



CUY-90-14.90

PID 77332/85531

APPENDIX EX-27

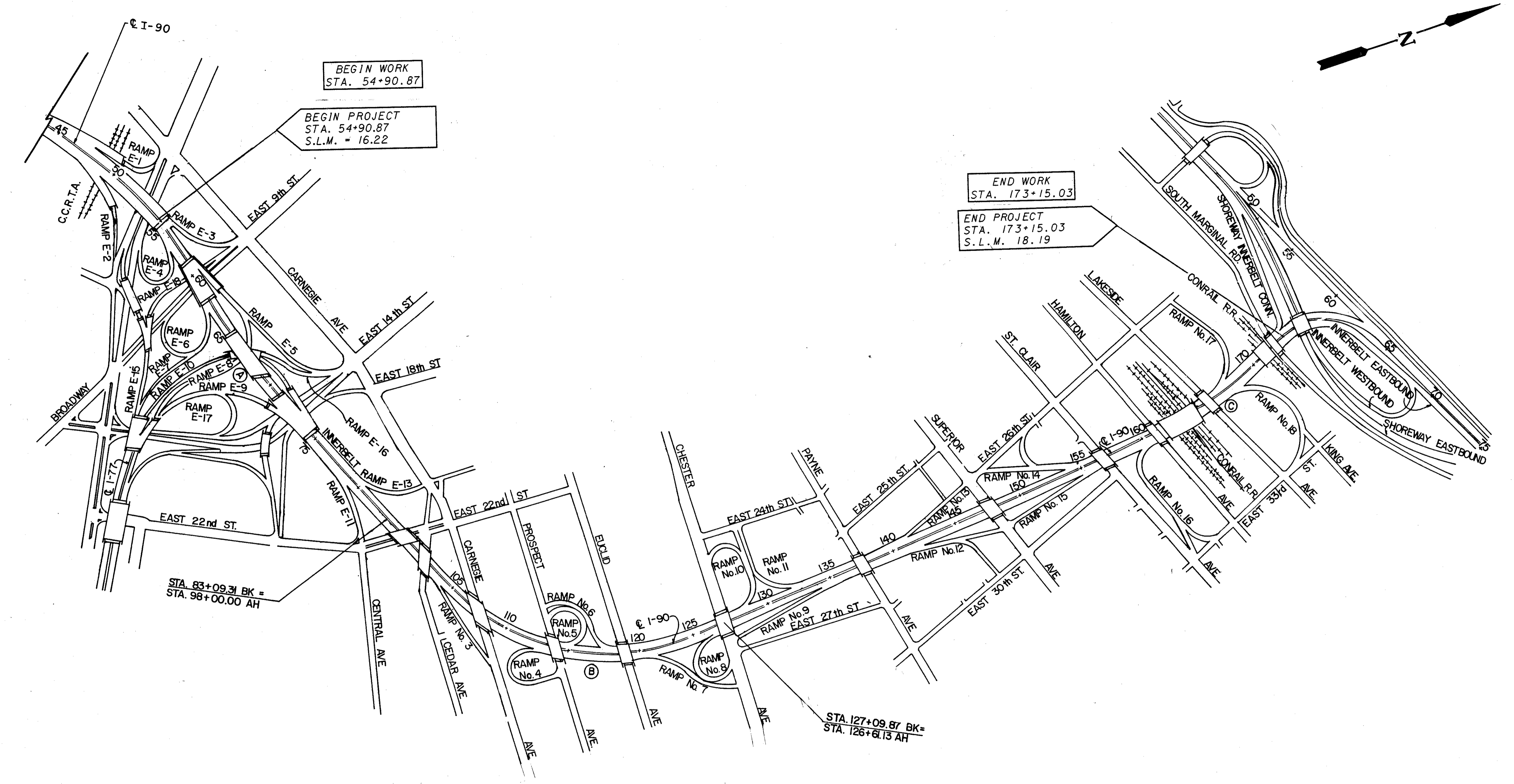
CUY-090-1622 PID 16193

(Reference Document)

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

**Innerbelt Bridge
Construction Contract Group 1 (CCG1)**

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 PLOT SUBMITTED: 18-APR-1996 11:02



BEGIN WORK
 STA. 54+90.87

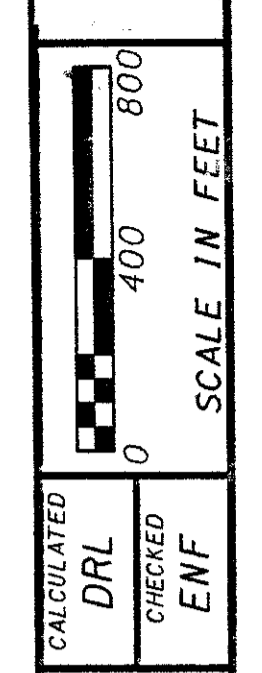
BEGIN PROJECT
 STA. 54+90.87
 S.L.M. = 16.22

END WORK
 STA. 173+15.03

END PROJECT
 STA. 173+15.03
 S.L.M. = 18.19

STA. 83+09.31 BK =
 STA. 98+00.00 AH

STA. 127+09.87 BK =
 STA. 126+61.13 AH



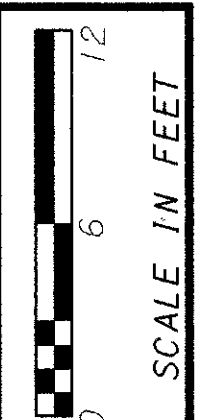
SCHEMATIC PLAN

CUYAHOGA COUNTY
 CUY-90-16.22

LEGEND - DRAFTING SYMBOLS

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

TYPICAL SECTIONS

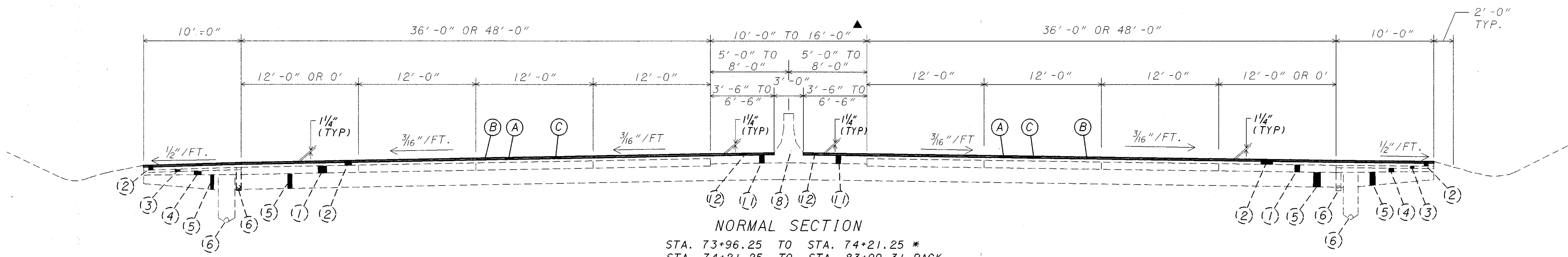


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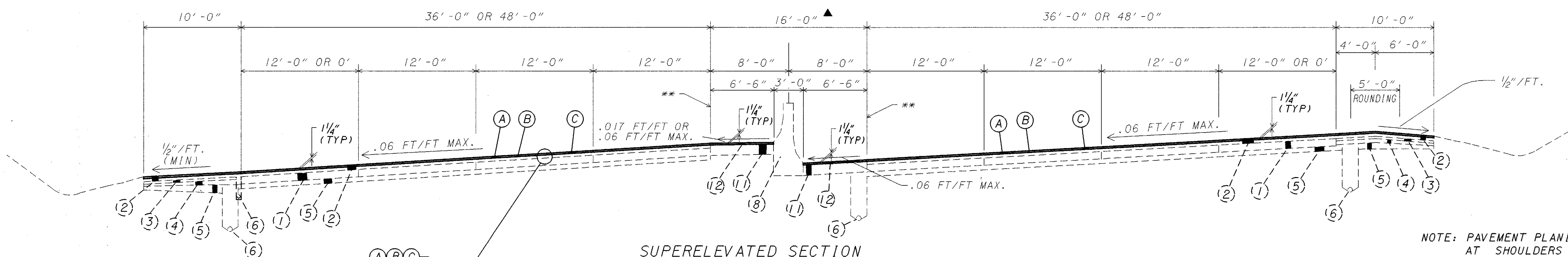
TYPICAL SECTIONS
I-90

CUYAHOGA COUNTY
CUY-90-16.22

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NORMAL SECTION
 STA. 73+96.25 TO STA. 74+21.25 *
 STA. 74+21.25 TO STA. 83+09.31 BACK
 STA. 98+00 AHEAD TO STA. 101+25
 STA. 127+75 TO STA. 151+00



SUPERELEVATED SECTION
 STA. 54+90.87 TO STA. 58+54.98
 STA. 58+54.98 TO STA. 58+79.98 *
 STA. 61+16.05 TO STA. 61+41.05 *
 STA. 61+41.05 TO STA. 64+85.18
 STA. 64+85.18 TO STA. 65+10.18 *
 STA. 68+19.03 TO STA. 68+44.03 *
 STA. 68+44.03 TO STA. 70+64.23
 STA. 70+64.23 TO STA. 70+89.23 *
 STA. 101+25 TO STA. 127+09.89 BACK
 STA. 126+61.13 AHEAD TO STA. 127+75

* APPROACH SLABS
 ** FROM STA. 54+90.87 TO STA 70+80±, A PORTION OF THE EXISTING MEDIAN SHOULDER HAS AN EXISTING CONCRETE WEARING SURFACE. THE LIMITS OF THE PROPOSED PLANING AND PAVING, ALONG THE INSIDE MEDIAN SHOULDER, SHALL COINCIDE WITH THIS JOINT.
 ▲ THE MEDIAN SHOULDER WIDTHS SHOWN FOR THE NORMAL AND SUPERELEVATED SECTIONS ARE INTERCHANGEABLE.

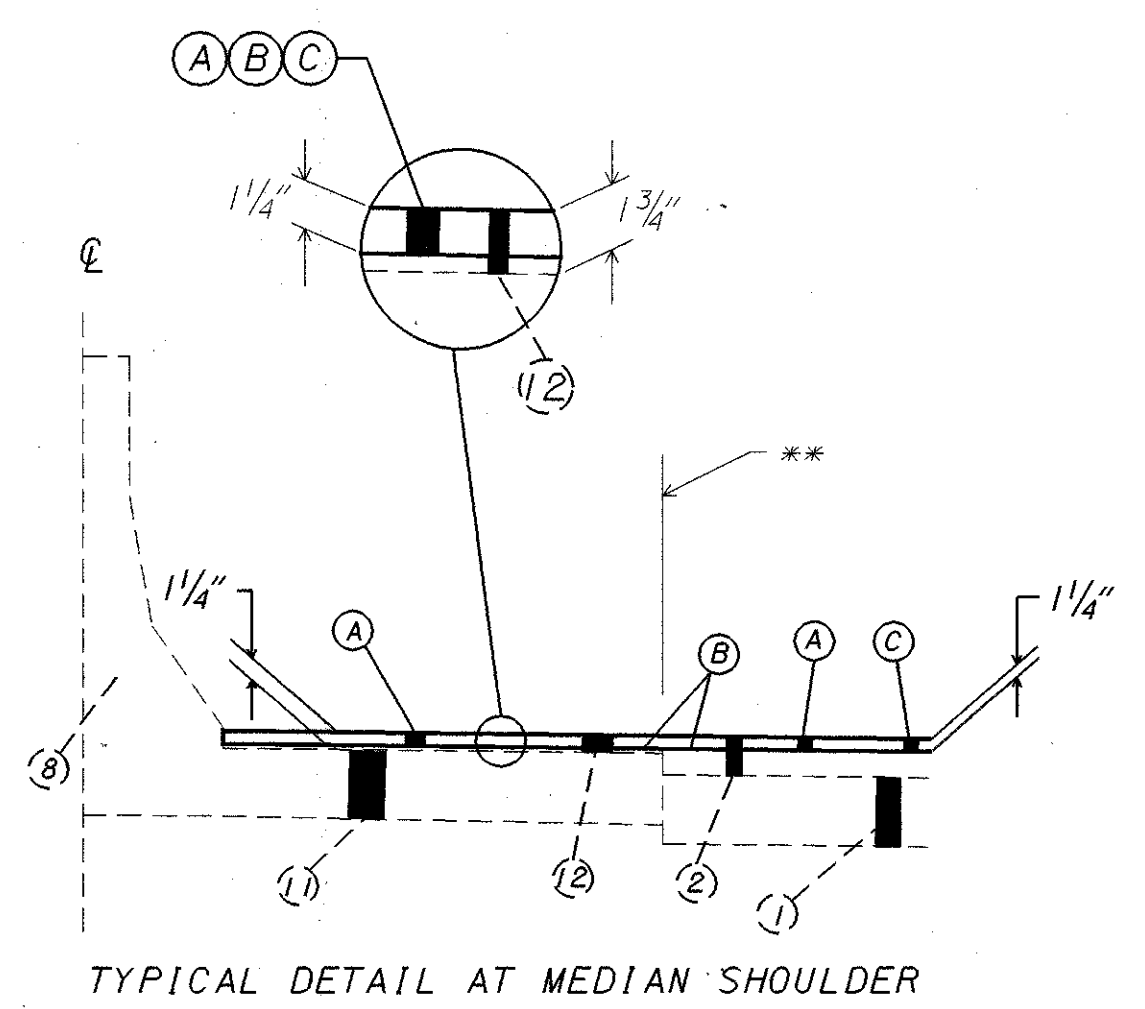
NOTE: PAVEMENT PLANING, BITUMINOUS AT SHOULDERS SHOULD MATCH THE EXISTING SHOULDER SLOPE.

EXISTING

- (1) 9" REINFORCED CONCRETE PAVEMENT
- (2) 4-1/4" EXISTING ASPHALT
- (3) BITUMINOUS AGGREGATE BASE
- (4) AGGREGATE BASE
- (5) SUBBASE, 6" OR 18"
- (6) UNDERDRAIN
- (8) CONCRETE BARRIER MEDIAN
- (9) CURB
- (10) GUARDRAIL
- (11) 9" PLAIN CONCRETE PAVEMENT
- (12) 1-3/4" EXISTING ASPHALT

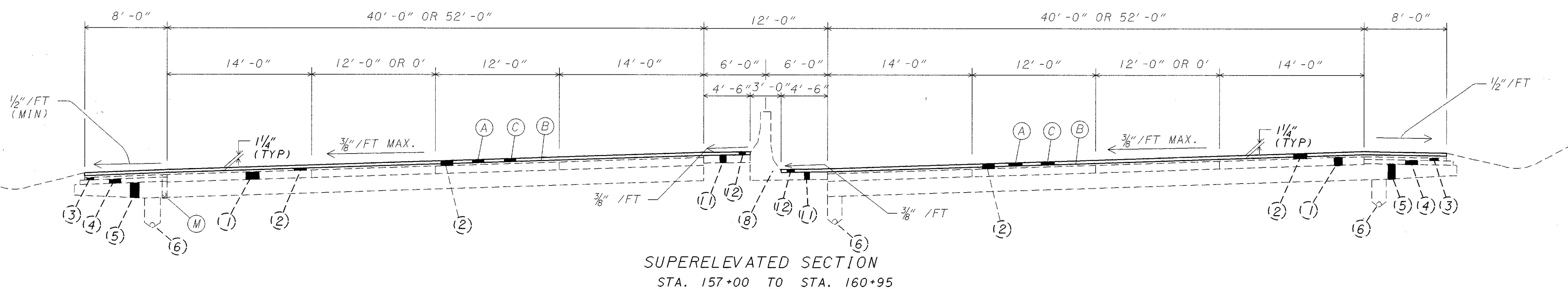
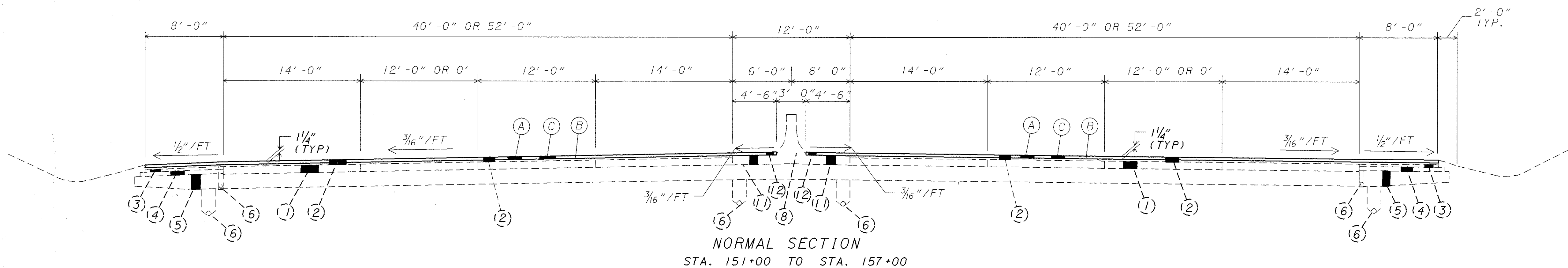
PROPOSED

- (A) ITEM 254 - PAVEMENT PLANING, BITUMINOUS, AS PER PLAN "A"
- (B) ITEM 407 - TACK COAT USING SS 924
- (C) ITEM SPECIAL - ASPHALT CONCRETE WITH SBR LATEX, SURFACE COURSE, TYPE I, AC-10

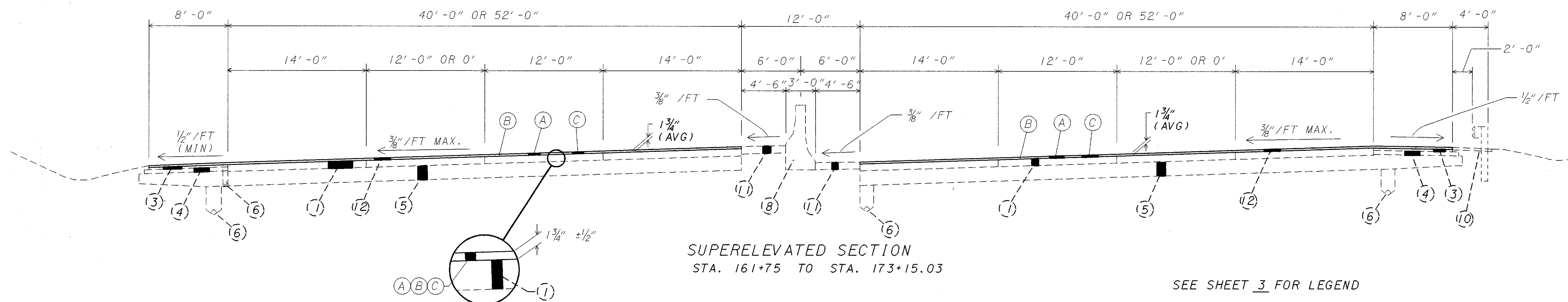


TYPICAL DETAIL AT MEDIAN SHOULDER

TYPICAL SECTIONS



STA. 160+95 TO STA. 161+70 TRANSITION TO SECTION WITH NO INTERMEDIATE ASPHALT COURSE



SEE SHEET 3 FOR LEGEND

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CALCULATED	DRAWN
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TYPICAL SECTIONS
I-90

CUYAHOGA COUNTY
CUI-90-16.22

GENERAL NOTES

GENERAL

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.

UNDERGROUND UTILITIES

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

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

- | | |
|--|--|
| 1. THE CLEVELAND ELECTRIC ILLUMINATING CO.
3601 RIDGE RD.
CLEVELAND, OHIO 44102
(216) 634-7303
ATTN: FRANK DIBBS | 4. THE EAST OHIO GAS CO.
1201 EAST 55TH ST.
CLEVELAND, OHIO 44103
(216) 736-6667
ATTN: PAULA HIDALGO |
| 2. AMERITECH
13630 LORAIN AVE. 4TH FLOOR
CLEVELAND, OHIO 44111
(216) 476-6141
ATTN: LAURA FRANK | 5. CLEVELAND WATER DEPARTMENT
1201 LAKESIDE AVENUE
CLEVELAND, OHIO 44114
(216) 644-2444
ATTN: DON TREBAR |
| 3. CUYAHOGA COUNTY SANITARY ENGINEER
6100 WEST CANAL ROAD
VALLEY VIEW, OHIO 44125
(216) 443-8204
ATTN: RUTH LANGSNER | 6. CLEVELAND PUBLIC POWER(MELP)
1201 LAKESIDE AVENUE
CLEVELAND, OHIO 44114
(216) 664-4245
ATTN: DALE TURKOVICH |

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.

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.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

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.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

SEQUENCE OF OPERATIONS

THE CONTRACTOR'S WORK SHALL CONFORM TO THE FOLLOWING SEQUENCE OF OPERATION.

1. COMPLETE VISUAL SURVEY OF EXISTING MANHOLES LOCATED WITHIN THE TRAVELED LANES WITH THE PROJECT ENGINEER. ORDER REPLACEMENT CASTINGS AS DIRECTED BY THE ENGINEER.
2. REPAIR BROKEN CONCRETE RINGS AROUND EXISTING MANHOLES AS DIRECTED BY THE ENGINEER.
3. REFERENCE THE EXISTING TRANSVERSE SAWED AND SEALED JOINTS ON BOTH SIDES OF THE ROADWAY.
4. PLANE THE EXISTING ASPHALT SURFACE COURSE WITHIN THE ALLOWABLE LANE CLOSURE.
5. PLANE ADDITIONAL AREAS WHICH HAVE DEEPER DETERIORATION, AS DIRECTED BY THE ENGINEER.
6. PLACE LEVELING COURSE WHERE NECESSARY. (IN THE ADDITIONAL PLANED AREAS AND IN AREAS SPECIFICALLY NOTED IN THIS PLAN)
7. EITHER:
 - a. CLEAN PAVEMENT, PLACE TEMPORARY PAVEMENT MARKINGS AND OPEN ALL LANES TO TRAFFIC. THE SURFACE COURSE OF ASPHALT FROM STA 54+90 TO STA 160+95 MUST BE PLACED WITHIN TWO (2) DAYS OF THE PLANING OPERATION. THE SURFACE COURSE FROM STA 160+95 TO STA 173+15 MUST BE PLACED WITHIN ONE (1) DAY OF THE PLANING OPERATION. THROUGHOUT THIS PROJECT, THE TRANSVERSE PAVEMENT JOINTS MUST BE SAWED AND SEALED WITHIN TWO (2) DAYS OF PLACEMENT OF THE SURFACE COURSE. TEMPORARY PAVEMENT MARKINGS SHALL BE PLACED PRIOR TO OPENING ALL LANES TO TRAFFIC.

OR

- b. CLEAN, TACK, PAVE SURFACE COURSE, AND SAW AND SEAL TRANSVERSE PAVEMENT JOINTS. (TRANSVERSE JOINTS MUST BE SAWED AND SEALED WITHIN TWO (2) DAYS OF THE PLACEMENT OF THE SURFACE COURSE.) TEMPORARY PAVEMENT MARKINGS SHALL BE PLACED PRIOR TO OPENING ALL LANES TO TRAFFIC.

8. THE CONTRACTOR MAY ONLY BEGIN PLANING THE ADJACENT SECTION OF PAVEMENT (ADJACENT TRANSVERSELY) AFTER PLACING THE SURFACE COURSE OF ASPHALT ON THE PREVIOUS PLANED SECTION AND COMPLETING THE SAWING AND SEALING OF THE TRANSVERSE PAVEMENT JOINTS. AT ALL TIMES THE CONTRACTOR MUST PAVE TO EITHER THE EXISTING WEARING SURFACE OR THE NEW ASPHALT WEARING SURFACE. THE CONTRACTOR MAY CONTINUE TO PLANE LONGITUDINALLY PRIOR TO PLACING THE FINAL SURFACE COURSE, BUT MUST PAVE EACH PLANED SECTION WITHIN THE TIME LIMITS LISTED ABOVE.
9. COMPLETE ALL PERMANENT TRAFFIC CONTROL ITEMS. (PAVEMENT MARKINGS AND RAISED PAVEMENT MARKERS)

PAVEMENT

ADDITIONAL REPAIRS

THIS ITEM SHALL BE USED ON AREAS WHERE, AFTER THE FIRST PASS WITH THE PLANER, DETERIORATED AREAS STILL EXIST.

THE PROJECT ENGINEER SHALL DETERMINE THE AREAS THAT REQUIRE ADDITIONAL PLANING AND SHALL SPECIFY THE REQUIRED PLANING DEPTH.

THIS ITEM SHALL INCLUDE ALL OF THE LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PERFORM A SEPARATE PASS WITH THE PLANER. PAYMENT SHALL BE PER S.Y. REGARDLESS OF THE THICKNESS PLANED. THE THICKNESS MAY VARY FROM 1/4" TO 2". THESE AREAS SHALL BE RESTORED WITH ITEM SPECIAL - ASPHALT CONCRETE, SBR LATEX, SURFACE COURSE, TYPE 1, AC-10. THIS QUANTITY OF ASPHALT SHALL BE PLACED AND COMPACTED PRIOR TO PLACEMENT OF THE FINAL SURFACE COURSE AND PRIOR TO OPENING ALL LANES TO TRAFFIC.

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

ITEM 254- PAVEMENT PLANING, BITUMINOUS, AS PER PLAN "B"	1000 S.Y.
ITEM SPECIAL- ASPHALT CONCRETE, SBR LATEX, SURFACE COURSE, TYPE 1, AC - 10	35 C.Y.
ITEM 407- TACK COAT USING SS 924	100 GAL

DRAWN	DRL
CALCULATED	DRL
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GENERAL NOTES

CUYAHOGA COUNTY
CUY-90-16.22

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PAVEMENT (CONTINUED)

PROFILE AND ALIGNMENT

THE PROPOSED PAVEMENT RESURFACING SHALL FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT.

ITEM 413 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS

PRIOR TO BEGINNING PLANING OPERATIONS, THE CONTRACTOR SHALL MARK THE LOCATIONS OF EXISTING SAWED AND SEALED JOINTS ON BOTH THE INSIDE AND THE OUTSIDE EDGES OF THE ROADWAY. THE CONTRACTOR MUST SAW NEW JOINTS IN THE FINAL SURFACE COURSE AT THE SAME LOCATION AS THE EXISTING TRANSVERSE PAVEMENT JOINTS.

THE PROPOSED SAWING AND SEALING SHALL BE PERFORMED WITHIN TWO (2) DAYS OF THE PLACEMENT OF THE FINAL SURFACE COURSE, WITHIN THE LANE CLOSURE RESTRICTIONS LISTED ELSEWHERE IN THIS PLAN. THE CONTRACTOR SHALL NOT BEGIN PLANING OPERATIONS ADJACENT TO THE NEW SURFACE COURSE ASPHALT PRIOR TO COMPLETING THE SAWING AND SEALING OPERATION. THE CONTRACTOR SHALL HAVE SUFFICIENT EQUIPMENT, MATERIALS, AND LABOR ON SITE TO KEEP UP WITH THE ASPHALT PRODUCTION.

