUY-480-4.86

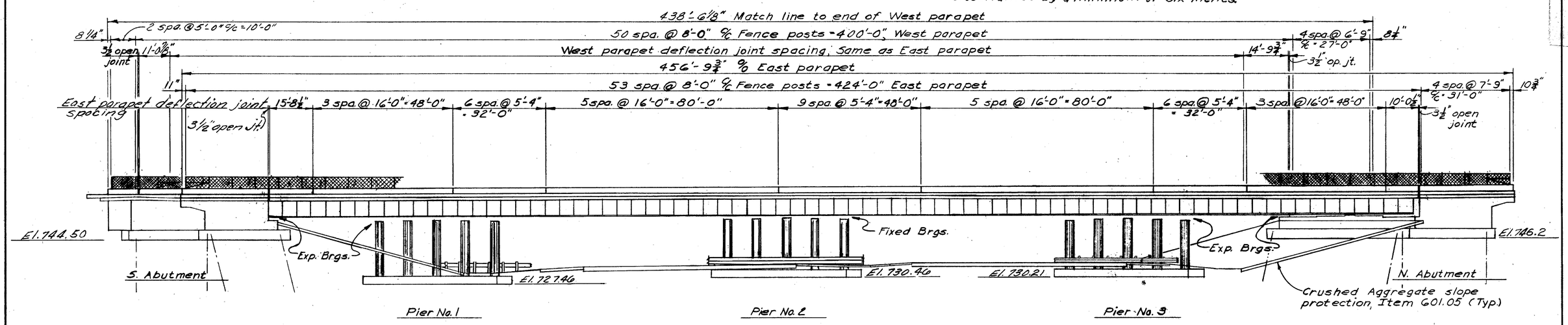
* Along ℄ of parapet

Note: Top rail of fence shall be curved to match the parapet



GENERAL PLAN

Note: Scupper spacing shall be adjusted to clear intermediate crossframes by a minimum of six inches.



ELEVATION

Note: Parapet deflection joint spacing is measured from ℄ of superstructure parapet.

3/14

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

GENERAL PLAN

BRIDGE Nº CUY-480-06 14
MASTICK ROAD OVER I-480
CUYAHOGA COUNTY STA. 9+34.20 STA. 13+32.37

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R. V.		G.W.M.	G.W.M.	7/16/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

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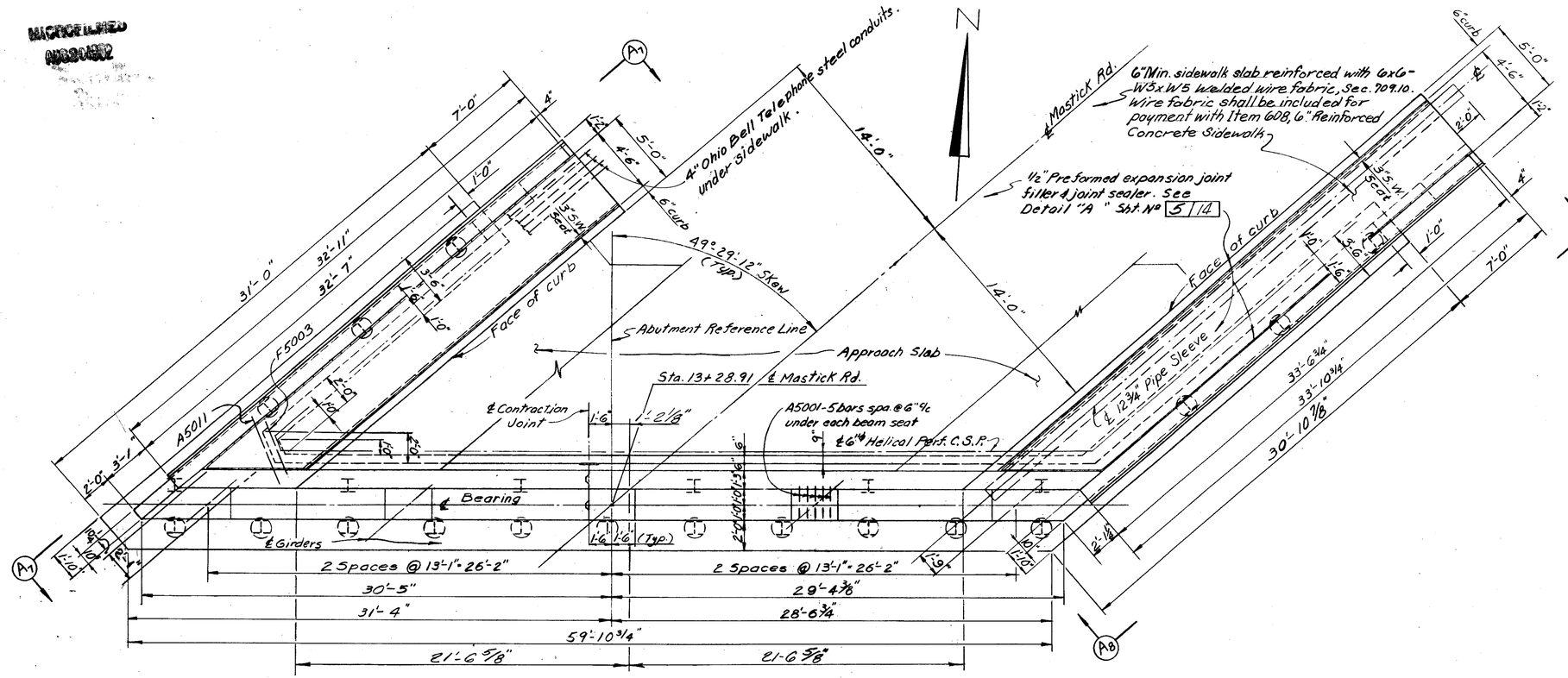
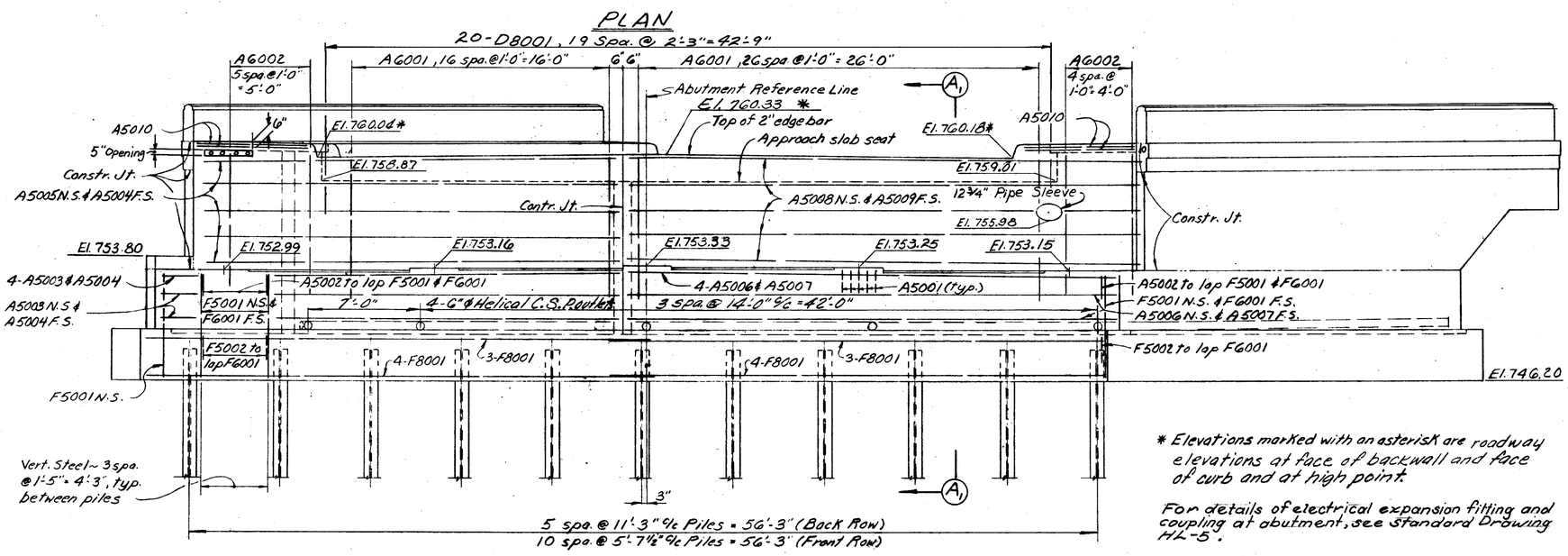
347



PLAN



ELEVATION

* Elevations marked with an asterisk are roadway elevations at face of backwall and face of curb and at high point.

For details of electrical expansion fitting and coupling at abutment, see Standard Drawing HL-5.

NOTES:

Porous backfill 1'-6" thick, full length of abutment and wings, shall extend up to the subgrade or to the finished ground. Excavation therefor, in excess of that required for construction of the abutment shall be considered as paid for in the bid price per cu. yd. paid for Porous Backfill.

A joint shall be provided in the abutment portion of the end dam at the contraction joint.

6"ϕ Helical perf. C.S.P. shall have all ends capped.

6"ϕ Helical non-perf. C.S.P. shall extend into crushed aggregate.

For details of contraction joint see Common Details Sheet No. 328

In reinforcing steel callouts:
N.S. indicates near side
F.S. indicates far side

All piles shall be HP10x42

I Vertical piles

(I) Batter piles 1:4

Concrete parapet shall be included for payment with Item 517 Bridge Railing.

Item 608, 6" concrete sidewalk shall be included, for payment with roadway items.

Adjustable type elbows meeting specification requirements for gage and coating are acceptable for making bends in perforated corrugated metal pipe. Elbows and stem of tees need not be perforated.

For sections & elevations see Sheet 5/14

Reinforcing steel in the vicinity of the 12 3/4" O.D. pipe sleeve shall be positioned or cut as necessary in the field to clear.

