CUY-90-14.90

PID 77332/85531

APPENDIX EX-24

CUY-090-1341 PID 05581
(Reference Document)

State of Ohio
Department of Transportation
Jolene M. Molitoris, Director

Innerbelt Bridge
Construction Contract Group 1 (CCG1)

Revision Date: 1989

E-0

DESIGN DESIGNATION.

1989 ADT	80,200
2009 ADT	112,280
DHV	11,300
D	55%
T	5%
V	60 MPH
POSTED SPEED	55 MPH

FUNCTIONAL CLASSIFICATION:
URBAN INTERSTATE

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5	1 156
IR-90-1(155)26	FEDERAL PROJECT	

IR-90-1(155)26

CUY-90-13.41

CUYAHOGA COUNTY
CITY OF CLEVELAND

CONVENTIONAL SIGNS

County Line
Township Line
Section Line
Corporation Line or
Fence Line (existing) (proposed)
Center Line 352 353
Trees, Stumps, (to be removed)
Utility Poles: Telephone, Power, Light.

Limited Access (only) LA
Right of Way (only) RW
Limited Access & Right of Way LA & RW
Existing Right of Way
Property Line (in existing fence)
Railroad or
Guardrail (existing) (proposed)

INDEX OF SHEETS

LINE DATA

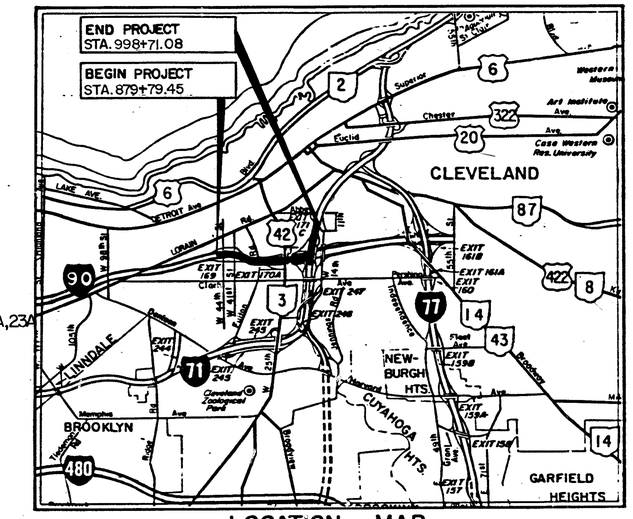
PROJECT LIMITS.
SLM. 13.41=
STA. 879+79.45 TO STA. 931+30.15(BACK) = 5150.70
STA. 928+50 (AHEAD) TO STA. 998+71.08 = 7021.08
12171.78 L.F. = 2.305 MILES

WORK LIMITS

STA. 857+79 TO STA. 931+30.15(BACK) = 7351.15
STA. 928+50(AHEAD) TO STA. 1000+00(BACK) = 7150.00
STA. 4+86.55(AHEAD)TO STA. 14+07 = 920.45
STA. 6+08.33(LANE WS) TO STA. 25+00(BACK) = 1891.67
STA. 0+00(AHEAD, LANE SBOR) TO STA 17+30 = 1730.00
19043.27 L.F. = 3.607 MILES

Plan Prepared By:
O.D.O.T. DISTRICT 12
LOCATION AND DESIGN
05581

Date:
Date of Letting ____ 19__ Contract No. ____



LOCATION MAP

SCALE IN MILES
0 2 4 6 8

PORTION TO BE IMPROVED
FUTURE CONSTRUCTION
INTERSTATE
U.S. HIGHWAYS
STATE HIGHWAYS

SCALES

Plan 25' 50' 100'
Profile: Horizontal, Vertical
Cross Section: Horizontal 5' 10' 20', Vertical 5' 10' 20'

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 of the highway to traffic and that provisions for the maintenance and safety of traffic will be as set forth on these 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

SUPPLEMENTAL SPECIFICATIONS			
802	5-4-88	923	1-10-69
812	8-8-88	852	6-10-87
803	10-2-89	853	6-26-78
836	11-12-85	924	12-14-88
931	6-18-85	933	2-10-87
944	6-24-89	947	10-17-83
847	10-17-83	905	5-2-89
850	5-31-88	952	12-14-88
902	8-31-79	953	8-21-80
921	12-4-72	956	6-26-78

Approved Walter A. Gallt
Date 9-29-89 District Deputy Director of Transportation

Approved B.D. Vanlalani
Date 10-24-89 Engineer, Bureau of Bridges and Structural Design.

Approved Charles J. Still
Date 12/11/89 Chief Engineer, Planning and Design

Approved Bernard B. Hurst
Date 12/11/89 Director, Department of Transportation

REVISED 2-17-90

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

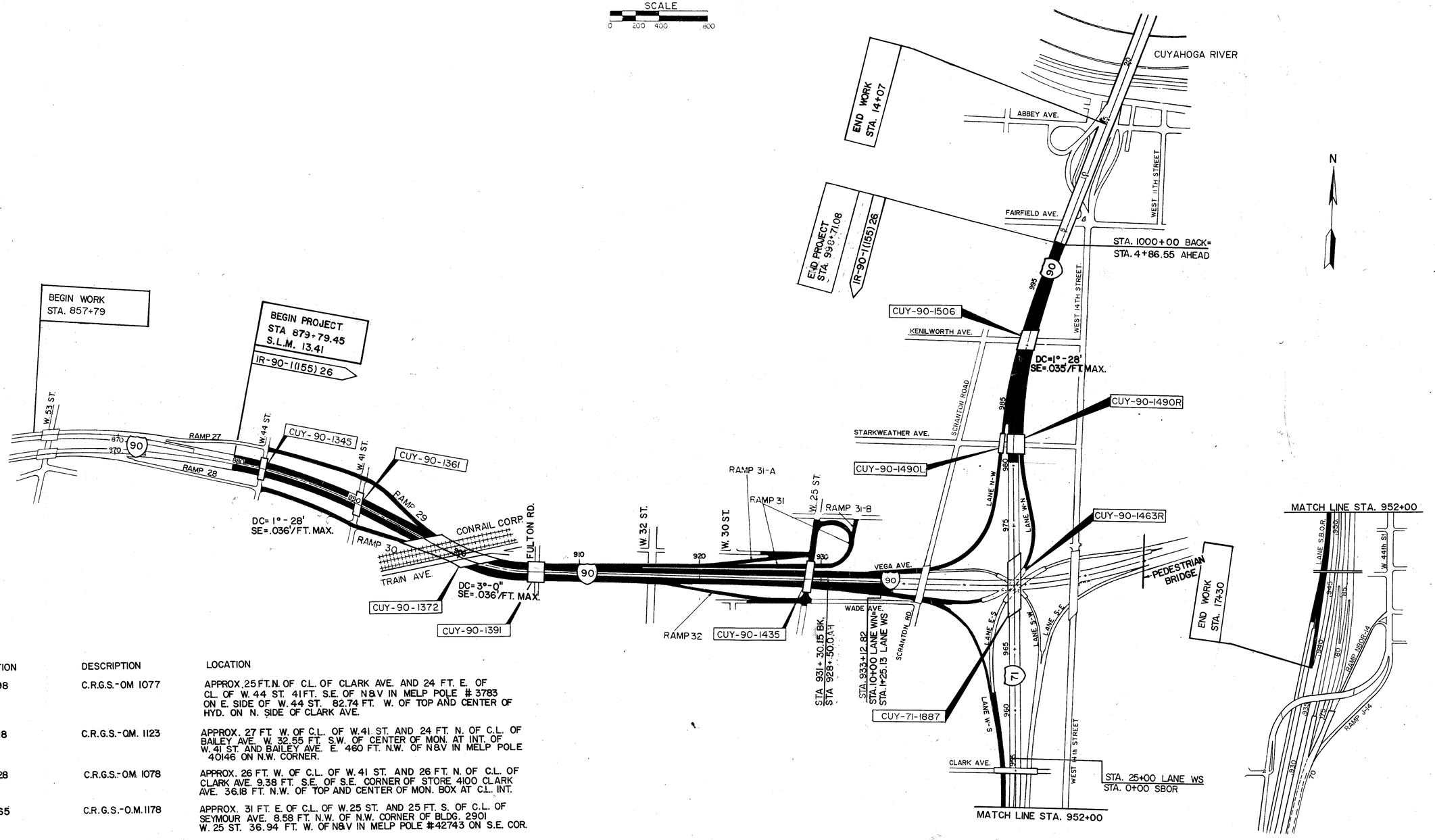
SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

BP-3	12-6-76	GR-2B	2-5-82	TC-82.10	8-29-84	TC-31.10	3-1-79	TC-52.10	4-3-79	HL-10.13	5-1-87
BP-4	10-1-87	GR-3	1-21-85	TC-7.65	3-1-79	TC-31.21	3-6-79	TC-52.20	4-3-79	HL-20.14	5-1-87
BP-5	10-1-87			TC-9.10	4-24-80	TC-32.10	3-8-79	TC-71.10	4-9-79	HL-30.31	5-1-87
BP-7	10-1-87	GR-3B	1-21-85	TC-9.30	4-24-80	TC-32.11	3-21-79			HL-30.32	5-1-87
BP-9	12-6-76	GR-4	2-5-82	TC-12.30	1-20-84						
BP-11	1-30-84	GR-4A	1-30-84	TC-15.115	3-1-79	TC-35.10	8-29-84				
BP-12	10-1-87	GR-5	2-5-82			TC-41.10	8-29-84	MC-4	7-26-76		
BP-13	5-8-87	GR-6	2-5-82	TC-18.24	4-25-79	TC-41.20	3-26-79	MC-9	1-30-84		
CB-3A	5-1-79			TC-18.26	5-31-79	TC-41.40	6-18-79	MT-95.30	10-10-88		
CB-4	11-10-83	MC-5	6-12-75	TC-21.10	1-20-84	TC-41.50	3-26-79	MT-95.31	10-10-88		
CB-2-2A8B	5-1-79	MC-9A	1-11-85	TC-21.20	1-20-84	TC-42.10	8-19-77	MT-99.10	11-14-86	BR-1	5-29-79
CB-8	11-10-83			TC-22.10	3-1-79	TC-42.20	3-26-79			SD-1-69	6-12-69
GR-1	1-11-85	TC-72.20	2-26-82	TC-22.20	3-1-79	TC-51.10	1-20-84			EXJ-4-87	1-5-89

SCHEMATIC PLAN

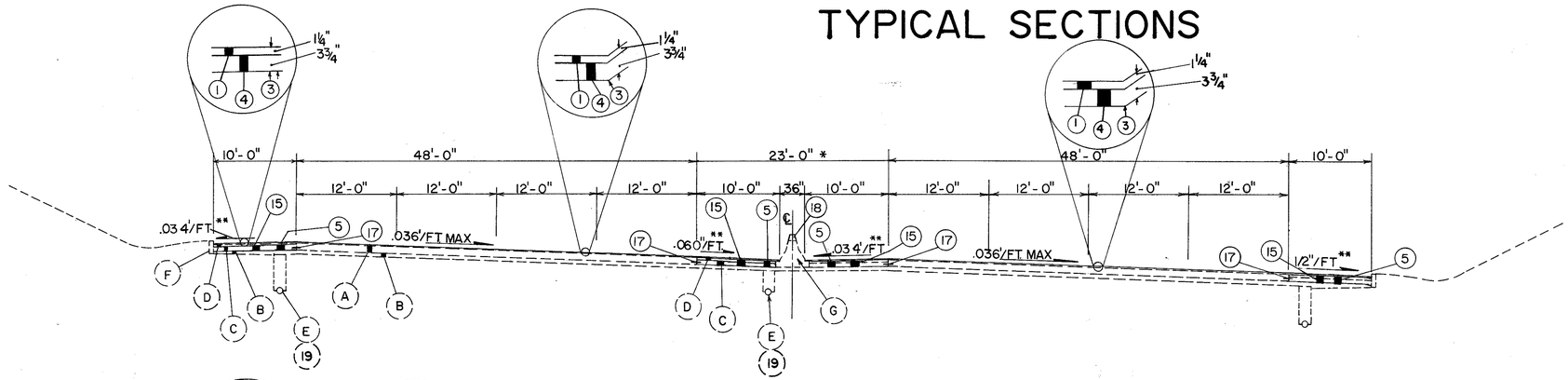
CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	2 156

SCALE
0 200 400 800

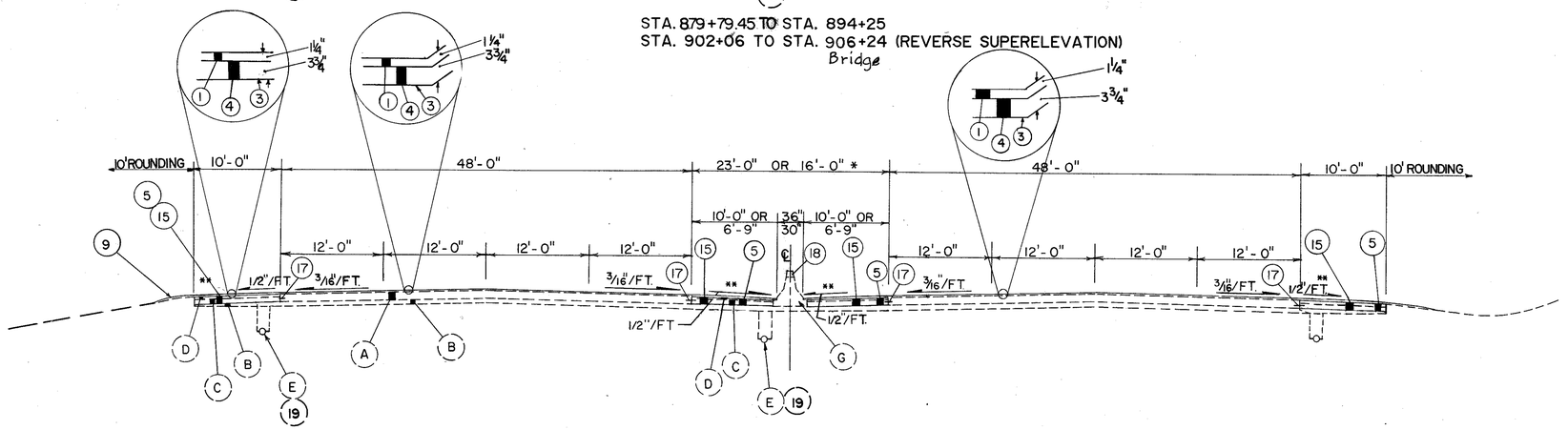


ELEVATION	DESCRIPTION	LOCATION
681.298	C.R.G.S.-OM 1077	APPROX. 25 FT. N. OF C.L. OF CLARK AVE. AND 24 FT. E. OF CL. OF W. 44 ST. 41 FT. S.E. OF N&V IN MELP POLE # 3783 ON E. SIDE OF W. 44 ST. 82.74 FT. W. OF TOP AND CENTER OF HYD. ON N. SIDE OF CLARK AVE.
682.518	C.R.G.S.-OM. 1123	APPROX. 27 FT. W. OF C.L. OF W. 41 ST. AND 24 FT. N. OF C.L. OF BAILEY AVE. W. 32.55 FT. S.W. OF CENTER OF MON. AT INT. OF W. 41 ST. AND BAILEY AVE. E. 460 FT. N.W. OF N&V IN MELP POLE 40146 ON N.W. CORNER.
680.628	C.R.G.S.-OM. 1078	APPROX. 26 FT. W. OF C.L. OF W. 41 ST. AND 26 FT. N. OF C.L. OF CLARK AVE. 9.38 FT. S.E. OF S.E. CORNER OF STORE 4100 CLARK AVE. 36.18 FT. N.W. OF TOP AND CENTER OF MON. BOX AT C.L. INT.
680.565	C.R.G.S.-O.M. 1178	APPROX. 31 FT. E. OF C.L. OF W. 25 ST. AND 25 FT. S. OF C.L. OF SEYMOUR AVE. 8.58 FT. N.W. OF N.W. CORNER OF BLDG. 2901 W. 25 ST. 36.94 FT. W. OF N&V IN MELP POLE #42743 ON S.E. COR.

TYPICAL SECTIONS



STA. 879+79.45 TO STA. 894+25
STA. 902+06 TO STA. 906+24 (REVERSE SUPERELEVATION)
Bridge



STA. 894+25 TO STA. 896+76 (Bridge)
STA. 907+59 TO STA. 931+30.15 BACK (STA. 928+50 AHEAD)

NOTE: TYPICAL SECTION STATIONING INCLUDES BRIDGES BUT IN NO WAY ARE THESE TYPICALS REPRESENTATIVE OF THE BRIDGE TYPICALS. SEE STRUCTURE SECTION FOR BRIDGE INFORMATION.

* SEE PAVED SHOULDER DETAIL SHEET No. 5

** SEE CONCRETE SHOULDER SUB-SUMMARY FOR LOCATIONS OF SHOULDER REPLACEMENT SHEET No. 22

*** AS PER PLAN SHALL BE USED WHEN TYPE I IS EXPOSED TO TRAFFIC.

LEGEND

PROPOSED

① ITEM **446** - ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20 AS PER PLAN. ***
② ITEM **446** - ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
③ ITEM 407 - TACK COAT
④ ITEM 301 - BITUMINOUS AGGREGATE BASE, AC-20.
⑤ ITEM 203 - EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION.
⑥ ITEM 203 - LINEAR GRADING.
⑦ ITEM 310 - 6" SUBBASE, TYPE 1, GRADING A, AS PER PLAN.
⑧ ITEM 404 - 3" ASPHALT CONCRETE, AC-20.
⑨ ITEM 617 - 3" COMPACTED AGGREGATE (3' WIDE), TYPE A
⑩ DELETED
⑪ ITEM 606 - GUARDRAIL TYPE 5.
⑫ ITEM SPECIAL - 3/4" RUBBERIZED OPEN GRADED ASPHALT FRICTION COURSE (SEE PROPOSAL NOTE)
⑬ ITEM 254 - PAVEMENT PLANING BITUMINOUS & ITEM 254 - PATCHING PLANED SURFACE EX. 3/4" OPEN GRADED ASPHALT CONCRETE ONLY
⑭ ITEM 202 CURB REMOVED.
⑮ ITEM 305 - CONCRETE BASE, AS PER PLAN
⑯ ITEM 609 - CURB TYPE 6. AS PER PLAN
⑰ NUMBER 5 TIE BAR, 24" LONG, SPACED AT 30" C/C ##
⑱ ITEM 622 - CONCRETE GLARE SCREEN
⑲ ITEM 605 - 6 SHALLOW PIPE UNDERDRAIN

EXISTING

Ⓐ 10" REINFORCED CONCRETE PAVEMENT.
Ⓑ SUBBASE (6" OR 18").
Ⓒ AGGREGATE BASE.
Ⓓ BITUMINOUS AGGREGATE BASE.
Ⓔ 6" UNDERDRAINS.
Ⓕ CURB, TYPE 6.
Ⓖ CONCRETE BARRIER.
Ⓗ GUARDRAIL, TYPE 5.
Ⓘ MEDIAN
Ⓙ OPEN GRADED ASPHALT.
Ⓚ ASPHALT SURFACE COURSE
Ⓛ CURB, TYPE 2A.
Ⓜ CONCRETE PAVEMENT.

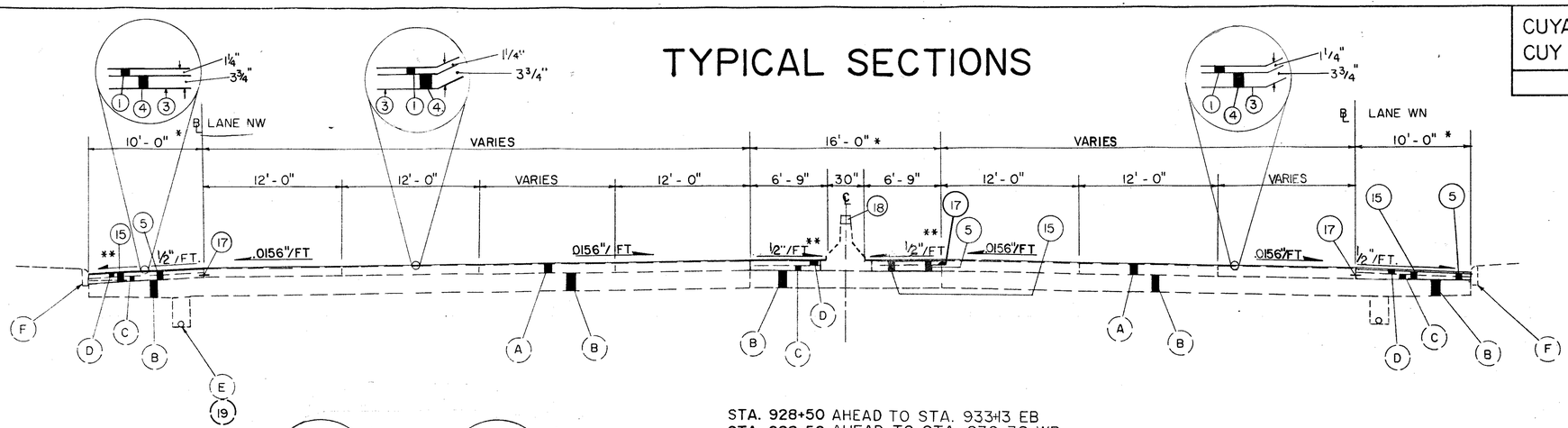
≠ 9½" AVG. CONCRETE BASE (THICKNESS FROM 9" AT BARRIER TO 10" AT PAVEMENT) FOR LEFT (OR INSIDE) SHOULDER, 10" CONCRETE BASE FOR RIGHT (OR OUTSIDE) SHOULDER AND LEFT SHOULDER ON LANES NW, WN, WS, SBOR.

USE A NONSHRINK, NON-METALLIC GROUT MEETING THE REQUIREMENTS OF ASTM C-881, TYPE I, GRADE 3, CLASS A, B, OR C, OR SS 952.

THE GROUT SHALL CONSIST OF A TWO COMPONENT EPOXY OR POLYESTER RESIN. BONDING COMPOUND THAT WILL FIRMLY ANCHOR THE TIE BAR WITHIN 15 MINUTES, AND SHALL BE ACCEPTED BY CERTIFICATION IN ACCORDANCE WITH ITEM 101.061. THE DRILLED HOLES SHALL BE 7/8 DIA. PAYMENT IS INCLUDED IN ITEM 305, AS PER PLAN.

90449

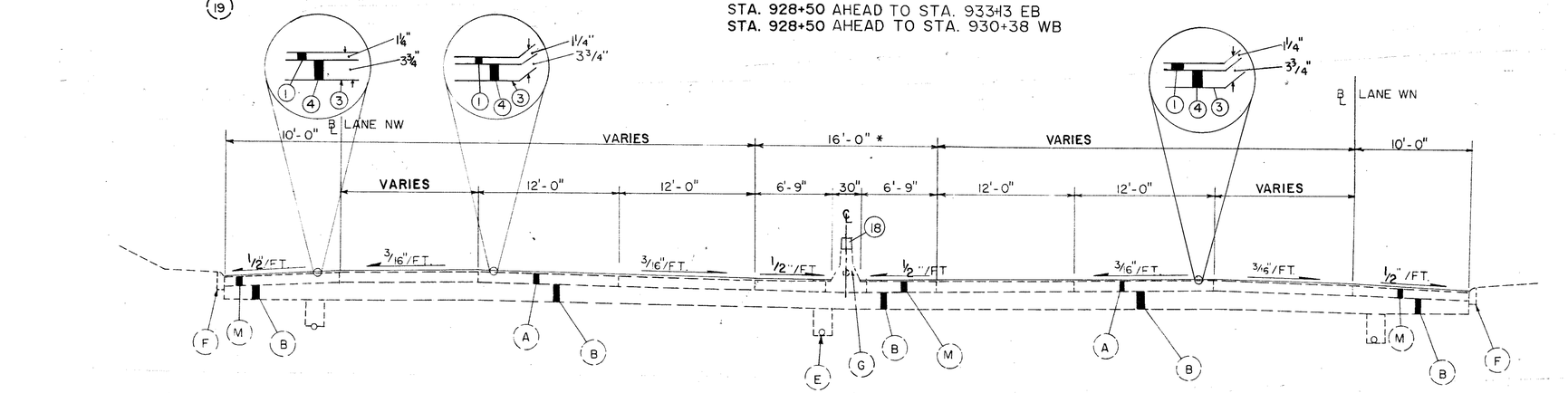
TYPICAL SECTIONS



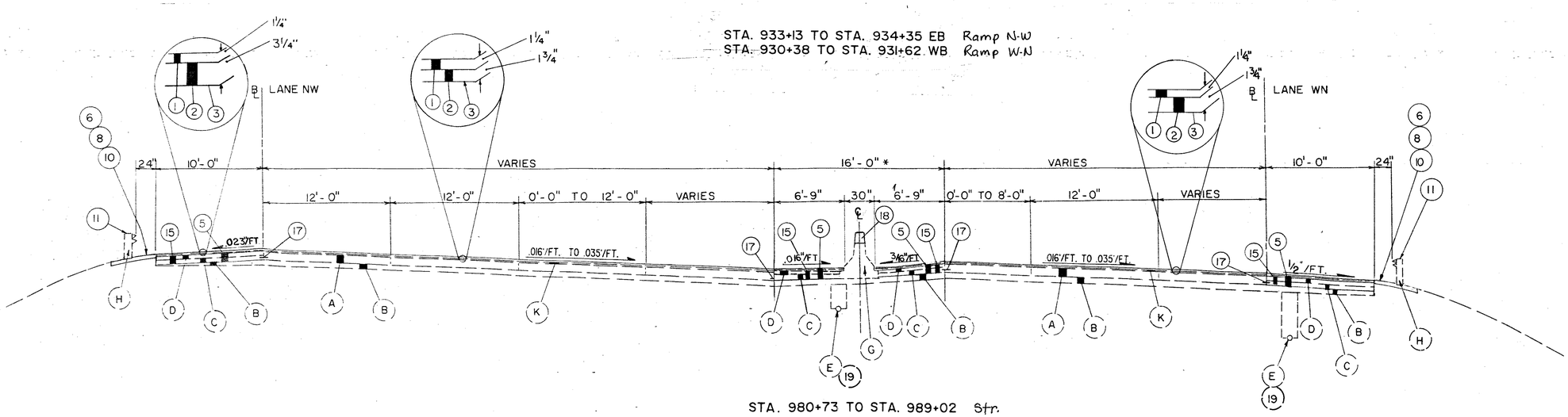
* SEE PAVED SHOULDER DETAIL SHEET No. 5

** SEE CONCRETE SHOULDER SUB-SUMMARY FOR LOCATIONS OF SHOULDER REPLACEMENT, SHEET No. 22

STA. 928+50 AHEAD TO STA. 933+13 EB
STA. 928+50 AHEAD TO STA. 930+38 WB



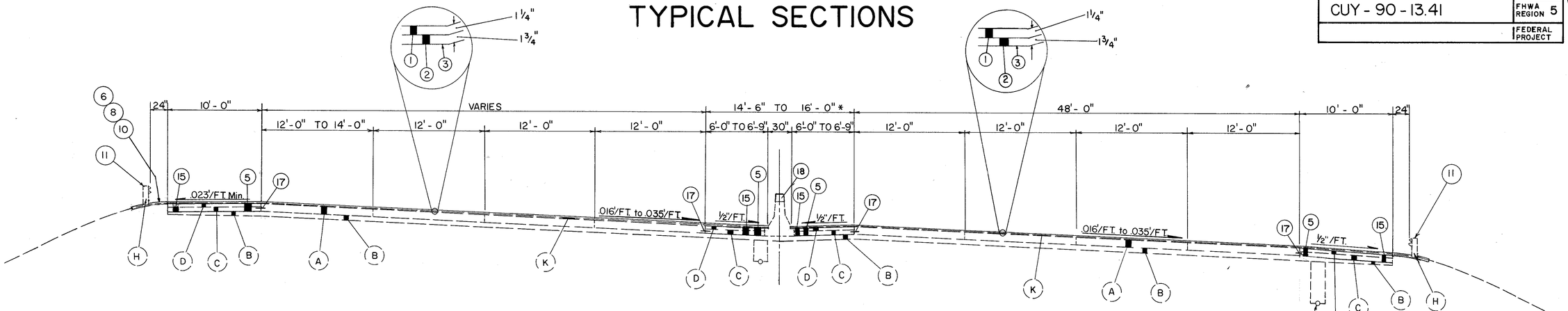
STA. 933+13 TO STA. 934+35 EB Ramp N-W
STA. 930+38 TO STA. 931+62 WB Ramp W-N



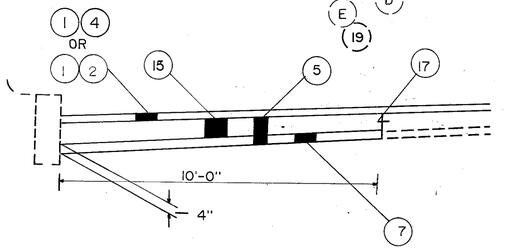
STA. 980+73 TO STA. 989+02 Str.

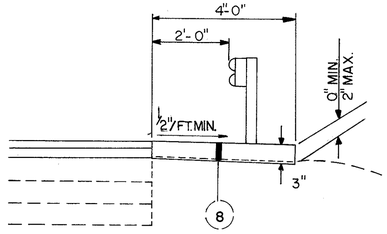
730

TYPICAL SECTIONS



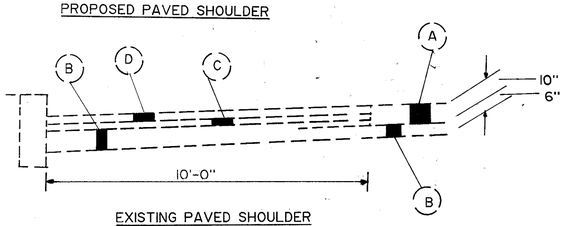
STA. 989+02 TO STA. 991+21 STR.
STA. 991+21 TO STA. 998+01



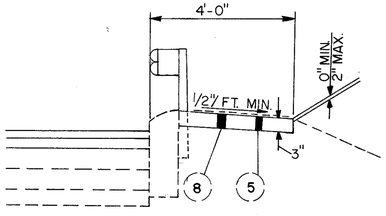


TYPICAL SHOULDER TREATMENT,
GUARDRAIL AND NO CURB

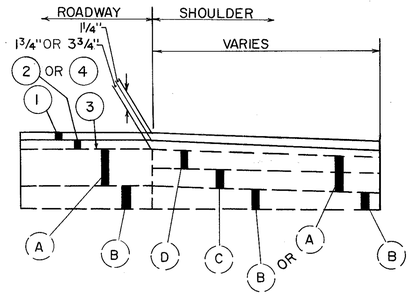
PROPOSED PAVED SHOULDER



EXISTING PAVED SHOULDER



TYPICAL SHOULDER TREATMENT,
GUARDRAIL AND CURB



TYPICAL FOR INSIDE AND OUTSIDE PAVED SHOULDERS, (WITH CURB, **NON CURBED, AND BARRIER)**

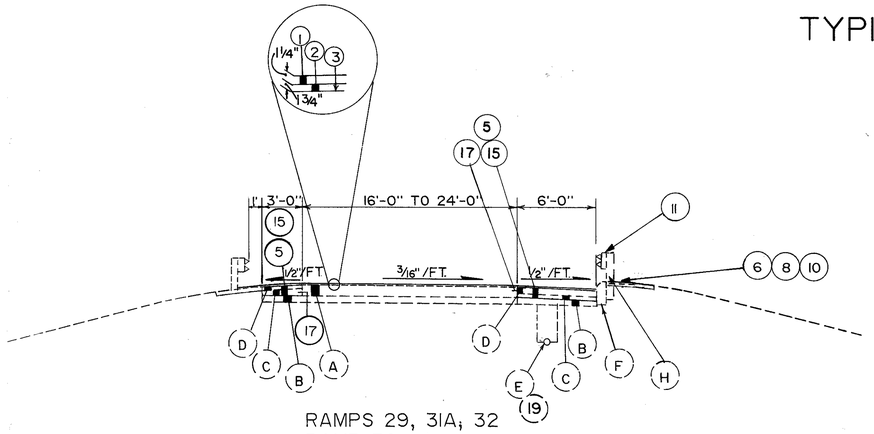
* PAVED SHOULDER DETAIL WITH OPEN GRADED ASPHALT
STA. 879+79 TO STA. 933+13 EB
STA. 879+79 TO STA. 931+62 WB

90449

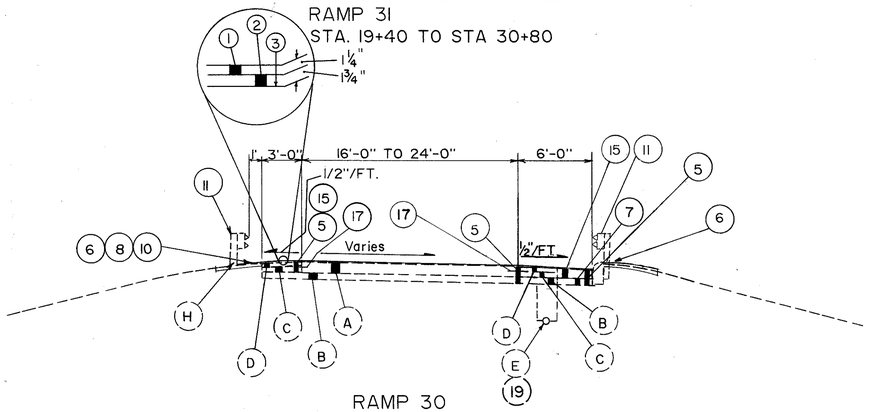
TYPICAL SECTIONS - RAMPS

CUYAHOGA COUNTY	OHIO	6
CUY-90-13.41	FHWA REGION 5	156
	FEDERAL PROJECT	

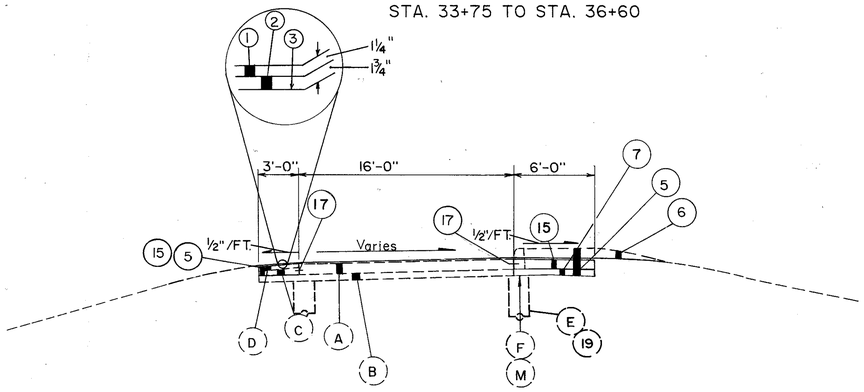
* SEE PAVED SHOULDER DETAIL SHEET No, 5



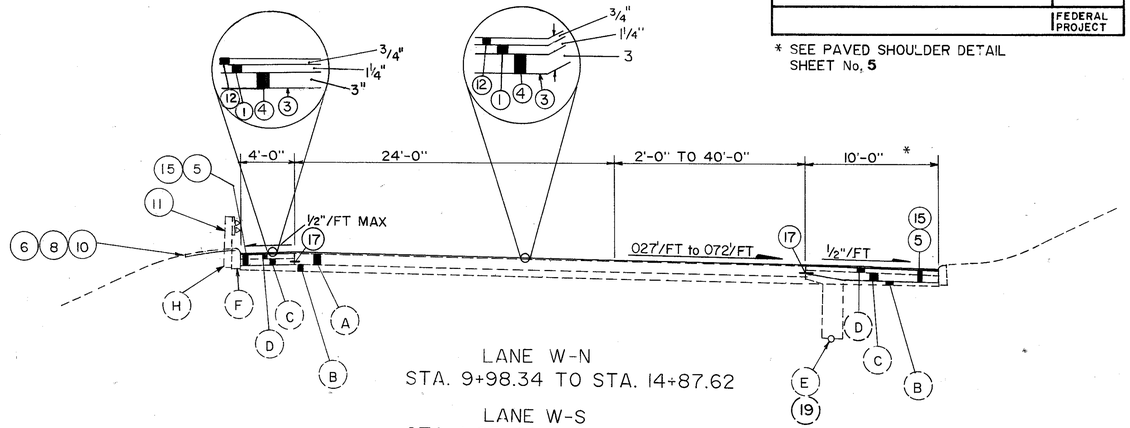
RAMPS 29, 31A; 32
RAMP 30
STA. 95+07 TO STA. 95+82
RAMP 31
STA. 19+40 TO STA 30+80



RAMP 30
STA. 91+82 TO STA. 95+07
RAMP 31
STA. 33+75 TO STA. 36+60

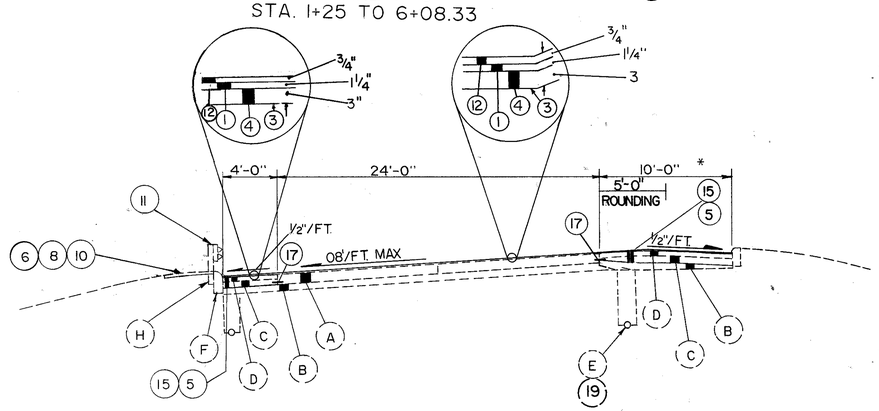


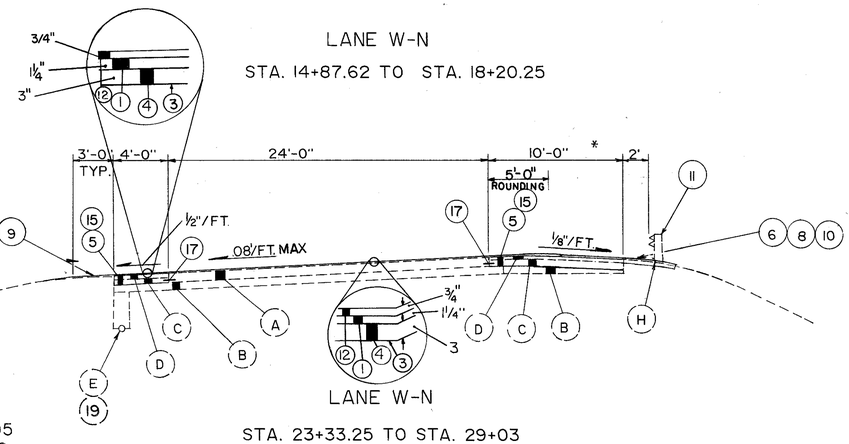
RAMP 31B
STA. 4+70 TO STA. 5+95



LANE W-N
STA. 9+98.34 TO STA. 14+87.62

LANE W-S
STA. 1+25 TO 6+08.33





LANE W-N
STA. 14+87.62 TO STA. 18+20.25

LANE W-N
STA. 23+33.25 TO STA. 29+03

RAMP WORK LIMITS FOR INFORMATIONAL PURPOSES:

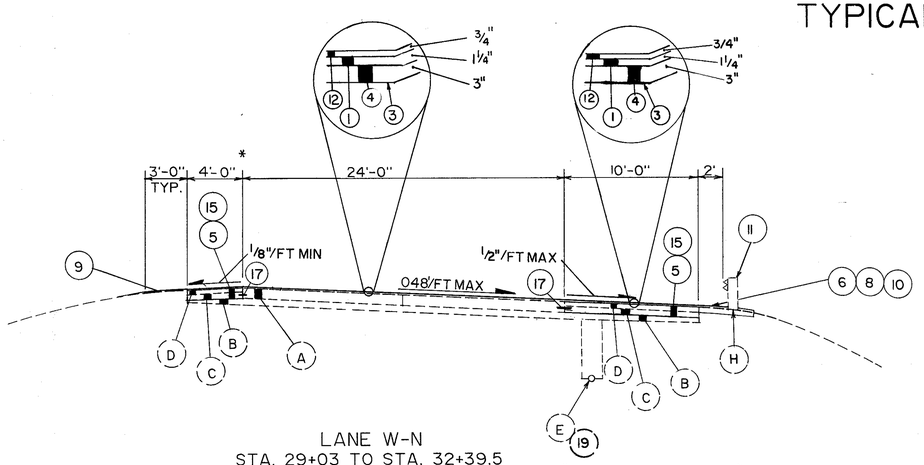
RAMP 29 STA. 90+05 TO STA. 95+95
RAMP 30 STA. 91+28 TO STA. 95+82
RAMP 31 STA. 19+64 TO STA. 37+35
RAMP 31A STA. 15+89 TO STA. 29+70
RAMP 31B STA. 4+58 TO STA. 6+26
RAMP 32 STA. 18+98 TO STA. 29+38

90449

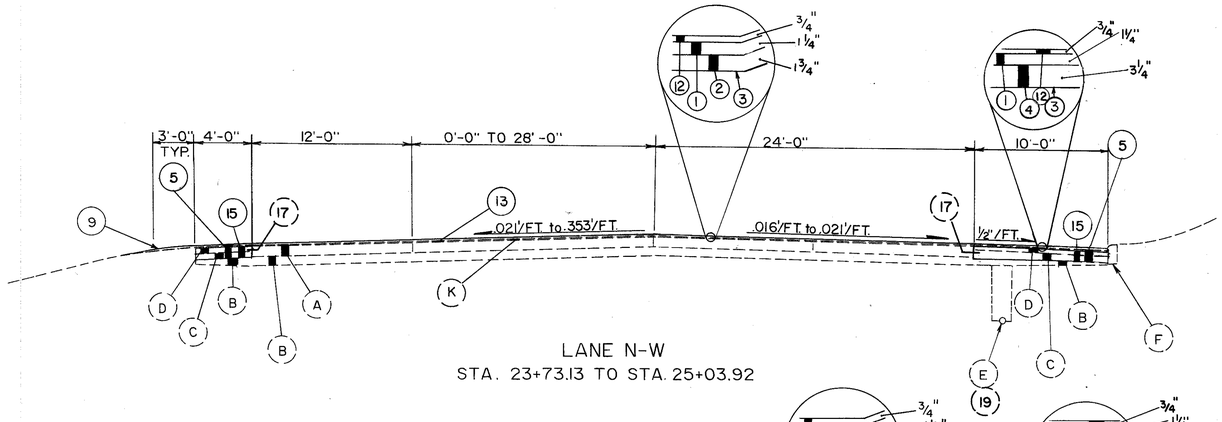
TYPICAL SECTIONS - RAMPS

* SEE PAVED SHOULDER DETAIL SHEET No. 5

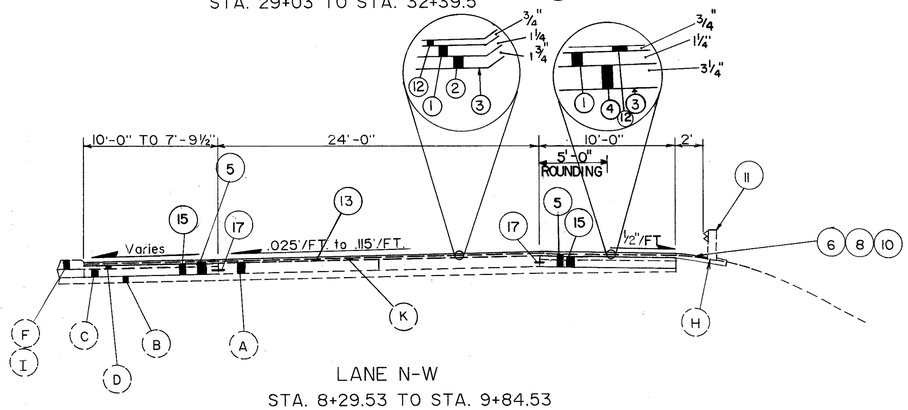
CUYAHOGA COUNTY	OHIO
CUY-90-13.41	FHWA REGION 5
	FEDERAL PROJECT



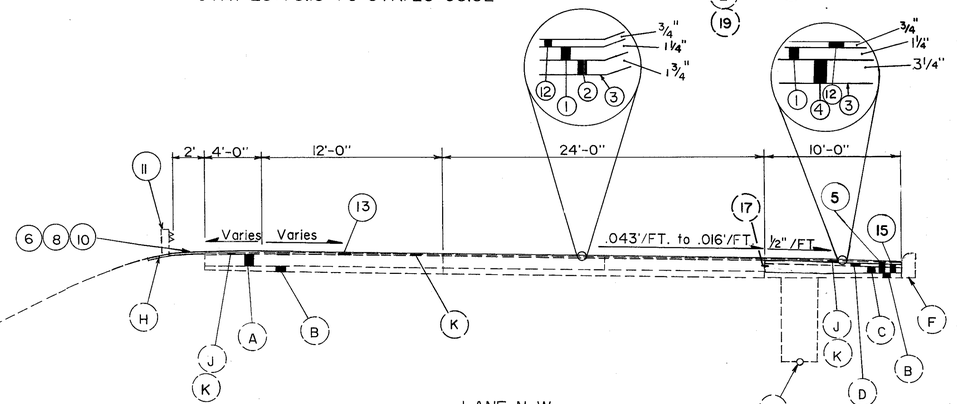
LANE W-N
STA. 29+03 TO STA. 32+39.5



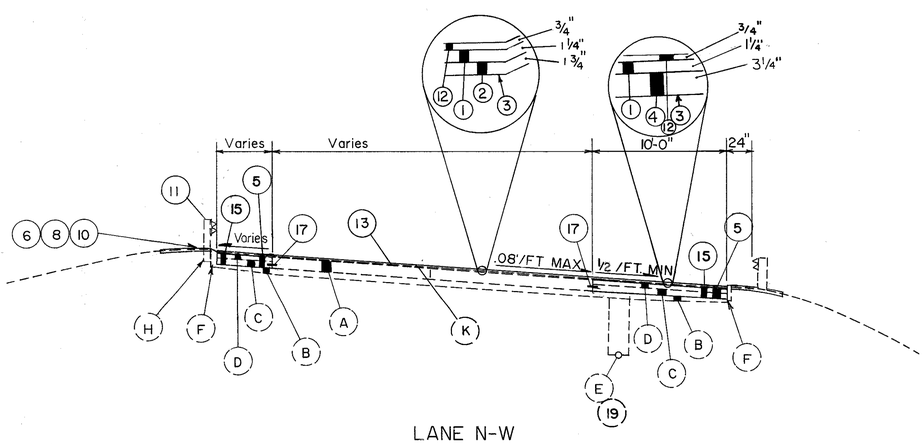
LANE N-W
STA. 23+73.13 TO STA. 25+03.92



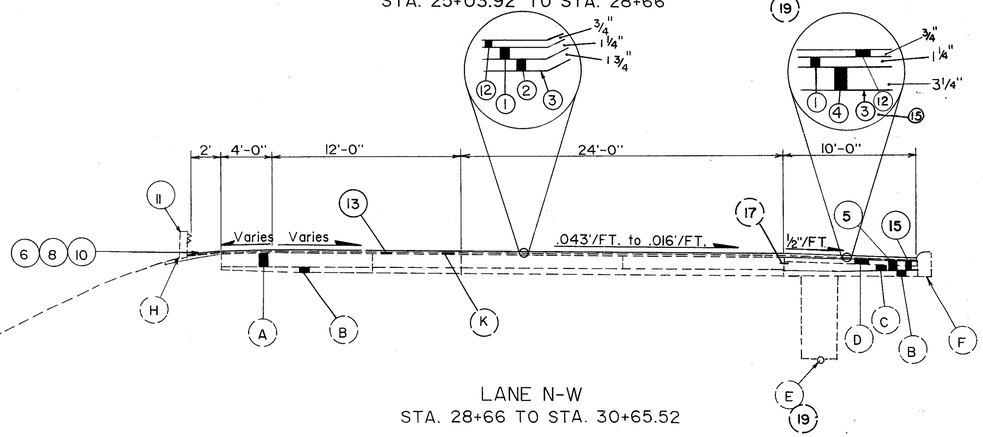
LANE N-W
STA. 8+29.53 TO STA. 9+84.53



LANE N-W
STA. 25+03.92 TO STA. 28+66



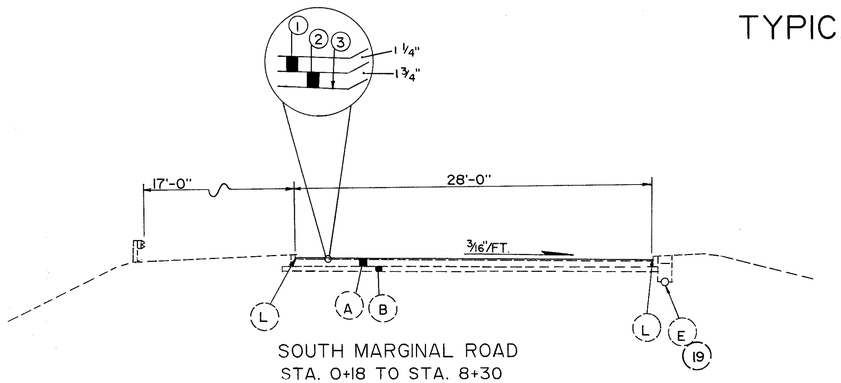
LANE N-W
STA. 12+00.64 TO STA. 23+73.13



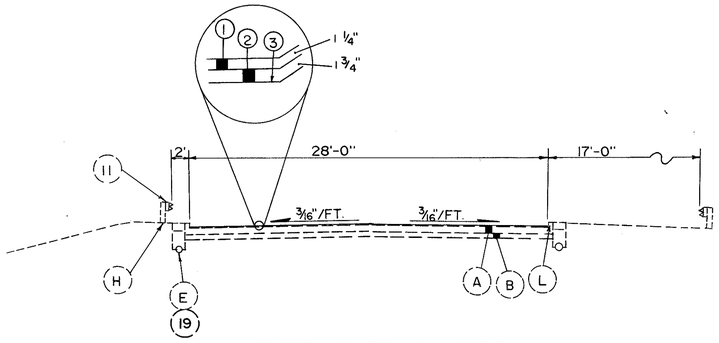
LANE N-W
STA. 28+66 TO STA. 30+65.52

TYPICAL SECTIONS - MARGINAL ROADS, RAMPS

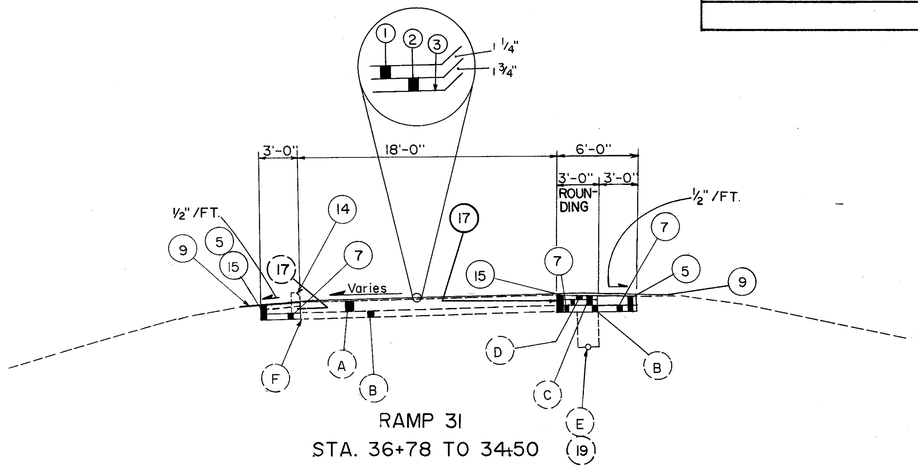
CUYAHOGA COUNTY	OHIO	8
CUY- 90 - 13.41	FHWA REGION 5	156
	FEDERAL PROJECT	



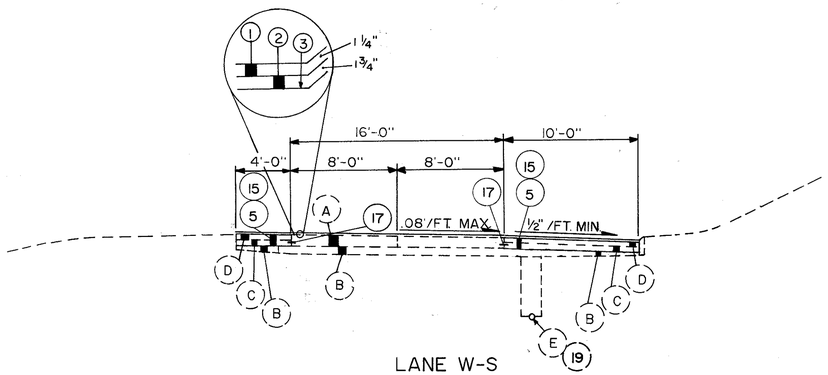
SOUTH MARGINAL ROAD
STA. 0+18 TO STA. 8+30



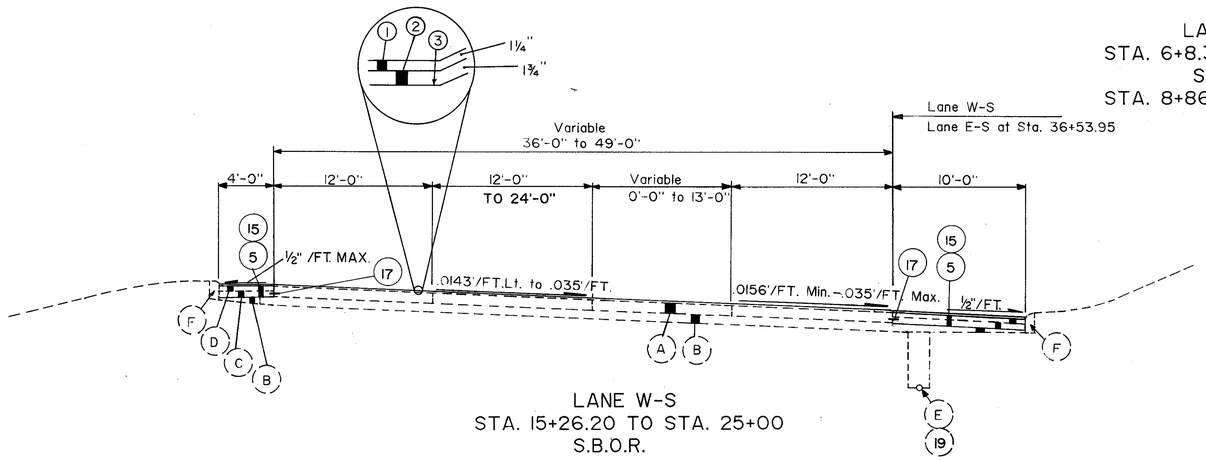
NORTH MARGINAL ROAD
STA. 0+19 TO STA. 8+37



RAMP 31
STA. 36+78 TO 34+50



LANE W-S
STA. 6+8.33 TO STA. 15+26.20
S.B.O.R.
STA. 8+86 TO STA. 11+80



LANE W-S
STA. 15+26.20 TO STA. 25+00
S.B.O.R.
STA. 0+00 TO STA. 8+86

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.

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 TRANSPORTATION BLVD., GARFIELD HEIGHTS, OHIO 44125.

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. CITY OF CLEVELAND SEWER DEPT.
   1201 LAKESIDE AVE.
   CLEVELAND, OHIO 44114
   (216) 664-2604
5. CLEVELAND PUBLIC POWER
   1201 LAKESIDE AVENUE
   CLEVELAND, OHIO 44114
   (216) 664-3346
6. CUYAHOGA COUNTY SANITARY ENGINEER
   75 PUBLIC SQUARE
   CLEVELAND, OHIO 44113
   (216) 443-7600
7. CITY OF CLEVELAND, DEPT. OF WATER
   1201 LAKESIDE AVE.
   CLEVELAND, OHIO 44114
   (216) 664-3349

COOPERATION BETWEEN CONTRACTORS

THE CONTRACTOR SHALL COOPERATE AND COORDINATE HIS OPERATIONS WITH THE CONTRACTOR'S ON OTHER PROJECTS THAT MAY BE IN FORCE DURING THE LIFE OF THIS CONTRACT. NO WAIVER OF ANY PROVISIONS OF 105.07 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS IS INTENDED.

EQUIPMENT AND MATERIAL STORAGE

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

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

ALL ITEMS ARE COST PARTICIPATION I UNLESS SHOWN OTHERWISE.

COOPERATION WITH RAILROADS

THE CONTRACTOR SHALL COOPERATE AT ALL TIMES WITH LOCAL OFFICIALS OF THE RAILROAD COMPANY. HE SHALL USE ALL REASONABLE CARE AND DILIGENCE IN THE WORK IN ORDER TO AVOID ACCIDENTS, DAMAGE OR INTERFERENCE WITH THE TRAINS OR OTHER PROPERTY OF THE RAILROAD. THE CONTRACTOR SHALL NOTIFY THE LOCAL OFFICIALS OF THE RAILROAD PRIOR TO STARTING WORK THAT MAY AFFECT RAILROAD PROPERTY AND FACILITIES AND SHALL PAY THE RAILROAD COMPANY THE COST OF FLAGMEN FURNISHED BY THE RAILROAD COMPANY AND MADE NECESSARY BECAUSE OF ANY OF THE CONTRACTOR'S OPERATIONS OVER OR ADJACENT TO THE TRACKS.

NO SCAFFOLD, PLANKS, OR OTHER EQUIPMENT SHALL BE SUSPENDED OR ERECTED ABOVE OR WITHIN 10' OF A RAIL OVER WHICH TRAINS ARE OPERATING WITHOUT PRIOR WRITTEN APPROVAL OF THE CHIEF ENGINEER, OR HIS AUTHORIZED REPRESENTATIVE OF THE RAILROAD COMPANY.

FAILURE TO NOTIFY THE RAILROAD COMPANY, AS NOTED ABOVE, SHALL BE CAUSE FOR STOPPING WORK UNTIL ALL PROVISIONS FOR PROTECTING RAILROAD PROPERTY HAVE BEEN PROVIDED. SEE STRUCTURES NOTES FOR RAILROAD INFORMATION.

WORK WILL GENERALLY BE ON STRUCTURE CUY-90-1372, I-90 OVER CONRAIL. THE WORK WILL INCLUDE SOUNDING THE CONCRETE DECK BOTTOM, REMOVING LOOSE OR DETERIORATED CONCRETE, PATCHING AND SEALING OF EXPOSED CONCRETE SURFACES, INJECTION OF DELAMINATED CONCRETE ON THE DECK UNDERSIDE, SCUPPER PLUGGING, NEW SCUPPER INSTALLATION AND DRAINAGE REHABILITION INCLUDING CONSTRUCTION OF NEW CATCH BASINS AT THE BASE OF PIER 2.

ROADWAY

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

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

ITEM 201-CLEARING AND GRUBBING

THIS LUMP SUM ITEM SHALL BE USED TO CLEAR BRUSH AND TREES OBSTRUCTING SIGHT DISTANCES.

THE FIRST LOCATION IS ALONG LANE NW FROM APPROXIMATELY STATION 11+75 TO STATION 24+00. THE AREA SHALL BE CLEARED TO 20 FEET (OR CLEAR ZONE) FROM THE RIGHT SHOULDER EDGE.

THE SECOND LOCATION IS BETWEEN CUY-90-1490 R AND L ON THE NORTH SIDE (BEHIND THE IMPACT ATTENUATOR). THE AREA SHALL BE PREPARED SO THAT A 3" ASPHALT OVERLAY CAN BE PLACED THERE. ALSO INCLUDED IN THIS ITEM IS THE REMOVAL OF ONE (1) 18" DIAMETER TREE. THE ABOVE IS APPROXIMATE & THE STATE OF OHIO RESERVES THE RIGHT TO ORDER THE REMOVAL OF ADDITIONAL TREES AND STUMPS WITHIN THE RIGHT OF WAY AND PAID FOR UNDER THIS ITEM.

ITEM 202- RAISED PAVEMENT MARKERS REMOVED FOR STORAGE

RAISED PAVEMENT MARKERS SHALL BE REMOVED FROM THE ROADWAY IN A MANNER THAT PREVENTS DAMAGE TO THE CASTINGS. REMOVED MARKERS ARE TO BE STORED ON THE RIGHT-OF-WAY WITHIN THE PROJECT LIMITS BY THE CONTRACTOR AS DIRECTED. ALL COSTS TO BE INCLUDED IN THE CONTRACTOR'S PRICE BID FOR ITEM 202- RAISED PAVEMENT MARKERS REMOVED FOR STORAGE.

ITEM 202-RAISED PAVEMENT MARKERS REMOVED FOR STORAGE	1000 EACH

ITEM 203-EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION, A.P.P.

THIS ITEM SHALL BE PERFORMED ALONG THF OUTSIDE EDGE OF PAVED SHOULDERS UNDER GUARDRAIL IN PREPERATION FOR THE HERBICIDES AND ITEM 404 FOR WEED CONTROL (SEE REFERENCE OF TYPICAL SECTIONS). THIS ITEM OF WORK SHALL INCLUDE SITE RESTORATION AND EXCAVATION NECESSARY TO PROVIDE A LEVELSURFACE AT THE EDGE OF SHOULDER FOR SURFACING. THE CONTRACTOR SHALL PROVIDE SMOOTH SHOULDER SLOPES (1/2" PER FOOT MIN., 1" PER FOOT MAX.)

ITEM 203-EXCAVATION NOT INCLUDED EMBANKMENT CONSTRUCTION, AS PER PLAN	100 C.Y.

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, AS PER PLAN	100 C.Y.

ITEM 203-LINEAR GRADING
ITEM 404-ASPHALT CONCRETE
ITEM SPECIAL - [illegible] FOR WEED CONTROL

THESE ITEMS SHALL BE USED FOR EROSION CONTROL UNDER EXISTING OR PROPOSED GUARDRAIL, AND IN THE AREA BETWEEN CUY-90-1490 R AND L AFTER CLEARING AND GRUBBING OPERATIONS HAVE BEEN PERFORMED. THIS WORK SHALL TAKE PLACE AT THE SAME TIME AS THE WORK UNDER THE GUARDRAIL.

EXCAVATION AND SITE RESTORATION SHALL BE CONSIDERED INCIDENTAL AND COST SHALL BE COVERED IN ITEM 203-LINEAR GRADING. ITEM 404 SHALL BE PLACED FLUSH WITH THE SURROUNDING SOIL OR SHOULDER.

WHEN WORKING UNDER EXISTING GUARDRAIL, THE COMPACTION METHOD FOR ITEM 404 SHALL BE 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 SHEET 21

GENERAL NOTES

CUY-90-13.41

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5	OHIO		

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ITEM 254-PAVEMENT PLANNING, PORTLAND CEMENT CONCRETE

THIS ITEM SHALL CONSIST OF REMOVING THE EXISTING CONCRETE PAVEMENT FOR BUTT JOINTS DESCRIBED ON SHEET NO.38 , AND AS DIRECTED BY THE ENGINEER. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 254-PAVEMENT PLANNING, PORTLAND CONCRETE CEMENT 4562 SQ.YD.

ITEM 254- PAVEMENT PLANNING, BITUMINOUS

THIS ITEM SHALL CONSIST OF REMOVING EXISTING ASPHALT FOR BUTT JOINTS AS DESCRIBED ON SHEET 38 AND AS DIRECTED BY THE ENGINEER. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 254-PAVEMENT PLANNING, BITUMINOUS 2326 SQ.YD.

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 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. 14)

GUARDRAIL REPLACEMENT

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR SPOT REPLACEMENT OF GUARDRAIL IN ADDITION TO THE QUANTITIES TABULATED ON THE GUARDRAIL SUB-SUMMARY TABLE. THESE QUANTITIES SHALL BE USED TO REPLACE DAMAGED GUARDRAIL SECTIONS WHICH WERE NOT OTHERWISE SCHEDULED TO BE REPLACED.

ITEM 202-GUARDRAIL REMOVED.....500 L.F.
ITEM GUARDRAIL, TYPE 5, AS PER PLAN.....500 L.F.

RAISING EXISTING GUARDRAIL, TYPE 5

EXISTING TYPE 5 GUARDRAIL WHICH IS NOT SCHEDULED FOR REPLACEMENT IN THESE PLANS SHALL BE RAISED TO THE PROPER HEIGHT AFTER RESURFACING HAS BEEN COMPLETED. (SEE STD. CONSTRUCTION DRAWING GR-2B). PAYMENT FOR RAISING EXISTING GUARDRAIL SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY TO RAISE THE GUARDRAIL IN CONFORMANCE WITH ITEM 606 AND THE STANDARD CONSTRUCTION DRAWINGS, GR-2B (2-5-82). SEE SHEET 21 FOR QUANTITIES.

FASTENING OF BRIDGE TERMINAL ASSEMBLIES

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

THIS ITEM REQUIRES THE USE OF POLYESTER RESIN ANCHORS WITH FEMALE THREADED INSERTS (10 INCH LONG) TO ACCEPT 7/8" DIAMETER BOLTS WHEN THRU BOLTS CANNOT BE USED.

ITEM 202-ANCHOR ASSEMBLY POST REMOVED, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL EQUIPMENT, MATERIAL AND LABOR TO MODIFY EXISTING TYPE A ANCHOR ASSEMBLIES TO THE MORE CURRENT TYPE A ANCHOR ASSEMBLY AS PER STANDARD DRAWING GR-4 (2-5-82).

WORK SHALL INCLUDE THE REMOVAL OF EXISTING POST 12.5' FROM POST A OF THE ANCHOR. POST NEED NOT BE COMPLETELY REMOVED BUT MAY BE CUT OFF AT THE GROUND LINE.

SEQUENCE OF OPERATIONS FOR GUARDRAIL INSTALLATION OR RAISING EXCEPT FOR SHOULDER WIDENIN SECTION (SEE MAINTANENCE OF TRAFFIC NOTES):

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, OR RAISE EXISTING GUARDRAIL

TYPE 5 GUARDRAIL, AS PER PLAN, 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 FT.-6 INCH, 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.

ITEM 608 - 4" CONCRETE WALK, AS PER PLAN

THIS WORK CONSISTS OF REPLACING CONCRETE WALK WHICH IS CRACKED, BROKEN OR DETERIORATED, AS DIRECTED BY THE ENGINEER.

REPLACEMENT SHALL BE IN THE SAME LOCATION AS EXISTING WALK. SEE DETAIL ON SHEET 39 AND 41 .

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

ITEM 202 - WALK REMOVED.....4200 S.F.
ITEM 608 - 4" CONCRETE WALK, AS PER PLAN...3900 S.F.
ITEM 660 - SODDING.....810 S.Y.

CURB TYPE 6, AS PER PLAN

THIS WORK CONSISTS OF REPLACING BROKEN, MISSING, OR DETERIORATED CURB WITHIN THE PROJECT LIMITS AS DIRECTED BY THE ENGINEER. CURB REVEAL SHALL MATCH THE ADJACENT CURB REVEAL AS DIRECTED BY THE ENGINEER. WHEN NECESSARY, PREFORMED JOINT MATERIAL AND JOINT SEALER SHALL BE AS NOTED IN 609.02 AND STANDARD CONSTRUCTION DRAWING BP-7. SEE SHEET 39 FOR DETAILS.

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

ITEM 202 - CURB REMOVED.....1050 L.F.

ITEM 609 - CURB, TYPE 6, AS PER PLAN.....1050 L.F.

DUST CONTROL

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

ITEM 616-WATER.....1000 M.GAL
ITEM 616-CALCIUM CHLORIDE.....50 TON

ITEM 625-CONDUIT 713.04, 2", AS PER PLAN

EXISTING PLANS SHOW CONDUIT LOCATED IN THE OUTER PORTION OF THE PARAPET, YET THE CONDUIT MAY HAVE BEEN LOCATED ELSEWHERE WHEN BUILT.

DURING THE RAILING FACING OPERATION, IF THE EXISTING CONDUIT IS FOUND TO BE IN THE CURBED SECTION OF THE PARAPET, THE CONTRACTOR SHALL REMOVE THE CONDUIT UNDER ITEM 517 AND REPLACE THE CONDUIT AND MAKE ALL NECESSARY CONNECTIONS UNDER ITEM 625-CONDUIT 713.04
THIS ITEM SHALL BE AS DIRECTED BY THE ENGINEER AND USE AS A CONTINGENCY. ANY OR ALL OF THIS ITEM OF WORK MAY BE NON-PERFORMED.

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

ITEM 625-CONDUIT 713.04, 2", AS PER PLAN	3408 LIN.FT.
ITEM 625-CONNECTOR KIT TYPE II	14 EACH
ITEM 625-CONNECTOR KIT TYPE III	14 EACH
ITEM 625-NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	16680 LIN.FT.

JOINT SEALERS

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

WEARING COURSE REMOVED

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED FOR THE REMOVAL OF THE ASPHALT WEDGE AS SHOWN ON SHEET 38 .

ITEM 202-WEARING COURSE REMOVED 2000 S.Y.

ITEM SPECIAL- RAISING EXISTING IMPACT ATTENUATOR

THIS ITEM OF WORK SHALL INCLUDE THE CAREFUL REMOVAL OF THE EXISTING IMPACT ATTENUATOR, RAISING THE CONCRETE PAD, EXTENDING ANCHOR, AND REPLACING THE EXISTING IMPACT ATTENUATOR ON THE RAISED PAD.

THE EXISTING ATTENUATOR SHALL BE REMOVED INCLUDING ALL CELLS, PANELS, AND MISCELLANEOUS HARDWARE.

THE REMAINING BACKWALL SHALL BE FREE OF RUST AND DEBRIS.

A NEW 3 INCH CONCRETE PAD AS PER ITEM 305 SHALL BE POURED OVER THE EXISTING CONCRETE PAD. (THE SAME DIMENSIONS SHALL APPLY). THE TOP ELEVATION OF THE CONCRETE PAD SHALL BE THE SAME AS THE ADJACENT NEW ASPHALT OVERLAY.

THE EXISTING IMPACT ATTENUATOR SHALL THEN BE REANCHORED TO THE NEW PAD AS RECOMMENDED BY THE MANUFACTURER.

ALL LABOR, EQUIPMENT, MATERIALS AND HARDWARE NECESSARY TO COMPLETE THIS WORK ACCORDING TO MANUFACTURER'S SPECIFICATIONS (ENERGY ABSORPTION SYSTEMS INC) SHALL BE PAD FOR IN:

ITEM SPECIAL- RAISING EXISTING IMPACT ATTENUATOR 1 EACH

ITEM 609 - CURB, TYPE 2-A, AS PER PLAN

THE NEW TYPE 2-A CONCRETE CURB SHOWN IN THE DETAIL (SEE SHT. 39) SHALL BE CONNECTED TO THE EXISTING PAVEMENT WITH EPOXY COATED NO.5 DOWEL BARS SPACED ON 18 INCH CENTERS. INSTALLATION OF THE DOWEL BARS SHALL BE IN ACCORDANCE WITH ITEM 510.
ALL DISTURBED AREAS BEHIND CURB SHALL BE RESTORED USING FERTILIZER, SEED, AND MULCH IN ACCORDANCE WITH ITEM 659.
THE COST OF DOWEL BARS, DOWEL HOLES, MORTAR, AND RESTORATION OF DISTURBED AREAS BEHIND THE CURB SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 609-CURB, TYPE 2-A, AS PER PLAN.

ITEM 202 INTEGRAL CURB REMOVED 800 LIN. FT.
ITEM 609 CURB, TYPE 2A AS PER PLAN 780 LIN. FT.

PAVEMENT

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.

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 2 1/2, 3 OR 5 INCHES ABOVE THAT OF THE EXISTING PAVEMENT.

ITEM 305 - CONCRETE BASE

THIS ITEM SHALL BE USED ON SHOULDERS WHICH ARE NOT ALREADY CONCRETE. THE CONTRACTOR SHALL FOLLOW THE MAINTENANCE OF TRAFFIC PLANS TO DETERMINE WHICH PHASE THIS SHALL BE PERFORMED IN FIRST.

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

SLAG SHALL NOT BE USED, WITH THE EXCEPTION OF AIR-COOLED BLAST FURNACE SLAG.

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

THE AGGREGATE IN THE 446 SURFACE COURSE TYPE I IS RESTRICTED TO SLAG, WHEN USED AS A SURFACE COURSE.

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.

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.

PAVEMENT REPAIRS

ALL PAVEMENT REPAIRS SHALL BE COMPLETE ON ALL LANES PRIOR TO ANY RESURFACING. NO EXCEPTIONS.

ITEM 251-PARTIAL DEPTH PAVEMENT REPAIR (CONCRETE) AS PER PLAN

THIS ITEM SHALL CONSIST OF THE REMOVAL OF 2" MIN., 3" MAX, OF CONCRETE WEARING SURFACE IN AREAS EXHIBITING DETERIORATION.

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 50 PERCENT OF THE MEASURED AREA AT THE UNIT PRICE BID FOR ITEM 251-PARTIAL DEPTH PAVEMENT REPAIR (CONCRETE).

ITEM 251-PARTIAL DEPTH PAVEMENT REPAIR (ASPHALT CONCRETE) AS PER PLAN

THIS ITEM SHALL CONSIST OF THE REMOVAL OF MIN. OF 2-1/2" + OF THE ASPHALT WEARING SURFACE IN AREAS EXHIBITING DETERIORATION PLUS 3" REMOVAL INTO THE CONCRETE PAVEMENT.

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 50 PERCENT OF THE MEASURED AREA AT THE UNIT PRICE BID FOR ITEM 251-PARTIAL DEPTH PAVEMENT REPAIR (ASPHALT CONCRETE).

ITEM 252-FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT (SEE PROPOSAL NOTE)

THIS WORK SHALL BE PERFORMED WHERE RIGID REPLACEMENT IS NOT FEASIBLE AS DETERMINED BY THE ENGINEER. (TYPICALLY THE RAMP TERMINI AT INTERSECTING ROADWAYS WHERE CURBS PROHIBIT THE SHIFTING OF THROUGH TRAFFIC)

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.....2530 SQ. YD.
ITEM 803 - FULL DEPTH PAVEMENT SAWING.....3530 LIN.FT.

ITEM SPECIAL - PRESSURE RELIEF JOINTS, TYPE C

THIS ITEM OF WORK SHALL BE USED TO CONSTRUCT PRESSURE RELIEF JOINTS, STANDARD TYPE C, AS SHOWN ON STANDARD CONSTRUCTION DRAWINGS BP-11.1(1-30-84). JOINTS SHALL BE CARRIED THROUGH THE CONCRETE SHOULDERS. SEE SHEET 23 FOR QUANTITIES.

ASPHALT APPROACHES AT BRIDGES

THE ASPHALT APPROACHES TO STRUCTURES SHALL BE PLACED AS SHOWN ON THE DETAILS ON SHEET NO. 38. MINOR SURVEY WORK WILL BE REQUIRED TO DETERMINE THE LIMITS OF WEARING COURSE REMOVAL AND CONCRETE PAVEMENT CHIPPING. THEN, AFTER ALL OF THE ASPHALT WORK IS COMPLETE, THE CONTRACTOR SHALL SURVEY EACH LANE AT THE APPROACHES FOR THE ELEVATIONS EVERY 10 FEET. THE DATA SHALL BE GIVEN TO THE PROJECT ENGINEER. THE PROJECT ENGINEER SHALL DETERMINE IF THE PLAN HAS BEEN FOLLOWED AND WHETHER THE CRITERIA OF A STRAIGHT GRADE HAS BEEN MET. IF THE ENGINEER DETERMINES THAT A STRAIGHT GRADE HAS NOT BEEN MET IN ANY OR ALL LANES, THE CONTRACTOR SHALL GRIND 1" OF ASPHALT ACROSS THE FULL WIDTH OF THE PAVEMENT AT A LENGTH DETERMINED BY THE ENGINEER AND SHALL REPLACE THE SURFACE COURSE(S) UNTIL THE STRAIGHT GRADE CRITERIA IS MET. THIS ADDITIONAL WORK SHALL BE AT NO ADDITIONAL COST TO THE STATE. ALL COSTS OF SAID SURVEY SHALL BE INCLUDED IN THE PERTINENT ITEMS.

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

ITEM 310-SUBBASE, TYPE 1 GRADING A, AS PER PLAN	250 C.Y.
ITEM 203-EXCAVATION NOT INCLUDING EMBANKMENT	500 C.Y.

CONTRACTION JOINTS IN PAVEMENT WIDENING

WHERE NEW REINFORCED 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', ADDITIONAL CONTRACTION JOINTS AT A MAXIMUM SPACING OF 40' SHALL BE PLACED IN THE NEW PAVEMENT.

ITEM 305-CONCRETE BASE, 701.05, AS PER PLAN

ALL CEMENT USED FOR ITEM 305 SHALL MEET THE REQUIREMENTS OF 701.05 HIGH EARLY STRENGTH PORTLAND CEMENT.

PREFORMED EXPANSION JOINT MATERIAL

WHERE NEW CONCRETE IS PLACED ADJACENT TO EXISTING CONCRETE OR NEW CONCRETE OF ANOTHER PAY ITEM, PREFORMED EXPANSION JOINT MATERIAL AS PER 516.03 SHALL BE PLACED BETWEEN THE CONCRETE, EXCEPT BETWEEN PAVEMENT AND SHOULDERS. ALL COSTS FOR THE JOINT MATERIAL SHALL BE INCLUDED IN THE PERTINENT CONCRETE ITEM.

ITEM 812 - PORTLAND CEMENT

AN ESTIMATED QUANTITY OF ITEM 812 - PORTLAND CEMENT HAS BEEN INCLUDED IN THE PLANS FOR GROUT SUBSEALING OF EXISITING PAVEMENT. APPROXIMATELY 15% OF THE JOINTS AND CRACKS SHALL BE SUBSEALED AS PER SS 812 IN AREAS WITH NO ASPHALT OVERLAYS.

THIS WORK SHALL BE PERFORMED AFTER PAVEMENT REPAIRS ARE COMPLETE AT LOCATIONS WHICH ARE DISTRESSED OR HAVE BREACHED THE WATERPROOFING, BUT ARE NOT TO BE TOTALLY REPAIRED, AS DIRECTED BY THE ENGINEER.

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

ITEM 812 - PORTLAND CEMENT	8 TONS

ITEM 803 - FULL DEPTH 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-AGREGATE BASE HAVE BEEN PROVIDED TO REPAIR SAID FAILED SUBBASE 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:

203	CU. YDS.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
301	CU. YDS.	BITUMINOUS AGGREGATE BASE, AC-20
304	CU. YDS.	AGGREGATE BASE
605	LIN. FT.	AGGREGATE DRAINS
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 37

EROSION CONTROL/DRAINAGE

ITEM 601 -6" CONCRETE SLOPE PROTECTION, AS PER PLAN

AREAS OF THE EXISTING SLOPE PROTECTION FOR CUY-90-1490 R & L SHALL BE REMOVED AND REPLACED.

THIS WORK SHALL INCLUDE THE FOLLOWING:

1) EXCAVATION AND EMBANKMENT: THE EXCAVATION OF MATERIAL (APPROXIMATELY 300 C.Y.) FOR THE PROPOSED CONCRETE SLOPE PROTECTION, THE REMOVAL OF THE EXISTING CONCRETE SLOPE PROTECTION, AND THE PLACING OF EMBANKMENT MATERIAL (APPROXIMATELY 600 C.Y.) TO FILL ERODED AREAS UNDER AND ADJACENT TO THE PROPOSED CONCRETE SLOPE PROTECTION.

2) PROPOSED SLOPE PROTECTION: THE INSTALLATION OF THE NEW WELDED STEEL WIRE FABRIC REINFORCED SLOPE PROTECTION AS SHOWN ON SHEET 41, INCLUDING WELDED STEEL WIRE FABRIC, 709.10 AND FILTER FABRIC

FILTER FABRIC IS INCLUDED UNDER THIS ITEM OF WORK AND SHALL BE PLACED AS SHOWN ON SHEET NOS. 41 & 42

THE FABRIC SHALL MEET THE REQUIREMENTS OF SPECIFICATION 712.09 TYPE B (NONWOVEN). FIELD SPLICES SHALL CONSIST OF 12" OVERLAP SECURED IN ANY MANNER SUITABLE TO THE ENGINEER THAT WILL ASSURE THE OVERLAP IS MAINTAINED. OVERLAP CLOSURE AT THE TOP OF THE TRENCH SHALL BE 18", SECURED AS ABOVE. IF THE TRENCH WIDTH IS LESS THAN 18", THE OVERLAP SHALL EQUAL THE TRENCH WIDTH.

ALL COSTS OF REMOVING THE EXISTING CONCRETE SLOPE PROTECTION (6") AND EXCAVATING MATERIAL SHALL BE INCLUDED UNDER ITEM 202 - CONCRETE SLOPE PROTECTION REMOVED. ALL COSTS OF CONSTRUCTING THE NEW SLOPE PROTECTION, INCLUDING ALL NECESSARY EMBANKMENT, WELDED STEEL WIRE FABRIC, FILTER FABRIC, TYPE 4-A CURB, TYPE 2 PAVED GUTTER, FENCE AND PIPE UNDERDRAIN SHALL BE INCLUDED UNDER ITEM 601 -6" CONCRETE SLOPE PROTECTION AS PER PLAN .

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 202-CONCRETE SLOPE PROTECTION REMOVED	1794 S.Y.
ITEM 601-6" CONCRETE SLOPE PROTECTION, AS PER PLAN.	1794 S.Y.

THE PROPOSED CATCH BASINS, CONDUIT, AND CATCH BASIN REMOVAL SHALL BE PAID FOR SEPARATELY. SEE SHEET 43 FOR DETAILS THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE IN CONJUNCTION WITH THE CONCRETE SLOPE PROTECTION:

ITEM 202-CATCH BASIN REMOVED	1 EACH
ITEM 603-12" CONDUIT, TYPE C	25 L.F.
ITEM 604-CATCH BASIN, NO. 3A	1 EACH
ITEM 604-CATCH BASIN, NO. 8	1 EACH

EROSION CONTROL

ALL PERMANENT EROSION CONTROL ITEMS SHALL BE PLACED IMMEDIATELY AFTER THE EARTHWORK IS COMPLETED AT EACH LOCATION.

ITEMS 601 AND 660 ARE PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THIS ITEM WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION.

REVIEW OF DRAINAGE FACILITIES

BEFORE 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 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 PRICE BID FOR THE PERTINENT 604 ADJUSTMENT ITEMS OF THE CONTRACT.

ITEM 604 - ADJUSTING CASTING TO GRADE

ALL CASTINGS, EXCEPT THOSE OWNED BY PRIVATE COMPANIES, SHALL BE ADJUSTED BY THE CONTRACTOR. THE TIME BETWEEN ADJUSTING THE CASTINGS AND RESURFACING SHALL BE KEPT TO AN ABSOLUTE MINIMUM. ADJUSTING RINGS SHALL NOT BE USED. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO PERFORM THIS WORK.

ITEM 604 - CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN	59 EACH
ITEM 604 - MANHOLE ADJUSTED TO GRADE, AS PER PLAN	9 EACH
ITEM 604 - MEDIAN INLET ADJUSTED TO GRADE	50 EACH

ITEM 604 - MANHOLES, CATCH BASINS, OR INLETS RECONSTRUCTED TO GRADE

THE CONTRACTOR AND FIELD ENGINEER SHALL FIELD CHECK ALL EXISTING MANHOLES, CATCH BASINS, OR CURB INLETS LOCATED WITHIN THE LIMITS OF THE PROJECT. ANY MANHOLE, CATCH BASIN, OF CURB INLET FOUND THAT EXHIBITS SUBSTANTIAL DETERIORATION AND REQUIRES MORE WORK THAN IS SPECIFIED UNDER CASTINGS ADJUSTED TO GRADE, SHALL BE RECONSTRUCTED TO GRADE AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM	DESCRIPTION	QUANTITY	UNIT
604	CATCH BASIN, RECONSTRUCTED TO GRADE	1	EACH
604	MANHOLE, RECONSTRUCTED TO GRADE	1	EACH
604	INLET, RECONSTRUCTED TO GRADE	2	EACH

ITEM 604-CATCH BASIN NO. 2-2-B

NEW NO. 2-2-B CATCH BASINS HAVE BEEN PROVIDED TO REPLACES EXISTING TYPE 7 CATCH BASINS AT THE SAME LOCATIONS AT THE BASE OF PIER 2 UNDER STRUCTURE CUY-90-13.72. SEE SHEET 43A FOR DETAILS. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 604-CATCH BASIN NO. 2-2-B	4 EACH
ITEM 603-12" CONDUIT TYPE C	40 L.F.
ITEM 603-15" CONDUIT, TYPE C	5 L.F.
ITEM 601- PAVED GUTTER, TYPE I-2	16 L.F.

ITEM 653-TOPSOIL

AN ESTIMATED QUANTITY OF ITEM 653-TOPSOIL CALCULATED ON SHEET 23 SHALL BE USED AS A CONTINGENCY IN AREAS WHERE TOPSOIL IS DETERMINED TO BE NEEDED BY THE ENGINEER.

ITEM 605-AGGREGATE DRAIN

THE ESTIMATED QUANTITY OF AGGREGATE DRAIN SHALL BE USED WHERE AND AS DIRECTED BY THE ENGINEER TO DRAIN SUBBASE MATERIAL THAT HAS BECOME SATURATED. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 605-AGGREGATE DRAIN	250 L.F.

UNDERDRAINS

QUANTITIES SHOWN ON SHEET 23A SHALL BE USED TO CONSTRUCT NEW UNDERDRAINS AS SHOWN ON SHEET 13.

UNDERDRAIN OUTLETS IN EARTHWORK AREAS

EXISTING UNDERDRAIN OUTLETS WHICH ARE ENCOUNTERED IN THE EARTHWORK OR CULVERT EXTENSION AREAS SHALL BE EXTENDED AS DIRECTED BY THE ENGINEER USING 6 INCH CONDUIT, TYPE F. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

ITEM 605-6" CONDUIT, TYPE F..... 250 L.F.
707.17 NON PERFORATED ASTM 3034
SDR-35 OR SS 931

CONNECTIONS TO EXISTING PIPES

WHERE THE PLANS PROVIDE FOR A 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.

SEEDING AND MULCHING AS PER PLAN

AREAS SHALL BE SEEDED WITH PENNGIFT CROWN VETCH (CORONILLA VARIA). THE CROWN VETCH SEED MIXTURE SHALL CONSIST OF ONE (1) POUND OF PENNGIFT CROWN VETCH WHICH SHALL BE THOROUGHLY MIXED WITH EACH THREE (3) POUNDS OF THE SEED MIXTURE PER 659.09. THIS MIXTURE SHALL BE SOWN OVER THE PREPARED AREA AT THE RATE OF FOUR (4) POUNDS PER 1000 SQUARE FEET IN LIEU OF THE CROWN VETCH APPLICATION RATE LISTED IN 659.09.

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR ITEM 659 - SEEDING AND MULCHING AS PER PLAN.

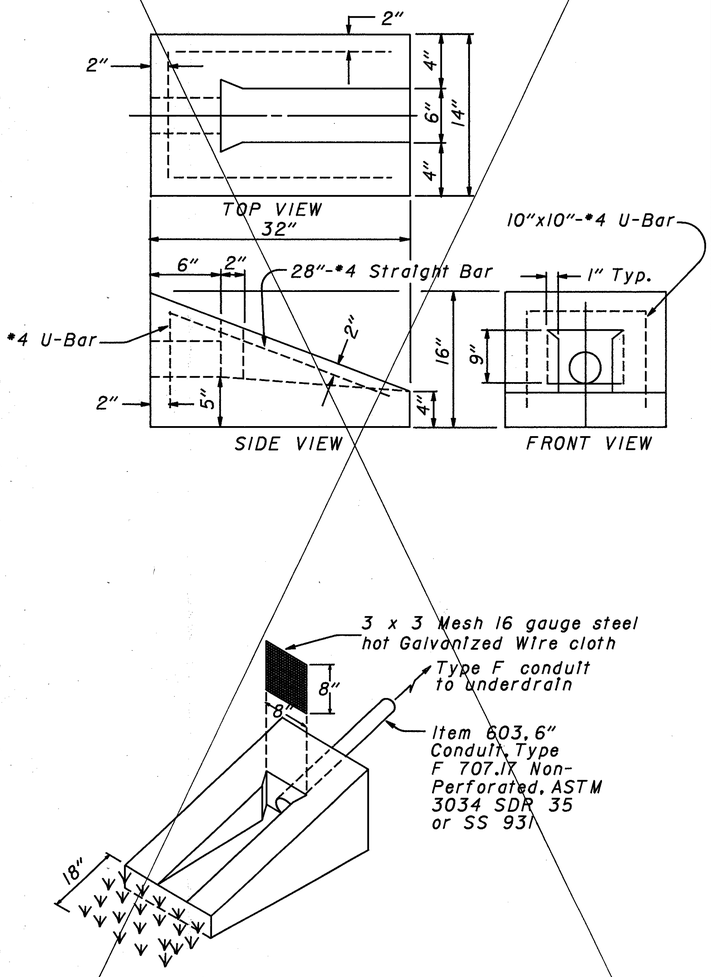
ITEM SPECIAL-EPOXY COATING OF EXISTING BARRIER MEDIAN INLETS

EXISTING BARRIER MEDIAN INLETS LOCATED WITHIN THE LIMITS OF THIS PROJECT SHALL BE EPOXY COATED. SEE THE PROPOSAL FOR SEALER MATERIAL AND SURFACE PREPARATION REQUIREMENTS AND APPLICATION RATES AND PROCEDURES. THE EPOXY SHALL BE TINTED TO MATCH THE EXISTING CONCRETE.
THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL-EPOXY COATING OF EXISTING BARRIER MEDIAN INLETS	366 SQ.YD.

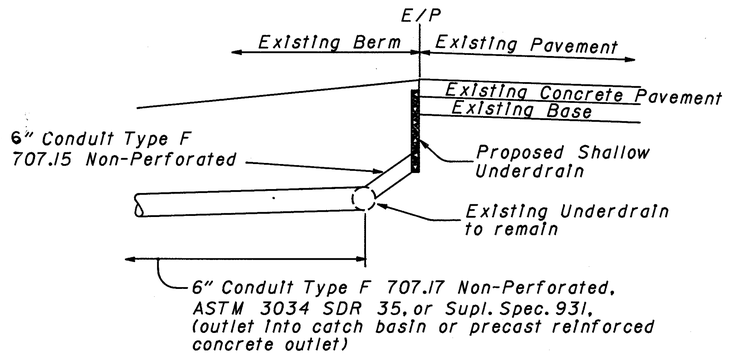
ITEM SPECIAL - PRECAST REINFORCED CONCRETE OUTLET

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

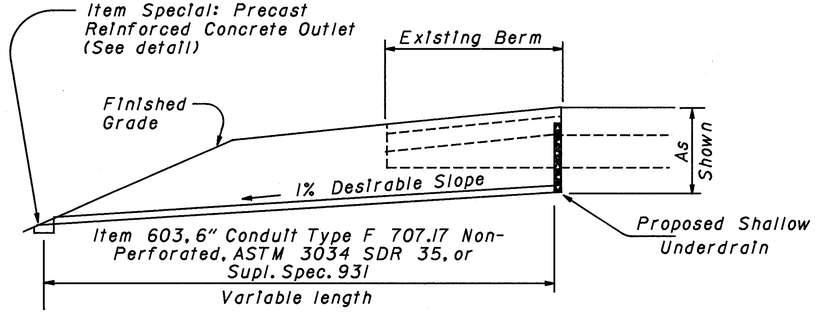


NOTE: The Sod shall be in accordance with Item 660 and staked at each corner approximately 3 inches in from the edge.

OUTLET DETAIL



NOTE: The cost of the 6" conduit Type F 707.15 Non-perforated, and necessary pipe bends and branches needed to connect the existing and proposed underdrains shall be included with the cost of the 6" conduit Type F beyond the existing underdrain.



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

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.

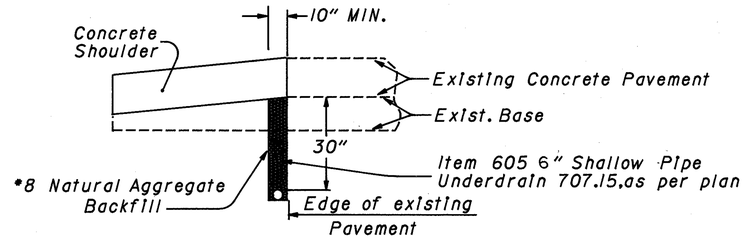
The outlets for the underdrain system shall be constructed as soon as possible after placement of the underdrain to drain the subbase & subgrade. All pipe bends & branches needed to connect the proposed underdrain to the proposed outlet or to an existing underdrain shall be manufactured fittings.

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 Pipe Underdrain 707.15, as per plan.

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.

PIPE UNDERDRAIN DETAIL FOR CONCRETE SHOULDERS



ITEM 605 6" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN

REV. 1-24-89
DATE 12-7-88

MAINTENANCE OF TRAFFIC

PUBLIC SAFETY

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.39B 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 5:1 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. (50' AT 5:1 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 BARRIERS 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" SHALL APPLY AFTER 5 DAYS, AND THE PROVISIONS OF PARAGRAPH "C" 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 OPERATIONS TO THAT LANE (EXCEPT THE ASPHALT CONCRETE SURFACE COURSE OVERLAY) SHALL BE PERFORMED IN AN ORDERLY SEQUENCE SUCH THAT IT WILL NOT BE NECESSARY TO AGAIN CLOSE THAT LANE UNTIL THE FINAL OVERLAY AND PAVEMENT MARKING OPERATIONS BEGIN.

IT IS THE INTENT OF THIS PROJECT TO MAINTAIN A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION ON THE MAINLINE PAVEMENT.

IT IS ALSO REQUIRED OF THE CONTRACTOR TO HAVE ALL NORMAL LANES OF TRAFFIC OPENED NOVEMBER 15 TO APRIL 15.* NO LANE RESTRICTIONS, INCLUDING RAMPS, WILL 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 INSTALLED TO REPLACE EXISTING SIGNS AND SUPPORTS SHALL BE IN PLACE PRIOR TO THE REMOVAL OF THE EXISTING SIGNS AND SUPPORTS.

MAINTAINING VEHICULAR TRAFFIC

GENERAL PROVISIONS

1. TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE SCHEDULE AND SEQUENCE OF THRU LANES TO BE MAINTAINED DESCRIBED ON SHEET NO. 48. 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 AGENCIES NOT LESS THAN SEVENTY-TWO (72) 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.

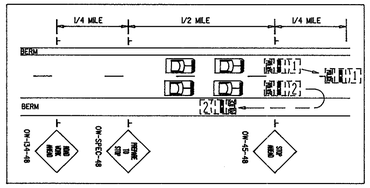
5. DURING NON-WORKING PERIODS, OPEN EXCAVATIONS SHALL BE DELINEATED WITH WARNING FLASHERS AND/OR OTHER APPROVED DEVICES AS DEEMED APPROPRIATE BY THE ENGINEER.

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

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

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 OR OVERLAYED AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS OR AS DIRECTED BY THE ENGINEER. (THIS INCLUDES OVERHEAD AND GROUND MOUNTED DIRECTIONAL SIGNS.)

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 MORE THAN 10 MINUTES IN ANY 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 UP OF STOPPED VEHICLES. WHERE STOPPAGE OCCURS IN THE VICINITY OF FREEWAY ENTRANCES, THE CONTRACTOR SHALL PLACE FLAGMEN 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. WHEN THE REMOVAL OR ERECTION OF A SIGN REQUIRES CLOSING MORE LANES THAN PERMITTED ON SHEET NO. 48 THAT WORK SHALL ALSO BE PERFORMED.



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 PLUS A POLICE CRUISER 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 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. A 45 MPH REGULATORY SPEED LIMIT ZONE WILL BE ESTABLISHED FOR THIS PROJECT AS INDICATED ON THE MAINTENANCE OF TRAFFIC SHEETS. THIS WILL REQUIRE NEW TEMPORARY R-10-48 SPEED LIMIT SIGNS TO BE FURNISHED, ERECTED, AND MAINTAINED BY THE CONTRACTOR, PER THE MAINTENANCE OF TRAFFIC PLANS. SPACED AT EVERY 2000 FEET IN ADDITION, THE EXISTING SPEED LIMIT SIGNS ARE TO COVERED BY THE CONTRACTOR TO INCLUDE ALUMINUM SIGN OVERLAYS, AND RELOCATION ON TEMPORARY SIGN SUPPORTS DISPLAYING THE 45 MPH SPEED.

12. CONTRACTOR SHALL BE REQUIRED TO PROVIDE SUFFICIENT CREWS TO IMPLEMENT ALL OR A SUB-PHASE OF THE TRAFFIC CONTROL IN THE MAINTENANCE OF TRAFFIC PLANS WITHIN THE SAME WORK DAY. THIS WILL PREVENT ANY CONFUSION BETWEEN THE CONSTRUCTION PHASE TRAFFIC PATTERN AND THE EXISTING TRAFFIC PATTERN. THE MAINTENANCE OF TRAFFIC PLANS CAN BE SUB-PHASED BY CONCENTRATING ON ONE DIRECTION OR A LENGTH WITHIN THAT DIRECTION. HOWEVER, IN EACH SUB-PHASE THE MAINTENANCE OF TRAFFIC PLAN SHALL BE COMPLETELY IMPLEMENTED WITHIN THE SAME WORK DAY.