THE CONTRACTOR SHALL NOTE THE TYPE OF SURFACE COURSE ASPHALT PROPOSED IN THIS PROJECT. NO ADDITIONAL PAYMENT WILL BE MADE FOR ANY EXTRA EFFORT/WORK REQUIRED TO SAW THROUGH THE PROPOSED ASPHALT SURFACE COURSE.

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

ITEM 413 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS 17,500 LIN. FT.

ITEM 407 - TACK COAT USING SS 924

THE RATE OF APPLICATION OF ITEM 407 TACK COAT USING SS 924 SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.10 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

THE CONTRACTOR SHALL ENSURE THAT THE PAVEMENT SURFACE IS THOROUGHLY CLEAN AND DRY PRIOR TO APPLICATION OF THE TACK COAT. THE COST OF CLEANING THE SURFACE AND DISPOSING OF ANY MATERIAL SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THIS ITEM.

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

ITEM 407 - TACK COAT USING SS924 STA 54+90.87 TO STA 173+15.03 (1-90 EB & WB) 127,319 S.Y. x 0.10 GAL/S.Y. = 12,732 GAL

ITEM SPECIAL - ASPHALT CONCRETE, SBR LATEX, SURFACE COURSE, TYPE 1, AC - 10 (TYPE 446)

IN ADDITION TO ITS USE AS A SURFACE COURSE, THIS ITEM SHALL BE USED AS A LEVELING COURSE FOR AREAS FROM STA 98+10± TO STA 101+26± AND FROM STA 106+10± TO STA 110+02± TO ENSURE THAT THE FINAL SURFACE COURSE HAS A CONSISTENT THICKNESS OF 1.25". THIS COURSE SHALL BE PLACED AND COMPACTED PRIOR TO PLACEMENT OF THE FINAL SURFACE COURSE. NO ADDITIONAL PAYMENT WILL BE MADE FOR PLACING THIS MATERIAL AS A SEPARATE OPERATION.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS NOTED ABOVE:

ITEM SPECIAL-ASPHALT CONCRETE, SBR LATEX, SURFACE COURSE, TYPE 1, AC-10 207 C.Y.

BUTT JOINTS

THE BUTT JOINTS LABELED IN THIS PROJECT CORRESPONDS TO A CHANGE IN THE TYPE OF SURFACE ASPHALT PAVED AS PART OF PROJECT 173-93. THE BUTT JOINT LOCATION MAY BE ADJUSTED BY THE PROJECT ENGINEER TO THE VISIBLE CHANGE IN SURFACE COURSE ASPHALT.

ITEM 254 - PAVEMENT PLANING, BITUMINOUS, AS PER PLAN "A"

THIS ITEM SHALL INCLUDE ALL OF THE LABOR, EQUIPMENT, AND MATERIAL REQUIRED TO PERFORM THIS ITEM. THE PAYMENT FOR THIS ITEM SHALL BE PER S.Y. REGARDLESS OF THE THICKNESS PLANED. THE FOLLOWING ARE ANTICIPATED PLANING DEPTHS.

- 1. STA 54+90± TO STA 98+10± (EB) 1.25"
2. STA 98+10± TO STA 99+10± (EB) 1.25" TO 2.5"
3. STA 99+10± TO STA 100+26± (EB) 2.5"
4. STA 100+26± TO STA 101+26± (EB) 2.5" TO 1.25"
5. STA 101+26± TO STA 106+10± (EB) 1.25"
6. STA 106+10± TO STA 107+10± (EB) 1.25" TO 2.5"
7. STA 107+10± TO STA 109+02± (EB) 2.5"
8. STA 109+02± TO STA 110+02± (EB) 2.5" TO 1.25"
9. STA 110+02± TO STA 160+95± (EB) 1.25"
10. STA 160+95± TO STA 161+70± (EB) 1.25" TO 1.75" #
11. STA 161+70± TO STA 173+15± (EB) 1.75" #

- 1. STA 54+90± TO STA 160+95± (WB) 1.25"
2. STA 160+95± TO STA 161+70± (WB) 1.25" TO 1.75" #
3. STA 161+70± TO STA 173+15± (WB) 1.75" #

AVERAGE DEPTH 1.75" (MAY VARY ±0.5")

THE PLANING OF SHOULDERS SHALL MATCH BOTH THE EXISTING SHOULDER SLOPE AND THE MAINLINE DEPTHS AS SHOWN ABOVE AND ON THE TYPICAL SECTIONS.

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

ITEM 254-PAVEMENT PLANING, BITUMINOUS, AS PER PLAN "A" 127,319 S.Y.

ITEM SPECIAL - ASPHALT CONCRETE WITH SBR LATEX, SURFACE COURSE, TYPE 1, AC-10 (TYPE 446)

DESCRIPTION

THIS WORK SHALL CONSIST OF CONSTRUCTING AN ASPHALT CONCRETE SURFACE COURSE OF AGGREGATE, SBR LATEX RUBBER COMPOUND, AND ASPHALT CEMENT MIXED IN A CENTRAL PLANT AND SPREAD AND COMPACTED ON A PREPARED SURFACE IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES, GRADES AND TYPICAL SECTIONS SHOWN ON THE PLANS OR ESTABLISHED BY THE ENGINEER.

THE REQUIREMENTS OF 441 AND 446 SHALL APPLY; DEVIATIONS FROM THESE ARE AS SHOWN.

COMPOSITION

THE COMBINED ASPHALT CEMENT (AC-10) AND RUBBER SOLIDS CONTENT SHALL BE 4.5 TO 9.5 PERCENT OF THE TOTAL MIX.

THE QUANTITY OF ASPHALT CEMENT AND RUBBER COMPOUND SHALL BE AS REQUIRED TO PRODUCE A COMPOSITION OF 95 PLUS OR MINUS 0.3 PERCENT ASPHALT CEMENT TO 5 PLUS OR MINUS 0.3 PERCENT RUBBER SOLIDS BY WEIGHT.

NO RECLAIMED PAVEMENT WILL BE PERMITTED.

THE PROPOSED JMF SHALL BE A DESIGN WHICH HAS BEEN PROPERLY MODIFIED TO INCORPORATE THE SBR LATEX RUBBER COMPOUND.

WEATHER LIMITATIONS

THE SURFACE OF THE EXISTING PAVEMENT SHALL BE A MINIMUM OF 10 DEGREES C (50 DEGREES F) AND THE MINIMUM AIR TEMPERATURE SHALL BE 10 DEGREES C (50 DEGREES F).

MATERIALS

THE MATERIALS SHALL BE:

ASPHALT CEMENT(AC-10). 702.01
RUBBER COMPOUND (SBR LATEX). 903

ALL AGGREGATE SHALL CONFORM TO 703.05 EXCEPT FINE AGGREGATE GRADATION IS WAIVED FOR 441 MIXES PER 441.02. THE COARSE AGGREGATE WILL BE LIMITED TO AIR COOLED BLAST FURNACE SLAG. NEITHER OPEN HEARTH NOR BASIC OXYGEN SLAG (STEEL SLAG) WILL BE PERMITTED FOR COARSE OR FINE AGGREGATE USAGE.

TYPE 1 GRADATION AND SPECIFICATION SHALL APPLY. (TYPE 1H GRADATION AND SPECIFICATION SHALL NOT APPLY.)

THE RUBBER SOLIDS CONTENT OF THE RUBBER COMPOUND SHALL BE CERTIFIED IN TRIPLICATE TO THE LABORATORY PRIOR TO THE START OF PRODUCTION.

A MINIMUM OF 50 PERCENT OF VIRGIN FINE AGGREGATE SHALL BE SAND MANUFACTURED FROM STONE, GRAVEL OR AIR-COOLED SLAG. IF THE SAND IS MANUFACTURED FROM GRAVEL, IT SHALL BE CRUSHED FROM GRAVEL MATERIAL RETAINED ON THE 3/8 INCH SIEVE.

TESTING

THE REQUIREMENTS OF 441 AND 446 SHALL APPLY, DEVIATIONS FROM THESE ARE AS FOLLOWS:

1. A MINIMUM OF ONE SET OF THREE (3) MARSHALL SPECIMENS SHALL BE MADE AND ANALYZED EVERY FOUR (4) HOURS OF PRODUCTION. THE RUNNING AVERAGE OF THREE (3) CONSECUTIVE AIR VOID DETERMINATIONS SHALL BE MAINTAINED WITHIN 3.0 TO 5.0 PERCENT AIR VOIDS. NO SINGLE AIR VOID DETERMINATION SHALL BE LESS THAN 3.0 PERCENT OR GREATER THAN 5.0 PERCENT. IN THE EVENT THE SINGLE AIR VOID FALLS LESS THAN 3.0 PERCENT OR OVER 5.0 PERCENT, THE CONTRACTOR SHALL CEASE OPERATIONS. PRODUCTION MAY RESUME WHEN APPROVED BY THE MONITORING TEAM AFTER CORRECTIVE ACTION IS TAKEN. THE RANGE FOR THREE (3) TESTS (MOVING AVERAGE) SHALL BE RECORDED (BITUMEN CONTENT, 1/2 INCH SIEVE, NO. 4 SIEVE, AND NO. 8 SIEVE) UNDER THE APPROPRIATE RUNNING AVERAGE POINT ON THE CHART. IN THE EVENT THE MOVING AVERAGE CHARTS ENTER THE WARNING BAND LIMITS, THE MONITORING TEAM SHALL BE NOTIFIED. (SEE TABLE C OF SECTION 441.10 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS)

TWO CONSECUTIVE TEST RESULTS VARYING BY GREATER THAN 1.5% FOR AIR VOIDS SHALL BE CONSIDERED OUT OF SPECIFICATION AND THE CONTRACTOR SHALL CEASE OPERATION. PRODUCTION MAY RESUME WHEN APPROVED BY THE MONITORING TEAM AFTER CORRECTIVE ACTION IS TAKEN.

2. DURING PRODUCTION, SHOULD MIX SPECIFICATION DEFICIENCIES CONTINUE, THE DISTRICT ENGINEER OF TESTS MAY RECOMMEND TO THE LABORATORY THAT WORK STOP AND THE MIX BE REDESIGNED. THIS DESIGN CHANGE WILL INCLUDE ANY MATERIAL CHANGE NECESSARY, IN THE OPINION OF THE LABORATORY, TO ACHIEVE SATISFACTORY PRODUCTION AND PLACEMENT PROPERTIES. A NEW DESIGN SHALL BE SUBMITTED FOR APPROVAL. NO ADDITIONAL PAYMENT WILL BE MADE TO THE CONTRACTOR FOR THIS MIX DESIGN CHANGE.

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GENERAL NOTES

CUYAHOGA COUNTY
CUY-90-16.22

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MIXING PLANTS

PLANTS SHALL HAVE THE NECESSARY EQUIPEMENT FOR PROPORTIONING THE RUBBER COMPOUND INTO THE MIXER. THIS EQUIPMENT SHALL BE APPROVED BY THE LABORATORY PRIOR TO THE START OF PRODUCTION.

THE AMOUNT OF SBR LATEX INCORPORATED INTO THE PAVING MIXTURE SHALL BE ELECTRONICALLY RECORDED EVERY FIVE MINUTES DURING PRODUCTION FOR DRUM PLANTS. FOR BATCH PLANTS, THE AMOUNT OF SBR LATEX INCORPORATED INTO THE PAVING MIXTURE SHALL BE ELECTRONICALLY RECORDED FOR EACH BATCH WHEN THE PLANT IS LOADING DIRECTLY INTO THE TRUCK OR EVERY 16 TONS OR LESS OF PRODUCTION WHEN THE MATERIAL IS DIRECTLY LOADED INTO A SILO. THE RECORD OF THE SBR LATEX SHALL BE SUBMITTED IN ACCORDANCE WITH 441.12 ON THE WORK DAY FOLLOWING THE PRODUCTION DAY. THE SBR MANUFACTURER'S TECHNICAL REPRESENTATIVE SHALL BE PRESENT DURING THE INITIAL PRODUCTION AND PLACEMENT OF THE SBR MODIFIED ASPHALT MIXTURE.

MIXING

THE COARSE AND FINE AGGREGATE SHALL BE MIXED DRY PRIOR TO ADDING THE ASPHALT CEMENT. THE ASPHALT CEMENT SHALL THEN BE ADDED AND THE MIXING CONTINUED UNTIL ALL OF THE AGGREGATE IS COMPLETELY COATED WITH BITUMEN. THE RUBBER COMPOUND SHALL THAN BE ADDED TO THE COATED AGGREGATE AND THE MIXING CONTINUED FOR A PERIOD OF NOT LESS THAN 40 SECONDS.

THE TEMPERATURE OF THE ASPHALT CONCRETE WHEN DISCHARGED FROM THE MIXER SHALL BE HIGH ENOUGH TO ALLOW FOR PROPER COMPACTION IN THE FIELD WITHOUT THE ASPHALT CEMENT AND SBR LATEX DRAINING OFF THE AGGREGATE, BUT NOT TO EXCEED 171 DEGREES C (340 DEGREES F) AT ANYTIME. ANY LOAD EXCEEDING 171 DEGREES C (340 DEGREES F) SHALL BE REJECTED.

ACCEPTANCE

ACCEPTANCE SHALL BE IN ACCORDANCE WITH 446.

BASIS OF PAYMENT

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE IN PLACE, WILL BE MADE FOR EACH LOT CORED AT THE CONTRACT PRICE OR AT THE CONTRACT PRICE AS MODIFIED IN THE FOLLOWING TABLE:

MEAN OF 10 CORES*	PAY FACTOR
97.0% OR GREATER	**
96.0% TO 96.9%	0.88
95.0% TO 95.9%	0.98
91.0% TO 94.9%	1.00
90.0% TO 90.9%	0.94
89.0% TO 89.9%	0.88
LESS THAN 89.0%	**

* MEAN OF 10 CORES AS PERCENT OF AVERAGE MSG FOR PRODUCTION DAY
 ** THE DIRECTOR WILL DETERMINE WHETHER THE MATERIAL MAY REMAIN IN PLACE. THE PAY FACTOR FOR SUCH MATERIAL ALLOWED TO REMAIN IN PLACE WILL BE 0.65.

ITEM	UNIT	DESCRIPTION
SPECIAL	CUBIC YARD	ASPHALT CONCRETE WITH SBR LATEX, SURFACE COURSE, TYPE I, AC-10

DRAINAGE

ITEM 604 - MANHOLE ADJUSTED TO GRADE, AS PER PLAN

THIS ITEM SHALL BE USED TO REPAIR EXISTING MANHOLES LOCATED WITHIN NORMALLY TRAVELLED LANES. THE LOCATION AND NUMBER OF THESE REPAIRS SHALL BE DETERMINED BY A VISUAL INSPECTION PERFORMED BY THE PROJECT ENGINEER. ALL TRAFFIC CONTROL WORK REQUIRED TO SAFELY INSPECT THE EXISTING MANHOLES (CONCRETE RINGS AND CASTINGS) SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614-MAINTAINING TRAFFIC.

THE REQUIRED WORK INCLUDES THE REMOVAL AND REPLACEMENT OF THE EXISTING CONCRETE ENCASEMENT AROUND THE MANHOLE CASTING. THE CONTRACTOR SHALL USE CLASS FS CONCRETE IN ORDER TO MEET THE MAINTENANCE OF TRAFFIC REQUIREMENTS LISTED ELSEWHERE IN THIS PLAN. IF THE ENGINEER DIRECTS THE CONTRACTOR TO REPLACE THE EXISTING CASTING, THE CONTRACTOR MUST HAVE THE REPLACEMENT ON SITE PRIOR TO BEGINNING WORK ON THE MANHOLE. THE COST OF THE NEW CASTING SHALL BE PAID UNDER ITEM SPECIAL- MISCELLANEOUS METAL.

THE UNIT PRICE BID FOR THIS ITEM SHALL INCLUDE ALL OF THE EQUIPMENT, MATERIALS, AND LABOR REQUIRED TO COMPLETE THE ABOVE NOTED WORK. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY:

ITEM 604 - MANHOLE ADJUSTED TO GRADE, AS PER PLAN 5 EACH

ITEM SPECIAL - MISCELLANEOUS METAL

THIS ITEM SHALL BE USED TO REPLACE EXISTING DAMAGED BOLTED DOWN MANHOLE CASTINGS LOCATED WITHIN THE NORMALLY TRAVELLED PAVEMENT AS DIRECTED BY THE ENGINEER. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE THE CASTING OF THE REQUIRED TYPE, SIZE, AND STRENGTH FOR THE PARTICULAR STRUCTURE IN QUESTION.

MATERIALS FURNISHED FOR THIS ITEM SHALL BE: FOUR (4) EQUALLY SPACED HALF-INCH (1/2") STAINLESS STEEL HEX CAP SCREWS CONFORMING TO ASTM F-593, ALLOY GROUP I. COUNTERSINKS, HOLES, THREADING AND PLACEMENT SHALL BE DONE IN ACCORDANCE WITH THE CASTING MANUFACTURES RECOMMENDATIONS AND METHODS.

ALL CASTINGS SHALL CONFORM TO THE REQUIREMENTS OF ITEM 604. THE CONTRACTOR IS CAUTIONED TO USE EXTREME CARE IN THE REMOVAL, STORAGE, AND REPLACEMENT OF ALL CASTINGS. ANY CASTINGS DAMAGED BY THE NEGLIGENCE OF THE CONTRACTOR, AS DETERMINED BY THE ENGINEER, SHALL BE REPLACED WITH THE PROPER NEW CASTING BY THE CONTRACTOR AT NO EXPENSE TO THE STATE.

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

ITEM SPECIAL - MISCELLANEOUS METAL 1000 LBS

DRAWN	DRL
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GENERAL NOTES

CUYAHOGA COUNTY
 CUY-90-16.22

TRAFFIC CONTROL

ITEM 202 - RAISED PAVEMENT MARKERS REMOVED FOR STORAGE, AS PER PLAN

RAISED PAVEMENT MARKERS SHALL BE REMOVED FROM THE ROADWAY IN A MANNER THAT PREVENTS DAMAGE TO THE CASTINGS. REMOVED MARKERS SHALL BE COLLECTED, STORED IN 55 GALLON DRUMS (WITH AMOUNT OF MARKERS CLEARLY MARKED) AND THEN DELIVERED TO THE ODOT WARRENSVILLE YARD- 25609 EMERY ROAD, WARRENSVILLE HEIGHTS, OHIO 44128 (SR 175 AT INTERSECTION OF I-271 AND EMERY ROAD), BY THE CONTRACTOR, AS DIRECTED BY THE ENGINEER. THE PROJECT ENGINEER SHALL GIVE THE WARRENSVILLE TRAFFIC DEPARTMENT (292-5801) 24 HOUR NOTICE PRIOR TO ANY DELIVERIES AND THE PROJECT ENGINEER SHALL BE RESPONSIBLE FOR FURNISHING ALL NECESSARY TRANSFER/RECEIVING DOCUMENTATION TO THE YARD. ALL COSTS ASSOCIATED WITH THE REMOVAL, STORAGE AND DELIVERY OF THESE MARKERS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202 - RAISED PAVEMENT MARKERS REMOVED FOR STORAGE, AS PER PLAN.

ITEM 202 - RAISED PAVEMENT MARKERS REMOVED FOR STORAGE, AS PER PLAN 960 EACH

ITEM 621 - RAISED PAVEMENT MARKER

FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED TO PERFORM THIS WORK.

ITEM 621 - RAISED PAVEMENT MARKER 960 EACH

PERMANENT PAVEMENT MARKINGS

PRIOR TO ANY PLANING AND PAVING OPERATIONS, THE CONTRACTOR IS RESPONSIBLE FOR CONDUCTING A FIELD SURVEY OF THE EXISTING PERMANENT MARKINGS. IT IS THE INTENT OF THIS PLAN TO REPLACE THE PAVEMENT MARKINGS IN THE SAME LOCATION AS THE EXISTING PAVEMENT MARKINGS. ANY STAKING OR MARKING REQUIRED TO ESTABLISH CONTROL POINTS TO ENSURE THAT EXISTING MARKINGS ARE ACCURATELY PLACED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR ALL PERMANENT MARKING LOCATIONS AND LAYOUTS SHALL BE VERIFIED WITH THE ENGINEER PRIOR TO THE ACTUAL INSTALLATION.

ITEM SPECIAL - PAVEMENT MARKING MISC.: EPOXY

DESCRIPTION

THIS WORK SHALL CONSIST OF FURNISHING AND APPLYING EPOXY PAVEMENT MARKINGS IN ACCORDANCE WITH 641, 740, AND THE ADDITIONAL REQUIREMENTS DESCRIBED HEREIN.

EQUIPMENT

EQUIPMENT FOR APPLYING THE EPOXY PAVEMENT MARKING SHALL BE CAPABLE OF MIXING THE COMPONENTS IN PROPORTIONS RECOMMENDED BY THE MANUFACTURER AND APPLYING GLASS BEADS AT THE TIME OF LINE PLACEMENT. THE MARKING EQUIPMENT SHALL BE CAPABLE OF APPLYING EPOXY MATERIAL AT THE SPECIFIED THICKNESS. THE CONTRACTOR SHALL PROVIDE A CALIBRATED MEASURING DEVICE ACCEPTABLE TO THE ENGINEER TO MEASURE THE EPOXY RESIN IN THE STRIPER TANKS.

IN GENERAL, THE APPLICATION EQUIPMENT SHALL BE MOBILE, TRUCK MOUNTED AND SELF CONTAINED PAVEMENT MARKING MACHINE, SPECIFICALLY DESIGNED TO APPLY RESIN MATERIALS AND REFLECTIVE GLASS SPHERES IN CONTINUOUS AND SKIP-LINE PATTERNS. THE APPLICATION EQUIPMENT SHALL BE MANEUVERABLE TO THE EXTENT THAT THE STRAIGHT LINES CAN BE FOLLOWED AND NORMAL CURVES CAN BE MADE IN A TRUE ARC. IN ADDITION, THE TRUCK MOUNTED UNIT SHALL BE PROVIDED WITH ACCESSORIES TO ALLOW FOR MARKING OF STOP LINES, TRANSVERSE LINES, DOTTED LINES, LEGENDS, SYMBOLS, CROSSWALKS, AND OTHER SPECIAL PATTERNS.

THE ENGINEER AND THE MATERIAL MANUFACTURER TOGETHER MAY APPROVE THE USE OF A PORTABLE APPLICATOR IN LIEU OF TRUCK MOUNTED ACCESSORIES FOR USE IN APPLYING SPECIAL MARKING ONLY, PROVIDED SUCH EQUIPMENT CAN DEMONSTRATE SATISFACTORY APPLICATION OF REFLECTORIZED MARKINGS WITH THESE SPECIFICATIONS:

THE MOBILE APPLICATOR SHALL INCLUDE THE FOLLOWING FEATURES:

1. THE MOBILE APPLICATOR SHALL PROVIDE INDIVIDUAL MATERIAL RESERVOIRS, OR SPACE, FOR STORAGE OF PART A AND PART B OF THE RESIN COMPOSITION.
2. THE APPLICATOR SHALL BE EQUIPPED WITH HEATING EQUIPMENT OF THE SUFFICIENT CAPACITY TO MAINTAIN THE INDIVIDUAL RESIN COMPONENTS AT THE MANUFACTURER'S RECOMMENDED TEMPERATURE AND PRODUCE THE REQUIRED AMOUNT OF HEAT AT THE MIXING HEAD & GUN TIP AND MAINTAIN THOSE TEMPERATURES WITH THE TOLERANCES RECOMMENDED BY THE RESIN MANUFACTURER FOR SPRAY APPLICATION.
3. THE APPLICATOR SHALL BE EQUIPPED WITH ADEQUATE INDIVIDUAL TANKS FOR STORAGE AND DISPENSING OF SIZE I AND SIZE II GLASS SPHERES AND BLACK AGGREGATE.
4. THE APPLICATOR SHALL BE EQUIPPED WITH INDIVIDUAL DISPENSERS FOR THE SIMULTANEOUS APPLICATION OF SIZE I AND SIZE II GLASS SPHERES RESPECTIVELY. EACH DISPENSER SHALL BE CAPABLE OF APPLYING SPHERES AT A MINIMUM RATE OF 20 LBS. PER GALLON OF THE RESIN COMPOSITION. THE APPLIED COMBINED TOTAL OF BOTH TYPES OF BEADS SHOULD BE OF MINIMUM OF 25 LBS. PER GALLON (12 TO 13 LBS OF EACH TYPE).
5. THE APPLICATOR SHALL BE EQUIPPED WITH INDIVIDUAL METERING DEVICES OR PRESSURE GAUGES, ON THE PROPORTIONING PUMPS (ONE INDICATOR PER PUMP) AS WELL AS STOKE COUNTERS TO MONITOR GALLON USAGE. ALL SUCH DEVICES SHALL BE VISIBLE TO THE ENGINEER.
6. THE APPLICATOR SHALL BE EQUIPPED WITH ALL NECESSARY SPRAY EQUIPMENT, MIXERS, COMPRESSORS AND OTHER APPURTENANCES TO ALLOW FOR THE PLACEMENT OF REFLECTORIZED PAVEMENT MARKING SYSTEM IN A SIMULTANEOUS SEQUENCE OF OPERATIONS.
7. EACH APPLICATION MUST HAVE A MINIMUM OF A 24" LONG STATIC MIXER UNIT AS MANUFACTURED BY KENICS COMPANY OR EQUAL FOR PROPER MIXING OF THE TWO COMPONENTS.
8. EACH MOBILE APPLICATOR MUST BE EQUIPPED WITH A COMPLETELY ENCLOSED FLUSH AND PURGE SYSTEM TO CLEAN THE LINES AND THE GUNS WITHOUT EXUDING ANY OF THE SOLUTION INTO THE ENVIRONMENT.

APPLICATION/ PAVEMENT PREPARATION

CLEAN THE SURFACE TO REMOVE ALL DEBRIS, LAITANCE AND ANY OTHER CONTAMINANTS THAT MAY HINDER THE ADHESION OF THE SYSTEM TO THE SURFACE. THE NEW SURFACE SHALL BE TREATED TO EXPOSE THE AGGREGATE WHICH WILL PROMOTE A STRONG BOND BETWEEN THE PAVEMENT AND THE PAVEMENT MARKING MATERIAL. WHENEVER GRINDING SCARIFYING, SANDBLASTING, SHOTBLASTING OR OTHER OPERATIONS ARE PERFORMED, THE DEBRIS GENERATED MUST BE CONTAINED THROUGH VACUUM TYPE EQUIPMENT OR EQUIVALENT AND THE WORK SHALL BE CONDUCTED IN SUCH A MANNER THAT THE FINISHED PAVEMENT SURFACE IS NOT DAMAGED OR LEFT IN A PATTERN THAT WILL MISLEAD OR MISDIRECT THE MOTORIST. WHEN THESE OPERATIONS ARE COMPLETED, THE PAVEMENT SURFACE SHALL FIRST BE POWER BROOMED AND THEN BLOWN OFF WITH COMPRESSED AIR TO REMOVE RESIDUE AND DEBRIS RESULTING FROM THE CLEANING WORK. ALL SUCH DEBRIS MUST BE PROPERLY CONTAINED, ESPECIALLY WHEN REMOVING YELLOW PAINT LINES, AND DISPOSED IN THE APPROPRIATE MANNER.

