SEE SHEET 2
FOR DETAIL

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

SUM-76/77/277-VAR

CITY OF AKRON

SUMMIT COUNTY

PROJECT DESCRIPTION

IMPROVEMENT OF 2.27 MILES OF I-76 BY PLANING THE SURFACE AND PLACING AN ASPHALT LAYER. REPLACEMENT OF EXISTING SHOULDER ALONG I-76, I-77, AND I-277. WIDEN VARIOUS RAMPS ALONG I-76 AND I-77. AS WELL AS MAINTENANCE TO VARIOUS STRUCTURES ALONG I-76.

I-76 MAINLINE:
PROJECT EDA: 1.69 ACRES
ESTIMATED CONTRACTOR EDA: 1.00 ACRES
NOTICE OF INTENT EDA: N/A (MAINTENANCE PROJECT)

I-76 / I-77 INTERCHANGE:
PROJECT EDA: 2.95 ACRES
ESTIMATED CONTRACTOR EDA: N/A (MAINTENANCE PROJECT)
NOTICE OF INTENT EDA: N/A (MAINTENANCE PROJECT)

I-76 / I-277 INTERCHANGE:
PROJECT EDA: 0.90 ACRES
ESTIMATED CONTRACTOR EDA: N/A (MAINTENANCE PROJECT)
NOTICE OF INTENT EDA: N/A (MAINTENANCE PROJECT)

I-277 / I-77 INTERCHANGE:
PROJECT EDA: 1.00 ACRES
ESTIMATED CONTRACTOR EDA: N/A (MAINTENANCE PROJECT)
NOTICE OF INTENT EDA: N/A (MAINTENANCE PROJECT)

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LIMITED ACCESS

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

2013 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT AS NOTED ON SHEETS 18-38, AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON THE PLANS.

APPROVED _____
DATE 12.4.14 DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

DESIGN DESIGNATION

ROUTE		DESIGN FUNCTIONAL CLASSIFICATION	NHS PROJECT
SUM-76- 6.31	SLM 6.31 TO SLM 8.58	URBAN INTERSTATE	YES
SUM-77-7.41	SLM 7.41 TO SLM 9.34	URBAN INTERSTATE	YES
SUM-77-15.87	SLM 15.87 TO SLM 16.90	URBAN INTERSTATE	YES
SUM-277-0.10	SLM 0.10 TO SLM 0.92	URBAN INTERSTATE	YES

DESIGN EXCEPTIONS

NONE

UNDERGROUND UTILITIES
CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG
CALL
1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY
OIL & GAS PRODUCERS UNDERGROUND
PROTECTION SERVICE CALL: 1-800-925-0988

PLAN PREPARED BY:
ODOT-- DISTRICT 4
2088 S. ARLINGTON RD
AKRON, OH 44306

ENGINEERS SEAL:

STATE OF OHIO
LAUREN M. PHILLIS
E-75639
REGISTERED PROFESSIONAL ENGINEER

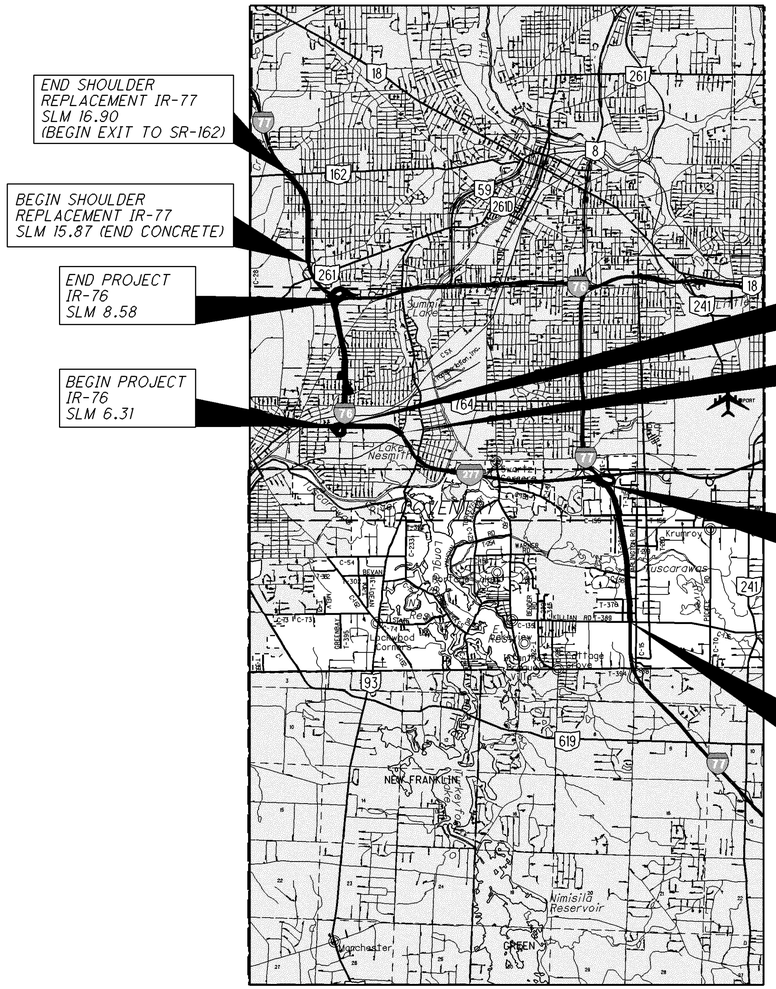
SIGNED Lauren M Phillis
DATE: 12.4.14

STANDARD CONSTRUCTION DRAWINGS

								SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
BP-3.1	7/18/14	RM-4.1	7/19/13	MT-98.29	7/19/13			800-2013	1/21/15	
				MT-99.20	7/19/13			821	4/20/12	
DM-1.1	1/18/13	HL-10.11	1/17/14	MT-101.60	7/19/13			832	1/17/14	
DM-4.3	7/19/13	HL-10.12	1/17/14	MT-101.90	7/18/14			843	4/18/03	
DM-4.4	7/20/12	HL-20.13	7/18/14	MT-105.10	7/19/13			847	4/18/14	
		HL-30.41	7/18/14					848	4/18/14	
MGS-1.1	7/19/13	HL-60.11	1/17/14	TC-41.10	7/19/13			861	7/19/13	
MGS-2.1	7/19/13	HL-60.12	1/17/14	TC-41.20	10/18/13					
MGS-3.1	7/18/14			TC-42.20	10/18/13					
MGS-4.2	7/19/13	MT-95.30	7/18/14	TC-52.10	10/18/13					
MGS-4.3	1/18/13	MT-95.50	7/19/13	TC-52.20	7/18/14					
MGS-5.2	7/19/13	MT-98.10	7/18/14	TC-65.10	1/17/14					
MGS-5.3	7/19/13	MT-98.11	7/18/14	TC-65.11	7/18/14					
MGS-6.2	1/18/13	MT-98.20	7/18/14	TC-71.10	1/17/14					
		MT-98.22	7/18/14	TC-72.20	7/18/14					
RM-1.1	7/18/14	MT-98.28	7/18/14							

FEDERAL PROJECT NO. E130(387)
PID NO. 84655
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
SUM-76/77/277-VAR
1/113

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LOCATION MAP

LATITUDE: N41°2'6" LONGITUDE: W81°34'6"