13. 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".

14. ALL LABOR, MATERTIALS, EQUIPMENT AND ANY INCIDENTALS REQUIRED TO COMPLETE THE WORK AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE

    LUMP SUM PRICE BID FOR ITEM 614-MAINTAINING TRAFFIC, UNLESS MENTIONED OTHERWISE IN THE PLANS.

MAJOR WORK ITEMS

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

A. REMOVAL OF OVERHEAD SIGN SUPPORTS
B. INSTALLATION OF OVERHEAD SIGN SUPPORTS, INCLUDING SIGNS
C. CONCRETE SHOULDER REPLACEMENT
D. REPAIR OF PAVEMENT JOINTS
E. REPAIR OF PAVEMENT PANELS
F. ASPHALT CONCRETE OVERLAY
G. PAVEMENT MARKING
H. BRIDGE REPAIR

SEE INTERIM COMPLETION DATE NOTE ON SHEET 16.

* SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH SECTION 108.07 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR EACH CALENDER DAY THAT ALL LANES ARE NOT OPEN AND AVAILABLE TO TRAFFIC.

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TRAFFIC CONTROL OF OPERATION FOR ASPHALT CONCRETE WORK (ITEMS 301 AND 446 COURSES)

ALL ASPHALT CONCRETE OPERATIONS SHALL BE CONDUCTED IN A MANNER THAT WILL ASSURE MINIMUM DANGER AND INCONVENIENCE TO THE HIGHWAY USERS. ALL 301 & 446 MAINLINE ASPHALT CONCRETE WORK SHALL BE PERFORMED AT NIGHT BETWEEN THE HOURS OF 8:00 P.M. AND 6:00 A.M..
EXCEPT AS PROVIDED FOR IN THE INTERIM COMPLETION DATE NOTE ON SHEET 16 , ALL OF THE INTERMEDIATE LEVELING COURSE SHALL BE PLACED DURING THE RESPECTIVE PHASE IN SEQUENCE OF OPERATION SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS. ALSO, ALL OF THE INTERMEDIATE LEVELING COURSE MUST BE PLACED FULL WIDTH OF EXISTING PAVEMENT PRIOR TO PLACEMENT OF THE FINAL SURFACE COURSE.

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.

A MINIMUM OF ONE (1) TWELVE (12) FOOT LANE IN EACH DIRECTION MUST BE MAINTAINED AT ALL TIMES DURING NIGHTTIME RESURFACING OPERATIONS.

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.

PRIOR TO OPENING THE ROADWAY TO NORMAL TRAFFIC DURING WINTER MONTHS, ALL ASPHALT WORK INCLUDING THE SURFACE COURSE MUST BE COMPLETED AN EQUAL FULL WIDTH DISTANCE. NO INTERMEDIATE LEVELING COURSE IS TO BE TRAVELED ON DURING WINTER MONTHS NOR SHALL ANY PART WIDTH RESURFACING REMAIN DURING THE WINTER. THE CONTRACTOR IS CAUTIONED TO SCHEDULE HIS OPERATIONS TO MEET THIS REQUIREMENT. IF THE CONTRACTOR DOES NOT MEET THIS REQUIREMENT OR HAS THIS REQUIREMENT WAIVED, THE CONTRACTOR SHALL INCREASE THE THICKNESS OF THE 446 SURFACE COURSE BY 1/2" ENTIRELY AT HIS EXPENSE FOR LABOR, MATERIALS AND EQUIPMENT.

SIGNING

ONE OF THE FIRST PRIORITIES OF THE CONTRACTOR IS TO ORDER AND INSTALL THE PROPOSED OVERHEAD SIGNS.

REGARDLESS OF WHETHER THE EXISTING, OR NEW OVERHEAD SIGNS ARE IN PLACE, THE MAINTENANCE OF TRAFFIC PLANS SHALL BE FOLLOWED (EG: OVERLAYS, SYMBOLS, ETC.). SEE GENERAL PROVISIONS #8, SHEET 14 FOR FURTHER INFORMATION.

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.

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. THE CONTRACTOR SHALL USE THIS ITEM TO MAINTAIN THE HIGHWAY ACCORDING TO SEC. 614.02. THIS ITEM SHALL ALSO BE USED FOR TEMPORARY ASPHALT RAMPS ALONG JOINTS. THE CONTRACTOR SHALL PERFORM THE ABOVE WORK BETWEEN THE HOURS OF 9 A.M. AND 3 P.M. 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. SEE SHEEET FOR DETAILS.

ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC....300 C.Y.

ITEM 614-TEMPORARY RAISED PAVEMENT MARKERS

TEMPORARY RAISED PAVEMENT MARKERS SHALL BE USED AS A SUPPLEMENT TO TEMPORARY PAVEMENT MARKINGS AS ON SHEET 49 . THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614-TEMPORARY RAISED PAVEMENT MARKERS, TYPE A 11692 EACH

ITEM 614-BARRIER REFLECTORS, TYPE A OR B

BARRIER REFLECTORS AND THEIR MOUNTING SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 802 EXCEPT THAT THE SPACING OF THE REFLECTORS SHALL BE HALF THE DISTANCE SPECIFIED IN SS. 802. THEY SHALL BE PLACED ON THE EXISTING GUARDRAIL AND BRIDGE PARAPETS ADJACENT TO TRAFFIC LANES WHICH HAVE BEEN SHIFTED FROM THE NORMAL DRIVING LANE PRIOR TO SHIFTING TRAFFIC. 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.

ITEM 614-BARRIER REFLECTOR, TYPE B 367 EACH

ITEM 614 - TEMPORARY PAVEMENT MARKINGS (LANE SHIFTS)

LANE SHIFTS OR LANE CLOSURES SHALL BE IMPLEMENTED USING 55:1 MAXIMUM TAPER RATE ON MAINLINE PAVEMENT AND 40:1 MAXIMUM TAPER RATE ON RAMPS. SEE MAINTENANCE OF TRAFFIC SHEETS FOR ACTUAL LOCATIONS.

ALL CONFLICTING PAVEMENT MARKINGS (INCLUDING THE LANE LINE ADJACENT TO THE LANE CLOSURE TAPER) SHALL BE REMOVED PRIOR TO PLACING THESE PAVEMENT MARKINGS. TEMPORARY RAISED PAVEMENT MARKERS SHALL BE USED IN CONJUNCTION WITH TEMPORARY EDGE LINES.

ITEM 614 - TEMPORARY EDGE LINES, CLASS I, 947.03 TYPE B 26.62 MILES
ITEM 614 - TEMPORARY LANE LINES, CLASS I, 947.03 TYPE B 16.58 MILES

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:(ADDITIONAL QUANTITIES AT BOTTOM OF 2ND COLUMN OF THIS SHEET TO BE CARRIED TO THE GENERAL SUMMARY)

ITEM 614 - TEMPORARY EDGE LINE, CLASS I, 947.03,TYPE C	3.5	MILES
ITEM 614 - TEMPORARY LANE LINE, CLASS I, 947.03,TYPE C	2.5	MILES
ITEM 614 - TEMPORARY 4" CHANNELIZING LINE, CLASS I, 947.03, TYPE B	11827	L.F.
ITEM 614 - TEMPORARY DOTTED LINES, CLASS I 947.03 TYPE B	1579	L.F.
ITEM 614 - TEMPORARY CENTER LINE, CLASS I, 947.03 TYPE B	0.27	MILES
ITEM 614 - TEMPORARY TRANSVERSE LINES, CLASS I, 947.03, TYPE B	4810	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 MARKINGS SHALL BE USED.

ITEM 614 - TEMPORARY EDGE LINES, CLASS I	38.96	MILES
ITEM 614 - TEMPORARY LANE LINES, CLASS II	43.12	MILES
ITEM 614 - TEMPORARY CHANNELIZING LINES, CLASS I	15523	L.F.
ITEM 614 - TEMPORARY STOP LINES, CLASS I	360	L.F.
ITEM 614 - TEMPORARY CENTER LINES, CLASS I	0.15	MILES

ITEM 621- REMOVAL OF PAVEMENT MARKINGS

THIS ITEM SHALL BE USED TO REMOVE EXISTING PERMANENT PAVEMTENT MARKINGS WHICH ARE IN CONFLICT WITH THE TEMPORARY MARKINGS AS DETAILED ON SHEET NO. 50 . 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 ..... 50,000 L.F.

TEMPORARY CONCRETE BARRIER (PUBLIC SAFETY) (Con't. sht 14)

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.
TEMPORARY CONCRETE BARRIERS (BRIDGE RECONSTRUCTION)

THE FOLLOWING GUIDE LINES APPLY TO THE USAGE OF TEMPORARY CONCRETE BARRIERS USED TO SEPERATE BRIDGE WORK THRU TRAFFIC:

ROADWAY (APPROACHES TO BRIDGE WORK AREAS)

THE STANDARD BARRIER SHOWN ON MC-9A APPLIES TO ALL ROADWAY BARRIERS. THE BARRIER SECTIONS SHALL BE BOLTED TOGETHER. PAYMENT INCLUDED UNDER ITEM 622-TEMPORARY CONCRETE BARRIER.

THE FOLLOWING "STRUCTURE" BARRIER APPLIES TO THE BARRIER PLACED ON THE APPROACH SLABS AND BRIDGES:

614 WORK ZONE SPEED LIMIT SIGN

AN ESTIMATED QUANTITY OF 23 EACH WORK ZONE SPEED LIMIT SIGNS ARE CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

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STRUCTURE (BRIDGE OVERLAY OR RAILING FACING)

THE STANDARD BARRIER SHOWN ON MC-9A APPLIES. SEE NOTES AND DETAILS ON SHEET 39A REGARDING SPECIAL DECK SURFACE PREPARATIONS, BOLTED END CONNECTIONS AND JOINT BLOCKING. PAYMENT INCLUDED UNDER ITEM 622-TEMPORARY CONCRETE BARRIER, AS PER PLAN.

THE FOLLOWING ESTIMATED QUANTITIES ARE INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DESCRIBED ABOVE:

ITEM 622-TEMPORARY CONCRETE BARRIER	2800 L.F.
ITEM 622-TEMPORARY CONCRETE BARRIER, BRIDGE MOUNTED, AS PER PLAN	1370 L.F.

LOOP DETECTORS

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

THE CONTRACTOR SHALL NOTIFY THE CITY OF CLEVELAND WHEN THESE OPERATIONS ARE TAKING PLACE WITHIN THE PROJECT TO THAT THE CITIES MAY CHANGE THE SIGNALIZATION TO AUTOMATIC RECALL PRIOR TO OR WHEN THE WIRE MAY BE BROKEN.

IF NO WIRE IS FOUND TO BE NEEDED, THIS ITEM SHALL BE NON-PERFORMED.

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

ITEM 632-LOOP DETECTOR WIRE, TYPE E	700 L.F.
ITEM 632-LOOP DETECTOR PAVEMENT CUTTING	300 L.F.

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 REPLACMENT 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.

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

ITEM SPECIAL - REPLACEMENT SIGNS.....500 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. (REPLACEMENT LIGHTS SHALL NOT BE PAID FOR SEPARATELY BUT CONSIDERED INCIDENTAL TO THIS ITEM OR ITEM 614 MAINTAINING TRAFFIC.) REPLACEMENT OF A DAMAGED LIGHT SHALL NOT CONSTITUTE REPLACEMENT OF A DRUM.

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

ITEM SPECIAL - REPLACEMENT DRUMS.....1000 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 PRICE BID FOR ITEM SPECIAL- LAW ENFORCEMENT OFFICER WITH PATROL CAR.

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

ITEM SPECIAL - LAW ENFORCEMENT OFFICER WITH PATROL CAR .....400 HRS.

MAINTENANCE OF TRAFFIC PLAN A & B

MAINTENANCE OF TRAFFIC PLAN A & B HAVE BEEN SET UP IN THE PLANS FOR USE IF INTERSTATE 490 OPENS PRIOR TO OR DURING THE CONSTRUCTION OF THIS PROJECT.

PLAN "A" SHALL BE USED IF I 490 OPENS PRIOR TO OR DURING CONSTRUCTION OF PHASE 1 OF THE MAINTENANCE OF TRAFFIC PLANS. THEN "B" MUST BE USED IN CONJUNCTION WITH PHASE 2.

PLAN "B" WILL BE USED WHEN I 490 OPENS DURING PHASE 2.

NEITHER "A" OR "B" WILL BE USED IF I 490 DOES NOT OPEN DURING CONSTRUCTION OF THIS PROJECT. IF "A" AND "B" OR "B" IS USED, THE LUMP SUM PRICE SHALL INCLUDE ALL COSTS TO INCORPORATE THE ALTERNATES INTO THE CORRESPONDING PHASE.

DELIVERING AND UNLOADING EXISTING TEMPORARY CONCRETE BARRIER

EXISTING CONCRETE BARRIER (AS A SEMI-PERMANENT METHOD OF PROTECTION OR CHANNELIZATION) CAN BE FOUND IN THREE LOCATIONS ON THIS PROJECT: ON I-90 EASTBOUND NEAR WEST 25TH STREET TO LANE WN (APPROXIMATELY 1900 L.F.); ON THE RIGHT PARAPET OF STRUCTURE CUY-90-1463, LANE WN, (APPROXIMATELY 500 L.F.); AND ON THE RIGHT SHOULDER OF I-71 NORTHBOUND RUNNING TO STRUCTURE CUY-71-1887 (APPROXIMATELY 750 L.F.).

ALL OF THE BARRIER SHALL BE REMOVED AND STORED WITHIN THE RIGHT-OF-WAY AS PART OF THE MAINTENANCE OF TRAFFIC.

WHEN THE WORK ON STRUCTURE CUY-71-1887 IS COMPLETE, THE BARRIER SHALL BE PLACED IN THE EXISTING LOCATION. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL BARRIER IN THE SAME PLACE PRIOR TO REMOVING THE BARRIER. FOR FURTHER INFORMATION, SEE THE MAINTENANCE OF TRAFFIC NOTE "WORK ON CUY-71-1887".

AT I-90 EASTBOUND, THE BARRIER SHALL BE PLACED BACK AT THE EXISTING LOCATION ONLY IF I-490 HAS NOT OPENED. IF I-490 HAS OPENED, THE BARRIER SHALL BE EVALUATED WITH THE BARRIER FROM STRUCTURE CUY-90-1463. THE PROJECT ENGINEER SHALL SELECT 50 PIECES OF THE BEST CONDITION BARRIER TO BE DELIVERED, UNLOADED, AND STACKED AT THE O.D.O.T. WARRENSVILLE YARD, 25609 EMERY ROAD, WARRENSVILLE HEIGHTS, 292-5800. THE CONTRACTOR SHALL NOTIFY THE YARD AT LEAST 24 HOURS IN ADVANCE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DISPOSE OF THE REMAINING BARRIER.

ALL OF THE WORK IN THIS NOTE SHALL BE PART OF THE LUMP SUM ITEM - MAINTAINING TRAFFIC AS PER PLAN A AND B EXCEPT FOR THE FOLLOWING WHICH SHALL BE PAID FOR BY COST PARTICIPATION II:

ITEM SPECIAL - DELIVERING AND UNLOADING TEMPORARY CONCRETE BARRIER	500 L.F.

WORK ON CUY-71-1887

THE PROPOSED WORK ON CUY-71-1887 IS ANTICIPATED TO TAKE APPROXIMATELY TWO WEEKS. THE CONTRACTOR SHALL SCHEDULE HIS WORK ACCORDINGLY.

TRAFFIC SHALL NOT BE SHIFTED ONTO THE SHOULDERS UNTIL THE WORK IS READY TO BEGIN ON THAT BRIDGE AND TRAFFIC SHALL BE SHIFTED OFF THE SHOULDERS AS SOON AS WORK IS COMPLETE.

INTERIM COMPLETEION DATE

BECAUSE OF THE HIGH TRAFFIC VOLUME OCCURING THROUGHOUT THIS PROJECT AN INTERIM COMPLETION DATE WILL BE UTILIZED TO MINIMIZE THE INCONVENIENCE TO THE MOTORING PUBLIC.

THIS INTERIM COMPLETION DATE FOR THE FOLLOWING ITEMS OF WORK SHALL BE NOVEMBER 14, 1990.

1. UNDERDRAIN REPLACEMENT
2. CONCRETE SHOULDER REPLACEMENT
3. REPAIR OF PAVEMENT JOINTS AND PANELS
4. ASPHALT CONCRETE OVERLAY INCLUDING SURFACE COURSE
5. BRIDGE DECK REPAIRS, OVERLAYS AND TREATMENTS
6. BRIDGE PARAPET REFACINGS

THESE WORK ITEMS SHALL BE COMPLETED ON THE FOLLOWING PAVEMENT LOCATIONS (AREAS NOT LISTED BELOW SHALL BE SUBJECT TO THE OVERALL PROJECT COMPLETION DATE):

1. I-90 MAINLINE, EASTBOUND AND WESTBOUND, STA 857+79 TO 935+00 AND STA 980+00 TO 1000+00.

2. LANE W-N AND LANE N-W.

ONLY SHORT TERM, DAYLIGHT, NON-RUSH HOUR CLOSURES SHALL BE PERMITTED WITHIN THE ABOVE AREAS AFTER THE INTERIM COMPLETION DATE.

AT THE CONTRACTORS OPTION, HE MAY DELAY BOTH OVERLAY COURSES UNTIL AFTER ALL PAVEMENT REPAIRS HAVE BEEN COMPLETED. IF HE EXERCISES THIS OPTION HE MAY PLACE HIS ASPHALT AFTER THE INTERIM COMPLETION DATE (AT NO PENALTY) PROVIDING HE PAVES FULL WIDTH EACH NIGHT AND RE-OPENS THE ROADWAY THE FOLLOWING MORNING WITH ALL LANES OPEN AND TEMPORARY PAVEMENT MARKINGS IN PLACE.

LIQUIDATED DAMAGES IN ACCORDANCE WITH 108.07 SHALL BE ASSESSED FOR EACH CALENDAR DAY AFTER NOVEMBER 14, 1990 FOR WHICH THE ABOVE PROVISIONS ARE NOT MET.

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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	–	–

	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								

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT TWELVE

614 TEMPORARY RAISED PAVEMENT MARKERS

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
					5-87

RESURFACING QUANTITIES

CUYAHOGA COUNTY
CUY-90-13.41

OHIO
FHWA REGION 5
FEDERAL PROJECT

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LOCATION		LENGTH	END WIDTHS	SURFACE AREA		446 ASPHALT CONCRETE SURFACE COURSE AC-20	446 ASPHALT CONCRETE INTERMEDIATE COURSE AC-20	301 BITUMINOUS AGGREGATE BASE, AC-20	SPECIAL OPEN GRADED ASPHALT FRICTION COURSE (RUBBERIZED)
FROM	TO	LIN FT	LIN FT	SQ YDS		CU. YDS.	CU. YDS.	CU. YDS.	CU. YDS.
EB									
878+54	879+79	125	81	1125		39.1		38.7	
879+79	885+00	521	73	4225.9		146.7		440.2	
885+00	895+17	1017	68	7684		266.8		800.4	
895+17	896+42	125	68	944.5		32.7		32.5	
901+70	902+95	125	80	1111.1		38.5		38.2	
902+95	904+95	200	79.3	1762.2		61.2		183.6	
904+95	906+20	125	78	1083.3		37.6		37.2	
907+59	908+84	125	76.5	1062.5		36.9		36.5	
908+84	915+36	652	76	5505.8		191.1		573.5	
915+36	919+00	364	86.5	3498.5		121.5		364.4	
919+00	926+49	749	64	5326.3		184.9		554.8	
926+49		941.15							
(STA.931+30.15 BACK = STA.928+50 AHEAD)									
	933+10		81.5	8522.7		296		887.8	
933+10	934+35	125	51	708.3		24.6		24.3	
980+23	980+98	75	51	425		14.7	6.8		
982+63	983+38	75	82	683.3		23.7	11.0		
983+38	988+52	514	75.5	4311.9		147.7	209.6		
988+52	989+27	75	68	566.7		19.6	9.1		
991+03	991+78	75	63	525		18.2	8.4		
991+78	994+75	297	63	2079		72.2	101.1		
994+75	998+14	339	61	2297.7		79.8	111.7		
998+14	998+89	75	57.5	479.2		16.7	7.7		
WB									
878+54	879+79	125	89	1236.2		42.9		42.5	
879+79	883+09	330	76	2786.7		96.7		290.3	
883+09	895+92	1283	68	9693.8		337		1009.8	
895+92	897+17	125	96.25	1336.8		46.3		46.0	
902+43	903+68	125	81.25	1128.4		39.1		38.8	
903+68	904+23	55	81.25	496.6		17.2		51.7	
904+23	906+20	197	80.5	1762		61.2		183.5	
907+59	908+84	125	76	1055.5		36.6		36.3	
908+84	911+95	311	76	2626.2		91.2		273.6	
911+95	915+89	394	81.5	3567.9		123.9		371.7	
915+89	922+19	630	66.5	4655		161.7		484.9	
922+19	923+00	81	67	603		21		62.8	
923+00		1017.15							
(STA.931+30.15 BACK = STA.928+50 AHEAD)									
	930+37		81.5	9210.9		319.8		959.5	
930+37	931+62	125	50	694.4		24.1		23.9	
980+23	980+98	75	51	425		14.7	6.8		
982+63	983+38	75	51	425		14.7	6.8		
983+38	984+36	98	51	555.3		19.3	21.6		
TOTALS						3337.6	500.6	7887.4	

LOCATION		LENGTH	END WIDTHS	SURFACE AREA		446 ASPHALT CONCRETE SURFACE COURSE AC-20	446 ASPHALT CONCRETE INTERMEDIATE COURSE AC-20	301 BITUMINOUS AGGREGATE BASE, AC-20	SPECIAL OPEN GRADED ASPHALT FRICTION COURSE (RUBBERIZED)
FROM	TO	LIN FT	LIN FT	SQ YDS		CU. YDS.	CU. YDS.	CU. YDS.	CU. YDS.
984+36	988+52	416	90	4160		144.5	202.2		
988+52	989+27	75	78	650		11.3	10.4		
990+85	991+60	75	65	541.7		9.4	8.7		
991+60	994+75	315	63	2205		76.5	107.2		
994+75	997+96	321	60	2140		74.3	104.0		
997+96	998+71	75	56	466.7		8.1	7.5		
S. MARGINAL RD. 7		R							
0+18	0+93	75	34	283.3		9.8	2.3		
0+93	7+55	662	28	2059.6		71.5	100.1		
7+55	8+30	75	33	275		9.5	2.3		
S. MARGINAL RD TO		RELOC.	BUCKEYE	AVE.					
5+75	6+50	R	50	416.7		14.5	6.8		
RAMP 30									
91+28	92+03	75	33	275		4.8	2.3		
92+03	95+07	304	28	945.8		32.9	46		
95+07	95+82	75	27	225		3.9	1.8		
RAMP 32	TO WADE AVE								
18+98	19+48	50	28	155.6		5.4	7.5		
19+48	20+00	52	25	144.4		5	7		
20+00	22+00	200	25	555.6		19.2	27		
22+00	23+00	100	23	255.6		8.9	12.4		
23+00	25+45	245	18	490		17	23.9		
25+45	26+53	108	39	468		16.3	22.8		
26+53	28+63	210	38	886.7		30.8	43.1		
28+63	29+38	75	40	333.3		5.8	3		
WADE AVE.		R							
50+73	51+98	125	19.5	270.8		4.7	11.3		
LANE WN									
9+98	10+23	25	46	127.8		4.5		10.7	2.7
10+23	10+98	75	48.5	404.1		7		11.1	8.4
10+98	12+50	152	49.5	836		29.1		69.7	17.4
12+50	14+88	238	63	1666		57.9		138.8	34.7
14+88	17+20	232	37	953.8		33		79.5	19.9
17+20	18+45	125	33	458.3		8		12.6	9.5
18+45	24+33	125	34	472.2		8.2		12.9	9.8
24+33	31+63	730	38	3082.3		107		256.9	64.2
31+63	32+63	100	36.5	405.6		14.1		11.2	8.5
TOTALS						852.9	759.6	603.4	175.1
TOTALS THIS SHEET						4190.5	1260.2	8490.8	175.1

RESURFACING QUANTITIES

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	19 156

LOCATION		LENGTH	END WIDTHS	SURFACE AREA		446 ASPHALT CONCRETE SURFACE COURSE AC-20	446 ASPHALT CONCRETE INTERMEDIATE COURSE AC-20	301 BITUMINOUS AGGREGATE BASE, AC-20	SPECIAL OPEN GRADED ASPHALT FRICTION COURSE (RUBBERIZED)
FROM	TO	LIN FT	LIN FT	SQ YDS		CU. YDS.	CU. YDS.	CU. YDS.	CU. YDS.
LANE NW									
30+65	30+40	25	36	100		3.5	4.9		2.1
30+40	23+73	667	46.5	3446.1		119.7	167.5		71.8
23+73	23+00	73	42.5	344.8		12	16.8		7.2
23+00	12+75	1025	38	4327.7		150.3	210.4		90.2
12+75	11+75	100	38	422.3		7.4	10.3		8.8
10+09	9+09	100	41.5	461.1		8.1	11.3		9.6
9+09	8+54	55	44	268.9		9.3	13		5.6
8+54	8+29	25	44	122.3		4.2	5.9		2.5
LANE SW									
19+80	18+80	100	20	222.2		3.9	5.4		
LANE WS	TO SBOR-M								
6+10	6+35	25	36	100		3.4	4.9		
6+35	6+60	25	36	100		3.4	4.9		
6+60	7+10	50	36	200		7	9.7		
7+10	8+60	150	33	550		19.1	26.8		
8+60	12+75	415	30	1383.4		48	67.3		
12+75	14+25	150	28	466.7		16.2	22.7		
14+25	15+25	100	24	266.7		9.3	13		
15+25	19+66	441	57.5	2817.5		97.8	136.9		
19+66		669							
STA. 25+00 BACK = STA. 0+00 AHEAD									
	1+35		51.5	3828.1		132.9	186.1		
1+35	4+08	273	59	1789.7		62.1	87		
4+08	5+66	158	71	1246.4		43.2	60.6		
5+66	8+86	320	79	2808.9		97.5	136.5		
8+86	10+80	194	38.5	829.9		28.8	40.4		
10+80	11+05	25	27	75		2.6	3.7		
11+05	11+80	75	36.5	304.1		5.3	2.5		
LANE ES									
15+26	14+51	75	42.5	354.2		6.2	2.9		
SBOR									
12+41	13+16	75	38	316.7		5.5	2.6		
W. 44 ST.									
44+11	44+76	65	41 AVG.	296.1		10.3			
46+62	47+27	65	41 AVG.	296.1		10.3			
W. 41 ST.									
47+94	48+59	65	44 AVG.	317.8		11			
50+52	51+17	65	40 AVG.	288.9		10			
W. 25 ST.									
43+48	44+08	60	44 AVG.	293.3		10.2			
46+30	47+05	75	48	400		13.9			
TOTALS						972.4	1254.0		197.8

LOCATION		LENGTH	END WIDTHS	SURFACE AREA		446 ASPHALT CONCRETE SURFACE COURSE AC-20	446 ASPHALT CONCRETE INTERMEDIATE COURSE AC-20	301 BITUMINOUS AGGREGATE BASE, AC-20	SPECIAL OPEN GRADED ASPHALT FRICTION COURSE (RUBBERIZED)
FROM	TO	LIN FT	LIN FT	SQ YDS		CU. YDS.	CU. YDS.	CU. YDS.	CU. YDS.
N. MARGINAL RD. 6									
0+19	0+94	75	30	250		8.7	2.1		
0+94	7+52	658	28	2047.1		71.1	99.5		
7+52	8+27	75	31.5	262.5		9.1	7.2		
RAMP 29									
90+05	90+80	75	33.5	279.2		9.7	2.3		
90+80	93+95	315	33	1155		40.1	56.1		
93+95	94+95	100	31	344.4		12	16.8		
94+95	95+45	50	30	166.7		5.8	8.1		
95+45	95+95	50	31.5	175		6.1	8.5		
RAMP 31A TO VEGA AVE.									
15+89	16+89	100	24	266.7		9.3	12.9		
16+89	20+50	361	32	1283.6		44.5	62.4		
20+50	21+00	50	37	205.6		7.2	10		
21+00	22+20	120	38.5	513.3		17.8	25		
22+20	23+20	100	21.5	238.9		8.3	11.6		
23+20	26+72	352	22	860.5		29.8	41.8		
26+72	28+95	223	42	1040.7		36.1	50.6		
28+95	29+70	75	36	300		10.4	2.5		
VEGA AVE.									
50+73	51+98	125	19.5	270.8		9.4	2.2		
RAMP 31									
19+64	23+52	388	17	732.9		25.4	35.6		
23+52	24+19	67	18.5	137.7		4.8	6.7		
24+19	25+69	150	22	366.7		12.8	17.9		
25+69	30+80	511	25	1419.4		49.2	69		
30+80	31+52	72	25.5	204		7.1	9.9		
31+52	33+22	170	27	510		17.7	24.8		
33+22	34+35	113	38	477		16.5	23.2		
34+35	36+60	225	24	600		20.8	29.2		
36+60	37+35	75	35	291.7		10.1	2.4		
RAMP 31B									
4+58	5+51	93	19	196.3		6.8	9.5		
5+51	6+26	75	31	258.3		9	2.1		
TOTALS						515.6	649.9		
TOTALS THIS SHEET						1488.0	1903.9		197.8

GUARDRAIL QUANTITIES

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	21 156

GUARDRAIL QUANTITIES

REFERENCE NO.	EXISTING LOCATION FROM	EXISTING LOCATION TO	PROPOSED LOCATION FROM	PROPOSED LOCATION TO	SIDE		202 GUARDRAIL REMOVED L.F.	202 ANCHOR ASSEMBLY POST REMOVED, A.P.P. EA.	606 GUARDRAIL, BARRIER DESIGN, TYPE 5 L.F.	606 RAISING EXISTING GUARDRAIL, TYPE 5 L.F.	606 GUARDRAIL, TYPE 5 AS PER PLAN L.F.	606 ANCHOR ASSEMBLY, TYPE A EA.	606 ANCHOR ASSEMBLY, TYPE T EA.	606 ANCHOR ASSEMBLY, BARRIER DESIGN, TYPE A EA.	606 BRIDGE TERMINAL ASSEMBLY, TYPE A EA.	606 BRIDGE TERMINAL ASSEMBLY, TYPE J EA.	622 CONCRETE BARRIER, TYPE B42, AS PER PLAN	203 LINEAR GRADING L.F.	404 ASPHALT CONCRETE, AC-20 (3" THICK.) C.Y.	
G1	0+06	8+16	NO	CHANGE	R		25				25					2		810	30	360
G2	0+28	8+17	NO	CHANGE	L		25				25					2		789	29	350
G3	0+35	3+38	1+25	3+37.5	R		303				175	1	1					213	8	94
G4	886+48	888+00	886+48	887+88	R		152				75	1			1		40	100	4	44
G5	91+35	91+88	NO	CHANGE	L		12.5	1			12.5					1		53	2	24
G6	50+50	51+00	NO	CHANGE	R		12.5				12.5					1		50	2	22
G7	893+37	895+15	893+08	894+48	R		178				50	1		1			40	100	4	44
G8	93+96	95+33	NO	CHANGE	R		12.5	1		124.5	12.5					1		137	5	61
G9	95+87	97+36	95+96	97+36	R		149				100				2		40	100	4	44
G10	901+61	906+21	NO	CHANGE	R		65			395	25				2		40	420	16	187
G11	903+07	906+17	NO	CHANGE	R		25			285	25				2			310	12	138
G12	907+59	910+73	907+59	910+96.5	R		37.5			276.5	48.5		1		1			338	13	150
G13	907+60	912+94	NO	CHANGE	R		40	1		494					2		40	494	18	220
G14	15+86	17+76	15+95	17+35	R		190				75	1			1		40	100	4	44
G15	923+47	925+25	923+50	924+90	R		178				75	1			1		40	100	4	44
G16	23+97	29+30	27+52.5	29+30	L		493			75	112.5	1				1		178	7	79
G17	24+00	29+62	NO	CHANGE	R		37.5			524.5	25		1	1		1		562	20	250
G18	24+72	33+00	NO	CHANGE	L		125	2		703*	100	1						828	31	67
G19	16+25	22+94	NO	CHANGE	L		12.5			656.5	12.5				1			669	25	297
G20	11+85	17+30	NO	CHANGE	L			1		545								545	20	242
G21	16+83	18+30	17+05	18+30	R		147				100	1			1			125	5	56
G22	15+20	22+09	-	-	L		689													
G23	23+52	32+50	NO	CHANGE	R		25			873	25				2			898	33	399
G24	11+95	16+40	11+95	14+75	R		190			255.5	12.5		1		1			280	10	124
G25	34+43	40+78	NO	CHANGE	R		25				25				2			635	24	282
G26	982+75	983+00	-	-	R		25													
G27	9+65	9+90	-	-	L		25													
G28	982+70	989+00	NO	CHANGE	R		65				25				4		40	630	23	280
G29	991+00	998+65	NO	CHANGE	R		25				25				2			765	28	340
G30	991+23	999+00	NO	CHANGE	R		65				25				4		40	737	27	328
G31	8+60	9+20	7+77	9+17	L		60				62.5	1	1		1		40	100	4	44
G32	4+20	23+70	3+81	23+25	L		244			312	120.5	1	1		3		80	1864	69	825
G33	1+70	4+20	2+41	3+81	R		250				62.5	1	1		1		40	100	4	44
G34	19+65	21+45	18+88	20+28	L		180				62.5	1	1		1		40	100	4	44
G35	19+65	21+45	18+88	20+28	R		180				62.5	1	1		1		40	100	4	44
TOTALS							4268	6		4816.5 703*	1594	13	9	2	36	9	600	13230 =132 STA	493	

* BARRIER GUARDRAIL RAISED

SHOULDER WORK QUANTITIES

SHOULDER WORK QUANTITIES

STATION FROM	STATION TO	SHOULDER WIDTH FEET RT.	SHOULDER WIDTH FEET LT.			305 CONCRETE BASE, 10" THICK SQ.YD.	305 CONCRETE BASE, 9.5" THICK SQ.YD.	310 SUBBASE, TYPE 1, GRADING A, AS PER PLAN CU.YD.	203 EXCAVATION N/I EMBANKMENT CONST. CU.YD.
EB									
877+00	896+20	9.5	9.5			2027	2027		1098
896+20	896+75		9.5				58		15
901+42	902+05	9.5				67			19
902+05	902+95	9.5	9.0			95	90		50
902+95	906+20	9.5	8.25			343	298		174
906+20	907+59	9.5	6.9			147	107		69
907+59	919+00	9.5	6.25			1204	792		543
919+00	920+00		6.25				69		18
920+00	933+10	9.5	6.25			1383	910		624
933+10	933+13		6.25				2		1
982+63	989+27	9.5	5.5			701	406		300
989+27	989+40	9.5				14			4
990+99	991+14		5.5				9		2
991+14	998+76	9.5	5.5			804	446		341
WB									
874+00	894+92	9.5	9.5			2208	2208		1196
894+92	895+92		9.5				106		28
895+92	896+80	10.75	9.0			105	88		52
896+80	897+50	10.75				84			23
902+06	902+64		9.5				61		16
902+64	904+24	10.75	9.25			191	164		96
904+24	906+20	10.75	7.5			234	163		108
906+20	907+59	9.5	6.9			147	107		69
907+59	915+89	9.5	6.25			876	576		393
915+89	922+19	12.0	6.25			840	438		349
922+19	923+00	12.0	6.25			108	56		45
923+00	930+38	9.5	6.25			779	513		351
997+66	998+86	7	2			93	27		33
994+85	997+66	9.5	5.5			297	172		127
990+96	994+85	9.5	5.5			411	238		177
982+63	989+23	9.5	5.5			697	403		300
972+48	980+98	9.5	5.5			897	519		386
TOTALS						14752	11057		7007

SHOULDER WORK QUANTITIES

STATION FROM	STATION TO	SHOULDER WIDTH FEET RT.	SHOULDER WIDTH FEET LT.			305 CONCRETE BASE, 10" THICK SQ.YD.	305 CONCRETE BASE, 9.5" THICK SQ.YD.	310 SUBBASE, TYPE 1, GRADING A, AS PER PLAN CU.YD.	203 EXCAVATION N/I EMBANKMENT CONST. CU.YD.
LANE WN									
9+98	10+98	10				111			31
10+98	12+50	10	7			169	118		78
12+50	30+63	10	4			2014	806		772
30+63	31+63	10	3			111	33		39
LANE NW									
30+66	29+66	10				111			31
29+66	25+04	10				513			143
25+04	11+76	10	4			1476	590		560
10+09	9+30	10	6.5			88	57		39
9+30	8+30	10				111			31
RAMP 29									
90+80	94+00	6	6			213	213	71	186
94+00	95+00		3				33	6	15
95+00	96+00	6	3			67	33	17	44
RAMP 30									
91+28	91+82		3				18	3	8
91+82	94+75	6	3			195	98	49	129
94+75	95+81	8.6	3			101	35	23	60
95+81	97+00		3				40	7	18
RAMP 31									
23+52	24+19		2.5				19	3	8
24+19	25+69	3.5	2.5			58	42	17	39
25+69	30+80	6	3			341	170	85	225
30+80	31+52	6	3			48	24	3	7
31+52	36+78	6	3			351	175	88	232
RAMP 31A									
15+89	20+50	8				410		68	182
20+50	21+00	7				39		7	18
21+00	26+72	6				382		64	170
RAMP 31B									
4+43	4+58	6	3			10	5	3	7
4+58	4+70	6	3			8	4	2	5
RAMP 32									
18+98	19+48	9	3			50	17	11	30
19+48	22+00	6	3			168	84	42	111
22+00	23+00	4	3			44	33	13	34
23+00	29+38		3				213	35	91
TOTALS						7189	2860	617	3343

GRAND TOTAL 21941 13917 617 10350

ITEM SPECIAL - PRESSURE RELIEF JOINTS		
STRUCTURE	ITEM SPECIAL - P.R.J., TYPE C (L.F.)	ITEM 605 - AGG. DRAINS (L.F.)
1345	70	
1361	78	
1372	188	
1391	306	
1435	98	
1463	71	
1490	228	
1490L	39	
1506	214	
71-1887	180	60
TOTALS	1472	60

ITEM 608 - CURB RAMPS TYPE 2		
INTERSECTION CROSS STREET	QUANTITY	SQ. FT.
W. 44th ST.	7	210
W. 41st ST.	4	120
TOTALS		330

ITEM 407 - TACK COAT
5679 C.Y. X (36/1.25) X 0.075 = 12267 **Gal.**

EARTHWORK RECAP			
SHEET NO.	ITEM 203 - EXCAV. N/I EMBANK. CONST. (C.Y.)	ITEM 203 - EMBANKMENT (C.Y.)	ITEM 659 - SEEDING AND MULCHING, APP (S.Y.)
44	213		
45	119		
46		348	2338
47	27	186	1910
TOTALS	359	534	4248

ITEM 653-TOPSOIL FURNISHED AND PLACED

FROM ITEM 659-SEEDING AND MULCHING

4248 S.Y. X 3"/12/3 = **354 C.Y.**

ITEM 659-AGRICULTURAL LIMING

FROM ITEM 659-SEEDING AND MULCHING

4248 S.Y. X 100 LB. X 9/(1000 S.F. X 2000 LB./TON) = **1.91 TON**

ITEM 659-FERTILIZER

FROM ITEM 659-SEEDING AND MULCHING

4248 S.Y. X 20 LB. X 9/(1000 S.F. X 2000 LB./TON) = **0.38 TON**

ITEM 659-WATER

FROM ITEM 659-SEEDING AND MULCHING

4248 S.Y. X 240 GAL./S.F. X (9 S.F./S.Y.)/(1000 X 1000) = **9.18 M.GAL**

ITEM 617-COMPACTED AGGREGATE				
LOCATION	FROM STA.	TO STA.	NO. OF SIDES	TOTAL LENGTH
MAINLINE	894+25	896+76	2	502
MAINLINE	910+24	928+50	1	1826
RAMP 31B	4+70	5+95	1	125
LANE WN	23+33	29+03	1	570
LANE WN	29+03	32+35	1	332
LANE NW	23+73	25+04	1	131
RAMP 31	36+78	34+50	2	456
LANE WS	6+08	15+26	1	918
RAMP SBOR	8+86	11+80	1	294
				5154 L.F.
[5154 L.F. X 3' (WIDE) X 3" (THICK)/12"/FT.]/27=**143 C.Y.**				

DRAINAGE QUANTITIES

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

LEGEND:
AH = AHEAD
BK = BACK
CB = CATCH BASIN
I= INLET (IN OUTLET COLUMN)
P = PIPE OR CONDUIT

CUYAHOGA COUNTY CUY-90-13.41	OHIO
	FHWA REGION 5
	FEDERAL PROJECT

23A/156

DRAINAGE QUANTITIES

LOCATION	STATION FROM	STATION TO	LENGTH	NUMBER OF SIDES	ITEM - 605 6" SHALLOW PIPE UNDERDRAIN TOTAL LENGTH	CONNECTION OR OUTLET TYPE	ITEM - 603 6" CONDUIT TYPE B	ITEM - 603 6" CONDUIT TYPE F *
			LIN. FT.		LIN. FT.		LIN. FT.	LIN. FT.
EASTBOUND I-90	879+79	886+55	676		676	CB		10
	886+55	893+99	744		744	CB		10
	893+99	896+60	261		261	CB		10
	902+64	905+93	329		329	CB		10
	907+88	908+23	35		35	-		
	908+23	919+00	1077		1077	TO R-32		
	919+00	931+30 BK	1230		1230	-		
	AH 928+50	933+13	463		463	TO EXIST		25
	982+89	989+12	623		623	P		25
	991+20	998+90	770		770	P		25
WESTBOUND I-90	879+79	886+55	676	2	1352	CB,I		20
	886+55	893+99	744	2	1488	CB,I		20
	893+99	896+60	261	2	522	CB,I		20
	902+64	905+93	329		329	I		10
	907+88	908+23	35		35	-		
	908+23	914+00	577	2	1154	I,P		45
	914+00	918+45	445	2	890	I,P		20
	918+45	923+25	480	2	960	CB,I		20
	923+25	928+75	550	2	1100	CB,I		20
	928+75	931+30 BK	255	2	510	-		80
	AH 928+50	930+38	188	2	376	TO EXIST		
	982+89	984+69	180		180	I		10
	984+69	989+00	431		431	CB		10
	991+20	995+50	430		430	-		
	995+50	998+73	323	2	646	CB,I		45
SMR7	0+43	0+60	17		17	I		10
	0+60	4+25	365		365	CB		10
	4+25	5+63	138		138	-		10
	6+60	8+15	155		155	I		10
R-30	91+28	95+60	432		432	CB		10
R-32	19+00	20+75	175		175	CB		10
	20+75	29+38	863		863	P	25	10
NMR6	0+56	0+95	39		39	-		
	0+95	4+62	367	2	734	I		20
	4+62	7+98	336	2	672	-		
R-29	90+22	93+22	278	2	556	P		20
	93+22	94+17	95	2	190	CB		20
	94+17	94+92	75		75	TO WB MAINLINE		
SUB-TOTAL (LEFT SIDE					21022		25	565

DRAINAGE QUANTITIES

LOCATION	STATION FROM	STATION TO	LENGTH	NUMBER OF SIDES	ITEM - 605 6" SHALLOW PIPE UNDERDRAIN TOTAL LENGTH	CONNECTION OR OUTLET TYPE	ITEM - 603 6" CONDUIT TYPE B	ITEM - 603 6" CONDUIT TYPE F *
			LIN. FT.		LIN. FT.		LIN. FT.	LIN. FT.
R-31A	15+89	18+40	251		251	P		35
	18+40	23+25	84		84	CB		10
	23+25	25+75	250		250	I		10
	25+75	26+70	95	2	190	CB		20
	26+70	28+44	174		174	I		10
R-31	25+00	30+80	580		580	I		10
	30+80	31+30	50	2	100	TO EXIST		
	31+30	32+85	155		155	-		
	32+85	34+40	155	2	310	MH		20
	34+40	36+80	240		240	-		
R-31B	4+60	5+88	128	2	256	MH		20
LANE W-S	1+25	1+67	42		42	CB		10
	1+67	2+15	48		48	CB		10
	2+15	2+63	16		16	CB		10
	2+63	4+76	213		213	I		10
	4+76	5+20	44		44	I		10
	5+20	7+69	249		249	MH		10
	7+69	13+20	551		551	I		10
	13+20	15+53	233		233	I		10
	15+53	19+19	366		366	I		10
	19+19	25+00	581		581	TO EXIST		10
LANE W-N	14+03	16+03	200		200	MH		10
	16+03	18+36	233		233	MH		10
	23+35	29+03	568		568	I		10
	29+03	32+32	329		329	CB		55
LANE N-W	12+01	15+00	299		299	I		10
	15+00	20+17	517		517	I		10
	20+17	23+76	359		359	I		10
	23+76	26+03	227		227	I		10
	26+03	27+48	145		145	I		10
	27+48	28+93	145		145	I		10
	28+93	30+66	173		173	TO EXIST		
SBOR	0+00	3+60	360		360	-		
	3+60	8+50	490		490	I		10
	8+50	10+50	200		200	I		10
	10+50	11+80	130		130	TO EXIST		
TOTAL (RIGHT SIDE)					9308			400
SUB-TOTAL (LEFT SIDE)					21022		25	565
TOTALS					30330		25	965

GENERAL SUMMARY

I - FEDERAL & STATE PARTICIPATION
II - 100% STATE PARTICIPATION

CALC. BY ___ DATE:	CUYAHOGA COUNTY	OHIO	24
CHKD BY ___ DATE:	CUY-90-13.41	FHWA REGION 5	156
		FEDERAL PROJECT	

ITEM	SHEET NUMBER															PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN REF.
	9	10	11	12	15	18	19	20	21	22	23	37A	37	40	43	I	II							
																							ROADWAY	
201	LUMP																		201		LUMP		CLEARING AND GRUBBING	
202		2000														2000			202		2000	SQ.YD.	WEARING COURSE REMOVED	
202	1000															1000			202		1000	EACH	RAISED PAVEMENT MARKERS REMOVED FOR STORAGE	
202									6							6			202		6	EACH	ANCHOR ASSEMBLY POST REMOVED, AS PER PLAN	10
202		500							4768							4768			202		4768	LIN.FT.	GUARDRAIL REMOVED	
202		800														800			202		800	LIN.FT.	INTEGRAL CURB REMOVED	
202		1050														1050			202		1050	LIN.FT.	CURB REMOVED	
202		4200														4200			202		4200	SQ.FT.	WALK REMOVED	
202				1												1			202		1	EACH	CATCH BASIN REMOVED	
202														4		4			202		4	EACH	CATCH BASIN ABANDONED	
202				1794												1794			202		1794	SQ.YD.	CONCRETE SLOPE PROTECTION REMOVED, AS PER PLAN	12,41,42
202														996		996			202		996	LIN.FT.	CURB REMOVED, AS PER PLAN	40
203	200															200			203		200	CU.YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION, AS PER PLAN	9
203			500							10350	359		100			11309			203		11309	CU.YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
203											534					534			203		534	CU.YD.	EMBANKMENT	
203									132							132			203		132	STA.	LINEAR GRADING	
606		500							1594							2094			606		2094	LIN.FT.	GUARDRAIL, TYPE 5, AS PER PLAN	10
606									13							13			606		13	EACH	ANCHOR ASSEMBLY, TYPE A	
606									9							9			606		9	EACH	ANCHOR ASSEMBLY, TYPE T	
606									36							36			606		36	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE A	
606									9							9			606		9	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE J	
606									4861.5							4861.5			606		4861.5	LIN.FT.	RAISING EXISTING GUARDRAIL, TYPE 5	
606									703							703			606		703	LIN. FT.	RAISING EXISTING GUARDRAIL, BARRIER DESIGN, TYPE 5	
606									2							2			606		2	EACH	ANCHOR ASSEMBLY, BARRIER DESIGN, TYPE A	
608											330					330			608		330	SQ.FT.	CURB RAMPS, TYPE 2	
		3900														3900			608		3900	SQ.FT.	4" CONCRETE WALK, AS PER PLAN	39
SPEC																								
SPEC		1														1			SPEC.		1	EACH	RAISING EXISTING IMPACT ATTENUATOR	

GENERAL SUMMARY

I FEDERAL & STATE PARTICIPATION
II STATE PARTICIPATION

CALC. BY ___ DATE:	CUYAHOGA COUNTY	OHIO	25
CHKD BY ___ DATE:	CUY-90-13.41	FHWA REGION 5	156
		FEDERAL PROJECT	

ITEM	SHEET NUMBER															PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN REF.
	9	10	11	12		15	16	18	19	22	23	21	37	40	43	I	II							
																							PAVEMENT	
251													9400			9400			251		9400	SQ.YD.	PARTIAL DEPTH PAVEMENT REPAIR (CONCRETE) AS PER PLAN	
251													4700			4700			251		4700	SQ.YD.	PARTIAL DEPTH PAVEMENT REPAIR (ASPHALT CONCRETE) AS PER PLAN	
252			2530													2530			252		2530	SQ.YD	FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT	
803			3530										73420			76950			803		76950	LIN.FT.	FULL DEPTH PAVEMENT SAWING	
254		4562														4562			254		4562	SQ.YD.	PAVEMENT PLANING PORTLAND CEMENT CONCRETE	
254		2326														2326			254		2326	SQ.YD.	PAVEMENT PLANING BITUMINOUS	
301								8491					100			8591			301		8591	CU.YD.	BITUMINOUS AGGREGATE BASE, AC-20	
304													100			100			304		100	CU.YD.	AGGREGATE BASE	
305										21941						21941			305		21941	SQ.YD.	10" CONCRETE BASE, AS PER PLAN	3
305										13917						13917			305		13917	SQ.YD.	9.5" CONCRETE BASE, AS PER PLAN	3
310			250							617						867			310		867	CU.YD.	SUBBASE, TYPE 1, GRADING A AS PER PLAN	11
404												493			5	498			404		498	CU.YD.	ASPHALT CONCRETE, AC-20	
407											12267					12267			407		12267	GAL	TACK COAT	
446								4191								5679			446		5679	CU.YD.	ASPHALT CONCRETE, AC-20, TYPE 1, SURFACE COURSE, AS PER PLAN	3, 11
446								1260	1904							3164			446		3164	CU.YD.	ASPHALT CONCRETE, AC-20, TYPE 2, INTERMEDIATE COURSE	
609		1050														1050			609		1050	LIN.FT.	CURB TYPE 6, AS PER PLAN	10.39
609		780														780			609		780	LIN.FT.	CURB, TYPE 2-A, AS PER PLAN	39
812			8													8			812		8	TON	PORTLAND CEMENT	
803													22000			22000			803		22000	SQ.YD.	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C	
SPEC.								175	198							373			SPEC.		373	CU.YD	RUBBERIZED OPEN GRADED ASPHALT FRICTION COURSE (SEE PROPOSAL NOTE)	
SPEC.											1472					1472			SPEC		1472	LIN.FT.	PRESSURE RELIEF JOINT, TYPE C	
617											143					143			617		143	CU.YD.	COMPACTED AGGREGATE, TYPE A	
622												600				600			622		600	LIN.FT.	CONCRETE BARRIER, TYPE B42, AS PER PLAN	39A
622													/5133			5133			622		5133	LIN.FT.	CONCRETE GLARE SCREEN	37A
																							MAINTENANCE OF TRAFFIC	
404						300										300			404		300	CU.YD.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	
614						11692										11692			614		11692	EACH	TEMPORARY RAISED PAVEMENT MARKERS	
616		1000														1000			616		1000	M GAL.	WATER	
616		50														50			616		50	TON	CALCIUM CHLORIDE	
614						26.62										26.62			614		26.62	MILE	TEMPORARY EDGE LINES, CLASS I, 947.03 TYPE B	✓
614						3.5										3.5			614		3.5	MILE	TEMPORARY EDGE LINES, CLASS I, 947.03 TYPE C	✓
614						2.5										2.5			614		2.5	MILE	TEMPORARY LANE LINE, CLASS I, 947.03 TYPE C	✓
614						0.27										0.27			614		0.27	MILE	TEMPORARY CENTER LINE, CLASS I, 947.03 TYPE B	✓
614						11827										11827			614		11827	LIN.FT.	TEMPORARY CHANNELIZING LINE, CLASS I, 947.03 TYPE B	✓
614						16.58										16.58			614		16.58	MILE	TEMPORARY LANE LINES, CLASS I, 947.03 TYPE B	✓
614						4810										4810			614		4810	LIN.FT.	TEMPORARY TRANSVERSE LINE, CLASS I, 947.03 TYPE B	✓
614						1579										1579			614		1579	LIN.FT.	TEMPORARY DOTTED LINE, CLASS I, 947.03 TYPE B	✓
614						367										367			614		367	EACH	BARRIER REFLECTORS, TYPE B	
614						23										23			614		23	EACH	WORK ZONE SPEED LIMIT SIGN (SEE PROPOSAL NOTE)	
614						38.96										38.96			614		38.96	MILE	TEMPORARY EDGE LINE, CLASS I	
614						43.12										43.12			614		43.12	MILE	TEMPORARY LANE LINE, CLASS II	
614						15523										15523			614		15523	LIN.FT.	TEMPORARY CHANNELIZING LINE, CLASS I	
614						0.15										0.15			614		0.15	MILE	TEMPORARY CENTER LINE, CLASS I	
						360										360			614		360	LIN.FT.	TEMPORARY STOP LINES, CLASS I	
614							LUMP									LUMP			614		LUMP		MAINTENANCE OF TRAFFIC PLAN A AND B	16,72-77
614							LUMP									LUMP			614		LUMP		MAINTENANCE OF TRAFFIC PLAN B	16,72-77
621						50000										50000			621		50000	LIN.FT.	REMOVAL OF PAVEMENT MARKINGS	
622							2800									2800			622		2800	LIN.FT.	TEMPORARY CONCRETE BARRIER	
622							1370									1370			622		1370	LIN.FT.	TEMPORARY CONCRETE BARRIER, BRIDGE MOUNTED, AS PER PLAN	15, 16
632							700									700			632		700	LIN.FT.	LOOP DETECTOR WIRE, TYPE E	
632							300									300			632		300	LIN.FT.	LOOP DETECTOR PAVEMENT CUTTING	
SPCL.							500										500		SPCL.		500	LIN.FT.	DELIVERING AND UNLOADING TEMPORARY CONCRETE BARRIER	
SPCL.							1000									1000			SPCL.		1000	EACH	REPLACEMENT DRUMS	
SPCL.							500									500			SPCL.		500	SQ.FT.	REPLACEMENT SIGNS	

REVISED 2-17-90

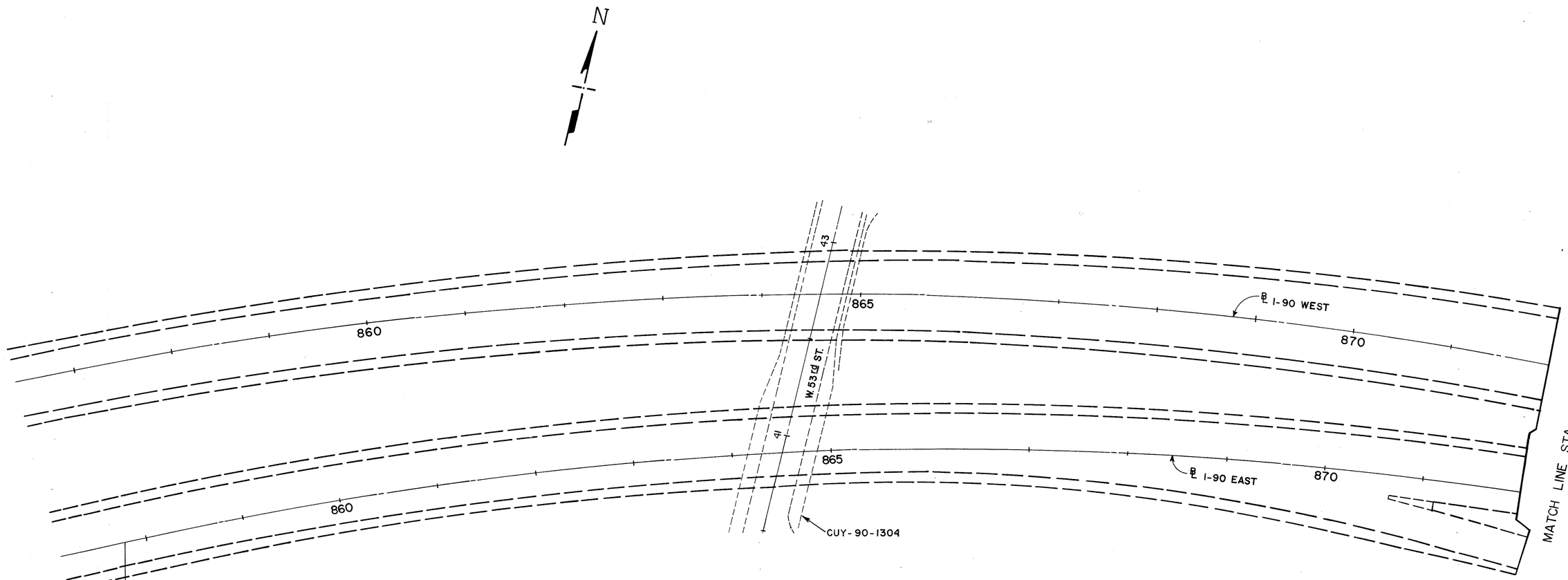
GENERAL SUMMARY

I FEDERAL & STATE PARTICIPATION
II 100% STATE PARTICIPATION

CALC. BY ___ DATE:	CUYAHOGA COUNTY CUY-90-13.41	OHIO
CHKD BY ___ DATE:		FHWA REGION 5
		FEDERAL PROJECT

ITEM	SHEET NUMBER 9	10	11	12	14	15	16	20	21	22	23	23A	37	40	43	PARTICIPATION I	II	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN REF.
																						DRAINAGE	
603				5												5		603		5	LIN. FT.	15" CONDUIT, TYPE C	
603				25												25		603		25	LIN. FT.	6" CONDUIT, TYPE B	
603				250								965				1215		603		1215	LIN.FT.	6" CONDUIT, TYPE F 707.17 NON-PERFORATED ASTM 3034 SDR-35 OR S&S	
603																65		603		65	LIN.FT.	12" CONDUIT, TYPE C	
604				59												59		604		59	EACH	CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN	12
604				9												9		604		9	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	12
604				50												50		604		50	EACH	INLET ADJUSTED TO GRADE, AS PER PLAN	12
604				1												1		604		1	EACH	CATCH BASIN, NO. 3A	
604				1												1		604		1	EACH	CATCH BASIN, NO. 8	
604				4												4		604		4	EACH	CATCH BASIN, NO. 2-2-A	
604				1												1		604		1	EACH	CATCH BASIN RECONSTRUCTED TO GRADE	
604				1												1		604		1	EACH	MANHOLE RECONSTRUCTED TO GRADE	
604				2												2		604		2	EACH	INLET RECONSTRUCTED TO GRADE	
605												30330				30330		605		30330	LIN.FT.	6" SHALLOW PIPE UNDERDRAINS, 707.15 AS PER PLAN	13
605				250							60		500			810		605		810	LIN.FT.	AGGREGATE DRAINS	
SPCL.				366												366		SPECIAL		366	SQ.YD.	EPOXY COATING OF EXISTING BARRIER MEDIAN INLETS (SEE PROPOSAL NOTE)	
																						EROSION CONTROL	
601				1794												1794		601		1794	SQ.YD.	6" CONCRETE SLOPE PROTECTION, AS PER PLAN	12, 41, 42
601				16												16		601		16	LIN.FT.	PAVED GUTTER, TYPE 1-2	
653											354					354		653		354	CU.YD.	TOPSOIL FURNISHED AND PLACED	
659											4248					4248		659		4248	SQ.YD.	SEEDING AND MULCHING, AS PER PLAN	12
659											10					10		659		10	M GAL.	WATER	
659											0.38					0.38		659		0.38	TON	COMMERCIAL FERTILIZER	
659											1.91					1.91		659		1.91	TON	AGRICULTURAL LIMING	
660			810													810		660		810	SQ.YD.	SODDING	
																						LIGHTING	
625			3408													3408		625		3408	LIN.FT.	CONDUIT, 2" 713.04 , AS PER PLAN	10
625			14													14		625		14	EACH	CONNECTOR KIT, TYPE II	
625			14													14		625		14	EACH	CONNECTOR KIT, TYPE III	
625			16680													16680		625		16680	LIN.FT.	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	
SPCL							400									400		SPCL		400	HOURS	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
614					LUMP											LUMP		614		LUMP		MAINTAINING TRAFFIC	
619	LUMP															LUMP		619		LUMP		FIELD OFFICE	
623																LUMP		623		LUMP		CONSTRUCTION LAYOUT STAKES	
624																LUMP		624		LUMP		MOBILIZATION	
																						FOR TRAFFIC CONTROL QUANTITIES, SEE SHEETS 83 & 84	
																						FOR STRUCTURE 20 FT SPAN & OVER SEE SHEET 121	

CUYAHOGA COUNTY	OHIO	27
CUY-90-13.41	FHWA REGION 5	156
	FEDERAL PROJECT	

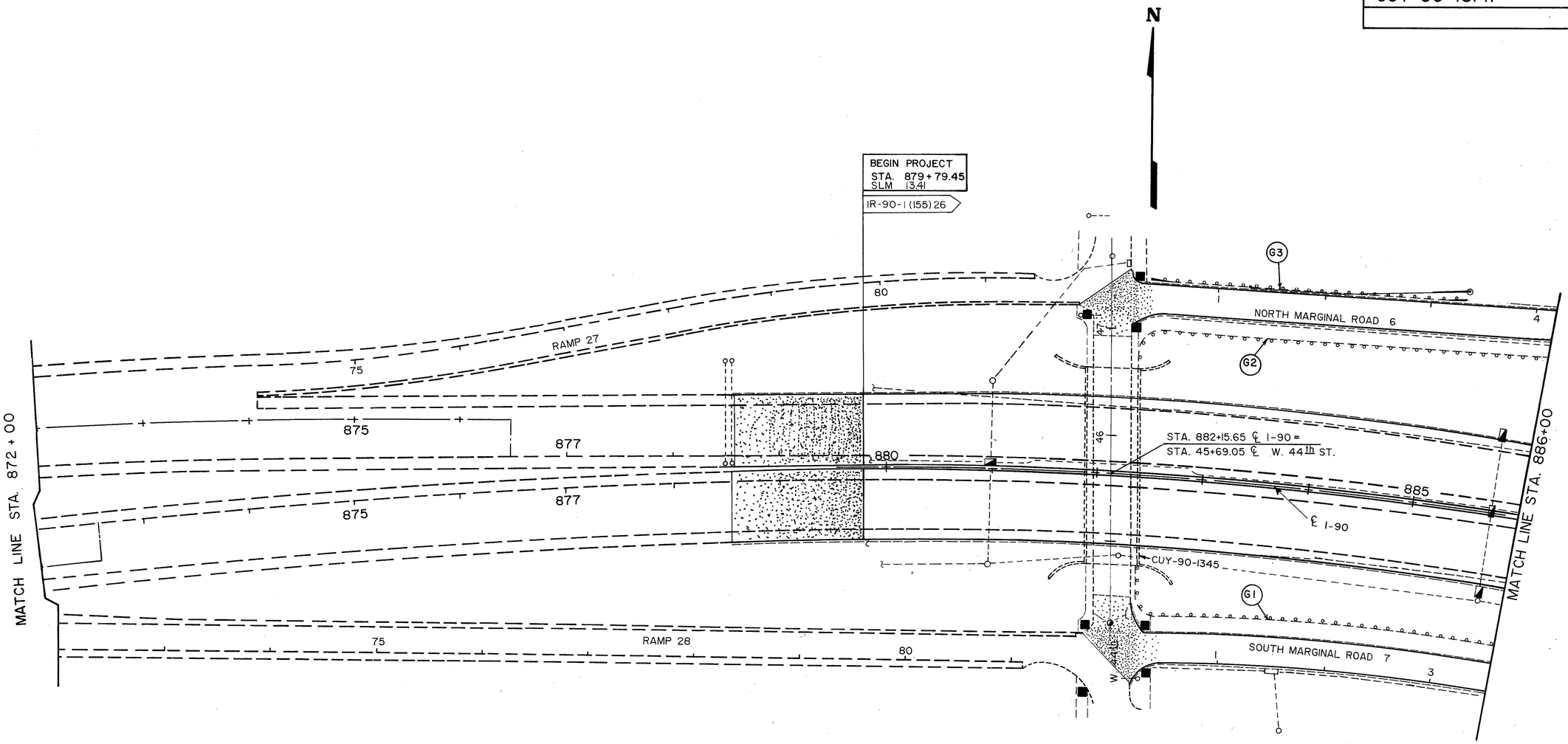


CROSS REFERENCE	
ITEM	SHEET
SIGNING	83-120

90449

PLAN SHEET STA. 857+00 TO STA. 872+00

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	28 156



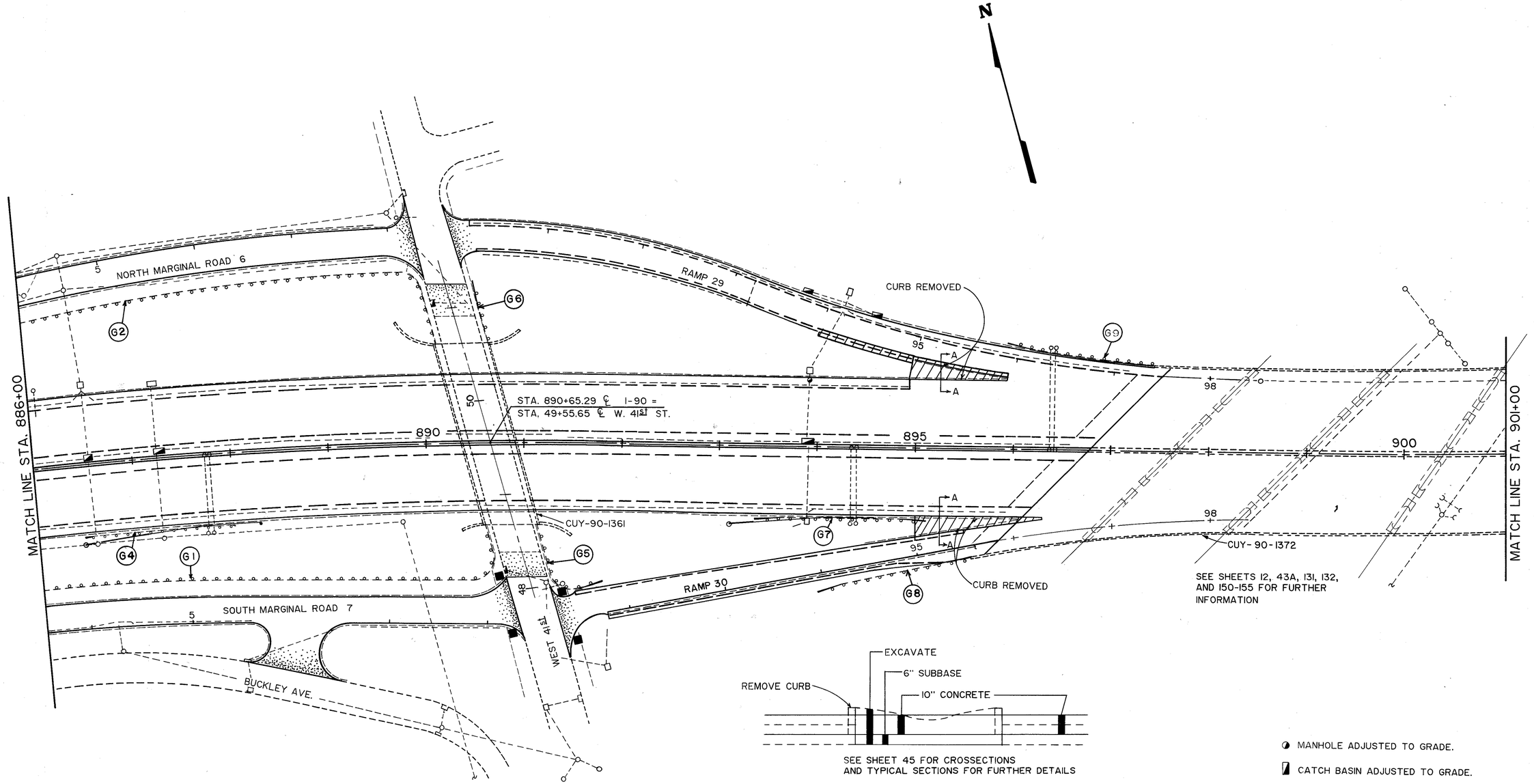
- MANHOLE ADJUSTED TO GRADE.
- CATCH BASIN ADJUSTED TO GRADE.

CROSS REFERENCE	
ITEM	SHEET
FEATHERING	38
GUARDRAIL	21
SIGNING	83-120
CURB RAMP	23

90449

PLAN SHEET STA. 872 +00 TO 886 +00

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	29 156



SEE SHEET 45 FOR CROSSECTIONS AND TYPICAL SECTIONS FOR FURTHER DETAILS

SECTION A-A

◑ MANHOLE ADJUSTED TO GRADE.

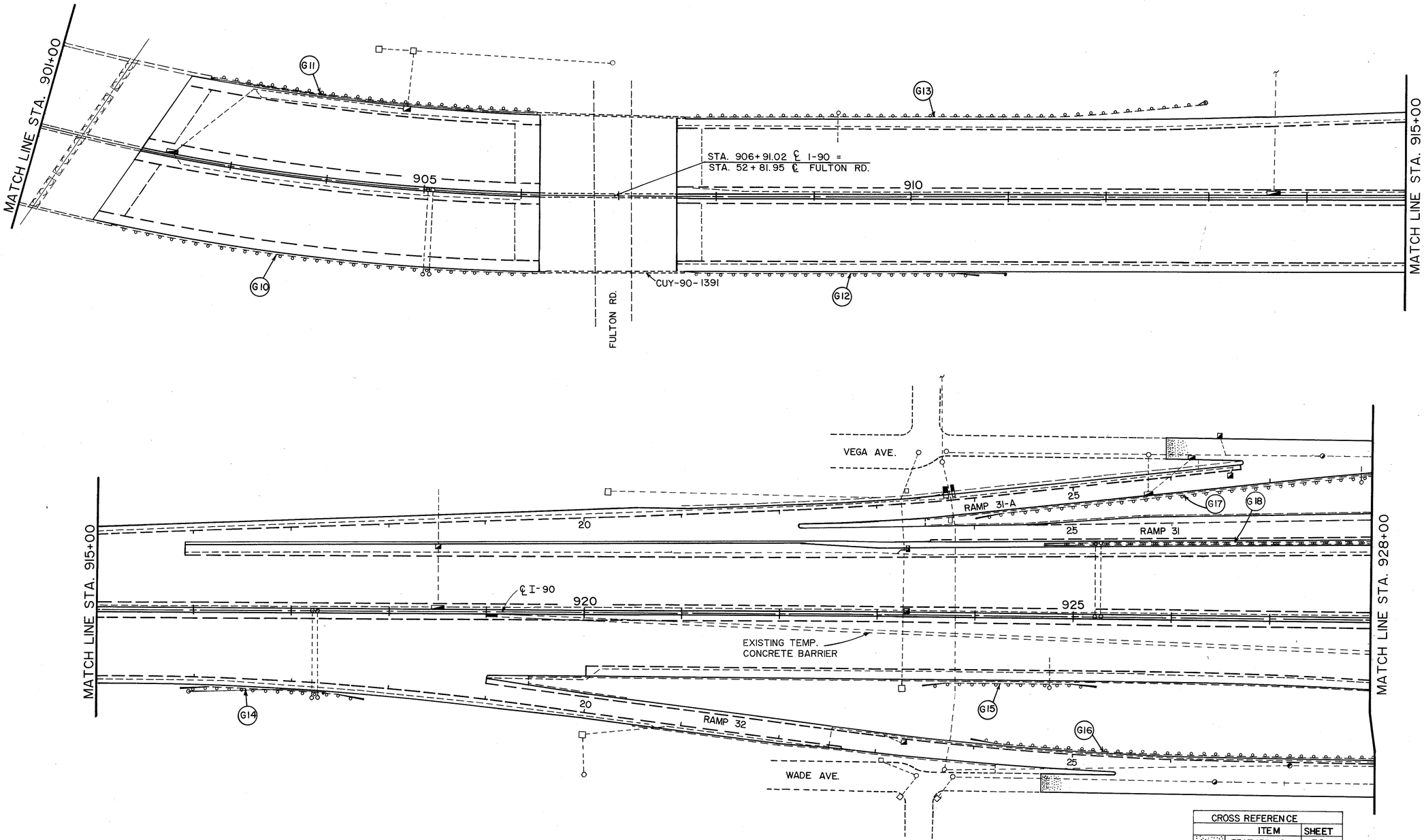
◪ CATCH BASIN ADJUSTED TO GRADE.

CROSS REFERENCE	
ITEM	SHEET
FEATHERING	38
GUARDRAIL	21
SHOULDER WIDENING	22
SIGNING	83-120
CURB RAMP	23
CURB REMOVED	40
CROSS SECTIONS	44-45

90449

PLAN SHEET STA. 886+00 TO 901+00

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	30 156



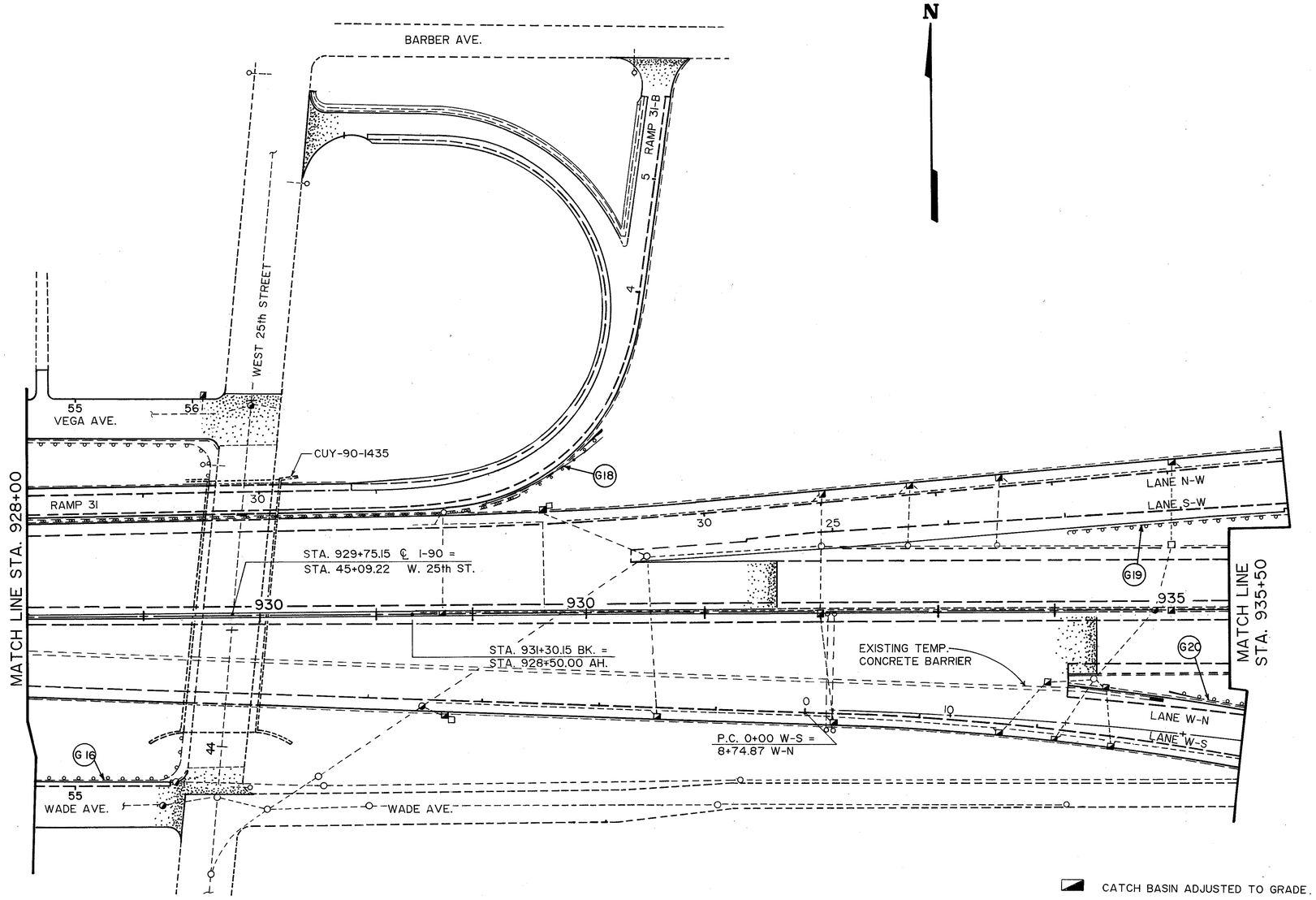
CROSS REFERENCE	
ITEM	SHEET
FEATHERING	38
GUARDRAIL	21
SHOULDER WIDENING	22
SIGNING	83-120

CATCH BASIN ADJUSTED TO GRADE.

NEW CATCH BASIN.

90449

PLAN SHEET STA. 901+00 TO 928+00



CATCH BASIN ADJUSTED TO GRADE.

MANHOLE ADJUSTED TO GRADE.

CROSS REFERENCE	
ITEM	SHEET
FEATHERING	38
GUARDRAIL	21
SHOULDER WIDENING	22
SIGNING	83-120

90449

PLAN SHEET STA. 928+00 TO 935+50

MATCH LINE STA. 975+00

N

SCRANTON RD.

STA. 24+20.94 ℄ LANE N-W =
STA. 11+06.36 ℄ SCRANTON RD.

LANE N-W

G22

LANE S-W

STA. 20+42.46 ℄ LANE S-W =
STA. 10+65.92 ℄ SCRANTON RD.

G19

MATCH LINE
STA. 935+50

℄ I-90

940

945

970

℄ I-490

950

LANE E-S

G23

LANE W-N

STA. 13+09.60 ℄ LANE W-N =
STA. 8+42.01 SCRANTON RD.

G20

LANE W-N

G21

STA. 4+33.12 ℄ LANE W-S =
STA. 8+26.59 ℄ SCRANTON RD.

LANE W-S

LANE E-S

℄ I-71

LANE S-W

MATCH LINE
STA. 10+00

MATCH LINE STA. 966+00
SHEET 35

CATCH BASIN ADJUSTED TO GRADE.

CROSS REFERENCE	
FEATHERING	38
GUARDRAIL	21
SIGNING	83-120

90449

PLAN SHEET STA. 935+50 TO 975+00

CUYAHOGA COUNTY	OHIO	33
CUY - 90 - 13.41	FHWA REGION 5	156
	FEDERAL PROJECT	

MATCH LINE STA. 975+00

STARKWEATHER AVE.

CUY-90-1490 L

STA. 10+92.58 ℄ LANE N-W =
STA. 6+41.84 ℄ STARKWEATHER AVE.

G24 G22 G27 G28 G26 G25 G23

15 LANE N-W

10

EXISTING IMPACT ATTENUATOR RAISED

℄ I-71 ENDS

980

985

℄ I-90

5

CUY-90-1506

KENILWORTH AVE.

990

35

40

30 LANE W-N

CURB REMOVED

CUY-90-1490 R

STA. 5+35.85 ℄ STARKWEATHER AVE. =
STA. 981+80.55 ℄ I-90

SEE DETAIL SHEET 43

STA. 990+11.51 ℄ I-90 =
STA. 4+50.03 ℄ KENILWORTH AVE.

MATCH LINE STA. 990+85

END PROJECT
STA. 998+71.08

IR-90-1(155)26

G29 G30

MATCH LINE STA. 990+85

995

℄ I-90

STA. 1000+00 BK. =
STA. 4+86.55 AH.

1000

10

MATCH LINE STA. 11+00

CATCH BASIN ADJUSTED TO GRADE

CROSS REFERENCE	
GUARDRAIL	21
SIGNING	83-120
CURB REMOVED	40

80449

PLAN SHEET STA 975+00 TO 11+00

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	34 156

END WORK
STA. 14+07

MATCH LINE STA. 11+00

MATCH LINE STA. 22+00

5

2

15

℄ I-90

20

10

8

6

MATCH LINE STA. 22+00

25

30

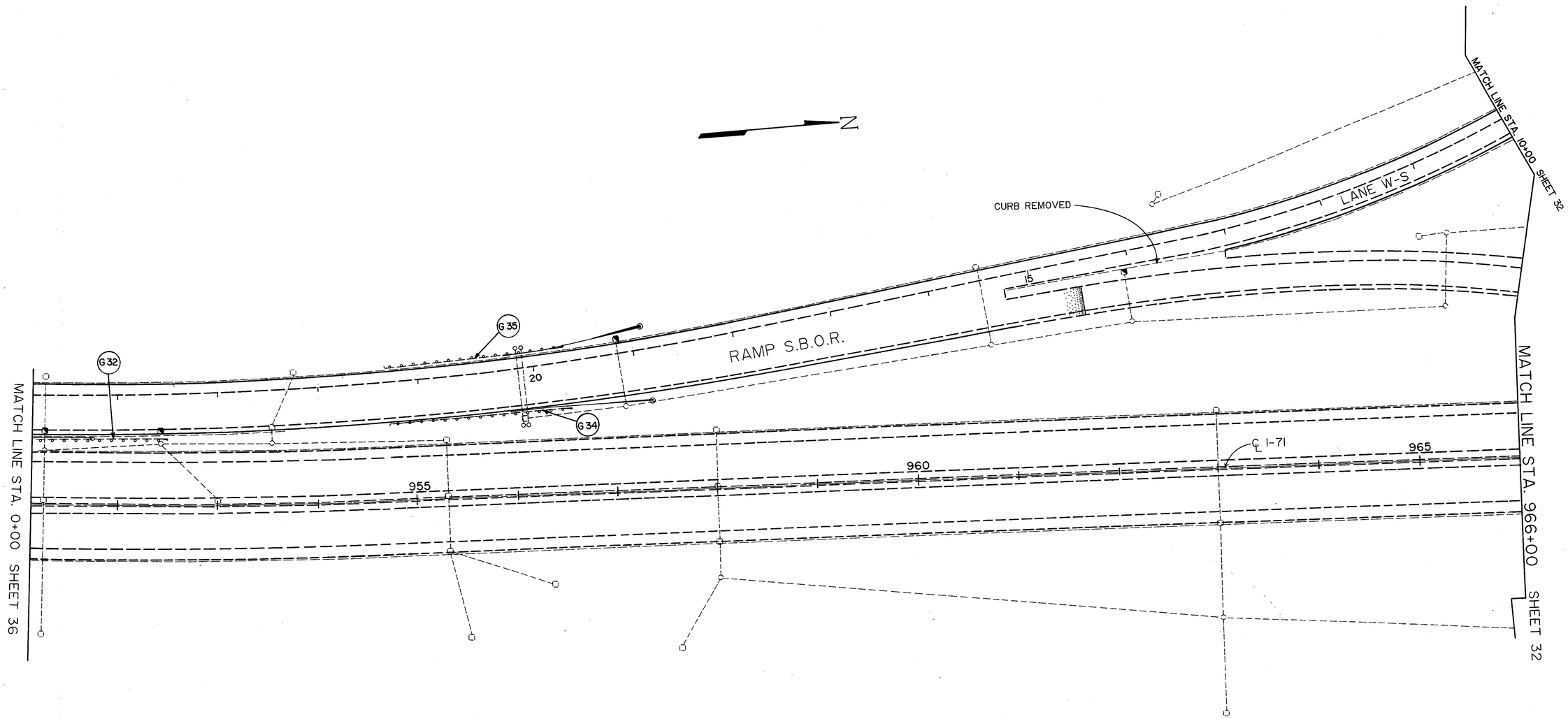
N

CROSS REFERENCE	
SIGNING	83-120

9044B

PLAN SHEET STA. 11+00 TO STA. 34+00

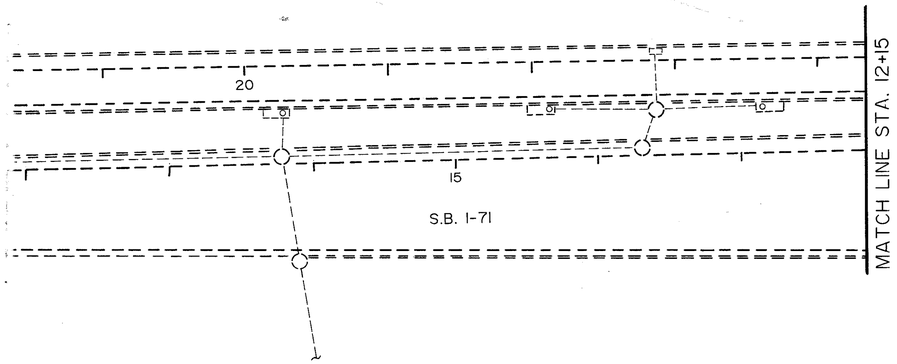
CUYAHOGA COUNTY	OHIO	35
CUY-90-13.41	FHWA REGION 5	156
	FEDERAL PROJECT	

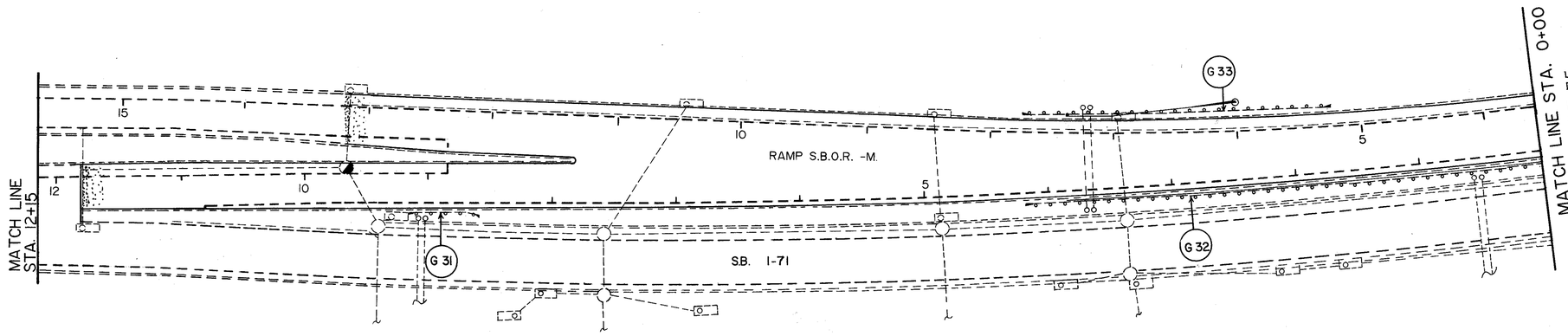


CATCH BASIN ADJUSTED TO GRADE

CROSS REFERENCE	
FEATHERING	38
GUARDRAIL	21
SIGNING	83-120
CURB REMOVED	40

PLAN SHEET STA. 10+00 TO STA. 0+00





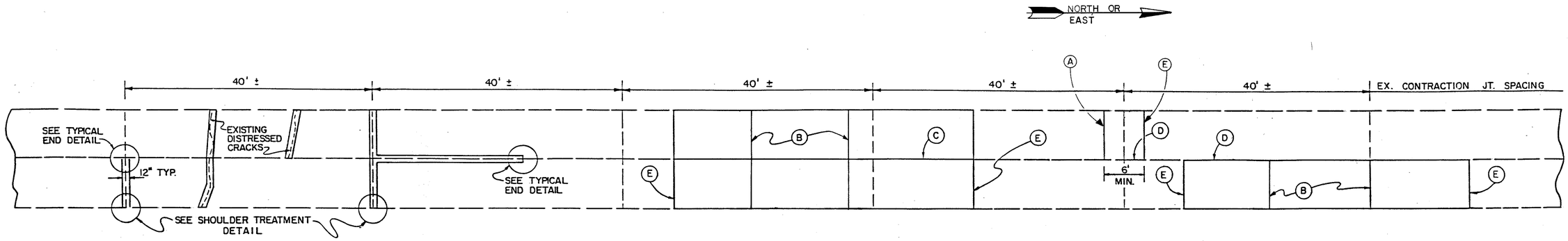
N

MANHOLE ADJUSTED TO GRADE.

CROSS REFERENCE	
FEATHERING	38
GUARDRAIL	21
SIGNING	83-120

PLAN SHEET STA. 0+00 TO STA. 18+14

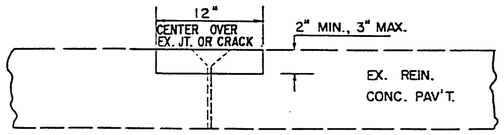
PAVEMENT REPAIR DETAILS



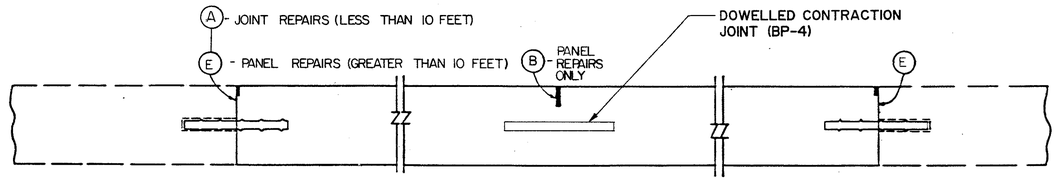
PARTIAL DEPTH JOINT OR CRACK REPAIR

TYPICAL TWO LANE REPLACEMENT

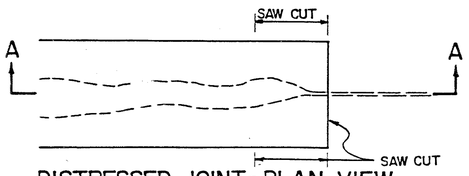
TYPICAL ONE LANE REPLACEMENT



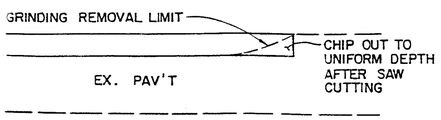
ITEM 251-PARTIAL DEPTH PAV'T REPAIR



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



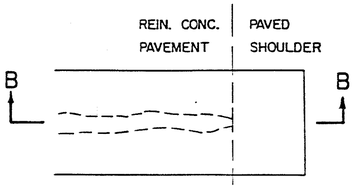
DISTRESSED JOINT - PLAN VIEW



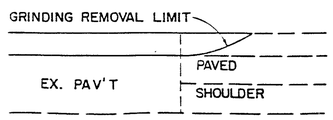
SECTION A-A

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

SEE GENERAL NOTE ON SHEET NO. 11 FOR ADDITIONAL INFORMATION

ESTIMATED QUANTITY *		
ITEM 251- PARTIAL DEPTH PAVEMENT REPAIR (CONCRETE)	9400	S.Y.
ITEM 251- PARTIAL DEPTH PAVEMENT REPAIR (ASPHALT)	4700	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 11 FOR ADDITIONAL INFORMATION

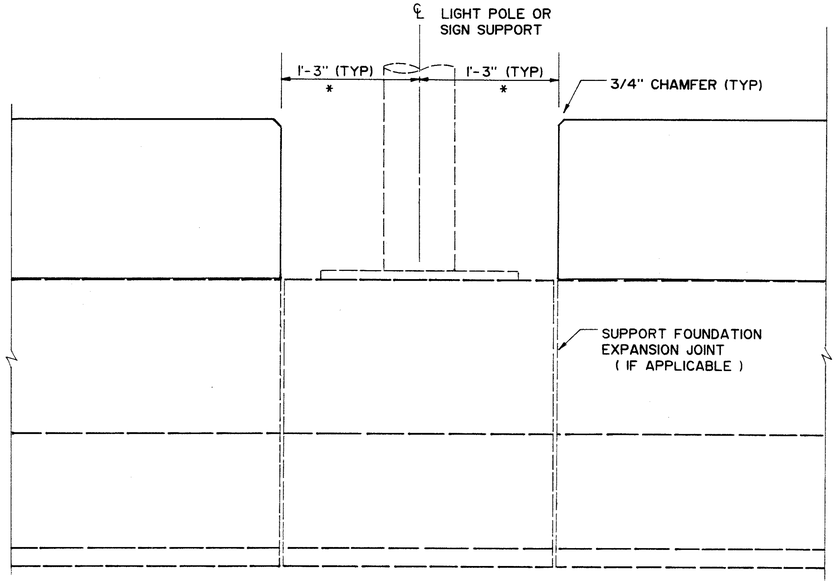
REINFORCING MESH AS SHOWN ON STD. DRAWING BP-13 IS NOT REQUIRED WHEN AN ASPHALT OVERLAY OF 3 INCHES OR MORE IS PROPOSED.

ESTIMATED QUANTITIES *			
ITEM 803	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C	22000	SQ. YDS.
ITEM 803	FULL DEPTH PAVEMENT SAWING	73420	LIN. FT.
ITEM 203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	100	CU. YDS.
ITEM 301	BITUMINOUS AGGREGATE BASE	100	CU. YDS.
ITEM 304	AGGREGATE BASE	100	CU. YDS.
ITEM 605	AGGREGATE DRAINS	500	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.

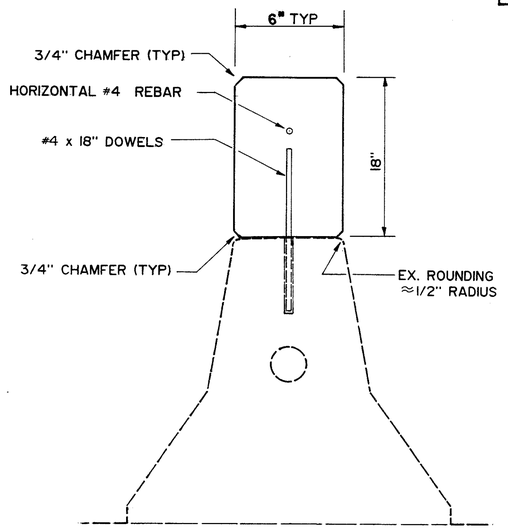
VISUAL SURVEY

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	37A 156

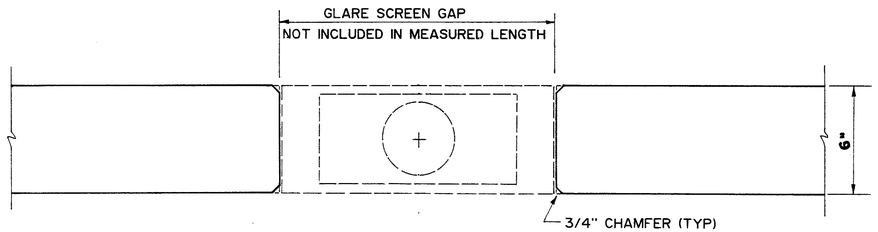


* - OR WIDER TO EXTEND TO SUPPORT FOUNDATION EXPANSION JOINT, IF WITHIN 2'-3".

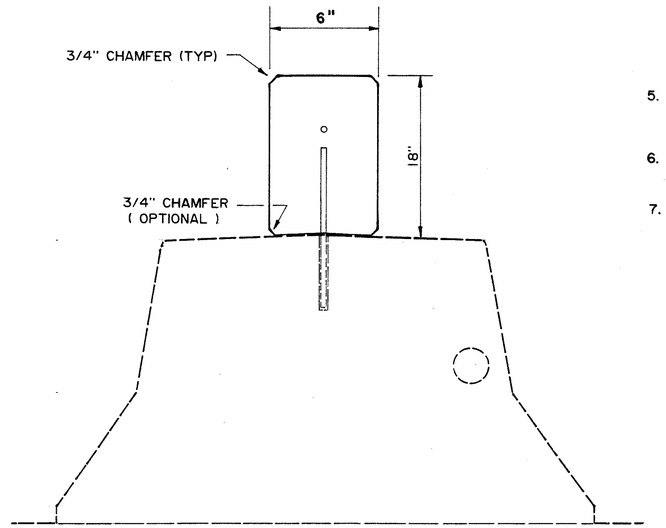
ELEVATION



NORMAL SECTION



PLAN VIEW



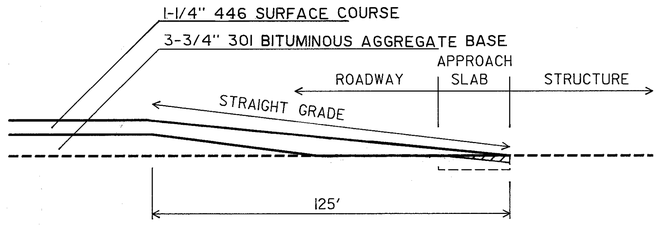
WIDENED SECTION, BRIDGE PIERS OR SIGN SUPPORTS

1. FOR ADDITIONAL NOTES AND DETAILS SEE STD. CONSTRUCTION DRAWING MC-9.
2. CONTRACTION JOINTS SHALL BE TOOLED OR SAWN A MINIMUM OF 1 ½ INCHES DEEP. SPACING SHALL MATCH EXISTING.
3. STATION MARKING AS PER MC-9 SHALL BE INCLUDED UNDER THIS ITEM OF WORK.
4. 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.
5. 3/4" P.E.J.F. (705.03) IS REQUIRED AROUND EACH PIER AND AT EXPANSION JOINTS.
6. GLARE SCREENS SHALL NOT BE REQUIRED BETWEEN PIERS.
7. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

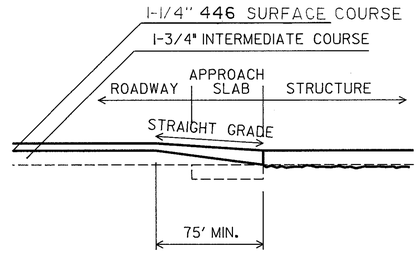
   ITEM 622- CONCRETE GLARE SCREEN A.P.P. 5133 LIN. FT.