REMOVAL AND CLEANING WORK SHALL BE CONDUCTED IN SUCH A MANNER AS TO CONTROL AND MINIMIZE AIRBORNE DUST, AND SIMILAR DEBRIS SO AS TO PREVENT A HAZARD TO MOTOR VEHICLE OPERATION OR NUISANCE TO PROPERTY.

CARE SHALL BE TAKEN ON BITUMINOUS AND PORTLAND CEMENT CONCRETE SURFACES WHEN PERFORMING REMOVAL AND CLEANING WORK TO PREVENT DAMAGE TO TRANSVERSE AND LONGITUDINAL JOINT SEALERS.

LIMITS OF WORK

CLEANING AND SURFACE PREPARATION WORK SHALL BE CONFINED TO THE SURFACE AREA SPECIFIED FOR THE APPLICATION OF THE PAVEMENT MARKING MATERIALS; OR THE SURFACE AREA OF EXISTING PAVEMENT MARKINGS THAT ARE SPECIFIED FOR REMOVAL ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

SURFACE PREPARATION WORK INCLUDES CLEANING FOR LINES WHICH INCLUDES: SOLID LINES, BROKEN LINES, CHANNELIZING LINES, TRANSVERSE LINES, STOP LINES, DOTTED LINES AND BARRIER LINES.

WHEN LINES ARE CLEANED, THE AREA OF PREPARATION WILL BE A WIDTH OF THE NEW PAVEMENT MARKING, OR EXISTING LINE, PLUS 1" ON EACH SIDE. NO NEW MARKING LINE SHALL BE APPLIED ON ANY PAVEMENT THAT HAS NOT BEEN PROPERLY PREPARED AS PER THIS SPECIFICATION.

REMOVAL OF EXISTING PAVEMENT MARKINGS

EXISTING PAVEMENT MARKINGS SHALL BE CLEANED FOR THE PURPOSE OF:

- A. PREPARING THE PAVEMENT SURFACE FOR THE APPLICATION OF NEW PAVEMENT MARKING IN THE SAME LOCATION AS THE EXISTING MARKINGS. (EITHER TEMPORARY OR PERMANENT)
- B. TO REMOVE EXISTING MARKINGS THAT ARE IN GOOD CONDITION WHICH, IF ALLOWED TO REMAIN, WILL INTERFERE WITH OR OTHERWISE CONFLICT WITH NEWLY APPLIED MARKING PATTERNS.
- C. PAVEMENT SHALL BE CLEANED TO THE EXTENT THAT 95% TO 100% OF THE EXISTING MARKING IS REMOVED. REMOVAL OPERATIONS SHALL BE CONDUCTED IN SUCH A MANNER THAT NO MORE THAN MODERATE COLOR AND/OR SURFACE TEXTURE CHANGE RESULTS ON THE SURROUNDING PAVEMENT SURFACE.
- D. THE DETERMINATION OF ACCEPTABLE REMOVAL WILL BE MADE BY JUDGEMENT OF THE ENGINEER AND WILL BE GUIDED BY THE DEPARTMENT'S PICTORIAL STANDARDS OF ACCEPTABLE MARKING REMOVAL. PICTORIAL STANDARDS ARE AVAILABLE.

APPLICATION

EPOXY MARKING MATERIAL SHALL ONLY BE APPLIED WHEN THE SURFACE IS CLEAN AND DRY AND THE PAVEMENT AND AIR TEMPERATURES ARE ABOVE 50 DEGREES F. THE CONTRACTOR SHALL TRANSFER THE ENTIRE CONTENTS OF EACH MATERIAL CONTAINER TO THE STRIPER TANKS. THE MATERIAL SHALL BE THOROUGHLY MIXED AT ALL TIMES DURING APPLICATION. EPOXY MARKING MATERIAL, PLUS RESIN, SHALL BE APPLIED UNIFORMLY TO THE SURFACE TO BE MARKED AT THE FOLLOWING RATES:

GALLONS PER MILE OF LINE	WIDTH OF LINE (INCHES) (THICKNESS OF 20 MILS)				
	4	6	8	12	24
SOLID LINE	22	33	44	66	132
DASHED LINE	5.5	8.5	11	17	34
DOTTED LINE	7.3	11	14.6	22	44
SYMBOLS, WORDS	1 GAL. PER 80 SQ.FT.				

THINNING SHALL NOT BE PERMITTED

GLASS BEADS SHALL BE APPLIED TO THE UNCURED EPOXY MATERIAL IN SUFFICIENT QUANTITY SO THAT THE BEADS COMPLETELY FILL THE EPOXY FILM FROM THE FILM-PAVEMENT INTERFACE TO THE TOP SURFACE OF THE FILM TO THE EXTENT THAT THERE ARE LOOSE BEADS ON THE SURFACE OF THE UNCURED LINE. THE RATE OF APPLICATION SHALL NOT BE LESS THAN 25 LBS. (3 KG) OF GLASS BEADS PER GALLON (LITER) OF EPOXY MATERIAL APPLIED.

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GENERAL NOTES

CUYAHOGA COUNTY
 CUY-90-16.22

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APPLICATION (CONTINUED)

IF THE EPOXY MARKING DOES NOT DRY TO A NO-TRACKING CONDITION CONSISTENTLY AND SHOWS A CYCLICAL SOFT SPOT, THE CONTRACTOR SHALL CEASE THE MARKING APPLICATION UNTIL THE PROBLEM IS CORRECTED.

CERTIFICATION OF COMPLIANCE

THE MANUFACTURER SHALL FURNISH A NOTARIZED CERTIFICATION THAT THE MATERIAL COMPLIES WITH THE PROVISIONS OF THIS SPECIFICATION. IT SHALL NOT BE INFERRED THAT THE PROVISIONS OF A CERTIFICATION OF COMPLIANCE WAIVES STATE INSPECTION, SAMPLING OR TESTING.

LABORATORY SAMPLES

PROMPTLY AFTER EXECUTION OF THIS CONTRACT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE SOURCES OF MATERIAL HE EXPECTS TO USE. THE MATERIAL MANUFACTURER SHALL FURNISH SAMPLES OF THE EPOXY MATERIALS, AS MAY BE REQUIRED BY THE ENGINEER, A MINIMUM OF TEN DAYS BEFORE THE DATE OF INTENDED USE OF THESE MATERIALS.

INFRARED SPECTRA

A COPY OF THE INFRARED SPECTRA OF EACH COMPONENT ON EACH LOT NUMBER SHALL BE SUPPLIED BY THE MANUFACTURER ALONG WITH CERTIFICATION PAPERS. THIS INFRARED SPECTRA WILL BE ON RECORD WITH THE OHIO DEPARTMENT OF TRANSPORTATION TO SERVE AS A QUALITY CONTROL MEASURE FOR THE FUTURE SUPPLY OF THIS SYSTEM TO THE STATE.

QUALIFYING A MANUFACTURER

THE MANUFACTURER MUST HAVE EXPERTISE REINFORCED WITH HISTORY IN THIS PARTICULAR FIELD TO QUALIFY SUCH AS:

1. PROOF OF SUCCESSFUL INSTALLATIONS OF AT LEAST 4 YEARS (4 PLOWING SEASONS), COVERING A MINIMUM OF 200,000 LIN. FT. IN THIS STATE WHERE THIS PROJECT IS TO BE BID, WITH RETROREFLECTIVITY NUMBERS EXCEEDING 150 ON WHITE AND 100 ON YELLOW, UTILIZING MICROLUX 12 OR EQUIVALENT
2. AMPLE PRODUCTION CAPACITY
3. PROPER FACILITY
4. COMPLIANCE WITH EPA REGULATIONS
5. A VERIFIABLE QUALITY CONTROL PROGRAM
6. MUST HAVE COMPLETED AND PASSED THE SERVICE TEST IN ACCORDANCE WITH SUPPLEMENT 1047

QUALIFYING A CONTRACTOR

IN ORDER FOR AN INSTALLER OF SUCH PAVEMENT MARKING MATERIAL TO BE APPROVED, THE FOLLOWING DOCUMENT MUST BE SUBMITTED:

A CERTIFICATE FROM A PRE-APPROVED MANUFACTURER OF SUCH EPOXY PAVEMENT MARKING MATERIALS, CERTIFYING THAT SUCH A CONTRACTOR HAS FUNCTIONAL, APPROPRIATE EQUIPMENT TO INSTALL THE EPOXY PAVEMENT MATERIAL STATED WITH THE TECHNOLOGY IN THIS SPECIFICATION AND HE HAS AND CONTINUES TO BE SUCCESSFUL AT PERFORMING THIS TYPE OF WORK.

MATERIALS

MATERIAL SUPPLIED SHALL BE A 2 PART HYBRIDIZED POLYMER SYSTEM CAPABLE OF BEING APPLIED AT AMBIENT TEMPERATURES DOWN TO 50 DEGREES F. THE MATERIAL SHALL BE CAPABLE OF RETAINING REFLECTIVE GLASS BEADS OF THE DROP-ON OR SPRAY-ON TYPE.

THE EPOXY SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:

1. GENERAL
THE EPOXY SHALL BE FORMULATED AS A LONG LIFE PAVEMENT MARKING SYSTEM FREE OF ANY PEROXIDES, AND/OR TMPTA (TRI-METHYLOL PROPANE TRI-ACRYLATE) AND OTHER SUCH MULTI-FUNCTIONAL MONOMERS. THE EPOXY SHOULD BE DESIGNED TO PROVIDE A SIMPLE VOLUMETRIC MIXING RATIO OF ITS COMPONENTS SUCH AS 2:1.
2. VISCOSITY
THE VISCOSITY OF THE PART "A" WHITE SHALL BE BETWEEN 19,000 AND 20,000 CP AND PART "A" YELLOW SHALL BE BETWEEN 25,000 AND 26,000 CP. THE VISCOSITY OF PART "B" SHALL BE BETWEEN 1,950 AND 2,050 CP. AT THE POINT OF APPLICATION, THE VISCOSITIES SHALL BE WITHIN 10% OF EACH OTHER.
3. WEIGHT
THE WEIGHT OF PART "A" WHITE 11.8 LBS/GAL ±0.2 LBS/GAL AND YELLOW AT 12.8 LBS/GAL ±0.2 LBS/GAL. THE WEIGHT OF PART "B" SHALL BE 9.6 LBS/GAL ±0.2 LBS/GAL.
4. EPOXIDE NUMBER
THE EPOXIDE NUMBER OF THE MATERIAL SHALL BE 0.51 ±0.05 AS DETERMINED BY ASTM D-1652 FOR BOTH WHITE AND YELLOW COMPONENT "A" ON A PIGMENT FREE BASIS.
5. AMINE NUMBER
THE AMINE NUMBER OF THE CURING AGENT (COMPONENT B) SHALL BE 375 ±50 AS PER ASTM D-2074.
6. TOXICITY
UPON HEATING TO APPLICATION TEMPERATURE, THE MATERIAL SHALL NOT EXUDE FUMES WHICH ARE TOXIC OR INJURIOUS TO PERSONS OR PROPERTY. UPON CURING, THE MATERIALS SHOULD BE COMPLETELY INERT WITH ALL COMPONENTS FULLY REACTED AND ENVIRONMENTALLY SAFE.
7. DRYING TIME (LABORATORY):
THE EPOXY PAVEMENT MARKING MATERIAL WHEN MIXED IN THE PROPER RATIO AND APPLIED AT THE APPROXIMATE PRESCRIBED WET FILM THICKNESS AT 75 DEGREES F ±2 DEGREES F AND WITH PROPER SATURATION OF GLASS SPHERES SHALL EXHIBIT NO TRACKING TIME WHEN TESTED 40-45 MIN. ACCORDING TO ASTM D-711.
8. DRYING TIME (FIELD):
THE PAVEMENT MARKING MATERIAL SHALL HAVE A SETTING TIME TO A NO-TRACKING CONDITION OF NOT MORE THAN 35 MINUTES AT 75 DEGREES F ±2 DEGREES F. THE LINE MUST BE PROTECTED FROM TRACKING DURING THE SETTING PERIOD BY CONING OFF THE LINE FROM TRAFFIC OR BY USING A CONVOY OF VEHICLES TO TRAFFIC FROM CROSSING THE WET LINE OR WITH A SATURATION OF GLASS BEADS ON THE WET LINE TO PREVENT TRACKING.
9. CURING
THE EPOXY SHALL BE CAPABLE OF FULLY CURING UNDER A CONSTANT SURFACE TEMPERATURE OF 45 DEGREES F OR ABOVE.

10. ADHESION TO PAVEMENT (CONCRETE AND ASPHALT)

THE CURED PAVEMENT MARKING MATERIALS, WHEN TESTED ACCORDING TO ACI METHOD 503, SHALL HAVE SUCH A HIGHER DEGREE OF ADHESION TO THE SPECIFIED CONCRETE (COMPRESSIVE STRENGTH, 4,000 PSI MIN.) OR ASPHALT SURFACE SUCH THAT THERE SHALL BE 100% CONCRETE FAILURE IN THE PERFORMANCE OF THIS TEST. THE PREPARED SPECIMENS SHALL BE CONDITIONED AT ROOM TEMPERATURE (75 DEGREES F ± 2 DEGREES F) FOR A MINIMUM OF 24 HOURS AND A MAXIMUM OF 72 HOURS PRIOR TO THE PERFORMANCE OF THE TESTS INDICATED.

11. HARDNESS

THE PAVEMENT MARKING MATERIAL, WHEN TESTED ACCORDING TO ASTM D-224-75, SHALL HAVE A SHORE D HARDNESS BETWEEN 70 AND 90. SAMPLES SHALL BE ALLOWED TO CURE AT ROOM TEMPERATURE FOR A MINIMUM OF 24 HOURS AND A MAXIMUM OF 72 HOURS PRIOR TO PERFORMING THE INDICATED TEST.

12. TENSILE STRENGTH

WHEN TESTED ACCORDING TO ASTM D-638, THE EPOXY PAVEMENT MARKING MATERIAL SHALL HAVE A TENSILE STRENGTH OF NOT LESS THAN 5,000 POUNDS PER SQUARE INCH. THE TYPE IV SPECIMENS SHALL BE CAST IN A SUITABLE MOLD AND PULLED AT A RATE OF 0.25 INCHES PER MINUTE BY A SUITABLE DYNAMIC TESTING MACHINE. THE SAMPLES SHALL BE ALLOWED TO CURE AT ROOM TEMPERATURE FOR A MINIMUM OF 72 HOURS BEFORE PERFORMING THE INDICATED TESTS.

13. COMPRESSIVE STRENGTH

WHEN TESTED ACCORDING ASTM D-695, THE EPOXY PAVEMENT MARKING MATERIAL SHALL HAVE A COMPRESSIVE STRENGTH OF NOT LESS THAN 12,000 POUNDS PER SQUARE INCH. THE CAST SAMPLE SHALL BE CONDITIONED AT ROOM TEMPERATURE FOR A MINIMUM OF 72 HOURS BEFORE PERFORMING THE INDICATED TESTS. THE RATE OF COMPRESSION OF THESE SAMPLES SHALL BE NO MORE THAN 0.25 INCHES PER MINUTE.

14. ABRASION RESISTANCE

THE ABRASION RESISTANCE SHALL BE EVALUATED ON A TABER ABRADER WITH A 1000 GRAM LOAD AND CS-17 WHEELS. THE DURATION OF THE TEST SHALL BE 1000 CYCLES. THE WEAR INDEX SHALL BE CALCULATED BASED ON ASTM TEST METHOD C-501 AND THE WEAR INDEX FOR THE CATALYZED MATERIAL SHALL NOT BE MORE THAN 100 MG. THE TESTS SHALL BE RUN ON CURED SAMPLES OF MATERIAL WHICH HAVE BEEN APPLIED AT A FILM THICKNESS OF 20 ±0.5 MIL TO CODE S-16 STAINLESS PLATES. THE SAMPLES SHALL BE ALLOWED TO CURE AT 75 DEGREES F ±2 DEGREES F FOR A MINIMUM OF 24 HOURS AND A MAXIMUM OF 72 HOURS PRIOR TO PERFORMING THE INDICATED TESTS.

15. IMPACT STRENGTH

SAMPLE PREPARATION: PROPERLY MIXED MATERIAL SHALL BE APPLIED ON A MINIMUM OF 28 DAY OLD CLEAN CONCRETE AND SHALL BE ALLOWED TO CURE FOR 72 HOURS AT 75 DEGREES F ±2 DEGREES F. FILM THICKNESS OF THE MATERIAL SHALL BE AT THE APPROPRIATELY PRESCRIBED THICKNESS.

TESTING: AT A TEMPERATURE OF 75 DEGREES F ±2 DEGREES F (25 DEGREES C), A 2 LB. ROUND STEEL BALL SHALL BE DROPPED FROM A HEIGHT OF 4 FT. ON THE CURED SAMPLE. NO CRACKING OR CHIPPING OF THE MATERIAL SHALL TAKE PLACE.

CALCULATED	DRL
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GENERAL NOTES

CUYAHOGA COUNTY
CUY-90-16.22

16. COLOR

THE MIXED HYBRIDIZED POLYMER COMPOUND, BOTH WHITE AND YELLOW, MUST BE APPLIED TO 2 SETS OF 3" X 6" ALUMINUM PANELS AT 20 ± 1 MIL IN THICKNESS, ONE SET WITH NO GLASS SPHERES AND ONE SET WITH GLASS SPHERES AS SPECIFIED IN THIS SPECIFICATION SECTION 633.03.04, PARAGRAPH B (MUST ENSURE 50/50 DISTRIBUTION OF SIZE I AND SIZE II SPHERES FOR THIS WILL IMPACT THE RESULTS OF THIS TEST) AND EXPOSE THE PREPARED SAMPLES IN A Q.U.V. ENVIRONMENTAL TESTING CHAMBER, AS DESCRIBED IN ASTM G-53, AND THEY SHALL CONFORM TO THE FOLLOWING REQUIREMENTS. THE TEST SHALL BE CONDUCTED FOR 75 HOURS AT 122 DEGREES F, 4 HOURS HUMIDITY AND 4 HOURS U.V., IN ALTERNATING CYCLES. THE PREPARED PANELS SHALL BE CURED AT 77 DEGREES F FOR 72 HOURS PRIOR TO EXPOSURE. THE COLOR OF THE WHITE EPOXY MATERIAL SHALL NOT BE DARKER THAN FEDERAL STANDARD NO. 595A-17855. THE COLOR OF THE YELLOW EPOXY MATERIAL SHALL BE REASONABLY CLOSE TO FEDERAL STANDARD

17. ACCELERATED LIFE CYCLE AGING TEST

THE MATERIAL MUST NOT SHOW ANY EVIDENCE OF BLISTERING, BUBBLING, OR DELAMINATING WHEN SUBMITTED TO TEST METHOD ATR-931. INDEPENDENT TEST LABORATORIES SUCH AS PSI CAN BE CONTACTED TO PERFORM ATR-931. CLEVELAND OFFICE: (216) 447-1335, CONTACT JIM McCUE.

REFLECTIVE MEDIA

BOTH SIZE I AND SIZE II REFLECTIVE GLASS SPHERES SHALL BE SIMULTANEOUSLY DISPENSED THROUGH INDIVIDUAL DISPENSING GUNS ON THE WET MATERIAL RESPECTIVELY AND THE COMBINED APPLICATION OF BOTH SIZES SHALL BE AT A MINIMUM RATE OF 25 LBS/GAL WITH EACH SIZE RANGING BETWEEN 12-13 LBS/GAL AND THE BEADS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

THE GLASS SPHERES SHALL BE COLORLESS, CLEAN TRANSPARENT, FREE FROM MILKINESS OR EXCESSIVE AIR BUBBLES, AND ESSENTIALLY CLEAN FROM SURFACE SCARRING OR SCRATCHING.

SIZE I AND SIZE II GLASS BEADS SHALL BE SPHERICAL IN SHAPE AND AT LEAST 70% SHALL BE TRUE SPHERES. SIZE I SPHERES SHALL BE TESTED FOR ROUNDNESS ACCORDING TO THE PROCEDURAL DIRECTIVES OF THE MATERIALS BUREAU. SIZE II SPHERES SHALL BE TESTED IN ACCORDANCE WITH ASTM D-1155.

THE REFRACTIVE INDEX OF THE SPHERES SHALL BE A MINIMUM OF 1.50 AS DETERMINED BY THE LIQUID IMMERSION METHOD AT 75 DEGREES F. THE SILICA CONTENT OF THE GLASS SPHERES SHALL NOT BE LESS THAN 60%.

SIZE I GLASS SPHERES SHALL BE COATED WITH SILANE TYPE ADHERENCE COATING TO ENHANCE ITS EMBEDMENT AND ADHERENCE TO APPLIED BINDER MATERIAL FILM. THE COATED BEADS SHALL EMIT A YELLOW-GREEN FLUORESCENCE WHEN TESTED BY THE DANSYL CHLORIDE TEST PROCEDURE. SIZE II GLASS SPHERES SHALL BE TREATED WITH A MOISTURE PROOF COATING. GLASS BEADS SHALL SHOW NO TENDENCY TO ABSORB MOISTURE IN STORAGE AND SHALL REMAIN FREE OF CLUSTERS AND LUMPS. THEY SHALL FLOW FREELY FROM DISPENSING EQUIPMENT AT ANY TIME WHEN ATMOSPHERIC CONDITIONS ARE SATISFACTORY FOR MARKING OPERATIONS. THE MOISTURE RESISTANCE OF THE GLASS SPHERE SHALL BE DETERMINED ON THE BASIS OF THE FOLLOWING TEST: PLACE 2 LBS OF SPHERES IN A WASHED COTTON BAG HAVING A THREAD COUNT OF 50 PER SQUARE INCH(WARP AND WOOF) AND IMMERSER THE BAG IN A CONTAINER OF WATER FOR 30 SECONDS. REMOVE THE BAG AND FORCE EXCESS WATER FROM THE SAMPLE BY SQUEEZING THE BAG. SUSPEND AND ALLOW THE BAG TO DRAIN FOR 2 HOURS AT ROOM TEMPERATURE (70-72 DEGREES F). THEN MIX THE SAMPLE IN THE BAG SHAKING THOROUGHLY. TRANSFER A SAMPLE SLOWLY TO A CLEAN, DRY GLASS FUNNEL HAVING A STEM 4 INCHES IN LENGTH WITH A 3/8 INCH INSIDE DIAMETER STEM ENTRANCE OPENING AN A MINIMUM EXIT OPENING OF 1/4 INCH. THE ENTIRE SAMPLE SHALL FLOW FREELY THROUGH THE FUNNEL. IF THE BEADS CLOG WHEN FIRST INTRODUCED, THEN IT IS PERMISSIBLE TO LIGHTLY TAP THE FUNNEL TO INITIATE FLOW.

IN ADDITION TO THE REQUIREMENTS OF 740.10, THE FOLLOWING SHALL APPLY:

INSPECTION SHALL BE DONE AT THE PROJECT SITE. RANDOM SAMPLES SHALL BE OBTAINED FROM THE MATERIAL DELIVERED TO THE PROJECT SITE OR AT OTHER LOCATIONS DESIGNATED BY THE LABORATORY.

GLASS BEADS FOR EPOXY MARKINGS SHALL HAVE THE FOLLOWING GRADATION WHEN TESTED IN ACCORDANCE WITH ASTM D-1214.

SIZE I			SIZE II		
U.S. STD. SIEVE NO.	% RETAINED	% PASSING	U.S. STD. SIEVE NO.	% RETAINED	% PASSING
10	0	100	20	0-5	95-100
12	0-5	95-100	30	5-20	80-95
14	5-20	80-95	50	30-75	9-42
16	40-80	10-40	80	9-32	0-10
18	10-40	0-5	100	0-5	-
20	0-5	0-2	PAN	0-2	-
PAN	0-2				

PERFORMANCE REQUIREMENTS

THE SYSTEM SHALL PROVIDE EFFECTIVE DELINEATION ON CONCRETE AS WELL AS ASPHALT FOR THE SPECIFIED PERIOD AND PROVIDE THE FOLLOWING INITIAL RETROREFLECTIVITY REQUIREMENTS:

	SPECIFIC LUMINAIRE (MILLICANDELAS/SQ.FT./FT. CANDLE)-MICROLUX 12
WHITE LINE, SYMBOLS AND LEGENDS	250 MIN.
YELLOW LINE	175 MIN.

RE-APPLYING

THE RE-APPLICATION SHALL BE APPLIED OVER THE EXISTING BINDER WITH THE PROPER SURFACE PREPARATION AS STATED IN 641.05. THE RATES OF RE-APPLICATION SHALL BE AS FOLLOWS:

LINE WIDTH	WET FILM THICKNESS	BINDER	REFLECTORIZED SPHERES
4"	10 MILS	481 FT./GAL. 10.97 GAL./MILE	25 LBS./GAL. 274.25 LBS./MILE

METHOD OF MEASUREMENT

IN ADDITION TO THE REQUIREMENTS OF 641.12, THE FOLLOWING SHALL APPLY:

- A. THE CONTRACTOR MUST SUBMIT CERTIFIED DOCUMENTS FROM THE MANUFACTURER OF THE AMOUNT OF GALLONS AND POUNDS OF BEADS SHIPPED FOR A PARTICULAR PROJECT.
- B. IN THE FIELD, THE CONTRACTOR SHALL FURNISH A CALIBRATED MEASURING DEVICE TO BE USED TO MEASURE THE QUANTITY OF MATERIAL USED SUCH AS STROKE COUNTERS MOUNTED ON THE DISPENSING PUMPS. STROKE COUNTER READINGS MUST BE TAKEN AT THE BEGINNING AND END OF EACH DAY BY THE STATE AUTHORIZED INSPECTOR. CAUTION MUST BE TAKEN WHILE RECIRCULATING THE MATERIAL TO TURN OFF THE STROKE COUNTER ON THE PUMP. (USING "DIPPING THE TANK" METHOD AS THE ONLY MEASURE IS NOT SUFFICIENT)

C. THE RATE OF APPLICATION OF MATERIALS SHALL BE VERIFIED BY COMPARING THE AMOUNT OF MATERIAL USED WITH THE COMPUTED AMOUNT NEEDED FOR EACH SECTION. WHERE SHORT SECTIONS ARE INVOLVED AND IT IS NOT PRACTICAL OR FEASIBLE TO DETERMINE THE QUANTITIES USED ON EACH AND EVERY SHORT SECTION, SUCH SECTIONS MAY BY AGREEMENT BETWEEN THE ENGINEER AND CONTRACTOR, BE GROUPED TOGETHER TO VERIFY THE QUANTITIES USED.