SCALE IN MILES

0 1 2 3 4

N

PORTION TO BE IMPROVED _ _ _ _ _ _ _ _ _ _ _ _ _ _

INTERSTATE HIGHWAY. _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

FEDERAL ROUTES _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

STATE ROUTES _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

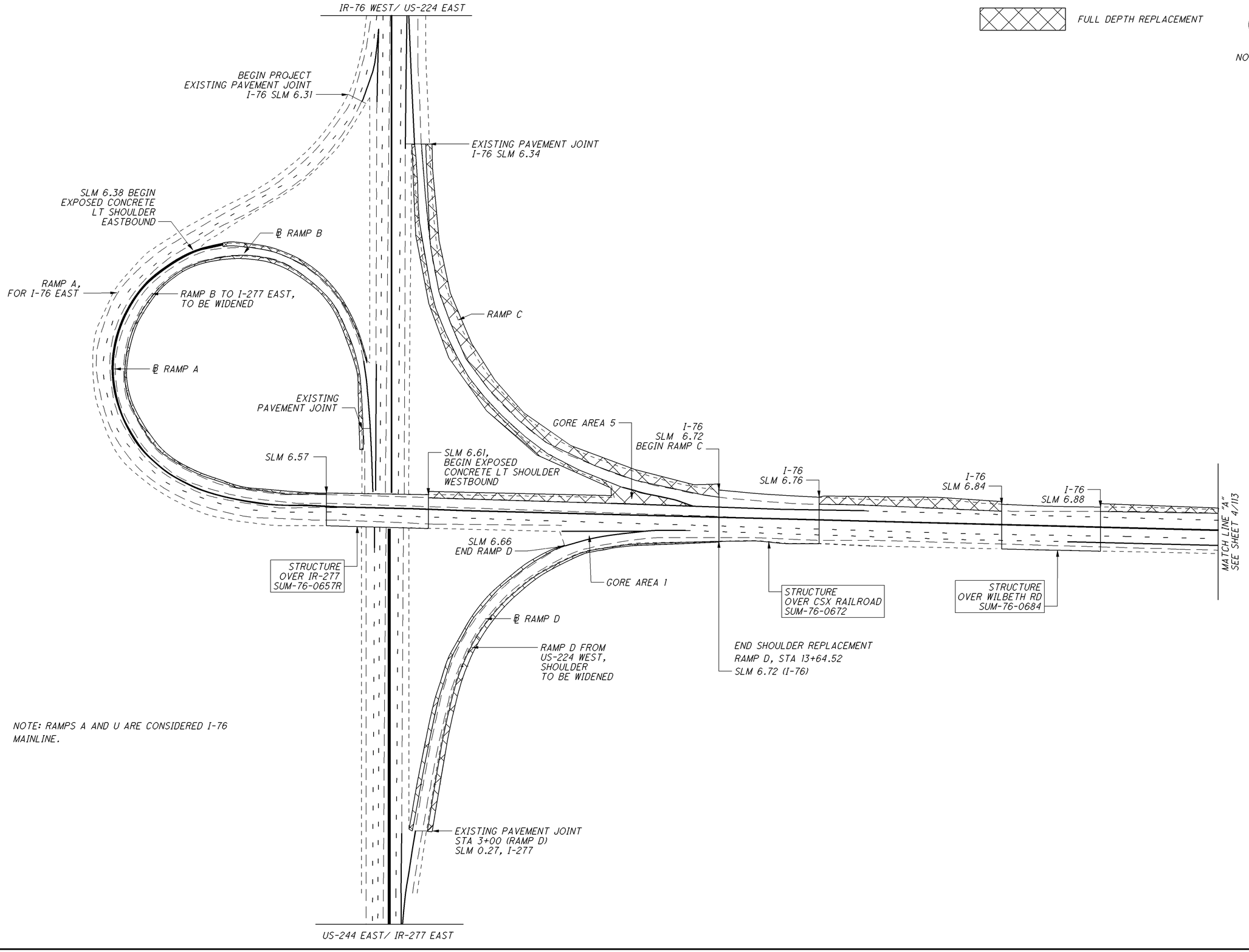
COUNTY & TOWNSHIP ROADS. _ _ _ _ _ _ _ _ _ _ _ _

OTHER ROADS. _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

LOCATION MAP

SUM-76/77/
277-VAR

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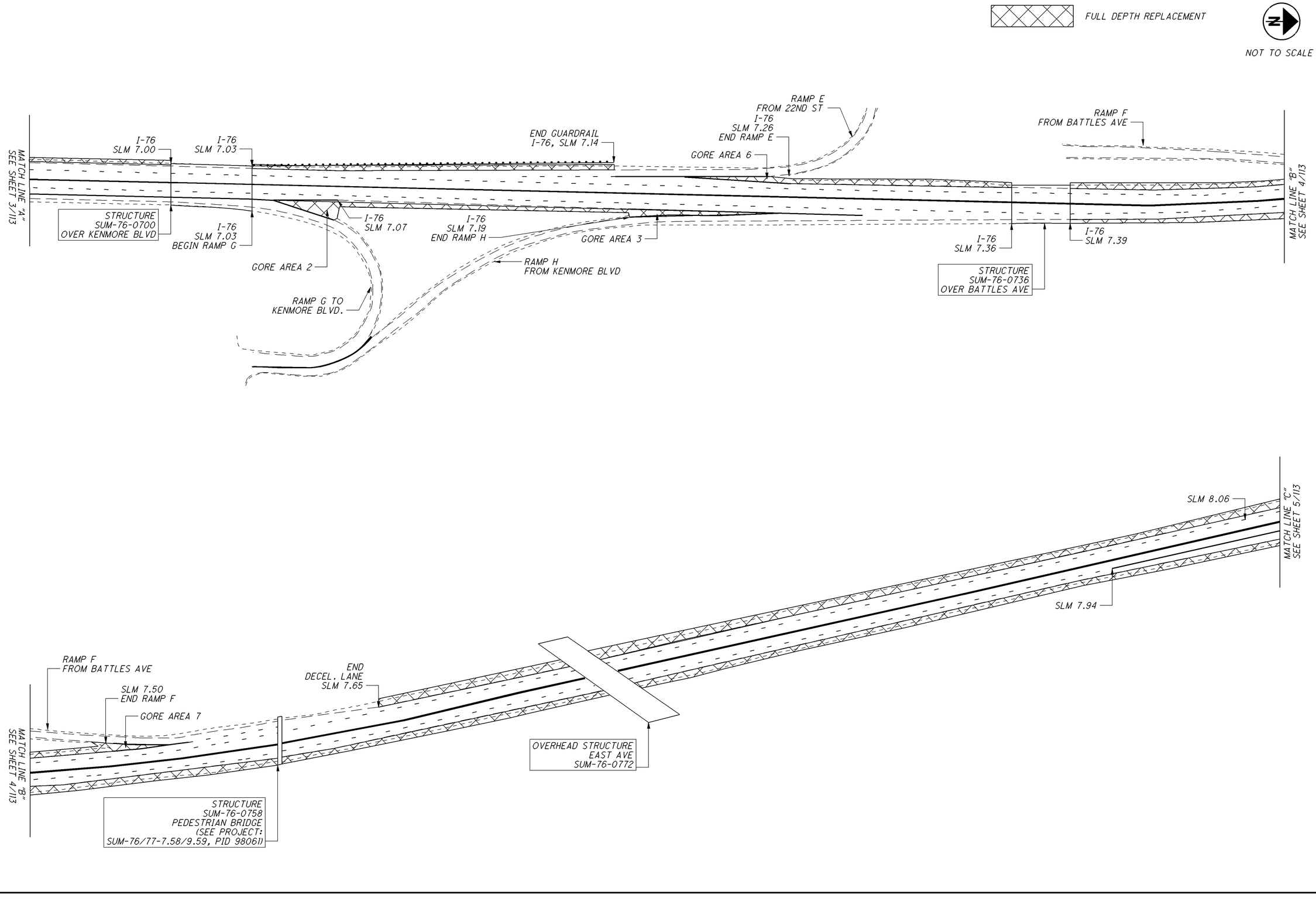
NOTE: RAMPS A AND U ARE CONSIDERED I-76 MAINLINE.

