21-8

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-90-1(29)11 U-329(22)	

L 211

MICROFILMED SEP 9 1965
MAR 23 1965 GROUND PHOTOLAB

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
CUY-2-24.33
CUYAHOGA COUNTY
CITY OF CLEVELAND
CITY OF EUCLID

I-90-1(29)11
U-329 (22)

CUYAHOGA COUNTY
CUY 2-24.33
CUY-90-25.13

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

MAR 23 1965 GROUND PHOTOLAB

NOTE: FEDERAL PROJECT I-329 (20) & I-90-1(18)11 APPEARING THROUGHOUT THIS PLAN SHALL BE CONSIDERED TO READ I-90-1(29)11

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, 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 THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATE.

APPROVED Wm B. Henry
DATE 6/29/60 DIVISION DEPUTY DIRECTOR

APPROVED W Freeman
DATE 9-6-60 ENGINEER OF LOCATION & DESIGN

APPROVED O.K. Overman
DATE 8-22-60 ENGINEER OF BRIDGES

APPROVED Guy E. Keeper
DATE 9-9-60 DEPUTY DIRECTOR, PLANNING & PROGRAMMING

APPROVED C.W. McCaughey
DATE 9-6-60 DEPUTY DIRECTOR DESIGN & CONSTRUCTION

APPROVED G.A. Berry
DATE 9-9-60 FIRST ASSISTANT DIRECTOR

APPROVED E.S. Preston
DATE 9-9-60 DIRECTOR OF HIGHWAYS

APPROVED Louis R. Krasser
DATE 6/30/60 DIRECTOR OF PUBLIC SERVICE CITY OF CLEVELAND

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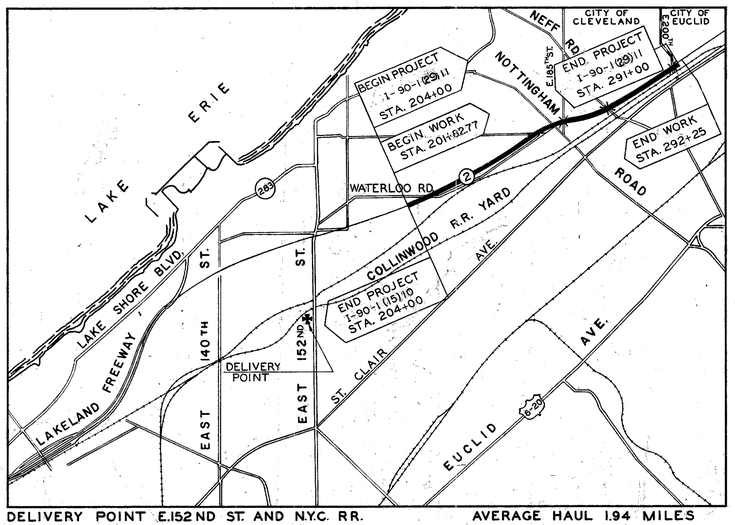
CONVENTIONAL SIGNS

CENTER LINE
CORPORATION LINE
FENCE LINE
GUARD RAIL — STANDARD BARRIER
RAILROAD
POLE LINES –
MUNICIPAL LIGHT & POWER — O M
CLEVELAND ELEC. ILLUMINATING — O CEI
OHIO BELL TELEPHONE — O OBT
EXISTING SEWERS TO BE ABANDONED

Revised Sheets Nos. 16, 17, 25, 26 and 43. R.E.C. 12-19-60



DELIVERY POINT E.152ND ST. AND N.Y.C. RR. AVERAGE HAUL 1.94 MILES

LOCATION MAP

SCALE IN FEET
0 1000 2000 4000 6000 8000

STATE HIGHWAYS
OTHER HIGHWAYS
PORTION TO BE IMPROVED

SCALES

PLAN ____ 1" = 50'
PROFILE - HORIZONTAL ____ 1" = 50'
PROFILE - VERTICAL ____ 1" = 10'
CROSS SECTIONS ____ 1" = 20'

LINE DATA

	WORK	PROJECT
BEGIN I-90-1(18)11	201+82.77	204+00
END I-90-1(18)11	292+25	291+00
GROSS LENGTH I-90-1(18)11	9,042.23 LIN. FT.	8,700.00 LIN. FT. OR 1.647 MILES
BEGIN U-329 (22)	268+73.67	268+73.67
END U-329(22)	289+82.25	289+82.25
GROSS LENGTH U-329(22)	2,108.58 LIN. FT.	2,108.58 LIN. FT. OR 0.399 MILE
ADDITIONS LOCAL ROADS #	3,693.97 LIN. FT.	
NET LENGTH OF I-90-1(18)11 + U-329(22)	14,844.78 LIN. FT. OR 2.811 MILES	10,808.58 LIN. FT. OR 2.047 MILES

SEE SHEET Nº 24 FOR ADDITIONS LOCAL ROADS

MAR 23 1965 GROUND PHOTOLAB

STATE OF OHIO
W. R. HARGETT 3029
A. D. YANDA 2071
C. M. BARBER 223
REGISTERED PROFESSIONAL ENGINEERS

Revised As-Built

PLANS PREPARED BY
HARGETT, YANDA & BARBER
CONSULTING ENGINEERS
CLEVELAND, OHIO 15 Jan. 1960

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED:

DIVISION ENGINEER ____ DATE ____

SUPPLEMENTAL SPECIFICATIONS		STANDARD CONSTRUCTION DRAWINGS							
NUMBER	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING No.	DATE
18-REVISED	6-15-59	B-T-50-70-71-E-NO.1	10-1-47	I-8 C.B. NO. 6	1-26-59	I-21-23	8-1-56	RB-1-55	2-2-59
M-206.14	7-15-49	B-T-71R	3-2-53	I-8 I. NO. 2	4-23-59	L-3	4-1-50		
M-106.6 (d) REV.	4-1-58	F-1	9-1-59	I-8 M.H. NO. 1	1-26-59	L-3-A	4-1-50		
I-112	9-15-56	F-3	9-1-59	I-8 M.H. NO.1-A	1-26-59	L.J. NO. 1	7-1-55		
M-106.6(C)	2-17-59	G-7.07	6-1-56	I-8 M H NO 2	1-26-59	T.J.	5-1-56	I-12	7-1-54
B-219 REV.	3-12-59	I.H.S. NO. 1	11-3-58	I-14-G	1-22-52	RI-1	7-15-58	F-2	10-1-58
30	5-28-48	I-1,2,3,4 & 5	4-24-58	I-15 NO. 1	5-21-59	T-35	1-2-56		
5-101	12-2-59	I-8 C.B. 2-2A & B	3-2-59	I-15 NO. 2-A	5-21-59	L-1	4-1-50		

FILE NO.	CUY-2-24.33
	DATE OF LETTING ____
	CONTRACT NO. ____

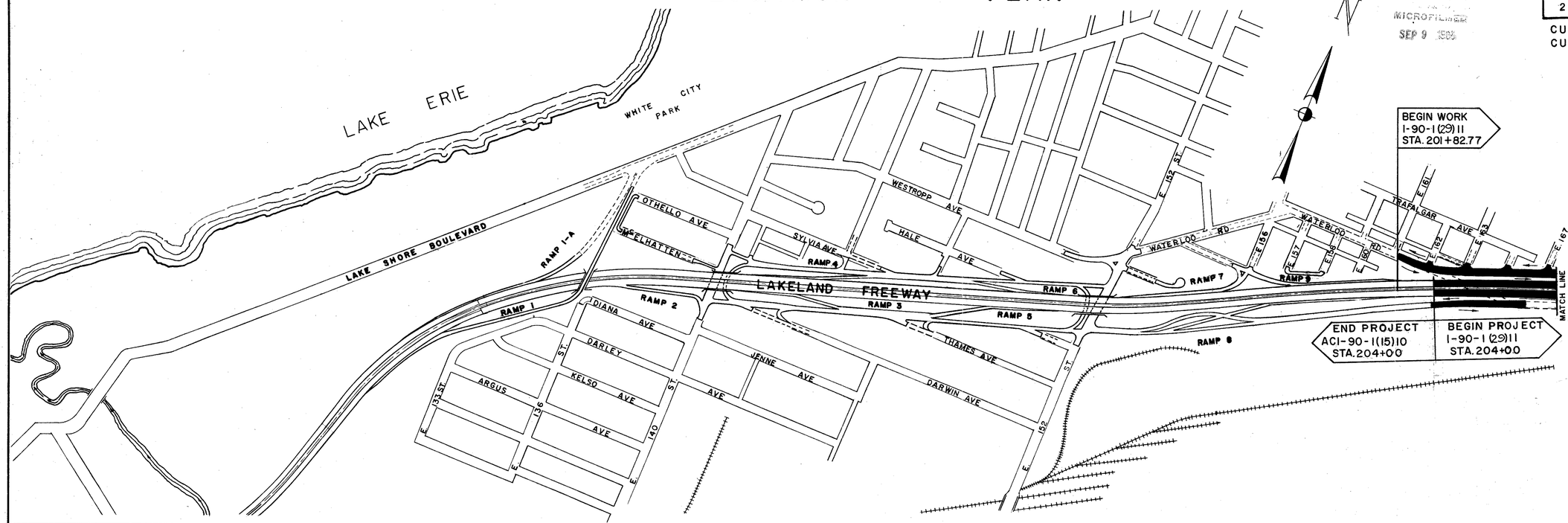
00150R2A

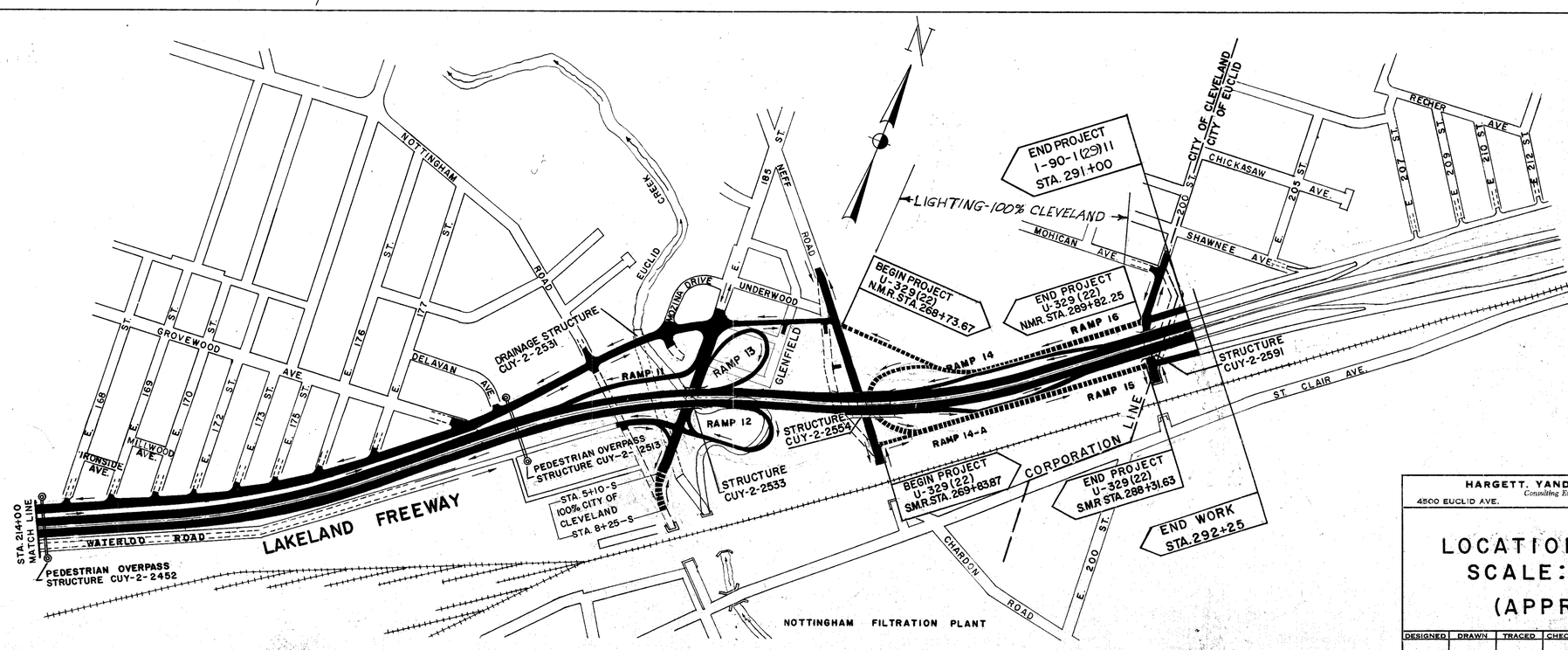
LOCATION PLAN

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

CUYAHOGA COUNTY
CUY. 2-24.33

MICROFILMED
SEP 9 1986





HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

LOCATION PLAN
SCALE: 1" = 400'
(APPROX.)

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

3 TBM

FWY. Curve No 4 - ℄ Data
D = 0°-28'-00"
Δ = 04°-58'-18" L
R = 12277.58'
T = 747.88'
L = 1493.93'
LC = 1493.00'
E = 22.76'

N.M.R. Curve No 2 - ℄ Data
D = 5°-45'-00"
Δ = 21°-37'-51"
R = 996.45'
T = 190.36'
L = 376.19'
LC = 373.96'
E = 18.02'

FWY. Curve No 5 - ℄ Data
D = 0°-28'-00"
Δ = 05°-39'-15" R
R = 12277.58'
T = 606.29'
L = 1211.41'
LC = 1211.11'
E = 14.97'

S.M.R. Curve No 1 -
D = 2°-00'-00"
Δ = 4°-58'-18"
R = 2864.79'
T = 174.51'
L = 348.58'
LC = 348.37'
E = 5.31'

S.M.R. Curve No 2 - ℄ Data
D = 1°-00'-00"
Δ = 3°-04'-14"
R = 5729.58"
T = 153.54'
L = 307.04'
LC = 307.02'
E = 2.06'

S.M.R. Curve No 3 - ℄ Data
D = 2°-00'-00"
Δ = 8°-43'-29"
R = 2864.79'
T = 218.54'
L = 436.24'
LC = 435.81'
E = 8.32'

N.M.R. Curve No 3 - ℄ Data
D = 1°-26'-00"
Δ = 14°-07'-04"
R = 3997.39'
T = 494.99'
L = 984.96'
LC = 982.47'
E = 30.50'

FWY. Curve No 4 - ℄ Data
D = 1°-20'-00"
Δ = 13°-07'-04" L
R = 4297.20'
T = 494.08'
L = 983.83'
LC = 981.49'
E = 28.31'

Ramp No 7 - ℄ Data
R = 5896.72 | R = 298.51 | R = 264.78
Δ = 4°23'57" | Δ = 18°43'48" | Δ = 42°56'15"
T = 226.49 | T = 49.23 | T = 104.13
L = 452.74 | L = 97.58 | L = 198.43
Lc = 452.64 | Lc = 97.15 | Lc = 193.82

Ramp No 8 - ℄ Data
R = 1808.00
Δ = 14°24'59"
T = 178.08
L = 354.27
Lc = 353.34

Ramp No 8-B Data
R = 490.31
Δ = 15°27'05"
T = 58.38
L = 116.05
Lc = 115.71

SMR W.B. Lane - ℄ Data
R = 512.00
Δ = 25°47'31"
T = 117.23
L = 230.48
Lc = 228.54

SMR W.B. Lane - ℄ Data
R = 514.00 | R = 1012.00
Δ = 41°13'28" | Δ = 20°33'04"
T = 193.33 | T = 183.47
L = 369.82 | L = 362.99
Lc = 361.90 | Lc = 361.05

Ramp No 9 - ℄ Data
R = 708.00
Δ = 15°19'51"
L = 189.46
T = 94.66
L = 188.21
Lc = 187.65

Connector Rd. - ℄ Data
R = 708.00
Δ = 0°00'77"
T = 1.59
L = 3.18
Lc = 3.18

Connector Rd. - ℄ Data
R = 360.00
Δ = 111°00'28"
T = 52.39
L = 69.75
Lc = 59.44

Connector Rd. - ℄ Data
R = 360.00
Δ = 68°39'00"
T = 24.73
L = 43.14
Lc = 40.61

Connector Rd. - ℄ Data
R = 450.75
Δ = 42°39'39"
T = 175.53
L = 335.56
Lc = 327.79

Ramp No 9 - ℄ Data
R = 1808.00
Δ = 11°45'39"
T = 186.58
L = 298.16
Lc = 297.65

Ramp No 9 - ℄ Data
R = 708.00
Δ = 15°19'51"
T = 95.39
L = 189.46
Lc = 188.91

Ramp No 8 - ℄ Data
R = 1808.00
Δ = 14°24'59"
T = 178.08
L = 354.27
Lc = 353.34

Ramp No 8-B Data
R = 490.31
Δ = 15°27'05"
T = 58.38
L = 116.05
Lc = 115.71

SMR W.B. Lane - ℄ Data
R = 512.00
Δ = 25°47'31"
T = 117.23
L = 230.48
Lc = 228.54

SMR W.B. Lane - ℄ Data
R = 514.00 | R = 1012.00
Δ = 41°13'28" | Δ = 20°33'04"
T = 193.33 | T = 183.47
L = 369.82 | L = 362.99
Lc = 361.90 | Lc = 361.05

N.M.R. Curve No 3 - ℄ Data
D = 1°-26'-00"
Δ = 14°-07'-04"
R = 3997.39'
T = 494.99'
L = 984.96'
LC = 982.47'
E = 30.50'

FWY. Curve No 4 - ℄ Data
D = 1°-20'-00"
Δ = 13°-07'-04" L
R = 4297.20'
T = 494.08'
L = 983.83'
LC = 981.49'
E = 28.31'

Note:
All Distances Are In Reference To Tangent Lines.
All Stations Are In Reference To Freeway Or Marginal Road Center Lines.

Note:
The Center Line Of Construction As Here Indicated Is Based Upon The Legally Described Center Line Of The Improvement As Published In The City Record Of Dec. 31, 1947, Headed Ord. No. 1340-47, And The Supporting Survey And Calculation Figures As Furnished By The State Of Ohio Highway Department, Now Described In Ordinance No 2111-58 Published In The City Record of 19 November 1958.

Legend:
- ■ New Monument to be Set
- ▣ Existing Monument to be Re-Set
- □ Existing Reference Point

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

CONSTRUCTION CENTERLINE LAKELAND FREEWAY & MARGINAL ROADS

SCALE: 1-100

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

4 / 18A

N

MATCH LINE A

MATCH LINE B

MATCH LINE C

Sta. 266+19.14 N.M.R.

Punch hole in X on Mon Cover

N-49°-21'-07"E 531.63'

529.31'

144.49'

Ramp Sta. 7+88.93 ℄ WOODROW AVE. N-89°-43'-08"W

℄ GLENFIELD RD.

Ramp №13 ℄ Data

R = 300.00'	R = 150.00'
Δ = 45°-35'-10"	Δ = 132°-21'-32"
T = 126.07'	T = 339.77'
L = 238.69'	L = 346.51'
LC = 232.44'	LC = 274.44'

R = 400.00'
Δ = 69°-34'-37"
T = 277.69'
L = 485.74'
LC = 456.44'

Ramp Sta. 4+42.42

N-89°-43'-38"W

℄ CHAPMAN AVE 614.79'

N-67°-47'-39"E

Ramp Sta. 2+03.73

℄ LAKELAND FWY. 661.75'

N-69°-21'-07"E

Conc. Nail

43.22' ℄ Stone

℄ NEFF ROAD RELOC. N38°-24'-13"W

EX. NEFF 5+96.02

(℄ to ℄) 62'

P.I. to P.I. = 2054.19'

N71°-09'-39"E

RAMP STA. 1+37.29

℄ RAMP

R=1010 R=510 R=260

RAMP STA. 4+90.66

RAMP STA. 5+13.86

RAMP No. 12 ℄ DATA

R = 1010.00	R = 510.00	R = 260.00	R = 160.00
Δ = 11°-56'-44	Δ = 16°-02'-34"	Δ = 18°-20'-05"	Δ = 150°-31'-08"
T = 105.67'	T = 71.87'	T = 41.26'	T = 608.13'
L = 210.57'	L = 142.80'	L = 83.20'	L = 420.33'
LC = 210.19'	LC = 142.33'	LC = 81.50'	LC = 309.47

LEGEND:
■ NEW MONUMENT TO BE SET
▣ EXISTING MONUMENT TO BE RESET
□ EXISTING REFERENCE POINT

NOTE:
ALL DISTANCES ARE IN REFERENCE TO TANGENT LINES. ALL STATIONS ARE IN REFERENCE TO FREEWAY OR MARGINAL ROAD CENTER LINES.

NOTE:
THE CENTERLINE OF CONSTRUCTION AS HERE INDICATED IS BASED UPON THE LEGALLY DESCRIBED CENTERLINE OF THE IMPROVEMENT AS PUBLISHED IN THE CITY RECORD OF DEC. 31, 1947 HEADED ORD. No. 1340-47, AND THE SUPPORTING SURVEY AND CALCULATION FIGURES FURNISHED BY THE STATE OF OHIO HIGHWAY DEPARTMENT, NOW DESCRIBED IN ORDINANCE No. 2111-58, PUBLISHED IN THE CITY RECORD OF 19 NOVEMBER 1958.

N.M.R. Curve №5-℄ Data
D=10°-30'-47"
Δ=27°-18'-05"
R=545.00'
T=132.36'
L=259.49'
LC=257.24'
E=15.84'

N.M.R. Curve №4-℄ Data
D=2°-30'-00"
Δ=12°-16'-26"
R=2291.83'
T=246.42'
L=490.96'
LC=490.02'
E=13.21'

FWY. Curve №7-℄ Data
D=1°-20'-00"
Δ=14°-01'-39" R
R=4297.20'
T=528.68'
L=1052.06'
LC=1049.44'
E=32.41'

RAMP №11 ℄ DATA
R=1408.00'
Δ=14°-19'-18"
T=175.65'
L=349.49'
LC=348.59'

RAMP №11 ℄ DATA
R=992.00'
Δ=16°-25'-10"
T=143.12'
L=284.28'
LC=283.31'

Ramp №11 ℄ Data
R=108.00'
Δ=57°-15'-00"
T=58.94'
L=107.91'
LC=103.48'

Ramp Sta. 11+55.01

Ramp Sta. 12+62.92 E.185TH ST. 2+56.85-N

Ramp Sta. 12+74.67 E.185TH ST. 2+68.15-N

Ramp Sta. 13+00.00 E.185TH ST. 2+93.48-N

Ramp Sta. 13+62.92 E.185TH ST. 3+56.85-N

Ramp Sta. 14+00.00 E.185TH ST. 3+93.48-N

Ramp Sta. 14+74.67 E.185TH ST. 4+68.15-N

Ramp Sta. 15+00.00 E.185TH ST. 4+93.48-N

Ramp Sta. 15+62.92 E.185TH ST. 5+56.85-N

Ramp Sta. 16+00.00 E.185TH ST. 5+93.48-N

Ramp Sta. 16+74.67 E.185TH ST. 6+68.15-N

Ramp Sta. 17+00.00 E.185TH ST. 6+93.48-N

Ramp Sta. 17+62.92 E.185TH ST. 7+56.85-N

Ramp Sta. 18+00.00 E.185TH ST. 7+93.48-N

Ramp Sta.

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

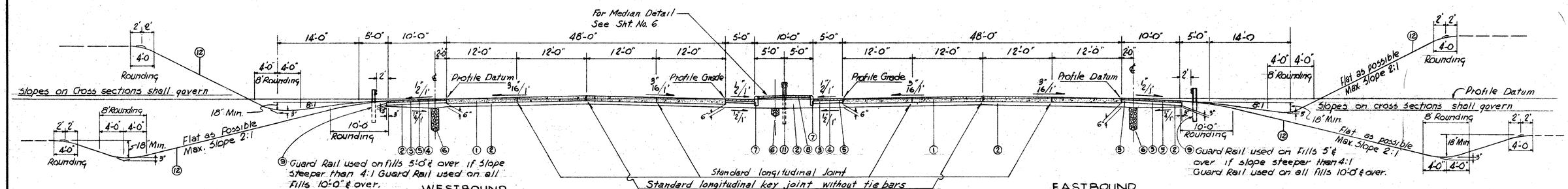
5 Tech.

TYPICAL SECTIONS

(2) 48'-0" PAVEMENTS

TYPE T-71 REINFORCED CONCRETE PAVEMENT

SCALE 1/8" = 1'-0"



WESTBOUND

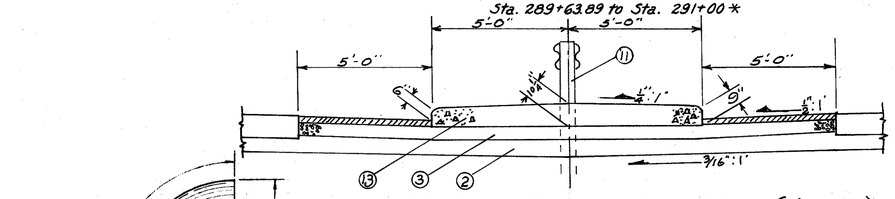
Sta. 204+00 to Sta. 219+75
Sta. 236+50 to Sta. 246+25
Sta. 284+00 to Sta. 287+36.71
Sta. 289+63.89 to Sta. 291+00 *

See extra area Sht. No 56
See extra area Sht. No 67
See extra area Sht. No 67

From Sta. 236+50 to Sta. 246+25 (Westbound)
From Sta. 284+50 to Sta. 287+36.71 (Eastbound)
From Sta. 284+57.49 to Sta. 287+36.71 (Westbound)

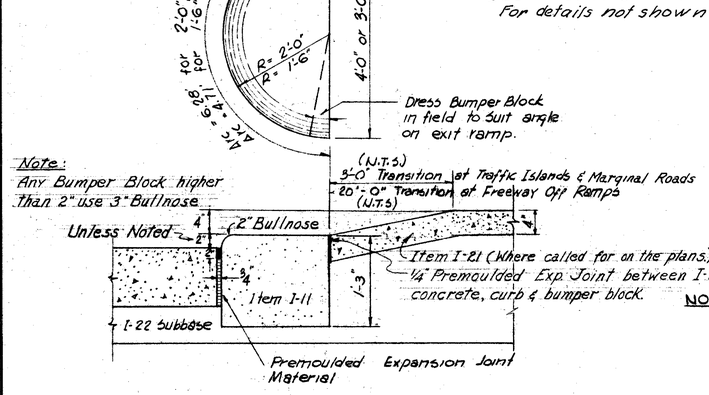
EASTBOUND

Sta. 204+00 to Sta. 220+75
Sta. 236+50 to Sta. 246+25
Sta. 284+25 to Sta. 287+36.71
Sta. 289+63.89 to Sta. 291+00 *



NORMAL SECTION TYPE 2 MEDIAN. (* NOTE)

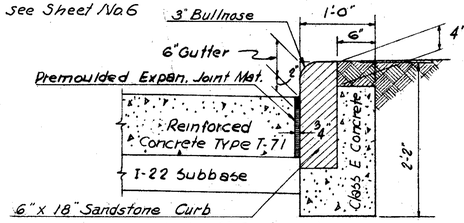
* The above median applies From Sta 289+63.89 to Sta 291+00
For details not shown see Sheet No 6



BUMPER BLOCK DETAIL
SCALE 1"=1'-0"

NOTE:
Bumper block sandstone shall meet the requirement of Sec I-11.02 of the Construction and Material Specifications.

NOTE: The 4" premoulded expansion joint material shall meet the requirements of section M-10.02 or M-10.03 of the specifications. The cost of pavement for traffic islands and between curbs at ramp exit noses shall include the premoulded expansion joint material and will be paid for at the contract unit price per square yard bid for Item I-21 Portland Cement Concrete Traffic Island Pavement.



For Radii, 55 feet or less

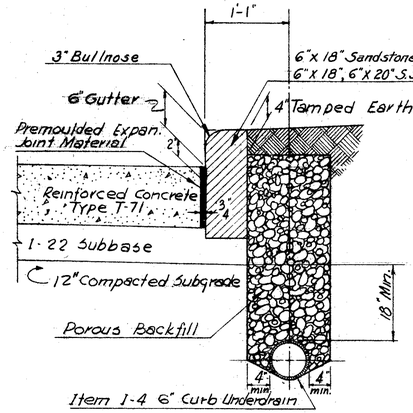
RADIAL CURB DETAIL
SCALE 1"=1'-0"

NOTE: All curbs shall be 6"x18" Sandstone Curb unless otherwise noted.

NOTE:
The three quarter (¾") inch Premoulded Joint Material shall meet the requirements of section M-10.02 of the standard Specifications. It shall be placed in front of the Radial Curb and Bumper Blocks to within two (2") inches of the surface. The remaining space shall be filled with Bituminous Filler* meeting the requirements of Sec. M-5.6 F2 of the Standard Specifications. The cost of the joint & the cost of class "E" concrete shall be included in price bid per lineal foot of curb.

NOTE:
If pavement is built before the curb is placed, it shall be built full width and any opening between curb and pavement shall be filled with dry sand to within (2") two inches of the surface; the remaining space shall be filled with Bituminous filler* meeting the requirements of Sec. M-5.6 F2 of the Standard Specifications. Sand shall meet the requirements of Sec. M-2.1. The cost of joint is to be included in the price bid per lineal foot of curb.

* Where pavement consists of asphaltic concrete the bituminous filler may be omitted.



DETAIL SHOWING STRAIGHT CURB & 6" CURB UNDERDRAINS
SCALE 1"=1'-0"

* NOTE:
Subsequent to completion of the plans the Median Pavement was changed from Type 1 to Type 2 from Sta. 289+63.89 to Sta. 291+00. Median pavement quantities have been adjusted, however quantities of median Curbs will be adjusted at the time of construction.

LEGEND

① T-71 10" Reinforced Portland Cement concrete pavement.
② I-22 Subbase Grading A or B as per plan, see Sht. # 14
③ I-18 5" Stabilized crushed aggregate shoulders
④ T-31 Bituminous Surface Treatment consisting of one application as follows:
0.008 cubic Yards No 6 Aggregate and 0.25 gallon Bituminous Material per square yard. (see note in proposal)
⑤ B-219 3" Waterproofed aggregate base course
⑥ I-4 6" Underdrains As per plan.
⑦ I-11 6"x18" Sandstone Curb. As per plan.
⑧ I-21 Standard Type 1 Portland cement concrete median Pavement.
⑨ I-15 Guard Rail Std. Type
⑩ T-71 9" Reinforced Portland Cement Concrete Pavement.
⑪ I-15 Guard Rail - Barrier Type
⑫ L-9 Seeding
⑬ I-21 Standard Type 2 Portland Cement Concrete Median Pavement

For Details of I-4 6" Underdrains (Deep and Shallow) See Sht. No 10
For Details of I-4 6" Underdrain of median strip. See Sht. No 6

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4500 EUCLID AVE. CLEVELAND 3, OHIO

TYPICAL SECTIONS

FREEWAY NORMAL

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

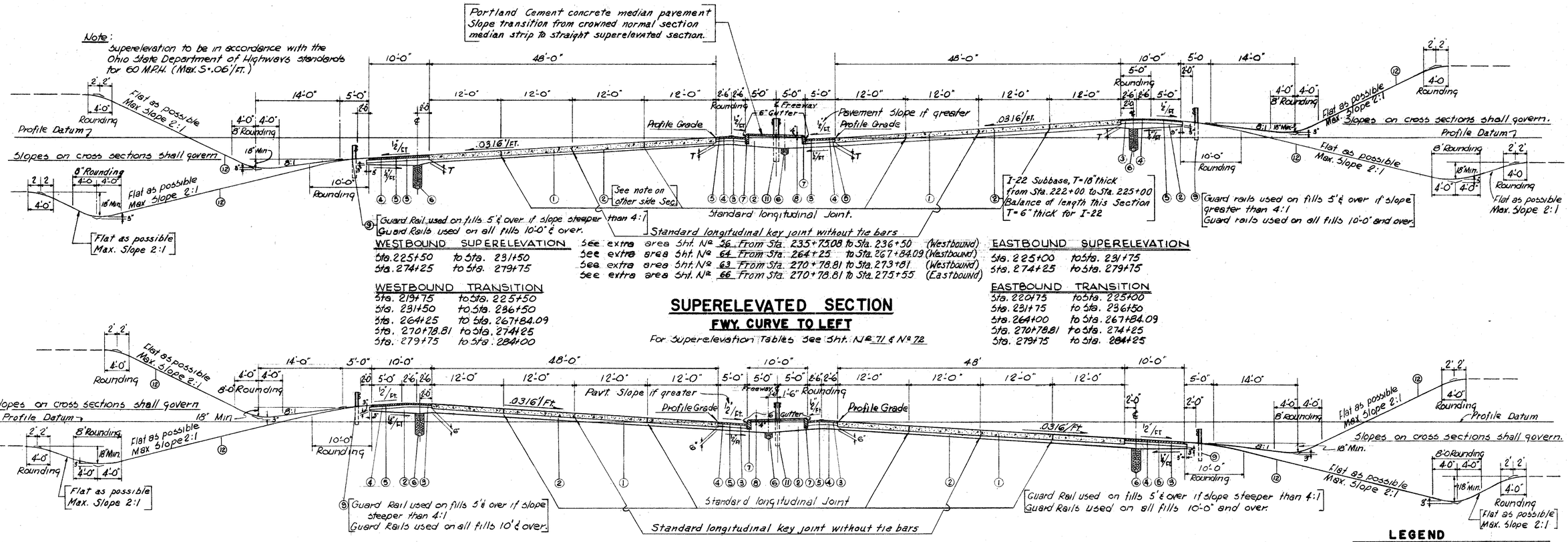
CUYAHOGA COUNTY
CUY-2-24.33

TYPICAL SECTIONS

2-48'-0" PAVEMENTS

TYPE T-71 REINFORCED CONCRETE PAVEMENT

SCALE 1/8" = 1'-0"



WESTBOUND SUPERELEVATION

Sta. 225+50 to Sta. 231+50
Sta. 274+25 to Sta. 279+75

WESTBOUND TRANSITION

Sta. 219+75	to Sta. 225+50
Sta. 231+50	to Sta. 236+50
Sta. 264+25	to Sta. 267+84.09
Sta. 270+78.81	to Sta. 274+25
Sta. 279+75	to Sta. 284+00

See extra area Sht. Nº 56 From Sta. 235+75.08 to Sta. 236+50 (Westbound)
See extra area Sht. Nº 64 From Sta. 264+25 to Sta. 267+84.09 (Westbound)
See extra area Sht. Nº 63 From Sta. 270+78.81 to Sta. 273+81 (Westbound)
See extra area Sht. Nº 66 From Sta. 270+78.81 to Sta. 275+55 (Eastbound)

EASTBOUND SUPERELEVATION

Sta. 225+00 to Sta. 231+75
Sta. 274+25 to Sta. 279+75

EASTBOUND TRANSITION

Sta. 220+75	to Sta. 225+00
Sta. 231+75	to Sta. 236+50
Sta. 264+00	to Sta. 267+84.09
Sta. 270+78.81	to Sta. 274+25
Sta. 279+75	to Sta. 284+25

SUPERELEVATED SECTION

FWY. CURVE TO LEFT

For Superelevation Tables See Sht. Nº 71 & Nº 72

WESTBOUND SUPERELEVATION

Sta. 252+25 to Sta. 256+59.23

WESTBOUND TRANSITION

Sta. 246+25 to Sta. 252+25
Sta. 259+33.69 to Sta. 264+25

See extra area Sht. Nº 55,56 From Sta. 246+25 to Sta. 249+31 (Westbound)
See extra area Sht. Nº 55 From Sta. 253+10 to Sta. 256+59.23 (Westbound)
See extra area Sht. Nº 61,64 From Sta. 259+33.69 to Sta. 264+25 (Westbound)
See extra area Sht. Nº 60 From Sta. 259+50 to Sta. 264+00 (Eastbound)

EASTBOUND SUPERELEVATION

Sta. 252+25 to Sta. 256+59.23
Sta. 259+33.69 to Sta. 259+50.

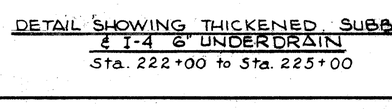
EASTBOUND TRANSITION

Sta. 246+25 to Sta. 252+25
Sta 259+50 to Sta. 264+00

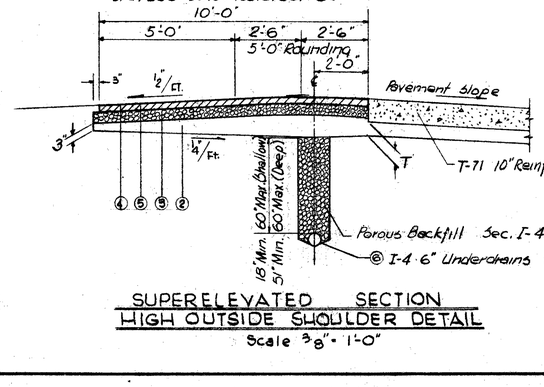
SUPERELEVATED SECTION

FWY. CURVE TO RIGHT

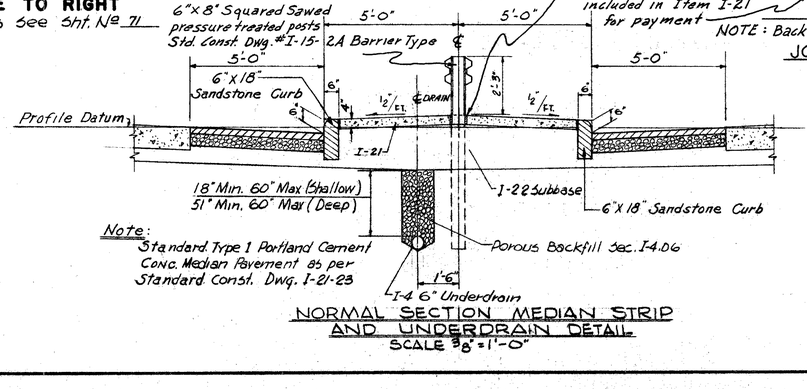
For Superelevation Tables See Sht. Nº 71



DETAIL SHOWING THICKENED SUBBASE & I-4 6" UNDERDRAIN
Sta. 222+00 to Sta. 225+00



SUPERELEVATED SECTION
HIGH OUTSIDE SHOULDER DETAIL
Scale 3/8" = 1'-0"

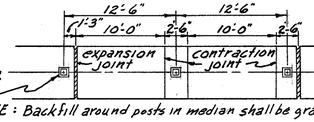


Note:
Standard Type 1 Portland Cement Conc. Median Pavement as per Standard Const. Dwg. I-21-23

NORMAL SECTION MEDIAN STRIP AND UNDERDRAIN DETAIL
SCALE 3/8" = 1'-0"

LEGEND

For interpretation of key numbers See Sht. Nº 5



NOTE: Backfill around posts in median shall be granular material

JOINT DETAIL AT GUARD RAIL POSTS IN CONCRETE MEDIAN

For Details of I-4 6" Underdrains (deep & shallow) See Sht. Nº 10

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TYPICAL SECTIONS

FREEWAY SUPERELEVATED
CURVE TO LEFT AND RIGHT

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
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CUYAHOGA COUNTY
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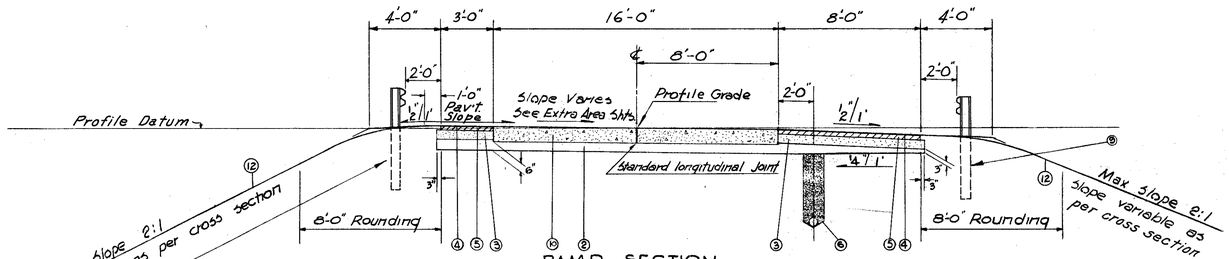
TYPICAL SECTIONS

16' PAVEMENTS

TYPE T-71 REINFORCED CONCRETE PAVEMENT

SCALE = 1/4" = 1'-0"

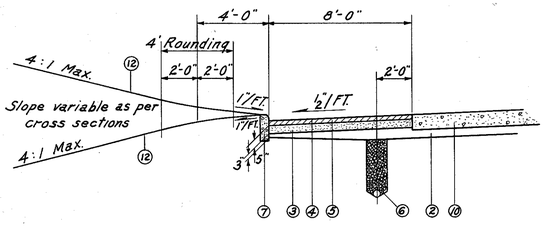


RAMP SECTION

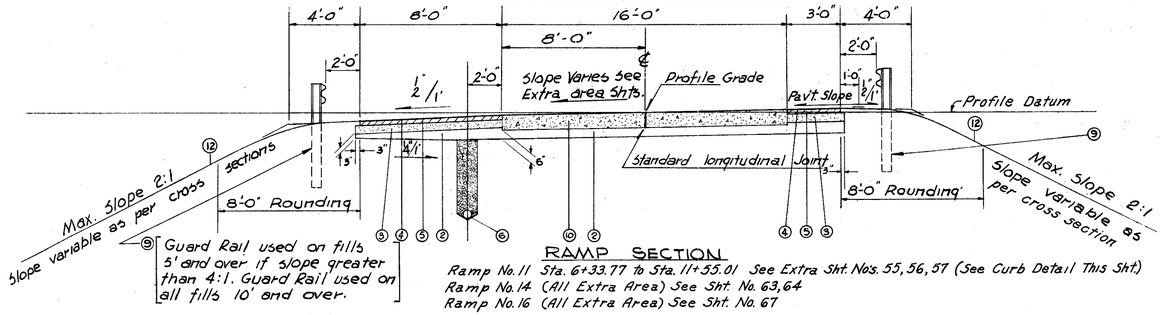
Ramp No. 14 A (All extra area) See Sht. No. 66
Ramp No. 15 (All extra area) See Sht. No. 67

⑨ Guard Rail used on fills 5'ℓ over if slope greater than 4:1. Guard Rail used on all fills 10'ℓ over.

NORMAL SECTION



RAMP NO. 11 CURB DETAIL

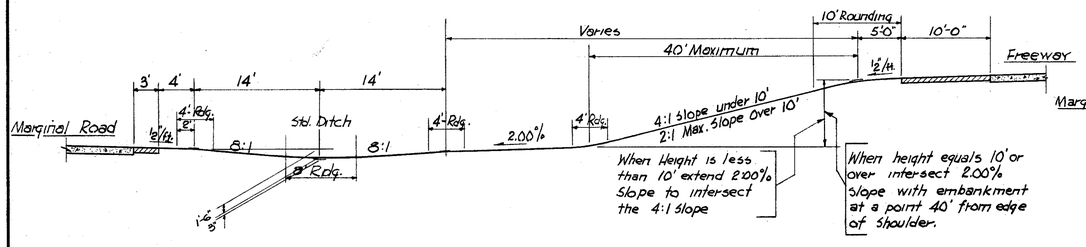


RAMP SECTION

Ramp No. 11 Sta. 6+33.77 to Sta. 11+55.01 See Extra Sht. Nos. 55, 56, 57 (See Curb Detail This Sht.)
Ramp No. 14 (All Extra Area) See Sht. No. 63, 64
Ramp No. 16 (All Extra Area) See Sht. No. 67

⑨ Guard Rail used on fills 5' and over if slope greater than 4:1. Guard Rail used on all fills 10' and over.

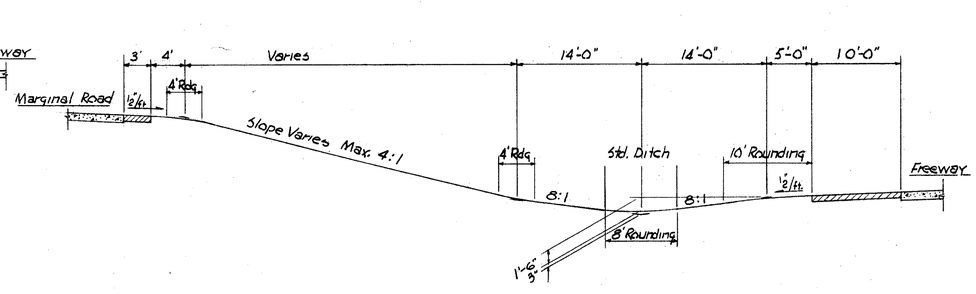
NORMAL SECTION



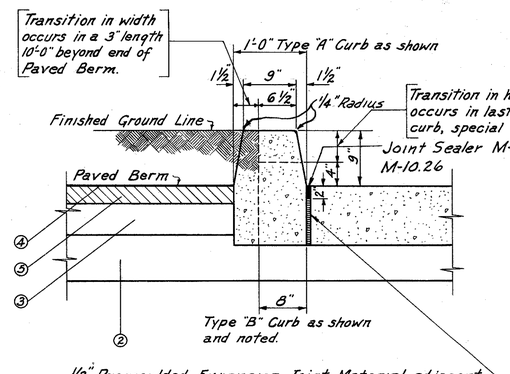
FREEWAY ABOVE MARGINAL ROAD
DITCH FOLLOWS MARGINAL RD.

STANDARD DITCH DETAIL

SCALE = 1/8" = 1'-0"



MARGINAL ROAD ABOVE FREEWAY
DITCH FOLLOWS FREEWAY



1/2" Premoulded Expansion Joint Material adjacent to pavement See notes under "Radial Curb Detail" given on Sht. No. 5
Cost for concrete curb, Special Type A shall include the cost of the premoulded expansion joint material in place.

DETAILS OF CONCRETE CURB, SPECIAL TYPE A & B

SCALE 1" = 1'-0"

LEGEND

See Sht. No. 5 for interpretation of Key Symbols.

For Details of 1-4 6" Underdrains (Deep & Shallow) see Sht No. 10

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

TYPICAL SECTIONS

16 FOOT RAMPS
&
STANDARD DITCH

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

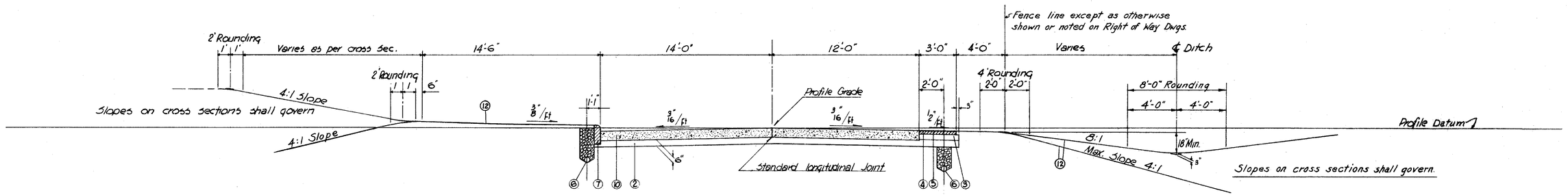
CUYAHOGA COUNTY
CUY-2-24.33

TYPICAL SECTIONS

26' PAVEMENT & 38' PAVEMENT

TYPE T-71 REINFORCED CONCRETE

SCALE: 1/4" = 1'-0"

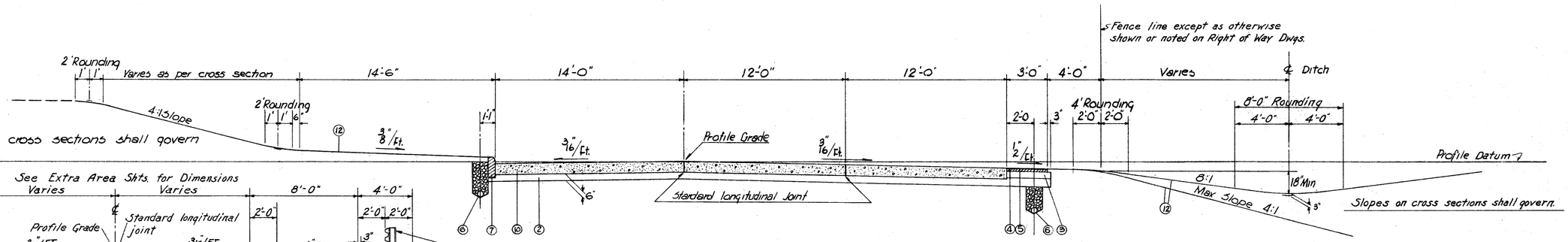


From Sta. 269+45.42 to Sta. 280+45.17
From Sta. 282+90 to Sta. 289+13.99

NORTH MARGINAL ROAD

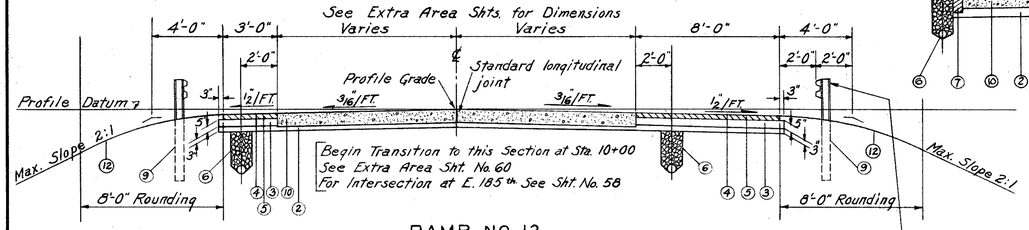
See extra area Sht. No. 63 From Sta. 274+00 to Sta. 275+62.69
See extra area Sht. No. 64 From Sta. 278+75.82 to Sta. 280+45.17
See extra area Sht. No. 67 From Sta. 282+90 to Sta. 284+22

NORMAL SECTION

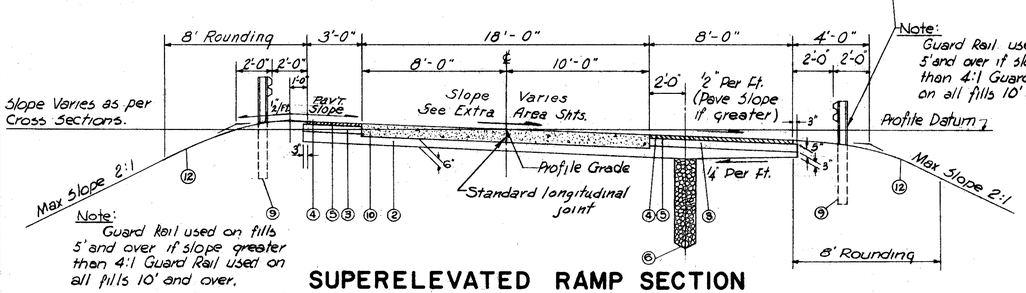


NORTH MARGINAL ROAD
From Sta. 280+45.17 to Sta 282+90

NORMAL SECTION

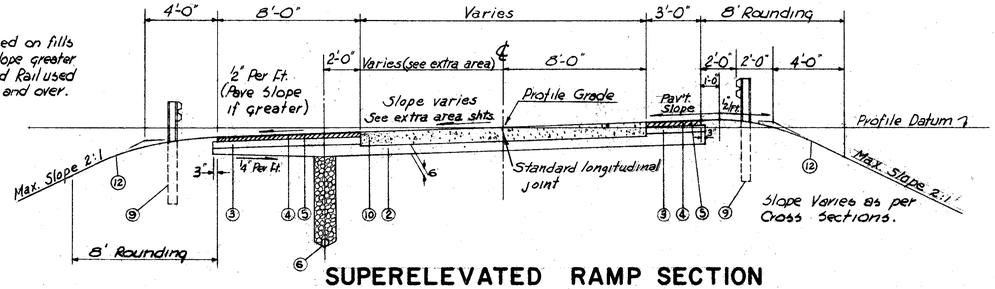


RAMP NO. 12



SUPERELEVATED RAMP SECTION

Ramp No. 12 See Extra Area Sht. 60 Sta. 4+90.66 to Sta. 10+00



SUPERELEVATED RAMP SECTION

Ramp No. 13 (All Extra Area) See Sht. No. 57 & 61

LEGEND

For interpretation of key numbers See Sht. No. 5

For Details of 1-4 6" underdrains (deep & shallow) See Sht. No. 10

HARGETT, YANDA & BARBER
Consulting Engineers
4800 EUCLID AVE. CLEVELAND 3, OHIO

TYPICAL SECTIONS

NORTH MARGINAL ROAD
SUPERELEVATED RAMPS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

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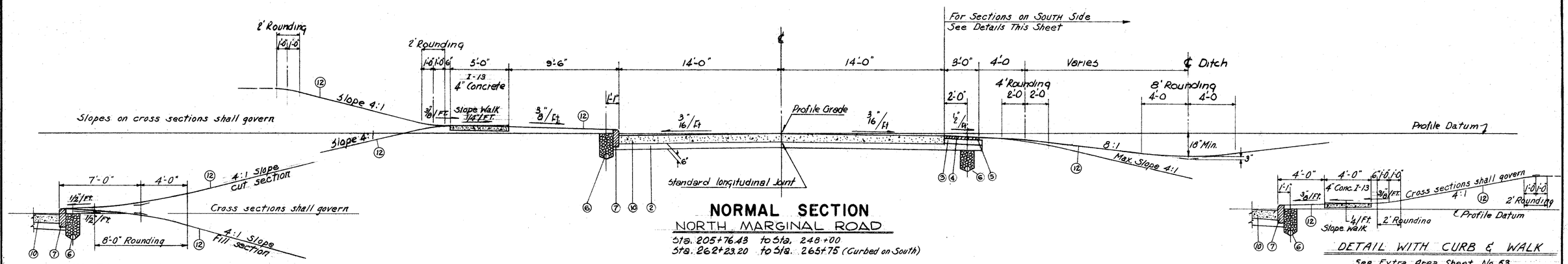
TYPICAL SECTIONS

NORTH MARGINAL ROAD & MARGINAL ROAD CONNECTOR

TYPE T-71 REINFORCED CONCRETE

SCALE 1/4" = 1'-0"



DETAIL WITH CURB NO WALK

Sta. 262+50 to Sta. 265+75 (South Side)

NORMAL SECTION

NORTH MARGINAL ROAD

Sta. 205+76.43 to Sta. 248+00

Sta. 262+23.20 to Sta. 265+75 (Curbed on South)

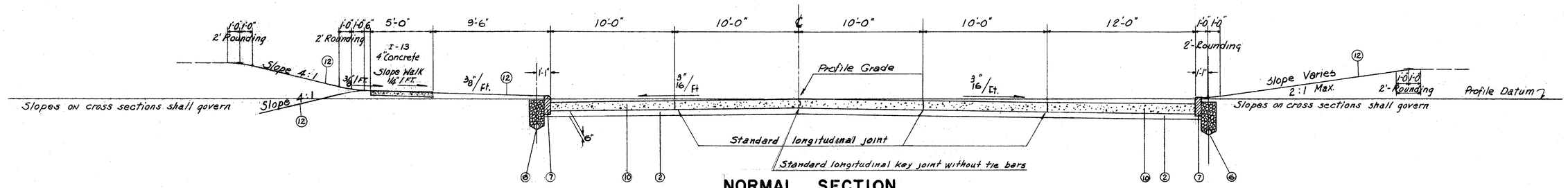
DETAIL WITH CURB & WALK

See Extra Area Sheet No. 53

Sta. 249+00 to Sta. 251+75 (South Side)

See extra area Sht. No. 50 From Sta. 206+82.10 to Sta. 208+04.22 (North Side)
See extra area Sht. No. 50 From Sta. 209+64.22 to Sta. 211+04.85 (North Side)
See extra area Sht. No. 51 From Sta. 212+85.08 to Sta. 214+27.84 (North Side)
See extra area Sht. No. 51 From Sta. 215+35.13 to Sta. 217+05.48 (North Side)
See extra area Sht. No. 51 From Sta. 218+85.01 to Sta. 219+88.05 (North Side)
See extra area Sht. No. 51 From Sta. 221+74.88 to Sta. 223+01.83 (North Side)
See extra area Sht. No. 52 From Sta. 224+39.52 to Sta. 225+78.88 (North Side)

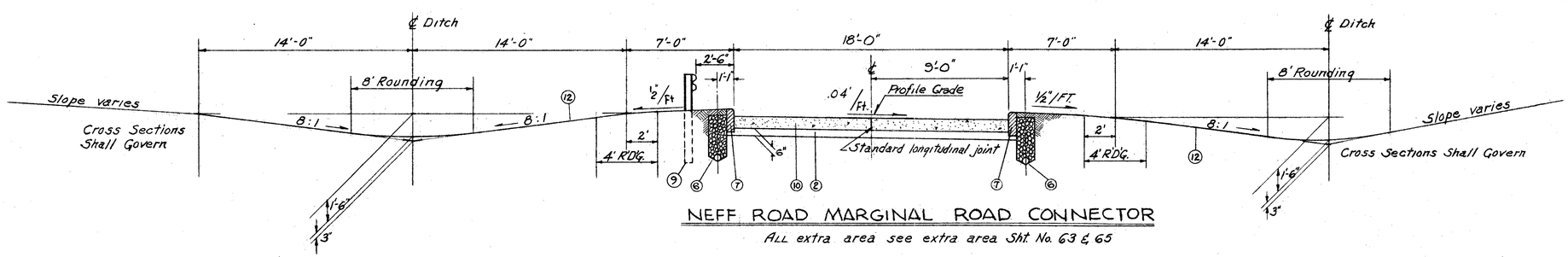
See extra area Sht. No. 52 From Sta. 226+92.29 to Sta. 228+38.20 (North Side)
See extra area Sht No. 52 From Sta. 229+48.92 to Sta. 230+95.41 (North Side)
See extra area Sht. No. 52 From Sta. 232+37.13 to Sta. 233+87.93 (North Side)
See extra area Sht. No. 53 From Sta. 236+27.64 to Sta. 237+77.48 (North Side)
See extra area Sht. No. 53 From Sta. 241+62.39 to Sta. 243+06.17 (North Side)
See extra area Sht. No. 53 From Sta. 244+73.83 to Sta. 245+84.90 (North Side)



NORMAL SECTION

NORTH MARGINAL ROAD

From Sta. 255+00 to Sta. 259+23.53 All extra area See extra area Sht. No. 54



NEFF ROAD MARGINAL ROAD CONNECTOR

ALL extra area see extra area Sht. No. 63 & 65

LEGEND

For interpretation of key numbers see Sht. No. 5

For Details of I-4 6" underdrains (deep & shallow) See Sht. No. 10

HARGETT, YANDA & BARBER
Consulting Engineers
4800 EUCLID AVE. CLEVELAND 3, OHIO

TYPICAL SECTIONS

NORTH MARGINAL ROAD & MARGINAL ROAD CONNECTOR

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
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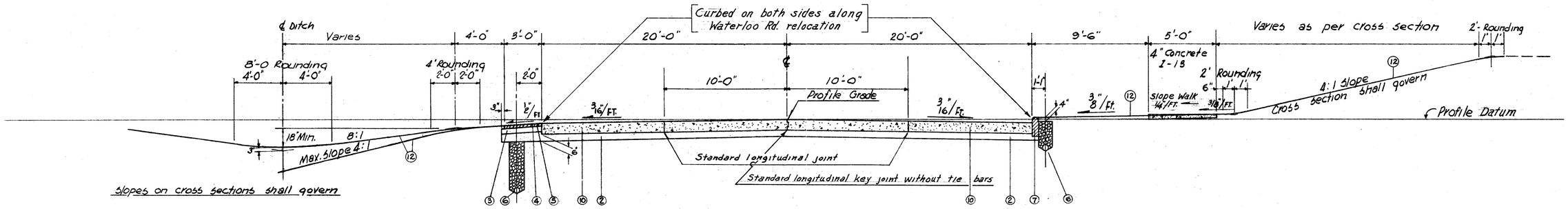
TYPICAL SECTIONS

40' PAVEMENT 24' PAVEMENT 36' PAVEMENT

TYPE T-71 REINFORCED CONCRETE PAVEMENTS

SCALE 1/4" = 1'-0"

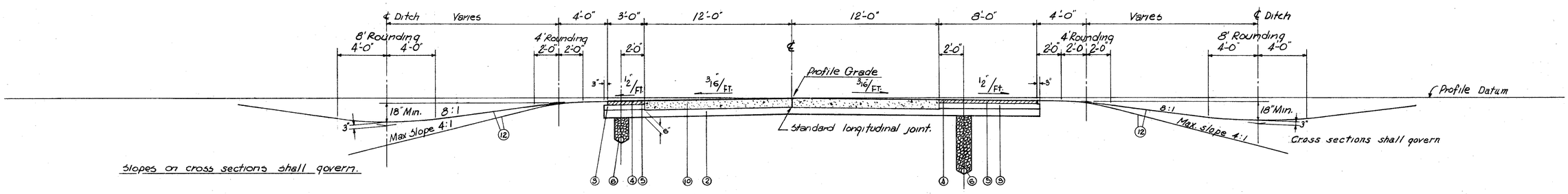


From Sta. 204+00 to Sta. 210+75
(All extra area) From Sta. 0+69.13 to Sta. 2+68.95 (Waterloo Reloc.)

SOUTH MARGINAL ROAD
& WATERLOO ROAD RELOCATION

See extra area Sht. No 50 From Sta. 210+75 to Sta. 211+00
See extra area Sht. No 56 From Sta. 0+69.13 to Sta. 4+23.85

NORMAL SECTION

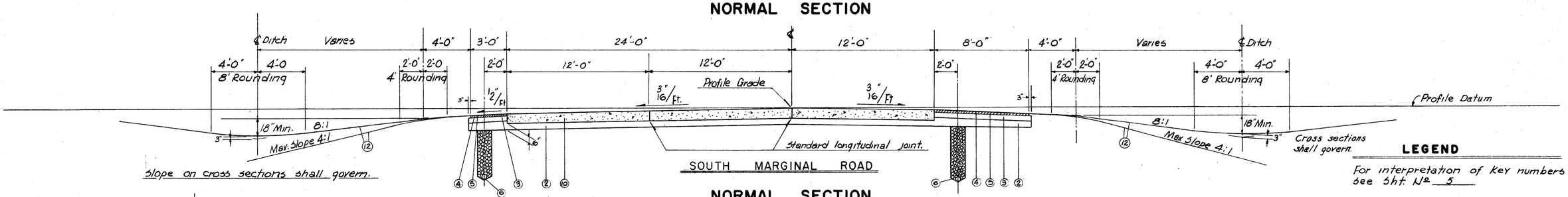


From Sta. 271+80.78 To Sta. 278+49.17
From Sta. 282+06.40 To Sta. 287+36.06

SOUTH MARGINAL ROAD

See extra area Sht. No 66 From Sta. 277+16 To Sta. 278+49.17
See extra area Sht. No 67 From Sta. 282+06.40 To Sta. 283+40

NORMAL SECTION

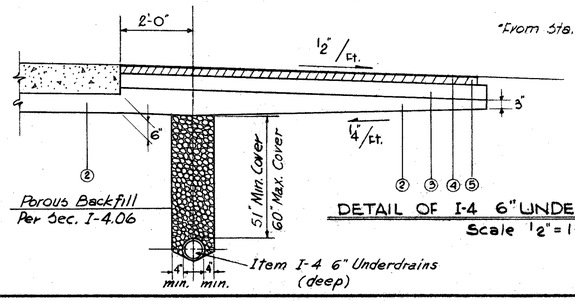


SOUTH MARGINAL ROAD

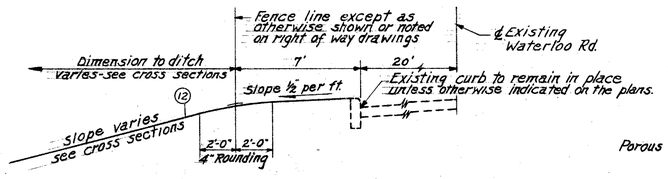
*From Sta. 278+49.17 to Sta. 282+06.40

LEGEND

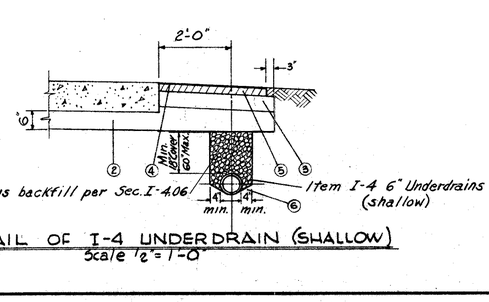
For interpretation of key numbers see Sht. No 5



DETAIL OF I-4 6" UNDERDRAINS (DEEP)
Scale 1/2"=1'-0"



EXISTING WATERLOO RD.
FROM STA. 10+10.64 TO STA. 52+07.72
SCALE 1/4"=1'-0"



DETAIL OF I-4 UNDERDRAIN (SHALLOW)
Scale 1/2"=1'-0"

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4900 EUCLID AVE. CLEVELAND 3, OHIO

TYPICAL SECTIONS

SOUTH MARGINAL ROAD & WATERLOO ROAD RELOCATION

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
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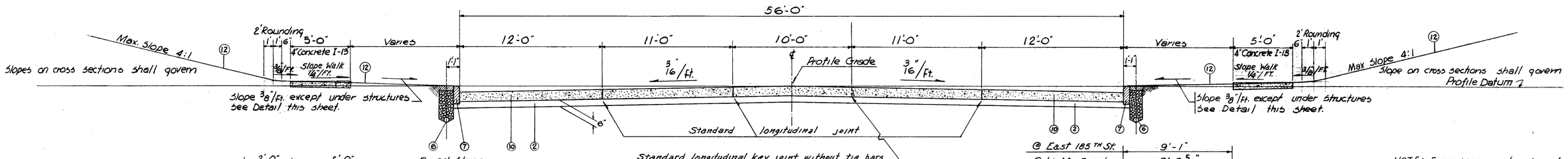
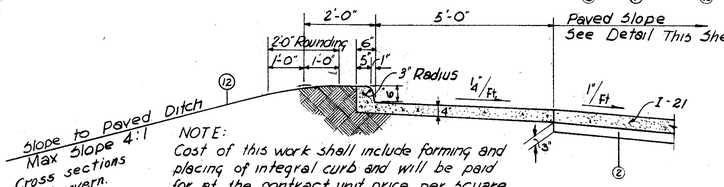
TYPICAL SECTIONS

EAST 185, NEFF ROAD & EAST 200 CROSS STREETS

TYPE T-71 REINFORCED CONCRETE

SCALE 1/4"=1'-0"





NOTE:
Cost of this work shall include forming and placing of integral curb and will be paid for at the contract unit price per square foot bid for Item 1-13 Sidewalk with curb.

DETAIL OF CURBED SIDEWALK UNDER BRIDGES

Scale 12"=1'-0"

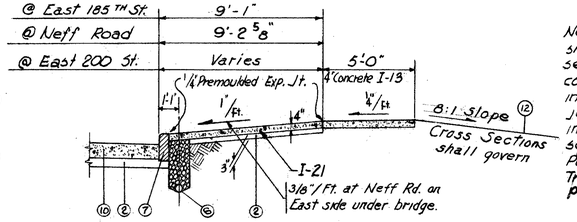
Used on West side of E.185TH Street From Sta. 1+03(S) to Sta. 0+77(N)
Used on East side of E.185TH Street From Sta. 0+58(S) to Sta. 1+18(N)
Used on West side of Neff Road From Sta. 0+65(S) to Sta. 1+04(N)
Used on West side of E.200TH Street From Sta. 0+98(S) to Sta. 0+75(N)
Used on East side of E.200th. Street From Sta. 0+80(S) to Sta. 1+07(N)

NEFF ROAD

All extra area See extra area Sht. Nos 62,63,65 From Sta. 5+27.88(S) to Sta. 7+60(N)

EAST 200 STREET

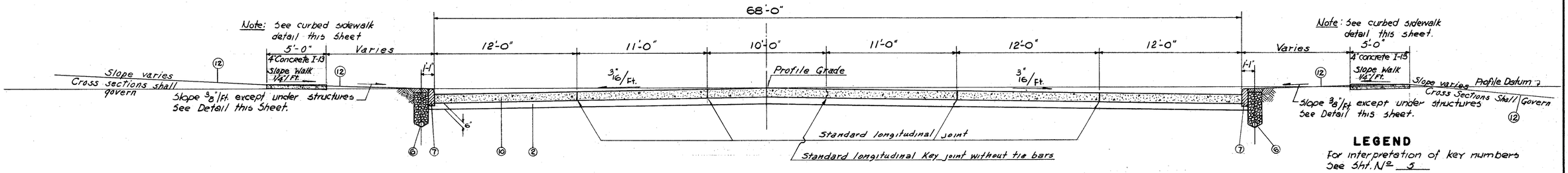
All extra area See extra area Sht. Nos 68,69 From Sta. 3+80 (S) to Sta. 6+15(N)



NOTE: Expansion joint material shall meet the requirements of section M-10.02 or M-10.03. The cost of Traffic Island Pav't including premolded expansion joint material shall be included in the contract unit price per square yard bid for Item I-21 Portland Cement Concrete Traffic Island Pavement, as per plan.

DETAIL OF PAVED SLOPE USED UNDER BRIDGE STRUCTURES

SCALE 1/4"=1'-0



EAST 185 STREET

All extra area See extra area Sht. Nos 54,57,58,59 From Sta. 8+25(S) to Sta. 5+86.09 (N)

LEGEND
For interpretation of key numbers See Sht. No. 5

For Details of I-4 6" Curb Underdrains See Sht. No. 10

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

TYPICAL SECTIONS

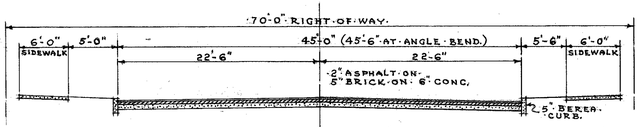
E. 185TH ST., NEFF ROAD & E. 200TH ST.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

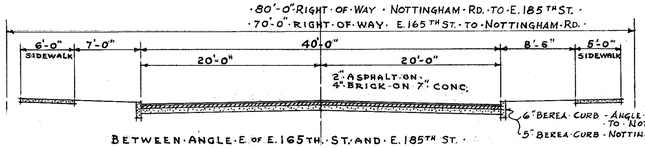
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

12 / 780

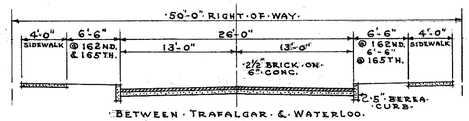
CUYAHOGA COUNTY
CUY-2-24.33



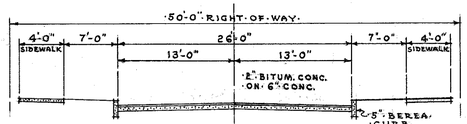
BETWEEN 152ND. & ANGLE E. OF E. 165TH. (RESURFACED BET. 152ND. & 156TH.)
WATERLOO ROAD
LOOKING EAST



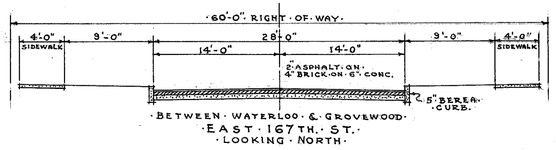
BETWEEN ANGLE E OF E. 165TH. ST. AND E. 185TH ST.
WATERLOO ROAD
LOOKING EAST



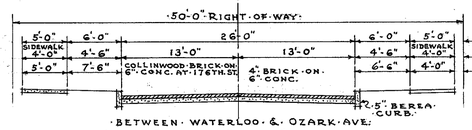
BETWEEN TRAFALGAR & WATERLOO.
EAST 162ND. ST.
BETWEEN TRAFALGAR & WATERLOO.
EAST 165TH. ST.
LOOKING NORTH.



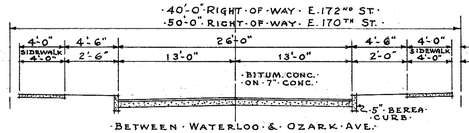
BETWEEN TRAFALGAR & WATERLOO.
EAST 163RD. ST.
LOOKING NORTH.



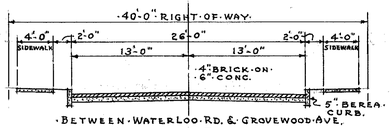
BETWEEN WATERLOO & GROVEWOOD
EAST 167TH. ST.
LOOKING NORTH.



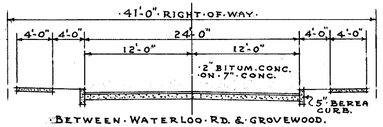
BETWEEN WATERLOO & OZARK AVE.
EAST 168TH. ST.
BETWEEN WATERLOO & OZARK AVE.
EAST 169TH. ST.
BETWEEN WATERLOO & NOTTINGHAM RDS.
EAST 176TH. ST.
BETWEEN WATERLOO & NOTTINGHAM RDS.
EAST 177TH. ST.
LOOKING NORTH.



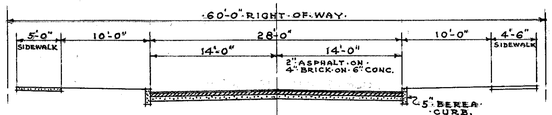
BETWEEN WATERLOO & OZARK AVE.
EAST 170TH. ST.
BETWEEN WATERLOO & GROVEWOOD AVE.
EAST 172ND. ST.
LOOKING NORTH.



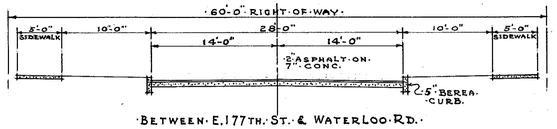
BETWEEN WATERLOO RD. & GROVEWOOD AVE.
EAST 173RD. ST.
LOOKING NORTH.



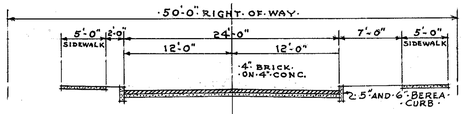
BETWEEN WATERLOO RD. & GROVEWOOD.
EAST 175TH. ST.
LOOKING NORTH.



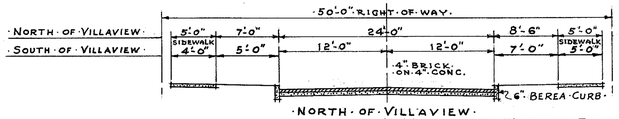
BETWEEN E. 174TH. ST. & DELAVAN RD.
GROVEWOOD AVE.
LOOKING EAST.



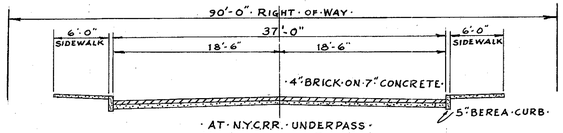
BETWEEN E. 177TH. ST. & WATERLOO RD.
DELAVAN ROAD
LOOKING NORTH.



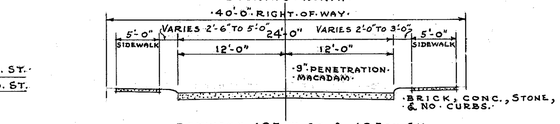
NORTH OF LANKEN TO WATERLOO RD.
NOTTINGHAM ROAD
LOOKING NORTH.



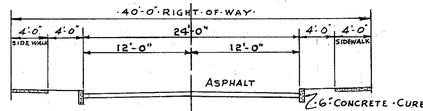
NORTH OF VILLAVIEW
SOUTH OF VILLAVIEW TO WATERLOO RD.
NOTTINGHAM ROAD
LOOKING NORTH.



AT N.Y.C.R.R. UNDERPASS
NOTTINGHAM ROAD
LOOKING NORTH.

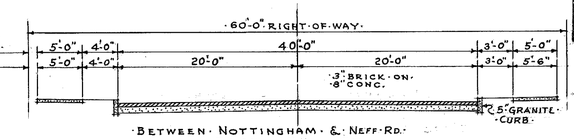


BETWEEN 185TH. ST. & 185TH. ST.
MOZINA DRIVE.

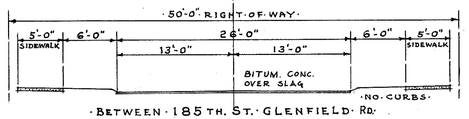


WEST OF NOTTINGHAM ROAD.
VILLAVIEW RD. N.E.
LOOKING WEST.

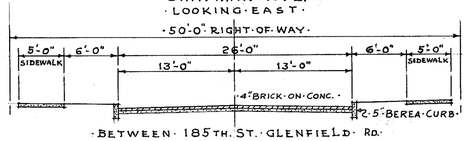
THIS LINE OF FIGURES
AT NOTTINGHAM ROAD
AT MOZINA DRIVE



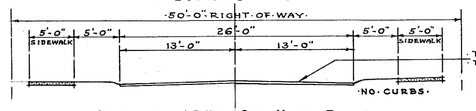
BETWEEN NOTTINGHAM & NEFF RD.
EAST 185TH. ST.
BETWEEN CHAPMAN AVE. & GLENFIELD RD. (70' R. OF W. 30' E. SIDE, 40' W. SIDE &)
BET. WATERLOO & NOTTINGHAM RDS. - RESURFACED BY ST. DEPT. IN 1954.
LOOKING NORTH.



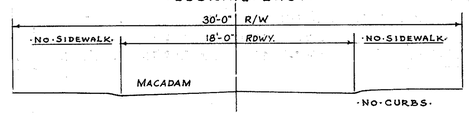
BETWEEN 185TH. ST. GLENFIELD RD.
CHAPMAN AVE.
LOOKING EAST.



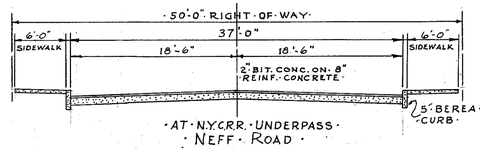
BETWEEN 185TH. ST. GLENFIELD RD.
WOODROW AVE.
LOOKING EAST.



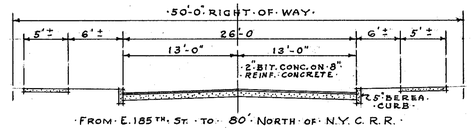
BETWEEN 185TH. ST. NEFF ROAD.
UNDERWOOD AVE.
LOOKING EAST.



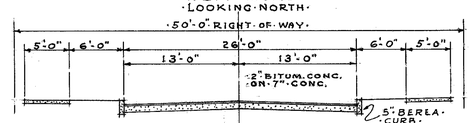
BETWEEN UNDERWOOD & CHAPMAN AVE.
GLENFIELD ROAD



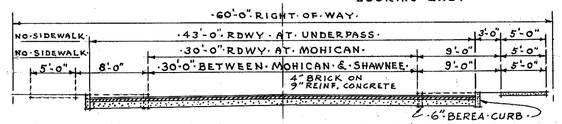
AT N.Y.C.R.R. UNDERPASS
NEFF ROAD
LOOKING NORTH.



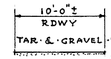
FROM E. 185TH. ST. TO 80' NORTH OF N.Y.C.R.R.
NEFF ROAD
LOOKING NORTH.



WITHIN LIMITS OF PROJECT.
MOHICAN AVE.
LOOKING EAST.



BET. ST. CLAIRE & NORTHERLY CITY LIMITS.
EAST 200TH. ST.
LOOKING NORTH.



BETWEEN E. 168TH. & E. 169TH. STS.
IRONSIDE CT.
BETWEEN E. 169TH. & E. 170TH. STS.
MILLWOOD CT.
BET. E. 175TH. ST. & GROVEWOOD.
MALVERN RD.
BETWEEN E. 160TH. & E. 165TH. STS.
BURBANK CT.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

EXISTING STREET SECTIONS

NO SCALE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

CUYAHOGA COUNTY
CUY-2-24.33

GENERAL NOTES

1. DESIGN SPEED:
THE GEOMETRICS FOR THIS PROJECT HAVE BEEN PLANNED FOR A DESIGN SPEED OF 60 MILES PER HOUR.

2. SIGHT DISTANCE:
BASIS FOR MEASURING SIGHT DISTANCE SHALL BE 4.0 FEET FOR HEIGHT OF EYE AND ZERO FEET FOR HEIGHT OF OBJECT. THE MINIMUM STOPPING SIGHT DISTANCE ON THIS PROJECT IS 600 FEET.

3. ELEVATION DATUM:
ALL ELEVATIONS ARE BASED ON U. S. G. S. DATUM.

4. R/W MONUMENTS, FEDERAL PROJECT MARKERS, & SECTION MARKERS:
EXISTING R/W MONUMENTS, BENCH MARKS, FEDERAL PROJECT MARKERS AND SECTION MARKERS THAT WILL BE REMOVED BY CONSTRUCTION, SHALL BE PROTECTED BY THE CONTRACTOR AS PER SECTION G-7.09 UNTIL THEY CAN BE WITNESSED, REFERENCED AND RESET BY THE ENGINEER.

5. CONSTRUCTION LAYOUT STAKES:
THIS WORK SHALL BE PERFORMED AS SET FORTH IN THE PROPOSAL AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LUMP SUM BID FOR CONSTRUCTION LAYOUT STAKES.

6. 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.

7. ROAD NAME SIGNS:
ALL COUNTY, TOWNSHIP, CITY OR VILLAGE ROAD, STREET NAME SIGNS, AND/OR TRAFFIC SIGNS, THAT WILL BE DISTURBED BY THE CONSTRUCTION SHALL BE CAREFULLY REMOVED AND STORED BY THE CONTRACTOR FOR DISPOSAL BY THEIR RESPECTIVE OWNERS. PAYMENT FOR THIS OPERATION SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR ROADWAY EXCAVATION.

8. FIELD OFFICE:
THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE FOR THE EXCLUSIVE USE OF THE STATE EMPLOYEES, IN ACCORDANCE WITH SECTION S-0.01(b), HAVING A MINIMUM OF 500 SQUARE FEET OF FLOOR SPACE. THE CONTRACTOR SHALL HAVE A TELEPHONE INSTALLED AND MAINTAINED IN THE FIELD OFFICE DURING THE CONSTRUCTION OF THIS PROJECT. CONTRACTOR SHALL ALSO INSTALL WIRING AND OUTLETS SUITABLE FOR CONNECTING TO OFFICE EQUIPMENT, AND PROVIDE 110 VOLT ALTERNATING CURRENT DURING THE CONSTRUCTION OF THIS PROJECT.

9. UTILITIES:
THE CONTRACTOR SHALL NOTIFY AT LEAST 48 HOURS BEFORE BREAKING GROUND ALL PUBLIC SERVICE CORPORATIONS HAVING WIRE, POLES, PIPE, CONDUITS, MANHOLES, OR OTHER STRUCTURES THAT MAY BE AFFECTED BY THIS OPERATION, INCLUDING ALL STRUCTURES WHICH ARE AFFECTED AND NOT SHOWN ON THESE PLANS. THE PUBLIC SERVICE CORPORATIONS WORK MAY HAVE TO BE PERFORMED IN SEVERAL OPERATIONS, IF SO REQUIRED BY THE PHASING OF THE CONTRACTOR'S SCHEDULE. ANY 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.

10. 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 MAKES NO GUARANTEES AS TO THEIR ACCURACY OR COMPLETENESS.

11. PROTECTION OF TRAFFIC
THE CONTRACTOR SHALL SAFEGUARD THE TRAVELING PUBLIC ON THE NORTH AND SOUTH MARGINAL ROADS, EAST 185TH STREET, NEFF ROAD AND EAST 200TH STREET, BY PROVIDING PLATFORMS, NETS, OR OTHER SUITABLE PROTECTION ABOVE THE TRAVELED LANES. PAYMENT FOR THIS PROTECTION SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "MAINTAINING TRAFFIC".

12. HEAVY EQUIPMENT:
THE CONTRACTOR SHALL EXERCISE CARE IN THE USE OF HEAVY EQUIPMENT OVER FINISHED WORK AND WILL BE REQUIRED TO REMOVE AND REPLACE ANY COMPLETED WORK DESTROYED THEREBY. SEWERS LINES SHALL BE BACKFILLED TO A HEIGHT OF FOUR FEET BEFORE LOADED EARTH-MOVING EQUIPMENT IS PERMITTED TO CROSS THE TRENCH. HEAVY EQUIPMENT SHALL NOT BE OPERATED OVER ANY COMPLETED LAYER OF EMBANKMENT, COMPACTED SUBGRADE OR SUBBASE IF SUCH OPERATIONS TENDS TO DESTROY THE SOIL STRUCTURE OR PIPE UNDERDRAINS, HOWEVER, IF SUCH OPERATIONS CANNOT BE AVOIDED, THE CONTRACTOR WILL BE REQUIRED TO REDUCE THE SIZE OF LOADS TO AN EXTENT THAT DAMAGE DOES NOT OCCUR. ANY ADDITIONAL FILL AND SUBSEQUENT EXCAVATION REQUIRED TO PROVIDE THIS MINIMUM COVER SHALL BE MADE AT NO ADDITIONAL COST TO THE STATE.

13. REPLACEMENTS:
THE CONTRACTOR SHALL REPLACE AT HIS OWN EXPENSE ANY ITEM NOT SPECIFICALLY LISTED FOR REMOVAL THAT IS DAMAGED OR DESTROYED BY HIS OPERATIONS.

14. SPECIAL DITCHES:
FOR SPECIAL DITCH GRADES, SEE CROSS SECTIONS.

15. ROUNDING OF CORNERS ON CROSS SECTIONS:
THE ROUNDED CORNERS, AS SHOWN ON STANDARD DRAWING RI-1, APPLY TO ALL CROSS SECTIONS UNLESS OTHERWISE SHOWN ON THE TYPICAL SECTIONS.

16. REMOVAL OF BUILDINGS:
WHERE THE PLAN NOTES A STRUCTURE TO BE REMOVED UNDER ITEM S-24 THE ENTIRE BUILDING, WITHIN AND WITHOUT THE RIGHT-OF-WAY, SHALL BE REMOVED TO GROUND LEVEL AND THE BASEMENT FILLED AS PER ITEM E-1.

17. EXISTING WATER WELLS:
DUG WELLS AND CISTERNS ENCOUNTERED WITHIN THE WORK LIMITS SHALL BE FILLED WITH ROCK OR GRANULAR MATERIAL. DRILLED WELL CASING SHALL BE REMOVED TO AN ELEVATION APPROXIMATELY THREE FEET BELOW FINISHED GRADE AND COVERED WITH A PRECASE CONCRETE SLAB OR A LARGE ROCK. PRIOR TO CONSTRUCTION OF EMBANKMENT CONTRACTOR SHALL REMOVE ANY MASONRY, SURROUNDING A WELL, WITHIN THREE FEET OF FINISHED GRADE. PUMPS AND OTHER APPURTENANCES SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY HIM. THE COST OF FILLING OR CAPPING OF WELLS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER CUBIC YARD OF ROADWAY EXCAVATION ITEM E-1.

18. LOCATION AND SIZE OF PIPE:
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.

19. CONNECTIONS TO EXISTING SEWERS
AT PLACES WHERE THE PLANS PROVIDE FOR PROPOSED DRAINAGE PIPES TO BE CONNECTED TO EXISTING PIPES, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE AS TO LINE AND GRADE BEFORE HE STARTS TO LAY THE PROPOSED SEWER. THE COST OF THIS OPERATION SHALL BE INCLUDED IN THE COST BID FOR ITEM I-2 STORM SEWERS. THE CONTRACTOR SHALL SO CONDUCT THIS OPERATION THAT THE FLOW OF ALL EXISTING SEWERS WILL BE MAINTAINED AT ALL TIMES. ANY ADDITIONAL LABOR OR COST INVOLVED IN MAINTAINING THIS FLOW BY PUMPING OR ANY OTHER APPROVED METHOD, WHICH IS NECESSARY FOR THE COMPLETION OF THIS PROJECT, SHALL BE INCLUDED IN THE PRICE BID PER LINEAL FOOT FOR STORM SEWERS, ITEM I-2.

20. PLUGGING PIPE ENDS:
THE UPSTREAM ENDS OF PIPE LINES OR TILE LINES INTERCEPTED BY EARTHWORK OPERATIONS SHALL BE EFFECTIVELY BLOCKED AND COVERED. BROKEN PIECES AND PORTIONS OF PIPE OR TILE SHALL BE REMOVED UNTIL A WHOLE LENGTH IS ENCOUNTERED, WHICH SHALL BE BLOCKED WITH CONCRETE, FLAT STONE OR BRICK LAID IN MORTAR, OR A PRECAST CLAY OR CONCRETE STOPPER. PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR ROADWAY EXCAVATION ITEM E-1.

21. EXISTING DRAINAGE:
IT IS ANTICIPATED THAT SOME EXISTING PIPE DRAINS OTHER THAN THOSE CARRYING DOMESTIC WASTE WILL BE INTERCEPTED AND SEVERED BY THE PROPOSED ROADWAY AND CHANNEL EXCAVATIONS. IN ANY SUCH CASE A SECTION OF THE PIPE SO SEVERED SHALL BE REMOVED TO MAKE WAY FOR THE NECESSARY EXCAVATION. IF THE REMAINING PIPE FLOWS AWAY FROM THE EXCAVATION AND THE PLANS DO NOT INDICATE THAT IT IS TO BE USED AS AN OUTLET, IT SHALL BE BLOCKED EFFECTIVELY AT ITS UPPER END. IF THE PIPE FLOWS TOWARD THE DITCH EXCAVATION THE TILE SHALL BE PRESERVED AND A PROPER NEW OUTLET PROVIDED. EXISTING PIPES WHICH CROSS THE ROADWAY BENEATH THE SIDE DITCHES AND MEDIAN SWALE MAY BE REPLACED IN THEIR ENTIRETY IF DIRECTED BY THE ENGINEER. THE FOLLOWING AMOUNTS HAVE BEEN PROVIDED FOR THE ABOVE PURPOSE AND FINAL PAYMENT WILL BE MADE ON THE BASIS OF THE FINAL ESTIMATE AND FINAL MEASUREMENT.

600 LIN. FT. EACH OF I-2, 8", 10" AND 12" STORM SEWER UNDER PAVEMENT, SECTION M-6.5(b) or M-6.8(b).

22. ABANDONED SEWERS AND DRAINS:
THE CONTRACTOR SHALL PLUG ALL EXISTING SEWERS AND DRAINS WHICH WERE OR ARE TO BE ABANDONED. SATISFACTORY SEALING SHALL CONSIST OF CONSTRUCTING AN 8" THICK BRICK MASONRY BULKHEAD OR EQUIVALENT INSIDE THE PIPE, OR IN ANY MANNER SATISFACTORY TO THE ENGINEER. THE COST OF THIS WORK SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE IN A MANNER SATISFACTORY TO THE ENGINEER AND WILL BE INCLUDED FOR PAYMENT WITH THE CONTRACT UNIT PRICE BID FOR ROADWAY EXCAVATION ITEM E-1.

23. EXISTING HOUSE DRAINS:
THE REMOVAL OF ALL EXISTING HOUSE CONNECTIONS, WHICH INCLUDES SANITARY, YARD, ROOF, BASEMENT, OR OTHER SIMILAR PIPE DRAINS, WITHIN THE ROADWAY CONSTRUCTION LIMITS WILL BE CLASSIFIED AND PAID FOR AS ROADWAY EXCAVATION, E-1, UNLESS OTHERWISE ITEMIZED FOR PAYMENT IN THE PLANS. PAYMENT FOR PLUGGING OF PIPES WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR ROADWAY EXCAVATION ITEM E-1.

24. PIPE:
WHEN BELL AND SPIGOT PIPE IS USED, ANY NECESSARY PIPE CUT-OFFS SHALL BE MADE AT THE SPIGOT END OF THE LENGTH OF PIPE ADJACENT TO THE END LENGTH. WHEN TONGUE AND GROOVE PIPE IS USED THE LENGTH OF PIPE NEXT TO THE END LENGTH SHALL BE CUT AND BUTT JOINT FORMED WITH A COLLAR 12" LARGER THAN THE OUTSIDE DIAMETER AND 12" IN LENGTH. THE COST OF THE JOINT AND COLLAR SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR PERTINENT PIPE ITEM.

25. PIPE JOINTING MATERIAL:
THE CONTRACTOR WILL BE PERMITTED TO USE, AS AN ALTERNATE TO THOSE JOINT MATERIALS OUTLINED IN THE SPECIFICATIONS, SUCH TRADE NAME JOINTS AS "WEDGE-LOCK", "TYLOX", OR "SLIP-SEAL" OR EQUAL AS APPROVED BY THE ENGINEER.

26. PIPE FOR SUBGRADE DRAINAGE:
10 LIN. FT. OF 8" PLAIN CORRUGATED METAL PIPE, SEC. M-6.4(a), SHALL BE FURNISHED AND PLACED BY THE CONTRACTOR IN MANHOLES, CATCH BASINS, OUTLETS AND INLETS FOR EACH SUBGRADE DRAIN, WHERE AND AS DIRECTED BY THE ENGINEER. PAYMENT FOR EACH WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER LINEAL FOOT FOR ITEM I-4 PIPE OUTLETS FOR UNDERDRAINS.

27. LONGITUDINAL UNDERDRAINS:
IT IS INTENDED THAT DEEP LONGITUDINAL UNDERDRAINS BE PROVIDED UNDER EACH OUTSIDE SHOULDER FOR ITS ENTIRE LENGTH THROUGH EACH SOIL CUT. AT EACH END OF EACH SOIL CUT, A TRANSVERSE DRAIN IS LOCATED AT THE POINT WHERE SUBGRADE CHANGES FROM CUT TO FILL, AND SHALL DISCHARGE INTO THE DEEP UNDERDRAIN. IT IS ALSO INTENDED THAT SHALLOW LONGITUDINAL UNDERDRAINS, SEC. M-6.4(h) BE PROVIDED UNDER EACH OUTSIDE SHOULDER FOR ITS ENTIRE LENGTH THROUGH EACH ROCK CUT. THE ENGINEER WILL MAKE WHATEVER ADJUSTMENTS IN THE LENGTHS OF UNDERDRAINS OR LOCATIONS OF TRANSVERSE UNDERDRAINS THAT ARE NECESSARY TO ACCOMPLISH THE ABOVE.

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28. EXISTING FLEXIBLE PAVEMENT:

WITHIN THE LIMITS OF CONSTRUCTION, WHERE THE EXISTING FLEXIBLE PAVEMENT WILL HAVE LESS THAN SIX (6") INCHES OF FILL PLACED UPON IT, THE PAVEMENT SHALL BE THOROUGHLY SCARIFIED FOR ITS FULL DEPTH, MIXED WITH SUFFICIENT SOIL, AND PROPERLY RECOMPACTED TO INSURE THE ELIMINATION OF ANY PLANE OF SEPARATION BETWEEN IT AND THE EMBANKMENT PLACED THEREON. PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR ROADWAY EXCAVATION E-1. WHERE FLEXIBLE PAVEMENT IS NOTED TO BE REMOVED, THE COST OF SO DOING SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR ROADWAY EXCAVATION ITEM E-1.

29. PAVEMENT REMOVAL:

ALL RIGID TYPE PAVEMENT LOCATED WITHIN THE LIMITS OF THE RIGHT-OF-WAY SHALL BE REMOVED AS PER PLAN. PAVEMENT LOCATED BEYOND THE LIMITS OF OTHER CONSTRUCTION AND LISTED FOR REMOVAL SHALL BE REMOVED IN ITS ENTIRETY, THE ROADWAY SHALL THEN BE PLOWED, HARROWED AND DRAGGED TO A SMOOTH GRADE, THE OLD DITCHES FILLED, AND THE ENTIRE AREA SHAPED TO BLEND WITH THE SURROUNDING TERRAIN. COST OF ALL THE ABOVE SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR ITEM E-8, REMOVAL AND DISPOSAL OF EXISTING PAVEMENT AND REMOVAL AND DISPOSAL OF EXISTING BASE. THE ENTIRE AREA SHALL THEN BE SEEDED AND MULCHED AS CALLED FOR ELSEWHERE IN THESE GENERAL NOTES.

30. DRIVEWAY AND SIDEWALK REMOVAL:

THIS ITEM SHALL CONSIST OF THE REMOVAL, AND DISPOSAL IN ACCORDANCE WITH SECTION E-1.06(a) OF THE SPECIFICATIONS, OF ALL DRIVEWAYS, SIDEWALKS, AND MISCELLANEOUS SLABS WITHIN THE LIMITS OF THE RIGHT-OF-WAY. THE COST OF THIS WORK SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER CUBIC YARD BID FOR ITEM E-1 ROADWAY EXCAVATION.

31. EXPANSION AND CONTRACTION JOINTS:

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

32. GUARD RAIL PARAPET:

COST OF PROVIDING AND INSTALLING ANCHOR FOR CONNECTING DEEP STEEL BEAM GUARD RAIL TO BRIDGE PARAPET IS INCLUDED IN THE BRIDGE QUANTITIES FOR PAYMENT. CONTRACTOR SHALL PROVIDE ONE ADDITIONAL GUARD RAIL POST IN THE CENTER OF THE FIRST PANEL OF DEEP STEEL BEAM GUARD RAIL WHERE ANCHORED TO THE PARAPET, COST OF WHICH SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER LINEAL FOOT FOR GUARD RAILS.

33. GUARD RAIL POST ANCHORS:

AT LOCATIONS WHERE PIER FOOTINGS INTERFERE WITH INSTALLATION OF FULL LENGTH GUARD RAIL POSTS, SHORT POSTS SHALL BE PROVIDED AND SHALL BE ANCHORED IN ACCORDANCE WITH THE DETAIL SHOWN ON STANDARD DRAWING I-15 No. 6. COST OF PROVIDING AND INSTALLING NECESSARY ANCHORS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER LINEAL FOOT FOR GUARD RAILS.

34. EROSION CONTROL:

SODDED CHANNELS SHALL BE PROVIDED AT ENDS OF BRIDGES WHERE REQUIRED BY THE PLANS. COST OF ALL WORK NECESSARY TO COMPLETE THE ITEM SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD BID FOR ITEM L-10, SODDING FOR SPECIAL BERM AND SLOPE PROTECTION. AN 18 INCH WIDE STRIP OF SOD SHALL BE USED ON EACH SIDE OF TYPE 1 OR 2 PAVED GUTTER FOR ITS ENTIRE LENGTH. SODDING WILL BE PAID FOR UNDER L-10 SODDING. THE TOTAL QUANTITY OF L-10 SODDING USED FOR THIS PURPOSE IS 95 SQUARE YARDS. THE ENGINEER WILL CHECK LOCATIONS AND QUANTITIES OF THE SODDING AND PAVED GUTTER PROVIDED FOR EROSION CONTROL AND MAKE NECESSARY ADJUSTMENTS, WHERE REQUIRED, DUE TO FIELD CONDITIONS.

35. MANHOLE CASTINGS:

MANHOLE CASTINGS LOCATED IN SLOPES 4:1 OR LESS SHALL BE SET SO THAT THE COVER WILL CONFORM WITH THE PLAN OF THE SLOPED SURFACES.

36. MANHOLES, CATCH BASINS, CURB INLETS AND CASTINGS:

ALL MANHOLES, CATCH BASINS, AND CURB INLETS CONSTRUCTED, AND CASTINGS FURNISHED FOR SAME, FOR MARGINAL ROADS AND CROSS STREETS SHALL BE SPECIAL AND IN ACCORDANCE WITH THE SPECIFICATIONS AND STANDARDS OF THE CITY OF CLEVELAND AND SHALL CONFORM TO THE DETAILS SHOWN ON THESE PLANS. ALL OTHER DRAINAGE STRUCTURES AND CASTINGS FOR SAME SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STATE'S STANDARD CONSTRUCTION DRAWINGS.

37. MANHOLES REBUILT:

IN THOSE INSTANCES WHERE THE CASTING GRADE IS TO BE RAISED, ALL OF THE CORBELLED PORTION OF THE MANHOLE SHALL BE REMOVED AND THE MANHOLE RECONSTRUCTED TO THE PROPER GRADE. IN THOSE INSTANCES WHERE THE CASTING GRADE IS TO BE LOWERED THE MANHOLE SHALL BE REMOVED TO A POINT 4'-0" BELOW THE BOTTOM OF THE CASTING AT ITS NEW GRADE AND THEN REBUILT TO THE PROPER GRADE. MANHOLE STEPS WILL BE REQUIRED WITHIN THE LIMITS OF THE REBUILT PORTIONS AND SHALL CONFORM TO THE DETAILS AND NOTES AS SHOWN ON STANDARD CONSTRUCTION DRAWING I-8 M. H. No. 1. THE EXISTING CASTINGS SHALL BE CAREFULLY SALVAGED AND RESET ON THE REBUILT STRUCTURE. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE PROVISIONS OF SECTION I-8 OF SPECIFICATIONS.

38. SALVAGED CASTINGS:

ALL EXISTING SEWER CASTINGS SALVAGED OTHER THAN THOSE TO BE REUSED ON THIS PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND WILL BE DISPOSED OF BY HIM. BACKFILLING MATERIAL USED TO FILL ABANDONED MANHOLES, CATCH BASINS, AND INLETS SHALL BE SAND. THE COST OF PERFORMING THE ABOVE WORK SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR ITEM I-16.

39. STORM SEWERS:

THE CONTRACTOR WILL BE REQUIRED TO CONNECT SOME OF THE PROPOSED STORM SEWERS INTO EXISTING MANHOLES AND CATCH BASINS. ALL COST OF PERFORMING THE ABOVE WORK SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER LINEAL FOOT BID FOR THE PERTINENT STORM SEWER ITEM.

40. I-22 UNDER APPROACH SLABS:

THE AREA BETWEEN THE BOTTOM SURFACE OF THE APPROACH SLAB AND THE SUBGRADE SHALL BE FILLED WITH ITEM I-22 SUBBASE. THE MINIMUM DEPTH OF SUBBASE SHALL BE SIX (6") INCHES.

41. I-22 SUBBASE GRADING A OR B :

MATERIAL FOR THIS ITEM SHALL MEET THE REQUIREMENTS FOR ITEM I-22, GRADING A OR B, EXCEPT THAT FOR BOTH GRADINGS THE PERCENT PASSING THE NO. 200 SIEVE SHALL NOT EXCEED TEN.

42. SUBGRADE COMPACTION:

THE SUBGRADE FOR DRIVES PAVED WITH T-70 MATERIAL SHALL BE COMPACTED FOR A DEPTH OF SIX (6) INCHES TO THE DENSITY REQUIREMENTS SHOWN IN TABLE III, ITEM E-1. PAYMENT FOR SUBGRADE COMPACTION, AS SPECIFIED ABOVE, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM E-1, ROADWAY EXCAVATION.

43. SALVAGED CURB:

SANDSTONE CURB TO BE SALVAGED FOR RE-USE AT SUCH LOCATIONS AS DESIGNATED ON THE PLANS, SHALL BE NEATLY STOCKPILED, WHERE AND AS DIRECTED BY THE ENGINEER. SALVAGED CURB SHALL BE PLACED IN A CONTINUOUS LINE NOT INTERSPERSED WITH NEW CURB.

44. CONCRETE CURBS, SPECIAL TYPE A AND B:

THIS ITEM SHALL CONSIST OF PORTLAND CEMENT CONCRETE CURBS, AS SHOWN IN THE DETAILS AND AT SUCH LOCATIONS AS DESIGNATED ON THE PLANS. THE COST OF CONCRETE CURB, TYPE A SHALL INCLUDE THE TRANSITION IN WIDTH FROM TYPE A TO B. THE COST OF CONCRETE CURB, TYPE B, SHALL INCLUDE THE TRANSITION IN ELEVATION AT THE END OF THIS CURB AS SHOWN IN THE DETAILS ON THE PLANS. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF SECTION I-12 OF THE SPECIFICATIONS AND PAYMENT FOR THESE ITEMS WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAL FOOT BID FOR ITEM I-12 CONCRETE CURB, SPECIALTYPE A, AND CONCRETE CURB, SPECIAL TYPE B.

45. BUMPER BLOCKS:

THIS ITEM SHALL CONSIST OF A SANDSTONE BUMPER BLOCK, AS SHOWN IN THE DETAILS AND AT SUCH LOCATIONS AS DESIGNATED ON THE PLANS. THE COST OF THIS ITEM SHALL INCLUDE THE NECESSARY DRESSING, OF THE FIRST LENGTH OF STANDARD CURB EACH WAY FROM THE BUMPER BLOCK, REQUIRED TO ACCOMPLISH THE DESIRED TRANSITION SHOWN ON THE DETAILS. AS WELL AS THE NECESSARY LABOR AND MATERIAL REQUIRED TO EXCAVATE BACKFILL, FURNISH AND INSTALL JOINT MATERIAL, AND COMPLETE THIS ITEM. PAYMENT FOR THIS ITEM WILL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH BID FOR ITEM I-11 BUMPER BLOCK.

46. REMOVAL OF TREES AND STUMPS:

THE SIZE AND NUMBER OF TREES AND STUMPS SHOWN BELOW FOR REMOVAL, UNDER THE CONSTRUCTION AS DETAILED ON THESE PLANS, ARE AS NEARLY CORRECT AS AVAILABLE INFORMATION PERMITS. THE STATE OF OHIO WILL NOT BE RESPONSIBLE FOR ANY VARIATIONS FOUND DURING CONSTRUCTION. ALL TREES AND STUMPS WITHIN THE LIMITS OF THE RIGHT-OF-WAY ON THE MAIN FACILITY AND THE WORK LIMITS ON THE CROSS-ROADS AND CHANNEL IMPROVEMENTS WILL BE REMOVED UNLESS OTHERWISE DIRECTED BY THE ENGINEER. NO TREES SHALL BE REMOVED UNTIL SPECIFICALLY MARKED FOR REMOVAL BY THE ENGINEER. THE COST OF THIS WORK SHALL BE INCLUDED IN THE COST LUMP SUM BID FOR ITEM E-9 REMOVAL OF TREES AND STUMPS.

47. L-9 COMMERCIAL FERTILIZER:

ALL AREAS TO BE SEEDED UNDER ITEM L-9 OR SODDED UNDER ITEM L-10 SHALL HAVE COMMERCIAL FERTILIZER, 12-12-12, APPLIED AT THE RATE SPECIFIED IN SECTION L-9.10 OF THE SPECIFICATIONS.

48. AGRICULTURAL LIMING MATERIALS:

LOCATION AND NEED FOR AGRICULTURAL LIMING MATERIAL WILL BE DETERMINED BY FIELD TEST AFTER ROUGH GRADING OPERATIONS HAVE BEEN PERFORMED. QUANTITIES OF AGRICULTURAL LIMING MATERIALS AS SHOWN ON PLANS ARE SUFFICIENT FOR THE ENTIRE PROJECT BUT WILL BE NON-PERFORMED FOR THE AREAS WHERE TESTS SHOW THAT THE LIMING MATERIAL IS NOT NEEDED. WHERE USED THIS MATERIAL SHALL BE APPLIED AT THE RATE OF 100 LBS. PER 1,000 SQ. FT.

49. SEEDING AND PROTECTING:

QUANTITIES PROVIDED FOR SEEDING THE MAIN FACILITY ARE CALCULATED FOR ALL SOIL AREAS BETWEEN RIGHT-OF-WAY LINES. ON CROSS ROADS OR OTHER UNFENCED AREAS, SEEDING HAS BEEN CALCULATED FOR ALL SOIL AREAS LOCATED BETWEEN THE WORK LIMITS, INCLUDING RUNAROUNDS. SEED SHALL BE SOWN AT THE RATE SPECIFIED IN L-9.11 OF THE SPECIFICATIONS. SEEDING FORMULA FOR AREAS BETWEEN CURB AND SIDEWALK AND AREAS IN FRONT OF RESIDENCES SHALL BE IN ACCORDANCE WITH THE FOLLOWING: 60%-ILLAHEE FESCUE, 30%-KENTUCKY BLUE GRASS, 10%-WHITE DUTCH CLOVER. SEEDING FORMULA FOR ALL OTHER SEEDED AREAS SHALL BE IN ACCORDANCE WITH THE FOLLOWING: 70%-KENTUCKY 31 FESCUE, 20%-KENTUCKY BLUE GRASS, 5%-REDTOP, 5%-ALSIKE CLOVER.

AREAS BETWEEN CURB AND SIDEWALK AND IN FRONT OF RESIDENCES:

LOCATION	SIDE	FROM STATION	TO STATION
SOUTH MARGINAL ROAD	R	204+00	211+00
NORTH MARGINAL ROAD	L	201+55.75	248+00
NORTH MARGINAL ROAD	R & L	248+00	260+44.69
WATERLOO ROAD RELOCATED	R	0+69.13	4+67.08
EAST 185TH STREET	R & L	8+25 (S)	5+86.09 (N)
NORTH MARGINAL ROAD	R & L	261+17.49	268+23.83
NEFF ROAD RELOCATED	R & L	5+27.88(S)	7+60(N)
E. 200TH STREET RELOCATED	L	3+80(S)	6+15(N)
NORTH MARGINAL ROAD	L	290+43.93	292+03.63

TREE AND STUMP REMOVAL SCHEDULE:

SIZE	12" to 18"	18" to 24"	24" to 30"	30" to 36"	36" to 42"	42" to 48"
Trees	375	132	39	4	---	1
Stumps	1	---	---	---	---	---

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50. GRADING TOLERANCES:

FOR AREAS IN FRONT OF RESIDENCES, FOR AREAS BETWEEN CURB AND SIDEWALK AND FOR OTHER AREAS SPECIFICALLY INDICATED ON ABOVE TABULATION, THE SEED BED SHALL BE PREPARED TO PROVIDE A SMOOTH SURFACE. ALL STONES LARGER THAN ONE INCH IN DIAMETER SHALL BE REMOVED FROM THE SURFACE OF THE SEED BED. HAND RAKING WILL BE REQUIRED IN AREAS INACCESSIBLE TO MACHINES AND HAND RAKING MAY BE REQUIRED, IF DIRECTED BY THE ENGINEER, IN ALL THE AFOREMENTIONED AREAS IF MACHINES USED DO NOT PROVIDE RESULTS EQUIVALENT TO RESULTS OBTAINED BY HAND RAKING.. COST OF THIS ADDITIONAL WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ROADWAY EXCAVATION, ITEM E-1.

51. PLACING SOD IN DITCHES:

ALL SOD PLACED IN DITCHES SHALL BE LAID WITH THE LONG EDGES OF THE STRIPS PERPENDICULAR TO THE FLOW LINE OF THE DITCH. SUCCESSIVE STRIPS SHALL BE NEATLY MATCHED AND ALL JOINTS STAGGERED OR BROKEN. THE SOD SHALL BE STAKED SECURELY WITH STAKES PLACED ON MAXIMUM TWO (2) FT. CENTERS IN ROWS NOT MORE THAN TWO (2) FT. APART. STAKES IN ADJACENT ROWS SHALL BE STAGGERED. THE STAKES SHALL BE WOOD FROM ½" x 3/4" x 12" TO 1" x 1" x 24", AS REQUIRED TO HOLD THE SOD AND SHALL BE DRIVEN FLUSH WITH THE TOP OF THE SOD.

52. FENCE, TYPE C:

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING FENCE AND GATES AS SHOWN ON STANDARD CONSTRUCTION DRAWINGS F-1, F-2 & F-3 AND IN THE SPECIAL DETAILS. POSTS AND GATES SHALL BE SET TO THE DIMENSIONS CALLED FOR ON THE PLANS. THE FABRIC SHALL BE FASTENED TO THE SIDE OF THE POST AWAY FROM THE LIMITED ACCESS FREEWAY. ALL THE WORK NECESSARY TO COMPLETE THESE ITEMS SHALL BE DONE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION NO. 18. PAYMENT FOR THE ABOVE ITEMS WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAL FOOT BID FOR S. S. 18 FENCE TYPE C AND PER EACH BID FOR S. S. 18 FENCE GATES, TYPE C.

53. COOPERATION

IT IS THE INTENT OF THE DEPARTMENT TO AWARD OTHER CONTRACTS, DESIGNATED AS SECTION CUY 2-26.04, LYING IMMEDIATELY EAST OF THE EASTERN LIMITS OF THIS SECTION, AND SECTION CUY 2-22.97, LYING IMMEDIATELY WEST OF THE WESTERN LIMITS OF THIS SECTION. IT SHOULD ALSO BE UNDERSTOOD BY THE CONTRACTOR FOR THIS SECTION THAT CONTRACTORS FOR THE VARIOUS PUBLIC SERVICE CORPORATIONS, OR THEIR WORK FORCES, WILL BE WORKING IN THIS AREA. THERE WILL BE NO ALLOWANCE MADE BY THE DEPARTMENT FOR ANY DELAY OR INCONVENIENCE DUE TO LACK OF COOPERATION BETWEEN THE CONTRACTOR FOR THIS SECTION AND THE VARIOUS OTHER CONTRACTORS OR WORK FORCES.

54 CHANGE IN LOCATION OF PROPOSED WATERLOO ROAD SEWER:

Subsequent to the completion of these plans it was decided to shift the location of the proposed Waterloo Road sewer 5 feet North of the location shown on the plans in order to provide adequate clearance with existing Cleveland Electric Illuminating and Ohio Bell Telephone ducts. The area affected is within the limits of Waterloo Road approximate Station 10+00 to Station 27+00 or Main Line Station 211+00 to Station 227+50.
Junction chamber No. 4, Right of Sta. 211+00 will remain as shown on plan sheet 28. The No. 2 manhole Right of Sta. 211+17 will be shifted 5 feet closer to the Main Line centerline as will all appurtances on this sewer line to and including the No. 1 manhole at Right of Sta. 225+94. The Standard Manhole No. 1 at Sta. 227+50 will remain as shown on plan sheet 29.
Adjustment in quantities of affected items will be made at the time of final measurement.

MAINTAINING TRAFFIC:

TWO-WAY THROUGH TRAFFIC WILL BE MAINTAINED ON EXISTING WATERLOO ROAD UNTIL THE GREEN CREEK CULVERT IS REBUILT, AND THE RUNAROUND RD IN THE VICINITY OF STATION 211+00 IS BUILT.

THE SOUTH MARGINAL ROAD SHALL BE COMPLETED BETWEEN STATIONS 204+00 AND 211+00, IMMEDIATELY AFTER OPENING THE RUNAROUND RD, AND OPENED TO THROUGH TRAFFIC.

THE NORTH MARGINAL ROAD CONSTRUCTION SHALL BE STARTED AS SOON AS THE CONTRACTOR IS NOTIFIED TO COMMENCE WORK ON THE PROJECT, AND SHALL BE OPENED TO TRAFFIC AS SOON AS IS PRACTICABLE.

EAST 185TH STREET WILL BE CLOSED TO THROUGH TRAFFIC BETWEEN NEFF ROAD AND ST. CLAIR AVENUE. TO THIS EFFECT SIGNING WILL BE DONE BY THE CITY OF CLEVELAND AND THE STATE OF OHIO.

EXISTING NOTTINGHAM ROAD SHALL BE KEPT OPEN TO TWO-WAY THROUGH TRAFFIC UNTIL THE FOLLOWING PHASES FOR CONSTRUCTION ARE COMPLETED: THE ENTIRE EUCLID CREEK CULVERT AND ITS CONTROLLED BACKFILL; THE NORTH MARGINAL ROAD CONSTRUCTED BETWEEN NOTTINGHAM AND NEFF ROADS; AND EAST 185TH STREET RECONSTRUCTED, BETWEEN THE NORTH MARGINAL ROAD AND NOTTINGHAM ROAD.

DURING THE CONSTRUCTION OF THE EAST 185TH STREET BRIDGE AND PAVEMENT, TRAFFIC SHALL BE MAINTAINED OVER THE NORTH MARGINAL ROAD TO NEFF ROAD, IN ADDITION TO KEEPING NOTTINGHAM ROAD OPEN UNTIL THE EAST 185TH STREET CONNECTION IS MADE TO THE EXISTING NOTTINGHAM ROAD UNDERPASS OF THE N.Y.C.R.R.

TWO-WAY TRAFFIC WILL BE MAINTAINED OVER EXISTING NEFF ROAD AND EAST 200TH STREET DURING THE CONSTRUCTION OF THE BRIDGES OVER THE NEW LOCATION OF EACH STREET. THE ROAD CONSTRUCTION FOR EACH STREET SHALL ALSO PROCEED SIMULTANEOUSLY WITH THE ERECTION OF THE STRUCTURES.

WHEN COMPLETING PAVING INSTALLATIONS AT THE CONSTRUCTION TERMINI OF EAST 185TH STREET, NEFF ROAD AND EAST 200TH STREET, TRAFFIC SHALL BE MAINTAINED ON ONE HALF OF EACH ROAD AS LONG AS IS POSSIBLE. IF AND WHEN, IN THE OPINION OF THE ENGINEER, IT BECOMES NECESSARY TO CLOSE AN UNDERPASS TO FACILITATE ANY CONSTRUCTION, SUBSURFACE, SURFACE OR OVERHEAD, NOT MORE THAN ONE UNDERPASS OF THE N. Y. C. TRACKS SHALL BE CLOSED TO TRAFFIC AT ANY ONE TIME.

CONSTRUCTION OF ALL PHASES OF THE ENTIRE PROJECT MAY PROCEED IMMEDIATELY AFTER THE CONTRACTOR IS INSTRUCTED TO DO SO, EXCEPTING THOSE PORTIONS AFFECTING THE CONDITIONS AFOREMENTIONED.

THE CONTRACTOR SHALL CO-OPERATE WITH THE CITY OF CLEVELAND TRAFFIC ENGINEERING DEPARTMENT, IN THE PERFORMANCE OF HIS WORK IN ORDER TO CONFORM WITH THE ABOVE MENTIONED REQUIREMENTS.

ALTERNATE METHODS: IF THE CONTRACTOR SO ELECTS, HE MAY SUBMIT ALTERNATE METHODS FOR THE MAINTENANCE OF TRAFFIC, PROVIDED THE INTENT OF THE FOREGOING PROVISIONS IS FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATE PLAN SHALL BE PLACED INTO AFFECT UNTIL APPROVAL HAS BEEN GRANTED, IN WRITING, BY THE DIRECTOR AND CITY OF CLEVELAND TRAFFIC ENGINEERING DEPARTMENT.

PAYMENT FOR TEMPORARY ROADWAYS:-
Payment for construction, maintenance and subsequent removal, wherever required, of temporary roadways not separately itemized under Item S-15, except for furnishing and placing of Items M-10 and T-10, Shall be included in the lump sum price bid for "Maintaining Traffic."

SUMMARY OF TABLES

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STORM SEWERS

I-2 LIN. FT.

SHEET NO	CLASS A: M-6.4 (c) 12"	CLASS A: UNDER PAVEMENT 12"	15"	6"	M-6.6(c) 12"	M-6.6(b)-M-6.8(b) 8"	12"	15"	M-6.6(b) M-6.8(b) 18"
TOTAL 100 % CITY OF CLEVE.	41					48			
	42								
	27		20						
	28							98	80
	29								178
	30						81	162	
	31	114							
	32	208	8			80			
	33	198							
	34								
	35								
	36					65			
	37		39			348	862		
	38					26(F)			
	39						24		
	40	6(F)	22(F)	20(F)				344(F)	
	41		48						
	42		22						
	43		44						
	44		4		34	18			
	45		144	128		16			
	46		6(F)	184					
	47			26		46			
TOTAL- CLEVE. URBAN (F)		6(F)	28(F)	20(F)		26(F)		344(F)	
TOTAL- CLEVE., INTERSTATE		520	309	154	184	34	573	367	260	258
	34								
	38								
	40								
	43								
TOTAL- CITY OF EUCLID	INTERSTATE								
	100 % PARTICIPATION								

SHEET NO	CLASS A: UNDER PAVEMENT 6"	12"	15"	18"	21"	39"	42"
TOTAL 100 % CITY OF CLEVE.	41						
	42						
	27		20				
	28	80	24		22	889	92
	29		35	324		39	
	30			38		174	
	31	70	14	6			
	32		12				
	33		20				
	34						
	35						
	36						
	37		176		296		
	38		18	70(F)			
	39						
	40			20(F)			
	41		4	54			
	42		112				
	43						
	44		55	63			
	45						
	46	54(F) 19			42(F) 182		
	47		10	212(F)			
TOTAL- CLEVE. URBAN (F)			54(F)	302(F)	42(F)		
TOTAL- CLEVE., INTERSTATE		150	499	505	500	213	889
	34						
	38						
	40						40 ✓
	43				44		40
TOTAL- CITY OF EUCLID	INTERSTATE				44		40
	100 % PARTICIPATION						40

SHEET NO	CLASS A: UNDER PAVEMENT 6"	12"	15"	18"	21"	24"	30"	12"
TOTAL 100 % CITY OF CLEVE.	41							
	42							
	27		171					
	28	92	106		80			
	29		521		96	100		
	30		100	272				110
	31		330	242				
	32		284					
	33		404					
	34							
	35							
	36		293					
	37		18(F) 1046				67	
	38		560(F) 42					
	39		110	97				
	40			70(F)				
	41		164	58			322	
	42		436		44(F) 26	72(F) 26	146	100
	43		50	44(F) 130	110	142		
	44		103					
	45			154				
	46		276(F) 40	254(F)			114	
	47		104(F)					
TOTAL- CLEVE. URBAN (F)			958(F)	368(F)	44(F)	72(F)		
TOTAL- CLEVE., INTERSTATE		92	4029	1124	312	268	649	100
	34							
	38							
	40	40 ✓						
	43	40						
TOTAL- CITY OF EUCLID	INTERSTATE	40						
	100 % PARTICIPATION	40						

SHEET NO	CLASS A: M-6.4 (d) 42"	M-6.4 (g) 78"	M-6.6(c) 24"	M-6.6(b) or M-6.8(b) 15"	24"	27"	30"	33"	M-6.6(c) 36"
TOTAL 100 % CITY OF CLEVE.	41								
	42								
	27								
	28			6					
	29				158		292	292	
	30					296			
	31	8	272						64
	32								
	33								
	34								
	35								
	36								
	37								
	38								
	39								
	40								
	41								
	42								
	43								
	44	16							200
	45								
	46								
	47								
TOTAL- CLEVE. URBAN (F)									
TOTAL- CLEVE., INTERSTATE		8	272	6	158	296	292	292	264
	34								
	38								
	40				16				12* ✓
	43				16				12
TOTAL- CITY OF EUCLID	INTERSTATE				16				~~12*~~
	100 % PARTICIPATION								

SHEET NO	CLASS B: M-6.6(b) or M-6.8(b) SAN. 36"	M-6.6(c) 36"	M-6.6(b) or M-6.8(b) UNDER PAVEMENT 15"	18"	21"	M-6.6(b) 54"	60"	78"
TOTAL 100 % CITY OF CLEVE.	41							
	42							
	27							
	28		101	242				
	29							
	30							
	31							246
	32							344
	33				208			
	34							
	35							
	36							
	37							
	38							
	39							
	40		76			84	122	
	41							
	42							
	43							
	44							268
	45							
	46							
	47							
TOTAL- CLEVE. URBAN (F)								
TOTAL- CLEVE., INTERSTATE		264	177	242	208	84	122	590
	34							
	38							
	40		10 ✓			192		
	43		10			192		
TOTAL- CITY OF EUCLID	INTERSTATE							
	100 % PARTICIPATION							

SHEET NO	CLASS B: M-6.6(b) or M-6.8(b) UNDER PAVEMENT 42"	60"	66"	M-6.6 (c) UNDER PAVEMENT 42"	60"	66"	M-6.6 (d) UNDER PAVEMENT San. 12"	18"	San. 42"	72"	M-106.6(d) 33"	36"	M-6.8 (b) UNDER PAVT 12"	M-106.6(d) UNDER PAVEMENT 78"
TOTAL 100 % CITY OF CLEVE.	41													
	42													
	27													
	28													
	29													
	30										276	258		
	31													
	32													544
	33													
	34													
	35													
	36													
	37													
	38													
	39													
	40													
	41													
	42													
	43													
	44													
	45													
	46													
	47													
TOTAL- CLEVE. URBAN (F)														
TOTAL- CLEVE., INTERSTATE		428	368	340	498			284				276	258	544
	34													
	38													
	40													
	43													
TOTAL- CITY OF EUCLID	INTERSTATE							270	274* ✓	442*				
	100 % PARTICIPATION							270	~~274~~*	442*				

# Indicates reference 100 % Euclid is removed.

\# 100 % CITY OF EUCLID PARTICIPATION

STORM SEWERS

I-5 PIPE SPECIALS EACH

SHEET NO	CLASS A: 8"x 6" INCREASER	8" x 6" REDUCER	8" x 6" TEE	8" x 90° ELBOW	UNDER PAVT. 8"x6" INC.	8"x6" RED.	15"x6" TEE	M-6.6 M-6.8(b) 8"x18° BEND	8"x14° BEND	M-64(c) 12"x18° BEND	12"x25° BEND	12"x49° BEND	12"x18° BEND	12"x25° BEND	8"x90° ELBOW	8"x80° BEND	BEND 6"x34°	8"x11°	12"x22°
TOTAL- 100 % CITY OF CLEVE.	41				2	1													
	42																		
	28																		
	29																		
	30									1	1								
	31				2	1					2			1					2
	32											1	1						3
	33																		
	34																		
	35																		
	36				3	2													
	37				19	10		1	2							1	1		
	38				1(F)														
	39																		
	40						1(F)												
	41																		
	42																		
	43																		
	44	1	1		2														
	45					1	1												
	46																		
	47	3	1	2	4														
TOTAL- CLEVE. URBAN (F)					1(F)		1(F)												
TOTAL- CLEVE., INTERSTATE		4	2	2	6	25	14		1	2	1	3	1	1	1			2	3
	34																		
	38																		
	40																		
	43																		
TOTAL- CITY OF EUCLID	INTERSTATE																		
	100 % PARTICIPATION																		

SHEET NO	CLASS A: UNDER PAVEMENT 12"x6" TEE	12"x8" TEE	15"x6" TEE	15"x12" TEE	12"x6" TEE	28L.TEE 12"x8" DBL.TEE	12"x8" WYE	M-6.6(b) 36x8" TEE	30x21" TEE	33x12" TEE
TOTAL- 100 % CITY OF CLEVE.	41									
	42									
	28									
	29	1							1	1
	30		1		2					
	31		1							
	32		1			1				
	33									
	34									
	35									
	36									
	37		2	1			1	1		
	38									
	39									
	40									
	41									
	42									
	43									
	44							1		
	45									
	46		1		1(F)					
	47									
TOTAL- CLEVE. URBAN (F)					1(F)					
TOTAL- CLEVE., INTERSTATE		1	6	1	2	1	1	1	1	1
	34									
	38									
	40									
	43									
TOTAL- CITY OF EUCLID	INTERSTATE									
	100 % PARTICIPATION									

SHEET NO	CLASS B: UNDER PAVEMENT M-6.6(b) 54"x12" TEE	M-6.6 (b) 66"x12" TEE	66"x15" TEE	66x36" TEE	78"x8" TEE	78"x12" TEE	78"x15" TEE	78"x24" WYE	M-6.6 (c) 42"x12" TEE	66"x12" TEE	M-6.8(b) 36"x12" TEE	M-1066(d) 78"x12" TEE	M-6.6(c) 42"x12" TEE	66"x15" TEE	33"x12" TEE	M-6.8(b)
TOTAL- 100 % CITY OF CLEVE.	41															
	42															
	28															
	29															
	30										1					1
	31						2	2	1							
	32		1	1	1		1					2				
	33									2				1		
	34															
	35															5
	36															5
	37															10
	38															1
	39															2
	40								1							
	41															7
	42															2
	43															2
	44									2			1			
	45															
	46															4
	47															
TOTAL- CLEVE. URBAN (F)																
TOTAL- CLEVE., INTERSTATE							3	2	1	2	1	2	1	1	1	47
	34															
	38															1
	40															
	43															2
TOTAL- CITY OF EUCLID	INTERSTATE															3
	100 % PARTICIPATION															~~2~~*

SHEET NO	I-16 EACH ABANDONED MANHOLE	CATCH BASIN
TOTAL- 100 % CITY OF CLEVE.	41	4
	42	1
	28	4
	29	5
	30	4
	31	
	32	4
	33	
	34	
	35	
	36	
	37	2
	38	
	39	
	40	
	41	10
	42	1
	43	2
	44	
	45	
	46	8
	47	
TOTAL- CLEVE. URBAN (F)		
TOTAL- CLEVE., INTERSTATE		40
	34	
	38	
	40	
	43	2* ✓
TOTAL- CITY OF EUCLID	INTERSTATE	2
	100 % PARTICIPATION	~~2~~*

\# 100 % CITY OF EUCLID PARTICIPATION

Revised R.E.C. 12-19-60

SUMMARY OF TABLES

CUYAHOGA COUNTY
CUY-2-24.33

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

17
180

STORM SEWERS — I-8 EACH

SHEET NO	MANHOLE ADJ. TO GRADE	MANHOLE REBUILT	CATCH BASIN ADJ. TO GRADE	MANHOLE STD. NO. 1	MANHOLE STD. NO. 2 NO. DROP	MANHOLE TYPE A	JUNCTION CHAMBER #4	CURB INLET No. 2-6	CURB INLET No. 2-6 MODIFIED	CURB INLET No. 2-8 MODIFIED	CURB INLET No. 2-8	CURB INLET No. 2-10	CURB INLET No. 2-12	CURB INLET SPECIAL No. 4	CATCH BASIN No. 2-2A	CATCH BASIN No. 2-2B	CATCH BASIN SPECIAL No. 4	CATCH BASIN No. 5	CATCH BASIN No. 6	CATCH BASIN No. 5 MODIFIED SPECIAL No. 22A
TOTAL 100% CITY OF CLEVE.	41	2																		
	42	3	1			1	2													
	27		1					2										1		1
	28	3	1			4	1	5	3									1		3
	29	2			3			8	3									4		3
	30				3			8			2							6		
	31					1		3			1		1	1				3		1
	32					2		2			2	1						1	1	
	33				2	3		5				3								
	34																			
	35																			
	36	2		1			5										6			
	37	7		3	4		6							13			8	2		1
	38													2 / 6(F)		1(F)		1 / 1(F)		1(F)
	39	3												3			1		1	
	40					3								2(F)				2(F)		1
	41	1	1		1		1							6						5(F) / 1
	42	4	1				2							9	1					
	43	3	1				3							2	2					
	44	1				3								3				2	1	1
	45													2				2		
	46						1(f)							1 / 2(F)	1(f)			1(F)	1	1 / 2(F)
	47																	2		
TOTAL- CLEVE. URBAN (F)							1(F)							10(F)	1(F)	1(F)		4(F)		8(F)
TOTAL- CLEVE. INTERSTATE		26	5	4	13	16	17	1	33	6	5	4	1	42	3		15	26	3	9	6
	34																			
	38																			
	40													1						
	43	2 / 1*	1 / 1*	2	1	1 / 3*	1 / 1*													
TOTAL CITY OF EUCLID INTERSTATE		2 / 1*	1 / 1*	2	1	1 / 3*	1 / 1*							1						

UNDERDRAINS — I-4 LIN. FT.

SHEET NO	6" UNDERDRAINS DEEP	6" UNDERDRAINS SHALLOW	6" CURB UNDERDRAINS DEEP	6" CURB UNDERDRAINS SHALLOW	8" PIPE OUTLET M-64 (a)
TOTAL 100% CITY OF CLEVE.				622	
	930	150			60
	1405	2613			50
	3958				100
	3936				100
	1462	1669			50
		2761		86	50
		3742		140	92
		774		50	
		2589		2708	160
		1928		2265	70
				9(F)	
				2783	130
		1606(F)		2090(F)	90(F)
		28		158	30
		691		1404	106
		3042(F)		3201(F)	70(F)
		18		20	10
				1634	80
				2324	90
				50(F) / 1075	50
	194	932		96	66
		1338		532	40
		769		878(F) / 172	20(F) / 20
		1776			46
TOTAL- CLEVE. URBAN (F)		4648 (F)		3347 (F)	180(F)
TOTAL- CLEVE. INTERSTATE	11,886	21,778		15,447	1400
		300			
		18		24	
		198		204	10
				410	20
		516		638	30

UNDERDRAINS — I-5 PIPE SPECIALS EACH

SHEET NO	6"x90° ELBOW	6"x60° BEND	6"x45° BEND	6"x33½° BEND	6"x22½° BEND	6"x11¼° BEND	6"x70° BEND	6"x18" TEE	6"x18° BEND	6"x18"x6" WYE	6"x15° BEND	6"x45° WYE
TOTAL 100% CITY OF CLEVE.	2							1				
										6		
		1								3	1	
										6		
										6		
								1		3		1
	2				1	2		1				
	4							2				
	20		1					9		1		
	3							5				
								2(F)		1(F)		
	9(F) / 2				1(F)			2		2(F) / 1		
		1					1					
			2(F)									
	15(F)	2(F)	2(F)		1(F)			2(F)		3(F)		
	39	3	3					24	1	26	1	1

STORM SEWERS — I-13 SQ. FT. SIDEWALKS

SHEET NO	4"
TOTAL 100% CITY OF CLEVE.	
	17,447
TOTAL- CLEVE. URBAN (F)	
TOTAL- CLEVE. INTERSTATE	17,447
TOTAL- CITY OF EUCLID, INTERSTATE	

STORM SEWERS — I-14 LIN. FT. PAVED GUTTER

SHEET NO	STD. TYPE 1	STD. TYPE 2
TOTAL 100% CITY OF CLEVE.		
	85	
		174
TOTAL- CLEVE. URBAN (F)		
TOTAL- CLEVE. INTERSTATE	175	174
TOTAL- CITY OF EUCLID, INTERSTATE		

STORM SEWERS — I-15 LIN. FT. GUARD RAIL STEEL BEAM TYPE (DEEP)

SHEET NO	STANDARD DESIGN	BARRIER DESIGN
TOTAL 100% CITY OF CLEVE.		
		311.60
	581.00	1,112.50
		1,300.00
	67.80	1,275.40
	931.76	921.33
	100.00	1,300.00
	2,301.32	1,371.83
	954.28	
	249.86 (F)	
	1002.81	
	339.79	
TOTAL- CLEVE. URBAN (F)	249.86 (F)	
TOTAL- CLEVE. INTERSTATE	6,377.76	7,592.66
	199.00	98.28
TOTAL- CITY OF EUCLID, INTERSTATE	199.00	98.28

EARTHWORK — E-1 METHOD B CU. YDS.

SHEET NO	ROADWAY EXCAVATION	EMBANKMENT	EMBANKMENT +22%
TOTAL- 100% CITY OF CLEVE.	1462	14	17
	14,209	1940	2,367
	15,893	5432	6,627
	50,563	4	5
	51,718	8	10
	104,186	65,268	79,627
	8,518 / 2,747(F)	212,156	258,830
	11,518 / 28,103(F)	16,954 / 219(F)	13,928 / 267(F)
	2,131 / 6,381(F)	38,000 / 2,915(F)	46,360 / 3,556(F)
	20,991	10,444	12,742
	60,064	483	589
	22,579	11,519	14,053
TOTAL- CLEVE. URBAN (F)	38,228(F)	3,134(F)	3,823(F)
TOTAL- CLEVE. INTERSTATE	362,181	361,588	441,138
	6,021	14,200	17,324
	801	361	440
TOTAL- CITY OF EUCLID, INTERSTATE	6,822	14,561	17,764

I-8 EACH — MONUMENT ASSEMBLIES

SHEET NO	TYPE B	RESET
TOTAL- 100% CITY OF CLEVE.	2	
	1	
	1	
	1	
	1	
	2	
	1	
	20	
	6	
	2(F)	
	5	
	2(F)	
	2	
	4	
	3	1
TOTAL- CLEVE. URBAN (F)	4(F)	
TOTAL- CLEVE. INTERSTATE	47	1
	1	
TOTAL- CITY OF EUCLID, INTERSTATE	1	

I-22 CU. YD. SUBBASE GRADING A OR B

SHEET NO	
TOTAL- 100% CITY OF CLEVE.	
	3.73
TOTAL- CLEVE. URBAN (F)	
TOTAL- CLEVE. INTERSTATE	3.73
TOTAL- CITY OF EUCLID, INTERSTATE	

L-10 SQ. YDS. SODDING

SHEET NO	SODDING	SODDING FOR SPECIAL BERM AND SLOPE PROTECTION
TOTAL- 100% CITY OF CLEVE.		
	77	
	206	
	412	
	446	
	297	28
	930	47
	44	
	68	110
	234	
	53	
	58 (F)	
	29	
	133 / 623 (F)	
	32	
	133	
	24	
	14.1	
	106	
	160 (F)	
	336	
	157	
TOTAL- CLEVE. URBAN (F)	841 (F)	
TOTAL- CLEVE. INTERSTATE	3,858	185
	3	
TOTAL- CITY OF EUCLID, INTERSTATE	3	

T-70 SQ. YDS. 6" P.C.C. PAVEMENT

SHEET NO	
TOTAL- 100% CITY OF CLEVE.	
	33.56
TOTAL- CLEVE. URBAN (F)	
TOTAL- CLEVE. INTERSTATE	33.56
TOTAL- CITY OF EUCLID, INTERSTATE	

S-24 LUMP SUM — REMOVE CATCH BASIN

SHEET NO	
TOTAL- 100% CITY OF CLEVE.	
	1
TOTAL- CLEVE. URBAN (F)	
TOTAL- CLEVE. INTERSTATE	1
TOTAL- CITY OF EUCLID, INTERSTATE	

SPEC. INTERSTATE AND DEFENCE HIGHWAY SIGN

SHEET NO	
TOTAL- 100% CITY OF CLEVE.	
	2
	2
	2
TOTAL- CLEVE. URBAN (F)	
TOTAL- CLEVE. INTERSTATE	6
TOTAL- CITY OF EUCLID, INTERSTATE	

* 100 % CITY OF EUCLID PARTICIPATION

a/ Indicates reference 100% Euclid is removed.

Revised R.E.C. 12-19-60

SUMMARY OF TABLES

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

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CUYAHOGA COUNTY
CUY-2-24.33

EXTRA AREA QUANTITIES

SHEET NO.	E-8			I-11			I-12		I-13		I-18	I-21		I-22	B-219	T-31			T-70	T-71	
	REMOVAL FOR RE-USE OF EXIST. CURB	REMOVAL AND DISPOSAL		SANDSTONE STRAIGHT CURB	SANDSTONE RADIAL CURB	BUMPER BLOCK	CONCRETE CURB		CONCRETE SIDEWALK		5" STABILIZED CRUSHED AGGREGATE SHOULDERS & APPROACHES	STD. TYPE I PORT. CEM. CONCRETE MEDIAN PAVEMENT	4" PORT. CEM. CONCRETE * TRAFFIC ISLAND PAVEMENT	SUB-BASE GRADING A OR B	3" WATERPROOFED AGGREGATE BASE COURSE	BITUMINOUS SURFACE TREATMENT			PORTLAND CEMENT CONCRETE PAV'M'T.	REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	
		CURB	PAVT.				SPEC. TYPE A	SPEC. TYPE B	4" CURBED	4"						#6 AGGR	BIT. MATERIAL AS PER PLANS		6"	9"	10"
	LIN. FT.	LIN. FT.	SQ. YDS.	LIN. FT.	LIN. FT.	EACH	LIN. FT.		SQ. FT.		CU. YDS.	SQ. YDS.		CU. YDS.	CU. YDS.	CU. YDS.	GALS.		SQ. YDS.	SQ. YDS.	
50				787.97	325.80					4,089.32	14.01			523.45	7.81	0.74	23.42		132.89	2,903.78	
51				313.97	430.80					3,314.79				227.08					117.77	1,263.42	
52				584.29	240.77					3,936.12				242.39					56.61	1,393.77	
53				1,520.58	354.30					5,979.05	0.58			646.95	0.35	0.03	1.04		237.48	3,666.81	
54				1,592.11	370.29	3				6,141.30			18.89	1,106.24					41.33	6,502.83	
55				477.13			117.00	84.00			190.96			487.93	112.41	10.80	337.22			821.94	591.50
56				600.63	78.54					1,529.40	172.53			676.63	100.97	9.69	302.93			1,688.97	1,017.17
57				1,130.22		2			1,718.59	2,532.60	15.33		312.43	657.93	9.02	0.86	27.06		33.78	3,591.89	
58				1,783.24	107.68	5			239.42	4,695.40	21.97		82.08	944.59	12.65	1.21	37.95			5,318.33	
60				202.16		1					221.23		18.22	766.33	127.76	12.26	383.32			2,264.08	566.67
61							114.00	83.50			196.26			566.40	113.85	10.92	341.57			1,482.61	395.69
62		97.50	21.67	1,710.94	349.54					7,564.90				816.95					122.28	4,763.24	
63				340.00			138.00	62.50	847.00	930.00	93.47		275.16	442.30	55.07	5.28	165.22			1,414.08	330.26
64											141.76			383.97	82.22	7.89	246.67			813.93	404.67
65				826.67					82.50	4,355.98			57.16	484.28					153.33	2,752.09	
66				202.43		1					119.42		18.22	361.13	69.54	6.68	208.68			671.27	513.96
67				200.00		1	98.50	103.50			196.26		24.00	627.95	114.56	10.99	343.71			1,313.41	840.54
68				776.59	206.01	3			38.50	3,402.35	1.34		52.56	541.48	0.75	0.07	2.25		37.22	3,048.38	
69				687.31	37.22				1,930.50	1,276.00	0.98		426.22	502.46	0.57	0.05	1.70			2,773.54	
CITY OF CLEVELAND INTERSTATE TOTAL	———	97.50	21.67	13,736.24	2,500.95	16	467.50	333.50	4,856.51	49,747.21	1,386.10		1,284.94	11,006.44	807.53	77.47	2,422.74		932.69	48,448.37	4,660.46
68				242.80						1,287.50	1.10			102.87	0.61	0.06	1.82			601.28	
69				398.60						595.00	10.07			190.72	5.57	0.54	16.72			1,048.85	
CITY OF EUCLID INTERSTATE TOTAL	———	———	———	641.40	———	———	———	———	———	1,882.50	11.17		———	239.59	6.18	0.60	18.54		———	1,650.13	———
62				87.51	84.04						0.19			47.58	0.12	0.01	.35			279.11	
63				1,101.41							4.79			199.19	2.87	0.28	8.62			1,124.50	
65				782.94	70.74	1					7.19			200.19	4.22	0.41	12.66			1,124.59	
68				151.94	41.60						0.95			56.96	0.55	0.05	1.66			328.44	
69				66.34	99.95						6.42			61.81	3.72	0.36	11.16			312.44	
CITY OF CLEVELAND URBAN FUNDS TOTAL	———	———	———	2,190.14	296.33	1	———	———	———	———	19.54		———	565.73	11.48	1.11	34.45		———	3,169.08	———
59	55.00	557.00	1,760.00	862.58						4,129.00				268.19						1,585.33	
100% CITY OF CLEVELAND TOTAL	55.00	557.00	1,760.00	862.58	———	———	———	———	———	4,129.00	———		———	268.19	———	———	———		———	1,585.33	———
GRAND TOTAL	55.00	654.50	1,781.67	17,430.36	2,797.28	17	467.50	333.50	4,856.51	55,758.71	1,416.81		1,284.94	12,133.95	825.19	79.18	2,475.73		932.69	54,852.91	4,660.46

* NOTE: For detail of traffic island pavement used under bridge structures, see sheet No. 11.

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
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CUYAHOGA COUNTY
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ESTIMATED QUANTITIES OF FENCE

ITEM SS-18 FENCE TYPE "C"

① FENCE LEFT

STATIONS		DISTANCE OUT	END POST	DEFLECTION POINT CORNER POST	DEFLECTION POINT LINE POST	TYPE C FENCE LIN. FT. CITY OF CLEVELAND	TYPE C FENCE LIN. FT. CITY OF EUCLID
203+65.96		117.49					
205+80.02		115.24					
203+65.96	205+80.02					216'	
223+65.08		109.00			1		
205+80.02	223+65.08					1775'	
233+80.53		114.25			1		
223+65.08	233+80.53			R=4018.39		990.14'ARC	
245+00.0		114.25			1		
233+80.53	245+00.0					1105'	
249+22.04		118.28		1			
245+00.0	249+22.04					422'	
249+88.66		135.37			1		
249+22.04	249+88.66					69'	
250+83.92		159.60		1			
249+88.66	250+83.92					100'	
252+02.11		175.81		1			
250+83.92	252+02.11					124'	
252+52.13		169.96		1			
252+02.11	252+52.13					38'	
254+87.00		203.10		1			
252+52.13	254+87.00					247'	
256+71.31		205.97		1			
254+87.00	256+71.31					193'	
258+23.17		232.41	1				
256+71.31	258+23.17					162'	
256+77.16		156.73	1				
257+25.03		162.67		1			
256+77.16	257+25.03					50'	
257+25.03		83.67	1				
257+25.03	257+25.03					79'	
259+38.98		83.67	1				
260+25.68		300.36	1				
259+38.98	260+25.68					235'	
259+61.27		296.95	1				
260+09.31		424.91		1			
259+61.27	260+09.31					138'	
260+52.41		458.1		1			
260+09.31	260+52.41					58'	
264+61.68		458.0		1			
260+52.41	264+61.68					411'	
264+92.06		428.0		1			
264+61.68	264+92.06					43'	
264+94.02		196.01		1			
264+92.06	264+94.02					218'	
264+85.90		165.90		1			
264+94.02	264+85.90					31'	
264+86.41		125.91		1			
264+85.90	264+86.41					40'	
266+77.92		128.35		1			
264+86.41	266+77.92					192'	
267+63.18		151.55		1			
266+77.92	267+63.18					88'	
267+84.92		83.67	1				
267+63.18	267+84.92					71'	
270+24.40		83.67	1				
270+43.79		138.86		1			
270+24.40	270+43.79					58'	
270+26.45=		155.45		1			
NMR-272+14.96		228.87					
270+43.79	270+26.45					24'	
NMR-275+62.69		19.00			1		
NMR-272+14.96	NMR-275+62.69			R=393.0		427'ARC	
NMR-276+80.87		19.00			1		
NMR-275+62.69	NMR-276+80.87					118'	
NMR-278+40.00		19.00	1				
NMR-276+80.87	NMR-278+40.00			R=719.0'		163'ARC	
		TOTAL	8	16		7885'	

② FENCE LEFT

STATIONS		DISTANCE OUT	END POST	DEFLECTION POINT CORNER POST	DEFLECTION POINT LINE POST	TYPE C FENCE LIN. FT. CITY OF CLEVELAND	TYPE C FENCE LIN. FT. CITY OF EUCLID
NMR-278+23.16		69.37	1				
NMR-282+90.00		31.00			1		
NMR-278+23.16	NMR-282+90.00					484'	
NMR-283+84.22		40.09			1		
NMR-282+90.00	NMR-283+84.22			R=493.00		95'ARC	
NMR-285+14.09		65.37	1				
NMR-283+84.22	NMR-285+14.09					132'	
NMR-284+70.00		19.0	1				
NMR-288+54.54		19.0		1			
NMR-284+70.00	NMR-288+54.54					385'	
NMR-288+54.54		43.0		1			
NMR-288+54.54	NMR-288+54.54					24'	
NMR-288+91.87		80.33	1				
NMR-288+54.54	NMR-288+91.87					53'	
NMR-290+63.85		80.33	1				
NMR-290+81.39		19.00		1			
NMR-290+63.85	NMR-290+81.39					64'	
NMR-292+03.63		19.00	1				
NMR-290+81.39	NMR-292+03.63					103'	19'

CALCULATIONS

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
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LINE Nº	DESCRIPTION		QUANTITY	UNIT
	E-8 REMOVAL & DISPOSAL OF EXISTING PAVEMENT			
	CITY OF CLEVELAND - INTERSTATE			
1	WATERLOO RD. STA. 0+23.78 TO STA. 10+10.64	4,917.41 SQ.YD.		
2	WATERLOO RD. STA. 52+07.72 TO STA. 56+55.69	2,076.27		
3	E. 162 ND. ST. STA. 0+22.50 TO STA. 1+09.07	260.82		
4	E. 163 RD. ST. STA. 0+22.50 TO STA. 2+14.52	596.16		
5	E. 165 TH. ST. STA. 0+22.50 TO STA. 3+25.35	922.41		
6	E. 167 TH. ST. STA. 0+21.47 TO STA. 3+81.14	1,143.90		
7	E. 168 TH. ST. STA. 0+21.47 TO STA. 3+64.15	1,013.45		
8	E. 169 TH. ST. STA. 0+21.67 TO STA. 3+56.84	993.92		
9	E. 170 TH. ST. STA. 0+21.47 TO STA. 3+80.75	1,066.96		
10	E. 172 ND. ST. STA. 0+21.56 TO STA. 3+95.91	1,097.01		
11	E. 173 RD. ST. STA. 0+21.56 TO STA. 3+83.38	1,062.25		
12	E. 175 TH. ST. STA. 0+21.56 TO STA. 4+23.45	1,101.86		
13	E. 176 TH. ST. STA. 0+24.06 TO STA. 4+14.27	1,203.46		
14	E. 177 TH. ST. STA. 0+24.06 TO STA. 4+22.41	1,211.07		
15	GROVEWOOD AVE. STA. 0+17.17 TO STA. 4+14.13	1,298.24		
16	DELAVAN RD. STA. 0+20.00 TO STA. 3+57.20	1,254.82		
17	NOTTINGHAM RD. STA. 4+62.14 TO STA. 4+92.98	118.63		
18	NOTTINGHAM RD. STA. 5+32.98 TO STA. 8+27.00	810.56		
19	NOTTINGHAM RD. STA. 9+10.18 TO STA. 10+22.83	300.40		
20	E. 185 TH. ST. STA. 5+10.00 S TO STA. 5+86.09 N	4,380.24		
21	WOODROW AVE. STA. 0+20.00 TO STA. 5+41.65	1,517.72		
22	NEFF RD. STA. 0+00 TO STA. 7+41.39	2,191.90		
23	NEFF RD. STA. 9+72.00 TO STA. 13+29.60	1,049.00		
24	MOHICAN AVE. STA. 0+15.00 TO STA. 0+77.38	185.57		
25	E. 200 TH. ST. STA. 0+00 TO STA. 10+30.40	1,493.55		
26	FROM SHEET No. 18 SUMMARY OF EXTRA AREAS	21.67		
27	WATERLOO RD. N. SIDE (AT ALL INTERSECTIONS E. 165TH ST. THRU DELAVAN AVE.)	1,386.80		
28	(SUM OF LINES 1 THRU 27) (TOTAL REMOVAL & DISPOSAL OF EXISTING PAV'T.) CITY OF CLEVELAND INTERSTATE FUNDS		34,676.05	SQ. YD.
	CITY OF EUCLID - INTERSTATE			
29	E. 200 TH. ST. STA. 0+00 TO STA. 10+30.40	2,689.43 SQ.YD.		
30	(TOTAL REMOVAL & DISPOSAL OF EXISTING PAV'T.) CITY OF EUCLID INTERSTATE FUNDS		2,689.43	SQ. YD.
	E-8 REMOVAL FOR RE-USE OF EXISTING CURB			
	CITY OF CLEVELAND - INTERSTATE			
31	NOTTINGHAM RD. STA. 5+56.98 TO STA. 8+27.00	540 LIN. FT.		
32	NOTTINGHAM RD. STA. 9+10.18 TO STA. 10+22.83	170		
33	E. 200 TH. ST. STA. 0+00 TO STA. 10+30.40	966		
34	(SUM OF LINES 31 THRU 33) TOTAL (REMOVAL FOR RE-USE OF EXISTING CURB) CLEVELAND INTERSTATE FUNDS		1,676	LIN. FT.
	CITY OF EUCLID - INTERSTATE			
35	E. 200 TH. ST. STA. 0+00 TO STA. 10+30.40	1,292 LIN. FT.		
36	TOTAL (REMOVAL FOR RE-USE OF EXISTING CURB) CITY OF EUCLID INTERSTATE FUNDS		1,292	LIN. FT.
	E-8 REMOVAL & DISPOSAL OF EXISTING CURB			
	CITY OF CLEVELAND - INTERSTATE			
41	WATERLOO RD. STA. 0+23.78 TO STA. 10+10.64	1,810 LIN. FT.		
42	WATERLOO RD. STA. 10+10.64 TO STA. 56+55.69 - ALL EXIST. CURB CUTS NORTH SIDE	627		
43	WATERLOO RD. STA. 52+07.72 TO STA. 56+55.69	773		
44	E. 162 ND. ST. STA. 0+22.50 TO STA. 1+09.07	190		
45	E. 163 RD. ST. STA. 0+22.50 TO STA. 2+14.52	395		
46	E. 165 TH. ST. STA. 0+22.50 TO STA. 3+25.35	632		
47	E. 167 TH. ST. STA. 0+21.47 TO STA. 3+81.14	736		
48	E. 168 TH. ST. STA. 0+21.47 TO STA. 3+64.15	697		
49	E. 169 TH. ST. STA. 0+21.67 TO STA. 3+56.84	675		
50	E. 170 TH. ST. STA. 0+21.47 TO STA. 3+80.75	730		
51	E. 172 ND. ST. STA. 0+21.56 TO STA. 3+95.91	761		

LINE Nº	DESCRIPTION		QUANTITY	UNIT
52	E. 173 RD. ST. STA. 0+21.56 TO STA. 3+83.38	736 LIN. FT.		
53	E. 175 TH. ST. STA. 0+21.56 TO STA. 4+23.45	819		
54	E. 176 TH. ST. STA. 0+24.06 TO STA. 4+14.27	785		
55	E. 177 TH. ST. STA. 0+24.06 TO STA. 4+22.41	804		
56	GROVEWOOD AVE. STA. 0+17.17 TO STA. 4+14.13	793		
57	DELAVAN RD. STA. 0+20.00 TO STA. 3+57.20	652		
58	NOTTINGHAM RD. STA. 4+62.14 TO STA. 4+92.98	95		
59	NOTTINGHAM RD. STA. 5+32.98 TO STA. 5+56.98	74		
60	VILLA VIEW RD.	716		
61	E. 185 TH. ST. STA. 5+10.00 S TO STA. 5+86.09 N	1,822		
62	WOODROW AVE. STA. 0+20.00 TO STA. 5+41.65	1,064		
63	NEFF RD. STA. 0+00 TO STA. 7+41.39	1,483		
64	NEFF RD. STA. 9+72.00 TO STA. 13+29.60	705		
65	MOHICAN AVE. STA. 0+15.00 TO STA. 0+77.38	133		
66	FROM SHEET No. 18 SUMMARY OF EXTRA AREAS	98		
67	(SUM OF LINES 41 THRU 66) TOTAL (REMOVAL & DISPOSAL OF EXISTING CURB) CITY OF CLEVELAND INTERSTATE FUNDS		18,805	LIN. FT.
	E-1 ROADWAY EXCAVATION - METHOD B			
	CITY OF CLEVELAND - INTERSTATE			
71	FROM SHEET No. 17 EXCAVATION	362,181 CU. YD.		
72	FROM LINE No. 71 DEDUCT LUMP SUM FOR PAV'T. REMOVAL	-8,305		
73	(SUM OF LINES 71 & 72) TOTAL EXCAVATION CITY OF CLEVELAND INTERSTATE FUNDS		353,876	CU. YD.
74	FROM SHEET No. 17 EMBANKMENT + 22 %	441,138		
75	TO LINE No. 74 ADD LUMP SUM FOR PAVEMENT REMOVAL	+1,149		
76	FROM STRUCTURAL DWGS. - SURPLUS EXCAVATION - ITEMS E-2 & E-3 DEDUCT	-50,502 CU. YD.		
77	(SUM OF LINES 74, 75 & 76 TOTAL EMBANKMENT + 22 %	391,785 CU. YD.		
78	FROM LINE 77 DEDUCT LINE 73 = BORROW CLEVELAND INTERSTATE FUNDS	37,909 CU. YD.		
	CITY OF EUCLID - INTERSTATE			
80	FROM SHEET No. 17 EXCAVATION	6,822 CU. YD.		
81	FROM LINE No. 80 DEDUCT LUMP SUM FOR PAVEMENT REMOVAL	-728		
82	(SUM OF LINES 80 & 81) TOTAL EXCAVATION CITY OF EUCLID - INTERSTATE FUNDS		6,094	CU. YD.
83	FROM SHEET No. 17 EMBANKMENT + 22 %	17,764		
84	TO LINE No. 83 ADD LUMP SUM FOR PAVEMENT REMOVAL	+ 296		
85	(SUM OF LINES 83 & 84) TOTAL EMBANKMENT + 22 %	18,060 CU. YD.		
86	FROM LINE No. 85 DEDUCT LINE 82 = BORROW CITY OF EUCLID - INTERSTATE FUNDS	11,966		
87	(SUM OF LINES 78 & 86) = TOTAL BORROW INTERSTATE PROJECT	49,875 CU. YD.		
	CITY OF CLEVELAND - URBAN			
89	FROM SHEET No. 17 EXCAVATION - CITY OF CLEVELAND - URBAN FUNDS		38,228	CU. YD.
90	FROM SHEET No. 17 EMBANKMENT + 22 %	3,823		
91	FROM LINE No. 89 DEDUCT LINE 90 = SURPLUS EXCAVATION - URBAN PROJECT	34,405		
92	(SUM OF LINES 87 & 91) = TOTAL BORROW INTERSTATE & URBAN PROJECTS	15,470 CU. YD.		
	100 % CITY OF CLEVELAND FUNDS			
94	FROM SHEET No. 17 EXCAVATION - 100 % CLEVELAND FUNDS		1,462	CU. YD.
95	FROM SHEET No. 17 EMBANKMENT + 22 %	17 CU. YD.		
96	FROM LINE No. 94 DEDUCT LINE 95 = SURPLUS EXCAVATION 100 % CITY OF CLEVELAND	1,445		
	E-4 BORROW			
98	(SUM OF LINES 92 & 96) = GRAND TOTAL FOR PROJECT = TOTAL BORROW		14,025	CU. YD.
	E-1 COMPACTED SUBGRADE			
	CITY OF CLEVELAND - INTERSTATE			
101	FROM LINE 218 T-71 9" CONCRETE PAVEMENT	67,412.26 SQ. YD.		
102	FROM LINE 238 T-71 10" CONCRETE PAVEMENT	87,979.31		
103	FROM LINE 254 I-7 CONCRETE APPROACH SLABS	1,866.67		
104	FROM LINE 370 B-219 WATERPROOFED AGGREGATE BASE COURSE	33,667.95		
105	FROM LINE 262 I-11 CURB RESET = 1833.16 X .5 ÷ 9	101.84		
106	FROM LINE 297 SANDSTONE CURB 35,708.08 X .5 ÷ 9	1,983.78		
107	FROM SHT. No. 18 - SUMMARY OF TABLES - EXTRA AREAS - I-12 SPECIAL CURB = [(467.50 x 11) + (333.50 x 67)] ÷ 9 =	76.77		
108	(SUM OF LINES 101 THRU 107) TOTAL CITY OF CLEVELAND INTERSTATE FUNDS		193,088.58	SQ. YD.

CALCULATIONS

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
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LINE Nº	DESCRIPTION		QUANTITY	UNIT
	E-I COMPACTED SUBGRADE CONTINUED			
	CITY OF EUCLID - INTERSTATE			
109	FROM LINE 220 T-71 9" CONCRETE PAVEMENT	1,650.13 SQ. YD.		
110	FROM LINE 242 T-71 10" CONCRETE PAVEMENT	1,349.60		
111	FROM LINE 378 B-33 3" BITUMINOUS MACADAM BASE COURSE	411.56		
112	FROM LINE 266 I-11 CURB RESET = 837.84 X .5 ÷ 9 =	46.55		
113	(SUM OF LINES 109 THRU 112) TOTAL CITY OF EUCLID - INTERSTATE FUNDS		3,457.84	SQ. YD.
	CITY OF CLEVELAND - URBAN			
114	FROM LINE 225 T-71 9" CONCRETE PAVEMENT	13,001.88 SQ. YD.		
115	FROM LINE 387 B-33 3" BITUMINOUS MACADAM BASE COURSE	2,254.23		
116	FROM LINE 306 I-11 SANDSTONE CURB = 4,426.71 X .5 ÷ 9 =	245.93		
117	(SUM OF LINES 114 THRU 116) TOTAL CITY OF CLEVELAND - URBAN FUNDS		15,502.04	SQ. YD.
	100 % CITY OF CLEVELAND			
118	FROM LINE 227 T-71 9" CONCRETE PAVEMENT	1,585.33 SQ. YD.		
119	FROM LINE 269 I-11 CURB RESET 49 X .5 ÷ 9 =	2.72		
120	FROM LINE 309 I-11 SANDSTONE CURB 813.58 X .5 ÷ 9 =	45.20		
121	(SUM OF LINES 118 THRU 120) TOTAL CITY OF CLEVELAND 100 % FUNDS		1,633.25	SQ. YD.
	E-II WATER			
	CITY OF CLEVELAND - INTERSTATE			
125	FROM LINE 180 39,042.44 CU. YD. + LINE 330 = 4,784.69 CU. YD.	43,827 CU. YD.		
126	FROM LINES 74 & 75 TOTAL EMBANKMENT + 22 %	442,287 CU. YD.		
127	486,114 CU. YD. X 5 ÷ 1000 = TOTAL CITY OF CLEVELAND - INTERSTATE FUNDS		2,430.57	M. GAL.
	CITY OF EUCLID - INTERSTATE			
128	FROM LINE 198 642.94 CU. YD. + LINE 337 = 58.33 CU. YD.	701 CU. YD.		
129	FROM LINE 85 TOTAL EMBANKMENT + 22 %	18,060 CU. YD.		
130	18,761 CU. YDS. X 5 ÷ 1000 = TOTAL CITY OF EUCLID - INTERSTATE FUNDS		93.80	M. GAL.
	CITY OF CLEVELAND - URBAN			
131	FROM LINE 209 2,585.56 CU. YD. + LINE 346 = 328.04 CU. YD.	2,914 CU. YD.		
132	FROM LINE 90 TOTAL EMBANKMENT + 22 %	3,823 CU. YD.		
133	6,737 CU. YDS. X 5 ÷ 1000 = TOTAL CITY OF CLEVELAND - URBAN FUNDS		33.68	M. GAL.
	100 % CITY OF CLEVELAND			
134	FROM LINE 210	268 CU. YD.		
135	FROM LINE 95 TOTAL EMBANKMENT + 22 %	17 CU. YD.		
136	285 CU. YDS. X 5 ÷ 1000 = TOTAL 100 % CITY OF CLEVELAND		1.42	M. GAL.
	I-22 SUBBASE GRADING A OR B			
	CITY OF CLEVELAND - INTERSTATE			
141	FROM LINE 218 67,412.26 SQ. YD. - LINE 217 48,448.37 SQ. YD. = 18,963.89 SQ. YD. ÷ 6 =	3,160.65 CU. YD.		
142	FROM LINE 238 87,979.31 SQ. YD. - LINE 237 4,660.46 SQ. YD. = 83,318.85 SQ. YD. ÷ 6 =	13,886.48		
143	FWY. EASTBOUND ADDITIONAL 1'-0" I-22 STA. 222+00 TO STA. 225+00 = 300.75 X 48 X 1 ÷ 27 =	534.67		
144	FWY. WESTBOUND ADDITIONAL 1'-0" I-22 STA. 222+00 TO STA. 225+00 = 299.25 X 48 X 1 ÷ 27 =	532.00		
145	APPROACH SLABS SUBBASE (FROM LINE 254) 1,866.67 SQ. YD. X .66 ÷ 3 =	410.67		
146	MEDIAN STA. 204+00 TO STA. 289+98.78 = 8,598.78 LIN. FT.			
147	DEDUCT FROM LINE 146 - 646.36 LIN. FT. FOR STRUCTURES = 7,952.42 X .5743 = 4,567.07			
148	DEDUCT FROM LINE 147 - 45.42 CU. YD. FOR INLETS & 72.48 CU. YD. FOR SUPER ELEVATION AREAS =	4,449.17 CU. YD.		
149	MEDIAN ADDITIONAL 1'-0" I-22 STA. 222+00 TO STA. 225+00 = 300 X 1 X 10 ÷ 27 =	111.11		
150	FWY. EASTBOUND 10'-PAVED BERM STA. 204+00 TO STA. 259+50 = 5,550 LIN. FT.			
151	ADD TO LINE 150 - 4.52 LIN. FT. FOR CURVES; DEDUCT 224.46 LIN. FT. FOR STRUCTURES =			
152	5,330.06 LIN. FT. X .2040 = 1,087.33; ADD 3.42 CU. YD. FOR SUPER ELEVATION - HIGH SIDE	1,090.75 CU. YD.		
153	FWY. EASTBOUND ADDITIONAL 1'-0" I-22 10' PAVED BERM STA. 222+00 TO STA. 225+00 = 301.96 X .0741 =	22.38		

LINE Nº	DESCRIPTION		QUANTITY	UNIT
154	FWY. EASTBOUND 10' PAVED BERM STA. 264+00 TO STA. 270+80.44 = 680.44 LIN. FT.			
155	DEDUCT FROM LINE 154 244.72 LIN. FT. FOR STRUCTURE = 435.72 LIN. FT. X .2040 CU. YD./LIN. FT.	88.89 CU. YD.		
156	FWY. EASTBOUND 10' PAVED BERM STA. 275+55 TO STA. 284+50 = 895 LIN. FT.			
157	ADD TO LINE 156 8.27 LIN. FT. FOR CURVE = 903.27 LIN. FT. X .2040 CU. YD./LIN. FT. = 184.27 CU. YD.			
158	ADD TO LINE 157 2.13 CU. YD. FOR SUPERELEVATION - HIGH SIDE =	186.40		
159	FWY. EASTBOUND 10' PAVED BERM STA. 289+17.45 TO STA. 289+50.13 = 32.68 LIN. FT. X .2040 CU. YD./LIN. FT.	6.67		
160	FWY. WESTBOUND 10' PAVED BERM STA. 204+00 TO STA. 235+75.08 = 3,175.08 LIN. FT.			
161	DEDUCT FROM LINE 160 11.50 LIN. FT. FOR CURVES = 3,163.58 LIN. FT. X .2040 CU. YD./LIN. FT. =	645.37		
162	ADDITIONAL 1'-0" I-22; FWY. WESTBOUND 10' PAVED BERM STA. 222+00 TO STA. 225+00 = 298.04 X .0741 =	22.08		
163	FWY. WESTBOUND 10' PAVED BERM STA. 249+31 TO STA. 253+10 = 383.18 LIN. FT. X .2040	78.17		
164	FWY. WESTBOUND 10' PAVED BERM STA. 273+81 TO STA. 284+57.49 = 1,065.67 LIN. FT. X .2040	217.40		
165	FWY. WESTBOUND 10' PAVED BERM STA. 289+60.33 TO STA. 290+47.43 = 87.10 LIN. FT. X .2040	17.77		
166	FWY. EASTBOUND 5' PAVED BERM STA. 204+00 TO STA. 289+93.91 = 8,593.91 LIN. FT.			
167	DEDUCT FROM LINE 166; 646.36' FOR STRUCTURES = 7,947.55 LIN. FT. X .1235 =	981.52		
168	ADDITIONAL 1'-0" I-22 5' PAVED BERM STA. 222+00 TO STA. 225+00 = 300 X 5 X 1 ÷ 27 =	55.56		
169	FWY. WESTBOUND 5' PAVED BERM STA. 204+00 TO STA. 290+03.65 = 8603.65 LIN. FT.			
170	DEDUCT FROM LINE 169 646.36' FOR STRUCTURES = 7,957.29 LIN. FT. X .1235 =	982.73		
171	ADDITIONAL 1'-0" I-22 5' PAVED BERM STA. 222+00 TO STA. 225+00 = 300 X 5 X 1 ÷ 27 =	55.56		
172	RAMP No. 11 8' PAVED BERM STA. 6+33.77 TO STA. 11+55.01 = 521.24 X .1399 =	72.92		
173	RAMP No. 11 3' PAVED BERM STA. 6+33.77 TO STA. 11+55.01 = 521.24 X .0702 =	36.59		
174	NORTH MARGINAL ROAD 3' PAVED BERM STA. 205+76.43 TO STA. 248+00 = 4,230.35 LIN. FT. X .0702 CU. YD/FT.	296.97		
175	NORTH MARGINAL ROAD 3' PAVED BERM STA. 280+45.17 TO STA. 282+90 = 244.83 LIN. FT. X .0702 =	17.19		
176	SOUTH MARGINAL ROAD 3' PAVED BERM STA. 204+00 TO STA. 210+75 = 676.86 LIN. FT. X .0702 =	47.52		
177	SOUTH MARGINAL ROAD 3' PAVED BERM STA. 278+49.17 TO STA. 282+06.40 = 357.23 LIN. FT. .0702 =	25.08		
178	FROM SHEET No. 17 SUMMARY OF TABLES - PLAN PROFILE	3.73		
179	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS =	11,006.44		
180	(SUM OF LINES 141 THRU 179) TOTAL CITY OF CLEVELAND - INTERSTATE FUNDS		39,042.44	CU. YD.
	CITY OF EUCLID - INTERSTATE			
191	FROM LINE 242; 1,349.60 SQ. YD. (T-71 10) ÷ 6 =	224.93 CU. YD.		
192	MEDIAN STA. 289+98.78 TO STA. 291+00 = 101.22 LIN. FT. X .5743 CU. YD./LIN. FT. =	58.13		
193	FWY. EASTBOUND 10' PAVED BERM STA. 289+50.13 TO STA. 291+00 = 149.87 LIN. FT. X .2040 =	30.57		
194	FWY. WESTBOUND 10' PAVED BERM STA. 290+47.43 TO STA. 291+00 = 52.57 LIN. FT. X .2040 =	10.72		
195	FWY. EASTBOUND 5' PAVED BERM STA. 289+93.91 TO STA. 291+00 = 106.09 X .1235 =	13.10		
196	FWY. WESTBOUND 5' PAVED BERM STA. 290+03.65 TO STA. 291+00 = 96.35 X .1235 =	11.90		
197	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS =	293.59		
198	(SUM OF LINES 191 THRU 197) TOTAL CITY OF EUCLID - INTERSTATE FUNDS		642.94	CU. YD.
	CITY OF CLEVELAND - URBAN			
201	FROM LINE 225; 13,001.88 SQ. YD. - LINE 224; 3,169.08 SQ. YD. = 9,832.80 SQ. YD. T-71 ÷ 6 =	1,638.80 CU. YD.		
202	NORTH MARGINAL ROAD 3' PAVED BERM STA. 269+45.42 TO STA. 274+00 = 454.58 X .0702 =	31.91		
203	NORTH MARGINAL ROAD 3' PAVED BERM STA. 275+62.69 TO STA. 278+75.82 = 316.89 X .0702 =	22.25		
204	NORTH MARGINAL ROAD 3' PAVED BERM STA. 284+22 TO STA. 289+13.99 = 491.99 X .0702 =	34.54		
205	SOUTH MARGINAL ROAD 3' PAVED BERM STA. 271+80.78 TO STA. 277+16.00 = 532.13 X .0702 =	37.36		
206	SOUTH MARGINAL ROAD 3' PAVED BERM STA. 283+40 TO STA. 287+36.06 = 396.06 X .0702 =	27.80		
207	SOUTH MARGINAL ROAD 8' PAVED BERM STA. 271+80.78 TO STA. 287+36.06 = 1,559.15 X .1457 =	227.17		
208	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS =	565.73		
209	(SUM OF LINES 201 THRU 208) TOTAL CITY OF CLEVELAND - URBAN FUNDS		2,585.56	CU. YD.
	100 % CITY OF CLEVELAND			
210	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS =		268.19	CU. YD.
	T-71 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT			
	CITY OF CLEVELAND - INTERSTATE			
211	RAMP No. 11 STA. 6+33.77 TO STA. 11+55.01 = 521.24 FT. X 16 FT. ÷ 9 =	926.65 SQ. YD.		
212	NORTH MARGINAL ROAD STA. 205+76.43 TO STA. 248+00 = 4,223.57 FT. X 28 FT. ÷ 9 =	13,140.00		
213	NORTH MARGINAL ROAD STA. 262+23.20 TO STA. 265+75 = 351.80 FT. X 28 FT. ÷ 9 =	1,094.49		
214	NORTH MARGINAL ROAD STA. 280+45.17 TO STA. 282+90 = 244.83 FT. X 12 FT. ÷ 9 =	326.44		
215	SOUTH MARGINAL ROAD STA. 204+00 TO STA. 210+75 = 675.00 FT. X 40 FT. ÷ 9 =	3,000.00		
216	SOUTH MARGINAL ROAD STA. 278+49.17 TO STA. 282+06.40 = 357.23 FT. X 12 FT. ÷ 9 =	476.31		
217	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS =	48,448.37		
218	(SUM OF LINES 211 THRU 217) TOTAL CITY OF CLEVELAND - INTERSTATE FUNDS		67,412.26	SQ. YD.

CALCULATIONS

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

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LINE Nº	DESCRIPTION		QUANTITY	UNIT
	T-71 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT CONTINUED			
	CITY OF EUCLID - INTERSTATE			
220	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS - TOTAL CITY OF EUCLID-INTERSTATE FUNDS		1,650.13	SQ. YD.
	CITY OF CLEVELAND - URBAN			
222	NORTH MARGINAL ROAD STA. 269+45.42 TO STA. 289+13.99 = 1,968.02 X 26 ÷ 9 =	5,685.39 SQ. YD.		
223	SOUTH MARGINAL ROAD STA. 271+80.78 TO STA. 287+36.06 = 1,555.28 X 24 ÷ 9 =	4,147.41		
224	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS =	3,169.08		
225	(SUM OF LINES 222 THRU 224) - TOTAL CITY OF CLEVELAND - URBAN FUNDS		13,001.88	SQ. YD.
	100 % CITY OF CLEVELAND FUNDS			
227	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS - TOTAL 100 % CITY OF CLEVELAND FUNDS		1,585.33	SQ. YD.
	T-71 10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT			
	CITY OF CLEVELAND - INTERSTATE			
231	FWY. EASTBOUND STA. 204+00 TO STA. 287+26.99 = 8,326.99 LIN. FT.			
232	DEDUCT FROM LINE 231 559.02 LIN. FT. FOR STRUCTURES, APPROACH SLABS & CURVES = 7,767.97 X 48 ÷ 9 =	41,429.17 SQ. YD.		
233	FWY. EASTBOUND STA. 289+54.17 TO STA. 289+72.83 = 18.66 X 60 ÷ 9	124.40		
234	FWY. WESTBOUND STA. 204+00 TO STA. 287+46.43 = 8,346.43 LIN. FT.			
235	DEDUCT FROM LINE 234 579.34 LIN. FT. FOR STRUCTURES, APPROACH SLABS & CURVES = 7,767.09 X 48 ÷ 9 =	41,424.48		
236	FWY. WESTBOUND STA. 289+73.61 TO STA. 290+24.73 = 51.12 X 60 ÷ 9 =	340.80		
237	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS =	4,660.46		
238	(SUM OF LINES 231 THRU 237) TOTAL CITY OF CLEVELAND - INTERSTATE FUNDS		87,979.31	SQ. YD.
	CITY OF EUCLID - INTERSTATE			
240	FWY. EASTBOUND STA. 289+72.83 TO STA. 291+00 = 127.17 X 60 ÷ 9 =	847.80 SQ. YD.		
241	FWY. WESTBOUND STA. 290+24.73 TO STA. 291+00 = 75.27 X 60 ÷ 9 =	501.80		
242	(SUM OF LINES 240 & 241) TOTAL CITY OF EUCLID - INTERSTATE FUNDS		1,349.60	SQ. YD.
	I-7 REINFORCED CONCRETE APPROACH SLABS (T=13")			
	CITY OF CLEVELAND - INTERSTATE			
251	APPROACH SLABS STRUCTURE No. CUY-2-2533 (2 X 25 X 48 + 2 X 25 X 60) ÷ 9 =	600.00 SQ. YD.		
252	APPROACH SLABS STRUCTURE No. CUY-2-2554 (2 X 25 X 48 + 2 X 25 X 60) ÷ 9 =	600.00		
253	APPROACH SLABS STRUCTURE No. CUY-2-2591 4 X 25 X 60 ÷ 9 =	666.67		
254	(SUM OF LINES 251 THRU 253) TOTAL CITY OF CLEVELAND - INTERSTATE FUNDS		1,866.67	SQ. YD.
	I-11 6"x 18" SANDSTONE CURB RESET			
	CITY OF CLEVELAND - INTERSTATE			
259	FROM LINE 267 SURPLUS SANDSTONE CURB AVAILABLE FOR REUSE	325.16 LIN. FT.		
260	REMOVAL FOR REUSE OF EXISTING CURB FROM LINE 34	1,676		
261	DEDUCTION OF 10 % FOR BREAKAGE AND CURB CUTS	-168		
262	(SUM OF LINES 260 & 261) CURB AVAILABLE FOR REUSE - CITY OF CLEVELAND - INTERSTATE FUNDS		1,833.16	LIN. FT.
	CITY OF EUCLID - INTERSTATE			
263	REMOVAL FOR RE-USE OF EXISTING CURB - FROM LINE 36	1,292 LIN. FT.		
264	DEDUCTION OF 10 % FOR BREAKAGE AND CURB CUTS	-129		
265	(SUM OF LINES 263 & 264) CURB AVAILABLE FOR RE-USE	1,163		
266	FROM LINE 301 THE AMOUNT OF I-11 = TOTAL (SANDSTONE CURB RESET) CITY OF EUCLID INTERSTATE FUNDS		837.84	LIN. FT.
267	FROM LINE 265 DEDUCT LINE 266 1,163.00 - 837.84 = 325.16 LIN. FT. (SURPLUS SANDSTONE CURB-CITY OF EUCLID)			
	100 % CITY OF CLEVELAND			
268	FROM SHEET No. 18 SUMMARY OF TABLES REMOVAL FOR REUSE OF EXISTING CURB	55 LIN. FT.		
269	DEDUCTION OF 10% FOR BREAKAGE • TOTAL SANDSTONE CURB RESET 100 % CITY OF CLEVELAND	49		LIN. FT.

LINE Nº	DESCRIPTION		QUANTITY	UNIT
	I-11 6"x 18" SANDSTONE CURB			
	CITY OF CLEVELAND - INTERSTATE			
270	FWY. MEDIAN CURBS STA. 204+00 TO STA. 289+98.78 X 2 = 17,197.56 LIN. FT.			
271	DEDUCT FROM LINE 270 - 1,292.72 LIN. FT. FOR STRUCTURES AND 332.53 LIN. FT. FOR INLETS	15,572.31 LIN. FT.		
272	RAMP No. 11 LEFT SIDE STA. 6+33.77 TO STA. 11+55.01 = 521.24 LIN. FT.			
273	DEDUCT FROM LINE 272 4.0 LIN. FT. FOR INLETS	517.24		
274	NORTH MARGINAL ROAD STA. 205+76.43 TO STA. 206+82.10	105.67		
275	STA. 208+04.22 TO STA. 209+64.22	160.00		
276	STA. 211+04.85 TO STA. 212+85.08	180.23		
277	STA. 214+27.84 TO STA. 215+95.13	167.29		
278	STA. 217+05.48 TO STA. 218+85.01	179.53		
279	STA. 219+88.05 TO STA. 221+74.88	186.83		
280	STA. 223+01.83 TO STA. 224+39.52	137.43		
281	STA. 225+78.88 TO STA. 226+92.29	113.01		
282	STA. 228+38.20 TO STA. 229+48.92	110.33		
283	STA. 230+95.41 TO STA. 232+37.13	141.22		
284	STA. 233+87.93 TO STA. 236+27.64	239.71		
285	STA. 237+77.48 TO STA. 241+62.39	384.91		
286	STA. 243+06.17 TO STA. 244+73.83	166.98		
287	STA. 245+84.90 TO STA. 248+00	213.79		
288	STA. 262+23.20 TO STA. 265+75 BOTH SIDES	703.60		
289	DEDUCT FOR CURB INLETS & CATCH BASINS IN N.M.R. 54 X 2.	-108.00		
290	SOUTH MARGINAL ROAD STA. 204+00 TO STA. 210+75 = 673.27			
291	DEDUCT FROM LINE 290 5 X 4 = 20' LIN. FT. FOR CURB INLETS	653.27		
292	WATERLOO RD. NORTH SIDE (REPLACE CURB FROM CURB CUTS REMOVED) FROM LINE 42	627.00		
293	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS 13,736.24 STRAIGHT CURB + 2,500.95 RADIAL CURB = 16,237.19			
294	DEDUCT SANDSTONE CURB RESET FROM LINE 262	-1,833.16		
295				
296	WATERLOO RD. NORTH SIDE (NEW CURB AT ALL EXISTING INTERSECTIONS E. 165TH ST. THRU DELAVAN AVE.)	+851.70		
297	(SUM OF LINES 270 THRU 296) TOTAL CITY OF CLEVELAND - INTERSTATE FUNDS		35,708.08	LIN. FT.
	CITY OF EUCLID - INTERSTATE			
298	FWY. MEDIAN CURBS STA. 289+98.78 TO STA. 291+00 X 2 =	202.44 LIN. FT.		
299	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS - 641.40 STRAIGHT	641.40		
300	DEDUCT FOR CURB INLETS 3 X 2	-6.00		
301	SUM OF LINES 298, 299 & LINE 300 =	837.84		
302	DEDUCT LINE 301 FROM I-11 SANDSTONE CURB RESET IN LINE 266		0	LIN. FT.
	CITY OF CLEVELAND - URBAN			
303	NORTH MARGINAL ROAD STA. 269+45.42 TO STA. 289+13.99	1,960.24 LIN. FT.		
304	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREA 2190.14 STRAIGHT CURB + 296.33 RADIAL CURB =	2,486.47		
305	DEDUCT FOR CURB INLETS 10 X 2 = 20'	-20.00		
306	(SUM OF LINES 303 THRU 305) TOTAL CITY OF CLEVELAND - URBAN FUNDS		4,426.71	LIN. FT.
	100 % CITY OF CLEVELAND			
307	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREA STRAIGHT CURB	862.58 LIN. FT.		
308	DEDUCT SANDSTONE CURB RESET FROM LINE 269	-49.00		
309	(SUM OF LINES 307 & 308) TOTAL 100 % CITY OF CLEVELAND		813.58	LIN. FT.
	I-18 5" STABILIZED CRUSHED AGGREGATE SHOULDERS & APPROACHES			
	CITY OF CLEVELAND - INTERSTATE			
311	FWY. EASTBOUND 10' PAVED BERM STA. 204+00 TO STA. 259+50 = 5,550			
312	DEDUCT FROM LINE 311, 219.94 LIN. FT. FOR CURVES & STRUCTURE = 5,330.06 LIN. FT. X .1582	843.22 CU. YD.		
313	FWY. EASTBOUND 10' PAVED BERM STA. 264+00 TO STA. 270+80.44 = 680.44 LIN. FT.			
314	DEDUCT FROM LINE 313, 244.72 LIN. FT. FOR STRUCTURE = 435.72 LIN. FT. X .1582	68.93		
315	FWY. EASTBOUND 10' PAVED BERM STA. 275+55 TO STA. 284+50 = 903.27 LIN. FT. X .1582	142.90		
316	FWY. EASTBOUND 10' PAVED BERM STA. 289+17.45 TO STA. 289+50.13 = 32.68 LIN. FT. X .1582	5.17		
317	FWY. WESTBOUND 10' PAVED BERM STA. 204+00 TO STA. 235+75.08 = 3163.58 LIN. FT. X .1582	500.48		
318	FWY. WESTBOUND 10' PAVED BERM STA. 249+31 TO STA. 253+10.00 = 383.18 LIN. FT. X .1582	60.62		
319	FWY. WESTBOUND 10' PAVED BERM STA. 273+81 TO STA. 284+57.49 = 1,065.67 LIN. FT. X .1582	168.59		

CALCULATIONS

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

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LINE Nº	DESCRIPTION		QUANTITY	UNIT
	I-18 5" STABILIZED CRUSHED AGGREGATE SHOULDERS & APPROACHES CONTINUED			
	CITY OF CLEVELAND - INTERSTATE (CONTINUED)			
320	FWY. WESTBOUND 10' PAVED BERM STA. 289+60.33 TO STA. 290+47.43 = 87.10 LIN.FT. x.1582	13.78 CU.YD.		
321	FWY. E. & W. BOUND 5' PAVED BERM STA. 204+00 TO STA. 289+98.78 X 2 = 17,197.56 LIN. FT.			
322	DEDUCT FROM LINE 321, 12.92.72' FOR STRUCTURES = 15,904.84 LIN. FT. x.0772	1,227.85		
323	RAMP No. 11, 8' PAVED BERM STA. 6+33.77 TO STA. 11+55.01 = 521.24 LIN. FT. x .1234	64.32		
324	RAMP No. 11, 3' PAVED BERM STA. 6+33.77 TO STA. 11+55.01 = 521.24 LIN. FT. x .0502	26.17		
325	NORTH MARGINAL ROAD 3" PAVED BERM STA. 205+76.43 TO STA. 248+00 = 4230.35 LIN. FT. x.0502	212.36		
326	NORTH MARGINAL ROAD 3" PAVED BERM STA. 280+45.17 TO STA. 282+90 = 244.83 LIN. FT. x.0502	12.29		
327	SOUTH MARGINAL ROAD 3" PAVED BERM STA. 204+00 TO STA. 210+75 = 676.86 LIN. FT. x.0502	33.98		
328	SOUTH MARGINAL ROAD 3" PAVED BERM STA. 278+49.17 TO STA. 282+06.40 = 357.23 LIN. FT. x .0502	17.93		
329	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS	1,386.10		
330	(SUM OF LINES 311 THRU 329) TOTAL CITY OF CLEVELAND - INTERSTATE FUNDS		4,784.69	CU. YD.
	CITY OF EUCLID - INTERSTATE			
333	FWY. EASTBOUND 10' PAVED BERM STA. 289+50.13 TO STA. 291+00 = 149.87 LIN. FT. x.1582	23.71 CU. YD.		
334	FWY. WESTBOUND 10' PAVED BERM STA. 290+47.43 TO STA. 291+00 = 52.57 LIN. FT. x.1582	8.32		
335	FWY. E. & W. BOUND 5' PAVED BERM STA. 289+98.78 TO STA. 291+00 x 2 = 202.44 LIN. FT. x.0772	15.63		
336	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS	11.17		
337	(SUM OF LINES 333 THRU 336) TOTAL CITY OF EUCLID - INTERSTATE FUNDS		58.83	CU. YD.
	CITY OF CLEVELAND - URBAN			
339	NORTH MARGINAL ROAD 3' PAVED BERM STA. 269+45.42 TO STA. 274+00 = 454.58 LIN. FT. x.0502	22.82 CU. YD.		
340	NORTH MARGINAL ROAD 3' PAVED BERM STA. 275+62.69 TO STA. 278+75.82 = 316.89 LIN. FT. x.0502	15.91		
341	NORTH MARGINAL ROAD 3' PAVED BERM STA. 284+22 TO STA. 289+13.99 = 491.99 LIN. FT. x.0502	24.70		
342	SOUTH MARGINAL ROAD 3' PAVED BERM STA. 271+80.78 TO STA. 277+16 = 532.13 LIN. FT. x.0502	26.71		
343	SOUTH MARGINAL ROAD 3' PAVED BERM STA. 283+40 TO STA. 287+36.06 = 396.06 LIN. FT. x.0502	19.88		
344	SOUTH MARGINAL ROAD 8' PAVED BERM STA. 271+80.78 TO STA. 287+36.06 = 1559.15 LIN. FT. x.1273	198.48		
345	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS	19.54		
346	(SUM OF LINES 339 THRU 345) TOTAL CITY OF CLEVELAND - URBAN FUNDS		328.04	CU. YD.
	B-219 WATERPROOFED AGGREGATE BASE COURSE			
	CITY OF CLEVELAND - INTERSTATE			
351	FWY. EASTBOUND 10' PAVED BERM STA. 204+00 TO STA. 259+50 = 5,550 LIN. FT.			
352	DEDUCT FROM LINE 351, 219.94 LIN. FT. FOR CURVES & STRUCTURES = 5,330.06 LIN. FT. x 10 ÷ 9	5,922.29 SQ. YD.		
353	FWY. EASTBOUND 10' PAVED BERM STA. 264+00 TO STA. 270+80.44 = 680.44			
354	DEDUCT FROM LINE 353, 244.72 LIN. FT. FOR STRUCTURE = 435.72 x 10 ÷ 9	484.13		
355	FWY. EASTBOUND 10' PAVED BERM STA. 275+55 TO STA. 284+50 = 903.27 x 10 ÷ 9	1,003.63		
356	FWY. EASTBOUND 10' PAVED BERM STA. 289+17.45 TO STA. 289+50.13 = 32.68 x 10 ÷ 9	36.31		
357	FWY. WESTBOUND 10' PAVED BERM STA. 204+00 TO STA. 235+75.08 = 3,163.58 x 10 ÷ 9	3,515.09		
358	FWY. WESTBOUND 10' PAVED BERM STA. 249+31 TO STA. 253+10.00 = 383.18 x 10 ÷ 9	425.76		
359	FWY. WESTBOUND 10' PAVED BERM STA. 273+81 TO STA. 284+57.49 = 1,065.67 x 10 ÷ 9	1,184.08		
360	FWY. WESTBOUND 10' PAVED BERM STA. 289+60.33 TO STA. 290+47.43 = 87.10 x 10 ÷ 9	96.78		
361	FWY. E. & W. BOUND 5' PAVED BERMS STA. 204+00 TO STA. 289+98.78 = 17,197.56 LIN. FT.			
362	DEDUCT FROM LINE 261, 12.92.72' FOR STRUCTURES = 15,904.84 x 5 ÷ 9	8,836.02		
363	RAMP No. 11 - 8' PAVED BERM STA. 6+33.77 TO STA. 11+55.01 = 521.24 x 8 ÷ 9	463.32		
364	RAMP No. 11 - 3' PAVED BERM STA. 6+33.77 TO STA. 11+55.01 = 521.24 x 3 ÷ 9	173.75		
365	NORTH MARGINAL ROAD 3' PAVED BERM STA. 205+76.43 TO STA. 248+00 = 4,230.35 x 3 ÷ 9	1,410.12		
366	NORTH MARGINAL ROAD 3' PAVED BERM STA. 280+45.17 TO STA. 282+90 = 244.83 x 3 ÷ 9	81.61		
367	SOUTH MARGINAL ROAD 3' PAVED BERM STA. 204+00 TO STA. 210+75 = 676.86 x 3 ÷ 9	225.62		
368	SOUTH MARGINAL ROAD 3' PAVED BERM STA. 278+49.17 TO STA. 282+06.40 = 357.23 x 3 ÷ 9	119.08		
369	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS 807.53 CU. YDS. x 12	9,690.36		
370	(SUM OF LINES 351 THRU 369) TOTAL CITY OF CLEVELAND - INTERSTATE FUNDS	33,667.95 SQ. YD. ÷ 12	2,805.67	CU. YD.
	CITY OF EUCLID - INTERSTATE			
374	FWY. EASTBOUND 10' PAVED BERM STA. 289+50.13 TO STA. 291+00 = 149.87 x 10 ÷ 9	166.52 SQ. YD.		
375	FWY. WESTBOUND 10' PAVED BERM STA. 290+47.43 TO STA. 291+00 = 52.57 x 10 ÷ 9	58.41		
376	FWY. E. & W. BOUND 5' PAVED BERMS STA. 289+98.78 TO STA. 291+00 x 2 = 202.44 x 5 ÷ 9	112.47		
377	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS 6.18 CU. YDS. x 12	74.16		
378	(SUM OF LINES 374 THRU 377) TOTAL CITY OF EUCLID - INTERSTATE FUNDS	411.56 SQ. YD. ÷ 12	34.30	CU. YD.