D. CONTRACT PRICE ADJUSTMENT FOR EACH SECTION WILL BE BASED ON THE FOLLOWING PERCENT OF BINDER AND BEADS USED FOR EACH SECTION VERSUS THE CALCULATED QUANTITIES, WITH PAYMENT DETERMINED USING THE LOW BAND IF THERE IS A DIFFERENT BAND FOR BEADS AND BINDER. WHERE SHORT SECTIONS ARE GROUPED TOGETHER FOR VERIFICATION OF QUANTITIES, THE BAND DETERMINED ON THE BASIS OF A SINGLE RATE APPLICATION SHALL APPLY TO ALL SECTIONS OF THE GROUP

100% TO 95%	BAND 1
94.9% TO 90%	BAND 2
89.9% TO 80%	BAND 3
79.9% AND LESS	BAND 4

BASIS OF PAYMENT

THE UNIT BID PRICE FOR EACH ITEM SHALL INCLUDE ALL OF THE PAVEMENT PREPARATION WORK REQUIRED, INCLUDING THE REMOVAL OF EXISTING PAVEMENT MARKINGS.

FOR THE NUMBER MILES OF LINE APPLIED, GROUPED INTO EACH BAND, THE CONTRACTOR WILL BE PAID THE CONTRACT PRICE, ADJUSTED IN ACCORD WITH THE FOLLOWING SCHEDULE:

BAND 1	100% OF CONTRACT UNIT PRICE
BAND 2	90% OF CONTRACT UNIT PRICE
BAND 3	80% OF CONTRACT UNIT PRICE
BAND 4	RE-APPLY

PAYMENT WILL BE MADE FOR:

ITEM	UNIT	DESCRIPTION
SPEC	MILE	PAVEMENT MARKING MISC: EPOXY EDGE LINE
SPEC	MILE	PAVEMENT MARKING MISC: EPOXY LANE LINE
SPEC	LIN FT	PAVEMENT MARKING MISC: EPOXY CHANNELIZING LINE
SPEC	LIN FT	PAVEMENT MARKING MISC: EPOXY TRANSVERSE LINE
SPEC	LIN FT	PAVEMENT MARKING MISC: EPOXY STOP LINE
SPEC	LIN FT	PAVEMENT MARKING MISC: EPOXY DOTTED LINE

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GENERAL NOTES

CUYAHOGA COUNTY
 CUY-90-16.22

MAINTENANCE OF TRAFFIC

GENERAL

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

TRAFFIC CONTROL MATERIALS

A. SIGNS

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

ALL SIGNS SHALL HAVE A REFLECTORIZED BACKGROUND OF REFLECTIVE MATERIALS AS DESCRIBED IN THE "MANUAL".

B. SIGN SUPPORTS

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

C. DRUMS

DRUMS SHALL BE IN ACCORDANCE WITH PERTINENT SECTIONS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. ALL COSTS FOR INSTALLING, MAINTAINING AND SUBSEQUENT REMOVAL OF SAID DRUMS SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

D. SMALL BARRICADES

TYPE 11 BARRICADES MAY BE USED IN PLACE OF DRUMS TO CLOSE LANES WHERE REQUIRED FOR RESURFACING. THESE SHALL BE AT LEAST 36" HIGH AND 12" WIDE. NEAR THE TOP OF THE BARRICADE THERE SHALL BE A PANEL WITH ALTERNATE ORANGE AND REFLECTORIZED WHITE 6" WIDE STRIPS. THIS PANEL SHALL BE AT LEAST 12" WIDE AND 24" HIGH. A SINGLE FACED FLASHER SHALL BE LOCATED AT THE TOP OF THE BARRICADE AT THE END NEAREST TO TRAFFIC. THE FLASH SHALL FACE ONCOMING TRAFFIC. THE BARRICADES SHALL BE OF SUFFICIENT STABILITY SO THAT WIND OR TRAFFIC AIR TURBULENCE WILL NOT UPSET THEM. BARRICADES SHALL BE IN ACCORDANCE WITH PERTINENT SECTIONS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

E. FLASHERS

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

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

F. FLASHING ARROW BARRICADE

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

MAINTAINING VEHICULAR TRAFFIC

GENERAL PROVISIONS

1. TRAFFIC SHALL BE MAINTAINED WITHIN THE RESTRICTIONS DESCRIBED IN THE "LIQUIDATED DAMAGES, NIGHT TIME CLOSURES" NOTE ON SHEET NO.8 AND IN THE MAINTENANCE OF TRAFFIC PLANS. 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 FOURTY-EIGHT (48) HOURS PRIOR TO A SCHEDULED DISRUPTION OF TRAFFIC. THE CONTRACTOR SHALL ALSO NOTIFY THE DISTRICT 12 PUBLIC INFORMATION OFFICE AT 581-2333, X-244, AT LEAST FOURTY-EIGHT HOURS (48) PRIOR TO A SCHEDULED DISRUPTION OR CHANGE IN TRAFFIC PATTERNS.
3. NO ESTABLISHMENT OF LANE RESTRICTIONS SHALL OCCUR WITHOUT LAW ENFORCEMENT PERSONNEL AT EACH LOCATION TO DIRECT TRAFFIC.
4. THE CONTRACTOR SHALL FURNISH, ERECT AND MAINTAIN ALL NEW WARNING AND INFORMATION SIGNS NECESSARY FOR MAINTAINING TRAFFIC. THE CONTRACTOR SHALL DETERMINE WHAT SIGNS ARE NEEDED AND ADVISE THE ENGINEER IN WRITING TWO (2) WEEKS IN ADVANCE OF HIS DETAILED PLANS.
5. 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.
6. PLACEMENT OF FINAL ROADWAY PAVEMENT MARKINGS AND RAISED PAVEMENT MARKERS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE "LIQUIDATED DAMAGES, NIGHT TIME LANE CLOSURES" NOTE ON SHEET 8., WITH THE FOLLOWING EXCEPTION. SHORT-TERM, ONE-LANE CLOSURES WILL BE PERMITTED WEEKDAYS FROM 9:00 A.M. TO 2:00 P.M. FOR FINAL TRAFFIC CONTROL ITEMS ONLY. THE FINAL ROADWAY PAVEMENT MARKING AND RAISED PAVEMENT MARKER OPERATION SHALL BE ACCOMPLISHED AS FOLLOWS:

THE CONTRACTOR SHALL PROVIDE TWO (2) TRAILING VEHICLES AS PER MT-99.20 FOLLOWING THE PAVEMENT MARKING EQUIPMENT. THE TWO (2) TRAILING VEHICLES SHALL TRAVEL 500 FEET APART WITH THE REMOTE VEHICLE TRAVELING ON THE SHOULDER (LEFT OR RIGHT AS APPLICABLE) WHERE USEABLE SHOULDER IS AVAILABLE. THE INTERMEDIATE TRAILING VEHICLE SHALL TRAVEL IN THE CLOSED LANE 500 FEET BEHIND THE PAVEMENT MARKING EQUIPMENT. THE POLICE CRUISER SHALL TRAVEL 500 TO 1000 FEET BEHIND THE REMOTE TRAILING VEHICLE.

EACH TRAILING VEHICLE SHALL HAVE A YELLOW FLASHING BEACON PLUS 48" MIN. ORANGE AND BLACK CONSTRUCTION WARNING SIGNS MOUNTED ON THE BACK FACING TRAFFIC WITH STANDARD TYPE MESSAGES ADVISING MOTORISTS OF THE WORK AHEAD, ADVISORY WARNING SPEED, AND WHICH LANE IS CLOSED.
7. LANE CLOSURES FOR NIGHTTIME OPERATIONS SHALL ONLY BE IMPLEMENTED FROM 8:00 P.M. TO 6:00 A.M. THE CONTRACTOR SHALL SCHEDULE HIS OPERATIONS SO THAT THERE ARE SUFFICIENT CREWS TO DO THE WORK SCHEDULED WITHIN THIS TIME PERIOD.

8. 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".
9. ALL LABOR, MATERIALS, 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.
10. ANY TIME TRAFFIC IS DRIVING ON AN UNEVEN PAVEMENT SURFACE, THE CONTRACTOR SHALL POST OW-171(R OR L)-48 AND OWP171-24 SIGNS. THESE SIGNS SHALL BE POSTED AT REGULAR INTERVALS NOT TO EXCEED 1500 FT, ON BOTH SIDES OF THE ROADWAY, WITHIN THE PLANED AREA. THE CONTRACTOR SHALL MAKE SURE SIGNS ARE LOCATED NEAR ALL ENTRANCE RAMPS.

MAJOR WORK ITEMS

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

- A. REPAIR OF EXISTING MANHOLES (SEE MH'S ADJ TO GRADE, A.P.P.)
- B. REFERENCE ALL TRANSVERSE JOINTS TO BE SAWED AND SEALED
- C. PLANE EXISTING SURFACE COURSE
- D. ADDITIONAL PLANING OPERATIONS AS DIRECTED BY THE ENGINEER
- E. PAVE SPOT LOCATIONS WHERE LEVELING COURSE IS REQUIRED
- F. PAVE FINAL SURFACE COURSE
- G. SAW AND SEAL ASPHALT PAVEMENT JOINTS
- H. PAVEMENT MARKINGS & RAISED PAVEMENT MARKERS

ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC

THIS ITEM SHALL BE USED TO REPAIR HOLES THE ROADWAY SURFACE WHICH ARE DAMAGED DURING THE CLOSURE AND TO PROVIDE TEMPORARY ASPHALT RAMPS. TEMPORARY ASPHALT RAMPS SHALL NOT EXCEED 1 INCH IN 10 FEET LONGITUDINALLY AND 1 INCH IN 1 FOOT TRANSVERSELY. TEMPORARY RAMPS WILL NOT BE REQUIRED FOR LONGITUDINAL PAVEMENT ELEVATION DIFFERENCES LESS THAN 1.5". THE CONTRACTOR SHALL USE THIS ITEM TO MAINTAIN THE HIGHWAY ACCORDING TO SECTION 614.02. ANY CLOSURES NECESSARY TO PERFORM THIS WORK SHALL BE AS APPROVED BY THE ENGINEER. PRIOR TO RESURFACING, THE TEMPORARY RAMPS SHALL BE REMOVED AS PART OF THIS ITEM. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR MAINTENANCE OF TRAFFIC AS OUTLINED ABOVE, TO BE USED AS DIRECTED BY THE ENGINEER, ON ALL PARTS OF THIS PROJECT.

ITEM 404-BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC 250 C.Y.

INTERIM COMPLETION DATE

ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC BETWEEN NOVEMBER 15 AND APRIL 15. NOVEMBER 15 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH 108.07 FOR EACH CALENDAR DAY THAT ALL LANES ARE NOT OPEN AND AVAILABLE TO TRAFFIC.

INTERIM COMPLETION DATE- ASPHALT CONCRETE WORK

OCTOBER 15 SHALL BE CONSIDERED AN INTERIM COMPLETION DATE FOR ALL ASPHALT CONCRETE WORK. LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH 108.07 FOR EACH CALENDAR DAY BEYOND OCTOBER 15 THAT THE ASPHALT CONCRETE PAVING HAS NOT BEEN COMPLETED.

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MAINTENANCE OF TRAFFIC NOTES

CUYAHOGA COUNTY
CUI-90-16.22

MAINTENANCE OF TRAFFIC NOTES

ITEM SPECIAL-LAW ENFORCEMENT OFFICER WITH PATROL CAR

IN ADDITION TO THE REQUIREMENTS OF 614 AND THE LATEST EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD), A UNIFORMED LAW ENFORCEMENT OFFICER AND OFFICIAL PATROL CAR WITH WORKING TOP MOUNTED EMERGENCY FLASHING LIGHTS SHALL BE PROVIDED FOR CONTROLLING TRAFFIC FOR THE FOLLOWING TASKS:

* FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED.

LAW ENFORCEMENT OFFICERS (L.E.O.'S) SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED. THE LEO'S ARE CONSIDERED TO BE EMPLOYED BY THE CONTRACTOR AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACTIONS. ALTHOUGH THEY ARE EMPLOYED BY THE CONTRACTOR, THE PROJECT ENGINEER SHALL HAVE CONTROL OVER THEIR PLACEMENT. THE OFFICIAL PATROL CAR SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED BY THE OHIO REVISED CODE.

THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES.

LAW ENFORCEMENT OFFICERS WITH PATROL CAR REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM SPECIAL-LAW ENFORCEMENT OFFICER WITH PATROL CAR. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL, LAW ENFORCEMENT OFFICER WITH PATROL CAR 300 HOURS

THE HOURS PAID SHALL INCLUDE MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

IF THE CONTRACTOR WISHES TO UTILIZE LEO'S FOR FLAGGING AND TRAFFIC CONTROL OTHER THAN FOR THAT REQUIRED IN THESE PLANS, HE MAY DO SO AT HIS OWN EXPENSE. PAYMENT FOR THE EXCESS ABOVE THE CONTRACT REQUIREMENTS WILL BE INCLUDED UNDER ITEM 614 MAINTAINING TRAFFIC.

TRAFFIC CONTROL OF OPERATION FOR ASPHALT CONCRETE

ALL ASPHALT CONCRETE OPERATIONS SHALL BE CONDUCTED IN A MANNER THAT WILL ASSURE MINIMUM DANGER AND INCONVENIENCE TO THE HIGHWAY USERS.

A MINIMUM OF THE 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.

ITEM SPECIAL - REPLACEMENT DRUM

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT DRUMS SHALL BE NEW.

PAYMENT FOR THE NEW DRUMS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM SPECIAL, REPLACEMENT DRUM, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM, AND PROVIDING AND MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUM.

AN ESTIMATED QUANTITY OF 100 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ITEM SPECIAL - REPLACEMENT SIGN

FLAT SHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT SIGNS SHALL BE NEW. OTHER MATERIALS MAY BE IN USED BUT GOOD CONDITION SUBJECT TO APPROVAL BY THE ENGINEER.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE CONTRACT PRICE PER SQUARE FOOT FOR ITEM SPECIAL, REPLACEMENT SIGN, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF DAMAGED SIGNS, HARDWARE AND SUPPORTS, AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC.

AN ESTIMATED QUANTITY OF 320 SQUARE FEET HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

HOLIDAYS AND SPECIAL EVENTS

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

CHRISTMAS	NEW YEARS
MEMORIAL DAY	FOURTH OF JULY
LABOR DAY	THANKSGIVING
(OTHER HOLIDAY OR EVENT)	

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

DAY OF THE WEEK	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 12:00N MONDAY
MONDAY	12:00N FRIDAY THROUGH 12:00N TUESDAY
TUESDAY	12:00N MONDAY THROUGH 12:00N WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 12:00N THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 12:00N MONDAY
FRIDAY	12:00N THURSDAY THROUGH 12:00N MONDAY
SATURDAY	12:00N FRIDAY THROUGH 12:00N MONDAY

NO EXTENSIONS OF TIME SHALL BE GRANTED FOR DELAYS IN MATERIAL DELIVERIES, UNLESS SUCH DELAYS ARE INDUSTRY-WIDE, OR FOR LABOR STRIKES, UNLESS SUCH STRIKES ARE AREA-WIDE.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH 108.07.

THE CONTRACTOR SHALL CONTACT THE CITY OF CLEVELAND FOR LISTINGS OF ALL SPECIAL EVENTS WHICH TAKE PLACE IN THE CITY OF CLEVELAND THROUGHOUT THE DURATION OF THIS PROJECT.

DURING ANY DOWNTOWN EVENT WITH ATTENDANCE IN EXCESS OF 20,000 PEOPLE, ESPECIALLY HOME BASEBALL GAMES, NO LANE CLOSURES SHALL BE IMPLEMENTED UNTIL ONE (1) HOUR AFTER THE END OF THE EVENT.

RAMP CLOSURES

THE CONTRACTOR MAY TEMPORARILY CLOSE ENTRANCE AND EXIT RAMP WHILE WORKING IN THE RAMP ACCELERATION AND DECELERATION AREAS. A LAW ENFORCEMENT OFFICER WITH PATROL CAR WILL BE REQUIRED ANY TIME A RAMP IS CLOSED. THE PAYMENT FOR A LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR RAMP CLOSURES WILL NOT BE PAID FOR UNDER ITEM SPECIAL-LAW ENFORCEMENT OFFICER WITH PATROL CAR. THE COST FOR A LAW ENFORCEMENT OFFICER WITH PATROL CAR USED FOR RAMP CLOSURES SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614-MAINTAINING TRAFFIC.

WORK ZONE INSPECTIONS

THE CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL, OTHER THAN THE SUPERINTENDENT, AND SUBJECT TO THE APPROVAL OF THE ENGINEER, TO INSPECT ALL TRAFFIC CONTROL DEVICES IN THE WORK ZONE AT THE BEGINNING AND AT THE END OF EACH NIGHT. DAILY, A RECORD OF REVIEW SHALL BE GIVEN TO THE PROJECT ENGINEER, IN WRITING, AND SHALL INCLUDE A RECORD OF DEFICIENCIES AND RESOLUTION OF THE DEFICIENCIES.

THE FOLLOWING ITEMS SHALL BE INCLUDED IN EACH REVIEW:

TRAFFIC CONTROL DEVICE CONDITION, PLACEMENT, VISIBILITY, TRAFFIC FLOW CONDITIONS, INCIDENTS, CONGESTION POINTS, DELAYS, INTERACTION OF WORK VEHICLES AND TRAFFIC, EVIDENCE OF ACCIDENTS, PROPER STORAGE OF MATERIALS AND EQUIPMENT, CONFORMANCE WITH THE MAINTENANCE OF TRAFFIC PLAN, ADEQUACY OF THE MAINTENANCE OF TRAFFIC PLAN, CONFLICTING OR NON-CONFORMING PAVEMENT MARKINGS.

THE DESIGNATED INDIVIDUAL OR A QUALIFIED REPRESENTATIVE SHALL ALSO BE AVAILABLE ON AN AROUND-THE-CLOCK BASIS TO REPAIR AND OR REPLACE DAMAGED OR MISSING TRAFFIC CONTROL DEVICES. THESE INDIVIDUAL'S NAMES AND PHONE NUMBERS SHALL BE GIVEN TO THE PROJECT ENGINEER AT THE PRE-CONSTRUCTION MEETING.

COST FOR IMPLEMENTATION OF THIS ITEM AS DESCRIBED SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614-MAINTAINING TRAFFIC.

LIQUIDATED DAMAGES, NIGHT TIME LANE CLOSURES.

ALL OF THE WORK SHALL BE DONE DURING NIGHTTIME OPERATIONS FROM 8:00 P.M. TO 6:00 A.M. A MINIMUM OF TWO (2) LANES IN EACH DIRECTION SHALL REMAIN OPEN FROM 8:00 PM TO 11:00 PM. A MINIMUM OF ONE LANE IN EACH DIRECTION SHALL REMAIN OPEN FROM 11:00 PM TO 6:00 AM.

THE ONLY TIME THE HOURS MAY BE EXTENDED IS ON SATURDAY OR SUNDAY MORNING WHEN NO SPECIAL EVENT OR HOLIDAY IS OCCURRING. THE CONTRACTOR NEED NOT OPEN ALL OF THE LANES UNTIL 8:00 A.M.. THE CLOSURE MAY EXTEND BEYOND 8:00 A.M., UNTIL TRAFFIC HAS BACKED UP ONE HALF MILE, AS DETERMINED BY THE ENGINEER. AT THAT TIME, THE CONTRACTOR WILL HAVE FIFTEEN (15) MINUTES TO RE-OPEN THE LANE. IF THE LANES ARE NOT OPEN TO TRAFFIC IN FIFTEEN (15) MINUTES, LIQUIDATED DAMAGES SHALL APPLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE AWARE OF THE BACKUP SO THAT WHEN THE ENGINEER NOTIFIES THE CONTRACTOR TO OPEN ALL OF THE LANES, THE CONTRACTOR CAN DO SO. IN NO OTHER CASE MAY THESE HOURS BE EXTENDED.

THESE TIME LIMITATIONS SHALL NOT BE REVISED WITHOUT PRIOR WRITTEN APPROVAL FROM BOTH THE DISTRICT CONSTRUCTION ENGINEER AND THE DISTRICT PRODUCTION ENGINEER.

ANY DELAY IN EFFECTING THE ADDITIONAL LANE CLOSURE FOR NIGHTTIME OPERATIONS SHALL NOT BE SUFFICIENT CAUSE FOR ANY VIOLATION OF THE PERMITTED LANE CLOSURE TIMES.

LIQUIDATED DAMAGES IN THE AMOUNT OF \$88.00 PER MINUTE SHALL BE ASSESSED FOR ANY VIOLATION OF THE PERMITTED LANE CLOSURES.

THESE DAMAGES SHALL BE ASSESSED INDIVIDUALLY AND WILL BE CUMULATIVE FOR EACH DIRECTION WHICH DOES NOT RE-OPEN TO TRAFFIC ON TIME. (THIS COULD RESULT IN SEVERAL ASSESSMENTS IN THE SAME DAY) THE FULL AMOUNT OF THE LIQUIDATED DAMAGES SHALL BE ASSESSED FOR EACH VIOLATION.

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MAINTENANCE OF TRAFFIC NOTES

CUYAHOGA COUNTY
 CUY-90-16.22

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ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, TWO CHANGEABLE MESSAGE SIGNS, ON SITE, FOR THE DURATION OF THE PROJECT. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR. THE LIST CURRENTLY CONTAINS CLASS III AND II UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 650 FEET AND 850 FEET RESPECTIVELY.

EACH SIGN SHALL BE TRAILER MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM TO DIM THE SIGN DURING DARKNESS AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY.

THE LOCATION OF THE SIGN WILL BE AS DIRECTED BY THE ENGINEER. PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISABLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS WILL BE OFF, FACING AWAY FROM TRAFFIC AND SHALL DISPLAY ONE OR MORE HIGH INTENSITY YELLOW REFLECTIVE SHEETING SURFACES OF 9 - INCH BY 15-INCH MINIMUM SIZE FACING TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATING INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT AND TO REVISE SIGN MESSAGES, IF NECESSARY.

THE CONTRACTOR SHALL IMPLEMENT A SYSTEM WHEREBY CHANGED MESSAGES WILL BE IMPLEMENTED WITHIN TWO (2) HOURS FOLLOWING TELEPHONE NOTIFICATION FROM THE PROJECT ENGINEER TO A DESIGNATED PHONE.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PREPROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPACITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PREPROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON - BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE - LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED, BUT NORMALLY, NOT MORE THAN TWO MESSAGE PHASES SHOULD BE EMPLOYED, ALTHOUGH THREE PHASES MAY BE USED IN UNUSUAL CONDITIONS. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST ONCE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

THE PCMS SHALL CONTAIN A CELLULAR TELEPHONE DATA LINK WHICH WILL (IN ACTIVE CELLULAR PHONE AREAS) ALLOW REMOTE SIGN ACTIVATION, DEACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES. ONE REMOTE DATA INPUT DEVICE (LAPTOP COMPUTER PLUS MODEM OR EQUIVALENT) SHALL BE FURNISHED FOR USE BY THE DISTRICT WORK ZONE TRAFFIC ENGINEER AND SHALL BE INSURED AGAINST THEFT.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF 614.03 (C). THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC AND THE ENTIRE COST TO CONTROL TRAFFIC ACCRUED BY THE DEPARTMENT WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24 HOUR PER DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

THE REQUIREMENT TO FURNISH, INSTALL, MAINTAIN AND REMOVE A PCMS UNIT ON THIS PROJECT SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES AS OUTLINED IN 104.04.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE BID PER SIGN - MONTH FOR EACH ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE AND INCIDENTALS TO PERFORM THE ABOVE WORK.

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

2 SIGNS @ 2 MONTHS EACH = 4 SIGN-MONTHS

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN 4 SIGN-MONTHS

TEMPORARY WORK ZONE PAVEMENT MARKINGS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER. THESE ITEMS SHALL BE USED AS TEMPORARY PAVEMENT MARKINGS, PRIOR TO PLACEMENT OF THE PERMANENT MARKINGS. TEMPORARY MARKINGS SHALL BE MAINTAINED TO THE SATISFACTION OF THE ENGINEER UNTIL THE PERMANENT MARKINGS ARE COMPLETE IN PLACE. ALL COSTS ASSOCIATED WITH THE ABOVE DESCRIBED WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR:

ITEM	DESCRIPTION	UNIT
614	TEMPORARY LINE, CLASS I	17.52 MILES
614	TEMPORARY EDGE LINES, CLASS I	16.14 MILES
614	TEMPORARY CHANNELIZING LINES, CLASS I	10,192 LIN.FT.
614	TEMPORARY DOTTED LINE, CLASS I	4,932 LIN.FT.

