PLOT SUBMITTED: 14-DEC-1989 07:40
ZF2:F00,331]480TS.DGN;1
PLOT SUBMITTED BY: 'GRMOVSE'
MICROFILMED SEP 1 1994

Z-1

CUYAHOGA COUNTY CUY-480-15.84	OHIO	1/118
	FHWA REGION 5	
IR-480-4(71)169	FEDERAL PROJECT	

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
CUY-480-15.84
VILLAGE OF BROOKLYN HEIGHTS
CITY OF INDEPENDENCE
(CITY OF CLEVELAND)
CUYAHOGA COUNTY

IR-480-4(71)169

DESIGN DESIGNATION

Current A.D.T. (1990)	=	89000
Design Year A.D.T. (2010)	=	116740
D.H.V.	=	11670
D	=	55%
T	=	5%
Design Speed	=	60 MPH
Legal Speed	=	55 MPH
Functional Classification	=	URBAN INTERSTATE

Design Exception: NONE

CONVENTIONAL SIGNS

County Line
Township Line
Section Line
Corporation Line
Fence Line (existing) ×—×—(proposed)×—× 352 353
Center Line
Trees, Stumps, (to be removed)
Utility Poles: Telephone, Power, Light
Limited Access (only) L/A
Right of Way (only) R/W
Limited Access & Right of Way L/A & R/W
Existing Right of Way R/W
Property Line (in existing fence)
Railroad or
Guardrail (existing) (proposed)

INDEX OF SHEETS

LINE DATA

PROJECT LIMITS

STA. 860+00 TO STA. 995+50.25 = 13,550.25 L.F.
= 2.566 MILES

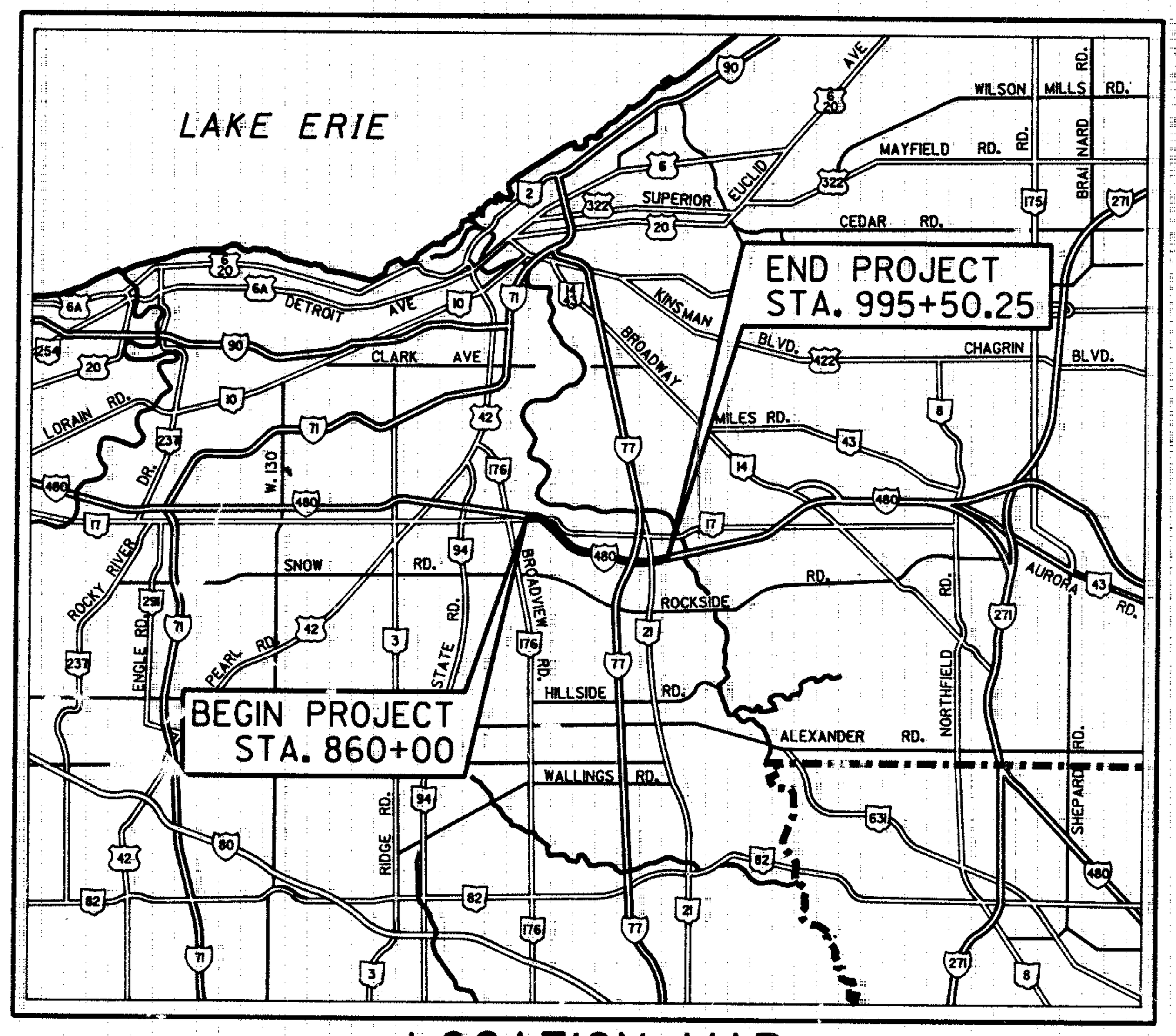
ADDITIONAL WORK

STA. 846+05	TO	STA. 860+00	=	1395.00	L.F.
STA. 995+50.25	TO	1009+45.25	=	1395.00	L.F.
(I-77) STA. 461+00.00	TO	506+50.00	=	4550.00	L.F.
				20890.25	L.F.

TOTAL = 3.956 MILES

Plan Prepared By:
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 12
Location & Design

Project: CUY-480-15.84 P.I.D. 6386
Date of Letting 19 Contract No.



LOCATION MAP
SCALE IN MILES
0 4 8 12

Portion to be Improved
State & Federal Routes
Other Roads

SCALES

Plan 0 50' 100'
Profiles: Horizontal 0 5' 10', Vertical 0 5' 10'
Cross Section: Horizontal 0 5' 10', Vertical 0 5' 10'

LIMITED ACCESS

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

1989 SPECIFICATIONS

The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

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

"UNDER AUTHORITY OF SECTION 4511.21, DIVISION (I) OF THE REVISED CODE OF OHIO, THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED."

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
Call...800-362-2764 (Toll free)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

Approved [signature]
Date 12-15-89 District Deputy Director of Transportation

Approved [signature]
Date 2-1-90 Engineer, Bureau of Bridges and Structural Design

Approved [signature]
Date 3/7/90 Chief Engineer, Planning and Design

Approved [signature]
Date 3/7/90 Director, Department of Transportation

SUPPLEMENTAL SPECIFICATIONS			
802	5-4-88	905	5-2-89
803	10-2-89	921	12-4-72
814	1-21-88	931	6-18-85
847	10-17-83	933	2-10-87
852	6-10-87	947	10-17-83
853	6-26-78	952	12-14-88
		956	6-26-78

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS													
BP-1	6-1-65	GR-3B	1-21-85	MT-95.30	10-10-88	HL-20.11	5-1-87	TC-12.30	1-20-84	TC-42.20	3-26-79
BP-2	1-11-85	GR-4	2-5-82	MT-97.10	4-29-88	HL-20.21	5-1-87	TC-21.10	1-20-84	TC-51.10	1-20-84
BP-3	12-6-76	GR-4A	1-30-84	MT-98.15	8-25-89	HL-20.22	5-1-87	TC-21.20	1-20-84	TC-51.11	1-20-84
BP-4	10-1-87	GR-5	2-5-82	MT-99.10	11-14-86	HL-20.23	5-1-87	TC-22.10	3-1-79	TC-52.10	4-3-79
BP-5	10-1-87	GR-6	2-5-82	MT-99.20	4-29-88	HL-20.31	5-1-87	TC-22.20	3-1-79	TC-52.20	4-3-79
BP-7	10-1-87			MT-102.20	8-25-89	HL-30.11	5-1-87	TC-31.21	3-6-79		
BP-11	1-30-84					HL-30.21	5-1-87	TC-32.10	3-8-79		
BP-13	1-23-90	MC-4	7-26-76			HL-30.22	5-1-87	TC-35.10	8-29-84	TC-71.10	4-9-79
		MC-6	1-30-84			HL-40.10	5-1-87	TC-41.10	8-29-84	TC-72.20	2-26-82
		MC-7	10-15-76	HL-10.11	5-1-87	HL-60.11	5-1-87	TC-41.20	3-26-79	TC-82.10	8-29-84
GR-1	1-11-85	MC-9	1-30-84	HL-10.12	5-1-87	HL-60.21	5-1-87	TC-41.40	6-18-79		
GR-2B	2-5-82	MC-9A	1-11-85	HL-10.13	5-1-87	HL-60.31	5-1-87	TC-41.50	3-26-79		
GR-3	1-21-85			HL-10.31	5-1-87			TC-42.10	8-19-77		

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR DATE

SCHEMATIC PLAN

CUYAHOGA COUNTY CUY-480-15.84	OHIO FHWA REGION 5 FEDERAL PROJECT	2 118

BEGIN WORK
STA. 846+05

BEGIN PROJECT
STA. 860+00
S.L.M. = 15.84
IR-480-4(71)169

400 200 0 400 800 1200 1600
SCALE IN FEET

BRIDGE NO.
CUY-480-1565
VERT. CL.=16'-4"

BRIDGE NO.
CUY-480-1585
VERT. CL.=19'-5"

CITY OF CLEVELAND
VILLAGE OF BROOKLYN HTS.

BRIDGE NO.
CUY-480-1594
VERT. CL.=17'-6"

N

850
860
840
870
880
890
900
910
920
930

PENN CENTRAL R.R.

RAMP GE-2

GRANGER ROAD (S.R. 17)

RAMP E-G

RAMP G-E

STA. ℄ I-480 835+00

GRANGER ROAD (S.R. 17)

BRIDGE NO.
CUY-480-1590
VERT. CL.=17'-8"

℄ CURVE DATA
D_c = 2°30'00"
S.E. = 0.059 FT/FT

TUXEDO AVE

END WORK
STA. 506+50

W.B.O.L.

E.B.O.L.

BRIDGE NO.
CUY-480-1682
VERT. CL.=20'+

I-480

STA. ℄ I-480 935+00

℄ CURVE DATA
D_c = 1°28'00"
S.E. = 0.036 FT/FT

LANCASTER DR.

STA. ℄ I-480 935+00

940

VILLAGE OF BROOKLYN HTS.
CITY OF INDEPENDENCE

BRIDGE NO.
CUY-77-0950

STA. ℄ I-77 506+50

BRIDGE NO.
CUY-480-1793L

950
960

BRIDGE NO.
CUY-480-1787WN
VERT. CL.=16'-10"

LANE N-W

LANE W-N

LANE W-S

LANE S-W

LANE E-N

LANE E-S

LANE N-E

LANE S-E

END PROJECT
STA. 995+50.25
S.L.M. = 18.41
IR-480-4(71)169

℄ CURVE DATA
D_c = 1°28'00"
S.E. = 0.036 FT/FT

END WORK
STA. 1009+45.25

980
990
1000
1010
1020
1030
1040

BRIDGE NO.
CUY-480-1830
VERT. CL.=20'+

BRIDGE NO.
CUY-480-1838L

BRIDGE NO.
CUY-480-1792ES
VERT. CL.=16'-8"

BRIDGE NO.
CUY-480-1793R

BRIDGE NO.
CUY-480-1838R

BRIDGE NO.
CUY-77-0890W

BEGIN WORK
STA. 461+00

BRIDGE NO.
CUY-77-0909

BRIDGE NO.
CUY-77-0881E

STA. ℄ I-77 462+00

BRECKSVILLE ROAD
S.R. 21

CITY OF INDEPENDENCE
VILLAGE OF VALLEY VIEW

CITY OF GARFIELD HTS.
VILLAGE OF VALLEY VIEW

STA. 1048+50
℄ I-480

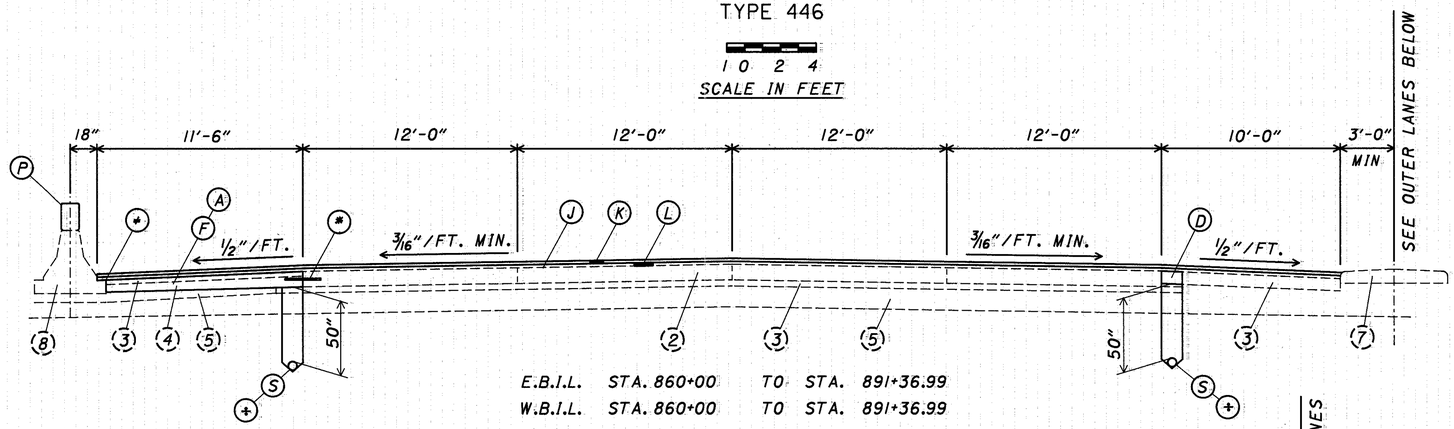
PLOT SUBMITTED: 14-DEC-1989 07:44
ZF2:[100,331]SCHEM.DGN
PLOT SUBMITTED BY: GRMOVSEK

PLOT SUBMITTED: 22-NOV-1989 13:55
ZF2:[100,331]480SECT.DGN;1
PLOT SUBMITTED BY: GRMOVSEK

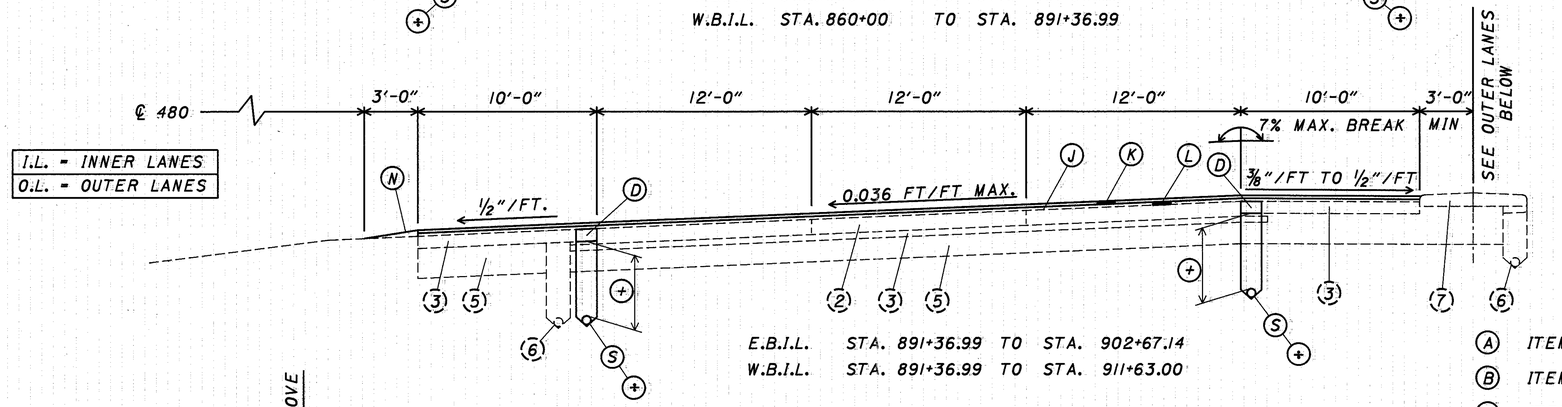
TYPICAL SECTIONS

TYPE 446

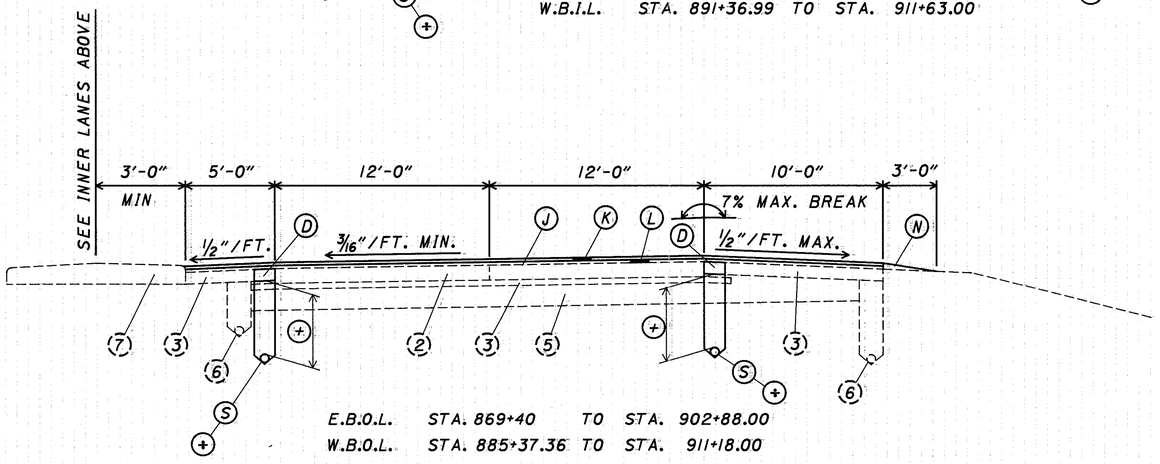
1 0 2 4
SCALE IN FEET



E.B.I.L. STA. 860+00 TO STA. 891+36.99
W.B.I.L. STA. 860+00 TO STA. 891+36.99



E.B.I.L. STA. 891+36.99 TO STA. 902+67.14
W.B.I.L. STA. 891+36.99 TO STA. 911+63.00



E.B.O.L. STA. 869+40 TO STA. 902+88.00
W.B.O.L. STA. 885+37.36 TO STA. 911+18.00

(*) •5 BARS, 24" LONG, 30" C/C PLACE AS PER BP-13 AND 803.05

(+) 3/4" P.E.J.F. 705.03

(+) OMIT ON HIGH SIDE OF SUPERELEVATION

(+) 30" IN FILL, 50" IN CUT 12" IN ROCK

EXISTING

(1) 9" REINFORCED CONCRETE PAVEMENT
(2) 10" REINFORCED CONCRETE PAVEMENT
(3) BITUMINOUS AGGREGATE BASE
(4) AGGREGATE BASE
(5) SUBBASE
(6) UNDERDRAIN
(7) CONCRETE MEDIAN
(8) CONCRETE BARRIER MEDIAN
(9) CURB

PROPOSED

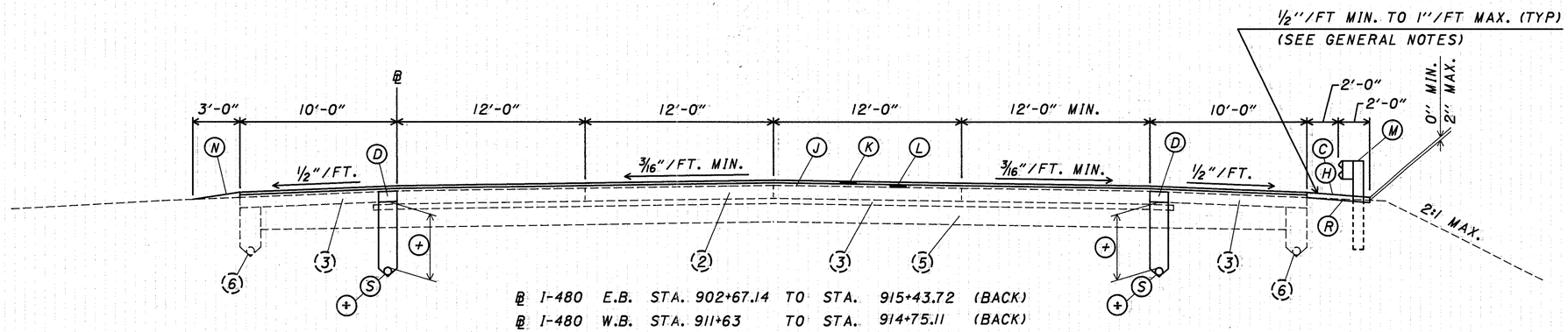
(A)	ITEM - 203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
(B)	ITEM - 203	EMBANKMENT, AS PER PLAN
(C)	ITEM - 203	LINEAR GRADING
(D)	ITEM - 301	BITUMINOUS AGGREGATE BASE, AC-20
(E)	ITEM - 305	9" CONCRETE BASE
(F)	ITEM - 305	10" CONCRETE BASE
(G)	ITEM - 310	SUBBASE, TYPE II, AS PER PLAN
(H)	ITEM - 404	3" ASPHALT CONCRETE, AC-20
(J)	ITEM - 407	TACK COAT
(K)	ITEM - 446	1-1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE I, AC-20, AS PER PLAN
(L)	ITEM - 446	1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, AC-20, TYPE 2, (1-3/4" AVERAGE)
(M)	ITEM - 606	GUARDRAIL, TYPE 5
(N)	ITEM - 617	COMPACTED AGGREGATE, TYPE A
(P)	ITEM - 622	CONCRETE GLARE SCREEEN (SEE SHEET 45)
(Q)	ITEM - 659	SEEDING AND MULCHING
(R)	ITEM - SPEC.	HERBICIDES FOR WEED CONTROL
(S)	ITEM - 605	6" (SHALLOW)(DEEP) PIPE UNDERDRAIN (SEE SHEET 51)
(T)	ITEM - 203	SUBGRADE COMPACTION

PLOT SUBMITTED: 22-NOV-1989 14:55
ZF2:[100,331]480SECT.DGN;1
PLOT SUBMITTED BY: GRMOVSEK

TYPICAL SECTIONS

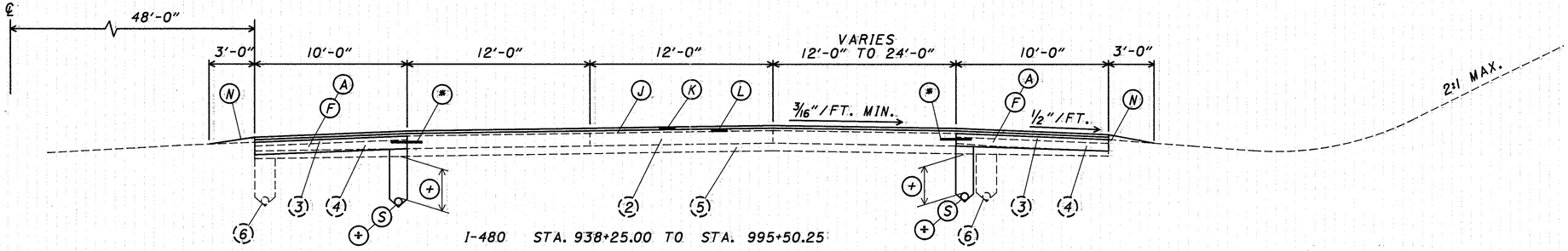
TYPE 446

1 0 2 4
SCALE IN FEET

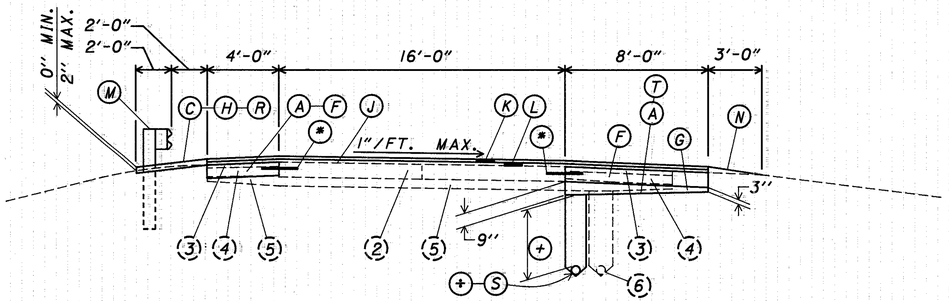


℄ I-480 E.B. STA. 902+67.14 TO STA. 915+43.72 (BACK)
℄ I-480 W.B. STA. 911+63 TO STA. 914+75.11 (BACK)
℄ I-480 E.B. & W.B. STA. 915+00.00 (AHEAD) TO STA. 938+25.00

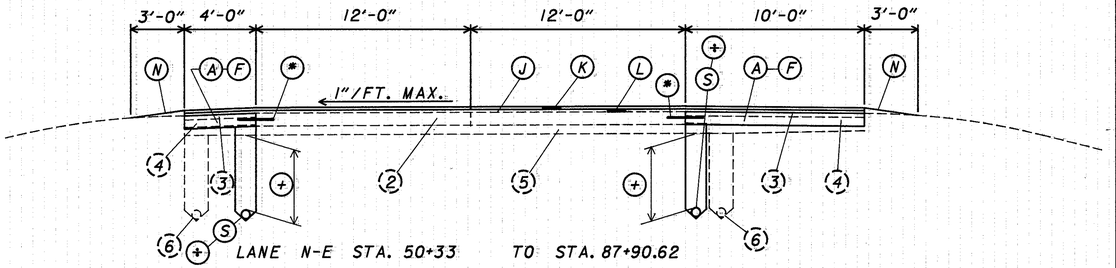
SEE SHEET NO. 3
FOR LEGEND



I-480 STA. 938+25.00 TO STA. 995+50.25



LANE	N-W	STA. 55+57.36	TO	STA. 66+66
	W-N	STA. 53+44.76	TO	STA. 83+14
	S-E	STA. 68+00	TO	STA. 86+30
	E-S	STA. 56+51	TO	STA. 82+75.91



LANE	N-E	STA. 50+33	TO	STA. 87+90.62
	W-S	STA. 46+10.27	TO	STA. 68+30
	S-W	STA. 73+93.92	TO	STA. 102+92.32
	E-N	STA. 64+39.19	TO	STA. 87+11

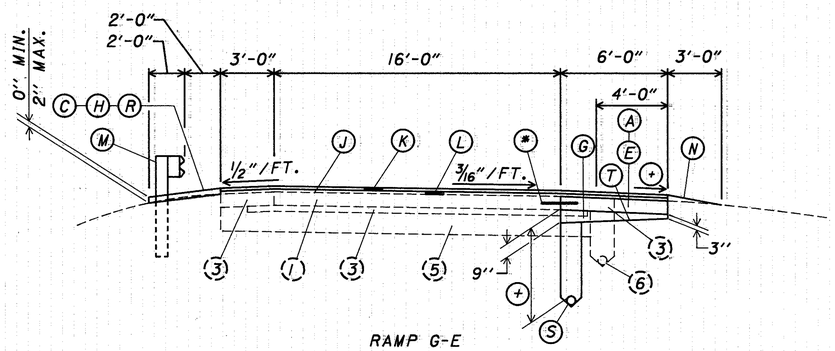
PLOT SUBMITTED: 22-NOV-1989 13:58
ZF2:[100,331]480SECT.DGN;1
PLOT SUBMITTED BY: GRMOVSEK

TYPICAL SECTIONS

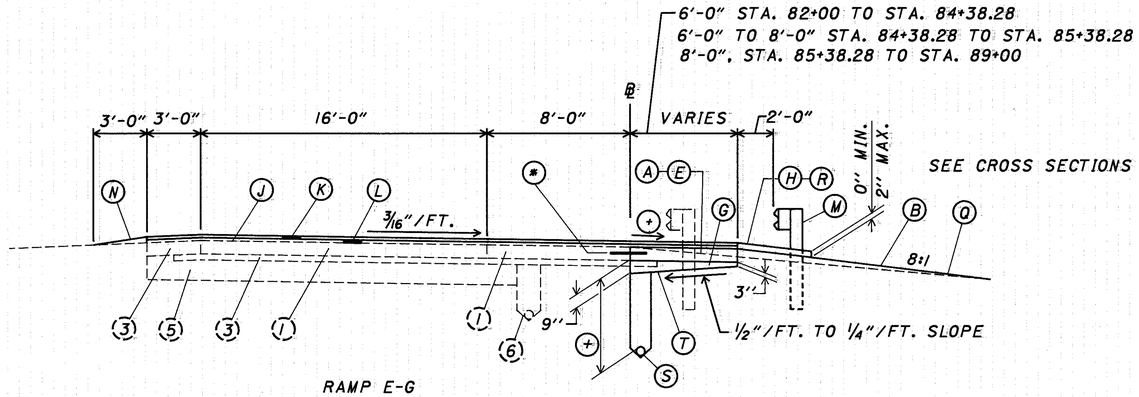
CUYAHOGA COUNTY CUY-480-15.84	OHIO FHWA REGION 5 FEDERAL PROJECT	5 118

TYPE 446

1 0 2 4
SCALE IN FEET

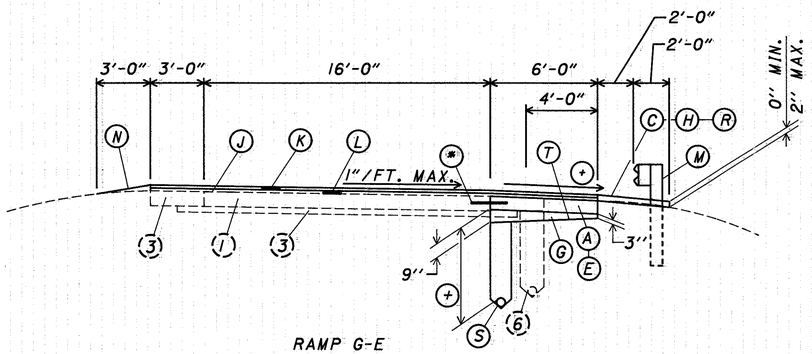


RAMP G-E
STA. 65+23.68 TO STA. 69+40

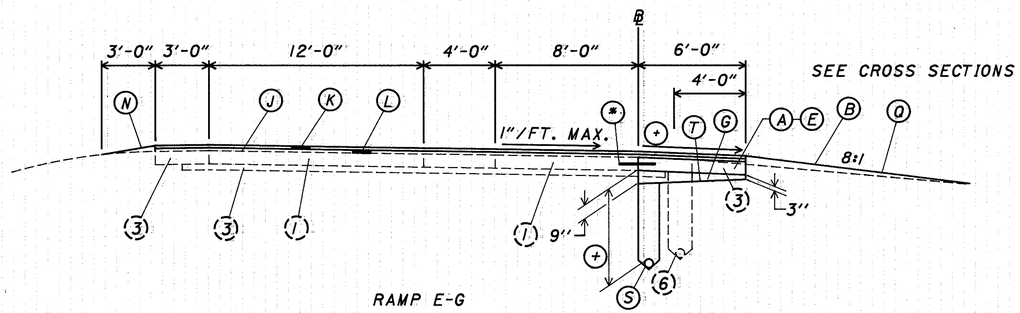


RAMP E-G
STA. 82+00 TO STA. 89+00

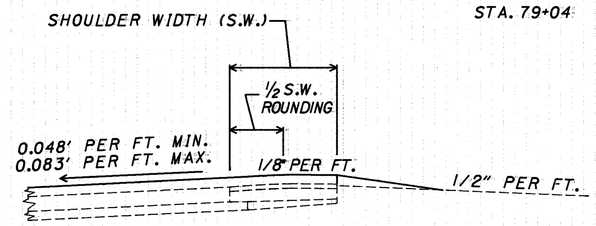
(+) SAME SLOPE AS PAVEMENT
1/2"/FT. MINIMUM



RAMP G-E
STA. 58+01 TO STA. 65+23.68



RAMP E-G
STA. 79+04 TO STA. 82+00



TYPICAL SHOULDER ROUNDING
SUPERELEVATION GREATER THAN 0.048'/FT.

SEE SHEET NO. 3
FOR LEGEND

C480ROAD

GENERAL

FIELD OFFICE

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

RIGHT OF WAY

ALL WORK SHALL BE PERFORMED WITHIN THE EXISTING RIGHT OF WAY OR EASEMENTS.

CONTINGENCY QUANTITIES:

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

UNDERGROUND UTILITIES:

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 OF THE OHIO REVISED CODE.

UTILITY OWNERSHIP:

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

1. THE CLEVELAND ELECTRIC ILLUMINATING CO.
   55 PUBLIC SQUARE
   CLEVELAND, OHIO 44101
   (216) 623-1350
2. OHIO BELL TELEPHONE CO.
   1020 BOLIVAR RD.
   CLEVELAND, OHIO 44115
   (216) 822-6291
3. THE EAST OHIO GAS CO.
   1201 EAST 55TH ST.
   CLEVELAND, OHIO 44103
   (216) 432-6803
4. ARCO PIPE LINE COMPANY
   359 SINCLAIR ST.
   TOLEDO, OHIO 43605
   (419) 698 - 8218
5. CUYAHOGA COUNTY SANITARY ENGR.
   1219 ONTARIO STREET
   CLEVELAND, OHIO 44113
   (216) 524-4814
6. CITY OF CLEVELAND
   DIVISION OF WATER
   1201 LAKESIDE AVENUE
   CLEVELAND, OHIO 44114
   (216) 664-3351

EXISTING TYPICAL SECTIONS

EXISTING TYPICAL SECTIONS HAVE BEEN TAKEN FROM THE RECORDS AND ARE BELIEVED TO REPRESENT THE EXISTING PAVEMENT, BUT THE STATE OF OHIO DOES NOT GUARANTEE THE ACCURACY OF THE SAME.

FOR FURTHER INFORMATION IN REGARD TO THE EXISTING TYPICAL SECTIONS THE CONTRACTOR SHALL REFER TO THE PREVIOUS CONSTRUCTION PLANS. THESE PLANS MAY BE REVIEWED AT THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT TWELVE OFFICES, 5500 E. 98TH STREET, GARFIELD HEIGHTS, OHIO 44125.

ALTERNATE METHODS

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

EQUIPMENT AND MATERIAL STORAGE

IN ORDER TO PROVIDE FOR THE SAFETY OF THE TRAVELING PUBLIC THE CONTRACTORS ATTENTION IS DIRECTED TO 614.03. IN ADDITION THE FOLLOWING PROVISIONS SHALL APPLY:

2) ANY REMOVED ITEMS SHALL NOT BE STORED ON THE RIGHT OF WAY FOR MORE THAN THIRTY DAYS.

3) THE STORAGE OF EQUIPMENT, MATERIALS AND VEHICLES WITHIN THE HIGHWAY RIGHT OF WAY WILL BE PERMITTED. THE NUMBER OF AREAS AND EXACT LOCATIONS SHALL BE APPROVED BY THE ENGINEER.

4) ALL DISTURBED AREAS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE STATE.

COST PARTICIPATION

THE QUANTITIES WHICH APPEAR IN THE GENERAL SUMMARIES HAVE BEEN PLACED IN THE FOLLOWING PARTICIPATION AREAS:

COST PARTICIPATION I - FEDERAL AND STATE
COST PARTICIPATION II - 100% STATE

ROADWAY

ITEM 202 RAISED PAVEMENT MARKERS REMOVED FOR STORAGE

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED THROUGHOUT THIS PROJECT:

ITEM 202 - RAISED PAVEMENT MARKERS REMOVED FOR STORAGE ..... 1800 EACH

ITEM 202 - GUARDRAIL REMOVED

THIS ITEM SHALL INCLUDE BOTH STANDARD AND BARRIER TYPE RAILS INCLUDING ANCHOR ASSEMBLIES AND TERMINAL ASSEMBLIES.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

ALL CORNERS SHALL BE ROUNDED (4' MINIMUM) EVEN THOUGH SHOWN OTHERWISE ON THESE PLANS.

DITCH RESTORATION

THIS WORK SHALL CONSIST OF THE REMOVAL AND DISPOSAL OF SILT, VEGETATION, TREES AND OTHER LOOSE OR UNSUITABLE MATERIAL FROM THE EXISTING DITCHES. THE ORIGINAL DITCH CROSS SECTION AND GRADE SHALL BE RE-ESTABLISHED TO THE SATISFACTION OF THE ENGINEER. THE LOCATIONS OF THIS WORK SHALL BE AS DIRECTED BY THE ENGINEER. PAYMENT FOR ITEM 203-EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION, AS PER PLAN SHALL INCLUDE ALL COSTS OF REMOVAL AND DISPOSAL. MEASUREMENT WILL BE BY LOOSE VOLUME IN CARRIER. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE UTILIZED AS OUTLINED ABOVE:

ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION ..... 250 C.Y.

ITEM 203 - EMBANKMENT, AS PER PLAN

THE TOP 3 INCHES OF EMBANKMENT SHALL CONSIST OF LOOSE, FRIABLE, LOAMY SOIL WITHOUT THE ADMIXTURE OF REFUSE OR STONE GREATER THAN 1 INCH. THE SOIL SHALL BE CAPABLE OF SUPPORTING VEGETATION.

C480ROAD

ROADWAY (CON'T)

GUARDRAIL PROTECTION

NO SIGNS SUPPORTS SHALL BE ERECTED BEFORE THE NECESSARY GUARDRAIL PROTECTION IS IN PLACE. SIMILARILY EXISTING GUARDRAIL WHICH PROTECTS AN OBSTRUCTION OR SLOPE WHICH IS TO BE UPGRADED TO ELIMINATE GUARDRAIL, SHALL NOT BE REMOVED UNTIL THAT WORK HAS BEEN COMPLETED. EXISTING GUARDRAIL WHICH IS SCHEDULED TO BE REPLACED WITH TYPE 5 GUARDRAIL, SHALL NOT BE REMOVED UNTIL THE NEW GUARDRAIL IS READY TO BE INSTALLED. UNDER NO CIRCUMSTANCES SHALL ANY HAZARD BE WITHOUT GUARDRAIL PROTECTION FOR MORE THAN 24 HOURS. (SEE PUBLIC SAFETY NOTE SHEET NO. 13)

GUARDRAIL OVER CULVERTS AND PIER FOOTINGS

WHEN SUFFICIENT POST DEPTH IS NOT AVAILABLE DUE TO A CULVERT OR PIER FOOTING, THE GUARDRAIL POSTS DIRECTLY OVER THE CULVERT OR PIER FOOTING SHALL NOT BE DRIVEN BUT SET IN HOLES. IF THE DISTANCE BETWEEN THE GROUND LINE AND THE TOP OF THE CULVERT OR PIER FOOTING IS LESS THAN THREE FEET, THE POST SHALL BE ENCASED IN A MINIMUM OF 4" THICKNESS OF COVER OF CLASS C CONCRETE FOR THE FULL DEPTH BELOW GROUND.

PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 606-GUARDRAIL TYPE 5.

LOCATION OF GUARDRAIL

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

GUARDRAIL REPLACEMENT LIMITS

ALL EXISTING GUARDRAIL EAST OF IR 480 STA 923+00 IS TO BE REPLACED. EXISTING GUARDRAIL WEST OF THAT POINT IS TO BE RAISED WHEREVER POSSIBLE. WHEN EXISTING GUARDRAIL WHICH IS SCHEDULED TO BE RAISED HAS ANY SIGNIFICANT DAMAGE, THAT PORTION SHALL BE TOTALLY REPLACED. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE AS DIRECTED BY THE ENGINEER:

ITEM 202 - GUARDRAIL REMOVED	1000	L.F.
ITEM 606 - GUARDRAIL, TYPE 5	1000	L.F.

FASTENING OF BRIDGE TERMINAL ASSEMBLIES

BRIDGE TERMINAL ASSEMBLIES WHICH ARE TO BE FASTENED TO EXISTING CONCRETE PARAPETS BY STEEL BOX BLOCKOUTS SHALL BE ATTACHED BY MEANS OF THROUGH BOLTS. EXPANSION ANCHOR BOLTS WILL NOT BE PERMITTED.

WHEN MOUNTING IS TO AN EXISTING WALL THE END TERMINAL SHALL BE ATTACHED USING 7/8 INCH DIAMETER ADHESIVE ANCHORS.

SEQUENCE OF OPERATIONS FOR GUARDRAIL INSTALLATION

1. COMPLETE SHOULDER CONSTRUCTION AND RESURFACING.
2. REMOVE EXISTING GUARDRAIL (INSTALL TEMPORARY CONCRETE BARRIER AT HAZARDS-SEE PUBLIC SAFETY NOTE).
3. CONSTRUCT STRIP OF ITEM 404 - ASPHALT CONCRETE, AC-20 , AS PER THE TYPICAL SECTIONS.
4. INSTALL NEW GUARDRAIL.

TYPE 5 GUARDRAIL POST SPACING

WHEN THE OFFSET BETWEEN THE FACE OF THE GUARDRAIL AND BRIDGE PIERS, MAJOR SIGNS, SIGN SUPPORTS, OR OTHER FIXED OBSTACLES IS LESS THAN 5 FEET 6 INCHES THE GUARDRAIL SHALL BE STIFFENED BY PROVIDING 3 FT. 1.5 INCH POST SPACING FROM 12.5 FEET IN ADVANCE OF THE OBSTRUCTION TO ITS END, AS PER STD. DRAWING GR-7. COST INCLUDED IN THE TYPE 5 UNIT PRICE BID. CONCRETE BARRIER IS TYPICALLY PROPOSED WHEN THE GUARDRAIL OFFSET IS LESS THAN 3'-6" (SEE SHEETS 49 AND 50).

ITEM - 606 RAISING EXISTING GUARDRAIL, AS PER PLAN

WHEN EXISTING GUARDRAIL WHICH IS TO BE RAISED REQUIRES THE ADDITIONAL POSTS AS MENTIONED ABOVE THEY SHALL BE ADDED UNDER THIS ITEM OF WORK. PAYMENT SHALL INCLUDE ALL COSTS OF RAISING THE EXISTING GUARDRAIL AND ADDING NEW INTERMEDIATE POSTS. NEW INTERMEDIATE POSTS SHALL BE OF THE SAME MATERIAL AS THE EXISTING POSTS.

ITEM 606 - RAISING EXISTING GUARDRAIL

TYPE A ANCHOR ASSEMBLIES SHALL NOT BE RAISED. TYPICALLY THE FLARED PORTION OF A GUARDRAIL RUN SHALL NOT REQUIRE RAISING EXCEPT THAT PORTION WHICH IS WITHIN 2 FEET OF THE NORMAL GUARDRAIL OFFSET (APPROXIMATELY 40 FEET FROM THE BEGINNING OF THE FLARE).

DUST CONTROL

THE FOLLOWING ESTIMATED QUATITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR DUST CONTROL:

ITEM 616-WATER.....	50	M.GAL.
ITEM 616-CALCIUM CHLORIDE.....	5	TON

PAVEMENT

ALIGNMENT AND PROFILE:

THE WORK PROPOSED BY THIS PROJECT IS FOR THE RESURFACING OF THE EXISTING PAVEMENT. THE PROFILE OF THE PROPOSED SURFACE WILL BE APPROXIMATELY 3 INCHES ABOVE THAT OF THE EXISTING PAVEMENT.

CONTRACTION JOINTS IN PAVEMENT WIDENING OR CONCRETE SHOULDERS

WHERE NEW CONCRETE PAVEMENT IS PLACED ADJACENT TO EXISTING CONCRETE PAVEMENT, CONTRACTION JOINTS SHALL BE PROVIDED IN THE NEW PAVEMENT SO AS TO FORM A CONTINUOUS JOINT WITH THAT IN THE EXISTING PAVEMENT.

IF THE DISTANCE BETWEEN THE EXISTING JOINTS IS GREATER THAN 40 FEET, ADDITIONAL CONTRACTION JOINTS AT A MAXIMUM SPACING OF 40 FEET SHALL BE PLACED IN THE NEW PAVEMENT.

JOINT SEALERS

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

ITEM 203 - LINEAR GRADING
ITEM 404 - ASPHALT CONCRETE, AC-20

ITEM 203 SHALL BE USED FOR EXCAVATION, EMBANKMENT AND SITE RESTORATION INCLUDING SEEDING AND MULCHING. IT SHALL BE USED AT THE AREAS RECEIVING ASPHALT CONCRETE UNDER GUARDRAIL AND CONCRETE BARRIER IN PLACE OF GUARDRAIL.

ITEM 404 SHALL BE USED FOR EROSION CONTROL UNDER EXISTING OR PROPOSED GUARDRAIL. IT SHALL BE SLOPED AT 1/2 INCH PER FOOT MINIMUM AND 1 INCH PER FOOT MAXIMUM AND SHALL BE PLACED THREE INCHES THICK. WHEN WORKING UNDER EXISTING GUARDRAIL THE COMPACTION METHOD FOR ITEM 404 SHALL BE AS APPROVED BY THE ENGINEER. BEFORE COMPLETION OF WORK ON THIS PROJECT BY THE CONTRACTOR, ANY DAMAGE TO THIS ITEM CAUSED BY THE INSTALLATION OF GUARDRAIL OR OTHER ITEMS OF WORK SHALL BE REPAIRED, AT NO ADDITIONAL COST TO THE STATE.

FOR ESTIMATED QUANTITIES, SEE PERTINENT CALCULATION SHEETS OR SUB-SUMMARY SHEETS.

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN

THE PAVEMENT SHALL BE REMOVED TO THE SPECIFIED DEPTH WITHIN THE DESIGNATED LIMITS BY A GRINDING METHOD THAT WILL CUT NEAT VERTICAL EDGES.

IF AFTER THE REMOVAL OPERATION THE ENGINEER DETERMINES THAT A FULL DEPTH REPAIR WILL BE NECESSARY, NO FURTHER WORK WILL BE REQUIRED. PAYMENT FOR THE GRINDING OPERATION WILL BE MADE BY PAYING FOR 50 PERCENT OF THE MEASURED AREA AT THE UNIT PRICE BID FOR ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN.

FOR ADDITIONAL DETAILS, NOTES AND QUANTITIES SEE SHEET NO. 46

ITEM 252 - FULL DEPTH RIGID PAVMENT REMOVAL AND FLEXIBLE REPLACEMENT

THIS WORK SHALL BE PERFORMED WHERE RIGID REPLACEMENT IS NOT REASONABLE AS DETERMINED BY THE ENGINEER. (TYPICALLY THE RAMPS AND RAMP TERMINI AT INTERSECTING ROADWAYS)

THE FOLLOWING ESTIMATED QUANTITIES ARE INCLUDED TO PERFORM THIS WORK AS DIRECTED BY THE ENGINEER:

ITEM 252 - FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT ..... 1000 S.Y.
ITEM 252 - FULL DEPTH PAVEMENT SAWING ..... 4500 L.F.

ITEM 301 - BITUMINOUS AGGREGATE BASE, AC-20, AS PER PLAN

THIS ITEM SHALL BE USED ON ALL MAINLINE AND RAMP BERMS TO REPAIR BADLY DAMAGED BERM AREAS, AS DIRECTED BY THE ENGINEER. THIS WORK SHALL INCLUDE THE REMOVAL OF 3" OR 6" OF THE EXISTING SHOULDER MATERIAL AND THE CONSTRUCTION OF A 3" OR 6" COURSE OF ITEM 301 ON THE EXISTING SUBBASE OR NEW SUBBASE AT THE CROSS SLOPES AS SHOWN ON THE TYPICAL SECTIONS. ALL COST OF EXCAVATION AND INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 301-BITUMINOUS AGGREGATE BASE, AS PER PLAN. THE CONTRACTOR SHALL PERFORM THE ABOVE BETWEEN THE HOURS OF 9:00 A.M. AND 3:00 P.M. AND SHALL NOT CLOSE MORE THAN ONE LANE IN EACH DIRECTION AT ANY TIME.

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

ITEM 301-BITUMINOUS AGGREGATE BASE, AC-20, AS PER PLAN ... 250 C.Y.

ITEM 304 AGGREGATE BASE, AS PER PLAN
ITEM 310 SUBBASE, TYPE I OR II, AS PER PLAN

MATERIALS FURNISHED FOR THESE ITEMS SHALL EXCLUDE GRANULATED SLAG BUT SHALL ALLOW AIR-COOLED BLAST FURNACE SLAG

ITEM 310 - SUBBASE, TYPE 1, GRADING A, AS PER PLAN

THIS ITEM SHALL BE USED TO REPLACE EXISTING UNSUITABLE SUBBASE PRIOR TO THE PLACING OF ITEM 301 OR 305. ALL COST OF EXCAVATION AND INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 310 - SUBBASE, TYPE I, GRADING A, AS PER PLAN. THE FOLLOWING ESTIMATED QUANTITY IS INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

ITEM 310 - SUBBASE, TYPE 1, GRADING A, AS PER PLAN ..... 200 C.Y.

ITEM 407 - TACK COAT

THE RATE OF APPLICATION OF 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT, AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AVERAGE APPLICATION RATES OF 0.075 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

ITEM 446 - ASPHALT CONCRETE

ON THIS PROJECT, ITEM 441 TABLE B PROPERTIES OF MIXTURES SHALL BE FOR HEAVY TRAFFIC VOLUMES.

ITEM 446 - ASPHALT CONCRETE SURFACE COURSE, TYPE I, AC-20, AS PER PLAN

THE AGGREGATE USED IN THE 446 SURFACE COURSE TYPE I WILL BE SLAG ONLY.

ITEM 446 - ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO PROVIDE FOR THE ADDITIONAL MATERIAL REQUIRED TO RESURFACE PAVED SHOULDERS WHICH ARE DROPPED OR IRREGULAR IN SHAPE:

ITEM 446 - ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20 ..... 500 C.Y.

STATION MARKINGS IN ASPHALT CONCRETE SURFACE COURSE

THE CONTRACTOR SHALL INSTALL AN INLAID THERMOPLASTIC MARKING EACH 100 FEET INTO THE WARM SURFACE BY THE USE OF A MECHANICAL ROLLER.

THESE MARKINGS WILL NOT BE REQUIRED FOR SECTIONS OF ROADWAY WHICH HAVE STATION MARKINGS IN THE CONCRETE BARRIER.

THE MARKINGS SHALL BE LOCATED TWELVE INCHES IN FROM THE RIGHT EDGE OF THE PAVED SHOULDER AND SHALL BE SHAPED AS FOLLOWS:

1) ONE 4 INCH X 12 INCH RECTANGLE AT EACH 1000 FOOT STATION.
   EXAMPLE: STA. 220+00
2) TWO 4 INCH DOTS AT EACH 500 FOOT STATION.
   EXAMPLE: STA. 225+00
3) ONE 4 INCH DOT AT ALL REMAINING 100 FOOT STATIONS.
   EXAMPLE: STA. 223+00

ALL COSTS OF MATERIALS AND INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 446-ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AS PER PLAN.

SPREADING EQUIPMENT

AN AUTOMATIC SCREED CONTROL HAVING A 40 FOOT SKI ARM SHALL BE USED FOR PLACING THE INTERMEDIATE COURSE (SEE PROPOSAL NOTE). FOR FULL WIDTH PAVING, THE WIDTH LAID SHALL NOT EXCEED THE PAVER'S RATED WIDTH AS RECOMMENDED BY THE PAVER MANUFACTURER.

LONGITUDINAL JOINTS

LONGITUDINAL JOINTS BETWEEN A PAVEMENT LANE AND ADJOINING BERM OR SPEED CHANGE LANE AND BETWEEN A SPEED CHANGE LANE AND THE ADJOINING BERM SHALL BE MADE THE SAME DAY. ALL LONGITUDINAL JOINTS SHALL BE HOT WITH THE EXCEPTION OF ONE COLD JOINT PER ROADWAY. LONGITUDINAL JOINT LOCATIONS SHALL BE AS APPROVED BY THE ENGINEER. EACH RAMP SHALL HAVE ONLY ONE LONGITUDINAL COLD JOINT LOCATED APPROXIMATELY HALFWAY ACROSS THE RAMP.

ASPHALT APPROACHES AT BRIDGES

THE ASPHALT APPROACHES TO STRUCTURES SHALL BE PLACED AS SHOWN ON THE DETAILS ON SHEET NO. 47. MINOR SURVEY WORK WILL BE REQUIRED TO DETERMINE THE LIMITS OF THE PAVEMENT PLANING. ALL COSTS OF SAID SURVEY SHALL BE INCLUDED UNDER ITEM 623-CONSTRUCTION LAYOUT STAKES, AS PER PLAN.

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PAVEMENT (CON'T)

ITEM 609 - ASPHALT CONCRETE CURB

THIS ITEM SHALL BE USED TO RE-DIRECT THE FLOW OF WATER AWAY FROM BRIDGE ABUTMENTS LOCATED AT THE DOWNGRADE SIDE OF EACH BRIDGE.

THE USE OF THIS ITEM SHALL BE LIMITED TO BRIDGES WHICH EXHIBIT EROSION AT THE WINGWALL ENDS OR WHICH HAVE SLOPES 4:1 OR STEEPER ALONG THE SUBJECT CURB AREA.

TWENTY FIVE (25) FEET OF ASPHALT CURB SHALL BE USED AT EACH LOCATION. THE CURB SHALL BUTT CLOSELY TO THE WINGWALL AND BE LOCATED EITHER BEHIND OR UNDER THE GUARDRAIL.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

ITEM 609-ASPHALT CONCRETE CURB, AC-20, TYPE 1 ..... 100 L.F.

CONCRETE MEDIAN REPAIR

THIS WORK SHALL INCLUDE THE REMOVAL OF THE EXISTING CONCRETE MEDIAN (AND CURBS IF NECESSARY), RESTORATION OF THE BASE MATERIAL AND THE INSTALLATION OF NEW CONCRETE MEDIAN (AND CURBS).

ALL JOINTS BETWEEN NEW 4 INCH CONCRETE MEDIAN AND CURBS (EXISTING OR PROPOSED) SHALL BE FILLED WITH 1/2 INCH P.E.J.F. (705.03) WHICH SHALL BE PLACED 1/2 INCH LOW. THE TOP 1/2 INCH SHALL BE SEALED WITH 705.04.

ALL COSTS OF REMOVAL INCLUDING RESTORATION OF THE BASE SHALL BE INCLUDED UNDER ITEM 202 - CONCRETE MEDIAN REMOVED, AS PER PLAN

ALL COSTS OF CONSTRUCTING THE NEW CONCRETE MEDIAN, INCLUDING THE JOINT FILLER AND SEAL SHALL BE INCLUDED UNDER ITEM 612 - 4" CONCRETE MEDIAN OR ITEM 612 - CONCRETE MEDIAN.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 202 - CONCRETE MEDIAN REMOVED, A.P.P. 1100 S.Y.
ITEM 202 - CURB REMOVED..... 400 L.F.
ITEM 609 - CURB, TYPE 6..... 400 L.F.
ITEM 612 - 4" CONCRETE MEDIAN..... 1000 S.Y.
ITEM 612 - CONCRETE MEDIAN..... 100 S.Y.

ITEM 617 - COMPACTED AGGREGATE, TYPE A

THIS ITEM SHALL BE USED ALONG ALL RESURFACED SHOULDERS EXCEPT THOSE WHICH ARE IN A REGRADING AREA OR THOSE WHICH ABUT ASPHALT CONCRETE UNDER GUARDRAIL.

THE ACTUAL DEPTH USED WILL VARY DEPENDING UPON EXISTING CONDITIONS. FOR CALCULATION PURPOSES AN AVERAGE DEPTH OF 1.5 INCHES WILL BE USED.

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

ITEM 617 - COMPACTED AGGREGATE, TYPE A ..... 950 C.Y.
ITEM 617 - WATER ..... 5 M.GAL.

ITEM 623 - CONSTRUCTION LAYOUT STAKES, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 623 THE CONTRACTOR SHALL PROVIDE FIELD SURVEY FOR ALL ASPHALT TRANSITIONS. (SEE SHEET NO. 47) SAID SURVEY SHALL CONSIST OF ELEVATIONS TAKEN AT THE BRIDGE EXPANSION JOINT (WHERE APPLICABLE) AND EXTENDING 75 FEET ONTO THE ROADWAY. ELEVATIONS AFTER RESURFACING SHALL BE TAKEN ALONG EACH EDGE LINE AND LANE LINE AND SHALL BE TAKEN AT THE FOLLOWING DISTANCES: 0 FEET, 5 FEET, 10 FEET, 25 FEET, 50 FEET, 65 FEET, 70 FEET AND 75 FEET. THE CONTRACTOR SHALL PLOT THESE AT EACH LOCATION AT A SCALE OF 1 INCH EQUALS 10 FEET HORIZONTALLY AND 1 INCH EQUALS 2 FEET VERTICALLY. THIS SURVEY SHALL BE DONE AND THE PLOTTED RESULTS GIVEN TO THE ENGINEER AS SOON AS POSSIBLE AFTER THE PLACEMENT OF THE SURFACE COURSE.

ITEM 803-FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C

THIS ITEM SHALL CONSIST OF REPLACING EXISTING PAVEMENT IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATIONS 803 AND 905. PAYMENT SHALL BE MADE FOR "CLASS C" ALTHOUGH THE CONTRACTOR MAY USE EITHER "CLASS FS", "CLASS MS", "CLASS S" OR "CLASS C". EXISTING BITUMINOUS OVERLAYS REMOVED SHALL BE REPLACED WITH ITEM 301 AS A SEPARATE PAY ITEM.

IF, AFTER REMOVAL OF THE RIGID PAVEMENT, THE ENGINEER DETERMINES THAT THE SUBBASE OR SUBGRADE HAS FAILED OR IS PUMPING, HE SHALL DIRECT THE CONTRACTOR TO EXCAVATE THE UNSUITABLE MATERIAL AND REPLACE IT WITH COMPACTED 304 AGGREGATE. QUANTITIES OF ITEM 203-EXCAVATION AND ITEM 304-AGGREGATE BASE HAVE BEEN PROVIDED TO REPAIR SAID FAILED SUBBASE OR SUBGRADE AREAS.

IF NEW EDGE DRAINS OR UNDERDRAINS ARE NOT PROPOSED AS PART OF THIS PROJECT THEN AGGREGATE DRAINS SHALL BE PLACED ACROSS THE SHOULDERS AS NECESSARY AND AS DIRECTED BY THE ENGINEER. FOR THIS PURPOSE QUANTITIES OF ITEM 301 BITUMINOUS AGGREGATE BASE AND ITEM 304 AGGREGATE BASE HAVE BEEN PROVIDED TO RECONSTRUCT THE PORTION OF THE EXISTING PAVED BERM DISTURBED BY THE TRENCHING OPERATIONS FOR PLACING THE ITEM 605 AGGREGATE DRAINS.

PAYMENT FOR THIS WORK SHALL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM	UNIT	DESCRIPTION
203	CU. YDS.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
301	CU. YDS.	BITUMINOUS AGGREGATE BASE, AC-20
304	CU. YDS.	AGGREGATE BASE, AS PER PLAN
605	LIN. FT.	AGGREGATE DRAINS, AS PER PLAN
803	SQ. YDS.	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C
803	LIN. FT.	FULL DEPTH PAVEMENT SAWING

FOR ESTIMATED QUANTITIES, SEE SHEET 46

ITEM SPECIAL-SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, 705.04

SEE NOTE IN PROPOSAL FOR THIS ITEM OF WORK.

THE FOLLOWING ESTIMATED QUANTITITES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED TO PERFORM THIS ITEM OF WORK:

ITEM	DESCRIPTION	QUANTITY	UNIT
SPECIAL	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, 705.04.....	65000	LIN. FT.

ITEM SPECIAL-SEALING OF CONCRETE SURFACES (NON-EPOXY), SEE PROPOSAL NOTE

A CLEAR SEALER SHALL BE APPLIED TO ALL REINFORCED SECTIONS OF THE CONCRETE MEDIANS. (LIGHT POLE FOUNDATIONS, SIGN SUPPORT FOUNDATIONS, PAVED SHOULDER INLETS AND BARRIER MEDIAN INLETS)

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

ITEM SPECIAL-SEALING OF CONCRETE SURFACES (NON-EPOXY)..... 300 S.Y.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

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

ITEM 207 - STRAW OR HAY BALES 64 EACH
ITEM 659 - REPAIR SEEDING AND MULCHING 250 SQ. YD.
ITEM 659 - COMMERCIAL FERTILIZER 0.02 TON

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DRAINAGE AND EROSION CONTROL

REVIEW OF DRAINAGE FACILITIES

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

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

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

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE PERTINENT 603 CONDUIT ITEMS OF THE CONTRACT.

CONNECTION TO EXISTING PIPE

WHERE THE PLANS PROVIDE FOR PROPOSED CONDUIT TO BE CONNECTED TO, OR TO CROSS EITHER OVER OR UNDER AN EXISTING SEWER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE HE STARTS TO LAY THE PROPOSED CONDUIT.

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

AGGREGATE SLOPE PROTECTION REPAIR

THIS ITEM SHALL BE USED TO REPAIR EXISTING SLOPE PROTECTION WHICH HAS BEEN ERODED AS A RESULT OF BRIDGE DRAINAGE.

THIS WORK SHALL INCLUDE THE PLACEMENT OF NON-POROUS EMBANKMENT MATERIAL AND CRUSHED AGGREGATE SLOPE PROTECTION.

EROSION AREAS SHALL BE REPAIRED USING EMBANKMENT AND CRUSHED AGGREGATE SLOPE PROTECTION TO MATCH THE SURROUNDING AREA.

ALL COSTS OF FURNISHING AND PLACING THE EMBANKMENT SHALL BE INCLUDED UNDER ITEM 601 - CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE AS DIRECTED BY THE ENGINEER:

ITEM 601-CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN ..... 600 S.Y.

ITEM SPECIAL-HERBICIDES FOR WEED CONTROL

PRIOR TO PLACING THE ITEM 404-ASPHALT CONCRETE, AC-20, AN APPLICATION OF PRINCEP 80W, OR AMISINE OR AN APPROVED EQUAL SHALL BE APPLIED TO THE SHOULDER BED.

THE RATE AND METHOD OR APPLICATION FOR AMISINE OR AN APPROVED EQUAL SHALL BE IN STRICT CONFORMANCE WITH THE MANUFACTURER'S INSTRUCTIONS. PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE BID PER SQUARE YARD OF ITEM SPECIAL-HERBICIDES FOR WEED CONTROL, WHICH PRICE SHALL CONSTITUTE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND WATER REQUIRED TO COMPLETE THIS ITEM OF WORK.

CONCRETE SLOPE PROTECTION REPAIR

THIS WORK SHALL INCLUDE THE REMOVAL OF THE EXISTING CONCRETE SLOPE PROTECTION, PLACING EMBANKMENT MATERIAL TO FILL ERODED AREAS UNDER AND ADJACENT TO THE PROPOSED CONCRETE SLOPE PROTECTION AND THE INSTALLATION OF NEW SLOPE PROTECTION. (INSTALL PROPOSED 3" DIA. LIGHTING CONDUITS PRIOR TO REPLACING SLOPE PROTECTION - SEE LIGHTING SHEET NO. 99) ALL JOINTS BETWEEN THE NEW AND OLD SLOPE PROTECTION SHALL BE SEALED WITH 705.04. ALL ADDITIONAL OPEN JOINTS AND CRACKS SHALL ALSO BE SEALED WITH 705.04.

ALL COSTS OF REMOVAL INCLUDING REMOVING ANY WASHED OUT SOIL AT THE BASE OF THE SLOPE PROTECTION SHALL BE INCLUDED UNDER ITEM 202 - CONCRETE SLOPE PROTECTION REMOVED.

ALL COSTS OF CONSTRUCTING THE NEW CONCRETE SLOPE PROTECTION, INCLUDING ALL NECESSARY ENBANKMENT AND JOINT AND CRACK SEALING SHALL BE INCLUDED UNDER ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 202 - CONCRETE SLOPE PROTECTION REMOVED ..... 200 S.Y.
ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN ..... 200 S.Y.

ITEM 604- CATCH BASIN, MEDIAN INLET OR MONUMENT BOX ADJUSTED TO GRADE

ALL CASTINGS EXCEPT THOSE OWNED BY PRIVATE UTILITIES SHALL BE ADJUSTED BY THE CONTRACTOR. THE TIME BETWEEN ADJUSTING THE CASTING AND RESURFACING SHALL BE KEPT TO AN ABSOLUTE MINIMUM. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY SHEETS.

ITEM 604- CATCH BASIN ADJUSTED TO GRADE..... 10 EACH
ITEM 604- MEDIAN INLET ADJUSTED TO GRADE..... 6 EACH
ITEM 604- MONUMENT BOX ADJUSTED TO GRADE..... 2 EACH
ITEM 604- MANHOLE ADJUSTED TO GRADE..... 1 EACH
ITEM 814- VALVE BOX ADJUSTED TO GRADE ..... 1 EACH

UNDERDRAIN REPLACEMENT

THE COMPLETE UNDERDRAIN SYSTEM IS TO BE REPLACED THROUGHOUT THIS PROJECT. NEW 6" DIAMETER UNDERDRAINS SHALL BE INSTALLED AT THE SAME LOCATIONS AS EXISTING EXCEPT THAT THEY SHALL BE LOCATED AT THE EDGE OF CONCRETE PAVEMENT AS SHOWN ON THE TYPICALS. ASPHALT ABOVE THE UNDERDRAIN SHALL BE REPLACED IN THE SAME THICKNESS AS THE EXISTING WITH ITEM 301 (AS A SEPARATE PAY ITEM), WHEN CONCRETE SHOULDERS ARE NOT PROPOSED. MAXIMUM PAYMENT WIDTH OF ITEM 301 SHALL BE 16 INCHES AND ANY ADDITIONAL WIDTH REQUIRED SHALL BE AT THE CONTRACTORS EXPENSE.

ALL UNDERDRAINS WHICH ARE DEEPER THAN 30 INCHES AS SHOWN ON THE TYPICALS SHALL BE PAID FOR AS DEEP UNDERDRAINS.

THE ABOVE UNDERDRAINS ARE TO BE OUTLETTED IN THE SAME LOCATION AS THE EXISTING. ADDITIONAL OUTLETS SHALL BE ADDED AS NECESSARY AS DIRECTED BY THE ENGINEER. THE OUTLETS SHALL BE CONSTRUCTED AT THE SAME LINE AND GRADE AS THE EXISTING OUTLET CONDUITS AND SHALL CONNECT BOTH THE OLD AND NEW UNDERDRAIN SYSTEMS INTO THE OUTLET. THE OUTLET CONDUIT SHALL BE ITEM 603 - 6" CONDUIT, TYPE F, 707.17, NON-PERFORATED, ASTM 3034 SDR 35 OR SUPPLEMENTAL SPECIFICATION 931. FOR ADDITIONAL DETAILS SEE SHEET 51.

AT THE PRE-CONSTRUCTION CONFERENCE THE CONTRACTOR SHALL BE FURNISHED FULL SIZE PRINTS SHOWING THE ORIGINAL UNDERDRAIN LOCATIONS AND HIGHLIGHTING THE PROPOSED UNDERDRAIN WORK. THIS WORK IS TABULATED ON SHEET 52 FOR INFORMATIONAL PURPOSES.
THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

ITEM 301-BITUMINOUS AGGREGATE BASE, AC-20..... 750 C.Y.
ITEM 603-6"CONDUIT, TYPE F, 707.17, NON-PERFORATED ASTM 3034 SDR 35 OR SUPPLEMENTAL SPECIFICATION 931..... 3500 L.F.
ITEM 605-6" SHALLOW PIPE UNDERDRAIN..... 35500 L.F.
ITEM 605-6" DEEP PIPE UNDERDRAIN..... 39500 L.F.
ITEM SPECIAL-PRECAST REINFORCED CONCRETE OUTLET..... 12 EACH

CONDUIT END TREATMENTS

IMMEDIATELY AFTER PLACEMENT OF ANY CONDUITS, THE CONTRACTOR SHALL CONSTRUCT THE END TREATMENTS REQUIRED BY THE PLANS.

ITEM 605-AGGREGATE DRAIN, AS PER PLAN

GRANULAR FILTER MATERIAL FOR THIS ITEM SHALL BE NO. 8 OR NO. 9 SIZE AND LIMITED TO DURABLE NATURAL AGGREGATES OR AIR-COOLED BLAST FURNACE SLAG.

THE FOLLOWING ESTIMATED QUANTITY IS INCLUDED IN THE GENERAL SUMMARY TO BE USED WHERE AND AS DIRECTED BY THE ENGINEER TO DRAIN SUBBASE MATERIAL WHICH HAS BECOME SATURATED.

ITEM 605-AGGREGATE DRAIN, AS PER PLAN ..... 500 L.F.

SEEDING

QUANTITIES FOR SEEDING ARE CALCULATED TO TWO (2) FEET BEYOND THE CONSTRUCTION LIMIT AS SHOWN ON THE CROSS SECTIONS.

WATERING AND MOWING PERMANENT SEEDED AREAS

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

ITEM 659 - WATER ..... 11 M.GAL.
ITEM 659 - MOWING ..... 11 M.SQ.FT.

REPAIR OF EROSION AREAS

THIS ITEM OF WORK SHALL BE USED AT THE LOCATIONS AS DIRECTED BY THE ENGINEER TO REPAIR AND RESEED ERODED AREAS, DEEP TIRE RUTS AND ANY OTHER AREAS WHICH ARE LACKING HEALTHY VEGETATION.

THE SEQUENCE OF WORK SHALL BE AS FOLLOWS:

1. LOOSEN UP THE EXISTING SOIL AND PERFORM MINOR REGRADING WORK AS NECESSARY. (INCLUDES EMBANKMENT AND EXCAVATION OPERATIONS)
2. PLACE TWO INCHES OF TOPSOIL OVER THE PREPARED AREAS. INCORPORATE LIMING AND FERTILIZER INTO THE TOPSOIL.
3. PLACE SEEDING AND MULCHING ON ALL REPAIR AREAS.

GENERALLY TWO INCHES OF TOPSOIL SHALL BE PLACED OVER ALL REPAIRED AREAS. THE BOUNDARIES OF THE TOPSOIL PLACEMENT SHALL BE FEATHERED BEYOND THE PREPARED AREAS TO ACHIEVE A GRADUAL TRANSITION AND INSURE DRAINAGE FLOW. PAYMENT SHALL BE BASED UPON A WEIGHT CONVERSION OF 2400 LBS PER CUBIC YARD REGARDLESS OF THE ACTUAL UNIT WEIGHT. THE ORGANIC MATTER REQUIREMENT OF 653.02 IS WAIVED FOR THIS ITEM OF WORK.

PRIOR TO PLACING THE TOPSOIL ALL AREAS SHALL BE LEVELLED OFF WITH THE SURROUNDING SOIL. DURING THIS OPERATION GRADING OPERATIONS SHALL BE PERFORMED AS NECESSARY TO INSURE THAT DRAINAGE FLOW TO THE DITCHES AND ALONG THE DITCHES WILL BE MAINTAINED AFTER THE PLACEMENT OF THE TOPSOIL.

PAYMENT FOR ALL OF THE ABOVE GRADING OPERATIONS SHALL BE INCLUDED IN THE COST FOR ITEM 653 - TOPSOIL FURNISHED AND PLACED, AS PER PLAN.

AGRICULTURAL LIMING AND FERTILIZER SHALL BE PLACED ON ALL AREAS COVERED WITH TOPSOIL AS PER 659.08.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

ITEM 653 - TOPSOIL FURNISHED AND PLACED, AS PER PLAN ..... 140 C.Y.
ITEM 659 - SEEDING AND MULCHING ..... 2500 S.Y.
ITEM 659 - AGRICULTURAL LIMING ..... 1.13 TONS
ITEM 659 - COMMERCIAL FERTILIZER ..... 0.23 TON

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GENERAL NOTES

CUYAHOGA COUNTY
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FEDERAL PROJECT
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MAINTAINING TRAFFIC

CRITICAL WORK ZONES

BECAUSE OF THE HIGH TRAFFIC VOLUME OCCURING THROUGHOUT THIS PROJECT IT IS THE INTENT OF THESE PLANS TO BREAK THE WORK AREAS INTO PARTS WHICH, WHEN COMPLETED, WILL ALLOW TRAFFIC TO RETURN TO NORMAL FLOW. THESE AREAS SHALL BE DENOTED AS "CRITICAL WORK ZONES". WHEN A LANE CLOSURE IS IMPLEMENTED WITHIN A "CRITICAL WORK ZONE" THE CONTRACTOR SHALL NOT BE PERMITTED TO IMPLEMENT ANY OTHER LANE CLOSURES WITHIN ANY OF THE DESIGNATED CRITICAL WORK ZONES UNTIL THE CRITICAL WORK ZONE IS WITHIN ONE WEEK OF RE-OPENING TO TRAFFIC. (THIS PROVISION IS NOT INTENDED TO PROHIBIT ANY PERMISSABLE DAYTIME CLOSURES)

THE FOLLOWING LIST OF "CRITICAL WORK ZONES" SHALL APPLY THROUGHOUT THIS PROJECT: (STATIONING APPLIES TO MAINLINE PAVEMENT ONLY)

(1) 480 E.B. STA. 860 TO STA. 891 AND STA. 903 TO STA. 996
(1A) 480 E.B. STA. 891 TO STA. 903
(2) 480 W.B. STA. 860 TO STA. 891 AND STA. 912 TO STA. 996
(2A) 480 W.B. STA. 891 TO STA. 912

ZONES (1A) AND (2A) SHALL BE IMPLEMENTED WHILE ZONES (1) OR (2) ARE IN EFFECT RESPECTIVELY. WORK SHALL BE CONCENTRATED WITHIN THESE ZONES TO PROVIDE FOR THE RE-OPENING TO THREE LANE TRAFFIC AS SOON AS POSSIBLE. A TWO WEEK MAXIMUM TIME LIMITATION SHALL APPLY FOR THE LANE RESTRICTION WITHIN ZONES (1A) AND (2A) ABOVE. LIQUIDATED DAMAGES IN THE AMOUNT OF $600 PER DAY SHALL BE ASSESSED FOR EACH CALENDAR DAY AFTER THE TWO WEEK ALLOWABLE THAT THE ROADWAY IN ZONE (1A) OR (2A) IS NOT OPENED TO THREE LANES OF TRAFFIC.

TRAFFIC CONTROL FOR ASPHALT CONCRETE OPERATIONS (ITEM 446 COURSES)

THE CONTRACTOR SHALL SCHEDULE HIS OPERATIONS SO THAT THE INTERMEDIATE ASPHALT COURSE WILL NOT BE EXPOSED TO TRAFFIC FOR MORE THAN TWO WEEKS. IF THE CONTRACTOR IS UNABLE TO PLACE THE SURFACE COURSE WITHIN THE ALLOWED TIME THEN HE SHALL INCREASE THE THICKNESS OF THE SURFACE COURSE BY ONE-HALF INCH. ALL COSTS OF PLACEMENT AND MATERIALS FOR THE ADDITIONAL ONE-HALF INCH ASPHALT THICKNESS SHALL BE PAID FOR BY THE CONTRACTOR.

IN ORDER TO COMPLY WITH THE ABOVE PROVISION THE CONTRACTOR SHOULD COMPLETE ALL PAVEMENT REPAIRS, FULL WIDTH, WITHIN A SECTION OF ROADWAY PRIOR TO BEGINNING HIS OVERLAY WORK.

ALL ASPHALT CONCRETE OPERATIONS SHALL BE CONDUCTED IN A MANNER THAT WILL ASSURE MINIMUM DANGER AND INCONVENIENCE TO THE HIGHWAY USERS. MAINLINE ASPHALT CONCRETE WORK SHALL BE PERFORMED AT NIGHT BETWEEN THE HOURS OF 8:00 P.M. OR 12:00 A.M. AND 6:00 A.M. (SEE "SCHEDULE OF THRU LANES TO BE MAINTAINED" ON SHEET 15 . RAMPS AND DIRECTIONAL ROADWAYS SHALL BE PAVED DURING THE DAY BETWEEN THE HOURS OF 9:00 A.M. AND 3:00 P.M. E.B.O.L. AND W.B.O.L. ROADWAYS MAY BE PAVED UNDER EITHER TIME PERIOD ABOVE. THE PROCEDURE FOR INSTALLATION OF ANY ASPHALT LAYER SHALL BE SUCH THAT NO DISCONTINUITY IN THE ELEVATION OF THE TRAVELED SURFACE SHALL EXIST AT ANY TIME OTHER THEN DURING THE PERMITTED WORKING HOURS AND THEN ONLY WHEN SUCH PROPER TRAFFIC CONTROL DEVICES ARE IN PLACE AS WILL PREVENT SUCH A DISCONTINUITY BEING A DANGER TO HIGHWAY USERS.

TRAFFIC MUST BE MAINTAINED AT ALL TIMES IN BOTH DIRECTIONS IN ACCORDANCE WITH THE GENERAL CONSTRUCTION SEQUENCE NOTE ON SHEET NO. 13 .

WHENEVER ANY PART OF THE TRAVELED SURFACE IS CLOSED, THE MOTORISTS SHALL BE WARNED AND DIVERTED BY THE CONTRACTOR THROUGH THE USE OF A FLASHING ARROW, IN ADDITION TO THOSE PROVISIONS SET FORTH IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS ANY PART-WIDTH RESURFACING JOINT EXCEPT AS IS NECESSARY DURING THE ACTUAL RESURFACING OPERATION. ANY PART WIDTH RESURFACING JOINTS WHICH MUST BE EXPOSED TO TRAFFIC SHALL BE RAMPED USING ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC, AT A RATE NOT TO EXCEED 1 INCH IN 1 FOOT. (LONGITUDINAL JOINTS)

TEMPORARY TRANSVERSE RESURFACING JOINTS WHICH MUST BE EXPOSED TO TRAFFIC SHALL BE RAMPED USING ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC, AT A RATE NOT TO EXCEED 1 INCH IN 4 FEET.

TRAFFIC CONTROL MATERIALS

A. SIGNS

SIGN DIMENSIONS AND SPECIFICATIONS, INCLUDING LETTER SIZES, SHALL BE AS PROVIDED IN THE "MANUAL", OR IN SIGN DESIGN DRAWINGS PROVIDED BY THE DEPARTMENT OF TRANSPORTATION. THE SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER PRIOR TO THE START OF THE PROJECT.

B. SIGN SUPPORTS

SUPPORTS SHALL BE ADEQUATE IN MASS AND STABILITY TO PREVENT THE SIGNS BEING BLOWN OVER BY WIND OR VEHICULAR GENERATED AIR TURBULENCE.

C. DRUMS

DRUMS SHALL BE IN ACCORDANCE WITH PERTINENT SECTIONS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. ALL PERMANENT LANE CLOSURES SHALL BE DELINEATED WITH DRUMS SPACED AT 50 FEET CENTER TO CENTER. ALL COSTS FOR INSTALLING, MAINTAINING AND SUBSEQUENT REMOVAL OF SAID DRUMS SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

D. SMALL BARRICADES

TYPE II BARRICADES MAY BE USED INSTEAD OF DRUMS TO CLOSE LANES WHERE REQUIRED FOR RESURFACING. THESE SHALL BE AT LEAST 36" HIGH AND 12" WIDE. NEAR THE TOP OF THE BARRICADE THERE SHALL BE A PANEL WITH ALTERNATE ORANGE AND REFLECTORIZED WHITE 6" WIDE STRIPS. THIS PANEL SHALL BE AT LEAST 12" WIDE AND 24" HIGH. FOR NIGHTTIME USE A STEADY BURN LIGHT SHALL BE LOCATED AT THE TOP OF THE BARRICADE AT THE END NEAREST TO TRAFFIC. THE BARRICADES SHALL BE OF SUFFICIENT STABILITY SO THAT WIND OR TRAFFIC AIR TURBULENCE WILL NOT UPSET THEM. BARRICADES SHALL BE IN ACCORDANCE WITH PERTINENT SECTIONS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

E. LIGHTING DEVICES

FLASHERS SHALL BE 12 VOLT BATTERY-OPERATED MODELS WITH 7 INCH DIAMETER YELLOW LENSES ILLUMINATED BY RAPID INTERMITTENT FLASHES OF SHORT DURATION AND SHALL BE PLACED ON ALL SIGNS AT ALL TIMES.

CONTINUOUS BURN LIGHTS SHALL BE 12 VOLT BATTERY OPERATED MODELS WITH MINIMUM 7 INCH DIAMETER YELLOW LENSES.

F. FLASHING ARROW BARRICADE

WHENEVER ANY PART OF THE TRAVELED SURFACE IS CLOSED, THE MOTORIST SHALL BE WARNED AND DIVERTED BY THE CONTRACTOR THROUGH THE USE OF ONE FLASHING ARROW BARRICADE FOR EACH LANE CLOSED. THE CONTRACTOR SHALL REFER TO STD. DRWG. TC-35.10 AND THE PROVISION SET FORTH IN OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS FOR ALL INFORMATION REGARDING FURNISHING, MAINTAINING, AND USE OF FLASHING ARROW BARRICADES. PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614-MAINTAINING TRAFFIC.

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GENERAL NOTES

MAINTAINING TRAFFIC

ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC

THIS ITEM SHALL BE USED TO REPAIR HOLES IN BRIDGE DECKS, ROADWAY SURFACE AND BERMS WHICH ARE DAMAGED DURING THE CLOSURE AND TO PROVIDE TEMPORARY ASPHALT RAMPS. THE CONTRACTOR SHALL USE THIS ITEM TO MAINTAIN THE HIGHWAY ACCORDING TO SEC. 614.02.
ANY CLOSURES NECESSARY TO PERFORM THIS WORK SHALL BE AS APPROVED BY THE ENGINEER. PRIOR TO RESURFACING, TEMPORARY ASPHALT RAMPS SHALL BE REMOVED AS PART OF THIS ITEM. THE FOLLOWING ESTIMATED QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR THE MAINTENANCE OF TRAFFIC AS OUTLINED ABOVE, TO BE USED AS DIRECTED BY THE ENGINEER ON ALL PARTS OF THIS PROJECT.

ITEM 404-BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC..... 350 C.Y.

ITEM 614- TEMPORARY RAISED PAVEMENT MARKERS

TEMPORARY RAISED PAVEMENT MARKERS SHALL BE USED TO SUPPLEMENT TEMPORARY PAVEMENT MARKINGS USED FOR LANE SHIFTS.

FOR ADDITIONAL NOTES SEE SHEET NO. 14

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

ITEM 614-TEMPORARY RAISED PAVEMENT MARKERS..... 12000 EA.

ITEM 614 - BARRIER REFLECTOR , TYPE A OR B

THESE BARRIER REFLECTORS AND THEIR MOUNTINGS SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 802 EXCEPT THAT SPACING OF THE REFLECTORS SHALL BE HALF THE DISTANCE SPECIFIED IN S.S.802. THEY SHALL BE PLACED ON EXISTING GUARDRAIL AND BRIDGE PARAPETS ADJACENT TO TRAFFIC LANES WHICH HAVE BEEN SHIFTED FROM THE NORMAL DRIVING LANE. THEY SHALL ALSO BE PLACED ON ALL TEMPORARY CONCRETE BARRIERS. REFLECTOR COLOR SHALL MATCH THE COLOR OF THE EDGELINE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE PRIOR TO SHIFTING TRAFFIC:

ITEM 614 - BARRIER REFLECTOR , TYPE A ..... 380 EACH
ITEM 614 - BARRIER REFLECTOR , TYPE B ..... 220 EACH

ITEM 614 - TEMPORARY PAVEMENT MARKINGS (TRAFFIC SHIFTS)

LANE SHIFTS OR LANE CLOSURES SHALL BE IMPLEMENTED USING 55:1 MAXIMUM TAPER RATES ON MAINLINE PAVEMENT AND DIRECTIONAL ROADWAYS AND 25:1 MAXIMUM TAPER RATES ON RAMPS. (SEE TRAFFIC MAINTENANCE DETAIL SHEETS)

TYPICAL LOCATIONS INCLUDE:

A) LANE CLOSURES
B) LANE SHIFTS
C) ENTRANCE/EXIT RAMP EXTENSIONS ACROSS CLOSED OUTSIDE LANES.