For additional General Notes see sheet 231A (347)

4/14

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

NORTH ABUTMENT DETAILS

BRIDGE No CUY-480-0614
MASTICK ROAD OVER I-480
CUYAHOGA COUNTY
STA. 9+34.20
STA. 13+32.37

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R.J.P.		R.S.S.	G.W.M.	7/10/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

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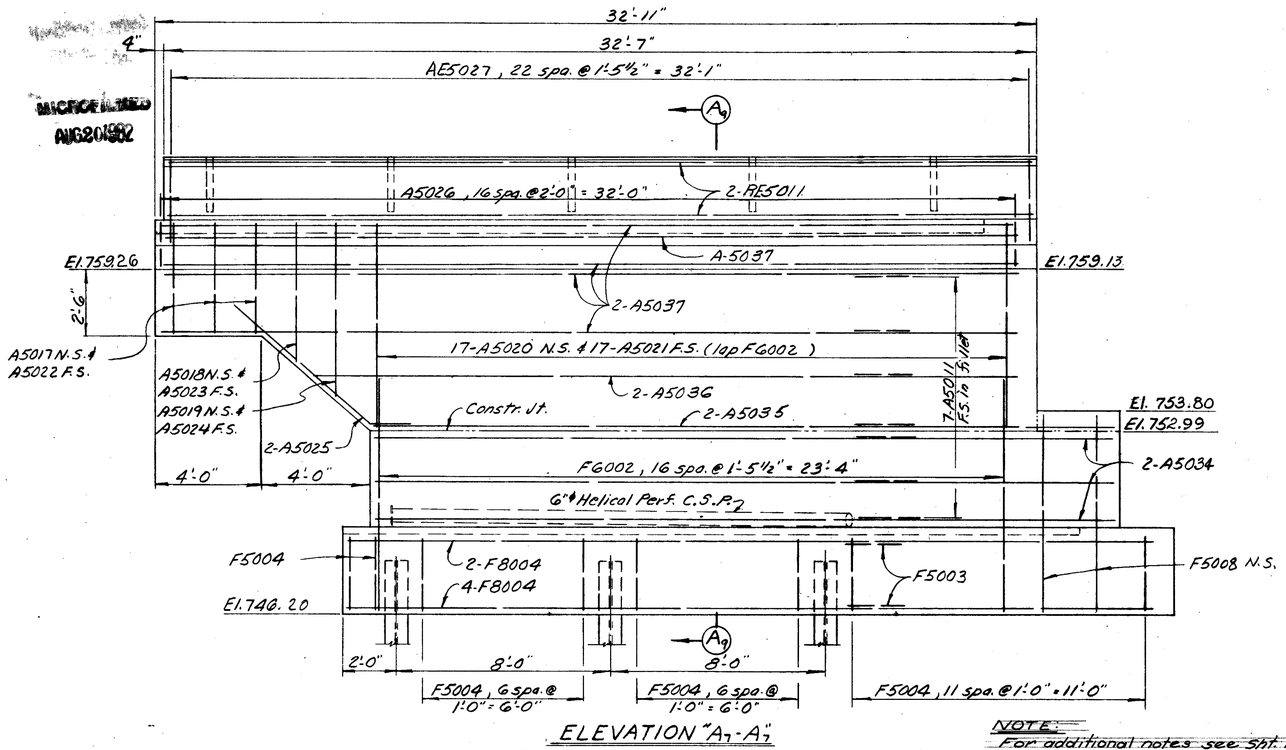
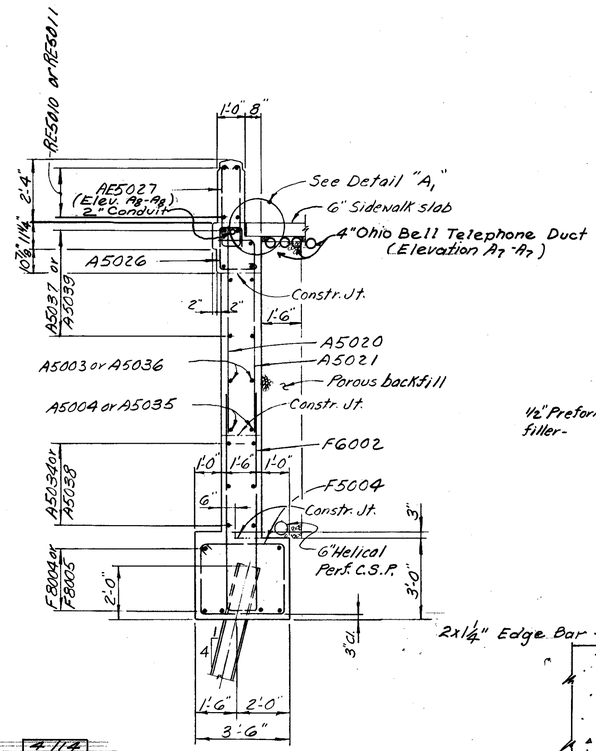
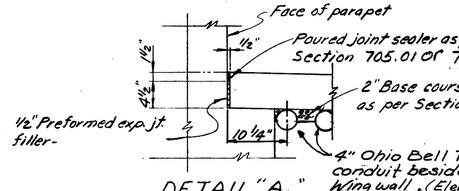


ELEVATION "A7-A7"

NOTE:
For additional notes see Sht Nº 4 14

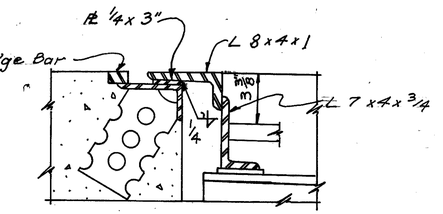


SECTION "A9-A9"

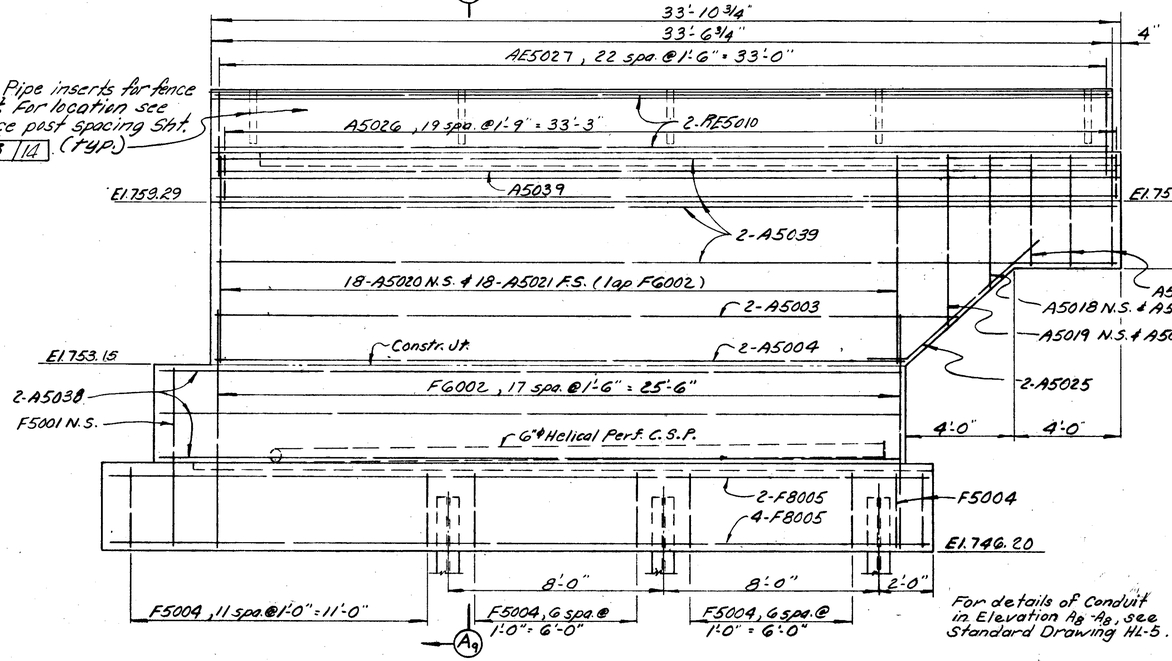


DETAIL "A,"

NOTE: Items above included for payment with Item 608, 6" Concrete sidewalk.

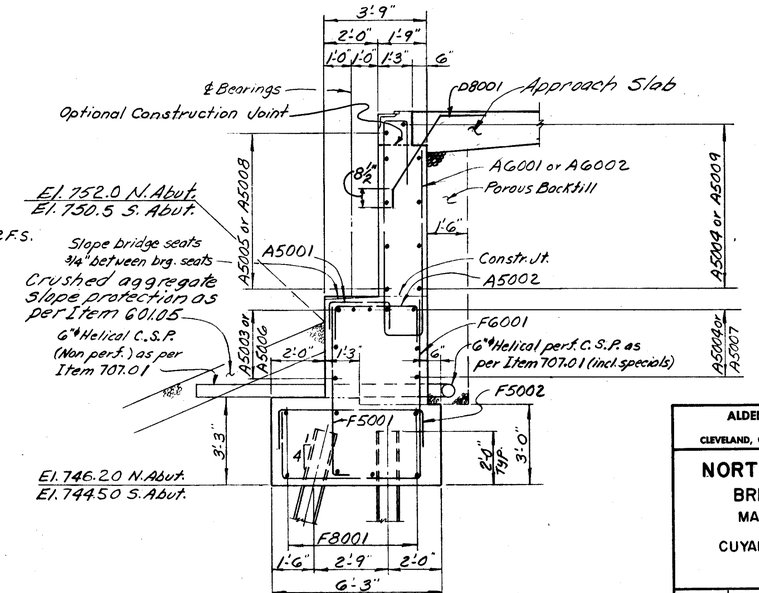


TYPICAL ROADWAY END DAM DETAILS
(For additional details see SD-1-69 Sh. 1 of 4)



For details of Conduit in Elevation A8-A8, see Standard Drawing HL-5.

ELEVATION "A8-A8"



SECTION "A1-A1"

5 14

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CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

NORTH ABUTMENT DETAILS

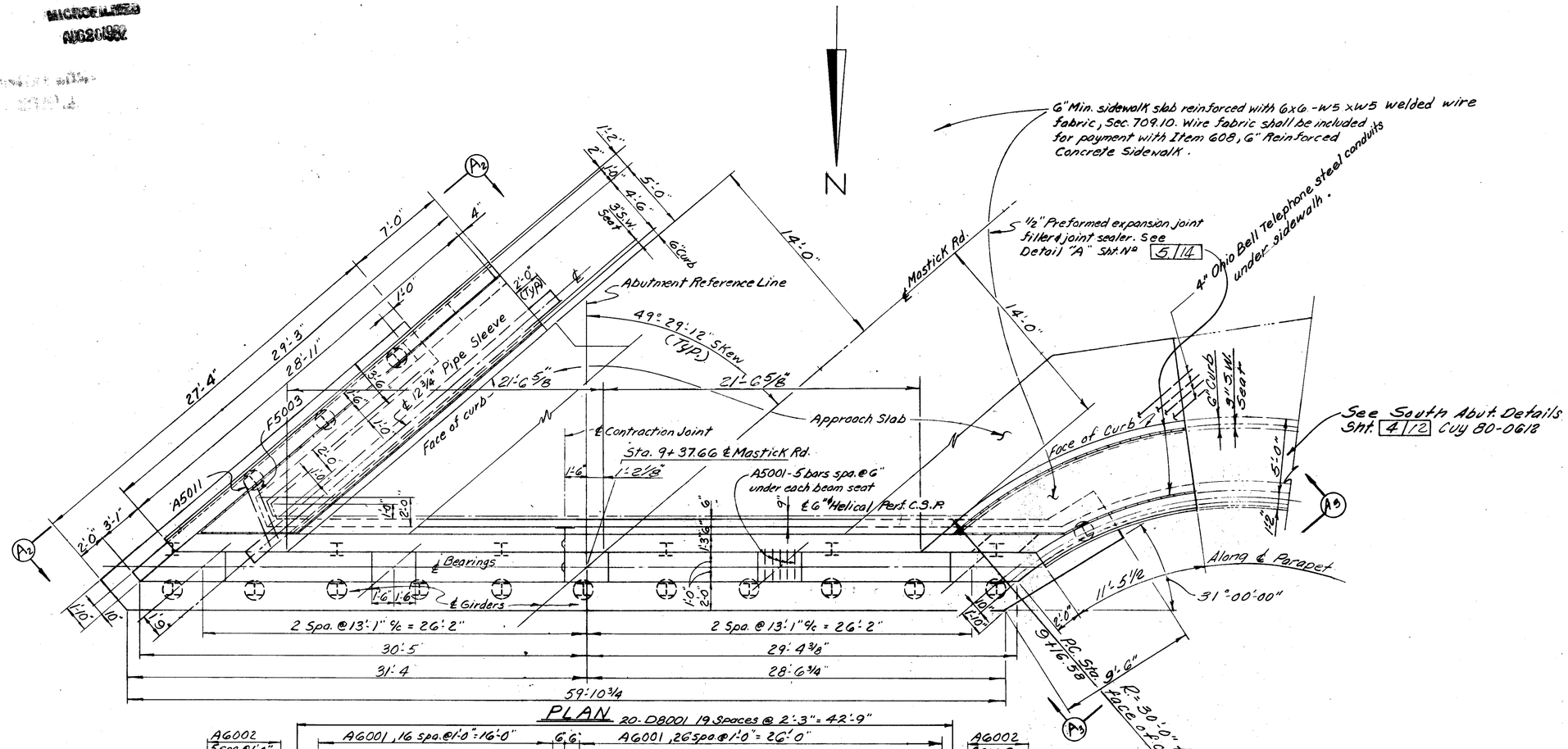
BRIDGE Nº CUY.-480-0614
MASTICK ROAD OVER I-480
CUYAHOGA COUNTY STA. 9+34.20
STA. 13+32.37