CALCULATED
DRL
CHECKED
ENF

MAINTENANCE OF TRAFFIC NOTES

CUYAHOGA COUNTY
CUY-90-16.22

RESURFACING QUANTITIES

ITEM SPECIAL - ASPHALT CONCRETE WITH SBR LATEX, SURFACE COURSE, TYPE 1, AC-10													SCL=SPEED CHANGE LANE						
LOCATION	FROM	TO	INSIDE SHOULDER DEPTH (IN)	MAINLINE/OUTSIDE SHOULDER DEPTH (IN)	LENGTH (FT)	INSIDE SHOULDER ** (FT)	# OF LANES	MAINLINE LANES (FT)	SCL/OUTSIDE SHOULDER (AVERAGE WIDTH) (FT)	TOTAL WIDTH (FT)	INSIDE SHOULDER AREA (SQ YD)	MAINLINE AREA (SQ YD)	OUTSIDE SHOULDER/SCL AREA (SQ YD)	SPEC	SPEC	SPEC			
														INSIDE SHOULDER ASPHALT (CU YD)	MAINLINE ASPHALT (CU YD)	OUTSIDE SHOULDER/SCL ASPHALT (CU YD)			
I-90 EAST BOUND																			
	54+90.78	55+97.03	1.25	1.25	106.25	0	4	48	13	63	0	566.7	153.5	0	19.7	5.3	BROADWAY RAMP (E-4)		
	55+97.03	57+30.00	1.25	1.25	132.97	0	4	48	34.5	84.5	0	709.2	509.7	0	24.6	17.7			
	57+30.00	57+79.00	1.25	1.25	49.00	0	4	48	10	60	0	261.3	54.4	0	9.1	1.9			
	57+79.00	58+82.50	1.25	1.25	103.50	0	4	48	10	60	0	552.0	115.0	0	19.2	4.0			
	58+82.50	61+13.75			EAST 9TH ST BRIDGE														
	61+13.75	62+20.00	1.25	1.25	106.25	0	4	48	19	69	0	566.7	224.3	0	19.7	7.8			
	62+20.00	62+48.58	1.25	1.25	28.58	0	4	48	28	78	0	152.4	88.9	0	5.3	3.1	EAST 9 TH ST RAMP (E-6)		
	62+48.58	63+48.00	1.25	1.25	99.50	0	3	36	10	48	0	398.0	110.6	0	13.8	3.8			
	63+48.00	64+06.43	1.25	1.25	58.43	0	3	36	10	48	0	233.7	64.9	0	8.1	2.3			
	64+06.43	65+12.68	1.25	1.25	106.25	0	3	36	9	47	0	425.0	106.3	0	14.8	3.7			
	65+12.68	68+16.12			VARIOUS RAMPS UNDER I-90														
	68+16.12	69+22.37	1.25	1.25	106.25	0	3	36	10	48	0	425.0	118.1	0	14.8	4.1			
	69+22.37	69+75.25	1.25	1.25	52.88	0	3	36	10	48	0	211.5	58.8	0	7.3	2.0			
	69+75.25	70+81.50	1.25	1.25	106.25	0	3	36	10	48	0	425.0	118.1	0	14.8	4.1			
	70+81.50	73+94.00			EAST 14TH ST BRIDGE														
	73+94.00	75+00.25	1.25	1.25	106.25	3.5	4	48	10	61.5	41.3	566.7	118.1	1.4	19.7	4.1			
	75+00.25	76+85.50	1.25	1.25	185.25	3.5	4	48	10	61.5	72.0	988.0	205.8	2.5	34.3	7.1			
	76+85.50	77+25.00	1.25	1.25	39.50	3.5	4	48	12.15	63.65	15.4	210.7	53.3	0.5	7.3	1.9			
	77+25.00	78+86.88	1.25	1.25	161.88	3.5	3	36	35.15	74.65	63.0	647.5	632.2	2.2	22.5	22.0	EAST 22 ST RAMP (E-11)		
	78+86.88	80+09.31	1.25	1.25	122.43	3.5	3	36	10	49.5	47.6	489.7	136.0	1.7	17.0	4.7			
	80+09.31	83+09.31	1.25	1.25	300.00	5	3	36	10	51	166.7	1200.0	333.3	5.8	41.7	11.6			
	83+09.31	98+00.00			STATION EQUATION: 83+09.31 BK = 98+00.00 AH														
	98+00.00	98+53.75	1.25	1.25	53.75	6.5	3	36	10	52.5	38.8	215.0	59.7	1.3	7.5	2.1			
	98+53.75	99+10.00	1.25	1.25	56.25	6.5	3	36	10	52.5	40.6	225.0	62.5	1.4	7.8	2.2			
	99+10.00	100+26.00	1.25	1.25	116.00	6.5	3	36	10	52.5	83.8	464.0	128.9	2.9	16.1	4.5			
	100+26.00	100+82.75	1.25	1.25	56.75	6.5	3	36	10	52.5	41.0	227.0	63.1	1.4	7.9	2.2			
	100+82.75	102+00.00	1.25	1.25	117.25	6.5	3	36	10	52.5	84.7	469.0	130.3	2.9	16.3	4.5			
	102+00.00	104+45.00	1.25	1.25	245.00	6.5	3	36	33.5	76	176.9	980.0	911.9	6.1	34.0	31.7			
	104+45.00	105+30.00	1.25	1.25	85.00	6.5	3	36	44.5	87	61.4	340.0	420.3	2.1	11.8	14.6	CARNEGIE AVE. (RAMP NO. 3)		
	105+30.00	106+53.75	1.25	1.25	123.75	6.5	3	36	10	52.5	89.4	495.0	137.5	3.1	17.2	4.8			
	106+53.75	107+10.00	1.25	1.25	56.25	6.5	3	36	10	52.5	40.6	225.0	62.5	1.4	7.8	2.2			
	107+10.00	109+02.00	1.25	1.25	192.00	6.5	3	36	10	52.5	138.7	768.0	213.3	4.8	26.7	7.4			
	109+02.00	109+58.25	1.25	1.25	56.25	6.5	3	36	10	52.5	40.6	225.0	62.5	1.4	7.8	2.2			
	109+58.25	112+33.00	1.25	1.25	274.75	6.5	3	36	10	52.5	198.4	1099.0	305.3	6.9	38.2	10.6			
	112+33.00	113+25.00	1.25	1.25	92.00	6.5	3	36	34.75	77.25	66.4	368.0	355.2	2.3	12.8	12.3			
	113+25.00	113+90.00	1.25	1.25	65.00	6.5	4	48	18.5	73	46.9	346.7	133.6	1.6	12.0	4.6	PROSPECT AVE. (RAMP NO. 4)		
	113+90.00	120+10.00	1.25	1.25	620.00	6.5	4	48	10	64.5	447.8	3306.7	688.9	15.5	114.8	23.9			
	120+10.00	122+10.00	1.25	1.25	200.00	6.5	3	36	39.75	82.25	144.4	800.0	883.3	5.0	27.8	30.7			
	122+10.00	125+40.00	1.25	1.25	330.00	6.5	3	36	10	52.5	238.3	1320.0	366.7	8.3	45.8	12.7	CHESTER AVE. (RAMP NO. 7)		
	125+40.00	126+75.00	1.25	1.25	135.00	5.75	3	36	31.75	73.5	86.3	540.0	476.3	3.0	18.8	16.5			
	126+75.00	127+09.87	1.25	1.25	34.87	5.75	4	48	10.75	64.5	22.3	186.0	41.7	0.8	6.5	1.4	CHESTER AVE. (RAMP NO. 8)		
TOTAL THIS SHEET					4726.66						2493.3	21628.5	8704.8	86.3	751.3	302.3			

** SEE NOTE ABOUT PLANING LIMITS OF MEDIAN SHOULDER ON SHEET 3.

PLOTTED BY: jgrmovse
 PLOTTED FROM: /1/pd/dlastovk/pid16193/16193qbd.dgn
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 PLOT SUBMITTED:

CALCULATED
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 QUANTITY SHEET
 CUYAHOGA COUNTY
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RESURFACING QUANTITIES

ITEM SPECIAL - ASPHALT CONCRETE WITH SBR LATEX, SURFACE COURSE, TYPE 1, AC-10

SCL=SPEED CHANGE LANE

LOCATION	INSIDE SHOULDER DEPTH	MAINLINE/OUTSIDE/SCL DEPTH	LENGTH	INSIDE SHOULDER **	# OF LANES	MAINLINE LANES	SCL/OUTSIDE SHOULDER (AVERAGE WIDTH)	TOTAL WIDTH	INSIDE SHOULDER AREA	MAINLINE AREA	SCL/OUTSIDE SHOULDER AREA	SPEC	SPEC	SPEC			
												FROM	TO	(IN)			
I-90 EAST BOUND																	
STATION EQUATION: 127+09.873 BK = 126+61.130 AH																	
127+09.87	126+61.13																
126+61.13	127+40.00	1.25	1.25	78.87	5.75	4	48	10.75	64.5	50.4	420.6	94.2	1.7	14.6	3.3		
127+40.00	130+00.00	1.25	1.25	260.00	6.5	3	36	18.75	61.25	187.8	1040.0	541.7	6.5	36.1	18.8		
130+00.00	132+21.00	1.25	1.25	221.00	6.5	3	36	12.75	55.25	159.6	884.0	313.1	5.5	30.7	10.9		
132+21.00	132+75.00	1.25	1.25	54.00	6.5	3	36	10	52.5	39.0	216.0	60.0	1.4	7.5	2.1		
132+75.00	133+65.00	1.25	1.25	90.00	6.5	3	36	10	52.5	65.0	360.0	100.0	2.3	12.5	3.5		
133+65.00	136+00.00	1.25	1.25	235.00	6.5	3	36	28.5	71	169.7	940.0	744.2	5.9	32.6	25.8	CHESTER AVE. (RAMP NO. 9)	
136+00.00	139+94.14	1.25	1.25	394.14	6.5	4	48	10	64.5	284.7	2102.1	437.9	9.9	73.0	15.2		
139+94.14	142+65.00	1.25	1.25	270.86	6.5	3	36	38	80.5	195.6	1083.4	1143.6	6.8	37.6	39.7	E 30TH ST. (RAMP NO. 12)	
142+65.00	151+00.00	1.25	1.25	835.00	6.5	3	38	10	54.5	603.1	3525.6	927.8	20.9	122.4	32.2	(14' LANE)	
151+00.00	154+60.00	1.25	1.25	360.00	4.5	3	40	10	54.5	180.0	1600.0	400.0	6.3	55.6	13.9	(14' LANE)	
154+60.00	156+48.00	1.25	1.25	188.00	4.5	4	52	12	68.5	94.0	1086.2	250.7	3.3	37.7	8.7	E 30TH ST. (RAMP NO. 15)	
156+48.00	159+75.00	1.25	1.25	327.00	4.5	4	52	8	64.5	163.5	1889.3	290.7	5.7	65.6	10.1		
159+75.00	160+95.00	1.25	1.25	120.00	4.5	4	52	17.5	74	60.0	693.3	233.3	2.1	24.1	8.1	ST. CLAIR (RAMP NO. 16)	
160+95.00	161+75.00	1.25	1.5	80.00	0	4	52	8	60	0.0	462.2	71.1	0.0	19.3	3.0		
EXISTING RUMBLE STRIPS																	
161+75.00	161+97.00	0	1.75#	78.00	0	4	52	8	60	0.0	450.7	69.3	0.0	21.9	3.4		
161+97.00	162+75.00	0	1.75#	78.00	0	4	52	8	60	0.0	450.7	69.3	0.0	21.9	3.4		
EXISTING RUMBLE STRIPS																	
162+75.00	162+97.00	0	1.75#	78.00	0	4	52	8	60	0.0	450.7	69.3	0.0	21.9	3.4		
162+97.00	163+75.00	0	1.75#	78.00	0	4	52	8	60	0.0	450.7	69.3	0.0	21.9	3.4		
EXISTING RUMBLE STRIPS																	
163+75.00	163+97.00	0	1.75#	163.00	0	4	52	8	60	0.0	941.8	144.9	0.0	45.8	7.0		
163+97.00	165+60.00	0	1.75#	163.00	0	4	52	8	60	0.0	941.8	144.9	0.0	45.8	7.0		
EXISTING RUMBLE STRIPS																	
165+60.00	165+82.00	0	1.75#	61.00	0	4	52	8	60	0.0	352.4	54.2	0.0	17.1	2.6		
165+82.00	166+43.00	0	1.75#	61.00	0	4	52	8	60	0.0	352.4	54.2	0.0	17.1	2.6		
EXISTING RUMBLE STRIPS																	
166+43.00	166+65.00	0	1.75#	53.00	0	4	52	8	60	0.0	306.2	47.1	0.0	14.9	2.3		
166+65.00	167+18.00	0	1.75#	53.00	0	4	52	8	60	0.0	306.2	47.1	0.0	14.9	2.3		
EXISTING RUMBLE STRIPS																	
167+18.00	167+40.00	0	1.75#	28.00	0	4	52	8	60	0.0	161.8	24.9	0.0	7.9	1.2		
167+40.00	167+68.00	0	1.75#	28.00	0	4	52	8	60	0.0	161.8	24.9	0.0	7.9	1.2		
EXISTING RUMBLE STRIPS																	
167+68.00	167+90.00	0	1.75#	70.00	0	4	52	35.5	87.5	0.0	404.4	276.1	0.0	19.7	13.4	RAMP NO. 18	
167+90.00	168+60.00	0	1.75#	58.00	0	4	52	8	60	0.0	335.1	51.6	0.0	16.3	2.5		
168+60.00	169+18.00	0	1.75#	58.00	0	4	52	8	60	0.0	335.1	51.6	0.0	16.3	2.5		
EXISTING RUMBLE STRIPS																	
169+18.00	169+40.00	0	1.75#	53.00	0	4	52	8	60	0.0	306.2	47.1	0.0	14.9	2.3		
169+40.00	169+93.00	0	1.75#	53.00	0	4	52	8	60	0.0	306.2	47.1	0.0	14.9	2.3		
EXISTING RUMBLE STRIPS																	
169+93.00	170+15.00	0	1.75#	28.00	0	4	52	8	60	0.0	161.8	24.9	0.0	7.9	1.2		
170+15.00	170+43.00	0	1.75#	28.00	0	4	52	8	60	0.0	161.8	24.9	0.0	7.9	1.2		
EXISTING RUMBLE STRIPS																	
170+43.00	170+65.00	0	1.75#	218.78	0	4	52	8	60	0.0	1264.1	194.5	0.0	61.4	9.5		
170+65.00	172+83.78	0	1.75#	31.30	0	4	52	8	60	0.0	180.8	27.8	0.0	8.8	1.4		
172+83.78	173+15.08	0	1.75#	31.30	0	4	52	8	60	0.0	180.8	27.8	0.0	8.8	1.4		
TOTALS THIS SHEET					4433.95					2252.3	21618.7	6640.0	78.3	827.8	245.5		
TOTALS FROM SHEET 9					4726.66					2493.3	21628.5	8704.8	86.3	751.3	302.3		
GRAND TOTAL					9160.61				4746	43265	15350	164.6	1579.1	547.8			

** SEE NOTE ABOUT PLANING LIMITS OF MEDIAN SHOULDER ON SHEET 3.
* 1.75" AVERAGE DEPTH (MAY VARY ± 0.5")

63,361 SY

2,292 CU. YD.

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 16193QBD.dgn

CALCULATED
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 CHECKED
 QUANTITY SHEET
 CUYAHOGA COUNTY
 CUY-90-16.22
 10
 32

PAVEMENT QUANTITIES

ITEM SPECIAL - ASPHALT CONCRETE WITH SBR LATEX, SURFACE COURSE, TYPE 1, AC-10														SCL=SPEED CHANGE LANE					
FROM	TO	INSIDE SHOULDER DEPTH (IN)	MAINLINE/OUTSIDE/SCL DEPTH (IN)	LENGTH (FT)	INSIDE SHOULDER ** (FT)	# OF LANES	MAINLINE LANES (FT)	SCL/OUTSIDE SHOULDER (AVERAGE WIDTH) (FT)	TOTAL WIDTH (FT)	INSIDE SHOULDER AREA (SQ YD)	MAINLINE AREA (SQ YD)	OUTSIDE SHOULDER/SCL AREA (SQ YD)	INSIDE SHOULDER ASPHALT (CU YD)	MAINLINE ASPHALT (CU YD)	OUTSIDE SHOULDER/SCL ASPHALT (CU YD)				
I-90 WEST BOUND																			
54+90.78	55+97.03	1.25	1.25	106.25	0	3	36	3.5	41.5	0.0	425.0	41.3	0.0	14.8	1.4				
55+97.03	57+79.00	1.25	1.25	181.97	0	3	36	11	49	0.0	727.9	222.4	0.0	25.3	7.7				
57+79.00	58+82.25	1.25	1.25	103.25	0	3	36	23	61	0.0	413.0	263.9	0.0	14.3	9.2	RAMP E-8			
58+82.25	61+13.75	EAST 9th STREET BRIDGE																	
61+13.75	62+48.58	1.25	1.25	134.83	0	3	36	10	48	0.0	539.3	149.8	0.0	18.7	5.2				
62+48.58	64+06.43	1.25	1.25	157.85	0	3	36	10	48	0.0	631.4	175.4	0.0	21.9	6.1				
64+06.43	65+12.68	1.25	1.25	106.25	0	3	36	10	48	0.0	425.0	118.1	0.0	14.8	4.1				
65+12.68	68+16.12	VARIOUS RAMPS UNDER I-90																	
68+16.12	69+22.39	1.25	1.25	106.27	0	3	36	10	48	0.0	425.1	118.1	0.0	14.8	4.1				
69+22.39	69+75.25	1.25	1.25	52.86	0	3	36	10	48	0.0	211.4	58.7	0.0	7.3	2.0				
69+75.25	70+81.50	1.25	1.25	106.25	0	3	36	10	48	0.0	425.0	118.1	0.0	14.8	4.1				
70+81.50	73+94.00	EAST 14th STREET BRIDGE																	
73+94.00	75+00.25	1.25	1.25	106.25	3.5	3	36	36.5	76	41.3	425.0	430.9	1.4	14.8	15.0	RAMP E-10			
75+00.25	78+66.88	1.25	1.25	366.63	3.5	3	36	28.5	68	142.6	1466.5	1161.0	5.0	50.9	40.3				
78+66.88	79+85.88	1.25	1.25	119	3.5	3	36	33.5	73	46.3	476.0	442.9	1.6	16.5	15.4	RAMP E-13			
79+85.88	83+09.31	1.25	1.25	323.43	5	3	36	11.5	52.5	179.7	1293.7	413.3	6.2	44.9	14.3				
83+09.31	98+00.00	STATION EQUATION: 83+09.31 BK=98+00.00 AH																	
98+00.00	108+20.00	1.25	1.25	1020	5	3	36	11.5	52.5	566.7	4080.0	1303.3	19.7	141.7	45.3				
108+20.00	113+00.00	1.25	1.25	480	5.75	3	36	17.25	59	306.7	1920.0	920.0	10.6	66.7	31.9				
113+00.00	115+00.00	1.25	1.25	200	5.75	3	36	32.25	74	127.8	800.0	716.7	4.4	27.8	24.9	RAMP No. 5			
115+00.00	117+40.00	1.25	1.25	240	5.75	3	36	10.75	52.5	153.3	960.0	286.7	5.3	33.3	10.0				
117+40.00	119+00.00	1.25	1.25	160	5.75	3	36	42.25	84	102.2	640.0	751.1	3.5	22.2	26.1	RAMP No. 6			
119+00.00	127+09.87	1.25	1.25	809.87	5.75	4	48	10.75	64.5	517.4	4319.3	967.3	18.0	150.0	33.6				
127+09.87	126+61.13	STATION EQUATION: 127+09.873 BK= 126+61.130 AH																	
126+61.13	127+30.00	1.25	1.25	68.87	5.75	4	48	10.75	64.5	44.0	367.3	82.3	1.5	12.8	2.9				
127+30.00	128+80.00	1.25	1.25	150	5.75	4	48	18.25	72	95.8	800.0	304.2	3.3	27.8	10.6	RAMP No. 10			
128+80.00	132+50.00	1.25	1.25	370	6.5	4	48	10	64.5	249.2	1840.0	383.3	8.7	63.9	13.3				
132+50.00	134+50.00	1.25	1.25	225	6.5	4	48	25	79.5	162.5	1200.0	625.0	5.6	41.7	21.7	RAMP No. 11			
134+50.00	139+00.00	1.25	1.25	450	5.75	4	48	10.75	64.5	287.5	2400.0	537.5	10.0	83.3	18.7				
139+00.00	140+70.00	1.25	1.25	170	6.5	4	48	17.5	72	122.8	906.7	330.6	4.3	31.5	11.5	RAMP No. 13			
140+70.00	151+07.08	1.25	1.25	1037.08	5.3	3	40	9.2	54.5	610.7	4609.2	1060.1	21.2	160.0	36.8				
151+07.08	153+65.00	1.25	1.25	257.92	4.5	3	40	15	59.5	129.0	1146.3	429.9	4.5	39.8	14.9				
153+65.00	154+91.00	1.25	1.25	126	4.5	4	52	27.5	84	63.0	728.0	385.0	2.2	25.3	13.4	RAMP No. 14			
154+91.00	160+95.00	1.25	1.25	604	3.75	4	52	8.75	64.5	251.7	3489.8	587.2	8.7	121.2	20.4				
160+95.00	161+70.00	0	1.50	75	0	4	52	9.9	61.9	0.0	433.3	82.5	0.0	18.1	3.4				
161+70.00	166+90.00	0	1.75#	520	0	4	52	8.75	60.75	0.0	3004.4	505.6	0.0	146.0	24.6				
166+90.00	167+40.00	0	1.75#	50	0	4	52	15.5	67.5	0.0	288.9	86.1	0.0	14.0	4.2	RAMP No. 17			
167+40.00	172+83.78	0	1.75#	543.78	0	4	52	8.75	60.75	0.0	3141.8	528.7	0.0	152.7	25.7	SHOREWAY CONNECTION			
172+83.78	173+15.03	0	1.75#	31.25	0	4	52	8.75	60.75	0.0	180.6	30.4	0.0	8.8	1.5				
GRAND TOTAL				9,534.9						4,200.2	45,139.9	14,617.4	145.7	1,662.4	524.3				
										63,958 SY			2,333 CU. YD.						

** SEE NOTE ABOUT PLANING LIMITS OF MEDIAN SHOULDER ON SHEET 3.
 # 1.75" AVG DEPTH (MAY VARY +/- 0.5")

PLOTTED BY: jgrmovse
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 16193qbc.dgn
 PLOT SUBMITTED: 1-MAY-1996 10:36

CALCULATED DRL CHECKED
 QUANTITY SHEET
 CUYAHOGA COUNTY
 CUY-90-16.22
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TRAFFIC CONTROL QUANTITIES

CALCULATED
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CHECKED

PLOT SUBMITTED: 1-MAY-1996 10:37

16193TSB.dgn

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PLOTTED FROM: /1/pd/dlastovk/pid16193/16193tsb.dgn

TRAFFIC CONTROL QUANTITIES
PAVEMENT MARKINGS

CUYAHOGA COUNTY
CUY-90-16.22

PAVEMENT MARKINGS																			
	ROADWAY	LOCATION		ITEM SPECIAL-PAVEMENT MARKING MISC.: EPOXY															
		FROM STATION	TO STATION	EDGE LINES (WHITE)	EDGE LINES (YELLOW)	LANE LINES (WHITE)	8" CHANNELIZING LINE (WHITE)	24" TRANSVERSE LINE (WHITE)	24" STOP LINES	4" DOTTED LINES									
		LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT								
	I-90 E.B.	54+90	56+44	154	154	467													
		56+44	57+07	63	63	189		126											
		57+07	58+82	175	175	525													
		58+82	61+20	238	238	476		238											
		61+20	62+50	130	130	260		260											
		62+50	71+82	932	932	1864													
		71+82	72+77	190	95	190		95											
		72+77	73+57	80	80	160		80											
		73+57	74+37	80	80	240													
		74+37	76+55	218	218	436												218	
		76+55	77+35	80	80	240													
		77+35	78+83	148	148	296		296											
		Ⓐ 78+83	103+63	989	989	1978													
		103+63	104+67	104	104	208		208											
		104+67	112+55	788	788	1576													
		112+55	113+27	144	72	144		72											
		113+27	113+90	63	63	126		63											
		113+90	115+50	160	160	480													
		115+50	118+50	300	300	600													
		118+50	120+10	160	160	480												300	
		120+10	121+05	95	95	190		95											
		121+05	122+21	116	116	232		232											
		122+21	125+43	322	322	644													
		125+43	126+75	232	132	264		132											
		Ⓑ 126+75	126+66	40	40	120													
		126+66	133+75	709	709	1,418												555	
		133+75	136+00	450	225	450		225											
		136+00	136+80	80	80	240													
		136+80	139+14	234	234	468												234	
		139+14	139+94	80	80	240													
		139+94	140+78	84	84	168		84											
		140+78	142+52	174	174	348		348											
		142+52	154+35	1,183	1,183	2,366												353	
		154+35	157+58	536	323	646		323											
		157+58	159+73	215	215	645													
		159+73	160+05	64	32	96		32										15	
		160+05	168+07	802	802	2,406													
		168+07	168+67	60	60	180		120										133	
		Ⓒ 168+67	173+15	448	448	1344													
SUBTOTALS (THIS SHEET)				11,120	10,383	23,400		3,029											
				21,503 LIN.FT.		23,400 LIN.FT.													
TOTALS CARRIED TO GENERAL SUMMARY				4.07 MI.		4.43 MI.		3,029 LIN.FT.		1,404 LIN.FT.		15 LIN.FT.		1,307 LIN.FT.					

Ⓐ STATION EQUATION
STA. 83+09.31 TO BK = STA. 98+00 AH

Ⓑ STATION EQUATION
STA. 127+09.87 BK = STA. 126+61.13 AH

Ⓒ STATION EQUATION
STA. 173+15.03 BK = STA. 73+15.03 AH

TRAFFIC CONTROL QUANTITIES

PAVEMENT MARKINGS

ROADWAY	LOCATION		ITEM SPECIAL-PAVEMENT MARKING MISC.: EPOXY												
	FROM STATION	TO STATION	EDGE LINES (WHITE)	EDGE LINES (YELLOW)	LANE LINES (WHITE)	8" CHANNELIZING LINE (WHITE)							24" TRANSVERSE LINE (WHITE)	24" STOP LINES	4" DOTTED LINES
	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT							LIN FT	LIN FT	LIN FT
I-90 W.B.	54+90	58+36	346	346	692										
	58+36	58+76	40	40	120										
	58+76	59+05	58	29	58	29									
	59+05	73+24	1,419	1,419	2,838										
		73+24	74+25	-	101	202	202						136		
	Ⓐ	74+25	108+20	1,904	1,904	3,808									
		108+20	113+70	550	550	1,100									550
		113+70	114+10	40	40	120									
		114+10	115+00	180	90	180	90								
		115+00	117+43	243	243	486									
		117+43	118+28	85	85	170	170						181		
		118+28	119+00	72	72	144	72								
		119+00	121+40	240	240	720									
		121+40	125+39	399	399	798									399
		125+39	127+30	240	240	720									
		Ⓑ	127+30	128+19	178	89	178	89							
		128+19	131+80	361	361	722									
		131+80	133+63	183	183	366	366						357		
		133+63	134+50	87	87	174	87								
		134+50	135+70	120	120	360									
		135+70	137+80	210	210	420									210
		137+80	139+00	120	120	360									
		139+00	140+58	316	158	316	158								
		140+58	153+78	1,320	1,320	2,640									
		153+78	155+25	147	147	294	294						397		
		155+25	158+50	325	325	650	325								
	158+50	167+17	867	867	2,601										
	167+17	167+51	68	34	102	34							15		
	167+51	171+64	413	413	1,239										
	171+64	172+64	100	100	200	100									
	172+64	173+15	102	51	102	51									
SUBTOTALS (THIS SHEET)			10,733	10,383	22,880	2067						1071	15	1159	
TOTALS CARRIED TO GENERAL SUMMARY			4.00 MI.		4.33 MI.	2067 LIN.FT.						1071 LIN.FT.	15 LIN.FT.	1159 LIN.FT.	