LINE Nº	DESCRIPTION		QUANTITY	UNIT
	CITY OF CLEVELAND - URBAN			
380	NORTH MARGINAL ROAD 3' PAVED BERM STA. 269+45.42 TO STA. 274+00 = 454.58 x 3 ÷ 9 =	151.53 SQ. YD.		
381	NORTH MARGINAL ROAD 3' PAVED BERM STA. 275+62.69 TO STA. 278+75.82 = 316.89 x 3 ÷ 9 =	105.63		
382	NORTH MARGINAL ROAD 3' PAVED BERM STA. 284+22 TO STA. 289+13.99 = 491.99 x 3 ÷ 9 =	164.00		
383	SOUTH MARGINAL ROAD 3' PAVED BERM STA. 271+80.78 TO STA. 277+16 = 532.13 x 3 ÷ 9 =	177.38		
384	SOUTH MARGINAL ROAD 3' PAVED BERM STA. 283+40 TO STA. 287+36.06 = 396.06 x 3 ÷ 9 =	132.02		
385	SOUTH MARGINAL ROAD 8' PAVED BERM STA. 271+80.78 TO STA. 287+36.06 = 1,559.15 x 8 ÷ 9 =	1,385.91		
386	FROM SHEET No. 18 SUMMARY OF TABLES - EXTRA AREAS 11.48 CU. YDS. x 12 =	137.76		
387	(SUM OF LINES 380 THRU 386) TOTAL CITY OF CLEVELAND - URBAN FUNDS	2,254.23 SQ. YD. ÷ 12	187.85	CU. YD.
	T-31 BITUMINOUS SURFACE TREATMENT - BITUMINOUS MATERIAL AS PER PLAN			
	CITY OF CLEVELAND - INTERSTATE			
415	FROM LINE 370, 33,667.59 SQ. YD. x .25 =	8,416.90 GAL.		
416	TOTAL CITY OF CLEVELAND - INTERSTATE FUNDS		8,416.90	GAL.
	CITY OF EUCLID - INTERSTATE			
420	FROM LINE 378, 411.56 SQ. YD. x .25 =	102.89 GAL.		
421	TOTAL CITY OF EUCLID - INTERSTATE FUNDS		102.89	GAL.
	CITY OF CLEVELAND - URBAN			
425	FROM LINE 387, 2,254.23 SQ. YD. x .25 =	563.56 GAL.		
426	TOTAL CITY OF CLEVELAND - URBAN FUNDS		563.56	GAL.
	T-31 BITUMINOUS SURFACE TREATMENT No. 6 AGGREGATE			
	CITY OF CLEVELAND - INTERSTATE			
430	FROM LINE 370, 33,667.59 SQ. YD. x .008 =	269.34 CU. YD.		
431	TOTAL CITY OF CLEVELAND - INTERSTATE FUNDS		269.34	CU. YD.
	CITY OF EUCLID - INTERSTATE			
435	FROM LINE 378, 411.56 SQ. YD. x .008 =	3.29 CU. YD.		
436	TOTAL CITY OF EUCLID - INTERSTATE FUNDS		3.29	CU. YD.
	CITY OF CLEVELAND - URBAN			
440	FROM LINE 387, 2,254.23 SQ. YD. x .008 =	18.03 CU. YD.		
441	TOTAL CITY OF CLEVELAND - URBAN FUNDS		18.03	CU. YD.

CALCULATIONS

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
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LINE Nº	DESCRIPTION		QUANTITY	UNIT
	I-21 STANDARD TYPE 1 PORTLAND CEMENT CONCRETE MEDIAN PAVEMENT			
	CITY OF CLEVELAND - INTERSTATE			
450	FWY. MEDIAN STA. 204+00 TO STA. 289+98.78 = 8,598.78 LIN. FT.			
451	DEDUCT FROM LINE 450, 646.36 LIN. FT. FOR STRUCTURES = 7,952.42 LIN.FT. X 9 ÷ 9 =	7,952.42 SQ. YD.		
452	DEDUCT FOR INLETS (31 #2-6, 5 #2-8, 4 #2-10, 1 #2-12) =	-92.12		
453	(SUM OF LINES 451 & 453)	7,860.30		
454	DEDUCT (SEE LINE 550) 34.88' X 9 ÷ 9 =	34.88		
455	TOTAL CITY OF CLEVELAND - INTERSTATE FUNDS		7,825.42	SQ.YD.
	CITY OF EUCLID - INTERSTATE			
460	FWY. MEDIAN STA. 289+98.78 TO STA. 291+00 = 101.22 LIN.FT. X 9 FT. ÷ 9 =	101.22 SQ. YD.		
461	DEDUCT (SEE LINE 551) 101.22 LIN FT. X 9 ÷ 9 =	- 101.22 SQ.YD.		
462	TOTAL CITY OF EUCLID - INTERSTATE		0	
	L-9 SEEDING AND PROTECTING			
	CITY OF CLEVELAND - INTERSTATE			
465	FROM SHEET No. 94 CROSS SECTIONS	226,043 SQ. YD.		
466	FROM SHEET No. 86 DEDUCT FOR CONCRETE SLOPE PROTECTION	-1,650		
467	FROM SHEET No. 91 DEDUCT FOR CONCRETE SLOPE PROTECTION	-1,224		
468	FROM SHEET No. 95 DEDUCT FOR CONCRETE SLOPE PROTECTION	-1,522		
469	SUM OF LINES 465 THRU 468	221,647		
470	FROM SHEET No. 17 DEDUCT FOR SODDING	-4,043		
471	(SUM OF LINES 469 & 477) TOTAL CITY OF CLEVELAND - INTERSTATE FUNDS		217,604	SQ. YD.
	CITY OF EUCLID - INTERSTATE			
475	FROM SHEET No. 96 CROSS SECTIONS	8,718 SQ. YD.		
476	FROM SHEET No. 17 DEDUCT FOR SODDING	-3		
477	(SUM OF LINES 475 & 476) TOTAL CITY OF EUCLID - INTERSTATE FUNDS		8,715	SQ. YD.
	CITY OF CLEVELAND - URBAN			
480	FROM SHEET No. 94 CROSS SECTIONS	23,337 SQ. YD.		
481	FROM SHEET No. 17 DEDUCT FOR SODDING	- 841		
482	(SUM OF LINES 480 & 481) TOTAL CITY OF CLEVELAND - URBAN FUNDS		22,496	SQ. YD.
	100 % CITY OF CLEVELAND			
485	FROM SHEET No. 86 CROSS SECTIONS	1,539 SQ. YD.		
486	TOTAL 100 % CITY OF CLEVELAND FUNDS		1,539	SQ. YD.
	L-9 COMMERCIAL FERTILIZER			
	CITY OF CLEVELAND - INTERSTATE			
490	FROM LINE 469 ; 221,647 SQ. YD. X 9 X 20/1000 ÷ 2000 =			
491	TOTAL CITY OF CLEVELAND - INTERSTATE FUNDS		19.95	TONS
	CITY OF EUCLID - INTERSTATE			
493	FROM LINE 475 ; 8,718 SQ. YD. X 9 X 20/1000 ÷ 2000 =			
494	TOTAL CITY OF EUCLID - INTERSTATE FUNDS		.78	TONS
	CITY OF CLEVELAND - URBAN			
496	FROM LINE 480 ; 23,337 SQ. YD. X 9 X 20/1000 ÷ 2000 =			
497	TOTAL CITY OF CLEVELAND - URBAN FUNDS		2.10	TONS
	100 % CITY OF CLEVELAND			
499	FROM LINE 485 ; 1,539 SQ. YD. X 9 X 20/1000 ÷ 2000 =			
500	TOTAL 100 % CITY OF CLEVELAND FUNDS		.14	TONS

LINE Nº	DESCRIPTION		QUANTITY	UNIT
	ADDITIONS FOR LOCAL ROADS I-90-1(18)11			
501	EAST 185 TH ST. STA. 8+25 SOUTH TO STA. 5+86.09 NORTH	1,411.09 FT.		
502	RELOCATED NEFF ROAD STA. 5+27.88 SOUTH TO STA. 7+60 NORTH	1,287.88		
503	E. 200 TH. ST. STA. 3+80 SOUTH TO STA. 6+15 NORTH	995.00		
504	(SUM OF LINES 501 THRU 503) TOTAL LENGTH OF WORK	3,693.97 ÷ 5280	.70	MI.
	T-35 ASPHALTIC CONCRETE SURFACE COURSE, TYPE "C" (85-100)			
	CITY OF CLEVELAND - INTERSTATE			
520	* WATERLOO ROAD NORTH SIDE (INTERSECTION PAVEMENT REPLACEMENT AS PER PLAN E.165 TH ST. THRU DELAVAN AVE) - TOTAL		38.52	CU. YD.
	B-35 ASPHALTIC CONCRETE LEVELING COURSE			
	CITY OF CLEVELAND - INTERSTATE			
530	* WATERLOO ROAD NORTH SIDE (INTERSECTION PAVEMENT REPLACEMENT AS PER PLAN E.165 TH ST. THRU DELAVAN AVE.) - TOTAL		115.56	CU. YD.
	T-30 BITUMINOUS TACK COAT			
	CITY OF CLEVELAND - INTERSTATE			
540	* WATERLOO ROAD NORTH SIDE (INTERSECTION PAVEMENT REPLACEMENT AS PER PLAN E.165 TH ST. THRU DELAVAN AVE.) 1386.80 SQ. YD. X .1 =		138.68	GAL.
	* FOR DETAIL SEE SHEET No. 104			
	I-21 STANDARD TYPE 2 PORTLAND CEMENT CONCRETE MEDIAN PAVT.			
	CITY OF CLEVELAND - INTERSTATE			
550	FWY MEDIAN STA. 289+63.90 TO STA. 289+98.78 = 34.88 LIN. FT. X 10 ÷ 9 =		38.75	SQ. YD.
	CITY OF EUCLID - INTERSTATE			
551	FWY MEDIAN STA. 289+98.78 TO STA. 291+00 = 101.22 LIN. FT. X 10 ÷ 9 =		112.47	SQ. YD.

GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

CUYAHOGA COUNTY
CUY 2- 24.33

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ITEM	QUANTITIES: CITY OF CLEVELAND	CITY OF EUCLID	CITY OF CLEVELAND	100% CITY PARTICIPATION		GRAND TOTAL	UNIT	DESCRIPTION	SHEET	LINE
	I-90-1(18)11		U-329(22)	I-90-1(18)11						
				CLEVELAND	EUCLID					
								ROADWAY CODE 7221		
E-1	353,876	6,094	38,228	1,462		399,660	CU. YDS.	ROADWAY EXCAVATION METHOD 'B' AS PER PLAN	20	78, 82, 89, 93
E-1	193,089	3,458	15,502	1,633		213,682	SQ. YDS.	COMPACTED SUBGRADE	20, 21	108, 113, 117, 121
E-4	14,025					14,025	CU. YDS.	BORROW	20	98
E-8	34,676	2,689		1,760		39,125	SQ. YDS.	REMOVAL AND DISPOSAL OF EXISTING PAVEMENT	18, 20	28, 30
E-8	18,805			557		19,362	LIN. FT.	REMOVAL AND DISPOSAL OF EXISTING CURB	18, 20	67
E-8	1,676	1,292		55		3,023	LIN. FT.	REMOVAL FOR RE-USE OF EXISTING CURB	18, 20	34, 36
E-9	LUMP					LUMP	LUMP	REMOVAL OF TREES AND STUMPS	14	
E-11	2,431	94	34	2		2,561	M. GAL.	WATER	21	127, 130 133, 136
I-8	47	1	4	2		54	EACH	MONUMENT ASSEMBLIES - TYPE 'B'	17	
I-8	1					1	EACH	MONUMENT ASSEMBLIES - RE-SET	17	
I-13	67,194	1,883		4,129		73,206	SQ. FT.	4" SIDEWALKS AS PER PLAN	17, 18	
I-13	4,857					4,857	SQ. FT.	4" SIDEWALKS, CURBED AS PER PLAN	18	
I-15	6,378	199	250			6,827	LIN. FT.	GUARD RAIL, STEEL BEAM - STANDARD TYPE (DEEP)	17	
I-15	7,593	99				7,692	LIN. FT.	GUARD RAIL, STEEL BEAM - BARRIER TYPE (DEEP) USING 6"X8" SQ. SAWED PRESSURE TREATED WOOD POSTS AS PER PLAN	17	
L-9	217,604	8,715	22,496	1,539		250,354	SQ. YDS.	SEEDING AND PROTECTING AS PER PLAN	24	471, 477 485, 486
L-9	19.95	0.78	2.10	0.14		22.97	TONS	COMMERCIAL FERTILIZER (12-12-12)	24	491, 494 497, 500
L-9	99.74	3.92	10.50	0.69		114.85	TONS	AGRICULTURAL LIMING MATERIALS AS PER PLAN		
L-10	3,858	3	841			4,702	SQ. YDS.	SODDING, AS PER PLAN	17	
L-10	185					185	SQ. YDS.	SODDING FOR SPECIAL BERM AND SLOPE PROTECTION AS PER PLAN	17	
T-10	600	300				900	CU. YDS.	TRAFFIC COMPACTED SURFACE COURSE FOR MAINTAINING TRAFFIC		
M-10	12	6				18	TONS	CALCIUM Chloride FURNISHED AND APPLIED FOR MAINTAINING TRAFFIC		
S-15	LUMP					LUMP	LUMP	TEMPORARY RUN AROUND AT WATERLOO RD. AND SOUTH MARGINAL ROAD CLASS 'A'	70	
SS-18	17,952	219				18,171	LIN. FT.	FENCE, TYPE "C"	19	
SS-18	7					7	EACH	FENCE GATES, TYPE "C"	19	
SPEC.	6					6	EACH	INTERSTATE AND DEFENSE HIGHWAY SIGN, FURNISHED AND ERECTED	17	
								DRAINAGE CODE 7221		
E-2	520					520	CU. YDS.	EXCAVATION FOR STRUCTURES	172A	
S-1	282					282	CU. YDS.	CONCRETE FOR STRUCTURES CLASS "C"	172A	
S-4	40,216					40,216	LBS	REINFORCING STEEL	172A	
S-24	LUMP					LUMP	LUMP	REMOVAL OF EXISTING STRUCTURES	37, 172A	
SPEC.	2,230					2,230	SQ. FT.	VITRIFIED CLAY LINER PLATES, AS PER PLAN	172A	
I-2	520		6			526	LIN. FT.	12" STORM SEWER SEC. M-6.4 (c)	16	
I-2	184					184	LIN. FT.	6" CLASS A STORM SEWER	16	
I-2	309		28			337	LIN. FT.	12" CLASS A STORM SEWER	16	
I-2	154		20			174	LIN. FT.	15" CLASS A STORM SEWER	16	
I-2	34					34	LIN. FT.	12" STORM SEWER UNDER PAVEMENT OR APPROACHES, SEC. M-6.6(b)	16	
I-2	600					600	LIN. FT.	10" STORM SEWER UNDER PAVEMENT OR APPROACHES, SEC. M-6.5(b) M-6.8(b)	13	
I-2	1173		26	48		1247	LIN. FT.	8" STORM SEWER UNDER PAVEMENT OR APPROACHES, SEC. M-6.5(b), M-6.8(b)	13, 16	
I-2	967					967	LIN. FT.	12" STORM SEWER UNDER PAVEMENT OR APPROACHES SEC. M-6.5(b), M-6.8(b)	13, 16	
I-2	260		344			604	LIN. FT.	15" STORM SEWER UNDER PAVEMENT OR APPROACHES SEC. M-6.5(b), M-6.8(b)	16	
I-2	258					258	LIN. FT.	18" STORM SEWER UNDER PAVEMENT OR APPROACHES, SEC. M-6.6(b), M-6.8(b)	16	
I-2	150					150	LIN. FT.	6" CLASS B STORM SEWER	16	
I-2	499		54			553	LIN. FT.	12" CLASS B STORM SEWER	16	
I-2	505		302			807	LIN. FT.	15" CLASS B STORM SEWER	16	
I-2	500	44	42			586	LIN. FT.	18" CLASS B STORM SEWER	16	
I-2	213					213	LIN. FT.	21" CLASS B STORM SEWER	16	
I-2	889					889	LIN. FT.	39" CLASS B STORM SEWER	16	
I-2		40			40	40	LIN. FT.	42" CLASS B STORM SEWER	16	

ITEM	QUANTITIES: CITY OF CLEVELAND	CITY OF EUCLID	CITY OF CLEVELAND	100% CITY PARTICIPATION		GRAND TOTAL	UNIT	DESCRIPTION	SHEET	LINE
	I-90-1(18)11		U-329(22)	I-90-1(18)11						
				CLEVELAND	EUCLID					
I-2	92					92	LIN. FT.	6" CLASS B STORM SEWER UNDER PAVEMENT OR APPROACHES	16	
I-2	4,029		958			4,987	LIN. FT.	12" CLASS B STORM SEWER UNDER PAVEMENT OR APPROACHES	16	
I-2	1,124		368			1,492	LIN. FT.	15" CLASS B STORM SEWER UNDER PAVEMENT OR APPROACHES	16	
I-2	312		44			356	LIN. FT.	18" STORM SEWER UNDER PAVEMENT OR APPROACHES, SEC. M-6.6(b) OR M-6.8(b)	16	
I-2	268		72			340	LIN. FT.	21" STORM SEWER UNDER PAVEMENT OR APPROACHES SEC. M-6.6(b) OR M-6.8(b)	16	
I-2	649					649	LIN. FT.	24" STORM SEWER UNDER PAVEMENT OR APPROACHES SEC. M-6.6(b) OR M-6.8(b)	16	
I-2	100					100	LIN. FT.	30" STORM SEWER UNDER PAVEMENT OR APPROACHES SEC. M-6.6(b) OR M-6.8(b)	16	
I-2	110					110	LIN. FT.	12" STORM SEWER UNDER PAV'T. OR APPROACHES SEC. M-6.5(b) OR M-6.8(b)	16	
I-2	16					16	LIN. FT.	42" STORM SEWER SEC. M-6.4 (d)	16	
I-2	8					8	LIN. FT.	78" STORM SEWER SEC. M-6.4 (g), 10-10GA.	16	
I-2	272					272	LIN. FT.	24" STORM SEWER SEC. M-6.6(a)	16	
I-2	6					6	LIN. FT.	15" STORM SEWER SEC. M-6.6 (b) OR M-6.8(b)	16	
I-2	158	16				174	LIN. FT.	24" STORM SEWER SEC. M-6.6 (b) OR M-6.8(b)	16	
I-2	296					296	LIN. FT.	27" STORM SEWER SEC. M-6.6 (b) OR M-6.8(b)	16	
I-2	292					292	LIN. FT.	30" STORM SEWER SEC. M-6.6 (b) OR M-6.8(b)	16	
I-2	568					568	LIN. FT.	33" STORM SEWER SEC. M-6.6 (b) OR M-6.8(b)	16	
I-2	264					264	LIN. FT.	36" STORM SEWER SEC. M-6.6 (c)	16	
I-2		12			(12)	12	LIN. FT.	36" STORM SEWER (SANITARY) SEC. M-6.8(b) OR M-6.6(b)	16	
I-2	177	10				187	LIN. FT.	15" STORM SEWER UNDER PAV'T. OR APPROACHES SEC. M-6.6(b) OR M-6.8(b)	16	
I-2	242					242	LIN. FT.	18" STORM SEWER UNDER PAV'T. OR APPROACHES SEC. M-6.6(b) OR M-6.8(b)	16	
I-2	208					208	LIN. FT.	21" STORM SEWER UNDER PAV'T. OR APPROACHES SEC. M-6.6(b) OR M-6.8(b)	16	
I-2	84	192				276	LIN. FT.	54" STORM SEWER UNDER PAVEMENT OR APPROACHES SEC. M-6.6(b)	16	
I-2	122					122	LIN. FT.	60" STORM SEWER UNDER PAVEMENT OR APPROACHES SEC. M-6.6(b)	16	
I-2	590					590	LIN. FT.	78" STORM SEWER UNDER PAVEMENT OR APPROACHES SEC. M-6.6(b)	16	
I-2	268					268	LIN. FT.	42" STORM SEWER SEC. M-6.6 (c)	16	
I-2	230					230	LIN. FT.	60" STORM SEWER SEC. M-6.6 (c)	16	
I-2	428					428	LIN. FT.	66" STORM SEWER SEC. M-6.6 (c)	16	
I-2	368					368	LIN. FT.	42" STORM SEWER UNDER PAVEMENT OR APPROACHES SEC. M-6.6 (c)	16	
I-2	340					340	LIN. FT.	60" STORM SEWER UNDER PAVEMENT OR APPROACHES SEC. M-6.6 (c)	16	
I-2	878					878	LIN. FT.	66" STORM SEWER UNDER PAVEMENT OR APPROACHES SEC. M-6.6(c)	16	
I-2				284		284	LIN. FT.	12" STORM SEWER UNDER PAV'T. OR APPROACHES (SANITARY) SEC. M-6.6(d)	16	
I-2		270				270	LIN. FT.	18" STORM SEWER UNDER PAVEMENT OR APPROACHES SEC. M-6.6 (d)	16	
I-2		274			(274)	274	LIN. FT.	42" STORM SEWER UNDER PAV'T. OR APPROACHES (SANITARY) SEC. M-6.6(d)	16	
I-2					442	442	LIN. FT.	72" STORM SEWER UNDER PAV'T. OR APPROACHES SEC. M-106.6(d)	16	
I-2				224		224	LIN. FT.	12" STORM SEWER UNDER PAV'T. OR APPROACHES SEC. M-6.8(b) (SANITARY)	16	
I-2	258					258	LIN. FT.	36" STORM SEWER SEC. M-6.8 (b) OR M-6.6(b)	16	
I-2	544					544	LIN. FT.	78" STORM SEWER UNDER PAVEMENT OR APPROACHES SEC. M-106.6(c)	16	
I-4	33,664	516	4,648			38,828	LIN. FT.	6" UNDERDRAINS	17	
I-4	15,447	638	3,347	662		20,094	LIN. FT.	6" CURB UNDERDRAINS	17	
I-4	1,400	30	180			1,610	LIN. FT.	8" PIPE OUTLETS FOR UNDERDRAINS SEC. M-6.4 (a)	17	
I-5	106		25	3		134	EACH	6" PIPE SPECIALS FOR UNDERDRAINS	17	
I-5	14					14	EACH	8" CLASS A PIPE SPECIALS FOR STORM SEWERS	16	
I-5	42		1	3		46	EACH	8" PIPE SPECIALS FOR STORM SEWERS UNDER PAVEMENT OR APPROACHES SEC. M-6.5 (b), M-6.8(b)	16	
I-5			1			1	EACH	15" PIPE SPECIAL FOR STORM SEWERS UNDER PAVEMENT OR APPROACHES SEC. M-6.5(b), M-6.8(b)	16	
I-5	12					12	EACH	12" PIPE SPECIALS FOR STORM SEWERS SEC M-6.4 (c)	16	

Revised R.E.C. 12-19-60

GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
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ITEM	QUANTITIES CITY OF CLEVELAND I-90-1(18)11	CITY OF EUCLID I-90-1(18)11	CITY OF CLEVELAND U-329(22)	100% CITY PARTICIPATION I-90-1(18)11 CLEVELAND	EUCLID	GRAND TOTAL	UNIT	DESCRIPTION	SHEET	LINE
								DRAINAGE CODE 7221		
I-5	10					10	EACH	12" CLASS B PIPE SPECIALS FOR STORM SEWERS UNDER PAVEMENT OR APPROACHES	16	
I-5	2		1			3	EACH	15" CLASS B PIPE SPECIALS FOR STORM SEWERS UNDER PAVEMENT OR APPROACHES	16	
I-5	1					1	EACH	18" CLASS B PIPE SPECIAL FOR STORM SEWERS UNDER PAVEMENT OR APPROACHES	16	
I-5	1					1	EACH	30" PIPE SPECIAL FOR STORM SEWERS SEC. M-6.6 (b)	16	
I-5	1					1	EACH	33" PIPE SPECIAL FOR STORM SEWERS SEC. M-6.6 (b)	16	
I-5	1					1	EACH	36" PIPE SPECIAL FOR STORM SEWERS SEC. M-6.6 (b)	16	
I-5	1					1	EACH	54" PIPE SPECIAL FOR STORM SEWERS UNDER PAVEMENT OR APPROACHES SEC. M-6.6 (b)	16	
I-5	3					3	EACH	66" PIPE SPECIALS FOR STORM SEWERS UNDER PAVEMENT OR APPROACHES SEC. M-6.6 (b)	16	
I-5	6					6	EACH	78" PIPE SPECIALS FOR STORM SEWERS UNDER PAVEMENT OR APPROACHES SEC. M-6.6 (b)	16	
I-5	1					1	EACH	42" PIPE SPECIAL FOR STORM SEWERS SEC. M-6.6 (c)	16	
I-5	1					1	EACH	66" PIPE SPECIAL FOR STORM SEWERS SEC. M-6.6 (a)	16	
I-5	2					2	EACH	42" PIPE SPECIALS FOR STORM SEWERS UNDER PAVEMENT OR APPROACHES SEC. M-6.6 (c)	16	
I-5	2					2	EACH	66" PIPE SPECIALS FOR STORM SEWERS UNDER PAVEMENT OR APPROACHES SEC. M-6.6 (c)	16	
I-5	1					1	EACH	33" PIPE SPECIAL FOR STORM SEWERS SEC. M-6.8 (b)	16	
I-5	1					1	EACH	36" PIPE SPECIAL FOR STORM SEWERS SEC. M-6.8 (b)	16	
I-5	2					2	EACH	78" PIPE SPECIALS FOR STORM SEWERS UNDER PAVEMENT OR APPROACHES SEC. M-106.6 (c)	16	
I-8	5	1		1	(1)	7	EACH	MANHOLES REBUILT	17	
I-8	26	3		5	(1)	34	EACH	MANHOLES ADJUST TO GRADE	17	
I-8	4	2				6	EACH	CATCH BASINS ADJUST TO GRADE	17	
I-8	13	1				14	EACH	STANDARD NO. 1 MANHOLES	17	
I-8	16	4		1	(3)	21	EACH	STANDARD NO. 2 MANHOLES (WITHOUT DROP PIPE)	17	
I-8	17	1	1	2	(1)	21	EACH	TYPE A MANHOLES	17	
I-8	1					1	EACH	JUNCTION CHAMBER NO. 4	17	
I-8	33					33	EACH	STANDARD NO. 2-6 MEDIAN INLETS	17	
I-8	6					6	EACH	STANDARD NO 2-6 MEDIAN INLETS, MODIFIED AS PER PLAN	17	
I-8	5					5	EACH	STANDARD NO. 2-8 MEDIAN INLETS	17	
I-8	4					4	EACH	STANDARD NO. 2-10 MEDIAN INLETS	17	
I-8	1					1	EACH	STANDARD NO. 2-12 MEDIAN INLET	17	
I-8	42	1	10			53	EACH	SPECIAL NO. 4 CURB INLETS	17	
I-8	3		1			4	EACH	STANDARD NO. 2-2A CATCH BASINS	17	
I-8	6		8			14	EACH	SPECIAL NO. 2-2A CATCH BASINS	17	
I-8			1			1	EACH	STANDARD NO. 2-2B CATCH BASIN	17	
I-8	15					15	EACH	SPECIAL NO. 4 CATCH BASINS	17	
I-8	26		4			30	EACH	STANDARD NO. 5 CATCH BASINS	17	
I-8	9					9	EACH	STANDARD NO. 5 CATCH BASINS, MODIFIED AS PER PLAN	17	
I-8	3					3	EACH	STANDARD NO. 6 CATCH BASINS	17	
I-14	175					175	LIN. FT.	PAVED GUTTER STANDARD TYPE 1	17	
I-14	174					174	LIN. FT.	PAVED GUTTER STANDARD TYPE 2	17	
I-16	40	2		5	(2)	47	EACH	MANHOLES ABANDONED	16	
I-16	47	3				50	EACH	CATCH BASINS ABANDONED	16	

ITEM	QUANTITIES CITY OF CLEVELAND I-90-1(18)11	CITY OF EUCLID I-90-1(18)11	CITY OF CLEVELAND U-329(22)	100% CITY PARTICIPATION I-90-1(18)11 CLEVELAND	EUCLID	GRAND TOTAL	UNIT	DESCRIPTION	SHEET	LINE
								PAVEMENT CODE 7221		
B-219	2,806	34	188			3,028	CU. YDS.	WATERPROOFED AGGREGATE BASE COURSE	23	370,378 387
B-35	116					116	CU. YDS.	ASPHALTIC CONCRETE LEVELING COURSE (70-85)	24	530
T-30	139					139	GALS.	BITUMINOUS TACK COAT SEC. M-5.5, MS-2, RS-1, OR SEC. M-5.2, RC-1, RC-2, OR RC-3 AS PER SEC. T-30.02	24	540
T-31	8,417	103	564			9,084	GALS.	BITUMINOUS SURFACE TREATMENT, BITUMINOUS MATERIAL AS PER PLAN	23	416,421 426
T-31	269	3	18			290	CU. YDS.	BITUMINOUS SURFACE TREATMENT NO. 6 AGGREGATE	23	434,436 441
T-35	39					39	CU. YDS.	ASPHALTIC CONCRETE SURFACE COURSE, TYPE 'C' (70-85)	24	520
T-70	967					967	SQ. YDS.	6" PORTLAND CEMENT CONCRETE PAVEMENT	17,18	
T-71	67,412	1,650	13,002	1,585		83,649	SQ. YDS.	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	21,22	218,220 226,227
T-71	87,979	1,350				89,329	SQ. YDS.	10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	22	238,242
I-7	1,867					1,867	SQ. YDS.	REINFORCED CONCRETE APPROACH SLAB (T= 13")	22	254
I-11	16		1			17	EACH	BUMPER BLOCKS, AS PER PLAN.	5,18	
I-11	35,708		4,427	.814		40,949	LIN. FT.	6" X 18" SANDSTONE CURB AS PER PLAN	22	297,303 306,309
I-11	1,833	838		.49		2,720	LIN. FT.	6" X 18" SANDSTONE CURB RESET AS PER PLAN	22	262, 266,269
I-12	468					468	LIN. FT.	SPECIAL TYPE 'A' CONCRETE CURB AS PER PLAN	18	
I-12	334					334	LIN. FT.	SPECIAL TYPE 'B' CONCRETE CURB AS PER PLAN	18	
I-18	4,785	59	328			5,172	CU. YDS.	STABILIZED CRUSHED AGGREGATE SHOULDERS AND APPROACHES	23	330 337,346
I-21	1,285					1,285	SQ. YDS.	4" PORTLAND CEMENT CONCRETE TRAFFIC ISLAND PAVEMENT AS PER PLAN	18	
I-21	7,826					7,826	SQ. YDS.	45 STANDARD TYPE 1 PORTLAND CEMENT CONCRETE MEDIAN PAVEMENT AS PER PLAN	24	455
I-22	39,042	643	2,586	268		42,539	CU. YDS.	SUBBASE, GRADING, 'A' OR 'B' AS PER PLAN	21	180,198 209,216
I-21	39	112				151	SQ. YDS.	STANDARD TYPE 2 PORTLAND CEMENT CONCRETE MEDIAN PAVT.	24	550,551
								STRUCTURES OVER 20' SPAN		
								BRIDGE - CUY-2-2533 ESTIMATED QUANTITIES ON SHEET 118		
								BRIDGE - CUY-2-2554 ESTIMATED QUANTITIES ON SHEET 128		
								BRIDGE - CUY-2-2591 ESTIMATED QUANTITIES ON SHEET 138		
								PEDESTRIAN OVERPASS CUY-2-2452 ESTIMATED QUANTITIES ON SHEET 163		
								PEDESTRIAN OVERPASS CUY-2-2513 ESTIMATED QUANTITIES ON SHEET 168		
								EUCLID CREEK CULVERT-CUY-2-2531 ESTIMATED QUANTITIES ON SHEET 161		
								RETAINING WALL ESTIMATED QUANTITIES ON SHEET 172		
								LIGHTING ESTIMATED QUANTITIES ON SHEET 116		
								DUCT LINE RELOCATION, ESTIMATED QUANTITIES SHEET 185		
								WATER LINE RELOCATION, ESTIMATED QUANTITIES SHEET 187		
	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	CONSTRUCTION LAYOUT STAKES		

Revised R.E.C. 12-19-60

GENERAL SUMMARY

FED. RD DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-90-1(29)11	

CUYAHOGA COUNTY
CUY-2-24.33

26-A
150

ITEM NO.	QUANTITY CLEVELAND I-90-1(29)11	UNIT	DESCRIPTION
			BUILDING REMOVAL
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY BRICK STORE. PARCEL 801 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE. PARCEL 819 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY FRAME SHED. PARCEL 825 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE. PARCEL 826 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME STORE AND APARTMENTS. PARCEL 828 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY BRICK STORE AND APTS., ONE 3 CAR BRICK GARAGE. PARCEL 851 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY BRICK STORE AND APARTMENTS. PARCEL 858 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY BRICK HOUSE, ONE BRICK AND TILE GARAGE. PARCEL 859 LA
S-24	LUMP SUM	LUMP	REMOVAL OF THREE 1 STORY BRICK STORES, ONE 4 CAR BRICK GARAGE. PARCEL 862 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE FRAME GARAGE. PARCEL 881 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 882 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY FRAME HOUSE. PARCEL 885
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY BRICK GAS STATION; 3-4000 GAL., 2-1000 GAL. & 2-550 GAL. UNDERGROUND
			GAS TANKS. PARCEL 901 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY BRICK HOUSE, ONE TILE GARAGE, ONE 3 CAR BRICK & TILE GARAGE. PARCEL 905 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE BRICK & TILE GARAGE. PARCEL 929 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE FRAME GARAGE. PARCEL 983 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1027 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY BRICK STORE, ONE 1½ STORY FRAME HOUSE. PARCEL 1053 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY BRICK STORE & ATTACHED 1¾ STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1068 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE FRAME GARAGE. PARCEL 1088 LA
S-24	LUMP SUM	LUMP	REMOVAL OF TWO 3 CAR FRAME GARAGES, ONE FRAME SHED. PARCEL 1090 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY BRICK GAS STATION; 1-6000 GAL., 1-4000 GAL., 2-1000 GAL., 1-550 GAL., & 1-280 GAL.
			UNDERGROUND GAS TANKS. PARCEL 1101 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY FRAME HOUSE. PARCEL 1107
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE 3 CAR FRAME GARAGE. PARCEL 1108 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE 3 CAR FRAME GARAGE. PARCEL 1112 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY BRICK HOUSE, ATTACHED BRICK GARAGE. PARCEL 1114
S-24	LUMP SUM	LUMP	REMOVAL OF ONE BRICK GARAGE. PARCEL 1123 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY BRICK HOUSE, ATTACHED BRICK GARAGE. PARCEL 1126 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY BRICK HOUSE. PARCEL 1127 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE ONE 3 CAR FRAME GARAGE, ONE FRAME SHED. PARCEL 1128 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE ONE METAL STORE BLDG. ONE FRAME SHED; 1-3000 GAL., 3-1000 GAL.,
			UNDERGROUND GAS TANKS. PARCEL 1131 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY FRAME HOUSE. PARCEL 1134
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE. PARCEL 1135
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE. PARCEL 1152
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE 1 STORY FRAME HOUSE, FOUR 3 CAR FRAME GARAGES, ONE FRAME
			SHED. PARCEL 1156 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY BRICK CHURCH. PARCEL 1157 LA
* S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY BRICK HOUSE ONE FRAME GARAGE. PARCEL 1160
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE. PARCEL 1161
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY FRAME HOUSE. PARCEL 1167 A
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2½ STORY BRICK & STUCCO HOUSE ONE FRAME GARAGE. PARCEL 1168
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY BRICK REPAIR GARAGE. PARCEL 1174
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1176
S-24	LUMP SUM	LUMP	REMOVAL OF ONE FRAME GARAGE. PARCEL 1201 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1202 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE FRAME GARAGE. PARCEL 1205 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY FRAME HOUSE, ONE HOUSE TRAILER. PARCEL 1206 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY FRAME HOUSE ONE CONC. BLK. GARAGE. PARCEL 1207 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1208 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1209 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1¾ STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1211 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1¾ STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1213 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE ONE CONC. BLK. & FRAME SHED. PARCEL 1214 LA

ITEM NO.	QUANTITY CLEVELAND I-90-1(29)11	UNIT	DESCRIPTION
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY BRICK HOUSE ONE FRAME GARAGE. PARCEL 1215 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY FRAME HOUSE, ATTACHED BRICK GARAGE. PARCEL 1216 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME STORE & APT. ATTACHED 1 STORY FRAME HOUSE, ONE 1½ STORY BRICK
			GARAGE ATTACHED CONC. BLK. SHED. PARCEL 1217 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE. PARCEL 1218 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1219 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1220 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY FRAME HOUSE, ONE FRAME GARAGE, ONE FRAME SHED. PARCEL 1221 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY FRAME HOUSE. PARCEL 1223 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1224 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1225 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY FRAME HOUSE. PARCEL 1226 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1227 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1229 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1230 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE CONC. BLK. & BRICK GARAGE. PARCEL 1231 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY BRICK HOUSE, ONE BRICK GARAGE. PARCEL 1232 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY BRICK HOUSE, ONE FRAME GARAGE. PARCEL 1233 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY BRICK HOUSE, ONE FRAME GARAGE. PARCEL 1234 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1235 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME SHED. PARCEL 1236 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY STUCCO HOUSE, ONE 1½ ST. FRAME GARAGE, ONE FRAME SHED. PARCEL 1259 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME GARAGE, ONE GREEN HOUSE. PARCEL 1261 LA.
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1265 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1266 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1267 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1268 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1269 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1270 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME GARAGE, TWO FRAME SHEDS. PARCEL 1271 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY BRICK & CONC. BLK. GAS STATION & REPAIR GARAGE, 3-1000 GAL., 1-200 GAL.
			UNDERGROUND GAS TANKS. PARCEL 1272 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1½ STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1273 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY CONC. BLK. REPAIR GARAGE, ONE 2 STORY FRAME HOUSE, ONE FRAME GARAGE. PARCEL 1274 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE ONE FRAME SHED ONE OPEN FRAME SHED. PARCEL 1303
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME BARN, 3 FRAME SHEDS. PARCEL 1305 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY FRAME HOUSE, ONE FRAME BARN & GARAGE. PARCEL 1306 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY BRICK FACTORY BUILDING. PARCEL 1309 LA
S-24	LUMP SUM	LUMP	REMOVAL OF ONE 1 STORY CONC. BLK. SHED. PARCEL 1310 LA

*	S-24	LUMP SUM	LUMP	REMOVAL OF ONE 2 STORY BRICK HOUSE, ONE BRICK GARAGE. PARCEL 1158 LA

R-15

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

27 ~~185~~

CUYAHOGA COUNTY
CUY. 2-24.33

NOTE:
For Construction Limit Lines see Right Of Way Drawings 175 Thru 180

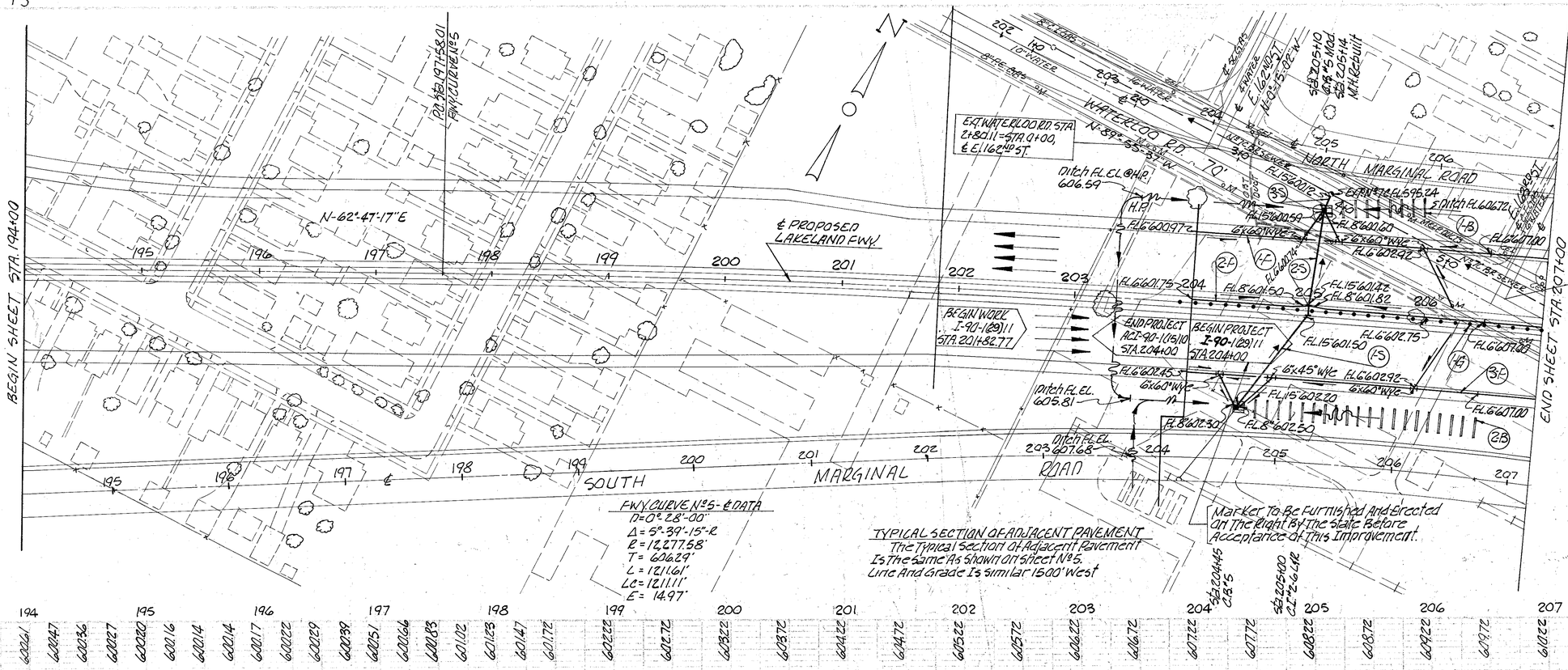
FOR PAVEMENT DETAILS & ELEVATIONS SEE SHEET No 50

NOTE:
Plan & Profile of Ramps & Marginal Roads Parallel To Main Line Have Their Earthwork Quantities Included With Respective Mainline Earthwork Quantities.

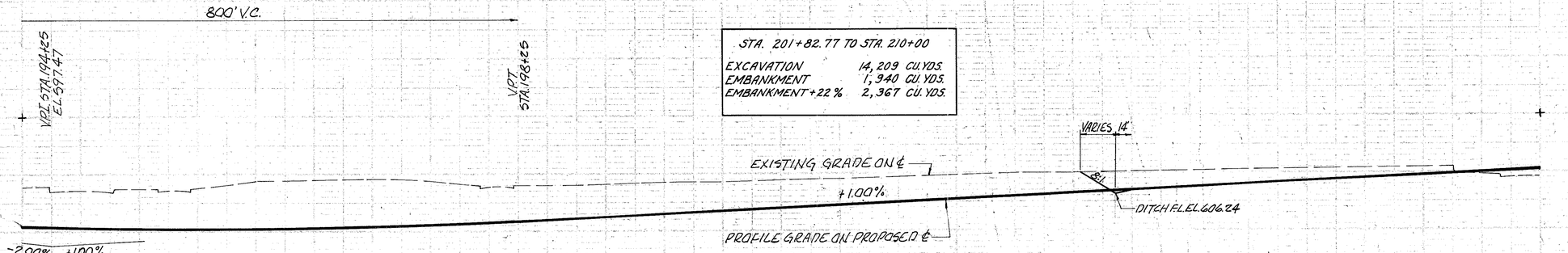
EXT. WATERLOO RD STA 5+60.13 = STA 0+00 & E. 163RD ST

TERMINAL CONSTRUCTION NOTE:
Terminal Construction May Be Modified As Directed By The Engineer Providing The Adjacent Project ACI-90-10(5)10 Construction Has Been Completed Up To Station 204+00. Modification Shall Include Direction of Flow In I-4 Underdrains And Direction Of Flow In Open Ditches From Station 204+00 To Station 205+00.

EXISTING MONUMENT NOTE:
Wherever Possible The Existing Monuments Are Not To Be Disturbed.



TYPICAL SECTION OF ADJACENT PAVEMENT
The Typical Section Of Adjacent Pavement Is The Same As Shown On Sheet No 5. Line And Grade Is Similar 1500' West



STA. 201+82.77 TO STA. 210+00

EXCAVATION	14,209 CU. YDS.
EMBANKMENT	1,940 CU. YDS.
EMBANKMENT +22%	2,367 CU. YDS.

GUARD RAIL

ITEM No	STATION FROM	STATION TO	SIDE R or L	I-15 LIN. FT. STEEL BEAM TYPE (DEEP) STD. DWG. No 2A BARRIER DESIGN
1-G	203+88.40	207+00	℄	311.6
TOTAL				311.6

L-10 SQ. YDS.

ITEM No	STATION FROM	STATION TO	SIDE R or L	LENGTH X WIDTH	SODDING
1-B	205+16	205+96	L	16'X 1.5'	24
2-B	204+60	206+50	R	16'X 1.5'	53
TOTAL					77

6" UNDERDRAINS

ITEM No	STATION FROM	STATION TO	SIDE	I-4 LIN. FT. 6" UD SHALLOW	6" UD DEEP	8" PIPE OUTLET	I-5 EACH 6"x60° WYE
1-F	204+00	207+00	L	50	346	20	3
2-F	204+00	207+00	℄	50	228	20	
3-F	204+00	207+00	R	50	356	20	3
TOTALS				150	930	60	6

STORM SEWERS

ITEM No	STATION FROM	STATION TO	SIDE	I-2 LIN. FT. 15" CL B	UNDER PAV'T. 15" CL B	I-8 EACH CI #2-6	CB #5	CB #5 Mod	M.H. REBUILT	LOCATION OF STRUCTURE
1-5	204+45	205+00	R		94		1			204+45
2-5	205+00	205+10	L&R	6	77	2				205+00 ; +10
3-5	205+10	205+14	L	14				1	1	205+10 ; +14
TOTALS				20	171	2	1	1	1	

PLAN & PROFILE · · · MAIN LINE STA. 194+00 TO STA. 207+00

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

28 / 180

CUYAHOGA COUNTY

CUY - 2 - 24.33

MICROFILMED SEP 9 1965

ITEM No.	STATION FROM	STATION TO		6" UNDERDRAIN I-2 LIN. FT.
SS	207+00	216+50	L	880
SS	216+50	218+85	L	235
SS	207+00	207+77	R	75
SS	207+77	214+60	R	683
SS	214+60	220+00	R	540
SS	207+00	220+00	C	880
SS	216+50	220+00	R	350
SS	218+85	220+00	L	115
				TOTAL

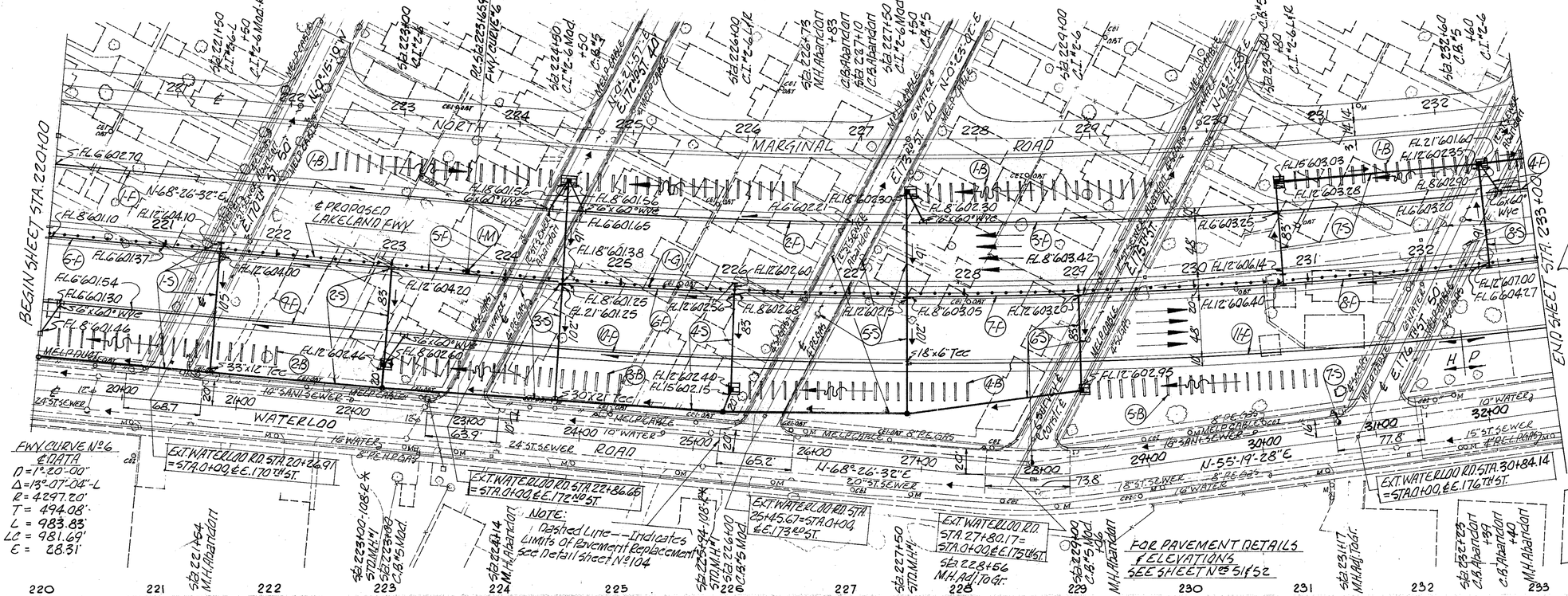
| ITEM No. | LOCATION OF STRUCTURE | I-8 EACH 6" MH REBUILT | I-8 EACH MH TO BE ADJUSTED | I-8 EACH STORM SEWER CONNECTION | I-8 EACH C.B. C.I. No 5 W.M.D. | I-8 EACH C.B. C.I. No 5 W.M.D. | I-8 EACH C.B. C.I. No 5 W.M.D.

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

29 780

CUYAHOGA COUNTY

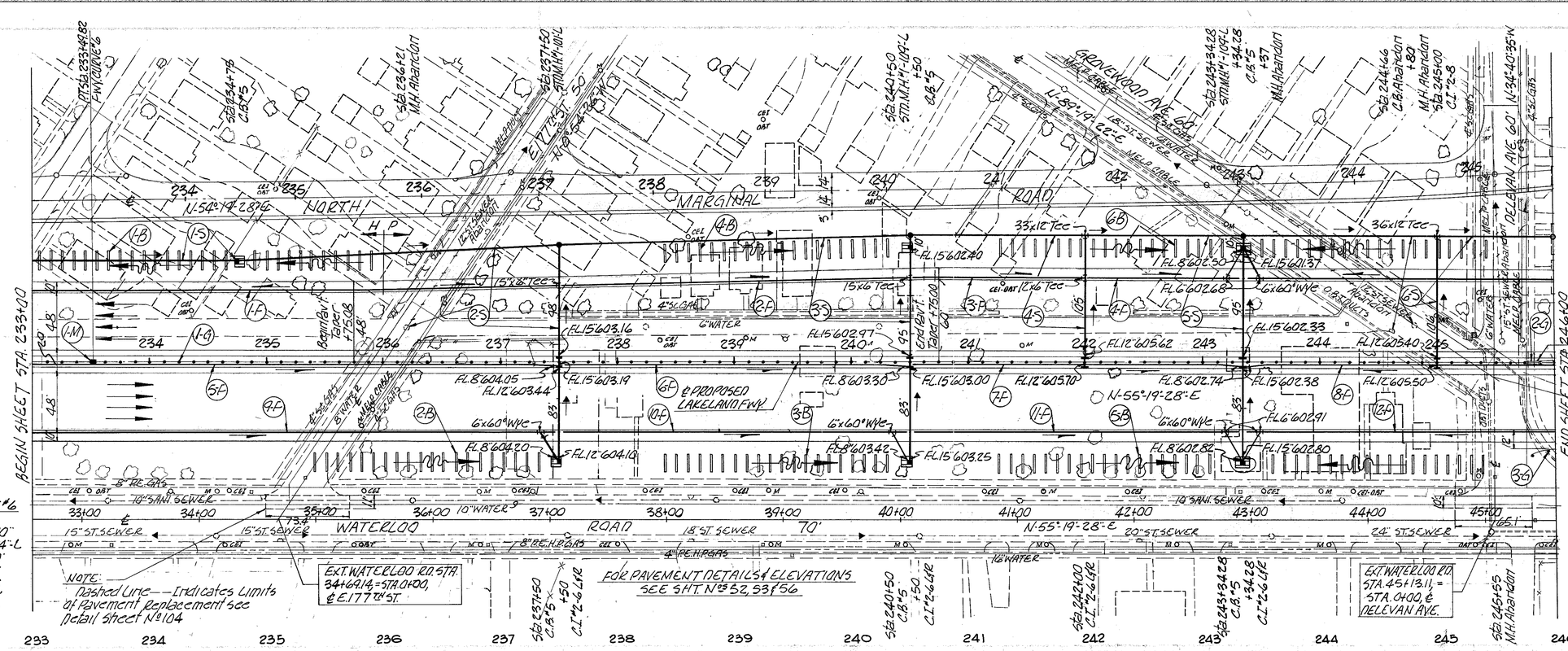
CUY - 2 - 24.33

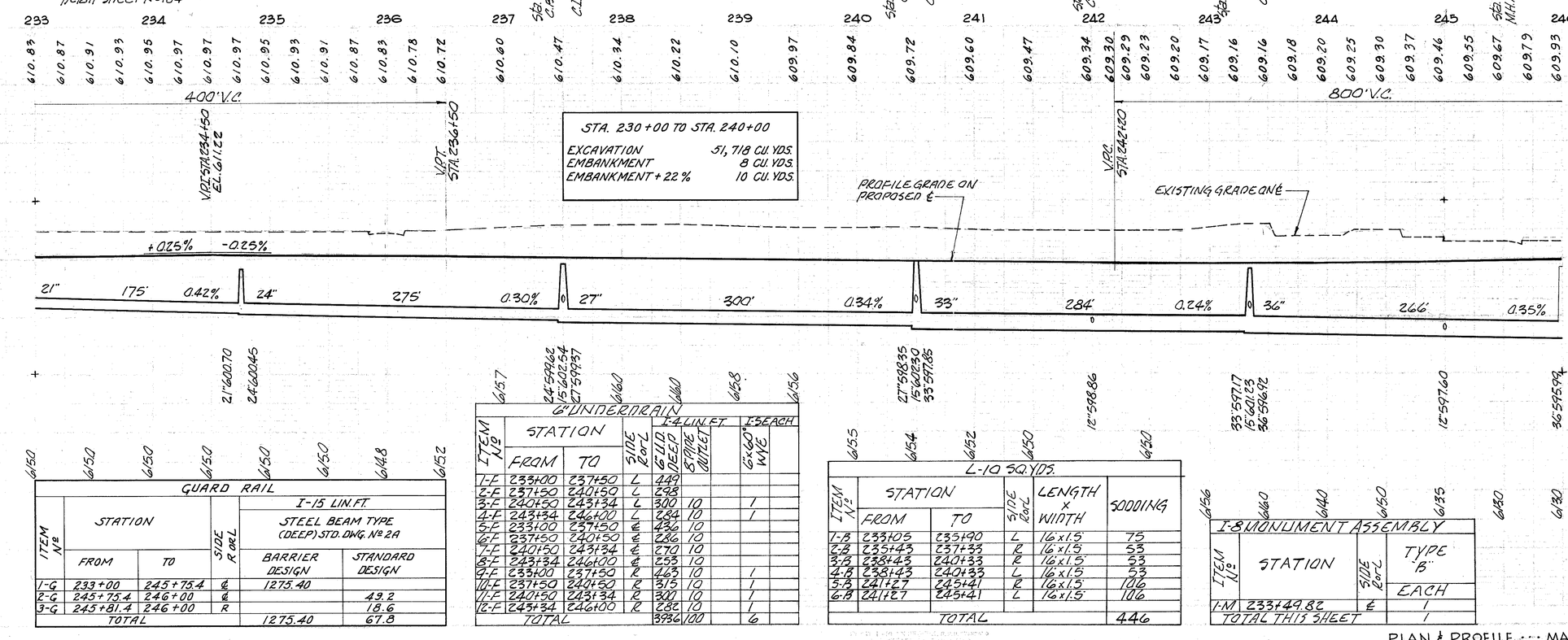

BEGIN SHEET STA. 220+00
END SHEET STA. 233+00
NORTH MARGINAL ROAD
WATERLOO ROAD
℄ PROPOSED LAKELAND FWY.
FWY. CURVE No 6 ℄ 17TH ST.
D = 1°-20-00"
Δ = 13°-07'-04" - L
R = 4297.20'
T = 494.08'
L = 983.83'
Lc = 981.69'
E = 28.31'
EXT. WATERLOO RD. STA. 220+26.91 = STA. 0+00, ℄E. 170TH ST.
EXT. WATERLOO RD. STA. 221+86.66 = STA. 0+00, ℄E. 172ND ST.
EXT. WATERLOO RD. STA. 225+45.67 = STA. 0+00, ℄E. 173RD ST.
EXT. WATERLOO RD. STA. 227+80.17 = STA. 0+00, ℄E. 175TH ST.
EXT. WATERLOO RD. STA. 230+84.14 = STA. 0+00, ℄E. 176TH ST.
NOTE: Dashed Line---Indicates Limits of Pavement Replacement See Detail Sheet No 104
FOR PAVEMENT DETAILS ELEVATIONS SEE SHEET No 51 & 52
N-68°-26'-32"-E
N-55°-19'-28"-E
N-0°-15'-10"-W
N-0°-23'-02"-E
S. FL 6602.70
FL 8 601.10
FL 6 601.37
FL 6 601.54
FL 6 601.30
FL 8 601.46
FL 12 604.00
FL 12 604.20
FL 12 602.46
FL 8 602.60
FL 12 602.40
FL 15 602.15
FL 6 601.65
FL 18 601.38
FL 8 601.25
FL 21 601.25
FL 6 602.21
FL 18 602.30
FL 8 602.30
FL 8 603.42
FL 12 602.60
FL 12 602.68
FL 12 602.15
FL 8 603.05
FL 12 603.26
FL 6 603.25
FL 12 606.14
FL 12 606.40
FL 15 603.03
FL 12 603.28
FL 8 602.90
FL 6 603.20
FL 12 607.00
FL 6 604.27
FL 12 602.95
33"x12" Tee
30"x21" Tee
18"x6" Tee
6"x60° Wye
8"x60° Wye
16"x60° Wye
10" SANI. SEWER
15" SANI. SEWER
24" ST. SEWER
10" WATER
16" WATER
8" PE. HP GAS
8" PE. LOOS
O/M MELP. CABLE
O/M MELP. FIBER
O/M MELP. CABLE & FIBER
O/M MELP. CABLE & 8" PE. LOOS
O/M MELP. CABLE & 4" PE. C.L. (HP GAS)
O/M 10" WATER & 15" ST. SEWER
O/M 16" WATER & 8" PE. HP GAS
O/M 16" WATER & 8" PE. LOOS
O/M 16" WATER & 8" PE. C.L. (HP GAS)
O/M 10" WATER & 15" ST. SEWER & 4" PE. C.L. (HP GAS)
O/M 16" WATER & 8" PE. LOOS & 4" PE. C.L. (HP GAS)
Sta 221+50 C.I. 12-6 Mod. L
Sta 223+00 C.I. 12-6
Sta 223+16.59 FWY. CURVE 12-6
Sta 224+50 C.I. 12-6 Mod.
Sta 226+00 C.I. 12-6 Lt.
Sta 226+73 M.H. Abandon +83
Sta 227+10 C.B. Abandon
Sta 227+50 C.I. 12-6 Mod.
Sta 229+00 C.I. 12-6
Sta 230+60 C.I. 12-6
Sta 232+60 C.I. 12-6
Sta 223+00 STD. M.H.
Sta 223+94.08 STD. M.H.
Sta 226+00 C.I. 12-6 Mod.
Sta 224+14 M.H. Abandon
Sta 227+50 STD. M.H.
Sta 229+00 C.I. 12-6 Mod.
Sta 231+17 M.H. Adj. To Gr.
Sta 232+25 C.B. Abandon +97
Sta 232+60 C.B. Abandon +40
Sta 228+56 M.H. Adj. To Gr.
Sta 233+00 M.H. Abandon
E.I. 173.25 ST. 40 N. 0°-23'-02"-E
E.I. 176.75 ST. 50 N. 0°-23'-02"-E
E.I. 176.75 ST. 50 N. 0°-23'-02"-E
E.I. 176.75 ST. 50

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

30 of 1884

CUYAHOGA COUNTY
CUY - 2 - 24.33





STA. 230+00 TO STA. 240+00

EXCAVATION	51,718 CU. YDS.
EMBANKMENT	8 CU. YDS.
EMBANKMENT + 22%	10 CU. YDS.

GUARD RAIL

ITEM No.	STATION FROM	STATION TO	SIDE R or L	I-15 LIN. FT. STEEL BEAM TYPE (DEEP) STD. DWG. No. 2A BARRIER DESIGN	I-15 LIN. FT. STEEL BEAM TYPE (DEEP) STD. DWG. No. 2A STANDARD DESIGN
1-G	233+00	245+75.4	℄	1275.40	
2-G	245+75.4	246+00	℄		43.2
3-G	245+81.4	246+00	R		18.6
TOTAL				1275.40	67.8

6"UNDERDRAIN

ITEM No.	STATION FROM	STATION TO	SIDE R or L	6" UD 4 LIN. FT. DEEP	6" UD 4 LIN. FT. STRIP SHEET	6"x60° WYE EACH
1-F	233+00	237+50	L	449		
2-F	237+50	240+50	L	298		
3-F	240+50	243+34	L	300	10	1
4-F	243+34	246+00	L	284	10	1
5-F	233+00	237+50	℄	436	10	
6-F	237+50	240+50	℄	286	10	
7-F	240+50	243+34	℄	270	10	
8-F	243+34	246+00	℄	253	10	
9-F	233+00	237+50	R	463	10	1
10-F	237+50	240+50	R	315	10	1
11-F	240+50	243+34	R	300	10	1
12-F	243+34	246+00	R	282	10	1
TOTAL				3936	100	6

L-10 SQ. YDS.

ITEM No.	STATION FROM	STATION TO	SIDE R or L	LENGTH x WIDTH	SODDING
1-B	233+05	233+90	L	16x1.5	75
2-B	235+43	237+33	R	16x1.5	53
3-B	238+43	240+33	R	16x1.5	53
4-B	238+43	240+33	L	16x1.5	53
5-B	241+27	243+41	R	16x1.5	106
6-B	241+27	243+41	L	16x1.5	106
TOTAL					446

I-8 MONUMENT ASSEMBLY

ITEM No.	STATION	SIDE R or L	TYPE "B" EACH
1-M	233+49.82	℄	1
TOTAL THIS SHEET			1

STATION FROM	STATION TO	LINEAR FEET	I-8 EACH ABAND.	I-8 EACH C.I. C.B. No. 1/4 E-8.5	I-8 EACH STD. M.H. No. 2-6 No. 1	I-8 EACH MH. C.B.	LOCATION OF STRUCTURE
233+00	234+75						
234+75	237+50	275		1	1	2	234+75
237+50	240+50	300		2	2	1	236+11.25
240+50	242+00	150		2	2	1	240+50
242+00	243+34	134		2	2	1	242+00
243+34	246+00	L 266				2	243+34.28
		R 252				1	243+18.37
TOTAL THIS SHEET		518		5	5	6	244+61.80
TOTAL PREVIOUS SHEETS		1366	1	6	6	8	245+55
TOTAL		1884	1	11	11	14	

STORM SEWER

FROM	TO	I-2 LINEAR FEET	I-2 LINEAR FEET LINDER PAVEMENT	I-2 EACH I-2 LINLET	I-5 EACH LT. DAVIT	I-5 EACH MANHOLE TYPES	15"	12"	36" x 12"	15" x 6"	12" x 6"	6.86
233+00	234+75											
234+75	237+50	275		1		2		90		1		
237+50	240+50	300		2		2		89		1		
240+50	242+00	150		2		2		93		1		
242+00	243+34	134		2		1				1		
243+34	246+00	L 266										
		R 252										
TOTAL THIS SHEET		518		5		7		272		4		
TOTAL PREVIOUS SHEETS		1366	1	6	1	8	1	1366	1	2	1	1
TOTAL		1884	1	11	1	15	1	1638	1	6	1	1

| FROM | TO | 15" | 12" A 6.86 | 12" A 6.86 | 12" B 6.86 | 12" B 6.86 | 12" C 6.86 | 12" C 6.86 | 12" D 6.86 | 12" D 6.86 | 12" E 6.86 | 12" E 6.86 | 12" F 6.86 | 12" F 6.86 | 12" G 6.86 | 12" G 6.86 | 12" H 6.86 | 12" H 6.86 | 12" I 6.86 | 12" I 6.86 | 12" J 6.86 | 12" J 6.86 | 12" K 6.86 | 12" K 6.86 | 12" L 6.86 | 12" L 6.86 | 12" M 6.86 | 12" M 6.86 | 12" N 6.86 | 12" N 6.86 | 12" O 6.86 | 12" O 6.86 | 12" P 6.86 | 12" P 6.86 | 12" Q 6.86 | 12" Q 6.86 | 12" R 6.86 | 12" R 6.86 | 12" S 6.86 | 12" S 6.86 | 12" T 6.86 | 12" T 6.86 | 12" U 6.86 | 12" U 6.86 | 12" V 6.86 | 12" V 6.86 | 12" W 6.86 | 12" W 6.86 | 12" X 6.86 | 12" X 6.86 | 12" Y 6.86 | 12" Y 6.86 | 12" Z 6.86 | 12" Z 6.86 | 36" x 12" 6.86 | 36" x 12" 6.86 | 36" 6.86 | 36" 6.86 | 33" 6.86 | 33" 6.86 | 27" 6.86 | 27" 6.86 | 24" 6.86 | 24" 6.86 | 21" 6.86 | 21" 6.86 | 18" 6.86 | 18" 6.86 | 15" 6.86 | 15" 6.86 | 7.07 | 7.07 | 6.86 | 6.86 | 6.55 | 6.55 | 6.25 | 6.25 | 5.94 | 5.94 | 5.64 | 5.64 | 5.33 | 5.33 | 5.03 | 5.03 | 4.72 | 4.72 | 4.42 | 4.42 | 4.11 | 4.11 | 3.81 | 3.81 | 3.50 | 3.50 | 3.20 | 3.20 | 2.89 | 2.89 | 2.59 | 2.59 | 2.28 | 2.28 | 1.98 | 1.98 | 1.67 | 1.67 | 1.37 | 1.37 | 1.06 | 1.06 | 0.76 | 0.76 | 0.45 | 0.45 | 0.15 | 0.15 | LINEAR FEET |
|---|---|---|---|---|---|---|---|---|---|---|---|---

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

31 / 180

CUYAHOGA COUNTY
CUY - 2 - 24.33

MICROFILMED
SEP 10 1985

FOR PAVEMENT DETAILS & ELEVATIONS SEE SHT. Nos 55, 56, 57 & 58

MARGINAL ROAD — NORTH — WATERLOO ROAD — RAMP N-H — EUCLID AVE. — E. 185TH ST.

BEGIN SHEET STA. 246+00 — END SHEET STA. 259+00

FOR CONT. OF STORM SEWER AND I-4 SEE SHT. No 44

FOR CONT. OF 36" SEWER SEE SHT. No 44

SEE GUARD RAIL DETAILS SHT. No 104

FWY. STA. 246+66.66 = RAMP N-H STA. 0+00

PROPOSED LAKELAND FWY.

FWY. CURVE No 7 DATA
D = 1°-20'-00"
Δ = 14°-01'-39" R
T = 528.68'
L = 1052.06'
Lc = 1049.44'
E = 32.41'
R = 4297.20

B.M.-O.M. 1308
Approx. 18 ft. S.W. of C.L. of Nottingham Rd. And 32 ft. S.E. of C.L. of Waterloo Rd. 35.38 ft. S. of C.L. Mon. Box At C.L. Int. 18.28 ft. E. of Top And Center of Hyd. On S. side of Waterloo Rd. Elev. 615.568

B.M. LIE-2 K-9 U.S.C.& G.S.
Approx. 33 ft. W. of W. Car of Nottingham Station And 16.8 ft. S.E. of S.E. Rail Of S. Track Of N.Y.C.R.R. Disc. Stamped K-9 1934
Elev. 628.244

E.L.T. WATERLOO RD. STA. 52+38.59 = NOTTINGHAM RD. STA. 51+12.98 = WATERLOO RD. RELOC. STA. 11+00

BRIDGE OMISSION - STRUCTURE CUY-2-2533 STA. 256+84.23 TO STA. 257+08.69

I-8 MONUMENT ASSEMBLY			
ITEM No	STATION	SIDE R OR L	TYPE "B" EACH
I-M	250 + 24.76	℄	1
TOTAL			1

L-10 SQ. YDS.							I-14 LIN. FT.
ITEM No	STATION FROM	STATION TO	SIDE Rt or L	LENGTH x WIDTH	SODDING	SODDING FOR SPECIAL BERM AND SLOPE PROTECTION	STD. PAVED GUTTER TYPE No 1
1-A	256+00	256+85	R		28		85
1-B	246+17	246+57	L	16 x 1.5'	13		
2-B	247+00	248+90	R	16 x 1.5'	53		
3-B	249+80	251+75	R	16 x 1.5'	53		
4-B	254+25	255+40	R	16 x 1.5'	32		
5-B	255+45	256+00	R	55 x 12'	33		
6-B	258+95		R	40 x 10'	45		
7-B	S.W. ABUTMENT		R	VARIES		28	
TOTAL					297	28	85

6" UNDERDRAIN												
ITEM No	STATION FROM	STATION TO	SIDE Rt or L	I-4 LIN. FT. 6" UD SHALLOW	6" UD DEEP	8" PIPE OUTLET	I-5 EACH 6:45° WYE	6:60° WYE	6" x 6" TEE
1-F	246+00	246+66	L		66		1		
2-F	248+30	251+35	L	33	318	10		1	
3-F	251+35	256+92	L	568					
4-F	246+00	248+72	℄		272				
5-F	248+72	254+00	℄	298	216	10			
6-F	254+00	256+56	℄	246		10			
7-F	246+00	244+32	R		350	10		1	
8-F	249+32	256+27	R	524	340	10		1	1
TOTAL				1669	1462	50	1	3	1

GUARD RAIL				
ITEM No	STATION FROM	STATION TO	SIDE R OR L	I-15 LIN. FT. STEEL BEAM TYPE (DEEP) STD. DWG. No 2A BARRIER DESIGN	STANDARD DESIGN
1-G	246+00	247+62.90	℄		325.80
2-G	247+62.90	256+63.40	℄	300.50	
3-G	256+63.40 POST	256+84.23 SPACE 7.17	℄	20.83	
4-G	246+00	246+84.40	R		84.40
5-G	246+47.60	247+50.60	L		103.00
6-G	253+85.57	257+10.57	L		325.00
7-G	255+41.57	256+36.07	R		87.50
8-G	258+93.94	259+00	R		6.06
TOTAL				921.33	931.76

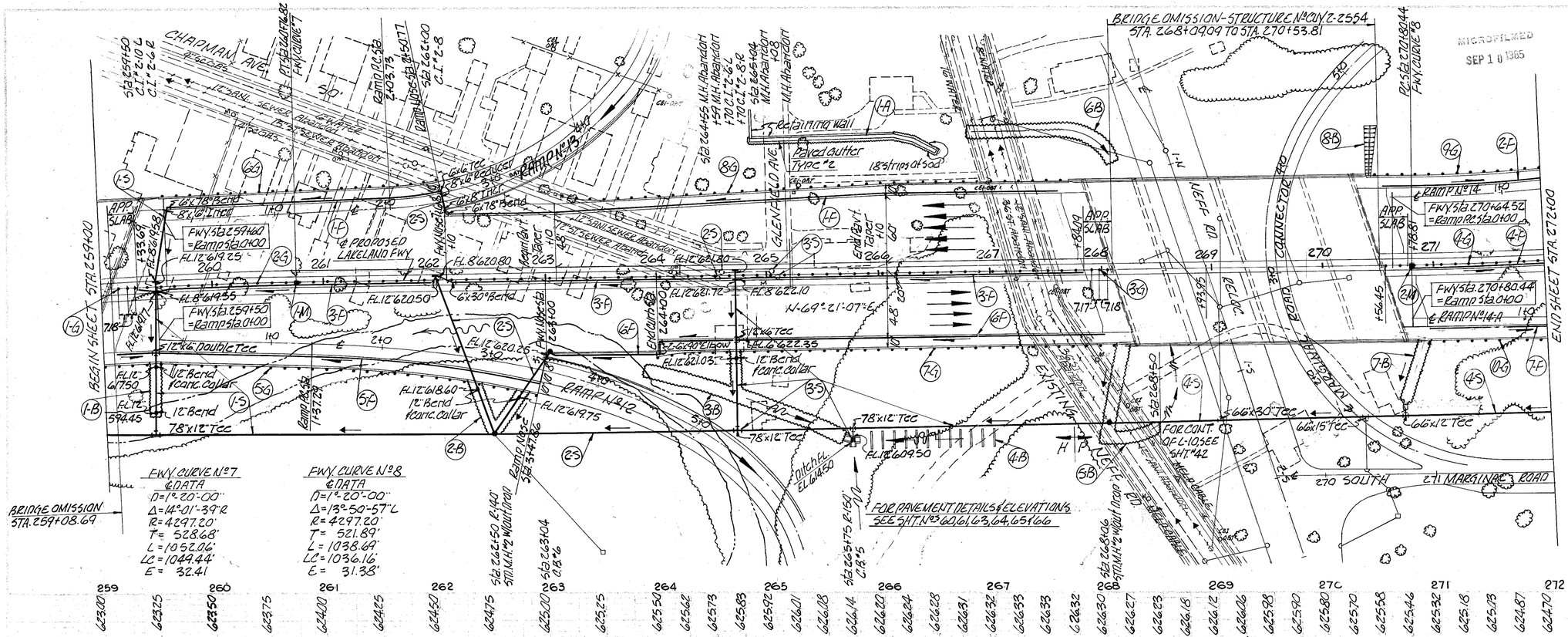
| I-8 EACH | | | | | | | | | | | |

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	1-329 (20)	

32 / 180

CUYAHOGA COUNTY
CUY - 2 - 24.33

MICROFILMED SEP 10 1985



STA. 260+00 TO STA. 270+00 INTERSTATE FUNDS	
EXCAVATION	8,318 CU. YDS.
EMBANKMENT	212,156 CU. YDS.
EMBANKMENT + 22 %	258,830 CU. YDS.

STA. 260+00 TO STA. 270+00 FEDERAL URBAN FUNDS	
EXCAVATION	2,747 CU. YDS.
EMBANKMENT	0 CU. YDS.
EMBANKMENT + 22 %	0 CU. YDS.

NOTE: Quantities for guard rails see sht. No 34

ITEM No	STATION FROM	STATION TO	I-14 LIN. FT. STD. PAVED GUTTER TYPE 2	I-14 LIN. FT. SODDING FOR SPECIAL BERM AND SLOPE PROTECTION	I-14 LIN. FT. SODDING LENGTH x WIDTH	SIDE R or L	70	72	74
1-A	264+84	266+54			37	L			
1-B	253+46	254+56			56	R			
2-B	262+29	262+80			97	R			
3-B	263+88	265+70			293	R			
4-B	263+90	267+00			32	R			
5-B	267+94	268+50			162	R			
6-B	266+80	268+15			192	R			
7-B	270+70	270+96			61	L			
8-B	N.E. ABUTMENT								
TOTAL				47	930		47	174	

ITEM No	STATION FROM	STATION TO	6" UNDERDRAIN I-4 LIN. FT. SIDE R or L	6" U.D. SHALLOW	6" CURB U.D. SHALLOW	8" PIPE OUTLET	I-5 EACH 6"x78° ELBOW	6"x6° TEE	6"x30° ELBOW	6"x90° ELBOW
1-F	259+64	267+62	L	796			2	1		
2-F	270+56	272+00	L	144					1	
3-F	259+30	267+80	R	809	40				1	
4-F	259+09	262+94	R	722						2
5-F	263+04	268+04	R	383	10		2	1		1
6-F	270+97	272+00	R	103						1
TOTAL				2761	86	50	2	1	2	2

I-8 MONUMENT ASSEMBLY

ITEM No	STATION	SIDE R or L	TYPE "B" EACH
1-M	260+76.82	℄	1
2-M	270+80.44	℄	1
TOTAL			2

STORM SEWER

ITEM No	STATION FROM	STATION TO	SIDE R or L	I-2 LIN. FT. UNDER PAVEMENT 8" CL A 6.4c	12" CL A 6.4c	12" CL B	12" CL A 6.4c	8" CL A 6.5b or 6.8b	12" CL B	66" CL B 6.6c	78" CL B 6.6b	78" CL B 10.6d	I-5 EACH UNDER PAVEMENT 6" 8" INCR. CLA 6.5b OR 6.8b	8" 6" RED. CLA 6.5b OR 6.8b	12" 6° DOUBLE TEE CLB	78" 12" TEE CLB 10.6d	78" 12" TEE CLB 6.6b	66" 6" TEE CLB 6.6b	66" 12" TEE CLB 6.6b	66" 15" TEE CLB 6.6b	66" 30" TEE CLB 6.6b	8" 90° ELBOW CLA 6.4c	8" 45° BEND CLA 6.4c	8" 80° 17° BEND CLA 6.4c	12" 20° BEND CLA 6.4c	12" 25° BEND CLA 6.4c	12" 28° BEND CLA 6.4c	I-8 EACH C.I. 2-8	C.I. 2-10	C.I. 2-6	C.B. #5	C.B. #6	STD. M.H. #2 W/out Drop	I-16 EA. ABANDON M.H.	LOCATION OF STRUCTURE
1-S	259+00	262+50	L&R			6	60		66	64		344	1		1		1				2							1	1						259+50
2-S	262+50	264+70	L&R				82		14	156		218	1	1																			2	262+00; +50; 263+04; 264+55; +59
3-S	264+70	268+06	L&R		8	6	66			64		326				2		1															2	264+70; 265+04; +08; +75
4-S	268+06	272+00	L&R								382								1	1	1													268+06;
TOTAL					8	12	208		80	284	382	344	544	2	1	1	2	1	1	1	1	1						2	1	2	2	1	2	1	2	4	

PLAN & PROFILE · · · MAIN LINE STA. 259+00 TO STA. 272+00

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

33
#80

CUYAHOGA COUNTY
CUY - 2 - 24.33

FWY. CURVE Nº8 ℄ DATA
D=1°-20'-00"
Δ=13°-50'-57"-L
R=4297.20'
T= 521.89'
L =1038.69'
LC =1036.16'
E= 31.58'

FOR PAVEMENT DETAILS & ELEVATIONS SEE SHT. Nº 63, 64, 66 & 67

FOR CONT. OF I-4 SEE SHT. #47

FOR CONT. OF STORM SEWER SEE SHT. #47

Railroad Track's & Ties shall be Moved and Disposed of. Cost shall be Included in The Cost of Item E-1.

BEGIN SHEET STA. 272+00

END SHEET STA. 285+00

℄ PROPOSED LAKELAND FWY.

N-85°-19'-14"-E

N-55°-30'-10"-E

N-69°-12'-07"-E

N-66°-31'-14"-E

Sta. 273+90 C.I.-2-L

Sta. 275+25 C.I.-2-L

Sta. 276+89.50 C.I.-2-L & R + 70 -2-L STA. M.H. #1

Sta. 277+18.93-L STA. M.H. #1

Sta. 278+60 C.I.-2-L

P.T. Sta. 281+19.13 ENT. CURVE #8

Sta. 281+30 C.I.-2-L

Sta. 284+10 C.I.-2-L & R

Sta. 273+43.39-L STA. M.H. #2 Wall Drop

Sta. 276+85.10-R STA. M.H. #2 Wall Drop

Sta. 284+15.05-R STA. M.H. #3 Wall Drop

Camp Horse Sta. 274+87.08

Camp Horse Sta. 276+54.61

Camp Horse Sta. 278+78.76

Camp Horse Sta. 281+87.08

Endwall Sta. 275+55

Endwall Sta. 284+36

RAMP Nº14 — 4+10 — 5+10 — 6+10 — 7+10

RAMP Nº14-A — 6+10 — 7+10

RAMP Nº16 — 2+10 — 3+10

RAMP Nº15 — 2+10

1-F 2-F 3-F 4-F 1-G 2-G 1-H 1-I 1-J 2-J 1-L 1-M 2-L 3-L 4-L 3-S 4-S 2-S 3-B 4-B 2-B 4-5 2-5

FL. 12" 617.22 — 276 FL. 12" 617.32 — FL. 12" 617.85 — FL. 12" 617.74 — FL. 8" 617.60 — FL. 12" 618.39 — FL. 12" 617.60 — FL. 12" 622.80 — FL. 8" 623.11 — FL. 12" 627.78 — FL. 12" 627.70 — FL. 8" 628.56 — FL. 12" 625.48

FL. 21" 610.96 — FL. 8" 614.00 — FL. 6" 616.17 — FL. 6" 616.47 — FL. 6" 616.59 — FL. 6" 619.20 — FL. 6" 619.52 — FL. 6" 619.51 — FL. 12" 617.73 — FL. 12" 618.22 — FL. 12" 619.10 — FL. 21" 619.98 — FL. 8" 617.00 — FL. 12" 622.08 — FL. 12" 619.74

6"x6" Tee — 6"x6"x90° Elbows — 12"x12" Tee — 66"x12" Tee — 12" Bend & Conc. Collar — 2-6"x90° Elbows

FL. 12" 622.08 — FL. 12" 622.80 — FL. 12" 627.00 — FL. 12" 625.48

STA. 270+00 TO STA. 280+00 INTERSTATE FUNDS

EXCAVATION	11,519 CU. YDS.
EMBANKMENT	16,334 CU. YDS.
EMBANKMENT+22%	19,928 CU. YDS.

STA. 270+00 TO STA. 280+00 FEDERAL URBAN FUNDS

EXCAVATION	29,100 CU. YDS.
EMBANKMENT	219 CU. YDS.
EMBANKMENT+22%	267 CU. YDS.

1000' V.C. — 600' V.C. — 1300' V.C.

V.P.T. STA. 274+59.50 — V.P.C. STA. 277+59.50 EL. 619.40 — V.P.T. STA. 280+59.50 — V.P.C. STA. 283+00

PROFILE GRADE ON PROPOSED ℄

EXISTING GRADE ON ℄

12"-88'-1.0% — 12"-56'-8.43% — 12"-10'-1.0% — 12"-72'-1.0% — 12"-30'-10.26% — 12"-111'-2.0% — 12"-34'-33.76% — 21"-114'-3.0% — 21"-102'-1.0% — 15" -1.00% — 15" +2.00%

66" 150' 0.36% — 66" 356' 0.35% — 66" 440' 0.32% — 60" 344' 0.35% — 60"

FOR CONT. OF STORM SEWER SEE SHT. #40

ITEM Nº	FROM	TO	SIDE R OR L	6" UNDERDRAIN I-4 LIN. FT.	I-5 EACH 6"x90° ELBOW	6"x6" TEE	6" PIPE OUTLET
1-F	272+00	285+00	L	1264	2	1	2
2-F	272+00	285+00	R	1254			
3-F	272+00	285+00	R	236			
4-F	274+37	285+00	R	963.100	34	2	4
TOTAL				3742.140	36	3	6

ITEM Nº	FROM	TO	SIDE R OR L	6" CURB UNDERDRAIN SHALLOW	8" PIPE OUTLET
1-F	272+00	285+00	L	40	18
2-F	272+00	285+00	R	40	
3-F	272+00	285+00	R		
4-F	274+37	285+00	R		
TOTAL				80	18

ITEM Nº	FROM	TO	SIDE R OR L	12" CMP SIDE DRAIN R OR L	12" CLB & GGCLA	12" 4°-16° BEND	12" 16°-26° BEND	12" 26°-45° BEND	12" 45° BEND
1-I	276+85	277+18	R	L&R 14	1	1			
2-I	277+18	284+36	R	L&R 6	2	1	2		
3-I	281+15	284+36	L&R				1		
4-I	284+36	285+00	L						
TOTAL				20	3	2	3	1	1

ITEM Nº	FROM	TO	SIDE R OR L	I-8 EACH STD. M.H. #1	STD. M.H. #2	C.I. #2	C.I. #2 Wall Drop
1-S	272+00	276+85	R	1			1
2-S	276+95	277+18	R	1		2	
3-S	276+85	281+30	L	1		2	
4-S	281+15	284+36	L				2
TOTAL				3	1	5	3

ITEM Nº	FROM	TO	SIDE R OR L	LOCATION OF STRUCTURE
1-S	272+00	276+85	R	278+43, 273+90, 276+75
2-S	276+95	277+18	R	276+93.5, 276+85, 277+18
3-S	276+85	281+30	L	278+60, 281+15, +30
4-S	281+15	284+36	L	284+10

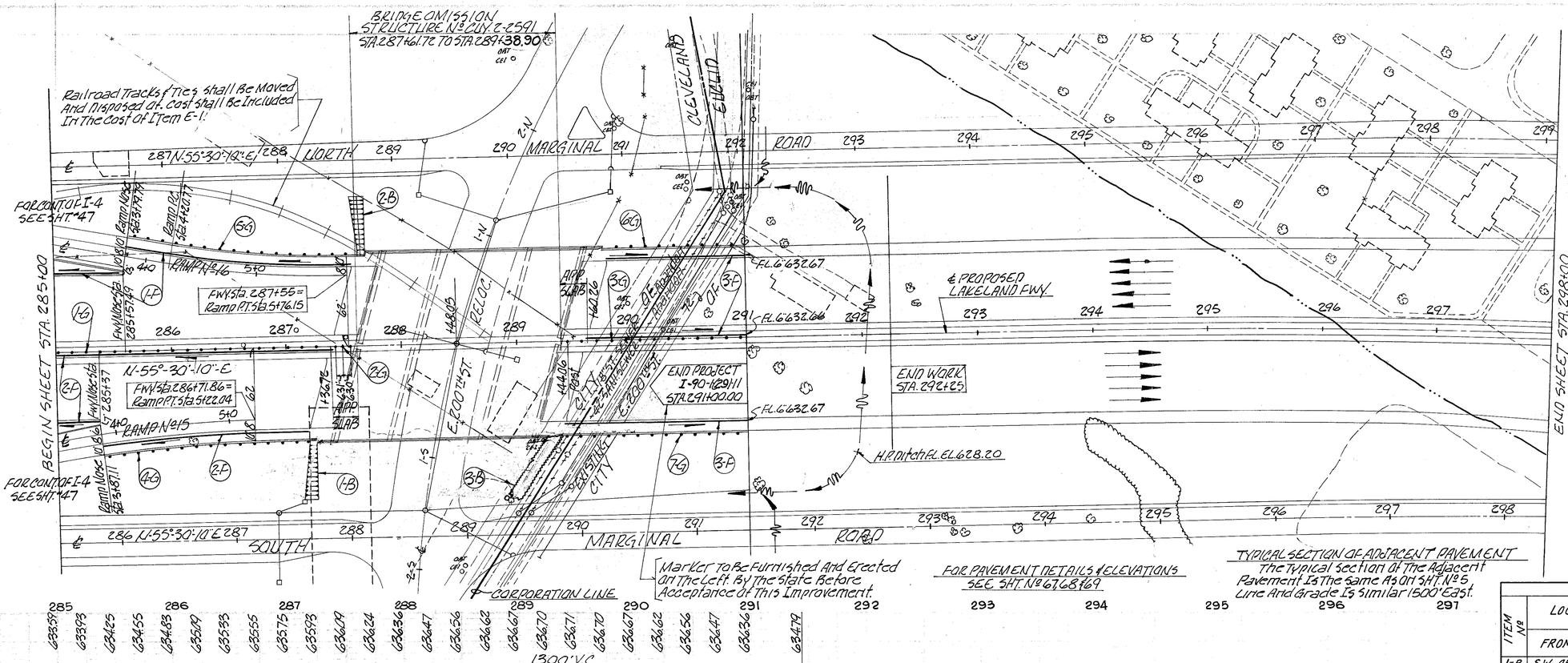
| ITEM Nº | FROM | TO | SIDE R OR L | STORM SEWER I-2 LIN. FT. 12" CL A B | 12" CL B | 12" CL B UNDER PAVEMENT | 12" CL B | 12" CL B | 12" CL B

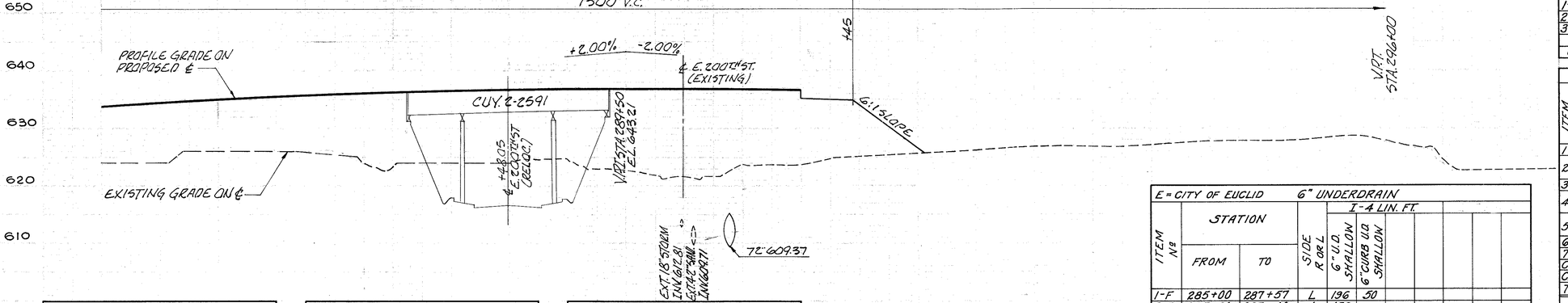
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (12)	1958

34 / 180

CUYAHOGA COUNTY
CUY-2-24.33

MICROFILMED
SEP 10 1963





STA. 280+00 TO STA. 287+00 CITY OF CLEVELAND INTERSTATE FUNDS	
EXCAVATION	2,141 CU. YDS.
EMBANKMENT	38,000 CU. YDS.
EMBANKMENT + 22%	46,360 CU. YDS.

STA. 280+00 TO STA. 287+00 CITY OF CLEVELAND FEDERAL URBAN FUNDS	
EXCAVATION	6,381 CU. YDS.
EMBANKMENT	2,915 CU. YDS.
EMBAMKMENT + 22%	3,556 CU. YDS.

STA. 289+00 TO STA. 292+25 CITY OF EUCLID	
EXCAVATION	6,021 CU. YDS.
EMBANKMENT	14,200 CU. YDS.
EMBANKMENT + 22%	17,324 CU. YDS.

E = CITY OF EUCLID — 6" UNDERDRAIN

ITEM No.	STATION FROM	STATION TO	SIDE R or L	I-4 LIN. FT. 6" U.D. SHALLOW	6" CURB U.D. SHALLOW
1-F	285+00	287+57	L	196	50
2-F	285+00	287+40	℄	456	
3-F	289+43	291+00	L & R	122 / 300	
TOTAL CLEVELAND				774	50
TOTAL EUCLID				300 E	

STORM SEWER

ITEM No.	STATION FROM	STATION TO	SIDE R or L	I-2 LIN. FT. 8" CL A 6.4C	I-5 EACH 8"x34° BEND	8"x 80° BEND CLA 6.4C	8"x 90° ELBOW	LOCATION OF STRUCTURE
1-S	287+12	287+25	R					
2-S	288+93	289+30	R					
TOTAL CLEVELAND								

L - 10 SQ. YDS.

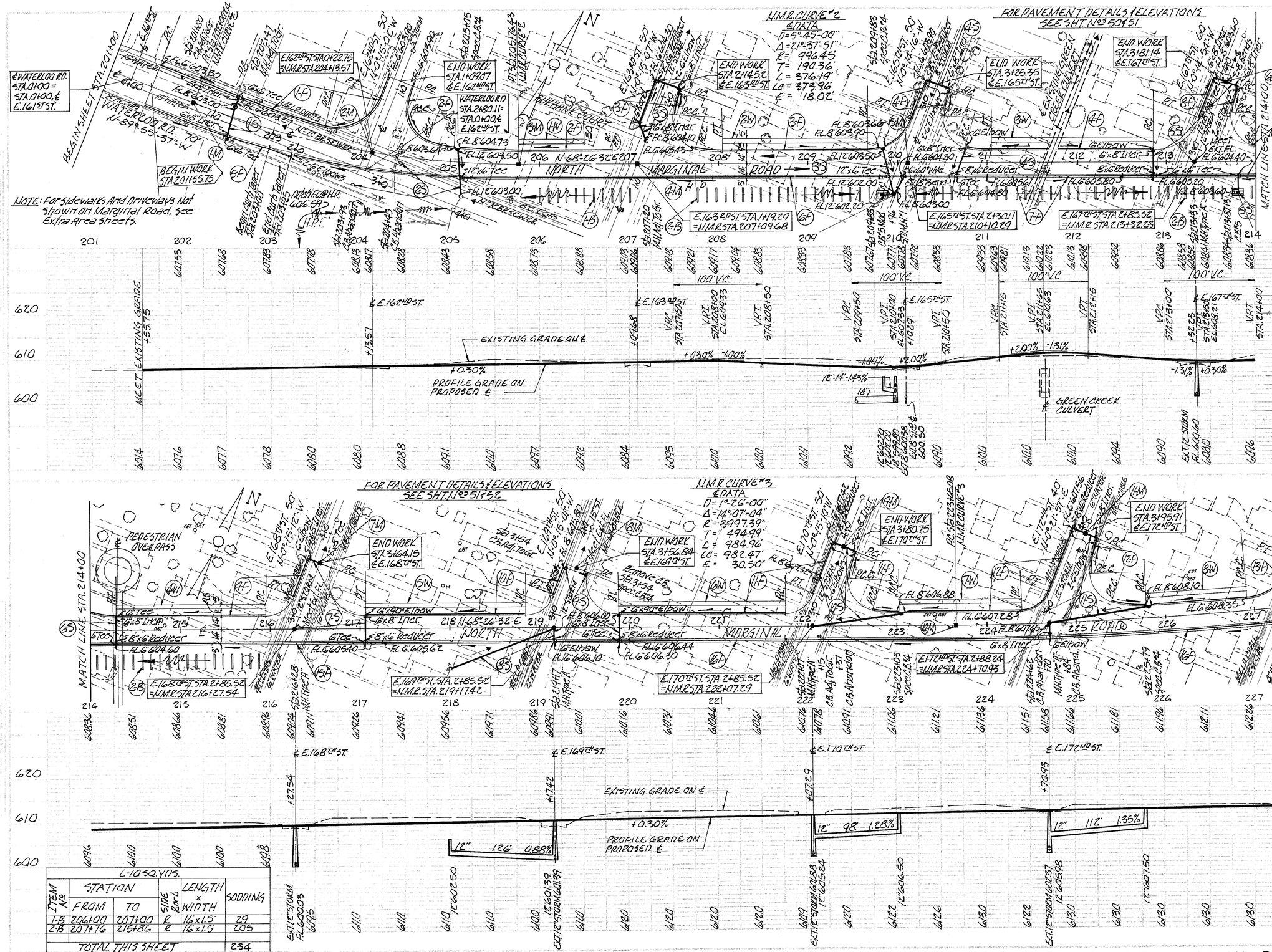
ITEM No.	LOCATION FROM	LOCATION TO	SIDE R or L	LENGTH x WIDTH	SODDING	SODDING FOR SPECIAL BERM AND SLOPE PROTECTION
1-B	S.W. ABUTMENT		R	VARIES		55
2-B	N.W. ABUTMENT		L	VARIES		55
3-B	288+95	289+30	R	61' x 10'	68	
CITY OF CLEVELAND TOTAL					68	110

GUARD RAIL

ITEM No.	STATION FROM	STATION TO	SIDE R or L	I-15 LIN. FT. STEEL BEAM TYPE (DEEP) STD. DWG. No. 2-A BARRIER DESIGN	STANDARD DESIGN
1-G	285+00	287+43.95	℄	243+95	
2-G	287+43.95 POST SPACE	287+61.72 6.31' ℄ 6.30'	℄	17.77	
3-G	289+35.26	290+94.06	℄	63.52 | 95.28 E	
4-G	285+37 FWY. 3+87.11 Ramp M	287+26.52	R		190.59
5-G	285+37.49 FWY. 3+79.79 Ramp N	287+73.51	L		214.87
6-G	289+74.10	291+00	L		78.90 | 47.00 E
7-G	289+27.11	291+00	R		20.89 | 152.00 E
CITY OF CLEVELAND TOTAL				325.24	505.25
CITY OF EUCLID (E) TOTAL				98.28 E	199.00 E
TOTAL SHEET No. 34					
1-G	259+08.69 POST SPACE	259+29.60 7.18'	℄	20.91	
2-G	259+29.60	267+92.10	℄	862.50	
3-G	267+92.10 POST SPACE	268+09.09 7.17' ℄ 7.18'	℄	16.99	
4-G	270+53.81	272+00	℄	146.19	
5-G	259+00	263+00 FWY. 3+47.86 Ramp	R		397.86
6-G	259+56.30	262+10 FWY. 2+50.77 Ramp	L		254.47
7-G	264+00	268+16.99	R		416.99
8-G	263+15	267+71.18	L		456.18
9-G	270+38.56	272+00	L		161.44
10-G	270+90.87	272+00	R		109.13
CITY OF CLEVELAND				1046.59	1796.07
TOTAL SHEET No. 32					

GUARD RAIL TOTALS	BARRIER DESIGN	STANDARD DESIGN
CITY OF CLEVELAND	1371.83	2301.32
CITY OF EUCLID	98.28	199.00

PLAN & PROFILE · · · MAIN LINE STA. 285+00 TO STA. 292+25.00



ITEM No	STATION FROM	STATION TO	SIDE ROAD	6" UD. SHALLOW	6" CURB UD. SHALLOW	8" PIPE OUTLET	6"x90° ELBOW	6"x60° WYE	6"x6" TEE	6"x45° BEND
1-F	201+55	E. 162ND ST. 1+09	L		296				1	
2-F	E. 162ND ST. 1+09	206+82	L		259	20				
3-F	E. 163RD ST. 2+15	209+81	L		285	10	2			1
4-F	209+81	212+85	L		310	10	4			
5-F	201+55	207+75	R	455	175		2		1	
6-F	207+75	209+90	R	215						
7-F	209+90	213+81	R	385		10		1	2	
8-F	E. 167TH ST. 3+82	214+00	L&R	28	81	10	2		1	
9-F	214+00	E. 168TH ST. 3+64	L		240		1		1	
10-F	217+07	E. 169TH ST. 3+55	L		204	10	1			
11-F	219+88	E. 170TH ST. 3+80	L		257	20	3			
12-F	222+71	E. 172ND ST. 3+96	L		296	20	2			
13-F	225+39	E. 173RD ST. 3+83	L		225	20				
14-F	228+02	229+00	L		80	20				
15-F	214+00	219+17	R	513					2	
16-F	219+17	228+85	R	965			2		1	
17-F	228+85	229+00	R	28		10	1			
TOTAL THIS SHT.				2589	2708	160	20	1	9	1

6" UNDERDRAIN

ITEM No	STATION FROM	STATION TO	SIDE ROAD	6" UD. SHALLOW	6" CURB UD. SHALLOW	8" PIPE OUTLET	6"x90° ELBOW	6"x60° WYE	6"x6" TEE	6"x45° BEND
1-F	201+55	E. 162ND ST. 1+09	L		296				1	
2-F	E. 162ND ST. 1+09	206+82	L		259	20				
3-F	E. 163RD ST. 2+15	209+81	L		285	10	2			1
4-F	209+81	212+85	L		310	10	4			
5-F	201+55	207+75	R	455	175		2		1	
6-F	207+75	209+90	R	215						
7-F	209+90	213+81	R	385		10		1	2	
8-F	E. 167TH ST. 3+82	214+00	L&R	28	81	10	2		1	
9-F	214+00	E. 168TH ST. 3+64	L		240		1		1	
10-F	217+07	E. 169TH ST. 3+55	L		204	10	1			
11-F	219+88	E. 170TH ST. 3+80	L		257	20	3			
12-F	222+71	E. 172ND ST. 3+96	L		296	20	2			
13-F	225+39	E. 173RD ST. 3+83	L		225	20				
14-F	228+02	229+00	L		80	20				
15-F	214+00	219+17	R	513					2	
16-F	219+17	228+85	R	965			2		1	
17-F	228+85	229+00	R	28		10	1			
TOTAL THIS SHT.				2589	2708	160	20	1	9	1

L-10 SQ. YDS.

ITEM No	STATION FROM	STATION TO	SIDE ROAD	LENGTH x WIDTH	SODDING
1-B	206+00	207+00	R	16x1.5	29
2-B	207+76	215+86	R	16x1.5	205
TOTAL THIS SHEET					234

PLAN & PROFILE ··· NORTH MARGINAL ROAD STA 201+00 TO STA. 229+00

STATE PROJECT OHIO I-329 (20)

CUYAHOGA COUNTY

CUY - 2 - 24.33

NOTE: Quantities for Storm Sewers Are Shown on SHT. No 37. Quantities for Monument Assemblies And Sidewalks Are Shown on SHT. No 36

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	1-329 (20)	

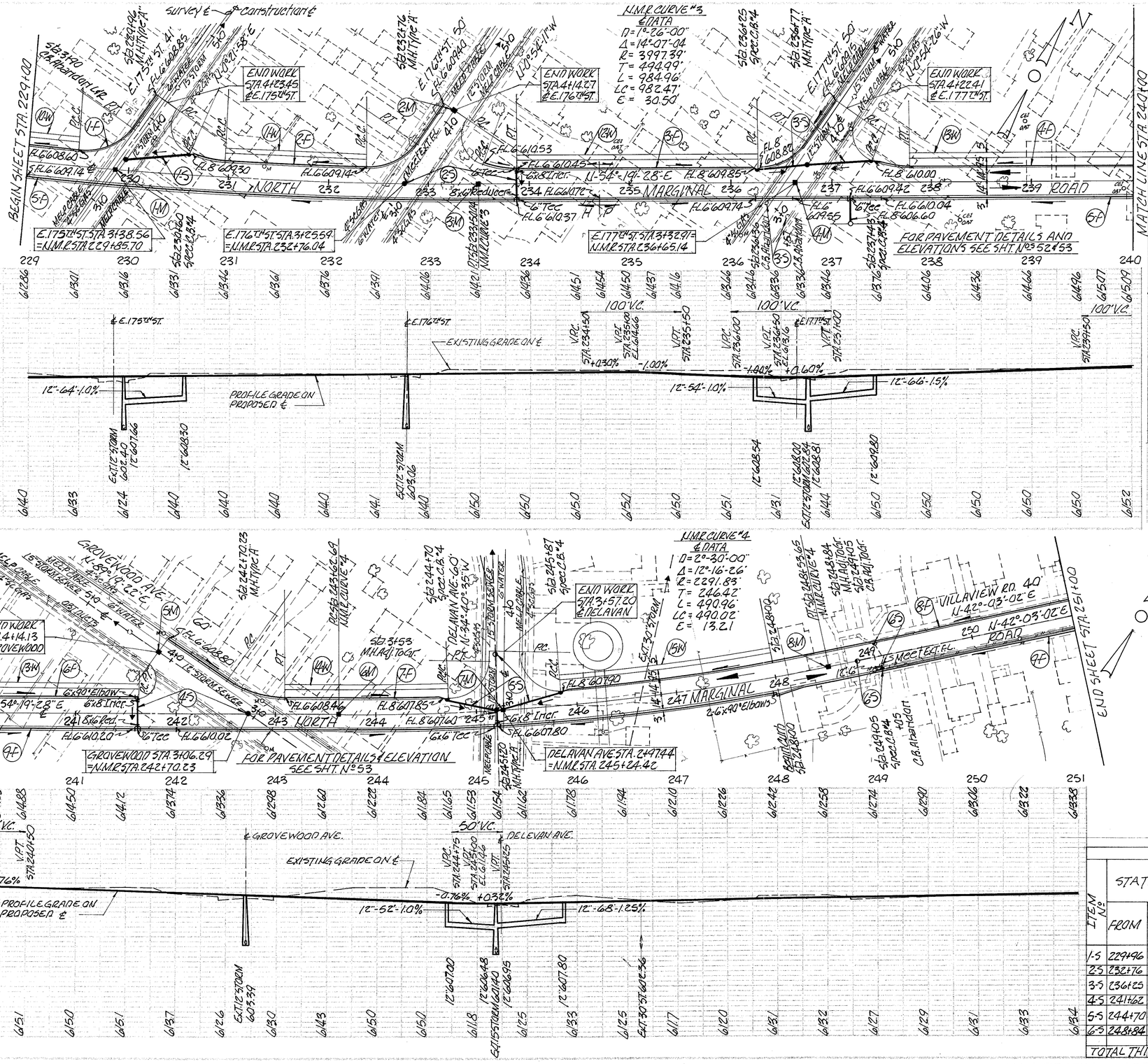
36
7351

CUYAHOGA COUNTY
CUY - 2 - 24.33

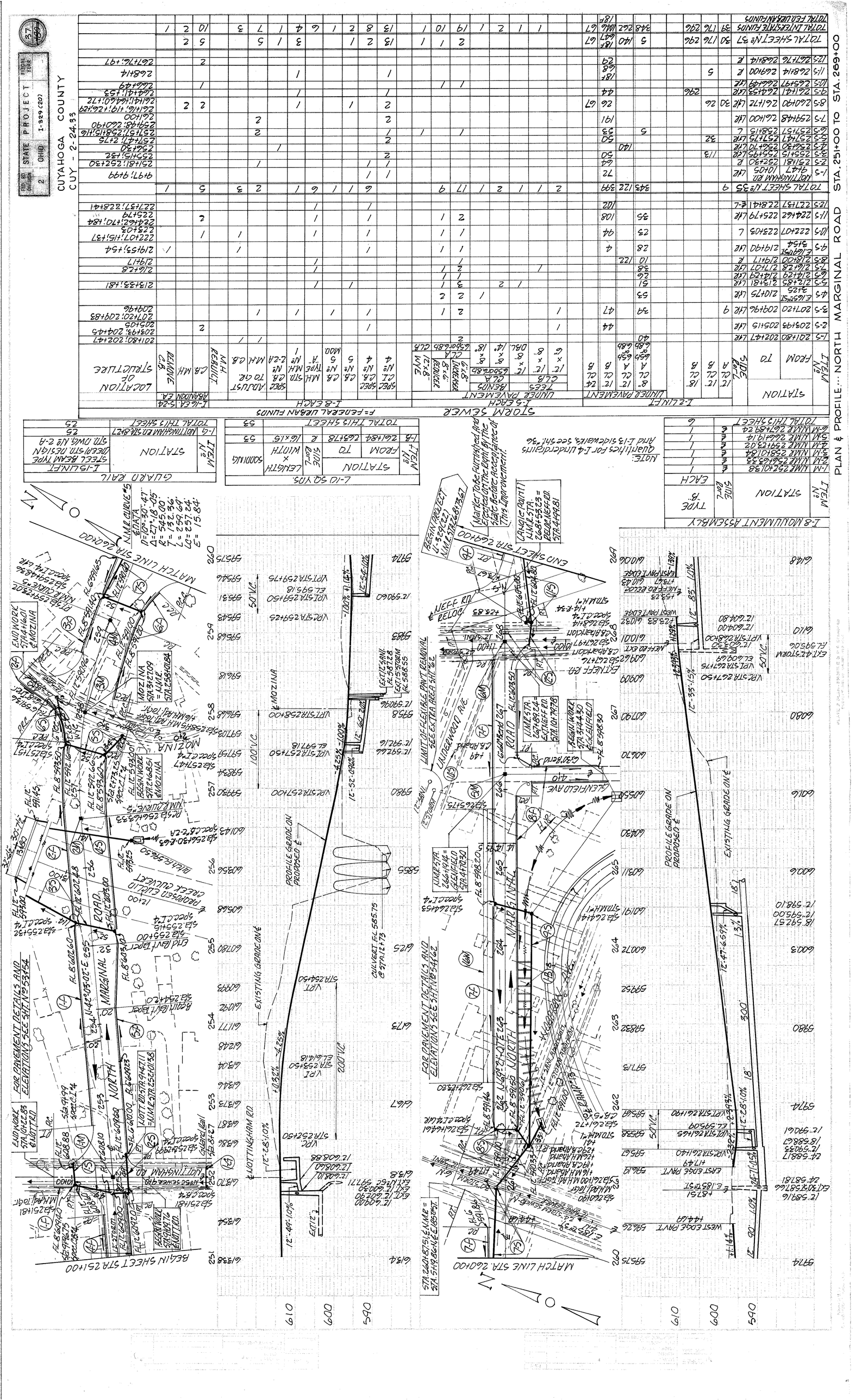
SIDEWALKS I-13 SQ. FT.					I-8 MONUMENT ASSEMBLY			
ITEM No.	STATION FROM	STATION TO	SIDE ℄	4" CONCRETE SQ. FT.	ITEM No.	STATION	SIDE ℄	TYPE "B" EACH
1-W	205+76.43	206+50	L	367.85	1-M	N.M.R. 202+00.24	℄	1
2-W	208+04.22	209+64.22	L	800.00	2-M	N.M.R. 204+13.57	℄	1
3-W	211+04.85	212+85.08	L	901.15	3-M	N.M.R. 205+76.43	℄	1
4-W	214+27.84	215+95.13	L	836.45	4-M	N.M.R. 207+09.68	℄	1
5-W	217+05.48	218+85.01	L	897.65	5-M	N.M.R. 210+10.29	℄	1
6-W	219+88.05	221+74.88	L	934.15	6-M	E. 167TH ST. 3+81.14	℄	1
7-W	223+01.83	224+39.52	L	688.45	7-M	E. 168TH ST. 3+64.15	℄	1
8-W	225+78.88	226+92.29	L	567.05	8-M	E. 169TH ST. 3+56.84	℄	1
9-W	228+38.20	229+00	L	309.00	9-M	E. 170TH ST. 3+80.75	℄	1
SUB-TOTAL SHEET Nº 35				6301.75	10-M	N.M.R. 223+65.08	℄	1
10-W	229+00	229+48.92	L	244.60	11-M	E. 172ND ST. 3+95.91	℄	1
11-W	230+95.41	232+37.13	L	708.60	12-M	E. 173RD ST. 3+83.38	℄	1
12-W	233+87.93	236+27.64	L	1198.55	SUB-TOTAL SHEET Nº 35			12
13-W	237+77.48	241+62.39	L	1924.55	1-M	N.M.R. 229+85.70	℄	1
14-W	243+06.17	244+73.83	L	838.30	2-M	E. 176TH ST. 4+14.27	℄	1
15-W	245+84.90	248+00	L	1075.50	3-M	N.M.R. 233+50.04	℄	1
SUB-TOTAL SHEET Nº 36				5990.10	4-M	N.M.R. 236+66.14	℄	1
16-W	262+23.20	265+75	L	1759.00	5-M	GROVEWOOD 4+14.13	℄	1
SUB-TOTAL SHEET Nº 37				1759.00	6-M	N.M.R. 243+62.69	℄	1
17-W	204+00	211+00	R	3396.15	7-M	N.M.R. 245+24.42	℄	1
SUB-TOTAL SHEET Nº 39				3396.15	8-M	N.M.R. 248+53.65	℄	1
TOTAL				17447.00	SUB-TOTAL SHEET Nº 36			8
					TOTAL			20

6" UNDERDRAIN											
ITEM No.	STATION FROM	STATION TO	SIDE ℄	I-4 LIN. FT. 6" U.D. SHALLOW	I-4 LIN. FT. 6" U.D. SHALLOW W/ MUNICIPAL SHALLOW CONN.	I-4 LIN. FT. 8" APPROVED OUTLET	I-5 EACH 6"x90° ELBOW	I-5 EACH 6"x6" TEE	I-5 EACH 6"x30° BEND	I-5 EACH 6"x60° BEND
1-F	251+94	255+32	L		270	20				
2-F	255+32	MOLINA 4+16	L		316	10		1		
3-F	258+74	260+00	L		104	20				
4-F	251+00	251+66	R		120					
5-F	252+30	257+47	R		495	20				
6-F	258+25	259+77	R		124	20				
7-F	260+00	267+64	L		620	20				
8-F	261+64	267+52	R		734	20			1	1
9-F	263+91	264+00	L		9					
TOTAL SHEET Nº 37					2783	130			1	1
TOTAL FED. URBAN FUND CLEVE.					9					
TOTAL INTERSTATE FUND CLEVE.					2783	130			1	1
1-F	229+00	E. 175TH ST. 4+23	L		147					
2-F	230+55	E. 176TH ST. 4+14	L		270	10				
3-F	233+55	E. 177TH ST. 4+22	L		353	20		1		
4-F	237+43	240+00	L		245	10				
5-F	229+00	240+00	R	1128		10		2		
6-F	240+00	241+62	L		162		1			
7-F	GROVEWOOD 4+14	244+70	L		285	10				
8-F	245+87	251+00	L		503	10				
9-F	240+00	251+00	R	800	300		2	2		
TOTAL SHEET Nº 36				1928	2263	70	3	5		

STORM SEWER														
ITEM No.	STATION FROM	STATION TO	SIDE ℄	I-2 LIN. FT. U. PAV'T. 8" CL A 65b or 68b	I-2 LIN. FT. U. PAV'T. 12" CL B	I-5 EACH U. PAV'T. 6"x8" LADDER CL A 65b or 68b	I-5 EACH U. PAV'T. 8"x6" LADDER CL B OR C	I-8 EACH M.H. TYPE "A"	I-8 EACH SPEC. C.B. Nº 4	I-8 EACH ADJUST TO GR. M.H.	I-8 EACH ADJUST TO GR. C.B.	I-6 EA. ABAND. C.B.	LOCATION OF STRUCTURE
1-S	229+96	230+55	℄L		61			1	1			2	229+96; 230+60 E. 175TH ST. STA. 3+90
2-S	232+76	233+88	L&R	26		1	1	1					232+76
3-S	236+25	237+43	L		114			1	2			2	236+25; 236+57 236+77; 237+43
4-S	241+62	242+70	L&R	26		1	1	1					242+70
5-S	244+70	245+87	L&R	13	114	1		1	2	1			244+70; 245+20; 187 DELAVAN AVE. STA. 3+53
6-S	248+84	249+05	L&R		4				1	1	1	1	248+84; 249+05
TOTAL THIS SHEET				65	293	3	2	5	6	2	1	5	



PLAN & PROFILE ··· NORTH MARGINAL ROAD STA. 229+00 TO STA. 251+00

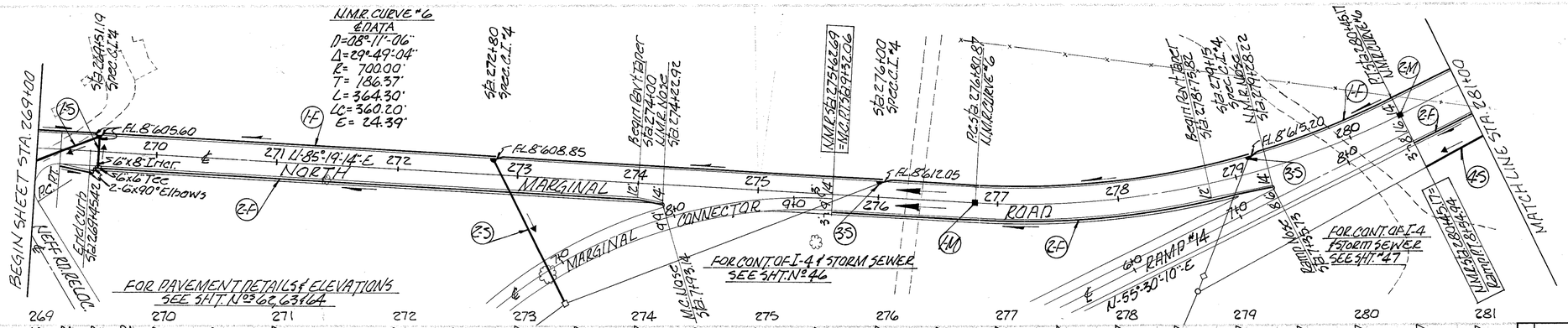

PLAN & PROFILE... NORTH MARGINAL ROAD STA. 251+00 TO STA. 269+00
CUYAHOGA COUNTY
CUY - 2 - 24.33
FED. RD. DIVISION 2
STATE OHIO
PROJECT 1-329 (20)
FISCAL YEAR
37
1969
STORM SEWER
F = FEDERAL URBAN FUNDS
I-8 EACH
I-5 EACH
I-2 LINEAL
UNDER PAVEMENT
LOCATION OF STRUCTURE
ITEM No.
STATION
SIDE
SIZE
FROM
TO
TYPE
CATCH BASIN
CATCH BASIN TYPE 2
MANHOLE
CATCH BASIN TYPE 1
CATCH BASIN TYPE 3
MANHOLE TYPE A
MANHOLE TYPE B
ADJUST TO GRADE
SPEC. CATCH BASIN
SPEC. MANHOLE
TYPE "A" INLET
TYPE "B" INLET
EQUALS
INCREASE
ENDS
TEES
BENDS
ADDITIONAL ITEMS
TOTAL SHEET No 37
TOTAL SHEET No 36
TOTAL FEDERAL FUNDS
GUARD RAIL
I-15 LINEAL
STEEL BEAM TYPE (INCLUDES STD. DWG. NO 2-A)
STATION
ITEM No.
NOTTINGHAM RD STA 24+82.71
TOTAL THIS SHEET
TOTAL THIS SHEET
L-10 SQ. YDS.
LENGTH
WIDTH
SUBBASE
STATION
ITEM No.
TOTAL THIS SHEET
TOTAL THIS SHEET
I-8 MOUNTING ASSEMBLY
ITEM No.
STATION
TYPE "B"
SIDE
EACH
NOTE: QUANTITIES FOR I-4 UNDERDRAINS AND I-13 SIDEWALKS, SEE STH. #36
BEGIN PROJECT STA 251+68.71
MARKER TO BE FURNISHED AND ERECTED AT THE END OF THE STATE ACTIVE ACCEPTANCE OF THIS IMPROVEMENT.
CHANGE POINT STA 264+55.33 = STA 264+97.97 BEGIN NEFF RD
END SHEET STA 264+00
MATCH LINE STA 264+00
MATCH LINE STA 251+00
BEGIN SHEET STA 251+00
NOTTINGHAM RD
MARGINAL ROAD
NORTH
MAPLE INN RD
CLEVELAND AVE.
LUNDQUIST AVE.
MOZINA
NEFF RD
RELOC.
EXISTING GRADE ON ℄
PROFILE GRADE ON PROPOSED ℄
FOR PAVEMENT DETAILS AND ELEVATIONS SEE SHT. #54
FOR PAVEMENT DETAILS AND ELEVATIONS SEE SHT. #62
END WORK STA 241+60
END WORK STA 246+22.83
END WORK STA 253+00
BEGIN WORK STA 264+21
BEGIN WORK STA 265+00
CULVERT EL 585.75 @ STA 262+75
EXIST. 12" CMP
EXIST. 18" CMP
EXIST. 42" STORM EL. 603.49
EXIST. 48" STORM EL. 594.65
EXIST. 36" STORM EL. 595.18
EXIST. 24" STORM EL. 597.18
EXIST. 30" STORM EL. 597.66
EXIST. 12" STORM EL. 599.06
EXIST. 12" STORM EL. 599.90
EXIST. 12" STORM EL. 600.30
EXIST. 12" STORM EL. 600.88
EXIST. 12" STORM EL. 601.18
EXIST. 12" STORM EL. 601.43
EXIST. 12" STORM EL. 601.73
EXIST. 12" STORM EL. 602.03
EXIST. 12" STORM EL. 602.33
EXIST. 12" STORM EL. 602.63
EXIST. 12" STORM EL. 602.93
EXIST. 12" STORM EL. 603.23
EXIST. 12" STORM EL. 603.53
EXIST. 12" STORM EL.

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

38 / 100

CUYAHOGA COUNTY
CUY - 2 - 24.33

N



ITEM No	STATION FROM	STATION TO	SIDE R or ℄	LENGTH x WIDTH	SODDING
1-8	281+30	283+20	R	16 X 1.5	53 F
2-8	284+43	284+75	R	VARIES 1.5	3 F
3-8	290+60	291+96	R	16 X 1.5	25 3 E
CITY OF CLEVELAND TOTAL					29
CITY OF EUCLID (E) TOTAL					3 E
FED. URBAN FUNDS CLEVELAND (F) TOTAL					56 F

I-10 SQ. YDS.

ITEM No	STATION FROM	STATION TO	SIDE R or ℄	6" U.D. SHALLOW	6" CURB & U.D. SHALLOW	8" PIPE OUTLET	6" U.D.	9" X .6 TILE	9" X .09 WM	8" X .06 STORM
1-F	269+00	281+00	L&R							
2-F	269+19	281+00	L&R							
3-F	281+00	290+18	L							
4-F	281+00	289+47	R							
5-F	290+50	292+03.63	L&R							
CE)= FEDERAL URBAN FUND										
TOTAL CLEVELAND										
CE)= TOTAL EUCLID										

F = FEDERAL URBAN FUND
E = CITY OF EUCLID

I-8 MONUMENT ASSEMBLY

ITEM No	STATION	SIDE R or ℄	TYPE "B" EACH
1-M	N.M.R. 276+80.87	℄	1 F
2-M	N.M.R. 280+45.17	℄	2 F
FED. URBAN FUNDS (F) TOTAL			

ITEM No	STATION FROM	STATION TO	SIDE R or ℄	I-16 EA. ABANDON C.B.
1-5	269+00	269+51	L&R	
2-5	269+80	272+45	L&R	
3-5	272+80	276+00	L&R	
4-5	276+00	280+45	L&R	
5-5	280+45	289+29	L&R	
6-5	289+29	290+88	L&R	1/8
FEDERAL URBAN FUND				1/8
TOTAL CLEVELAND				
TOTAL EUCLID				

LOCATION OF STRUCTURE

ITEM No	STATION FROM	STATION TO	SIDE R or ℄	I-2 LIN. FT. UNDER PAV'T. 12" CL B	I-3 EACH U.D. 6" INCR. CLA	I-8 EACH Spec. C.I. #4	I-8 EACH Spec. C.B. #2-2M	I-8 EACH C.B. #5
1-5	269+00	269+51	L&R		6.36 C&G	1 F		
2-5	269+80	272+45	L&R		6.36 C&G	1 F		
3-5	272+80	276+00	L			2 F		
4-5	276+00	280+45	L&R			1 F	1 F	
5-5	280+45	289+29	L&R			1 F		1
6-5	289+29	290+88	L&R	18		2		1
FEDERAL URBAN FUND				18		6 F	1 F	1 F
TOTAL CLEVELAND						2		1
TOTAL EUCLID								

ITEM No	STATION FROM	STATION TO	SIDE R or ℄	6" U.D. SHALLOW	6" CURB & U.D. SHALLOW	8" PIPE OUTLET	6" U.D.	9" X .6 TILE	9" X .09 WM	8" X .06 STORM
1-F	269+00	281+00	L&R							
2-F	269+19	281+00	L&R							
3-F	281+00	290+18	L							
4-F	281+00	289+47	R							
5-F	290+50	292+03.63	L&R							
CE)= FEDERAL URBAN FUND										
TOTAL CLEVELAND										
CE)= TOTAL EUCLID										

I-2 LIN. FT.

ITEM No	STATION FROM	STATION TO	SIDE R or ℄	12" CL B	15" CL B
1-5	269+00	269+51	L&R		
2-5	269+80	272+45	L&R		
3-5	272+80	276+00	L		
4-5	276+00	280+45	L&R		70 F
5-5	280+45	289+29	L&R		
6-5	289+29	290+88	L&R	18	
FEDERAL URBAN FUND				18	70 F
TOTAL CLEVELAND					
TOTAL EUCLID					

I-4 LIN. FT.

ITEM No	STATION FROM	STATION TO	SIDE R or ℄	15" CL B	12" CL B	8" PIPE OUTLET	6" CURB & U.D. SHALLOW	6" U.D. SHALLOW
1-8	281+30	283+20	R	1344 F	50 F			
2-8	284+43	284+75	R	896 F	24 F	308 F	30 F	
3-8	290+60	291+96	R	710 F	24 F	196 F	30 F	
CITY OF CLEVELAND TOTAL				2040 F	98 F	504 F	60 F	
CITY OF EUCLID (E) TOTAL				28	138	30		
FED. URBAN FUNDS CLEVELAND (F) TOTAL				1814	24 E	474 F	30 E	

I-5 EACH

ITEM No	STATION FROM	STATION TO	SIDE R or ℄	9" X .6 TILE	9" X .09 WM	8" X .06 STORM
1-5	269+00	269+51	L&R			
2-5	269+80	272+45	L&R			
3-5	272+80	276+00	L			
4-5	276+00	280+45	L&R			
5-5	280+45	289+29	L&R			
6-5	289+29	290+88	L&R	1/8		
FEDERAL URBAN FUND				1/8		
TOTAL CLEVELAND						
TOTAL EUCLID						

6" UNDERDRAINS

ITEM No	STATION FROM	STATION TO	SIDE R or ℄	6" U.D. SHALLOW	6" CURB & U.D. SHALLOW	8" PIPE OUTLET	6" U.D.	9" X .6 TILE	9" X .09 WM	8" X .06 STORM
1-F	269+00	281+00	L&R							
2-F	269+19	281+00	L&R							
3-F	281+00	290+18	L							
4-F	281+00	289+47	R							
5-F	290+50	292+03.63	L&R							
CE)= FEDERAL URBAN FUND										
TOTAL CLEVELAND										
CE)= TOTAL EUCLID										

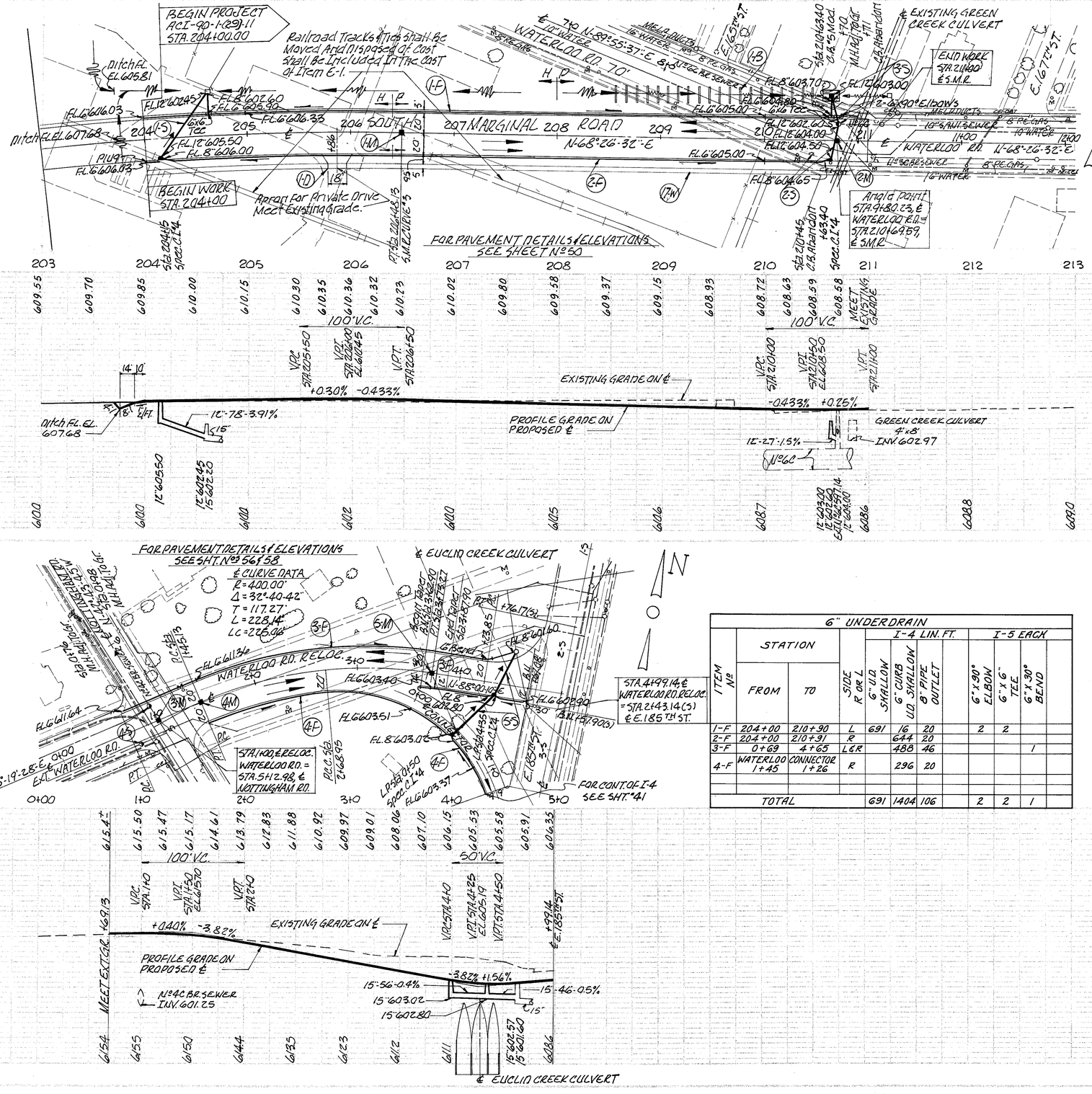
PLAN & PROFILE··· NORTH MARGINAL ROAD ··· STA. 269+00 TO STA. 292+03.63

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

39
180

CUYAHOGA COUNTY
CUY. 2-24.33

MICROFILMED
SEP 16 1985



NOTE:
Quantities For Sidewalks Are Shown On Sheet N° 36

I-8 MONUMENT ASSEMBLY

ITEM N°	STATION	SIDE R or L	TYPE "B" EACH
1-M	S.M.R. 206 +48.13	℄	1
2-M	S.M.R. 210 + 69.59	℄	1
3-M	RELOC. WATERLOO 1+00	℄	1
4-M	RELOC. WATERLOO 1+45.13	℄	1
5-M	RELOC. WATERLOO 3+73.27	℄	1
	TOTAL THIS SKEET		5

L - 10 SQ. YDS.

ITEM N°	STATION FROM	STATION TO	SIDE R or L	LENGTH X WIDTH	SODDING
1-B	208+56	210+46	L	16' X 1.5'	53
	SUB-TOTAL SHEET N° 39				53
1-B	270+78	272+70	R	192' X 12'	256 F
2-B	271+65.78	273+21	L	155.22' X 12'	207 F
3-B	273+76	274+50	R	74' X 12'	99 F
4-B	278+60	279+50	L	16' X 1.5'	27
5-B	280+45	282+35	L	16' X 1.5'	53
6-B	285+50	287+95	L	16' X 1.5'	61 F
	SUB-TOTAL SHEET N° 40				
INTERSTATE - CITY OF CLEVELAND TOTAL					80
FED. URBAN FUNDS - CLEVELAND (F) TOTAL					623 F
TOTAL THIS SHEET	INTERSTATE CLEVELAND				133
	FED. URBAN FUND CLEVELAND				623 F

DRIVEWAY QUANTITIES

ITEM N°	STATION	SIDE R or L	T-70 SQ. YDS. 6" PORTLAND CEMENT CONCRETE PAV'T.	I-22 CU. YDS. SUBBASE GRADING A OR B
1-D	205+86	R	33.56	3.73
TOTAL			33.56	3.73

6" UNDERDRAIN

ITEM N°	STATION FROM	STATION TO	SIDE R or L	I-4 LIN. FT. 6" U.D. SHALLOW	6" CURB U.D. SHALLOW	8" PIPE OUTLET	I-5 EACH 6"x30° ELBOW	6"x6" TEE	6"x30° BEND
1-F	204+00	210+90	L	691	16	20	2	2	
2-F	204+00	210+91	R		644	20			
3-F	0+69	4+65	L&R		488	46			1
4-F	WATERLOO 1+45	CONNECTOR 1+26	R		296	20			
TOTAL				691	1404	106	2	2	1

STORM SEWER

ITEM N°	STATION FROM	STATION TO	SIDE R or L	I-2 LIN. FT. UNDER PAVEMENT 12" CL A 6.5 b OR 6.8 b	12" CL B	15" CL B	I-8 EACH SPEC. C.B. #4	SPEC. C.I. #4	MOD. C.B. #5	M.H. ADJ. To GR.	I-16 EA. ABANDON C.B.	LOCATION OF STRUCTURE
1-S	204+15	204+63	L&R		76			1				204+15
2-S	210+45	210+70	L&R		34		1				1	210+45 ; +63.4
3-S	210+63	210+71	L	24					1	1	1	210+00 ; +63.4 ; +71+70
4-S	0+76	0+98	L&R							2		0+76 ; 0+98
5-S	CONNECTOR 0+50	WATERLOO 4+50	L&R			97		2				0+50 CONNECTOR 4+35 WATERLOO RD.
TOTAL				24	110	97	1	3	1	3	2	

PLATE 2 PLAN - PROFILE & QTY. SHEET
ISSUE 79 REVISED - JANUARY 1980

PLAN & PROFILE ··· SOUTH MARGINAL ROAD ··· STA. 203+00 TO STA 213+00
WATERLOO RD TO E. 185TH ST.

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	1-329 (20)	

40 / 188

CUYAHOGA COUNTY
CUY - 2 - 24.33

Marker To Be Furnished And Erected On The Right By The State Before Acceptance Of This Improvement.

S.M.R. Sta 269+54.47 = Reloc. Neff Rd. Sta. 149+84.5 (3)

BEGIN PROJECT U-329(22) S.M.R. STA. 269+83.87

BEGIN SHEET STA 269+54.47

MARGINAL COURT

RAMP No 14-A

FOR CONT OF I-4 SEE SHT. #47

FOR CONT OF I-4 SEE SHT. #47

279 ROAD N-55°-30'-10"-E

MATCH LINE STA 280+00

S.M.R. CURVE #5
℄ DATA
D = 3°-22'-13"
Δ = 13°-50'-57"
R = 1700.00'
T = 206.46'
L = 410.92'
Lc = 409.97'
E = 12.44'

FOR PAVEMENT DETAILS & ELEVATIONS SEE SHT. No 3 & 65 & 66

NOTE: Quantities for Grading Are Shown on Sheet No 39

I-B MONUMENT ASSEMBLY

ITEM No	STATION	SIDE OF ROAD	TYPE "B"	EACH
1-M	S.M.R. 273+26.91	℄		1
2-M	S.M.R. 277+37.83	℄		1
FED. URBAN FUNDS (F) TO TOTAL				2 F

6" UNDERDRAIN
I-4 LIN. FT.

ITEM No	STATION FROM	STATION TO	SIDE OF ROAD	8" PIPE OUTLET	6" UD SHALLOW	6" CURB UD SHALLOW	SIDE OF ROAD	6"x45° BEND
1-F	269+97	280+00	L	460				
2-F	270+39	280+00	R	204	18			
3-F	280+00	283+06	L & R	380	18			
4-F	280+00	283+06	L & R	378				
5-F	283+07	285+16	L	354	10			
TOTAL				1776	46			

6" UNDERDRAIN
I-4 LIN. FT. FROM SHEET No 47

ITEM No	STATION FROM	STATION TO	SIDE OF ROAD	8" PIPE OUTLET	6" UD SHALLOW	6" CURB UD SHALLOW	SIDE OF ROAD	6"x45° BEND
RAMPS No 14; 14-A; 15								
1-F	269+97	280+00	L	104 F	7.0 F	20 F		
2-F	270+39	280+00	R	64 F	6.74 F	30 F		
3-F	280+00	283+06	R	206 F	2.56 F	10 F		
4-F	280+00	283+06	L	206 F	2.56 F	10 F		
5-F	283+07	285+16	R	26 F	5.00 F	10 F		
6-F	283+07	285+16	L	26 F	4.19 F	10 F		
FEDERAL URBAN FUND				320 F	30.42 F	70 F		
TOTAL CLEVELAND					20	10		
TOTAL EUCLID					204 F	198 E		

STORM SEWER
RAMPS No 14; 14-A; 15, FROM SHEET No 47

ITEM No	STATION FROM	STATION TO	SIDE OF ROAD	I-2 LIN. FT. UNDER PAVT. 12" CL A	12" CL B	I-2 EACH 8" CL A	8" CL B	I-8 EACH C.B. #5
1-F	1+87	6+50	L & R	10	212 F		16	104 F
2-F	6+50	8+55	L & R				14	
3-F	3+78	7+64	L & R		26		16	
4-F	0+00	3+88	L & R					
5-F	0+00	3+80	L					
TOTAL				10	212 F		46	104 F

STORM SEWER
RAMPS No 14; 14-A; 15, FROM SHEET No 47

ITEM No	STATION FROM	STATION TO	SIDE OF ROAD	I-2 LIN. FT. UNDER PAVT. 12" CL A	12" CL B	15" CL A	15" CL B	12" CL A	12" CL B	15" CL A	15" CL B	15" CL A	15" CL B	18" CL A	18" CL B	I-5 EACH 54" CL A	54" CL B	60" CL A	60" CL B	I-8 EACH STD. Spec M.H.	STD. Spec C.B. #2 2.24 W/Low Drop	C.B. #5	C.B. #4
1-S	270+34	270+63	L & R	20 F																		2 F	
2-S	271+30	271+43	L & R																				1 E
3-S	280+00	280+29	L & R			20 F																1 F	
4-S	280+02	288+63	L & R					22 F	230													1 F	
5-S	288+63	291+46.33	L & R	6 F						6 F	20 F	20 F	22 F									2 F	2 F
FEDERAL URBAN FUND																							
TOTAL CLEVELAND									230														1 E
TOTAL EUCLID																							

F = FEDERAL URBAN FUND E = CITY OF EUCLID

PLAN & PROFILE SOUTH MARGINAL ROAD STA. 269+54.47 TO STA. 291+46.33

MICROFILMED
SEP 10 1983

FED. FY. COUNTER.	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

41

CUYAHOGA COUNTY
CUY. 2-24.33

B.M.-O.M.301: Approx. 28 ft. W of C.L. of NOTTINGHAM RD. And 28 ft. N. of C.L. of ST. CLAIR AVE. 39.3 E ft. NW. of I.P. In Mon. Box At C.L. Intr. 1310 ft. S. W. of N. & V. In C.E.I. Pole # 505197 Elev. 630.703.

FOR PAVEMENT DETAILS & ELEVATIONS SEE SHT. Nos 54, 57, 58 & 59

B.M.-O.M. 64: Approx. 30 ft. E. of C.L. of E. 185TH ST. And 90 ft. S. of C.L. Chickasaw Ave. 44.60 ft. N.E. of N.V. In C.E.I. Pole # 63988. On E. Side of E. 185TH ST. 5.47 ft. N.W. of N & V In 12 Inch Maple on E. Side of E. 185TH ST. 1 ft. E. of E. Edge of Walk. Elev. 606.598

BEGIN WORK STA. 8+25-S & E. 185TH ST

℄ CURVE DATA
Δ = 43°-00'-05"
R = 300.00'
T = 118.18'
L = 225.15'
LC = 219.91'

PROPOSED EUCLID CREEK CULVERT ℄

WATERLOO RD. RELOC. & RAMP No 12

RAMP No 13

NOTTINGHAM RD.

CHAPMAN AVE.

MAGNOLIA DRIVE

MARGINAL RD. & ROAD

WILLOWICK AVE.

E. 185TH ST.

CORP. LIMIT OF CLEVELAND PARTICIPATION

STA. 1+86.09 E. 185TH ST.

STA. 2+80.41-N, E. 185TH ST. = STA. 0+00 ℄ MOZINA

STA. 5+19.86, E. 185TH ST. = STA. 2604.8751, E. N.M.R.

STA. 2443.14-S, E. 185TH ST. = STA. 4+99.14 ℄ WATERLOO RD RELOC. = STA. 16+48.36 ℄ RAMP 12

STA. 1+90.19-N, E. 185TH ST. = Ramp 13 ℄ STA. 12+74.69

STA. 2+56.85-N, E. 185TH ST. = REMOVE STA. 2+60.41-N

REMOVE SIGNALS

2-INTERSTATE AND DEFENSE HIGHWAY SIGNS, FURNISHED AND ERECTED-1 @ EACH END OF WORK.

FOR CONT. OF STORM SEWER SEE SHEET No 46

MEET EXISTING GRADE STA. 8+25-S

MEET EXISTING GRADE

PROFILE GRADE ON PROPOSED ℄

EXISTING GRADE ON ℄

℄ FREEWAY

CUY. 2-25.33

12"-48"-1.0%

12"-60"-1.0%

12"-7"-1.0%

15"-58"

12"-50"-2.0%

-2.94%

+0.30%

-0.96%

15"-61"-1.47%

24" 212' 0.25% 24" 116' 0.25%

12" STORM ABANDON

12" SANITARY ABANDON

PLUG HERE

24" STORM

30" STORM

STA. 5+10-S TO STA. 5+86.09-N INTERSTATE FUNDS

EXCAVATION	20,991 CU. YDS.
EMBANKMENT	10,444 CU. YDS.
EMBANKMENT + 22 %	12,742 CU. YDS.

STA. 8+25-S TO STA. 5+10-S 100 % CITY OF CLEVELAND

EXCAVATION	1,462 CU. YDS.
EMBANKMENT	14 CU. YDS.
EMBANKMENT + 22 %	17 CU. YDS.

GUARD RAIL

ITEM Nº	STATION	I-15 LIN. FT. STEEL BEAM TYPE (DEEP) STD. DESIGN STD. DWG. Nº 2-A
1-G	0+77, MOZINA	25
TOTAL		25

L - 10 SQ. YDS.

ITEM Nº	STATION FROM	STATION TO	SIDE R or L	LENGTH & WIDTH	SODDING
1-B	3+90-N	4+98-N	R	16 X 1.5	32
TOTAL					32

I-8 MONUMENT ASSEMBLY

ITEM Nº	STATION	SIDE R or L	TYPE "B" EACH
1-M	E. 185TH 7+91.55-S	℄	1 (c)
2-M	E. 185TH 5+66.40-S	℄	1 (c)
3-M	E. 185TH 2+43.14-S	℄	1
4-M	E. 185TH 5+19.86-S	℄	1
CLEVELAND INTERSTATE FUND TOTAL			2
100 % CITY OF CLEVELAND (c) TOTAL			2 (c)

6" UNDERDRAIN

ITEM Nº	STATION FROM	STATION TO	SIDE R or L	I-4 LIN. FT. 6" CURB U/D 4.52	I-4 LIN. FT. 6" CURB U/D SHALLOW	I-4 LIN. FT. 8" PIPE OUTLET	I-5 EACH 6"x6" TEE	I-5 EACH 6"x90° ELBOW	I-5 EACH 6"x70° BEND	I-5 EACH 6"x45° BEND
1-F	8+25-S	2+62-S	L&R	622[c]	4.52	20	2[c]	1[c]		
2-F	2+18-S	2+05-N	L&R	676		50			1	
3-F	2+57-N	5+08-N	L&R	434		10				1
4-F	5+25-N	5+86-N	L	72						
TOTAL 100 % CITY OF CLEVELAND				622[c]			2[c]	1[c]		
TOTAL INTERSTATE FUNDS				1634		80			1	1

STORM & SANITARY SEWER

C = 100 % CITY OF CLEVELAND PARTICIPATION

ITEM Nº	STATION FROM	STATION TO	SIDE R or L	I-2 LIN. FT. UNDER PAVEMENT 12" CL A	15" CL B	12" CL B	8" CLA 6.5b OR 6.8b	12" CL B	24" CL B	24" CL B	15" CL B	I-5 EA. U.P. 8" x " INCR CLA 6.5b OR 6.8b	8" x 6" REDUC CLA 6.5b OR 6.8b	I-8 EACH STD. M.H. Nº 1	STD. M.H. TYPE A	SPEC. C.I. Nº 4	SPEC. C.B. Nº 2-2A	M.H. ADJ TO GR.	M.H. REBUILT	I-16 EA. ABANDON M.H.	I-16 EA. ABANDON C.B.	LOCATION OF STRUCTURE
1-S	8+25-S	4+30-S	L&R				48[c]					2[c]	1[c]					1[c]		1/c	2	7+85-S ; 5+62-S ; 5+37-S ; 4+30-S
2-S	3+27-S	1+45-S	L&R	54	4			104						1		3				6/c	1	3+27-S ; 2+82-S ; +63-S ; +62-S ; +18-S ; +11-S ; 1+85-S ; +73-S ; +63-S ; +61-S ; +46-S ; +45-S
3-S	1+30-S	0+81-N	L&R	48				208								1				2/c	2	1+26-S ; +23-S ; +17-S ; 0+51-S ; 0+10-N ; 0+12-N
4-S	0+81-N	1+90-N	L&R				60		114					1	2			1		1		0+51-N ; 1+03-N ; 1+54-N
5-S	2+05-N	2+75-N	L&R							58					1			1/c		1/c	2	2+05-N ; +21-N ; +22-N ; +51-N ; +60-N ; +75-N
TOTAL 100 % CITY OF CLEVELAND							48[c]					2[c]	1[c]					2[c]		4[c]		
TOTAL INTERSTATE FUNDS				54	4			164	208	114	58			1	1	6	1	1	1	10	7	

PLAN & PROFILE ··· EAST 185TH STREET

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	1-329 (20)	

CUYAHOGA COUNTY
CUY - 2 - 24.33

FOR PAVEMENT DETAILS & ELEVATIONS SEE SHT. Nos 62, 63 & 65

E - INTERSTATE AND DEFENSE HIGHWAY SIGNS, FURNISHED AND ERECTED - 1@ EACH END OF WORK

BEGIN WORK STA. 5+27.88-S ℄ NEFF RD.

STA. 1+98.45-S ℄ NEFF RD. = STA. 269+54.47 ℄ S.M.R

STA. 8+05.34 ℄ EXT. NEFF RD. = STA. 0+00 ℄ TURNOUT

END WORK STA. 9+72 ℄ NEFF RD.

STA. 0+31.68 ℄ TURNOUT

END WORK, STA. 0+68 ℄ TURNOUT

STA. 4+99.81-N, ℄ RELOC. NEFF RD. = STA. 268+53.23 ℄ N.M.R (Angle Pt.)

Angle Point STA. 7+17.80-N ℄ RELOC. NEFF RD. = STA. 12+87.40 ℄ EXT. NEFF RD.

END WORK STA. 7+60-N ℄ NEFF RD.

NEFF ROAD EXISTING

NEFF RD. RELOCATED

MARGINAL CONNECTOR

PROPOSED LAKE MAINTENANCE PARK

℄ UNDERWOOD AVE.

GLENFIELD AVE.

N-54°-08'-10"-W

N-35°-52'-27"-W

N-38°-24'-13"-W

N-11°-20'-42"-W

N-69°-21'-07"-E

N-85°-19'-14"-E

270 N.M.R

℄ S.M.R

℄ FREEWAY

℄ N.M.R

CUY-2-2554

PROFILE GRADE ON PROPOSED ℄

EXISTING GRADE ON ℄ "A"

MEET EXISTING GRADE STA. 5+25-S V.P.I. STA. 5+25-S EL. 615.64

V.P.I. STA. 4+75-S EL. 615.34

V.P.I. STA. 3+25-S

V.P.I. STA. 1+25-S EL. 604.37

V.P.I. STA. 1+75-N

V.P.I. STA. 2+10-N

V.P.I. STA. 3+30-N EL. 610.15

V.P.I. STA. 4+10-N

MEET EXISTING GRADE STA. 7+24-N

+0.26%

-2.50%

-2.50%

+2.095%

+0.29%

30" STORM SEWER

36" STORM

42" STORM

48" STORM

12" SANI. SEWER

12" SANI. SEWER

12" SANI. SEWER

105' 0.87% 24"

150' 1.38% 12"

115' 1.5%

12"-72'-1.11%

12"-60'-1.0%

144' 0.22%

288'

0.22%

148' 0.22%

FOR CONT. OF SEWER SEE SHT. "37"

ITEM Nº	STATION FROM	STATION TO	SIDE R or L	LENGTH x WIDTH	SODDING
1-B	0+62-S	1+32-S	R	100' x 12'	133
TOTAL					133

L - 10 SQ. YDS.

ITEM Nº	STATION	SIDE R or L	TYPE "B" EACH
1-M	NEFF RELOC. 5+27.88-S	℄	1
2-M	NEFF RELOC. 1+98.45-S	℄	1
3-M	NEFF RELOC. 4+99.81-N	℄	1
4-M	NEFF RELOC. 7+17.80-N	℄	1
TOTAL			4

I-8 MONUMENT ASSEMBLY

STA. 5+27.88-S TO STA. 7+60-N

EXCAVATION	60,064 CU. YDS.
EMBANKMENT	483 CU. YDS.
EMBANKMENT + 22 %	589 CU. YDS.

ITEM Nº	STATION	GUARD RAIL I-15 LIN. FT. STEEL BEAM TYPE (DEEP) STD. DESIGN STD. DWG. Nº 2-A
1-G	EXT. NEFF 7+41.39	25
2-G	TURNOUT, 0+70	20
TOTAL		45

6" UNDERDRAIN

ITEM Nº	STATION FROM	STATION TO	SIDE R or L	I-4 LIN. FT. 6" CURB U.D. SHALLOW	I-5 EA. 8" PIPE OUTLET	I-5 EA. 6" x 60° BEND
1-F	5+28-S	0+00	L&R	958	10	
2-F	0+00	4+58-N	L&R	850	40	
3-F	5+33-N	7+60-N	L&R	388	20	
4-F	EXT. NEFF RD. 9+70	10+48	L&R	128	20	1
TOTAL				2324	90	1

C - SANITARY SEWER 100 % CITY OF CLEVELAND

STORM & SANITARY SEWER I-8 EACH

I-2 LIN. FT.

LOCATION OF STRUCTURE

F - FEDERAL URBAN FUND

ITEM Nº	STATION FROM	STATION TO	SIDE ROAD	UNDER PAVEMENT 12" CL. B SANI. M&M/M&P	12" CL. B	12" CL. A	18" CL. B	24" CL. B	30" CL. B	21" CL. B	STD. #2 W/ DROP	STD. M.H. M.&P. Type C.I. C.B. #4	Type C.I. C.B. #4	M.H. ADJ. TO GR.	M.H. ABANDON	M.H. C.B.	REMARKS
1-S	5+05-S	4+88-S	L&R			112											
2-S	2+77-S	2+55-S	L&R					288.224'									
3-S	2+47-S	1+87-N	L&R						100				2				
4-S	0+36-S	1+40-S	L&R				44'	44'					1				
5-S	0+36-S	1+14-N	L&R	22			140	146					2				
6-S	1+14-N	2+30-N	L&R				162						1				
7-S	EXT. NEFF RD. 8+10	10+30	L&R				6			72'			2				
8-S	4+89-N	7+24-N	L&R				128						2	1/1c			
100 % CITY OF CLEVELAND															3c	1c	
TOTAL FEDERAL URBAN FUND								288.224'		44'			1c				
TOTAL INTERSTATE FUND						22	1/2				72'	2c		2	9	1	4 1
									436	26	146	100	26				1 2

PLAN & PROFILE ··· NEFF ROAD (RELOCATED)

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

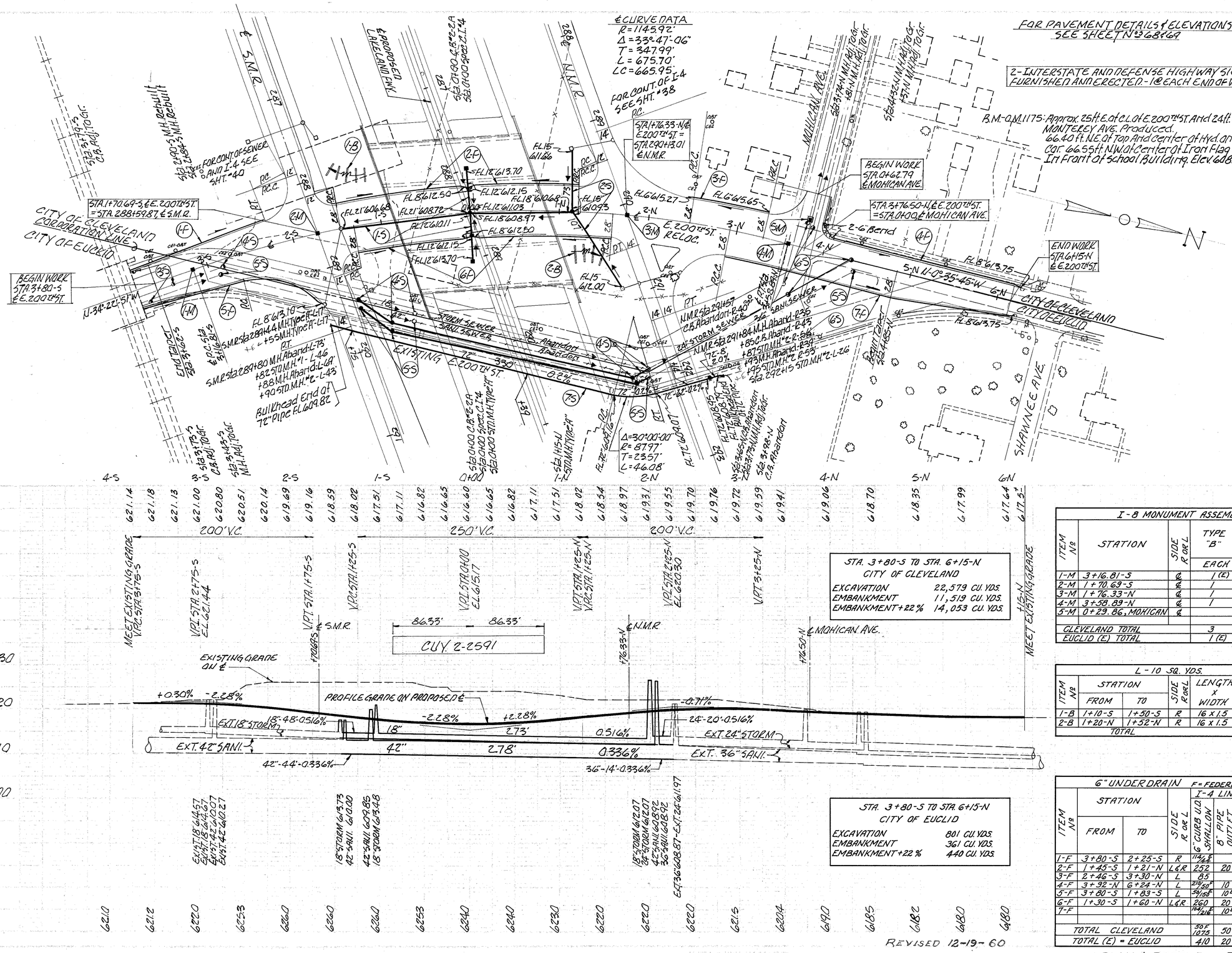
43 780

CUYAHOGA COUNTY
CUY - 2 - 24.33

FOR PAVEMENT DETAILS & ELEVATIONS SEE SHEET N° 2 & 68 & 69

2-INTERSTATE AND DEFENSE HIGHWAY SIGNS, FURNISHED AND ERECTED - 1@ EACH END OF WORK.

B.M.-O.M. 1175: Approx. 25 ft. E. of C.L. of E. 200TH ST. And 24 ft. N. of MONTEREY AVE. Produced. 66.40 ft. N.E. Of Top And Center of Hyd. on N.W. cor. 66.55 ft. N.W. of Center of Iron Flag Pole In Front of School Building. Elev. 608.185



REVISED 12-19-60

I-8 MONUMENT ASSEMBLY				
ITEM N°	STATION	SIDE R or L	TYPE "B" EACH	RESET EACH
1-M	3+16.81-S	℄	1 (E)	
2-M	1+70.69-S	℄	1	
3-M	1+76.33-N	℄	1	
4-M	3+38.89-N	℄	1	
5-M	0+29.86, MOHICAN	℄		1
CLEVELAND TOTAL			3	1
EUCLID (E) TOTAL			1 (E)	

STA. 3+80-S TO STA. 6+15-N CITY OF CLEVELAND	
EXCAVATION	22,579 CU. YDS.
EMBANKMENT	11,519 CU. YDS.
EMBANKMENT + 22%	14,053 CU. YDS.

L-10 SQ. YDS.				
ITEM N°	STATION FROM	STATION TO	SIDE R or L	LENGTH x WIDTH	SODDING
1-B	1+10-S	1+50-S	R	16 x 1.5	13
2-B	1+20-N	1+52-N	R	16 x 1.5	11
TOTAL					24

STA. 3+80-S TO STA. 6+15-N CITY OF EUCLID	
EXCAVATION	801 CU. YDS.
EMBANKMENT	361 CU. YDS.
EMBANKMENT + 22%	440 CU. YDS.

6" UNDERDRAIN F = FEDERAL URBAN FUND

ITEM N°	STATION FROM	STATION TO	SIDE R or L	I-4 LIN. FT. 6" CURB U.D. SHALLOW	I-4 LIN. FT. 8" PIPE OUTLET	I-5 EA. 6"x45° BEND
1-F	3+80-S	2+25-S	R	11½ E		
2-F	1+45-S	1+21-N	L&R	252	20	
3-F	2+46-S	3+30-N	L	85		
4-F	3+92-N	6+24-N	L	218/50	10	2F
5-F	3+80-S	1+83-S	L	54/158	10E	
6-F	1+30-S	1+60-N	L&R	260	20	
7-F				104/216	10E	
TOTAL CLEVELAND				50E 1075	50	2F
TOTAL (E) = EUCLID				410	20	

E = CITY OF EUCLID INTERSTATE FUND
* = 100% CITY OF EUCLID PARTICIPATION

STORM & SANITARY I-8 EACH

ITEM N°	STATION FROM	STATION TO	SIDE R or L	I-2 LIN. FT. UNDER PAVEMENT 12" CL B	15" CL B	18" CL B	21" CL B	24" CL B	30" CL B	36" CL B	42" CL B	42" CL SANI.	I-16 EA. ABANDON C.B.	M.H.	LOCATION OF STRUCTURE
				12" CL A											
1-S	1+46-S	1+15-N	L&R	44										0+00	
2-S	1+15-N	1+75-N	L&R										2	1+15-N	
3-S	3+79-S	1+00-S	L&R											3+79-S ; +73-S ; +43-S	
4-S	2+84-S	2+22-N	L&R											2+84-S ; S.M.R. 289+44 +80 ; +82 ; N.M.R. 291+57 ; +64 ; +65 ; +67	
5-S	2+30-S	4+37-N	L&R										1E	2+30-S ; S.M.R. 289+55 ; +68 ; +90 ; N.M.R. 291+93 ; +95 ; 4+37-N	
6-S	3+65-N	4+32-N	L&R										1E/3	3+65-N ; +74-N ; +81-N ; +98-N ; 4+32-N ;	
7-S	1+81-S	3+12-N	L&R											N.M.R. 292+15	
TOTAL 100% CITY OF EUCLID				44									2		
TOTAL FED. URBAN FUNDS															
TOTAL CLEVELAND															
TOTAL EUCLID															

ITEM N°	STATION FROM	STATION TO	SIDE R or L	C.B. ADJ. TO GR.	C.B. #2-2A	M.H. RE BUILT	M.H. ADJ. TO GR.	M.H. SPEC. ADJ. TO GR.	STD. M.H. #1 TYPE "A"	STD. M.H. #2 TYPE "B"	12" M.H. CL B SANI.	12" M.H. CL CL B	21" M.H. CL CL B	42" M.H. CL B	STD. M.H. No 2 DROP	STD. M.H. No 1
1-S	1+46-S	1+15-N	L&R		2			1E		1						1
2-S	1+15-N	1+75-N	L&R			2E		1E/	2							
3-S	3+79-S	1+00-S	L&R					1E		1						1
4-S	2+84-S	2+22-N	L&R					1E/	2							
5-S	2+30-S	4+37-N	L&R					1E/3		1						1
6-S	3+65-N	4+32-N	L&R													
7-S	1+81-S	3+12-N	L&R													
TOTAL 100% CITY OF EUCLID																
TOTAL FED. URBAN FUNDS																
TOTAL CLEVELAND																
TOTAL EUCLID																

ITEM N°	STATION FROM	STATION TO	SIDE R or L	M.H. RE BUILT	M.H. ADJ. TO GR.	M.H. SPEC. ADJ. TO GR.	STD. M.H. #1 TYPE "A"	STD. M.H. #2 TYPE "B"	12" M.H. CL B SANI.	12" M.H. CL CL B	21" M.H. CL CL B	42" M.H. CL B	STD. M.H. No 2 DROP	STD. M.H. No 1
1-S	1+46-S	1+15-N	L&R											
2-S	1+15-N	1+75-N	L&R											
3-S	3+79-S	1+00-S	L&R											
4-S	2+84-S	2+22-N	L&R											
5-S	2+30-S	4+37-N	L&R											
6-S	3+65-N	4+32-N	L&R											
7-S	1+81-S	3+12-N	L&R											
TOTAL 100% CITY OF EUCLID														
TOTAL FED. URBAN FUNDS														
TOTAL CLEVELAND														
TOTAL EUCLID														

* Indicates reference to 100% Euclid is removed.

PLAN & PROFILE ··· EAST 200TH ST. (RELOCATED)

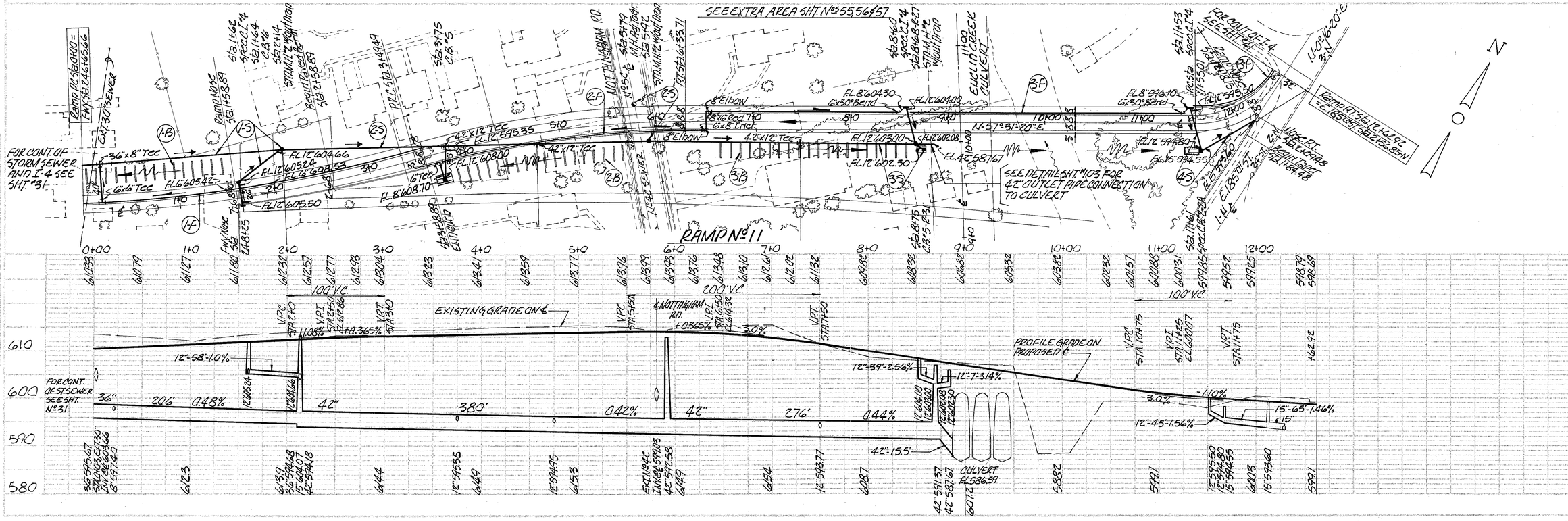
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-529 (20)	

CUYAHOGA COUNTY 44/180
CUY - 2 - 24.33

6" UNDERDRAIN												
ITEM Nº	STATION FROM	STATION TO	SIDE R OR L	I-4 LIN. FT. 6" U.D. SHALLOW	I-4 LIN. FT. 6" U.D. DEEP	I-4 LIN. FT. 6" CURB U.D. SHALLOW	I-4 LIN. FT. 8" PIPE OUTLET		I-5 SPECIAL 6" x 30° BEND	I-5 SPECIAL 6" x 6" TEE		
1-F	0+05	3+59	L	156	194		40			1		
2-F	3+59	6+50	R	300			10			1		
3-F	6+50	12+63	L	476		96	16		2			
TOTAL				932	194	96	66		2	2		

STORM SEWER																													
ITEM Nº	STATION FROM	STATION TO	SIDE R OR L	I-2 LIN. FT. 12" CL A	I-2 LIN. FT. 12" CL B	I-2 LIN. FT. 36" CL B 6.6b	I-2 LIN. FT. 42" CL B 6.6C	I-2 LIN. FT. 42" CL B 6.4d	I-2 LIN. FT. 15" CL B		UNDER PAV'T. 8" CL A 6.5b OR 6.8b	UNDER PAV'T. 12" CL A 6.6C	UNDER PAV'T. 12" CL B	UNDER PAV'T. 42" CL B 6.6C		I-5 SPECIAL U.P. 42" x 12" TEE CLB 6.6C		I-5 SPECIAL 36" x 8" TEE CL B 6.6b	I-5 SPECIAL 42" x 12" TEE CL B 6.6C	I-5 SPECIAL 8" x 90° EL-BOW CL A	I-5 SPECIAL 6" x 8" INCR. CL A	I-5 SPECIAL 8" x 6" RED. CL A		I-8 EACH CB #6	I-8 EACH CB #5	I-8 EACH SPEC. C.I. #4	I-8 EACH STD. M.H. #2 W/OUT DROP	I-8 EACH M.H. ADJ. TO GR.	I-8 EACH SPEC. C.B. "2-2A	LOCATION OF STRUCTURE
1-S	0+00	2+14	L&R		55	200							24						1						1		1	1			1+62 ; +64 ; 2+14
2-S	2+14	5+92	L&R									34		368		2										1		1	1		3+75 ; 5+79 ; +92
3-S	5+92	8+84	L&R	4			268	16			18		36							1	2	1	1			1	1	1			8+60 ; +68 ; +75
4-S	11+53	12+18	L&R						63				43														1			1	11+53 ; +61
TOTAL				4	55	200	268	16	63		18	34	103	368		2		1	1	2	1	1		1	2	3	3	1	1	

L-10 SQ. YDS.					
ITEM Nº	STATION FROM	STATION TO	SIDE R OR L	LENGTH x WIDTH	SODDING
1-B	0+05	1+50	L	16' x 1.5'	40
2-B	3+90	5+65	R	16' x 1.5'	48
3-B	6+66	8+56	R	16' x 1.5'	53
TOTAL					141

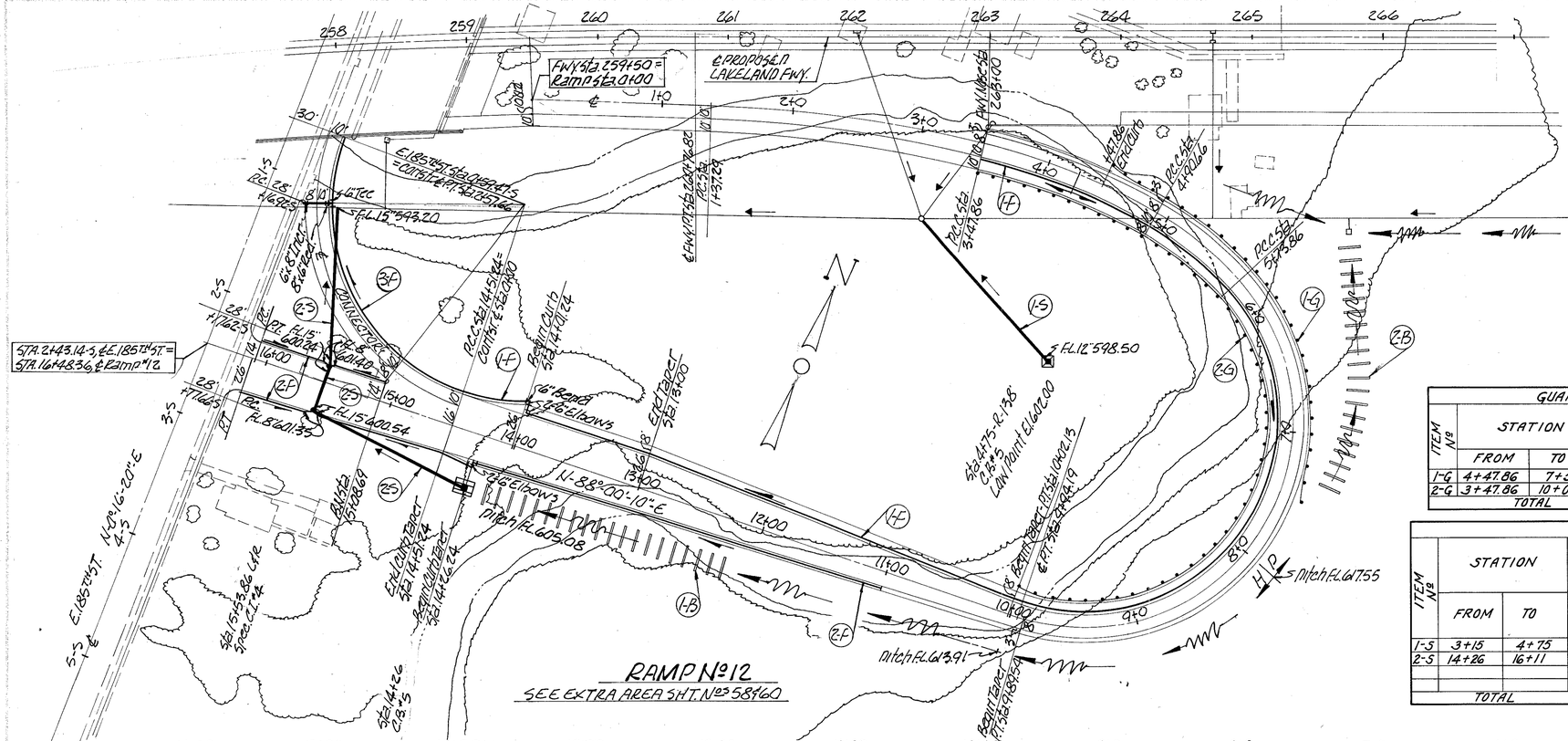


PLAN & PROFILE ··· RAMP NO. 11

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

CUYAHOGA COUNTY
CUY. 2-24.33

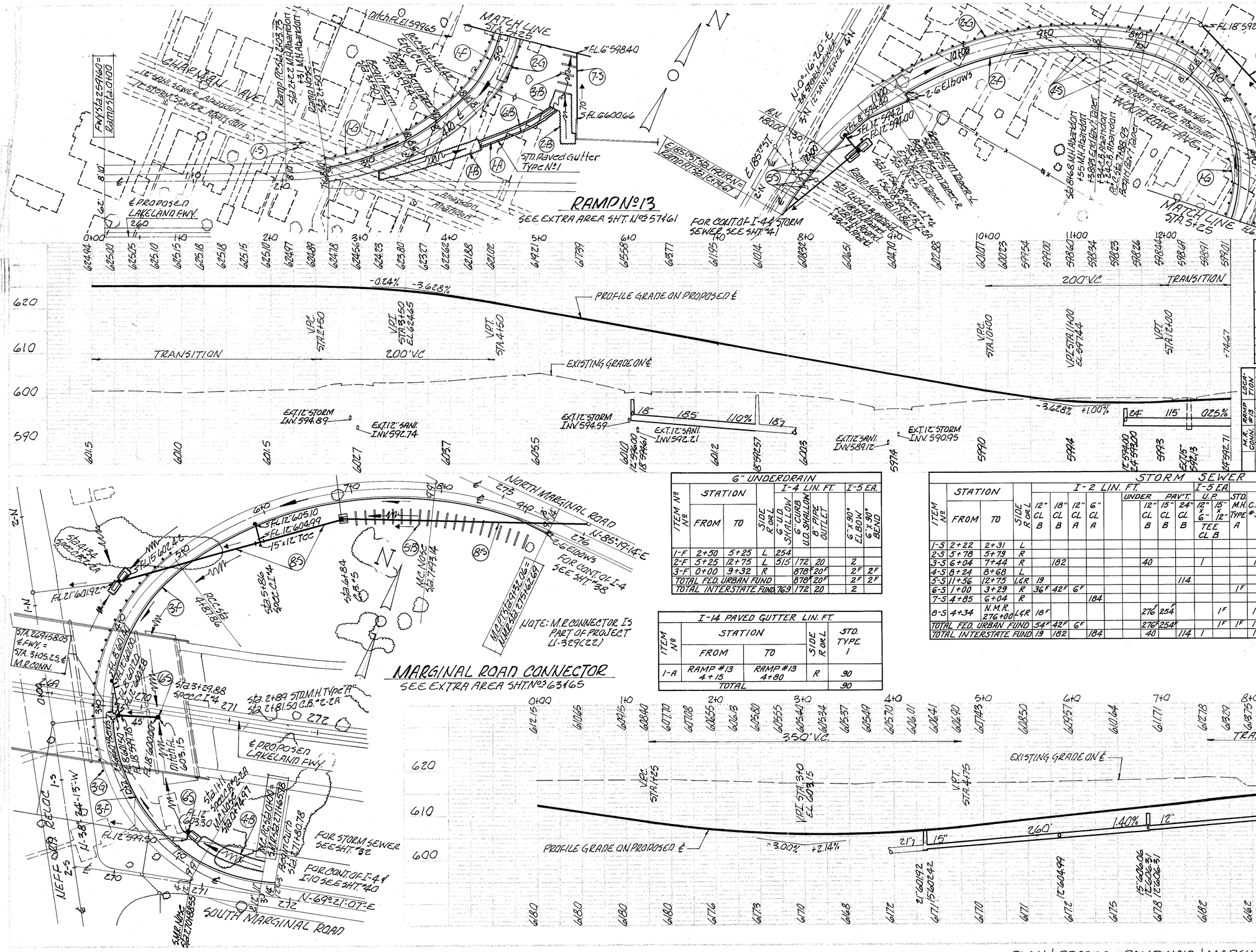
45
184


E. PROPOSED LAKELAND FWY.
FWY Sta 259+50 = Ramp Sta 0+00
E 185TH ST Sta 9+44.75 = Contact ℄ 1+50.85 Ahead
STA. 2+43.14-3, ℄ E. 185TH ST. = STA. 16+48.36, ℄ Ramp "12"
PC Sta 1+45.64 = Contact ℄ 1+52.08 Ahead
PC Sta 3+41.86
PC Sta 4+90.66
PC Sta 5+58.86
PT Sta 4+90.66
PT Sta 3+41.86
PC Sta 1+51.29
PT Sta 1+51.29
PC Sta 1+45.64
PT Sta 1+52.08
Beg. Curb Sta 1+47.24
End Taper Sta 1+13.00
Beg. Taper Sta 14+26.24
End Taper Sta 14+53.24
Beg. Taper Sta 14+26.24
Ballast Sta 15+28.69
Sta 15+53.86 Grd. Spec. 21.42
Sta 14+26 C.I. #5
Sta 1+38 C.I. #5
Sta 4+75 C.I. #5
Beg. Taper Sta 9+94.19
End Taper Sta 9+94.19
Beg. Taper Sta 10+19.91
End Taper Sta 10+19.91
Sta 10+38.91 C.I. #5
Sta 10+38.91 C.I. #5
Sta 10+38.91 C.I. #5

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

46

CUYAHOGA COUNTY
CUY. 2-24.33



GUARD RAIL				
ITEM No	STATION FROM	STATION TO	SIDE R OR L	I-15 LIN. FT. STEEL BEAM TYPE (DEEP) STD. DESIGN STD. DWG. No 2A
1-G	RAMP #13 2+50.77	RAMP #13 6+00	L	349.23
2-G	RAMP #13 4+42.42	RAMP #13 11+00	R	657.58
3-G	M.R. CONN. 2+38	M.R. CONN. 4+87.86	R	249.86 (F)
INTERSTATE FUNDS TOTAL				1006.81
FED. URBAN FUNDS TOTAL				249.86 (F)

L-10 SQ. YDS.						
LOCATION	ITEM No	STATION FROM	STATION TO	SIDE R OR L	LENGTH x WIDTH	SODDING
RAMP #13	1-B	3+05	4+15	R	120' x 12'	160
	2-B	4+65	4+95	R	65' x 12'	87
	3-B	4+95	6+60	L	16' x 1.5'	59
M.R. CONN.	4-B	0+00	0+90	R	80' x 12'	107 F
	5-B	7+00	9+13	R	16' x 1.5'	53 F
	6-B	18" STRIP ALONG PAVED GUTTER				30
INTERSTATE FUNDS TOTAL						336
FEDERAL URBAN FUNDS TOTAL (F)						160 F

6" UNDERDRAIN								
ITEM No	STATION FROM	STATION TO	SIDE R OR L	I-4 LIN. FT. 6" U.D. SHALLOW	I-4 LIN. FT. 6" CURB U.D. SHALLOW	I-4 LIN. FT. 8" PIPE OUTLET	I-5 EA. 6" x 90° ELBOW	I-5 EA. 6" x 90° BEND
1-F	2+50	5+25	L	254				
2-F	5+25	12+75	L	515	172	20	2	
3-F	0+00	9+32	R		878 F	20 F	2 F	2 F
TOTAL FED. URBAN FUND					878 F	20 F	2 F	2 F
TOTAL INTERSTATE FUND				769	172	20	2	

I-14 PAVED GUTTER LIN. FT.				
ITEM No	STATION FROM	STATION TO	SIDE R OR L	STD. TYPE 1
1-A	RAMP #13 4+15	RAMP #13 4+80	R	90
TOTAL				90

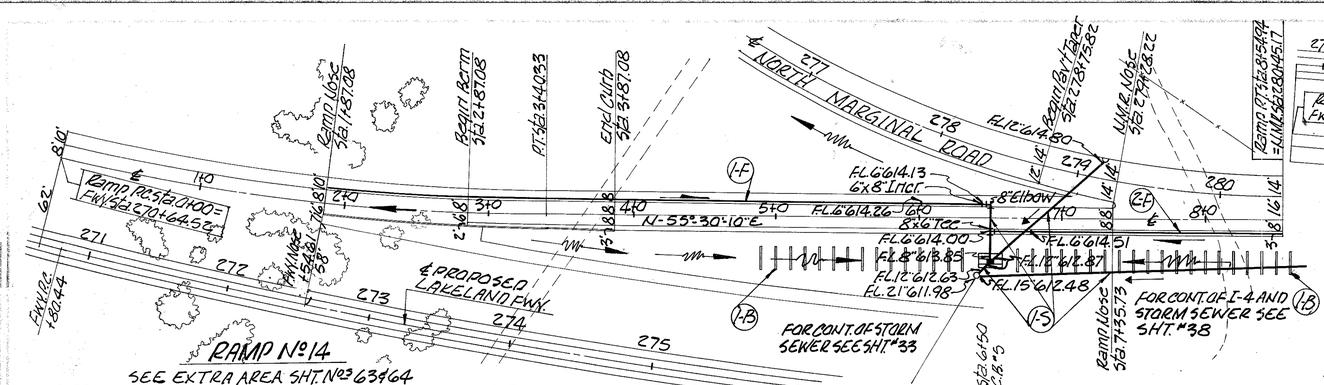
STORM SEWER																									
ITEM No	STATION FROM	STATION TO	SIDE R OR L	I-2 LIN. FT. 12" CL B	I-2 LIN. FT. 18" CL B	I-2 LIN. FT. 12" CL A	I-2 LIN. FT. 6" CL A	I-2 LIN. FT. UNDER PAV'T.	I-2 LIN. FT. UNDER PAV'T. 12" CL B	I-2 LIN. FT. UNDER PAV'T. 15" CL B	I-2 LIN. FT. UNDER PAV'T. 24" CL B	I-5 EA. U.P. 12" x 6" TEE CL B	I-5 EA. U.P. 15" x 12" TEE CL B	I-8 EACH STD. M.H. TYPE A	I-8 EACH C.B. #5	I-8 EACH C.B. #6	I-8 EACH SPEC. C.I. #4	I-8 EACH C.B. #2-2A	I-8 EACH SPEC. C.B. #2-2A	I-16 EA. ABANDON M.H.	I-16 EA. ABANDON C.B.	LOCATION OF STRUCTURE
1-S	2+22	2+31	L																	2		2+22; +31
2-S	5+78	5+79	R																	2		5+78; +79
3-S	6+04	7+44	R		182				40			1			1	1						RAMP #13-6+04; GLENFIELD, 3+47
4-S	8+24	8+68	L																	2	2	8+24; +34; +55; +68
5-S	11+56	12+75	L&R	19							114						1		1	2	2	11+56.78; 12+09; +18; +28; +33
6-S	1+00	3+29	R	36 F	42 F	6 F								1 F			1 F	1 F	1 F			1+11; 2+81.50; 2+89; 3+29.88
7-S	4+85	6+04	R				184															
8-S	4+34	N.M.R. 276+00	L&R	18 F					276 F	254 F			1 F		1 F		1 F		1 F			4+34; 5+86; 6+84
TOTAL FED. URBAN FUND				54 F	42 F	6 F			276 F	254 F			1 F	1 F	1 F		2 F	1 F	2 F			
TOTAL INTERSTATE FUND				19	182		184		40		114	1			1	1	1		1	8	4	

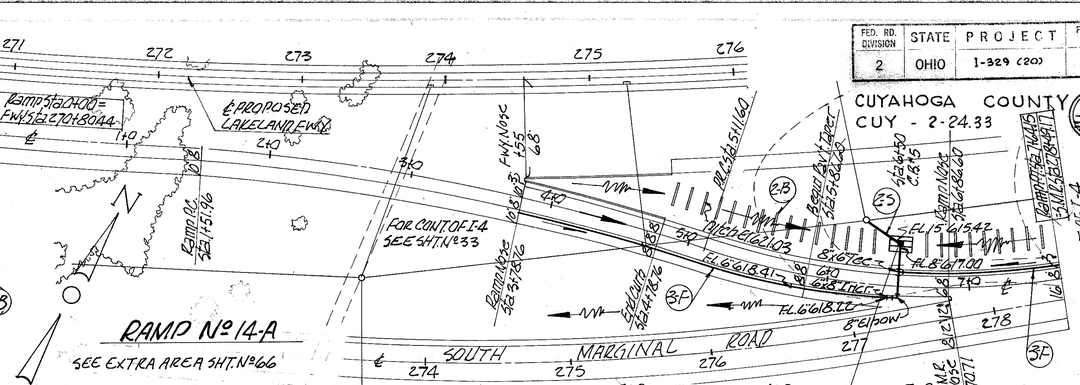
PLAN & PROFILE --- RAMP No 13 & MARGINAL ROAD CONNECTOR AT NEFF ROAD

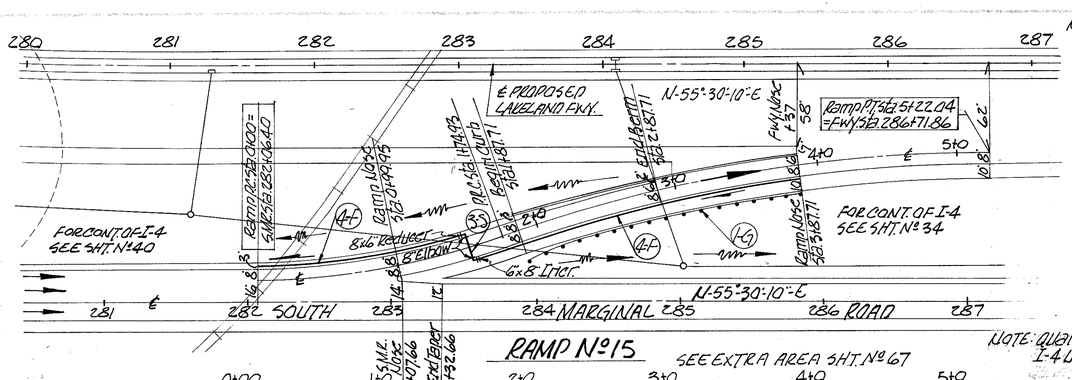
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY - 2-24.33

47
180

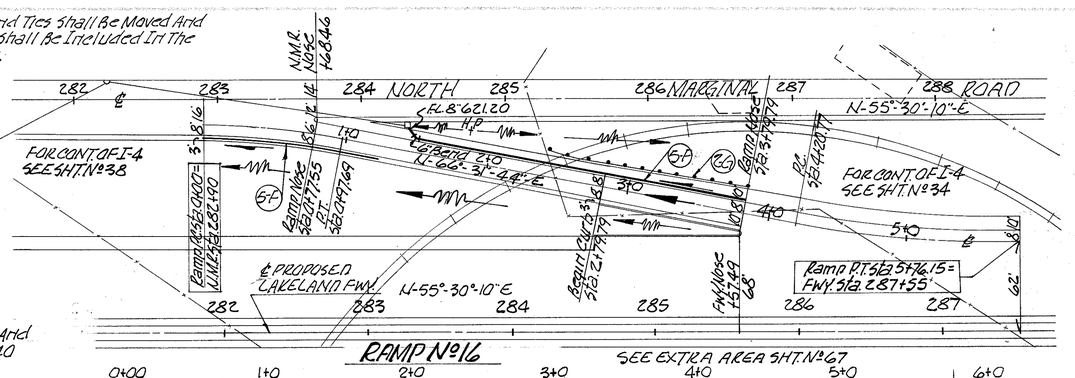






NOTE: Railroad Tracks And Ties Shall Be Moved And Disposed Of. Cost Shall Be Included In The Cost Of Item E-1.