913840

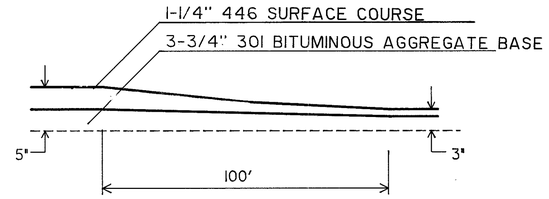
CONCRETE GLARE SCREEN DETAILS



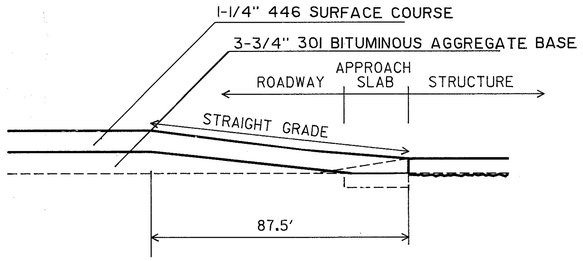
TYPICAL OVERLAY DETAIL AT BRIDGE
ROADWAY WITH 5" OVERLAY BRIDGE WITH NO OVERLAY



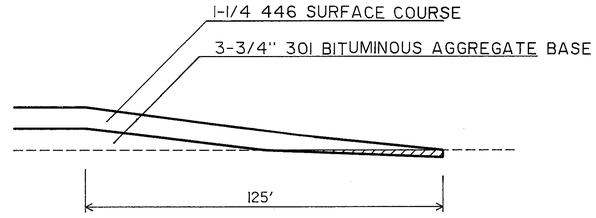
TYPICAL OVERLAY DETAIL AT BRIDGE
ROADWAY WITH 3" OVERLAY BRIDGE WITH 1-3/4" OVERLAY



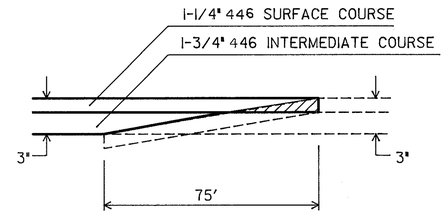
5" OVERLAY TO 3" OVERLAY



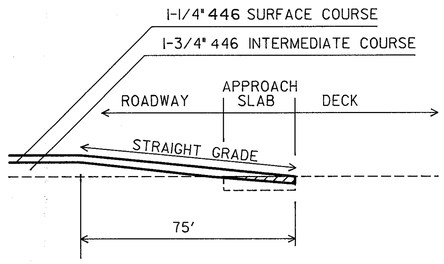
TYPICAL OVERLAY DETAIL AT BRIDGE
ROADWAY WITH 5" OVERLAY BRIDGE WITH 1-3/4" OVERLAY



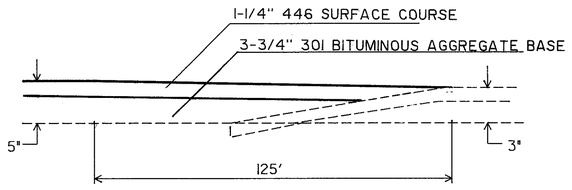
5" OVERLAY BUTT JOINT MEETING PAVEMENT WITH NO OVERLAY



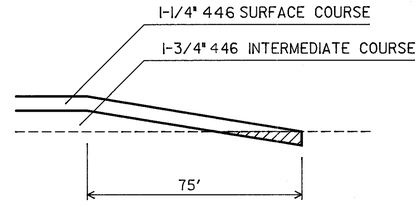
3" OVERLAY BUTT JOINT MEETING EXISTING
PAVEMENT WITH 3" OVERLAY



TYPICAL OVERLAY DETAIL AT BRIDGE
ROADWAY WITH 3" OVERLAY BRIDGE WITH NO OVERLAY



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



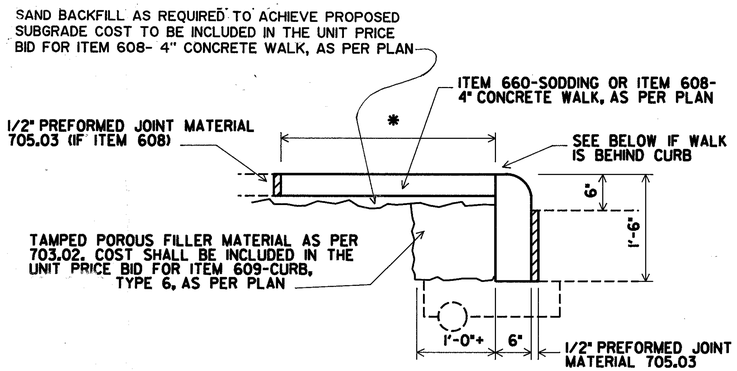
3" OVERLAY BUTT JOINT MEETING PAVEMENT WITH NO OVERLAY

ITEM 254-PAVEMENT PLANING, BITUMINOUS OR
ITEM 254-PAVEMENT PLANING, PORTLAND CEMENT CONCRETE
PAYMENT SHALL BE MADE UNDER THE
PERTINENT 254 ITEM

BUTT JOINT DETAILS

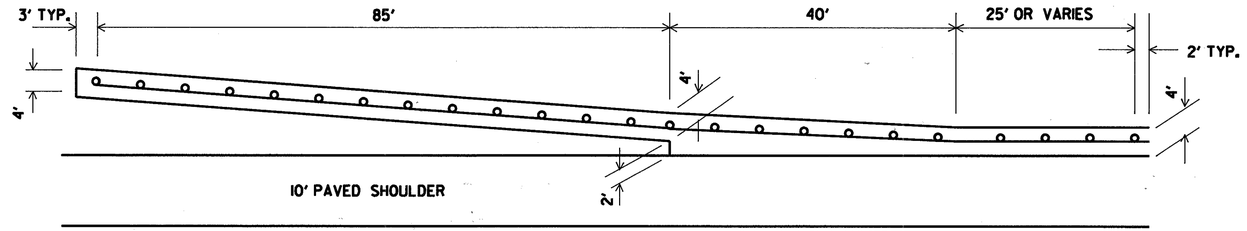
FHWA REGION	STATE	PROJECT	
5	OHIO		

CUYAHOGA COUNTY
CUY-90-13.41

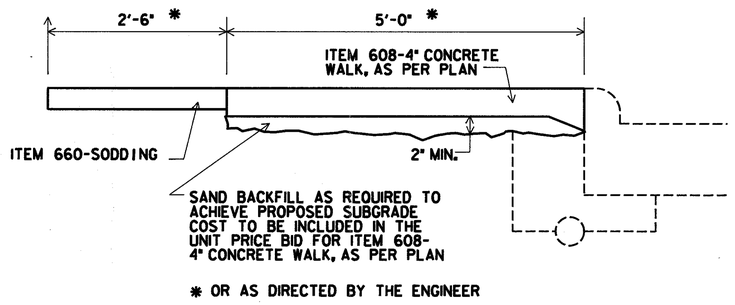


* LENGTH SHALL BE 2'-6" OR AS DIRECTED BY THE ENGINEER FOR ITEM 660-SODDING, AND 4'-0" OR TO THE FIRST JOINT OR AS DIRECTED BY THE ENGINEER FOR ITEM 608-4" CONCRETE WALK, AS PER PLAN

ITEM 609-CURB, TYPE 6, AS PER PLAN

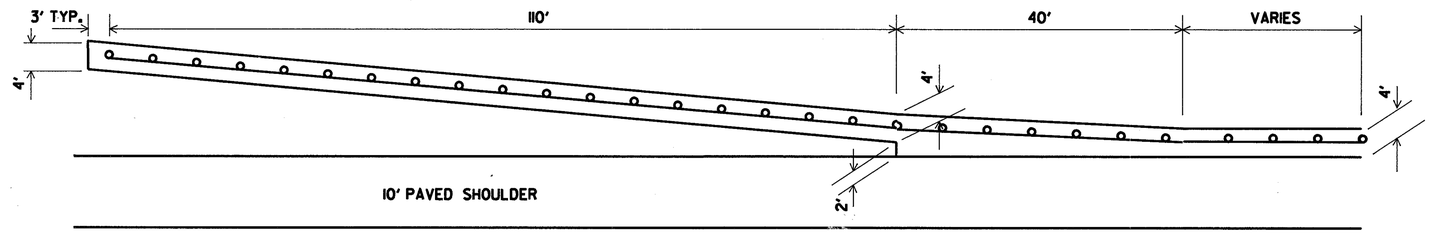


ITEM 404 - ASPHALT CONCRETE, AC-20
FOR EROSION CONTROL WITH 8.31' GUARDRAIL FLARE



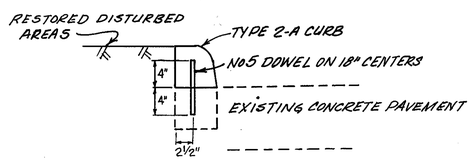
* OR AS DIRECTED BY THE ENGINEER

ITEM 608-4" CONCRETE WALK, AS PER PLAN

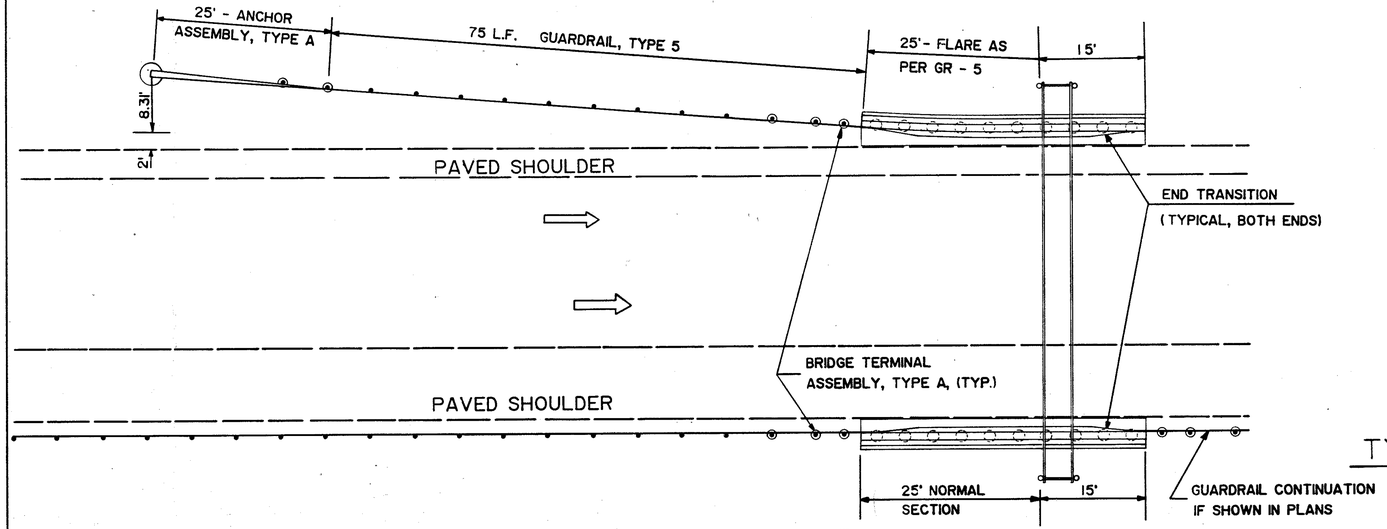


ITEM 404 - ASPHALT CONCRETE, AC-20
FOR EROSION CONTROL WITH 18' GUARDRAIL FLARE

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

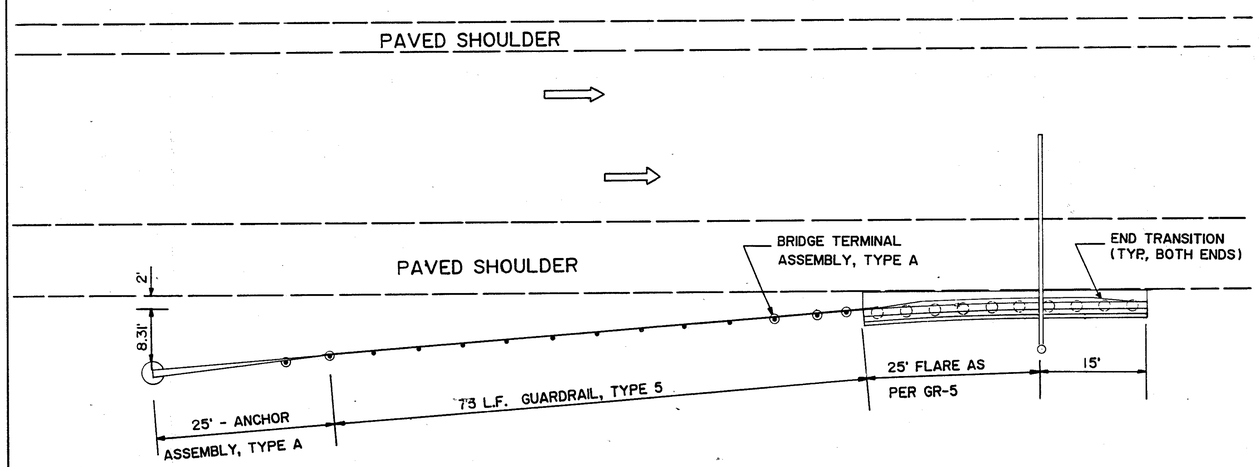


ITEM 609-CURB, TYPE 2-A, AS PER PLAN



PROTECTION OF OVERHEAD SIGN BRIDGE

GUARDRAIL AND BARRIER SHALL BE FLARED WHEREVER POSSIBLE. UNFLARED DETAIL ABOVE ONLY APPLIES TO APPLICATIONS WITHIN A LONG GUARDRAIL RUN.

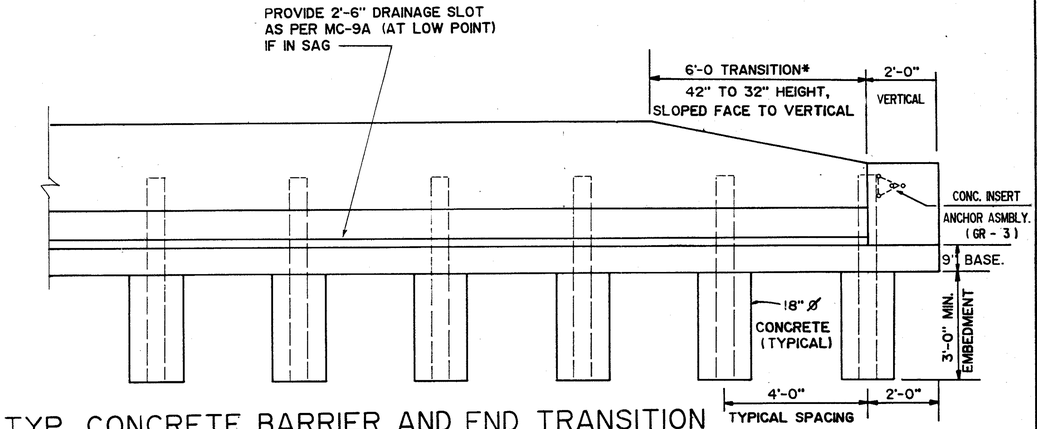


PROTECTION OF CANTILEVER SIGN SUPPORT

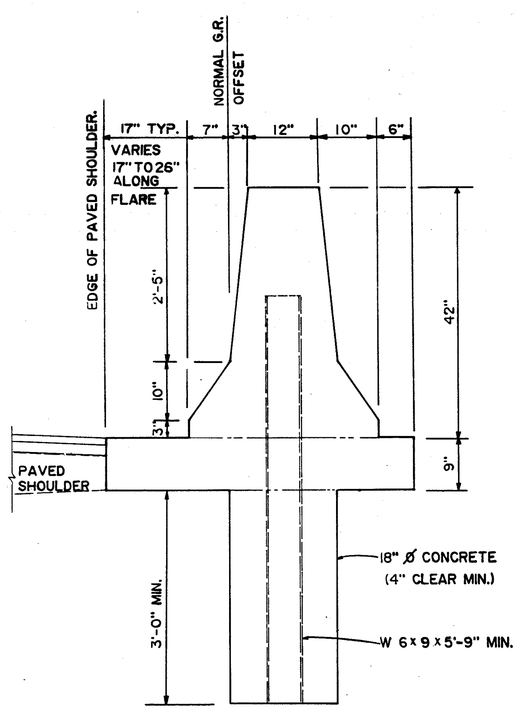
NOTES: 2'-6" DRAINAGE SLOTS AS PER STANDARD CONSTRUCTION DRAWING MC-9A SHALL BE PROVIDED AS REQUIRED TO PREVENT THE PONDING OF WATER

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

* - TRANSITION SIMILAR TO GR - 3 EXCEPT 12" TOP WIDTH



TYP. CONCRETE BARRIER AND END TRANSITION

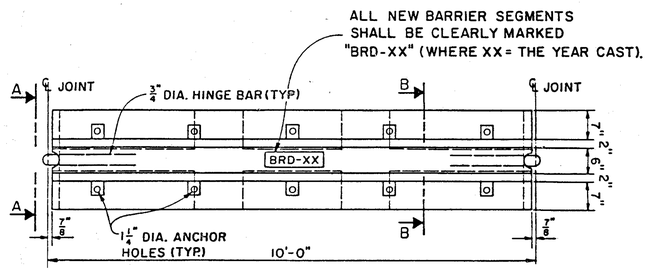


TYPICAL BARRIER SECTION
TYPE B42 AS PER PLAN

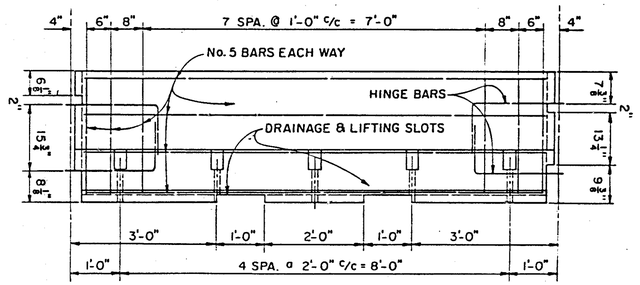
ITEM 622-CONCRETE BARRIER, TYPE B42, AS PER PLAN

THIS 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 MC-9

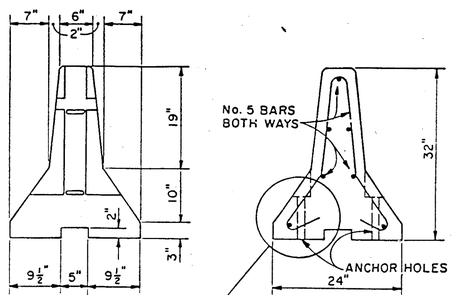
CONCRETE BARRIER PROTECTION OF SIGN SUPPORT



PLAN

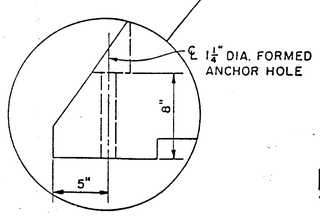


ELEVATION

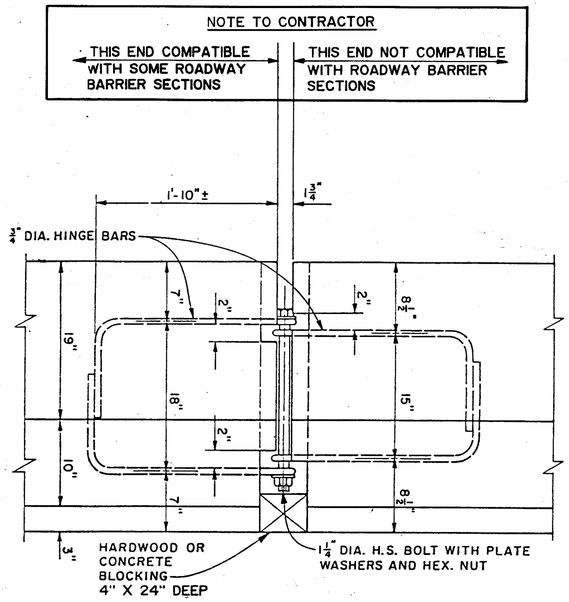


SECTION A - A

SECTION B - B



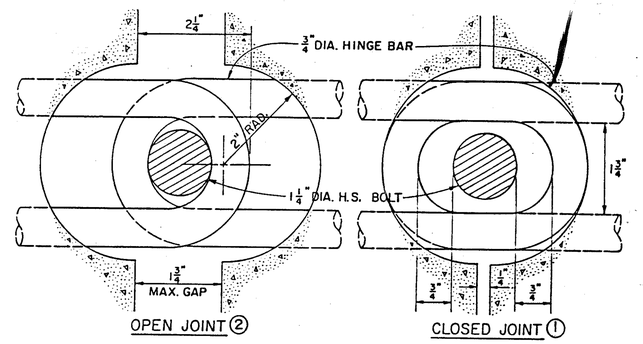
TYPE BRD BARRIER SECTIONS



DETAIL AT HINGED CONNECTION

MATERIAL REQUIREMENTS :

1. THE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.
2. ALL REINFORCED STEEL AND STEEL ROD CONNECTING LOOPS SHALL BE GRADE 60 REINFORCED STEEL WITH A MINIMUM YIELD STRENGTH OF 60,000 PSI.



② BARRIER JOINTS MUST BE FULLY OPEN BEFORE OPENING IS BLOCKED WITH CONCRETE OR HARDWOOD.

① BARRIERS SHOULD INITIALLY BE PLACED CLOSER TOGETHER SO THAT BOLTS CAN BE EASILY INSERTED THROUGH HINGE BAR LOOPS.

JOINT CONNECTION DETAIL

COMMON NOTES : ALL TEMPORARY CONCRETE BARRIERS ON STRUCTURES

BRIDGE DECK SURFACE PREPARATION

1. THE BRIDGE DECK SURFACE AREA ON WHICH THE PRECAST CONCRETE BARRIERS WILL REST SHALL BE CLEARED OF ALL LOOSE SAND, GRAVEL, DIRT AND DEBRIS.
2. ANY IRREGULARITIES IN THE BRIDGE DECK AREA, UNLESS JUDGED BY THE ENGINEER TO BE INCONSEQUENTIAL, SHALL BE LEVELED WITH GROUT AND/OR ASPHALT.
3. ASPHALT ROLL ROOFING SHALL BE PLACED ON THOSE BRIDGE DECK AREAS, AS JUDGED BY THE ENGINEER, TO HAVE A SURFACE ROUGHNESS WHICH WOULD INHIBIT FRICTION CONTACT BETWEEN BARRIER SEGMENTS AND DECK.

BOLTED JOINT CONNECTIONS

4. **WHEN STANDARD MC-9A BARRIER SECTIONS OR TYPE BRD BARRIER SECTIONS ARE USED ON STRUCTURES, THEY SHALL BE BOLTED TOGETHER AND BLOCKED AS SHOWN ABOVE (BOLTING DIMENSIONS FOR MC-9A BARRIER MAY VARY FROM THOSE SHOWN).**

CONCRETE BARRIER, TYPE BRD, ANCHORED

ALL ANCHORS SHALL BE 1" DIAMETER, HIGH STRENGTH, THRU BOLTS OR APPROVED RESIN ANCHORS. WHEN RESIN ANCHORS ARE USED, THEY MUST BE EMBEDDED A MINIMUM OF 6" INTO FIRM CONCRETE. THE NUMBER OF ANCHORS SHALL BE AS SHOWN BELOW AND SHALL BE PLACED SYMMETRICALLY ON THE ROADWAY SIDE OF THE BARRIER.

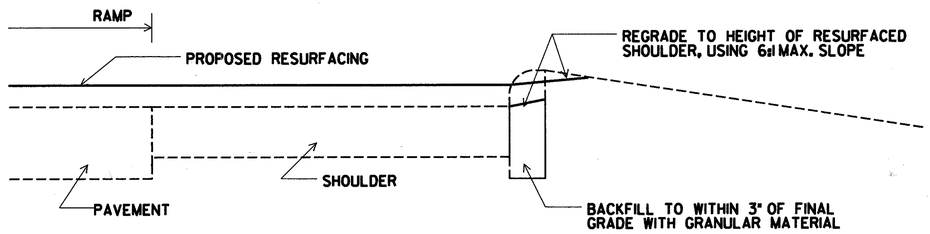
BRIDGE NO.	TRAFFIC CONTROL PHASE	NO. ANCHORS / 10' SECTION

FHWA REGION	STATE	PROJECT	
5	OHIO		

CUYAHOGA COUNTY
CUY-90-13.41

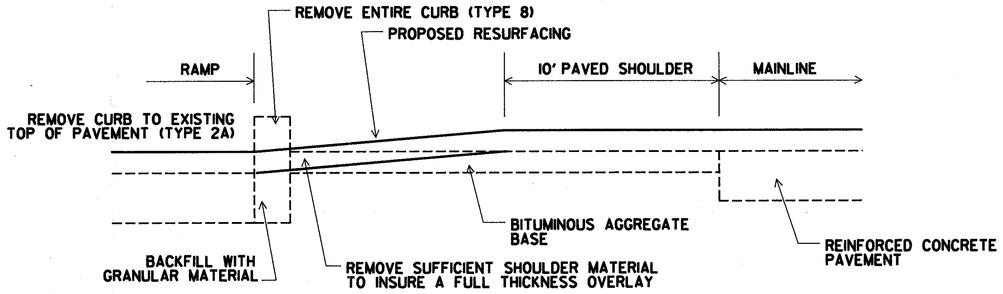
THE FOLLOWING DETAILS AND SPECIFICATIONS SHALL APPLY TO THIS ITEM OF WORK

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



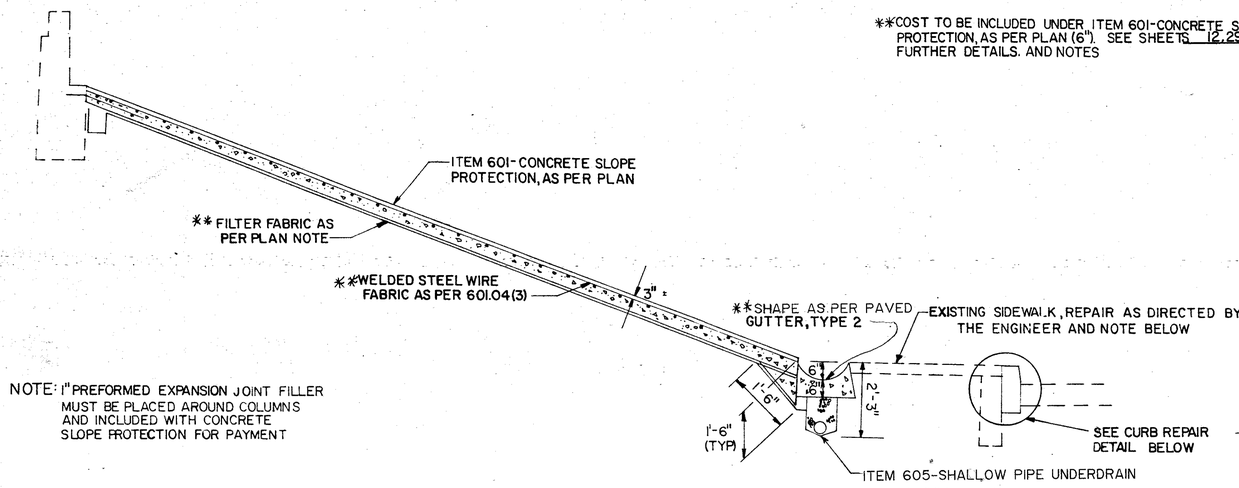
NOTE: CONNECT THE OUTSIDE EDGE OF THE 10 FT. PAVED SHOULDER AND THE CURB GUTTER LINE WITH A STRAIGHT GRADE

ESTIMATED QUANTITIES

RAMP NUMBER	LOCATION		202	
			CURB REMOVED AS PER PLAN	CATCH BASIN ABANDONED
	FROM	TO	LIN. FT.	EACH
WN	30+96	32+64	171	1
SE	20+26	21+26	100	2
30	95+00	96+05	105	
--	895+00	896+10	110	
29	94+00	95+95	195	
--	895+00	895+95	95	
WS	13+05	15+25	220	1
TOTALS			996	4

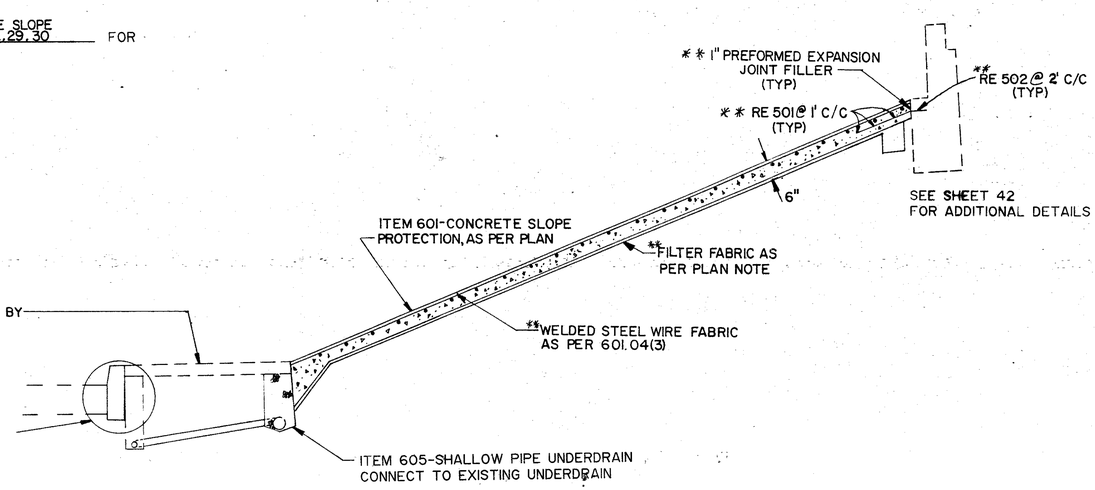
EROSION CONTROL DETAILS

**COST TO BE INCLUDED UNDER ITEM 601-CONCRETE SLOPE PROTECTION, AS PER PLAN (6"). SEE SHEETS 12, 29, 30 FOR FURTHER DETAILS. AND NOTES



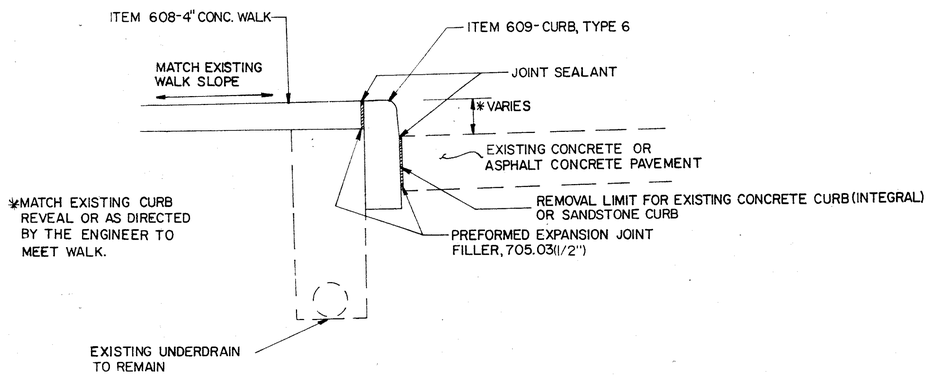
NOTE: 1" PREFORMED EXPANSION JOINT FILLER MUST BE PLACED AROUND COLUMNS AND INCLUDED WITH CONCRETE SLOPE PROTECTION FOR PAYMENT

TYPICAL CONCRETE SLOPE PROTECTION REPAIR WITH EXISTING PAVED GUTTER.
(UNDER CUY-90-1490 L&R)



TYPICAL CONCRETE SLOPE PROTECTION REPAIR WITHOUT PAVED GUTTER

SLOPE PROTECTION DETAILS
(NOT TO SCALE)



CURB REPAIR DETAIL A

SIDEWALK AND CURB REPAIRS

THESE ITEMS OF WORK SHALL BE USED TO REPLACE EXISTING CONCRETE WALK THAT HAS BUCKLED, CRACKED, OR MOVED FROM ITS INTENDED LOCATION. THIS IN TURN ALSO CAUSED THE EXISTING FENCE TO MOVE AND BE IN NEED OF REPLACEMENT. ALL REPLACEMENT WALK SHALL BE IN THE SAME LOCATION AS EXISTING AND SHALL BE AS DIRECTED BY THE ENGINEER (TYPICAL ALL APPLICABLE BRIDGES).

ALSO, THE CONCRETE CURB IN SOME LOCATIONS NEEDS REPLACEMENT. REPLACE AS SHOWN IN DETAIL A THIS SHEET.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

EROSION CONTROL DETAILS

CUYAHOGA COUNTY OHIO

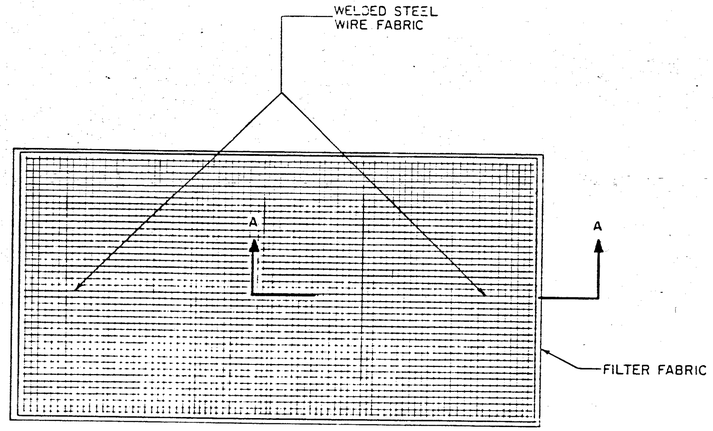
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
DATE	LM DATE	DATE	DATE	SHEET

FHWA REGION	STATE	PROJECT	
5	OHIO		

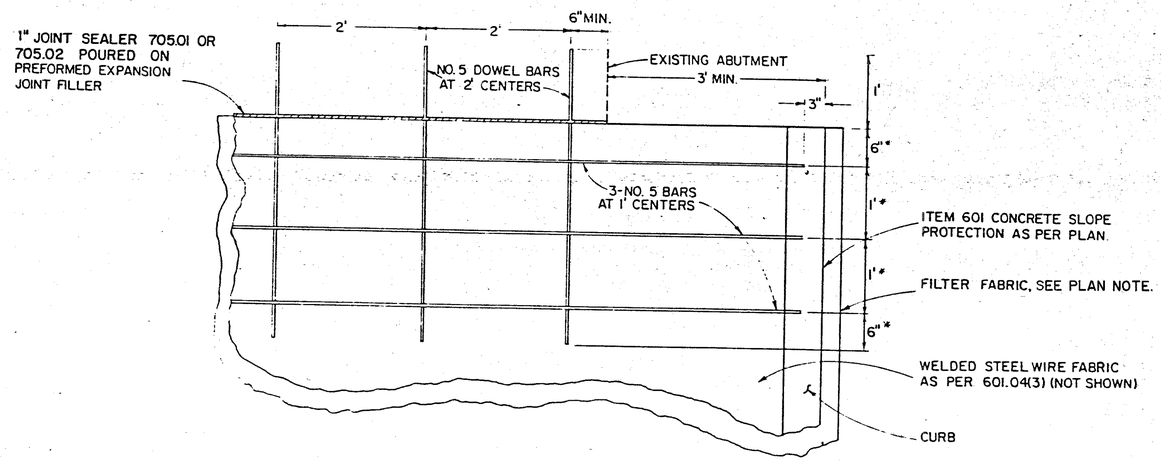
42/156

CUYAHOGA COUNTY
CUY-90-13.41

EROSION REPAIR PLAN

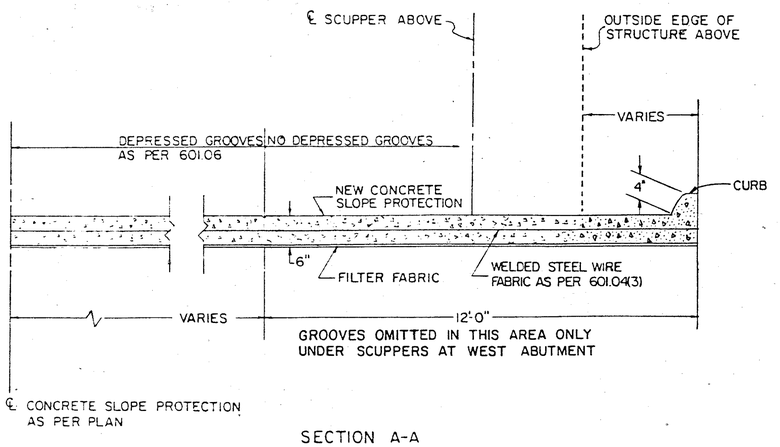


CONCRETE SLOPE PROTECTION
AS PER PLAN

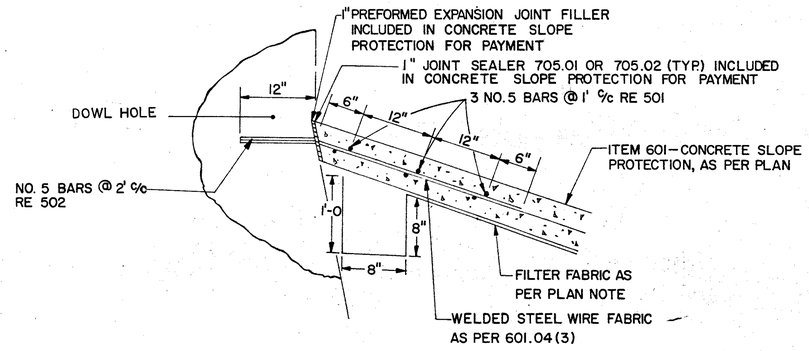


SLOPE PROTECTION REINFORCING DETAIL

*LENGTH AS MEASURED ALONG SLOPE.



SECTION A-A

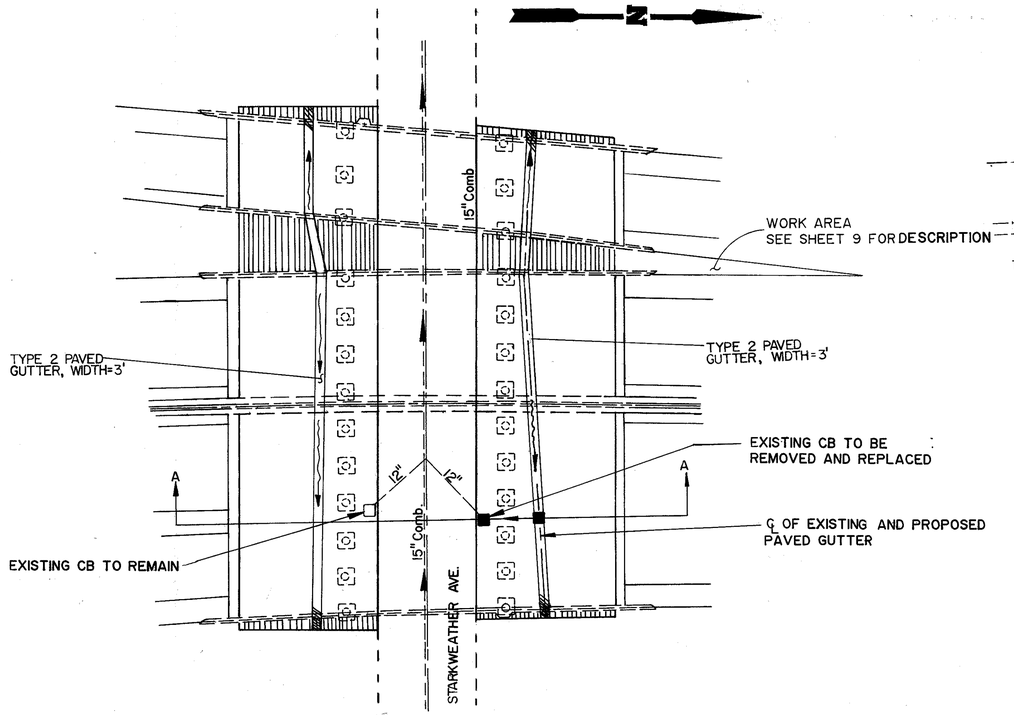


ANCHORING DETAIL

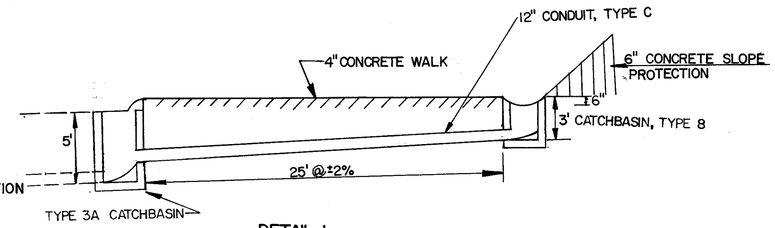
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

EROSION REPAIR PLAN

REVIEWED -	DATE	REVISED



PLAN VIEW

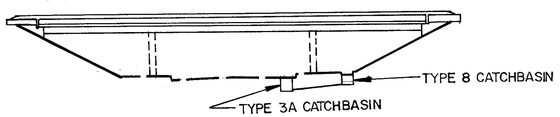


DETAIL 1

WORK AREA

ITEM 404 - ASPHALT CONCRETE, AC-20	5 C.Y.

CUY-90-1490



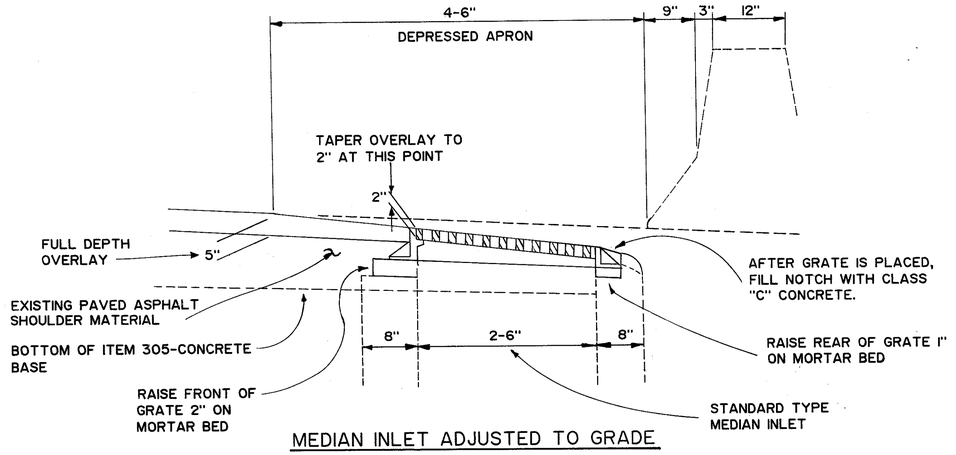
SECTION A-A
(SEE DETAIL 1)

LEGEND

PROPOSED STORM SEWER

EXISTING SEWER TO REMAIN IN SERVICE

CONCRETE SLOPE PROTECTION



MEDIAN INLET ADJUSTED TO GRADE

513840

DRAINAGE DETAILS

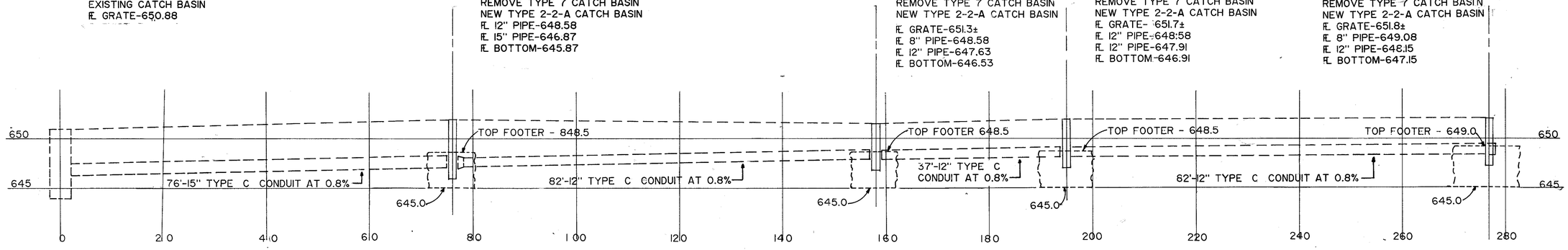
STA. 132+87,L E.B. TRACK PENN CENTRAL,66' LT.
EXISTING CATCH BASIN
℄ GRATE-650.88

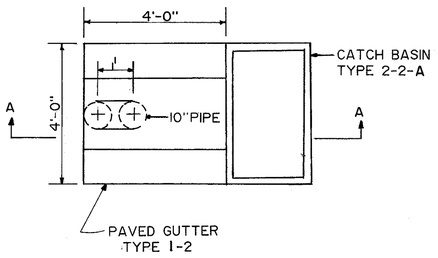
STA. 899+77.0 ℄ I - 90,6 75' LT.
REMOVE TYPE 7 CATCH BASIN
NEW TYPE 2-2-A CATCH BASIN
℄ 12" PIPE-648.58
℄ 15" PIPE-646.87
℄ BOTTOM-645.87

STA. 899+20.0 ℄ I-90,8.5' LT
REMOVE TYPE 7 CATCH BASIN
NEW TYPE 2-2-A CATCH BASIN
℄ GRATE-651.3±
℄ 8" PIPE-648.58
℄ 12" PIPE-647.63
℄ BOTTOM-646.53

STA. 898+94.2 ℄ I-90, 18.2' RT.
REMOVE TYPE 7 CATCH BASIN
NEW TYPE 2-2-A CATCH BASIN
℄ GRATE- 651.7±
℄ 12" PIPE-648.58
℄ 12" PIPE-647.91
℄ BOTTOM-646.91

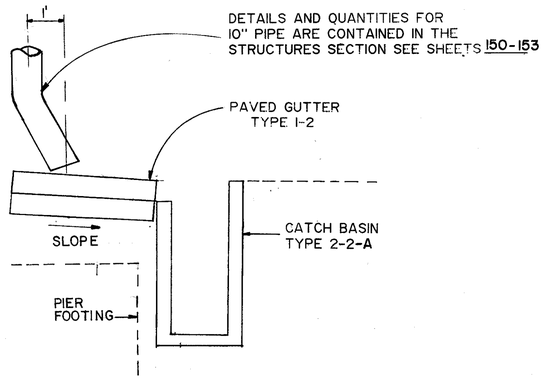
STA. 898+37.3 I-90 77.2 RT.
REMOVE TYPE 7 CATCH BASIN
NEW TYPE 2-2-A CATCH BASIN
℄ GRATE-651.8±
℄ 8" PIPE-649.08
℄ 12" PIPE-648.15
℄ BOTTOM-647.15





PLAN

FOR QUANTITIES, SEE
SHEET 12.



SECTION A-A

SEE SHEET 12 FOR FURTHER
INFORMATION.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

DRAINAGE DETAILS AT PIER 2

UNDER

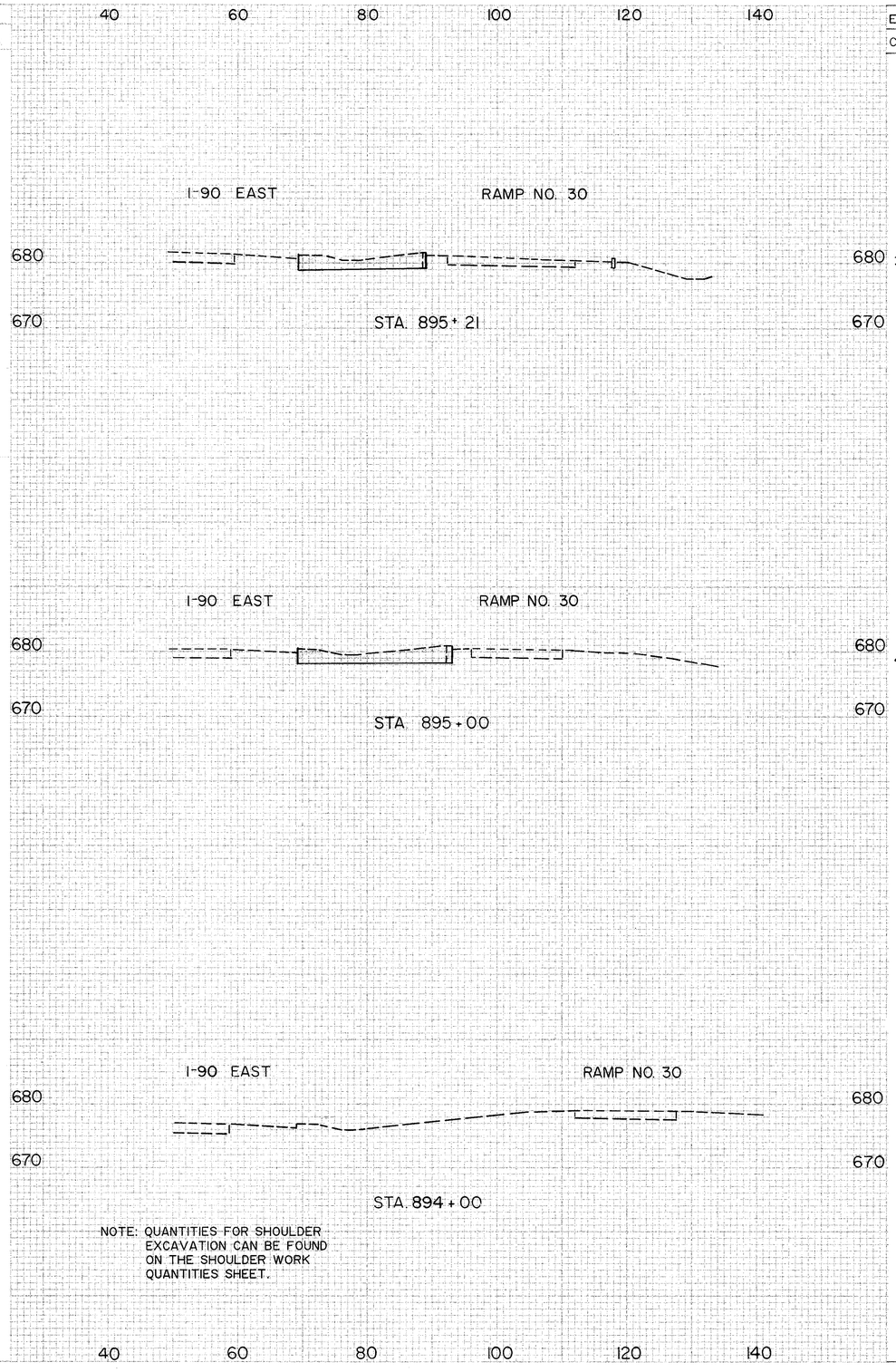
CUY - 90 - 13.72

CUYAHOGA COUNTY OHIO

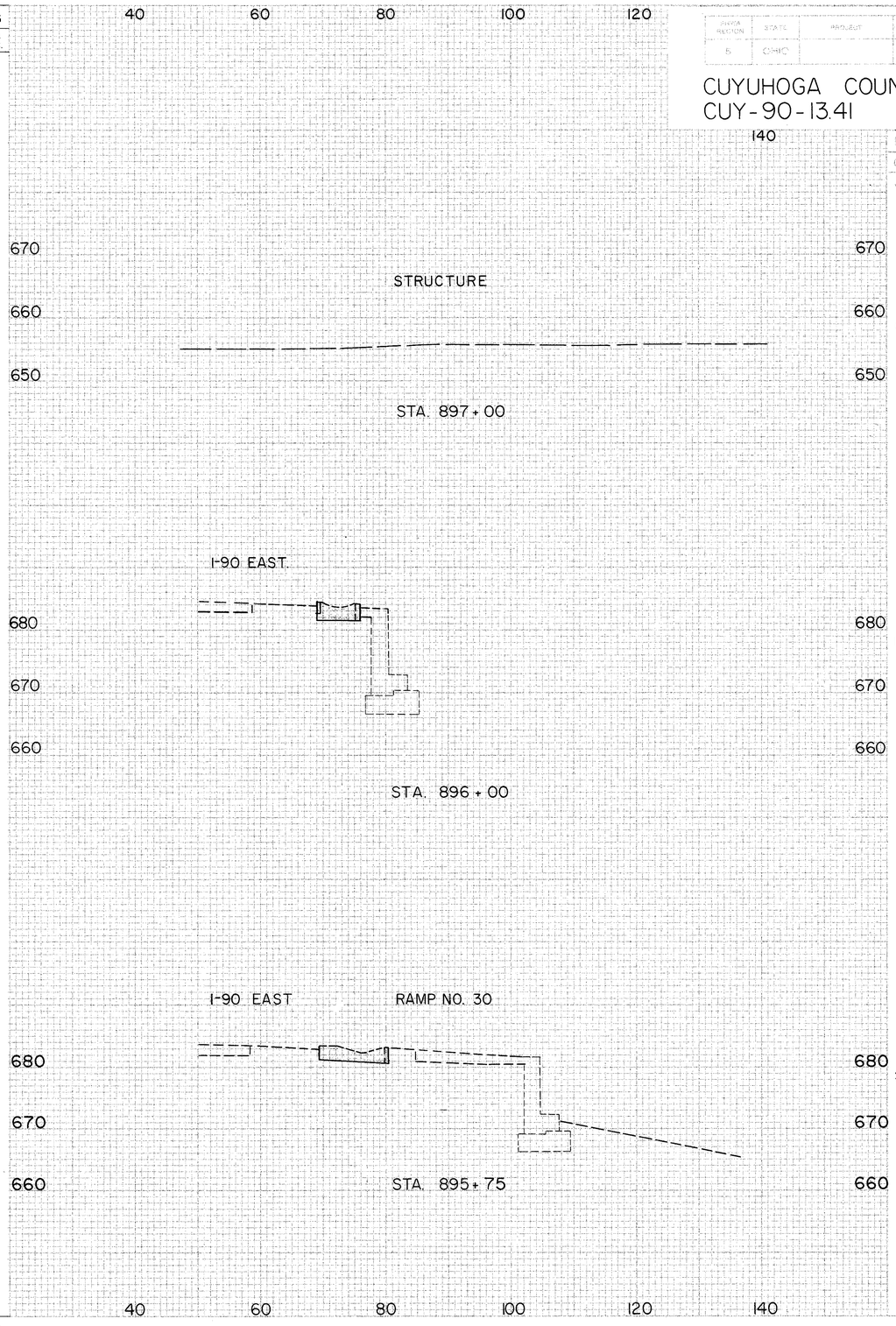
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
DATE	DATE	DATE	DATE	SHEET

80452

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	END WIDTH	SQ. YDS.
30	0				
		28			
42	0				
		78			
0	0				



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
		31	
17	0		
		20	
26	0		
		56	

AREA REGION	STATE	PROJECT	
5	OHIO		

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156

CUYUHOGA COUNTY
CUY-90-13.41

STA. 894+00 TO STA. 897+00

SEEDING			END AREA		VOLUME		SEEDING	
	END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL	END WIDTH	SQ. YDS.
STA. 895+00			45	0	AHEAD			
			6	0	BACK			
STA. 894+00			6	0		22		
STA. 893+00			0	0		11		
STA. 896+00			0	0		8		
STA. 895+75			17	0				
STA. 895+21			31	0		48		
						30		

NOTE: QUANTITIES FOR SHOULDER EXCAVATION CAN BE FOUND ON THE SHOULDER WORK QUANTITIES SHEET.

FEDERAL REGION	STATE	PROJECT	
5	OHIO		

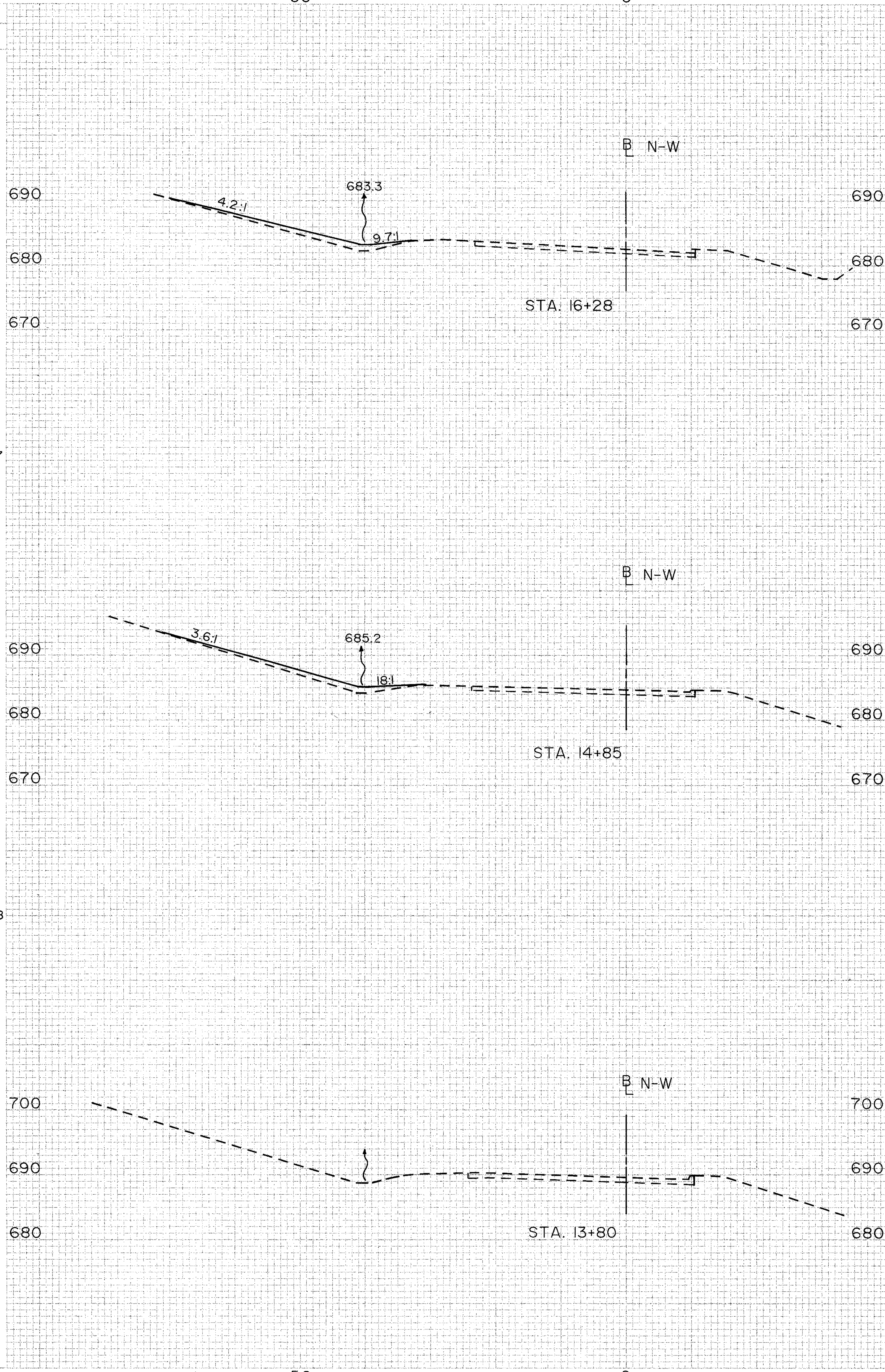
45
156

CUYAHOGA COUNTY
CUY-90-13.41

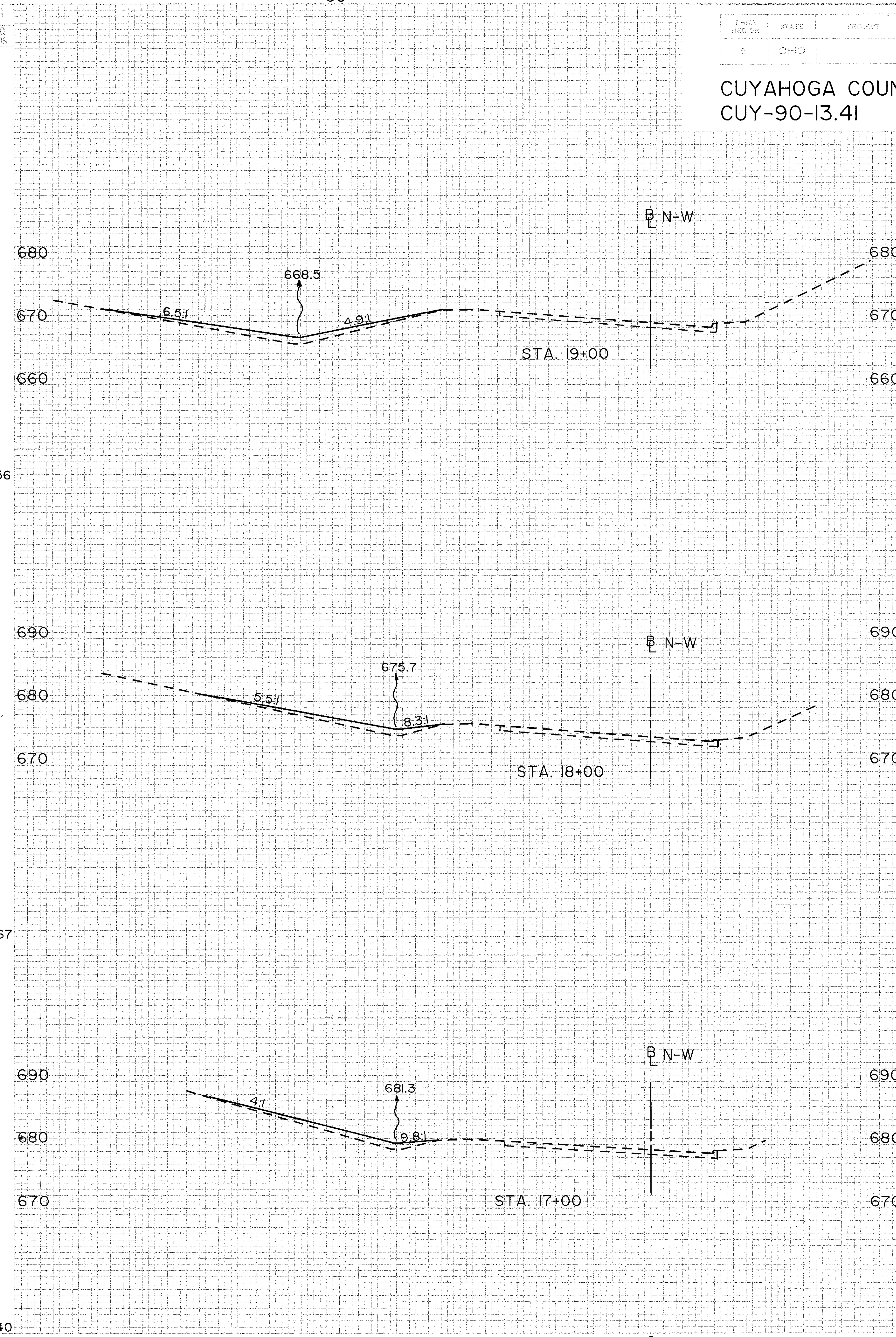
STA. 893+00 TO STA. 896+00

CUYAHOGA COUNTY
CUY-90-13.41

SEEDING END WIDTH	SEEDING SQ. YDS.
43	
	707
46	
	268
0	



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL	SEEDING END WIDTH	SEEDING SQ. YDS.
	19				
				58	
			103		
					556
	20			42	
			39		467
				42	
	0				
					340



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	27		
			85
	19		
			70
	19		
			51


FHWA REGION | STATE | PROJECT
5 | OHIO
47
156
CUYAHOGA COUNTY
CUY-90-13.41
SEEDING
END WIDTH
SQ. YDS
END AREA
VOLUME
CUT
FILL
100
50
0
670
660
650
640
680
℄ N-W
654.8
20.5:1
4.8:1
STA. 21+00
658.5
5.2:1
STA. 20+00
660.5
22:1
4.9:1
STA. 19+75
STA. 22+50
654.9
5.4:1
STA. 22+00
655.1
31:1
5.2:1
STA. 21+31
62
617
49
169
73
546
30
23
36
98
27
0
44
16
314
66
220
0
6
31
6
47
35

FHWA REGION	STATE	PROJECT	
5	OHIO		

48
156

CUYAHOGA COUNTY
CUY-90-13.41

ADVANCED WARNING SIGNS FOR RAMPS

LOCATION	PHASE	STATION	SIGN	SIZE IN.	DESCRIPTION
S. MARGINAL RD. 7	1, 2 1 2	0+50 1+00 1+00	OW-143 OC-39L OC-39R	48 X 48 48 X 48 48 X 48	ROADWORK AHEAD KEEP LEFT KEEP RIGHT
RAMP 30	1A, 2, 1B 1A, 2 1B	91+50 92+00 92+00	OW-143 OC-39R OC-39L	48 X 48 48 X 48 48 X 48	ROADWORK AHEAD KEEP RIGHT KEEP LEFT
N. MARGINAL RD. 6	1, 2 1 2	8+00 7+50 7+50	OW-143 OC-39L OC-39R	48 X 48 48 X 48 48 X 48	ROADWORK AHEAD KEEP LEFT KEEP RIGHT
RAMP 31	1, 2 1 2	37+00 36+50 36+50	OW-143 OC-39L OC-39R	48 X 48 48 X 48 48 X 48	ROADWORK AHEAD KEEP LEFT KEEP RIGHT
RAMP 31B	1, 2 1 2	5+75 5+25 5+25	OW-143 OC-39R OC-39L	48 X 48 48 X 48 48 X 48	ROADWORK AHEAD KEEP RIGHT KEEP LEFT
WADE AVE.	1, 2	49+00	OW-143	36 X 36	ROADWORK AHEAD

NOTES

SIGNS ADVANCE WARNING SIGNS ARE MEASURED FROM THIS POINT

BARRELS SHALL BE SPACED 50' C/C ON MAINLINE
25'C/C ON RAMPS AND STREETS

ALL MAINLINE TAPERS ARE 55:1

ALL TEMPORARY BARRIER TAPERS ARE 150' LONG AND END TERMINALS ARE OFFSET 10' UNLESS OTHERWISE NOTED

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

TEMPORARY PAVEMENT MARKINGS LEGEND

1. WHITE EDGE LINE
2. YELLOW EDGE LINE
3. LANE LINE
4. CHANNELIZING LINE
5. TRANSVERSE LINE
6. DOTTED LINE
7. CENTER LINE

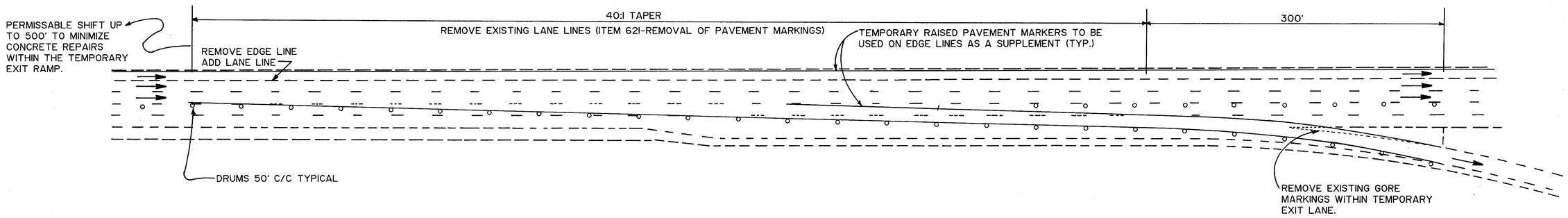
SCHEDULE OF THRU LANES TO BE MAINTAINED

APPROXIMATE STATION LIMITS	NO. OF THRU LANES	MIN. NO. OF LANES TO BE MAINTAINED	PERMISSIBLE ONE LANE ADDITIONAL CLOSURE
PHASE 1, E.B.			
879+79 - 930+00	3	2	1, 11PM TO 6 AM
983+00 - 999+00	3	2	1, 11PM TO 6 AM
PHASE 2, E.B.			
879+79 - 889+52	3	2	1, 11PM TO 6 AM
904+00 - 917+00	3	2	1, 11PM TO 6 AM
PHASE 1, W.B.			
879+79 - 896+00	3	2	1, 11PM TO 6 AM
909+00 - 930+00	3	2	1, 11PM TO 6 AM
993+00 - 998+80	3	2	1, 11PM TO 6 AM
PHASE 2. W.B.			
879+79 - 897+00	3	2	1, 11PM TO 6 AM
910+00 - 930+00	3	2	1, 11PM TO 6 AM
993+00 - 998+75	3	2	1, 11PM TO 6 AM
RAMPS		AT LEAST 1, BUT 2 AT INTERSECTIONS	

ADVANCED WARNING SIGNS

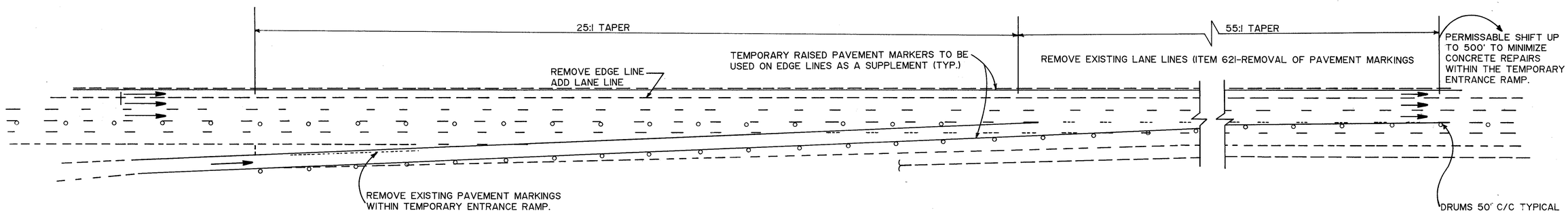
LOCATION	DISTANCE FT.	SIGN	SIZE IN.	DESCRIPTION
I-90 E.B. PHASE 1	500	SPECIAL	48 X 24	THRU TRAFFIC 3 LANES AHEAD
	500	OW-143	30 X 30	35 MPH
	1000	SPECIAL	36 X 48	RIGHT LANE MUST EXIT
	3000	OW-134	48 X 48	ROAD WORK AHEAD
	5200	SPECIAL	48 X 48	WATCH FOR STOPPED TRAFFIC
	6500	SPECIAL	48 X 48	POSSIBLE CONGESTION AHEAD
	8000	OW-134	48 X 48	ROAD WORK AHEAD
I-90 W.B. PHASE 1 ALTERNATE B	500	OW-123-MOD	48 X 48	LEFT LANE CLOSED 500 FT
	500	OW-143	30 X 30	35 MPH
	1000	OW-123-MOD	48 X 48	LEFT LANE CLOSED 1000 FT
	2000	OW-123-MOD	48 X 48	LEFT LANE CLOSED 2000 FT
	3000	OW-134	48 X 48	ROAD WORK AHEAD
	5200	SPECIAL	48 X 48	WATCH FOR STOPPED TRAFFIC
	6500	SPECIAL	48 X 48	POSSIBLE CONGESTION AHEAD
	8000	OW-134	48 X 48	ROAD WORK AHEAD
I-90 E.B. PHASE 2	500	OW-123-MOD	48 X 48	LEFT LANE CLOSED 500 FT
	500	OW-143	30 X 30	35 MPH
	750	SPECIAL	36 X 48	RIGHT 2 LANES MUST EXIT
	1000	OW-123-MOD	48 X 48	LEFT LANE CLOSED 1000 FT
	2000	OW-123-MOD	48 X 48	LEFT LANE CLOSED 2000 FT
	3000	OW-134	48 X 48	ROAD WORK AHEAD
	5200	SPECIAL	48 X 48	WATCH FOR STOPPED TRAFFIC
	6500	SPECIAL	48 X 48	POSSIBLE CONGESTION AHEAD
	8000	OW-134	48 X 48	ROAD WORK AHEAD
I-90 W.B. PHASE 2 ALTERNATE A	500	OW-122-MOD	48 X 48	RIGHT LANE CLOSED 500 FT
	500	OW-143	30 X 30	35 MPH
	1000	OW-122-MOD	48 X 48	RIGHT LANE CLOSED 1000 FT
	2000	OW-122-MOD	48 X 48	RIGHT LANE CLOSED 2000 FT
	3000	OW-134	48 X 48	ROAD WORK AHEAD
	5200	SPECIAL	48 X 48	WATCH FOR STOPPED TRAFFIC
	6500	SPECIAL	48 X 48	POSSIBLE CONJESTION AHEAD
	8000	OW-134	48 X 48	ROAD WORK AHEAD
LANE SW. W.B. PHASE 1 I-71 N.B. PHASE 1	500	OC-39L	48 X 48	KEEP LEFT
	500	OW-143	30 X 30	35 MPH
	2500	OW-134	48 X 48	ROADWORK AHEAD
	5200	OW-134	48 X 48	ROADWORK AHEAD
LANE SW. W.B. PHASE 2 I-71 N.B. PHASE 2	500	OC-39R	48 X 48	KEEP RIGHT
	500	OW-143	30 X 30	35 MPH
	2500	OW-134	48 X 48	ROADWORK AHEAD
	5200	OW-134	48 X 48	ROADWORK AHEAD

TRAFFIC MAINTENANCE



TYPICAL EXIT RAMP ACROSS CLOSED LANES

NOTE: THE CONTRACTOR SHALL USE TEMPORARY EDGE LINES, CLASS I AND TEMPORARY LANE LINES CLASS II IN PLACE OF CLASS I, 947.03, TYPE C PAVEMENT MARKINGS AS DESCRIBED IN THE GENERAL NOTES, SHEET 15.

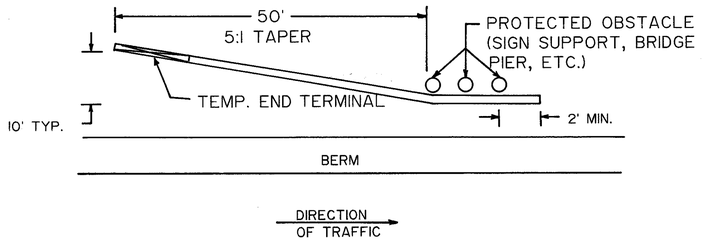


TYPICAL ENTRANCE RAMP ACROSS CLOSED LANES

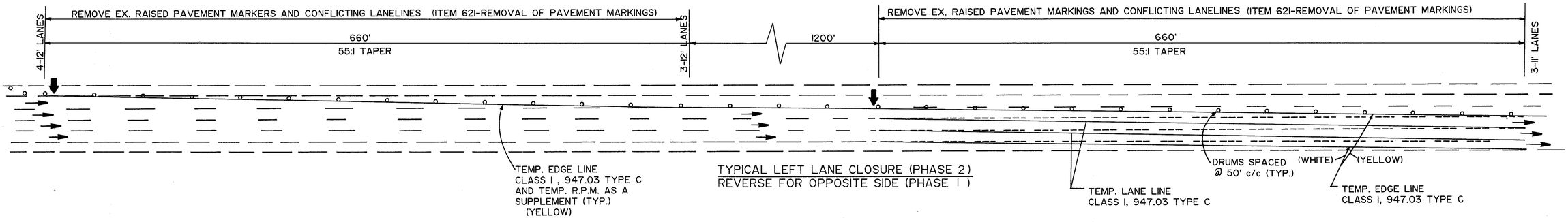
PAVEMENT REPAIRS WHICH FALL WITHIN THE TEMPORARY EXIT/ENTRANCE RAMP LANES SHALL BE REPAIRED USING FLEXIBLE MATERIALS. EVERY ATTEMPT SHALL BE MADE TO AVOID PAVEMENT REPAIRS WITHIN THE TEMPORARY RAMPS BY SHIFTING THE TEMPORARY RAMP TERMINI (SEE DETAILS). WHEN FLEXIBLE REPAIRS ARE NESSARY THEY SHALL BE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

TRAFFIC MAINTENANCE

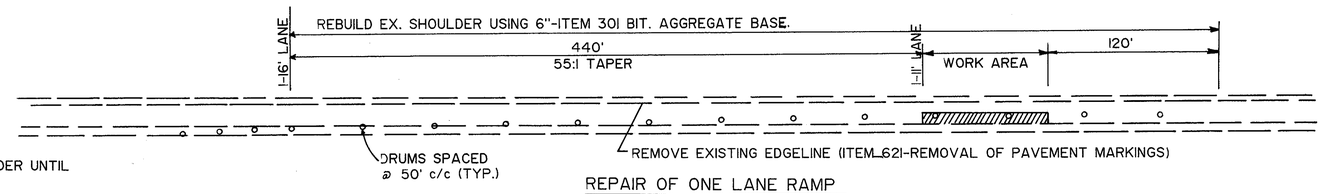
CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	50 156



TEMPORARY PROTECTION OF OBSTACLES



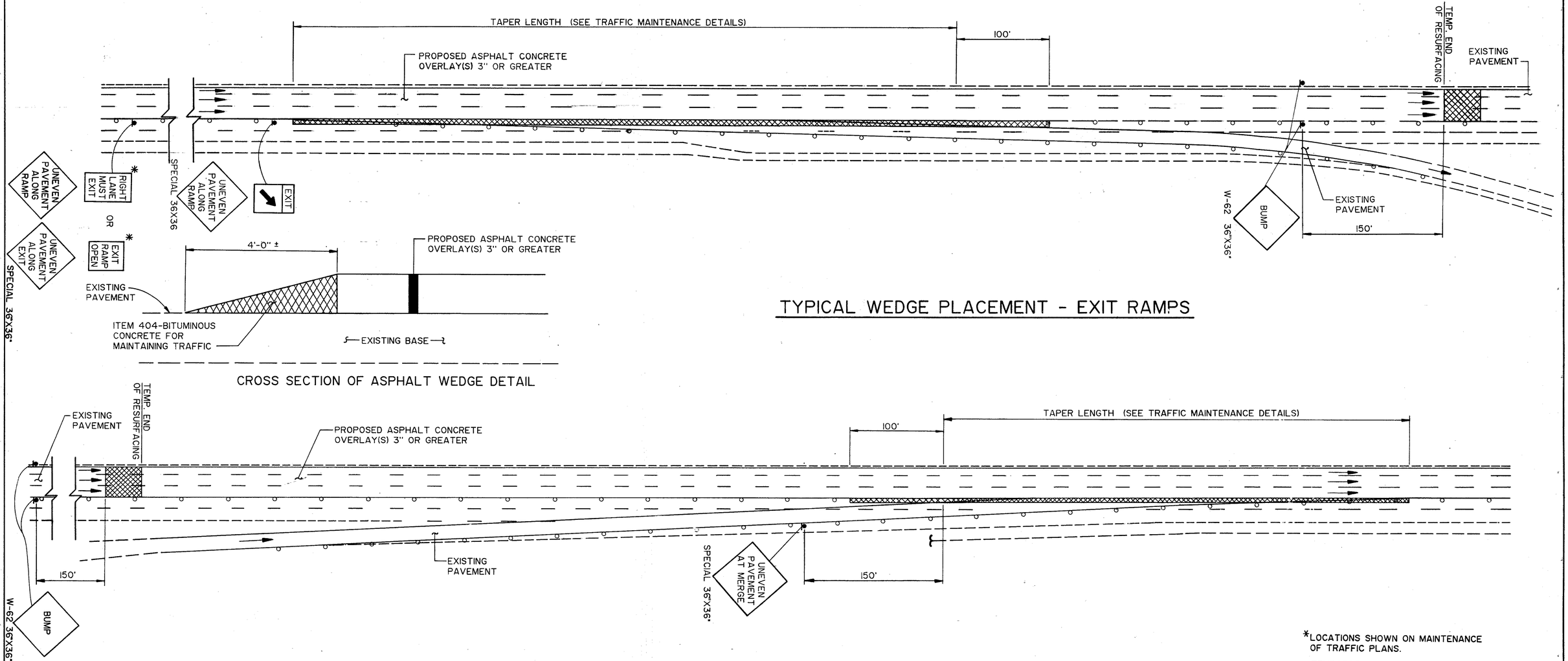
TYPICAL LEFT LANE CLOSURE (PHASE 2)
REVERSE FOR OPPOSITE SIDE (PHASE 1)



NOTE: NO TRAFFIC SHALL BE MOVED ONTO THE SHOULDER UNTIL SHOULDER RECONSTRUCTION IS COMPLETE.

REPAIR OF ONE LANE RAMP
REVERSE FOR OPPOSITE SIDE

90492



TYPICAL WEDGE PLACEMENT - EXIT RAMPS

TYPICAL WEDGE PLACEMENT - ENTRANCE RAMPS

*LOCATIONS SHOWN ON MAINTENANCE OF TRAFFIC PLANS.

TEMPORARY ASPHALT WEDGES MUST BE IN PLACE PRIOR TO ALLOWING TRAFFIC TO CROSS LONGITUDINAL RESURFACING JOINT.

ITEM 404-BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC

NOTE: RIGHT CLOSURES SHOWN DETAILS ALSO APPLY TO LEFT CLOSURES ALSO

WEDGE REMOVAL SHALL BE PAID FOR UNDER ITEM 202- WEARING COURSE REMOVED

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TRAFFIC MAINTENANCE

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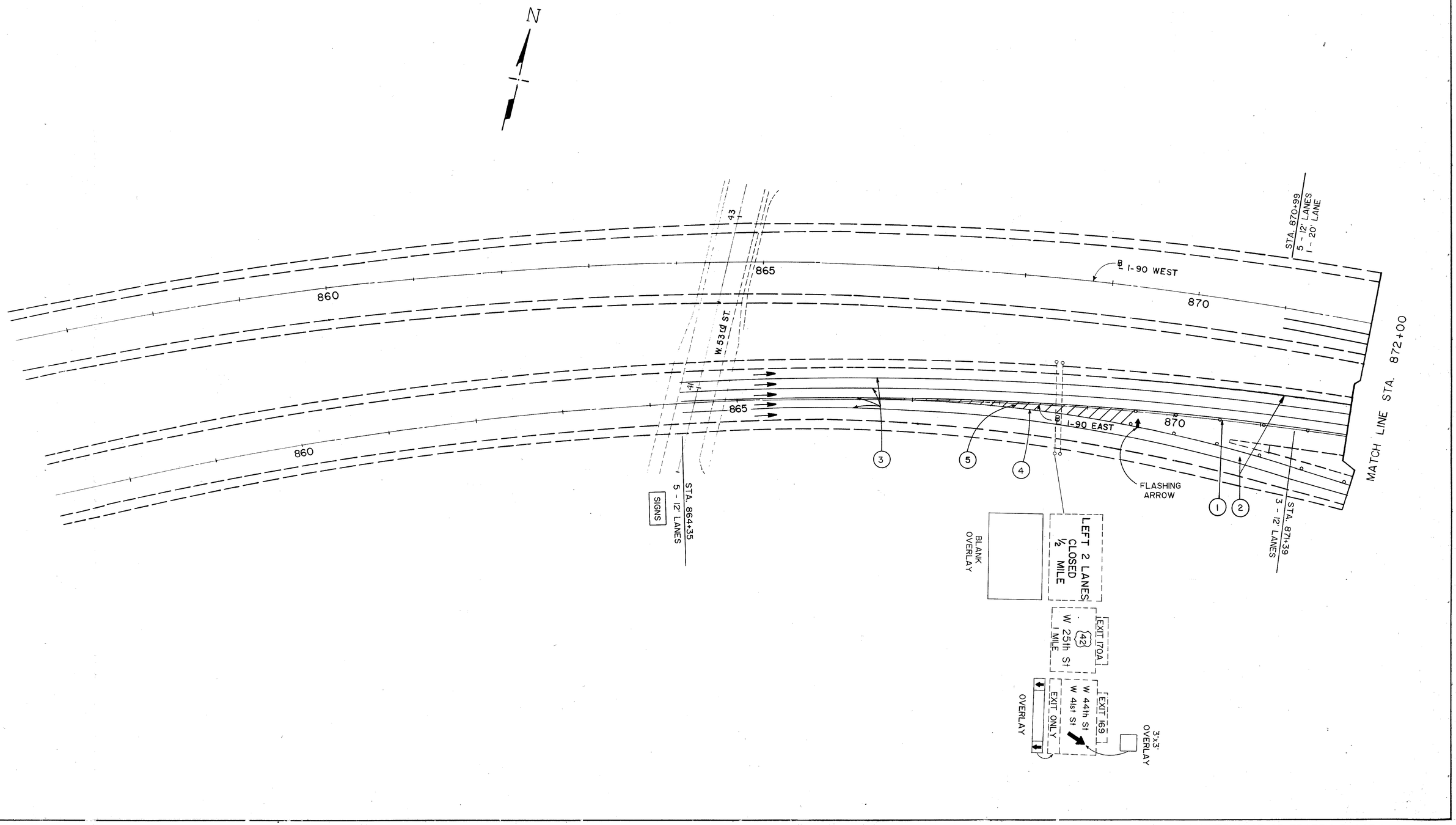

MAINTENANCE OF TRAFFIC PHASE I

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	53 156

N

BEGIN PROJECT
STA. 879+79

EAST 90 KEEP LEFT
WEST

90 WEST Toledo

EXIT 167A
W. 98th St.
WEST BLVD.
1½ MILES

10 Lorain Ave.
1 MILE

STA. 874+29
3 - 11' LANES
1 - 15' LANE
2 - 12' LANES

RAMP 27

NORTH MARGINAL ROAD

STA. 882+15.65 ℄ I-90 =
STA. 45+69.05 ℄ W. 44th ST.

℄ I-90

CUY-90-1345

MATCH LINE STA. 872+00

STA. 873+04
3-11' LANES

STA. 878+54
3-11' LANES

RAMP 28

SOUTH MARGINAL ROAD

W. 44th

MATCH LINE STA. 886+00

10 Lorain Ave
EXIT 170

3'x3' BLANK OVERLAY

3'x3' BLANK OVERLAY

90 WEST Toledo

Downtown
EAST 90
To 71

MAINTENANCE OF TRAFFIC PHASE I

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	54 156

N

MATCH LINE STA. 886+00

NORTH MARGINAL ROAD 6

SOUTH MARGINAL ROAD 7

BUCKLEY AVE.

WEST 41st STREET

RAMP 29

RAMP 30

90 WEST Toledo

EXIT 169
W 41st St
W 44th St
EXIT ONLY

18'x3' BLANK OVERLAY

90 WEST Toledo

OW-96
36" x 48"
STA. 896.10

OW-143
30" x 30"

EXIT

25 MPH

EXIT RAMP OPEN

48" x 48"
OC - 45°
STA. 900+00

MATCH LINE STA. 901+00

NOTE: WIDEN RAMP 29 PRIOR TO IMPLEMENTATION OF PHASE IA.

STA. 890+65.29 ℄ I-90 =
STA. 49+55.65 ℄ W. 41st ST.

890 895 900

CLOSE 49'+ PAVE 39'+

CLOSE 32'+ PAVE 28'+

CUY-90-1361

CUY-90-1372

1 2 3 END TERMINAL

STA. 95+65
3 - 11' LANES
1 - 14' LANE

NOTE - WIDEN RAMP 30 PRIOR TO IMPLEMENTATION OF PHASE I

To 71
90 EAST
Downtown

WEST 90 EAST
KEEP LEFT
KEEP RIGHT

BLANK OVERLAY

LEFT 2 LANES
CLOSED
MERGE RIGHT

EXIT 170A
W 25th St
(42)
½ MILE

MERGE RIGHT
3'x9' OVERLAY

LEFT 2 LANES
CLOSED
AHEAD

90 EAST
Downtown
Cleveland

3'x3' BLANK OVERLAY

SEE SHEET 29 FOR SECTION THROUGH GORES AT RAMPS 29 & 30

NOTE: ALL RAMP CLOSURES NOT SPECIFICALLY SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS SHALL BE TREATED AS SHOWN ON SHEET 50 AND AS SHOWN IN THE STANDARD DRAWINGS.

MAINTENANCE OF TRAFFIC PHASE I

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	55 156

MATCH LINE STA. 901+00

905

CLOSE 44' PAVE 39'

STA. 906+91.02 ℄ I-90 =
STA. 52+81.95 ℄ FULTON RD.

910

CLOSE 44'+ PAVE 39'

CUY-90-1391

FULTON RD.

TEMPORARY CONCRETE BARRIER, END TERMINAL 30' OFFSET

STA. 905+45
3 - 11' LANES

EXIT 169
W 41st St
W 44th St
EXIT ONLY
NEXT EXIT
15'x3' OVERLAY

END TERMINAL

SPECIAL 24"x36" STA. 908+00

RIGHT LANE MUST EXIT

SPECIAL 24"x36" STA. 912+00

RIGHT LANE MUST EXIT

EXIT 169
W 41st St
W 44th St
½ MILE

90 WEST Toledo

MATCH LINE STA. 915+00

BLANK OVERLAY

LEFT 2 LANES CLOSED

71 SOUTH Columbus JCT ½ MI

3'x3' BLANK OVERLAY

EXIT 170A
42 W 25th St
EXIT ONLY
NEXT EXIT
15'x3' OVERLAY

STA. 916+00
3 - 11' LANES
1 - 11' LANE

VEGA AVE.

RAMP 31-A

RAMP 31

MATCH LINE STA. 915+00

920

925

MATCH LINE STA. 928+00

BLANK OVERLAY

LEFT 2 LANES CLOSED

90 EAST Downtown Cleveland

3'x3'

3'x3' OVERLAY

EXIT 170A
42 W 25th St
EXIT ONLY

OW-96
36"x48"
STA. 915+00

EXIT

RAMP 32

WADE AVE.

REMOVE TEMPORARY CONCRETE BARRIER

STA. 926+60
3 - 11' LANES
2-12' LANES

90 WEST Toledo

STA. 27+00
1-12' LANE

71 SOUTH Columbus
KEEP RIGHT
NEXT EXIT
18'x3' OVERLAY

90449

MAINTENANCE OF TRAFFIC PHASE I

CUYAHOGA COUNTY CUY-90-13.41	OHIO	56 156
	FHWA REGION 5	
	FEDERAL PROJECT	

N

EXIT 169
W 41st St
W 44th St
EXIT ONLY

18'x3' BLANK OVERLAY

WEST
90
Toledo

SEE SHEETS 44-47
FOR CROSSECTIONS

RAMP 29

4 5 6 1

95

38

CLOSE 49' PAVE 39'

895

900

905

CUY-90-1391

HULTON RD

RAMP 30

95

CLOSE 20' PAVE 17'

CUY-90-1372

1 4 1 6

1 2 3

SEE SHEETS 44-47
FOR CROSSECTIONS

BLANK OVERLAY

LEFT 2 LANES
CLOSED
MERGE RIGHT

EXIT 170A
42
W 25th St
½ MILE

BLANK OVERLAY

LEFT 2 LANES
CLOSED

71

3'x3' BLANK OVERLAY

Columbus
JCT
½ MI

SOUTH

EXIT 170A
42
W 25th St
EXIT ONLY

NEXT EXIT

15'x3' OVERLAY

NOTE: ALL OTHER TRAFFIC
MAINTENANCE SHALL
BE AS SHOWN IN PHASE I

MAINTENANCE OF TRAFFIC PHASE IA

CUYAHOGA COUNTY	OHIO	57
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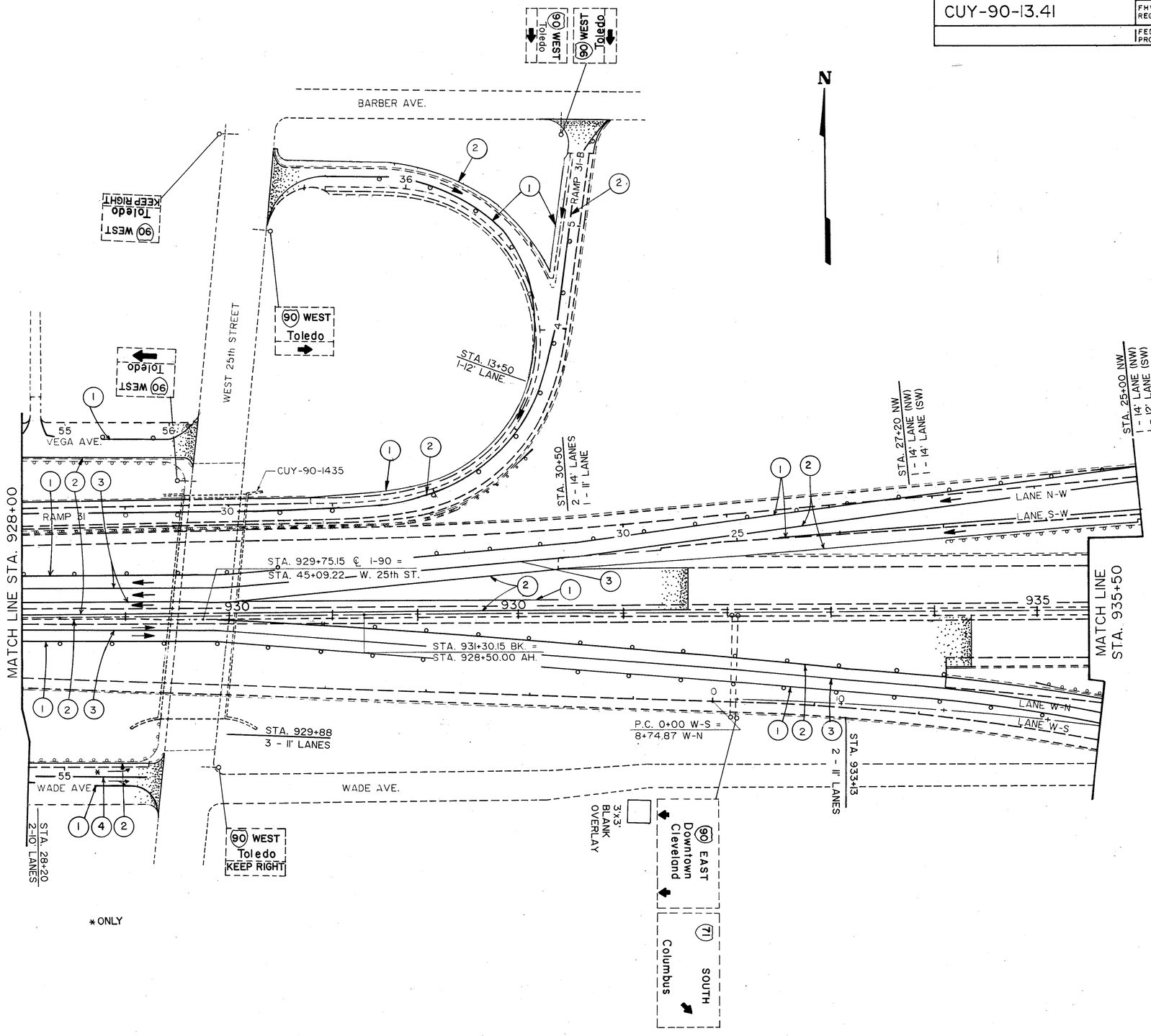
	FEDERAL PROJECT	



MAINTENANCE OF TRAFFIC PHASE I

MATCH LINE STA. 975+00

FLASHING ARROW

N

1 - 14' LANE

STA. 974+18
3-11' LANES

3'x12' OVERLAY

KEEP LEFT

EXIT ↑ 1 MI
Dennison Ave
Jennings Rd.

SOUTH
(71)
Columbus

STA. 973+23
3-11' LANES

SCRANTON RD.

STA. 24+20.94 ℄ LANE N-W =
STA. 11+06.36 ℄ SCRANTON RD.

LANE N-W

STA. 18+55
1 - 12' LANE

LANE S-W

STA. 15+25
1 - 12' LANE

LANE W-N

LANE E-S

STA. 20+42.46 ℄ LANE S-W =
STA. 10+65.92 ℄ SCRANTON RD.

950

℄I-490

MATCH LINE
STA. 935+50

940

945

PAVE 19

STA. 13+09.60 ℄ LANE W-N =
STA. 8+42.01 SCRANTON RD.

CLOSE 24'

LANE W-N

END TERMINAL

STA. 17+70
1-14' LANE

℄I-71

(90) EAST
LEFT (2) LANES

(71) ENDS
Downtown
KEEP RIGHT

Conv Center
Stadium
use Ontario
EXIT

STA. 10+85
1 - 16' LANE

SIGNS

3'x3'
BLANK
OVERLAY

STA. 4+33.12 ℄ LANE W-S =
STA. 8+26.59 ℄ SCRANTON RD.

(71)
Columbus
SOUTH

LANE W-S

LANE S-W

LANE E-S

STA. 967+20
3-11' LANES

MATCH LINE
STA. 10+00

MATCH LINE STA. 966+00
SEE SHEET 61

MAINTENANCE OF TRAFFIC PHASE I

CUYAHOGA COUNTY	OHIO	59
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MATCH LINE STA. 975+00
2 - 11' LANES
1 - 14' LANE

CUY-90-1490 L

STARKWEATHER AVE.

STA. 9+35
1 - 14' LANE

STA. 983+38
2 - 11' LANES

STA. 10 + 92.58 ℄ LANE N-W =
STA. 6 + 41.84 ℄ STARKWEATHER AVE.

END TERMINAL (TYP.)

LANE N-W

15

CLOSE 24'

PAVE 19'

10

980

985

CLOSE 28'+

PAVE 25'+

CLOSE 28'+

PAVE 25'+

℄ I-90

FLASHING ARROW

CLOSE 19'

PAVE 16'

35

30

LANE W-N

REMOVE CURB
PRIOR TO PHASE I

CUY-90-1490 R

STA. 980+23
2 - 11' LANES
1 - 13' LANE

STA. 5 + 35.85 ℄ STARKWEATHER AVE. =
STA. 981 + 80.55 ℄ I-90

END TERMINAL

25 MPH

OW 143
30"x 30"
STA. 989-00

CUY-90-1506

KENILWORTH AVE

CLOSE 37'+

990

PAVE 35'+

CLOSE 32'+

PAVE 29'+

40

MATCH LINE STA. 990+85

STA. 990+11.51 ℄ I-90 =
STA. 4+50.03 ℄ KENILWORTH AVE.