CALCULATED CNC
CHECKED LMP

SCHEMATIC PLAN I-76

SUM-76/77
277-VAR

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CALCULATED CNC
CHECKED LMP

SCHEMATIC PLAN I-76

SUM-76/77
277-VAR

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FULL DEPTH REPLACEMENT

NOT TO SCALE

EXISTING PAVEMENT JOINT
I-77 SLM 15.47
END SHOULDER REPLACEMENT
STA 4+68.14 RAMP T

IR-77

RAMP T
FROM I-77 NORTH,
TO BE WIDENED

I-76 SLM 8.27,
STA 12+00 RAMP T
END RAMP T
END RAMP V

GORE AREA 8

STRUCTURE
SUM-76-0824L
OVER MORSE ST

I-76 SLM 8.24

STRUCTURE
SUM-76-0832L
OVER IR-77

I-76 SLM 8.36,
STA 97+42 RAMP W

I-76 SLM 8.27,
STA 89+88 RAMP W

I-76 SLM 8.32,
STA 95+32 RAMP W

MATCH LINE "C"
SEE SHEET 4/113

GORE AREA 4

I-76 SLM 8.19, BEGIN
RAMPS U AND W

END EXPOSED
CONCRETE LT SHOULDER
EASTBOUND
I-76 SLM 8.04

STRUCTURE
SUM-76-0825UR
RAMP OVER MORSE ST

STA 10+00, RAMP W
SLM 15.34

RAMP W
TO IR-77 NORTH,
TO BE WIDENED

RAMP V
FROM IR-76 WEST / IR-77 NORTH

RAMP U
TO IR-76 EAST/IR-77 SOUTH

EXISTING PAVEMENT JOINT
STA 6+80 RAMP W,
SLM 15.25 I-77

EXISTING PAVEMENT JOINT
I-76 SLM 8.43

END FULL DEPTH REPAIRS
RAMP V, BEGIN EXPOSED
CONCRETE LT SHOULDER

STA 1+50 RAMP W

MATCH LINE "D"
SEE SHEET 5/113

MATCH LINE "D"
SEE SHEET 5/113

EXISTING PAVEMENT JOINT
I-76 SLM 8.58,
BEGIN FULL DEPTH REPAIR
RAMP V

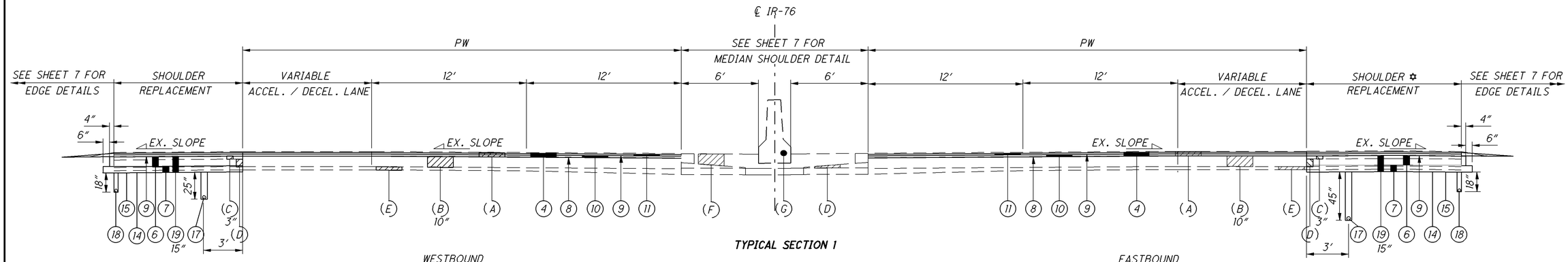
CALCULATED CNC
CHECKED LMP

SCHEMATIC PLAN I-76

SUM-76/77
277-VAR

5
113

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TYPICAL SECTION 1

WESTBOUND

SLM FROM	SLM TO	PW (FEET)	SHOULDER (FEET)
6.61	6.72	18	10
6.76	6.84	24	13
6.88	7.00	24	11
7.03	7.14	35	10
7.14	7.26	35	0 (INCLUDED IN RAMP E)
7.26	7.36	24	10
7.39	7.50	24	10
7.50	7.65	38	0 (INCLUDED IN RAMP F)
7.65	8.06	24	10
8.06	8.24	30	11

EASTBOUND

	SLM FROM	SLM TO	PW (FEET)	SHOULDER (FEET)
✡	6.31	6.57	24	11
✡	6.61	6.66	24	11
✡	6.66	6.72	24	0 (GORE AREA 1)
✡	6.76	6.84	36	10
✡	6.88	7.00	36	10
✡	7.03	7.07	24	0 (GORE AREA 2)
	7.07	7.19	36	12
✡	7.19	7.36	36	0 (INCLUDED IN RAMP H)
	7.39	7.94	24	12
	7.94	8.19	27	12

✡IR-76 OMIT SHOULDER FULL DEPTH REPLACEMENT. RESURFACE EXISTING SHOULDER ALONG WITH IR-76 MAINLINE. SEE SCHEMATIC PLAN, SHEETS 3-5, FOR DETAIL

* FOR TRAFFIC DATA SEE WWW.DOT.STATE.OH.US/DIVISIONS/PLANNING/TECHSERV/TRAFFIC/PAGES/TRAFFIC-COUNT-REPORTS-AND-MAPS.ASPX

LEGEND

(1) ITEM 202, WEARING COURSE REMOVED
(2) ITEM 202, PAVEMENT REMOVED
(3) ITEM 209, LINEAR GRADING, AS PER PLAN
(4) ITEM 254, PAVEMENT PLANING ASPHALT CONCRETE AS PER PLAN (T= 4″±)
(5) ITEM 254, PAVMENT PLANING ASPHALT CONCRETE AS PER PLAN (VAR. T= 1¾″ TO 3¼″)
(6) ITEM 302, ASPHALT CONCRETE BASE, PG64-22 (9″)
(7) ITEM 304, AGGREGATE BASE, AS PER PLAN (T=6″)
(8) ITEM 407, SPECIAL- TACK COAT, TRACKLESS TACK @ 0.10 GAL/SY
(9) ITEM 407, SPECIAL- TACK COAT, TRACKLESS TACK FOR INTERMEDIATE COURSE @ 0.04 GAL/SY
(10) ITEM 442, ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE B (448) (T= 1¾″)
(11) ITEM 442, ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE B (448), AS PER PLAN (T= 1½″)
(12) ITEM 441, ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (UNDER GUARDRAIL), AS PER PLAN
(13) ITEM 617, COMPACTED AGGREGATE AS PER PLAN
(14) ITEM 204, SUBGRADE COMPACTION
(15) ITEM 204, PROOF ROLLING
(16) NOT USED
(17) ITEM 605, 6″ UNCLASSIFIED UNDERDRAINS WITH FABRIC WRAP
(18) ITEM 605, 4″ BASE PIPE UNDERDRAINS WITH FABRIC WRAP
(19) ITEM 203, EXCAVATION