NOTE: quantities for storm sewer And I-4 Underdrain, see SHT. Nº40



L-10 SQ. YDS.

ITEM No.	STATION FROM	STATION TO	SIDE R or L	LENGTH x WIDTH	SODDING
1-B	RAMP Nº14 4+90	8+60	R	16x1.5	93
2-B	RAMP Nº14-A 4+80	7+55	L	16x1.5	64
TOTAL THIS SHT.					157

GUARD RAIL

ITEM Nº	STATION FROM	STATION TO	SIDE R or L	I-15 LIN. FT. STEEL BEAM TYPE (DEEP) STD. DESIGN STD. DWG. Nº 2A
1-G	RAMP #15 1+87.71	3+87.71	R	200.00
2-G	RAMP #16 2+40	3+79.79	L	139.79
TOTAL				339.79

PLAN & PROFILE ··· RAMP NO. 14, RAMP NO. 14A, RAMP NO. 15 AND RAMP NO. 16

R-15

21-8

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

18 180

CUYAHOGA COUNTY
CUY. 2- 24.33

EUCLID CREEK

MOLINA DRIVE

UNDERWOOD AVE.

ROAD

MARGINAL

NORTH

185TH STREET

RAMP NO. 13

GLENFIELD RD.

NEFF ROAD

RELOCATED

EAST

RAMP NO. 11

RAMP

LAKELAND FREEWAY

TURNAROUND

LOW PT. 594.61

LOW PT. 596.70

H.P. 599.69

599.51

2:1

2:1 SLOPE

SEE SHEET NO. 49 FOR GRADING SOUTH OF FREEWAY

N

LEGEND

——— EXISTING CONTOURS

—615— PROPOSED CONTOURS

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

GRADING PLAN
FREEWAY AT EAST 185TH STREET, RAMPS #11 & #13 & EUCLID CREEK CULVERT

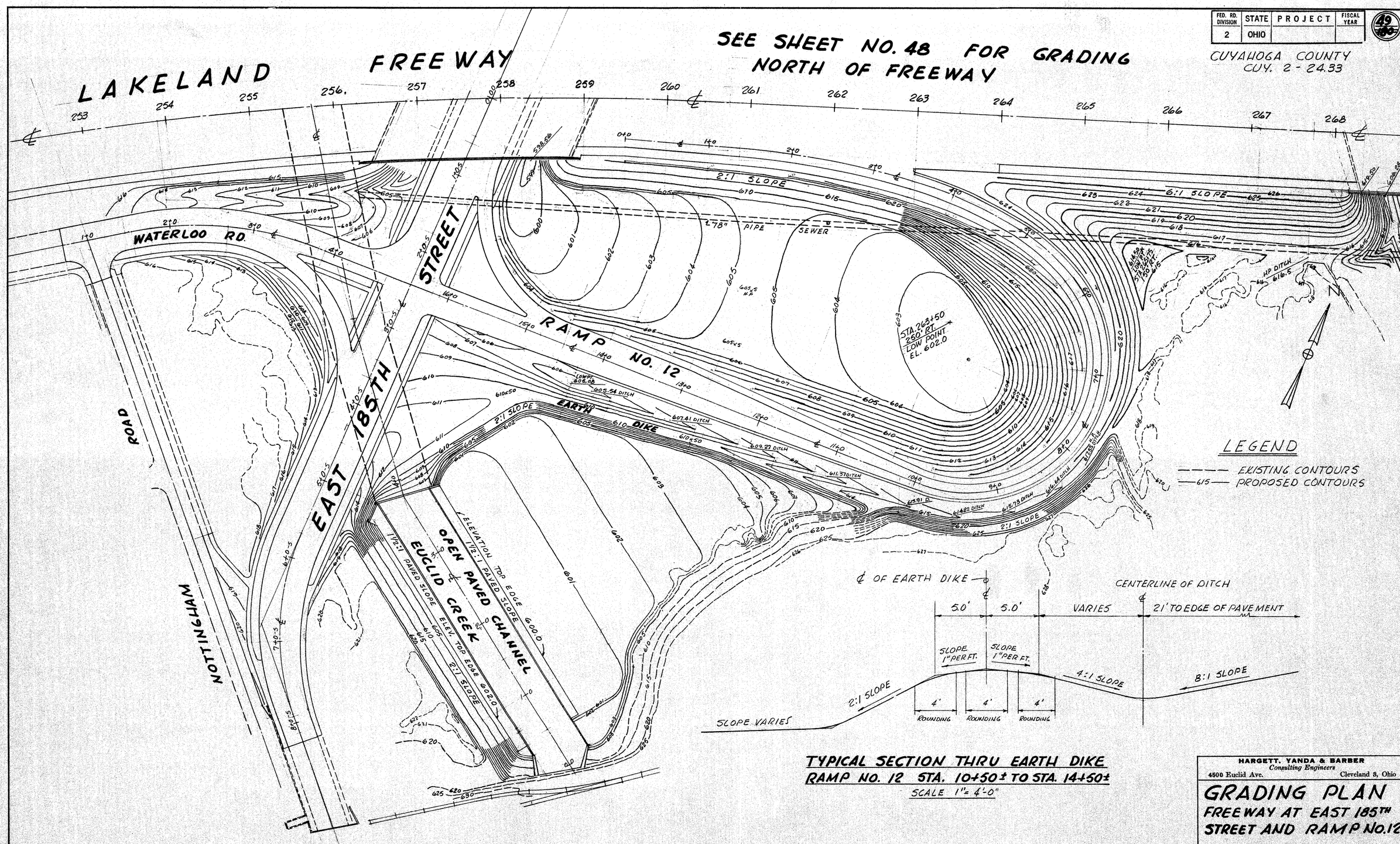
SCALE 1" = 50'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

49

CUYAHOGA COUNTY
CUY. 2 - 24.33



TYPICAL SECTION THRU EARTH DIKE
RAMP NO. 12 STA. 10+50± TO STA. 14+50±
SCALE 1" = 4'-0"

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

GRADING PLAN
FREEWAY AT EAST 185TH STREET AND RAMP No. 12.

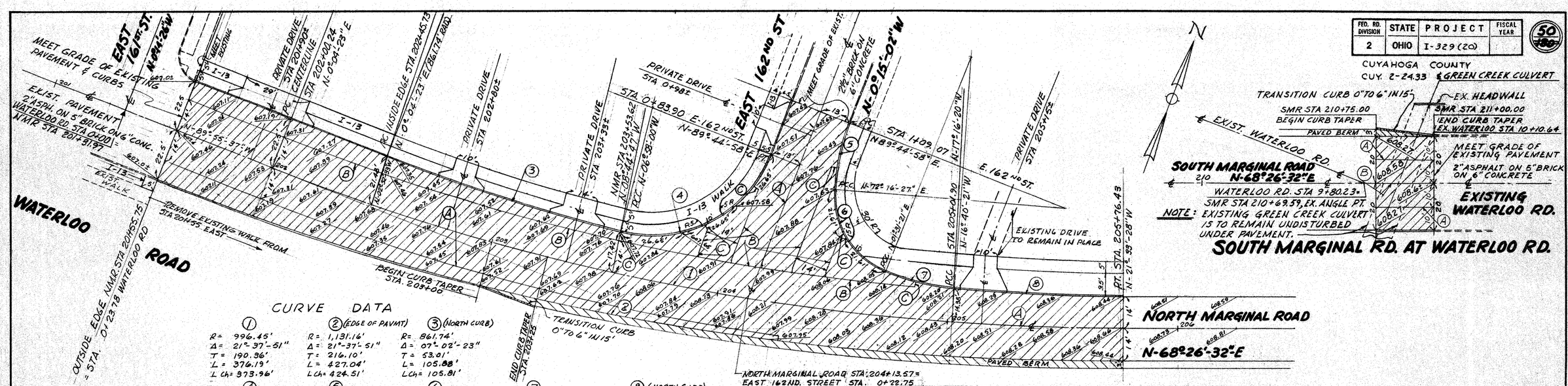
SCALE 1" = 50'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

50
186

CUYAHOGA COUNTY
CUY. 2-24.33



GREEN CREEK CULVERT

SOUTH MARGINAL RD. AT WATERLOO RD.

CURVE DATA

①	② (EDGE OF PAVMT)	③ (NORTH CURB)
R= 996.45'	R= 1,131.16'	R= 861.74'
Δ= 21°-37'-51"	Δ= 21°-37'-51"	Δ= 07°-02'-23"
T= 190.36'	T= 216.10'	T= 53.01'
L= 376.19'	L= 427.04'	L= 105.88'
L Ch= 373.96'	L Ch= 424.51'	L Ch= 105.81'

④	⑤	⑥
R= 55.00'	R= 100.00'	R= 35.00'
Δ= 83°-17'-02"	Δ= 17°-28'-31"	Δ= 70°-45'-06"
T= 48.90	T= 15.37'	T= 24.85'
L= 79.95	L= 30.50'	L= 43.22'
L Ch= 73.09'	L Ch= 30.38'	L Ch= 40.53'

⑨	⑩	⑪
R= 10.00'	R= 10.00'	R= 100.00
Δ= 158°-41'-34"	Δ= 90°-00'-05"	Δ= 17°-28'-31"
T= 53.16'	T= 10.00'	T= 15.37'
L= 27.70'	L= 15.71'	L= 30.50'
L Ch= 19.66'	L Ch= 14.14'	L Ch= 30.38'

⑦	⑧ (NORTH CURB)
R= 100.00'	R= 861.74'
Δ= 18°-11'-42"	Δ= 04°-53'-07"
T= 16.01'	T= 36.76'
L= 31.76'	L= 73.48'
L Ch= 31.62'	L Ch= 73.45'

⑫	⑬
R= 35.00'	R= 100.00'
Δ= 76°-21'-19"	Δ= 17°-28'-31"
T= 27.52'	T= 15.37'
L= 46.64'	L= 30.50'
L Ch= 43.27'	L Ch= 30.38'

⑭	⑮	⑯	⑰
R= 55.00'	R= 100.00'	R= 35.00'	R= 100.00'
Δ= 68°-40'-48"	Δ= 17°-28'-31"	Δ= 76°-22'-10"	Δ= 17°-28'-31"
T= 37.57'	T= 15.37'	T= 27.53'	T= 15.37'
L= 65.93'	L= 30.50'	L= 46.65'	L= 30.50'
L Ch= 62.05'	L Ch= 30.38'	L Ch= 43.27'	L Ch= 30.38'

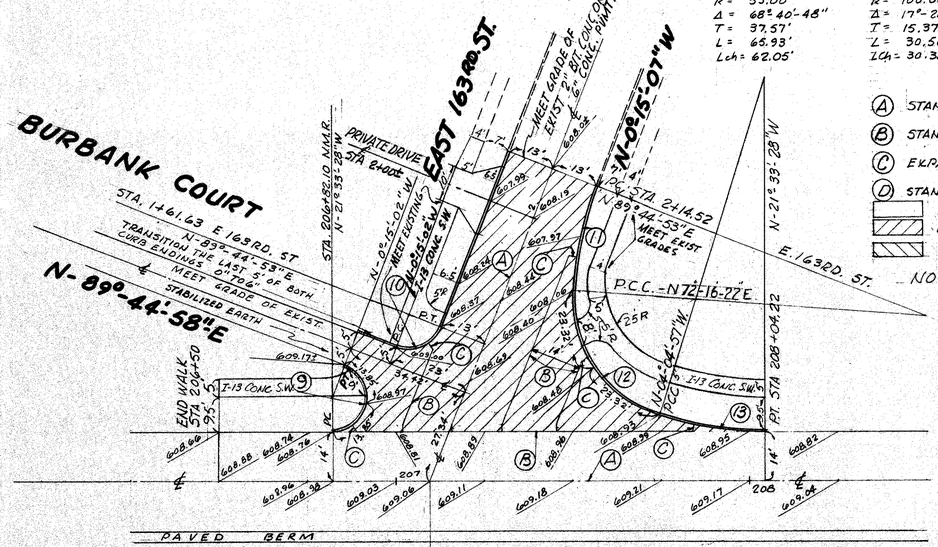
SUMMARY OF QUANTITIES

DESCRIPTION	I-11 LIN. FT. SANDSTONE CURB RADIAL	I-11 LIN. FT. SANDSTONE CURB STRAIGHT	I-13 Sq. Ft. 4" CONCRETE SIDEWALK	I-18 CU. YD. 5" STABILIZED CRUSHED AGGREGATE APPROACHES & SHOULDERS	I-22 CU. YD. SUB-BASE GRADING A OR B	B-219 CU. YDS. 3" WATERPROOFED AGGREGATE BASE COURSE	T-31 BITUMINUS SURFACE TREATMENT #6 AGGREGATE Cu. YD.	T-31 BITUMINUS SURFACE TREATMENT BITUMINOUS MATERIAL AS PER PLANS GALS.	T-70 SQ. YDS. PORTLAND CEMENT CONCRETE PAVEMENT 6"	T-71 SQ. YDS. PORTLAND CEMENT CONCRETE PAVEMENT 9" REINF.
S.M.R	—	25.18	—	0.58	19.45	0.35	0.03	1.04	—	111.11
E.162ND C.N.M.R.	123.17	528.77	2,027.52	13.43	370.74	7.46	0.71	22.38	100.67	2026.67
E.163RD	90.05	125.31	1,024.75	—	67.71	—	—	—	16.11	389.56
E.165TH	112.58	108.71	1037.05	—	65.55	—	—	—	16.11	376.44
TOTALS	325.80	787.97	4,089.32	14.01	523.45	7.81	0.74	23.42	132.89	2903.78

LEGEND

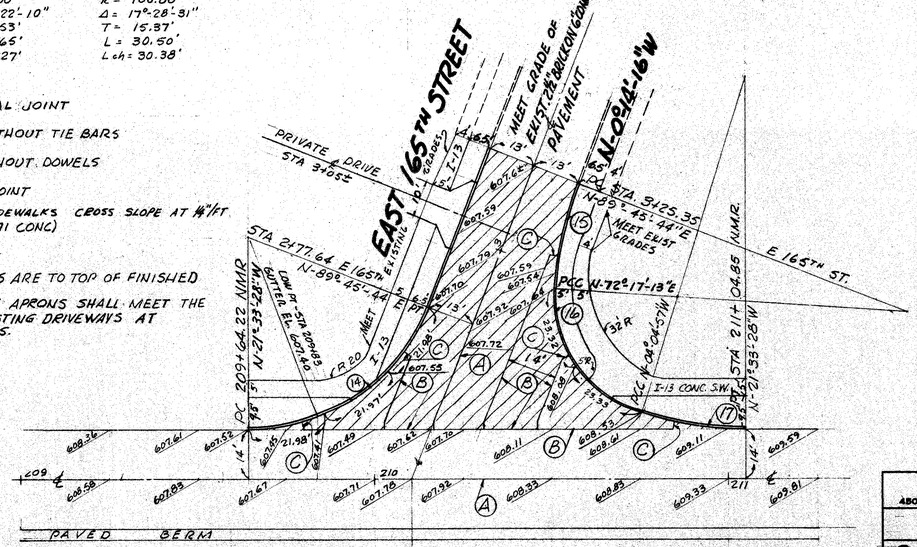
- (A) STANDARD LONGITUDINAL JOINT
- (B) STANDARD KEY JOINT WITHOUT TIE BARS
- (C) EXPANSION JOINT WITHOUT DOWELS
- (D) STANDARD EXPANSION JOINT
- 4" CONCRETE I-13 SIDEWALKS CROSS SLOPE AT ¼" / FT.
- NEW PAVEMENT (T-71 CONC)
- PAVED BERM

NOTE: ALL ELEVATIONS ARE TO TOP OF FINISHED PAVEMENT. NEW DRIVEWAY APRONS SHALL MEET THE GRADE OF EXISTING DRIVEWAYS AT BACK OF APRONS.



NORTH MARGINAL ROAD STA. 207+09.68 = EAST 163 RD. STREET STA. 1+19.29

NORTH MARGINAL ROAD N-68°26'-32"E



NORTH MARGINAL ROAD STA. 210+10.29 = EAST 165TH STREET STA. 2+30.11

NORTH MARGINAL ROAD N-68°-26'-32"E

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Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

EXTRA AREA DETAILS

S.M.R. AT EXIST. WATERLOO RD.
INT. N. MARG. RD. WITH E. 162ND E. 163RD. E. 165TH STREETS & WATERLOO ROAD

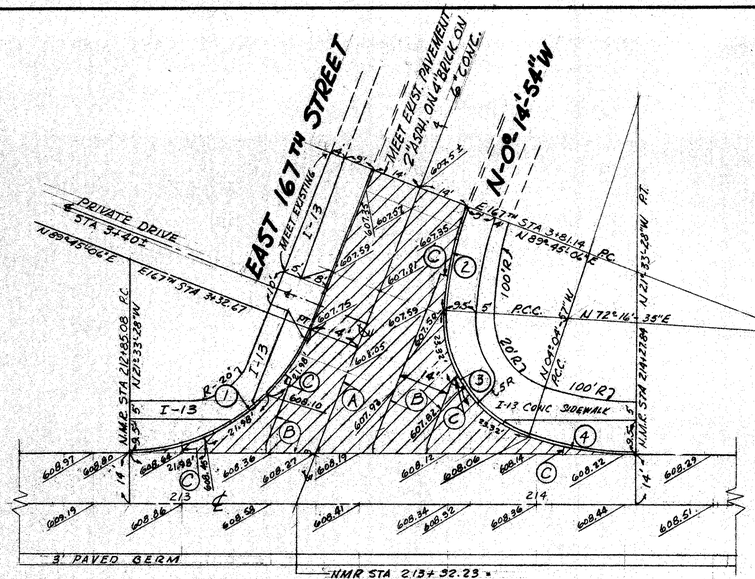
SCALE 1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY. 2-24.33

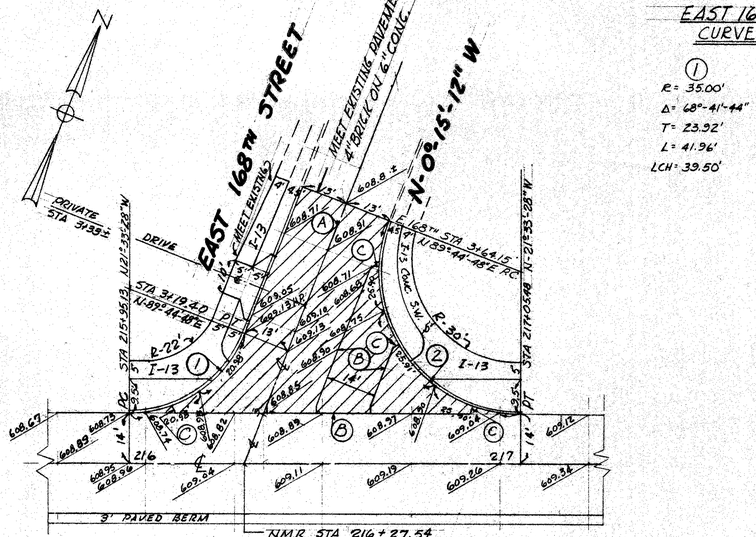
51
183



EAST 167TH ST.
CURVE DATA

①	②
R = 55.00'	R = 100.00'
Δ = 68°-41'-26"	Δ = 17°28'-31"
T = 37.58'	T = 15.37'
L = 65.94'	L = 30.50'
LCH = 62.06'	LCH = 30.38'
③	④
R = 35.00'	R = 100.00'
Δ = 76°-21'-32"	Δ = 17°-28'31"
T = 27.52'	T = 15.37'
L = 46.64'	L = 30.50'
LCH = 43.27'	LCH = 30.38'

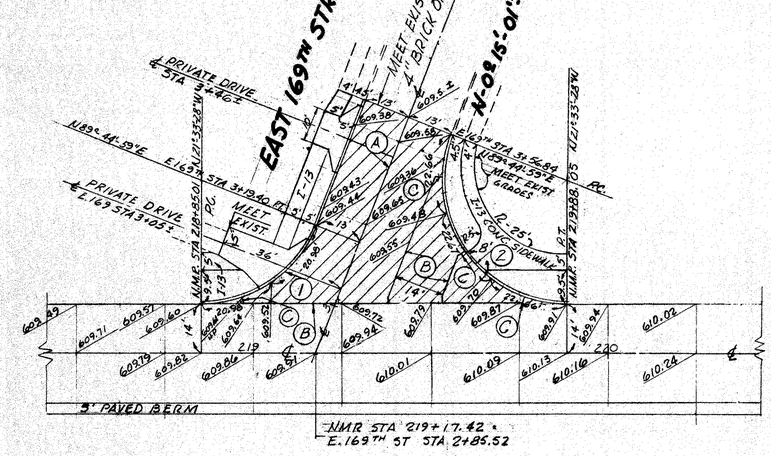
NORTH MARGINAL ROAD N-68°-26'-32"-E



EAST 168TH ST.
CURVE DATA

①	②
R = 35.00'	R = 40.00'
Δ = 68°-41'-44"	Δ = 111°-18'-16"
T = 23.92'	T = 58.53'
L = 41.96'	L = 77.71'
LCH = 39.50'	LCH = 66.05'

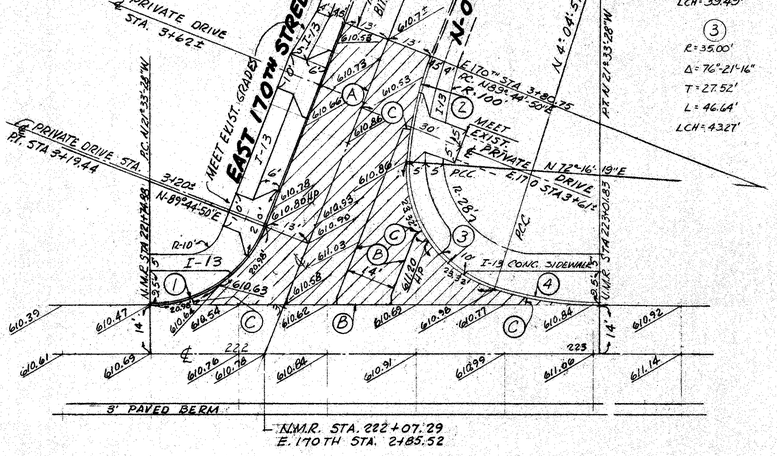
NORTH MARGINAL ROAD N-68°-26'-32"-E



EAST 169TH ST.
CURVE DATA

①	②
R = 35.00'	R = 35.00'
Δ = 68°41'-33"	Δ = 111°-18'-27"
T = 23.92'	T = 51.22'
L = 41.96'	L = 67.99'
LCH = 39.49	LCH = 57.80

NORTH MARGINAL ROAD N-68°-26'-32"-E



EAST 170TH. ST
CURVE DATA

①	②
R=35.00'	R=100.00'
Δ=68°-41'42"	Δ=17°-28'-31"
T=23.92'	T=15.37'
L=41.96'	L=30.50'
LCH=39.49'	LCH=30.38'
③	④
R=35.00'	R=100.00'
Δ=76°-21'-16"	Δ=17°-28'-31"
T=27.52'	T=15.37'
L=46.64'	L=30.50'
LCH=43.27'	LCH=30.38

NORTH MARGINAL ROAD N-68°-26'-32"-E

SUMMARY OF QUANTITIES

DESCRIPTION	I-13 SQ. FT. 4" CONCRETE SIDEWALK	I-12 CU. YD. SUB-BASE GRADING A OR B	T-70 SQ. YDS. PORTLAND CEMENT CONCRETE PAVEMENT 6"	T-71 SQ. YDS. PORTLAND CEMENT CONCRETE PAVEMENT 9" REINF.	I-11 LIN. FT. SANDSTONE CURB RADIAL	I-11 LIN. FT. SANDSTONE CURB STRAIGHT
E167TH St.	1,110.28	67.83	18.61	388.44	112.58	109.47
E168TH St.	770.68	49.37	13.61	282.61	119.67	44.75
E169TH St.	541.28	44.95	36.94	241.04	109.95	37.44
E170TH St	892.55	64.93	48.61	351.33	88.60	122.31
TOTALS	3,314.79	227.08	117.77	1,263.42	430.80	313.97

LEGEND

- (A) STANDARD LONGITUDINAL JOINT
- (B) STANDARD KEY JOINT WITHOUT TIE BARS
- (C) EXPANSION JOINT WITHOUT DOWELS
- (D) STANDARD EXPANSION JOINT

NEW PAVEMENT (T-71 CONCRETE)
4" CONCEETE I-13 SIDEWALKS
CROSS SLOPE AT 4"/FT

NOTE: ALL ELEVATIONS ARE TO THE TOP OF FINISHED PAVEMENT.

NEW DRIVEWAY APRONS SHALL MEET THE GRADE OF EXISTING DRIVEWAYS AT BACK OF APRONS, UNLESS OTHERWISE INDICATED.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

EXTRA AREA DETAILS

INTERSECTION OF NORTH MARGINAL ROAD WITH E.167TH, E.168TH, E.169TH & E.170TH STREETS

SCALE: 1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

PED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

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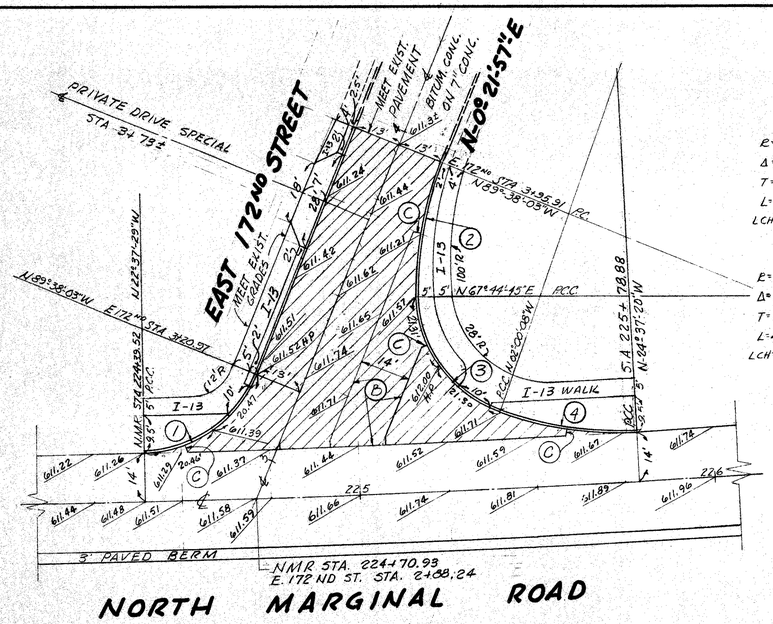
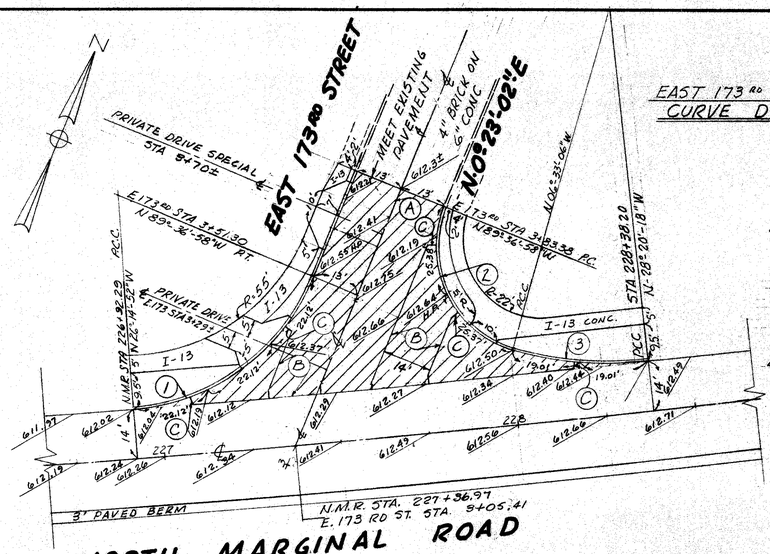
CUYAHOGA COUNTY
CUY. 2-24.33



EAST 172 ND ST
CURVE DATA

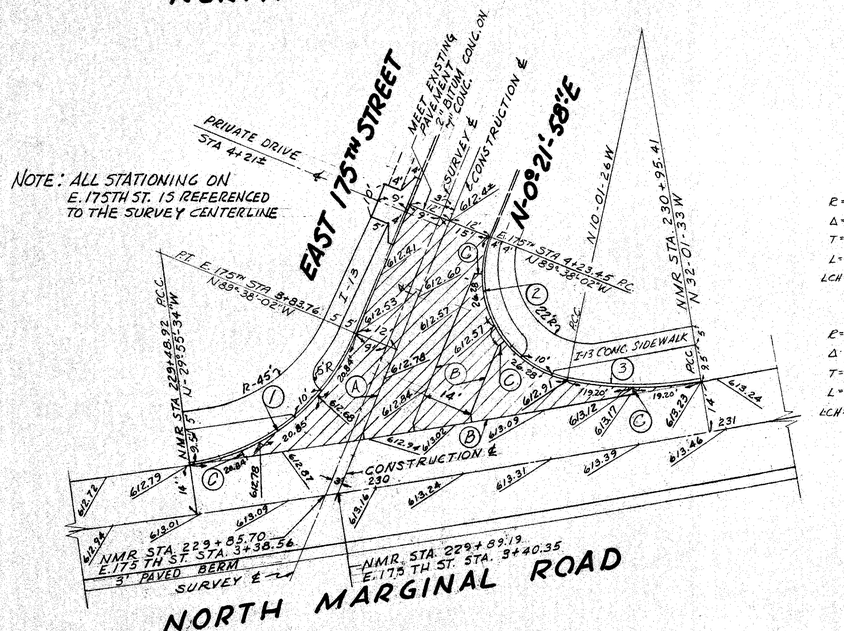
①	②
R= 35.00'	R= 100.00'
Δ= 67°-00'-34"	Δ= 22°-37'-12"
T= 23.24'	T= 20.00'
L= 40.93'	L= 39.48'
LCH= 38.73'	LCH= 39.22'

③	④
R= 35.00'	R= 100.00'
Δ= 69°-44'-53"	Δ= 22°-37'-12"
T= 24.35'	T= 20.00'
L= 42.61'	L= 39.48'
LCH= 40.02	LCH= 39.22'



EAST 173 RD ST.
CURVE DATA

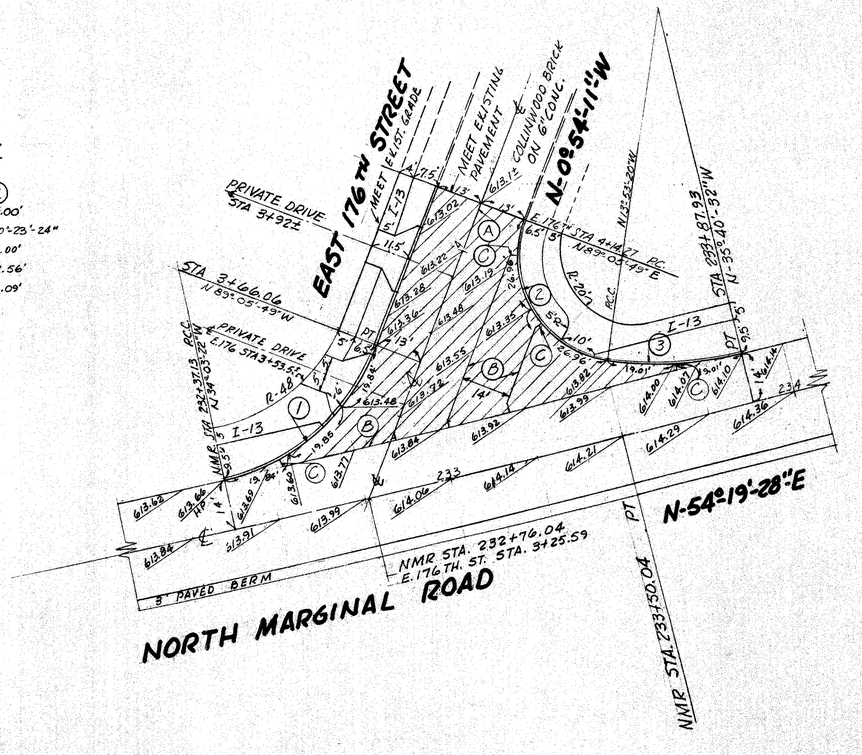
①	②	③
R= 60.00'	R= 30.00'	R= 100.00'
Δ= 63°-22'-06"	Δ= 96°-56'-08"	Δ= 21°-47'-12"
T= 37.03'	T= 33.87'	T= 19.25'
L= 66.36'	L= 50.75'	L= 38.02'
LCH= 63.03'	LCH= 44.91'	LCH= 37.80'



EAST 175 TH ST
CURVE DATA

①	②
R= 60.00'	R= 30.00'
Δ= 59°-42'-28"	Δ= 100°-23'-24"
T= 34.44'	T= 36.00'
L= 62.53'	L= 52.56'
LCH= 59.73'	LCH= 46.09'

③
R= 100.00'
Δ= 22°-00'-07"
T= 19.44'
L= 38.40'
LCH= 38.17



EAST 176 TH ST.
CURVE DATA

①	②	③
R= 60.00'	R= 30.00'	R= 100.00'
Δ= 54°-50'-49"	Δ= 102°-59'-09"	Δ= 21°-47'-12"
T= 32.47'	T= 37.71'	T= 19.25'
L= 57.53'	L= 53.92'	L= 38.02'
LCH= 57.12'	LCH= 46.96	LCH= 37.80'

LEGEND

- (A) STANDARD LONGITUDINAL JOINT
- (B) STANDARD KEY JOINT WITHOUT TIE BARS
- (C) EXPANSION JOINT WITHOUT DOWELS
- (D) STANDARD EXPANSION JOINT
- NEW PAVEMENT (T-71 CONCRETE)
- 4" CONCRETE I-13 SIDEWALKS
  CROSS SLOPE AT 4"/FT.

SUMMARY OF QUANTITIES

DESCRIPTION	I-13 Sq.Ft. 4" Concrete Sidewalk	I-22 Cu.Yd. Sub-base Grading A or B	T-70 Sq.Yds. Portland Cement Concrete Pavement 6"	T-71 Sq.Yds. Portland Cement Concrete Pavement 9" Reinf.	I-11 Lin.Ft. Sandstone Curb Radial	I-11 Lin.Ft. Sandstone Curb Straight
E.172ND St.	1047.25	74.04	17.17	426.22	83.54	153.90
E.173RD St.	889.25	53.54	11.39	308.44	50.75	136.46
E.175TH St.	995.20	54.32	11.94	312.44	52.56	148.17
E.176TH St.	1004.42	60.49	16.11	346.67	53.92	145.76
Totals	3936.12	242.39	56.61	1393.77	240.77	584.29

NOTE: NEW DRIVEWAY APRONS SHALL MEET THE GRADE OF EXISTING DRIVEWAYS AT BACK OF APRONS. ALL ELEVATIONS ARE TO THE TOP OF FINISHED PAVEMENT.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

EXTRA AREA DETAILS
INTERSECTION OF NORTH MARGINAL ROAD WITH E.172ND, E.173RD, E.175TH & E.176TH STREETS

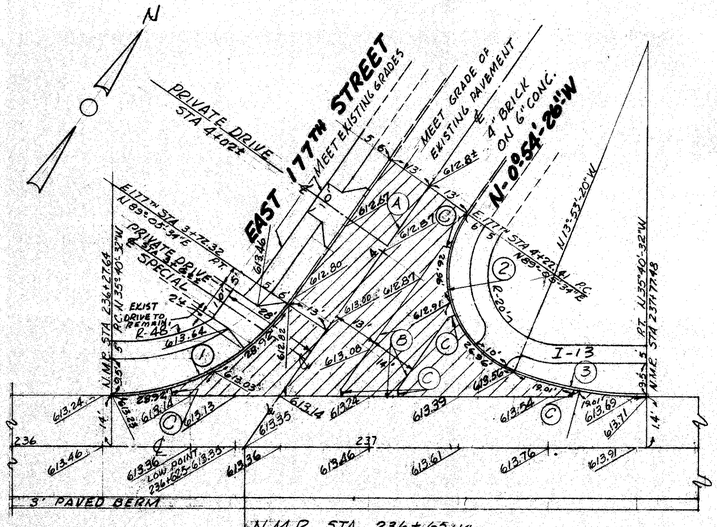
SCALE: 1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

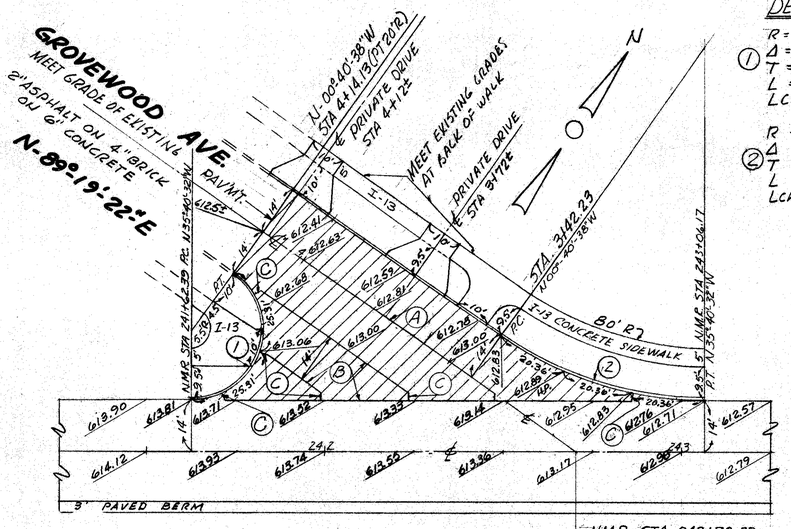
53
186

CUYAHOGA COUNTY
CUY 2 - 24.33



NORTH MARGINAL ROAD N-54°19'-28"-E

N.M.R. STA. 236+65.14
E. 177 TH. ST. STA. 3+32.91



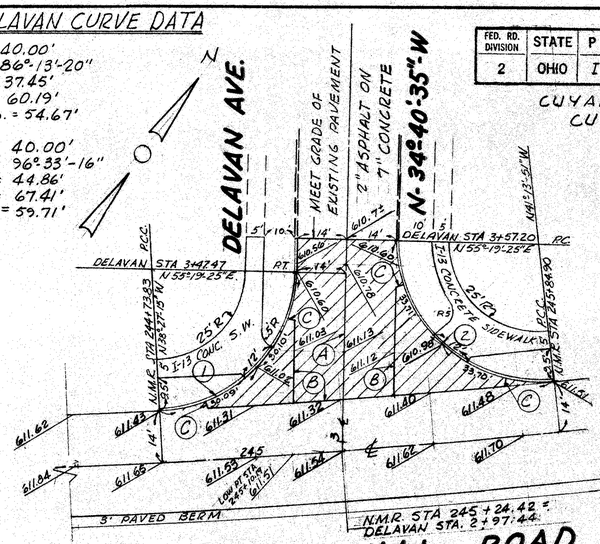
NORTH MARGINAL ROAD N-54°19'-28"-E

N.M.R. STA 242+70.23 =
GROVEWOOD STA. 3+06.25

DELAVAN CURVE DATA

① R = 40.00'
Δ = 86°-13'-20"
T = 37.45'
L = 60.19'
LCh. = 54.67'

② R = 40.00'
Δ = 96°-33'-16"
T = 44.86'
L = 67.41'
LCh = 59.71'



NORTH MARGINAL ROAD

E 177TH ST. CURVE DATA

① R = 60.00' Δ = 55°13'-54" T = 31.39' L = 57.84' LCh = 55.62'

② R = 30.00' Δ = 102°-58'-54" T = 37.70' L = 53.92' LCh = 46.95'

③ R = 100.00' Δ = 21°-47'-12" T = 19.25' L = 38.02' LCh = 37.80'

LEGEND

(A) STANDARD LONGITUDINAL JOINT.
(B) STANDARD KEY JOINT WITHOUT TIE BARS
(C) EXPANSION JOINT WITHOUT DOWELS
(D) STANDARD EXPANSION JOINT.
NEW PAVEMENT (T-71 CONC)
4" CONCRETE I-13 SIDEWALK
PAVED BERM

GROVEWOOD AVE CURVE DATA

① R = 20.00' Δ = 145°-00'-06" T = 68.44' L = 50.62' LCh = 38.15'

② R = 100.00' Δ = 34°-59'-54" T = 31.53' L = 61.08' LCh = 60.14'

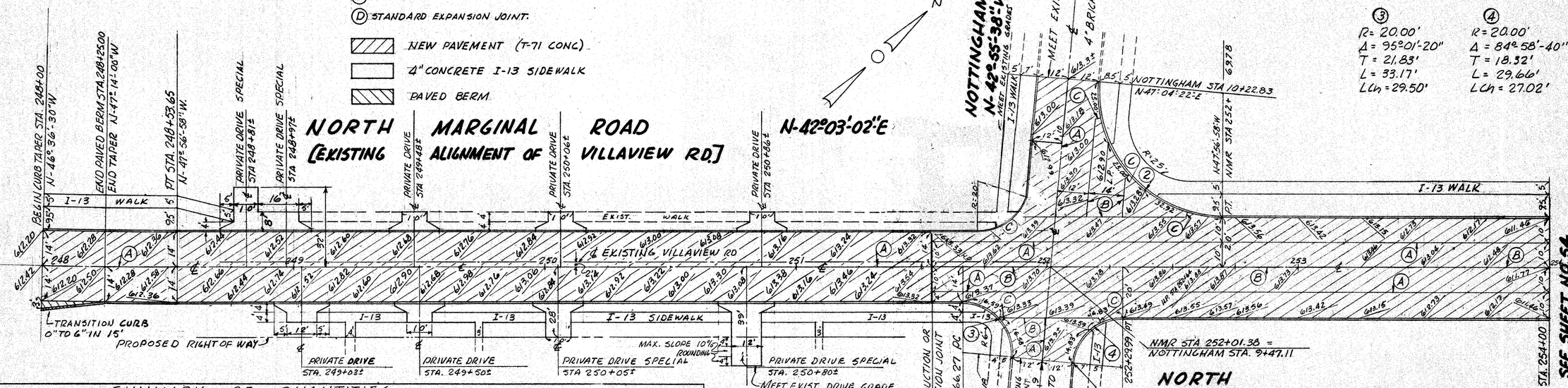
NOTTINGHAM RD. - CURVE DATA

① R = 40.00' Δ = 84°58'40" T = 36.64' L = 59.33' LCh = 54.04'

② R = 50.00' Δ = 95°01'20" T = 54.59' L = 82.92' LCh = 73.74'

③ R = 20.00' Δ = 95°01'-20" T = 21.83' L = 33.17' LCh = 29.50'

④ R = 20.00' Δ = 84°58'-40" T = 18.32' L = 29.66' LCh = 27.02'



NORTH MARGINAL ROAD N-42°03'-02"E

SUMMARY OF QUANTITIES

DESCRIPTION		I-13 SQ. FT. 4" CONCRETE SIDEWALK	I-18 CU. YD. 5" STABILIZED CRUSHED AGGREGATE APPROACHES & SHOULDERS	F-22 CU. YD. SUB BASE GRADING A OR B	8-219 CU. YDS. 3" WATERPROOFED AGGREGATE BASE COURSE	T-31 BITUMINOUS SURFACE TREATMENT #6 AGGREGATE CU. YD.	T-31 BITUMINOUS MATERIAL AS PER PLANS GALS.	T-70 SQ. YD. PORTLAND CEMENT CONCRETE PAVEMENT 6"	T-71 SQ. YD. PORTLAND CEMENT PAVEMENT 9" REINF.	I-11 LIN. FT. SANDSTONE CURB RADIAL	I-11 LIN. FT. SANDSTONE CURB STR.
E. 177TH ST.		827.95	—	61.63	—	—	—	33.72	341.78	53.92	145.95
DELAVAN		814.00	—	38.13	—	—	—	—	225.02	127.60	9.73
GROVEWOOD		879.32	—	66.47	—	—	—	43.06	364.89	50.62	140.85
N.M.R. & NOTTINGHAM		3,457.78	0.58	480.72	0.35	0.03	1.04	160.70	2,735.12	122.16	1224.05
TOTALS		5,979.05	0.58	646.95	0.35	0.03	1.04	237.48	3,666.81	354.30	1520.58

NOTES -
NEW DRIVEWAY APRONS SHALL MEET GRADE OF EXISTING DRIVEWAYS AT BACK OF APRON UNLESS OTHERWISE SHOWN. ALL ELEVATIONS ARE TO TOP OF FINISHED PAVEMENT.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

EXTRA-AREA DETAILS
N.M.R. & EAST 177TH ST. - N.M.R. & GROVEWOOD AVE. - N.M.R. & DELAVAN AVE. - N.M.R. & NOTTINGHAM AVE.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

54 / 186

CUYAHOGA COUNTY
CUY. 2-24.33

SUMMARY OF QUANTITIES (TOTAL THIS SHEET)

I-11 EACH	I-11 LIN. FT.		I-13 SQ. FT.	I-21 SQ. YD.	I-22 CU. YD.	T-70 SQ. YD.	T-71 SQ. YD.
BUMPER BLOCK	SANDSTONE CURB		CONCRETE SIDEWALK	P.C.C. TRAFFIC ISLAND PAVEMENT	SUB-BASE GRADING A OR B	PORTLAND CEMENT CONCRETE PAVT.	
	STR.	RADIAL	4"			6"	9" REINF.
3	1592.11	370.29	6141.30	18.89	1106.24	41.33	6502.83

LEGEND

- (A) STANDARD LONGITUDINAL JOINT
- (B) STANDARD KEY JOINT WITHOUT TIE BARS
- (C) EXPANSION JOINT WITHOUT DOWELS
- (D) STANDARD EXPANSION JOINT
- I-13 CONCRETE SIDEWALK CROSS SLOPE 4%/FT
- NEW PAVEMENT (T-71 CONCRETE)
- I-21 CONCRETE

NOTE:
1. ALL ELEVATIONS ARE TO THE TOP OF FINISHED PAVEMENT.
2. NEW DRIVEWAY APRONS SHALL MEET THE EXISTING DRIVEWAYS AT BACK OF APRONS UNLESS OTHERWISE INDICATED

MOZINA DRIVE
NORTH MARGINAL ROAD
MATCH LINE THIS SHEET NMR STA 256+00
N42°03'-02"E
N-0°-16'-20"E
STREET
185TH
EAST
I-13 CONC. SIDEWALK
I-13 CONG. WALK
NMR STA 258+74.18 N 25°-46'-53"W
NMR STA 259+42.82 N 20°-38'-53"W
LOW POINT NMR STA 259+48.36 EL. GUTTER 595.60
NMR STA 260+39.33 N 20°-38'-53"W
MEET EXIST. PAVEMENT 3" BRICK ON 8" CONC.
596.1±
NMR STA 261+51.86 N 20°-38'-53"W
NMR STA 262+23.20 N 20°-38'-53"W
E.185TH STA 5+86.09 N N 89°-43'-40"W
E.185TH STA 5+68.04 N 89°-43'-40"W
EXIST. DRIVE
PRIVATE DRIVE
REMAINS
E.185TH STA 5+43.4
NMR STA 260+87.51
E.185TH STA 5+19.86 N
NMR STA 260+87.51
NMR STA 261+46.56
LOW POINT NMR STA 261+64.61 EL. GUTTER 595.16
E.185TH STA 4+81.15 N 89°-43'-40"W
NMR STA 261+23.57 N 20°-38'-53"W
NMR STA 257+60.41 N 37°-44'-37"W
NMR STA 257+69.38 N 38°-32'-32"W
NMR STA 258+01.04 MOZINA STA 5+27.09
NMR STA 258+25.50 N 38°-32'-32"W
NMR STA 258+29.54 MOZINA STA 5+31.62 EL. GUTTER 595.25 LOW POINT
NMR STA 258+39.25 MOZINA STA 5+41.33 EL. GUTTER 595.54 LOW POINT
NMR STA 258+44.41 MOZINA STA 5+46.49 PCC
MOZINA STA 4+87.25 NMR STA 257+60.41 PCC N 37°-44'-37"W
MOZINA STA 4+116.01 PRC N 87°-25'-02"E
MOZINA STA 4+78.52 PRC N 87°-25'-02"E
PRIVATE DRIVE STA 5+12.5
EXISTING DRIVE
MEET EXIST. PAVEMENT
MOZINA STA 5+27.09 NMR STA 258+01.04 PRC N 42°-03'-44"E
MOZINA STA 5+31.62 NMR STA 258+29.54 EL. GUTTER 595.25 LOW POINT N 38°-32'-32"W
MOZINA STA 5+41.33 NMR STA 258+39.25 EL. GUTTER 595.54 LOW POINT N 38°-32'-32"W
MOZINA STA 5+46.49 NMR STA 258+44.41 PCC N 38°-32'-32"W
MOZINA STA 5+78.52 NMR STA 258+76.44 PRC N 42°-03'-44"E
MEET EXISTING PAVEMENT
MOZINA STA 6+28.05 NMR STA 259+25.80 PCC N 64°-30'-00"E
NMR STA 259+42.82 MOZINA STA 6+42.83 PRC N 64°-30'-00"E
NMR STA 259+48.36 MOZINA STA 6+48.36 EL. GUTTER 595.60 LOW POINT N 20°-38'-53"W
N 69°-21'-07"E
N 60°-37'-55"E PCC
N 68°-59'-38"E PRC
MATCH LINE THIS SHEET NMR STA 256+00
BEGIN SHEET N.M.R. STA. 254+00 SEE SHEET NO. 53 FOR EXTRA AREA
NORTH MARGINAL ROAD N.42°-03'-02"E
BEGIN CURB TAPER NMR STA 254+20.00
END CURB TAPER NMR STA 255+00.00
MATCH LINE E.185TH STA 5+50N SEE SHEET NO 57 FOR E.185TH ST. EXTRA AREA

DETAIL "A"
NOT TO SCALE
N 69°-21'-07 E NORTH MARGINAL ROAD
15'-R BUMPER BLOCK
STA 260+28.53 N 20°-38'-53"W
STA 260+30.28 N 20°-38'-53"W
11.5'-R BUMPER BLOCK
I-21
STA 4+68.13 N 89°-43'-40"W
STA 4+20.70 N 89°-43'-40"W
15'-R BUMPER BLOCK - SET 6" HIGH
N 0°-16'-20"E
E.185TH ST.
N 26°-39'-38"E 13'
N 43°-26'-13-54"E
32'
40'

CURVE DATA

(1) CURB
R= 513.00'
Δ= 09°-30'-26"
T= 42.66'
L= 85.12'
LCH= 85.03'

(2)
R= 545.00'
Δ= 27°-18'-05"
T= 132.36'
L= 259.69'
LCH= 257.24

(3) CURB
R= 565.00'
Δ= 10°-12'-21"
T= 50.45'
L= 100.64'
LCH= 100.51'

(4)
R= 60.00'
Δ= 60°-58'-34"
T= 35.33'
L= 63.85'
LCH= 60.88'

(5)
R= 40.00'
Δ= 113°-12'-01"
T= 60.66'
L= 79.03'
LCH= 66.79'

(6) CURB
R= 565.00'
Δ= 05°-08'-06"
T= 25.34'
L= 50.64'
LCH= 50.62'

(7) CURB
R= 513.00'
Δ= 10°-15'-53"
T= 46.08'
L= 91.90'
LCH= 91.78'

(8)
R= 20.00'
Δ= 84°-15'-14"
T= 18.09'
L= 29.41'
LCH= 26.83'

(9)
R= 20.00'
Δ= 101°-40'-16"
T= 24.55'
L= 35.49'
LCH= 31.01'

(10) CURB
R= 338.00'
Δ= 1°-36'-16"
T= 4.73'
L= 9.46'
LCH= 9.46'

(11) ℄ IMPROVED MOZINA
R= 350.00'
Δ= 24°-11'-18"
T= 75.00'
L= 147.76'
LCH= 147.66'

(12) CURB
R= 362.00'
Δ= 6°-08'-13"
T= 19.41'
L= 38.77'
LCH= 38.76'

(13)
R= 1.50'
Δ= 110°-55'-13"
T= 2.18'
L= 2.90'
LCH= 2.47'

(14)
R= 1.50'
Δ= 132°-51'-34"
T= 3.45'
L= 3.48'
LCH= 2.75'

(15)
R= 66.00'
Δ= 16°-50'-21"
T= 9.77'
L= 19.40'
LCH= 19.33'

(16)
R= 50.00'
Δ= 69°-04'-47"
T= 34.42'
L= 60.28'
LCH= 57.60'

(17)
R= 150.00'
Δ= 21°-46'-48"
T= 28.18'
L= 55.71'
LCH= 55.39'

(18)
R= 40.00'
Δ= 68°-21'-37"
T= 27.16'
L= 47.72'
LCH= 44.94'

(19)
R= 30.00'
Δ= 110°-55'-13"
T= 43.59'
L= 58.08'
LCH= 49.42'

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Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

EXTRA AREA DETAILS

INTERSECTION OF NORTH MARGINAL ROAD WITH MOZINA DRIVE & E.185TH ST.

SCALE: 1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

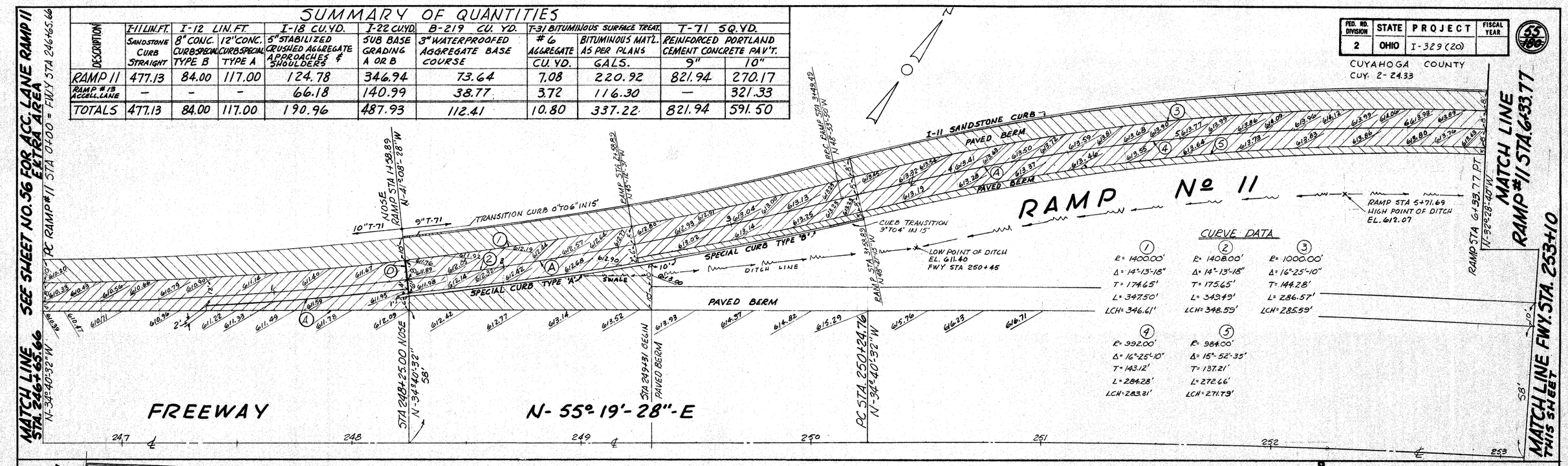
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

55/180

CUYAHOGA COUNTY
CUY. 2-24.33

SUMMARY OF QUANTITIES

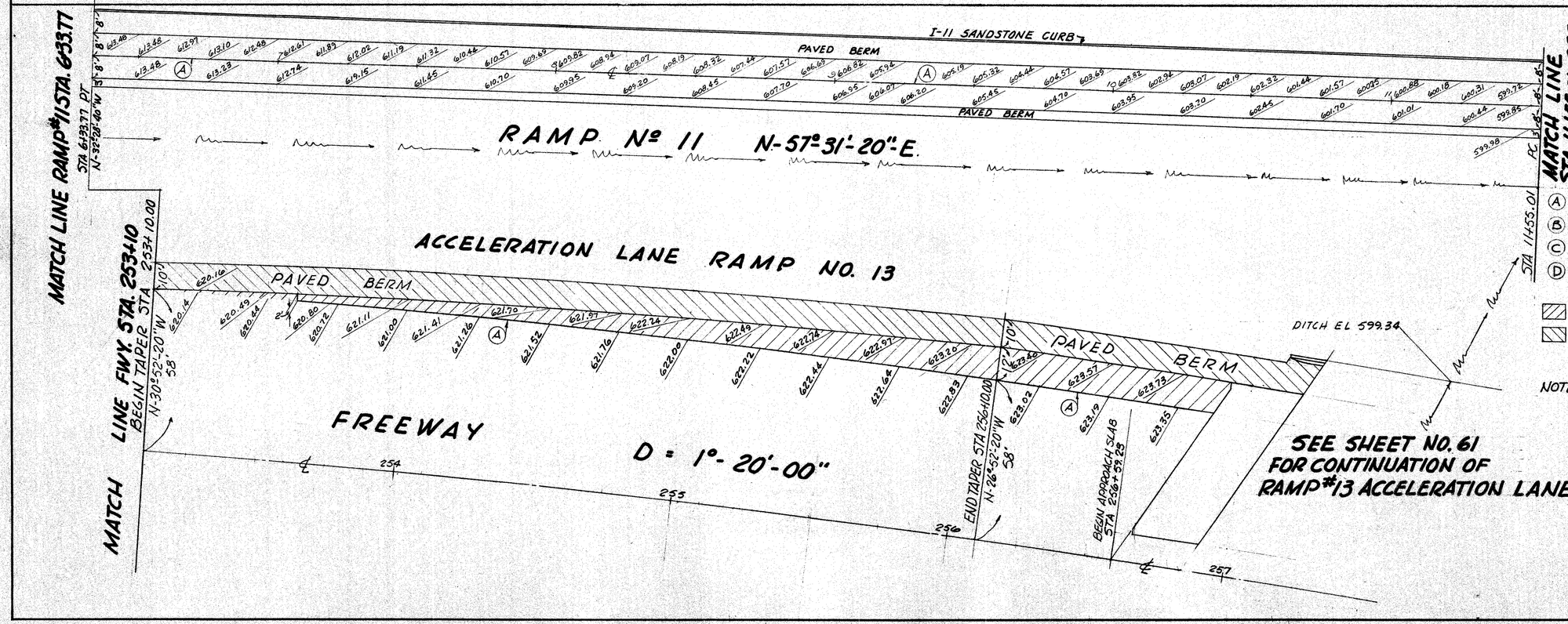
DESCRIPTION	I-11 LIN. FT.	I-12 LIN. FT.		I-18 CU. YD.	I-22 CU. YD.	B-219 CU. YD.	T-31 BITUMINOUS SURFACE TREAT.		T-71 SQ. YD.	
	SANDSTONE CURB STRAIGHT	8" CONC. CURB SPECIAL TYPE B	12" CONC. CURB SPECIAL TYPE A	5" STABILIZED CRUSHED AGGREGATE APPROACHES & SHOULDERS	SUB BASE GRADING A OR B	3" WATERPROOFED AGGREGATE BASE COURSE	#6 AGGREGATE CU. YD.	BITUMINOUS MAT'L. AS PER PLANS GALS.	REINFORCED PORTLAND CEMENT CONCRETE PAV'T. 9"	10"
RAMP 11	477.13	84.00	117.00	124.78	346.94	73.64	7.08	220.92	821.94	270.17
RAMP #13 ACCELL. LANE	—	—	—	66.18	140.99	38.77	3.72	116.30	—	321.33
TOTALS	477.13	84.00	117.00	190.96	487.93	112.41	10.80	337.22	821.94	591.50



CURVE DATA

1	2	3
R = 1400.00'	R = 1408.00'	R = 1000.00'
Δ = 14°-13'-18"	Δ = 14°-13'-18"	Δ = 16°-25'-10"
T = 174.65'	T = 175.65'	T = 144.28'
L = 347.50'	L = 349.49'	L = 286.57'
LCH = 346.61'	LCH = 348.59'	LCH = 285.59'

4	5
R = 992.00'	R = 984.00'
Δ = 16°-25'-10"	Δ = 15°-52'-35"
T = 143.12'	T = 137.21'
L = 284.28'	L = 272.66'
LCH = 283.31'	LCH = 271.79'



LEGEND

- (A) STANDARD LONGITUDINAL JOINT
- (B) STANDARD KEY JOINT WITHOUT TIE BARS
- (C) EXPANSION JOINT WITHOUT DOWELS
- (D) STANDARD EXPANSION JOINT

NEW PAVEMENT (T-71 CONCRETE)
PAVED BERM

NOTE:
ALL ELEVATIONS ARE TO THE TOP OF FINISHED PAVEMENT.

SEE SHEET NO. 61 FOR CONTINUATION OF RAMP #13 ACCELERATION LANE

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EXTRA-AREA DETAILS

RAMP NO. 11
STA. 0+00 TO STA. 11+55.01
ACCELERATION LANE
RAMP NO. 13 1"=20'

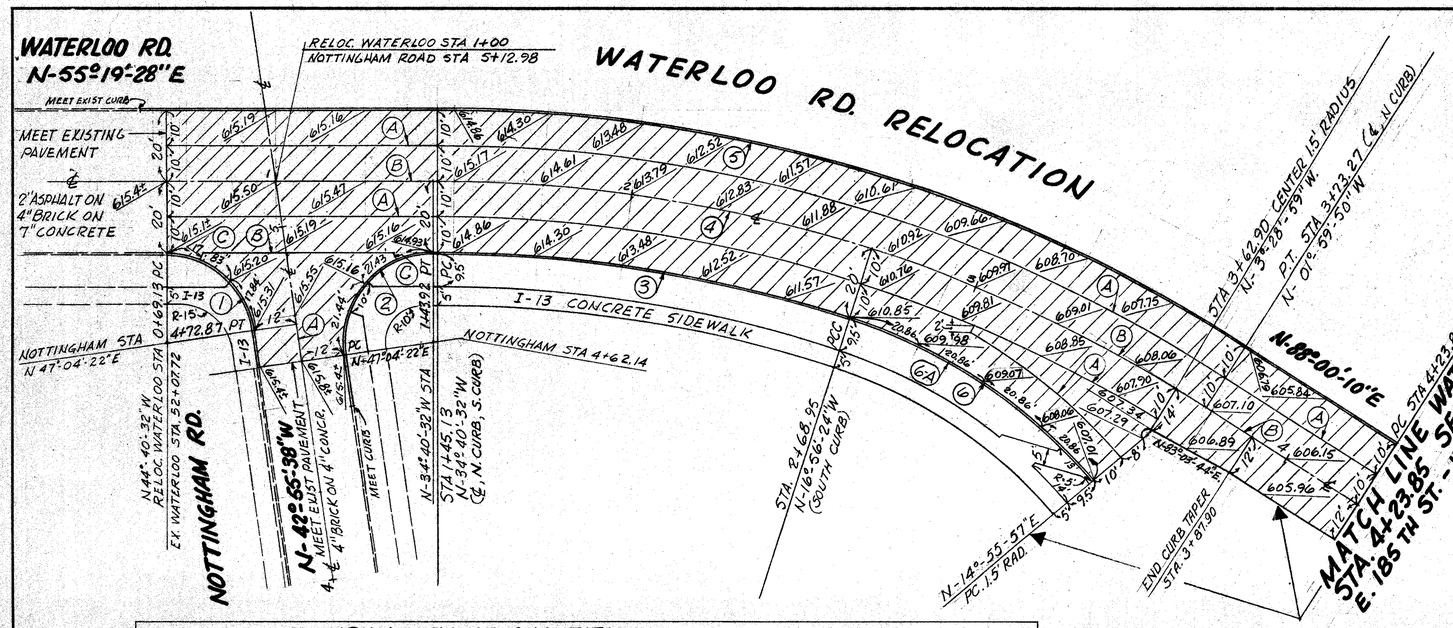
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

56 / 106

CUYAHOGA COUNTY
CUY. 2-24.33

WATERLOO RD. RELOCATION



RELOCATED WATERLOO ROAD CURVE DATA

① R = 25.00' Δ = 81°-44'-54" T = 21.64' L = 35.67' LCh = 32.72'

② R = 25.00' Δ = 98°-15'-06" T = 28.89' L = 42.87' LCh = 37.81'

③ R = 380.00' Δ = 17°-44'-08" T = 59.29' L = 117.63' LCh = 117.16'

④ R = 400.00' Δ = 32°-40'-42" T = 117.17' L = 228.14' LCh = 225.06'

⑤ R = 420.00' Δ = 32°-40'-42" T = 123.13' L = 239.54' LCh = 236.31'

⑥ (TOTAL CURVE) R = 150.00 Δ = 107°-12'-44" T = 203.50' L = 280.68' LCh = 241.49'

⑥-A (PARTIAL CURVE THIS SHEET) R = 150.00' Δ = 31°-52'-21" T = 42.83' L = 83.44' LCh = 82.37'

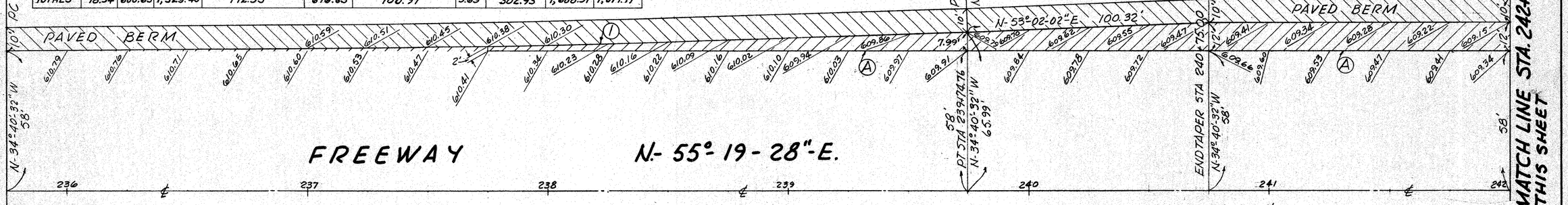
LEGEND

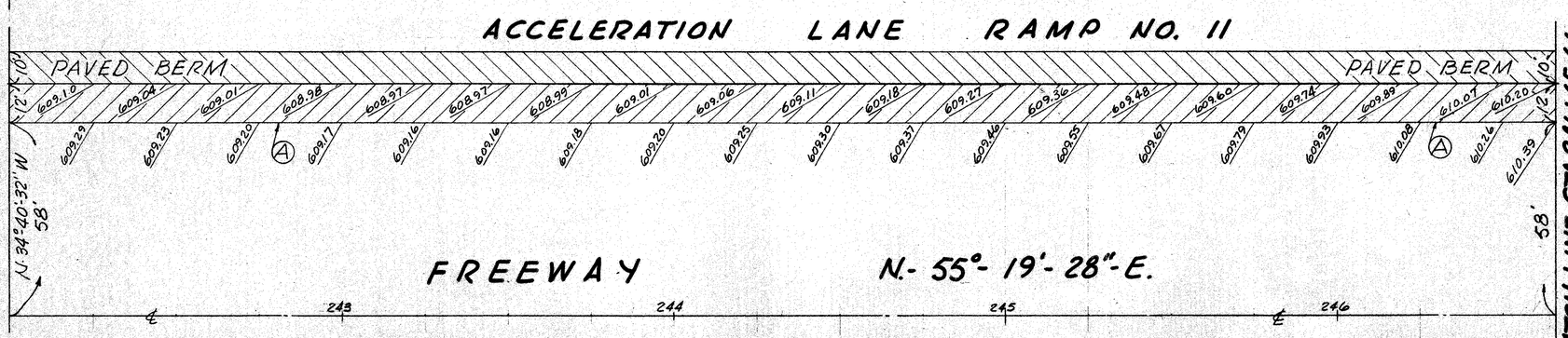
- NEW PAVEMENT (T-71 CONCRETE)
- PAVED BERM
- (A) STANDARD LONGITUDINAL JOINT.
- (B) STD. KEY JOINT WITHOUT TIE BARS.
- (C) EXPANSION JOINT WITHOUT DOWELS.
- (D) STANDARD EXPANSION JOINT.

NOTE: ALL ELEVATIONS ARE TO TOP OF FINISHED PAVEMENT.

SUMMARY OF QUANTITIES (TOTAL THIS SHEET)

DESCRIPTION	I-11 LIN. FT. SANDSTONE CURB RADIAL	I-11 LIN. FT. SANDSTONE CURB STR.	I-13 SQ. FT. CONCRETE SIDEWALK 4"	I-18 CU. YD. 5" STABILIZED CRUSHED AGGREGATE APPROACHES & SHOULDERS	I-22 CU. YD. SUB-BASE GRADING A OR B	B-219 CU. YD. 3" WATERPROOFED AGGREGATE BASE COURSE	F-31 BIT. SURFACE TREAT. #6 AGG. CU. YD.	F-31 BIT. SURFACE TREAT. BIT. MATERIAL AS PER PLANS GALS.	T-71 SQ. YD. REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT 9"	T-71 SQ. YD. REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT 10"
ACC. LANE RAMP #11	—	—	—	172.53	392.00	100.97	9.69	302.93	—	1,017.17
WATERLOO RELOCATED	78.54	600.63	1,529.40	—	284.63	—	—	—	1,688.97	—
TOTALS	78.54	600.63	1,529.40	172.53	676.63	100.97	9.69	302.93	1,688.97	1,017.17





RAMP # 11 CURVE DATA

① R = 10,000.00' Δ = 02°-17'-26" T = 199.92' L = 399.78' LCh = 399.75'

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Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

EXTRA AREA DETAILS
ACCELERATION LANE RAMP #11
WATERLOO ROAD RELOCATION

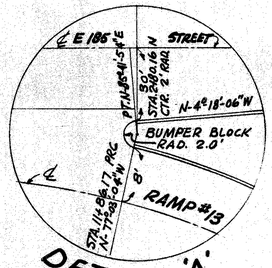
SCALE 1" = 20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

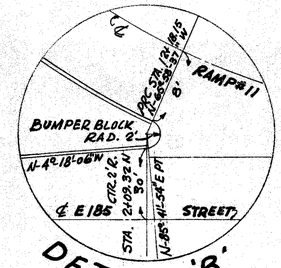
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY. 2-24.33

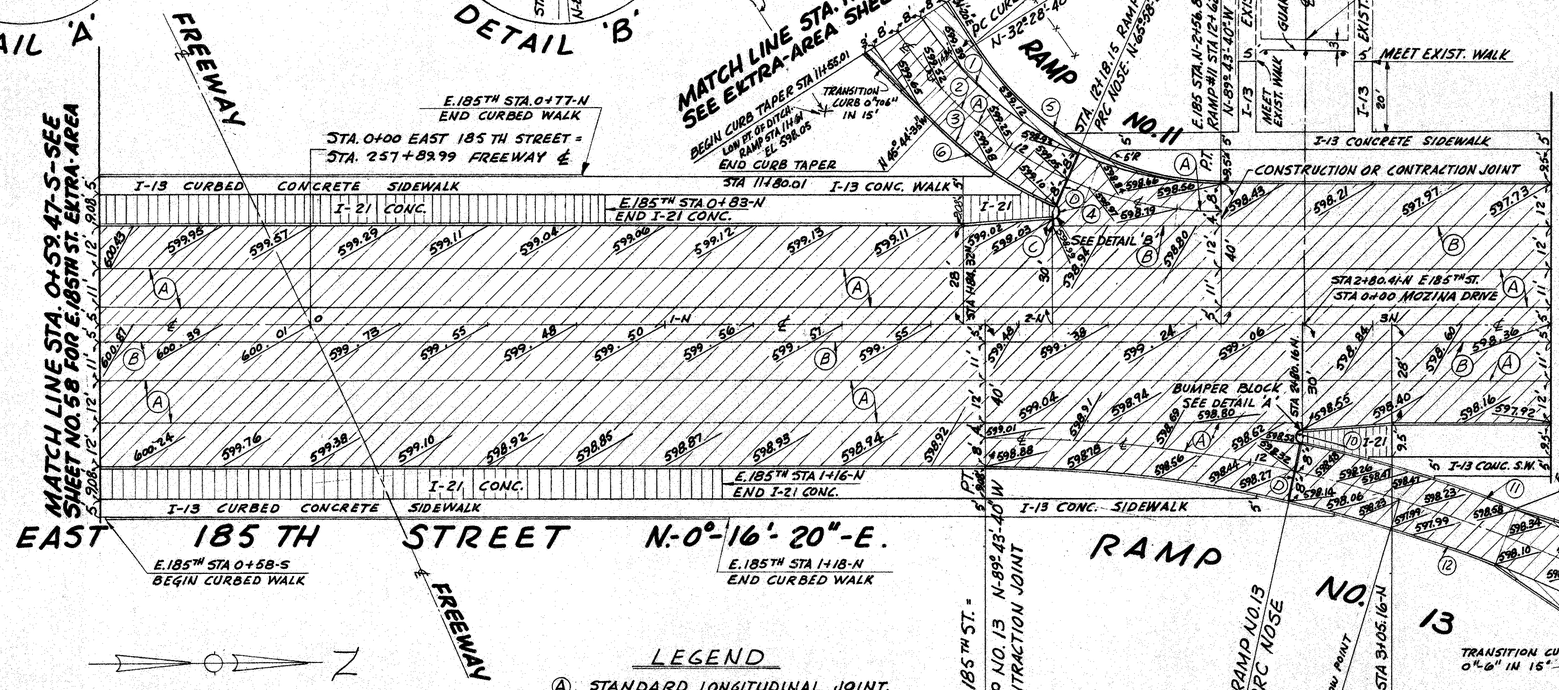
57
186



DETAIL 'A'



DETAIL 'B'



LEGEND

- (A) STANDARD LONGITUDINAL JOINT.
- (B) STANDARD KEY JOINT WITHOUT TIE BARS.
- (C) EXPANSION JOINT WITHOUT DOWELS.
- (D) STANDARD EXPANSION JOINT.

NEW PAVEMENT (T-71 CONC.)
PAVED BERM
I-13 CONCRETE SIDEWALK
I-21 CONCRETE

SUMMARY OF QUANTITIES

I-11 EACH	I-11 LIN. FT.	I-13 SQ. FT.		I-18 CU. YD.	I-21 SQ. YD.
BUMPER BLOCK	SANDSTONE CURB	CONCRETE SIDEWALK		5" STABILIZED CRUSHED AGGREGATE APPROACHES & SHOULDERS	P.C.C. TRAFFIC ISLAND PAVEMENT
	STRAIGHT	4" CURBED	4"		
2	1,130.22	1,718.59	2,532.60	15.33	312.43

I-22 CU.YD.	B-219 CU. YD.	T-31 BIT. SURFACE TREAT.		T-70 SQ.YD	T-71 SQ.YD.
SUB-BASE GRADING A OR B	3" WATERPROOFED AGGREGATE BASE COURSE	#6 AGGREGATE	BIT. MATERIAL AS PER PLANS	PORTLAND CEMENT CONCRETE PAV'T.	
		CU. YD.	GALS.	6"	5" REINF.
657.93	9.02	.86	27.06	33.78	3,591.89

CURVE DATA

	①	②	③	④	⑤ (N. CURB)	⑥ (S. CURB)
R=	100.00'	108.00'	116.00'	2.00'	82.57'	116.00'
Δ=	57°-15'-00"	57°-15'-00"	33°-29'-57"	151°-40'-31"	57°-15'-00"	20°-14'-02"
T=	54.68'	58.94'	34.91'	7.93'	45.07'	20.70'
L=	99.92'	107.91'	67.82'	5.29'	82.51'	40.97'
Lch=	95.81'	103.48'	66.86'	3.88'	79.12'	40.75'

	⑦ (TOTAL CURVE)	⑧ (TOTAL CURVE)	⑨ (TOTAL CURVE)	⑩	⑪ (N. CURB)	⑫ (S. CURB)
R=	408.00'	400.00'	392.00'	2.00'	408.00'	392.00'
Δ=	56°-54'-01"	69°-34'-37"	62°-24'-54"	162°-44'-58"	8°-45'-43"	21°-26'-19"
T=	221.07'	271.89'	237.47'	13.19'	31.24'	74.21'
L=	405.18'	485.74'	427.02'	5.68'	62.39'	146.68'
Lch=	338.74'	456.44'	406.22'	3.95'	62.33'	145.82'

NOTE: ALL ELEVATIONS ARE TO TOP OF FINISHED PAVEMENT. FOR DETAIL OF CURBED CONC. SIDEWALK SEE SHEET NO. 11.

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Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

EXTRA AREA DETAILS

INTERSECTION OF EAST 185TH ST. WITH RAMP NO 11 & RAMP NO 13

SCALE: 1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY 2-24.33

N

LEGEND

- (A) STANDARD LONGITUDINAL JOINT.
- (B) STANDARD KEY JOINT WITHOUT TIE BARS.
- (C) EXPANSION JOINT WITHOUT DOWELS.
- (D) STANDARD EXPANSION JOINT.

NEW PAVEMENT (T-71 CONCRETE)
PAVED BERM
I-21 CONCRETE

NOTE:
1. ALL ELEVATIONS ARE TO THE TOP OF FINISHED PAVEMENT.
2. FOR DETAIL OF CURBED CONC. SIDEWALK SEE SHEET Nº 11.

MATCH LINE STA. 5+10-S SEE SHEET No 59 FOR E. 185TH ST. EXTRA-AREA

STA 5+10-S LIMIT OF FEDERAL PARTICIPATION N-89°-43'-40"-W

EAST 185TH STREET

PT. STA 4+28.02-S N-89°-43'-40"-W

CONSTRUCTION & STA. 14+26.06 168' RAD. TO 1.5' RAD. PRC N-60°-04'-33"-E

PRC 1.5'R TO 168'R. N-14°-55'-57"-E

CONST. ℄ STA. 0+00

MATCH LINE

BUMPER BLOCK

RADIAL BEARING PT 1.5'R N-06°-56'-16"-W

CENTER 1.5'R. STA 3+62.90 N-09°-28'-59"-W

BEGIN CURB TAPER

PT (℄) STA 3+73.27 N-01°-59'-50"-W

STA 5+87.90 END CURB TAPER

MATCH LINE SEE SHEET NO. 56 FOR EXTRA-AREA WATERLOO RD RELOCATION

N-88°-00'-10"-E

PC STA 4+23.85 N-01°-59'-50"-W

N-0°-16'-20"-E

STA. 1+76.77-S N-89°-43'-40"-W

BEGIN CURBED WALK E.185TH STA 1+03-S

I-13 WALK

I-13 CURBED WALK

E.185TH STA 1+00-S BEGIN I-21 CONCRETE

I-21 CONC.

I-13 SIDEWALK

LOW POINT STA 0+50

CONSTRUCTION & STA 14+26.06 168' RAD. TO 1.5' RAD. PRC N-60°-04'-33"-E

I-13 SIDEWALK

I-13 CONC. WALK

WATERLOO RD. RELOCATION

CONST. ℄

STA 4+35.00 LOW POINT EL. GUTTER 605.28

I-13 WALK BUMPER BLOCK WATERLOO STA. 4+67.08 N-01°-59'-50"-W

BUMPER BLK. SET 6" HIGH

STA. 4+99.14 RELOC. WATERLOO =
STA. 2+49.14-S E. 185TH ST. =
STA. 16+48.36 RAMP #12

STA. 16+09.39 N-01°-59'-50"-W

BUMPER BLK. SET 6" HIGH

I-13

STA 16+11.28 N-01°-59'-50"-W

MATCH LINE STA. 14+00

MATCH LINE STA. 13+00 SEE SHEET NO. 60 FOR RAMP #12 EXTRA-AREA

SOUTH PAVEMENT EDGE N 86°-20'-20"-E

PAVED BERM

N-88°-00'-10"-E

NO. 12 RAMP SOUTH

STA 15+08.69 N-01°-59'-50"-W

END CURBTAPER STA. 14+51.24

TRANSITION CURB 0"TO6" IN 15'

STA. 14+26.24 BEGIN CURB TAPER - S. SIDE

LOW PT. STA 15+53.86 EL. GUTTER 606.01

BUMPER BLOCK

CONST. ℄

N-70°-31'-20"-E 2'-RADIUS - PRC CONSTRUCTION ℄ STA. 2+02.51

E.185TH STA 0+4-S BEGIN I-21 CONC.

N-17°-45'-10"-E CONSTRUCTION ℄ STA 0+55.15

PCC STA. 14+51.24 (RAMP #12) - STA. 0+00 CONSTR. ℄

N-01°-59'-50"-W CONSTRUCTION OR CONTRACTION JOINT

PC CURB N-16°-20'-49"-W

TRANSITION CURB 0"-6" IN 15'

STA 14+01.24 BEGIN CURB (N. SIDE)

STA 2+57.66 CONSTR. ℄ = STA 0+59.47-S P.T. N-89°-43'-40"-W CONSTRUCTION OR CONTRACTION JOINT

MATCH LINE STA. 0+59.47-S SEE SHEET NO. 57 FOR E. 185TH ST. EXTRA-AREA.

MATCH LINE STA. 14+00 - THIS SHEET

CURVE DATA

①	②	③	④	⑤
R = 50.00'	R = 1.50'	R = 1.50'	R = 1.50'	R = 168.00'
Δ = 87°-43'-50"	Δ = 158°-07'-47"	Δ = 92°-16'-10"	Δ = 149°-48'-13"	Δ = 45°-08'-36"
T = 48.06'	T = 7.76'	T = 1.56'	T = 5.56'	T = 69.83'
L = 76.56'	L = 4.14'	L = 2.42'	L = 3.92'	L = 132.37'
LCh = 69.30'	L.Ch = 2.95'	LCh = 2.16'	LCh = 2.90	LCh = 128.97'
⑥ (TOTAL CURVE)	⑦	⑧	⑨	⑩
R = 150.00'	R = 10.00'	R = 10.00'	R = 2.00'	R = 2.00'
Δ = 107°-12'-44"	Δ = 86°-04'-00"	Δ = 92°-16'-10"	Δ = 160°-15'-00"	Δ = 160°-15'-00"
T = 203.50'	T = 9.34'	T = 10.40'	T = 11.49'	T = 11.49'
L = 280.68'	L = 15.02'	L = 16.10'	L = 5.59'	L = 5.59'
LCh = 241.49'	LCh = 13.65'	LCh = 14.42'	LCh = 3.94'	LCh = 3.94'
⑪	⑫	⑬	⑭	
R = 168.00'	R = 150.00'	R = 150.00'	R = 160.00	
Δ = 52°-46'-10"	Δ = 92°-16'-10"	Δ = 14°-20'-59"	Δ = 92°-16'-10"	
T = 83.34'	T = 156.06'	T = 18.88'	T = 166.47'	
L = 154.73'	L = 241.56'	L = 37.57'	L = 257.66'	
LCh = 149.32'	LCh = 216.29	LCh = 37.47'	LCh = 230.71'	

(6-A) PARTIAL CURVE THIS SHEET
R = 150.00'
Δ = 45°-08'-36"
T = 62.35'
L = 118.19'
LCh = 115.15'

(6-B) PARTIAL CURVE THIS SHEET
R = 150.00'
Δ = 30°-11'-47"
T = 40.47'
L = 79.05'
LCh = 78.14'

(6-C) CONST. ℄
R = 160.00'
Δ = 45°-08'-36"
T = 66.51'
L = 126.06'
LCh = 122.83'

SUMMARY OF QUANTITIES (TOTAL THIS SHEET)

I-11 EACH	I-11 LIN. FT.		I-13 SQ. FT.		I-18 CU. YD.	I-21 SQ. YD.	I-22 CU. YD.	B-219 CU. YD.	T-31 BIT. SURFACE TREAT.		T-71 SQ. YD.
BUMPER BLOCK	SANDSTONE CURB		CONCRETE SIDEWALK		5" STABILIZED CRUSHED AGGREGATE APPROACHES & SHOULDERS	P.C.C. TRAFFIC ISLAND PAVEMENT	SUB-BASE GRADING A or B	3" WATERPROOFED AGGREGATE BASE COURSE	#6 AGG.	BIT. MATERIAL AS PER PLANS	REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
	STR.	RADIAL	4" CURBED	4"					CU. YD.	GALS.	9"
5	1,783.24	107.68	239.42	4,695.40	21.97	82.08	944.59	12.65	1.21	37.95	5,318.33

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

EXTRA-AREA DETAILS

INTERSECTION WATERLOO RD. RELOCATION ℄ E. 185TH ST.; RAMP NO. 12 ℄ E. 185TH ST.

1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

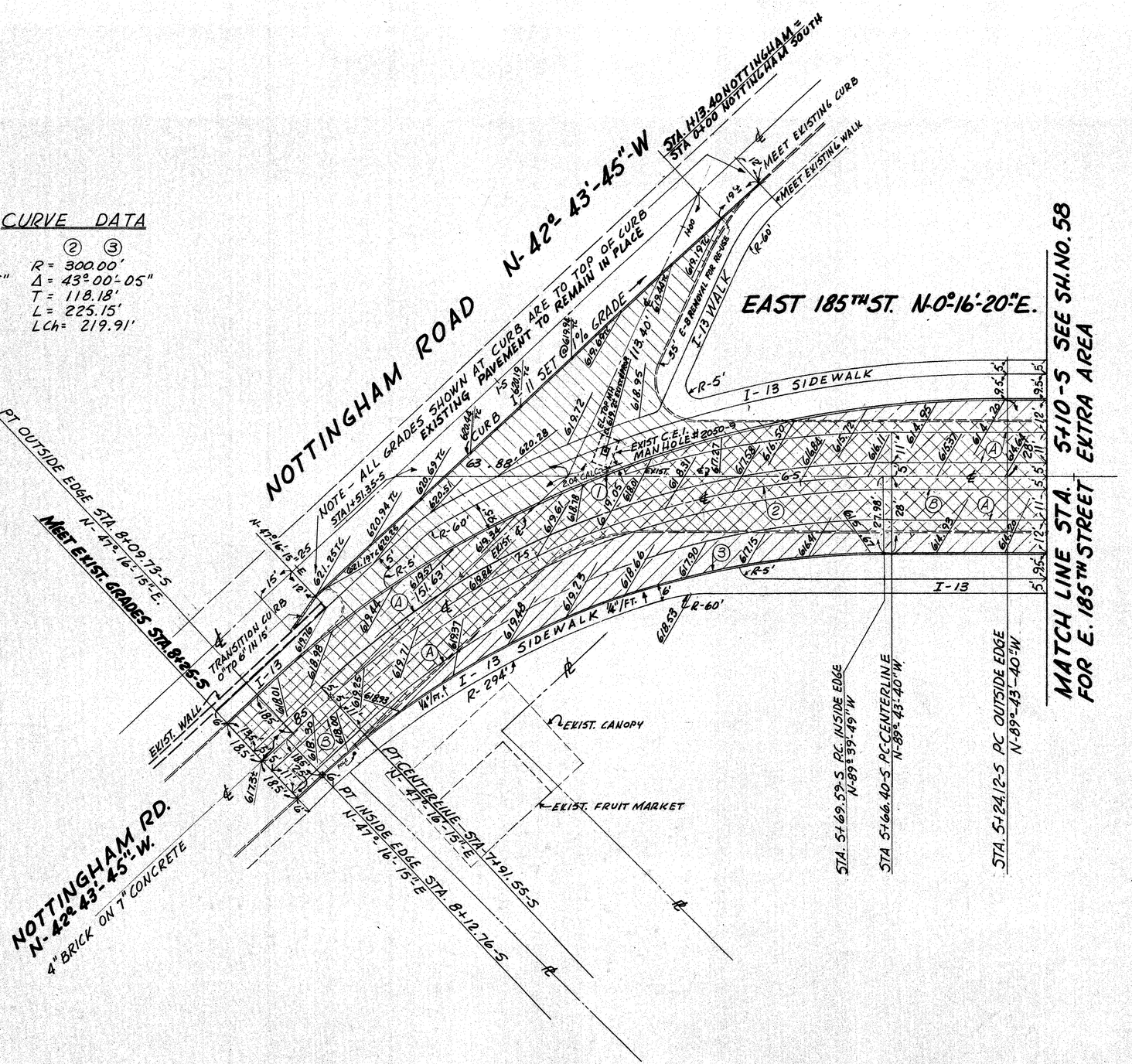
59 186

CUYAHOGA COUNTY
CUY. 2-24.33

N

CURVE DATA

①	②	③
R = 400.00'	R = 300.00'	
Δ = 43°00'-05"	Δ = 43°00'-05"	
T = 157.57'	T = 118.18'	
L = 300.21'	L = 225.15'	
LCh = 293.21'	LCh = 219.91'	



LEGEND

- (A) STANDARD LONGITUDINAL JOINT.
- (B) STANDARD KEY JOINT WITHOUT TIE BARS.
- (C) EXPANSION JOINT WITHOUT DOWELS.
- (D) STANDARD EXPANSION JOINT.

- NEW PAVEMENT (T-71 CONCRETE).
- EXISTING PAVEMENT REMOVED.
- EXISTING PAVEMENT REMOVED & REPLACED WITH NEW PAVEMENT.

NOTE:
ALL ELEVATIONS ARE TO THE TOP OF FINISHED PAVEMENT - EXCEPT AS NOTED.

SUMMARY OF QUANTITIES

E-8	E-8		I-11 LIN. FT.	I-13 SQ. FT.	I-22 CU. YD.	T-71 SQ. YD.
REMOVAL FOR RE-USE OF EXIST. CURB	REMOVAL & DISPOSAL		SANDSTONE CURB	CONCRETE SIDEWALK	SUB-BASE GRADING A OR B	REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
LIN. FT.	CURB L.F.	PAVT. S.Y.	STRAIGHT	4"		9"
55	557	1,760	862.58	4,129.0	268.19	1,585.33

NOTE: 100 PERCENT PARTICIPATION - CITY OF CLEVELAND

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

EXTRA-AREA DETAILS

EAST 185TH ST.
STA. 5+10-S TO STA 8+25-S

SCALE 1" = 20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
					1/8 20 NOV 59	

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

60
780

CUYAHOGA COUNTY
CUY. 2-24.33

FREEWAY N.-69°-21'-07"-E.

N

LEGEND

- (A) STANDARD LONGITUDINAL JOINT.
- (B) STANDARD KEY JOINT WITHOUT TIE BARS.
- (C) EXPANSION JOINT WITHOUT DOWELS.
- (D) STANDARD EXPANSION JOINT.

NEW PAVEMENT (T-71 CONCRETE)
PAVED BERM
I-21 CONCRETE

NOTE: ALL ELEVATIONS ARE TO THE TOP OF FINISHED PAVEMENT.

BEGIN RAMP-FWY STA. 253+50 = STA. 0+00 RAMP N-22°-20'-21"-W

RAMP ℄ N-71°-09'-39"-E

FWY STA 260+76.82 N-20°-38'-53"-W

RAMP STA. 1+37.29 N-18°-50'-21"-W

FWY STA 263+00 N-20°-38'-53"-W 58'

FWY STA. 264+00 END CURB 58'

PAVED BERM

BUMPER BLOCK

I-21

TRANSITION CURBS 0"TO6" IN 15'

END CURB STA. 4+47.86

10"-T-71

9"-T-71

RAMP STA. 3+47.86 PCC N-06°-53'-37"-W

STA. 4+90.66 PCC N-09°-08'-57"-E

PCC STA. 5+73.86 N-27°-29'-02"-E

PAVED BERM

CURVE DATA

①	②	③	④
R= 1,000.00'	R= 1,010.00'	R= 2.00'	R= 500.00'
Δ= 11°-56'-44"	Δ= 11°-56'-44"	Δ= 166°-14'-44"	Δ= 16°-02'-34"
T= 104.62'	T= 105.67'	T= 16.79'	T= 70.46'
L= 208.49'	L= 210.57'	L= 5.81'	L= 140.00'
LCh= 208.11	LCh= 210.19'	LCh= 3.97'	LCh= 139.54'

⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫
R=510.00'	R= 518.00'	R= 250.00'	R= 260.00'	R= 268.00'	R= 150.00'	R=160.00'	R=168.00
Δ=16°-02'-34"	Δ= 16°-02'-34"	Δ= 18°-20'-05"	Δ= 18°-20'-05"	Δ= 18°-20'-05"	Δ= 153°-33'-12"	Δ=150°-31'-08"	Δ= 149°-51'-18"
T=71.87'	T= 73.00'	T= 39.67'	T= 41.26'	T= 42.53'	T= 638.36'	T= 608.13'	T= 623.83'
L=142.80'	L= 145.04'	L= 80.00'	L= 83.20'	L= 85.76'	L= 402.00'	L= 420.33'	L= 439.40'
LCh=142.33'	LCh= 144.57'	LCh= 78.37'	LCh= 81.50'	LCh= 84.01'	LCh= 292.05	LCh= 309.47'	LCh= 324.44'

SUMMARY OF QUANTITIES (TOTAL THIS SHEET)

I-11 EACH	I-11 LIN.FT.	I-18 CU. YD.	I-21 SQ. YD.	I-22 CU. YD.	B-219 CU. YD.	T-31 BIT. SURFACE TREAT.		T-71 SQ. YD.	
BUMPER BLOCK	SANDSTONE CURB STRAIGHT	5" STABILIZED CRUSHED AGGREGATE APPROACHES & SHOULDERS	P.C.C. TRAFFIC ISLAND PAVEMENT	SUB-BASE GRADING A or B	3" WATERPROOFED AGGREGATE BASE COURSE	#6 AGGREGATE	BIT. MATERIAL AS PER PLANS	REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	
						CU. YD.	GALS.	9"	10"
1.	202.16	221.23	18.22	766.33	127.76	12.26	383.32	2,264.08	566.67

SEE SHEET No. 58

MATCH LINE STA. 13+00 FOR RAMP #12 EXTRA-AREA
STA. 13+00 END TAPER
STA. 13+00 (INSIDE EDGE PAVEMENT)

RAMP # 12

BEARING N. EDGE PAVEMENT N- 88°-57'-46"-W

N-88°-00'-10"-E

BEARING S. EDGE PAVEMENT N- 86°-20'-20"-E

PAVED BERM

PT STA. 10+02.13 (INSIDE EDGE) BEGIN TAPER
PT STA. 9+94.19 (CENTERLINE) N-01°-02'-14"-E
N-01°-59'-50"-W

N-03°-35'-10"-W

STA. 9+89.54 PT 168' R. (OUTSIDE EDGE)
BEGIN TAPER

MATCH LINE STA. 7+00

MATCH LINE STA. 7+00

HARGETT, YANDA & BARBER
Consulting Engineers
4900 Euclid Ave. Cleveland 3, Ohio

EXTRA-AREA DETAILS

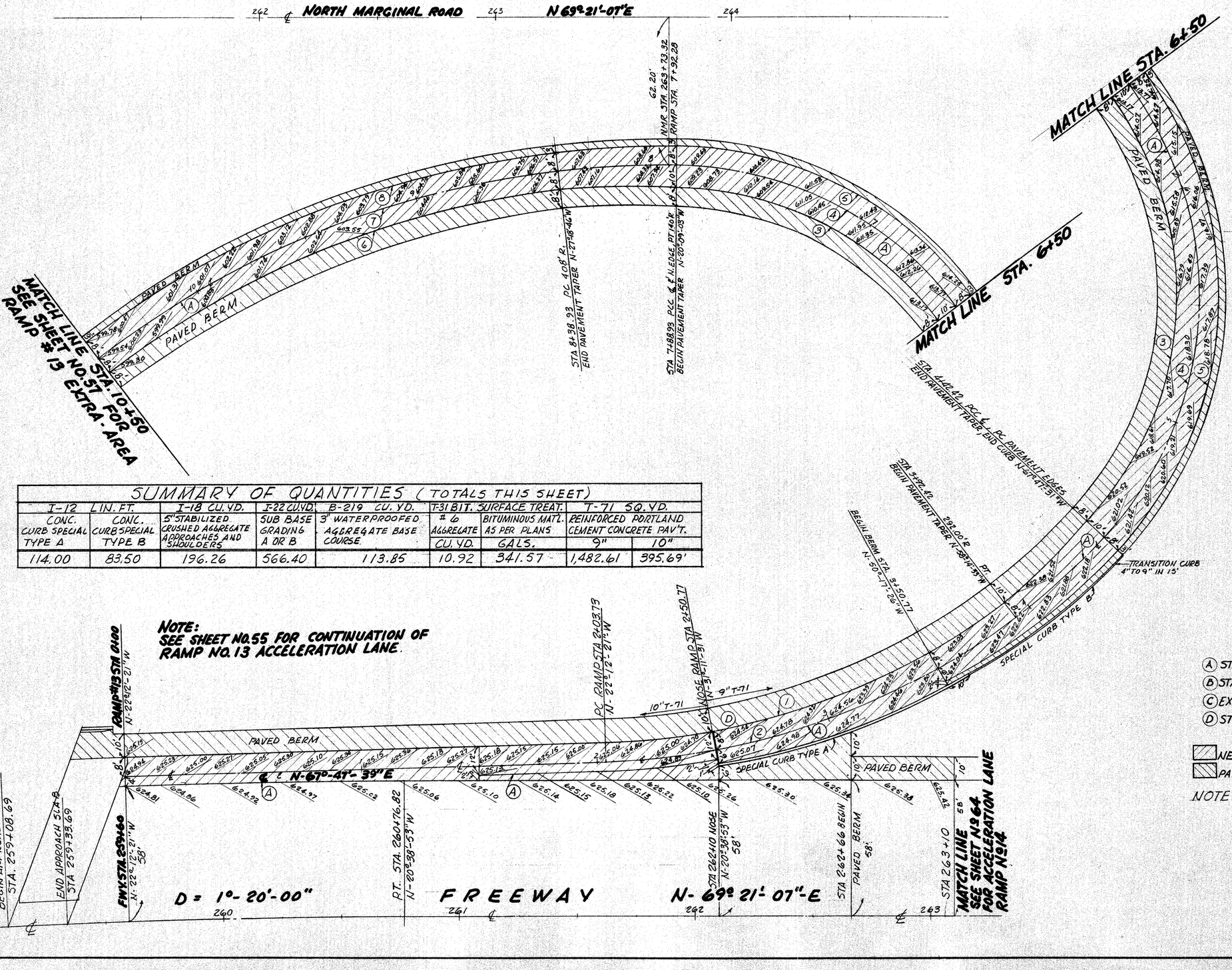
RAMP NO. 12
STA. 0+00 TO STA. 13+00
1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY. 2-24.33

61
180



SUMMARY OF QUANTITIES (TOTALS THIS SHEET)

I-12 CONC. CURB SPECIAL TYPE A LIN. FT.	I-12 CONC. CURB SPECIAL TYPE B LIN. FT.	I-18 CU. YD. 5" STABILIZED CRUSHED AGGREGATE APPROACHES AND SHOULDERS	I-22 CU.YD. SUB BASE GRADING A OR B	B-219 CU. YD. 3" WATERPROOFED AGGREGATE BASE COURSE	T-31 BIT. SURFACE TREAT. #6 AGGREGATE CU. YD.	BITUMINOUS MAT'L. AS PER PLANS GALS.	T-71 SQ. YD. REINFORCED PORTLAND CEMENT CONCRETE PAV'T. 9"	10"
114.00	83.50	196.26	566.40	113.85	10.92	341.57	1,482.61	395.69'

CURVE DATA

①	②
R= 292.00'	R= 300.00'
Δ= 36°02'-12"	Δ= 45°-35'-10"
T= 94.98'	T= 126.07'
L= 183.66'	L= 238.69'
LCh. 180.64'	LCh= 232.44'
③	④
R= 140.00'	R= 150.00'
Δ= 132°-21'-32"	Δ= 132°-21'-32"
T= 317.11'	T= 339.77'
L= 323.41'	L= 346.51'
LCh= 256.15	LCh= 274.44'
⑤	⑥ (TOTAL CURVE)
R= 158.00'	R= 392.00'
Δ= 132°-21'-32"	Δ= 62°-24'-54"
T= 357.89'	T= 237.47'
L= 365.00'	L= 427.02'
LCh= 289.08'	LCh= 406.22'
⑦ (TOTAL CURVE)	⑧ (TOTAL CURVE)
R= 400.00'	R= 408.00'
Δ= 69°-34'-37"	Δ= 56°-54'-01"
T= 277.94'	T= 221.07'
L= 485.74'	L= 405.18'
LCh= 456.54'	LCh= 388.74'

LEGEND

- (A) STANDARD LONGITUDINAL JOINT
- (B) STANDARD KEY JOINT WITHOUT TIE BARS
- (C) EXPANSION JOINT WITHOUT DOWELS
- (D) STANDARD EXPANSION JOINT

NEW PAVEMENT (T-71 CONCRETE)
PAVED BERM

NOTE: ALL ELEVATIONS ARE TO TOP OF FINISHED PVMT.

HARGETT, YANDA & BARBER
Consulting Engineers
4900 EUCLID AVE. CLEVELAND 3, OHIO

EXTRA AREA DETAILS

RAMP Nº 13

SCALE: 1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
					44 20 OF 57	

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

62
180

CUYAHOGA COUNTY
CUY. 2-24.33

CURVE DATA

(1) R=20.00' Δ=90°43'-50" T=20.26' L=31.67' LCH=28.46'	(2) R=20.00' Δ=89°16'-10" T=19.75' L=31.16' LCH=28.10'	(3) R=20.00' Δ=2°19'-41" T=0.41' L=0.81' LCH=0.81'	(4) R=40.00' Δ=56°16'-33" T=21.39' L=39.29' LCH=37.73'	(5) R=35.00' Δ=111°39'-50" T=51.56' L=68.21' LCH=57.92'
(6) R=35.00' Δ=90°00'-00" T=35.00' L=54.98' LCH=49.50'	(7) R=35.00' Δ=104°32'-25" T=45.24' L=63.86' LCH=55.36'	(8) R=26.00' Δ=89°18'-51" T=24.70' L=38.37' LCH=35.14'	(9) R=40.00' Δ=102°06'-12" T=49.49' L=71.28' LCH=62.22'	(10) R=15.00' Δ=138°26'-11" T=39.53' L=36.25' LCH=28.05'
(11) R=50.00' Δ=24°29'-38" T=10.85' L=21.37' LCH=21.21'	(12) R=20.00' Δ=125°52'-05 T=39.14' L=43.94' L.CH=35.62'			

SUMMARY OF QUANTITIES

DESCRIPTION	E-8 REMOVAL & DISPOSAL CURB L.F.	E-8 REMOVAL & DISPOSAL PAV'T. SQ. YD.	I-11 LIN. FT. SANDSTONE CURB STR.	I-11 LIN. FT. SANDSTONE CURB RADIAL	I-13 SQ.FT. CONCRETE SIDEWALK 4"	I-18 CU. YD. 5" STABILIZED CRUSHED AGGREGATE APPROACHES & SHOULDERS	I-22 CU.YD. SUB-BASE GRADING A OR B	B-219 CU.YD. 3" WATERPROOF AGGREGATE BASE COURSE	T-31 BIT. SURF. TREAT #6 AGG. CU. YD	T-31 BIT. SURF. TREAT BIT. MATERIAL AS PER PLANS GALS.	T-70 S.Y. PORTLAND CEMENT CONCRETE PAV'T. 6"	T-71 S.Y. 9" REINF.
INTERSTATE FUNDS	97.50	21.67	1,710.34	349.54	7,564.90	——	816.95	——	——	——	122.28	4,763.24
URBAN FUNDS	——	——	87.51	84.04	——	.19	47.58	.12	.01	.35	——	279.11

EXISTING PAVEMENT TO REMAIN IN PLACE FROM GLENFIELD STA 1+25 TO GLENFIELD STA 3+44.30

TRANSITION CURB 0 TO 6" IN 15'

MEET EXISTING

PRIVATE DRIVE STA 3+41.5

GLENFIELD STA 4+36.44 PT. N 68°-37'-17"E

NMR STA 265+95.06 PC N 20°-38'-53"W

END SHEET NMR STA 265+75

UNDERWOOD STA 4+27.76 PC N 20°-38'-53"W

N.M.R. STA 266+19.14 GLENFIELD AVE. STA 4+70.30

UNDERWOOD AVE N-89°-42'-55"W

LIMIT OF FLEXIBLE PAVEMENT REMOVAL

EXISTING GLENFIELD N21°22'-45"W

EXIST. PAVEMENT TO REMAIN IN PLACE

GLENFIELD STA 5+57.34 UNDERWOOD STA. 4+64.48

GLENFIELD STA. 5+91.34 PT. N 68°-37'-16"E

NORTH MARGINAL ROAD N69°21'-01"E

I-13 CONCRETE SIDEWALK

RELOG. NEFF STA 5+74.35 N 51°-35'-41"E

EXISTING PAVEMENT TO REMAIN IN PLACE

EXISTING NEFF ROAD N21°-20'-02"W

EXISTING NEFF RD. STA 8+05.39 TURNAROUND STA. OHOO

N35°-52-27"W

ANGLE POINT EXISTING NEFF STA 5+16.39

MEET EXISTING

EXIST. NEFF RD. STA 7+41.39 LIMIT OF PAVEMENT REMOVAL

EXIST. NEFF STA 7+41.39 PC N 54°-07'-33"E

TURNAROUND N54°-07'-33"E

STA 0+46 PT. N 35°-52'-27"W

STA 0+58.15 PT. N 35°-52'-27"W

END WORK STA 0+68

EXIST. NEFF RD. STA 9+72.00

EXIST. PAVE'T. 2" BITUM. CONC. ON 8" REINF. CONCRETE

EXIST. NEFF STA 10+41.44 PT. N 68°-39'-58"E

NMR STA 267+44.54 PC N 20°-38'-53"W

MEET EXISTING GRADES ALONG BACK OF WALK

PRIVATE DRIVE STA 10+01.23

I-13 CONC. S.W.

EXIST. NEFF STA 10+38.97 PCC. N 68°-39'-58"E

PCC. 15° RAD. TO 50' RAD.

RELOC. NEFF STA 4+57.59-N PT. N 51°-35'-47"E

RELOC. NEFF STA 5+74.35-N N 51°-35'-41"E

16'-R

STA. 267+89.24 N.M.R.

STA. 10+79.76 EXIST. NEFF RD.

I-13 CONCRETE SIDEWALK

LIMIT OF INTERSTATE PARTICIPATION

RELOCATED NEFF ROAD

N-38-24-15"W

RELOCATED NEFF ROAD STA 4+99.81-N N.M.R. STA 268+53.23 (ANGLE POINT)

RELOC. NEFF RD. STA. 4+33.48+N N 51°-35'-47"E

N-40°-32'-51"-W

I-13 CONCRETE SIDEWALK

N-49°-27'-09"E

N-2°-21'-05"W

CURB TRANSITION 0 TO 6" IN 15'-0

N87°-38'-55"E END CURB

NORTH MARGINAL ROAD N 85°-19'-14"E

PAVED BERM

NMR STA 269+20.42 PCC (S.CURB) N 4°-40'-46"W

NMR STA 269+45.42 END SHEET

NEFF ROAD RELOC. STA 5+28.69 N 51°-35'-41"E

PT. N 4°-40'-46"W NMR STA 268+82.11

I-13 CONCRETE SIDEWALK

N.32°-45'-05"W

EXIST. WALK TO REMAIN IN PLACE

EXIST. WALK

N-35°-54'-25"-W

N.38°-37'-20"W

ANGLE POINT PT. RELOC. NEFF RD. STA 7+17.80-N EXIST. NEFF RD. STA 12+87.40

C.O. ROUNDING

MEET EXIST. WALK

MEET EXISTING GRADE @ WALK

PRIVATE DRIVE STA 7+58

PRIVATE DRIVE CONC. DRIVE STA 6+47

MEET EXISTING GRADE @ WALK

MEET EXISTING STA 7+60-N

2" BITUM. CONC. ON 8" REINF. CONC.

SEE SH. #63 FOR RELOCATED NEFF RD. EXTRA AREA

MATCH LINE RELOCATED NEFF ROAD STA. 4+20-N

607.30 608.10 608.90

℄ SPECIAL DITCH

80'

80'

LEGEND

- (A) STANDARD LONGITUDINAL JOINT
- (B) STANDARD KEY JOINT WITHOUT TIE BARS
- (C) EXPANSION JOINT WITHOUT DOWELS
- (D) STANDARD EXPANSION JOINT
- PAVED BERM
- NEW PAVEMENT (T-71 CONCRETE)
- EXISTING PAVEMENT REMOVED AND REPLACED WITH NEW PAVEMENT

NOTE
1. ALL ELEVATIONS ARE TO THE TOP OF FINISHED PAVEMENT.
2. NEW DRIVEWAY APRONS SHALL MEET THE GRADE OF EXISTING DRIVEWAYS AT BACK OF APRONS UNLESS OTHERWISE INDICATED.

FEDERAL URBAN FUND PARTICIPATION

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

EXTRA AREA DETAILS

INTERSECTION OF GLENFIELD AVE. & UNDERWOOD AVE. - INTERSECTION OF NORTH MARGINAL ROAD WITH EXISTING & RELOCATED NEFF ROAD & GLENFIELD AVE. - NEFF RD TURNAROUND

SCALE: 1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
					4/4/60 20 NOV 59	

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

63/180

CUYAHOGA COUNTY
CUY. 2-24.33

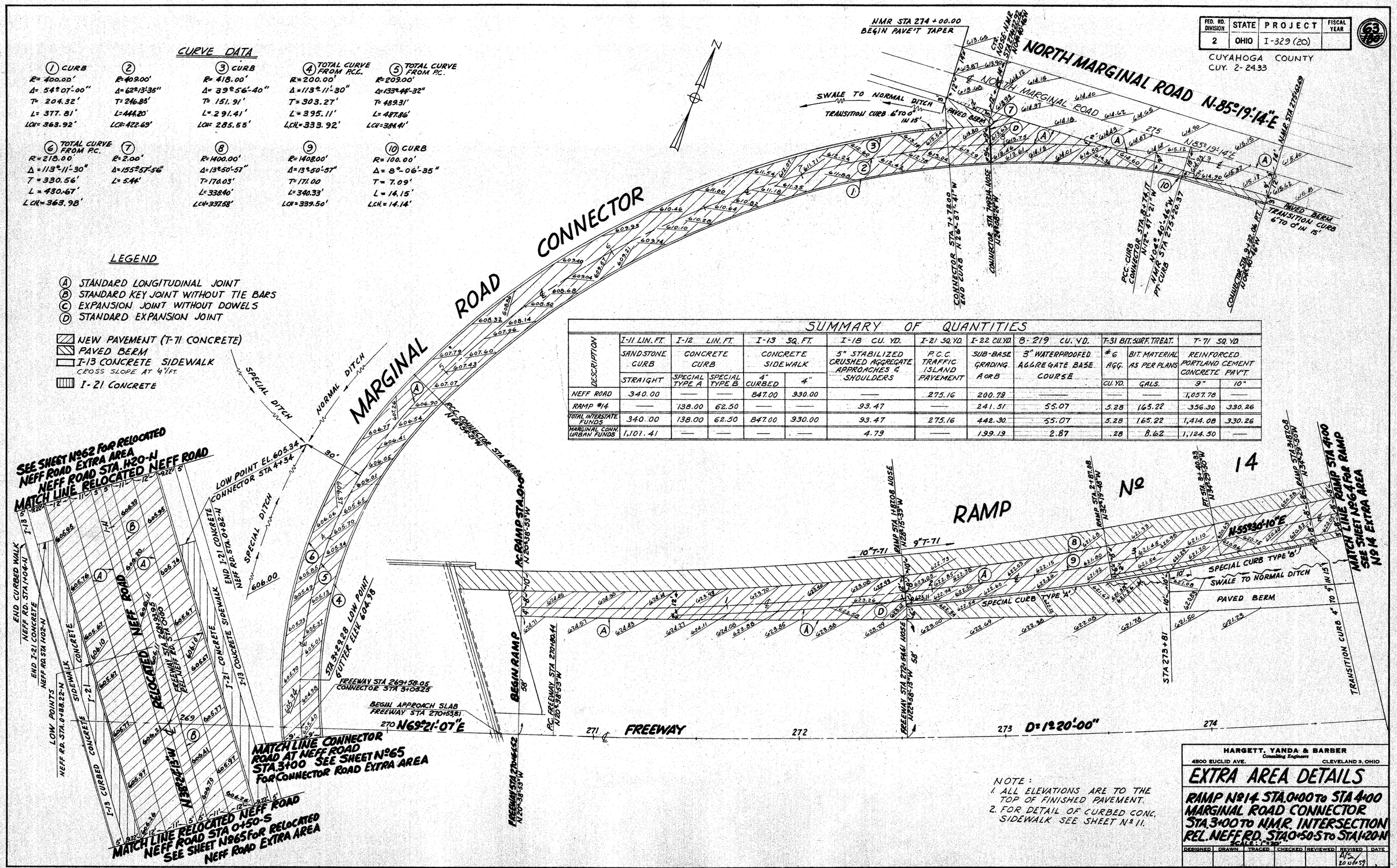
CURVE DATA

① CURB	②	③ CURB	④ TOTAL CURVE FROM P.C.C.	⑤ TOTAL CURVE FROM P.C.
R= 400.00'	R= 409.00'	R= 418.00'	R= 200.00'	R= 209.00'
Δ= 54°07'-00"	Δ= 62°13'-35"	Δ= 39°56'-40"	Δ= 113°11'-30"	Δ= 133°44'-32"
T= 204.32'	T= 246.85'	T= 151.91'	T= 303.27'	T= 489.31'
L= 377.81'	L= 444.20'	L= 291.41'	L= 395.11'	L= 487.86'
LCH= 363.92'	LCH= 422.69'	LCH= 285.55'	LCH= 333.92'	LCH= 384.41'

⑥ TOTAL CURVE FROM P.C.	⑦	⑧	⑨	⑩ CURB
R= 218.00'	R= 2.00'	R= 1400.00'	R= 1408.00'	R= 100.00'
Δ= 113°11'-30"	Δ= 155°57'-56"	Δ= 13°50'-57"	Δ= 13°50'-57"	Δ= 8°-06'-35"
T= 330.56'	L= 5.44'	T= 170.03'	T= 171.00	T= 7.09'
L= 430.67'		L= 338.40'	L= 340.33'	L= 14.15'
LCH= 363.98'		LCH= 337.58'	LCH= 339.50'	LCH= 14.14'

LEGEND

- Ⓐ STANDARD LONGITUDINAL JOINT
- Ⓑ STANDARD KEY JOINT WITHOUT TIE BARS
- Ⓒ EXPANSION JOINT WITHOUT DOWELS
- Ⓓ STANDARD EXPANSION JOINT
- NEW PAVEMENT (T-71 CONCRETE)
- PAVED BERM
- I-13 CONCRETE SIDEWALK CROSS SLOPE AT 1/4"/FT.
- I-21 CONCRETE



SUMMARY OF QUANTITIES

DESCRIPTION	I-11 LIN. FT. SANDSTONE CURB STRAIGHT	I-12 LIN. FT. CONCRETE CURB SPECIAL TYPE A	I-12 LIN. FT. CONCRETE CURB SPECIAL TYPE B	I-13 SQ. FT. CONCRETE SIDEWALK 4" CURBED	I-13 SQ. FT. CONCRETE SIDEWALK 4"	I-18 CU. YD. 5" STABILIZED CRUSHED AGGREGATE APPROACHES & SHOULDERS	I-21 SQ. YD. P.C.C. TRAFFIC ISLAND PAVEMENT	I-22 CU. YD. SUB-BASE GRADING A OR B	B-219 CU. YD. 3" WATERPROOFED AGGREGATE BASE COURSE	T-31 BIT. SURF. TREAT. #6 AGG. CU. YD.	T-31 BIT. SURF. TREAT. BIT. MATERIAL AS PER PLANS GALS.	T-71 SQ. YD. REINFORCED PORTLAND CEMENT CONCRETE PAV'T. 9"	T-71 SQ. YD. REINFORCED PORTLAND CEMENT CONCRETE PAV'T. 10"
NEFF ROAD	340.00	—	—	847.00	930.00	—	275.16	200.79	—	—	—	1,057.78	—
RAMP #14	—	138.00	62.50	—	—	93.47	—	241.51	55.07	5.28	165.22	356.30	330.26
TOTAL INTERSTATE FUNDS	340.00	138.00	62.50	847.00	930.00	93.47	275.16	442.30	55.07	5.28	165.22	1,414.08	330.26
MARGINAL CONN. URBAN FUNDS	1,101.41	—	—	—	—	4.79	—	199.19	2.87	.28	8.62	1,124.50	—

NOTE:
1. ALL ELEVATIONS ARE TO THE TOP OF FINISHED PAVEMENT.
2. FOR DETAIL OF CURBED CONC. SIDEWALK SEE SHEET Nº 11.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

EXTRA AREA DETAILS

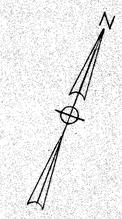
RAMP Nº14 STA. 0+00 TO STA 4+00
MARGINAL ROAD CONNECTOR
STA. 3+00 TO N.M.R. INTERSECTION
REL. NEFF RD. STA. 0+50-S TO STA. 1+20-N
SCALE: 1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
					A/S 20 Nov 59	

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

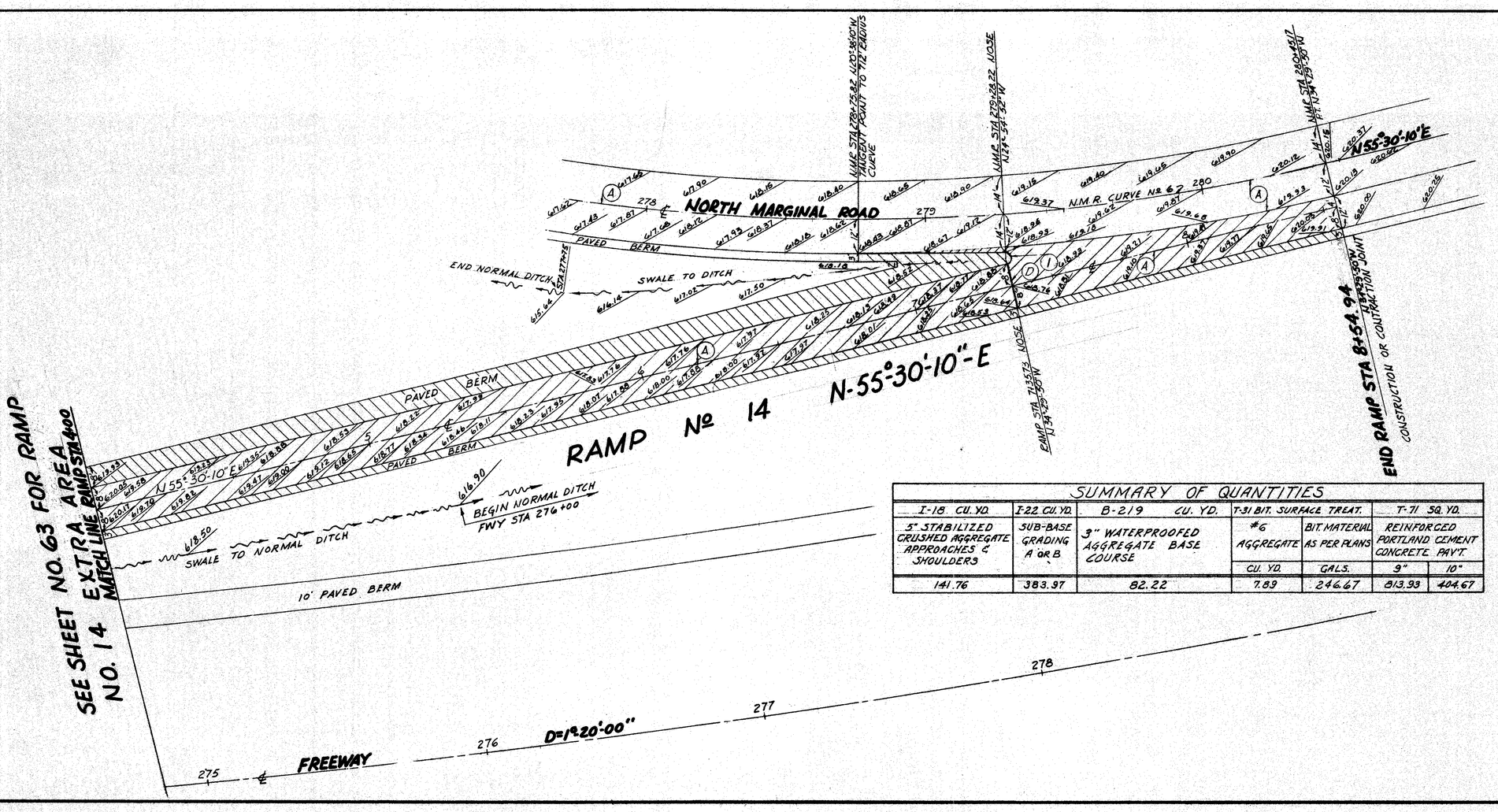
64 180

CUYAHOGA COUNTY
CUY. 2-24.33



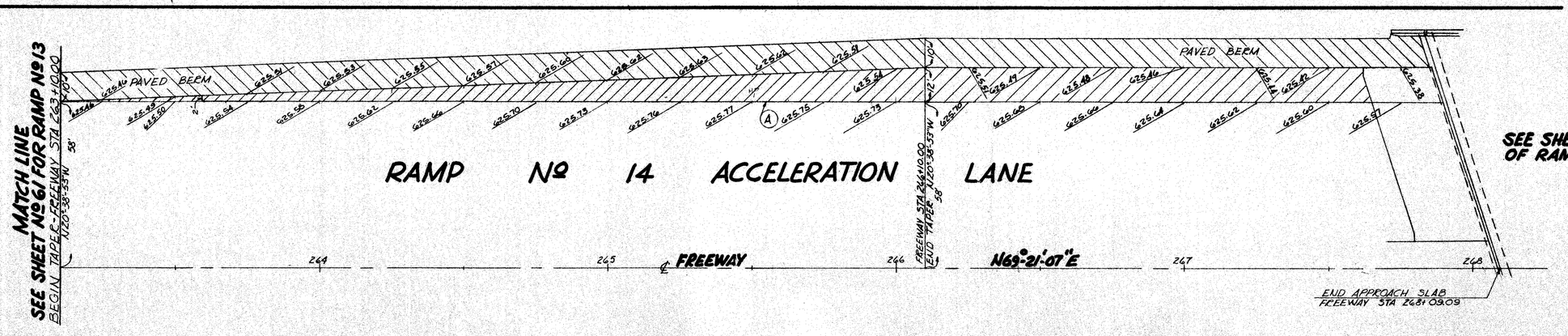
CURVE DATA

(1)
R = 2.00'
Δ = 164°-30'-07"
L = 5.74'



SUMMARY OF QUANTITIES

I-18. CU. YD.	I-22 CU. YD.	B-219 CU. YD.	T-31 BIT. SURFACE TREAT.		T-71 SQ. YD.	
5" STABILIZED CRUSHED AGGREGATE APPROACHES & SHOULDERS	SUB-BASE GRADING A OR B	3" WATERPROOFED AGGREGATE BASE COURSE	#6 AGGREGATE	BIT. MATERIAL AS PER PLANS	REINFORCED PORTLAND CEMENT CONCRETE PAV'T.	
			CU. YD.	GALS.	9"	10"
141.76	383.97	82.22	7.89	246.67	813.93	404.67



LEGEND

- (A) STANDARD LONGITUDINAL JOINT
- (B) STANDARD KEY JOINT WITHOUT TIE BARS
- (C) EXPANSION JOINT WITHOUT DOWELS
- (D) STANDARD EXPANSION JOINT
- NEW PAVEMENT (T-71 CONCRETE)
- PAVED BERM

SEE SHEET Nº 63 FOR CONTINUATION OF RAMP Nº 14 ACCELERATION LANE

NOTE: ALL ELEVATIONS ARE TO THE TOP OF FINISHED PAVEMENT.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

EXTRA AREA DETAILS

INTERSECTION OF RAMP Nº 14 WITH NORTH MARGINAL ROAD RAMP Nº 14 ACCELERATION LANE

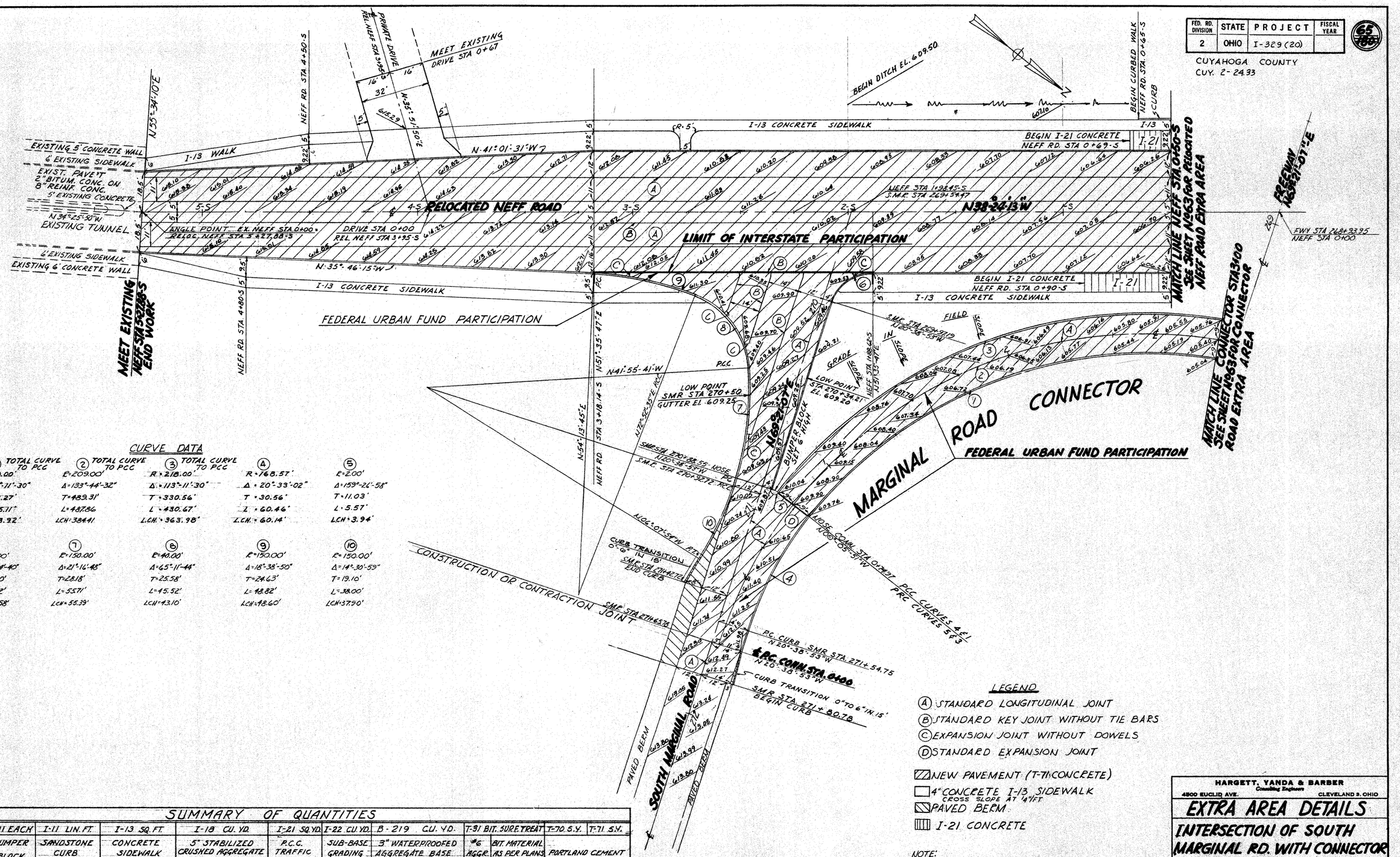
SCALE: 1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-389(20)	

CUYAHOGA COUNTY
CUY. 2-24.33

65
1965



CURVE DATA

	① TOTAL CURVE TO PCC	② TOTAL CURVE TO PCC	③ TOTAL CURVE TO PCC	④	⑤
	R=200.00'	E=209.00'	R=218.00'	R=768.57'	E=2.00'
	Δ=113°-11'-30"	Δ=133°-44'-32"	Δ=113°-11'-30"	Δ=20°-33'-02"	Δ=159°-26'-58"
	T=303.27'	T=489.31'	T=330.56'	T=30.56'	T=11.03'
	L=395.11'	L=487.86	L=430.67'	L=60.46'	L=5.57'
	LCH=333.92'	LCH=384.41	LCH=363.98'	LCH=60.14'	LCH=3.94'

	⑥	⑦	⑧	⑨	⑩
	R=20.00'	R=150.00'	R=40.00'	R=150.00'	R=150.00'
	Δ=72°-14'-40"	Δ=21°-16'-48"	Δ=65°-11'-44"	Δ=18°-38'-50"	Δ=14°-30'-59"
	T=14.60'	T=28.18'	T=25.58'	T=24.63'	T=19.10'
	L=25.22'	L=55.71'	L=45.52'	L=48.82'	L=38.00'
	LCH=23.58'	LCH=55.39'	LCH=43.10'	LCH=48.60'	LCH=37.90'

SUMMARY OF QUANTITIES

DESCRIPTION	I-11 EACH BUMPER BLOCK	I-11 LIN. FT. SANDSTONE CURB STR.	I-11 LIN. FT. SANDSTONE CURB RADIAL	I-13 SQ. FT. CONCRETE SIDEWALK 4" CURBED	I-13 SQ. FT. CONCRETE SIDEWALK 4"	I-18 CU. YD. 5" STABILIZED CRUSHED AGGREGATE APPROACHES & SHOULDERS	I-21 SQ. YD. P.C.C. TRAFFIC ISLAND PAVEMENT	I-22 CU. YD. SUB-BASE GRADING A OR B	B-219 CU. YD. 3" WATERPROOFED AGGREGATE BASE COURSE	T-31 BIT. SURF. TREAT #6 AGGR. CU. YD.	T-31 BIT. SURF. TREAT BIT. MATERIAL AS PER PLANS GALS.	T-70 S.Y. PORTLAND CEMENT CONCRETE PAV'T. 6"	T-71 S.Y. PORTLAND CEMENT CONCRETE PAV'T. 9" REINF.
URBAN FUNDS	1	782.94	70.74	—	—	7.19	—	200.19	4.22	41	12.66	—	1,124.59
INTERSTATE FUNDS	—	826.67	—	82.50	4,355.98	—	57.16	484.28	—	—	—	153.33	2,752.09

LEGEND

- (A) STANDARD LONGITUDINAL JOINT
- (B) STANDARD KEY JOINT WITHOUT TIE BARS
- (C) EXPANSION JOINT WITHOUT DOWELS
- (D) STANDARD EXPANSION JOINT
- NEW PAVEMENT (T-71 CONCRETE)
- 4" CONCRETE I-13 SIDEWALK CROSS SLOPE AT ¼" FT.
- PAVED BERM
- I-21 CONCRETE

NOTE:
1. ALL ELEVATIONS ARE TO THE TOP OF FINISHED PAVEMENT.
2. FOR DETAIL OF CURBED CONC. SIDEWALK SEE SHEET N°11.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

EXTRA AREA DETAILS

INTERSECTION OF SOUTH MARGINAL RD. WITH CONNECTOR RD. & RELOCATED NEFF RD.

SCALE: 1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
					A.B. 10-20-67	

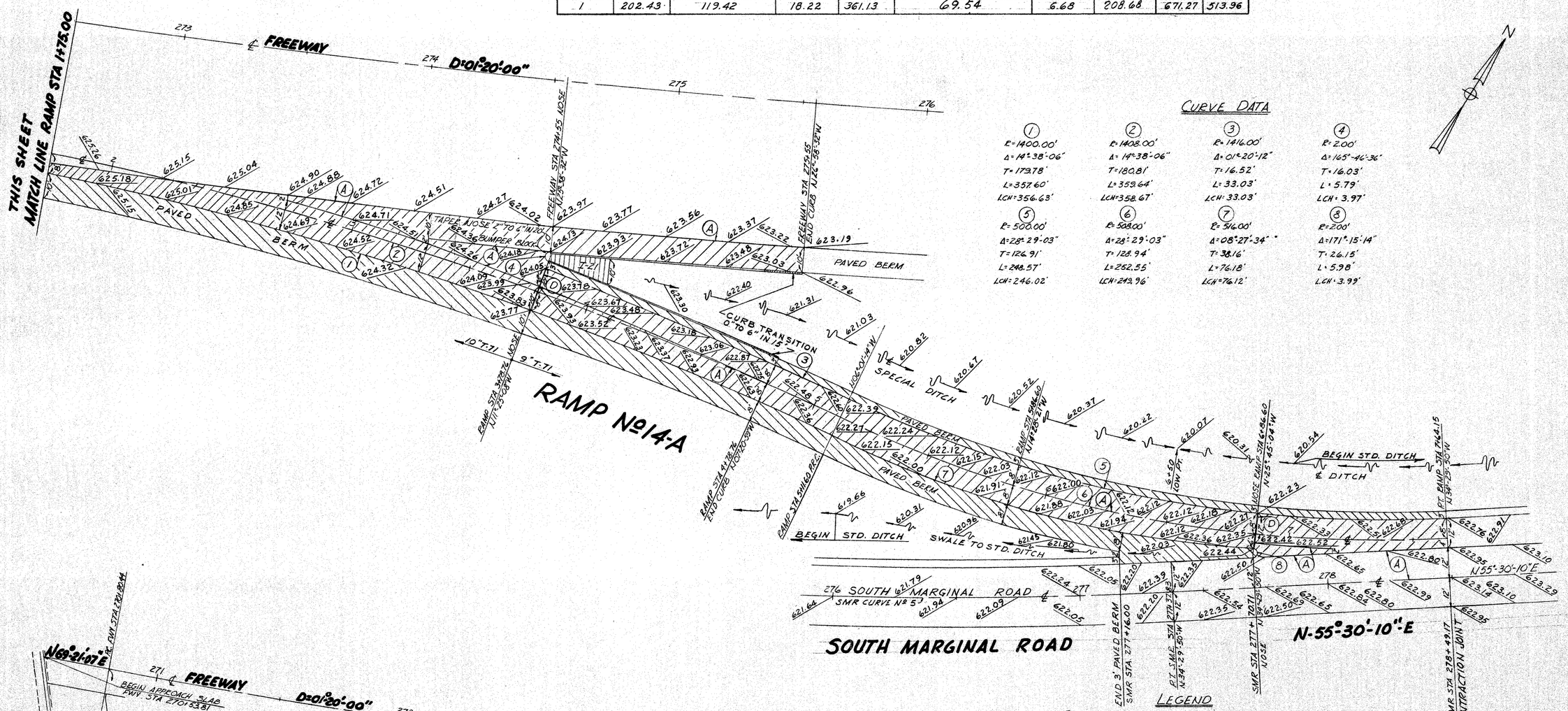
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

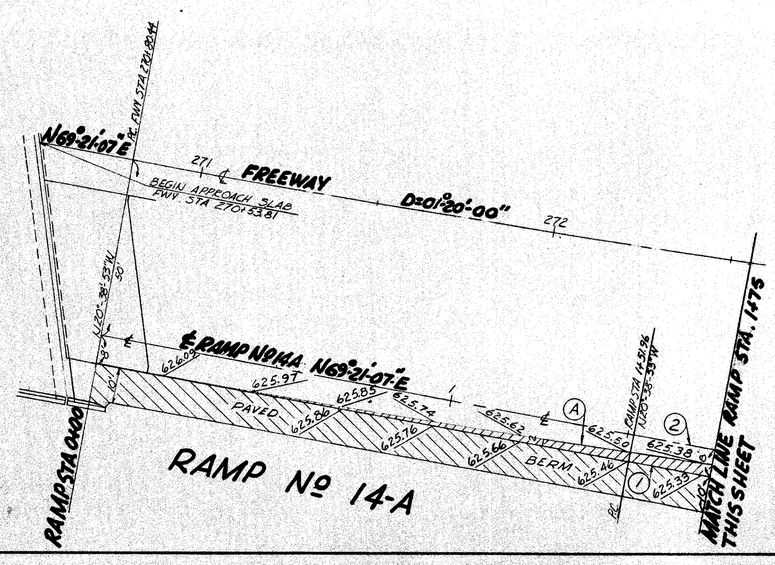
CUYAHOGA COUNTY
CUY. 2-24.33

66 / 180

SUMMARY OF QUANTITIES (TOTAL THIS SHEET)

I-11 EACH	I-11 LIN. FT.	I-18 CU. YD.	I-21 SQ. YD.	I-22 CU. YD.	B-219 CU. YD.	T-31 BIT. SURFACE TREAT		T-71 SQ. YD.	
BUMPER BLOCK	SANDSTONE CURB / STRAIGHT	5" STABILIZED CRUSHED AGGREGATE APPROACHES & SHOULDERS	P.C.C. TRAFFIC ISLAND PAVEMENT	SUB-BASE GRADING A OR B	3" WATERPROOFED AGGREGATE BASE COURSE	#6 AGGREGATE	BIT. MATERIAL AS PER PLANS	REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	
						CU. YD.	GALS.	9"	10"
1	202.43	119.42	18.22	361.13	69.54	6.68	208.68	671.27	513.96





CURVE DATA

1	2	3	4
R=1400.00'	R=1408.00'	R=1416.00'	R=2.00'
Δ=14°-38'-06"	Δ=14°-38'-06"	Δ=01°-20'-12"	Δ=165°-46'-36"
T=179.78'	T=180.81'	T=16.52'	T=16.03'
L=357.60'	L=359.64'	L=33.03'	L=5.79'
LCH=356.63'	LCH=358.67'	LCH=33.03'	LCH=3.97'
5	**6**	**7**	**8**
R=500.00'	R=508.00'	R=516.00'	R=2.00'
Δ=28°-29'-03"	Δ=28°-29'-03"	Δ=08°-27'-34"	Δ=171°-15'-14"
T=126.91'	T=128.94'	T=38.16'	T=26.15'
L=248.57'	L=252.55'	L=76.18'	L=5.98'
LCH=246.02'	LCH=249.96'	LCH=76.12'	LCH=3.99'

LEGEND

- (A) STANDARD LONGITUDINAL JOINT
- (B) STANDARD KEY JOINT WITHOUT TIE BARS
- (C) EXPANSION JOINT WITHOUT DOWELS
- (D) STANDARD EXPANSION JOINT

- NEW PAVEMENT (T-71 CONCRETE)
- PAVED BERM
- I-21 CONCRETE

NOTE:
ALL ELEVATIONS ARE TO THE TOP OF FINISHED PAVEMENT.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

EXTRA AREA DETAILS

RAMP No 14-A

SCALE: 1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
					AC 28 NOV 59	

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY. 2-24.33

67
785

NORTH MARGINAL ROAD

N-55°-30'-10"-E

NORTH MARGINAL ROAD

N 55°-30'-10" E

NMR STA. 284+22 BEGIN 3" PAVED BERM

NMR STA. 284+75 BEGIN STD. DITCH

DITCH HIGH POINT NMR STA 284+75

PAVED BERM

SPECIAL DITCH

RAMP STA. 0+00 = NMR STA. 282+90 + RAMP STA. 0+00.3 L 134°-29'-50" W, 110' FR. CONST. OR CONTR. JOINT

RAMP No. 16

N66°-31'-14"E

FWY STA. 283+25 END STD. DITCH

RAMP STA. 1+75.00 END PAVT. TAPER

TRANSITION CURB 0" TO 6" IN 15'

BUMPER BLOCK TAPER NOSE 2" TO 6" IN 20'

9"T-71

10"T-71

RAMP No 16

FREEWAY

N-55°-30'-10"-E

N 55°-30'-10" E

FREEWAY

CURVE DATA

(1) R=500.00' Δ=11°-01'-04" T=48.22' L=96.15' LCH=96.00'	(2) R=508.00' Δ=11°-01'-04" T=48.99' L=97.69' LCH=97.54'	(3) R=2.00' Δ=171°-15'-14" T=26.15' L=5.98' LCH=3.99'	(4) R=800.00' Δ=11°-01'-04" T=77.16' L=153.84' LCH=153.60'	(5) R=808.00' Δ=11°-01'-04" T=77.93' L=155.38' LCH=155.14'
(6) R=2.00' Δ=168°-58'-56" T=20.74' L=5.90' LCH=3.98'	(7) R=500.00' Δ=19°-43'-49" T=86.95' L=172.18' LCH=171.33'	(8) R=508.00' Δ=19°-43'-49" T=88.34' L=174.93' LCH=174.07'	(9) R=516.00' Δ=08°-27'-26" T=38.15' L=76.16' LCH=76.10'	(10) R=2.00' Δ=168°-45'-37" T=20.26' L=5.89' LCH=3.98
(11) R=1000.00' Δ=19°-43'-49" T=173.90' L=344.36' LCH=342.66'	(12) R=1008.00' Δ=19°-43'-49" T=175.29' L=347.11' LCH=345.40'	(13) R=1016.00' Δ=00°-43'-35" T=6.44' L=12.88' LCH=12.78'		

SUMMARY OF QUANTITIES (TOTAL THIS SHEET)

DESCRIPTION	I-11 EACH BUMPER BLOCK	I-11 LIN. FT. SANDSTONE CURB STRAIGHT	I-12 LIN. FT. CONCRETE CURB SPECIAL TYPE A	I-12 LIN. FT. CONCRETE CURB SPECIAL TYPE B	I-18 CU. YD. 5" STABILIZED CRUSHED AGGREGATE APPROACHES & SHOULDERS	I-21 SQ. YD. P.C.C. TRAFFIC ISLAND PAVEMENT	I-22 CU. YD. SUB-BASE GRADING A OR B	B-219 CU. YD. 3" WATERPROOFED AGGREGATE BASE COURSE	T-31 BIT. SURF. TREAT #6 AGG. CU. YD.	T-31 BIT. SURF. TREAT BIT. MATERIAL AS PER PLANS GALS.	T-71 SQ. YD. REINFORCED PORTLAND CEMENT CONCRETE PAV'T. 9"	T-71 SQ. YD. REINFORCED PORTLAND CEMENT CONCRETE PAV'T. 10"
RAMP #15	——	——	98.5	103.5	101.88	——	293.71	59.66	5.72	178.99	660.91	289.78
RAMP #16	1	200.00	——	——	94.38	24.00	334.24	54.90	5.27	164.72	652.50	550.76
TOTALS	1	200.00	98.50	103.50	196.26	24.00	627.95	114.56	10.99	343.71	1,313.41	840.54

RAMP No 15

RAMP STA. 0+00 = SMR STA 282+40.2 + RAMP STA 0+00 L 134°-29'-50" W, CONSTRUCTION OR CONTRACTION JOINT.

RAMP No. 15

RAMP STA. 2+00 END STD. DITCH

TRANSITION CURB 9" TO 4" IN 15' SPECIAL CURB TYPE "B"

SPECIAL CURB TYPE "A"

PAVED BERM

SPECIAL DITCH

SMR STA 284+75 BEGIN STD. DITCH

SOUTH MARGINAL ROAD

N-55°-30'-10"-E

SMR STA. 283+40 BEGIN 3' PAVED BERM

N-55° 30'-10"-E

FWY STA 284+50 END 10' PAVED BERM

FWY STA 285+37.00 L 134°-29'-50" W 58'

FWY STA 286+71.86 58'

END APPROACH SLAB FWY STA. 287+61.71

RAMP STA 287+55 N 34°-29'-50" W 58'

RAMP STA 248+71 L 147°-09'-58" W

RAMP STA 5122.04 N 34°-29'-50" W PP

LEGEND

- (A) STANDARD LONGITUDINAL JOINT
- (B) STANDARD KEY JOINT WITHOUT TIE BARS
- (C) EXPANSION JOINT WITHOUT DOWELS
- (D) STANDARD EXPANSION JOINT
- NEW PAVEMENT (T-71 CONCRETE)
- PAVED BEEM
- I-21 CONCRETE

NOTE: ALL ELEVATIONS ARE TO THE TOP OF FINISHED PAVEMENT.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

EXTRA AREA DETAILS

RAMP No 15

RAMP No 16

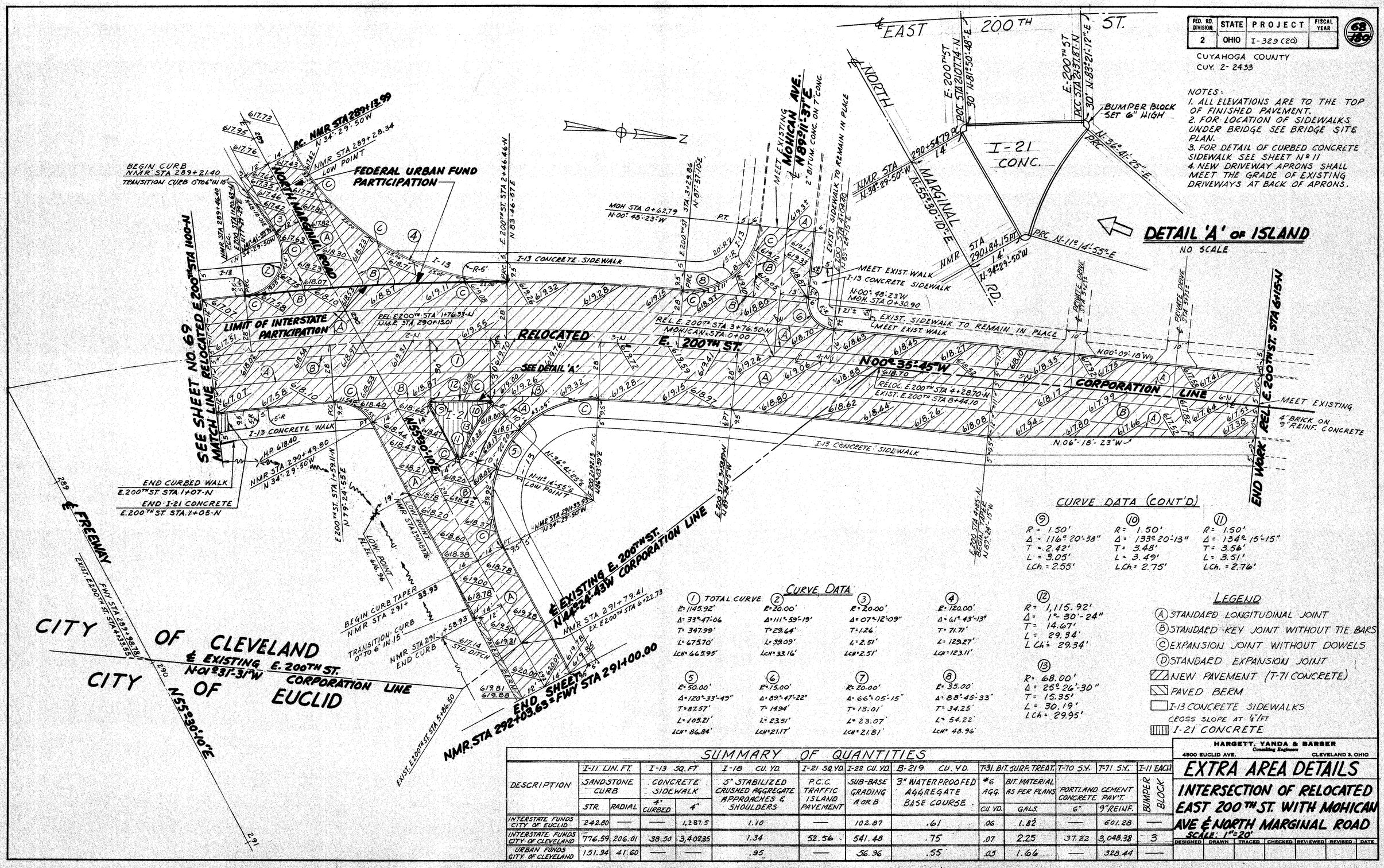
SCALE: 1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY. 2- 2433

NOTES:
1. ALL ELEVATIONS ARE TO THE TOP OF FINISHED PAVEMENT.
2. FOR LOCATION OF SIDEWALKS UNDER BRIDGE SEE BRIDGE SITE PLAN.
3. FOR DETAIL OF CURBED CONCRETE SIDEWALK SEE SHEET Nº 11
4. NEW DRIVEWAY APRONS SHALL MEET THE GRADE OF EXISTING DRIVEWAYS AT BACK OF APRONS.



CURVE DATA (CONT'D)

(9)	(10)	(11)
R = 1.50'	R = 1.50'	R = 1.50'
Δ = 116°-20'-38"	Δ = 133°-20'-13"	Δ = 134°-15'-15"
T = 2.42'	T = 3.48'	T = 3.56'
L = 3.05'	L = 3.49'	L = 3.51'
LCh = 2.55'	LCh = 2.75'	LCh = 2.76'

CURVE DATA

(1) TOTAL CURVE	(2)	(3)	(4)
R=1145.92'	R=20.00'	R=20.00'	R=120.00'
Δ=33°-47'-06	Δ=111°-59'-19'	Δ=07°-12'-09"	Δ=61°-43'-13"
T=347.99'	T=29.64'	T=1.26	T=71.71'
L=675.70'	L=39.09'	L=2.51'	L=129.27'
LCh=665.95'	LCh=33.16'	LCh=2.51'	LCh=123.11'

(5)	(6)	(7)	(8)
R=50.00'	R=15.00'	R=20.00'	R=35.00'
Δ=120°-33'-43"	Δ=89°-47'-22"	Δ=66°-05'-15"	Δ=88°-45'-33"
T=87.57'	T=14.94'	T=13.01'	T=34.25'
L=105.21'	L=23.51'	L=23.07'	L=54.22'
LCh=86.84'	LCh=21.17'	LCh=21.81'	LCh=48.96'

(12)	(13)
R=1,115.92'	R=68.00'
Δ=1°-30'-24"	Δ=25°-26'-30"
T=14.67'	T=15.35'
L=29.34'	L=30.19'
LCh=29.34'	LCh=29.95'

LEGEND

- (A) STANDARD LONGITUDINAL JOINT
- (B) STANDARD KEY JOINT WITHOUT TIE BARS
- (C) EXPANSION JOINT WITHOUT DOWELS
- (D) STANDARD EXPANSION JOINT
- NEW PAVEMENT (T-71 CONCRETE)
- PAVED BERM
- I-13 CONCRETE SIDEWALKS CROSS SLOPE AT ¼"/FT
- I-21 CONCRETE

SUMMARY OF QUANTITIES

DESCRIPTION	I-11 LIN. FT. SANDSTONE CURB		I-13 SQ. FT CONCRETE SIDEWALK		I-18 CU. YD. 5" STABILIZED CRUSHED AGGREGATE APPROACHES & SHOULDERS	I-21 SQ. YD. P.C.C. TRAFFIC ISLAND PAVEMENT	I-22 CU. YD. SUB-BASE GRADING A OR B	B-219 CU. YD. 3" WATERPROOFED AGGREGATE BASE COURSE	T-31. BIT. SURF. TREAT. #6 AGG.		T-70 S.Y.	T-71 S.Y.	I-11 EACH
	STR.	RADIAL	4" CURBED	4"					CU. YD.	GALS.	6"	9" REINF.	BUMPER BLOCK
INTERSTATE FUNDS CITY OF EUCLID	242.80	—	—	1,287.5	1.10	—	102.87	.61	.06	1.82	—	601.28	—
INTERSTATE FUNDS CITY OF CLEVELAND	776.59	206.01	38.50	3,402.85	1.34	52.56	541.48	.75	.07	2.25	37.22	3,048.38	3
URBAN FUNDS CITY OF CLEVELAND	151.94	41.60	—	—	.95	—	56.96	.55	.05	1.66	—	328.44	—

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

EXTRA AREA DETAILS

INTERSECTION OF RELOCATED EAST 200TH ST. WITH MOHICAN AVE & NORTH MARGINAL ROAD

SCALE: 1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

CUYAHOGA COUNTY
CUY. 2-24.33

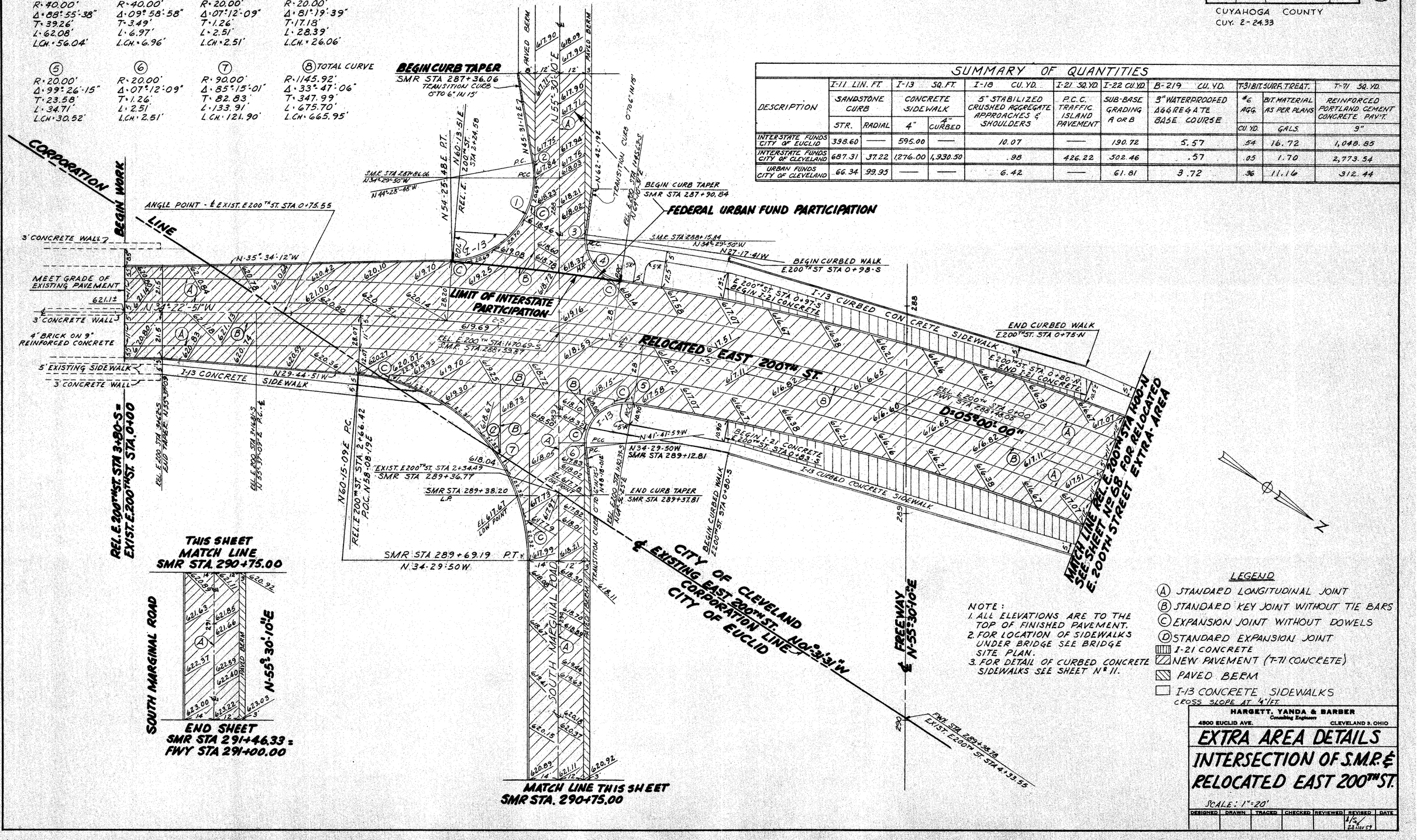
CURVE DATA

①	②	③	④
R=40.00'	R=40.00'	R=20.00'	R=20.00'
Δ=88°55'38"	Δ=09°58'58"	Δ=07°12'09"	Δ=81°19'39"
T=39.26'	T=3.49'	T=1.26'	T=17.18'
L=62.08'	L=6.97'	L=2.51'	L=28.39'
L.CH.=56.04'	L.CH.=6.96'	L.CH.=2.51'	L.CH.=26.06'

⑤	⑥	⑦	⑧ TOTAL CURVE
R=20.00'	R=20.00'	R=90.00'	R=1145.92'
Δ=99°26'15"	Δ=07°12'09"	Δ=85°15'01"	Δ=33°47'06"
T=23.58'	T=1.26'	T=82.83'	T=347.99'
L=34.71'	L=2.51'	L=133.91'	L=675.70'
L.CH.=30.52'	L.CH.=2.51'	L.CH.=121.90'	L.CH.=665.95'

SUMMARY OF QUANTITIES

DESCRIPTION	I-11 LIN. FT. SANDSTONE CURB STR.	I-11 LIN. FT. SANDSTONE CURB RADIAL	I-13 SQ.FT. CONCRETE SIDEWALK 4"	I-13 SQ.FT. CONCRETE SIDEWALK 4" CURBED	I-18 CU. YD. 5" STABILIZED CRUSHED AGGREGATE APPROACHES & SHOULDERS	I-21 SQ.YD. P.C.C. TRAFFIC ISLAND PAVEMENT	I-22 CU.YD. SUB-BASE GRADING A OR B	B-219 CU.YD. 3" WATERPROOFED AGGREGATE BASE COURSE	T-31 BIT. SURF. TREAT. #6 AGG. CU.YD.	T-31 BIT. SURF. TREAT. BIT. MATERIAL AS PER PLANS GALS.	T-71 SQ.YD. REINFORCED PORTLAND CEMENT CONCRETE PAV'T. 9"
INTERSTATE FUNDS CITY OF EUCLID	398.60	——	595.00	——	10.07	——	190.72	5.57	.54	16.72	1,048.85
INTERSTATE FUNDS CITY OF CLEVELAND	687.31	37.22	1,276.00	1,930.50	.98	426.22	502.46	.57	.05	1.70	2,773.54
URBAN FUNDS CITY OF CLEVELAND	66.34	99.95	——	——	6.42	——	61.81	3.72	.36	11.16	312.44



LEGEND

- Ⓐ STANDARD LONGITUDINAL JOINT
- Ⓑ STANDARD KEY JOINT WITHOUT TIE BARS
- Ⓒ EXPANSION JOINT WITHOUT DOWELS
- Ⓓ STANDARD EXPANSION JOINT
- I-21 CONCRETE
- NEW PAVEMENT (T-71 CONCRETE)
- PAVED BERM
- I-13 CONCRETE SIDEWALKS CROSS SLOPE AT ¼" / FT.

NOTE:
1. ALL ELEVATIONS ARE TO THE TOP OF FINISHED PAVEMENT.
2. FOR LOCATION OF SIDEWALKS UNDER BRIDGE SEE BRIDGE SITE PLAN.
3. FOR DETAIL OF CURBED CONCRETE SIDEWALKS SEE SHEET Nº 11.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

EXTRA AREA DETAILS INTERSECTION OF S.M.R. ℄ RELOCATED EAST 200TH ST.

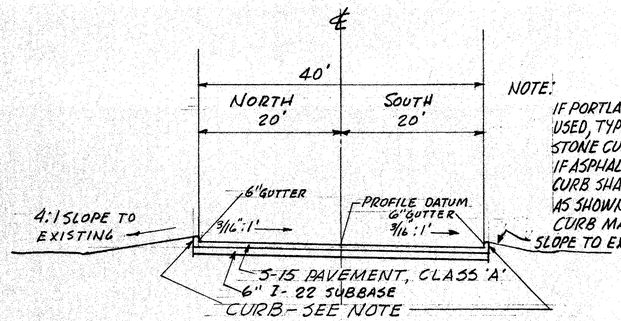
SCALE: 1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
					1/5/ 28 DEC 59	

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

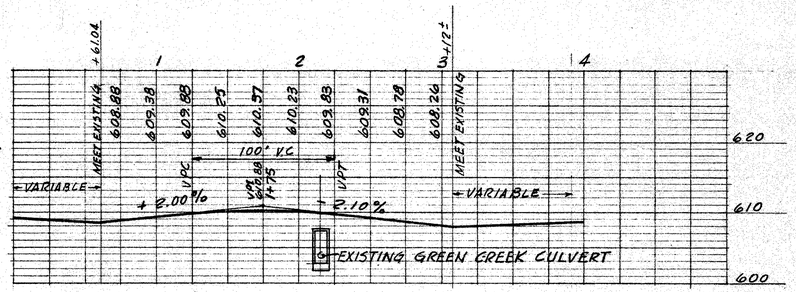
70 ~~80~~

CUYAHOGA COUNTY
CUY-2-24,33

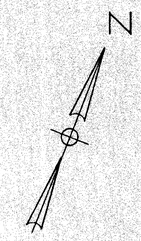


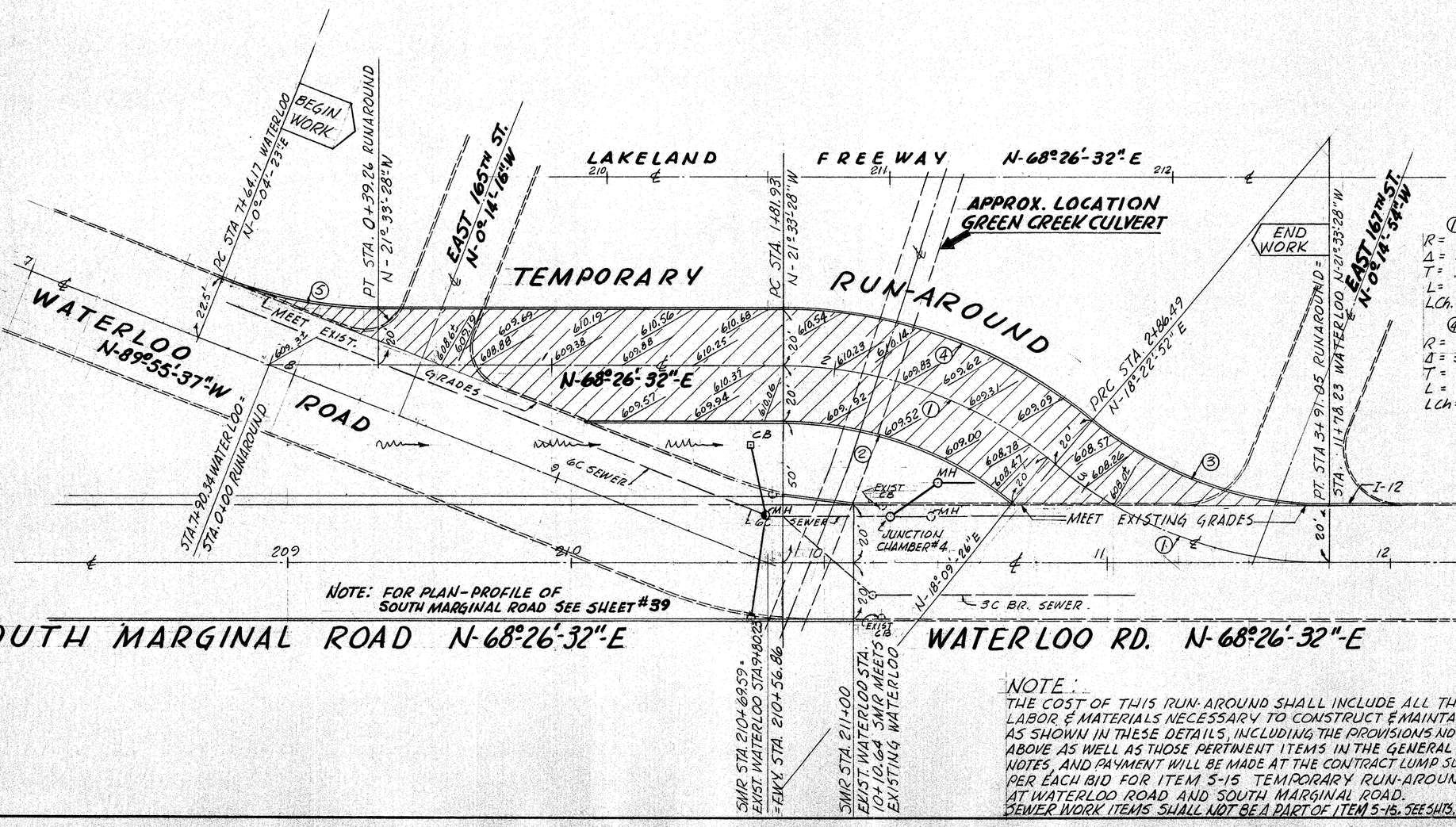
NOTE:
IF PORTLAND CEMENT CONCRETE PAVEMENT IS USED, TYPE 2-A CONC. CURB OR SALVAGEABLE STONE CURB MAY BE USED;
IF ASPHALTIC CONCRETE PAVEMENT IS USED, CURB SHALL BE IN ACCORDANCE WITH SS I-112 AS SHOWN ON STD. DWG. T-35, OR SALVAGEABLE CURB MAY BE USED.

TYPICAL SECTION
NO-SCALE



PROFILE WATERLOO-S.M.R. RUN-AROUND
SCALE: HORIZ. 1"=50'
VERT. 1"=10'





NOTE: FOR PLAN-PROFILE OF SOUTH MARGINAL ROAD SEE SHEET #39

SOUTH MARGINAL ROAD N-68°26'-32"E

WATERLOO RD. N-68°26'-32"E

CURVE DATA

①	②	③
R = 150.00'	R = 130.00'	R = 130.00'
Δ = 39°-56'-20"	Δ = 39°42'-54"	Δ = 39°56'-20"
T = 53.77'	T = 46.95'	T = 46.60'
L = 104.56'	L = 90.11'	L = 90.62'
LCh. 101.22'	LCh. = 88.32'	LCh. = 87.73'

④	⑤
R = 170.00'	R = 150.00'
Δ = 39°-56'-20"	Δ = 21°37'-51"
T = 60.93'	T = 28.65'
L = 118.50'	L = 56.63'
LCh = 114.72'	LCh = 56.29'

NOTE:
THE COST OF THIS RUN-AROUND SHALL INCLUDE ALL THE LABOR & MATERIALS NECESSARY TO CONSTRUCT & MAINTAIN AS SHOWN IN THESE DETAILS, INCLUDING THE PROVISIONS NOTED ABOVE AS WELL AS THOSE PERTINENT ITEMS IN THE GENERAL NOTES, AND PAYMENT WILL BE MADE AT THE CONTRACT LUMP SUM PER EACH BID FOR ITEM 5-15 TEMPORARY RUN-AROUND AT WATERLOO ROAD AND SOUTH MARGINAL ROAD.
SEWER WORK ITEMS SHALL NOT BE A PART OF ITEM 5-15. SEE SHTS. 28 & 39

HARGETT, YANDA & BARBER
Consulting Engineers
4600 Euclid Ave. Cleveland 3, Ohio

TEMPORARY RUN-AROUND AT WATERLOO ROAD & SOUTH MARGINAL ROAD

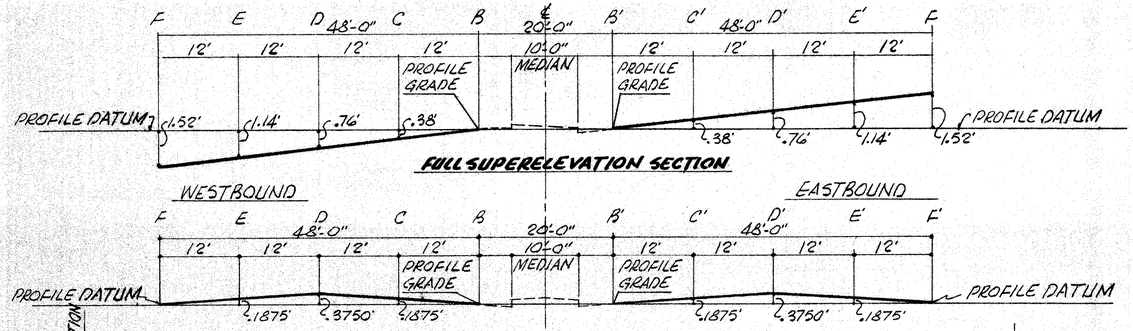
PLAN SCALE 1"=20'

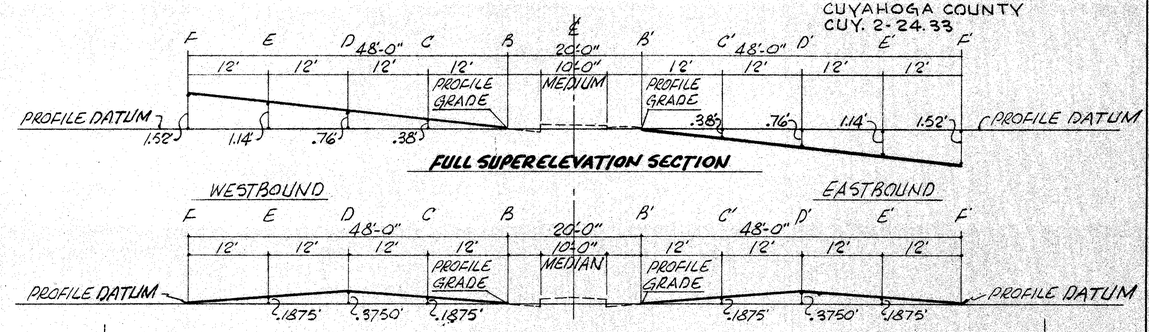
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

SUPERELEVATION TABLES

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

CUYAHOGA COUNTY
CUY. 2-24.33





1° 20'-00" CURVE No 6 P.C. STA. 223+65.99 – P.T. STA. 233+49.82 DESIGN SPEED 60 M.P.H.

NORMAL SECTION — RUN-OFF — FULL SUPER TRANSITION

F	E	D	C	B	STATIONS	B'	C'	D'	E'	F'
607.75	607.94	608.13	607.94	607.75	219+50	607.75	607.94	608.13	607.94	607.75
607.73	607.92	608.11	607.92	607.73	+75	607.73	607.92	608.11	607.92	607.73
607.70	607.90	608.10	607.91	607.72	220+00	607.72	607.91	608.10	607.91	607.73
607.68	607.89	608.10	607.92	607.73	+25	607.73	607.92	608.11	607.92	607.73
607.66	607.87	608.10	607.94	607.75	+50	607.75	607.94	608.13	607.94	607.75
607.64	607.86	608.09	607.97	607.79	+75	607.79	607.98	608.17	607.98	607.79
607.62	607.85	608.09	608.00	607.84	221+00	607.84	608.03	608.22	608.04	607.86
607.60	607.84	608.08	608.03	607.91	+25	607.91	608.10	608.28	608.13	607.97
607.57	607.82	608.08	608.06	607.97	+50	607.97	608.16	608.35	608.22	608.09
607.55	607.81	608.08	608.08	608.03	+75	608.03	608.22	608.41	608.31	608.21
607.53	607.80	608.07	608.11	608.10	222+00	608.10	608.29	608.48	608.40	608.33
607.51	607.78	608.07	608.14	608.16	+25	608.16	608.35	608.54	608.50	608.47
607.49	607.77	608.06	608.16	608.22	+50	608.22	608.41	608.60	608.61	608.62
607.47	607.76	608.06	608.19	608.28	+75	608.28	608.47	608.66	608.72	608.78
607.45	607.75	608.05	608.21	608.34	223+00	608.34	608.53	608.74	608.84	608.96
607.42	607.73	608.05	608.24	608.41	+25	608.41	608.61	608.82	608.97	609.15
607.40	607.72	608.04	608.27	608.47	+50	608.47	608.69	608.91	609.12	609.34
					P.C. +65.99					
607.38	607.71	608.04	608.30	608.53	+75	608.53	608.78	609.03	609.28	609.53
607.36	607.69	608.03	608.32	608.60	224+00	608.60	608.88	609.16	609.44	609.72
607.35	607.68	608.04	608.35	608.66	+25	608.66	608.97	609.28	609.59	609.90
607.34	607.69	608.06	608.38	608.72	+50	608.72	609.06	609.40	609.74	610.07
607.35	607.71	608.08	608.42	608.78	+75	608.78	609.14	609.51	609.88	610.23
607.36	607.73	608.11	608.47	608.84	225+00	608.84	609.22	609.60	609.98	610.36
607.39	607.77	608.15	608.52	608.91	+25	608.91	609.29	609.67	610.05	610.43
607.45	607.83	608.21	608.59	608.97	+50	608.97	609.35	609.73	610.11	610.49
607.51	607.89	608.27	608.65	609.03	+75					
					231+25					
608.95	609.33	609.71	610.09	610.47	+50	610.47	610.85	611.23	611.61	611.99
609.02	609.40	609.77	610.15	610.53	+75	610.53	610.91	611.29	611.67	612.05
609.12	609.48	609.84	610.22	610.60	232+00	610.60	610.97	611.33	611.70	612.08
609.23	609.58	609.93	610.29	610.66	+25	610.66	611.02	611.37	611.73	612.10
609.35	609.69	610.02	610.37	610.72	+50	610.72	611.06	611.39	611.74	612.09
609.48	609.81	610.12	610.45	610.78	+75	610.78	611.09	611.41	611.73	612.06
609.63	609.93	610.23	610.53	610.83	233+00	610.83	611.11	611.42	611.70	612.01
609.80	610.07	610.33	610.60	610.87	+25	610.87	611.13	611.41	611.67	611.94
					P.T. +49.82					
609.96	610.20	610.44	610.67	610.91	+50	610.91	611.14	611.40	611.62	611.86
610.11	610.33	610.56	610.74	610.93	+75	610.93	611.15	611.39	611.55	611.75
610.25	610.46	610.67	610.80	610.95	234+00	610.95	611.16	611.38	611.50	611.65
610.39	610.59	610.78	610.87	610.97	+25	610.97	611.17	611.37	611.45	611.54
610.51	610.71	610.88	610.93	610.97	+50	610.97	611.16	611.36	611.39	611.42
610.60	610.79	610.97	610.98	610.97	+75	610.97	611.15	611.35	611.33	611.31
610.67	610.85	611.03	611.00	610.95	235+00	610.95	611.14	611.33	611.28	611.23
610.72	610.91	611.08	611.01	610.93	+25	610.93	611.12	611.31	611.23	611.14
610.76	610.95	611.12	611.02	610.91	+50	610.91	611.10	611.28	611.18	611.05
610.78	610.97	611.15	611.01	610.87	+75	610.87	611.06	611.25	611.11	610.96
610.79	610.98	611.17	611.00	610.83	236+00	610.83	611.02	611.21	611.04	610.87
610.76	610.97	611.16	610.97	610.78	+25	610.78	610.98	611.16	610.97	610.79
610.72	610.91	611.10	610.91	610.72	+50	610.72	610.91	611.10	610.91	610.72

1° 20'-00" CURVE No 7 P.C. STA. 250+24.76 – P.T. STA. 260+76.82 DESIGN SPEED 60 M.P.H.