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R.J.R.		R.S.S.	G.W.M.	7/16/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

349
347

CUYAHOGA COUNTY
CUY-480-4.86



NOTES:
For Section & Elevations see Sht. No. 7/14
For additional notes see Sht. No. 4/14

* Elevations marked with an asterisk are roadway elevations at face of backwall at face of curb and face of backwall at high point.

For details of electrical expansion fitting and coupling in abutment, see Standard Drawing HL-5.

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ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SOUTH ABUTMENT DETAILS

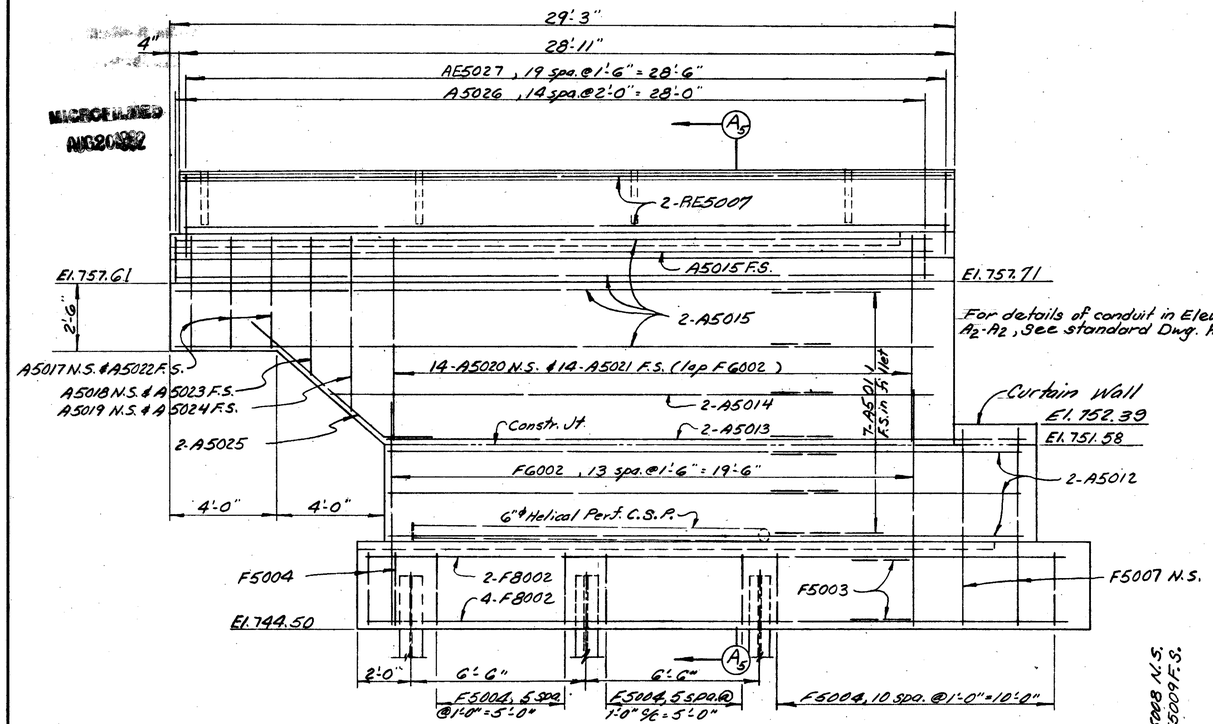
BRIDGE No. CUY-480-0614
MASTICK ROAD OVER I-480
CUYAHOGA COUNTY STA. 9+34.20
STA. 13+32.37

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R.J.P.		R.S.S.	G.W.M.	7/17/68	

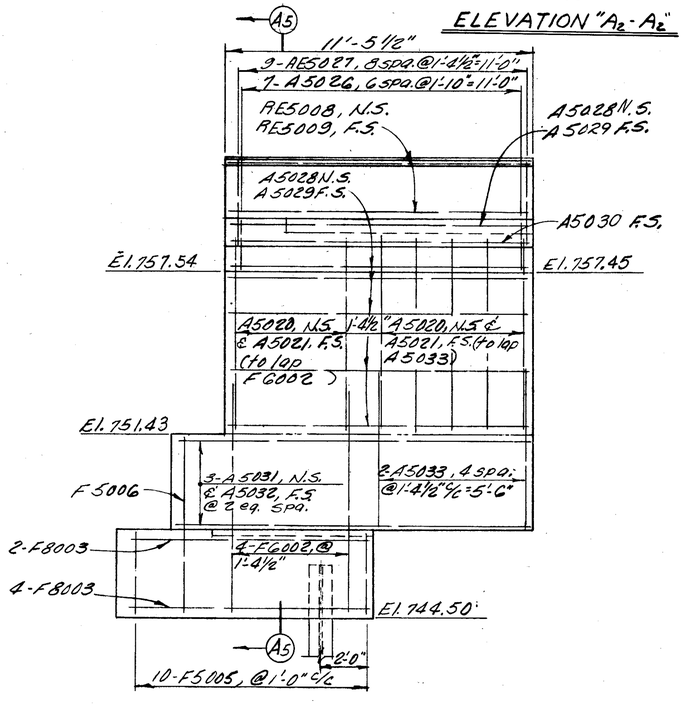
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

320
347

CUYAHOGA COUNTY
CUY-480-4.86

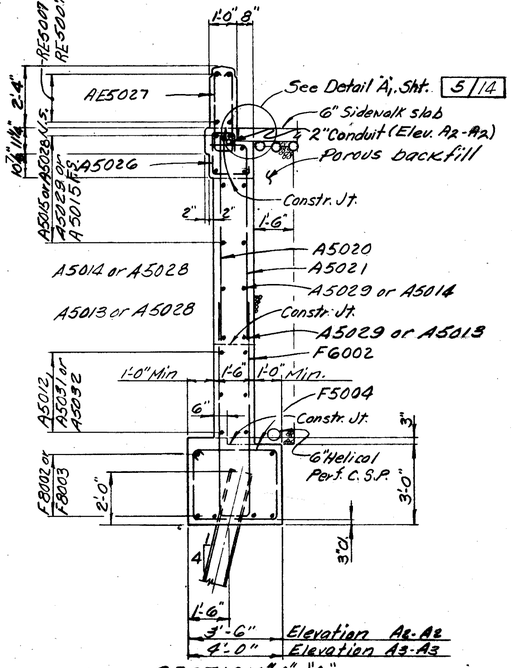


ELEVATION "A2 - A2"



ELEVATION "A3 - A3"

RE5007 or RE5008 N.S.
RE5007 or RE5008 - RE5009 F.S.



SECTION "A5" - "A5"

For additional notes see Sht. Nº 6/14

7/14

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SOUTH ABUTMENT DETAILS

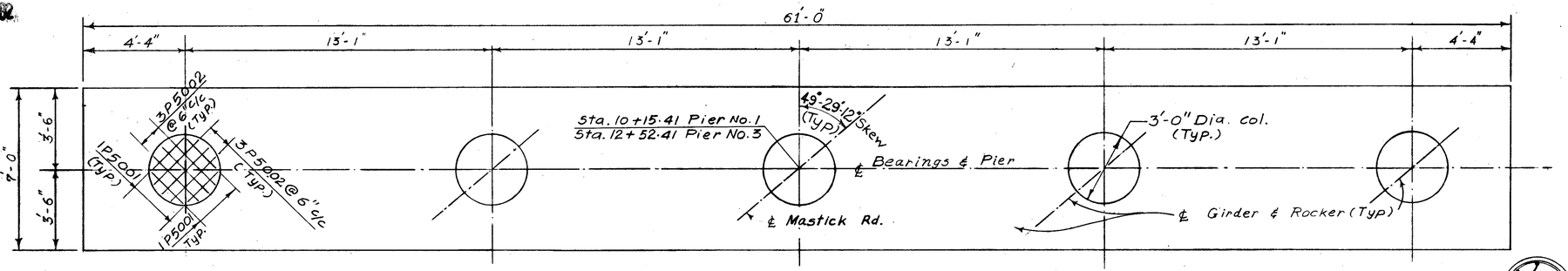
BRIDGE Nº CUY.-480-06 14
MASTICK ROAD OVER I-480
CUYAHOGA COUNTY STA. 9+34.20
STA. 13+32.37

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R.J.P.		R.S.S.	G.W.M.	7/11/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