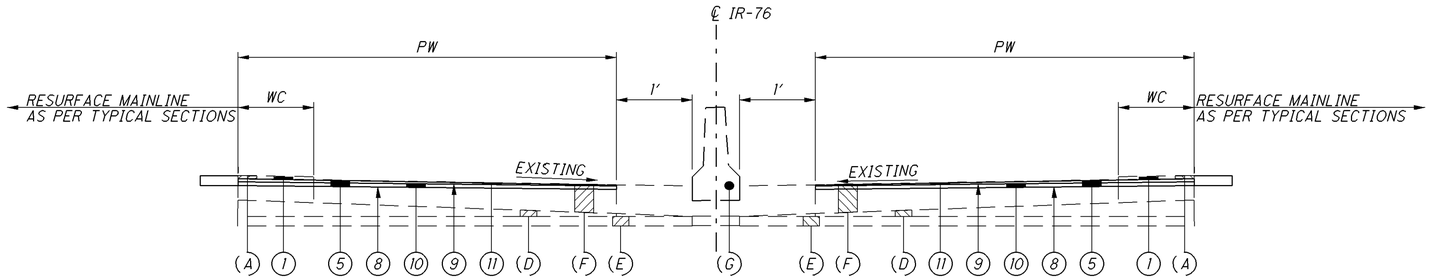
(A) EXISTING ASPHALT SURFACE
(B) EXISTING REINFORCED CONCRETE BASE
(C) EXISTING ASPHALT BASE
(D) EXISTING AGGREGATE BASE
(E) EXISTING SUBBASE
(F) EXISTING PLAIN CONCRETE (VARIES 9″ - 13¼″)
(G) EXISTING CONCRETE BARRIER
(H) EXISTING GUARDRAIL

TYPICAL SECTIONS

SUM-76/77/277-VAR

6
113

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MEDIAN SHOULDER DETAIL

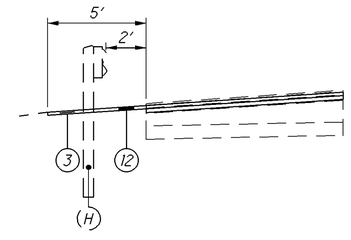
WESTBOUND

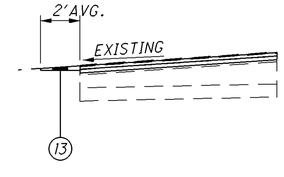
SLM FROM	SLM TO	WC (FEET)	PW (FEET)	LENGTH (MILE)
6.61	6.72	5	5	0.10
6.72	8.27	1	5	1.55
RAMP B		5	5	0.14
RAMP V		1	5	0.30

EASTBOUND

SLM FROM	SLM TO	WC (FEET)	PW (FEET)	LENGTH (MILE)
6.61	8.04	1	5	1.66
8.04	8.19	5	5	0.15
RAMP W		5	5	0.44

EDGE DETAILS





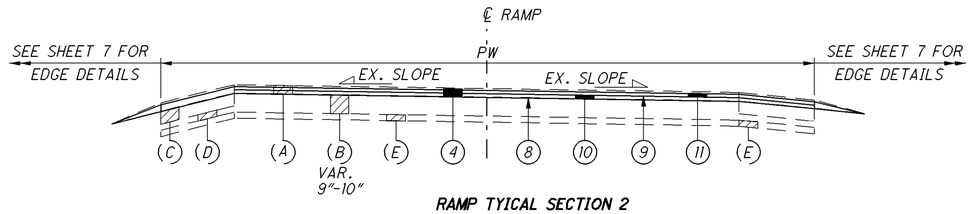
SEE SHEET 6 FOR LEGEND

TYPICAL SECTIONS

SUM-76/77/
277-VAR

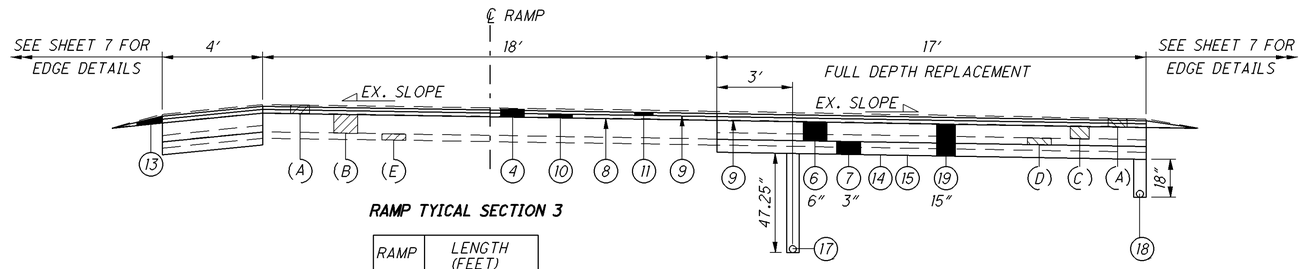
7
113

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RAMP TYICAL SECTION 2

RAMP	PW (FEET)	LENGTH (FEET)
E	24	850
F	20	1,500
G	24	770
H	24	1,860
V*	35	1,559



RAMP TYICAL SECTION 3

RAMP	LENGTH (FEET)
C	1,130

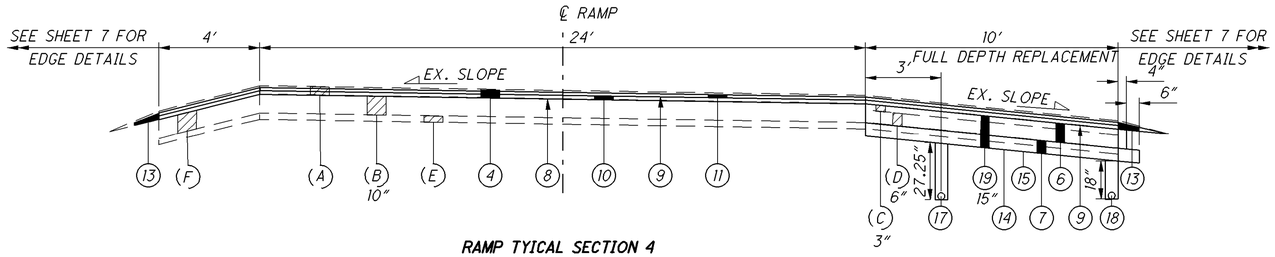
SEE SHEET 6 FOR LEGEND

*RESURFACE RAMP V INSIDE CONCRETE SHOULDER AS SHOWN IN TYPICAL 3

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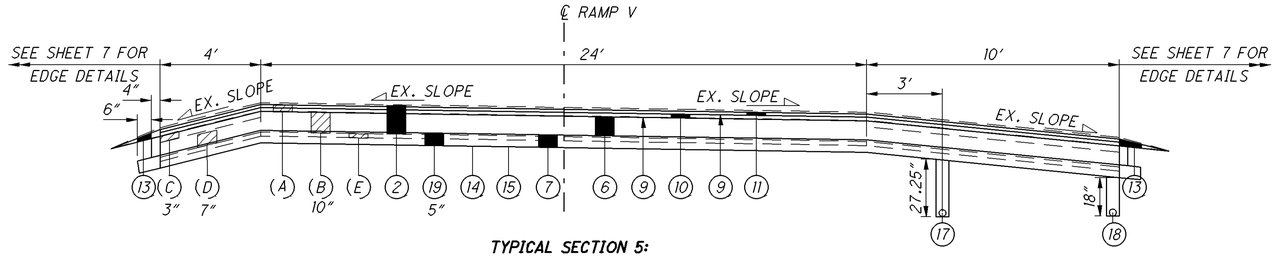
TYPICAL SECTIONS