ALL CONFLICTING PAVEMENT MARKINGS (INCLUDING THE LANE LINE ADJACENT TO THE LANE CLOSURE TAPER) SHALL BE REMOVED PRIOR TO PLACING THESE PAVEMENT MARKINGS.

ALL TEMPORARY PAVEMENT MARKINGS WHICH ARE INSTALLED BEYOND THE PROPOSED RESURFACING LIMITS SHALL BE 947.03, TYPE C.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

ITEM 614-TEMPORARY EDGE LINE, CLASS I, 947.03, TYPE B .... 13.50 MI.
ITEM 614-TEMPORARY EDGE LINE, CLASS I, 947.03, TYPE C .... 2.50 MI.
ITEM 614-TEMPORARY EDGE LINE, CLASS I ..... 10.00 MI.
ITEM 614-TEMPORARY LANE LINE, CLASS I, 947.03, TYPE B .... 7.50 MI.
ITEM 614-TEMPORARY CHANNELIZING LINE,CLASS I,947.03,TYPE B 32000 L.F.
ITEM 614-TEMPORARY CHANNELIZING LINE,CLASS I,947.03,TYPE C 7000 L.F.
ITEM 614-TEMPORARY 4" DOTTED LINES,CLASS I,947.03,TYPE B . 500 L.F.

ITEM 614 - TEMPORARY PAVEMENT MARKINGS (RESURFACING OR LANE SHIFT REMOVAL)

TEMPORARY MARKINGS SHALL BE PLACED AT THE LOCATIONS OF THE PERMANENT MARKINGS AS SHOWN IN THE TRAFFIC CONTROL PLANS.

AFTER THE OVERLAYS ARE PLACED OR FOLLOWING LANE SHIFT REMOVALS THE FOLLOWING TEMPORARY MARKINGS SHALL BE USED:

ITEM 614-TEMPORARY LANE LINES, CLASS II ..... 52.00 MILES
ITEM 614-TEMPORARY EDGE LINES, CLASS I ..... 38.00 MILES
ITEM 614-TEMPORARY GORE MARKINGS, CLASS II ..... 2500 L.F.
ITEM 614-TEMPORARY STOP LINES, CLASS I ..... 120 L.F.

ITEM 621- REMOVAL OF PAVEMENT MARKINGS

THIS ITEM SHALL BE USED TO REMOVE EXISTING PERMANENT PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH THE TEMPORARY MARKINGS AS SHOWN ON THE TRAFFIC MAINTENANCE DETAILS. PAYMENT SHALL BE BASED UPON THE ACTUAL LENGTH REMOVED. (GAPS SHALL NOT BE INCLUDED IN THE MEASURED LENGTH). THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE.

ITEM 621- REMOVAL OF PAVEMENT MARKINGS ..... 70000 L.F.

ITEM 614- WORK ZONE SPEED LIMIT SIGN

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED FOR WORK ZONE SPEED LIMIT SIGNS AS DIRECTED BY THE ENGINEER. (SEE PROPOSAL NOTE)

ITEM 614 - WORK ZONE SPEED LIMIT SIGN 32 EACH

ITEM SPECIAL-REPLACEMENT SIGNS

FLAT SHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIRMENT OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE BID PRICE PER SQUARE FOOT FOR ITEM SPECIAL - REPLACEMENT SIGNS AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED SIGNS, HARDWARE AND SUPPORTS AND PROVIDING NECESSARY REPLACEMENT HARDWARE SUPPORTS, ETC. REPLACEMENT SIGNS SHALL BE NEW BUT OTHER MATERIALS MAY BE USED, SUBJECT TO APPROVAL BY THE ENGINEER.

AN ESTIMATED QUANTITY OF ITEM SPECIAL, REPLACEMENT SIGNS HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL - REPLACEMENT SIGNS..... 1200 S.F.

ITEM SPECIAL-REPLACEMENT DRUMS

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENT OF THE PLANS, SPECIFICATION AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER AND PAID FOR UNDER ITEM SPECIAL REPLACEMENT DRUMS. PAYMENT FOR EACH NEW DRUM SHALL INCLUDE (1) THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM AND (2) PROVIDING, MAINTAINING AND REMOVING NEW DRUMS IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUMS.

AN ESTIMATED QUANTITY OF ITEM SPECIAL-REPLACEMENT DRUMS HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL - REPLACEMENT DRUMS..... 300 EACH

ITEM SPECIAL-LAW ENFORCEMENT OFFICER WITH PATROL CAR

THE CONTRACTOR SHALL PROVIDE AND PAY ALL COST FOR THE SERVICES OF LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR THE EXCLUSIVE PURPOSE OF CONTROLLING TRAFFIC WHENEVER A CHANGE IN THE TRAFFIC PATTERN TAKES PLACE. THE NUMBER OF OFFICERS AND CARS REQUIRED FOR THIS PURPOSE SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE OFFICERS SHALL MOVE THEIR PATROL CARS AS NECESSARY TO INSURE THEIR CONSTANT PRESENCE AT THE POINT(S) OF SLOWDOWN, STOPPAGE OR BACK-UP. PAYMENT FOR THE ABOVE WILL BE INCLUDED IN THE UNIT BID FOR ITEM SPECIAL- LAW ENFORCEMENT OFFICER WITH PATROL CAR.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ARRANGEMENTS FOR SCHEDULING AND PAYMENT OF LAW ENFORCEMENT OFFICER WITH PATROL CAR.

ITEM SPECIAL-LAW ENFORCEMENT OFFICER WITH PATROL CAR ..... 600 HRS.

TEMPORARY CONCRETE BARRIER (PUBLIC SAFETY)

TEMPORARY CONCRETE BARRIER SECTIONS (10 FT. LONG) AS REQUIRED BY THE PUBLIC SAFETY NOTE SHALL BE SUPPLIED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING, UNLOADING AND TRANSPORTATION OF THE BARRIER.

THE BARRIER SECTIONS SHALL BE BOLTED TOGETHER WITH STEEL CONNECTIONS AS PER STANDARD CONSTRUCTION DRAWING MC-9A.

ALL COSTS FOR FURNISHING, INSTALLING AND SUBSEQUENT REMOVING TEMPORARY CONCRETE BARRIER AS DESCRIBED UNDER PUBLIC SAFETY SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

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GENERAL NOTES

MAINTAINING TRAFFIC

PUBLIC SAFETY

THE FOLLOWING PROVISIONS "A", "B" AND "C" SHALL APPLY WHEN THE LANE ADJACENT TO THE GUARDRAIL IS OPEN TO TRAFFIC:

THE PERIOD OF TIME THAT A HAZARD IS LEFT UNPROTECTED BY THE REMOVAL OF GUARDRAIL SHALL BE HELD TO AN ABSOLUTE MINIMUM AND IN NO CASE SHALL SUCH A PERIOD BE LONGER THAN ONE WORKING DAY. IF, AFTER ONE DAY, THE ENTIRE RUN OF GUARDRAIL CONSTRUCTION IS NOT COMPLETE THE FOLLOWING SHALL APPLY:

A. IN AREAS WHERE EXISTING GUARDRAIL HAS BEEN REMOVED OR THE GUARDRAIL IS IN A PARTIAL STAGE OF COMPLETION, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TYPE II BARRICADES WITH TYPE C (STEADY BURNING) WARNING LIGHTS WITHIN THE LIMITS OF THE UNPROTECTED AREA. THE BARRICADES SHALL BE PLACED AT 50' INTERVALS AND OFFSET AT LEAST TWO FEET FROM THE EDGE OF THE TRAVELED ROADWAY AND IN CLOSE PROXIMITY TO THE CONSTRUCTION. THE APPROACH END OF A PARTIALLY COMPLETED RUN OF GUARDRAIL SHALL BE FASTENED AT GROUND LEVEL TO A STEEL DRUM.

B. IF THE EXISTING GUARDRAIL IS FOR THE PROTECTION OF AN OBSTACLE (I.E. SIGN SUPPORT, BRIDGE PARAPET, ETC.) THE CONTRACTOR SHALL ERECT TEMPORARY CONCRETE BARRIER AS DETAILED ON SHEET NO. 15 IN THE DIRECTION OF TRAFFIC. THE REQUIREMENTS OF PARAGRAPH "A" SHALL APPLY TO THE REMAINING GUARDRAIL WITHIN THE RUN. TEMPORARY BARRIER SHALL BE FLARED AT A 10:1(MINIMUM) TAPER RATE AND SHALL INCLUDE A TEMPORARY END TERMINAL AS PER MC-9A.

C. THE REQUIREMENTS STATED IN "A" SHALL APPLY FOR A PERIOD NOT TO EXCEED ONE WEEK. WHERE THE REBUILDING OR CONSTRUCTION OF ANY RUN OF GUARDRAIL CANNOT BE ACCOMPLISHED WITHIN ONE WEEK, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY CONCRETE BARRIER IN THE INTERIM TIME IT TAKES TO COMPLETE THE WORK. THE APPROACH END OF THE TEMPORARY CONCRETE BARRIER SHALL BE FLARED 10 FT. (100' AT 10:1 TAPER) AND SHALL INCLUDE A TEMPORARY END TERMINAL AS PER MC-9A. IN ADDITION, A TYPE II BARRICADE WITH TYPE B (HIGH INTENSITY FLASHER) WARNING LIGHT SHALL BE PLACED IN FRONT OF THIS INITIAL SECTION OF TEMPORARY BARRIER TO PROVIDE FOREWARNING TO THE APPROACHING TRAFFIC.

WHEN THE LANE ADJACENT TO THE GUARDRAIL IS CLOSED TO TRAFFIC THE PROVISIONS OF PARAGRAPH "A" ABOVE SHALL APPLY AFTER 1 DAY, THE PROVISIONS OF PARAGRAPH "B" ABOVE SHALL APPLY AFTER 10 DAYS AND THE PROVISIONS OF PARAGRAPH "C" ABOVE SHALL APPLY AFTER 15 DAYS.

THE TERM "GUARDRAIL" AS USED HEREIN SHALL BE UNDERSTOOD TO COVER ALL TYPES OF GUARDRAIL, EXISTING OR PROPOSED FOR THE PROJECT, INCLUDING BARRIER DESIGN GUARDRAIL.

THE COST OF COMPLYING WITH THESE SAFETY PROCEDURES SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614-MAINTAINING TRAFFIC.

GENERAL CONSTRUCTION SEQUENCE

THE CONTRACTOR IS REMINDED THAT, IN THE CONDUCT OF THIS PROJECT, HIS SEQUENCE OF OPERATIONS SHALL BE PLANNED AND EXECUTED IN SUCH A WAY AS TO MINIMIZE THE NUMBER OF LANE REDUCTIONS AND/OR LANE WIDTH REDUCTIONS REQUIRED TO MAINTAIN TRAFFIC THROUGH THE PROJECT. IN THIS REGARD, WHEN A TRAFFIC LANE IS CLOSED, ALL FULL DEPTH AND PARTIAL DEPTH REPAIRS SHALL BE PERFORMED IN AN ORDERLY SEQUENCE SUCH THAT IT WILL NOT BE NECESSARY TO AGAIN CLOSE THAT LANE UNTIL THE ASPHALT OVERLAY AND PAVEMENT MARKING OPERATIONS BEGIN.

PRIOR TO SHIFTING TRAFFIC ONTO THE SHOULDERS, NEW CONCRETE SHOULDERS SHALL BE CONSTRUCTED (WHEN SHOWN ON THE TYPICAL SECTIONS). LANE RESTRICTIONS AS REQUIRED TO REBUILD THE SHOULDERS SHALL BE AS PERMITTED ON THE "SCHEDULE OF THRU LANES TO BE MAINTAINED" TABLE. FOR ONE LANE DIRECTIONAL ROADWAYS THE FOLLOWING PROVISIONS APPLY;

A. TRAFFIC SHALL BE SHIFTED AS SHOWN ON THE TRAFFIC MAINTENANCE DETAILS
B. ONLY DAYTIME, NON-RUSH HOUR WORK WILL BE PERMITTED AND
C. TEMPORARY PAVEMENT MARKINGS AND THE REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL NOT BE REQUIRED.

IT IS ALSO REQUIRED OF THE CONTRACTOR TO HAVE ALL NORMAL LANES OF TRAFFIC OPENED THROUGHOUT THE WINTER SEASON (DECEMBER 1ST THRU MARCH 1ST). NO LANE RESTRICTIONS, INCLUDING RAMPS, SHALL BE ALLOWED DURING THIS TIME. THE CONTRACTOR IS CAUTIONED TO SCHEDULE HIS WORK, ESPECIALLY ASPHALT OVERLAYS, TO MEET THIS REQUIREMENT.

OVERHEAD SIGNS AND SUPPORTS THAT ARE BEING MODIFIED SHALL NOT BE REMOVED UNTIL THE NEW FOUNDATION IS CONSTRUCTED AND ANY REQUIRED SUPPORT MODIFICATIONS ARE AT THE SITE.

MAJOR WORK ITEMS

THE FOLLOWING MAJOR WORK ITEMS WILL REQUIRE TRAFFIC MAINTENANCE PROCEDURES WHICH SHALL BE INCORPORATED INTO THE CONTRACTORS SEQUENCE OF OPERATIONS.

A. INSTALLATION OF NEW UNDERDRAINS, PULLBOX UNDERDRAINS, AND LIGHTING CONDUIT PAVEMENT CROSSINGS
B. SHOULDER WIDENING OR REPLACEMENT
C. REPAIR OF PAVEMENT JOINTS AND PANELS
D. ASPHALT CONCRETE OVERLAY
E. PAVEMENT MARKINGS
F. INSTALLATION OF CONCRETE BARRIER AND GUARDRAIL
G. MODIFICATION OR RELOCATION OF OVERHEAD SIGN SUPPORTS
H. INSTALLATION OF NEW OVERHEAD SIGNS
I. REPLACEMENT OF HIGHWAY LIGHTING SYSTEM

MAINTAINING VEHICULAR TRAFFIC

GENERAL PROVISIONS

1. TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE "SCHEDULE OF THRU LANES TO BE MAINTAINED" DESCRIBED ON SHEET NO. 15. THE CONTRACTOR SHALL SET UP AND OPERATE HIS EQUIPMENT IN SUCH A MANNER AS TO MINIMIZE ENCROACHMENT UPON THE TRAVELLED WIDTH OF PAVEMENT.

2. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE RESPONSIBLE LAW ENFORCEMENT AGENCY NOT LESS THAN TWENTY-FOUR (24) HOURS PRIOR TO A SCHEDULED DISRUPTION OF TRAFFIC.

3. NO STOPPAGE OF TRAFFIC OR ESTABLISHMENT OF LANE RESTRICTIONS SHALL OCCUR WITHOUT LAW ENFORCEMENT PERSONNEL AT EACH LOCATION TO DIRECT TRAFFIC.

4. DURING OVERHEAD CONSTRUCTION THE CONTRACTOR SHALL PROVIDE, IF DEEMED NECESSARY BY THE ENGINEER, SAFETY NETS AND OR OTHER SAFETY DEVICES UNDER THE STRUCTURES TO PROTECT TRAFFIC IN THE AREA OF CONSTRUCTION.

5. DURING NON-WORKING PERIODS, OPEN EXCAVATIONS SHALL BE DELINEATED WITH WARNING FLASHERS AND/OR OTHER APPROVED DEVICES AS DEEMED APPROPRIATE BY THE ENGINEER.

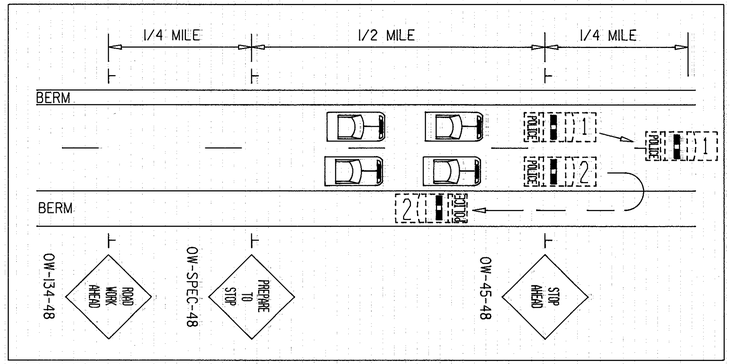
6. EXISTING SIGNS LOCATED WITHIN THE ROAD WORK AREAS WHICH ARE NECESSARY FOR INTERIM OR PERMANENT TRAFFIC CONTROL SHALL BE REMOVED AND REERECTED IN LOCATIONS AS APPROVED BY THE ENGINEER.

7. THE CONTRACTOR SHALL FURNISH, ERECT AND MAINTAIN ALL NEW WARNING AND INFORMATION SIGNS NECESSARY FOR MAINTAINING TRAFFIC. THE CONTRACTOR SHALL DETERMINE WHAT SIGNS ARE NEEDED AND ADVISE THE ENGINEER TWO (2) WEEKS IN ADVANCE OF HIS DETAILED PLANS.

   SEE THE TRAFFIC MAINTENANCE DETAILS FOR THE MINIMUM SIGNAGE REQUIRED.

8. TRAFFIC CONTROL DEVICES SHALL BE SET UP PRIOR TO THE START OF CONSTRUCTION, AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH SPECIAL CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS THEY ARE NEEDED AND SHALL BE IMMEDIATELY REMOVED THEREAFTER. WHERE OPERATIONS ARE PERFORMED IN STAGES, THERE SHALL BE IN PLACE ONLY THOSE DEVICES THAT APPLY TO THE CONDITION PRESENT DURING THE STAGE IN PROGRESS. ALL SIGNS WITH MESSAGES WHICH DO NOT APPLY DURING A CERTAIN PERIOD SHALL BE COVERED OR SET ASIDE OUT OF THE VIEW OF TRAFFIC.

9. ERECTION OF SPAN TYPE AND BRIDGE MOUNTED OVERHEAD SUPPORTS SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT COMPLETE TRAFFIC STOPPAGE ON ALL LANES OF ANY DIRECTIONAL ROADWAY IS NO LONGER THAN 10 MINUTES IN ANY ONE CONSECUTIVE 30 MINUTE PERIOD. A MINIMUM OF TWO (2) LAW ENFORCEMENT PATROL VEHICLES SHALL BE USED TO PACE MOTORISTS TO A STOP. AFTER TRAFFIC HAS BEEN SLOWED, ONE (1) PATROL VEHICLE SHALL TRAVEL ALONG THE ROADWAY SHOULDER 500 FEET BEHIND THE BACK OF STOPPED VEHICLES. WHERE STOPPAGE OCCURS IN THE VICINITY OF FREEWAY ENTRANCES, THE CONTRACTOR SHALL PLACE FLAGGERS ON THE RAMPS TO STOP TRAFFIC.. PATROL VEHICLES SHALL HAVE HIGH RISE FLASHING BEACONS TO PROVIDE ADEQUATE VISIBILITY TO APPROACHING MOTORISTS. WHEN THE ENGINEER DEEMS APPROPRIATE, THE CONTRACTOR SHALL ERECT AND MAINTAIN "ROADWORK AHEAD", "PREPARE TO STOP", AND "STOP AHEAD" SIGNS WITH FLASHING TWELVE INCH (12) TRAFFIC SIGNAL HEADS IN ACCORDANCE WITH 632.05. THESE SIGNS SHALL BE ILLUMINATED DURING NIGHT OPERATIONS. PATROL VEHICLES AND SIGNS SHALL BE LOCATED IN ACCORDANCE WITH THE FOLLOWING SKETCH. ERECTION OF SIGN SPANS SHALL BE DONE AT NIGHT BETWEEN THE HOURS OF 10 P.M. AND 6 A.M.



NOTE: DETAIL IS SHOWN FOR TWO LANE DIRECTIONAL TRAFFIC. IF ADDITIONAL DIRECTIONAL LANES EXIST, THE STOPPAGE OF TRAFFIC SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE EXISTING ROADWAY CONDITIONS. (3 PATROL VEHICLES ARE REQUIRED IN 3 LANE SECTIONS.)

10. PLACEMENT OF FINAL ROADWAY PAVEMENT MARKINGS SHALL BE ACCOMPLISHED ONLY MONDAY THRU FRIDAY BETWEEN THE HOURS OF 9:00 A.M. AND 3:00 P.M. WITH A MAXIMUM OF ONE LANE EACH DIRECTION CLOSED AT ANY TIME.

    THE CONTRACTOR SHALL PROVIDE TWO (2) TRAILING VEHICLES WITH FLASHING BEACON FOLLOWING THE PAVEMENT MARKING EQUIPMENT WHEN MARKINGS ARE PLACED IN ORDER TO PROVIDE ADVANCE WARNING TO THE MOTORISTS OF THE TEMPORARY LANE CLOSURE AND CONSTRUCTION. THE TWO (2) TRAILING VEHICLES SHALL TRAVEL 500 FEET APART WITH THE REMOTE VEHICLE TRAVELING ON THE SHOULDER (LEFT OR RIGHT AS APPLICABLE) WHERE USABLE SHOULDER IS AVAILABLE. THE INTERMEDIATE TRAILING VEHICLE SHALL TRAVEL IN THE CLOSED LANE 500 FEET BEHIND THE PAVEMENT MARKING EQUIPMENT. THE POLICE CRUISER SHALL TRAVEL 500 TO 1000 FEET BEHIND THE REMOTE TRAILING VEHICLE.

    EACH TRAILING VEHICLE SHALL HAVE A YELLOW FLASHING BEACON PLUS 48" MIN. ORANGE AND BLACK CONSTRUCTION WARNING SIGNS MOUNTED ON THE BACK FACING TRAFFIC WITH STANDARD TYPE MESSAGES ADVISING MOTORISTS OF THE WORK AHEAD, ADVISORY WARNING SPEED, AND WHICH LANE IS CLOSED.

11. FOR ANY OPERATION NOT SPECIFICALLY MENTIONED IN THESE PLANS, THE TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".

12. ALL LABOR, MATERIALS, EQUIPMENT AND ANY INCIDENTALS REQUIRED TO COMPLETE THE WORK AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614-MAINTAINING TRAFFIC.

PLOT SUBMITTED: 22-NOV-1989 13:59
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614 - TEMPORARY RAISED PAVEMENT MARKERS

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING, AND SUBSEQUENTLY REMOVING TEMPORARY RAISED PAVEMENT MARKERS (TRPM'S). THE TRPM'S SHALL BE YELLOW OR WHITE, AS DESCRIBED IN THE PLAN.

MATERIAL
ALL UNITS SHALL BE OF SUFFICIENT STRENGTH AND PROPERLY SHAPED SO AS NOT TO BE DISLODGED OR BROKEN, OR THE REFLECTOR DISLODGED OR BROKEN, OR THE REFLECTOR DISLODGED OR DAMAGED BY IMPACTS FROM VEHICLES TIRES, INCLUDING THOSE OF HIGH PRESSURE TRUCK TIRES LOADED TO 4500 POUNDS.

RETROREFLECTORS SHALL BE PROVIDED IN ONE OR TWO DIRECTIONS ON EACH UNIT AS REQUIRED BY THE USAGE AND SHALL RETURN WHITE OR YELLOW LIGHT AS IS APPROPRIATED FOR THE APPLICATION.

THE REFLECTOR SHALL HAVE AN EFFECTIVE AREA OF 0.35 SQUARE INCH FOR TYPE A OR 3.0 SQUARE INCH FOR TYPE B. ITS BRIGHTNESS OR SPECIFIC INTENSITY (WHEN TESTED AT 0.2 DEGREE ANGLE OF OBSERVATION AND THE FOLLOWING ANGLES OF INCIDENCE) SHALL MEET OR EXCEED THE FOLLOWING:

SPECIFIC INTENSITY

INCIDENCE ANGLE (DEGREES)	TYPE A WHITE	TYPE A YELLOW
0	1.0	0.6
20	0.4	0.24
45	-	-

INCIDENCE ANGLE (DEGREES)	TYPE B WHITE	TYPE B YELLOW
0	3.0	1.8
20	1.2	0.72
45	0.3	0.2

ANGLE OF INCIDENCE FORMED BY A RAY FROM LIGHT SOURCE TO THE MARKER AND THE NORMAL TO THE LEADING EDGE OF THE MARKER FACE (ALSO HORIZONTAL ENTRANCE ANGLE).

ANGLE OF OBSERVATION FORMED BY A RAY FROM LIGHT SOURCE TO THE MARKER AND THE RETURNED RAY FROM THE MARKER TO THE MEASURING RECEPTOR.

SPECIFIC INTENSITY IS THE MEAN CANDLEPOWER OF THE REFLECTED LIGHT (AT GIVEN INCIDENCE AND DIVERGENCE ANGLES) FOR EACH FOOT-CANDLE AT THE REFLECTOR (ON A PLANE PERPENDICULAR TO THE INCIDENT LIGHT).

TYPE A UNITS ARE INTENDED TO PROVIDE HIGH VISIBILITY BOTH AT NIGHT AND DURING DAYLIGHT. THEIR DAY TIME VISIBILITY SHALL BE ASSURED BY SIZE, SHAPE AND COLOR AS FOLLOWS:

1) THE UNITS SHALL BE A HIGH VISIBILITY YELLOW OR WHITE COLOR WHICH WILL NOT DEGRADE SUBSTANTIALLY DUE TO TRAFFIC WEAR AND WHICH WILL MATCH THE COLOR OF THE REFLECTOR.

2) WHEN VIEWED FROM ABOVE, THE UNITS SHALL HAVE A VISIBLE AREA OF NOT LESS THAN 14 SQUARE INCHES.

3) WHEN VIEWED FROM THE FRONT, PARALLEL TO THE PAVEMENT, AS FROM APPROACHING TRAFFIC, THE UNIT SHALL HAVE A WIDTH OF APPROXIMATELY 4 INCHES AND A VISIBLE AREA OF NOT LESS THAN 1.5 SQUARE INCHES.

TYPE B UNITS ARE INTENDED TO PROVIDE HIGH VISIBILITY AT NIGHT BY RETRO-REFLECTING AUTOMOTIVE HEADLIGHT BACK TO THE DRIVER.

INSTALLATION: THEY SHALL BE ATTACHED TO CLEAN, DRY PAVEMENT BY A BUTYL ADHESIVE PAD, A BITUMINOUS ADHESIVE OR OTHER CONSTRUCTION GRADE ADHESIVES (SUCH AS FRANKLIN PANEL AND METAL ADHESIVE) SUITABLE TO ANCHOR THE UNIT UNDER THE ABOVE CONDITIONS. WHEN IT IS NECESSARY TO ATTACH UNITS TO NEW CONCRETE WITH CURING COMPOUND REMAINING, THE CURING COMPOUND MEMBRANE SHALL BE REMOVED BY SANDBLASTING OR OTHER MECHANICAL CLEANING METHOD. THEY SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL IMMEDIATELY REPLACE, AT HIS COST, ANY UNITS WHICH FAIL (BROKEN HOUSING, HOUSING WORN TO THE EXTENT THAT DAYTIME VISIBILITY IS SIGNIFICANTLY DIMINISHED OR OF AN UNACCEPTABLE COLOR, DETACHED OR BROKEN REFLECTOR, HOUSING DETACHED FROM ADHESIVE).

TRPM'S ARE LIKELY TO BE REMOVED BY SNOW PLOWING OPERATIONS, THUS THEY ARE NOT CONSIDERED SUITABLE FOR USE DURING THE PERIOD FROM OCTOBER 15 UNTIL APRIL 30. THE CONTRACTOR IS ADVISED TO SCHEDULE HIS WORK AND/OR THE USE OF THESE DEVICES TO AVOID THIS PERIOD. SHOULD THE CONTRACTOR CHOOSE TO USE TRPM'S DURING THIS PERIOD AND THEY ARE SUBSEQUENTLY REMOVED OR DESTROYED BY SNOW AND ICE CONTROL ACTIVITIES, THE CONTRACTOR SHALL IMMEDIATELY, AT HIS COST, PROVIDE A SUBSTITUTE TRAFFIC GUIDANCE SYSTEM EFFECTIVE DURING LIGHT AND DARK AND WHICH IS ACCEPTABLE TO THE ENGINEER.

THE UNITS SHALL BE PLACED ACCURATELY TO DEPICT STRAIGHT OR UNIFORMLY CURVING LINES. WHEN USED TO SUPPLEMENT TEMPORARY PAVEMENT MARKINGS, THEY MAY BE PLACED ON OR IMMEDIATELY ADJACENT TO THE PAVEMENT MARKING. LOCATIONS SHALL BE ADJUSTED UP TO ONE FOOT LONGITUDINALLY OR SIX INCHES LATERALLY TO AVOID PLACEMENT ON JOINTS, CRACKED OR DETERIORATED PAVEMENT. THEY SHALL NOT BE PLACED DIRECTLY ON PAVEMENT MARKINGS IF THIS WILL DETRACT FROM THEIR ABILITY TO REMAIN ATTACHED TO THE PAVEMENT.

APPLICATION
1) WHEN REQUIRED TO SUPPLEMENT PAVEMENT MARKING; THEY SHALL BE PLACED AS FOLLOWS:

LINE	TYPE	SPACING
EDGE LINE	A OR B	20' C/C
LANE LINE	A OR B	40' C/C*
CENTER LINE (SINGLE/BROKEN)	A OR B	40' C/C *
CENTER LINE (DOUBLE/SOLID)	A OR B	2 UNITS SIDE BY SIDE 4 INCHES APART 20' C/C
CHANNELIZING LINE (INCLUDES EXIT GORE NOSE)	A OR B	10' C/C

* CENTERED IN GAP

2) WHEN USED TO SIMULATE (REPLACE) PAVEMENT MARKING THEY SHALL BE PLACED AS FOLLOWS:

LINE	TYPE	SPACING
EDGE LINE	A	5' C/C
LANE LINE	A	4@3.33' C/C 30' GAP (40' CYCLE)
CENTER LINE (DOUBLE SOLID)	A	2 UNITS SIDE BY SIDE 5' C/C
CENTER LINE (SINGLE BROKEN)	A	4@3.33' C/C 30' GAP (40' CYCLE)
CHANNELIZING LINE (INCLUDES EXIT GORE NOSE)	A	5' C/C
EDGE LINE (TWO COLOR) (WHITE/YELLOW)	A	BACK TO BACK 5' C/C

YELLOW TRPM'S USED TO SEPARATE OPPOSITE FLOWS OF TRAFFIC (CENTER LINES) SHALL INCLUDE REFLECTIONS FOR BOTH DIRECTIONS. ALL OTHER YELLOW TRPM'S AND WHITE TRPM'S SHALL PROVIDE RETROREFLECTIVITY FOR ONE DIRECTION.

REMOVAL
REMOVAL SHALL BE ACCOMPLISHED IN A MANNER THAT LITTLE OR NONE OF THE ADHESIVE REMAINS ON THE PAVEMENT AND PERMANENT PAVEMENT SURFACES SHALL NOT BE SCARRED, BROKEN OR ROUGHENED SIGNIFICANTLY.

PAYMENT
BASIS OF PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE PER EACH TRPM AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE AND INCIDENTALS REQUIRED TO PERFORM THE WORK. IT SHALL ALSO INCLUDE REPLACEMENT AT NO ADDITIONAL COST OF ALL TRPM'S WHICH, IN THE JUDGEMENT OF THE ENGINEER, FAIL FOR ANY REASON, EXCEPT DUE TO FAILURE OF THE PAVEMENT TO WHICH THEY ARE ATTACHED.

ITEM	UNIT	DESCRIPTION
614	EACH	TEMPORARY RAISED PAVEMENT MARKERS

STATIONING (FROM-TO) (SIDE)	SPACING	TYPE A W	TYPE A Y	TYPE A Y/Y	TYPE B W	TYPE B Y	TYPE B Y/Y	REMARKS (LINE TYPE)
TOTALS								

5-87

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

614 TEMPORARY RAISED PAVEMENT MARKERS

CUYAHOGA COUNTY OHIO

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
				SHEET /

TRAFFIC MAINTENANCE

PLOT SUBMITTED: 22-NOV-1989 14:04
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PLOT SUBMITTED BY: GRMOVSEK

TRAFFIC MAINTENANCE

SCHEDULE OF THRU LANES TO BE MAINTAINED *

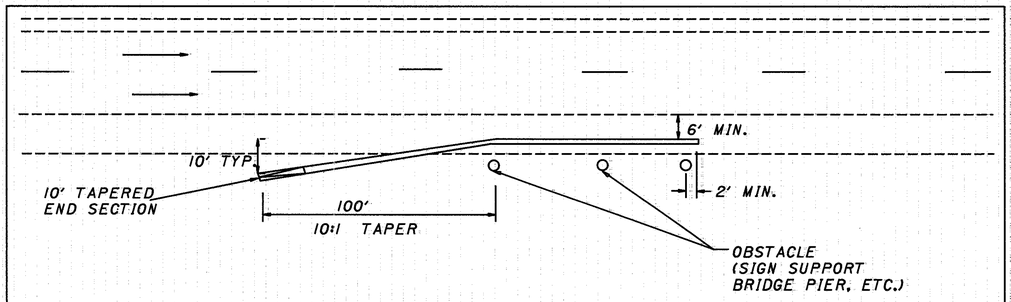
APPROXIMATE STATION LIMITS	BASIC ROADWAY TYPICAL SECTION	NUMBER OF THRU LANES TO BE MAINTAINED DURING CONCRETE REPAIRS ⊞	NUMBER OF THRU LANES TO BE MAINTAINED DURING RESURFACING ≠
STA. 860+00 TO STA. 891+00	4 LANES EACH DIRECTION	3 LANES EACH DIRECTION	2 LANES EACH DIRECTION (8:00 PM TO 12:00 AM) 1 LANE EACH DIRECTION (12:00 AM TO 6:00 AM)
STA. 891+00 EB TO STA. 903+00 EB STA. 891+00 TO STA. 912+00 WB	3 LANES EACH DIRECTION	3 LANES EACH DIRECTION 2 LANES EACH DIRECTION ⊕ (TWO WEEK TIME LIMIT)	2 LANES EACH DIRECTION (8:00 PM TO 12:00 AM) 1 LANE EACH DIRECTION (12:00 AM TO 6:00 AM)
STA. 903+00 EB TO STA. 946+00 EB STA. 912+00 WB TO STA. 950+00 WB	4 LANES EACH DIRECTION	3 LANES EACH DIRECTION	2 LANES EACH DIRECTION (8:00 PM TO 12:00 AM) 1 LANE EACH DIRECTION (12:00 AM TO 6:00 AM)
STA. 946+00 EB TO STA. 990+00 EB STA. 950+00 WB TO STA. 988+00 WB	3 LANES EACH DIRECTION	2 LANES EACH DIRECTION	2 LANES EACH DIRECTION (8:00 PM TO 12:00 AM) 1 LANE EACH DIRECTION (12:00 AM TO 6:00 AM)
STA. 990+00 EB TO STA. 996+00 EB STA. 988+00 WB TO STA. 996+00 WB	4 LANES EACH DIRECTION	3 LANES EACH DIRECTION	1 LANE EACH DIRECTION (12:00 AM TO 6:00 AM)
E.B.O.L. & W.B.O.L.	2 LANES	1 LANE	1 LANE EACH DIRECTION (9:00 AM TO 3:00 PM) OR (8:00 PM TO 6:00 AM)
RAMP G-E	1 LANE	1-11' LANE USING SHOULDER AS NECESSARY. NO OVERNIGHT RESTRICTIONS. USE FLEXIBLE REPAIRS.	1 LANE (9:00 AM TO 3:00 PM)
RAMP E-G	2 LANES	1 LANE	1 LANE (9:00 AM TO 3:00 PM)
2 LANE DIRECTIONAL ROADWAYS	2 LANES	1 LANE	1 LANE (9:00 AM TO 3:00 PM)
1 LANE DIRECTIONAL ROADWAYS	1 LANE	1 LANE USING SHOULDER AS PER DETAILS.	1 LANE (9:00 AM TO 3:00 PM)

* DURING THE SET UP AND TAKE DOWN OF TRAFFIC CONTROL ZONES A MINIMUM OF 2 THRU LANES SHALL BE MAINTAINED ON ON THE 3 OR 4 LANE SECTIONS. TRAFFIC RESTRICTIONS TO 2 LANES SHALL BE LIMITED TO BETWEEN THE HOURS OF 10:00 AM TO 2:00 PM. IF THE CONTRACTOR CHOOSES TO IMPLEMENT THE TRAFFIC CONTROL SCHEMES AT NIGHT BETWEEN 12:00 AM TO 6:00 AM HE MAY CLOSE ANY ROADWAY TO 1 THRU LANE

⊞ CONCRETE REPAIRS INCLUDE SHOULDER REPLACEMENT OR REPAIR AND FULL DEPTH OR PARTIAL DEPTH REPAIR. AT THE COMPLETION OF THE CONCRETE REPAIRS THE ROADWAY SHALL BE RE-OPENED TO NORMAL TRAFFIC. ANY LANE CLOSURES NEEDED AFTER THAT TIME SHALL BE LIMITED TO NON-RUSH HOUR.(9:00 AM TO 2:00 PM) OR (8:00PM TO 6:00 AM)

≠ ALLOWABLE RESURFACING TIMES SHOWN IN PARENTHESES

⊕ LANE RESTRICTION ONLY PERMITTED FOR CONCRETE REPAIRS OF MIDDLE LANE. SEE "CRITICAL WORK ZONE" NOTE (SHEET 11).



TEMPORARY CONCRETE BARRIER AT HAZARDS
SEE PUBLIC SAFETY NOTE FOR REQUIRED USE

ADVANCE WARNING SIGNS

		DISTANCE *	SIGN	SIZE	DISCRIPTION
LEFT LANE CLOSED		500'	OW-60D	48"X48"	WIDTH TRANSITION (SYMBOLIC)
		1000'	OW-143	24"X24"	35 MPH
			OW-123 MOD	48"X48"	LEFT LANE CLOSED 1000 FT.
		2000'	OW-123 MOD	48"X48"	LEFT LANE CLOSED 2000 FT.
		3000'	OW-134	48"X48"	ROAD WORK AHEAD
		5200'	OW-134	48"X48"	ROAD WORK AHEAD
RIGHT LANE CLOSED		500'	OW-60C	48"X48"	WIDTH TRANSITION (SYMBOLIC)
		1000'	OW-143	24"X24"	35 MPH
			OW-122 MOD	48"X48"	RIGHT LANE CLOSED 1000 FT.
		2000'	OW-122 MOD	48"X48"	RIGHT LANE CLOSED 2000 FT.
		3000'	OW-134	48"X48"	ROAD WORK AHEAD
		5200'	OW-134	48"X48"	ROAD WORK AHEAD
REVERSE FOR LEFT LANE SHIFT	LANE SHIFT (ADVANCE)	500'	OW-5,5A OR 5B	48"X48"	LANE SHIFT (SYMBOLIC)
			OW-143	24"X24"	35 MPH
		1000'	OC-53	36"X36"	MAINTAIN PRESENT LANE
		2000'	OC-49R	48"X48"	RIGHT LANE MUST USE SHOULDER
			OW-145A	30"X16"	2000 FT.
		3000'	OC-39AL	48"X48"	ALL TRUCKS LEFT 2 LANES
	LANE SHIFT (THRU)	500'	OC-49R	48"X48"	RIGHT LANE MUST USE SHOULDER
		1500'c/c	OC-49R	48"X48"	RIGHT LANE MUST USE SHOULDER
	LANE SHIFT (END)	0'	OC-6,6A OR 6B	48"X48"	LANE SHIFT (SYMBOLIC)
			OC-143	24"X24"	35 MPH
	EXIT RAMP ACROSS CLSD LANE		GORE	OW-SPEC	48"X48"	EXIT RAMP
		500'	OW-SPEC	48"X48"	EXIT RAMP 500 FT.
		1000'	OW-SPEC	48"X48"	EXIT RAMP 1000 FT.
	EXIT ONLY LANE	500'	OW-SPEC	48"X48"	RIGHT LANE MUST EXIT
		1000'	OW-SPEC	48"X48"	RIGHT LANE MUST EXIT
		2000'	OW-SPEC	48"X48"	RIGHT LANE MUST EXIT

DUAL SIGN INSTALLATION: SINGLE, DUAL, SINGLE INSTALLATION

* DISTANCES ARE MEASURED FROM BEGINNING OF LANE CLOSURE. LANE SHIFT OR PAINTED GORE.

EXTRA ADVANCE WARNING SIGN GROUPS AS PER STANDARD DRAWING MT-95.30 SHALL BE INSTALLED WHEN DIRECTED BY THE ENGINEER.

SEE STANDARD DRAWING MT-98.15 FOR ENTRANCE RAMPS APPROACHING A CLOSED LANE.

TRAFFIC MAINTENANCE

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

16
118

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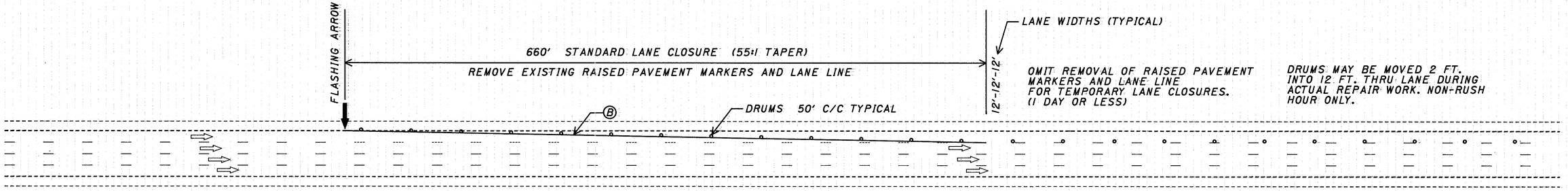
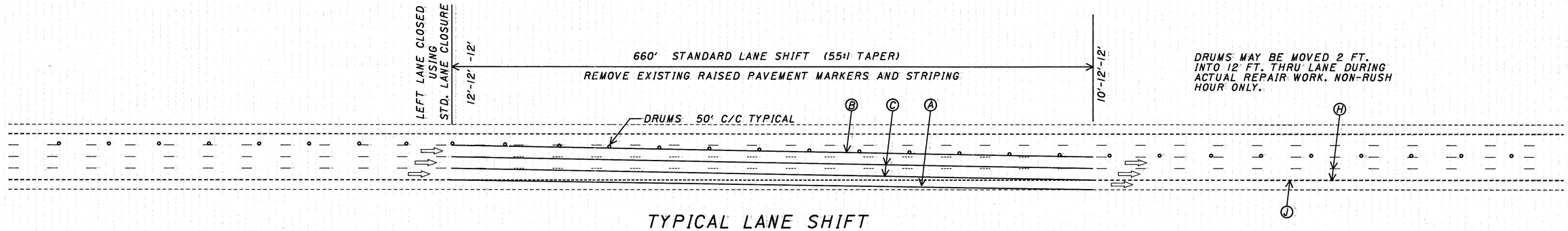
SCALE IN FEET



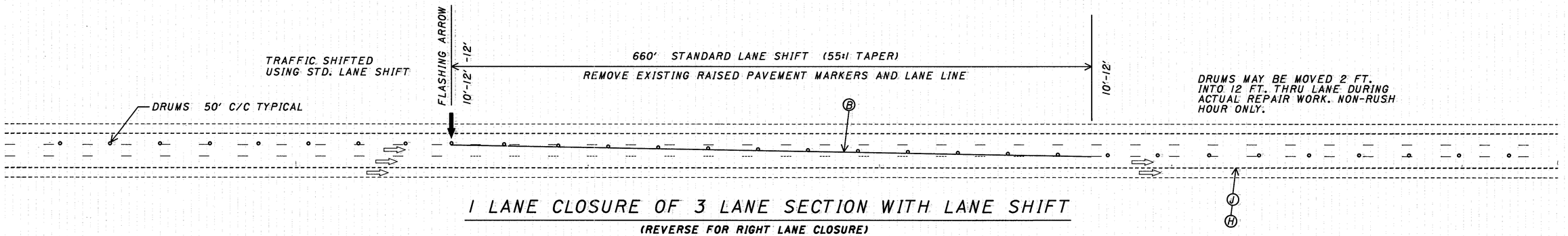
TYPICAL LEFT LANE CLOSURE

(REVERSE FOR RIGHT LANE CLOSURE)



TYPICAL LANE SHIFT

(REVERSE AT END OF CLOSURE)



1 LANE CLOSURE OF 3 LANE SECTION WITH LANE SHIFT

(REVERSE FOR RIGHT LANE CLOSURE)

FOR TEMPORARY PAVEMENT MARKING LEGEND SEE SHEET 18.

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CUYAHOGA COUNTY	OHIO	17
CUY-480-15.84	FHWA REGION 5	118
	FEDERAL PROJECT	

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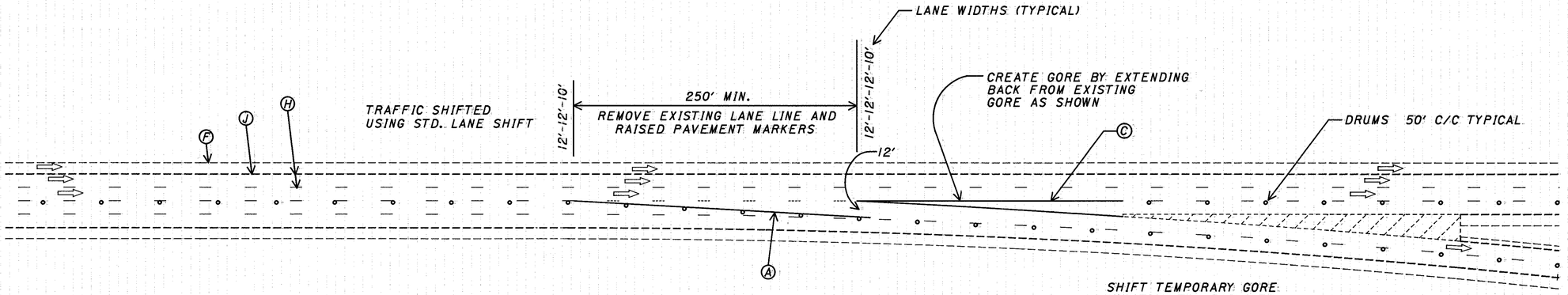
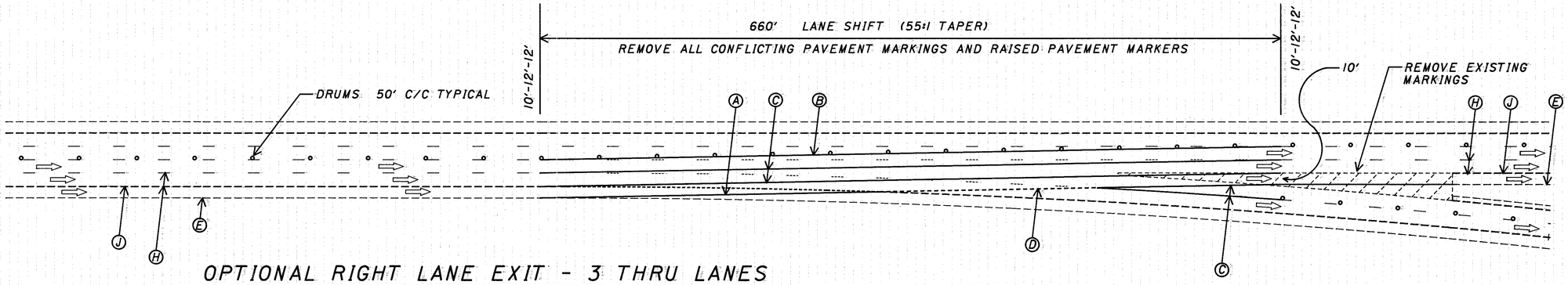


OPTIONAL RIGHT LANE EXIT - 3 THRU LANES

(RIGHT LANE CLOSED)



OPTIONAL RIGHT LANE EXIT - 3 THRU LANES

(LEFT LANE CLOSED)

FOR TEMPORARY PAVEMENT MARKING LEGEND SEE SHEET 18.

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TRAFFIC MAINTENANCE

CUYAHOGA COUNTY	OHIO	18
CUY-480-15.84	FHWA REGION 5	118
	FEDERAL PROJECT	

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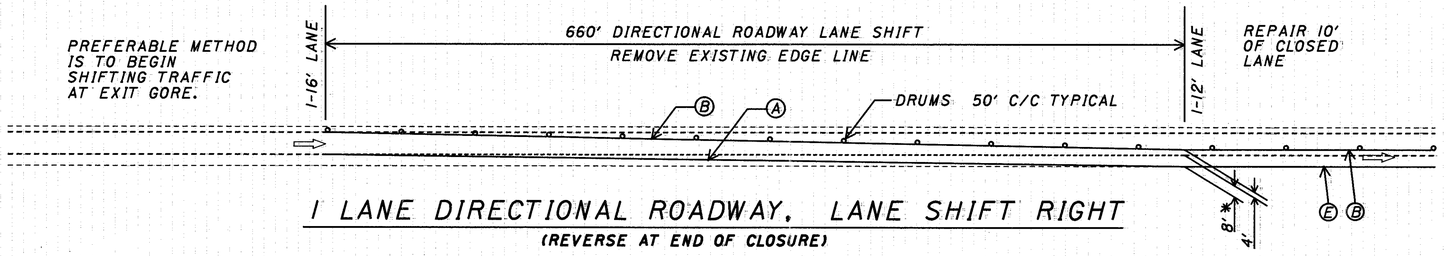
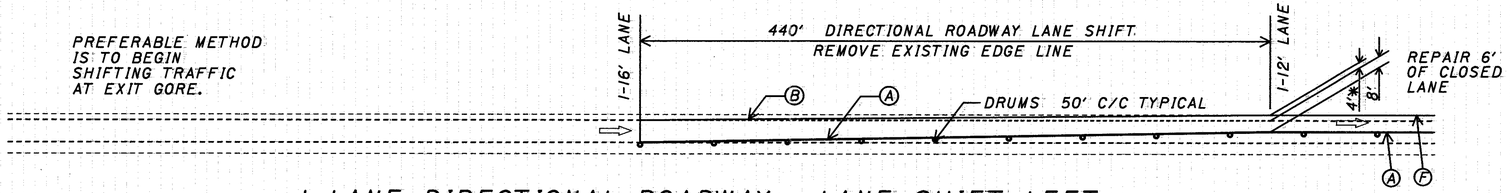
SCALE IN FEET



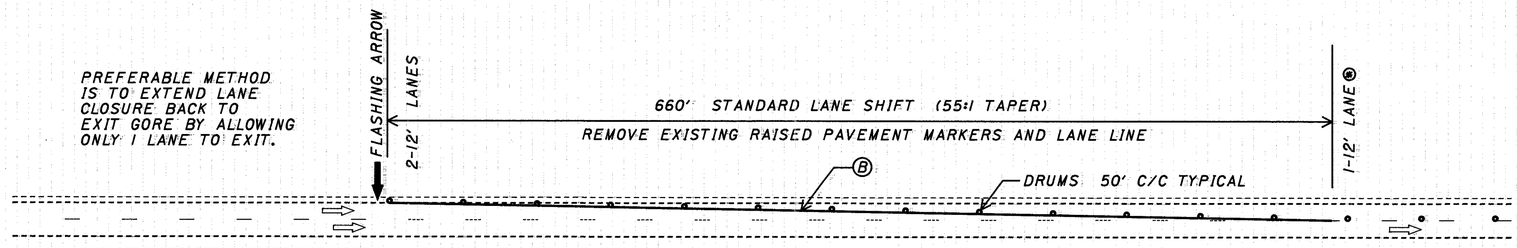
1 LANE DIRECTIONAL ROADWAY, LANE SHIFT RIGHT

(REVERSE AT END OF CLOSURE)



1 LANE DIRECTIONAL ROADWAY, LANE SHIFT LEFT

(REVERSE AT END OF CLOSURE)



2 LANE DIRECTIONAL ROADWAY, 1 LANE CLOSURE

(REVERSE FOR RIGHT LANE CLOSURE)

TEMPORARY PAVEMENT MARKING LEGEND

(ALL ITEMS SHALL HAVE SUPPLEMENTAL TEMPORARY RAISED PAVEMENT MARKERS)

- (A) - TEMPORARY EDGE LINES, CLASS I, 947.03, TYPE B ⊕(WHITE)
- (B) - TEMPORARY EDGE LINES, CLASS I, 947.03, TYPE B ⊕(YELLOW)
- (C) - TEMPORARY CHANNELIZING LINE, CLASS I, 947.03 TYPE B ⊕
- (D) - TEMPORARY 4" DOTTED LINES, CLASS I, 947.03 TYPE B
- (E) - TEMPORARY EDGE LINE, CLASS I (WHITE)
- (F) - TEMPORARY EDGE LINE, CLASS I (YELLOW)
- (H) - TEMPORARY RAISED PAVEMENT MARKERS (SUPPLEMENTAL TO EXISTING LANE LINE)
- (J) - TEMPORARY LANE LINE, CLASS I, REMOVE EX. EDGE LINE LEAVING 10 FT. SECTIONS 40' C/C. PROVIDE NEW MARKINGS OVER EXISTING MARKINGS IF DIRECTED BY THE ENGINEER.

* - PAVED SHOULDER WIDTH IS REDUCED BY 9 INCHES AT STRUCTURES

⊕ - ALL TEMPORARY PAVEMENT MARKINGS WHICH ARE TO BE INSTALLED BEYOND THE PROPOSED RESURFACING LIMITS SHALL BE 947.03, TYPE C

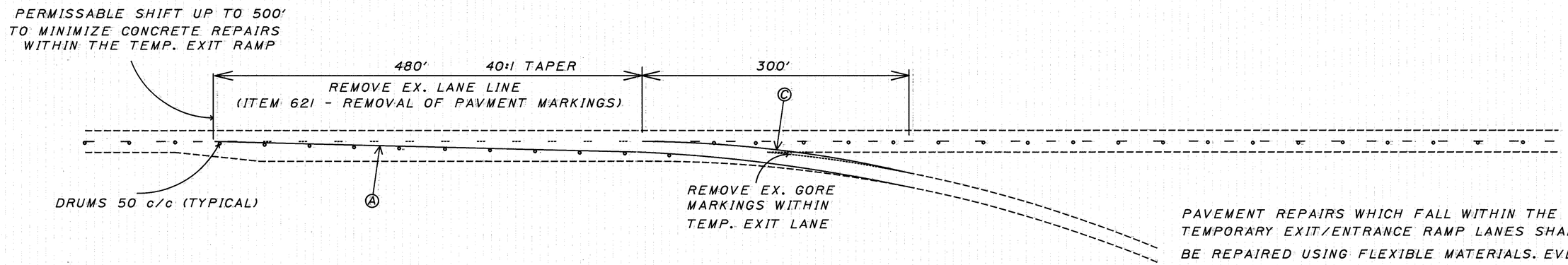
NOTE:

FOR THIS PROJECT RAMPS E-G AND G-E SHALL BE CONSIDERED AS DIRECTIONAL ROADWAYS. ALL REPAIRS TO RAMP G-E ARE TO BE DONE USING TEMPORARY LANE CLOSURES AND THEREFORE NO TEMPORARY PAVEMENT MARKINGS SHALL BE REQUIRED.

⊛ - DRUMS MAY BE MOVED 2 FT. INTO 12 FT. THRU LANE DURING ACTUAL REPAIR WORK. NON-RUSH HOUR ONLY.

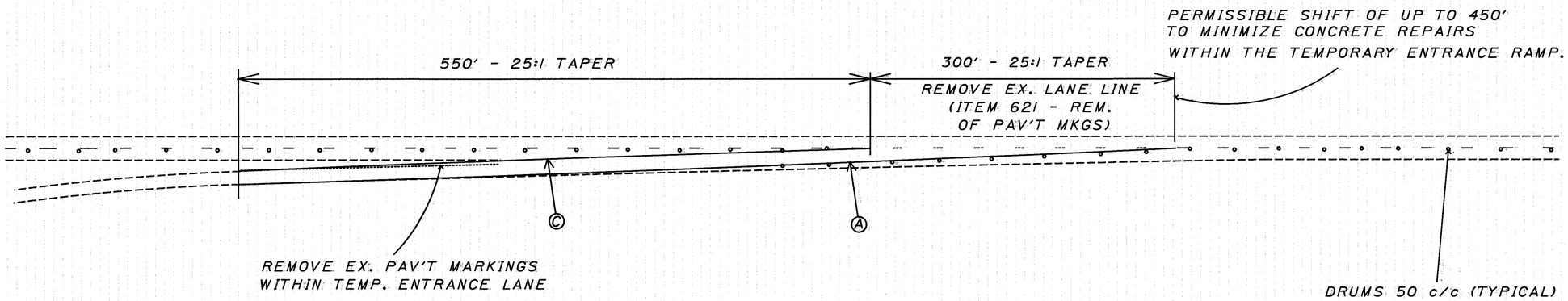
TRAFFIC MAINTENANCE

CUYAHOGA COUNTY CUY-480-15.84	OHIO FHWA REGION 5 FEDERAL PROJECT	19 118



TYPICAL EXIT RAMP ACROSS CLOSED LANE

PAVEMENT REPAIRS WHICH FALL WITHIN THE TEMPORARY EXIT/ENTRANCE RAMP LANES SHALL BE REPAIRED USING FLEXIBLE MATERIALS. EVERY ATTEMPT SHALL BE MADE TO AVOID PAVMENT REPAIRS WITHIN THE TEMPORARY RAMP BY SHIFTING THE TEMPORARY RAMP TERMINI. (SEE DETAILS) WHEN FLEXIBLE REPAIRS ARE NECESSARY THEY SHALL BE PERFORMED BETWEEN 10 A.M. AND 3 P.M. FLAGGERS SHALL BE REQUIRED TO CONTROL TRAFFIC DURING THAT WORK.



TYPICAL ENTRANCE RAMP ACROSS CLOSED LANE

FOR TEMPORARY PAVEMENT MARKING LEGEND SEE SHEET 18.

PLOT SUBMITTED: 22-NOV-1989 14:13
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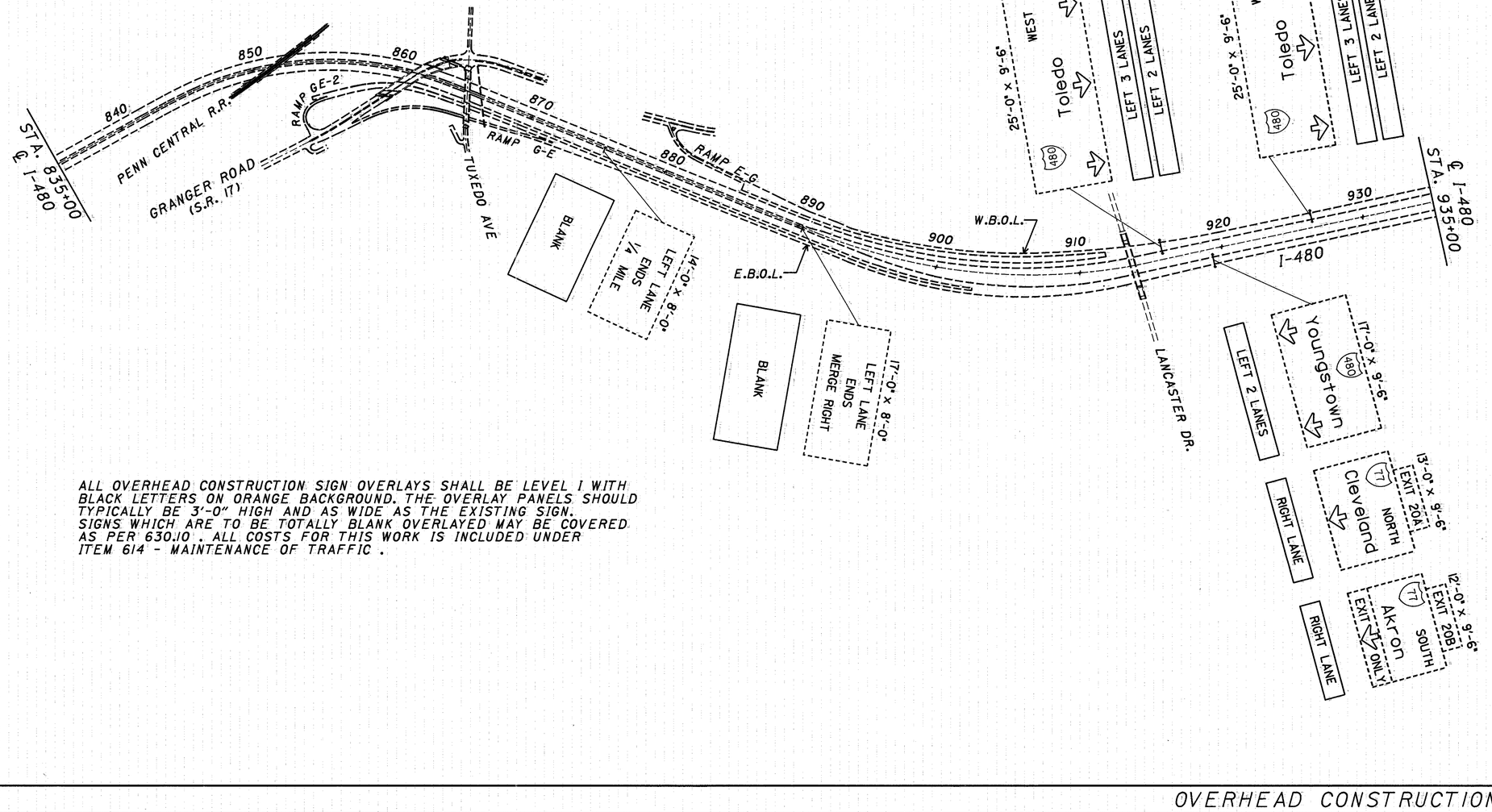
PLOT SUBMITTED BY: GRMOVSEK

TRAFFIC MAINTENANCE

CUYAHOGA COUNTY CUY-480-15.84	OHIO FHWA REGION 5 FEDERAL PROJECT	20 118

400 200 0 400 800 1200 1600

SCALE IN FEET



ALL OVERHEAD CONSTRUCTION SIGN OVERLAYS SHALL BE LEVEL I WITH BLACK LETTERS ON ORANGE BACKGROUND. THE OVERLAY PANELS SHOULD TYPICALLY BE 3'-0" HIGH AND AS WIDE AS THE EXISTING SIGN. SIGNS WHICH ARE TO BE TOTALLY BLANK OVERLAYED MAY BE COVERED AS PER 630.10 . ALL COSTS FOR THIS WORK IS INCLUDED UNDER ITEM 614 - MAINTENANCE OF TRAFFIC .

OVERHEAD CONSTRUCTION SIGN OVERLAYS

PLOT SUBMITTED: '22-NOV-1989 14:14

ZF2:[100,331480TM5.DGN

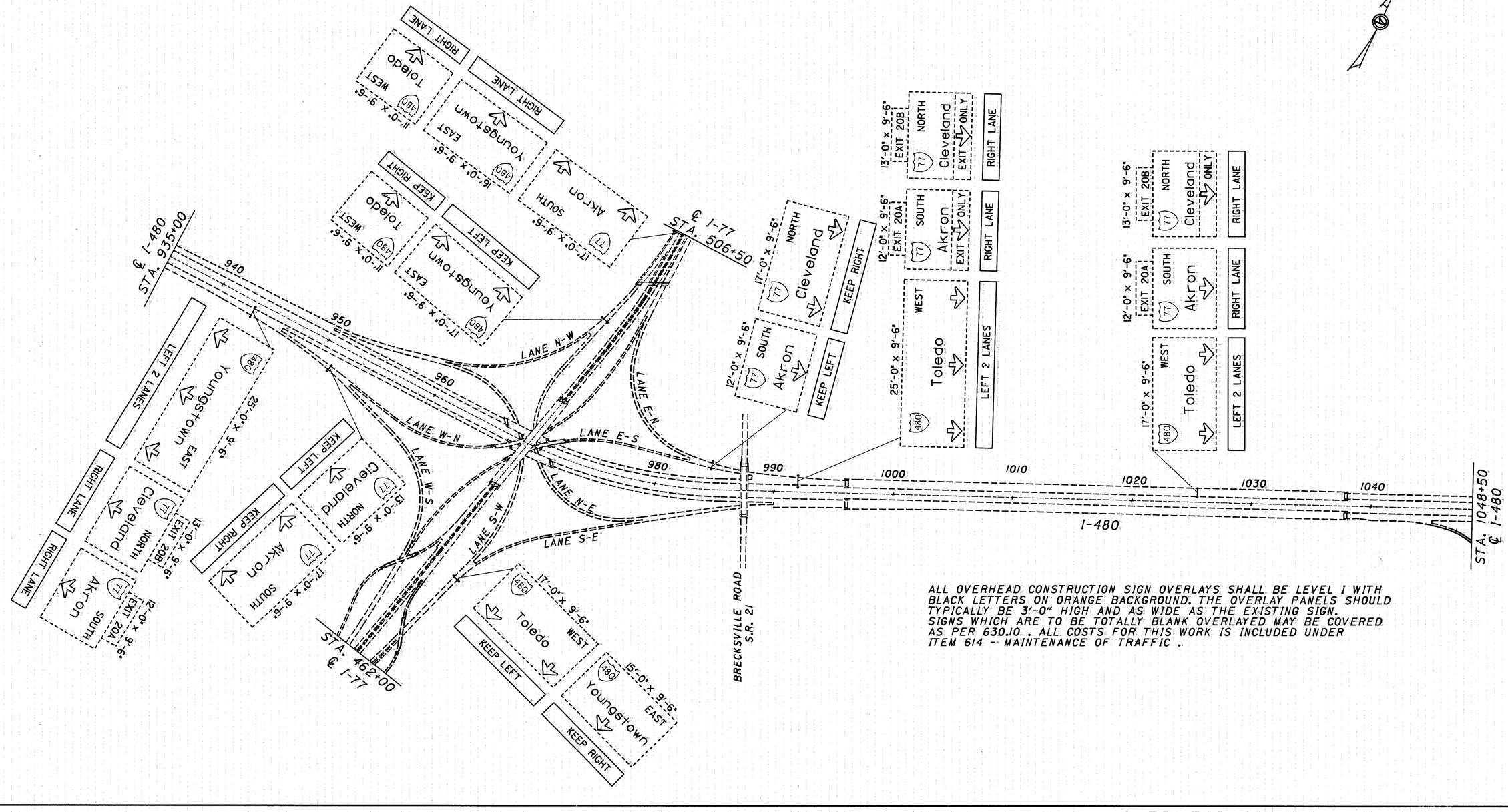
PLOT SUBMITTED BY: GRMOVSEK

TRAFFIC MAINTENANCE

CUYAHOGA COUNTY CUY-480-15.84	OHIO FHWA REGION 5 FEDERAL PROJECT	21 118

400 200 0 400 800 1200 1600

SCALE IN FEET



ALL OVERHEAD CONSTRUCTION SIGN OVERLAYS SHALL BE LEVEL I WITH BLACK LETTERS ON ORANGE BACKGROUND. THE OVERLAY PANELS SHOULD TYPICALLY BE 3'-0" HIGH AND AS WIDE AS THE EXISTING SIGN. SIGNS WHICH ARE TO BE TOTALLY BLANK OVERLAYED MAY BE COVERED AS PER 630.10 . ALL COSTS FOR THIS WORK IS INCLUDED UNDER ITEM 614 - MAINTENANCE OF TRAFFIC .

OVERHEAD CONSTRUCTION SIGN OVERLAYS

PLOT SUBMITTED: 22-NOV-1989 14:22

PLOT SUBMITTED BY: GRMOVSEK

ZF2:[100,331]480TM6.DGN

PLOT SUBMITTED: 22-NOV-1989 14:26
ZF2:[100,331480CSSI.DGN
PLOT SUBMITTED BY: GRMOVSEK

SHOULDER QUANTITIES

SHOULDER WIDENING OR REPLACEMENT

SIDE	LOCATION FROM	LOCATION TO	LENGTH	AVERAGE WIDTH	203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	203 SUBGRADE COMPACTION	305 9" CONCRETE BASE	305 10" CONCRETE BASE	310 SUBBASE, TYPE II, AS PER PLAN
	FROM	TO	FT.	FT.	C.Y.	S.Y.	S.Y.	S.Y.	C.Y.
	LANE W-S								
LT	46+10.27	68+30	2219.7	4	274.1			986.4	
RT	46+10.27	68+30	2219.7	10	685.0			2466.3	
	LANE W-N								
LT	53+44.76	83+14	2496.1⊗	4	308.3			1109.3	
RT	53+44.76	83+14	2496.1⊗	8	986.2	2218.8		2218.8	369.7
	LANE N-W								
LT	55+57.36	66+66	1108.6	4	136.9			492.7	
RT	55+57.36	56+57.36	100	9	27.8			100.0	
RT	56+57.36	66+66	1008.6	8	398.5	896.5		896.5	149.4
	LANE S-W								
LT	73+93.92	102+92.32	2898.4	4	358.0			1288.0	
RT	73+93.92	93+75	1981.1	10	611.4			2201.2	
RT	93+75	94+75	100	9	27.8			100.0	
RT	94+75	102+92.32	817.3	10	252.2			908.1	
GORE S-W/N-W	93+75	95+14.59	139.6	15	69.8			237.3	
	LANE E-S								
LT	55+82	56+51	69.0	10	21.3			76.7	
LT	56+51	82+75.91	2121.0⊕	8	838.0	1885.4		1885.4	314.1
RT	55+82	82+75.91	2190.0⊕	4	270.5			973.2	
GORE E-S/W-S	55+82	56+51	69.0	12	25.6			92.0	
	LANE E-N								
LT	65+39.19	87+70	2230.8	4	275.5			991.4	
RT	64+39.19	87+86	2346.8	10	724.2			2607.5	
GORE E-N/W-N	83+14	84+69	155.0	8	38.3			137.8	
	LANE N-E								
LT	49+40	87+90.62	3850.6	4	475.5			1711.2	
RT	49+58	76+85	2727.0	10	841.6			3030.0	
RT	76+85	77+97	112.0	8	44.3	99.6		99.6	16.6
RT	77+97	78+97	100.0	9	27.8			100.0	
RT	78+97	87+90.62	893.6	10	275.8			992.9	
GORE N-E/S-E	76+85	78+95.22	210.2	15	105.1			357.3	
	LANE S-E								
LT	68+00	86+30	1830.0	4	226.0			813.3	
RT	68+00	86+30	1830.0	8	723.0	1626.7		1626.7	271.0
⊗ - INCLUDES DEDUCTION OF 473.17' FOR BRIDGE CUY-480-1787 W-N ⊕ - INCLUDES DEDUCTION OF 503.87' FOR BRIDGE CUY-480-1792 E-S									
SUB-TOTAL					9048.5	6727.0		28499.6	1120.8

SHOULDER WIDENING OR REPLACEMENT

SIDE	LOCATION FROM	LOCATION TO	LENGTH	AVERAGE WIDTH	203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	203 SUBGRADE COMPACTION	305 9" CONCRETE BASE	305 10" CONCRETE BASE	310 SUBBASE, TYPE II, AS PER PLAN
	FROM	TO	FT.	FT.	C.Y.	S.Y.	S.Y.	S.Y.	C.Y.
I-480									
	EBIL								
MEDIAN	860+00	891+36.99	3137.0	11	1065.0			3834.0	
MEDIAN	891+36.99	893+25	188.0	12.34	71.6			257.8	
	WBIL								
MEDIAN	860+00	891+36.99	3137.0	11	1065.0			3834.0	
	EB								
MEDIAN	938+25.0	996+25.25	●5437.4	10	1678.0			6041.5	
OUTSIDE	938+25.0	996+25.25	●5437.4	10	1678.0			6041.5	
GORE 480/N-E	987+88.7	990+00	211.3	28	182.6			657.4	
	WB								
MEDIAN	938+25.0	996+25.25	●5437.4	10	1678.0			6041.5	
OUTSIDE	938+25.0	996+25.25	●5437.4	10	1678.0			6041.5	
GORE 480/S-W	950+00	951+88.6	188.6	21	122.2			440.1	
	RAMP GE								
RT	58+71.09	71+00	1228.9	6	341.4	819.3	819.3		136.5
RT	71+00	72+00	100	7	32.4	77.8	77.8		12.9
	RAMP EG								
LT	78+77	82+00	345.6	6	96.0	230.4	230.4		38.4
LT	82+00	84+38.28	238.3	6	66.2	158.9	158.9		26.5
LT	84+38.28	85+38.28	100.0	7	32.4	77.8	77.8		13.0
LT	85+38.28	89+00	361.7	8	134.0	321.5	321.5		53.6
● INCLUDES DEDUCTION OF 362.83' FOR BRIDGE NUMBER CUY-480-1793									
SUB-TOTAL					9920.8	1685.7	1685.7	33189.3	280.9
SUB-TOTAL (FROM LEFT)					9048.5	6727.0		28499.6	1120.8
SHEET TOTALS					18969.3	8412.7	1685.7	61688.9	1401.7

PLOT SUBMITTED: 22-NOV-1989 14:28
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PLOT SUBMITTED BY: GRMOVSEK

RESURFACING QUANTITIES

RESURFACING QUANTITIES

LOCATION FROM	LOCATION TO	SIDE	LENGTH	END WIDTHS	SURFACE AREA	446 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20, AS PER PLAN	446 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20, AS PER PLAN
				LIN. FT.	SQ. YDS.	CU. YDS.	CU. YDS.
RAMP G-E							
57+71	58+01	EB	30′	20	67	2.3	3.3
58+01	58+71	EB	70′	20	156	5.4	7.6
58+71	65+23	EB	652′	25	1811	62.9	88.0
65+23	69+40	EB	417′	25	1158	40.2	56.3
RAMP E-G							
78+77	79+87	WB	110.0′	53.5	654	22.7	31.8
79+87	84+38.28	WB	451.3′	30.0	1504	52.2	73.1
84+38.28	85+38.28	WB	100.0′	31.0	344	11.9	16.7
85+38.28	89+00	WB	361.7′	72.5	2914	101.2	141.7
89+00	92+40	WB	340.0′	57.5	2172	75.4	105.6
92+40	93+40	WB	100′	49.0	544	18.9	26.4
LANE N-W							
55+57.36	56+57.6		100.3′	29.0	323	11.2	15.7
56+57.6	66+66		1008.4′	28.0	3137	108.9	152.5
LANE N-E							
49+58	55+58.8		600.8′	58.0	3867	134.3	188.0
55+58.8	76+85		2126.2′	38.0	8977	311.7	436.4
76+85	87+90.62		1105.6′	51.2	6288	218.3	305.7
LANE W-S							
46+10.27	53+40.66		730.4′	47.6	3859	134.0	187.6
53+40.66	68+30		1489.3′	38.0	6288	218.3	305.7
LANE W-N							
53+44.76	83+14		2496.4⊕	28.0	7765	269.6	377.5
LANE S-E							
67+25	73+91.84		666.8′	56.0	4149.0	144.1	201.7
73+91.84	86+30		1238.2′	28.0	3852	133.7	187.2
LANE S-W							
73+93.32	93+75		1981.7′	38.0	8367	290.5	406.7
93+75	102+92.32		917.3′	51.9	5290	183.7	257.2
LANE E-N							
64+39.19	70+73.12		633.9′	50.5	3554	123.4	172.8
70+73.12	83+14		1240.9′	38.0	5239	181.9	254.7
83+14	87+86		472′	54.8	2872	99.7	139.6
LANE E-S							
55+07	56+51		144.0′	62.2	995	34.5	48.4
56+51	82+75.91		2121.0⊗	28.0	6599	229.1	320.7
SUB-TOTAL						3220.0	4508.6

⊕INCLUDES DEDUCTION OF 473.2′ FOR BRIDGE NUMBER CUY-480-1787WN
⊗INCLUDES DEDUCTION OF 503.9′ FOR BRIDGE NUMBER CUY-480-1792ES

RESURFACING QUANTITIES

LOCATION FROM	LOCATION TO	SIDE	LENGTH	END WIDTHS	SURFACE AREA	446 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20	446 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
				LIN. FT.	SQ. YDS.	CU. YDS.	CU. YDS.
I-480							
868+65	869+40	EBOL	75′	39.0	325	11.3	15.8
869+40	871+00	EBOL	160′	69.7	1,239	43.0	60.2
871+00	872+00	EBOL	100′	63.7	708	24.6	34.4
872+00	881+20	EBOL	920′	50.5	5,162	179.2	250.9
881+20	902+88	EBOL	2168′	39.0	9,395	326.2	456.7
885+37.36	911+18	WBOL	2581′	44.0	12618	438.1	613.4
859+25	893+25	EBIL	3400′	69.5	26,256	911.7	1,276.3
893+25	902+67	EBIL	942′	60.2	6,301	218.8	306.3
859+25	891+36.99	WBIL	3212′	69.5	24,804	861.2	1,205.7
891+36.99	891+77.91	WBIL	41′	57.5	261	9.1	12.7
891+77.91	911+63	WBIL	1985′	56.0	12,351	428.9	600.4
902+67	915+43.72	EB	1276.7′	85.8	12,171	422.6	591.6
915+00	918+83	EB	383′	71.8	3,056	106.1	148.6
918+83	938+25	EB	1942′	68.0	14,673	509.5	713.3
911+63	914+75	WB	312′	99.4	3,447	119.7	167.6
915+00	920+51.92	WB	551.9′	75.3	4,620	160.4	224.6
920+51.92	936+00	WB	1548.1′	68.0	11,697	406.1	568.6
938+25	940+10	EB	185′	68.0	1,398	48.5	68.0
940+10	946+12.1	EB	602.1′	83.6	5,591	194.1	271.8
946+12.1	987+88.7	EB	3813.8⊛	56.0	23,730	824.0	1,153.5
987+88.7	990+00	EB	211.3′	100.2	2,351	81.6	114.3
990+00	996+20	EB	620′	90.3	6,217	215.9	302.2
936+00	950+00	WB	1400′	82.0	12,756	442.9	620.1
950+00	951+88.6	WB	188.6′	101.0	2,116	73.5	102.9
951+88.6	989+12.54	WB	3361.1⊛	56.0	20,914	726.2	1016.7
989+12.54	996+20	WB	707.5′	81.7	6,419	222.9	312.0
SUB-TOTAL						8006.1	11226.6
SUB-TOTAL (FROM LEFT)						3220.0	4508.6
SHEET TOTALS						11226	15735

⊛ INCLUDES DEDUCTION OF 362.8′ FOR BRIDGE NUMBER CUY-480-1793 LEFT OR RIGHT

ITEM 407 - TACK COAT

$$\frac{11090}{1.25"} \times \frac{36"}{Y.D.} = 319{,}392 \text{ S.Y.}$$

$$319{,}392 \text{ S.Y.} \times \frac{0.075 \text{ GALS.}}{\text{S.Y.}} = \underline{23{,}954 \text{ GALS.}}$$

PRESSURE RELIEF JOINTS

	LOCATION*	SPECIAL PRESSURE RELIEF JOINT, TYPE C *	
		LIN. FT.	
31	872+00 EBOL	6 **	
	882+50 EBOL	6 **	
	892+00 WBOL	6 **	
	892+50 EBOL	6 **	
32	900+50 WBOL	16 **	
34	954+50 EB	20 ***	
	965+30 WB	56	
	966+40 EB	56	
	971+40 WB	56	
	972+30 EB	56	
35	995+20 WB	72	
	995+20 EB	86	
36	50+70 LANE N-E	38	
	54+25 LANE N-E	14 ***	
	86+70 LANE E-N	52	
37	64+68 LANE W-S	14 ***	
	60+10 LANE E-S	12 ***	
	74+70 LANE S-W	14 ***	
38	69+65 LANE N-E	14 ***	
39	65+90 LANE W-N	28	
	72+90 LANE W-N	28	
40	87+75 LANE S-W	14 ***	
41	75+25 LANE E-N	14 ***	
	73+30 LANE E-S	28	
	66+00 LANE E-S	28	
TOTALS:		740	

*- EXCEPT AT BRIDGES OR LIGHTING CONDUIT CROSSINGS, THE LOCATIONS MAY BE ADJUSTED ± 100 FT. TO AVOID EXISTING JOINT LOCATIONS OR TO ALLOW THE PRESSURE RELIEF JOINT TO BE INSTALLED BY BULKHEADING IN A PAVEMENT REPAIR AREA.

**- THE PRESSURE RELIEF JOINT SHALL EXTEND ACROSS EXISTING CONCRETE MEDIANS.

***- THE LOCATION IS AN EXTENSION ACROSS THE PROPOSED CONCRETE SHOULDERS OF THE TRENCH IN PAVED AREAS AS SHOWN ON SHEET NO. 104. THIS WORK SHALL NOT BE DONE UNTIL AFTER THE PROPOSED LIGHTING CONDUITS HAVE BEEN INSTALLED.

OVERLAY FEATHERS

LOCATION	254 PAVEMENT PLANING, BITUMINOUS	254 PAVEMENT PLANING, PORTLAND CEMENT CONCRETE
	SQ. YDS.	SQ. YDS.
RAMP G-E TERMINI		23
RAMP E-G TERMINI		146
67+25 (LANE S-E)	174	
55+07 (LANE E-S)	208	
49+58 (LANE N-E)	132	
87+86 (LANE W-N)	174	
859+25 (EB)	241	
859+25 (WB)	241	
996+20 (EB)	278	
996+20 (WB)	243	
868+65 (E.B.O.L.)		135
BR. CUY-480-1793R		389
BR. CUY-480-1793L		389
BR. CUY-480-1787WN		194
BR. CUY-480-1792ES		194
TOTALS:	1691	1470

EARTHWORK

SHEET NUMBER	203 EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION	203 EMBANKMENT, AS PER PLAN	659 SEEDING AND MULCHING
	C.Y.	C.Y.	S.Y.
53	317	117	1287
54		211	1077
TOTALS:	317	328	2364

ITEM 659 - COMMERCIAL FERTILIZER

(2364) S.Y. X $\frac{9 \text{ S.F.}}{\text{S.Y.}}$ X $\frac{20 \text{ LBS.}}{1000 \text{ S.F.}}$ X $\frac{\text{TON}}{2000 \text{ LBS.}}$ = 0.21 TON *

ITEM 659 - AGRICULTURAL LIMING

(2364) S.Y. X $\frac{9 \text{ S.F.}}{\text{S.Y.}}$ X $\frac{100 \text{ LBS.}}{1000 \text{ S.F.}}$ X $\frac{\text{TON}}{2000 \text{ LBS.}}$ = 1.06 TONS

* ADD AN ADDITIONAL $\frac{(7.5 \text{ lbs}) \times 5114 \times 9}{1000 \text{ S.F.} \quad 2000}$ = 0.173 TON FOR TWO CONSTRUCTION SEASONS

(250 + 2500 + 2364 = 5114)

ITEM 622 - CONCRETE GLARE SCREEN

STA. 851+95 TO STA. 892+45 =	=	4050.0 L.F.
DEDUCT FOR LIGHT POLE FOUNDATIONS	17 x 2.5' =	- 42.5 L.F.
DEDUCT FOR CANTILEVER SIGN SUPPORTS	1 x 10.0' =	- 10.0 L.F.
DEDUCT FOR OVERHEAD SIGN SPANS	1 x 10.0' =	- 10.0 L.F.
DEDUCT FOR PIERS, BR. NO. CUY-480-1585	=	- 90.60 L.F.
DEDUCT FOR PIERS, BR. NO. CUY-480-1590	=	- 34.03 L.F.
DEDUCT FOR PIERS, BR. NO. CUY-480-1594	=	- 2.50 L.F.
	TOTAL =	3860.37 L.F.