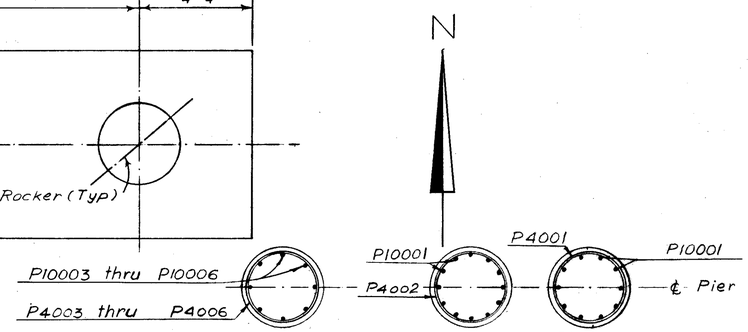
CUYAHOGA COUNTY
CUY-480-4.86

321
347



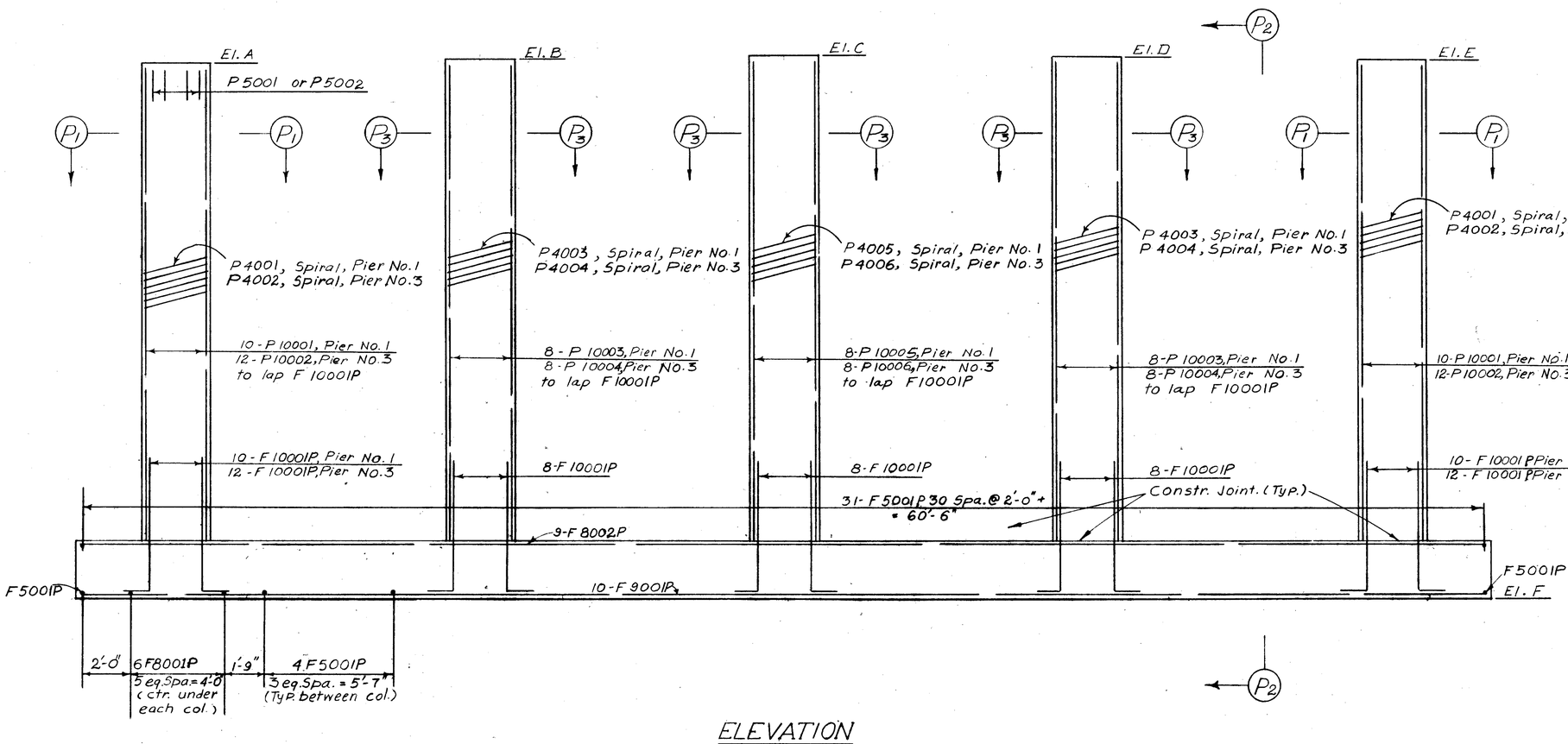
PLAN

ELEVATION TABLE						
LOCATION	El. A	El. B	El. C	El. D	El. E	El. F
PIER # 1	750.95	751.11	751.29	751.19	751.10	727.46
PIER # 3	751.89	752.07	752.24	752.15	752.05	730.21

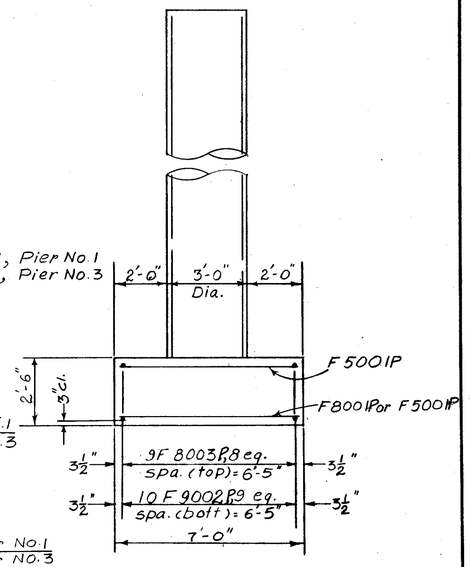


SECTION P3-P3

SECTION P1-P1



ELEVATION



SECTION P2-P2

8/14

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER Nº1 & Nº 3 DETAILS

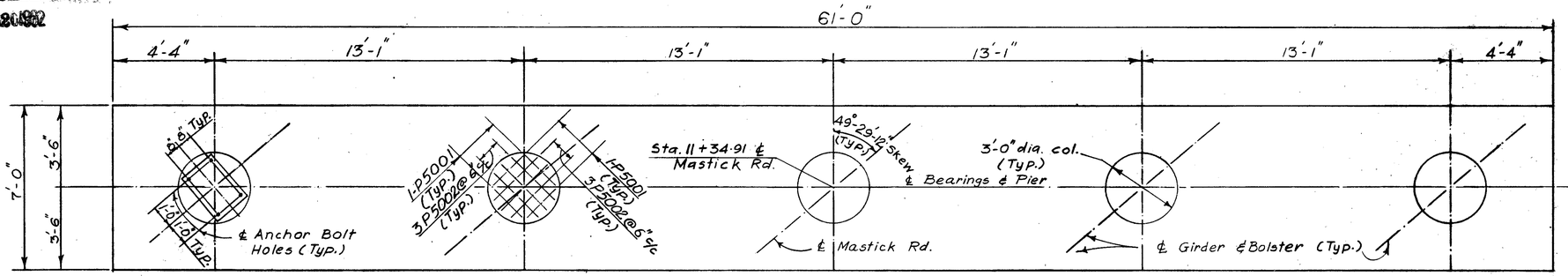
BRIDGE Nº CUY.-480-06 14
MASTICK ROAD OVER I-480
CUYAHOGA COUNTY STA. 9+34.20
STA. 13+32.37

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	B.I.P.		R.S.S.	G.W.M.	7/17/63	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

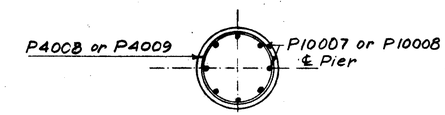
322/347

CUYAHOGA COUNTY
CUY-480-4.86

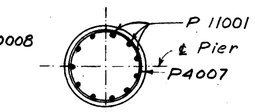


PLAN

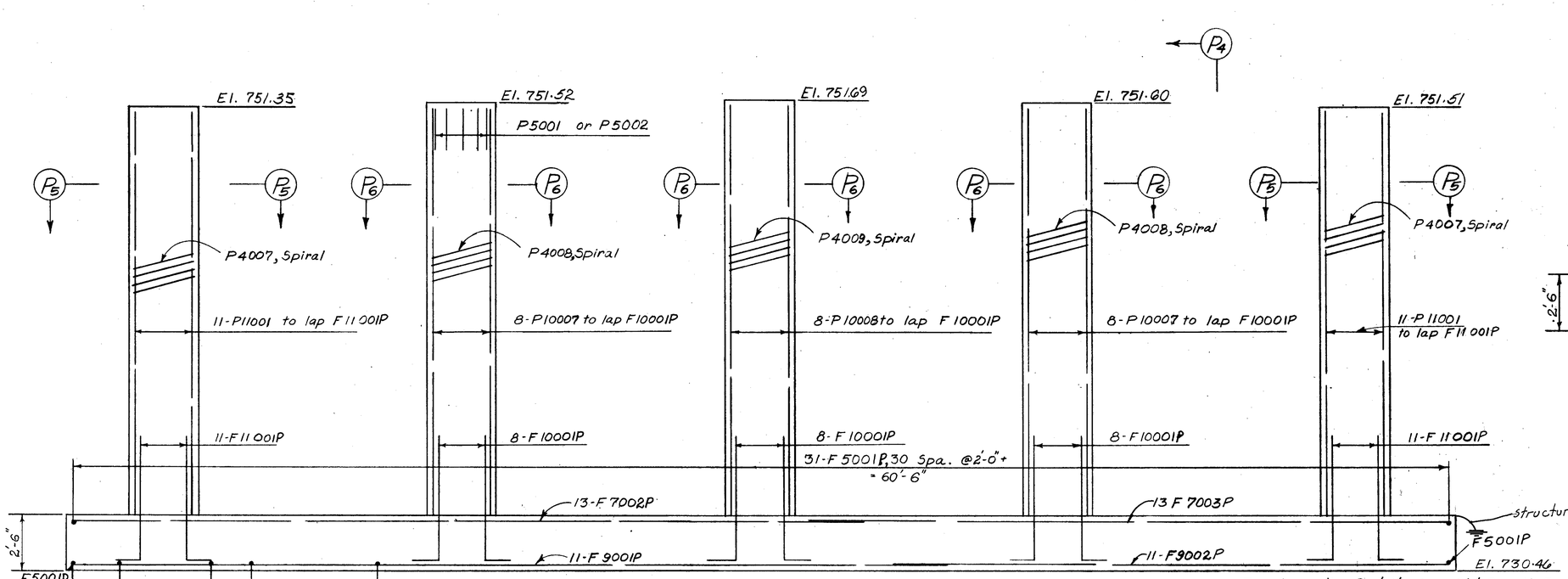
N



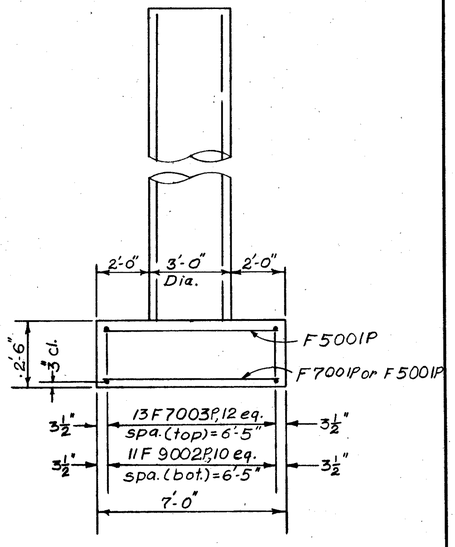
SECTION P_6-P_6



SECTION P_5-P_5



ELEVATION



SECTION P_4-P_4

For Grounding Details, See Std. Dwg. HL-7

For additional General Notes see sht 23A/347

BRIDGE SEAT REINFORCING: Reinforcing steel in the vicinity of the bridge seats, or Pier No. 2 shall be accurately placed to avoid interference with the drilling of bearing anchor holes or the presetting of bearing anchors.