SUM-76/77/ 277-VAR



RAMP TYICAL SECTION 4

RAMP	LENGTH (FEET)
U	1,165



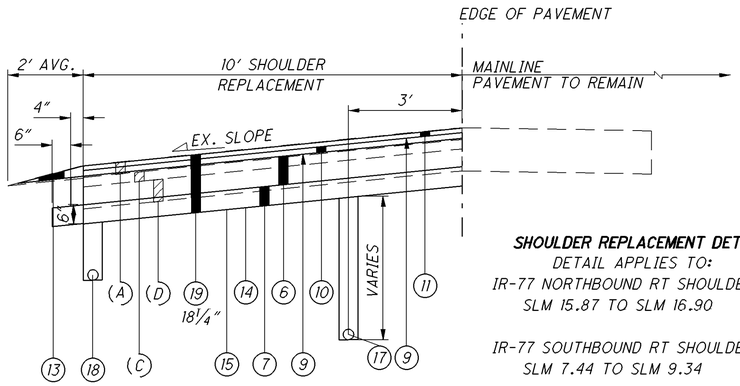
TYPICAL SECTION 5:
RAMP V FULL DEPTH REPAIRS
FROM 76 EAST/ 77 NORTH TO CONCRETE BARRIER ON RAMP V (1056 FT)

SEE SHEET 6 FOR LEGEND

TYPICAL SECTIONS

SUM-76/77/ 277-VAR

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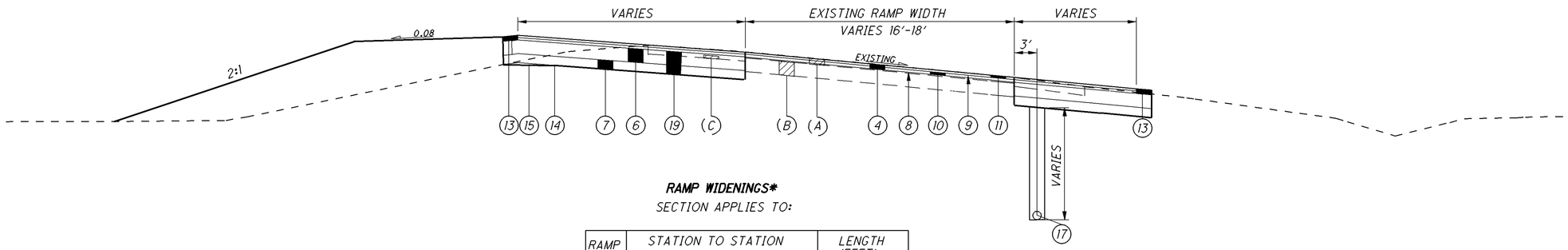
SHOULDER REPLACEMENT DETAIL

DETAIL APPLIES TO:

IR-77 NORTHBOUND RT SHOULDER
SLM 15.87 TO SLM 16.90

IR-77 SOUTHBOUND RT SHOULDER
SLM 7.44 TO SLM 9.34

IR-277 EASTBOUND RT SHOULDER
SLM 0.10 TO SLM 0.93

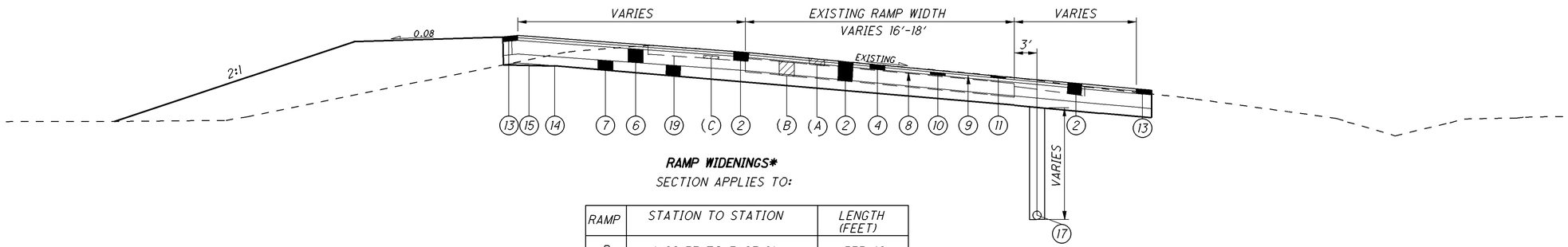


RAMP WIDENINGS*

SECTION APPLIES TO:

RAMP	STATION TO STATION	LENGTH (FEET)
A	5+00 TO 16+50	1,150
A/B	0+00 TO 1+92.33 (RAMP B) 9+16.32 TO 17+50 (RAMP A)	1,026.01
D	3+00 TO 13+00	1,000
T	4+50 TO 12+00	750

** SEE RESPECTIVE RAMP CROSS SECTIONS FOR ALL SLOPES AND WIDENING DIMENSIONS*



RAMP WIDENINGS*

SECTION APPLIES TO:

RAMP	STATION TO STATION	LENGTH (FEET)
B	1+92.33 TO 7+67.81	575.48

** SEE RESPECTIVE RAMP CROSS SECTIONS FOR ALL SLOPES AND WIDENING DIMENSIONS*

SEE SHEET 6 FOR LEGEND

TYPICAL SECTIONS

SUM-76/77/277-VAR

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UTILITIES

THE CONTRACTOR SHALL USE THE FOLLOWING PROCEDURE AT EACH LOCATION WHERE WORK IS PERFORMED, IN ACCORDANCE WITH SECTIONS 105.07 AND 107.16 IN THE CONSTRUCTION AND MATERIALS SPECIFICATIONS:

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE OHIO UTILITIES PROTECTION SERVICE (OUPS), THE OHIO & GAS PROCEDURES UNDERGROUND PROTECTION SERVICE (OGPUPS), THE OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 4 HEADQUARTERS AND ALL NON REGISTERED UTILITY OWNERS AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN ALL AREAS.

OUPS 1-800-362-2764 (CONTACT LIMITED BASIS PARTICIPANTS DIRECTLY)
OGPUPS 1-800-925-0988
ODOT 330-786-3145 KEN GREENE

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

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

AT&T
THE OHIO BELL
TELEPHONE COMPANY
ATTN: JERRY SMITH
50 W. BOWERY ST.
4TH FLOOR
AKRON, OH 44308
330-384-8557

CITY OF AKRON
PUBLIC UTILITIES BUREAU
CITI CENTER
ATTN GEORGE THOMAS
P.O. BOX 3665
AKRON, OH 44309
330-375-2831 EXT.: 6418
330-375-2831 FAX

MCI COMMUNICATIONS
ATTN: BETH SEUBERT
2400 NORTH GLENVILLE
RICHARDSON, TX 75082

SPRINT LONG DISTANCE
ATTN: JOE THOMAS
11370 ENTERPRISE PARK DR.
SHARONVILLE, OHIO 45241
513-612-4204
513-612-4244 FAX

TIME WARNER CABLE
ATTN: CHRISTINE LIENHARDT
530 SOUTH MAIN ST.
SUITE 1751
AKRON, OH 44311
330-633-9203 EXT. 330-555-7322

AT&T LONG DISTANCE
C/O HLG CONSULTING
ATTN: TONY LYLE
5980-G WILCOX PLACE
DUBLIN, OH 43016
614-760-8320 (OFFICE)
614-760-8323 (FAX)
DOMINION EAST OHIO
ATTN: BRYAN D. DAYTON
320 SPRINGSIDE DRIVE,
SUITE 320
AKRON, OH 44333
OFFICE: 330-664-2409

OHIO EDISON
ATTN: DAVID L. MILLER
1910 W. MARKET STREET
BUILDING #1
AKRON, OH 44313
330-436-4055
SUMMIT COUNTY DEPT. OF
ENVIRONMENTAL SERVICES
ATTN MIKE WEANT
2525 STATE ROAD
CUYAHOGA FALLS, OH 44223
330-926-2407
330-926-2471 FAX

PROFILE AND ALIGNMENT

PLACE THE PROPOSED PAVEMENT TO FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. PLACE THE PROPOSED ASPHALT CONCRETE OVERLAY AS SHOWN ON THE TYPICAL SECTIONS.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

TRAFFIC COUNTERS

THE CONTRACTOR WILL CONTACT THE TRAFFIC MONITORING SECTION, FIELD MANAGER AT 614 -275-1382, FOURTEEN (14) CALENDAR DAYS PRIOR TO WORK INVOLVING THE TRAFFIC DATA COLLECTION SITE AT SLM 7.37 ON I-76 EAST AND WESTBOUND LANES.