170 B

WEST
Toledo
(90)

45 MPH

STA. 988+52
3 - 11' LANES

3'x3' BLANK OVERLAY

SOUTH
Columbus
(71)

3'x3' BLANK OVERLAY

(90) EAST

(77) SOUTH
E. 9th St.
1¼ MILE

Conv Center
Stadium
Use Quarto
EXIT

WEST
Toledo
(90)

3'x3' OVERLAY

SOUTH
Columbus
(71)

3'x3' BLANK OVERLAY

MATCH LINE STA. 990+85

STA. 99+60
3 - 11' LANES

RIGHT LANE MUST EXIT

SPECIAL
24"x36"
STA. 992+00

END TERMINAL

RIGHT LANE MUST EXIT

SPECIAL
24"x36"
STA. 996+00

STA. 998+80
3 - 11' LANES

STA. 998+01
3 - 11' LANES

995

1000

STA. 1000+00 BK. -
STA. 4+86.55 AH.

℄ I-90

STA. 6+97
3 - 13' LANES

STA. 8+93
3 - 11' LANES
1 - 16' LANE

MATCH LINE STA. 11+00

MAINTENANCE OF TRAFFIC PHASE I.

CUYAHOGA COUNTY	OHIO	60
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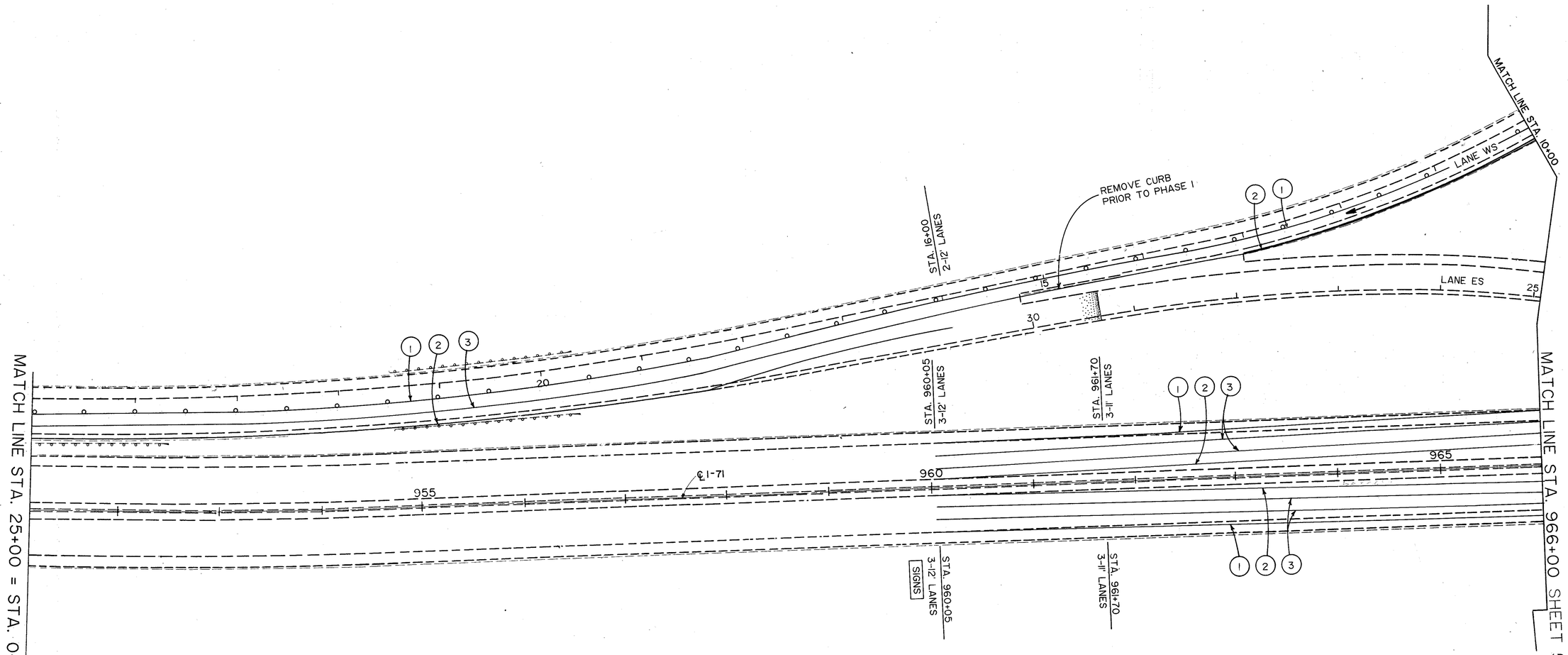
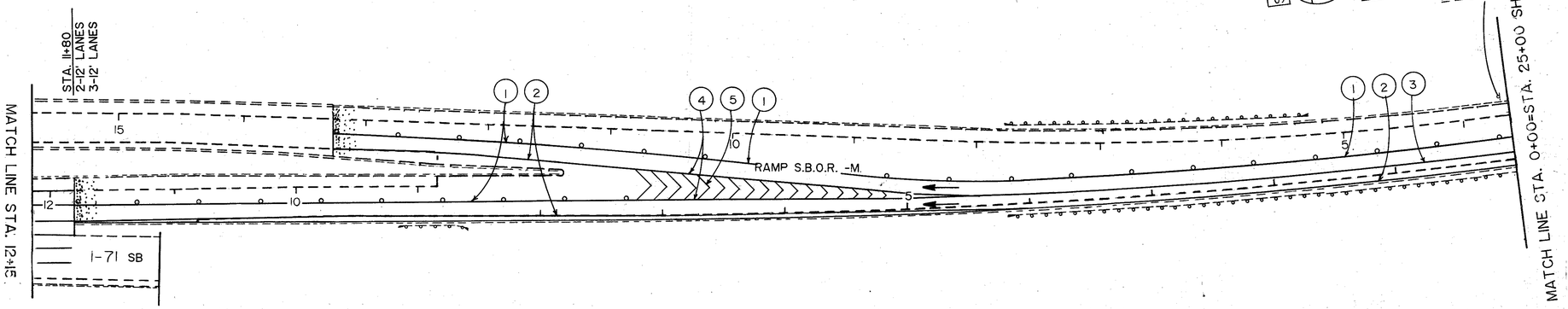
MAINTENANCE OF TRAFFIC PHASE I

CUYAHOGA COUNTY CUY-90-13.41	OHIO	61 156
	FHWA REGION 5	
	FEDERAL PROJECT	



MAINTENANCE OF TRAFFIC PHASE I

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	62 156



MAINTENANCE OF TRAFFIC PHASE I

CUYAHOGA COUNTY	OHIO	63
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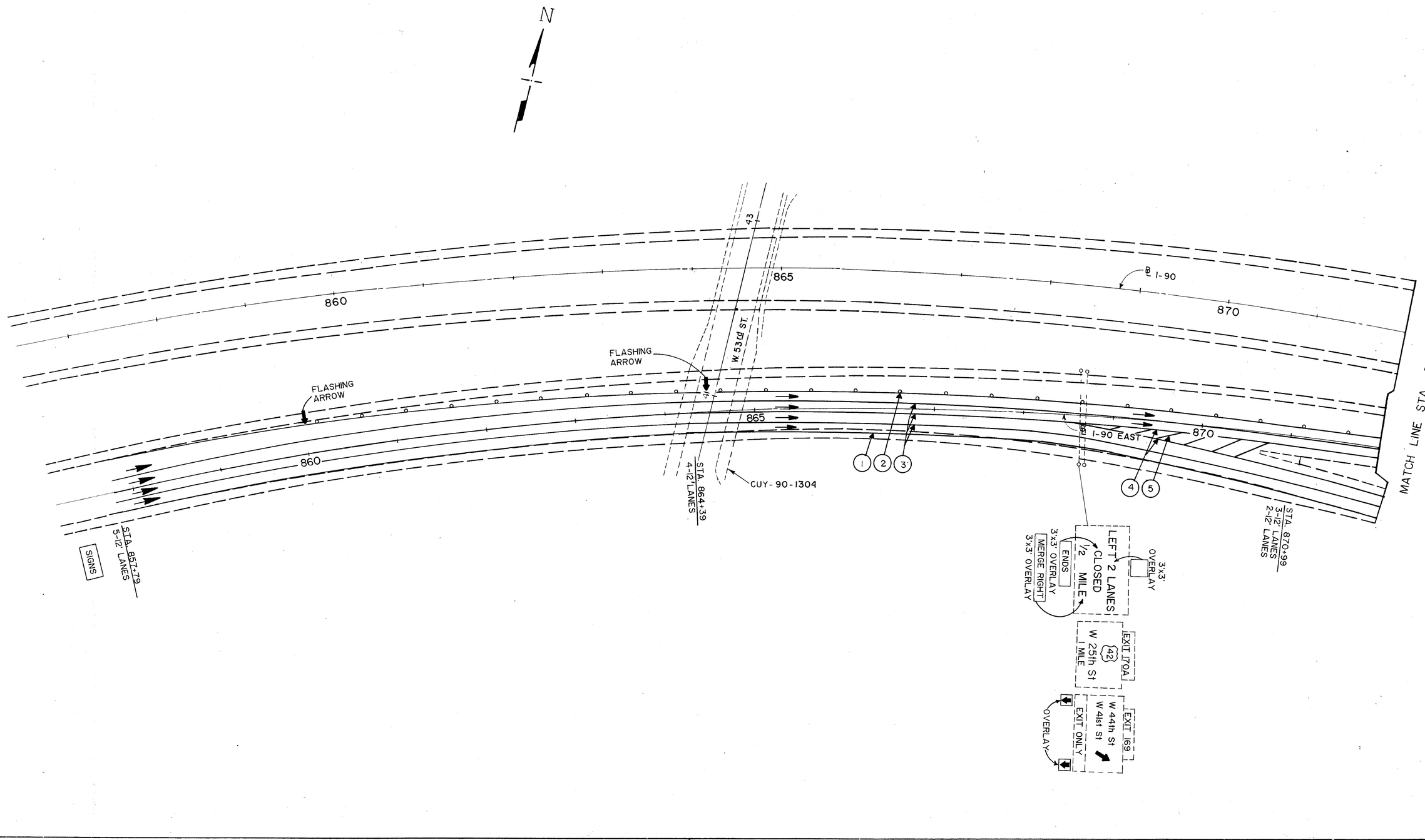
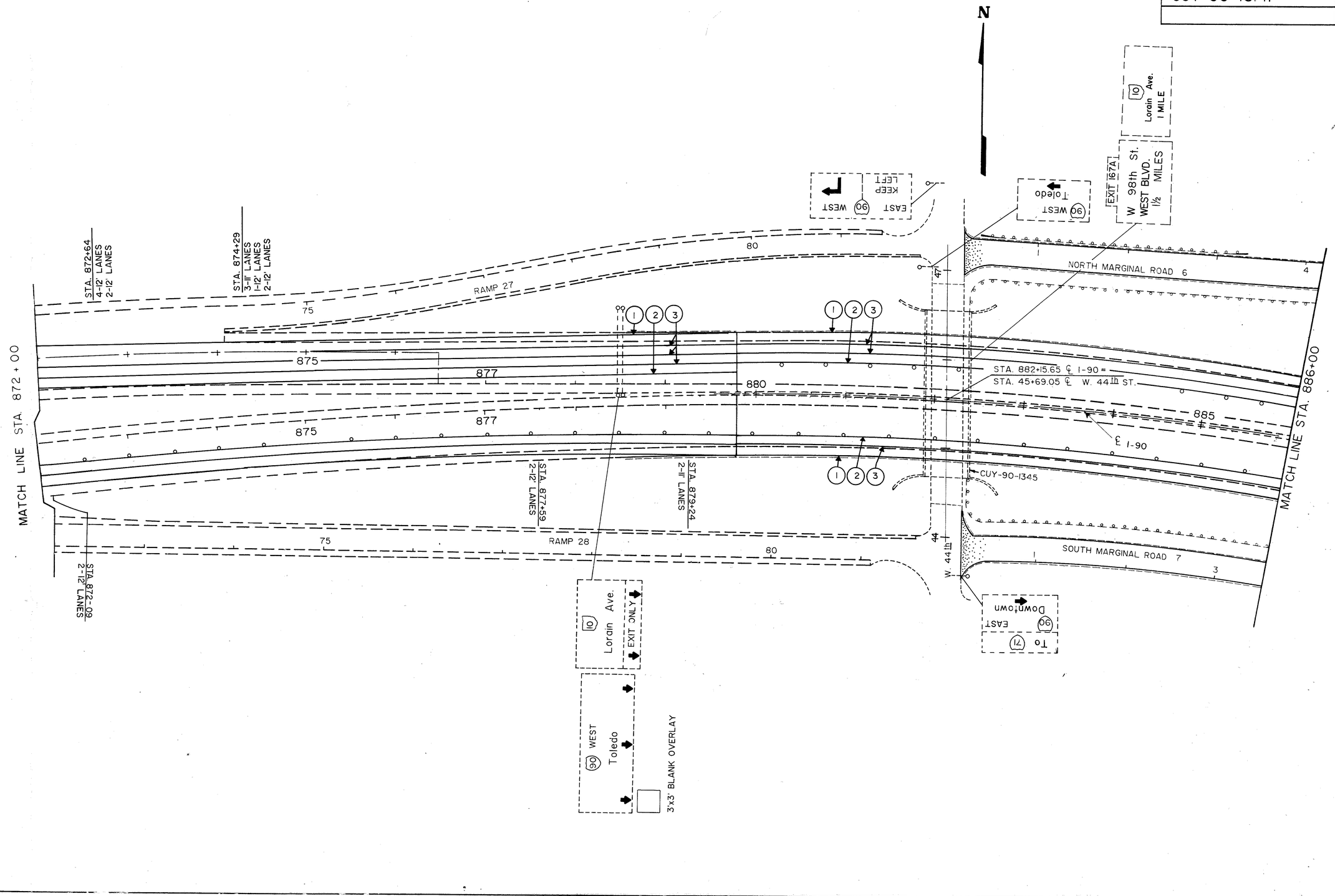


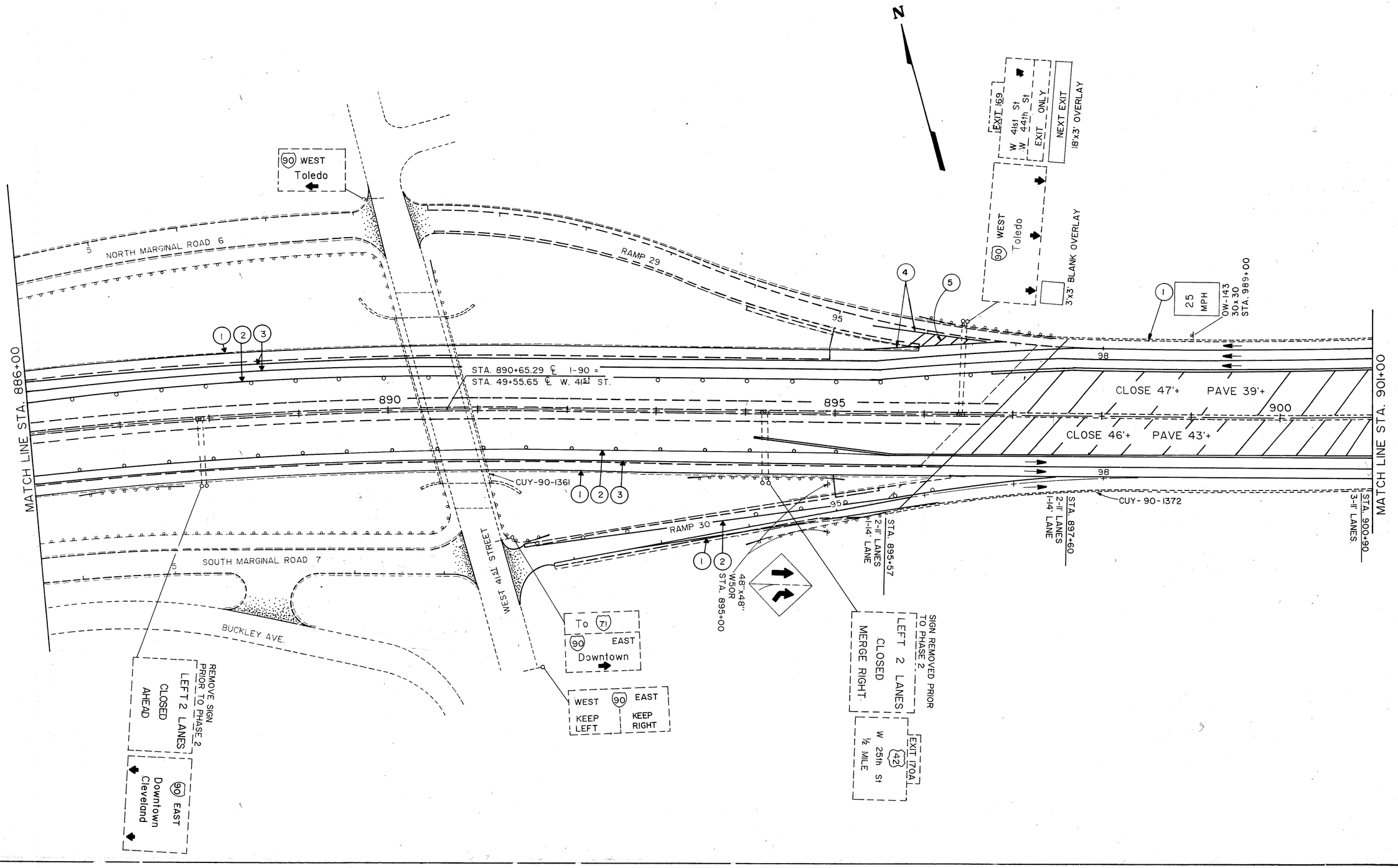
MAINTENANCE OF TRAFFIC PHASE 2

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	64 156



MAINTENANCE OF TRAFFIC PHASE 2

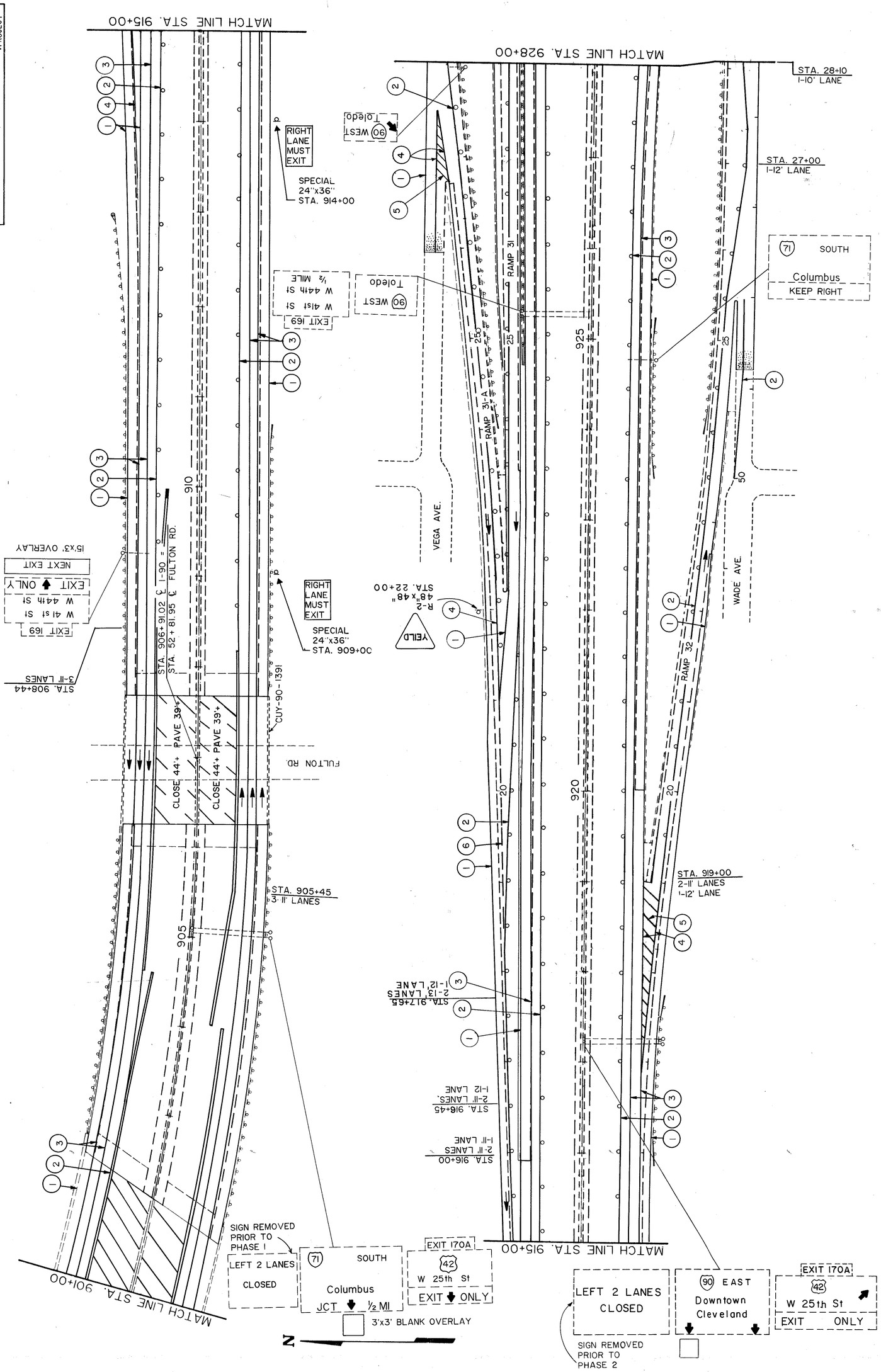
CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	65 156



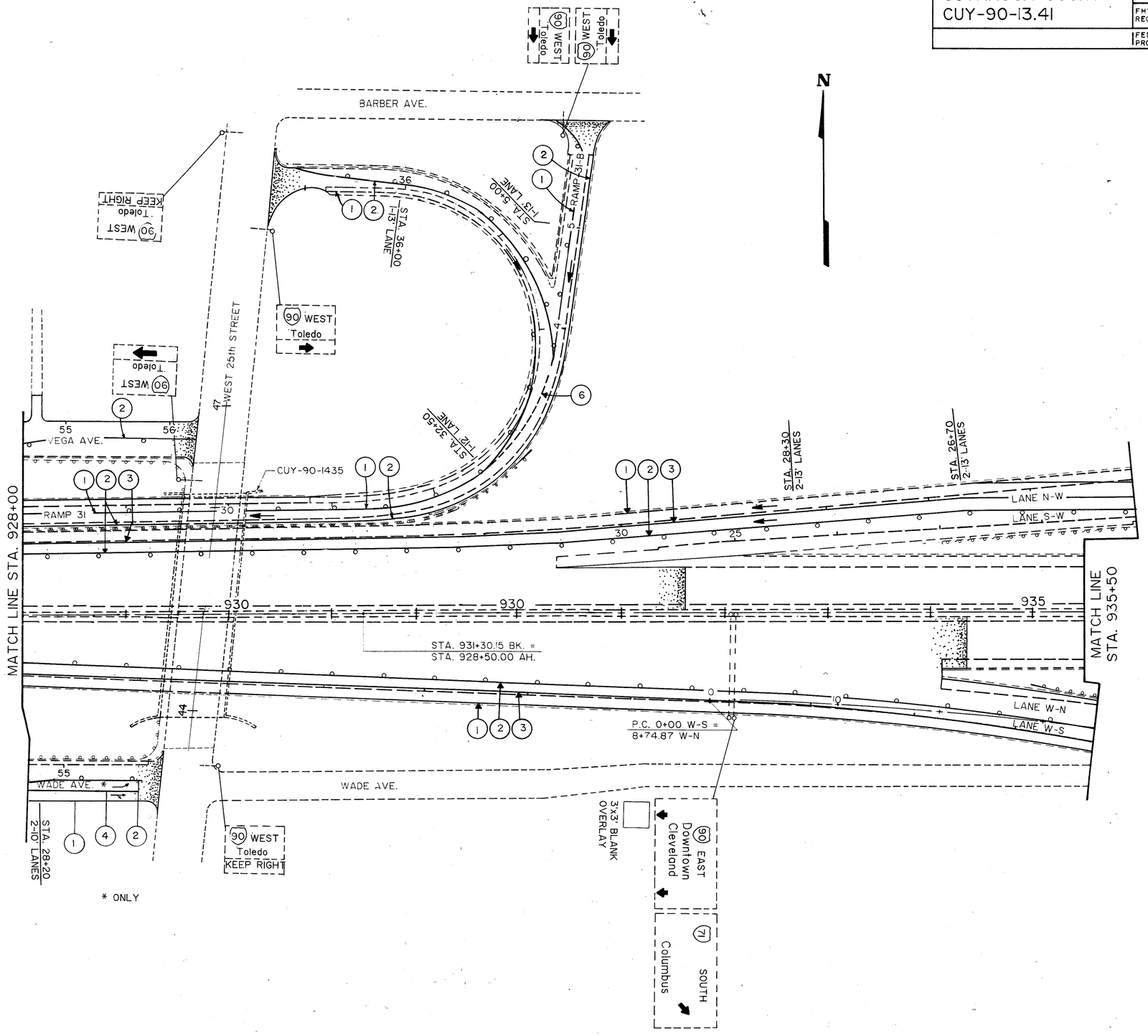
MAINTENANCE OF TRAFFIC PHASE 2

OHIO | FHWA REGION 5 | FEDERAL PROJECT

CUYAHOGA COUNTY
CUY-90-13.41



CUYAHOGA COUNTY CUY-90-13.41	OHIO	67 156
	FHWA REGION 5	
	FEDERAL PROJECT	



MAINTENANCE OF TRAFFIC PHASE 2

CUYAHOGA COUNTY CUY-90-13.41	OHIO	68 156
	FHWA REGION 5	
	FEDERAL PROJECT	

SHEET 69,71
MATCH LINE STA. 975+00

N

FLASHING ARROW

LANE NARROWS

36"X36" SPECIAL STA. 25+00

SCRANTON RD.

STA. 24+20.94 ℄ LANE N-W =
STA. 11+06.36 ℄ SCRANTON RD.

LANE N-W

20

SOUTH (71) Columbus

EXIT 1 MILE Denison Ave. Jennings Rd.

3-11' LANES STA. 973+23

STA. 974+18
3-11' LANES

STA. 16+35
1-16' LANE
SIGNS

STA. 18+55
1-12' LANE

LANE S-W

15

STA. 20+42.46 ℄ LANE S-W =
STA. 10+65.92 ℄ SCRANTON RD.

MATCH LINE
STA. 935+50

940

℄ I-90

945

℄ I-490

950

LANE E-S

LANE W-N

PAVE 19'

970

CLOSE 24'

STA. 13+09.60 ℄ LANE W-N =
STA. 8+42.01 SCRANTON RD.

LANE W-N

STA. 17+70
1-14' LANE

STA. 4+33.12 ℄ LANE W-S =
STA. 8+26.59 ℄ SCRANTON RD.

STA. 14+00
2-12' LANES

SOUTH (71) Columbus

LANE W-S

LANE E-S

℄ I-71

LANE S-W

90 EAST
LEFT 2 LANES

71 ENDS
Downtown
KEEP RIGHT

Conv. Center
Stadium
use Ontario
EXIT

STA. 967+20
3-11' LANES

MATCH LINE
STA. 10+00

MATCH LINE STA. 966+00
SHEET 72

MAINTENANCE OF TRAFFIC PHASE 2

CUYAHOGA COUNTY	OHIO	69
CUY - 90 - 13.41	FHWA REGION 5	156
	FEDERAL PROJECT	

MATCH LINE STA. 975+00

FLASHING ARROW

LANE W-N

CUY-90-1490 R

STA. 980+23
2-11' LANES
1-13' LANE

STARKWEATHER AVE

STA. 9+35
1-14' LANE

STA. 983+38
2-11' LANES

CUY-90-1490 L

STA 10+92.58 ℄ LANE N-W =
STA 6+41.84 ℄ STARKWEATHER AVE

END TERMINAL
20' OFFSET
75' LENGTH

LANE N-W

CLOSE 24'+

PAVE 19'

CLOSE 28'+

PAVE 25'+

CLOSE 49'+

PAVE 43'+

STA. 5+35.85 ℄ STARKWEATHER AVE. =
STA. 981+80.55 ℄ I-90

℄ I-90

RIGHT LANE MUST EXIT

SPECIAL
24'x36'
STA. 987+00

CUY-90-1506

KENILWORTH AVE

CLOSE 37'

PAVE 35'+

CLOSE 27'

PAVE 22'

STA 990+11.51 ℄ I-90 =
STA. 4+50.03 ℄ KENILWORTH AVE.

STA 998+52
2-11' LANES

MATCH LINE STA. 990+85

170 B
90 WEST Toledo
45 MPH

3'x3' BLANK OVERLAY

90 EAST

77 SOUTH
E.9th St.
1¼ MILE

Conv Center
Stadium
Use Ontario
EXIT

90 WEST Toledo

3'x3' OVERLAY 3'x3' BLANK OVERLAY

SOUTH Columbus 71

SOUTH Columbus 71

STA. 991+60
3-11' LANES

RIGHT LANE MUST EXIT

SPECIAL
24'x36'
STA. 992+00

MATCH LINE STA. 990+85

STA. 998+75
3-11' LANES

STA. 999+00
2-11' LANES
1-13' LANE

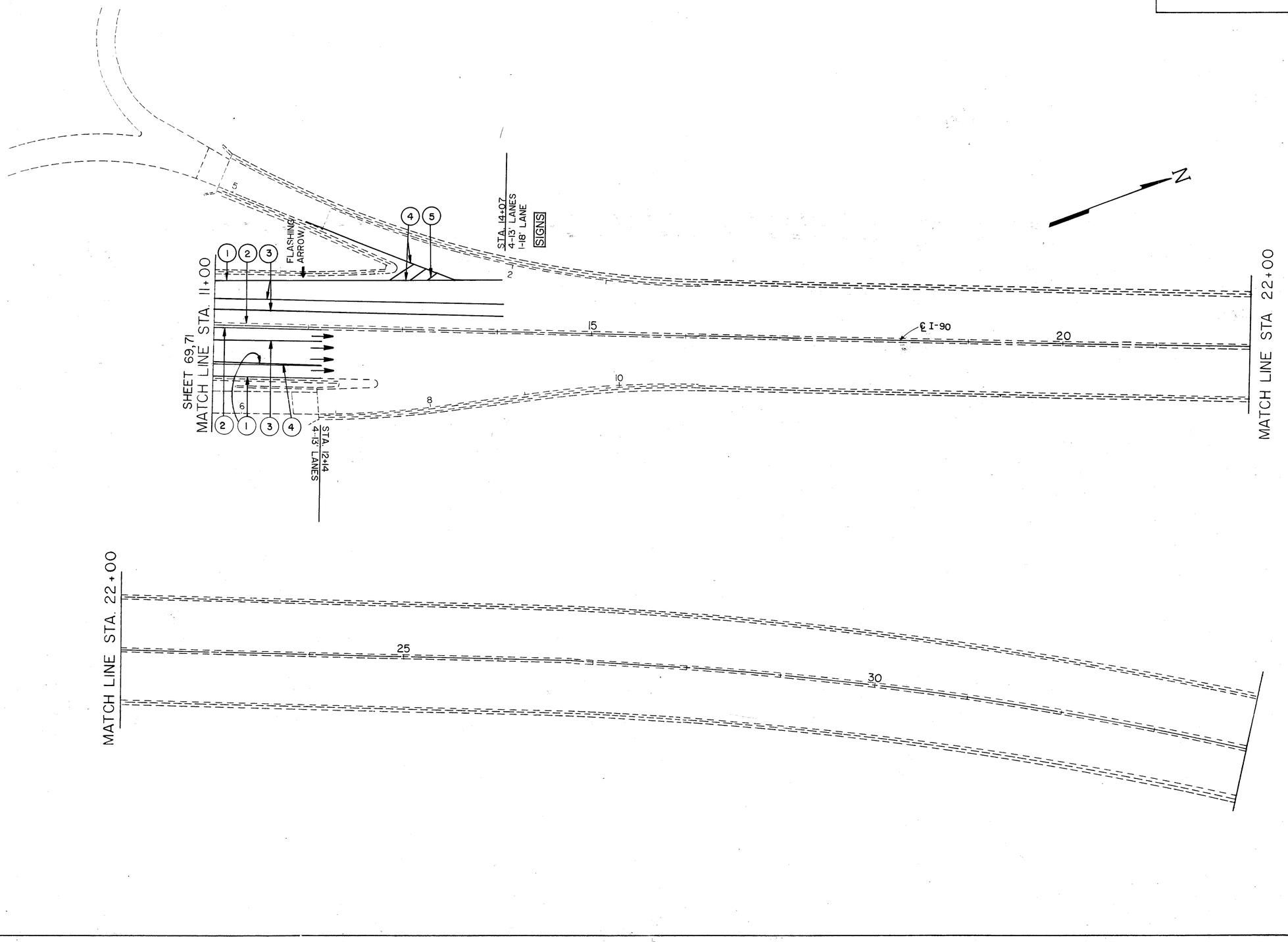
STA. 1000+00 BK. =
STA. 4+86.55 AH.

STA. 6+92
3-13' LANES

MATCH LINE STA. 11+00

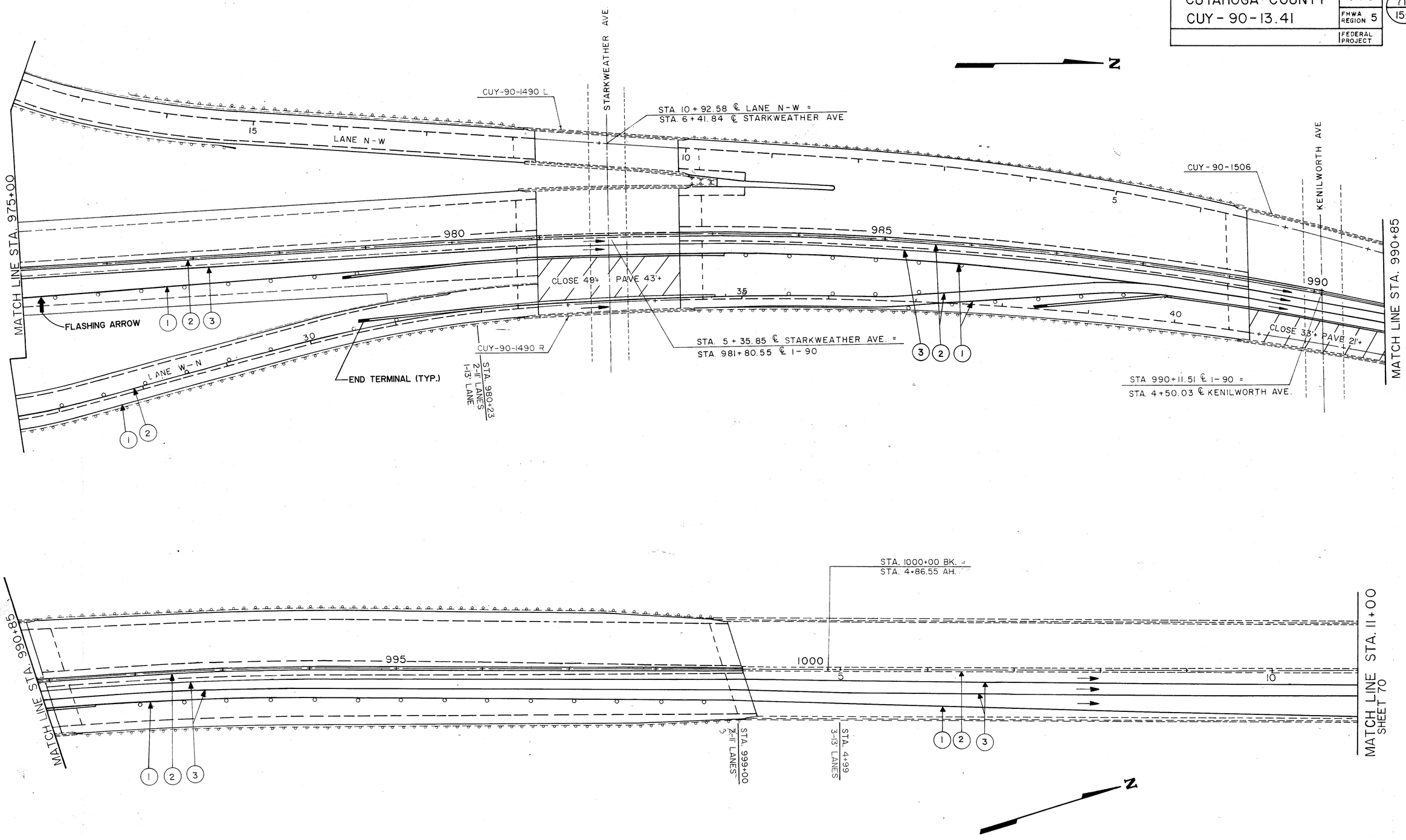
MAINTENANCE OF TRAFFIC PHASE 2

CUYAHOGA COUNTY	OHIO	70
CUY-90-13.41	FHWA REGION 5	156
	FEDERAL PROJECT	



MAINTENANCE OF TRAFFIC PHASE 2·

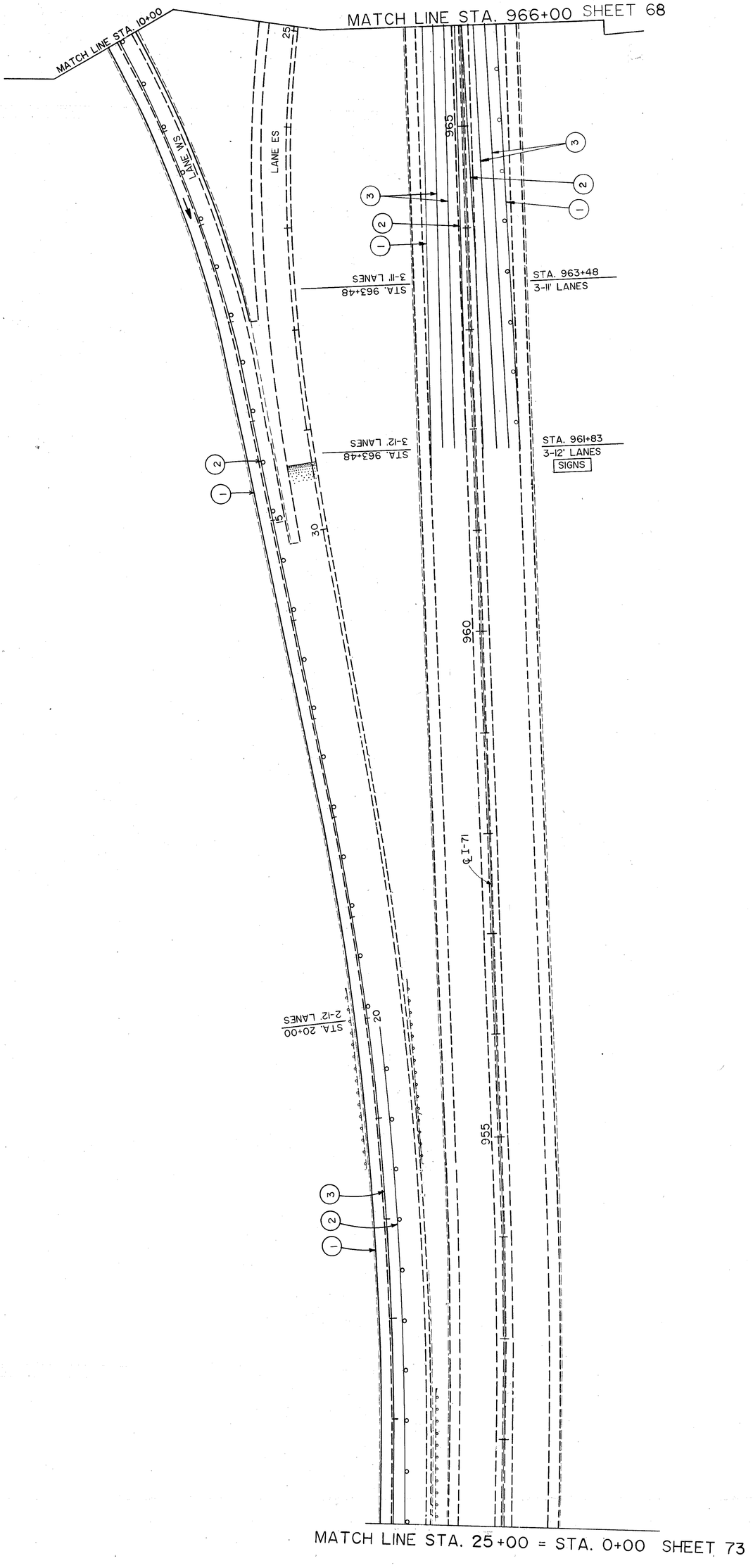
CUYAHOGA COUNTY	OHIO	71
CUY - 90 - 13.41	FHWA REGION 5	156
	FEDERAL PROJECT	



MAINTENANCE OF TRAFFIC PHASE 2A

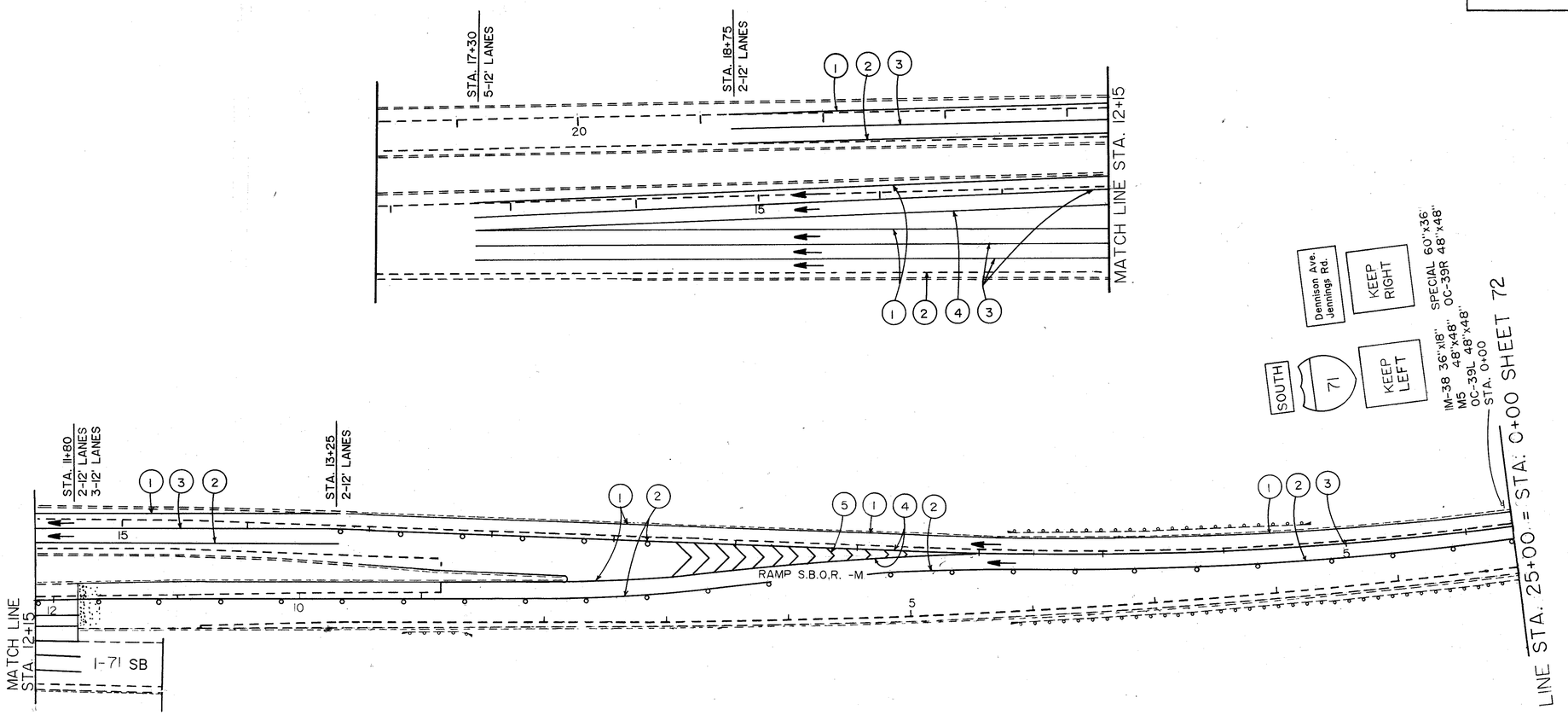
OHIO | FHWA REGION 5 | FEDERAL PROJECT

CUYAHOGA COUNTY
CUY-90-13.41



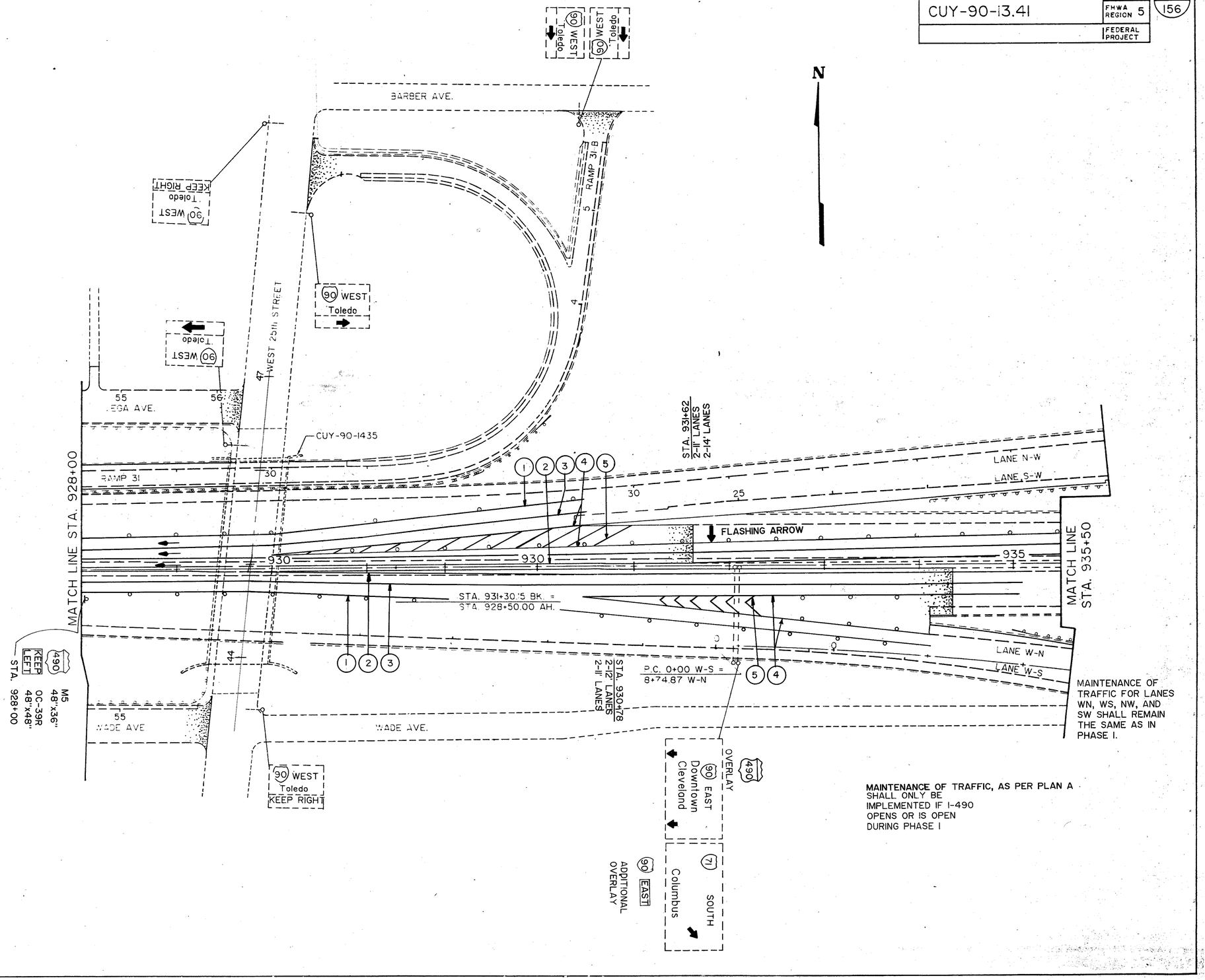
MAINTENANCE OF TRAFFIC PHASE 2

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	73 156



MAINTENANCE OF TRAFFIC PHASE 2

CUYAHOGA COUNTY CUY-90-i3.41	OHIO FHWA REGION 5 FEDERAL PROJECT	74 156



MAINTENANCE OF TRAFFIC AS PER PLAN A

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	75 156

MATCH LINE STA. 975+00

N

EXIT 1 MILE
Denison Ave.
Jennings Rd.

SOUTH (71) Columbus

STA. 24+20.94 ℄ LANE N-W =
STA. 0+36.36 ℄ SCRANTON RD.

LANE N-W

LANE S-W

STA. 20+42.46 ℄ LANE S-W =
STA. 0+65.92 ℄ SCRANTON RD.

STA. 936+33
2-11' LANES

STA. 937+43
2-12' LANES

1 2 3 FLASHING ARROW

STA. 944+03
3-12' LANES
SIGNS

LANE E-S

STA. 20+54
2-12' LANES
SIGNS

MATCH LINE
STA. 935+50

940

945

950

970

STA. 13+09.60 ℄ LANE W-N =
STA. 8+42.01 SCRANTON RD.

LANE W-N

STA. 4+33.2 ℄ LANE W-S =
STA. 8+26.59 ℄ SCRANTON RD.

LANE W-S

LANE E-S

LANE S-W

1

(71) Columbus SOUTH

(90) EAST
LEFT 2 LANES

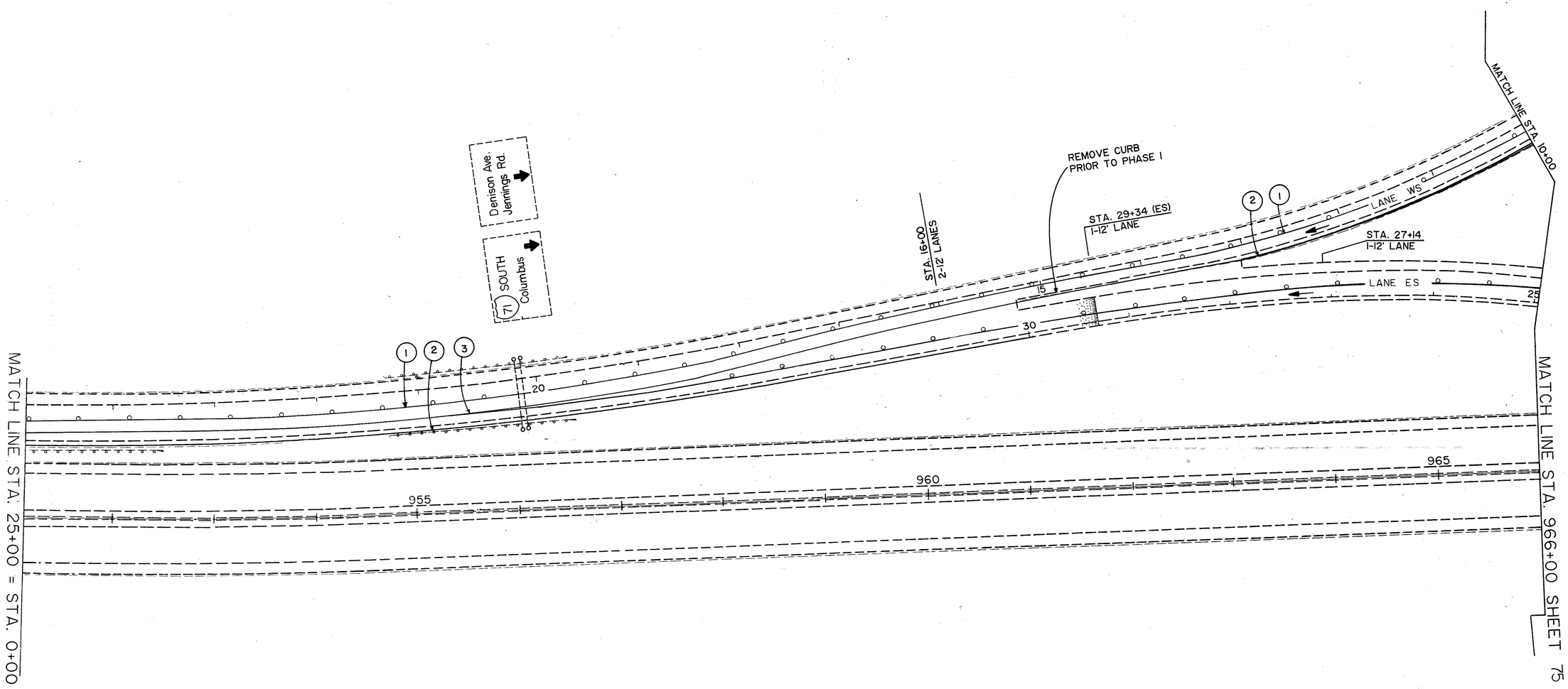
(71) ENDS
Downtown
KEEP RIGHT

Conv. Center
Stadium
use Ontario
EXIT

MATCH LINE STA. 966+00 SHEET 76

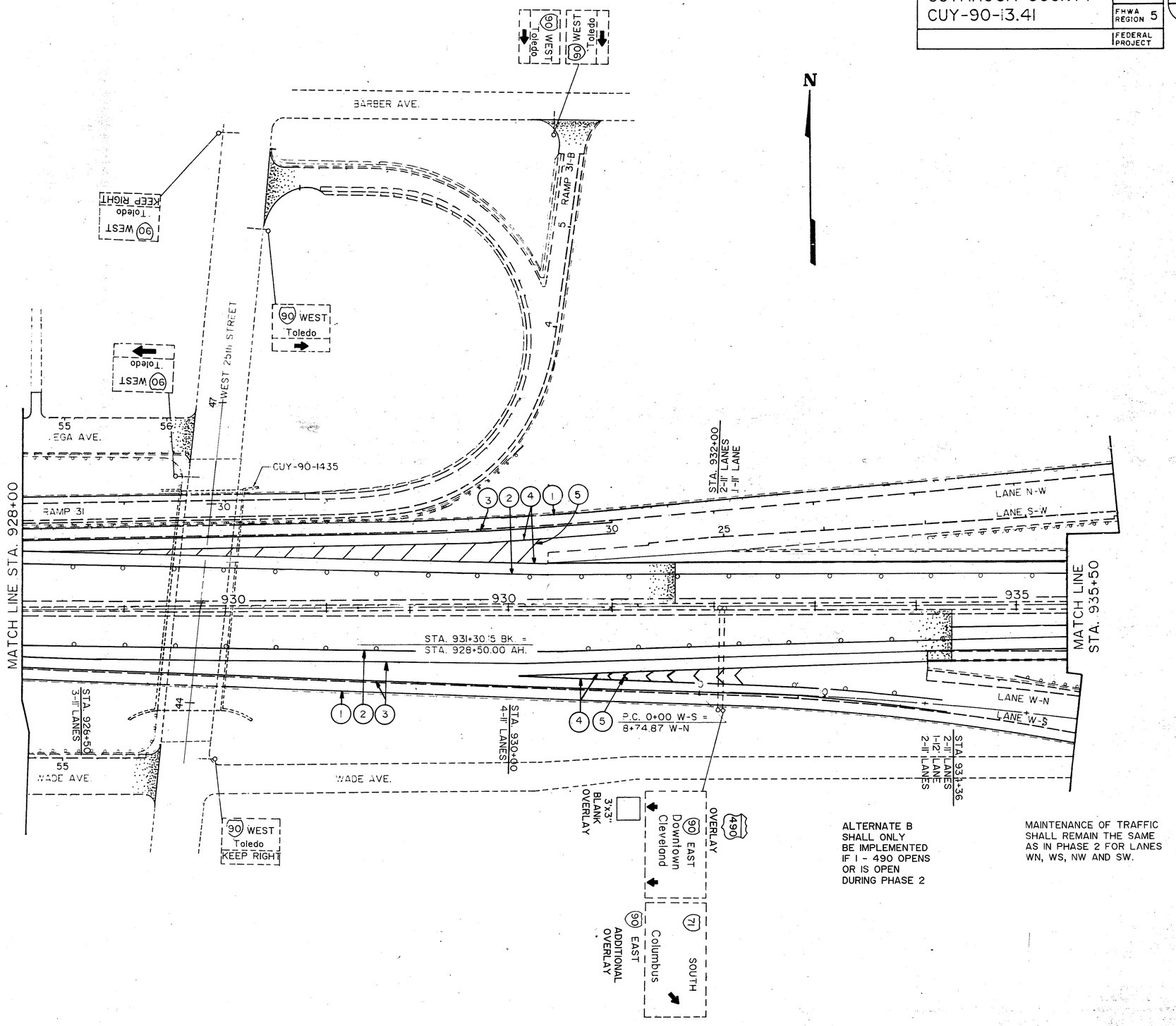
MAINTENANCE OF TRAFFIC AS PER PLAN A

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	76 156



MAINTENANCE OF TRAFFIC AS PER PLAN A

CUYAHOGA COUNTY	OHIO	77
CUY-90-13.41	FHWA REGION 5	156
	FEDERAL PROJECT	



ALTERNATE B SHALL ONLY BE IMPLEMENTED IF I - 490 OPENS OR IS OPEN DURING PHASE 2

MAINTENANCE OF TRAFFIC SHALL REMAIN THE SAME AS IN PHASE 2 FOR LANES WN, WS, NW AND SW.

MAINTENANCE OF TRAFFIC AS PER PLAN B

CUYAHOGA COUNTY CUY-90-13.41	OHIO	78
	FHWA REGION 5	156
	FEDERAL PROJECT	

MATCH LINE STA. 975+00

N

SCRANTON RD.

STA. 24+20.92 ℄ LANE N-W =
STA. 4+06.36 ℄ SCRANTON RD.

LANE N-W

20

SOUTH (71) Columbus

EXIT 1 MILE
Denison Ave.
Jennings Rd.

LANE W-N

25

LANE S-W

5

STA. 938+60
2-12' LANES

1 2 3

LANE E-S

STA. 945+20
3-12' LANES
SIGNS

950

MATCH LINE
STA. 935+50

FLASHING ARROW

940

945

970

FLASHING
ARROW

STA. 13+09.60 ℄ LANE W-N =
STA. 8+42.01 SCRANTON RD.

1 2 3

STA. 939+86
2-12' LANES

STA. 940+96
3-12' LANES

20

15

LANE W-N

STA. 4+33.12 ℄ LANE W-S =
STA. 8+26.59 ℄ SCRANTON RD.

(71) Columbus SOUTH

LANE W-S

LANE E-S

LANE S-W

10

90 EAST
LEFT 2 LANES

71 ENDS
Downtown
KEEP RIGHT

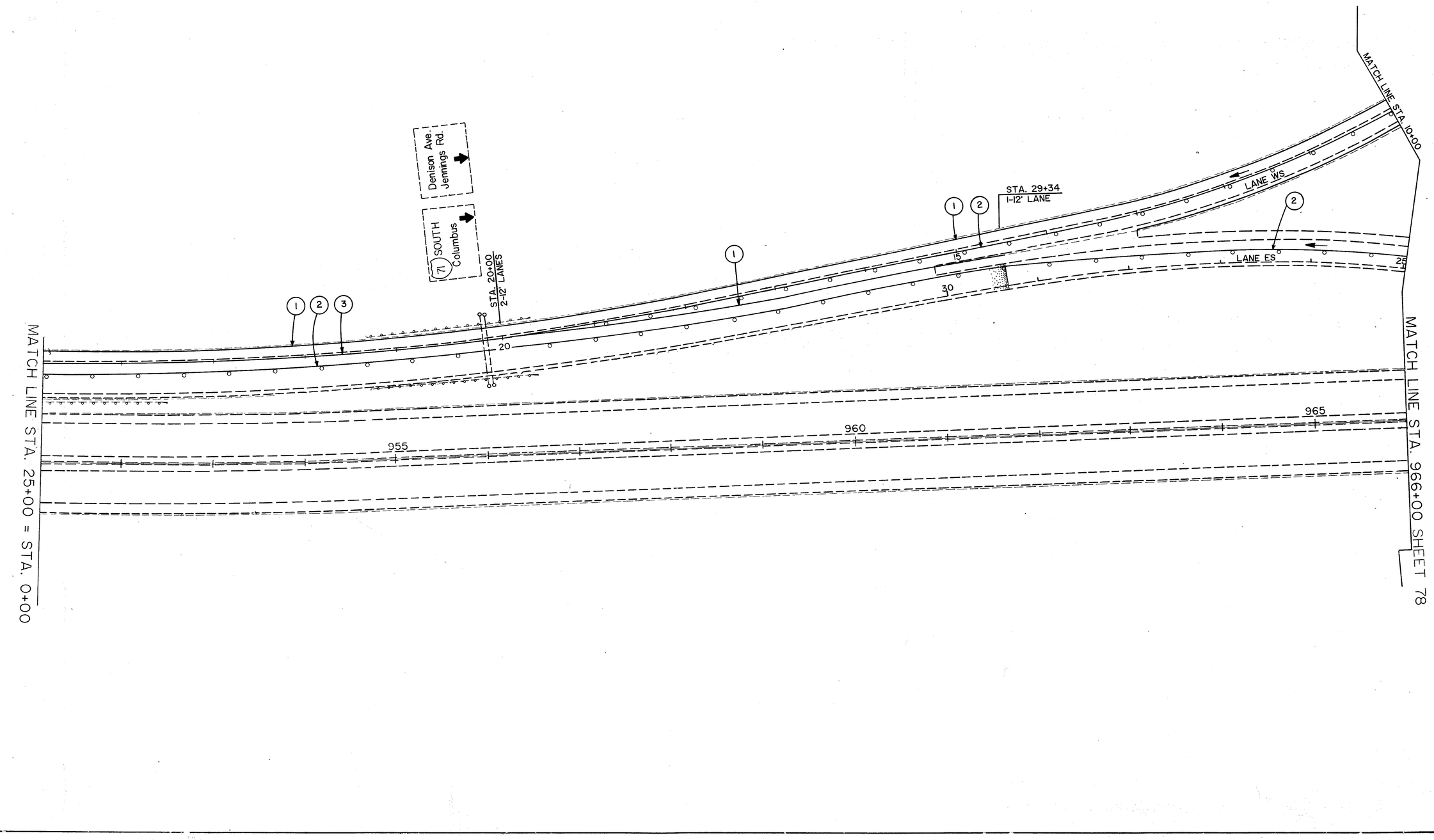
Conv. Center
Stadium
use Ontario
EXIT

SHEET 79

MATCH LINE STA. 966+00

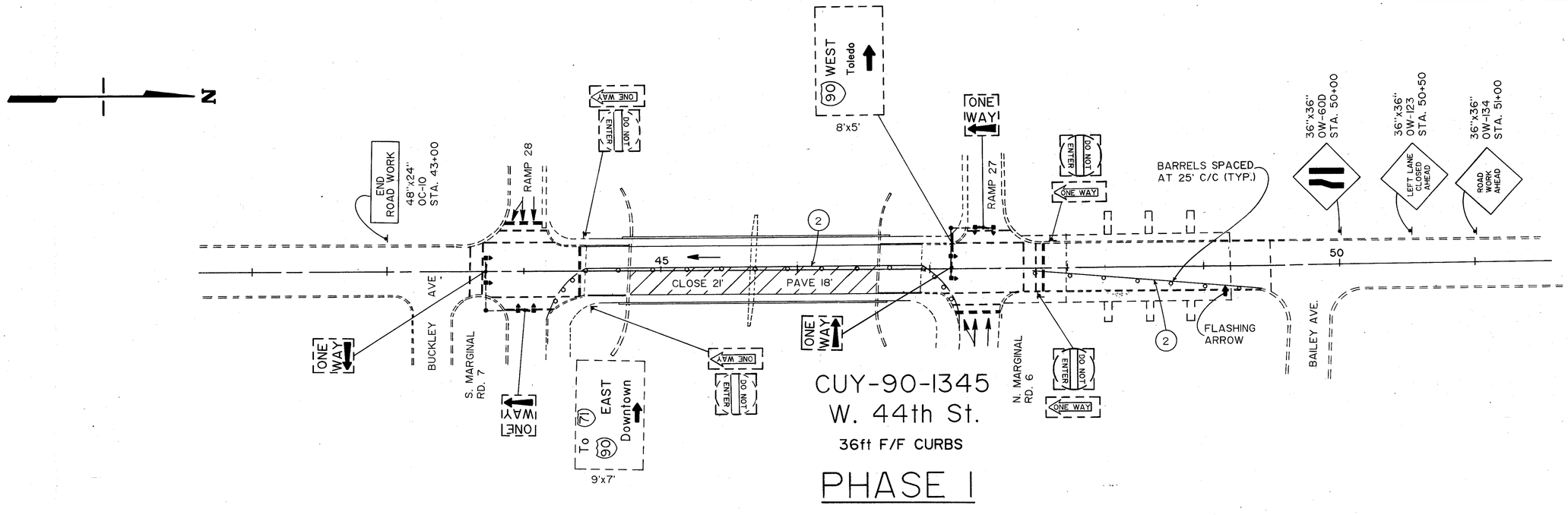
MAINTENANCE OF TRAFFIC AS PER PLAN B

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	79 156



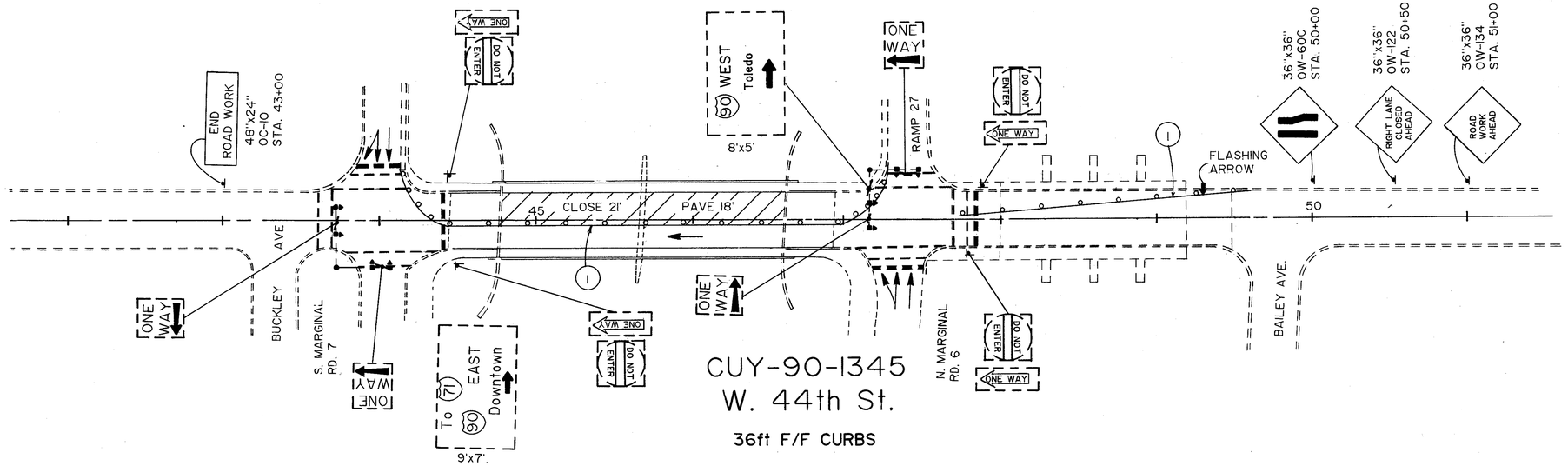
MAINTENANCE OF TRAFFIC AS PER PLAN B.

CUYAHOGA COUNTY	OHIO	80
CUY-90-13.41	FHWA REGION 5	156
	FEDERAL PROJECT	



CUY-90-1345
W. 44th St.
36ft F/F CURBS

PHASE 1

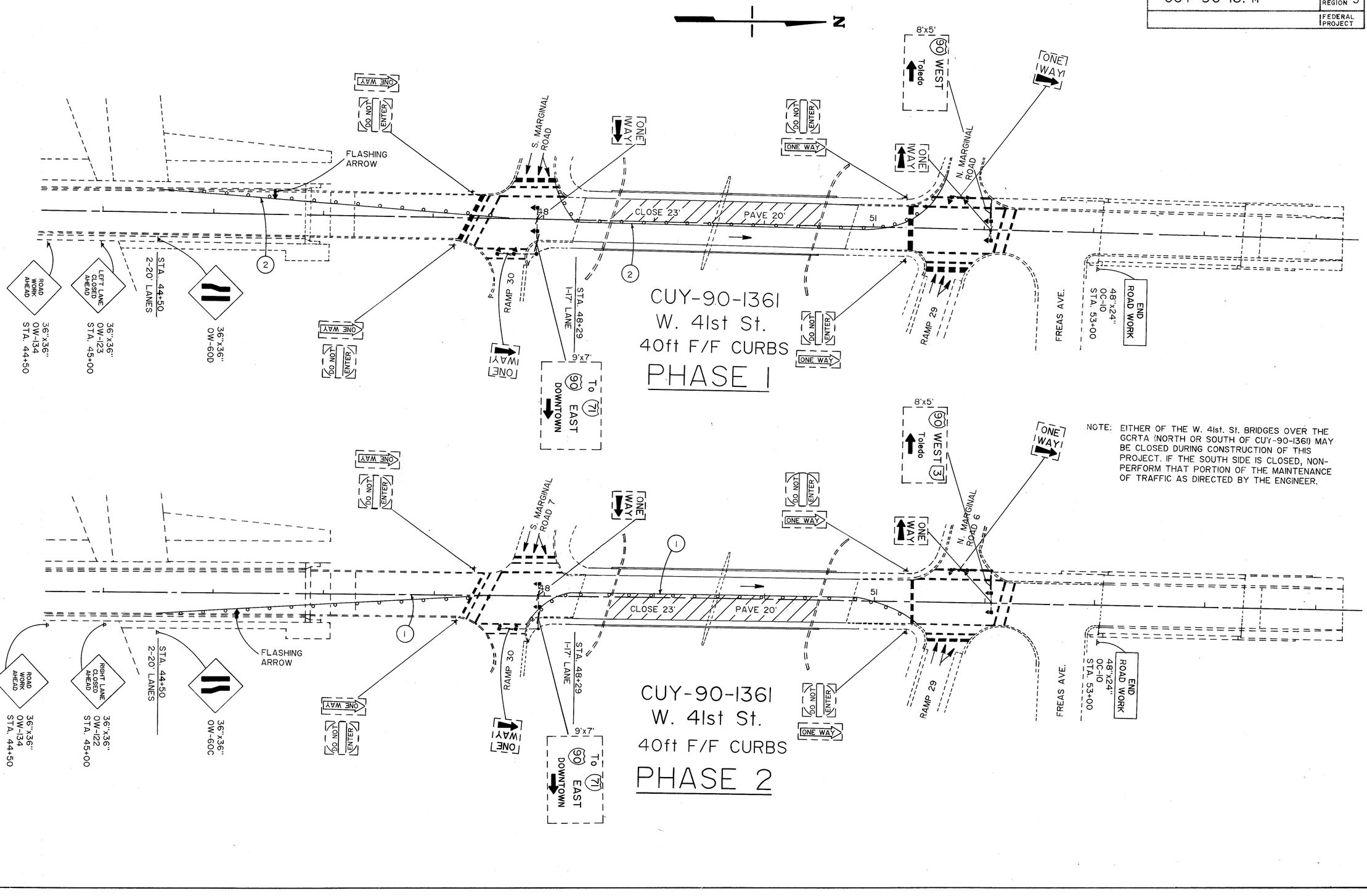


CUY-90-1345
W. 44th St.
36ft F/F CURBS

PHASE 2

MAINTENANCE OF TRAFFIC PHASE I AND 2 . CUY-90-1345 W. 44th St.

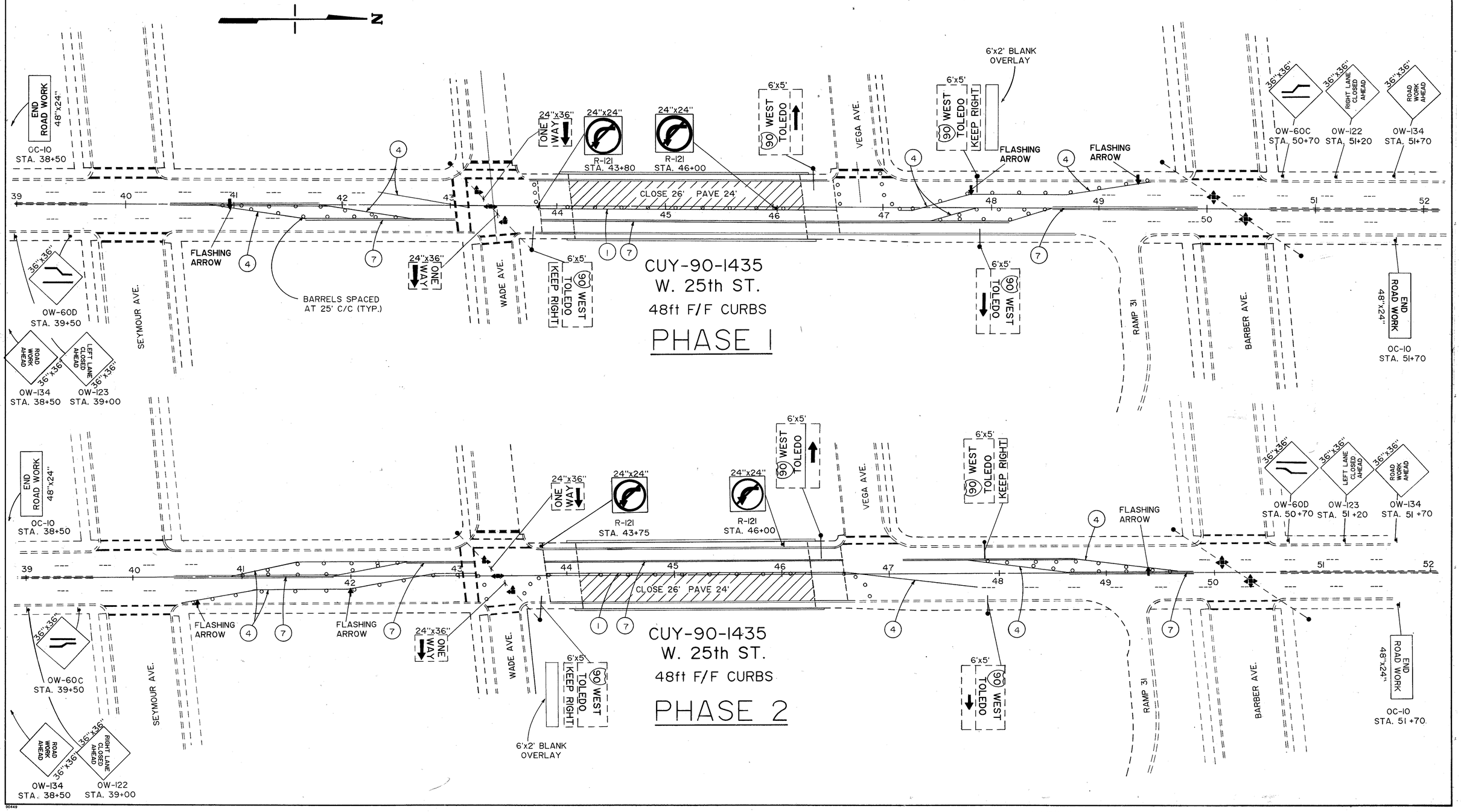
CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	81 156



NOTE: EITHER OF THE W. 41st. St. BRIDGES OVER THE GCRTA (NORTH OR SOUTH OF CUY-90-1361) MAY BE CLOSED DURING CONSTRUCTION OF THIS PROJECT. IF THE SOUTH SIDE IS CLOSED, NON-PERFORM THAT PORTION OF THE MAINTENANCE OF TRAFFIC AS DIRECTED BY THE ENGINEER.

MAINTENANCE OF TRAFFIC PHASE I AND 2 CUY-90-1361 W. 41st St.

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	82 156



MAINTENANCE OF TRAFFIC PHASE I AND 2 CUY-90-1435 W. 25th St.

TRAFFIC CONTROL SUMMARY

CALC. BY	CUYAHOGA COUNTY	OHIO
DATE:	CUY-90-13.41	FHWA REGION 5
CHKD BY		FEDERAL PROJECT
DATE:		

83
156

ITEM	SHEET NUMBER 85	86	87	88	89	90	91	92	93	94	95	96	PARTICIPATION I	II	100% STATE	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
630					283.25	184.25	225.26	212.68	215.5				1120.94			630		1121	SQ.FT.	SIGNS, FLAT SHEET, TYPE G
630					40		103			3588.5	1405.5		5137			630		5137	SQ.FT.	SIGNS, EXTRUSHEET, TYPE G
630										300			300			630		300	SQ.FT.	SIGNS, ERECTED EXTRUSHEET, TYPE G
630						38.5	44		145				227.5			630		228	LIN.FT.	GROUND-MOUNTED SUPPORTS, NO. 2 POST
630					106	164.5	307.5	190	175.5				944			630		944	LIN.FT.	GROUND-MOUNTED SUPPORTS, NO. 3 POST
630					240.5	18.5	43.5	44.5	96.5				444			630		444	LIN.FT.	GROUND-MOUNTED SUPPORTS, NO. 4 POST
630						164.5							16.5			630		165	LIN.FT.	ONE WAY SUPPORTS, No. 3 POST
630					148.5	80.5	32	33					294			630		294	LIN.FT.	ONE WAY SUPPORTS, No. 4 POST
630																				
630					31.5		94.5	32.5					159			630		159	LIN.FT.	GROUND-MOUNTED SUPPORTS, W6X9 BEAM
630					.66		1.32	.66					2.7			630		2.7	CU.YD.	CONCRETE FOR EMBEDDED FOUNDATIONS
630					2		4						6			630		6	EACH	BREAKAWAY BEAM CONNECTION
630					1			2					3			630		3	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED
630							6		5				11			630		11	EACH	SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED
630					2	2							4			630		4	EACH	SIGN HANGER ASSEMBLY, MAST ARM
630										82	33		115			630		115	EACH	SIGN ATTACHMENT ASSEMBLY
630										7			7			630		7	EACH	REMOVAL OF SIGN ATTACHMENT ASSEMBLY
630					31	21	21	29	16				118			630		118	EACH	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE
630					1								1			630		1	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND STORAGE
630					16	14	17	23	15				85			630		85	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL
630					2		8	2	2				14			630		14	EACH	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL
630									4				4			630		4	EACH	2" DIAMETER POST
630										521.5			521.5			630		522	SQ.FT.	SIGNS, TEMPORARY OVERLAY, TYPE G
630										318	92.5		410.5			630		411	SQ.FT.	SIGNS, OVERLAY, TYPE G
630										25	13		38			630		38	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE
630					2					54	20		76			630		76	EACH	LUMINAIRE SUPPORT ASSEMBLY, TYPE TC-31.21
630					31	21	21	29	16						118	630		118	EACH	PREPARATION AND SHIPMENT OF STORED SIGNS, FLATSHEET
630					1					25	13				39	630		39	EACH	PREPARATION AND SHIPMENT OF STORED SIGNS, EXTRUSHEET

GENERAL SUMMARY

TRAFFIC CONTROL SUMMARY

CALC. BY DATE:	CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5	84 156
CHKD BY DATE:		FEDERAL PROJECT	

ITEM	SHEET NUMBER															PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
			85	86	87	88	89	90	91	92	93	94	95	96	97	I	II						
631												24	11			35			631		35	EACH	SIGNS WIRED
631												2				2			631		2	EACH	SIGNS WIRED, OVERPASS STRUCTURE MOUNTED
631												2	1			3			631		3	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 100-WATT LAMP
631												38	19			57			631		57	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 175-WATT LAMP
631												9				9			631		9	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 250-WATT LAMP
631												16	9			25			631		25	EACH	DISCONNECT SWITCH WITH ENCLOSURE, TYPE X
631												16	9			25			631		25	EACH	SWITCH ENCLOSURE MOUNTING BRACKET ASSEMBLY
631												2	2			4			631		4	EACH	BALLAST, TYPE CMRI 100W-480V, INTEGRAL
631												34	19			53			631		53	EACH	BALLAST, TYPE CMRI 175W-480V, INTEGRAL
631												7				7			631		7	EACH	BALLAST, TYPE CMRI 250W-480V, INTEGRAL
631												4				4			631		4	EACH	BALLAST, TYPE CMRI 175W-480V, REMOTE
631												2				2			631		2	EACH	BALLAST WIRING ENCLOSURE, TYPE B
631												2				2			631		2	EACH	BALLAST WIRING ENCLOSURE MOUNTING BRACKET
802			171													171			802		171	EACH	BARRIER REFLECTOR, TYPE A
802			277													277			802		277	EACH	BARRIER REFLECTOR, TYPE B
847														7.92	6.92	14.84			847		14.84	MILE	EDGE LINES, 947.02
847														10.42	4.78	15.2			847		15.2	MILE	LANE LINES, 947.02
847															0.18	0.18			847		0.18	MILE	CENTER LINES, 947.02
847														4865	1200	6065			847		6065	LIN.FT.	CHANNELIZING LINES, 947.02
847															210	210			847		210	LIN.FT.	STOP LINES, 947.02
847														1666	487	2153			847		2153	LIN.FT.	TRANSVERSE LINES, 947.02
847															230	230			847		230	LIN.FT.	CROSSWALK LINES, 947.02
847															6	6			847		6	EACH	LANE ARROWS, 947.02
847															3	3			847		3	EACH	WORD ON PAVEMENT, 72 INCHES, 947.02
SPEC.						62										62			SPEC.		62	EACH	SURFACE PREPARATION, EXISTING SUPPORT SECTIONS
SPEC.						62										62			SPEC.		62	EACH	COATING, EPOXY PRIME COAT, SUPPORT SECTIONS
SPEC.						62										62			SPEC.		62	EACH	COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTIONS
SPEC.						62										62			SPEC.		62	EACH	COATING, URETHANE TOP COAT, SUPPORT SECTIONS

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 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 114 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 631 -BALLAST ENCLOSURE MOUNTING BRACKET ASSEMBLY, REMOTE BALLAST

BALLAST ENCLOSURE MOUNTING BRACKET ASSEMBLIES SHALL BE FURNISHED FOR INSTALLATION FOR OVERPASS MOUNTED LIGHTING ONLY. BRACKETS SHALL BE IN ACCORDANCE WITH PLAN DETAILS AND GALVANIZED IN ACCORDANCE WITH 711.02. BRACKETS SHALL BE TYPE B FOR OVERPASS STRUCTURES AS DETAILED IN THE PLANS AND ON TC-32.11.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE FOR EACH ASSEMBLY WHICH SHALL INCLUDE ALL NECESSARY BRACKETS, FIELD DRILLING AND HARDWARE FURNISHED AND IN PLACE.

ITEM 631 - BALLAST ENCLOSURE, TYPE B

BALLAST ENCLOSURES SHALL BE FURNISHED AND INSTALLED AS DETAILED IN THE PLANS. THE ENCLOSURE SHALL BE MOUNTED ON BRACKETS WHICH ARE SEPARATELY FURNISHED FOR OVERPASS STRUCTURES.

ENCLOSURES SHALL BE TYPE B FOR OVERPASS STRUCTURES AS DETAILED IN THE PLANS. SEE SHEET 115 FOR DETAILS.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE FOR EACH ENCLOSURE, FURNISHED, IN PLACE, COMPLETE AND READY FOR SERVICE.

FORMER CONSTRUCTION PLANS

FOR EXISTING SIGNING DETAILS REFER TO APPLICABLE PLANS LISTED BELOW:

COUNTY, ROUTE & SECTION	PROJECT NO.
CUY-90-13.33	516-71
CUY-71/90-18.54/13.81	183-65
CUY-71/90-18.65/14.90	127-69

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, 633, 730, 731, AND 733.

ITEM 802-BARRIER REFLECTORS, 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 TO DECREASE THE SPACINGS TO MATCH S.S. 802.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM	DESCRIPTION	QTY.	UNIT
802	BARRIER REFLECTORS, TYPE A	171	EACH
802	BARRIER REFLECTORS, TYPE B	277	EACH

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.

TRAFFIC CONTROL (CONT'T)

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.