Ⓐ STATION EQUATION STA. 83+09.31 TO BK = STA. 98+00 AH
 Ⓑ STATION EQUATION STA. 127+09.87 BK = STA. 126+61.13 AH
 Ⓒ STATION EQUATION STA. 173+15.03 BK = STA. 73+15.03 AH

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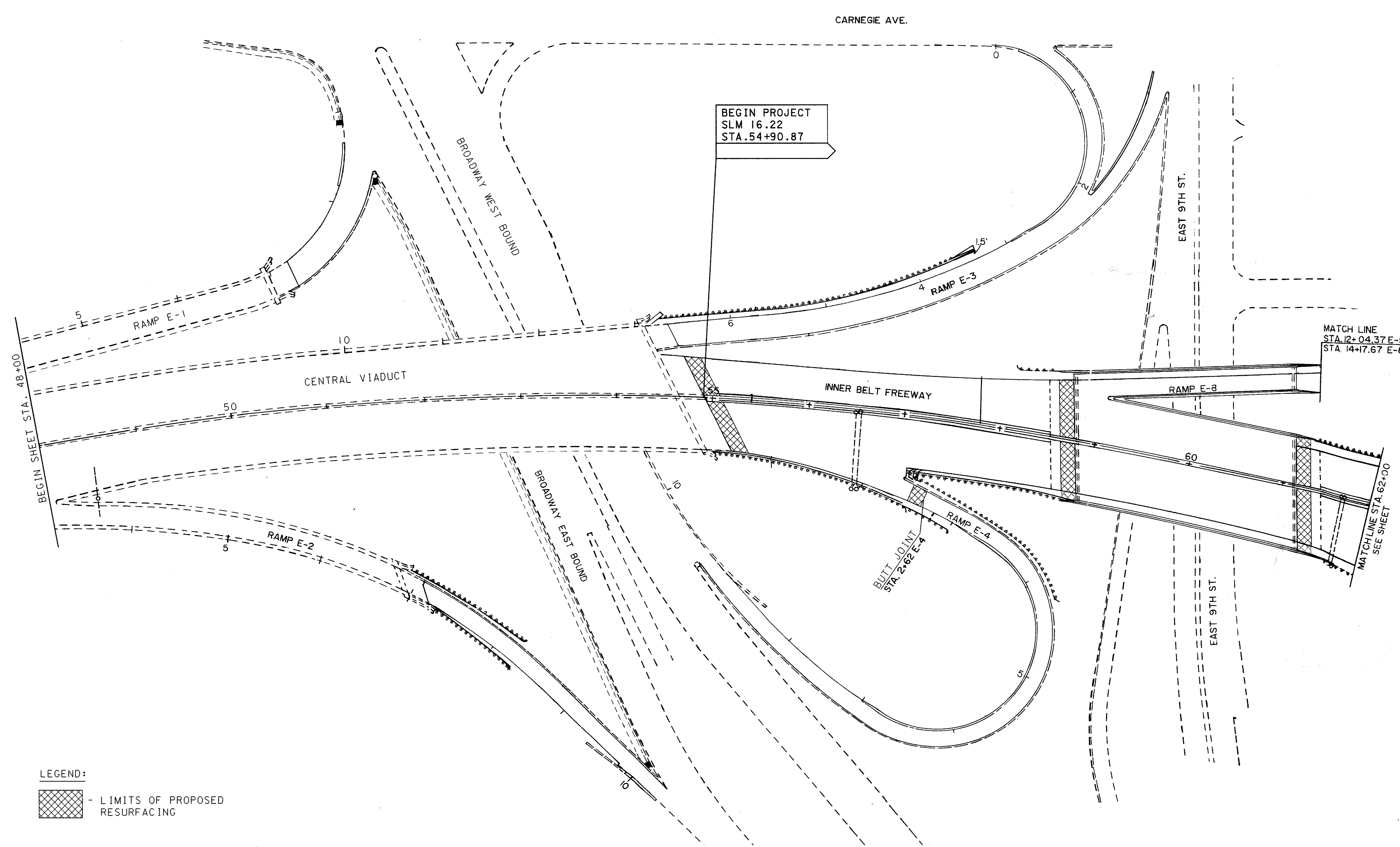
CALCULATED DRL CHECKED
 TRAFFIC CONTROL QUANTITIES
 PAVEMENT MARKINGS
 CUYAHOGA COUNTY
 CUY-90-16.22
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ITEM	STRUCTURE NUMBER													PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT		SEE SHEET NO.
	5	6	6A	6B	7	8	8A	10	11	12	13											
ROADWAY																						
202				960										960		202	54101	960	EACH	RAISED PAVEMENT MARKER REMOVED FOR STORAGE, AS PER PLAN	6B	
DRAINAGE																						
604			5											5		604	34501	5	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	6A	
SPEC.			1000											1000		SPEC.	60450000	1000	POUND	MISCELLANEOUS METAL	6A	
PAVEMENT																						
254			127319											127319		254	01001	127319	SQ.YD.	PAVEMENT PLANNING, BITUMINOUS, AS PER PLAN "A"	6	
254	1000													1000		254	01001	1000	SQ.YD.	PAVEMENT PLANNING, BITUMINOUS, AS PER PLAN "B"	5	
407	100		12732											12832		407	13900	12832	GAL.	TACK COAT USING SS 924	6	
413			17500											17500		413	14000	17500	LIN.FT.	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINT, 705.04	6	
SPEC.	35		207					2292	2333					4867		SPEC.	44619020	4867	CU.YD.	ASPHALT CONCRETE WITH SBR LATEX, SURFACE COURSE, TYPE I, AC-10	5,6,7	
TRAFFIC CONTROL																						
621			960											960		621	00100	960	EACH	RAISED PAVEMENT MARKER		
SPEC								4.07	4.00					8.07		SPEC	69080000	8.07	MILE	PAVEMENT MARKING MISC.: EPOXY EDGE LINE	6B-6D	
SPEC								4.43	4.33					8.76		SPEC	69080000	8.76	MILE	PAVEMENT MARKING MISC.: EPOXY LANE LINE	6B-6D	
SPEC								3029	2067					5096		SPEC	69080010	5096	LIN. FT.	PAVEMENT MARKING MISC.: EPOXY CHANNELIZING LINE	6B-6D	
SPEC								15	15					30		SPEC	69080010	30	LIN. FT.	PAVEMENT MARKING MISC.: EPOXY STOP LINE	6B-6D	
SPEC								1404	1071					2475		SPEC	69080010	2475	LIN. FT.	PAVEMENT MARKING MISC.: EPOXY TRANSVERSE LINE	6B-6D	
SPEC								1307	1159					2466		SPEC	69080010	2466	LIN. FT.	PAVEMENT MARKING MISC.: EPOXY DOTTED LINE 4"	6B-6D	
MAINTENANCE OF TRAFFIC																						
404				250										250		404	35000	250	CU.YD.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC		
SPEC.								300						300		SPEC.	61411100	300	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR		
SPEC.								320						320		SPEC.	61412500	320	SQ.FT.	REPLACEMENT SIGN		
SPEC.								100						100		SPEC.	61412600	100	EACH.	REPLACEMENT DRUM		
614								4						4		614	18601	4	SIGN MNTH	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	8A	
614								17.52						17.52		614	20000	17.52	MILE	TEMPORARY LANE LINE, CLASS I		
614								16.14						16.14		614	22000	16.14	MILE	TEMPORARY EDGE LINE, CLASS I		
614								10192						10192		614	23000	10192	LIN.FT.	TEMPORARY CHANNELIZING LINE, CLASS I		
614								4932						4932		614	24000	4932	LIN.FT.	TEMPORARY DOTTED LINE, CLASS I		
614														LUMP		614	11000	LUMP		MAINTAINING TRAFFIC		
623														LUMP		623	10000	LUMP		CONSTRUCTION LAYOUT STAKES		
624														LUMP		624	10000	LUMP		MOBILIZATION		

CALCULATED
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 GENERAL SUMMARY
 CUYAHOGA COUNTY
 CUY-90-16.22
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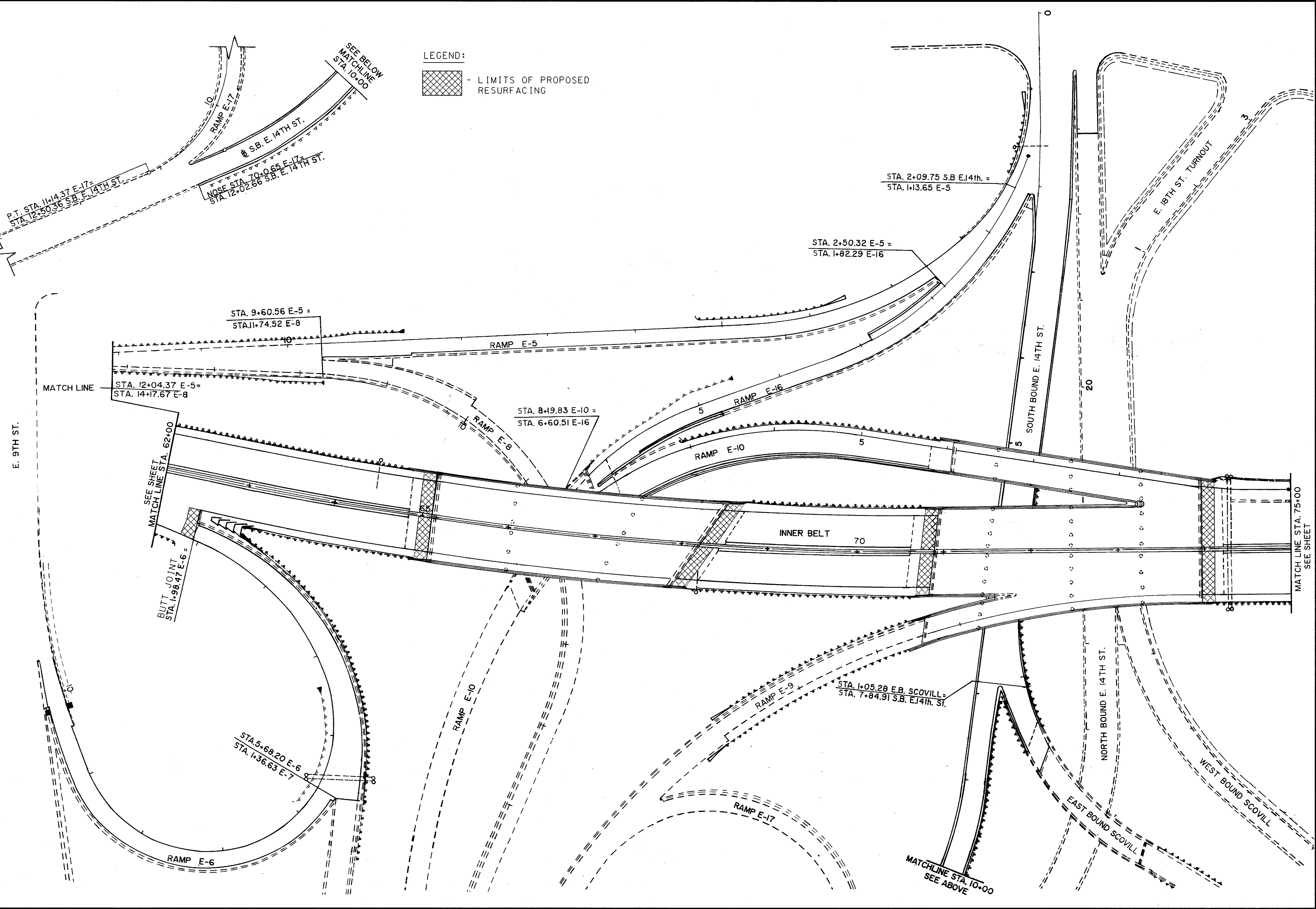


LEGEND:
[Hatched Box] - LIMITS OF PROPOSED RESURFACING

DRAWN JAG		REVIS	
CALCULATED DRL		CHECKED ENF	
PLAN SHEET IR-90 / INNERBELT FREEWAY STA. 48+00 TO STA. 62+00			
CUYAHOGA COUNTY CUY-90-16.22			
15		32	

SCALE: 1" = 100 FEET

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PLOTTED FROM: /1/pd/dj.estovk/pid16193/16193qpb.dgn
16193qpb.dgn
PLOT SUBMITTED: 18-APR-1996 10:43



PLAN SHEET
I-90 / INNERBELT FREEWAY
STA. 62+00 TO STA. 75+00

DRAWN	JAG
CHECKED	ENF
CALCULATED	DRL

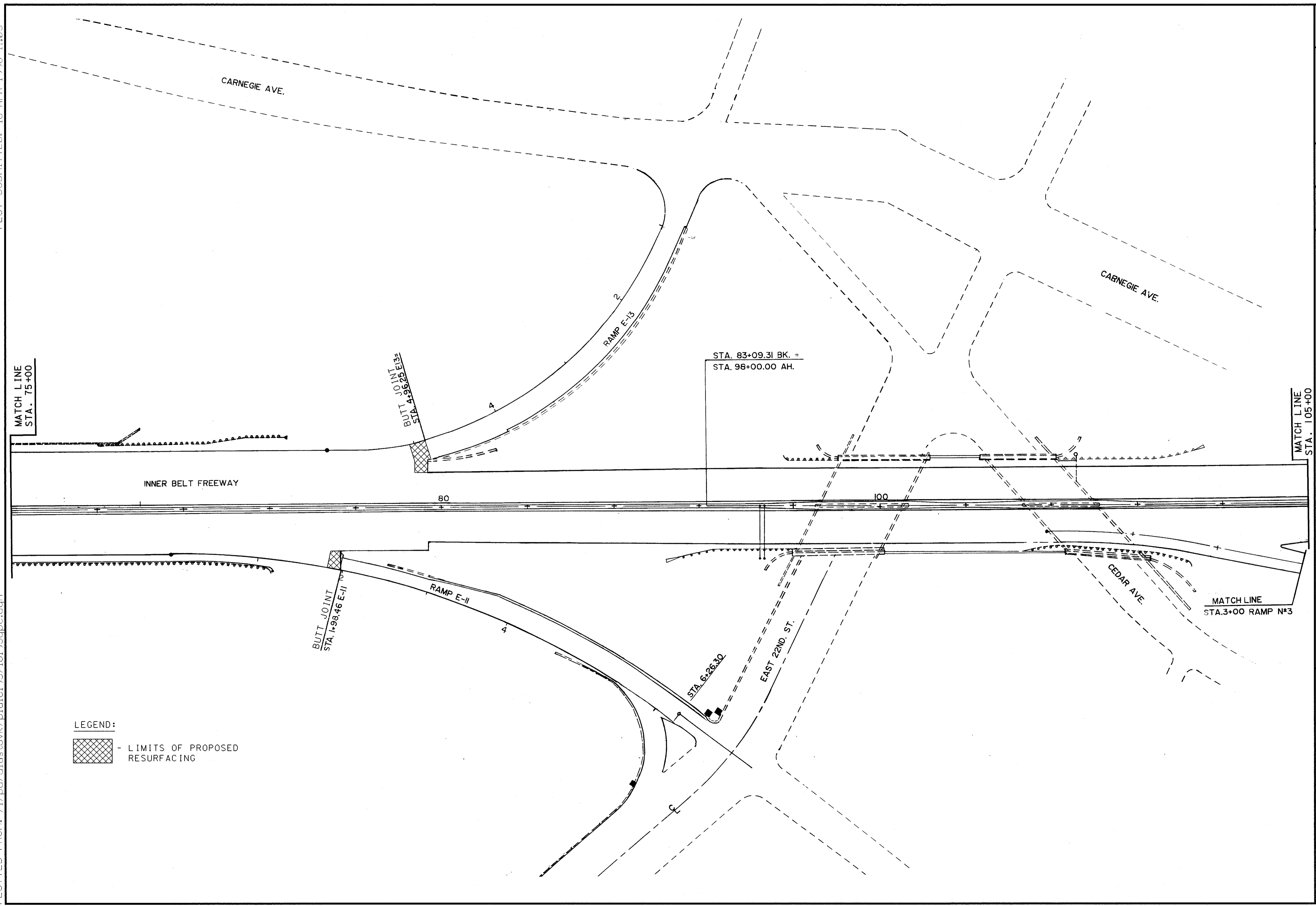
SCALE: 1" = 100 FEET

CUYAHOGA COUNTY
CUY-90-16.22

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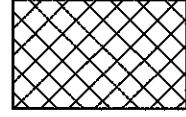
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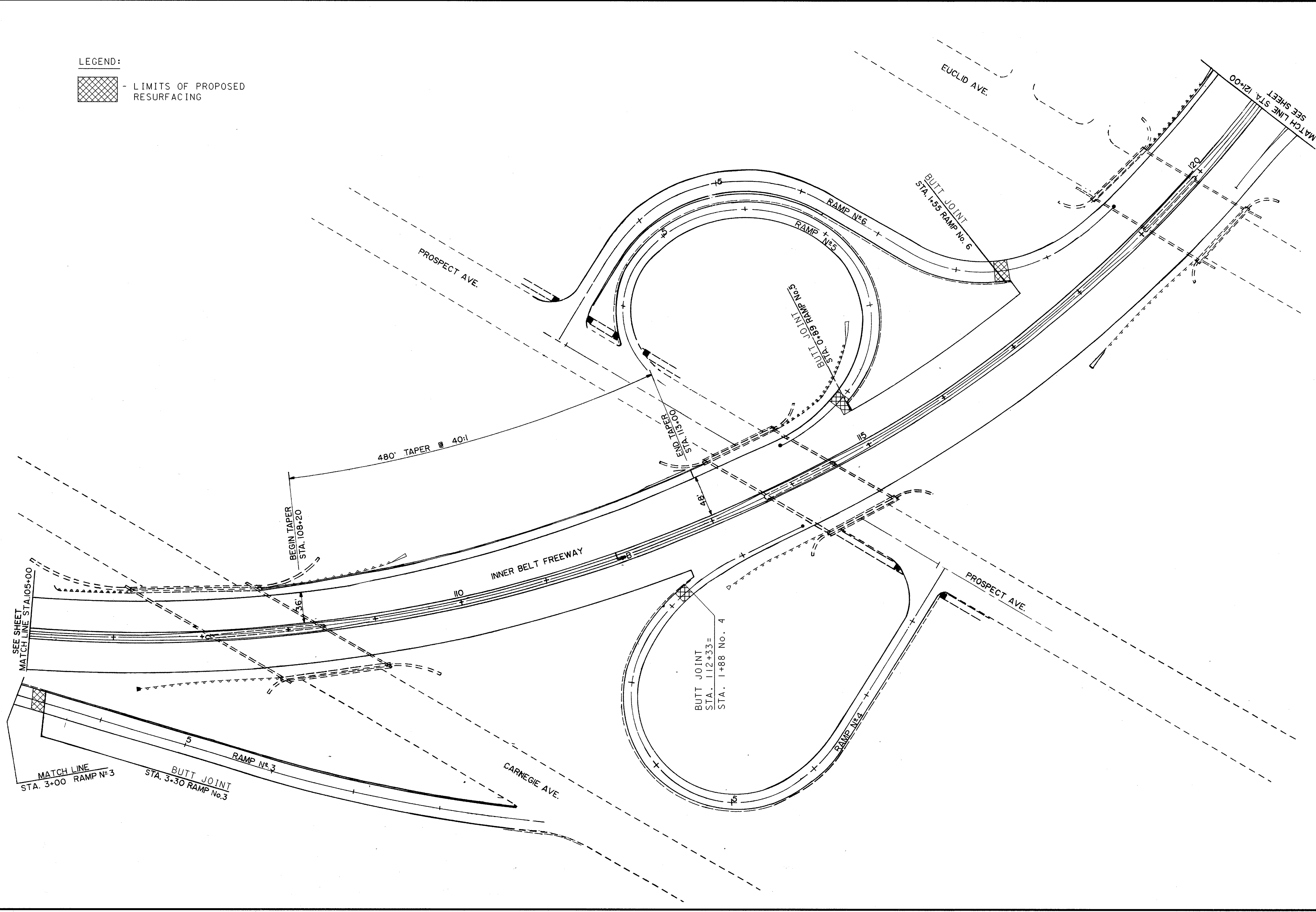
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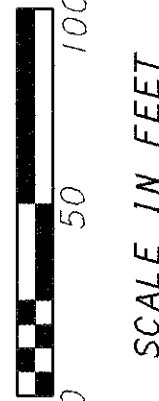


DRAWN JAG	CALCULATED DRL	REVISER REVISED	CHECKED ENF
PLAN SHEET IR-90 / INNERBELT FREEWAY STA. 75+00 TO STA. 105+00			
CUYAHOGA COUNTY CUY-90-16.22			
17 32			

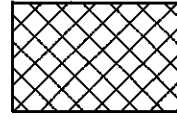
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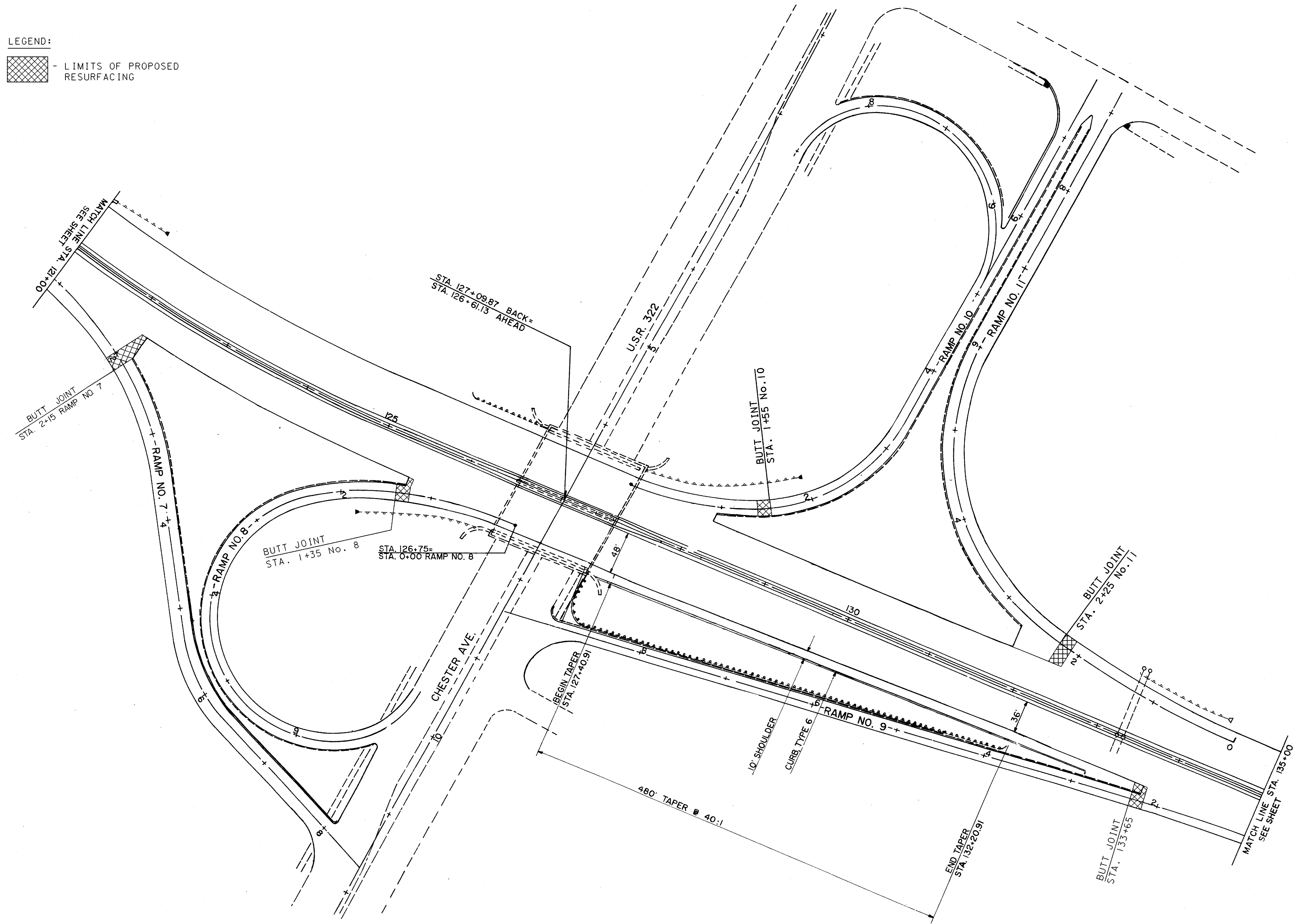
LEGEND:
 LIMITS OF PROPOSED RESURFACING



	
	
DRAWN JAG	REVISIONS (None listed)
CALCULATED DRL	CHECKED ENF
CUYAHOGA COUNTY CUY-90-16.22	
PLAN SHEET IR-90 / INNERBELT FREEWAY STA. 105+00 TO STA. 121+00	
18 32	

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LEGEND:
 - LIMITS OF PROPOSED RESURFACING



DRAWN	JAG
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CALCULATED	ENF
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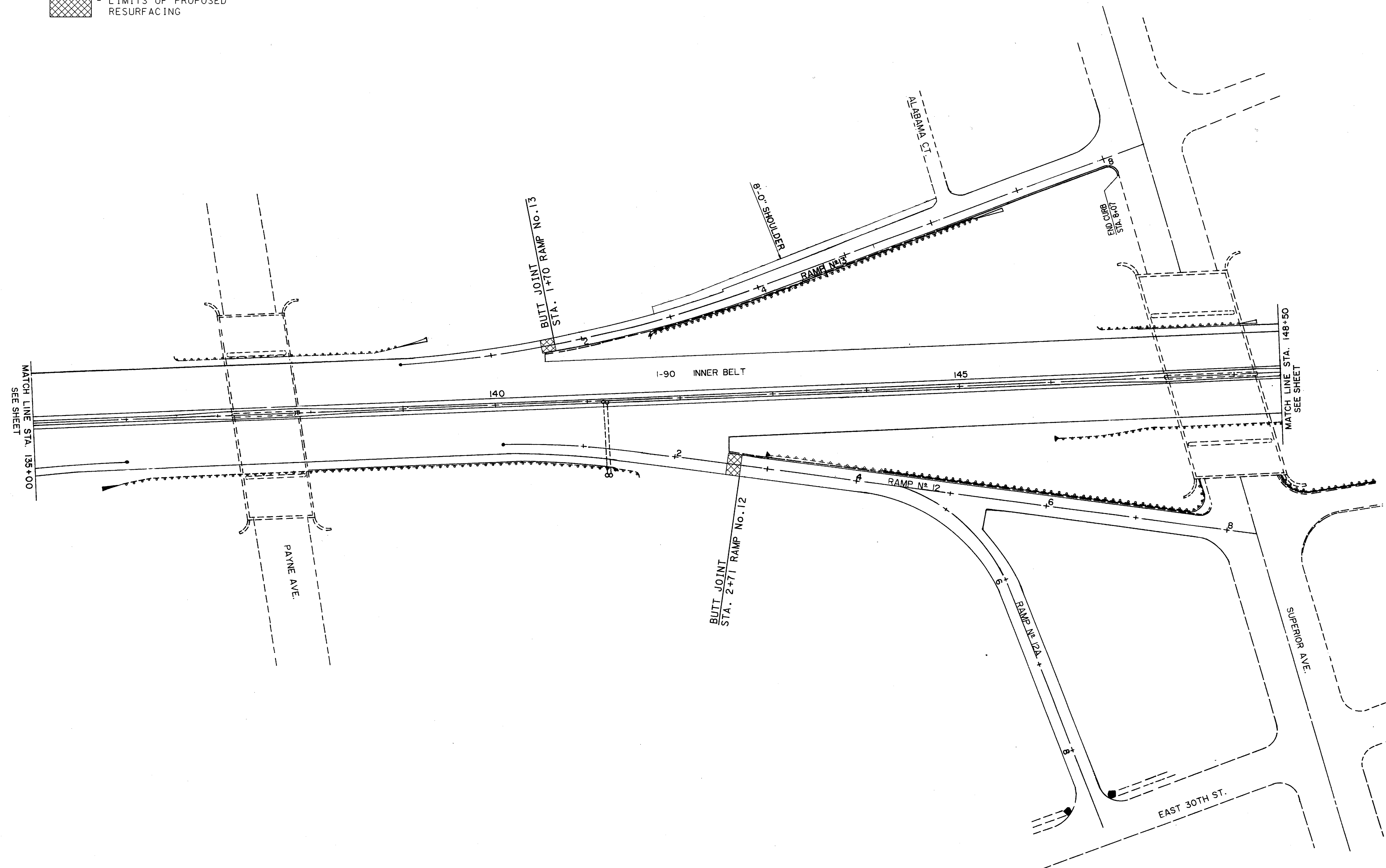
PLAN SHEET
 I-90 / INNERBELT FREEWAY
 STA. 121+00 TO STA. 135+00