PAVEMENT MARKING DETAILS

THE PAVEMENT MARKING DETAIL SHEETS WILL BE SUPPLIED TO THE CONTRACTOR AT THE PRE-CONSTRUCTION MEETING.

PAVEMENT MARKING LANE WIDTHS

THE NORMAL LANE WIDTH FOR THE PAVEMENT MARKINGS ON THIS PROJECT SHALL BE AS FOLLOWS [AT LEAST 3 DAYS PRIOR TO PERFORMING THE WORK CONTACT THE TRAFFIC OFFICE AT 330-786-3147 TO CONFIRM THE WIDTHSJ:

ROUTE	S.L.M. TO S.L.M.	LANE WIDTH
76	6.31 TO 8.58	12'
77	7.44 TO 9.34	12'
77	15.87 TO 16.90	12'
277	0.10 TO 0.92	12'

ALL WIDEN RAMPS SHALL BE STRIPED BACK TO THE EXISTING WIDTH AND NUMBER OF LANES.

AREAS DISTURBED BY EQUIPMENT ACTIVITIES

ANY AREAS DISTURBED BY EQUIPMENT ACTIVITIES MUST BE SEEDED WITH NATIVE PLANT SPECIES AND MULCHED TO PREVENT EROSION OF SEDIMENTS INTO WATERS OF THE UNITED STATES.

MECHANICAL EQUIPMENT OPERATION

THE MECHANICAL EQUIPMENT USED TO EXECUTE THE WORK AUTHORIZED HEREIN SHALL BE OPERATED IN A MANNER TO MINIMIZE TURBIDITY THAT COULD DEGRADE WATER QUALITY AND ADVERSELY AFFECT AQUATIC PLANT AND ANIMAL LIFE.

AVOIDANCE OF STREAMS/ WETLANDS

NO IMPACTS TO STREAMS AND WETLANDS ARE AUTHORIZED BY THIS PROJECT. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES, INCLUDING ANY NECESSARY CLEARING AND GRUBBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL TEMPORARY CONSTRUCTION FENCING ALONG THE CONSTRUCTION LIMITS AT WETLAND LOCATIONS AND SOIL EROSION AND SEDIMENTATION CONTROLS IN THE FIELD ALONG THE WETLANDS AS PER SUPPLEMENTAL SPECIFICATION 832. THE TEMPORARY CONSTRUCTION FENCING, SOIL EROSION AND SEDIMENTATION CONTROLS SHALL REMAIN IN PLACE AND BE MAINTAINED THROUGHOUT PROJECT CONSTRUCTION. FOLLOWING COMPLETION OF WORK AND ESTABLISHMENT OF NATIVE VEGETATION AS ACCEPTED BY THE ENGINEER, ALL TEMPORARY CONSTRUCTION FENCING AND SOIL EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED BY THE CONTRACTOR.

CLEARING AND GRUBBING (RAMP A: I-277 TO I-77)

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

UNSUITABLE SOILS- RAMP V

THE FOLLOWING ITEMS AND QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER TO ADDRESS UNSUITABLE SOILS ENCOUNTERED IN THE AREA UNDER THE PROPOSED PAVEMENT OF RAMP V (WB I-76 TO WB I-76).

ITEM 204 - EXCAVATION OF SUBGRADE, 342 CU YD
ITEM 204 - GRANULAR MATERIAL, TYPE B, 342 CU YD
ITEM 204 - GEOTEXTILE FABRIC, 712.09, TYPE A, 1,025 SQ YD
ITEM 861 - GEORGRID FOR SUBGRADE STABILIZATION, 1,025 SQ YD

UNSUITABLE SOILS- SHOULDERS

THE FOLLOWING ITEMS AND QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER TO ADDRESS UNSUITABLE SOILS ENCOUNTERED IN THE AREA UNDER THE PROPOSED PAVEMENT OF THE SHOULDERS (I-76, I-77, AND I-277).

ITEM 204 - EXCAVATION OF SUBGRADE, 2,700 CU YD
ITEM 204 - GRANULAR MATERIAL, TYPE B, 2,700 CU YD
ITEM 204 - GEOTEXTILE FABRIC, 712.09, TYPE A, 8,100 SQ YD
ITEM 861 - GEORGRID FOR SUBGRADE STABILIZATION, 8,100 SQ YD

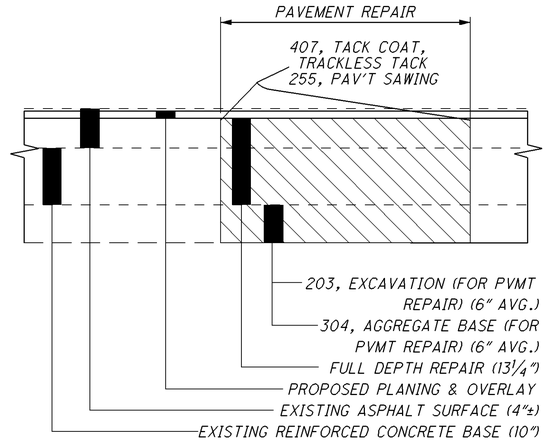
ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN

THIS ITEM OF WORK SHALL BE PERFORMED IN CONFORMANCE WITH ITEM 254 IN THE CMS EXCEPT THE DEPTH SHALL VARY FROM 4" TO THE TOP OF THE CONCRETE WHICHEVER IS FIRST. THIS WORK SHALL BE PERFORMED SO THAT THE CONCRETE BASE IS NOT DISTURBED. ALL EQUIPMENT, LABOR, TOOLS, AND OTHER INCIDENTALS REQUIRED TO PERFORM THIS WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN.

ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC1, AS PER PLAN

A QUANTITY OF THIS ITEM SHALL BE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER. THIS ITEM SHALL CONSIST OF CUTTING AND REMOVING DETERIORATED PAVEMENT FULL DEPTH AND PLACING 13¼"± CONCRETE, CLASS QC1. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, THIS ITEM SHALL BE PERFORMED AFTER THE COMPLETION OF MAINLINE PAVEMENT PLANING. IT IS NOT THE INTENT TO REPAIR EVERY DETERIORATED AREA WITHIN THE PROJECT. THE ENGINEER SHALL DETERMINE WHICH AREAS ARE TO BE REPAIRED.
PAVEMENT SHALL BE BASED ON THE ACTUAL NUMBER OF SQUARE YARDS OF PAVEMENT REMOVED AND REPLACED TO THE LIMITS DESIGNATED BY THE ENGINEER. REPAIR LOCATIONS SHOULD BE DOCUMENTED FOR FUTURE REFERENCE.
THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

255, FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC1 , AS PER PLAN, 850 SQ YD
255, FULL DEPTH PAVEMENT SAWING, 2550 FT



CALCULATED CNC
CHECKED LMP

GENERAL NOTES

SUM-76/77
277-VAR

11
113

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ITEM 203 - EXCAVATION (FOR PAVEMENT REPAIR)

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AND DISPOSING OF ALL UNSUITABLE MATERIAL BY EXCAVATING THE EXISTING SUBGRADE AND SUBBASE TO AN AVERAGE DEPTH OF 6 INCHES OR AS DIRECTED BY THE ENGINEER. EXACT LIMITS OF REMOVAL SHALL BE DETERMINED BY THE ENGINEER. ALL EQUIPMENT, LABOR, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203 EXCAVATION (FOR PAVEMENT REPAIR). THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

203, EXCAVATION (FOR PAVEMENT REPAIR) 142 CU YD

ITEM 304 - AGGREGATE BASE (FOR PAVEMENT REPAIR)

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED AND SHALL BE USED AS DIRECTED BY THE ENGINEER TO BACKFILL AREAS WHICH WERE EXCAVATED UNDER ITEM 203 EXCAVATION (FOR PAVEMENT REPAIR). THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

304, AGGREGATE BASE (FOR PAVEMENT REPAIR) 142 CU YD

ITEM 304 - AGGREGATE BASE, AS PER PLAN

GRANULATED SLAG (GS) SHALL NOT BE PERMITTED FOR THIS ITEM. ALL OTHER REQUIREMENTS OF SECTIONS 304 AND 703.17 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL STILL BE APPLICABLE.

ITEM 442- ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (448), AS PER PLAN

703.05 DO NOT USE COARSE AGGREGATE FROM A SOURCE DESIGNATED 'SR' OR 'SRH' ACCORDING TO THE OFFICE OF MATERIALS MANAGEMENT (OMM) IN ANY JOB MIX FORMULA (JMF) FOR THIS ITEM.

ITEM 617 - COMPACTED AGGREGATE, AS PER PLAN

IN LOW SHOULDER AREAS EXCEEDING 1", AND ADJACENT TO THE SAFETY EDGE, OR AS DIRECTED BY THE ENGINEER, RECYCLED ASPHALT PAVEMENT (RAP) SHALL BE USED IN AREAS ADJACENT TO THE PAVED BERM. THE RAP SHALL HAVE A MINIMUM PG CONTENT OF 4.5% AND MEET THE FOLLOWING GRADATION. ONCE THE STOCKPILE MEETS THE GRADATION, THE PG CONTENT OF THE RAP SHALL BE DETERMINED PER 441.03. THE RAP ANALYSIS MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL 2 WEEKS PRIOR TO USE. METHOD OF MEASUREMENT SHALL BE AS PER 617.06. PLACEMENT AND COMPACTION SHALL MEET THE REQUIREMENTS OF ITEM 617. ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 617 COMPACTED AGGREGATE, AS PER PLAN.

MODIFIED GRADATION SHALL APPLY:

SIEVE	TOTAL PERCENT PASSING
1-1/2"	100
3/4"	50-100
NO. 4	35-70
NO. 30	9-33
NO. 200	0-13

BARRIER WALL REPAIR

THE FOLLOWING QUANTITIES HAVE BE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER. THIS OPERATION SHALL CONSIST OF REPAIRING THE CONCRETE BARRIER WALL WHERE SPALLING OR BROKEN PATCHES HAVE OCCURRED.

PRIOR TO THE SURFACE CLEANING SPECIFED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACCUM ABRASIVE BLASTING.

519, PATCHING CONCRETE STRUCTURE AS PER PLAN, (FOR BARRIER WALL), 500 SQ FT
843, PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR (FOR BARRIER WALL), 500 SQ FT

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A W-BEAM, BEAM SPLICE AS SHOWN IN AASHTO M 180-12, EXCEPT THE BEAM WASHERS ARE NOT TO BE USED. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

ITEM SPECIAL - MISCELLANEOUS METAL

EXISTING CASTINGS MAY PROVE TO BE UNSUITABLE FOR REUSE, AS DETERMINED BY THE ENGINEER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CASTINGS OF THE REQUIRED TYPE, SIZE AND STRENGTH (HEAVY OR LIGHT DUTY) FOR THE PARTICULAR STRUCTURE IN QUESTION. ALL MATERIAL SHALL MEET ITEM 611 OF THE SPECIFICATIONS AND SHALL HAVE THE PRIOR APPROVAL OF THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

SPECIAL, MISCELLANEOUS METAL 1295 POUNDS

THE CONTRACTOR IS CAUTIONED TO USE EXTREME CARE IN THE REMOVAL, STORAGE AND REPLACEMENT OF ALL EXISTING CASTINGS. CASTINGS DAMAGED BY THE NEGLIGENCE OF THE CONTRACTOR, AS DETERMINED BY THE ENGINEER, SHALL BE REPLACED WITH THE PROPER NEW CASTINGS AT THE EXPENSE OF THE CONTRACTOR.

PAVING UNDER GUARDRAIL

THIS OPERATION SHALL INCLUDE PREPARATION OF THE GRADED SHOULDER USING 209, LINEAR GRADING AS PER PLAN, AND PAVING UNDER THE GUARDRAIL USING 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), UNDER GUARDRAIL, AS PER PLAN.

ITEM 209, LINEAR GRADING AS PER PLAN, SHALL CONSIST OF EXCAVATING TOPSOIL, AND PLACING GRANULAR MATERIAL.

ALL COLLECTED DEBRIS AND TOPSOIL, INCLUDING RHIZOMES, ROOTS AND OTHER VEGETATIVE PLANT MATERIAL SHALL BE REMOVED AND DISPOSED OF AS SPECIFIED IN 105.17.

THE REMOVED MATERIAL SHALL BE REPLACED WITH COMPACTABLE GRANULAR MATERIAL CONFORMING TO 703.16 PLACED TO GRADE AS DETAILED ON THE TYPICAL SECTION OR AS APPROVED BY THE ENGINEER.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 209, LINEAR GRADING, AS PER PLAN.

PAVING UNDER GUARDRAIL SHALL CONSIST OF PLACING ITEM 441 TO THE DEPTH SPECIFIED USING ONE OF THE FOLLOWING METHODS:

METHOD A:
1. SET GUARDRAIL POSTS
2. PLACE ITEM 441

METHOD B:
1. PLACE ITEM 441
2. BORE ASPHALT AT POST LOCATIONS (MAY BE OMITTED IF STEEL POSTS ARE USED)
3. SET GUARDRAIL POSTS
4. PATCH AROUND POSTS. THE MATERIALS USED FOR PATCHING SHALL BE AN ASPHALT CONCRETE APPROVED BY THE ENGINEER. PATCHED AREAS SHALL BE COMPACTED USING EITHER HAND OR MECHANICAL METHODS. FINISHED SURFACES SHALL BE SMOOTH AND SLOPED TO DRAIN AWAY FROM THE POSTS.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE, WITH THE EXCEPTION OF SETTING GUARDRAIL POSTS, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 441, ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 1, (448), UNDER GUARDRAIL, AS PER PLAN.