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. SIGNS	EXISTING GANVANIZED SECTIONS
1	NO WORK (BRIDGE MOUNTED)
2	2 END FRAMES
3	2 END FRAMES
4	2 END FRAMES, 1 TRUSS
5	2 END FRAMES
6	1 VERT. POLE, 1 ARM
7	NO WORK (PREVIOUSLY PROTECTED)
8	2 END FRAMES
9	1 VERT. POLE, 1 ARM
10	2 END FRAMES, 1 TRUSS
20	1 VERT. POLE, 1 ARM
21	1 VERT. POLE, 2 SIGNAL ARMS, 1 LIGHT ARM
22	1 VERT. POLE, 2 SIGNAL ARMS, 2 LIGHT ARMS
23	1 VERT. POLE, 2 SIGNAL ARMS, 1 LIGHT ARM
24	1 VERT. POLE, 2 SIGNAL ARMS, 1 LIGHT ARM
25	1 VERT. POLE, 1 ARM
26	1 VERT. POLE, 1 ARM
27	1 VERT. POLE, 1 ARM, 1 LIGHT ARM
28	1 VERT. POLE, 1 ARM, 1 LIGHT ARM
29	1 VERT. POLE, 1 ARM, 1 LIGHT ARM
30	1 VERT. POLE, 1 ARM, 1 LIGHT ARM
31	1 VERT. POLE, 1 ARM, 1 LIGHT ARM
55	2 END FRAMES
57	2 END FRAMES
58	2 END FRAMES

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

ITEM SPECIAL -	SURFACE PREPARATION, EXISTING SUPPORT SECTIONS.....	62	EACH
ITEM SPECIAL -	COATING, EPOXY PRIME COAT, SUPPORT SECTIONS.....	62	EACH
ITEM SPECIAL -	COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTIONS.....	62	EACH
ITEM SPECIAL -	COATING, URETHANE TOP COAT, SUPPORT SECTIONS.....	62	EACH

TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY
CUY-90-13.41

OHIO | FHWA REGION 5 | FEDERAL PROJECT

89/156

GROUND MOUNTED SIGNS

REFERENCE NO.	PLAN SHEET NO.	DIRECTION	SIDE	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. 2 POST LIN FT	630 GROUND MOUNTED SUPPORTS, NO. 3 POST LIN FT	630 GROUND MOUNTED SUPPORTS, NO. 4 POST LIN FT	630 ONE WAY SUPPORTS, NO. 3 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 FOR ANCHOR BASE FOUNDATIONS CU YD	630 CONRETE FOR EMBEDDED FOUNDATIONS CU YD	630 BREAKAWAY BEAM CONNECTION EACH	630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED EACH	630 SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED EACH	630 SIGN SUPPORT ASSEMBLY, MAST ARM EACH	630 SIGN HANGER ASSEMBLY, MAST ARM EACH	630 SIGN ATTACHMENT ASSEMBLY EACH	630 REMOVAL OF GROUND MOUNTED SIGN AND STORAGE EACH	630 REMOVAL OF GROUND MOUNTED MAJOR SIGN AND STORAGE EACH	630 REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED BEAM SUPPORT & DISPOSAL EACH	630 REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL EACH
101	98	EB		871+90	GF	96X60		40										.66	2							1		2	
101.5	99	WB	RT	872+90	W-53-48	48 X 48	16			15/15.5																1		2	
102	99	WB	RT	876+00	W-50R-48	48 X 48	16			15/15.5																			
103	99	EB	RT	77+00 R 28																						1			2
104	99	EB	RT	77+00 R 28																						1			
105AB	99	EB	LT/RT	78+87 R 28	R-31K-36	36 X 36	18				12.5/12.5															2		2	
106AB	99	EB•	LT/RT	78+87 R 28	R-41A-36	36 X 24	12				12.5/12.5																		
107	99	WB	RT	880+00	W-49R-48	48 X 48	16			15/15.5																1		2	
108AB	99	WB	LT/RT	81+11 R 27	R-15B-30	30 X 18	7.5			14.5																2		2	
109	99	WB	RT	81+35 R 27	IM-40-36	36 X 18	4.5				16.5		18													1		1	
110	99	WB	RT	81+35 R 27	M-5C-36-2	36 X 36	9																			1			
111	99	WB	RT	81+35 R 27	IM-26-30	30 X 24	5																						
112	99	SB•	RT	47+60 W.44	R-41B-30	30 X 30	6.25						16																
113	99	WB	RT	47+60 W.44	R-44L-36	36 X 12	3																						
114	99	EB	LT	44+30 W.44	R-43R-36	36 X 12	3						16																
115	99	SB•	LT	44+30 W.44	R-41B-30	30 X 30	6.25																			1		1	
116AB	99	EB	LT/RT	81+60 R 28	R-31K-36	36 X 36	18				15/15		16.5/16.5													2		2	
117AB	99	EB	LT/RT	81+60 R 28	R-41B-30	30 X 30	12.5																			2			
118AB	99	EB	LT/RT	81+60 R 28	R-43L-36	36 X 12	6																			2			
118.5AB	99	EB	LT/RT	81+60 R 28	R-43R-36	36 X 12	6																			2			
119	99	SB	RT	44+75 W.44	R-55-12	12 X 18	1.5														1								
120AB	99	SB•	LT/RT	44+55 W.44	R-41A-36	36 X 24	12				13.5/13.5																		
121	99	EB		W.44	R-43R-72	72 X 24	12																1						1
122	99	WB		W.44	R-43R-72	72 X 24	12																1						1
123AB	99	SB•	LT/RT	49+50 W.44	R-41A-36	36 X 24	12				13.5/13.5																		
124AB	99	WB•	LT/RT	0+25 NMR6	R-43R-36	36 X 12	6				15/15		16.5/16													2		2	
125AB	99	SB	LT/RT	0+25 NMR6	R-41B-30	30 X 30	12.5																			2			
125.5AB	99	WB	LT/RT	0+25 NMR6																						2			
133AB	99	WB	LT/RT	0+25 NMR6	R-31Q-30	30 X 30	12.5																						
130	99	EB	LT	0+30 SMR7	R-43R-36	36 X 12	3				15/15		16.5/16.5													1		2	
131	99	SB•	RT	0+30 SMR7	R-41B-30	30 X 30	6.25																			1			
132	99	SB	LT	0+30 SMR7	R -120-24	24 X 24	4																			1			
133.5	99	WB	RT	1+00 NMR6																						1			
134AB	99	WB•	LT/RT	2+58 NMR6	R-41A-36	36 X 24	12				15/15																		
135AB	99	WB	LT/RT	2+58 NMR6	R-31Q-30	30 X 30	12.5																			2	1		
TOTALS	•FACES OTHER DIRECTION THAN DIRECTION OF TRAVEL (TYP)						28325	40		106	240.5		148.5			31.5			.66	2		1			2		31	1	16	2	2

TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY
CUY-90-13.41

OHIO
FHWA REGION 5
FEDERAL PROJECT

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GROUND MOUNTED SIGNS

REFERENCE NO.	PLAN SHEET NO.	DIRECTION	SIDE	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. 2 POST LIN FT	630 GROUND MOUNTED SUPPORTS, NO. 3 POST LIN FT	630 GROUND MOUNTED SUPPORTS, NO. 4 POST LIN FT	630 ONE WAY SUPPORTS, NO. 3 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 FOR ANCHOR BASE FOUNDATIONS CU YD	630 CONRETE FOR EMBEDDED FOUNDATIONS CU YD	630 BREAKAWAY BEAM CONNECTION EACH	630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED EACH	630 SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED EACH	630 SIGN SUPPORT ASSEMBLY, MAST ARM EACH	630 SIGN HANGER ASSEMBLY, MAST ARM EACH	630 SIGN ATTACHMENT ASSEMBLY EACH	630 REMOVAL OF GROUND MOUNTED SIGN AND STORAGE EACH	630 REMOVAL OF GROUND MOUNTED MAJOR SIGN AND STORAGE EACH	630 REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED BEAM SUPPORT & DISPOSAL EACH
134.5	99	WB	RT	1+40 NMR6	R -120-24	24 X 24	4		13																			
137	99	WB	RT	4+10	IM-40-36	36 X 18	4.5				18.5																		
138	99	WB	RT	4+10	M-5C-36	36 X 36	9																						
139	99	WB	RT	4+10	IM-26-30	30 X 24	5																						
140 AB	100	EB	LT/RT	4+18 SMR7	R-310-30	30 X 30	12.5			14.5/14.5																			
141 AB	100	WB	LT/RT	4+18 NMR6	R-310-30	30 X 30	12.5			14.5/14.5																2		2	
142	100	EB	RT	5+60 SMR7	N-15-24	24 X 6	1			13																			
143	100	EB		5+60 SMR7	N-29-24	24 X 24	4																						
144 AB	100	EB •	LT/RT	5+60 SMR7	R-41A-36	36 X 24	12			13/13																2		2	
145	100	EB •	LT	6+25 SMR7	R-43R-36	36 X 12	3		12.5																	1		1	
150	100	EB	RT	6+50 SMR7	R-1-30	30 X 30	6.25			14.5																1		1	
151	100	EB	RT	6+50 SMR7																						1			
152	100	EB	RT	7+20 SMR7																						1			
153	100	EB	RT	7+20 SMR7																						1			
154	100	NB •	LT	49+50 W 41																						1			
155 AB	100	NB •	LT/RT	51+00 W 41	R-41A-36	36 X 24	12			13.5/13.5																			
156 AB	100	NB	LT/RT	51+45 W 41	R-41B-30	30 X 30	12.5						16.5/16.5													1		1	
157 AB	100	NB •	LT/RT	51+45 W 41	R-43R-36	36 X 12	6																			1		1	
158	100	WB	-	NMR6	R-43R-72	72 X 24	12																	1					
159 AB	100	EB	LT/RT	8+20 SMR7	R-310-30	30 X 30	12.5						16.5/16.5													2		2	
160 AB	100	EB	LT/RT	8+20 SMR7																						2		2	
161 AB	100	EB •	LT/RT	8+20 SMR7	R-41B-30	30 X 30	12.5																			2			
162 AB	100	EB •	LT/RT	8+20 SMR7	R-43R-36	36 X 12	6																						
163 AB	100	NB •	LT/RT	45+60 W 41	R-41A-36	36 X 24	12			13/13																			
164	100	EB	-	91+40 R-30	R-43L-72	72 X 24	12																	1					
170	100	NB •	RT	47+30 W 41	R-43L-36	36 X 12	3						14.5													1		1	
171	100	NB •	RT	47+30 W 41	R-41B-30	30 X 30	6.25																			1			
172	100	EB	RT	90+60	R-15B-30	30 X 18	3.75		13																	1		1	
TOTALS							184.25		38.5	164.5	18.5		80.5									2				21		14	

TRAFFIC CONTROL QUANTITIES, GROUND MOUNTED SIGNS

TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY
CUY-90-13.41

OHIO
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FEDERAL PROJECT

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GROUND MOUNTED SIGNS

REFERENCE NO.	PLAN SHEET NO.	DIRECTION	SIDE	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. 2 POST LIN FT	630 GROUND MOUNTED SUPPORTS, NO. 3 POST LIN FT	630 GROUND MOUNTED SUPPORTS, NO. 4 POST LIN FT	630 ONE WAY SUPPORTS, NO. 3 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 FOR ANCHOR BASE FOUNDATIONS CU YD	630 CONRETE FOR EMBEDDED FOUNDATIONS CU YD	630 BREAKAWAY BEAM CONNECTION EACH	630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED EACH	630 SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED EACH	630 SIGN SUPPORT ASSEMBLY, MAST ARM, EACH	630 SIGN HANGER ASSEMBLY, MAST ARM EACH	630 SIGN ATTACHMENT ASSEMBLY EACH	630 REMOVAL OF GROUND MOUNTED SIGN AND STORAGE EACH	630 REMOVAL OF GROUND MOUNTED MAJOR SIGN AND STORAGE EACH	630 REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED BEAM SUPPORT & DISPOSAL EACH
173AB	100	WB •	LT/RT	90+20 R-29	R-41B-30	30 X 30	12.5			14.5/14.5			16/16												2		4	
174AB	100	WB	LT/RT	90+20 R-29	R-12I-30	30 X 30	12.5																		2			
175AB	100	WB	LT/RT	90+20 R-29																					2			
176AB	100	WB•	LT/RT	90+20 R-29	R-43L-36	36 X 12	6																		2			
177AB	100	WB	LT/RT	90+50 R-29	R-31K-36	36 X 30	15			31/31																		
178	100	EB	LT	92+50 R-30	W-60D-36	36 X 36	9				14.5														1		2	
179	100	EB	RT	892+75	W-49R-48	48 X 48	16			15/15.5															1		2	
180AB	100	WB	LT/RT	92+50 R-29	R-41A-36	36 X 24	12			31/31																		
181AB	100	WB	LT/RT	92+50 R-29	R-31K-36	36 X 30	15																					
182	100			NO WORK																								
183	100	WB	RT	894+20	GF	96 X 60		40								15.5/16		.66	2									
184	100	WB	RT	95+00 R-29	W-47-48	48 X 48	16			15/15.5															1		2	
185AB	100	EB	LT/RT	895+80, 896+60	X-6L/R	12 X 36	6														2							
186AB	101	WB	LT/RT	902+15	X-6L/R	12 X 36	6														2							
187AB	101	EB	LT/RT	908+00	X-6L/R	12 X 36	6		14.5												1							
188AB	101	EB	LT/RT	905+95	X-6L/R	12 X 36	6		14.5												1							
189	101	WB	RT	908+45																					2		2	
190	101	WB	RT																									
191	101	WB		911+80																					1			2
191.5	101	WB	RT	912+80	G-5H-120	120 X 24	20											.66	2									
191.75	101	WB	RT	912+80	GEP-96	96 X 24		18								15.5/16												
192	102	EB	RT	18+05 R-32	W-97-48	48 X 60	20																		1			2
193	102	EB	RT	920+20	GF	108 X 60		45								15.5/16												
194	102	EB	RT	22+00 R-32																					1			2
195	102	WB	LT	920+80	W-50R-48	48 X 48	16			15/15.5																		
196	102	WB	LT	21+00 R-31A	R-2-60	60 X 60 X 60	10.83			15/15.5															1		2	
197AB	102	EB •	LT/RT	23+00 R-32	R-41A-36	36 X 24	12			15/15															2		2	
198	102	EB	RT	26+10 R-32	R-55W-12	12 X 18	1.5		15																			
199	102	EB	RT	25+40 R-32	R-2-48	48X48X48	6.93			15.5/16															1		1	
200	102	EB	RT	25+40 R-32																					1			2
TOTALS							225.26	103	44	307.5	43.5			32			94.5			1.32	4			6				21		17	8

TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY
CUY-90-13.41

OHIO
FHWA REGION 5
FEDERAL PROJECT

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GROUND MOUNTED SIGNS

REFERENCE NO.	PLAN SHEET NO.	DIRECTION	SIDE	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. 2 POST LIN FT	630 GROUND MOUNTED SUPPORTS, NO. 3 POST LIN FT	630 GROUND MOUNTED SUPPORTS, NO. 4 POST LIN FT	630 ONE WAY SUPPORTS, NO. 3 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 FOR ANCHOR BASE FOUNDATIONS CU YD	630 CONRETE FOR EMBEDDED FOUNDATIONS CU YD	630 BREAKAWAY BEAM CONNECTION EACH	630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED EACH	630 SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED EACH	630 SIGN SUPPORT ASSEMBLY, MAST ARM EACH	630 SIGN HANGER ASSEMBLY, MAST ARM EACH	630 SIGN ATTACHMENT ASSEMBLY EACH	630 REMOVAL OF GROUND MOUNTED SIGN AND STORAGE EACH	630 REMOVAL OF GROUND MOUNTED MAJOR SIGN EACH	630 REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED BEAM SUPPORT & DISPOSAL EACH
201	102	WB	RT	26+00 R-31	W-49R-48	48X48	16			15															2		4	
202	102	EB	RT	27+45 R-32	W-47-36	36X36	9													1					1			
203	102	EB	LT	27+45 R-32	R-10-24	24X30	5			14.5															1		1	
204	102	WB	RT	26+50 R-31A	R-15B-30	30X18	3.75			13															1		1	
205	103	EB	RT	55+00 WADE AV.																					1			
210AB	103	EB	LT/RT	29+15 R-32	R-43L-36	36X12	6				15/15		16.5/16.5												2		2	
211AB	103	EB	LT/RT	29+15 R-32	R-41B-30	30X30.	12.5																		2			
212AB	103	EB	LT/RT	29+15 R-32	R-43R-36	36X12	6																		2			
212.5AB	103	EB	LT/RT	29+15 R-32	R-31M-48	48X30	20																					
213	103	EB	LT/RT	29+15 R-32																					1		2	
214	103	EB	LT/RT	29+15 R-32																					1			
215	103	EB	RT	57+00 WADE AV.																					1			
216	103	EB	RT	930+35	W-143-24	24X24	4													1					1			
217	103	EB	RT	930+35	W-1-36	36X36	9																					
218	103	WB	RT	35+00 R-31	W-49L-36	36X36	9			14.5															1		2	
219	103	WB	RT	4+70 R-31B	R-2-48	48X48X48	6.93			15.5/16															1		2	
220	103	EB	LT	NO WORK																								
221	103	EB	LT	NO WORK																								
222	104	EB	LT	13+70 L-WN	W-143-24	24X24	4				14.5																	
223	104	EB	LT	13+70 L-WN	W-2-36	36X36	9																		1		2	
224	104	WB	LT	20+48 L-NW	W-33-30	30X36	7.5			14.5															1		1	
225	104	WB	LT	19+70 L-NW	W-33-30	30X36	7.5			14.5															1		1	
226	104	EB	RT	7+30 L-WS	W-33-30	30X36	7.5			14.5															1		1	
227	104	EB	RT	7+70 L-WS	W-33-30	30X36	7.5			14.5															1		1	
228	104	EB	RT	15+75 L-WN	W-33-30	30X36	7.5			14.5															1		1	
229	104	EB	RT	16+30 L-WN	W-33-30	30X36	7.5			14.5															1		1	
230	104	EB	RT	16+80 L-WN	W-33-30	30X36	7.5			14.5															1		1	
231	104	EB	RT	17+75 L-WN	W-143-24	24X24	4								16/16.5			.66							3			2
232	104	EB	RT	17+75 L-WN	W-32-96	96X48	32																					
233	104	EB	RT	17+75 L-WN	W-143-24	24X24	4																					
TOTALS							212.68			190	44.5		33		32.5			.66			2				29		23	2

TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY
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OHIO
FHWA REGION 5
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GROUND MOUNTED SIGNS

REFERENCE NO.	PLAN SHEET NO.	DIRECTION	SIDE	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. 2 POST LIN FT	630 GROUND MOUNTED SUPPORTS, NO. 3 POST LIN FT	630 GROUND MOUNTED SUPPORTS, NO. 4 POST LIN FT	630 ONE WAY SUPPORTS, NO. 3 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 FOR ANCHOR BASE FOUNDATIONS CU FT	630 CONRETE FOR EMBEDDED FOUNDATIONS CU FT	630 BREAKAWAY BEAM CONNECTION EACH	630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED EACH	630 SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED EACH	630 SIGN SUPPORT ASSEMBLY, MAST ARM EACH	630 SIGN HANGER ASSEMBLY, MAST ARM EACH	630 SIGN ATTACHMENT ASSEMBLY EACH	630 REMOVAL OF GROUND MOUNTED SIGN AND STORAGE EACH	630 REMOVAL OF GROUND MOUNTED MAJOR SIGN EACH	630 REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED BEAM SUPPORT & DISPOSAL EACH	630 2" DIAMETER POST EACH
234 AB	104	EB	LT/RT	18+25 L-WN	X-6L/R	12X36	6		14.5												1								
235	104	WB	RT	NO WORK																									
236	104	WB	LT	NO WORK																									
237	104	WB	LT	21+11 L-NW	W-33-30	30X36	7.5			14.5																1		1		
238	104	WB	LT	20+05 L-NW	W-33-30	30X36	7.5			14.5																1		1		
239	104	EB	RT	18+40 L-WN	W-33-30	30X36	7.5			14.5																1		1		
240	104	EB	RT	19+40 L-WN	W-33-30	30X36	7.5														1								1
241	104	EB	RT	20+40 L-WN	W-33-30	30X36	7.5														1								1
242	104	EB	RT	21+40 L-WN	W-33-30	30X36	7.5														1								1
243	104	EB	RT	22+55 L-WN	W-33-30	30X36	7.5														1					1			1
243.5	104	EB	RT	23+65 L-WN	W-33-30	30X36	7.5			14.5																			
244	104	EB	RT	24+80 L-WN	W-33-30	30X36	7.5			14.5																1		1		
245	104	EB	RT	25+65 L-WN	W-33-30	30X36	7.5			14.5																1		1		
246	104	WB	LT	19+00 L-NW	W-33-30	30X36	7.5			14.5																1		1		
248	104	WB	LT	18+00 L-NW	W-33-30	30X36	7.5			14.5																1		1		
250	105	EB	RT	977+10	W-49R-48	48X48	16			15/15.5																1		2		
251	105	WB	LT	16+78 L-NW	W-33-30	30X36	7.5			14.5																1		1		
252	105	WB	LT	13+25 L-NW	W-1-48	48X48	16				15.5/16															2		2		
253	105	WB	LT	13+25 L-NW	W-143-24	24X24	4																							
252.5	105	WB	RT	12+22 L-NW	W-1-48	48X48	16				15.5/16															2			2	
253.5	105	WB	RT	12+22 L-NW	W-143-24	24X24	4																							
254 AB	105	EB	LT/RT	980+75	X-6L/R	12X36	6		14.5/14.5																					
255 AB	105	WB	RT	983+00	X-6R	12X36	3		14.5																	1		1		
256 AB	105	WB	LT/RT	982+90	X-6L/R	12X36	6		14.5/14.5																					
257	105	WB	RT	9+20 L-NW	W-98-48	48X60	20				16.5/17																			
258 AB	105	EB	LT/RT	989+00	X-6L/R	12X36	6		14.5/14.5																					
259 AB	106	EB	LT/RT	998+85	X-6L/R	12X36	6		14.5/14.5																					
260	108	SB	LT	7+50 R-SBORM	W-49R-36	36X36	9			14.5																1		2		
TOTALS							215.5		145	175.5	96.5										5					16		15	2		4

TRAFFIC CONTROL QUANTITIES, GROUND MOUNTED SIGNS

TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY
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• REMOTE, NOT INTEGRAL

OVERHEAD MOUNTED SIGNS

REFERENCE NO.	PLAN SHEET NO.	ELEVATION VIEW SHEET NO.		LOCATION	SIGN SIZE	CODE	630 SIGNS, EXTRUSHEET, TYPE G SQ FT	630 SIGNS, TEMPORARY OVERLAY, TYPE G SQ FT	630 SIGNS, OVERLAY, TYPE G SQ FT	630 REMOVAL OF SIGN ATTACHMENT ASSEMBLY EA.	630 OVERHEAD SIGN SUPPORT, TYPE TC-12.30 DESIGN NO	ARM EA								630 REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE TYPE	DES EA								630 REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE EACH	630 REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE EACH	630 SIGN ATTACHMENT ASSEMBLY EACH	630 SIGNS ERECTED EXTRUSHEET, TYPE G SQ FT	630 LUMINAIRE SUPPORT ASSEMBLY TYPE TC-31.21 2'-9" ARM EA	3'-3" ARM EA	4'-3" ARM EA	5'-9" ARM EA	631 SIGNS WIRED EA	SIGN SERVICE EA	631 SIGNS WIRED, OVERPASS STRUCTURE MOUNTED EACH	631 PHOTOELECTRIC CONTROL EACH	625 GROUND ROD EA	631 MERCURY VAPOR LUMINAIRE, TYPE TC-31.21, WITH 100-WATT LAMP EACH	631 MERCURY VAPOR LUMINAIRE, TYPE TC-31.21, WITH 175-WATT LAMP EACH	631 MERCURY VAPOR LUMINAIRE, TYPE TC-31.21, WITH 250-WATT LAMP EACH	631 DISCONNECT SWITCH WITH ENCLOSURE, TYPE X EACH	631 SWITCH ENCLOSURE MOUNTING BRACKET ASSEMBLY EACH	631 BALLAST, TYPE CMRI 100W-480V EACH	631 BALLAST, TYPE CMRI 175W-480V EACH	631 BALLAST, TYPE CMRI 250W-480V EACH	631 BALLAST WIRING ENCLOSURE, TYPE A EACH	631 BALLAST WIRING ENCLOSURE, TYPE B EACH	631 BALLAST WIRING ENCLOSURE MOUNTING BRACKET, TYPE A EACH	631 BALLAST WIRING ENCLOSURE MOUNTING BRACKET, TYPE B EACH
1A	99	109		882+40	15X9		135																				1		3				2						2		1	1		2 •			1		1
1A					9X2	GEP-108	18																																										
1B					15X10		150																				1		3				2						2			1		2 •			1		1
1B					9X2	GEP-108	18																																										
2A	100	109		887+90	17X12		204	204	51																		1		5					2	1					2	1	1		2				
2A					9X2	GEP-108	18	18																																									
2B					17X10		170																				1		3				2		1				2	2			2				
3A	100	109		894+20	12X10		120	120																			1		3				2		1				2		1	1		2				
3A					9X2	GEP-108	18	18																																									
3B					15X10		150																				1		3				2		1				2				2				
3B					9X2	GEP-108	18																																										
4A	100	109		896+40	25X10		250																				1		4				3	3	1				3		1	1		3				
4C					18X9		162		54																		1		3				2		1				2					2				
4C						GEP-96	16																																										
5A	101	110		905+10	12X10		120																				1		3				2		1				2		1	1		2				
5B					16X10		160		48																		1		3				2		1				2					2				
5B					9X2	GEP-108	18																																										
6	101	110		909+25	16X9		144		48																		1		3				2		1				2		1	1		2				
6					8X2		16																																										
7A	102	110		917+20	17X9.5 ✓		161.5	161.5																			1		5				2	2	1				2		1	1		2				
7B					17X10 ✓		170																				1		3				2	2	1				2					2				
7C					18X10 ✓		180		27																		1		3				2		1				2					2				
					9X2	GEP-108	18																																									
8A	102	110		925+25	11X7.5 ✓		82.5																				1		2				1		1				1		1	1		1				
8C					15X8.5 ✓		127.5																				1		3				2		1				2					2				
8C					8X2 ✓	GEP-96	16																																									
9	102	110		924+75	12X10 ✓		120																				1		3				2		1				2		1	1		2				
9					9X2 ✓	GEP-108	18																																										
10A										7																			5	300			3	1						3					3				
10B	103	111		932+06	17X12.5		212.5		51																		1		5					2	1					2	1	1			2				
10C					13X12.5		162.5		39																		1		3				2		1				2					2				
10C					9X2	GEP-108	18																																										
20	99	112		W.44	10X4.5		45																				1		2			1			1			1			1		1	1	1				
21	99	112		W.44	7X7		49																				1		2			1			1			1			1		1	1		1			
22	99	112		W.44	11X9.5		104.5																				1		3				1		1				1		1	1		1			
23	100	112		W.41	7X7		49																				1		2			1			1			1			1		1	1		1			
24	100	112		W.41	11X9.5		104.5																				1		3				1		1				1		1	1		1			
25	100	112		W.41	10X4.5		45																				1		2			1			1			1			1		1	1	1				
TOTALS							3588.5	521.5	318	7																	25		82	300	2	2	36	14	24	2			2	38	9	16	16	2	38	7		2		2

TRAFFIC CONTROL QUANTITIES, OVERHEAD MOUNTED SIGNS

TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY
CUY-90-13.41

OHIO
FHWA REGION 5
FEDERAL PROJECT

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• REMOTE, NOT INTEGRAL

OVERHEAD MOUNTED SIGNS

REFERENCE NO.	PLAN SHEET NO.	ELEVATION VIEW SHEET NO.		LOCATION	SIGN SIZE	CODE	630 SIGNS, EXTRUSHEET, TYPE G	630 SIGNS, OVERLAY, TYPE G		630 OVERHEAD SIGN SUPPORT, TYPE TC-12.30									630 REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE								630 REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE	630 REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE	630 SIGN ATTACHMENT ASSEMBLY	630 CONCRETE FOR ANCHOR BASE FOUNDATIONS	630 LUMINAIRE SUPPORT ASSEMBLY TYPE TC-31.20				631	631	631	625	631	631	631	631	631	631	631	631	631	631	631
										DESIGN NO	ARM								TYPE	DES											2'-9" ARM	3'-3" ARM	4'-3" ARM	5'-9" ARM	SIGNS WIRED	SIGN SERVICE	SIGNS WIRED, OVERPASS STRUCTURE MOUNTED	PHOTOELECTRIC CONTROL	GROUND ROD	MERCURY VAPOR LUMINAIRE, TYPE (TC-713.21) WITH 100-WATT LAMP	MERCURY VAPOR LUMINAIRE, TYPE (TC-713.21) WITH 175-WATT LAMP	MERCURY VAPOR LUMINAIRE, TYPE (TC-713.21) WITH 250-WATT LAMP	DISCONNECT SWITCH WITH ENCLOSURE, TYPE X	SWITCH ENCLOSURE MOUNTING BRACKET ASSEMBLY	BALLAST, TYPE CMRI 100W-480V	BALLAST, TYPE CMRI 175W-480V	BALLAST, TYPE CMRI 250W-480V	BALLAST WIRING ENCLOSURE, TYPE A	BALLAST WIRING ENCLOSURE, TYPE B	BALLAST WIRING ENCLOSURE MOUNTING BRACKET, TYPE A	BALLAST WIRING ENCLOSURE MOUNTING BRACKET, TYPE B
							SQ FT	SQ FT		EA	EA	EA	EA	EA	EA	EA	EA		EA	EA	EA	EA	EA	EA	EACH	EACH	CU YD	EA	EA	EA	EA	EA	EA	EACH	EACH	EA	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
26	102	113		28+00, R-31	9X6		54																			1					1				1				1							
27	103	113		W.25	7X7		49																			1					1								1						
28	103	113		W.25	9X7		63																			1					1								1						
29A	103	113		BARBER	7X7		49																			1					1														
29B					7X7		49																			1																			
30	103	113		W.25	7X7		49																			1					1								1						
31	103	113		W.25	9X7		63																			1					1								1						
55A	105	111		987+45	25X10		250																							3	1								3						
55B					13X10		130																							2	1								2						
					9X2	GEP-108	18	595																																						
57B	106	111		994+45	13X10		130																			1					3								2						
57B																																													
57C					16X10.5		168																			1					3								2						
58A	106	111		998+50	17X10		170	33																		1					3								2						
58B					17X10		170																			1					3								2						
TOTALS							14055	92.5																		13			1	6	10	3	11				1	19		9	9	2	19						

TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY
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PAVEMENT MARKINGS

	SHEET REFERENCE	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
	98	I-90 E.B.	865+00	869+00	400	400	1600																		
	98		869+00	871+15	215	215	860				430				324										
	98-100		871+15	896+30	2515	2515	7545																		
	100		896+30	898+40	420	210	630				420														
	100-102		898+40	917+60	1920	1920	7680																		
	102		917+60	919+00	140	280	420				280				107										
	102-103		919+00	930+00	1100	1100	3300																		
	103		930+00	931+30.15	130	130	520																		
		STA. 931+30.15 = STA 928+50																							
	103		928+50	931+00	250	250	1000																		
	103		931+00	934+00	300	300	900				600				370										
	103	LANE WN	11+00	13+20	220	220	220																		
	104		13+20	15+00	180	180	180				360				204										
	104-105		15+00	32+70	1770	1770	1770																		
	105	I-90 E.B./N.B.	981+00	986+70	1140	570	1710				570														
	105		986+70	990+00	330	330	990																		
		STA. 990+00 = STA. 4+86.55																							
	106		4+86.55	12+15	729	729	2187																		
		STA. 0+00 WS = STA. 8+74.87 WN																							
	103-104-107	LANE WS	6+00	15+25	925	925																			
	107		15+25	17+80	510	255	255				255														
	107		17+80	25+00	720	720	1440																		
		STA. 25+00 = STA. 0+00																							
	108		0+00	3+00	300	300	600																		
	108		3+00	8+00	500	500	500				1000				468										
	108		8+00	12+00	400	400	400																		
	98	I-90 W.B.	871+00	872+00	100	100	500																		
	99		872+00	874+00	400	200	800				200														
	99-100		874+00	895+90	2190	2190	6570																		
	100		895+90	898+50	260	260	780				520				193										
	100-101		898+50	910+00	1150	1150	4600																		
	101		910+00	913+60	360	360	1440																		
	101-102		913+60	915+90	460	230	690				230														
	102		915+90	928+00	1210	1210	3630																		
	103		928+00	931+30	330	330	1320																		
		STA. 931+30.15 = STA. 928+50																							
	TOTALS THIS SHEET				21574	20249	55037				4865				1666										
					41823L.F.=7.92MI.		10.42MI.																		

TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY
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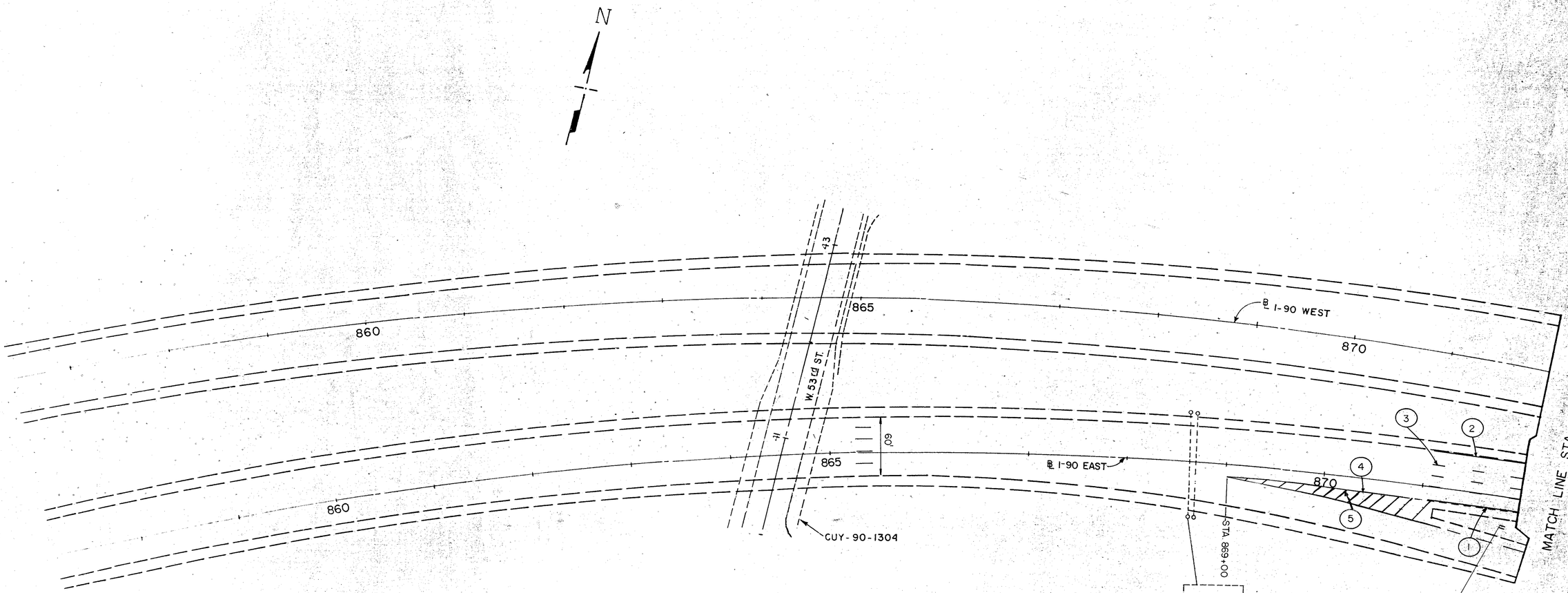
PAVEMENT MARKINGS

	SHEET REFERENCE	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
	103	I-90 W.B. CONT'D.	928+00	929+00	100	100	400																		
	103		929+00	930+50	300	150	450																		
	103	LANE NW	30+65	24+50	615	615	615																		
	104		24+50	23+00	300	150	150																		
	104-105		23+00	10+70	1230	1230	1230																		
	105	I-90 W.B./S.B.	983+35	984+35	200	200	300																		
	105		984+35	988+60	425	425	1275				850				382										
	105-106		988+60	1000+00	1140	1140	3420																		
		STA. 1000+00 = STA. 4+86.55																							
	106		4+86	14+12	926	926	2778																		
	104-106	I-71 N.B./I-90 E.B.	961+83	981+00	1917	1917	3834																		
	104-106	I-71 S.B./I-90 W.B.	960+05	983+35	2330	2330	4660																		
	99-100	S. MARGINAL RD.	0+15	8+35	820	820	820						40												
	100	RAMP 30	91+25	96+30	505	505																			
	102	RAMP 32	19+00	25+45	645	645																			
			25+45	29+40	395	395	395																		
	99-100	N. MARGINAL RD.	0+20	8+20	800	800	800						30												
	100	RAMP 29	90+00	92+00	200	200	200																		
			92+00	95+90	390	390																			
	102-103	RAMP 31A	15+90	20+50	460	460																			
			20+50	22+25							350				105										
			22+50	27+00	450	450																			
			27+00	29+80	280	280	280							70											
	101-103	RAMP 31	20+50	34+50	1400	1400																			
			34+50	37+35	285	285								80											
	103	RAMP 31B	4+50	6+00	150	150																			
	103	W. 25 ST.	40+50	50+00	1900		1900	950					100												
	100	W. 41 ST.	44+50	51+50	700	700	700																		
	99	W. 44 ST.	44+40	49+50	510	510	510																		
	102-103	WADE AVE.	53+45	55+95			500						40	80									6	3	
TOTALS THIS SHEET					19373	17173	25217	950			1200		210	230	487								6	3	
					36546 L.F.=6.92 MI.		4.78 MI.	0.18 MI.																	

TRAFFIC CONTROL QUANTITIES, PAVEMENT MARKINGS

S-0

CUYAHOGA COUNTY	OHIO	98
CUY-90-13.41	FHWA REGION 5	156
	FEDERAL PROJECT	



LEGEND

- EXISTING SIGN
- NEW SIGN
- EXISTING SIGN REPLACED WITH NEW SIGN OF SAME KIND AT SAME LOCATION
- EXISTING POST/BEAM
- NEW POST/BEAM

NOTE:

847 PAVEMENT MARKINGS SHALL BE PLACED THROUGHOUT THE WORK LIMITS OF THIS PROJECT ALTHOUGH ONLY A REPRESENTATIVE SAMPLE MAY BE SHOWN ON THE TRAFFIC CONTROL SHEETS. SEE SHEETS 96-97 FOR QUANTITY CALCULATIONS.

CUYAHOGA COUNTY
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TRAFFIC CONTROL PLANS

CUYAHOGA COUNTY
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OHIO
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N

STA. 52+07

NORTH MARGINAL ROAD 6

SOUTH MARGINAL ROAD 7

BUCKLEY AVE.

W. 44th St
W. 41st St

RAMP 29

RAMP 30

W. 41st STREET

STA. 95+00

STA. 896+40

STA. 898+40

STA. 894+20

STA. 890+65.29 ℄ I-90 =
STA. 49+55.65 ℄ W. 41st ST.

MATCH LINE STA. 886+00

MATCH LINE STA. 901+00
SHEET 101

CUY-90-1361

CUY-90-1372

STA. 887+90

STA. 8+20

STA. 40+50

STA. 47+30

STA. 892+75

STA. 92+50

STA. 45+60

STA. 9+60

STA. 6+25

STA. 5+60

STA. 4+18

STA. 5+00

STA. 51+45

STA. 90+20

STA. 90+50

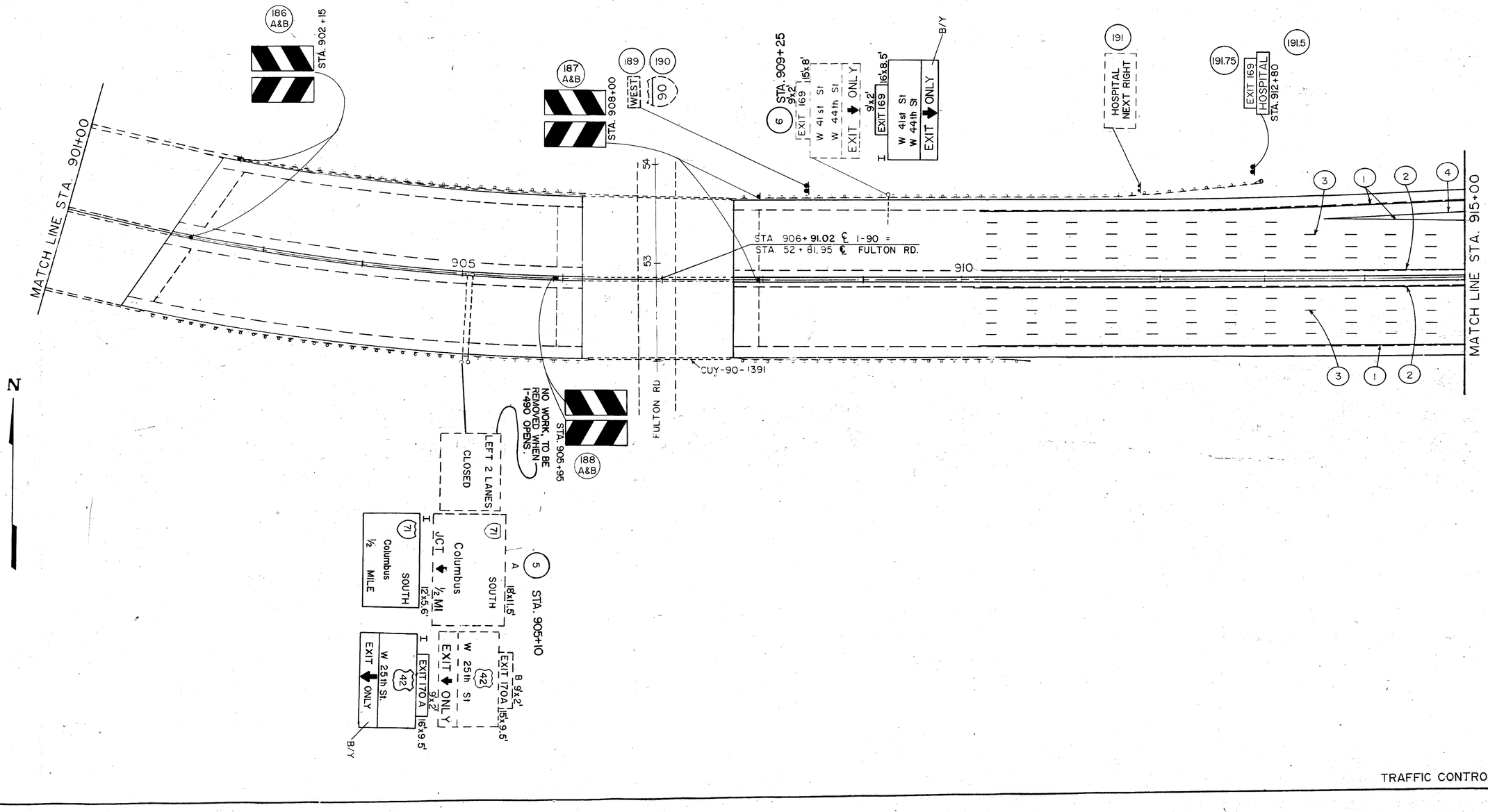
STA. 93+50

STA. 896+60

STA. 8+20

TRAFFIC CONTROL PLANS

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	101 156



TRAFFIC CONTROL PLANS

OHIO | FHWA REGION 5 | FEDERAL PROJECT

CUYAHOGA COUNTY.
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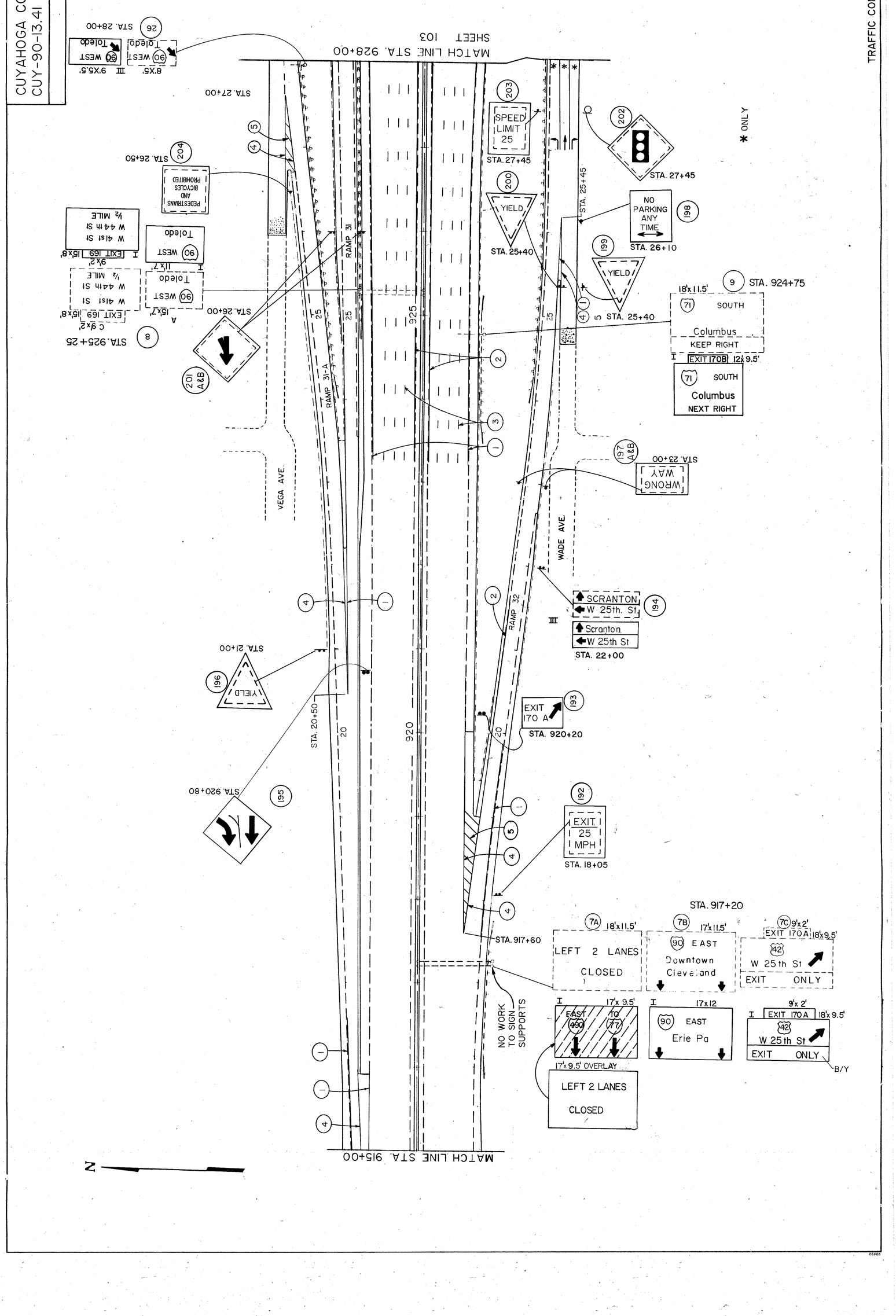
TRAFFIC CONTROL PLANS



CUYAHOGA COUNTY
CUY-90-13.41

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FHWA REGION 5
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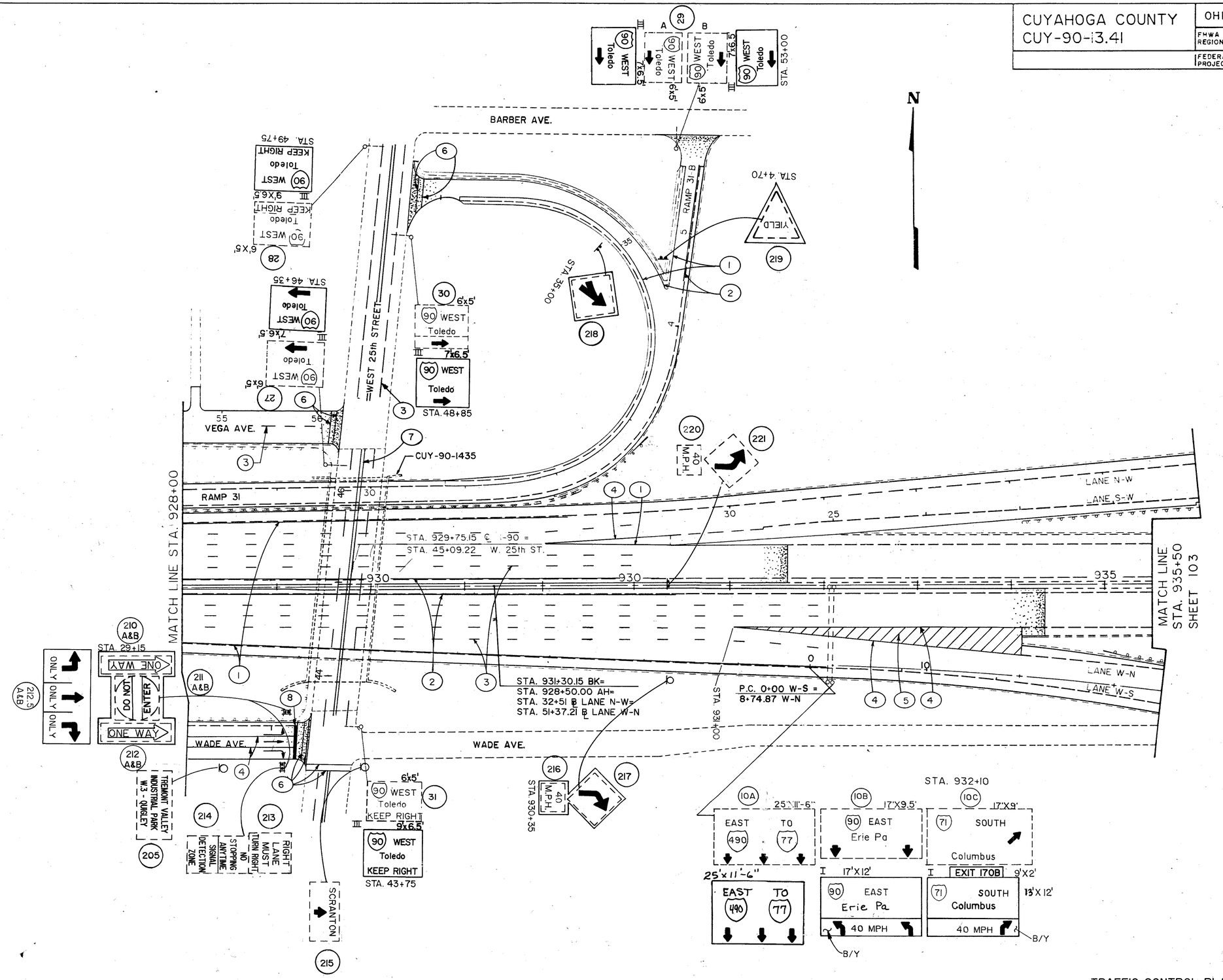

TRAFFIC CONTROL PLANS

CUYAHOGA COUNTY
CUY-90-13.41

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SHEET 105
MATCH LINE STA. 975+00

N

248
STA. 18+00

246
STA. 19+00

FLASHING ARROW

EXIT 1 MILE
Denison Ave
Jennings Rd.

NEW SIGN TO BE DONE BY OTHERS

71 SOUTH
Columbus

236

224
STA. 20+48

225
STA. 19+70

235

238
STA. 20+50

237
STA. 21+11

STA 24+20.94 ℄ LANE N-W =
STA 10+06.36 ℄ SCRANTON RD.

STA 24+50 SCRANTON RD.

LANE N-W

20

4 1

1 3 2

STA. 20+42.46 ℄ LANE S-W =
STA. 10+65.92 ℄ SCRANTON RD.

LANE S-W

15

1 2

245
STA. 25+65

244
STA. 24+80

243.5
STA. 23+65

243
STA. 22+55

LANE W-N

25

LANE E-S

℄ I-490

950

940

945

MATCH LINE
STA. 935+50

STA. 13+09.60 ℄ LANE W-N =
STA. 8+42.01 SCRANTON RD.

15

LANE W-N

2 3 1

5 4

STA. 13+20

STA. 4+33.12 ℄ LANE N-S =
STA. 8+26.59 ℄ SCRANTON RD.

222
40 M.P.H.
STA. 13+70

223

71 SOUTH
Columbus

17'x9'

NEW SIGN TO BE DONE BY OTHERS

226 227
STA. 7+30
STA. 7+70

LANE W-S

2 228 229
1 230
STA. 15+75
STA. 16+30
STA. 16+80

231
40 M.P.H.
STA. 17+75

232

233
40 M.P.H.

234 A&B

239

STA. 18+40

STA. 18+25

242
241
240

STA. 19+40
STA. 20+40
STA. 21+40

920

LANE E-S

LANE S-W

10

17-13

2
3
1

NEW SIGN TO BE DONE BY OTHERS

90 EAST
LEFT 2 LANES

71 ENDS
Downtown
KEEP RIGHT

Conv. Center
Stadium
USE Ontario
EXIT

LANE S-E

MATCH LINE STA. 10+00

MATCH LINE STA. 966+00
SEE SHEET 107

TRAFFIC CONTROL PLANS

CUYAHOGA COUNTY
CUY-90-13.41

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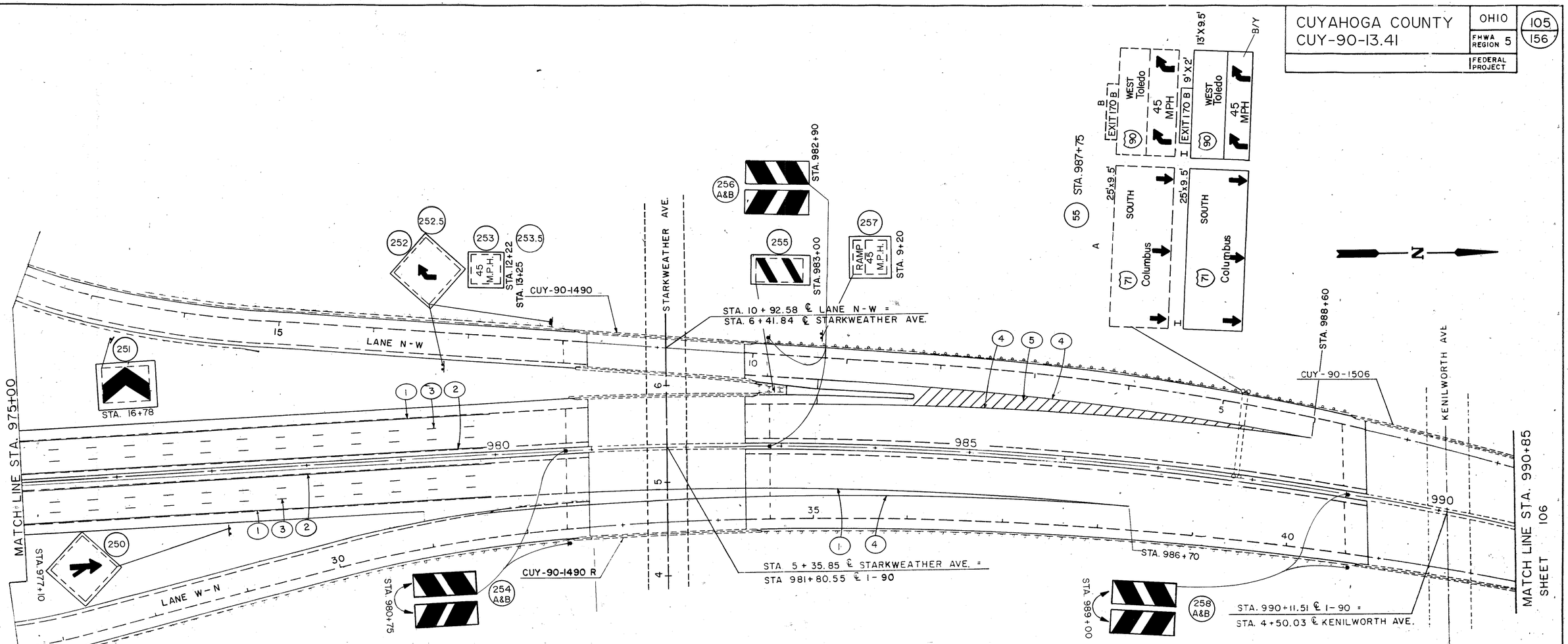
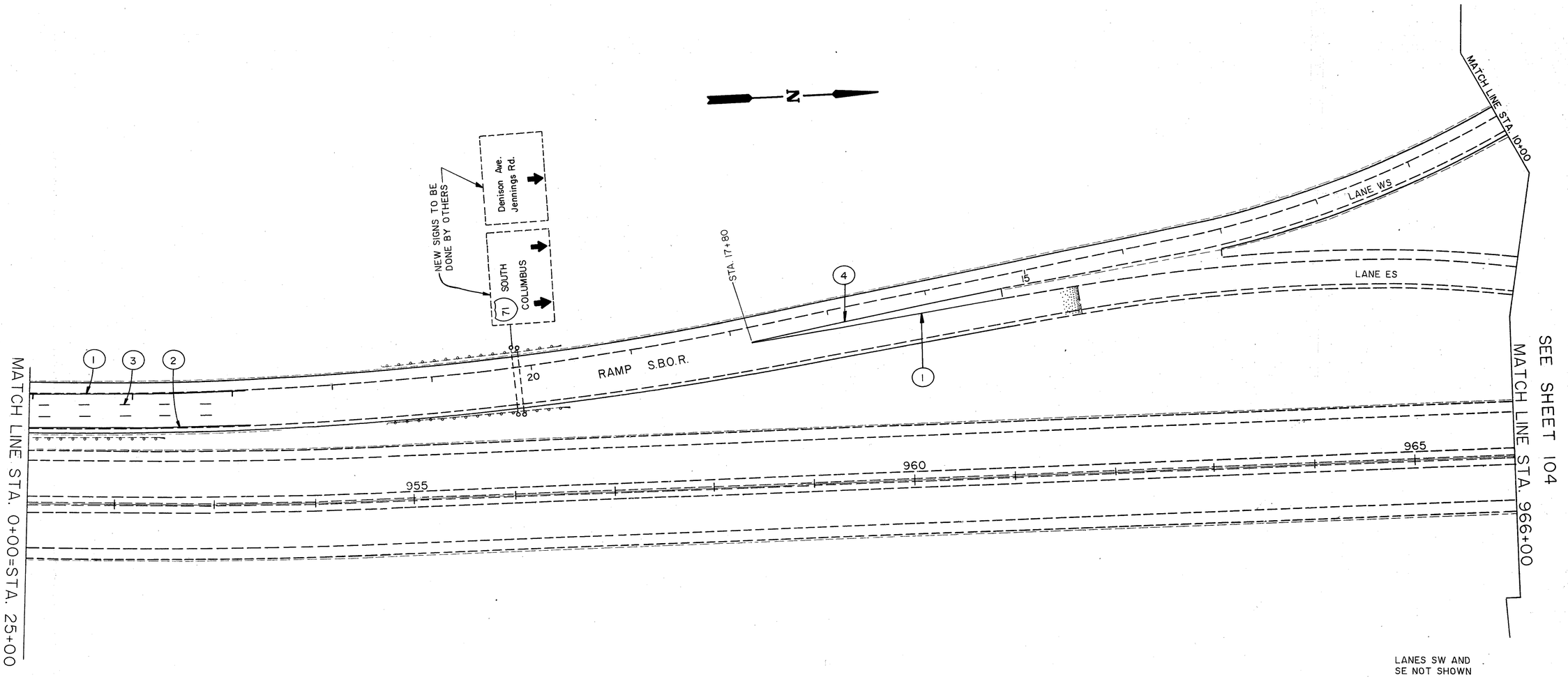


TRAFFIC CONTROL PLANS

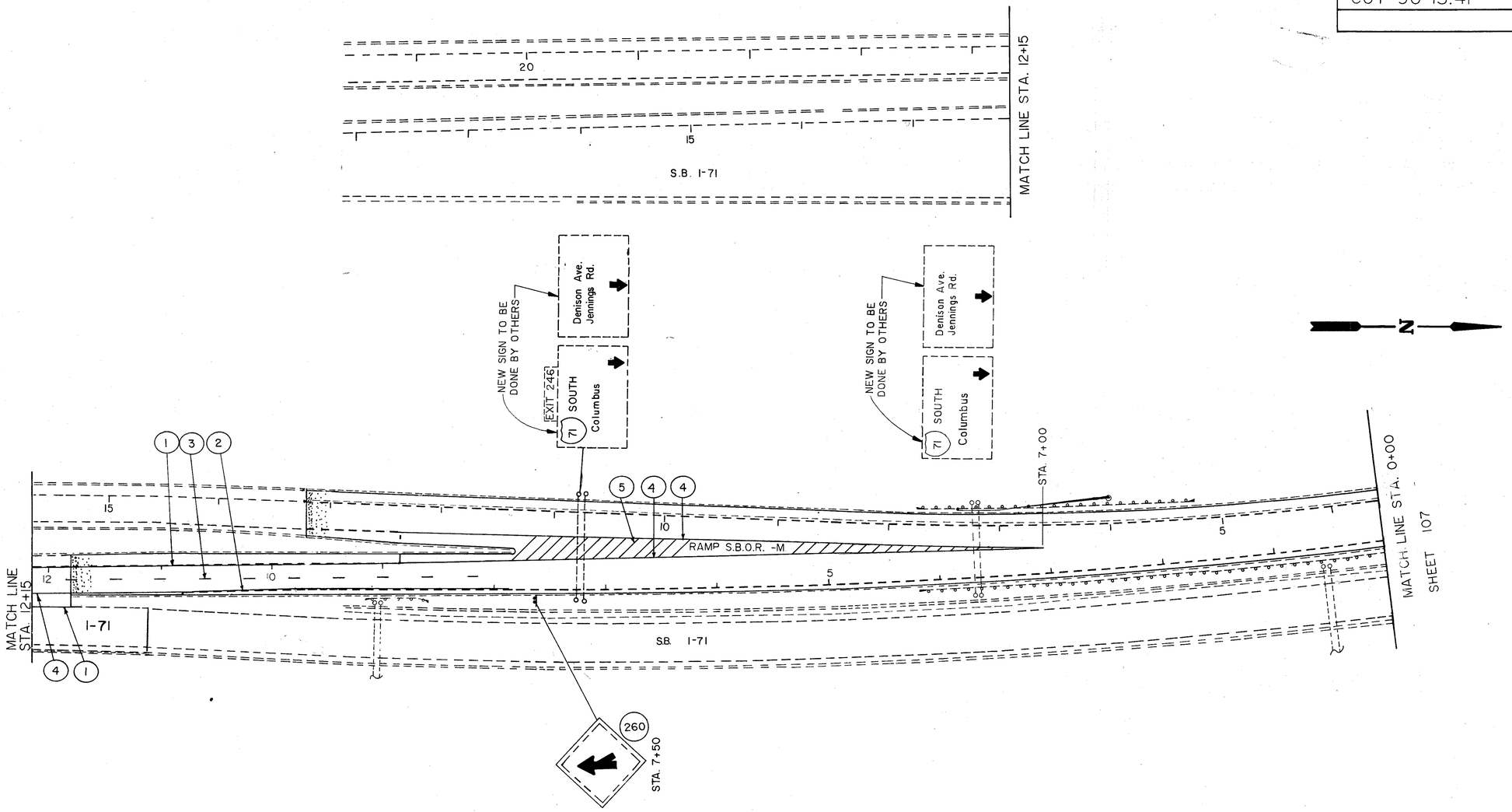
CUYAHOGA COUNTY CUY-90-13.41	OHIO	106 156
	FHWA REGION 5	
	FEDERAL PROJECT	

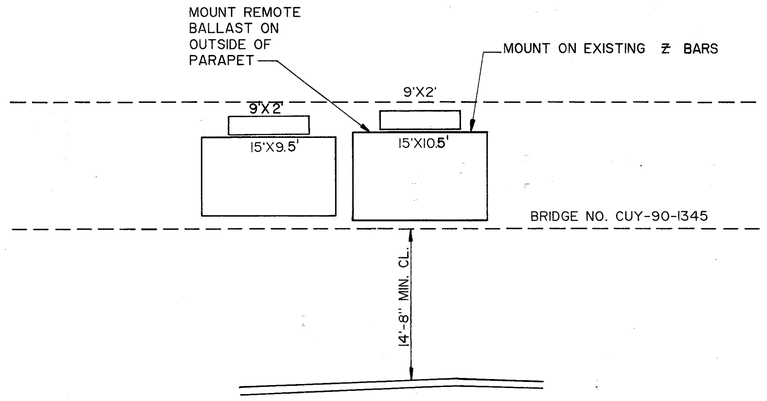
CUYAHOGA COUNTY CUY-90-13.41	OHIO	107 156
	FHWA REGION 5	
	FEDERAL PROJECT	



TRAFFIC CONTROL PLANS

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	108 156

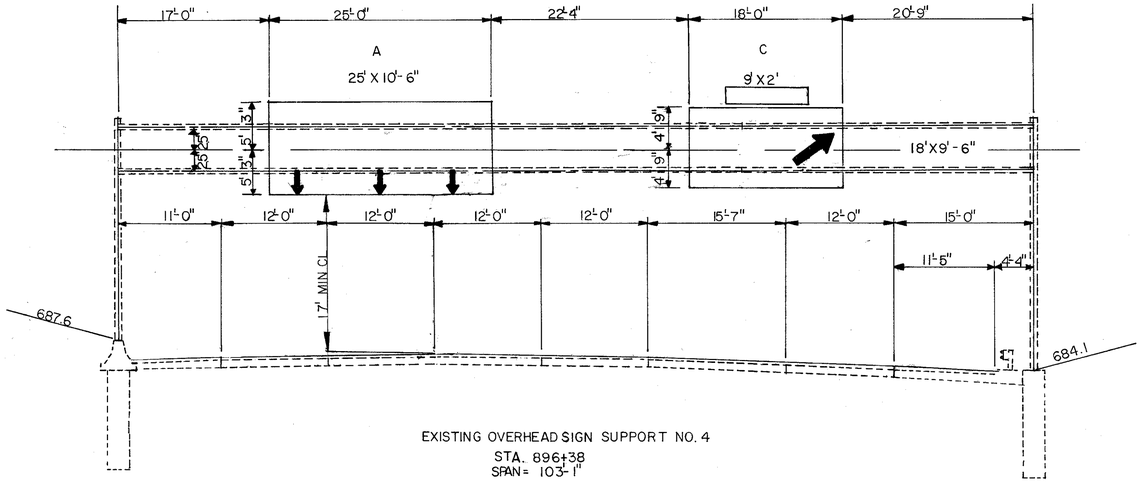




EXISTING OVERHEAD SIGN SUPPORT NO. 1

STA. 885+90

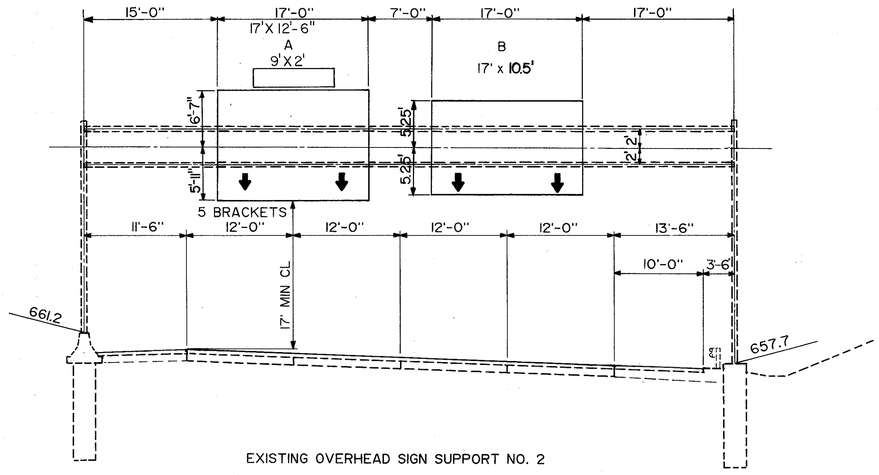
816 NO. 12.24 DESIGN 8 MOD



EXISTING OVERHEAD SIGN SUPPORT NO. 4

STA. 896+38
SPAN = 103'-1"

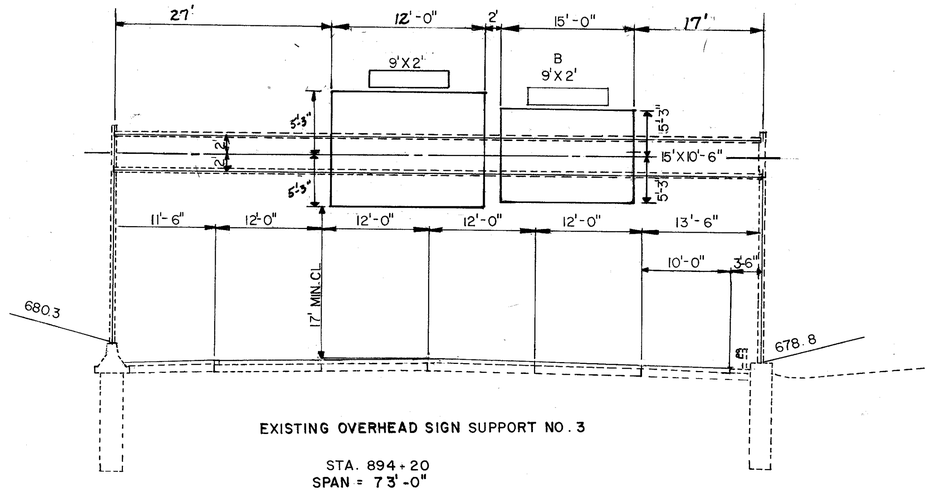
816 NO. 15.8 MOD



EXISTING OVERHEAD SIGN SUPPORT NO. 2

STA. 887+90
SPAN = 73'-0"

816 NO. 7.5 DESIGN 2 MOD

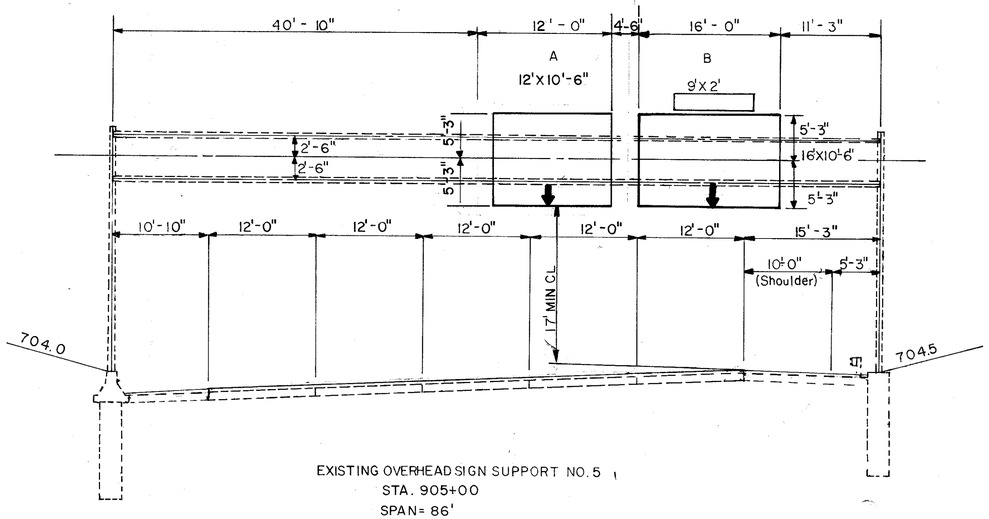


EXISTING OVERHEAD SIGN SUPPORT NO. 3

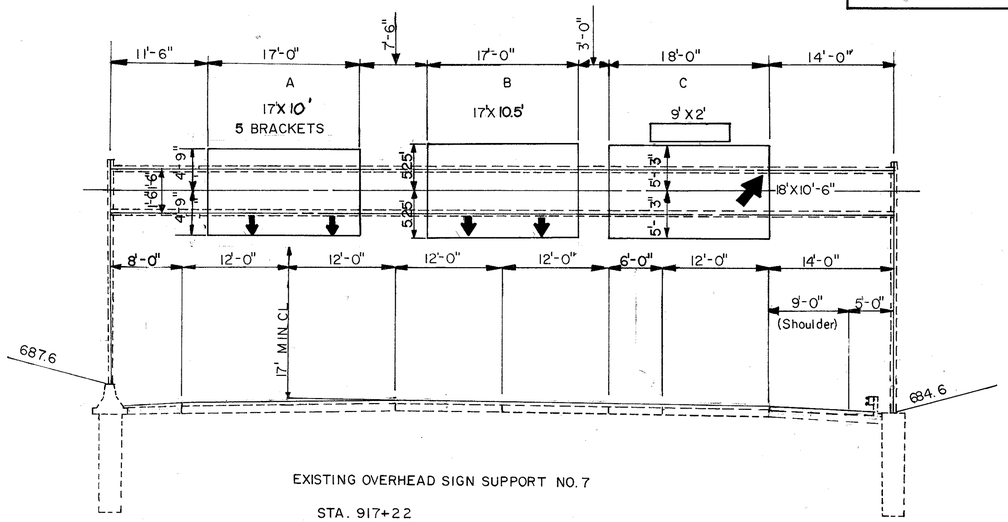
STA. 894+20
SPAN = 73'-0"

816 NO. 7.5 DESIGN 2 MOD

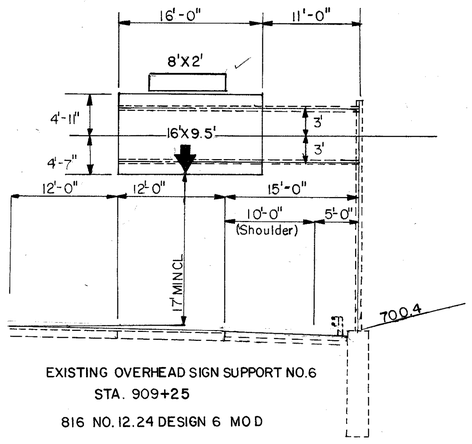
513840



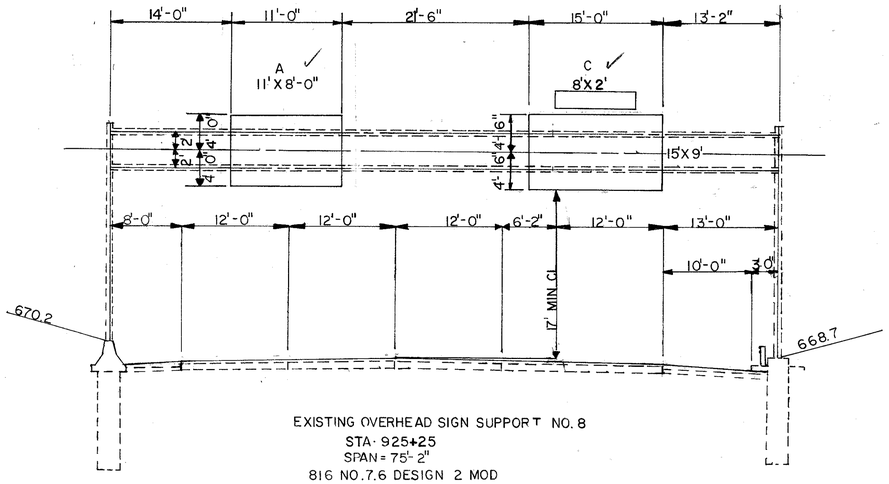
EXISTING OVERHEAD SIGN SUPPORT NO. 5
STA. 905+00
SPAN = 86'
816 NO. 7.6 DESIGN 4 MOD



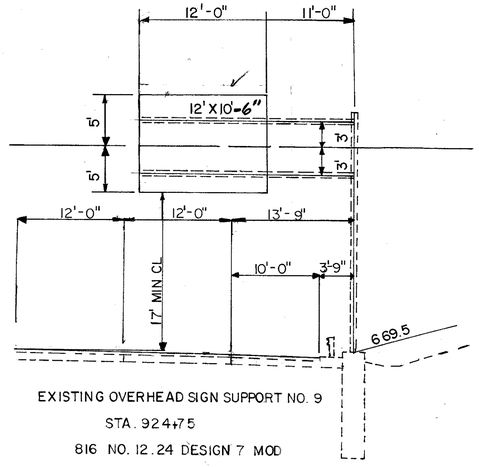
EXISTING OVERHEAD SIGN SUPPORT NO. 7
STA. 917+22
SPAN = 88'-0"
816 NO. 15.8 MOD



EXISTING OVERHEAD SIGN SUPPORT NO. 6
STA. 909+25
816 NO. 12.24 DESIGN 6 MOD

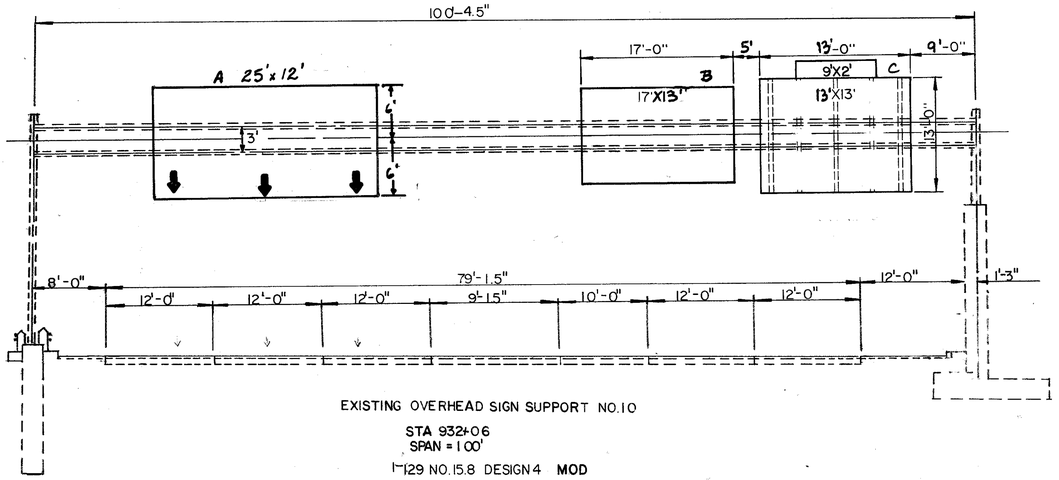


EXISTING OVERHEAD SIGN SUPPORT NO. 8
STA. 925+25
SPAN = 75'-2"
816 NO. 7.6 DESIGN 2 MOD

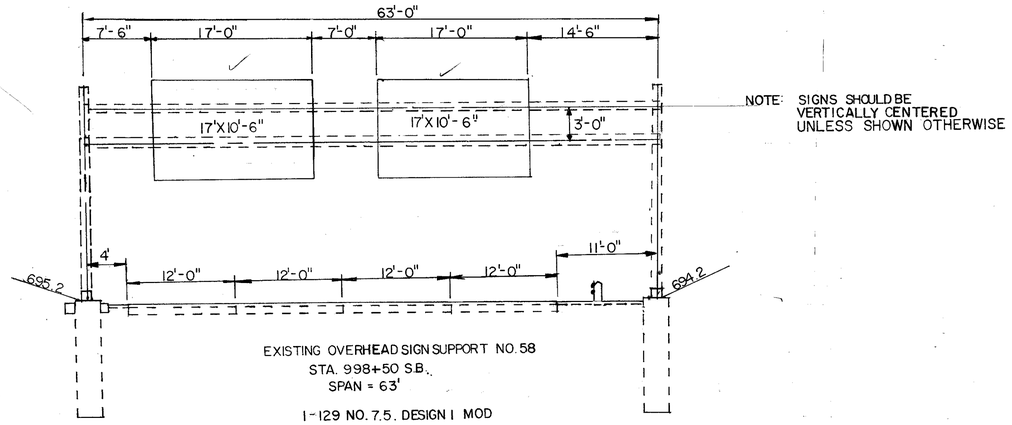


EXISTING OVERHEAD SIGN SUPPORT NO. 9
STA. 924+75
816 NO. 12.24 DESIGN 7 MOD

513840

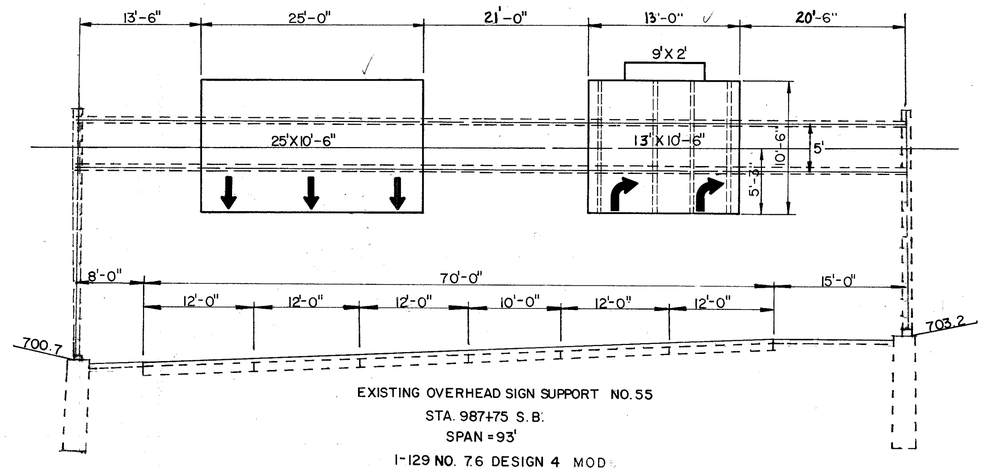


EXISTING OVERHEAD SIGN SUPPORT NO.10
STA 932+06
SPAN = 100'
1-129 NO.15.8 DESIGN 4 MOD

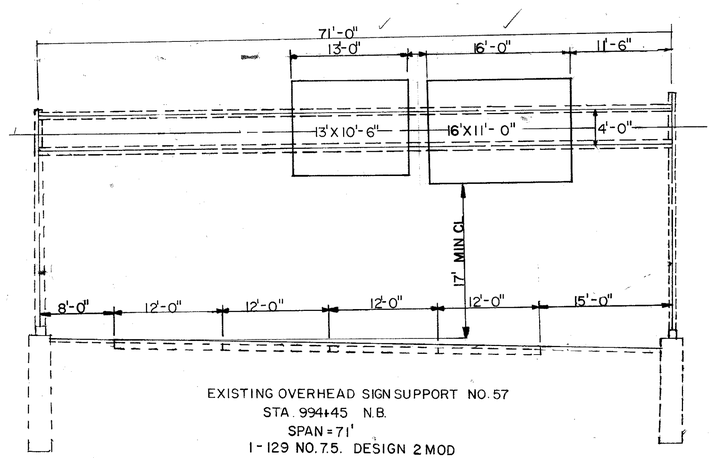


NOTE: SIGNS SHOULD BE VERTICALLY CENTERED UNLESS SHOWN OTHERWISE

EXISTING OVERHEAD SIGN SUPPORT NO. 58
STA. 998+50 S.B.
SPAN = 63'
1-129 NO. 7.5. DESIGN 1 MOD



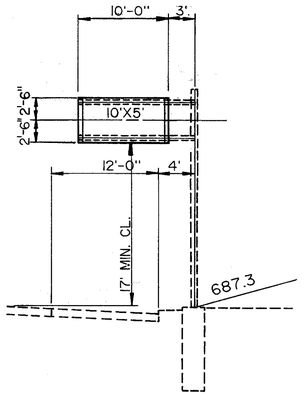
EXISTING OVERHEAD SIGN SUPPORT NO. 55
STA. 987+75 S.B.
SPAN = 93'
1-129 NO. 7.6 DESIGN 4 MOD



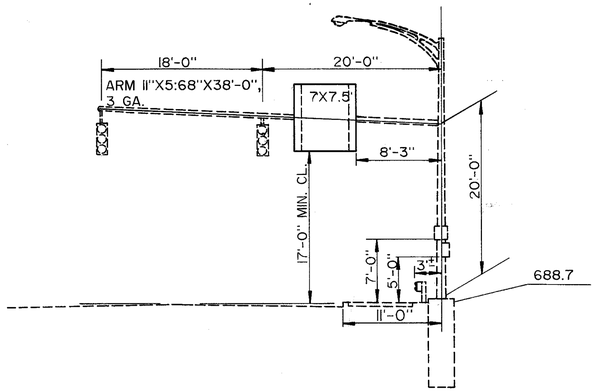
NOTE: SIGNS SHOULD BE VERTICALLY CENTERED UNLESS SHOWN OTHERWISE

EXISTING OVERHEAD SIGN SUPPORT NO. 57
STA. 994+45 N.B.
SPAN = 71'
1-129 NO. 7.5. DESIGN 2 MOD

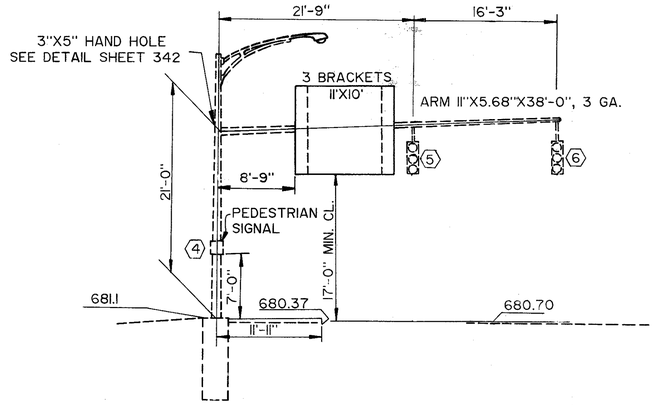
513840



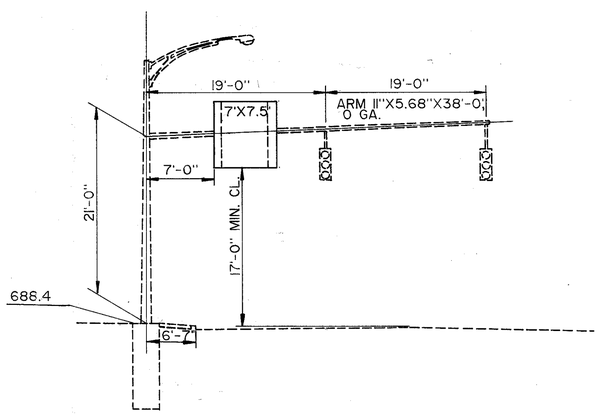
W. 44 ST. STA. 51+40
OVERHEAD SIGN NO. 20
NO. 12.24 DESIGN 3 MOD



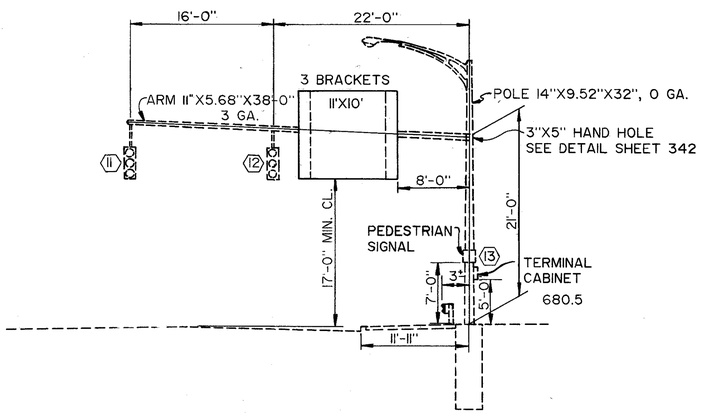
W. 44 ST. STA. 47+13
OVERHEAD SIGN NO. 21



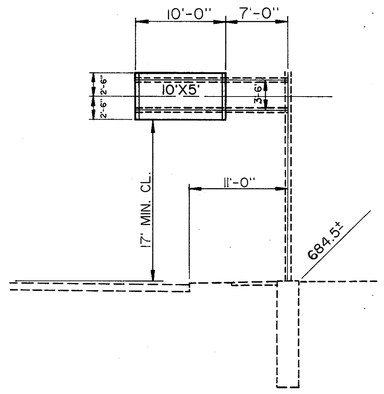
W. 44 ST. STA. 43+72, 30.75' RI
OVERHEAD SIGN NO. 22



W. 41 ST. STA. 52+07
OVERHEAD SIGN NO. 23

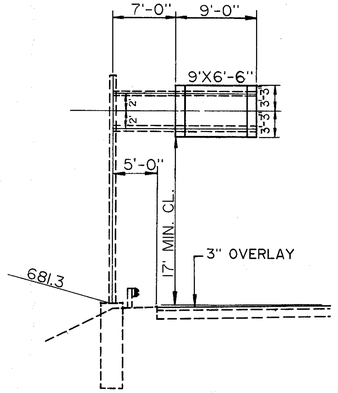


W. 41 ST. STA. 47+95
OVERHEAD SIGN NO. 24

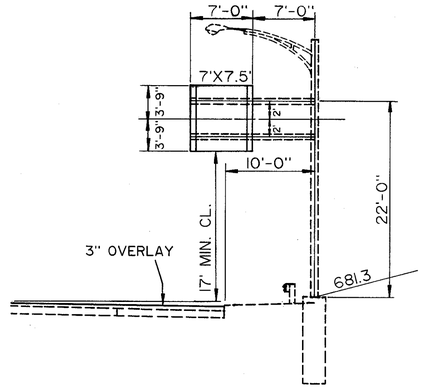


W. 41 ST. STA. 40+50
OVERHEAD SIGN NO. 25
NO. 12.24 DESIGN 3 MOD

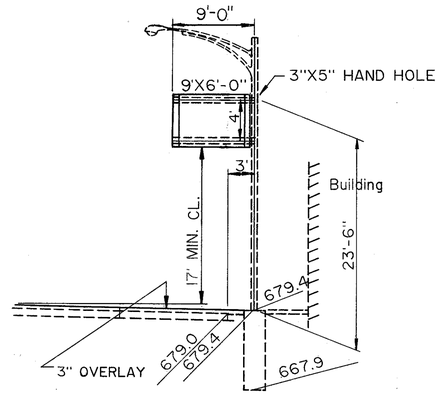
513840



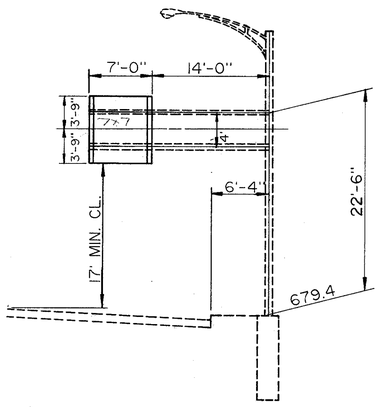
RAMP 31A STA. 28+00
OVERHEAD SIGN NO. **26**
NO. 12.24 DESIGN 3 MOD



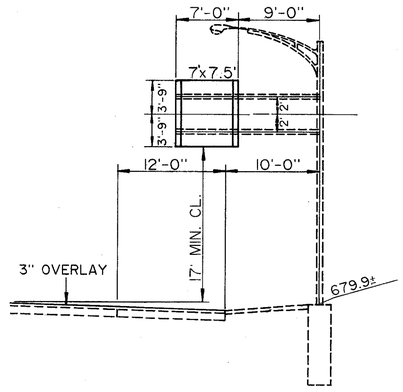
W. 25 ST. STA. 46+35
OVERHEAD SIGN NO. **27**
NO. 12.24 DESIGN 1 MOD



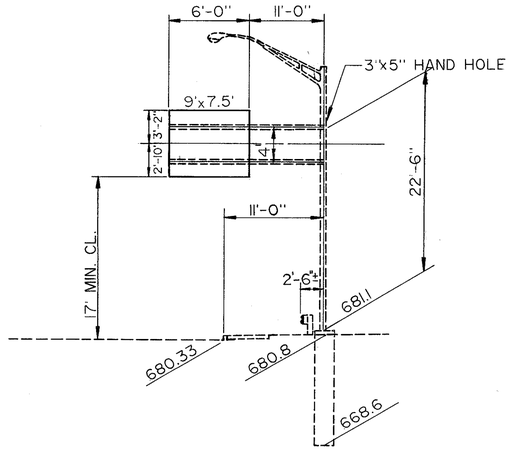
W. 25 ST. STA. 49+75
OVERHEAD SIGN NO. **28**
NO. 12.24 DESIGN 1 MOD



BARBER AVE. STA. 53+00
OVERHEAD SIGN NO. **29**
NO. 12.30 DESIGN 6 MOD



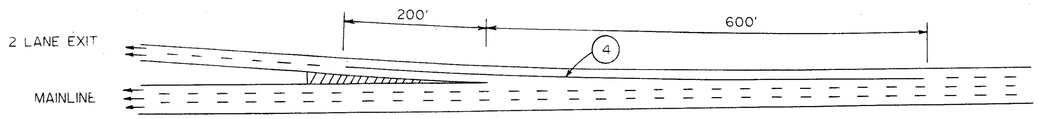
W. 25 ST. STA. 48+85
OVERHEAD SIGN NO. **30**
NO. 12.24 DESIGN 3 MOD



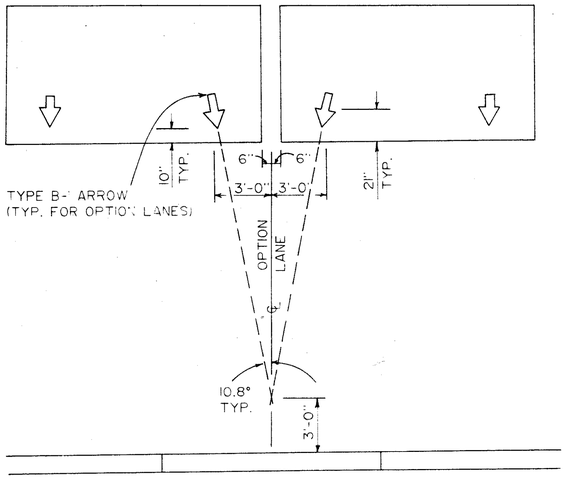
W. 25 ST. STA. 43+75
OVERHEAD SIGN NO. **31** ON SIGNAL SUPPORT SP-6
NO. 12.30 DESIGN 6 MOD

513840

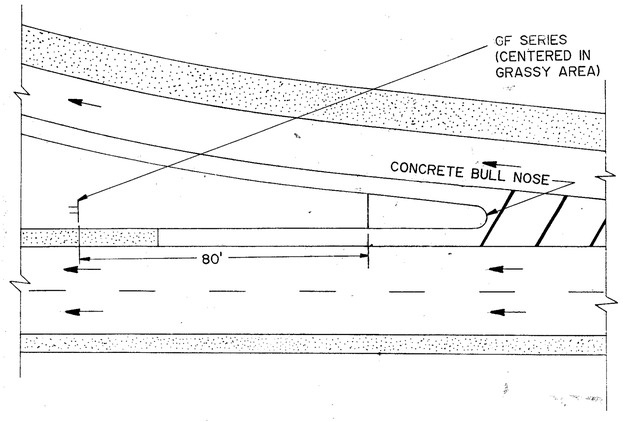
TRAFFIC CONTROL DETAILS



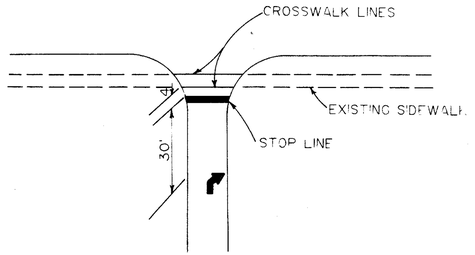
TYPICAL PLACEMENT OF ADDITIONAL CHANNELIZING LINE AT TWO LANE EXIT TERMINALS



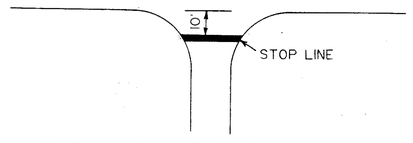
TYPICAL ARROW ORIENTATION AT OPTION LANE



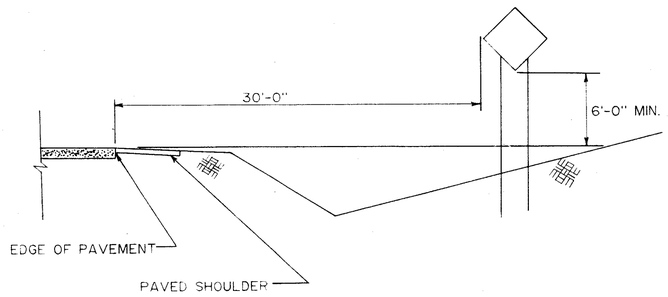
TYPICAL PLACEMENT OF GF SERIES SIGNS



TYPICAL PLACEMENT OF STOP LINES
(WITH SIDEWALKS)



TYPICAL PLACEMENT OF STOP LINES
(WITHOUT SIDEWALKS)



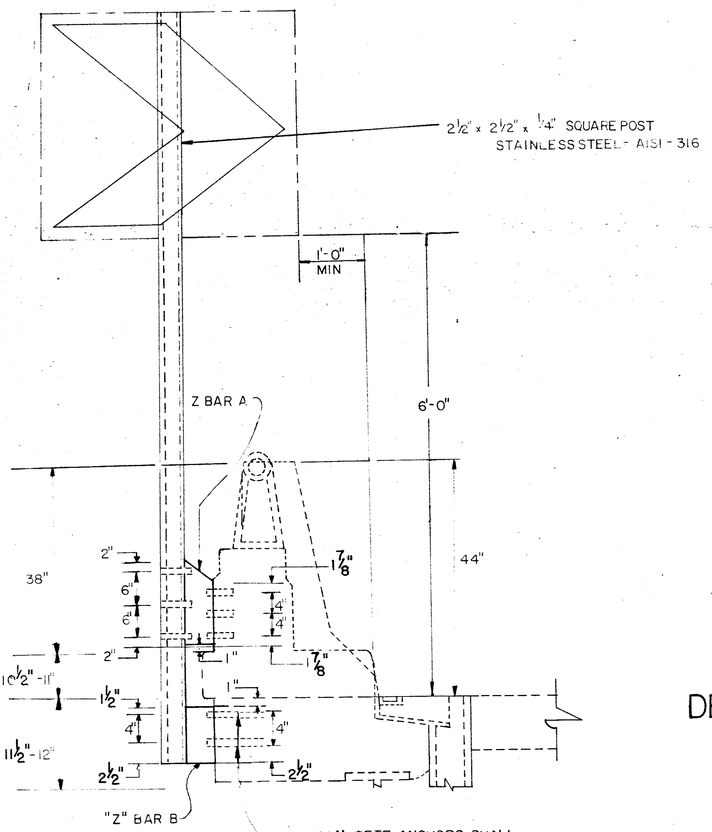
630 - FLATSHEET SIGN INSTALLATIONS

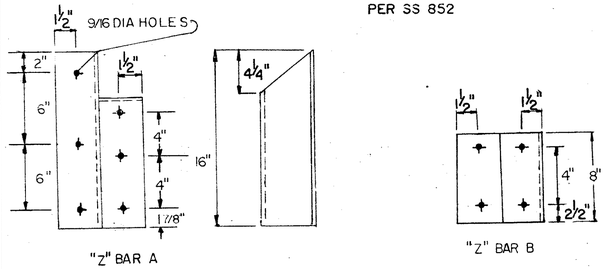
ALL FREEWAY FLATSHEET SIGN INSTALLATIONS NOT BEHIND GUARDRAIL SHALL BE OFFSET 30 FEET FROM THE EDGE OF PAVEMENT.

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

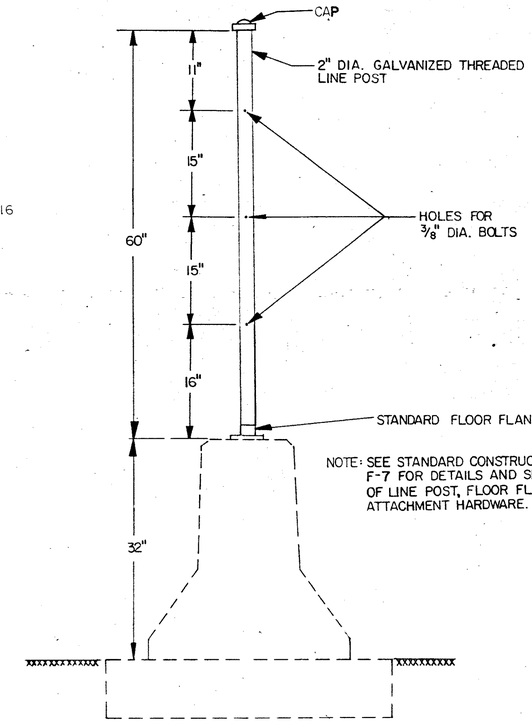
SIGNING AND BALLAST ENCLOSURE DETAILS

W33-30 CHEVRON ARROW





CHEVRON ARROW
POST CONNECTION

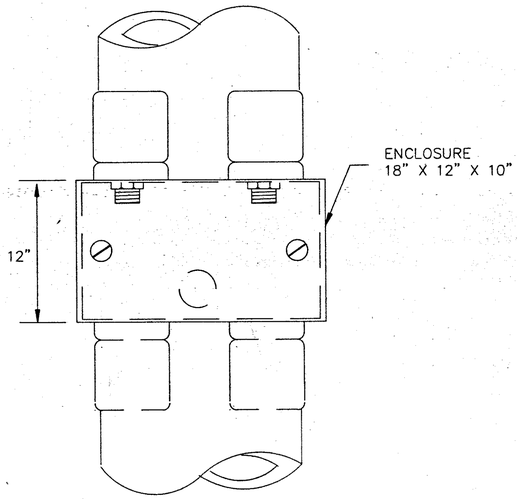


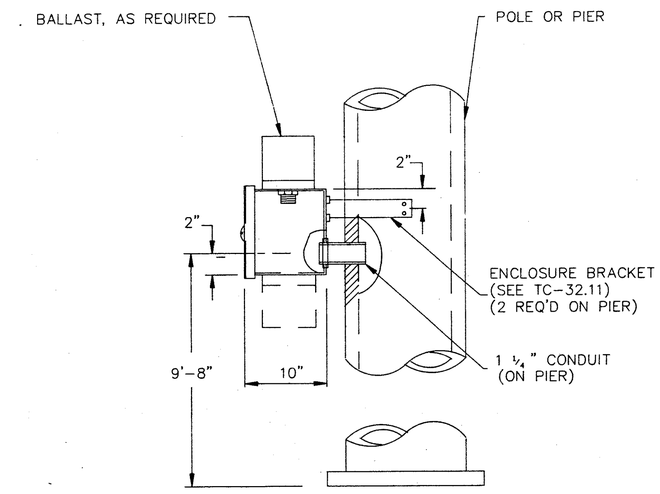
NOTE: SEE STANDARD CONSTRUCTION DRAWING F-7 FOR DETAILS AND SPECIFICATION OF LINE POST, FLOOR FLANGE, AND ATTACHMENT HARDWARE.

DETAILS OF POST FOR SIGN

ITEM 630-2" DIAMETER POST

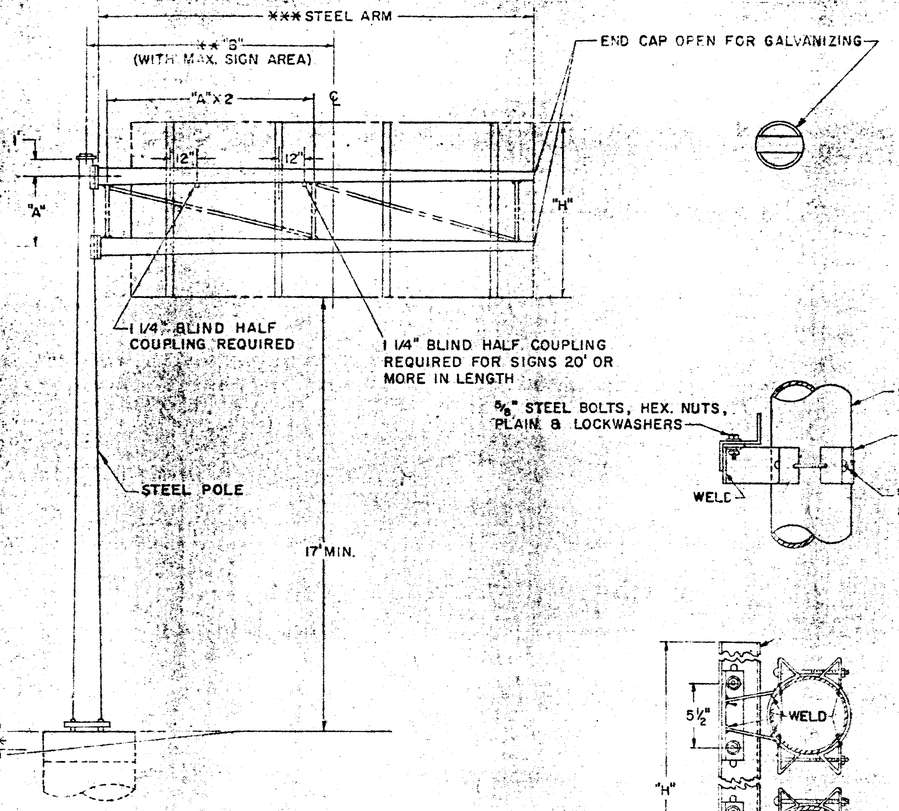
THIS ITEM SHALL INCLUDE ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO PROVIDE AND INSTALL THE MEDIAN MOUNTED SIGN POST AS DETAILED ABOVE.



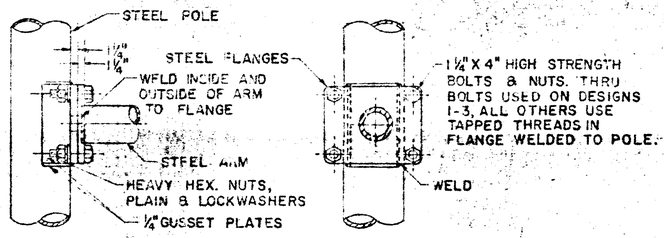


631 – BALLAST ENCLOSURE, TYPE B

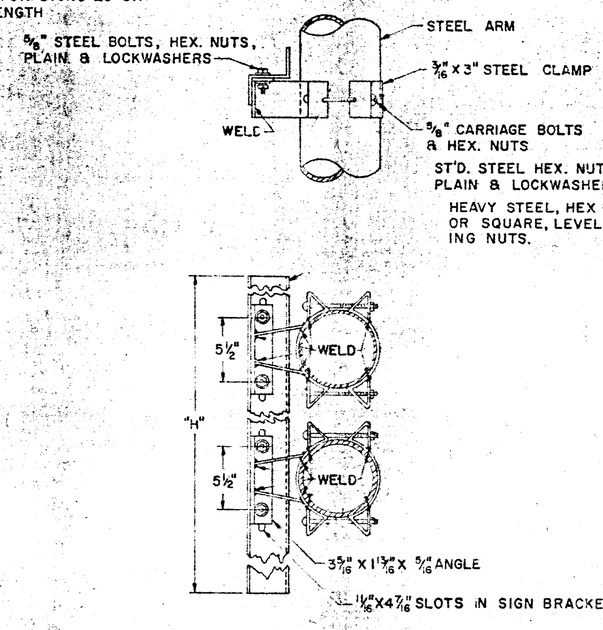
CUYAHOGA COUNTY
CUY - 90 - 13.41



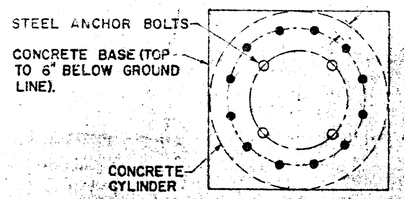
NOTE:
THE 12" DIMENSION SHOWN FOR BLIND HALF COUPLINGS MAY BE INCREASED OR DECREASED WHEN NECESSARY TO TO PREVENT INTERFERENCE WITH OTHER MEMBERS.

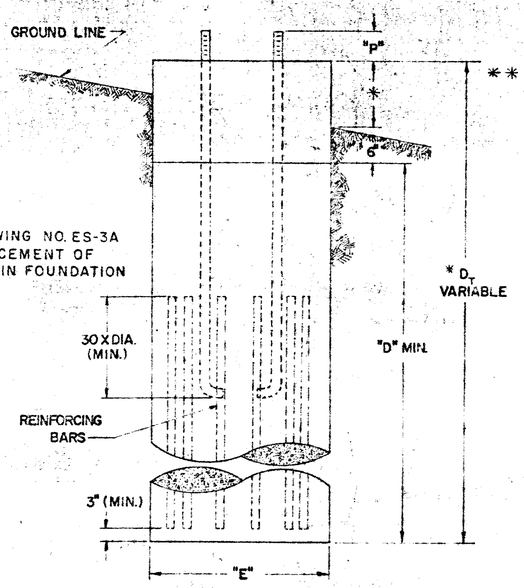


ARM ATTACHMENT



POLE BASE DETAIL





FOUNDATION DETAIL

SIGN ATTACHMENT DETAIL

DESIGN NO.	POLE SIZE	*** ARM SIZE	DIM A	DIM ** B	DIM "D" MIN.	DIM E	DIM F	DIM P	DIM "S"	DIM T	BOLT CIRCLE	ANCHOR BOLT SIZE	MAX SIGN AREA	REINF BARS SIZE	REINF BARS #REQ'D
1	3 Ga, 12" X 8.78" X 23'-0"	7Ga, 6.9" X 4.66" X 16'-0"	4'	12'	9'	3'-0"	11 5/16"	7 3/4"	17"	2"	16"	1 3/4" X 90"	80	3/4"	12
2	3 Ga, 12" X 8.78" X 23'-0"	7 Ga, 8" X 5.2" X 20'-0"	4'	16'	9'	3'-0"	11 5/16"	7 3/4"	17"	2"	16"	1 3/4" X 90"	80	3/4"	12
3	3 Ga, 15" X 11.5" X 25'-0"	7 Ga, 8.3" X 6.06" X 16'-0"	4'	12'	11'	3'-0"	15 1/2"	8 3/8"	23"	2"	22"	2" X 96"	120	1"	12
4	3 Ga, 16" X 12.5" X 25'-0"	3 Ga, 9.2" X 6.40" X 20'-0"	4'	16'	11'	3'-0"	16 5/16"	8 3/8"	24 1/2"	2"	23 1/2"	2" X 96"	120	1"	12
5	0 Ga, 18" X 14.36" X 26'-0"	7 Ga, 11" X 7.92" X 22'-0"	6'	14'	13'	3'-0"	18"	9 3/8"	26 1/2"	2 1/2"	25 1/2"	2 1/2" X 120"	180	1 1/8"	12
6	0 Ga, 18" X 14.36" X 26'-0"	7 Ga, 12.5" X 8.86" X 26'-0"	6'	18'	13'	3'-0"	18"	9 3/8"	26 1/2"	2 1/2"	25 1/2"	2 1/2" X 120"	180	1 1/8"	12
7	2 PLY 7 Ga, 18" X 14.36" X 26'-0"	7 Ga, 12.5" X 9.14" X 24'-0"	6'	14'	15'	3'-0"	18"	9 3/4"	26 1/2"	2 1/2"	25 1/2"	2 1/2" X 144"	240	1 1/4"	12
8	2 PLY 1/4", 18" X 14.36" X 26'-0"	3 Ga, 12.5" X 8.58" X 26'-0"	6'	18'	15'	3'-0"	18"	11 1/4"	26 1/2"	3"	25 1/2"	3" X 144"	240	1 1/4"	12

NOTES

FABRICATION - ALL PORTIONS OF THE SIGN SUPPORT, INCLUDING SIGN ATTACHMENTS, SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF A.S.T.M. DESIGNATIONS A-123 AND A-153. THE CONDUIT SHALL BE GALVANIZED IN ACCORDANCE WITH SEC. 625.13 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS FOR PAYMENT.