PLOT SUBMITTED: 22-NOV-1989 15:18
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331480CSS]D...

GUARDRAIL QUANTITIES

CUYAHOGA COUNTY CUY-480-15.84	OHIO	25/118
	FHWA REGION 5	
	FEDERAL PROJECT	

FOR CONCRETE BARRIER DETAILS SEE SHEETS 49 & 50

GUARDRAIL QUANTITIES

SHEET NO.	REFERENCE NO.	EXISTING LOCATIONS STATION FROM	EXISTING LOCATIONS STATION TO	PROPOSED LOCATIONS STATION FROM	PROPOSED LOCATIONS STATION TO	DIRECTION	SIDE	202 CURB REMOVED L.F.	202 GUARDRAIL REMOVED L.F.		606 RAISING EXISTING GUARDRAIL L.F.	606 RAISING EXISTING GUARDRAIL, AS PER PLAN L.F.	606 GUARDRAIL, TYPE 5 L.F.	606 BARRIER GUARDRAIL, TYPE 5 L.F.	606 ANCHOR ASSEMBLY, TYPE A EA.	606 ANCHOR ASSEMBLY, TYPE A BARRIER DESIGN EA.	606 ANCHOR ASSEMBLY, TYPE T EA.	606 BRIDGE TERMINAL ASSEMBLY, TYPE A EA.	606 BRIDGE TERMINAL ASSEMBLY, TYPE J EA.		622 CONCRETE BARRIER, TYPE D, AS PER PLAN L.F.	622 CONCRETE BARRIER, TYPE B42, AS PER PLAN L.F.	203 LINEAR GRADING L.F.	404 ASPHALT CONCRETE, AC-20 C.Y.	SPEC HERBICIDES FOR WEED CONTROL S.Y.
30	1-G	857+68.75	867+14			EB	OUT				818.75	50											290	11.1	134
	2-G	861+06	865+81			WB	IN				262.5	187.5													
	3-G	61+62 G-E	67+50 G-E				LT				500												630	23.7	284
	4-G	64+25.50 G-E	67+65 G-E	64+35 G-E	66+10 G-E		RT		362.5		137.5		100		1			1				50	178	5.1	61
31	5-G	82+39.20 E-G	90+52 E-G	84+90 E-G	90+40 E-G		LT		812.5				462.5		1		1	1	1			50	555	18.9	226
	6-G	892+00 EBOL	902+45.60 EBOL				OUT				925												1055	39.4	473
32	7-G	894+00.34 WBOL	904+28.50 WBOL				OUT		75		875		25					1	1			50	1030	36.7	440
	8-G	909+66	915+36			EB	OUT				475												605	22.8	273
	9-G	911+95	913+20			EB	IN				50												128	5.1	61
	10-G	911+95 WBOL	917+05			WB	OUT		125/75		137.5		12.5/25					2	1			50	378	10.5	126
	11-G	914+05	917+05			WB	IN		75		137.5		25					1	1			50	303	9.5	114
	12-G	917+95	919+70			EB	IN		87.5				12.5					1				50	153	4.0	48
	13-G	917+95	919+70			WB	OUT		87.5				12.5					1				50	153	4.0	48
33	14-G	926+00	63+78 N-W	926+25	63+78 N-E	WB	OUT		2787.5				2637.5		1			2	1			100	2765	99.1	1189
	15-G	926+00	927+75	926+25	927+75	WB	IN		175				75		1			1				50	153	4.0	48
	16-G	942+15	943+52.50	942+00	943+50	EB	IN		137.5				75		1			1				50	153	4.0	48
	17-G	942+15	64+13 W-S	942+00	62+47 W-S		RT		2187.5				1850		1		1	3	3			150	2043	75.8	910
	18-G	957+93	959+30.50	958+00	959+50	WB	OUT		137.5				75		1			1				50	153	4.0	48
34	19-G	961+94	963+31.50			EB	OUT		137.5																
	20-G	964+58	966+08	964+58	966+08	WB	OUT		150				137.5				1		1				153	5.7	68
	21-G	964+29	967+29	964+29	967+29	EB	IN		300				275		1		1	1					303	11.6	139
	22-G	965+77	967+77	965+02	967+77	EB	OUT		200				75		1			1				125	278	4.0	48
	23-G	970+10	972+66.97	970+10	972+66.97	WB	OUT		250				100		1			1				125	253	5.1	61
	24-G	970+52	972+54.32	970+52	972+54.32	WB	IN		300				275		1			1					303	11.6	139
	25-G	971+53	972+96.04	971+53	972+03	EB	OUT		150				37.5				1						52	1.9	23
	26-G	69+30 E-N	67+92.50 E-N	69+29 E-N	67+79 E-N		LT		137.5				75		1			1				50	153	4.0	48
35	27-G	986+00	987+87.50	986+00	987+87.50	EB	OUT		187.5				150		1		1						193	7.5	90
	28-G	86+05 S-N	987+87.50	85+93 S-E	987+87.50		LT		187.5				100		1			1				75	203	5.1	61
	29-G	991+71.50	993+09	991+75	993+25	WB	OUT		137.5				75		1			1				50	153	4.0	48
	30-G	991+71.50	993+09	991+75	993+25	WB	IN		137.5				75		1			1				50	153	4.0	48
	31-G	995+70	995+95	995+70	995+95	WB	OUT		25				12.5				1						27	9	108
	32-G	992+45	995+95	992+45	995+95	EB	IN		350				325		1			1					353	13.4	161
	33-G	994+32.50	995+95	994+32.50	995+95	EB	OUT		162.5				137.5		1			1					165	6.5	78
36	34-G	49+98.50 N-E	54+67.50 N-W	48+98.50 N-E	54+48.50 N-E		RT		468.75				400					1	1			50	452	14.9	179
	35-G	53+30 N-E	54+67.50 N-E	52+90 N-E	54+40 N-E		LT		137.5				75		1			1				50	153	4.0	48
37	36-G	70+94.75 W-S	66+26 W-S	53+87 E-S	66+31.50 W-S		RT		468.75				387.5		1			1				50	466	15.8	189
	37-G	54+62.50 S-E	55+75 E-S	54+60 E-S	56+35 E-S		RT		112.5				100		1			1				50	178	5.1	61
	38-G	71+34.50 S-E	72+72 S-E	71+05 S-E	72+55 S-E		LT		137.5				75		1			1				50	153	4.0	48
	39-G	71+34.50 S-E	72+72 S-E	71+05 S-E	72+55 S-E		RT		137.5				75		1			1				50	153	4.0	48
38	40-G	62+85 N-E	67+95.73 N-E	62+85 N-E	67+64.96 N-E		RT		518.75				387.5		1			1				75	491	15.8	189
	41-G	64+46 N-E	68+49.34 N-E	63+50 N-E	68+47.12 N-E		LT		387.5				437.5		1		1						480	33.6	403
	42-G	82+00 S-E	86+31.25 S-E	82+00 S-E	85+87.50 S-E		RT		431.25				350		1		1						393	14.9	179
39	43-G	50+51 W-S	62+07 W-N	50+25 W-S	51+75 W-S		LT		112.5				75		1			1				50	153	4.0	48
	44-G	62+07 W-N	66+57 W-N	65+04.10 W-N	66+57 W-N		LT		450				125		1			1					153	6.0	72
	45-G	65+64.48 W-N	67+13 W-N	65+64.30 W-N	67+13 W-N		RT		150				125		1			1					153	6.0	72
	46-G	71+68 S-W	73+51 W-N				LT		150																
40	47-G	83+00	86+84.28 S-W	82+70.80 S-W	86+40 S-W		RT		387.5				275		1			1				75	378	11.6	139
	48-G	83+12 S-W	87+27.33 S-W	82+88.30 S-W	87+20 S-W		LT		406.25				375		1		1						418	29.2	350
41	49-G	63+58.31 E-S	65+45 E-S				LT		187.5																
	50-G	65+11.18 E-S	67+07 E-S	63+78.50 E-S	67+07 E-S		RT		193.75				275					1	1			50	325	10.2	122
	51-G	72+14 E-S	73+62.75 E-S	72+14 E-S	73+62.75 E-S		LT		150				125		1			1					153	6.0	72
	52-G	72+61 E-S	74+51.75 E-S	72+61 E-S	74+51.75 E-S		RT		187.5				162.5		1			1					191	7.4	89
36	53-G	86+16 E-N	87+66 E-N	86+16 E-N	87+66 E-N		RT		150				125		1			1					153	6.0	72
	TOTALS								15262.5		4318.75	237.5	11187.5		34		10	41	11			625	1250	18463 = 185 STA.	669.6	8031

PLOT SUBMITTED: 8-DEC-1989 07:02
C ZF2:[100,331480GS2.DGN;1
PLOT SUBMITTED BY: GRMOVSEK

PLOT SUBMITTED: 7-DEC-1989 11:26
PLOT SUBMITTED BY: GRMOVSEK
ZF2:100,331480SMI.DGN
2345689

GENERAL SUMMARY

CALC. BY	CUYAHOGA COUNTY	OHIO	26
DATE:	CUY-480-15.84	FHWA REGION 5	118
CHKD BY		FEDERAL PROJECT	
DATE:			

ALL ITEMS COST PARTICIPATION I UNLESS SHOWN OTHERWISE

ITEM	SHEET NUMBER											PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
	6	7	9	10	12	22	24	25	44	46	48	I	II						
																		ROADWAY	
202											1	1		202	58500	1	EACH	CATCH BASIN ABANDONED	
202				200								200		202	98300	200	SQ.YD.	CONCRETE SLOPE PROTECTION REMOVED	
202			400									400		202	32000	400	LIN.FT.	CURB REMOVED	
202											1643	1643		202	32001	1643	LIN.FT.	CURB REMOVED AS PER PLAN	48
202	1800											1800		202	54100	1800	EACH	RAISED PAVEMENT MARKERS REMOVED FOR STORAGE	
202		1000						15263				16263		202	38000	16263	LIN.FT.	GUARDRAIL REMOVED	
202			1100									1100		202	30501	1100	SQ.YD.	CONCRETE MEDIAN REMOVED, AS PER PLAN	9
203								185				185		203	60000	185	STA.	LINEAR GRADING	
203						8413						8413		203	50000	8413	SQ.YD.	SUBGRADE COMPACTION	
203							328					328		203	20001	328	CU.YD.	EMBANKMENT, AS PER PLAN	6
203	250					18969	317		276	100		19912		203	12000	19912	CU.YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
604				2								2		604	39500	2	EACH	MONUMENT BOX ADJUSTED TO GRADE	
606								34				34		606	25000	34	EACH	ANCHOR ASSEMBLY, TYPE A	
606								10				10		606	26500	10	EACH	ANCHOR ASSEMBLY, TYPE T	
606								41				41		606	30000	41	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE A	
606								11				11		606	34000	11	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE J	
606		1000						11187.5				12187.5		606	13000	12187.5	LIN.FT.	GUARDRAIL, TYPE 5	
606								4318.75				4318.75		606	98000	4318.75	LIN.FT.	RAISING EXISTING GUARDRAIL	
606								237.5				237.5		606	98000	237.5	LIN.FT.	RAISING EXISTING GUARDRAIL, AS PER PLAN	7
																		MAINTENANCE OF TRAFFIC	
404					350							350		404	35000	350	CU.YD.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	
614					12000							12000		614	12800	12000	EACH	TEMPORARY RAISED PAVEMENT MARKERS	
614					7.50							7.50		614	20200	7.50	MILE	TEMPORARY LANE LINES, CLASS I, 947.03, TYPE B	
614					52.00							52.00		614	20400	52.00	MILE	TEMPORARY LANE LINES, CLASS II	
614					13.50							13.50		614	22200	13.50	MILE	TEMPORARY EDGE LINES, CLASS I, 947.03, TYPE B	
614					2.50							2.50		614	22300	2.50	MILE	TEMPORARY EDGE LINES, CLASS I, 947.03, TYPE C	
614					48.00							48.00		614	22000	48.00	MILE	TEMPORARY EDGE LINES, CLASS I	
614					32000							32000		614	23400	32000	LIN.FT.	TEMPORARY CHANNELIZING LINES, CLASS I, 947.03, TYPE B	
614					7000							7000		614	23600	7000	LIN.FT.	TEMPORARY CHANNELIZING LINES, CLASS I, 947.03, TYPE C	
614					500							500		614	24400	500	LIN.FT.	TEMPORARY 4" DOTTED LINES, CLASS I, 947.03, TYPE B	
614					2500							2500		614	28000	2500	LIN.FT.	TEMPORARY GORE MARKINGS, CLASS II	
614					120							120		614	26000	120	LIN.FT.	TEMPORARY STOP LINES, CLASS I	
614					380							380		614	13200	380	EACH	BARRIER REFLECTORS, TYPE A	
614					220							220		614	13300	220	EACH	BARRIER REFLECTORS, TYPE B	
614					32							32		614	12470	32	EACH	WORK ZONE SPEED LIMIT SIGN	
616		50										50		616	10000	50	M. GAL.	WATER	
616		5										5		616	20000	5	TON	CALCIUM CHLORIDE	
621					70000							70000		621	92000	70000	LIN.FT.	REMOVAL OF PAVEMENT MARKINGS	
SPEC.					600							600		SPEC.	614 11100	600	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
SPEC.					1200							1200		SPEC.	614 12500	1200	SQ.FT.	REPLACEMENT SIGNS	
SPEC.					300							300		SPEC.	614 12600	300	EACH	REPLACEMENT DRUMS	

PLOT SUBMITTED: 22-NOV-1989 14:33
ZF2:[100,331480SM2.DGN
PLOT SUBMITTED BY: GRMOVSEK

GENERAL SUMMARY

CALC. BY		CUYAHOGA COUNTY	OHIO	27
DATE:		CUY-480-15.84	FHWA REGION 5	118
CHKD BY			FEDERAL PROJECT	
DATE:				

ALL ITEMS COST PARTICIPATION I UNLESS SHOWN OTHERWISE

ITEM	SHEET NUMBER										PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
	8	9	10	22	23	24	25	44	46		I	II						
																	PAVEMENT	
251									10000		10000		251	01001	10000	SQ.YD.	PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN	8
252	1000										1000		252	01000	1000	SQ.YD.	FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT	
252	4500										4500		252	01500	4500	LIN.FT.	FULL DEPTH PAVEMENT SAWING	
254						1691					1691		254	01000	1691	SQ.YD.	PAVEMENT PLANING, BITUMINOUS	
254						1470					1470		254	01010	1470	SQ.YD.	PAVEMENT PLANING, PORTLAND CEMENT CONCRETE	
301			750					75	5		830		301	10002	830	CU.YD.	BITUMINOUS AGGREGATE BASE, AC-20	
301	250										250		301	10003	250	CU.YD.	BITUMINOUS AGGREGATE BASE, AC-20, AS PER PLAN	8
304									100		100		304	20001	100	CU.YD.	AGGREGATE BASE, AS PER PLAN	8
305				1686							1686		305	13000	1686	SQ.YD.	9" CONCRETE BASE	
305				61689							61689		305	14000	61689	SQ.YD.	10" CONCRETE BASE	
310	200										200		310	12001	200	CU.YD.	SUBBASE, TYPE 1, GRADING A, AS PER PLAN	8
310				1402				201			1603		310	20001	1603	CU.YD.	SUBBASE, TYPE 11, AS PER PLAN	8
404							670				670		404	20000	670	CU.YD.	ASPHALT CONCRETE, AC-20	
407					23954			70			24024		407	10000	24024	GAL.	TACK COAT	
446					11226			32			11258		446	01401	11258	CU.YD.	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20, AS PER PLAN	8
446	500				15735			45			16270		446	01200	16270	CU.YD.	ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20	
609		400									400		609	26000	400	LIN.FT.	CURB, TYPE 6	
609		100									100		609	10000	100	LIN.FT.	ASPHALT CONCRETE CURB, AC-20, TYPE 1	
612		1000									1000		612	40000	1000	SQ.YD.	4" CONCRETE MEDIAN	
612		100									100		612	42000	100	SQ.YD.	CONCRETE MEDIAN	
617		950						7			957		617	10100	957	CU.YD.	COMPACTED AGGREGATE, TYPE A	
617		5									5		617	25000	5	M. GAL.	WATER	
622						3861					3861		622	80000	3861	LIN. FT.	CONCRETE GLARE SCREEN	
622							625				625		622	24001	625	LIN.FT.	CONCRETE BARRIER, TYPE D, AS PER PLAN	50
622							1250				1250		622	23401	1250	LIN.FT.	CONCRETE BARRIER, TYPE B42, AS PER PLAN	49
803									55000		55000		803	00100	55000	SQ.YD.	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C	46
803									160000				803	10000	160000	LIN.FT.	FULL DEPTH PAVEMENT SAWING	46
SPEC.						740					740		SPEC.	451 32000	740	LIN.FT.	PRESSURE RELIEF JOINT, TYPE C	
SPEC.		65000									65000		SPEC.	450 14000	65000	LIN.FT.	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, 705.04	9
SPEC.		300									300		SPEC.	512 67504	300	SQ.YD.	SEALING OF CONCRETE SURFACES (NON-EPOXY)	9
																	EROSION CONTROL	
207		64									64		207	70000	64	EACH	STRAW OR HAY BALES	
601			600								600		601	20001	600	SQ.YD.	CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN	10
601			200								200		601	21001	200	SQ.YD.	CONCRETE SLOPE PROTECTION, AS PER PLAN	10
659		250									250		659	14000	250	SQ.YD.	REPAIR SEEDING AND MULCHING	
653			140								140		653	10001	140	CU.YD.	TOPSOIL FURNISHED AND PLACED, AS PER PLAN	10
659			11								11		659	35000	11	M. GAL.	WATER	
659			11								11		659	40000	11	M. SQ.FT.	MOWING	
659		0.02	0.23			0.38					0.63		659	20000	0.63	TON	COMMERCIAL FERTILIZER	
659			1.13			1.06					2.19		659	30000	2.19	TON	AGRICULTURAL LIMING	
659			2500			2364					4864		659	10000	4864	SQ.YD.	SEEDING AND MULCHING	
SPEC.							8031				8031		SPEC.	659 98000	8031	SQ.YD.	HERBICIDES FOR WEED CONTROL	10

PLOT SUBMITTED: 22-NOV-1989 14:35
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331480SM3.DGN

GENERAL SUMMARY

CALC. BY	CUYAHOGA COUNTY	OHIO
DATE:	CUY-480-15.84	FHWA REGION 5
CHKD BY		FEDERAL PROJECT
DATE:		

28/118

ALL ITEMS COST PARTICIPATION I UNLESS SHOWN OTHERWISE

ITEM	SHEET NUMBER				PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
	6	10	12	46	I	II					DRAINAGE	
603		3500			3500		603	01500	3500	LIN.FT.	6" CONDUIT, TYPE F, 707.17, NON-PERFORATED ASTM 3034 SDR 35 OR SUPPLEMENTAL SPECIFICATION 931	
604		10			10		604	09000	10	EACH	CATCH BASIN ADJUSTED TO GRADE	
604		1			1		604	34500	1	EACH	MANHOLE ADJUSTED TO GRADE	
814		1			1		814	10800	1	EACH	VALVE BOX ADJUSTED TO GRADE	
604		6			6		604	98000	6	EACH	MEDIAN INLET ADJUSTED TO GRADE	
605		500		100	600		605	31101	600	LIN.FT.	AGGREGATE DRAINS, AS PER PLAN	10
605		35500			35500		605	11100	35500	LIN.FT.	6" SHALLOW PIPE UNDERDRAIN	
605		39500			39500		605	12200	39500	LIN.FT.	6" DEEP PIPE UNDERDRAIN	
SPEC.		12			12		SPEC.	604 36600	12	EACH	PRECAST REINFORCED CONCRETE OUTLET	

FOR TRAFFIC CONTROL SUMMARY SEE SHEET NO'S 67 & 68

FOR LIGHTING SUMMARY SEE SHEET NO. 94

FOR STRUCTURE SUMMARY SEE SHEET NO. 110

614				LUMP			614	11000		LUMP	MAINTAINING TRAFFIC	
619		LUMP					619	10000		LUMP	FIELD OFFICE	
623							623	10000		LUMP	CONSTRUCTION LAYOUT STAKES, AS PER PLAN	8 & 9
624							624	10000		LUMP	MOBILIZATION	

PLAN SHEET KEY MAP

CUYAHOGA COUNTY CUY-480-15.84	OHIO FHWA REGION 5 FEDERAL PROJECT	29 118

400 200 0 400 800 1200 1600

SCALE IN FEET

N

ROADWAY PLAN SHEET Nº

TRAFFIC CONTROL PLAN SHEET Nº

30/69 31/70 31/71 32/72 32/73 33/74

CITY OF CLEVELAND
VILLAGE OF BROOKLYN HTS.

PENN CENTRAL R.R.

GRANGER ROAD (S.R. 17)

RAMP GE-2

RAMP G-E

RAMP E-G

TUXEDO AVE

W.B.O.L.

E.B.O.L.

LANCASTER DR.

℄ I-480 STA. 835+00

℄ I-480 STA. 935+00

840 850 860 870 880 890 900 910 920 930

I-480

33/75 36/79 40/83 41/84 35/78 39/82 34/76 34/77 38/81 37/80

VILLAGE OF BROOKLYN HTS.
CITY OF INDEPENDENCE

LANE N-W
LANE E-N
LANE E-S
LANE W-N
LANE W-S
LANE S-W
LANE N-E
LANE S-E

940 950 960 970 980 990 1000 1010 1020 1030 1040

℄ I-77 STA. 506+50

STA. 462+00 ℄ I-77

BRECKSVILLE ROAD S.R. 21

CITY OF INDEPENDENCE
VILLAGE OF VALLEY VIEW

CITY OF GARFIELD HTS.
VILLAGE OF VALLEY VIEW

STA. 1048+50 ℄ I-480

I-480

ZFA2:[10033]KEYMAP .DGN;1

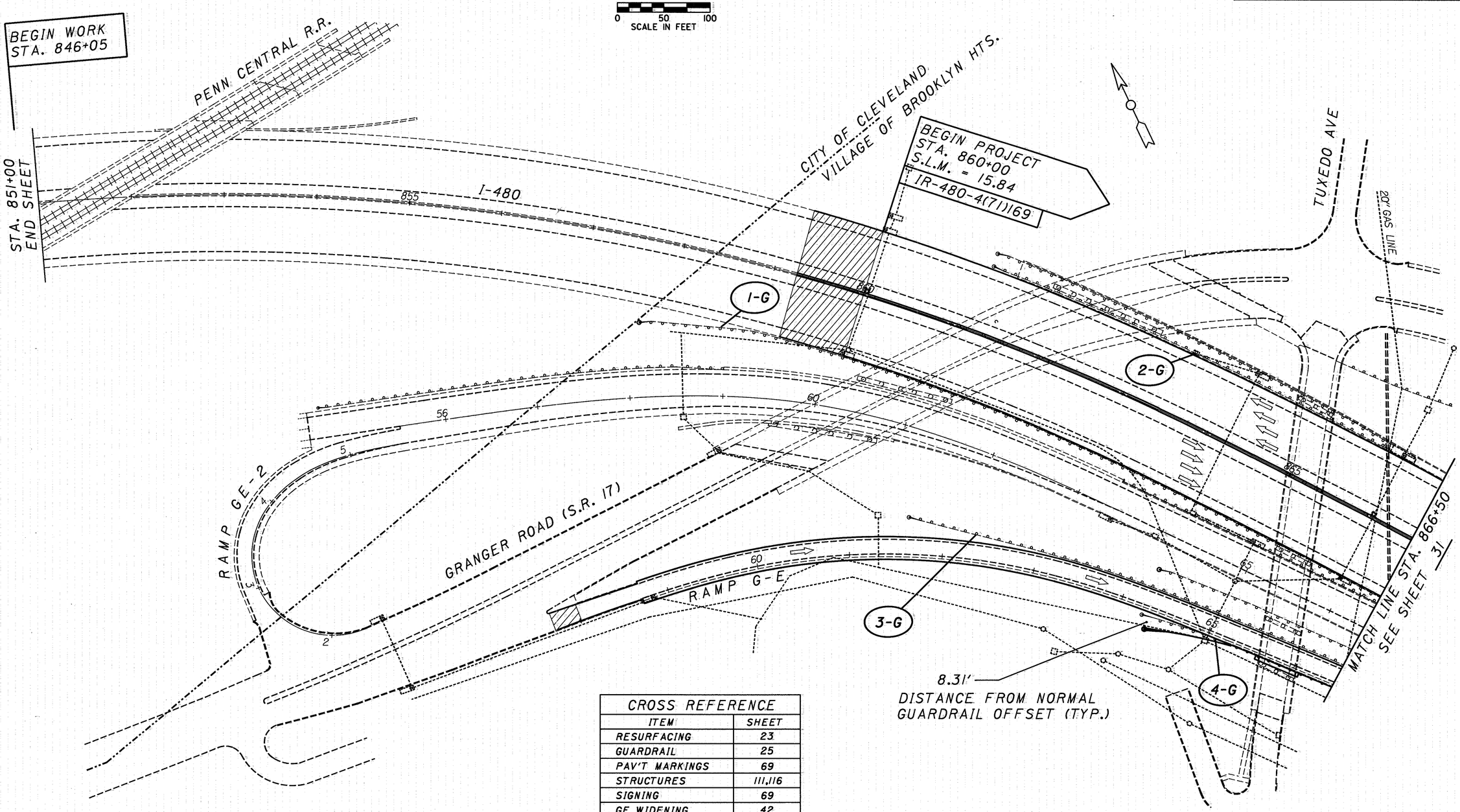
PLOT SUBMITTED: 24-NOV-1989 06:37
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,33]PS30.DGN;1

PLAN SHEET

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

30/118

0 50 100
SCALE IN FEET



CROSS REFERENCE	
ITEM	SHEET
RESURFACING	23
GUARDRAIL	25
PAV'T MARKINGS	69
STRUCTURES	111,116
SIGNING	69
GE WIDENING	42
LIGHTING	101

LEGEND:

▨ = SEE FEATHER DETAILS, SHEET NO. 47

I-480 PLAN VIEW STA. 851+00 TO STA. 866+50

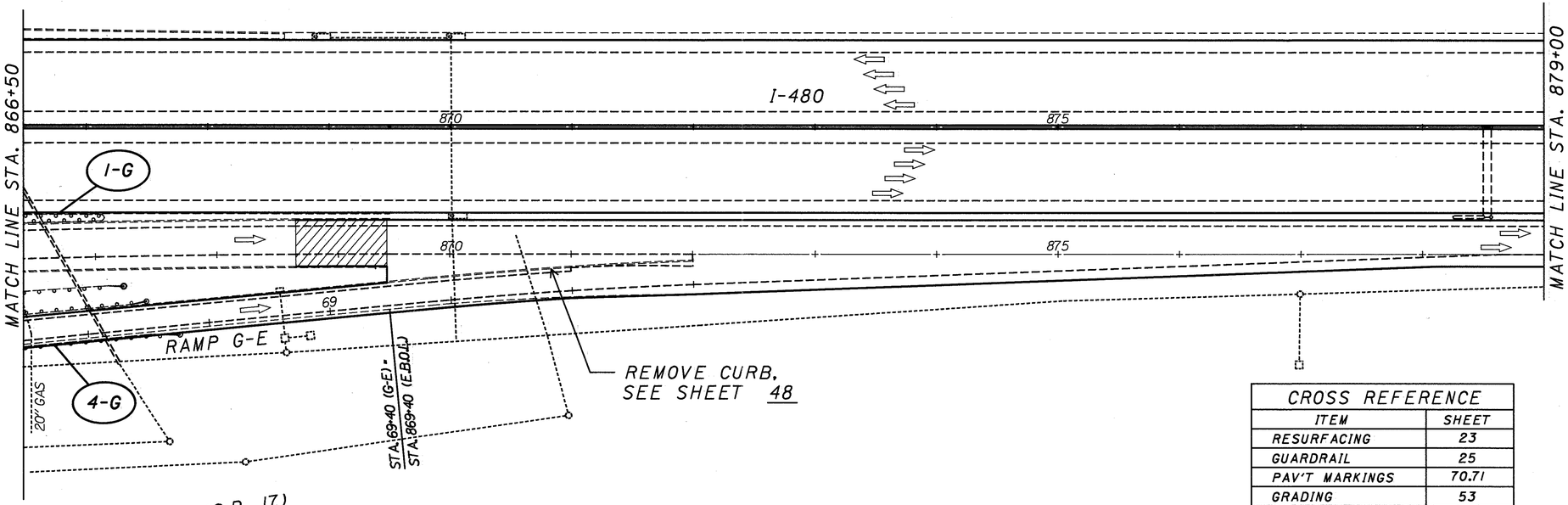
PLOT SUBMITTED: 24-NOV-1989 06:41
ZF2:[100,331]PS31.DGN
PLOT SUBMITTED BY: GRMOVSEK

PLAN SHEET

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

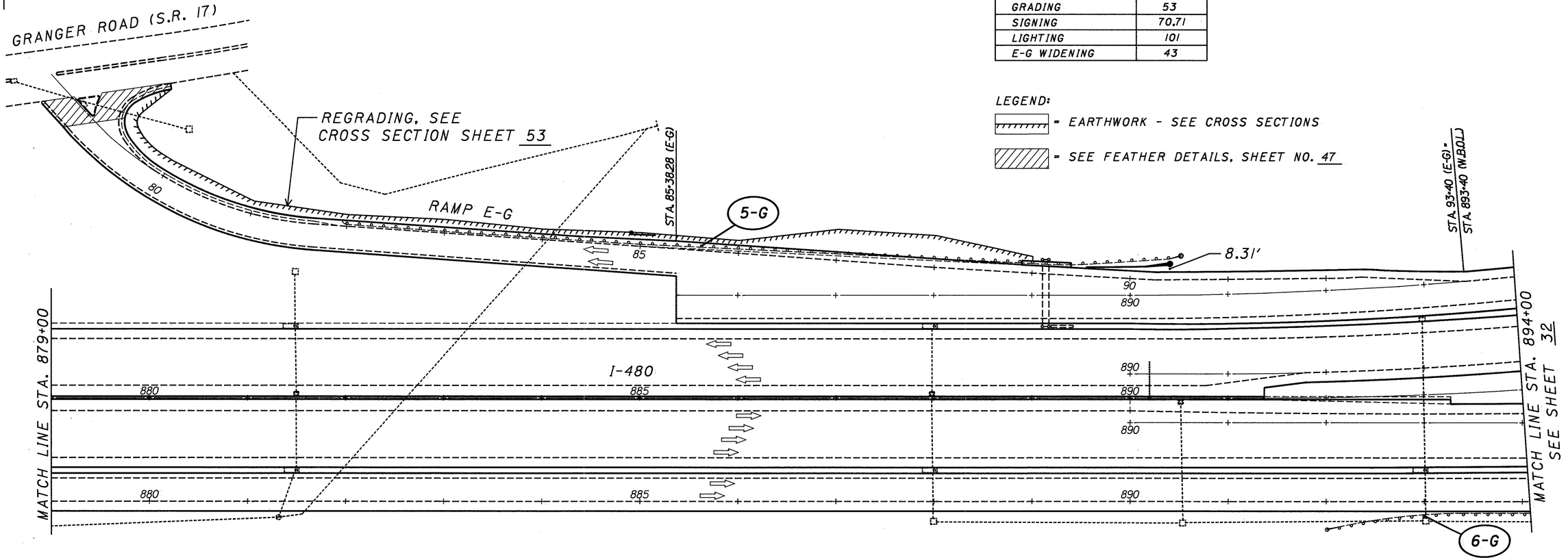
31
118

SCALE IN FEET: 0 50 100



CROSS REFERENCE	
ITEM	SHEET
RESURFACING	23
GUARDRAIL	25
PAV'T MARKINGS	70.71
GRADING	53
SIGNING	70.71
LIGHTING	101
E-G WIDENING	43

LEGEND:
- = EARTHWORK - SEE CROSS SECTIONS
- = SEE FEATHER DETAILS, SHEET NO. 47



I-480 PLAN VIEW STA. 866+50 TO STA. 894+00

PLAN SHEET

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

32/118

SCALE IN FEET 0 50 100

WEST-BOUND OUTER LANE

SEE SHEET 31
MATCH LINE STA. 894+00

MATCH LINE STA. 908+00

MATCH LINE STA. 923+00
SEE SHEET 33

I-480

℄ I-480

EAST-BOUND OUTER LANE

LANCASTER DR.

STA. 911+18 (W.B.O.L.) -
STA. 911+63 (W.B.I.L.)

STA. 914+75.11 ℄ WB -
STA. 915+00 ℄ I-480

STA. 902+88 (E.B.O.L.) -
STA. 902+67.14 (E.B.I.L.)

STA. 915+43.72 ℄ EB -
STA. 915+00 ℄ I-480

6-G 7-G 8-G 9-G 10-G 11-G 12-G 13-G

CROSS REFERENCE	
ITEM	SHEET
RESURFACING	23
GUARDRAIL	25
PAV'T MARKINGS	72,73
STRUCTURES	118
SIGNING	72,73

I-480 PLAN VIEW STA. 894+00 TO STA. 923+00

PLOT SUBMITTED: 24-NOV-1989 06:43
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]PS32.DGN

PLOT SUBMITTED: 24-NOV-1989 06:45
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,33]IPS33.DGN

PLAN SHEET

CROSS REFERENCE	
ITEM	SHEET
RESURFACING	23
GUARDRAIL	25
PAV'T MARKINGS	74,75
CROSSOVERS	44
GRADING	54
SIGNING	74,75
LIGHTING	98

CUYAHOGA COUNTY
CUY-480-15.84

OHIO
FHWA REGION 5
FEDERAL PROJECT

33
118

0 50 100
SCALE IN FEET

LEGEND:
▭ = EARTHWORK - SEE CROSS SECTIONS

SEE SHEET 32
MATCH LINE STA. 923+00

I-480

925 930

8.31'

15-G

14-G

℄ I-480

MATCH LINE STA. 938+00

STA. 102+92.32 (S-W) •
STA. 951+88.6 ℄ I-480

℄ LANE S-W

REMOVE CURB, SEE SHEET 48

MATCH LINE STA. 102+00 SEE SHEET 40

MATCH LINE STA. 938+00

I-480

940 945 950

8.31'

16-G

℄ I-480

MATCH LINE STA. 953+00 SEE SHEET 34

8.31'

17-G

STA. 946+12.10 ℄ I-480 •
STA. 46+10.27 (W-S)

47

℄ LANE W-S

LANE W-S

MATCH LINE STA. 50+00 SEE SHEET 39

ARCO 12" CASING

30" GAS

20" GAS

REGRADING, SEE CROSS SECTION SHEET 54

I-480 PLAN VIEW STA. 923+00 TO STA. 953+00

PLOT SUBMITTED: 24-NOV-1989 06:48
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]PS34.DGN

PLAN SHEET

0 50 100
SCALE IN FEET

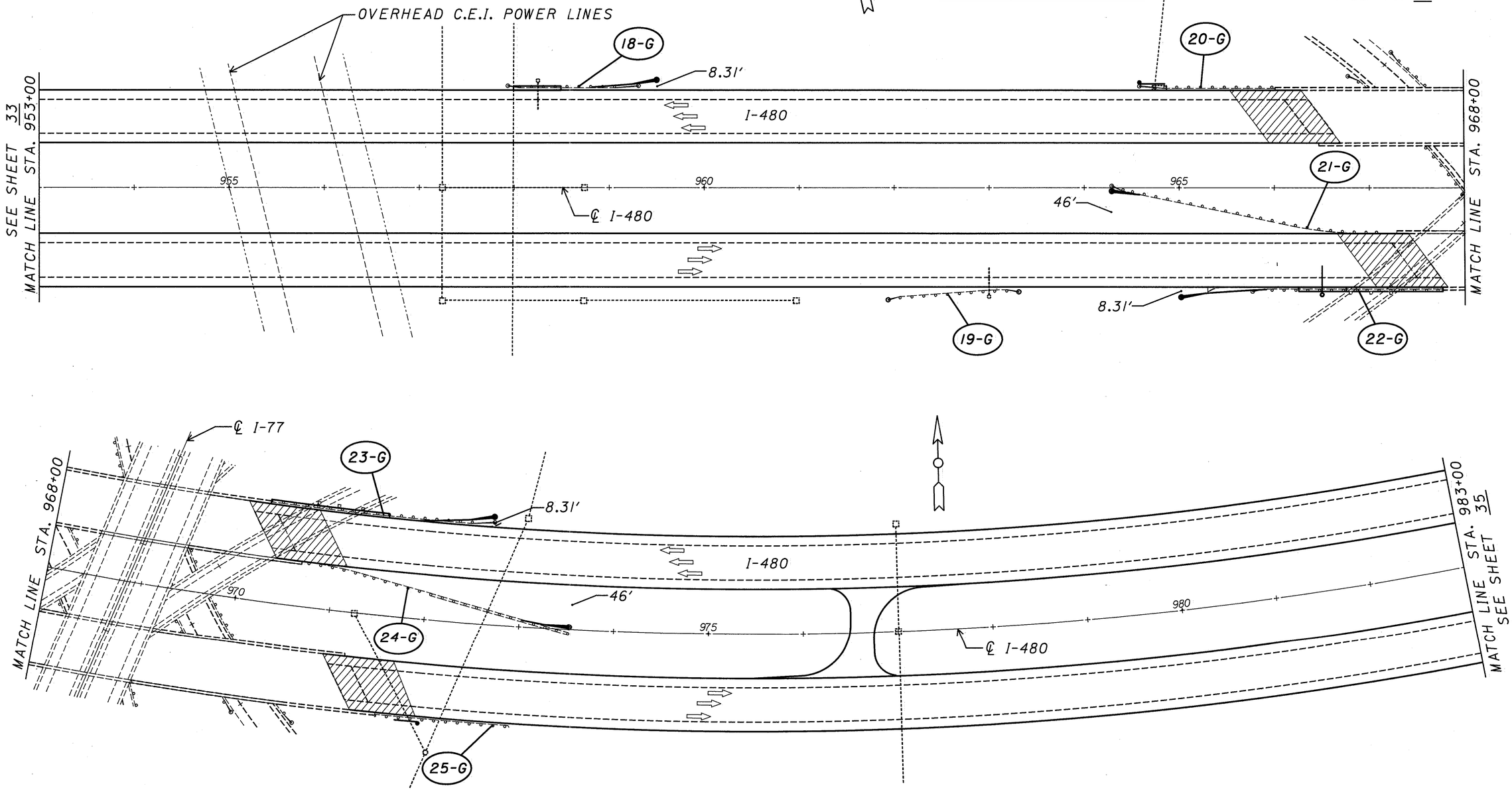
CROSS REFERENCE	
ITEM	SHEET
RESURFACING	23
GUARDRAIL	25
PAV'T MARKINGS	76,77
CROSSOVERS	44
SIGNING	76,77
LIGHTING	98,99,101

CUYAHOGA COUNTY
CUY-480-15.84

OHIO
FHWA REGION 5
FEDERAL PROJECT

34
118

LEGEND:
▨ - SEE FEATHER DETAILS, SHEET NO. 47



I-480 PLAN VIEW STA. 953+00 TO STA. 983+00

PLOT SUBMITTED: 24-NOV-1989 13:55
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]PS35.DGN

PLAN SHEET

CROSS REFERENCE	
ITEM	SHEET
RESURFACING	23
GUARDRAIL	25
PAV'T MARKINGS	78
SIGNING	78
LIGHTING	99

CUYAHOGA COUNTY
CUY-480-15.84

OHIO
FHWA REGION 5
FEDERAL PROJECT

35
118

SCALE IN FEET
0 50 100

LEGEND:
- EXISTING IMPACT ATTENUATOR
- SEE FEATHER DETAILS, SHEET NO. 47

END PROJECT
STA. 995+50.25
S.L.M. = 18.41
IR-480-4(71)169

SEE SHEET 41
MATCH LINE
STA. 69+00

26-G
LANE E-N
8.31'
EXISTING IMPACT ATTENUATOR
NOSE STA. 64+39.19 (E-N) ℄ STA. 989+12.54 L I-480

29-G
8.31'
31-G
I-480
8.31'

SEE SHEET 34
MATCH LINE
STA. 983+00

I-480
985
990
995
℄ I-480

27-G
I-480
8.31'
30-G
46'
32-G

SEE SHEET 38
MATCH LINE
STA. 83+00

85
℄ LANE N-E
28-G
BRECKSVILLE ROAD
(S.R. 21)
STA. 987+887 ℄ I-480
STA. 87+90.82 (N-E)
REMOVE CURB,
SEE SHEET 48
18'
33-G

MATCH LINE STA. 998+00
MATCH LINE STA. 998+00
I-480
1000
1005
℄ I-480
END SHEET STA. 1008+00

END WORK
STA. 1009+45.25

I-480 PLAN VIEW STA. 983+00 TO STA. 1008+00

PLOT SUBMITTED: 24-NOV-1989 13:58
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,33]IPS41.DGN

PLAN SHEET

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

36
118

0 50 100
SCALE IN FEET

CROSS REFERENCE	
ITEM	SHEET
RESURFACING	23
GUARDRAIL	25
PAV'T MARKINGS	79
SIGNING	79
LIGHTING	100

LEGEND:
▨ - SEE FEATHER DETAILS, SHEET NO. 47

SEE SHEET 40 MATCH LINE STA. 59+00
38
℄ LANE N-W
STA. 55+57.36 (N-W) -
STA. 55+58.76 (N-E)
SEE SHEET MATCH LINE STA. 58+50
℄ LANE N-E
34-G
55
35-G
8.31'
50
END SHEET STA. 492+00
℄ I-77
495
I-77
500
505
STA.506+50 END SHEET
39
SEE SHEET MATCH LINE STA. 77+50
80
℄ LANE W-N
85
18'
53-G
REMOVE CURB SEE SHEET 48
STA. 83+14 (E-N) -
STA. 83+14 (W-N)
80
℄ LANE E-N
MATCH LINE SEE STA. 76+00 SEE SHEET 41

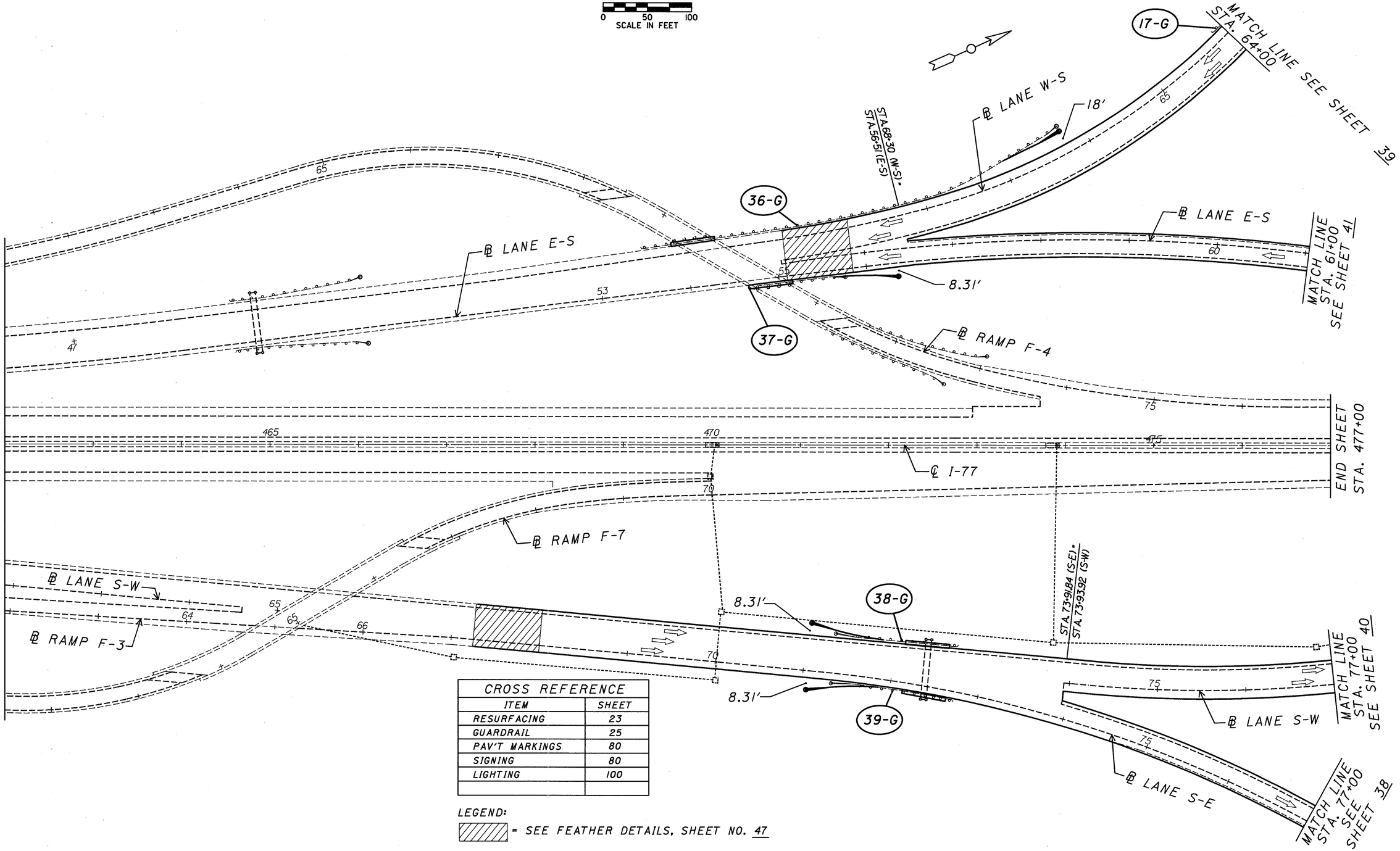
PLAN VIEW I-77 STA. 492+00 TO 506+50

PLOT SUBMITTED: 24-NOV-1989 14:00
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,33]PS40.DGN

PLAN SHEET

CUYAHOGA COUNTY	OHIO	37
CUY-480-15.84	FHWA REGION 5	118
	FEDERAL PROJECT	

0 50 100
SCALE IN FEET



CROSS REFERENCE	
ITEM	SHEET
RESURFACING	23
GUARDRAIL	25
PAV'T MARKINGS	80
SIGNING	80
LIGHTING	100

LEGEND:
▨ = SEE FEATHER DETAILS, SHEET NO. 47

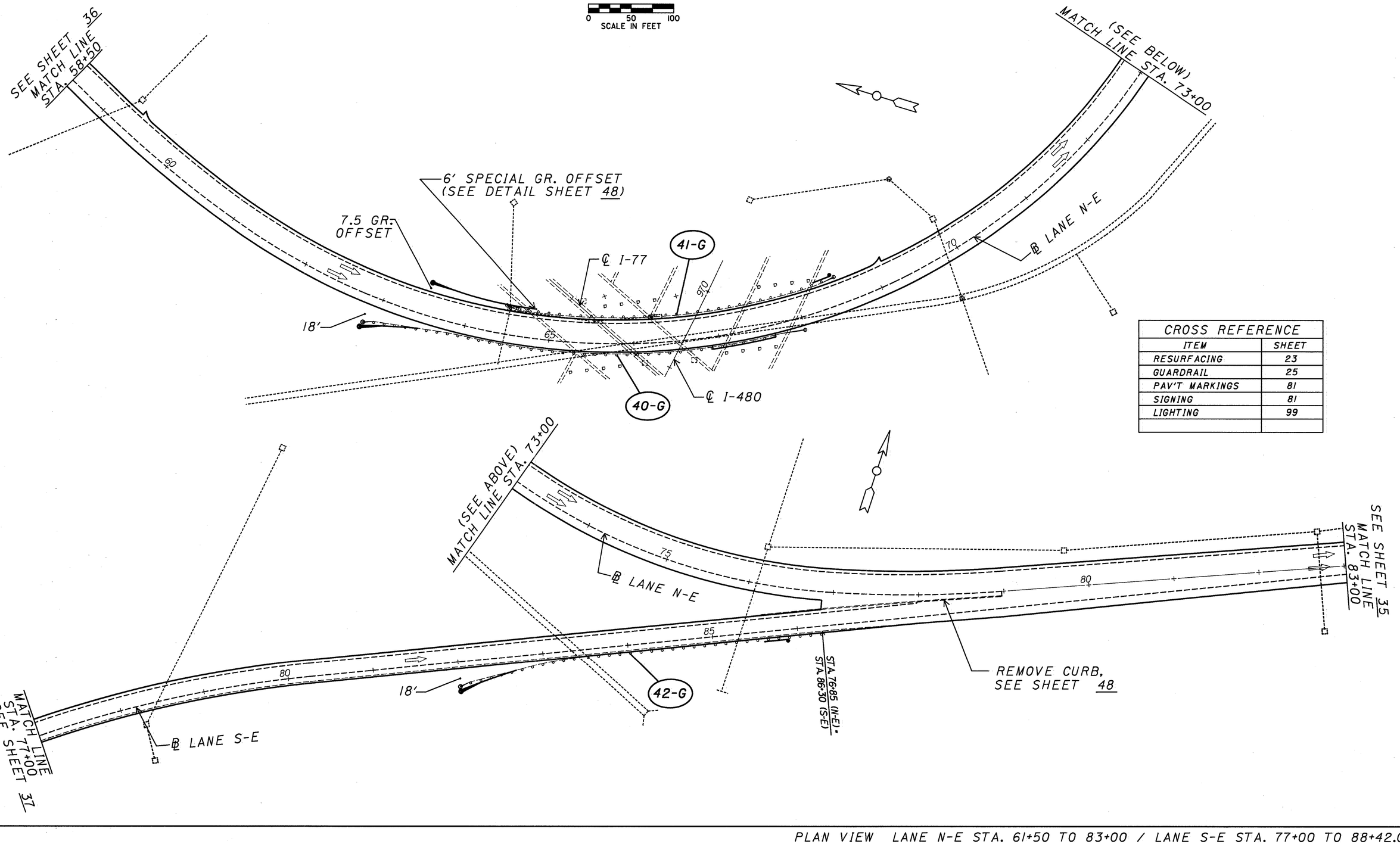
PLAN VIEW I-77 STA. 462+00 TO 477+00

PLOT SUBMITTED: 24-NOV-1989 14:02
ZF2:[100,331]PS39.DGN
PLOT SUBMITTED BY: GRMOVSEK

PLAN SHEET

CUYAHOGA COUNTY	OHIO	38
CUY-480-15.84	FHWA REGION 5	118
	FEDERAL PROJECT	

SCALE IN FEET 0 50 100



CROSS REFERENCE	
ITEM	SHEET
RESURFACING	23
GUARDRAIL	25
PAV'T MARKINGS	81
SIGNING	81
LIGHTING	99

PLAN VIEW LANE N-E STA. 61+50 TO 83+00 / LANE S-E STA. 77+00 TO 88+42.05

PLAN SHEET

CUYAHOGA COUNTY	OHIO	39
CUY-480-15.84	FHWA REGION 5	118
	FEDERAL PROJECT	

CROSS REFERENCE	
ITEM	SHEET
RESURFACING	23
GUARDRAIL	25
PAV'T MARKINGS	82
GRADING	54
SIGNING	82
LIGHTING	98,99

LEGEND:
- EARTHWORK - SEE CROSS SECTIONS
- SEE FEATHER DETAILS, SHEET NO. 47

0 50 100
SCALE IN FEET

REGRADING, SEE CROSS SECTION SHEET 54

8.31'

MATCH LINE STA. 50+00 SEE SHEET 33

ARCO 12" CASING

30" GAS

20" GAS

STA. 53+44.76 (W-N) - STA. 53+40.66 (W-S)

43-G

OVERHEAD C.E.I. POWER LINES

(SEE BELOW) MATCH LINE STA. 62+00

℄ LANE W-N

℄ LANE W-S

17-G

CITY OF INDEPENDENCE
VILLAGE OF BROOKLYN HTS

51

55

60

MATCH LINE STA. 64+00 SEE SHEET 37

(SEE ABOVE) MATCH LINE STA. 62+00

REGRADING, SEE CROSS SECTION SHEET 54

18'

44-G

℄ LANE W-N

65

℄ I-480

℄ I-77

46-G

75

SEE SHEET 36 MATCH LINE STA. 77+50

18'

45-G

PLAN VIEW LANE W-S STA. 50+00 TO 64+00 / LANE W-N STA. 53+44.76 TO 77+50

PLOT SUBMITTED: 24-NOV-1989 14:04

ZF2:[100,331]PS36.DGN

PLOT SUBMITTED BY: GRMOVSEK

PLAN SHEET

CROSS REFERENCE	
ITEM	SHEET
RESURFACING	23
GUARDRAIL	25
PAV'T MARKINGS	83
SIGNING	83
LIGHTING	98,99

CUYAHOGA COUNTY CUY-480-15.80	OHIO
	FHWA REGION 5
	FEDERAL PROJECT

40
118

SCALE IN FEET 0 50 100

SEE SHEET 33 MATCH LINE STA. 102+00

OVERHEAD C.E.I. POWER LINES

14-G

STA. 93+75 (S-W) - STA. 66+66 (N-W)

℄ LANE N-W

18'

SEE SHEET 36 MATCH LINE STA. 59+00

REMOVE CURB SEE SHEET 48

℄ LANE S-W

MATCH LINE STA. 91+00 (SEE BELOW)

℄ I-77

47-G

℄ I-480

48-G

7.5' GR. OFFSET

SPECIAL 6' GR. OFFSET (SEE DETAIL SHEET 48)

MATCH LINE (SEE ABOVE) STA. 91+00

MATCH LINE STA. 77+00 SEE SHEET 37

PLAN VIEW LANE S-W STA. 77+00 TO 102+00 / LANE N-W STA. 59+00 TO 68+06.86

PLOT SUBMITTED: 24-NOV-1989 14:10

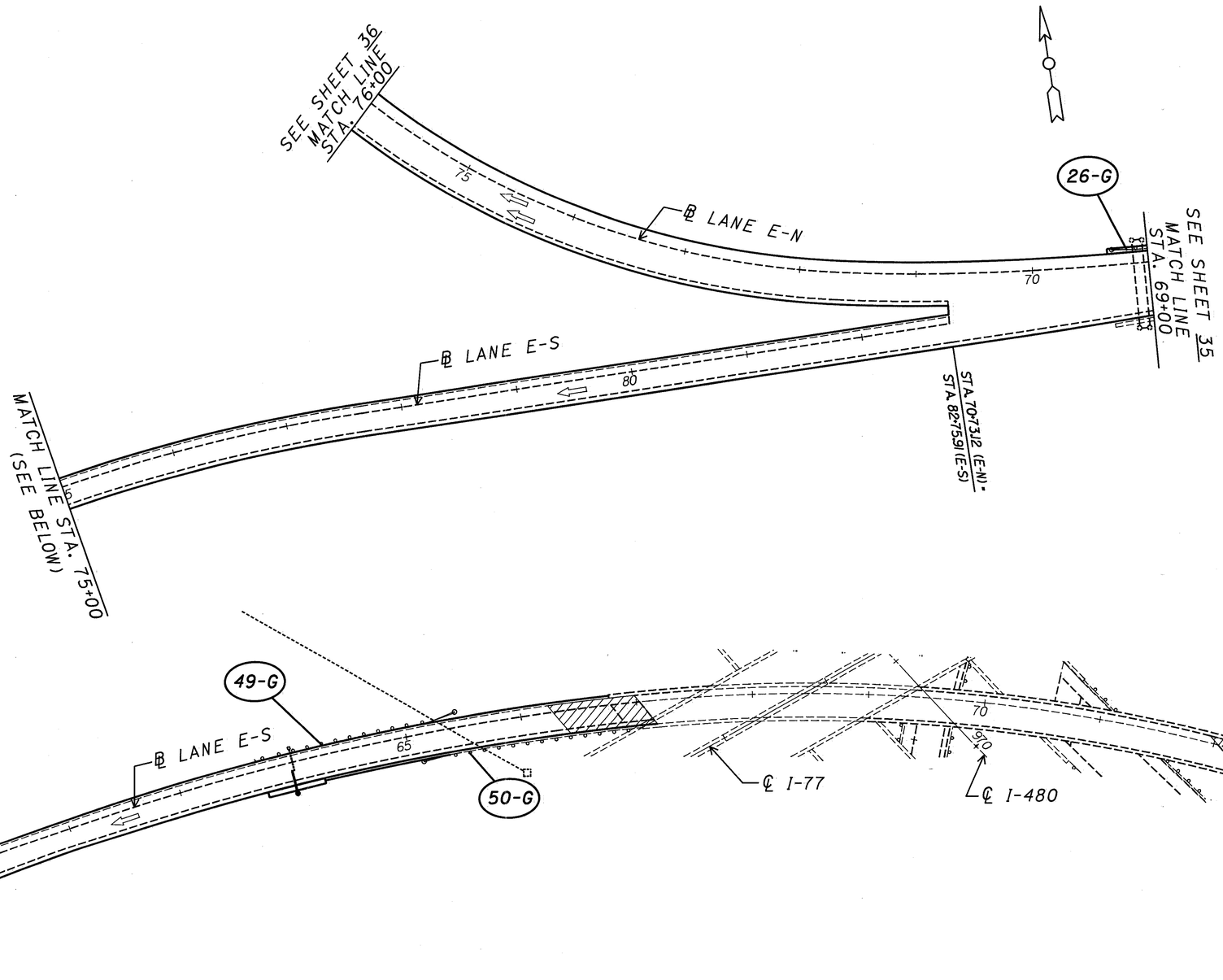
PLOT SUBMITTED BY: GRMOVSEK

ZF2:[100,331]PS37.DGN

PLAN SHEET

CUYAHOGA COUNTY CUY-480-15.84	OHIO	41/118
	FHWA REGION 5	
	FEDERAL PROJECT	

0 50 100
SCALE IN FEET



CROSS REFERENCE	
ITEM	SHEET
RESURFACING	23
GUARDRAIL	25
PAV'T MARKINGS	84
SIGNING	84
LIGHTING	99

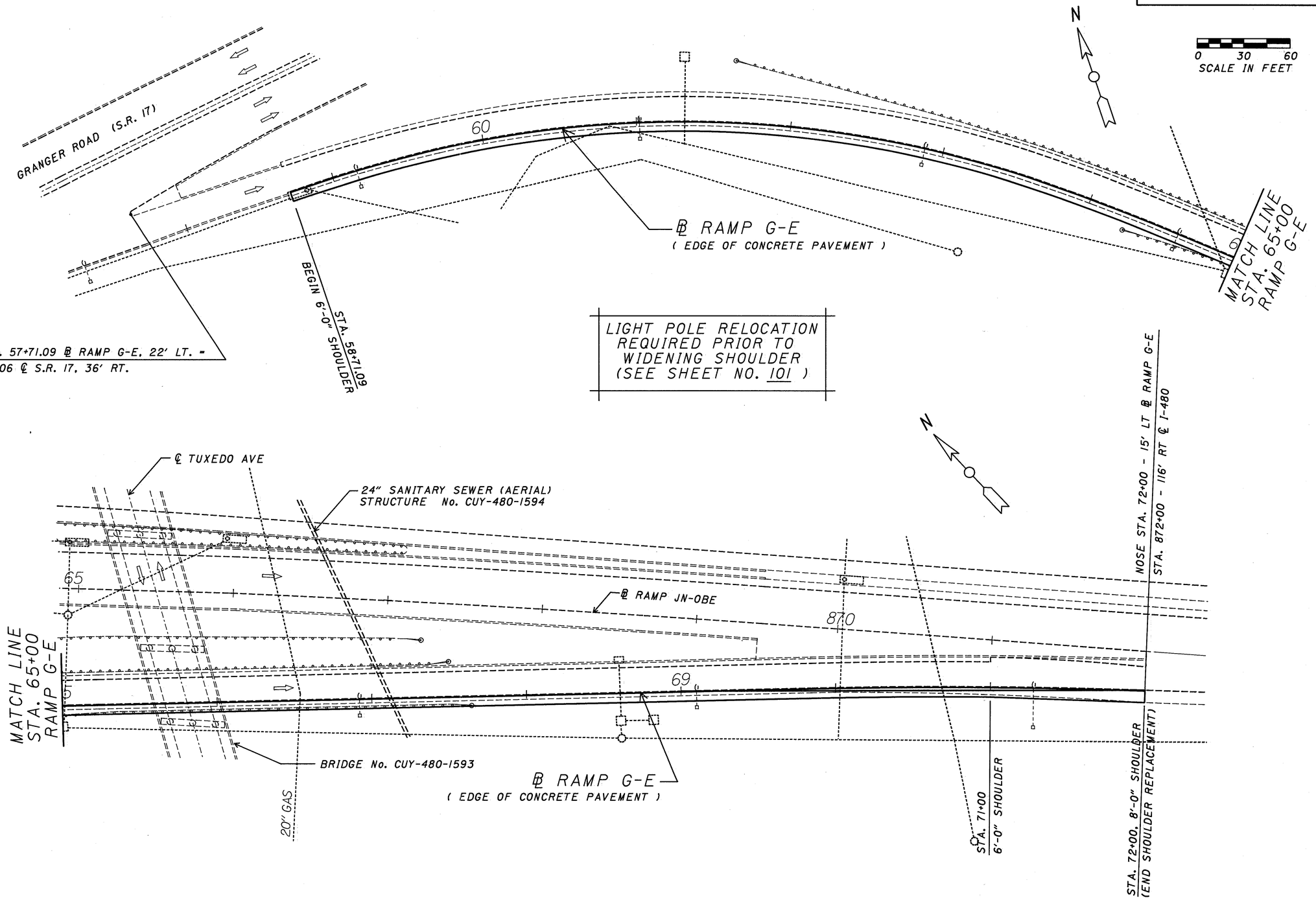
LEGEND:

▨ - SEE FEATHER DETAILS, SHEET NO. 47

PLAN VIEW LANE E-N STA. 69+00 TO 76+00 / LANE E-S STA. 61+00 TO 83+00

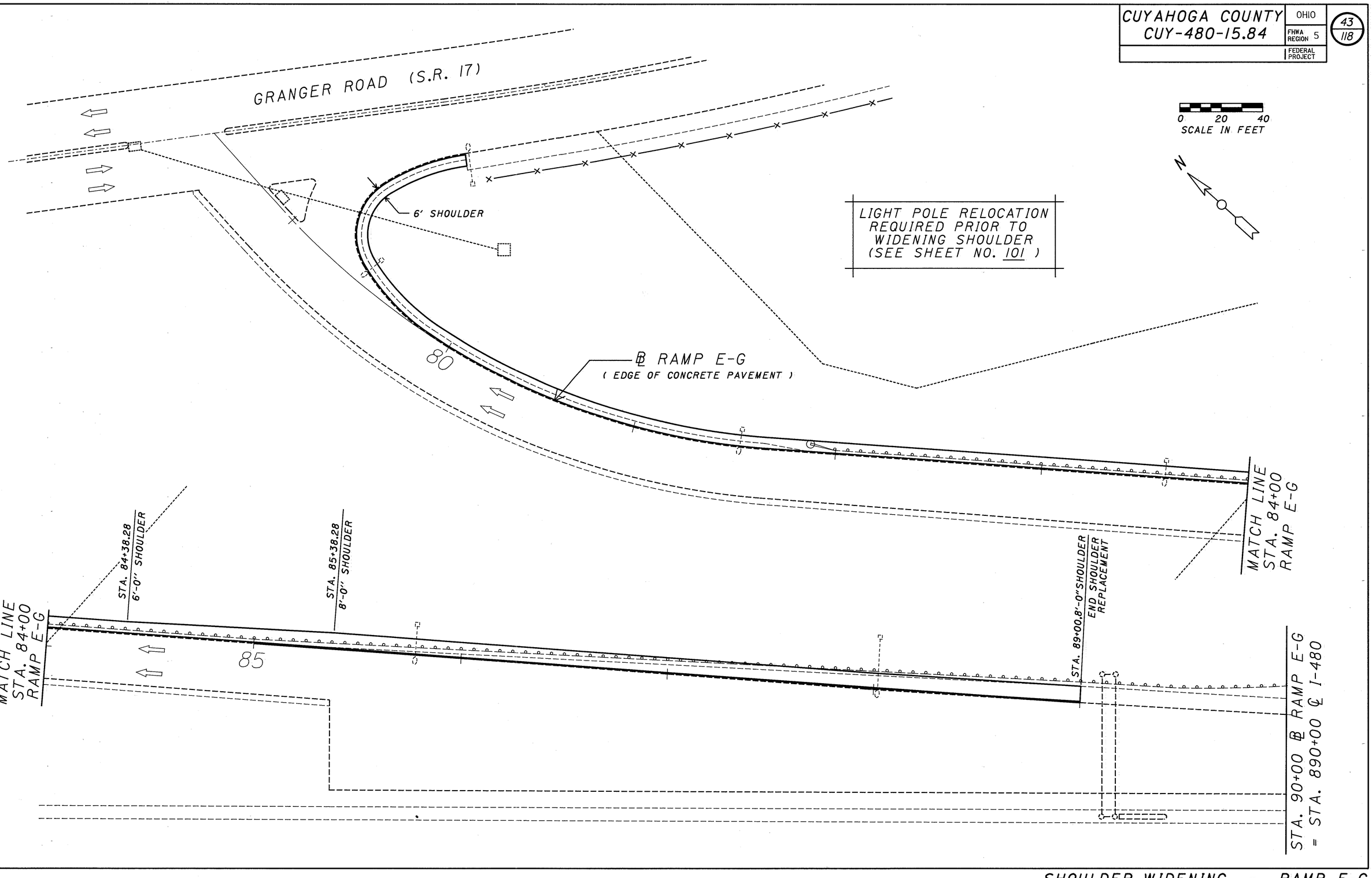
PLOT SUBMITTED: 24-NOV-1989 14:15
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]PS38.DGN

PLOT SUBMITTED: 24-NOV-1989 14:17
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]RAMPGE.DGN



SHOULDER WIDENING - RAMP G-E

PLOT SUBMITTED: 24-NOV-1989 14:19
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]RAMPEG.DGN

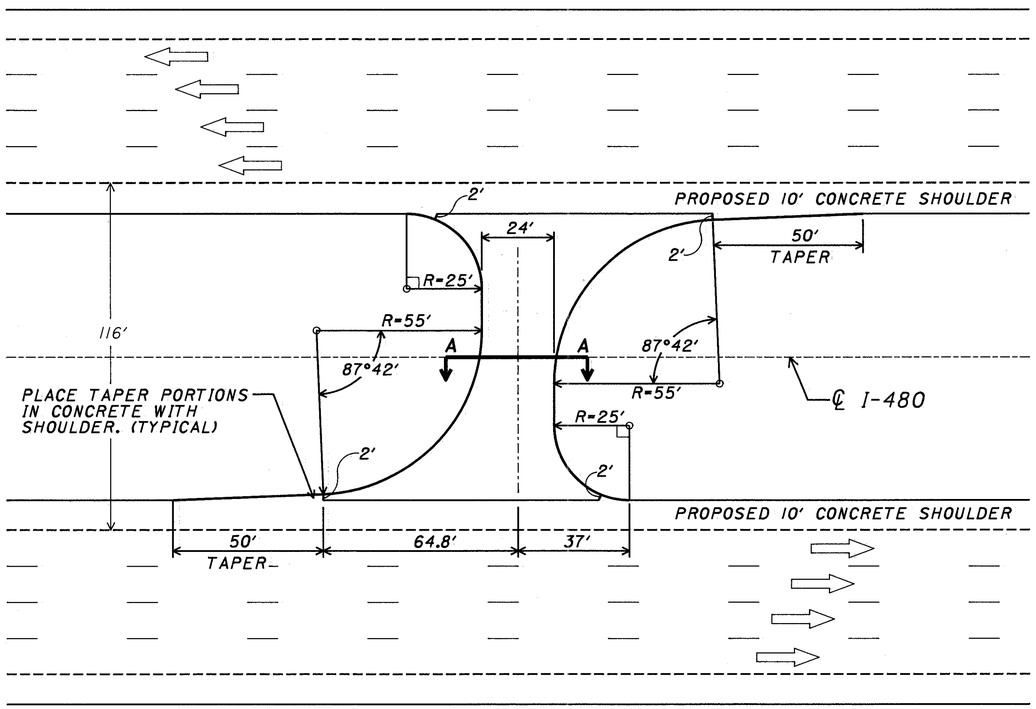


SHOULDER WIDENING - RAMP E-G

PLOT SUBMITTED: 24-NOV-1989 14:20
PLOT SUBMITTED BY: GRMOVSEK
ZF2:L100,331480DET3.DGN

CROSSOVER DETAILS

CUYAHOGA COUNTY CUY-480-15.84	OHIO	44 / 118
	FHWA REGION 5	
	FEDERAL PROJECT	



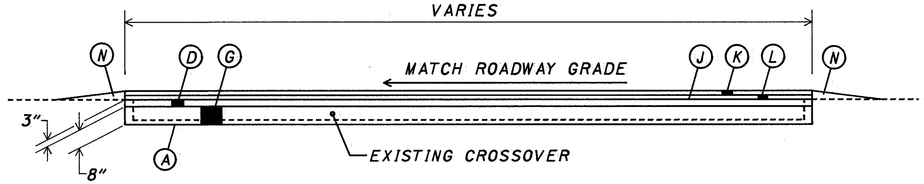
TYPICAL CROSSOVER

LEGEND

(A)	ITEM - 203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
(D)	ITEM - 301	BITUMINOUS AGGREGATE BASE, AC-20
(G)	ITEM - 310	SUBBASE, TYPE II, AS PER PLAN
(J)	ITEM - 407	TACK COAT
(K)	ITEM - 446	1-1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE I, AC-20, AS PER PLAN
(L)	ITEM - 446	1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, AC-20, TYPE 2
(N)	ITEM - 617	COMPACTED AGGREGATE, TYPE A

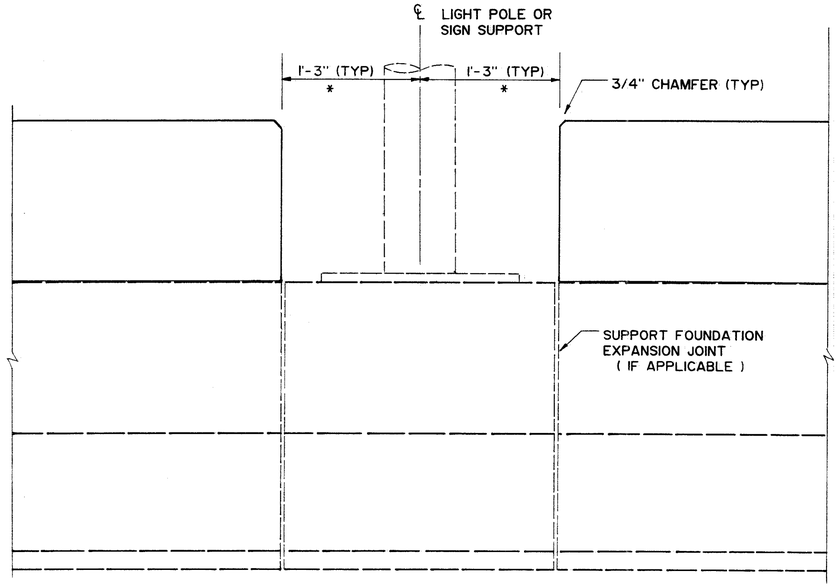
ESTIMATED QUANTITIES

LOCATION	203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	301 BITUMINOUS AGGREGATE BASE, AC-20	310 SUBBASE, TYPE II, AS PER PLAN	407 TACK COAT,	446 1-1/4" ASP. CONCRETE SURFACE COURSE, TYPE I, AC-20, AS PER PLAN	446 1-3/4" ASP. CONCRETE INT. COURSE, TYPE 2, AC-20	617 COMPACTED AGGREGATE, TYPE A
	CU. YDS.	CU. YDS.	CU. YDS.	GALS.	CU. YDS.	CU. YDS.	CU. YDS.
933 + 49	138	37.7	100.6	34.9	16.2	22.6	3.3
976 + 62	138	37.7	100.6	34.9	16.2	22.6	3.3
TOTAL	276	75	201	70	32	45	7



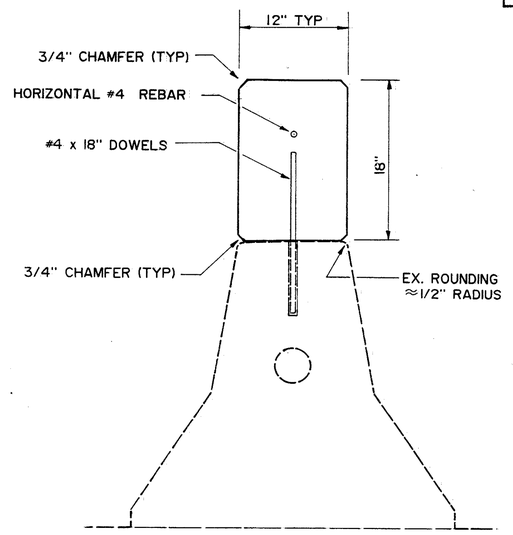
TYPICAL SECTION A-A

STA. 933 + 49
STA. 976 + 62

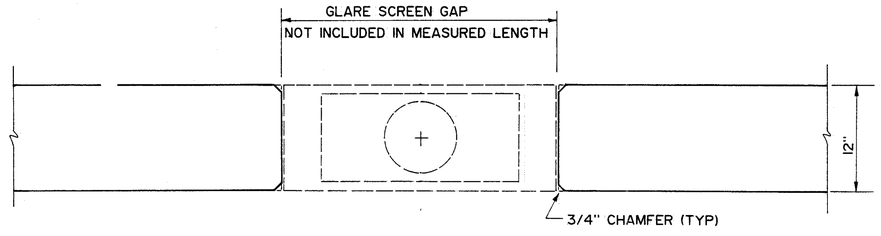


* - OR WIDER TO EXTEND TO SUPPORT FOUNDATION EXPANSION JOINT

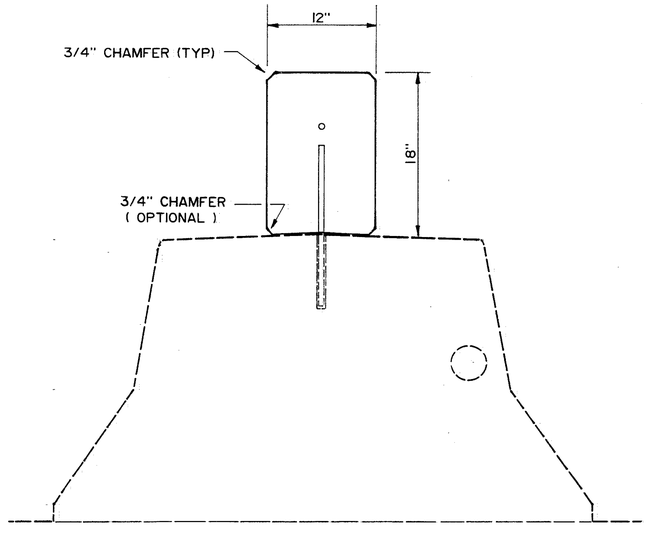
ELEVATION



NORMAL SECTION



PLAN VIEW



WIDENED SECTION, BRIDGE PIERS OR SIGN SUPPORTS

FOR ADDITIONAL NOTES AND DETAILS SEE STD. CONSTRUCTION DRAWING MC-9.

CONTRACTION JOINTS SHALL BE TOOLED OR SAWN A MINIMUM OF 1 ½ INCHES DEEP. SPACING SHALL MATCH EXISTING.

STATION MARKING AS PER MC-9 SHALL BE INCLUDED UNDER THIS ITEM OF WORK.

DOWELS SHALL BE INSTALLED AS SHOWN ON THESE DETAILS AND MC-9. DOWELS SHALL BE CONSTRUCTED AT 4' MAXIMUM SPACING. START AND END DOWELS 6" FROM ALL BARRIER EXPANSION AND CONTRACTION JOINTS.
DOWEL HOLES AND GROUTING SHALL BE AS PER ITEM 510 AND INCLUDED UNDER THIS ITEM OF WORK FOR PAYMENT.

3/4" P.E.J.F. (705.03) IS REQUIRED AROUND EACH PIER AND AT EXPANSION JOINTS.

GLARE SCREENS SHALL NOT BE REQUIRED BETWEEN PIERS.

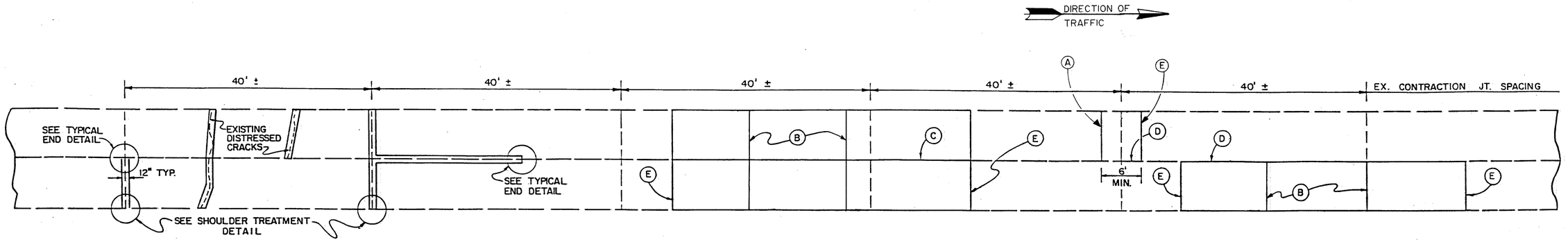
513840

CONCRETE GLARE SCREEN DETAILS

CUYAHOGA COUNTY CUY-480-15.84	OHIO
	FHWA REGION 5
	FEDERAL PROJECT

46/118

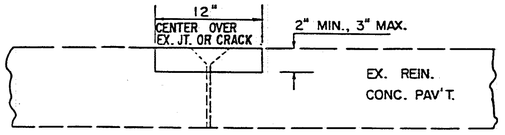
PAVEMENT REPAIR DETAILS



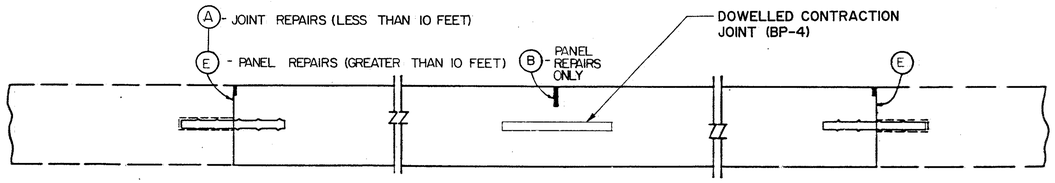
PARTIAL DEPTH JOINT OR CRACK REPAIR

TYPICAL TWO LANE REPLACEMENT

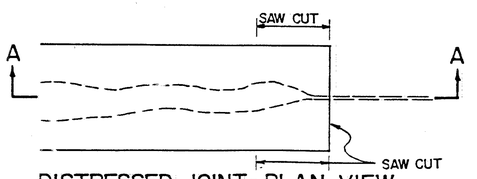
TYPICAL ONE LANE REPLACEMENT



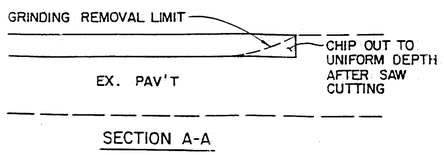
ITEM 251-PARTIAL DEPTH PAV'T REPAIR



ITEM 803- FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT



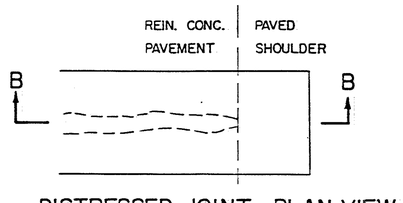
DISTRESSED JOINT- PLAN VIEW



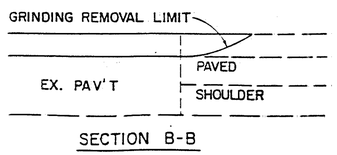
SECTION A-A

TYPICAL END DETAIL

NO SEPARATE PAYMENT WILL BE MADE FOR THESE SAW CUTS



DISTRESSED JOINT - PLAN VIEW



SECTION B-B

SHOULDER TREATMENT DETAIL

MEASURED QUANTITY SHALL NOT INCLUDE THE PAVED SHOULDER AREA

ESTIMATED QUANTITY *		
ITEM 251- PARTIAL DEPTH PAVEMENT REPAIR AS PER PLAN	10,000	S.Y.

LEGEND

- (A) TYPE T TIED REPAIR JOINT, AS PER BP-13
- (B) SAWED CONTRACTION JOINT AS PER BP-4 MAX. SPACING 20' C/c
- (C) LONGITUDINAL BUTT JOINT AS PER BP-3 (USING HOOK BOLTS)
- (D) LONGITUDINAL JOINT AS PER BP-13
- (E) TYPE Y DOWELLED REPAIR JOINT, AS PER BP-13

SEE GENERAL NOTES ON SHEET 9 / FOR ADDITIONAL INFORMATION

ESTIMATED QUANTITIES *			
ITEM 803	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C	55,000	SQ. YDS.
ITEM 803	FULL DEPTH PAVEMENT SAWING	160,000	LIN. FT.
ITEM 203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	100	CU. YDS.
ITEM 301	BITUMINOUS AGGREGATE BASE, AC-20	5	CU. YDS.
ITEM 304	AGGREGATE BASE, AS PER PLAN	100	CU. YDS.
ITEM 605	AGGREGATE DRAINS, AS PER PLAN	100	LIN. FT.

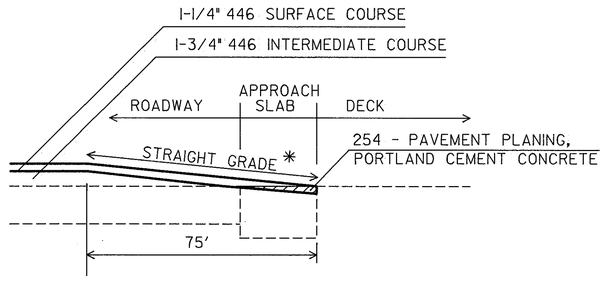
* QUANTITY ESTIMATES ARE BASED ON DYNAFLECT READINGS AND VISUAL INSPECTION. AN ADDITIONAL 25% WAS ADDED TO THE REPAIR AREA TO COMPENSATE FOR ANY ROADWAY DETERIORATION THAT MAY OCCUR BETWEEN THE TIME OF PLAN PREPARATION AND ACTUAL CONSTRUCTION.

VISUAL SURVEY 8/18/89

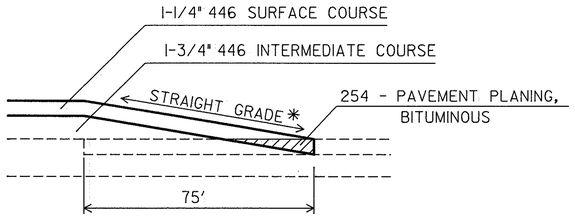
EXISTING PORTLAND CEMENT CONCRETE SURFACE AREA= 217,576 SQ. YDS.