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ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

PIER No 2 DETAILS

BRIDGE No CUY-480-0614
MASTICK ROAD OVER I-480
CUYAHOGA COUNTY STA. 9+34.20
STA. 13+32.37

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	B.I.P.		R.S.S.	G.W.M.	7/17/68	

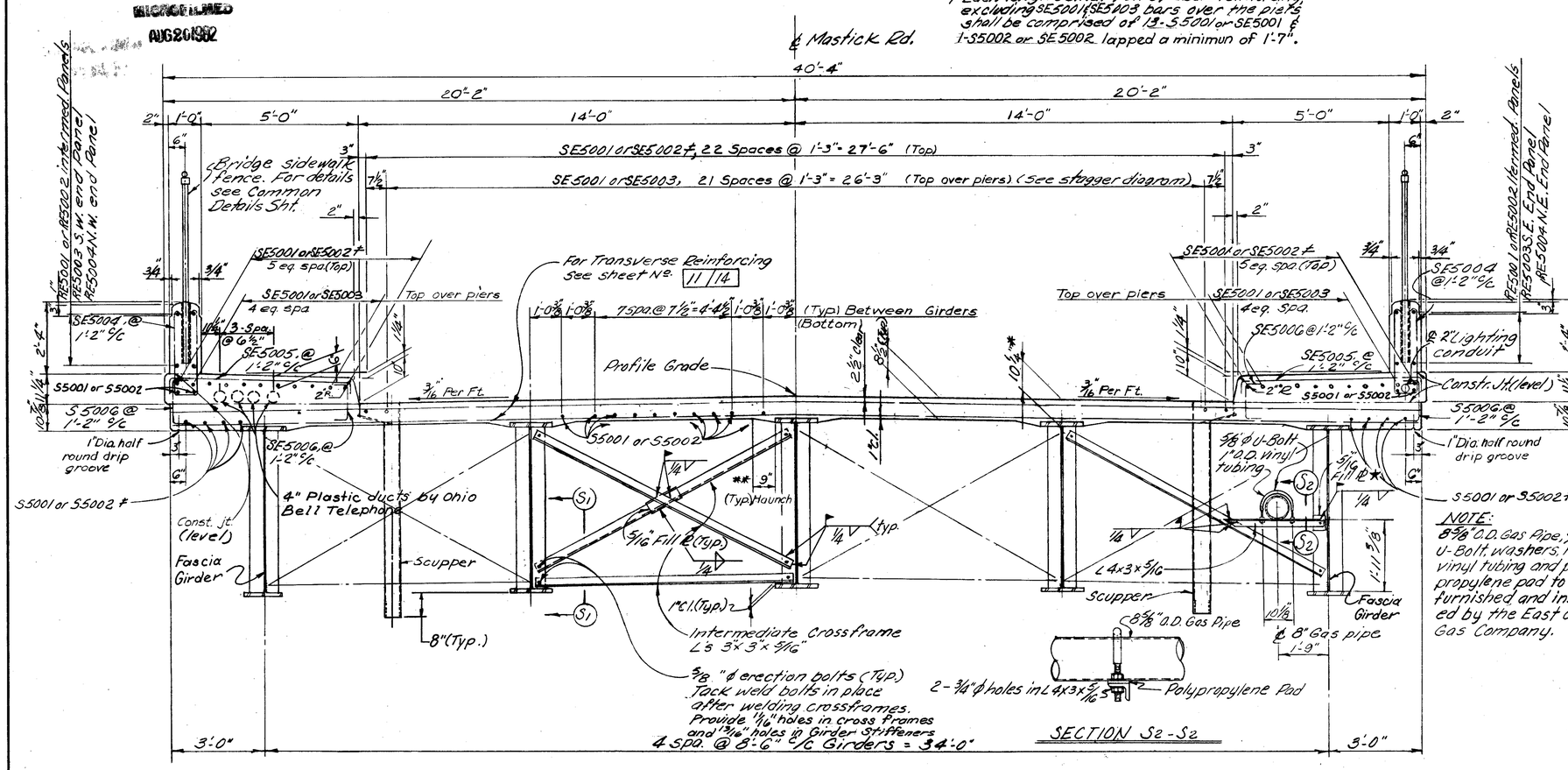
MICROFILMED
AUG 20 1982

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

323/347

CUYAHOGA COUNTY
CUY-480-4.86

* Each longitudinal run of deck reinforcing, excluding SE5001 & SE5003 bars over the piers shall be comprised of 1-S5001 or SE5001 & 1-S5002 or SE5002 lapped a minimum of 1'-7".



TRANSVERSE SECTION

★ Shop weld fill plate to stiffener with ¼" continuous fillet weld.

NOTES:

8" slab thickness includes 1" monolithic concrete wearing surface.

* This dimension is from the top of the slab to the top of the web of the girder and is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per sec. 511.18 of the construction and materials specifications.

** A typical haunch width of 9" shall be used for computing quantities of concrete. However the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For scupper details see Standard Dwg. SD-1-69 and 23A/347

Longitudinal reinforcing steel shall be field cut as necessary to avoid interference with scuppers. Also, epoxy coated bars that are field cut shall be treated as per approved manufacturer's recommendations.

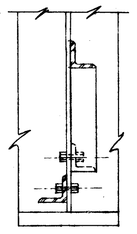
Concrete parapets are included for payment with Item 517 Bridge Railing.

Field bend transverse bars to fit crown. Field bending to be included in Item 509 for payment.

Epoxy coated bars damaged by field bending shall be repaired as per approved manufacturer's recommendations.

For fence post spacing see sheet 3/14

NOTE: 8⅝" O.D. Gas Pipe, ⅝" ϕ U-Bolt, washers, nuts, vinyl tubing and polypropylene pad to be furnished and installed by the East Ohio Gas Company.



SECTION S1-S1

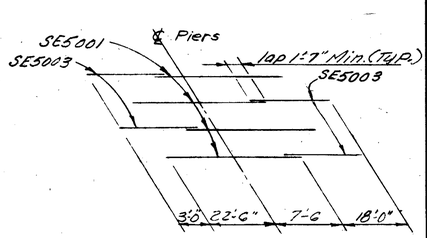
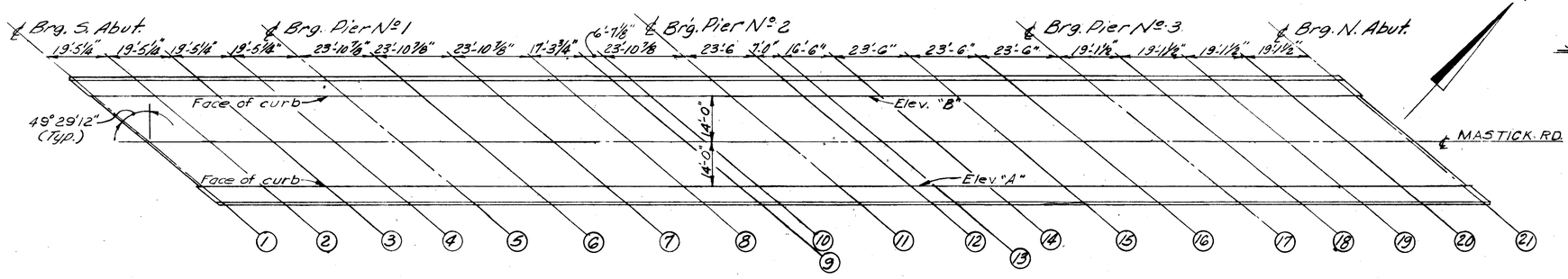


DIAGRAM SHOWING STAGGER OF SE5001 & SE5003 BARS OVER PIERS



DECK ELEVATIONS

NOTE: The deck elevations shown are those which are required prior to placing of the concrete deck. Proper allowance has been made for the dead load deflection caused by the weight of the concrete.

TABLE OF DECK ELEVATIONS

LINE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
ELEV. "A"	758.61	758.70	758.78	758.84	758.92	759.04	759.17	759.26	759.30	759.32	759.39	759.50	759.54	759.63	759.72	759.79	759.86	759.94	760.03	760.11	760.17
ELEV. "B"	758.48	758.57	758.65	758.71	758.79	758.91	759.03	759.13	759.17	759.19	759.26	759.37	759.41	759.50	759.60	759.67	759.73	759.80	759.89	759.97	760.03

10/14

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS

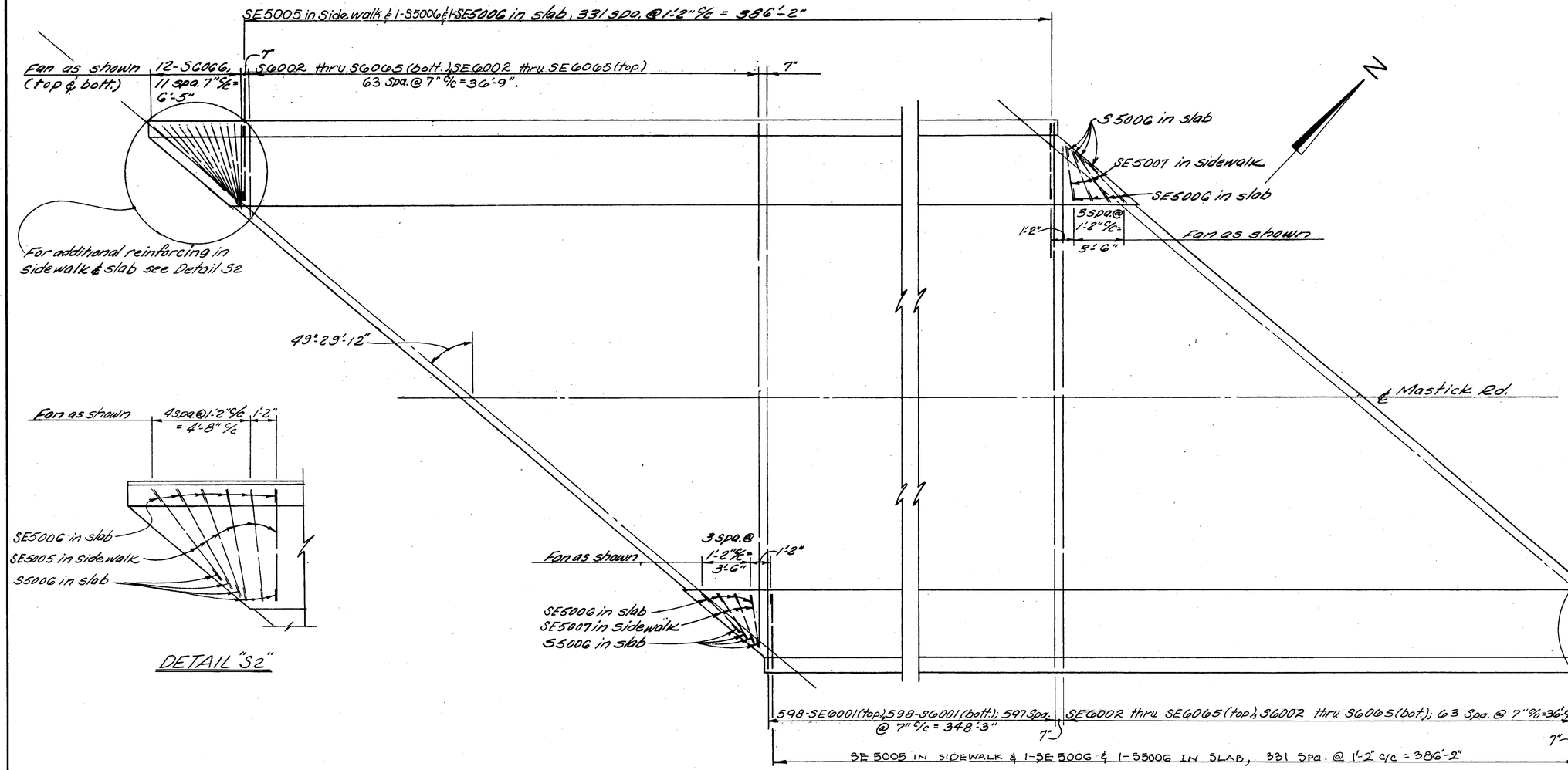
BRIDGE No. CUY-480-0614
MASTICK ROAD OVER I-480
CUYAHOGA COUNTY
STA. 9+34.20
STA. 13+32.37

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R.T. R.V.		R.J.P.	G.W.M.	7/11/83	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

324/347

CUYAHOGA COUNTY
CUY-480-4.86



TRANSVERSE SLAB REINFORCING

NOTE: Transverse Reinforcing Steel shall be placed normal to ℄ of Mastick Rd. except at acute corners of Slab.