NORMAL — RUN-OFF — FULL SUPER TRANSITION

F	E	D	C	B	STATIONS	B'	C'	D'	E'	F'
609.93	610.12	610.31	610.12	609.93	246+00	609.93	610.12	610.31	610.12	609.93
610.08	610.27	610.46	610.27	610.08	+25	610.08	610.27	610.46	610.27	610.08
610.26	610.44	610.63	610.44	610.25	+50	610.25	610.43	610.61	610.42	610.23
610.47	610.64	610.81	610.62	610.43	+75	610.43	610.59	610.76	610.57	610.38
610.71	610.85	611.00	610.81	610.62	247+00	610.62	610.76	610.91	610.72	610.53
610.96	611.08	611.21	611.02	610.83	+25	610.83	610.95	611.07	610.89	610.70
611.22	611.32	611.43	611.24	611.05	+50	611.05	611.15	611.25	611.07	610.88
611.49	611.57	611.66	611.47	611.28	+75	611.28	611.36	611.44	611.26	611.07
611.78	611.84	611.91	611.72	611.53	248+00	611.53	611.59	611.65	611.46	611.27
612.09	612.13	612.17	611.98	611.79	+25	611.79	611.83	611.87	611.68	611.49
612.42	612.43	612.45	612.26	612.07	+50	612.07	612.09	612.10	611.91	611.71
612.77	612.75	612.73	612.54	612.35	+75	612.35	612.35	612.33	612.14	611.94
613.14	613.08	613.04	612.85	612.66	249+00	612.66	612.61	612.57	612.37	612.18
613.52	613.43	613.35	613.16	612.97	+25	612.97	612.88	612.81	612.67	612.42
613.93	613.80	613.68	613.49	613.30	+50	613.30	613.17	613.06	612.85	612.67
614.37	614.20	614.04	613.84	613.65	+75	613.65	613.48	613.32	613.11	612.93
614.82	614.62	614.42	614.22	614.00	250+00	614.00	613.80	613.61	613.39	613.20
					P.C. +24.76					
615.29	615.06	614.83	614.61	614.38	+25	614.38	614.15	613.93	613.69	613.47
615.76	615.51	615.25	615.00	614.75	+50	614.75	614.50	614.25	613.99	613.74
616.23	615.96	615.67	615.40	615.12	+75	615.12	614.85	614.57	614.29	614.01
616.71	616.41	616.10	615.80	615.50	251+00	615.50	615.20	614.90	614.59	614.29
617.19	616.86	616.53	616.21	615.88	+25	615.88	615.55	615.23	614.90	614.57
617.65	617.30	616.95	616.61	616.25	+50	616.25	615.90	615.55	615.21	614.86
618.08	617.71	617.36	617.00	616.62	+75	616.62	615.25	615.88	615.52	615.16
618.48	618.10	617.74	617.36	616.98	252+00	616.98	616.60	616.22	615.85	615.48
618.85	618.47	618.09	617.71	617.33	+25	617.33	616.95	616.57	616.19	615.81
619.19	618.81	618.43	618.05	617.67	+50	617.67	617.29	616.91	616.53	616.15
624.32	624.14	623.76	623.38	623.00	259+00	623.00	622.62	622.24	621.86	621.48
624.64	624.26	623.88	623.50	623.12	+25	623.12	622.74	622.36	621.98	621.60
624.77	624.39	624.01	623.63	623.25	+50	623.25	622.87	622.49	622.11	621.73
624.86	624.50	624.10	623.73	623.38	+75	623.38	623.00	622.63	622.26	621.89
624.98	624.59	624.20	623.84	623.50	260+00	623.50	623.14	622.79	622.42	622.07
624.97	624.66	624.30	623.96	623.62	+25	623.62	623.29	622.95	622.60	622.27
625.02	624.73	624.41	624.07	623.75	+50	623.75	623.44	623.12	622.80	622.50
625.06	624.80	624.52	624.18	623.18	+75	623.88	623.60	623.31	623.02	622.75
					P.T. +76.82					
625.10	624.87	624.62	624.30	624.00	261+00	624.00	623.75	623.50	623.24	623.00
625.14	624.94	624.72	624.42	624.12	+25	624.12	623.91	623.70	623.46	623.25
625.18	625.01	624.83	624.53	624.25	+50	624.25	624.08	623.92	623.69	623.50
625.22	625.08	624.94	624.64	624.38	+75	624.38	624.26	624.15	623.94	623.75
625.26	625.16	625.04	624.76	624.50	262+00	624.50	624.44	624.38	624.17	623.98
625.30	625.23	625.14	624.87	624.62	+25	624.62	624.61	624.60	624.40	624.20
625.34	625.30	625.25	624.99	624.75	+50	624.75	624.78	624.81	624.61	624.42
625.38	625.37	625.36	625.10	624.88	+75	624.88	624.94	625.00	624.81	624.62
625.42	625.44	625.46	625.22	625.00	263+00	625.00	625.10	625.19	625.00	624.81
625.46	625.51	625.57	625.34	625.12	+25	625.12	625.26	625.37	625.19	624.99
625.50	625.58	625.67	625.45	625.25	+50	625.25	625.41	625.55	625.37	625.16
625.54	625.66	625.78	625.56	625.38	+75	625.38	625.56	625.72	625.53	625.33
625.58	625.73	625.88	625.68	625.50	264+00	625.50	625.69	625.87	625.69	625.49

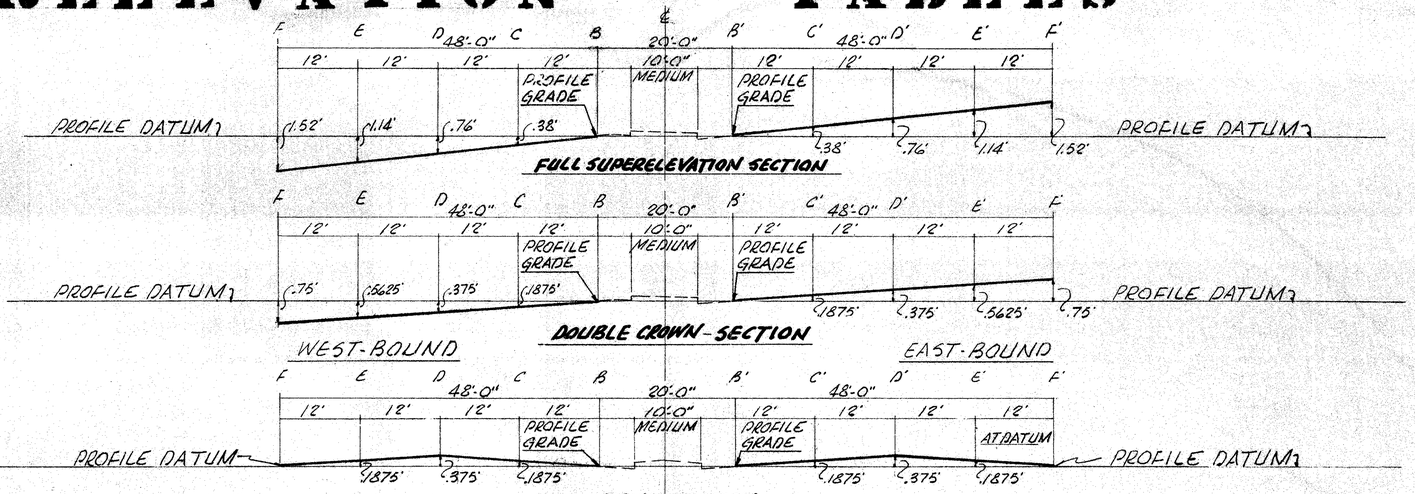
SUPERELEVATION TABLES

SUPERELEVATION TABLES

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

CUYAHOGA COUNTY
CUY. 2-24.33

72
164



1°-20'-00" CURVE Nº 8 P.C. STA. 270+80.44 - P.T. STA. 281+19.13 DESIGN SPEED 60MPH

F	E	D	C	B	STATIONS	B'	C'	D'	E'	F'
625.54	625.66	625.77	625.56	625.38	263+75	625.38	625.56	625.72	625.53	625.33
625.58	625.73	625.88	625.68	625.50	264+00	625.50	625.69	625.87	625.69	625.49
625.62	625.80	625.97	625.80	625.62	+25	625.62	625.81	626.00	625.83	625.65
625.66	625.85	626.04	625.89	625.73	+50	625.73	625.92	626.11	625.96	625.80
625.70	625.89	626.08	625.96	625.83	+75	625.83	626.02	626.21	626.08	625.95
625.73	625.92	626.10	626.01	625.92	265+00	625.92	626.11	626.30	626.20	626.10
625.76	625.95	626.12	626.05	626.01	+25	626.01	626.20	626.39	626.32	626.25
625.77	625.96	626.14	626.08	626.08	+50	626.08	626.27	626.46	626.42	626.40
625.75	625.94	626.13	626.09	626.14	+75	626.14	626.33	626.52	626.52	626.55
625.73	625.92	626.11	626.10	626.20	266+00	626.20	626.39	626.58	626.62	626.70
625.70	625.89	626.09	626.11	626.24	+25	626.24	626.43	626.62	626.70	626.82
625.68	625.87	626.06	626.12	626.28	+50	626.28	626.47	626.66	626.77	626.92
625.66	625.84	626.03	626.13	626.31	+75	626.31	626.50	626.69	626.82	626.99
625.64	625.82	626.00	626.14	626.32	267+00	626.32	626.51	626.70	626.86	627.04
625.62	625.80	625.98	626.14	626.33	+25	626.33	626.52	626.71	626.88	627.07
625.60	625.78	625.96	626.13	626.33	+50	626.33	626.52	626.71	626.89	627.08
625.57	625.76	625.94	626.13	626.32	+75	626.32	626.51	626.70	626.88	627.07
625.55	625.74	625.92	626.11	626.30	268+00	626.30	626.49	626.68	626.86	627.05
625.52	625.71	625.89	626.08	626.27	+25	626.27	626.46	626.65	626.83	627.02
624.71	624.90	625.08	625.27	625.46	270+75	625.46	625.65	625.84	626.02	626.21
					P.C. +80.44					
624.57	624.76	624.94	625.13	625.32	271+00	625.32	625.51	625.70	625.89	626.09
624.43	624.62	624.80	624.99	625.18	+25	625.18	625.37	625.56	625.76	625.97
624.27	624.46	624.66	624.84	625.03	+50	625.03	625.22	625.42	625.63	625.85
624.08	624.27	624.48	624.68	624.87	+75	624.87	625.06	625.28	625.50	625.74
623.85	624.05	624.28	624.49	624.70	272+00	624.70	624.91	625.13	625.37	625.62
623.58	623.81	624.05	624.28	624.52	+25	624.52	624.76	624.99	625.24	625.50
623.29	623.55	623.81	624.07	624.33	+50	624.33	624.59	624.85	625.11	625.38
623.00	623.28	623.56	623.85	624.13	+75	624.13	624.41	624.70	624.98	625.26
622.69	623.00	623.31	623.61	623.92	273+00	623.92	624.23	624.54	624.84	625.15
622.38	622.70	623.05	623.37	623.71	+25	623.71	624.04	624.37	624.70	625.04
622.08	622.42	622.77	623.12	623.48	+50	623.48	623.84	624.19	624.55	624.90
621.78	622.14	622.50	622.87	623.24	+75	623.24	623.62	624.00	624.36	624.72
621.50	621.86	622.24	622.62	623.00	274+00	623.00	623.38	623.76	624.14	624.51
621.23	621.61	621.99	622.37	622.75	+25	622.75	623.13	623.51	623.89	624.27

CONTINUATION - CURVE Nº 8

F	E	D	C	B	STATIONS	B'	C'	D'	E'	F'
621.99	622.37	622.75	623.13	623.51	279+50	623.51	623.89	624.27	624.65	625.03
622.37	622.75	623.13	623.51	623.89	+75	623.89	624.27	624.65	625.03	625.41
622.80	623.18	623.55	623.92	624.30	280+00	624.30	624.67	625.05	625.41	625.78
623.32	623.67	624.03	624.38	624.74	+25	624.74	625.10	625.45	625.79	626.14
623.91	624.24	624.56	624.89	625.21	+50	625.21	625.54	625.86	626.18	626.51
624.54	624.83	625.12	625.42	625.71	+75	625.71	626.00	626.29	626.59	626.88
625.16	625.42	625.69	625.95	626.21	281+00	626.21	626.47	626.73	627.00	627.26
					P.T. +19.13					
625.79	626.02	626.25	626.48	626.71	+25	626.71	626.94	627.17	627.40	627.63
626.41	626.61	626.81	627.01	627.21	+50	627.21	627.41	627.62	627.81	628.01
627.03	627.22	627.41	627.56	627.71	+75	627.71	627.90	628.09	628.23	628.39
627.66	627.85	628.03	628.12	628.21	282+00	628.21	628.40	628.59	628.67	628.76
628.29	628.47	628.66	628.69	628.71	+25	628.71	628.90	629.09	629.11	629.15
628.87	629.06	629.25	629.23	629.21	+50	629.21	629.40	629.59	629.57	629.56
629.44	629.63	629.81	629.76	629.71	+75	629.71	629.90	630.09	630.03	629.99
630.00	630.19	630.37	630.29	630.21	283+00	630.21	630.40	630.59	630.50	630.42
630.55	630.74	630.92	630.81	630.70	+25	630.70	630.89	631.08	630.96	630.85
631.08	631.27	631.46	631.31	631.17	+50	631.17	631.36	631.55	631.40	631.26
631.60	631.78	631.97	631.80	631.62	+75	631.62	631.81	632.00	631.83	631.66
632.06	632.25	632.44	632.25	632.06	284+00	632.06	632.25	632.44	632.25	632.06
632.47	632.66	632.85	632.66	632.47	+25	632.47	632.66	632.85	632.66	632.47
632.86	633.05	633.24	633.05	632.86	+50	632.86	633.05	633.24	633.05	632.86

FULL SUPER — TRANSITION — RUN-OFF — NORMAL — DOUBLE CROWN — RUN-OFF — TRANSITION — FULL SUPER

R-12

3-15

SEEDING & PROTECTING	
WIDTH	AREA
LIN. FT.	SQ. YDS.
139	1589
147	1722
163	
299	1633
289	1492
248	
8	117
13	25
13	

NORTH 280 260 240 220 200 180 160 140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140 160 180 200 SOUTH

FED. ROAD DIV. NO.	STATE	PROJECT	FISCAL YEAR	SHEET NO.
2	OHIO	I-329 (20)		73

CUYAHOGA COUNTY
CUY-2-24.33

	END AREA		Cu. YDS.	
	CUT	FILL	CUT	FILL
600	566	6		
			2633	11
620				
600	856	0		
			3300	15
AHEAD	926	8		
BACK	706	8		
600			88	
			1509	15
			924	0
			824	0
600	68	0		
			215	0
620				
600	48	0		
			30	0
STA. 201+82.77	48	0		

	Cu. YDS.	Cu. YDS.	Cu. YDS.
EXCAVATION	14,209		
EMBANKMENT	1,940		
EMBANKMENT 122%	2,367		

STA 206+00
609.22
F.L. EL. 607.09
EXISTING WATERLOO RD.
EXISTING WALL
EXIST. SEWER
N.M.R.
S.M.R.
C=170
C=396
F=6

STA 205+00
608.22
L.P. STA 205+10
F.L. EL. 606.19
F.L. EL. 606.22
C=856
L.P. STA 204+45
F.L. EL. 605.54
F.L. EL. 606.46
F.L. EL. 605.70

STA 204+00
607.22
F=2
C=56
C=12
C=868
C=648 (BACK)

BEGIN PROJECT STA. 204+00

STA 203+50
606.72
H.P. STA. 203+50
F.L. EL. 606.59
F.L. EL. 605.87
C=76
C=898

NOTE:
THE CONSTRUCTION SOUTH OF THE CONSTRUCTION LIMIT LINE ℄ EAST OF STA. 202+00 TO STA. 203+00 IS NOT A PART OF THIS CONTRACT.

STA 203+00
606.22
DITCH AT STA. 203+36
F.L. EL. 604.09
LIMIT OF CONSTRUCTION
C=68

STA 202+00
605.22
C=48

BEGIN WORK STA. 201+82.77

PLATE A CROSS SECTION 8 1/2 x 11 STANDARD
GOSHO DIVISION CO. CHICAGO-NEW YORK

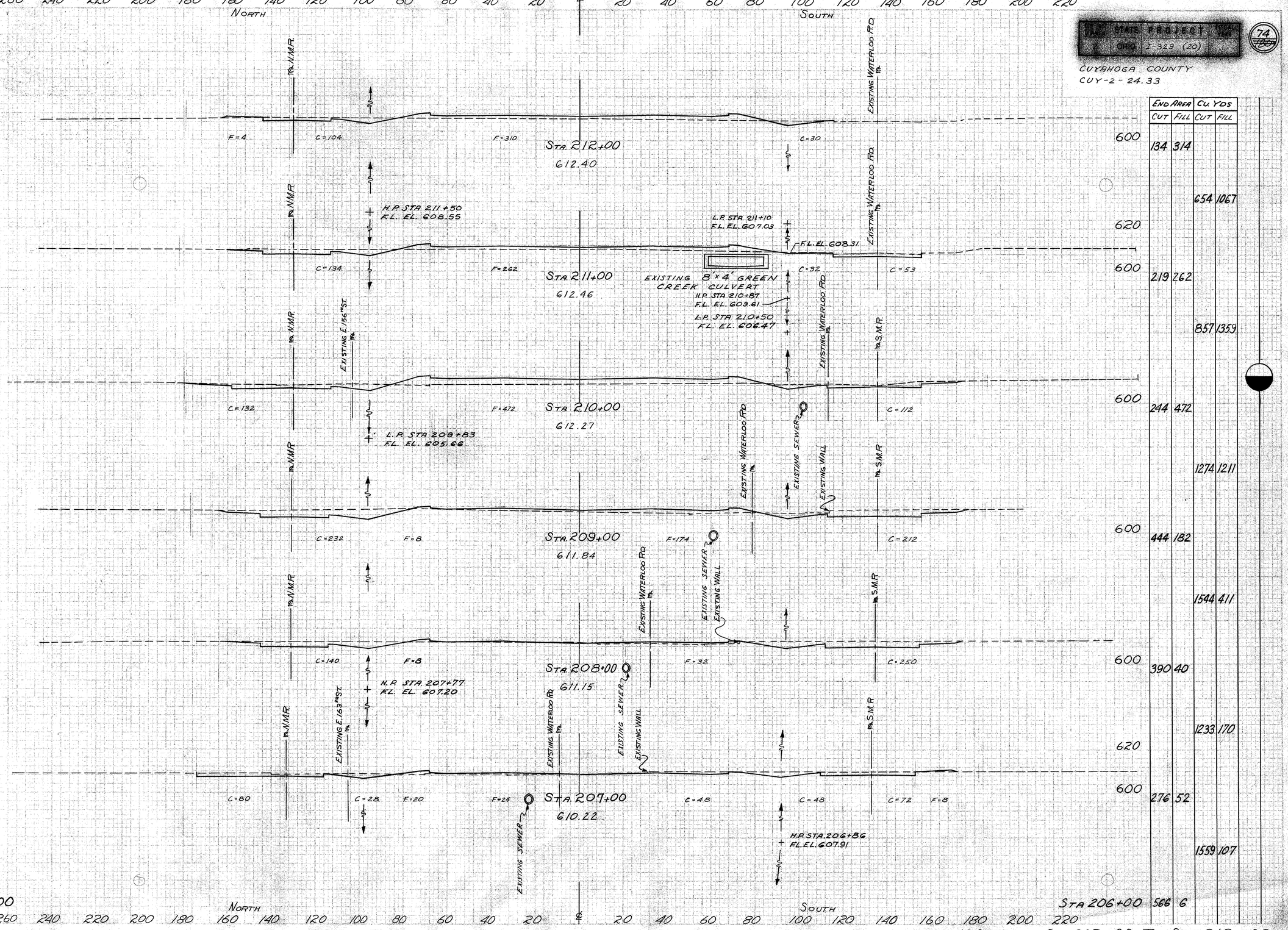
X-SECTIONS STA. 201+00 TO STA. 206+00

SEEDING & PROTECTING	
WIDTH	AREA
LIN. FT.	SQ. YDS.
122	
	1428
135	
	1483
132	
	1522
142	
	1561
139	
	1355
105	
	1355
139	

STATE	PROJECT	SHEET NO.
OHIO	I-329 (20)	74

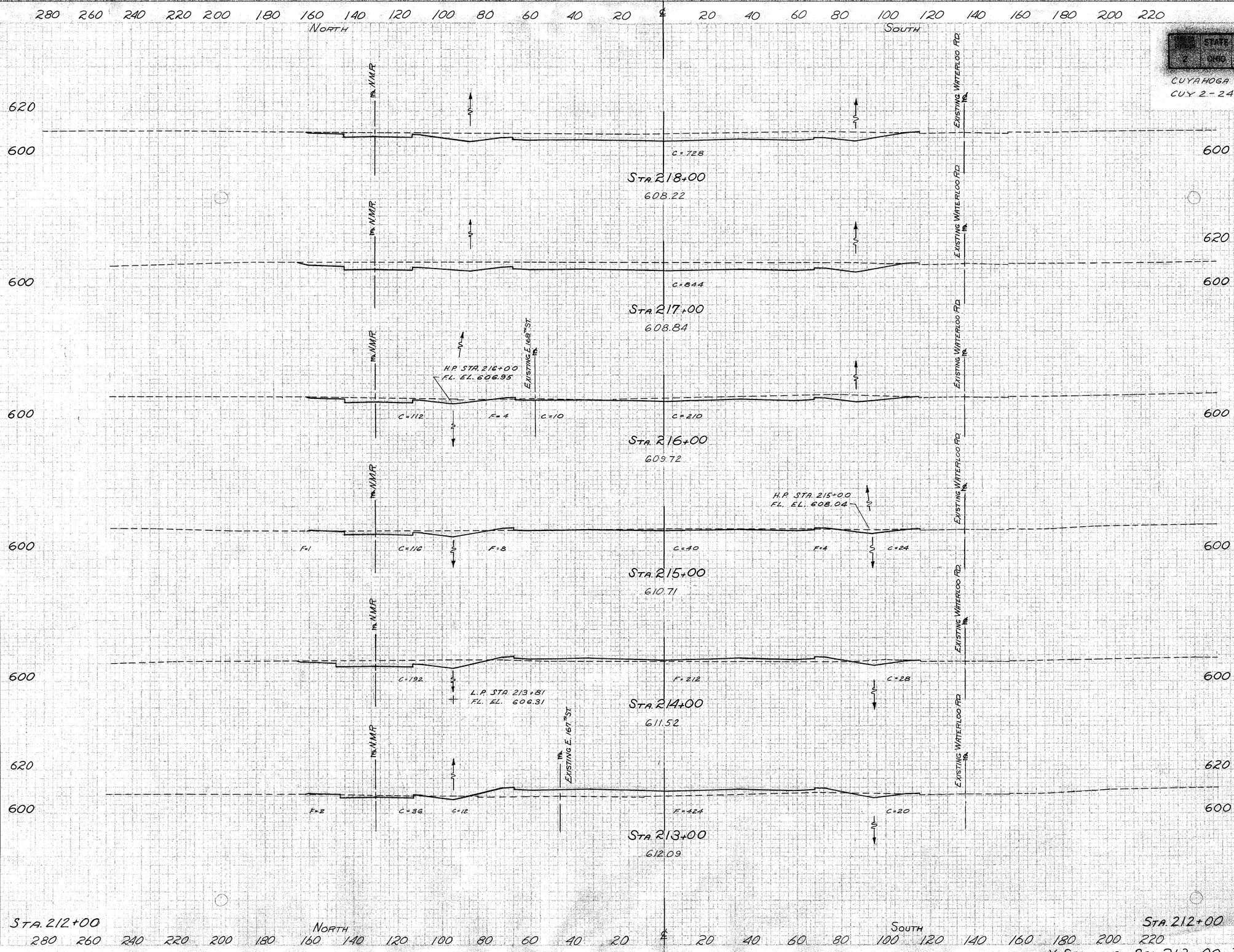
CUYAHOGA COUNTY
CUY-2-24.33

END AREA		CU. YDS	
CUT	FILL	CUT	FILL
134	314		
		654	1067
219	262		
		857	1359
244	472		
		1274	1211
444	182		
		1544	411
390	40		
		1233	170
276	52		
		1559	107
566	6		



X-SECTIONS STA 207+00 TO STA 212+00

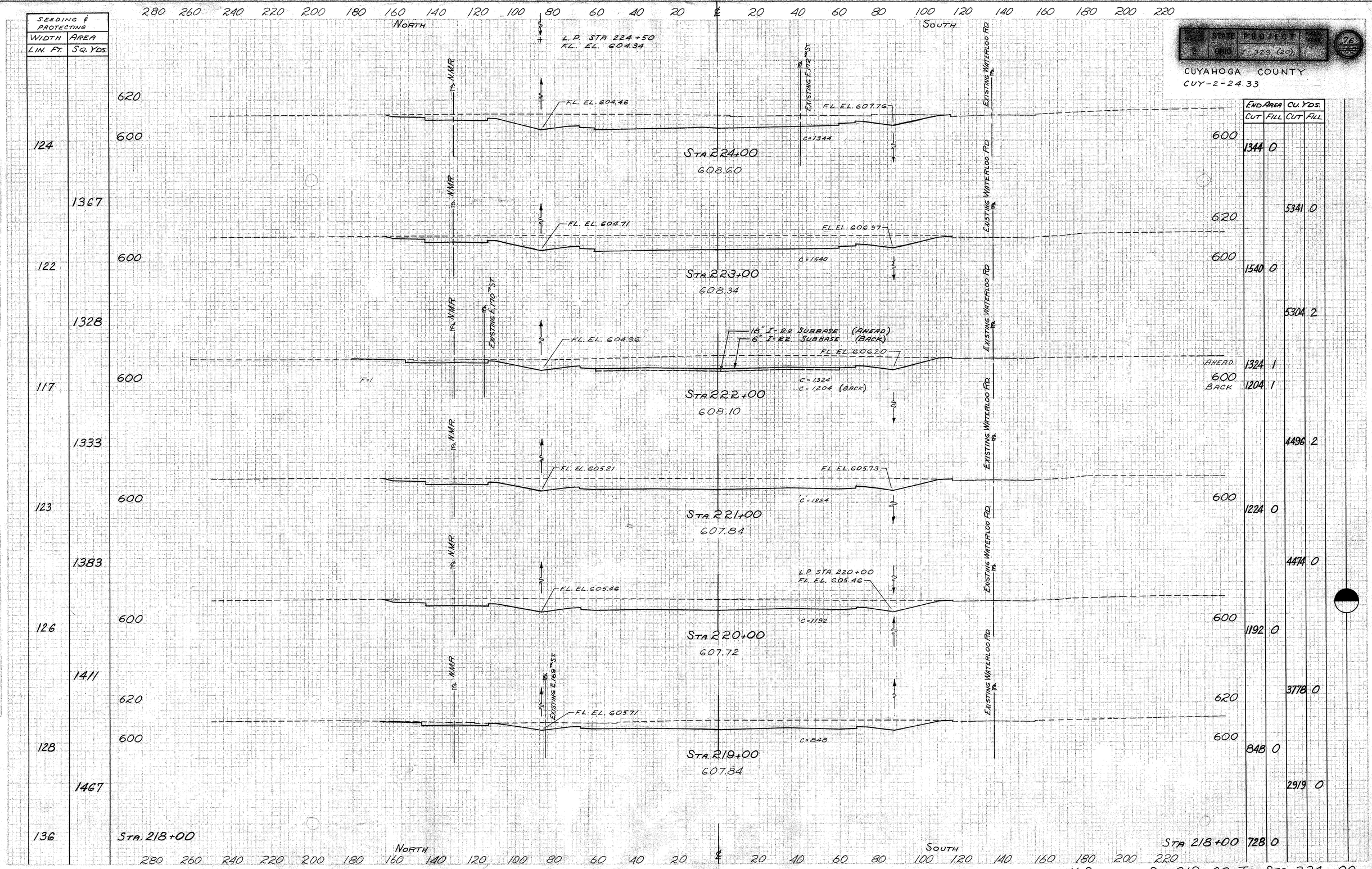
SEEDING & PROTECTING	
WIDTH	AREA
LIN. FT.	SQ. YDS.
136	
	1483
131	
	1400
121	
	1344
121	
	1828
208	
	1789
114	
	1311
122	



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
728	0		
		2911	0
844	0		
		2178	7
332	4		
		948	31
180	13		
		741	417
220	212		
		533	1181
68	426		
		374	1370
134	314		

EXCAVATION 15,893 CU. YDS.
EMBANKMENT 5,432 CU. YDS.
EMBANKMENT +22% 6,627 CU. YDS.

X-SECTIONS STA. 213+00 TO STA. 218+00



END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
1344	0		
		5341	0
1540	0		
		5304	2
1324	1		
1204	1		
		4496	2
1224	0		
		4474	0
1192	0		
		3778	0
848	0		
		2919	0
728	0		

STA 218+00

CUYAHOGA COUNTY
CUY-2-24.33

X-SECTIONS STA 219+00 TO STA 224+00

SEEDING & PROTECTING	
WIDTH LIN. FT.	AREA SQ. YDS.
131	1555
149	1567
133	1517
140	1511
132	1328
107	1283
124	

FED. ROAD DIVISION	STATE	PROJECT	FISCAL YEAR
5	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

STA. 224+00 — NORTH — 280 260 240 220 200 180 160 140 120 100 80 60 40 20 — ℄ — 20 40 60 80 100 120 140 160 180 200 220 — SOUTH — STA. 224+00

STA. 230+00
610.10
F.L. EL. 609.68
C = 1224
EXISTING WATERLOO RD.
EXISTING E. 175TH ST.
N.M.R.

STA. 229+00
609.84
F.L. EL. 609.42
C = 1404
EXISTING WATERLOO RD.
EXISTING E. 173RD ST.
N.M.R.

STA. 228+00
609.60
F.L. EL. 609.18
C = 1504
EXISTING WATERLOO RD.
EXISTING E. 173RD ST.
N.M.R.

STA. 227+00
609.34
F.L. EL. 608.92
C = 1204
EXISTING WATERLOO RD.
N.M.R.

STA. 226+00
609.10
F.L. EL. 608.68
C = 1420
EXISTING WATERLOO RD.
EXISTING E. 172ND ST.
N.M.R.

STA. 225+00
608.84
6" I-22 SUBBASE (AHEAD)
18" I-22 SUBBASE (BACK)
F.L. EL. 608.42
C = 1480
C = 1600 (BACK)
EXISTING WATERLOO RD.

END AREA CUT	END AREA FILL	CU YDS. CUT	CU YDS. FILL
600			
1224	0		
		4867	0
620			
600			
1404	0		
		5385	0
600			
1504	0		
		5015	0
600			
1204	0		
		4859	0
600			
1420	0		
		5370	0
620			
AHEAD 600			
1480	0		
BACK 600			
1600	0		
		5452	0
STA. 224+00			
1344	0		

	CU YDS
EXCAVATION	50,563
EMBANKMENT	4
EMBANKMENT +22%	5

X-SECTIONS STA 225+00 TO STA 230+00

SEEDING & PROTECTING	
WIDTH LIN. FT.	AREA SQ. YDS.
128	1405
125	1378
123	1383
126	1411
128	1450
133	1467
131	

FED. ROAD PROJECT NUMBER	STATE	PROJECT	FISCAL YEAR
S	OHIO	I-329 (20)	

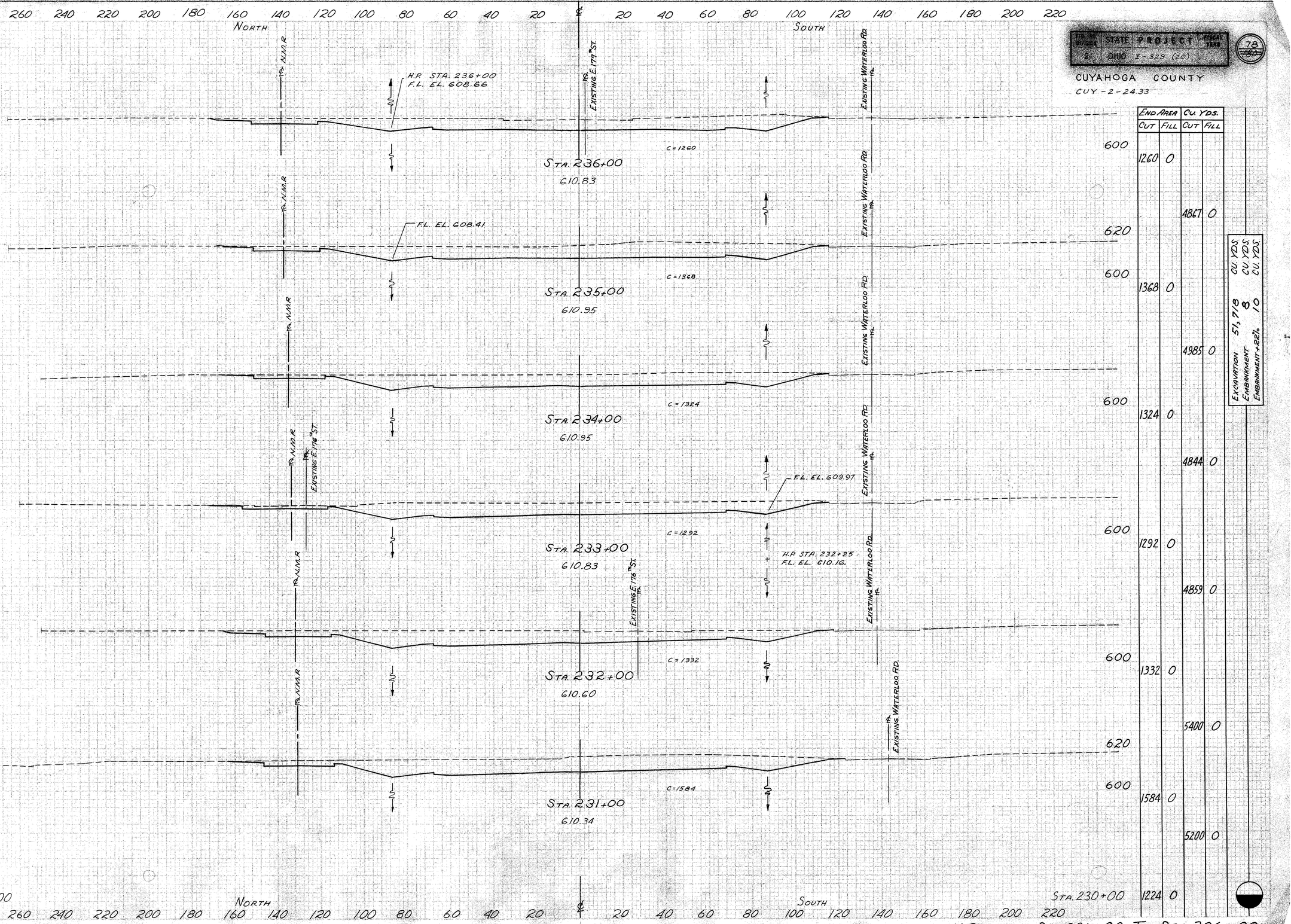
CUYAHOGA COUNTY

CUY-2-24.33

78

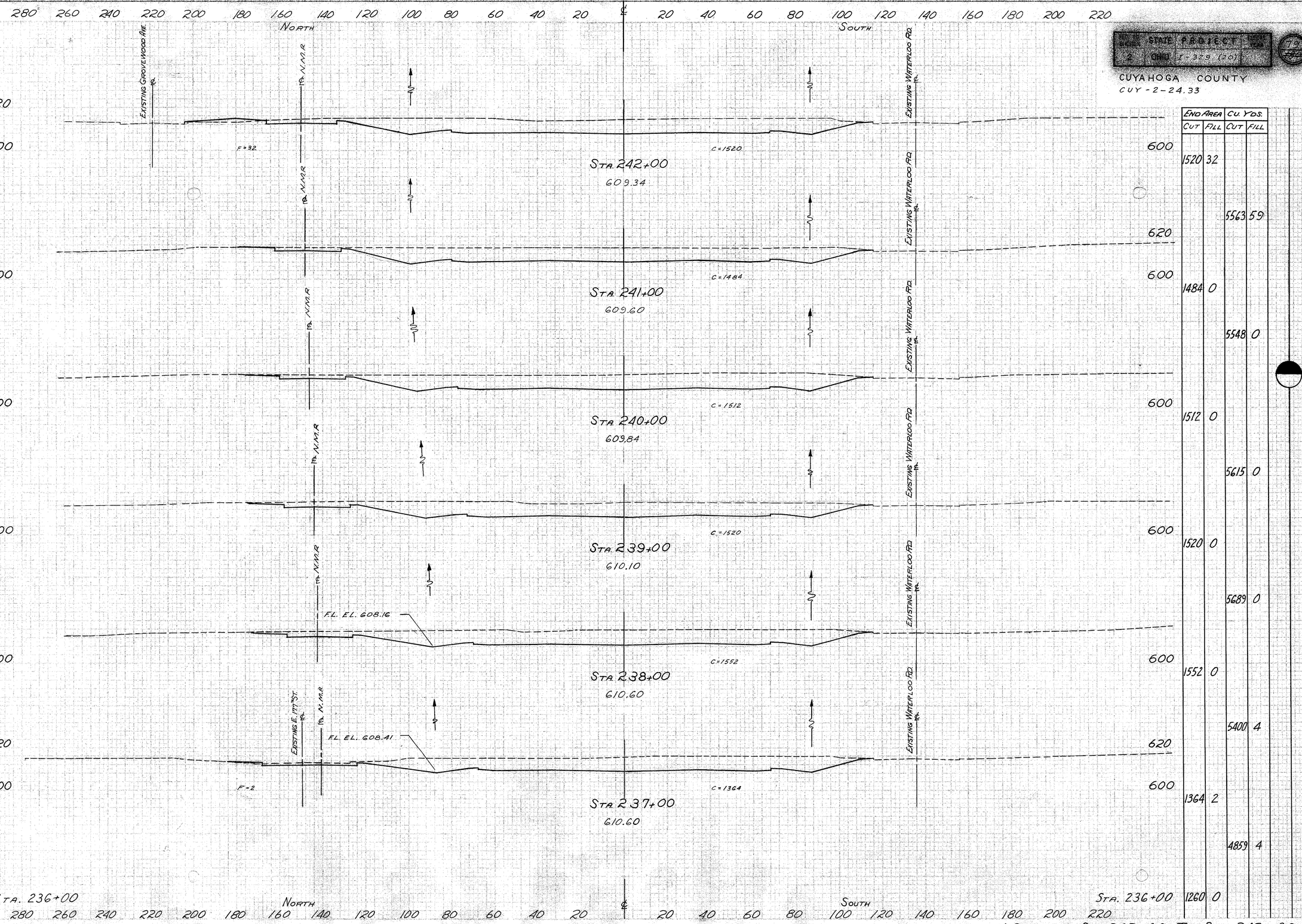
END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
1260	0		
		4867	0
1368	0		
		4985	0
1324	0		
		4844	0
1292	0		
		4859	0
1332	0		
		5400	0
1584	0		
		5200	0
1224	0		

EXCAVATION	51,718	CU. YDS
EMBANKMENT	8	CU. YDS
EMBANKMENT + 22%	10	CU. YDS



X-SECTIONS STA. 231+00 TO STA. 236+00

SEEDING & PROTECTING	
WIDTH LIN. FT.	AREA SQ. YDS.
129	1439
130	1417
125	1394
126	1433
132	1417
123	1394
128	



END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
1520	32		
		5563	59
1484	0		
		5548	0
1512	0		
		5615	0
1520	0		
		5689	0
1552	0		
		5400	4
1364	2		
		4859	4
1260	0		

NO. OF SHEETS	STATE	PROJECT	SHEET NO.
2	OHIO	I-329 (20)	79

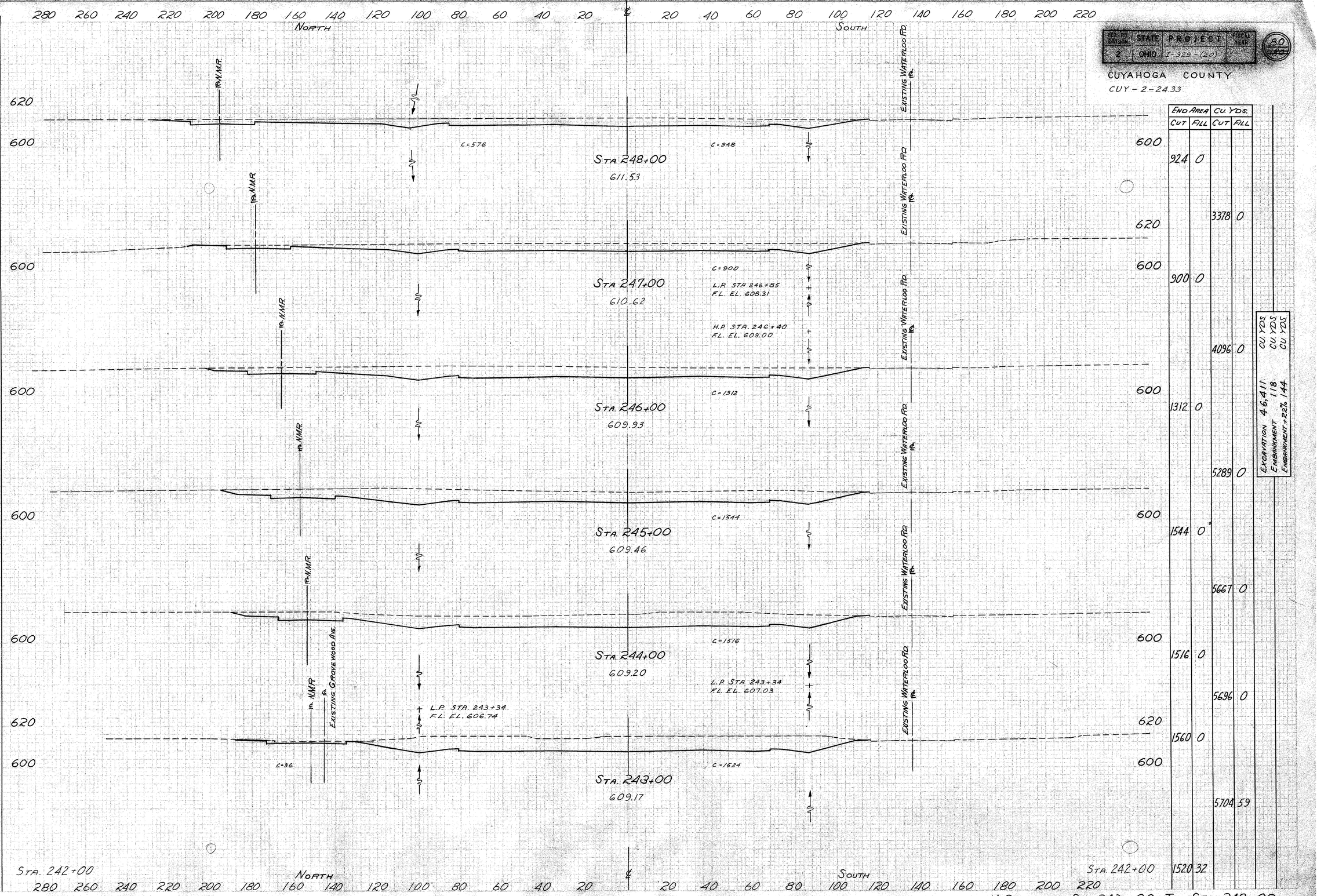
CUYAHOGA COUNTY
CUY-2-24.33

X-SECTIONS STA 237+00 TO STA 242+00

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329-(20)	80

CUYAHOGA COUNTY
CUY-2-24.33

SEEDING & PROTECTING	
WIDTH LIN. FT.	AREA SQ. YDS.
169	
	2250
236	
	2389
194	
	1911
150	
	1600
138	
	1428
119	
	1378
129	



END AREA CUT	END AREA FILL	CU YDS. CUT	CU YDS. FILL
924	0		
		3378	0
900	0		
		4096	0
1312	0		
		5289	0
1544	0		
		5667	0
1516	0		
		5696	0
1560	0		
		5704	59
1520	32		

	CU. YDS.
EXCAVATION	46,411
EMBANKMENT	118
EMBANKMENT - 22%	144

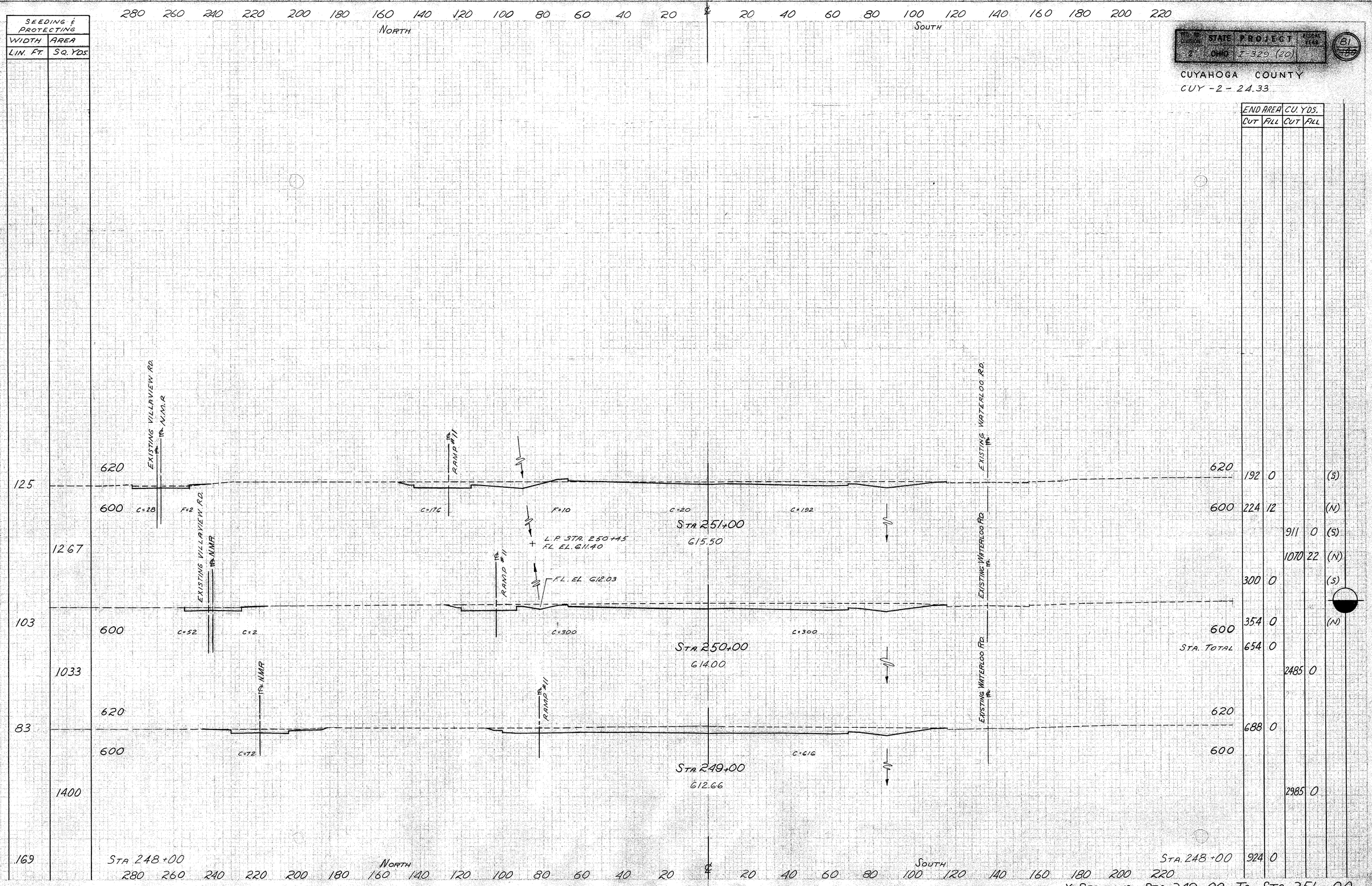
X-SECTIONS STA 243+00 TO STA 248+00

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

81

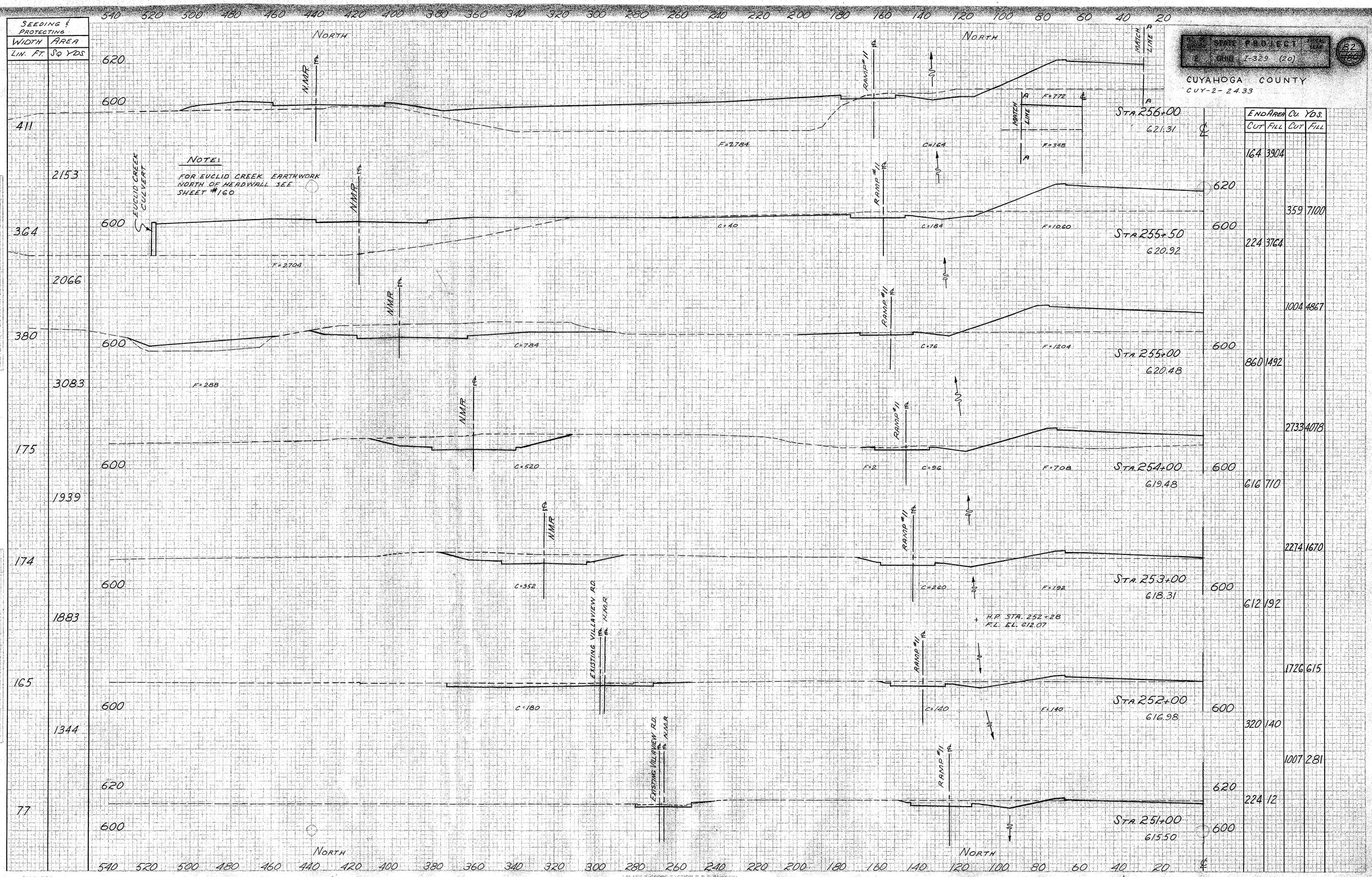
CUYAHOGA COUNTY

CUY-2-24.33



END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL	
192	0			(S)
224	12			(N)
		911	0	(S)
		1070	22	(N)
300	0			(S)
354	0			(N)
654	0			
		2485	0	
688	0			
		2985	0	
924	0			

X-SECTIONS STA 249+00 TO STA 251+00

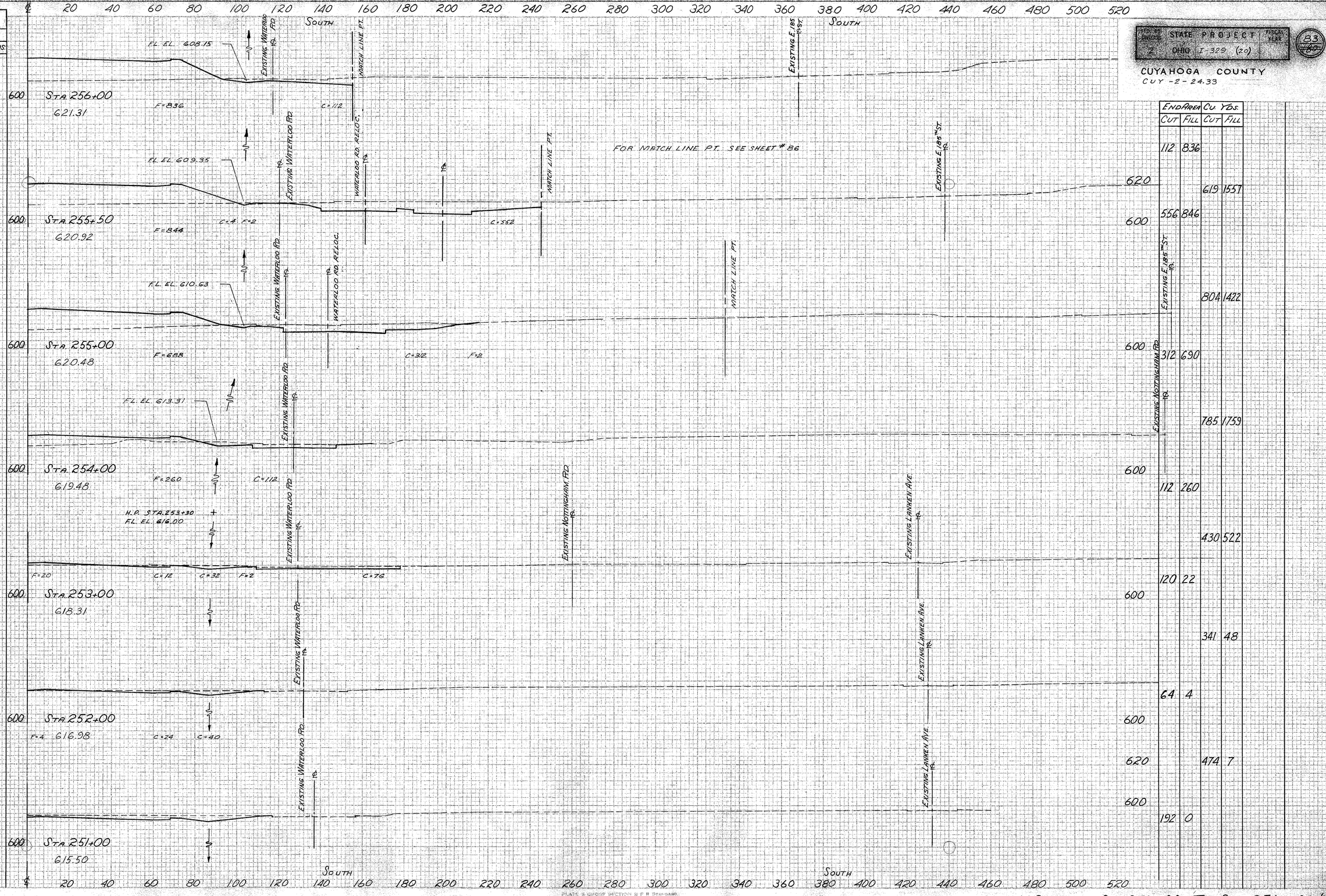


END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
164	3904		
		359	7100
224	3764		
		1004	4867
860	1492		
		2733	4078
616	710		
		2274	1670
612	192		
		1726	615
320	140		
		1007	281
224	12		

FED. RD. DIVISION 2 | STATE OHIO | PROJECT I-329 (20) | FISCAL YEAR 82

CUYAHOGA COUNTY
CUY-2-24.33

X-SECTIONS STA. 251+00 TO STA. 256+00 (N)



END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
112	836		
		619	1557
556	846		
		804	1422
312	690		
		785	1759
112	260		
		430	522
120	22		
		341	48
64	4		
		474	7
192	0		

FED. RD. DIVISION 2 | STATE OHIO | PROJECT I-329 (20) | FISCAL YEAR

83

CUYAHOGA COUNTY
CUY-2-24.33

X-SECTIONS STA. 251+00 TO STA. 256+00 (S)

SEEDING & PROTECTING	
WIDTH	AREA
LIN. FT	SQ YDS.
144	856
10	150
44	289
60	306
50	614
171	994
187	1661
411	

FED. ROAD DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

84
189

CUYAHOGA COUNTY
CUY-2-24.33

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
	106	2492	(TO MATCH LINE)
		196	8588
0	0		
		252	0
272	0		
		489	0
256	0		
		459	63
	240	68	
		335	2056
	122	2152	
		183	413 4944
	76	3188	
		222	6567
	164	3904	

North 540 520 500 480 460 440 420 400 380 360 340 320 300 280 260 240 220 200 180 160 140 120 100 80 60 40 20

Existing E. 185th St. — Existing Woodrow Ave. — Match Line Pt. — Existing Chapman Ave. — Match Line Pt. — Existing E. 185th St.

C=60 C=116 F=2492

Sta. 260+00 623.50

For match line pt. see sheet 86

Sta. 259+00 623.00

N.M.R. — Match Line Pt. — Existing Mozina Drive — Existing E. 185th St.

C=272

Sta. 258+50 622.75

N.M.R. — 2 Wall — Existing Mozina Drive — Match Line Pt. — Existing E. 185th St.

C=256

Sta. 258+00 622.50

N.M.R. — Existing Mozina Drive — Ramp #11 — Match Line Pt.

C=240 F=68

Sta. 257+50 622.25

N.M.R. — Ramp #11 — Match Line Pt.

C=122 F=2152

Sta. 257+00 621.98

N.M.R. — Conc. Paved Slope — Ramp #11

F=8 C=76 F=3180

Sta. 256+50 621.67

Sta. 256+00 ℄

North 540 520 500 480 460 440 420 400 380 360 340 320 300 280 260 240 220 200 180 160 140 120 100 80 60 40

X-Sections Sta. 256+50 To Sta. 260+00 (N)

Printed in U.S.A.
The Williams Brothers Corp.

Plate 2 Cross Section 8 F H Wennborg
Right Edition of Subdivision

SEEDING & PROTECTING	
WIDTH LIN. FT.	AREA SQ. YDS.
538	6578
646	3142
485	2400
379	1886
300	1194
130	639
100	520
87	

FED. ROAD DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

	END AREA		CU. YDS.	
	CUT	FILL	CUT	FILL
	516	3810		
				942
F	620	4859	11711	
	600			
	2108	2514		
F				
			3287	3185
E				
	600			
	1442	926		
E				
			6694	943
D				
	600		5188	92
D				
			11100	93
C				
	600		6200	8
C				
			9448	7
B				
	600		4004	0
B				
			5163	297
A				
	620		1572	668 (TO MATCH LINE)
	600		551	1393
A			112	836 (TO MATCH LINE)

	CU. YDS.	CU. YDS.
EXCAVATION (U)	12,309	CU. YDS.
EXCAVATION (S)	45,466	CU. YDS.
TOTAL EXCAVATION	57,775	CU. YDS.
EMBANKMENT (U)	41,264	CU. YDS.
EMBANKMENT (S)	23,886	CU. YDS.
TOTAL EMBANKMENT	65,150	CU. YDS.
EMBANKMENT ±22%	79,483	CU. YDS.

NOTE:
THE EUCLID CREEK CULVERT EARTHWORK QUANTITIES BELOW THE DATUM AT ELEVATION 600 ARE SHOWN ON SHEETS 159 & 160

X-SECTIONS STA 256+50 TO STA 260

FED. ROAD DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY

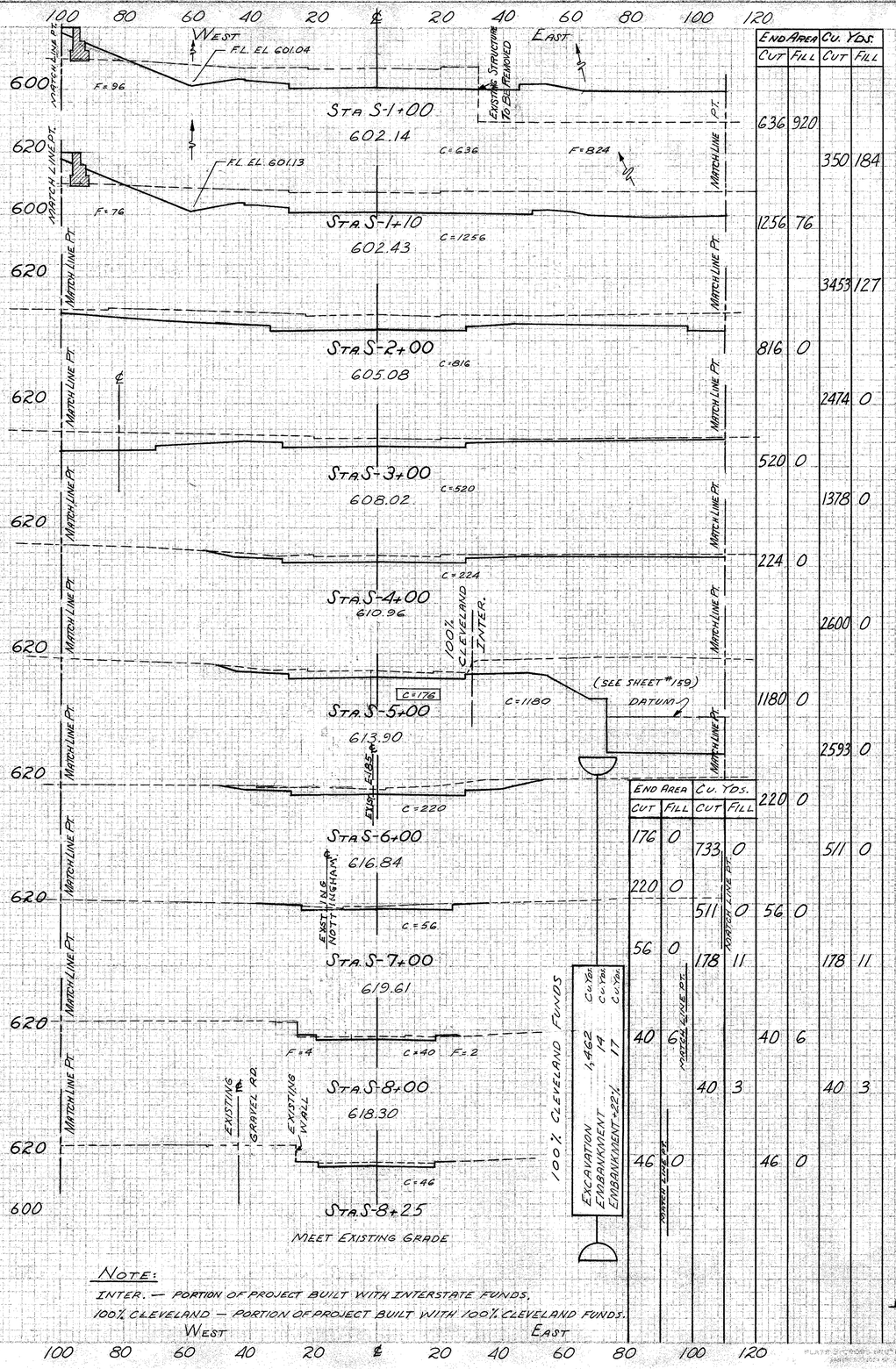
CUY-2-24.33

86

SEEDING & PROTECTING	
WIDTH LIN. FT.	AREA SQ. YDS.
107	
	123
115	
	1205
126	
	1322
112	
	1217
98	
	878
60	
	76
78	

SEEDING & PROTECTING	
WIDTH LIN. FT.	AREA SQ. YDS.
100% CLEVELAND	
60	691
78	594
29	233
13	21
0	

100% CLEVELAND TOTAL AREA=1,539 S.Y.



END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
636	920		
		350	184
1256	76		
		3453	127
816	0		
		2474	0
520	0		
		1378	0
224	0		
		2600	0
1180	0		
		2593	0
220	0		
		511	0
176	0	733	0
220	0		
511	0	56	0
56	0	178	11
40	6	40	6
40	3	40	3
46	0	46	0

NOTE:

INTER. — PORTION OF PROJECT BUILT WITH INTERSTATE FUNDS.

100% CLEVELAND — PORTION OF PROJECT BUILT WITH 100% CLEVELAND FUNDS.

SEEDING & PROTECTING	
WIDTH LIN. FT.	AREA SQ. YDS.
32	
	510
75	
	805
70	
	800
74	
	950
97	
	1166
118	
	1211
100	
	575
107	
107	

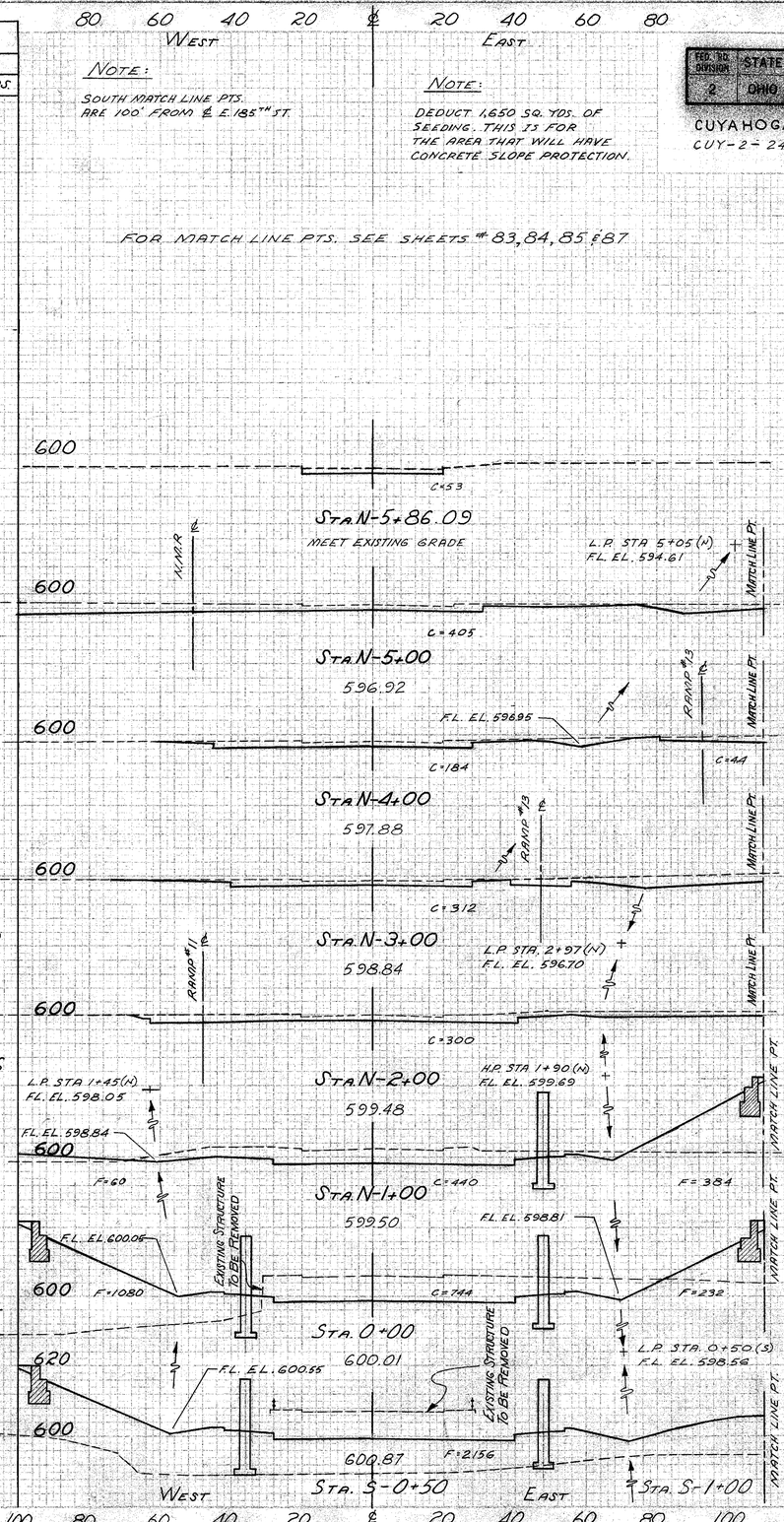
NOTE:

SOUTH MATCH LINE PTS. ARE 100' FROM ℄ E. 185TH ST.

NOTE:

DEDUCT 1,650 SQ. YDS. OF SEEDING. THIS IS FOR THE AREA THAT WILL HAVE CONCRETE SLOPE PROTECTION.

FOR MATCH LINE PTS. SEE SHEETS #83, 84, 85 & 87



END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
53	0		
		730	0
405	0		
		1172	0
228	0		
		1000	0
312	0		
		1133	0
300	0		
		1370	822
440	444		
		2193	3252
744	1312		
		689	3211
0	2156		
		589	2848
636	920		

EXCAVATION 22,453 CU. YDS.
EMBANKMENT 10,458 CU. YDS.
EMBANKMENT +22% 12,759 CU. YDS.

E 185TH ST. X-SECTIONS STA. 8+25 (S) TO STA. 5+86.09 (N)

SEEDING & PROTECTING	
WIDTH	AREA
LIN. FT.	SQ. YDS.
123	1600
453	1970
256	1683
350	1978
362	4088
374	4061
357	2783
144	

NO. OF SHEETS	STATE	PROJECT	FISCAL YEAR
87	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
40	2356		
		39	5715
2	3816		
		2	9086
0	6008		
		6	10893
6	5756		
		57	9631
56	4646		
		196	15074
50	3494		
		704	11552
330	2744		
		807	9696
106	2492		

North 540 520 500 480 460 440 420 400 380 360 340 320 300 280 260 240 220 200 180 160 140 120 100 80 60 40 20

620 / 600

N.M.R. ℄ — F=252 — C=40 — L.P. STA. 264+81, F.L. EL. 599.50 — Existing Woodrow Ave ℄ — Proposed Wall — Paved Gutter — F=2104 — STA. 265+00, 625.92 — Existing Chapman Ave ℄

N.M.R. ℄ — F=308 — C=2 — Existing Woodrow Ave ℄ — F=1484 — F=2024 — STA 264+50, 625.73

H.P. STA 264+38, F.L. EL. 601.50 — Ramp #3 ℄ — Ramp #3 ℄ — Existing Chapman Ave ℄

N.M.R. ℄ — F.L. EL. 600.76 — F=168 — Existing Woodrow Ave ℄ — F=3272 — F=2568 — STA 264+00, 625.50

N.M.R. ℄ — F.L. EL. 599.95 — Ramp #3 ℄ — Existing Woodrow Ave ℄ — Ramp #3 ℄ — F.L. EL. 621.00 — Existing Chapman Ave ℄

E=76 — F=8 — C=6 — F=1876 — F=3796 — STA 263+50, 625.25

N.M.R. ℄ — F.L. EL. 599.10 — Ramp #3 ℄ — Existing Woodrow Ave — Ramp #3 ℄ — F.L. EL. 623.76 — Existing Chapman Ave ℄

F=20 — C=56 — F=1872 — F=3334 — STA 263+00, 625.00

N.M.R. ℄ — F.L. EL. 597.0 — Ramp #3 ℄ — Existing Woodrow Ave ℄ — Existing Chapman Ave ℄

F=2 — C=44 — C=6 — F=808 — F=2684 — STA 262+00, 624.50

FOR MATCH LINE PT. SEE SHEET #86

620 / 600

MATCH LINE PT. — N.M.R. ℄ — F.L. EL. 595.13 — Existing Woodrow Ave ℄ — Ramp #3 ℄ — Existing Chapman Ave ℄

C=88 — F=284 — C=230 — C=12 — F=2460 — STA 261+00, 624.00

STA 260+00 — North 540 520 500 480 460 440 420 400 380 360 340 320 300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 — North — STA. 260+00

PLATE 3 CROSS SECTION, B.P.R. STANDARD

X-SECTIONS STA 261+00 TO STA 265+00 (N)

SEEDING & PROTECTING	
WIDTH LIN. FT	AREA SQ YDS
308	1883
370	2111
390	2153
385	2095
369	4083
366	4344
416	5294
538	

STATE	PROJECT	REFERENCE
OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

	END AREA		CU. YDS.	
	CUT	FILL	CUT	FILL
620				
	468	5294		
			1066	11431
600	684	7052		
			1211	12196
	624	6120		
600				
			922	11169
	372	5942		
600				
			376	10980
	34	5884		
600				
			63	21718
	0	5844		
			200	19641
	108	4762		
600				
	516	3810	1156	15814

EXCAVATION (N)	5,144	Cu. Yds.
EXCAVATION (S)	5,921	Cu. Yds.
TOTAL EXCAVATION	11,065	Cu. Yds.
EMBANKMENT (N)	87,418	Cu. Yds.
EMBANKMENT (S)	124,738	Cu. Yds.
TOTAL EMBANKMENT	212,156	Cu. Yds.
EMBANKMENT +22%	258,830	Cu. Yds.

URBAN		
EXCAVATION	2,747	Cu. Yds.
EMBANKMENT	0	Cu. Yds.
EMBANKMENT +22%	0	Cu. Yds.

X-SECTIONS STA 261+00 TO STA 265+00(S)

SEEDING & PROTECTING		SEEDING & PROTECTING	
WIDTH	AREA	WIDTH	AREA
LIN. FT.	SQ. YDS.	LIN. FT.	SQ. YDS.
		URBAN	
140		82	
	1577		939
144		87	
	1572		1239
139		136	
	1316		1911
98		208	
	1966		2577
256		256	
	1422		
0		600	
0			
0		600	
333			
60		600	
1150			
147		620	
1500			
123		STA. 265+00	

500 480 460 440 420 400 380 360 340 320 300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 — NORTH

FOR MATCH LINE PT. SEE SHEET #91

NOTE:
INTER. PORTION OF PROJECT BUILT WITH INTERSTATE FUNDS
URBAN — PORTION OF PROJECT BUILT WITH URBAN FUNDS

FOR MATCH LINE PT. SEE SHEET #91

FED. AID DIVISION	STATE	PROJECT	FISCAL YEAR
5	OHIO	I-329 (20)	

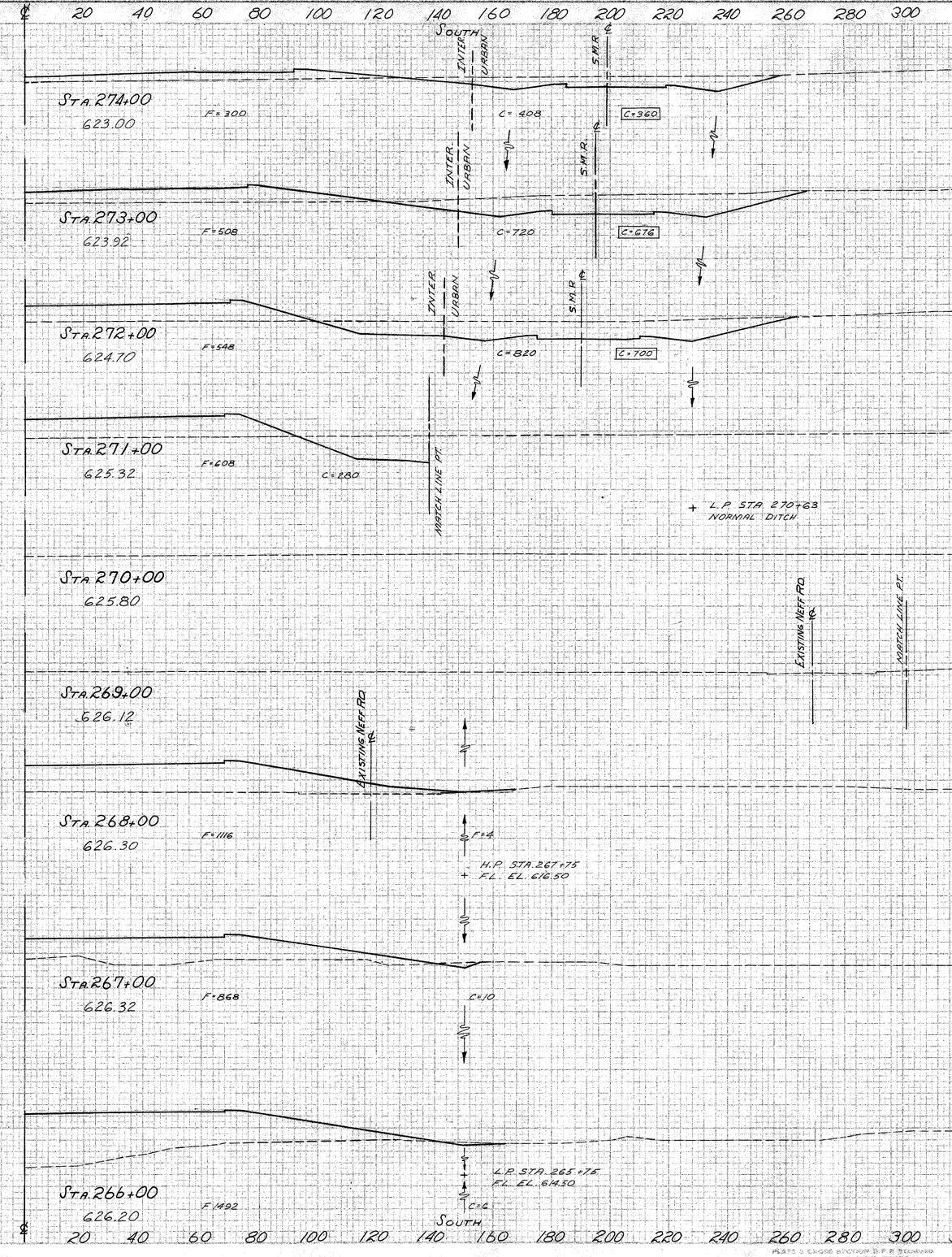
CUYAHOGA COUNTY
CUY-2-24.33

89 / 92

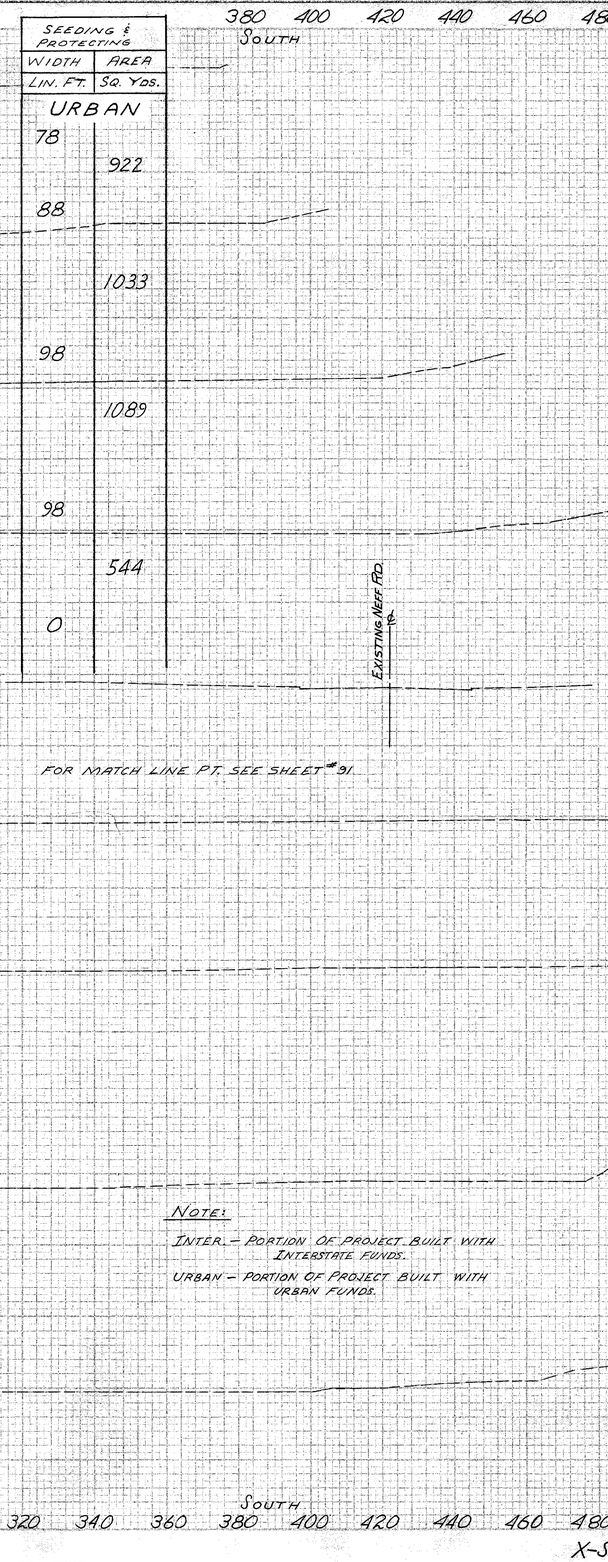
END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL	END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
				488	184		
						1970	1185
		URBAN					
		328	0				
		1304	0	576	456		
		376	0				
						4207	1778
				1696	504		
		2696	0				
						7367	2059
		5185	0				
				2272	608		
						8107	1501
		1000	0				
				2060	0		
		2060	0	(TO MATCH LINE)			
		2747	0				
0	0						
						2747	13
						0	172
							(TO MATCH LINE)
						185	1993
				100	904		
						259	5533
				40	2084		
						148	8222
				40	2356		

X-SECTIONS STA. 266+00 TO STA. 274+00 (N)

SEEDING & PROTECTING	
WIDTH LIN. FT.	AREA SQ. YDS.
61	739
72	805
73	794
70	389
0	0
0	556
100	1128
103	1694
202	2833
308	



SEEDING & PROTECTING	
WIDTH LIN. FT.	AREA SQ. YDS.
URBAN	
78	922
88	1033
98	1089
98	544
0	



END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
URBAN			
620	360	0	
		1919	0
600	676	0	
		2548	0
600	700	0	
		2178	0
700	0		
600	587		
	280	608	(TO MATCH LINE)
	26	796	
600	0	0	
	0	0	
600	0	1141	
	0	1120	
600			
	19	3681	
600	10	868	
	30	4370	
620	6	1492	
600	878	12567	
	468	5294	

END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
	408	300	
		2089	1496
	720	508	
		2852	1956
	820	548	
		2605	2141

EXCAVATION - N	21,651 CU. YDS.
EXCAVATION - S	4,372 CU. YDS.
TOTAL EXCAVATION	16,396 CU. YDS.
EMBANKMENT-N	6,523 CU. YDS.
EMBANKMENT-S	3,641 CU. YDS.
TOTAL EMBANKMENT	16,553 CU. YDS.
EMBANKMENT x 22%	20,195 CU. YDS.

NOTE:

INTER. – PORTION OF PROJECT BUILT WITH INTERSTATE FUNDS.

URBAN – PORTION OF PROJECT BUILT WITH URBAN FUNDS.

FED. DIV.	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	90

CUYAHOGA COUNTY

CUY-2-24.33

PLATE 2 CROSS SECTION B.P.R. STANDARD

X-SECTIONS STA. 266+00 TO STA. 274+00 (S)

SEEDING & PROTECTING	
WIDTH	AREA
LIN. FT.	SQ. YDS.

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL

FED. ROAD DIV. NO.	STATE	PROJECT	PROJECT ITEM
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

NOTE:
SOUTH MATCH LINE PTS ARE 85' FROM ℄

NOTE:
DEDUCT 1,224 SQ. YDS. OF SEEDING THIS IS THE AREA THAT WILL HAVE CONCRETE SLOPE PROTECTION.

WEST 60 40 20 ℄ 20 40 60 80 100 120 140 — EAST

SEEDING & PROTECTING		END AREA		CU. YDS.	
WIDTH	AREA	CUT	FILL	CUT	FILL
LIN. FT.	SQ. YDS.				
179	620				
	600	STA. N-2+00		2016	0
1717		608.06	C=2016		
		F.L. EL. 607.30	L.P. STA. 1+13 (N) F.L. EL. 605.34		
		MARGINAL CONNECTOR	MATCH LINE PT.	8281	59
		F.L. EL. 605.92	F.L. EL. 605.47		
130		F=32		2456	32
	600	STA. N-1+00		8756	174
1340		606.39	C=2456		
		L.P. STA 0+25 (N) F.L. EL. 605.54			
		F.L. EL. 605.64	F.L. EL. 604.14		
		MARGINAL CONNECTOR	MATCH LINE PT.	2272	62
		F=52	F=10		
122	600	STA. 0+00		8689	137
		606.21	C=2272		
1455		L.P. STA. 0+47 (S) F.L. EL. 603.15			
		F.L. EL. 606.99	F.L. EL. 603.36		
		MARGINAL CONNECTOR	MATCH LINE PT.	2420	12
140			F=12		
	600	STA. S-1+00		8185	22
1594		607.56	C=2420		
NOTE: SOUTH MATCH LINE PTS ARE 85' FROM ℄		MARGINAL CONNECTOR	MATCH LINE PT.		
147				2000	0
	600	STA. S-2+00		5763	0
1772		610.02	C=2000		
	620	EXISTING NEFF RD	MATCH LINE PT.	1112	0
172			C=1112		
	600	STA. S-3+00		2681	4
1378		612.52			
	620	EXISTING NEFF RD	MATCH LINE PT.	336	2
76		F=2	C=336		
	600	STA. S-4+00		804	4
583		614.63			
	620	EXISTING NEFF RD	MATCH LINE PT.	98	0
29		C=2	C=96		
	600	STA. S-5+00		72	0
45		615.40			
	620	EXISTING WALL	MATCH LINE PT.	42	0
0			C=42		
	600	STA. S-5+27.88			
		MEET EXISTING GRADE			

WEST 60 40 20 ℄ 20 40 60 80 100 120 140 — EAST

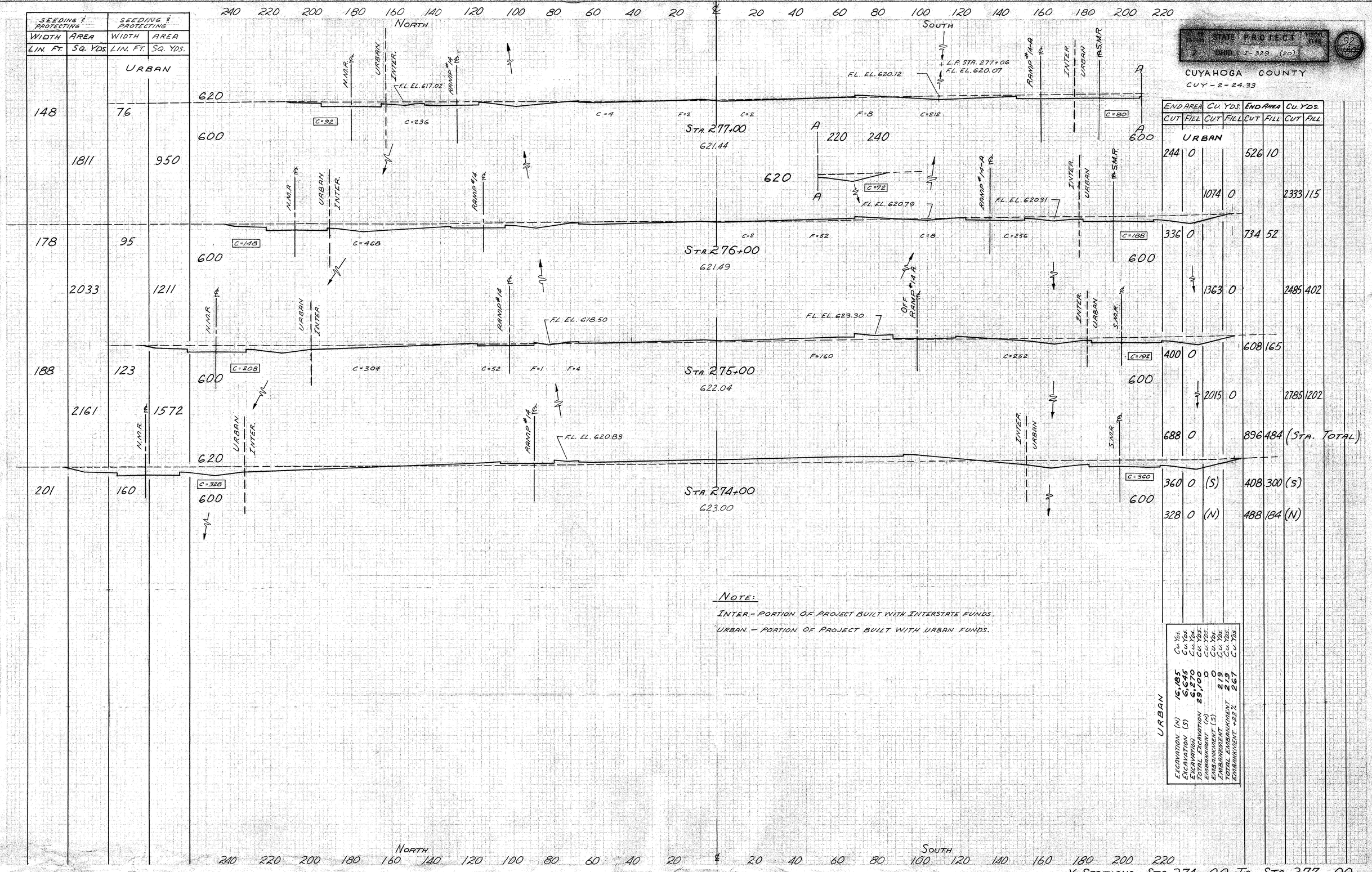
SEEDING & PROTECTING		END AREA		CU. YDS.	
WIDTH	AREA	CUT	FILL	CUT	FILL
LIN. FT.	SQ. YDS.				
	620				
12		C=33			
	600	STA. N-7+60		33	0
		MEET EXISTING GRADE	FOR MATCH LINE PT. SEE SHEET #89 & 90		
261		EXISTING NEFF RD		86	9
		F=8 C=28 C=16	MATCH LINE PT.		
35	600	STA. N-7+00		44	8
		611.31			
539				333	44
		EXISTING NEFF RD			
62		F=16 C=136	MATCH LINE PT.	136	16
	600	STA. N-6+00			
		611.02			
778		EXISTING NEFF RD		1422	30
			MATCH LINE PT.		
78	600	STA. N-5+00	C=632	632	0
		610.73			
1278				3318	0
		F.L. EL. 608.90	N.M.R.		
152		C=1192	MATCH LINE PT.	1192	0
	600	STA. N-4+00			
1850		610.44		5044	0
181					
	620	F.L. EL. 608.10		1532	0
2000			MATCH LINE PT.		
	600	STA. N-3+00	C=1532	6510	0
179		609.70			
		STA. N-2+00		2016	0

WEST 60 40 20 ℄ 20 40 60 80 100 120 — EAST

EXCAVATION	60,064 CU. YDS.
EMBANKMENT	483 CU. YDS.
EMBANKMENT +22%	589 CU. YDS.

PLATE 3 CROSS SECTION IS P.P.I. STANDARD

NEFF ROAD X-SECTIONS STA. 5+27.88(S) TO STA. 7+60 (N)



END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL	END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
URBAN							
244	0			526	10		
		1074	0			2333	115
336	0			734	52		
		1363	0			2485	402
400	0			608	165		
		2015	0			2785	1202
688	0			896	484	(STA. TOTAL)	
360	0	(S)		408	300	(S)	
328	0	(N)		488	184	(N)	

NOTE:

INTER. - PORTION OF PROJECT BUILT WITH INTERSTATE FUNDS.

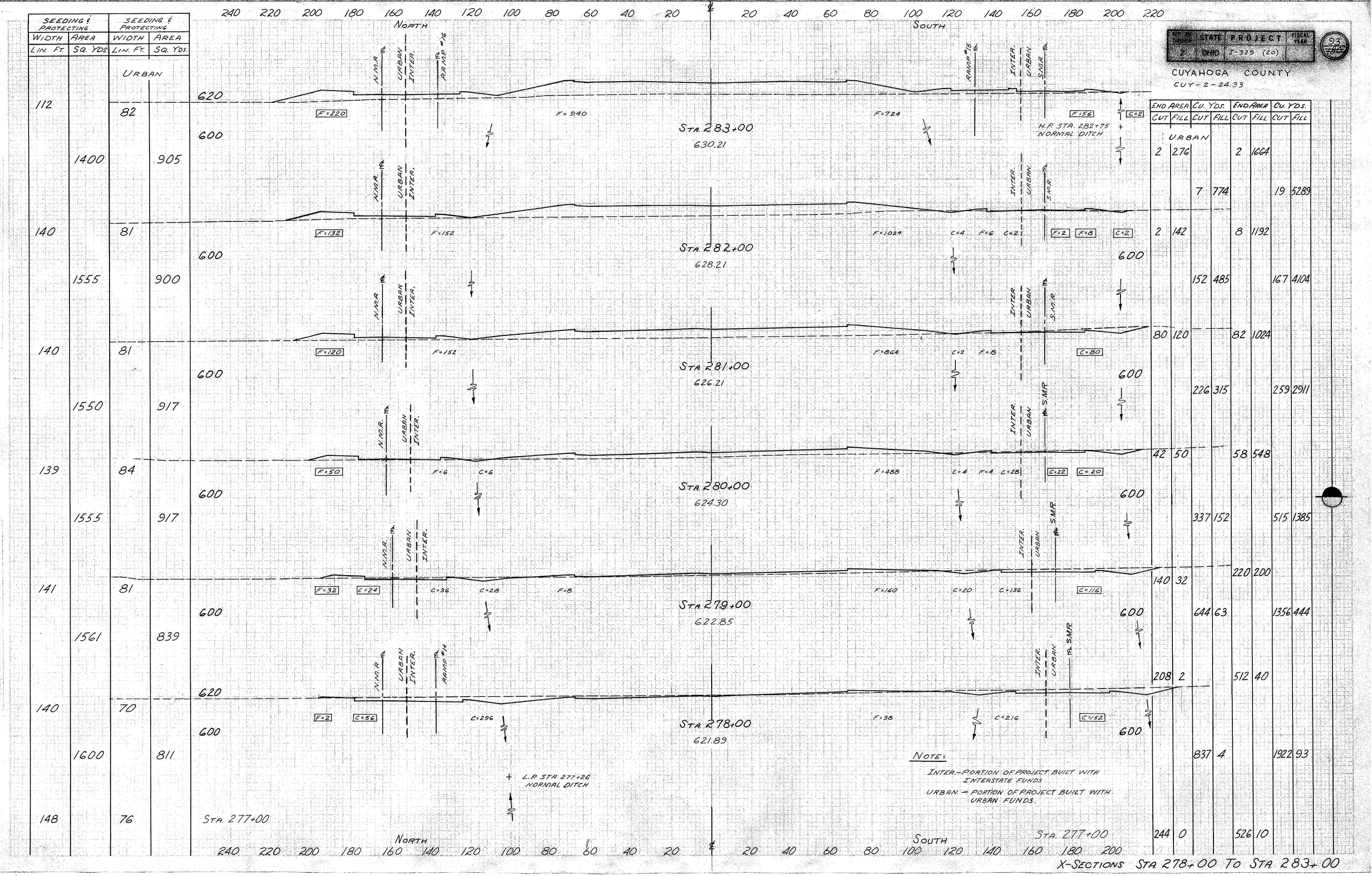
URBAN - PORTION OF PROJECT BUILT WITH URBAN FUNDS.

URBAN

EXCAVATION (N)	16,185	Cu. Yds.
EXCAVATION (S)	6,645	Cu. Yds.
EXCAVATION	6,270	Cu. Yds.
TOTAL EXCAVATION	29,100	Cu. Yds.
EMBANKMENT (N)	0	Cu. Yds.
EMBANKMENT (S)	0	Cu. Yds.
EMBANKMENT	219	Cu. Yds.
TOTAL EMBANKMENT	219	Cu. Yds.
EMBANKMENT +22%	267	Cu. Yds.

X-SECTIONS STA. 274+00 TO STA. 277+00

SEEDING & PROTECTING		SEEDING & PROTECTING	
WIDTH LIN. FT.	AREA SQ. YDS.	WIDTH LIN. FT.	AREA SQ. YDS.
		URBAN	
112		82	
	1400		905
140		81	
	1555		900
140		81	
	1550		917
139		84	
	1555		917
141		81	
	1561		839
140		70	
	1600		811
148		76	



STATE	PROJECT	FISCAL YEAR
OHIO	I-329 (20)	

CUYAHOGA COUNTY

CUY-2-24.33

END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL	END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
		URBAN					
2	276			2	1664		
		7	774			19	5289
2	142			8	1192		
		152	485			167	4104
80	120			82	1024		
		226	315			259	2911
42	50			58	548		
		337	152			515	1385
140	32			220	200		
		644	63			1356	444
208	2			512	40		
		837	4			1922	93
244	0			526	10		

NOTE:

INTER.-PORTION OF PROJECT BUILT WITH INTERSTATE FUNDS

URBAN.-PORTION OF PROJECT BUILT WITH URBAN FUNDS.

X-SECTIONS STA 278+00 TO STA 283+00

SEEDING & PROTECTING		SEEDING & PROTECTING		SEEDING & PROTECTING	
WIDTH LIN. FT.	AREA SQ. YDS.	WIDTH LIN. FT.	AREA SQ. YDS.	WIDTH LIN. FT.	AREA SQ. YDS.
CLEVELAND		CLEVELAND URBAN		EUCLID	
135	107			55	
	1411	TOTAL SEEDING INTERSTATE = 226,043 S.Y.	1117	TOTAL SEEDING URBAN = 23,337 S.Y.	
119	94				
	1250		1039		
106	93				
	1183		983		
107	84				
	1217		922		
112	82				

FED. AID PROJECT	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

94 / 103

CUYAHOGA COUNTY
CUY-2-24.33

200 180 160 140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140 160 180 200 220

NORTH — SOUTH

STA. 289+00
636.67

620 A 220 240 A
600
C=108

EXISTING E. 200 ST. — ℄ S.M.R. — C=272

FOR MATCH LINE P.T. SEE SHEET 95

END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
EUCLID			
380	0		
CLEVELAND URBAN			
972	0	1336	2024
3074	0	4193	1096
688	0	928	1808
1919	96	2607	7230
348	52	480	2096
822	415	1081	7533
96	172	104	1972
181	830	196	6752
CLEVELAND			
0	0		
2	276	2	166A

STA. 288+00
636.36

NOTE:
STATION 287+00 X-SECTION IS THE MATCH LINE FOR E. 200TH ST. X-SECTIONS ON THE WEST SIDE.

L.P. STA. 287+12 NORMAL DITCH

600 — C=156 — C=248 — F=2024 — C=1088 — C=816

STA. 287+00
635.75

L.P. STA. 286+91 NORMAL DITCH

C=64 — C=108 — F=1808 — C=820 — C=624

STA. 286+00
634.83

600 — F.L. EL. 632.30 — F.L. EL. 622.43 — F=48 — F=4 — F=12 — F=1184 — C=480 — C=348

STA. 285+00
633.59

600 — F.L. EL. 630.12 — F.L. EL. 622.25 — F.L. EL. 627.04 — F.L. EL. 623.98 — F=172 — F=1032 — F=940 — C=8 — C=96

STA. 284+00
632.06

H.P. STA. 283+71 F.L. EL. 624.20

L.P. STA. 283+28 F.L. EL. 623.77

STA. 283+00

NOTE:
INTER – PORTION OF PROJECT BUILT WITH INTERSTATE FUNDS.
URBAN – PORTION OF PROJECT BUILT WITH URBAN FUNDS.

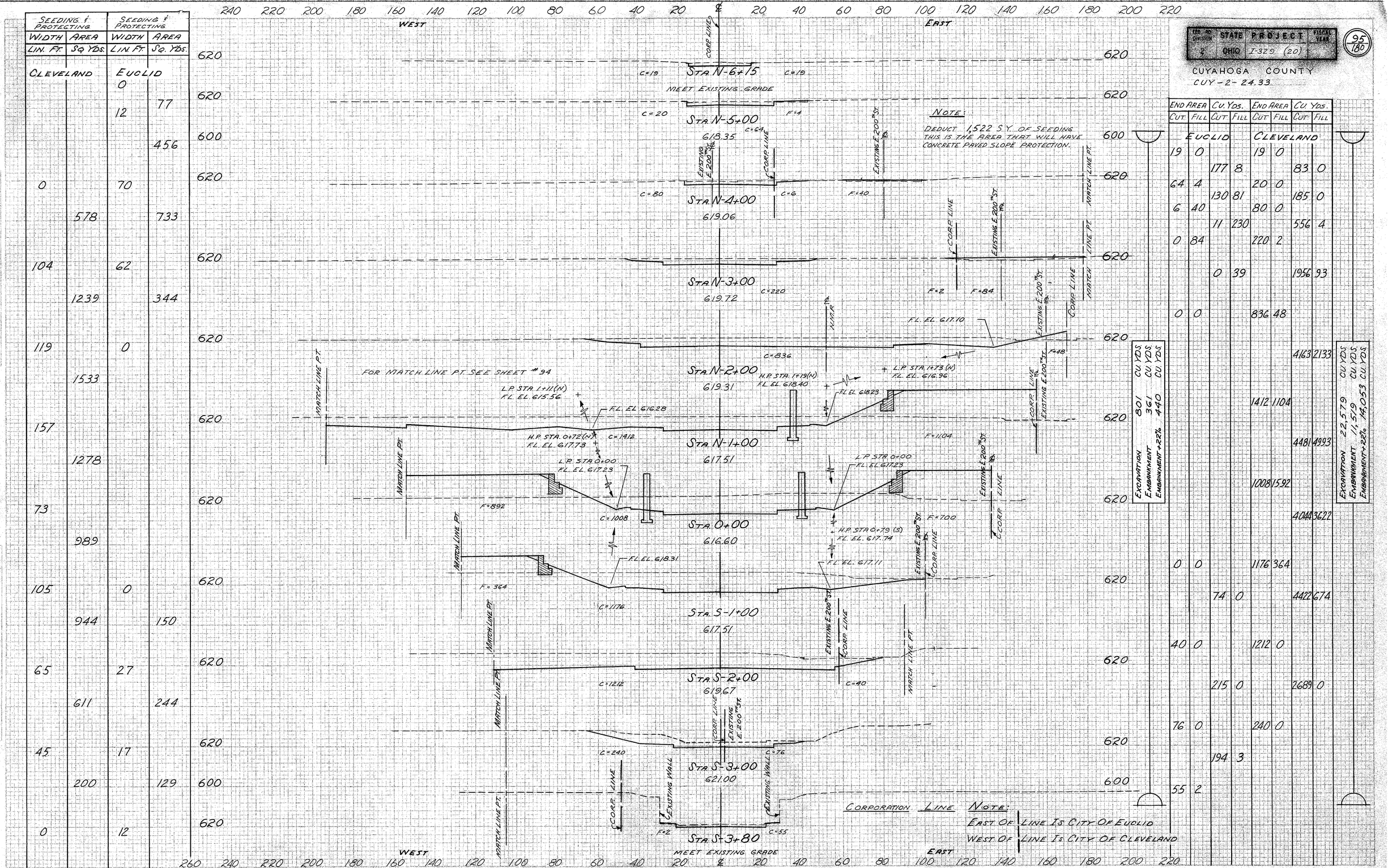
CLEVELAND-URBAN

EXCAVATION	8,522 CU. YDS.
EMBANKMENT	40,915 CU. YDS.
EMBANKMENT +22%	49,916 CU. YDS.

X-SECTIONS STA 284+00 TO STA 289+00

FED. RD. DIVISION 2 | STATE OHIO | PROJECT I-329 (20) | FISCAL YEAR
95/180

CUYAHOGA COUNTY
CUY-2-24.33



SEEDING & PROTECTING WIDTH LIN. FT.	SEEDING & PROTECTING AREA SQ. YDS.	SEEDING & PROTECTING WIDTH LIN. FT.	SEEDING & PROTECTING AREA SQ. YDS.
CLEVELAND		EUCLID	
		0	
			77
		12	
			456
0		70	
	578		733
104		62	
	1239		344
119		0	
	1533		
157			
	1278		
73			
	989		
105		0	
	944		150
65		27	
	611		244
45		17	
	200		129
0		12	

END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL	END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
EUCLID				CLEVELAND			
19	0			19	0		
		177	8			83	0
64	4			20	0		
		130	81			185	0
6	40			80	0		
		11	230			556	4
0	84			220	2		
		0	39			1956	93
0	0			836	48		
						4163	2133
				1412	1104		
						4481	4993
				1008	1592		
						4044	3622
0	0			1176	364		
		74	0			4422	674
40	0			1212	0		
		215	0			2689	0
76	0			240	0		
		194	3				
55	2						

EXCAVATION 801 CU. YDS.
EMBANKMENT 361 CU. YDS.
EMBANKMENT +22% 440 CU. YDS.

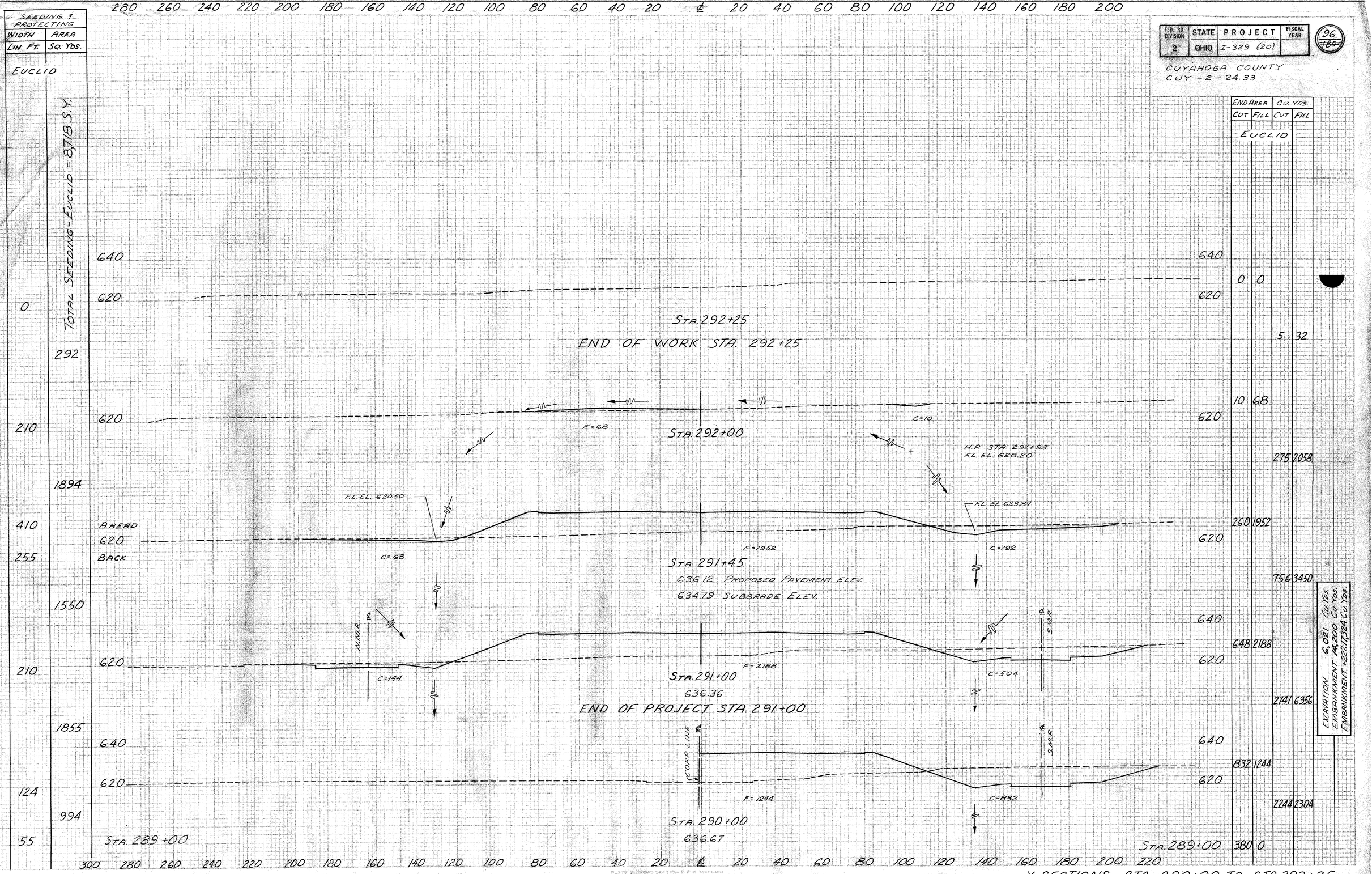
EXCAVATION 22,579 CU. YDS.
EMBANKMENT 11,519 CU. YDS.
EMBANKMENT +22% 14,053 CU. YDS.

E. 200TH ST. X-SECTIONS STA. 3+80(S) TO STA. 6+15(N)

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

96 ~~180~~

CUYAHOGA COUNTY
CUY-2-24.33



X-SECTIONS STA. 290+00 TO STA 292+25

R-15

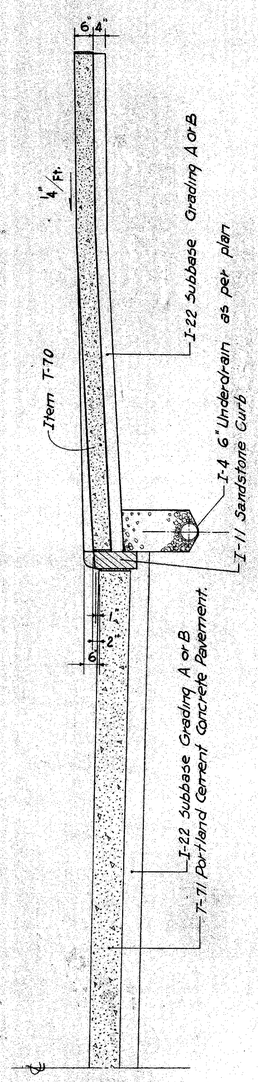
21-4

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

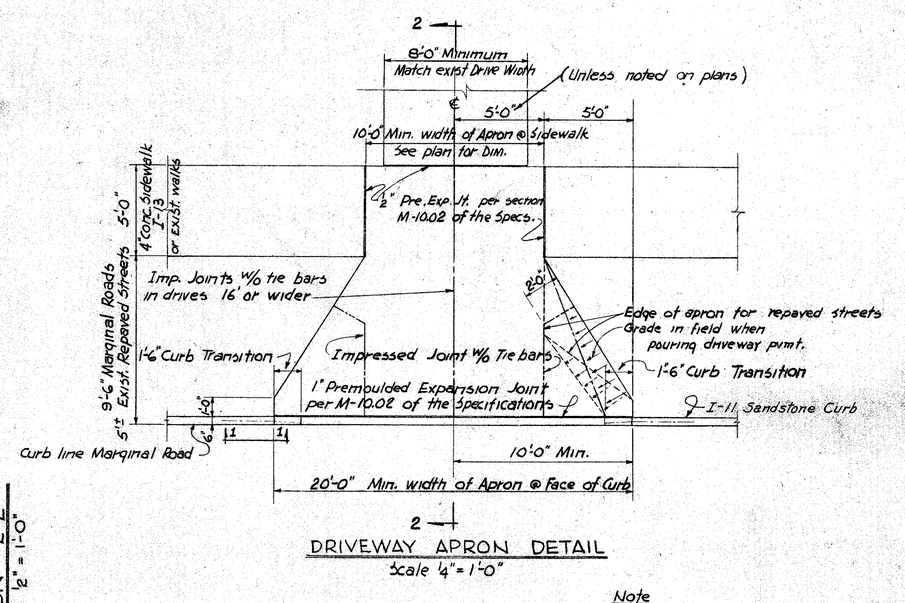
97
~~80~~

CUYAHOGA COUNTY
CUY. 2-24.33

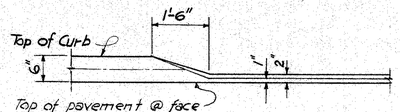
SIDEWALK & DRIVEWAY APRON DETAIL



SECTION 2-2
SCALE 1/2" = 1'-0"



DRIVEWAY APRON DETAIL
Scale 1/4" = 1'-0"

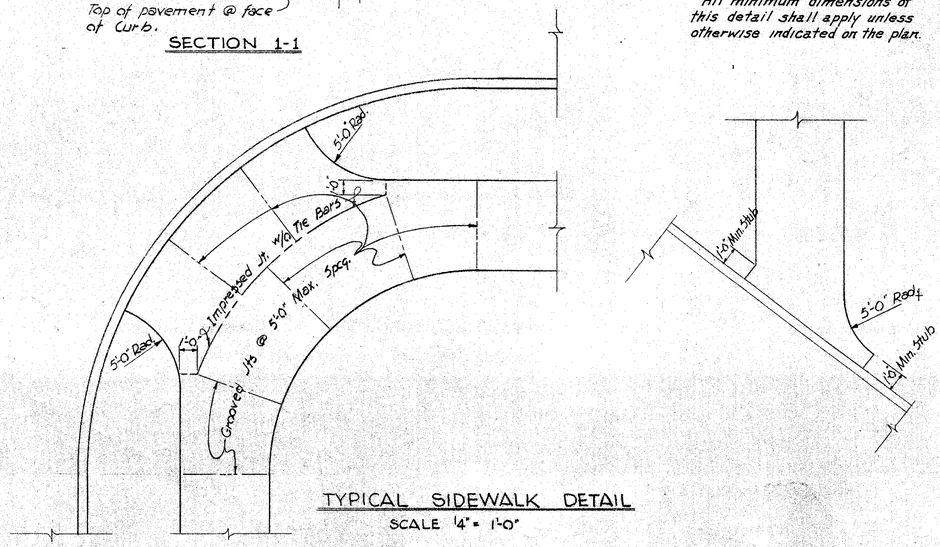


SECTION 1-1

Note

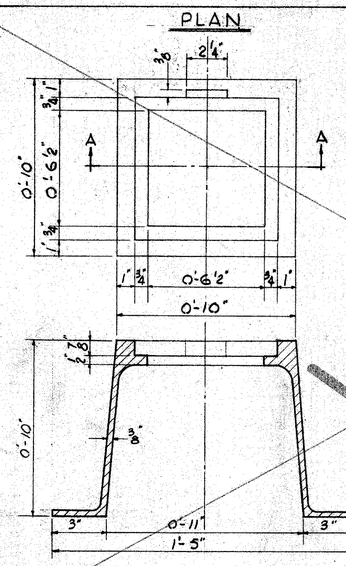
This work including reinforcement & Pre. Exp. Joint, will be paid for at the contract unit price bid per square yard for Item T-71 6" Reinforced Portland Cement Concrete Pavement.

All minimum dimensions of this detail shall apply unless otherwise indicated on the plan.

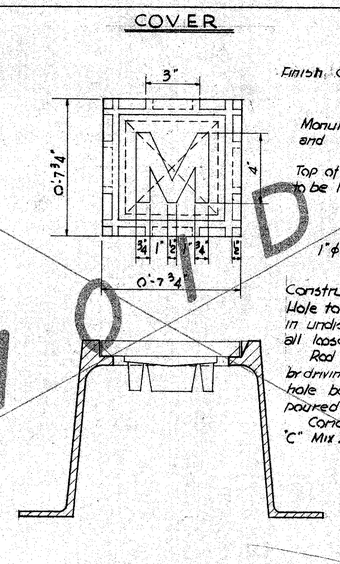


TYPICAL SIDEWALK DETAIL
SCALE 1/4" = 1'-0"

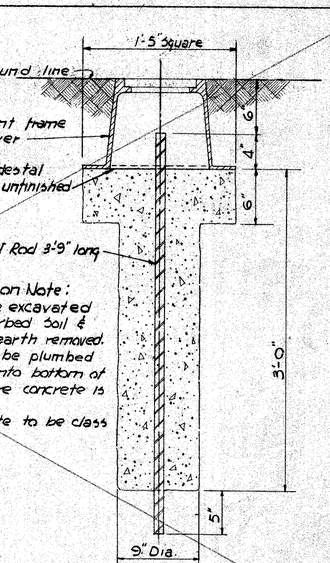
MONUMENT BOX TYPE A FOR UNPAVED AREAS



SECTION-A-A
MONUMENT FRAME AND COVER C.I.
SCALE - 3" = 1'-0"



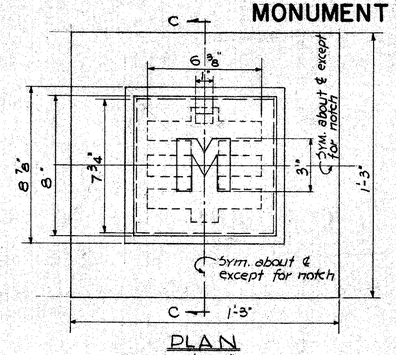
COVER IN PLACE



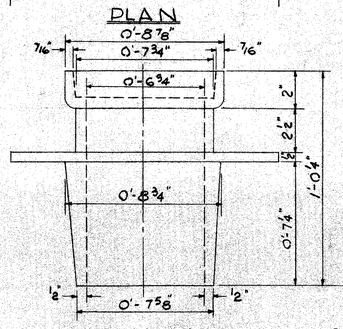
DETAIL OF MONUMENT ASSEMBLY
SCALE 1 1/2" = 1'-0"

VOID

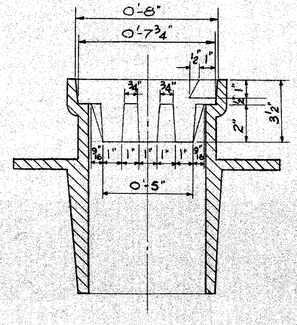
MONUMENT BOX TYPE B FOR PAVED AREAS



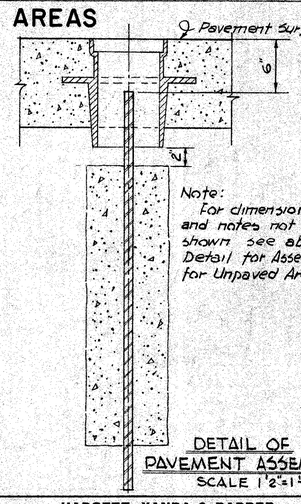
PLAN



ELEVATION
SCALE 3" = 1'-0"



SECTION C-C
MONUMENT FRAME AND COVER C.I.



DETAIL OF PAVEMENT ASSEMBLY
SCALE 1 1/2" = 1'-0"

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SIDEWALK & DRIVEWAY APRON DETAILS

MONUMENT ASSEMBLIES

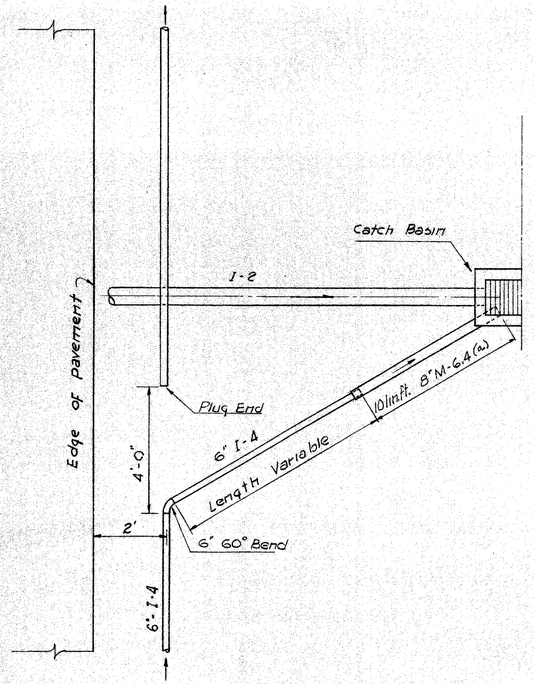
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

TYPICAL DETAILS I-4 & I-2

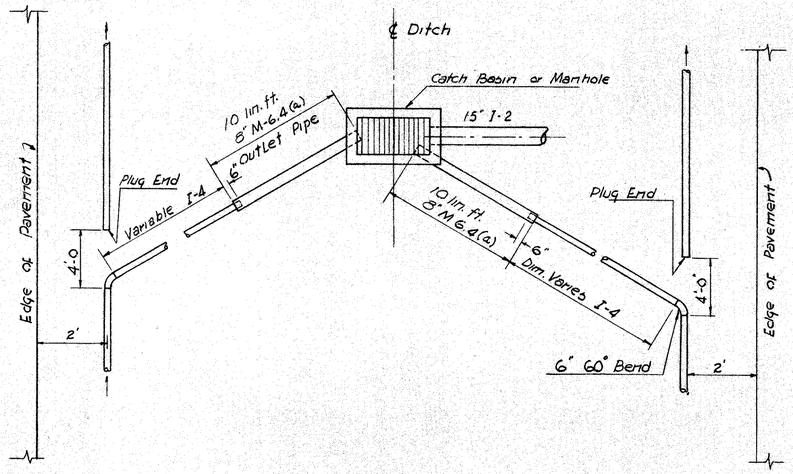
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

98
~~100~~

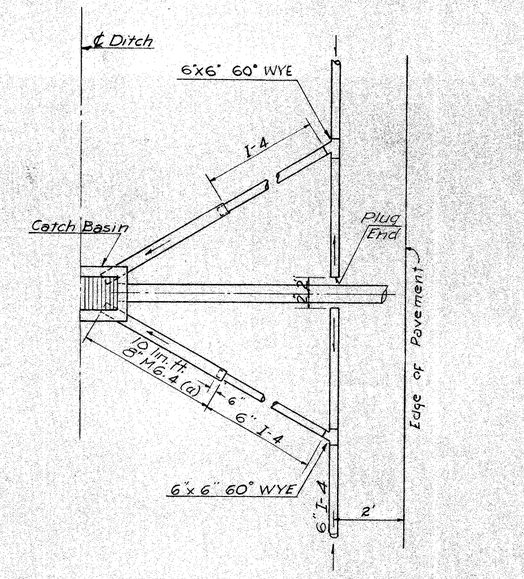
CUYAHOGA COUNTY
CUY 2-24.33



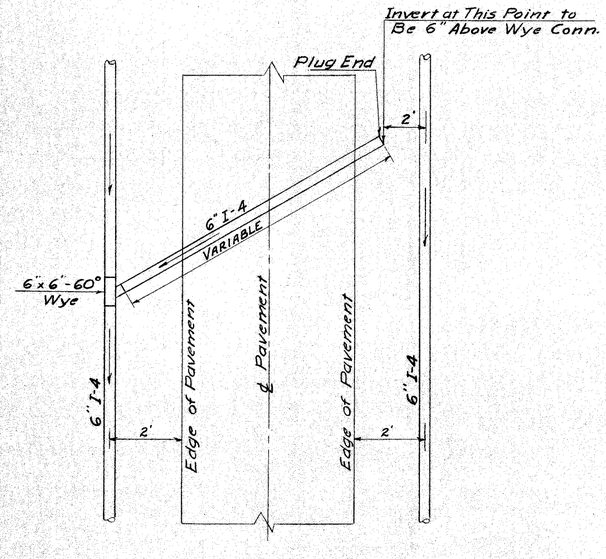
UNDERDRAIN OUTLET DETAIL A



UNDERDRAIN OUTLET DETAIL B



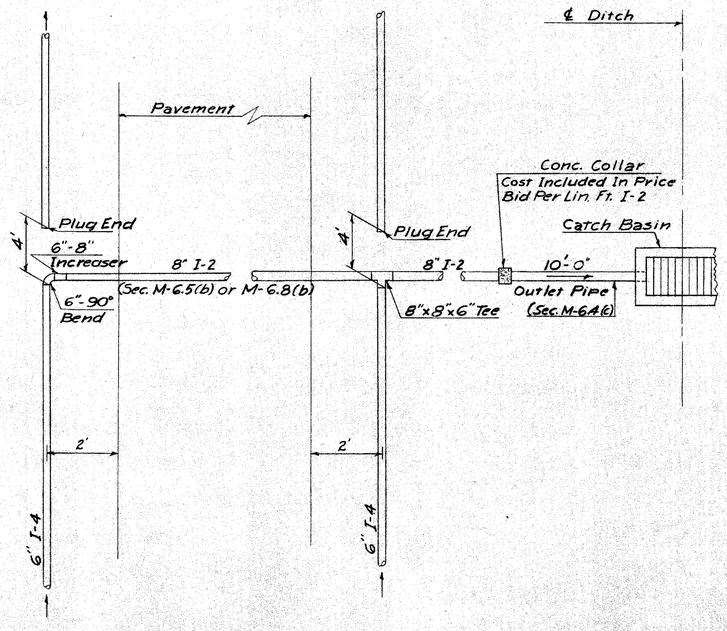
UNDERDRAIN OUTLET DETAIL C



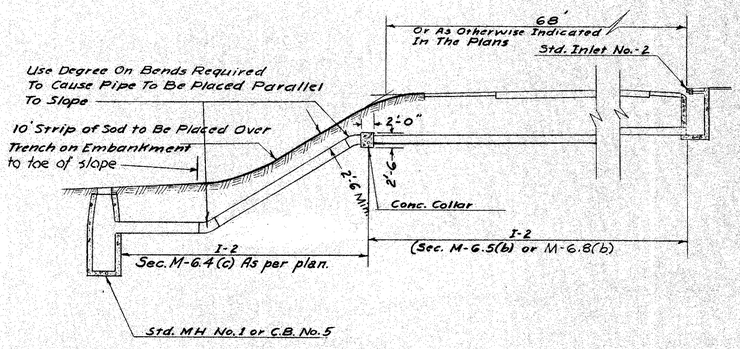
NOTE: Location to Be Adjusted In Field And to Be Placed In Cut Section

DETAIL I-4 CROSSOVER

CUT TO FILL SECTION



UNDERDRAIN OUTLET DETAIL E



MEDIAN OUTLET DETAIL IN HIGH FILL

NOTE: Concrete Collar to Be Included In Bid Price For I-2 Pipe

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Consulting Engineers
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DRAINAGE DETAILS

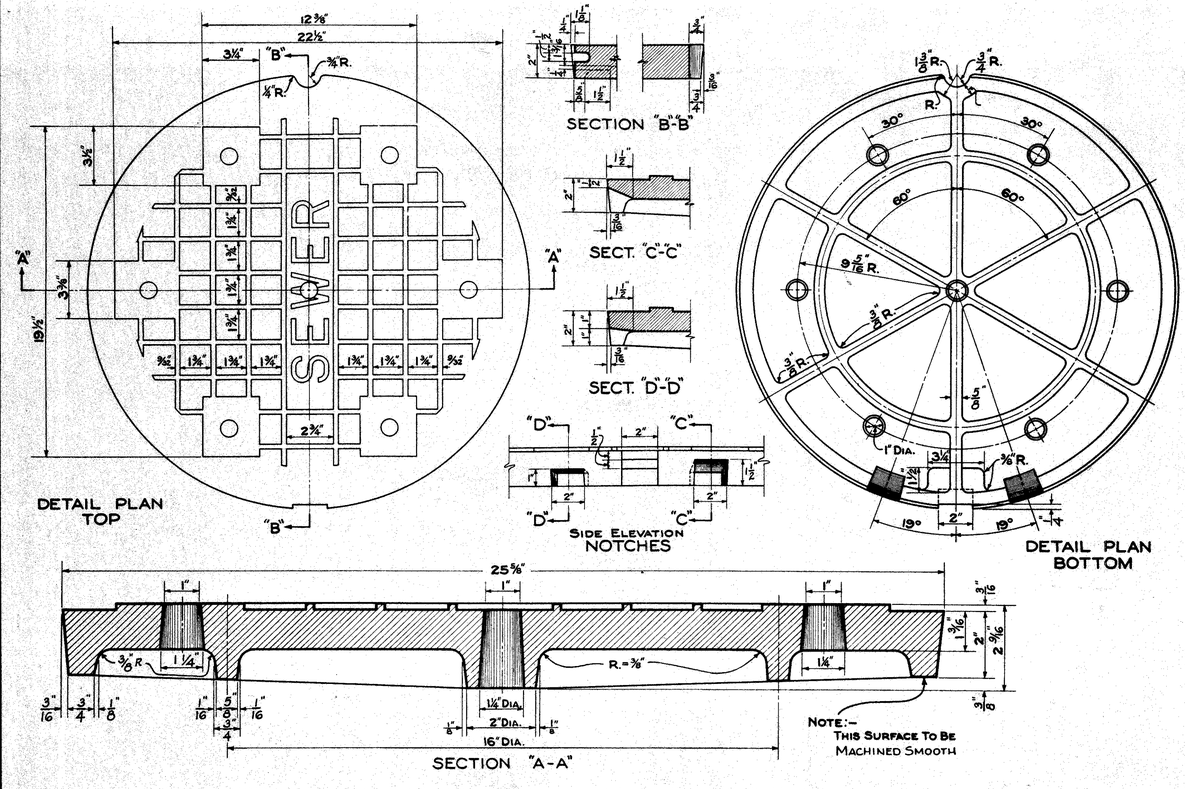
TYPICAL DETAILS I-4 & I-2

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	1-329 (20)	

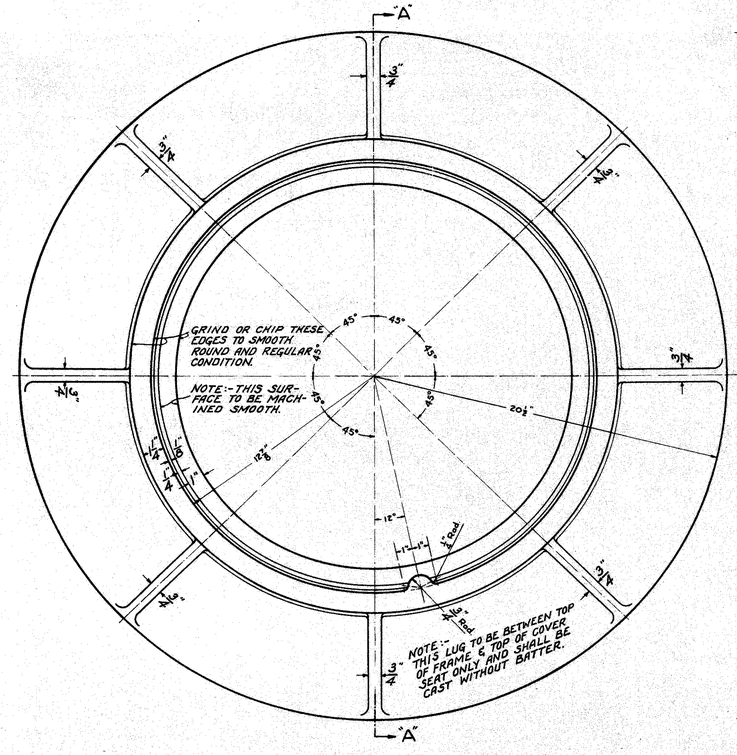
CUYAHOGA COUNTY
CUY-2-24.33

99
~~100~~

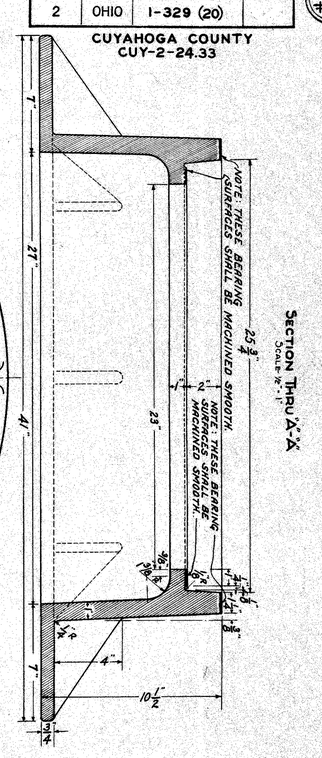


TYPE "A" MANHOLE COVER - CAST IRON
STANDARD CITY OF CLEVELAND
NO SCALE

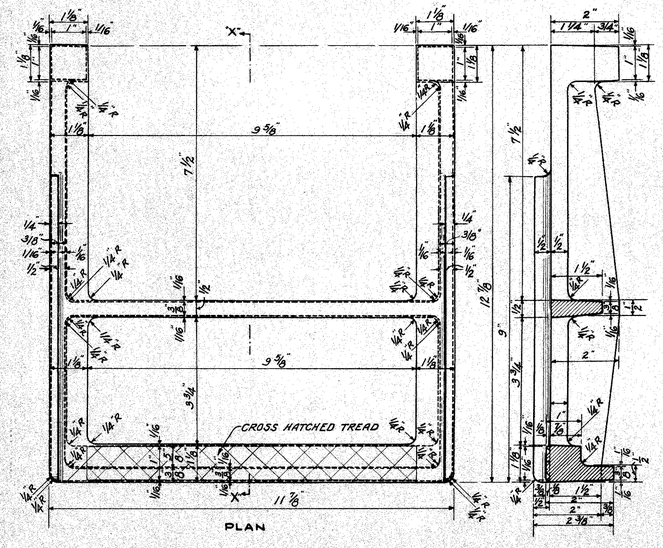
WEIGHT OF COVER 195 LBS.

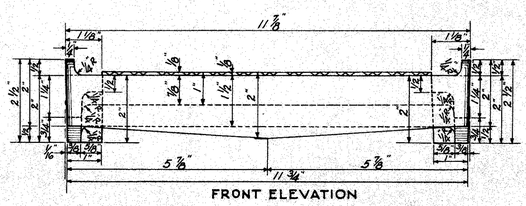


TYPE "A" MANHOLE FRAME - CAST IRON
STANDARD CITY OF CLEVELAND
NO SCALE

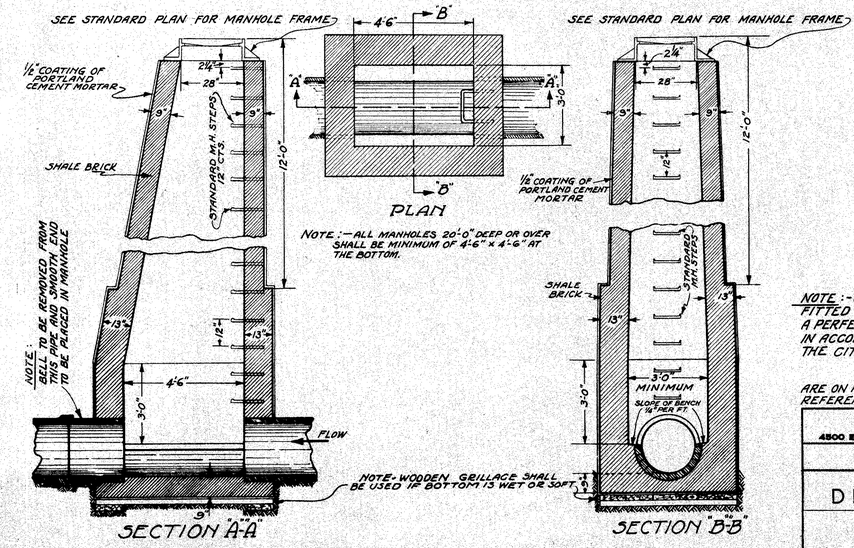


WEIGHT OF FRAME 355 LBS.





CAST IRON MANHOLE STEP
STANDARD CITY OF CLEVELAND
NO SCALE



TYPE "A" MANHOLE
STANDARD CITY OF CLEVELAND
NO SCALE

NOTE:- COVERS AND FRAMES SHALL BE FITTED AND SHIPPED IN PAIRS TO INSURE A PERFECT FIT. ALL CASTINGS SHALL BE IN ACCORDANCE WITH SECTION 0-7.81 OF THE CITY OF CLEVELAND SPECIFICATIONS.

CITY OF CLEVELAND SPECIFICATIONS ARE ON FILE IN THE CITY HALL FOR USE AS REFERENCE.

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Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

DRAINAGE DETAILS

TYPE "A" MANHOLE

STANDARD CITY OF CLEVELAND
MANHOLE, FRAME, COVER & STEP

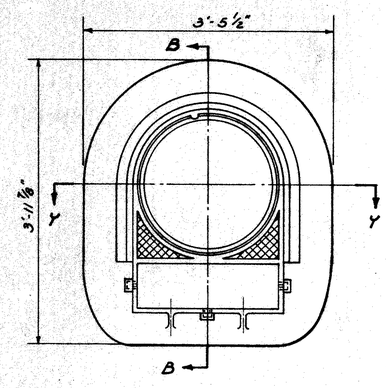
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

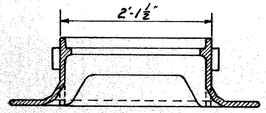
100
~~180~~

CUYAHOGA COUNTY
CUY-2-24.33

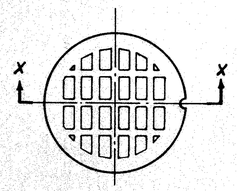
SPECIAL CATCH BASIN Nº 4



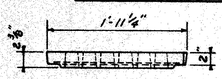
PLAN OF CASTING - C.I.



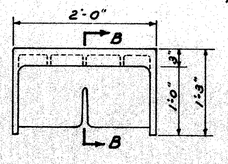
SECTION Y-Y



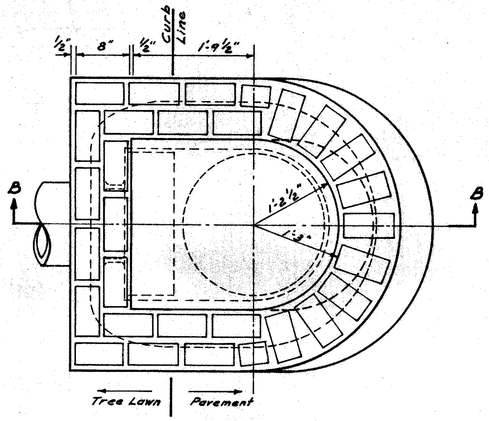
PLAN OF COVER - C.I.



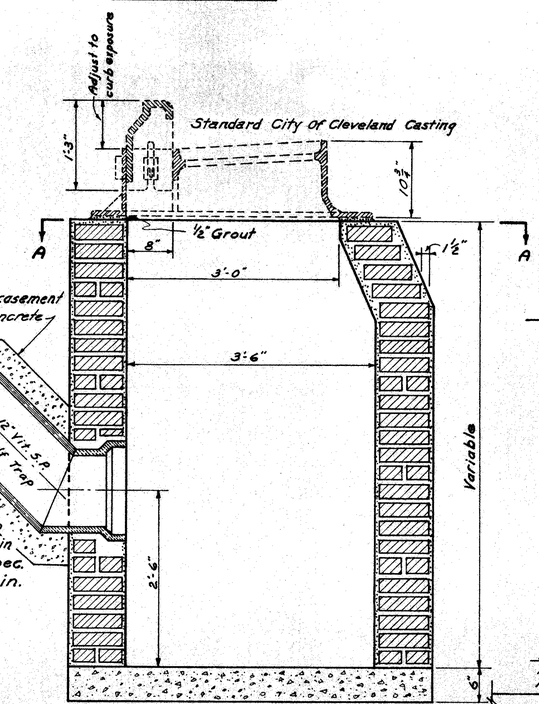
SECTION X-X



ELEVATION
CURB BOX - C.I.



PLAN SECTION A-A



Note: Half Trap to be included in price bid for Spec. Nº 4 Catch Basin.

SECTION B-B

NOTES:

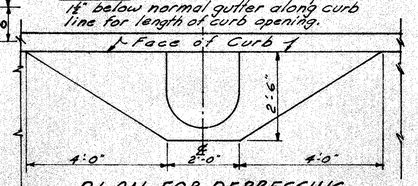
BRICK WALLS~
Brick walls shall be 8" thick & plastered on the inside & the outside with 1:2 cement mortar ½" thick.
Concrete side walls, where used in place of brick, shall be made 8" thick of Class "C" concrete.

OUTLET~
The outlet shall be of the size shown on the Plans and may be constructed in any side.

BOTTOM~
The bottom shall be built as per the Plans, of Class "C" concrete, or of two (2) courses of brick, (set in mortar).

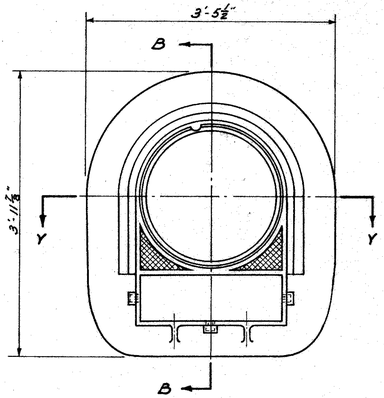
CASTINGS~
Casting shall be Standard City of Cleveland and in accordance with Section 0-7.81 of the City of Cleveland specifications.

NOTE - City of Cleveland specifications are on file in the City Hall for use as reference.

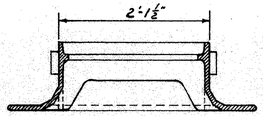


PLAN FOR DEPRESSING PAVEMENT FOR ABOVE STRUCTURES

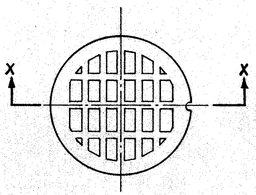
SPECIAL CURB INLET Nº 4



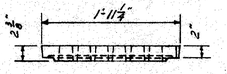
PLAN OF CASTING - C.I.



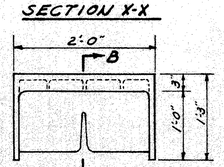
SECTION Y-Y



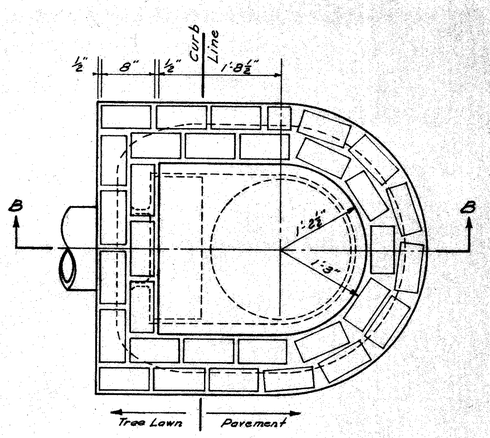
PLAN OF COVER - C.I.



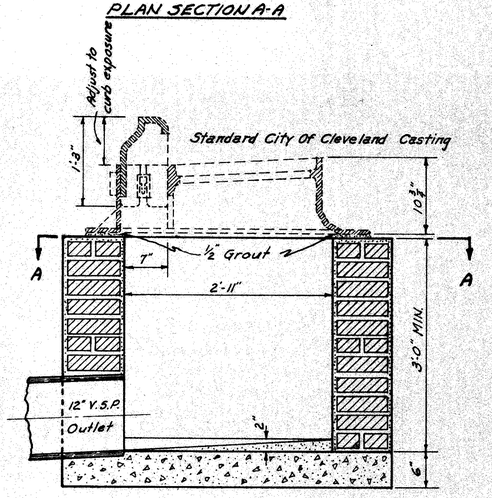
SECTION X-X



ELEVATION
CURB BOX - C.I.



PLAN SECTION A-A



SECTION B-B

NOTE: Cover seat & Cover surfaces shall be chilled & ground smooth and straight and shipped in pairs to insure a perfect fit.

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Consulting Engineers
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DRAINAGE DETAILS
SPECIAL CATCH BASIN Nº 4
AND
SPECIAL CURB INLET Nº 4

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

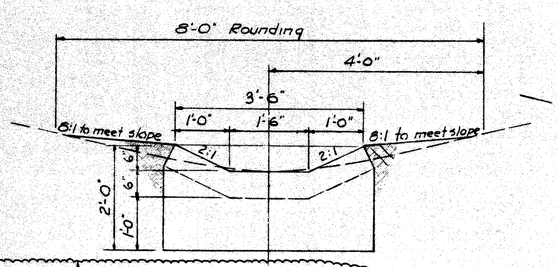
DRAINAGE DETAILS

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 389(20)	

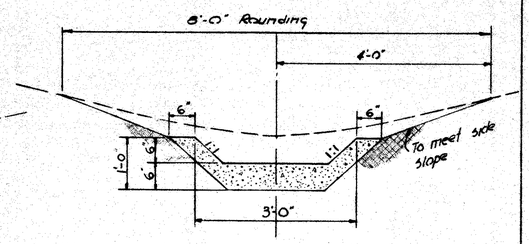
CUYAHOGA COUNTY
CUY 2-24.33

(101) ~~100~~

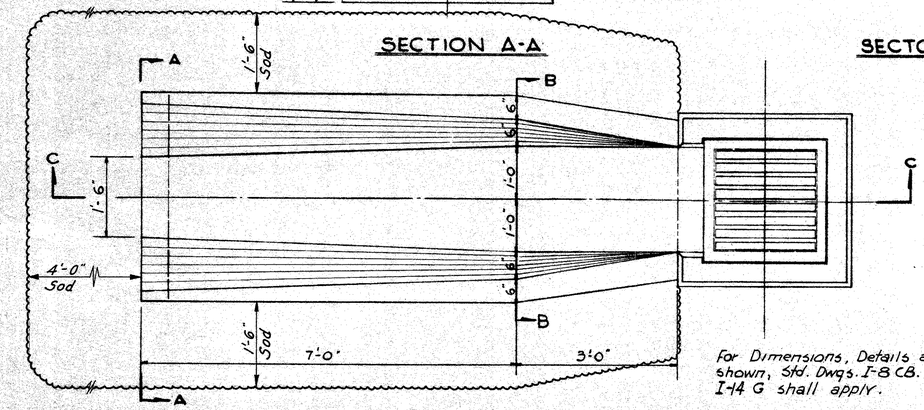
SPECIAL NO. 2-2A CATCH BASIN
SCALE 3/4" = 1'-0"



SECTION A-A



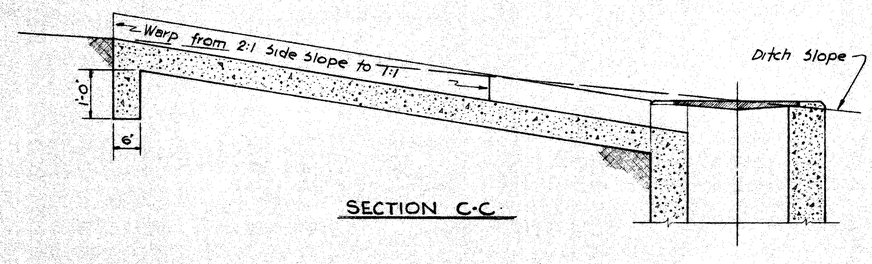
SECTON B-B



PLAN

When a Catch Basin is located in a sag, 2 (two) Paved Gutters (one on each side) shall be built.

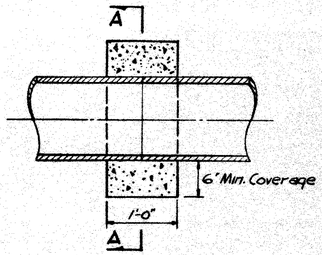
For Dimensions, Details and Notes not shown, Std. Dwgs. I-8 CB. #2-2-A & B and I-14 G shall apply.

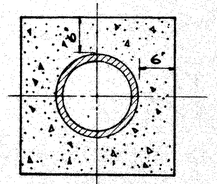


SECTION C-C

Paved gutters and sod in place shall be paid for in the Unit Price Bid for Item I-8 Spec. CB #2-2A

SPECIAL NO. 2-2A CATCH BASIN



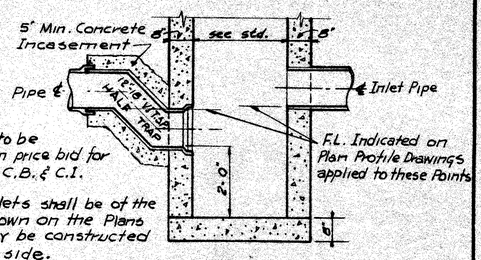


SECTION A-A
SCALE 1" = 1'-0"

CONCRETE COLLAR DETAIL
NOTE:
Concrete Collar to be included in price bid for I-2 pipe.

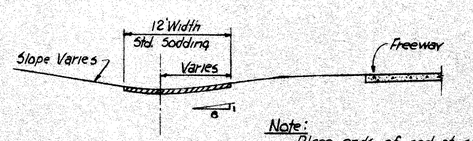
MODIFIED CATCH BASINS & CURB INLETS
SCALE 3/4" = 1'-0"

Note:
By Modified Catch Basin or Curb Inlet we mean the Contractor to add the trapped outlet, as shown in this detail, to the Standard Catch Basin or Curb Inlet as shown on the applicable Standard Construction Drawings. The cost of this modification shall include all the labor and materials necessary to install completely the work shown on this detail and will be paid for at the contract unit price per each bid for the pertinent Modified Catch Basin or Curb Inlet, Item I-8



Note:
1. Half trap to be included in price bid for Modified C.B. & C.I.
2. The outlets shall be of the size shown on the Plans and may be constructed in any side.

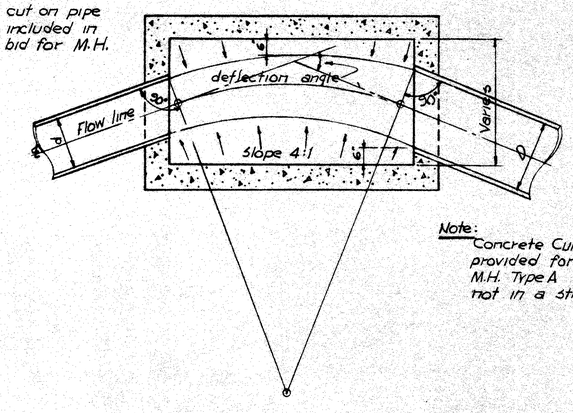
TRAP DETAIL
MODIFIED CATCH BASINS & CURB INLETS
SCALE 1/2" = 1'-0"



Note:
Place ends of sod at same level so as to provide Maximum depth of flow in protected channel.

SOD DITCH DETAIL
SCALE 1/8" = 1'-0"

Bevel cut on pipe to be included in price bid for M.H.



Note:
Concrete Curved channel to be provided for Std. M.H. #2 and M.H. Type A if Manhole constructed not in a straight pipe line.

DETAIL OF CHANNEL THROUGH M.H.
SCALE 1/2" = 1'-0"

HARGETT, YANDA & BARBER
Consulting Engineers
4900 EUCLID AVE. CLEVELAND 3, OHIO

DRAINAGE DETAILS

SOD DITCH DETAIL
TRAP DETAIL
SPECIAL Nº 2-2A CATCH BASIN
CONCRETE COLLAR DETAIL
CHANNEL THROUGH M.H.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

102
180

CUYAHOGA COUNTY
CUY-2-24.33

SPECIAL BERM & SLOPE PROTECTION

Prior to placement of sod in the berm and slope, galvanized poultry fence shall be placed on the finished grade in strands which shall be at right angles to the direction of flow. Each strand shall be staked securely on top and bottom with stakes spaced at four foot intervals and alternated in rows four feet apart.

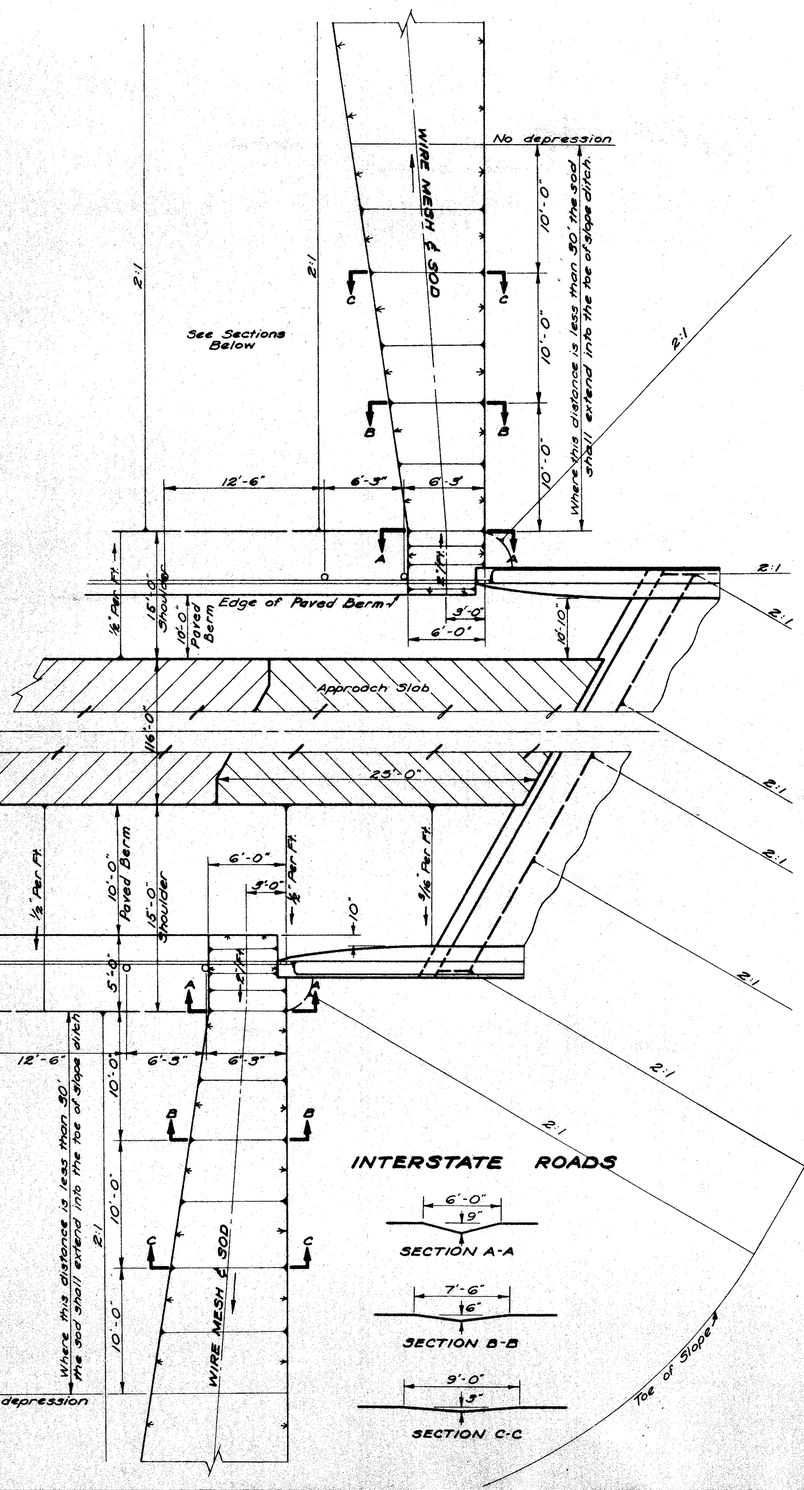
Stakes shall be 1"x 1"x 8" wood stakes and shall be perpendicular to the ground and flush with the finished grade.

The fence shall be Straight Line Poultry Fence or equivalent with strand width of four feet, having a two inch mesh and all wires No. 20 Gauge.

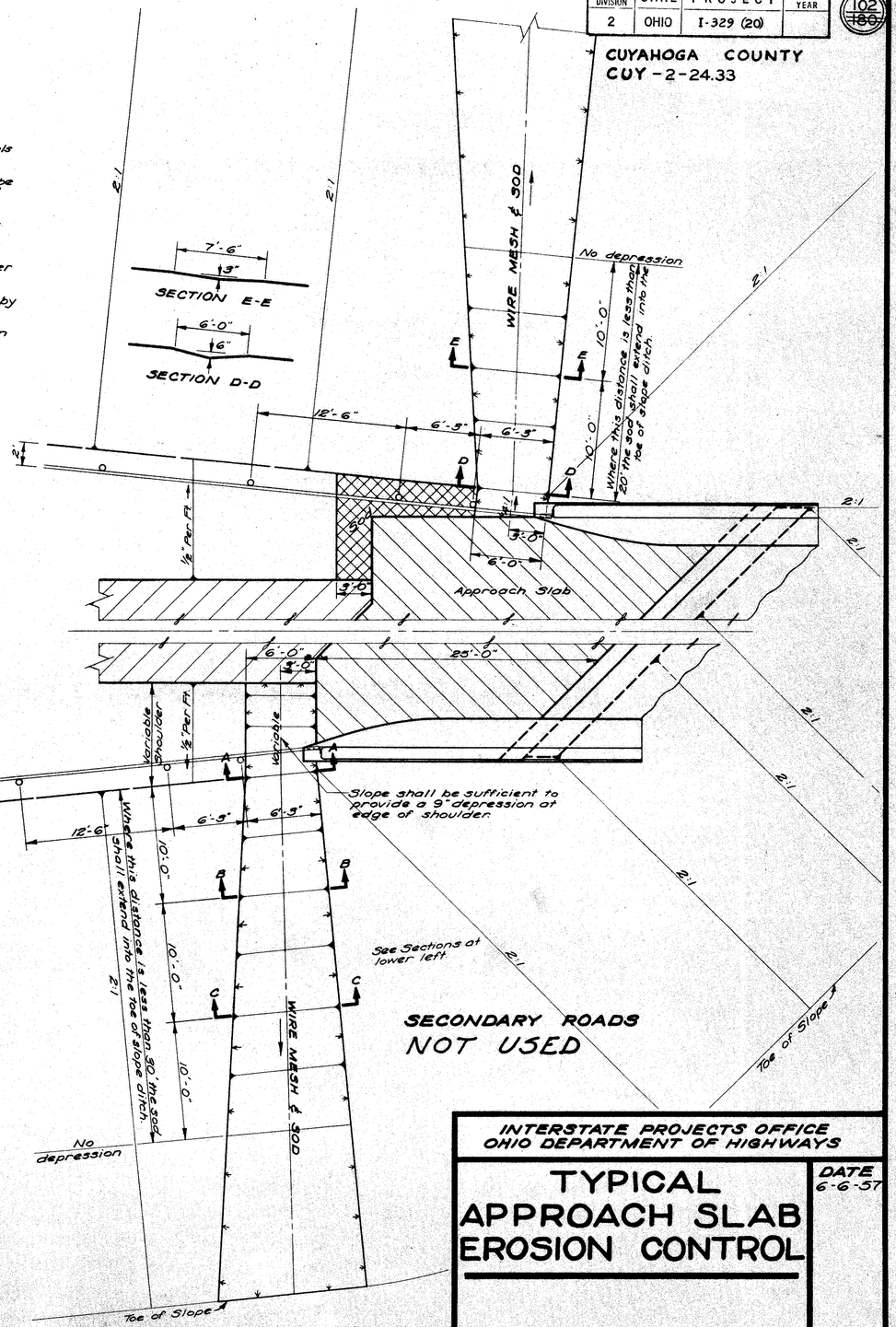
Each strand of fencing shall be fastened together at twelve inch intervals by means of hog rings.

The fence shall be secured to the wood stakes by metal staples.

Sod shall be laid in accordance with Construction and Materials Specifications Section L-10.07.



INTERSTATE ROADS



SECONDARY ROADS
NOT USED

INTERSTATE PROJECTS OFFICE
OHIO DEPARTMENT OF HIGHWAYS

TYPICAL APPROACH SLAB EROSION CONTROL

DATE 6-6-57

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

103 100

CUYAHOGA COUNTY
CUY.-2-24.33

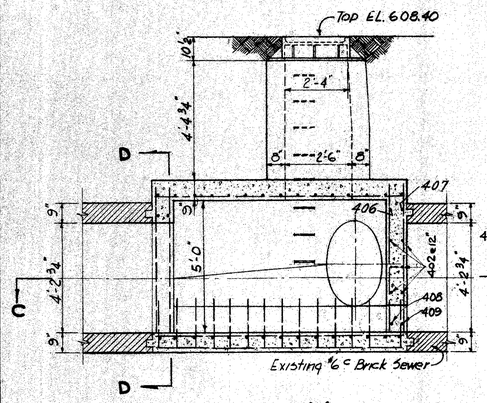
DRAINAGE DETAILS

NO. 4 JUNCTION CHAMBER DETAILS

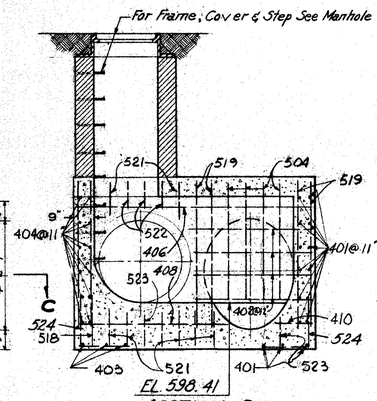
SCALE = 3/8" = 1'-0"

JUNCTION CHAMBER Nº4

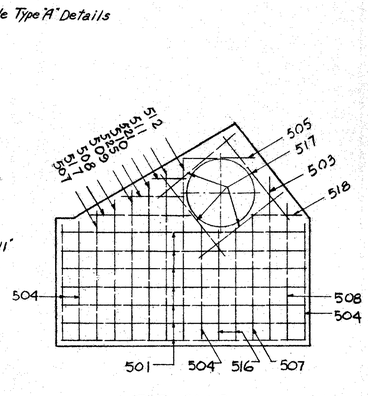
FWY. STA. 211+00



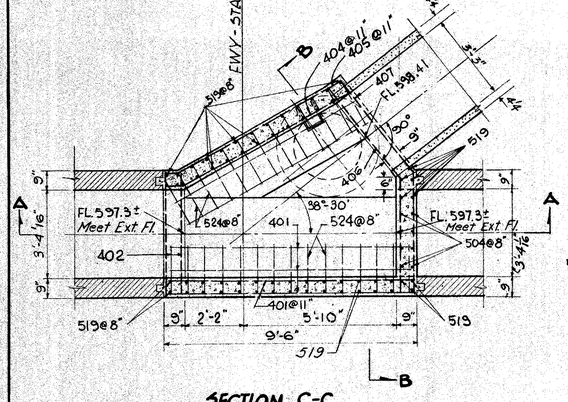
SECTION A-A



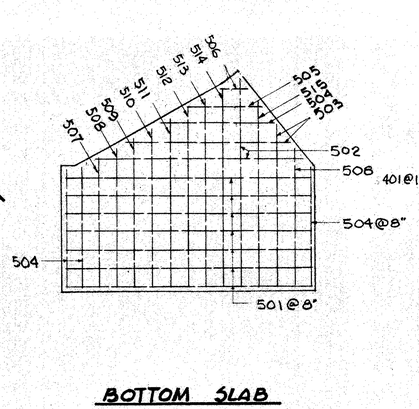
SECTION B-B



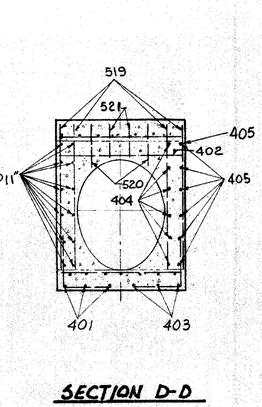
TOP SLAB



SECTION C-C



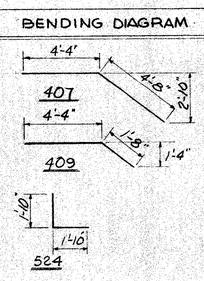
BOTTOM SLAB



SECTION D-D

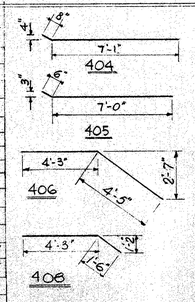
MARK	Nº	LENGTH	SHAPE
501	14	9'-3"	STR
502	2	7'-11"	STR
503	5	6'-2"	STR
504	16	4'-6"	STR
505	2	2'-9"	STR
506	1	0'-11"	STR
507	3	4'-10"	STR
508	4	5'-3"	STR
509	2	5'-8"	STR
510	2	6'-0"	STR
511	2	6'-5"	STR
512	2	6'-9"	STR
513	1	7'-2"	STR
514	1	7'-6"	STR
515	1	7'-0"	STR
516	2	4'-3"	STR
517	5	3'-10"	STR

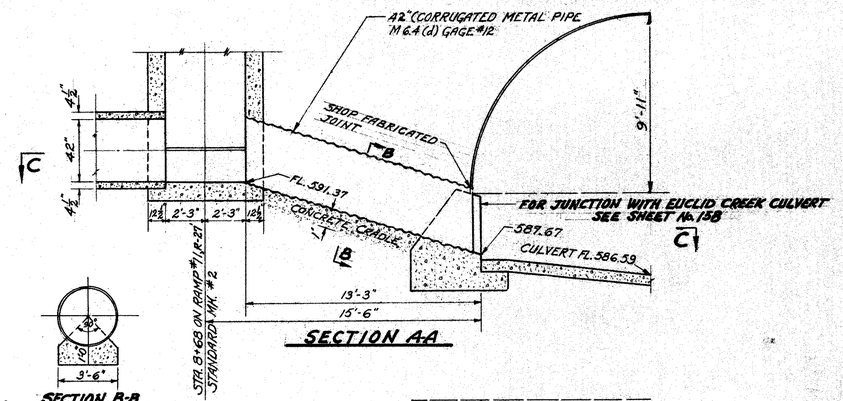
BENDING DIAGRAM



MARK	Nº	LENGTH	SHAPE
518	2	1'-10"	STR
519	59	5'-6"	STR
520	4	1'-9"	STR
521	21	1'-4"	STR
522	6	1'-0"	STR
523	4	1'-2"	STR
524	27	3'-8"	BENT
525	1	2'-5"	STR
401	15	9'-3"	STR
402	10	4'-6"	STR
403	3	7'-6"	STR
404	6	7'-9"	BENT
405	6	7'-6"	BENT
406	1	8'-8"	BENT
407	1	9'-0"	BENT
408	1	5'-9"	BENT
409	1	6'-0"	BENT
410	2	1'-5	STR

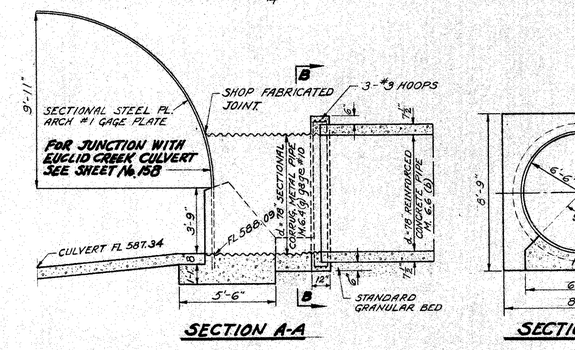
BENDING DIAGRAM

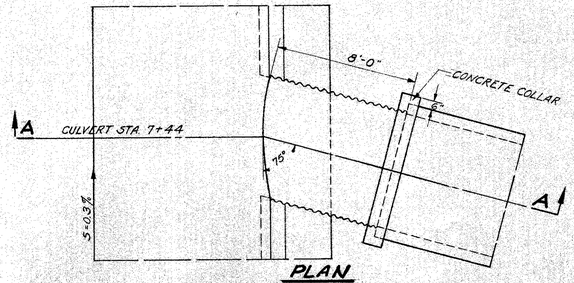




OUTLET PIPE CONNECTION WITH CULVERT AT STA. 9+94

SCALE = ¼" = 1'





PLAN

OUTLET PIPE CONNECTION WITH CULVERT AT STA. 7+44

SCALE = ¼" = 1'

NOTE:
CONCRETE COLLAR AND CONCRETE CRADLE PRICE TO BE INCLUDED IN THE PRICE BID PER LINEAL FOOT OF THE 78" DIA. SECTIONAL PIPE 6.4 (g).

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

DRAINAGE DETAILS

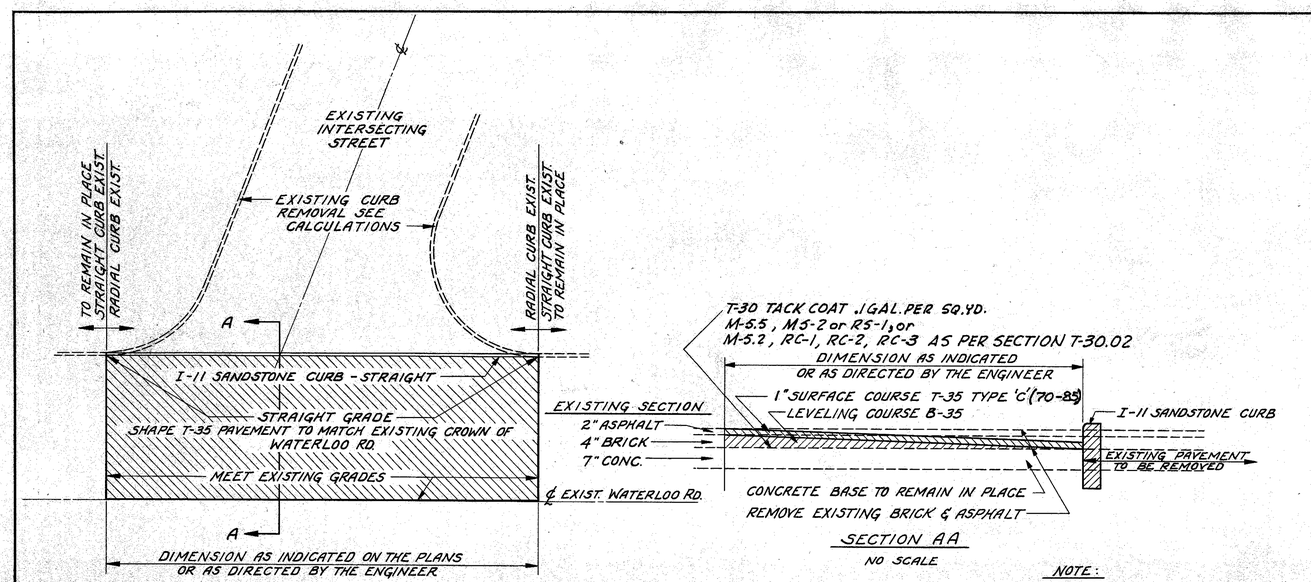
JUNCTION CHAMBER No.4 & OUTLET PIPE CONNECTIONS WITH EUCLID CREEK CULVERT

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

104
~~180~~

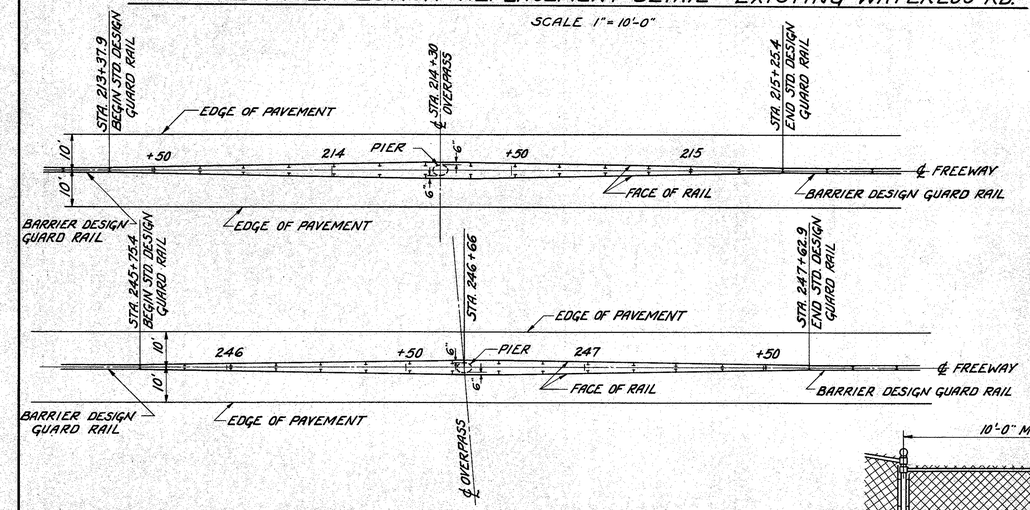


SECTION AA
NO SCALE

NOTE:
FOR QUANTITIES OF INTERSECTION REPLACEMENTS SEE CALCULATIONS.

TYPICAL INTERSECTION REPLACEMENT DETAIL - EXISTING WATERLOO RD.

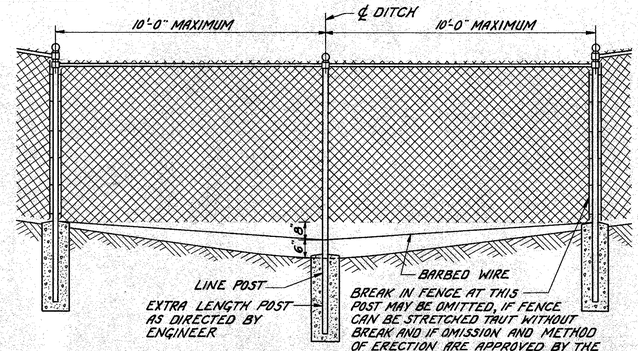
SCALE 1" = 10'-0"



GUARD RAIL AT PEDESTRIAN OVERPASS PIERS

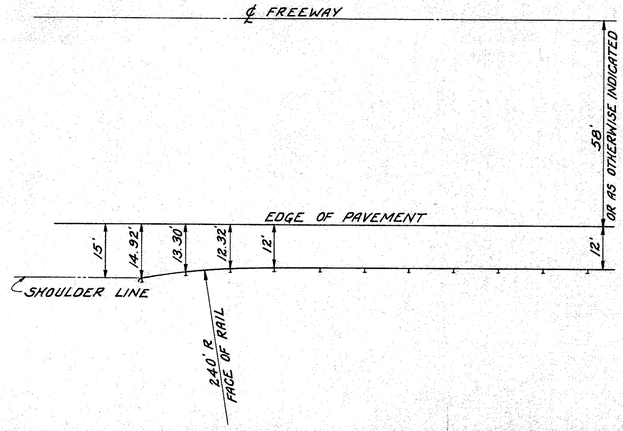
SCALE 1" = 20'

NOTE:
FOR DIMENSIONS, NOTES AND DETAILS NOT SHOWN SEE STANDARD DRAWING F-1



TYPE "C" FENCE - DITCH CROSSING

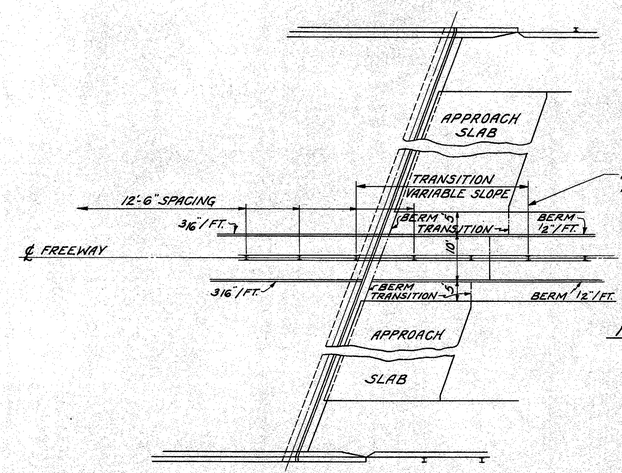
SCALE 3/8" = 1'-0"



STANDARD FLARE DETAIL

SCALE 1" = 20'

NOTE:
THE THREE INITIAL PANELS SHALL BE CURVED, AS SHOWN, FROM THE 14.92' OFFSET AT THE END POST TO NORMAL 12' OFFSET.
TOP OF RAIL SHALL BE 2'-3" ABOVE GRADE AT FACE OF RAIL.



BERM AND GUARD RAIL TRANSITIONS AT BRIDGE APPROACHES

NOT TO SCALE

NOTE:
TRANSITION BERM, IN AREA SHOWN FROM 12"/FT. SLOPE TO 3/16"/FT. SLOPE. TRANSITION GUARD RAIL IN A STRAIGHT LINE FROM FIRST POST BEYOND END OF APPROACH SLAB TO FIRST POST ON BRIDGE.
MAINTAIN TOP OF MEDIAN CURB AT 6" ABOVE BERM MEASURED AT FACE OF CURB.

HARGETT, YANDA & BARBER
Consulting Engineers
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MISCELLANEOUS DETAILS

MISCELLANEOUS GUARD RAIL PAVED GUTTER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

105
~~130~~

BEGIN SHEET STA. 194+00

E. 158TH ST.

E. 160TH ST.

N

CALCUTTA AVE.

195 196 197 198 199 200 201 202 203

SOUTH MARGINAL ROAD

202 203 204 204+45

40 C-5

E. 162ND ST.

NORTH MARGINAL ROAD

39 205+00 205 206 206+50 38 C-5

BEGIN WORK STA. 204+00

WATERLOO RD.

16 205+20 17 206+55 E. 165TH ST. B-3

205 206 204+70 206+15

12 13 B-4

205 205+25 206 207 206+75

13 14 B-5

MATCH LINE STA. 207+00

E. 163RD ST.

E. 165TH ST.

E. 167TH ST.

E. 168TH ST.

E. 169TH ST.

STA 3+75 E. 167TH ST.

2-2" DUCT TO NEXT EXISTING LIGHTING POLE ON E. 167TH ST. TERMINATE DUCT IN A REGULAR PULL BOX. POLE TO BE LOCATED BY THE DIVISION OF LIGHT & POWER.

SPECIAL PULL BOX & FOUNDATION SEE NOTE (2)

1¼" CONDUIT IN 3" CONCRETE EXCASEMENT.

SPECIAL PULL BOX & FOUNDATION (TYPICAL FOR FLOODLIGHT POLES)

NORTH MARGINAL ROAD

C-5 37 208+95 208 36 209+55 209 210 35 211+15 211 212 34 212+70 213 5PB 214 32 214+60 215 31 215+90 216 30 217+20 217 218 29 218+70 219 C-5

SPECIAL PULL BOX & FOUNDATION MOUNT PULL BOX CLOSE TO SHOULDER 214+20 21 AS SHOWN ON SHEET NO. 115

32A

B-3 18 207+95 19 209+40 20 210+90 21 212+45 22 214+05 22/A 214+40 23 215+60 24 217+20 25 218+80 B-3

208 209 210 211 212 213 214 215 216 217 218 219

214+30

207+65 209+20 210+80 212+40 214+05 214+40 215+60 217+20 218+80

B-4 14 15 16 17 18 18/A 19 20 21 B-4

SPECIAL PULL BOX & FOUNDATION 2-2" DUCT TO NEXT EXIST. LIGHTING POLE TO BE LOCATED BY DIVISION OF LIGHT & POWER. TERMINATE DUCT IN A REGULAR PULL BOX.

WATERLOO ROAD

208 208+25 209 210 209+75 211 212

B-5 15 16

SOUTH MARGINAL ROAD

NOTE (4)
FROM STA. 211+00 OF WATERLOO RD. EAST TO NOTTINGHAM R.D. THE EXISTING LIGHTING POLES ARE TO REMAIN IN PLACE. SEE SHEET NO. 28

SPECIAL PULL BOX & FOUNDATION (TYPICAL FOR ALL 3 POLES)
1¼" CONDUIT IN 3" CONC. ENCASEMENT

2-2" DUCT TO NEXT EXISTING LIGHTING POLE ON WATERLOO RD. TERMINATE DUCT IN A REGULAR PULL BOX. POLE TO BE LOCATED BY DIVISION OF LIGHT & POWER

SEE NOTE (2)

400 W MERCURY FLOODLIGHT, EACH POLE

END SHEET STA. 220+00

NOTES.

(1) DUCT LOCATION AT INTERSECTIONS AND CROSS STREETS ARE SHOWN AS SCHEMATIC, THE EXACT LOCATION SHALL BE DETERMINED ACCORDING TO FIELD CONDITIONS.

(2) FOR PEDESTRIAN OVERPASS LIGHTING DETAILS (ENLARGED PLAN & ELEVATION) SEE SHEET NO. 114.

(3) THE DESIGNATION "POWER CO." OR "MUNY POWER CO" ON THE DRAWINGS SHALL BE CONSIDERED TO MEAN THE MUNICIPAL DIVISION OF LIGHT & POWER OF THE CITY OF CLEVELAND.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

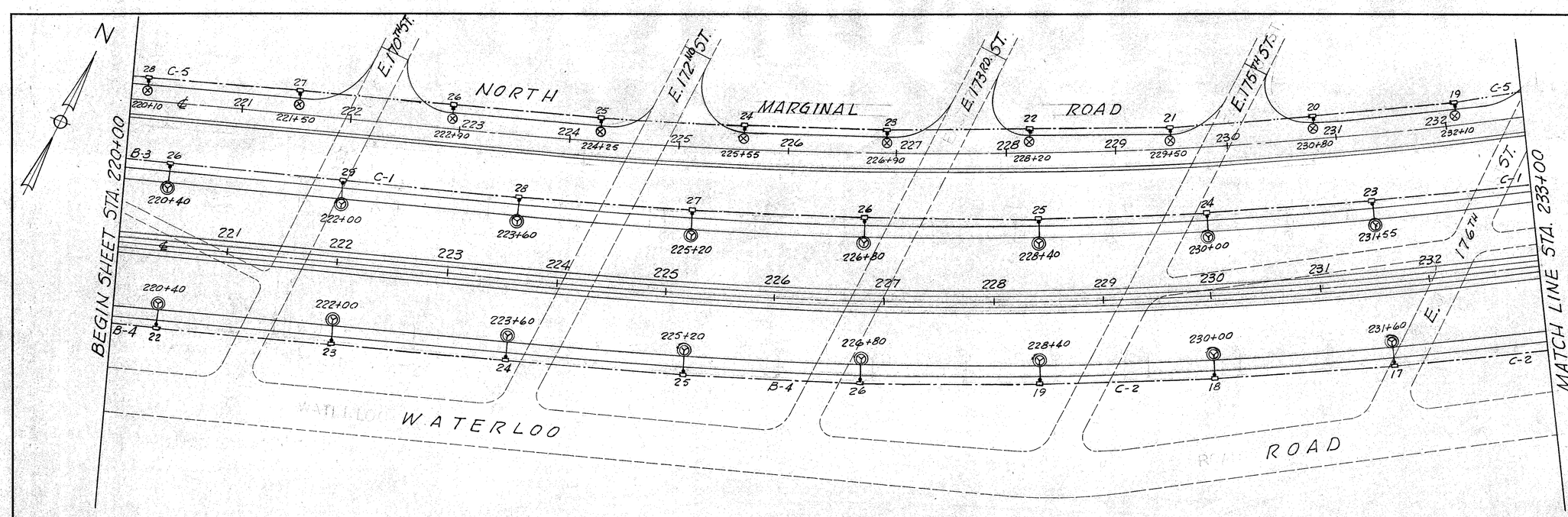
FREEWAY LIGHTING STA. 204 TO STA. 220

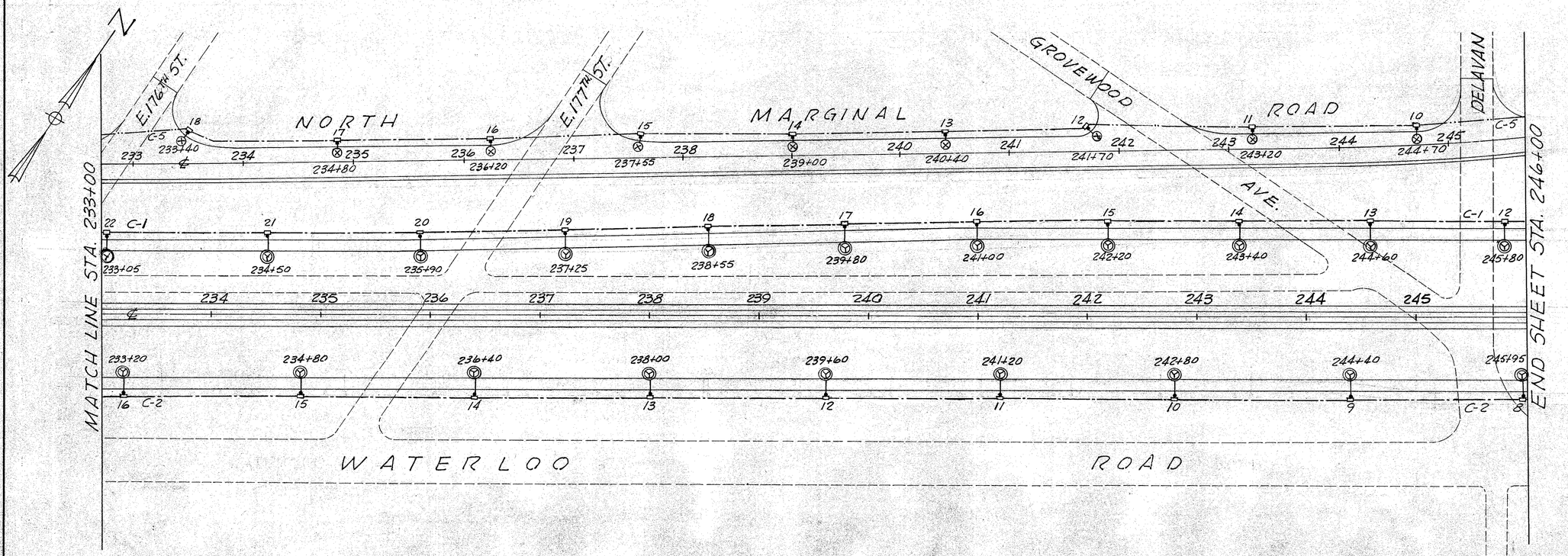
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. AID DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

106
780





HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

FREEWAY LIGHTING STA. 220 TO STA. 246

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

SHEET NO.	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

107
107

BEGIN SHEET STA. 246+00

END SHEET STA. 260+00

MATCH LINE STA. 5+40-S

MATCH LINE STA. 5+40-S

NOTTINGHAM RD.

NOTTINGHAM RD.

MARGINAL ROAD — C-5

MOZINA DR.

RAMP NO. 11

RAMP NO. 12

RAMP NO. 13

WATERLOO ROAD

WATERLOO RD. RELOC.

E. 185TH ST.

EAST 185TH ST.

NORTH

CONNECT EXISTING STREET LIGHTING UNITS TO NEW DUCT WORK IN THE AREA BETWEEN ARROWS FOR NEW ELECTRICAL CIRCUIT. PROVIDE PULL BOX AT EACH POLE.

2-2" DUCT TO NEXT EXISTING LIGHTING POLE ON DELAVAN RD. TERMINATE DUCT IN A REGULAR PULL BOX. POLE TO BE LOCATED BY DIV. OF LIGHT & POWER

1¼" CONDUIT IN 3" CONC. ENCASEMENT

SEE NOTE ④

SPECIAL PULL BOX & FOUNDATION (AT EACH POLE) C-5

SPECIAL PULL BOX & FOUNDATION

2-2" DUCT TO NEAREST EXIST. LIGHTING POLE. TERMINATE DUCT IN A REGULAR PULL BOX.

SPECIAL PULL BOX & FOUNDATION

2-2" DUCT TO NEXT EXISTING LIGHTING POLE ON WATERLOO RD. TERMINATE DUCT IN A REGULAR PULL BOX. POLE TO BE LOCATED BY DIVISION OF LIGHT AND POWER.

SPECIAL PULL BOX & FOUNDATION (TYPICAL FOR ALL 3 POLES)

400 W. MERCURY FLOOD, ALL POLES

1¼" CONDUIT IN 3" CONC. ENCASEMENT

PULL BOX ON STREET SIDE OF POLE

EXISTING LIGHTING POLE TO REMAIN IN PLACE

PULL BOX ON STREET SIDE OF LAMP STANDARD

PULLBOX ON STREET SIDE OF LAMP STD.

PULL BOX ON STREET SIDE OF LAMP STD.