PLOT SUBMITTED: 27-NOV-1989 06:39
ZF2:[100,331480DETI.DGN
PLOT SUBMITTED BY: GRMOVSEK

FEATHER DETAILS



TYPICAL OVERLAY DETAIL AT BRIDGE
ROADWAY WITH 3" OVERLAY BRIDGE WITH NO OVERLAY
NO ASPHALT SURFACE ON APPROACH SLAB



3" OVERLAY BUTT JOINT MEETING PAVEMENT WITH ASPHALT OVERLAY

* - *STRAIGHT GRADE - THE ASPHALT TRANSITIONS SHALL BE CONSIDERED UNACCEPTABLE IF THE FINAL GRADE VARIES FROM THE DESIRED STRAIGHT GRADE BY GREATER THAN 3/8 INCHES ANYWHERE THROUGHOUT THE LENGTH OF THE TRANSITION. THIS TOLERANCE IS REDUCED TO 1/4 INCH FOR THE FIRST 5 FEET ADJACENT TO AN EXPANSION JOINT.*

PAYMENT WILL BE HELD FOR 1 C.Y. OF ASPHALT PER FOOT OF PAVING WIDTH AT EACH TRANSITION LOCATION UNTIL THE TRANSITION IS SHOWN TO BE ACCEPTABLE. THE CONTRACTOR IS TO PROVIDE THE NECESSARY SURVEY WORK TO SHOW THAT THESE STRAIGHT GRADES ARE MET ALONG EACH EDGE LINE AND LANE LINE.

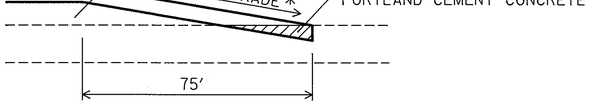
ALL UNACCEPTABLE ASPHALT TRANSITIONS SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE. THE REPAIR METHOD SHALL BE AS FOLLOWS:

A. DETERMINE FINAL GRADE LINE BY EXTENDING A STRAIGHT LINE FROM THE TOP OF THE BRIDGE END DAM JOINT TO A POINT 75' AWAY ON THE TOP OF RESURFACING.

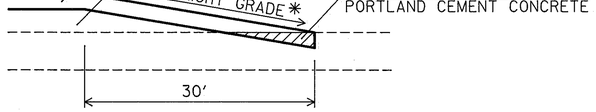
B. REMOVE ASPHALT CONCRETE EXACTLY 1" BELOW THE FINAL GRADE.

C. PLACE ITEM 407 - TACK COAT AND ITEM 446 - ASPHALT CONCRETE, TO DESIRED GRADE.

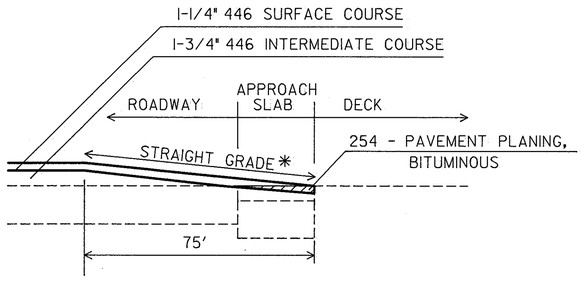
D. SURVEY TRANSITION TO VERIFY THAT THE REPAIR IS WITHIN THE ALLOWABLE TOLERANCE.



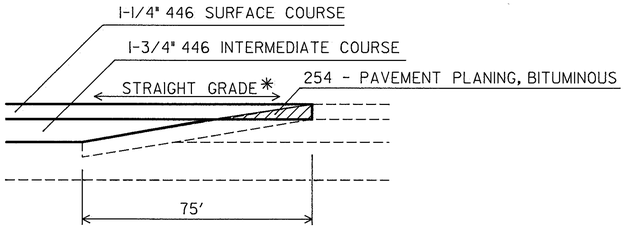
3" OVERLAY BUTT JOINT MEETING PAVEMENT WITH NO OVERLAY



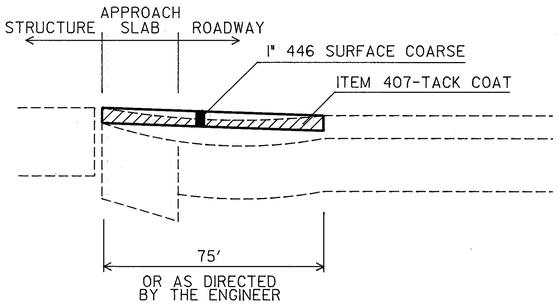
3" OVERLAY BUTT JOINT MEETING PAVEMENT WITH NO OVERLAY
(RAMP TERMINALS ONLY)



TYPICAL OVERLAY DETAIL AT BRIDGE
ROADWAY WITH 3" OVERLAY BRIDGE WITH NO OVERLAY
EXISTING ASPHALT SURFACE ON APPROACH SLAB



3" OVERLAY BUTT JOINT MEETING EXISTING PAVEMENT WITH 3" OVERLAY



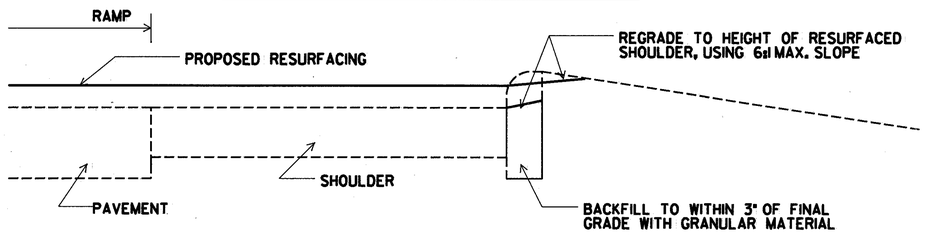
CORRECTION OF UNACCEPTABLE ASPHALT TRANSITIONS

PLOT SUBMITTED: 27-NOV-1989 06:41
ZF2:[100,331480DET2.DGN
PLOT SUBMITTED BY: GRMOVSEK

MISCELLANEOUS DETAILS

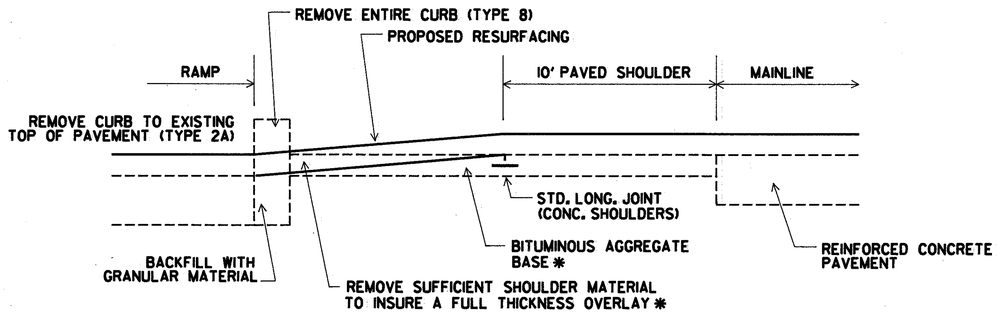
THE FOLLOWING DETAILS AND SPECIFICATIONS SHALL APPLY TO THIS ITEM OF WORK

CASE 1- TYPE 6 OR 7 CURB REMOVED



NOTE: RESTORE DISTURBED AREA IN CONFORMANCE WITH ITEM 659. ALL WORK SHOWN SHALL BE INCLUDED UNDER ITEM 202 WITH THE EXCEPTION OF THE RESURFACING ITEMS

CASE 2 - TYPE 2A OR 8 CURB REMOVED

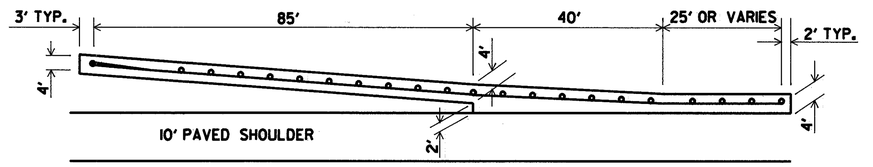


NOTE: CONNECT THE OUTSIDE EDGE OF THE 10 FT. PAVED SHOULDER AND THE CURB GUTTER LINE WITH A STRAIGHT GRADE

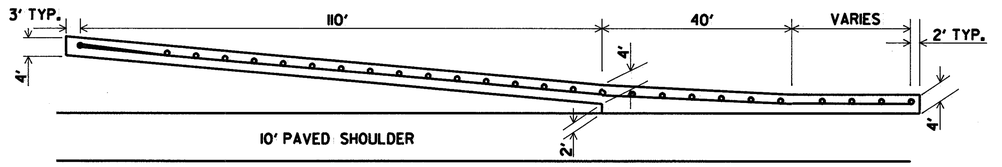
* - IF CONCRETE SHOULDERS ARE PROPOSED, PLACE TO THE GRADES SHOWN ABOVE. WHEN THE CONCRETE SHOULDER WIDTH EXCEEDS 16 FEET, INSTALL A STANDARD LONGITUDINAL JOINT AT THE OUTSIDE EDGE OF THE 10 FT. PAVED SHOULDER.

ESTIMATED QUANTITIES

RAMP NUMBER	LOCATION FROM	LOCATION TO	202 CURB REMOVED AS PER PLAN	202 CATCH BASIN ABANDONED
			LIN. FT.	EACH
GE	69 + 40	72 + 00	260	
LANE SE	85 + 57	88 + 42	285	
SW	101 + 24	104 + 80	260	
NE	86 + 50	90 + 00	355	
NW	66 + 04	68 + 07	209	
WN	81 + 96	84 + 70	274	1
TOTALS			1643	1

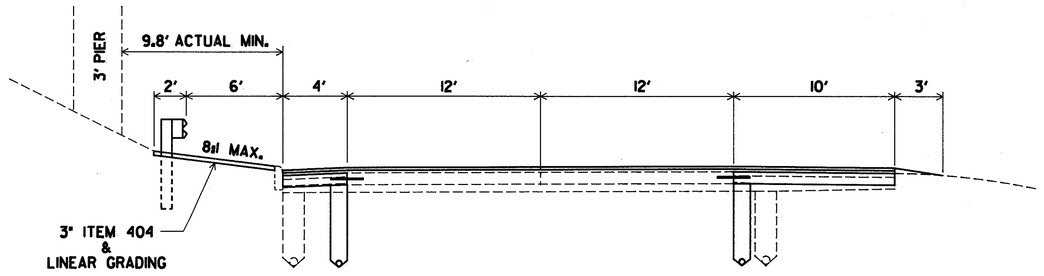


ITEM 404 FOR EROSION CONTROL WITH 8.31' GUARDRAIL FLARE



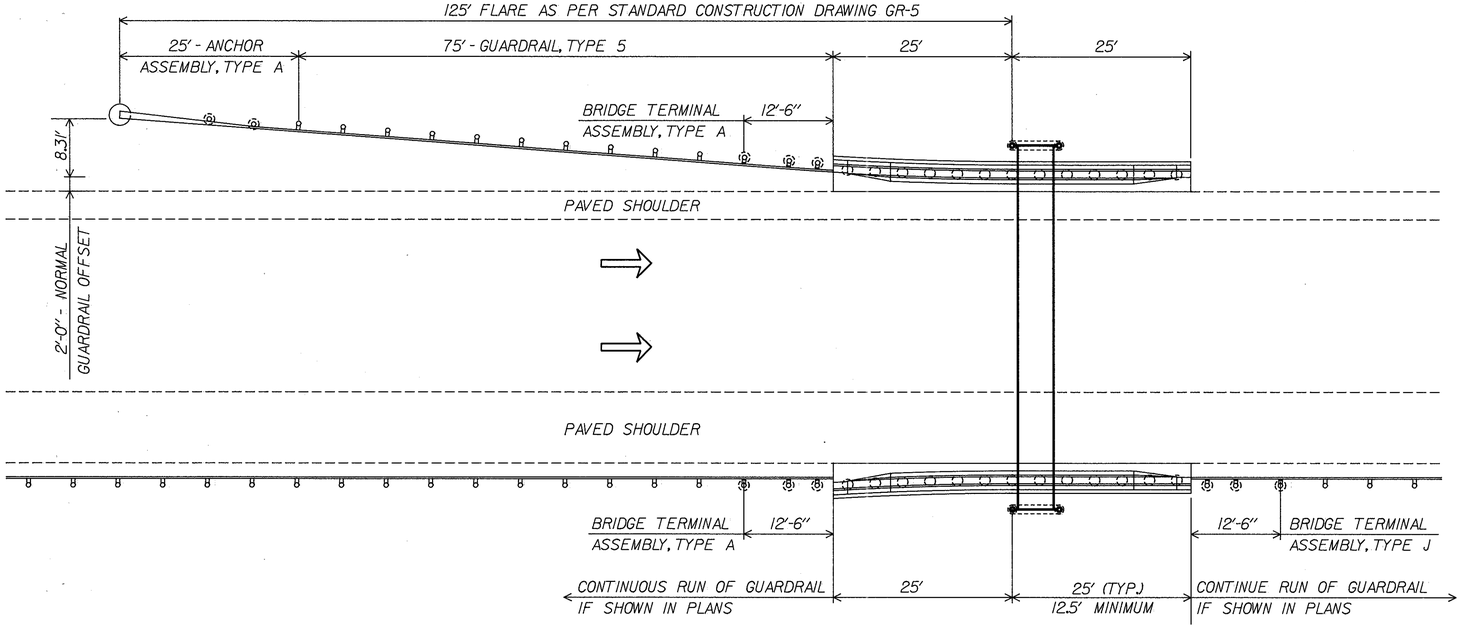
ITEM 404 FOR EROSION CONTROL WITH 18' GUARDRAIL FLARE

NOTE: A 4' WIDE STRIP OF ITEM 404 SHALL BE CONSTRUCTED UNDER ALL PROPOSED GUARDRAIL.



SPECIAL GUARDRAIL OFFSET - RAMPS N-E & S-W
INSIDE OF CURVE UNDER BRIDGES

PLOT SUBMITTED: 8-DEC-1989 07:04
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]CONBAR2.DGN



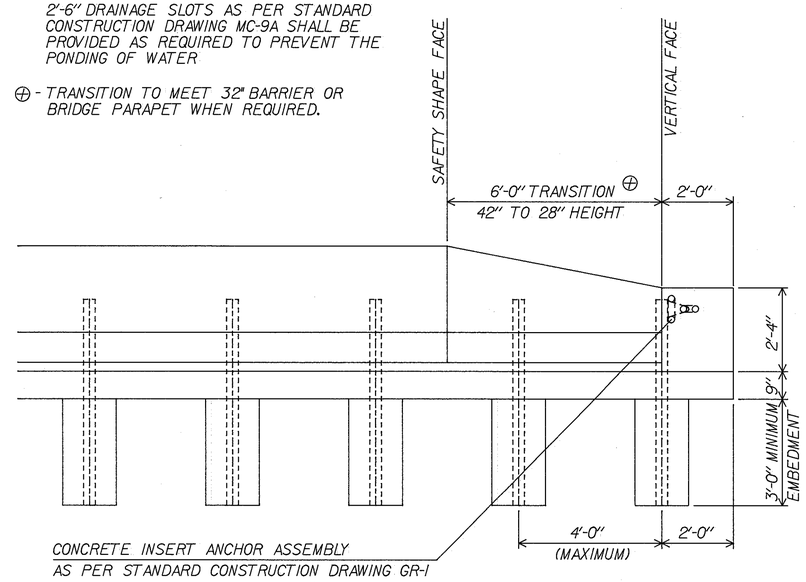
CONCRETE BARRIER PROTECTION FOR OVERHEAD SPAN TYPE SIGN SUPPORTS

NOTES:

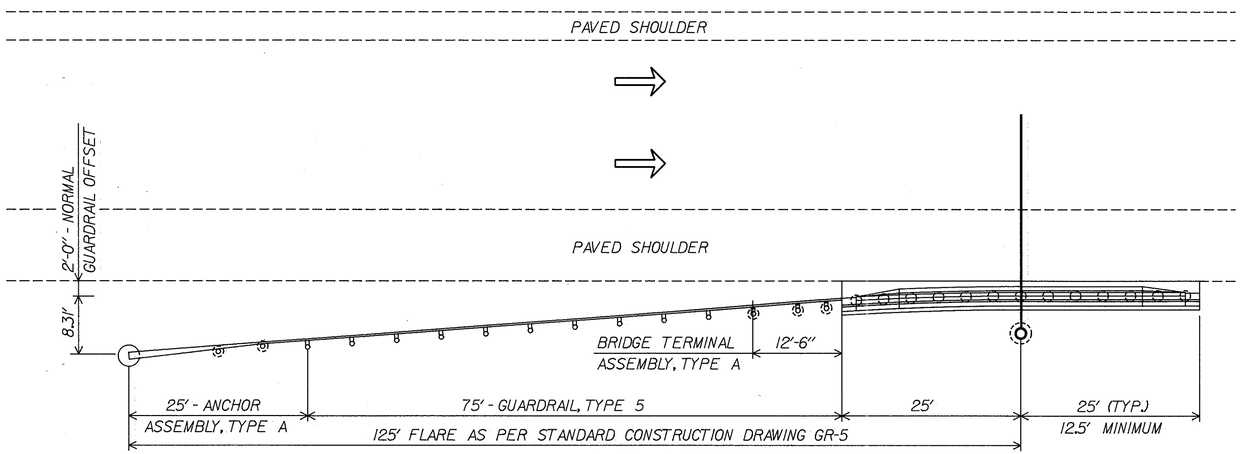
BARRIER ENDS SHALL BE TRANSITIONED SIMILAR TO THE TRANSITION SHOWN IN STANDARD CONSTRUCTION DRAWING GR-3 EXCEPT THAT THE MAXIMUM HEIGHT SHALL BE 42"

2'-6" DRAINAGE SLOTS AS PER STANDARD CONSTRUCTION DRAWING MC-9A SHALL BE PROVIDED AS REQUIRED TO PREVENT THE PONDING OF WATER

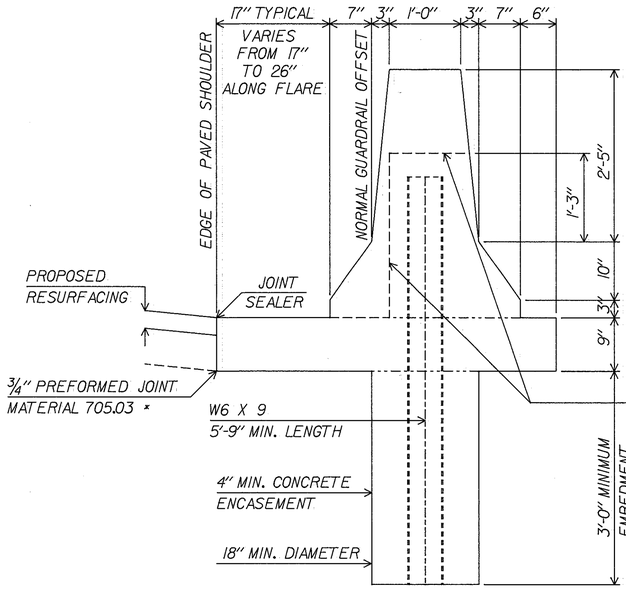
⊕ - TRANSITION TO MEET 32" BARRIER OR BRIDGE PARAPET WHEN REQUIRED.



CONCRETE BARRIER PLAN SHOWING END TRANSITION



CONCRETE BARRIER PROTECTION FOR OVERHEAD CANTILEVER TYPE SIGN SUPPORTS



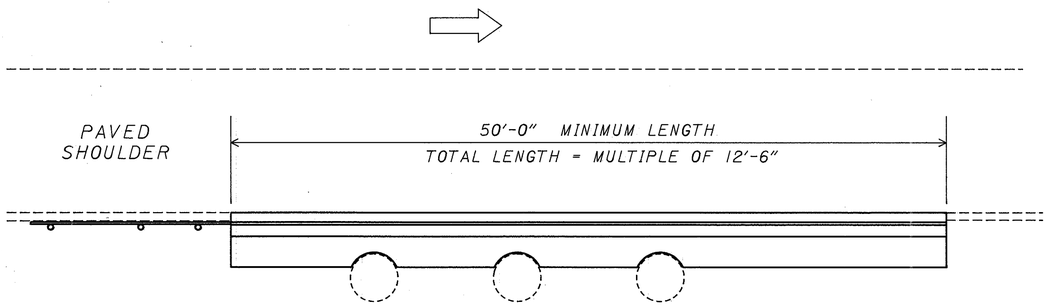
ITEM 622 - CONCRETE BARRIER, TYPE B42 AS PER PLAN

THIS ITEM OF WORK SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY TO CONSTRUCT THE CONCRETE BARRIER AS DETAILED ON THIS SHEET. FOR DETAILS NOT SHOWN SEE STANDARD CONSTRUCTION DRAWING GR-1, GR-3 MC-9 AND MC-9A

* EXPANSION JOINT MATERIAL IS NOT REQUIRED WHEN THE BARRIER IS ADJACENT TO FLEXIBLE TYPE PAVEMENT

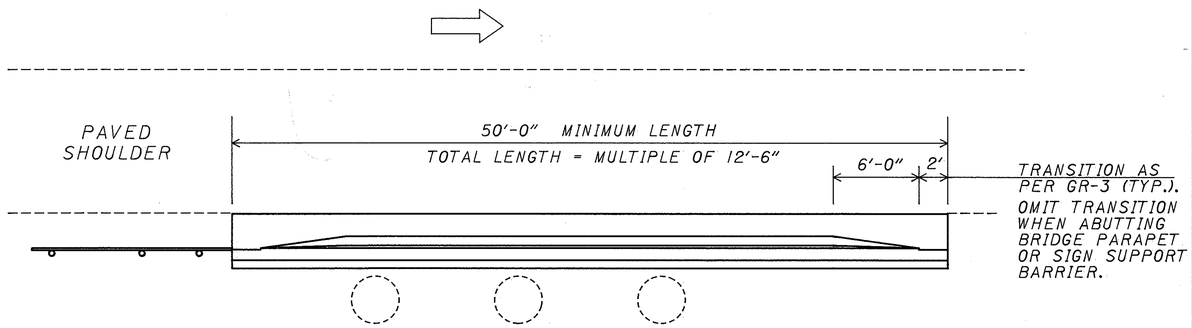
CONCRETE BARRIER SECTION

CONCRETE BARRIER PROTECTION FOR OVERHEAD SIGN SUPPORTS



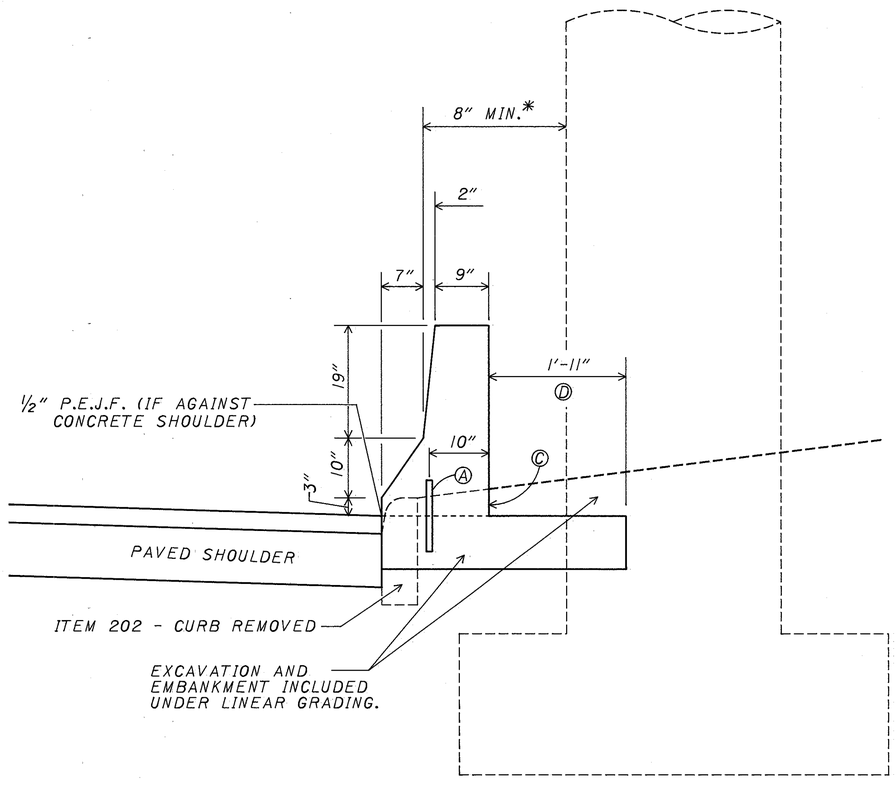
TYPICAL BARRIER PLAN - CURBED ROADWAY

BARRIER REQUIRED WHEN PIERS ARE WITHIN 3'-6" OF NORMAL GUARDRAIL OFFSET



TYPICAL BARRIER PLAN - UNCURBED ROADWAY

BARRIER REQUIRED WHEN PIERS ARE WITHIN 3'-6" OF NORMAL GUARDRAIL OFFSET



* - IF PIER IS CLOSER THAN 11 1/2 INCHES TO NORMAL GUARDRAIL OFFSET THEN REDUCE BARRIER TOP WIDTH AT PIER ONLY AND PLACE 1/2 " P.E.J.F. (705.03) BETWEEN PIER AND BARRIER. TREAT CONCRETE BASE SIMILARLY.

Ⓐ - No. 8 DEFORMED STEEL BARS, 12" LONG, SPACED ON 2' CENTERS

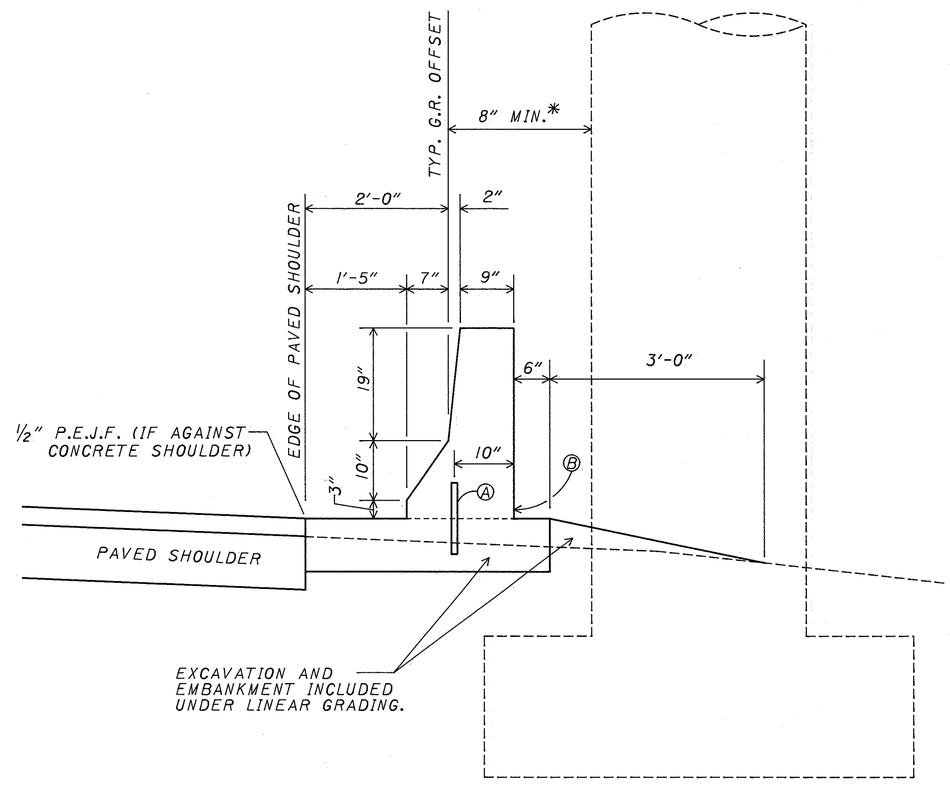
Ⓑ - PROVIDE 2" X 18" DRAINAGE SLOTS 5' CENTER TO CENTER IN SAGS AND 10' CENTER TO CENTER IN INSTALLATIONS LONGER THAN 100 FEET.

Ⓒ - PROVIDE 2" X 18" DRAINAGE SLOTS 5' CENTER TO CENTER

Ⓓ - BACKFILL ABOVE FOOTING WITH No.2 CRUSHED AGGREGATE 601.05. COSTS TO BE INCLUDED UNDER ITEM 622.

TYPICAL BARRIER SECTION - CURBED ROADWAY

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



TYPICAL BARRIER SECTION - UNCURBED ROADWAY

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

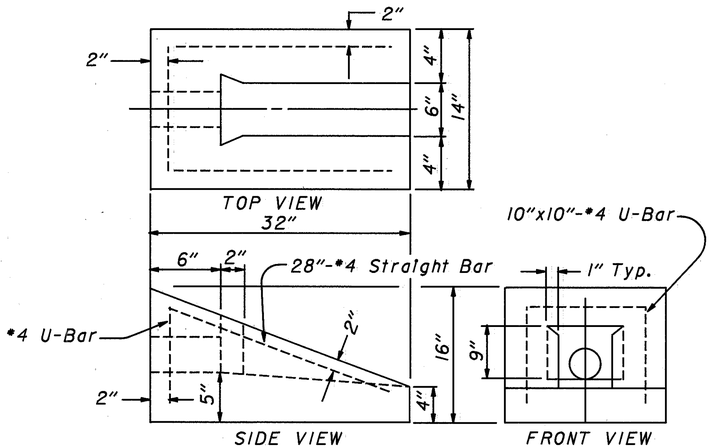
CONCRETE BARRIER PROTECTION OF PIERS

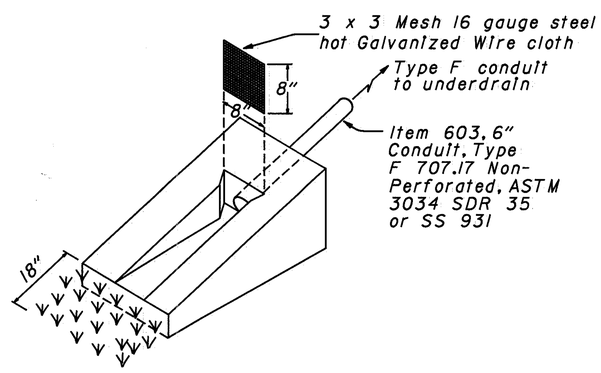
ZFA2:[10033]CONBAR3 .DGN;1

PLOT SUBMITTED: 27-NOV-1989 06:43
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]480UD3.DGN;1

DRAINAGE DETAILS

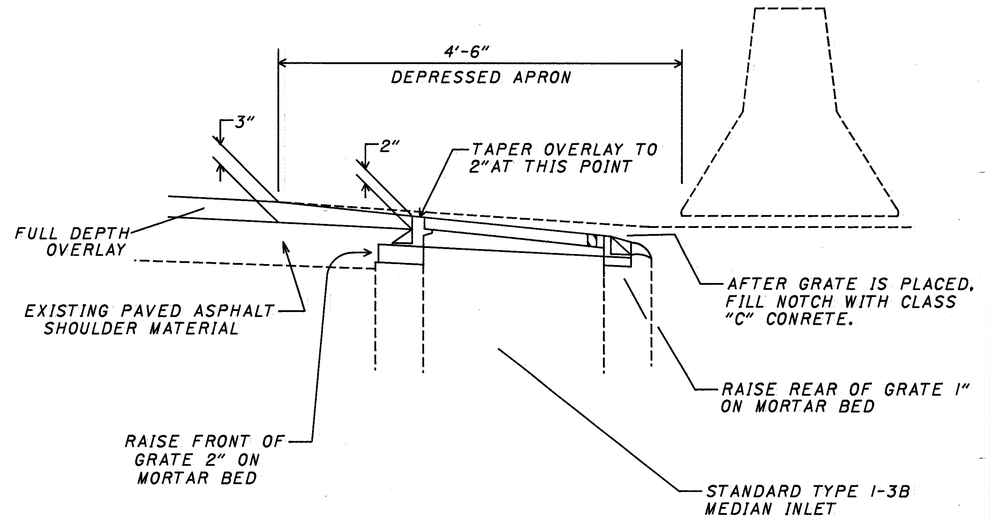
The Concrete outlet shall meet the requirements of Item 604 in the Construction & Materials Specifications. Payment shall be made on an Each basis. Payment shall include the cost of the Sod & Wire Cloth.



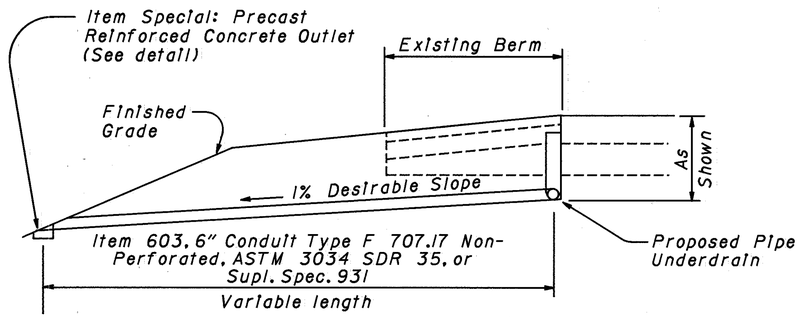


NOTE: The Sod shall be in accordance with Item 660 and staked at each corner approximately 3 inches in from the edge.

ITEM SPECIAL - PRECAST REINFORCED CONCRETE OUTLET

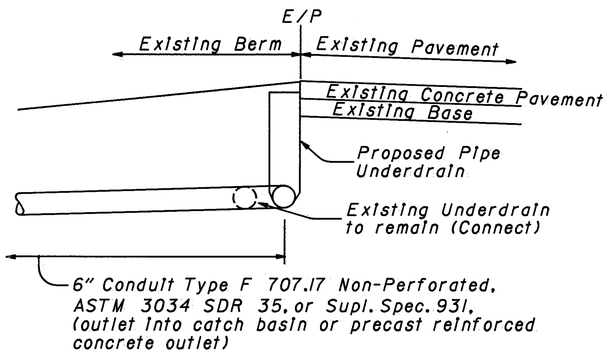


MEDIAN INLET ADJUSTED TO GRADE



NOTE: For underdrain outlets into catch basins the above Type F Conduit shall be used entirely between the underdrain & catch basin.

OUTLET DETAIL



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

MATERIALS: The underdrain shall be a pipe underdrain system per Item 605

The outlets for the underdrain system shall be constructed as soon as possible after placement of the underdrain to drain the subbase & subgrade. All pipe bends & branches needed to connect the proposed underdrain to the proposed outlet or to an existing underdrain shall be manufactured fittings.

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

BASIS OF PAYMENT: Work completed and accepted under this Item and measured will be paid for at the contract unit price bid per linear foot for Item 605 6" (Shallow)(Deep) Pipe Underdrain .

The price shall be full compensation for excavation and backfill; for furnishing materials, including material for outlet fittings for all labor, tools equipment, and incidentals necessary to complete the work.

ITEM 605 6" (SHALLOW)(DEEP) PIPE UNDERDRAIN

DRAINAGE QUANTITIES

LEGEND:
AH = AHEAD
BK = BACK

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

52/118

*- 707.17, NON-PERFORATED ASTM 3034 SDR 35 OR SS 931

DRAINAGE QUANTITIES

LOCATION	STATION FROM	STATION TO	LENGTH	NUMBER OF SIDES	ITEM - 605 6" SHALLOW PIPE UNDERDRAIN	ITEM - 605 6" DEEP PIPE UNDERDRAIN	ITEM - 603 6" CONDUIT TYPE B	ITEM - 603 6" CONDUIT TYPE F *	TO EXISTING CATCH BASIN, MANHOLE, ETC...	SPEC. PRECAST REINFORCED CONCRETE OUTLET
			LIN. FT.		LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.		EA.
480 LT	860+00	865+98	598	1		588		20	YES	
	866+00	869+98	398	1		398		10	YES	
	866+00	881+50	1550	1		1530		30	YES	
	870+00	881+50	1150	1		1140		20	YES	
	881+50	888+00	645	2	640	640		20	YES	
	888+05	893+00	495	1	490			10	YES	
	888+05	890+50	245	1		240		20	YES	
	S.R. 17	894+25	1550	1		1550		25		1
	893+05	902+35	930	1	925			10	YES	
	894+30	901+75	745	1	745			30		1
	902+40	912+85	1045	1	1040			20	YES	
	902+40	910+95	885	1	880			10	YES	
	912+45	916+60	415	1		410		20	YES	
	915+00	916+60	160	1	145			60	YES	
	916+65	921+45	480	2	470	470		85	YES	
	921+50	933+00	1150	2	1140	1140		90		1
	933+05	936+60	355	1	355			30		1
	933+05	936+50	345	1	345			60	YES	
	936+70	948+25	1155	1	510	640		50	YES	
	936+85	948+20	1135	1	470	665		30		1
	948+30	958+75	1045	1	1035			70	YES	
	950+00	959+00	900	1	890			80		1
	958+75	966+35	760	1	375	385		-	YES	
	959+00	966+10	710	1	350	360		-	YES	
	970+35	972+82	250	1		250		-	YES	
	970+60	976+95	635	1	625			65	YES	
	973+00	976+95	395	1		395		20	YES	
	977+00	988+50	1150	1		1145		20	YES	
	977+00	988+65	1165	1	545	615		60	YES	
	988+70	991+70	300	1		295		20	YES	
	988+70	990+45	175	1		170		60	YES	
RAMP G-E	58+64	64+88	624	1		614		30	YES	
	68+50	881+31	1270	1	325	935		40	YES	
480 RT	866+00	869+95	395	1	390			10	YES	
	866+00	881+50	1550	1	1530			30	YES (2)	
	870+00	881+50	1150	1	1140			20	YES (2)	
	881+45	888+00	655	1		650		20	YES	
	881+55	888+00	645	2	1280			20	YES (2)	
	888+05	890+50	245	1	240			10	YES	
	888+05	893+00	495	2	480	480		50	YES (2)	
	890+55	893+00	245	1	240			10	YES	
	890+55	902+45	1190	1	1175			95	YES	
	893+05	901+15	810	1	795			10	YES	
	903+50	911+15	765	1	760			70	YES	
	911+20	916+60	540	1	535			60	YES	
	912+00	916+60	460	1	455			60	YES	
	916+65	921+45	480	2	475	475		100	YES (2)	
	921+45	928+00	655	2	650	650		135	YES (2)	
	928+05	936+40	835	1	800			70	YES	
	928+05	936+00	795	1		780		30	YES	
	936+15	947+50	1135	1	200	935		25		1
(LEFT SIDE					23445	18545		1940		7

DRAINAGE QUANTITIES

LOCATION	STATION FROM	STATION TO	LENGTH	NUMBER OF SIDES	ITEM - 605 6" SHALLOW PIPE UNDERDRAIN	ITEM - 605 6" DEEP PIPE UNDERDRAIN	ITEM - 603 6" CONDUIT TYPE B	ITEM - 603 6" CONDUIT TYPE F *	TO EXISTING CATCH BASIN, MANHOLE, ETC...	SPEC. PRECAST REINFORCED CONCRETE OUTLET
			LIN. FT.		LIN. FT.		LIN. FT.	LIN. FT.		EA.
480 RT	936+35	948+25	1190	1	495	690		60	YES	
	946+15	957+25	1110	1		1105		25	YES	
	948+30	958+75	1045	1	1035			70	YES	
	957+25	967+60	1035	1		1030		25	YES	
	958+75	967+35	860	1	375	485		-		
	971+25	976+95	570	1	550			80	YES	
	977+00	988+65	1165	1	1160			60	YES	
	983+25	990+00	675	1	655			110	YES	
	988+70	996+20	750	1		745		25	YES	
LANE N-W	49+55	57+00	745	1	745			30		1
	57+05	65+00	795	1	785			35	YES	
	65+00	72+45	745	1	745			-		
	72+50	948+30	685	1	685			30		1
LANE E-N	64+90	75+00	1010	1		1010		30		1
	75+05	84+65	960	1		955		20	YES	
	74+50	76+25	175	1		175		90	YES	
	81+00	84+67	367	1		362		10	YES	
	84+70	87+85	315	1		315		30		1
LANE S-E	67+42	69+98	256	1		251		20	YES	
	70+02	83+25	1323	1		1313		50	YES	
	83+25	98+15	1490	1		1470		20	YES	
	98+20	994+50	580	1		575		20	YES	
LANE W-S	47+50	57+95	1045	1	1035			10	YES	
	58+00	69+71	1171	1	671	500		40		1
	64+00	67+00	300	1				55	YES	
LANE N-W	56+50	66+40	990	1	990			25	YES	
	72+00	72+50	50	1		50		20	YES	
	72+50	84+70	1220	1		1205		30	YES	
	82+50	83+70	120	1		120		-		
LANE E-S	55+12	66+01	1089	1		1079		35	YES	
	72+65	73+25	60	1	60			65	YES	
	73+25	79+00	575	1	565			10	YES	
	58+00	63+00	500	1		500		60	YES	
	78+75	82+75	400	1	400			60	YES	
LANE S-W	67+42	69+98	256	1		251		15	YES	
	70+02	85+50	1548	1		1533		20	YES	
	85+54	89+50	396	1		371		35	YES	
	89+50	98+75	955	1		950		15	YES	
LANE N-E	50+50	59+23	873	1		858		25	YES	
	59+20	64+49	529	1		524		10	YES	
	64+50	66+21	171	1	171			-		
	66+26	76+10	984	1		969		20	YES	
	76+15	87+90	1175	1		1160		25	YES	
	55+60	58+10	250	1	250			50	YES	
SUB-TOTAL (RIGHT SIDE)					11372	20551		1465		5
SUB-TOTAL (LEFT SIDE)					23445	18545		1940		7
GRAND TOTAL					34817	39096		3405		12

QUANTITIES SHOWN ARE FOR ESTIMATING PURPOSES ONLY - SEE SHEET NO. 10 FOR QUANTITIES

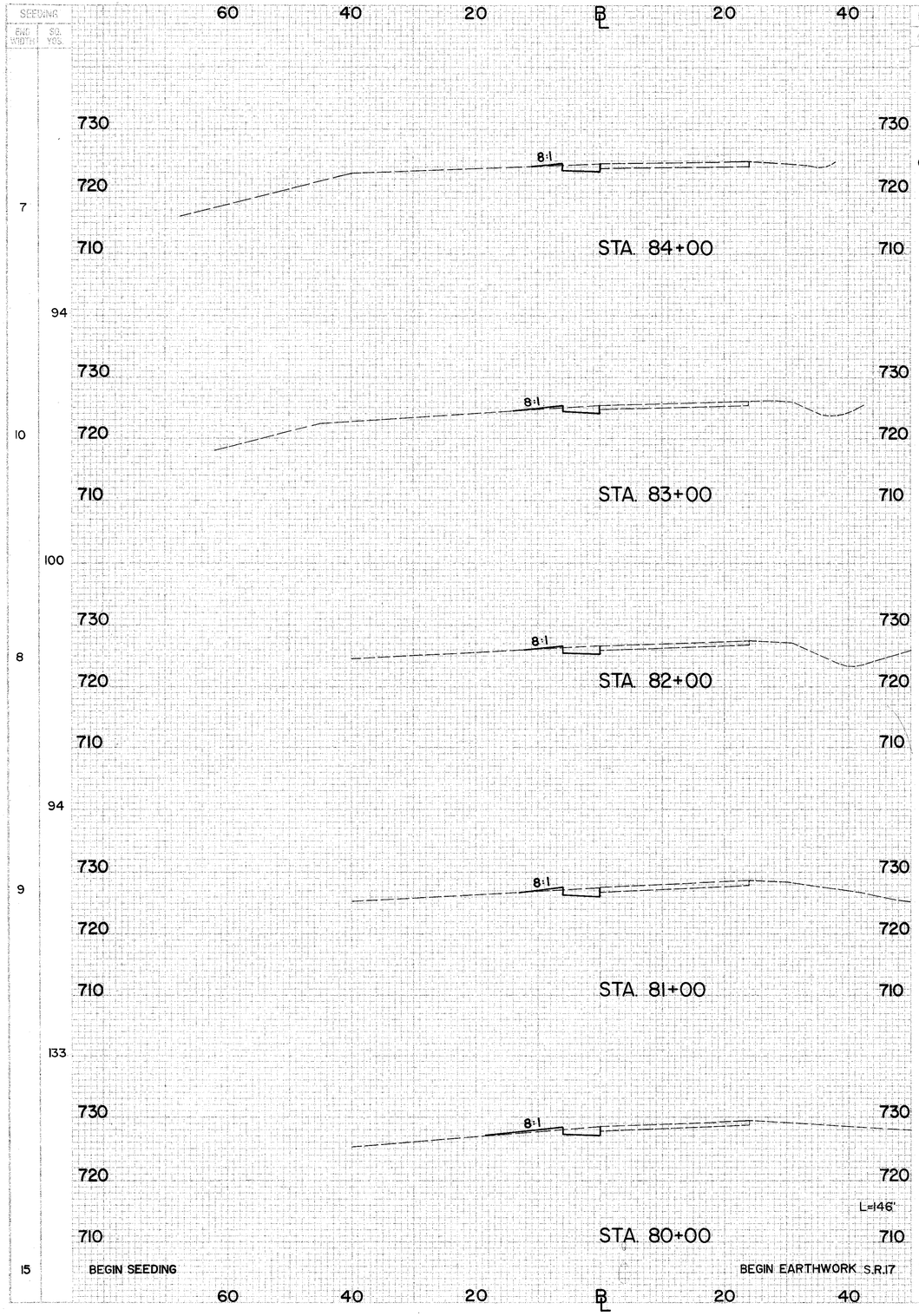
PLOT SUBMITTED: 27-NOV-1989 06:46
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]480DRSMI.DGN;1

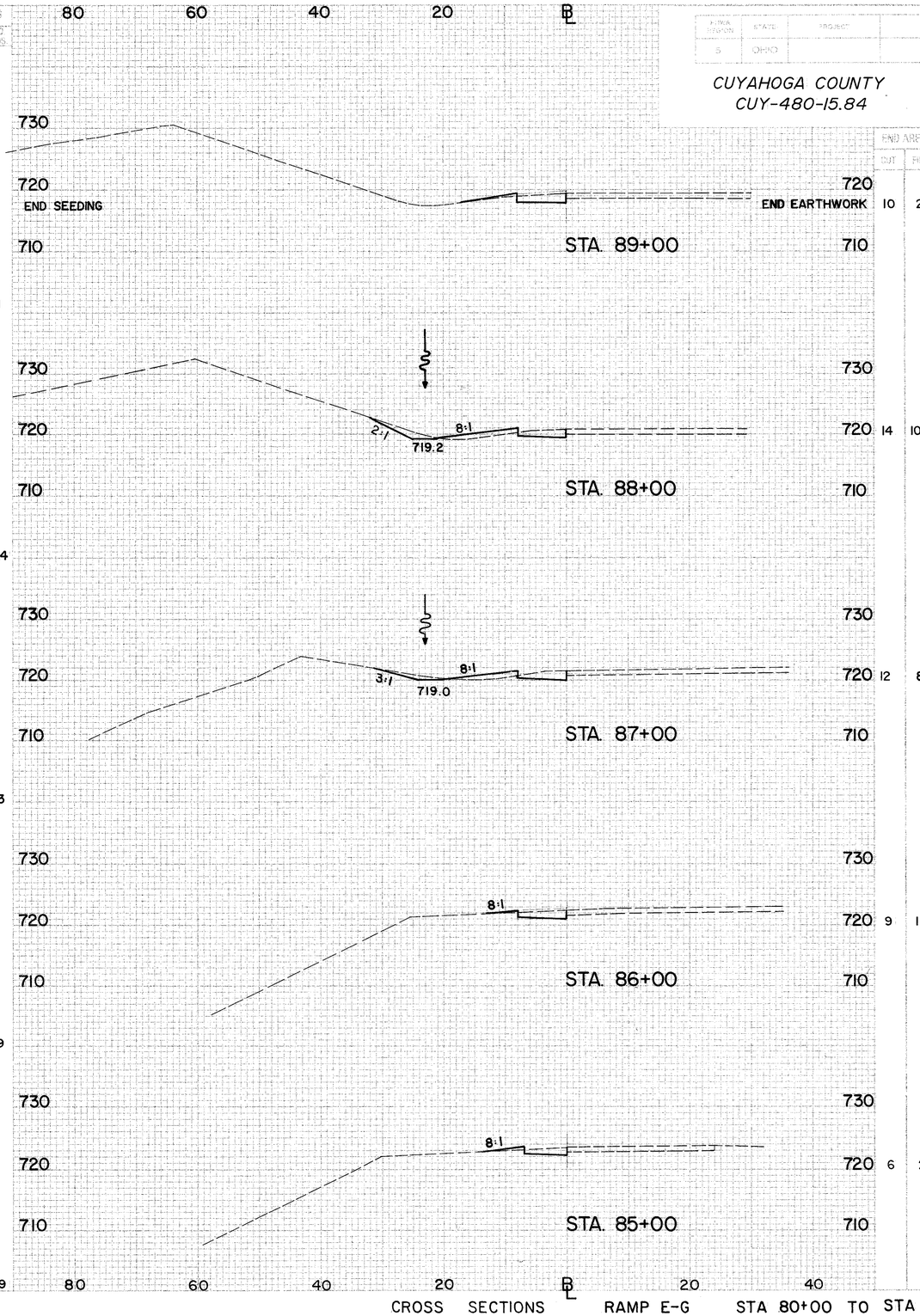
FED. REGION	STATE	PROJECT	
5	OHIO		

53
118

CUYAHOGA COUNTY
CUY-480-15.84

SEEDING END WIDTH	SEEDING SQ. YDS.	STA.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		84+00				
7	94		6	1	22	6
		83+00				
10	100		6	2	24	6
		82+00				
8	94		7	1	26	4
		81+00				
9	133		7	1	26	6
		80+00				
15			7	2	38	11
		89+00				
11	211		10	2	44	22
		88+00				
27	294		14	10	48	33
		87+00				
26	183		12	8	39	17
		86+00				
7	89		9	1	28	6
		85+00				
9	89		6	2	22	6





CROSS SECTIONS RAMP E-G STA 80+00 TO STA 89+00

CUYAHOGA COUNTY
CUY-480-15.84

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
4		END SEEDING				
		STA 51+25 (LANE W-S)	END EARTHWORK	0	0	
	78				0	7
24		STA 50+75 (LANE W-S)		0	7	
	150				0	15
30		STA 50+25 (LANE W-S)		0	9	
	94				0	8
4		BEGIN SEEDING STA 49+75 (LANE W-S)	BEGIN EARTHWORK	0	0	
		END SEEDING STA 66+00 (LANE W-N)	END EARTHWORK	0	0	
	97				0	9
		STA 65+50 (LANE W-N)		0	10	
	208				0	38
		STA 65+00 (LANE W-N)		0	31	
	281				0	81
		STA 64+50 (LANE W-N)		0	56	
	169				0	53
4		BEGIN SEEDING STA 64+00 (LANE W-N)	BEGIN EARTHWORK	0	0	

CROSS SECTION- LANE W-S STA 49+75 TO STA 51+25, LANE W-N STA 64+00 TO STA 66+00

2-A

GENERAL NOTES

TRAFFIC CONTROL

REMOVAL OF EXISTING ITEMS

ALL 630 REMOVAL ITEMS NOT SPECIFICALLY INCLUDING STORAGE OR REERECTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR. REMOVAL AND DISPOSAL SHALL BE THE RESPONSIBLILITY OF THE CONTRACTOR.

630 REMOVAL OF SIGN SERVICE

INCIDENTAL TO THE REMOVAL, RELOCATION OR MODIFICATION OF A SIGN SUPPORT IN ACCORDANCE WITH SPECIFICATION 630.12, SIGN SERVICE TO THE SUPPORT SHALL ALSO BE REMOVED. SIGN SERVICE CABLES SHALL BE DISCONNECTED AT THE SERVICE PULLBOX AND REMOVED. CONNECTION OF THE REMAINING CABLES SHALL CONFORM TO 625.17 TO INSURE CIRCUIT CONTINUITY.

630 SIGN LOCATIONS

SIGN LOCATIONS OF EXISTING AND PROPOSED SIGNS ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR PRIOR TO ERECTION OF ALL SIGN SUPPORTS (POSTS, BEAMS, AND OVERHEADS) SHALL STAKE THE PROPOSED LOCATION, INCLUDING OFFSET. OVERHEAD SUPPORT LOCATIONS SHALL ALSO INCLUDE FOUNDATION ELEVATIONS. THE ENGINEER SHALL APPROVE ALL SUPPORT LOCATIONS AND MAY ADJUST THE LOCATION TO CORRECT SLOPE AND SUBSURFACE DIFFICULTIES, SIGN SIGHT DISTANCE OBSTRUCTIONS, IMPROVE SAFETY AND ELIMINATE OVERHEAD OBSTACLES.

PAYMENT FOR STAKING SHALL BE INCIDENTAL TO THE VARIOUS SIGN SUPPORT ITEMS.

630 FLATSHEET SIGN INSTALLATIONS

ALL FREEWAY FLATSHEET SIGN INSTALLATIONS NOT BEHIND GUARDRAIL SHALL BE OFFSET 30 FEET FROM THE EDGE OF PAVEMENT. SEE SHEET 89 FOR DETAILS.

USE STANDARD DRAWING TC-42.20 FOR FLATSHEET SIGNS INSTALLED BEHIND GUARDRAIL, ON CROSS ROADS, ON RAMPS AND BETWEEN RAMPS AND MAINLINE.

ITEM 630 - SIGNS, FLAT SHEET, AS PER PLAN

SEE DETAIL ON SHEET 90 DESCRIBING THIS ITEM OF WORK.

ITEM 631 - REMOVAL OF DISCONNECT SWITCH ENCLOSURE AND DISPOSAL

INCIDENTAL TO THE REMOVAL OF DISCONNECT SWITCH ENCLOSURE, THE DISCONNECT SWITCH SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

ITEM 631 - REMOVAL OF LUMINAIRE AND DISPOSAL

INCIDENTAL TO THE REMOVAL OF THE LUMINAIRE, THE WIRING, BALLAST, AND THE MOUNTING BRACKET ASSEMBLY SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR

ITEM 631 - BALLAST, BY TYPE, INTEGRAL

BALLAST FOR MERCURY VAPOR LUMINAIRES SHALL BE MOUNTED WITHIN THE LUMINAIRE HOUSING (INTEGRAL) OR MOUNTED IN A WEATHERPROOF HOUSING ATTACHED TO OR BESIDE THE LUMINAIRE (CONTIGUOUS). BALLAST HOUSINGS SHALL BE OF CORROSION RESISTANT MATERIALS.

INTEGRAL BALLASTS SHALL BE USED TO LIGHT ALL NON-STRUCTURALLY MOUNTED OVERHEAD SIGNS AS SHOWN IN THE PLANS.

FORMER CONSTRUCTION PLANS

FOR EXISTING SIGNING DETAILS REFER TO APPLICABLE PLANS LISTED BELOW:

COUNTY, ROUTE & SECTION	PROJECT NO.
CUY-480-18.43	634-70
CUY-480-15.81	504-74
CUY-77/480-8.69/17.37	33-69

COPIES OF THESE PLANS ARE AVAILABLE FOR REFERENCE THROUGH DISTRICT 12 OF THE OHIO DEPARTMENT OF TRANSPORTATION.

TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS

REFERENCES TO SUPPLEMEMTAL SPECIFICATIONS 857, 858, 861, 957, 958, AND 961 ON TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS IN THESE PLANS SHALL CONSIDERED TO READ AS RESPECTIVE REFERENCES TO ITEMS 630, 631, 730, 731, AND 733.

ITEM 630-OVERHEAD SIGN SUPPORT MODIFICATION, BY TYPE

OVERHEAD SIGN SUPPORTS SHALL BE MODIFIED AS SHOWN IN THE PLANS. THE MODIFICATION SHALL CONSIST OF:

SIGN 34
- A) INSERTION OF A NEW BOX TRUSS OF 5 FEET
- B) RELOCATION OF AN EXISTING END FRAME

SIGN 85
- A) INSERTION OF A NEW BOX TRUSS OF 5 FEET
- B) RELOCATON OF BOTH EXISTING END FRAMES

THE NEW SECTION SHALL BE INSERTED IN THE CENTER OF THE EXISTING TRUSS BAND SHALL CONTAIN DIAGONAL TRUSS MEMBERS WHICH SHALL BE ORIENTED TO FORM TRIANGULAR SPACES BETWEEN CHORDS AND DIAGONALS ON EACH FACE OF THE TRUSS.

LOOP DETECTORS

ESTIMATED QUANTITIES OF ITEM 632-LOOP DETECTOR PAVEMENT CUTTING AND LOOP DETECTOR WIRE, TYPE E ARE PROVIDED AS A CONTINGENCY WHEN WIRE IS CUT, BROKEN OR DESTROYED DUE TO PAVEMENT REPAIR, OR BUTT JOINT OPERATIONS.

NEW LOOP DETECTORS SHALL BE PLACED AT THE SAME LOCATIONS AND SAME SIZE AS THE EXISTING. THE LOOP DETECTOR WIRE SHALL BE REPLACED TO THE PULL BOX OR POLE, WHICHEVER IS APPLICABLE, UNDER ITEM 632 AND TC-82.10.

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

	QUANTITY	UNIT
ITEM 632-LOOP DETECTOR PAVEMENT CUTTING	300	L.F.
ITEM 632-LOOP DETECTOR WIRE, TYPE E	600	L.F.

ITEM 802-BARRIER REFLECTOR , TYPE A OR B

THIS ITEM SHALL BE USED TO PLACE THE FINAL BARRIER REFLECTORS. THE EXISTING TEMPORARY BARRIER REFLECTORS SHALL REMAIN AND THE PROPOSED REFLECTORS SHALL BE USED IN ALL OTHER AREAS. FINAL SPACINGS FOR ALL BARRIER REFLECTORS SHALL MATCH S.S. 802.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM	DESCRIPTION	QTY.	UNIT
802	BARRIER REFLECTOR , TYPE A	200	EACH
802	BARRIER REFLECTOR , TYPE B	100	EACH

PLOT SUBMITTED: 22-DEC-1989 07:14
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,122]480GN01.DGN;1
C48072

PLOT SUBMITTED: 22-DEC-1989 10:43
ZF2:[100,122]480GN05.DGN
PLOT SUBMITTED BY: GRMOVSEK
C480COAT

GENERAL NOTES

TRAFFIC CONTROL

PROTECTIVE COATING OF OVERHEAD SIGN SUPPORT SECTIONS, GENERAL

OVERHEAD SIGN SUPPORTS CAN BE SEPARATED INTO MAJOR SECTIONS SUCH AS END FRAMES, TRUSSES, VERTICAL POLES, AND CANILEVER ARMS. FOR THE IMPLEMENTATION OF THIS WORK ITEM IT WILL BE BENEFICIAL TO REFER TO THE MAJOR SECTIONS OF THE OVERHEAD SIGN SUPPORTS RATHER THAN THE WHOLE SUPPORT. MORE SPECIFIC INSTRUCTIONS AND FLEXIBILITY CAN BE GIVEN BASED UPON THE UNIT OF MEASURE AND PAYMENT PER MAJOR SUPPORT SECTION.

THE PROTECTIVE COATING OF OVERHEAD SIGN SUPPORT SECTIONS SHALL BE A FOUR PART PROCESS TO INCLUDE SURFACE PREPARATION FOLLOWED BY A THREE STEP COATING SYSTEM. THIS THREE STEP COATING SYSTEM SHALL CONSIST OF AN EPOXY-PRIME COAT, AN EPOXY INTERMEDIATE COAT, AND AN URETHANE TOP COAT, WITH EACH COAT A DIFFERENT COLOR. FOR AN EXPLANATION OF THE MATERIALS TO BE USED SEE NOTE ENTITLED "COATING SYSTEM." THE PURPOSE OF THIS COATING IS TO PROVIDE PROTECTION FOR NEW (UNWEATHERED) AND OLDER WEATHERED GALVANIZED STEEL SUPPORT SECTIONS FROM CORROSIVE ELEMENTS IN THE ATMOSPHERE. COATING AND SURFACE PREPARATION OF NEW GALVANIZED SUPPORT SECTIONS SHOULD BE DONE BY THE MANUFACTURER.

THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO COMPLY WITH POLLUTION LAWS, RULES OR REGULATIONS OF FEDERAL, STATE, OR LOCAL AGENCIES. THE COATING MATERIALS SPECIFIED FOR THE WORK CAN BE HAZARDOUS TO THE HEALTH OF THE APPLICATOR IF NOT APPLIED AS PER THE MANUFACTURERS INSTRUCTIONS. THE CONTRACTOR SHALL FOLLOW THE DATA SHEET AND THE LABEL ON THE PAINT CONTAINERS. THESE PRECAUTIONS SHALL INCLUDE THE USE OF RESPIRATORS AND EYE AND SKIN PROTECTION AS SPECIFIED. THE CONTRACTOR SHALL ALSO INSURE THAT HIS PAINTING OPERATIONS AND LOCATIONS WILL NOT ENDANGER OR ADVERSELY AFFECT THE PUBLIC IN GENERAL.

THE PROPOSED CLEANING AND COATING OPERATIONS SHALL BE PERFORMED ONLY WHEN THE AMBIENT TEMPERATURE IS 50 DEGREES F OR ABOVE. ALL STEEL SURFACES OF TRUSS AND END FRAMES INCLUDING THE WELDED AREAS,BALLAST ENCLOSURE MOUNTING BRACKET AND THE BASE PLATES ARE TO BE CLEANED AND COATED. BEFORE EACH COATING IS APPLIED, IT SHALL BE MIXED WITH AN APPROVED POWER, MECHANICAL MIXER TO A UNIFORM CONSISTANCY WHICH SHALL BE MAINTAINED DURING ITS APPLICATION. EACH COAT SHALL BE APPLIED IN A WORKMANLIKE MANNER AS A CONTINUOUS FILM OF UNIFORM THICKNESS WHICH IS FREE OF HOLIDAYS, PORES, RUNS OR SAGS. ALL COATS SHALL BE APPLIED BY BRUSH. THINNING OF PAINT IS STRICTLY PROHIBITED. PAINT NOT CAPABLE OF BEING APPLIED AS SPECIFIED SHALL NOT BE USED. THE COATING SHALL PENETRATE ALL JOINTS AND CONNECTIONS. THE ENGINEER SHALL BE NOTIFIED 24 HOURS PRIOR TO ANY CLEANING OR COATING OPERATIONS SO THAT INSPECTION SERVICES CAN BE PROVIDED.

COATING SYSTEM

THE COATING SYSTEM SHALL CONSIST OF A POLYAMIDE-CURED EPOXY PRIME COAT, A POLYAMIDE-CURED EPOXY INTERMEDIATE COAT AND AN ALIPHATIC POLYURETHANE TOP COAT. THE COATING MATERIALS USED SHALL BE THOSE AS LISTED FROM ONE OF THE FOLLOWING MANUFACTURERS OR AN APPROVED EQUAL.

1. AMERON
   210 NORTH BERRY STREET
   BREA, CALIFORNIA 92621
   LOCAL TELEPHONE CONTACT: (216) 896-3602
   PRIME COAT: AMERCOAT 71
   INTERMEDIATE COAT: AMERLOCK 400
   TOP COAT: AMERCOAT 450 GL

2. GLIDDEN COATINGS AND RESINS
   14979 BAGLEY ROAD
   MIDDLEBURG HTS.,OHIO 44130
   LOCAL TELEPHONE CONTACT: (216) 845-4646
   PRIME COAT: GLID-GUARD EPOXY CHROMATE METAL PRIMER NO. 5251/5252
   INTERMEDIATE COAT: GLID-GUARD EPOXY CHEMICAL RESISTANT FINISH NO. 5240 SERIES
   TOP COAT: GLID-THANE ONE POLYURETHANE COATINGS NO. 6100 SERIES

3. PORTER PAINT CO.
   400 SOUTH 13TH STREET
   LOUISVILLE,KY 40201
   LOCAL TELEPHONE CONTACT: (216) 562-6709
   PRIME COAT: PORTER PAINTS MCR 4300
   INTERMEDIATE COAT: PORTER PAINTS MCR 4300
   TOP COAT: PORTER PAINTS HYTHANE

4. POLY-CARB
   33095 BAINBRIDGE ROAD
   P.O. BOX 39278
   SOLON, OHIO 44139
   LOCAL TELEPHONE CONTACT: (216) 248-1223
   PRIME COAT: MARK-60 (ULTRAPOX)
   INTERMEDIATE COAT: MARK-60 (ULTRAPOX) (LIGHT GREY)
   TOP COAT: MARK-73 (ULTRA-KOTE) (MEDIUM GREY)

5. SHERWIN WILLIAMS COMPANY
   761 BETA DRIVE
   MAYFIELD VILLAGE, OHIO 44143
   LOCAL TELEPHONE CONTACT: (216) 461-3310
   PRIME COAT: TILE-CLAD II HI-BILD PRIMER
   INTERMEDIATE COAT: HI-SOLIDS CATALYZED EPOXY (PURE WHITE) (SLATE GREY)
   TOP COAT: HI-BILD ALIPHATIC POLYURETHANE ENAMEL

ALL THREE COATS OF THE SYSTEM SHALL BE MANUFACTURED BY THE SAME COMPANY TO INSURE COMPATIBILITY AMONG COATS.

SURFACE PREPARATION, NEW SUPPORT SECTIONS

NEW UNWEATHERED GALVANIZED SUPPORT SECTIONS SHOULD HAVE THEIR SURFACE PREPARATION AS WELL AS THEIR PROTECTIVE COATING DONE AT THE MANUFACTURER OF THE SUPPORT SECTIONS.

THE SUPPORT SECTIONS SHALL BE PREPARED FOR COATING BY SSPC-SP1 FOLLOWED BY SSPC-SP7 (SOLVENT CLEANING FOLLOWED BY A BRUSH BLAST). BEFORE THE PREPARED SURFACE DEGRADES FROM THE PRESCRIBED STANDARDS, THE PRIME COAT SHALL BE APPLIED. IN EVERY CASE, THE SURFACE SHALL BE COATED WITH THE EPOXY PRIME COAT ON THE SAME DAY OF SURFACE PREPARATION. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, MARRING OR OTHER DAMAGE TO THE PREPARED SURFACE.

PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING, TRANSPORTATION COSTS AND MATERIALS NECESSARY TO ACCOMPLISH THIS ITEM OF WORK PER MAJOR SUPPORT SECTION.

BASIS OF PAYMENT WILL BE AS FOLLOWS:

ITEM SPECIAL - SURFACE PREPARATION, NEW SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

SURFACE PREPARATION, EXISTING SUPPORT SECTIONS

EXISTING, WEATHERED GALVANIZED SUPPORT SECTIONS SHOULD HAVE THEIR SURFACE PREPARATION AS WELL AS THEIR PROTECTIVE COATING DONE UNDER CONDITIONS OF TEMPERATURE AND HUMIDITY WITHIN THE SAME RANGE AS SPECIFIED BY THE MANUFACTURER OF THE EPOXY-PRIME COAT MATERIAL TO BE USED IMMEDIATELY AFTER THIS CLEANING OPERATION. THE SUPPORT SECTIONS SHALL BE PREPARED FOR COATING BY SSPC-SP1 FOLLOWED BY SSPC-SP10 (SOLVENT CLEANING FOLLOWED BY A COMMERCIAL BLAST CLEANING.) BEFORE THE PREPARED SURFACE DEGRADES FROM THE PRESCRIBED STANDARDS, THE PRIME COAT SHALL BE APPLIED. IN EVERY CASE, THE SURFACE SHALL BE COATED WITH THE EPOXY PRIME COAT ON THE SAME DAY AS THE SURFACE PREPARATION. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING MARRING, OR OTHER SUFACE DAMAGE TO THE PREPARED SURFACE.

PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING, TRANSPORTATION COSTS AND MATERIALS NECESSARY TO ACCOMPLISH THIS ITME OF WORK PER MAJOR SUPPORT SECTION.

BASIS OF PAYMENT WILL BE AS FOLLOWS:

SPECIAL: SURFACE PREPARATION, EXISTING SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTIONS.

GENERAL NOTES

TRAFFIC CONTROL (CONT'D)

COATING, EPOXY-PRIME COAT, SUPPORT SECTIONS

THIS ITEM SHALL CONSIST OF THE APPLICATION OF ONE (1) COAT OF AN EPOXY PRIMER TO SUPPORT SECTIONS. THE TOTAL DRY FILM THICKNESS OF THIS COAT SHALL BE BETWEEN 1.5 TO 2.0 MILS. IF MORE THAN ONE PASS IS NECESSARY TO OBTAIN THE REQUIRED MIL THICKNESS THAT COST SHALL BE BORNE BY THE CONTRACTOR. THE COLOR OF THIS COAT SHALL BE NOTICEABLY DIFFERENT FROM THE BASE MATERIAL AND OTHER PROPOSED COATS. THIS COAT SHALL IN ALL CASES BE APPLIED OVER SURFACES THAT WERE PREPARED EARLIER THAT SAME DAY. THE THINNING OF THE EPOXY MATERIAL IS STRICTLY PROHIBITED. MATERIAL NOT CAPABLE OF BEING APPLIED AS SPECIFIED SHALL NOT BE USED.

WHEN THE AVERAGE DRY FILM THICKNESS OF THIS COAT OVER THE ENTIRE SUPPORT SECTION IS LESS THAN THE SPECIFIED 1.5 TO 2.0 MILS BUT IS AT LEAST 1.25 MILS, THE CONTRACT BID PRICE FOR THIS ITEM SHALL BE REDUCED IN DIRECT PROPORTION TO THE PERCENT DEFICIENCY OF COATING UP TO 16-2/3%. IF THE DEFICIENCY OF COATING IS MORE THAN 16-2/3% (I.E., THE AVERAGE DRY FILM THICKNESS IS LESS THAN 1.25 MILS) THE WORK FOR THIS ITEM SHALL BE CONSIDERED UNSATISFACTORY AND SHALL BE RECOATED AT THE FULL EXPENSE OF THE CONTRACTOR, INCLUDING ALL LABOR, EQUIPMENT, AND MATERIAL.

THE EPOXY PRIME COAT CHOSEN BY THE CONTRACTOR SHALL BE ONE OF THE FOLLOWING TWO-COMPONENT COMPOSITIONS CONFORMING TO ITS LISTED PROPERTIES:

AMERCOAT 71
% SOLIDS BY VOLUME: 47% +/- 2%
POT LIFE: 8 HRS. @ 77 DEGREES F(25 DEGREES C)
DRYING TIME: 4 HRS. @ 77 DEGREES F

EPOXY CHROMATE METAL PRIMER NO. 5251/5252:
% SOLIDS BY VOLUME: 32.2% +/- 2%
POT LIFE: 24 HRS. @ 80 DEGREES F, 5 HRS. @ 100 DEG. F
DRYING TIME: 1 HR. TO TOUCH, 3-4 HRS. RECOAT
VISCOSITY: BASE 71-75 KU (STORMER)
CURING AGENT 56-60 KU (STORMER)
% SOLIDS BY WEIGHT: 51.5% +/- 2%

MCR-4301 EPOXY PRIMER
% SOLIDS BY VOLUME: 48.0% +/- 2%
POT LIFE: 30 HRS. @ 50-60 DEG. F.
16 HRS. @ 80-100 DEG. F.
DRYING TIME: 4-6 HRS. @ 50-60 DEG. F.

MARK-60 (ULTRAPOX):
% SOLIDS BY WEIGHT: 70-75% +/- 2%
POT LIFE: 6 HRS. @ 75 DEGREES F
DRYING TIME: 2-3 HRS. INITIAL SET @ 75 DEGREES F
VISCOSITY: 300-500 CPS @ 75 DEGREES F

TILE-CLAD II HI-BILD PRIMER
% SOLIDS BY VOLUME: 48% +/- 2%
% SOLIDS BY WEIGHT: 63% +/- 2%
POT LIFE: 8 HRS. @ 77 DEGREES F
DRYING TIME: 1 HR. TO TOUCH, 6 HRS. TO RECOAT @ 77 F

FOR NEW SUPPORT SECTIONS THIS PRIME COAT SHOULD BE DONE AT THE MANUFACTURER OF THE SUPPORT SECTIONS. VERIFICATION BY THE MANUFACTURER OF THE COATING MATERIAL FOR THE PRIME COAT PROCEDURES WILL BE REQUIRED. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, MARRING, OR OTHER SURFACE DAMAGE TO THE PRIME COAT.

THE PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING COSTS, AND MATERIALS NECESSARY TO ACCOMPLISH THIS ITEM OF WORK. THIS PRIME COAT SHALL BE MANUFACTURED BY THE THE SAME COMPANY SUPPLYING THE INTERMEDIATE AND TOP COATS. A PROPERLY CALIBRATED DRY FILM THICKNESS INSTRUMENT WILL BE USED TO CHECK THE COATING.

BASIS OF PAYMENT WILL BE AS FOLLOWS:

ITEM SPECIAL - COATING, EPOXY PRIME COAT, SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTIONS

THIS ITEM SHALL CONSIST OF THE APPLICATION OF ONE (1) COAT OF EPOXY TO SUPPORT SECTIONS. THE TOTAL DRY FILM THICKNESS OF THIS COAT SHALL NOT BE LESS THAN SIX (6.0) MILS. IF MORE THAN ONE PASS IS NECESSARY TO OBTAIN THE REQUIRED THICKNESS, THAT COST SHALL BE BORNE BY THE CONTRACTOR. THINNING OF THE EPOXY MATERIAL IS STRICTLY PROHIBITED. MATERIAL NOT CAPABLE OF BEING APPLIED AS SPECIFIED SHALL NOT BE USED. THE COLOR OF THIS COAT SHALL BE LIGHT GREY.

WHEN THE AVERAGE DRY FILM THICKNESS OF THIS COAT OVER THE ENTIRE SUPPORT SECTION IS LESS THAN THE SPECIFIED SIX (6.0) MILS BUT IS AT LEAST (5.0) MILS, THE CONTRACT PRICE FOR THIS ITEM SHALL BE REDUCED IN DIRECT PROPORTION TO THE PERCENT DEFICIENCY OF COATING UP TO 16-2/3%. IF THE DEFICIENCY OF COATING IS MORE THAN 16-2/3% (I.E. THE AVERAGE DRY FILM THICKNESS IS LESS THAN 5.0 MILS) THE WORK FOR THIS ITEM SHALL BE CONSIDERED UNSATISFACTORY AND SHALL BE RECOATED AT THE FULL EXPENSE OF THE CONTRACTOR, INCLUDING ALL LABOR, EQUIPMENT, AND MATERIAL.

THE EPOXY INTERMEDIATE COAT CHOSEN BY THE CONTRACTOR SHALL BE ONE OF THE FOLLOWING TWO-COMPONENT COMPOSITIONS CONFORMING TO ITS LISTED PROPERTIES.

AMERLOCK 400:
% SOLIDS BY VOLUME: 83% +/- 2%
POT LIFE: 2-1/2 HRS. @ 70 DEGREES F
DRYING TIME: 20 HRS. @ 70 DEGREES F

GLID-GUARD EPOXY CHEMICAL RESISTANT FINISH NO. 5240 SERIES:
% SOLIDS BY VOLUME: 44.7% +/- 2%
POT LIFE: 10 HRS. @ 80 DEGREES F
DRYING TIME: 4 HRS. @ 77 DEGREES F TO HANDLE
VISCOSITY: 68-72 KU
% SOLIDS BY WEIGHT: 58.0% +/- 2%

MCR 4361 HIGH BUILD EPOXY (OFF-WHITE)
% SOLIDS BY VOLUME: 49.4% +/- 2%
POT LIFE: 30 HRS. @ 50-60 DEG. F.,
16 HRS. @ 80-100 DEG. F.
DRYING TIME: 1-2 HRS. @ 60-80 DEG. F.

MARK-60 ULTRAPOX:
% SOLIDS BY WEIGHT: 70-75% +/- 2%
POT LIFE: 6 HRS. @ 75 DEGREES F
DRYING TIME: 2-3 HRS. INITIAL SET @ 75 DEGREES F
VISCOSITY: 300-500 CPS @ 75 DEGREES F

HI-SOLIDS CATALYZED EPOXY:
% SOLIDS BY VOLUME: 61% +/- 2% (PURE WHITE)
% SOLIDS BY WEIGHT: 77% +/- 2% (PURE WHITE)
POT LIFE: 5 HRS. @ 77 DEGREES F
DRYING TIME: 1 HR. TO TOUCH, 4 HRS. TACK FREE, 6 HRS. TO RECOAT @ 77 DEGREES F & 50% R.H.

AT LEAST 24 HOURS BUT NO MORE THAN THREE (3) DAYS SHALL ELAPSE AFTER THE APPLICATION OF THE EPOXY PRIME COAT AND BEFORE THE APPLICATION OF THE EPOXY INTERMEDIATE COAT. SURFACES SHALL IN ALL CASES BE CLEAN BEFORE THE INTERMEDIATE COAT IS APPLIED.

FOR NEW SUPPORT SECTIONS, THIS INTERMEDIATE COAT SHOULD BE DONE AT THE MANUFACTURER OF THE SUPPORT SECTIONS. VERIFICATION BY THE MANUFACTURER FOR THE INTERMEDIATE COAT PROCEDURE WILL BE REQUIRED. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, MARRING OR OTHER SURFACE DAMAGE TO THE INTERMEDIATE COAT.

THE PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING COSTS, AND MATERIAL NECESSARY TO ACCOMPLISH THIS ITEM OF WORK. THIS INTERMEDIATE COAT SHALL BE MANUFACTURED BY THE SAME COMPANY SUPPLYING THE PRIME AND TOP COATS. A PROPERLY CALIBRATED DRY FILM THICKNESS INSTRUMENT WILL BE USED TO CHECK THE COATING.

BASIS OF PAYMENT WILL BE AS FOLLOWS:

ITEM SPECIAL - COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

PLOT SUBMITTED: 22-DEC-1989 10:40
ZF2:[100,122]480GN06.DGN
PLOT SUBMITTED BY: GRMOVSEK
C480COAT

PLOT SUBMITTED: 22-DEC-1989 10:37
ZF2:[100,122]480GN07.DGN;1
PLOT SUBMITTED BY: GRMOVSEK
C480C047

GENERAL NOTES

TRAFFIC CONTROL (CONT'D)

COATING, URETHANE TOP COAT, SUPPORT SECTIONS

THIS ITEM SHALL CONSIST OF THE APPLICATION OF ONE (1) COAT OF URETHANE TO SUPPORT SECTIONS. THE TOTAL DRY FILM THICKNESS OF THIS COAT SHALL NOT BE LESS THAN ONE AND ONE-HALF (1.5) MILS. IF MORE THAN ONE PASS IS NECESSARY TO OBTAIN THE REQUIRED MIL THICKNESS THAT COST SHALL BE BORNE BY THE CONTRACTOR. THINNING OF THE URETHANE MATERIAL IS STRICTLY PROHIBITED. MATERIAL NOT CAPABLE OF BEING APPLIED AS SPECIFIED SHALL NOT BE USED. THE COLOR OF THIS COAT SHALL BE MEDIUM GRAY.

WHEN THE AVERAGE DRY FILM THICKNESS OF THIS COAT OVER THE ENTIRE SUPPORT SECTION IS LESS THAN THE SPECIFIED ONE AND ONE-HALF (1.5) MILS BUT IS AT LEAST ONE (1.0) MIL, THE CONTRACT PRICE FOR THIS ITEM SHALL BE REDUCED IN DIRECT PROPORTION TO THE PERCENT DEFICIENCY OF COATING UP TO 33 1/3%. IF THE DEFICIENCY OF COATING IS MORE THAN 33-1/3% (I.E., THE AVERAGE DRY FILM THICKNESS IS LESS THAN 1.0 MIL) THE WORK FOR THIS ITEM SHALL BE CONSIDERED UNSATISFACTORY AND SHALL BE RECOATED AT THE FULL EXPENSE OF THE CONTRACTOR, INCLUDING ALL LABOR, EQUIPMENT, AND MATERIAL.

THE URETHANE TOP COAT CHOSEN BY THE CONTRACTOR SHALL BE ONE OF THE FOLLOWING MATERIALS CONFORMING TO ITS LISTED PROPERTIES:

AMERCOAT 450 GL:
% SOLIDS BY VOLUME: 45% +/- 2%
POT LIFE: 20 HRS. @ 77 DEGREES F
DRYING TIME: 8 HRS. @ 77 DEGREES F DRY-THROUGH

GLID-THANE ONE POLYURETHANE COATINGS NO. 6100 SERIES:
% SOLIDS BY VOLUME: 38% +/- 2%
DRYING TIME: 8-12 HRS. @ 77 DEGREES F TO HANDLE
VISCOSITY: 100-250 CPS
% SOLIDS BY WEIGHT: 52-55%

HYTHANE
% SOLIDS BY VOLUME: 42% +/- 2%
POT LIFE: 16 HRS. @ 50 DEG. F.
12 HRS. @ 75 DEG. F.

MARK-73 (ULTRA-KOTE):
% SOLIDS BY VOLUME: 52.5% +/- 2%
POT LIFE: 8 HRS. @ 75 DEGREES F
DRYING TIME: 4-5 HRS. @ 75 DEGREES F TACK FREE
VISCOSITY: 70-75 KU @ 75 DEGREES F
% SOLIDS BY WEIGHT: 55% +/- 2%

HI-BILD ALIPHATIC POLYURETHANE ENAMEL
% SOLIDS BY VOLUME: 40% +/- 2% (CATALYZED)
% SOLIDS BY WEIGHT: 48% +/- 2% (CATALYZED)
POT LIFE: 6 HRS. @ 77 DEGREES F
DRYING TIME: 30 MIN. TO TOUCH, 4 HRS. TACK FREE, 18 HRS. MIN., 72 HRS. MAX TO RECOAT.

AT LEAST 24 HOURS BUT NO MORE THAN THREE (3) DAYS SHALL ELAPSE AFTER THE APPLICATION OF THE EPOXY INTERMEDIATE COAT AND BEFORE THE APPLICATION OF THE URETHANE TOP COAT. SURFACES SHALL IN ALL CASES BE CLEAN BEFORE THE TOP COAT IS APPLIED.

FOR NEW SUPPORT SECTIONS, THIS TOP COAT SHOULD BE DONE AT THE MANUFACTURER OF THE SUPPORT SECTIONS. VERIFICATION BY THE MANUFACTURER FOR THE TOP COAT PROCEDURE WILL BE REQUIRED. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, MARRING OR OTHER SURFACE DAMAGE TO THE TOP COAT.

THE PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING COST, AND MATERIALS NECESSARY TO ACCOMPLISH THIS ITEM OF WORK. THIS TOP COAT SHALL BE MANUFACTURED BY THE SAME COMPANY SUPPLYING THE PRIME AND INTERMEDIATE COATS. A PROPERLY CALIBRATED, DRY FILM THICKNESS INSTRUMENT WILL BE USED TO CHECK THE COATING.

BASIS OF PAYMENT WILL BE AS FOLLOWS:

ITEM SPECIAL - COATING, URETHANE TOP COAT, SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

PREQUALIFICATION

PRIOR TO USE, THE CONTRACTOR SHALL SUBMIT TO THE DIRECTOR COPIES OF THE MANUFACTURER'S CERTIFIED TEST DATA SHOWING THAT THE MATERIAL COMPLIES WITH THE REQUIREMENTS OF THIS SPECIFICATION. THE TEST DATA SHALL INCLUDE THE BRAND NAME OF THE PAINT, NAME OF MANUFACTURER, NUMBER OF THE LOT TESTED AND DATE OF MANUFACTURE. WHEN THE PAINT HAS BEEN APPROVED BY THE DIRECTOR, FURTHER PERFORMANCE TESTING BY THE MANUFACTURER WILL NOT BE REQUIRED UNLESS THE FORMULATION OR MANUFACTURING PROCESS HAS BEEN CHANGED, IN WHICH CASE NEW CERTIFIED TEST RESULTS WILL BE REQUIRED.