CUYAHOGA COUNTY
 CUY-90-16.22

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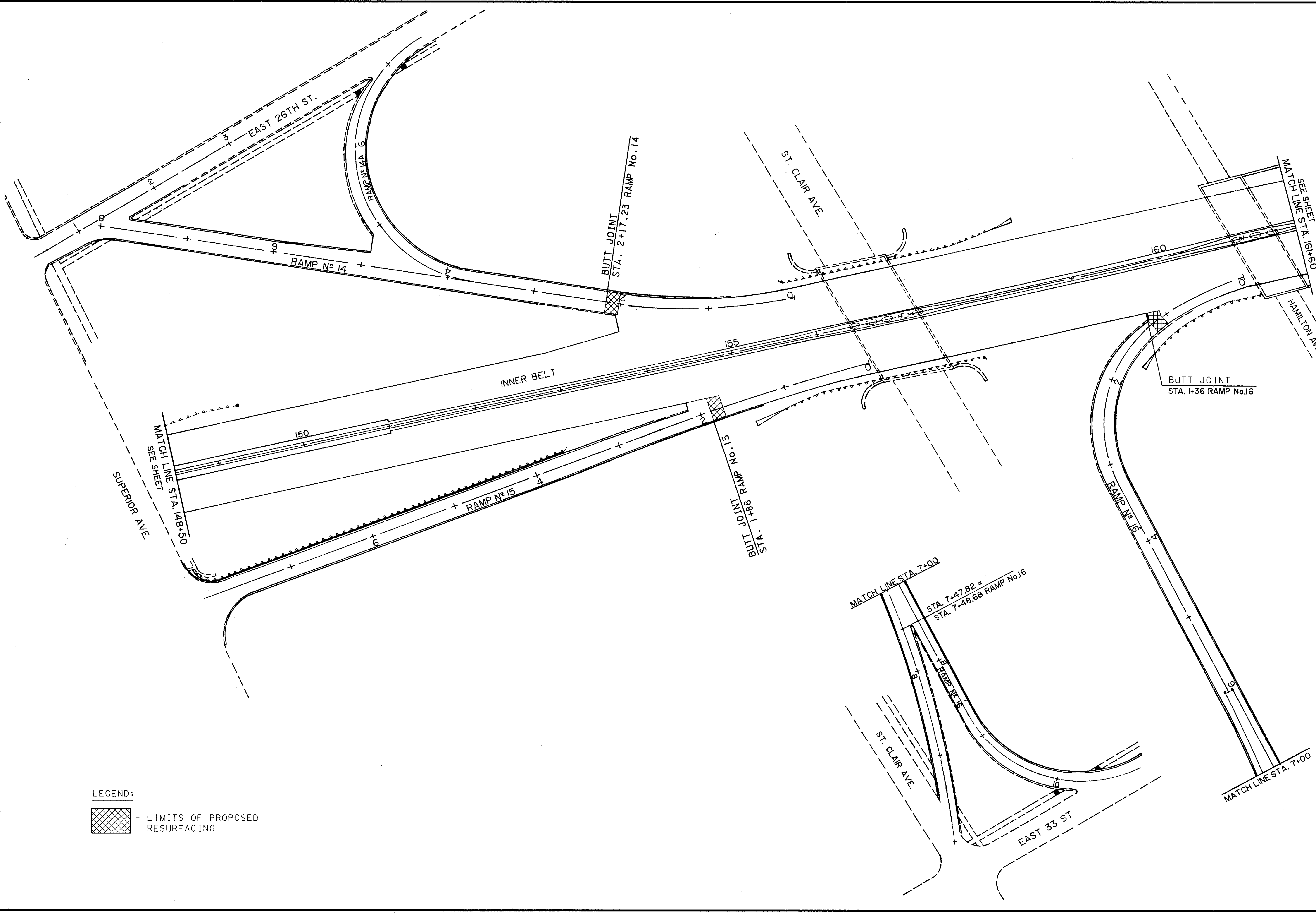
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LEGEND:
- LIMITS OF PROPOSED RESURFACING



DRAWN JAG	REVISER	CALCULATED DRL	CHECKED ENF	PLAN SHEET I-90 / INNERBELT FREEWAY STA. 135+00 TO STA. 148+50	CUYAHOGA COUNTY CUY-90-16.22	20 32

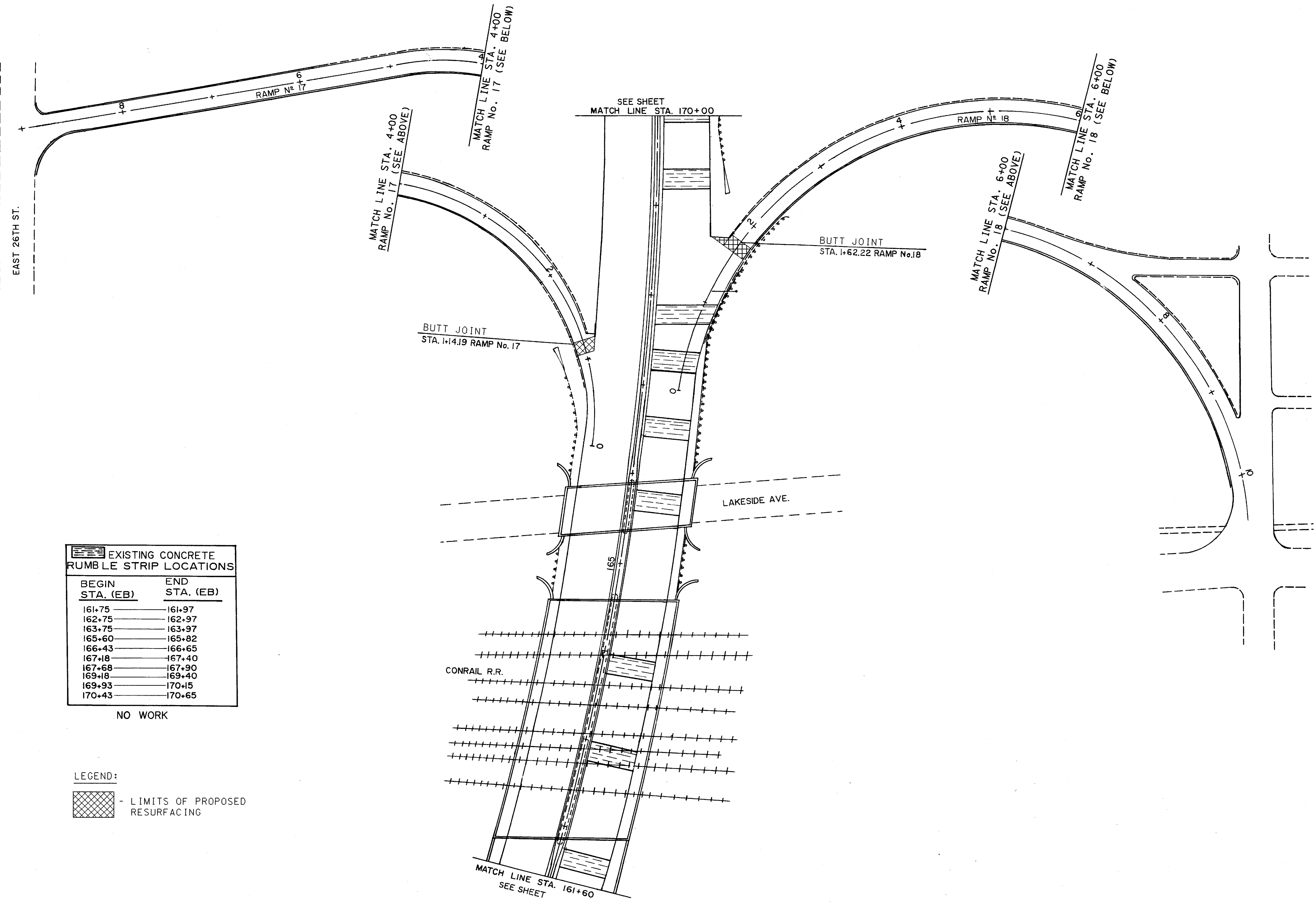
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 PLOTTED FROM: /j/pd/dl/stovk/pid/16193/16193qpg.dgn
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 PLOT SUBMITTED: 18-APR-1996 12:35



LEGEND:
 - LIMITS OF PROPOSED RESURFACING

  SCALE: 1" = 100 FEET	DRAWN: JAG CHECKED: ENF	PLAN SHEET IR-90 / INNERBELT FREEWAY STA. 148+50 TO STA. 161+60
	CALCULATED: DRL CHECKED: ENF	
CUYAHOGA COUNTY CUY-90-16.22		21 32

PLOTTED BY: kbanasza
 PLOTTED FROM: /1/pd/djlastovk/p1d16193/16193qph.dgn
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 PLOT SUBMITTED: 18-APR-1996 12:39



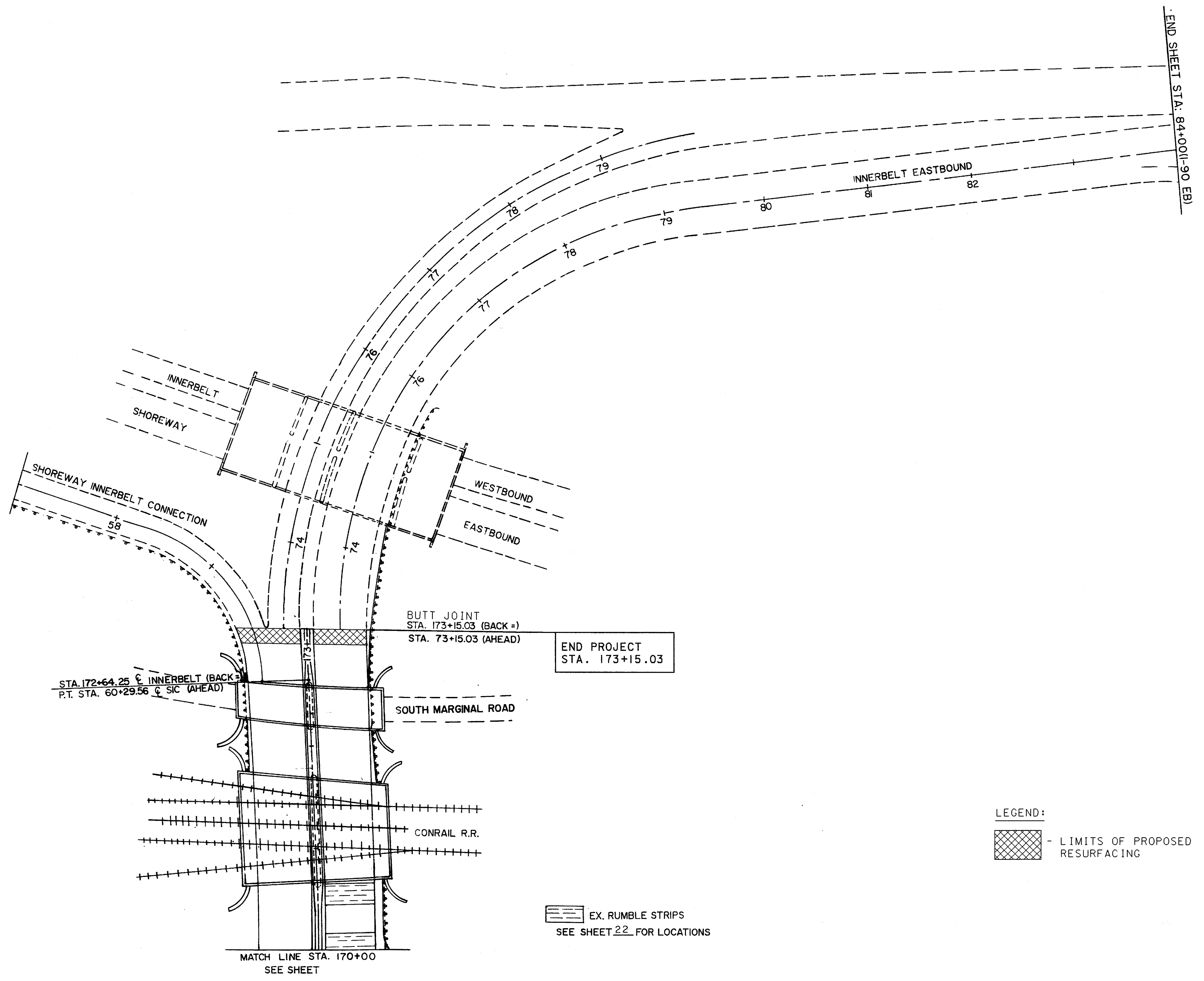
EXISTING CONCRETE RUMBLE STRIP LOCATIONS

BEGIN STA. (EB)	END STA. (EB)
161+75	161+97
162+75	162+97
163+75	163+97
165+60	165+82
166+43	166+65
167+18	167+40
167+68	167+90
169+18	169+40
169+93	170+15
170+43	170+65

NO WORK

LEGEND:
 - LIMITS OF PROPOSED RESURFACING

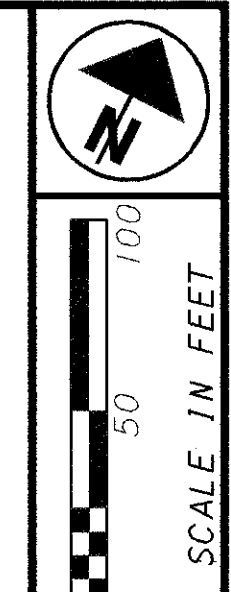
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 PLOTTED FROM: /1/pd/dl/astovk/pdf/16193/16193ap.i.dgn
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 PLOT SUBMITTED: 18-APR-1996 12:41



END PROJECT
 STA. 173+15.03

LEGEND:
 - LIMITS OF PROPOSED RESURFACING

EX. RUMBLE STRIPS
 SEE SHEET 22 FOR LOCATIONS

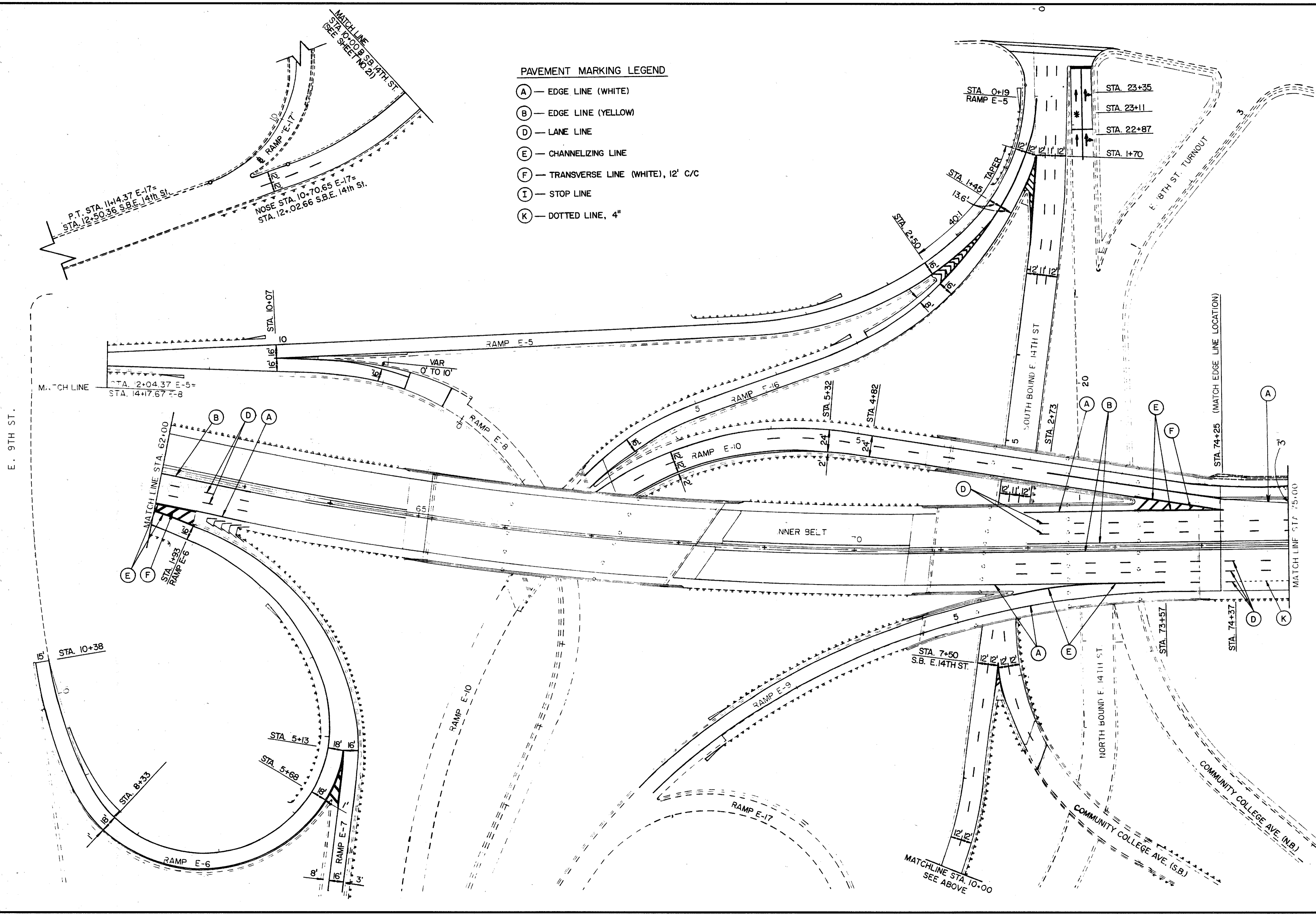


CALCULATED	DRL	CHECKED	ENF
DRAWN	JAG	REVISED	

PLAN SHEET
 I-90 / INNERBELT FREEWAY
 STA. 170+00 TO STA. 84+00

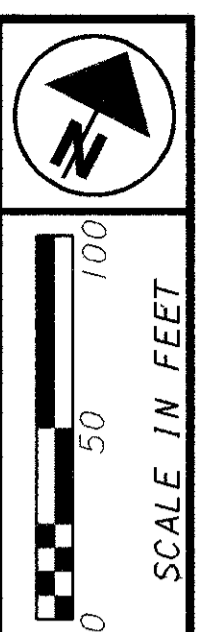
CUYAHOGA COUNTY
 CUY-90-16.22

PLOTTED BY: kbanasza
 PLOTTED FROM: /1/pd/dlastovk/pid16193/16193gp1.dgn
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 PLOT SUBMITTED: 18-APR-1996 16:54



PAVEMENT MARKING LEGEND

- (A) — EDGE LINE (WHITE)
- (B) — EDGE LINE (YELLOW)
- (D) — LANE LINE
- (E) — CHANNELIZING LINE
- (F) — TRANSVERSE LINE (WHITE), 12' C/C
- (I) — STOP LINE
- (K) — DOTTED LINE, 4"

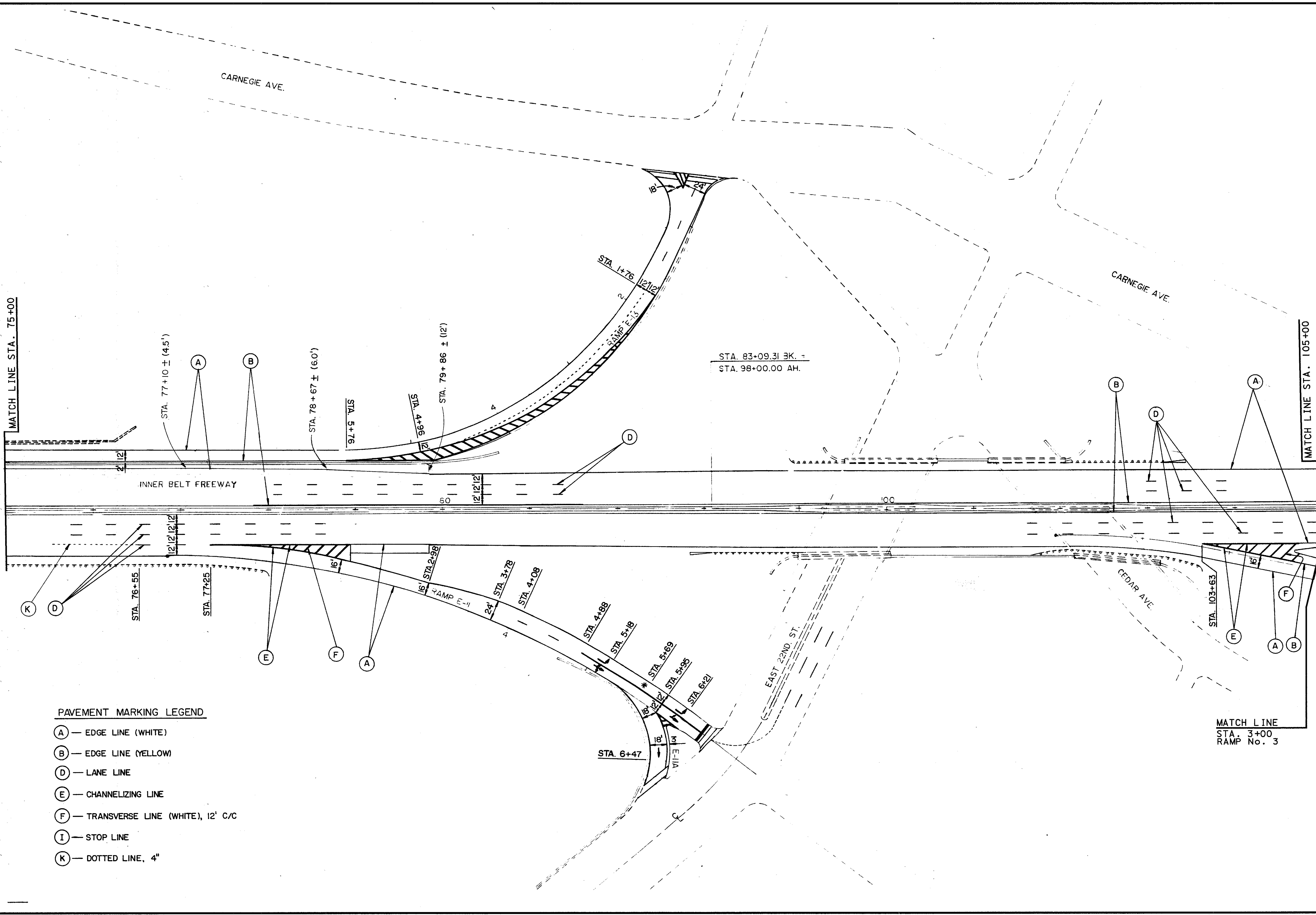
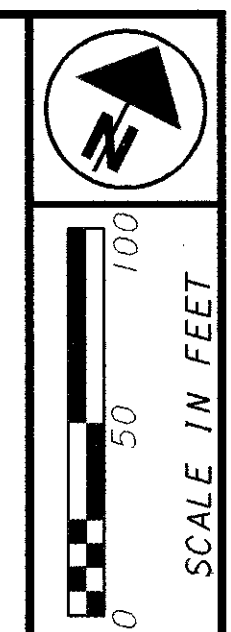


CALCULATED	DRAWN
DRL	JAG
CHECKED	REVISED
ENF	

PLAN SHEET
 I-90 / INNERBELT FREEWAY
 STA. 62+00 TO STA. 75+00

CUYAHOGA COUNTY
 CUY-90-16.22

PLOTTED BY: kbanesza
 PLOTTED FROM: /1/pd/dlastovk/pid16193/16193qpm.dgn
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 PLOT SUBMITTED: 18-APR-1996 16:52



- PAVEMENT MARKING LEGEND**
- (A) — EDGE LINE (WHITE)
 - (B) — EDGE LINE (YELLOW)
 - (D) — LANE LINE
 - (E) — CHANNELIZING LINE
 - (F) — TRANSVERSE LINE (WHITE), 12' C/C
 - (I) — STOP LINE
 - (K) — DOTTED LINE, 4"

CALCULATED	DRL	CHECKED	ENF
DRAWN	JAG	REVISED	

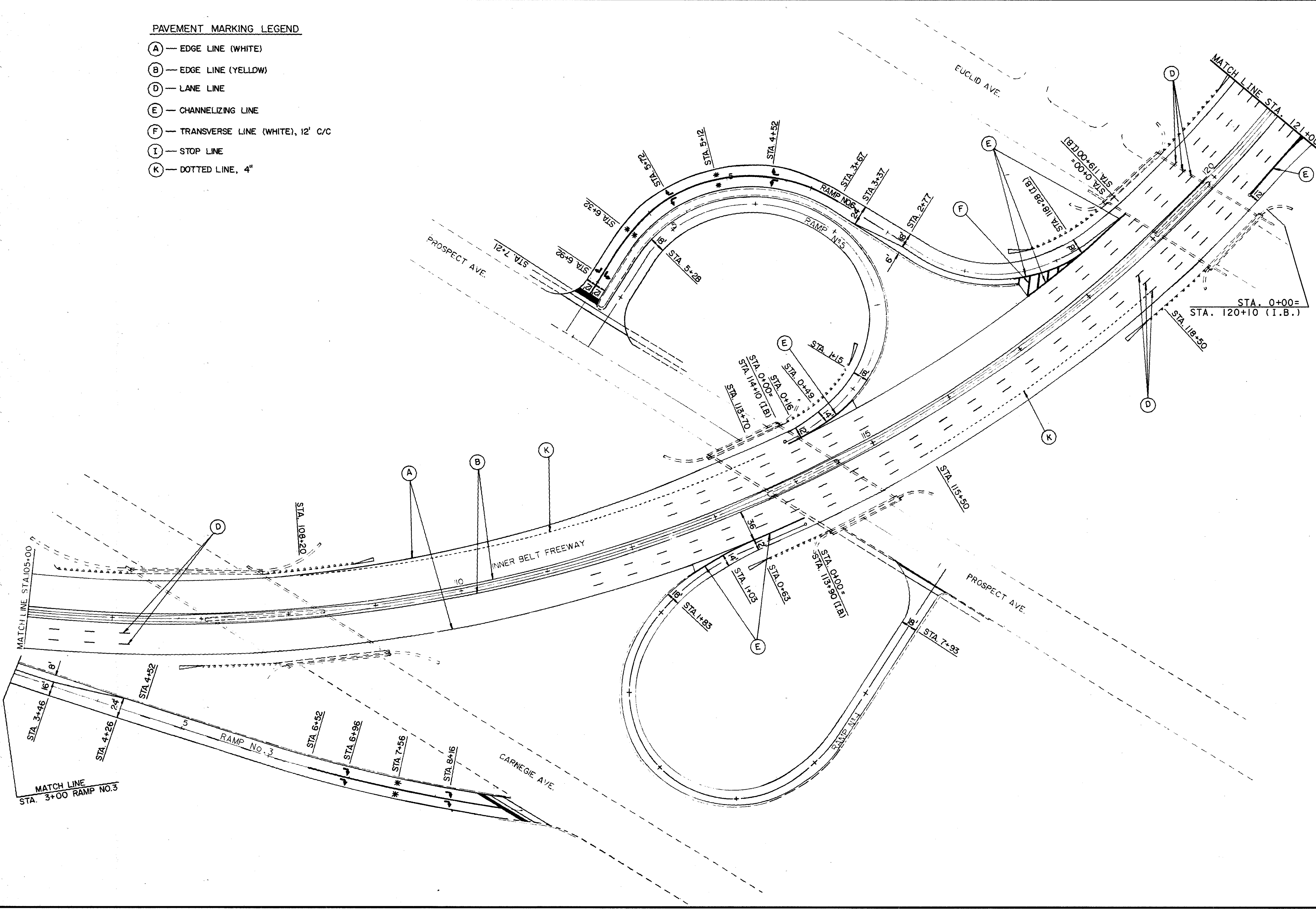
PLAN SHEET
 I-90 / INNERBELT FREEWAY
 STA. 75+00 TO STA. 105+00