FOR POWER CO. CONNECTION

REGULATOR VAULT 'C'
TOP OF VAULT EL. 602.50
FLOOR EL. 592.75
INVERT OF 6" DRAIN EL. 590.50
GRADE EL. 599.00
SEE NOTE ③

FOR PULL BOX AND LAMP STANDARD ARRANGEMENT SEE SHEET NO. 115

6'6"x6' TRANSFORMER VAULT FOR UNDERPASS LIGHTING
TOP OF VAULT EL. 599.77
INV. 3" DRAIN EL. 591.23
GRADE EL. 599.77
SEE NOTE ①

FOR PULL BOX AND LAMP STANDARD ARRANGEMENT SEE SHEET NO. 115

13-FLOUR. LUMINAIRES 12'6" O/C SEE NOTE ②

24"x24"x12" JUNCTION BOX

24"x18"x12" JUNCTION BOX UNDER BRIDGE

LIMIT OF INTERSTATE FUND PARTICIPATION STA. 5+10-S 100% CITY OF CLEVELAND PARTICIPATION

NOTES:

③ SINCE THE ELEVATION OF THE TOP OF REGULATOR VAULT IS HIGHER THAN THE GRADE ELEVATION, BUILD UP THE GRADE TO THE TOP OF THE REGULATOR VAULT MANHOLE WITH A MAXIMUM 2:1 SLOPE.

④ FOR PEDESTRIAN OVERPASS LIGHTING DETAILS SEE SHEET NO. 114.

NOTES:

FOR UNDERPASS LIGHTING 1-10 KVA SINGLE PHASE

① TRANSFORMER IS RECCOMMENDED WITH 120/240 VOLT 60 CYCLE SECONDARY-TRANSFORMER BY POWER COMPANY

② FLOURESCENT LUMINAIRES FOR E. 185TH ST. UNDER FREEWAY SHALL BE SINGLE 85 WATT 72" LONG HIGH OUTPUT LAMP LUMINAIRES, AS G.E. #106 OR APPROVED EQUAL WITH 120 V. LOW TEMPERATURE BALLASTS – FOR TWO LAMPS, ONE BALLAST. TOTAL LUMINAIRES = 52, MOUNTED IN FOUR ROWS, 13 TO EACH SIDE OF PIER #1 & PIER #2, 12'6" O/C APPROXIMATELY, TO MATCH PIER EXPANSION JOINTS. USE 3/4" CONDUIT BETWEEN LUMINAIRES, WITH EXPANSION FITTINGS AT PIER JOINTS. SEE DWG NO. 113 FOR DETAILS.

SUMMARY OF LIGHTING LOAD REGULATORS & LUMINAIRES WITH RECCOMMENDED CIRCUITING FOR AREA 'C' FROM STA. 220 TO 260

VAULT	REGULATOR CAPACITY	CIRCUIT NO.	NUMBER OF LUMINAIRES 15,000 LUMENS	10,000 LUMENS	FLOUR.	TOTAL LOAD K-W
"C"	30 KW	C-1	30			30.-
	20 KW	C-2	20			20.-
	20 KW	C-3		27		20.-
	30 KW	C-4		35		25.9
	30 KW	C-5		41		30.4
	10 KVA TF.	C-6			52	6.-
TOTAL			50	103	52	132.3

NOTE: TF. = TRANSFORMER, SINGLE PHASE 60CY. 120/240 W. 3W. SECONDARY BY POWER CO.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

FREEWAY LIGHTING STA. 246 TO STA. 260

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

SHEET NO.	STATE	PROJECT	TOTAL SHTS.
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

108
180

MATCH LINE STA. 5+70-N

FOR PRIMARY POWER

INTERSTATE PARTICIPATION

100% CITY OF CLEVELAND PARTICIPATION

MARGINAL ROAD

REMOVE EXISTING LAMP STANDARD AT STA 7+57

MATCH LINE STA. 5+70-N

NEFF RELOC.

NORTH

WOODROW

CHAPMAN

RAMP NO. 13

GLENFIELD RD.

NEFF ROAD

REGULATOR VAULT "D"
TOP OF VAULT EL. 613.25
INV. 6" DRAIN EL. 601.17
GRADE EL. 613.00
SEE NOTES ① ②

INVERT 6" DRAIN EL 600.70

8'-0" EXIST. SEWER

EXIST. MANHOLE

PAVEMENT REMOVAL & REPLACEMENT SEE DETAIL THIS SHT.

FOR PRIMARY POWER

PULL BOX STREET SIDE OF POLE

7½"x7½"x6" JUNCTION BOX SEE DETAILS ON SHEET 113

1" CONDUIT TO PIER #2 FLOURESCENT LIGHTS

24"x26" JUNCT. BOX IN BRIDGE STRUCTURE

1½" CONDUIT UP TO JUNCT. BOX MTD. TO PIER. SEE NOTE ②

7½"x7½"x6" Junct. Box

90'-0"

SEE NOTE ③

2" EXPANSION FITTING & FIBER DUCT ADAPTER

2" COND.

¾" CONDUIT

MARGINAL ROAD CONNECTOR
100% CITY OF CLEVELAND PARTICIPATION

RAMP NO. 14

RAMP NO. 14-A

100% CITY OF CLEVELAND PARTICIPATION

FOR PULL BOX AND LAMP STANDARD ARRANGEMENT AT SOUTH MARGINAL ROAD FROM NEFF RD. TO E. 200TH ST. SEE SHEET NO. 115

SOUTH MARGINAL ROAD

RAMP NO. 12

REMOVE EXIST. PAV'T. AND REPLACE

2" T-35 ASPHALTIC CONC. SURFACE COURSE
8" T-1 REINF. PORT. CEM. CONC. PAV'T.

EXISTING NEFF
2" BIT. CONC.
8" REINF. CONC.

LIMIT OF TRENCH FOR 6" DRAIN

2' MIN. 2' MIN

NOTE:
THE COST OF PAVEMENT REMOVAL AND REPLACEMENT SHALL INCLUDE ALL THE LABOR AND MATERIALS NECESSARY TO COMPLETE THE WORK AS SHOWN IN THIS DETAIL AND WILL BE PAID FOR AT CONTRACT UNIT PRICE BID FOR ITEM I-2, 6" DRAIN.

NEFF ROAD PAVEMENT REPLACEMENT OVER TRENCH

LIMIT OF CLEVELAND INTERSTATE FUND PARTICIPATION

NEFF ROAD

SLIP ROAD

RELOC.

2" FIBER DUCT ADAPTER & EXPANS. FITTING

APPROX. LOCATION OF LUMINAIRES

2" GALV. CONDUIT

24"x24"x12" JUNCTION BOX FOR INSUL. TRANSF. FOR BRIDGE LAMP STANDARD.

2" DUCT

40'-0"

2" EXPAN. FTG. & FIBER DUCT ADAPTER

24"x24"x12" JUNCTION BOX

BEGIN SHEET STA. 260+00

END SHEET STA. 276+00

NOTES

① CONNECT 6" REGULATOR VAULT DRAIN TO EXIST. MANHOLE IN EXISTING NEFF RD. AS SHOWN. REPAIR PAVEMENT AS SHOWN IN DETAIL, THIS SHEET.

② FOR FLOURESCENT LIGHTING OF BRIDGE OVER NEFF RD., 1-10 KVA SINGLE PHASE TRANSFORMER SHALL BE LOCATED IN REGULATOR VAULT "D". FROM VAULT RUN 2-2" & 4 DUCTS TO DOUBLE PULL BOX AT FOUNDATION OF PIER NO. 1, THENCE A 1½" CONDUIT TO 7½"x7½"x6" JUNCTION BOX FOR THE 120/240 VOLT POWER SUPPLY, CIRCUIT D-5. TRANSFORMER FURNISHED AND INSTALLED BY POWER CO.

③ A TOTAL OF 60 SINGLE LAMP HIGH OUTPUT FLOURESCENT LUMINAIRES (4 ROWS OF 13 & 1 ROW OF 8) FOR NEFF RD. BRIDGE LIGHTING. FOR MOUNTING, SEE SHEET NO. 113. LUMINAIRES FURNISHED BY POWER CO.

④ FOR CIRCUIT D-6, UNDERPASS LIGHTING OF E. 200TH ST. BRIDGE SEE SHEET NO. 109.

SUMMARY OF LIGHTING LOAD REGULATORS & LUMINAIRES WITH RECOMMENDED CIRCUITING FOR AREA "D" STATION 260 TO STA. 290

	REGULATOR CAPACITY	CIRCUIT NO.	NUMBER OF LUMINAIRES 15,000 LUMEN	10,000 LUMEN	FLOUR	TOTAL LOAD IN KW	
VAULT "D"	30	D-1	27	3		29.3	
	30	D-2	28	2		29.5	
	25	D-3		31		23.-	
	25	D-4		32		23.6	
POLE	10 KVA T.F.	D-5			60	7.5	3
	10 KVA T.F.	D-6			48	6.-	4
TOTAL			55	68	108	118.9	

NOTE: TF = TRANSFORMER, SINGLE PHASE 120/240 V SECONDARY

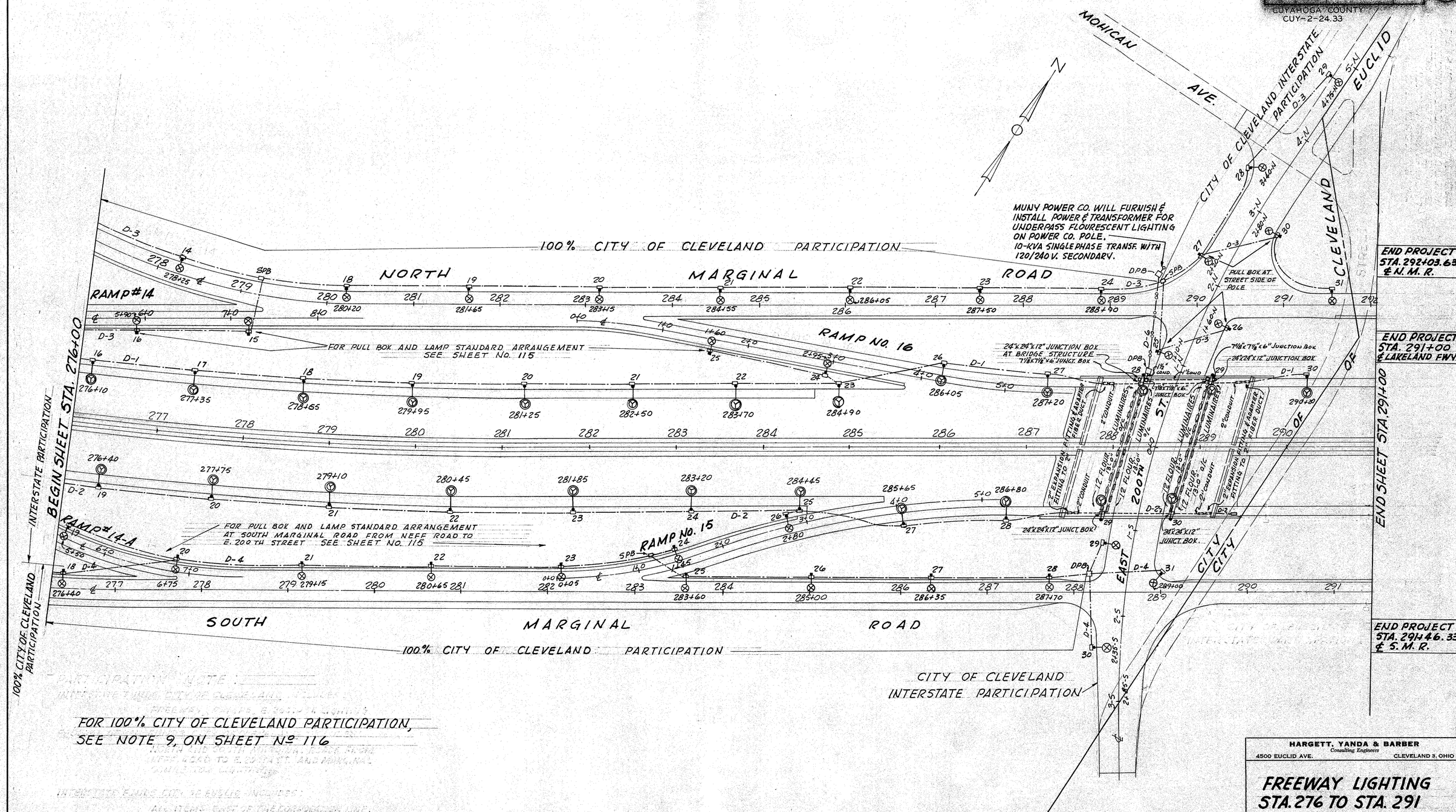
HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

FREEWAY LIGHTING STA. 260 TO STA. 276

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33



FOR 100% CITY OF CLEVELAND PARTICIPATION, SEE NOTE 9, ON SHEET Nº 116

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Consulting Engineers
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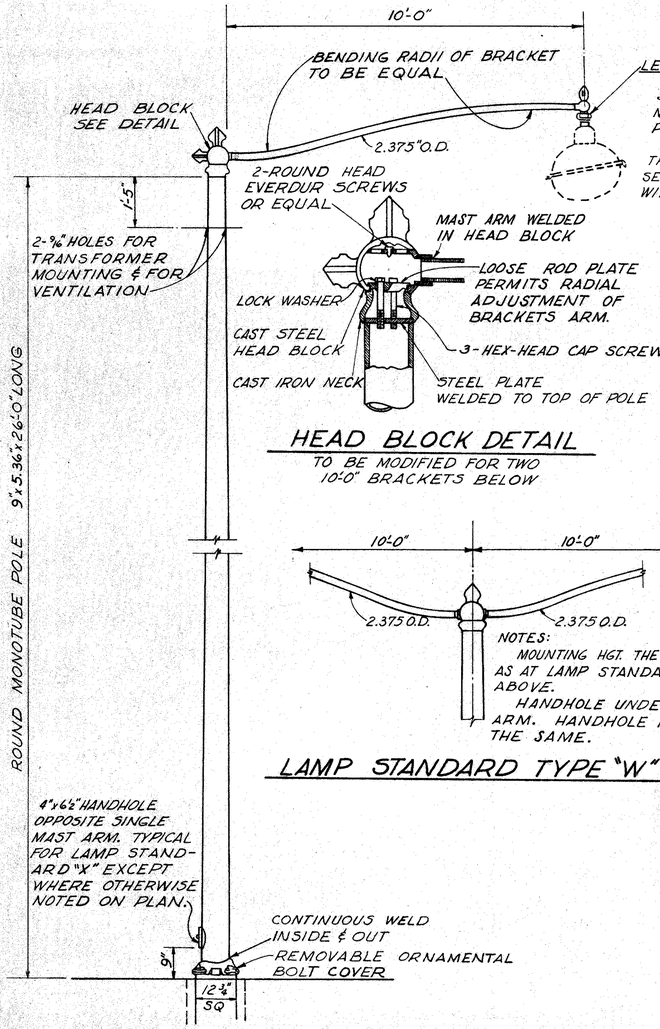
FREEWAY LIGHTING STA. 276 TO STA. 291

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

110 ~~180~~

CUYAHOGA COUNTY
COY-2-24.33

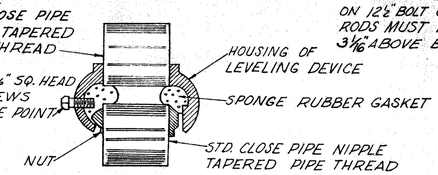


HEAD BLOCK DETAIL

TO BE MODIFIED FOR TWO 10'-0" BRACKETS BELOW

NOTES:
MOUNTING HGT. THE SAME AS AT LAMP STANDARD "X" ABOVE.
HANDHOLE UNDER ONE ARM. HANDHOLE HEIGHT THE SAME.

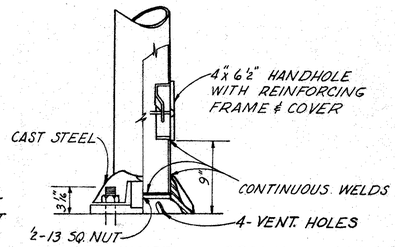
LAMP STANDARD TYPE "W"



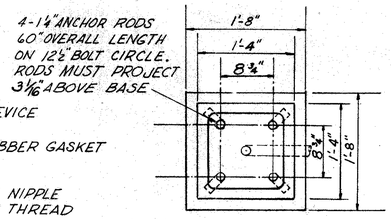
LEVELING DEVICE DETAIL



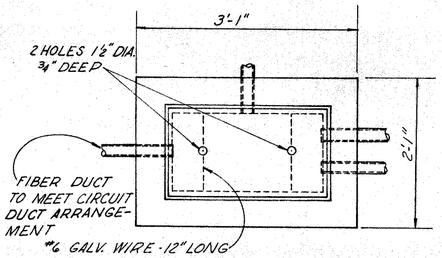
SECTION THRU POLE



BOLT COVER & HAND HOLE DETAIL

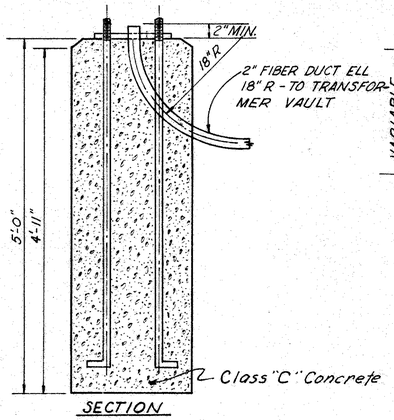


PLAN



PLAN

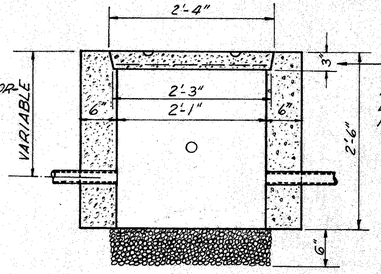
NOTE:
DIMENSIONS SHOWN ARE FOR TOP OPENING. COVER TO BE APPROX. ½" LESS



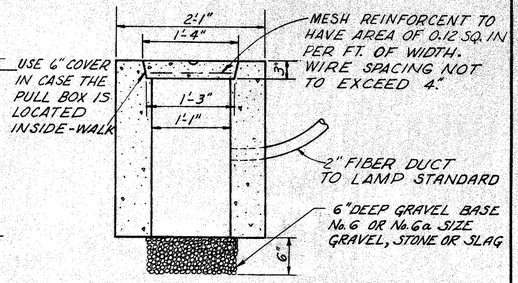
SECTION

LAMP STANDARD FOUNDATION - REGULAR - TO BE CAST IN PLACE FOR TYPES "W" & "X" LAMP STANDARD

EXCEPT WHERE OTHERWISE SPECIFIED ON PLANS

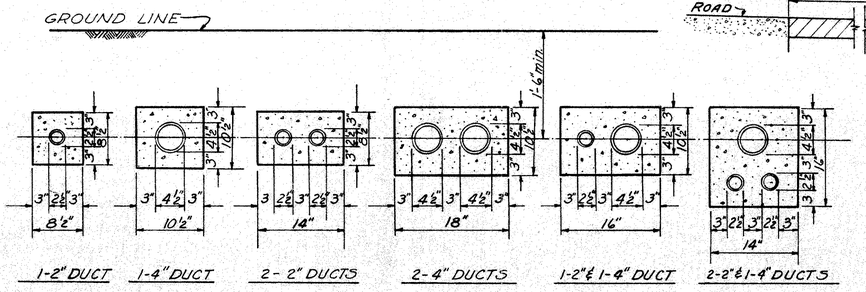


LONGITUDINAL SECTION



CROSS SECTION

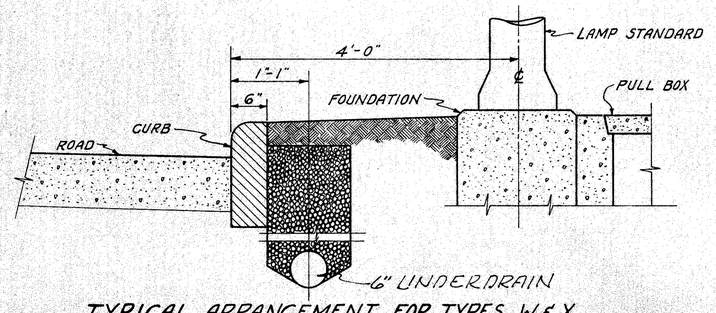
PULL BOX AND TRANSFORMER VAULT - REGULAR - FOR TYPES "W" & "X" LAMP STANDARDS



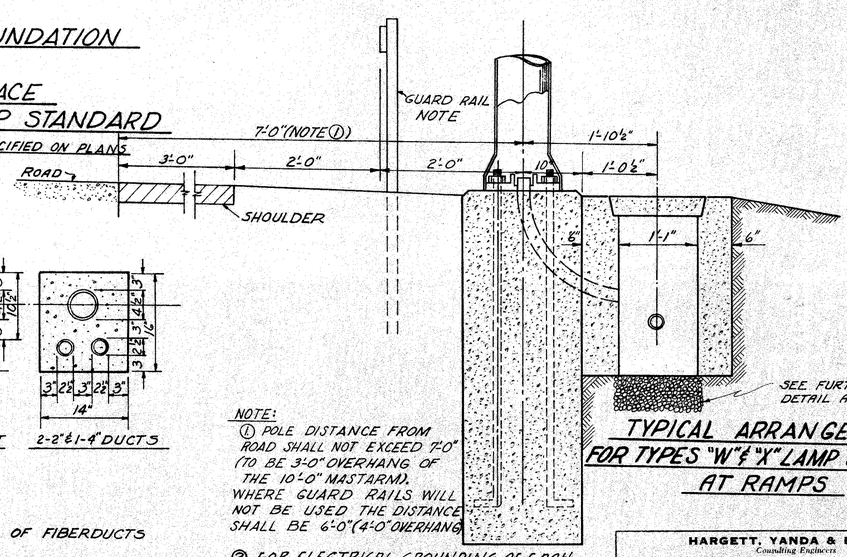
TYPICAL DUCT SECTIONS

FOR DEPTH OF PAVEMENT CROSSOVERS SEE OTHER SHEET - DIMENSIONS OF FIBERDUCTS REFER TO ORANGEBURG CONDUIT FITTINGS

LAMP STANDARD TYPE "X"



TYPICAL ARRANGEMENT FOR TYPES W & X LAMP STANDARDS AT MARGINAL ROADS CROSS STREETS & MARGINAL ROAD CONNECTOR



NOTE:
① POLE DISTANCE FROM ROAD SHALL NOT EXCEED 7'-0" (TO BE 3'-0" OVERHANG OF THE 10'-0" MASTARM). WHERE GUARD RAILS WILL NOT BE USED THE DISTANCE SHALL BE 6'-0" (4'-0" OVERHANG)

② FOR ELECTRICAL GROUNDING OF EACH STANDARDS PROVIDE A ⅝" MIN. DIA. 8'-0" LONG COPPER GROUND ROD WITH CONNECTOR AND WITH No. 6 AWG. TINNED COPPER WIRE CONNECTION TO THE STANDARD GROUND LUG. THE RESISTANCE OF GROUND NOT TO EXCEED 15 OHMS.

TYPICAL ARRANGEMENT FOR TYPES "W" & "X" LAMP STANDARDS AT RAMPS

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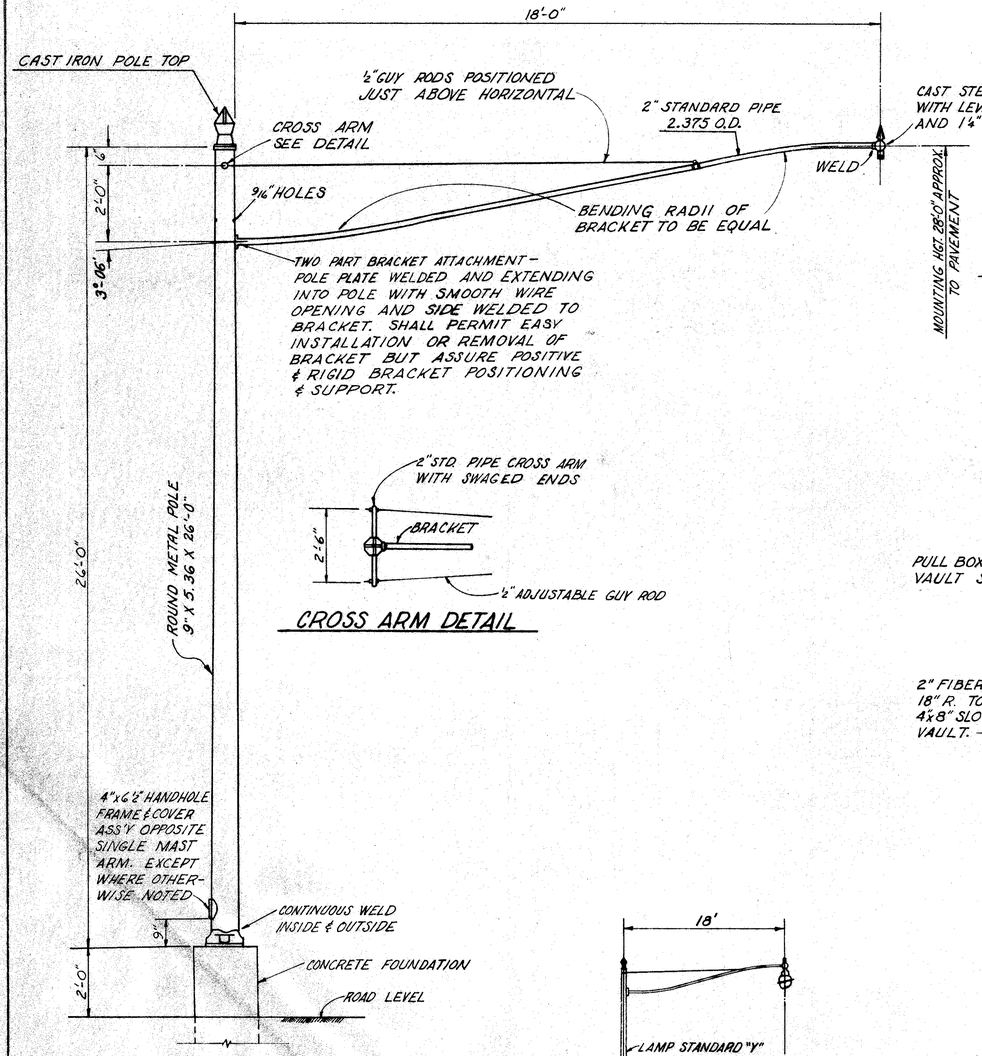
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

LIGHTING DETAILS
LAMP STANDARDS
TYPE "W" & "X"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

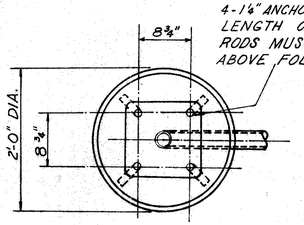
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33



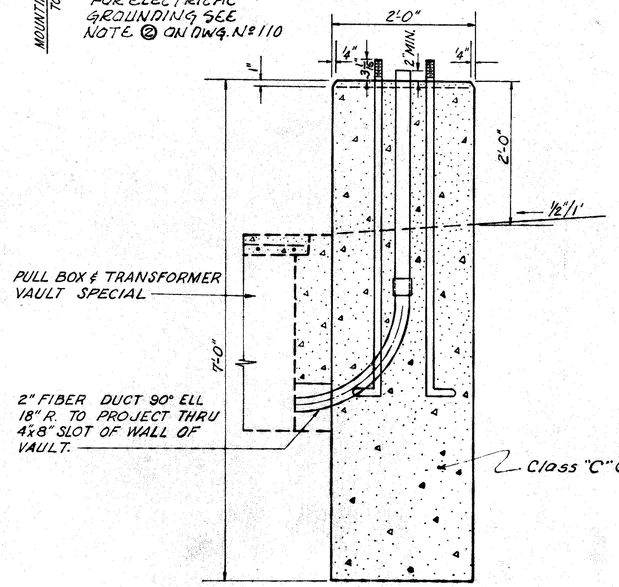
CROSS ARM DETAIL

TYPICAL POLE MODIFICATION
LAMP STANDARD TYPE "Y"



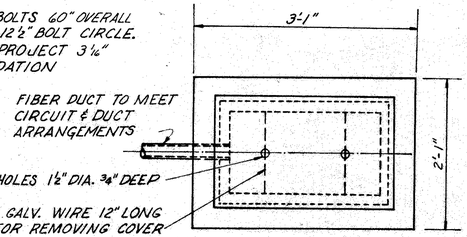
PLAN

NOTE:
FOR ELECTRICAL GROUNDING SEE NOTE ② ON DWG. N° 110

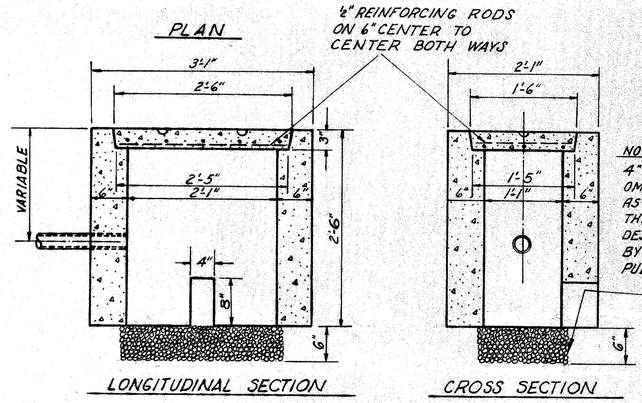


SECTION

LAMP STANDARD FOUNDATION SPECIAL
FOR TYPE "Y" LAMP STANDARDS
TO BE CAST IN PLACE



PLAN

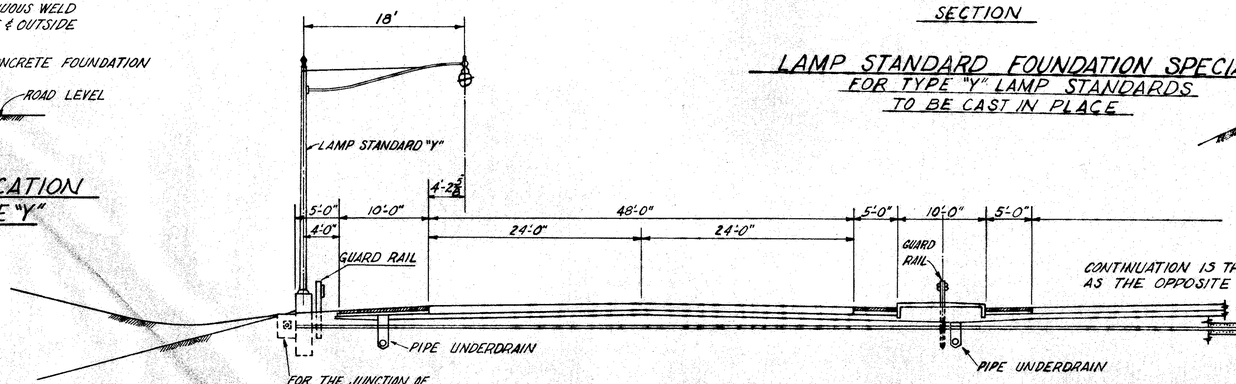


LONGITUDINAL SECTION

CROSS SECTION

NOTES:
4"X8" SLOT TO BE OMITTED WHEN USED AS A PULL BOX ONLY. THIS PULL BOX WILL BE DESIGNATED ON PLANS BY ▭ SPB (SPECIAL PULL BOX).

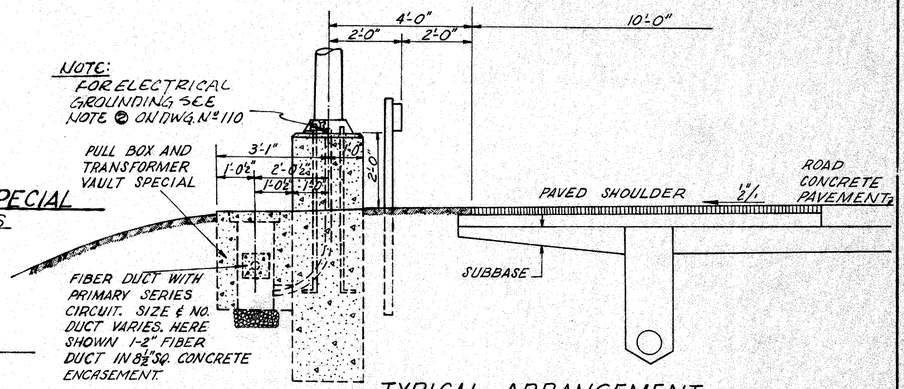
PULL BOX & TRANSFORMER VAULT SPECIAL
FOR LAMP STANDARDS TYPE "Y"



FOR THE JUNCTION OF CROSS OVER DUCTS, SEPARATE PULL BOXES SHALL BE USED - SAME SIZE AS SHOWN ABOVE - AND SHALL BE IN LINE WITH THE LAMP PULL & TRANSFORMER VAULTS.

TYPICAL STREET LTG. DUCT CROSSOVER
AT NORMAL FREEWAY ROAD SECTION

NOTE:
FOR ELECTRICAL GROUNDING SEE NOTE ② ON DWG. N° 110



TYPICAL ARRANGEMENT
LAMP STANDARD "Y"

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

LIGHTING DETAILS
LAMP STANDARDS
TYPE "Y"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

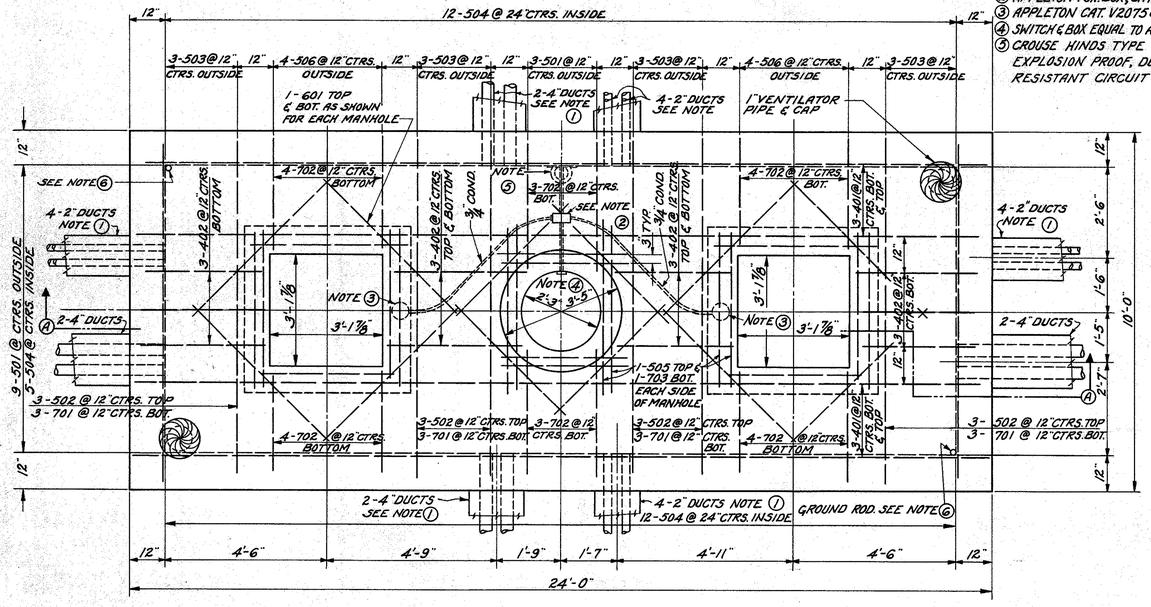
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY - 2 - 24.33

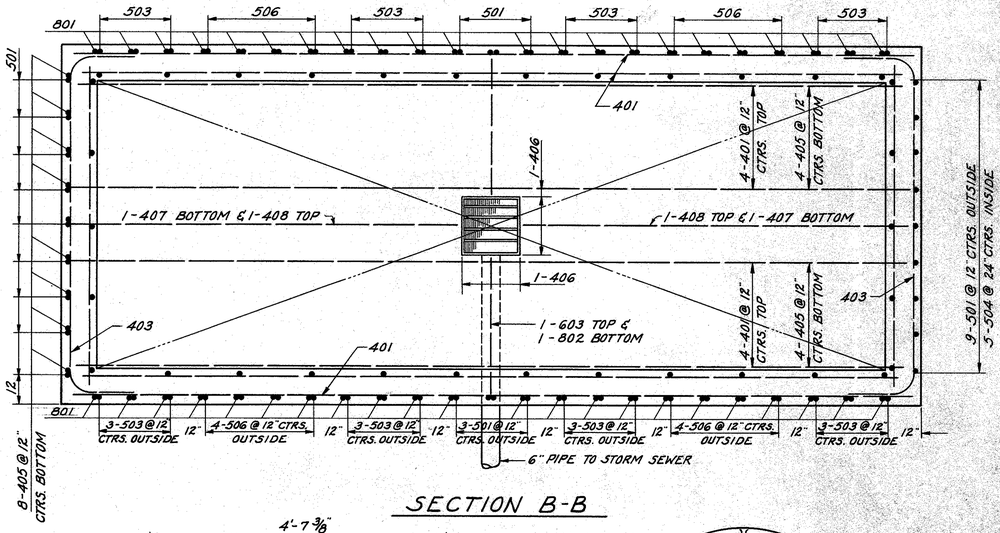
112
~~160~~

NOTES
1. WHERE INITIAL USE OF INDICATED DUCT BANKS IS NOT REQUIRED - SEE PLANS - EXTEND THE DUCTS THRU THE WALLS 18" MIN. & CAP ON THE OUTSIDE ENDS FOR FUTURE USE.
2. APPLETON FSX. BOX, CAT. 7904, -GASKETED COVER.
3. APPLETON CAT. V2075 G. VAPORTIGHT LIGHT. FIXTURE.
4. SWITCH & BOX EQUAL TO APPLETON CF-DEA-10, TYPE "E."
5. CROUSE HINDS TYPE FLB 171-DT-15-1, 15A., 1-P EXPLOSION PROOF, DUST-TIGHT AND WEATHER RESISTANT CIRCUIT BREAKER CONDULETS.
6. FOR GROUNDING 2-1" DIA. X 10'-0" GROUND ROD SHALL BE PLACED IN DIAGONAL CORNERS OF THE VAULT WITH 6" OF THE ROD EXTENDING ABOVE THE FLOOR. ADDITIONAL GROUND RODS SHALL BE DRIVEN IF REQUIRED TO INSURE NOT OVER 5 OHM GROUNDS.
7. THE TOP AND SIDES OF TRANSFORMER VAULT SHALL BE PROVIDED WITH TYPE "B" WATER-PROOFING ACCORDING TO OHIO STANDARD CONSTRUCTION AND MATERIAL SPECIFICATIONS.

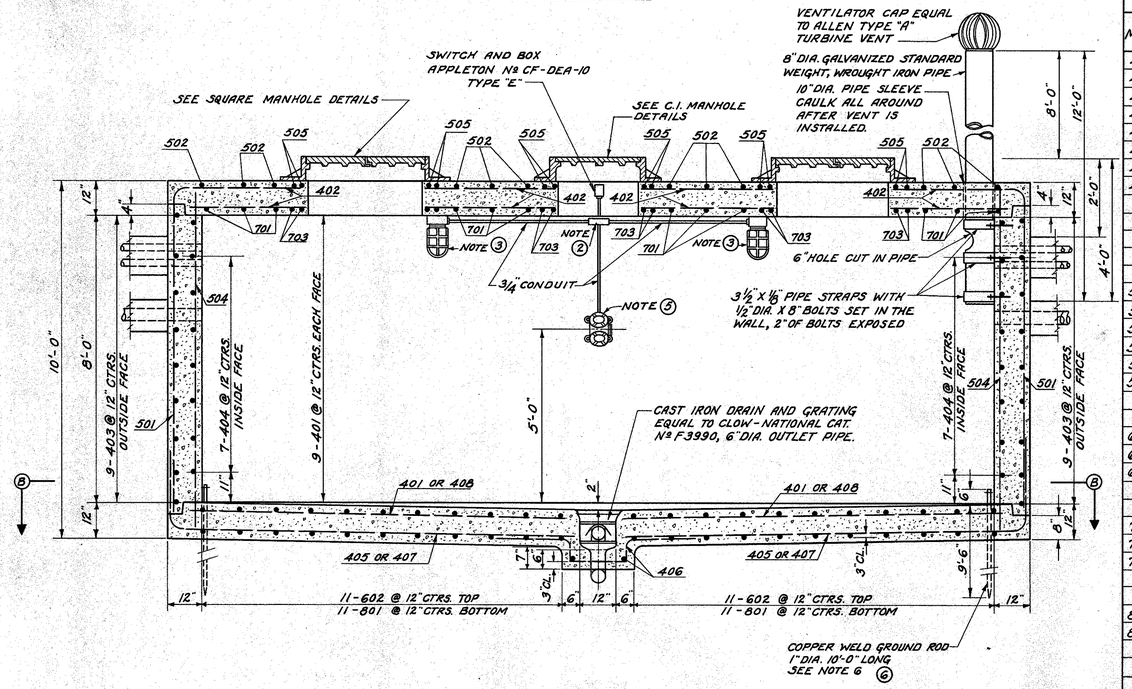
FOR THE FLOOR VAPOR BARRIER A 0.004 POLYETHYLENE FILM SHALL BE APPLIED OVER THE SUB-GRADE. THE FILM SHALL BE LAPPED NOT LESS THAN 6" WITH THE TOP LAP PLACED IN THE DIRECTION OF THE SPREADING OF THE CONCRETE.



PLAN



SECTION B-B

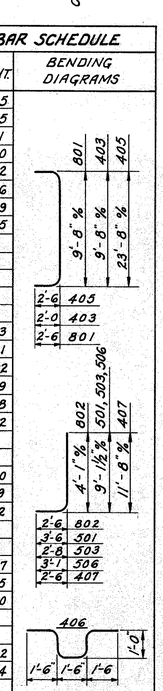


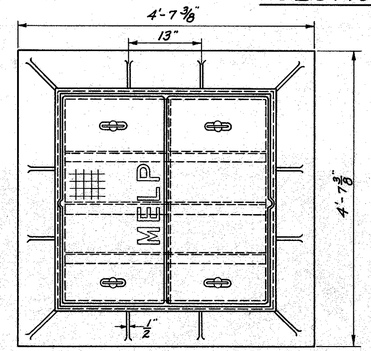
SECTION A-A

REINFORCING BAR SCHEDULE

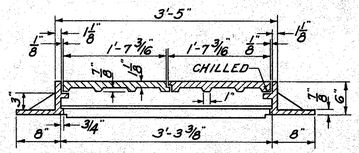
MARK	SIZE	NO. REQ'D.	LGTH.	TYPE	WGHT.	BENDING DIAGRAMS
401	4	56	23'-8	STR.	885	
402	4	18	3'-9	STR.	45	
403	4	18	13'-5	B	161	
404	4	14	9'-8	STR.	90	
405	4	8	28'-5	B	152	
406	4	4	6'-0	B	16	
407	4	2	14'-0	B	19	
408	4	2	11'-2	STR.	15	
501	5	24	12'-6	B	313	
502	5	12	9'-8	STR.	121	
503	5	24	11'-8	B	292	
504	5	34	9'-0	STR.	319	
505	5	24	5'-6	STR.	138	
506	5	16	12'-1	B	202	
601	6	24	5'-0	STR.	180	
602	6	22	9'-8	STR.	319	
603	6	2	4'-0	STR.	12	
701	7	12	9'-8	STR.	237	
702	7	22	3'-0	STR.	135	
703	7	24	5'-6	STR.	270	
801	8	22	14'-4	B	842	
802	8	2	6'-5	B	34	
			TOTAL		4,797	

BENDING DIAGRAMS



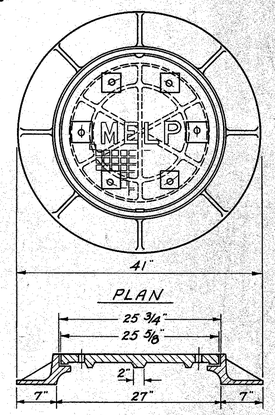


PLAN



CROSS SECTION

STANDARD SQUARE MANHOLE
SIDEWALK TYPE COVER AND FRAME
(BY THE MADISON FOUNDRY CO., DESIGN No. 2346)



CROSS SECTION

STANDARD CI MANHOLE DETAILS
SIDEWALK TYPE RING & COVER
(BY THE MADISON FOUNDRY CO, DESIGN Nº 2371)

STRUCTURAL DETAIL NOTES
1 - CONCRETE SHALL BE CLASS "E" OR CLASS "C" AT THE OPTION OF THE CONTRACTOR.
2 - REINFORCING STEEL SHALL BE 2" CLEAR FROM FACE OF CONCRETE UNLESS NOTED OTHERWISE.
3 - REINFORCING BAR SIZE IS INDICATED IN THE BAR MARK, THE FIRST DIGIT BEING THE BAR SIZE NUMBER FOR EXAMPLE, A 602 BAR IS A NUMBER 6 SIZE BAR.

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Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

REGULATOR VAULT DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
		G.J.				

CUYAHOGA COUNTY
CUY-2-24.33

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

~~113~~ 150

1-ROW OF 13 HIGH OUTPUT SINGLE LAMP FLOURESCENT LUMINAIRES MOUNTED HIGHER ON EAST SIDE OF PIER #1 AIMED TO E. 185TH. STREET ROADWAY.

AT EACH PIER EXPANSION JOINT USE 3/4" CONDUIT EXPANSION FITTING WITH BONDING JUMPER, WEATHERPROOF AS APPLETON TYPE AJ #11701 WITH #11750 JUMPER, OR APPROVED EQUAL.

1-ROW OF 13 HIGH OUTPUT FLOURESCENT LUMINAIRES MOUNTED HIGHER ON WEST SIDE OF PIER #2, AIMED TO E.185TH STREET ROADWAY, CONNECTED BY 3/4" CONDUIT.

2"RIGID CONDUIT

1"RIGID CONDUIT

2"WEATHERPROOF EXPANSION FITTING AND FIBER CONDUIT ADAPTER FROM METAL CONDUIT TO FIBER CONDUIT.

"LB" CONDULET, GALVANIZED, WITH GASKET COVER

2"FIBER DUCT

3/4" CONDUIT BETWEEN FLOUR. LUMINAIRES

24"x24"x12" JUNCTION BOX

1"WEATHERPROOF FLEXIBLE COUPLING

2"DUCT IN CONC. ENCASEMENT TO NEXT LAMP STD.

℄ DOUBLE PULL BOX

SIDEWALK

PIER Nº 1

PIER Nº 2

7 1/8"x7 1/8"x6" JUNCTION BOX EACH SIDE RUSSELL & STOLL # 2258 OR EQUAL

1"WEATHERPROOF FLEXIBLE COUPLING

1"GALVANIZED RIGID CONDUIT DOWN TO 7 1/8"x7 1/8"x 6" JUNCTION BOX (NOT SHOWN)

E. 185 TH STREET

1½" COND.

SIDEWALK

1-#6 BARE COPPER GROUND TO #0 BARE COPPER MAIN GROUND. SEE NOTE 4

1 ROW OF 13 HIGH OUTPUT SINGLE LAMP FLOURESCENT LUMINAIRES MOUNTED LOWER ON EAST SIDE OF PIER AND AIMED TO SIDEWALK.

1-4" DUCT & 1-2" DUCT

5¾"x4"x4½" JUNCTION BOX RUSSELL & STOLL # 2107

3" PIPE DRAIN TO EXISTING SEWER UNDER E. 185TH STREET.

5/8"x 8'-0" COPPER GROUND ROD WITH GROUND ROD CLAMPS.

1-#6 BARE COPPER GROUND WIRE TO BE BONDED TO THE 1½" CONDUIT.

6'x 6'x 6' TRANSFORMER VAULT AT NORTH ENTRANCE OF BRIDGE FOR UNDERPASS FLOURESCENT LIGHTING. FOR VAULT DETAILS SEE SHEET Nº 115

THIS ROW OF 13 HIGH OUTPUT SINGLE LAMP FLOURESCENT LUMINAIRES SHALL BE MOUNTED LOWER ON WEST SIDE OF PIER AND AIMED TO SIDEWALK.

SOUTH ELEVATION - BRIDGE OVER EAST 185TH STREET

BRIDGE Nº CUY-2-2533 STATION 256+84.23

NOTES:

1. ALL ELEVATIONS OF BRIDGES, ELECTRIC DEVICES ARE SHOWN AT SOUTH SIDE OF BRIDGE ONLY. ARRANGEMENT FOR NORTH SIDE OF BRIDGE SIMILAR.
2. ELECTRICAL ITEMS MOUNTED IN, ON, OR TO THE BRIDGE STRUCTURE ARE INCLUDED AND PAID AS BRIDGE STRUCTURE, ITEM 5-25.
3. ALL CONDUIT RUNS SHALL BE GALVANIZED INSIDE AND OUTSIDE, ALL FITTINGS WATERPROOF.
4. ALL LAMP STANDARDS ON BRIDGE SHALL BE GROUNDED TO THE STRUCTURAL STEEL OF THE BRIDGE BY A Nº 6 AWG BARE COPPER STRANDED WIRE. FOR GROUNDING OF THE BRIDGE STRUCTURAL STEEL, SEE SHEETS Nº 118, 128 & 138. FRAMES OF UNDERPASS LUMINAIRES, JUNCTION BOXES SHALL BE GROUNDED THRU THE CONTINUOUS CONDUIT RUNS TO GROUND ROD AT TRANSFORMER VAULT OR PULL BOX. FOR THE CONTINUITY OF GROUNDING, ALL EXPANSION FITTINGS SHALL HAVE GROUNDING JUMPERS. THE CONDUIT RUN OF THE UNDERPASS LIGHTING SHALL ALSO BE BONDED TO THE Nº 0 MAIN GROUND WIRE OF BRIDGE AT THE ENDS OF PIER Nº 2 BY 1-Nº6 BARE COPPER GROUND WIRE.

HANDHOLE

LAMP STANDARD "L" SEE DRAWING SH. Nº 111

3'-6"

1-#6 BARE STRANDED COPPER GROUND WIRE, WELDED TO BRIDGE STRUCT. STEEL

1¼" GALV. CONDUIT

HIGH OUTPUT SINGLE LAMP FLOURESCENT LUMINAIRE AT THE EAST SIDE OF PIER

SPECIAL FOUNDATION FOR LAMP STANDARDS ON BRIDGE FOR DETAIL SEE SH. # 147

24"x 24"x 12" JUNCTION BOX FOR MOUNTING DETAILS, SEE SHEET Nº 147

HIGH OUTPUT SINGLE LAMP FLOURESCENT LUMINAIRE AT THE EAST SIDE OF PIER.

3/4" CONDUIT SURFACE MOUNTED

WEATHERPROOF EXPANSION FITTING, 3/4" TYPICAL FOR EA. EXPAN. JOINT.

6"

2"CONDUIT

12'-6"

12'-6"

12'-6"

HIGH OUTPUT SINGLE LAMP FLOURESCENT LUMINAIRE AT THE WEST SIDE OF PIER

APPROX. 2 HOLE HOT GALV. CONDUIT STRAPS, AS DIAMOND T-18

PIER Nº 1

PARTIAL SECTION 1-1
BRIDGE OVER EAST 185TH STREET

2"WEATHERPROOF EXPANSION FITTING

2"FIBER DUCT ADAPTER TO 2"METAL CONDUIT

1"LB"CONDULET

2"FIBER DUCT IN CONCRETE TO NEXT LAMP STANDARD

1 ROW OF 13 HIGH OUTPUT FLOURESC. LUMINAIRES MTD. UPPER PART OF EAST SIDE OF PIER #1 - 3/4" WEATHERPROOF EXPANSION FITTINGS AT PIER JOINTS.

1 ROW OF 13 HIGH OUTPUT SINGLE LAMP FLOURESCENT LUMINAIRES MOUNTED UPPER PART OF WEST SIDE PIER #2, AIMED TO NEFF ROAD.

5¾"x4"x4½" JUNCTION BOX RUSSELL & STOLL # 2107 OR EQUAL

3/4" WEATHERPROOF EXPANSION FITTINGS EACH SIDE OF PIER AT JOINTS

1 ROW OF 8 HIGH OUTPUT SINGLE LAMP FLOURESCENT LUMINAIRES FOR MARGINAL ROAD CONNECTOR LIGHTING AIMED TO 4 OF MARGINAL RD CONNECTOR CONNECTED BY 3/4" CONDUIT WITH 1" EXPANSION JOINT.

2"CONDUIT

24"x24"x12"JUNCTION BOX

2"CONDUIT

2" WEATHERPROOF EXPANSION FITTING AND 2" FIBER CONDUIT ADAPTER FROM 2"METAL CONDUIT TO 2"FIBER CONDUIT.

1" FLEXIBLE COUPLING

7 1/8"x7 1/8"x6" JUNCT. BOX EACH SIDE OF PIER

1"CONDUIT

1"FLEXIBLE COUPLING

#0 BARE COPPER MAIN GROUND

1½" CONDUIT TO 7 1/8"x7 1/8"x 6" J.B.

SIDEWALK

PIER Nº 1

PIER Nº 2

3/4" CONDUIT

24"x24"x12" J.B.

PIER Nº 3

SIDEWALK

℄ 2" DUCT FROM REGULATOR VAULT

#6 BARE COPPER

5/8"x 8'-0" GROUND ROD

1 ROW OF HIGH OUTPUT SINGLE LAMP FLOURESCENT LUMINAIRES MOUNTED LOWER PART ON WEST SIDE OF PIER. AIM TO SIDEWALK.

1 ROW OF 13 HIGH OUTPUT SINGLE LAMP FLOURESCENT LUMINAIRES MOUNTED LOWER PART ON EAST SIDE OF PIER #2 AIMED TO SIDEWALK.

MAIN GROUND WIRE 1-#0 BARE COPPER SEE NOTE 4 AND SHEET Nº 128

SOUTH ELEVATION - BRIDGE OVER NEFF ROAD - BRIDGE Nº CUY-2-2554

STATION 268+09.09

24"x24"x12" JUNCTION BOX FOR MOUNTING DETAILS SEE SHEET Nº 147

KINDORF C-249 CONDUIT CLAMP

KINDORF D-255 CONCRETE INSERT WITH 3/8" HANGER ROD AND C-149 ADJUSTABLE PIPE HANGER FOR CONDUIT RUN SUPPORT.

36 WF

3"x 3"x 5/16" L

3"x 3"x 5/16" L

3/4" COND.

3'x3'x5/16" L FOR SUPPORTING LUMINAIRE, WELDED TO WEB OF 36"WF AT BOTH ENDS.

1 ROW OF 8 HIGH OUTPUT SINGLE LAMP FLOURESCENT LUMINAIRES, EVERY OTHER LUMINAIRE WITH BALLAST.

PARTIAL SECTION 2-2
BRIDGE OVER NEFF ROAD BETWEEN PIER Nº 2 & 3

WHERE SHOWN ON PLAN OR SECTION

5¾"x4"x4½" JUNCTION BOX, RUSSELL & STOLL #2107 WITH GASKETED SCREW COVER

2"x1½"x¼" MOUNTING L-S 12" LONG

1"RIGID CONDUIT

BOTTOM FLANGE OF 36" BEAM

3'x3'x5/16" L LENGTH VARIES (APPROX. 10'-2") FOR LOCATION SEE SHEET Nº 134 THESE ITEMS ARE INCLUDED WITH ITEM 5-7 FOR PAYMENT

6'- 2⅛"

WELD TO WEB OF BEAM

6½"x2"x 3/16" MOUNTING, 12 WELDED TO 3"x3"x 5/16" L

3"

4⅝"

6 1/2"

FLANGE OF 36"WF 230

FLANGE OF 36"WF 230

3/8" DIA. HOLES IN MOUNTING PL FOR MOUNTING OF G.E. CAT. Nº 2F-106 UB-1 OR UB-5 HIGH OUTPUT SINGLE LAMP FLOURESCENT LUMINAIRES.

SECTION 3-3

TYPICAL FOR MOUNTING UNDERPASS FLOURESCENT LIGHTING BETWEEN BEAMS AT BRIDGE OVER NEFF ROAD

2" FIBER DUCT ADAPTER TO METAL CONDUIT & 2" WEATHERPROOF EXPANSION FITTING

1 ROW OF 12-HIGH OUTPUT FLOURESCENT LUMINAIRES - MOUNTED UPPER PART ON EAST SIDE OF PIER Nº1

3/4" CONDUIT BETWEEN LUMINAIRES WITH EXPANSION FITTINGS AT PIER JOINTS

1"LB CONDULET

1"RIGID COND.

1 ROW OF 12-HIGH OUTPUT SINGLE LAMP FLOURESCENT LUMINAIRES MOUNTED ON UPPER WEST OF PIER Nº 2 AND AIMED TO ROADWAY

3/4" WEATHERPROOF EXPANSION FITTINGS ON EACH SIDE

2"CONDUIT

1"LB" CONDULET & 1" FLEXIBLE COUPLING FROM RIGID CONDUIT.

TERMINATE DUCT IN A REGULAR PULL BOX

2"CONDUIT

1"FLEXIBLE COUPLING, 7 1/8"x7 1/8"x6" JUNCT. BOX EACH SIDE OF PIER SEE TYPICAL DETAIL

1½" RIGID CONDUIT FLUSH

7 1/8"x7 1/8"x6" JUNCT. BOX EACH SIDE OF PIER

SIDEWALK

PIER Nº 1

PIER Nº 2

SIDEWALK

2" FIBER DUCT IN CONCRETE TO NEXT LAMP STANDARD

1 ROW OF 12-HIGH OUTPUT SINGLE LAMP FLOURESCENT LUMINAIRES MOUNTED LOWER PART ON WEST SIDE OF PIER Nº 1. AIM TO SIDEWALK.

DOUBLE PULL BOX 1-#6 BARE COPPER GROUND WIRE SEE NOTE 4

5/8"x 8'-0" COPPER GROUND ROD, CLAMP

1 ROW OF 12- HIGH OUTPUT SINGLE LAMP FLOURESCENT LUMINAIRES MOUNTED ON LOWER EAST SIDE OF PIER Nº 2 AIM TO SIDEWALK

SOUTH ELEVATION - BRIDGE OVER EAST 200TH STREET

BRIDGE Nº CUY-2-2591 STATION 287+61.72

1"RIGID CONDUIT

PIER

1"WEATHERPROOF FLEXIBLE COUPLING 12" LONG APPLETON CAT. # EX 7312 OR APPROVED EQUAL

APPROX. 12"

WATERPROOF FITTINGS

3/4"CONDUIT TO LUMINAIRE

7⅛"x7⅛"x6" WATERPROOF CAST IRON JUNCTION BOX WITH SCREW COVER RUSSELL-STOLL # 2258 MOUNT SEMI-RECESSED

3/4"CONDUIT

1'-0" (APPROX)

3/4"

8"

PIER

3/4" CONDUIT TO LUMINAIRES

REINFORCING BAR

1½" RIGID GALV. CONDUIT DOWN FLUSH IN COLUMN MASONRY TO PULL BOX OR TRANSFORMER VAULT.

PIER COLUMN

CROSS SECTION OF PIER
TYPICAL MOUNTING DETAIL OF SEMI-RECESSED JUNCTION BOXES FOR FLOURESCENT LIGHTING

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

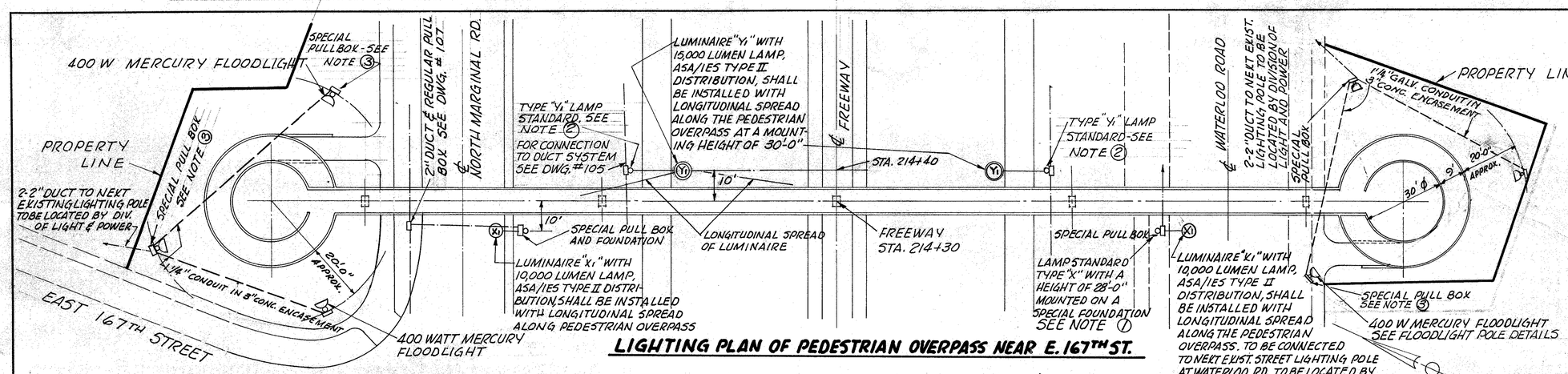
UNDERPASS BRIDGE LIGHTING
SECTIONS & DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

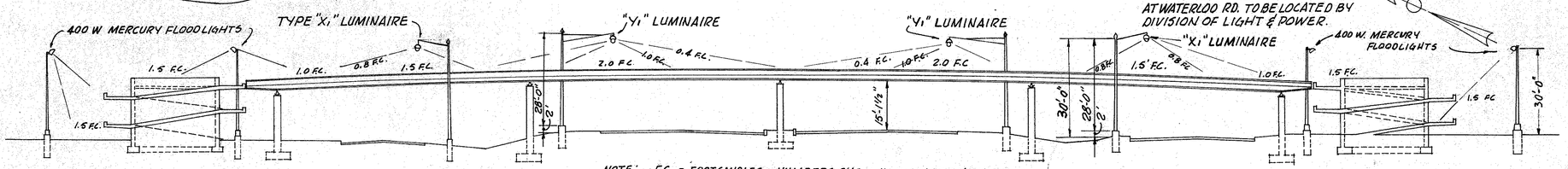
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

114/180

CUYAHOGA COUNTY
CUY-2-24.33



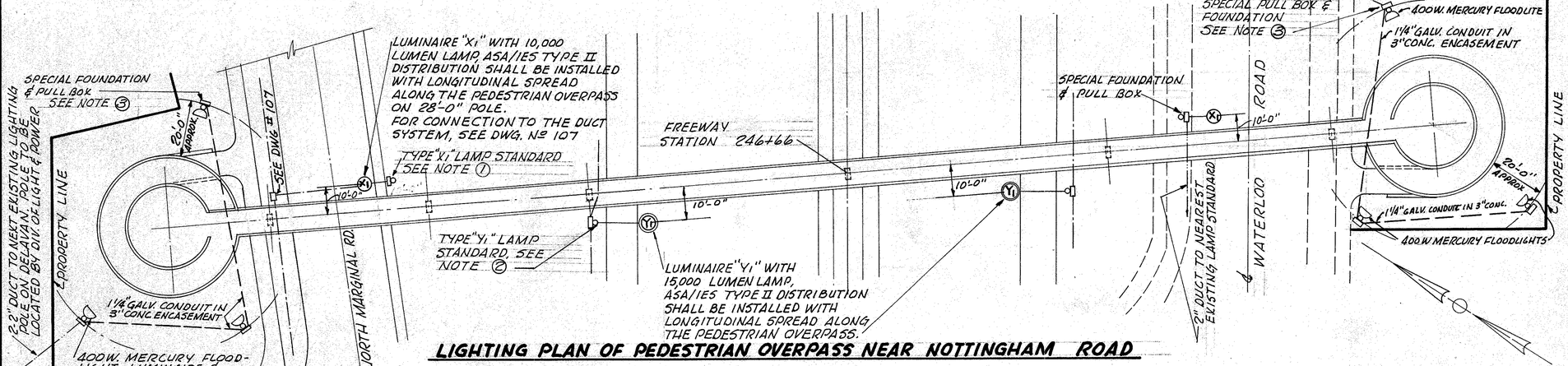
LIGHTING PLAN OF PEDESTRIAN OVERPASS NEAR E. 167TH ST.



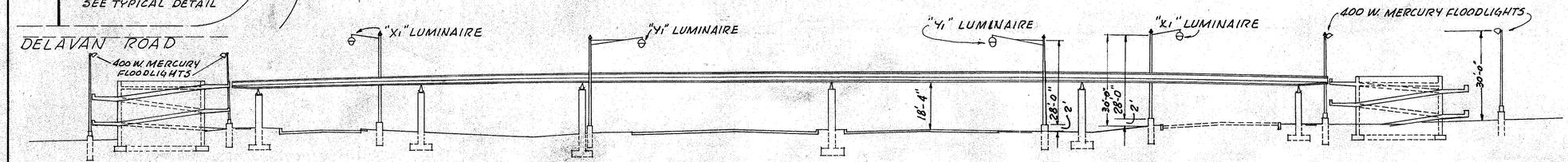
NOTE: F.C. = FOOTCANDLES NUMBERS SHOW ILLUMINATION IN HORIZONTAL FOOTCANDLES ON PEDESTRIAN OVERPASS

ELEVATION OF PEDESTRIAN OVERPASS NEAR E. 167TH ST. WITH LIGHTING DETAILS

NOTE ① LAMP STANDARD TYPE "X1" SHALL BE SIMILAR TO LAMP STANDARD "X" ON SHEET Nº 110, EXCEPT THE HEIGHT OF POLE SHALL BE 28'-0", AND POLE SHALL BE INSTALLED ON SPECIAL FOUNDATION AS SHOWN ON SHEET Nº 111



LIGHTING PLAN OF PEDESTRIAN OVERPASS NEAR NOTTINGHAM ROAD

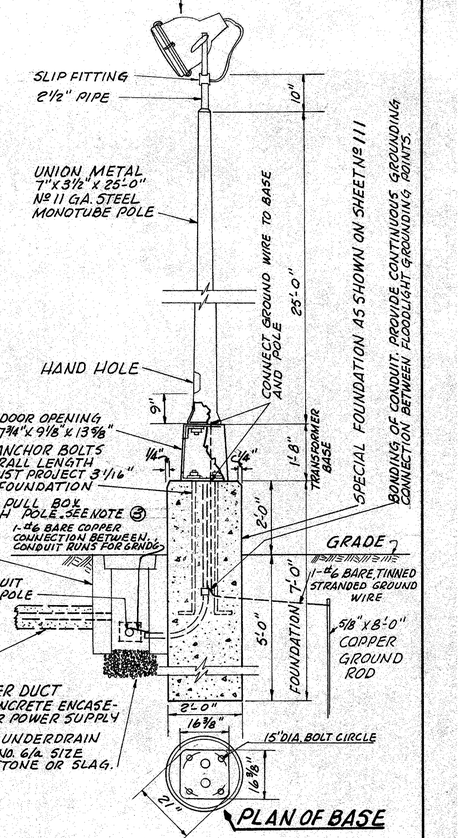


NOTE ② LAMP STANDARD "Y1" SHALL BE SIMILAR TO LAMP STANDARD "Y" ON SHEET Nº 110, EXCEPT THAT THE HEIGHT OF POLE SHALL BE 28'-0". FOUNDATION AND INSTALLATION TO BE THE SAME AS SHOWN ON SHEET Nº 111

ELEVATION OF PEDESTRIAN OVERPASS NEAR NOTTINGHAM ROAD WITH LIGHTING DETAILS

NOTE ③ SPECIAL PULL BOXES AT FLOODLIGHT POLES MAY BE INSTALLED AT THE MOST CONVENIENT SIDE OF THE POLE FOUNDATION - TO BE CONSIDERED THE DUCT AND CONDUIT ENTRANCE.

400 WATT COLOR CORRECTED HEAVY DUTY MERCURY VAPOR FLOODLIGHT AS CROUSE HINDS MVE-14 WITH WIDE BEAM SM LENS (90.4° HORIZONTAL 91.8° LATERAL SPREAD) OR WIDE LITE CORPORATION TYPE "B" FLOODLIGHT WITH 136° LATERAL AND 95° VERTICAL SPREAD, WITH LOW TEMPERATURE HIGH POWER FACTOR TRANSFORMER BASE MOUNTED BALLASTS. LUMINAIRE AND BALLAST BY POWER COMPANY.



FLOODLIGHT POLE DETAILS

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

PEDESTRIAN OVERPASS LIGHTING DETAILS

OVERPASS NEAR E. 167TH ST.

OVERPASS NEAR NOTTINGHAM RD.

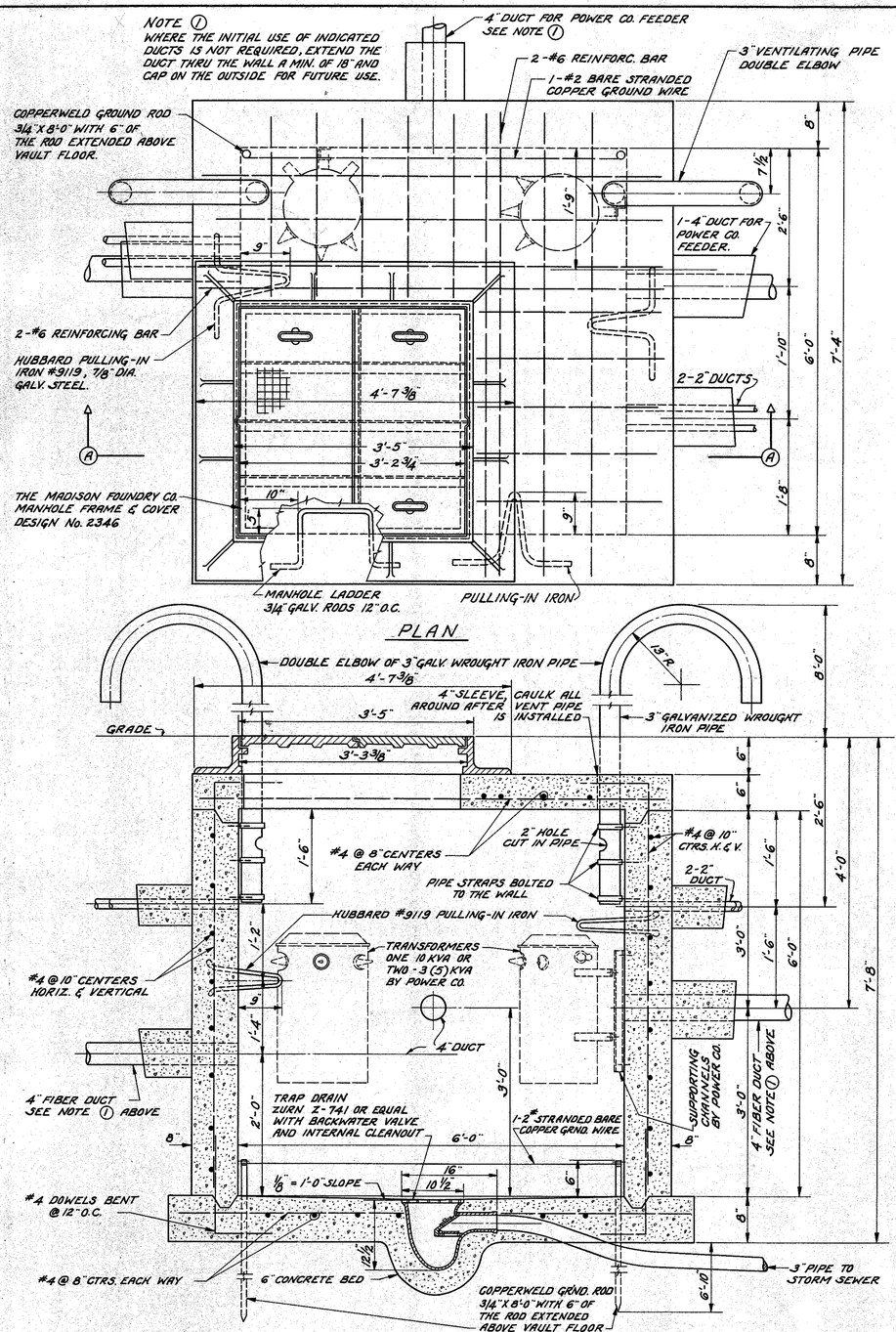
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

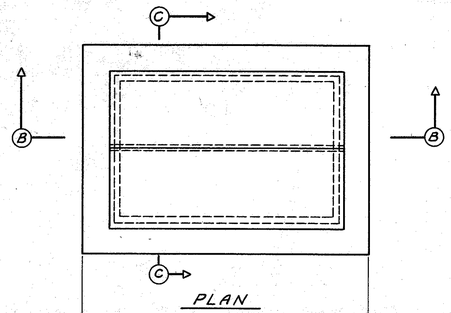
CUYAHOGA COUNTY
CUY-2-24.33

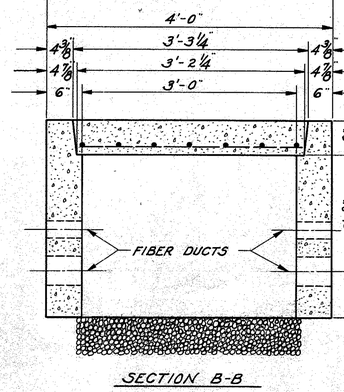
115
~~180~~

NOTE (1)
WHERE THE INITIAL USE OF INDICATED DUCTS IS NOT REQUIRED, EXTEND THE DUCT THRU THE WALL A MIN. OF 18" AND CAP ON THE OUTSIDE FOR FUTURE USE.

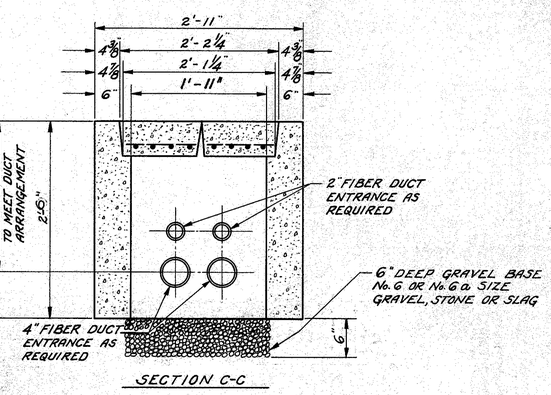


TRANSFORMER VAULT DETAILS FOR FLUORESCENT UNDERPASS LIGHTING



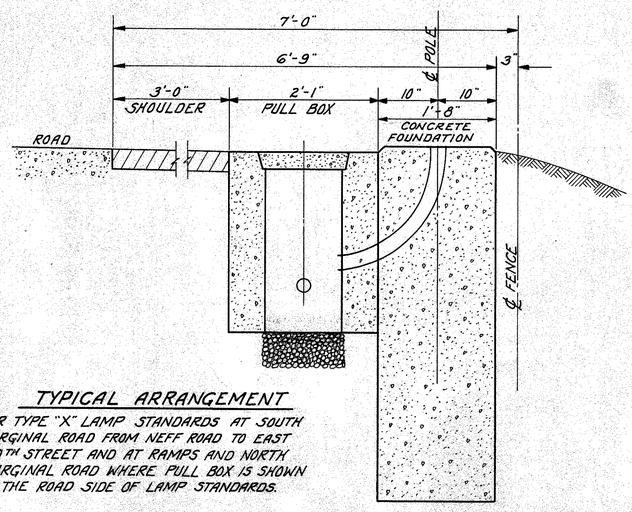


SECTION B-B



SECTION C-C

TYPICAL DOUBLE PULL BOX DETAILS



TYPICAL ARRANGEMENT

FOR TYPE "X" LAMP STANDARDS AT SOUTH MARGINAL ROAD FROM NEFF ROAD TO EAST 200TH STREET AND AT RAMPS AND NORTH MARGINAL ROAD WHERE PULL BOX IS SHOWN AT THE ROAD SIDE OF LAMP STANDARDS.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

UNDERPASS & BRIDGE LIGHTING
TRANSFORMER VAULT DETAILS
TYPICAL DOUBLE PULL BOX

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
		G.J.				

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

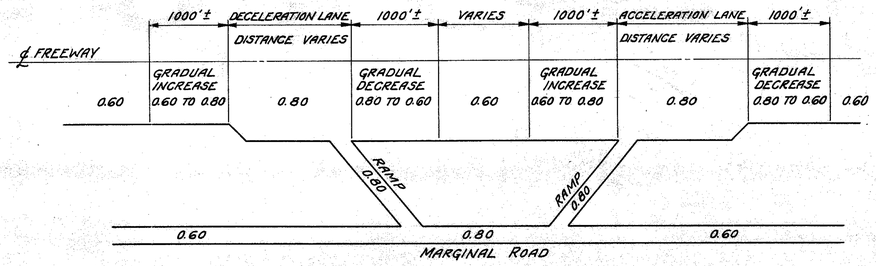
116
~~180~~

LAMP STANDARD ASSEMBLY

TYPE	POLE	MAST ARM	FOUNDATION	PULL BOX	NOTE
W	TYPICAL-MODIFIED	2-10 FT.	REGULAR	REGULAR	
X	TYPICAL	1-10 FT.	REGULAR	REGULAR	
X_1	SIMILAR AS TYPE "X" EXCEPT THE LENGTH (SEE NOTE)	1-10 FT.	SPECIAL	SPECIAL	LENGTH OF STANDARD: 28'-0"; LUMINAIRE SHALL BE TURNED 90° TO ROADWAY WITH STREET SIDE OF LAMP TO THE PEDESTRIAN OVERPASS
Y	TYPICAL-MODIFIED	1-18 FT.	SPECIAL	SPECIAL	
Y_1	SIMILAR AS TYPE "Y" EXCEPT THE LENGTH (SEE NOTE)	1-18 FT.	SPECIAL	SPECIAL	LENGTH OF STANDARD: 28'-0"; LUMINAIRE SHALL BE TURNED 90° TO FREEWAY WITH STREET SIDE OF LAMP TO THE PEDESTRIAN OVERPASS

GENERAL ILLUMINATION DATA

ROADWAY	LAMP SIZE	SPACING IN FEET		OVERHANG	FOOTCANDLES		NOTE
		GENERAL	INTER SECTION		GENERAL	INTER SECTION	
FREEWAY	15,000 LUMENS	160	120	4-FT.	.6	.8	CALCULATED WITH IES TYPE IV DISTRIBUTION
MARGINAL ROADS	10,000 LUMENS	160	120	4-FT.	.6	.8	CALCULATED WITH IES TYPE III DISTRIBUTION
RAMPS	10,000 LUMENS	150	110	3-FT. (AT GUARD RAILS) 4-FT. (NO GUARD RAILS)	.6	.8	CALCULATED WITH IES TYPE III DISTRIBUTION
CROSS STREETS	10,000 LUMENS		100	4-FT.		.8	CALCULATED WITH IES TYPE III DISTRIBUTION
PEDESTRIAN OVER-PASSES	10,000 TO 15,000 Lum.	100-120			1.5		CALCULATED WITH IES TYPE II DISTRIBUTION WITH LONGITUDINAL SPREAD ALONG THE OVERPASS
CIRCULAR RAMPS FOR PEDESTRIANS	400 W MERCURY FLOOD LIGHTS	70			1.5		



SCHEMATIC DIAGRAM OF FOOTCANDLES
MAXIMUM CRITERIA

NOTES (CONTINUED FROM BOTTOM)

(5) LUMINAIRES ARE NOT SUBJECTS OF THIS CONTRACT

(6) THE PROVIDED LENGTHS OF GROUND WIRE FOR EACH LAMP STANDARD ARE:
LAMP STANDARD TYPE "X" & "W" ------ 8'-0"
LAMP STANDARD TYPE "Y", X_1, Y_1 & FLOODS 10'-0"
LAMP STANDARD TYPE "Y" ON BRIDGES-6'-0"

(7) LAMP STANDARD FOR FLOODLIGHTS AS SHOWN ON SHEET #114, COMPLETE WITH TRANSFORMER BASE, MOUNTING BOLTS AND SLIP FITTER

(8) ALL ITEMS CALLED FOR BY TRADE NAME MAY BE SUBSTITUTED BY AN APPROVED EQUAL.

(9) 100% CITY OF CLEVELAND PARTICIPATION ITEMS ARE: FOR LIGHTING: NORTH & SOUTH MARGINAL ROADS FROM NEFF ROAD TO EAST 200TH STREET, MARGINAL ROAD CONNECTOR AT NEFF ROAD, SOUTH END OF 185TH STREET FROM STA. 5+10-S TO STA. 6+80-S.

(10) ALL CONDUITS SHALL BE RIGID, THREADED, HEAVY WALL TYPE, GALVANIZED INSIDE AND OUTSIDE.

TABLE 1

SYMBOLS AND SUMMARY OF QUANTITIES EXCEPT ITEMS OF BRIDGES - SEE NOTES (1)(5)(8)

ITEM	DESCRIPTION	SYMBOLS	PARTICIPATION												GRAND TOTAL	NOTE
			CITY OF CLEVELAND						100% CITY OF CLEVELAND							
			INTERSTATE FUNDS						SHEET Nº							
			SHEET Nº													
			105	106	107	108	109	TOTAL	105	106	107	108	109	TOTAL (9)		
S-25	1-2" DUCT	—·—·—·—	4770	6750	6235	6435	2953	27,143			290	2000	2280	4570	31,713	FEET
S-25	1-4" DUCT	—o—o—o—														
S-25	2-2" DUCT	—··—··—	1225	1230	1830	1060	955	6,300			90	80	50	220	6,520	FEET
S-25	2-4" DUCT	—oo—oo—			565	470	120	1,155							1,155	FEET
S-25	1-2" & 1-4" DUCT	—·—o—			140	130		270							270	FEET
S-25	2-2" & 1-4" DUCT	—··—o—			155			155							155	FEET
S-25	1-2" & 2-4" DUCT	—··—oo—														
S-25	2-2" & 2-4" DUCT	—··—oo—			95	155		250							250	FEET
S-25	1-1" CONDUIT IN 3" CONCRETE ENCASEMENT UNDERGROUND	CONDUIT SIZE NOTED ON PLANS SEE NOTE (10)														
S-25	1-1½" CONDUIT IN 3" CONCRETE ENCASEMENT UNDERGROUND		320		320			640							640	FEET
S-25	1-1½" CONDUIT IN 3" CONCRETE ENCASEMENT UNDERGROUND				20	15	15	50							50	FEET
S-25	#6 BARE TINNED STRANDED COPPER GROUND WIRE-NOTE (6)	#6 BARE	428	512	616	498	328	2,382			24	120	136	280	2,662	FEET
S-25	REGULAR PULL BOX -AS PER PLAN-	□	19	19	47	36	18	139			3	15	17	35	174	EACH
S-25	SPECIAL PULL BOX -AS PER PLAN-	□ SPB	31	36	35	23	23	148				1		1	149	EACH
S-25	DOUBLE PULL BOX -AS PER PLAN-	▭ DPB			8	7	3	18							18	EACH
S-25	REGULAR FOUNDATION	■	16	19	42	36	17	130			3	15	17	35	165	EACH
S-25	SPECIAL FOUNDATION	●	30	36	28	21	20	135							135	EACH
S-25	5/8"x8'-0" COPPER GROUND ROD WITH CONNECTOR		46	55	70	57	37	265			3	15	17	35	300	EACH
S-25	LAMP STANDARD, TYPE "W"	W			6			6				1		1	7	EACH
S-25	LAMP STANDARD, TYPE "X"	X	16	19	36	36	17	124			3	14	17	34	158	EACH
S-25	LAMP STANDARD, TYPE "X_1"	X_1	2		2			4							4	EACH
S-25	LAMP STANDARD, TYPE "Y"	Y	20	36	18	21	20	115							115	EACH
S-25	LAMP STANDARD, TYPE "Y_1"	Y_1	2		2			4							4	EACH
S-25	LAMP STANDARD FOR FLOOD-LIGHTS AT CIRCULAR RAMPS (7)		6		6			12							12	EACH
S-25	10,000 LUMEN LAMP (5)															
S-25	15,000 LUMEN LAMP (5)															
S-25	400 W MERCURY FLOOD LIGHT (5)															
S-25	REGULATOR VAULT 22'x8'x8' COMPLETE AS SHOWN ON SHEET Nº 112				1	1		2							2	EACH
S-25	TRANSFORMER VAULT 6'x6'x6' COMPLETE AS SHOWN ON SHEET Nº 115				1			1							1	EACH
I-2	6" CLASS "B" STORM SEWER	6			100	70		170							170	FEET
I-2	3" CLASS "B" STORM SEWER	3			80			80							80	FEET

TABLE 2

SYMBOLS AND SUMMARY OF ELECTRICAL ITEMS OF BRIDGES

ITEM	DESCRIPTION	SYMBOLS	BRIDGE OVER			TOTAL	NOTE
			E. 185TH ST. SHEET Nº 107	NEFF RD. SHEET Nº 108	E. 200TH ST. SHEET Nº 109		
S-25	3/4" GALVANIZED RIGID CONDUIT WITH WATERPROOF FITTINGS & SUPPORTS	———	406	500	390	1296	FEET
S-25	1" GALVANIZED RIGID CONDUIT WITH WATERPROOF FITTINGS & SUPPORTS	———	98	140	90	328	FEET
S-25	1¼" GALVANIZED RIGID CONDUIT WITH ELBOWS WATERPROOF FITTINGS & SUPPORTS	———	40	60	40	140	FEET
S-25	1½" GALVANIZED RIGID CONDUIT WITH WATERPROOF FITTINGS, ELBOWS & SUPPORTS	———	22	22	22	66	FEET
S-25	2" GALVANIZED RIGID CONDUIT WITH WATERPROOF FITTINGS & SUPPORTS	———	330	490	320	1140	FEET
S-25	1" FLEXIBLE COUPLING, 12" FLEXIBLE LENGTH, WEATHERPROOF WITH FEMALE NIPPLES AT BOTH ENDS, APPLETON #EXJ-312 OR EQUAL	——∿——	2	2	2	6	EACH
S-25	3/4" CONDUIT EXPANSION FITTING, WEATHERPROOF APPLETON TYPE #XJ, CAT.#11701 WITH CAT.#11750 BONDING JUMPER, NOTE (2)	——▭——	12	13	12	37	EACH
S-25	1" CONDUIT EXPANSION FITTING, WEATHERPROOF APPLETON TYPE #XJ, CAT. Nº 11702 WITH CAT.#11750 BONDING JUMPER, NOTE (2)	——▭——	1	1	1	3	EACH
S-25	2" CONDUIT EXPANSION FITTING WEATHERPROOF APPLETON TYPE #XJ, CAT. Nº 11705 WITH CAT.#11751 BONDING JUMPER, NOTE (2)	——▭——	4	4	4	12	EACH
S-25	ADAPTER FROM 2" RIGID CONDUIT TO 2" FIBER CONDUIT WITH TAPER SLEEVE JOINT AT THE FIBER END & THREADED FOR METAL CONDUIT, ORANGEBURG (2)	——▭——	4	4	4	12	EACH
S-25	SIZE 0-BARE, STRANDED, TINNED COPPER GROUND	———	110	110	110	330	FEET
S-25	SIZE 6-BARE, STRANDED, TINNED COPPER GROUND WIRE	-------	36	48	36	120	FEET
S-25	5-3/4" X 4" X 4½" WATERPROOF CAST IRON JUNCTION BOX WITH GASKETED SCREW COVER. RUSSELL & STOLL CAT.# 2107 OR EQUAL.	▫	1	2	—	3	EACH
S-25	7⅛" X 7⅛" X 6" WATERPROOF CAST IRON JUNCTION BOX WITH GASKETED SCREW COVER. RUSSELL & STOLL CAT.# 2258 OR EQUAL.	▫	4	4	4	12	EACH
S-25	24" X 24" X 12" JUNCTION BOX, STANDARD COLUMBIA WITH HINGED COVER, GALVANIZED	□	4	6	4	14	EACH
S-25	LAMP STANDARD TYPE "Y" FOR BRIDGES, SAME AS SHOWN ON DWG.#111, EXCEPT THE LOCATION OF HANDHOLE, FOR WHICH SEE NOTE (4) & DWG.#113	—Ⓨ	4	6	4	14	EACH
S-25	SPECIAL CONCRETE FOUNDATION FOR LAMP STANDARDS ON BRIDGES, AS SHOWN ON DWG. Nº 147	●	4	6	4	14	EACH

NOTES

(1) - ELECTRICAL ITEMS MOUNTED IN, ON OR TO THE STRUCTURE OF A BRIDGE (UNDERPASS) ARE NOT INCLUDED IN TABLE 1.

(2) - ELECTRICAL ITEMS MOUNTED IN, ON OR TO THE STRUCTURE OF A BRIDGE (SHOWN TABLE 2) ARE INCLUDED AND PAID FOR AS BRIDGE STRUCTURE ITEM S-25. THESE ELECTRICAL ITEMS ARE INDICATED ON THE FOLLOWING STRUCTURAL DRAWINGS:
BRIDGE OVER E. 185TH STREET ---- DRAWING Nº 118
BRIDGE OVER NEFF ROAD ---- DRAWING Nº 128
BRIDGE OVER E. 200TH STREET ---- DRAWING Nº 138

(3) - ALL PULL BOXES AT LAMP STANDARDS "Y" WITHOUT MARKS, SHALL BE SPECIAL PULL BOXES. WHEN SPECIAL PULL BOX IS USED SEPARATELY FROM STANDARD, MARK "SPB" IS SHOWN.

(4) - LAMP STANDARDS ON BRIDGES SHALL HAVE THE 4"x6½" HANDHOLE AT THE MAST ARM SIDE OF POLE. THE BOTTOM OF HANDHOLE SHALL BE 3'-6" FROM THE BOTTOM END OF POLE.

(CONTINUED ABOVE)

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

GENERAL ILLUMINATION DATA, SYMBOLS AND SUMMARY OF QUANTITIES

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE

R-15

DIST. NO. OR DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

117
180

CUYAHOGA COUNTY
CUY-2-24.33

MICROFILMED
SEP 10 1985

Ditch
10+00
2:1 Maximum
Variable Slope
El. 599.36
8.6'
5'-0 Sidewalk
Bituminous Shoulder
CURVE DATA
D = 1°20'00"
Δ = 14°01'39"
R = 4297.20'
T = 528.68'
Lc = 1052.06
L.C. = 1049.44
E = 32.41
Sup. Elev. .031G/F
P.C. 250+24.76
P.I. = Sta. 255+50.79
10" Reinforced Concrete Pavement
10'-0"
60'-0"
CREEK CULVERT
9+00
℄ EUCLID
℄ E. 185 TH ST.
L Bridge
Nur.00
N.0°
12"storm
Bis.
El. 599.51
Variable Slope
601
2:1 Maximum
℄ West Abut. Bearings Sta. 256+86.74
Face of West Abut. Sta. 256+88.13
Slope Protection
595
Sta. 257+89.99 on ℄ Freeway
Sta. 0+00 on E 185 TH ST.
Sta. 24°39'29"
152'-0" Parapets
12"storm
12"Sanitary
92'-0"
2:1 Slope
Slope Protection
Begin Approach Slope Sta. 259+08.69
10" A/c Pvt.
RAMP No 13
P.T. = Sta. 260+76.82
255+00
256+00
257+00
259+00
260+00
261+00
N 69°21'01"E
℄ Freeway
End Approach Slab Sta. 256+84.23
Varies
T-10 Concrete
2:1 Max.
℄ Ditch
600
10" Water
Point A Sta 0+00
Reference chord
Face of East Abut. Sta 259+04.98
℄ East Abut. Bearings Sta. 259+06.24
10" A/c Pvt.
NORMAL EDGE OF PAVEMENT ℄
RAMP No 12
DECELERATION LANE
El. 592.96
AR-1-57
V6.5
Variable Slope
2:1 Maximum
5'-0 Sidewalk
FILL EXISTING BED TO 600.0±
595
590
600
605
El. 601.27
8.5'
Variable Slope
15.9'
2:1 Maximum
28'-0"
5+1.25
N. 0°16'20"E
40'-0"
C.E.I.
12"storm
12"
12"sani.
12"storm
42"
10" Water
5+1.25

Legend
- Hydrant
- Buried T. Pole
- Telephone Pole
- Exist. Manhole
- Exist. Catch Basin
- Meter
- Valve
- C.E.I. Power Line

FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus, or in the Division office, but the State assumes no responsibility for the accuracy thereof.

V. C. DATA	
V.P.C. Sta. 251+50	El. 616.25
V.P.I. Sta. 254+50	El. 620.75
V.P.T. Sta. 257+50	El. 622.25
+1.50% AND +0.50% GRADE	

Sta. 256+84.23
Bridge Limits 224.46'
Sta. 259+08.69
600 V.C.
V.P.T. Sta. 257+50

620.48 620.92 621.31 621.98 622.25 622.50 622.75 623.00 623.25 623.50
620.00 610.00 600.00
Elev. 610.80 North
Elev. 609.00 South
Elev. 618.0 North
Elev. 614.1 South
Elev. 619.0 North
Elev. 615.2 South
Elev. 611.90 North
Elev. 610.10 South
Variable 2:1 Max. (Normal) Paved Slope
15'-2" 6"
Variable
3/4" 7/8"
1"
2:1 (Normal) Paved Slope
12"Storm, Invert = 597.37'
12"Sani., Invert = 587.58'
BEARING PILES: 12 BP53 at abutments. Estimated average pay length = 25' for north half and 15' for the South.
BEARING PILES, 12 BP53 Estimated average pay length = 22'
255+00 256+00 257+00 258+00 259+00 260+00

EXISTING STRUCTURE
TYPE: CONTINUOUS CONCRETE BEAM & SLAB WITH SOLID WALL CONCRETE PIER & ABUTMENTS.
SPANS: 32'-0"±, 32'-0"±
SKEW: 20° L.F.
ROADWAY: 60'-0"± % OF RAILING
LENGTH: 67'-3 3/4"±

PROPOSED STRUCTURE
TYPE: CONTINUOUS STEEL BEAMS WITH REINFORCED CONCRETE DECK, PIERS AND ABUTMENTS
SPANS: 64'-0" 91'-6" 64'-0" ℄ BEARINGS
ROADWAY: 152'-0" F/F PARAPETS
LOADING: CF-2000-57 (ADEQUATE FOR AASHO ALTERNATE LOADING)
SKEW: REF. CHORD TO ℄ E. 185 ST. 24° 39' 29"
WEARING SURFACE: 1" MONOLITHIC CONCRETE
APPROACH SLAB: AS-1-54 (25'-0" LONG)
ALIGNMENT: 1°-20'-00" R.C.
SUPERELEVATION: 0.031G/F

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

SITE PLAN
BRIDGE NO. CUY-2-2533
LAKELAND FREEWAY OVER EAST 185TH ST.
STATION 256+84.23 TO STATION 259+08.69
SR-2 & USR-20 SEC. CUY-2-24.33
SCALE 1"= 20'-0" I-329(20) CUYAHOGA COUNTY

TOPOGRAPHY		PROPOSED WORK				
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
AERIAL SURVEY & M.P. 2/1/82	TLP	GHG	GHG	[illegible]		

SITE PLAN EAST 185TH ST.

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329(20)	

118
186

CUYAHOGA COUNTY
CUY-2-24.33

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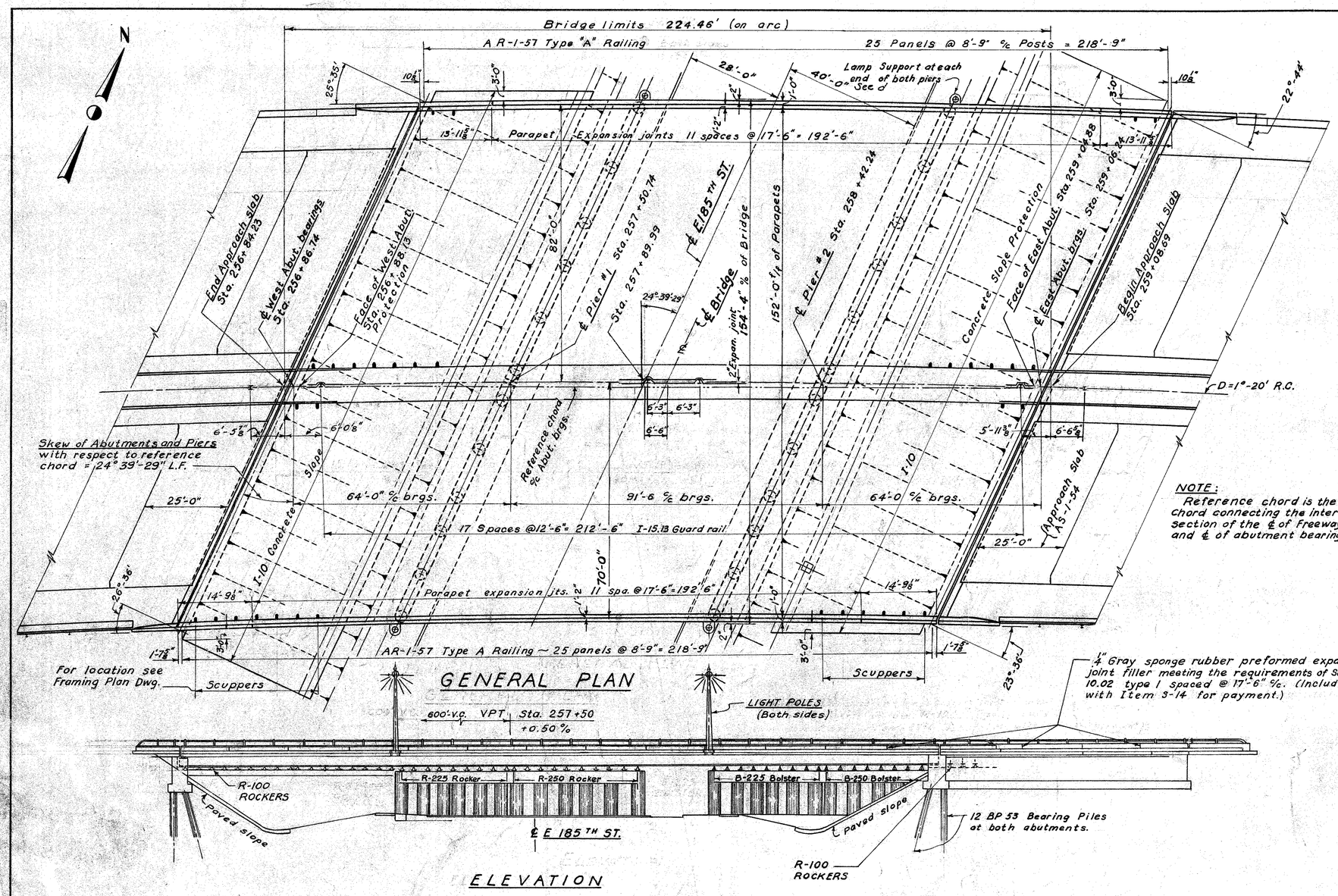
SEP 10 1985



GENERAL PLAN

ELEVATION

NOTE: Reference chord is the chord connecting the intersection of the ℄ of freeway and ℄ of abutment bearings.

.4" Gray sponge rubber preformed expansion joint filler meeting the requirements of Sec. M-10.02 type I spaced @ 17'-6" c/c. (Include with Item S-14 for payment.)

GENERAL NOTES

REFERENCE shall be made to Standard Drawings RB-1-55 revised 2-2-59 and to AR-1-57 revised 2-2-59. and Supplemental Specification S-101 dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with revisions dated 2-21-58.

REMOVAL OF EXISTING STRUCTURE: When no longer needed to maintain traffic, the existing structure shall be removed. The abutments and pier shall be removed to elevation 596.5± or as required for construction of new piers as shown on dwg. Nº 122 All removed portions of the structure shall be disposed of by the contractor.

EXCAVATION QUANTITY for the abutments includes the removal of fill material from the top of the spill-thru slope to the bottom of the abutment footing.

PILES at the abutments shall be driven to firm contact with shale. If the length of penetration is approximately equal to the depth to shale according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:
40 tons per pile using a 7000 ft.-lb. hammer
30 tons per pile using a 11,000 ft.-lb. hammer.
28 tons per pile using a 15,000 ft.-lb. or greater hammer.
The design load is 25 Tons per pile for both abutments.

FOUNDATION BEARING PRESSURE: The pier footings are designed for a maximum bearing pressure of 5.5 tons per sq. ft.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections between transverse construction joints which are parallel to the transverse reinforcing and are located near the center of any span.

WELDING of structural steel shall be class "A" unless otherwise noted. Any welds shown as field welds may, at the option of the contractor, be made in the shop. Class "B" welds are shown thus: B.

ELECTRICAL GROUNDS: A solid Nº 0 gage bare copper wire electrical ground shall be embedded in the outside column on each side of the structure at pier Nº 2. The lower ends of the wires shall terminate in a 25' length coiled under the footing and separated from the concrete by two layers of tar paper, and the upper ends shall extend sufficiently above the top of the concrete to provide for a suitable splice and extension for connection to the superstructure. The connection to the superstructure shall be a Nº. 6 gage, bare, stranded, tinned copper wire brazed or bolted to the outside beam flange and to the solid copper wire in the pier shaft. At the base of the lamp standards there shall be a tinned Nº. 6 gage copper wire brazed to one anchor bolt and the other end brazed or bolted to the outside beam flange.
Payment for electrical grounds is included in the lump sum bid for Item S-25 "Electrical Lighting System".

DETAILS: For details of end cross frames, end dam, beam cut off at backwall, centerline joint and median guard rail, welded butt joint in superstructure end dam at crown, scuppers, gutter supports, curb plates and lamp supports see drawings Nº 145, 146, and 147.

ELECTRICAL LIGHTING SYSTEM. Item S-25, includes the lamp standards with mast arms, junction boxes and electrical grounds.

PAINTING: See Proposal regarding painting.

STEEL: See Proposal regarding A-373 steel.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS.	PIERS	GEN'L.	As Built	
E-2	1,188	C.Y.	Unclassified Excavation		748	440			
E-2	36	C.Y.	Shale Excavation			36			
S-1	1,030	C.Y.	Class "C" Concrete, Superstructure	1030					
S-1	288	C.Y.	Class "C" Concrete, Pier Caps and Columns			288			
S-1	343	C.Y.	Class "E" Concrete, Abutments above Footings		343				
S-1	318	C.Y.	Class "E" Concrete, Abutment and Pier Footings		270	48			
S-3	55	L.F.	Waterproofing, 12"+½" Preformed Sealing Strip		55				
S-4	423,900	Lbs.	Reinforcing Steel	293,260	31,490	99,150			
S-7	1315,600	Lbs.	Structural Steel	1,315,600					
S-8	1315,600	Lbs.	Field Painting of Structural Steel	1,315,600					
S-9	~~54~~	S.F.	1" Preformed Expansion Joint Filler, Type I		59		00.24 +30	89	
S-9	227	L.F.	Structural expansion or contraction joint	221			00.74 +10	231	
S-13		C.Y.	Dry Rubbed Finish Painting						
S-14	500.5	L.F.	Railing; Aluminum Rail & Supports, Concrete Parapet	442.5			58		

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	PIERS.	GEN'L.	As Built	
S-14	224.5	L.F.	Guard Rail, Type I-15.13 with galvanized steel posts and bolts and double rail.	224.5					
S-16	LUMP	SUM	First Test Pile				LUMP		
S-18	2800	L.F.	Steel Piles; 12 BP 53		2800				
S-24	LUMP	SUM	Removal of Existing Structure				LUMP		
S-25	LUMP	SUM	Electrical Lighting System				LUMP		
S-25	~~330~~	L.F.	2" Galvanized Conduit including fittings & supports				330	00.51 +100	430
S-25	22	L.F.	1½" " " " " " & "				22		
S-25	40	L.F.	1¼" " " " " " & "				40		
S-25	98	L.F.	1" " " " " " & "				98		
S-25	406	L.F.	¾" " " " " " & "				406	00.54 -.04	342
S-29	~~134~~	C.Y.	Porous Backfill		134			00.78 +17	117
T-10	1650	S.Y.	Concrete Slope Protection				1650		

Note: Electrical quantities shown as Item S-25 are only those items which are actually a part of the bridge structure or are mounted thereon. For additional listing and details see Electrical Dwgs. Nº 111 thru 116.

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GENERAL PLAN, ELEVATION, NOTES AND ESTIMATED QUANTITIES
BRIDGE Nº CUY-2-2533
LAKELAND FREEWAY OVER E 185TH ST.
CUYAHOGA COUNTY STA. 256+84.23
SEC. CUY-2-24.33 TO STA 259+08.69

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
GHG	GHG	LM	AJC			

[A] Revised As Built CAM 2-25-64

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SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	1329 (20)	

119
~~180~~

CUYAHOGA COUNTY
CUY 2-24.33

6" angle and 2" bar discontinuous over contraction joint Do not weld

N

℄ of Freeway on curve

12'-8⅛" 3" 53'-6¾" 43'-9" 11'-1⅝"

Contraction Joint

9-A401 @ 4" ℄ at each beam seat

AG03

5'-6⅞" 1'-4⅝"

18'-1¼"

1'-3" 1'-10½" 3'-6" 1'-3"

℄ Abutment Brgs

Reference point Sta. 256+80.74

Reference chord

24°-39'-29"

26°-36"

1'-0½" 1'-6" 1'-6" 1'-6

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	1329(20)	

120 ~~180~~

CUYAHOGA COUNTY
CUY 2-24.33

MICROFILMED
SEP 10 1985

ABUTMENT NOTES

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade after which excavation shall be made for the abutments and end walls.

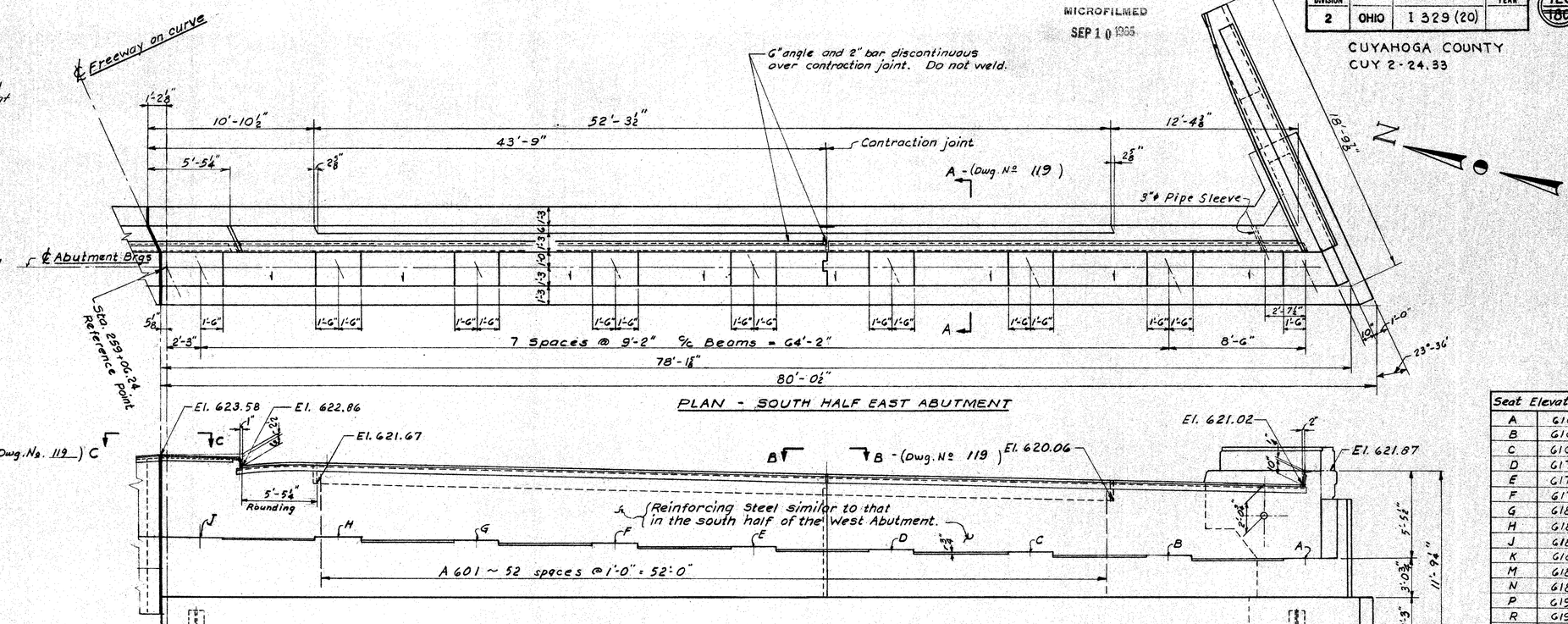
CONCRETE: Concrete in abutments, end walls, and footings may be either Class "C" or "E". However, payment shall be made on the basis of Class "E".

REINFORCING STEEL: Reinforcing steel shall be 2" clear from exposed face of concrete unless noted otherwise.

BACKWALL: The backwall shall be poured after all structural steel is in place.

POROUS BACKFILL; 2 ft. thick, full length of abutment and end walls shall extend upward to the bottom of the approach slab and paved shoulder. Excavation therefor, in excess of that required for the construction of the abutments and end walls, shall be considered as paid for in the bid price per cubic yard paid for porous backfill.

SLEEVES for electrical conduit shall be 3" ϕ standard pipe. Fill around conduit with preformed expansion joint filler meeting the requirements of Sec. S-9.02. Include with Item S-1, Abutment Concrete for payment.



Seat Elevations	
A	616.41
B	616.68
C	616.96
D	617.24
E	617.53
F	617.81
G	618.09
H	618.38
J	618.15
K	618.15
M	618.45
N	618.75
P	619.05
R	619.35
S	619.65
T	619.95
V	620.24
W	620.52
X	620.20

FOR ABUTMENT DETAILS SEE DWG. Nº 119

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

EAST ABUTMENT PLAN & ELEVATION
BRIDGE Nº CUY-2-2533
LAKELAND FREEWAY OVER E.185TH ST.

CUYAHOGA COUNTY STA. 256+84.23
SEC. CUY-2-24.33 TO STA. 259+08.69

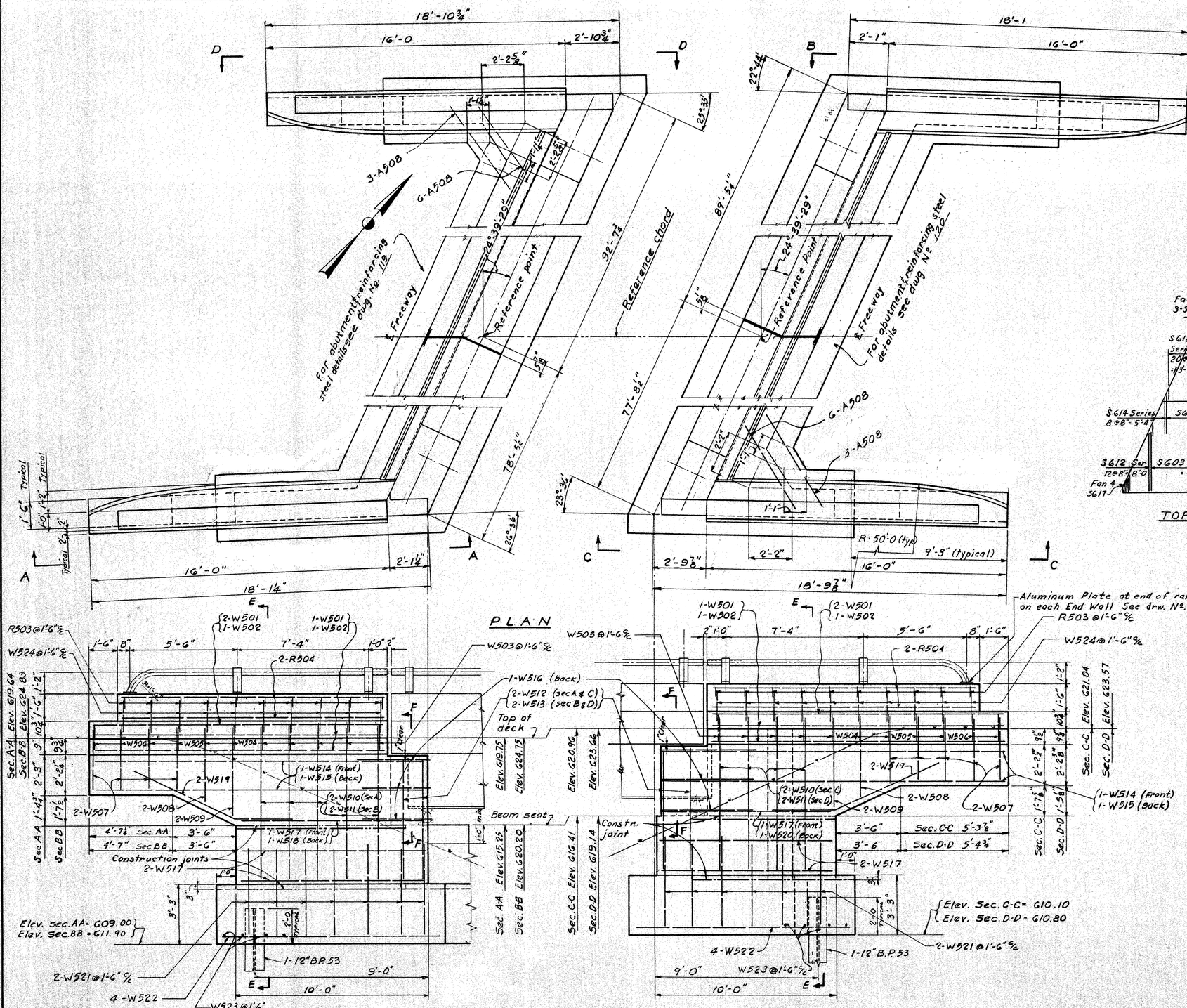
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
GHG	J.W.P.	J.W.P.	2/13			

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

121 ~~180~~

MICROFILMED
SEP 10 1985

CUYAHOGA COUNTY
CUY-2-24.33

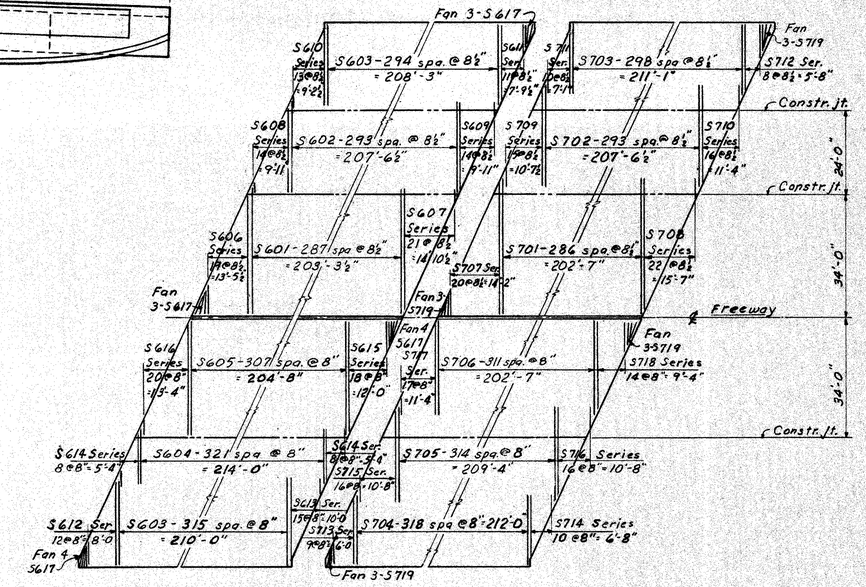


PLAN

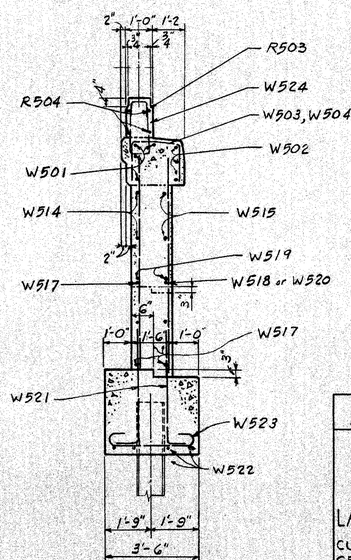
SOUTH WEST ELEVATION - SECTION AA
NORTH EAST ELEVATION - SECTION BB

SOUTH EAST ELEVATION - SECTION C-C
NORTH WEST ELEVATION - SECTION D-D

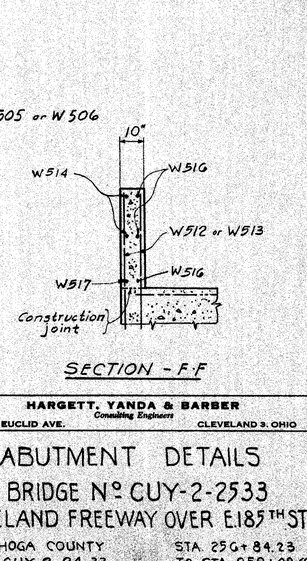
PART PLAN OF DECK



TOP STEEL BOTTOM STEEL



SECTION E-E



SECTION - F-F

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

ABUTMENT DETAILS
BRIDGE No. CUY-2-2533
LAKELAND FREEWAY OVER E.185TH ST.

CUYAHOGA COUNTY STA. 25G+84.23
SEC. CUY-2-24.33 TO STA. 259+08.69

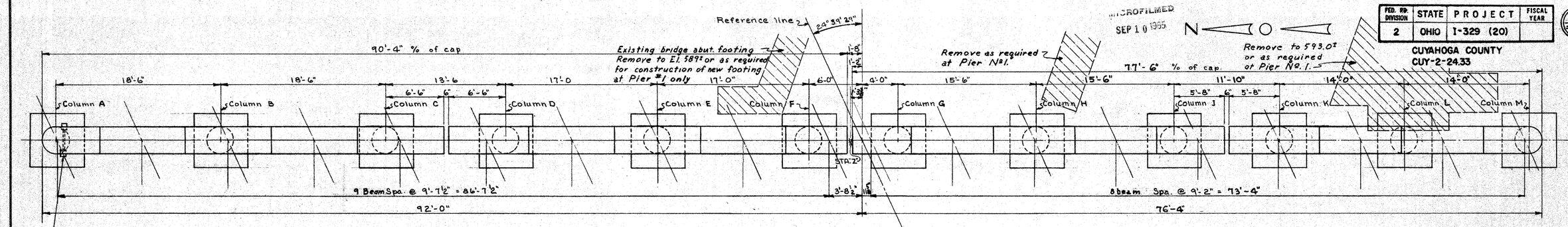
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
G.H.G	J.W.P.	J.W.P.				

MICROFILMED SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

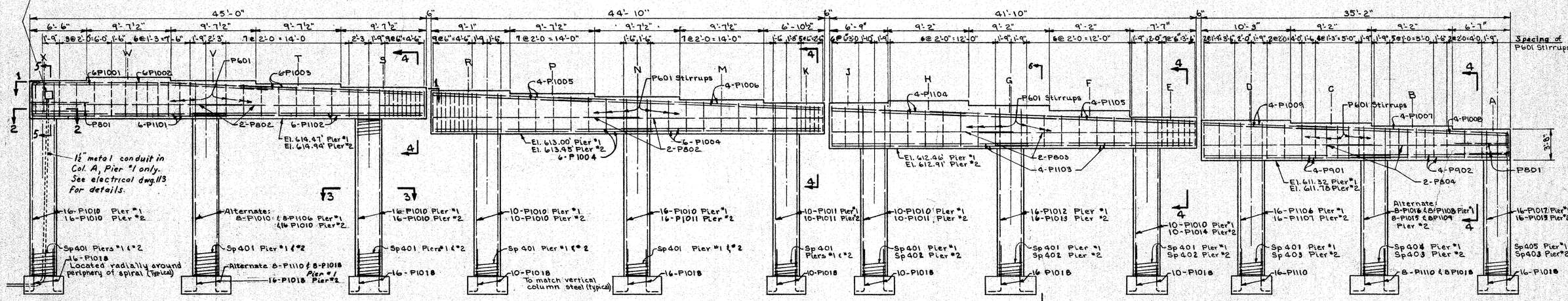
CUYAHOGA COUNTY
CUY-2-24.33

122 / 180

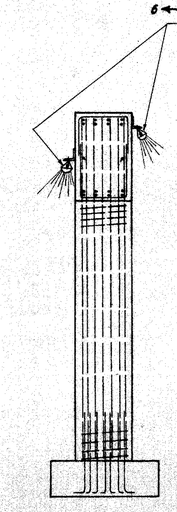


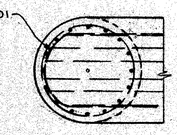
Junction boxes mounted on both sides of north end of each pier. 1¼" conduit between boxes. See dwg. 113 for details.

PIER PLAN

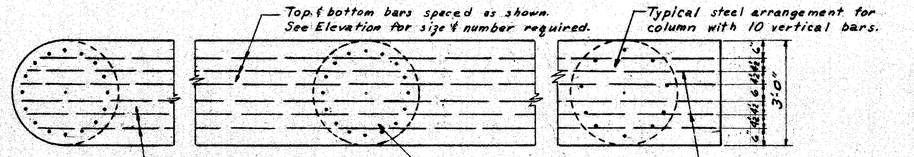


PIER ELEVATION

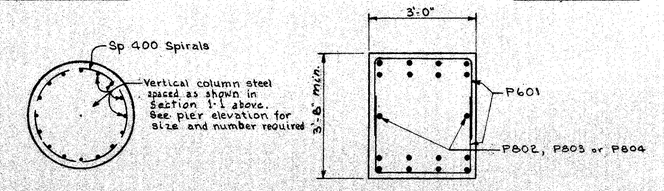




SECTION 2-2

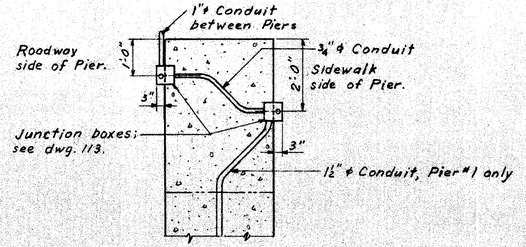


SECTION 1-1



SECTION 3-3

SECTION 4-4



SECTION 5-5

SECTION 6-6

NOTES:

REINFORCING STEEL shall be 2" clear from face of concrete unless otherwise noted.

REINFORCING STEEL shall be placed at Pier #2 to clear bolster anchor bolts.

CONCRETE shall be class "C" in pier caps and columns and Class "E" in Pier Footings.

FOOTING details and notes, see dwg. No. 123.

BEAM SEAT ELEVATIONS		
STA. Z	PIER #1	PIER #2
	257 + 50.74	258 + 42.24
A	614.99	615.45
B	615.28	615.73
C	615.56	616.01
D	615.85	616.30
E	616.13	616.58
F	616.41	616.86
G	616.69	617.15
H	616.97	617.43
J	616.66	617.12
K	616.66	617.12
M	616.96	617.42
N	617.25	617.71
P	617.55	618.01
R	617.84	618.31
S	618.14	618.61
T	618.43	618.90
V	618.73	619.20
W	619.03	619.50
X	618.72	619.15

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Consulting Engineers
4800 EUCLID AVE. CLEVELAND 3, OHIO

PIER DETAILS
BRIDGE No. CUY-2-2533
LAKELAND FREEWAY OVER E. 185TH ST.

CUYAHOGA COUNTY STA. 256+84.23
SEC. CUY-2-24.33 To STA. 259+08.69

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
G H G	W.F. ELFORD	L.M.				

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

123
180

CUYAHOGA COUNTY
CUY-2-24.33

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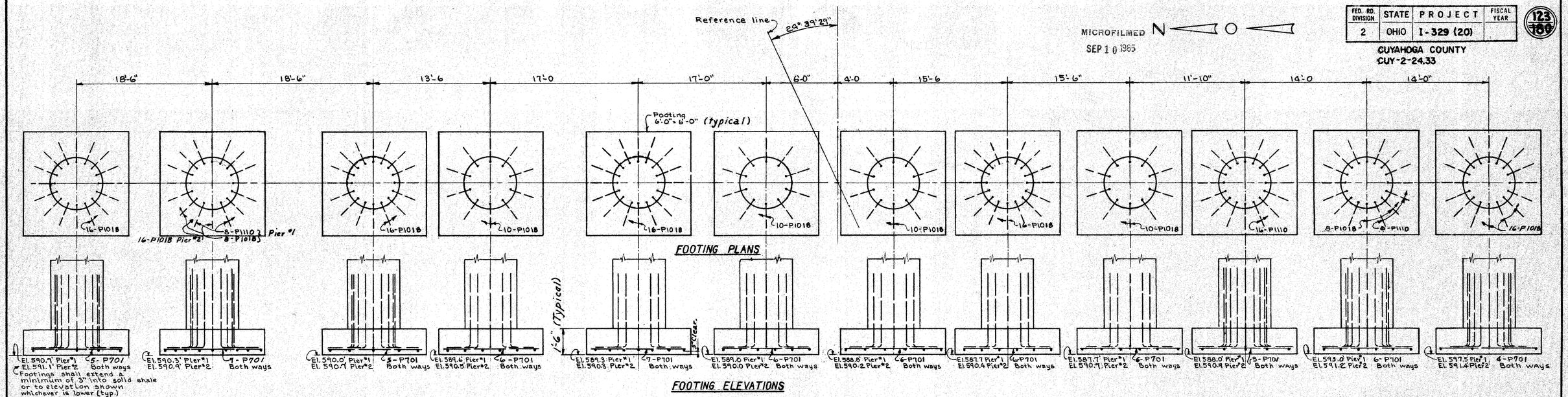
SEP 10 1965



Note: See dwg. No. 122, Section 1-1 for location of vertical column bars and footing dowels.

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PIER FOOTING DETAILS
BRIDGE No CUY-2-2533
LAKELAND FREEWAY OVER E.185TH ST.

CUYAHOGA COUNTY STA. 256+84.23
SEC. CUY-2-24.33 To STA. 259+08.69

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
GLG	W.F.ELFORD	J.W.P.	JJC			

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

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180

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SEP 10 1985

Intermediate X-Frames L 3×3×5/16 · 22 Spaces @ 12'-0" = 264'-0" See Sheet No 125 For Details

10'-6" | 13'-6"

℄ West Abut. Brgs. | Pier No 1 Brgs ℄ | ℄ Pier No 2 Brgs. | East Abut. Brgs ℄

3'-6" | 6'-0" | 13'-0" | 7'-0" | 7'-0" | 13'-0" | 6'-0" | 3'-6"

West Bound { Top Plate 14"×¾"×20'-0 / Bottom Plate 19"×⅜"×20'-0 } See drawing No 125 for splice details

N

9 Spaces @ 9'-7½" = 86'-7½" for Details

8 Spaces @ 9'-2" = 73'-4"

9 Spaces @ 8'-8⅛" = 78'-1⅛" (Normal)

9 Spaces @ 8'-9" = 78'-9" (Normal)

8 Spaces @ 8'-3⅜" = 66'-1" (Normal)

8 Spaces @ 8'-3¼" = 66'-2" (Normal)

9 Spaces @ 9'-7½" = 86'-7½"

8 Spaces @ 8'-9¾" = 70'-7" (Normal)

8 Spaces @ 9'-7½" = 77'-0"

7 Spaces @ 9'-2" = 64'-2"

36 WF 230 | 36 WF 300 | 36 WF 280 | 36 WF 230 | 36 WF 230

Use Special X-frames in this beam space

Skew of Steel = 24°-39'-29"

Reference Line

See Dwg No 145 for Details

End X-Frames L 4×4×5/16 Reference point

6 Spa. @ 6'-0" = 36'-0"

5 Spa @ 6'-0" = 30'-0"

4'-6"

3'-6"

3'-4½"

3'-4"

3'-8½"

0'-11⅞"

10⅝"

2'-3"

2'-5⅝"

2'-2"

2'-1⅝"

6'-0" | 3'-6"

Varies

8'-6"

East Bound { Top Plate 14"×⅝"×18'-6" / Bottom Plate 19"×1½"×18'-6" } See dwg. 125 for splice details

4'-0" | 6 Spa. @ 6'-0" = 36'-0" | 7 Scuppers

11'-6" | 7'-0"

7'-0" | 11'-6"

5 Spa. @ 6'-0" = 30'-0" | 6 Scuppers

3'-6"

64'-0" ℄ Brgs. | 91'-6" ℄ Brgs. | 64'-0" ℄ Brgs.

℄ E. 185th St. | ℄ Bridge

Note: X-Frames marked thus, $, denote Special X-Frames used at bend points at bearings over piers. See Dwg. No. 125 for details. See welding procedure note 4.

FRAMING PLAN

Spans 64'-0", 91'-6", 64'-0" ℄ Bearings
Measured Along the Sub-Chords

DEFLECTION AND CAMBER

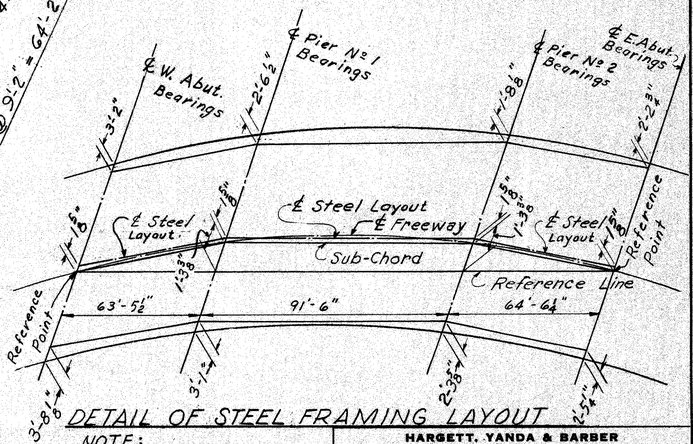
LOCATION	OUTSIDE BEAM		INSIDE BEAM	
	End span	Center span	End span	Center span
Deflection due to weight of steel	1/16"	1/4"	1/16"	1/4"
Deflection due to remaining dead load	3/16"	5/8"	3/16"	11/16"
Convexity required for vertical curve (west end only)	1/8"	0	1/8"	0
Sum of deflection and convexity	3/8"	7/8"	3/8"	15/16"
Required Camber	0	1"	0	1"

Note "A": Remove "keeper plates" from rocker and bolster caps at the abutment and pier locations shown thus * on the framing plan to provide for lateral expansion of the bridge deck.

BEAM SPLICE WELDING PROCEDURE
(Both structures)

1. Raise ends of beams at Abuts. 2".
2. Butt weld beam flanges and webs at both piers using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location, until welds are completed.
3. Weld top and bottom flange moment plates.
4. Weld Special X-Frames at piers after splice welding is completed, but before the beam ends are lowered.
5. Lower beam ends to final position.

SCUPPERS shall be spaced as shown. Crossframes shall be spaced as shown except as required to meet clearance requirements. Crossframes must clean scuppers by at least 6". For scupper details see drawing No. 147.



DETAIL OF STEEL FRAMING LAYOUT

NOTE:
Span lengths are laid out on the sub-chords, and the ℄ of steel layout bisects the mid-ordinate of the center span.

HARGETT, YANDA & BARBER
Consulting Engineers
4800 EUCLID AVE. CLEVELAND 3, OHIO

FRAMING PLAN
BRIDGE No CUY-2-2533
LAKELAND FREEWAY OVER E185TH ST.

CUYAHOGA COUNTY STA. 256+84.23
SEC. CUY-2-24.33 TO STA. 259+08.63

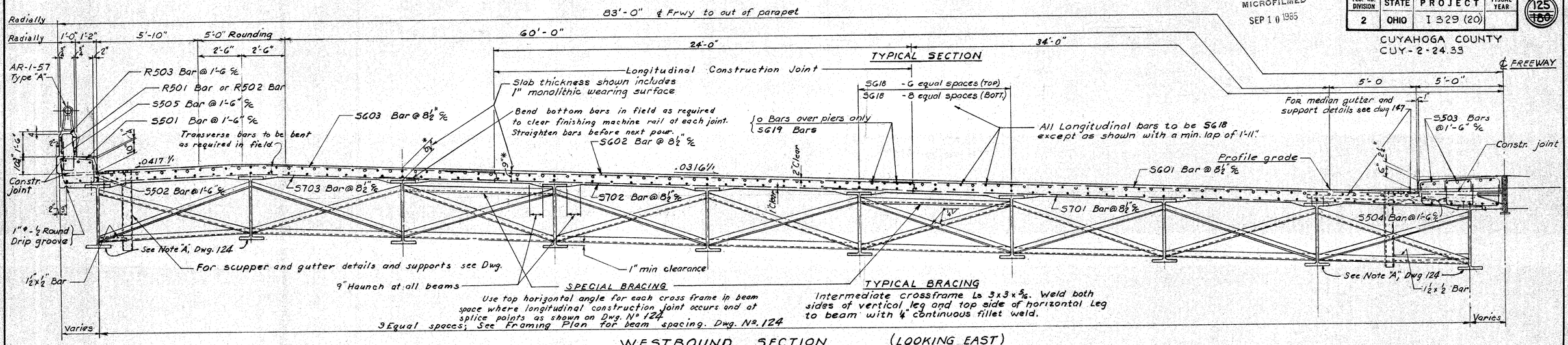
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
G.H.G.	K.J.M.	J.W.P.	M.C.Y.			

MICROFILMED SEP 10 1985

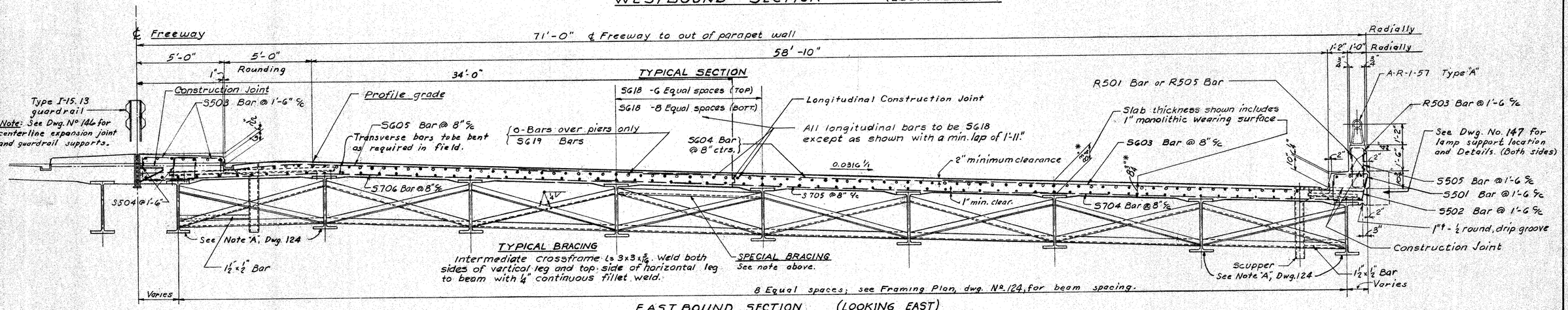
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

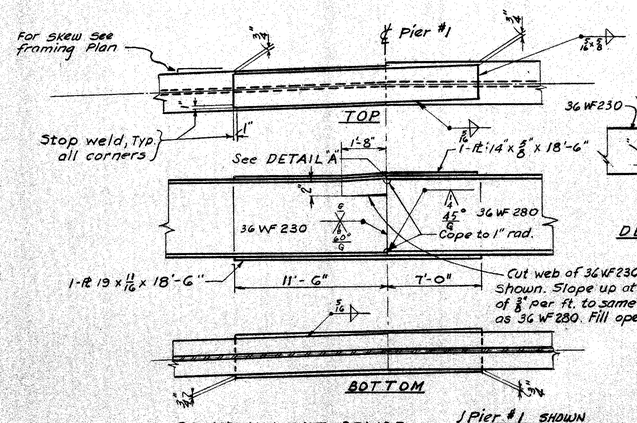
125
~~150~~

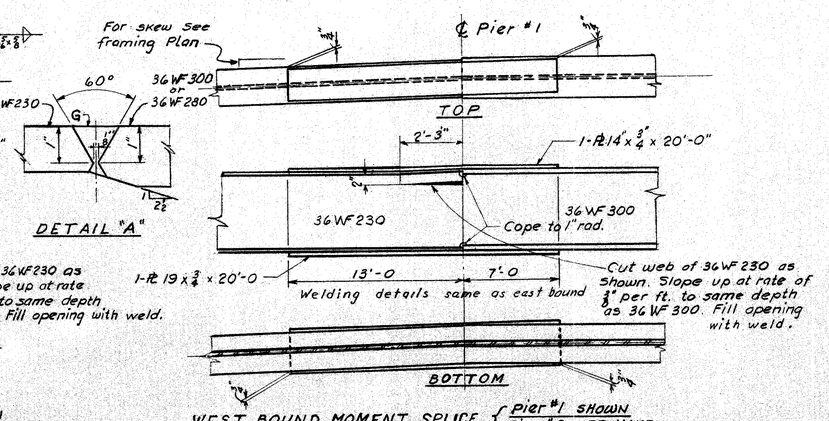


WESTBOUND SECTION (LOOKING EAST)



EAST BOUND SECTION (LOOKING EAST)





*These are nominal dimensions. The quantity of deck concrete to be paid for shall be based on these dimensions, 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.

MACHINE FINISHING of bridge decks will be required in accordance with the Special Provisions of this contract except that longitudinal joints, as shown on the plans, will be permitted. When the finishing machine is supported on the concrete the wheel of the machine shall be placed directly over the beam adjacent to the joint.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

TRANSVERSE SECTION AND BEAM SPLICE DETAILS
BRIDGE Nº CUY-2-2533
LAKELAND FREEWAY OVER E.185TH ST.

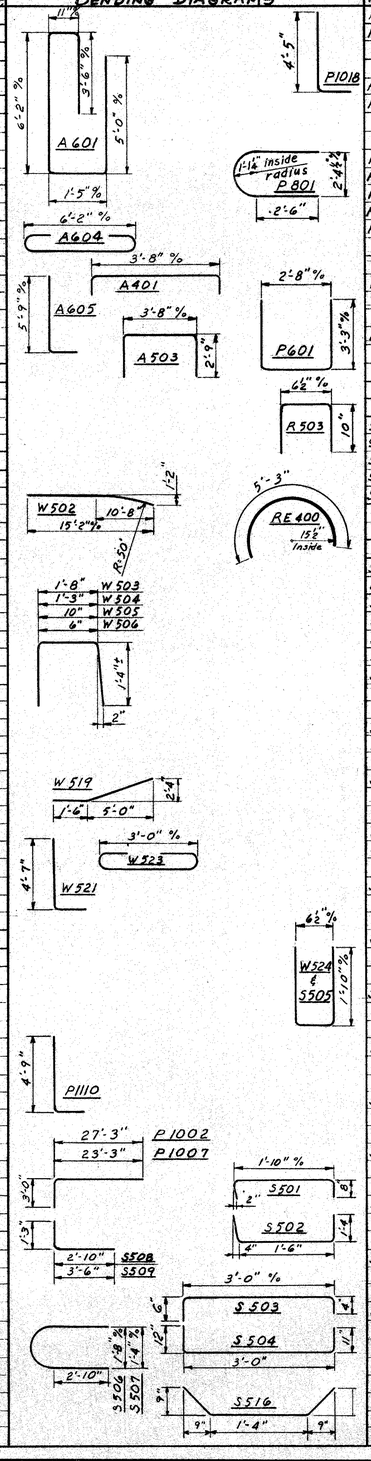
CUYAHOGA COUNTY STA. 256+84.23
SEC. CUY-2-24.33 TO STA. 259+08.69

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
G.H.G	J.W.P.	J.W.P.				

REINFORCING STEEL LIST

MARK	No	LENGTH	WEIGHT	SHP
ABUTMENTS				
A801	48	23'-3"	2,980	S
A802	24	17'-9"	1,137	S
A803	24	26'-2"	1,677	S
A601	240	16'-6"	5,948	B
A602	184	7'-0"	1,935	S
A603	8	5'-0"	60	S
A604	262	7'-6"	2,951	B
A605	524	6'-5"	5,050	B
A501	40	22'-10"	952	S
A502	20	17'-6"	365	S
A503	262	8'-11"	2,437	B
A504	24	27'-6"	688	S
A505	32	25'-0"	834	S
A506	20	10'-0"	209	S
A507	20	24'-0"	501	S
A508	18	5'-0"	94	S
A401	342	4'-6"	1,028	B
END WALLS				
W501	16	15'-8"	261	S
W502	12	15'-2"	190	B
W503	20	4'-1"	89	B
W504	8	3'-8"	32	B
W505	8	3'-3"	28	B
W506	8	2'-11"	24	B
W507	36	3'-7"	135	S
W508	8	4'-3"	35	S
W509	8	5'-4"	44	S
W510	18	8'-6"	160	S
W511	18	10'-8"	200	S
W512	8	6'-5"	54	S
W513	8	8'-7"	72	S
W514	8	17'-9"	148	S
W515	8	15'-3"	127	S
W516	12	4'-0"	50	S
W517	20	9'-8"	202	S
W518	2	7'-6"	16	S
W519	8	7'-0"	58	B
W520	2	6'-3"	13	S
W521	52	5'-1"	276	B
W522	16	11'-8"	195	S
W523	16	4'-2"	70	B
W524	40	4'-0"	166	B
PIERS				
P1101	24	21'-7"	2,752	S
P1102	24	26'-7"	3,390	S
P1103	32	22'-6"	3,825	S
P1104	16	15'-0"	1,275	S
P1105	16	30'-0"	2,550	S
P1106	24	26'-2	3,337	S
P1107	16	23'-9"	2,019	S
P1108	8	20'-7"	875	S
P1109	8	22'-10"	970	S
P1110	56	5'-11"	1,760	B
P1001	12	27'-3"	1,407	S
P1002	12	30'-0"	1,549	B
P1003	24	20'-7"	2,126	S
P1004	48	23'-10"	4,923	S
P1005	16	17'-8"	1,216	S
P1006	16	30'-0"	2,065	S
P1007	8	26'-0"	895	B
P1008	8	23'-3"	800	S
P1009	16	14'-9"	1,016	S
P1010	144	26'-2"	16,214	S
P1011	46	25'-5"	5,031	S
P1012	16	27'-4"	1,882	S
P1013	16	25'-1"	1,727	S
P1014	10	24'-2"	1,040	S
P1015	24	22'-4"	2,306	S
P1016	8	20'-7"	709	S

BENDING DIAGRAMS



MARK	No.	LENGTH	WEIGHT	SHP
P1017	16	15'-9"	1,084	S
P1018	280	5'-6"	6,627	B
P 901	16	21'-0"	1,142	S
P 902	16	16'-8"	907	S
P 801	16	8'-8"	370	B
P 802	16	23'-6"	1,004	S
P 803	8	22'-0"	470	S
P 804	8	18'-0"	384	S
P 805	68	5'-8"	1,029	S
P 701	284	5'-8"	3,289	S
P 601	428	8'-10"	5,678	B

PIER COLUMN SPIRALS

		CORE DIA.	PITCH	LENGTH	NO. TURNS	WEIGHT
Sp 401	16	32"	4½"	23'-0"±	64	6,735
Sp 402	9	32"	4½"	21'-0"±	59	1,162
Sp 403	9	32"	4½"	19'-0"±	54	1,062
Sp 404	1	32"	4½"	17'-0"±	48	315
Sp 405	1	32"	4½"	12'-0"±	35	229

SUPERSTRUCTURE

S701	287	38'-0"	22,292	S
S702	294	28'-5"	17,077	S
S703	299	20'-5"	12,478	S
S704	319	19'-9"	12,878	S
S705	315	27'-2"	17,492	S
S706	312	28'-0"	17,856	S
S707	1 Series	5'-10"	912	S
	of	to		
	21	36'-8"		
S708	1 Series	3'-8"	970	S
	of	to		
	23	37'-7"		
S709	1 Series	3'-2"	497	S
	of	to		
	16	27'-1½"		
S710	1 Series	3'-8"	556	S
	of	to		
	17	28'-4"		
S711	1 Series	3'-11"	261	S
	of	to		
	11	19'-4"		
S712	1 Series	6'-5"	232	S
	of	to		
	9	18'-10"		
S713	1 Series	6'-1"	259	S
	of	to		
	10	19'-2½"		
S714	1 Series	3'-8"	246	S
	of	to		
	11	18'-3"		
S715	1 Series	3'-0"	510	S
	of	to		
	17	26'-4"		
S716	1 Series	2'-6"	492	S
	of	to		
	17	25'-10"		
S717	1 Series	2'-9"	557	S
	of	to		
	18	27'-6½"		
S718	1 Series	6'-6"	512	S
	of	to		
	15	26'-11"		
S719	12	6'-0"	147	S
S601	288	35'-8"	15,429	S
S602	294	26'-0"	11,481	S
S603	611	24'-10"	22,790	S
S604	322	15'-10"	7,658	S
S605	308	33'-9"	15,613	S

MARK	No.	LENGTH	WEIGHT	SHP
S606	1 Series	5'-10"		
	of	to	615	S
	20	35'-1½"		
S607	1 Series	2'-11"	631	S
	of	to		
	22	35'-3½"		
S608	1 Series	3'-0"	311	S
	of	to		
	15	24'-7"		
S609	1 Series	3'-9"	328	S
	of	to		
	15	25'-4"		
S610	1 Series	9'-8"	288	S
	of	to		
	14	23'-8½"		
S611	1 Series	6'-6"	270	S
	of	to		
	12	23'-3½"		
S612	1 Series	6'-0"	288	S
	of	to		
	13	23'-6"		
S613	1 Series	2'-10"	331	S
	of	to		
	16	24'-8½"		
S614	2 Series	9'-8"	257	S
	of	to		
	9	15'-4"		
S615	1 Series	6'-6"	560	S
	of	to		
	19	32'-9"		
S616	1 Series	3'-11"	582	S
	of	to		
	21	29'-2"		
S617	14	6'-0"	126	S
S618	2016	29'-6"	89,327	S
S619	210	36'-0"	11,355	S

Vary by 1'-6½" Incr.

Vary by 1'-5½" Incr.

Vary by 1'-6½" Incr.

Vary by 1'-5½" Incr.

MARK	No.	LENGTH	WEIGHT	SHP
S-501	296	2'-11"	900	B
S 502	296	3'-11"	1,209	B
S 503	592	3'-7"	2,213	B
S 504	592	4'-8"	2,881	B
S 505	296	4'-0"	1,235	B
S 506	8	8'-3"	69	B
S 507	8	7'-9"	65	B
S 508	8	4'-0"	33	B
S 509	4	4'-8"	19	B
S 510	32	3'-4"	111	S
S 515	18	3'-0"	56	S
S 516	18	3'-6"	66	B
RAILING				
R501	88	17'-2"		S
R502	8	13'-7"		S
R503	336	1'-11"		B
R504	16	14'-2"		S
R505	8	14'-5"		S

Include with Item S-14 for payment

REPLACEMENT BARS				
RE1100	2	7'-6"		S
RE1000	3	7'-2"		S
RE900	1	6'-10"		S
RE800	1	6'-6"		S
RE700	5	6'-2"		S
RE600	10	5'-11"		S
RE500	1	5'-7"		S
RE400	1	5'-3"		B

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. 5-4.02 need not be furnished and replacement bars will not be required.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for spiral bars is an average distance from the top of the footing to the bottom of the pier cap. This length may be adjusted in the field to obtain the exact length required for each individual column. The "No. of Turns" shown is the "Length" divided by the "Pitch" plus 3 turns (total number of closed coils) expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 3-4. 1½ closed coils shall be provided at the ends of each spiral unit. Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four digits are used, indicate the bar size number. For example, A603 is a No. 6 size bar and A1102 is a No. 11 size.

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FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

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~~186~~

HARGETT, YANDA & BARBER
Consulting Engineers
4300 EUCLID AVE. CLEVELAND 3, OHIO

REINFORCING STEEL LIST AND NOTES
BRIDGE No. CUY-2-2533
LAKELAND FREEWAY OVER E. 185TH ST.

CUYAHOGA COUNTY STA. 256+84.23
SEC. CUY-2-24.33 TO STA. 259+08.69

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
G.H.G.	G.H.G.	G.H.G.				

MICROFILMED
SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329 (20)	

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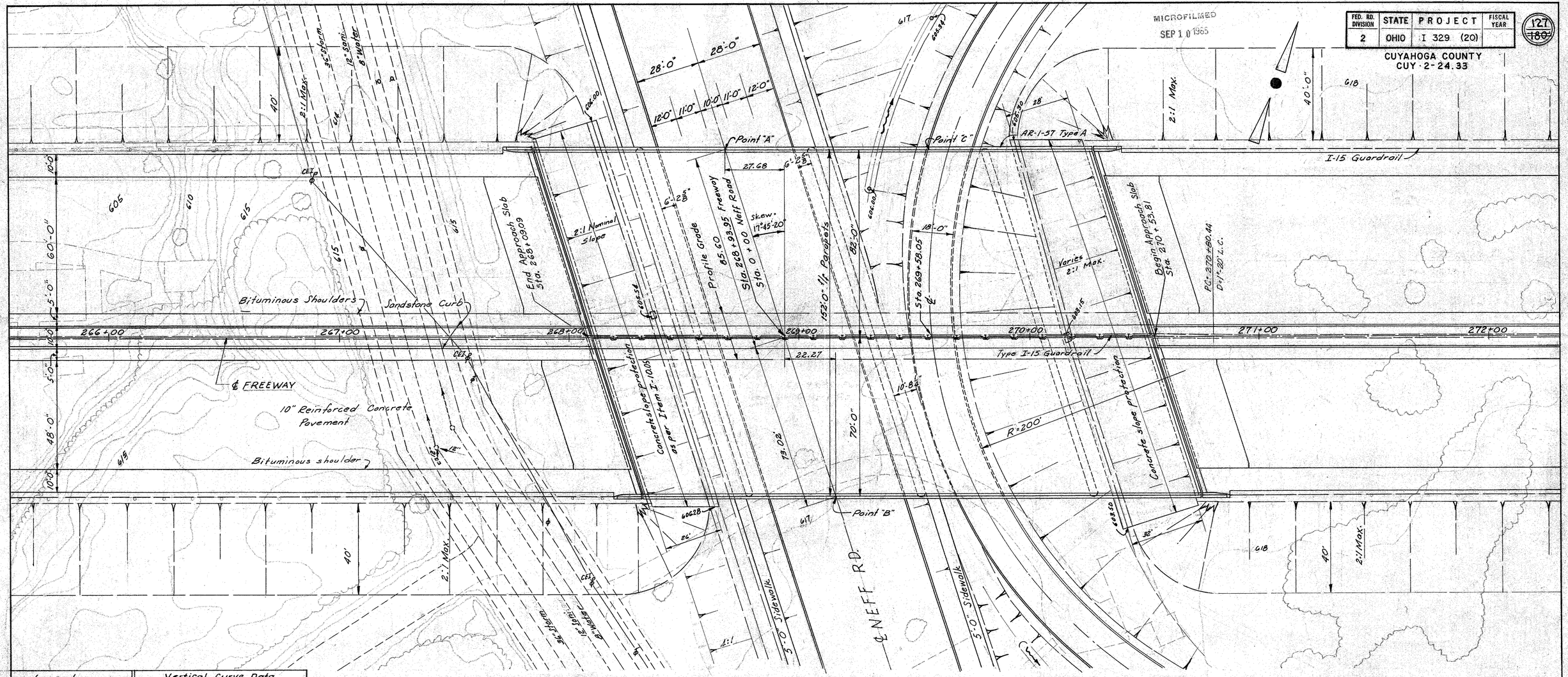
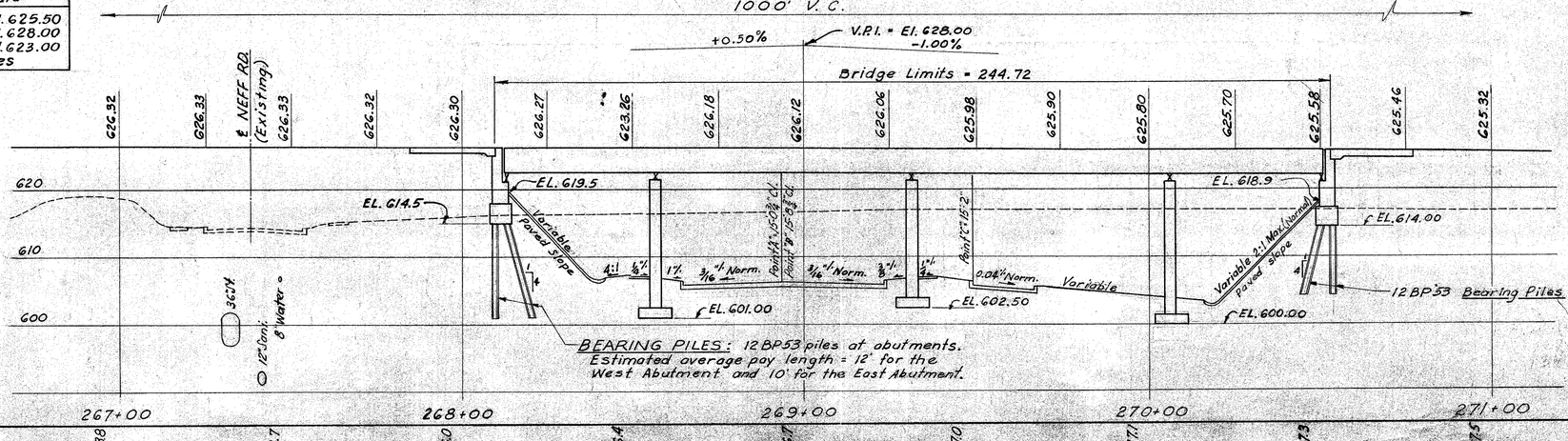
CUYAHOGA COUNTY
CUY-2-24.33





Legend

- Fire Hydrant
- General Pole
- Telephone Pole
- Exist. Manhole
- Exist. Catch Basin
- Meter
- Valve
- CEI Power line

Vertical Curve Data

V.P.C. Sta. 264+00	El. 625.50
V.P.I. Sta. 269+00	El. 628.00
V.P.T. Sta. 274+00	El. 623.00
+.50% ℄ -1.00%	Grades

FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus, or in the Division office, but the state assumes no responsibility for the accuracy thereof.

BEARING PILES: 12 BP 53 piles at abutments. Estimated average pay length = 12' for the West Abutment and 10' for the East Abutment.

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK, PIERS AND ABUTMENTS
SPANS: 45'-0" 75'-0" 75'-0" 45'-0" % BEARING
ROADWAY: 152'-0" F/F PARAPETS

LOADING: CF-2000-57 (ADEQUATE FOR AASHO ALTERNATE LOADING)
SKEW: 17° 45' 20" R.F.
WEARING SURFACE: 1" MONOLITHIC CONCRETE
APPROACH SLAB: AS-1-54 (25'-0" LONG)
ALIGNMENT: TANGENT
SUPERELEVATION: 0.0156 FT. PER FT.

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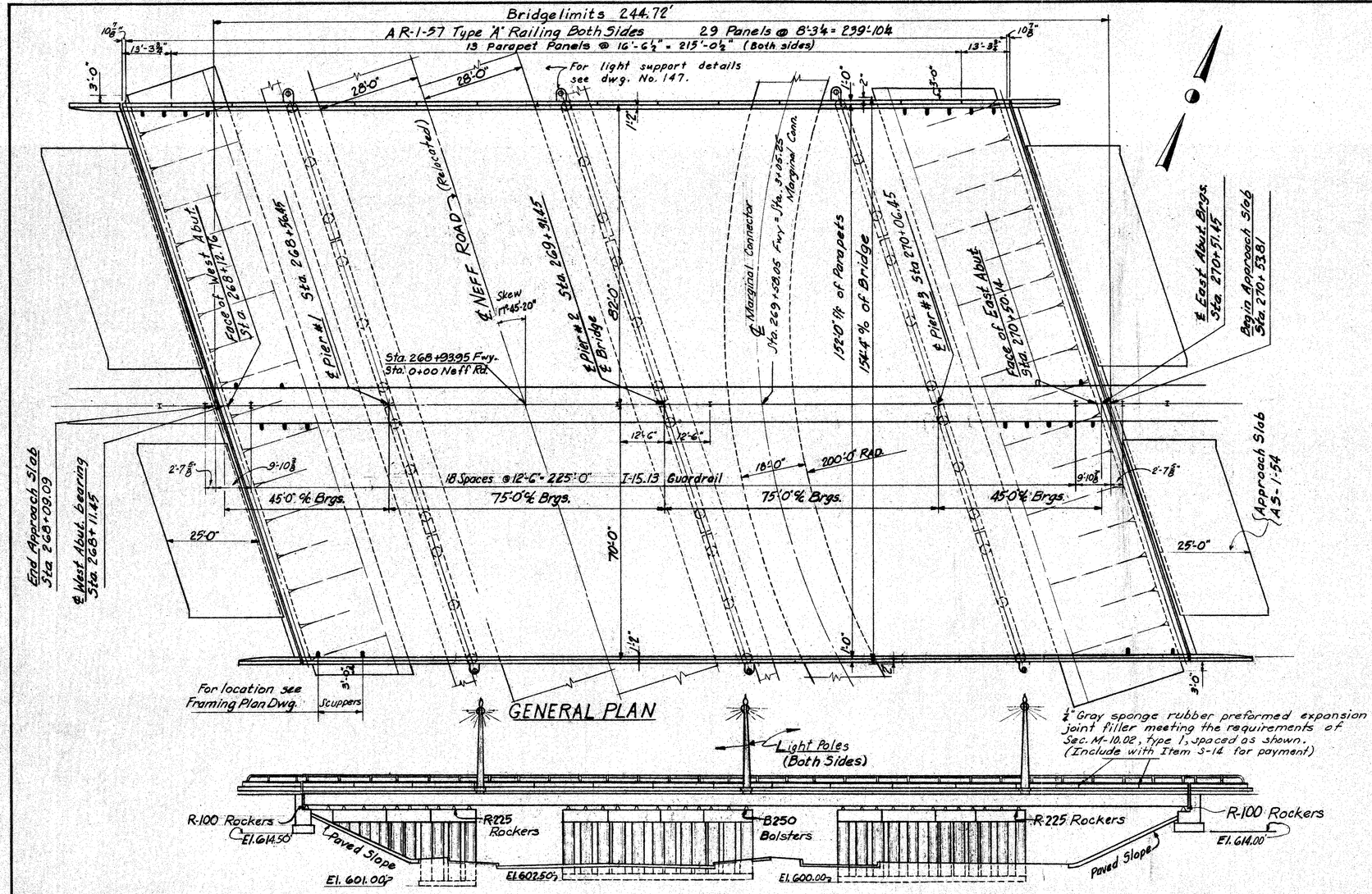
4500 EUCLID AVE. CLEVELAND 3, OHIO

SITE PLAN
BRIDGE NO. CUY-2-2554

LAKELAND FREEWAY OVER NEFF ROAD
STATION 268+09.09 TO STATION 270+53.81
SR-2 & USR 20 SEC. CUY-2-24.33
SCALE 1" = 20'-0" I-329 (20) CUYAHOGA COUNTY

TOPOGRAPHY		PROPOSED WORK				
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
ABOUT SURVEY RECORDS	T.L.P.	G.H.G.	J.W.P.	J.C. G.H.G.		

SITE PLAN NEFF ROAD



ELEVATION

MICROFILMED
SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329 (20)	

128 ~~180~~

CUYAHOGA COUNTY
CUY - 2 - 24.33

GENERAL NOTES

REFERENCE shall be made to Standard Drawings RB-1-55 revised Feb. 2, 1959 and to AR-1-57 revised Feb. 2, 1959. and Supplemental Specification S-101 dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the "State of Ohio, Department of Highways" dated Sept. 1, 1957 together with revisions dated Feb. 21, 1958.

EXCAVATION AND BACKFILL: Excavation quantity includes the removal of fill material between the surface of proposed embankment and the bottom of footings. Backfill behind the abutments shall be made with material meeting the requirements of Sec. I-22 and shall be compacted in accordance with the requirements for embankment compaction. The payment for this I-22 backfill shall be considered as included in the payment for E-2, Unclassified Excavation.

PILES shall be driven with a hammer of not less than 11,200 foot pounds per blow to firm contact with shale. If the length of penetration is approximately equal to the depth of shale according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:
For the abutment piles -
46 tons per pile using a 11,000 ft-lb hammer
41 tons per pile using a 15,000 ft-lb or greater hammer.
If the energy rating of the hammer is between the ratings as shown above, the capacity shall be determined by interpolation. The design load is 29 tons per pile for the abutment piles.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 8 tons per sq. ft.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

WELDING of structural steel shall be class "A" except as otherwise shown. Welds shown as field welds may at the option of the Contractor, be made in the shop. Class "B" welds shown thus B.

DETAILS: For details of end crossframes, end dam, aluminum railing, posts, beam cutoff at backwall, centerline expansion jt. & guardrail details and welded butt joint in superstructure end dam at crown see Dwgs. No. 145, 146 & 147.

ELECTRICAL GROUNDS: A solid No. 0 gage bare copper wire electrical ground shall be embedded in the outside column on each side of the structure at pier No. 2. The lower ends of the wires shall terminate in a 25" length coiled under the footing and separated from the concrete by two layers of tar paper, and the upper ends shall extend sufficiently above the top of the concrete to provide for a suitable splice and extension for connection to the superstructure. The connection to the superstructure shall be No. 6 gage, bare stranded, tinned copper wire brazed or bolted to a beam flange and to the solid copper wire in the pier shaft. At the base of the lamp standards there shall be a tinned, No. 6 gage, copper wire brazed to one anchor bolt and the other end brazed or bolted to the outside beam flange.
Payment for electrical grounds is included in the lump sum bid for Item S-25, "Electrical Lighting System."

ELECTRICAL ITEMS shown in the Estimated Quantities include only those items which are mounted on the structure or are a part thereof. For additional listing and details, see Electrical Dwgs. No. 111 thru 116.

ELECTRICAL LIGHTING SYSTEM, Item S-25, includes the lamp standards with mast arms, junction boxes and electrical grounds.

PAINTING: See Proposal regarding painting.

STEEL: See Proposal regarding A-373 Steel.

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super	Piers	Abut	Genl.	As Built
E-2	593	C.Y.	Unclassified Excavation		26	567		+53 / 646
E-2	114	C.Y.	Shale Excavation		114			
S-1	1128	C.Y.	Class "C" Concrete, Superstructure	1128				
S-1	323	C.Y.	Class "C" Concrete, Pier caps & columns		323			
S-1	300	C.Y.	Class "E" Concrete, Abuts. above footings			300		
S-1	310	C.Y.	Class "E" Concrete, Footings		50	260		
S-3	49	L.F.	Waterproofing, Preformed Sealing strip, 12"x½"			49		
S-4	490,840	Lbs.	Reinforcing steel	357,849	110,719	32,974		
S-7	1073300	Lbs.	Structural steel	1073300				
S-8	1073300	Lbs.	Field painting of structural steel	1073300				
S-9	49	SF.	1" Preformed exp. jt. filler, Type 1.			49		
S-9	242	L.F.	Structural expansion or contraction joint	242				

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super	Piers	Abut.	Genl.	As Built
S-14	540	L.F.	Railing (Aluminum rail & supports, Concr. parapet)	540				
S-14	244.72	L.F.	Guardrail, Type I-15.13 (Galv. steel post, base #s & bolts.) Double rail.	244.72				
S-16	Lump	Sum	First test pile				Lump	
S-18	1450	L.F.	Steel piles, 12BP53			1450		+37 / 1487
S-25	Lump	Sum	Electrical lighting system				Lump	
S-25	490	L.F.	2" Galvanized conduit including Fittings & supports				490	-27 / 463
S-25	22	L.F.	1½" " " " " "				22	
S-25	60	L.F.	1¼" " " " " "				60	
S-25	180	L.F.	1" " " " " "				140	-69 / 77
S-25	500	L.F.	¾" " " " " "				500	-66 / 434
S-29	170	C.Y.	Porous Backfill			170		-18 / 160
T-10	1224	S.Y.	Concrete slope protection, 6" conc. slab				1224	

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GENERAL PLAN, ELEVATION, NOTES AND ESTIMATED QUANTITIES
BRIDGE Nº CUY-2-2554
LAKELAND FREEWAY OVER NEFF ROAD

CUYAHOGA COUNTY STA. 268+09.09
SEC. CUY-2-24.33 TO STA. 270+53.81

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
G.H.G	D.P.	J.W.P.	W.A.C.			

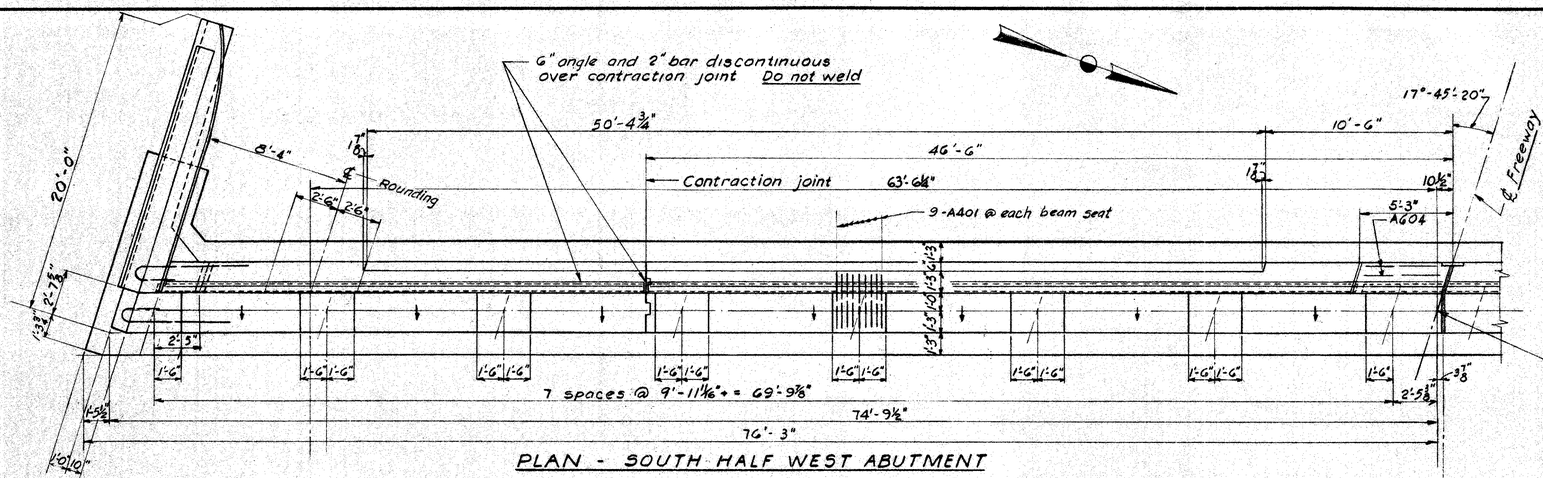
Revised for bid CAM 2-25-64

MICROFILMED
SEP 10 1985

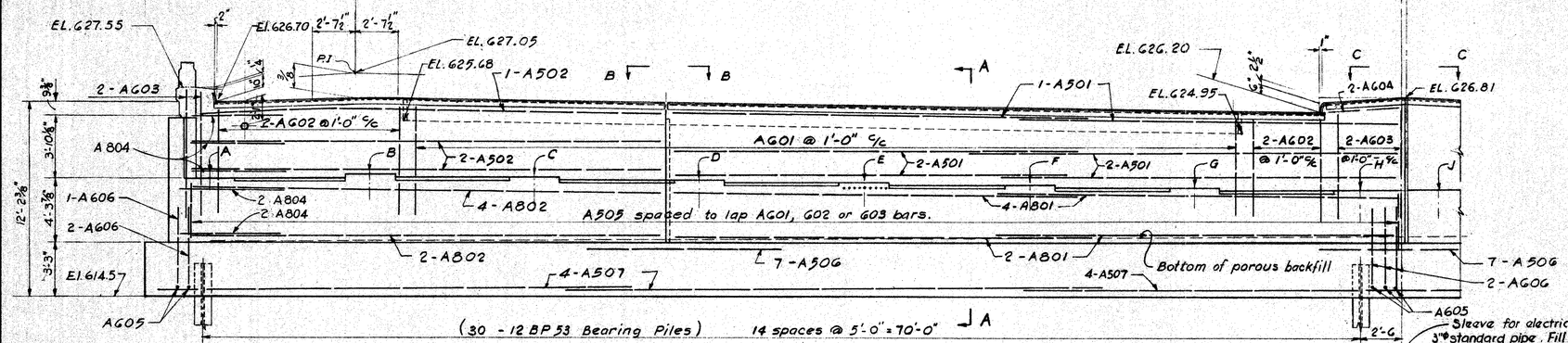
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329 (20)	

129
~~150~~

CUYAHOGA COUNTY
CUY 2-24.33

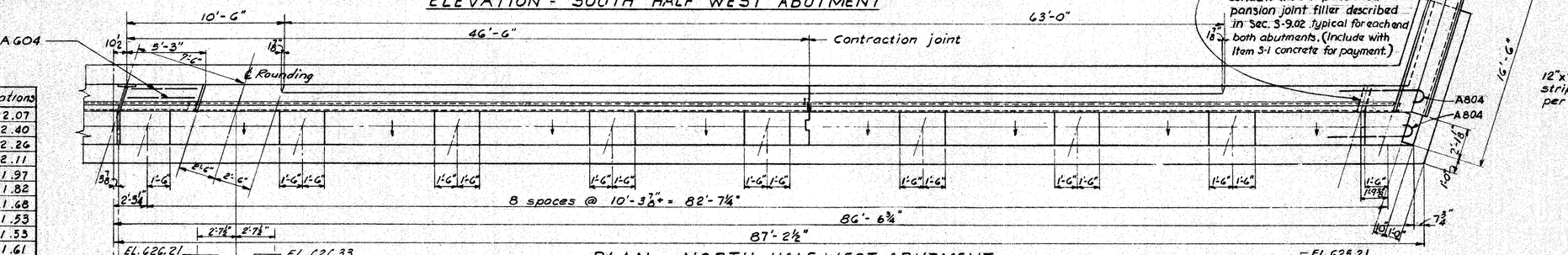


PLAN - SOUTH HALF WEST ABUTMENT

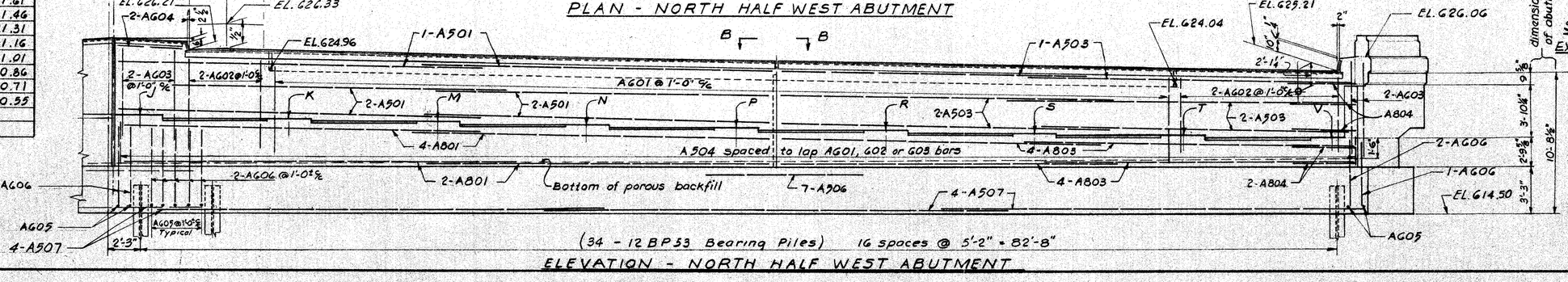


ELEVATION - SOUTH HALF WEST ABUTMENT

Seat Elevations	
A	622.07
B	622.40
C	622.26
D	622.11
E	621.97
F	621.82
G	621.68
H	621.53
J	621.53
K	621.61
M	621.46
N	621.31
P	621.16
R	621.01
S	620.86
T	620.71
V	620.55

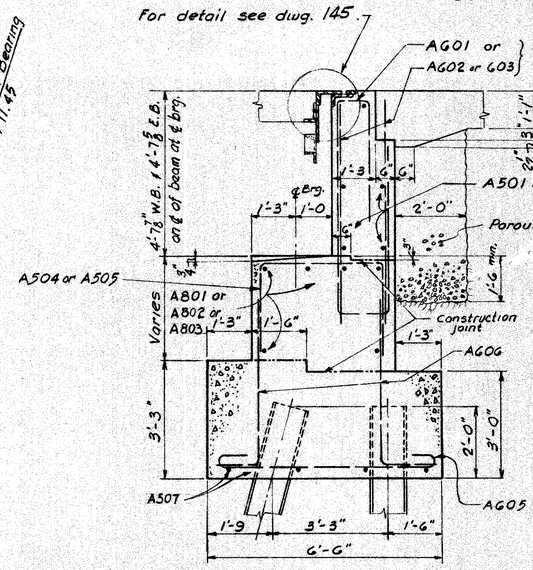


PLAN - NORTH HALF WEST ABUTMENT

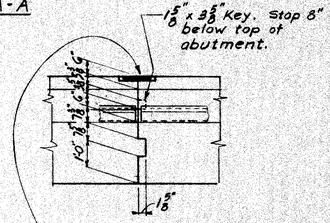


ELEVATION - NORTH HALF WEST ABUTMENT

For detail see dwg. 145



SECTION A-A



SECTION B-B
CONTRACTION JOINT

SECTION C-C
EXPANSION JOINT

FOR ABUTMENT DETAIL NOTES SEE DWG. 130

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Consulting Engineers
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WEST ABUTMENT PLAN & ELEVATION
BRIDGE N° CUY-2-2554
LAKELAND FREEWAY OVER NEFF ROAD

CUYAHOGA COUNTY STA. 268+09.09
SEC. CUY-2-24.83 TO STA. 270+53.81

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
G.H.G.	J.W.P.	J.W.P.	JJC			

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	1329(20)	

130
~~186~~

CUYAHOGA COUNTY
CUY 2-24.33

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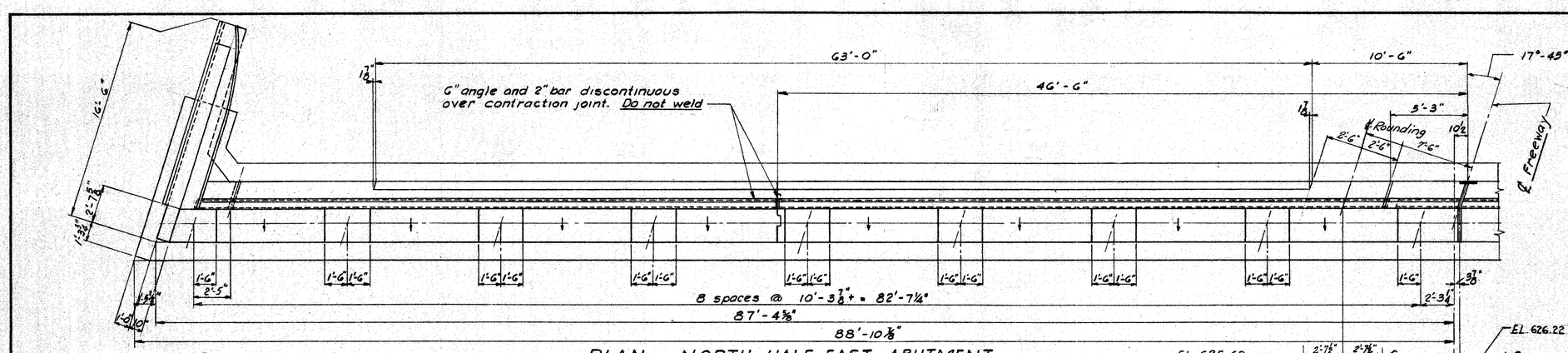
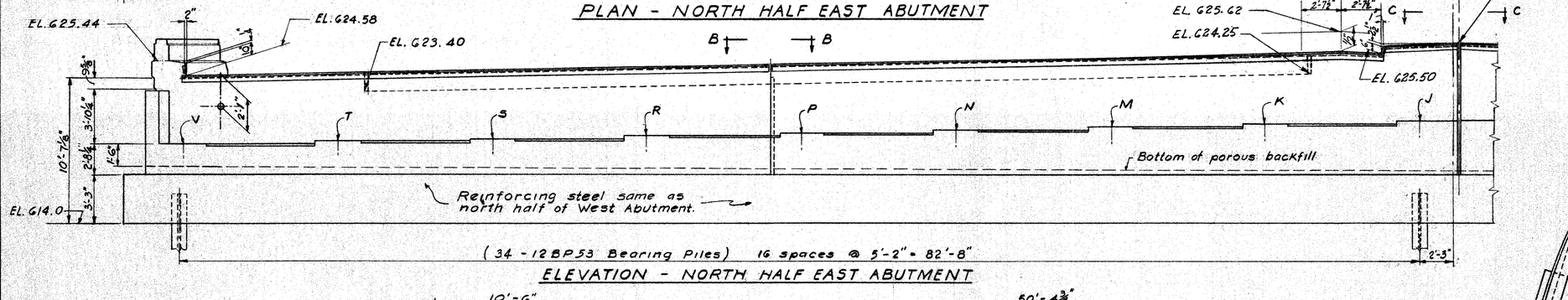
SEP 10 1985

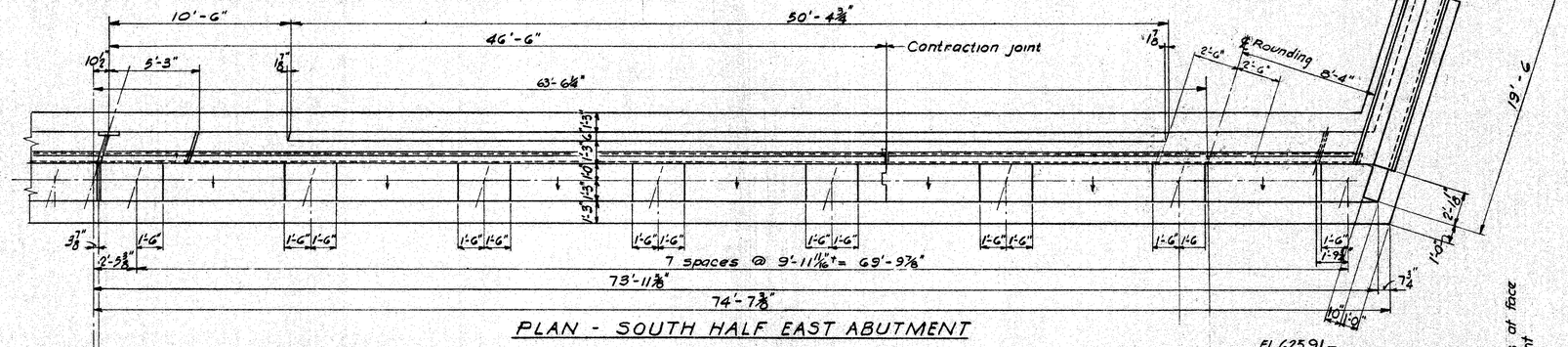


PLAN - NORTH HALF EAST ABUTMENT

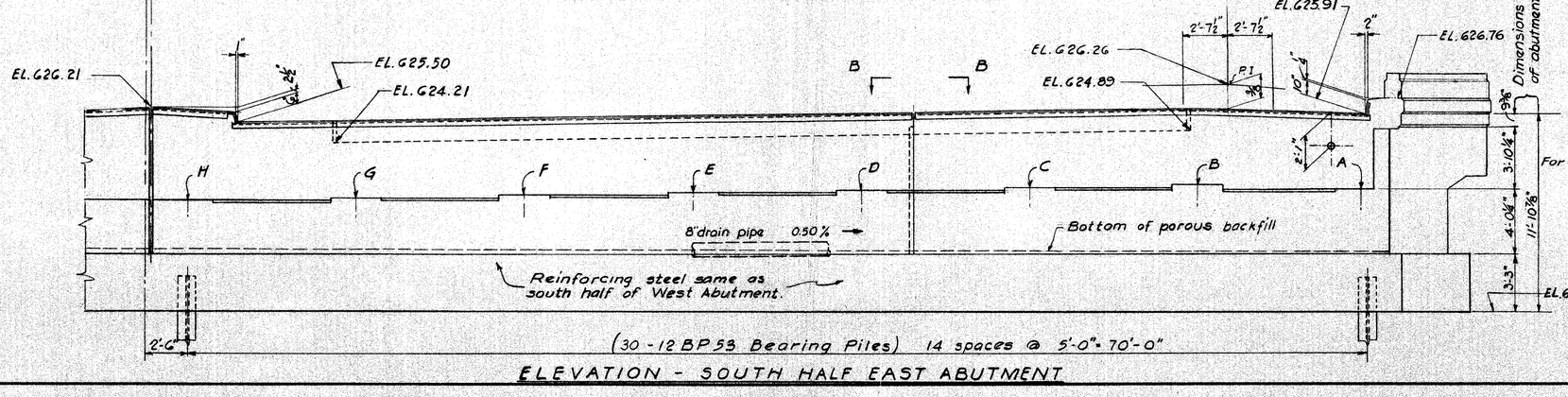


ELEVATION - NORTH HALF EAST ABUTMENT

Seat	Elevations
A	621.27
B	621.62
C	621.48
D	621.35
E	621.22
F	621.09
G	620.95
H	620.82
J	620.82
K	620.91
M	620.77
N	620.63
P	620.49
R	620.35
S	620.21
T	620.07
V	619.93



PLAN - SOUTH HALF EAST ABUTMENT



ELEVATION - SOUTH HALF EAST ABUTMENT

ABUTMENT NOTES

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope after which excavation shall be made for the abutments and end walls and piles driven.

CONCRETE: Concrete in abutments, end walls, and footings shall be Class "E"

REINFORCING STEEL: Reinforcing steel shall be 2" clear from exposed face of concrete in abutments and 3" clear from exposed face of concrete in footings.

BACKWALL: The backwall shall be poured after all structural steel and pipe sleeves are in place.

POROUS BACKFILL: 2 ft thick, full length of abutment and end walls shall extend upward to the bottom of the approach slab and paved shoulders. Excavation therefor in excess of that required for construction of the abutment and end walls shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

For abutment details see dwgs. 129 & 131

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

EAST ABUTMENT PLAN & ELEVATION
BRIDGE Nº CUY-2-2554
LAKELAND FREEWAY OVER NEFF ROAD

CUYAHOGA COUNTY STA. 268+09.09
SEC. CUY-2-24.33 To STA. 270+53.81

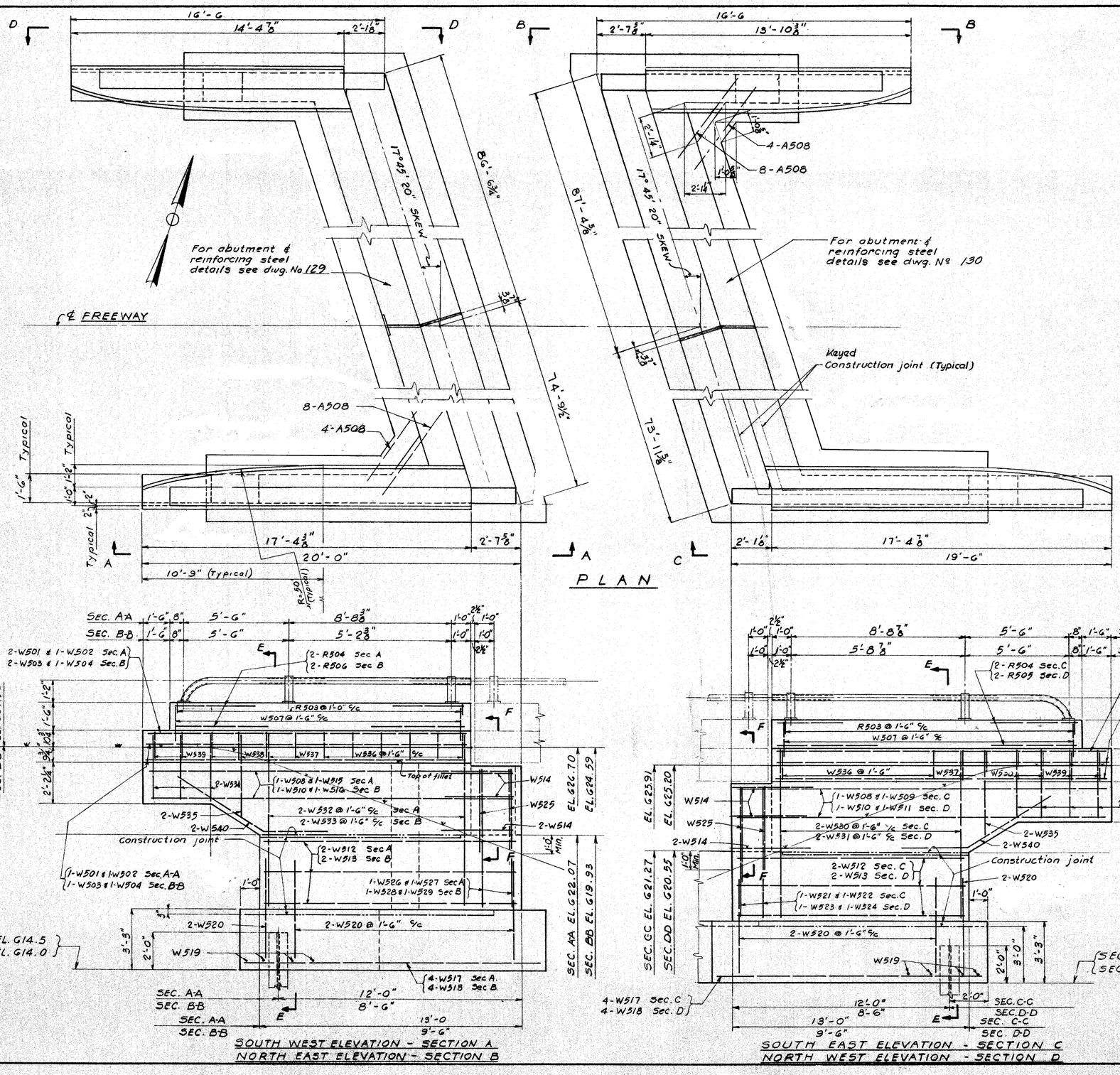
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
G.H.G.	J.W.P.	J.W.P.				