11/14

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS

BRIDGE Nº CUY-480-0614
MASTICK ROAD OVER I-480
CUYAHOGA COUNTY
STA. 9+34.20
STA. 13+32.37

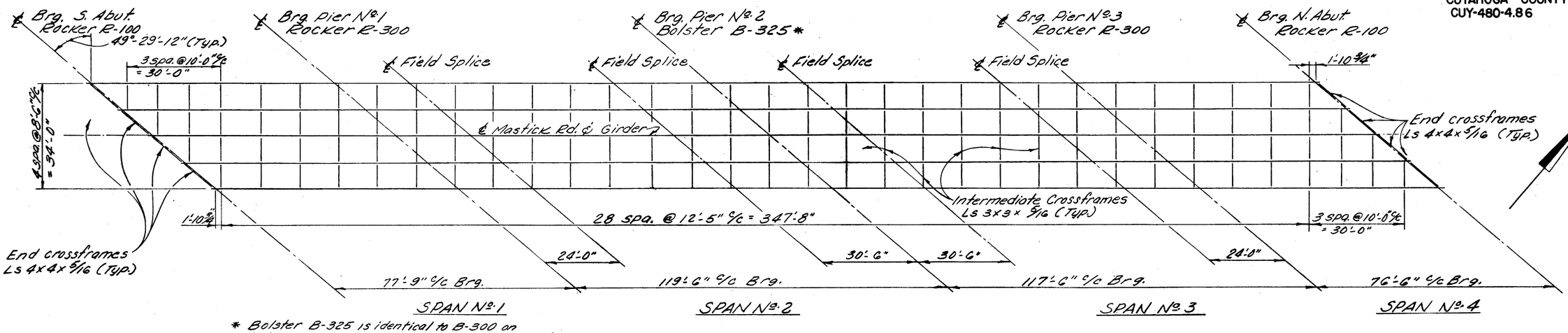
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R.T.		R.S.S.	G.W.M.	7/17/68	

MICROFILMED
AUG 20 1982

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

325/347

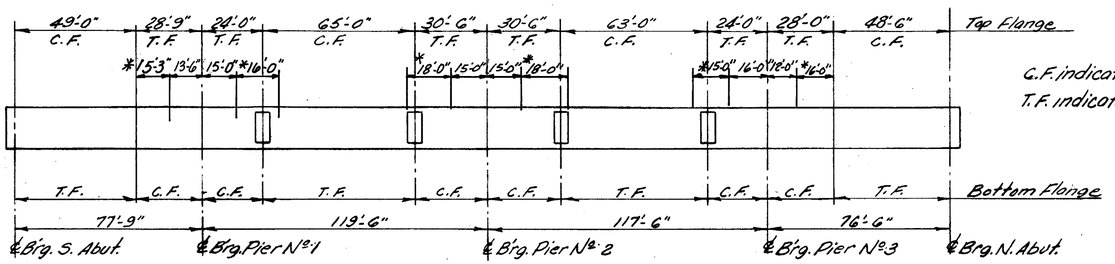
CUYAHOGA COUNTY
CUY-480-4.86



* Bolster B-325 is identical to B-300 on Std. Dwg. RB-1-55 with the following exceptions:
Dimension, A = 4"
" r1 = 2 1/16"
" r2 = 2 3/32
" C = 3 3/4"
" Y = 1 15/16
" H = 19 3/8"

FRAMING PLAN

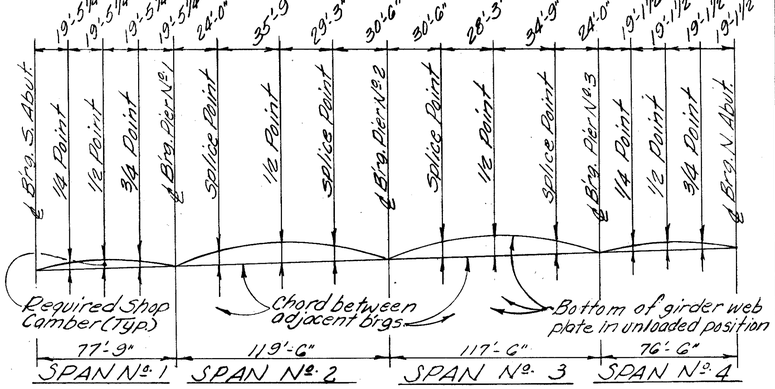
NOTES:
For Girder Details see Sheet 13/14
Place intermediate crossframes normal to Girder.
For additional General Notes see sh. 23/A 347



C.F. indicates compression flange
T.F. indicates tension flange

COMPRESSION AND TENSION FLANGE LOCATION DETAIL

* Indicates Contraflexure Zones



CAMBER & BLOCKING DIAGRAM

NOTE: Blocking dimensions in all cases equal 0"

DEFLECTION AND CAMBER

LOCATION	SPAN No. 1						SPAN No. 2						SPAN No. 3						SPAN No. 4					
	1/4 Pt.		1/2 Pt.		3/4 Pt.		Splice Pt.		1/2 Pt.		Splice Pt.		Splice Pt.		1/2 Pt.		Splice Pt.		1/4 Pt.		1/2 Pt.		3/4 Pt.	
	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.
Deflection due to weight of steel	1/16	1/16	1/16	1/16	0	0	1/16	1/16	3/16	3/16	1/16	1/16	1/16	1/16	1/8	1/8	1/16	1/16	0	0	1/16	1/16	1/16	1/16
Deflection due to remaining dead load	3/16	3/16	3/16	3/16	1/16	1/16	5/16	3/8	3/4	13/16	3/8	7/16	5/16	5/16	5/8	11/16	5/16	5/16	1/16	1/16	3/16	3/16	3/16	3/16
Required Shop Camber	1/4	1/4	1/4	1/4	1/16	1/16	3/8	7/16	13/16	1	7/16	1/2	3/8	3/8	3/4	13/16	3/8	3/8	1/16	1/16	1/4	1/4	1/4	1/4

12/14

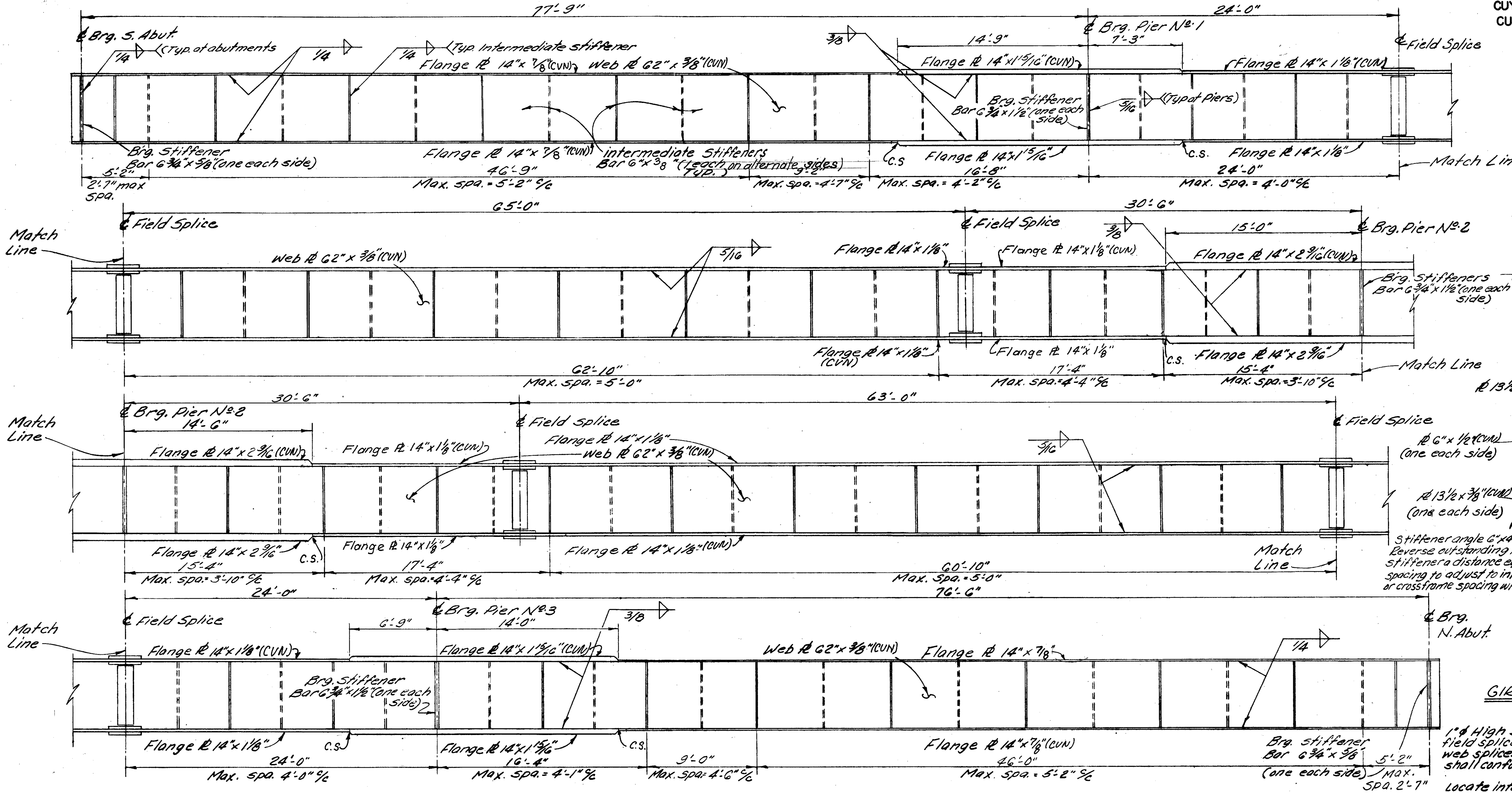
ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS
BRIDGE No. CUY-480-06 14
MASTICK ROAD OVER I-480
CUYAHOGA COUNTY STA. 9+34.20 STA. 13+32.37