ACCEPTANCE

THE MANUFACTURER SHALL SUBMIT CERIFIED TEST DATA IN ACCORDANCE WITH REQUIREMENTS OF THIS SPECIFICATION.

THE STATE RESERVES THE RIGHT TO SAMPLE AND TEST DELIVERED LOTS FOR COMPLIANCE.

LOCATIONS

THE FOLLOWING SUMMARY OF MAJOR SUPPORT SECTIONS TO HAVE A PROTECTIVE COATING APPLIED IS NOTED BELOW:

SUPPORT NO.	NEW GALVANIZED SECTIONS	EXISTING GALVANIZED SECTIONS
5	1 VERT. POLE, 1 ARM	
13		2 END FRAMES
34		2 END FRAMES
35		1 VERT. POLE, 1 ARM
37		1 VERT. POLE, 1 ARM
43		2 END FRAMES
44		2 END FRAMES
45		2 END FRAMES
50		1 VERT. POLE, 1 ARM
53		2 END FRAMES
61		1 VERT. POLE, 1 ARM
64	1 VERT. POLE, 1 ARM	
79		2 END FRAMES
86		2 END FRAMES
87		1 VERT. POLE, 1 ARM
99		2 END FRAMES
100		1 VERT. POLE, 1 ARM
147		2 END FRAMES

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO PERFORM THIS WORK:

ITEM SPECIAL -	SURFACE PREPARATION, EXISTING SUPPORT SECTIONS.....	32	EACH
ITEM SPECIAL -	SURFACE PREPARATION, NEW SUPPORT SECTIONS.....	4	EACH
ITEM SPECIAL -	COATING, EPOXY PRIME COAT, SUPPORT SECTIONS.....	36	EACH
ITEM SPECIAL -	COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTIONS.....	36	EACH
ITEM SPECIAL -	COATING, URETHANE TOP COAT, SUPPORT SECTIONS.....	36	EACH

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TRAFFIC CONTROL QUANTITIES

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OVERHEAD MOUNTED SIGNS

SUPPORT NO.	PLAN SHEET NO.	ELEVATION VIEW SHEET NO.	LOCATION	SIGN SIZE	SIGN CODE NO.	630 SIGNS, TEMP. OVL., TYPE G	630 SIGNS, EXTRUSHEET, TYPE G	630 REMOVAL OF SIGN AND DISPOSAL	630 REMOVAL OF OVD. SIGN SUPPORT AND DISPOSAL	630 REMOVAL OF OVH. SIGN AND RE-ERECTION	630 REMOVAL OF OVH. SIGN SUPPORT AND RE-ERECTION TYPE NO. 12.24	630 OVERHEAD SIGN SUPPORT TC-12.30			630 OVERHEAD SIGN SUPPORT MODIFICATION		630 CONC. FOR ANCHOR BASE FOUNDATIONS	630 SIGN ATTACHMENT ASSEMBLY	631 REMOVAL OF LUMINAIRE AND DISPOSAL	631 REMOVAL OF DISCONNECT SWITCH AND DISPOSAL	631 DISCONNECT SWITCH WITH ENCL., TYPE "X"	625 GROUND ROD	631 SIGN SERVICE	631 SIGNS WIRED	631 REMOVAL OF LUMINAIRE AND RE-ERECTION	631 LUMINAIRE SUPPORT ASSEMBLY TC-31.21				631 MERCURY VAPOR LUMINAIRE WITH LAMP TC-31.21			631 BALLAST, INTEGRAL					631 REMOVAL OF BALLAST AND RE-ERECTION
												DES #3 16' ARMS	DES #9 24' ARMS		TYPE 7.5, #1, MOD., NEW BOX TRUSS SECT. 5', (3' BOX)	TYPE 7.4, #1, MOD., NEW BOX TRUSS SECT. 5', (3' BOX)										2'-9" ARMS	3'-3" ARMS	4'-3" ARMS	5'-9" ARMS	100W	175W	250W	100W 480V	175W 480V	250W 480V			
				FT X FT		SF	SF	EA	EA	EA	EA	EA	EA	EA	EA	EA	CU YD	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA			EA
5	69	85	7+85 GRANGER RD.	13 X 5.5	GH		71.5	1	1			1					2.92	3 •	2	1	1	1	1	1		2•				2			2					
13	70	85	878+50 EB	NO WORK																																	
34	71	85	889+50 WBOL	21 X 7.5	GE		157.5	1							1		13.62	4	3	1	1	1	1	1				3			3			3			
35	71	85	890+25 EB	NO WORK																																	
37	72	85	901+75 WBOL	18 X 10	GB		180	1										3	2	1	1		1	1				2			2			2			
43A	73	86	915+88 WB	25 X 10	GG		250	1										4	3	1	1		1	1				3			3			3			
43B	73			18 X 12.5	GE	30	225	1										5	2					1						2			2				
				7 X 2	GEP		14																														
44A	73	86	919+25 EB	17 X 10	GG		170	1										3	2	1	1		1	1				2			2			2			
44B	73			13 X 10	GG		130	1										3	2					1				2			2			2			
				8 X 2	GEP		16																														
44C	73			16 X 10	GE		160	1										3	2					1				2			2			2			
				8 X 2	GEP		16																														
50	74	86	934+50 WB	18 X 12.5	GE	22	225	1										3	2	1	1		1	1					2			2			2		
				7 X 2	GEP		14																														
45A	74	86	926+50 WB	25 X 10	GG		250	1										4	3	1	1		1	1				3			3			3			
45B	74			18 X 12.5	GE	22	225	1										5	2					1					2			2			2		
				7 X 2	GEP		14																														
53A	75	87	943+25 EB	25 X 10	GG		250	1										4	3	1	1		1	1				3			3			3			
53B	75			16 X 10	GG		160	1										3	2					1				2			2			2			
				8 X 2	GEP		16																														
53C	75			16 X 10	GG		160	1										3	2					1				2			2			2			
				8 X 2	GEP		16																														
61	76			7 X 2	GEP		14																														
61	76	88	958+25 WB	18 X 12.5	GB	22	225	1										3	2	1	1		1	1					2			2			2		
64	76	88	966+50 EB	19 X 11	GB		209	1	1				1				3.97	3 •		1	1	1	1	1					2 •			2			2		
				7 X 2	GEP		14																														
79A	78	88	992+00 WB	25 X 10	GG		250	1										4	3	1	1		1	1				3			3			3			
79B				16 X 10	GE		160	1										3	2					1				2			2			2			
				8 X 2	GEP		16																														
79C				16 X 10	GE		160	1										3	2					1				2			2			2			
				8 X 2	GEP		16																														
99A	84	88	84+50 LANE E-S	12 X 10	GG		120	1										5	2	1	1		1	1				2			2			2			
99B				17 X 10	GG		170	1										3	2					1				2			2			2			
100	84	88	64+00 LANE E-S	17 X 11	GB					1	1						3.97			1	1	1	1	1	2													2
86A	82	87	51+50 LANE W-N	13 X 10	GG		130	1										5	2	1	1		1	1				2			2			2			
86B				17 X 10	GG		170	1										3	2					1				2			2			2			
87	82	87	61+15 LANE W-S	17 X 11	GB		153	1										3	2	1	1		1	1				2			2			2			
TOTALS						96	4527	24	2	1	1	1	1		1		24.5	79	51	15	15	4	15	25	2			41	8	2	41	10	2	41	10			2

TRAFFIC CONTROL QUANTITIES, OVERHEAD MOUNTED SIGNS

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TRAFFIC CONTROL QUANTITIES

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OVERHEAD MOUNTED SIGNS

SUPPORT NO.	PLAN SHEET NO.	ELEVATION VIEW SHEET NO.	LOCATION	SIGN SIZE	SIGN CODE NO.	630 SIGNS, TEMP. OVL., TYPE G	630 SIGNS, EXTRUSHEET, TYPE G	630 REMOVAL OF SIGN AND DISPOSAL	630 REMOVAL OF OVD. SIGN SUPPORT AND DISPOSAL	630 REMOVAL OF OVH. SIGN AND RE-ERECTION	630 REMOVAL OF OVH. SIGN SUPPORT AND RE-ERECTION TYPE NO. 12.24	630 OVERHEAD SIGN SUPPORT TC-12.30			630 OVERHEAD SIGN SUPPORT MODIFICATION		630 CONC. FOR ANCHOR BASE FOUNDATIONS	630 SIGN ATTACHMENT ASSEMBLY	631 REMOVAL OF LUMINAIRE AND DISPOSAL	631 REMOVAL OF DISCONNECT SWITCH AND DISPOSAL	631 DISCONNECT SWITCH WITH ENCL., TYPE "X"	625 GROUND ROD	631 SIGN SERVICE	631 SIGNS WIRED	631 REMOVAL OF LUMINAIRE AND RE-ERECTION	631 LUMINAIRE SUPPORT ASSEMBLY TC-31.21				631 MERCURY VAPOR LUMINAIRE WITH LAMP TC-31.21			631 BALLAST, INTEGRAL					631 REMOVAL OF BALLAST AND RE-ERECTION
												DES #3 16' ARMS	DES #9 24' ARMS		TYPE 7.5, *I, MOD., NEW BOX TRUSS SECT. 5', (3' BOX)	TYPE 7.4, *I, MOD., NEW BOX TRUSS SECT. 5', (3' BOX)										2'-9" ARMS	3'-3" ARMS	4'-3" ARMS	5'-9" ARMS	100W	175W	250W	100W 480V	175W 480V	250W 480V			
				FT X FT		SF	SF	EA	EA	EA	EA	EA	EA	EA	EA	EA	CU YD	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA			EA
147A	79	87	54+15 LANE N-E	17 X 10	GG		170	1										5	2	1	1		1	1				2				2						
147B	79			12 X 10	GG		120	1										3	2					1				2				2					
85A	80	87	72+30 LANE S-W	17 X 10	GG					1						1	13.6			1	1	1	1	1	2												2
85B	80			16 X 10	GG					1														1	2												2
TOTALS							290	2		2						1	13.6	8	4	2	2	1	2	4	4			4			4			4			4

TRAFFIC CONTROL QUANTITIES, OVERHEAD MOUNTED SIGNS

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TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY
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GROUND MOUNTED SIGNS

REFERENCE NO.	PLAN SHEET NO.	ELEVATION VIEW SHEET NO.	SPECIAL DETAIL SHEET NO.	LOCATION	SIGN CODE NO.	SIGN SIZE	630 SIGNS, FLAT SHEET, TYPE G	630 SIGNS, EXTRUSHEET, TYPE G	630 GROUND MOUNTED SUPPORTS, NO. 3 POST	630 GROUND MOUNTED SUPPORTS, NO. 4 POST	630 ONE WAY SUPPORTS, NO. 4 POST	630 GROUND MOUNTED SUPPORTS, S4x 7.7 BEAM	630 GROUND MOUNTED SUPPORTS, W6x 9 BEAM	630 GROUND MOUNTED SUPPORTS, W10x 12 BEAM	630 CONCRETE FDR EMBEDDED FOUNDATIONS	630 BREAKAWAY BEAM CONNECTION	630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED	630 GROUND MOUNTED SUPPORTS, W8 X 18 BEAM	630 REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	630 REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	630 REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL
							SQ. FT.	SQ. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	CU. YD.	EACH	EACH	LIN. FT.	EACH	EACH	EACH	EACH	EACH
1	69			857+90 RT	GN	132" X 42"		38.5					15-18		0.66	2						2	
2	↑			2+50 RMP GE-2 RT	R-15B	30" X 18"	3.75		11.0														
3				860+34 LT	N-41-12	12" X 36"	3.0		10.5											1		1	
4				860+34 RT	N-41-12	12" X 36"	3.0		10.5											1		1	
6				58+00 RMP G-E RT	R-15B	30" X 18"	3.75		11.0											1		1	
7				60+55 RMP G-E LT	W-33-30	30" X 36"	7.5		13.0											1		1	
8				61+23 RMP G-E LT	W-33-30	30" X 36"	7.5		13.0											1		1	
9				61+92 RMP G-E LT	W-33-30	30" X 36"	7.5		13.0											1		1	
10	↓			62+60 RMP G-E LT	W-33-30	30" X 36"	7.5		13.0											1		1	
11	69			63+29 RMP G-E LT	W-33-30	30" X 36"	7.5		13.0											1		1	
12				868+71 RMP JN-OBE RT	W-50R-48	48" X 48"	16.0			14.0-14.0										1		2	
14	71			78+65 RMP E-G RT	R-41B-36	36" X 36"	9.0			14.5	16.0									3		2	
					R-43R-48	48" X 18"	6.0																
					R-43L-48	48" X 18"	6.0																
15	71			78+95 RMP E-G LT	R-41B-36	36" X 36"	9.0			14.5	16.0									3		2	
	↑				R-43R-48	48" X 18"	6.0																
					R-43L-48	48" X 18"	6.0																
16				79+30 RMP E-G LT	R-2-48	48"X48"X48"	6.93		14-14											1		1	
17				79+11 RMP E-G RT																1		1	
18				79+30 RMP E-G RT	W-33-30	30" X 36"	7.5		13.0														
19				79+44 RMP E-G RT																1		1	
20				79+75 RMP E-G RT	W-33-30	30" X 36"	7.5		13.0														
21				80+03 RMP E-G RT																1		1	
22				80+20 RMP E-G RT	W-33-30	30" X 36"	7.5		13.0														
23				80+23 RMP E-G RT																1		1	
24				80+65 RMP E-G RT	W-32-96	96" X 48"		32.0					17-18		0.66	2				3		2	
					W-143-24	24" X 24"	4.0																
25				81+35 RMP E-G LT	R-31J	42" X 30"	8.75			13-13										2		1	
					R-41A-36	36" X 24"	6.0																
26				81+35 RMP E-G RT	R-31J	42" X 30"	8.75			13-13										2		1	
					R-41A-36	36" X 24"	6.0																
27				82+40 RMP E-G LT																6			2
28				82+75 RMP E-G LT	M-8-24	24" X 12"	2.0								2.20	2		22-23.5					
					M-2-24-3	30" X 24"	5.0																
					M-24-21	21" X 15"	2.19																
					M-52A	132" X 30"		27.5															
					D-4D	132" X 24"		22.0															
					D-4A	132" X 24"		22.0															
29				85+13 RMP E-G RT	W-13-36	36" X 36"	9.0			15										2		2	
					W-143-24	24" X 24"	4.0																
30				85+13 RMP E-G LT	W-13-36	36" X 36"	9.0			16													
					W-143-24	24" X 24"	4.0																
31				85+40 RMP E-G LT																2		1	
32				87+50 RMP E-G LT	W-47-48	48" X 48"	16.0			14-14.5													
33	↓			88+38 RMP E-G LT																1		2	
36	71			893+25 RMP JN-OBE RT	R-10-48	48" X 60"	20.0					17.0-17.5			0.54					2		2	
38	73			912+19 RT	W-76D-36	36" X 36"	9.0										1		1				
39	73			913+25 LT																1		1	
40	73			913+25 RT	N-41-12	12" X 36"	3.0		10.5											1		1	
41	73			913+93 LT	N-41-12	12" X 36"	3.0		10.5														
TOTALS							258.12	142	196	168.5	32.0	34.5	68.0		4.06	6	1	45.5	1	43	1	34	2

TRAFFIC CONTROL QUANTITIES

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GROUND MOUNTED SIGNS

REFERENCE NO.	PLAN SHEET NO.	ELEVATION VIEW SHEET NO.	SPECIAL DETAIL SHEET NO.	LOCATION	SIGN CODE NO.	SIGN SIZE	620 REFLECTOR, TYPE D	630 SIGNS, FLAT SHEET, TYPE G	630 SIGNS, EXTRUSHEET, TYPE G	630 GROUND MOUNTED SUPPORTS, NO. 3 POST	630 GROUND MOUNTED SUPPORTS, NO. 4 POST	630 SIGNS, FLAT SHEET, TYPE G, AS PER PLAN	630 ONE WAY SUPPORTS, NO. 4 POST		630 GROUND MOUNTED SUPPORTS, S4x 7.7 BEAM	630 GROUND MOUNTED SUPPORTS, W6x 9 BEAM	630 GROUND MOUNTED SUPPORTS, W10x 12 BEAM	630 CONCRETE FDR EMBEDDED FOUNDATIONS	630 BREAKAWAY BEAM CONNECTION		630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED	630 GROUND MOUNTED SUPPORTS, W8 X 18 BEAM			630 REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	630 REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL		630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	630 REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL
							EACH	SQ. FT.	SQ. FT.	LIN. FT.	LIN. FT.	SQ. FT.	LIN. FT.		LIN. FT.	LIN. FT.	LIN. FT.	CU. YD.	EACH		EACH	LIN. FT.			EACH	EACH	EACH		EACH	EACH
42	73			915+93 LT	W-97-48	48" X 60"		20.0							16.0-16.5			0.54												
46	74			926+50 LT																					1					
47	74			930+00 LT	R-10-48	48" X 60"		20.0							17.0-18.0			0.54												
48	74			933+31 CTR	R-123-36	36" X 36"	1	9.0			15															2			1	
					R-19-24	24" X 30"		5.0																						
49	74			933+68 CTR	R-123-36	36" X 36"	1	9.0			15															2			1	
					R-19-24	24" X 30"		5.0																						
51	75			942+25 RT																						1			2	
52	75			943+15 RT	W-98-48	48" X 60"		20.0							16.0-16.5			0.54												
54	75			946+92 RT	GF-72	72" X 60"			30.0						16.0-16.5			0.54	2											
55	75			103+00 RMP S-W RT	GN	132" X 42"			38.5								20.0-23.0	2.20												
56	75			952+65 RT	GN	144" X 42"			42.0							17.0-19.0		0.66	2											
57	76			953+00 LT																						1			2	
58	76			953+07 RT																							1		2	
59	76			953+50 LT	W-49R-48	48" X 48"		16.0			14-14																			
60	76			954+00 LT																						1			2	
62	76			965+70 RT	N-41-12	12" X 36"		3.0		10.5																1			1	
63	76			965+70 LT	N-41-12	12" X 36"		3.0		10.5																1			1	
65	76			967+30 RT	X-6L	12" X 36"		3.0		10																1			1	
66	76			967+78 RT	X-6R	12" X 36"		3.0		10																1			1	
67	77			970+20 LT	X-6R	12" X 36"		3.0		10																1			1	
68	77			970+65 LT	X-6L	12" X 36"		3.0		10																1			1	
69	77			976+44 CTR	R-123-36	36" X 36"	1	9.0			15															2			1	
					R-19-24	24" X 30"		5.0																						
70	77			976+80 CTR	R-123-36	36" X 36"	1	9.0			15															2			1	
					R-19-24	24" X 30"		5.0																						
71	77			979+00 RT	R-35-48	48" X 60"		20.0							16.5-17			0.54												
72	77			980+00 RT	R-35-48	48" X 60"		20.0							16.0-16.5			0.54												
73	77			980+35 RT																						1			2	
74	78			986+75 RT	W-49R-48	48" X 48"		16.0			14-14															1			2	
75	78			987+86 LT	GF-72	72" X 60"			30.0						16.0-16.0			0.54												
76	78			988+40 LT	X-1	18" X 18"		2.25		9.5																1			1	
77	78		90	988+50 RT	W-68-48	48" X 48"					14.5-15	16.0													1					
78	78		90	988+50 RT	W-68-48	48" X 48"					14-14.5	16.0													1					
80	78			992+20 LT	W-98-48	48" X 60"		20.0							16.0-16.5			0.54												
81	78			993+00 LT																						1			2	
82	78			995+20 RT	R-52-24	24" X 30"		5.0		14																1			1	
83	78			995+20 RT	R-52-24	24" X 30"		5.0		14																	1			2
84	80			67+25 RMP W-S LT	W-50R-48	48" X 48"		16.0			14-14															1			2	
88	82			66+36 RMP W-N LT	X-6L	12" X 36"		3.0		10																				
89	82			67+13 RMP W-N RT	X-6R	12" X 36"		3.0		10																1			1	
90	82			75+00 RMP W-N RT	W-46-48	48" X 48"		16.0			15-15.5															1			2	
91	82			75+00 RMP W-N LT	W-46-48	48" X 48"		16.0			14-14.5																			
92	84			76+00 RMP E-N LT	W-33-30	30" X 36"		7.5			15.5																			
93	84			75+00 RMP E-N LT	W-33-30	30" X 36"		7.5			15.5																			
94	84			74+80 RMP E-N LT																						1			1	
95	84			74+00 RMP E-N LT	W-33-30	30" X 36"		7.5			15.5																			
96	84			73+44 RMP E-N LT																						1			1	
97	84			73+00 RMP E-N LT	W-33-30	30" X 36"		7.5			15.5																			
98	84			72+12 RMP E-N LT																						1			1	
TOTALS							4	322.25	140.5	118.5	323	32.0			263	36	43	7.18	4					3	28	2		34	2

TRAFFIC CONTROL QUANTITIES, GROUND MOUNTED SIGNS

PLOT SUBMITTED: 15-DEC-1989 14:11
PLOT SUBMITTED BY: GRMOVSEK
C ZF2:[100,331]480GM03.DGN

PLOT SUBMITTED: 15-DEC-1989 14:13
ZF2:[100,331480GM01.DGN
PLOT SUBMITTED BY: GRMOVSEK

TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY
CUY-480-15.84

OHIO | FHWA REGION 5 | FEDERAL PROJECT

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GROUND MOUNTED SIGNS

REFERENCE NO.	PLAN SHEET NO.	ELEVATION VIEW SHEET NO.	SPECIAL DETAIL SHEET NO.	LOCATION	SIGN CODE NO.	SIGN SIZE	630 SIGNS, FLAT SHEET, TYPE G SQ. FT.	630 SIGNS, EXTRUSHEET, TYPE G SQ. FT.	630 GROUND MOUNTED SUPPORTS, NO. 3 POST LIN.FT.	630 GROUND MOUNTED SUPPORTS, NO. 4 POST LIN.FT.	630 ONE WAY SUPPORTS, NO. 4 POST LIN.FT.	630 GROUND MOUNTED SUPPORTS, S4x 7.7 BEAM LIN.FT.	630 GROUND MOUNTED SUPPORTS, W6x 9 BEAM LIN.FT.	630 GROUND MOUNTED SUPPORTS, W10x 12 BEAM LIN.FT.	630 CONCRETE FDR EMBEDDED FOUNDATIONS CU. YD.	630 BREAKAWAY BEAM CONNECTION EACH	630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED EACH	630 GROUND MOUNTED SUPPORTS, W8 X 18 BEAM LIN.FT.	630 REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL EACH
101	84			72+18 RMP E-S LT	X-6R	12" X 36"	3.0		10												—			1	
102	84			72+65 RMP E-S RT	X-6L	12" X 36"	3.0		10												—			1	
103	83			95+10 RMP S-W RT	R-2-60	60"X60"X60"	10.83			15.5-16.5											—			2	
104	↑			62+20 RMP N-W RT																	—			2	
105				60+51 RMP N-W RT	W-46-48	48" X 48"	16.0			15.5-16															
106				60+51 RMP N-W LT	W-46-48	48" X 48"	16.0			16-16.5															
107				92+61 RMP S-W RT	W-49R-48	48" X 48"	16.0			14.5-15															
108				90+00 RMP S-W RT	W-33-30	30" X 36"	7.5			15.5															
109				89+00 RMP S-W RT	W-33-30	30" X 36"	7.5			15.5															
110				88+00 RMP S-W RT	W-33-30	30" X 36"	7.5			15.5															
111				87+00 RMP S-W RT	W-33-30	30" X 36"	7.5			15.5															
112				86+00 RMP S-W RT	W-33-30	30" X 36"	7.5			15.5															
113				85+00 RMP S-W RT	W-33-30	30" X 36"	7.5			15.5															
114				84+00 RMP S-W RT	W-33-30	30" X 36"	7.5			15.5															
115				83+00 RMP S-W RT	W-33-30	30" X 36"	7.5			15.5															
116				82+00 RMP S-W RT	W-33-30	30" X 36"	7.5			15.5															
117				79+00 RMP S-W RT																	2			1	
118				78+42 RMP S-W RT	W-2-36	36" X 36"	9.0			15.5															
	↓				W-143-24	24" X 24"	4.0																		
119	83			78+42 RMP S-W LT	W-2-36	36" X 36"	9.0			15.5															
					W-143-24	24" X 24"	4.0																		
120	81			61+88 RMP N-E RT																	1			1	
121	↑			62+00 RMP N-E RT	W-33-30	30" X 36"	7.5			15.5															
122				62+60 RMP N-E RT																	1			1	
123				63+00 RMP N-E RT	W-33-30	30" X 36"	7.5			15.5															
124				63+49 RMP N-E RT																	1			1	
125				64+00 RMP N-E RT	W-33-30	30" X 36"	7.5			15.5															
126				64+81 RMP N-E RT																	1			1	
127				65+00 RMP N-E RT	W-33-30	30" X 36"	7.5			15.5															
128				66+00 RMP N-E RT	W-33-30	30" X 36"	7.5			15.5															
129				67+00 RMP N-E RT	W-33-30	30" X 36"	7.5			15.5											1			1	
130				67+87 RMP N-E RT																	1			1	
131				68+00 RMP N-E RT	W-33-30	30" X 36"	7.5			15.5															
132				68+77 RMP N-E RT																	1			1	
133				69+00 RMP N-E RT	W-33-30	30" X 36"	7.5			15.5															
134				69+67 RMP N-E RT																	1			1	
135				70+00 RMP N-E RT	W-33-30	30" X 36"	7.5			15.5															
136				70+58 RMP N-E RT																	1			1	
137				71+00 RMP N-E RT	W-33-30	30" X 36"	7.5			15.5															
138				72+00 RMP N-E RT	W-33-30	30" X 36"	7.5			15.5															
139				75+00 RMP N-E RT	W-49R-48	48" X 48"	16.0			14.5-15											1			2	
140				80+87 RMP S-E LT	W-46-48	48" X 48"	16.0			15.5-16															
141				80+87 RMP S-E RT	W-46-48	48" X 48"	16.0			14-14.5															
142				84+00 RMP S-E LT																	1			2	
143				84+00 RMP S-E RT																	1			2	
144				78+92 RMP N-E RT	R-2-60	60"X60"X60"	10.83			14.5-15.5											1			2	
145	↓			81+76 RMP N-E RT																	1			2	
146	81			83+00 RMP N-E RT	R-35-48	48" X 60"	20.0			15.5-16															
148	79			76+21 RMP E-N LT																	1			1	
149	79			77+00 RMP E-N LT	W-33-30	30" X 36"	7.5			15.5															
150	79			77+62 RMP E-N LT																	1			1	
151	79			78+00 RMP E-N LT	W-33-30	30" X 36"	7.5			15.5															
152	79			78+90 RMP E-N LT																	1			1	
153	79			79+00 RMP E-N LT	W-33-30	30" X 36"	7.5			15.5															
TOTALS							342.16		20	648.5											23			29	

TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY
CUY-480-15.84

OHIO
FHWA REGION 5
FEDERAL PROJECT

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GROUND MOUNTED SIGNS

REFERENCE NO.	PLAN SHEET NO.	ELEVATION VIEW SHEET NO.	SPECIAL DETAIL SHEET NO.	LOCATION	SIGN CODE NO.	SIGN SIZE	620 REFLECTOR, TYPE D	630 SIGNS, FLAT SHEET, TYPE G	630 SIGNS, EXTRUSHEET, TYPE G	630 GROUND MOUNTED SUPPORTS, NO. 3 POST	630 GROUND MOUNTED SUPPORTS, NO. 4 POST	630 ONE WAY SUPPORTS, NO. 4 POST	630 GROUND MOUNTED SUPPORTS, S4x 7.7 BEAM	630 GROUND MOUNTED SUPPORTS, W6x 9 BEAM	630 GROUND MOUNTED SUPPORTS, W10x 12 BEAM	630 CONCRETE FDR EMBEDDED FOUNDATIONS	630 BREAKAWAY BEAM CONNECTION	630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED	630 GROUND MOUNTED SUPPORTS, W8 X 18 BEAM	630 REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	630 REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	630 REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL
							EACH	SQ. FT.	SQ. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	CU. YD.	EACH	EACH	LIN. FT.	EACH	EACH	EACH	EACH	EACH
154	79			80+90 RMP E-N LT	W-49L-48	48" X 48"		16.0			14-14.5											1		2	
155	79			82+25 RMP W-N RT	R-2-60	60"X60"X60"		10.83			14.5-14.5													
156	79			82+65 RMP E-N LT																	1		1	
157	79			87+10 RMP E-N LT	W-49R-48	48" X 48"		16.0			14-14										1		2	
158	79			87+64 RMP E-N RT	X-6R	12" X 36"		3.0		10											1		1	
159	79			57+75 RMP N-E RT	W-2-36	36" X 36"		9.0			15.5													
					W-143-24	24" X 24"		4.0																
160	79			57+75 RMP N-E LT	W-2-36	36" X 36"		9.0			15.5													
					W-143-24	24" X 24"		4.0																
161	82			53+32 RMP W-S RT	GN	144" X 42"			42.0						18.5-23	2.20						1		2
162	82			61+00 RMP W-S LT	W-33-30	30" X 36"		7.5			15.5													
163	82			62+00 RMP W-S LT	W-33-30	30" X 36"		7.5			15.5													
164	82			63+00 RMP W-S LT	W-33-30	30" X 36"		7.5			15.5													
165	82			64+00 RMP W-S LT	W-33-30	30" X 36"		7.5			15.5													
166	80			65+00 RMP W-S LT	W-33-30	30" X 36"		7.5			15.5													
TOTALS								109.33	42.0	10	194				41.5	2.20					4	1		6	2

TRAFFIC CONTROL QUANTITIES, GROUND MOUNTED SIGNS

PLOT SUBMITTED: 15-DEC-1989 14:14
ZF2:[100,331480GM04.DGN
PLOT SUBMITTED BY: GRMOVSEK

PLOT SUBMITTED: 15-DEC-1989 14:15
ZF2:[100,331]480PM01.DGN
PLOT SUBMITTED BY: GRMOVSEK

TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY
CUY-480-15.84

OHIO
FHWA REGION 5
FEDERAL PROJECT

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PAVEMENT MARKINGS - 947.02

REFERENCE NO.		LOCATION ROADWAY	FROM STATION	TO STATION	847 EDGE LINES (WHITE) LIN.FT.	847 EDGE LINES (YELLOW) LIN.FT.	847 LANE LINES LIN.FT.	847 CENTER LINES SOLID DOUBLE LIN.FT.	847 CENTER LINES BROKEN SINGLE LIN.FT.	847 CENTER LINES BROKEN AND SOLID DOUBLE LIN.FT.	847 CHANNELIZING LINES (WHITE) LIN.FT.	847 CHANNELIZING LINES (YELLOW) LIN.FT.	847 STOP LINES LIN.FT.	847 CROSSWALK LINES LIN.FT.	847 TRANSVERSE LINES (WHITE) LIN.FT.	847 TRANSVERSE LINES (YELLOW) LIN.FT.	847 CURB MARKING LIN.FT.	847 ISLAND MARKING SQ.FT.	847 RAILROAD SYMBOL MARKINGS EACH	847 SCHOOL SYMBOL MARKINGS, 72-IN EACH	847 SCHOOL SYMBOL MARKINGS, 96-IN EACH	847 PARKING LOT STALL MARKING LIN.FT.	847 LANE ARROWS EACH	847 WORD "ONLY" ON PAVEMENT, 72-IN EACH	847 WORD "ONLY" ON PAVEMENT, 96-IN EACH	847 LIN.FT.	847 LIN.FT.	847 LIN.FT.	847 LIN.FT.
		EB I-480	846+05	894+00	4795	4795	14385																						
			894+00	902+67	867	867	1734																						
			902+67	911+90	1846	923	2769				923																		
			911+90	913+00	110	110	440																						
			913+00	942+75	2975	2975	8925																						
			942+75	945+00	225	225	675				450				140														
			945+00	946+12	112	112	336				224				206														
			946+12	990+00	4388	4388	8776																						
			990+00	998+00	1600	800	2400				800																		
		*	998+00	1002+60	460	460	1380																						
		WB I-480	852+40	890+80	3840	3840	11520																						
			890+80	911+63	2083	2083	4166																						
			911+63	913+00	137	137	411				274																		
			913+00	916+40	340	340	1020				680				349														
			916+40	941+85	2545	2545	7635																						
			941+85	951+89	2008	1004	3012				1004																		
			951+89	989+13	3724	3724	7448																						
		*	989+13	992+55	342	342	1026				684				351														
		*	992+55	1009+45.25	1690	1690	5070																						
		RAMP G-E	57+70	69+40	1170	1170																							
		EBOL	861+30	872+00		1070					1070				160	160													
			872+00	877+75	1150	575					575				120														
			877+75	902+88	2513	2513	2513																						
		LANE W-S	46+10	51+00	490	490	490																						
			51+00	53+41	241	241	241				482				200														
			53+41	68+30	1489	1489	1489																						
		LANE W-N	53+45	83+14	2962	2969																							
TOTALS					44102 = 8.35MI.	41877 = 7.93MI.	87861= 16.64MI.				7166				1526	160													
					16.28MI.										1686														

TRAFFIC CONTROL QUANTITIES, PAVEMENT MARKINGS

• PAVEMENT MARKINGS MAY BE NON-PERFORMED, AS DIRECTED BY THE ENGINEER, IF BRIDGE IS UNDER CONSTRUCTION

PLOT SUBMITTED: 15-DEC-1989 14:16
ZF2:[100,331480PM02.DGN
PLOT SUBMITTED BY: GRMOVSEK

TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY
CUY-480-15.84

OHIO
FHWA REGION 5
FEDERAL PROJECT

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PAVEMENT MARKINGS - 947.02

REFERENCE NO.		LOCATION ROADWAY	FROM STATION	TO STATION	847 EDGE LINES (WHITE) LIN. FT.	847 EDGE LINES (YELLOW) LIN. FT.	847 LANE LINES LIN. FT.	847 CENTER LINES SOLID DOUBLE LIN. FT.	847 CENTER LINES BROKEN SINGLE LIN. FT.	847 CENTER LINES BROKEN AND SOLID DOUBLE LIN. FT.	847 CHANNELIZING LINES (WHITE) LIN. FT.	847 CHANNELIZING LINES (YELLOW) LIN. FT.	847 STOP LINES LIN. FT.	847 CROSSWALK LINES LIN. FT.	847 TRANSVERSE LINES (WHITE) LIN. FT.	847 TRANSVERSE LINES (YELLOW) LIN. FT.	847 CURB MARKING LIN. FT.	847 ISLAND MARKING SQ. FT.	847 RAILROAD SYMBOL MARKINGS EACH	847 SCHOOL SYMBOL MARKINGS, 72-IN EACH	847 SCHOOL SYMBOL MARKINGS, 96-IN EACH	847 PARKING LOT STALL MARKING LIN. FT.	847 LANE ARROWS EACH	847 WORD "ONLY" ON PAVEMENT, 72-IN EACH	847 WORD "ONLY" ON PAVEMENT, 96-IN EACH	847 LIN. FT.	847 LIN. FT.	847 LIN. FT.	847 LIN. FT.
		LANE N-E	43+00	49+60	660		660				660																		
			49+60	53+80	420	420	420																						
			53+80	55+59	179	179	179				358				188														
			55+59	76+85	2126	2126	2126																						
			76+85	82+00	1030	515	515				515																		
			82+00	90+05	805	805	805																						
		LANE N-W	55+57	66+66	1109	1109																							
		RAMP E-G	78+75	79+20	45	45	45				90		50					250					2						
			79+20	93+40	1420	1420	1420																2	1					
		WBOL	893+40	911+18	1778	1778	1778																						
		LANE S-W	60+65	64+60	395	395	395																						
			64+60	66+50	380	190	190				190																		
			66+50	71+50	500	500	1000																						
			71+50	73+94	244	244	244				488				253														
			73+94	93+75	1981	1981	1981																						
			93+75	98+00	850	425	425				425																		
			98+00	102+92	492	492	492																						
		LANE E-N	64+39	68+30	391	391	391																						
			68+30	70+73	243	243	243				486				201														
			70+73	83+14	1241	1241	1241																						
			83+14	86+00	572	286	286				286																		
			86+00	87+90	190	190	190																						
			87+90	93+40	550		550				550																		
		LANE E-S	47+65	53+00	535	535	1070																						
			53+00	56+51	702	351	351				351																		
			56+51	87+76	3125	3125																							
		LANE S-E	73+92	86+30	1238	1238																							
TOTALS					23201 = 4.39 MI.	20224 = 3.83 MI.	16997= 3.22 MI.				4399		50		642			250					4	1					
						8.22 MI.																							

TRAFFIC CONTROL QUANTITIES, PAVEMENT MARKINGS

- PAVEMENT MARKINGS MAY BE NON-PERFORMED, AS DIRECTED BY THE ENGINEER, IF BRIDGE IS UNDER CONSTRUCTION

PLOT SUBMITTED: 18-DEC-1989 06:52
ZF2:100,331480TCGSI.DGN
PLOT SUBMITTED BY: GRMOVSEK

TRAFFIC CONTROL SUMMARY

CALC. BY	CUYAHOGA COUNTY	OHIO
DATE:	CUY-480-15.84	FHWA REGION 5
CHKD BY		FEDERAL PROJECT
DATE:		

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ITEM	SHEET NUMBER 59	60	61	62	63	64	PARTICIPATION I	II	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
													TRAFFIC CONTROL
620				4			4		620	40300	4	EACH	REFLECTOR, TYPE D
625	4	1					5		625	32000	5	EACH	GROUND ROD
630	96						96		630	80306	96	SQ.FT.	SIGNS, TEMPORARY OVERLAY, TYPE G
630	4527	290	142	140		42	5141		630	80204	5141	SQ.FT.	SIGNS, EXTRUSHEET, TYPE G
630			258	302	342	109	1011		630	80102	1011	SQ.FT.	SIGNS, FLAT SHEET, TYPE G
				32			32		630	80103	32	SQ.FT.	SIGNS, FLAT SHEET, TYPE G, AS PER PLAN (SEE SHT. 55)
630	24	2					26		630	87400	26	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL
630	2						2		630	89702	2	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL
630	1	2					3		630	87100	3	EACH	REMOVAL OF OVERHEAD SIGN AND RE-ERECTION
630	1						1		630	89110	1	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND RE-ERECTION, TYPE NO. 12.24
630			1	3			4		630	87500	4	EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL
630			43	28	23	4	98		630	84900	98	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL
630				2		1	3		630	85400	3	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL
630			34	34	29	6	103		630	86002	103	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL
630			2	2		2	6		630	86102	6	EACH	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL
630	1						1		630	20300	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN NO.3, 16 FEET ARM
630	1						1		630	20900	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN NO.9, 24 FEET ARM
630	1						1		630	74500	1	EACH	OVERHEAD SIGN SUPPORT MODIFICATION, TYPE 7.5, DESIGN NO.1, MOD., NEW BOX TRUSS SECTION 5 FEET
630		1					1		630	74500	1	EACH	OVERHEAD SIGN SUPPORT MODIFICATION, TYPE 7.4, DESIGN NO.1, MOD., NEW BOX TRUSS SECTION 5 FEET
630	24.5	13.6					38.1		630	00000	38.1	CU.YD.	CONCRETE FOR ANCHOR BASE FOUNDATIONS
630			4.06	7.18		2.20	13.4		630	00100	13.4	CU.YD.	CONCRETE FOR EMBEDDED FOUNDATIONS
630	79	8					87		630	75000	87	EACH	SIGN ATTACHMENT ASSEMBLY
630			196	118	20	10	344		630	03100	344	LIN.FT.	GROUND-MOUNTED SUPPORTS, NO.3 POST
630			169	323	649	194	1335		630	04100	1335	LIN.FT.	GROUND-MOUNTED SUPPORTS, NO.4 POST
630			32				32		630	08100	32	LIN.FT.	ONE WAY SUPPORTS, NO.4 POST
630			35	263			298		630	06400	298	LIN.FT.	GROUND-MOUNTED SUPPORTS, S4 X 7.7 BEAM
630			68	36			104		630	06500	104	LIN.FT.	GROUND-MOUNTED SUPPORTS, W6 X 9 BEAM
630				43		42	85		630	07600	85	LIN.FT.	GROUND-MOUNTED SUPPORTS, W10 X 12 BEAM
630			46				46		630	07000	46	LIN.FT.	GROUND-MOUNTED SUPPORTS, W8 X 18 BEAM
630			1				1		630	78500	1	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED
630			6	4			10		630	09000	10	EACH	BREAKAWAY BEAM CONNECTION
631	2	4					6		631	94402	6	EACH	REMOVAL OF BALLAST AND RE-ERECTION
631	51	4					55		631	94200	55	EACH	REMOVAL OF LUMINAIRE AND DISPOSAL
631	2	4					6		631	94100	6	EACH	REMOVAL OF LUMINAIRE AND RE-ERECTION
631	15	2					17		631	94304	17	EACH	REMOVAL OF DISCONNECT SWITCH AND DISPOSAL
631	15	2					17		631	85100	17	EACH	DISCONNECT SWITCH WITH ENCLOSURE, TYPE X
631	25	4					29		631	84300	29	EACH	SIGNS WIRED
631	15	2					17		631	84000	17	EACH	SIGN SERVICE
630	49	4					53		630	75106	53	EACH	LUMINAIRE SUPPORT ASSEMBLY, TYPE TC-31.21

PLOT SUBMITTED: 18-DEC-1989 06:54
PLOT SUBMITTED BY: GRMOVSEK
ZF2:1100,3311480TCGS2.DGN

TRAFFIC CONTROL SUMMARY

CALC. BY	CUYAHOGA COUNTY	OHIO
DATE:	CUY-480-15.84	FHWA REGION 5
CHKD BY		FEDERAL PROJECT
DATE:		

68
118

ITEM	SHEET NUMBER 55	58	59	60	65	66	PARTICIPATION 1	11	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
													TRAFFIC CONTROL
631			2				2		631	89100	2	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 100 WATT LAMP
631			41	4			45		631	89200	45	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 175 WATT LAMP
631			10				10		631	89300	10	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 250 WATT LAMP
631			2				2		631	87102	2	EACH	BALLAST, TYPE-CMRI 100 - 480, INTEGRAL
631			41	4			45		631	87202	45	EACH	BALLAST, TYPE-CMRI 175 - 480, INTEGRAL
631			10				10		631	87302	10	EACH	BALLAST, TYPE-CMRI 250 - 480, INTEGRAL
632	300						300		632	27500	300	LIN.FT.	LOOP DETECTOR PAVEMENT CUTTING
632	600						600		632	64900	600	LIN.FT.	LOOP DETECTOR WIRE, TYPE E
802	200						200		802	00100	200	EACH	BARRIER REFLECTORS, TYPE A
802	100						100		802	00200	100	EACH	BARRIER REFLECTORS, TYPE B
847					16.28	8.22	24.50		847	00000	24.50	MILE	EDGE LINES, 947.02
847					16.64	3.22	19.86		847	05800	19.86	MILE	LANE LINES, 947.02
847					7166	4399	11565		847	19000	11565	LIN.FT.	CHANNELIZING LINES, 947.02
847					1686	642	2328		847	47600	2328	LIN.FT.	TRANSVERSE LINES, 947.02
847						50			847	28000	50	LIN.FT.	STOP LINES, 947.02
847						250	250		847	63000	250	SQ.FT.	ISLAND MARKING, 947.02
847						4	4		847	66500	4	EACH	LANE ARROWS, 947.02
847						1	1		847	72500	1	EACH	WORD ON PAVEMENT, 72", 947.02
SPEC.		32					32		SPEC.	630 09100	32	EACH	SURFACE PREPARATION, EXISTING SUPPORT SECTION (SEE SHT. 56)
SPEC.		4					4		SPEC.	630 09102	4	EACH	SURFACE PREPARATION, NEW SUPPORT SECTION (SEE SHT. 56)
SPEC.		36					36		SPEC.	630 09104	36	EACH	COATING, EPOXY PRIME COAT, SUPPORT SECTIONS (SEE SHT. 57)
SPEC.		36					36		SPEC.	630 09106	36	EACH	COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTIONS (SEE SHT. 57)
SPEC.		36					36		SPEC.	630 09108	36	EACH	COATING, URETHANE TOP COAT, SUPPORT SECTIONS (SEE SHT. 58)

TRAFFIC CONTROL

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

69
118

SCALE IN FEET 0 50 100

NOTES:

PROPOSED OVERHEAD SIGN SIZES ARE EFFECTIVE AND DO NOT INCLUDE THE 1'-0" GLARE SHIELD (6" EXTRUSHEET SIGN AND 6" LIGHTING SUPPORT)

GUARDRAIL AND BARRIER LOCATIONS SHOWN ARE PROPOSED LOCATIONS AS SHOWN ON THE ROADWAY PLAN SHEETS.

CONNECT ALL PROPOSED OR EXISTING OVERHEAD SIGN SUPPORTS TO LIGHTING CIRCUITS AS SHOWN ON THE PLANS. ALL PROPOSED PULLBOX QUANTITIES ARE SHOWN IN LIGHTING PLANS.

PENN CENTRAL R.R.

STA. 852+40

STA. 851+00 END SHEET

CLEVELAND CORPORATION LIMIT NO WORK

CITY OF CLEVELAND
VILLAGE OF BROOKLYN HTS.

TUXEDO AVE

20" GAS LINE

855

BROOKLYN HTS CORPORATION LIMIT

11'-0" x 3'-6"

I-480 EAST Youngstown

RAMP JN-OBE

RAMP GE-2

GRANGER ROAD (S.R. 17)

PEDESTRIANS AND BICYCLES PROHIBITED

STA. 61+30

RAMP G-E

MATCH LINE STA. 866+50
SEE SHEET 70

STA. 7+90

STA. 7+85

CONNECT TO EXISTING PULLBOX

S.R. 17 (GRANGER RD.) STA. 7+85

13' x 5'

I-480 EAST Youngstown

LEGEND:

- (A) - EDGE LINE (WHITE)
- (B) - EDGE LINE (YELLOW)
- (C) - LANE LINE
- (D) - CHANNELIZING LINE
- (E) - TRANSVERSE LINE (WHITE), 12' c/c
- (G) - TRANSVERSE LINE (YELLOW), 100' c/c
- (H) - STOP LINES
- (I) - ISLAND MARKING
- * - WORD "ONLY" ON PAVEMENT
- (J) - TRANSVERSE LINE (WHITE), 100' c/c

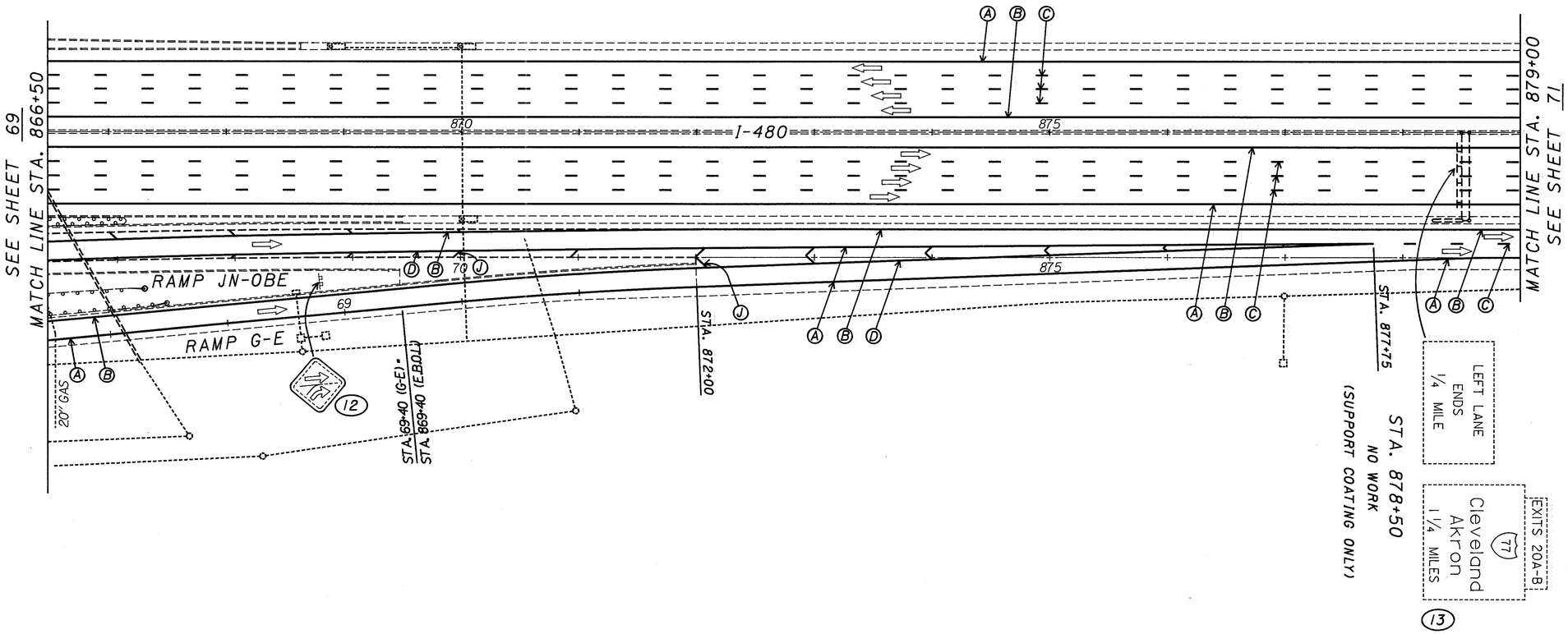
- EXISTING SIGN (TO BE REMOVED UNLESS "NO WORK" SHOWN)
- PROPOSED SIGN (WITH NEW LEGEND)
- OR — PROPOSED SIGN (WITH SAME LEGEND AS EXISTING)

PLOT SUBMITTED: 20-DEC-1989 11:08
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]SIGN30.DGN

TRAFFIC CONTROL

CUYAHOGA COUNTY	OHIO	70
CUY-480-15.84	FHWA REGION 5	118
	FEDERAL PROJECT	

0 50 100
SCALE IN FEET



FOR LEGEND SEE SHEET NO. 69

PLOT SUBMITTED: 20-DEC-1989 11:14
ZFA2:[100331]SIGN31-A .DGN;1
PLOT SUBMITTED BY: GRMOVSEK

TRAFFIC CONTROL

CUYAHOGA COUNTY CUY-480-15.84	OHIO FHWA REGION 5 FEDERAL PROJECT	71/118

SCALE IN FEET 0 50 100
GRANGER ROAD (S.R. 17)
STA. 79+20
RAMP E-G
I-480
880
885
890
90
890
SEE SHEET 70 MATCH LINE STA. 879+00
MATCH LINE STA. 894+00 SEE SHEET 72
STA. 93+40 (E-G) = STA. 893+40 (W.B.O.L.)
CONNECT TO EXISTING PULLBOX
STA. 889+50
21'-0" x 7'-0"
Brookpark Rd.
ROAD CLOSED
NO WORK
WRONG WAY
ONLY
25 MPH
DO NOT ENTER
ONE WAY
YIELD
STA. 890+25
NO WORK
(SUPPORT COATING ONLY)
LEFT LANE ENDS MERGE RIGHT
11' x 2'-6"
11' x 2'
IV
TO
176
EAST
WEST
17
Granger Rd.
Brookpark Rd.
SPEED LIMIT 55
MINIMUM 40

FOR LEGEND SEE SHEET NO. 69

PLOT SUBMITTED: 20-DEC-1989 11:16

ZFA2:[10033]SIGN31-B .DGN;1

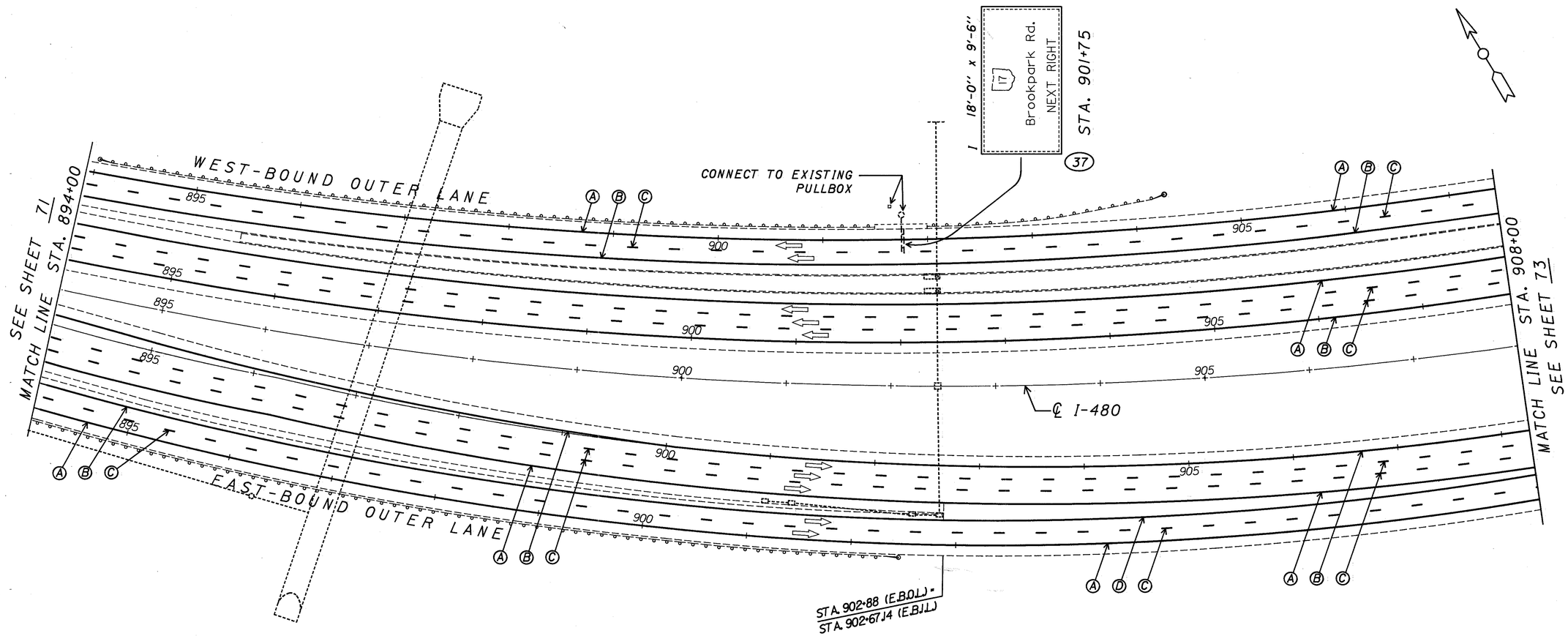
PLOT SUBMITTED BY: GRMOVSEK

TRAFFIC CONTROL

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

72
118

0 50 100
SCALE IN FEET



FOR LEGEND SEE SHEET NO. 69

PLOT SUBMITTED: 20-DEC-1989 11:20
PLOT SUBMITTED BY: GRMOVSEK
ZFA2:[100331]SIGN32-A .DGN;1

TRAFFIC CONTROL


SCALE IN FEET
0 50 100
WEST-BOUND OUTER LANE
CONNECT TO EXISTING PULLBOX
STA. 911+18 (W.B.O.L.)
STA. 911+63 (W.B.I.L.)
STA. 914+75.11 ℄ WB
STA. 915+00 ℄ I-480
STA. 916+40
STA. 915+88
STA. 919+25
STA. 911+90
STA. 915+43.72 ℄ EB
STA. 915+00 ℄ I-480
℄ I-480
LANCASTER DR.
MATCH LINE STA. 908+00
SEE SHEET 72
MATCH LINE STA. 923+00
SEE SHEET 74
CONNECT TO EXISTING PULLBOX
EXIT 45 MPH
7' x 2'
EXIT 17
Cleveland
Brookpark Rd.
EXIT ONLY
18'-0" x 12'-0"
B/Y
15'x 2' OVERLAY
EXIT 17
Brooklyn Hts.
Brookpark Rd.
EXIT ONLY
18'-0" x 12'-0"
WEST
480
Toledo
25'-0" x 9'-6"
480
Youngstown
EAST
17'-0" x 9'-6"
Youngstown
EXIT 20A
Cleveland
NORTH
8' x 2'
13'-0" x 9'-6"
EXIT 20B
Akron
SOUTH
EXIT ONLY
16'-0" x 9'-6"
MILE 19

FOR LEGEND SEE SHEET NO. 69

PLOT SUBMITTED: 20-DEC-1989 11:26
ZFA2:[10033]SIGN32-B .DGN;1
PLOT SUBMITTED BY: GRMOVSEK

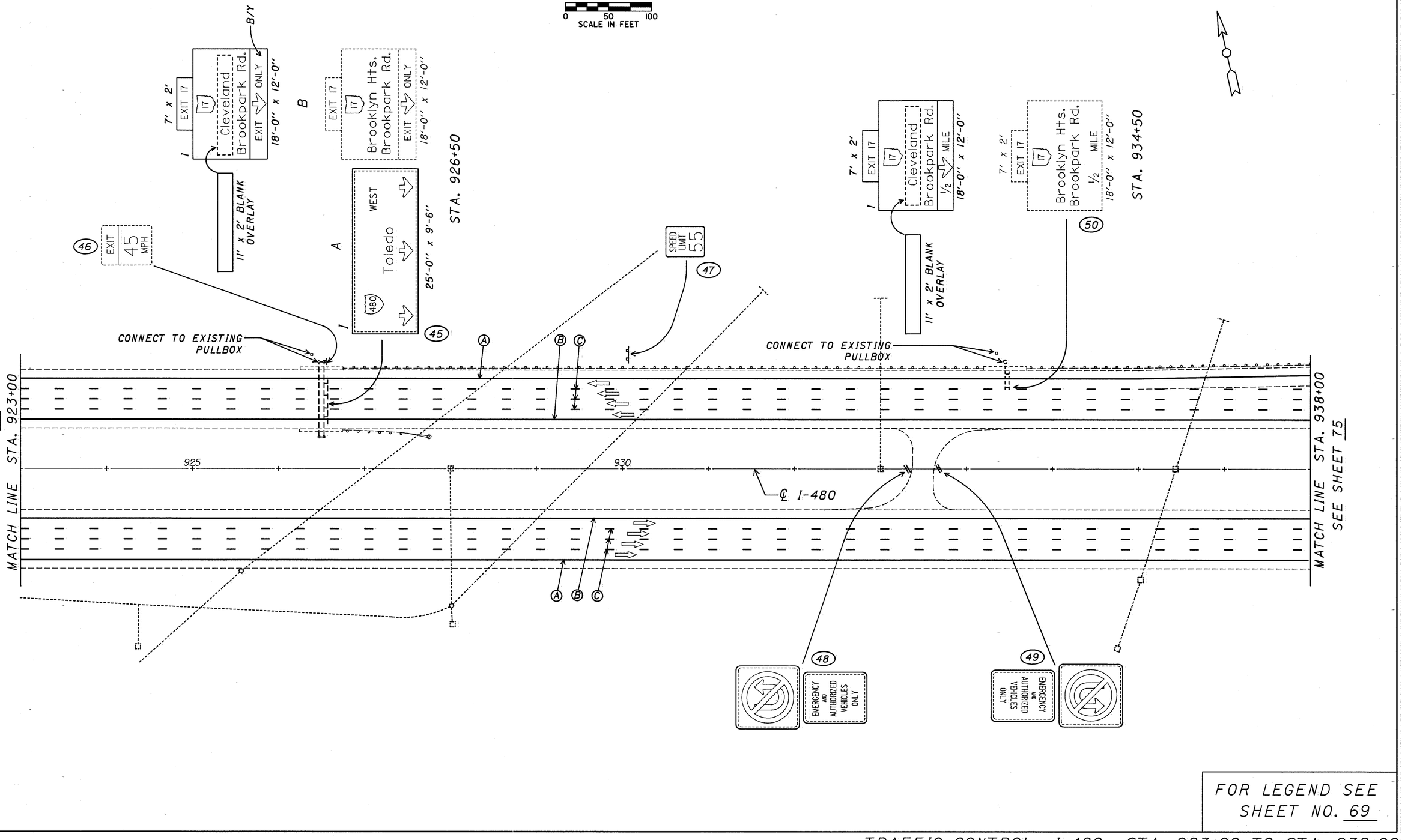
PLOT SUBMITTED: 21-DEC-1989 09:55
PLOT SUBMITTED BY: GRMOVSEK
ZFA2:[I00331]SIGN33-A .DGN;1

TRAFFIC CONTROL

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

74
118

SCALE IN FEET 0 50 100



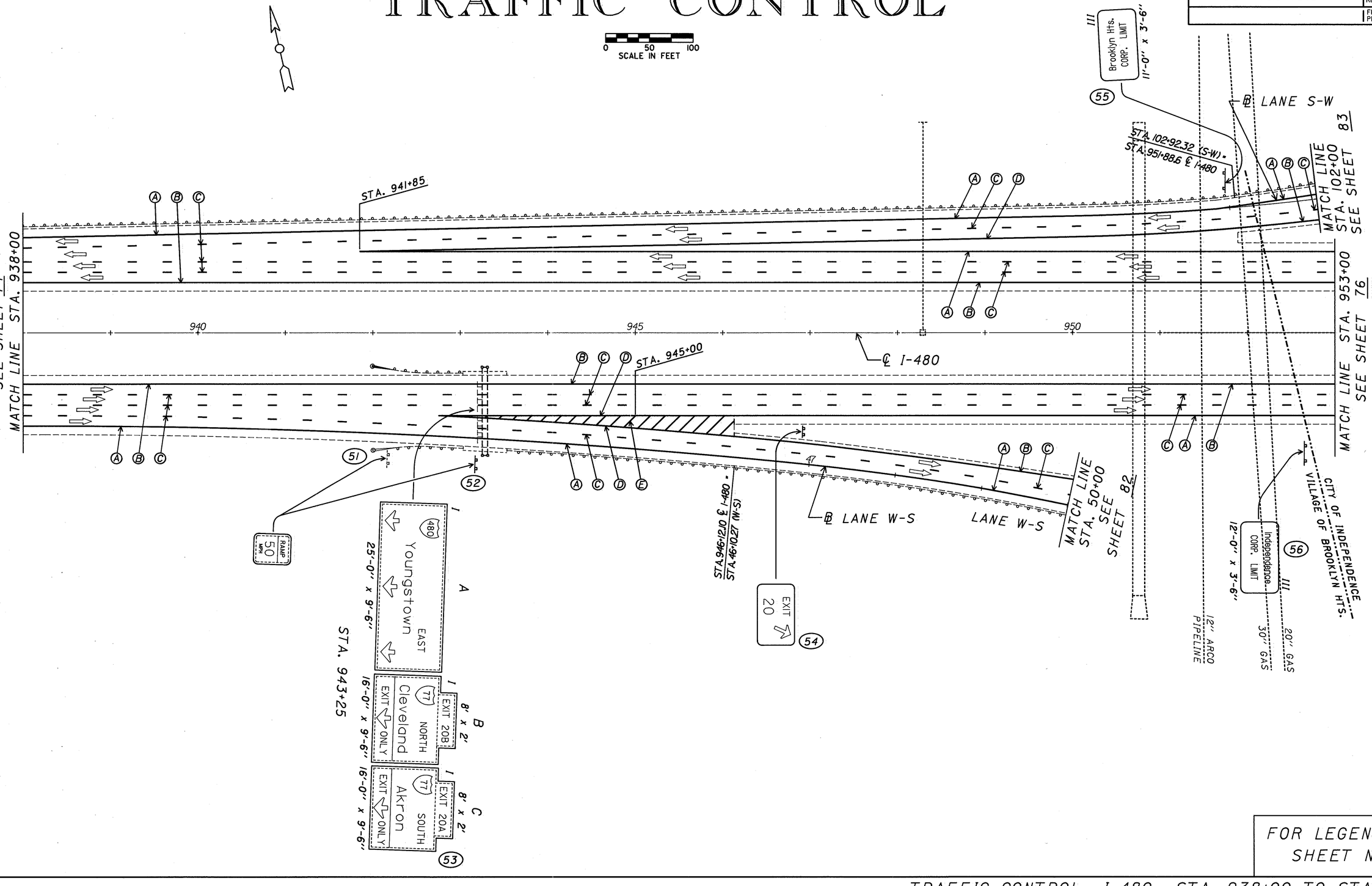
FOR LEGEND SEE SHEET NO. 69

PLOT SUBMITTED: 20-DEC-1989 11:31
ZFA2:[10033]SIGN33-B .DGN;1
PLOT SUBMITTED BY: GRMOVSEK

TRAFFIC CONTROL

CUYAHOGA COUNTY	OHIO	75
CUY-480-15.84	FHWA REGION 5	118
	FEDERAL PROJECT	

0 50 100
SCALE IN FEET



FOR LEGEND SEE SHEET NO. 69

PLOT SUBMITTED: 20-DEC-1989 11:34
PLOT SUBMITTED BY: GRMOVSEK
ZFA2:[100331]SIGN34-A .DGN;1

TRAFFIC CONTROL

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

76
118

0 50 100
SCALE IN FEET

11" x 2" BLANK OVERLAY

7' x 2'
EXIT 17
17
Cleveland
Brookpark Rd.
3/4 MILE
18'-0" x 12'-0"

61

EXIT 17
17
Brookpark Rd.
3/4 MILE
18'-0" x 12'-0"

STA. 958+25

57
Brooklyn Hts
CORPORATION LIMIT

59
60

OVERHEAD C.E.I. POWER LINES

CONNECT TO EXISTING PULLBOX

A B C

MILE 2 0
63

SEE SHEET 75
MATCH LINE STA. 953+00

955
960
965

℄ I-480

65

MATCH LINE STA. 968+00
SEE SHEET 77

150'
EASEMENT

A B C

STA. 963+00
(REMOVE EXISTING SUPPORT & SIGN)

66

CONNECT TO PROPOSED PULLBOX

Independence
CORPORATION LIMIT
58

MILE 2 0
62

Transportation Boulevard
E. 98th St.
1 1/2 MILES
1
EXIT 21
7" x 2"
19'-0" x 10'-6"
STA. 966+50
64

FOR LEGEND SEE SHEET NO. 69

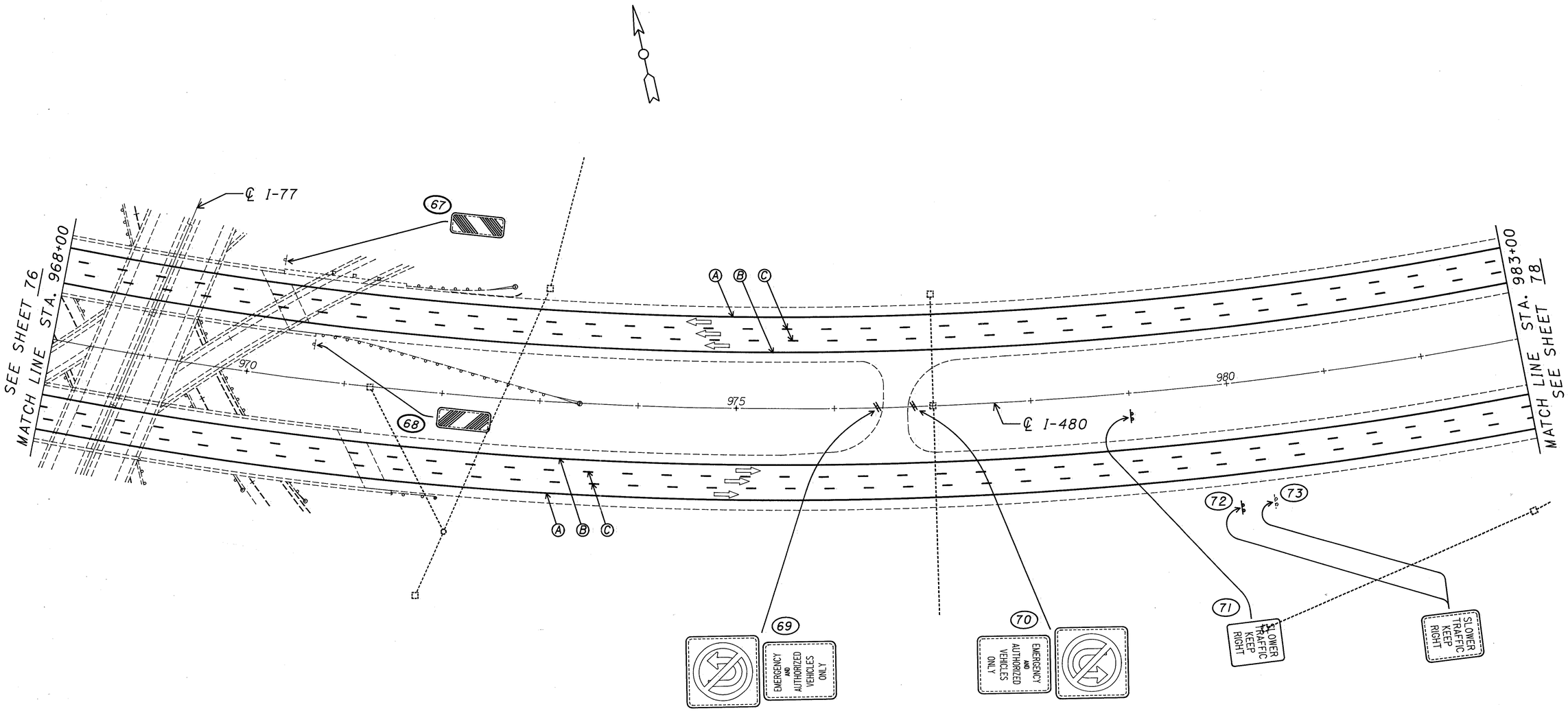
PLOT SUBMITTED: 20-DEC-1989 11:36
PLOT SUBMITTED BY: GRMOVSEK
ZFA2:[I00331]SIGN34-B .DGN;1

TRAFFIC CONTROL

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

77/118

0 50 100
SCALE IN FEET



FOR LEGEND SEE SHEET NO. 69

TRAFFIC CONTROL

CUYAHOGA COUNTY CUY-480-15.84	OHIO FHWA REGION 5 FEDERAL PROJECT	78/118

0 50 100
SCALE IN FEET
EXIT 20
X-1
C
8' x 2'
EXIT 20B
77
NORTH
Cleveland
EXIT ONLY
16' x 9'-6"
B
8' x 2'
EXIT 20A
77
SOUTH
Akron
EXIT ONLY
16' x 9'-6"
A
WEST
Toledo
480
25'-0" x 9'-6"
STA. 992+00
RAMP 50 MPH
W-98
CONNECT TO EXISTING PULLBOX
NOSE STA.64+39.19 (E-N) ℄ STA.989+12.54 L I-480
℄ LANE E-N
SEE SHEET 84 MATCH LINE STA. 69+00
STA. 68+30
SEE SHEET 77 MATCH LINE STA. 983+00
STA. 992+55
985
990
995
℄ I-480
STA. 998+00 END SHEET
NO WORK
NO WORK
SEE SHEET 81 MATCH LINE STA. 83+00
85
℄ LANE N-E
BRECKSVILLE ROAD (S.R. 21)
STA. 987+88.87 ℄ I-480
STA. 87+90.62 (N-E)
W-49R
W-68
WATCH FOR ICE ON BRIDGE
R-52
NO DRIVING ON MARKED SHOULDER
HOSPITAL NEXT RIGHT
R-52
NO DRIVING ON MARKED SHOULDER
74
75
76
77
78
79
80
81
82
83

FOR LEGEND SEE SHEET NO. 69

PLOT SUBMITTED: 20-DEC-1989 11:38

ZF2:[100,33]SIGN35.DGN

PLOT SUBMITTED BY: GRMOVSEK

TRAFFIC CONTROL

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

79/118

SCALE IN FEET 0 50 100

SEE SHEET 83 MATCH LINE STA. 59+00

℄ LANE N-W

STA. 55+57.36 (N-W) · STA. 55+58.76 (N-E)

SEE SHEET 81 MATCH LINE STA. 58+50

℄ LANE N-E

CONNECT TO EXISTING PULLBOX

STA. 54+15 (LANE N-E)

WEST Toledo 480 12'-0" x 9'-6"

EAST Youngstown 480 17'-0" x 9'-6"

STA. 53+80

END SHEET STA. 492+00

℄ I-77

I-77

STA. 506+50 END SHEET

SEE SHEET 82 MATCH LINE STA. 77+50

℄ LANE W-N

STA. 86+00

STA. 83+14 (E-N) · STA. 83+14 (W-N)

℄ LANE E-N

MATCH LINE STA. 76+00 SEE SHEET 84

W-2, W-143, 50 MPH, W-33R, W-49L, W-49R, R-2, X-6R

FOR LEGEND SEE SHEET NO. 69

PLOT SUBMITTED: 20-DEC-1989 11:43
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]SIGN41.DGN

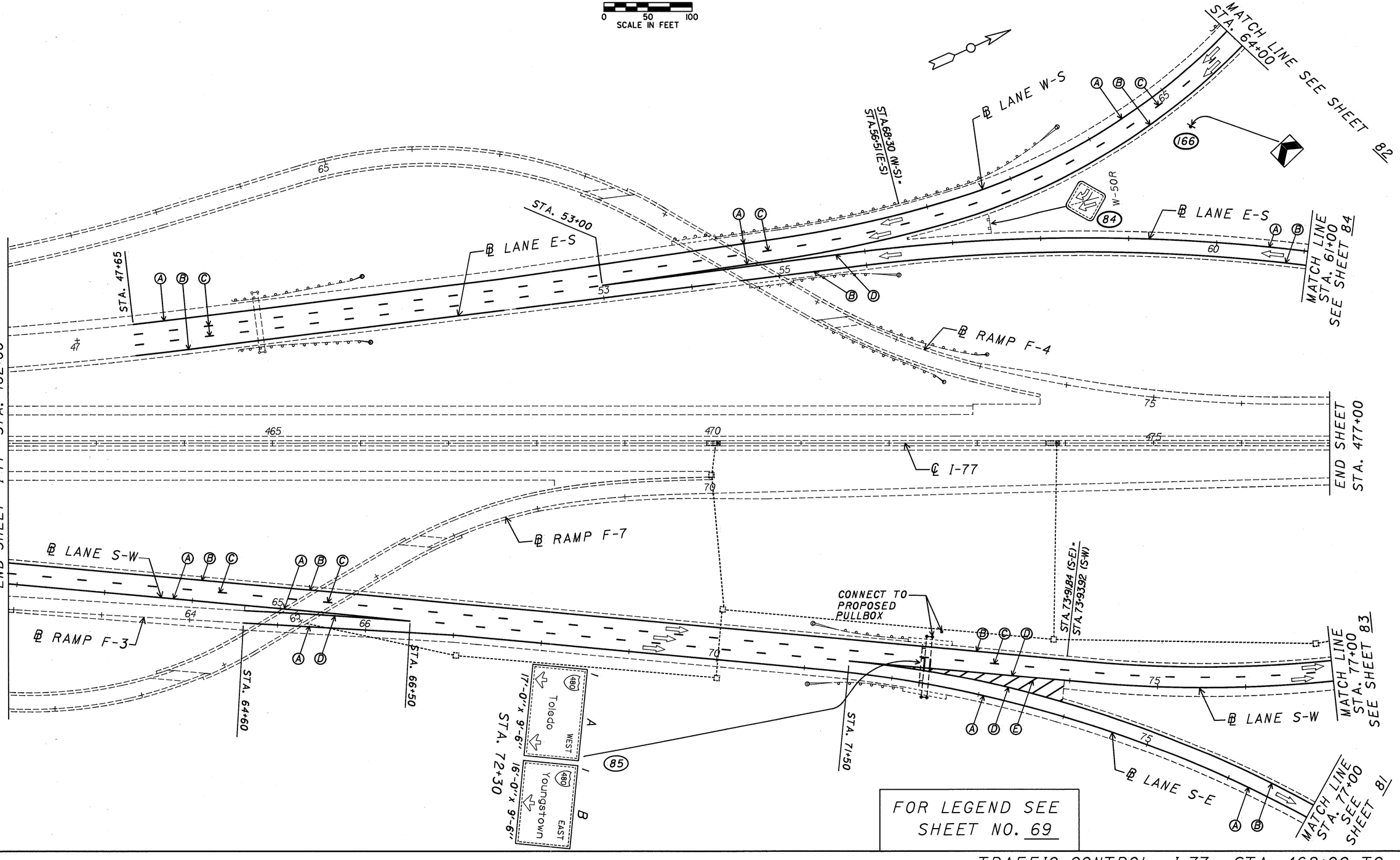
PLOT SUBMITTED: 20-DEC-1989 11:49
ZF2:[100,33]SIGN40.DGN
PLOT SUBMITTED BY: GRMOVSEK

TRAFFIC CONTROL

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

80/118

0 50 100
SCALE IN FEET



TRAFFIC CONTROL I-77 STA. 462+00 TO 477+00

PLOT SUBMITTED: 20-DEC-1989 11:54
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]SIGN39.DGN

TRAFFIC CONTROL

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

81/118

0 50 100
SCALE IN FEET

SEE SHEET 79
MATCH LINE
STA. 58+50

(SEE BELOW)
MATCH LINE STA. 73+00

℄ I-77

℄ I-480

℄ LANE N-E

℄ LANE S-E

(SEE ABOVE)
MATCH LINE STA. 73+00

STA. 82+00

MATCH LINE
STA. 83+00
SEE SHEET 78

MATCH LINE
STA. 77+00
SEE SHEET 80

STA. 76+85 (N-E)
STA. 86+30 (S-E)

W-33L

W-46 YIELD AHEAD

W-49R

R-2 YIELD

R-35 SLOWER TRAFFIC KEEP RIGHT

FOR LEGEND SEE SHEET NO. 69

TRAFFIC CONTROL LANE N-E STA. 58+50 TO 83+00 / LANE S-E STA. 77+00 TO 88+42.05

PLOT SUBMITTED: 20-DEC-1989 11:58

ZF2:[100,33]SIGN36.DGN

PLOT SUBMITTED BY: GRMOVSEK

TRAFFIC CONTROL

0 50 100
SCALE IN FEET
CONNECT TO PROPOSED PULLBOX
OVERHEAD C.E.I. POWER LINES
ARCO 12" CASING
30" GAS
20" GAS
STA. 51+00
STA. 53+44.76 (W-N)
STA. 53+40.66 (W-S)
MATCH LINE STA. 50+00 SEE SHEET 75
(SEE BELOW) MATCH LINE STA. 62+00
℄ LANE W-N
℄ LANE W-S
CITY OF INDEPENDENCE
VILLAGE OF BROOKLYN HTS
A
NORTH
77
Cleveland
13'-0" x 9'-6"
B
SOUTH
77
Akron
17'-0" x 9'-6"
STA. 51+50 (LANE W-N)
86
Independence CORP. LIMIT
12'-0" x 3'-6"
161
162
163
164
165
Rockside Rd.
Independence
1/2 MILE
17'-0" x 8'-6"
STA. 61+15
87
CONNECT TO EXISTING PULLBOX
MATCH LINE STA. 64+00 SEE SHEET 80
(SEE ABOVE) MATCH LINE STA. 62+00
SEE SHEET 79 MATCH LINE STA. 77+50
YIELD AHEAD
W-46
91
90
X-6L
88
X-6R
89
℄ I-480
℄ I-77
51
55
60
65
75

FOR LEGEND SEE SHEET NO. 69

TRAFFIC CONTROL

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

83
118

0 50 100
SCALE IN FEET

SEE SHEET 75
MATCH LINE
STA. 102+00

OVERHEAD C.E.I. POWER LINES

STA. 98+00

STA 93+75 (S-W)
STA 66+66 (N-W)

R-2

YIELD AHEAD

B LANE N-W

SEE SHEET 79
MATCH LINE
STA. 59+00

W-49R

YIELD AHEAD W-46

B LANE S-W

MATCH LINE STA. 91+00
(SEE BELOW)

℄ I-77

℄ I-480

MATCH LINE
(SEE ABOVE) STA. 91+00

W-2 W-143 50 MPH

MATCH LINE
STA. 77+00
SEE SHEET 80

FOR LEGEND SEE
SHEET NO. 69

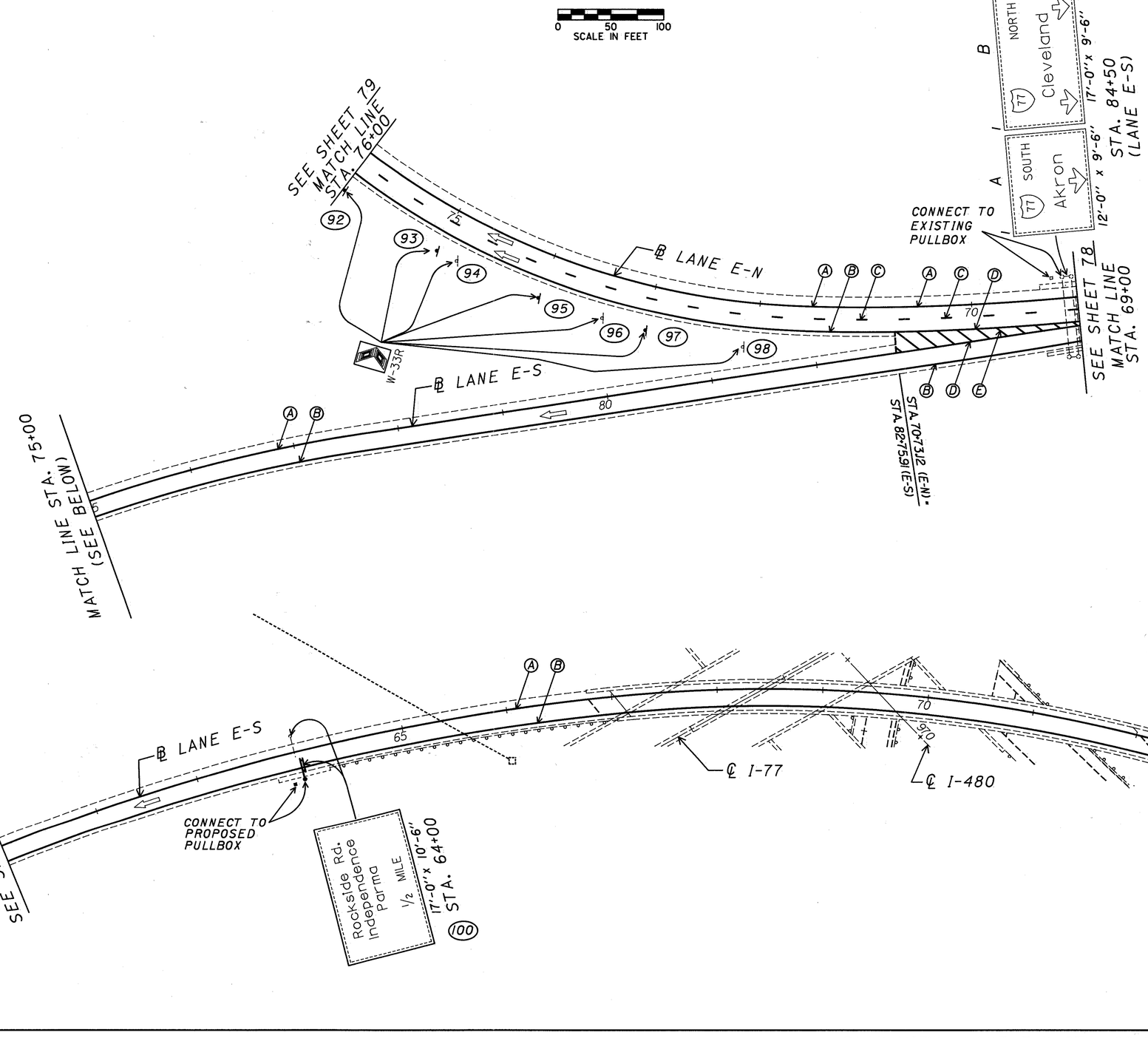
PLOT SUBMITTED: 20-DEC-1989 12:05
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,33]SIGN37.DGN

PLOT SUBMITTED: 20-DEC-1989 12:13
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,33]SIGN38.DGN

TRAFFIC CONTROL

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

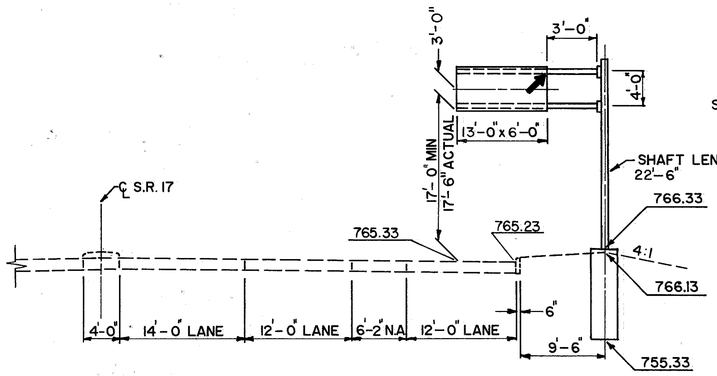
84/118



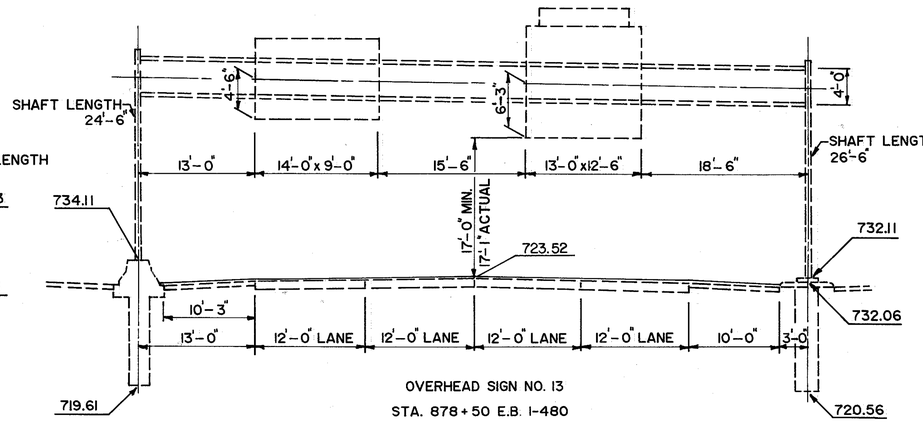
FOR LEGEND SEE SHEET NO. 69

PLAN VIEW LANE E-N STA. 69+00 TO 76+00 / LANE E-S STA. 61+00 TO 83+00

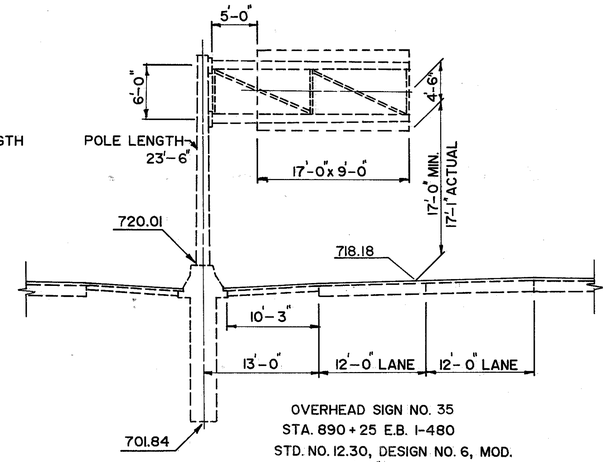
SIGN SUPPORT ELEVATIONS



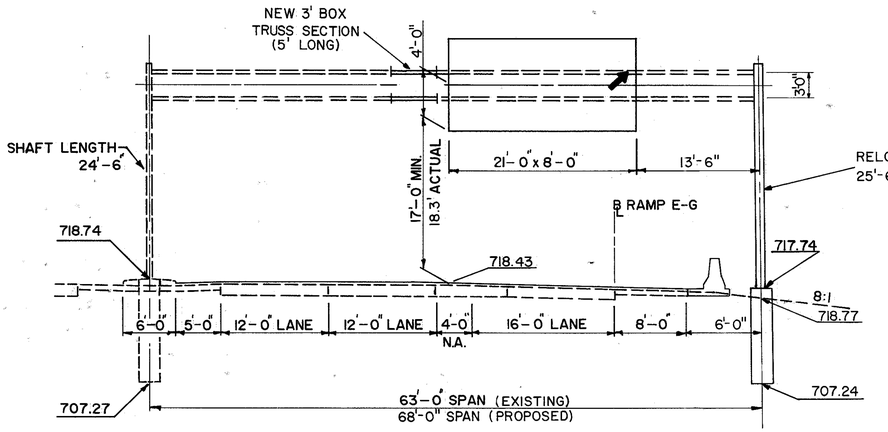
OVERHEAD SIGN NO. 5
STA. 7+85 , S.R. 17 AND RAMP G-E
STD. NO. 12.30, DESIGN NO. 3
16'-0" ARMS



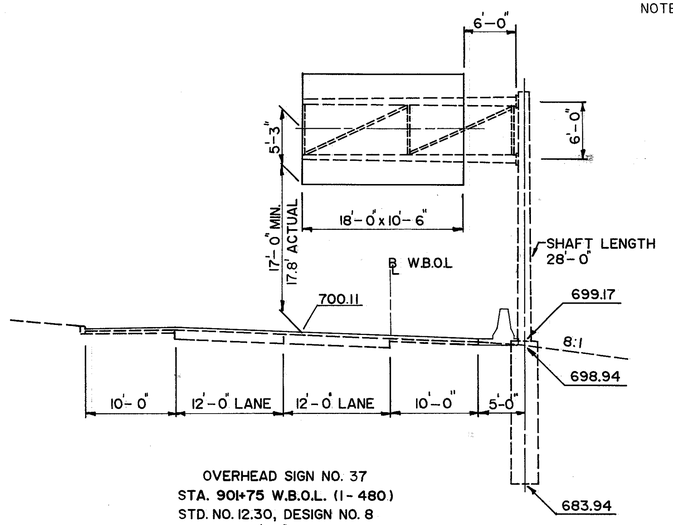
OVERHEAD SIGN NO. 13
STA. 878+50 E.B. I-480
STD. NO. 7.5, DESIGN NO. 2, MOD.
74'-0" SPAN
(NO WORK)
(SUPPORT COATING ONLY)



OVERHEAD SIGN NO. 35
STA. 890+25 E.B. I-480
STD. NO. 12.30, DESIGN NO. 6, MOD.
22'-0" ARMS
(NO WORK)
(SUPPORT COATING ONLY)



OVERHEAD SIGN NO. 34
STA. 889+50 W.B.O.L. (I-480)
STD. NO. 7.5, DESIGN NO. 1, MOD.
68'-0" SPAN



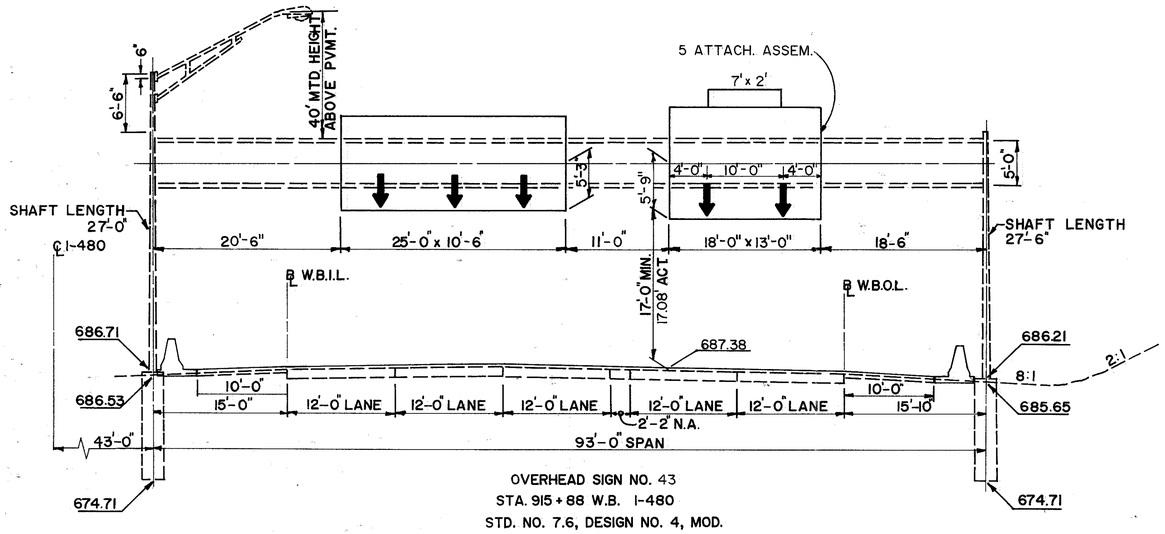
OVERHEAD SIGN NO. 37
STA. 901+75 W.B.O.L. (I-480)
STD. NO. 12.30, DESIGN NO. 8
24'-0" ARMS

NOTE: 1) SIGN SIZES ARE ACTUAL AND INCLUDE THE ADDITIONAL 1'-0" FOR GLARE SHIELD AND LUMINAIRE ASSEMBLIES.