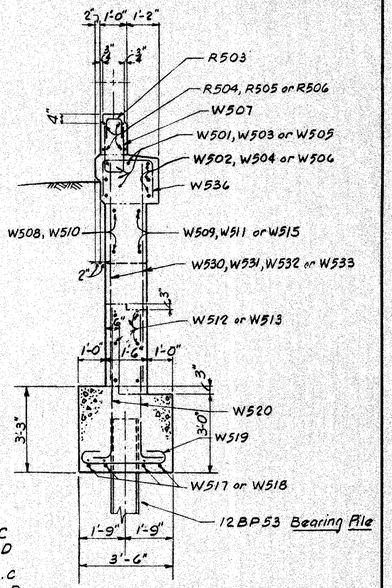
MICROFILMED
SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

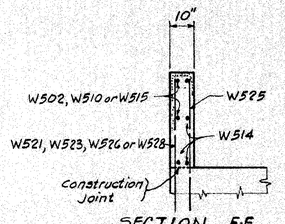
131
~~166~~

CUYAHOGA COUNTY
CUY-2-24.33





SECTION E-E



SECTION F-F

FOR ABUTMENTS SEE DWG'S 129 & 130

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

ABUTMENT DETAILS
BRIDGE N° CUY-2-2554
LAKELAND FREEWAY OVER NEFF ROAD

CUYAHOGA COUNTY STA. 268+09.09
SEC. CUY-2-24.33 TO STA. 270+28.81

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
G.H.G.	J.W.P.	J.W.P.				

MICROFILMED
SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

132
~~160~~

Surface mounted luminaires on pier #1 (as shown), on pier #2 (opp. hand) For location and arrangement see electrical drawings. (Not a part of this contract)

SECTION D-D

WESTBOUND

EASTBOUND

17°-45'-20" ℄ Freeway

86'-7½"

73'-9⅛"

16'-0" 16'-0" 12'-1½" 18'-0" 18'-0" 5'-0" 5'-6" 13'-6" 13'-6" 9'-9½" 15'-0" 15'-0"

5'-9" 6" 5'-10⅝" 4'-9½" 2'-6"

℄ Bearings

3" 3"

Sta. Z

6'-8" 10'-4" 10'-4" 11'-11" 8'-5⅛" 10'-4" 10'-4" 10'-4" 7'-2" 7'-2" 10'-0" 10'-0" 9'-10⅝" 9'-6" 10'-0" 10'-0" 6'-6"

2'-3⅞" 2'-5⅝"

8 Spaces @ 10'-3⅞" + = 82'-7¼"

7 Spaces @ 9'-11⅞" + = 69'-9⅞"

PLAN PIERS No. 1, 2, & 3

39'-3" 6" 46'-7½" 6" 37'-0⅛" 6" 36'-0"

Stirrup Spacing P601 Bars

1@6" 1'-9" 3@24"=6'-0" 7@11"=6'-5" 1'-10" 1'-9" 6@11"=5'-6" 12" 3@24"=6'-0" 1'-9" 1'-7" 2@28"=4'-8" | 8@6"=4'-0" 1'-8" 2'-0" 7@24"=14'-0" | 2'-0" 2'-0" 7@24"=14'-0" | 2'-0" 1'-8" 5@7" 2'-11" | 8@5"=3'-4" 1'-9" 1'-9" 5@24"=10'-0" | 1'-9" 1'-9" 8@9"=6'-0" 20@18"=4'-0" 1'-9" 1'-7" 2@18"=3'-0" | 2@15" 1'-10" 1'-9" 2@24"=4'-0" 9@10"=7'-6" 1'-9" 1'-9" 3@10"=7'-6" 2@28"=4'-8" 1'-9"

P804 V A B T G-P1003 G-P1001 S G-P1002 R P N G-P1004 4-P1004 M K G-P1002 4-P1002 J H G G-P1003 F G-P1006 E D C G-P1007 G-P1009 B G-P1008 A P804

B C

Constr. jts. at top & bottom of all columns. ½" metal conduit to junction boxes at Pier #1 only. See dwg. 113

G-P901 2-P801 6-P902 6-P1005 2-P802 6-P1005 4-P903 G-P903 2-P803 6-P903 4-P903 6-P903 4-P903 2-P803 6-P903 4-P903 6-P903 4-P903

A

EL. 616.59 Pier #1
EL. 616.21 Pier #3

EL. 617.19 Pier #1
EL. 616.77 Pier #3

EL. 617.55 Pier #1
EL. 617.10 Pier #3

EL. 618.07 Pier #1
EL. 617.58 Pier #3

16-P1010 Pier #1
16-P1011 Pier #3

16-P1102 Pier #1
16-P1106 Pier #3
Sp 401 Pier #1
Sp 405 Pier #3

16-P1010 Pier #1
16-P1011 Pier #3
Sp 401 Pier #1
Sp 405 Pier #3

{10-P1011 Pier #1
10-P1012 Pier #3
Sp 401 Pier #1
Sp 405 Pier #3

{10-P1012 Pier #1
10-P1013 Pier #3
Sp 402 Pier #1
Sp 406 Pier #3

16-P1013 Pier #1
16-P1018 Pier #3

16-P1013 Pier #1
16 P1018 Pier #3
16-P1103 Pier #1
16-P1107 Pier #3
Sp 402 Pier #1
Sp 406 Pier #3

EL. 601.00 Pier #1
EL. 600.00 Pier #3

ELEVATION - PIERS No. 1 & 3

39'-3" 6" 46'-7½" 6" 37'-0⅛" 6" 36'-0"

Stirrup spacing P601 bars

1'-6" 1'-9" 3@24"=6'-0" 1'-3" 9@7"=5'-3" 1'-9" 1'-9" 10@6"=5'-0" 1'-6" 3@24"=6'-0" 1'-9" 1'-7" 2@28" -4'-0" | 9@5" 1'-11" 2'-0" 7@24"=14'-0" | 2'-0" 2'-0" 7@24"=14'-0" | 2'-0" 1'-8" 7@6" -3'-11" | 8@5" 1'-9" 1'-9" 5@24"=10'-0" | 1'-9" 1'-9" 10@6" 12" 2@24" -4'-0" 1'-9" 1'-7" 2@18" -3'-0" | 2@15" 1'-9" 1'-9" 2@24" -4'-0" 15@6"=7'-6" 1'-9" 1'-9" 15@6"=7'-6" 2@24" 1'-9" 1'-6"

-3'-9" -3'-4" -8'-6" -4'-0"

P804 V A T G-P1001 G-P1003 S G-P1002 R P D G-P904 N M K G-P905 J H G G-P1003 F G-P1006 E D C G-P1007 B G-P1008 G-P1009 A P804

Junction boxes both sides of north end of Pier #2.

B B C A C D D

G-P801 EL. 616.38 2-P801 G-P801 G-P1101 EL. 616.96 2-P802 2-P802 G-P1101 G-P903 4-P903 EL. 617.31 2P803 2-P803 G-P903 4-P903 6-P903 4-P903 EL. 617.80 2-P803 2-P803 6-P903 4-P903

16-P1014 16-P1104 16-P1014 10-P1015 10-P1015 10-P1015 10-P1016 10-P1016 10-P1016 16-P1017 16-P1105 16-P1017

Sp 403 Sp 403 Sp 403 Sp 404 Sp 404 Sp 404

El. 602.50

ELEVATION - PIER No. 2

1" ℄ Conduit between piers 1 & 2

3'-0"

P801, P802 or P803

P1001 & P1009 bent down to match column bars where possible

Top and bottom steel spaced as shown See Elevation for size required

Typical bar arrangements: 10 bars 16 bars

3'-4" Min. 2'-0" Sidewalk side 1'-0" Roadway side

P601

¾" ℄ Conduit
1½" ℄ Conduit

P804

3'-0"

SECTION A-A

SECTION B-B

SECTION C-C

NOTES

REINFORCING STEEL shall be 2" clear from face of concrete unless otherwise noted.

REINFORCING STEEL shall be placed at Pier No. 2 to clear bolster anchor bolts.

CONCRETE shall be Class "C" in pier caps and columns and Class "E" in the footings.

FOOTING DETAILS and notes, see Dwg. No. 133

BEAM SEAT ELEVATIONS

STA. Z	PIER #1	PIER #2	PIER #3
	268+56.45	269+31.45	270+06.45
A	621.40	621.13	620.91
B	621.74	621.47	621.25
C	621.59	621.34	621.11
D	621.45	621.20	620.98
E	621.31	621.06	620.84
F	621.17	620.92	620.71
G	621.03	620.78	620.57
H	620.88	620.64	620.43
J	620.88	620.64	620.43
K	620.96	620.72	620.52
M	620.81	620.58	620.38
N	620.66	620.43	620.24
P	620.52	620.29	620.10
R	620.37	620.14	619.96
S	620.22	620.00	619.82
T	620.07	619.85	619.68
V	619.92	619.71	619.54

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Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

PIER DETAILS
BRIDGE Nº CUY-2-2554
LAKELAND FREEWAY OVER NEFF RD.

CUYAHOGA COUNTY STA. 268+09.09
SEC. CUY-2-24.33 to STA. 270+53.81

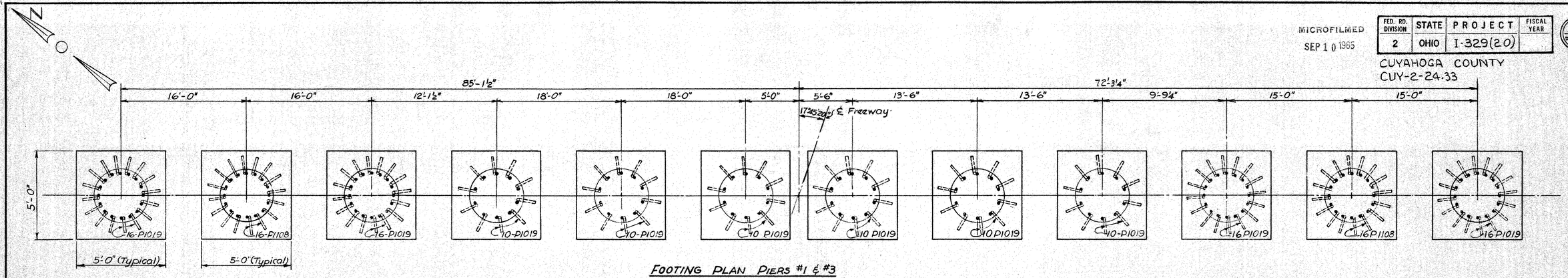
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
R.L.S.	W.E.	JJC	A.J.C. 11/73			

MICROFILMED
SEP 10 1965

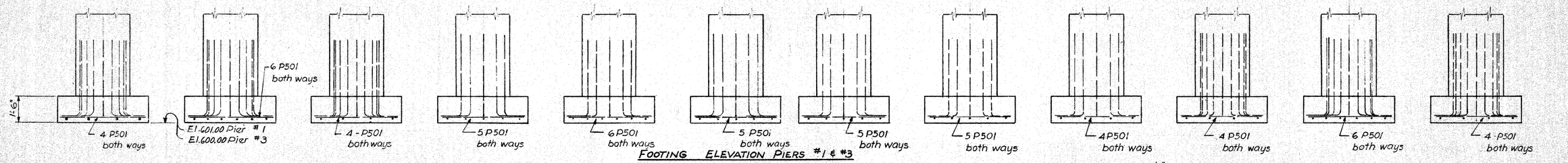
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

CUYAHOGA COUNTY
CUY-2-24.33

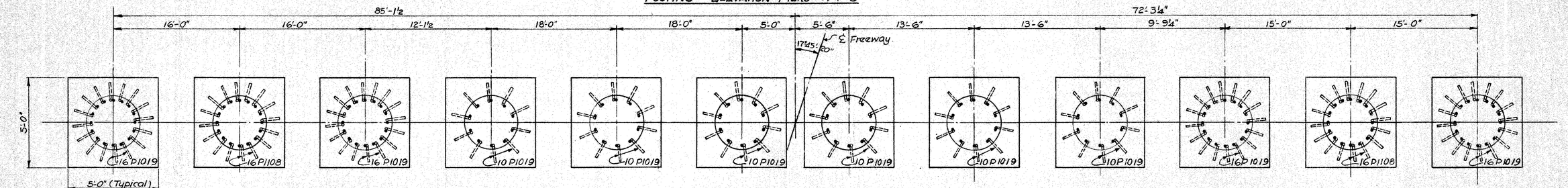
133
~~160~~



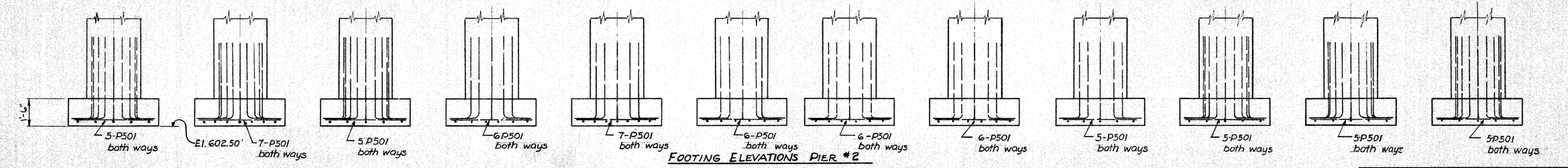
FOOTING PLAN PIERS #1 & #3



FOOTING ELEVATION PIERS #1 & #3



FOOTING PLAN PIER #2



FOOTING ELEVATIONS PIER #2

Notes:
CONCRETE shall be class "E" in pier footings
REINFORCING STEEL shall be 3" clear from face of concrete
FOOTING DOWELS to match vertical column steel. See drwg. for layout & detail.
PIER FOOTINGS shall extend a minimum of 3" into solid shale or to the elevations shown whichever is lower.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

PIER FOOTING DETAILS
BRIDGE Nº CUY-2-2554
LAKELAND FREEWAY OVER NEFF RD.

CUYAHOGA COUNTY STA. 268+09.09
SEC. CUY-2-24.33 To STA. 270+53.81

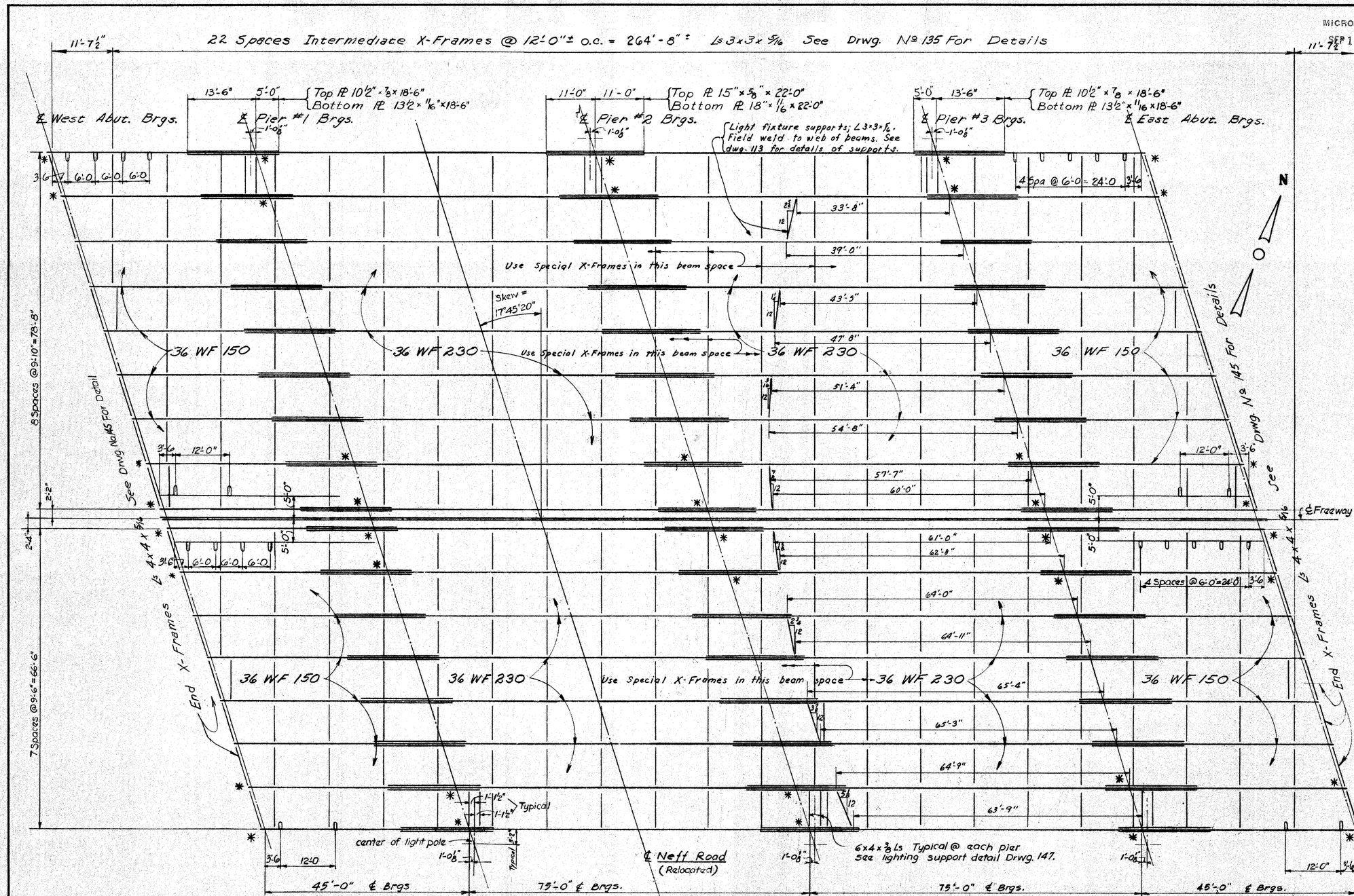
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
G.H.G.	W.FELFORD	J.M.P.	GHG			

MICROFILMED
SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

134
~~180~~

CUYAHOGA COUNTY
CUY-2-24.33



CAMBERING of beams is required in accordance with the table shown below.

FRAMING PLAN

Spans 45'-0", 75'-0", 75'-0" and 45'-0" c/c bearings.

DEFLECTION AND CAMBER				
LOCATIONS	OUTSIDE BEAMS		INSIDE BEAMS	
	End span	Int. spans	End span	Int. spans
Deflection due to weight of steel	0	⅛"	0	⅛
Deflection due to remaining dead load	1/16"	⅜"	1/16"	½"
Convexity required for vertical curve	1/16"	⅛"	1/16"	⅛"
Sum of deflection & convexity	⅛"	⅝"	⅛"	¾"
Required camber	0	0	0	1"

Where no camber required, place beams with convex side up

* "KEEPER" PLATES shall be removed from rocker and bolster cap at the abutment and pier locations shown thus * on the framing plan to provide for lateral expansion of the bridge deck.

NOTES:

SCUPPERS shall be spaced as shown. Crossframes shall be spaced as shown except as required to meet clearance requirements. Crossframes must clear scuppers by at least 6". For scupper details see drawing No 145.

BEAM SPLICE: For beam splice details and welding procedure see drawing No 135

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

FRAMING PLAN
BRIDGE No CUY-2-2554
LAKELAND FREEWAY
OVER NEFF ROAD

CUYAHOGA COUNTY STA. 268+09.09
SEC. CUY-2-24.33 To STA. 270+53.81

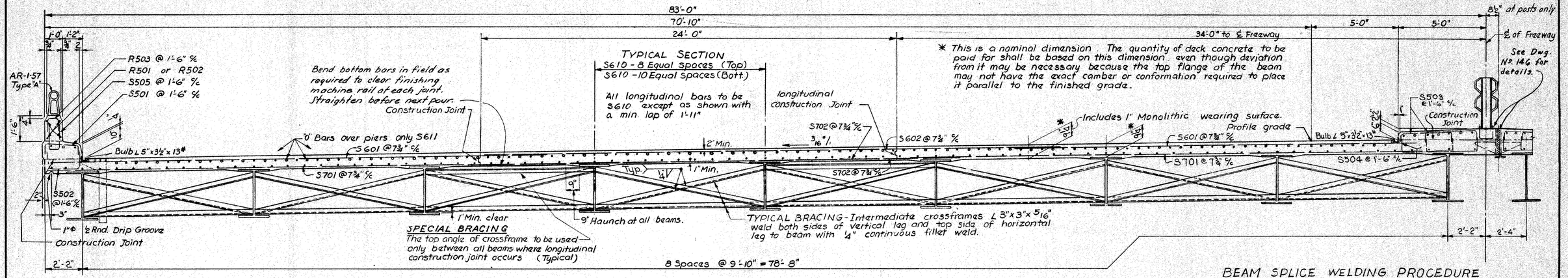
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
G.H.G.	K.J.W.	J.W.P.	JJC			

MICROFILMED
SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329(20)	

135
~~180~~

CUYAHOGA COUNTY
CUY-2-24.33

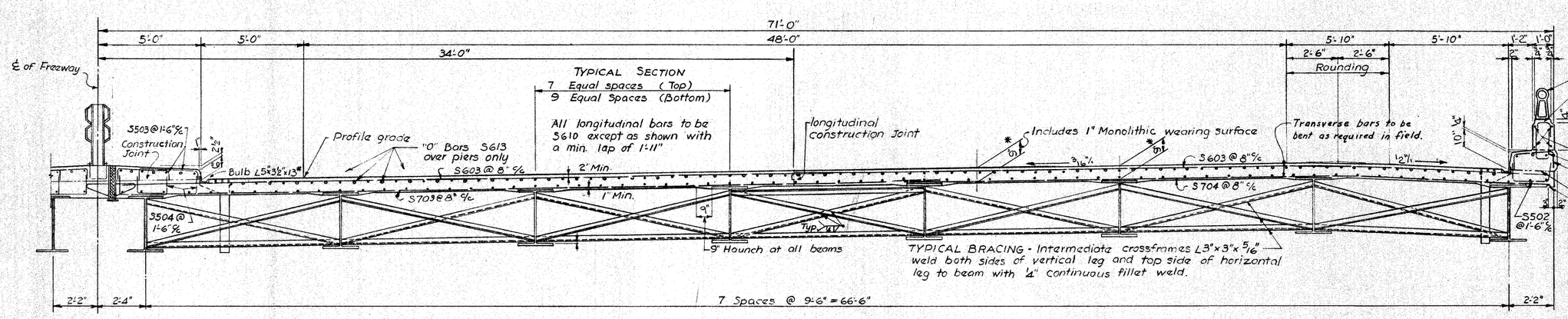


TRANSVERSE SECTION WEST BOUND STRUCTURE

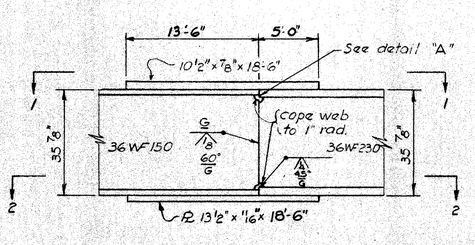
MACHINE FINISHING of bridge decks will be required in accordance with the Special Provisions of this contract except that longitudinal joints, as shown on the plans, will be permitted. When the finishing machine is supported on the concrete the wheel of the machine shall be placed directly over the beam adjacent to the joint.

BEAM SPLICE WELDING PROCEDURE

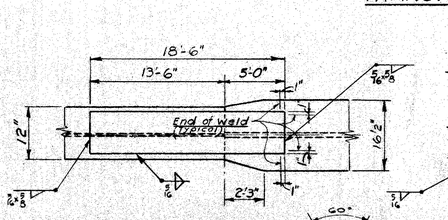
1. Raise end of beam at pier #2, 1½"
2. Butt weld beam flanges and web at first pier using the following sequence: make two passes on each flange then two on the web, repeat using one pass at each location, until welds are completed.
3. Weld top and bottom flange moment plates at pier #1
4. Lower end of beam at pier #2.
5. Make splice at piers #2 and #3 in the same manner raising the ends of the beams 2" at pier #3 and 0" at the abutment.



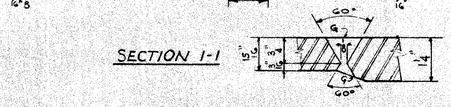
TRANSVERSE SECTION EAST BOUND STRUCTURE



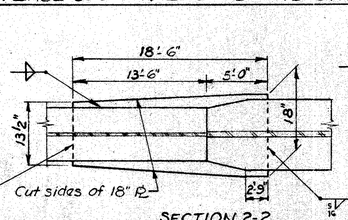
BEAM SPLICE PIER #1 AND #3



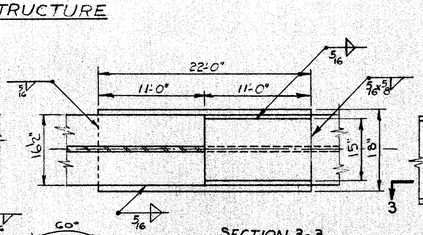
SECTION 1-1



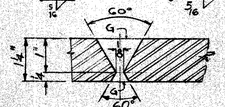
DETAIL "A"



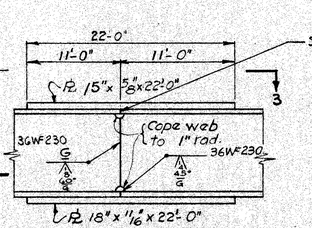
SECTION 2-2



SECTION 3-3



DETAIL "B"



BEAM SPLICE PIER #2

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

TRANSVERSE SECTION AND BEAM SPLICE DETAILS
BRIDGE № CUY-2-2554
LAKELAND FREEWAY OVER NEFF RD.

CUYAHOGA COUNTY STA. 268+09.09
SEC. CUY-2-24.33 TO STA. 270+53.81

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
G.H.G.	W.E. ELFORD	J.W.P.				

MICROFILMED
SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	1 329 (20)	

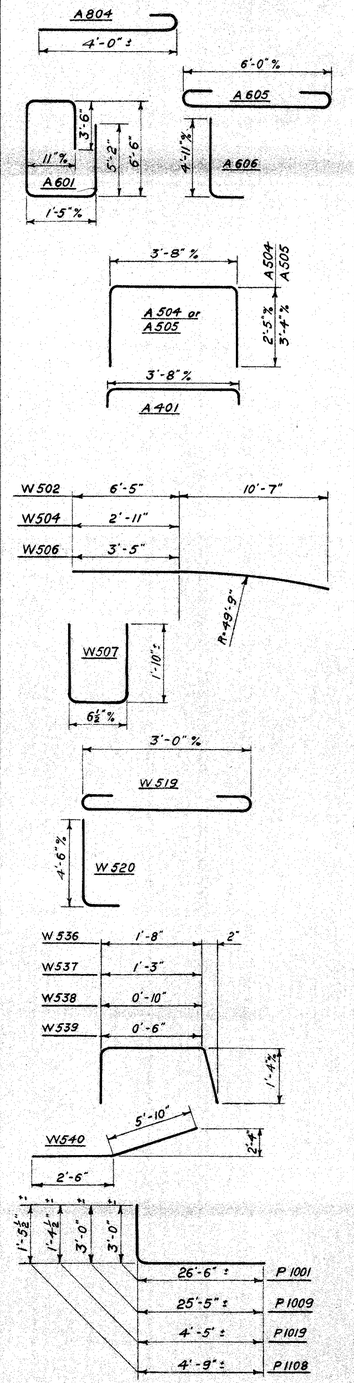
136
160

CUYAHOGA COUNTY
CUY - 2 - 24.33

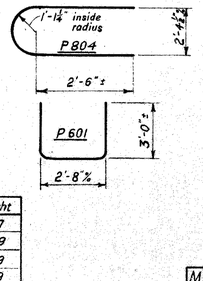
REINFORCING STEEL LIST

MARK	No.	LENGTH	WEIGHT	SH'P.
ABUTMENTS				
A801	48	24'-7"	3150	S
A802	12	27'-0"	865	S
A803	24	21'-8"	1389	S
A804	28	5'-1"	380	B
A601	228	15'-10"	5764	B
A602	140	6'-6"	1367	S
A603	56	7'-0"	589	S
A604	8	4'-11"	59	S
A605	318	7'-4"	3503	B
A606	634	5'-7"	5317	B
A501	40	24'-0"	1001	S
A502	10	27'-0"	282	S
A503	20	21'-3"	443	S
A504	178	8'-3"	1532	B
A505	150	10'-1"	1577	B
A506	42	10'-0"	438	S
A507	48	28'-7"	1431	S
A508	24	5'-8"	142	S
A401	306	4'-6"	920	B
END WALLS				
W501	8	17'-0"	142	S
W502	6	17'-0"	106	B
W503	4	13'-6"	56	S
W504	3	13'-6"	42	B
W505	4	14'-0"	58	S
W506	3	14'-0"	44	B
W507	40	4'-0"	167	B
W508	4	19'-2"	80	S
W509	2	17'-0"	35	S
W510	4	16'-2"	67	S
W511	2	14'-0"	29	S
W512	12	12'-8"	159	S
W513	12	9'-2"	115	S
W514	8	3'-9"	31	S
W515	2	16'-6"	34	S
W516	2	13'-6"	28	S
W517	8	15'-0"	125	S
W518	8	11'-5"	95	S
W519	16	4'-2"	70	B
W520	60	5'-0"	313	B
W521	2	7'-6"	16	S
W522	2	3'-10"	8	S
W523	2	6'-3"	13	S
W524	2	2'-7"	5	S
W525	8	5'-0"	42	S
W526	2	7'-9"	16	S
W527	2	4'-2"	9	S
W528	2	6'-2"	13	S
W529	2	2'-6"	5	S
W530	14	9'-4"	136	S
W531	14	8'-2"	119	S
W532	14	9'-8"	141	S
W533	14	8'-1"	118	S
W534	28	3'-6"	102	S
W535	8	4'-2"	35	S
W536	24	4'-1"	102	B
W537	8	3'-8"	30	B
W538	8	3'-3"	27	B
W539	8	2'-11"	24	B
W540	8	7'-6"	63	B
PIERS				
P1101	24	25'-0"	3188	S
P1102	16	17'-0"	1445	S
P1103	16	18'-6"	1573	S
P1104	16	15'-3"	1296	S
P1105	16	16'-9"	1424	S
P1106	16	17'-6"	1488	S
P1107	16	19'-0"	1615	S
P1108	96	5'-11"	3018	B

BENDING DIAGRAMS



MARK	No.	LENGTH	WEIGHT	SH'P.
PIERS (continued)				
P1001	18	29'-3"	2266	B
P1002	56	15'-2"	3656	S
P1003	54	27'-0"	6276	S
P1004	20	34'-3"	2949	S
P1005	48	24'-9"	5114	S
P1006	36	12'-10"	1989	S
P1007	36	13'-5"	2079	S
P1008	18	25'-5"	1969	S
P1009	18	28'-2"	2183	B
P1010	32	17'-0"	2342	S
P1011	62	17'-6"	4671	S
P1012	60	18'-0"	4649	S
P1013	62	18'-6"	4935	S
P1014	32	15'-3"	2101	S
P1015	30	15'-10"	2045	S
P1016	30	16'-3"	2099	S
P1017	32	16'-9"	2307	S
P1018	32	19'-0"	2617	S
P1019	372	5'-6"	8804	B
P 901	24	18'-9"	1530	S
P 902	24	23'-0"	1877	S
P 903	120	19'-9"	8058	S
P 904	12	34'-0"	1387	S
P 905	12	15'-1"	615	S
P801	36	20'-9"	1995	S
P802	12	25'-0"	801	S
P803	24	19'-9"	1266	S
P804	12	8'-7"	275	B
P 601	722	8'-4"	9037	B
P 501	368	4'-8"	1791	S

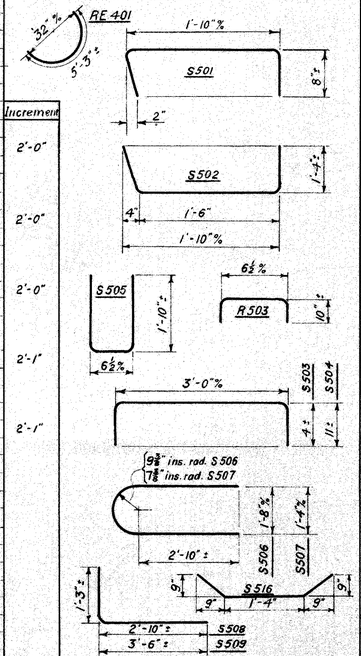


		Core Dia.	Pitch	Length	No. turns	Weight
Sp401	6	32"	4½	14'-3"	41	1397
Sp402	6	32"	4½	15'-3"	44	1499
Sp403	6	32"	4½	12'-5"	37	1259
Sp404	6	32"	4½	13'-6"	39	1329
Sp405	6	32"	4½	14'-9"	43	1464
Sp 406	6	32"	4½	15'-9"	45	1533

MARK	No	LENGTH	WEIGHT	SH'P.
SUPERSTRUCTURE				
S 701	714	32'-7"	47,556	S
S 702	362	21'-10"	16,156	S
S 703	342	41'-2"	28,780	S
S 704	346	31'-7"	22,338	S
S 705	2 Series of 14	5'-8" to 31'-8"	1068	S
S 706	2 Series of 15	4'-0" to 32'-0"	1104	S
S 707	2 Series of 10	3'-5" to 21'-5"	508	S
S 708	1 Series of 17	5'-9" to 39'-1"	779	S
S 709	1 Series of 19	3'-6" to 41'-0"	864	S
S 710	1 Series of 14	4'-3" to 31'-4"	510	S
S 711	1 Series of 13	5'-10" to 30'-10"	487	S

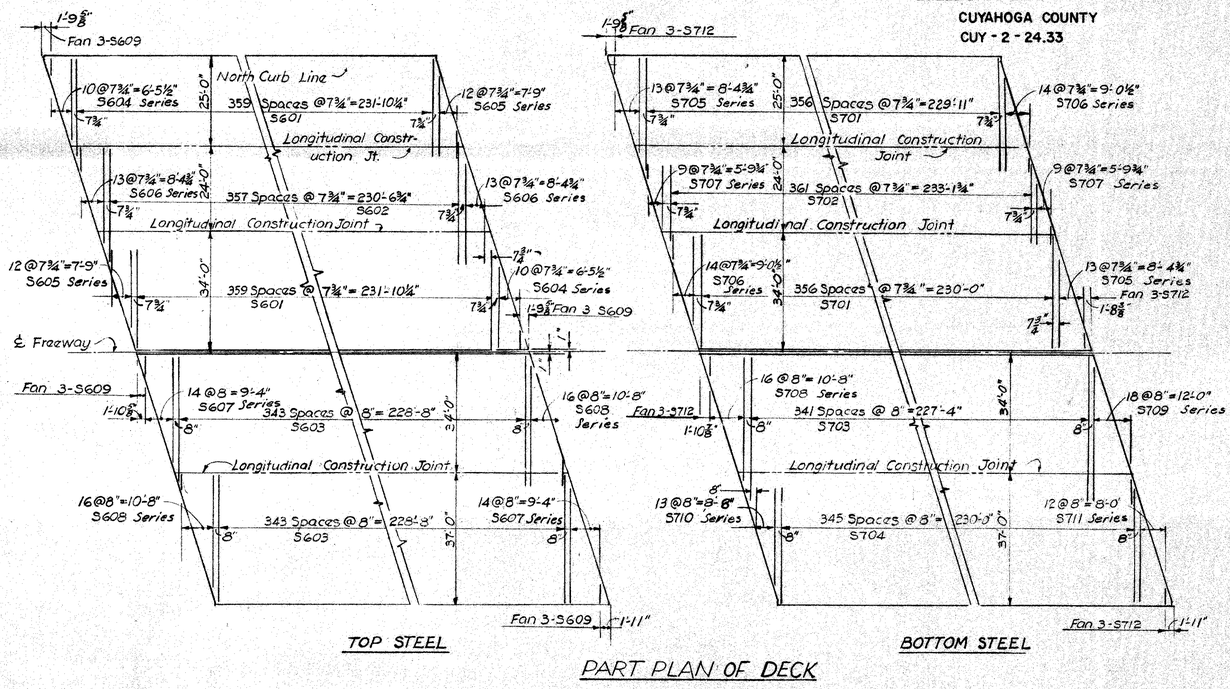
MARK	No	LENGTH	WEIGHT	SH'P.	Increment
SUPERSTRUCTURE (continued)					
S 712	2 Series of 11	5'-6" to 25'-8"	135	S	2'-0"
S 601	720	27'-6"	29,739	S	
S 602	358	31'-6"	16,938	S	
S 603	688	36'-4"	37,545	S	
S 604	2 Series of 11	5'-8" to 25'-8"	518	S	2'-0"
S 605	2 Series of 13	2'-8" to 26'-8"	573	S	2'-0"
S 606	2 Series of 14	4'-4" to 30'-4"	729	S	2'-0"
S 607	2 Series of 15	5'-8" to 34'-10"	912	S	2'-1"
S 608	2 Series of 17	2'-9" to 36'-1"	992	S	2'-1"
S 609	12	5'-6"	99	S	
S 610	2421	28'-6"	103,632	S	
S 611	342	30'-0"	15,410	S	
S501	324	2'-11"	986	B	
S502	324	4'-0"	1352	B	
S503	648	3'-5"	2309	B	
S504	648	4'-7"	3098	B	
S505	324	4'-0"	1352	B	
S506	12	8'-3"	103	B	
S 507	12	7'-9"	97	B	

BENDING DIAGRAMS



Increment
2'-0"
2'-0"
2'-0"
2'-1"
2'-1"

MARK	No	LENGTH	WEIGHT	SH'P.
SUPERSTRUCTURE (continued)				
S 508	12	4'-0"	50	B
S 509	6	4'-8"	29	B
S 510	48	3'-4"	167	S
S 515	19	3'-0"	60	S
S 516	19	3'-6"	70	B
RAILING				
R 501	104	16'-2"	Include with S-4 Railing for Payment.	S
R 502	16	13'-0"		S
R 503	364	2'-0"		B
R 504	8	15'-6"		S
R 505	4	12'-6"		S
R 506	4	12'-0"		S
REPLACEMENT BARS				
RE 1100	1	7'-6"		S
RE 1000	4	7'-2"		S
RE 900	1	6'-10"		S
RE 800	2	6'-6"		S
RE 700	7	6'-2"		S
RE 600	12	5'-11"		S
RE 500	2	5'-7"		S
RE 400	1	5'-3"		B



PART PLAN OF DECK

NOTES

BAR SIZE is indicated in the bar mark. The First digit where three digits are used, and the first two where four are used, indicate the bar size number. For example A700 is a № 7 size bar and A1014 is a № 10 size.

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.

SPIRAL REINFCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "№ of Turns" shown is the Length divided by the pitch, plus 3 turns. (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item S-4. 1½ closed coils shall be provided at the ends of each spiral unit.

For steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

REINFORCING STEEL LIST AND PART PLAN OF DECK
BRIDGE № CUY-2-2554
LAKELAND FREEWAY OVER NEFF ROAD

CUYAHOGA COUNTY STA 268+09.09
SEC. CUY-2-24.33 TO STA. 270+53.81

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
G.H.G.	L.M.	L.M.				

R-15

21-Y

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329 (20)	

137/180

CUYAHOGA COUNTY
CUY-2-24.33

MICROFILMED SEP 10 1985

N

Profile Grade Line — Sandstone Curb — FREEWAY — Sandstone Curb — Profile Grade Line

℄ I-151B Guardrail ℄ 12'-6"± 287

End Approach slab Sta. 287+ el. 72
Face of West Abut. Sta. 287+65.36
Slope Protection
℄ West Abut. Bearings Sta. 287+64.08
Item 1:1.0 Concrete
2:1 max.
Slope Varies
Ei. 618.38
Ei. 617.73
Ei. 617.23
Sta. 288+48.05 on ℄ Freeway = Sta. 0+00 on 200th St.
Point "A" N-1+00
200th St. (Relocated)
℄ 6'-0" Ch.
82'-0"
15°-57'-25" L.F. Skew Angle
℄ Brdg. = Sta. 288+50.31
166'-4" % of Deck
164'-0" ℄ Parapets
Ei. 618.40
Slope Varies
3:1
2:1 max.
40'-0"
7'-0"
2:1 max.
Slope Protection
Face of East Abut. Sta. 289+35.26
Begin Approach Slab Sta. 289+38.90
℄ East Abut. Bearings Sta. 289+36.56
Item 1:1.0 Concrete
Ei. 611.23
25'-0"
6" Water
18" Storm Sewer
42" Sani.
8" Water
6" curb
Ei. 617.69 Ditch
Ei. 617.77
7.92' clear
Point "B" Sta. 5-1+00
Left Turn Lane
12'-0" 11'-0" 10'-0" 11'-0" 12'-0"
56'-0"
Slope Varies
Ei. 618.38
6" Water
18" Storm
42" Sani.
8" Water
12" ℄ 200th St. (Relocated)
625
621
622
287
288
289
290
291

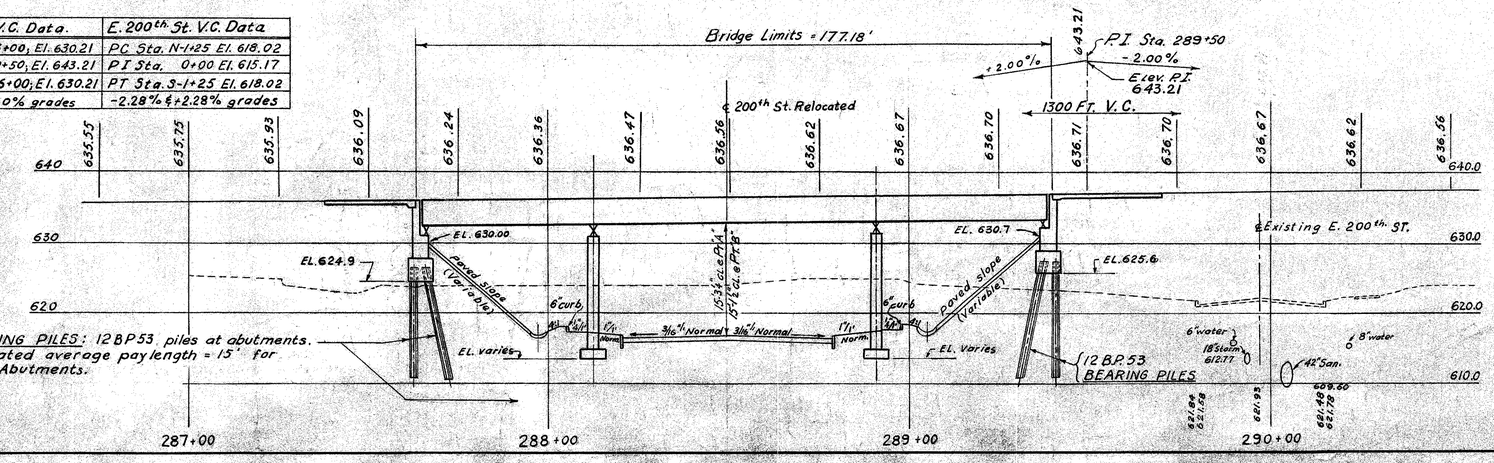
Legend

- Fire Hydrant
- General Pole
- Telephone Pole
- Exist. Manhole
- Exist. Catch Basin
- Meter
- Valve
- C.E.I. Power Line

E. 200th St. H.C. Data	
Δ = 33°-47'-06"	L curve = 665.95'
D = 5°-0'-0"	P.C. stat. = 5-3+16.8
R = 1145.92'	P.T. stat. = N-3+58.89
T = 347.99'	M.O. = 49.44'
L curve = 675.70'	E = 51.67'

Freeway V.C. Data.	E. 200th St. V.C. Data
P.C. Sta. 283+00, El. 630.21	P.C. Sta. N-1+25 El. 618.02
P.I. Sta. 289+50, El. 643.21	P.I. Sta. 0+00 El. 615.17
P.T. Sta. 296+00; El. 630.21	P.T. Sta. 3-1+25 El. 618.02
± 2.0% & -2.0% grades	-2.28% & +2.28% grades

FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus, or in the Division office, but the State assumes no responsibility for the accuracy thereof.



BEARING PILES: 12 BP 53 piles at abutments. Estimated average pay length = 15' for both Abutments.

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK, PIERS, AND ABUTMENTS
SPANS: 47'-0" 78'-6" 47'-0" ℅ BEARING
ROADWAY: 164'-0" F/F PARAPETS

LOADING: CF-2000-57 (ADEQUATE FOR AASHO ALTERNATE LOADING)
SKEW: 15° - 57' - 25" L.F.
WEARING SURFACE: 1" MONOLITHIC CONCRETE
APPROACH SLAB: AS-1-54 (25'-0" LONG)
ALIGNMENT: TANGENT

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

SITE PLAN
BRIDGE NO. CUY-2-2591

LAKELAND FREEWAY OVER EAST 200TH ST.
STATION 287+61.72 TO STATION 289+38.90
SR-2 & USR-20 SEC. CUY-2-24.33
SCALE: 1"=20'-0" UI-329 (20) CUYAHOGA COUNTY

TOPOGRAPHY		PROPOSED WORK				
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
1959, 1960 & 1962	T.L.P.	R.M.	J.W.P.	A.H.B. 10/65		

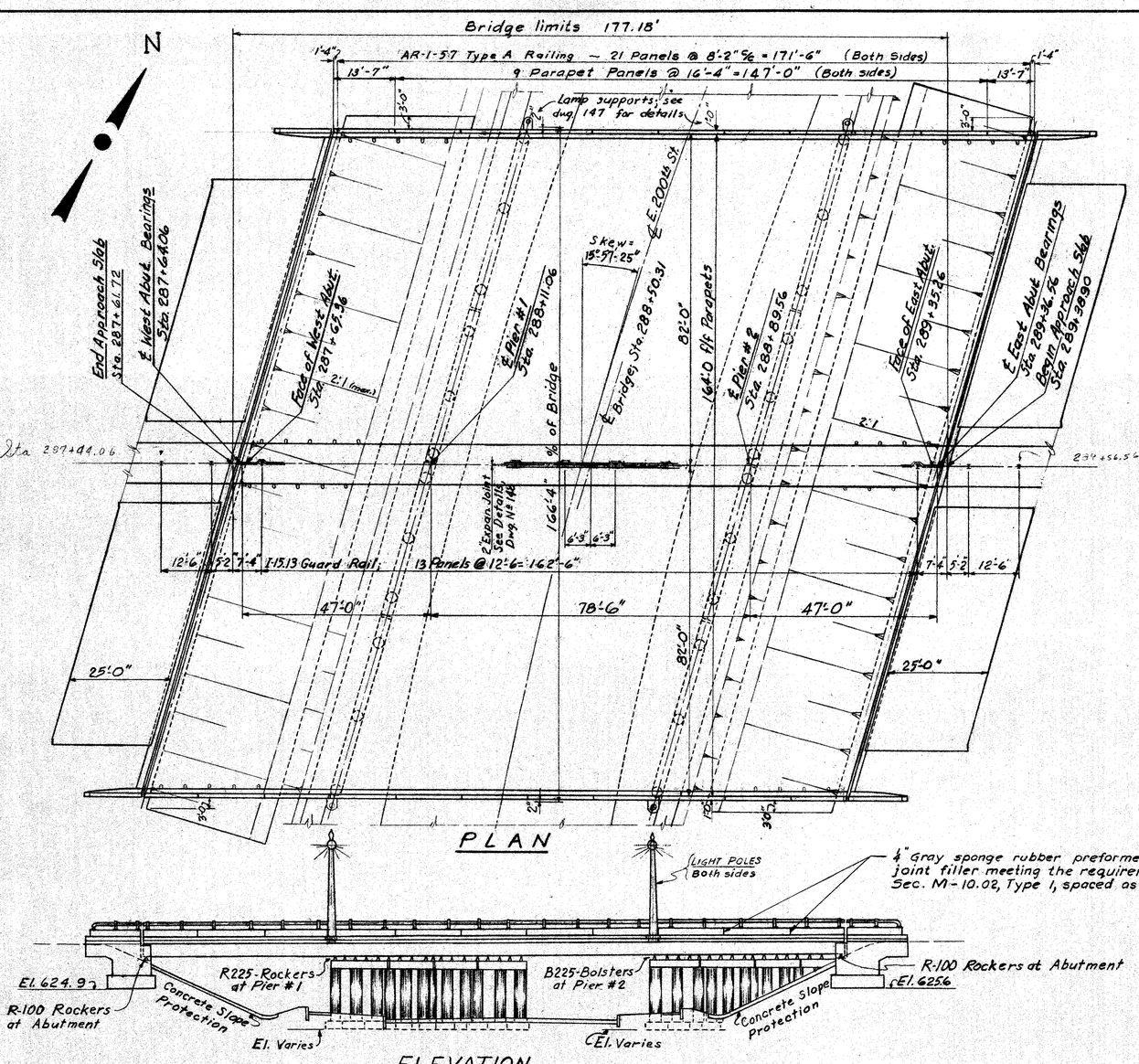
SITE PLAN EAST 200TH ST.

MICROFILMED
SEP 10 1965

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329(20)	

138
~~188~~

CUYAHOGA COUNTY
CUY-2-24.33



ELEVATION

GENERAL NOTES

REFERENCE shall be made to Standard Drawings RB-1-55, revised 2-2-59 & AR 1-57 revised 2-2-59. and Supplemental Specification S-101 dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specification for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with revisions dated Feb. 2, 1958

EXCAVATION AND BACKFILL: Excavation quantity includes the removal of fill material between the surface of proposed embankment and the bottom of footings. Backfill behind the abutments shall be made with material meeting the requirements of Sec. I-22 and shall be compacted in accordance with the requirements for embankment compaction. The payment for this I-22 backfill shall be considered as included in the payment for E-2, Unclassified Excavation.

EXCAVATION QUANTITY for the piers includes the removal of material between proposed grade and the bottom of footings.

WELDING of structural steel shall be class "A" unless otherwise noted. Any welds shown as field welds may, at the option of the Contractor, be made in the shop. Class "B" welds are shown thus: (B)→

PILES shall be driven with a hammer of not less than 11,000 foot-pounds per blow to firm contact with shale. If the length of penetration is approximately equal to the depth to shale according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

48 tons per pile using a 11,000 ft. lb. hammer
43 tons per pile using a 15,000 ft lb. or greater hammer.

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 30 tons per pile.

FOOTINGS shall extend a minimum of 3 inches into firm shale or to elevation shown, whichever is lower.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 8 tons per sq. ft.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are normal to the center-line of bridge and are located near the center of any span.

ELECTRICAL ITEMS S-25 listed in the Estimated Quantities include only those items which are mounted on the structure or are a part thereof. For additional listing and details see Electrical Dwg. Nº 111 thru 116.

ELECTRICAL LIGHTING SYSTEM, Item S-25, includes the lamp standards with mast arms, junction boxes and electrical grounds.

PAINTING: See Proposal regarding painting.

STEEL: See Proposal regarding A-373 Steel.

ELECTRICAL GROUNDS: A solid No. 0 gage bare copper wire electrical ground shall be embedded in the outside column on each side of the structure at Pier #2. The lower ends of the wires shall terminate in a 25 foot length coiled under the footing and separated from the concrete by two layers of tar paper, and the upper ends shall extend sufficiently above the top of the concrete to provide a suitable splice and extension for connection to the super structure. The connection to the super structure shall be a No. 6 gage, bare, stranded, tinned copper wire brazed or bolted to beam flange and to the solid copper wire in the pier shaft. At the base of the lamp standards there shall be a tinned, No. 6 gage, copper wire brazed to one anchor bolt and the other end brazed or bolted to the outside beam flange. Payment for electrical grounds is included in the lump sum bid for Item 525 "Electrical Lighting System."

GALVANIZING of all members which are specified to be galvanized shall be as called for in Sec. M-7.4 (a).

DETAILS For details of end cross frames, end dam, aluminum railing posts, beam cut-off at back wall center-line expansion joint and guard rail details, welded butt joints in superstructure end dam, "O" bars over Piers, curb plate details and lamp supports see Dwgs. Nº. 145, 146 and 147.

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super	Abut.	Pier	Gen'l.	As Built
E-2	~~873~~	C.Y.	Unclassified Excavation		696	177		co 8 -161 712
E-2	~~38~~	C.Y.	Shale Excavation			38		co 8 +74 112
S-1	894	C.Y.	Class "C" Concrete, Superstructure	894				
S-1	225	C.Y.	Class "C" Concrete, Pier Caps and Columns			225		
S-1	297	C.Y.	Class "E" Concrete, Abutments above footings		297			
S-1	284	C.Y.	Class "E" Concrete, Abutment and Pier footings		251	33		
S-3	85	L.F.	Waterproofing, 6"×12" Preformed Sealing Strip		85			
S-4	392,064	Lbs.	Reinforcing Steel	269922	37857	84285		
S-7	854,000	Lbs.	Structural Steel	854,000				
S-8	854,000	Lbs.	Field painting of Structural Steel	854,000				
S-9	46	S.F.	1" Preformed Expansion Joint Filler, Type I		46			
S-9	174	L.F.	Structural Expansion or contraction joint	174				
S-14	399	L.F.	Railing, (Aluminum Rail and Supports, Concrete Parapet)	347	52			

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super	Abut.	Pier	Gen'l.	As Built
S-14	~~1172~~	L.F.	Railing, (I-15.13 Guard Rail with Galvanized Steel Posts and Bolts and Double Rail)	1172				co 8 +60 1772
S-16	Lump	Sum	First Test Pile				Lump	
S-18	~~1920~~	L.F.	Steel Piles, 12 BP 53			1920		co 8 +56 1976
S-25	Lump	Sum	Electrical Lighting System				Lump	
S-25	~~320~~	L.F.	2" Galvanized conduit including fittings & supports				320	co 8 +14 334
S-25	22	L.F.	1½" " " " " "				22	
S-25	40	L.F.	1¼" " " " " "				40	
S-25	~~90~~	L.F.	1" " " " " "				90	co 8 -10 80
S-25	~~390~~	L.F.	¾" " " " " "				390	co 8 -33 357
S-29	147	C.Y.	Porous Backfill			147		
I-10	1522	S.Y.	Concrete Slope Protection				1522	

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

GENERAL PLAN, ELEVATION, NOTES AND ESTIMATED QUANTITIES
BRIDGE Nº CUY-2-2591
LAKELAND FREEWAY OVER E. 200TH ST.
CUYAHOGA COUNTY STA. 287+61.72
SEC. CUY-2-24.33 TO STA. 289+38.90

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
R.M.	D.P.	D.P.	10/63			

18 Revised As-Built CAM 2-20-64

RTE. NO. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	1329 (20)	

139 / 180

CUYAHOGA COUNTY
CUY 2 - 24.33

MICROFILMED
SEP 10 1985

12"x½" preformed sealing strip in 13"x¾" recess, full height of wall

1⅝"x3⅜" key, stop 8" below top of backwall

1⅝"x7½" key (to top of seat)

SECTION B-B

℄ Abut. Bearing

1"Preformed Exp. joint Filler

12"x½" preformed sealing strip in 13"x¾" recess full height

SECTION C-C

SECTION A-A

HALF ABUTMENT PLAN

HALF ABUTMENT ELEVATION

HALF ABUTMENT PLAN

HALF ABUTMENT ELEVATION 32 Piles 12BP53 15 Spaces @ 5'-5" = 81'-3"

ELEVATIONS		
Point	West Abut.	East Abut.
Sta. Z	287+64.06	289+36.56
A	631.03	631.70
B	631.20	631.85
C	631.37	632.01
D	631.54	632.16
E	631.71	632.31
F	631.81	632.40
G	631.67	632.26
H	631.54	632.09
J	631.40	631.93
K	631.41	631.93
L	631.58	632.08
M	631.74	632.24
N	631.91	632.39
P	631.85	632.30
R	631.71	632.15
S	631.57	631.99
T	631.43	631.84
V	631.29	631.68

NOTES:

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade after which excavation shall be made for the abutments and end walls.

CONCRETE in abutments and footings shall be Class "E".

REINFORCING STEEL shall be 2" clear from exposed surface unless noted otherwise.

BACKWALL CONCRETE shall be placed after all structural steel and pipe sleeves are in place.

END WALLS and details; see Dwg. No. 140

SLEEVES for electric conduit shall be 3"ϕ standard pipe, and shall be located as shown at the north end of the East abutment and both ends of the West abutment. Fill around conduit with expansion joint filler meeting the requirements of Sec. S-902 (Include with Item S-1, Concrete for payment.)

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

ABUTMENT PLAN AND ELEVATION
BRIDGE No. CUY-2-2591
LAKELAND FREEWAY OVER E.200TH ST.
CUYAHOGA COUNTY STA. 287+61.72
SEC. CUY-2-24.33 TO STA. 289+38.90

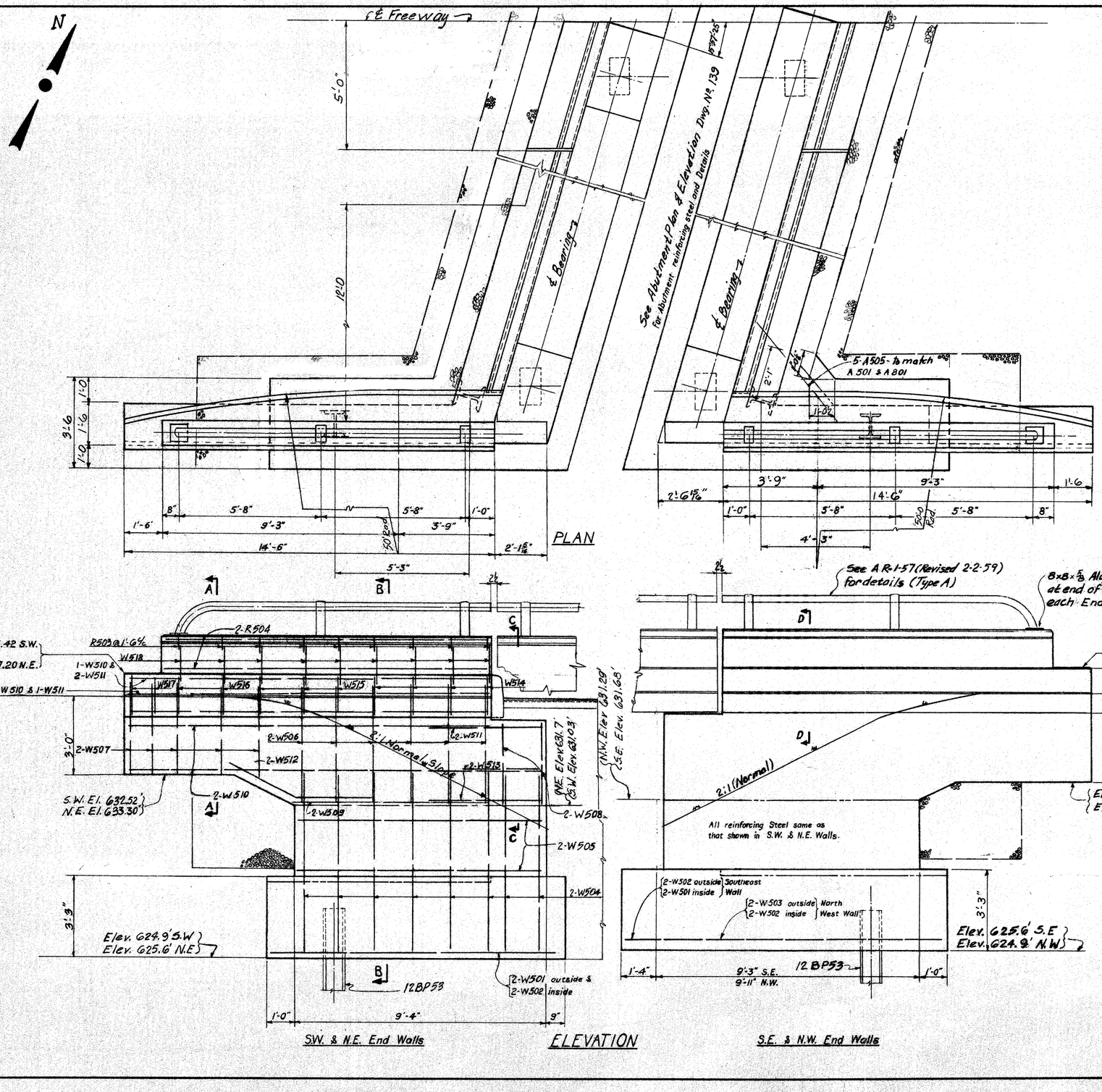
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
R.M.	D.P.	D.P.				

MICROFILMED
SEP 16 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329 (20)	

~~140~~ ~~166~~

CUYAHOGA COUNTY
CUY - 2 - 24.33



HARGETT, YANDA & BARBER
Consulting Engineers
4800 EUCLID AVE. CLEVELAND 3, OHIO

ABUTMENT DETAILS
BRIDGE Nº CUY-2-2591
LAKELAND FREEWAY OVER E.200TH ST.

CUYAHOGA COUNTY STA. 287 + 61.72
SEC. CUY-2-24.33 TO 289 + 38.90

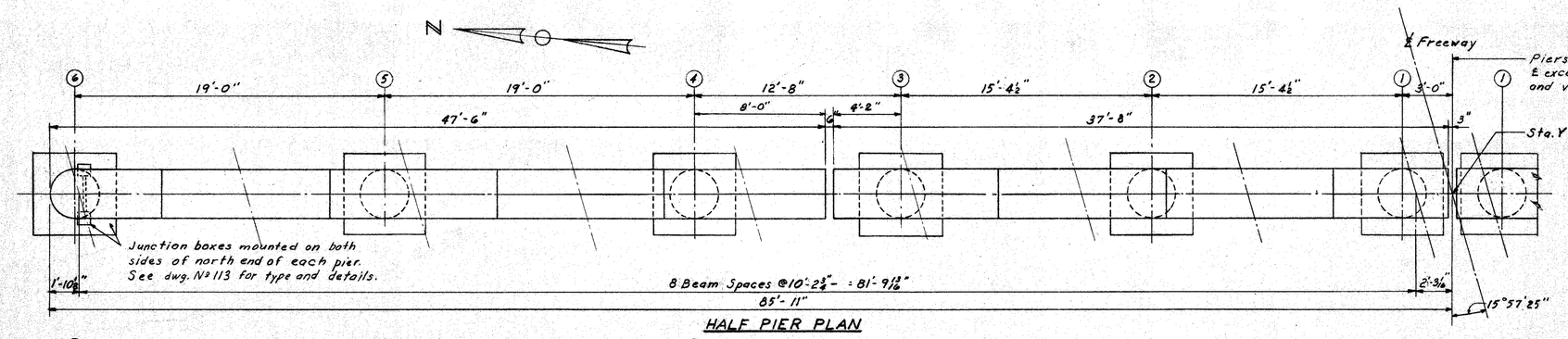
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
R.M.	D.P.	D.P.				

MICROFILMED
SEP 10 1965

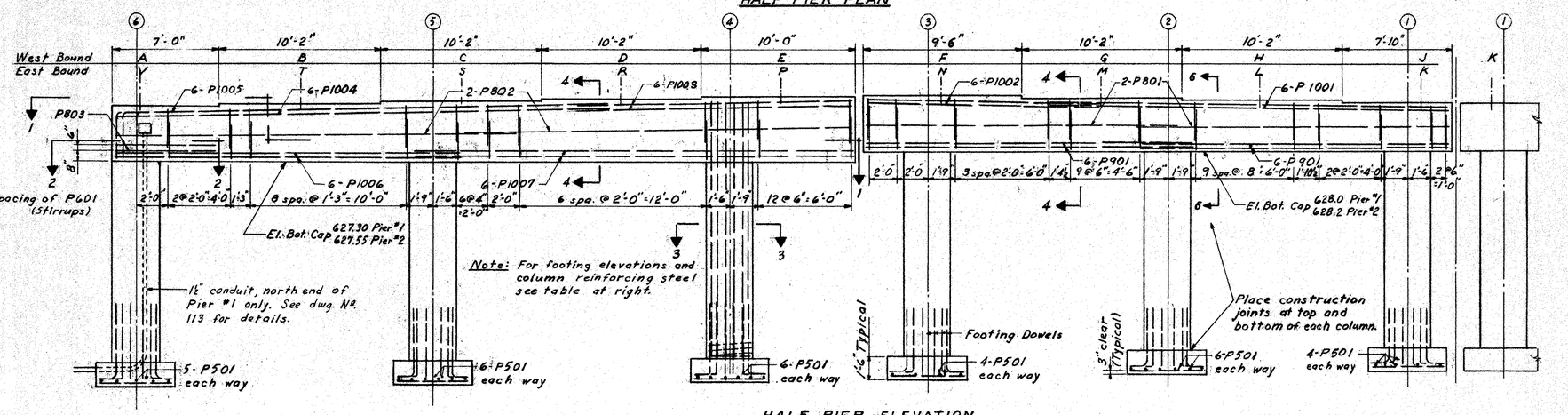
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	1 329 (20)	

141
~~160~~

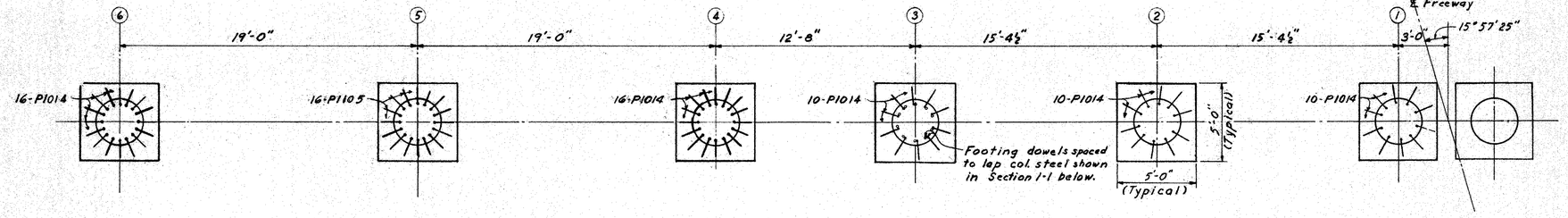
CUYAHOGA COUNTY
CUY - 2 - 24.33



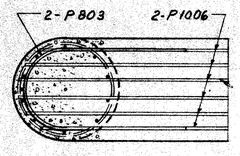
HALF PIER PLAN



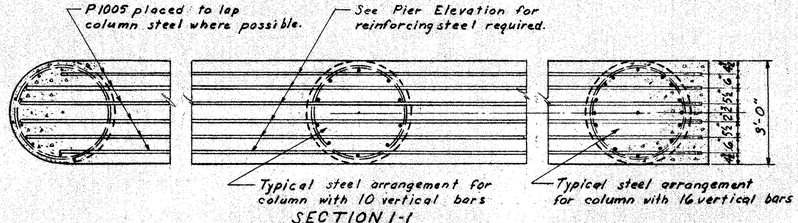
HALF PIER ELEVATION



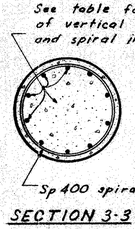
HALF PIER FOOTING PLAN



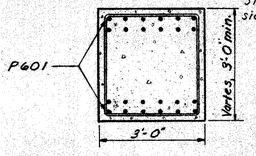
SECTION 2-2



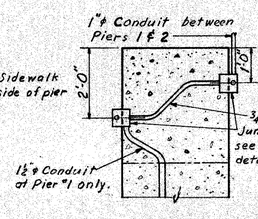
SECTION 1-1



SECTION 3-3



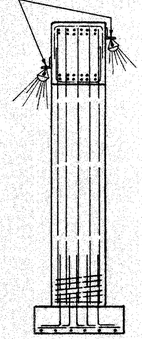
SECTION 4-4



SECTION 5-5

BEAM SEAT ELEVATIONS

BEAM SEAT	PIER #1	PIER #2
STA. "Y"	288+11.06	288+89.56
A	630.86	631.04
B	631.00	631.19
C	631.16	631.34
D	631.29	631.47
E	631.43	631.64
F	631.50	631.72
G	631.33	631.56
H	631.17	631.40
J	631.00	631.24
K	631.00	631.24
L	631.14	631.37
M	631.28	631.53
N	631.42	631.68
P	631.34	631.60
R	631.16	631.44
S	630.99	631.28
T	630.82	631.12
V	630.66	630.95



SECTION 6-6

FOOTING ELEVATIONS AND COLUMN REINFORCING

PIER #1 WEST BOUND				PIER #2 WEST BOUND		
Col.	Foot. Elev.	Reinforc.	Spiral	Foot. Elev.	Reinforc.	Spiral
1	611.0	10-P1008	Sp 401	612.7	10-P1013	Sp 402
2	610.8	10-P1009	Sp 401	612.4	10-P1011	Sp 402
3	610.5	10-P1009	Sp 401	612.1	10-P1011	Sp 402
4	610.4	16-P1010	Sp 401	611.8	16-P1008	Sp 402
5	610.2	16-P1101	Sp 401	611.4	16-P1103	Sp 402
6	610.0	16-P1010	Sp 401	611.0	16-P1008	Sp 402
PIER #1 EAST BOUND				PIER #2 EAST BOUND		
1	611.0	10-P1008	Sp 401	612.7	10-P1013	Sp 402
2	611.5	10-P1008	Sp 402	613.0	10-P1013	Sp 403
3	611.9	10-P1011	Sp 402	613.2	10-P1013	Sp 403
4	612.2	16-P1011	Sp 403	613.4	16-P1013	Sp 404
5	612.8	16-P1102	Sp 403	613.6	16-P1104	Sp 404
6	613.1	16-P1012	Sp 404	613.8	16-P1012	Sp 404

NOTES:

REINFORCING STEEL shall be 2" clear from exposed face of concrete unless noted otherwise.

REINFORCING STEEL shall be placed to clear Bolster anchor bolts at Pier #2.

CONCRETE shall be class "C" in pier caps and columns and class "E" in pier footings.

SPIRAL REINFORCING details are on Dwg. Nº 144

FOOTINGS shall be placed at elevation shown or shall extend a minimum of 3' into firm shale, whichever is lower.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 8, Ohio

PIER DETAILS
BRIDGE Nº CUY-2-2591
LAKELAND FREEWAY OVER E. 200TH ST.

CUYAHOGA COUNTY STA. 287+61.72
SEC. CUY-2-24.33 TO STA. 289+38.90

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
GHG	GHG	G.H.G.	[illegible]			

MICROFILMED
SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329 (20)	

142
~~150~~

CUYAHOGA COUNTY
CUY-2-24.33

NOTES

BEAM SPLICE DETAILS : See dwg. No. 143

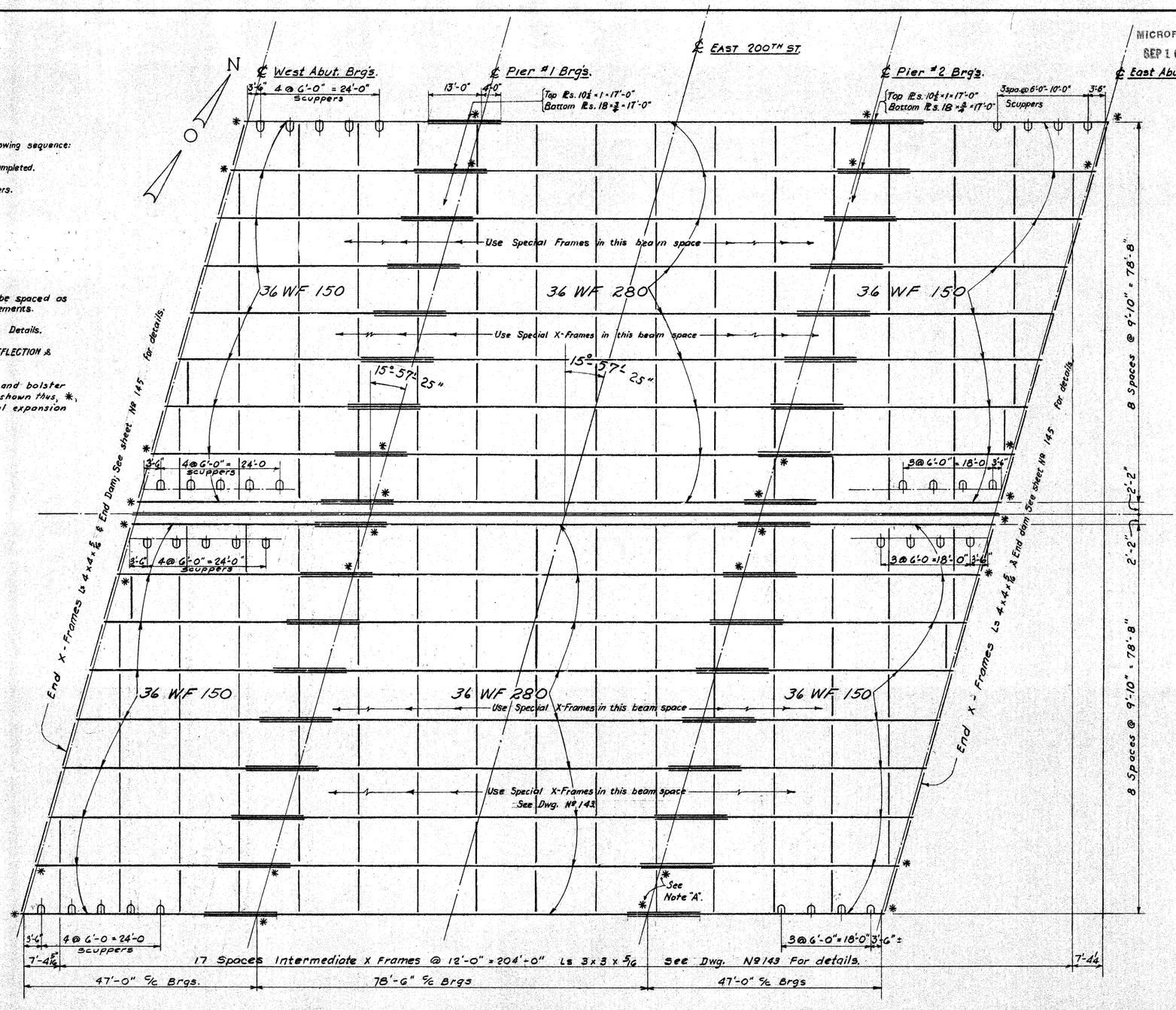
BEAM SPLICE WELDING PROCEDURE:

1. Raise ends of beams ½" at each abutment.
2. Butt weld beam flanges and webs at both piers using the following sequence: make two passes on the flanges then two on the web. Repeat, using one pass at each location until welds are completed.
3. Weld top and bottom flange moment plates at the piers.
4. Lower ends of beams to final position.

SCUPPERS shall be spaced as shown, Crossframes shall be spaced as shown except as required to meet clearance requirements. Crossframes must clear scuppers by at least 6". See dwg. Nº 145 for Scupper and Gutter support Details.

CAMBER : For cambering of steel beams see table of DEFLECTION & CAMBER below.

NOTE "A": Remove "Keeper" Plates from rocker and bolster caps at the abutment and pier locations shown thus, *, on the Framing Plan to provide for lateral expansion of the bridge deck.



FRAMING PLAN

DEFLECTION & CAMBER

LOCATION	OUTSIDE BEAMS		INSIDE BEAMS	
	END SPANS	CENTER SPAN	END SPANS	CENTER SPAN
Deflection due to weight of steel	0	1/4	0	3/16
Deflection due to remaining dead load.	1/16	9/16	1/16	11/16
Convexity required for vertical curve.	1/8	1/4	1/8	1/4
Sum of Convexity & Camber	3/16	1 1/8	3/16	1 1/8
Required Camber	0	1 1/8	0	1 1/8

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

FRAMING PLAN

BRIDGE Nº CUY-2-2591
LAKELAND FREEWAY OVER E.200TH ST.
CUYAHOGA COUNTY STA. 287+61.72
SEC. CUY-2-24.33 TO STA. 289+38.90

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
R.M.	J.W.P.	J.W.P.	[illegible]			

MICROFILMED
SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

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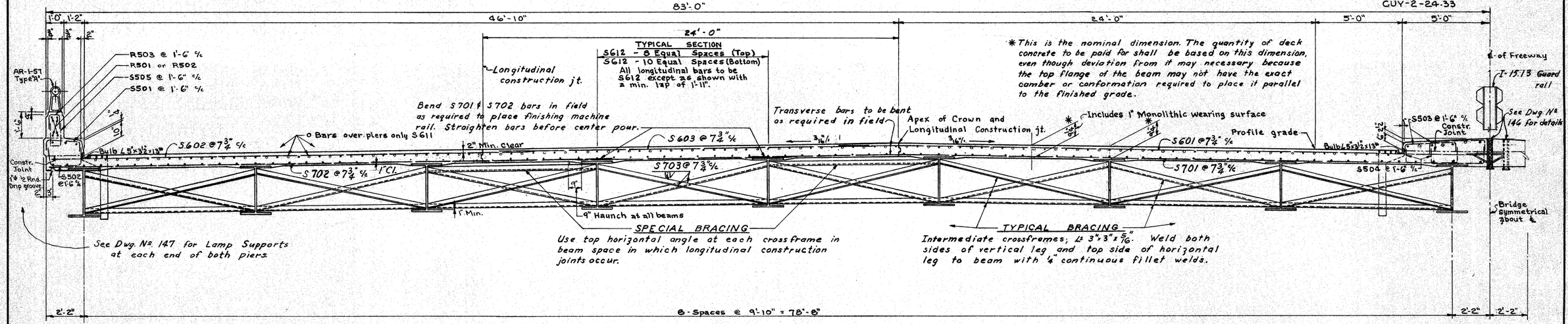
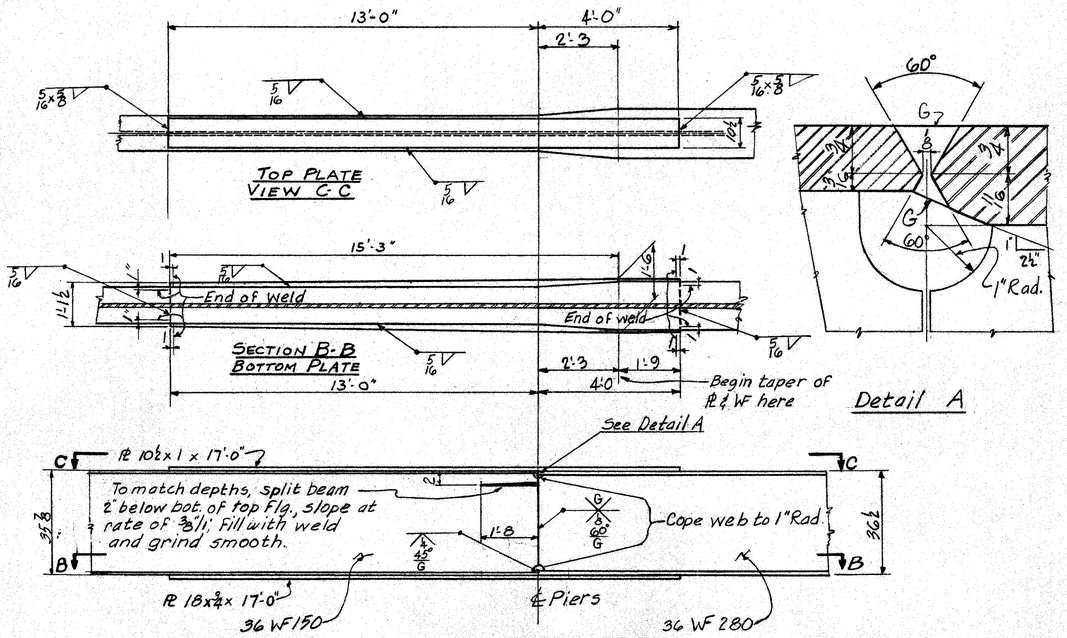
~~160~~



HALF TRANSVERSE SECTION
(West Bound Shown)

MACHINE FINISHING of bridge decks will be required in accordance with the Special Provisions of this contract except that longitudinal joints, as shown on the plans, will be permitted. When the finishing machine is supported on the concrete the wheel of the machine shall be placed directly over the beam adjacent to the joint.



DETAIL OF WEB & FLANGE SPLICE

HARGETT, YANDA & BARBER
Consulting Engineers
4800 EUCLID AVE. CLEVELAND 3, OHIO

TRANSVERSE SECTION AND BEAM SPLICE DETAILS

BRIDGE No. CUY-2-2591
LAKELAND FREEWAY OVER E.200TH ST.
CUYAHOGA COUNTY STA. 287+61.72
SEC. CUY-2-24.33 TO STA. 289+38.90

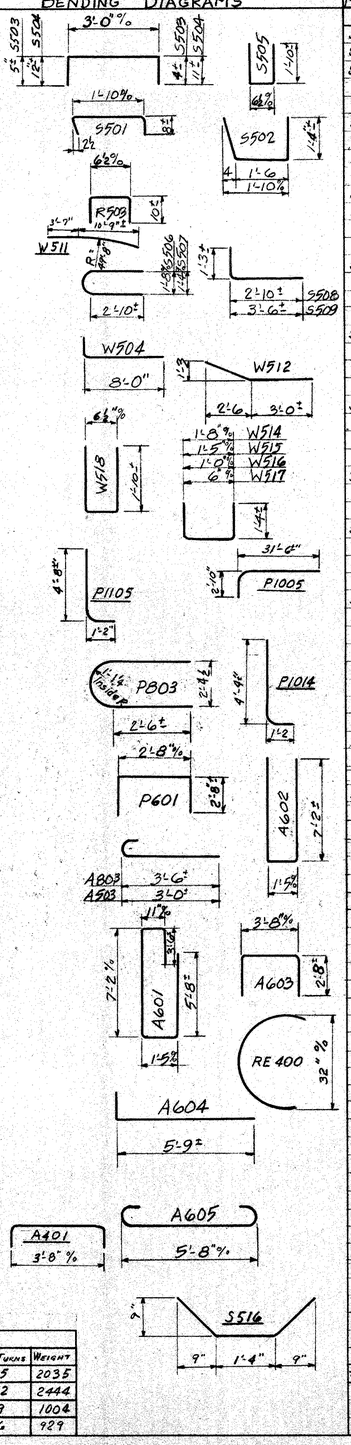
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
R.M.	W.F. ELFORD	W.F.E.				

REINFORCING STEEL LIST

MARK	NO	LENGTH	WEIGHT	SHP
ABUTMENTS				
A801	64	28'-2"	4,814	S
A802	4	27'-6"	294	S
A803	24	4'-7"	294	B
A804	4	28'-8"	306	S
A601	252	18'-0"	6,813	B
A602	92	15'-3"	2,130	B
A603	316	8'-8"	4,113	B
A604	632	6'-5"	6,091	B
A605	316	7'-0"	3,322	B
A606	56	26'-6"	2,229	S
A607	40	10'-0"	601	S
A501	80	28'-2"	2,350	S
A502	8	27'-6"	230	S
A503	32	3'-7"	120	B
A504	8	4'-10"	40	S
A505	10	6'-0"	63	S
A506	8	28'-8"	239	S
A401	360	4'-6"	1082	B
END WALLS				
W501	6	10'-6"	66	S
W502	8	11'-3"	94	S
W503	2	11'-9"	24	S
W504	64	8'-6"	567	B
W505	16	9'-0"	150	S
W506	48	5'-2"	259	S
W507	40	3'-6"	146	S
W508	16	3'-7"	60	S
W509	8	6'-4	53	S
W510	44	14'-2	650	S
W511	12	14'-4"	179	B
W512	8	5'-10"	49	B
W513	24	4'-6"	113	S
W514	16	4'-1"	68	B
W515	12	3'-10"	48	B
W516	8	3'-5"	29	B
W517	8	2'-11"	24	B
W518	36	3'-11"	147	B
PIERS				
P1101	16	19'-0"	1615	S
P1102	16	16'-6"	1403	S
P1103	16	18'-3"	1551	S
P1104	16	16'-0"	1360	S
P1105	64	5'-6"	1870	B
P1001	48	25'-7"	5284	S
P1002	48	15'-0"	3098	S
P1003	48	19'-2"	3958	S
P1004	24	31'-6	3253	S
P1005	24	34'-0"	3511	B
P1006	48	22'-0"	4544	S
P1007	48	28'-8"	5921	S
P1008	62	18'-0"	4802	S
P1009	20	18'-8"	1606	S
P1010	32	19'-0"	2616	S
P1011	46	17'-4"	3430	S
P1012	32	15'-6"	2134	S
P1013	56	16'-6"	3976	S
P1014	248	5'-3"	5602	B
P901	96	20'-2"	6583	S
P801	16	20'-0"	854	S
P802	16	24'-10"	1061	S
P803	8	8'-8"	185	B
P601	560	7'-8"	6449	B
P501	248	4'-8"	1207	S

SPIRALS						
	Core Dia. % Spiral		LENGTH	PITCH	NO TURNS	WEIGHT
Sp401	7	32"	15'-9"	4½"	45	2035
Sp402	9	32"	14'-9"	4½"	42	2444
Sp403	4	32	13'-4	4½"	39	1004
Sp404	4	32"	12'-6	4½"	36	929

BENDING DIAGRAMS



MARK	NO.	LENGTH	WEIGHT	SHP	
SUPERSTRUCTURE					
S701	500	42'-4"	43,265	S	
S702	508	92'-7"	33,836	S	
S703	528	12'-0"	12,952	S	
	2	7'-9"			
S704	Series	to	1,611	S	*
	of 16	41'-6"			
	2	5'-6"			
S705	Series	to	1,633	S	*
	of 17	41'-6"			
	2	5'-3			
S706	Series	to	996	S	*
	of 13	32'-3"			
	2	6'-9"			
S707	Series	to	938	S	*
	of 12	31'-6"			
	2	3'-8"			
S708	Series	to	115	S	*
	of 4	10'-5"			
	2	3'-4"			
S709	Series	to	110	S	*
	of 4	10'-1"			
S710	10	6'-0"	123	S	
S601	506	37'-4"	28,373	S	
S602	512	27'-7"	21,212	S	
S603	518	21'-6"	16,728	S	
	2	5'-10"			
S604	Series	to	860	S	*
	of 14	35'-1"			
	2	4'-5"			
S605	Series	to	909	S	*
	of 15	35'-11"			
	2	5'-0"			
S606	Series	to	537	S	*
	of 11	27'-6"			
	2	6'-4"			
S607	Series	to	494	S	*
	of 10	26'-7"			
	2	4'-3"			
S608	Series	to	291	S	*
	of 8	20'-0"			
	2	3'-3"			
S609	Series	to	331	S	*
	of 9	21'-3"			
S610	10	6'-0"	90	S	
S611	260	31'-6"	12,301	S	
S612	2142	26'-6"	85,258	S	
S501	232	2'-11"	705	B	
S502	232	3'-11"	948	B	
S503	464	3'-6"	1694	B	
S504	464	4'-8"	2258	B	
S505	232	3'-11"	948	B	
S506	8	8'-3"	69	B	
S507	8	7'-9"	65	B	
S508	8	4'-0"	33	B	
S509	4	4'-8"	19	B	
S510	36	3'-4"	125	S	
S515	14	3'-0"	44	S	
S516	12	3'-6"	51	B	

* Vary by 2'-3" increments

MARK	NO.	LENGTH	WEIGHT	SHP
RAILING				
R501	72	16'-0"	Include with Item 514 for payment	S
R502	16	13'-3"		S
R503	268	2'-0"		B
R504	16	12'-8"		S
REPLACEMENT BARS				
RE1100	1	7'-6"	—	S
RE1000	3	7'-2"	—	S
RE900	1	6'-10"	—	S
RE800	1	6'-6"	—	S
RE700	5	6'-2"	—	S
RE600	10	5'-11"	—	S
RE500	1	5'-7"	—	S
RE400	1	5'-3"	—	B

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FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
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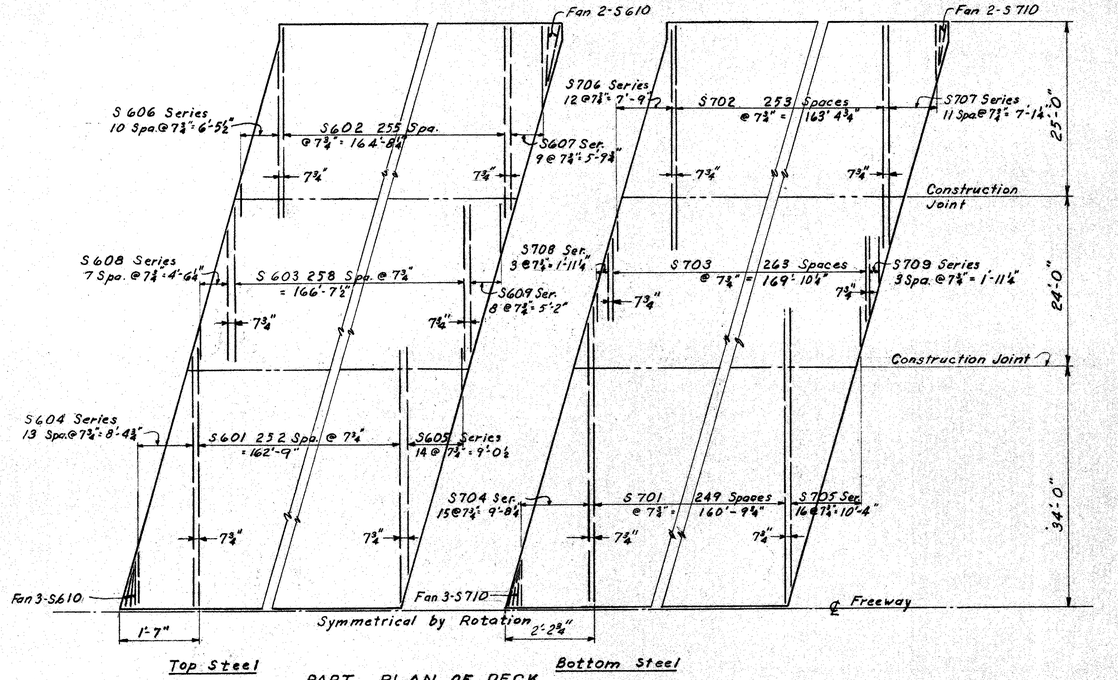
CUYAHOGA. COUNTY
CUY-2-24.33



Top Steel — Bottom Steel

PART PLAN OF DECK

BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four digits are used, indicate the bar size number. For example, P802 is a No. 8 size bar and P1102 is a No. 11 size.

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.08 need not be furnished and replacement bars will not be required.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "No. of Turns" shown is the "Length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item S-4. 1½ closed coils shall be provided at the ends of each unit. Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

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4800 EUCLID AVE. CLEVELAND 3, OHIO

REINFORCING STEEL LIST

BRIDGE Nº CUY-2-2591

LAKELAND FREEWAY OVER E.200 TH ST.

CUYAHOGA COUNTY STA. 287 + 61.72
SEC. CUY-2-24.33 TO STA. 289 +38.90

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
R.M.						

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

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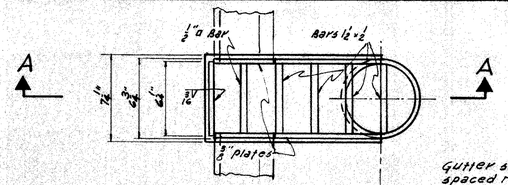
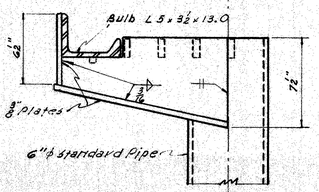
CUYAHOGA COUNTY
CUY-2-24.33

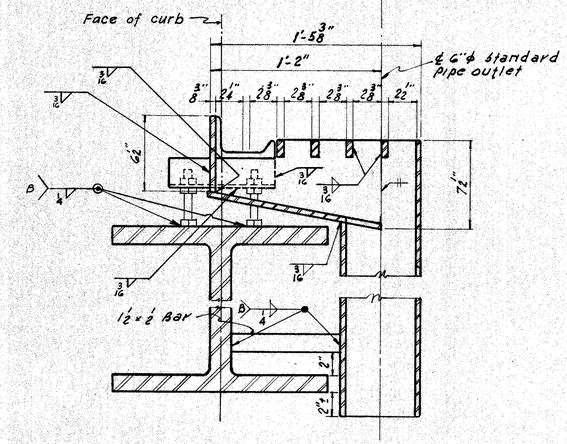


SCUPPER PLAN

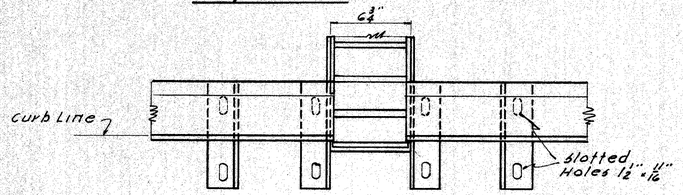
BRIDGE ON TANGENT ONLY



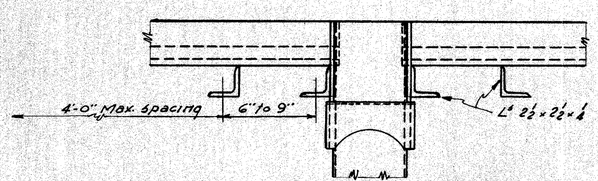
SCUPPER ELEVATION



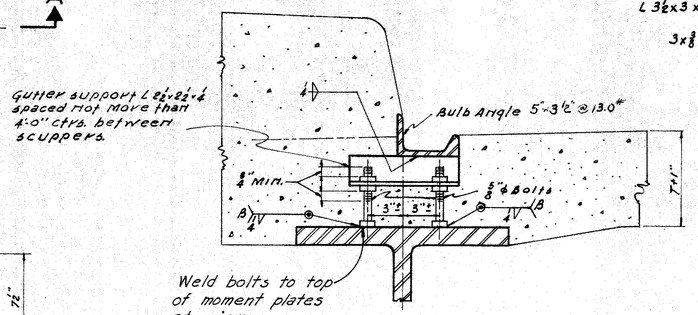
SECTION A-A



PART PLAN AT OUTSIDE CURB



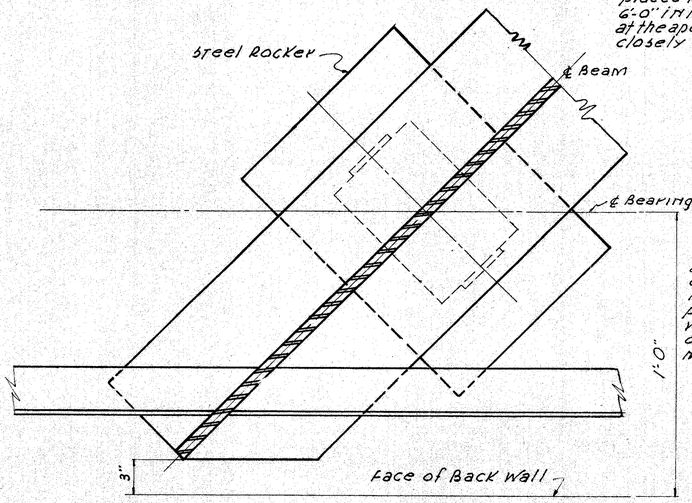
ELEVATION



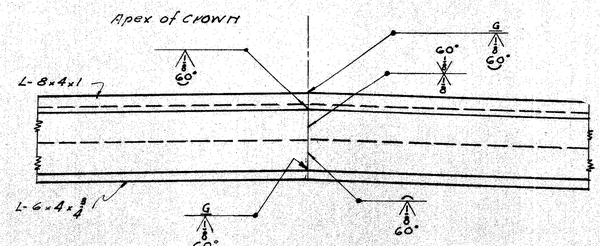
GUTTER SUPPORT

Scuppers shall be located as shown on Framing Plan

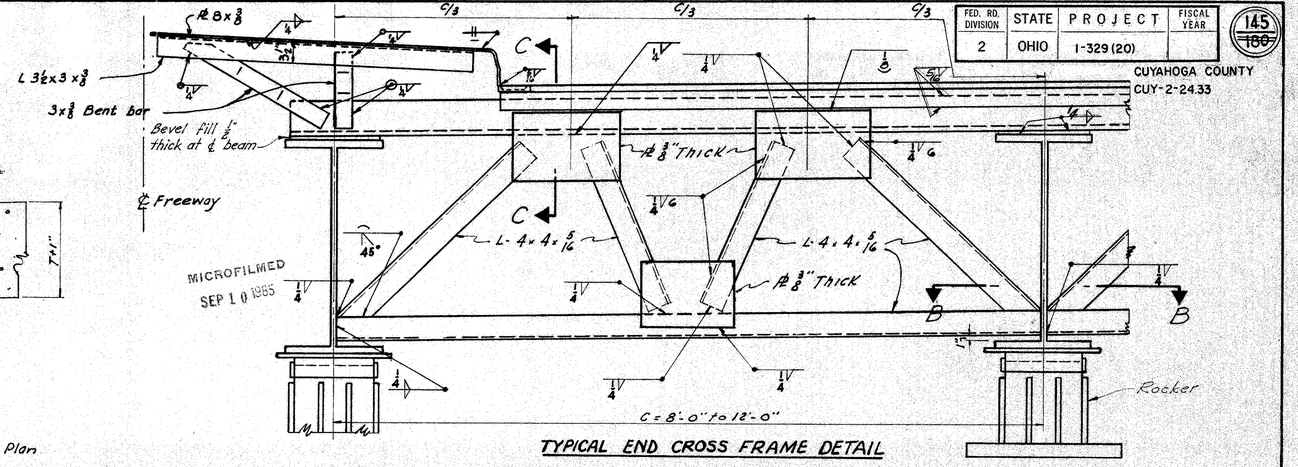
Gutters shall be accurately adjusted for alignment and grade, with allowance for dead load deflection, before concrete is placed.



SECTION B-B (For Skewed Bridges)



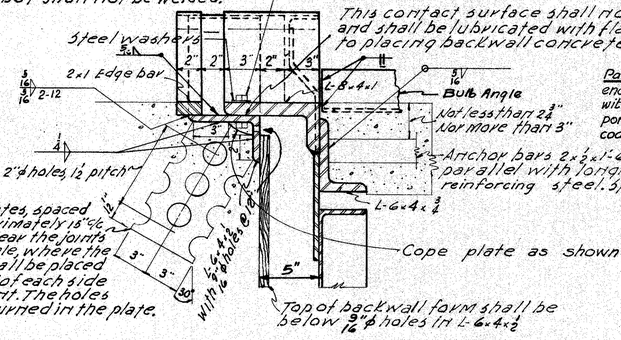
WELDED BUTT JOINT IN SUPERSTRUCTURE END DAM ANGLES AT APEX OF CROWN



TYPICAL END CROSS FRAME DETAIL

A welded butt joint in the end dam along the apex of the crown will be required for that portion of the end dam attached to the superstructure. The portion attached to the backwall shall be placed in segments not less than 6'-0" in length, with one of the joints at the apex of the crown. These shall be closely butted but shall not be welded.

5/8" ø bolts at not more than 2'-0" ℄ with nuts tack welded to under side of lower angle. 1 1/16" holes in upper angle. Center 5/8" bolts in 1 1/16" holes. Apply flake graphite between washers and angle. Turn bolt tight and release one-half turn. Remove bolts as soon as concrete has set, preferably within two hours after placing, to avoid damage due to temperature expansion or contraction of superstructure. Fill holes with bituminous material.

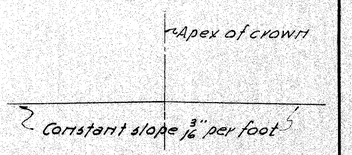


This contact surface shall not be painted and shall be lubricated with flake graphite prior to placing backwall concrete.

Paint. Omit shop coat on all portions of end dam. Portions in contact with steel or with concrete shall not be painted. All other portions shall be cleaned and given the shop coat in the field as well as the two field coats.

SECTION C-C SHOWING ROADWAY END DAM

FOR MEDIAN FINISH SEE DWG. #147



BRIDGE ROADWAY CROWN

(FOR NON-SUPERELEVATED SECTIONS ONLY)

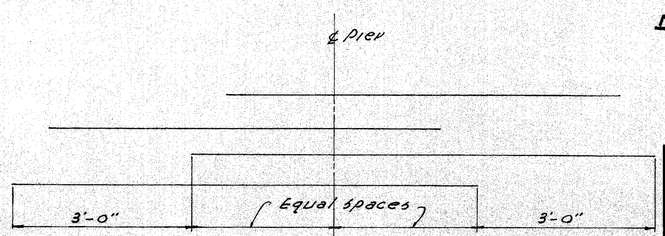


DIAGRAM SHOWING STAGGER OF "O" BARS OVER PIERS

NOTE: Scupper details shown are for bridge on tangent only. For details of scuppers on curved bridges see drawing #147

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BRIDGE DETAILS

BRIDGE, CUY-2-2533; CUY-2-2554; CUY-2-2591
LAKELAND FREEWAY
CUYAHOGA COUNTY
SEC. 2-24.33

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
A.V.C.	T.P.	J.W.P.	D.H.G.			

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
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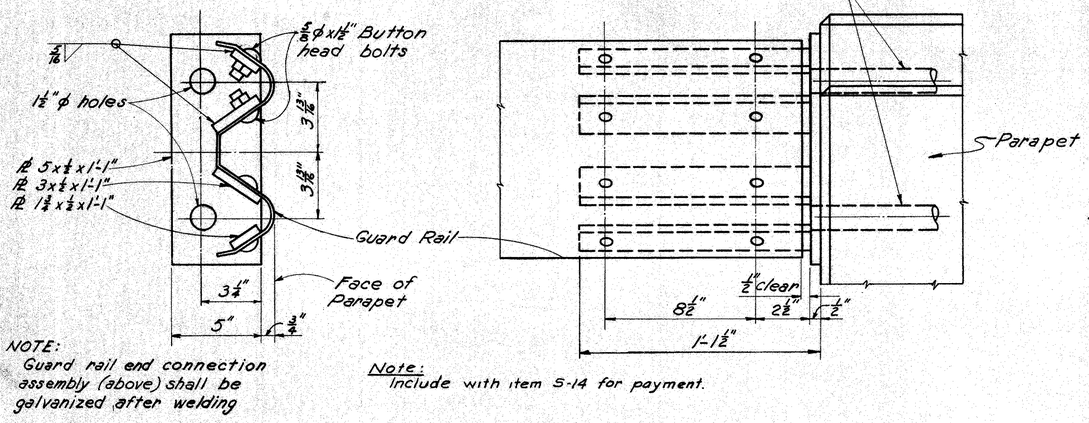
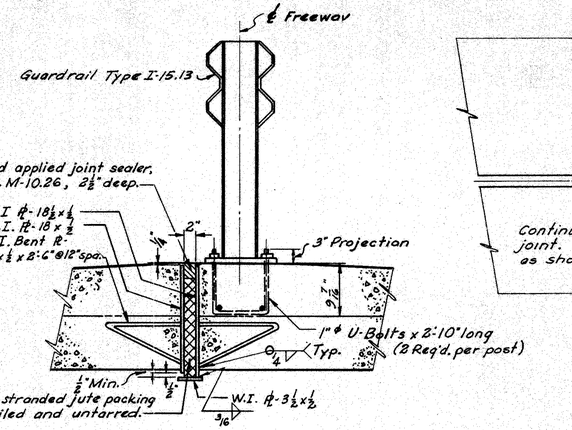


NOTE:
Guard rail end connection assembly (above) shall be galvanized after welding

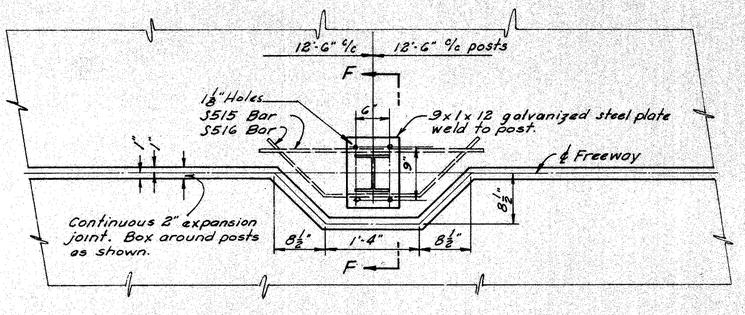
Note:
Include with item S-14 for payment.

GUARD RAIL END CONNECTION DETAIL

(As seen from pavement side)



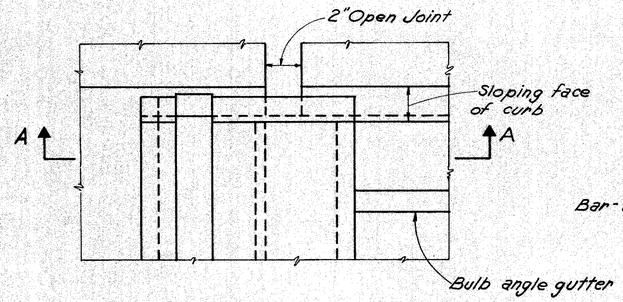
SECTION F-F



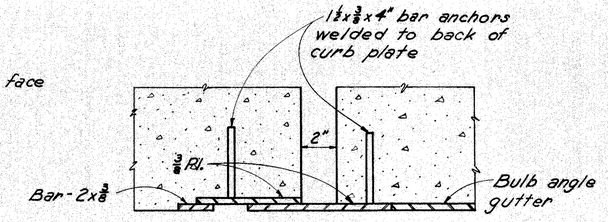
PLAN AT GUARDRAIL POST

CENTERLINE EXPANSION JOINT

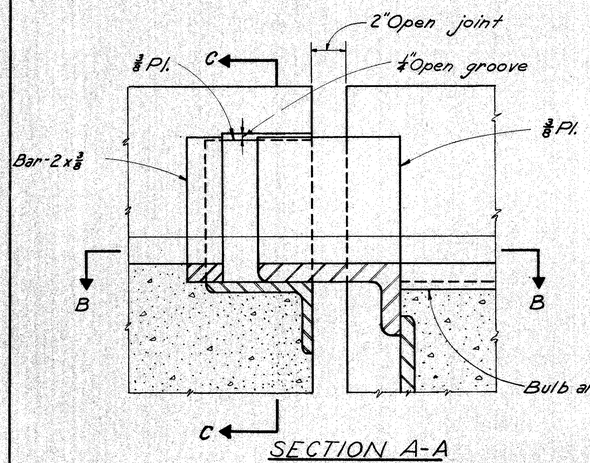
Including wrought iron plates, jute and joint sealer, to extend the full length of bridge between end dam angles.



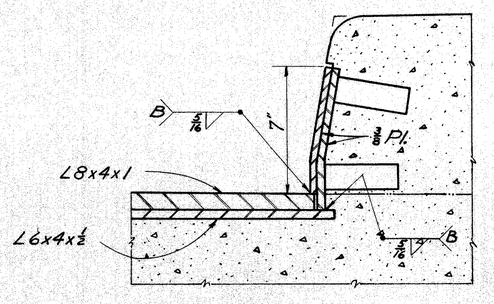
PART PLAN



SECTION B-B



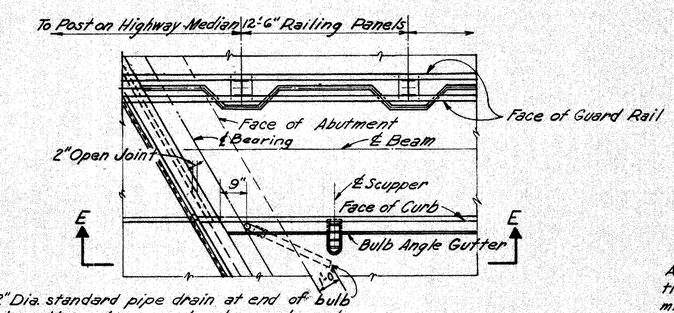
SECTION A-A



SECTION C-C

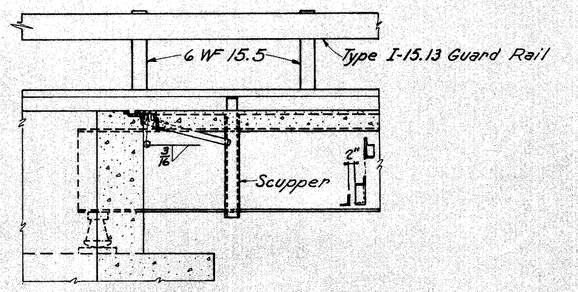
CURB PLATE DETAILS

MEDIAN GUARD RAIL DETAIL

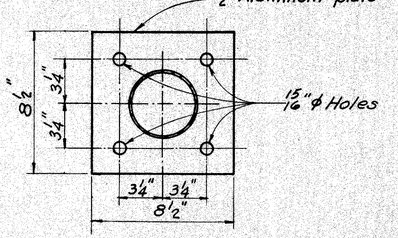


2" Dia. standard pipe drain at end of bulb angle gutter where grade slopes down to end dam. Use standard elbow and coupling. A welded bend may be used where space does not permit use of standard elbow.

PART PLAN AT ABUTMENT

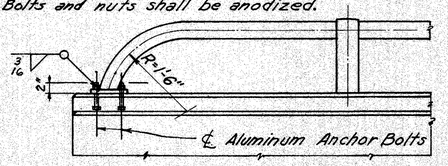


SECTION E-E



RAILING END BASE PLATE DETAIL

ANCHOR BOLTS shall be aluminum with a head or nut at the lower end. They shall be 1'-0" long and shall have a minimum diameter of 0.62" at the root of the thread. Bolts and nuts shall be anodized.



RAILING END DETAIL

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BRIDGE DETAILS

BRIDGE, CUY-2-2533, CUY-2-2554, CUY-2-2591
LAKELAND FREEWAY
CUYAHOGA COUNTY
SEC-2-24.33

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
A.J.C.	J.W.P.	J.W.P.	[illegible]			

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
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CUYAHOGA COUNTY
CUY-2-24.33

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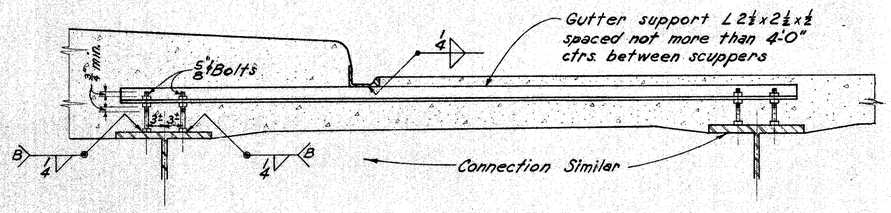
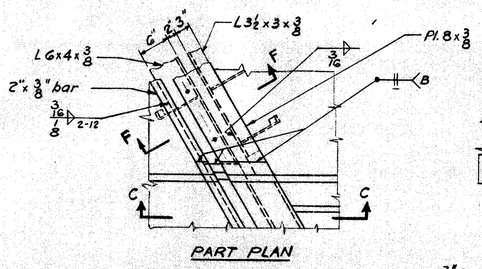
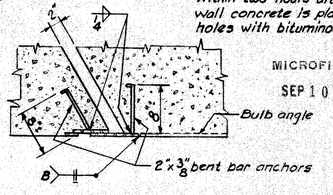


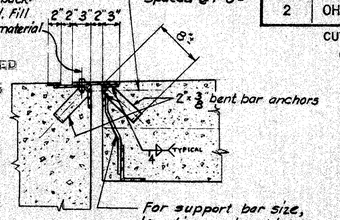
GUTTER SUPPORT AT MEDIAN



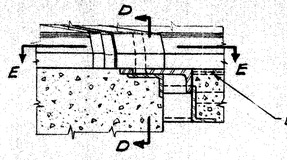
PART PLAN



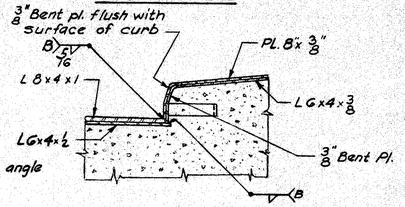
SECTION E-E



SECTION F-F

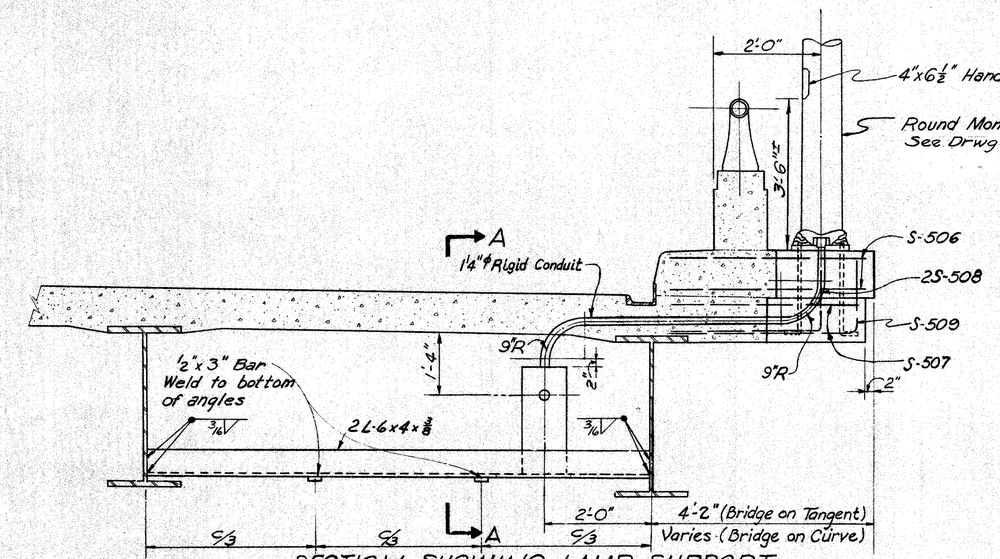


SECTION C-C

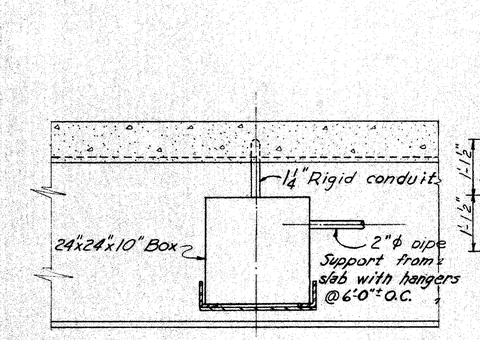


SECTION D-D

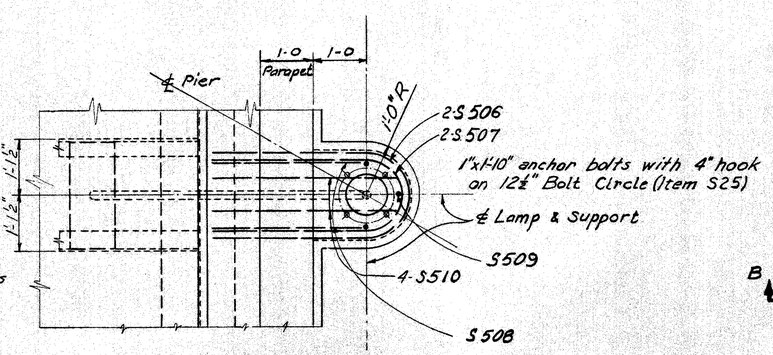
MEDIAN CURB DETAILS AT END FINISH



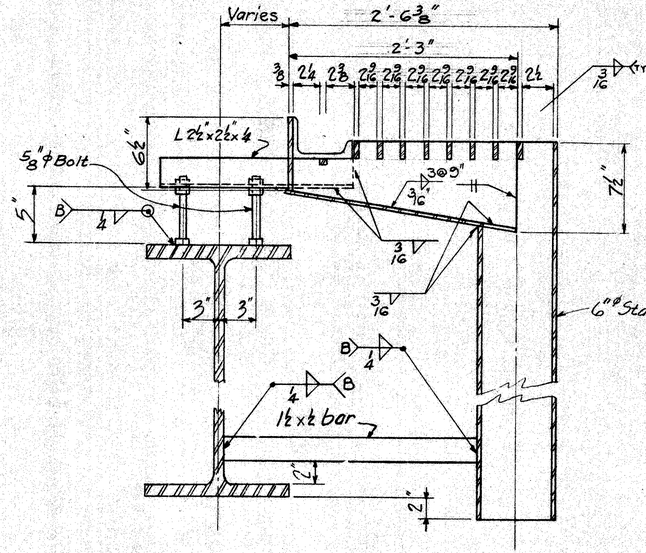
SECTION SHOWING LAMP SUPPORT JUNCTION BOX



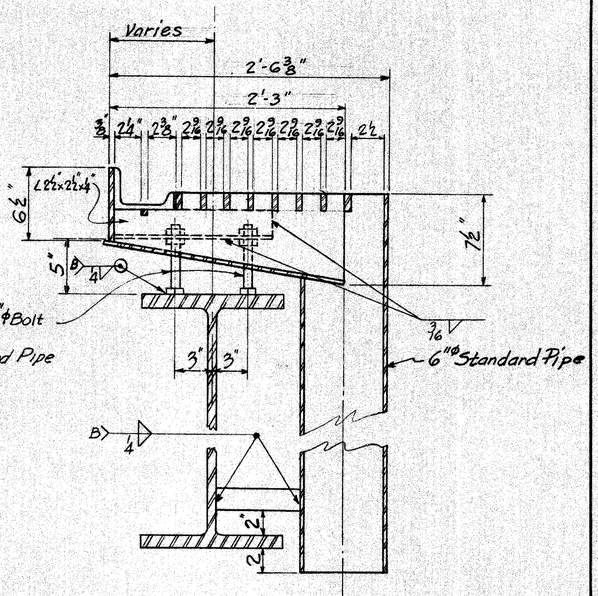
SECTION A-A



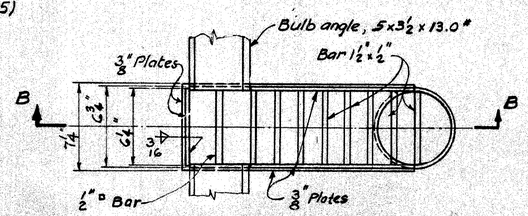
PLAN



SECTION B-B (Bridge on Curve)



ALTERNATE SECTION B-B (Bridge on Curve)



SCUPPER PLAN

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

BRIDGE DETAILS

BRIDGE CUY-2-2533, CUY-2-2554, CUY-2-2591
LAKELAND FREEWAY
CUYAHOGA COUNTY
SEC-2-24.33

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
A.F.C.	J.W.P.	J.W.P.	J.A.G. 10/28			

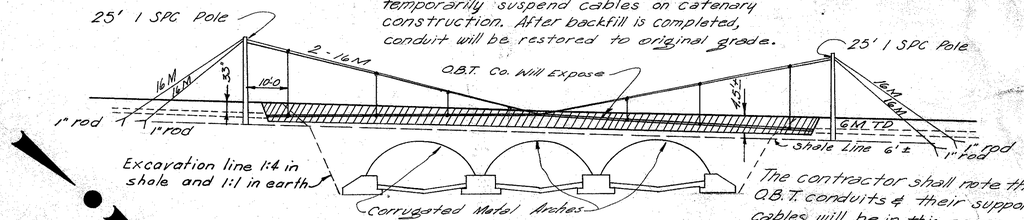
MICROFILMED
SEP 10 1965

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

148
180

CUYAHOGA COUNTY
CUY-2-24.33

NOTE: O.B.T. Co. To remove conduit and temporarily suspend cables on catenary construction. After backfill is completed, conduit will be restored to original grade.



TEMPORARY TELEPHONE CONDUIT SUPPORT

The contractor shall note that O.B.T. conduits & their supporting cables will be in this area as shown, during construction of the structure.

PROPOSED STRUCTURE

TYPE: 3-BARREL SECTIONAL PLATE ARCH CULVERT WITH REINFORCED CONCRETE PIERS, ABUTMENT AND SLAB.
SPANS: 20'-0" AT SPRING-LINE OF EACH ARCH.
LENGTH: 1000.0'
HEIGHT: 14'-6" INVERT TO CROWN OF ARCH.
ALIGNMENT: TANGENT SECTIONS WITH 5° DEFLECTION ANGLES AS SHOWN.
SKEW: 50°-08'-14" R.F. E.185TH; 7°-14'-01" L.F. ℄ FWY.
LOADING: H-20
APPROACH CHANNEL: REINFORCED CONCRETE WALLS AND SLAB; 380'-0" x 60'-0⅜".

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

DRAINAGE STRUCTURE № CUY-2-2531

LAKELAND FREEWAY OVER EUCLID CREEK
STATION 0+00 TO STATION 6+38
STA. 255+73.67

SR-2 & USR 20
SCALE: 1"=20'-0"
SEC. CUY-2-24.33
I-329(20) CUYAHOGA COUNTY

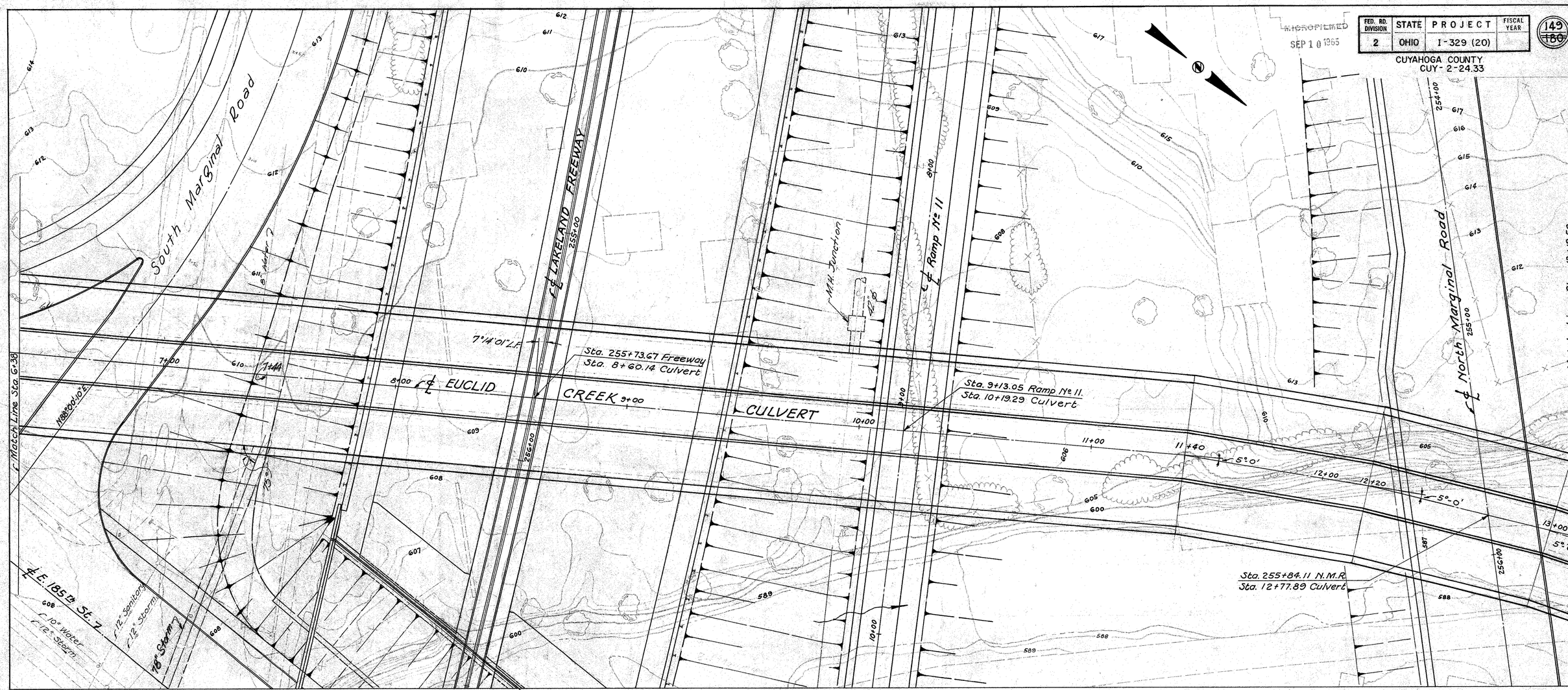
TOPOGRAPHY		PROPOSED WORK				
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
Aerial Survey	T.L.P.	ERA	RLG			

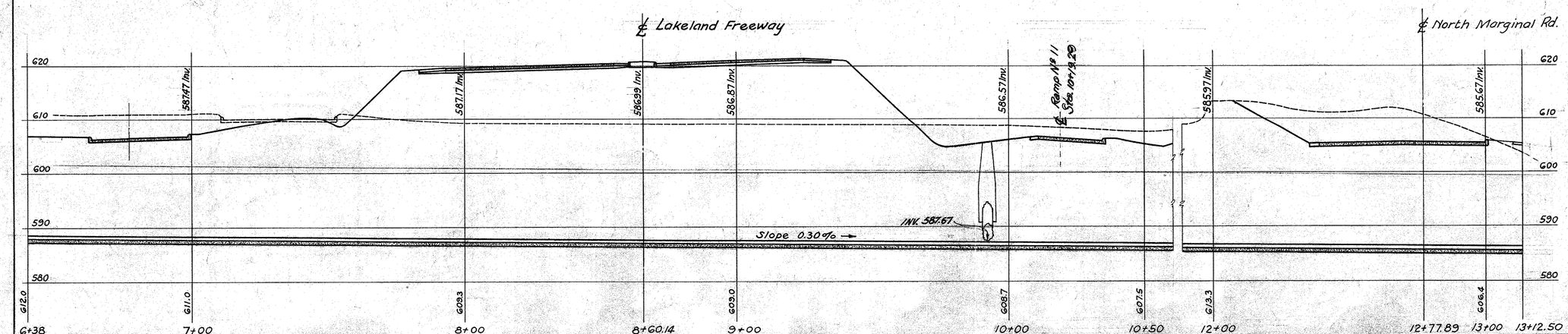
SITE PLAN EUCLID CREEK CULVERT

MICROFILMED
SEP 10 1965

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33





PROPOSED STRUCTURE

TYPE: 3-BARREL SECTIONAL PLATE ARCH CULVERT WITH REINFORCED CONCRETE PIERS; ABUTMENT AND SLAB.
SPANS: 20'-0" AT SPRING-LINE OF EACH ARCH.
LENGTH: 1000.0'
HEIGHT: 14'-6" INVERT TO CROWN OF ARCH.
ALIGNMENT: TANGENT SECTIONS WITH 5° DEFLECTION ANGLES AS SHOWN.
SKEW: 50°-08'-14" R.F. E.185TH.; 7°-14'-01" L.F. ℄ FWY.
LOADING: H-20
APPROACH CHANNEL: REINFORCED CONCRETE WALLS AND SLAB, 380'-0" x 60'-0 3/8"

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

DRAINAGE STRUCTURE No CUY-2-2531

LAKELAND FREEWAY OVER EUCLID CREEK
STATION 6+38 TO STATION 13+12.50

STA. 255 73.67
SR-2 & USR 20 SEC. CUY-2-24.33
SCALE: 1"=20'-0" I-329(20) CUYAHOGA COUNTY

TOPOGRAPHY		PROPOSED WORK				
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
Aerial Survey	T.L.P.	[illegible]	[illegible]	[illegible]		

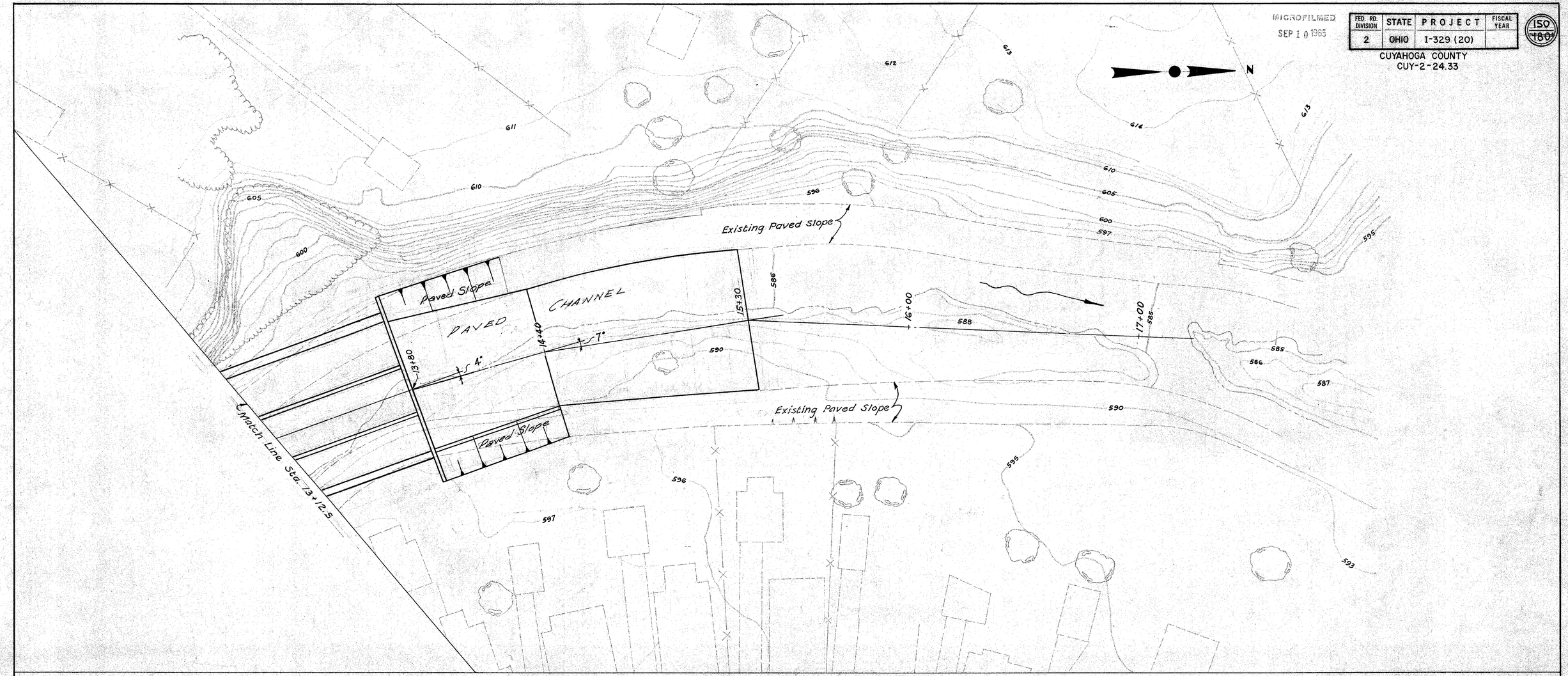
SITE PLAN EUCLID CREEK CULVERT

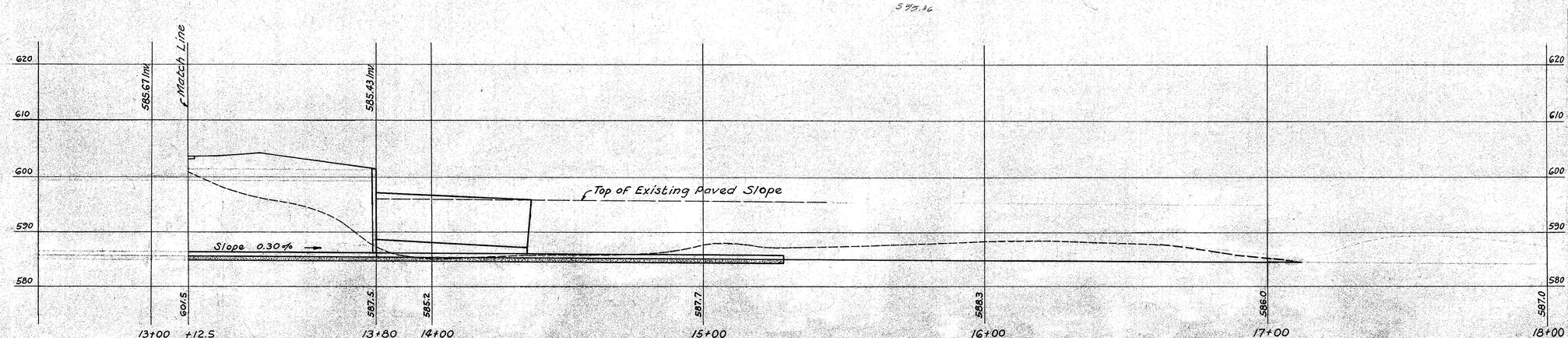
MICROFILMED
SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

150
~~180~~





PROPOSED STRUCTURE

TYPE: 3-BARREL SECTIONAL PLATE ARCH CULVERT WITH REINFORCED CONCRETE PIERS, ABUTMENT AND SLAB.
SPANS: 20'-0" AT SPRING-LINE OF EACH ARCH.
LENGTH: 1000.0'
HEIGHT: 14'-6" INVERT TO CROWN OF ARCH.
ALIGNMENT: TANGENT SECTIONS WITH 5° DEFLECTION ANGLES AS SHOWN.
SKEW: 50°-08'-14" R.F. E.185TH; 7°-14'-01" L.F. ℄ FWY.
LOADING: H-20
APPROACH CHANNEL: REINFORCED CONCRETE WALLS AND SLAB; 380'-0" x 60'-0 3/8"

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

DRAINAGE STRUCTURE Nº CUY-2-2531

LAKELAND FREEWAY OVER EUCLID CREEK
STATION 13+12.50 TO STATION 13+80

STA. 255 73.67
SR-2 & USR 20 SEC. CUY-2-24.33
SCALE: 1"=20'-0" I-329(20) CUYAHOGA COUNTY

TOPOGRAPHY		PROPOSED WORK				
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
Aerial Survey	T.L.P.	RHL	RHL			

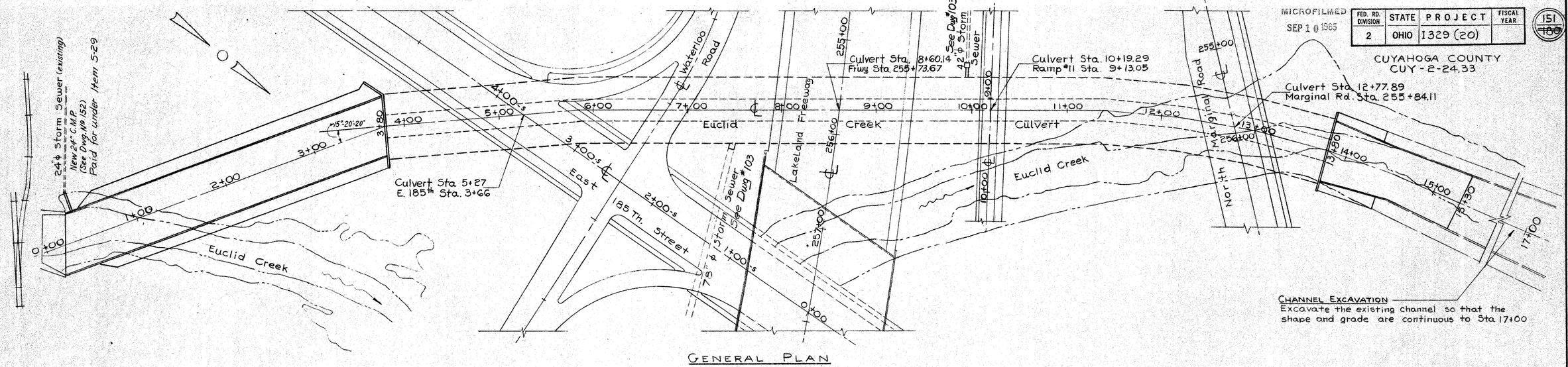
SITE PLAN EUCLID CREEK CULVERT

MICROFILMED
SEP 10 1985

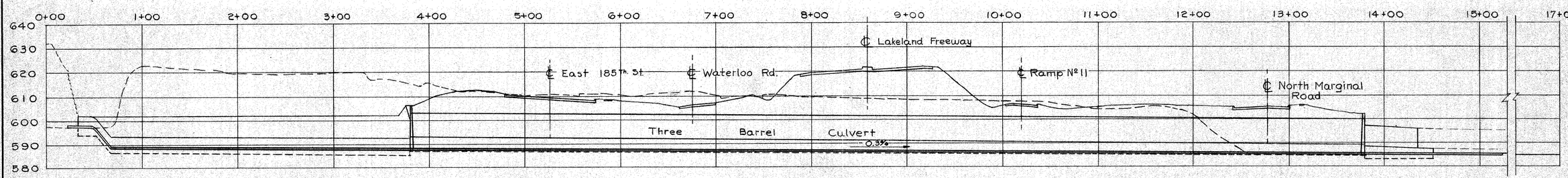
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	1329 (20)	

151 ~~186~~

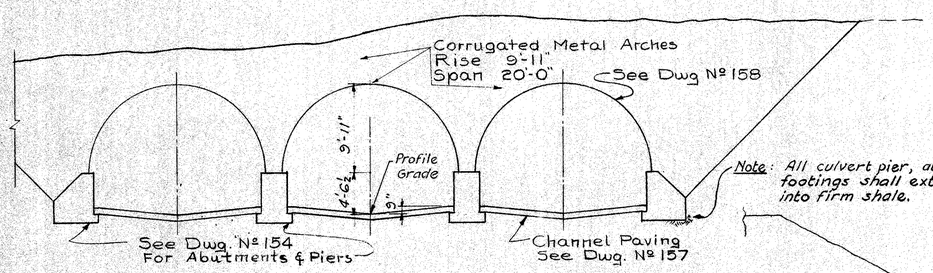
CUYAHOGA COUNTY
CUY-2-24.33



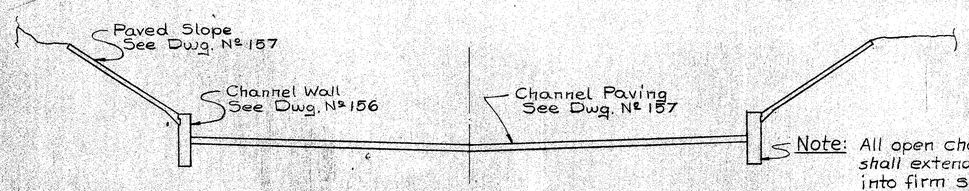
GENERAL PLAN



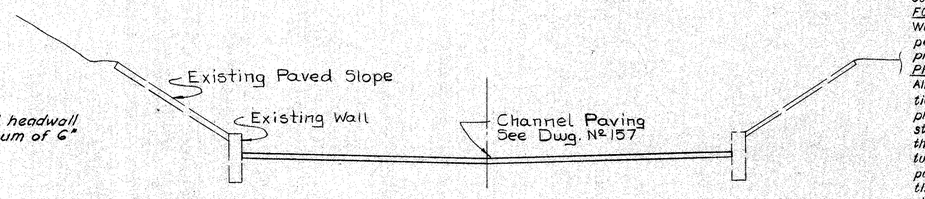
PROFILE



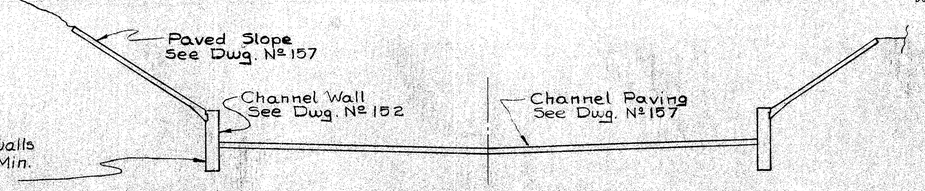
SECTION STA. 3+80 to STA. 13+80



SECTION STA. 13+80 to STA. 14+40



SECTION STA. 14+40 to STA. 15+30



SECTION STA. 0+00 to STA. 3+80

GENERAL NOTES:

DESIGN SPECIFICATIONS:
This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated September 1, 1957 together with revisions dated February 21, 1958.

FOUNDATIONS BEARING PRESSURE:
Wall footings are designed for a maximum bearing pressure of 3.0 tons per square foot. Culvert footings are designed for a maximum bearing pressure of 7.9 tons per square foot.

PROCEDURE:
All excavation and concrete work except the headwall above the sectional plate arches from sta. 1+60± to sta. 10+30± shall be completed while flow is maintained in the existing channel. Diversion structures shall then be erected to divert flow to east portions of the existing channel so that the ends of the westerly half of the structure can be constructed in the dry. After completion of the westerly portion of the structure, the flow shall be diverted thru that portion and the remaining parts of the structure completed. All water diversion structures shall be paid for under Item E-2 Cofferdams, cribs, and sheeting.
Before construction is started eight sets of prints showing details of the structures to be used on the railroad property shall be submitted to the Director for approval by the Highway Department and the New York Central Railroad. Before construction is started 2 sets of prints showing details of the other diversion structures shall be submitted to the Director for approval by the Highway Department.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 8, Ohio

GENERAL PLAN & ELEVATION CROSS SECTIONS & DETAILS EUCLID CREEK CULVERT DRAINAGE STRUCTURE Nº CUY-2-2531

LAKELAND FREEWAY OVER EUCLID CREEK

CUYAHOGA COUNTY
SEC. CUY-2-24.33 STA. 255 + 73.67

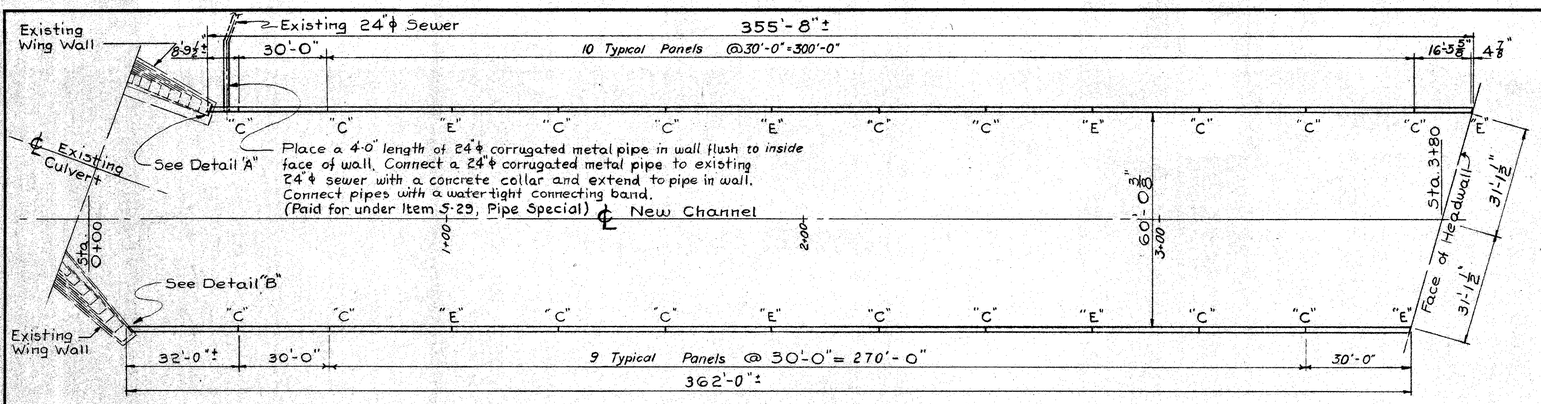
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
BMA	BMC	CB	GYC			

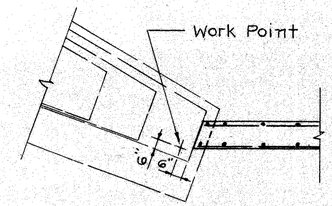
MICROFILMED
SEP 10 1985

FED. HWY. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

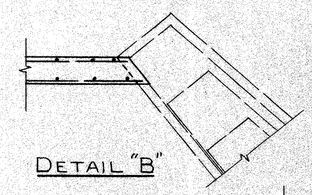
152
~~166~~

CUYAHOGA COUNTY
CUY-2-24.33

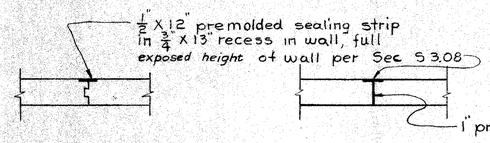




DETAIL "A"



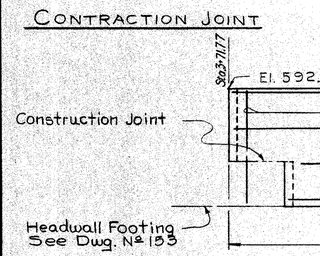
DETAIL "B"



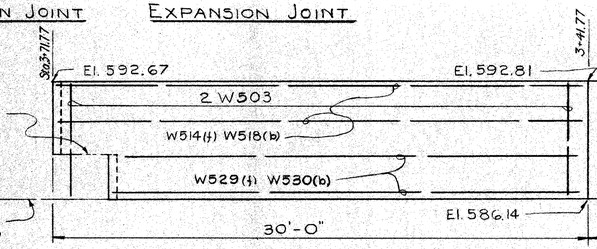
PLAN OF WALLS
(Sta. 0+00 to Sta 3+80)

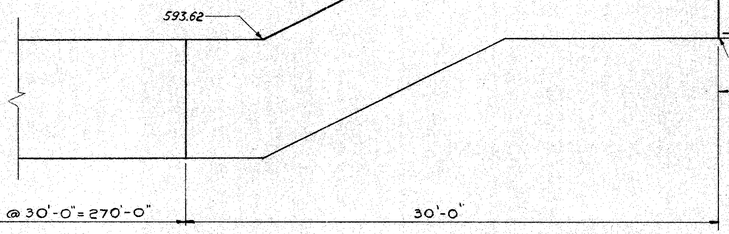
NOTE:
"C" indicates contraction joint
"E" indicates expansion joint.

CONTRACTION JOINT

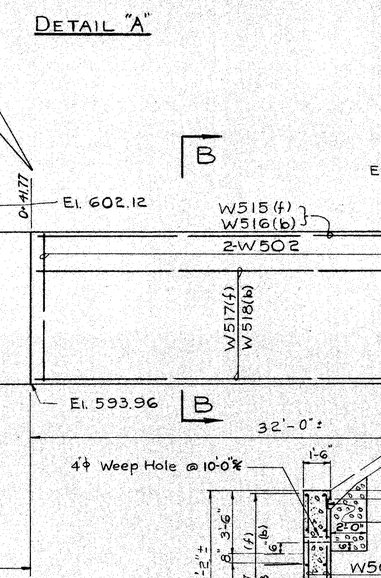


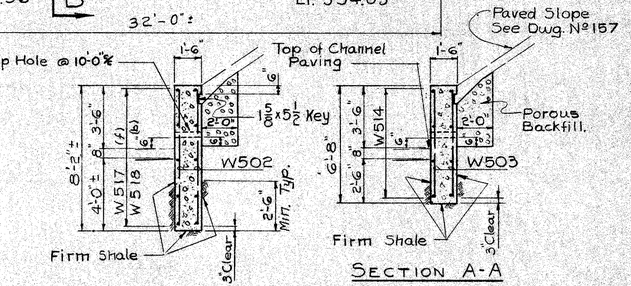
EXPANSION JOINT





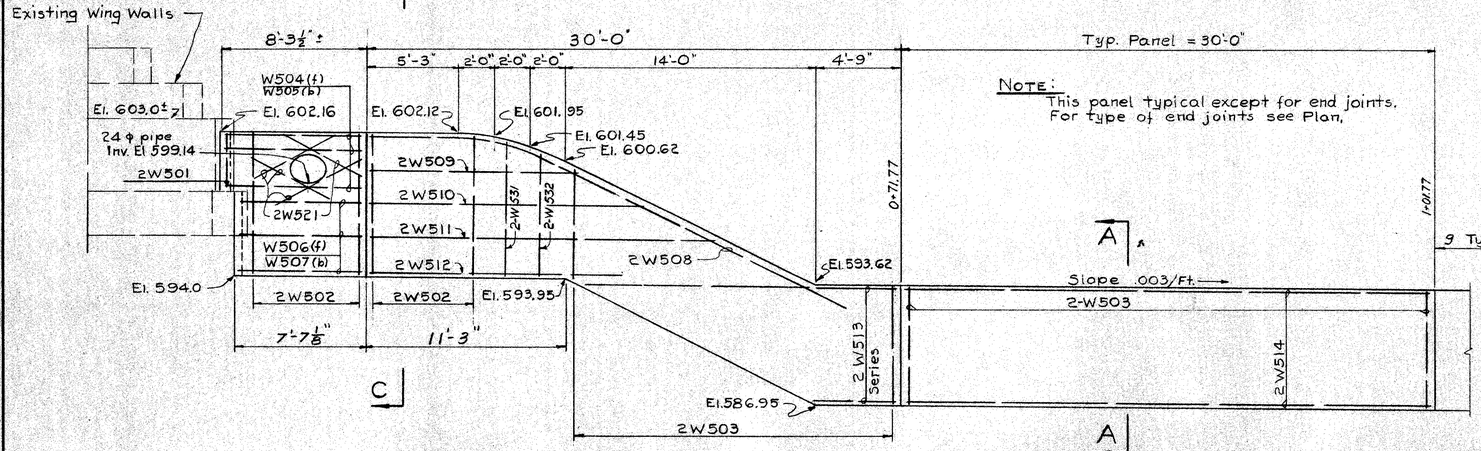
ELEVATION OF NORTH WALL
For details not shown see South Wall.



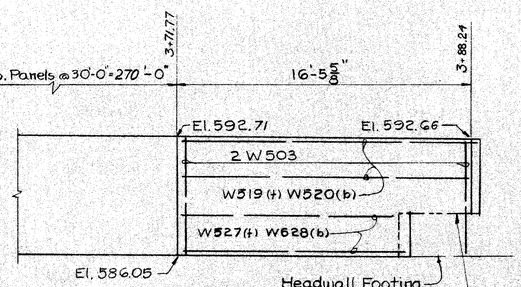


SECTION A-A

SECTION B-B (As shown)
SECTION C-C (Similar)



NOTE:
This panel typical except for end joints.
For type of end joints see Plan.



ELEVATION OF SOUTH WALL

NOTES:
CONCRETE shall be Class "E". Concrete required to extend channel walls into firm shale below elevations shown shall be paid for at price bid per cubic yard of class "E" concrete.
REINFORCING STEEL shall be 2" Clear from any exposed surfaces unless otherwise noted. Reinforcing shall be spaced 2'-0" c/c unless otherwise shown or noted. Location of wall reinforcing is indicated by (f) for front face, or (b) for back face.
PROCEDURE establish Work Point as shown in Detail "A" and locate the face of the South Wall on Headwall at station 3+80. Layout the centerline for the Approach Channel parallel to a line connecting these points, as shown in the Plan View.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

RETAINING WALLS
STATION 0+00 TO 3+80
EUCLID CREEK CULVERT
DRAINAGE STRUCTURE Nº CUY-2-2531
LAKELAND FREEWAY OVER EUCLID CREEK

CUYAHOGA COUNTY
SEC. CUY-2-24.33
STA. 255+73.67

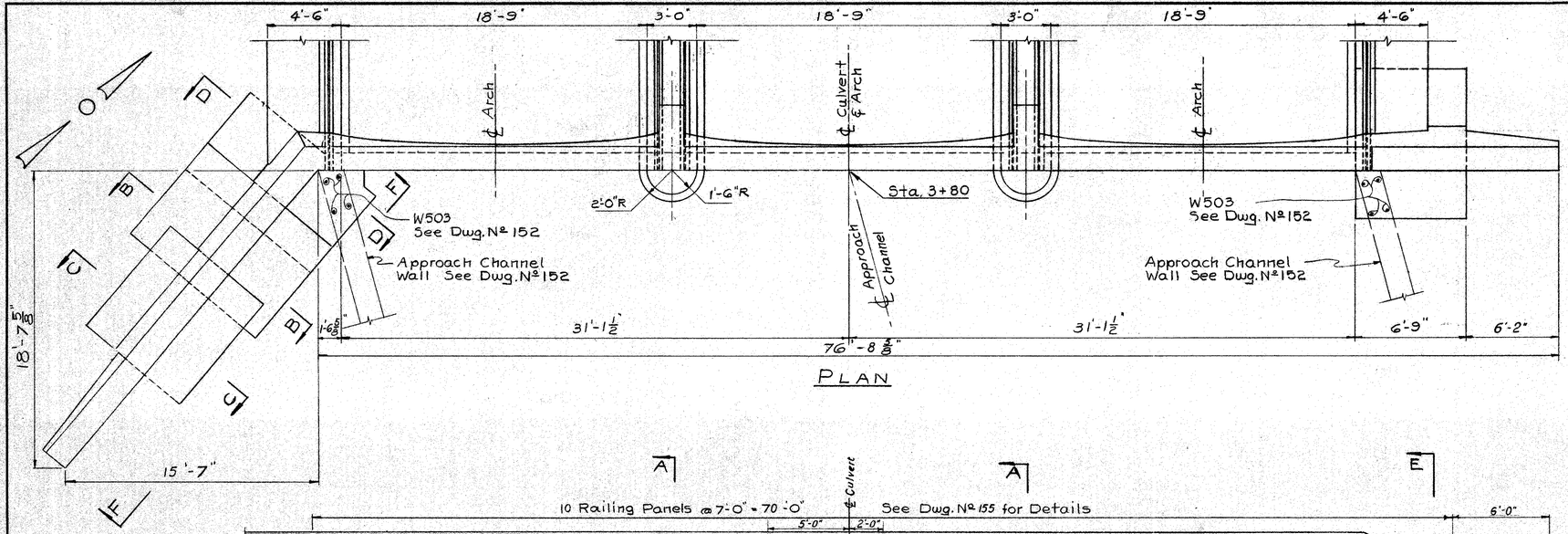
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
BMc	BMc	CB	GBC			

MICROFILMED
SEP 10 1985

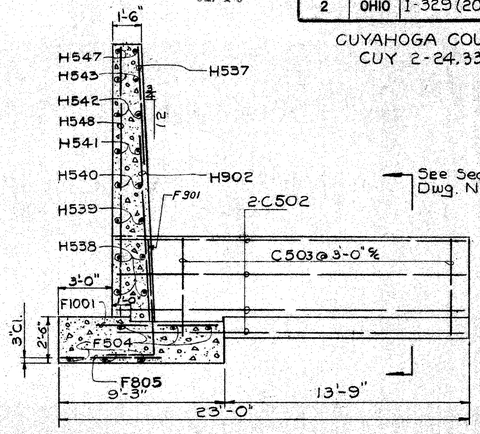
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

153
~~153~~

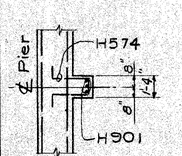
CUYAHOGA COUNTY
CUY 2-24.33



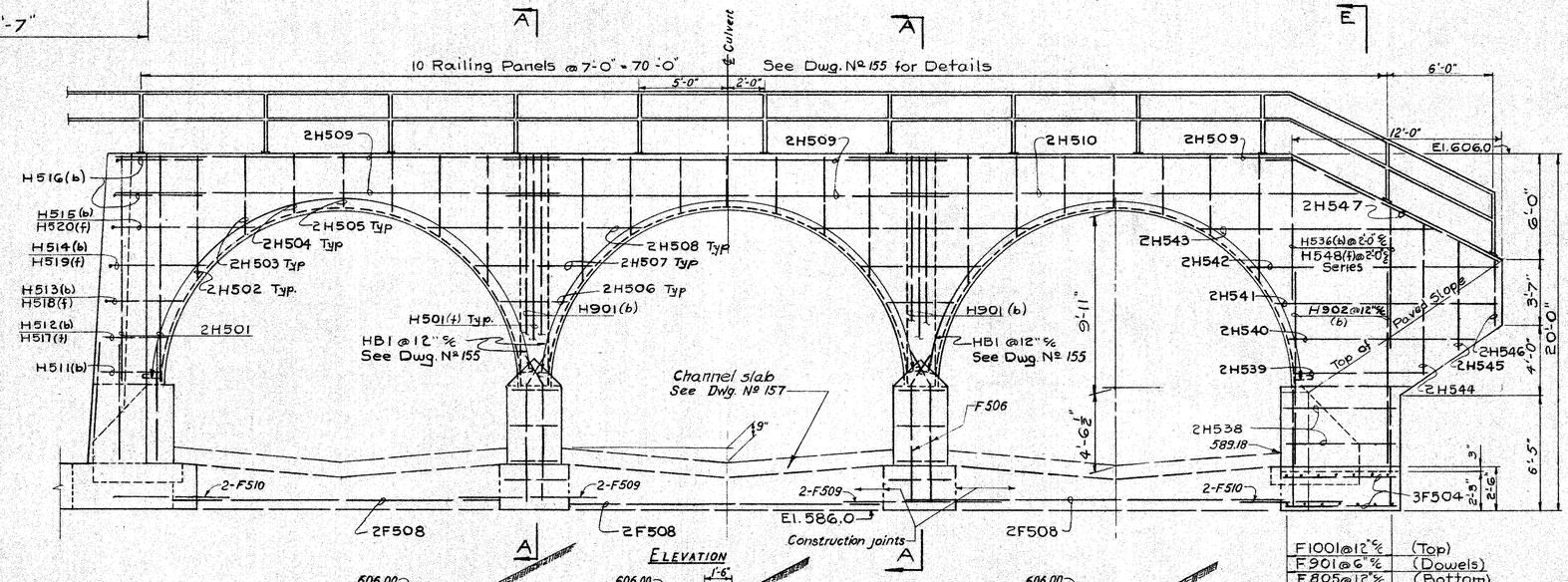
PLAN

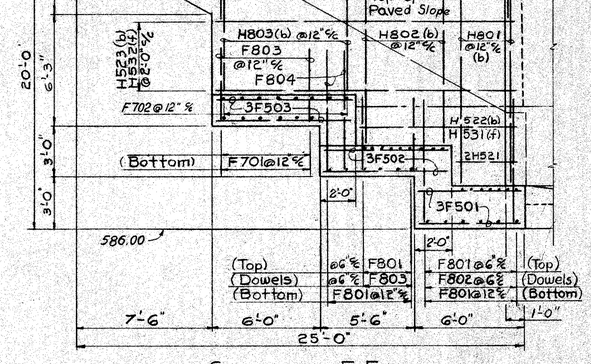


SECTION E-E

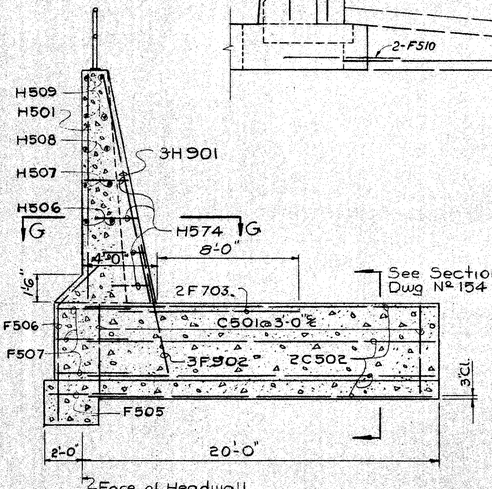


SECTION G-G

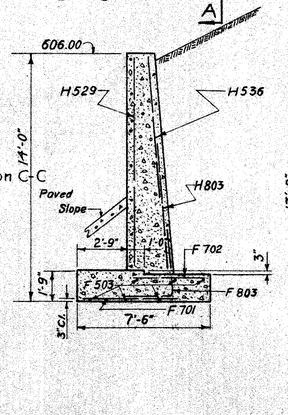




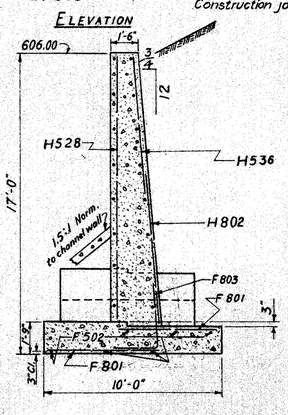
SECTION F-F



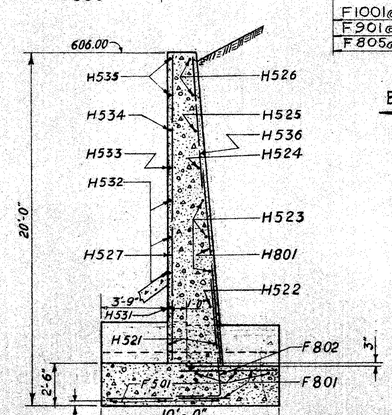
SECTION A-A



SECTION C-C



SECTION B-B



SECTION D-D

NOTES:
For notes see Dwg. Nº 152

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

HEAD WALL AT STA. 3+80
EUCLID CREEK CULVERT
DRAINAGE STRUCTURE Nº CUY-2-2531
LAKELAND FREEWAY OVER EUCLID CREEK
CUYAHOGA COUNTY
SEC CUY-2-24.33
STA. 255+73.67

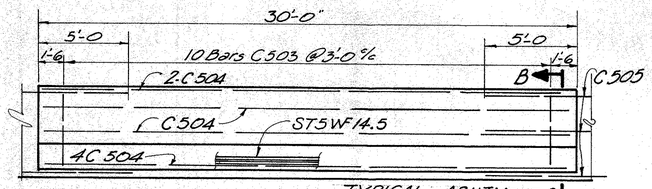
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
BMc	BMc	C.B.	AJC.			

MICROFILMED SEP 10 1965

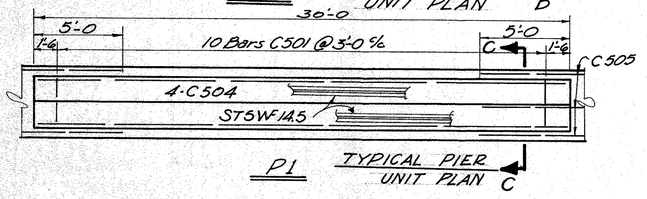
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

154

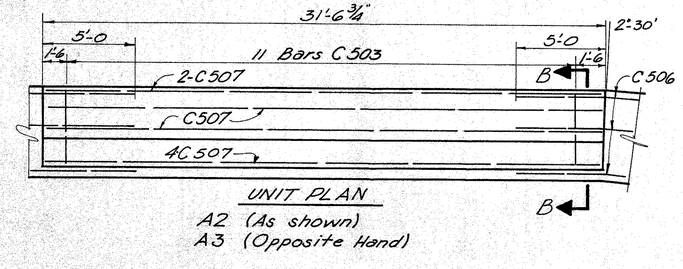
CUYAHOGA COUNTY
CUY-2-24.33



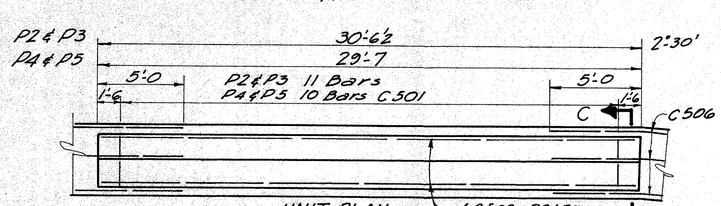
A1 TYPICAL ABUTMENT UNIT PLAN



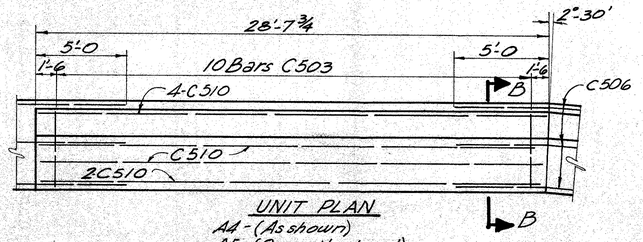
P1 TYPICAL PIER UNIT PLAN



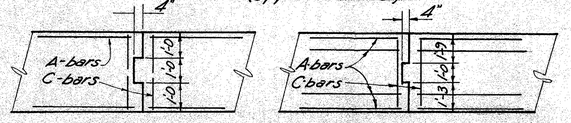
UNIT PLAN
A2 (As shown)
A3 (Opposite Hand)



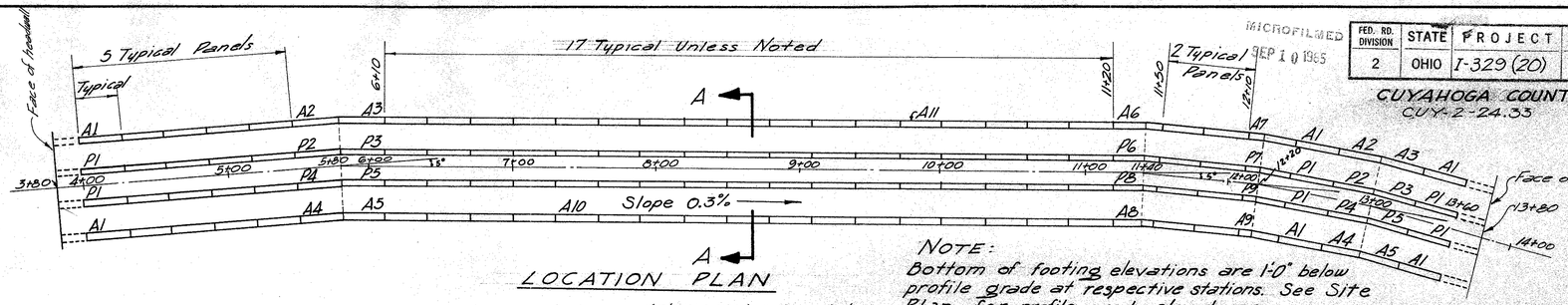
UNIT PLAN
P2 (As Shown)
P3 - (Opposite Hand)
P4 - (As Shown)
P5 - (Opposite Hand)



UNIT PLAN
A4 - (As shown)
A5 - (Opposite hand)



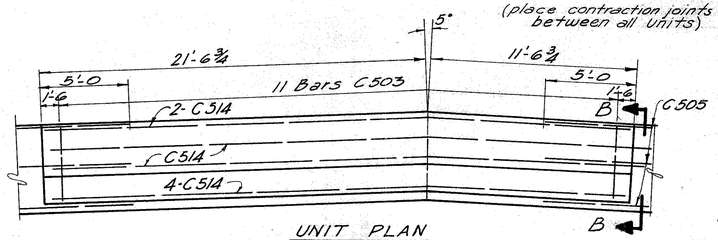
PIER CONTRACTION JOINT ABUTMENT CONTRACTION JOINT



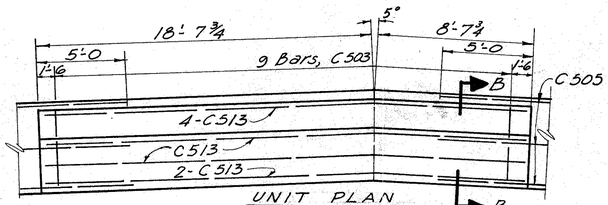
LOCATION PLAN

NOTE:
Bottom of footing elevations are 1'-0" below profile grade at respective stations. See Site Plan for profile grade elevations.

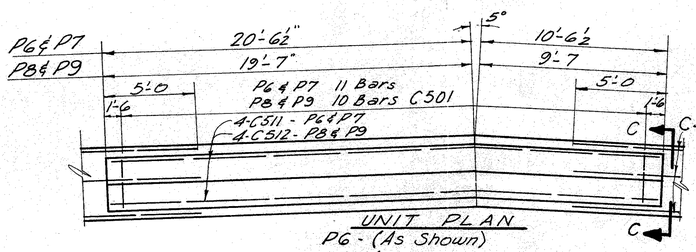
(place contraction joints between all Units)



UNIT PLAN
A6 (As Shown)
A7 (Opposite Hand)

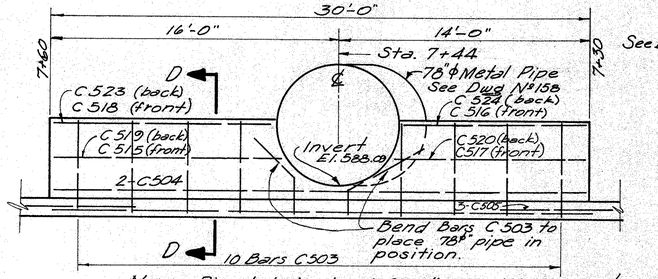


UNIT PLAN
A8 - (As Shown)
A9 - (Opposite Hand)



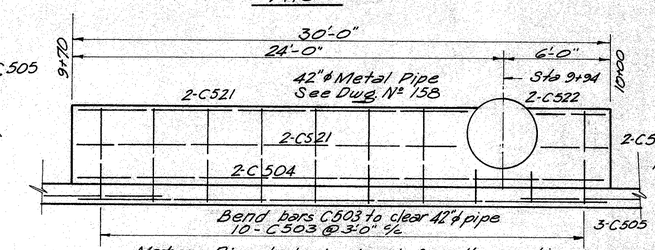
UNIT PLAN
P6 - (As Shown)
P7 - (Opposite Hand)
P8 - (As Shown)
P9 - (Opposite Hand)

SECTION A-A



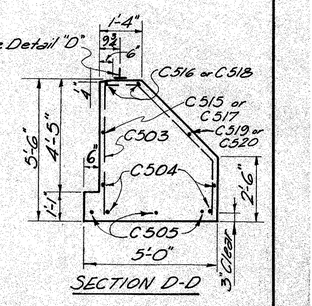
NOTE: Pipe to be in place before this section is poured.

A10

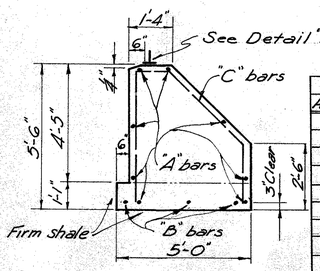


Note: Pipe to be in place before this section is poured

NOTE A: ST5WF145 shall be set in grout to insure uniform level bearing.

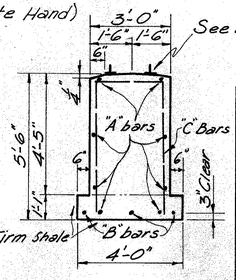


SECTION D-D



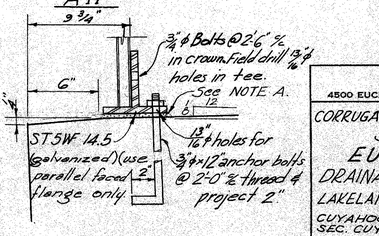
SECTION B-B

Abutment Steel			
Abutment	A Bars	B Bars	C Bars
A1	C504	C505	C503
A2	C507	C506	C503
A3	C507	C506	C503
A4	C510	C506	C503
A5	C510	C506	C503
A6	C514	C505	C503
A7	C514	C505	C503
A8	C513	C505	C503
A9	C513	C505	C503



SECTION C-C

Pier Steel			
Pier	A Bars	B Bars	C Bars
P1	C504	C505	C501
P2	C508	C506	C501
P3	C508	C506	C501
P4	C509	C506	C501
P5	C509	C506	C501
P6	C511	C505	C501
P7	C511	C505	C501
P8	C512	C505	C501
P9	C512	C505	C501



DETAIL "D"

NOTE:
See Dwg N°152 for notes.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

CORRUGATED METAL ARCH CULVERT FOOTINGS
STATION 3+80 TO 13+80
EUCLID CREEK CULVERT
DRAINAGE STRUCTURE N°CUY-22531
LAKELAND FREEWAY OVER EUCLID CREEK
CUYAHOGA COUNTY
SEC. CUY-2-24.33 STA. 255+73.67

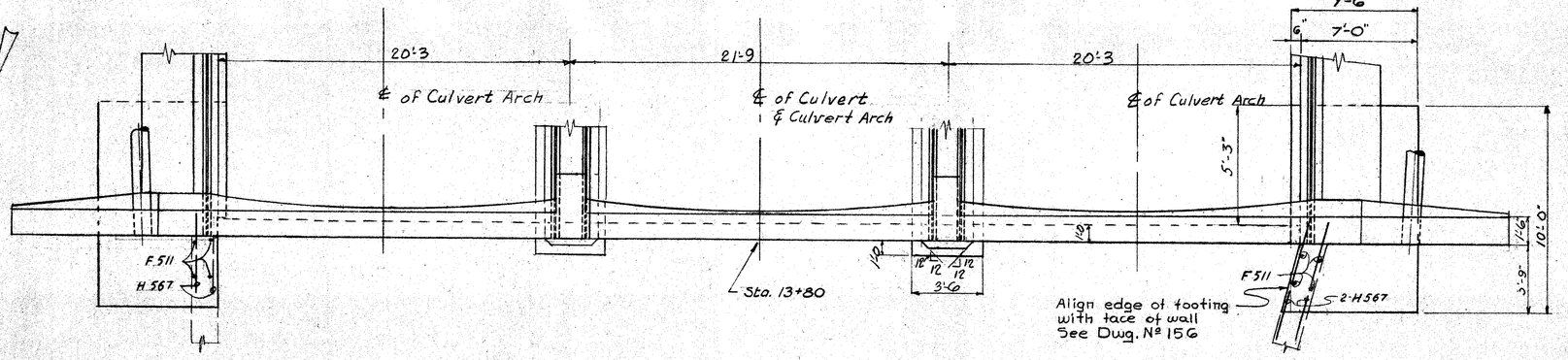
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
BMA'C	BMA'C					

MICROFILMED
SEP 10 1985

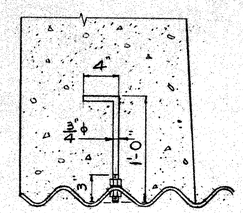
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

155
155

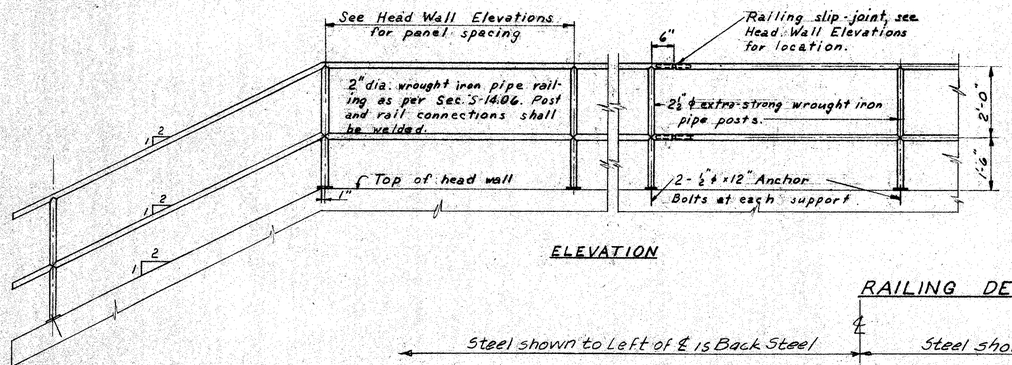
CUYAHOGA COUNTY
CUY.-2-24.33



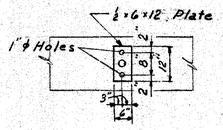
PLAN



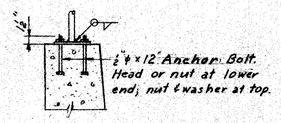
DETAIL OF HOOK BOLT-HB1



ELEVATION

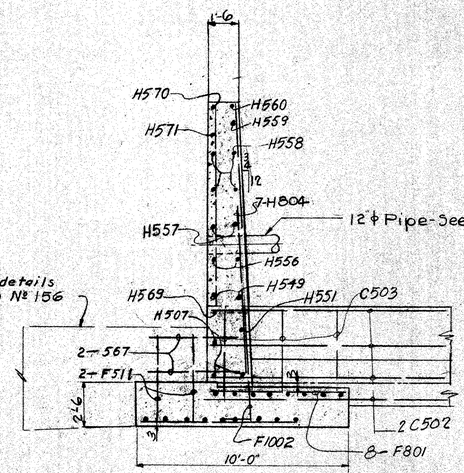


BASE PLATE



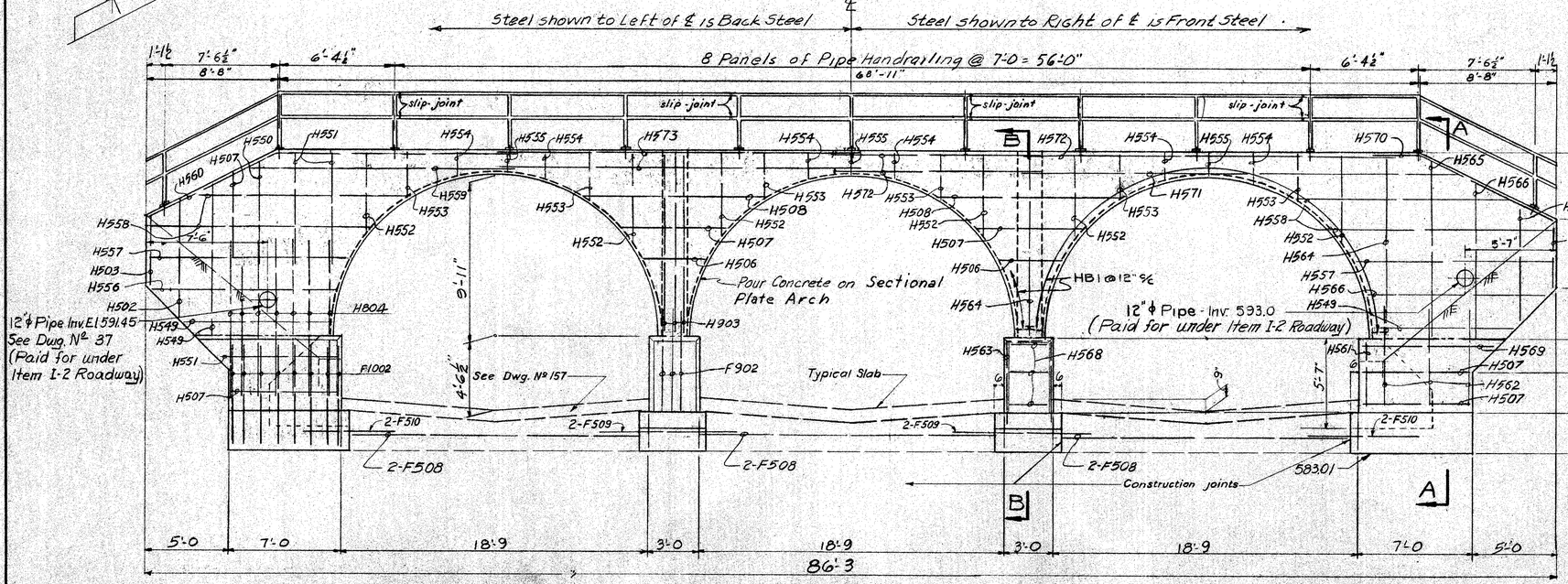
ANCHOR BOLTS

For wall details see drawing Nº 156

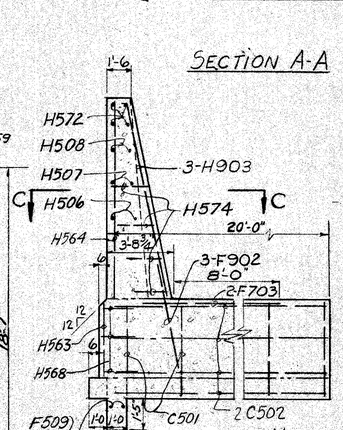


SECTION A-A

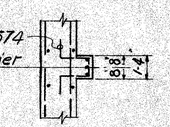
RAILING DETAILS



ELEVATION



SECTION B-B



SECTION C-C

NOTE: For section through Culvert see Dwg. Nº 158

NOTES:
See Dwg. Nº 152 for notes.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

HEAD WALL AT STA. 13+80
EUCLID CREEK CULVERT
DRAINAGE STRUCTURE Nº CUY-2-2531

CUYAHOGA COUNTY
SEC. CUY-2-24.33 STA. 255+73.67

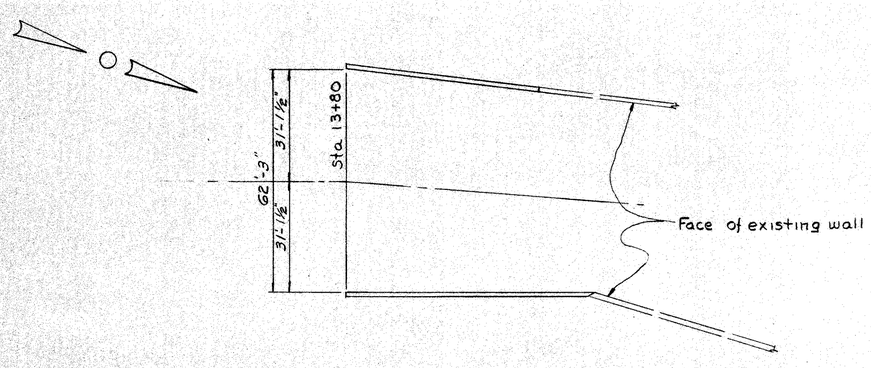
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
BMH	DP	C.B.	DJC			

MICROFILMED SEP 10 1965

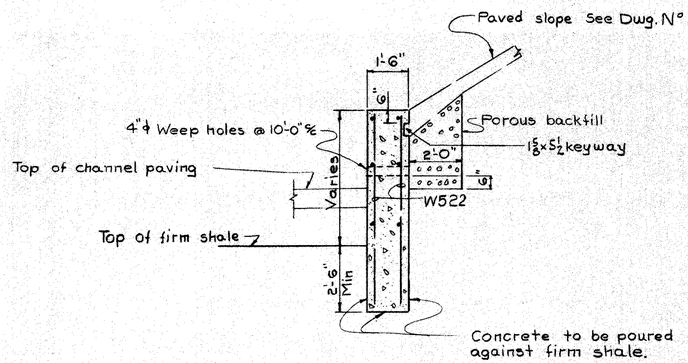
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	T-329 (20)	

156 ~~166~~

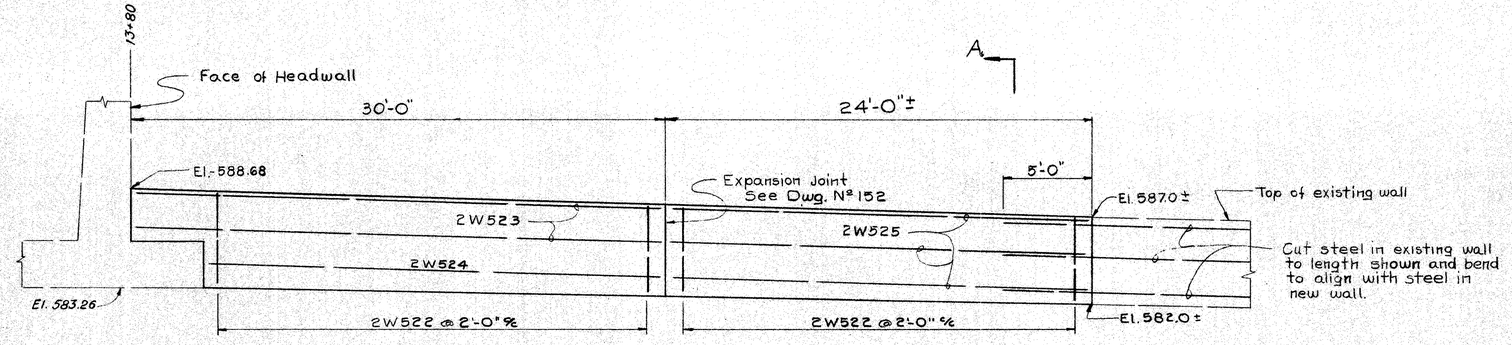
CUYAHOGA COUNTY
CUY-2-24.33



PLAN OF WALLS

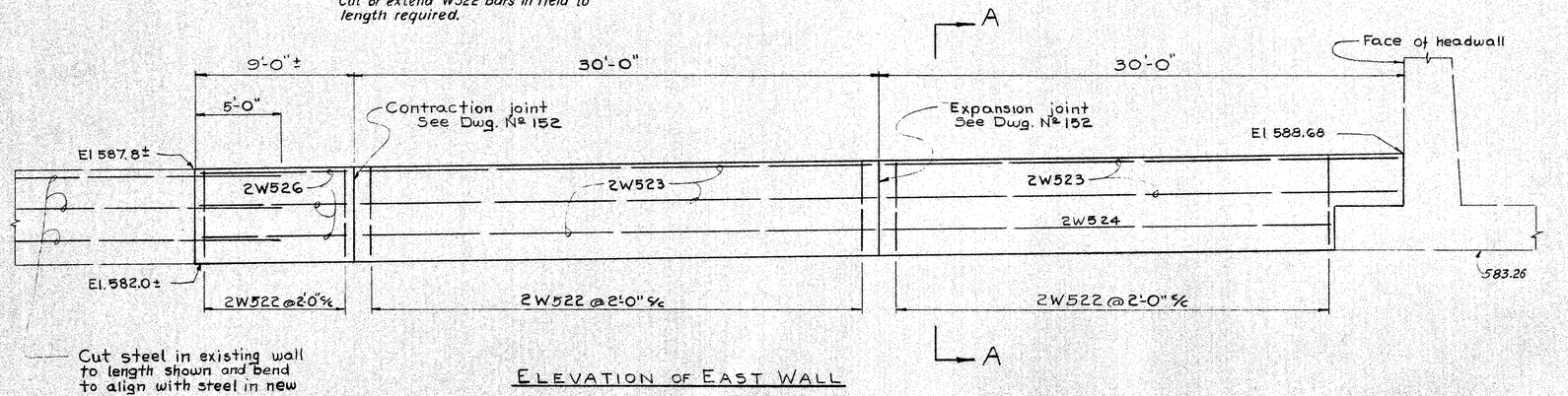


SECTION A-A



ELEVATION OF WEST WALL

NOTE:
Cut or extend W522 bars in field to length required.