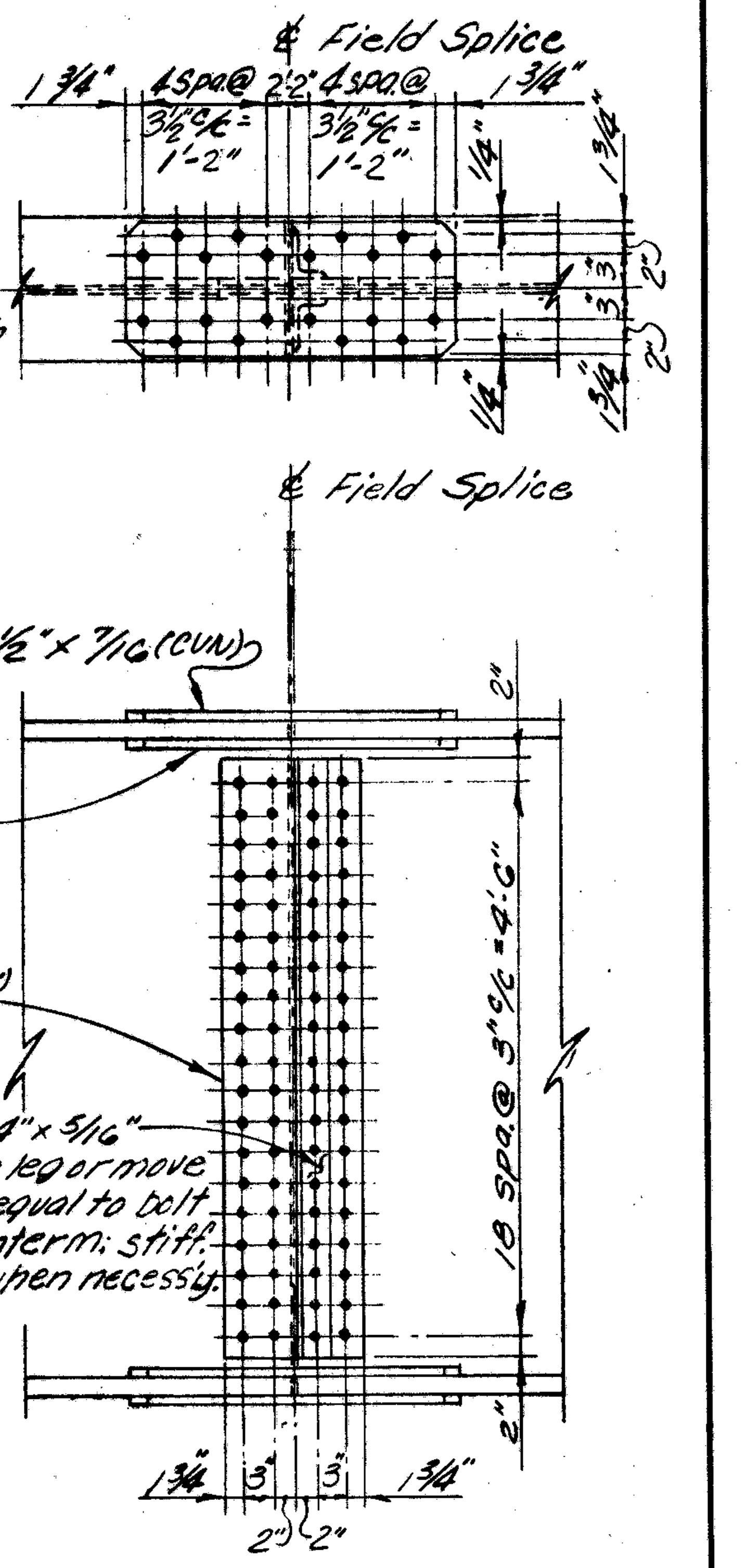
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R. T.		R.S.S.	G.W.M.	7/17/80	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86



GIRDER ELEVATION



GIRDER FIELD SPLICE DETAIL

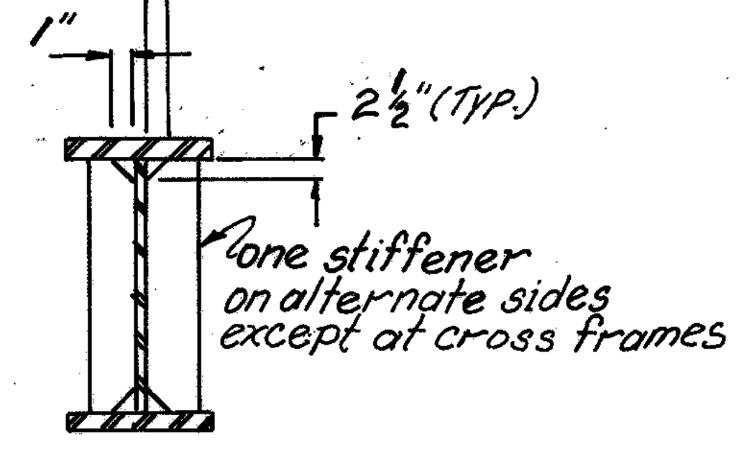
NOTES:

1"φ High strength bolts shall be used at field splices. Bolt heads on exterior girder web splices shall be on fascia side. Bolts shall conform to A325 steel.

Locate intermediate stiffeners to serve as attachments for intermediate crossframes.

Intermediate Web Stiffeners: Instead of the pairs of transverse intermediate web stiffeners single 6"x 3/8" web stiffeners shall be used on alternate sides of the web of interior girders and on the inside of the web of fascia girders at the spacing shown. Tranverse web stifferers shall be provided for the attachment of deck crossframes.

Grinding Of Shop Welds: Flange butt welds shall be ground flush in tension ares only. Except for webs of fascia girders web welds shall be ground flush for their full depth. Grinding shall be done in the direction of stress.



TYPICAL INTERMEDIATE STIFFENER DETAILS

For location of compression and tension flanges see sheet Nº 12/14

CS-Indicates butt weld subject to compressive stress only.

For additional Notes see sheet 231A/347

13/14

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

SUPERSTRUCTURE DETAILS
BRIDGE Nº CUY-480-06 14
MASTICK ROAD OVER I-480
CUYAHOGA COUNTY STA. 9+34.20
STA. 13+32.37

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R.T.		R.S.S.	G.W.M.	7/17/68	

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				ABUTMENT						
A 5001	50	4-11	256	1		1- 6	2- 2	1- 6		
A 5002	82	7- 0	599	1		1-11	3- 5	1-11		
A 5003	14	27- 3	398	ST						
A 5004	18	25- 6	479	ST						
A 5005	10	26- 3	274	ST						
A 5006	12	30- 6	382	ST						
A 5007	6	34- 6	216	ST						
A 5008	10	33- 0	344	ST						
A 5009	10	33- 9	352	ST						
A 5010	8	7- 2	60	ST						
A 5011	14	5- 0	73	ST						
A 5012	6	23- 0	144	ST						
A 5013	2	23- 2	48	ST						
A 5014	2	22- 0	46	ST						
A 5015	9	28-11	271	ST						
A 5016	4	28- 7	119	ST						
A 5017	9	3-11	37	ST						
A 5018	3	5- 1	16	ST						
A 5019	3	6- 6	20	ST						
A 5020	58	7- 8	464	ST						
A 5021	58	8- 6	514	1	1- 6	7- 2				
A 5022	9	4- 9	45	1	1- 6	3- 5				
A 5023	3	5-11	19	1	1- 6	4- 7				
A 5024	3	7- 4	23	1	1- 6	6- 0				
A 5025	6	8- 7	54	12	7- 0	1- 2		1- 1		
A 5026	59	4- 6	277	2	0-11	1- 4	1- 5	0- 8	0- 8	
A 5028	6	11- 0	69	5	24- 4		11- 0			
A 5029	6	11- 7	72	5	25- 6		11- 7			
A 5030	1	11- 2	12	5	24-10		11- 2			
A 5031	3	13- 0	41	5	24- 4		13- 0			
A 5032	3	13- 7	43	5	25- 6		13- 7			
A 5033	10	5- 4	56	ST						
A 5034	6	26-10	168	ST						
A 5035	2	27- 0	56	ST						
A 5036	2	26- 0	54	ST						
A 5037	9	32- 7	306	ST						
A 5038	6	27- 8	173	ST						
A 5039	9	33- 6	314	ST						
A 6001	82	20- 4	2504	2	7- 1	1- 5	8- 7	0-11	3- 0	
A 6002	22	21- 8	716	2	8- 9	1- 5	9- 3	0-11	2- 0	
D 8001	40	6-7	703	20	4- 5	0-8½	1-6½			
F 5001	85	6-10	606	1	0- 8	6- 4				
F 5002	82	8- 3	706	1		1- 7	5- 4	1- 7		
F 5003	4	4- 6	19	ST						
F 5004	81	11- 9	993	3	2- 7	3- 0	2- 7	3- 0		
F 5005	10	12- 7	131	3	2- 6	3- 6	2- 6	3- 6		
F 5006	1	6- 6	7	ST						
F 5007	2	7- 5	15	ST						
F 5008	2	7- 2	15	ST						
F 6001	82	13-11	1714	1	6- 4	5- 4	2- 7			
F 6002	53	17- 4	1380	1		8- 3	1- 2	8- 3		
F 8001	28	31- 0	2318	ST						
F 8002	6	26- 2	419	ST						
F 8003	6	9- 0	144	ST						
F 8004	6	29-10	478	ST						
F 8005	6	30- 6	489	ST						

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				PIERS						
F 5001P	147	6- 6	997	ST						
F 7001P	40	6- 6	531	ST						
F 7002P	13	34- 0	903	ST						
F 7003P	13	28- 9	764	ST						
F 8001P	60	6- 6	1041	ST						
F 8002P	18	34- 0	1634	ST						
F 8003P	18	29- 0	1394	ST						
F 9001P	31	38- 3	4032	ST						
F 9002P	31	25- 1	2644	ST						
F10001P	116	6- 7	3286	1		5- 6	1- 5			
F11001P	22	7- 2	838	1		5-10	1- 8			
P 4001	2	20-10	784	17	NO. TURNS= 59		NO. SPACERS= 8			6
P 4002	2	19- 0	717	17	NO. TURNS= 54		NO. SPACERS= 8			6
P 4003	2	21- 0	785	17	NO. TURNS= 59		NO. SPACERS= 8			6
P 4004	2	19- 2	718	17	NO. TURNS= 54		NO. SPACERS= 8			6
P 4005	1	21- 2	393	17	NO. TURNS= 59		NO. SPACERS= 4			6
P 4006	1	19- 4	365	17	NO. TURNS= 55		NO. SPACERS= 4			6
P 4007	2	18- 2	679	17	NO. TURNS= 51		NO. SPACERS= 8			6
P 4008	2	18- 4	691	17	NO. TURNS= 52		NO. SPACERS= 8			6
P 4009	1	18- 6	346	17	NO. TURNS= 52		NO. SPACERS= 4			6
P 5001	60	4- 5	276	1		1- 6	1- 8	1- 6		
P 5002	90	5- 1	477	1		1- 6	2- 4	1- 6		
P10001	20	20-10	1793	ST						
P10002	24	19- 0	1962	ST						
P10003	16	21- 0	1446	ST						
P10004	16	19- 2	1320	ST						
P10005	8	21- 2	729	ST						
P10006	8	19- 4	666	ST						
P10007	16	18- 4	1262	ST						
P10008	8	18- 6	637	ST						
P11001	22	18- 2	2123	ST						
				SUPERSTRUCTURE						
S 5001	676	30- 0	21152	ST						
S 5002	52	23- 7	1279	ST						
S 5006	682	2-4	1660	1		0-8	1- 3	0- 8		
S 6001	598	39- 8	35629	ST						
S 6002	2	38- 0		ST						1
THRU			4278		VARY LENGTH BY			0- 6		
S 6065	2	6- 6		ST						1
S 6066	48	6- 0	433	ST						
				RAILING-EPOXY COATED						
RE5001	128	15- 7		ST						2,5
RE5002	168	4-11		ST						2,5
RE5003	8	15-4		ST						2,5
RE5004	8	9-8		ST						2,5
RE5007	4	28- 7		ST						2,5
RE5008	2	10-11		5	24- 2		10-11			2,5