CUYAHOGA COUNTY
 CUY-90-16.22

PLOTTED BY: kbanasza
 PLOTTED FROM: /1/pd/dlastovk/pid16193/16193gpn.dgn
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 PLOT SUBMITTED: 18-APR-1996 16:51

PAVEMENT MARKING LEGEND

- (A) — EDGE LINE (WHITE)
- (B) — EDGE LINE (YELLOW)
- (D) — LANE LINE
- (E) — CHANNELIZING LINE
- (F) — TRANSVERSE LINE (WHITE), 12' C/C
- (I) — STOP LINE
- (K) — DOTTED LINE, 4"

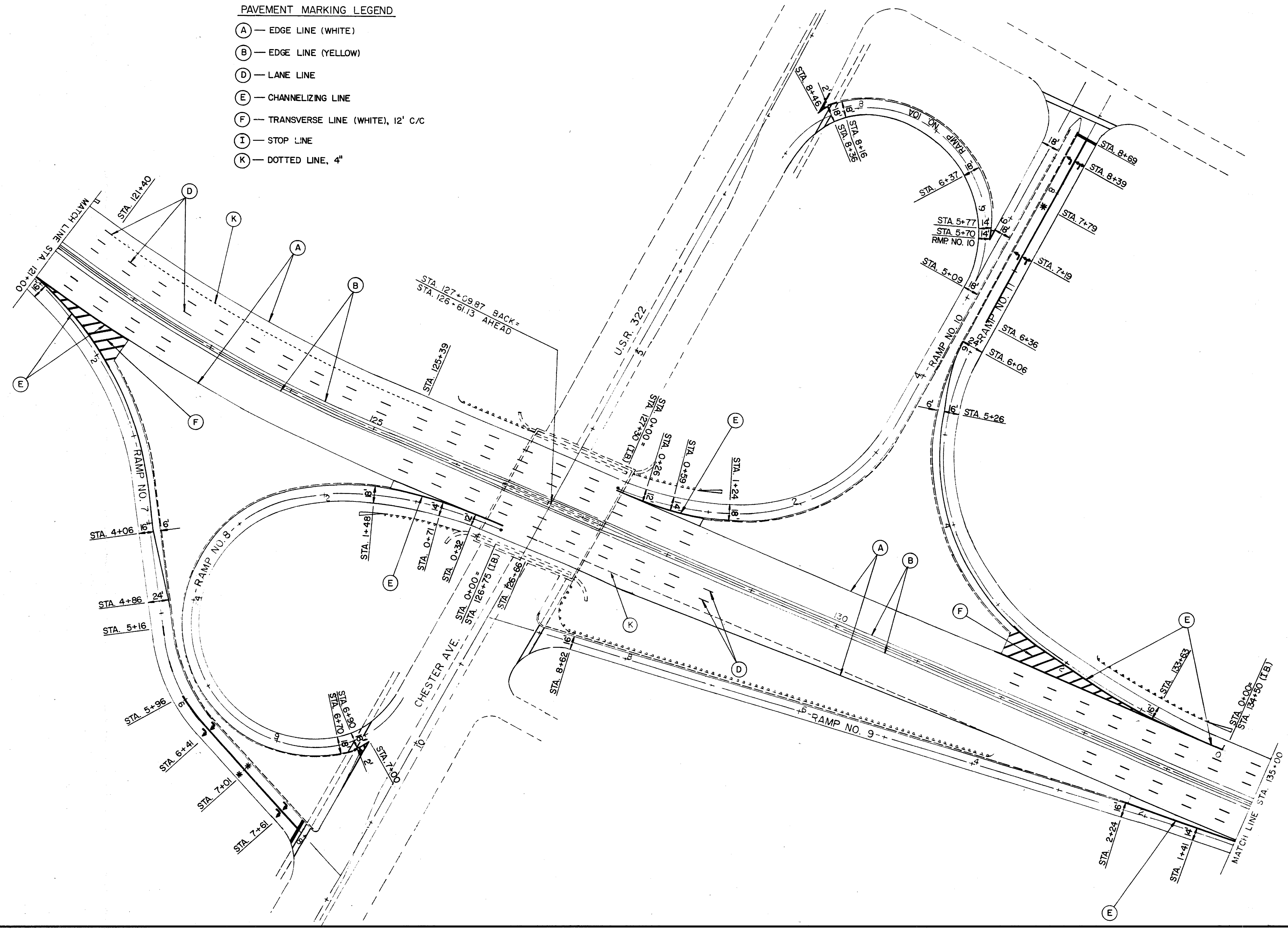


 SCALE IN FEET 	DRAWN JAG REVISED	CALCULATED DRL CHECKED ENF	PLAN SHEET I-90 / INNERBELT FREEWAY STA. 105+00 TO STA. 121+00
			CUYAHOGA COUNTY CUY-90-16.22
			27 38

PLOTTED BY: kbanasza
 PLOTTED FROM: /1/pd/dlastovk/pid16193/16193gpp.dgn
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 PLOT SUBMITTED: 18-APR-1996 16:49

PAVEMENT MARKING LEGEND

- (A) — EDGE LINE (WHITE)
- (B) — EDGE LINE (YELLOW)
- (D) — LANE LINE
- (E) — CHANNELIZING LINE
- (F) — TRANSVERSE LINE (WHITE), 12' C/C
- (I) — STOP LINE
- (K) — DOTTED LINE, 4"

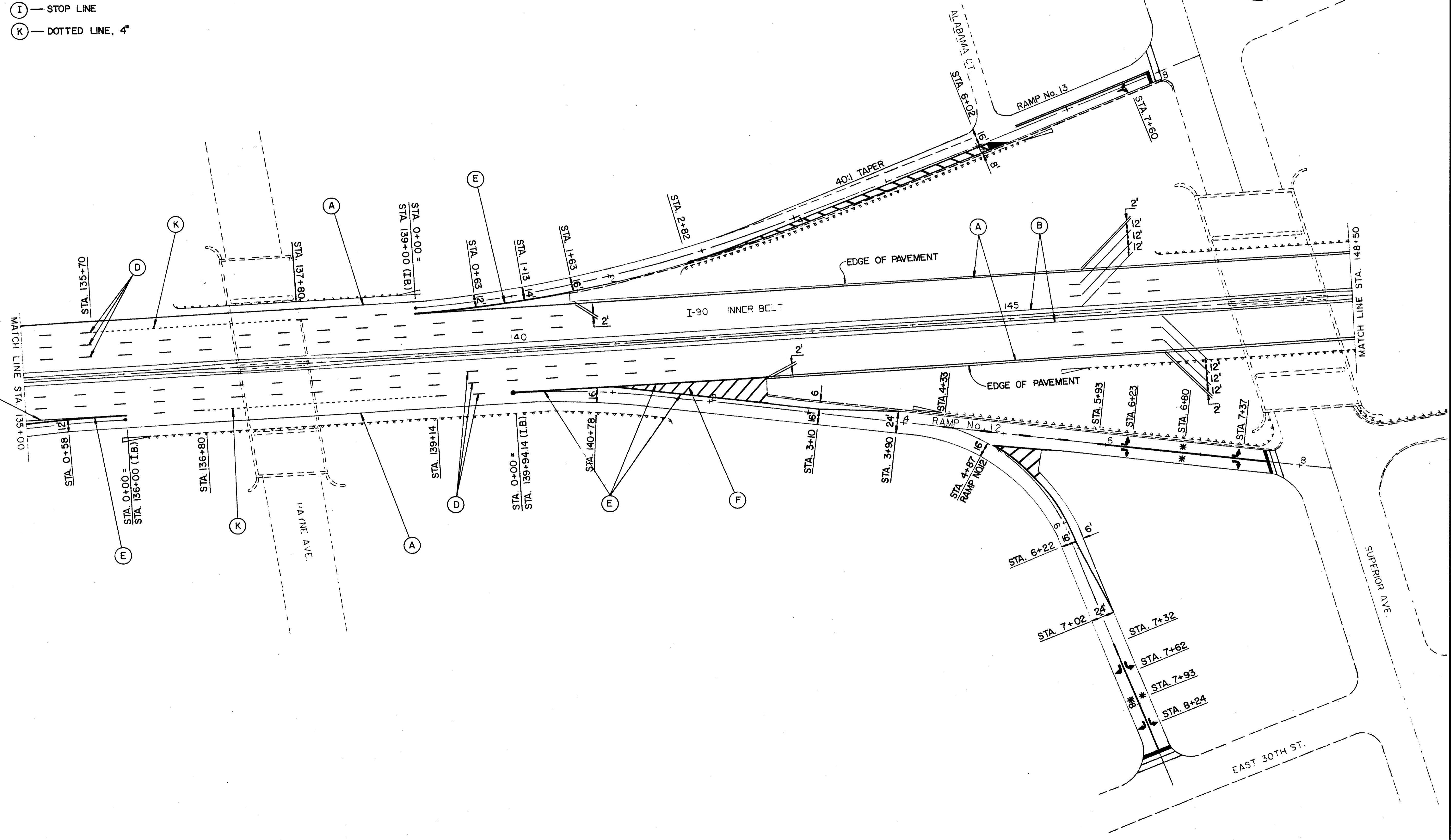


	 SCALE IN FEET	DRAWN JAG	REVISIONS REVISED
CALCULATED DRL	CHECKED ENF	PLAN SHEET I-90 / INNERBELT FREEWAY STA. 121+00 TO STA. 135+00	
CUYAHOGA COUNTY CUY-90-16.22		28 32	

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 PLOTTED FROM: /1/pd/blastovk/pid/16193/16193gpa.dgn
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 PLOT SUBMITTED: 18-APR-1996 16:33

PAVEMENT MARKING LEGEND

- (A) — EDGE LINE (WHITE)
- (B) — EDGE LINE (YELLOW)
- (D) — LANE LINE
- (E) — CHANNELIZING LINE
- (F) — TRANSVERSE LINE (WHITE), 12' C/C
- (I) — STOP LINE
- (K) — DOTTED LINE, 4"



CUYAHOGA COUNTY
 CUY-90-16.22

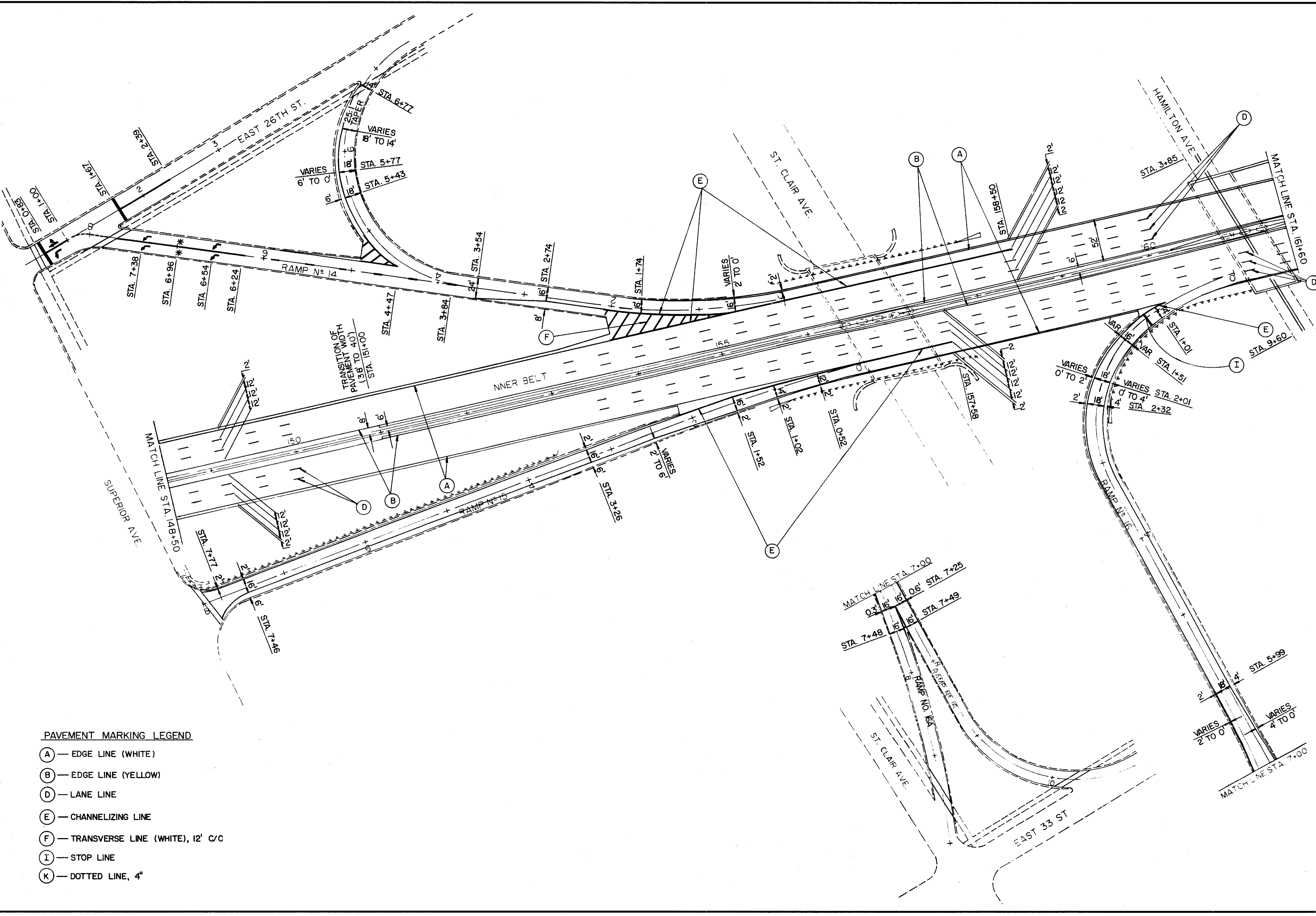
PLAN SHEET
 IR-90 / INNERBELT FREEWAY
 STA. 135+00 TO STA. 148+50

SCALE IN FEET
 0 50 100

DRAWN JAG	CALCULATED DRL	CHECKED ENF	REVISED
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PLOTTED BY: kbanasza
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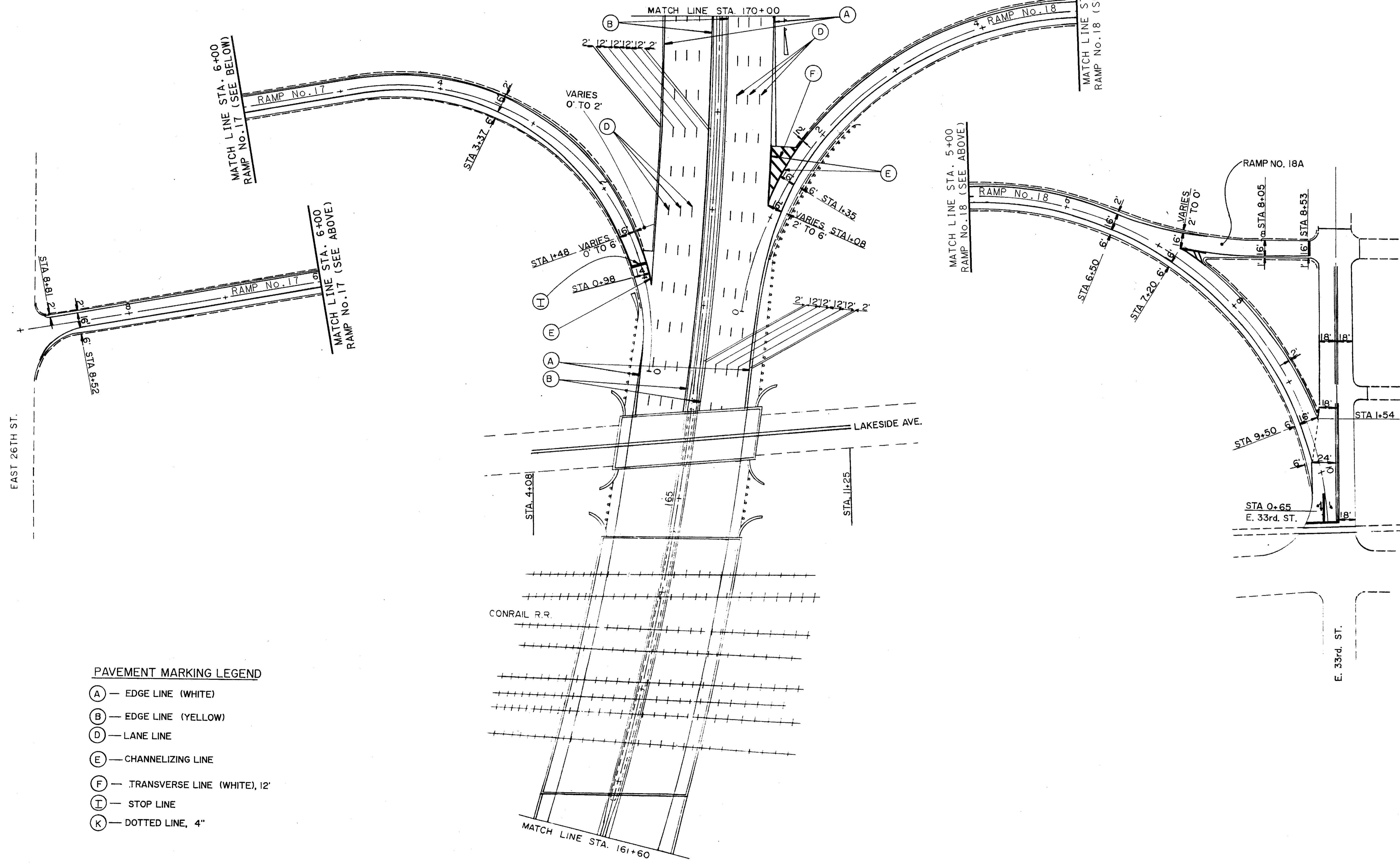
- PAVEMENT MARKING LEGEND**
- (A) — EDGE LINE (WHITE)
 - (B) — EDGE LINE (YELLOW)
 - (D) — LANE LINE
 - (E) — CHANNELIZING LINE
 - (F) — TRANSVERSE LINE (WHITE), 12' C/C
 - (I) — STOP LINE
 - (K) — DOTTED LINE, 4"

 SCALE: 1/4" = 100'								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">DRAWN</td> <td style="width: 50%;">CALCULATED</td> </tr> <tr> <td style="text-align: center;">JAG</td> <td style="text-align: center;">DRL</td> </tr> <tr> <td style="text-align: center;">REVISED</td> <td style="text-align: center;">CHECKED</td> </tr> <tr> <td style="text-align: center;">ENF</td> <td style="text-align: center;">ENF</td> </tr> </table>	DRAWN	CALCULATED	JAG	DRL	REVISED	CHECKED	ENF	ENF
DRAWN	CALCULATED							
JAG	DRL							
REVISED	CHECKED							
ENF	ENF							
PLAN SHEET I-90 / INNERBELT FREEWAY STA. 148+50 TO STA. 161+60								
CUYAHOGA COUNTY CUY-90-16.22								
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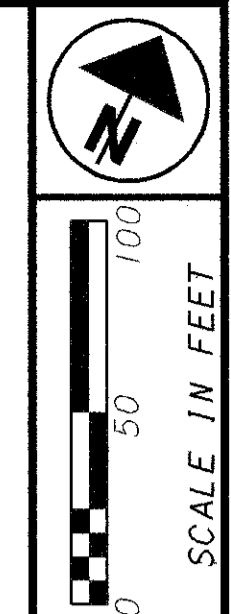
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16193GFS.DGN

PLOT SUBMITTED: 18-APR-1996 15:55



- PAVEMENT MARKING LEGEND**
- (A) — EDGE LINE (WHITE)
 - (B) — EDGE LINE (YELLOW)
 - (D) — LANE LINE
 - (E) — CHANNELIZING LINE
 - (F) — TRANSVERSE LINE (WHITE), 12"
 - (H) — STOP LINE
 - (K) — DOTTED LINE, 4"

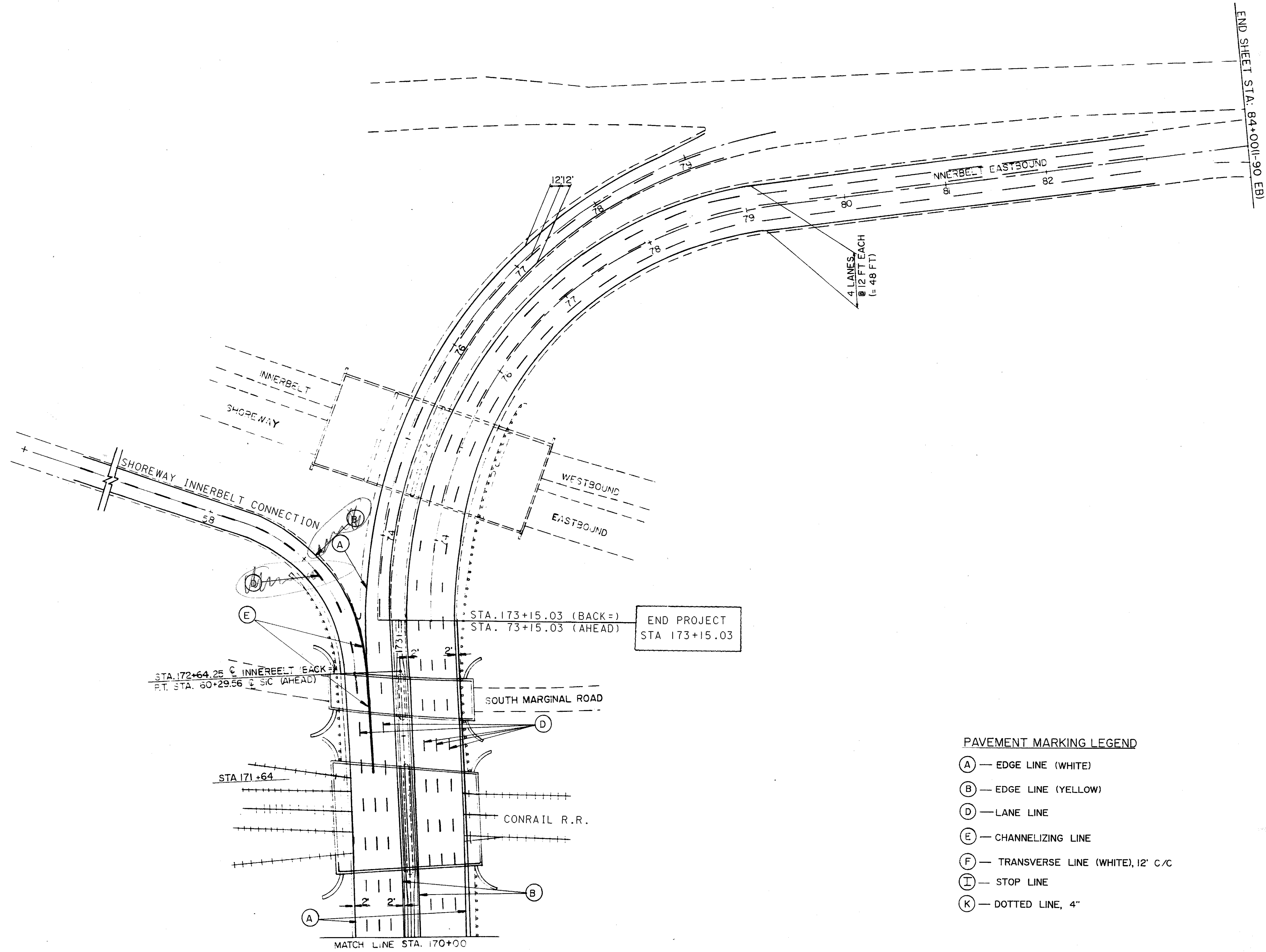


DRAWN	JAG
CHECKED	ENF
CALCULATED	DRL

PLAN SHEET
 I-90 / INNERBELT FREEWAY
 STA. 161+60 TO STA. 170+00

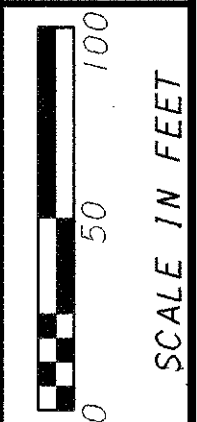
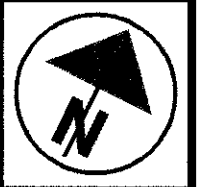
CUYAHOGA COUNTY
 CUY-90-16.22

PLOTTED BY: kbanasza
 PLOTTED FROM: /1/pd/dlastovk/pid16193/16193gpt.dgn
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 18-APR-1996 15:52



PAVEMENT MARKING LEGEND

- (A) — EDGE LINE (WHITE)
- (B) — EDGE LINE (YELLOW)
- (D) — LANE LINE
- (E) — CHANNELIZING LINE
- (F) — TRANSVERSE LINE (WHITE), 12' C/C
- (I) — STOP LINE
- (K) — DOTTED LINE, 4"



CALCULATED	DRAWN
DRL	JAG
CHECKED	REVISED
ENF	

PLAN SHEET
 IR-90 / INNERBELT FREEWAY
 STA. 170+00 TO STA. 84+00

CUYAHOGA COUNTY
 CUY-90-16.22