ELEVATION OF EAST WALL

NOTES:
For notes see Dwg. N° 152

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 8, Ohio

RETAINING WALLS
STATION 13+80 TO 14+50
EUCLID CREEK CULVERT
DRAINAGE STRUCTURE N° CUY-2-2531
LAKELAND FREEWAY OVER EUCLID CREEK
CUYAHOGA COUNTY
SEC. CUY-2-24.33 STA 255 + 73.67

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
BMc	BMc	CB	JJC			

MICROFILMED
SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

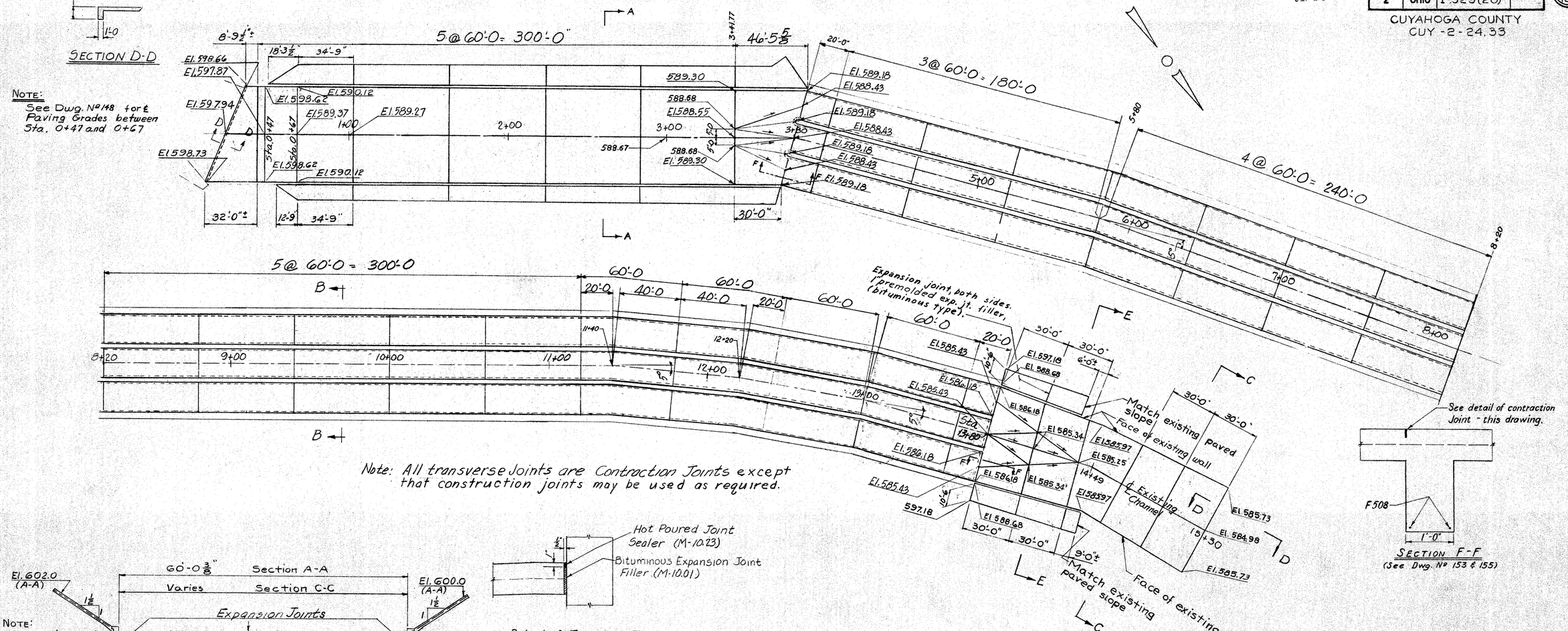
157 ~~166~~

CUYAHOGA COUNTY
CUY-2-24.33

Extend 2'-0" below existing creek bottom

SECTION D-D

NOTE:
See Dwg. No 148 for Paving Grades between Sta. 0+47 and 0+67


5@60'-0" = 300'-0"
3@60'-0" = 180'-0"
4@60'-0" = 240'-0"
El. 598.66
El. 597.87
El. 597.94
El. 598.73
El. 598.62
El. 590.12
El. 589.37
El. 589.27
El. 589.30
El. 588.67
El. 588.55
El. 589.18
El. 588.43
El. 589.18
El. 588.43
El. 589.18
El. 588.43

MICROFILMED
SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

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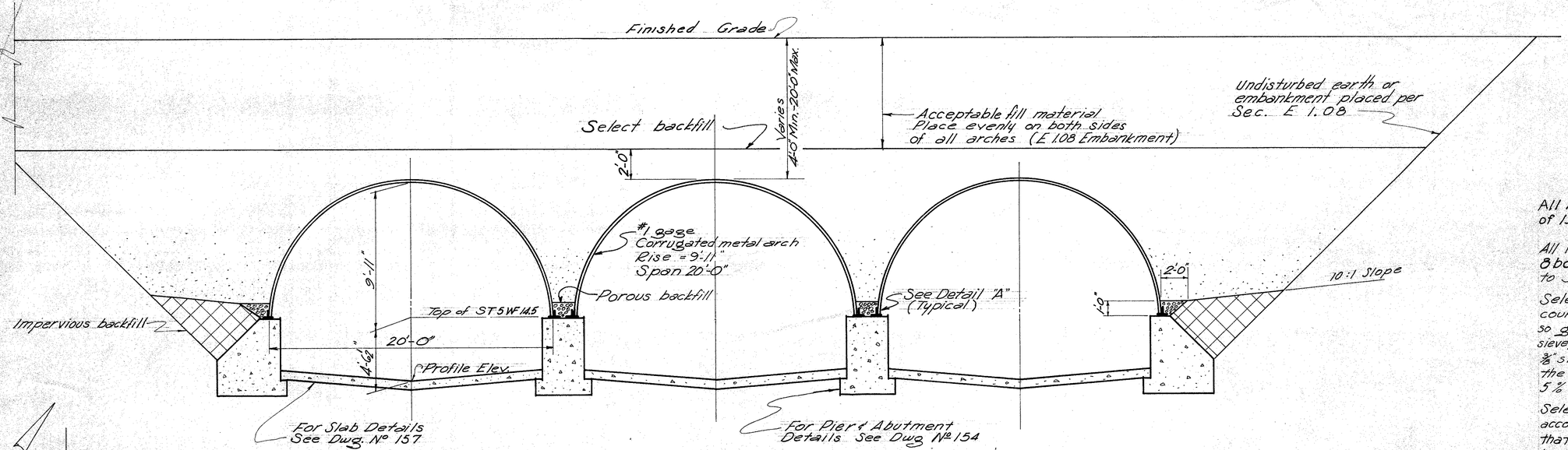
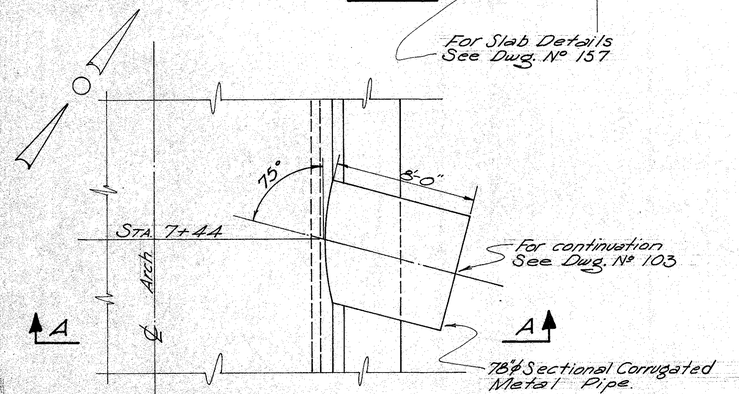
CUYAHOGA COUNTY
CUY-2-24.33

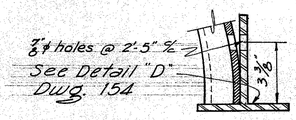


TYPICAL SECTION STA. 3+80 TO STA. 13+80

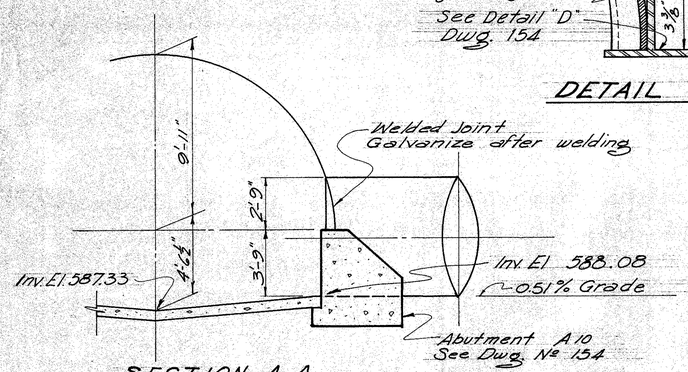
(See Site Plan for Alignment & Profile Grade)



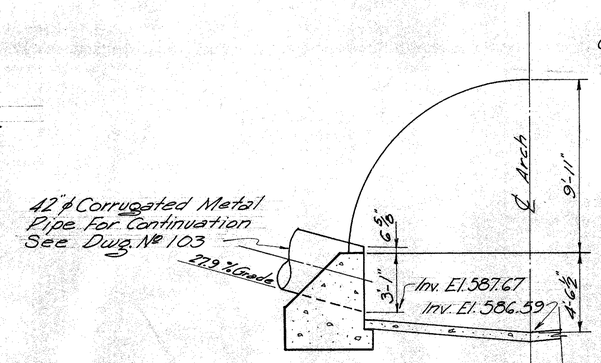
PLAN AT STA 7+44



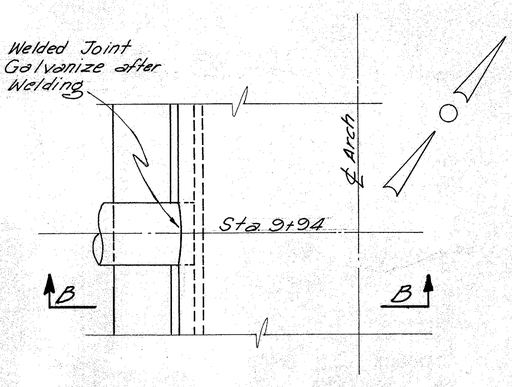
DETAIL "A"



SECTION A-A



SECTION B-B



PLAN AT STA. 9+94

All bolts shall be tightened to a torque of 150 to 250 foot pounds.

All longitudinal joints shall have 8 bolts per foot from Sta. 7+40 to Sta. 10+00.

Select backfill shall be a sand & course aggregate combination so graded that 100% will pass the ¾" sieve, not less than 90% will pass the ⅜" sieve, not more than 10% will pass the Nº 100 sieve and not more than 5% will pass the Nº 200 sieve.

Select backfill shall be placed in accordance with Sec. E 1.08(B) except that compaction with water will not be permitted. The required compaction shall be not less than 95% of maximum laboratory dry weight.

The backfill between the arches shall be brought up uniformly to keep equal pressures on opposite sides of the arches at all times. At no time shall there be a variation of more than 12" between the heights of backfill on opposite sides of each arch.

Construction equipment, other than approved compactors, shall not be operated within a distance of 6' each side of the structure except that light weight motor graders and light weight dozers may be used after a minimum cover of 2' has been placed and compacted over the top of the pipe.

Heavy earth moving and compaction equipment shall not be operated closer to the culvert than 6' until after a cover of 6' has been placed and compacted over the top of the arches.

Before placing select backfill over the arches the contractor shall submit, for approval by the Director, a complete description of his proposed method of placing the backfill.

A constant check shall be kept of the horizontal and vertical alignment of the arches by use of plumb lines attached at the centerline of each arch @ 24' centers.

Porous backfill as indicated on the plans shall be Nº 3 gravel or stone and shall be so placed as to minimize the damage to the galvanized plates.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

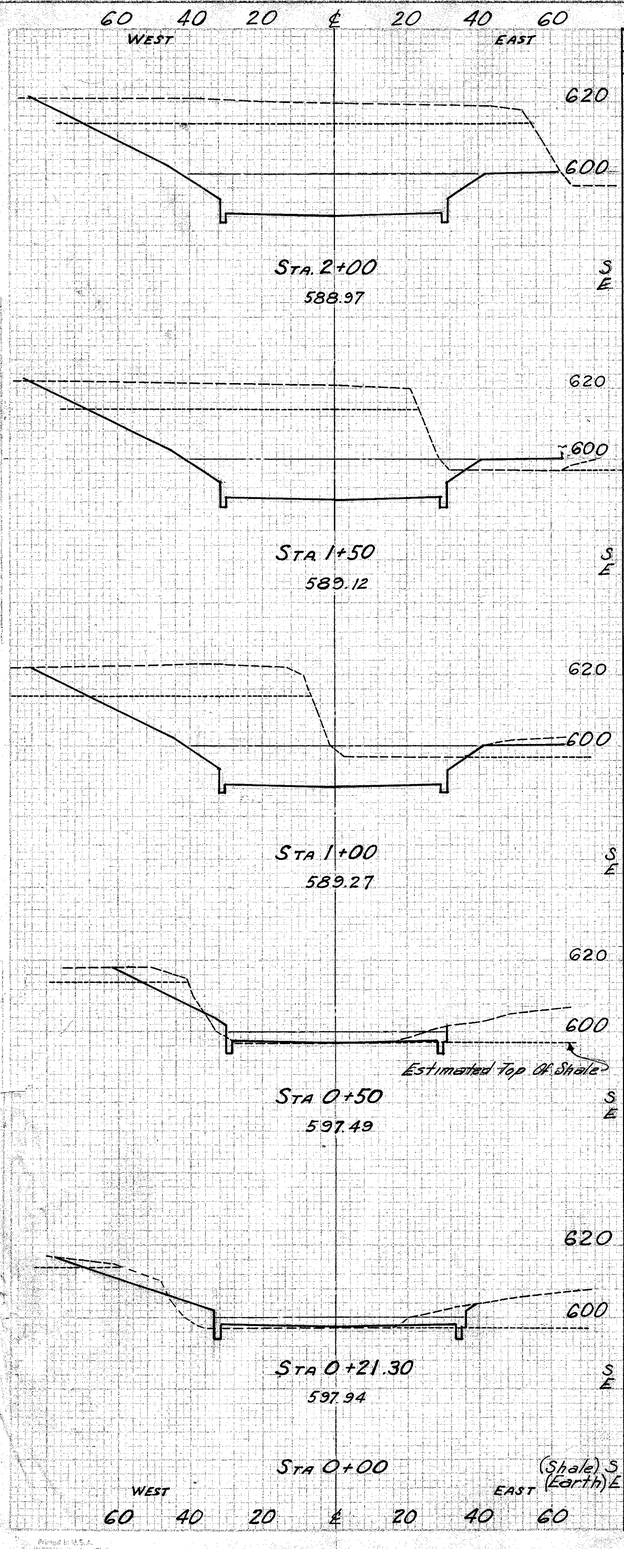
CORRUGATED METAL ARCH CULVERT DETAILS
STATION 3+80 TO 13+80
EUCLID CREEK CULVERT
DRAINAGE STRUCTURE Nº CUY-2-2531
LAKELAND FREEWAY OVER EUCLID CREEK
CUYAHOGA COUNTY STA. 255+73.67
SEC. CUY-2-24.33

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
BMM	BMM	K	DJC			

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

159 ~~180~~

CUYAHOGA COUNTY
CUT 2-24.33



	END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
STA. 2+00				
588.97	S 730	0		
	E 0	0		
			1315	0 S
			0	0 E
STA 1+50				
589.12	S 690	0		
	E 0	0		
			1175	0 S
			0	0 E
STA 1+00				
589.27	S 580	0		
	E 0	0		
			535	0 S
			20	2 E
STA 0+50				
597.49	S 0	0		
	E 22	2		
			0	0 S
			27	16 E
STA 0+21.30				
597.94	S 0	0		
	E 28	28		
			0	0 S
STA 0+00	(Shale) S	0	11	6 E
	(Earth) E	0		
STA. 4+00				
588.37	S 1130	0		
	E 360	471		
			850	0 S
			150	230 E
STA 3+80				
BEGIN CULVERT	S 1165	0		
588.43	E 44	150		
			856	0 S
			0	0 E
STA. 3+50	S 765	0		
588.52	E 0	0		
			1410	0 S
			0	0 E
STA. 3+00	S 755	0		
588.67	E 0	0		
			1385	0 S
			0	0 E
STA. 2+50	S 740	0		
588.82	E 0	0		
			1360	0 S
			0	0 E
STA 9+00				
586.87	S 885	0		
	E 630	423		
			3390	0 S
			2330	1709 E
STA. 8+00	S 945	0		
587.17	E 630	500		
			3950	0 S
			1790	1337 E
STA 7+00	S 995	0		
587.47	E 335	222		
			3810	0 S
			990	798 E
STA 6+00	S 1045	0		
587.77	E 200	209		
			4410	0 S
			1085	1180 E
STA. 5+00	S 1190	0		
588.07	E 385	418		
			4330	0 S
			1380	1646 E

NOTE:
For Structural Excavation @ Head-Wall see Dwg N°153

NOTE:
From Sta. 0+00 to Sta. 3+80 and From Sta 13+80 to Sta. 17+10 All Excavation Above Elev. 600 Shall Be Classified As E-1.

EUCLID CREEK CULVERT X-SECTIONS STA. 0+00 To STA. 9+00

159

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

160/180

CUYAHOGA COUNTY
CUY 2-24.33

MICROFILMED
SEP 10 1985

	END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL	
STA. 12+00	S 340	0			
585.97	E 380	295			
			710	0	S
			1150	503	E
STA. 11+50	S 430	0			
586.12	E 660	248			
			895	0	S
			1250	456	E
STA. 11+00	S 535	0			
586.27	E 690	244			
			1060	0	S
			1345	495	E
STA. 10+50	S 610	0			
586.42	E 765	291			
			1240	0	S
			1195	406	E
STA. 10+00	S 885	0			
586.57 (Shale)	E 630	148 (Earth)			
			2990	0	S
			2140	1057	E
STA. 14+00	S 0	0			
585.37	E 170	0			
			15	0	S
			125	0	E
STA. 13+80	S 40	0			
END CULVERT	E 170	0			
585.43	S 65	0			
	E 290	12			
			95	0	S
			260	79	E
STA. 13+50	S 105	0			
585.52	E 180	130			
			255	0	S
			280	253	E
STA. 13+00	S 170	0			
585.67	E 120	148			
			410	0	S
			390	297	E
STA. 12+50	S 275	0			
585.82	E 300	178			
			570	0	S
			815	438	E
STA. 17+10	S 0	0			
(MEET EXISTING CREEK BED)	E 0	0			
			0	0	S
			S 0	0	E
STA. 17+00	S 0	0			
584.47	E 20	0			
			0	0	S
			65	0	E
STA. 16+50	S 0	0			
584.62	E 50	0			
			0	0	S
			125	0	E
STA. 16+00	S 0	0			
584.77	E 85	0			
			0	0	S
			265	0	E
STA. 15+30	S 0	0			
(END PAVED CREEK BOTTOM)	E 120	0			
584.98			0	0	S
			145	0	E
STA. 15+00	S 0	0			
585.07	E 140	0			
			0	0	S
			240	0	E
STA. 14+50	S 0	0			
585.22	E 120	0			
			0	0	S
			270	0	E
			36305	0	S TOTAL
			17448	10908	E TOTAL

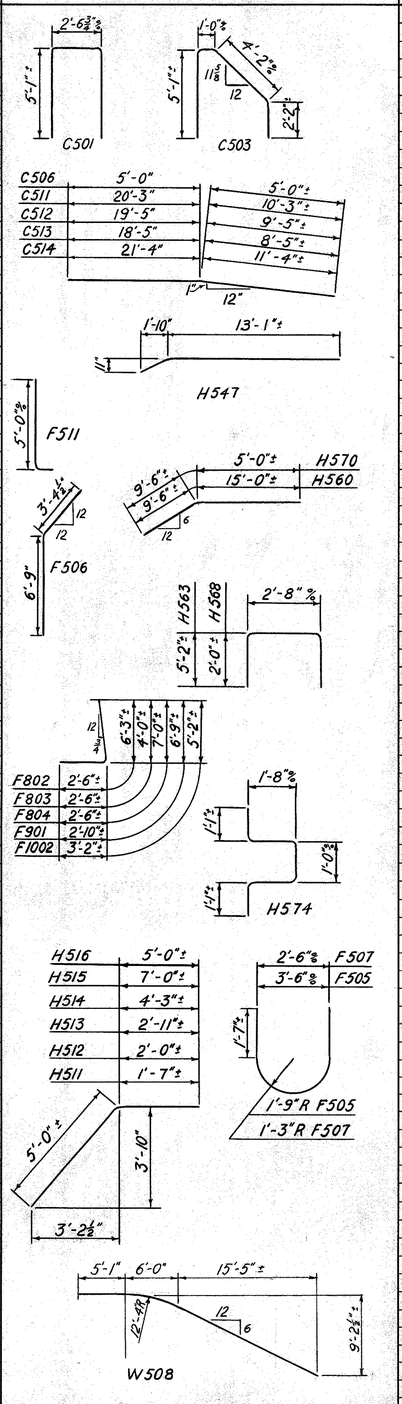
NOTE:
For Backfill Over Culvert See Dwg No 158

EUCLID CREEK CULVERT X-SECTIONS STA. 10+00 To STA. 17+10

REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	SHP	REMARKS
RETAINING WALLS					
W501	2	3'-0"	6	S	
W502	54	7'-9"	436	S	
W503	658	6'-3"	4289	S	
W504	2	7'-11"	17	S	
W505	2	7'-5"	15	S	
W506	3	7'-3"	22	S	
W507	3	6'-9"	21	S	
W508	4	28'-6"	119	B	
W509	4	11'-8"	49	S	
W510	4	15'-4"	64	S	
W511	4	19'-0"	79	S	
W512	4	12'-8"	53	S	
	4 Series	4'-8"			
W513	of	to	186	S	4'-4"
	4	17'-8"			increments
W514	154	29'-8"	4766	S	
W515	1	31'-7"	33	S	
W516	1	30'-5"	32	S	
W517	4	30'-11"	129	S	
W518	4	29'-9"	124	S	
W519	2	16'-1"	34	S	
W520	2	16'-6"	34	S	
W521	8	5'-0"	42	S	
W522	118	5'-0"	615	S	
W523	14	29'-8"	433	S	
W524	4	25'-8"	107	S	
W525	6	24'-8"	154	S	
W526	6	8'-8"	54	S	
W527	2	12'-6"	26	S	
W528	2	12'-0"	25	S	
W529	2	26'-7"	55	S	
W530	2	26'-2"	55	S	
W531	4	7'-6"	31	S	
W532	4	6'-10"	29	S	
HEAD WALLS					
H901	6	13'-2"	269	S	
H902	6	11'-2"	228	S	
H903	6	11'-9"	240	S	
H801	4	11'-2"	119	S	
H802	5	8'-11"	119	S	
H803	8	5'-11"	126	S	
H804	14	9'-10"	367	S	
H501	6	12'-10"	80	S	
H502	16	7'-0"	117	S	
H503	16	4'-3"	71	S	
H504	12	3'-3"	41	S	
H505	6	3'-0"	19	S	
H506	8	3'-9"	31	S	
H507	16	6'-6"	108	S	
H508	8	12'-0"	100	S	
H509	10	25'-0"	261	S	
H510	2	26'-4"	55	S	
H511	1	6'-6"	7	B	
H512	1	6'-11"	7	B	
H513	1	7'-10"	8	B	
H514	1	9'-2"	10	B	
H515	1	11'-11"	12	B	
H516	2	9'-11"	21	B	
H517	1	2'-10"	3	S	
H518	1	3'-9"	4	S	
H519	1	5'-1"	5	S	
H520	1	7'-10"	8	S	
H521	2	4'-7"	10	S	
H522	1	9'-2"	10	S	
H523	3	17'-0"	53	S	
H524	1	20'-0"	21	S	
H525	1	23'-6"	25	S	
H526	2	24'-4"	51	S	
H527	2	17'-4"	36	S	
H528	3	15'-1"	48	S	
H529	4	12'-1"	50	S	

BENDING DIAGRAMS



MARK	NO.	LENGTH	WEIGHT	SHP	REMARKS
	2	3'-1"			
H530	Series	to	40	S	1'-2"
	of 4	6'-7"			increments
H531	1	9'-10"	10	S	
H532	3	17'-10"	56	S	
H533	1	20'-10"	22	S	
H534	1	24'-3"	25	S	
H535	2	25'-5"	53	S	
H536	4	6'-6"	27	S	
H537	9	8'-0"	75	S	
H538	4	6'-3"	26	S	
H539	2	7'-3"	15	S	
H540	2	11'-5"	24	S	
H541	2	13'-2"	27	S	
H542	2	14'-8"	31	S	
H543	2	13'-9"	29	S	
H544	2	9'-0"	19	S	
H545	2	6'-8"	14	S	
H546	2	3'-5"	7	S	
H547	2	15'-1"	31	B	
	1 Series	14'-4"			
H548	of	to	66	S	12" increments
	4	17'-4"			
H549	6	9'-0"	56	S	
H550	2	7'-4"	15	S	
H551	6	7'-2"	45	S	
H552	12	5'-4"	66	S	
H553	12	2'-10"	35	S	
H554	12	1'-8"	21	S	
H555	6	1'-4"	8	S	
H556	4	11'-4"	47	S	
H557	4	12'-3"	51	S	
H558	8	13'-6"	113	S	
H559	2	16'-9"	35	S	
H560	2	24'-6"	51	B	
H561	2	3'-11"	8	S	
H562	6	6'-1"	39	S	
H563	2	12'-9"	27	B	
H564	4	11'-5"	48	S	
H565	2	11'-0"	23	S	
H566	2	9'-4"	19	S	
H567	8	5'-0"	42	S	
H568	6	6'-5"	40	B	
H569	2	8'-4"	17	S	
H570	2	14'-6"	30	B	
H571	2	27'-0"	56	S	
H572	3	24'-0"	75	S	
H573	4	22'-0"	92	S	
H574	8	6'-0"	50	B	
HEADWALL FOOTINGS					
F1001	7	6'-10"	206	S	
F1002	16	8'-4"	569	B	
F901	13	9'-4"	412	B	
F902	12	7'-0"	286	S	
F801	60	6'-4"	1015	S	
F802	11	8'-7"	252	B	
F803	10	6'-4"	169	B	
F804	2	9'-4"	50	B	
F805	7	5'-7"	104	S	
F701	6	5'-0"	61	S	
F702	8	4'-4"	71	S	
F703	8	10'-0"	163	S	
F501	6	3'-8"	35	S	
F502	6	7'-2"	45	S	
F503	6	7'-8"	48	S	
F504	6	6'-5"	40	S	
F505	2	8'-8"	18	B	
F506	4	10'-0"	42	B	
F507	6	7'-3"	45	B	
F508	12	17'-7"	220	S	
F509	8	7'-6"	63	S	
F510	8	3'-6"	29	S	
F511	8	5'-6"	46	B	

MARK	NO.	LENGTH	WEIGHT	SHP	REMARKS
PIERS					
C501	671	12'-6"	8787	B	
C502	32	19'-8"	656	S	
C504	416	29'-8"	12,872	S	
C505	186	10'-0"	1,940	S	
C506	12	10'-0"	125	B	
C508	32	30'-0"	1001	S	
C509	32	29'-2"	973	S	
C511	16	30'-6"	509	B	
C512	16	28'-10"	481	B	
ABUTMENTS					
C502	32	19'-8"	656	S	
C503	670	12'-2"	8502	B	
C504	408	29'-8"	12,624	S	
C505	186	10'-0"	1,940	S	
C506	12	10'-0"	125	B	
C507	32	31'-0"	1035	S	
C510	32	28'-2"	940	S	
C513	16	26'-10"	448	B	
C514	16	32'-8"	545	B	
C515	1	12'-8"	13	S	
C516	2	10'-1"	21	S	
C517	1	10'-8"	11	S	
C518	2	12'-4"	26	S	
C519	1	13'-8"	14	S	
C520	1	9'-8"	10	S	
C521	4	21'-8"	90	S	
C522	4	3'-8"	15	S	
REPLACEMENT BARS					
RE1001	1	7'-2"	*	S	
RE901	1	6'-10"	*	S	
RE801	1	6'-6"	*	S	
RE701	1	6'-2"	*	S	
RE501	4	5'-7"	*	S	

* REPLACEMENT BARS: IF REINFORCING BARS ARE FABRICATED FROM STOCK WHICH HAS PREVIOUSLY BEEN TESTED AND APPROVED BY THE OHIO HIGHWAY TESTING LABORATORY, TEST SAMPLES AS PROVIDED IN SEC. S-4.02 NEED NOT BE FURNISHED AND REPLACEMENT BARS WILL NOT BE REQUIRED.
BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, H507 IS A NO. 5 SIZE BAR AND F1002 IS A NO. 10 SIZE.

MICROFILMED SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

CUYAHOGA COUNTY
CUY-2-24.33

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	R.WALL	H.WALL	PIERS	ABUT.	GEN'L.	AS BUILT	
E-2	Lump	Sum	Cofferdams, cribs and Sheeting					Lump		
E-2	4370	C.Y.	Shale Excavation	350	200	430	570	2820		
E-3	36,330	C.Y.	Channel Excavation (Shale)					36,330		
E-3	~~17,850~~	C.Y.	Channel Excavation (Unclassified)					17,850	CO 14 -5275	12,575
S-1	~~393~~	C.Y.	Class "E" Concrete, Retaining & Head Walls	308	85				CO 14 +77	+70
S-1	~~2110~~	C.Y.	Class "E" Concrete, Culvert Piers & Abuts.			980	1130		CO 14 -92	2038
S-1	~~750~~	C.Y.	Class "E" Concrete, Footings		29	321	400		CO 19 +130	900
S-3	~~88~~	L.F.	Waterproofing, Premolded Sealing Strip	88					CO 19 +16	104
S-4	74,928	Lbs.	Reinforcing Steel	12,134	8435	27,344	27,015		CO 19 -2-19	116
S-9	~~97~~	S.F.	1" Premolded Expansion Joint Filler, Bituminous	97					CO 19 +160	6920
S-9	~~6860~~	L.F.	8 x ½" Premolded Expansion Joint Filler (Bituminous)					6860		
S-14	188	L.F.	Railing, 2"ϕ Wrought Iron Pipe		188					
S-28	1000	L.F.	3-Barrel Corrugated Sectional plate arch structure					1000		
S-29	~~440~~	C.Y.	Porous Backfill	218				222	CO 19 -22	418
S-29	Lump	Sum	Pipe Special-24"ϕ Corrugated Metal Pipe & Connections					Lump		
T-10	1200	S.Y.	Concrete Slope Protection, as per plan.					1200		
T-70	9642	S.Y.	8" Portland Cement Concrete Pavement, as per plan.					9642		

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

REINFORCING STEEL LIST
ESTIMATED QUANTITIES
EUCLID CREEK CULVERT
DRAINAGE STRUCTURE Nº CUY-2-2531
LAKELAND FREEWAY OVER EUCLID CREEK
CUYAHOGA COUNTY
SEC. CUY-2-24.33 STA. 255+73.67

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
BMH	BMH	CB	CJC			

Revised As-Built 2AM 226-64

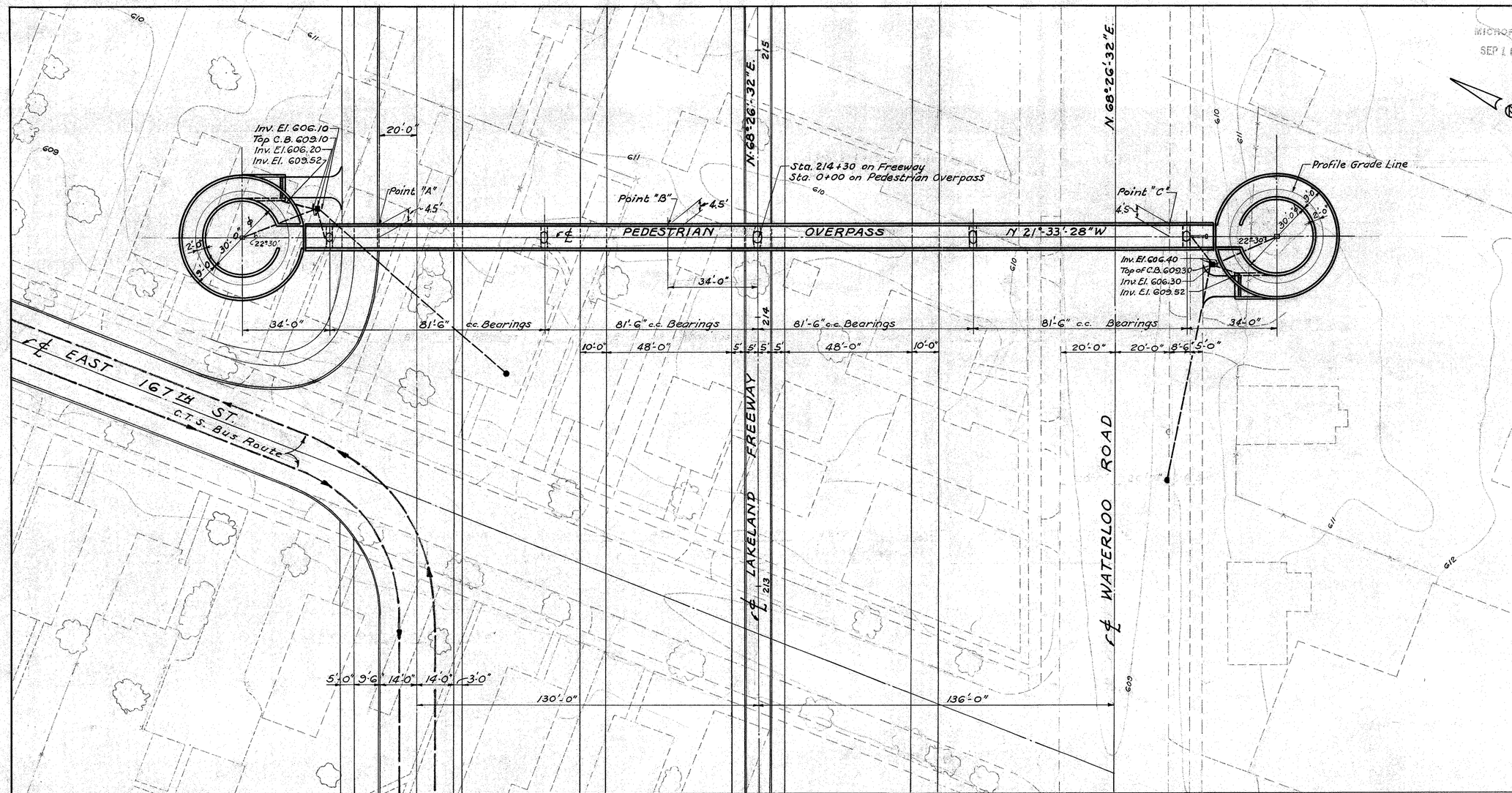
161

MICROFILMED
SEP 10 1965

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

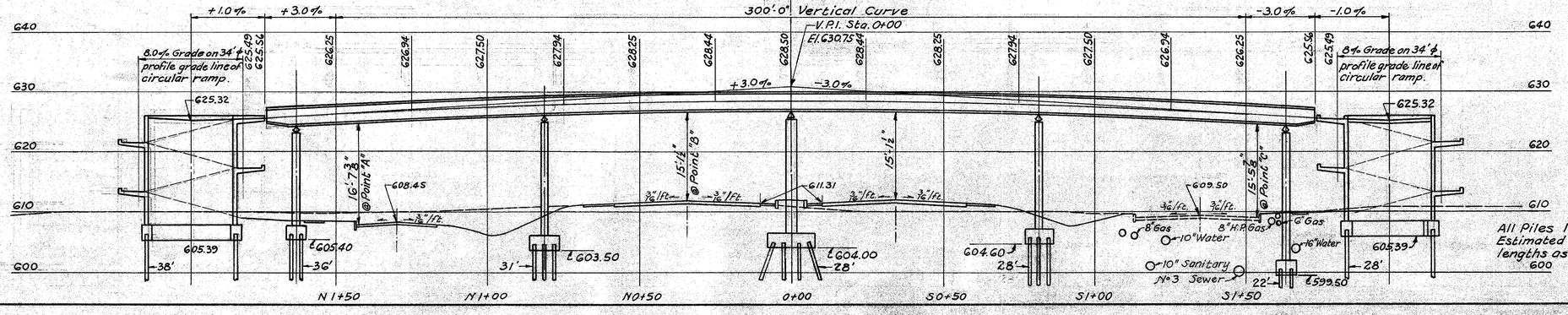
162
180

CUYAHOGA COUNTY
CUY-2-24.33



FOUNDATION SOUNDINGS:

Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office, but the State does not guarantee the accuracy thereof.



All Piles 12" BP @ 53#
Estimated average pay lengths as shown.

Corrections 163

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAMS WITH REINFORCED CONCRETE DECK, PIERS & ABUTMENTS.
SPANS: 10'-81.5'-81.5'-81.5'-81.5'-10'
PEDESTRIAN OVERPASS: 8' CLEAR
LOADING: 85 LBS. PER SQ. FT.
SKEW: NONE
WEARING SURFACE: 1/2" MONOLITHIC CONCRETE
APPROACH RAMPS: REINFORCED CONCRETE

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

SITE PLAN
BRIDGE NO. CUY-2-2452
LAKELAND FREEWAY UNDER PEDESTRIAN OVERPASS NEAR EAST 167 ST.

CUYAHOGA COUNTY
SEC. CUY-2-24.33
STATION 214+30

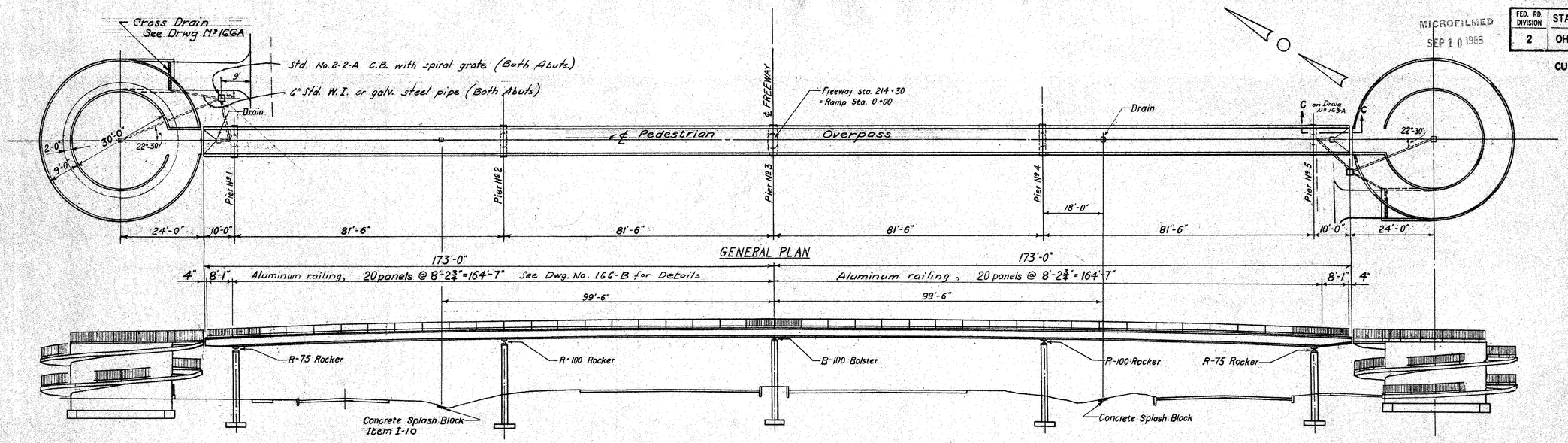
TOPOGRAPHY		PROPOSED WORK				
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
[illegible]	L.M.	[illegible]	[illegible]	A.J.C. [illegible]		

SITE PLAN PEDESTRIAN OVERPASS NEAR E. 167TH ST.

MICROFILMED
SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	1-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33



ESTIMATED QUANTITIES

Item	Total	Unit	Description	Superstr.	Piers	Ramp Struct.	General
E-2	354	C.-Y.	Unclassified Excavation		182	172	
S-1	72	C.-Y.	Class "C" Concrete, Superstructure	72			
S-1	33	C.-Y.	Class "C" Concrete, Pier Caps and Columns		33		
S-1	119	C.-Y.	Class "C" Concrete, Ramp Struct. Walls			119	
S-1	156	C.-Y.	Class "C" Concrete, Ramp Struct			156	
S-1	99	C.Y.	Class "E" Concrete, Footings		48	51	
S-4	74,017	Lb.	Reinforcing Steel	11,130	12665	50222	
S-7	122,800	Lb.	Structural Steel	122,800			
S-8	122.800	Lb.	Field painting of Structural Steel	122,800			
S-9	16	L.F.	5"x½ Preformed Expansion joint filler				16
S-14	1430	L.F.	Railing, Aluminum rails, 4"ϕ and 4"H-posts	692		738	
S-14	1080	L.F.	Aluminum handrail, 1½"ϕ and brackets			1080	
S-16	Lump	Sum	First test pile				Lump
S-18	1920	L.F.	Steel piles, 12 BP 53		864	1056	
S-29	2	Ea.	Standard No 2-2-A catch basins				2
S-29	12	L.F.	4"ϕ W.I. or galvanized steel pipe, fittings & drains	12			
S-29	171	L.F.	6"ϕ W.I. or galvanized steel pipe, fittings & drains			114	57
S-29	2	Ea.	7"x6"x 2'-0" casting & grate			2	
S-29	2	Ea.	7"x6"x 2'-0 casting & grate			2	
I-10	2	Ea.	Concrete Splash Block 3'-0 x 3'-0 x 0'-6"				2
Special	2	Ea.	Aluminum Access Door (complete, in place)			2	

NOTES

REFERENCE shall be made to Standard Drawing RB-1-55, revised 2-2-59. & Supplemental Specification S-101, dated 12-2-59, and Std. Dwg. I-8, No. 2-2A dated 3-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with revisions thereof dated 2-21-58.

PILES shall be driven to firm contact with shale. If the length of penetration is approximately equal to the depth of shale according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

47 tons per pile using a 11,000 ft-lb. hammer
53 tons per pile using a 15,000 ft-lb. or greater hammer

If the energy rating of the hammer is between the ratings shown above, the required formula capacity shall be determined by interpolation. The design load is 40 tons per pile for the pier piles, and 40 tons per pile for the ramp structure footing piles.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

WELDING of structural steel shall be class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

SURFACE FINISH OF CONCRETE: Outside of walls, ramp, pier caps and columns shall receive a rubbed surface finish. The deck and ramp slabs shall be finished in accordance with Sec. T-71.214 method A. All other exposed surfaces shall be governed by the provisions of Item S-1, except that form liners shall be used on the bottom area of the spiral ramps.

UTILITY LINES: All labor and 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 will be held to a minimum.

FALSEWORK: At least 15 days prior to the beginning of construction of the falsework for the "Ramp Structures," the Contractor shall submit three copies of the falsework plans to the Director for approval.

STEEL: See Proposal regarding A-373 Steel.

HARGETT, YANDA & BARBER
Consulting Engineers
4520 Euclid Ave. Cleveland 3, Ohio

GENERAL PLAN, ELEVATION, NOTES & ESTIMATED QUANTITIES
BRIDGE NO. 2452
LAKELAND FREEWAY UNDER PEDESTRIAN OVERPASS NEAR EAST 167TH ST.

CUYAHOGA COUNTY STATION 214+30
SEC. CUY-2-24.33

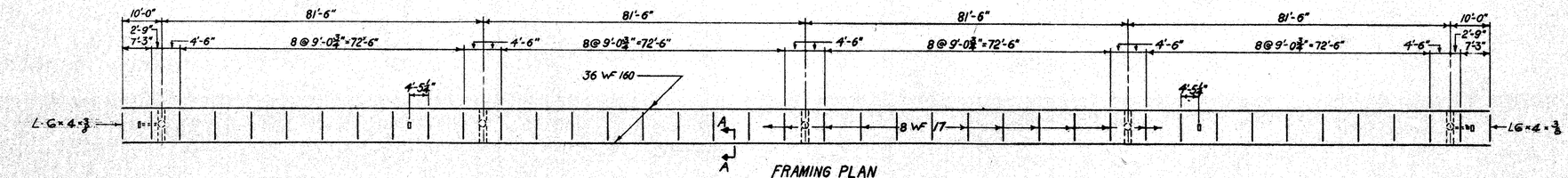
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
[illegible]	L.M.	L.M.	A.J.C. 11-28-75			

MICROFILMED
SEP 10 1985

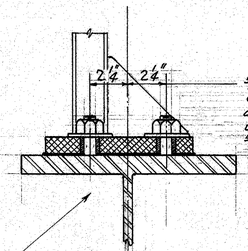
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

163A
~~180~~

CUYAHOGA COUNTY
CUY-2-24.33

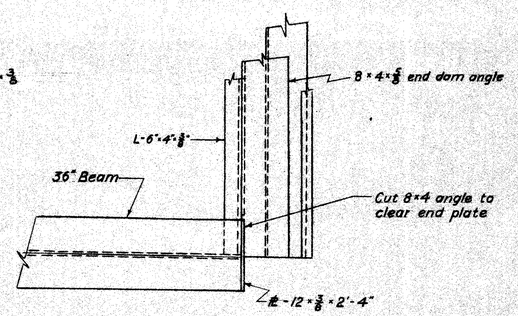


FRAMING PLAN

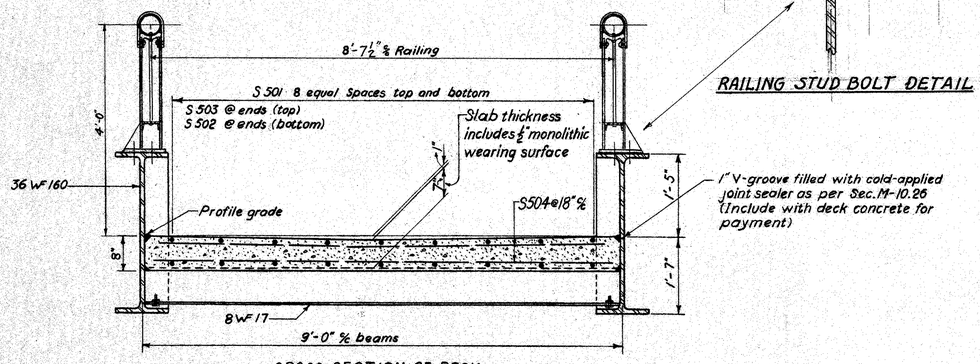


⅝"φ × 2¼" stud bolts welded to beam flange. Thoroughly coat contact surface between flange and base plate with an aluminum-impregnated caulking compound, or a synthetic rubber-impregnated fabric gasket shall be used. ⅝"φ neoprene bushings and washers shall be used with stud bolts. For Railing Details see Drwg. № 166-B. For post locations see Drwg. № 163 & № 168.

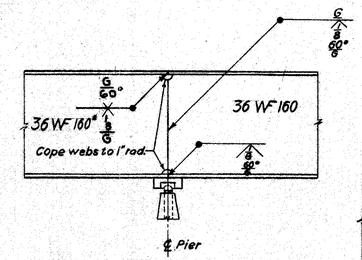
RAILING STUD BOLT DETAIL



DETAIL SHOWING PLATE AT ENDS OF 36" BEAMS.



CROSS-SECTION OF DECK

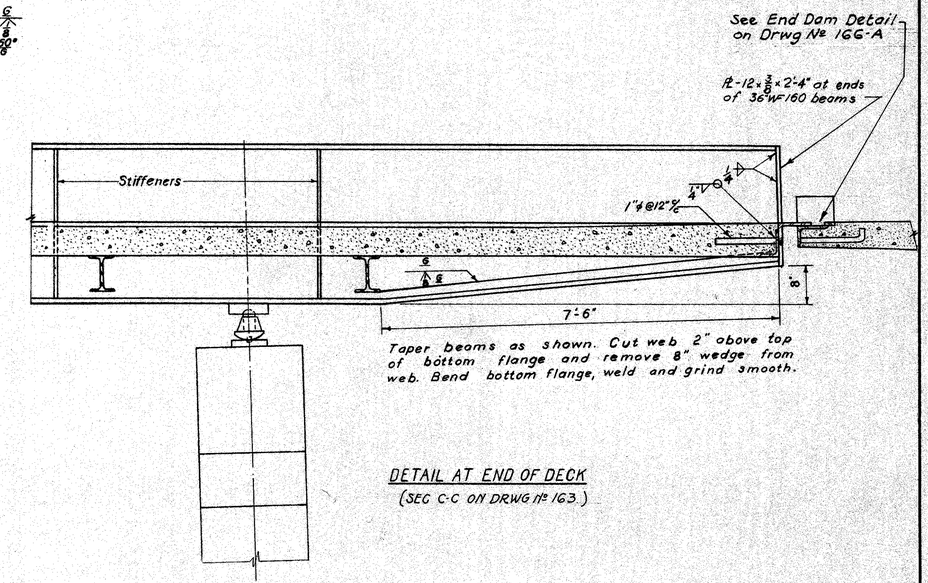


BEAM SPLICE DETAIL

BEAM SPLICE WELDING PROCEDURE

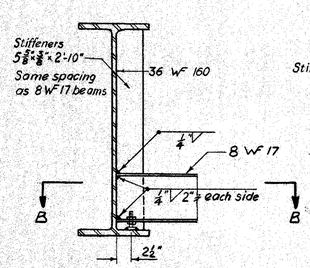
1. Raise end of beam @ Pier #4, 3⅝"
2. Butt-weld beam flanges and web at Pier #3 using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location, until welds are completed.
3. Lower end of beam at Pier #4
4. Make splices at Pier #4 and Pier #2, in that order, in the same manner raising the ends of the beams 2¾" at Pier #5 and 2⅞" at Pier #1.

Painting: See proposal regarding Painting.

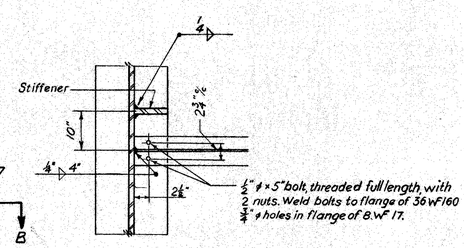


Taper beams as shown. Cut web 2" above top of bottom flange and remove 8" wedge from web. Bend bottom flange, weld and grind smooth.

DETAIL AT END OF DECK
(SEC C-C ON DRWG № 163.)



SECTION A-A



SECTION B-B

CAMBERING of beams (or girders) is required in accordance with the following table:

TABLE OF DEFLECTION AND CAMBER

Location	Interior Spans	Exterior Spans	Cantilevers
Deflection due to weight of steel	⅛"	¼"	0
Deflection due to remaining dead load	3/16"	⅝"	0
Convexity required for vertical curve	2"	1⅞"	0
Sum of Deflection and Convexity	2 5/16"	2¾"	0
Required Camber	2 5/16"	2¾"	0

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 8, Ohio

FRAMING PLAN, STRUCTURAL STEEL DETAILS & DECK SECTIONS
BRIDGE № CUY-2-2452
LAKELAND FREEWAY UNDER PEDESTRIAN OVERPASS NEAR EAST 167th ST.
CUYAHOGA COUNTY
SEC. CUY-2-24.33 STA. 214+30

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
GHB	L.M.	L.M.	AOC			

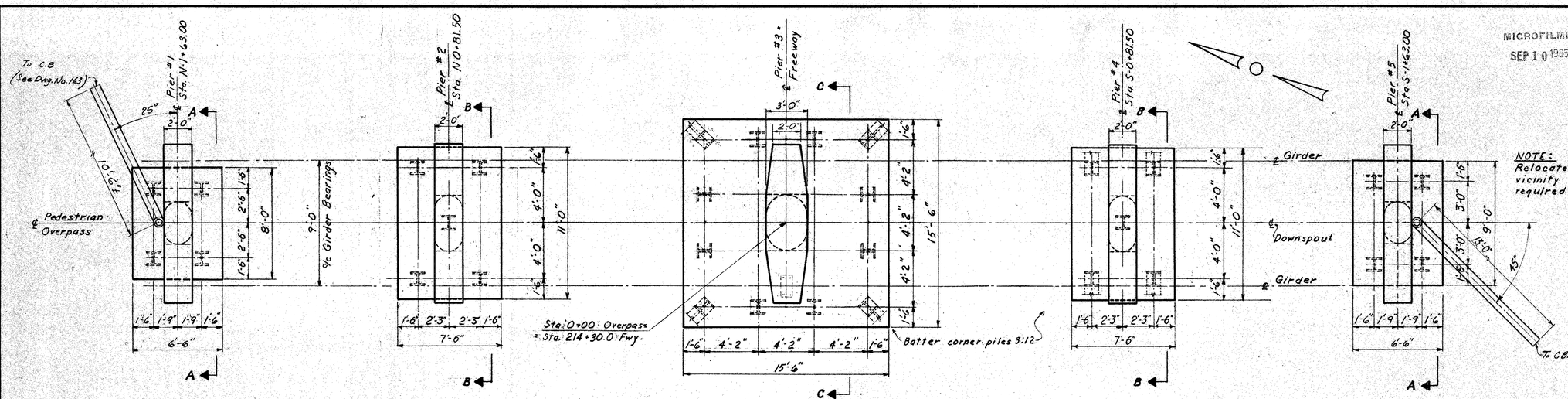
163-A

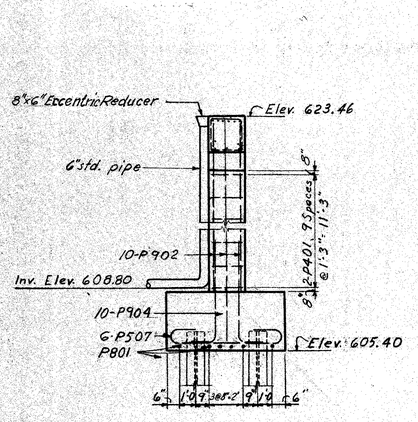
MICROFILMED SEP 10 1985

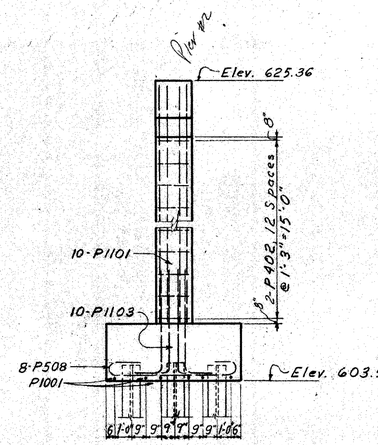
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329(20)	

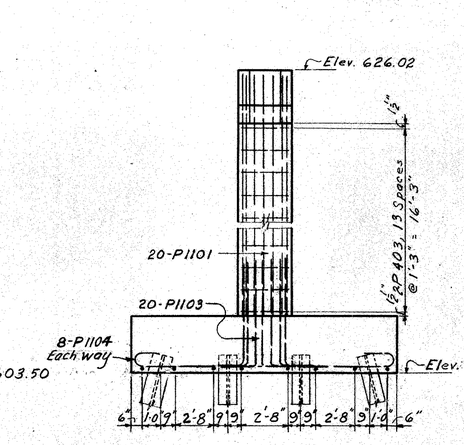
164 ~~180~~

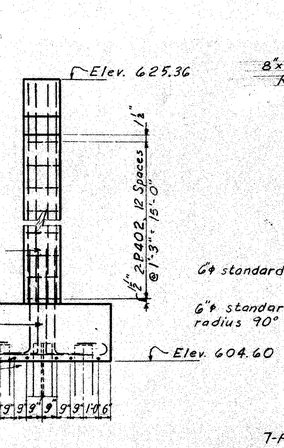
CUYAHOGA COUNTY
CUY-2-24.33

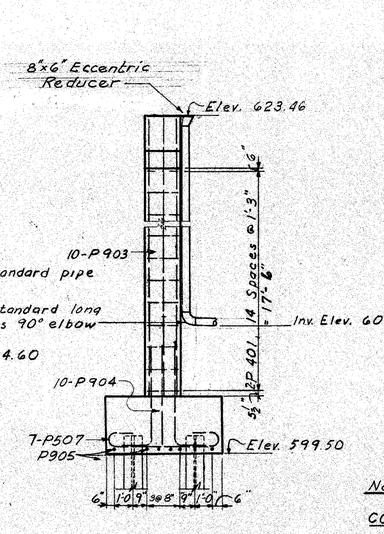


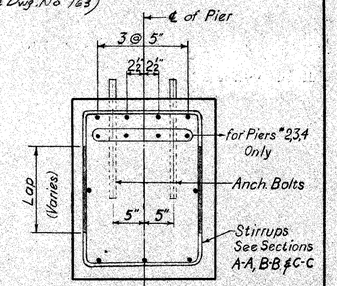




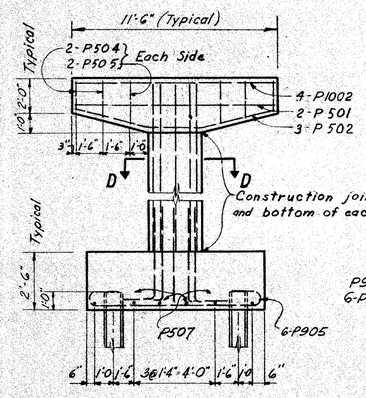




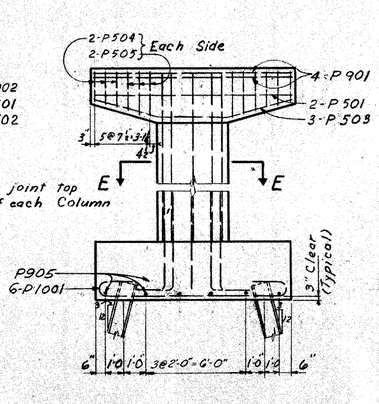




PIER CAP SECTION
(Typical)

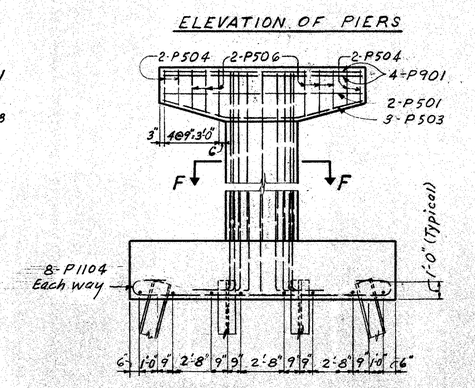


SECTION A-A

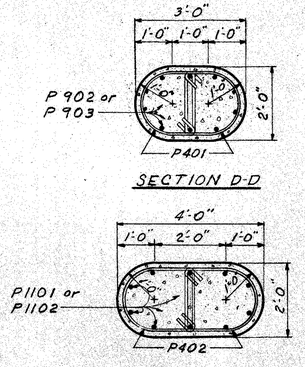


SECTION B-B

ELEVATION OF PIERS

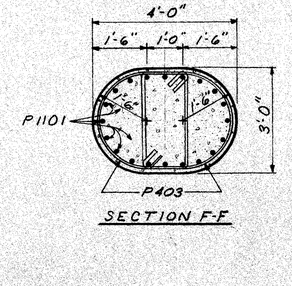


SECTION C-C



SECTION D-D

SECTION E-E



SECTION F-F

Notes:

CONCRETE in pier caps and columns shall be Class "C."

CONCRETE in pier footings shall be Class "E."

REINFORCING STEEL shall be 2" clear from exposed face of concrete unless noted otherwise.

REINFORCING STEEL shall be placed to clear bolster anchor bolts.

PILES: 30 required. For capacity see note, Dwg. No. 163

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 8, Ohio

PIER DETAILS
BRIDGE No CUY-2-2452
LAKELAND FREEWAY UNDER PEDESTRIAN OVERPASS NEAR E. 167TH ST.

CUYAHOGA COUNTY
SEC. CUY-2-24.33 STA. 214+30.00

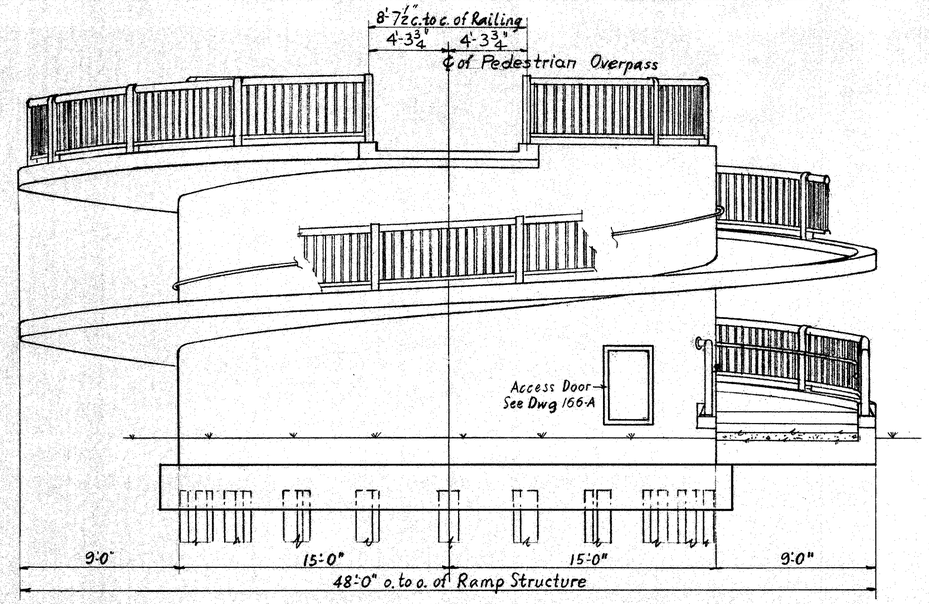
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
SHB	SHB	L.M.	SHB OJC			

MICROFILMED
SEP 10 1965

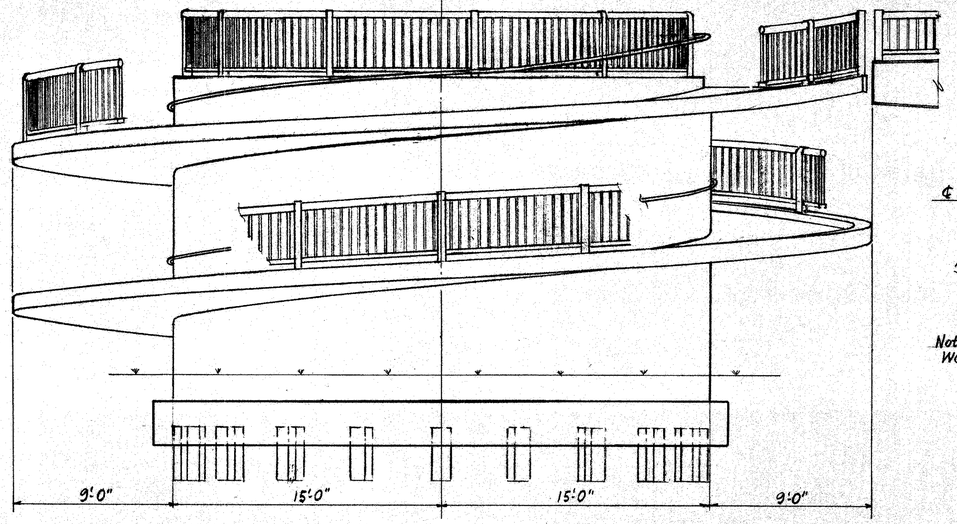
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

165
~~180~~

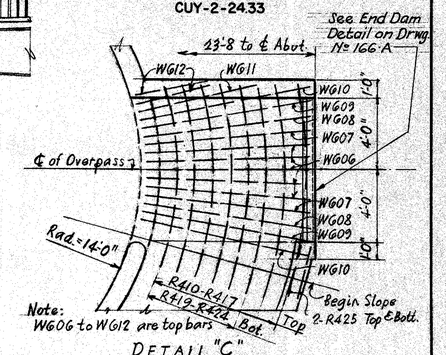
CUYAHOGA COUNTY
CUY-2-24.33



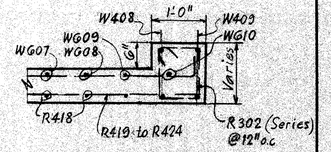
SOUTH ELEVATION OF NORTH RAMP STRUCTURE
NORTH ELEVATION OF SOUTH RAMP STRUCTURE



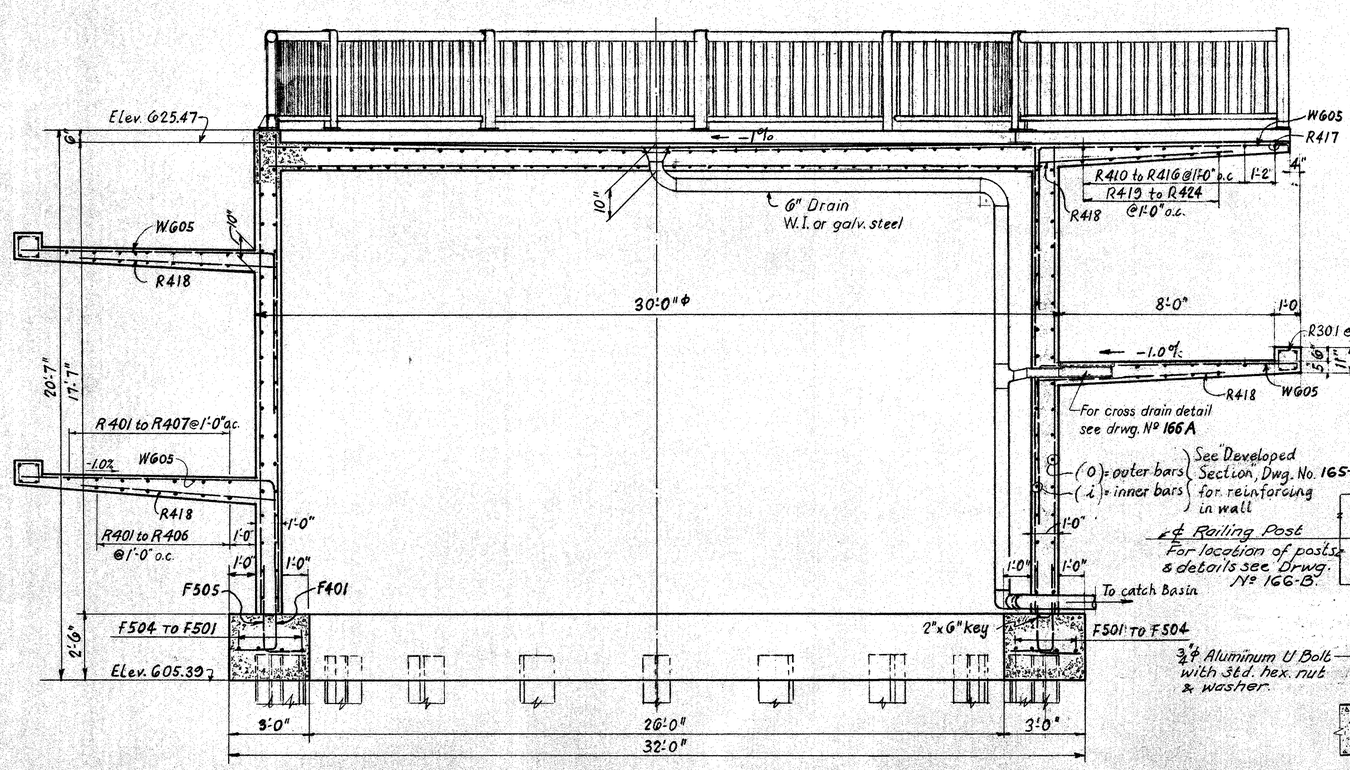
WEST ELEVATION OF NORTH RAMP STRUCTURE
EAST ELEVATION OF SOUTH RAMP STRUCTURE



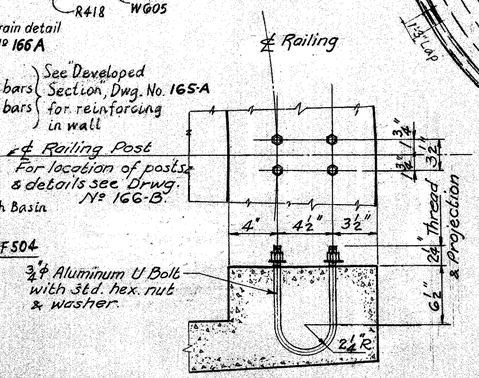
DETAIL "C"



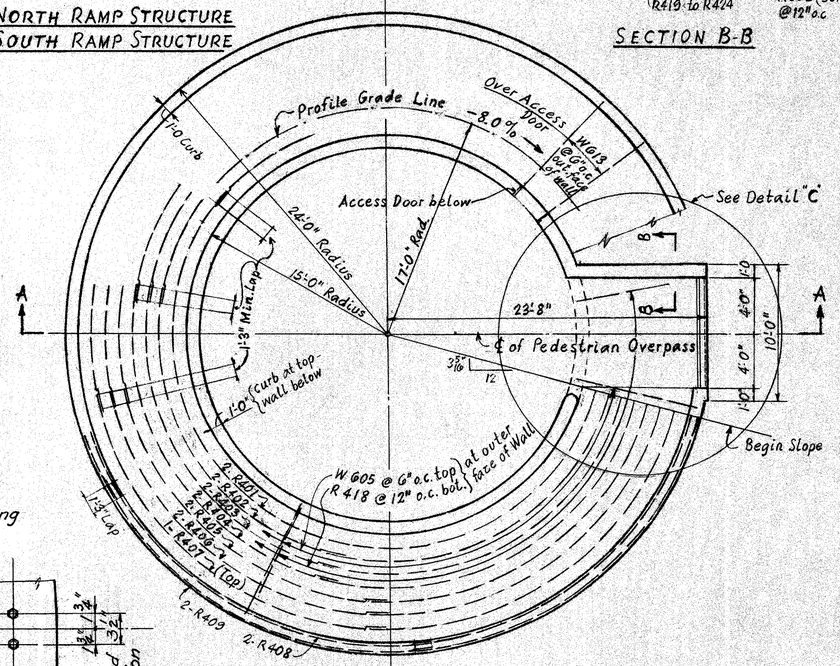
SECTION B-B



SECTION A-A



ANCHOR BOLT DETAIL



PLAN

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 8, Ohio

RAMP STRUCTURE DETAILS
BRIDGE NO. CUY. 2-2452
LAKELAND FREEWAY UNDER PEDESTRIAN OVERPASS NEAR EAST 167TH ST.
CUYAHOGA COUNTY STA. 214+30
SEC. CUY. 2-24.33

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
[illegible]	CLS	L.M.	CLS			

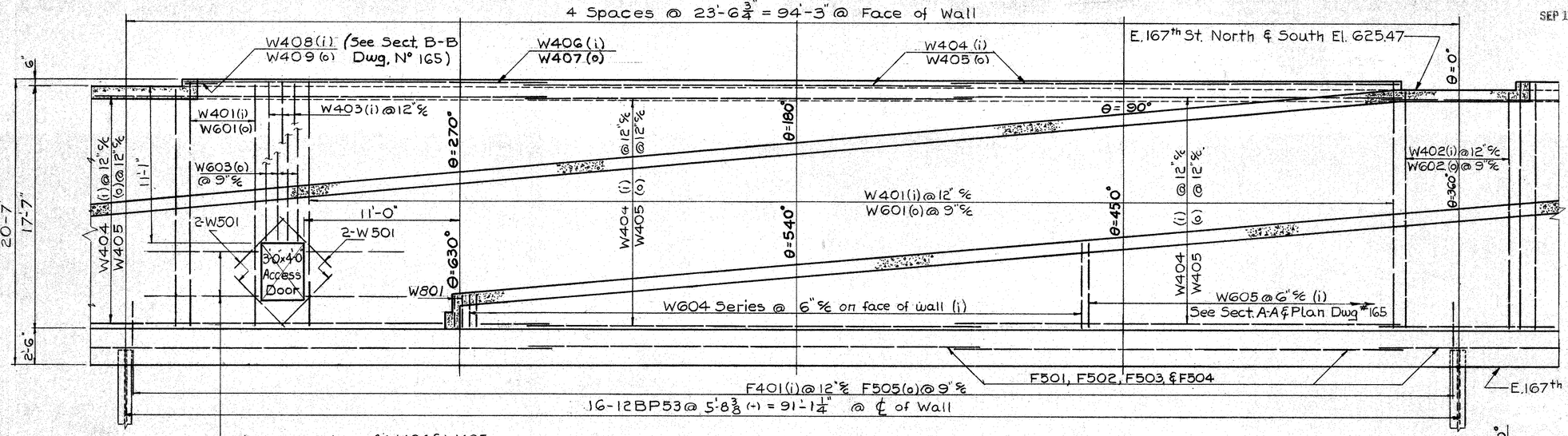
165

MICROFILMED
SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329 (20)	

165-A
~~180~~

CUYAHOGA COUNTY
CUY-2-24.33



DEVELOPED SECTION AT FACE OF WALL

NOTE: Spacing shown for vertical reinforcing steel in wall is the spacing at the centerline of steel, unless otherwise noted.

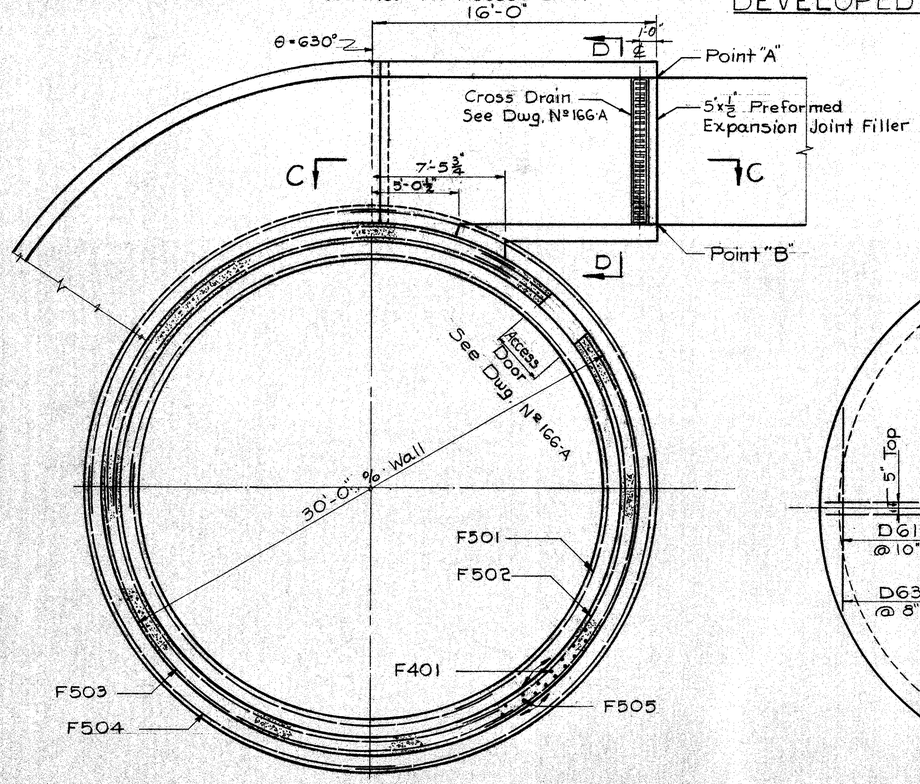
(i) indicates reinforcing steel in the inside face of the wall.

(o) indicates reinforcing steel in the outside face of the wall

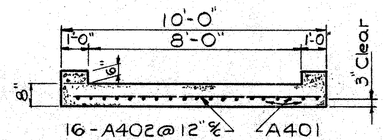
Concrete for walls and ramp shall be Class "C". Concrete for footings shall be Class "E".

Reinforcing steel shall be 2" clear from face of concrete unless otherwise noted.

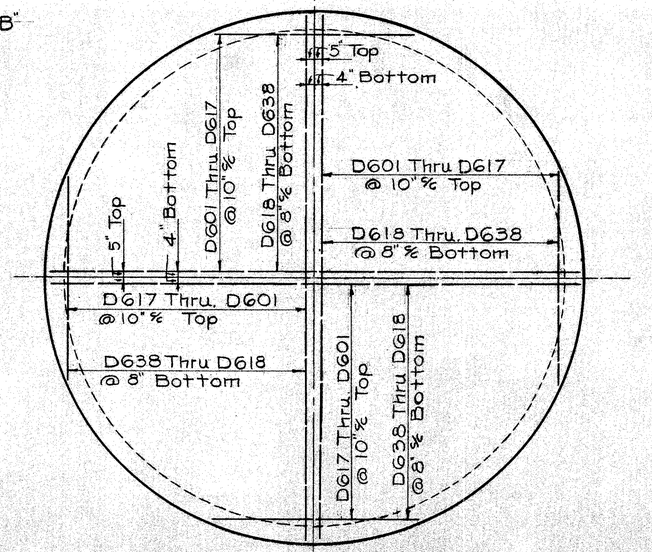
For additional notes see Dwg. N° 163



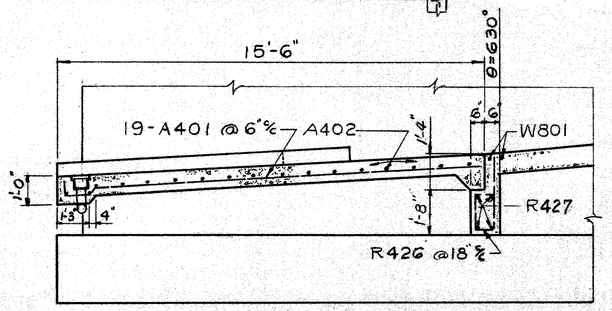
FOUNDATION & APPROACH SLAB PLAN



SECTION D-D

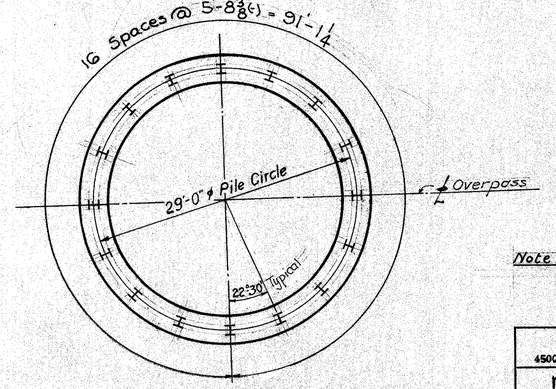


TOP SLAB REINFORCING PLAN



SECTION C-C

RAMP ELEVATIONS		
θ or Point	E. 167th Street North	E. 167th Street South
90°	623.70	623.70
180°	621.56	621.56
270°	619.42	619.42
360°	617.29	617.29
450°	615.15	615.15
540°	613.01	613.01
630°	610.88	610.88
A	610.02	610.02
B	609.94	609.94



PILING LAYOUT

Note: 32 Piles required. For capacity see note on Drwg. N° 163.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 8, Ohio

RAMP STRUCTURE DETAILS
BRIDGE NO. CUY. 2-2452
LAKELAND FREEWAY UNDER PEDESTRIAN OVERPASS NEAR EAST 167TH ST.
CUYAHOGA COUNTY STA. 214+30
SEC. CUY. 2-24.33

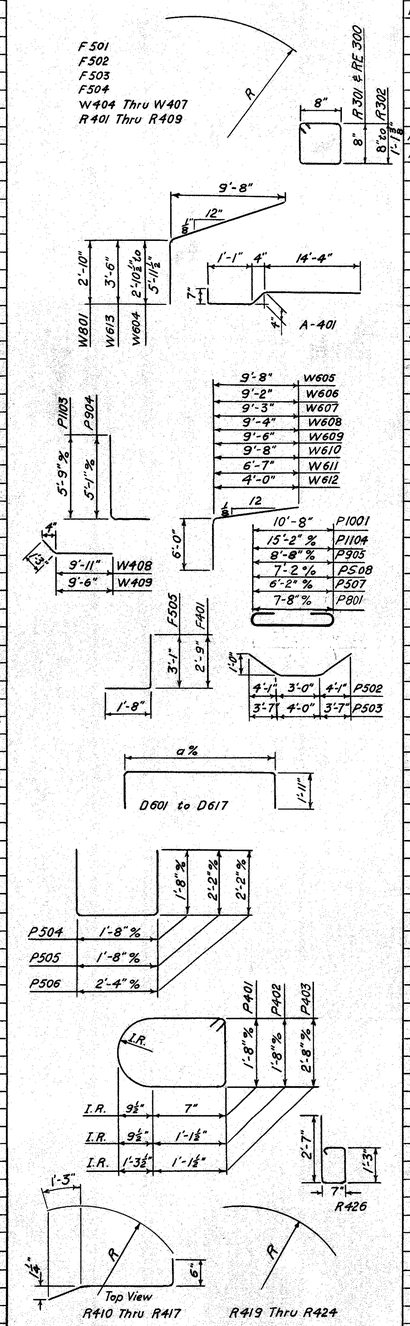
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
GWMc	GWMc	LM	CES WATS			

165-A

REINFORCING STEEL LIST

MARK	NO.*	LENGTH	WEIGHT	SHP.	REMARKS
	Ramp	Structure	Footings		
F501	6	29'-4"	184	B	R=13'-3"
F502	6	31'-6"	197	B	R=14'-3"
F503	6	32'-5"	203	B	R=14'-9"
F504	8	26'-5"	220	B	R=15'-9"
F505	246	4'-8"	1197	B	
F401	180	4'-4"	521	B	
	Ramp	Structure	Walls		
W801	4	12'-4"	132	B	
W601	218	17'-11"	5867	S	
W602	22	17'-5"	576	S	
W603	8	11'-3"	135	S	
W604	2	12'-4½"			
	Series	to	3135	B	
	of 75	15'-5½"			½" incr.
W605	480	15'-6"	11,175	B	
W606	10	15'-0"	225	B	
W607	4	15'-1"	91	B	
W608	4	15'-2"	91	B	
W609	4	15'-4"	92	B	
W610	4	15'-6"	93	B	
W611	2	12'-5"	37	B	
W612	4	9'-10"	59	B	
W613	14	13'-0"	273	B	
W501	16	5'-0"	83	S	
W401	158	17'-11"	1891	S	
W402	16	17'-5"	186	S	
W403	6	11'-3"	45	S	
W404	106	31'-6"	2230	B	R=14'-3"
W405	106	32'-5"	2295	B	R=14'-9"
W406	2	22'-2"	30	B	R=14'-3"
W407	2	23'-0"	31	B	R=14'-9"
W408	4	11'-1"	30	B	
W409	4	10'-8"	29	B	
	Ramp	Structure	Cantilever	Slab	
R401	24	29'-9"	477	B	R=16'-0"
R402	28	27'-3"	510	B	R=17'-0"
R403	28	28'-9"	538	B	R=18'-0"
R404	28	30'-3"	566	B	R=19'-0"
R405	32	28'-1"	600	B	R=20'-0"
R406	32	29'-4"	625	B	R=21'-0"
R407	16	30'-8"	328	B	R=22'-0"
R408	18	28'-9"	346	B	R=23'-2"
R409	18	29'-7"	356	B	R=23'-10"
R410	2	11'-0"	15	B	R=16'-0"
R411	2	11'-2"	15	B	R=17'-0"
R412	2	11'-6"	15	B	R=18'-0"
R413	2	11'-9"	16	B	R=19'-0"
R414	2	12'-0"	16	B	R=20'-0"
R415	2	12'-3"	16	B	R=21'-0"
R416	2	12'-6"	17	B	R=22'-0"
R417	2	12'-10"	17	B	R=23'-2"
R418	340	7'-0"	1590	S	
R419	2	10'-6"	14	B	R=16'-0"
R420	2	10'-8"	14	B	R=17'-0"
R421	2	11'-0"	15	B	R=18'-0"
R422	2	11'-3"	15	B	R=19'-0"
R423	2	11'-6"	15	B	R=20'-0"
R424	2	11'-9"	16	B	R=21'-0"
R425	8	3'-0"	16	S	
R426	14	5'-0"	47	B	
R427	8	9'-8"	52	S	

BENDING DIAGRAMS



MARK	NO.	LENGTH	WEIGHT	SHP.	REMARKS
R301	340	3'-3"	415	B	
	2	3'-3"			
R302	Series	to	22	B	varies by ½"
	of 8	3'-11¾"			
		Approach	Walk		
A401	38	16'-3"	412	B	
A402	32	9'-8"	207	S	
		Piers			
P1101	30	19'-0"	3,028	S	
P1102	10	17'-9"	943	S	
P1103	40	6'-10"	1,452	B	
P1104	16	18'-4"	1,559	B	
P1001	12	13'-6"	697	B	
P1002	8	11'-2"	384	S	
P901	24	11'-2"	911	S	
P902	10	14'-11"	507	S	
P903	10	20'-10"	708	S	
P904	20	6'-1"	414	B	
P905	6	11'-2"	228	B	
P801	6	9'-10"	158	B	
P501	10	11'-2"	116	S	
P502	6	11'-4"	71	B	
P503	9	11'-5"	107	B	
P504	48	4'-9"	238	B	
P505	32	5'-9"	192	B	
P506	12	6'-5"	80	B	
P507	13	7'-4"	99	B	
P508	16	8'-4"	139	B	
P401	50	6'-1"	203	B	
P402	52	7'-2"	249	B	
P403	28	9'-9"	182	B	
	Ramp	Structure	Slab		
D601	8	33'-2"	399	B	a=29'-8"
D602	8	33'-1"	397	B	a=29'-7"
D603	8	32'-10"	394	B	a=29'-4"
D604	8	32'-7"	391	B	a=29'-1"
D605	8	32'-2"	386	B	a=28'-8"
D606	8	31'-8"	381	B	a=28'-2"
D607	8	31'-2"	375	B	a=27'-8"
D608	8	30'-5"	366	B	a=26'-11"
D609	8	29'-7"	355	B	a=26'-1"
D610	8	28'-7"	343	B	a=25'-1"
D611	8	27'-6"	330	B	a=24'-0"
D612	8	26'-2"	314	B	a=22'-8"
D613	8	24'-8"	296	B	a=21'-2"
D614	8	22'-10"	274	B	a=19'-4"
D615	8	20'-9"	249	B	a=17'-3"
D616	8	18'-1"	217	B	a=14'-7"
D617	8	14'-8"	176	B	a=11'-2"
D618	8	29'-0"	348	S	
D619	8	28'-11"	347	S	
D620	8	28'-10"	346	S	
D621	8	28'-8"	344	S	
D622	8	28'-4"	341	S	
D623	8	28'-0"	337	S	
D624	8	27'-8"	332	S	
D625	8	27'-3"	327	S	
D626	8	26'-8"	320	S	
D627	8	26'-1"	313	S	
D628	8	25'-4"	304	S	
D629	8	24'-7"	295	S	
D630	8	23'-9"	285	S	
D631	8	22'-9"	273	S	
D632	8	21'-9"	261	S	

MARK	NO.	LENGTH	WEIGHT	SHP.	REMARKS
D633	8	20'-4"	244	S	
D634	8	18'-10"	226	S	
D635	8	17'-3"	207	S	
D636	8	15'-3"	183	S	
D637	8	12'-10"	154	S	
D638	8	9'-8"	116	S	
		Superstructure			
S501	207	28'-9"	6,207	S	
S502	18	24'-6"	460	S	
S503	18	10'-0"	188	S	
S504	464	8'-10"	4,275	S	
		Replacement Bars			
RE1100	1	7'-6"	*	S	
RE1000	1	7'-2"	*	S	
RE900	1	6'-10"	*	S	
RE800	1	6'-6"	*	S	
RE600	2	5'-11"	*	S	
RE-500	1	5'-7"	*	S	
RE-400	1	5'-3"	*	S	
RE-300	1	3'-3"	*	B	

BAR SIZE is indicated in the bar mark. The first digit where three digits are used and the first two where four are used, indicate the bar size number. For example, P901 is a NO. 9 Size bar and P1101 is a NO. 11 size bar.

* *REPLACEMENT BARS*
If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.

MICROFILMED
SEP 1 0 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

166
~~180~~

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

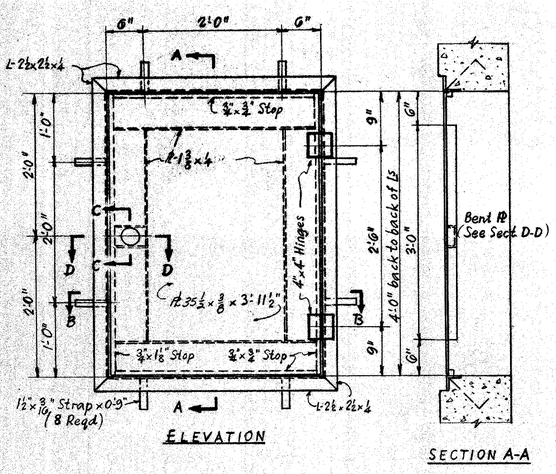
REINFORCING STEEL LIST
BRIDGE NO. CUY-2-2452
LAKELAND FREEWAY UNDER PEDESTRIAN OVERPASS NEAR EAST 167 ST.
CUYAHOGA COUNTY
SEC. CUY-2-24.33 STATION 214+30

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
B.M.Y.&B.	L.M.	L.M.	A.J.C.			

MICROFILMED
SEP 10 1985

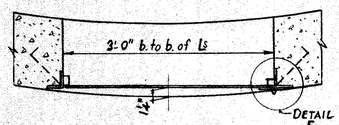
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	1-329(20)	

CUYAHOGA COUNTY
CUY-2-24.33

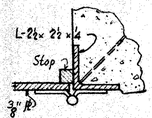


ELEVATION

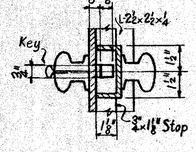
SECTION A-A



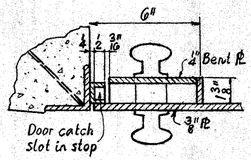
SECTION B-B



DETAIL "E"



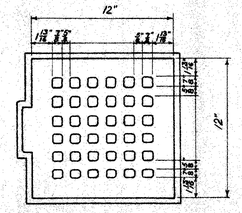
SECTION C-C



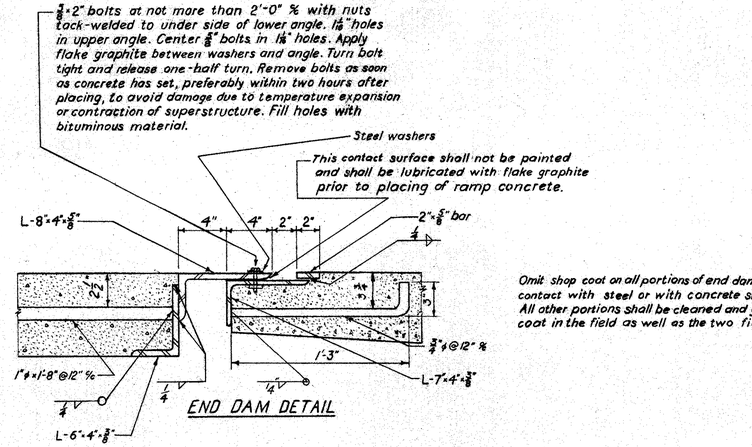
SECTION D-D

ACCESS DOOR

See Dwg. 16SA&17MA All Material welded Aluminum conforming to the requirements of Sect. M-7.19.

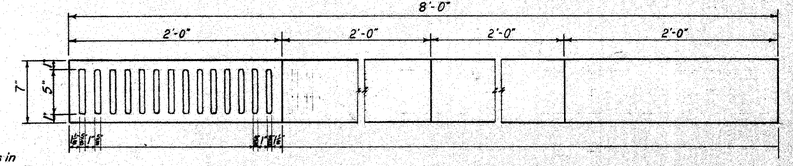


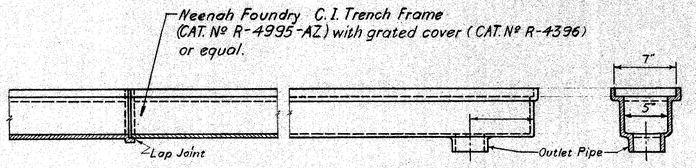
DRAIN DETAIL



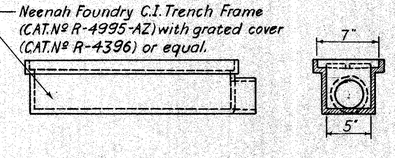
END DAM DETAIL

Omit shop coat on all portions of end dam. Portions in contact with steel or with concrete shall not be painted All other portions shall be cleaned and given the shop coat in the field as well as the two field coats.

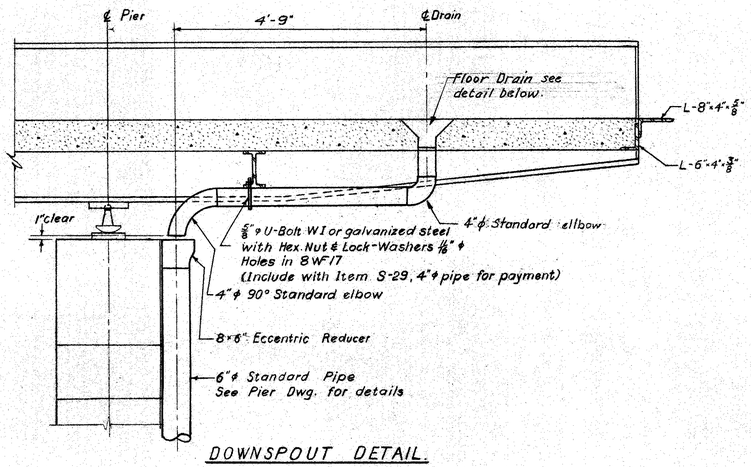




CROSS DRAIN DETAIL AT BOTTOM OF RAMP.
(8' UNIT)



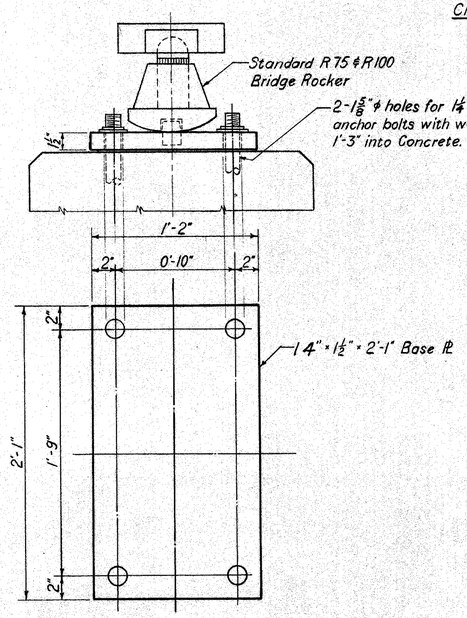
CROSS DRAIN DETAIL IN RAMP
(2' UNIT)



DOWNSPOUT DETAIL

DOWNSPOUTS shall be standard wrought iron pipe or hot-dipped galvanized steel pipe. Joints shall be made by welding or by the use of a clamp-type coupling with a ring gasket. All welding shall be done before galvanizing. On bolts galvanizing as called for in Sec. M-10.30 will be considered sufficient.

DRAINAGE QUANTITIES include all materials mounted within or on the overpass and ramp structures upto and including the catch basin of the end of the ramp.



MODIFIED BASE PLATE WITH ANCHOR BOLTS FOR STANDARD R-75 & R-100 BRIDGE ROCKERS

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

MISCELLANEOUS DETAILS

BRIDGE NO. CUY-2-2452 & NO. CUY-2-2513

LAKELAND FREEWAY UNDER PEDESTRIAN OVERPASSES

CUYAHOGA COUNTY STATION 214+30
SEC. CUY-2-24.33 & STATION 246+66

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
BHS	L.M.	L.M.	A.J.C.			

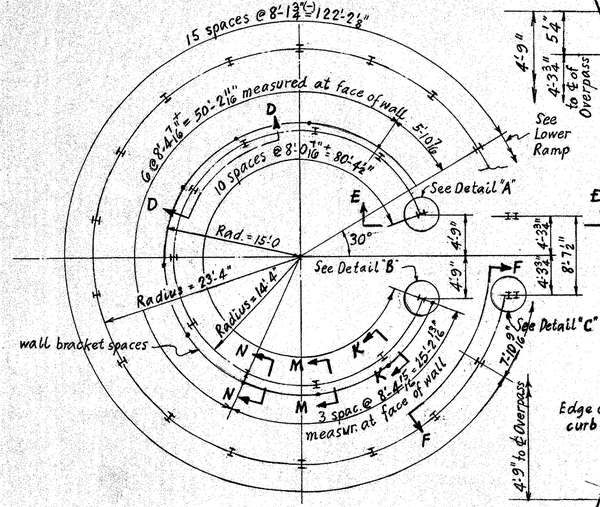
166-A

MICROFILMED
SEP 10 1985

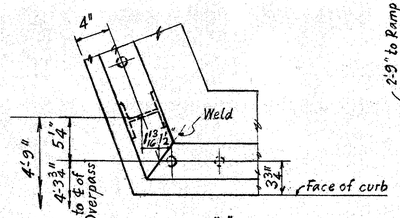
FED. RD DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

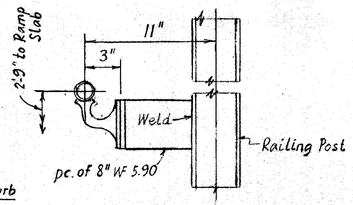
166B



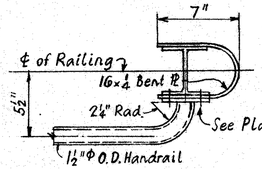
PLAN OF TOP DECK AND UPPER RAMP



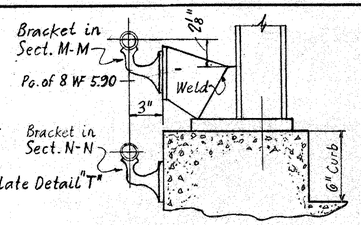
DETAIL "A"



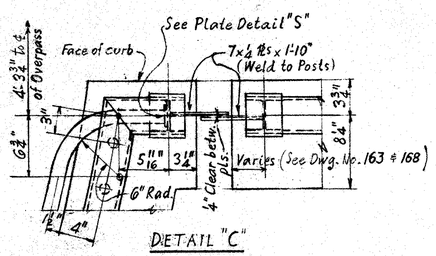
SECTION K-K



SECTION L-L



SECTIONS M-M & N-N



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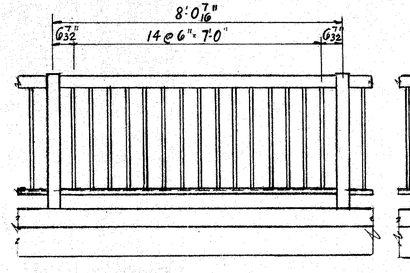
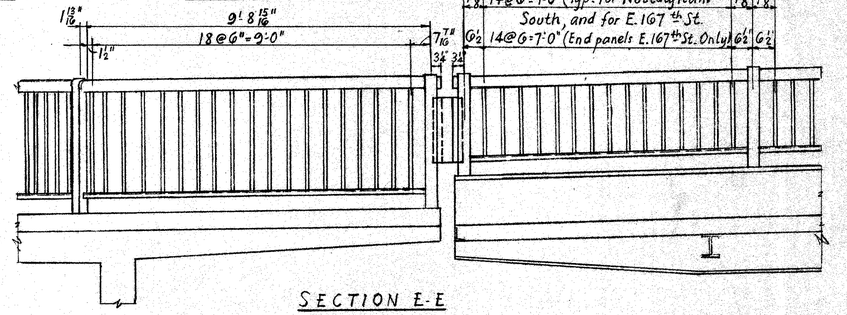
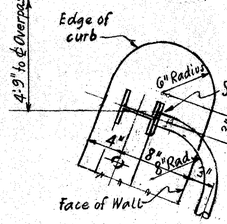


SECTION D-D
(Typical)



SECTION E-E



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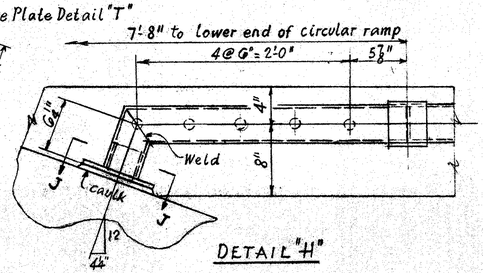
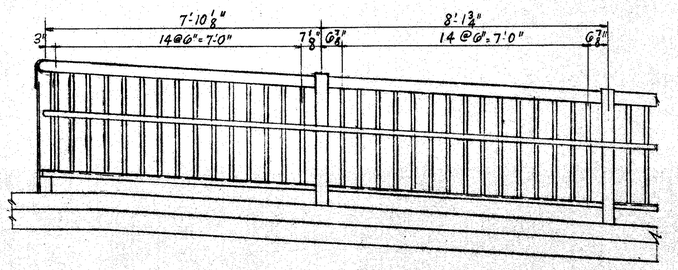
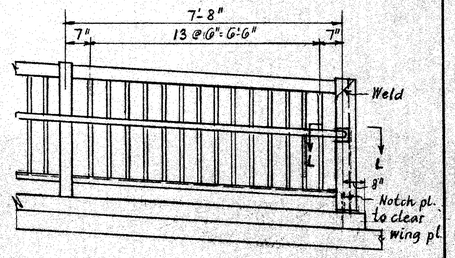
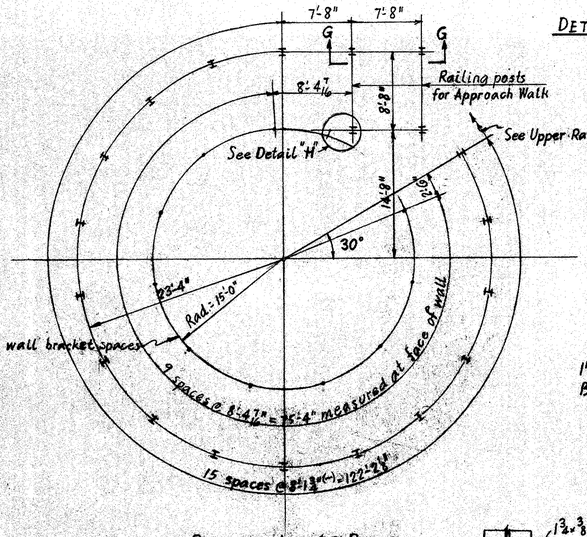


DETAIL "H"

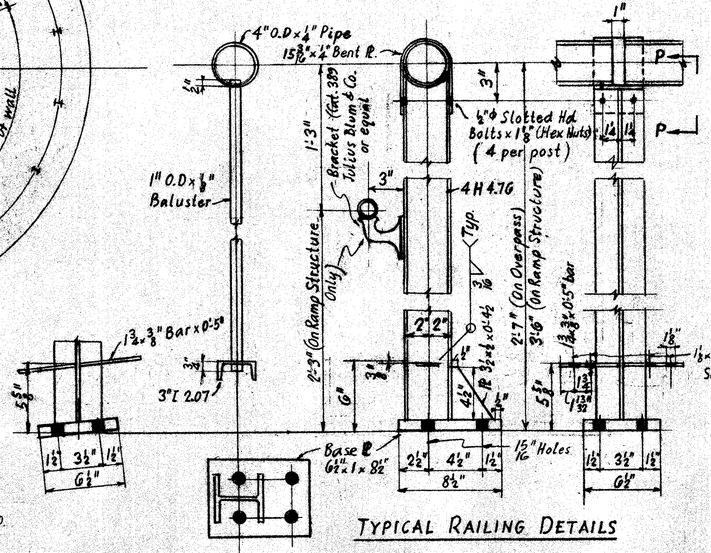




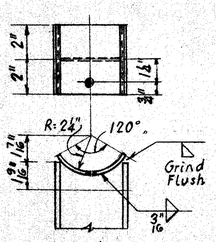
SECTION G-G



PLAN OF LOWER RAMP

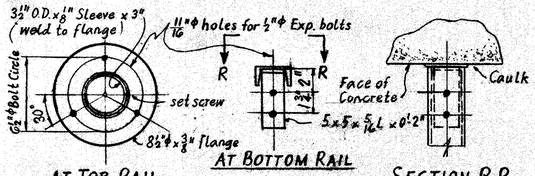


TYPICAL RAILING DETAILS



VIEW

SECTION F-F



SECTION J-J

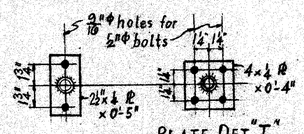


PLATE DET. "S"
PLATE DET. "T"

NOTES

Material for Railing, including anchor bolts & details, shall be an aluminum alloy conforming to the requirements of Sec. M-719.

Where aluminum, except anchor bolts, is to be in contact with concrete the contact surfaces shall be thoroughly coated with an aluminum-impregnated caulking compound or with heavy bituminous paint, provided the exposed paint shall be pigmented with aluminum powder or paste, so as to have an aluminum appearance.

Where aluminum is to be in contact with another metal, the contact surface shall be thoroughly coated with an aluminum-impregnated caulking compound, or a synthetic rubber impregnated fabric gasket shall be used. Aluminum shims, if required, shall be similarly separated from other metals.

For stud bolt detail see Drwg. N° 163-A
For anchor bolt detail see Drwg. N° 165 & N° 170.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

RAILING DETAILS
BRIDGE NO. CUY-2-2452 & BRIDGE NO. CUY. 2-2513
LAKELAND FREEWAY UNDER PEDESTRIAN OVERPASSES

CUYAHOGA COUNTY
SEC. CUY. 2-24.33

STA. 214+30.00
STA. 244+66.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
CLS	CLS	CLS	WM. HARP			

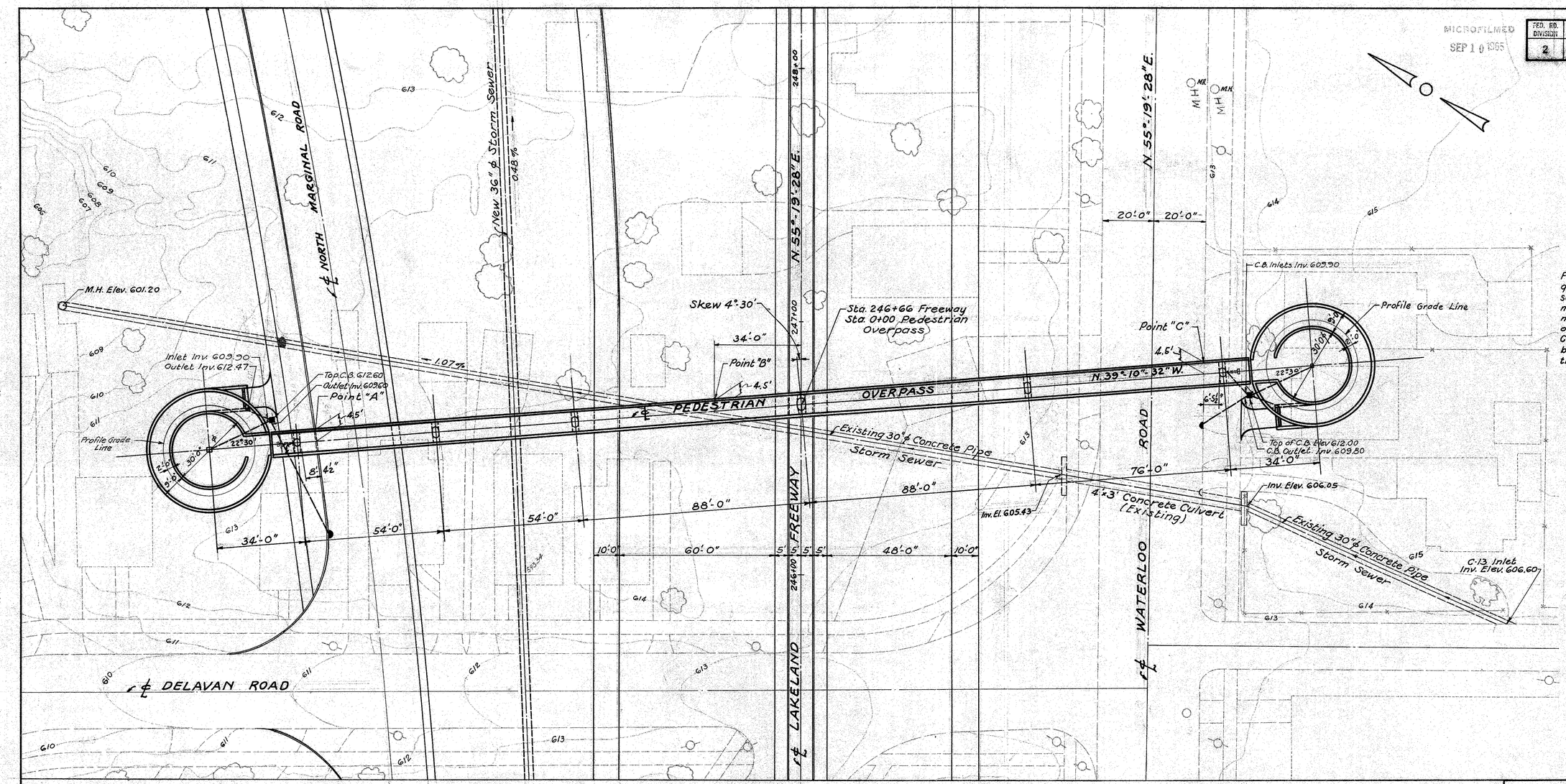
166-B

MICROFILMED
SEP 10 1965

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

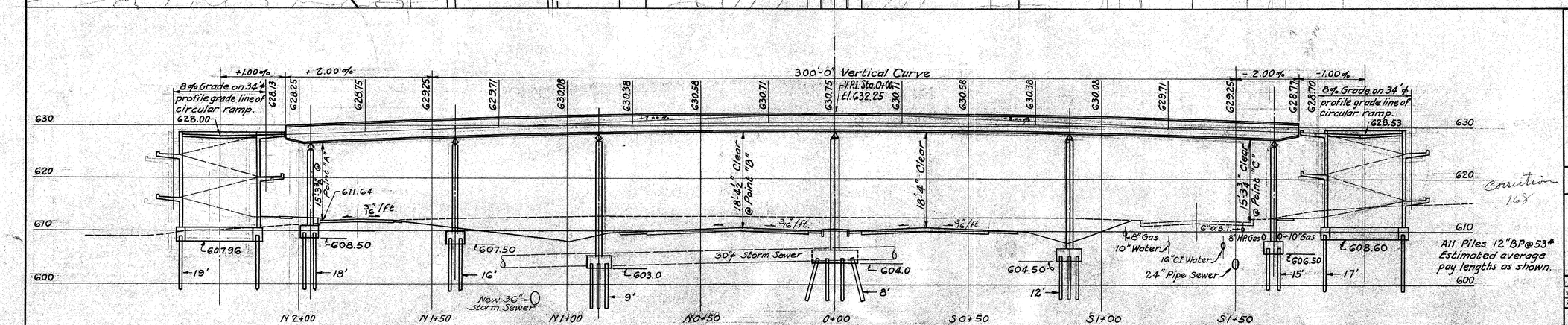
167
180

CUYAHOGA COUNTY
CUY-2-24.33



FOUNDATION SOUNDINGS:

Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office, but the State does not guarantee the accuracy thereof.



All Piles 12" BP @ 53#
Estimated average pay lengths as shown.

Correction 168

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAMS WITH REINFORCED CONCRETE DECK, PIERS & ABUTMENTS.
SPANS: 10' - 54' - 54' - 88' - 88' - 76' - 10'
PEDESTRIAN OVERPASS: 8' CLEAR
LOADING: 85 LBS. PER SQ. FT.
SKEW: 4°-30' R.F.
WEARING SURFACE: ½" MONOLITHIC CONCRETE
APPROACH RAMPS: REINFORCED CONCRETE.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

SITE PLAN
BRIDGE NO. CUY-2-2513
LAKELAND FREEWAY UNDER PEDESTRIAN OVERPASS NEAR NOTTINGHAM
CUYAHOGA COUNTY
SEC. CUY-2-24.33 STATION 246+66

TOPOGRAPHY		PROPOSED WORK				
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
AERIAL SURVEYS	M.L.	[illegible]	W.A.B.	A.J.C. W.B.		

SITE PLAN PEDESTRIAN OVERPASS NEAR NOTTINGHAM

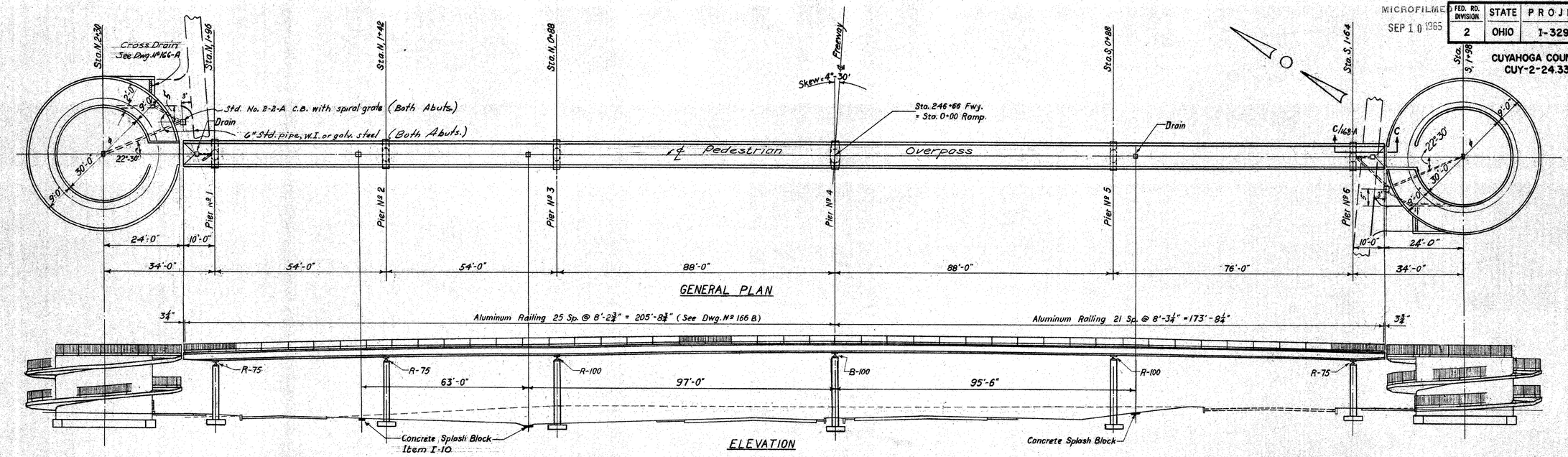
167

MICROFILMED SEP 10 1965

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

168 ~~180~~

CUYAHOGA COUNTY
CUY-2-24.33



ESTIMATED QUANTITIES

Item	Total	Unit	Description	Superstr.	Piers	Ramp Struct.	General	As Built	
E-2	359	C.Y.	Unclassified Excavation		183	176			
S-1	79	C.Y.	Class "C" Concrete, Superstructure	79				CO. 1 = 78	1 -
S-1	40	C.Y.	Class "C" Concrete, Pier Caps and Columns		40				
S-1	119	C.Y.	Class "C" Concrete, Ramp Structure Walls			119			
S-1	156	C.Y.	Class "C" Concrete, Ramp Structure (incl. slabs)			156			
S-1	110	C.Y.	Class "E" Concrete, Footings		59	51			
S-4	76,541	Lbs.	Reinforcing Steel	12,232	14,087	50222			
S-7	135,100	Lbs.	Structural Steel	135,100					
S-8	135,100	Lbs.	Field Painting of Structural Steel	135,100					
S-9	16	L.F.	5"x½" Preformed Expansion Joint Filler				16		
S-14	1498	L.F.	Railing, Aluminum rails 4" ϕ and 4" Hposts	760		738			
S-14	1080	L.F.	Aluminum handrail, 1½" ϕ and brackets			1080		CO. 2 = 217 CO. 3 = 107	923 893
S-16	Lump	Sum	First test pile				Lump		
S-18	1140	L.F.	Steel piles, 12BP53		420	720			
S-29	2	Ea.	Standard N° 2-2-A catch basins				2		
S-29	12	L.F.	4" ϕ W.I. or galvanized steel pipe, fittings & drains	12					
S-29	157	L.F.	6" ϕ W.I. or galvanized steel pipe, fittings & drains			107	50		
S-29	2	Ea.	7"x6"x8'-0" Casting and grate			2			
S-29	2	Ea.	7"-6"x2'-0 Casting and grate			2			
I-10	3	Ea.	Concrete Splash Blocks 3'-0"x3'-0"x0'-6"				3		
Special	2	Ea.	Aluminum Access Door (complete, in place)			2			

NOTES

REFERENCE shall be made to Standard Drawing RB-1-55, revised 2-2-59, & Supplemental Specification 5-101, dated 12-2-59, and to Std. Dwg. I-8, No. 2-2A dated 3-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highway, dated 9-1-57, together with revisions thereof dated 2-21-58.

PILES shall be driven to firm contact with shale. If the length of penetration is approximately equal to the depth of shale according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

40 tons per pile using a 11,000 ft-lb hammer
35 tons per pile using a 15,000 ft-lb hammer

If the energy rating of the hammer is between the ratings shown above, the required formula capacity shall be determined by interpolation. The design load is 30 tons per pile for the pier piles and for the ramp structure footing piles.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

WELDING of structural steel shall be class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

SURFACE FINISH OF CONCRETE: Outside of walls, ramp, pier caps and columns shall receive a rubbed surface finish. The deck and ramp slabs shall be finished in accordance with Sec. T-71.214 Method A. All other exposed surfaces shall be governed by the provisions of Item S-1, except that form liners shall be used on the bottom area of the spiral ramps.

UTILITY LINES: All labor and 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 will be held to a minimum.

FALSEWORK: At least 15 days prior to the beginning of construction of the falsework for the "Ramp Structures", the Contractor shall submit three copies of the falsework plans to the Director for approval.

STEEL: See Proposal regarding A-373 Steel.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

GENERAL PLAN, ELEVATION, NOTES & ESTIMATED QUANTITIES
BRIDGE NO. 2513
LAKELAND FREEWAY UNDER PEDESTRIAN OVERPASS NEAR NOTTINGHAM

CUYAHOGA COUNTY STATION 246+66
SEC. CUY-2-24.33

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
G.R.B.	L.M.	L.M.				

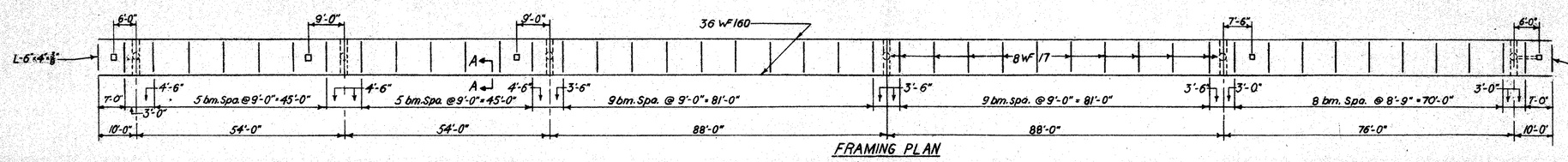
AB Revised As-Built CAM 2-20-64

MICROFILMED
SEP 10 1965

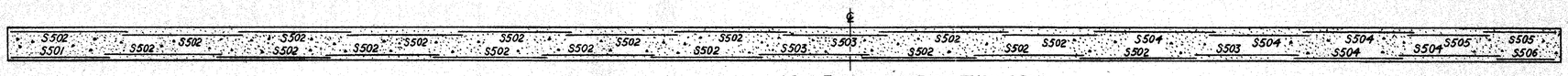
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	1-329(20)	

168-A
180

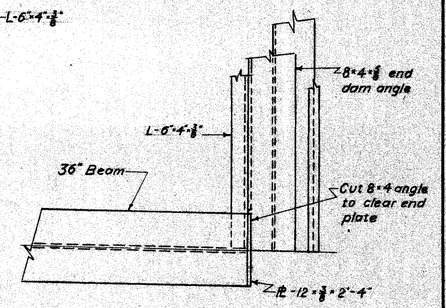
CUYAHOGA COUNTY
CUY-2-24.33



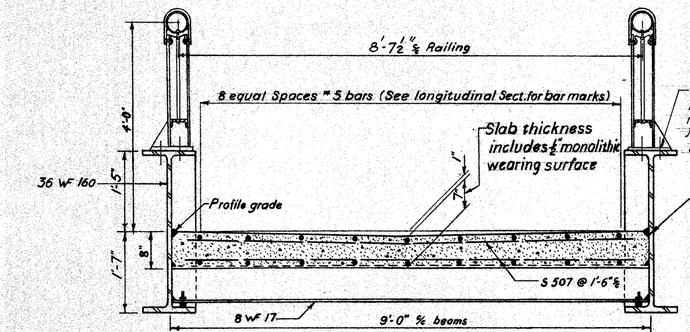
FRAMING PLAN



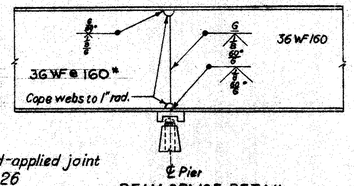
LONGITUDINAL SECTION THRU DECK



DETAIL SHOWING PLATE AT ENDS OF 36" BEAMS



CROSS-SECTION THRU DECK



BEAM SPLICE DETAIL

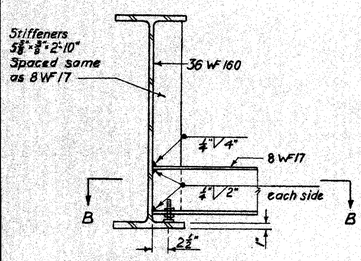
See detail & note for stud bolts on Dr'wg. N° 163. For railing details see Drwg. N° 166-B. For post locations see Drwg. N° 168.

1" V-groove filled with cold-applied joint sealer as per Sec. M-10.26 (Include with deck concrete for payment)

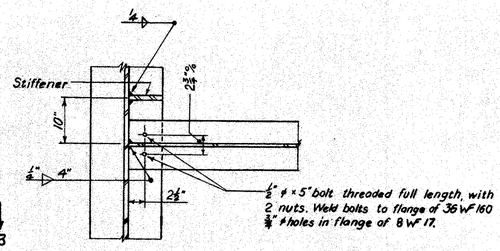
BEAM SPLICE WELDING PROCEDURE

1. Raise end of beam @ Pier #5, 4⅛".
2. Butt-weld beam flanges and web at Pier #4 using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location until welds are completed.
3. Lower end of beam at Pier #5.
4. Make splices at Pier #5, Pier #3, & Pier #2, in that order, in the same manner raising the ends of the beams 2⅜" at Pier #6, 1¼" @ Pier #2, and ½" at Pier #1.

Painting: See proposal regarding Painting.



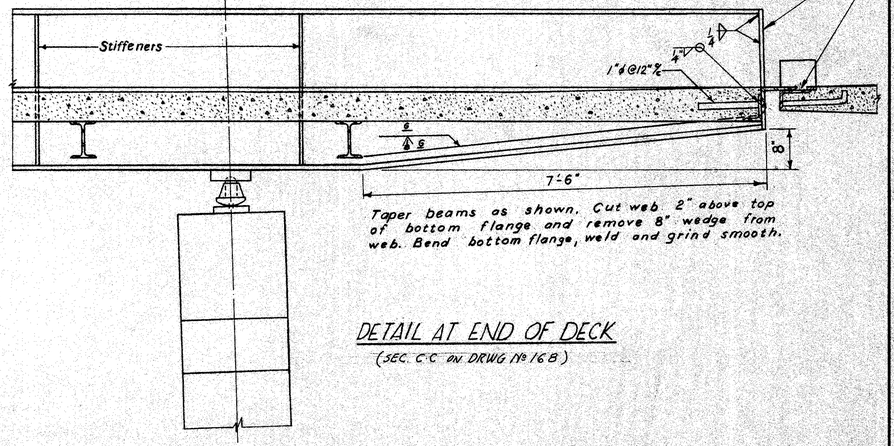
SECTION A-A



SECTION B-B

CAMBERING of beams (or girders) is required in accordance with the following table:

TABLE OF DEFLECTION AND CAMBER					
LOCATION	SPAN 1-2	SPAN 2-3	SPAN 3-4	SPAN 4-5	SPAN 5-6
Deflection due to weight of steel	1/16"	0	1/4"	1/8"	3/16"
Deflection due to remaining dead load	1/8"	-1/16"	1/2"	1/4"	1/2"
Convexity required for vertical curve	0	5/8"	1½"	1½"	1"
Sum of Deflection and Convexity	3/16"	9/16"	2¼"	1⅝"	1⅛"
Required Camber	0	0	2¼"	1⅝"	1⅛"



Taper beams as shown. Cut web 2" above top of bottom flange and remove 8" wedge from web. Bend bottom flange, weld and grind smooth.

DETAIL AT END OF DECK
(SEC. C-C ON DRWG N° 168)

HARGETT, YANDA & BARBER
Consulting Engineers
4509 Euclid Ave. Cleveland 8, Ohio

FRAMING PLAN STRUCTURAL STEEL DETAILS & DECK SECTIONS
BRIDGE NO. CUY-2-2513
LAKELAND FREEWAY UNDER PEDESTRIAN OVERPASS NEAR NOTTINGHAM
CUYAHOGA COUNTY
SEC. CUY-2-24.33 STA. 246+66

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
RHB	L.M.	L.M.	AGC			

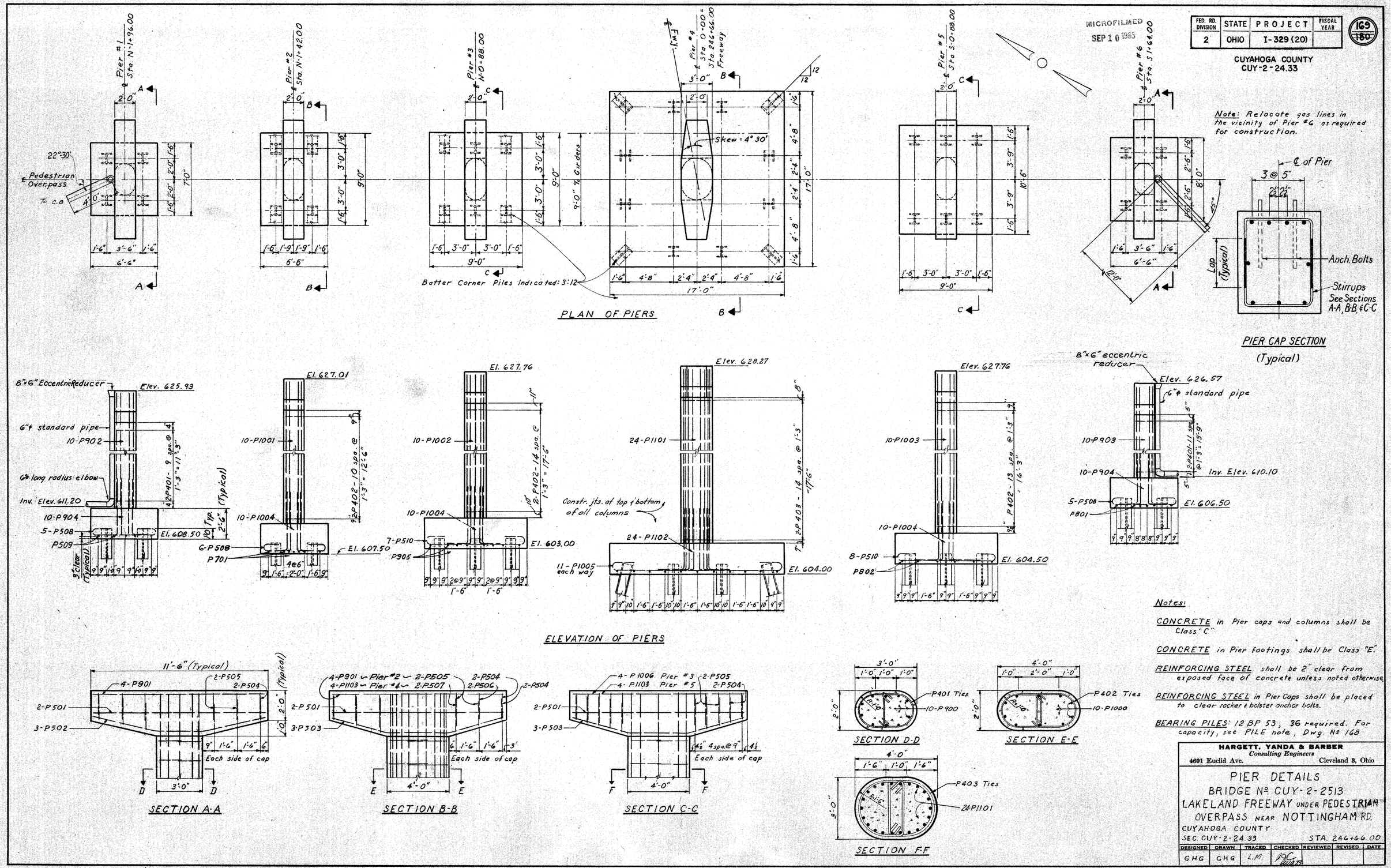
168-A

MICROFILMED
SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

169
180

CUYAHOGA COUNTY
CUY-2-24.33



Notes:

CONCRETE in Pier caps and columns shall be Class "C"

CONCRETE in Pier footings shall be Class "E".

REINFORCING STEEL shall be 2" clear from exposed face of concrete unless noted otherwise.

REINFORCING STEEL in Pier Caps shall be placed to clear rocker & bolster anchor bolts.

BEARING PILES: 12 BP 53; 36 required. For capacity, see PILE note, Dwg. № 168

HARGETT, YANDA & BARBER
Consulting Engineers
4601 Euclid Ave. Cleveland 3, Ohio

PIER DETAILS
BRIDGE № CUY-2-2513
LAKELAND FREEWAY UNDER PEDESTRIAN OVERPASS NEAR NOTTINGHAM RD.
CUYAHOGA COUNTY
SEC. CUY-2-24.33 STA. 246+66.00

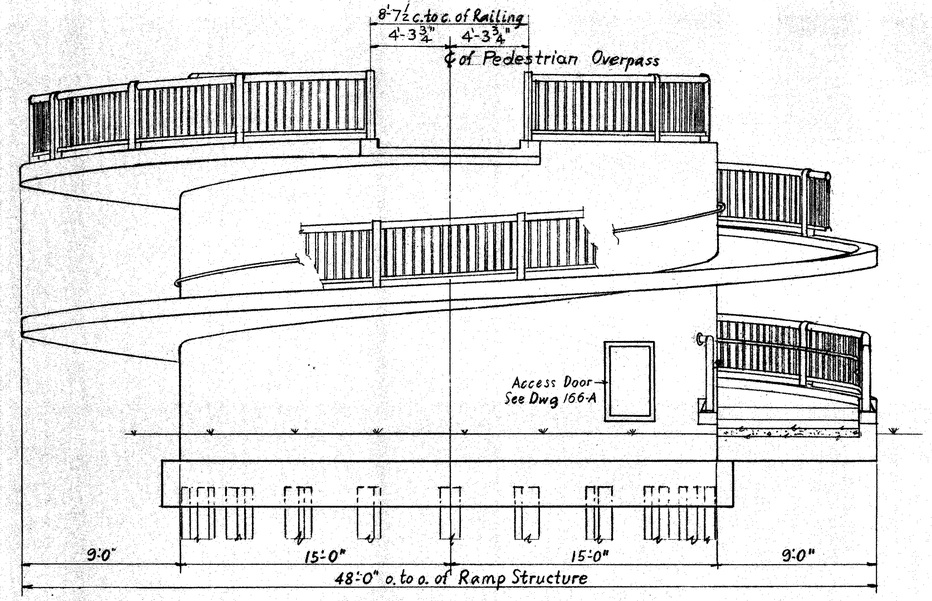
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
GHG	GHG	L.M.	[illegible]			

MICROFILMED
SEP 10 1985

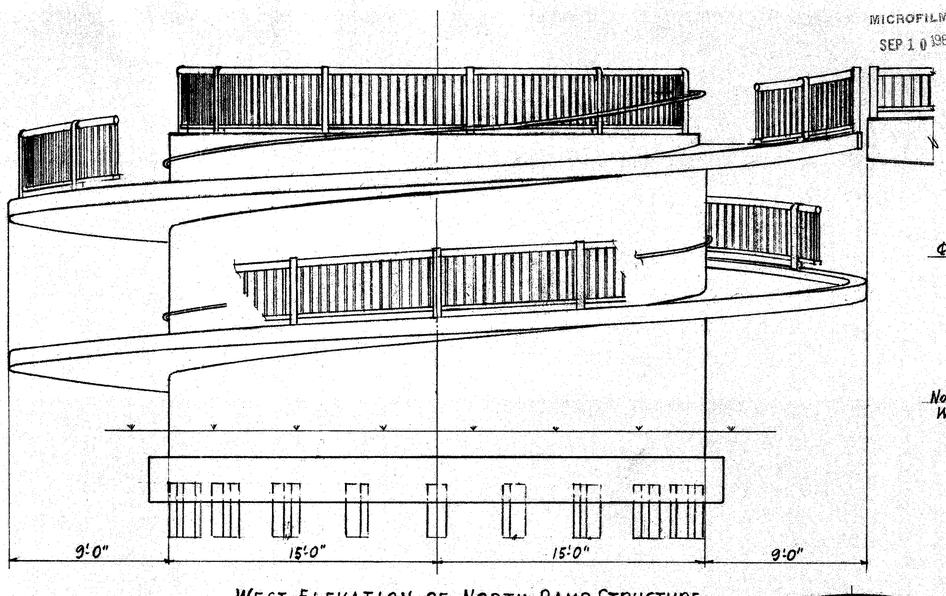
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

170
180

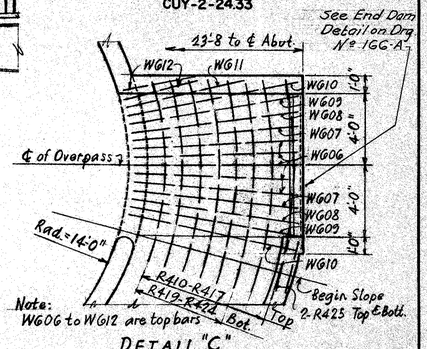
CUYAHOGA COUNTY
CUY-2-24.33



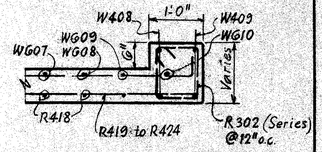
SOUTH ELEVATION OF NORTH RAMP STRUCTURE
NORTH ELEVATION OF SOUTH RAMP STRUCTURE



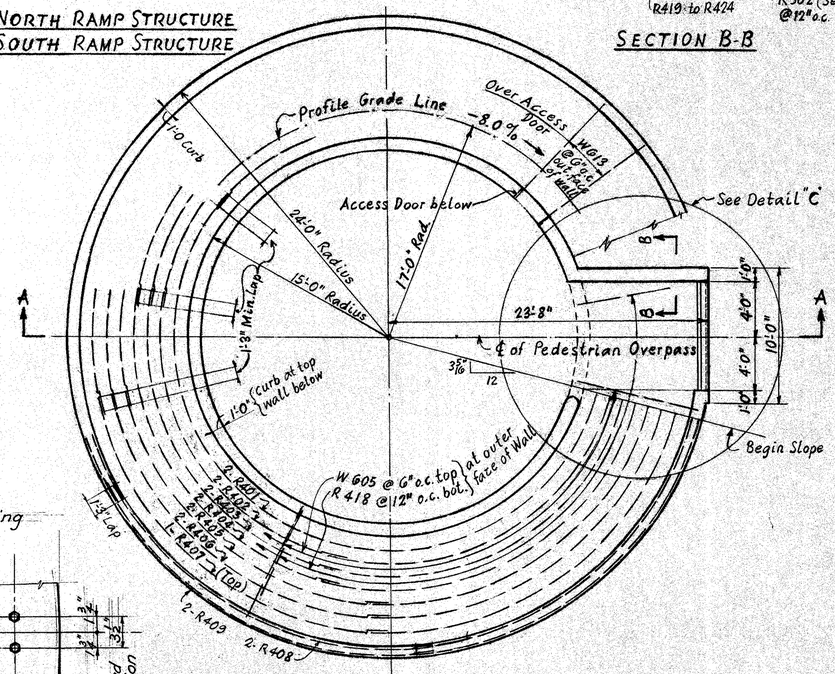
WEST ELEVATION OF NORTH RAMP STRUCTURE
EAST ELEVATION OF SOUTH RAMP STRUCTURE



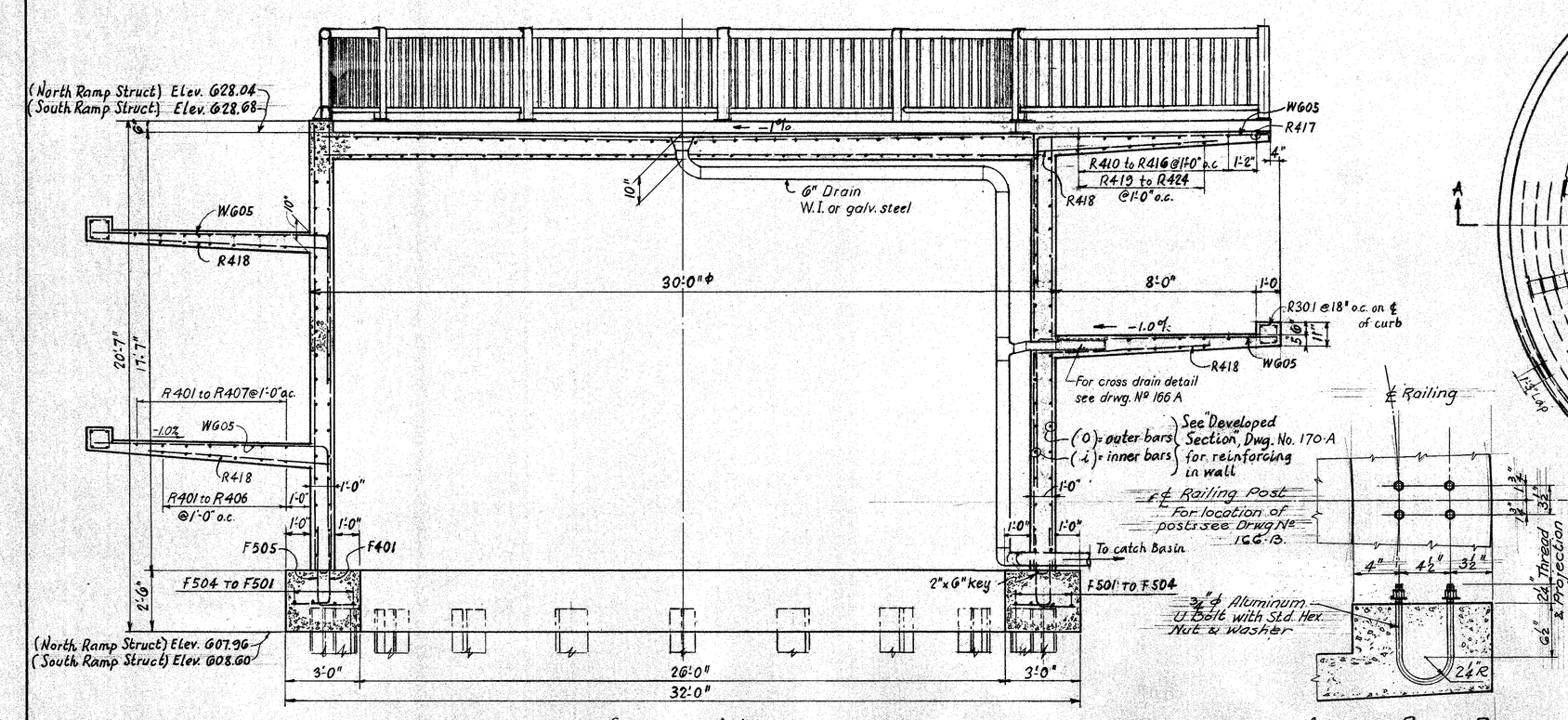
DETAIL "C"



SECTION B-B



PLAN



SECTION A-A

ANCHOR BOLT DETAIL

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

RAMP STRUCTURE DETAILS
BRIDGE NO. CUY. 2-2513
LAKELAND FREEWAY UNDER PEDESTRIAN OVERPASS NEAR NOTTINGHAM ROAD

CUYAHOGA COUNTY STA. 244+06
SEC. CUY. 2-24.33

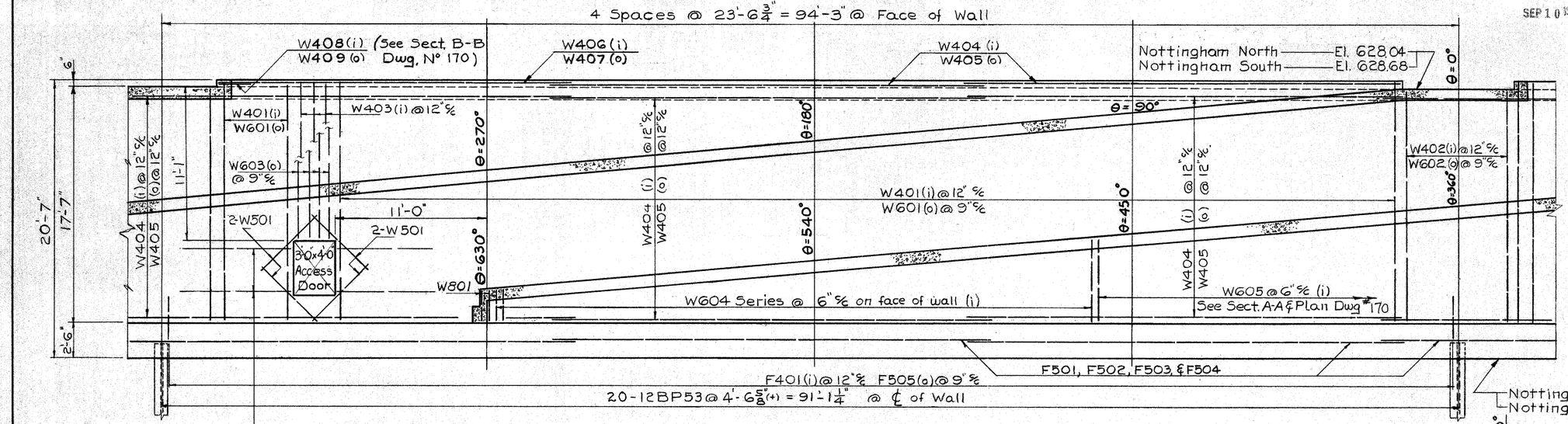
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
[illegible]	CLS	L.M.	CLS [illegible]			

MICROFILMED SEP 10 1985

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329 (20)	

170A ~~180~~

CUYAHOGA COUNTY
CUY-2-24.33



Increase lap of W404 & W405 to allow for Access Door

DEVELOPED SECTION AT FACE OF WALL

NOTE: Spacing shown for vertical reinforcing steel in wall is the spacing at the centerline of steel, unless otherwise noted.

(i) indicates reinforcing steel in the inside face of the wall.

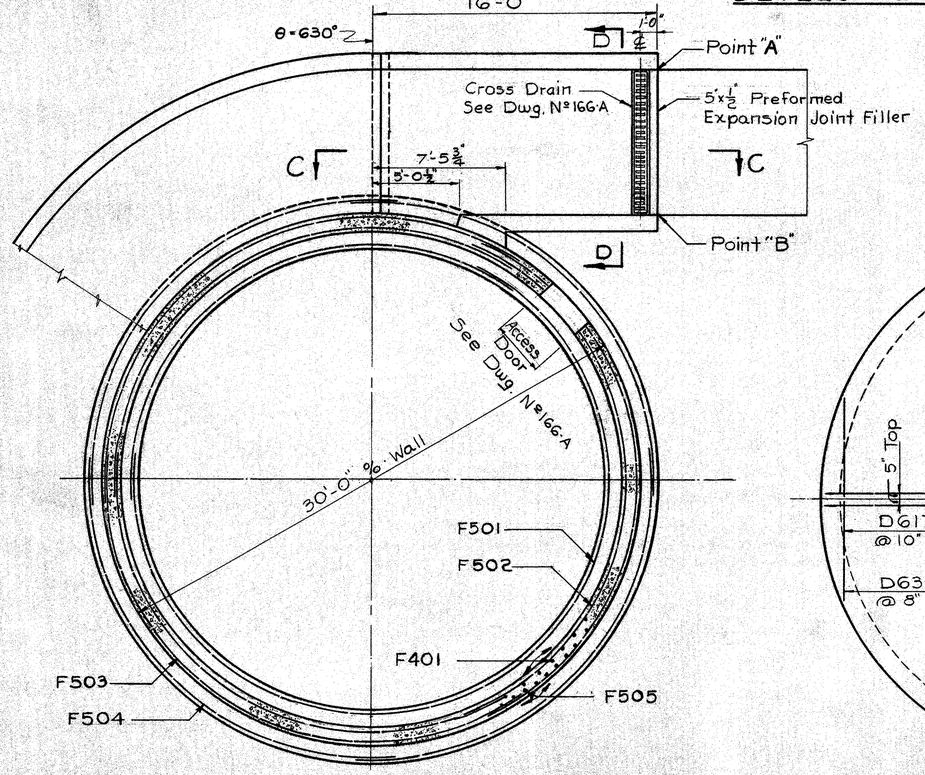
(o) indicates reinforcing steel in the outside face of the wall

Concrete for walls and ramp shall be Class "C". Concrete for footings shall be Class "E".

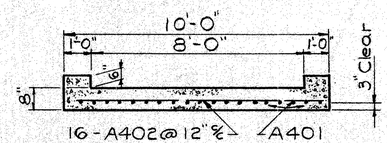
Reinforcing steel shall be 2" clear from face of concrete unless otherwise noted.

For additional notes see Dwg. N° 168

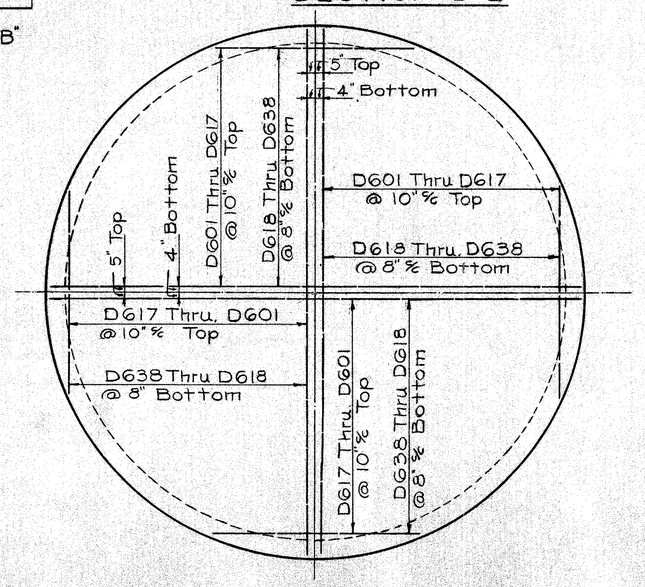
Nottingham North —— El. 607.96
Nottingham South —— El. 608.60



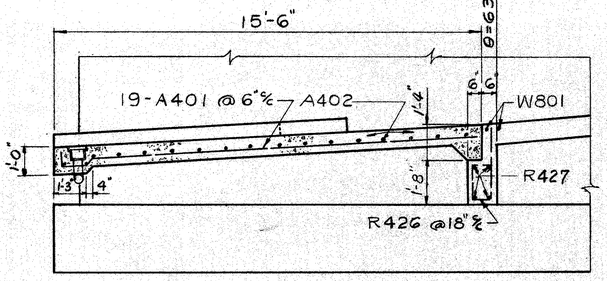
FOUNDATION & APPROACH SLAB PLAN



SECTION D-D

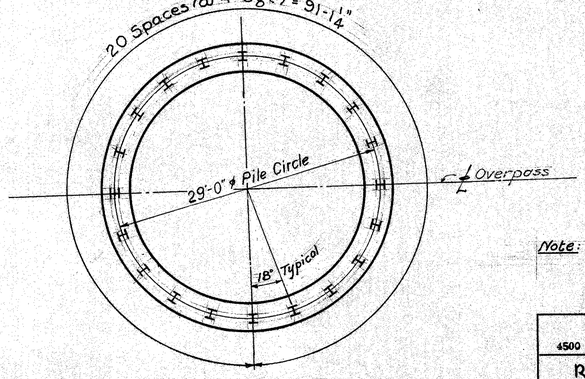


TOP SLAB REINFORCING PLAN



SECTION C-C

RAMP ELEVATIONS		
θ or Point	Nottingham North	Nottingham South
90°	626.27	626.91
180°	624.13	624.77
270°	622.00	622.64
360°	619.86	620.50
450°	617.72	618.36
540°	615.59	616.23
630°	613.45	614.09
A	612.97	613.23
B	612.89	613.15



PILING LAYOUT

Note: 40 Bearing Pile required. For pile capacity see Drwg N° 168.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

RAMP STRUCTURE DETAILS
BRIDGE NO. CUY. 2-2513
LAKELAND FREEWAY UNDER PEDESTRIAN OVERPASS NEAR NOTTINGHAM ROAD

CUYAHOGA COUNTY STA. 244+66
SEC. CUY. 2-24.33

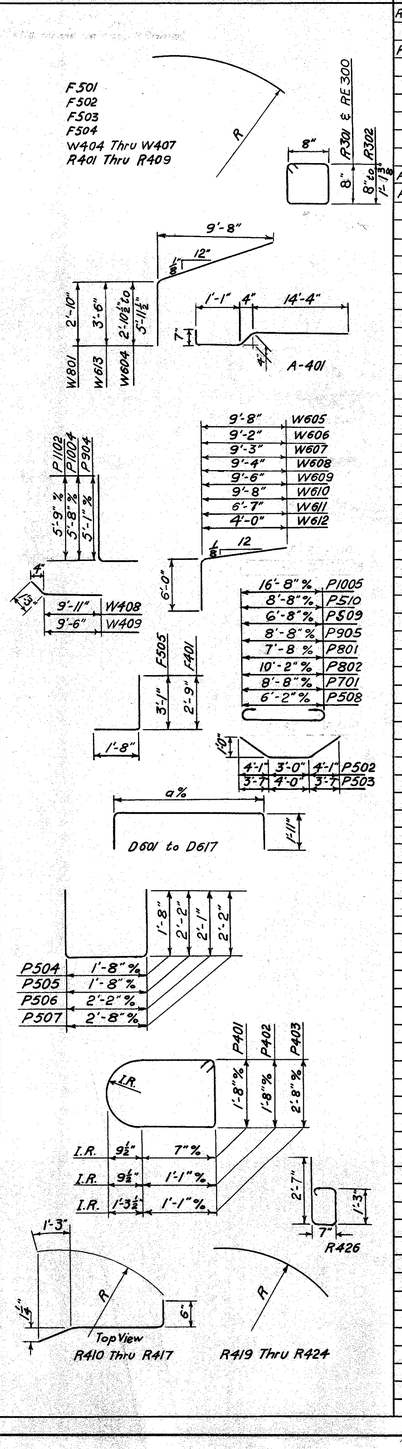
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
[illegible]	[illegible]	L.M.	[illegible]			

170A

REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	SHP.	REMARKS
	Ramp	Structure	Footings		
F501	6	29'-4"	184	B	R=13'-3"
F502	6	31'-6"	197	B	R=14'-3"
F503	6	32'-5"	203	B	R=14'-9"
F504	8	26'-5"	220	B	R=15'-9"
F505	246	4'-8"	1197	B	
F401	180	4'-4"	521	B	
	Ramp	Structure	Walls		
W801	4	12'-4"	132	B	
W601	218	17'-11"	5867	S	
W602	22	17'-5"	576	S	
W603	8	11'-3"	135	S	
	2	12'-4½"			
W604	Series	to	3135	B	
	of 75	15'-5½"			½" incr.
W605	480	15'-6"	11,175	B	
W606	10	15'-0"	225	B	
W607	4	15'-1"	91	B	
W608	4	15'-2"	91	B	
W609	4	15'-4"	92	B	
W610	4	15'-6"	93	B	
W611	2	12'-5"	37	B	
W612	4	9'-10"	59	B	
W613	14	13'-0"	273	B	
W501	16	5'-0"	83	S	
W401	158	17'-11"	1891	S	
W402	16	17'-5"	186	S	
W403	6	11'-3"	45	S	
W404	106	31'-6"	2230	B	R=14'-3"
W405	106	32'-5"	2295	B	R=14'-9"
W406	2	22'-2"	30	B	R=14'-3"
W407	2	23'-0"	31	B	R=14'-9"
W408	4	11'-1"	30	B	
W409	4	10'-8"	29	B	
	Ramp	Structure	Cantilever	Slab	
R401	24	29'-9"	477	B	R=16'-0"
R402	28	27'-3"	510	B	R=17'-0"
R403	28	28'-9"	538	B	R=18'-0"
R404	28	30'-3"	566	B	R=19'-0"
R405	32	28'-1"	600	B	R=20'-0"
R406	32	29'-4"	625	B	R=21'-0"
R407	16	30'-8"	328	B	R=22'-0"
R408	18	28'-9"	346	B	R=23'-2"
R409	18	29'-7"	356	B	R=23'-10"
R410	2	11'-0"	15	B	R=16'-0"
R411	2	11'-2"	15	B	R=17'-0"
R412	2	11'-6"	15	B	R=18'-0"
R413	2	11'-9"	16	B	R=19'-0"
R414	2	12'-0"	16	B	R=20'-0"
R415	2	12'-3"	16	B	R=21'-0"
R416	2	12'-6"	17	B	R=22'-0"
R417	2	12'-10"	17	B	R=23'-2
R418	340	7'-0"	1590	S	
R419	2	10'-6"	14	B	R=16'-0"
R420	2	10'-8"	14	B	R=17'-0"
R421	2	11'-0"	15	B	R=18'-0"
R422	2	11'-3"	15	B	R=19'-0"
R423	2	11'-6"	15	B	R=20'-0"
R424	2	11'-9"	16	B	R=21'-0"
R425	8	3'-0"	16	S	
R426	14	5'-0"	47	B	
R427	8	9'-8"	52	S	

BENDING DIAGRAMS



MARK	NO.	LENGTH	WEIGHT	SHP.	REMARKS
R301	340	3'-3"	415	B	
	2	3'-3"			
R302	Series	to	22	B	varies by ¼"
	of 8	3'-11¾"			
		Approach	Walk		
A401	38	16'-3"	412	B	
A402	32	9'-8"	207	S	
	Ramp	Structure	Slab		
D601	8	33'-2"	399	B	a=29'-8"
D602	8	33'-1"	397	B	a=29'-7"
D603	8	32'-10"	394	B	a=29'-4"
D604	8	32'-7"	391	B	a=29'-1"
D605	8	32'-2"	386	B	a=28'-8"
D606	8	31'-8"	381	B	a=28'-2"
D607	8	31'-2"	375	B	a=27'-8"
D608	8	30'-5"	366	B	a=26'-11"
D609	8	29'-7"	355	B	a=26'-1"
D610	8	28'-7"	343	B	a=25'-1"
D611	8	27'-6"	330	B	a=24'-0"
D612	8	26'-2"	314	B	a=22'-8"
D613	8	24'-8"	296	B	a=21'-2"
D614	8	22'-10"	274	B	a=19'-4"
D615	8	20'-9"	249	B	a=17'-3"
D616	8	18'-1"	217	B	a=14'-7"
D617	8	14'-8"	176	B	a=11'-2"
D618	8	29'-0"	348	S	
D619	8	28'-11"	347	S	
D620	8	28'-10"	346	S	
D621	8	28'-8"	344	S	
D622	8	28'-4"	341	S	
D623	8	28'-0"	337	S	
D624	8	27'-8"	332	S	
D625	8	27'-3"	327	S	
D626	8	26'-8"	320	S	
D627	8	26'-1"	313	S	
D628	8	25'-4"	304	S	
D629	8	24'-7"	295	S	
D630	8	23'-9"	285	S	
D631	8	22'-9"	273	S	
D632	8	21'-9"	261	S	
D633	8	20'-4"	244	S	
D634	8	18'-10"	226	S	
D635	8	17'-3	207	S	
D636	8	15'-3"	183	S	
D637	8	12'-10"	154	S	
D638	8	9'-8"	116	S	
	Superstructure				
S501	9	24'-2"	227	S	
S502	162	28'-7"	4,830	S	
S503	27	25'-7"	720	S	
S504	45	27'-6"	1291	S	
S505	18	18'-6"	347	S	
S506	9	14'-7"	137	S	
S507	508	8'-10"	4680	S	

MARK	NO.	LENGTH	WEIGHT	SHP.	REMARKS
		Piers			
P1101	24	21'-3"	2,710	S	
P1102	24	6'-11"	882	B	
P1103	8	11'-2"	475	S	
P1001	10	16'-3"	699	S	
P1002	10	21'-6"	925	S	
P1003	10	20'-0"	861	S	
P1004	30	6'-9"	871	B	
P1005	22	19'-6"	1846	B	
P1006	4	11'-2"	192	S	
P901	12	11'-2"	456	S	
P902	10	13'-11"	473	S	
P903	10	16'-7"	564	S	
P904	20	6'-1"	414	B	
P905	8	11'-2"	304	B	
P801	6	9'-10"	157	B	
P802	6	12'-4"	197	B	
P701	7	10'-4"	148	B	
P501	12	11'-2"	140	S	
P502	6	11'-4"	71	B	
P503	12	11'-5"	143	B	
P504	32	4'-9"	159	B	
P505	48	5'-9"	288	B	
P506	4	6'-1"	25	B	
P507	4	6'-9"	28	B	
P508	16	7'-4"	122	B	
P509	5	7'-10"	41	B	
P401	44	6'-0"	176	B	
P402	80	7'-0"	374	B	
P403	30	9'-7"	192	B	
P510	15	9'-10"	154	B	
		Replacement Bars			
RE1100	1	7'-6"	*	S	
RE1000	1	7'-2"	*	S	
RE900	1	6'-10"	*	S	
RE800	1	6'-6"	*	S	
RE700	1	6'-2"	*	S	
RE600	2	5'-11"	*	S	
RE500	1	5'-7"	*	S	
RE400	1	5'-3"	*	S	
RE300	1	3'-3"	*	B	

BAR SIZE is indicated in the bar mark. The first digit where three digits are used and the first two where four are used, indicate the bar size number. For example, P901 is a NO. 9 size bar and P1101 is a NO. 11 size bar.

* *REPLACEMENT BARS*
If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. 3-4.02 need not be furnished and replacement bars will not be required.

MICROFILMED
SEP 10 1965

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

CUYAHOGA COUNTY
CUY-2-24.33

171
~~180~~

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

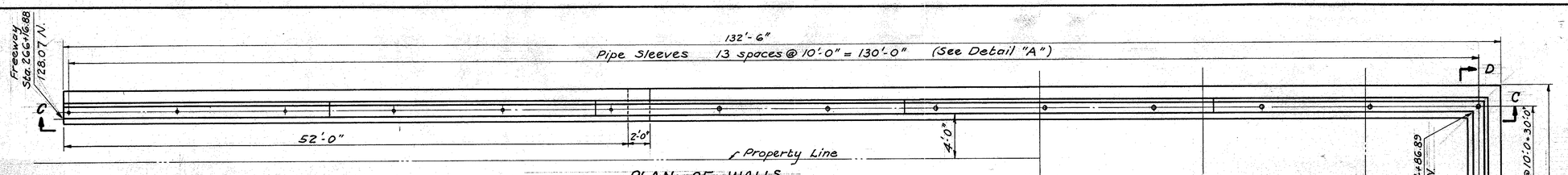
REINFORCING STEEL LIST
BRIDGE NO. CUY-2-2513
LAKELAND FREEWAY UNDER PEDESTRIAN OVERPASS NEAR NOTTINGHAM RD.
CUYAHOGA COUNTY
SEC. CUY-2-24.33 STATION 246+66

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
W.C. BLD	L.M.	L.M.	G.E.B.			

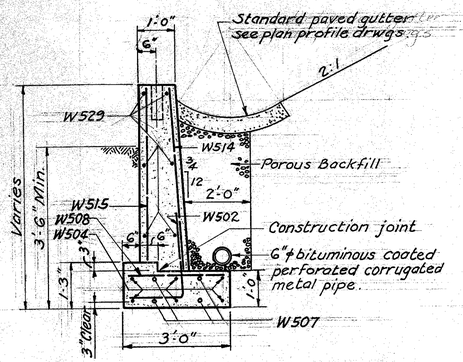
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-329 (20)	

172 ~~180~~

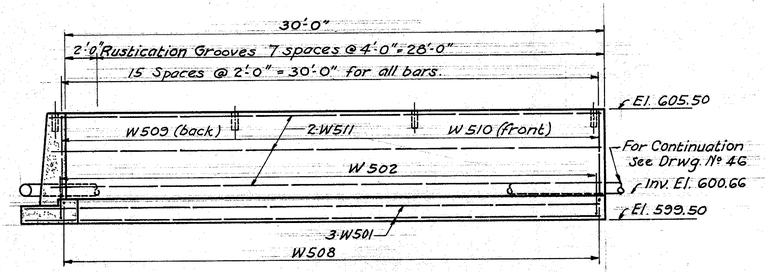
CUYAHOGA COUNTY
CUY-2-24.33



PLAN OF WALLS



SECTION A-A



ELEVATION D-D WEST WALL

Notes:

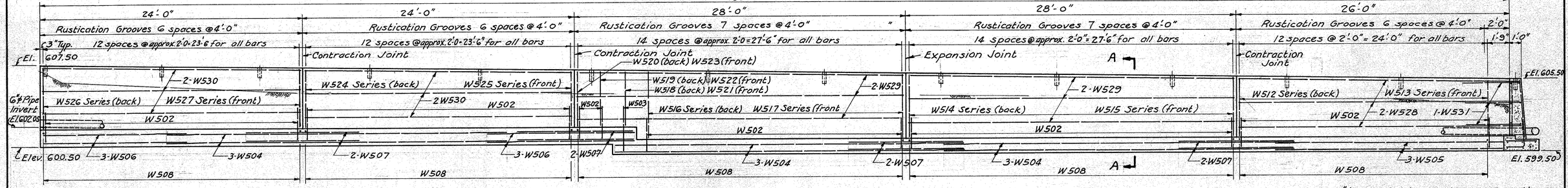
Concrete shall be class "E" for walls and footings.

Reinforcing Steel shall be 2" clear from face of concrete unless noted.

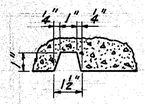
Fence on top of wall is shown on drawing №. 179 and is paid for as Item SS-18.

Bar Size is indicated in the bar mark. The first digit indicates the bar size number. For example W503 is a number 5 bar.

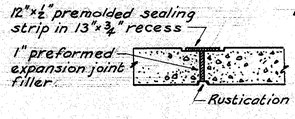
Replacement Bars If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.



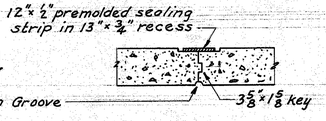
ELEVATION C-C SOUTH WALL



DETAIL OF RUSTICATION GROOVE



EXPANSION JOINT



CONTRACTION JOINT

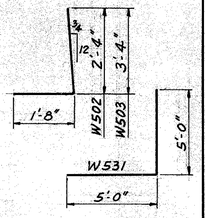
REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	SHAPE	REMARKS
W 501	6	32'-2"	201	S	
W 502	84	3'-11"	403	B	
W 503	1	4'-11"	5	B	
W 504	18	30'-0"	563	S	
W 505	6	23'-4"	146	S	
W 506	12	13'-5"	168	S	
W 507	16	10'-0"	167	S	
W 508	84	2'-8"	234	S	
W 509	16	4'-10"	81	S	
W 510	16	4'-7"	76	S	
W 511	6	30'-8"	192	S	
	Series	4'-10 3/4"			
W512	of	to	68	S	*
	13	5'-2 5/8"			
	Series	4'-7 3/4"			
W513	of	to	65	S	*
	13	4'-11 7/8"			

MARK	NO.	LENGTH	WEIGHT	SHAPE	REMARKS
	Series	5'-2 1/2"			
W514	of	to	85	S	*
	15	5'-7 3/4"			
	Series	4'-11 1/2"			
W515	of	to	81	S	*
	15	5'-4 3/4"			
	Series	5'-7 3/4"			
W516	of	to	73	S	*
	12	5'-11 7/8"			
	Series	5'-4 3/4"			
W517	of	to	70	S	*
	12	5'-8 7/8"			
W518	1	5'-10 1/4"	5	S	
W519	1	5'-05/8"	5	S	
W520	1	5'-1"	5	S	
W521	1	4'-9 1/4"	5	S	
W522	1	4'-9 3/8"	5	S	

MARK	NO.	LENGTH	WEIGHT	SHAPE	REMARKS
W523	1	4'-10"	5	S	
	Series	5'-1"			
W524	of	to	72	S	*
	13	5'-5 1/2"			
	Series	4'-10"			
W525	of	to	68	S	*
	13	5'-2 1/2"			
	Series	5'-5 1/2"			
W526	of	to	77	S	*
	13	5'-10"			
	Series	5'-2 1/2"			
W527	of	to	73	S	*
	13	5'-7"			
W528	6	26'-8"	167	S	
W529	12	27'-8"	346	S	
W530	12	23'-8"	296	S	
W531	3	9'-11"	31	B	
Replacement Bar					
RE501	1	5'-7"		S	

BENDING DIAGRAMS

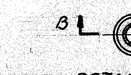


* 3/8" Increment

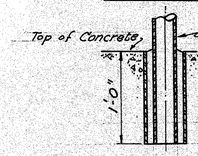
ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	WALL	FOOTING	GENERAL
E-2	144	C.Y.	Unclassified Excavation			144
S-1	37	C.Y.	Class "E" Concrete Walls	37		
S-1	20	C.Y.	Class "E" Concrete Footings		20	
S-3	22	L.F.	Waterproofing, 12" x 1/2" Premolded Sealing Strip	22		
S-4	3764	LB.	Reinforcing Steel	1941	1823	
S-9	6	S.F.	1" Preformed Expansion Joint Filler	6		
S-29	51	C.Y.	Porous Backfill			51
S-29	167	L.F.	6"ϕ Perforated Bituminous Coated Corrugated Metal Pipe, Sec. M-6.4(f)			167

4"ϕ Standard pipe sleeve set vertically and flush with top of wall. Paid for under Item S-1 Wall Concrete.



DETAIL "A"



SECTION B-B

HARGETT, YANDA & BARBER
Consulting Engineers
4500 EUCLID AVE. CLEVELAND 3, OHIO

RETAINING WALL AT GLENFIELD
PLAN - ELEVATION - DETAILS
STEEL LIST - ESTIMATED QUANTITIES
LAKELAND FREEWAY

CUYAHOGA COUNTY
SEC CUY-2-24.33

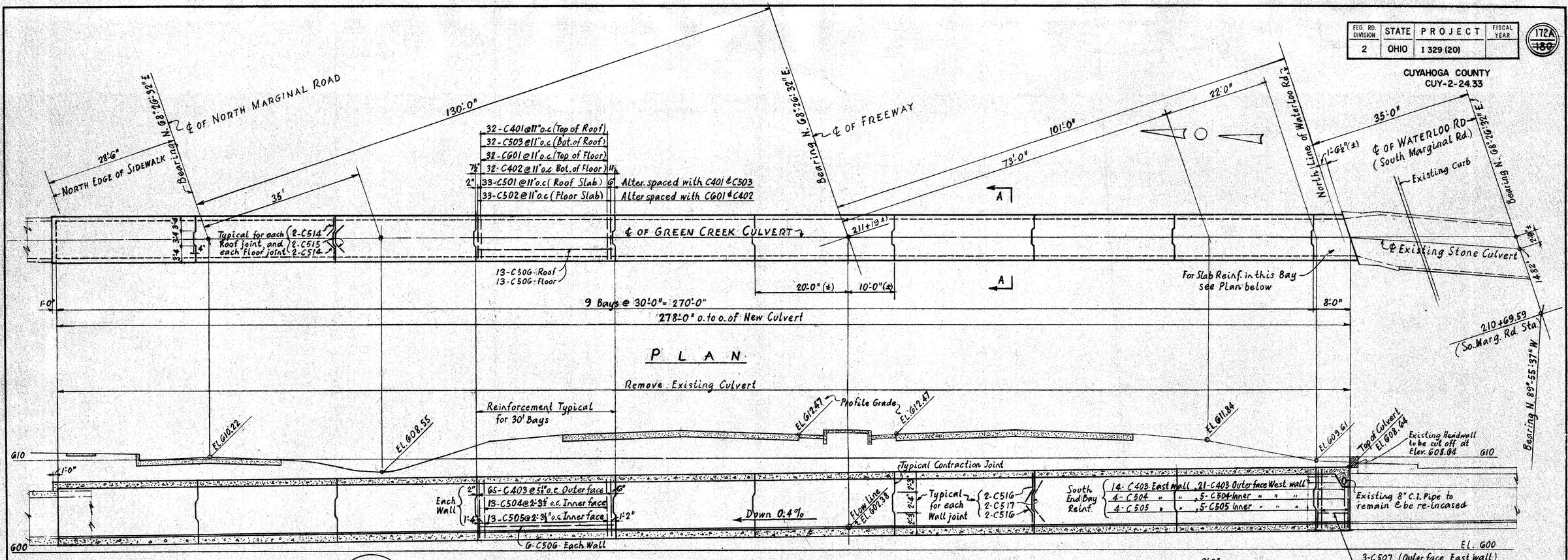
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
G.W.	G.W.	W.A.B.	L.S.C. W.G.B.			

172

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I 329 (20)	

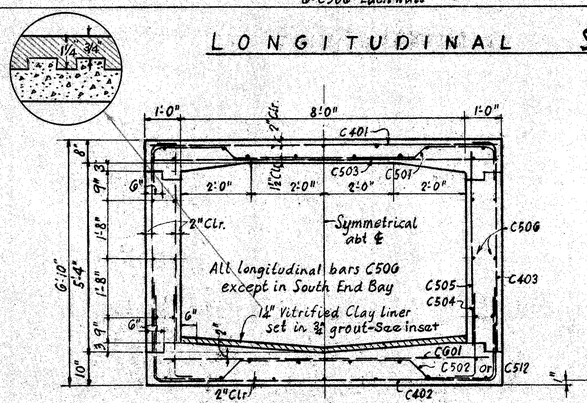
172A ~~180~~

CUYAHOGA COUNTY
CUY-2-24.33

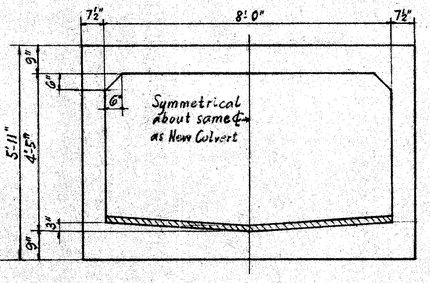


PLAN

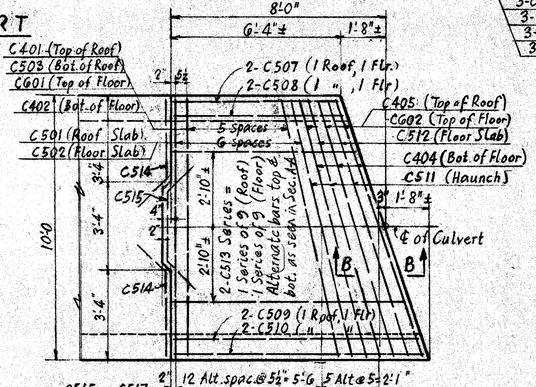
LONGITUDINAL SECTION ON ℄ OF CULVERT



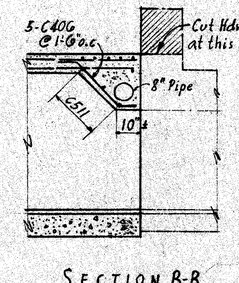
SECTION A-A (NEW CULVERT)



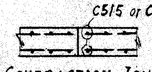
SECTION A-A (EXISTING CULVERT)
(TO BE REMOVED)



PLAN OF BAY AT SOUTH END



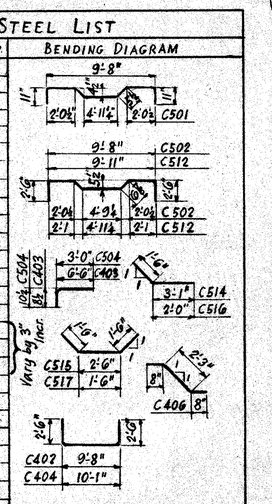
SECTION B-B



CONTRACTION JOINT BETWEEN BAYS

REINFORCING STEEL LIST

MARK	No.	LENGTH	WEIGHT	SHP.	BENDING DIAGRAM
C601	294	9'-6"	4195	S.	
C602	3	9'-11"	45	S	
C501	304	11'-5"	3619	B	
C502	304	14'-9"	4676	B	
C503	294	9'-6"	2913	S	
C504	243	3'-9"	950	B	
C505	243	5'-6"	1394	S	
C506	342	29'-8"	10582	S	
C507	5	6'-2"	32	S	
C508	5	6'-5"	33	S	
C509	5	9'-0"	47	S	
C510	5	9'-3"	48	S	
C511	3	9'-9"	30	S	
C512	2	15'-0"	31	B	
C513	2 SERIES OF 9 EACH	6'-9" TO 8'-9"	146	S	
C514	72	4'-7"	344	B	
C515	36	5'-6"	207	B	
C516	72	3'-6"	263	B	
C517	36	4'-6"	169	B	
C401	294	9'-8"	1899	S	
C402	294	14'-5"	2830	B	
C403	1205	7'-1"	5701	B	
C404	3	14'-10"	30	B	
C405	3	10'-1"	20	S	
C406	5	3'-7"	12	B	



All Dimensions o. to o. of bar

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	CULVERT
E-2	520	C.Y.	UNCLASSIFIED EXCAVATION	520
S-1	282	C.Y.	CLASS "C" CONCRETE	282
S-4	40216	LBS.	REINFORCING STEEL	40216
S-24	LUMP	SUM	REMOVAL OF EXISTING STRUCTURE	L.S.
Spec.	2230	SQ.FT.	1½" VITRIFIED CLAY TUNNEL LINER & GROUT	2230
			QUANTITIES TO GENERAL SUMMARY	

NOTES

CONCRETE shall be Class "C".
REINFORCING STEEL shall be 2" clear from face of concrete, unless otherwise noted.
BAR SIZE is indicated in the bar mark. The first digit indicates the bar size number for example: C504 is a #5 size bar.
REPLACEMENT BARS If Replacement bars are fabricated from stock which has previously been tested and approved by the Ohio Testing Laboratory, test samples as provided in Section S-402 need not be furnished, and replacement will not be required.

MAXIMUM SOIL PRESSURE = 1500 # PER SQ. FT.

HARGETT, YANDA & BARBER
Consulting Engineers
4500 Euclid Ave. Cleveland 3, Ohio

GREEN-CREEK CULVERT
DETAILS TO REPLACE EXISTING CULVERT
REINF. STEEL LIST & ESTIMATED QUANTITIES
LAKELAND FREEWAY

CUYAHOGA COUNTY
SEC. CUY. 2-24.33 STA. 211+19

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED	DATE
CDS	CDS	JWP	JGC			

477-2060

172A

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-329-20	

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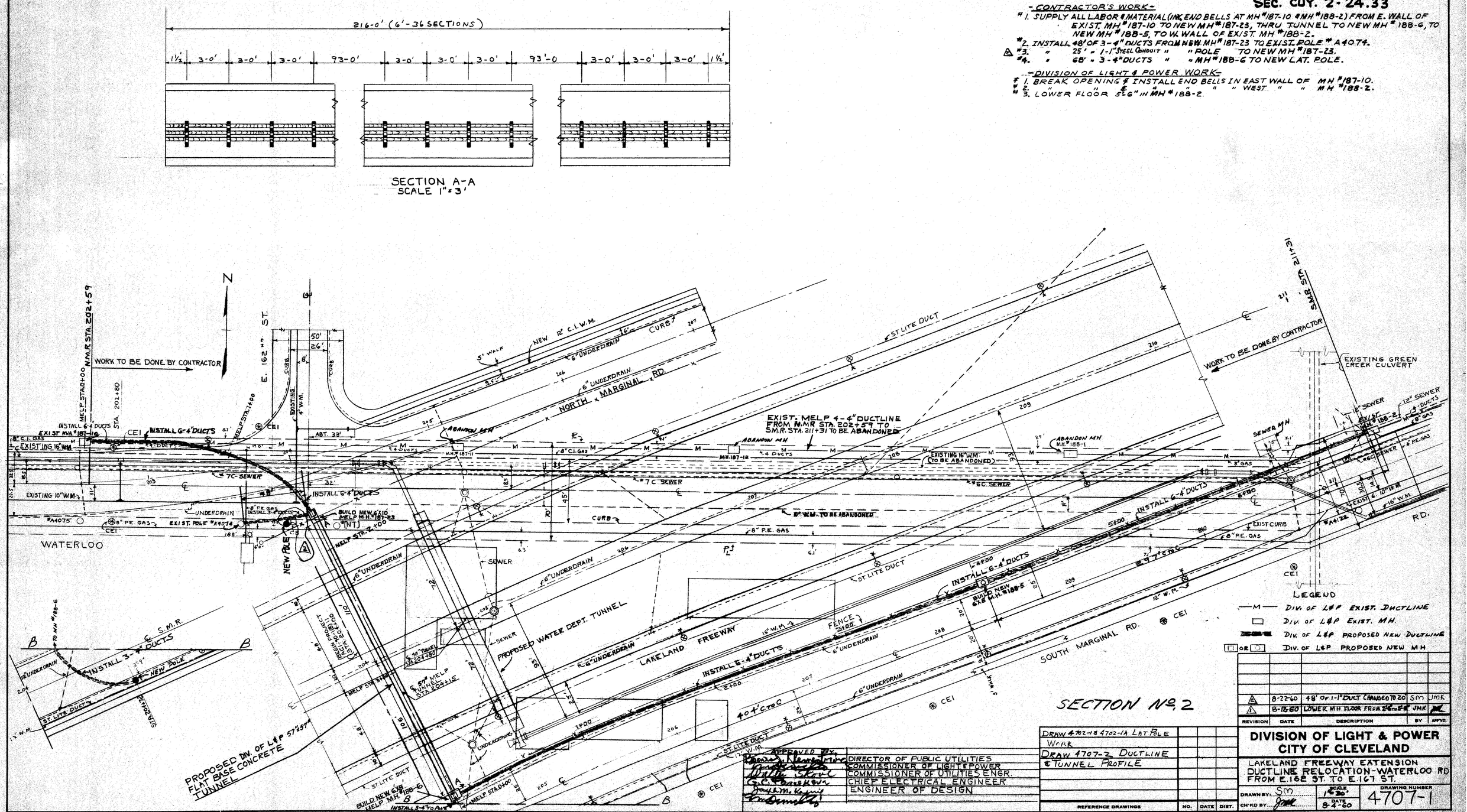
CUYAHOGA COUNTY
SEC. CUY. 2-24.33

-CONTRACTOR'S WORK-

#1. SUPPLY ALL LABOR & MATERIAL (INC. END BELLS AT MH #187-10 & MH #188-2) FROM E. WALL OF EXIST. MH #187-10 TO NEW MH #187-23, THRU TUNNEL TO NEW MH #188-6, TO NEW MH #188-5, TO W. WALL OF EXIST. MH #188-2.
#2. INSTALL 48' OF 3-4" DUCTS FROM NEW MH #187-23 TO EXIST. POLE # A4074.
#3. " 25' " 1-1" STEEL CONDUIT " " POLE TO NEW MH #187-23.
#4. " 68' " 3-4" DUCTS " " MH #188-6 TO NEW LAT. POLE.

-DIVISION OF LIGHT & POWER WORK-

#1. BREAK OPENING & INSTALL END BELLS IN EAST WALL OF MH #187-10.
#2. " " & " " " " WEST " " MH #188-2.
#3. LOWER FLOOR 5'-6" IN MH #188-2.



REVISION	DATE	DESCRIPTION	BY	APP'D.
2	8-22-60	48' OF 1-1" DUCT CHANGED TO 20'	SM	JMK
1	8-12-60	LOWER MH FLOOR FROM 2'-6" TO 5'-6"	JMK	

APPROVED BY:
DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF LIGHT & POWER
COMMISSIONER OF UTILITIES ENGR.
CHIEF ELECTRICAL ENGINEER
ENGINEER OF DESIGN

DRAW 4702-1 & 4702-1A LAT POLE WORK
DRAW 4707-2 DUCTLINE & TUNNEL PROFILE

REFERENCE DRAWINGS | NO. | DATE | DIST.

DIVISION OF LIGHT & POWER
CITY OF CLEVELAND

LAKELAND FREEWAY EXTENSION
DUCTLINE RELOCATION-WATERLOO RD
FROM E.162 ST. TO E.167 ST.

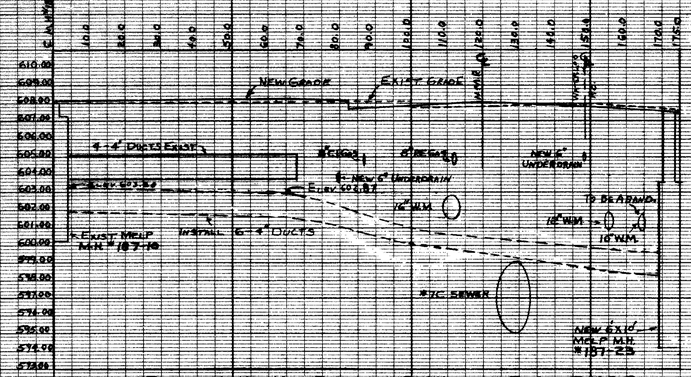
DRAWN BY: SM | SCALE 1" = 30' | DRAWING NUMBER 4707-1
CH'KD BY: JMK | DATE 8-4-60

DUCT LINE RELOCATION .... WATERLOO ROAD

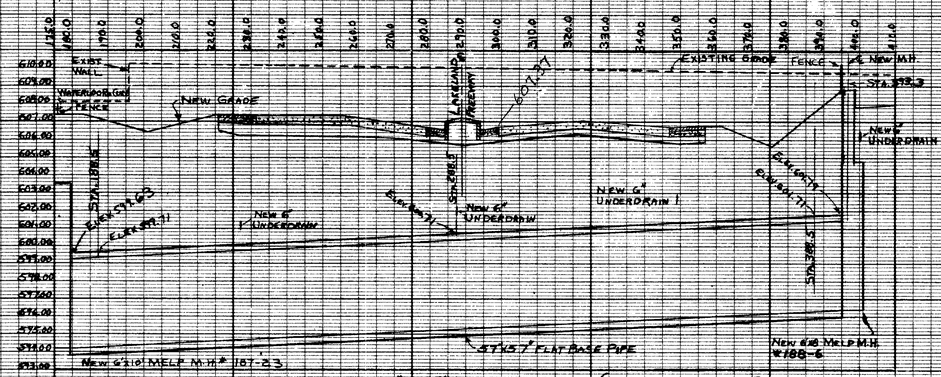
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-329-20	

182

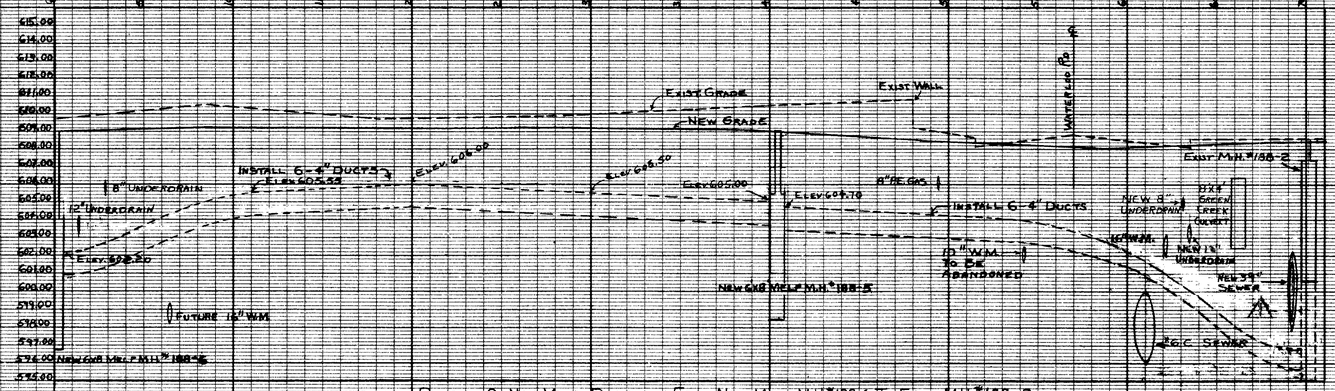
CUYAHOGA COUNTY
SEC. CUY. 2-24.33



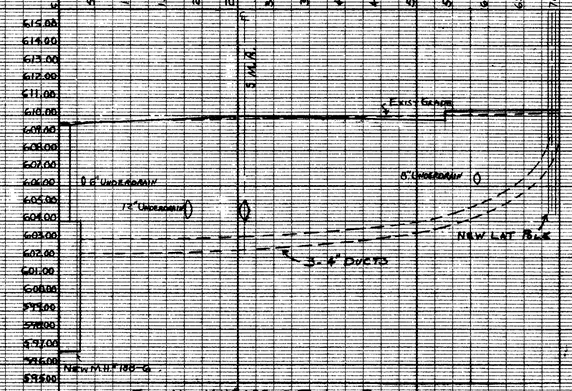
PROFILE OF NEW MELP DUCTLINE ON WATERLOO RD. AND E. 162 ST M.H. #187-10 TO NEW M.H. #187-23 (LOOKING N.E.)