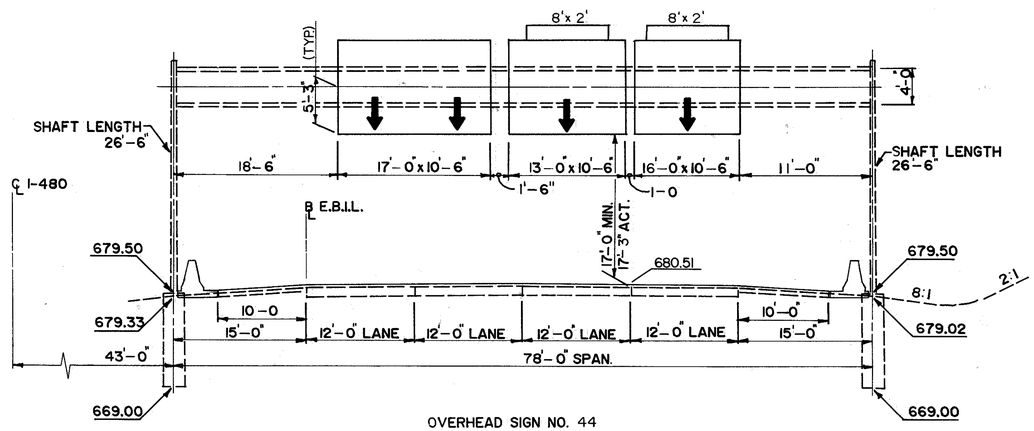
2) ELEVATIONS INCLUDE PROPOSED 3" RESURFACING.

513840

SIGN SUPPORT ELEVATIONS



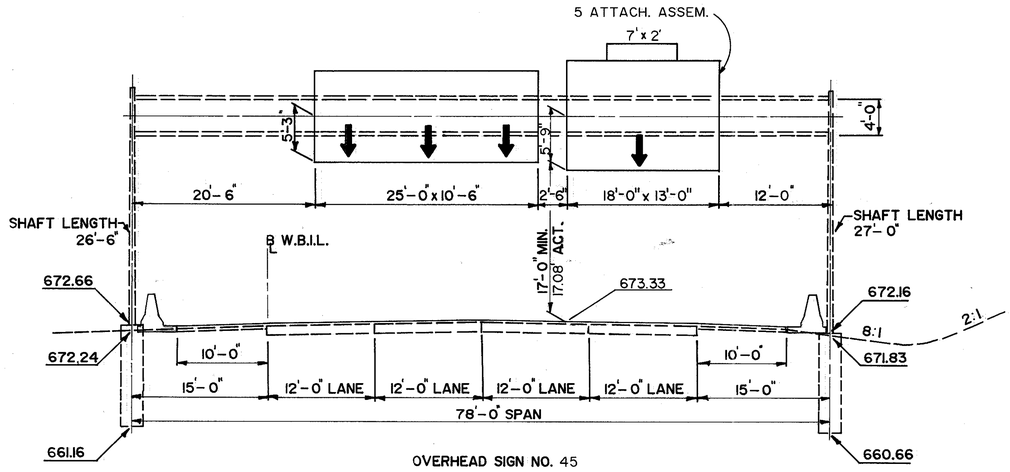
OVERHEAD SIGN NO. 43
STA. 915+88 W.B. I-480
STD. NO. 7.6, DESIGN NO. 4, MOD.
93 0 SPAN



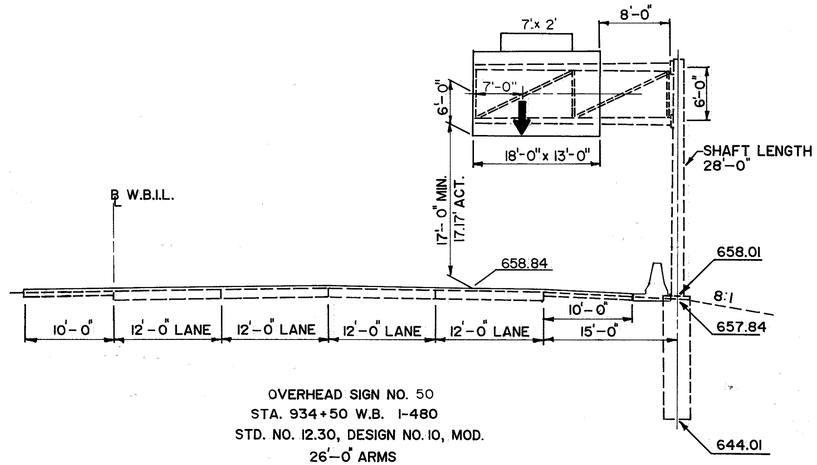
OVERHEAD SIGN NO. 44
STA. 919+25 E.B.O.L I-480
STD. NO. 7.5, DESIGN NO. 2, MOD.
78'-0" SPAN

NOTE: 1) SIGN SIZES ARE ACTUAL AND INCLUDE THE ADDITIONAL 1'-0" FOR GLARE SHIELD AND LUMINAIRE ASSEMBLIES.

2) ELEVATIONS INCLUDE PROPOSED 3" RESURFACING.



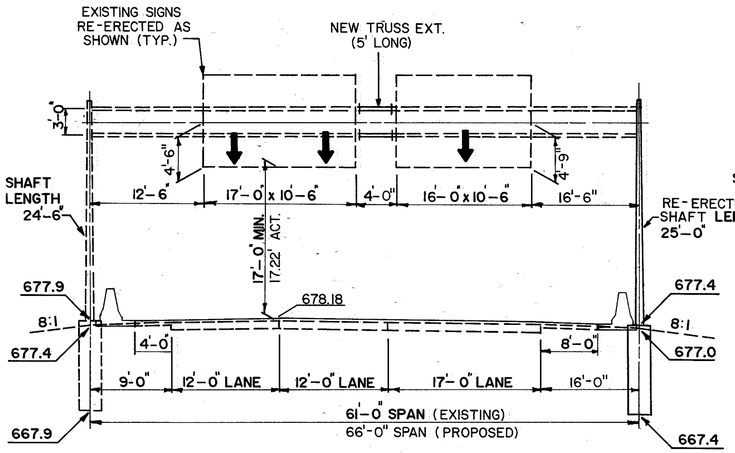
OVERHEAD SIGN NO. 45
STA. 926+50 W.B.I.L. I-480
STD. NO. 7.6, DESIGN NO. 3, MOD.
78-0 SPAN



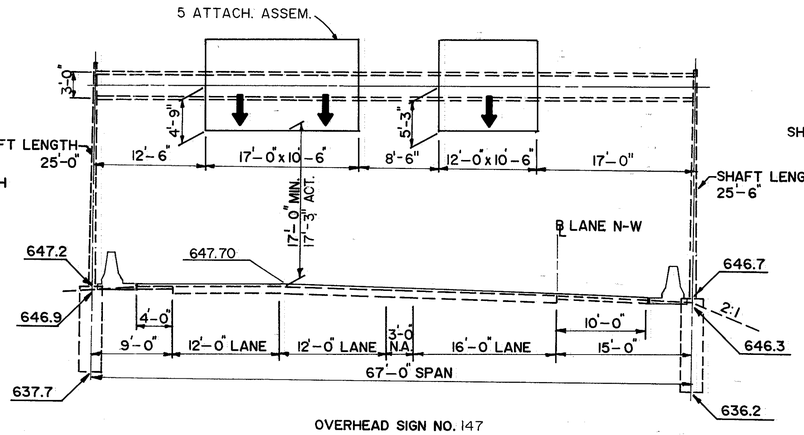
OVERHEAD SIGN NO. 50
STA. 934+50 W.B. I-480
STD. NO. 12.30, DESIGN NO. 10, MOD.
26'-0" ARMS

513840

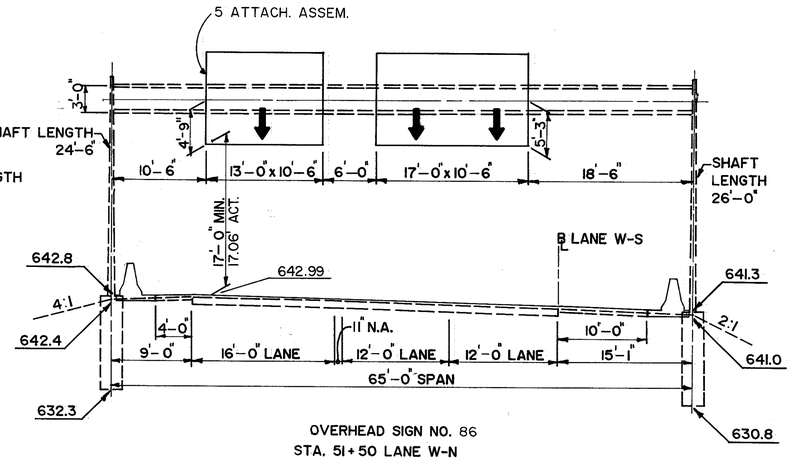
SIGN SUPPORT ELEVATIONS



OVERHEAD SIGN NO. 85
STA. 72+30 LANE S-W
STD. NO. 7.4, DESIGN NO. 1, MOD
66'-0" SPAN



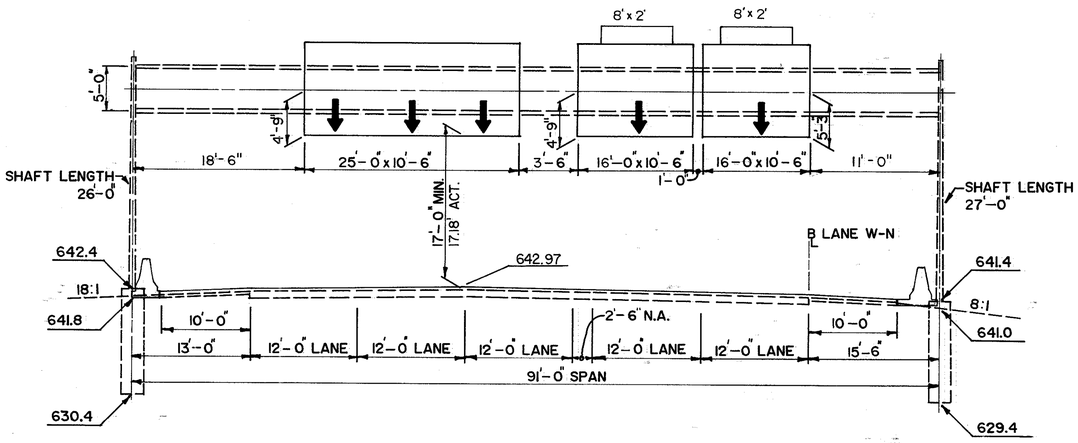
OVERHEAD SIGN NO. 147
STA. 54+15 LANE N-E
STD. NO. 7.4, DESIGN NO. 1, MOD.
67'-0" SPAN



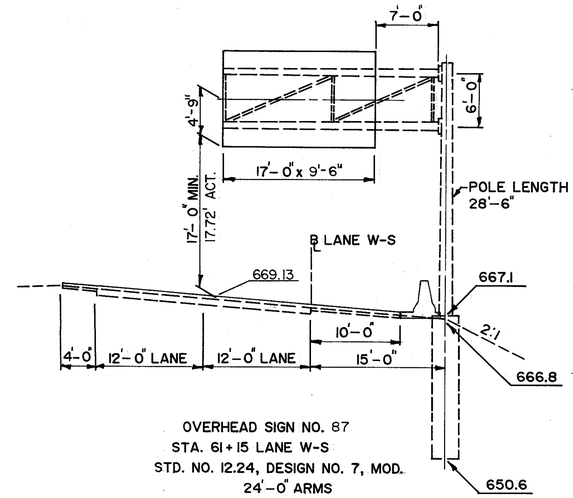
OVERHEAD SIGN NO. 86
STA. 51+50 LANE W-N
STD. NO. 7.4, DESIGN NO. 1, MOD.
65'-0" SPAN

NOTE: 1) SIGN SIZES ARE ACTUAL AND INCLUDE THE ADDITIONAL 1'-0" FOR GLARE SHIELD AND LUMINAIRE ASSEMBLIES.

2) ELEVATIONS INCLUDE PROPOSED 3" RESURFACING.



OVERHEAD SIGN NO. 53
STA. 943+25 E.B. I-80
STD. NO. 7.6, DESIGN NO. 4, MOD.
91'-0" SPAN

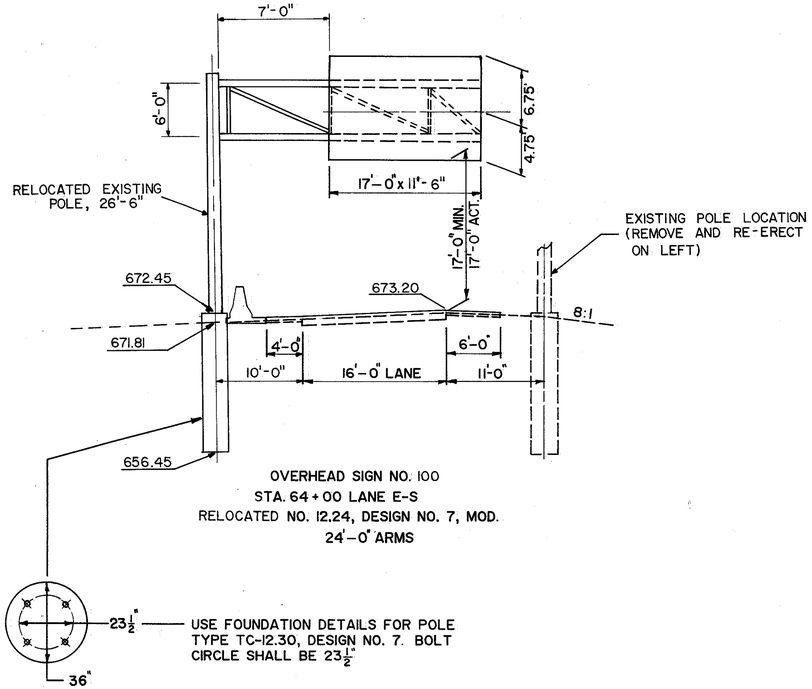


OVERHEAD SIGN NO. 87
STA. 61+15 LANE W-S
STD. NO. 12.24, DESIGN NO. 7, MOD.
24'-0" ARMS

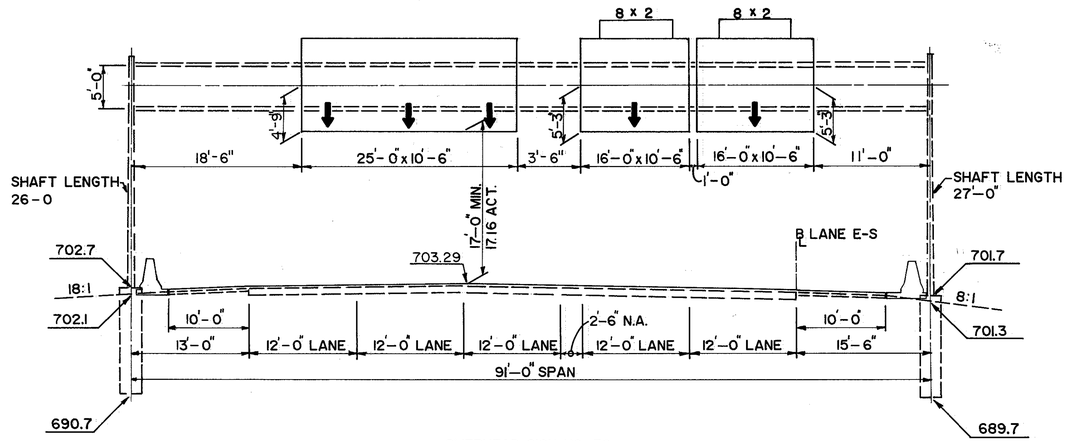
513840

CUYAHOGA COUNTY CUY-480-15.84	OHIO FHWA REGION 5 FEDERAL PROJECT	88 118

SIGN SUPPORT ELEVATIONS



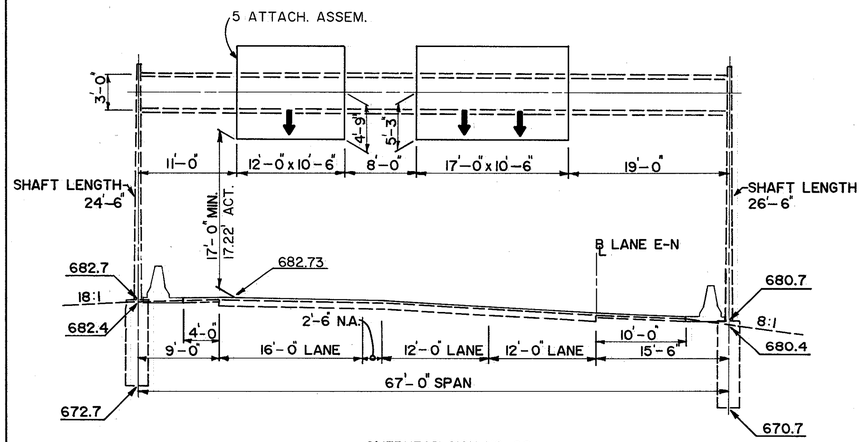
OVERHEAD SIGN NO. 100
STA. 64+00 LANE E-S
RELOCATED NO. 12.24, DESIGN NO. 7, MOD.
24'-0" ARMS



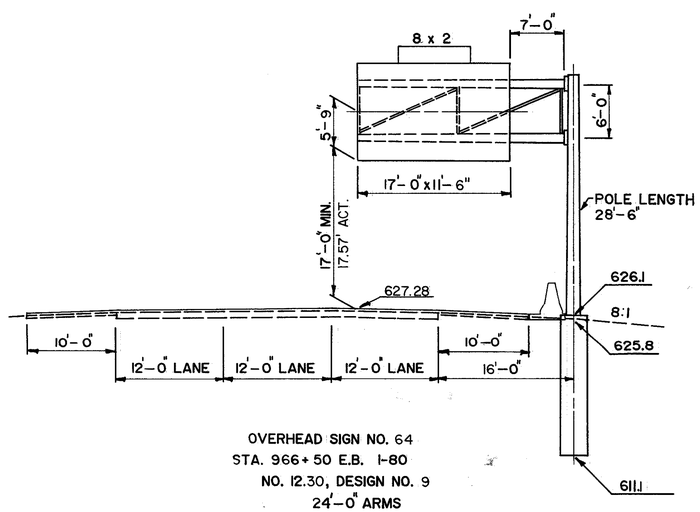
OVERHEAD SIGN NO. 79
STA. 992+00 W.B. I-80
STD. NO: 7.6, DESIGN NO. 4, MOD.
91'-0" SPAN

NOTE: 1) SIGN SIZES ARE ACTUAL AND INCLUDE THE ADDITIONAL 1'-0" FOR GLARE SHIELD AND LUMINAIRE ASSEMBLIES.

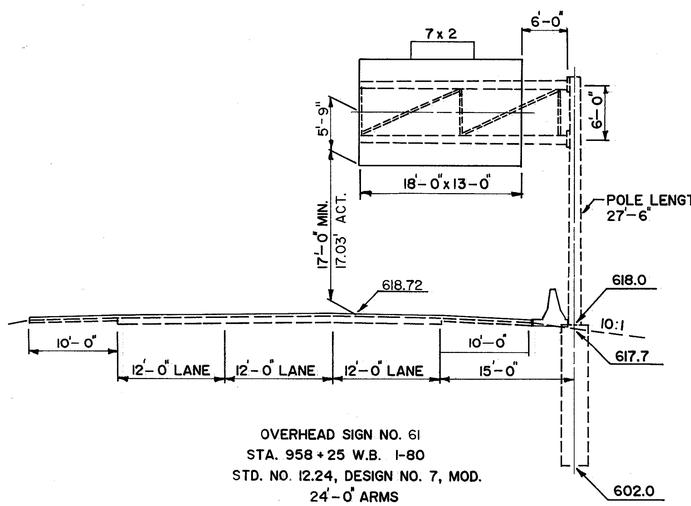
2) ELEVATIONS INCLUDE PROPOSED 3" RESURFACING.



OVERHEAD SIGN NO. 99
STA. 84+50 LANE E-S
STD. NO. 7.4, DESIGN NO. 1, MOD.
67'-0" SPAN



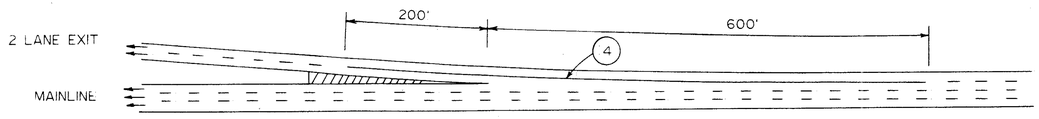
OVERHEAD SIGN NO. 64
STA. 966+50 E.B. I-80
NO. 12.30, DESIGN NO. 9
24'-0" ARMS



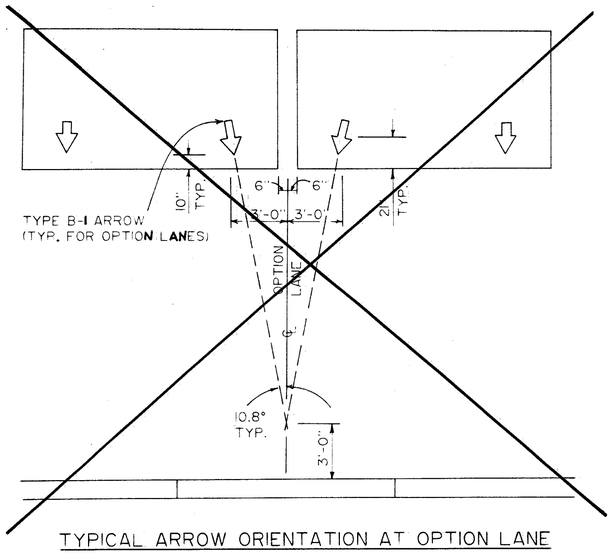
OVERHEAD SIGN NO. 61
STA. 958+25 W.B. I-80
STD. NO. 12.24, DESIGN NO. 7, MOD.
24'-0" ARMS

513840

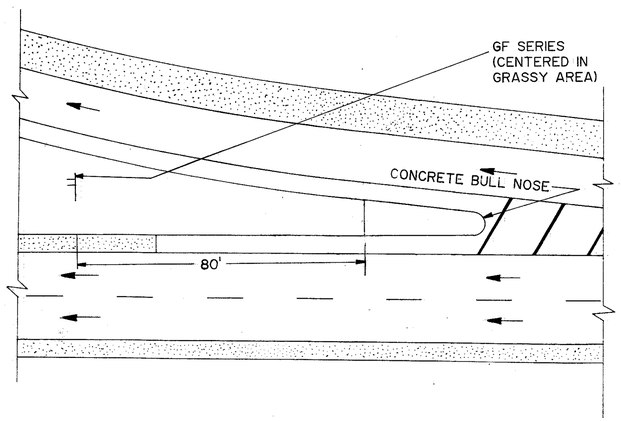
TRAFFIC CONTROL DETAILS



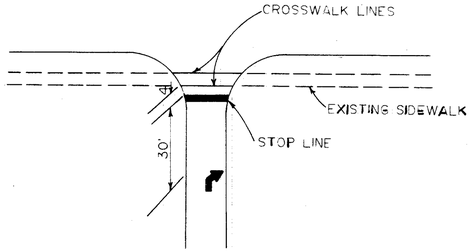
TYPICAL PLACEMENT OF ADDITIONAL CHANNELIZING LINE AT TWO LANE EXIT TERMINALS



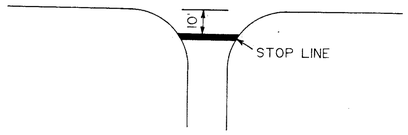
TYPICAL ARROW ORIENTATION AT OPTION LANE



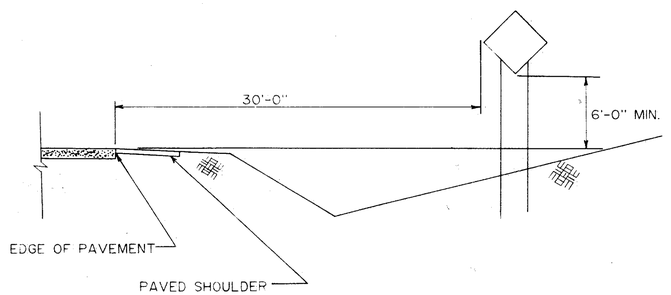
TYPICAL PLACEMENT OF GF SERIES SIGNS



TYPICAL PLACEMENT OF STOP LINES (WITH SIDEWALKS)



TYPICAL PLACEMENT OF STOP LINES (WITHOUT SIDEWALKS)

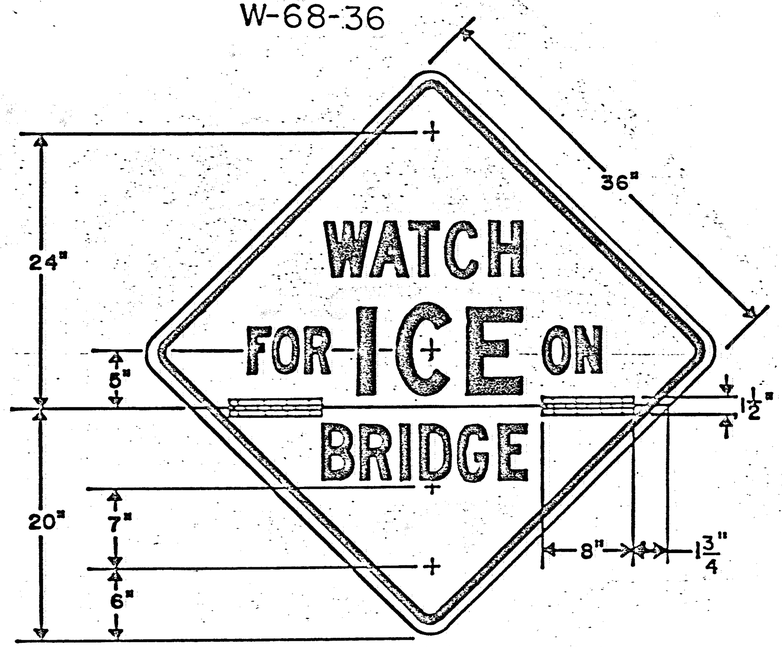


630 - FLATSHEET SIGN INSTALLATIONS

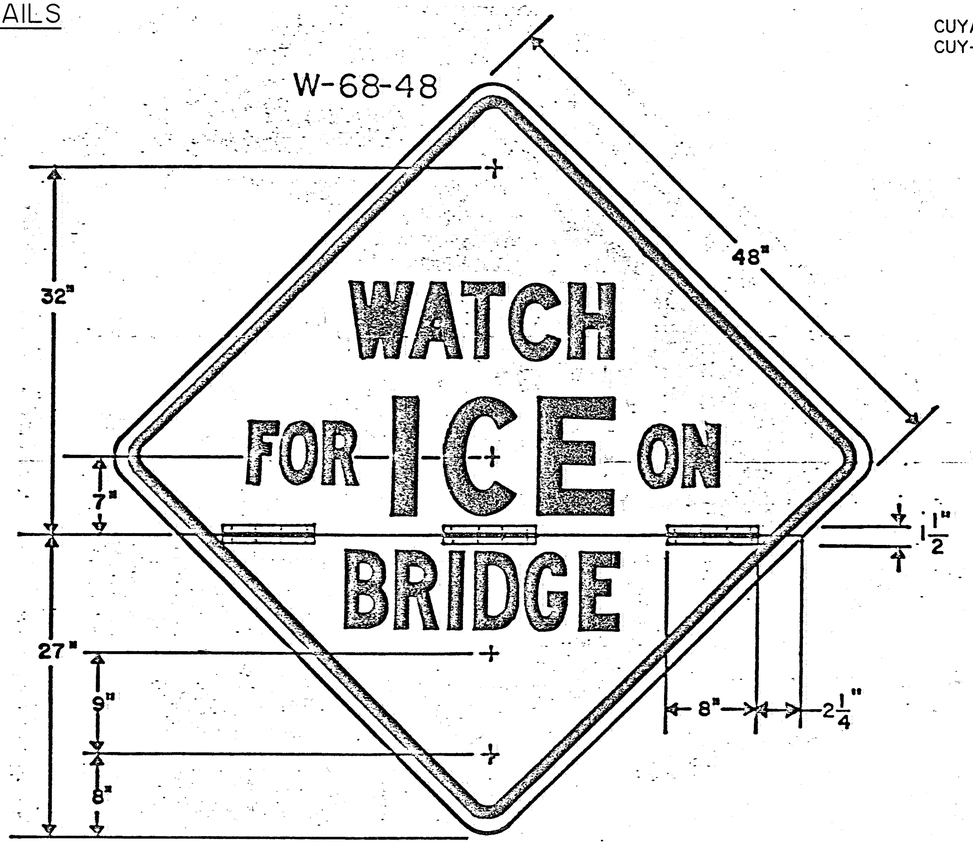
ALL FREEWAY FLATSHEET SIGN INSTALLATIONS NOT BEHIND GUARDRAIL SHALL BE OFFSET 30 FEET FROM THE EDGE OF PAVEMENT.

USE STANDARD DRAWING TC-42.20 FOR FLATSHEET SIGNS INSTALLED BEHIND GUARDRAIL, ON CROSS ROADS, ON RAMPS AND BETWEEN RAMPS AND MAINLINE.

W-68-36



W-68-48



NOTES:

1) The sign shall be hinged with 8" lengths of 1½" brass-plated hinge which is riveted to each section of the sign and then covered with yellow reflective sheeting (Type F-730.18) to match the background of the sign.

2) To fold the sign down, remove the top two bolts, fold the upper part of the sign down and insert a bolt through the lowest hole in the sign and into the post. Tighten the bolt to prevent the sign from flapping in the wind and sustaining damage.

3) Generally a 48 inch warning sign is mounted on two number 3 drive posts; however, in order to accommodate the sign hole alignment, only one number 4 sign support shall be used in mounting the W-68-48 sign.

OHIO DEPARTMENT OF TRANSPORTATION	
"HINGED" WATCH FOR ICE ON BRIDGE SIGN W-68	DATE 10/82

26-10

TOWER LIGHTING SCHEMATIC PLAN

CUYAHOGA COUNTY CUY-480-15.84	OHIO FHWA REGION 5 FEDERAL PROJECT	91 118

200 0 200 400 600 800

STA. 935+00 ℄-480

EXISTING LIGHTS TO REMAIN

VILLAGE OF BROOKLYN HTS.
CITY OF INDEPENDENCE

CEI POWER LINES
132 KV OVERHEAD

150' EASEMENT

LANE W-S
LANE W-N
LANE S-W
LANE N-W
LANE N-E
LANE S-E
LANE E-S
LANE E-N
RAMP F-4 L
RAMP F-4
RAMP F-7
I-77

REMOVE EXISTING LIGHTS

STA. 506+50 ℄-77

EXISTING LIGHTS TO REMAIN

EXISTING LIGHTS TO REMAIN

STA. 1000+00 ℄-480

EXISTING LIGHTS TO REMAIN

STA. 461+00 ℄-77

EXISTING LIGHTS TO REMAIN

PLOT SUBMITTED: 6-DEC-1989 15:13
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]480LTSP.DGN;1

GENERAL NOTES

LIGHTING

PROPOSED WORK

IT IS THE INTENT OF THESE PLANS TO REPLACE THE EXISTING IR-77/IR-480 INTERCHANGE LIGHTING WITH A COMPLETE NEW LIGHTING SYSTEM. ADDITIONAL WORK INCLUDES THE RELOCATION OF THE CONVENTIONAL LIGHT POLES ALONG THE GRANGER ROAD RAMPS.

SEQUENCE OF OPERATIONS

THE EXISTING LIGHTS SHALL REMAIN OPERATIVE UNTIL THE PROPOSED LIGHTING IS IN PLACE AND READY TO BE CONNECTED TO THE EXISTING CIRCUIT. THE FOLLOWING SEQUENCE OF OPERATIONS SHALL BE USED FOR THE TOWER LIGHTING:

1. CONSTRUCT EMBANKMENT (IF REQUIRED)
2. INSTALL FOUNDATIONS
3. CONSTRUCT UNDERGROUND CIRCUITS (EXCEPT THOSE UTILIZING EXISTING CONDUITS)
4. INSTALL NEW LIGHT TOWERS
5. CONNECT NEW CIRCUIT INTO EXISTING CONTROL CENTER
6. MAKE FINAL CIRCUIT CONNECTIONS THROUGH EXISTING CONDUITS
7. REMOVE EXISTING LIGHT STANDARDS AND FOUNDATIONS.

WHEN STEP 6 ABOVE IS REQUIRED, ALL POLES WITHIN THAT CIRCUIT SHALL BE WIRED AND COMPLETE PRIOR TO SEVERING THE EXISTING LIGHTING CIRCUIT AND LIGHTING SYSTEM. THE CONTRACTOR SHALL ESTABLISH A FUNCTIONING NEW TOWER LIGHTING SYSTEM WITHIN ONE WORKING DAY AFTER DISCONNECTING THE EXISTING SYSTEM. THE PROPOSED UNDERPASS LIGHTING SHALL BE ESTABLISHED WITHIN ONE WEEK OF THE ABOVE SWITCHOVER.

THE SEQUENCE FOR THE RELOCATION OF THE RAMP LIGHT STANDARDS SHALL BE AS FOLLOWS:

1. INSTALL FOUNDATIONS
2. CONSTRUCT UNDERGROUND CIRCUITS
3. REMOVE AND RELOCATE EXISTING LIGHT STANDARDS
4. CONNECT THE PROPOSED CIRCUIT TO THE EXISTING
5. REMOVE EXISTING FOUNDATIONS

THE CONTRACTOR SHALL SCHEDULE HIS OPERATIONS SO THAT STEPS 3 AND 4 ABOVE WILL BE COMPLETED WITHIN ONE WORKING DAY FOR EACH RAMP AREA.

GENERAL

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:

CLEVELAND ELECTRIC ILLUMINATING COMPANY
55 PUBLIC SQUARE
CLEVELAND, OHIO 44101

SUPPLIED POWER SHALL BE 480 VOLT, 2 WIRE, ONE SIDE GROUNDED.

UNDERPASS LUMINAIRES

UNDERPASS LUMINAIRES SHALL BE HOLOPHANE "UNDERPASS WALLPACK", WESTINGHOUSE, OR GENERAL ELECTRIC WL-250 UNDERPASS UNIT OR EQUAL APPROVED BY THE ENGINEER, AND SHALL BE FURNISHED WITH AN INTEGRAL FUSE HOLDER AND 10-AMPERE FUSE. THE INTEGRAL HIGH PRESSURE SODIUM BALLAST SHALL BE OF A REGULATOR TYPE RATED FOR 480 VOLTS, 100 WATTS.

LIGHT TOWER FOUNDATIONS

LIGHT TOWER FOUNDATATIONS SHALL EXTEND 4 INCHES (+/- 2 INCHES) ABOVE GROUND RATHER THAN FLUSH AS SHOWN ON HL-20.21. THE CONTRACTOR SHALL ACCURATELY LOCATE ALL UNDERGROUND CONDUITS PRIOR TO DRILLING FOR FOUNDATIONS. FOUNDATION LOCATIONS SHALL BE SHIFTED AS NECESSARY TO AVOID ANY UNDERGROUND UTILITIES OR CONDUITS BY AT LEAST 10 FEET. ALL FOUNDATION RELOCATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO DRILLING.

LAMPS-HIGH PRESSURE SODIUM (HPS)

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

REMOVAL OF EXISTING ITEMS

THE CONTRACTOR SHALL CAREFULLY REMOVE AND STORE ON THE PROJECT, AT THE LOCATION SPECIFIED BY THE ENGINEER, THE EXISTING BREAKAWAY BASES IF DETERMINED TO BE SALVAGEABLE BY THE ENGINEER. CIRCUIT CABLE MAY BE ABANDONED IN PLACE OR REMOVED. WHEN SUFFICIENT SALVAGEABLE LIGHTING MATERIALS HAVE BEEN REMOVED AND STORED THE CONTRACTOR SHALL CONTACT THE DISTRICT LIGHTING ENGINEER TO ARRANGE FOR PICK UP BY STATE FORCES. ALL NON-SALVAGEABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

ITEM 202 - LIGHT POLE FOUNDATION REMOVED

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

ITEM 202 - PULL BOX REMOVED

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

ITEM 202 - LUMINAIRE REMOVED, AS PER PLAN

THIS ITEM OF WORK SHALL INCLUDE THE REMOVAL OF THE EXISTING LUMINAIRE FOR RE-USE OR DISPOSAL. ALL LUMINAIRES EXCEPT THOSE WHICH ARE TO BE RE-ERECTED SHALL BE DISPOSED OF BY THE CONTRACTOR. LUMINAIRES TO BE RE-ERECTED SHALL BE CAREFULLY STORED BY THE CONTRACTOR.

ITEM 202 - LIGHT POLE REMOVED, AS PER PLAN

THIS ITEM OF WORK SHALL INCLUDE THE CAREFUL REMOVAL OF THE EXISTING LIGHT POLE, BRACKET ARM, BREAKAWAY BASE AND THE DISCONNECTION OF THE CIRCUIT AT THE ADJACENT LIGHT POLE, PULLBOX ETC. LIGHT POLES, BRACKET ARMS AND BREAKAWAY BASES WHICH ARE TO BE RE-ERECTED SHALL BE CAREFULLY STORED BY THE CONTRACTOR. ALL SALVAGEABLE BREAKAWAY BASES SHALL BE REMOVED AND STORED ON THE PROJECT FOR PICK UP BY STATE FORCES. ALL UNSALVAGEABLE BREAKAWAY BASES AND REMAINING LIGHT POLES AND BRACKET ARMS SHALL BE DISPOSED OF BY THE CONTRACTOR.

ITEM 202 - POWER SERVICE REMOVED

THIS ITEM OF WORK SHALL INCLUDE THE REMOVAL OF ALL SWITCHES, BOXES, CONDUIT, CABLE AND ANY INCIDENTALS ATTACHED TO THE EXISTING POWER SERVICE.

ITEM 202 - UNDERPASS LIGHTING FIXTURE REMOVED

THIS ITEM OF WORK SHALL INCLUDE THE REMOVAL AND DISPOSAL OF AN EXISTING UNDERPASS LIGHTING FIXTURE. EXISTING FLEXIBLE CONDUITS SHALL BE REMOVED BACK TO THE STRUCTURE JUNCTION BOX OR CONCRETE DECK AS APPLICABLE. ALL CONDUIT OPENINGS SHALL BE TIGHTLY CAPPED UNLESS THE UNDERPASS LIGHTING IS TO BE RE-ESTABLISHED AS DETAILED IN THE PLANS.

ITEM 202 - SERVICE TO UNDERPASS LIGHTING REMOVED

THIS ITEM OF WORK SHALL INCLUDE THE REMOVAL OF ALL WIRING, SPLICES AND CONNECTORS FROM THE ROADWAY PULLBOX TO THE UNDERPASS LIGHTING FIXTURES. PAYMENT SHALL BE "PER EACH" FOR EACH STRUCTURE UNDERPASS LIGHTING SYSTEM SO REMOVED.

ITEM 603 - UNDERDRAINS FOR PULL BOXES

REFERENCE IS MADE TO STANDARD DRAWING HL-30.11 FOR DETAILS OF DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHEREVER POSSIBLE. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE TO DRAIN BOTH EXISTING AND PROPOSED PULLBOXES:

ITEM 603 - 4" CONDUIT, TYPE E ..... 500 L.F.

ITEM 625 - RE-ERECT EXISTING LIGHT POLE, AS PER PLAN

THIS ITEM OF WORK SHALL INCLUDE THE RE-ERECTION OF AN EXISTING LIGHT POLE WHICH WAS REMOVED UNDER ITEM 202. THE FURNISHING OF NEW ANCHOR BOLTS AND NUTS, AS PER HL-10.13, SHALL BE INCLUDED UNDER THIS ITEM OF WORK. THE RE-ERECTED LIGHT POLES SHALL CONSIST OF THE BEST PARTS AVAILABLE FROM ALL POLES REMOVED AS DETERMINED BY THE ENGINEER. ALL COSTS OF INCORPORATING THOSE PARTS INTO A FUNCTIONING LIGHT STANDARD SHALL BE INCLUDED UNDER THIS ITEM OF WORK.

ITEM 625 - RE-ERECT EXISTING LUMINAIRE, AS PER PLAN

THIS ITEM OF WORK SHALL INCLUDE THE RE-ERECTION OF AN EXISTING LUMINAIRE WHICH WAS REMOVED UNDER ITEM 202. THE FURNISHING OF A NEW LAMP AND CLEANING AND ADJUSTING THE EXISTING LUMINAIRE TO PROVIDE THE SPECIFIED DISTRIBUTION SHALL BE INCLUDED UNDER THIS ITEM OF WORK. THE RE-ERECTED LUMINAIRE SHALL CONSIST OF THE BEST PARTS AVAILABLE FROM ALL LUMINAIRES REMOVED AS DETERMINED BY THE ENGINEER. ALL COSTS OF PROVIDING AND INCORPORATING THOSE PARTS INTO A FUNCTIONING LUMINAIRE SHALL BE INCLUDED UNDER THIS ITEM OF WORK.

ITEM 625 - CONDUIT CLEANED AND CABLES REMOVED, AS PER PLAN

THIS ITEM SHALL CONSIST OF LOCATING AND CLEANING AN EXISTING CONDUIT OF ALL EXISTING CABLES, MUD, AND DEBRIS SO THAT NEW CABLES MAY BE INSTALLED. INCIDENTAL TO THE CLEANING IS THE INSTALLATION OF BUSHINGS AND/OR COUPLINGS ON THE ENDS OF THE EXISTING CONDUIT AS REQUIRED. UPON THE EXPOSING OF THE EXISTING CONDUIT ENDS BY THE CONTRACTOR THE ENGINEER WILL DETERMINE WHETHER THIS ITEM SHALL BE USED OR A NEW DUCT INSTALLED BY TRENCHING (SEPARATE PAY ITEM). THE REMOVAL OF OBSTRUCTIONS FROM DRAIN OUTLETS SHALL BE INCIDENTAL TO THE CONDUITS CLEANED. MATERIAL REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE PROJECT SITE. DISTURBED AREAS SHALL BE PROPERLY RESTORED.

PAYMENT WILL BE MADE FOR EACH LINEAR FOOT OF ITEM 625 "CONDUIT CLEANED AND CABLES REMOVED, AS PER PLAN" AND SHALL BE FULL COMPENSATION INCLUDING ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THE INSTALLATION IN A SATISFACTORY WORKMANLIKE MANNER.

C480LGHT

LIGHTING (CON'T)

ITEM 625 - TRENCH IN PAVED AREAS, TYPE B, AS PER PLAN

THIS ITEM OF WORK SHALL BE AS SHOWN ON THE DETAIL ON SHEET NO. 104 THIS ITEM SHALL BE USED TO INSTALL NEW CONDUIT CROSSINGS UNDER EXISTING PAVEMENT OR TO REPLACE EXISTING CONDUITS UNDER PAVEMENT WHICH ARE DEEMED UNUSABLE, AS DETERMINED BY THE ENGINEER. THE PROPOSED CABLE OR CONDUIT SHALL BE INSTALLED BY TRENCHING. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO REPLACE EXISTING UNUSEABLE CONDUITS AS OUTLINED ABOVE:

ITEM 625 - TRENCH IN PAVED AREAS, TYPE B, AS PER PLAN.... 100 L.F.
ITEM 625 - TRENCH, 24" DEEP..... 100 L.F.
ITEM 625 - CONDUIT, 3" 713.04..... 200 L.F.

THIS WORK SHALL BE DONE A MINIMUM OF TWO WEEKS PRIOR TO RESURFACING.

PULLBOX REPLACEMENT OR REMOVAL

EXISTING PULLBOXES WHICH ARE DAMAGED AND ARE NOT SCHEDULED TO BE UTILIZED IN THE PROPOSED LIGHTING SCHEME SHALL BE REMOVED WHEN DIRECTED BY THE ENGINEER. ANY OTHER PULLBOXES WHICH ARE DAMAGED OR REQUIRE A DIFFERENT OFFSET OR GRADE SHALL BE REPLACED AS DIRECTED BY THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE LIGHTING GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 202 - PULLBOX REMOVED ..... 10 EACH
ITEM 625 - PULLBOX, CONCRETE, 713.04, 18" ..... 8 EACH
ITEM 625 - TRENCH, 24" DEEP ..... 40 L.F.
ITEM 625 - CONDUIT, 3", 713.04 ..... 40 L.F.

ITEM 625 - POWER SERVICE (A, B, BRC & BRD), AS PER PLAN

THIS ITEM OF WORK SHALL INCLUDE ALL COSTS OF EQUIPMENT, MATERIALS AND LABOR TO CONSTRUCT A GROUND MOUNTED POWER SERVICE AS DETAILED IN THE PLANS. IN ADDITION TO THE REQUIREMENTS OF 625.18 THIS ITEM SHALL INCLUDE ALL COSTS OF PROVIDING POWER SERVICE FROM AN EXISTING POLE TO A GROUND MOUNTED POWER SERVICE INCLUDING A 20 AMP BY-PASS SWITCH COMPLETE WITH WIRE AND CONDUIT. THE EXACT LOCATION OF THE POWER SERVICE SHALL BE AS DIRECTED BY THE DISTRICT LIGHTING ENGINEER.

ITEM 625-SERVICE TO UNDERPASS LIGHTING, AS PER PLAN (BR. CUY-480-1793L)
ITEM 625-SERVICE TO UNDERPASS LIGHTING, AS PER PLAN (BR. CUY-480-1793R)

THIS ITEM SHALL CONSIST OF PROVIDING COMPLETE ELECTRICAL SERVICE, EXCEPT FOR LUMINAIRES AND STRUCTURE GROUNDING FOR AN UNDERPASS LIGHTING SYSTEM. THE INSTALLATION SHALL INCLUDE ALL CABLES, CONNECTOR KITS, FLEXIBLE CONDUITS AND ANY INCIDENTALS NECESSARY FOR COMPLETE UNDERPASS LIGHTING SERVICE. THE LUMP SUM BID SHALL INCLUDE PAYMENT FOR ALL EQUIPMENT, LABOR AND MATERIALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED.

LIGHT POLE IDENTIFICATION

EXISTING LIGHT POLES WHICH ARE TO BE CONNECTED INTO A DIFFERENT CIRCUIT SHALL BE RE-IDENTIFIED AS PER 625.23. PAYMENT FOR THIS WORK SHALL BE CONSIDERED AS INCIDENTAL TO THE LIGHT POLE REMOVED, AS PER PLAN PAY ITEM.

PLOT SUBMITTED: 5-DEC-1989 10:54
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PLOT SUBMITTED BY: GRMOVSEK

GENERAL SUMMARY

CALC. BY DATE:	CUYAHOGA COUNTY CUY-480-15.84	OHIO
CHKD BY DATE:		FHWA REGION 5
		FEDERAL PROJECT

94/118

ITEM	SHEET NUMBER 92	93	95	96	97	PARTICIPATION 1	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
202				9	196	205	202	75401	205	EACH	LIGHT POLE REMOVED, AS PER PLAN (SEE SHT. 92)
202				9	196	205	202	98100	205	EACH	LUMINAIRE REMOVED, AS PER PLAN (SEE SHT. 92)
202				9	180	189	202	75500	189	EACH	LIGHT POLE FOUNDATION REMOVED
202		10				10	202	75300	10	EACH	PULLBOX REMOVED
202			3	1		4	202	75510	4	EACH	POWER SERVICE REMOVED
202			16			16	202	98100	16	EACH	UNDERPASS LIGHTING FIXTURE REMOVED
202			5			5	202	98100	5	EACH	SERVICE TO UNDERPASS LIGHTING REMOVED
603	500					500	603	00400	500	LIN.FT.	4" CONDUIT, TYPE E
625				9		9	625	35501	9	EACH	RE-ERECT EXISTING LUMINAIRE, AS PER PLAN (SEE SHT. 92)
625			853			853	625	98100	853	LIN.FT.	CONDUIT CLEANED AND CABLES REMOVED, AS PER PLAN (SEE SHT. 92)
625				1		1	625	13100	1	EACH	LIGHT TOWER, BBBB90
625				1		1	625	13304	1	EACH	LIGHT TOWER, BBBBBB90
625			6	2		8	625	13400	8	EACH	LIGHT TOWER, BBBBBB100
625			6	2		8	625	13404	8	EACH	LIGHT TOWER, BBBBBB110
625				1		1	625	13406	1	EACH	LIGHT TOWER, BBBBBB120
625			1			1	625	13410	1	EACH	LIGHT TOWER, BBBBBB130
625			1			1	625	13420	1	EACH	LIGHT TOWER, BBBBBB140
625			2			2	625	13430	2	EACH	LIGHT TOWER, BBBBBB150
625			12	7		19	625	15100	19	EACH	LIGHT TOWER FOUNDATION, 36" X 20' DEEP
625			4			4	625	15400	4	EACH	LIGHT TOWER FOUNDATION, 42" X 25' DEEP
625			1			1	625	21100	1	EACH	LIGHT TOWER MAINTENANCE PLATFORM, TYPE B
625			1			1	625	21200	1	EACH	LIGHT TOWER MAINTENANCE PLATFORM, TYPE C
625				9		9	625	14000	9	EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP
625				9		9	625	35001	9	EACH	RE-ERECT EXISTING LIGHT POLE, AS PER PLAN (SEE SHT. 92)
625			41	26		67	625	32000	67	EACH	GROUND ROD, 713.16
625			84	24		108	625	27200	108	EACH	LUMINAIRE, SYMMETRIC, 400W HPS, 713.21, 480V
625			12	16		28	625	27000	28	EACH	LUMINAIRE, ASYMMETRIC, 400W HPS, 713.21, 480V
625			4			4	625	26000	4	EACH	LUMINAIRE , STYLE A, TYPE II, 100W HPS, 713.13, 480V
625			4	13		17	625	00500	17	EACH	CONNECTOR KIT, TYPE II
625			4	13		17	625	00600	17	EACH	CONNECTOR KIT, TYPE III
625			44	16		60	625	01500	60	EACH	CABLE SPLICING KIT
625		100	132	146		378	625	29601	378	LIN.FT.	TRENCH IN PAVED AREAS, TYPE B, AS PER PLAN (SEE SHT. 93)
625		140	13391	5034		18565	625	29002	18565	LIN.FT.	TRENCH, 24" DEEP
625		240	791	270		1301	625	25500	1301	LIN.FT.	CONDUIT, 3", 713.04
625		8	9	3		20	625	30700	20	EACH	PULL BOX, 713.08, 18"
625			1775			1775	625	24300	1775	LIN.FT.	1½" DUCT-CABLE WITH 2 NO. 2 AWG, 5000-VOLT CABLES
625			13490	5425		18915	625	24100	18915	LIN.FT.	1½" DUCT-CABLE WITH 2 NO. 4 AWG, 5000-VOLT CABLES
625			356			356	625	23300	356	LIN.FT.	NO. 2 AWG, 5000 VOLT DISTRIBUTION CABLE
625			3440	192		3632	625	23200	3632	LIN.FT.	NO. 4 AWG, 5000 VOLT DISTRIBUTION CABLE
625			3	1		4	625	34001	4	EACH	POWER SERVICE, AS PER PLAN (SEE SHT. 93)
625			LUMP			LUMP	625	37000	LUMP	LUMP	SERVICE TO UNDERPASS LIGHTING, AS PER PLAN, (BR. NO. CUY-480-1793L) (SEE SHT. 93)
625			LUMP			LUMP	625	37000	LUMP	LUMP	SERVICE TO UNDERPASS LIGHTING, AS PER PLAN, (BR. NO. CUY-480-1793R) (SEE SHT. 93)
625							625	38000	LUMP	LUMP	HIGH VOLTAGE TEST

PLOT SUBMITTED: 5-DEC-1989 10:55

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PLOT SUBMITTED BY: GRMOVSEK

LIGHTING SUB-SUMMARY

CUYAHOGA COUNTY
CUY-480-15.84

OHIO
FHWA REGION 5
FEDERAL PROJECT

LIGHTING SUB-SUMMARY

			STATION		202						625																																				
LINE NO.	PLAN SHEET NO.	LOCATION	FROM	TO	LIGHT POLE REMOVED, AS PER PLAN	LIGHT POLE FOUNDATION REMOVED	POWER SERVICE REMOVED	UNDERPASS LIGHTING FIXTURE REMOVED	SERVICE TO UNDERPASS LIGHTING REMOVED	LUMINAIRE REMOVED, AS PER PLAN	RE-ERECT EXISTING LUMINAIRE, AS PER PLAN	UNDERPASS LUMINAIRE, 100W HPS, 713.13,480V	CONDUIT CLEANED AND CABLES REMOVED, AS PER PLAN	LIGHT TOWER, BBBB90	LIGHT TOWER, BBBBBB90	LIGHT TOWER, BBBBBB100	LIGHT TOWER, BBBBBB110	LIGHT TOWER, BBBBBB120	LIGHT TOWER, BBBBBB130	LIGHT TOWER, BBBBBB140	LIGHT TOWER, BBBBBB150	LIGHT TOWER FOUNDATION, 36"x20' DEEP	LIGHT TOWER FOUNDATION, 42" X 25' DEEP	LIGHT TOWER MAINTENANCE PLATFORM, TYPE B	LIGHT TOWER MAINTENANCE PLATFORM, TYPE C	LIGHT POLE FOUNDATION, 24" X 6' DEEP	RE-ERECT EXISTING LIGHT POLE, AS PER PLAN	GROUND ROD, 713.16	LUMINAIRE, SYMMETRIC, TYPE V, 400W HPS, 713.21, 480V	LUMINAIRE, ASYMMETRIC, TYPE I, 400W HPS, 713.21, 480V	LUMINAIRE, ASYMMETRIC, TYPE II OR III, 400W HPS, 713.21, 480V	CONNECTOR KIT, TYPE II	CONNECTOR KIT, TYPE III	NO. 2 AWG, 5000-VOLT, DISTRIBUTION CABLE	NO.4 AWG, 5000-VOLT DISTRIBUTION CABLE	CABLE SPLICE KIT	TRENCH IN PAVED AREAS, TYPE B, AS PER PLAN	TRENCH, 24" DEEP	CONDUIT, 3", 713.04	PULL BOX, CONCRETE, 713.08, 18"	1½" DUCT-CABLE WITH 2 - NO.4 AWG,5000 VOLT CABLES	1½" DUCT CABLE W/2 - NO. 2 AWG, 5000 V. CABLE		POWER SERVICE	SERVICE TO UNDERPASS LIGHTING, AS PER PLAN, (BR. NO. CUY-480-1793L)	SERVICE TO UNDERPASS LIGHTING, AS PER PLAN, (BR. NO. CUY-480-1793R)	
					EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	L.F.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	L.F.	L.F.	EA.	L.F.	L.F.	L.F.	EA.	L.F.	L.F.		EA.	LUMP	LUMP	
1	98	I-480	936+99 RT	939+08 RT																												2	2					209			219						
2			937+55 LT	939+58 LT																												2	2					203			213						
3			943+35 RT	943+30 RT													1					1						2	6							2		37		1	47						
4			943+30 RT	949+35 LT												1						1						2	6									605			615						
5			949+35 LT	954+50 RT													1					1						2	6								36	623	66		669						
6			954+50 RT	51+60 LT(W-S)																																2		286		1	296						
7			954+50 RT	958+43 RT																																2		397		1	407						
8			958+43 RT	58+80 RT(W-S)			1						370															3							510									1			
9			958+43 RT	958+50 LT									360																						740	2											
10			958+50 LT	958+25 LT																																2		25			35						
11			958+25 LT	97+75 LT(S-W)												1						1						2		6								120			130						
12			958+43 RT	60+00 LT(W-N)												1						1						2	6									143			153						
13			58+80 RT(W-S)	61+25 RT(W-S)																																2		245			255						
14																																															
15																																															
16																																															
17																																															
18	99		60+00 LT(W-N)	966+60 RT																																2		690		1	700						
19			966+60 RT	967+50 RT				2	1			2																								2		90			100					LUMP	
20			64+68 LT(W-S)	65+40 LT(E-S)															1				1					2	6									565			575						
21			60+10 RT(E-S)	63+90 RT(E-S)																																2		372		1	382						
22			54+25 LT(N-E)	58+45 LT(N-E)													1					1			1			2	6									428			438						
23			58+45 LT(N-E)	60+80 LT(N-E)																																2		230		1	263						
24			60+80 LT(N-E)	489+90 LT(I-77)																															240	2		110	110								
25			60+80 LT(N-E)	87+75 RT(S-W)																	1		1					2	6								24	447	48		481						
26			87+75 RT(S-W)	64+40 LT(N-W)													1					1						2	6									471			481						
27			87+75 RT(S-W)	966+05 LT				2	1			2																									24	82	48		159				LUMP		
28			BR. NO. CUY-77-0909					4	1																																						
29			BR. NO. CUY-480-1787WN					5	1																																						
30			BR. NO. CUY-480-1792ES					3	1																																						
31			75+25 RT(E-N)	72+80 LT(E-S)																1			1					2	6									615	48		707						
32			66+60 RT(E-N)	"BRD"			1																					3							540	2			80					1			
33			66+60 RT(E-N)	69+10 RT(E-N)																																2		250			260						
34			69+10 RT(E-N)	75+25 RT(E-N)												1						1		1				2	6									625			635						
35			66+60 RT(E-N)	65+70 RT(E-N)																															400	4		90	90	1							
36			65+70 RT(E-N)	995+90 LT																																		805			815						
37			65+70 RT(E-N)	992+00 LT																																2		11			436						
38			992+00 LT	992+47 LT																																		11			79						
39			992+47 LT	994+22 LT																																		11			207						
40			994+22 LT	995+75 LT																																2					174						
41			74+70 LT(S-W)	81+05 LT(S-E)													1					1						2		6							24	754	48		788						
42			81+05 LT(S-E)	69+65 RT(N-E)																	1		1					2	6									405			415						
43			69+65 RT(N-E)	978+20 RT												1						1						2	6								24	769	48			803					
44			978+20 RT	986+95 RT																																2		962				972					
45			983+70 LT	986+95 RT												1						1						2	6							2		369			379						
46			986+95 RT	989+65													1					1						2	6									309			319						
47			989+65 RT	"BRC"			1						123															3						356	150			110	110	1				1			
48			"BRC"	987+90 RT																															860	4		95	95	1							
49			987+90 RT	995+90 RT																																		800			810						
50			987+90 RT	992+95 RT																																		11			526						
51			992+95 RT	994+47 RT																																		11			184						
52			994+47 RT	995+75 RT																																2					138						
53																																															
54																																															
55																																															
TOTALS							3	16	5			4	853			6	6		1	1	2	12	4	1	1			41	84	12		4	4	356	3440	44	132	13391	791	9	13490	1775		3	LUMP	LUMP	
																														12																	

LIGHTING SUB-SUMMARY

LIGHTING SUB-SUMMARY

CUYAHOGA COUNTY
CUY-480-15.84

OHIO
FHWA REGION 5
FEDERAL PROJECT

96
118

PLOT SUBMITTED: 5-DEC-1989 10:58

PLOT SUBMITTED BY: GRMOVSEK

ZF2:[100,331]LTSM102.DGN

LIGHTING SUB-SUMMARY

LINE NO.	PLAN SHEET NO.	LOCATION	STATION FROM	STATION TO	202 LIGHT POLE REMOVED, AS PER PLAN EA.	202 LIGHT POLE FOUNDATION REMOVED EA.	202 POWER SERVICE REMOVED EA.	202 UNDERPASS LIGHTING FIXTURE REMOVED EA.	202 SERVICE TO UNDERPASS LIGHTING REMOVED EA.	202 LUMINAIRE REMOVED, AS PER PLAN EA.	625 RE-ERECT EXISTING LUMINAIRE, AS PER PLAN EA.	625 UNDERPASS LUMINAIRE, 1000 HPS, 713.13, 480V EA.	625 CONDUIT CLEANED AND CABLES REMOVED, AS PER PLAN L.F.	625 LIGHT TOWER, BBBB90 EA.	625 LIGHT TOWER, BBBBBB90 EA.	625 LIGHT TOWER, BBBBBB100 EA.	625 LIGHT TOWER, BBBBBB110 EA.	625 LIGHT TOWER, BBBBBB120 EA.	625 LIGHT TOWER, BBBBBB130 EA.	625 LIGHT TOWER, BBBBBB140 EA.	625 LIGHT TOWER, BBBBBB150 EA.	625 LIGHT TOWER FOUNDATION, 36"x20' DEEP EA.	625 LIGHT TOWER FOUNDATION, 42" X 25' DEEP EA.	625 LIGHT TOWER MAINTENANCE PLATFORM, TYPE B EA.	625 LIGHT TOWER MAINTENANCE PLATFORM, TYPE C EA.	625 LIGHT POLE FOUNDATION, 24" X 6' DEEP EA.	625 RE-ERECT EXISTING LIGHT POLE, AS PER PLAN EA.	625 GROUND ROD, 713.16 EA.	625 LUMINAIRE, SYMMETRIC, TYPE V, 400W HPS, 713.21, 480V EA.	625 LUMINAIRE, ASYMMETRIC, TYPE I, 400W HPS, 713.21, 480V EA.	625 LUMINAIRE, ASYMMETRIC, TYPE II OR III, 400W HPS, 713.21, 480V EA.	625 CONNECTOR KIT, TYPE II EA.	625 CONNECTOR KIT, TYPE III EA.	625 NO.2 AWG, 5000-VOLT, DISTRIBUTION CABLE L.F.	625 NO.4 AWG, 5000-VOLT DISTRIBUTION CABLE L.F.	625 CABLE SPLICE KIT EA.	625 TRENCH IN PAVED AREAS, TYPE B, AS PER PLAN L.F.	625 TRENCH, 24" DEEP L.F.	625 CONDUIT, 3", 713.04 L.F.	625 PULL BOX, CONCRETE, 713.08, 18" EA.	625 1½" DUCT-CABLE WITH 2 - NO.4 AWG,5000 VOLT CABLES L.F.	625 ½" DUCT CABLE W/2 - NO. 2 AWG, 5000 V. CABLE L.F.	625 POWER SERVICE EA.	625 SERVICE TO UNDERPASS LIGHTING, AS PER PLAN, (BR. NO. CUY-480-1793L) LUMP	625 SERVICE TO UNDERPASS LIGHTING, AS PER PLAN, (BR. NO. CUY-480-1793R) LUMP
1	100	I-77	44+68 LT(E-S)	64+00 RT(F-4)										1								1						2		4	1	1					369			379					
2			64+00 RT(F-4)	48+90 LT(E-S)																														2			65			104					
3			48+90 LT(E-S)	469+35 LT													1					1						2	6						36	554	60		600					
4			474+90 LT	60+10 RT(E-S)																														4		162		1	172					
5			60+10 RT(E-S)	64+68 LT(W-S)													1					1						2	6						16	138	38		164					
6			61+25 RT(W-S)	64+68 LT(W-S)																															24	413	48		447					
7			59+99 RT(F-3)	63+15 RT(F-3)											1							1						2		6		1	1			346			356					
8			72+40 LT(S-W)	74+70 LT(S-W)														1				1						2	6					2		230		1	286					
9			75+25 RT(E-N)	80+45 LT(E-N)												1						1						2		6					24	618	48		678					
10			CTRL CTR "A"	55+25 RT(N-W)			1																					3												1				
11			498+70 LT	499+90 LT												1						1						2	6					2		143			153					
12			498+70 LT	54+25 LT(N-E)																														2		267		1	277					
13			54+25 LT(N-E)	55+25 RT(N-W)																													192		46	30	76							
14																																														
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17																																														
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19																																														
20																																														
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22	101	RAMP E-G	33+50 (S.R. 17)	79+72 LT	1	1				1	1																1	1	1				2	2			67			77					
23			79+72 LT	81+58 LT	1	1				1	1																1	1	1				1	1			188			198					
24			81+58 LT	83+65 LT	1	1				1	1																1	1	1								207			217					
25			83+65 LT	85+00 LT																														2		135			145					
26																																														
27		RAMP G-E	58+40 RT	59+21 RT	1	1				1	1																1	1	1				2	2			81			91					
28			61+02 RT	62+93 RT	2	2				2	2																2	2	2				2	2			180			190					
29			62+93 RT	64+15 RT																														2		120			130					
30			64+15 RT	64+81 RT	1	1				1	1																1	1	1				1	1			70			80					
31			64+81 RT	66+97 RT	1	1				1	1																1	1	1				1	1			217			227					
32			66+97 RT	69+15 RT	1	1				1	1																1	1	1				1	1			217			227					
33			69+15 RT	871+28 (EBOL)																														1	1			217			227					
34																																														
35																																														
36																																														
37																																														
38																																														
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TOTALS					9	9	1			9	9			1	1	2	2	1				7				9	9	26	24	12	4	13	13		192	16	146	5034	270	3	5425			1		
																													16																

PLOT SUBMITTED: 5-DEC-1989 11:01
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]480LPR1.DGN

LIGHTING REMOVAL

LOCATION	STATION	202 LIGHT POLE REMOVED, AS PER PLAN EACH	202 LIGHT POLE FOUNDATION REMOVED EACH	202 LUMINAIRE REMOVED, AS PER PLAN EACH
I-480	942+73 RT	1	1	1
	943+48 LT	1	1	1
	944+25 RT	1	1	1
	945+11 LT	1	1	1
	946+74 LT	1	1	1
	948+09 RT	1	1	1
	948+37 LT	1	1	1
	950+00 LT	1	1	1
	950+41 RT	1	1	1
	952+28 LT	1	1	1
	952+73 RT	1	1	1
	954+56 LT	1	1	1
	955+05 RT	1	1	1
	956+84 LT	1	1	1
	957+37 RT	1	1	1
	959+12 LT	1	1	1
	959+69 RT	1	1	1
	961+40 LT	1	1	1
	962+01 RT	1	1	1
	963+68 LT	1	1	1
	964+33 RT	1	1	1
	965+96 LT	1	1	1
	966+45 RT	1	1	1
	968+24 LT	1	1	1
	969+48 RT	1		1
	970+23 LT	1	1	1
	971+60 RT	1	1	1
	971+69 RT	1	1	1
	973+75 RT	1	1	1
	973+82 LT	1	1	1
	975+89 RT	1	1	1
	975+95 LT	1	1	1
	978+03 RT	1	1	1
	978+09 LT	1	1	1
	980+17 RT	1	1	1
	980+22 LT	1	1	1
	982+31 RT	1	1	1
	982+36 LT	1	1	1
	984+45 RT	1	1	1
	984+49 LT	1	1	1
	986+59 RT	1	1	1
	986+63 LT	1	1	1
	988+15 LT	1	1	1
	988+55 RT	1	1	1
	989+48 LT	1	1	1
	990+00 RT	1	1	1
	991+00 LT	1	1	1
	991+46 RT	1	1	1
I-77	461+53 RT	1	1	1
	463+72 LT	1	1	1
	465+90 RT	1	1	1
	468+09 LT	1	1	1
	470+28 RT	1	1	1
	471+61 LT	1	1	1
	472+92 RT	1	1	1
	474+27 LT	1	1	1
SUB-TOTAL		56	54	56

LIGHTING REMOVAL

LOCATION	STATION	202 LIGHT POLE REMOVED, AS PER PLAN EACH	202 LIGHT POLE FOUNDATION REMOVED EACH	202 LUMINAIRE REMOVED, AS PER PLAN EACH
I-77	476+31 RT	1	1	1
	478+35 LT	1	1	1
	480+40 RT	1		1
	482+51 LT	1		1
	484+54 RT	1		1
	486+72 LT	1		1
	488+82 RT	1		1
	490+99 LT	1	1	1
	493+11 RT	1	1	1
	495+23 LT	1	1	1
	497+35 RT	1	1	1
	499+47 LT	1	1	1
	501+59 RT	1	1	1
LANE W-N	45+75 RT	1	1	1
	47+58 RT	1	1	1
	49+37 RT	1	1	1
	51+10 RT	1	1	1
	56+00 RT	1	1	1
	57+86 RT	1	1	1
	59+72 RT	1	1	1
	61+59 RT	1	1	1
	63+45 RT	1	1	1
	65+21 RT	1	1	1
	66+97 RT	1	1	1
	68+80 RT	1		1
	71+88 RT	1		1
	73+71 RT	1	1	1
	75+54 RT	1	1	1
	77+38 RT	1	1	1
	79+21 RT	1	1	1
	81+04 RT	1	1	1
LANE W-S	52+86 RT	1	1	1
	54+75 RT	1	1	1
	56+40 RT	1	1	1
	58+30 RT	1	1	1
	60+20 RT	1	1	1
	62+10 RT	1	1	1
	64+00 RT	1	1	1
	65+90 RT	1	1	1
	71+60 RT	1	1	1
LANE E-N	67+15 RT	1	1	1
	68+62 RT	1	1	1
	70+28 RT	1	1	1
	71+97 RT	1	1	1
	73+81 RT	1	1	1
	75+67 RT	1	1	1
	77+53 RT	1	1	1
	79+39 RT	1	1	1
	81+25 RT	1	1	1
	83+10 RT	1	1	1
	84+70 RT	1	1	1
	86+00 RT	1	1	1
SUB-TOTAL		52	45	52

LIGHTING REMOVAL

LOCATION	STATION	202 LIGHT POLE REMOVED, AS PER PLAN EACH	202 LIGHT POLE FOUNDATION REMOVED EACH	202 LUMINAIRE REMOVED, AS PER PLAN EACH
LANE N-W	51+30 RT	1	1	1
	53+15 RT	1	1	1
	55+03 RT	1	1	1
	56+66 RT	1	1	1
	58+60 RT	1	1	1
	60+55 RT	1	1	1
	62+51 RT	1	1	1
	64+46 RT	1	1	1
	66+44 RT	1	1	1
	68+07 RT	1	1	1
LANE N-E	56+43 RT	1	1	1
	57+91 RT	1	1	1
	59+91 RT	1	1	1
	61+51 RT	1	1	1
	63+11 RT	1	1	1
	64+61 RT	1	1	1
	68+30 RT	1	1	1
	70+04 RT	1	1	1
	71+78 RT	1	1	1
	73+52 RT	1	1	1
	75+26 RT	1	1	1
	78+95 RT	1	1	1
	80+52 RT	1	1	1
	82+10 RT	1	1	1
	83+68 RT	1	1	1
	85+26 RT	1	1	1
	68+84 RT	1	1	1
	88+53 RT	1	1	1
LANE E-S	46+41 LT	1	1	1
	48+14 LT	1	1	1
	49+87 LT	1	1	1
	51+60 LT	1	1	1
	53+32 LT	1	1	1
	55+05 LT	1	1	1
	56+54 LT	1	1	1
	58+05 LT	1	1	1
	59+87 LT	1	1	1
	61+68 LT	1	1	1
	63+49 LT	1	1	1
	65+30 LT	1	1	1
LANE E-S	67+11 LT	1		1
	69+86 LT	1		1
	71+90 LT	1		1
	73+86 LT	1	1	1
	75+84 LT	1	1	1
	77+82 LT	1	1	1
	79+80 LT	1	1	1
	81+45 LT	1	1	1
SUB-TOTAL		48	45	48

LIGHTING REMOVAL

LOCATION	STATION	202 LIGHT POLE REMOVED, AS PER PLAN EACH	202 LIGHT POLE FOUNDATION REMOVED EACH	202 LUMINAIRE REMOVED, AS PER PLAN EACH
LANE S-W	61+62 LT	1	1	1
	64+95 LT	1	1	1
	66+64 RT	1	1	1
	68+32 RT	1	1	1
	70+01 RT	1	1	1
	71+70 RT	1	1	1
	73+38 RT	1	1	1
	75+42 RT	1	1	1
	77+46 RT	1	1	1
	79+50 RT	1	1	1
	81+54 RT	1	1	1
	83+58 RT	1	1	1
	87+15 RT	1	1	1
	89+15 RT	1	1	1
	91+15 RT	1	1	1
	93+15 RT	1	1	1
	96+86 RT	1	1	1
	98+58 RT	1	1	1
	100+30 RT	1	1	1
	101+80 RT	1	1	1
	103+30 RT	1	1	1
LANE S-E	75+23 RT	1	1	1
	77+42 RT	1	1	1
	79+61 RT	1	1	1
	81+81 RT	1	1	1
	84+01 RT	1	1	1
	86+21 RT	1	1	1
RAMP F-3	63+28 RT	1	1	1
RAMP F-4	61+01 RT	1	1	1
	62+91 RT	1	1	1
	64+81 RT	1	1	1
	66+71 LT	1	1	1
	68+65 LT	1		1
	70+47 LT	1		1
	72+40 LT	1	1	1
RAMP F-7	61+20 RT	1	1	1
	63+01 RT	1	1	1
	64+87 RT	1		1
	66+56 RT	1		1
	68+46 RT	1	1	1
SUB-TOTAL		40	36	40
SUB-TOTAL (FROM LEFT)		156	144	156
SHEET TOTAL		196	180	196

LIGHT POLES REMOVED

TOWER LIGHTING PLAN

CUYAHOGA COUNTY CUY-480-15.84	OHIO	98/118
	FHWA REGION 5	
	FEDERAL PROJECT	

PLOT SUBMITTED: 5-DEC-1989 11:19

PLOT SUBMITTED BY: GRMOVSEK

ZF2:[100,331]LT3.DGN

LEGEND:

- EX. LIGHT POLE (NO WORK)
- EX. LIGHT POLE AND LUMINAIRE, (REMOVE)
- LIGHT POLE AND LUMINAIRE, (RELOCATED)
- EXISTING CIRCUIT(S) IN CONDUIT(S)
- PROPOSED CABLE IN EXISTING CONDUIT
- EXISTING CIRCUIT
- PROPOSED DUCT CABLE
- EXISTING PULLBOX
- PROPOSED PULLBOX
- D — PROPOSED DUCT UNDER PAVEMENT IN 3" CONDUIT
- PROPOSED 3" CONDUIT , 713.04
- EXISTING POLE MOUNTED POWER SERVICE
- PROPOSED PAD MOUNTED POWER SERVICE
- LUMINAIRE, SYMMETRIC, TYPE V, 6-400W HPS, 713.21, 480V
- LUMINAIRE, ASYMMETRIC, TYPE I, 6-400W HPS, 713.21, 480V
- LUMINAIRE, ASYMMETRIC, TYPE III, 4-400W HPS, 713.21, 480V