* FOUNDATION - THE TOP ELEVATION OF FOUNDATIONS SHALL BE VARIED SO AS TO MAINTAIN A MINIMUM CLEARANCE OF 17' BETWEEN THE BOTTOM OF THE SIGN AND THE HIGHWAY CROWN.

** ERECTION - VALUES OF "B" MAY BE EXCEEDED PROVIDED THE PRODUCT OF ACTUAL SIGN AREA TIMES THE DISTANCE FROM ℄ OF POLE TO ℄ OF SIGN DOES NOT EXCEED THE MAX. SIGN AREA TIMES "B".

*** ARMS 20' LONG OR LONGER ARE TO BE TRUSS TYPE WITH 3" X 3" X 3/8" ANGLES WELDED TO GUSSET PLATES.

MATERIAL - STEEL POLE BASES, FLANGES, AND END CAPS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 30 GRADE B. HIGH STRENGTH STEEL BOLTS SHALL CONFORM TO ASTM SPECIFICATION A 193 GRADE B7. AFTER FABRICATION TAPERED POLES AND ARMS SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

SOILS - THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY). FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL - REINFORCING STEEL AS SHOWN IN TABLE SHALL BE INSTALLED WHEN "D" EXCEEDS THE ANCHOR BOLT LENGTH BY MORE THAN 3 FT. THE COST AND PLACEMENT OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

DESIGN

THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

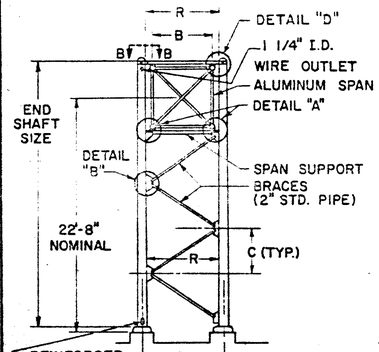
OVERHEAD SIGN SUPPORT	816 No. 12.24	DATE 4-18-66, 4-18-67

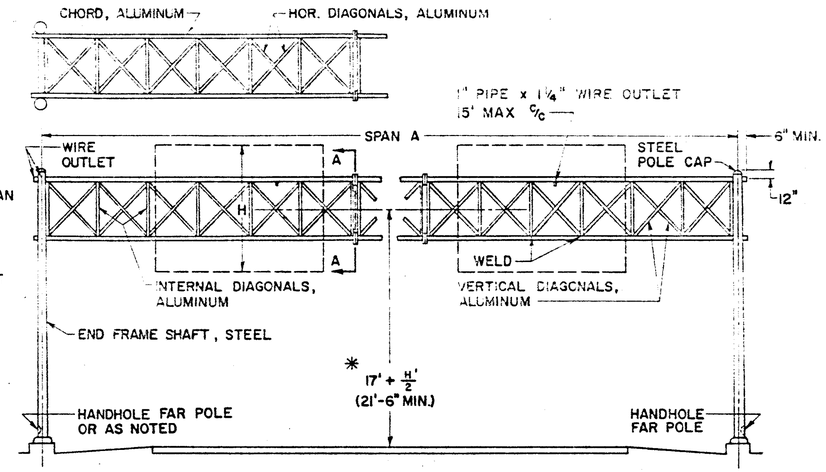
APPROVED Robert E. Lamer
ENGINEER OF TRAFFIC

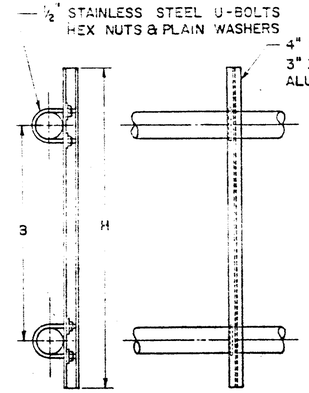
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

117/156

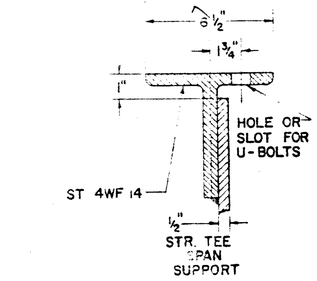
CUYAHOGA COUNTY
CUY - 90 -13.41







SIGN BRACKET



SECTION D-D

NOTES

MATERIALS

THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL.

SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 816 UNLESS OTHERWISE NOTED.

STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.

AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

FABRICATION

THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SEC. 711.02.

MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

ERECTION

USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD 1/4" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

PAYMENT

PAYMENT FOR THE GALVANIZED CONDUIT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

SOILS

THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY).

FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL

COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

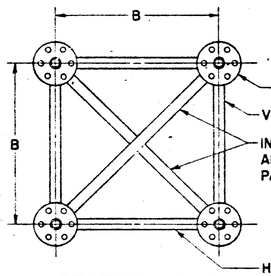
BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR DIGITS ARE USED, INDICATE THE BAR SIZE NUMBER.

*FOUNDATION ELEVATION

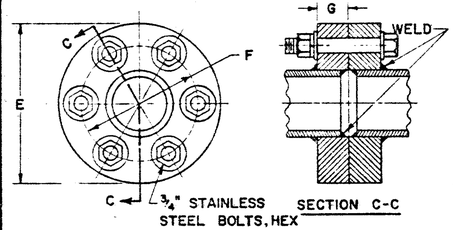
ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17' CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF THE PAVEMENT AND SHOULDERS.

DESIGN

THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

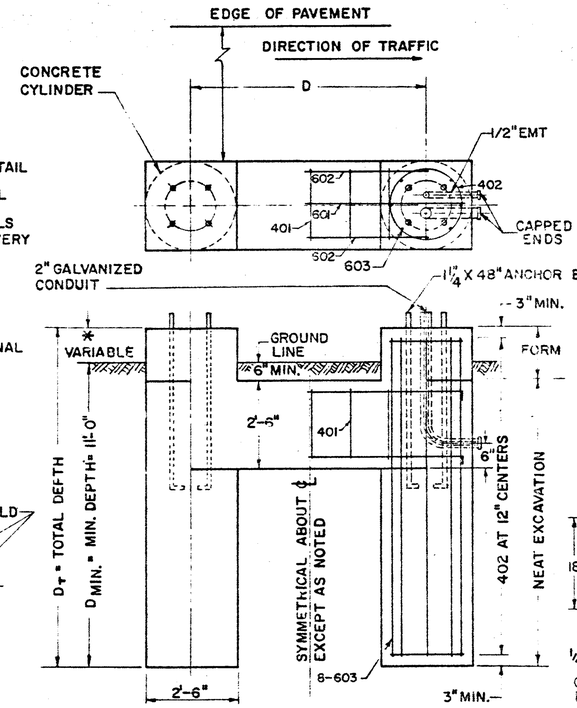


SECTION A-A



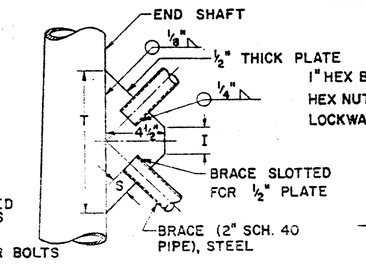
CAST FLANGE, B-26 ALLOY SG 70A-T7 (356-T7)

FLANGE DETAIL

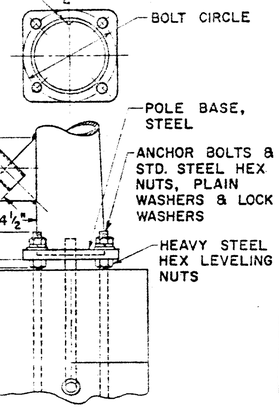


FOUNDATION DETAIL

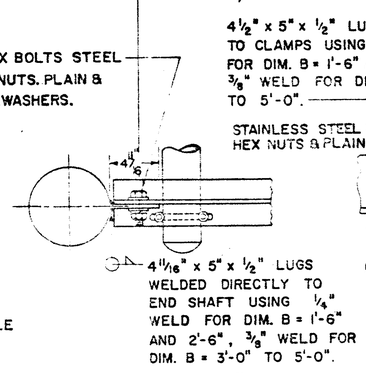
(RIGHT HAND SHOWN—LEFT HAND OPPOSITE)



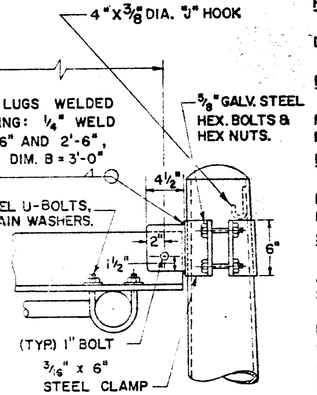
DETAIL "B"



POLE BASE DETAIL

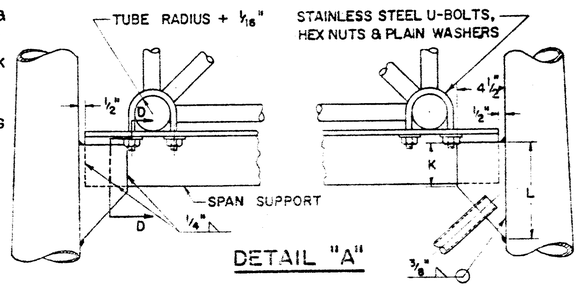


VIEW B-B



DETAIL "D"

UPPER SPAN SUPPORT (ALTERNATE METHODS)

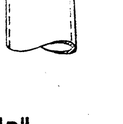


DETAIL "A"

LOWER SPAN SUPPORT

DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U BOLTS	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL
1.	50' thru 65'	3'-0"	4'-11 3/4"	4'-5"	9 1/4"	8"X4.5 X25'-0",3GA	5'-10 3/16"	7 7/16"	1 3/8"	3 1/2"	4 3/4"	8"	12"	6 5/8"	3'-9"	1 1/2"	10"	5/8"	3'-3 5/8"	11"	Split Tee 3'-8"	4 3/4" X .188"	2" X .188"	1.660"X .140"
2.	70' thru 75'	4'-0"	4'-10 1/4"	5'-7"	9 1/4"	8"X6.22X 25'-6",3GA	6'-7 1/8"	7 7/16"	1 3/8"	5/8"	4 3/4"	7 3/4"	12"	6 1/4"	4'-11"	1 1/2"	9 1/2"	5/8"	4'-5 5/8"	11"	Split Tee 4'-10"	4 3/4" X .188"	2' X .188"	1.900"X .145"
3.	76' thru 80'	4'-0"	4'-10 1/4"	5'-7"	11"	8"X 6.22X25'-6",3GA	6'-7 1/8"	8 1/2"	1 1/2"	5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-11"	1 1/2"	9 1/2"	5/8"	4'-5 5/8"	11"	Split Tee 4'-10"	5 1/2" X .250	2 1/2" X .188"	1.900"X .145"
4.	81' thru 110'	5'-0"	4'-6 1/2"	6'-7"	11"	8"X6.18X26'-0",3GA	7'-3 1/4"	8 1/2"	1 1/2"	—	3 1/2"	7 3/4"	12"	7 1/4"	5'-11"	1 3/4"	11 1/4"	3/4"	5'-5 5/8"	11'	Split Tee 5'-10"	5 1/2" X .250	2 1/2" X .188	2 1/2" X .186

REINFORCEMENT SCHEDULE			
MARK	NO.	LENGTH	TYPE
401	12"C/C	8'-6"	102
402	12"C/C	7"-6"	103
601	4	D+4'-0"	101
602	8	D+2'-0"	101
603	32	D_T - 6"	STR.



600 SQ. FT. SIGN AREA

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORTS

816 No.7.6

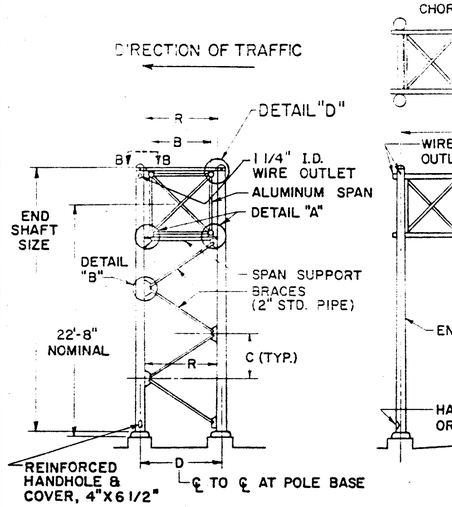
DATE 5-6 64, 5-5-64, 6-20-68

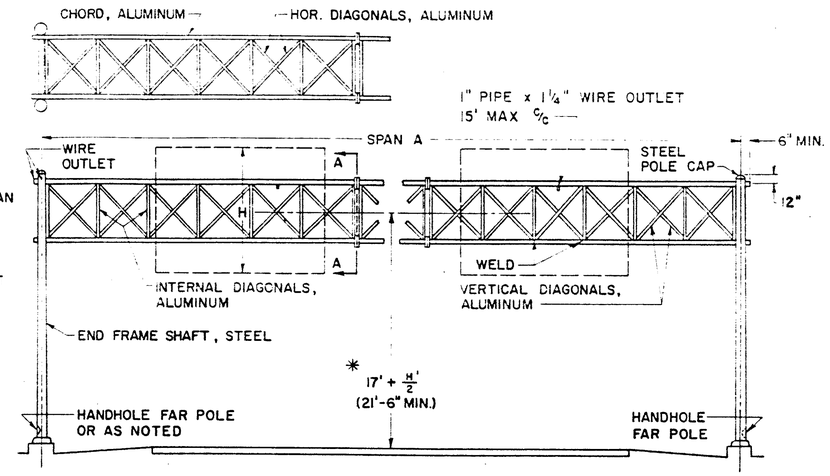
APPROVED _____ ENGINEER OF TRAFFIC

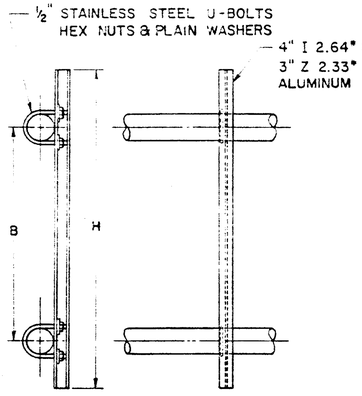
OVERHEAD SIGN SUPPORT. 816 NO.7.6

FED. RD. DIVISION	STATE	PROJECT		118
2	OHIO			156

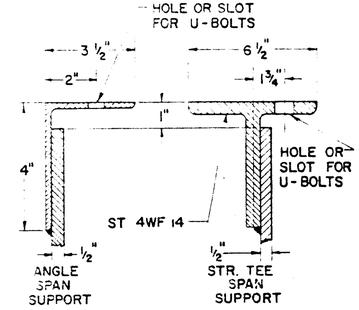
CUYAHOGA COUNTY
CUY - 90 -13.41







SIGN BRACKET



SECTION D-D

NOTES

MATERIALS

THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL.

SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 816 UNLESS OTHERWISE NOTED.

STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.

AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

FABRICATION

THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SEC. 711.02

MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

ERECTION

USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD 1/4" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

PAYMENT

PAYMENT FOR THE GALVANIZED CONDUIT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

SOILS

THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY).

FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND 60% IN SILTY CLAY, 100% IN SOFT CLAY AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL

COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

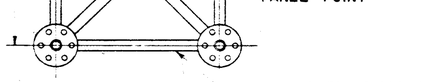
BAR SIZE IS INDICATED IN THE BAR MARK THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED IN THE BAR SIZE NUMBER

*FOUNDATION ELEVATION

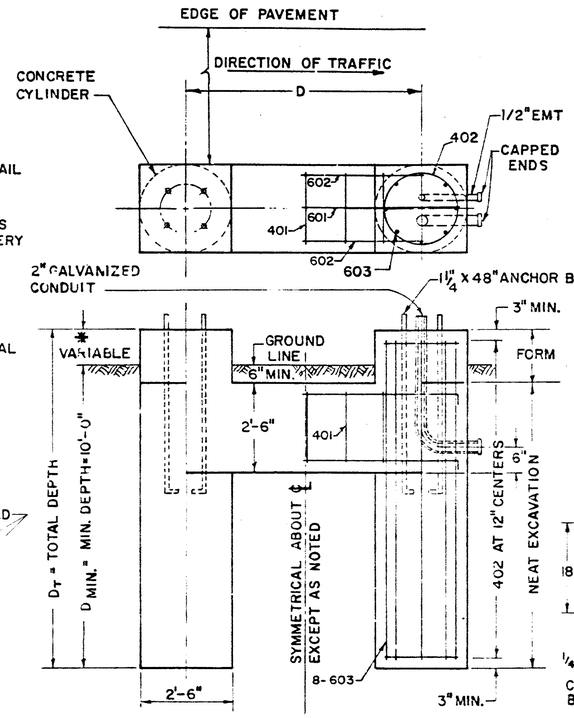
ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17' CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF PAVEMENT AND SHOULDERS.

DESIGN

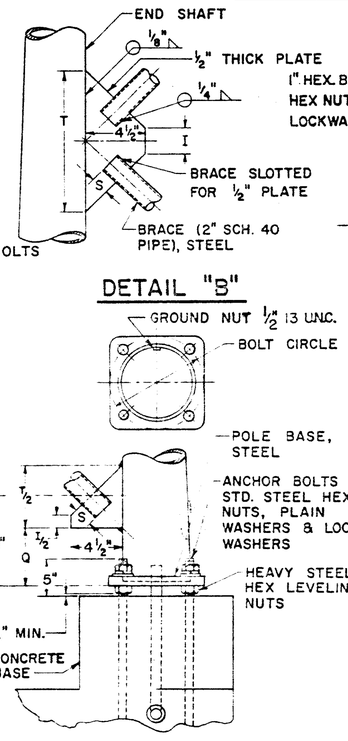
THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.



SECTION A-A

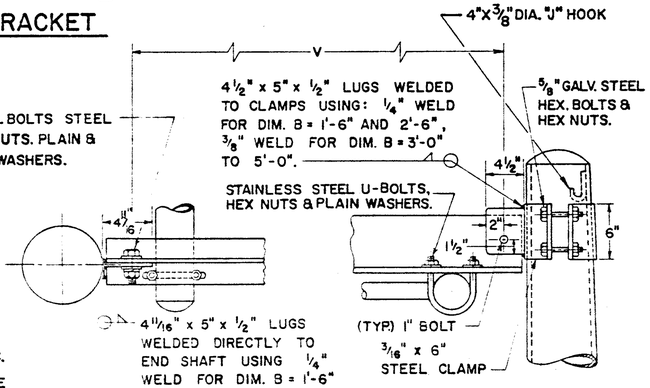


FOUNDATION DETAIL
(RIGHT HAND SHOWN — LEFT HAND OPPOSITE)



DETAIL "B"

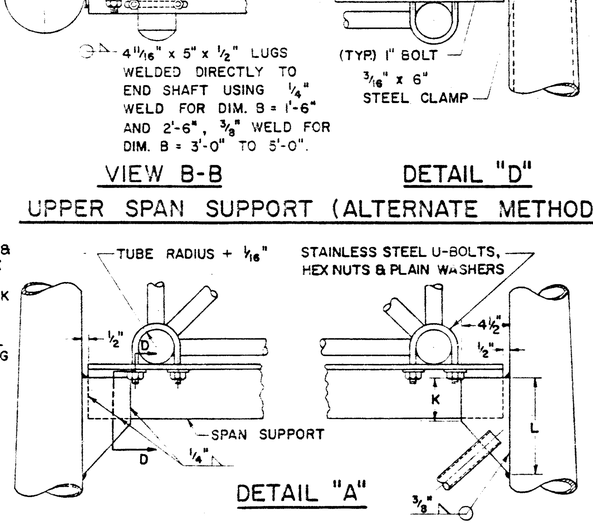
POLE BASE DETAIL



VIEW B-B

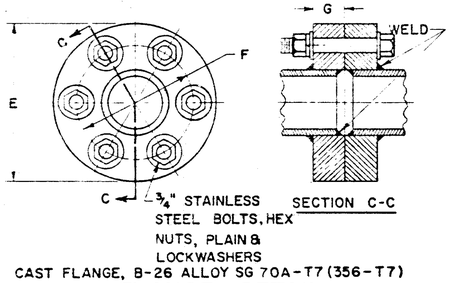
DETAIL "D"

UPPER SPAN SUPPORT (ALTERNATE METHODS)



DETAIL "A"

LOWER SPAN SUPPORT



CAST FLANGE, B-26 ALLOY SG 70A-T7 (356-T7)

FLANGE DETAIL

DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U BOLTS	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL
1	50' THRU 70'	3'-0"	4'-1 3/4"	4'-5"	9 1/4"	8"X4.5"X 25'-0" 36A	5'-10 3/16"	7 7/16"	1 3/8"	3 1/2"	4 3/4"	8"	12"	6 5/8"	3'-9"	1 1/2"	10"	5/8"	2'-3 5/8"	11"	SPLIT TEE 3'-8"	4 3/4"X .168"	1.900"X .145"	.660"X .140"
2	71' THRU 80'	4'-0"	4'-10 1/4"	5'-7"	9 1/4"	8"X6.22"X25'-6" 36A	6'-7 1/8"	7 7/16"	1 3/8"	5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-11"	1 1/2"	9 1/2"	5/8"	4'-5 5/8"	11"	SPLIT TEE 4'-10"	4 3/4"X .188"	2" X .188"	1.900"X .145"
3	81' THRU 86'	4'-0"	4'-10 1/4"	5'-7"	11"	8"X8.22"X25'-6" 36A	6'-7 1/8"	8 1/2"	1 1/2"	5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-11"	1 1/2"	9 1/2"	5/8"	4'-5 5/8"	11"	SPLIT TEE 4'-10"	5 1/2"X .250"	2" X .188"	1.900"X .145"
4	86' THRU 110'	5'-0"	4'-8 1/2"	6'-7"	11"	8"X6.18"X26'-0" 36A	7'-1/4"	8 1/2"	1 1/2"	—	3 1/2"	7 3/4"	12"	7 1/2"	5'-11"	1 3/4"	11 1/2"	3/4"	5'-5 5/8"	11"	SPLIT TEE 5'-10"	5 1/2"X .250"	2 1/2"X .188"	2 1/2"X .188"

REINFORCEMENT SCHEDULE			
MARK	NO.	LENGTH	TYPE
401	12"C/C	9'-6"	102
402	12"C/C	7'-6"	103
601	4	D+4'-0"	101
602	8	D+2'-0"	101
603	32	D1-6"	STR.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORTS | 816 No.7.5

DATE
5-2-62
7-25-62
4-29-64
6-20-66

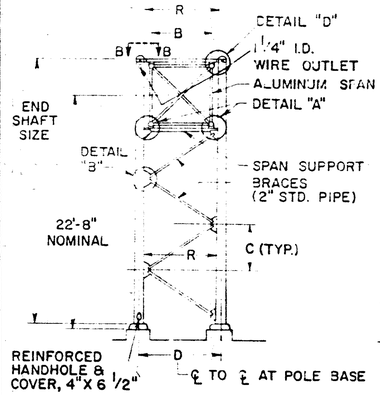
APPROVED Robert P. Conner
ENGINEER OF TRAFFIC

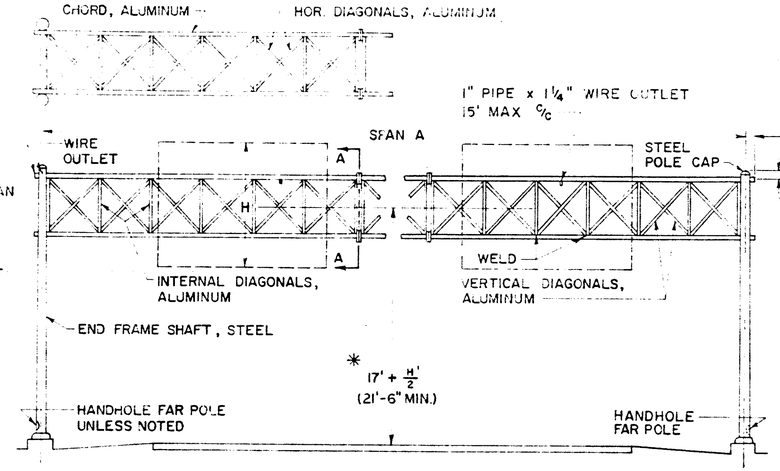
500 SQ. FT. SIGN AREA OVERHEAD SIGN SUPPORT, 816 NO. 7.5

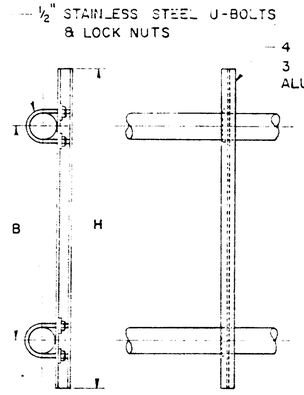
FED. RD. DESIGN	STATE	PROJECT	
2	OHIO		

119
156

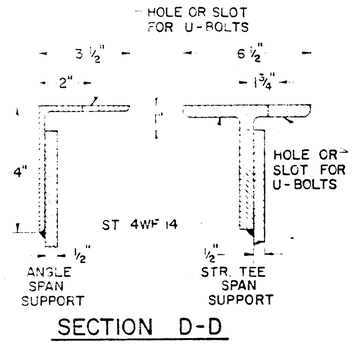
CUYAHOGA COUNTY
CUY - 90 -13.41







SIGN BRACKET



SECTION D-D

NOTES

MATERIALS

THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL.

SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 816 UNLESS OTHERWISE NOTED.

STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.

AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

FABRICATION

THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SEC. 711.02.

MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

ERECTION

USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD ¼" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

PAYMENT

PAYMENT FOR THE GALVANIZED CONDUIT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

SOILS

THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY).

FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL

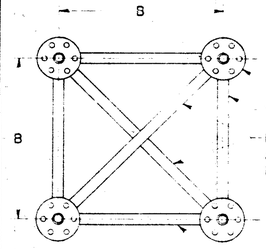
COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS. BAR SIZE IS INDICATED IN THE BAR MARK THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER

*FOUNDATION ELEVATION

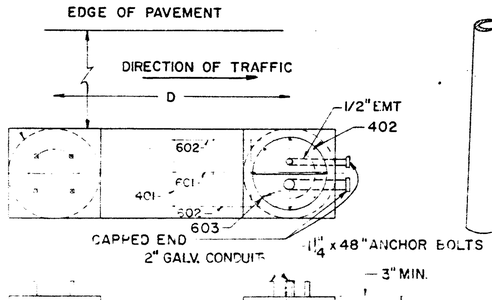
ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17' CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF THE PAVEMENT AND SHOULDERS.

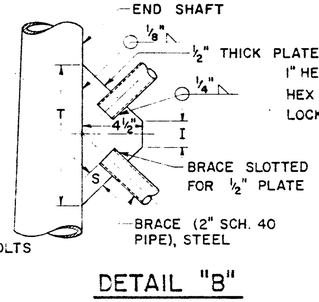
DESIGN

THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

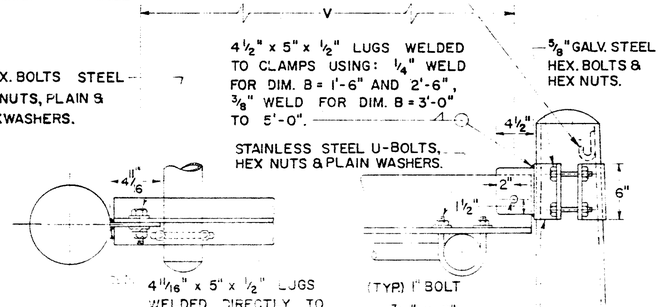


SECTION A-A



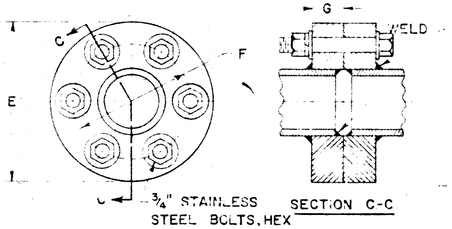


DETAIL "B"



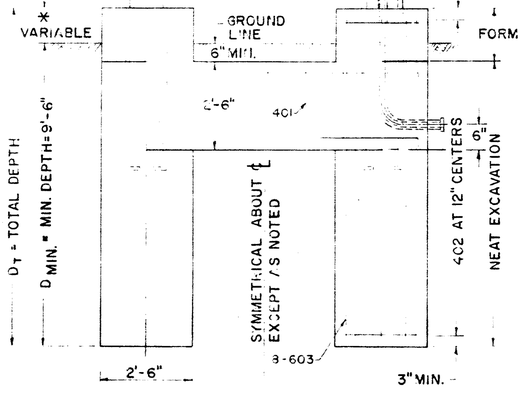
VIEW B-B DETAIL "D"

UPPER SPAN SUPPORT (ALTERNATE METHODS)



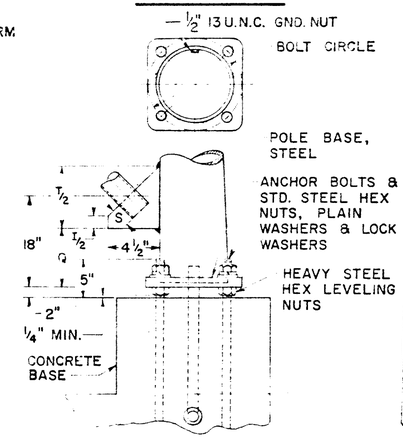
CAST FLANGE, B-26 ALLOY SG 70A-T7 (356-T7)

FLANGE DETAIL

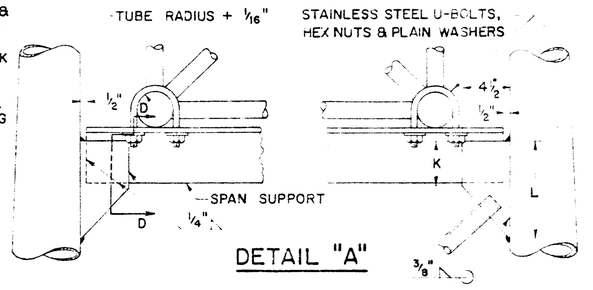


FOUNDATION DETAIL

(RIGHT HAND SHOWN — LEFT HAND OPPOSITE)



POLE BASE DETAIL



DETAIL "A"

LOWER SPAN SUPPORT

DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U BOLTS	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL
1	50' thru 75'	3'-0"	4'-11¾"	4'-5"	9¼"	8"x4.5"x25'-0", 3 GA.	5'-10 13/16"	7 7/16"	1⅜"	3½"	4¾"	8"	12"	6⅝"	3'-9"	1½"	10"	⅝"	3'-3⅝"	11"	SPLIT TEE 3'-8"	4¾" x .188"	1.900" x .145"	1.000" x .140"
2	76' thru 85'	4'-0"	4'-10¼"	5'-7"	9¼"	8"X6.22"x25'-6" 3 GA.	6'-7⅛"	7 7/16"	1 9/16"	⅝"	4⅜"	7¾"	12"	6¼"	4'-10"	1½"	9½"	⅝"	4'-4⅝"	11"	SPLIT TEE 4'-10"	4¾" x .188"	2" x .196"	1.300" x .145"
3	86' thru 90'	4'-0"	4'-10¼"	5'-7"	11"	8"X6.22"x25'-6" 3 GA.	6'-7⅛"	8½"	1½"	⅝"	4⅜"	7¾"	12"	6¼"	4'-10"	1½"	9½"	⅝"	4'-4⅝"	11"	SPLIT TEE 4'-10"	5½" x .250"	2" x .188"	1.900" x .145"
4	91' thru 110'	5'-0"	4'-8½"	6'-7"	11"	8"X6.18"x26'-0", 3 GA.	7'-3¼"	8½"	1½"	—	3½"	7¾"	12"	7¼"	5'-10"	1¾"	11¼"	¾"	5'-4⅝"	11"	SPLIT TEE 5'-10"	5½" x .250"	2½" x .188"	2½" x .188"

REINFORCEMENT SCHEDULE			
MARK NO.	LENGTH	TYPE	
401	12"C/C	8'-6"	102
402	12"C/C	7'-6"	103
601	4	D+ 4'-0"	101
602	8	D+ 2'-0"	101
603	32	D_T - 6"	STR

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORTS

816 No.7.4

DATE
5-2-62
7-25-62
5-6-64
6-20-66

APPROVED Robert C. Comer
ENGINEER OF TRAFFIC

400 SQ. FT. SIGN AREA OVERHEAD SIGN SUPPORT. 816 NO.7.4

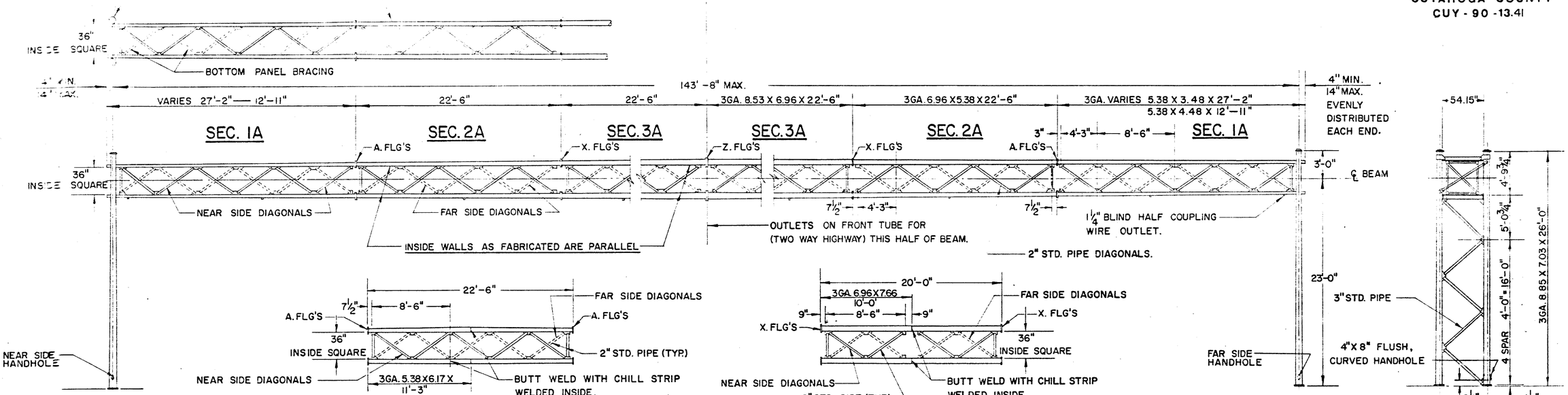
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

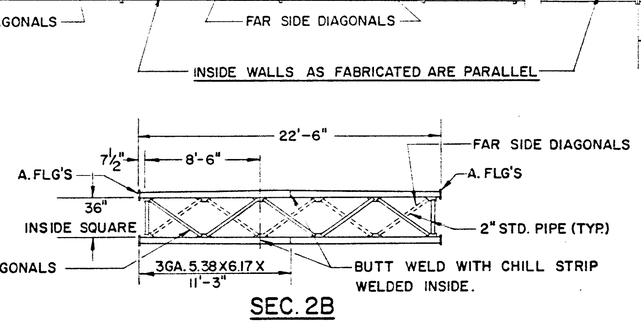
120
156

CUYAHOGA COUNTY
CUY - 90 -13.41

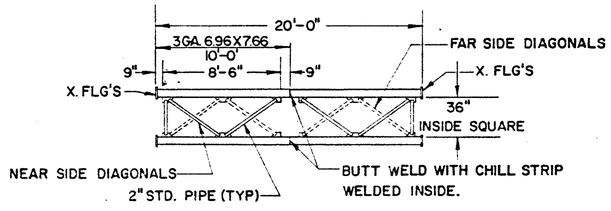
WIRING HANDHOLE IN THIS POLE ALSO FOR 2 DIRECTION TRAFFIC.

WIRING OUTLETS ON LOWER TUBE - THIS SIDE (FOR TWO-WAY HIGHWAY) THIS HALF OF BEAM.



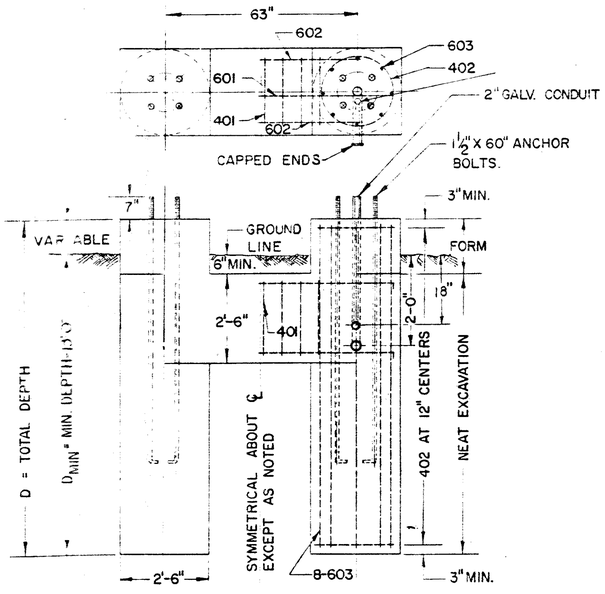


SEC. 2B

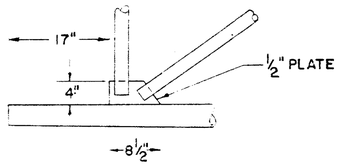


SEC. 3B

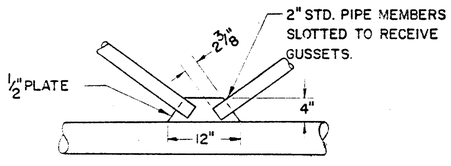
BOTH END FRAMES ALIKE UNLESS OTHERWISE NOTED



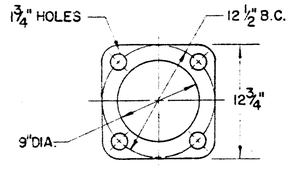
FOUNDATION DETAIL



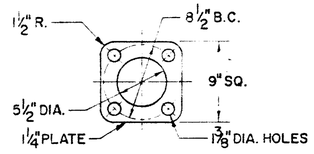
END JOINT DETAIL



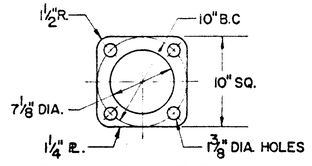
TYPICAL JOINT
DIAGONAL TRUSS MEMBER



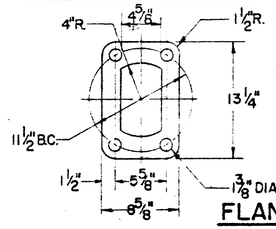
POLE BASE DETAIL



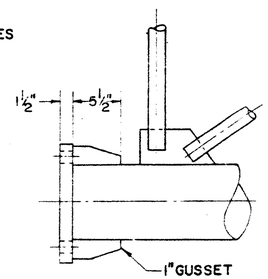
FLANGE TYPE A.
FOR SEC. 1-A, 2-A, & 2-B

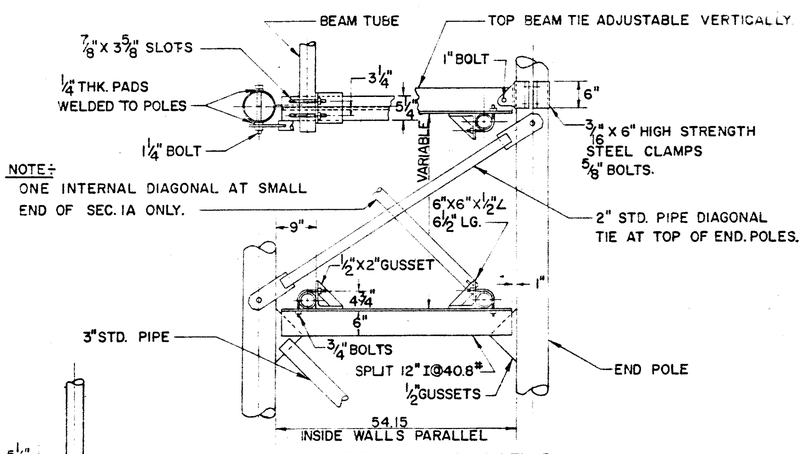


FLANGE TYPE X.
FOR SEC. 2-A, 3-A & 3-B



FLANGE TYPE Z.
FOR SEC. 3-A





BOTTOM BEAM SUPPORT & END POLE FRAME TIE.

Revised 4 Feb 70 RLB

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORT	816 15.8	DATE 6-24-64 7-1-66 2-4-70

APPROVED _____ ENGINEER OF TRAFFIC

OVERHEAD SIGN SUPPORT, 816 NO. 15.8

BRIDGE SUMMARY

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

CUYAHOGA COUNTY
CUY-90-13.41

121
156

	STRUCTURE NUMBER CUY-90									CUY-71	PARTICIPATION		ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
	1345	1361	1372	1391	1435	1463R	1490R	1490L	1506	1887	I	II					
202	744		9834	2379	1186						14143		202		14143	SQ.YD.	WEARING COURSE REMOVED
202	2	8	20		2					6	38		202		38	EACH	SCUPPERS PLUGGED
202	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP		202		LUMP		PORTIONS OF STRUCTURES REMOVED
509	50	50	500	100	50	50	100	50	100	100	1150		509		1150	LB.	REINFORCING STEEL, AS PER PLAN
513	250				250	250					750		513		750	LB.	STRUCTURAL STEEL (AISC CERTIFICATION NOT REQUIRED)
514	250				250	250					750		514		750	LB.	FIELD PAINTING OF NEW STRUCTURAL STEEL, SYSTEM B
516		83									83		516		83	LIN.FT.	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS, INCLUDING ELASTOMERIC STRIP SEALS, AS PER PLAN
516	73		422	322	97	245	77	268	277	200	1981		516		1981	LIN.FT.	POURED POLYURETHANE JOINT SEAL
517						1085	380	380	378	1085	3308		517		3308	LIN.FT.	RAILING FACED, AS PER PLAN
518	1	1	1		1		1	1		4	10		518		10	EACH	SCUPPER INSERTS
518			4								4		518		4	EACH	SCUPPERS INCLUDING SUPPORTS, AS PER PLAN
518	105	580	250		80					145	1160		518		1160	LIN.FT.	10" PIPE, 707.08, INCLUDING SPECIALS
518			210								210		518		210	LIN.FT.	12" PIPE, 707.08, INCLUDING SPECIALS
519	51	45	295	55	184	97	167	23	336	1104	1178.5	1178.5	519		2357	SQ.FT.	PATCHING CONCRETE STRUCTURES, AS PER PLAN
SPEC.										2588	1294	1294	SPEC.		2588	SQ.FT.	PNEUMATICALLY PLACED MORTAR (SEE PROPOSAL NOTE)
SPEC.										180	180		SPEC.		180	EACH	LATERAL BRACING GUSSET PLATE END RETROFIT
SPEC.										4	4		SPEC.		4	EACH	LATERAL BRACING GUSSET PLATE END RETROFIT AT FIELD SPLICE
SPEC.										8	8		SPEC.		8	EACH	LATERAL BRACING GUSSET RETROFIT
SPEC.										8	8		SPEC.		8	EACH	PENCIL ABRASIVE BLASTING, GRINDING AND NDT
SPEC.										10	10		SPEC.		10	EACH	DRILLING STRUCTURAL STEEL (1" DIA. HOLE)
SPEC.										2	2		SPEC.		2	EACH	DRILLING STRUCTURAL STEEL (1 1/4" DIA. DIAGONAL HOLE)
SPEC.										4	4		SPEC.		4	EACH	DRILLING STRUCTURAL STEEL (1 1/2" DIA. HOLE)
SPEC.										4	4		SPEC.		4	EACH	DRILLING STRUCTURAL STEEL (2" DIA. HOLE)
SPEC.										LUMP	LUMP		SPEC.		LUMP		FIELD PAINTING OF RETROFITTED AREAS, SYSTEM OZEU (SEE PROPOSAL NOTE)
850		859									859		850		859	SQ.YD.	SUPERPLASTICZED DENSE CONCRETE OVERLAY (1-3/4" THICK)
850	744		9834	2379	1186						14143		850		14143	SQ.YD.	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (2-3/4" THICK)
850	24	23	266	65	32						410		850		410	CU.YD.	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS)
850	1	1	5	2	1						10		850		10	CU.YD.	SUPERPLASTICIZED DENSE CONCRETE, FULL DEPTH REPAIR
850	5	5			5						15		850		15	CU.YD.	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), AS PER PLAN
850		LUMP									LUMP		850		LUMP		TEST SLAB
SPEC.																	
SPEC.						1852	2325	708	2580	5364	12829		SPEC.		12829	SQ.YD.	BRIDGE DECK GROOVING
SPEC.						1852	2325	708	2580	5364	12829		SPEC.		12829	SQ.YD.	TREATING CONCRETE BRIDGE DECKS WITH HMWM RESIN (SEE PROPOSAL NOTE)
SPEC.	3150	3087	32976	6363	18666	5931	6462	1872	5976	5823		90306	SPEC.		90306	SQ.FT.	SOUNDING CONCRETE BRIDGE COMPONENTS
SPEC.	6402	7220	70627	19273	9496	11380	19061	5417	19547	41524		209947	SPEC.		209947	SQ.FT.	SOUNDING CONCRETE DECK BOTTOMS
SPEC.	1281	144	1413	386	950	228	381	108	391	831	6113		SPEC.		6113	SQ.FT.	LOW PRESSURE EPOXY INJECTING OF DELAMINATED CONCRETE
SPEC.	1416	1330	6397	1389	3080	2429	1656	798	1577	3124	23187		SPEC.		23196	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)
SPEC.	128	125	269	65	136	44	29	10	23	117	473	473	SPEC.		946	SQ.FT.	REPAIRING CONCRETE STRUCTURES WITH SOLVENT-FREE EPOXY RESIN
SPEC.						370	883	105	1161	1805		4324	SPEC.		4324	SQ.YD.	PATCHING CONCRETE BRIDGE DECK OVERLAYS
SPEC.	LUMP	LUMP	LUMP		LUMP		LUMP	LUMP		LUMP		LUMP	SPEC.		LUMP		CLEANING BRIDGE DRAINAGE SYSTEMS
SPEC.			40								40		SPEC.		40	EACH	RESETTING BEARINGS
SPEC.	6		23		10	13	9	3	4	37	105		SPEC.		105	EACH	SCUPPER MODIFICATION
SPEC.			530	139				161	164	462	1456		SPEC.		1456	LIN.FT.	MEDIAN BARRIER JOINT SEAL (1/2"X10" NEOPRENE SHEET)
SPEC.						LUMP	LUMP	LUMP		LUMP		LUMP	SPEC.		LUMP		DELIVERY AND UNLOADING OF ALUMINUM POSTS AND RAILS
						3	2	1	2	6	14		SPEC.		14	EACH	JUNCTION BOX, AS PER PLAN
	1345	1361	1372	1391	1435	1463R	1490R	1490L	1506	71-1887							

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

BRIDGE SUMMARY
CUYAHOGA COUNTY OHIO

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
			DWL	

SHEET 1/36

STRUCTURES

SCOPE OF MAJOR WORK ITEMS

MAJOR BRIDGE WORK INCLUDED IN THESE PLANS IS CONCRETE PROTECTION AND REPAIR OF THE WEARING SURFACE, DRAINAGE CLEANING REPAIR AND RETROFIT, CONCRETE REPAIR AND SEALING, INSTALLATION OF SAFETY SHAPE PARAPETS,AND REPAIRING AND SEALING OF JOINTS. SEE THE GENERAL PLAN, ELEVATION AND TRANSVERSE SECTION SHEET FOR MAJOR WORK TO BE PERFORMED ON EACH BRIDGE. SEE SHEETS 48-82 FOR MAINTANCE OF TRAFFIC.

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, 105.2 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

PLANS OF EXISTING STRUCTURES ARE AVAILABLE FOR EXAMINATION AT THE OHIO DEPARTMENT OF TRANSPORTATION: DISTRICT 12 OFFICE: 10100 BROADWAY AVENUE: GARFIELD HEIGHTS, OHIO.

COOPERATION WITH RAILROADS

THE CONTRACTOR SHALL COOPERATE AT ALL TIMES WITH LOCAL OFFICIALS OF THE RAILROAD COMPANY. HE SHALL USE ALL REASONABLE CARE AND DILIGENCE IN THE WORK IN ORDER TO AVOID ACCIDENTS, DAMAGE OR INTERFERENCE WITH THE TRAINS OR OTHER PROPERTY OF THE RAILROAD. THE CONTRACTOR SHALL NOTIFY THE LOCAL OFFICIALS OF THE RAILROAD PRIOR TO STARTING WORK THAT MAY AFFECT RAILROAD PROPERTY AND FACILITIES AND SHALL PAY THE RAILROAD COMPANY THE COST OF FLAGMEN FURNISHED BY THE RAILROAD COMPANY AND MADE NECESSARY BECAUSE OF ANY OF THE CONTRACTOR'S OPERATIONS OVER OR ADJACENT TO THE TRACKS.

NO SCAFFOLDS, PLANKS OR OTHER EQUIPMENT SHALL BE SUSPENDED OR ERECTED ABOVE OR WITHIN 10 FEET OF A RAIL OVER WHICH TRAINS ARE OPERATING WITHOUT PRIOR WRITTEN APPROVAL OF THE CHIEF ENGINEER, OR HIS AUTHORIZED REPRESENTATIVE OF THE RAILROAD COMPANY.

FAILIURE TO NOTIFY THE RAILROAD COMPANY, AS NOTED ABOVE, SHALL BE CAUSE FOR STOPPING WORK UNTIL ALL THE PROVISIONS FOR PROTECTING RAILROAD PROPERTY HAVE BEEN PROVIDED. NOTIFY CONRAIL, HERB BARNES, ENGINEER OF CONSTRUCTION, 6 TEN CENTER PLAZA, PHIL., PA 19103, (215) 596-2195

EXISTING DRAINAGE SYSTEMS

IF SCUPPERS, DOWNSPOUTS, ETC. ARE BLOCKED WITH SDC OR OTHER FOREIGN MATTER BY NEGLECT OF THE CONTRACTOR DURING CONSTRUCTION OF THIS PROJECT, THE CONTRACTOR SHALL CLEAN OUT THE SCUPPERS, ETC. (REPLACE THEM IF NECESSARY) SUCH THAT NO SDC OR OTHER MATTER IS BLOCKING THEM, AT NO ADDITIONAL COST TO THE STATE.

PLAN OF OPERATIONS AND PROTECTION

THE CONTRACTOR SHALL SUBMIT TO THE DIRECTOR A COMPLETE SCHEDULE OF CONSTRUCTION OPERATIONS ALONG WITH PLANS CONTAINING HIS PROPOSED METHODS OF PREVENTING DEBRIS FROM FALLING ON THE ROADWAY BELOW,INCLUDING LOOSE BOTTOM COVER CONCRETE. THESE PLANS
MUST BE SUBMITTED AND APPROVED PRIOR TO COMMENCING THE WORK. NO REMOVAL WORK SHALL BE STARTED WITHOUT PRIOR APPROVAL OF THE ENGINEER.

ITEM 509- REINFORCING STEEL, AS PER PLAN

THIS ITEM SHALL BE USED TO REPLACE REINFORCING STEEL WHICH IS BENT, ELONGATED, MISSING OR EXTREMELY CORRODED. BARS SHALL BE THE SAME SIZE AS ORIGINAL BARS AND SHALL BE PLACED AS NEAR AS POSSIBLE TO THEIR ORIGINAL LOCATION. BARS SHALL BE LAPPED ACCORDING TO SECTION 509.08. PAYMENT FOR THIS ITEM SHALL INCLUDE THE COST OF ALL MATERIALS AND LABOR NECESSARY TO COMPLETE THE ABOVE WORK, INCLUDING REMOVAL OF EXISTING STEEL. ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSEABLE BY THE CONTRACTOR'S REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT HIS COST.

THE FOLLOWING ESTIMATED QUANTITY OF REINFORCING STEEL IS TO BE USED WHERE AND AS DIRECTED BY THE ENGINEER.

ITEM 509- REINFORCING STEEL, AS PER PLAN 1150 POUNDS

TYING REBARS

THE PURPOSE OF THIS WORK IS TO TIE EXPOSED STEEL REINFORCING BARS WHICH ARE IN CROSS CONTACT OR LAPPED. TACK WELDING SHALL NOT BE PERMITTED. THIS WORK SHALL BE PERFORMED WHERE AND AS DETERMINED BY THE ENGINEER TO RESTRICT THE RELATIVE MOVEMENT OF THE REINFORCING BARS.

PAYMENT FOR THIS WORK INCLUDING EXTRA REMOVAL OF CONCRETE TO PERMIT TYING SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 850-SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS).

ITEM 202-PORTIONS OF STRUCTURES REMOVED

THIS ITEM SHALL INCLUDE THE REMOVAL OF APPROXIMATELY 18 S.Y. OF MEDIAN ON CUY-90-1372 AS SHOWN ON THE GENERAL PLAN AND ELEVATION SHEET. ALSO, THIS ITEM SHALL INCLUDE THE REMOVAL OF LOOSE COVER CONCRETE OR SPALLS FOUND ON THE UNDERSIDES OF ALL BRIDGE DECKS DURING DECK BOTTOM SOUNDINGS.

ITEM 516- POURED POLYURETHANE JOINT SEAL

1) THE MATERIAL FOR THIS ITEM IS A TWO-PART, COLD APPLIED, CHEMICALLY CURING, SELF LEVELING, ELASTOMERIC, POLYURETHANE JOINT SEAL. IT SHALL BE "FX-551" AS MANUFACTURED BY FOX INDUSTRIES INCORPORATED, "UREXPAN NR-200" AS MANUFACTURED BY PECORA CORPORATION OR AN APPROVED EQUAL.

2) IT SHALL BE USED ON BRIDGE EXPANSION JOINTS WHERE NO RAISINGS ARE NECESSARY.

3) THE INSTALLED AND CURED MATERIAL SHALL BE 1 INCH DEEP AND SHALL BE BONDED TO THE SIDES OF THE JOINT. THE CONTRACTOR SHALL SANDBLAST THE BONDING SURFACES PRIOR TO THE MATERIAL PLACEMENT. ANY UNBONDED SECTION SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

4) DAMS AS REQUIRED TO CONTAIN THE POURED SEAL SHALL BE INCIDENTAL TO THIS ITEM OF WORK.

PAYMENT FOR ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT SHALL BE INCLUDED IN THE UNIT COST PER LINEAL FOOT OF ITEM 516- POURED POLYURETHANE JOINT SEAL.

ITEM 518- DRAINAGE OF STRUCTURES

THIS ITEM SHALL BE USED IN TWO WAYS. FIRST, THIS ITEM SHALL BE USED FOR THE REMOVAL AND REPLACEMENT OF EXISTING DRAINAGE AS SHOWN ON SHEETS 149-156 FOR CUY-90-1345/1361/1372/1435, 71-1887. ALL MISCELLANEOUS MATERIAL NEEDED FOR CONTRACTORS, SUPPORTS, ETC., SHALL INCLUDE IN THE PERTINENT 518 ITEM. THE PARTIAL REMOVAL AND PARTIAL REPLACEMENT OF THE SCUPPERS AS SHOWN ON THE DRAINAGE DETAIL SHEETS SHALL BE CONSIDERED INCIDENTAL AND PAID FOR UNDER THE PERTINENT 518 ITEM. SCUPPER MODIFICATIONS SHALL BE NEW, LARGER SCUPPERS ON CUY-90-1372.

THE ESTIMATED QUANTITIES ARE AS FOLLOWS:

ITEM SPECIAL-SCUPPER MODIFICATION	105	EACH
ITEM 518-10" PIPE, 707.08, INCLUDING SPECIALS	964	L.F.
ITEM 518-12" PIPE, 707.08, INCLUDING SPECIALS	100	L.F.

SECONDLY, THIS ITEM SHALL BE USED AS A CONTINGENCY QUANTITY FOR DRAINAGE REMOVAL AND REPLACEMENT, AS DIRECTED BY THE ENGINEER FOR CUY-90-1345/1361/1372/1435 AND CUY-71-1887.

IF THE ENGINEER LOCATES CORRODED OR DETERIORATED SCUPPERS OR HOPPERS, THEY NEED NOT BE REPLACED. INSTEAD, AN INSERT OF THE SAME KIND, ONE HALF INCH LESS IN DIAMETER (OR ONE HALF INCH LESS IN BOTH LENGTH AND WIDTH) SHALL BE INSERTED WITHIN THE EXISTING UNIT, AND FIELD WELDED TO THE EXISTING UNIT. TOP GRATES MAY BE FIELD CUT FOR INSERTION AND REPLACEMENT: THEN THE GRATES SHALL BE FIELD WELDED TO THE ORIGINAL LOCATION AFTER THE INSERT IS IN PLACE. AN EXTENSION SHALL THEN BE WELDED TO THE INSERT AFTER THE EXISTING PIPE BELOW HAS BEEN REMOVED.
THE FOLLOWING ESTIMATED QUANTITIES ARE AS FOLLOWS:

ITEM 518-10" PIPE, 707.08, INCLUDING SPECIALS	196	L.F.
ITEM 518-12" PIPE, 707.08, INCLUDING SPECIALS	110	L.F.
ITEM 518-SCUPPER INSERTS	10	EACH

ALL COSTS FOR LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE ITEMS OF WORK SHALL BE INCLUDED IN EACH UNIT PRICE BID OF ITEM 518.

WORK INCLUDED IN ITEM 518 SHALL BE USED IN CONJUNCTION WITH ITEM SPECIAL-CLEANING BRIDGE DRAINAGE SYSTEM.

SEQUENCE OF OPERATIONS FOR OVERLAY REPAIRS

1. SOUND AND PATCH OVERLAYS
2. TREAT WITH HMWM
3. GROOVE

LEGEND: SDC - SUPERPLASTICIZED DENSE CONCRETE
HMWM - HIGH MOLECULAR WEIGHT METHACRYLATE

GENERAL NOTES

CUY-90-13.41

FHWA REGION	STATE	PROJECT	
5	OHIO		

123/156

ITEM 850-SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), AS PER PLAN

THIS ITEM SHALL BE USED TO PATCH SIDEWALKS AND CURBS. NO SAW CUTS SHALL BE USED. IN THE CURB AREA, THE CONTRACTOR SHALL REMOVE LOOSE OR UNSOUND CONCRETE TO A DEPTH THAT PROVIDES A 3/4 INCH MINIMUM CLEARANCE AROUND THE EXISTING REINFORCING STEEL.

ITEM SPECIAL- SOUNDING OF CONCRETE DECK BOTTOMS

THIS WORK SHALL CONSIST OF SUPPLYING THE MATERIALS, LABOR AND EQUIPMENT NECESSARY FOR SOUNDING DECK BOTTOMS IN ORDER THAT THE ENGINEER MAY OUTLINE THE DELAMINATED AREAS. AFTER ALL OVERLAY REMOVAL OPERATIONS ON A GIVEN BRIDGE ARE COMPLETED THE CONTRACTOR SHALL SOUND THE ENTIRE DECK BOTTOM WITH HAMMERS AND THE ENGINEER SHALL OUTLINE ALL UNSOUND AREAS FOR EPOXY INJECTION. THE FOOTAGE FOR THIS ITEM SHALL BE THE NUMBER OF SQUARE FEET OF DECK BOTTOM THAT ARE SATISFACTORILY SOUNDED AND ACCEPTED. THE ACCEPTED QUANTITIES OF DECK BOTTOM SOUNDING WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT, AT WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY FOR SOUNDING CONCRETE DECK BOTTOMS. PAYMENT WILL BE MADE UNDER ITEM SPECIAL-SOUNDING CONCRETE DECK BOTTOMS (SQ. FT.).

ITEM SPECIAL- LOW PRESSURE EPOXY INJECTING DELAMINATED CONCRETE

THIS WORK SHALL CONSIST OF LOW-PRESSURE EPOXY INJECTION OF DELAMINATED BOTTOM COVER CONCRETE OF BRIDGE DECKS IN ACCORDANCE WITH THESE SPECIFICATIONS, IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND MANUFACTURERS RECOMMENDATIONS AS DIRECTED BY THE ENGINEER.

THE INJECTION RESIN SHALL BE THERMAL-CHEM INJECTION RESIN PRODUCT NO. 2, POLY-CARB MARK-10 INJECTION RESIN, DURAL CRETE LV OR SIKADUR 52 INJECTION RESIN. THE BONDER SHALL BE THERMAL-CHEM BONDER PRODUCT NO. 4, DURALCRETE GEL, POLYCARB MARK 8 NON-SAG OR SIKADUR HI-MOD GEL (SIKASTIX 31). 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 EPOXY PRESSURE GROUTING.

PORTS SHALL BE INSTALLED IN CLEAN HOLES THAT ARE VACUUM-DRILLED (TO PREVENT FINES FROM BEING IMPACTED INTO THE CRACK) 3 INCHES DEEP IN THE DECK BOTTOM SO THAT THE EPOXY WILL PENETRATE THE HOLLOW PLANE. THE FIRST PORT SHALL BE LOCATED NEAR THE EDGE OF THE OUTLINED UNSOUND AREA. ADDITIONAL PORTS SHALL BE PLACED AT DISTANCES SLIGHTLY GREATER THAN THE DISTANCE FROM THE FIRST PORT TO THE VOID EDGE. PORT PLACEMENT MUST ENSURE THAT THE GROUT FACE REACHES THE EDGE OF THE VOID BEFORE REACHING THE NEXT PORT. PORTS AND VISIBLE CRACKS SHALL BE SEALED WITH BONDER TO PREVENT EMISSION OF INJECTION RESIN. THE BONDER SHALL CURE 24 HOURS PRIOR TO INJECTION OF EPOXY RESIN.

THE RESIN SHALL BE INJECTED ONLY WHEN THE DECK IS DRY AND ITS TEMPERATURE IS ABOVE 50 DEGREES F. THE INJECTION RESIN COMPONENTS SHALL BE AT 70 DEGREES PRIOR TO MIXING.

THE EPOXY INJECTION EQUIPMENT SHALL BE CAPABLE OF INJECTING THE MATERIAL INTO THE PORTS AT LOW PRESSURES OF 14 TO 20 PSI. THE INJECTION EQUIPMENT SHALL BE CAPABLE OF METERING, MIXING AND INJECTING THE EPOXY RESIN ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

THE INJECTION SHALL COMMENCE AT THE EDGE OF THE DELAMINATION AND CONTINUE UNTIL THE EPOXY RESIN APPEARS AT THE NEXT PORT. MOST INCOMPLETELY FILLED VOIDS ARE CAUSED BY THE OPERATOR STOPPING THE INJECTION PROCESS PREMATURELY: THEREFORE, A STEADY, LOW PRESSURE SHALL BE MAINTAINED ON THE EPOXY UNTIL A STEADY CLEAR FLOW APPEARS AT THE NEXT PORT. THEN THE INJECTION NOZZLE IS REMOVED, THE PORT CLOSED AND THE INJECTION CONTINUED FROM PORT TO PORT UNTIL THE VOID IS COMPLETELY FILLED. SINCE THE GROUT FACE IS MOVING UNDER VISCOUS FLOW CONDITIONS WHICH ARE GOVERNED BY FLUID SURFACE FRICTION, THE INJECTION PROCESS IS SLOW. REGARDLESS, INJECTION PRESSURE SHALL BE 20 PSI MAXIMUM SO THAT BOTTOM COVER CONCRETE IS NOT BLOWN OFF. PROGRESS OF THE EPOXY SHALL BE CHECKED WITH A TAPPING HAMMER.

THE OUTLINED INJECTED VOIDS SHALL BE SOUNDED WITH A HAMMER BY THE ENGINEER. ANY REMAINING UNSOUND AREAS SHALL BE PORTED AND REINJECTED AT NO ADDITIONAL COST TO THE STATE. ALL EQUIPMENT, LABOR AND MATERIALS REQUIRED BY THE ENGINEER TO ACCOMPLISH THIS WORK SHALL BE SUPPLIED BY THE CONTRACTOR.

THE FOOTAGE UNDER THIS ITEM SHALL BE THE NUMBER OF SQUARE FEET OF DELAMINATED DECK BOTTOM CONCRETE THAT ARE SATISFACTORILY LOW-PRESSURE EPOXY INJECTED AND ACCEPTED.

THE ACCEPTED QUANTITIES OF LOW-PRESSURE EPOXY INJECTED CONCRETE WILL BE PAID FOR AT THE CONTRACT UNIT BID PRICE PER SQUARE FOOT, AT WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING AND PLACING ALL MATERIALS, SOUNDING THE INJECTED AREAS, SUPPLYING THE MANUFACTURER'S REPRESENTATIVE AND ALL OTHER MATERIAL, LABOR AND EQUIPMENT NECESSARY TO COMPLETE THIS WORK ACCORDING TO SPECIFICATIONS.

ITEM SPECIAL- CLEANING BRIDGE DRAINAGE SYSTEMS

THIS ITEM SHALL BE PERFORMED AFTER THE OVERLAY PLACEMENT IS COMPLETE AND CONSISTS OF REMOVING ALL DIRT AND DEBRIS FROM CURB AREAS, SCUPPERS, HOPPERS, DRAINAGE TROUGHS, PIPE COLLECTORS, DOWNSPOUTS AND ALL PIPES BEHIND THE ABUTMENTS AND INCLUDING THE PIPES OF THE UNDERGROUND STORM SEWERS TO THE FIRST MANHOLE OR CATCH BASIN. AFTER THE DIRT AND DEBRIS ARE REMOVED THE ENTIRE DRAINAGE SYSTEM SHALL BE FLUSHED WITH CLEAN WATER, MAKING CERTAIN THE WATER FLOWS SMOOTHLY TO THE ADJACENT MANHOLE OR CATCH BASIN.

CORRODED OR DETERIORATED PIPES WHICH ARE NOT SCHEDULED TO BE REPLACED, DOWNSPOUTS, DRANIAGE TROUGHS, HOPPERS OR SCUPPERS SHALL BE REPLACED UNDER ITEM 518-DRAINAGE OF STRUCTURES.

THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT PRIOR TO BEGINNING THE WORK FOR THE PURPOSE OF EXAMINING THE EXISTING BRIDGE DRAINAGE SYSTEM. THE CONTRACTOR'S SUPERINTENDENT SHALL ACCOMPANY THE ENGINEER DURING THIS DETAILED EXAMINATION OF THE BRIDGE DRAINAGE SYSTEM.

ALL COSTS FOR LABOR, MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE THE EXAMINATION AND CLEANING OF THE BRIDGE DRAINAGE SYSTEM SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM SPECIAL- CLEANING BRIDGE DRAINAGE SYSTEM.

ITEM SPECIAL- RESETTING BEARINGS

RESETTING BEARINGS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SHEET OF THE PLANS AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR ITEM SPECIAL- RESETTING BEARINGS. THIS PRICE SHALL BE PAYMENT IN FULL FOR ALL MATERIAL, EQUIPMENT AND LABOR NECESSARY TO COMPLETE THIS WORK.

ITEM SPECIAL- SEALING OF CONCRETE SURFACES (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) CURBS, SIDEWALKS AND PARAPETS (ALL FACES).
2) CONCRETE BARRIER MEDIANS (ALL FACES).
3) DECK EDGES AND THE UNDERSIDE IN ANY BAY LOCATED BENEATH AN OPEN OR SEALED JOINT OR AN UNDERSIDE EXTENDING BEYOND THE EXTERIOR BEAMS.
4) PIERS INCLUDING CAPS AND COLUMNS. (WITH THE EXCEPTION OF 1/4 OF CIRCUMFRENCE OF COLUMNS NOT FACING THE SPLASH ZONE.
5) ABUTMENTS INCLUDING BACKWALLS AND WINGWALLS.

ITEM SPECIAL - BARRIER MEDIAN JOINT SEAL (1/2" X 10" NEOPRENE SHEET)

A) DESCRIPTION
THIS WORK SHALL INCLUDE FURNISHING AND INSTALLING A NEOPRENE SHEET SEAL ALONG THE TOP OF THE BRIDGE MEDIAN BARRIER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

B) MATERIAL
1) THE NEOPRENE PIECES SHALL MEET THE FOLLOWING SPECIFICATIONS.

PROPERTY	REQUIREMENT	ASTM METHOD
TENSILE STRENGTH, MIN., PSI	2000	D-412-62T
ELONGATION AT BREAK, MIN.	250%	D-412-51T
HARDNESS, DUROMETER A	60 +5	D-2240 MODIFIED
OZONE RESISTANCE, 20% ELONGATION 300 PPHM 40°C (104°F) (70 HRS) WIPE SURFACES WITH SOLVENT TO REMOVE CONTAMINATION	NO CRACKS	D-1149
HEAT AGING 70 HRS @ 212°F		D-573
TENSILE STRENGTH, MAX. % DECREASE	-20	
ELONGATION, MAX. % DECREASE	-20	
HARDNESS, MAX. CHANGE	+10/-0	
OIL SWELL, ASTM OIL #3 70 HRS. @ 212°F MAX. WEIGHT INCREASE AT SPECIFIC GRAVITY 1.35 +3	+45	D-471
COMPRESSION SET, 70 HRS. @ 212°F	40% MAX.	D-395 (B)
LOW TEMPERATURE	NOT BRITTLE	D-746
RESISTANCE TO SALT, VARIATION OF VOLUME IN % 70 HRS. AT 40°C IN CALCIUM CHLORIDE SOLUTION	-5% TO +10%	

2) ADHESIVES SHALL BE SIKADUR 31 MANUFACTURED BY THE SIKA CHEMICAL COMPANY OF LYNHURST, NEW JERSEY, FEL-POXY FP-01 MANUFACTURED BY THE FELT PRODUCTS COMPANY OF SKOKIE, ILLINOIS, OR AN APPROVED EQUAL. ADHESIVES SHALL BE STORED AT TEMPERATURES BETWEEN 50°F AND 80°F AND SHALL BE USED WITHIN 270 DAYS AFTER THE DATE OF MANUFACTURE.

C) REQUIREMENTS
THE MEDIAN SEAL SHALL BE CONTINUOUS ALONG THE LENGTH OF THE BRIDGE EXCEPT AT INTERMEDIATE EXPANSION JOINTS AND AT LIGHT AND SIGN SUPPORTS. ELASTOMERIC SHEETS SHALL BE AS LONG AS PRACTICAL WITH FIELD SPLICES BONDED TOGETHER WITH ADHESIVE.

D) SURFACE PREPARATION
1) NEOPRENE
TO AVOID THE SUBSEQUENT CONTAMINATION OF PREPARED SURFACES ALL SURFACES SHALL BE CLEANED WITH METHYL ETHYL KETON (MEK), TOLUENE (T) OR OTHER APPROVED SOLVENT USING CLEAN DISPOSABLE CLOTHS. THEN NOT MORE THAN 7 DAYS PRIOR TO THE SEAL INSTALLATION, A THIN (1/8" MIN. THICKNESS) COATING OF CYCLIZING PASTE* SHALL BE APPLIED TO THE BONDING SURFACE. AFTER 25 TO 40 MINUTES, THE PASTE SHALL BE WASHED FROM THE SURFACES WITH CLEAN WATER.

*CYCLIZING PASTE IS A MIXTURE OF ONE POUND OF PITTSBURGH PLATE GLASS INDUSTRIES' HISIL 223 OR AN APPROVED ALTERNATE AND SIX POUNDS OF CONCENTRATED SULFURIC ACID (18 MOLAR). TO MIX THE PASTE, ADD HISIL TO ACID SLOWLY WHILE STIRRING MIXTURE TO ACHIEVE A SMOOTH VISCOUS PASTE. NOTE: SINCE CONCENTRATED SULFURIC ACID IS VERY CORROSIVE AND HISIL IS AN EXTREMELY FINE NON-TOXIC POWDER, RUBBER GLOVES AND GLASSES SHOULD BE USED BY THOSE USING THE PASTE, WHILE GLOVES, GLASSES AND A RESPIRATOR SHOULD BE USED BY THOSE MIXING THE PASTE.

REVISED

2) CONCRETE
THE CONCRETE SURFACE SHALL BE THOUROUGHLY CLEANED TO REMOVE DUST, CURING COMPOUND, LAITANCE AND ANY OTHER FOREIGN MATERIALS BY MEANS OF SANDBLASTING FOLLOWED BY AIR BROOMING OR POWER SWEEPING TO REMOVE DUST AND SAND FROM THE SURFACE AND OPENED PORES.

E) FIELD BONDING
IMMEDIATELY PRIOR TO ADHESIVE APPLICATION, BONDING SURFACES SHALL BE CLEAN, DRY AND WARMER THAN 45°F AND SHALL BE MAINTAINED ABOVE 45°F UNTIL THE ADHESIVE HAS CURED.

ADHESIVE COMPONENTS SHALL BE COMBINED IN THE EXACT RATIOS RECOMMENDED BY THE ADHESIVE MANUFACTURER AND SHALL BE THOROUGHLY MIXED TO ENSURE A UNIFORM MATERIAL FREE FROM ENTRAPPED AIR. THE BONDING PROCEDURES AND RATE OF APPLICATION SHALL BE IN ACCORDANCE WITH THE ADHESIVE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. FOR PROPER CONTROL DURING CURING, LIGHT PRESSURE SHOULD BE MAINTAINED UNTIL THE ADHESIVE HAS CURED.

F) MEASUREMENT AND PAYMENT
MEDIAN BARRIER SEAL WILL BE MEASURED BY THE LINEAL FOOT COMPLETED IN PLACE AND PAID FOR AT THE CONTRACT UNIT PRICE BID PER LINEAL FOOT FOR ITEM SPECIAL, MEDIAN BARRIER SEAL. THIS PRICE SHALL BE PAYMENT IN FULL FOR FURNISHING ALL MATERIALS, EQUIPMENT AND LABOR TO COMPLETE THE WORK SPECIFIED FOR ITEM SPECIAL- MEDIAN BARRIER JOINT SEAL (1/2" X 10" NEOPRENE SHEET).

ITEM SPECIAL - PAVEMENT GROOVING

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY EQUIPMENT, MATERIALS LABOR, AND INCIDENTALS (INCLUDING MAINTENANCE OF TRAFFIC WHEN NOT SPECIFICALLY INCLUDED IN THE PLANS) TO PLACE TRANSVERSE GROOVES IN THE SURFACE OF EXISTING BRIDGE DECK SURFACES OR TEXTURE A NEW DECK SURFACE, AND SUBSEQUENT CLEANUP.

A NEW DECK SURFACE:
FOR A NEW DECK SURFACE DURING PLACING, THE SURFACE SHALL BE TEXTURED BY USING A BROOM OR BURLAP DRAG IN THE LONGITUDINAL DIRECTION SO AS TO PRODUCE A UNIFORM, GRITTY, LONGITUDINAL TEXTURE.

THE TRANSVERSE GROOVING SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

GROOVING METHOD - GROOVING SHALL BE DONE UTILIZING DIAMOND TIPPED BLADES MOUNTED ON A MULTIBLADE ARBOR ON A SELF-PROPELLED MACHINE WHICH HAS BEEN BUILT FOR GROOVING OF PAVEMENTS. THE GROOVER SHALL HAVE A DEPTH CONTROL DEVICE WHICH WILL DETECT VARIATIONS IN THE PAVEMENT SURFACE AND THE CUTTING HEAD HEIGHT TO MAINTAIN THE DEPTH OF THE GROOVE SPECIFIED. THE GROOVING MACHINE SHALL BE PROVIDED WITH DEVICES TO CONTROL ALIGNMENT. FLAILING TYPE GROOVING WILL NOT BE PERMITTED.

LAYOUT AND ALIGNMENT - TRANSVERSELY GROOVED AREAS SHALL BEGIN AND END ONE FOOT FROM ANY CURBS OR PARAPETS AND SHALL BE PERPENDICULAR TO THE ROADWAY CENTERLINE.

THE CONTRACTOR SHALL PROVIDE AN EXPERIENCED TECHNICIAN TO SUPERVISE THE LOCATION ALIGNMENT, LAYOUT, DEMENSION, AND GROOVING OF THE SURFACE.

GROOVE PATTERN- TRANSVERSE GROOVING SHALL RUN IN A CONTINOUS PATTERN ACROSS THE SURFACE WITHIN 6 INCHES OF ALL LONGITUDINAL JOINTS. THE GROOVING SHALL BE TERMINATED A MINIMUM OF 1 FOOT FROM ANY DEVICE IN PLACE IN A BRIDGE DECK, SUCH AS SCUPPERS OR EXPANSION JOINTS. THE GROOVE PATTERN SHALL BE 0.10 IN. WIDTH BY 0.15 IN. DEPTH WITH A CENTER TO CENTER SPACING OF 5/8 INCH. THE ALLOWABLE TOLERANCES SHALL BE AS STATED BELOW.

THE SPACING OF GROOVES SHALL NOT BE LESS THAN 1/2 INCH NOR MORE THAN 3/4 INCH.

THE DEPTH OF THE GROOVES SHALL NOT BE MORE THAN 0.20 INCH.

GROOVING TECHNIQUE - AT THE BEGINNING OF EACH WORK SHIFT, ALL GROOVING MACHINES SHALL BE EQUIPPED WITH A FULL COMPLEMENT OF GROOVING BLADES THAT ARE CAPABLE OF CUTTING GROOVES OF THE SPECIFIED WIDTH, DEPTH AND SPACING.

IF, DURING THE COURSE OF WORK, A SINGLE GROOVING BLADE ON ANY INDIVIDUAL GROOVING MACHINE BECOMES INCAPABLE OF CUTTING A GROOVE, WORK SHALL BE PERMITTED TO CONTINUE FOR THE REMAINDER OF THE GROOVE OMITTED BECAUSE OF THE FAILED BLADE. SHOULD TWO (2) OR MORE GROOVING BLADES ON ANY INDIVIDUAL GROOVING MACHINE BECOME INCAPABLE OF CUTTING GROOVES, THE CONTRACTOR SHALL CEASE OPERATIONS.

CLEANUP - THE REMOVAL OF ALL SLURRY OR RESIDUE RESULTING FROM THE GROOVING OPERATION SHALL BE CONTINUOUS. THE BRIDGE DECK SURFACE SHALL BE IMMEDIATELY LEFT IN A CLEAN CONDITION, FREE OF ALL SLIPPERINESS FROM THE SLURRY, ETC. RESIDUE FROM GROOVING OPERATIONS SHOULD NOT BE PERMITTED TO FLOW ACROSS SHOULDERS OR LANES OCCUPIED BY PUBLIC TRAFFIC OR FLOW INTO GUTTERS OR OTHER DRAINAGE FACILITIES. SOLID RESIDUE, RESULTING FROM GROOVING OPERATIONS, SHALL BE REMOVED FROM THE SURFACE BEFORE SUCH RESIDUE IS BLOWN BY THE ACTION OF TRAFFIC OR WIND.

WATER AND UTILITIES - THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING WATER AS NECESSARY TO PERFORM THE SPECIFIED GROOVING IN ACCORDANCE WITH THE SPECIFICATIONS.

TRAFFIC CONTROL - ALL WORK ON THIS PROJECT SHALL BE SCHEDULED AND PERFORMED IN SUCH A MANNER AS TO PROVIDE MINIMUM OBSTRUCTION AND MAXIMUM PROTECTION OF THE TRAVELING PUBLIC.

METHOD AND MEASUREMENT - GROOVING SHALL BE THE ACTUAL AREA TO THE NEAREST SQUARE YARD OF SURFACE GROOVED AND ACCEPTED. THE QUANTITY OF GROOVING SHALL BE DETERMINED BY MULTIPLYING THE WIDTH OF THE BRIDGE DECK AND LENGTH OF THE GROOVED AREA. NO DEDUCTION SHALL BE MADE FOR GROOVING OMITTED AT THE JOINTS AND/OR OTHER DEVICES AND GROOVING OMITTED AS PERMITTED FOR BLADES WHICH BECOME INCAPABLE OF CUTTING A GROOVE.

BASIS OF PAYMENT

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQUARE YARD	BRIDGE DECK GROOVING

STRUCTURAL STEEL

AN ESTIMATED QUANTITY OF 750 LBS. FOR BOTH ITEM 513 STRUCTURAL STEEL (AISC) CERTIFICATION NOT REQUIRED) AND ITEM 514-FIELD PAINTING OF NEW STRUCTURAL STEEL SYSTEM B HAVE BEEN INCLUDED IN THE BRIDGE SUMMARY TO BE USED FOR REPLACEMENT OF RUSTED AND DETERIORATED CROSSFRAMES AS DIRECTED BY THE ENGINEER.

GENERAL REPAIR OF CONCRETE STRUCTURES

REPAIRS TO CONCRETE STRUCTURES SHALL BE MADE USING THE FOLLOWING REPAIR MATERIALS AT THE GENERAL LOCATIONS DESCRIBED HEREIN:

1. ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN. TO BE USED WHERE THE DEPTH OF MATERIAL LOSS OR DEPTH TO SOUND CONCRETE EXCEEDS ONE INCH. (THESE AREAS ARE TYPICALLY TOO SMALL TO JUSTIFY USING PNEUMATICALLY PLACED MORTAR)
2. ITEM SPECIAL - PNEUMATICALLY PLACED MORTAR (SEE PROPOSAL NOTE)
3. ITEM SPECIAL - REPAIRING CONCRETE WITH SOLVENT-FREE EPOXY RESIN. TO BE USED WHERE THE DEPTH OF MATERIAL LOSS IS ONE HALF INCH OR LESS. THESE AREAS ARE TYPICALLY DEFINED AS HAVING POPOUTS, BEING LIGHTLY SCALED OR HONEYCOMBED.

THE REPAIR LOCATIONS SHALL BE DETERMINED BY SOUNDING ALL CONCRETE COMPONENTS OF THE BRIDGES IN ACCORDANCE WITH THE FOLLOWING ITEM:

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 REPAIRED. THE CONTRACTOR SHALL SOUND THE CONCRETE COMPONENTS LISTED WITH HAMMERS, AND THE ENGINEER SHALL OUTLINE ALL UNSOUND AREAS FOR CONCRETE RESTORATION. THE FOOTAGE UNDER THIS ITEM SHALL BE THE NUMBER OF SQUARE YARDS 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 YARD AT WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, AND EQUIPMENT NECESSARY FOR SOUNDING CONCRETE BRIDGE COMPONENTS, ITEM SPECIAL, SQ. FT.

THE ENGINEER SHALL MAKE THE FINAL DETERMINATION AS TO WHICH OF THE FOLLOWING REPAIR ITEMS WILL BE USED AT EACH LOCATION:

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

THE CONTRACTOR MAY USE EITHER OF THE FOLLOWING TWO REPAIR METHODS. EACH INDIVIDUAL PATCH LOCATION SHALL BE REPAIRED ENTIRELY BY THE SAME METHOD.

METHOD 1 - THIS ITEM CONSISTS OF PATCHING EXISTING STRUCTURAL CONCRETE IN ACCORDANCE WITH ITEM 519 AND THE FOLLOWING ADDITIONAL REQUIREMENTS:

A. SURFACE PREPARATION SHALL INCLUDE THE THOROUGH SANDBLASTING AND AIR CLEANING OF ALL SURFACES WHICH ARE TO BE IN CONTACT WITH THE PATCHING MATERIAL.

B. ALL OF THE ACCESSIBLE PREPARED CONCRETE SURFACES SHALL BE COATED WITH TWO-COMPONENT EPOXY BONDING AGENT CONFORMING TO AASHTO M-235-731, CLASS III. THE BONDING MATERIAL SHALL BE MIXED AND PLACED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

C. NO STEEL WIRE FABRIC SHALL BE REQUIRED.

METHOD 2 - THIS ITEM CONSISTS OF PATCHING EXISTING STRUCTURAL CONCRETE USING A TROWELABLE MORTAR IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

A. DESCRIPTION: THIS WORK 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 IN ACCORDANCE WITH THESE SPECIFICATIONS, AND IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

B. MATERIALS: THE PATCHING MATERIAL SHALL BE SIKATOP 122 AND 123, THERMAL-CHEM PRODUCT NO. 304, POLYCARB MARK 193.4 AND 194, FIVE STAR HIGHWAY PATCH, UPCO BOSTICK 964, EUCLID CHEMICAL EUCO VERTICOAT, MASTER BUILDERS SET VERTIPATCH 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: 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 OF AN INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICAL. AFTER COMPLETION OF THE SECONDARY REMOVAL OPERATION, THE ENGINEER WILL RE-SOUND THE AREAS TO ENSURE THAT ONLY SOLID CONCRETE REMAINS. THE CONTRACTOR SHALL LEAVE HIS LADDERS, PLATFORMS, OR SCAFFOLDS IN PLACE FOR A SUFFICIENT LENGTH OF TIME AND IN SUCH A MANNER TO PERMIT THE ENGINEER TO SOUND THE CONCRETE. 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 NORMAL 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, LAITANCE AND ALL TRACES OF FOREIGN MATERIAL. IF NECESSARY, DETERGENT CLEANING SHALL PRECEDE BLAST CLEANING TO ENSURE THE REMOVAL OF CONTAMINANTS THAT ARE DETERIMENTAL TO ACHIEVING 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 THE 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. 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.

H. BASIS OF PAYMENT: PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
519	SQUARE FT.	PATCHING CONCRETE STRUCTURES AS PER PLAN

ITEM SPECIAL - REPAIRING CONCRETE STRUCTURES WITH SOLVENT FREE EPOXY RESIN

A. DESCRIPTION: THIS ITEM CONSISTS OF THE REMOVAL OF ALL LOOSE AND DISINTEGRATED CONCRETE, PREPARATION OF THE SURFACE, AND THE MIXING AND APPLICATION OF THE EPOXY RESIN AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS, IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

B. MATERIALS: SHALL BE A TWO PART, SOLVENT FREE, EPOXY RESIN COATING. THE COLOR SHALL CLOSELY MATCH THAT OF THE CONCRETE. THE MATERIAL SHALL BE SIKAGARD 62, EUCLID CHEMICAL EPOXY 452 LV, POLY-CARB MARK-65; THERMAL-CHEM PRODUCT NO. 901 OR DURALKOTE.

A MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT AT THE JOB SITE DURING THE APPLICATION OF THE EPOXY COATING UNTIL SUCH A TIME AS HE AND THE ENGINEER ARE SATISFIED THE CONTRACTOR IS QUALIFIED IN ALL ASPECTS OF APPLYING THE EPOXY COATING.

C. REMOVAL OF CONCRETE: ALL LOOSE AND DISINTEGRATED CONCRETE SHALL BE REMOVED FROM THE AREAS TO BE REPAIRED IN SUCH A MANNER AND TO SUCH AN EXTENT AS TO EXPOSE A SOLID CONCRETE SURFACE. AFTER COMPLETION OF THE REMOVAL OPERATION THE ENGINEER WILL RE-SOUND THE AREA TO INSURE THAT ONLY SOLID CONCRETE REMAINS. THE CONTRACTOR SHALL LEAVE HIS LADDERS, PLATFORMS, OR SCAFFOLDS IN PLACE FOR A SUFFICIENT LENGTH OF TIME AND IN SUCH A MANNER TO PERMIT THE ENGINEER TO SOUND THE CONCRETE.

CONCRETE MAY BE REMOVED BY SCABBLERS, CHIPPING, OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 10 POUND CLASS. CARE SHALL BE USED IN WORKING NEAR REINFORCING STEEL SO AS NOT TO DAMAGE OR DEBOND THE STEEL, OR TO SHATTER THE CONCRETE AROUND IT. WHEN REMOVAL BECOMES EXTENSIVE THE ENGINEER MAY REQUIRE AN AREA TO BE REPAIRED AND PAID FOR UNDER THE APPROPRIATE CONCRETE PATCHING ITEM.

D. SURFACE PREPARATION: CLEANING SHALL PRECEDE THE APPLICATION OF THE COATING BY NOT MORE THAN 24 HOURS. THE SURFACE TO BE COATED AND 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. SURFACES SHALL BE MADE FREE TO SPALL, LAITANCE, AND ALL TRACES OF FOREIGN MATERIALS.

E. APPLICATION: THE EPOXY SHALL BE APPLIED TO THE CONCRETE SURFACES BY BRUSHING, UNDER CONDITIONS IN THE MANNER SPECIFIED BY THE MANUFACTURER. TWO COATS SHALL BE APPLIED AT THE RATE OF 200 SQUARE FEET PER GALLON FOR EACH COAT. THE FIRST COAT SHALL BE TINTED TO APPEAR DIFFERENT IN COLOR THAN THE SECOND COAT. THE COLOR OF THE SECOND SHALL CLOSELY MATCH THAT OF THE EXISTING CONCRETE SURFACE.

F. PAYMENT: THE COST OF ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR THE COATING OF THE CONCRETE INCLUDING REMOVALS AND SURFACE PREPARATION, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ. FT.	REPAIRING CONCRETE STRUCTURES WITH SOLVENT FREE EPOXY RESIN

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 THE PATCHING ITEM USED.

STRUCTURES CONT'D

ITEM 517 - RAILING FACED, AS PER PLAN

A. DESCRIPTION: THIS ITEM SHALL CONSIST OF FACING EXISTING CURB STYLE PARAPETS TO ATTAIN A DEFLECTOR PARAPET SHAPE USING CAST-IN-PLACE CONCRETE.

B. REMOVAL: THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING ALUMINUM RAILS AND POSTS. HE SHALL DELIVER AND UNLOAD ALL TURNED DOWN RAILING END PANELS AT A DESIGNATED AREA AT THE STATE MAINTENANCE YARD ON SOM CENTER ROAD IN MAYFIELD, OHIO, (SHEET 140). THE EXISTING CONCRETE CURB SHALL BE REMOVED TO PROVIDE CLEARANCE FOR PLACING CONCRETE AS DETAILED IN THE PLANS. THE WINGWALL PARAPET AND CURB SHALL BE REMOVED WITHIN THE 8 FOOT WINGWALL TRANSITION LENGTH AS DETAILED IN THE PLANS. ALL LOOSE OR UNSOUND PARAPET CONCRETE SHALL ALSO BE REMOVED. 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-CLASS. DELIVERY AND UNLOADING SHALL BE PAID FOR UNDER ITEM SPECIAL-DELIVERY & OF UNLOADING ALUMINUM POSTS AND RAILS.

C. DOWEL HOLES AND REINFORCING STEEL: 1 1/4" DOWEL HOLES SHALL BE DRILLED AT 12 INCHES CENTER TO CENTER AS SHOWN ON THE PLANS. THE GROUT SHALL CONSIST OF CEMENT AND WATER USING TYPE I, TYPE III, OR SHRINKAGE COMPENSATING CEMENT. CLEAN HOLES SHALL BE SATURATED THOROUGHLY WITH WATER FOR A MINIMUM OF 5 MINUTES PRIOR TO PLACING GROUT. IMMEDIATELY PRIOR TO GROUTING, ALL FREE STANDING WATER SHALL BE REMOVED FROM HOLES. AFTER INITIAL MIXING, THINNING OR RETEMPERING OF GROUT WITH EXTRA WATER SHALL NOT BE ALLOWED. HARDENED OR SET GROUT WHICH HAS BECOME TOO STIFF OR DRY TO PROVIDE A GOOD BOND SHALL BE DISCARDED. DOWELS SHALL NOT BE INSTALLED IF THE MEAN AIR OR GROUT TEMPERATURES ARE LESS THAN 45 F. FURTHERMORE, AFTER PLACING, THE FRESH GROUT SHALL BE MAINTAINED AT A TEMPERATURE OF NOT LESS THAN 45 F FOR 72 HOURS, AND AT NOT LESS THAN 40 F FOR AN ADDITIONAL 4 DAYS. THE TEMPERATURE OF THE MIXED GROUT, IMMEDIATELY BEFORE PLACING, SHALL BE NOT LESS THAN 50 F NOR MORE THAN 90 F. THE CEMENT GROUT SHALL BE CURED CONTINUOUSLY WITH EITHER WET RAGS OR A SATISFACTORY CURING COMPOUND (WHICH MUST BE SUBSEQUENTLY REMOVED) FOR A MINIMUM PERIOD OF 3 DAYS WITHOUT DISTURBING THE DOWELS. HOLES NEED TO BE ONLY 1/8" LARGER THAN THE DOWEL DIAMETER. GROUT ANCHORING USING NON SHRINKING EPOXY MORTAR AS PER SS 853 AND 956 MAY BE USED IN LIEU OF THE ABOVE REQUIREMENTS WITH THE EXCEPTION THAT THE HOLE SIZE SHALL BE 3/4" DIA. POLYESTER/VINYLESTER RESIN ANCHORS AS PER SS 852 AND 952 MAY BE USED IN LIEU OF EPOXY SECURED ANCHORS. *

ALL REINFORCING STEEL IS INCLUDED UNDER THIS ITEM OF WORK.

D. SURFACE PREPARATION: THE PARAPET SURFACE 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, LAITANCE AND ALL TRACES OF FOREIGN MATERIAL. IF NECESSARY, DETERGENT CLEANING SHALL PRECEDE BLAST CLEANING TO ENSURE THE REMOVAL OF CONTAMINANTS THAT ARE DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

E. MATERIALS

REINFORCING STEEL EPOXY COATED	509
CONCRETE	511, CLASS S

F. PARAPET DEFLECTION JOINTS

DEFLECTION JOINTS SHALL BE PLACED IN THE NEW CONCRETE PARAPETS AT THE SAME LOCATION AS THE EXISTING ONES.

DEFLECTION JOINTS SHALL BE MADE VERTICALLY OR AT RIGHT ANGLES TO THE DECK BY SAWING. THE SAWING SHALL BE DONE AFTER THE CONCRETE HAS TAKEN ITS INITIAL SET AND BEFORE ANY SHRINKAGE CRACKS CAN DEVELOP. THE USE OF AN EDGE GUIDE, FENCE OR JIG IS REQUIRED TO ENSURE THAT THE CUT OF THE JOINT IS STRAIGHT, TRUE AND ALIGNED ON ALL FACES OF THE PARAPET FACING. THE NEED FOR A GUIDE ON THE BACK SIDE MAY BE ELIMINATED IF THE INITIAL CUT ON THE FRONT SIDE OF THE PARAPET FACING IS AT LEAST TWO-THIRDS OF THE WAY THROUGH THE PARAPET FACING. THE REAR CUT WOULD THEN BE GUIDED BY THE SLOT OF THE FIRST CUT AND BY THE EXISTING DEFLECTION JOINT SLOT. A SAW BLADE SUFFICIENTLY LARGE ENOUGH TO SAW THROUGH THE ENTIRE PARAPET WOULD BE ACCEPTABLE, BUT THE MINIMUM DEPTH OF THE SAW CUT SHALL BE TWO INCHES. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, NOT TO EXCEED ONE QUARTER INCH. THE OUTSIDE ONE INCH OF THE PERIMETER OF THE DEFLECTION JOINT SHALL BE SEALED WITH A POLYURETHANE OR POLYMERIC JOINT SEALANT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION TT-S-00227E. THE BOTTOM ONE QUARTER INCH OF BOTH THE INSIDE AND OUTSIDE FACES OF THE PARAPET FACING SHOULD BE LEFT UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE.

G. CONCRETE CURING. SEE SS 836.

H. METHOD OF MEASUREMENT: THE QUANTITY SHALL BE THE ACTUAL LENGTH OF THE RAILING FACED, MEASURED FROM END OF WINGWALL TO END OF WINGWALL. THIS ITEM SHALL INCLUDE THE FURNISHING OF ALL LABOR EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS WORK. ALL COSTS OF REMOVAL, DOWEL HOLES, REINFORCING STEEL, CONCRETE, INSTALLING DEFLECTION JOINTS AND CONSTRUCTING WINGWALL TRANSITIONS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
517	LIN. FT.	RAILING FACED, AS PER PLAN, TYPE A
517	LIN. FT.	RAILING FACED, AS PER PLAN, TYPE B

* ALL LOOSE AND UNSOUND CONCRETE IN THE AREA OF THE PARAPET TO BE FACED SHALL BE REMOVED. ALL REMAINING SOUND CONCRETE SHALL BE MECHANICALLY SCARIFIED 1/4" DEEP.

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.