PROFILE OF 57"X57" MELP TUNNEL ℄ (LAKELAND FREEWAY STA. 204+15) (LOOKING N.E.)



PROFILE OF NEW MELP DUCTLINE FROM NEW MELP M.H. #188-6 TO EXIST M.H. #188-2 (LOOKING N.W.)



FROM NEW M.H. #188-6 TO LAT POLE (LOOKING N.E.)

SECTION No. 2

REVISION	DATE	DESCRIPTION	BY	APPD
1	8/12/60	Add 20 39" Sewer & Lowered Duct	SM	JMK

APPROVED BY

DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF LIGHT & POWER
COMMISSIONER OF UTILITIES ENGR.
CHIEF ELECTRICAL ENGINEER
ENGINEER OF DESIGN

REFERENCE DRAWINGS	NO.	DATE	DIST.
#4708-2 PLAN OF MH #188-5			
#4708-1 PLAN OF MH'S #187-23 & #188-6			
#4702-1 POLE WORK FREEWAY EXT.			
#4707-1 DUCT LINE RELOCATION			
#2346 MANHOLE COVER STREET TYPE			

DIVISION OF LIGHT & POWER
CITY OF CLEVELAND

LAKELAND FREEWAY EXTENSION
DUCTLINE & TUNNEL PROFILE

DRAWN BY SM
CH'KD BY JMK
SCALE
DATE 8/3/60
DRAWING NUMBER 4707-2

DUCT LINE RELOCATION .... WATERLOO ROAD

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	I-329-20

CUYAHOGA COUNTY
SEC. CUY. 2-24.33

MH #187-23 FLOOR

PLAN

RYERSON RYWELD GRATING & 3/16 X 1 1/4" BARS. FACTORY PAINTED BLACK. ROUGH ON SUMP.

PLAN & ELEV. OF 1 1/2" X 1 1/2" X 1/4" L. IRON FRAME TOP OF SUMP. WELD 4-3/4" X 1/4" ANCHORS TO FRAME

FENCE BY GENERAL CONTRACTOR

NORTH

4 FREEWAY @ STATION #204+15

106 FT. ± ZERO

2/6 ± FT. 36 @ 6'-0" EA.

FENCE BY GENERAL CONTRACTOR

5'-0" MIN. 5'-7" MAX.

6"-4" PROJECT IN CONCRETE ENCASEMENT

6" MINIMUM

6" UNDERDRAIN INSTALLED BY GENERAL CONTRACTOR

POLE NO. 20 & 60 A.S.W. W.P. BY M.E.L.P.

BY THIS CONTRACTOR

GRADE

3-#6-1"C. IN 4" CONC. ENCASE

5W 3#0 1"C

5#10 1"C.

PB

LP

3"#6-1"C.

REC. EDD15

MH #187-23

2#10-1"C.

REC EDD15

REC PL93

2#10-1"C.

REC EDD15

REC

GRADE

5W

2#10-1"C.

REC EDD15

5#10 1"C.

MH #188-6

CONDUIT RISER DIAGRAM

#4 MAIN LUGS ONLY 240/120V. ϕ 60 CY.

SCHEDULE OF LIGHTING PANEL

20A	1	600W LIGHTS
	2	
	3	FUTURE PUMP
	4	SPARE
	5	SPARE
	6	6 REC.

LP

FINISHED GRADE

UNDISTURBED EARTH

TAMP EVERY 8" LAYERS OF GRANULAR BACKFILL

HAND TAMP EVERY 4" LAYERS OF F.22 BACKFILL

UNDISTURBED EARTH

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

HERE 12

CABLE SUPPORT

3-4" FIBRE DUCT IN CONCRETE ENCASEMENT. DWG # 4707-1

NOTE: All Items Called for by Trade Name May be Substituted by an Approved Equal.

NOTE: 57"x57" Flat Base Precast Concrete Pipe As Per Details on Drawing 2346 Sheet No. 185

DWG # 4707-1

4-4" FIBRE DUCT IN CONCRETE ENCASEMENT

MELP

M.E.L.P.

LIGHT SW.

LP

18"x18" SUMP 24" DEEP

100W LAMP

2" SUMP DRAIN

#4 @ 3" OC

#4 @ 6" OC

#4 @ 3" OC

#4 @ 6" OC

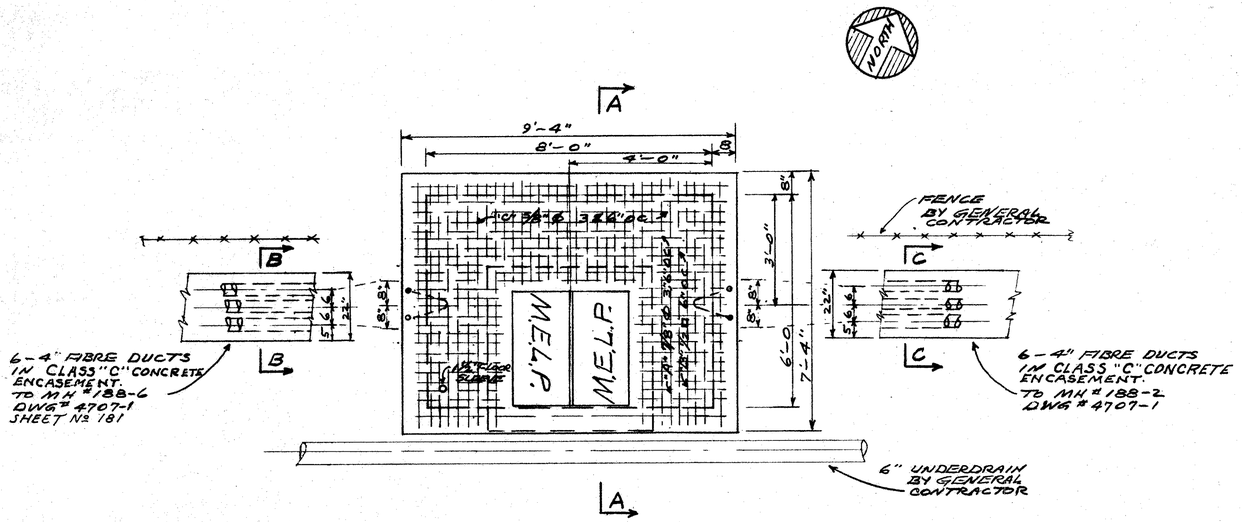
#4 @ 3" OC

#4 @ 6" OC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-329-20	

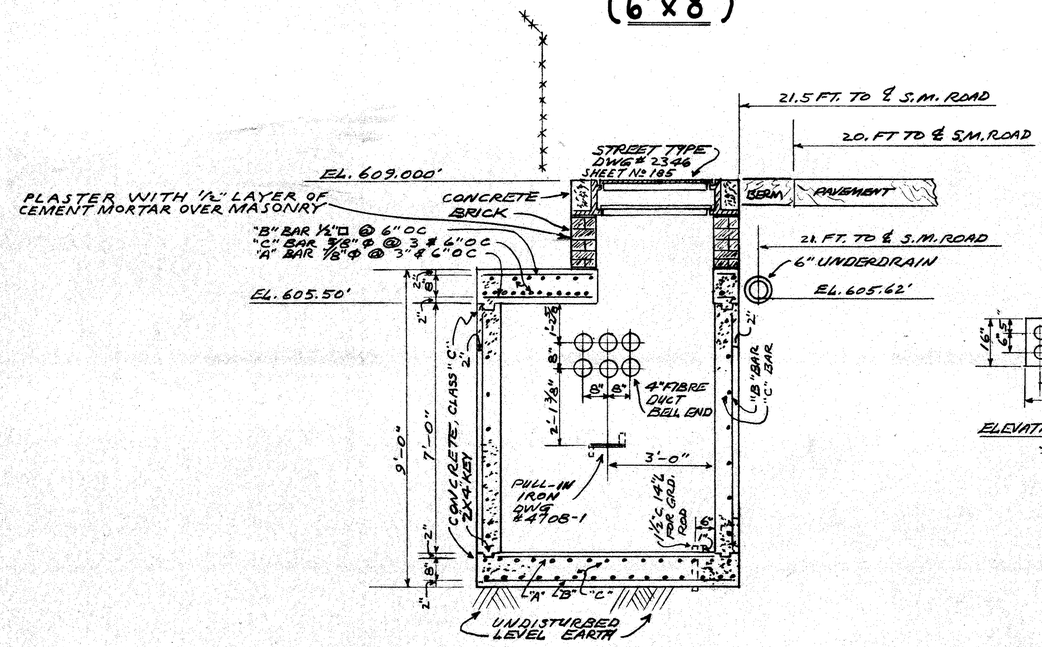
184

CUYAHOGA COUNTY
SEC. CUY. 2-24.33

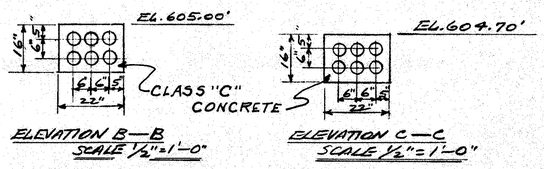


PLAN OF MANHOLE #188-5
SCALE ½"=1'-0"

SPECIAL LIGHTING MANHOLE No 3
(6'x8')



ELEVATION A——A
SCALE ½"=1'-0"



ELEVATION B—B
SCALE ½"=1'-0"

ELEVATION C—C
SCALE ½"=1'-0"

SECTION No. 2

APPROVED BY		
		DIRECTOR OF PUBLIC UTILITIES
		COMMISSIONER OF LIGHT & POWER
		COMMISSIONER OF UTILITIES ENG.
		CHIEF ELECTRICAL ENGINEER
		ENGINEER OF DESIGN

REVISION	DATE	DESCRIPTION	BY	APP'D.

DIVISION OF LIGHT & POWER
CITY OF CLEVELAND

LAKELAND FREEWAY EXTENSION
PLAN OF MANHOLE #188-5

REFERENCE DRAWINGS	NO.	DATE	DIST.
#4708-1 PLAN OF MH" 187-23, 188-6			
#4702-1 POLE WORK FREEWAY EXT.			
#4707-2 DUCTLINE & TUNNEL PROFILE			
#4707-1 DUCTLINE RELOCATION			
#2346 MANHOLE COVER STREET TYPE			

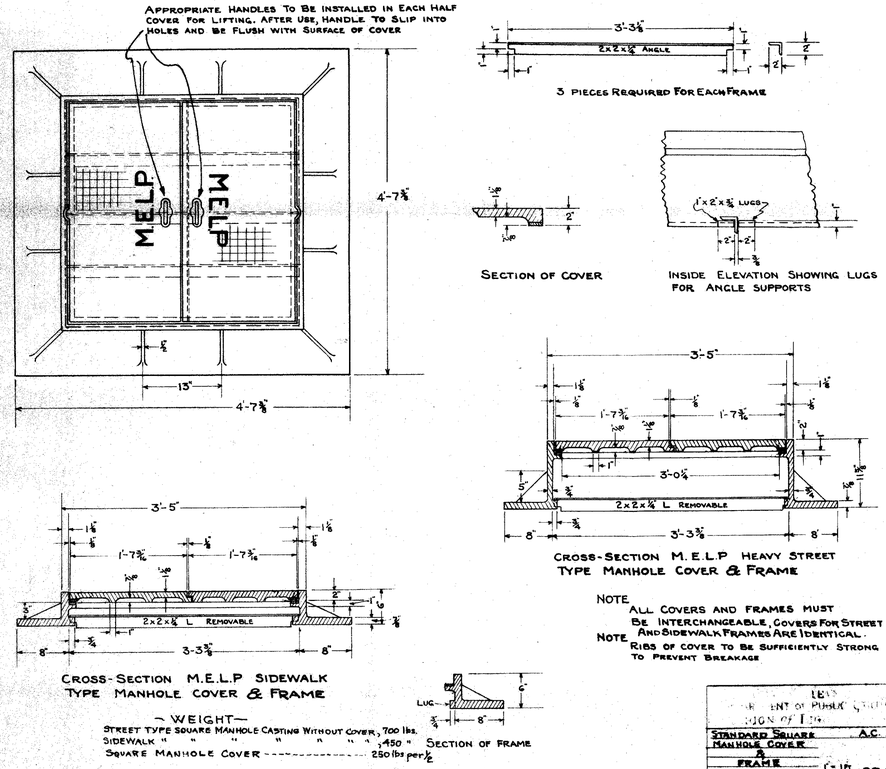
DRAWN BY H.G.
CH'KD BY JMK
SCALE AS NOTED
DATE 8-3-60
DRAWING NUMBER 4708-2

DUCT LINE RELOCATION .... WATERLOO ROAD

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-329-20	

185

CUYAHOGA COUNTY
SEC. CUY. 2-24.33



NOTE
ALL COVERS AND FRAMES MUST BE INTERCHANGEABLE, COVERS FOR STREET AND SIDEWALK FRAMES ARE IDENTICAL.
NOTE
RIBS OF COVER TO BE SUFFICIENTLY STRONG TO PREVENT BREAKAGE

— WEIGHT —
STREET TYPE SQUARE MANHOLE CASTING WITHOUT COVER, 700 lbs.
SIDEWALK " " " " " " " ,450 "
SQUARE MANHOLE COVER ---------- 250 lbs per ½

LEVEL
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF LIGHTS
STANDARD SQUARE MANHOLE COVER & FRAME A.C.
1" = 1 FT
12-12-33
2346
REVISED - 7-21-36, 9-5-47, 1-6-53, 1-22-54
HB

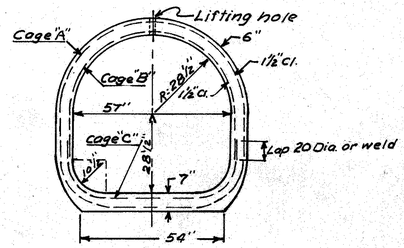
STANDARD SQUARE MANHOLE COVER & FRAME

DUCT LINE RELOCATION (Sheet No 181 to Sheet No 185)

ESTIMATED QUANTITIES

ITEM	QUANTITY 1-9-1(29)11			UNIT	DESCRIPTION
I-2	216			LIN. FT.	57"×57" Flat Base Pre-Cast Concrete Pipe Under Pavement or Approaches, as per plan.
I-8	1			EACH	Special Lighting Manhole No 1, (6'×10'), As Per Plan
I-8	1			EACH	Special Lighting Manhole No 2, (6'×8'), As Per Plan
I-8	1			EACH	Special Lighting Manhole No 3, (6'×8'), As Per Plan
S-25	850			LIN. FT.	6-4 Inch Ducts, As Per Plan
S-25	116			LIN. FT.	3-4 Inch Ducts, As Per Plan
S-25	25			LIN. FT.	1-1 Inch Conduit in Concrete Encasement Underground, As Per Plan
S-25	LUMP SUM			LUMP SUM	Electrical Equipment, As Per Plan

57"×57" REINFORCED CONCRETE PIPE



Minimum Steel per Foot of Pipe
Cage "A" = 0.28 Sq. in
Cage "B" = 0.28 Sq. in
Cage "C" = 0.44 Sq. in
Minimum Longitudinal Steel = 2.1 sq. in. equally spaced

All splices in cage "A" shall be welded or have 20 bar diameters lap for deformed bars and 40 bar diameters lap for wire or plain bars.

Materials, design and manufacturing methods shall meet the requirements of Sec. M-6.6, Reinforced Concrete Pipe, except as otherwise noted. Concrete stresses shall have a minimum ultimate compressive value of 4500 lbs. per sq. in. Sections of pipe shall have a minimum length of four feet.

DRAWING NUMBER
2346

DUCT LINE RELOCATION .... WATERLOO ROAD

R-15

21-2

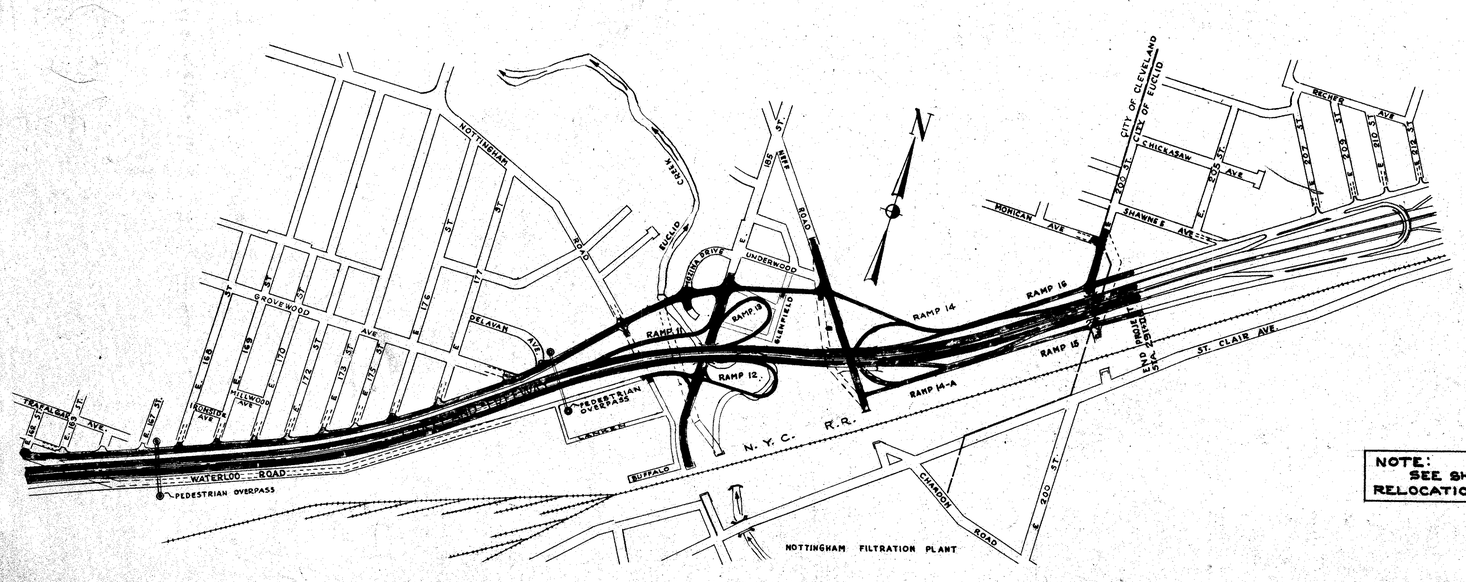
FEDERAL ROAD DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
CUY. 2-24.33

CUY-90-25.13

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT

LAKELAND FREEWAY EXTENSION — WATER MAINS
SECTION Nº 2



	DRAWING REFERENCE
DWG. Nº	DESCRIPTION
B-1563	LOCATION PLAN AND INDEX.
B-1564	12" WATER MAIN IN SOUTH MARGINAL ROAD FROM WATERLOO RD. WEST.
B-1565	TUNNEL UNDER FREEWAY AND NEW 16" W.M. FROM EXISTING 16" W.M. IN WATERLOO ROAD.
B-1566	LAYOUT OF TUNNEL UNDER FREEWAY AT WATERLOO RD. AND 16" W.M. FOR SAME.
B-1567	12" WATER MAIN IN NORTH MARGINAL RD. FROM EAST 162 ST. TO EAST 165TH ST.
B-1568	12" WATER MAIN IN NORTH MARGINAL RD. FROM EAST 167TH ST. TO EAST 170TH ST.
B-1569	12" WATER MAIN IN NORTH MARGINAL RD. FROM 160 FT. WEST OF 172ND ST. TO 175 FT. EAST OF E. 173RD ST.
B-1570	12" WATER MAIN IN NORTH MARGINAL RD. FROM EAST 175TH ST. TO EAST 176TH ST.
B-1571	12" WATER MAIN IN NORTH MARGINAL RD. FROM 270 FT. WEST OF EAST 177TH ST. TO GROVEWOOD AVE.
B-1572	12" WATER MAIN IN NORTH MARGINAL RD. FROM 130 FT. WEST OF DELAVAN AVE. TO NOTTINGHAM RD.
B-1573	12" WATER MAIN IN EAST 185TH ST. FROM STA. 5+10.-S TO STA. 3+00.-S ALSO 16" CONN. AT NOTTINGHAM RD.
B-1574	12" WATER MAIN IN EAST 185TH ST. FROM STA. 3+00.-S TO STA. 3+15.-N.
B-1575	12" WATER MAIN IN EAST 185TH ST. FROM STA. 3+15.0-NORTH TO MOZINA DR.
B-1576	16" WATER MAIN IN NEFF RD. FROM STA. 5+27.88-S TO STA. 0+70.-N.
B-1577	12" WATER MAIN IN THE INTERSECTION OF NEFF RD. AND NORTH MARGINAL RD.
B-1578	12" WATER MAIN IN EAST 200TH ST. AT SOUTH MARGINAL RD.
B-1579	12" WATER MAIN IN RELOCATED EAST 200TH ST. FROM STA. 1+00.-N. TO MOHICAN AVE.
B-1580	DELAVAN, GROVEWOOD, MALVERN, WATERLOO, E.169, E.170, E.172, E.173, E.175, E.176 AND E.177 STREETS
	SHOWING PLUGGING OF WATER MAINS AND HOUSE CONNECTIONS.
B-1581	NOTTINGHAM, WATERLOO, VILLAVIEW, MOZINA, WOODROW, CHAPMAN AND E. 185TH ST. SHOWING
	PLUGGING OF WATER MAINS AND HOUSE CONNECTIONS.
B-1582	NEFF, GLENFIELD, UNDERWOOD, WOODROW AND CHAPMAN AVE. SHOWING PLUGGING OF WATER
	MAINS AND HOUSE CONNECTIONS.
B-1583	MOHICAN AVE. AND E. 200TH ST. SHOWING PLUGGING OF WATER MAINS AND HOUSE CONNECTIONS.
B-1534	WATERLOO RD., E. 162 ST., E. 163 ST., E. 165 ST. AND E. 167 ST., SHOWING PLUGGING OF WATER MAINS AND
	HOUSE CONNECTIONS.
SM-230	STANDARD DETAILS OF DRAIN VAULT, AIR COCK, AND CONNECTIONS.
SM-292	" " " VALVE AND AIR COCK BOXES.
SM-31	" " , MANHOLE FRAMES & COVERS.

NOTE:
SEE SHEET Nº 26-A FOR WATER LINE RELOCATION ESTIMATED QUANTITIES.

GENERAL NOTES

WATER MAINS TO BE LAID ACCORDING TO ELEVATIONS GIVEN ON DRAWINGS. CORRECTNESS OF UNDERGROUND INFORMATION HERE ON IS NOT GUARANTEED AND MUST BE USED AT BIDDERS OWN RISK.
TAPS FOR CHLORINATION TO BE PROVIDED AFTER WORK HAS BEGUN.
THE DIVISION OF WATER WILL DETERMINE THE LOCATION OF NECESSARY TAPS.
SAND BACKFILL REQUIRED IN FUTURE AND EXISTING PAVEMENTS ONLY.

PERMANENT REPAVING SHALL BE DONE BY THE CONTRACTOR IN AREAS WHERE FREEWAY CONSTRUCTION IS NOT INVOLVED, SUCH AS PLUGGING WATER MAINS AND CONNECTIONS.
THE STATIC HEAD USED FOR TESTING SHALL BE MEASURED FROM EL. 803, THE FIELD TESTING HEAD SHALL BE .75* PLUS THAT DUE TO STATIC.

NOTE TO BIDDERS

CHECK WITH DIVISION OF WATER AND HEAT FOR COSTS OF CHLORINATION AND ALSO BRANCH SLEEVE AND VALVE INSTALLATIONS.

CAST IRON PIPE:

ALL PIPE IN THIS CONTRACT FROM 16" AND UNDER SHALL BE CLASS 25 AND FITTINGS CLASS 250, OR CLASS "B" PIPE WITH CLASS "B" OR "D" FITTINGS. ALL PIPE SHALL HAVE BELL & SPIGOT ENDS FOR CAST LEAD JOINTS, BOLTED MECHANICAL JOINTS OR SLIP-ON TYPE JOINTS WITH COMPRESSED RUBBER RING INSERTS. ALL FITTINGS SHALL HAVE BELL & BELL OR BELL & SPIGOT ENDS WITH CAST LEAD JOINTS. ALL PIPE & FITTINGS TO BE CEMENT LINED.

SECTION Nº 2

8-9-60

APPROVED 6-30 1960

Bronis J. Klementowicz — DIRECTOR OF PUBLIC UTILITIES
D. C. Hutz — COMMISSIONER OF WATER AND HEAT
Walter Skove — COMMISSIONER — DIVISION OF UTILITIES ENGINEERING
J. R. Conn — ENGINEER OF CONSTRUCTION AND SURVEYS
Arnold Bartel — ENGINEER OF DESIGN

REVISIONS	

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT: LAKELAND FREEWAY EXTENSION
LOCATION PLAN AND INDEX

DRAWN BY S.B. | SCALE
TRACED BY S.B.
CHECKED BY F.I.P. DATE 5-18-60 | No. B-1563

GENERAL SUMMARY

ITEM	CITY of CLEVELAND WATER DEPT. SPECIFICATIONS	QUANTITY INTERSTATE				UNIT	DESCRIPTION
		I-90-1(29)11					DUCT LINE RELOCATION
							For Estimated Quantities See Sheet [illegible]
							WATER-LINE RELOCATION ITEMS
Special	1	550				Lin.Ft.	6" And smaller Cast Iron Pipe and Fittings
Special	1	100				Lin.Ft.	8" Cast Iron Pipe and Fittings
Special	1	10				Lin.Ft.	10" Cast Iron Pipe and Fittings
Special	1	8,125				Lin.Ft.	12" Cast Iron Pipe and Fittings
Special	1	1,775				Lin.Ft.	16" Cast Iron Pipe and Fittings
Special	1	3				Each	Flushing Pipe Installed
Special	2	24				Each	Furnishing and Setting 6" Hydrant
Special	3	10				Lin.Ft.	2" Galvanized Wrought Iron Pipe and Fittings
Special	3	10				Lin.Ft.	2" Brass Pipe and Fittings
Special	4	2				Each	2" Valve
Special	4	35				Each	6" Hub Valve
Special	4	1				Each	8" Hub Valve
Special	4	20				Each	12" Hub Valve
Special	4	3				Each	16" Hub Valve
Special	4	1				Each	8"x8" Branch Sleeve and Valve
Special	4	1				Each	10"x10" Branch Sleeve and Valve
Special	4	1				Each	16"x16" Branch Sleeve and Valve
Special	4	1				Each	6" Inserting Valve
Special	4	1				Each	10" Inserting Valve
Special	4	1				Each	16" Inserting Valve
Special	6	5				Cu.Yd.	Brick Masonry
Special	7	50				Cu.Yd.	Concrete Masonry
Special	8	35,000				Lb.	Miscellaneous Metals
Special	9	140				Each	Plugging Service Connection at Main
Special	10	14				Each	Remove and Salvage 6" Hydrant
Special	10	1				Each	Remove and Salvage Manhole Frame and Cover
Special	10	2				Each	Remove and Salvage 16" Valve
Special	10	30				Each	Plug Installed in Main (All Sizes)
Special	10	20				Each	Remove Valve Box
Special	10	1				Each	Remove Plug
I-2		144				Lin.Ft.	48" Storm Sewers Under Pavement or Approaches Sec.M-6.6(b) using special joints, as per plan.

Water Line Relocation Items:

Water Line Relocation Work shown on Sheets 186 to 211 inclusive shall be in accordance with the Standard Specifications of the City of Cleveland, Department of Public Utilities, Division of Water and Heat on File in Room 624 Lincoln Bldg. - *See Note in Proposal.*

The cost of all excavation and backfill required for each Water Line Relocation Item shall be included in the Unit Price Bid for each pertinent Water Line Relocation Item.

FEDERAL ROAD DIVISION	STATE	PROJECT	
2	OHIO		

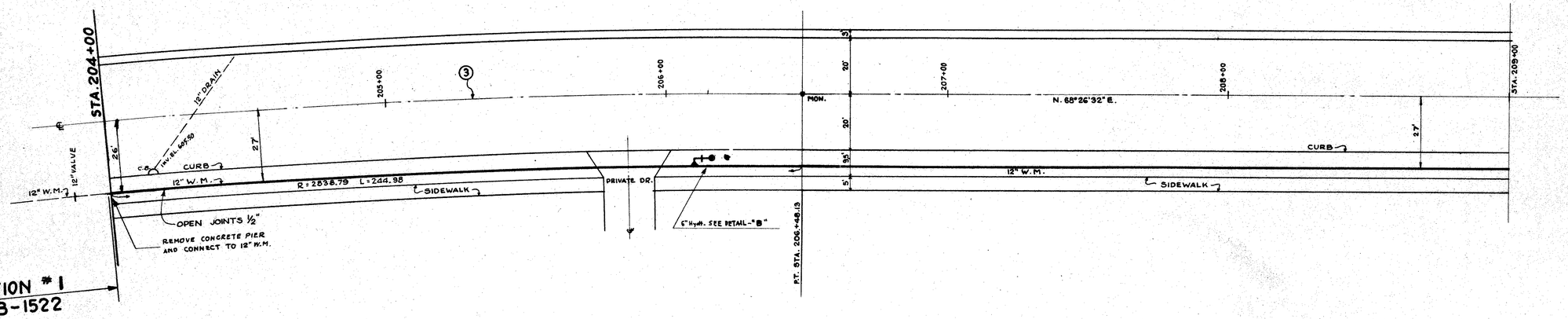
188

CUYAHOGA COUNTY
CUY. 2-24.33

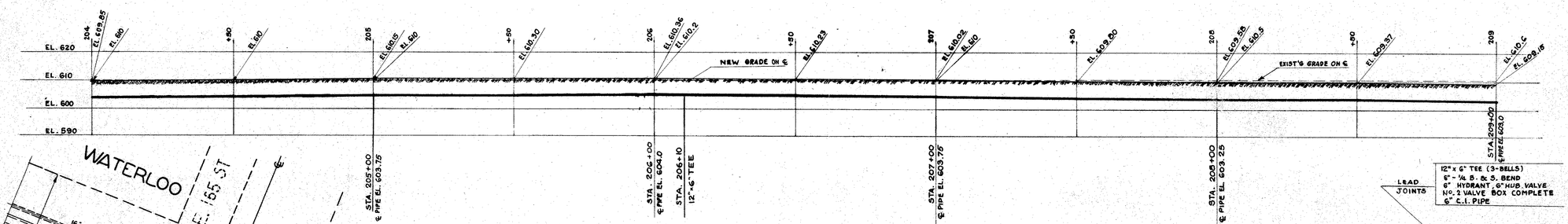
③

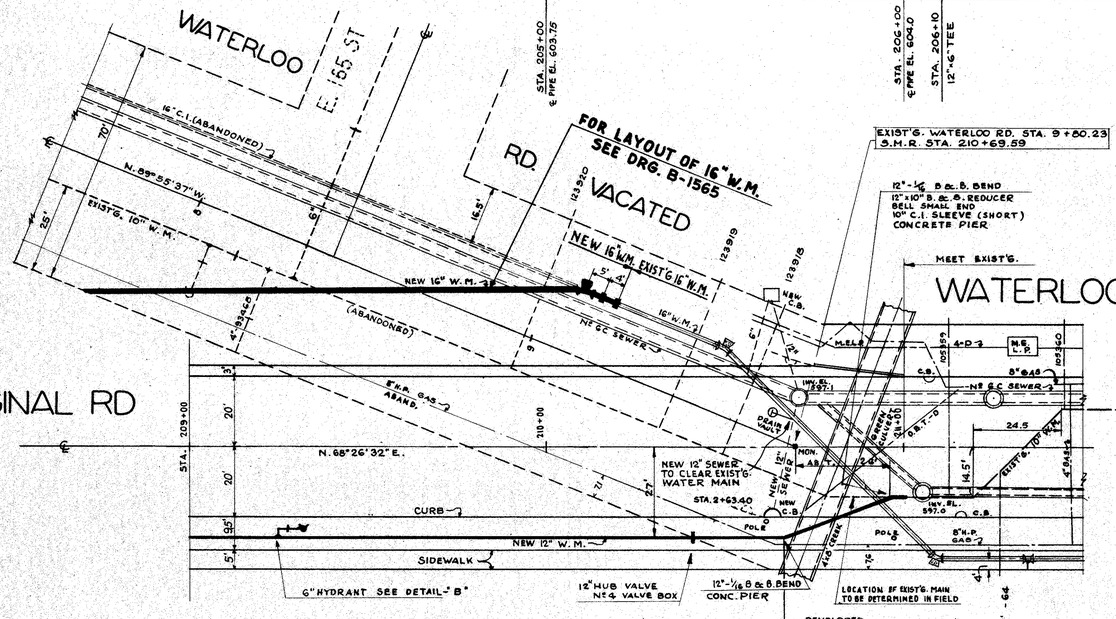
S.M.R. CURVE Nº 3 - ℄ DATA
D = 2°00'00"
Δ = 8°43'29"
R = 2864.79'
T = 218.54'
L.C. = 436.24'
E = 8.32'

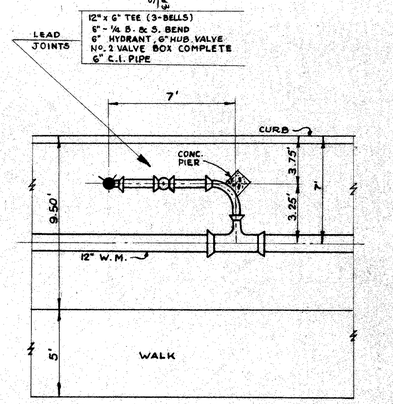
SOUTH MARGINAL ROAD



END OF SECTION #1
SEE DWG. B-1522







DETAIL "B"
SCALE: - ¼" = 1'-0"

NOTE: FOR CLASS OF PIPE AND FITTINGS SEE NOTE ON DWG. Nº B-1563.

SECTION Nº 2

8-11-60

APPROVED 6-30 19 60

Bronis J. Klementowicz — DIRECTOR OF PUBLIC UTILITIES
J. K. Hunt — COMMISSIONER OF WATER AND HEAT
Walter Shaw — COMMISSIONER - DIVISION OF UTILITIES ENGINEERING
J. R. Connor — ENGINEER OF CONSTRUCTION AND SURVEYS
Arnold Brotzki — ENGINEER OF DESIGN

REVISIONS	

LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT: LAKELAND FREEWAY EXTENSION
12" W.M. IN SOUTH MARGINAL RD. FROM WATERLOO RD WEST.

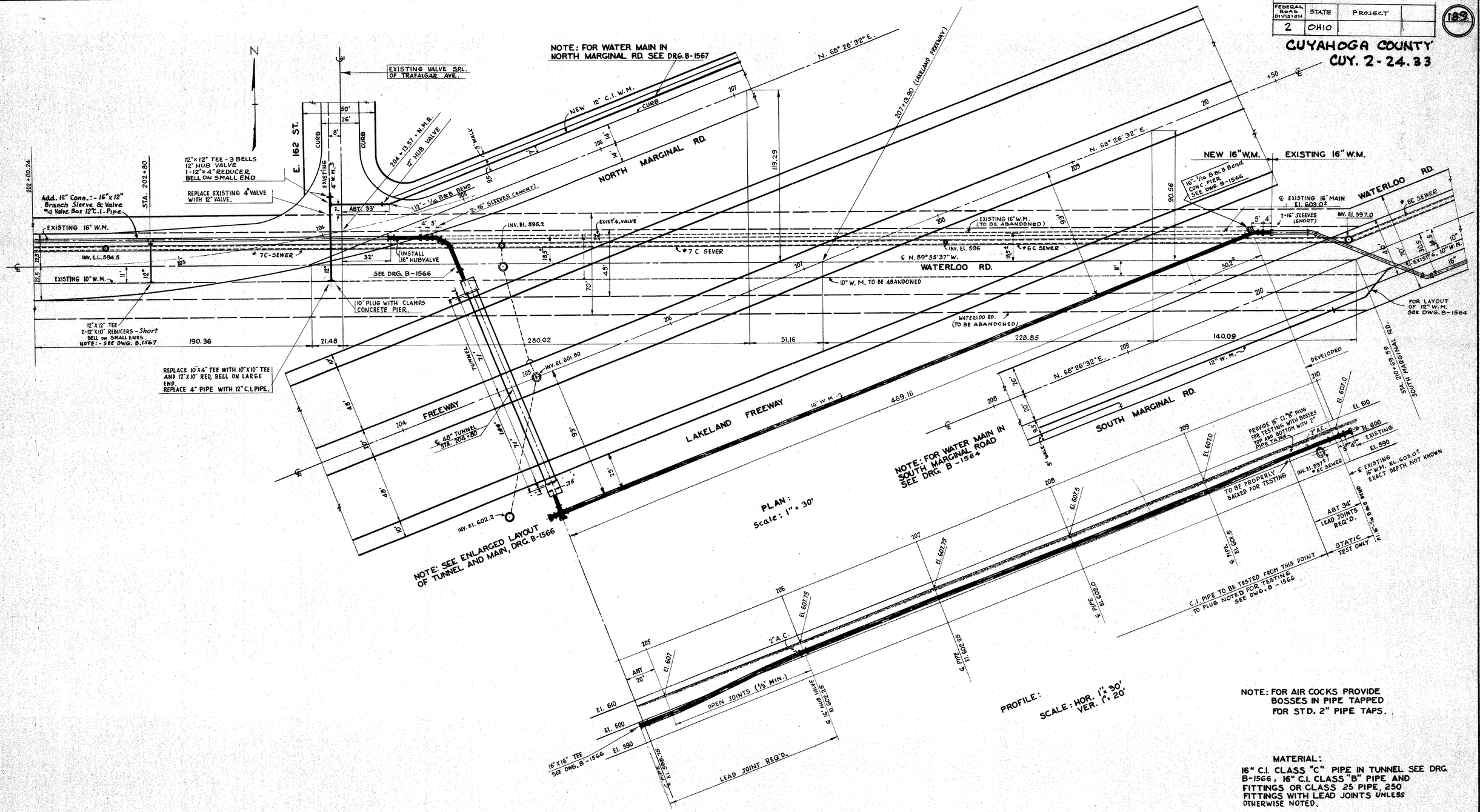
DRAWN BY S.B.
TRACED BY S.B.
CHECKED BY E.I.P. DATE 4-6-60
SCALE 1" = 20'-0"

No. B-1564

FEDERAL ROAD DIVISION	STATE	PROJECT
2	OH10	

182

CUYAHOGA COUNTY
CUY. 2-24.33



NOTE: FOR AIR COCKS PROVIDE BOSSES IN PIPE TAPPED FOR STD. 2" PIPE TAPS.

MATERIAL:
16" C.I. CLASS "C" PIPE IN TUNNEL SEE DRG. B-1566, 16" C.I. CLASS "B" PIPE AND FITTINGS OR CLASS 25 PIPE, 250 FITTINGS WITH LEAD JOINTS UNLESS OTHERWISE NOTED.

SECTION Nº 2

8-15-60

APPROVED 6-30 1960

Bronis J. Klementowicz — DIRECTOR OF PUBLIC UTILITIES
J. F. Holt — COMMISSIONER OF WATER AND HEAT
Walter Stone — COMMISSIONER-DIVISION OF UTILITIES ENGINEERING
J. R. Connor — ENGINEER OF CONSTRUCTION & SURVEYS
Arnold Frankel — ENGINEER OF DESIGN

REVISIONS	

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO

DIVISION OF WATER AND HEAT CONTRACT No.

SUBJECT LAKELAND FREEWAY EXTENSION:
TUNNEL UNDER FREEWAY AND NEW 16" W.M. FROM EXISTING 16" W.M. IN WATERLOO ROAD.

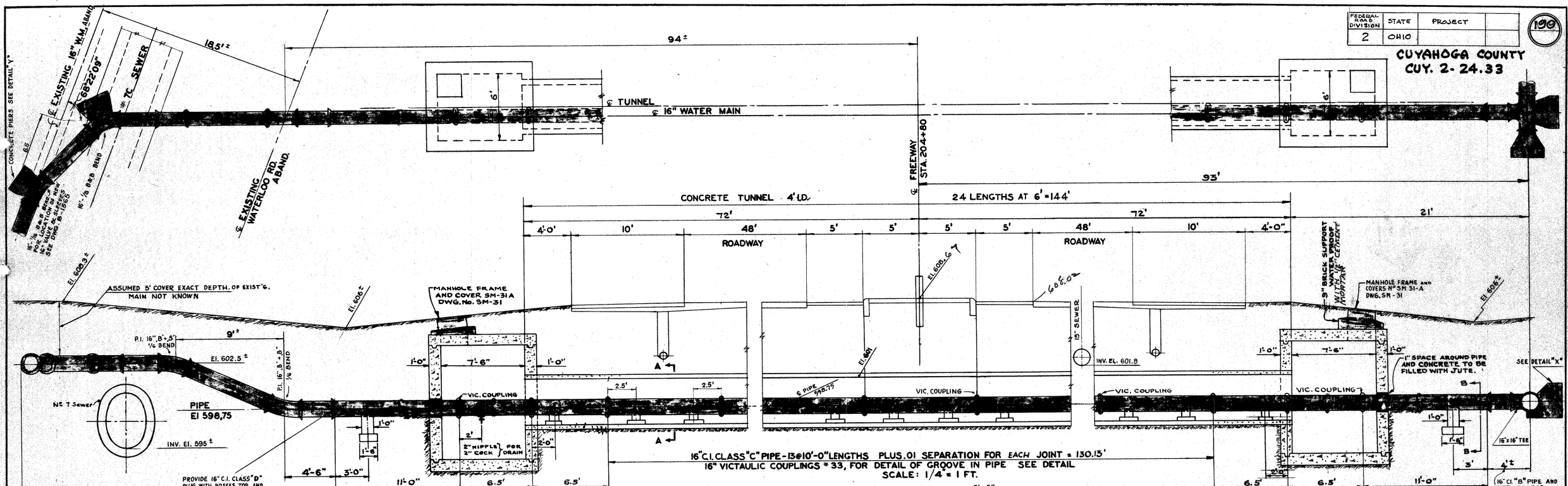
DRAWN BY F.T.P.
TRACED BY S.B.
CHECKED BY E.T.P. DATE 4-5-60
SCALE AS NOTED

No. B-1565

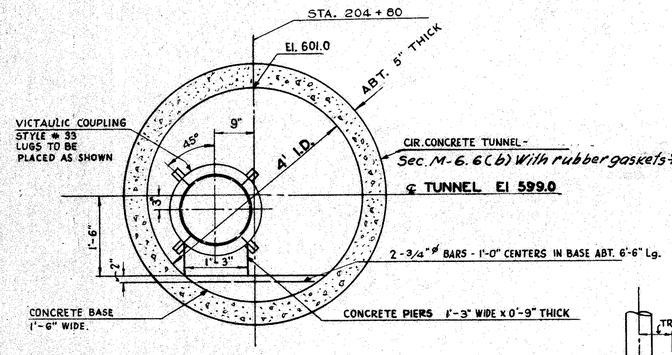
FEDERAL ROAD DIVISION	STATE	PROJECT	
2	OHIO		

190

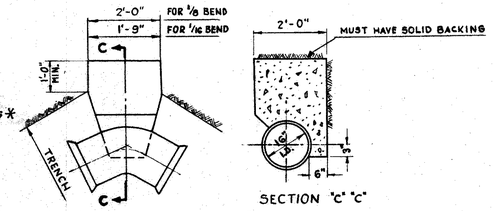
CUYAHOGA COUNTY
CUY. 2-24.33



Note: Tunnel and Vaults to be Made Water Proof.

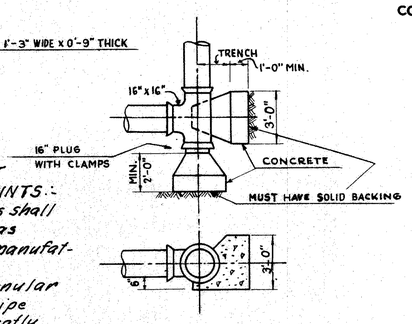


SECTION 'A' 'A'
SCALE: 3/4" = 1 FT.

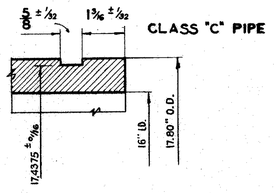


DETAIL "Y" CONCRETE PIER

SECTION "C" "C"

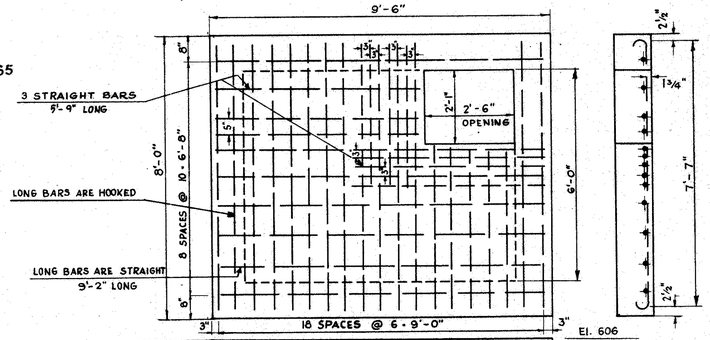


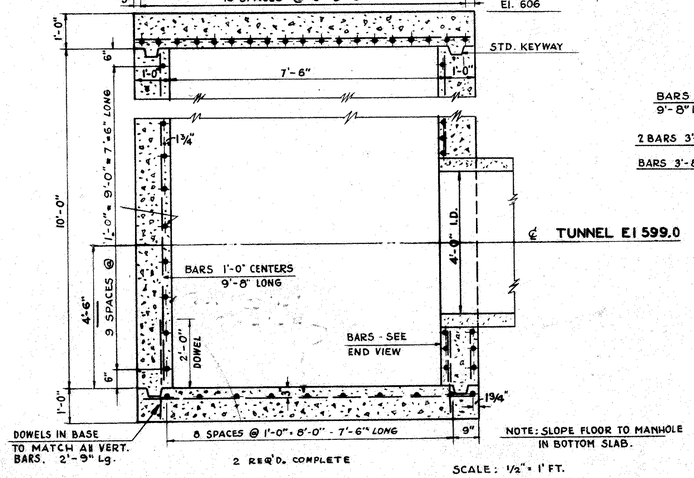
PIERS FOR 16x16 TEE
DETAIL "X"

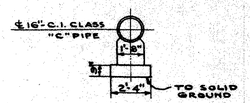


GROOVE FOR VICTAULIC COUPLINGS
SCALE 1½ = 1 FT.

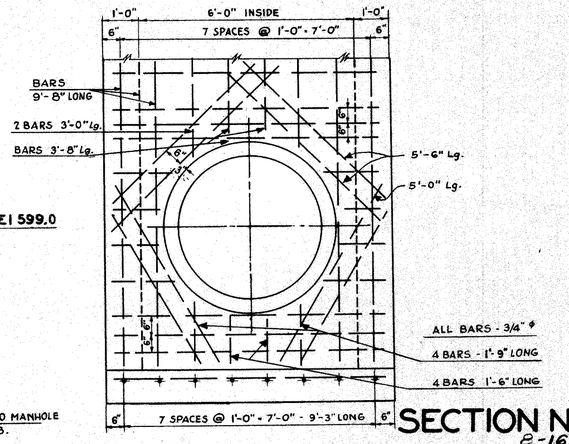
* - I-2 STORM SEWER UNDER PAVEMENT OR APPROACHES USING SPECIAL JOINTS:- The 48" I-2 Concrete pipe tunnel joints shall be sealed with "Tylox" rubber gaskets as manufactured by the Hamilton Kent manufacturing company, or an approved equal. In addition to the rubber gaskets the annular space on the outside and inside of the pipe joints shall be completely filled and neatly pointed with cement mortar composed of one part cement to two parts of clean, sharp sand.







SECTION - B-B
CONCRETE PIER
2- REQ'D.



SECTION Nº 2
8-16-60

APPROVED 6-30 1960

Bernice J. Klementowicz — DIRECTOR OF PUBLIC UTILITIES
J. E. Hunter — COMMISSIONER OF WATER AND HEAT
Walter Stone — COMMISSIONER-DIVISION OF UTILITIES ENGINEERING
J. R. Conner — ENGINEER OF CONSTRUCTION & SURVEYS
Arnold Sinkel — ENGINEER OF DESIGN

REVISIONS

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO
DIVISION OF WATER AND HEAT CONTRACT No.

SUBJECT: LAKELAND FREEWAY EXTENSION
LAYOUT OF TUNNEL UNDER FREEWAY AT WATERLOO RD. AND 16" WATER MAIN FOR SAME.

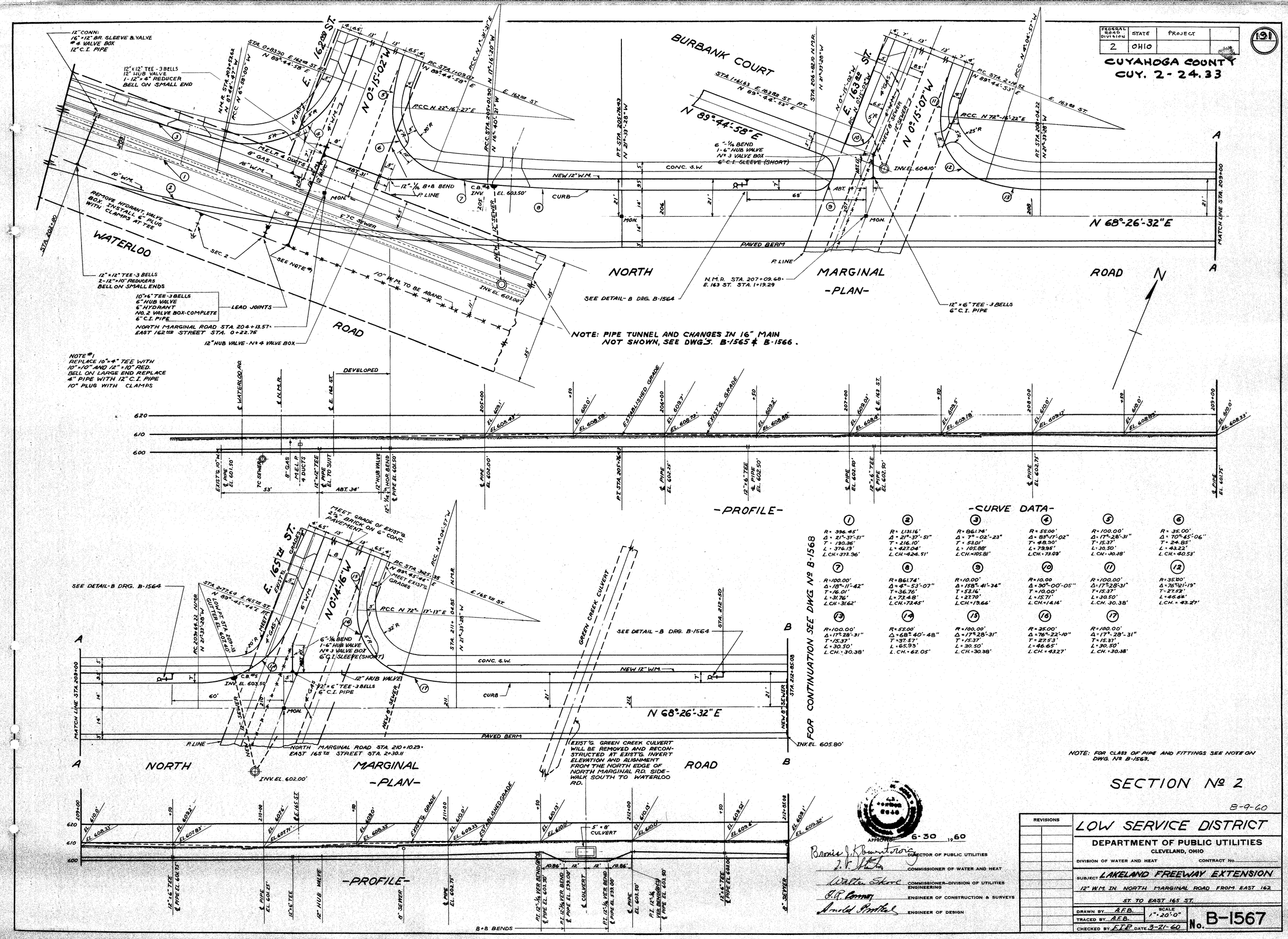
DRAWN BY F.T.P. | TRACED BY S.B. | CHECKED BY F.T.P. DATE 4-5-60 | SCALE AS NOTED

No. B-1566

FEDERAL ROAD DIVISION	STATE	PROJECT	
2	OHIO		

191

CUYAHOGA COUNTY
CUY. 2-24.33



(1) R = 396.45' Δ = 21°-37'-51" T = 190.36' L = 376.19' L.CH. = 373.96'	(2) R = 1,131.16' Δ = 21°-37'-51" T = 216.10' L = 427.04' L.CH. = 424.51'	(3) R = 861.74' Δ = 7°-02'-23" T = 53.01' L = 105.88' L.CH. = 105.81'	(4) R = 55.00' Δ = 83°-17'-02" T = 48.90' L = 79.95' L.CH. = 73.09'	(5) R = 100.00' Δ = 17°-28'-31" T = 15.37' L = 30.50' L.CH. = 30.38'	(6) R = 35.00' Δ = 70°-45'-06" T = 24.85' L = 43.22' L.CH. = 40.53'
(7) R = 100.00' Δ = 18°-11'-42" T = 16.01' L = 31.76' L.CH. = 31.62'	(8) R = 861.74' Δ = 4°-53'-07" T = 36.76' L = 73.48' L.CH. = 73.45'	(9) R = 10.00' Δ = 158°-41'-34" T = 53.16' L = 27.70' L.CH. = 19.66'	(10) R = 10.00 Δ = 90°-00'-05" T = 10.00' L = 15.71' L.CH. = 14.14'	(11) R = 100.00' Δ = 17°-28'-31" T = 15.37' L = 30.50' L.CH. 30.38'	(12) R = 35.00' Δ = 76°-21'-19" T = 27.52' L = 46.64' L.CH. = 43.27'
(13) R = 100.00' Δ = 17°-28'-31" T = 15.37' L = 30.50' L.CH. = 30.38'	(14) R = 55.00' Δ = 68°-40'-48" T = 37.57' L = 65.93' L.CH. = 62.05'	(15) R = 100.00' Δ = 17°-28'-31" T = 15.37' L = 30.50' L.CH. = 30.38'	(16) R = 35.00' Δ = 76°-22'-10" T = 27.53' L = 46.65' L.CH. = 43.27'	(17) R = 100.00' Δ = 17°-28'-31" T = 15.37' L = 30.50' L.CH. = 30.38'	

NOTE: FOR CLASS OF PIPE AND FITTINGS SEE NOTE ON DWG. No B-1563.

SECTION No 2

8-9-60

APPROVED 6-30 1960

Bronis J. Klementowicz — DIRECTOR OF PUBLIC UTILITIES
J. F. Staton — COMMISSIONER OF WATER AND HEAT
Walter Skove — COMMISSIONER-DIVISION OF UTILITIES ENGINEERING
J. R. Conner — ENGINEER OF CONSTRUCTION & SURVEYS
Arnold Pontkel — ENGINEER OF DESIGN

REVISIONS

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO

DIVISION OF WATER AND HEAT — CONTRACT No.

SUBJECT LAKELAND FREEWAY EXTENSION
12" W.M. IN NORTH MARGINAL ROAD FROM EAST 162 ST. TO EAST 165 ST.

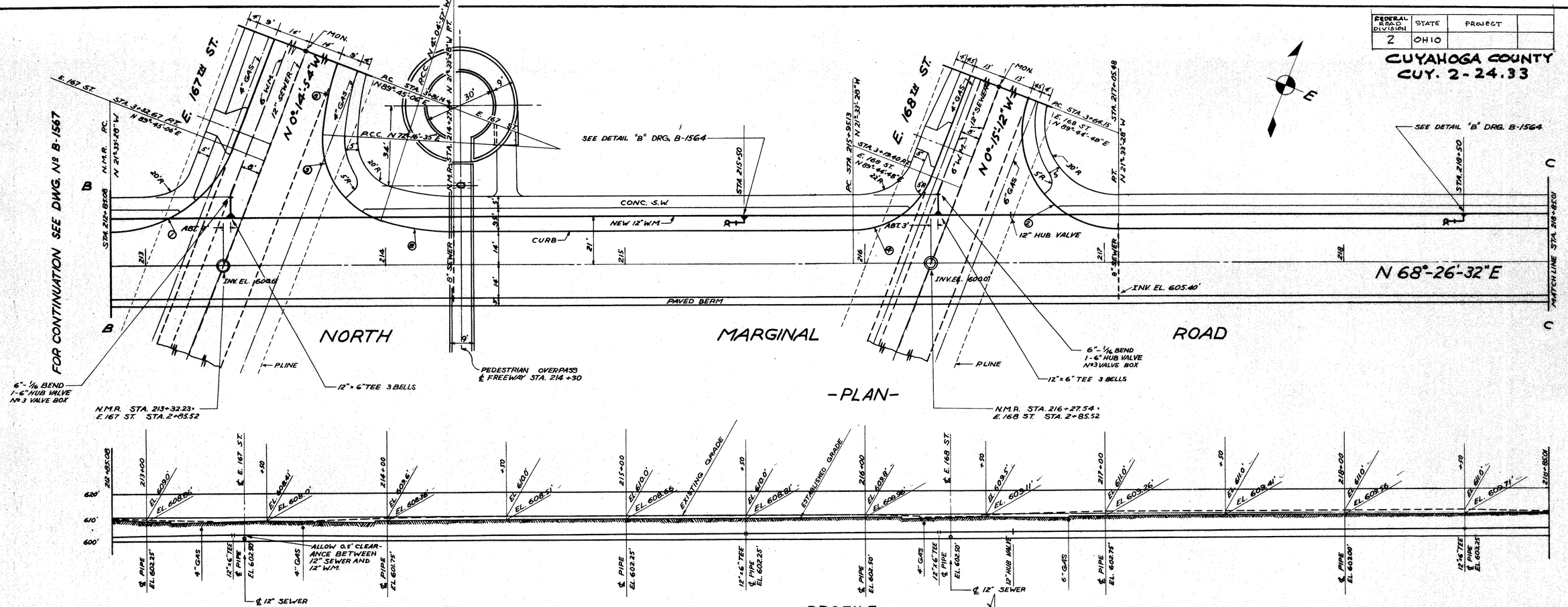
DRAWN BY A.F.B. — SCALE 1" = 20'-0"
TRACED BY A.F.B.
CHECKED BY F.I.P. DATE 3-21-60

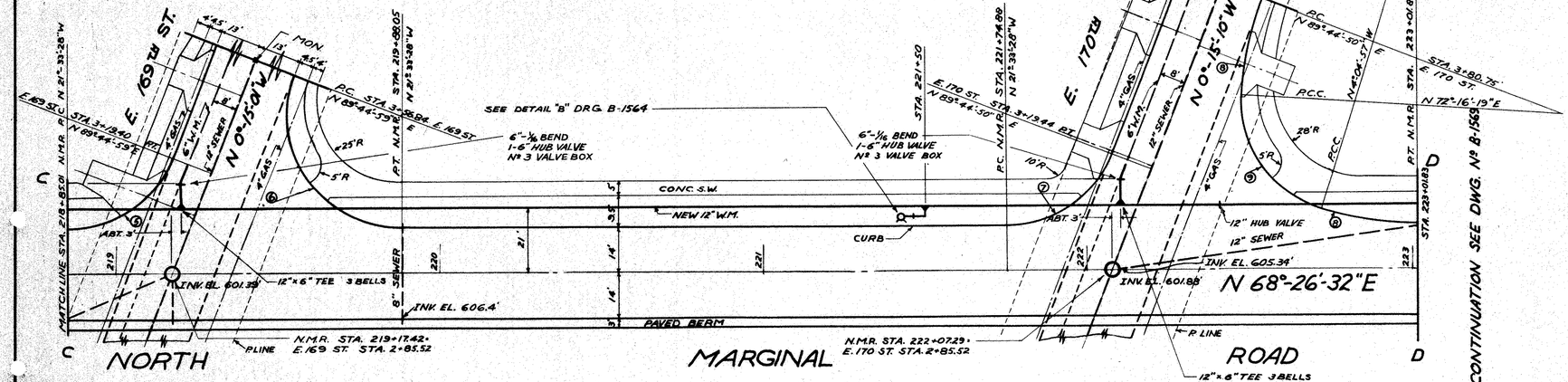
No. B-1567

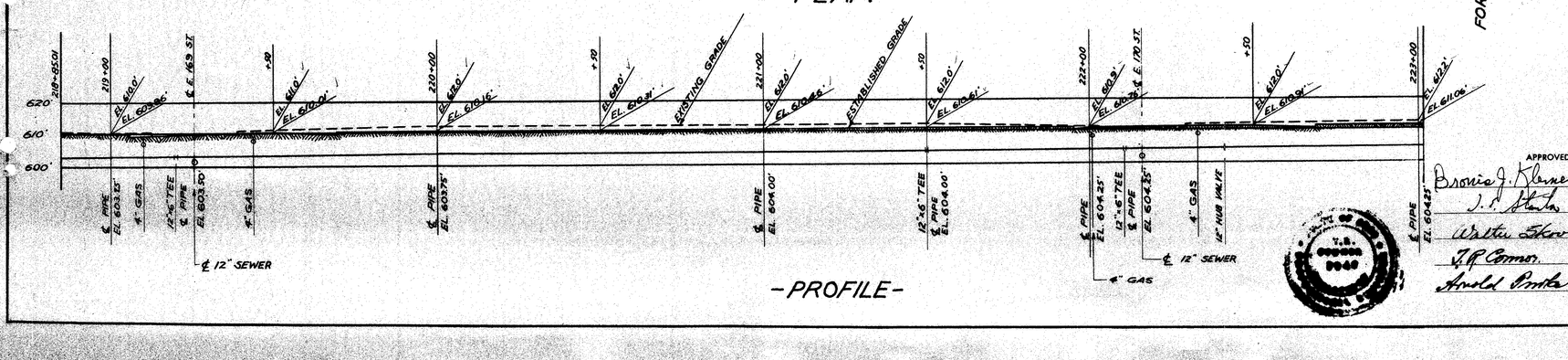
FEDERAL ROAD DIVISION	STATE	PROJECT	
2	OH10		

192

CUYAHOGA COUNTY
CUY. 2-24.33







CURVE DATA

①	②	③	④	⑤
R=55.00'	R=40.00'	R=35.00'	R=35.00'	R=35.00'
Δ=68°-41'-26"	Δ=111°-18'-16"	Δ=76°-21'-32"	Δ=68°-41'-44"	Δ=68°-41'-33"
T=37.58'	T=58.53'	T=27.52'	T=23.92'	T=23.92'
L=65.94'	L=77.71'	L=46.64'	L=41.96'	L=41.96'
L.CH.=62.06'	L.CH.=66.05'	L.CH.=43.27'	L.CH.=39.50'	L.CH.=39.49'

⑥	⑦	⑧	⑨
R=35.00'	R=35.00'	R=100.00'	R=35.00'
Δ=111°-18'-27"	Δ=68°-41'-42"	Δ=17°-28'-31"	Δ=76°-21'-16"
T=51.22'	T=23.92'	T=15.37'	T=27.52'
L=67.99'	L=41.96'	L=30.50'	L=46.64'
L.CH.=57.80'	L.CH.=39.49'	L.CH.=30.38'	L.CH.=43.27'

NOTE: FOR CLASS OF PIPE AND FITTINGS SEE NOTE ON DWG. Nº B-1563.

SECTION Nº 2

8-11-60

APPROVED 6-30 1960

Bronis J. Klementovicz — DIRECTOR OF PUBLIC UTILITIES
J. J. Stanton — COMMISSIONER OF WATER AND HEAT
Walter Skove — COMMISSIONER—DIVISION OF UTILITIES ENGINEERING
J. P. Comer — ENGINEER OF CONSTRUCTION & SURVEYS
Arnold Pinkas — ENGINEER OF DESIGN

REVISIONS	

LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO

DIVISION OF WATER AND HEAT — CONTRACT No.

SUBJECT: LAKELAND FREEWAY EXTENSION
12" W.M. IN NORTH MARGINAL RD. FROM E. 167TH ST. TO E. 170TH ST.

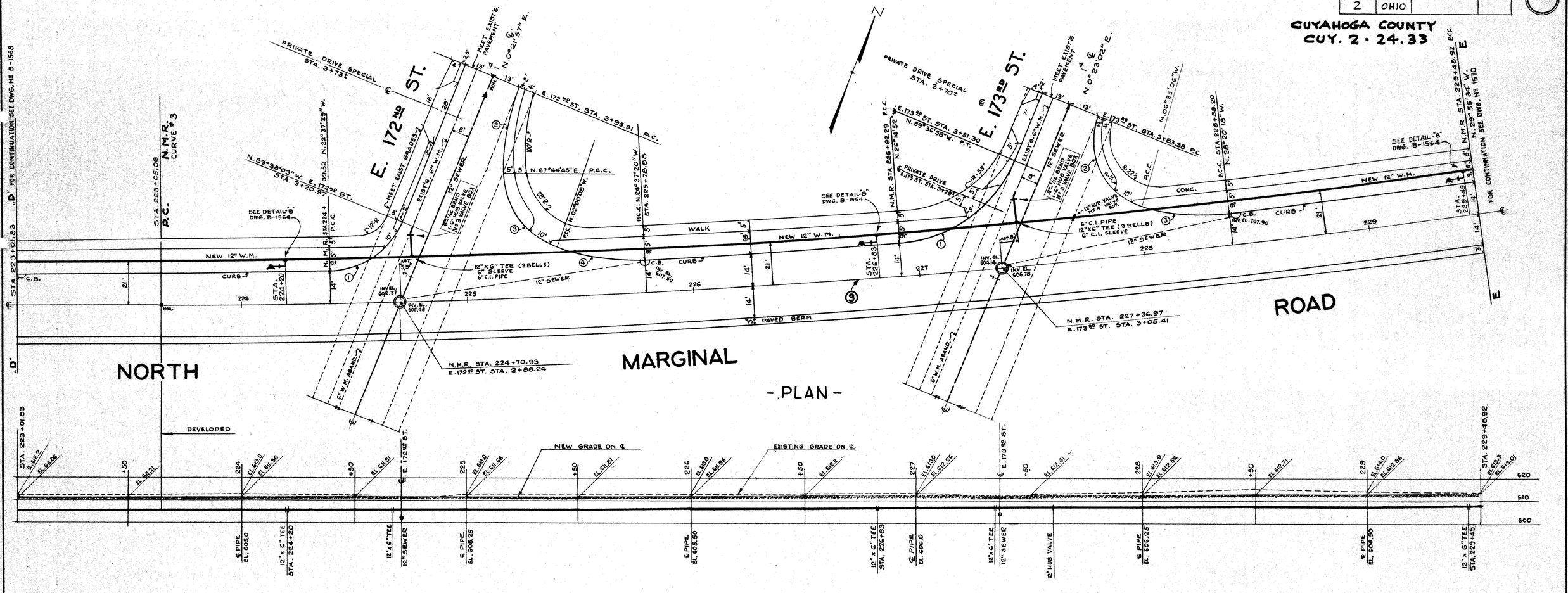
DRAWN BY A.E.B. — SCALE 1"=20'-00"
TRACED BY A.E.B.
CHECKED BY F.I.P. DATE 3-21-60

No. B-1568

FEDERAL ROAD DIVISION	STATE	PROJECT	
2	OHIO		

122

CUYAHOGA COUNTY
CUY. 2 - 24.33



- PROFILE -

EAST 172nd ST.
CURVE DATA

①	②
R = 35.00'	R = 100.00'
Δ = 67°00'34"	Δ = 22°37'12"
T = 23.24'	T = 20.00'
L = 40.93'	L = 39.48'
LC = 38.73'	LC = 39.22'

③	④
R = 35.00'	R = 100.00'
Δ = 69°44'53"	Δ = 22°37'12"
T = 24.39'	T = 20.00'
L = 42.61'	L = 39.48'
LC = 40.02'	LC = 39.22'

N.M.R. CURVE Nº 3 - ℄ DATA.

D =	1°26'00"
Δ =	14°07'04"
R =	3 997.39'
T =	494.99'
L =	984.96'
LC =	982.47'
E =	30.50'

EAST 173rd ST.
CURVE DATA

①	②
R = 60.00'	R = 30.00'
Δ = 63°22'06"	Δ = 96°56'08"
T = 37.03'	T = 33.87'
L = 66.36'	L = 50.75'
LC = 63.03'	LC = 44.91'

③
R = 100.00'
Δ = 21°47'12"
T = 19.25'
L = 38.02'
LC = 37.80'

NOTE: FOR CLASS OF PIPE AND FITTINGS SEE NOTE ON DWG. Nº B-1563.

SECTION Nº 2

8-9-60

APPROVED 6-30 1960

Bronis J. Klementowski — DIRECTOR OF PUBLIC UTILITIES
J. F. Stanton — COMMISSIONER OF WATER AND HEAT
Walter Shaw — COMMISSIONER - DIVISION OF UTILITIES ENGINEERING
W. P. Conna — ENGINEER OF CONSTRUCTION AND SURVEYS
Arnold Pinkel — ENGINEER OF DESIGN

REVISIONS	

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT: LAKELAND FREEWAY EXTENSION
12" W.M. IN NORTH MARGINAL RD. FROM 160 FT. WEST OF E. 172nd ST. TO 175 FT. EAST OF E. 173rd ST.

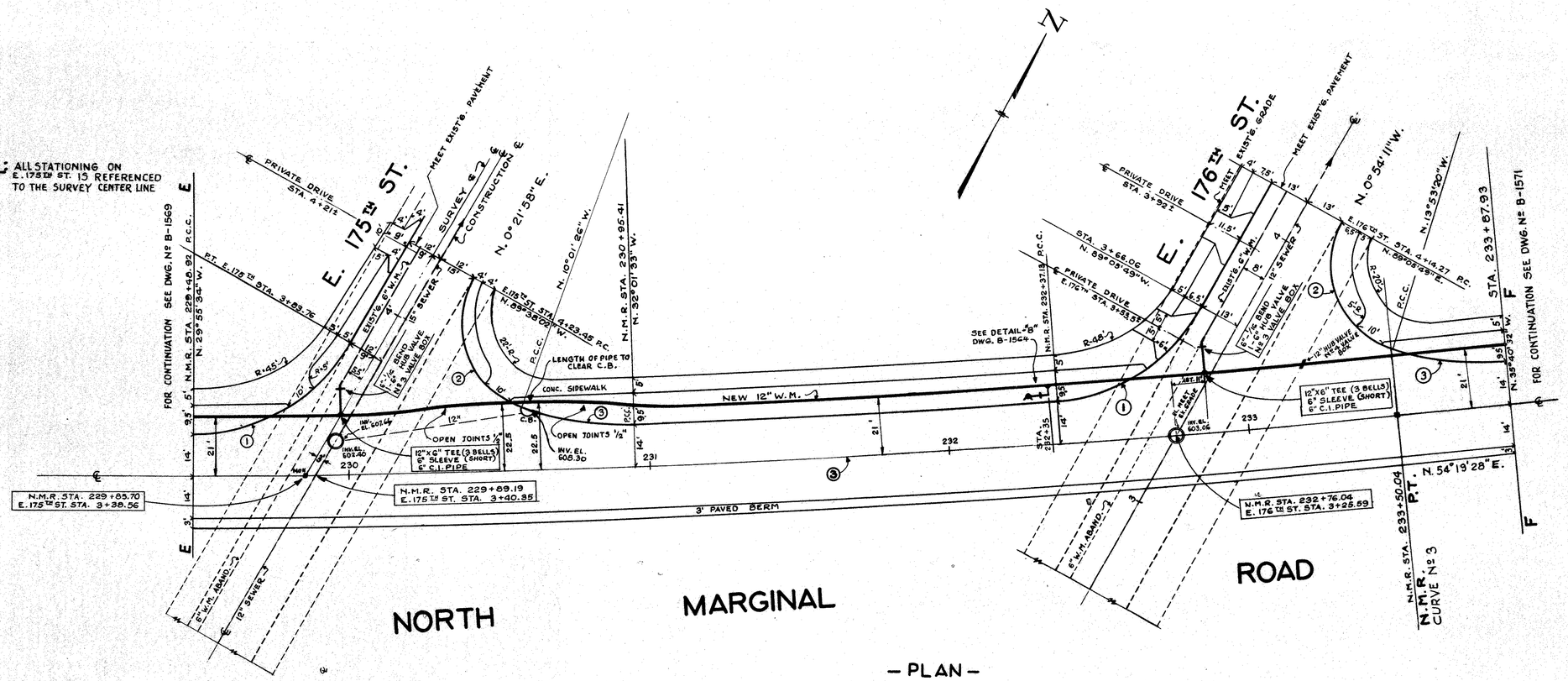
DRAWN BY S.B.
TRACED BY S.B.
CHECKED BY F.I.P. DATE 4-4-60
SCALE 1" = 20'-0"
No. B-1569

FEDERAL ROAD DIVISION	STATE	PROJECT	
2	OHIO		

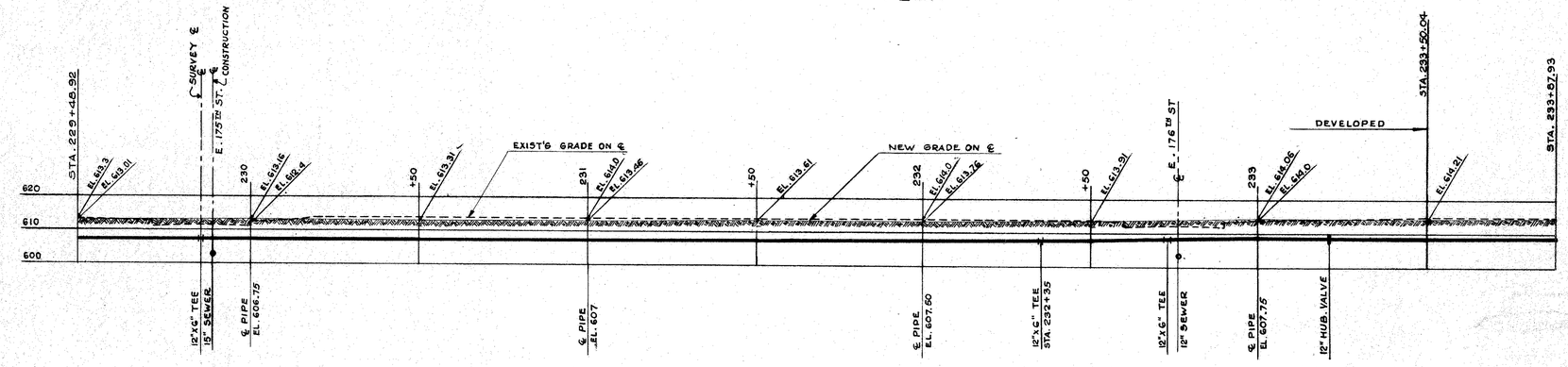
CUYAHOGA COUNTY
SEC. CUY. 2-24.33

194

NOTE: ALL STATIONING ON E. 175TH ST. IS REFERENCED TO THE SURVEY CENTER LINE



— PLAN —



— PROFILE —

EAST 175TH ST.
CURVE DATA

①	②
R = 60.00'	R = 30.00'
Δ = 59° 42' 28"	Δ = 100° 23' 24"
T = 34.44'	T = 36.00'
L = 62.53'	L = 52.56'
LCH = 59.73'	LCH = 46.09'

③
R = 100.00'
Δ = 22° 00' 07"
T = 19.44'
L = 38.40
LCH = 38.17

EAST 176TH ST.
CURVE DATA

①	②
R = 60.00'	R = 30.00'
Δ = 56° 50' 49"	Δ = 102° 59' 09"
T = 32.47'	T = 37.71'
L = 59.53'	L = 53.92'
LCH = 57.12'	LCH = 46.96'

③
R = 100.00'
Δ = 21° 47' 12"
T = 19.25'
L = 38.02'
LCH = 37.80'

N.M.R. CURVE NO 3 - ℄ DATA.

D = 1° 26' 00"
Δ = 14° 07' 04"
R = 3 997.39'
T = 494.99'
L = 984.96'
LC = 982.47'
E = 30.50'

NOTE: FOR CLASS OF PIPE AND FITTINGS SEE NOTE ON DWG. NO B-1569.

SECTION NO 2

8-10-60

APPROVED 6-30 1960

Bronis J. Klementowicz — DIRECTOR OF PUBLIC UTILITIES
J. L. Hunter — COMMISSIONER OF WATER AND HEAT
Walter Skove — COMMISSIONER — DIVISION OF UTILITIES ENGINEERING
J. P. Connor — ENGINEER OF CONSTRUCTION AND SURVEYS
Arnold Bortel — ENGINEER OF DESIGN

REVISIONS	

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT: LAKELAND FREEWAY EXTENSION
12" W.M. IN NORTH MARGINAL RD. FROM E. 175TH ST. TO E. 176TH ST.

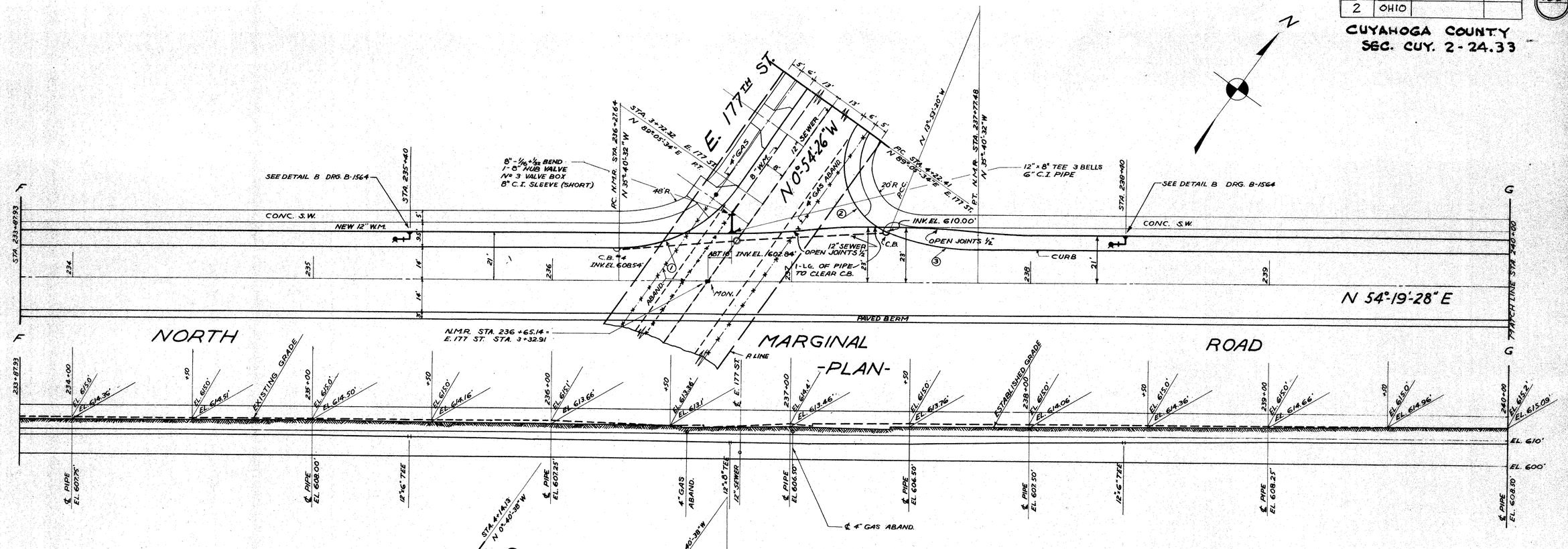
DRAWN BY S.B.
TRACED BY S.B.
CHECKED BY E.I.P. DATE 4-4-60
SCALE 1" = 20'-0"
No. B-1570

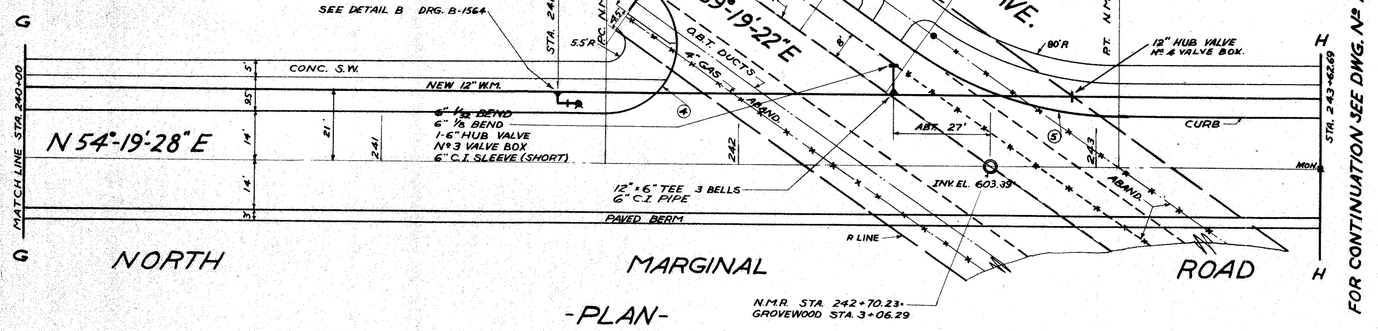
FEDERAL ROAD DIVISION	STATE	PROJECT	
2	OHIO		

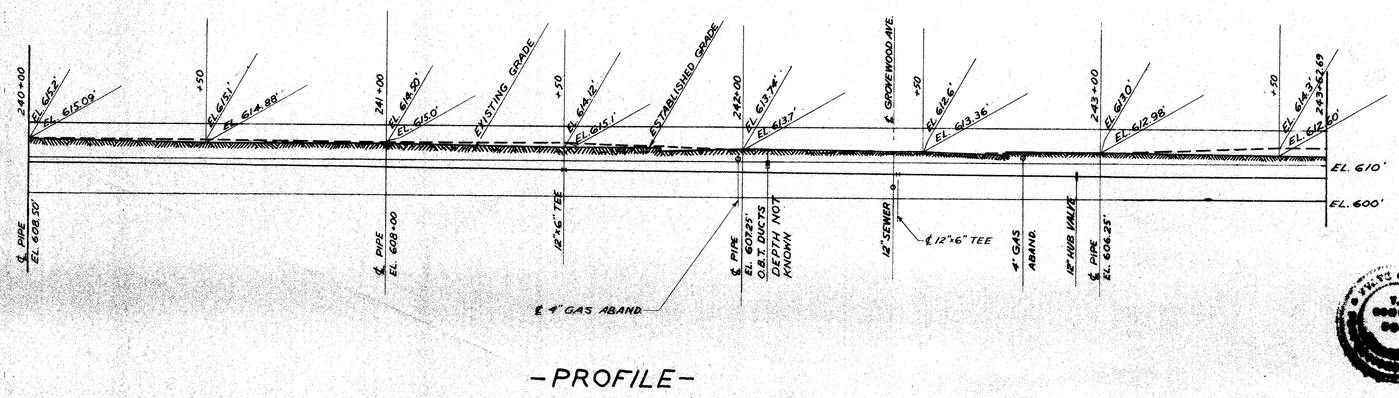
195

CUYAHOGA COUNTY
SEC. CUY. 2-24.33

FOR CONTINUATION SEE DWG. Nº B-1570







-PROFILE-

CURVE DATA

①	②	③	④	⑤
R=60.00'	R=30.00'	R=100.00'	R=20.00'	R=100.00'
Δ=55°-13'-54"	Δ=102°-58'-54"	Δ=21°-47'-12"	Δ=145°-00'-06"	Δ=34°-59'-54"
T=31.39'	T=37.70'	T=19.25'	T=63.44'	T=31.53'
L=57.84'	L=53.92'	L=38.02'	L=50.62'	L=61.08'
L.CH.=55.62'	L.CH.=46.95'	L.CH.=37.80'	L.CH.=38.15'	L.CH.=60.14'

NOTE: FOR CLASS OF PIPE AND FITTINGS SEE NOTE ON DWG. Nº B-1563.

SECTION Nº 2

8-10-60

APPROVED 6-30 1960

Morris J. Klement Jr. — DIRECTOR OF PUBLIC UTILITIES
N. E. Stuntz — COMMISSIONER OF WATER AND HEAT
Walter Elsass — COMMISSIONER—DIVISION OF UTILITIES ENGINEERING
J. P. Conner — ENGINEER OF CONSTRUCTION & SURVEYS
Arnold Pontius — ENGINEER OF DESIGN

REVISIONS	

LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO
DIVISION OF WATER AND HEAT — CONTRACT No.

SUBJECT LAKELAND FREEWAY EXTENSION
12" W.M. IN NORTH MARGINAL RD. FROM 270 FT. WEST OF E. 177TH ST. TO GROVEWOOD AVE.

DRAWN BY A.F.B. | SCALE 1"=20'-0"
TRACED BY A.F.B.
CHECKED BY F.T.P. DATE 3-29-60

No. B-1571

FED. RD. DIVISION 2 | STATE OHIO | PROJECT.

CUYAHOGA COUNTY
CUY. 2-24.33

FOR CONTINUATION SEE DWG. Nº B-1571

N.M.R. CURVE #4 ℄ DATA.
D = 2°-30'-00"
Δ = 12°-16'-26"
R = 2291.83
T = 246.42
L = 490.96
L.C. = 490.02
E. = 13.21

DELAVAN AVE.
N 34°-40'-35" W
P.C. N.M.R. #4
STA. 244+50
STA. 244+73.83
STA. 3+47.47
N 55°-19'-25" E
DELAVAN RT.
P.C. STA. 3+57.20
N 55°-19'-25" E
DELAVAN
STA. 245+84.90
N 41°-13'-51" W
P.C.C. N.M.R.
N 38°-27'-15" W
1 6" HUB VALVE
Nº 3 VALVE BOX
6" C.I. SLEEVE (SHORT)
SEE DETAIL "B" DWG. B-1564
CONC. S.W.
4" GAS TO BE ABAND.
6" W.M.
12" SEWER
C.B. #4
INV. EL. 607.00
INV. EL. 607.80
INV. EL. 601.40
12"×6" TEE 3 BELLS
6" C.I. PIPE
30" PIPE CULVERT SEWER
SEE DETAIL B DWG. B-1564
STA. 247+50
CONC. S.W.
NEW 12" W.M.
CONNECTIONS TO BE ABAND.
12"-1/8 BEND
STA. 248+08
12"-1/8 BEND
P.T. N.M.R. #4
STA. 248+31.65
293203
6" W. CONN. TO BE ABAND.
INV. EL. 607.80
C.B. #4
N 42°-03'-02" E
MATCH LINE STA. 249+00
ABT. 36.2'
MON.
STA. 248+00
BEGIN CURB
PAVED BERM
CURB
#4
P LINE
MARGINAL ROAD
NORTH
N.M.R. STA. 245+24.42 =
DELAVAN STA. 2+97.44
PEDESTRIAN OVERPASS
℄ FREEWAY STA. 246+66
-PLAN-

243+62.69
244+00 EL. 615.0' EL. 618.32'
+50 EL. 615.0' EL. 614.94'
245+00 EL. 611.6' EL. 614.53'
℄ DELAVAN AVE.
+50 EL. 612.5' EL. 611.62'
EXISTING GRADE
246+00 EL. 613.3' EL. 611.78'
+50 EL. 612.5' EL. 611.34'
247+00 EL. 612.0' EL. 611.7'
ESTABLISHED GRADE
+50 EL. 612.26' EL. 612.0'
248+00 EL. 613.1' EL. 612.42'
+50 EL. 613.2' EL. 612.58'
249+00 EL. 612.74' EL. 612.7'
EL. 610'
EL. 600'
℄ 4" GAS TO BE ABAND.
℄ PIPE EL. 605.75'
12"×6" TEE
℄ PIPE EL. 605.00'
12"×6" TEE
15" SEWER
4" GAS TO BE ABAND.
℄ PIPE EL. 606.35'
30" PIPE CULV. INV. EL. 602.90
ALLOW 1' CLEARANCE WITH 5' COVER
℄ PIPE EL. 605.50'
12"×6" TEE
℄ PIPE EL. 606.00'
12"-1/4 HOR. BEND
12"-1/8 HOR. BEND
℄ PIPE EL. 606.25'
-PROFILE-

REMOVE - 4" HYDRANT
- Nº 2 VALVE BOX
LEAD JOINTS
12"×6" TEE 3 BELLS
6" HUB VALVE
6" HYDRANT
Nº 2 VALVE BOX
6" C.I. PIPE
REMOVE Nº 3 VALVE BOX AND PLUG 6" W.M. AT TEE WITH 6" PLUG AND CLAMPS
NOTTINGHAM
N 47°-04'-22" E
STA. 9+96.75 P.T.
1-12" HUB VALVE
Nº 4 VALVE BOX
12" C.I. PIPE
P.C. N.M.R.
N 47°-56'-58" W
STA. 251+53.92
NOTTINGHAM RD.
N 42°-55'-38" W
8" SEWER
6" GAS
6" GAS
C.B. #6
INV. EL. 608.60
C.I. #5
6" GAS
25'R
CONC. S.W.
CURB
STA. 10+22.83
N 47°-04'-22" E
NOTTINGHAM
P.T. N.M.R. STA. 252+69.78
N 47°-56'-58" W
BEGIN OLD S.W.
264'
212'
166'
OLD S.W.
CURB
6" W.M. TO BE ABAND.
NEW 12" W.M.
EXIST'G. ℄
NEW ℄
OLD CURB
CURB
CONC. S.W.
261'
208'
163'
64'
MATCH LINE STA. 249+00
N 42°-03'-02" E
END OLD S.W.
74'
40'R
INV. EL. 592.71'
INSTALL 10" INSERTING VALVE
10"×10" TEE 3 BELLS
12"×10" REDUCER
BELL ON LARGE END
12" SEWER
10" SEWER
INV. EL. 602.90
INV. EL. 600.00
C.B. #5
10" W.M.
5-C SEWER
C.I. #4
6'R
NOTTINGHAM RD.
STA. 9+10.18
PT
N 47°-04'-22" E
PC. NOTTINGHAM
STA. 9+09.76
N 47°-04'-22" E
STA. 252+29.99 P.T.
NOTTINGHAM
STA. 251+66.22
NORTH
MARGINAL ROAD
(EXISTING VILLAVIEW ROAD)
N.M.R. STA. 252+01.38 =
NOTTINGHAM STA. 9+47.11
-PLAN-

249+00 EL. 612.74' EL. 612.7'
+50 EL. 612.50' EL. 612.0'
EXISTING GRADE
250+00 EL. 613.1' EL. 613.06'
ESTABLISHED GRADE
+50 EL. 613.3' EL. 613.22'
251+00 EL. 613.4' EL. 613.39'
+50 EL. 613.6' EL. 613.54'
252+00 EL. 613.8' EL. 613.70'
+50 EL. 615.5' EL. 613.86'
℄ NOTTINGHAM RD.
EL. 610
EL. 600
12" SEWER
8" SEWER
ALLOW 1' CLEARANCE
12" SEWER
10" W.M.
5-C SEWER
℄ PIPE EL. 606.25'
STA. 249+25
12"×6" TEE
℄ PIPE EL. 606.30'
℄ PIPE EL. 606.00'
-PROFILE-

NOTE: EXISTING 6" WATER MAIN IN VILLAVIEW RD. TO BE KEPT IN SERVICE UNTIL NEW 12" W.M. HAS BEEN INSTALLED WITH EXISTING CONNECTIONS.

CURVE DATA

①	②	③
R = 40.00'	R = 40.00'	R = 40.00'
Δ = 86°-13'-20"	Δ = 96°-33'-16"	Δ = 84°-58'-40"
T = 37.45'	T = 44.86'	T = 36.64'
L = 60.19'	L = 67.41'	L = 59.33'
L.CH. = 54.67'	L.CH. = 59.71'	L.CH. = 54.04'

④	⑤	⑥
R = 50.00'	R = 20.00'	R = 20.00'
Δ = 95°-01'-20"	Δ = 95°-01'-20"	Δ = 84°-58'-40"
T = 54.59'	T = 21.83'	T = 18.32'
L = 82.92'	L = 33.17'	L = 29.66'
L.CH. = 73.74'	L.CH. = 29.50'	L.CH. = 27.02'

NOTE: FOR CLASS OF PIPE AND FITTINGS SEE NOTE ON DWG. Nº B-1563.

SECTION Nº 2

8-10-60

APPROVED 6-30 1960
Bronis J. Klementowicz — DIRECTOR OF PUBLIC UTILITIES
J. C. Martin — COMMISSIONER OF WATER AND HEAT
Walter Glover — COMMISSIONER — DIVISION OF UTILITIES ENGINEERING
R. R. Conner — ENGINEER OF CONSTRUCTION AND SURVEYS
Arnold Pinkel — ENGINEER OF DESIGN

REVISIONS

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT: LAKELAND FREEWAY EXTENSION
12" W.M. IN NORTH MARGINAL RD. FROM 130 FT. WEST OF DELAVAN AVE. TO NOTTINGHAM RD.

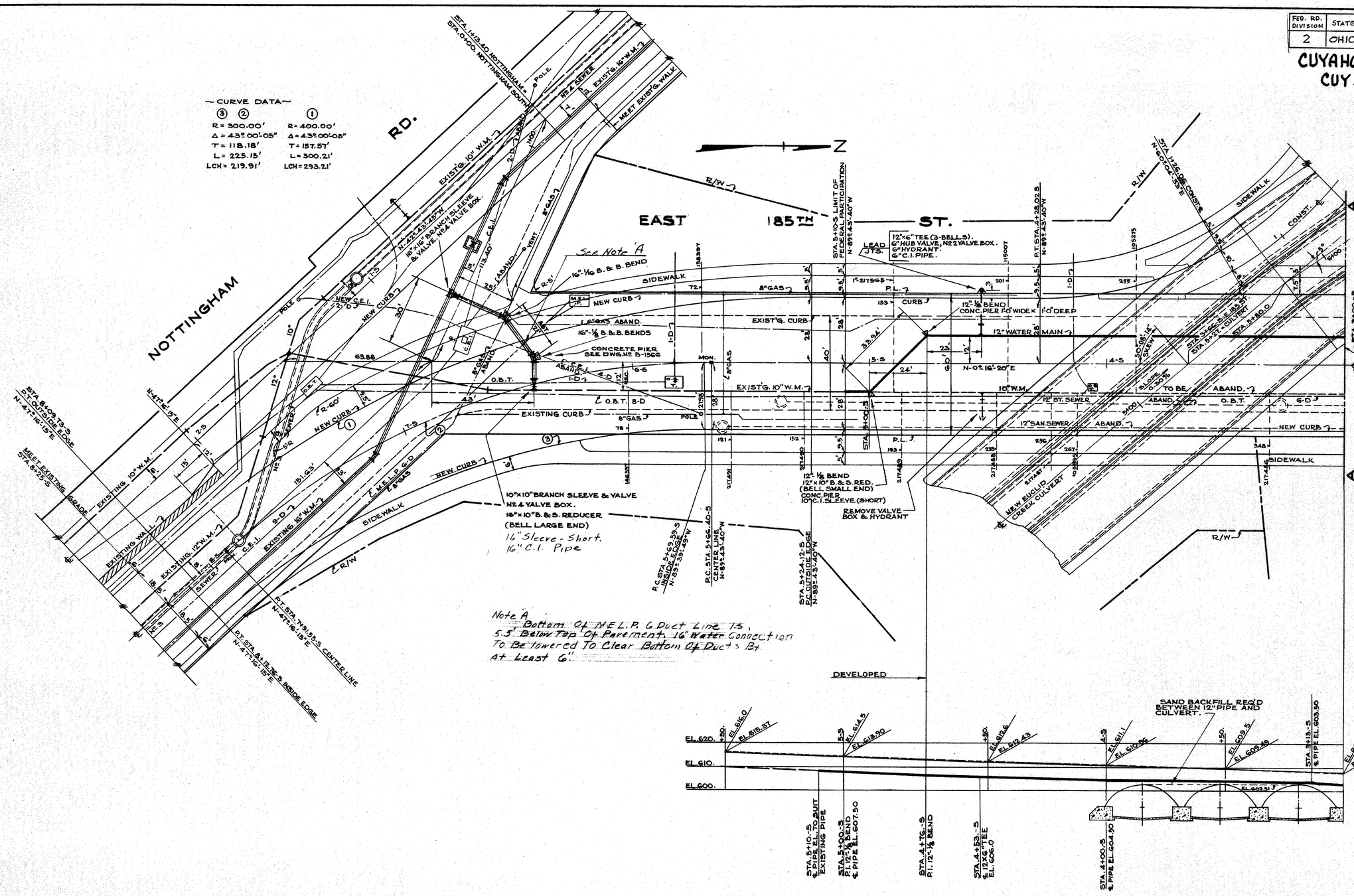
DRAWN BY: A.F.B.
TRACED BY: A.F.B.
CHECKED BY: F.T.P. DATE: Mar. 30-60
SCALE: 1"=20'-0"

No. B-1572

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

197

CUYAHOGA COUNTY
CUY. 2-24.33



Note A
Bottom Of M.E.L.P. 6 Duct Line 1.5, 5.5' Below Top Of Pavement. 16" Water Connection To Be lowered To Clear Bottom Of Ducts By At Least 6".

NOTE:- FOR CLASS OF PIPE AND FITTINGS SEE DWG. No B-1563.

SECTION No 2

= 31-60

APPROVED 6-30 1960

Bronis J. Klementowicz — DIRECTOR OF PUBLIC UTILITIES
T. A. Stutz — COMMISSIONER OF WATER AND HEAT
Walter Skove — COMMISSIONER-DIVISION OF UTILITIES ENGINEERING
T. R. Connor — ENGINEER OF CONSTRUCTION & SURVEYS
Arnold Prokel — ENGINEER OF DESIGN

REVISIONS

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO

DIVISION OF WATER AND HEAT — CONTRACT No.

SUBJECT LAKELAND FREEWAY EXTENSION
12" WATER MAIN IN EAST 185TH ST. FROM STA. 5+10.-S TO STA. 3+00.-S ALSO 16" CONN. AT NOTTINGHAM RD.

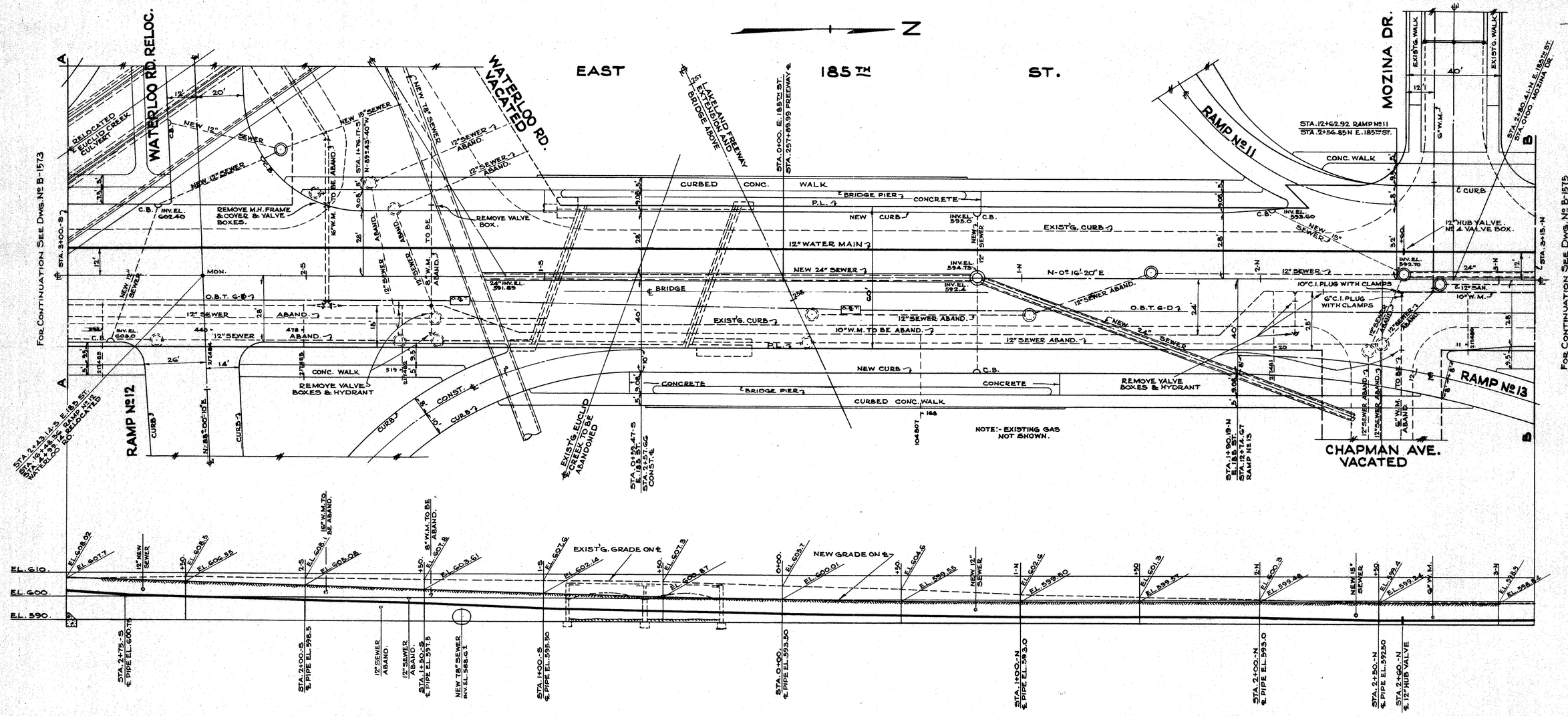
DRAWN BY W.F.K. — SCALE 1" = 20'-0"
TRACED BY W.F.K.
CHECKED BY E.T.R. DATE 4-21-60

No. B-1573

FED. RD. DIVISION 2 | STATE OHIO | PROJECT

CUYAHOGA COUNTY
CUY. 2 - 24.33

FOR CONTINUATION SEE DWG. Nº B-1575



NOTE:- FOR CLASS OF PIPE AND FITTINGS SEE DWG. Nº B-1563.

SECTION Nº2

5-31-60

APPROVED 6-30 1960

Bronis J. Klementowski — DIRECTOR OF PUBLIC UTILITIES
T. E. Stanton — COMMISSIONER OF WATER AND HEAT
Walter Steve — COMMISSIONER-DIVISION OF UTILITIES ENGINEERING
J. P. Conroy — ENGINEER OF CONSTRUCTION & SURVEYS
Arnold Smith — ENGINEER OF DESIGN

REVISIONS

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO

DIVISION OF WATER AND HEAT — CONTRACT No.

SUBJECT: LAKELAND FREEWAY EXTENSION
12" WATER MAIN IN EAST 185TH ST. FROM STA. 3+00.-S
TO STA. 3+15.-N.

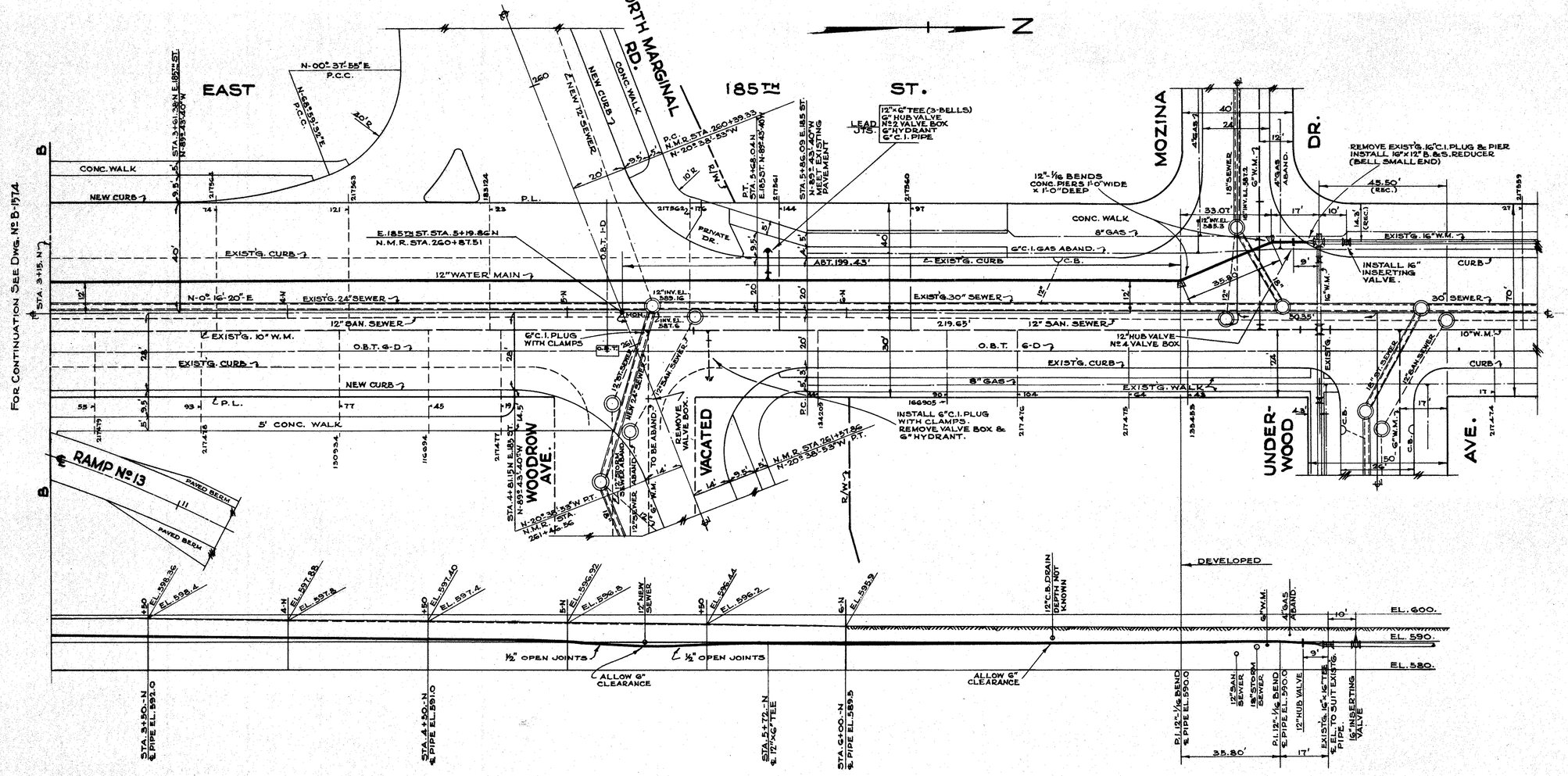
DRAWN BY W.F.K. | TRACED BY W.F.K. | CHECKED BY F.T.P. DATE 4/21/60 | SCALE 1"=20'-0"

No. B-1574

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

192

CUYAHOGA COUNTY
CUY. 2 - 24.33



FOR CONTINUATION SEE DWG. No B-1574

NOTE:- FOR CLASS OF PIPE AND FITTINGS SEE DWG. No B-1563.

SECTION No 2

5-31-60

APPROVED 6-30 1960

Boris J. Klementowicz — DIRECTOR OF PUBLIC UTILITIES

J. L. Stutz — COMMISSIONER OF WATER AND HEAT

Walter Shore — COMMISSIONER—DIVISION OF UTILITIES ENGINEERING

J. P. Comer — ENGINEER OF CONSTRUCTION & SURVEYS

Arnold Bonkel — ENGINEER OF DESIGN

REVISIONS	

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO

DIVISION OF WATER AND HEAT — CONTRACT No.

SUBJECT **LAKELAND FREEWAY EXTENSION**

12" WATER MAIN IN E. 185TH ST. FROM STA. 3+15.0-NORTH TO MOZINA DR.

DRAWN BY W.F.K. — SCALE 1"=20'-0"

TRACED BY W.F.K.

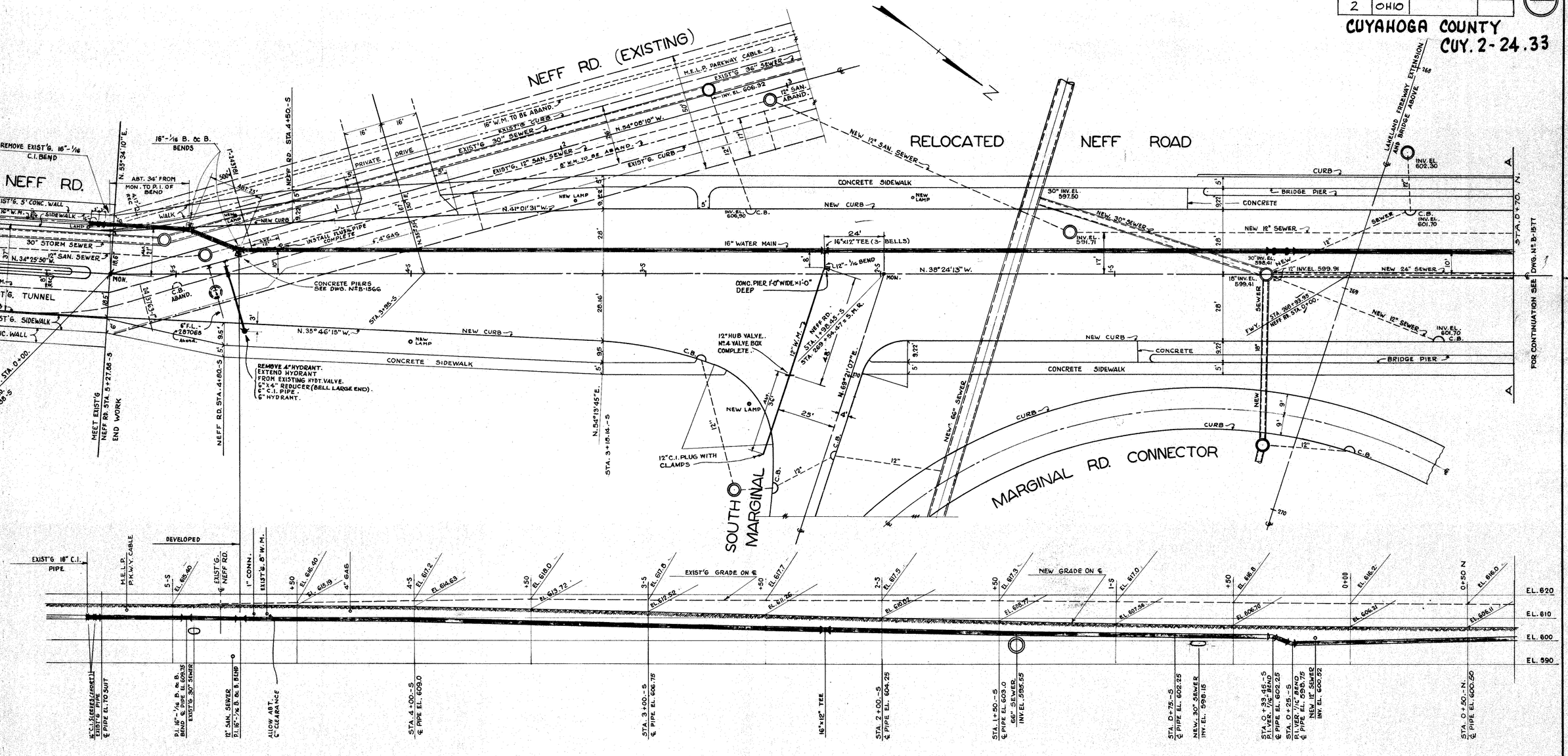
CHECKED BY FJP — DATE 4-22-60

No. B-1575

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

200

CUYAHOGA COUNTY
CUY. 2-24.33



NOTE: FOR CLASS OF PIPE AND FITTINGS SEE NOTE ON DWG. Nº B-1563.

SECTION Nº 2

5-31-60

APPROVED 6-30 1960

Bruce J. Klamentowicz — DIRECTOR OF PUBLIC UTILITIES
J. P. Slanta — COMMISSIONER OF WATER AND HEAT
Walter Stowe — COMMISSIONER—DIVISION OF UTILITIES ENGINEERING
J. P. Connor — ENGINEER OF CONSTRUCTION & SURVEYS
Arnold Bortel — ENGINEER OF DESIGN

REVISIONS

LOW SERVICE DISTRICT

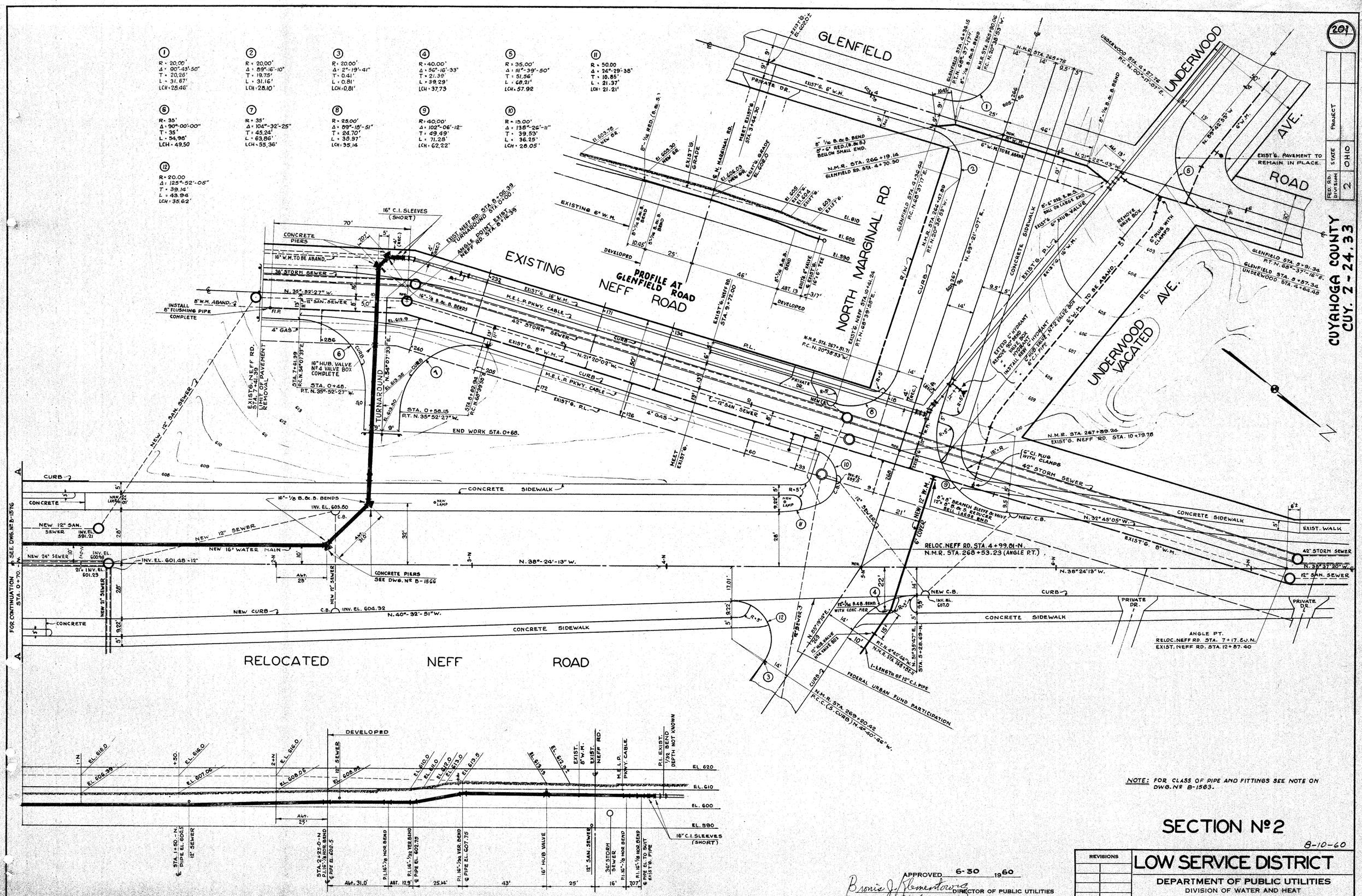
DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO

DIVISION OF WATER AND HEAT — CONTRACT No.

SUBJECT LAKELAND FREEWAY EXTENSION
16" WATER MAIN IN NEFF RD. FROM STA. 5+27.88-S TO STA. 0+70.-N

DRAWN BY W.F.K.
TRACED BY S.B.
CHECKED BY F.I.P. DATE 5-18-60
SCALE 1" = 20'-0

No. B-1576



NOTE: FOR CLASS OF PIPE AND FITTINGS SEE NOTE ON DWG. Nº B-1563.

SECTION Nº 2

8-10-60

APPROVED 6-30 1960

Bronis J. Klementowicz — DIRECTOR OF PUBLIC UTILITIES

T. E. Stanton — COMMISSIONER OF WATER AND HEAT

Walter Skove — COMMISSIONER – DIVISION OF UTILITIES ENGINEERING

T. R. Connor — ENGINEER OF CONSTRUCTION AND SURVEYS

Arnold Imhof — ENGINEER OF DESIGN

REVISIONS	

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT: LAKELAND FREEWAY EXTENSION
12" W.M. IN THE INTERSECTION OF NEFF RD. AND NORTH MARGINAL RD.

DRAWN BY W.F.K.
TRACED BY S.B.
CHECKED BY F.T.P. DATE 5-5-60
SCALE 1" = 20'-0"

No. B-1577

CUYAHOGA COUNTY
CUY. 2-24.33

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

201

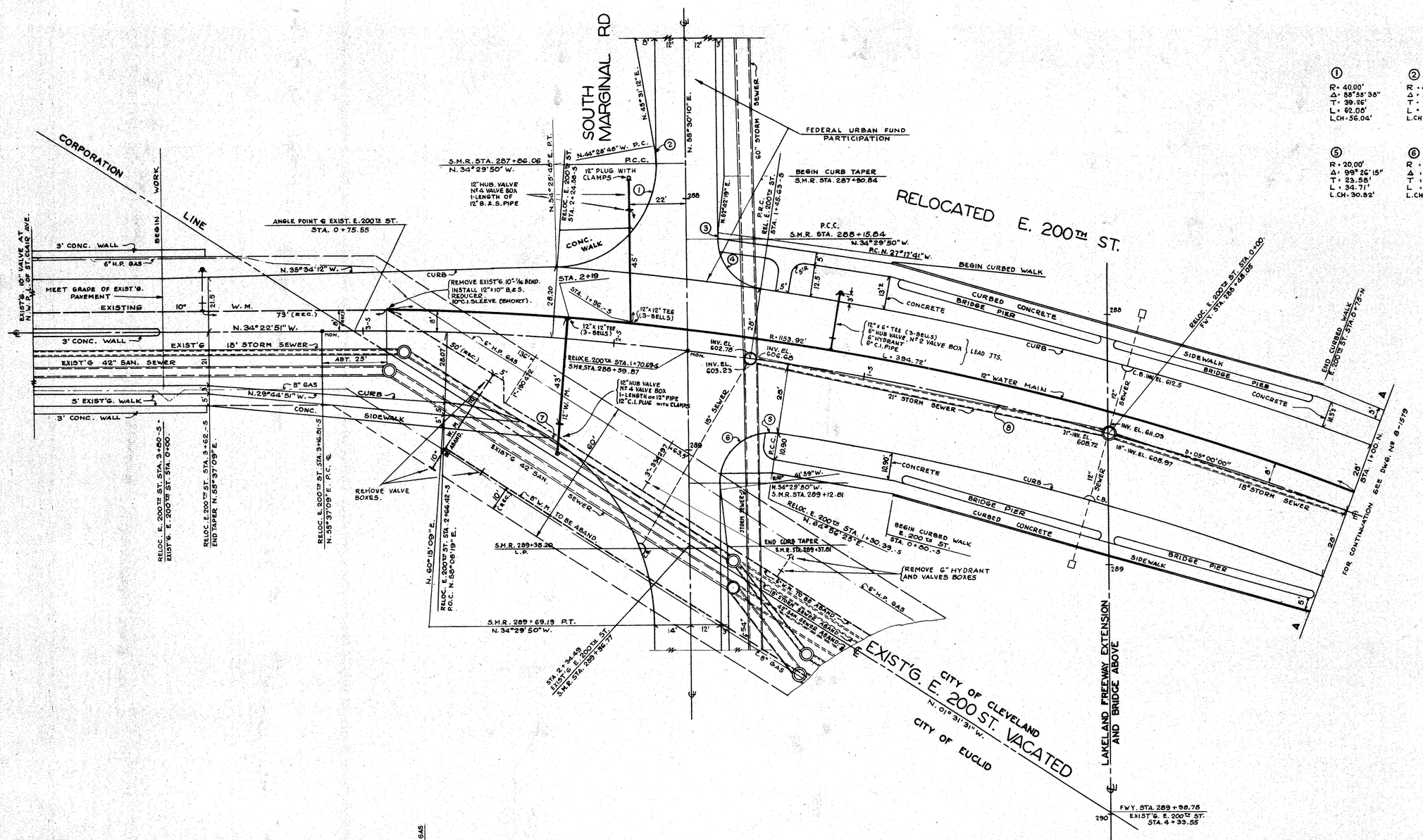
FED. RD. DIVISION	STATE	PROJECT	
2	OH10		

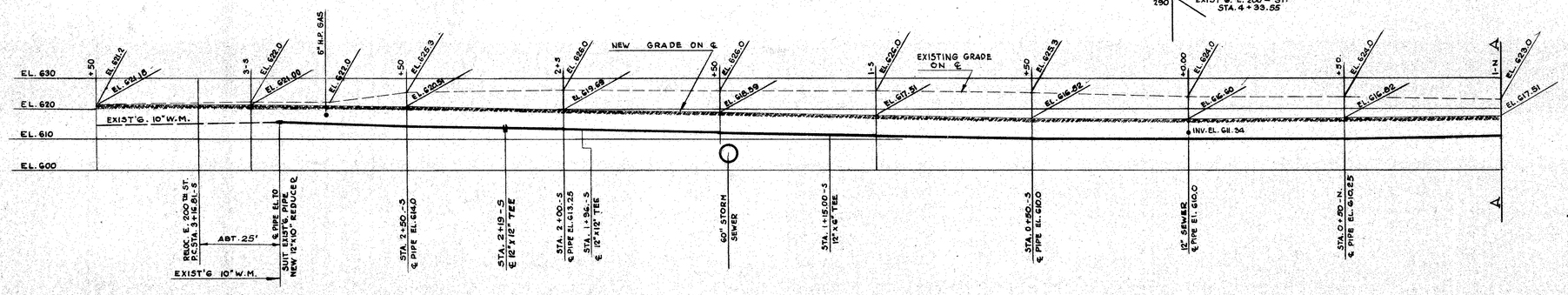
202

CURVE DATA: CUYAHOGA COUNTY
CUY. 2-24.33

①	②	③	④
R = 40.00'	R = 40.00'	R = 20.00	R = 20.00
Δ = 88°55'38"	Δ = 09°58'58"	Δ = 07°12'09"	Δ = 81°19'39"
T = 39.26'	T = 3.49'	T = 1.26'	T = 17.18'
L = 62.05'	L = 6.97'	L = 2.51'	L = 28.39'
L.CH = 56.04'	L.CH = 6.96'	L.CH = 2.51'	L.CH = 26.06

⑤	⑥	⑦	⑧
R = 20.00'	R = 20.00'	R = 90.00'	R = 1145.92'
Δ = 99°26'15"	Δ = 07°12'09"	Δ = 85°15'01"	Δ = 33°47'09"
T = 23.58'	T = 1.26'	T = 82.83'	T = 347.99'
L = 34.71'	L = 2.51'	L = 133.91'	L = 675.70'
L.CH = 30.82'	L.CH = 2.51'	L.CH = 121.90'	L.CH = 665.95'





NOTE: FOR CLASS OF PIPE AND FITTINGS SEE NOTE ON DWG. N° B-1563.

SECTION N° 2

5-31-60

APPROVED 6-30 1960

Bronis J. Klementavicz — DIRECTOR OF PUBLIC UTILITIES
J. E. Stanton — COMMISSIONER OF WATER AND HEAT
Walter Sheve — COMMISSIONER – DIVISION OF UTILITIES ENGINEERING
J. R. Connor — ENGINEER OF CONSTRUCTION AND SURVEYS
Arnold Pinkel — ENGINEER OF DESIGN

REVISIONS

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT: LAKELAND FREEWAY EXTENSION,
12" W.M. IN E. 200TH ST. AT SOUTH MARGINAL RD.

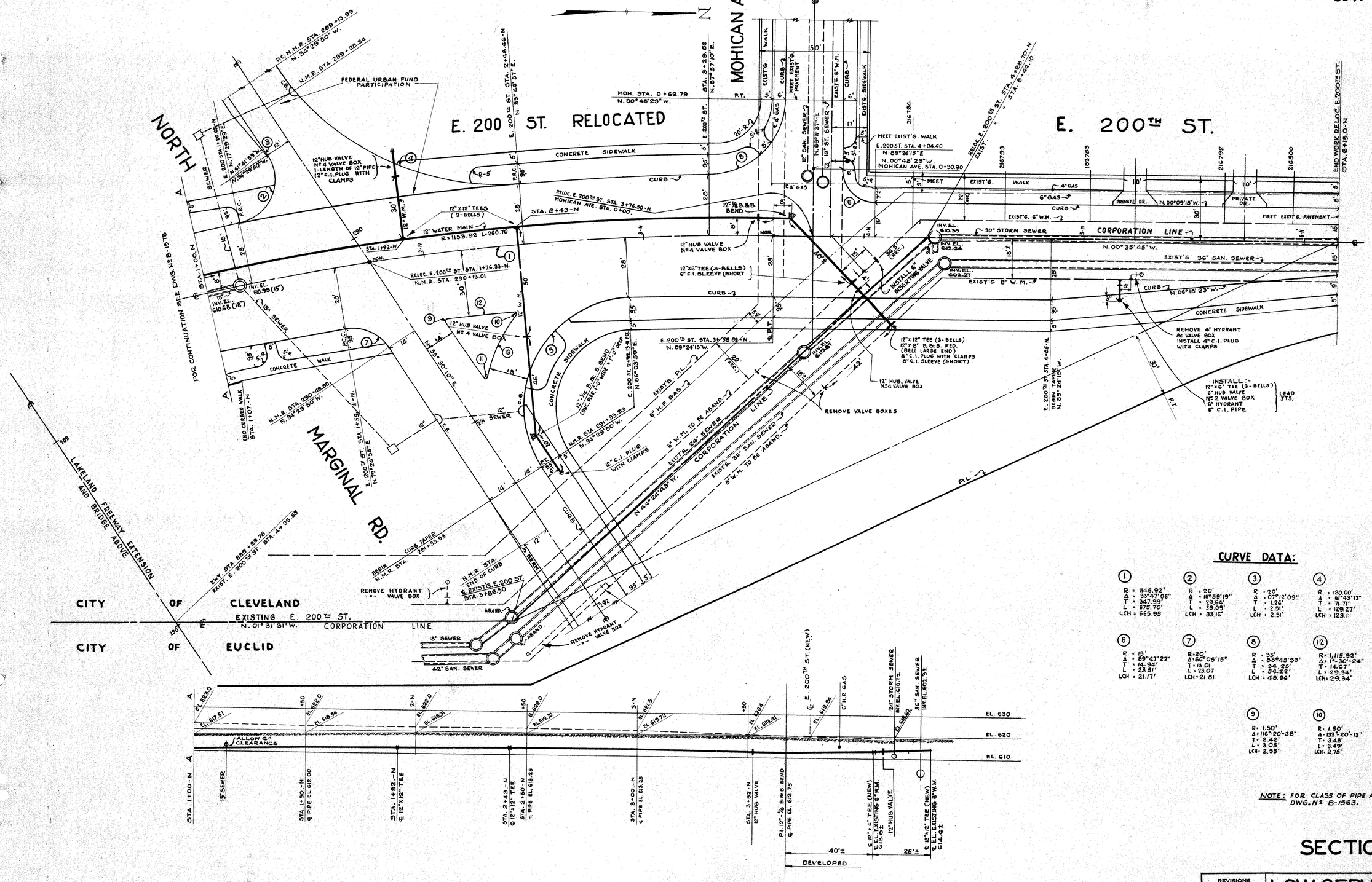
DRAWN BY W.T.K.
TRACED BY S.B.
CHECKED BY F.T.B. DATE 5-18-60
SCALE 1"=20'-0"

No. B-1578

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

203

CUYAHOGA COUNTY
CUY. 2-24.33



CURVE DATA:

① R = 1145.92' Δ = 33°47'06" T = 347.90' L = 675.70' LCH = 665.95	② R = 20' Δ = 111°59'19" T = 29.64' L = 39.09' LCH = 33.16'	③ R = 20' Δ = 07°12'09" T = 1.26' L = 2.51' LCH = 2.51'	④ R = 120.00' Δ = 61°43'13" T = 71.71' L = 129.27' LCH = 123.1'	⑤ R = 50' Δ = 120°33'49" T = 87.57' L = 105.21' LCH = 86.84'
⑥ R = 15' Δ = 89°47'22" T = 16.94' L = 23.51' LCH = 21.17'	⑦ R = 20' Δ = 66°05'15" T = 13.01' L = 23.07' LCH = 21.81'	⑧ R = 35' Δ = 88°45'33" T = 34.22' L = 54.22' LCH = 48.96'	⑫ R = 1,115.92' Δ = 1°-30'-24" T = 14.67' L = 29.34' LCH = 29.34'	⑬ R = 68.00' Δ = 25°-26'-30" T = 15.35' L = 30.19' LCH = 29.95'
		⑨ R = 1.50' Δ = 116°-20'-38" T = 2.45' L = 3.05' LCH = 2.55'	⑩ R = 1.50' Δ = 133°-20'-13" T = 3.48' L = 3.49' LCH = 2.75'	⑪ R = 1.50' Δ = 134°-15'-18" T = 3.56 L = 3.51 LCH = 2.76

NOTE: FOR CLASS OF PIPE AND FITTINGS SEE NOTE ON DWG. Nº B-1563.

SECTION Nº 2

5-31-60

APPROVED 6-30 1960

Bruce J. Klement vice
DIRECTOR OF PUBLIC UTILITIES

J. E. Stanton
COMMISSIONER OF WATER AND HEAT

Walter Stone
COMMISSIONER – DIVISION OF UTILITIES ENGINEERING

J. G. Connor
ENGINEER OF CONSTRUCTION AND SURVEYS

Arnold Bortkal
ENGINEER OF DESIGN

REVISIONS	

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

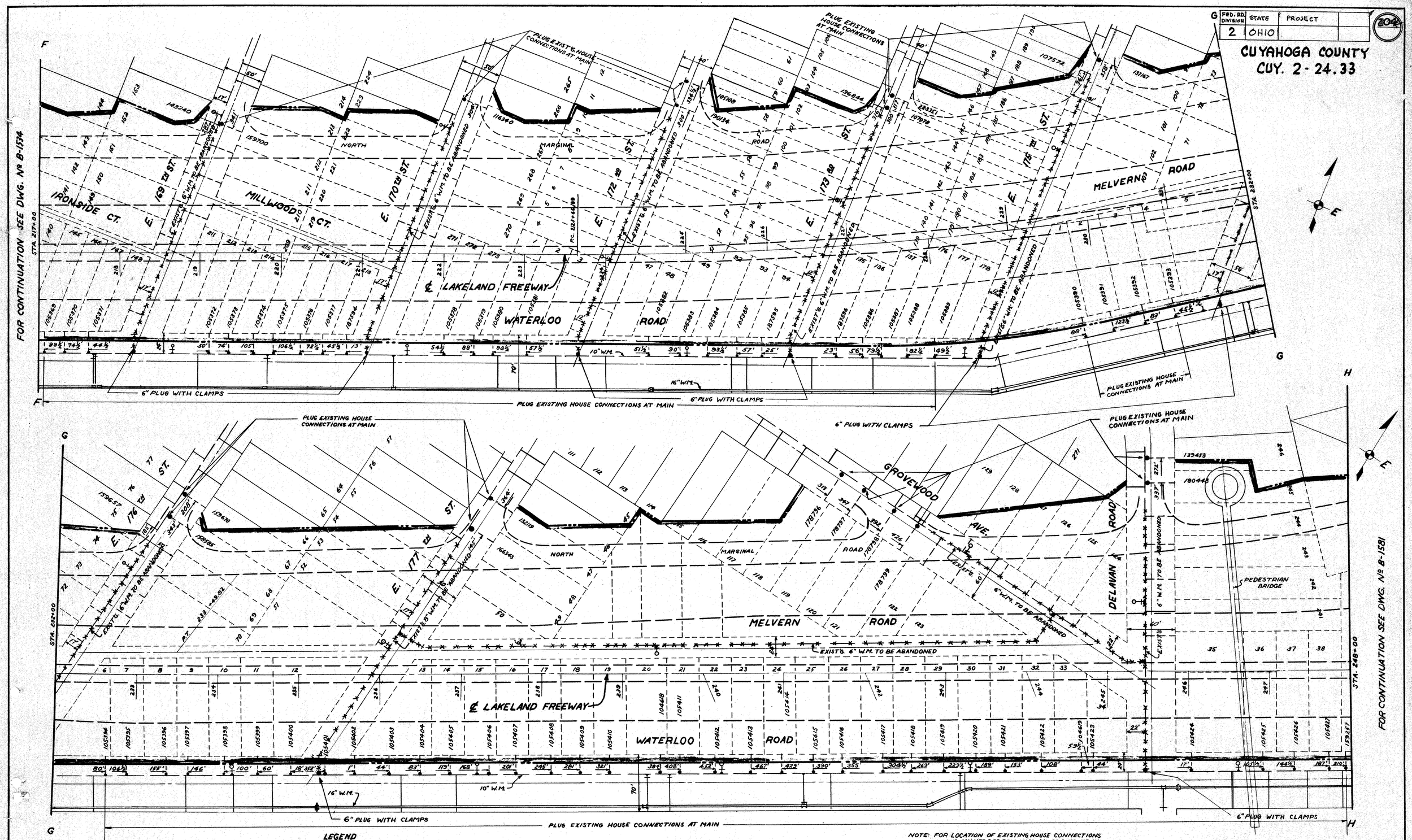
SUBJECT: LAKELAND FREEWAY EXTENSION
12" WATER MAIN IN RELOCATED E 200TH ST.
FROM STA. 1+00.-NORTH TO MOHICAN AVE.

DRAWN BY W.P.K.
TRACED BY S.B.
CHECKED BY F.T.P. DATE 5-18-60
SCALE 1" = 20'-0"
No. B-1579

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

204

CUYAHOGA COUNTY
CUY. 2-24.33



LEGEND
— — — = EXISTING WATER MAINS
x-x-x-x-x = " " " ABANDONED
● = PLUGGING OF CONNECTIONS, C.I. PLUGS, CAPS, AND FLUSHING PIPES.

NOTE: FOR LOCATION OF EXISTING HOUSE CONNECTIONS AND VALVES SEE ROLL MAPS Nº 32A, 102, 115, 116, 120, 121, 170, 176, 282, AND 284.
FOR NEW 12" W.M. IN NORTH MARGINAL RD. AND WATER MAIN CONNECTIONS TO SAME SEE DWG'S. B-1567 TO B-1572.

SECTION Nº 2

5-31-60

APPROVED 6-30 1960

Bronis J. Klementowicz — DIRECTOR OF PUBLIC UTILITIES
J. E. Stanton — COMMISSIONER OF WATER AND HEAT
Walter Skove — COMMISSIONER-DIVISION OF UTILITIES ENGINEERING
T. R. Connor — ENGINEER OF CONSTRUCTION & SURVEYS
Arnold Pinkel — ENGINEER OF DESIGN

REVISIONS

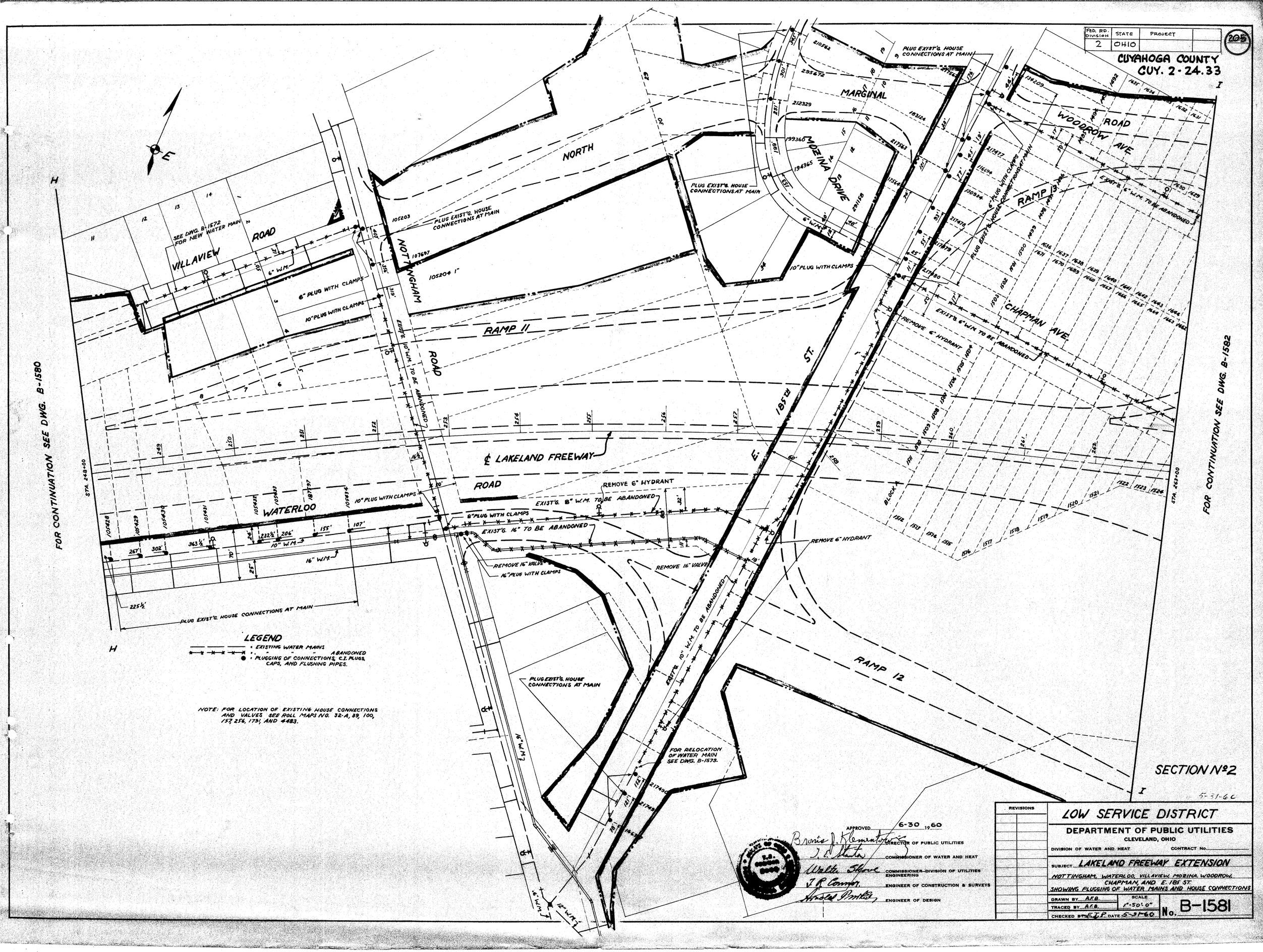
LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO

DIVISION OF WATER AND HEAT — CONTRACT No.

SUBJECT LAKELAND FREEWAY EXTENSION
DELAVAN, GROVEWOOD, MELVERN, WATERLOO, E. 169, E. 170, E. 172, E. 173, E. 175, E. 176, AND E. 177 STREETS.
SHOWING PLUGGING OF WATER MAINS AND HOUSE CONNECTIONS

DRAWN BY AFB
TRACED BY AFB
CHECKED BY F.T.P. DATE 5-31-60
SCALE 1"=50'-0"
No. B-1580

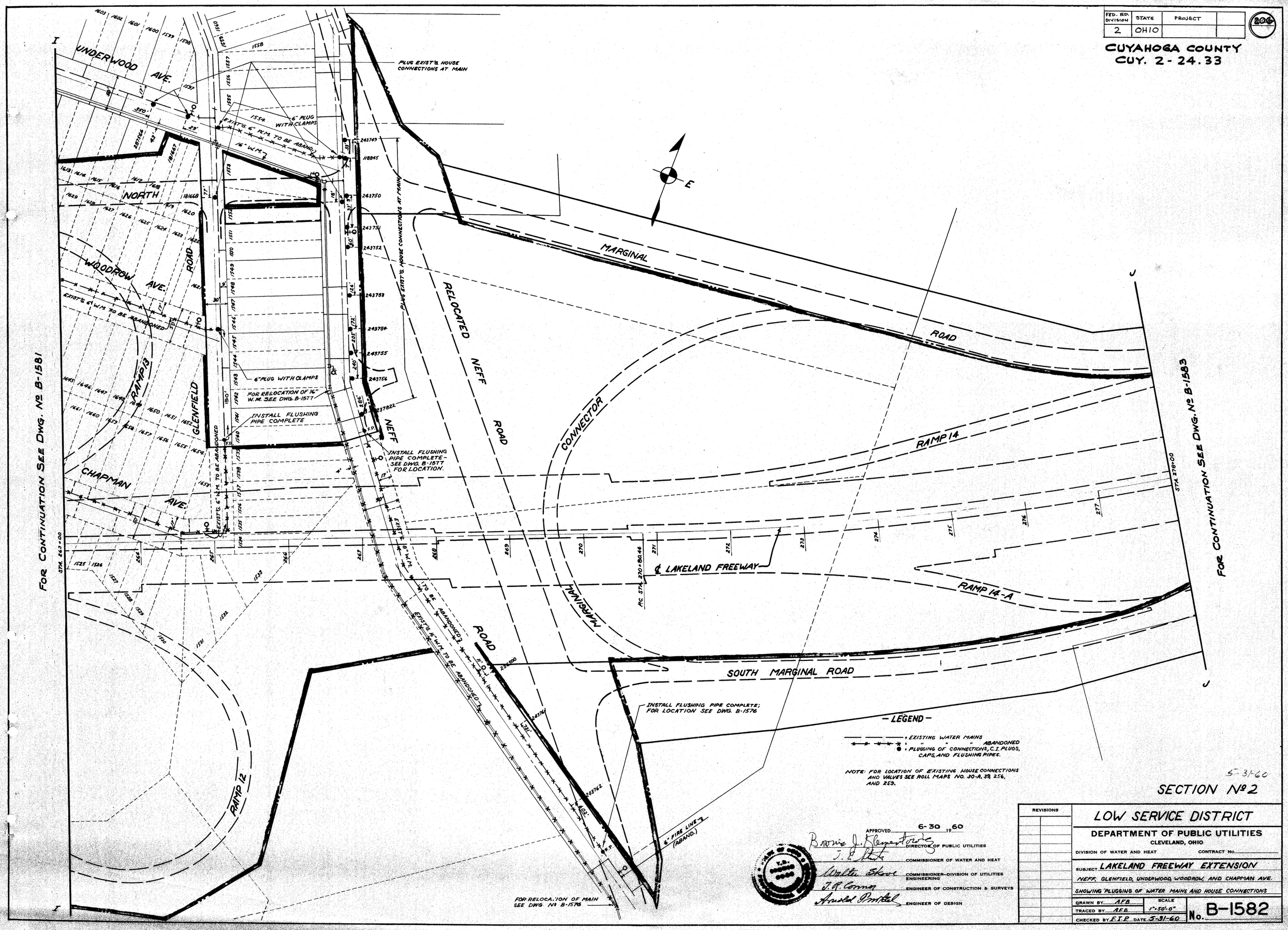


FED. RD. DIVISION 2
STATE OHIO
PROJECT
205
CUYAHOGA COUNTY
CUY. 2-24.33
VILLAVIEW ROAD
NORTH NOTTINGHAM ROAD
MARGINAL ROAD
MOZINA DRIVE
WOODROW AVE.
RAMP 13
CHAPMAN AVE.
RAMP 11
RAMP 12
185TH ST.
WATERLOO ROAD
℄ LAKELAND FREEWAY
SEE DWG. B-1572 FOR NEW WATER MAIN
6" W.M.
6" PLUG WITH CLAMPS
10" PLUG WITH CLAMPS
PLUG EXIST'G. HOUSE CONNECTIONS AT MAIN
EXIST'G. 10" W.M. TO BE ABANDONED
EXIST'G. 6" W.M. TO BE ABANDONED
REMOVE 6" HYDRANT
EXIST'G. 8" W.M. TO BE ABANDONED
8" PLUG WITH CLAMPS
EXIST'G. 16" TO BE ABANDONED
REMOVE 16" VALVE
16" PLUG WITH CLAMPS
10" W.M.
16" W.M.
12" W.M.
FOR CONTINUATION SEE DWG. B-1580
FOR CONTINUATION SEE DWG. B-1582
STA. 248+00
STA. 263+00
FOR RELOCATION OF WATER MAIN SEE DWG. B-1573.
LEGEND
EXISTING WATER MAINS
ABANDONED
PLUGGING OF CONNECTIONS, C.I. PLUGS, CAPS, AND FLUSHING PIPES.
NOTE: FOR LOCATION OF EXISTING HOUSE CONNECTIONS AND VALVES SEE ROLL MAPS NO. 32-A, 39, 100, 157, 256, 1791, AND 4483.
SECTION No 2
5-31-60
APPROVED 6-30 1960
DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF WATER AND HEAT
COMMISSIONER-DIVISION OF UTILITIES ENGINEERING
ENGINEER OF CONSTRUCTION & SURVEYS
ENGINEER OF DESIGN
REVISIONS
LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO
DIVISION OF WATER AND HEAT
CONTRACT No.
SUBJECT LAKELAND FREEWAY EXTENSION
NOTTINGHAM, WATERLOO, VILLAVIEW, MOZINA, WOODROW, CHAPMAN, AND E. 185 ST.
SHOWING PLUGGING OF WATER MAINS AND HOUSE CONNECTIONS
DRAWN BY A.F.B.
TRACED BY A.F.B.
CHECKED BY E.J.P. DATE 5-31-60
SCALE 1"=50'-0"
No. B-1581

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

206

CUYAHOGA COUNTY
CUY. 2-24.33



- LEGEND -

- EXISTING WATER MAINS
- " " " ABANDONED
- PLUGGING OF CONNECTIONS, C.I. PLUGS, CAPS, AND FLUSHING PIPES.

NOTE: FOR LOCATION OF EXISTING HOUSE CONNECTIONS AND VALVES SEE ROLL MAPS NO. 30-A, 39, 256, AND 259.

5-31-60

SECTION Nº 2

APPROVED 6-30 1960

Bronis J. Klementowicz — DIRECTOR OF PUBLIC UTILITIES
J. E. Stutz — COMMISSIONER OF WATER AND HEAT
Walter Skove — COMMISSIONER-DIVISION OF UTILITIES ENGINEERING
J. R. Connor — ENGINEER OF CONSTRUCTION & SURVEYS
Arnold Pinkel — ENGINEER OF DESIGN

REVISIONS	

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO

DIVISION OF WATER AND HEAT — CONTRACT No.

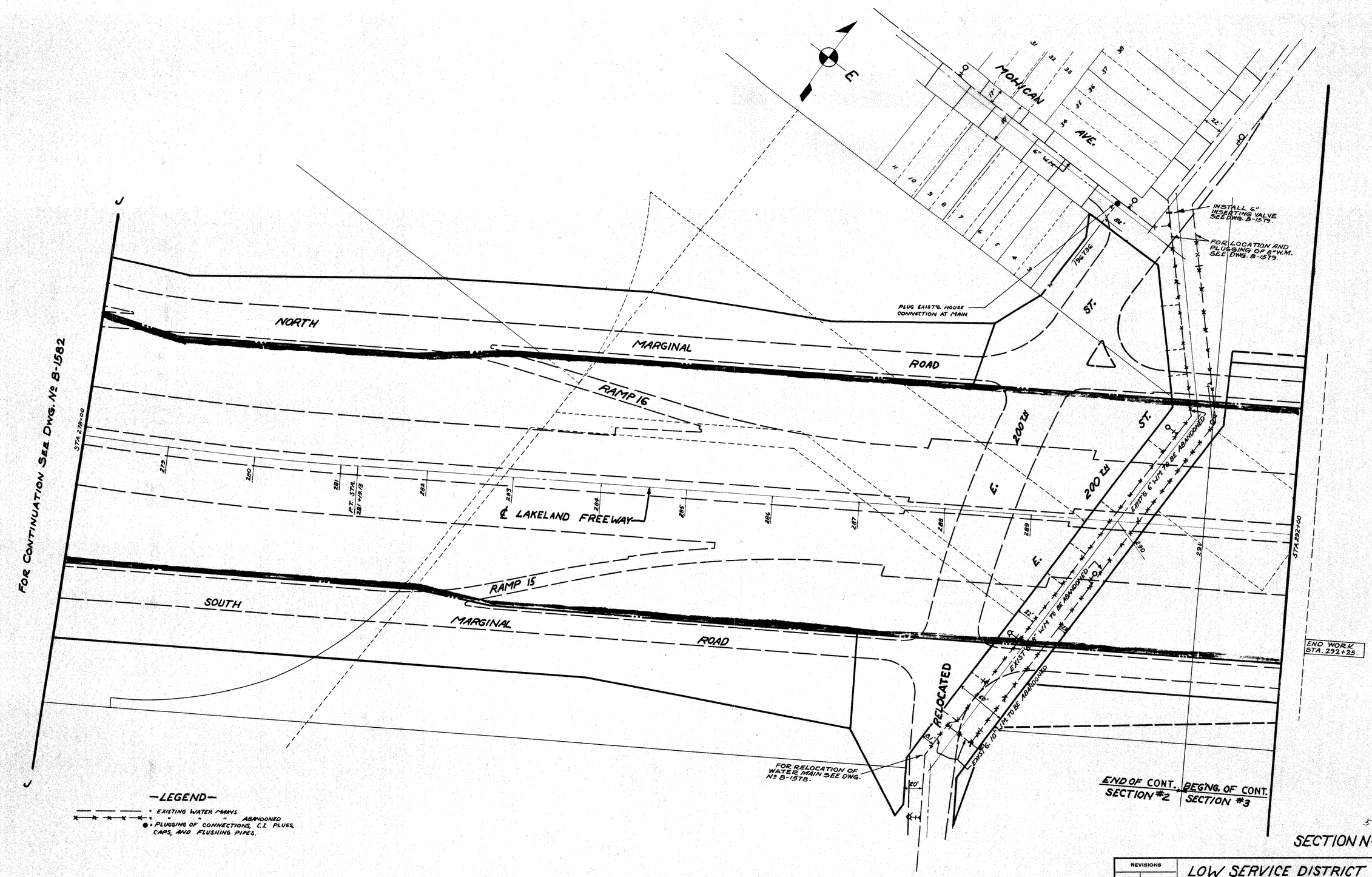
SUBJECT LAKELAND FREEWAY EXTENSION
NEFF, GLENFIELD, UNDERWOOD, WOODROW, AND CHAPMAN AVE.
SHOWING PLUGGING OF WATER MAINS AND HOUSE CONNECTIONS

DRAWN BY AFB
TRACED BY AFB
CHECKED BY F.I.P. DATE 5-31-60
SCALE 1"=50'-0"
No. B-1582

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

207

CUYAHOGA COUNTY
CUY. 2-24.33



—LEGEND—

EXISTING WATER MAINS
" " " ABANDONED
PLUGGING OF CONNECTIONS, C.I. PLUGS, CAPS, AND FLUSHING PIPES.

NOTE: FOR LOCATION OF EXISTING HOUSE CONNECTIONS SEE ROLL MAPS 1569-A AND 1743.

5-31-60

SECTION Nº 2

APPROVED 6-30 1960

Bruno J. Klementowicz — DIRECTOR OF PUBLIC UTILITIES
J. E. Stanton — COMMISSIONER OF WATER AND HEAT
Walter Skove — COMMISSIONER—DIVISION OF UTILITIES ENGINEERING
J. R. Connor — ENGINEER OF CONSTRUCTION & SURVEYS
Arnold Prokel — ENGINEER OF DESIGN

REVISIONS

LOW SERVICE DISTRICT

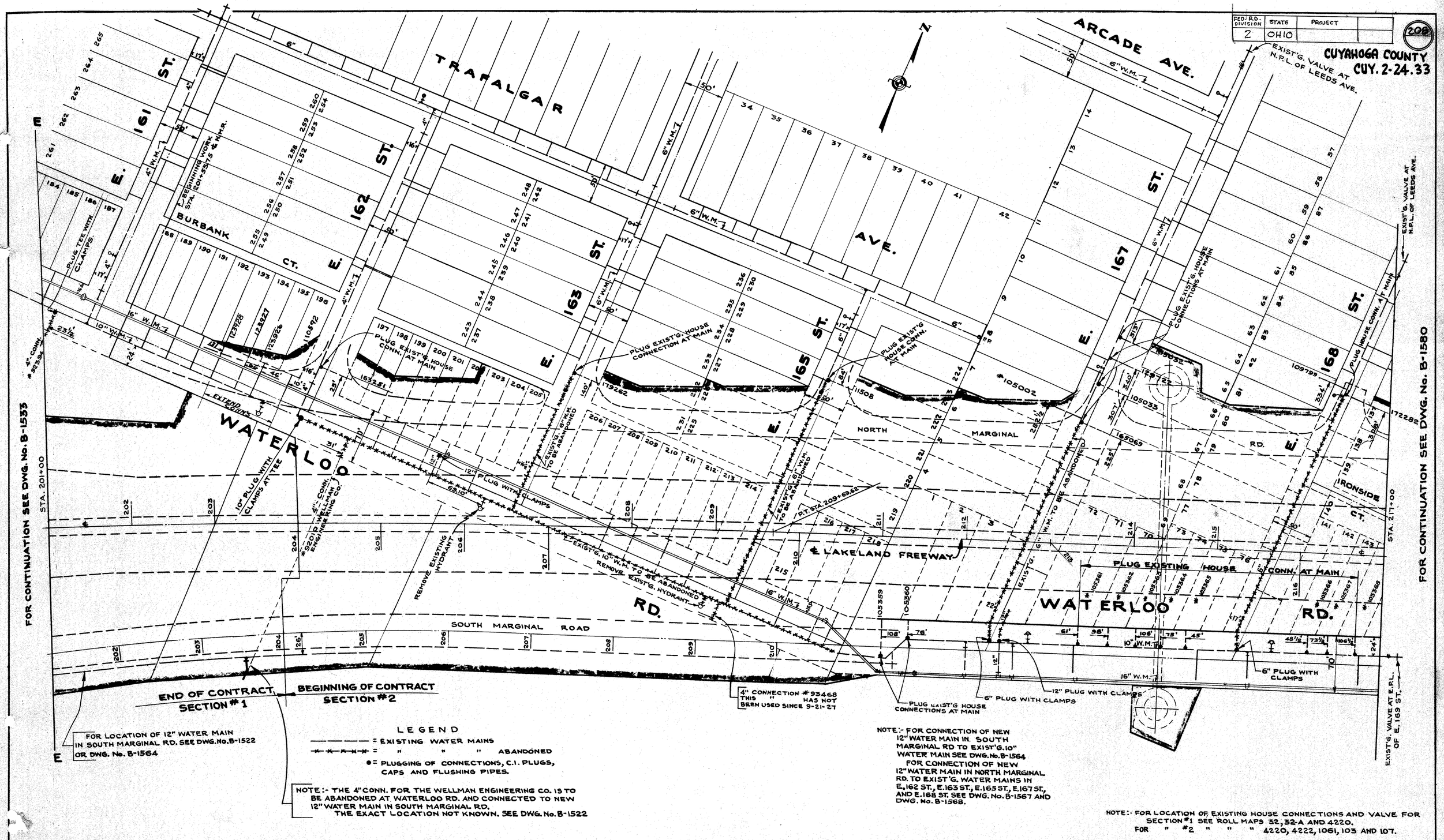
DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO

DIVISION OF WATER AND HEAT — CONTRACT No.

SUBJECT LAKELAND FREEWAY EXTENSION
MOHICAN AVE., AND E. 200 ST.
SHOWING PLUGGING OF WATER MAINS AND HOUSE CONNECTIONS

DRAWN BY A.F.B. — SCALE 1"=50'-0"
TRACED BY A.F.B.
CHECKED BY F.I.R. DATE 5-31-60

No. B-1583

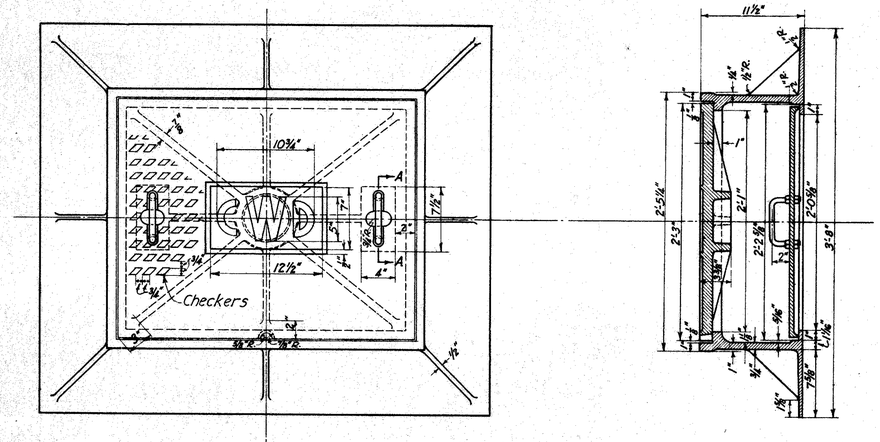


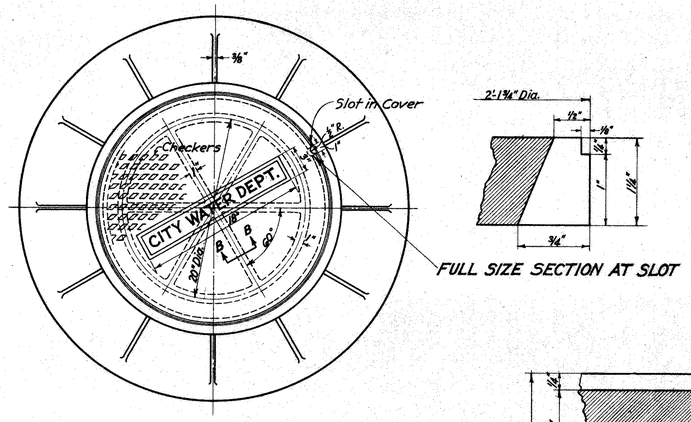
FED. RD. DIVISION 2
STATE OHIO
PROJECT
208
CUYAHOGA COUNTY
CUY. 2-24.33
TRAFALGAR AVE.
ARCADE AVE.
E. 161 ST.
E. 162 ST.
E. 163 ST.
E. 165 ST.
E. 167 ST.
E. 168 ST.
BURBANK CT.
WATERLOO RD.
NORTH MARGINAL RD.
IRONSIDE CT.
SOUTH MARGINAL ROAD
℄ LAKELAND FREEWAY
FOR CONTINUATION SEE DWG. No. B-1533
FOR CONTINUATION SEE DWG. No. B-1580
END OF CONTRACT SECTION #1
BEGINNING OF CONTRACT SECTION #2
PLUG EXIST'G. HOUSE CONN. AT MAIN
PLUG EXIST'G. HOUSE CONNECTION AT MAIN
PLUG EXIST'G. HOUSE CONNECTIONS AT MAIN
PLUG TEE WITH CLAMPS
PLUG WITH CLAMPS
REMOVE EXISTING HYDRANT
EXIST'G. 10" W.M. TO BE ABANDONED
REMOVE EXIST'G. HYDRANT
EXIST'G. 6" W.M. TO BE ABANDONED
EXIST'G. VALVE AT N.P.L. OF LEEDS AVE.
EXIST'G. VALVE AT E.P.L. OF E. 169 ST.
4" CONNECTION #93468 THIS " HAS NOT BEEN USED SINCE 9-21-27
FOR LOCATION OF 12" WATER MAIN IN SOUTH MARGINAL RD. SEE DWG. No. B-1522 OR DWG. No. B-1564
LEGEND
= EXISTING WATER MAINS
= " " " ABANDONED
● = PLUGGING OF CONNECTIONS, C.I. PLUGS, CAPS AND FLUSHING PIPES.
NOTE:- THE 4" CONN. FOR THE WELLMAN ENGINEERING CO. IS TO BE ABANDONED AT WATERLOO RD. AND CONNECTED TO NEW 12" WATER MAIN IN SOUTH MARGINAL RD. THE EXACT LOCATION NOT KNOWN. SEE DWG. No. B-1522
NOTE:- FOR CONNECTION OF NEW 12" WATER MAIN IN SOUTH MARGINAL RD TO EXIST'G. 10" WATER MAIN SEE DWG. No. B-1564
FOR CONNECTION OF NEW 12" WATER MAIN IN NORTH MARGINAL RD. TO EXIST'G. WATER MAINS IN E. 162 ST., E. 163 ST., E. 165 ST., E. 167 ST., AND E. 168 ST. SEE DWG. No. B-1567 AND DWG. No. B-1568.
NOTE:- FOR LOCATION OF EXISTING HOUSE CONNECTIONS AND VALVE FOR SECTION #1 SEE ROLL MAPS 32, 32-A AND 4220.
FOR " #2 " " " 4220, 4222, 1061, 103 AND 107.
SECTION No 1
" No 2
5-26-60
APPROVED NOV. 13 1959
DIRECTOR OF PUBLIC UTILITIES
COMMISSIONER OF WATER AND HEAT
COMMISSIONER-DIVISION OF UTILITIES ENGINEERING
ENGINEER OF CONSTRUCTION & SURVEYS
ENGINEER OF DESIGN
REVISIONS
5-11-60 SEC. #2
LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO
DIVISION OF WATER AND HEAT
CONTRACT No.
SUBJECT LAKELAND FREEWAY EXTENSION
WATERLOO RD., E. 162 ST., E. 163 ST., E. 165 ST., E. 167 ST. & E. 168 ST.
SHOWING PLUGGING OF WATER MAINS AND HOUSE CONNECTIONS
DRAWN BY P.C.
TRACED BY P.C.
CHECKED BY F.I.R. DATE 11-9-59
SCALE 1" = 50'-0"
No. B-1534

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

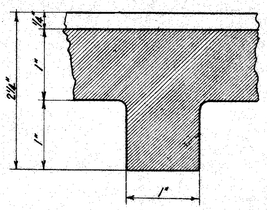
209

CUYAHOGA COUNTY
CUY. 2 - 24.33

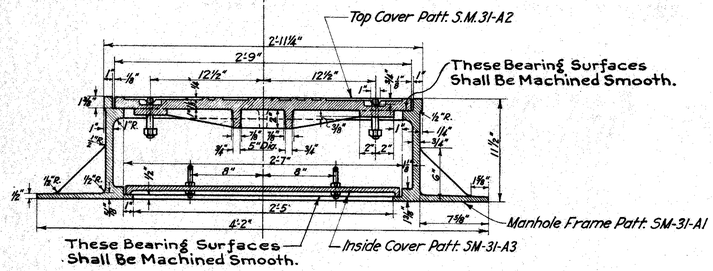


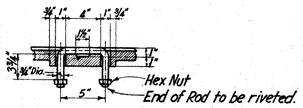


FULL SIZE SECTION AT SLOT

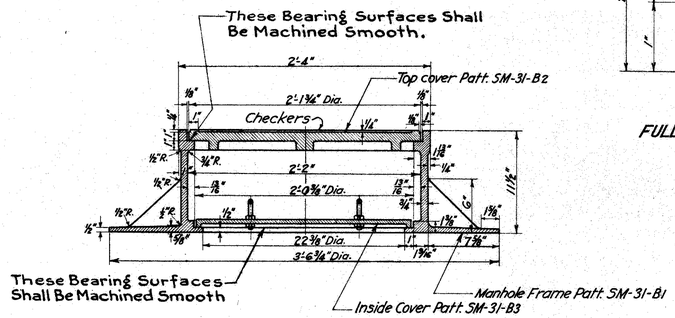


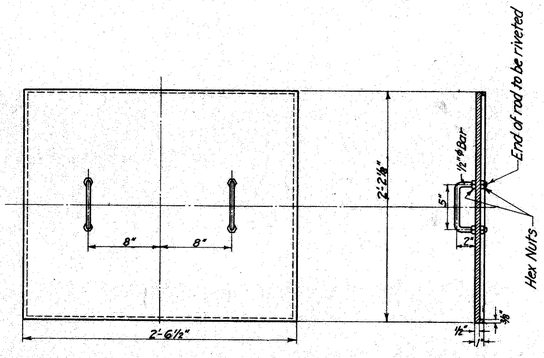
FULL SIZE SECTION AT B-B





SECTION A-A

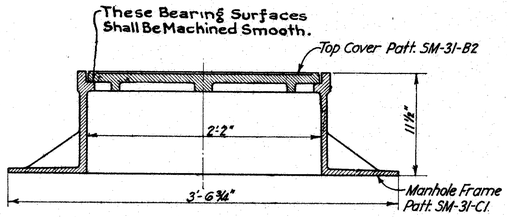




INSIDE COVER (C.I.) PATT. SM-31-A3

MANHOLE FRAME AND COVERS MARK SM-31A

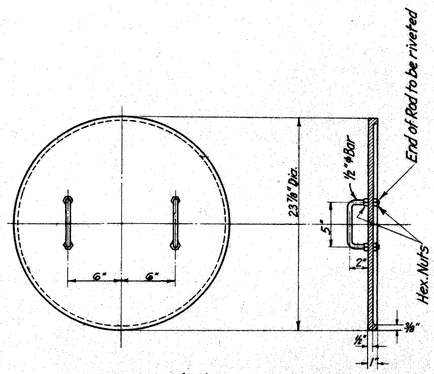
Consisting of { C.I. Manhole Frame Patt. SM-31-A1
C.I. Top Cover Patt. SM-31-A2
C.I. Inside Cover Patt. SM-31-A3



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)



INSIDE COVER (C.I.) PATT. SM-31-B3

MANHOLE FRAME AND COVER 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-31-B3

This is a duplicate tracing of the original approved tracing SM31 dated 6-29-1926.

2-15-54

DATE 3-19-1935 J.P.K.

REVISIONS	
4-23-30	M.H. SM-31A
7-21-31	- - - -
2-15-54	NOTES

APPROVED April 25 1947

DIRECTOR OF PUBLIC UTILITIES

ACTING COMMISSIONER OF WATER & HEAT

ENGINEER OF CONSTRUCTION & SURVEYS

ASSISTANT ENGINEER OF DESIGN

DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO

DIVISION OF WATER AND HEAT — CONT. No

SUBJECT STANDARD DETAILS
MANHOLE FRAMES AND COVERS

DRAWN BY R.H.S. & F.D.H. — CHECKED BY R.H.M. 4/3/26

DATE 3-24-26 — SCALE 1½" = 1'-0" — DWG. No SM-31

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
CUY. 2 - 24.33

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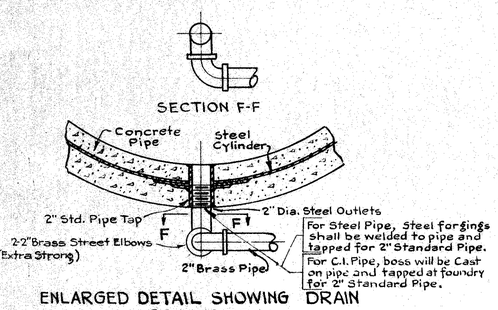
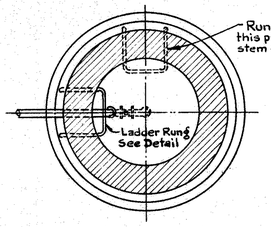
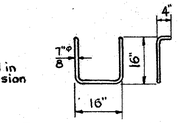


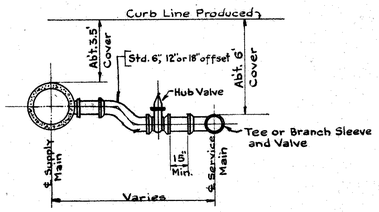
ENLARGED DETAIL SHOWING DRAIN CONNECTION
Scale :- 1½"=1'-0"
(FURNISH WITH 2" MALLEABLE IRON PLUG)



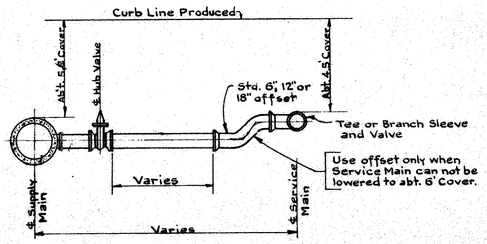
SECTION A-A



DETAIL OF LADDER RUNG
(W.I. OR DURALUMIN)
Nº Req'd. depends on depth of Vault
Scale: 1"=1'-0"



TYPICAL OFFSET CONNECTION WHERE SUPPLY MAIN IS HIGHER THAN SERVICE MAIN



TYPICAL OFFSET CONNECTION WHERE SUPPLY MAIN IS LOWER THAN SERVICE MAIN

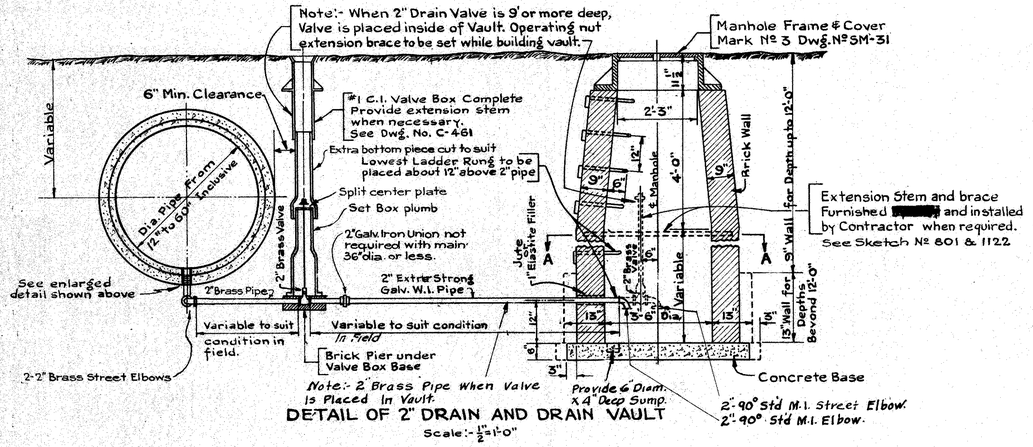
TYPICAL OFFSET CONNECTIONS

Scale: 1"=1'-0"

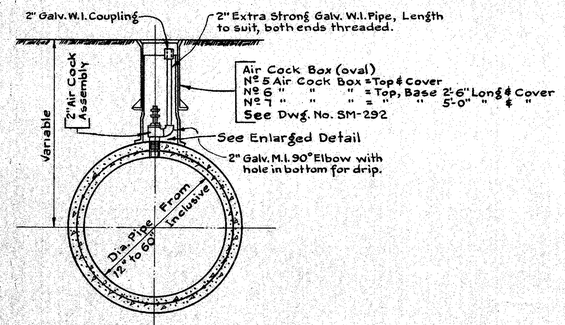
Note:- The City will tap and cut existing water mains. City will furnish and install all such portions of cross connections where indicated or called for on the various contract drawings or specifications.
Pipe for cross connections to be same class as that of service mains.
Contractor to do all excavating and backfill for this work.

-NOTE-

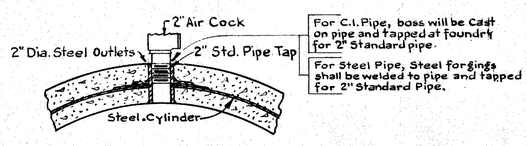
Concrete: 1-2-4 Mix, 1½" coarse aggregates.
Brick: Shale Brick.
Mortar: 1-3 Cement Mortar.
Plaster outside brick masonry with not less than ½" cement mortar 1-3 mixture.
All manhole frames to be set in mortar.



DETAIL OF 2" DRAIN AND DRAIN VAULT
Scale:- 1½"=1'-0"



DETAIL OF 2" AIR COCK INSTALLATION FOR CONCRETE MAINS
Scale :- 1½"=1'-0"



ENLARGED DETAIL SHOWING CONNECTION FOR AIRCOCK OR PITOMETER
(FURNISH WITH 2" MALLEABLE IRON PLUG)

in the proposal NOTE

See specifications for definite information for work to be done and material to be furnished by the City of Cleveland.
Details of 2" outlets for C.I. pipe and steel pipe shall be fabricated so that the drain and air cock connections can be made as shown for concrete pipe.
Details as drawn are for Concrete Pipe.

12-12-55

APPROVED May 1 1943
Chas. P. Bishop — DIRECTOR OF PUBLIC UTILITIES
L. H. Hamlyn — ACTING COMMISSIONER OF WATER AND HEAT
J. C. Levy — ENGINEER OF CONSTRUCTION & SURVEYS
K. H. Wandelzoning — ASSISTANT ENGINEER OF DESIGN

REVISIONS	
3-16-43	Pipe Laying Contract
6-26-44	BRASS PIPE
9-27-44	Notes
1-19-45	Drain Conn.
10-9-47	AIR COCK ASSEMBLY
5-29-51	ADDED 16" PIPE ADDED 12" PIPE
11-22-54	
12-12-55	DURALUMIN

DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO
DIVISION OF WATER AND HEAT — CONTRACT No.
SUBJECT **STANDARD DETAILS**
Drain Vault, Air Cock and Connections For Various Pipe.
DRAWN BY P.C. — TRACED BY P.C. — CHECKED BY F.T.R. — DATE 10-19-42 — SCALE As Shown
No. SM-230

FEDERAL AID DIVISION	STATE	PROJECT	
2	OHIO		

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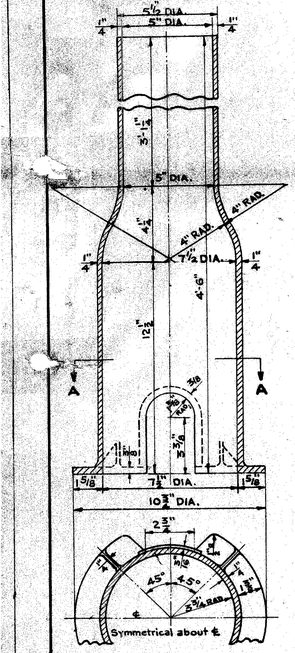
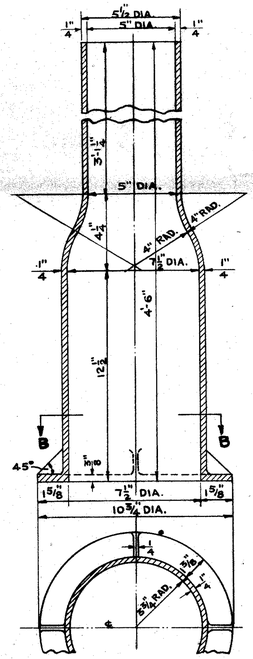
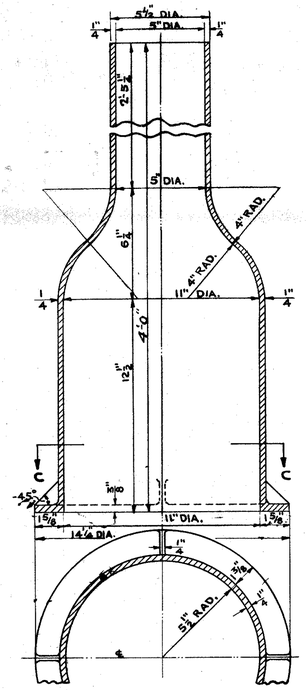
CUYAHOGA COUNTY
CUY. 2 - 24.33



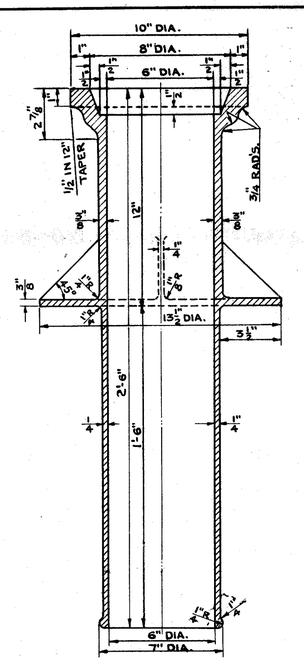
SECTION A-A
BASE No. 1 FOR 1½" AND 2" VALVES
EST. WT. 69#
Scale:- 3"=1'-0"



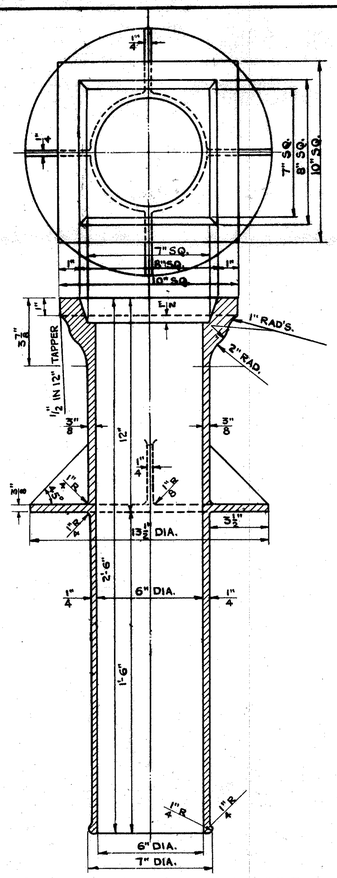
SECTION B-B
BASE No. 2 AND 3 FOR 3", 4", 6" & 8" VALVES
EST. WT. 71#
Scale:- 3"=1'-0"



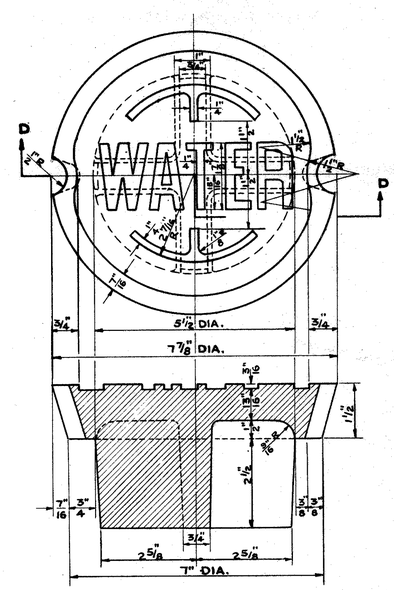
SECTION C-C
BASE No. 4 FOR 10", 12" AND 16" VALVES
EST. WT. 79#
Scale:- 3"=1'-0"



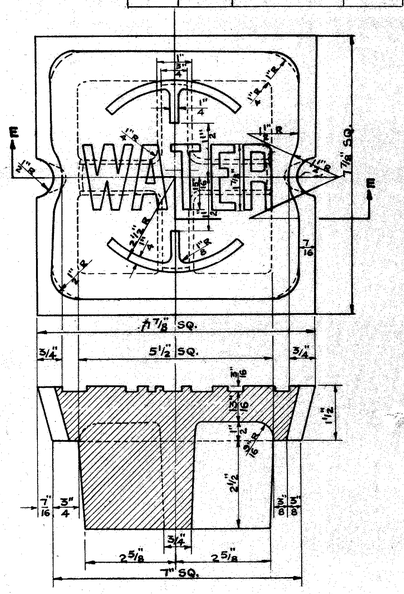
SECTION OF TOP WITH ROUND HEAD No. 1 AND 2
EST. WT. 73#
Scale:- 3"=1'-0"



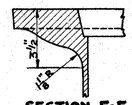
SECTION OF TOP WITH SQUARE HEAD No. 3 AND 4
EST. WT. 85#
Scale:- 3"=1'-0"



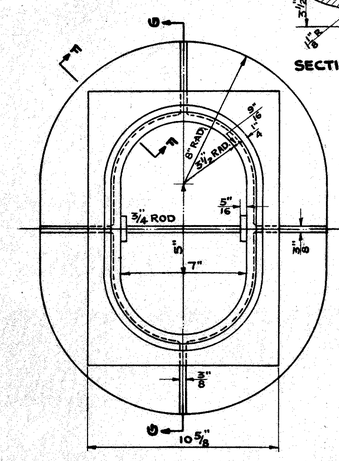
SECTION D-D
DETAIL OF ROUND COVER FOR No. 1 AND 2 TOP
EST. WT. 20#
Scale:- 6"=1'-0"



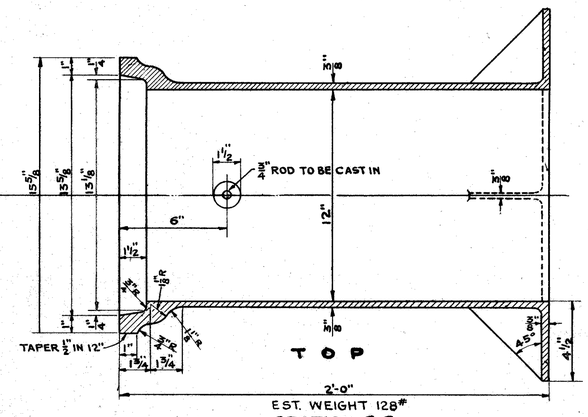
SECTION E-E
DETAIL OF SQUARE COVER FOR No. 3 AND 4 TOP
EST. WT. 25#
Scale:- 6"=1'-0"



SECTION F-F

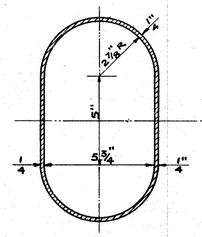


PLAN

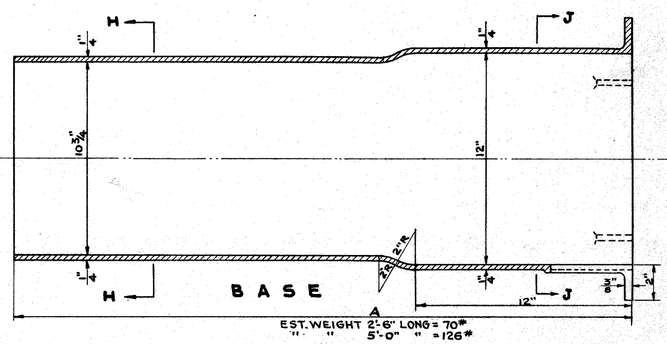


EST. WEIGHT 128#
SECTION G-G

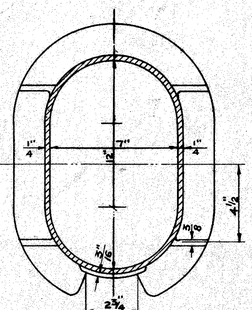
AIR COCK BOX No. 5 IS TOP AND COVER
" " " No. 6 " " BASE 2'-6" LONG AND COVER
FLUSHING " No. 7 " " " 5'-0" " "
Scale:- 3" = 1'-0"



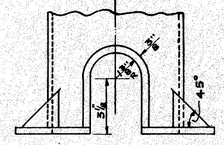
SECTION H-H



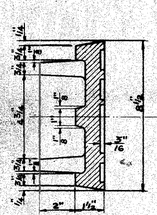
EST. WEIGHT 2'-6" LONG = 70#
" " 5'-0" " = 126#



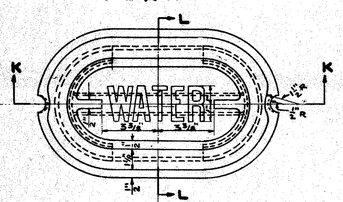
SECTION J-J



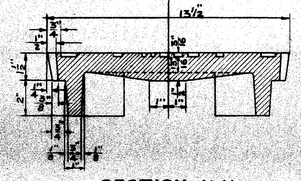
This opening to be in 5'-0" base only



SECTION L-L



COVER



SECTION K-K
EST. WEIGHT = 37#

REVISIONS	

APPROVED April 25 1947

Earl McGowan — DIRECTOR OF PUBLIC UTILITIES
H. H. Hasselman — ACTING COMMISSIONER OF WATER AND HEAT
A. G. Levy — ENGINEER OF CONSTRUCTION & SURVEYS
J. R. Connor — ASSISTANT ENGINEER OF DESIGN

DEPARTMENT OF PUBLIC UTILITIES
CLEVELAND, OHIO

DIVISION OF WATER AND HEAT — CONTRACT NO.

SUBJECT: **STANDARD DETAILS**
VALVE AND AIR COCK BOXES

DRAWN BY P.C.
TRACED BY P.C.
CHECKED BY F.T.P.
SCALE AS NOTED
DATE 11-21-46

No. SM-292