ALL CABLE IS NO. 4 AWG UNLESS SHOWN OTHERWISE

100 50 0 100 200 300 400

N

132 KV OVERHEAD CEI POWER LINES

CITY OF INDEPENDENCE VILLAGE OF BROOKLYN HTS

LANE N-W

LANE S-W

LANE W-N

LANE W-S

STA. 961+00 ℄-480

STA. 935+00 ℄-480

STA. 949+35 (℄-480), 20' LT.
BBBBBB100, 1B-3

STA. 97+75 (S-W), 65' LT.
BBBBBB100, 1B-5

STA. 60+00 (W-N), 100'LT.
BBBBBB100, 1B-1

STA. 943+30 (℄-480), 10' RT.
BBBBBB110, 1B-4

STA. 954+50 (℄-480), 180' RT.
BBBBBB110, 1B-2

DISCONNECT CIRCUIT CONTINUATION HERE

STA. 941+53
1PD-15 (NEW DECAL)

EXTEND EXISTING CIRCUIT 1PD

STA. 939+58
1PD-14 (NEW DECAL)

EX. CIRCUIT 1PD

EX. CIRCUIT 2PD

EXTEND EX. CIRCUIT 2PD

STA. 939+08
2PD-13 (NEW DECAL)

STA. 940+98
2PD-14 (NEW DECAL)

DISCONNECT CIRCUIT CONTINUATION HERE

EXISTING LIGHTS TO REMAIN

ARCO 12" CASING

20" GAS

30" GAS

PULL WIRES THRU PULLBOX (NO SPLICES)

CUT INTO EX. 3" DIA. CONDUITS

PROPOSED POWER SERVICE "B" FEED TO SERVICE POLE THRU EX. 2" DIA. CONDUIT

EX. POWER SERVICE "B" ON SERVICE POLE

150' EASEMENT

TOWER LIGHTING PLAN I-480 STA. 935+00 TO STA. 961+00

TOWER LIGHTING PLAN

CUYAHOGA COUNTY CUY-480-15.84	OHIO	99 / 118
	FHWA REGION 5	
	FEDERAL PROJECT	

100 50 0 100 200 300 400

STA. 493+00 ℄-77

STA. 58+45 (N-E), 60′ LT.
BBBBBBII0, A-2

STA. 87+75 (S-W), 65′ RT.
BBBBBBI50, A-3

STA. 64+40 (N-W), 70′ LT.
BBBBBBII0, A-4

STA. 72+80 (E-S), 85′ LT
BBBBBBI40, 3BRD-3

STA. 75+25 (E-N), 45′ RT.
BBBBBBI00, 3BRD-1

STA. 983+70 (℄-480), 5′ LT.
BBBBBBI00, 3BRC-2

STA. 978+20 (℄-480), 180′ RT.
BBBBBBI00, 3BRC-3

STA. 69+65 (N-E), 65′ RT.
BBBBBBI50, 3BRC-4

STA. 81+05 (S-E), 55′ LT.
BBBBBBII0, 3BRC-5

STA. 65+40 (E-S), 90′ LT.
BBBBBBI30, 2B-2

SERVICE TO UNDERPASS LIGHTING. SEE SHEET NO. 101 FOR DETAILS

NO. 2 AWG

STA. 994+22
2BRD-8 (NEW DECAL)

STA. 992+47
2BRD-7 (NEW DECAL)

EXISTING LIGHTS TO REMAIN

DISCONNECT EX. CIRCUITS

EX. CIRCUIT 1BRD

EX. CIRCUIT 2 BRD

EX. CIRCUIT 2 BRC

EX. CIRCUIT 1BRC

DISCONNECT EX. CIRCUITS

STA. 994+47
2BRC-8 (NEW DECAL)

STA. 992+95
2BRC-7 (NEW DECAL)

STA. 989+65 (℄-480)
BBBBBBII0, 3BRC-1

EX. POWER SERVICE "BRD" ON SERVICE POLE

PROPOSED POWER SERVICE "BRD"

NO SPLICES 1BRD & 2BRD

PULL WIRES THRU PULLBOX INTO POWER SERVICE, (NO SPLICES)

INSTALL 3" DIA. CONDUIT DURING OR PRIOR TO CONCRETE SLOPE PROTECTION REPLACEMENT

PROPOSED POWER SERVICE "BRC"

NO SPLICES

NO. 2 AWG (3BRC ONLY)

PULL WIRES THRU PULLBOX INTO POWER SERVICE, (NO SPLICES)

EX. POWER SERVICE "BRC" ON SERVICE POLE

STA. 961+00 ℄-480

STA. 986+00 ℄-480

STA. 1000+00 ℄-480

STA. 476+00 ℄-77

LANE N-E

LANE N-W

LANE W-N

LANE W-S

LANE E-N

LANE E-S

LANE S-E

LANE S-W

I-77

ELEV. = 700′

ELEV. = 670′

ELEV. = 640′

ELEV. = 620′

FOR LEGEND SEE SHEET NO. 98

TOWER LIGHTING PLAN I-480 STA. 961+00 TO STA.1000+00

PLOT SUBMITTED: 5-DEC-1989 11:22

PLOT SUBMITTED BY: GRMOVSEK

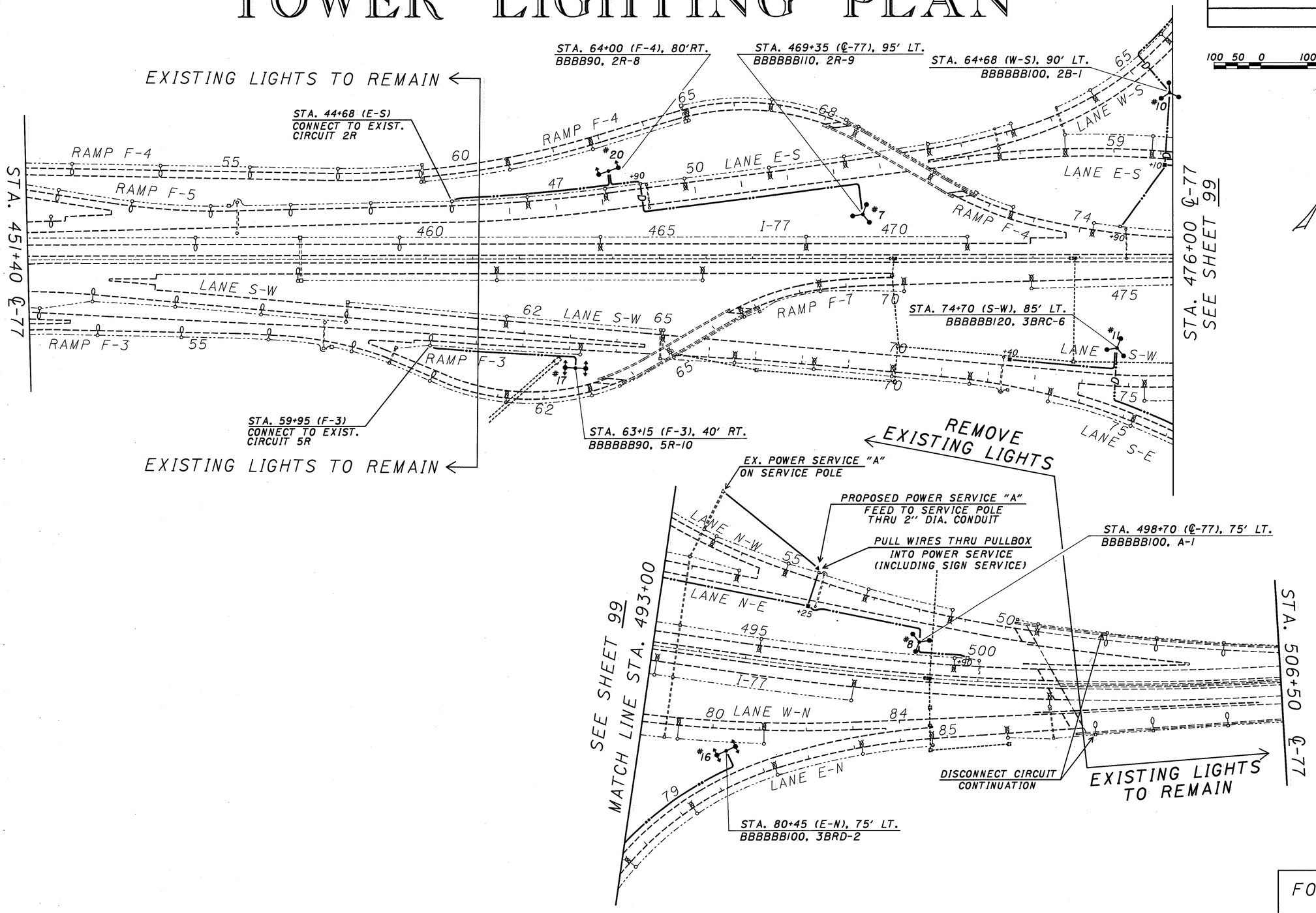
ZF2:[100,331]LT1.DGN;1

TOWER LIGHTING PLAN

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

100 / 118

100 50 0 100 200 300 400



FOR LEGEND SEE SHEET NO. 98

TOWER LIGHTING PLAN I-77 STA. 461+00 TO STA 476+00, STA 493+00 TO STA. 506+50

PLOT SUBMITTED: 5-DEC-1989 11:29
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]LT2.DGN;1

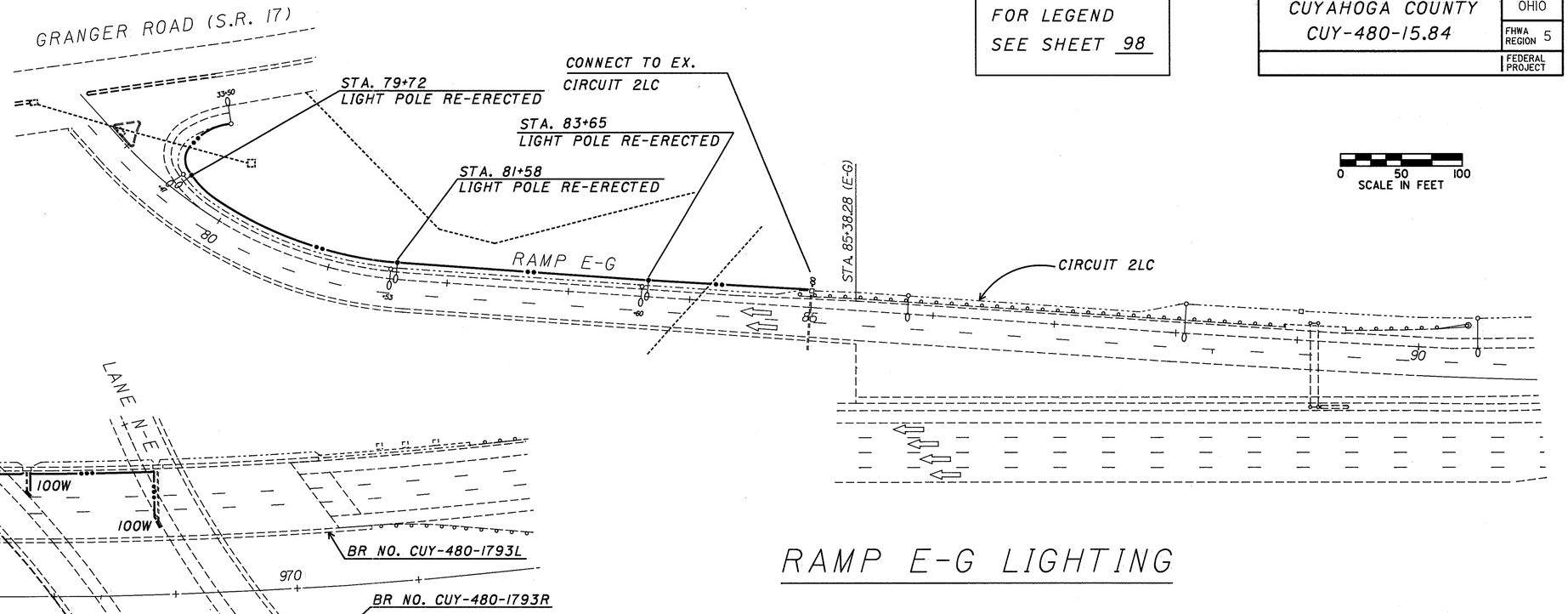
PLOT SUBMITTED: 5-DEC-1989 11:31
ZF2:[100,331]LT4.DGN
PLOT SUBMITTED BY: GRMOVSEK

FOR LEGEND
SEE SHEET 98

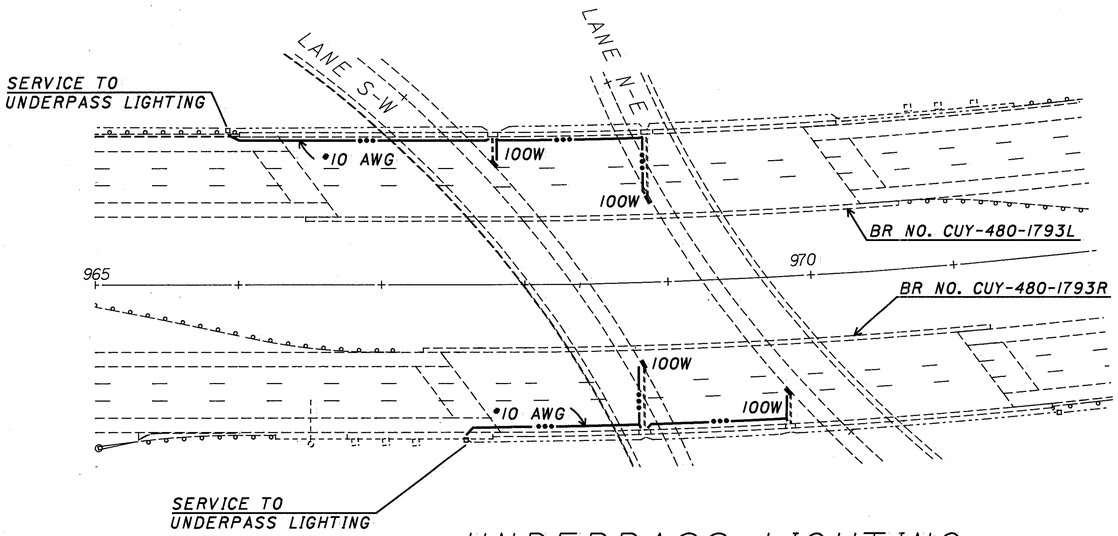
CUYAHOGA COUNTY
CUY-480-15.84

OHIO
FHWA REGION 5
FEDERAL PROJECT

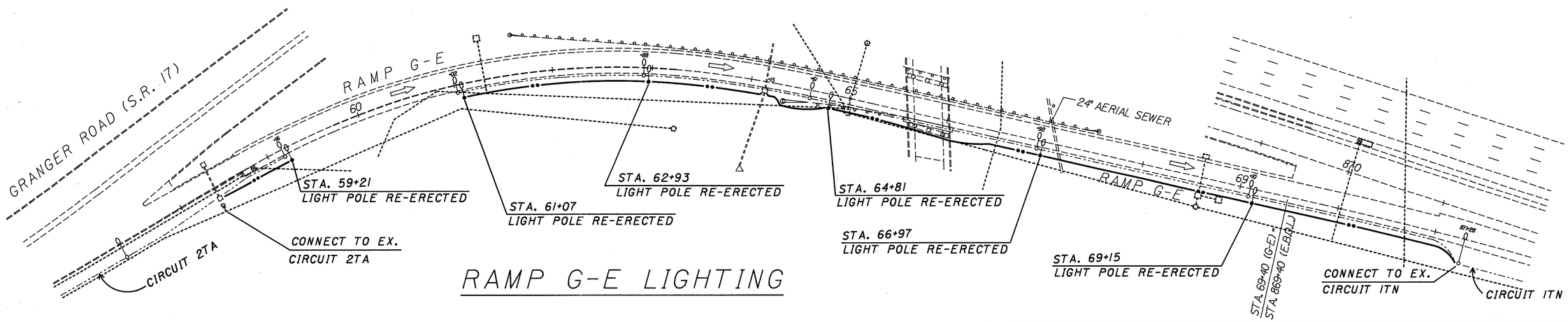
101
118



RAMP E-G LIGHTING



UNDERPASS LIGHTING



RAMP G-E LIGHTING

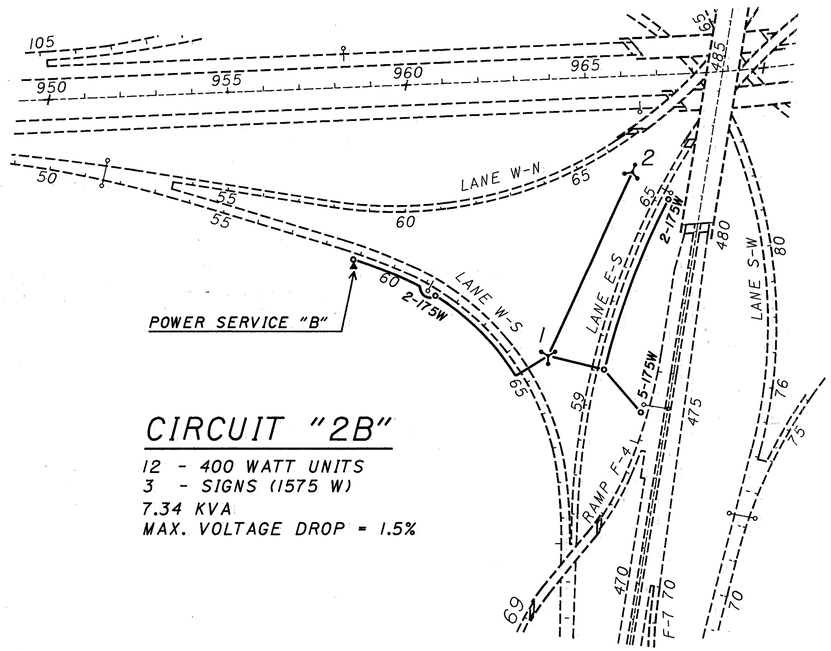
N
APPROX.

RELOCATED LIGHT POLES, RAMPS G-E & E-G, UNDERPASS LIGHTING

LIGHTING CIRCUIT MAPS

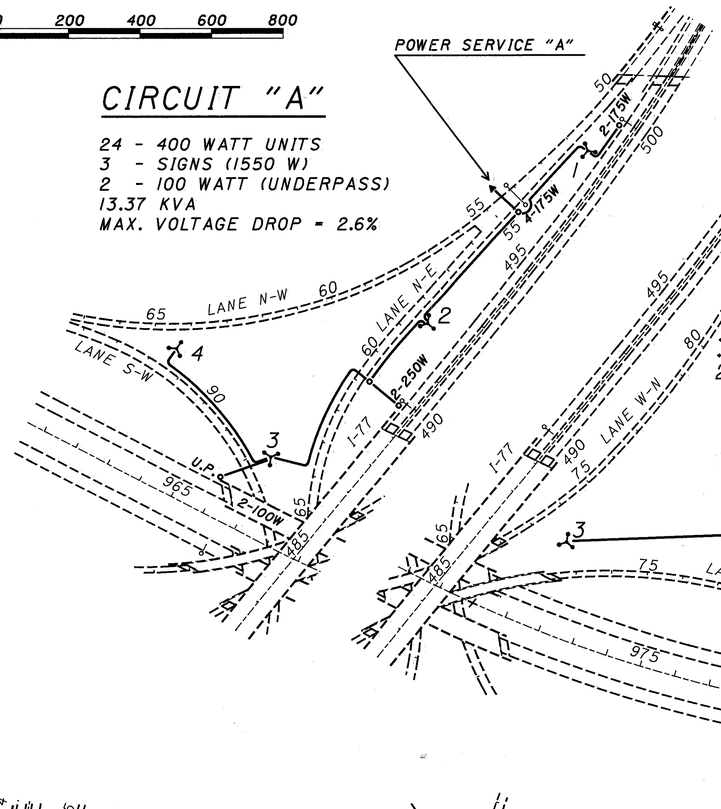
CUYAHOGA COUNTY CUY-480-15.84	OHIO	102/118
	FHWA REGION 5	
	FEDERAL PROJECT	

200 0 200 400 600 800



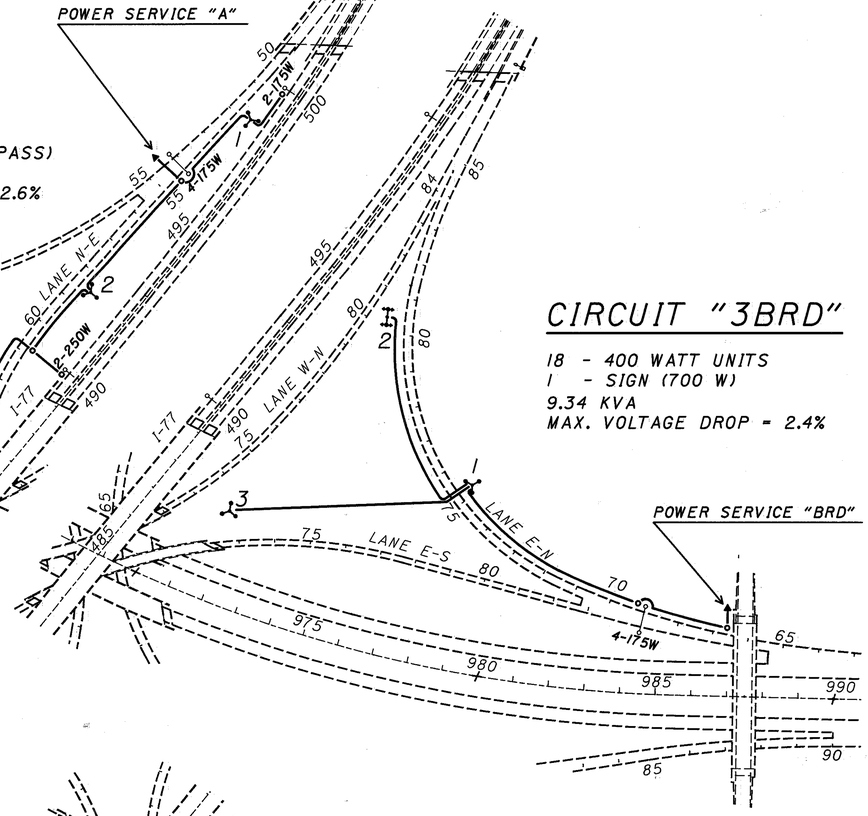
CIRCUIT "2B"

12 - 400 WATT UNITS
3 - SIGNS (1575 W)
7.34 KVA
MAX. VOLTAGE DROP = 1.5%



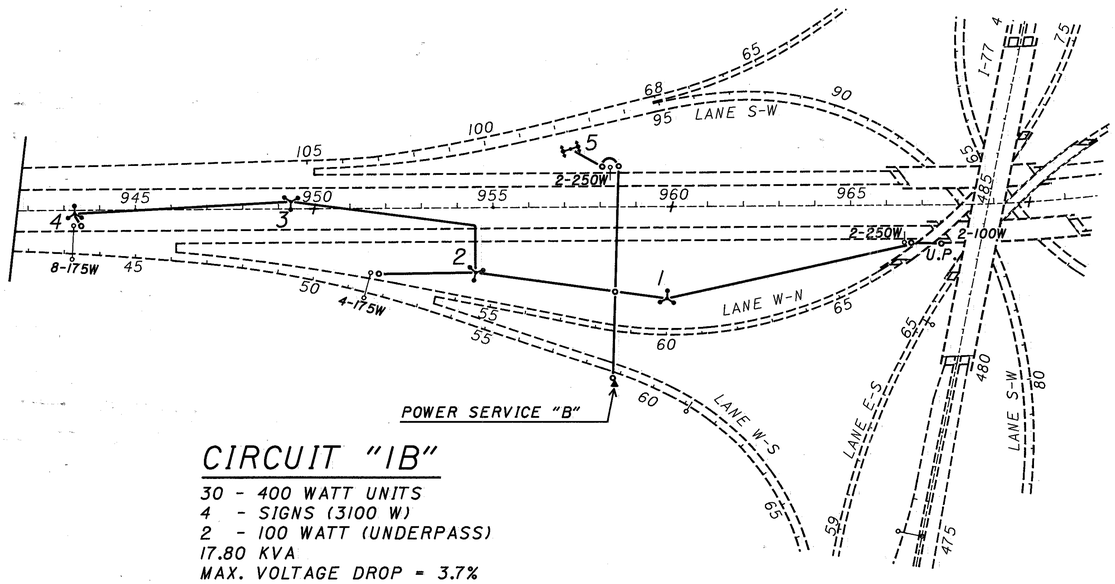
CIRCUIT "A"

24 - 400 WATT UNITS
3 - SIGNS (1550 W)
2 - 100 WATT (UNDERPASS)
13.37 KVA
MAX. VOLTAGE DROP = 2.6%



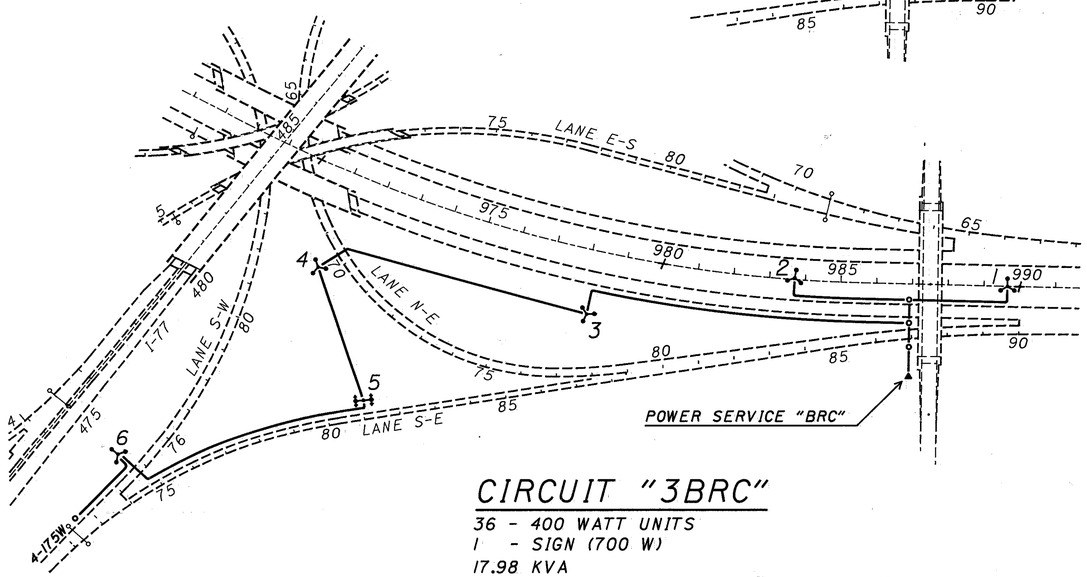
CIRCUIT "3BRD"

18 - 400 WATT UNITS
1 - SIGN (700 W)
9.34 KVA
MAX. VOLTAGE DROP = 2.4%



CIRCUIT "IB"

30 - 400 WATT UNITS
4 - SIGNS (3100 W)
2 - 100 WATT (UNDERPASS)
17.80 KVA
MAX. VOLTAGE DROP = 3.7%



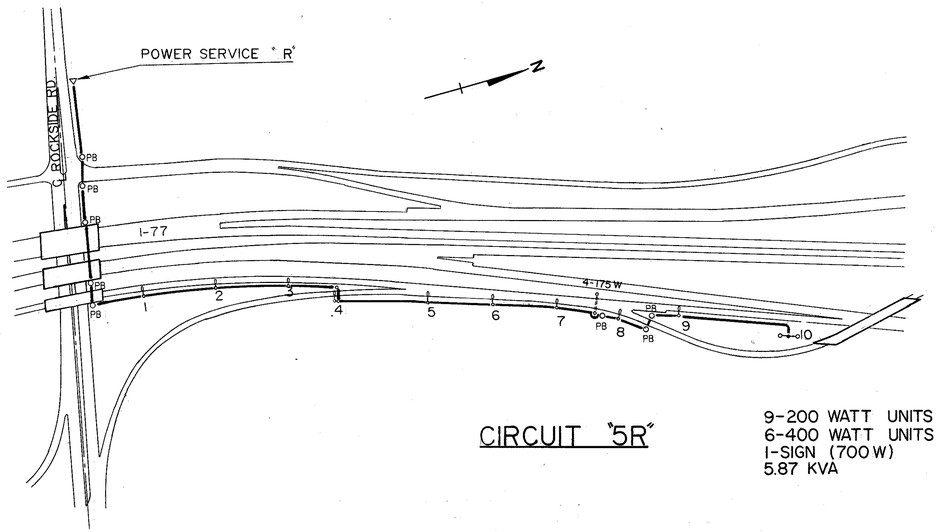
CIRCUIT "3BRC"

36 - 400 WATT UNITS
1 - SIGN (700 W)
17.98 KVA
MAX. VOLTAGE DROP = 4.4%

PLOT SUBMITTED: 5-DEC-1989 11:34
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]480LTCL.DGN

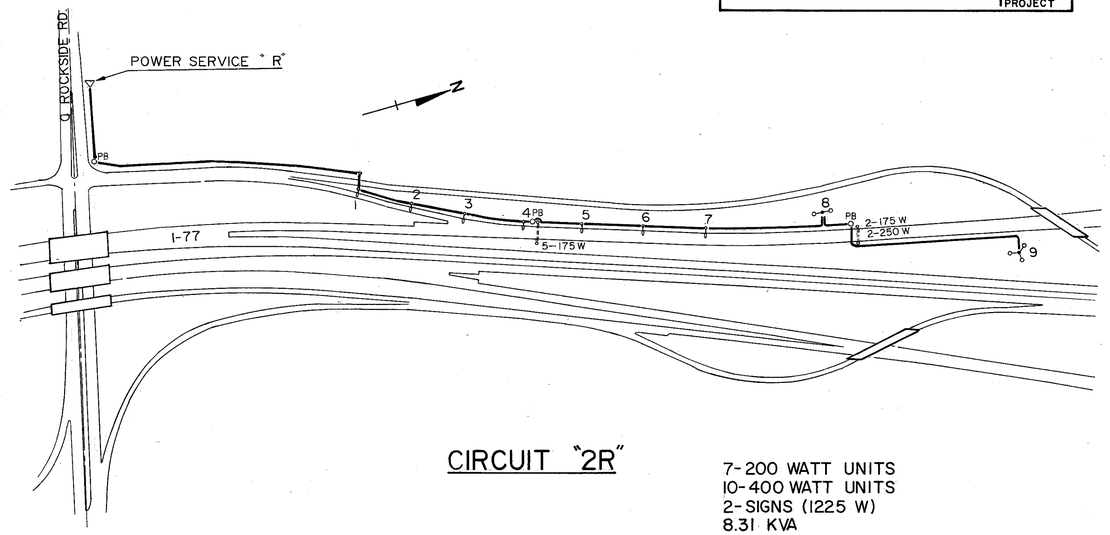
LIGHTING CIRCUIT MAPS

CUYAHOGA COUNTY	OHIO	103 / 118
CUY-480-15.84	FHWA REGION 5	
	FEDERAL PROJECT	



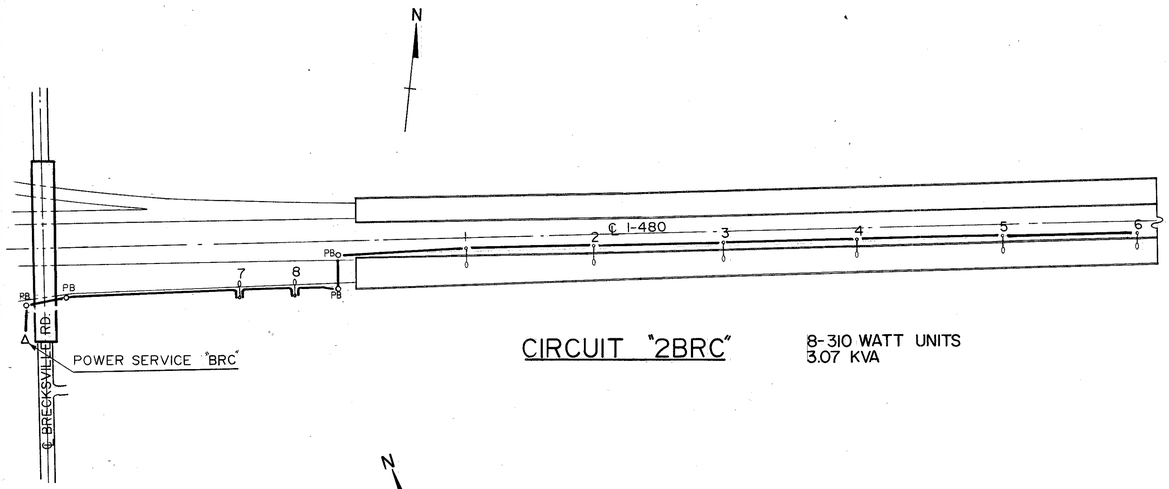
CIRCUIT "5R"

9-200 WATT UNITS
6-400 WATT UNITS
1-SIGN (700 W)
5.87 KVA



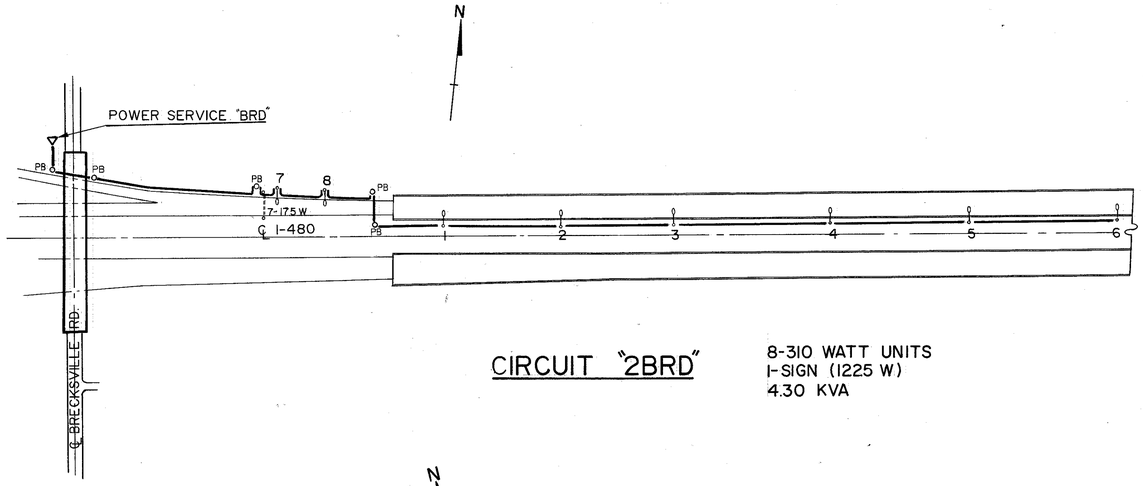
CIRCUIT "2R"

7-200 WATT UNITS
10-400 WATT UNITS
2-SIGNS (1225 W)
8.31 KVA



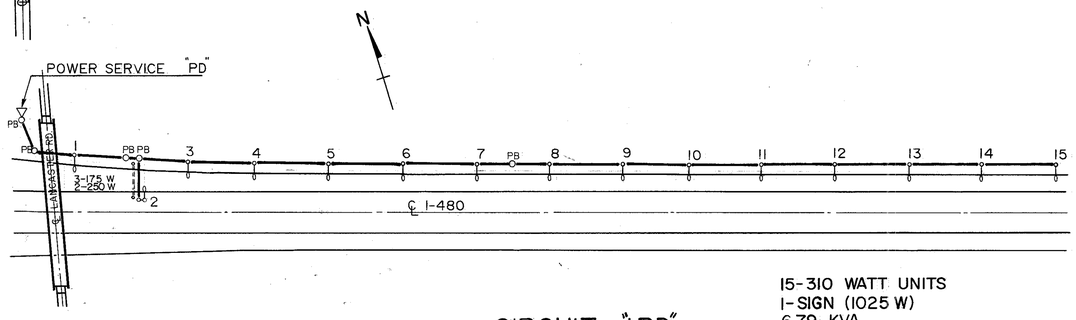
CIRCUIT "2BRC"

8-310 WATT UNITS
3.07 KVA



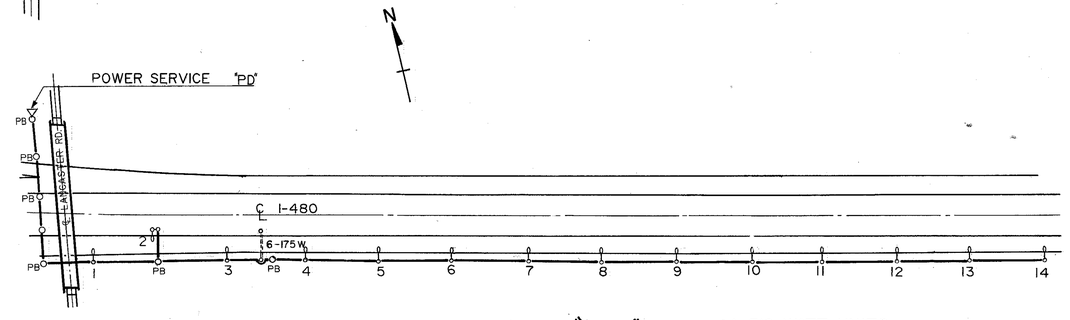
CIRCUIT "2BRD"

8-310 WATT UNITS
1-SIGN (1225 W)
4.30 KVA



CIRCUIT "1PD"

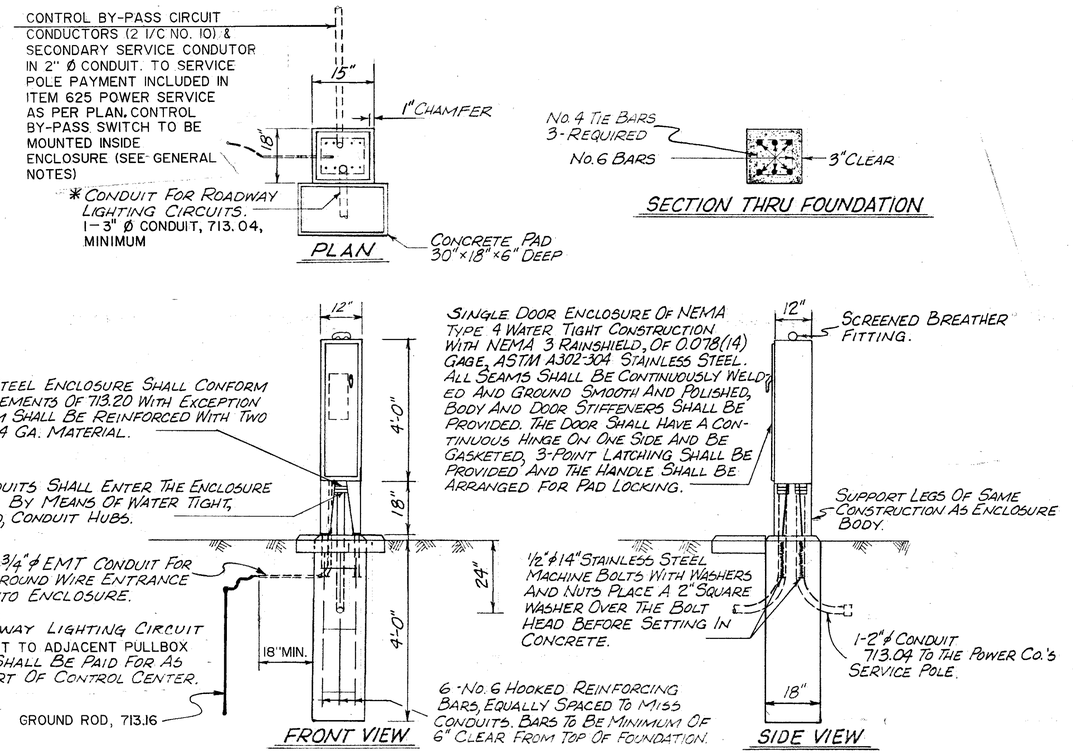
15-310 WATT UNITS
1-SIGN (1025 W)
6.79 KVA



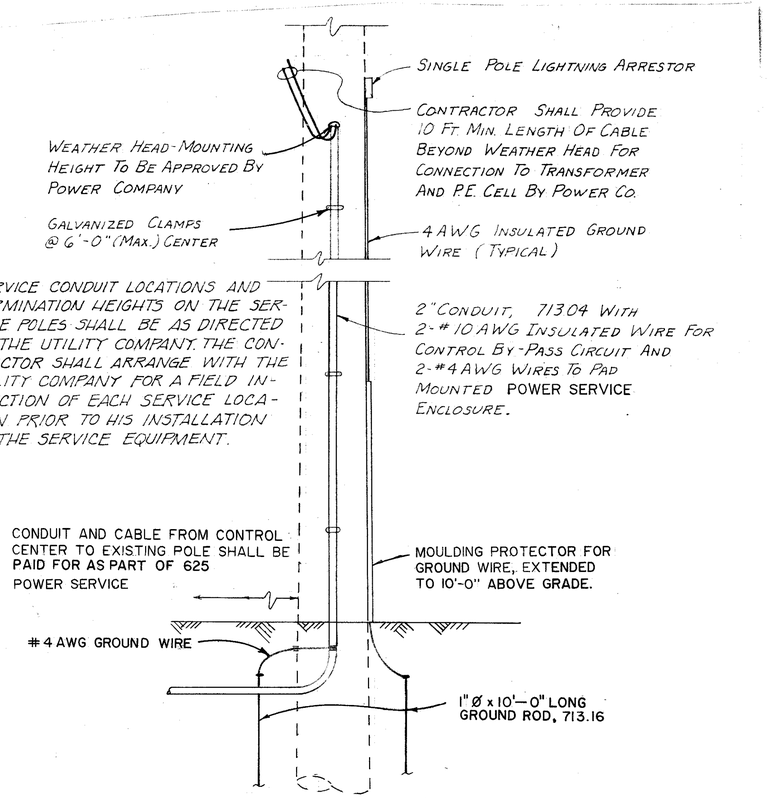
CIRCUIT "2PD"

14-310 WATT UNITS
1-SIGN (1050 W)
6.43 KVA

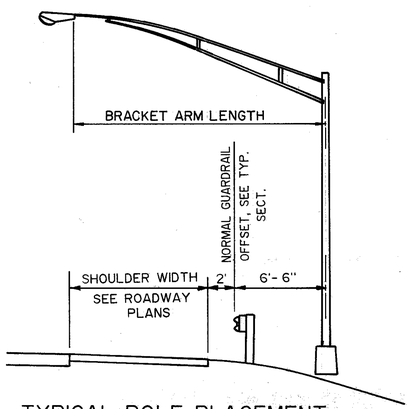
513840



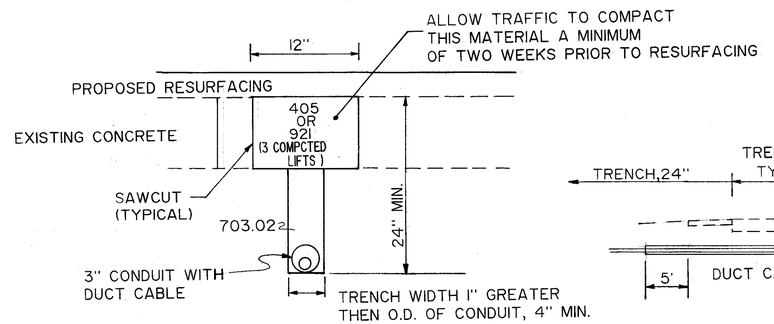
GROUND MOUNTED POWER SERVICE DETAILS

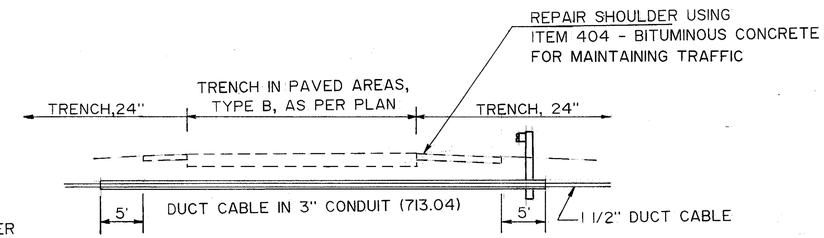


POWER SERVICE ON EXISTING POLE
(NO SCALE)



TYPICAL POLE PLACEMENT





TRENCH IN PAVED AREAS
TYPE B, AS PER PLAN

CUYAHOGA COUNTY
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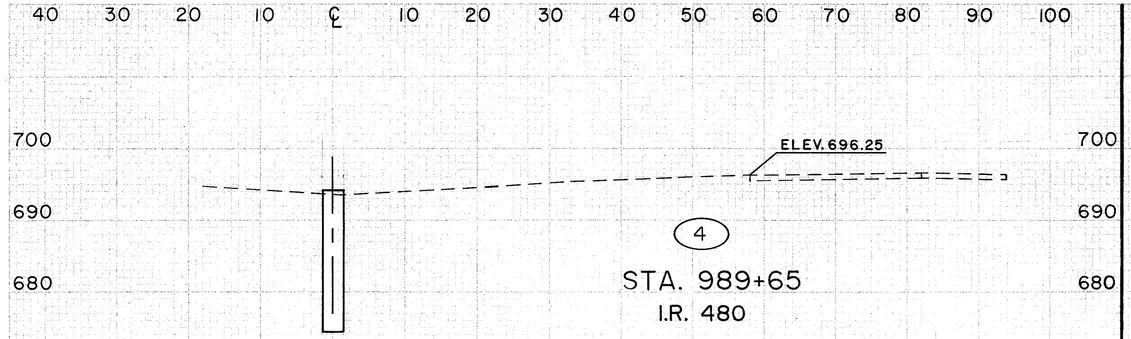
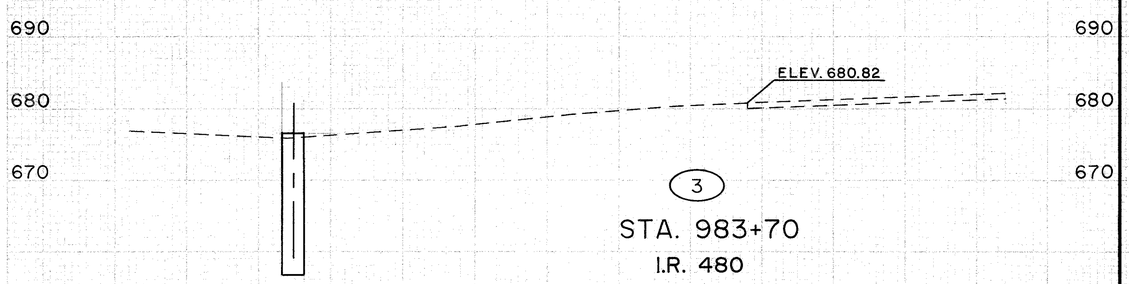
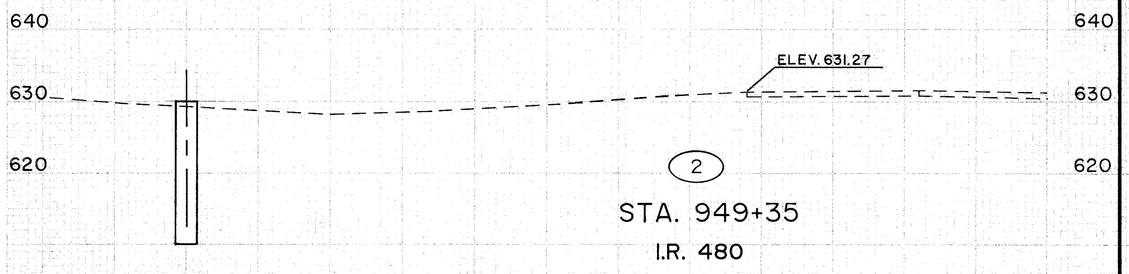
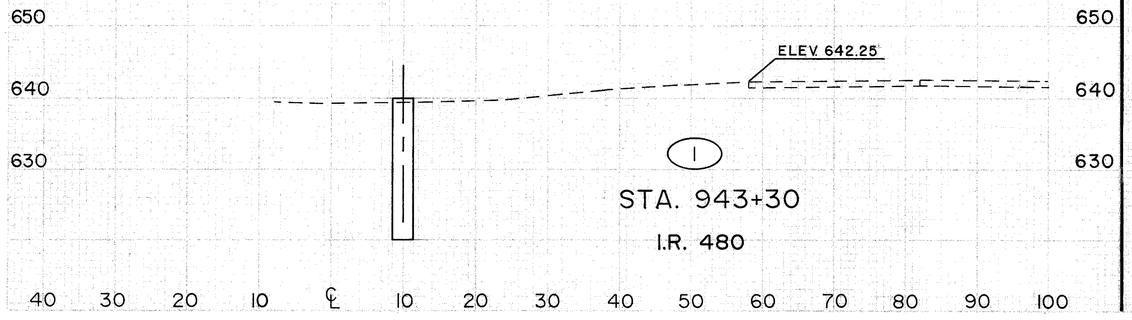
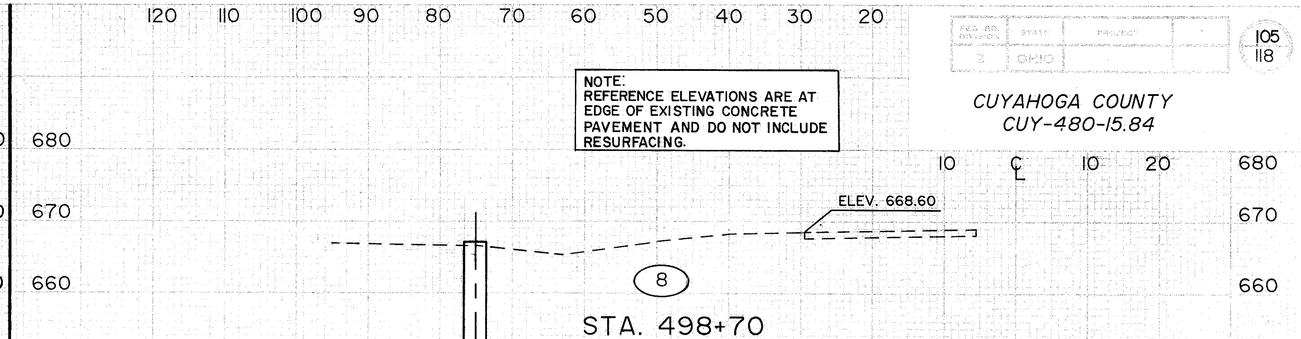
NOTE:
REFERENCE ELEVATIONS ARE AT EDGE OF EXISTING CONCRETE PAVEMENT AND DO NOT INCLUDE RESURFACING.

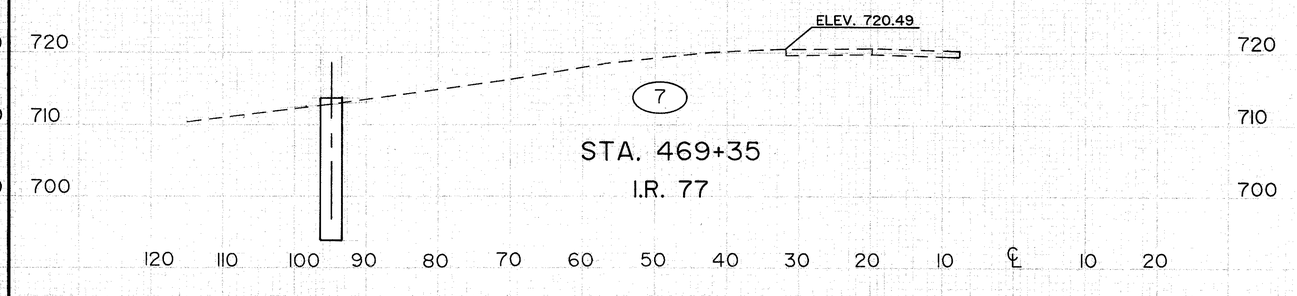


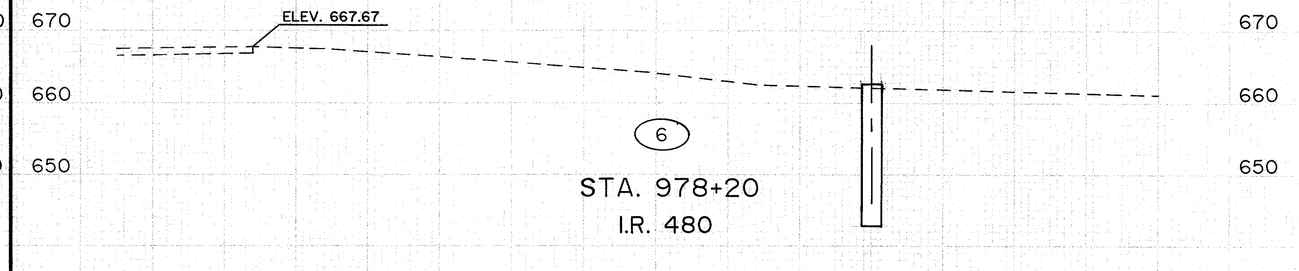


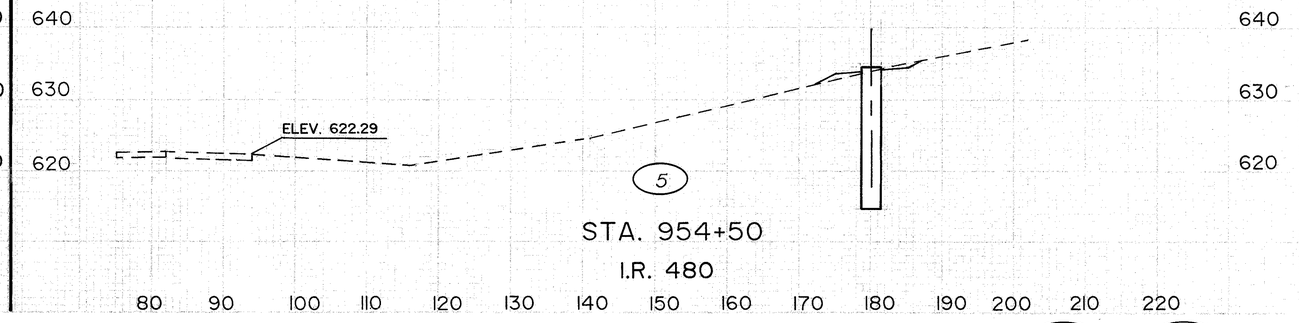












LIGHT TOWERS (1) THRU (8)

CUYAHOGA COUNTY
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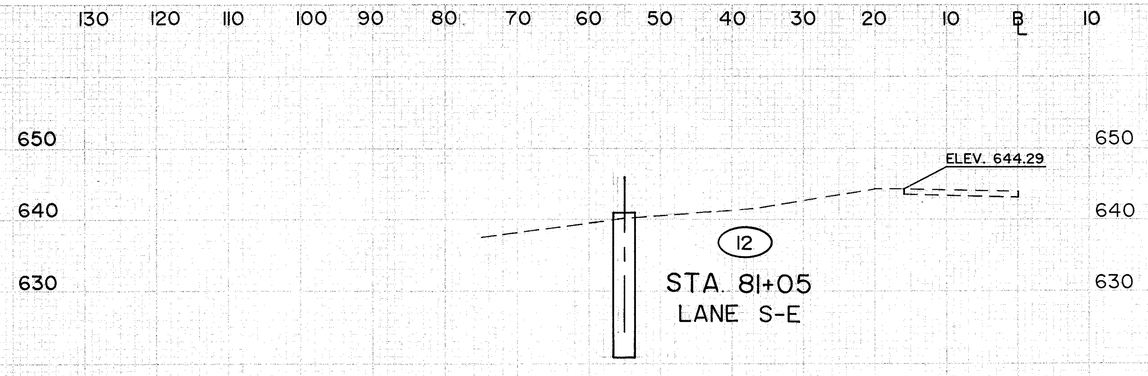

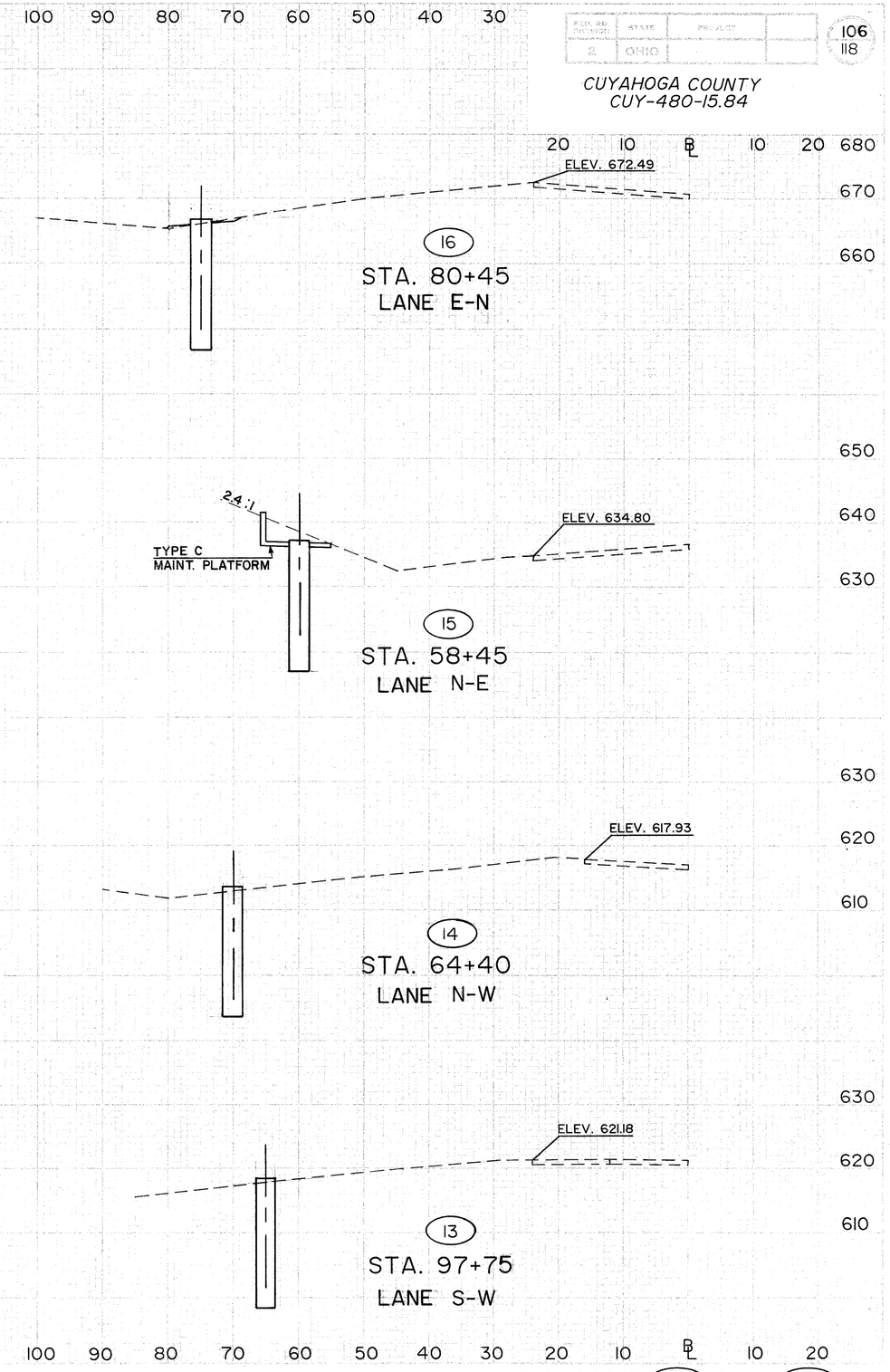

LIGHT TOWERS (9) THRU (16)

FED. RD. DIVISION	STATE	PROJECT	
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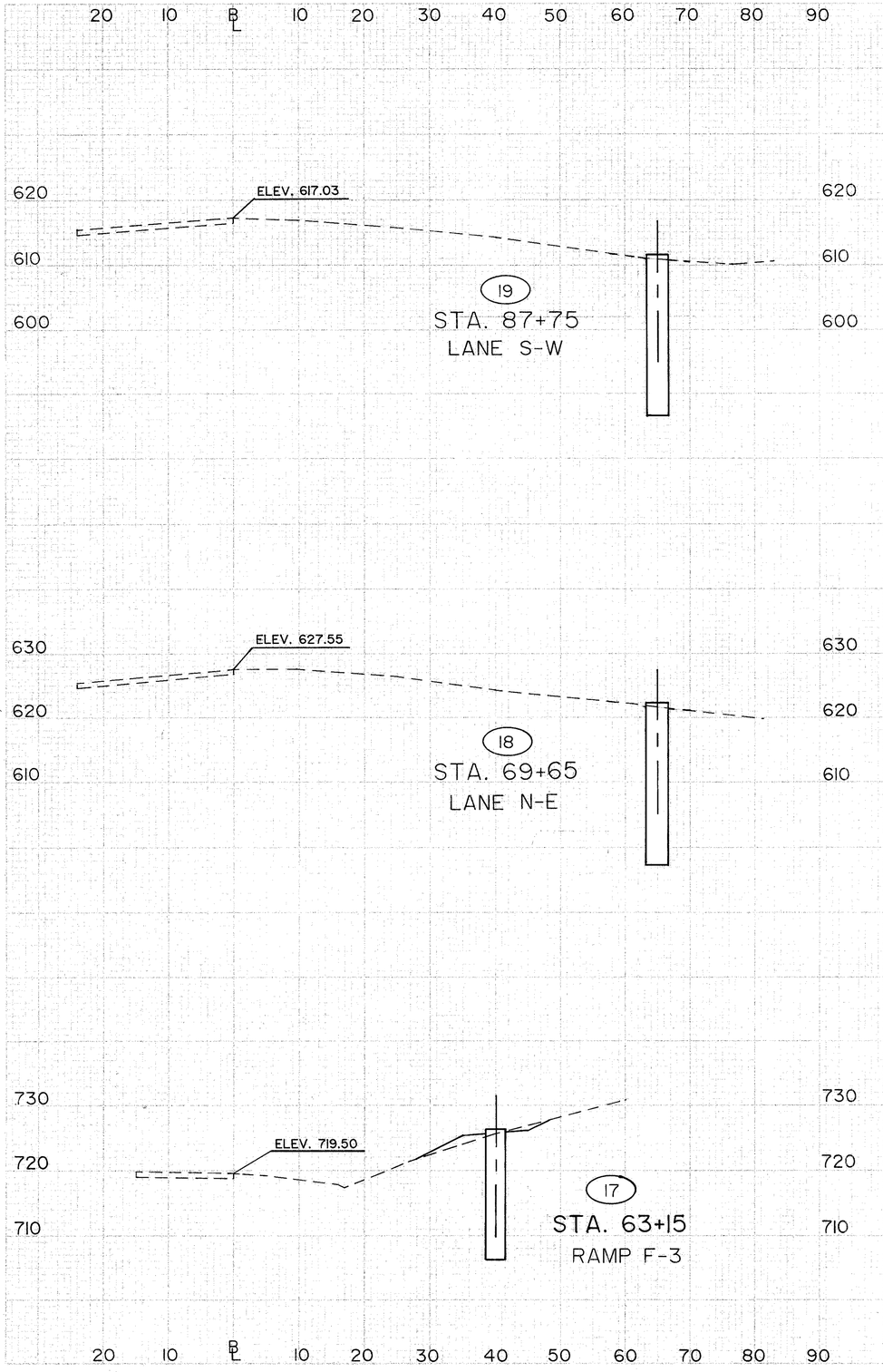

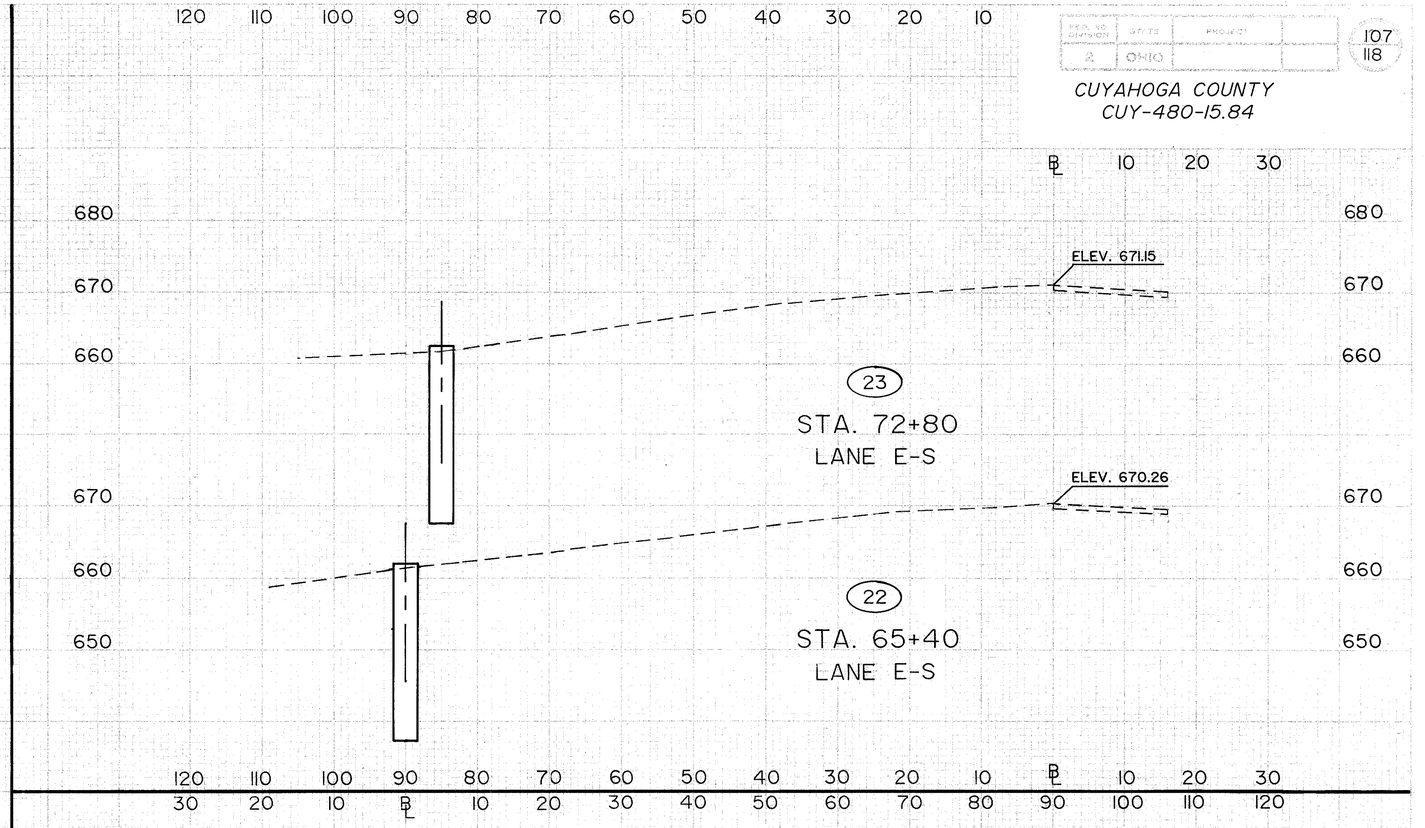

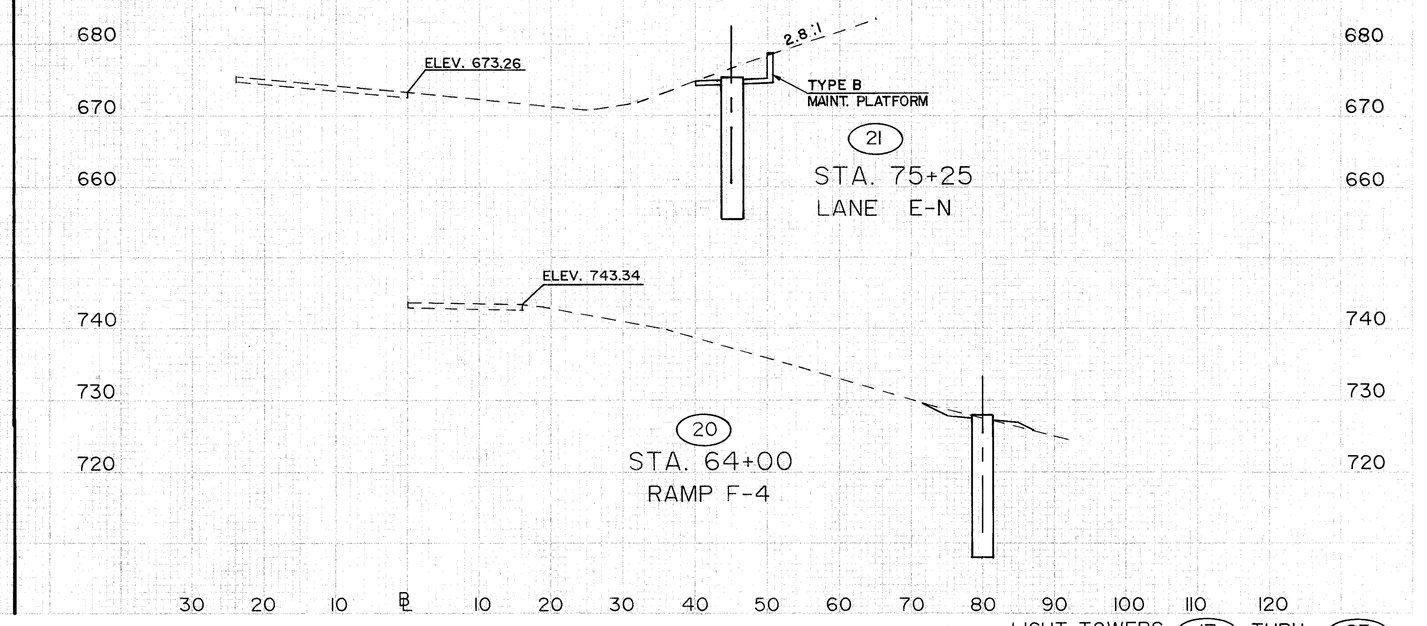

LIGHT TOWERS (17) THRU (23)

C480STR

STRUCTURE NOTES

SCOPE OF PROPOSED MAJOR WORK ITEMS

MAJOR WORK, AS LISTED BELOW, IS LIMITED TO THE FOLLOWING STRUCTURES: BR. NO. CUY-480-1585, BR. NO. CUY-480-1590, BR. NO. CUY-480-1594, BR. NO. CUY-480-1682 AND THE RETAINING WALL ALONG RAMP GE-2.

1) REPAIR OF UNSOUND AREAS OF EXISTING OVERLAYS AND TOTAL SURFACE TREATMENT WITH HIGH MOLECULAR WEIGHT METHACRYLATE.
2) SOUNDING OF ALL CONCRETE BRIDGE COMPONENTS, PATCHING AS NECESSARY AND SEALING. (PARAPET ONLY FOR RETAINING WALL)
3) BRIDGE DRAINAGE CLEANOUT AND RETROFIT
4) RESETTING TILTED ROCKERS.

FOR EXACT WORK ITEMS ON EACH STRUCTURE SEE THE GENERAL PLAN SHEETS.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.5 AND 105.2.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

PLANS OF EXISTING STRUCTURES ARE AVAILABLE FOR EXAMINATION AT THE OHIO DEPARTMENT OF TRANSPORTATION; DISTRICT 12 OFFICE; 5500 TRANSPORTATION BLVD., GARFIELD HTS., OHIO, AND AT THE ODOT BUREAU OF BRIDGES, 25 SOUTH FRONT STREET, COLUMBUS OHIO.

TRAFFIC CONTROL FOR STRUCTURE REPAIR WORK

PERMISSABLE LANE CLOSURES FOR I.R. 480 AND RAMPS G-E AND E-G ARE AS SHOWN ON SHEET NO. 15/118.

WHEN THE PROPOSED STRUCTURE DECK REPAIR WORK REQUIRES A LANE CLOSURE IT SHALL BE LIMITED AS NOTED BELOW:

BRIDGE NO.	BASIC ROADWAY	MAINTAIN
CUY-480-1585	2 LANES EACH DIRECTION	1 LANE EACH DIRECTION AS PER MT-95.30
CUY-480-1590	1 LANE EACH DIRECTION	1 LANE EACH DIRECTION USING FLAGGERS AS PER MT-97.10 *
CUY-480-1682	1 LANE EACH DIRECTION	1 LANE EACH DIRECTION USING FLAGGERS AS PER MT-97.10 *

* - CLOSURES PERMITTED DURING DAYTIME HOURS ONLY. TRAFFIC SHALL BE RETURNED TO NORMAL AT THE END OF EACH WORK DAY.

ITEM 202- PORTIONS OF STRUCTURE REMOVED

WORK TO BE PAID FOR UNDER THIS ITEM SHALL INCLUDE THE REMOVAL OF STRUCTURAL COMPONENTS AS DETAILED IN THE PLANS AND AS DIRECTED BY THE ENGINEER. THESE REMOVALS ARE INCLUDED BUT NOT NECESSARILY LIMITED TO THE FOLLOWING LIST:

BR. NO. CUY-480-1585
THIS ITEM OF WORK SHALL INCLUDE THE COMPLETE REMOVAL OF 2 SCUPPERS, SHORTENING THE PIPE OUTLETS OF 4 SCUPPERS, THE COMPLETE REMOVAL OF 4 HORIZONTAL DRAINAGE CONDUCTORS INCLUDING SUPPORTS AND THE PARTIAL REMOVAL OF 2 DOWNSPOUTS AND ANY OTHER ADDITIONAL ITEMS AS SHOWN ON SHEETS 4/11 THRU 7/11.

BR. NO. CUY-480-1590
THIS ITEM OF WORK SHALL INCLUDE THE CAREFUL, COMPLETE REMOVAL OF 2 SCUPPERS, FOR RE-USE, THE REMOVAL OF THE REINFORCED CONCRETE DECK IN 2 AREAS TO ALLOW FOR THE INSTALLATION OF THE RELOCATED SCUPPERS, SHORTENING THE PIPE OUTLETS OF 2 SCUPPERS, THE COMPLETE REMOVAL OF 2 HORIZONTAL DRAINAGE CONDUCTORS INCLUDING SUPPORTS AND THE PARTIAL REMOVAL OF 1 DOWNSPOUT AND ANY OTHER ADDITIONAL ITEMS AS SHOWN ON SHEETS 9/11 AND 10/11.

RESTORATION OF THE CONCRETE DECK IN THE SCUPPER REMOVAL AREA SHALL INCLUDE REPAIRING THE DECK WITH CONCRETE IN ACCORDANCE WITH ITEM 511. REMOVAL OF THE PIPE HANGER SUPPORT BRACKETS SHALL BE ACCOMPLISHED BY CUTTING OFF AT APPROXIMATELY 1 INCH FROM THE WEB. RESTORATION OF THE CUT STEEL SHALL INCLUDE GRINDING THE CUTS SMOOTH AND REPAINTING THOSE AREAS IN ACCORDANCE WITH 514.05 - SYSTEM B. *The restoration work shall be considered as incidental to this item of work.*

ONLY PNEUMATIC OR HAND TOOLS THAT WILL GIVE RESULTS SATISFACTORY TO THE ENGINEER SHALL BE USED IN THE REMOVAL OF THE DISINTEGRATED CONCRETE. EXTREME CARE SHALL BE TAKEN TO AVOID DAMAGING THE EXISTING REINFORCING STEEL WHICH IS TO REMAIN IN PLACE. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 60 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT HAMMERS NOT TO EXCEED 90 POUNDS MAY BE USED WITH THE APPROVAL OF THE ENGINEER. NO HOE RAMS SHALL BE USED. ANY STEEL WHICH IS MADE UNUSEABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT HIS EXPENSE.

ITEM 516 - RESET BEARINGS

THIS ITEM OF WORK SHALL CONSIST OF VERTICALLY RESETTING TILTED ROCKERS AS FOLLOWS:

1) LIFT THE INDIVIDUAL BEAM OR GIRDER UNTIL THERE IS NO CONTACT BETWEEN THE SOLE PLATE AND ROCKER (1/4 INCH MAXIMUM).
2) RESET THE ROCKER AND BASE PLATE INTO THEIR FINAL POSITION BY CENTERING THE BASE PLATE UNDER THE SOLE PLATE BOTH LONGITUDINALLY AND TRANSVERSELY AT 60 DEGREES F.
3) LOWER BEAM OR GIRDER.
4) PLACE TROWELABLE MORTAR (SEE NOTES) AROUND THE PERIMETER OF THE BASE PLATE TO PREVENT FUTURE MOVEMENT.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE STRUCTURE SUMMARY TO BE USED WHERE AND AS DIRECTED BY THE ENGINEER.

ITEM 516 - RESET BEARINGS 5 EACH

ITEM 518 - SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN

THIS ITEM OF WORK SHALL INCLUDE THE COMPLETE INSTALLATION OF A USED SCUPPER IN THE EXISTING DECK AT THE LOCATION SHOWN IN THE PLAN. CONCRETE RESTORATION SHALL BE ACCORDANCE WITH ITEM 511 AND INCLUDED UNDER THIS ITEM OF WORK.

ITEM 518 - PIPE CONDUCTORS

MATERIALS FOR THESE ITEMS SHALL BE AS PER 518.05. IF PLASTIC PIPE IS USED THE PIPE AND FITTINGS SHALL CONFORM TO 707.19-ASTM D3034, SDR 35, OR SS931. THE DRAINAGE CLEANOUT DETAILED IN THE PLANS MAY BE REPLACED WITH SCREW TYPE PLASTIC DRAINAGE PLUGS PROVIDING THEY ARE A READILY AVAILABLE INDUSTRY STANDARD. SHOP DRAWINGS SHALL BE BASED UPON FIELD MEASUREMENTS AND SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

THIS ITEM SHALL CONSIST OF PATCHING EXISTING CONCRETE (TYPICALLY CURBS) AT THE LOCATIONS AS SHOWN IN THE PLANS AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH ITEM 519 AND THE FOLLOWING ADDITIONAL REQUIREMENTS:

1) SURFACE PREPARATION SHALL INCLUDE THE THOROUGH SANDBLASTING AND AIR CLEANING OF ALL SURFACES WHICH ARE TO BE IN CONTACT WITH THE PATCHING MATERIAL.
2) IN AREAS TO BE PATCHED WITH CLASS "S" CONCRETE ALL OF THE ACCESSIBLE PREPARED CONCRETE SURFACES SHALL BE COATED WITH TWO-COMPONENT EPOXY BONDING AGENT CONFORMING TO AASHTO M-235-73I, CLASS III. THE BONDING MATERIAL SHALL BE MIXED AND PLACED AS PER THE MANUFACTURER'S RECOMMENDATIONS. A MANUFACTURER'S STATEMENT THAT THE PRODUCTS MEETS THE ABOVE SPECIFICATION SHALL BE ACCEPTABLE IN PLACE OF ODOT MATERIAL TESTING.
3) REMOVAL DEPTH SHALL BE 3 INCHES MINIMUM OR TO SOUND CONCRETE.
4) NO STEEL WIRE FABRIC SHALL BE REQUIRED.
5) THE CONCRETE MAY BE TROWELLED IN PLACE, PROVIDED THAT AN ACCEPTABLE SMOOTH APPEARANCE CAN BE ACHIEVED AS DETERMINED BY THE ENGINEER.

PAYMENT SHALL BE MADE UNDER THE SQUARE FOOT UNIT PRICE FOR ITEM 519-PATCHING CONCRETE STRUCTURES, AS PER PLAN.

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STRUCTURE NOTES
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CUYAHOGA COUNTY OHIO

DESIGNED	TRACED	CHECKED	REVIEWED DATE	REVISED
ENF	JAG		DWL	SHEET 1 /11

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ITEM SPECIAL- SEALING OF CONCRETE SURFACES (NON-EPOXY)

A SEALER SHALL BE APPLIED TO THE EXPOSED CONCRETE SURFACES OF THE BRIDGES AS LISTED BELOW. SEE THE PROPOSAL FOR SEALER MATERIAL AND SURFACE PREPARATION REQUIREMENTS AND APPLICATION RATES AND PROCEDURES.

1) PARAPETS (ALL FACES).
2) DECK EDGES AND THE UNDERSIDE IN ANY BAY LOCATED BENEATH AN OPEN OR SEALED JOINT OR THE UNDERSIDE EXTENDING BEYOND THE EXTERIOR BEAMS.
3) PIERS, INCLUDING CAPS AND COLUMNS.
4) ABUTMENTS, INCLUDING BACKWALLS AND WINGWALLS.

ITEM SPECIAL - TREATING CONCRETE BRIDGE DECKS WITH HMWM RESIN

(SEE NOTE IN PROPOSAL FOR THIS ITEM OF WORK) THIS ITEM OF WORK SHALL NOT BE PERFORMED UNTIL ALL REPAIRS TO THE DECK AND WALKS ARE COMPLETE. TREATED AREA SHALL INCLUDE THE DECKS, WALKS, CURBS AND MEDIANS.

ITEM SPECIAL- PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR

A. DESCRIPTION: THIS ITEM CONSISTS OF THE REMOVAL OF ALL LOOSE AND DISINTEGRATED CONCRETE, PREPARATION OF THE SURFACE, AND THE MIXING, PLACING, FINISHING AND CURING OF THE PATCHES AS DIRECTED BY THE ENGINEER. THE WORK SHALL BE PERFORMED UPON THE FOLLOWING CONCRETE BRIDGE COMPONENTS IN ACCORDANCE WITH THESE SPECIFICATIONS, AND IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS:

1. EDGES OF DECK.
2. ABUTMENTS, INCLUDING BACKWALLS AND WINGWALLS.
3. PIERS, INCLUDING COLUMNS AND CAPS.
4. SIDEWALKS AND PARAPETS.

B. MATERIALS: THE PATCHING SHALL BE SIKATOP 122 AND 123, THERMAL-CHEM PRODUCT NO. 3 OR POLY-CARB MARK 193.4 AND 194. FIVE STAR HIGHWAY PATCH, UPCO BOSTICK 964, EUCLID CHEMICAL EUCO VERTICOAT, MASTER BUILDERS EMACO OR DURALTOP AND DURALPATCH GEL. THE MATERIAL SHALL BE TINTED TO CURE TO THE COLOR OF THE EXISTING CONCRETE. ALL MATERIALS SHALL BE STORED AND INCORPORATED IN THE WORK AS RECOMMENDED BY THE MANUFACTURER. A MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT AT THE JOB SITE UNTIL SUCH TIME AS HE AND THE ENGINEER ARE SURE THAT THE CONTRACTOR IS QUALIFIED IN ALL ASPECTS OF PATCHING CONCRETE STRUCTURES WITH THE SELECTED MATERIAL.