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. ALL UNSOUND CONCRETE INCLUDING ALL PATCHES OTHER THAN SOUND PORTLAND CEMENT CONCRETE, AND ALL OBVIOUSLY LOOSE AND DISINTEGRATED CONCRETE SHALL 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 CONTRACTORS RESPONSIBILITY TO SUPPLY A CONCRETE WHICH MEETS THESE SPECIFICATIONS AND PROVIDES THE NECESSARY WORKABILITY, FINISHABILITY AND PUMPABLITY IF NEEDED. THE INCORPORATION 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 SHEET 128.

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 WILL 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.

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 NOT 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 PROCEDURE 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 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 BETWEEN OCT. 31 TO APRIL 1 EXCEPT BY SPECIFIC PERMISSION OF THE DIRECTOR.

DURING DELAYS IN THE PATCH PLACEMENT OPERATIONS OR 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 1	-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 DEGREES F. COARSE AGGREGATE SHALL BE ADDED AT A RATE OF 25 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 WITH SECTION 451.09 OF THE CMS.

G. 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.

H. BASIS OF PAYMENT. PAYMENT SHALL BE MADE AT THE CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ. YD.	PATCHING CONCRETE BRIDGE DECK OVERLAYS

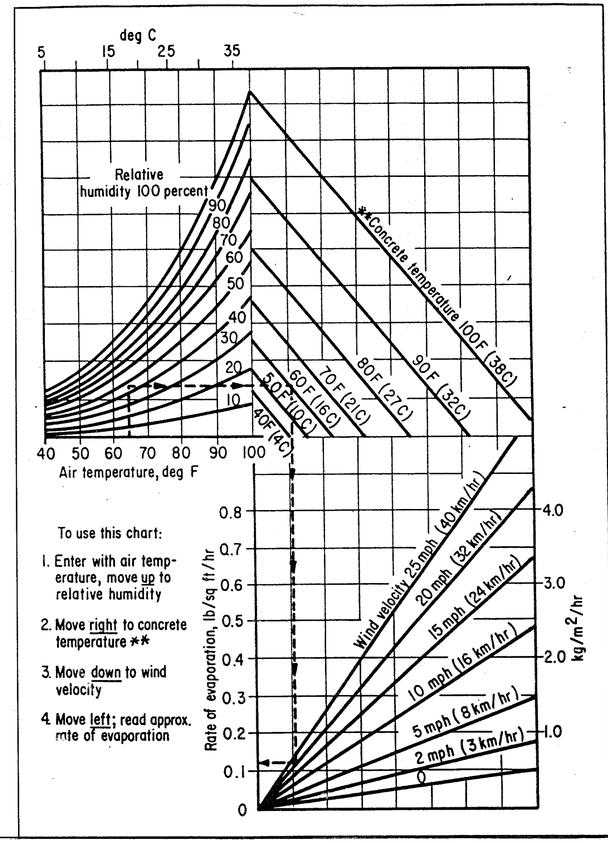
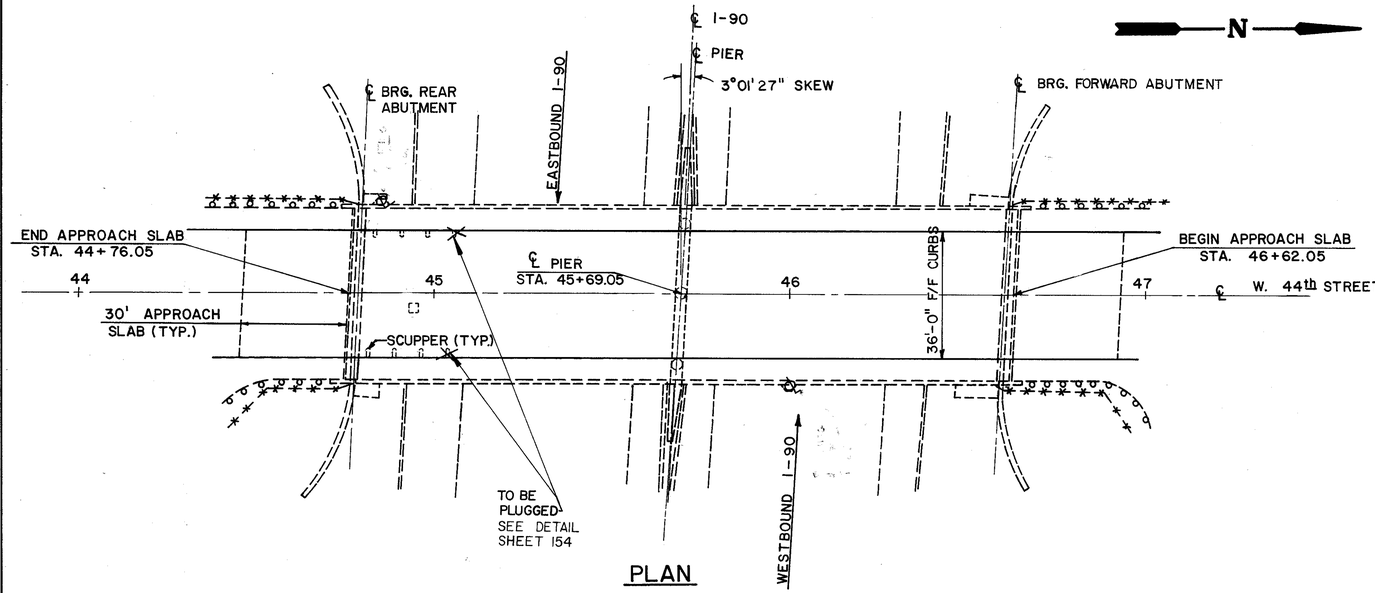


***Fig. 1**— Effect of concrete and air temperatures, relative humidity, and wind velocity on the rate of evaporation of surface moisture from concrete. This chart provides a graphic method of estimating the loss of surface moisture for various weather conditions. To use the chart, follow the four steps outlined above.*

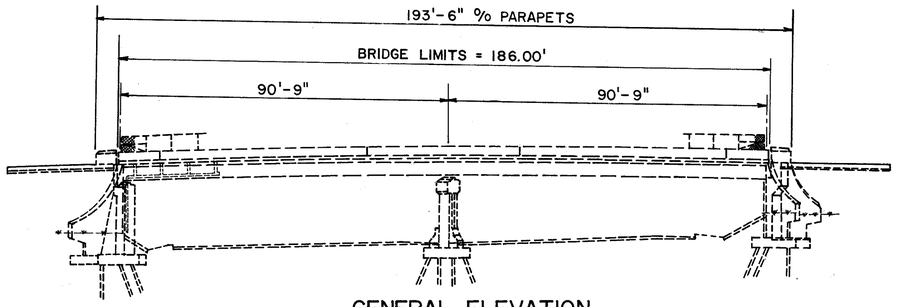
* ACI Committee 308, "Standard Practice for Curing Concrete (ACI 308-81)", American Concrete Institute, Detroit, 1984, 11 pp.

** In using this figure, the concrete temperature shall be taken as the average of the deck surface temperature and the plastic concrete temperature.

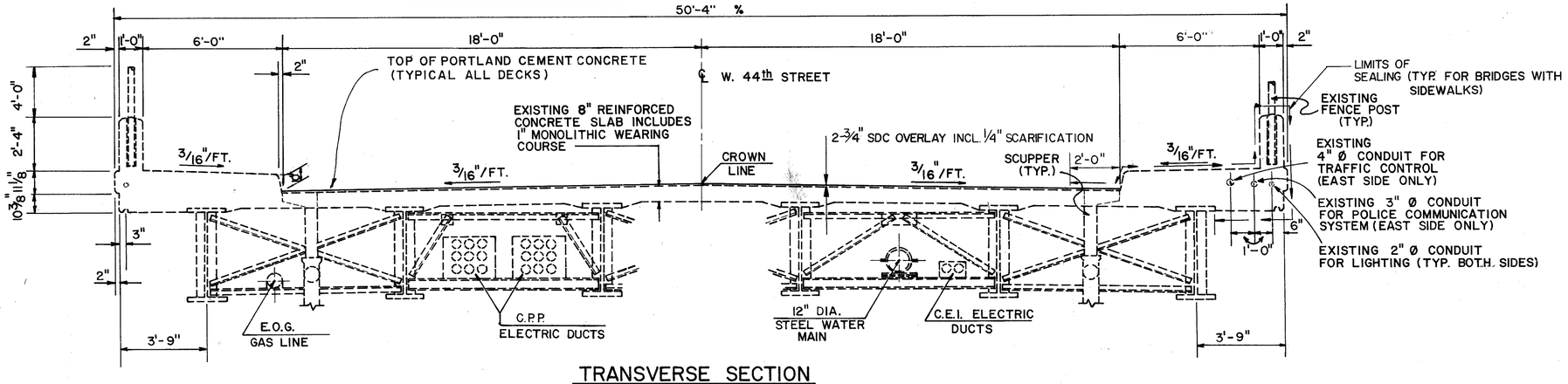
CUYAHOGA COUNTY CUY-90-13.41	OHIO	129 / 156
	FHWA REGION 5	
	FEDERAL PROJECT	



PLAN



GENERAL ELEVATION



TRANSVERSE SECTION

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL GIRDERS WITH REINFORCED CONCRETE DECK AND SUPERSTRUCTURE
SKEW: 3°-01'-27" LEFT FORWARD
SPANS: 90'-9", 90'-9" % BEARINGS
ROADWAY: 36'-0" F/F CURBS WITH 6'-0" SIDEWALKS
LOADING: HS 20-44 & INTERSTATE ALT. LD.
WEARING SURFACE: ASPHALT 2-1/2"
APPROACH SLABS: AS-1-67(30' LONG)
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
SLOPE PROTECTION: CRUSHED AGGREGATE

PROPOSED WORK

1. 2-¾" SDC OVERLAY AND REPAIR
2. DRAINAGE CLEANING, REPAIR, AND RETROFIT
3. PATCHING AND SEALING OF CONCRETE SURFACES
4. SOUNDING AND EPOXY INJECTION REPAIR OF DECK BOTTOM

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS SQ. FT.	519 PATCHING CONCRETE STRUCTURES, AS PER PLAN SQ. FT.	SPECIAL REPAIRING CONCRETE STRUCTURES WITH SOLVENT-FREE EPOXY RESIN SQ. FT.	
ABUTS. & WINGWALL	2025	41		
PARAPETS	1125		68	
PIERS & CAPS		10	10	
CURB & WALK			50	
TOTALS	3150	51	128	

UTILITIES LEGEND
C.P.P. CLEVELAND PUBLIC POWER
E.O.G. EAST OHIO GAS
C.E.I. CLEVELAND ELECTRIC ILLUMINATING
O.B.T. OHIO BELL TELEPHONE

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

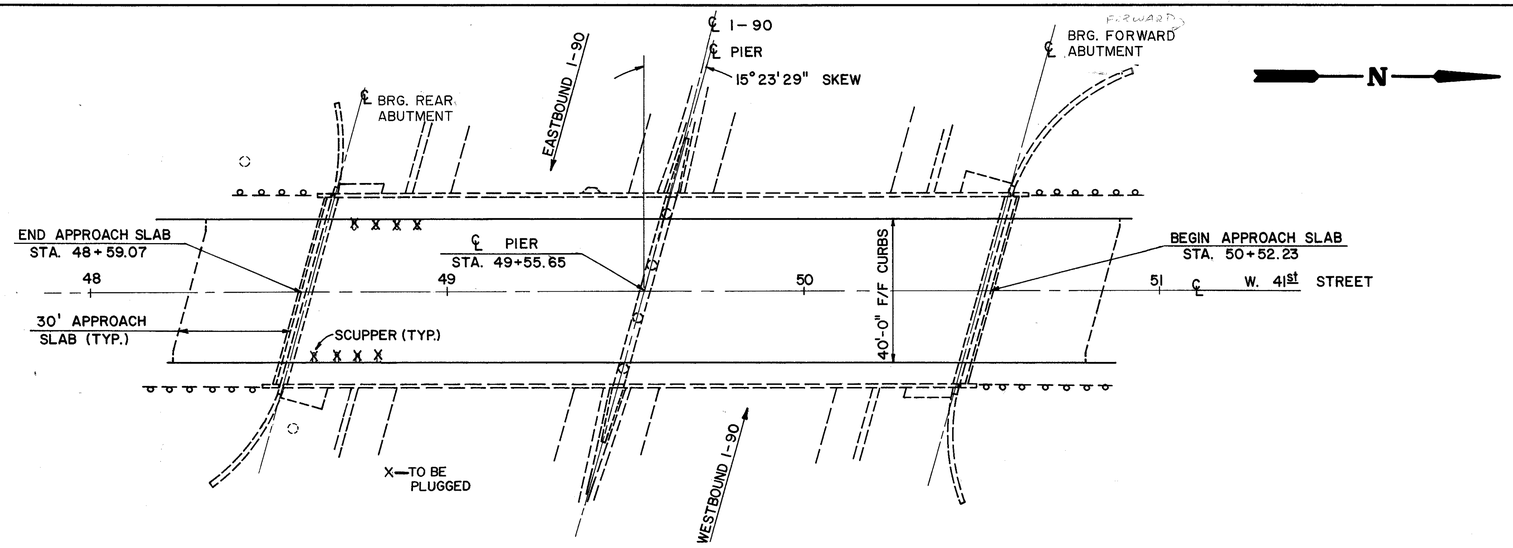
GENERAL PLAN & ELEVATION TRANSVERSE SECTION CUY-90-1345 W. 44th ST. OVER I-90

CUYAHOGA COUNTY OHIO

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
	SPR		DWL	

SHEET 9/36

CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	130 156



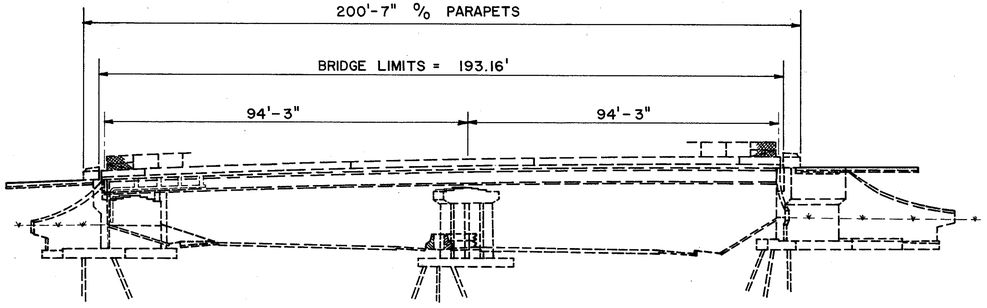
PLAN

EXISTING STRUCTURE
TYPE: CONTINUOUS STEEL GIRDERS WITH REINFORCED CONCRETE DECK AND SUPERSTRUCTURE
SKEW: 15°-23'-29" LEFT FORWARD
SPANS: 2 AT 94'-3" ℅ BEARINGS
ROADWAY: 40'-0" F/F CURBS WITH 6'-0" SIDEWALKS
LOADING: HS 20-44 & INTERSTATE ALT. LD.
WEARING SURFACE: 1" MONOLITHIC CONC.
APPROACH SLABS: AS-1-67(30' LONG)
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
SLOPE PROTECTION: CRUSHED AGGREGATE

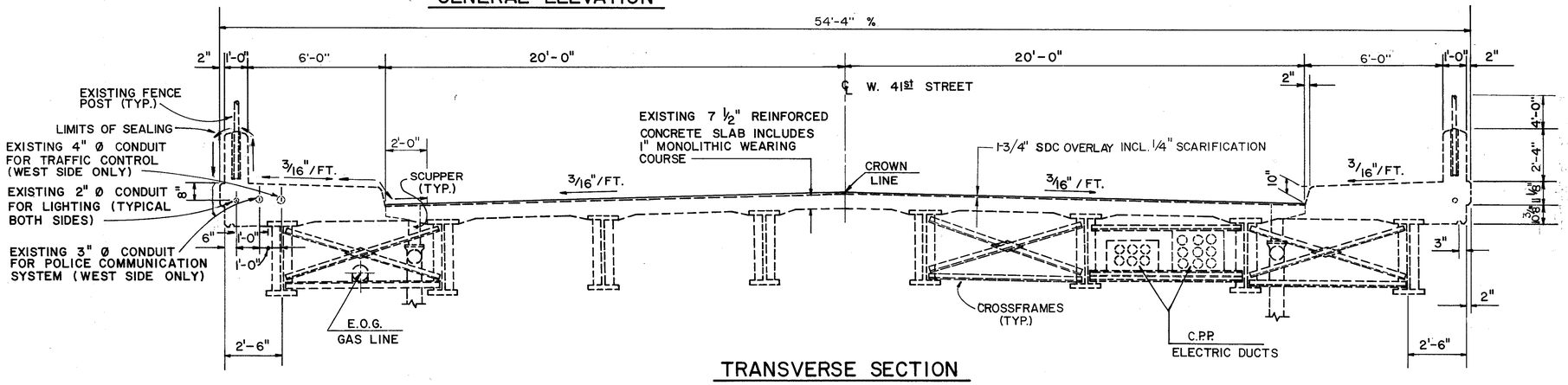
PROPOSED WORK

1. 1-3/4" SDC OVERLAY AND REPAIR
2. DRAINAGE RETROFIT
3. PATCHING AND SEALING OF CONCRETE SURFACES
4. SOUNDING AND EPOXY INJECTION REPAIR OF DECK BOTTOM
5. EXPANSION JOINT RAISING (SEE SHEET 144)

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS SQ. FT.	519 PATCHING CONCRETE STRUCTURES, AS PER PLAN SQ. FT.	SPECIAL REPAIRING CONCRETE STRUCTURES WITH SOLVENT-FREE EPOXY RESIN SQ. FT.	
ABUTS. & WINGWALL	1935	35		
PARAPETS	1152		65	
PIERS & CAPS		10	10	
CURB & WALK			50	
TOTALS	3087	45	125	



GENERAL ELEVATION



TRANSVERSE SECTION

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

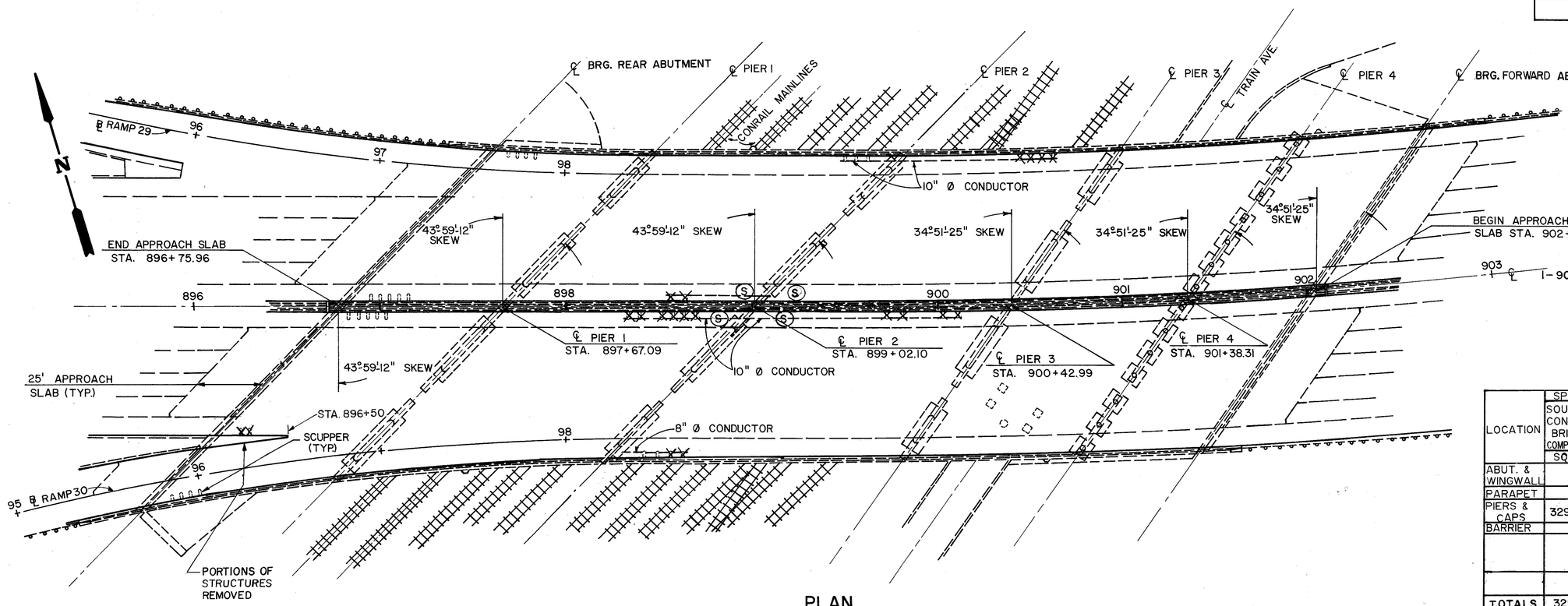
GENERAL PLAN & ELEVATION TRANSVERSE SECTION CUY-90-1361 W. 41st ST. OVER I-90

CUYAHOGA COUNTY OHIO

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
	SPR		DWL	

SHEET 10/36

CUYAHOGA COUNTY CUY-90-13.41	OHIO	131 / 156
	FHWA REGION 5	
	FEDERAL PROJECT	

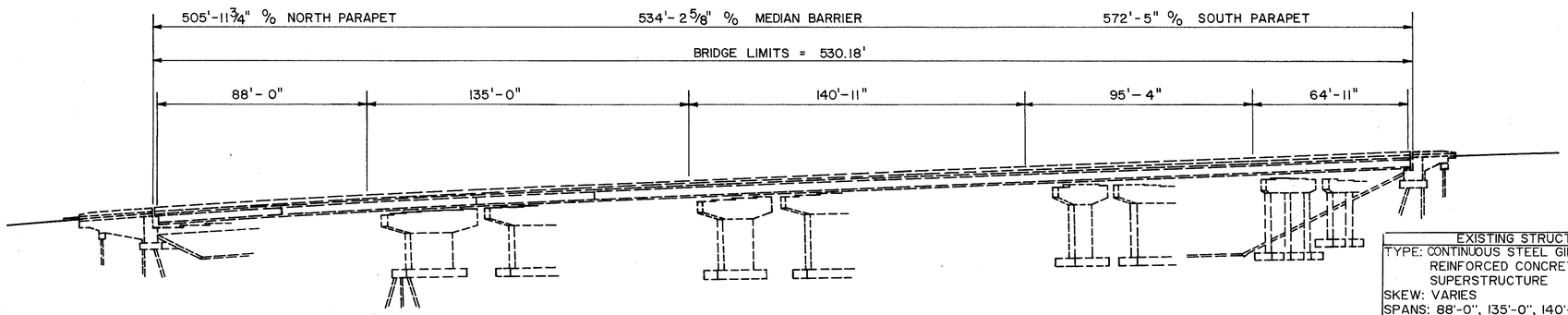


PLAN

X - EXISTING SCUPPER PLUGGED

(S) - NEW SCUPPER, SEE DETAILS, SHEETS 153-154

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS SQ. FT.	519 PATCHING CONCRETE STRUCTURES AS PER PLAN SQ. FT.	SPECIAL REPAIRING CONRETE STRUCTURES WITH SOLVENT-FREE EPOXY RESIN SQ. FT.	
ABUT. & WINGWALL		80		
PARAPET			108	
PIERS & CAPS	32976	169	161	
BARRIER		46		
TOTALS	32976	295	269	



GENERAL ELEVATION

PROPOSED WORK

1. 2-¾" SDC OVERLAY AND REPAIR
2. DRAINAGE CLEANING, REPAIR, AND RETROFIT
3. PATCHING AND SEALING OF CONCRETE SURFACES
4. SOUNDING AND EPOXY INJECTION REPAIR OF DECK BOTTOM
5. RESET ROCKERS

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL GIRDERS WITH REINFORCED CONCRETE DECK AND SUPERSTRUCTURE
SKEW: VARIES
SPANS: 88'-0", 135'-0", 140'-0", 93'-0" & 62'-0" ALONG MAIN TANGENT
ROADWAY: VARIES, TOE TO TOE OF CURBS
LOADING: HS 20-44 AND INTERSTATE ALT. LD.

WEARING SURFACE: ASPHALT, 2-1/2"
ALIGNMENT: TANGENT & SPIRAL TO LEFT
SUPERELEVATION: TRANSITIONAL
SLOPE PROTECTION: CRUSHED AGGREGATE AT ABUT. A-1 & CONCRETE AT ABUT. A-2

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

GENERAL PLAN & ELEVATION CUY-90-1372

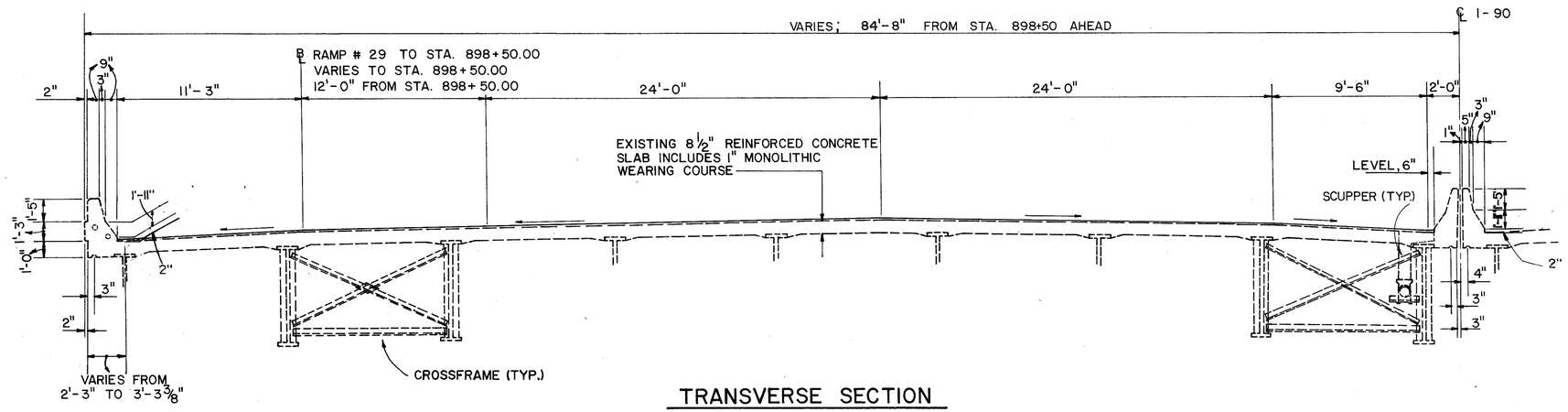
I-90 OVER CONRAIL & TRAIN AVE.

CUYAHOGA COUNTY — OHIO

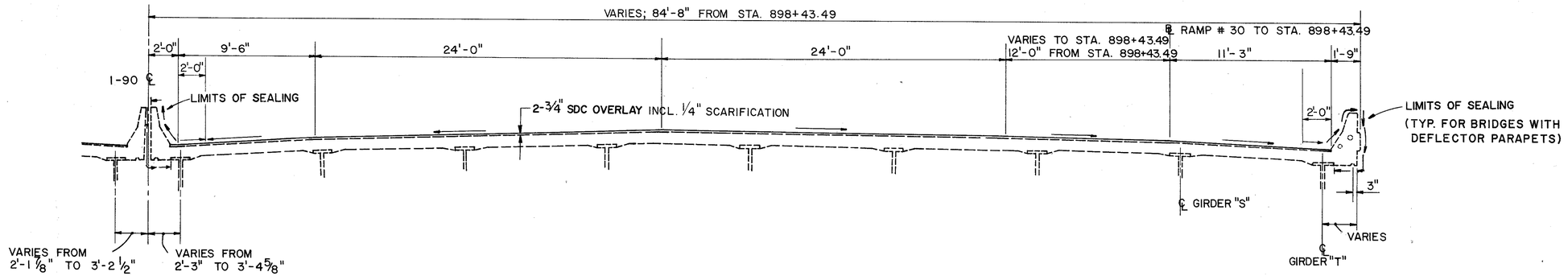
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
	SPR		DWL	

SHEET 11/36

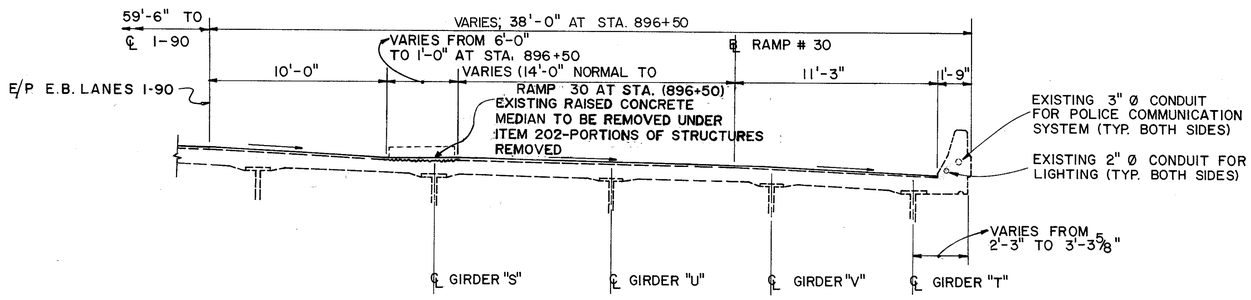
CUYAHOGA COUNTY CUY-90-13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	132 156



TRANSVERSE SECTION
WESTBOUND LANES



TRANSVERSE SECTION
EASTBOUND LANES
EXCEPT BELOW



TRANSVERSE SECTION
EASTBOUND LANES
RAMP # 30 FROM ABUT. A-1 TO STA. 896+50

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

TRANSVERSE SECTION
CUY-90-1372
I-90 OVER CONRAIL & TRAIN AVE.

CUYAHOGA COUNTY — OHIO

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
	SPR		DWL	

SHEET 12/36

CUYAHOGA COUNTY CUY-90-13,41	OHIO	133 / 156
	FHWA REGION 5	
	FEDERAL PROJECT	

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS SQ. FT.	519 PATCHING CONCRETE STRUCTURES AS PER PLAN SQ. FT.	SPECIAL REPAIRING CONCRETE STRUCTURES WITH SOLVENT-FREE EPOXY RESIN SQ. FT.	
ABUT. & WINGWALL		20		
PARAPETS			26	
PIERS & CAPS	6363	25	39	
BARRIER		10		
TOTALS	6363	55	65	

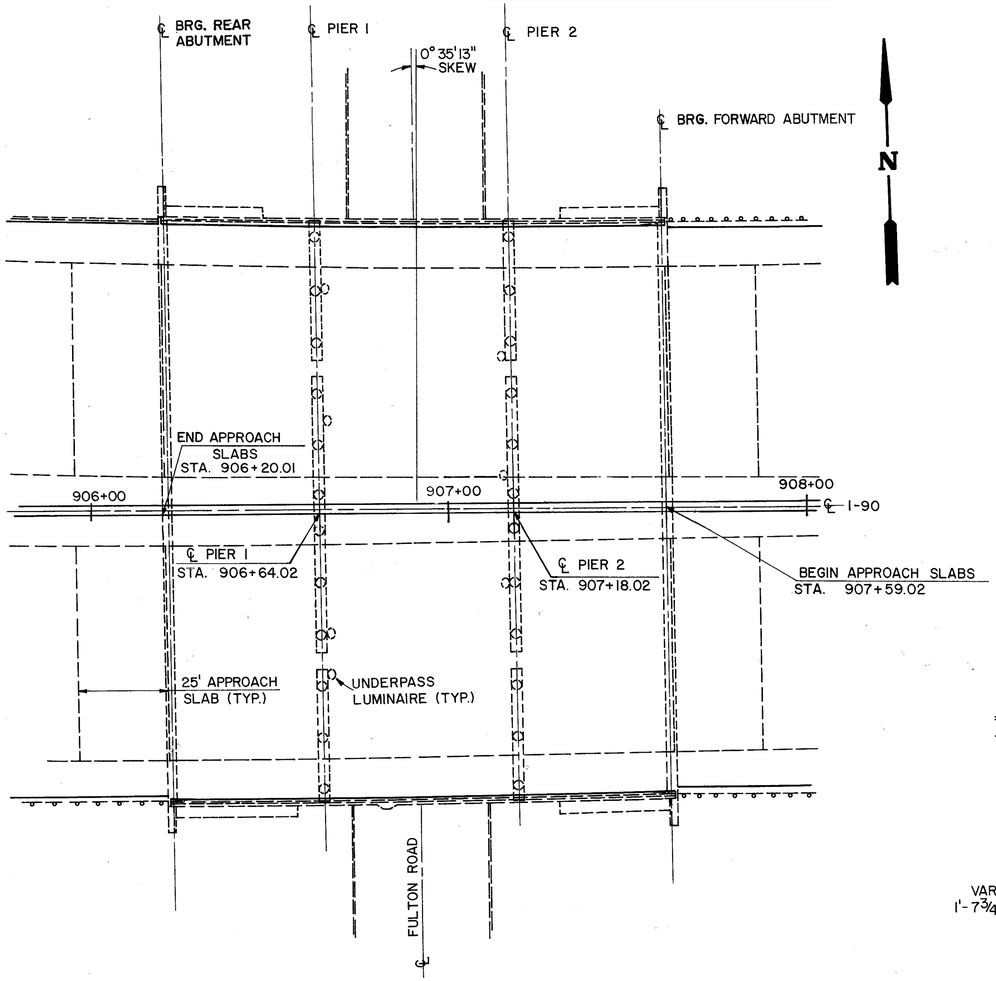
EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL GIRDERS WITH REINFORCED CONCRETE DECK AND SUPERSTRUCTURE
SKEW: 0°-35'-13" RT. FWD. TO LOCAL TANG.
SPANS: 43'-0", 54'-0", 40'-0" ALONG LOCAL TANGENT
ROADWAY: VARIES TOE TO TOE OF CURBS
LOADING: HS 20-44 AND INTERSTATE ALTERNATE LOADING
WEARING SURFACE: ASPHALT 2-1/2"
APPROACH SLABS: 25' LONG(AS-I-67)
ALIGNMENT: SPIRAL TO LEFT
SLOPE PROTECTION: CONCRETE

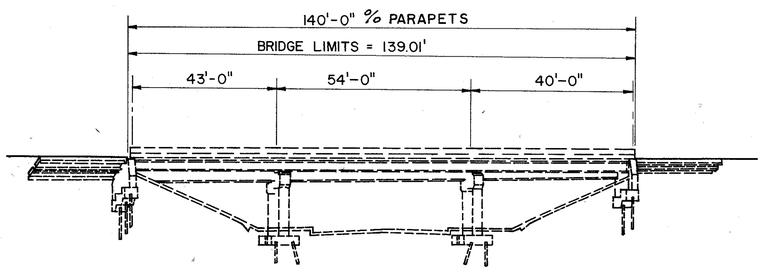
PROPOSED WORK

1. 2-¾" SDC OVERLAY AND REPAIR
2. PATCHING AND SEALING OF CONCRETE SURFACES
3. SOUNDING AND EPOXY INJECTION REPAIR OF DECK BOTTOM

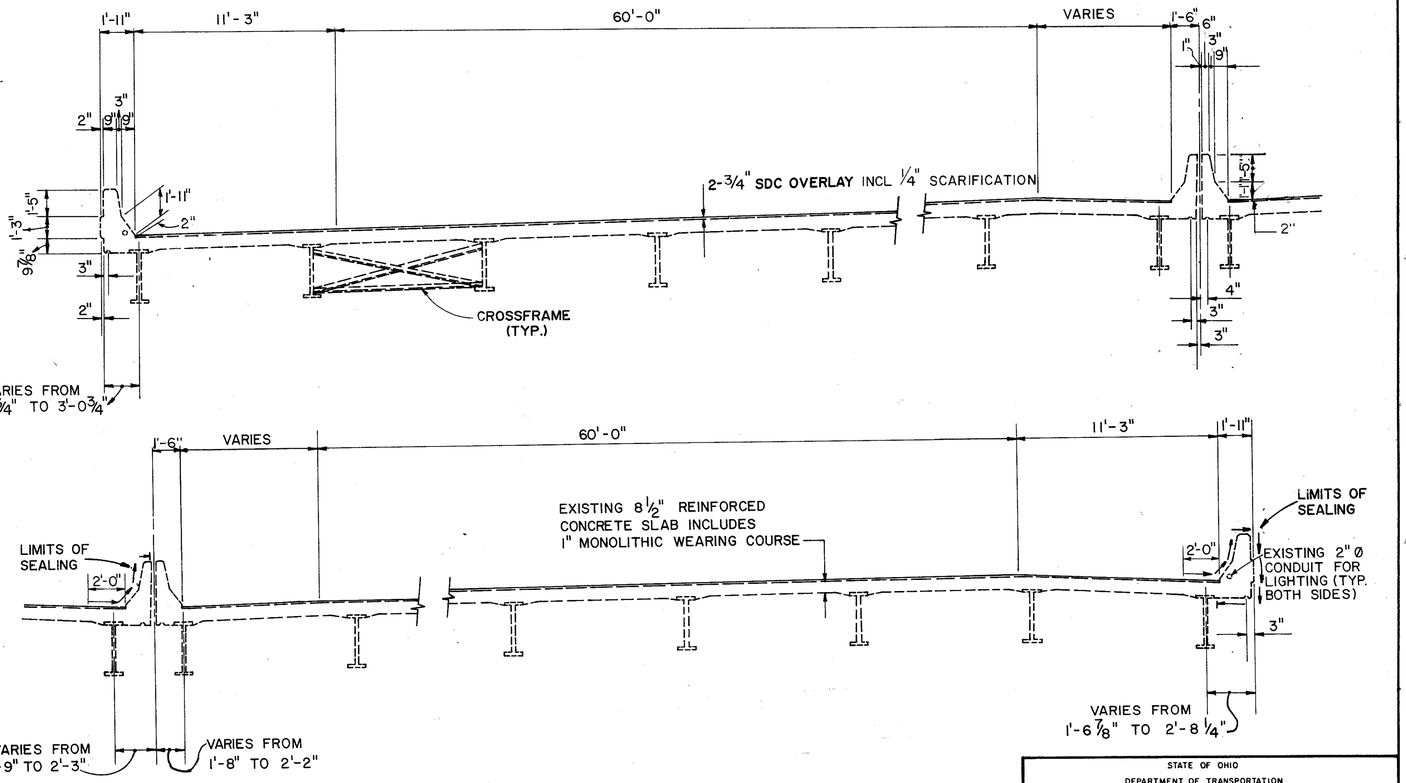
Face to Face of Curbs



PLAN



GENERAL ELEVATION



TRANSVERSE SECTION

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

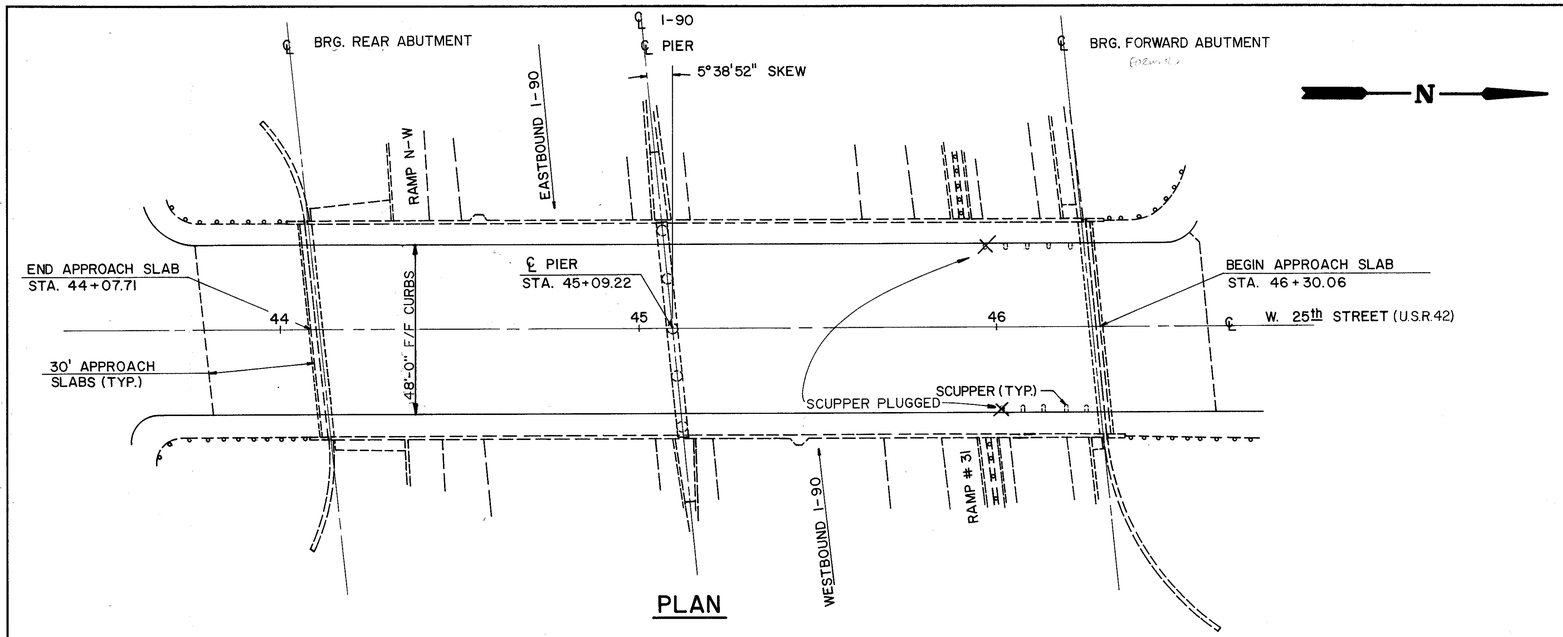
GENERAL PLAN & ELEVATION, TRANSVERSE SECTION CUY-90-1391 I-90 OVER FULTON ROAD

CUYAHOGA COUNTY OHIO

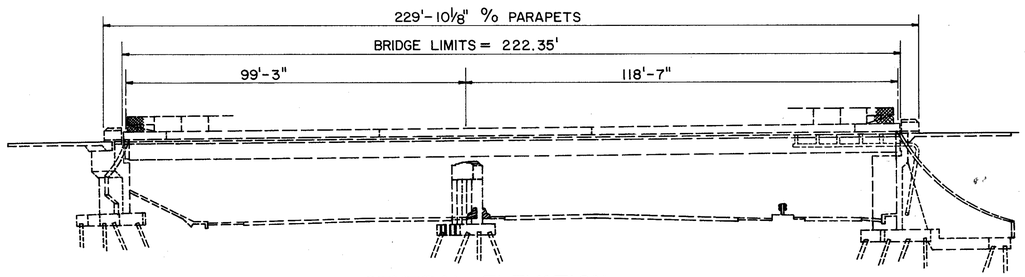
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
	SPR		DWL	

SHEET 13/36

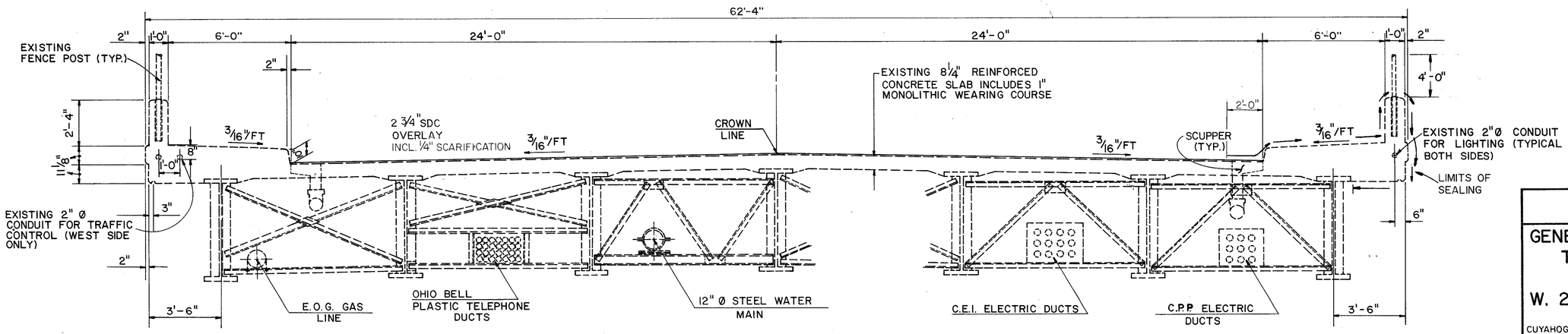
CUYAHOGA COUNTY CUY-90-13.41	OHIO	134 / 156
	FHWA REGION 5	
	FEDERAL PROJECT	



PLAN



GENERAL ELEVATION



TRANSVERSE SECTION

EXISTING STRUCTURE
TYPE: CONTINUOUS STEEL GIRDERS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
SKEW: 5°-38'-52", RIGHT FORWARD
SPANS: 99'-3", 118'-7" % BEARINGS
ROADWAY: 48'-0" F/F CURBS WITH 6'-0" SIDEWALKS
LOADING: HS20-44 & INTERSTATE ALT. LD.
WEARING SURFACE: ASPHALT 2-1/2"
APPROACH SLABS: AS-1-67(30' LONG)
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
SLOPE PROTECTION: CONCRETE

PROPOSED WORK

1. 2-¾" SDC OVERLAY AND REPAIR
2. DRAINAGE CLEANING, REPAIR
3. PATCHING AND SEALING OF CONCRETE SURFACES
4. SOUNDING AND EPOXY INJECTION REPAIR OF DECK BOTTOM

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS SQ. FT.	519 PATCHING CONCRETE STRUCTURES, AS PER PLAN SQ. FT.	SPECIAL REPAIRING CONCRETE STRUCTURES WITH SOLVENT-FREE EPOXY RESIN SQ. FT.	
ABUTS & WINGWALL	4851	49		
PARAPETS			76	
PIERS & CAPS	1467	10	10	
RETAINING WALL	12348	125		
CURB & WALK			50	
TOTALS	18666	184	136	

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

GENERAL PLAN & ELEVATION, TRANSVERSE SECTION CUY-90-1435

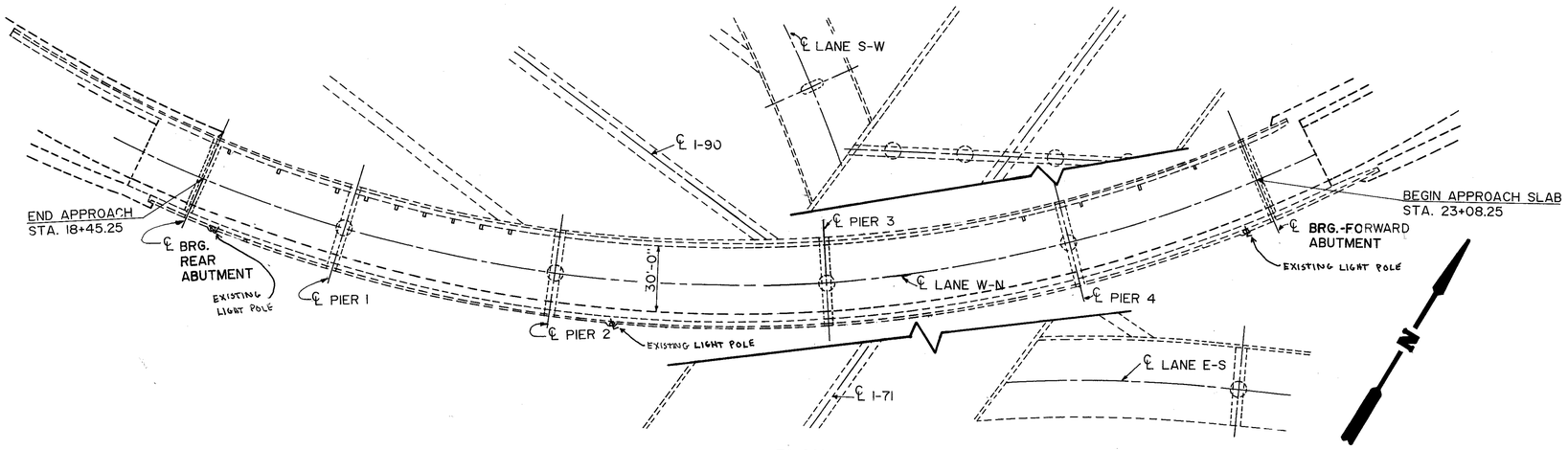
W. 25th ST. OVER I-90

CUYAHOGA COUNTY OHIO

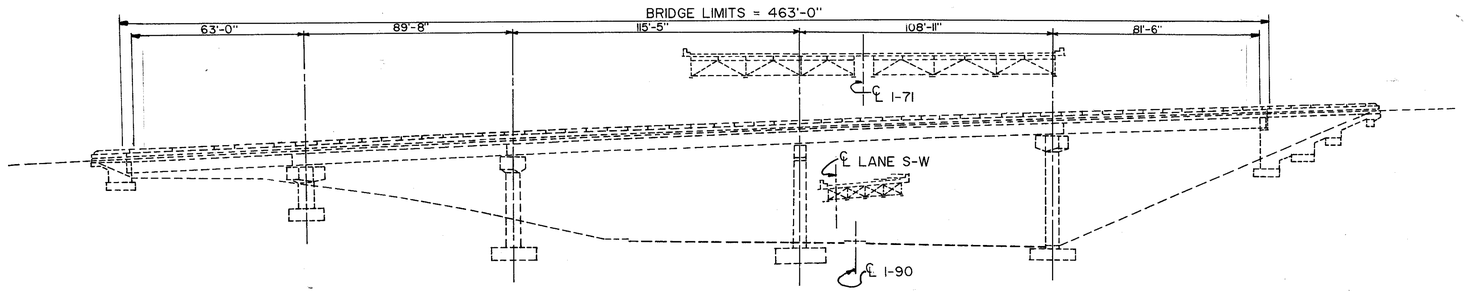
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
	SPR		DWL	

SHEET 14/36

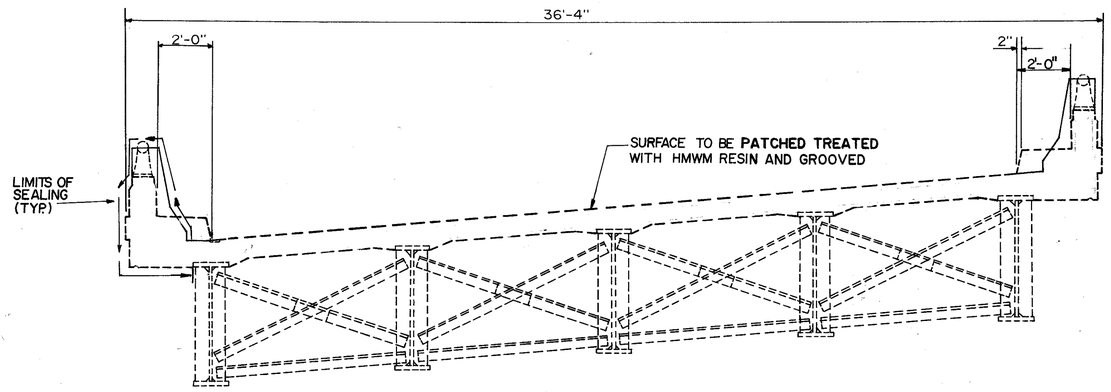
CUYAHOGA COUNTY CUY-90-13.41	OHIO	135 / 156
	FHWA REGION 5	
	FEDERAL PROJECT	



PLAN



GENERAL ELEVATION



TRANSVERSE SECTION

EXISTING STRUCTURE
TYPE: 5 SPAN CONTINUOUS WELDED GIRDER WITH REINFORCED CONCRETE SLAB
SPANS: 63'-0", 89'-8", 115'-5", 108'-11", 81'-6" = 458'-6" CENTER TO CENTER OF END BEARINGS
ROADWAY: 30'-0" ROADWAY WITH 2'-0" SAFETY CURBS. 34'-0" **FACE TO FACE** OF PARAPETS
LOADING: CF2000 (57) ADEQUATE FOR A.A.S.H.O. ALTERNATE LOADING
SKEW: 0°-00'-00"
WEARING SURFACE: 1" MONOLITHIC CONCRETE
APPROACH SLABS: 25'-0" (AS-1-54)
ALIGNMENT: 10°-00'-00" CURVE LEFT
SUPERELEVATION: .080 FT. PER FT.
1975 ADT: 14,279, DIRECTIONAL

PROPOSED WORK

1. **WEARING SURFACE REPAIR, HMWM TREATMENT AND GROOVING**
2. **PATCHING AND SEALING OF CONCRETE SURFACES**
3. **SOUNDING AND EPOXY INJECTION REPAIR OF DECK BOTTOM**
4. **INSTALLATION OF SAFETY SHAPE** RAILING FACING ON DECK AND WINGWALLS

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS SQ. FT.	519 PATCHING CONCRETE STRUCTURES, AS PER PLAN SQ. FT.	SPECIAL REPAIRING CONCRETE STUCTURES WITH SOLVENT-FREE EPOXY RESIN SQ. FT.		SPECIAL PATCHING CONCRETE BRIDGE DECK OVERLAYS SQ. YD.
ABUTS.& WINGWALL	990	70			
PARAPET					
PIERS & CAPS	4941	27	44		
DECK					370
TOTALS	5931	97	44		370

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

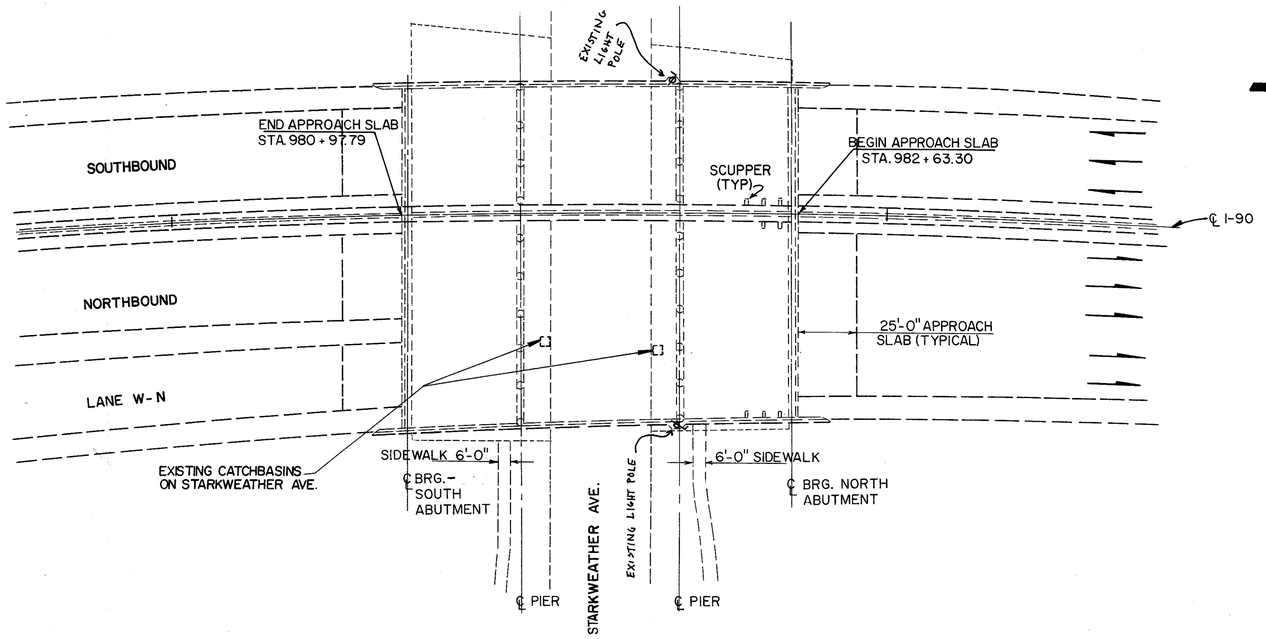
GENERAL PLAN & ELEVATION, TRANSVERSE SECTION LANE W-N CUY-90-1463R

CUYAHOGA COUNTY OHIO

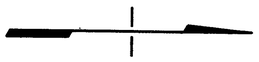
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
	DMS	DWL		

SHEET 15/36

CUYAHOGA COUNTY	OHIO	136
CUY - 90 - 13.41	FHWA REGION 5	156
	FEDERAL PROJECT	



PLAN



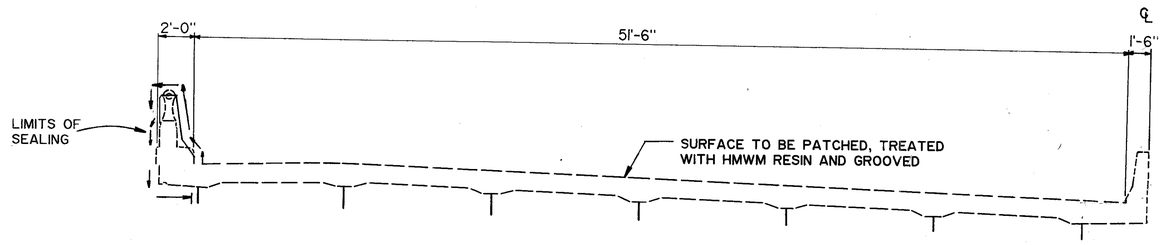
EXISTING STRUCTURE
TYPE: CONTINUOUS ROLLED BEAMS WITH REINFORCED DECK AND SUBSTRUCTURE
SPANS: 47'-0⅛", 67'-0", AND 47'-0"
ROADWAY: VARIES, TOE TO TOE OF CURBS.
LOADING: CF 2000(57) ADEQUATE FOR A.A.S.H.O. ALT. LOADING
SKEW: VARIES, 0°-9'-35" RIGHT FORWARD
WEARING SURFACE: 1½" DENSE CONCRETE
APPROACH SLABS: 25'-0" (AS-I-54)
ALIGNMENT: CURVE 1°-28'-00" RIGHT

PROPOSED WORK

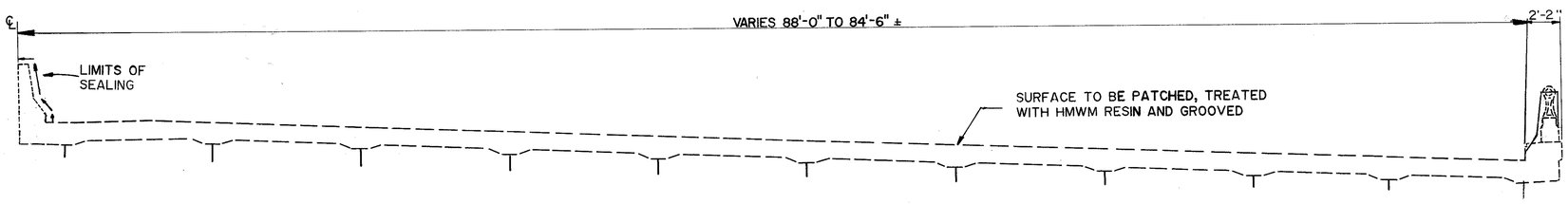
1. WEARING SURFACE REPAIR, HMWM TREATMENT AND GROOVING
2. DRAINAGE CLEANING AND REPAIR
3. PATCHING AND SEALING OF CONCRETE SURFACES
4. SOUNDING AND EPOXY INJECTION REPAIR OF DECK BOTTOMS
5. INSTALLATION OF SAFETY SHAPE RAILING FACING ON DECK AND WINGWALLS

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS SQ. FT.	519 PATCHING CONCRETE STRUCTURES, AS PER PLAN SQ. FT.	SPECIAL REPAIRING CONCRETE STRUCTURES WITH SOLVENT-FREE EPOXY RESIN SQ. FT.		SPECIAL PATCHING CONCRETE BRIDGE DECK OVERLAYS SQ. YD.
ABUTS & WINGWALL		120			
PARAPETS					
PIERS & CAPS	6462	36	29		
DECK		11			883
TOTALS	6462	167	29		883

ELEVATION



CROSS SECTION CUY-90-1490R, SOUTHBOUND LANES



CROSS SECTION CUY-90-1490R, NORTHBOUND LANES

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

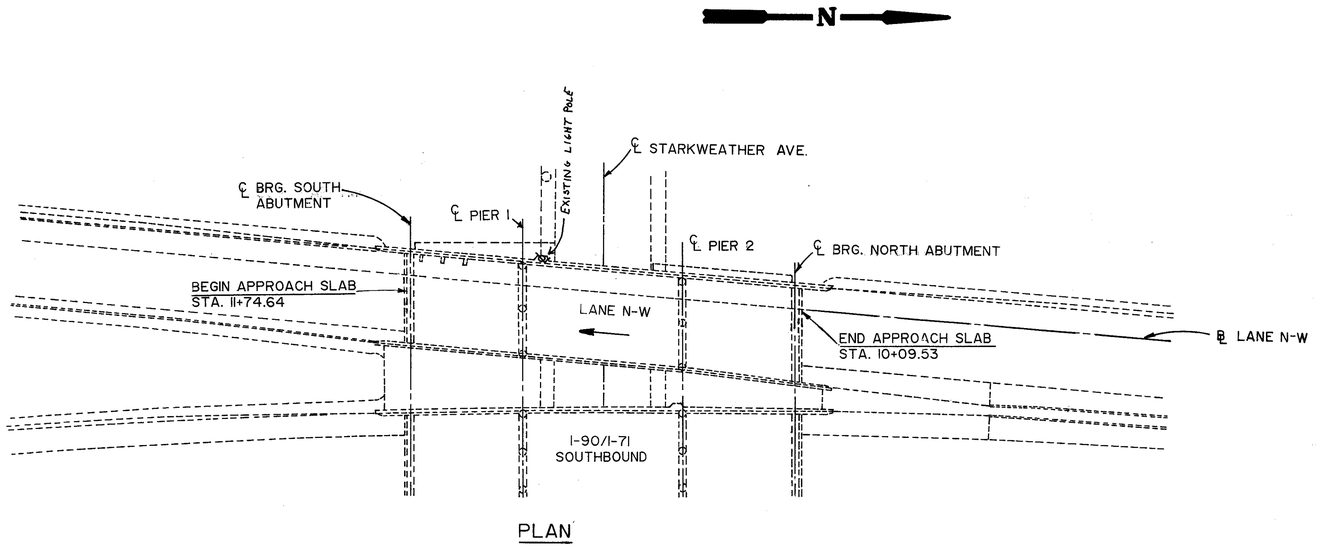
GENERAL PLAN & ELEVATION TRANSVERSE SECTION CUY-90-1490R I-90 OVER STARKWEATHER AVE.

CUYAHOGA COUNTY OHIO

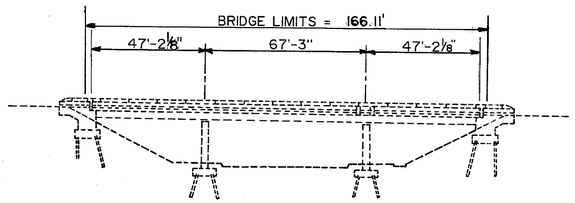
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
			DWL.	

SHEET 16/36

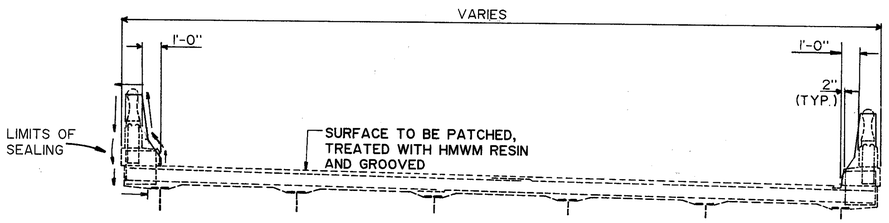
CUYAHOGA COUNTY CUY-90-13.41	OHIO	137 / 156
	FHWA REGION 5	
	FEDERAL PROJECT	



PLAN



GENERAL ELEVATION



TRANSVERSE SECTION

EXISTING STRUCTURE
TYPE: CONTINUOUS ROLLED BEAMS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 47'-2⅛", 67'-3" AND 47'-2⅛"
ROADWAY: VARIES, TOE TO TOE OF CURBS
LOAD.: CF 2000(57) ADEQUATE FOR A.A.S.H.O. ALTERNATE LOADING
SKEW: VARIES, 4°-56'-01" RIGHT FORWARD
WEARING SURFACE: 1½" DENSE CONCRETE OVERLAY
APPROACH SLAB: 25'-0" (AS-1-54)
ALIGNMENT: TANGENT

PROPOSED WORK

1. WEARING SURFACE REPAIR, HMWM TREATMENT AND GROOVING
2. DRAINAGE CLEANING AND REPAIR
3. PATCHING AND SEALING OF CONCRETE SURFACES
4. SOUNDING AND EPOXY INJECTION REPAIR OF DECK BOTTOM
5. INSTALLATION OF SAFETY SHAPE RAILING FACING ON DECK AND WINGWALLS

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS SQ. FT.	519 PATCHING CONCRETE STRUCTURES AS PER PLAN SQ. FT.	SPECIAL REPAIRING CONCRETE STRUCTURES WITH SOLVENT-FREE EPOXY RESIN SQ. FT.		SPECIAL PATCHING CONCRETE BRIDGE DECK OVERLAYS SQ. YD.
ABUTS. & WINGWALL		12			
PARAPETS					
PIERS & CAPS	1872	11	10		
DECK					105
TOTALS	1872	23	10		105

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

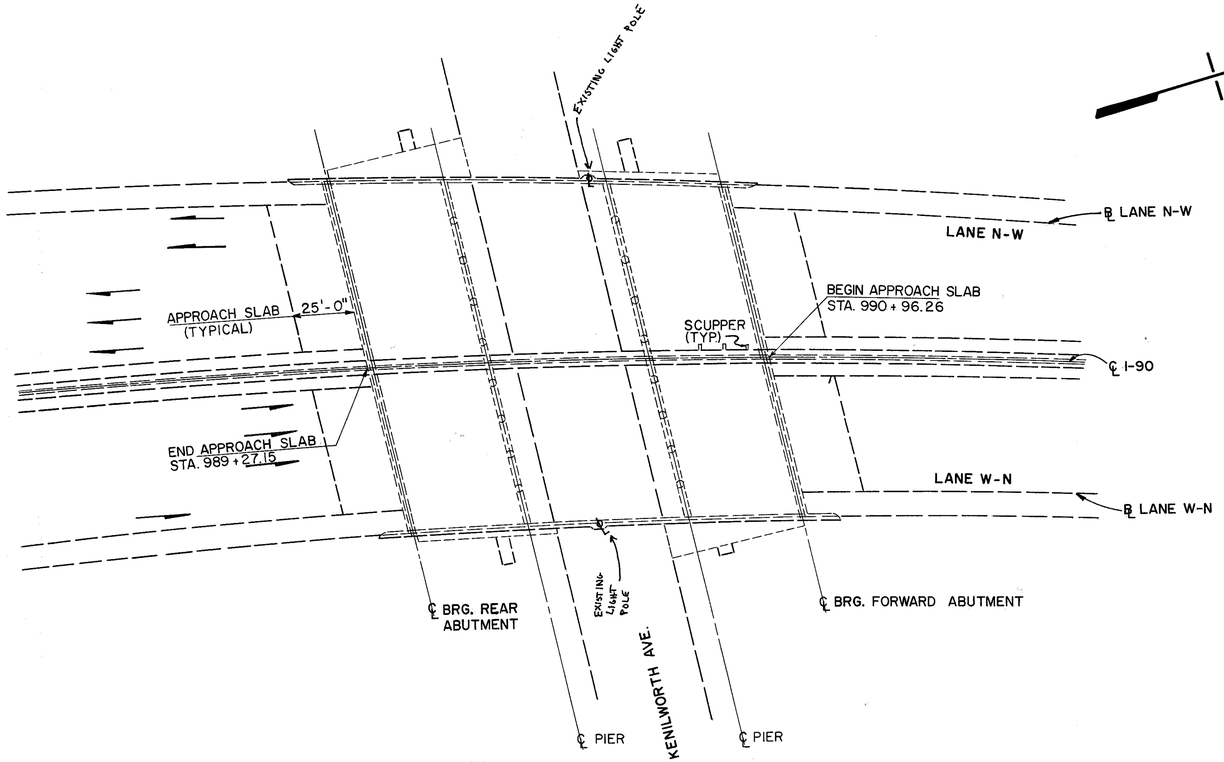
GENERAL PLAN & ELEVATION TRANSVERSE SECTION LANE N-W CUY-90-1490L

CUYAHOGA COUNTY OHIO

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
	DMS		DWL	

SHEET 17/36

CUYAHOGA COUNTY	OHIO	138
CUY-90-13.41	FHWA REGION 5	156
	FEDERAL PROJECT	



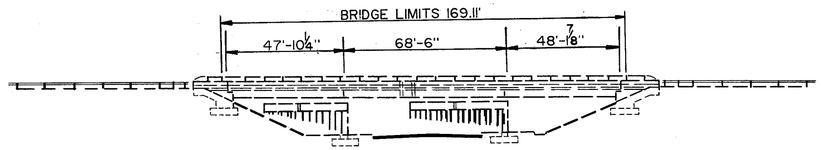
PLAN

EXISTING STRUCTURE
TYPE: CONTINUOUS ROLLED BEAMS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 47'-10¼", 68'-6" AND 48'-1⅞"
ROADWAY: WIDTH VARIES TOE TO TOE CURBS
LOADING: CF 2000(57) ADEQUATE FOR A.A.S.H.O. ALT. LOADING
SKEW: VARIES 12°-01'-40" RIGHT FORWARD
WEARING SURFACE: 1½" DENSE CONCRETE
APPROACH SLABS: 25'-0" (AS-1-54)
ALIGNMENT: CURVE RIGHT (1°28'-00")

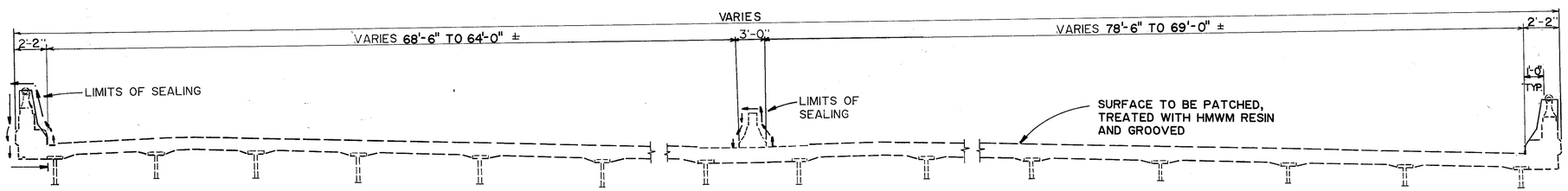
PROPOSED WORK

1. WEARING SURFACE REPAIR, HMWM TREATMENT AND GROOVING
2. PATCHING AND SEALING OF CONCRETE SURFACES
3. SOUNDING AND EPOXY INJECTION REPAIR OF DECK BOTTOM
4. INSTALLATION OF SAFETY SHAPE RAILING FACING ON DECK AND WINGWALLS

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS SQ. FT.	519 PATCHING CONCRETE STRUCTURES AS PER PLAN SQ. FT.	SPECIAL REPAIRING CONCRETE STRUCTURES WITH SOLVENT-FREE EPOXY RESIN SQ. FT.		SPECIAL PATCHING CONCRETE BRIDGE DECK OVERLAYS SQ. YD.
ABUT. & WINGWALL		287			
PARAPETS					
PIERS & CAPS	5976	37	23		
BARRIER		12			
DECK					1161
OTHER					
TOTALS	5976	336	23		1161



ELEVATION



TYPICAL CROSS SECTION

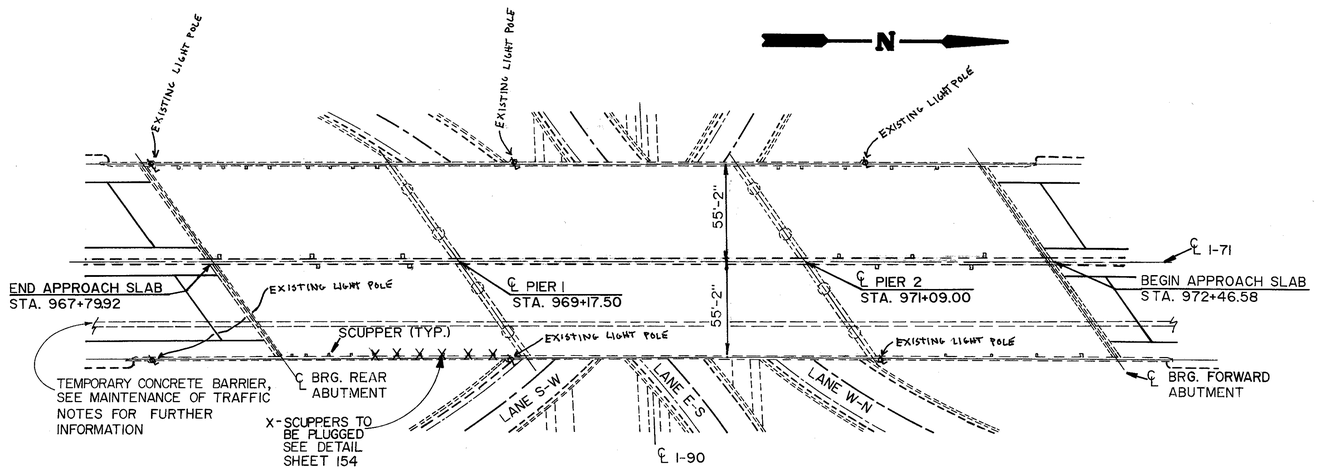
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

GENERAL PLAN & ELEVATION, TRANSVERSE SECTION CUY-90-1506 I-90 OVER KENILWORTH AVE.

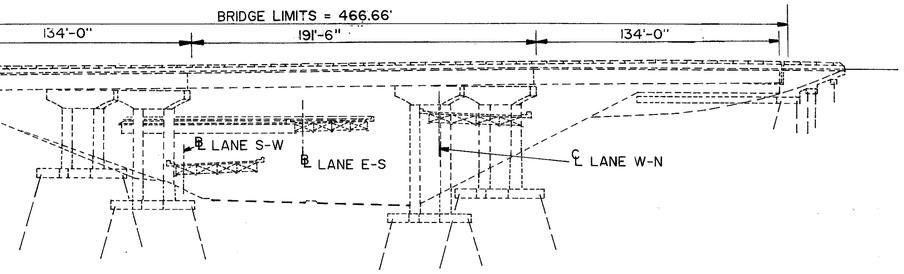
CUYAHOGA COUNTY OHIO

DESIGNED	TRACED SG	CHECKED	REVIEWED DWL	REVISED
				SHEET 18/36

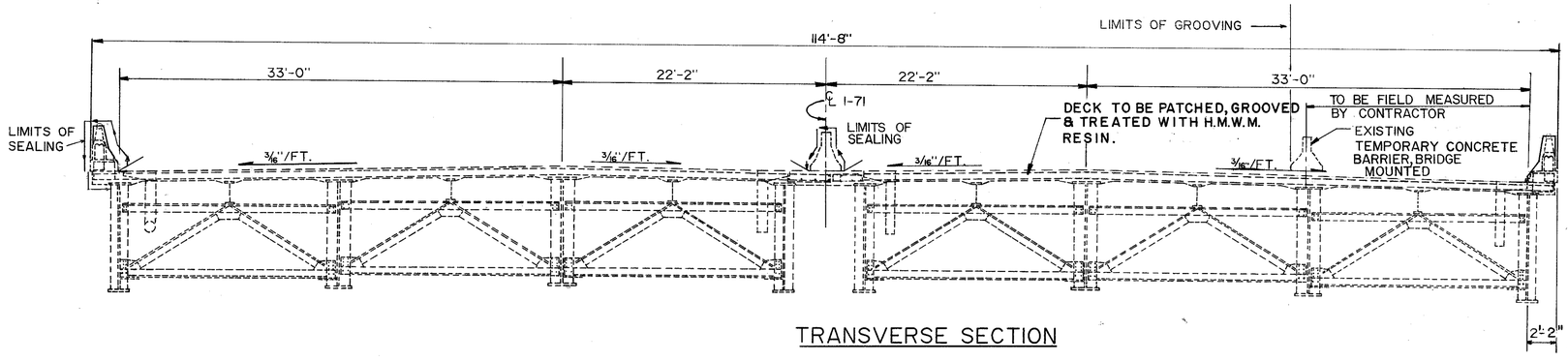
CUYAHOGA COUNTY CUY-90-13.41	OHIO	139 / 156
	FHWA REGION 5	
	FEDERAL PROJECT	



PLAN



GENERAL ELEVATION



TRANSVERSE SECTION

EXISTING STRUCTURE
TYPE: 3 SPAN CONTINUOUS WELDED GIRDERS WITH RENFORCED COCRETE DECK &STRUC.
SPANS: 134'-0", 191'-6", 134'-0"= 459'-6" CENTER TO CENTER OF BEARINGS
ROADWAY: 110'-4" TOE TO TOE OF CURBS INCLUDING 3'-0" OF MEDIAN
LOADING: CF 2000(57) ADEQUATE FOR A.A.S.H.O. ALTERNATE LOADING
SKEW: 35°-30'-00"
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLABS: 25'-0" (AS-I-54)
ALIGNMENT: TANGENT

PROPOSED WORK

1. WEARING SURFACE REPAIR, H.M.W.M. TREATMENT AND GROOVING
2. DRAINAGE AND CLEANING, REPAIR, AND RETROFIT
3. PATCHING AND SEALING OF CONCRETE SURFACES
4. SOUNDING AND EPOXY INJECTION REPAIR OF DECK BOTTOMS
5. INSTALLATION OF SAFETY SHAPE RAILING FACING ON DECK AND WING WALLS.

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS SQ. FT.	519 PATCHING CONCRETE STRUCTURES, AS PER PLAN SQ. FT.	SPECIAL REPAIRING CONCRETE STRUCTURES WITH SOLVENT-FREE EPOXY RESIN SQ. FT.	SPECIAL PNEUMATICALLY PLACED MORTAR SQ. FT.	SPECIAL PATCHING CONCRETE BRIDGE DECK OVERLAYS SQ. YD.
ABUT. & WINGWALL		1000		2588	
PARAPETS			71		
PIERS & CAPS	5823	72	46		
BARRIER		32			
DECK					1805
TOTALS	5823	1104	117	2588	1805

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

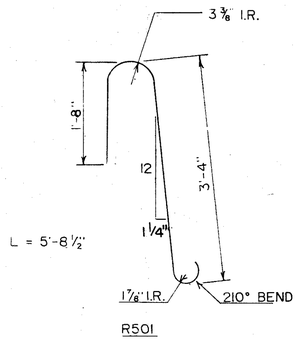
GENERAL PLAN & ELEVATION TRANSVERSE SECTION CUY-71-1887 I-71 OVER I-90

CUYAHOGA COUNTY OHIO

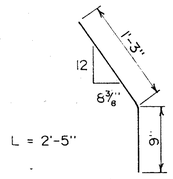
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
	DMS		DWL	

SHEET 19/36

CUYAHOGA COUNTY CUY-90-13.41	OHIO	140 / 156
	FHWA REGION 5	
	FEDERAL PROJECT	

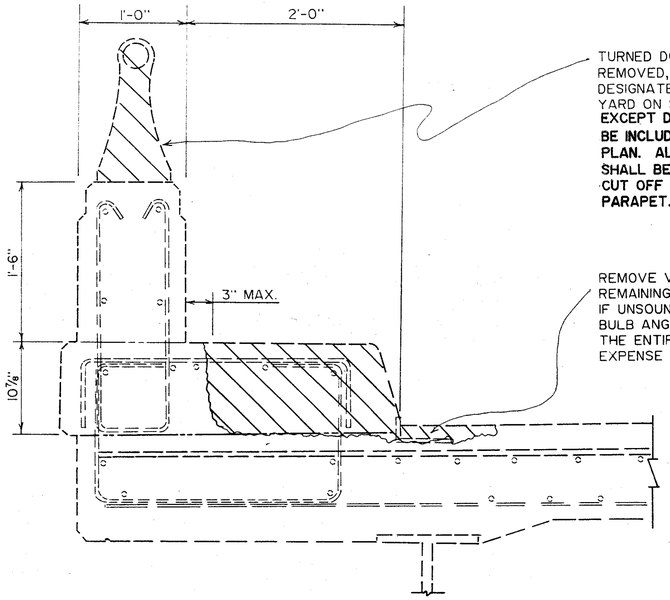


R501



R502

ESTIMATING INFO.
REINFORCING STEEL = 16 LBS/L.F.
CONCRETE . . . . . = 0.10 C.Y./L.F.
DOWEL HOLES. . . . .= 2/L.F.
ALL ITEMS INCLUDED UNDER ITEM 517

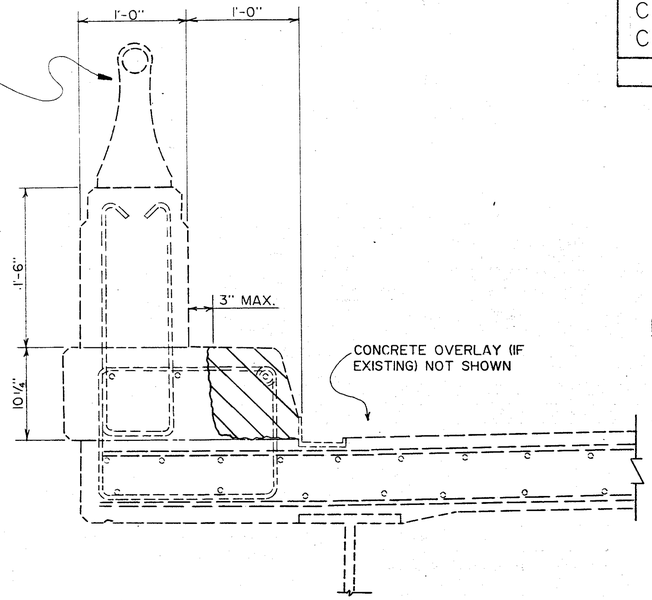


REMOVAL PLAN

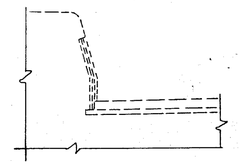
TURNED DOWN RAILING END PANELS SHALL BE REMOVED, DELIVERED AND UNLOADED AT A DESIGNATED AREA AT THE STATE MAINTENANCE YARD ON S.R. 91 IN MAYFIELD, OHIO. ALL COSTS **EXCEPT DELIVERY OF RAILINGS AND POSTS, SHALL BE INCLUDED UNDER ITEM 517 RAILING FACED,** AS PER PLAN. **ALL OTHER RAILINGS, POSTS AND HARDWARE SHALL BECOME THE PROPERTY OF THE CONTRACTOR. CUT OFF REAR ANCHOR BOLTS FLUSH WITH TOP OF PARAPET.**

REMOVE VERTICAL LEG. OF BULB ANGLE, IF REMAINING BULB ANGLE BECOMES LOOSE OR IF UNSOUND CONCRETE EXISTS BENEATH THE BULB ANGLE THE CONTRACTOR SHALL REMOVE THE ENTIRE BULB ANGLE AT NO ADDITIONAL EXPENSE TO THE STATE.

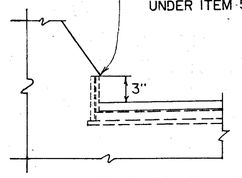
INDICATES REMOVAL AREA (REMOVE EXISTING STEEL AS SHOWN IN PROPOSED TYPICAL)



REMOVAL PLAN



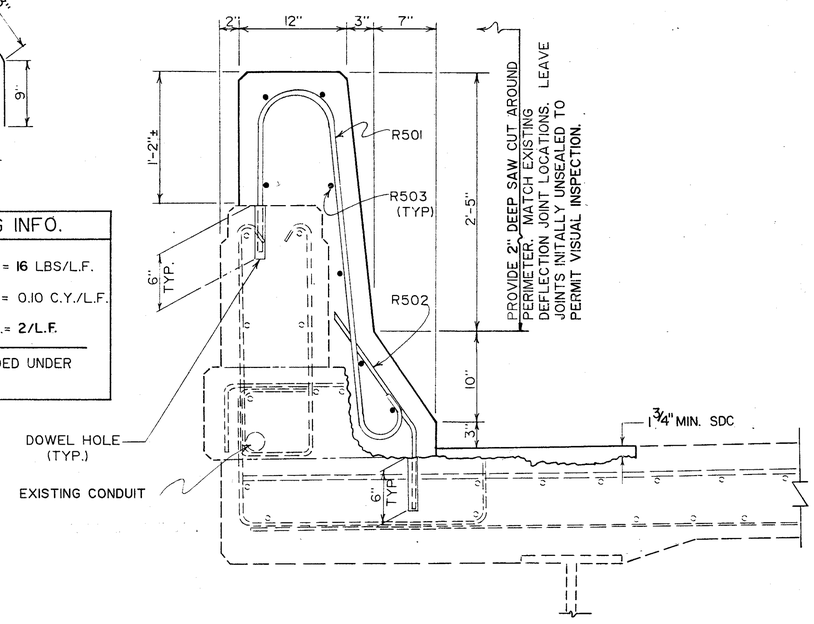
EXISTING CURB PLATES



MODIFIED CURB PLATES
(FOR RAILING FACED, TYPE B ONLY)

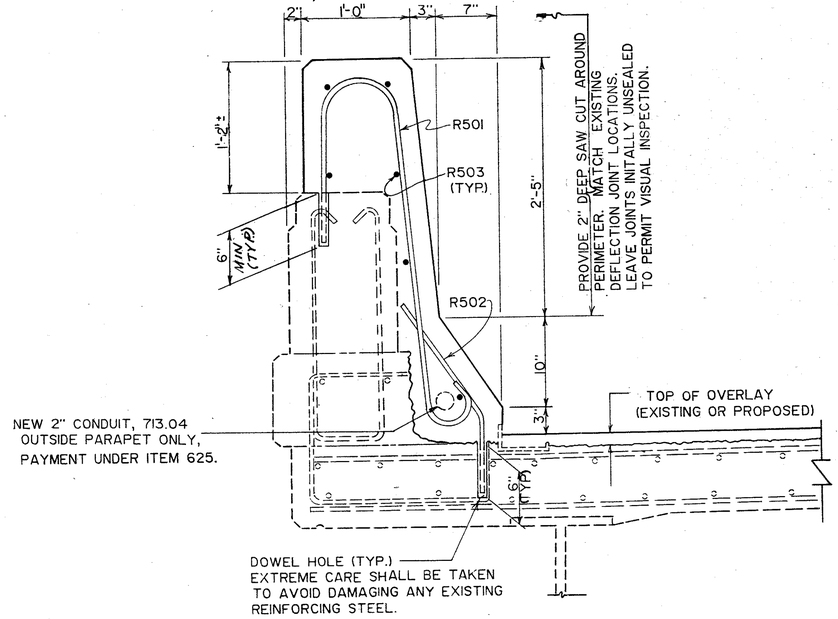
COMMON NOTES

1. EXACT EXIST. REBAR LOCATIONS NOT KNOWN
2. EXISTING REINFORCED STEEL MAY BE CUT OFF OR BENT OUT OF THE WAY (RAILING FACED, TYPE B ONLY)
3. REMOVAL LIMITS SHALL PROVIDE 2 INCH MIN. CLEARANCE AROUND ALL NEW REINFORCING BARS.
4. ALL REINFORCING STEEL SHALL BE SPACED 1'-0" C/C MAXIMUM. VERTICAL STEEL SHALL MISS EXISTING DEFLECTION JOINTS BY 3" MIN.
5. ALL LONGITUDINAL STEEL SHALL BE CONTINUOUS (WITH MIN. LAP SPLICES 1'-8")
6. CONCRETE COVER SHALL BE 2" TYPICAL.
7. REINFORCING STEEL - ASTM A615, A616 OR A617, GRADE 60. fy = 60 KSI, fs = 24 KSI.
8. FOR ADDITIONAL NOTES AND INFORMATION SEE STD. DWG. BR-1 AND THE GENERAL NOTES.
9. BRIDGES WITH LIGHTING HAVE EX. 2" Ø CONDUIT IN CURB. REMOVE UNDER THIS ITEM OF WORK, IF ENCOUNTERED.
10. **SLIP FORMS MAY BE USED.**



RAILING FACED, AS PER PLAN, TYPE A

CUY-90-1463R



RAILING FACED, AS PER PLAN, TYPE B

CUY-90-1490R, 1490L, 1506, CUY-71-1887

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

TYPICAL RAILING FACING DETAILS

(EX. 2'-0" SAFETY CURB = TYPE A)
(EX. 1'-0" SAFETY CURB = TYPE B)

CUY-90-1463 R/1490 L&R/1506, CUY-71-1887.
CUYAHOGA COUNTY

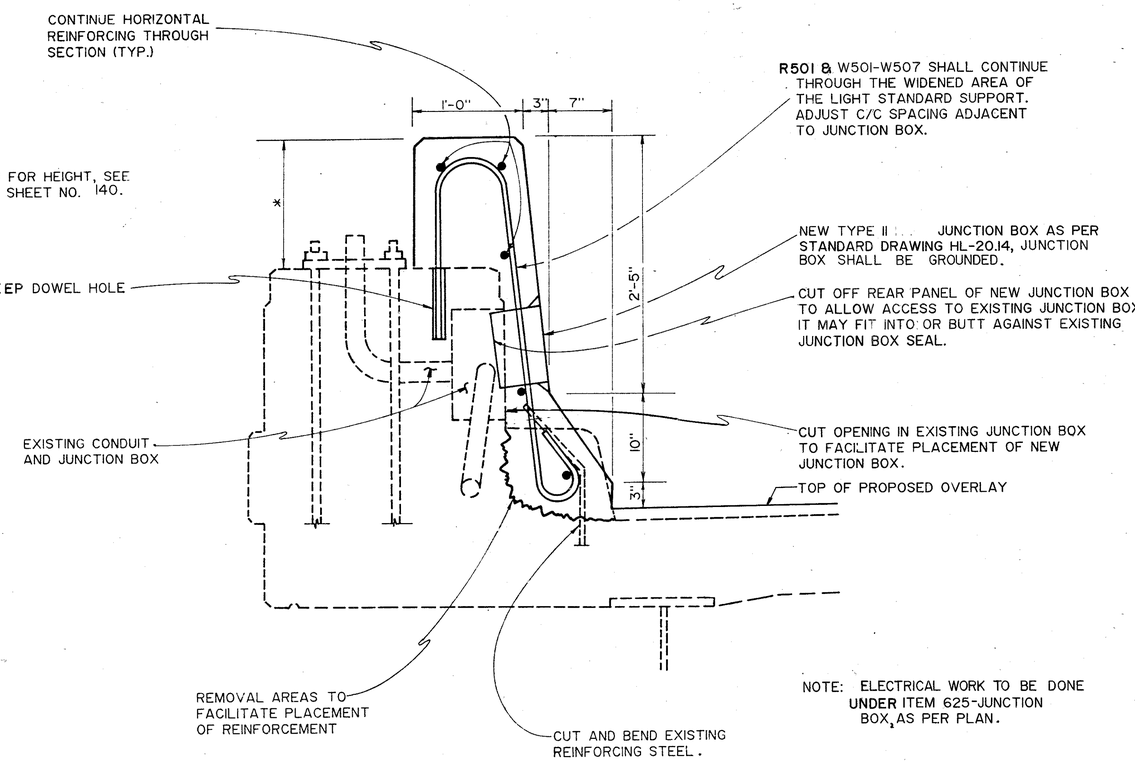
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
			DWL	

SHEET 20/36

90449

TYPICAL PARAPET DETAILS

NOTE:
FOR DETAILS AND DIMENSIONS NOT SHOWN, SEE THE TYPICAL PARAPET DETAILS, SHEET NOS. 140 & 142.



PARAPET MODIFICATIONS AT EXISTING LIGHT POLES

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

TYPICAL PARAPET DETAILS AT LIGHT POLES

CUY.-90-1463 R/1490 L&R/1506
CUY.-71-1887

CUYAHOGA COUNTY OHIO

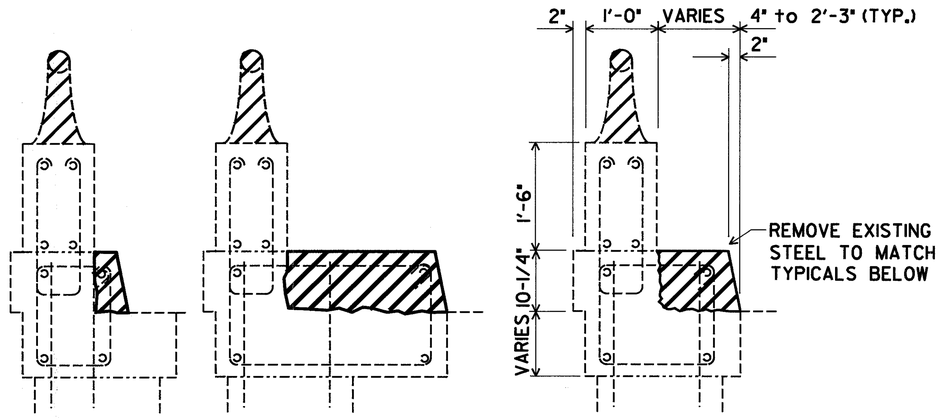
DESIGNED	DETAILED	QUANTITIES	CHECKED	REVISED
			DWL	

21/36

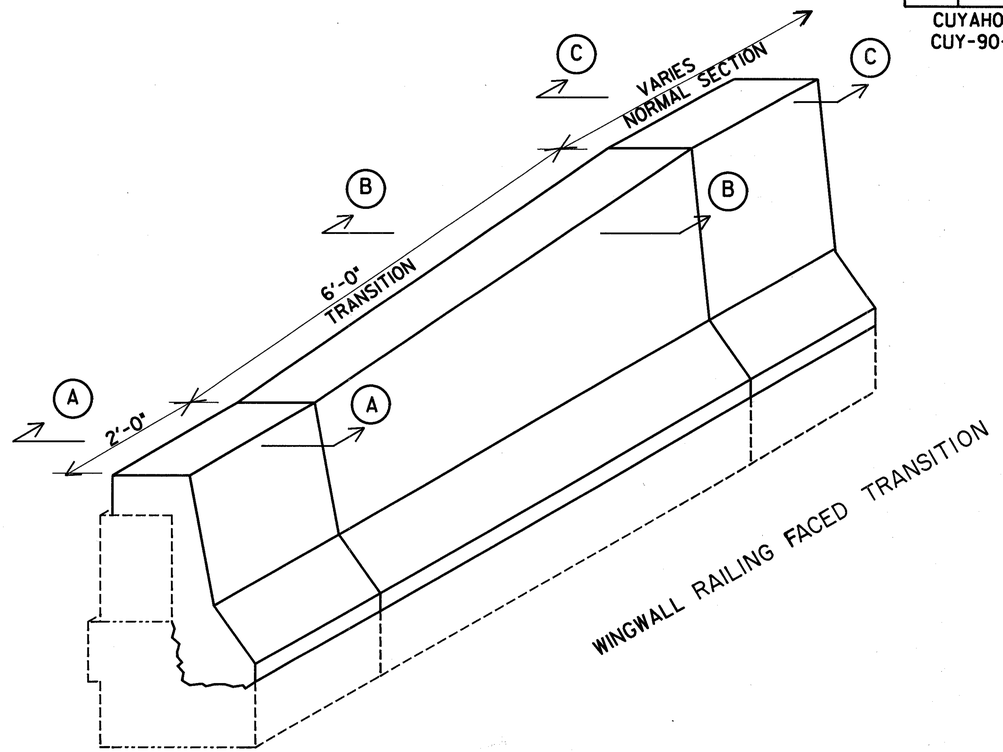
FHWA REGION	STATE	PROJECT	
5	OHIO		

142/156

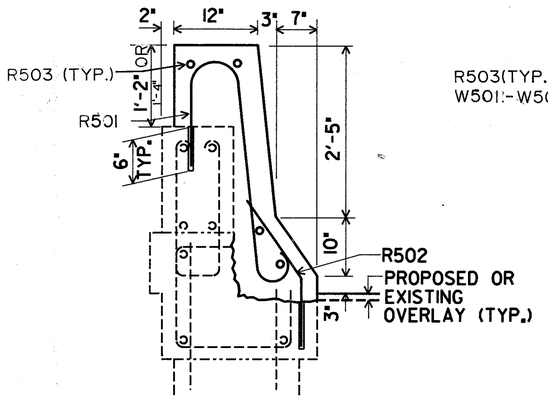
CUYAHOGA COUNTY
CUY-90-13.41



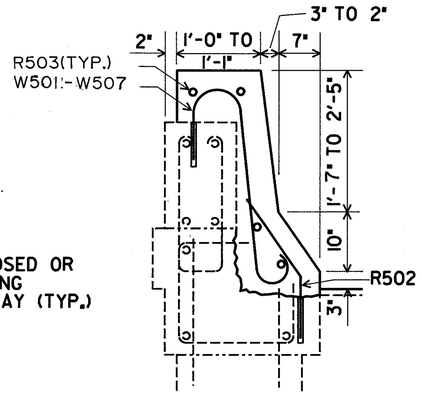
TYPICAL REMOVAL



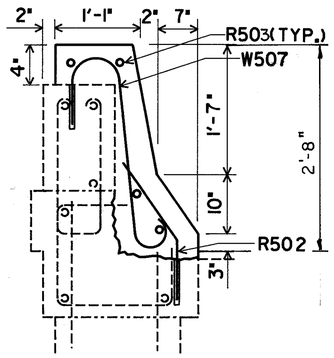
WINGWALL RAILING FACED TRANSITION



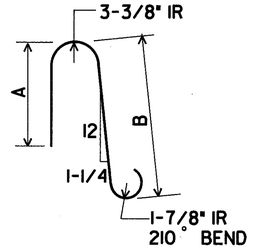
SECTION C-C



SECTION B-B



SECTION A-A



BAR	A	B
W501	0'-10 1/8"	2'-8 1/8"
W502	0'-11 1/4"	2'-9 1/4"
W503	1'-0 3/8"	2'-10 3/8"
W504	1'-1 1/2"	2'-11 1/2"
W505	1'-2 5/8"	3'-0 5/8"
W506	1'-3 3/4"	3'-1 3/4"
W507	1'-4 7/8"	3'-2 7/8"

FOR REINFORCING WITH PREFIX R OR OTHER PARAPET DETAILS, SEE RAILING FACING DETAILS SHEETS 140-142

REMOVAL

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

WINGWALL RAILING FACED TRANSITION DETAILS

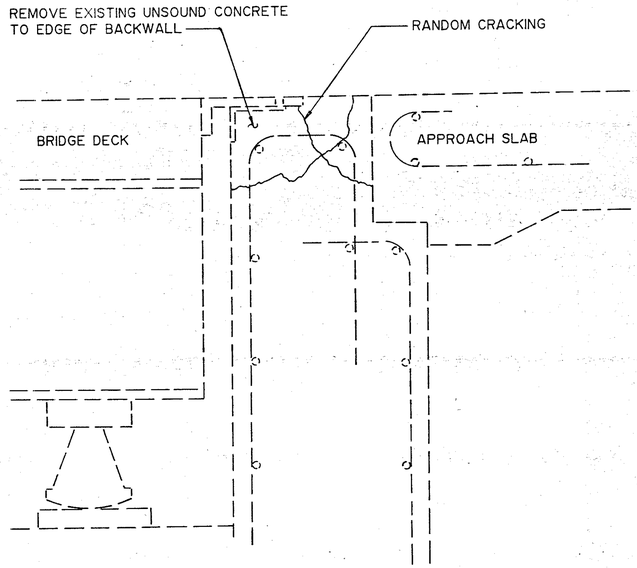
CUY.-90-1463R / 1490 L & R / 1506
CUY.-71-1887

CUYAHOGA COUNTY — OHIO

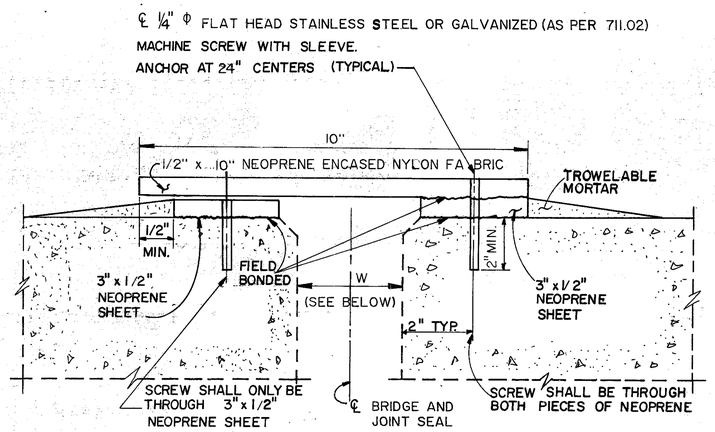
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
		CAM	DWL	

SHEET 22/36

MISCELLANEOUS DETAILS



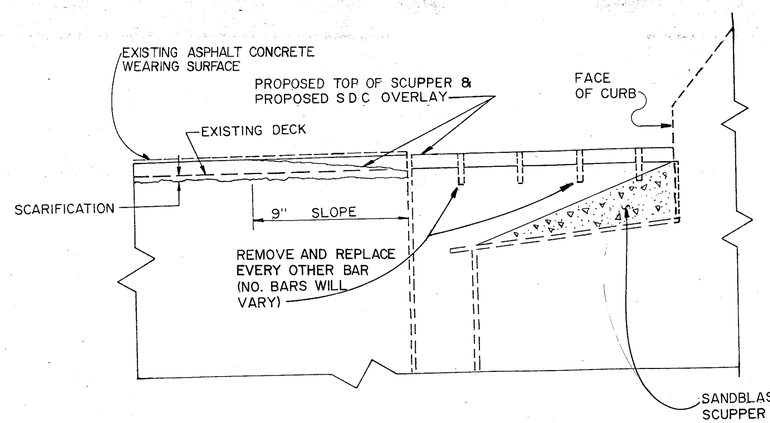
EXISTING BACKWALL



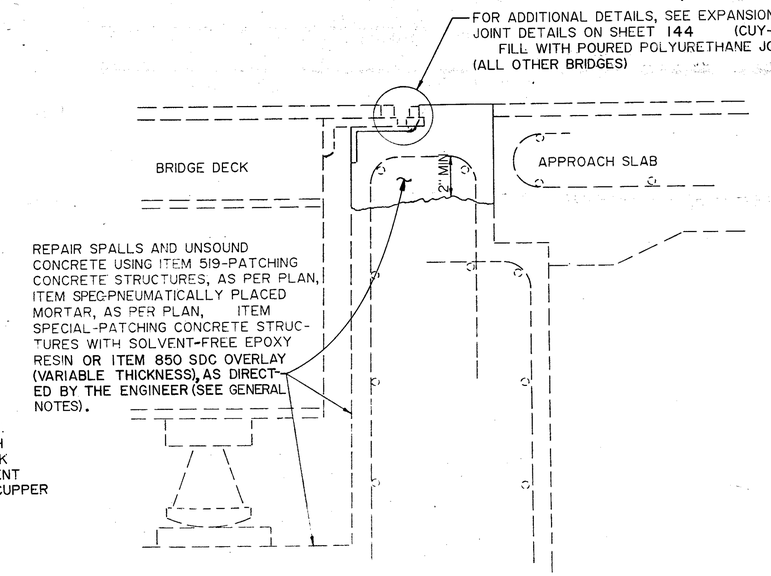
NOTE: MEDIAN BARRIER SEAL SHALL BE CONTINUOUS EXCEPT AT SIGN SUPPORTS LIGHTPOLE AND PULL BOX PILASTERS AND AT EXPANSION JOINTS.