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				RAILING-EPOXY COATED (CONTINUED)						
RE5009	2	11- 2		5	24-10		11- 2			2,5
RE5010	4	33- 2		ST						2,5
RE5011	4	32- 3		ST						2,5
			LIGHT	POLE SUPPORTS						
LE501	12	3-1	39	1		0-7½	2-1	0-7½		4,5
LE502	12	9-4	117	1		3-9	2-1	3-9		4,5
LE503	21	8-0	174	16		0-6	2-1	1-4	2-1	4,5
LE504	12	3-9	48	ST						4,5
		EPOXY COATED REINFORCING STEEL-SUPERSTRUCTURE								
SE5001	551	30-0	17241	ST						5
SE5002	35	23-7	861	ST						5
SE5003	96	19-7	1961	ST						5
SE5005	674	6-9	4745	1		0-8	5-8	0-8		5
SE5006	682	2-4	1660	1		0-8	1-3	0-8		5
SE5007	8	4-11	41	1		0-8	3-10	0-8		5
SE6001	598	39-8	35629	ST						5
SE6002	2	38-0		ST						1,5
THRU			4278							
SE6065	2	6-6		ST						1,5
SE5004	676	7-1	4994	8	0-0¾	2-11	0-0¾	2-11	0-8	5
			ABUTMENT-EPOXY COATED							
AE5027	75	7-3	567	8	0-0¾	2-11	0-0¾	2-11	0-8	5

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

(327/347)

CUYAHOGA COUNTY
CUY-480-4.86

NOTES

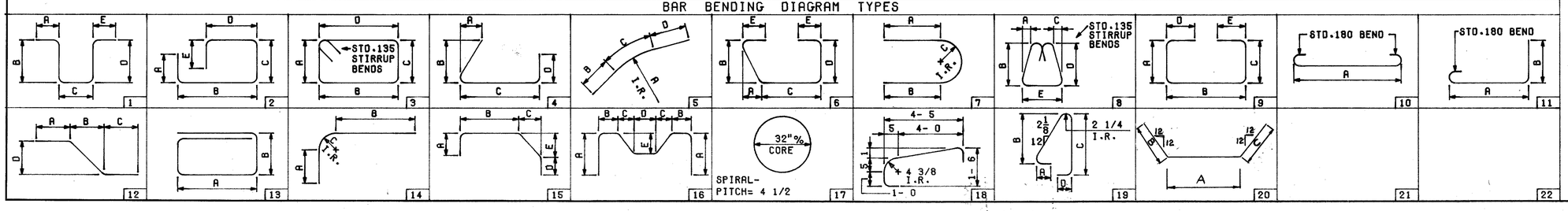
1. INDICATES SERIES BAR. EACH BAR VARIES FROM ADJACENT BAR(S) BY TABULATED AMOUNT(S), CALCULATED TO NEAREST 1/8 INCH. WEIGHT SHOWN IS FOR ENTIRE SERIES UTILIZING AVERAGE LENGTH.
2. BARS INCLUDED WITH ITEM 517, RAILING, FOR PAYMENT.
3. COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.
4. LIGHT POLE SUPPORT BARS INCLUDED WITH ITEM 509 FOR PAYMENT.
5. BARS ARE TO BE EPOXY COATED AS PER PROPOSAL NOTE.
6. 'LENGTH' SHOWN FOR SPIRAL BARS IS DISTANCE FROM TOP OF FOOTING TO BOTTOM OF PIER CAP.
   'NO. TURNS' SHOWN IS 'LENGTH' DIVIDED BY PITCH, PLUS 3 TURNS (NUMBER OF CLOSED COILS), EXPRESSED AS NEAREST WHOLE NUMBER.
   SPIRAL BARS MAY HAVE DEFORMATIONS AND SHALL IN OTHER RESPECTS CONFORM TO ITEM 509. 1 1/2 CLOSED COILS SHALL BE PROVIDED AT ENDS OF EACH SPIRAL UNIT. FOUR STEEL CHANNEL, TEE OR ANGLE SPACERS, WEIGHING APPROXIMATELY 0.80 LB. PER LIN. FT. OF SPACER SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG PERIPHERY OF COIL. WEIGHT OF SPACERS, AT 0.80 LB. PER LIN. FT. WILL BE PAID FOR AS REINFORCING STEEL AND IS INCLUDED IN TABULATED WEIGHT. OTHER DETAILS IN ACCORDANCE WITH CRSI STANDARD PRACTICE.

FOR ADDITIONAL NOTES SEE SHEET (231A/347)

BAR SIZE DESIGNATION

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE FOUR DIGITS ARE USED, AND FIRST TWO DIGITS WHERE FIVE DIGITS ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A7001 IS A NO. 7 SIZE BAR AND A10140 IS A NO. 10 SIZE.

BAR BENDING DIAGRAM TYPES



14/14

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

REINFORCING STEEL LIST
BRIDGE NO. CUY-480-0614
MASTICK ROAD OVER I-480

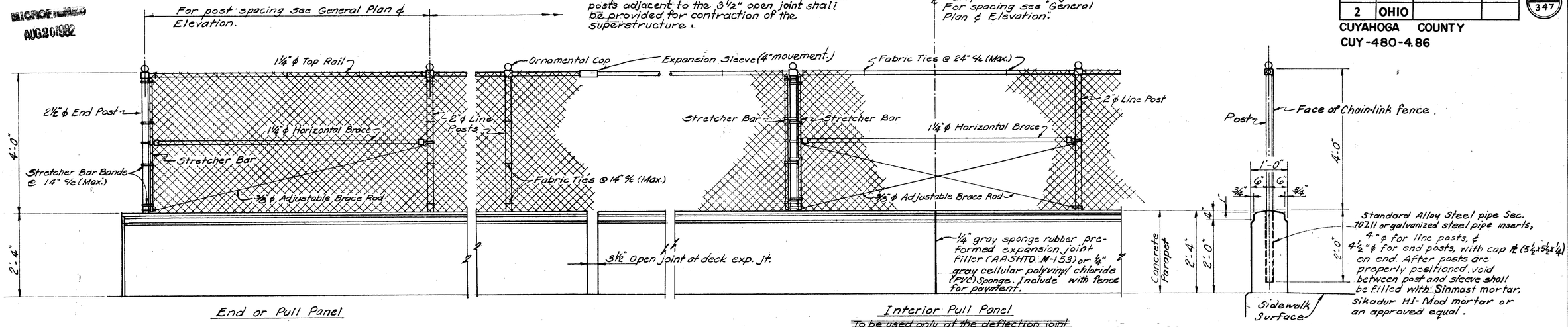
CUYAHOGA COUNTY STA. 9 + 34.20
STA. 13 + 32.37

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.I.P.			R.S.S.	G.W.M.	11/7/68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

CUYAHOGA COUNTY
CUY-480-4.86

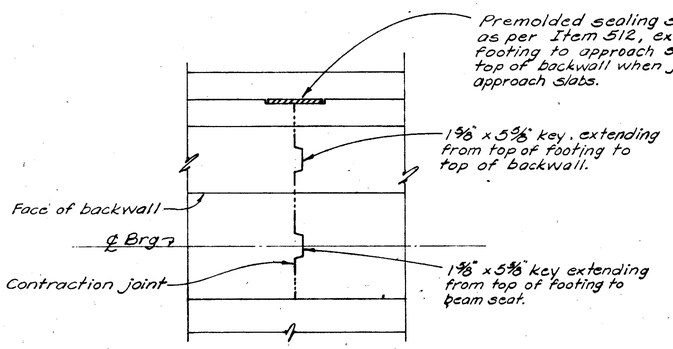
328/347



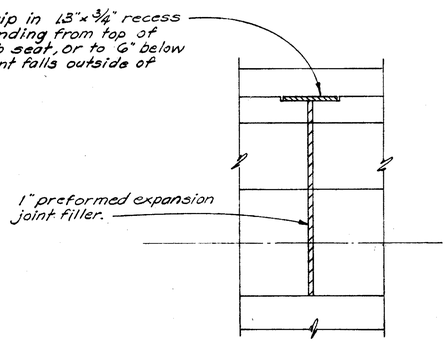
NOTE:
Fence shall conform to AASHTO M181, Type I or Type 2 and 710.03, chain link fence.

Concrete parapets shall be placed in alternate sections by the use of bulkheads. Closing sections shall be placed after removal of bulkheads and after placement of preformed exp. jt. filler filler. P.E.J.F. shall be flush with surface of concrete and exposed edges shall be free of mortar.

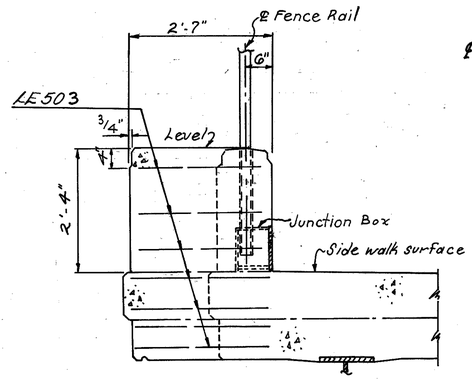
BRIDGE SIDEWALK FENCE



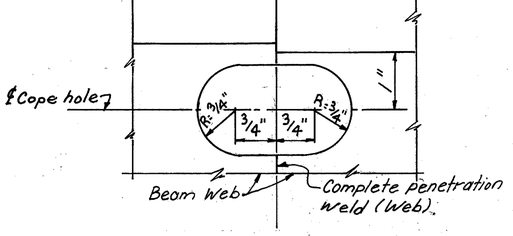
ABUTMENT CONTRACTION JOINT DETAIL



ABUTMENT EXPANSION JOINT DETAIL



SECTION THRU LIGHT POLE PILASTER FOR BRIDGE WITH SIDEWALK RAILING (See Standard Construction Drawing HL-4 for additional details).



COPE HOLE DETAIL FOR SHOP WELDED BUTT SPLICE

For Additional Notes see sh. 231A/347

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

COMMON DETAILS

CUYAHOGA COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
				G.W.M.	6/13/68	