C. REMOVAL OF CONCRETE: THE ENGINEER SHALL OUTLINE THE AREAS TO BE REMOVED. ALL LOOSE, SOFT, HONEY-COMBED, AND DISINTEGRATED CONCRETE, PLUS ONE FOURTH OF AN INCH DEPTH OF SOUND CONCRETE SHALL BE REMOVED. WHERE THE BOND BETWEEN THE CONCRETE AND A REINFORCING BAR HAS BEEN DESTROYED, OR WHERE MORE THAN ONE-HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE SHALL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM ONE-HALF INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICAL. AFTER COMPLETION OF THE REMOVAL OPERATION, THE ENGINEER WILL RE-SOUND THE AREAS TO ENSURE THAT ONLY SOLID CONCRETE REMAINS. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT DAMAGE OR SHATTER THE CONCRETE THAT IS TO REMAIN AND WILL NOT CUT, ELONGATE OR DAMAGE THE REINFORCING STEEL IN ANY WAY. CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 35 POUND CLASS. WHERE EXISTING REINFORCING BARS WOULD BE LESS THAN ONE INCH FROM THE PROPOSED FINISHED SURFACE OF CONCRETE, THEY SHALL, IF PRACTICAL, BE DRIVEN BACK INTO RECESSES CUT IN THE MASONRY TO OBTAIN THAT COVERAGE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

D. SURFACE PREPARATION: CLEANING SHALL PRECEDE APPLICATION OF THE PATCHING MATERIAL BY NOT MORE THAN 24 HOURS. THE SURFACE TO BE PATCHED AND THE EXPOSED REINFORCING STEEL SHALL BE THOROUGHLY CLEANED BY SANDBLASTING FOLLOWED BY AN AIR BLAST. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL. THE SURFACE SHALL BE MADE FREE OF SPALLS, LATTANCE AND ALL TRACES OF FOREIGN MATERIAL. IF NECESSRY, DETERGENT CLEANING SHALL PRECEDE BLAST CLEANING TO ENSURE THE REMOVAL OF CONTAMINANTS THAT ARE DETRIMENTAL TO ACHIEVE AN ADEQUATE BOND. THE PREPARED SURFACE SHALL BE LEFT IN THE CONDITION AS RECOMMENDED BY THE MANUFACTURER. ANY ADDITIONAL SURFACE PREPARATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR PATCHING MATERIAL WHICH IS USED. ALL UNCHIPPED SURFACES THAT WILL RECEIVE NEW MATERIAL SHALL BE MECHANICALLY ROUGHENED.

E. PATCHING: THE MIXING, PROPORTIONING, PLACING AND CURING PROCEDURES AND TOOLS, EQUIPMENT, LABOR AND MATERIALS USED SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS. THE SURFACE OF THE REPAIR AREA SHALL BE FLUSH WITH THE SURROUNDING AREA.

F. CURING: PATCHES SHALL BE CURED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

G. INSPECTION AND SOUNDING OF CONCRETE PATCHES

AFTER CURING AND BEFORE FINAL ACCEPTANCE, ALL PATCHED AREAS SHALL BE SOUNDED. ALL UNSOUND AREAS AND AREAS EXHIBITING CRACKING SHALL BE REMOVED AND REPATCHED ACCORDING TO THIS NOTE.

ALL SOUNDING, AND REPLACEMENT OF REJECTED AREAS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM OF WORK.

H. METHOD OF MEASUREMENT: THE QUANTITY SHALL BE THE ACTUAL AREA IN SQUARE FEET OF THE EXPOSED SURFACE OF ALL COMPLETED PATCHES, IRRESPECTIVE OF DEPTH OR THICKNESS OF THE PATCH COMPLETE, IN PLACE AND ACCEPTED. IF THE PATCH INCLUDES CORNERS OR EDGES OF MEMBERS ALL OF THE EXPOSED SURFACES SHALL BE INCLUDED. THE COST OF ALL LABOR, EQUIPMENT, INCIDENTALS AND MATERIALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM.

I. BASIS OF PAYMENT: PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQUARE FOOT	PATCHING CONCRETE WITH TROWELABLE MORTAR

ITEM SPECIAL- SOUNDING CONCRETE BRIDGE COMPONENTS

THIS WORK SHALL CONSIST OF SUPPLYING THE MATERIALS, LABOR, AND EQUIPMENT NECESSARY FOR SOUNDING AND MARKING CONCRETE BRIDGE COMPONENTS IN ORDER THAT THE ENGINEER MAY OUTLINE THE SPALLED AND DELAMINATED AREAS TO BE REMOVED. THE CONTRACTOR SHALL SOUND THE CONCRETE COMPONENTS LISTED BELOW WITH HAMMERS, AND THE ENGINEER SHALL OUTLINE ALL UNSOUND AREAS FOR CONCRETE RESTORATION. THE FOOTAGE UNDER THIS ITEM SHALL BE THE NUMBER OF SQUARE FEET OF CONCRETE SURFACE THAT ARE SATISFACTORILY SOUNDED AND ACCEPTED. THE ACCEPTED QUANTITIES OF SOUNDING WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, AND EQUIPMENT NECESSARY FOR SOUNDING CONCRETE BRIDGE COMPONENTS. PAYMENT WILL BE MADE FOR SOUNDING THE FOLLOWING CONCRETE COMPONENTS ON THE FOLLOWING BRIDGES:

CUY-480-1585	ABUTMENTS, PIERS, WINGWALLS, DECK, SIDEWALK, MEDIAN CURB AND PARAPET
CUY-480-1590	ABUTMENTS, PIERS, WINGWALLS, DECK, SIDEWALK, CURB AND PARAPET
CUY-480-1594	PIERS
CUY-480-1682	ABUTMENTS, PIERS, WINGWALLS, DECK, SIDEWALK, CURB AND PARAPET
RETAINING WALL	ALONG NORTH SIDE OF RAMP GE-2 (LANE JN-OBE) PARAPET (FRONT FACE AND 38 INCHES DOWN BACK SIDE)

ITEM SPECIAL- PATCHING CONCRETE BRIDGE DECK OVERLAYS

IN ORDER TO MAKE REPAIRS WITHOUT IMPLEMENTING LONG TERM LANE CLOSURES THE MATERIAL FOR THIS ITEM OF WORK SHALL BE LIMITED TO QUICK SET CONCRETE (QSC) FOR DECK REPAIRS TO CUY-480-1590 AND CUY-480-1682. FOR ADDITIONAL INFORMATION SEE THE GENERAL NOTE ON SHEET 2A/11.

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			DATE	SHEET 2/11

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ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECK OVERLAYS

A. DESCRIPTION. THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS AND EQUIPMENT TO REPAIR CONCRETE BRIDGE DECK OVERLAYS, INCLUDING THE REMOVAL OF ALL LOOSE AND UNSOUND CONCRETE BITUMINOUS PATCHES, SURFACE PREPARATION, BONDING COAT AND THE MIXING, PLACING, FINISHING, CURING, AND COMPRESSIVE STRENGTH TESTING OF ALL THE PATCHES AS DIRECTED BY THE ENGINEER.

B. REMOVAL OF UNSOUND CONCRETE. THE ENGINEER SHALL SOUND THE ENTIRE DECK AND OUTLINE THE AREAS TO BE REMOVED. SOUNDING MAY HAVE TO BE DELAYED UNTIL THE DECK IS SUFFICIENTLY DRY TO PERMIT DETECTION OF ALL AREAS OF DELAMINATION. THE PERIMETER OF ALL REMOVAL AREAS SHALL BE SAWED TO A DEPTH OF 2" TO PRODUCE A VERTICAL OR SLIGHTLY UNDERCUT FACE. ADDITIONAL SAW CUTS MAY BE REQUIRED TO FACILITATE REMOVAL. COOLING WATER FROM WET SAWING AND DUST FROM DRY SAWING SHALL NOT BE ALLOWED TO CONTAMINATE THE EXPOSED PATCH HOLES; THEREFORE, SAWING SHALL NOT BE PERFORMED WITHIN 200 FEET OF REPAIR AREAS FROM WHICH THE OLD MATERIAL HAS BEEN REMOVED. ALL UNSOUND CONCRETE INCLUDING ALL PATCHES OTHER THAN SOUND PORTLAND CEMENT CONCRETE, AND ALL OBVIOUSLY LOOSE AND DISINTEGRATED CONCRETE SHALL BE BE REMOVED. THE UNSOUND CONCRETE MAY BE REMOVED BY CHIPPING OR HAND-DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 35-POUND CLASS AND SHALL BE OPERATED AT AN ANGLE OF LESS THAN 45 DEGREES MEASURED FROM THE SURFACE OF THE DECK. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING OR DAMAGING REINFORCING STEEL. WHERE THE BOND BETWEEN THE CONCRETE AND A PRIMARY REINFORCING BAR HAS BEEN DESTROYED, OR WHERE MORE THAN ONE HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE SHALL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM 3/4 INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICABLE. REINFORCEMENT WHICH HAS BECOME LOOSE SHALL BE ADEQUATELY SUPPORTED AND TIED BACK INTO PLACE. AFTER COMPLETION OF THE SECONDARY REMOVAL OPERATIONS, THE ENGINEER WILL RE-SOUND THE DECK TO ENSURE THAT ONLY SOUND CONCRETE REMAINS.

C. SURFACE PREPARATION. CLEANING SHALL CLOSELY PRECEDE APPLICATION OF THE BONDING GROUT AND/OR THE PATCHING MATERIAL. THE SURFACE TO BE PATCHED AND THE EXPOSED REINFORCING STEEL SHALL BE THOROUGHLY CLEANED WITHIN 24 HOURS PRIOR TO PATCHING BY ABRASIVE BLASTING FOLLOWED BY AN AIR BLAST. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL.

CONTAMINATION OF THE AREA TO BE PATCHED BY CONSTRUCTION EQUIPMENT OR FROM ANY OTHER SOURCE SHALL BE PREVENTED BY PLACEMENT OF A CLEAN 4-MIL POLYETHYLENE SHEET (OR ANY OTHER COVERING AS APPROVED BY THE ENGINEER) ON THE SURFACE OF THE DECK FOLLOWING THE AIR BLAST CLEANING.

WHERE REINFORCING STEEL IS EXPOSED, THE CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORTS FOR THE CONCRETE MIXER SO THAT REINFORCING STEEL AND ITS BOND WITH THE CONCRETE WILL NOT BE DAMAGED BY THE WEIGHT AND MOVEMENT OF THE CONCRETE MIXER, OR SHALL PROVIDE MEANS TO CONVEY CONCRETE FROM THE MIXER TO THE PATCH LOCATIONS.

FOR PATCHES WHICH DO NOT USE WATER AS THE ACTIVATOR, THE PREPARED SURFACE SHALL BE SURFACE DRY. FOR PATCHES WHICH REQUIRE WATER AS THE ACTIVATOR THE PREPARED SURFACE SHALL BE LEFT IN THE CONDITION AS RECOMMENDED BY THE MANUFACTURER. ANY ADDITIONAL SURFACE PREPARATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR THE PATCHING MATERIAL WHICH IS USED.

D. MATERIALS, PLACING AND CURING. OVERLAYS SHALL BE PATCHED WITH EITHER MSMC OR QSC OR A COMBINATION THEREOF.

MICRO-SILICA MODIFIED CONCRETE. (MSMC)

MATERIAL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

FINE AGGREGATE (NATURAL SAND)	-703.02
COARSE AGGREGATE (NO. 8)	-703.02
PORTLAND CEMENT, TYPE 1	-701.04
WATER	-499.02
CHEMICAL ADMIXTURE	-705.12, ASTM C 494, TYPE A OR D
AIR-ENTRAINING ADMIXTURE	-705.10
SUPERPLASTICIZING ADMIXTURE	-705.12, ASTM C 494, TYPE F OR G (HIGH RANGE WATER REDUCER)
CURING MATERIAL	-705.05 OR 705.06 WHITE OPAQUE
MICRO-SILICIA ADMIXTURE	AS RECOMMENDED AND FURNISHED BY:

ELBORG TECHNOLOGY COMPANY
PITTSBURGH PA.

OR

GRACE CONSTRUCTION PRODUCTS
CAMBRIDGE, MA.

OR

SIKA CORPORATION
LYNHURST, NJ.

OR

MASTER BUILDERS
CLEVELAND, OHIO

BONDING GROUT. GROUT FOR MSMC PATCHES SHALL CONSIST OF PARTS BY VOLUME AS FOLLOWS:

1 PART MICROSILICA SLURRY MIX
6 PARTS CEMENT
10 PARTS SAND
2 1/2 PARTS WATER AS REQUIRED TO ACHIEVE A STIFF SLURRY

THE CONSISTENCY OF THIS SLURRY SHALL BE SUCH THAT IT CAN BE APPLIED WITH A STIFF BRUSH OR BROOM TO THE EXISTING SURFACE IN A THIN, UNIFORM COATING. THE COATING OF GROUT SHALL BE SCRUBBED ONTO THE DRY SURFACE IMMEDIATELY BEFORE PLACING THE CONCRETE. CARE SHALL BE EXERCISED TO ENSURE THAT NO EXCESS GROUT IS PERMITTED TO COLLECT IN LOW SPOTS. IN NO CASE SHALL THE GROUT BE PERMITTED TO DRY BEFORE PLACING THE NEW CONCRETE. GROUT SHALL BE PAINTED OVER ALL JOINTS BETWEEN THE NEW AND EXISTING CONCRETE IMMEDIATELY AFTER THE FINISHING HAS BEEN COMPLETED. THE GROUT SHALL BE MIXED AND PLACED WITHIN THE SAME TIME REQUIREMENTS AS FOR THE MSMC PATCHES.

PROPORTIONING AND ALL OTHER REQUIRED CHARACTERISTICS OF THE MIX, I.E. AIR ENTRAINMENT AND SLUMP, SHALL BE ADJUSTED OFF THE DECK BEFORE PLACEMENT OF THE PATCHES BEGINS. THE MSMC MIXTURE SHALL CONSIST OF A WORKABLE MIXTURE OF UNIFORM COMPOSITION AND CONSISTENCY WITH THE FOLLOWING PROPORTIONS:

TYPE OF COARSE AGGREGATE	COARSE AGGREGATE (LBS.)	FINE AGGREGATE (LBS.)	CEMENT (LBS.)	MICRO-SILICA (LBS.)	MAXIMUM WATER-CEMENT RATIO
GRAVEL	1520	1170	700	105	0.36
LIMESTONE	1540	1170	700	105	0.36
SLAG	1335	1170	700	105	0.36

* THE SPECIFIC GRAVITIES USED FOR DETERMINING THE ABOVE WEIGHTS ARE: NATURAL SAND 2.62, GRAVEL 2.62, LIMESTONE 2.65, SLAG 2.30 AND MICRO-SILICA 2.20.

NOTE: THE CONTRACTOR SHALL OBTAIN A WRITTEN STATEMENT FROM THE MANUFACTURER OF THE MICRO-SILICA ADMIXTURE THAT HE IS SATISFIED WITH THE COMPATIBILITY OF THE COMBINATION OF MATERIALS AND SEQUENCE IN WHICH THEY ARE COMBINED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SUPPLY A CONCRETE WHICH MEET THESE SPECIFICATIONS AND PROVIDES THE NECESSARY WORKABILITY, FINISHABILITY AND PUMPABLITY IF NEEDED. THE INCORPORATION OF OF INDIVIDUALLY APPROVED MATERIALS INTO THE CONCRETE WILL NOT NECESSARILY RESULT IN AN ACCEPTABLE MIX. THE USE OF DIFFERENT CHEMICAL ADMIXTURES OR AGGREGATES IS A DISTINCT POSSIBILITY, ALL COSTS OF WHICH SHALL BE INCLUDED UNDER THIS ITEM OF WORK.

DELETERIOUS MATERIAL SHALL NOT EXCEED ONE-HALF THE REQUIREMENT FOR SUPERSTRUCTURE AGGREGATE AND SODIUM SULFATE SOUNDNESS LOSS SHALL NOT EXCEED THAT SPECIFIED FOR SUPERSTRUCTURE CONCRETE IN 703.02.

THE BATCH WEIGHTS DESCRIBED SHALL BE CORRECTED TO COMPENSATE FOR THE MOISTURE CONTAINED IN THE AGGREGATE AT THE TIME OF USE. A CHEMICAL ADMIXTURE (705.12, TYPE A OR D) SHALL BE USED. THE TRANSIT MIXER SHALL BE LIMITED TO 3/4 OF ITS RATED CAPACITY OR 6 CUBIC YARDS, WHICHEVER IS THE SMALLER, UNLESS A LARGER SIZE IS APPROVED BY THE ENGINEER. ANY ADMIXTURE ADDED AFTER THE INITIAL MIXING SHALL BE MIXED A MINIMUM OF 5 MINUTES AT MIXING SPEED. AFTER ALL COMPONENTS HAVE BEEN ADDED, THE SLUMP RANGE SHALL BE 6 +/- 2 INCHES. THE AIR CONTENT SHALL BE 8 +/- 2 PERCENT AT THE POINT OF DISCHARGE. IF SLUMP LOSS OCCURS AFTER MIXING, THE MIX MAY BE "RETEMPERED" WITH THE ADMIXTURE. IF THE CONSISTENCY OF THE CHARGE AFTER "RETEMPERING" IS SUCH AS TO CAUSE SEGREGATION OF THE COMPONENTS, THIS WILL BE CAUSE FOR REJECTION OF THE LOAD. THE MSMC SHALL STILL BE PLACED WITHIN THE 90 MINUTE LIMITATION.

CONCRETE SHALL BE MIXED IN A CENTRAL MIXING PLANT OR READY-MIXED CONCRETE TRUCK CAPABLE OF DISCHARGING CONCRETE HAVING A MAXIMUM WATER-CEMENT RATIO OF 0.36.

CENTRAL MIXING PLANTS AND READY-MIXED CONCRETE TRUCKS SHALL MEET THE REQUIREMENTS OF 499.04 (B). ADMIXTURES SHALL BE INTRODUCED INTO THE CONCRETE IN SUCH A MANNER THAT WILL DISPERSE IT THROUGHOUT THE ENTIRE LOAD. BATCH PLANTS SHALL MEET THE REQUIREMENTS OF 499.04 (A) AND SHALL BE LOCATED SUCH THAT THE MAXIMUM TIME REQUIRED FROM START OF MIXING TO COMPLETION OF DISCHARGE OF THE CONCRETE AT THE SITE OF WORK SHALL NOT EXCEED 90 MINUTES.

THE OVERLAY PATCHES SHALL BE WATER CURED AS PER CMS 511.14 METHOD (A) USING CONTINUOUS SPRINKLING AND NO PLASTIC SHEETING, FOR A MINIMUM OF 24 HOURS FOLLOWED BY A MEMBRANE CURE PER CMS 511.14 METHOD (B).

AN EVAPORATION RETARDANT AND FINISHING AID MAY BE USED AT THE CONTRACTOR'S OPTION PRIOR TO THE TEXTURING OPERATION. ANY PRODUCT USED FOR SUCH PURPOSE SHALL BE SPECIFICALLY MARKETED FOR SAID USE. (PLAIN WATER IS NOT ACCEPTABLE) THE APPLICATION RATE SHALL NOT EXCEED THE HOURLY SURFACE EVAPORATION RATE AS DETERMINED BY FIGURE 1 ON THE NEXT SHEET.

IMMEDIATELY AFTER THE TEXTURING OPERATION THE CONTRACTOR SHALL SPRAY AN EVAPORATION RETARDANT OVER THE TEXTURED AREA. THE APPLICATION RATE SHALL BE AS PER THE MANUFACTURER'S RECOMMENDATIONS. THE WET BURLAP CURE SHALL FOLLOW THIS OPERATION AS CLOSELY AS POSSIBLE.

THE CONTRACTOR SHALL SUPPLY A PROPERLY CALIBRATED IMPACT REBOUND HAMMER TO VERIFY THAT THE PATCHES HAVE REACHED 3000 P.S.I. COMPRESSIVE STRENGTH PRIOR TO OPENING TO TRAFFIC.

THE IMPACT REBOUND HAMMER SHALL BE THE MODEL C-7311 H-METER AND THE FIELD CALIBRATOR SHALL BE THE MODEL C-7312 TEST ANVIL AS MANUFACTURED BY JAMES INSTRUMENTS, INC; 4048 N. ROCKWELL ST; CHICAGO, ILLINOIS 60618; PHONE (312) 463-6500. THE IMPACT HAMMER AND TEST ANVIL SHALL BECOME THE PROPERTY OF ODOT DISTRICT 12 TEST LAB AT THE CONCLUSION OF THIS PROJECT.

MICROSIL

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

STRUCTURE NOTES
CUY-480-15.84

CUYAHOGA COUNTY OHIO

DESIGNED	TRACED	CHECKED	REVIEWED DATE	REVISED
ENF	JAG		DWL	

SHEET 2A/11

GENERAL NOTES

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FHWA REGION	STATE	PROJECT	
5	OHIO		

109B
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THE MSMC PATCHING MATERIAL SHALL BE PLACED ONLY WHEN THE LOCAL AMBIENT TEMPERATURE IS ABOVE 45 DEGREES FAHRENHEIT AND IS FORECAST TO REMAIN ABOVE 45 DEGREES FAHRENHEIT FOR THE CURING PERIOD. THE MSMC SHALL BE PLACED WHEN RAIN IS FORECAST WITHIN THE INTENDED WORKING PERIOD. MSMC SHALL BE PLACED ONLY IF THE PATCH SURFACE EVAPORATION RATE, AS AFFECTED BY THE AMBIENT AIR TEMPERATURE, CONCRETE TEMPERATURE, DECK TEMPERATURE, RELATIVE HUMIDITY AND WIND VELOCITY, IS 0.1 POUND PER SQUARE FOOT PER HOUR OR LESS. THE CONTRACTOR SHALL DETERMINE AND DOCUMENT THE ATMOSPHERIC CONDITIONS SUBJECT TO VERIFICATION BY THE ENGINEER. NO MSMC SHALL BE PLACED IF THE AMBIENT AIR TEMPERATURE IS 85 DEGREES FAHRENHEIT OR HIGHER OR PREDICTED TO GO ABOVE 85 DEGREES FAHRENHEIT DURING THE PATCHING OPERATIONS REGARDLESS OF THE SURFACE EVAPORATION RATE.

NO TRAFFIC SHALL BE PERMITTED ON THE PATCHES UNTIL THE 24 HOUR WATER CURE IS COMPLETED AND THE 3000 PSI STRENGTH IS OBTAINED. THE TEMPERATURE AT THE PATCH SURFACE SHALL BE MAINTAINED ABOVE 35 DEGREES F UNTIL THE CURING PERIOD IS COMPLETED.

FIGURE 1 AS SHOWN ON THIS SHEET SHALL BE USED TO DETERMINE GRAPHICALLY THE LOSS OF SURFACE MOISTURE FOR THE PATCHES. IN NO CASE SHALL THE TEMPERATURE OF THE MSMC EXCEED 90 DEGREES FAHRENHEIT DURING PLACEMENT. IF RAIN OCCURS DURING PLACING OF THE MATERIAL, ALL OPERATIONS SHALL CEASE. NO MSMC PATCHES SHALL BE PLACED AFTER OCTOBER 31ST EXCEPT BY SPECIFIC PERMISSION OF THE DIRECTOR.

DURING DELAYS IN THE PATCH PLACEMENT OPERATIONS OF MORE THAN 10 MINUTES THE WORK FACE OF THE PLACED PATCH MATERIAL AND ANY BONDING GROUTED AREAS SHALL BE TEMPORARILY COVERED WITH WET BURLAP. IF AN EXCESSIVE DELAY IS ANTICIPATED, A BULKHEAD SHALL BE INSTALLED AT THE WORK FACE AND THE OVERLAY PLACEMENT OPERATION TERMINATED.

UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER, PATCH SHALL NOT BE PLACED ADJACENT TO A PREVIOUS PATCH WHICH HAS CURED FOR LESS THAN 24 HOURS.

ADEQUATE PRECAUTIONS SHALL BE TAKEN TO PROTECT THE FRESHLY PLACED MSMC FROM RAIN.

QUICK SET CONCRETE (QSC)

MATERIAL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

COARSE AGGREGATE (NO. 8)	-703.02
QUICK SETTING CONCRETE MORTAR, TYPE II	-SS933
WATER	-499.02

QSC PATCHES SHALL BE BONDED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

PROPORTIONING AND PLACING OF QSC PATCHES SHALL BE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. THE PATCHING MATERIAL SHALL BE MADE USING QUICK SETTING CONCRETE MORTAR, TYPE I, SUPPLEMENTAL SPECIFICATION NUMBER 933. THE CONCRETE SHALL BE MIXED AND PLACED AS PER MANUFACTURER'S RECOMMENDATIONS WITH THE AMBIENT TEMPERATURE ABOVE 50 DEGRESS F. COARSE AGGREGATE, WHICH HAS BEEN CLEANED, DRIED AND BAGGED SHALL BE ADDED AT A RATE OF 30 POUNDS OF AGGREGATE PER 50 LBS. OF DRY QSC MORTAR.

QSC PATCHES SHALL BE CURED FOR A MINIMUM OF 2 HOURS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. 3000 PSI COMPRESSIVE STRENGTH SHALL BE VERIFIED WITH THE PROPERLY CALIBRATED IMPACT REBOUND HAMMER PRIOR TO OPENING TO TRAFFIC.

E. PLACING. IF PLACEMENT OF THE PATCHES IS TO BE MADE AT NIGHT, THE CONTRACTOR SHALL SUBMIT A PLAN WHICH PROVIDES ADEQUATE LIGHTING FOR WORK AREA. THE PLAN SHALL BE SUBMITTED AT LEAST 15 CALENDAR DAYS IN ADVANCE AND BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS PLACED. THE LIGHTS SHALL BE SO DIRECTED THAT THEY DO NOT AFFECT OR DISTRACT APPROACHING TRAFFIC.

IMMEDIATELY FOLLOWING APPLICATION OF THE BONDING GROUT THE PATCHING MATERIAL SHALL BE PLACED, CONSOLIDATED AND FINISHED TO THE EXISTING GRADE AND ELEVATION. PATCHES EXCEEDING 50 S.F. SHALL BE LEVELED AND CONSOLIDATED WITH A MECHANICAL VIBRATING SCREED. SMALLER PATCHES SHALL BE HAND VIBRATED AND LEVELED WITH A TEN FOOT STRAIGHTEDGE. ANY IRREGULARITIES IN THE PATCHES EXCEEDING 1/8 INCH IN 10 FEET SHALL BE CORRECTED IMMEDIATELY.

F. FINISHING. AFTER THE PATCHES HAVE BEEN CONSOLIDATED AND FINISHED THEY SHALL BE TEXTURED IN ACCORDANCE TO SECTION 451.09 OF THE CMS.

G. INSPECTION AND SOUNDING OF CONCRETE PATCHES. AFTER CURING AND BEFORE FINAL ACCEPTANCE, ALL PATCHED AREAS SHALL BE SOUNDED. ALL UNSOUND AREAS AND AREAS EXHIBITING CRACKING SHALL BE REMOVED AND REPATCHED ACCORDING TO THIS NOTE.

ALL SOUNDING, AND REPLACEMENT OF REJECTED AREAS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND INCLUDED IN THE UNIT BID PRICE FOR THIS ITEM.

H. SEALING PATCH EDGES. ALL JOINTS ALONG PATCH EDGES SHALL BE SEALED WITH AN APPROVED HIGH MOLECULAR WEIGHT METHACRYLATE SEALER ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AND THE HMWM PROPOSAL NOTE. COST FOR SEALING SHALL BE INCLUDED WITH PATCHING WHEN A SEPARATE PAY ITEM FOR WEARING SURFACE SEALING IS NOT INCLUDED IN THE PLANS.

I. METHOD OF MEASUREMENT. THE QUANTITY SHALL BE THE ACTUAL AREA IN SQUARE YARDS OF THE EXPOSED SURFACE OF ALL PATCHES, IRRESPECTIVE OF THE DEPTH OF PATCH, COMPLETE, IN PLACE AND ACCEPTED.

J. BASIS OF PAYMENT. PAYMENT SHALL BE MADE AT THE CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ. YD.	PATCHING CONCRETE BRIDGE DECK OVERLAYS

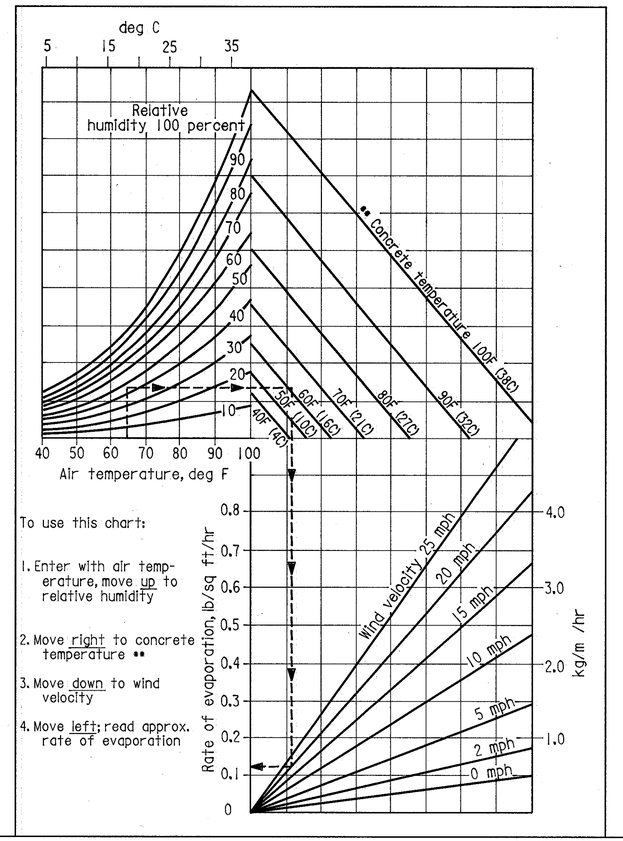

Fig. 1* - Effect of concrete and air temperatures, relative humidity, and wind velocity on the rate of evaporation of surface moisture from concrete. This chart provides a graphic method of estimating the loss of surface moisture for various weather conditions. To use the chart, follow the four steps outlined above.

* ACI Committee 308, "Standard Practice for Curing Concrete (ACI 308-81)", American Concrete Institute, Detroit, 1984, 11 pp.

•• In using this figure, the concrete temperature shall be taken as the average of the deck surface temperature and the plastic concrete temperature.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

STRUCTURE NOTES
CUY-480-15.84

CUYAHOGA COUNTY OHIO

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
ENF	JAG		DWL	-
			DATE	SHEET 2B/11

GENERAL NOTES

MICROSIL

STRUCTURE SUMMARY

PARTICIPATION CODE
I = STATE AND FEDERAL
II = 100% STATE

CALC. BY ___ DATE:	CUYAHOGA COUNTY CUY-480-15.84	OHIO FHWA REGION 5	110 118
CHKD BY ___ DATE:		FEDERAL PROJECT	

** = 50% FEDERAL PARTICIPATION

*= CONTINGENCY QUANTITY, SUBJECT TO NON-PERFORMANCE AT NO PENALTY TO THE STATE

ITEM	STRUCTURE NUMBER CUY-480-												PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
	GENERAL NOTES		RAMP GE-2 RETAINING WALL		1585		1590		1594		1682		I	II						
	I	II	I	II	I	II	I	II	I	II	I	II								
202					LUMP		LUMP						LUMP			202	11200	LUMP	LUMP	PORTIONS OF STRUCTURE REMOVED
516	5												5			516	46700	5*	EACH	RESET BEARINGS
518							2						2			518	12201	2	EACH	SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN (SEE SHT. 108)
518					86		43						129			518	51100	129	LIN.FT.	8" PIPE, INCLUDING SPECIALS
519					30	30	10	10			10	10	50	50		519	11101	100*	SQ.FT.	PATCHING CONCRETE STRUCTURES, AS PER PLAN ** (SEE SHT. 108)
SPEC.			370		3091		1721		81		1780		7043			SPEC.	512 67504	7043	SQ.YD.	SEALING OF CONCRETE SURFACES (NON-EPOXY) (SEE PROPOSAL NOTE) (SEE SHT. 109)
SPEC.						1138		35				78		1251		SPEC.	519 12800	1251*	SQ.YD.	PATCHING CONCRETE BRIDGE DECK OVERLAYS (SEE SHT. 109 AND 109-B)
SPEC.				3330		65704		31593		725		34140		135492		SPEC.	519 10004	135492	SQ.FT.	SOUNDING CONCRETE BRIDGE COMPONENTS (SEE SHT. 109)
SPEC.						4209		1789				2013		8011		SPEC.	512 73000	8011	SQ.YD.	TREATING CONCRETE BRIDGE DECKS WITH HMWM RESIN (SEE PROPOSAL NOTE)
SPEC.			25	25	665	665	120	120			155	155	965	965		SPEC.	519 11504	1930*	SQ.FT.	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR ** (SEE SHT. 109)

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

STRUCTURE SUMMARY

CUYAHOGA COUNTY				OHIO
DESIGNED	TRACED	CHECKED	REVIEWED DATE	REVISED
ENF	JAG		DWL	SHEET 3/11

PLOT SUBMITTED: 4-DEC-1989 06:41
PLOT SUBMITTED BY: GRMOVSEK
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PLOT SUBMITTED: 27-NOV-1989 15:27
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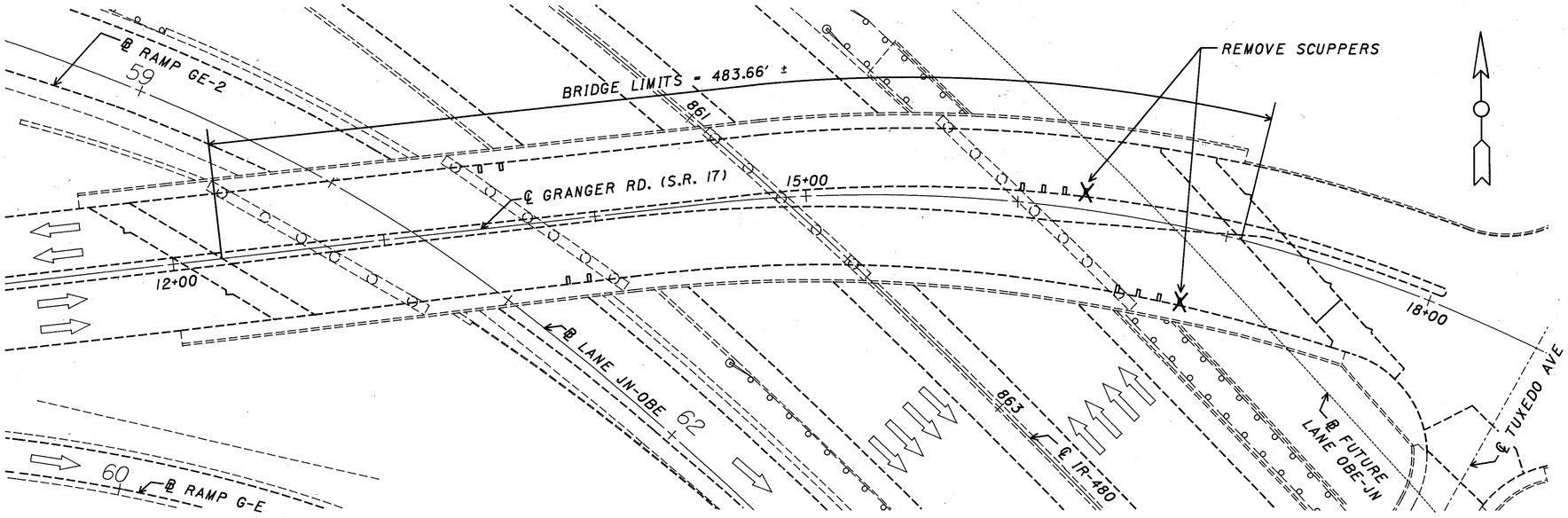
PLOT SUBMITTED BY: GRMOVSEK

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

111
118



PLAN

0 30 60
SCALE IN FEET

EXISTING STRUCTURE

TYPE: 5 SPAN Continuous steel girders with concrete deck and substructure.

SPANS: 57'-0", 83'-0 15/16", 120'-7 1/2", 117'-2 7/8", and 97'-2"

ROADWAY: Varies 60'-0" to 72'-0" Curb to Curb with raised median and two 5'-0" sidewalks

LOADING: HS 20-44

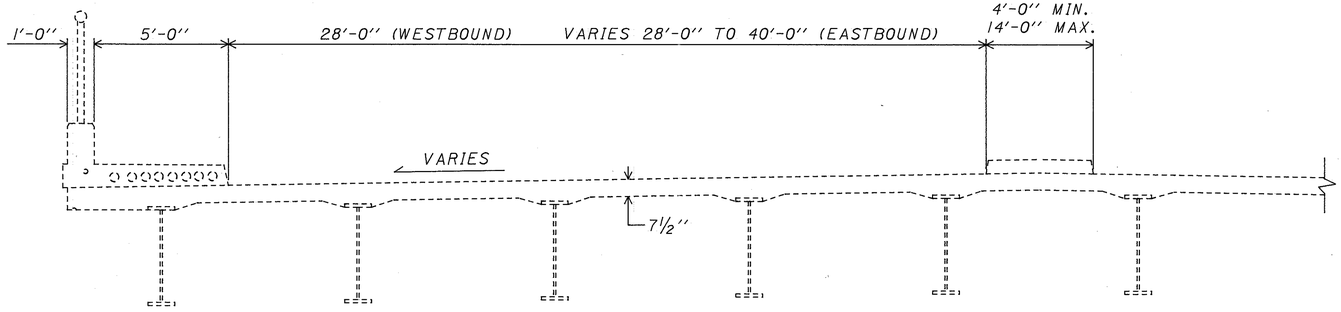
WEARING SURFACE: 1" Latex Modified Concrete

ALIGNMENT: Tangent, 8°00'00" Right (Along ℄ S.R. 17)

SKEW: Varies

PROPOSED WORK

1. WEARING SURFACE REPAIR AND HMWM TREATMENT
2. PATCHING AND SEALING OF CONCRETE SURFACES
3. RESET TILTED BEARINGS
4. DRAINAGE CLEANOUT, SCUPPER REMOVAL AND MODIFICATION OF SCUPPER OUTLETS



TRANSVERSE SECTION

0 2 4 8
SCALE IN FEET

LOCATION	519 PATCHING CONCRETE STRUCTURES, AS PER PLAN	SPECIAL PATCHING CONCRETE WITH TROWELABLE MORTAR
	SQ. FT.	SQ. FT.
CURBS	40	
SIDEWALKS & MEDIAN		140
PARAPETS		370
PIERS AND CAPS		105
BACKWALLS & ABUTMENTS		275
50% EXPANSION FACTOR	20	440
TOTAL	60	1330

SURVEY DATE 10/25/89

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

GENERAL PLAN & TRANSVERSE SECTION

BR. NO. CUY-480 -1585
GRANGER RD. (S.R. 17) OVER I.R. 480

CUYAHOGA COUNTY				OHIO
DESIGNED	TRACED	CHECKED	REVIEWED DATE	REVISED
ENF	JAG		DWL	SHEET 4 / 11

PLOT SUBMITTED: 27-NOV-1989 15:28
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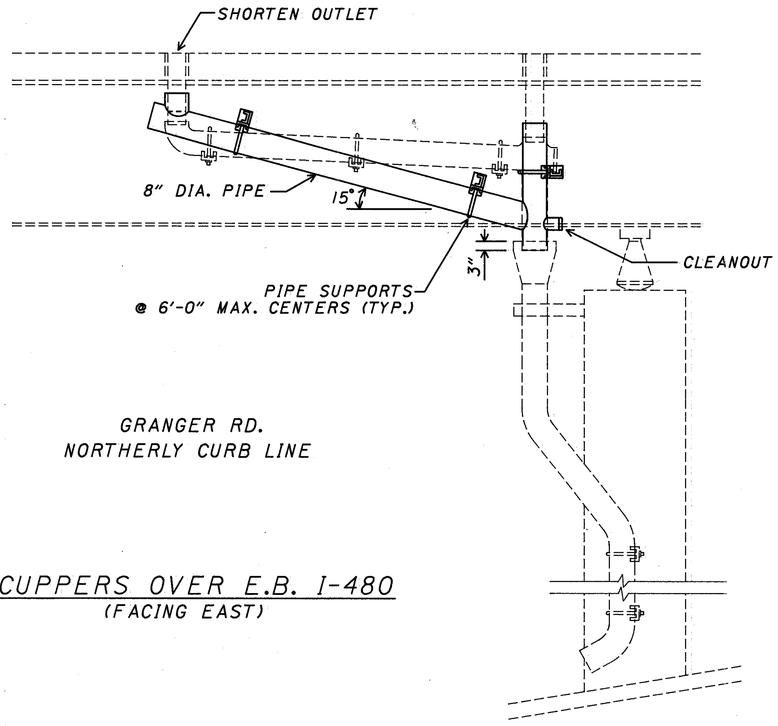
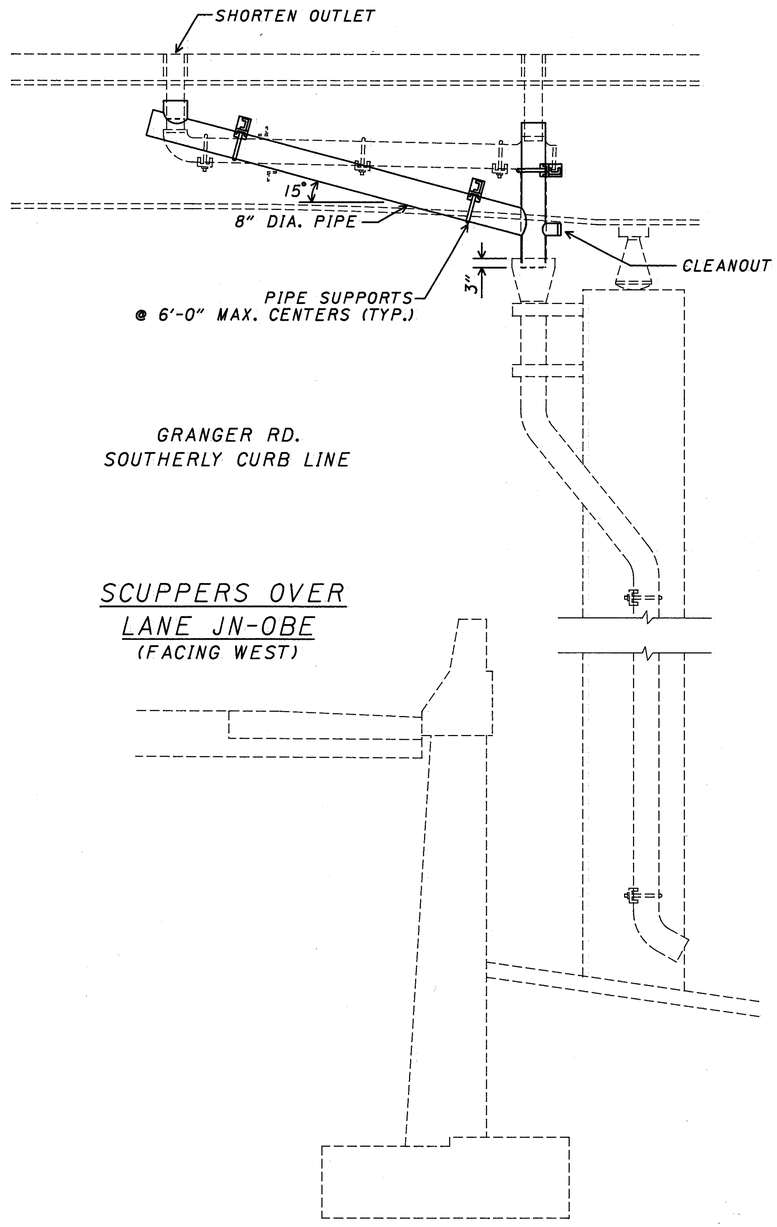
PLOT SUBMITTED BY: GRMOVSEK

CUYAHOGA COUNTY	OHIO
CUY-480-15.84	FHWA REGION 5
	FEDERAL PROJECT

112
118



SCUPPERS OVER E.B. I-480
(FACING EAST)



SCUPPERS OVER
LANE JN-OBE
(FACING WEST)

0 1 2 4
SCALE IN FEET

NOTES:

THE PIPE CONDUCTOR AND ALL FITTINGS SHALL BE MADE OF 8" DIA. PIPE AND MAY BE EITHER PLASTIC OR STEEL, GALVANIZED AS PER 711.02

THE SCUPPER OUTLETS SHALL EXTEND 6 INCHES INTO THE HORIZONTAL CONDUCTOR DRAIN SOCKETS.

THE DRAWINGS SHOWN ARE TO SCALE BASED UPON ORIGINAL PLAN AND FIELD MEASUREMENTS. THE CONTRACTOR SHALL BE REQUIRED TO MAKE EXACT FIELD MEASUREMENTS TO BE USED TO FABRICATE THE DRAINAGE SYSTEM AS SHOWN. NECESSARY MEASUREMENTS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE SCUPPER SPACING, DOWNSPOUT LOCATION , PIPE OFFSET FROM GIRDER WEB AND CROSSFRAME LOCATIONS ALONG PIPE.

FOR PIPE DETAILS, SUPPORTS AND CONNECTION DETAILS SEE SHEET NO. 8 / 11

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

DRAINAGE MODIFICATION

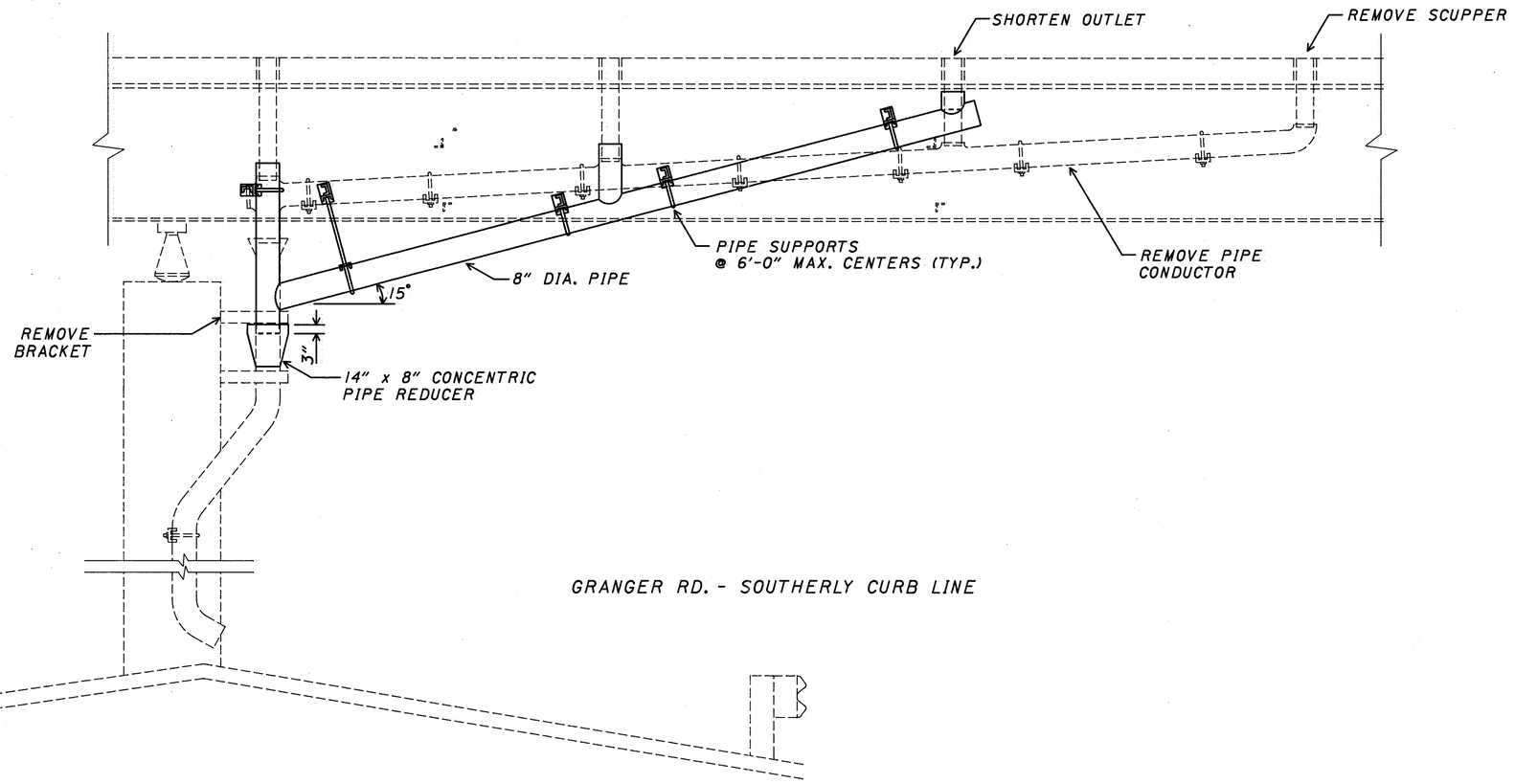
BR. No. CUY-480-1585
GRANGER RD. (S.R. 17)
OVER I.R. 480

CUYAHOGA COUNTY OHIO

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
ENF	JAG		DWL	
			DATE	SHEET 5 / 11

PLOT SUBMITTED: 27-NOV-1989 16:46
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]BRDGDRN.DGN;1

CUYAHOGA COUNTY	OHIO	113
CUY-480-15.84	FHWA REGION 5	118
	FEDERAL PROJECT	



SCALE IN FEET: 0 1 2 4

SCUPPERS OVER FUTURE LANE OBE-JN
(FACING WEST)

NOTES:

THE PIPE CONDUCTOR AND ALL FITTINGS SHALL BE MADE OF 8" DIA. PIPE AND MAY BE EITHER PLASTIC OR STEEL, GALVANIZED AS PER 711.02

THE SCUPPER OUTLETS SHALL EXTEND 6 INCHES INTO THE HORIZONTAL CONDUCTOR DRAIN SOCKETS.

THE DRAWINGS SHOWN ARE TO SCALE BASED UPON ORIGINAL PLAN AND FIELD MEASUREMENTS. THE CONTRACTOR SHALL BE REQUIRED TO MAKE EXACT FIELD MEASUREMENTS TO BE USED TO FABRICATE THE DRAINAGE SYSTEM AS SHOWN. NECESSARY MEASUREMENTS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE SCUPPER SPACING, DOWNSPOUT LOCATION , PIPE OFFSET FROM GIRDER WEB AND CROSSFRAME LOCATIONS ALONG PIPE.

FOR PIPE DETAILS, SUPPORTS AND CONNECTION DETAILS SEE SHEET NO. 8/11

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

DRAINAGE MODIFICATION

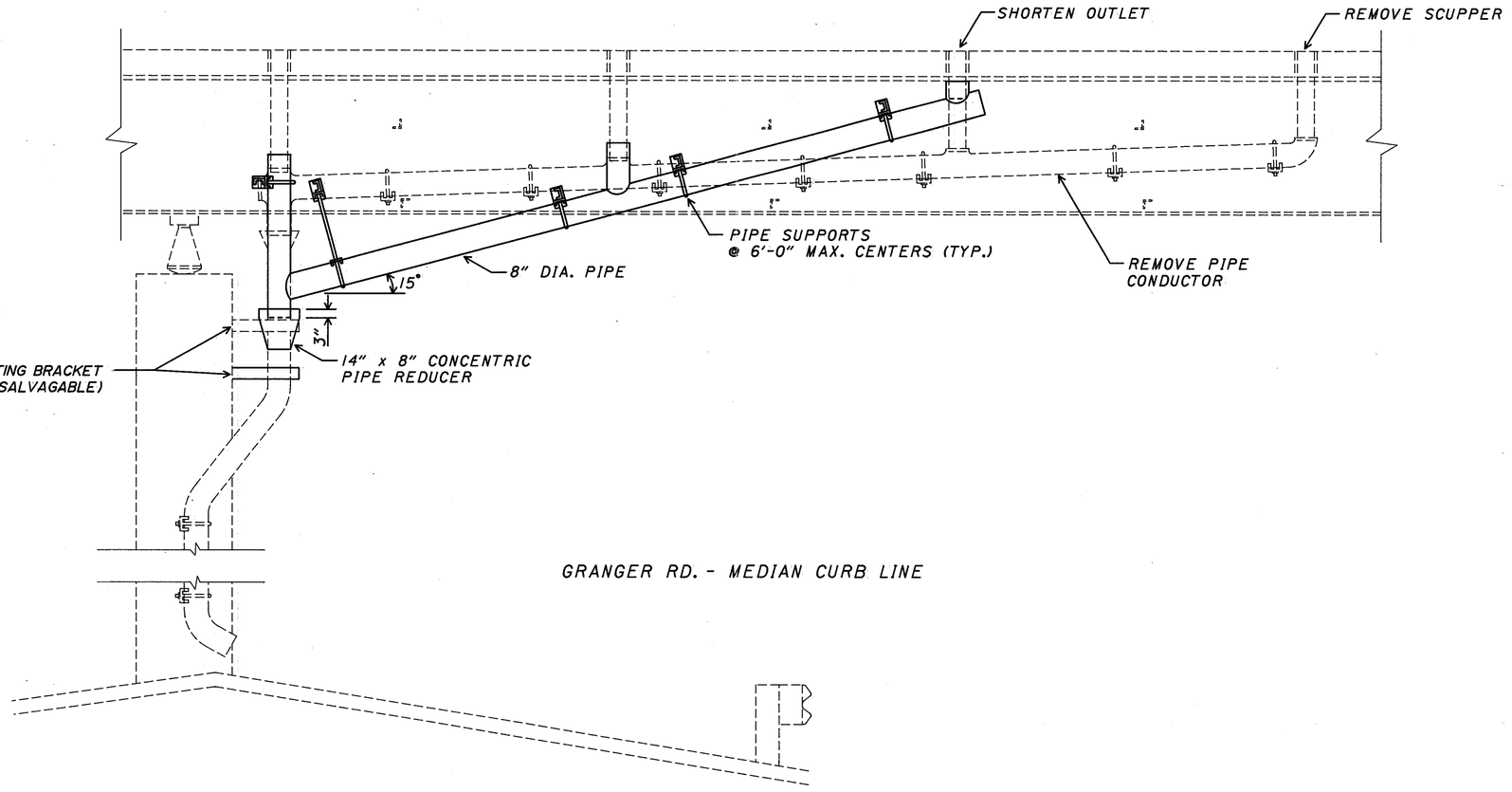
BR. No. CUY-480-1585
GRANGER RD. (S.R. 17)
OVER I.R. 480

CUYAHOGA COUNTY — OHIO

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
ENF	JAG		DWL	
			DATE	SHEET 6/11

PLOT SUBMITTED: 27-NOV-1989 15:31
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]BRDGDRN.DGN;1

CUYAHOGA COUNTY	OHIO	114
CUY-480-15.84	FHWA REGION 5	118
	FEDERAL PROJECT	



SCALE IN FEET: 0 1 2 4

NOTES:

THE PIPE CONDUCTOR AND ALL FITTINGS SHALL BE MADE OF 8" DIA. PIPE AND MAY BE EITHER PLASTIC OR STEEL, GALVANIZED AS PER 711.02

THE SCUPPER OUTLETS SHALL EXTEND 6 INCHES INTO THE HORIZONTAL CONDUCTOR DRAIN SOCKETS.

THE DRAWINGS SHOWN ARE TO SCALE BASED UPON ORIGINAL PLAN AND FIELD MEASUREMENTS. THE CONTRACTOR SHALL BE REQUIRED TO MAKE EXACT FIELD MEASUREMENTS TO BE USED TO FABRICATE THE DRAINAGE SYSTEM AS SHOWN. NECESSARY MEASUREMENTS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE SCUPPER SPACING, DOWNSPOUT LOCATION , PIPE OFFSET FROM GIRDER WEB AND CROSSFRAME LOCATIONS ALONG PIPE.

SCUPPERS OVER FUTURE LANE OBE-JN
(FACING WEST)

FOR PIPE DETAILS, SUPPORTS AND CONNECTION DETAILS SEE SHEET NO. 8 / 11

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

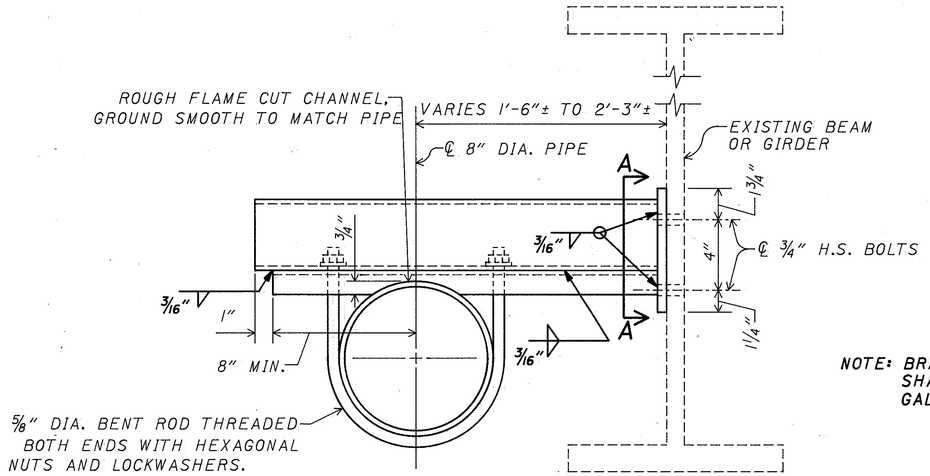
DRAINAGE MODIFICATION

BR. No. CUY-480-1585
GRANGER RD. (S.R. 17)
OVER I.R. 480

CUYAHOGA COUNTY — OHIO

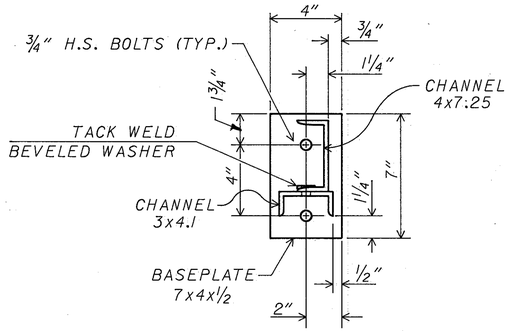
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
ENF	JAG		DWL	
			DATE	SHEET 7 / 11

PLOT SUBMITTED: 4-DEC-1989 10:01
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,33]BRDGDRN.DGN;1



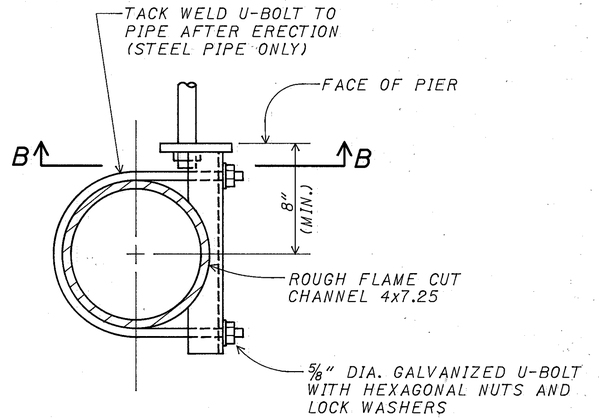
PIPE SUPPORT AT GIRDERS

(SPACED @ 6'-0" CTRS., MAX)

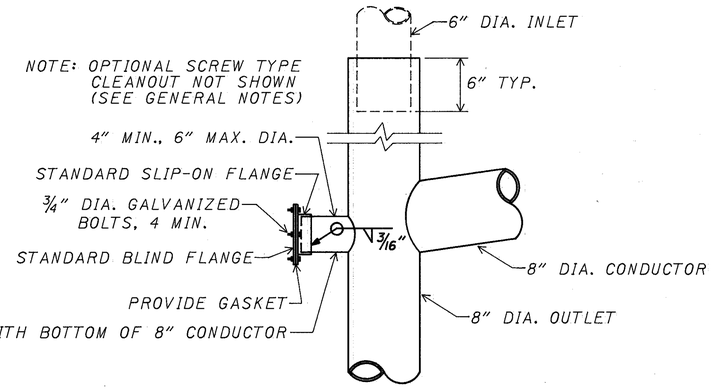


NOTE: BRACKET MATERIAL SHALL BE A-36 STEEL GALVANIZED AS PER 711.02

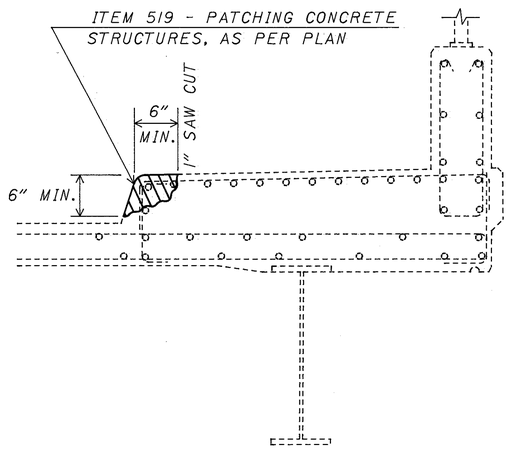
SECTION A-A



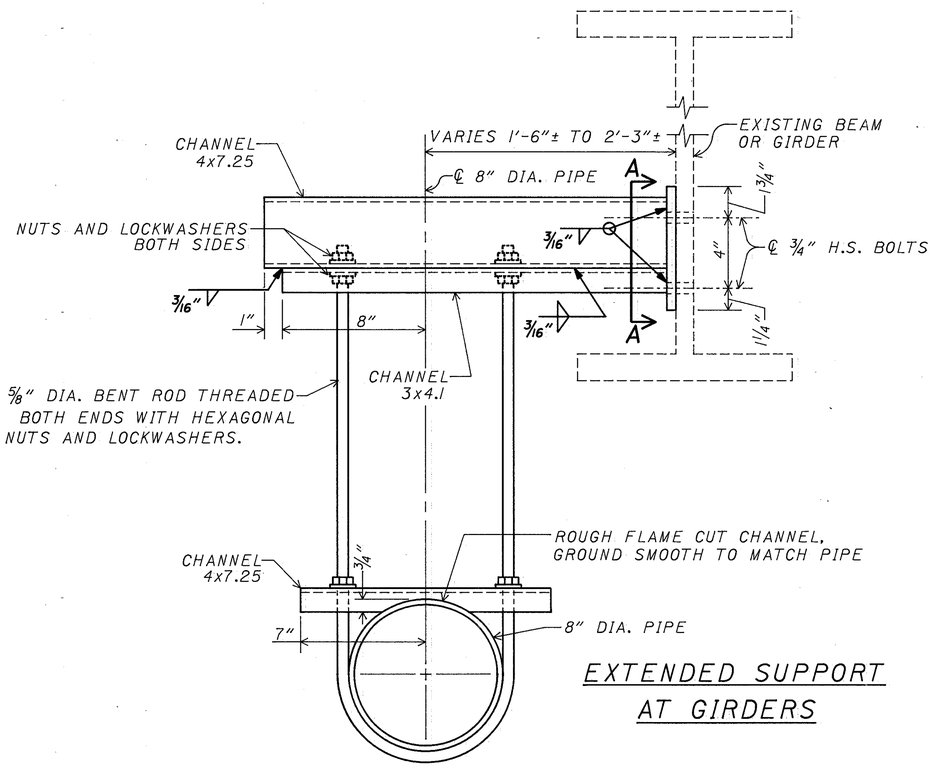
PIPE SUPPORT DETAIL ON ABUTMENTS



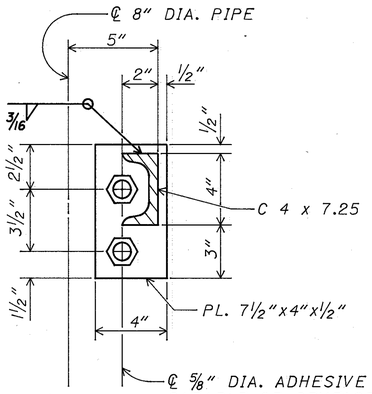
TYPICAL OUTLET DETAIL



TYPICAL CURB PATCHING ALL BRIDGES



EXTENDED SUPPORT AT GIRDERS



SECTION B-B

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

MISCELLANEOUS DETAILS

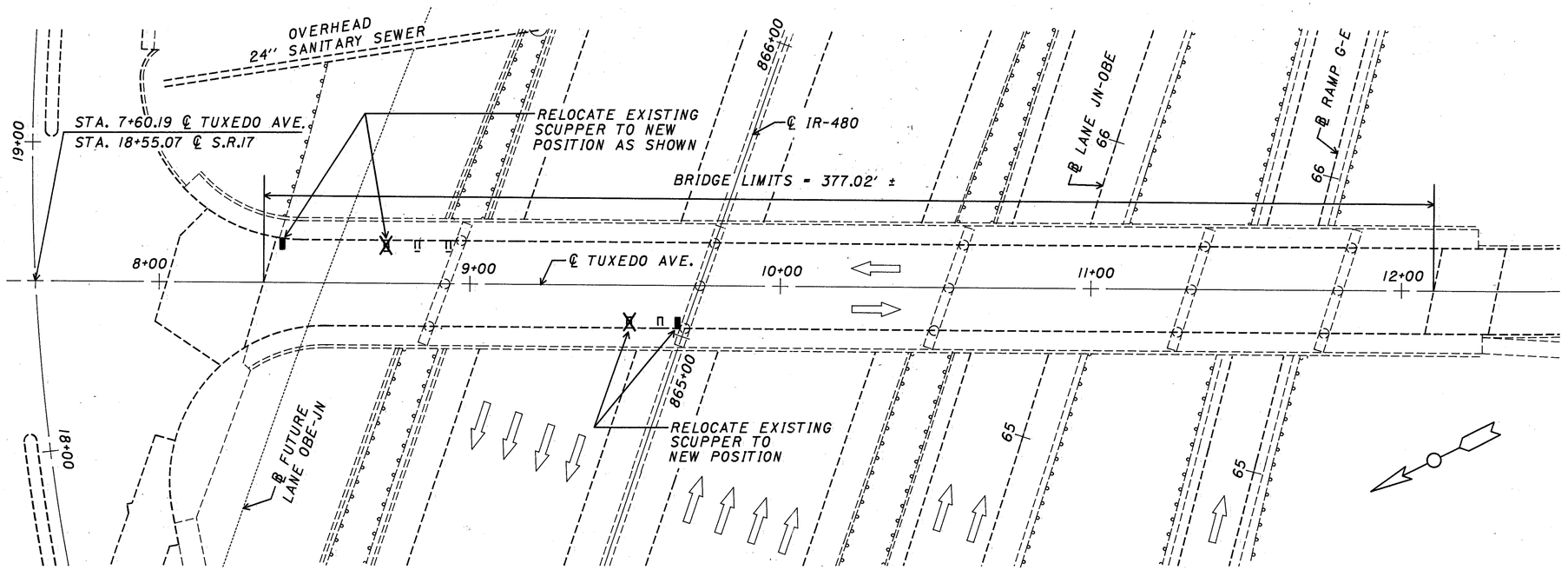
BR. No. CUY-480-1585
BR. No. CUY-480-1590
BR. No. CUY-480-1682
OVER I.R. 480

CUYAHOGA COUNTY OHIO

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
ENF	JAG		DWL	
			DATE	SHEET 8 / 11

PLOT SUBMITTED: 27-NOV-1989 15:34
PLOT SUBMITTED BY: GRMOVSEK
ZF2:[100,331]480BR2.DGN;1

CUYAHOGA COUNTY CUY-480-15.84	OHIO FHWA REGION 5 FEDERAL PROJECT	116 118



PLAN

0 20 40
SCALE IN FEET

EXISTING STRUCTURE

TYPE: 6 SPAN, Continuous steel rolled beam with concrete deck and substructure

SPANS: 57'-0", 2(81'-0"), 69'-6", 49'-0", and 34'-6"

ROADWAY: 28'-0" Curb to curb with two 6'-0" sidewalks

LOADING: HS 20-44

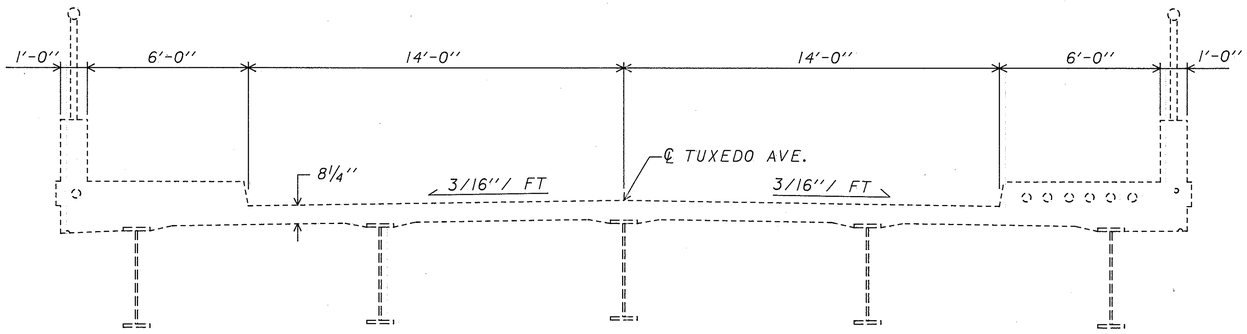
WEARING SURFACE: 1" Latex Modified Concrete

ALIGNMENT: Tangent

SKEW: 18°48'41" Left Forward

PROPOSED WORK

1. WEARING SURFACE REPAIR AND HMWM TREATMENT
2. PATCHING AND SEALING OF CONCRETE SURFACES
3. DRAINAGE CLEANOUT, SCUPPER RELOCATION AND MODIFICATIONS OF SCUPPER OUTLETS



TRANSVERSE SECTION

0 2 4 8
SCALE IN FEET

LOCATION	519 PATCHING CONCRETE STRUCTURES. AS PER PLAN SQ. FT.	SPECIAL PATCHING CONCRETE WITH TROWELABLE MORTAR SQ. FT.
CURBS	13	
SIDEWALKS		50
PARAPETS		20
PIERS & CAPS		55
BACKWALLS & ABUTMENTS		35
50% EXPANSION FACTOR	7	80
TOTAL	20	240

SURVEY DATE 10/26/89

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

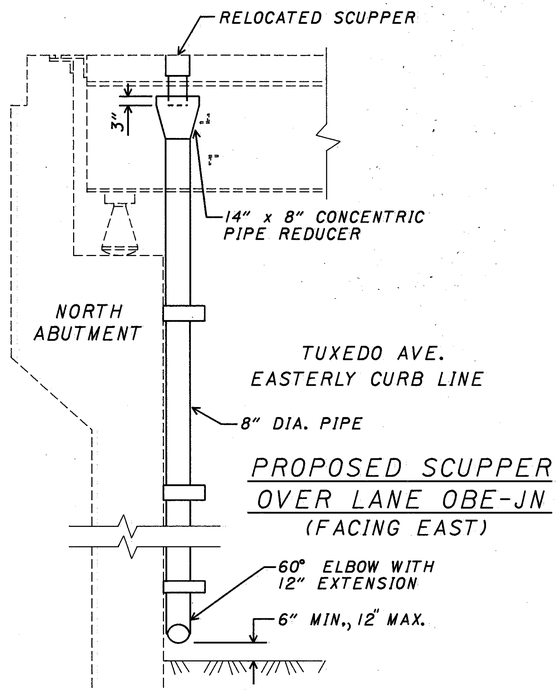
GENERAL PLAN & TRANSVERSE SECTION

BR. NO. CUY-480 -1590
TUXEDO AVE. OVER I.R. 480

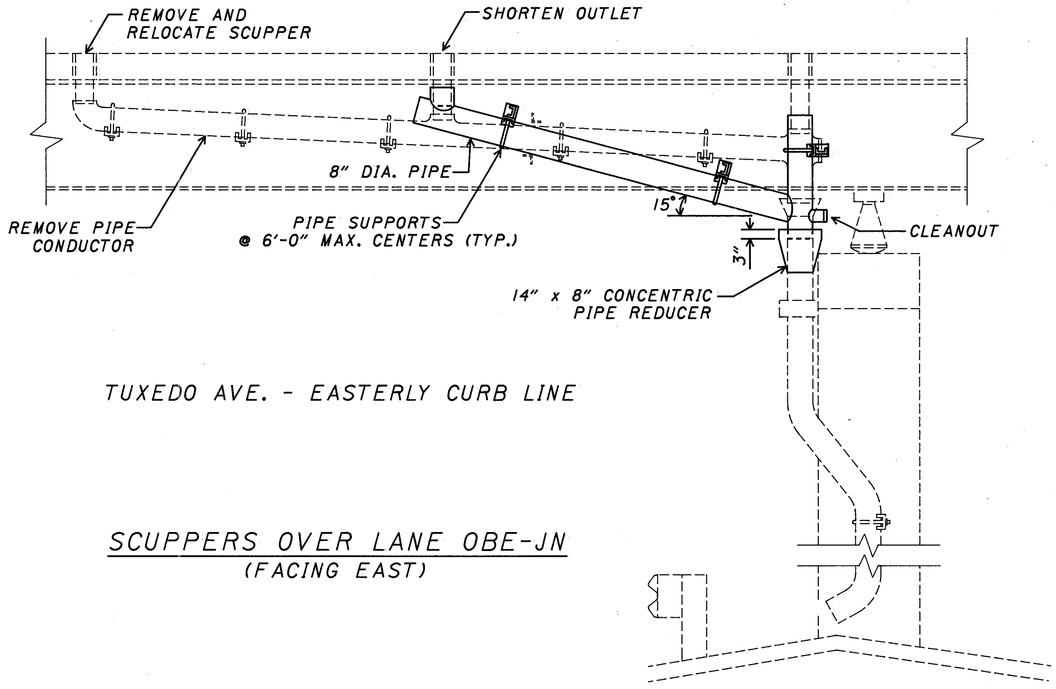
CUYAHOGA COUNTY — OHIO

DESIGNED	TRACED	CHECKED	REVIEWED DATE	REVISED
ENF	JAG		DWL	SHEET 9 / 11

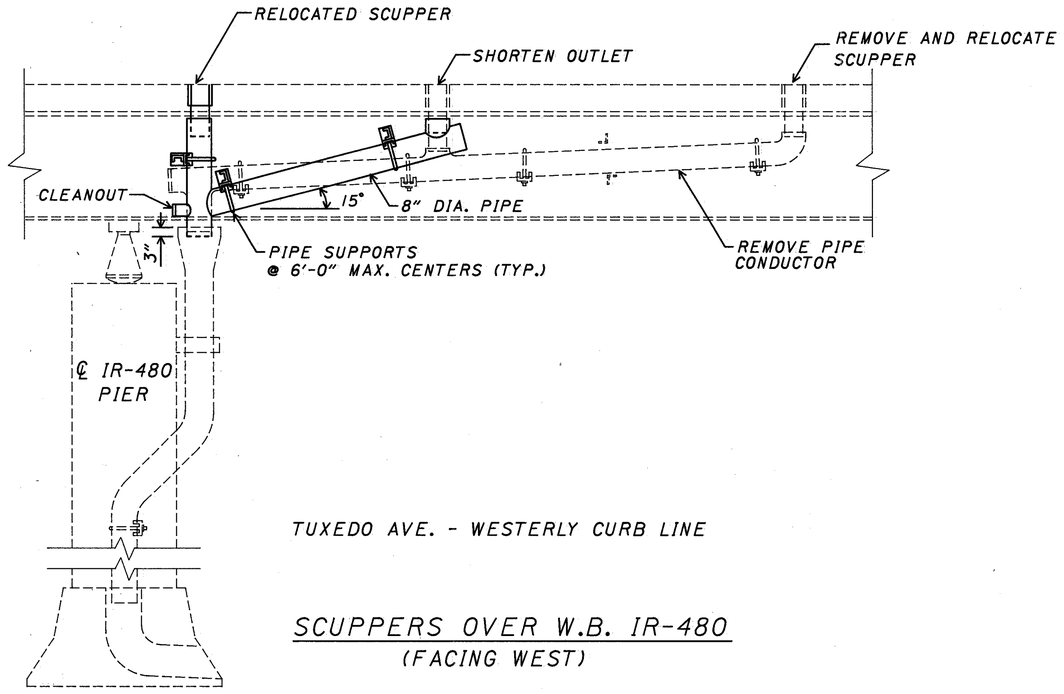
PLOT SUBMITTED: 27-NOV-1989 15:55
ZF2:[100,331]BRDGDRN.DGN
PLOT SUBMITTED BY: GRMOVSEK



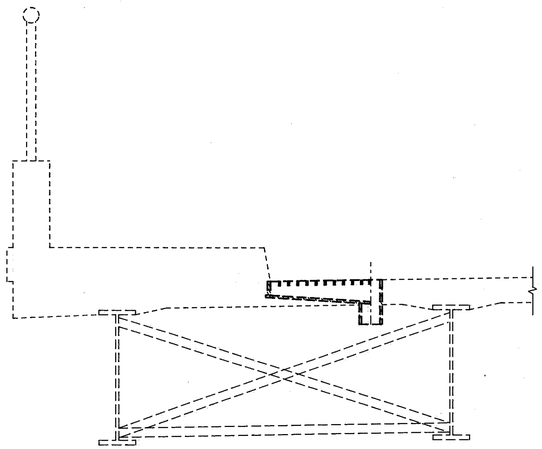
PROPOSED SCUPPER OVER LANE OBE-JN
(FACING EAST)



SCUPPERS OVER LANE OBE-JN
(FACING EAST)



SCUPPERS OVER W.B. IR-480
(FACING WEST)



RELOCATED SCUPPER
(OUTLET NOT SHOWN)

0 1 2 4
SCALE IN FEET

NOTES:

THE PIPE CONDUCTOR AND ALL FITTINGS SHALL BE MADE OF 8" DIA. PIPE AND MAY BE EITHER PLASTIC OR STEEL, GALVANIZED AS PER 711.02

THE SCUPPER OUTLETS SHALL EXTEND 6 INCHES INTO THE HORIZONTAL CONDUCTOR DRAIN SOCKETS.

THE DRAWINGS SHOWN ARE TO SCALE BASED UPON ORIGINAL PLAN AND FIELD MEASUREMENTS. THE CONTRACTOR SHALL BE REQUIRED TO MAKE EXACT FIELD MEASUREMENTS TO BE USED TO FABRICATE THE DRAINAGE SYSTEM AS SHOWN. NECESSARY MEASUREMENTS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE SCUPPER SPACING, DOWNSPOUT LOCATION , PIPE OFFSET FROM GIRDER WEB AND CROSSFRAME LOCATIONS ALONG PIPE.

FOR PIPE DETAILS, SUPPORTS AND CONNECTION DETAILS SEE SHEET NO. 8 / 11

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

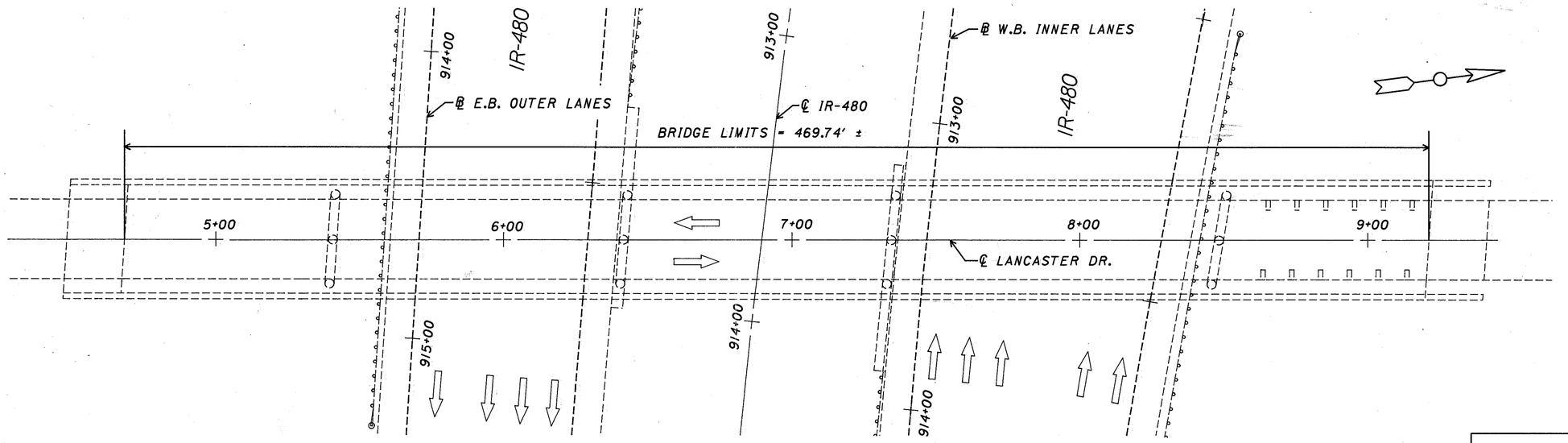
DRAINAGE MODIFICATION

BR. No. CUY-480-1590
TUXEDO AVE. OVER I.R. 480

CUYAHOGA COUNTY				OHIO
DESIGNED ENF	TRACED JAG	CHECKED	REVIEWED DWL DATE	REVISED

PLOT SUBMITTED: 27-NOV-1989 15:36
ZF2:[100,331]480BR3.DGN;1
PLOT SUBMITTED BY: GRMOVSEK

CUYAHOGA COUNTY CUY-480-15.84	OHIO FHWA REGION 5 FEDERAL PROJECT	118 118



PLAN

0 20 40
SCALE IN FEET

EXISTING STRUCTURE

TYPE: 5 SPAN, Continuous welded steel girder with concrete deck and substructure

SPANS: 68'-6", 105'-0", 90'-9", 109'-6", and 73'-3"

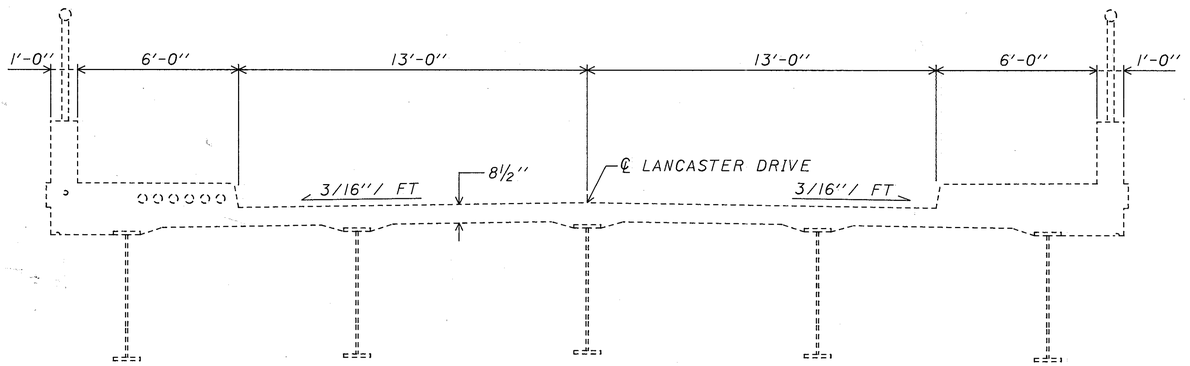
ROADWAY: 26'-0" Curb to curb with two 6'-0" sidewalks

LOADING: HS 20-44

WEARING SURFACE: 1" Latex Modified Concrete

ALIGNMENT: Tangent

SKEW: 05°56'29" Left Forward



TRANSVERSE SECTION

0 2 4 8
SCALE IN FEET

PROPOSED WORK

1. WEARING SURFACE REPAIR AND HMWM TREATMENT
2. PATCHING AND SEALING OF CONCRETE SURFACES

LOCATION	519 PATCHING CONCRETE STRUCTURES, AS PER PLAN	SPECIAL PATCHING CONCRETE WITH TROWELABLE MORTAR
	SQ. FT.	SQ. FT.
CURBS	13	
SIDEWALKS		55
PARAPETS		25
PIERS & CAPS		55
BACKWALLS & ABUTMENTS		70
50% EXPANSION FACTOR	7	105
TOTAL	20	310

SURVEY DATE 10/26/89

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

GENERAL PLAN & TRANSVERSE SECTION

BR. NO. CUY-480 -1682
LANCASTER DR. OVER I.R. 480

CUYAHOGA COUNTY — OHIO

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
ENF	JAG		DWL	
			DATE	SHEET 11 / 11