PAYMENT FOR STEEL SCREWS AND TROWELABLE MORTAR SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM SPECIAL, MEDIAN BARRIER JOINT SEAL.

NEOPRENE MEDIAN BARRIER JOINT SEAL DETAIL



TYPICAL OVERLAY DETAIL AT SCUPPERS FOR BRIDGE DECK OVERLAYS



PROPOSED BACKWALL REPAIR

BRIDGE	W(in.)
CUY-90-1372	1.7"
CUY-90-1391	1.7"
CUY-90-1490	1"
CUY-90-1506	1"
CUY-71-1887	1"

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

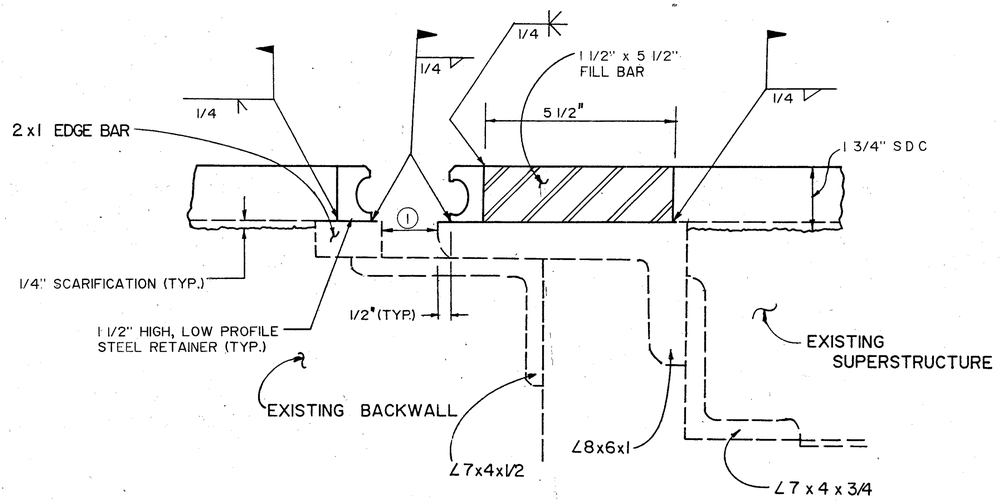
MISCELLANEOUS DETAILS

CUYAHOGA COUNTY OHIO

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
			DWL	

SHEET 23/36

STRUCTURE	JOINT OPENING (IN.) ①			SEAL SIZE (IN.)
CUY-90-1361 (R) (F)	1.5" (MIN.) 1.5" (MIN.)			4" 4"



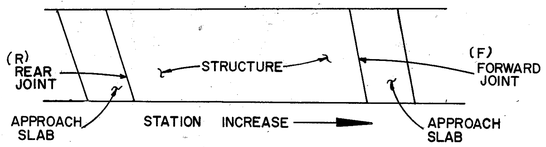
ITEM 516 - VERTICAL EXTENSION OF
STRUCTURAL EXPANSION JOINTS
INCLUDING ELASTOMERIC STRIP SEALS, AS PER PLAN
BR.NO. CUY-90-1361

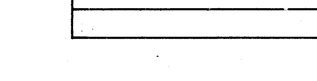
NOTE: POUR POLYURETHANE JOINT SEAL IN THE STRIP SEAL AND EXTEND FROM THE CURB LINE ONE FOOT. COST TO BE INCLUDED WITH ITEM 516-VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS, INCLUDING ELASTOMERIC STRIP SEALS, AS PER PLAN.

STRUCTURE	SKEW	DISTANCE ① (MAX.)		JOINT LENGTH
CUY-90-1361	15°-23'-29"	96.6'		41.46'

① SEE STD. DWG. EXJ-4-87, SHEET 5/5.
JOINT LENGTH IS MEASURED ALONG THE CENTERLINE OF THE JOINT, FACE TO FACE OF CURB.

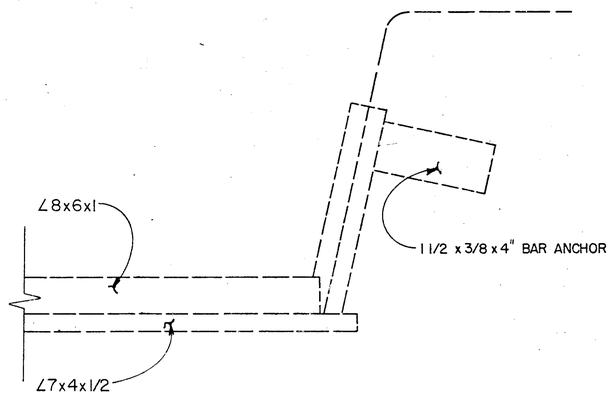
JOINT LOCATION REFERENCE





STRIP SEAL GLAND TABLE			
SEAL MOVEMENT RATING	MANUFACTURER & DESIGNATION *		
	D.S. BROWN COMPANY	STRUCTURAL ACCESSORIES INC.	WATSON BOWMAN & ACME CORP.
3"	300A	—	SE-300
4"	400A	40 SEQ	SE-400
5"	500A	50 SEQ	SE-500

* OR AN APPROVED ALTERNATE



EXISTING CURB PLATE

STATE OF OHIO
DEPARTMENT OF TRANSPORATION
DDISTRICT 12 LOCATION & DESIGN

STRUCTURAL EXPANSION JOINTS
AND
CURB PLATE DETAILS
BR. NO. CUY-90-1361

CUYAHOGA COUNTY OHIO

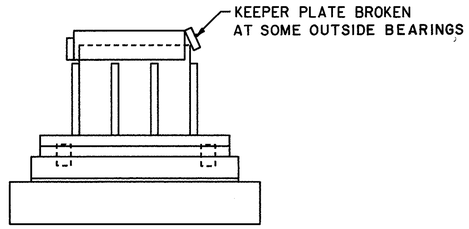
DESIGNED	TRACED	CHECKED	REVIEWED	
			DWL	24/36

FHWA REGION	STATE	PROJECT	
5	OHIO		

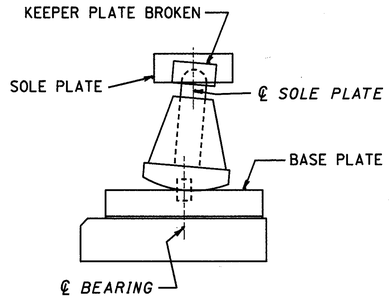
145
156

CUYAHOGA COUNTY
CUY-90-13.41

ROCKER DETAILS



EXISTING FRONT ELEVATION



EXISTING SIDE ELEVATION

PROCEDURE FOR BEARING **RESETTING** (CUY-90-1372)

AT LOCATIONS WHERE BACKWALL IS RETAINED

1. RAISE THE SUPERSTR. **BEAM** AT THE ABUTMENT (1/4" MAX.) UNTIL THERE IS NO CONTACT BETWEEN THE SOLE PLATE AND THE BEARING.

2. RESET THE ROCKER AND BASE PLATE OR BASE PLATE ONLY IN FINAL POSITION, BY CENTERING, AT 60 F, THE BASE PLATE UNDER THE SOLE PLATE BOTH IN THE LONGITUDINAL AND TRANSVERSE DIRECTIONS.

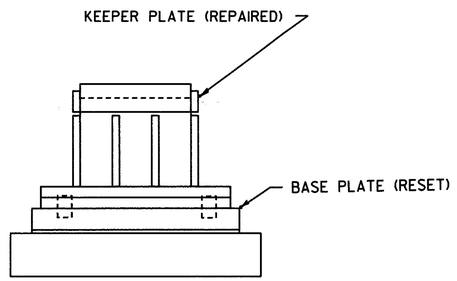
3. LOWER THE SUPERSTRUCTURE (BEAM)

4. REWELD THE KEEPER PLATE TO THE SOLE PLATE AS REQUIRED WITH A 5/16" FILLET WELD AFTER REMOVAL OF FRACTURED WELD.

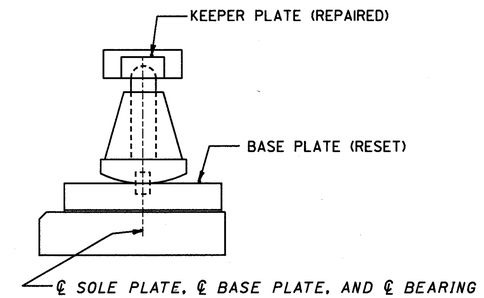
5. PLACE TROWELABLE MORTAR AROUND THE BASE PLATE

THE WORK SHALL BE PAID FOR UNDER ITEM SPECIAL - RESETTING BEARINGS

NOTE: A PORTION OR ALL OF THIS SHEET MAY APPLY.



MODIFIED FRONT ELEVATION

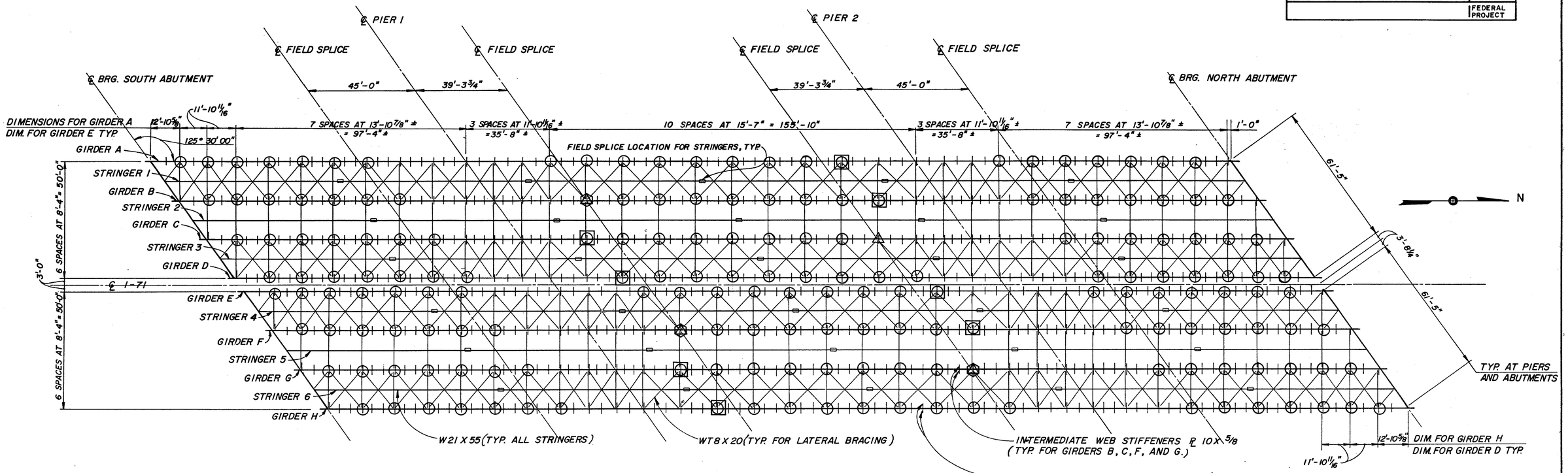


MODIFIED SIDE ELEVATION

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

RESETTING BEARING DETAIL
BR. NO. CUY-90-1372

CUYAHOGA COUNTY				OHIO
DESIGNED	TRACED	CHECKED	REVIEWED DWL	REVISED
				SHEET 25/36



FRAMING PLAN

○ – LATERAL BRACING GUSSET PLATE END RETROFIT

△ – LATERAL BRACING GUSSET PLATE END RETROFIT AT FIELD SPLICE

□ – LATERAL BRACING GUSSET RETROFIT

⬡ – PENCIL ABRASIVE BLASTING, GRINDING, AND NDT

ITEM SPECIAL - PENCIL ABRASIVE BLASTING, GRINDING, AND NDT

THIS WORK SHALL CONSIST OF THE FOLLOWING SEQUENCE OF OPERATIONS PERFORMED AT A SUSPECTED CRACK LOCATION AS DIRECTED BY THE ENGINEER:

1.) CLEAN THE SUSPECTED CRACK AREA BY PENCIL ABRASIVE BLASTING THE PAINT AND/OR RUST FROM THE SURFACE OF THE PLATES AND ADJACENT WELDS (APPROXIMATELY A 12 SQ. IN. AREA).

2.) THE ENGINEER, ACCOMPANIED BY THE CONTRACTOR, SHALL CAREFULLY VISUALLY INSPECT THE CLEANED AREA. GRINDING MAY BE DIRECTED BY THE ENGINEER TO ENHANCE INVESTIGATION FOR CRACK PRESENCE. ALL GRINDING SHALLBE DONE CAUTIOUSLY, ESPECIALLY IN TENSION AREAS.

3.) THE CONTRACTOR SHALL NON-DESTRUCTIVELY TEST (NDT) THE AREA USING MAGNETIC PARTICLE EXAMINATION AND/OR DYE PENETRANT SO THAT THE ENGINEER MAY FURTHER INSPECT FOR CRACKS.

4.) ALL CRACKS AND/OR CRACK TIPS THAT ARE ACCESSIBLE SHALL BE REMOVED ACCORDING TO, AND PAID FOR UNDER, ITEM SPECIAL - DRILLING STRUCTURAL STEEL, AND ANY CRACKS INACCESSIBLE TO DRILLING SHALL BE REMOVED BY CAREFUL GRINDING OR BY CAREFULLY ENLARGING THE DRILLED HOLES BY GRINDING.

5.) PERFORM THE STEP 1 THRU STEP4 OPERATIONS ON THE OTHER SIDE OF THIS LOCATION. NO LOCATION SHALL BE LEFT INCOMPLETELY RETROFITTED OVERNIGHT.

THE ACCEPTED NUMBER OF RETROFITS AS DESCRIBED IN THIS NOTE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LOCATION, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, AND EQUIPMENT NECESSARY TO CLEAN, GRIND, AND PERFORM NDT ON BOTH SIDES OF THE SUSPECTED CRACK LOCATION.

PAYMENT WILL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	PENCIL ABRASIVE BLASTING, GRINDING, & NDT

PENCIL ABRASIVE BLASTING

THE PENCIL BLASTING REFERRED TO BY VARIOUS REPAIR ITEMS IN THESE PLANS SHALL CONFORM TO THE FOLLOWING:

THE DESIGNATED NON-DESTRUCTIVE TESTING (NDT) AREAS SHALL BE CLEANED OF ALL PAINT, RUST, AND FOREIGN MATERIALS BY ABRASIVE BLASTING TO A SURFACE QUALITY EQUAL TO PREPARATION GRADE Sa 2 ½. SINCE THE INTENT OF THE PENCIL BLASTING IS TO ENHANCE THHE VISUAL AND NDT CRACK DETECTION TECHNIQUES PERFORMED UPON THE STRUCTURAL STEEL, A GENTLE BLAST SHALL BE USED SUCH THAT THE SURFACE IS NOT PEENED OR OTHERWISE COLD WORKED. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE THE PAINT IN THE SURROUNDING AREA. THE BLASTING SHALL BE PERFORMED USING A MAXIMUM COMPRESSED AIR PRESSURE OF 100 PSI, A HOSE NOZZLE DIAMETER OF ¼ ± 1/16 INCH AND A GRADE 30/60 COAL SLAG ABRASIVE OR EQUIVALENT EXCEPT SILICA SAND SHALL NOT BE USED. BLASTERS USED FOR SURFACE PREPARATION FOR STRUCTURAL STEEL COATING CANNOT BE USED FOR PENCIL BLASTING. AFTER ABRASIVE BLASTING IS COMPLETE THE CLEANED AREA SHALL BE AIR BLOWN CLEAN.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER PRIOR TO THE START OF THE RETROFIT WORK THAT HE CAN SATIAFACTORILY PERFORM PENCIL ABRASIVE BLASTING ACCORDING TO THESE SPECIFICATIONS. COST OF PENCIL ABRASIVE BLASTING HAS BEEN INCLUDED FOR PAYMENT WITH THE RETROFIT ITEMS.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 BRIDGE DEPARTMENT

EXISTING FRAMING PLAN
AND RETROFIT LOCATIONS

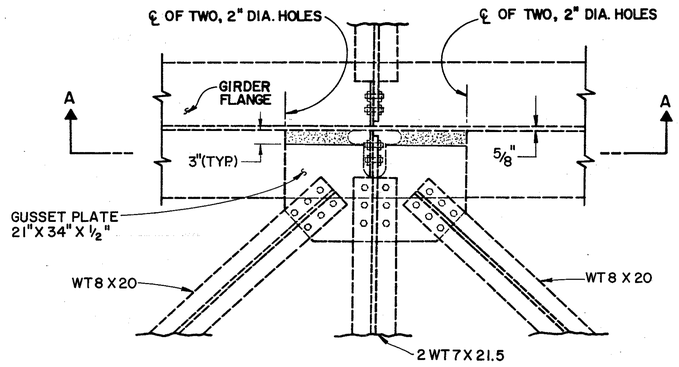
BRIDGE CUY-71-1887
OVER I-490

26/36

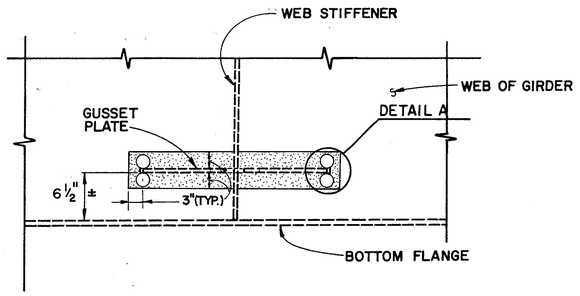
CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BGW	GLC	GLC				

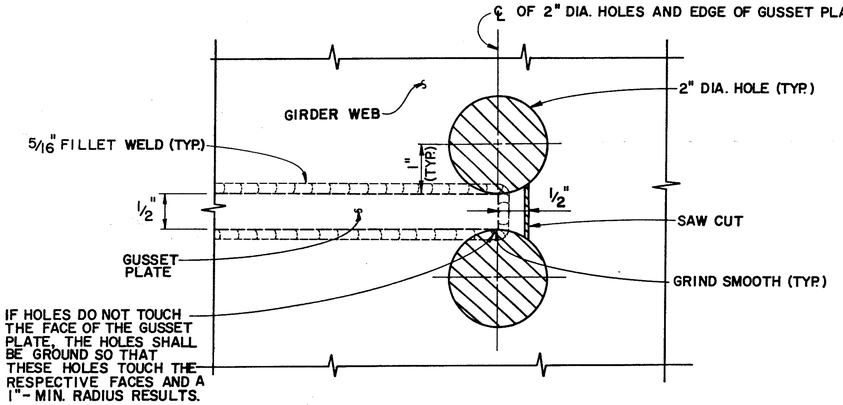
513840



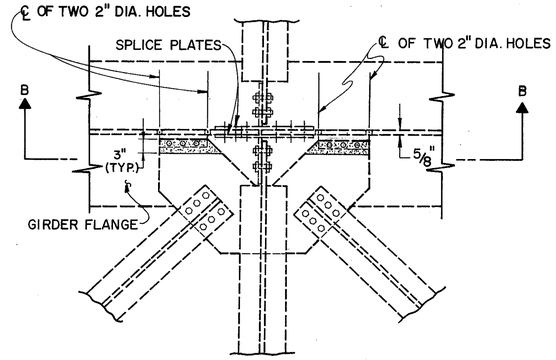
LATERAL GUSSET PLATE END RETROFIT



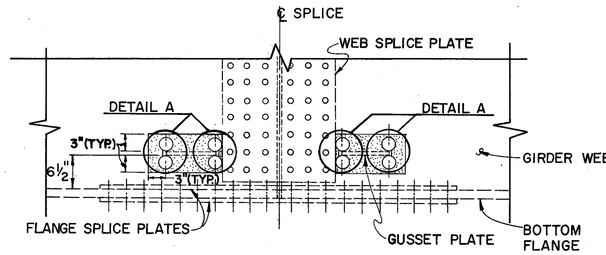
SECTION A-A



DETAIL A



LATERAL GUSSET PLATE END RETROFIT AT FIELD SPLICE



SECTION B-B

ITEM SPECIAL - LOWER LATERAL BRACING GUSSET PLATE END RETROFIT

THIS WORK SHALL CONSIST OF THE FOLLOWING SEQUENCE OF OPERATIONS PERFORMED ON A LOWER LATERAL BRACING GUSSET PLATE.

1. DRILL THE 2-INCH DIAMETER HORIZONTAL HOLES THROUGH THE GIRDER WEB AT THE GUSSET PLATE ENDS AS SHOWN ON PLANS.
2. SAW CUT VERTICALLY THROUGH THE WEB FROM ONE HOLE TO THE OTHER.
3. IF THE 2-INCH DIAMETER HOLE OF STEP ONE DID NOT TOUCH THE GUSSET PLATE, A ONE-INCH MIN. RADIUS SHALL BE GROUND TO THE LIMITS OF THE GUSSET PLATE.

THE ACCEPTED NUMBER OF RETROFITS AS DESCRIBED HEREIN WILL BE PAID FOR AT THE UNIT PRICE PER LOCATION, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT THAT IS NECESSARY TO DRILL, CUT, AND GRIND THE LATERAL BRACING GUSSET RETROFIT AREA. PAYMENT WILL BE MADE AT THE CONTRACT PRICES BID UNDER :

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	**LATERAL BRACING GUSSET PLATE END RETROFIT**
SPECIAL	EACH	LATERAL BRACING GUSSET PLATE END RETROFIT AT FIELD SPLICE

ITEM SPEC.-FIELD PAINTING OF RETROFITTED AREAS

THIS ITEM SHALL CONSIST OF PAINTING EXISTING STRUCTURAL STEEL RETROFIT AREAS.

SURFACE PREPARATION AND COATING OF THE STEEL AREAS SHALL BE ACCORDING TO THE PROPOSAL NOTE ENTITLED, "PAINTING OF EXISTING STEEL, SYSTEM OZEU". AREAS TO BE COATED SHALL BE AS FOLLOWS:

1.) ANY AREA RETROFITTED BY THIS PROJECT
2.) AREAS THAT WERE DAMAGED BY ABRASIVE BLASTING
3.) ANY AREAS DAMAGED BY OTHER CONTRACTOR OPERATIONS

MATCH COLOR OF EXISTING PAINT.
COST FOR FURNISHING ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY TO TO COMPLETE THIS ITEM SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR THIS ITEM. PAYMENT WILL BE MADE UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	LUMP SUM	FIELD PAINTING OF RETROFITTED AREAS SYSTEM OZEU

ITEM SPECIAL - DRILLING STRUCTURAL STEEL

THIS WORK SHALL CONSIST OF DRILLING DEFECTS, CRACKS, AND ENDS OF CRACKS, AND NON-DESTRUCTIVE TESTING (NDT), USING BOTH DYE PENETRANT AND MAGNETIC PARTICLE EXAMINATION, AS DIRECTED BY THE ENGINEER.

HOLES SHALL BE DRILLED TO REMOVE DEFECTS, ENTIRE CRACKS, OR THE APPARENT ENDS OF THE CRACKS REVEALED BY THE NDT AND VISUAL INSPECTION PEFORMED UNDER RETROFIT WORK ITEMS. THE EXPOSED CIRCUMFERENCE OF EACH DRILLED HOLE SHALL BE GROUND SMOOTH AND CAREFULLY INSPECTED FOR CRACKS USING NDT. DRILLING, GRINDING, AND TESTING SHALL CONTINUE UNTIL ALL CRACK ENDS ARE REMOVED. WHEN NO CRACKS ARE DETECTED, NO HOLES SHALL BE DRILLED UNDER THIS ITEM.

SINCE ANY OF THE CRACKS COULD PROPAGATE INTO THE TENSION FLANGE, REMOVING THEIR ENDS IS IMPERATIVE. CRACKS LESS THAN 1 1/2" LONG AND CRACKED AREAS OR DEFECTS LESS THAN 1 1/2" IN DIAMETER SHALL BE REMOVED BY A SINGLE HOLE WHEN PRACTICAL. ENDS OF CRACKS LONGER THAN 1 1/2" AND DEFECTS SMALLER THAN 1/2" SHALL BE DRILLED WITH A 1" DIAMETER HOLE. HOLES SHALL BE CAREFULLY EXAMINED FOR WEB CRACKS IN THE PLANE OF THE WEB. THE LOCATION OF ALL HOLES SHALL BE DETERMINED BY THE ENGINEER AND DRILLED UNDER THE DIRECTION OF THE ENGINEER. 1 1/2" OR 2" DIAMETER HOLES MAY BE DRILLED WHERE THE PROXIMITY OF THE CRACK END TO ADJACENT STEEL PRECLUDES DRILLING A 1" DIAMETER HOLE.

THE ACCEPTED NUMBER OF HOLES DRILLED IN THE STRUCTURAL STEEL, AS DETAILED ABOVE, WILL BE PAID FOR AT THE CONTRACT BID PRICE PER EACH HOLE, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, & EQUIPMENT NECESSARY FOR DRILLING THE HOLES, GRINDING, AND NON-DESTRUCTIVE TESTING. PAYMENTS WILL BE MADE UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	DRILLING STRUCTURAL STEEL (1" DIA. HOLE)
SPECIAL	EACH	DRILLING STRUCTURAL STEEL (1 1/4" DIA. DIAGONAL HOLE)
SPECIAL	EACH	DRILLING STRUCTURAL STEEL (1 1/2" DIA. HOLE)
SPECIAL	EACH	DRILLING STRUCTURAL STEEL (2" DIA. HOLE)

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 BRIDGE DEPARTMENT

LATERAL BRACING GUSSET PLATE END RETROFIT

BRIDGE NO. CUY-71-1887 27/36
OVER I-490
CUYAHOGA COUNTY OHIO

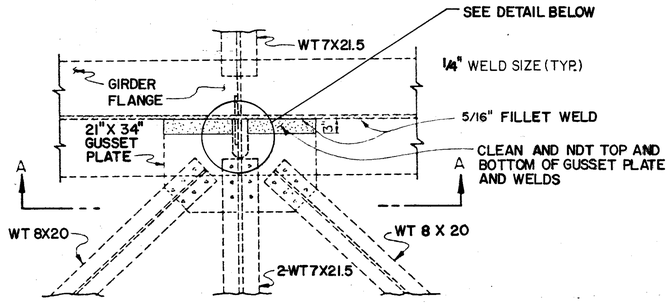
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BGW	GLC	GLC		DWL		

513840

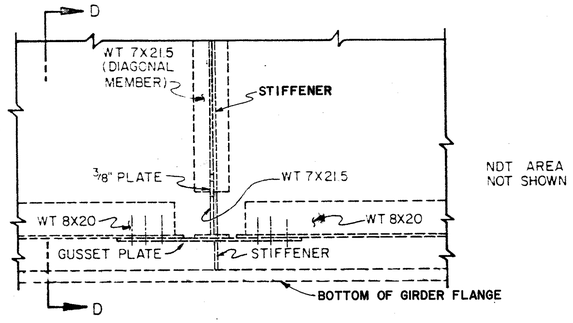
FHWA REGION	STATE	PROJECT	
5	OHIO		

148
156

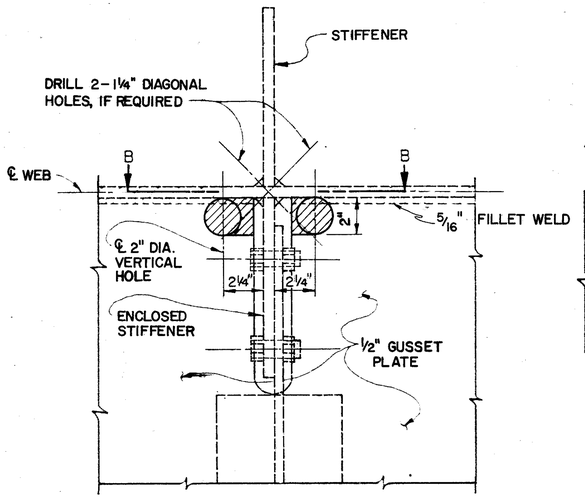
CUYAHOGA COUNTY
CUY - 90 - 13.41



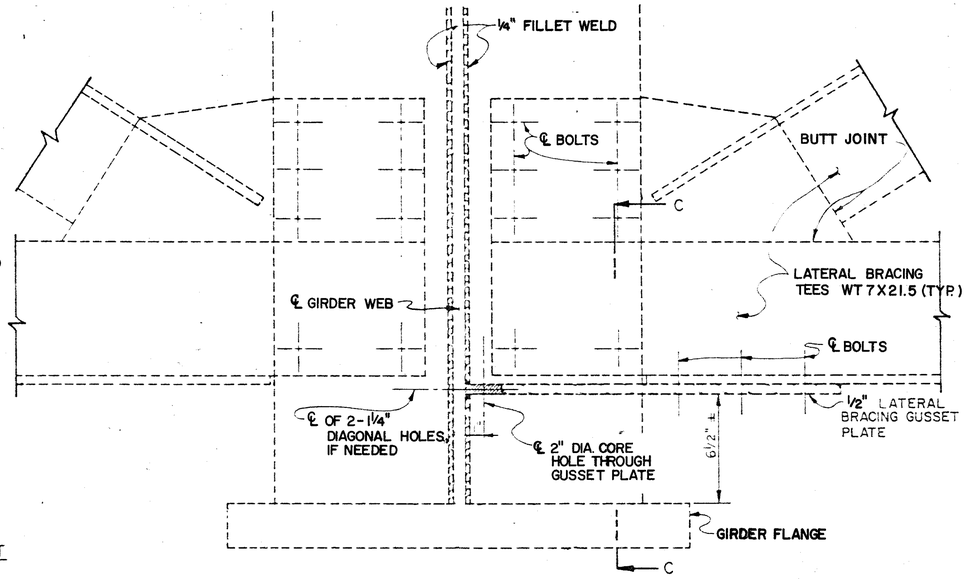
EXISTING LOWER LATERAL GUSSET PLAN



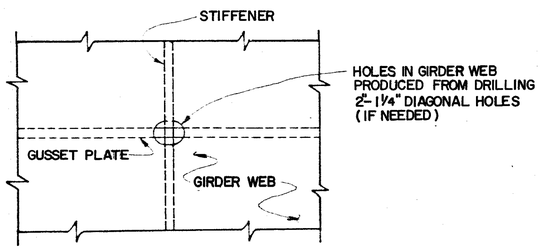
SECTION A-A



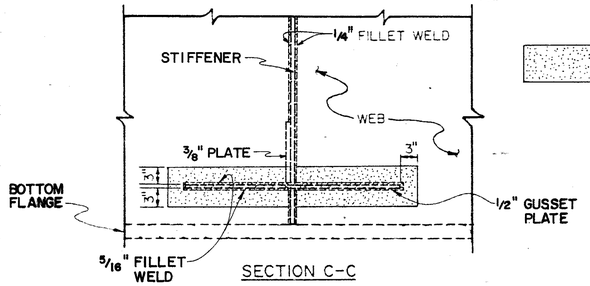
PLAN VIEW OF GUSSET - STIFFENER CONNECTION RETROFIT



LOWER LATERAL GUSSET SECTION D-D



SECTION B-B



SECTION C-C

INDICATES AREAS OF PENCIL ABRASIVE BLASTING GRINDING AND NDT

LATERAL BRACING GUSSET RETROFIT

THIS WORK SHALL CONSIST OF THE FOLLOWING SEQUENCE OF OPERATIONS PERFORMED ON ONE LOWER LATERAL BRACING GUSSET PLATE:

1. CLEAN THE AREAS TO BE DRILLED AND TO HAVE NDT, BY PENCIL SANDBLASTING THE PAINT, RUST, AND DIRT FROM THE INDICATED STEEL SURFACES. THE CLEANED STEEL AREAS SHALL INCLUDE TOP AND BOTTOM PORTIONS OF THE GUSSET PLATE, ALL GUSSET PLATE TO WEB WELDS, AND SURROUNDING PORTIONS OF THE WEB. SPECIAL CLEANING BY GRINDING STEEL SHALL BE USED ONLY AS DIRECTED BY THE ENGINEER TO ENHANCE INVESTIGATION OF CRACK PRESENCE.

2. DRILL 2-INCH DIAMETER VERTICAL HOLES THROUGH THE GUSSET PLATE REMOVING THE GUSSET PLATE TO WEB FILLET WELDS AT THE LOCATIONS WITHOUT GOUGING THE WEB AS PER THE ADJACENT RETROFIT DETAILS.

3. MAKE A CUT THROUGH THE GUSSET PLATE BEGINNING AT THE 2-INCH DIAMETER HOLE AND PROCEED LONGITUDINALLY TOWARD THE ENCLOSED STIFFENER. THE CUT SHALL BE PARALLEL TO THE WEB AND A DISTANCE OF 2 INCHES FROM IT.

4. CUT THE GUSSET PLATE - WEB FILLET WELDS WITHIN THE REMOVAL AREA. DO NOT UNDERCUT THE WELDS OR GOUGE THE WEB DURING THE CUTTING OPERATION. ALL CUTTING SHALL BE DONE BY EITHER THE OXYGEN CUTTING OR THE AIR CARBON-ARC PROCESS. CUTTING MAY BE DONE MANUALLY PROVIDED A GUIDE IS USED AND A STRAIGHT CUT IS ATTAINED. THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER PRIOR TO THE START OF WORK THAT HE CAN ACCOMPLISH THE WORK WITHOUT DAMAGE TO THE GIRDER WEB REGARDLESS OF THE PROCESS USED. AT NO TIME SHALL THE ADJACENT STEEL TEMPERATURES EXCEED 1100° F.

5. THE SURFACES OF THE CUT FILLET WELDS AND GUSSET PLATE SHALL BE GROUND IMMEDIATELY AFTER DISCARDING THE REMOVED PORTION OF GUSSET PLATE. THIS GRINDING IS TO REMOVE ANY LARGE SURFACE IRREGULARITIES.

6. ANY REMAINING FILLET WELDS SHALL BE GROUND SO THAT THE RESULTING SURFACE OF THE WEB IS SMOOTH. EXTREME CARE SHALL BE TAKEN TO ENSURE **THAT THE FULL** THICKNESS OF THE WEB IS MAINTAINED AND NO UNDERCUT, GOUGING OR OVERGRINDING OF THE WEB TAKES PLACE. IF THE 2-INCH DIAMETER HOLE OF STEP 2 DID NOT TOUCH THE FACE OF THE WEB, THE HOLE SHALL BE GROUND SO THAT A **1"- MIN.** RADIUS FROM THE FACE OF THE WEB TO THE DRILLED GUSSET PLATE RESULTS.

7. GRIND THE CUT SURFACES OF THE GUSSET PLATE SMOOTH

8. THE CONTRACTOR AND THE ENGINEER SHALL CAREFULLY VISUALLY INSPECT THE WEB, GUSSET PLATE, AND FILLET WELDS. ADDITIONALLY, THE CLEANED WEB, GUSSET PLATE, AND WELDS SHALL BE NON-DESTRUCTIVELY TESTED USING BOTH DYE PENETRANT AND MAGNETIC PARTICLE EXAMINATION SO THAT THE ENGINEER CAN INSPECT FOR CRACKS.

9. ANY CRACKS FOUND IN THE WEB SHALL BE REMOVED PER ITEM SPECIAL-DRILLING STRUCTURAL STEEL AND PER RETROFIT DETAILS. ANY CRACKS INTO OR BEHIND ANOTHER PLATE SHALL BE REMOVED BY CAREFUL GRINDING, BY CAREFULLY ENLARGING THE HORIZONTAL HOLES IN THE WEB BY GRINDING, OR BY FURTHER DRILLING.

10. DRILLING, GRINDING AND TESTING SHALL CONTINUE UNTIL ALL CRACK ENDS OR CRACKS ARE REMOVED.

THE ACCEPTED NUMBER OF RETROFITS AS DESCRIBED HEREIN WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LOCATION, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO CLEAN, DRILL THE 2" DIAMETER VERTICAL HOLES, GRIND AND PERFORM NON-DESTRUCTIVE TESTING TO THE LATERAL BRACING GUSSET RETROFIT AREA. PAYMENT WILL BE MADE AT THE CONTRACT PRICES BID FOR:

ITEM	UNIT
SPECIAL	EACH

DESCRIPTION
LATERAL BRACING GUSSET RETROFIT

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 BRIDGE DEPT.

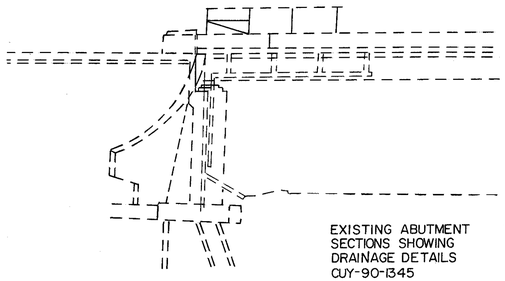
LATERAL BRACING GUSSET RETROFIT

BRIDGE CUY-71-1887
OVER I-490

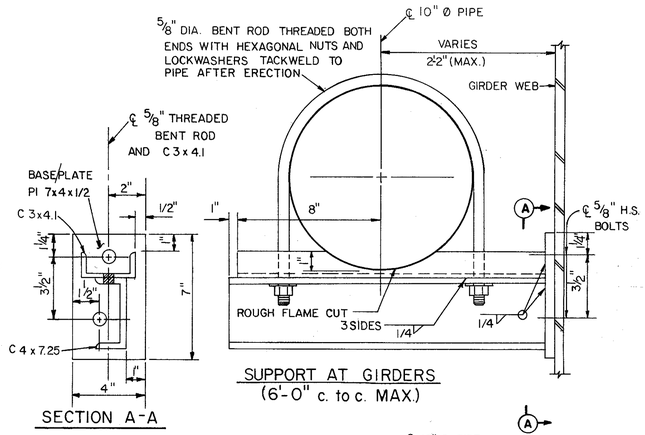
CUYAHOGA COUNTY OHIO

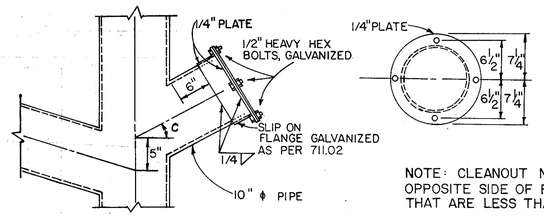
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
EJA	JPH		DWL	

SHEET 28/36

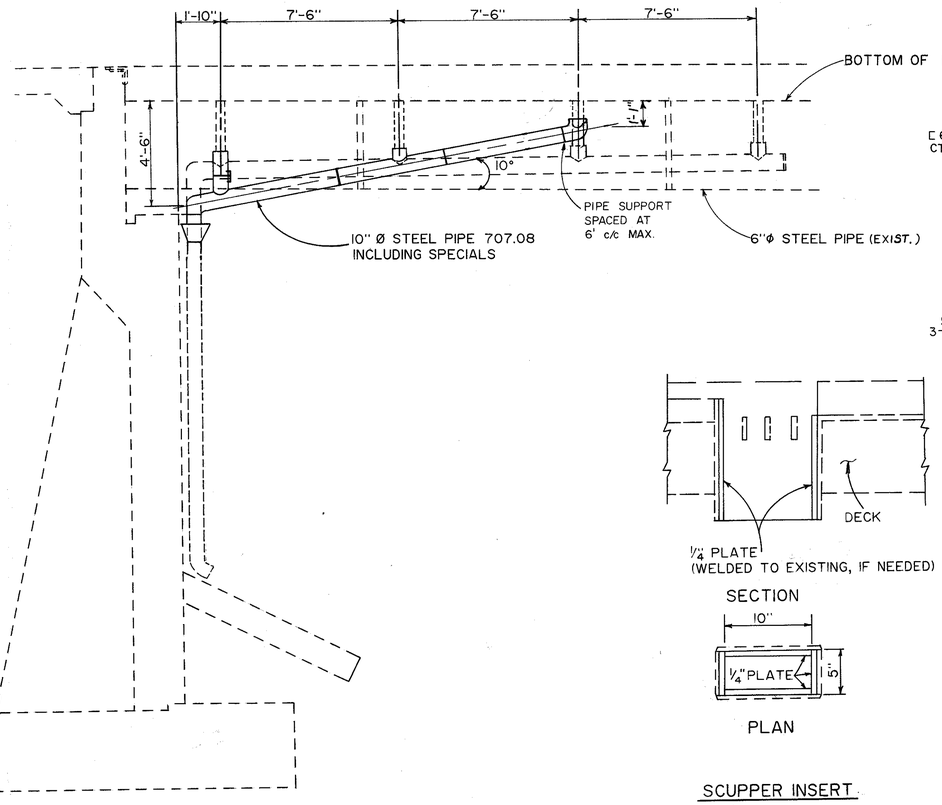


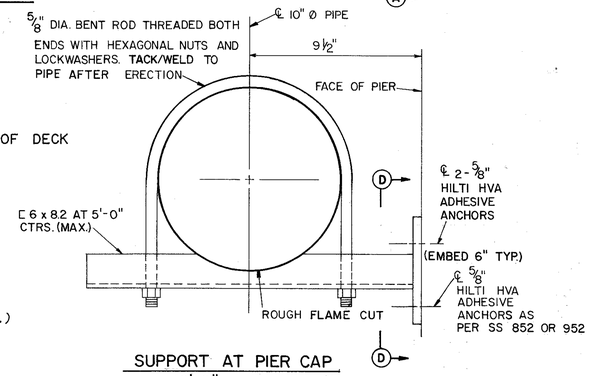
EXISTING ABUTMENT SECTIONS SHOWING DRAINAGE DETAILS CUY-90-1345

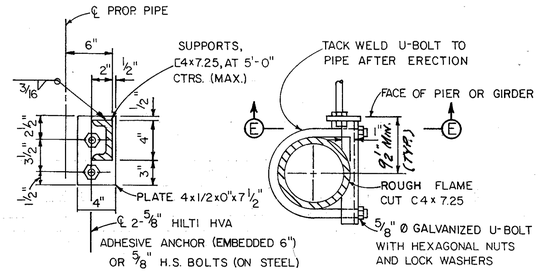


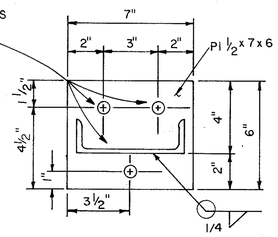


TYPICAL CLEANOUT DETAIL









NOTE: THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO PREPARING SHOP DRAWINGS.

ALL PIPES ATTATCHED TO THE GIRDER SHALL BE ONE CONTINUOUS PIECE.

CUY-90-1345

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

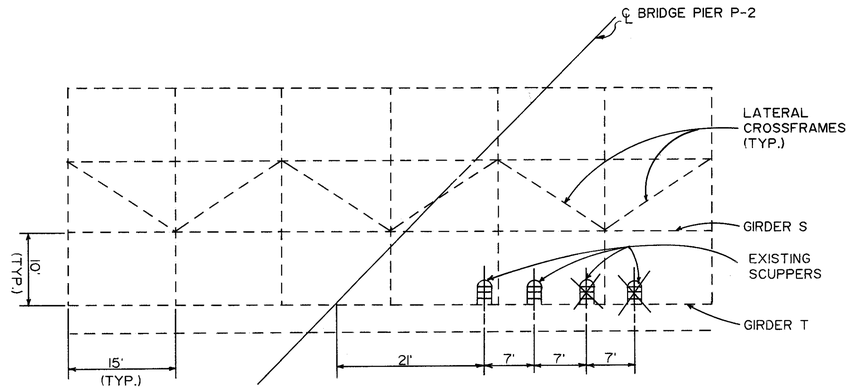
DRAINAGE DETAILS CUY-90-1345 AND MISC. DRAINAGE DETAILS

CUYAHOGA COUNTY OHIO

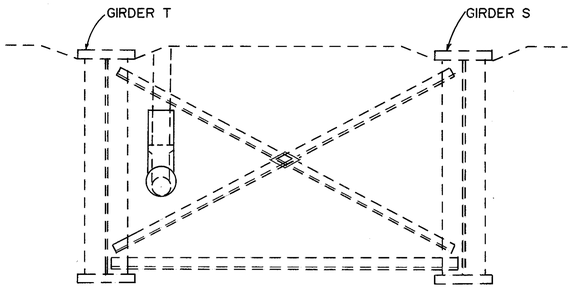
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
			DWL	

SHEET 29/36

513840

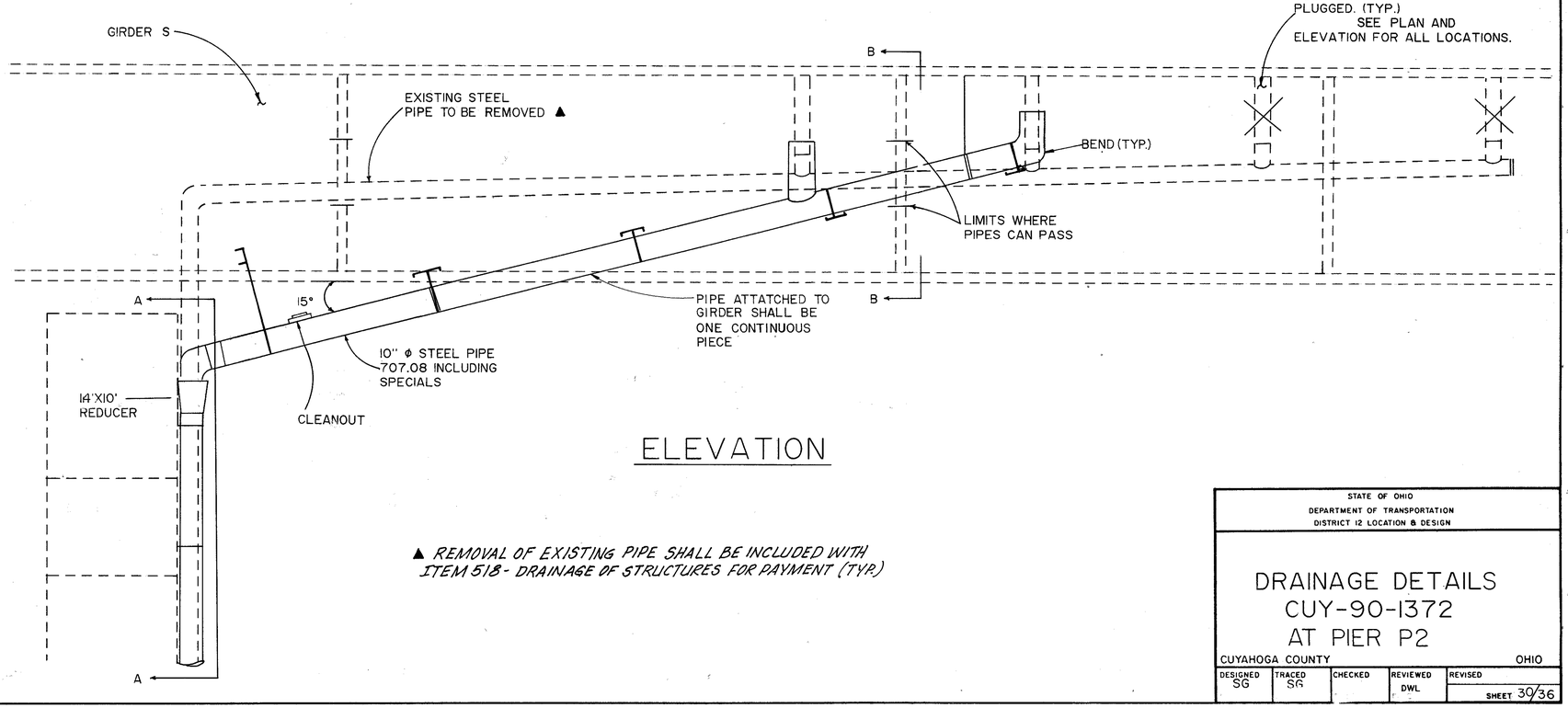


PLAN

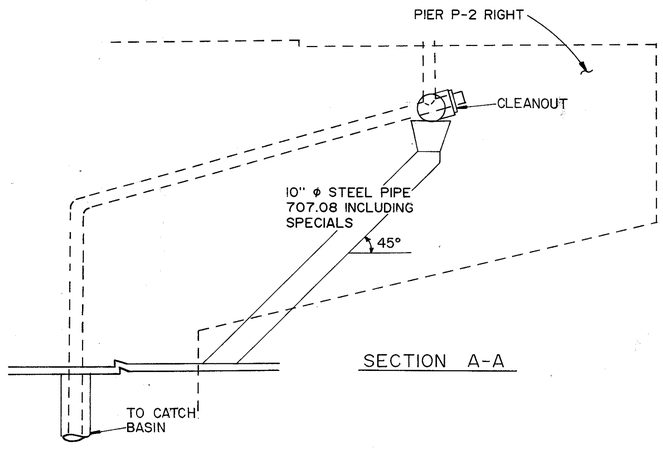


SECTION B-B

NOTE: ✕ DESIGNATES SCUPPER TO BE PLUGGED.



ELEVATION



SECTION A-A

▲ *REMOVAL OF EXISTING PIPE SHALL BE INCLUDED WITH ITEM 518 - DRAINAGE OF STRUCTURES FOR PAYMENT (TYP.)*

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

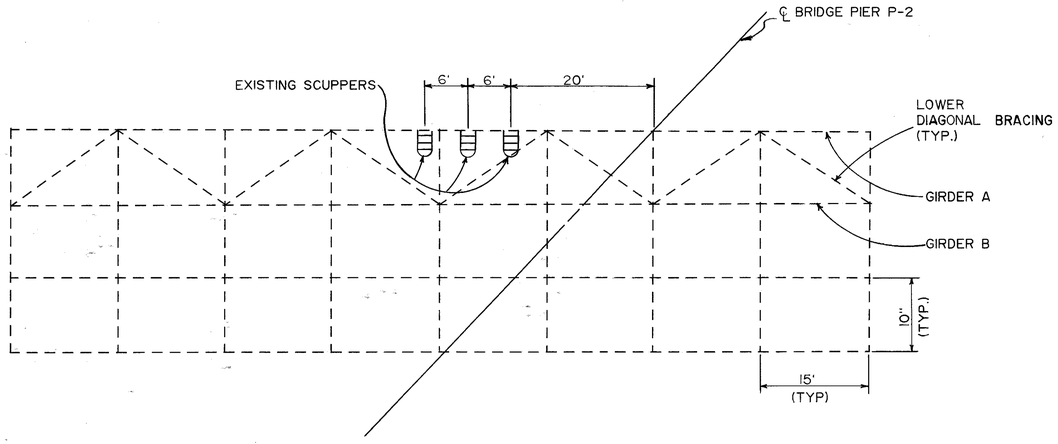
DRAINAGE DETAILS
CUY-90-1372
AT PIER P2

CUYAHOGA COUNTY — OHIO

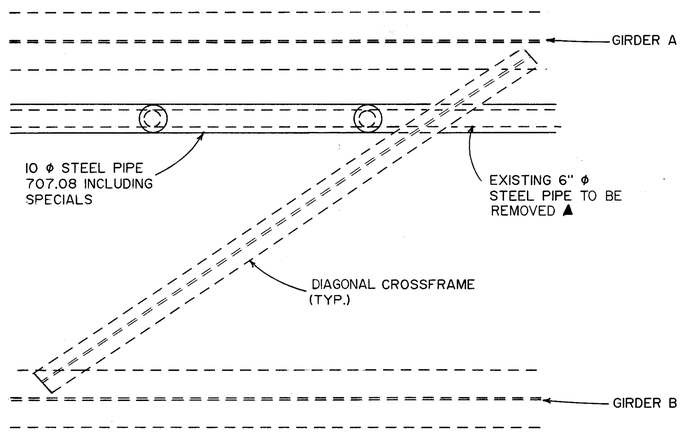
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
SG	SG		DWL	

SHEET 30/36

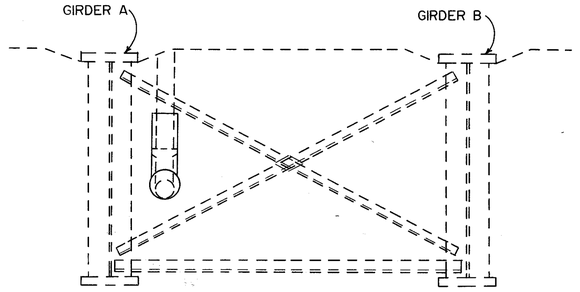
80492



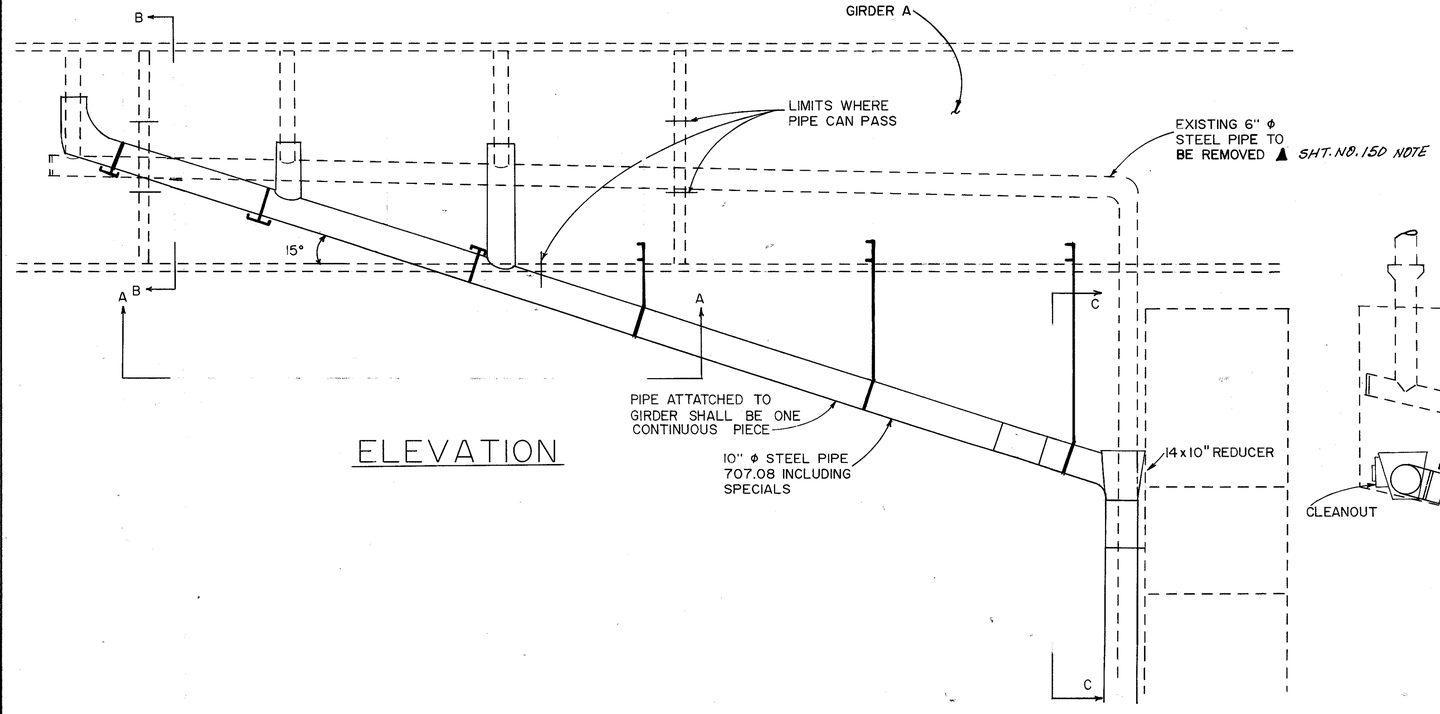
PARTIAL PLAN



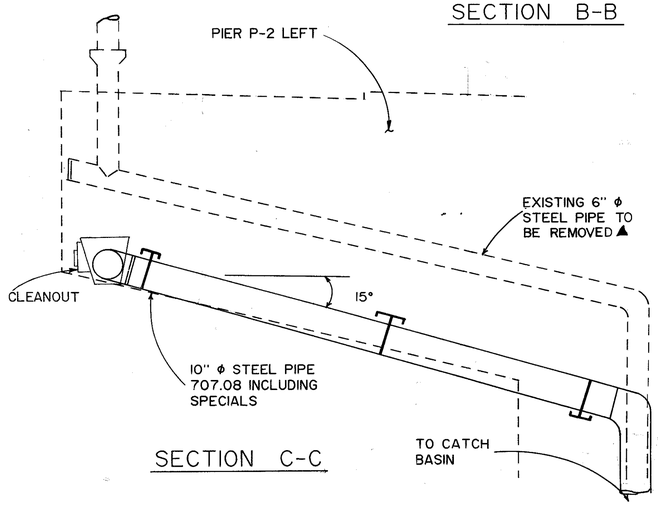
SECTION A-A



SECTION B-B



ELEVATION



SECTION C-C

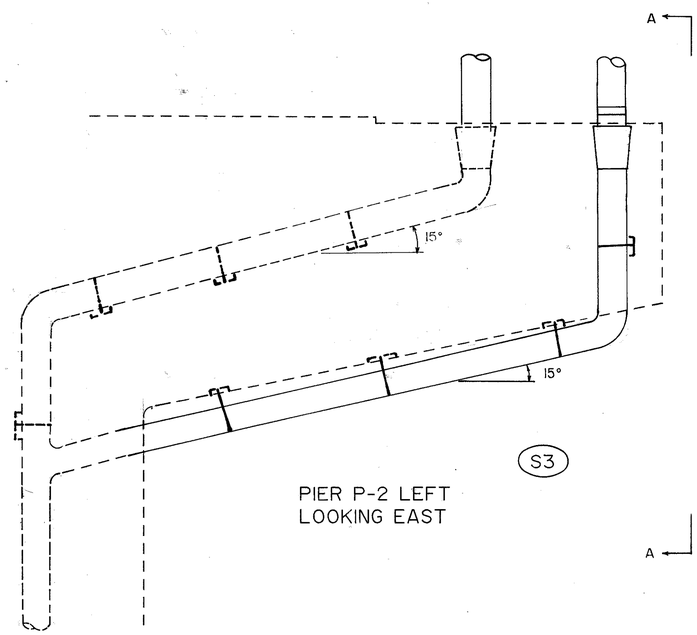
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

DRAINAGE DETAILS
CUY-90-13 72
AT PIER P 2

CUYAHOGA COUNTY OHIO

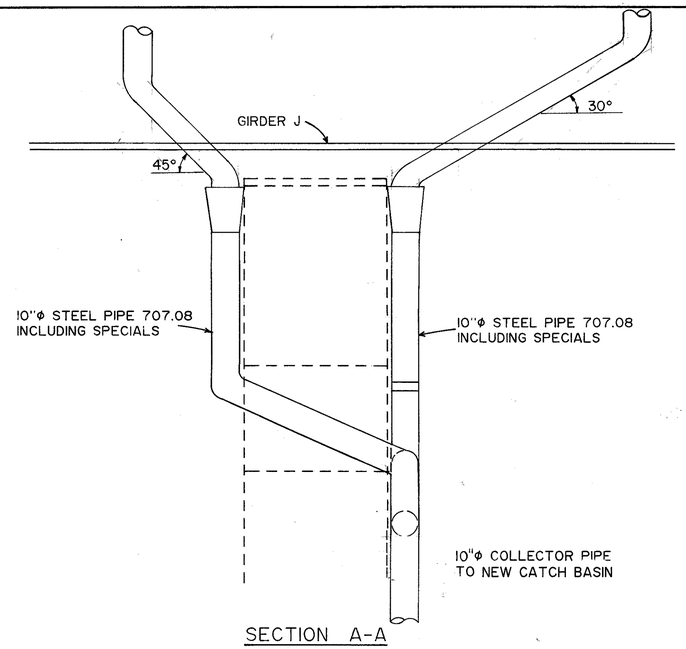
DESIGNED SG	TRACED SG	CHECKED	REVIEWED DWL	REVISED

SHEET 31 / 36

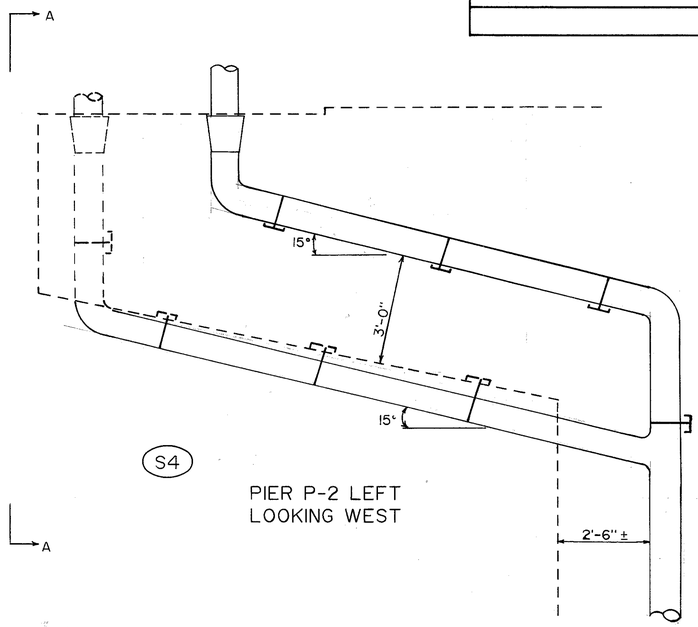


S3

PIER P-2 LEFT
LOOKING EAST

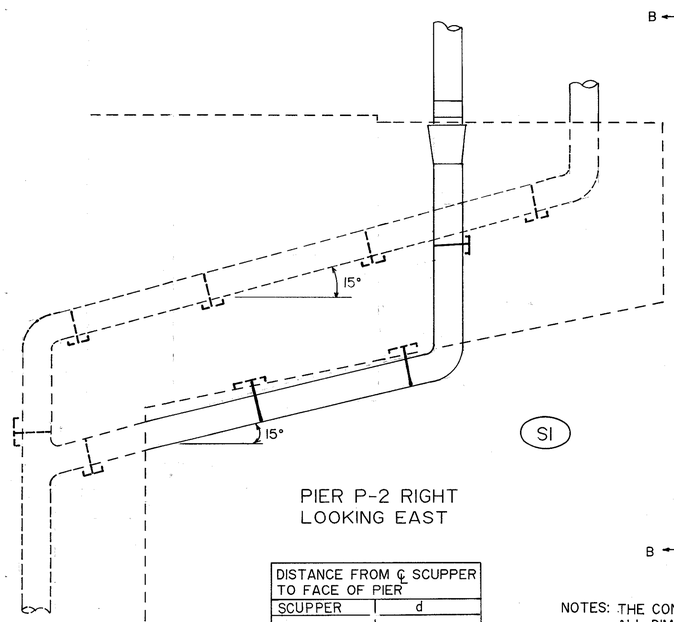


SECTION A-A



S4

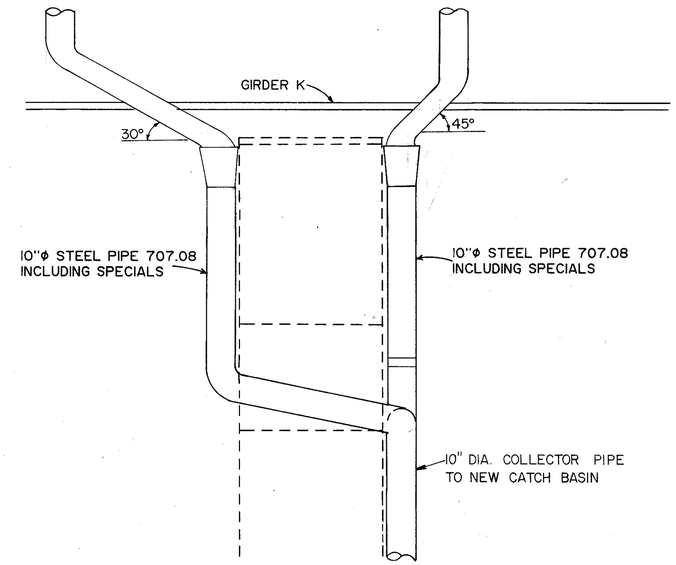
PIER P-2 LEFT
LOOKING WEST



S1

PIER P-2 RIGHT
LOOKING EAST

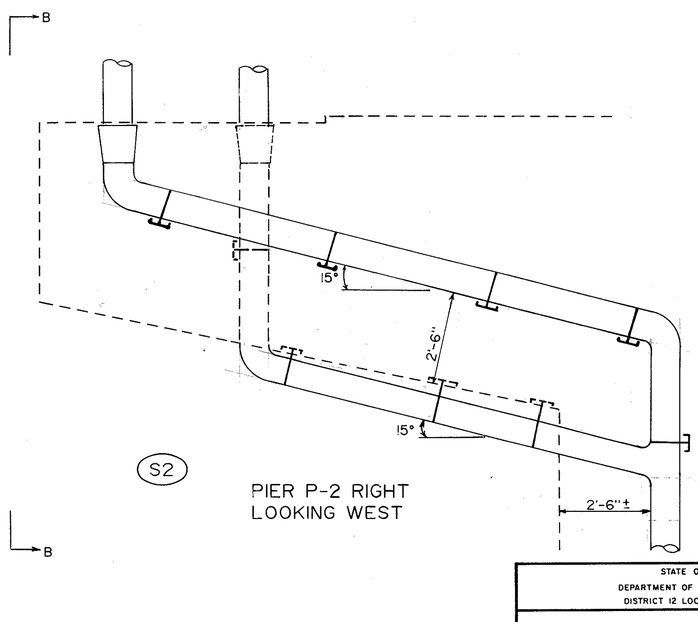
DISTANCE FROM ℄ SCUPPER TO FACE OF PIER	
SCUPPER	d
S1	5'
S2	2'
S3	3'
S4	7'



SECTION B-B

NOTES: THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. FIELD ADJUSTMENTS FOR PROPOSED SCUPPERS SHALL BE MADE, AS DIRECTED BY THE ENGINEER.

ELEVATION VIEWS ARE PERPENDICULAR TO ℄ I-90.



S2

PIER P-2 RIGHT
LOOKING WEST

FOR ADDITIONAL VIEWS
SEE SHEETS 150, 151 & 153.

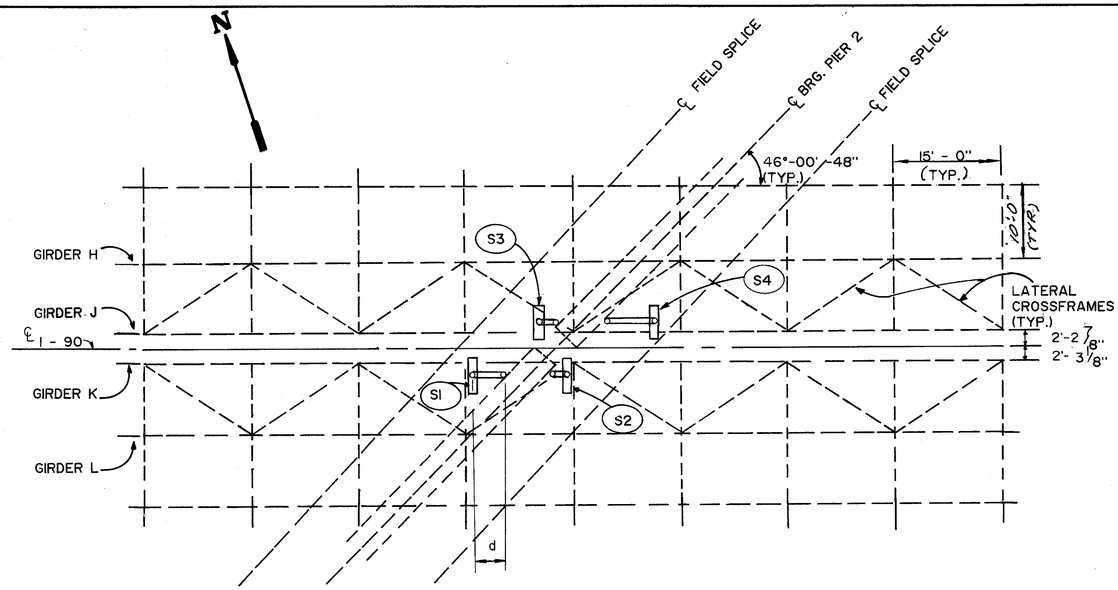
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

COLLECTOR PIPE DETAILS
CUY-90-1372

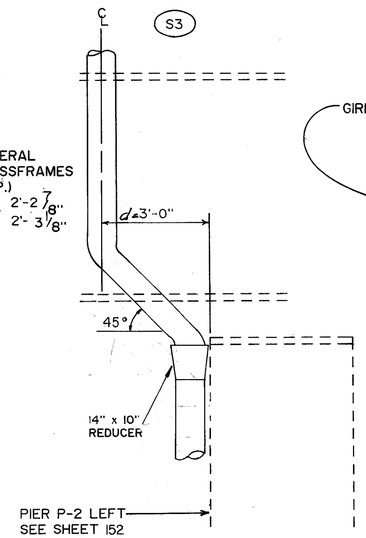
CUYAHOGA COUNTY OHIO

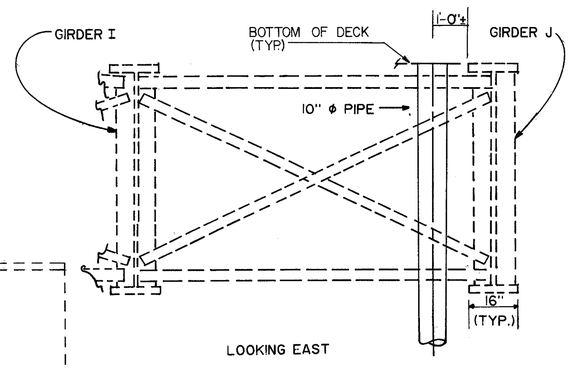
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
DATE	DATE	DATE	DWL DATE	SHEET 32/36

CUYAHOGA COUNTY CUY - 90 - 13.41	OHIO FHWA REGION 5 FEDERAL PROJECT	153 156

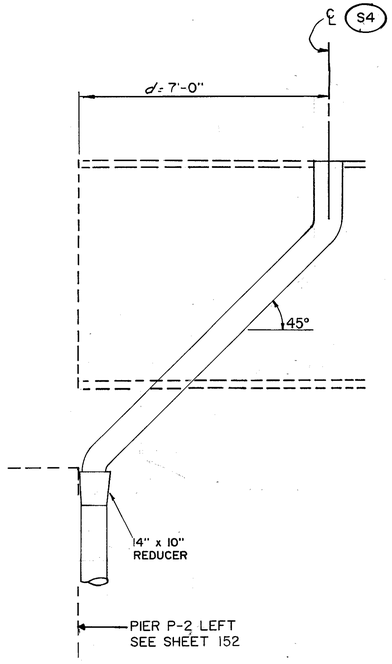


PARTIAL PLAN VIEW OF SUPERSTRUCTURE AND PROPOSED SCUPPER LOCATIONS

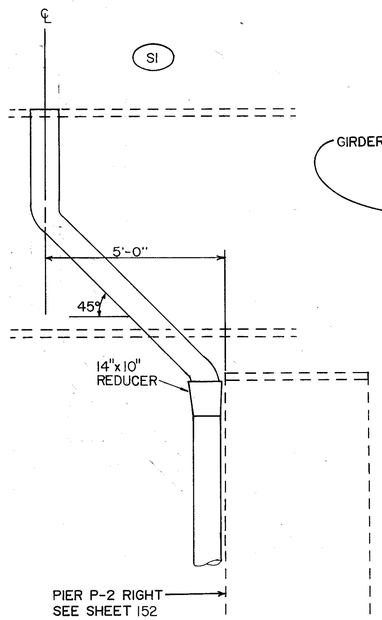


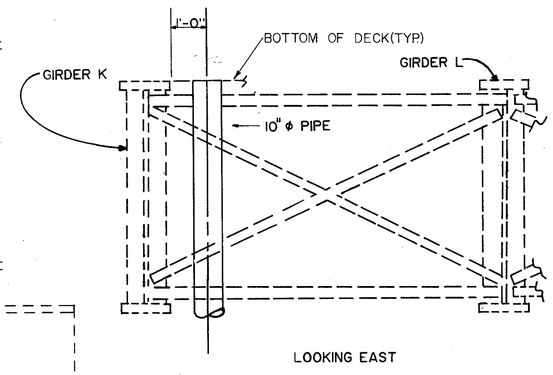


PARTIAL ELEVATION VIEW

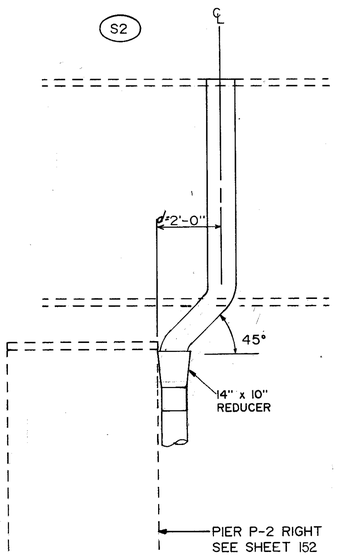


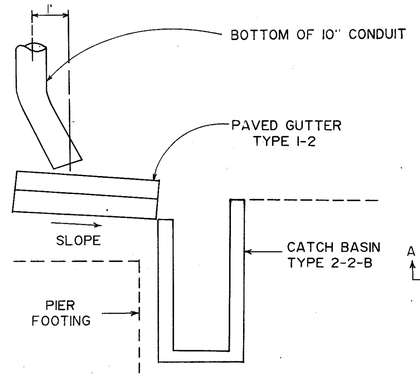
NOTE: DETAILS FOR PAVED GUTTER AND CATCH BASIN ARE CONTAINED IN THE DRAINAGE SECTION SEE SHEET 43A.



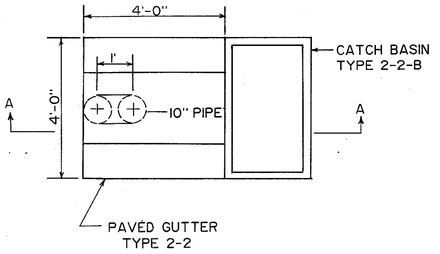


PARTIAL ELEVATION VIEW





SECTION A-A



PLAN

FOR ADDITIONAL VIEWS SEE SHEET 150-152.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

SCUPPER LOCATIONS AND DETAILS CUY - 90 - 1372

CUYAHOGA COUNTY				OHIO
DESIGNED	TRACED	CHECKED	REVIEWED DWL	REVISED

SHEET 33/36

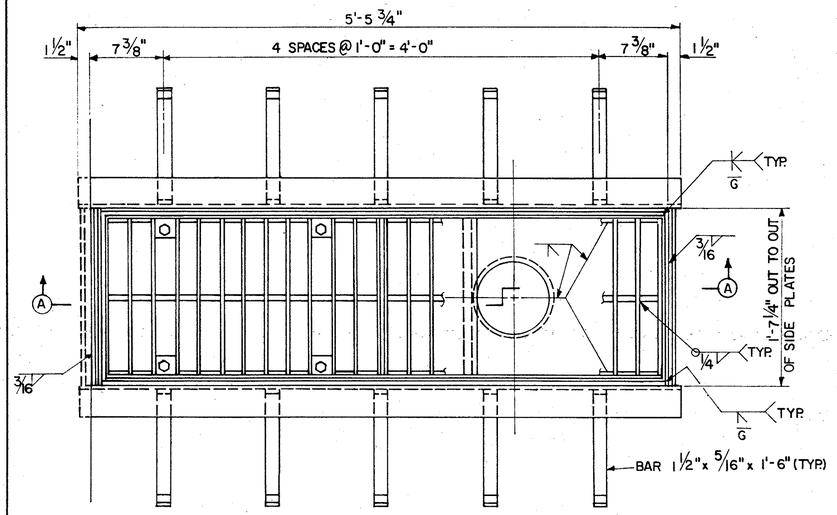
80452

DIMENSION "C"	
LOCATION	"C"
ALL SCUPPERS	2 ½"

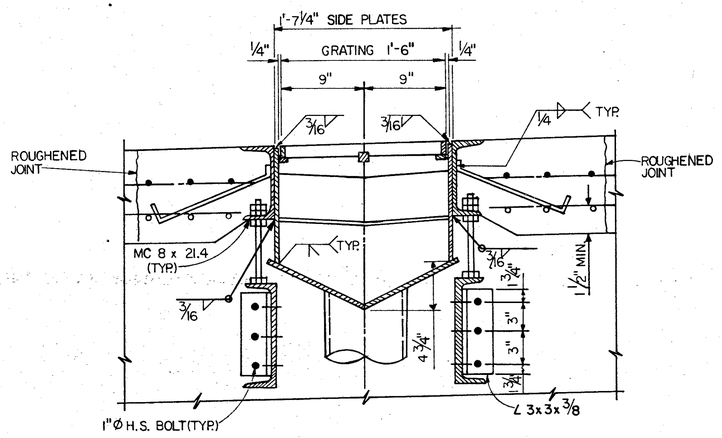
CUYAHOGA COUNTY
CUY-90-13.41

OHIO
FHWA REGION 5
FEDERAL PROJECT

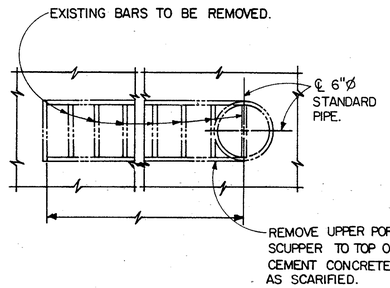
154
156



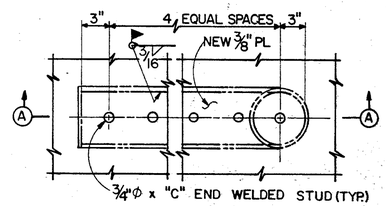
PLAN



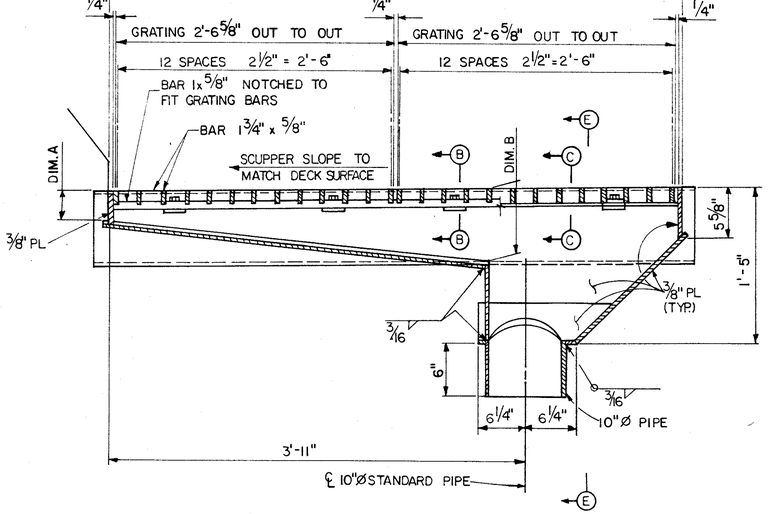
SECTION E-E



EXISTING PLAN

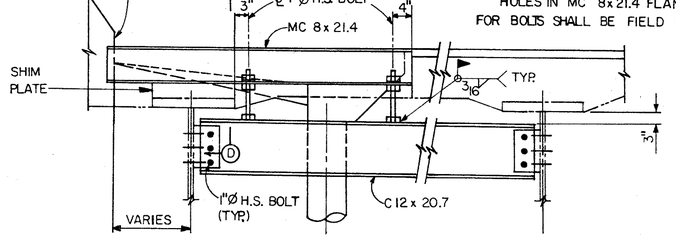


MODIFIED PLAN



SECTION A-A

TABLE OF DIMENSIONS			
SCUPPER TYPE		AT FACE OF SIDE-PLATE	AT ℄ SCUPPER
S1	DIM. A	3"	3½"
	DIM. B	7"	7½"

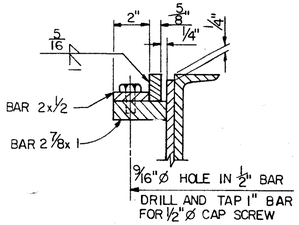


NOTE:
HOLES IN MC 8x21.4 FLANGE FOR BOLTS SHALL BE FIELD DRILLED.

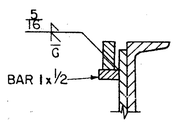
SCUPPER SUPPORT

SECTION A-A

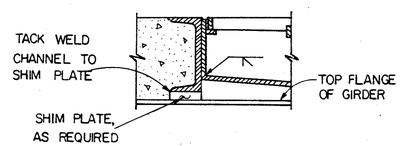
PLUGGING EXISTING SCUPPERS



SECTION B-B
THRU GRATING FASTENING



SECTION C-C
THRU GRATING SUPPORT



SECTION D-D

NOTES:

——— INDICATES EXISTING STRUCTURE

▨ INDICATES PORTION OF STRUCTURE TO BE REMOVED

FOR DECK REMOVAL AND REPLACEMENT AT PROPOSED SCUPPERS, SEE SHEET 155 .

THE SCUPPERS AND SUPPORTS SHALL BE HOT-DIP GALVANIZED ASTM A36 STEEL, AS PER 711.02

THE SUPPORT CHANNELS, CLIP ANGLES, 1" DIAMETER BOLTS AND ATTACHED 10" DIAMETER PIPE ARE INCLUDED WITH ITEM 518, SCUPPERS INCLUDING SUPPORTS, AS PER PLAN FOR PAYMENT.

FOR SCUPPER LOCATIONS SEE SHEETS. 152, 131 & 153

PLUGGING EXISTING SCUPPERS AS DETAILED SHALL BE PERFORMED UNDER ITEM 202 "SCUPPERS PLUGGED"

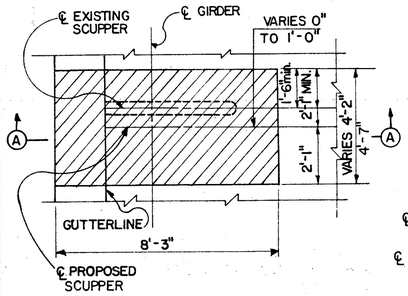
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

SCUPPER DETAILS
CUY-90-1372

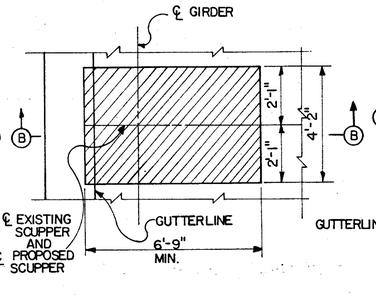
CUYAHOGA COUNTY OHIO

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
			DWL	

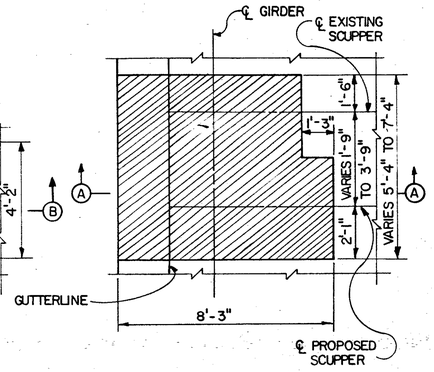
SHEET 34/36



TYPE A

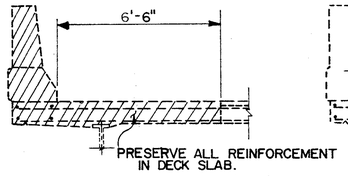


TYPE A

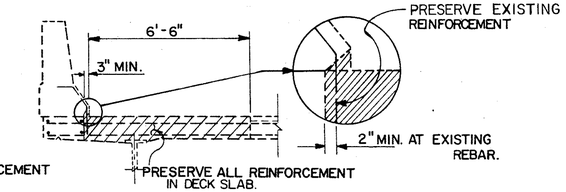


TYPE B

DECK REMOVAL PLAN AT PROPOSED SCUPPERS
(PRESERVE ALL EXISTING REINFORCEMENT EXCEPT AS NOTED IN DECK REPAIR DETAILS)

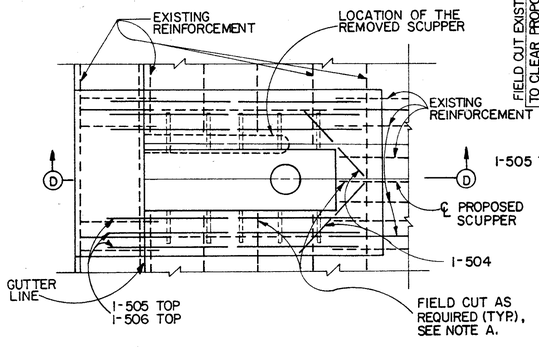


SECTION A-A

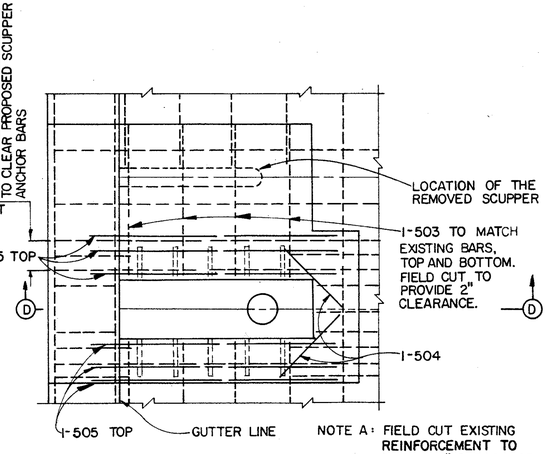


SECTION B-B

NOTE: THE REMOVAL OF EXISTING SCUPPER AND SCUPPER SUPPORTS AT LOCATIONS OF PROPOSED SCUPPERS IS INCLUDED WITH ITEM 202, PORTIONS OF STRUCTURES REMOVED FOR PAYMENT.



TYPE A REPAIR



TYPE B REPAIR

DECK REPAIR AT PROPOSED SCUPPERS
(REPAIR AT PARAPET SHOWN, MEDIAN REPAIR SIMILAR)

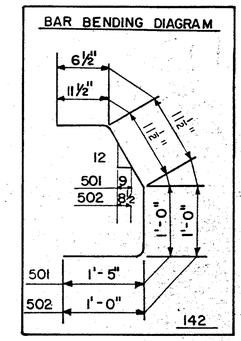
TYPE A SCUPPER

CUY-90-13.72 (Conrail Bridge)

Mark	No.	Length	Shape	Weight (lbs.)
502	16	3"-4"	142	56
504	8	2'-10"	STR.	24
505	24	7'-9"	STR.	194
			TOTAL	274 lbs.

274 lbs. x 4 LOCATIONS= 1096 lbs.

BAR BENDING DIAGRAM

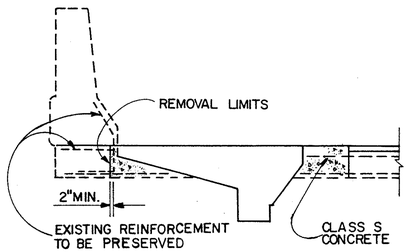


NOTES:
FOR SCUPPER DETAILS, SEE SHEET 154.
FOR EXISTING AND PROPOSED SCUPPER LOCATIONS, SEE SHEETS 152, 131 & 153.

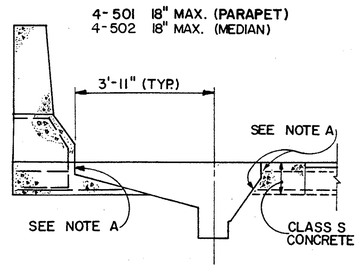
ALL REINFORCING STEEL SHALL BE EPOXY COATED.

ALL REINFORCEMENT AND CLASS S CONCRETE FOR DECK PATCH SHALL BE INCLUDED IN ITEM 518, SCUPPERS INCLUDING SUPPORTS, AS PER PLAN FOR PAYMENT.

– – – – – – – – INDICATES EXISTING STRUCTURE
▨ INDICATES PORTIONS OF STRUCTURE REMOVED



SECTION D-D



SECTION D-D

NOTE: FOR PARAPET AND MEDIAN REINFORCEMENT NOT SHOWN, SEE SHEET 140 MEDIAN REINFORCEMENT SIMILAR TO PARAPET REINFORCEMENT

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

DECK REPAIR AT PROPOSED SCUPPERS
CUY-90-1372

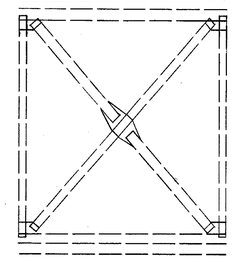
CUYAHOGA COUNTY OHIO

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
			DWL	

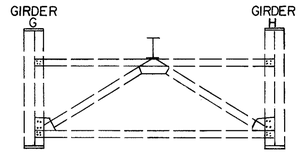
SHEET 35/36

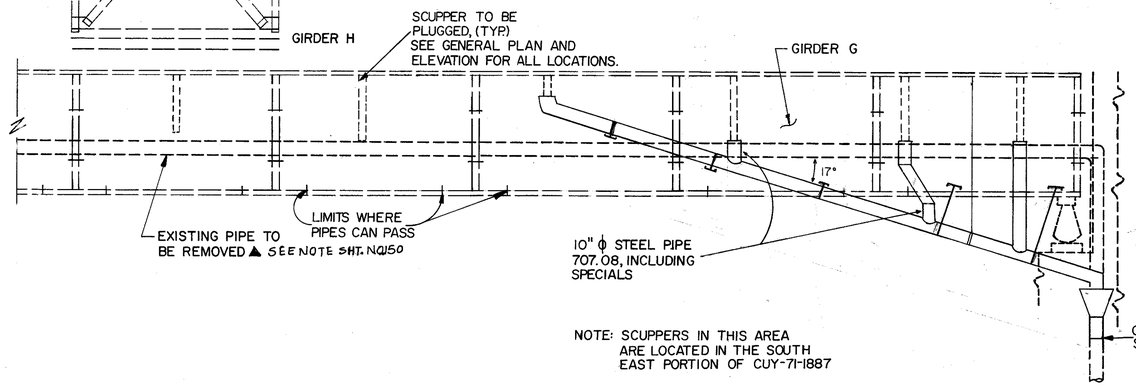
CUYAHOGA COUNTY CUY-90-13.41	OHIO	156 156
	FHWA REGION 5	
	FEDERAL PROJECT	

TYPICAL CROSSFRAME
ALONG BOTTOM FLANGE

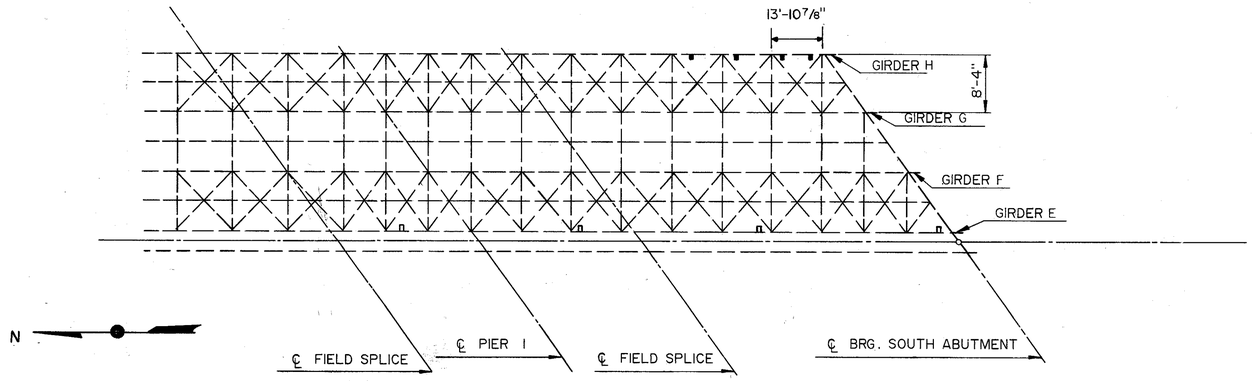


TYPICAL CROSSFRAME
BETWEEN BEAMS





NOTE: SCUPPERS IN THIS AREA ARE LOCATED IN THE SOUTH EAST PORTION OF CUY-71-1887



PARTIAL FRAMING PLAN

NOTE: THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

DRAINAGE DETAILS
CUY-71-1887

CUYAHOGA COUNTY — OHIO

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
SG	LM	LAM	DWL	

SHEET 36/36