ITEM 611- CATCH BASIN ADJUSTED TO GRADE

THERE ARE 26 EXISTING CATCH BASINS THAT SHALL BE ADJUSTED TO GRADE. THE CATCH BASINS ARE LOCATED ALONG THE CONCRETE GUTTER AND IN THE RAMP GORE AREAS.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

611, CATCH BASIN ADJUSTED TO GRADE, 26 EACH

LINEAR GRADING

SHOULDER WIDTH BEYOND THE LIMITS OF THE COMPACTED AGGREGATE WILL BE GRADED TO PROVIDE POSITIVE DRAINAGE AND WILL BE PERFORMED ONLY IN THE AREAS NECESSARY. THIS WORK WILL NOT BE PERFORMED ON THE ENTIRE PROJECT. THE AREAS FOR THE WORK WILL BE MARKED BY THE PROJECT ENGINEER. THESE ITEMS OF WORK WILL BE PERFORMED AFTER THE PLACEMENT OF ITEM 617 COMPACTED AGGREGATE. UNDER NO CIRCUMSTANCES WILL THIS WORK BE PERFORMED CONCURRENTLY WITH ANY OTHER OPERATION.

GRADING WILL BE ACCOMPLISHED BY THE REMOVAL OF, OR ADDITION OF MATERIAL TO PROVIDE A 0.08 POSITIVE SLOPE. EXCESS MATERIAL WILL BE WINDROWED ON THE SHOULDER. THE GRADED AREAS WILL BE COMPACTED TO A SUFFICIENT DENSITY TO PREVENT EROSION UNTIL SEEDING AND MULCHING IS PERFORMED. ALL EXCESS MATERIAL WILL BE REMOVED FROM THE BERMS AND WILL BE DISPOSED OF OFF THE PROJECT BY THE CONTRACTOR.

SEEDING AND MUCHING, FERTILIZER AND LIME WILL BE PERFORMED WITHIN A PERIOD NOT TO EXCEED 10 DAYS AFTER THE LINEAR GRADING.

THE QUANTITY OF ITEM 209 IS NOT PERMITED TO BE INCREASED. REDUCTIONS IN QUANTITIES ARE PERMITTED AS DETERMINED BY THE PROJECT ENGINEER.

ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK WILL BE INCLUDED IN THE UNIT PRICE FOR THE PERTINENT BID ITEM. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

209, LINEAR GRADING, 147 STA.
659, SEEDING AND MULCHING, 8167 SQ YD
659, COMMERCIAL FERTILIZER, 1.10 TON
659, LIME, 1.69 ACRES
659, WATER, 44 M. GAL.

ITEM 606 - IMPACT ATTENUATOR, TYPE 2, (UNIDIRECTIONAL 70 MPH, 96")

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE TYPE 2 IMPACT ATTENUATORS AS LISTED ON THE OFFICE OF ROADWAY ENGINEERING'S WEB PAGE. WHEN BI-DIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE 2 [(SPEED (70 MPH), HAZARD WIDTH (96 INCHES), (UNIDIRECTIONAL)], EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS/BACKSTOPS, TRANSITIONS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

CALCULATED CNC CHECKED LMP

GENERAL NOTES

SUM-76/77 277-VAR

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CALCULATED CNC
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GENERAL NOTES

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE B

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND, THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

THE FACE OF THE TYPE B IMPACT HEAD SHALL BE COVERED WITH TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE B, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING REFLECTIVE SHEETING AND ALL RELATED HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 606 - ANCHOR ASSEMBLY, TYPE E

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 27.75 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM SPECIAL - MISC.: VERTICAL CLEARANCE

AFTER ALL CONSTRUCTION HAS BEEN COMPLETED, A REGISTERED SURVEYOR WILL TAKE VERTICAL CLEARANCE MEASUREMENTS AT LOCATIONS INDICATED ON THE APPROVED ODOT FORM (AVAILABLE IN THE DISTRICT 4 STRUCTURES AND PAVEMENT OFFICE). THE FINAL MEASUREMENTS SHALL BE RECORDED ON THE FORM AND SUBMITTED TO THE PROJECT ENGINEER AND THE DISTRICT 4 STRUCTURES AND PAVEMENT ENGINEER. THE RECORD SHALL BEAR THE SEAL OF THE LECENSED SURVEYOR WHO HAS TAKEN THE MEASUREMENTS. THIS WORK SHALL BE PERFORMED AT THE FOLLOWING STRUCTURES:

SUM-76-0567R
SUM-76-0758
SUM-76-0772
SUM-77-0744
SUM-77-0887
SUM-77-1657
SUM-77-1699

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:
SPECIAL - MISC.: VERTICAL CLEARANCE, 7 EACH

UNDERDRAINS

THE CONTRACTOR SHALL REFER TO THE ORGINAL CONSTRUCTION PLANS OF EACH ROUTE FOR EXISTING UNDERDRAIN LOCATIONS AND ELEVATIONS. THE FOLLOWING PLANS SHALL BE REFERENCED FOR THE CORRESPONDING ROUTE:

IR-76
AKRON EXPRESSWAY SYSTEM KENMORE EXPRESSWAY SUM-5-9.33
AKRON EXRESSWAY SYSTEM SUM-18-8.21, SUM-5-10.62

IR-77 (SLM 15.87 TO SLM 16.90)
AKRON EXPRESSWAY SYSTEM EXPRESSWAY PART 14-A
SUM-18-6.54

IR-77 (SLM 7.44 TO SLM 9.34)
SUM-77-9.07/ SUM-8-9.07
SUM-8-6.70

IR-277
SUM-277/224-0.00/6/31-10.22

ALL UNDERDRAIN LOCATIONS SHOWN ON THE DRAINAGE SUB SUMMARIES, SHEETS 96-100, 100A, SHALL BE IN REFERENCE TO THE ORIGINAL CONSTRUCTION PLANS.
THE EXISTING UNDERDRAINS SHALL BE REPLACED TO MATCH ALL PREVIOUS CONDITIONS.
NEW UNDERDRAINS SHALL BE INSTALLED WITH MINIMUM IMPACT TO EXISTING CONDITIONS.

ALL GENERATED QUANTITES IN THE DRAINAGE SUB SUMMARIES ARE SUBJECT TO REVIEW UPON FIELD INSPECTION.

PAYMENT FOR THE REMOVAL OF EXISTING UNDERDRAINS SHALL BE INCIDENTAL TO EXCAVATION FOR SHOULDER REPLACEMENT ON IR-76 MAINLINE AND RAMPS.

RAMP PAVMENT WIDENING

THE CONTRACTOR SHALL ESTABLISH THE EXISTING EDGE OF THE CONCRETE BASE FOR EACH RAMP BY PLANING THE EXISTING ASPHALT CONCRETE SURFACE TO THE CONCRETE BASE.

ALTHOUGH THE SHOULDER WIDENING SHALL VARY IN WIDTH FOR EACH RAMP DEPENDENT UPON THE LOCATION OF THE EXISTING CONCRETE BASE, THE CONTRACTOR SHALL HOLD THE PROPOSED FORESLOPE OFFSET SHOWN ON THE CORRESPONDING CROSS SECTION.

SURVEY RAMP V (IR-77N TO IR-277E/ IR-76W)

A REGISTERED SURVEYOR WILL TAKE ELEVATION AND GRADE MEASUREMENTS TO ESTABLISH AN EXISTING PROFILE OF RAMP V. THE FINAL MEASUREMENTS SHALL BE RECORDED AND SUBMITTED TO THE PROJECT ENGINEER. THE RECORD SHALL BEAR THE SEAL OF THE LICENSED SURVERYOR WHO HAS TAKEN THE MEASUREMENTS. THE CONTRACTOR SHALL USE THE MEASUREMENTS TO REPLACE RAMP V FULL DEPTH TO THE EXISTING ELEVATIONS AND GRADE.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED UNDER THE UNIT BID PRICE FOR ITEM 623, LAYOUT STAKES AND SURVEYING.

REVIEW OF DRAINAGE FACILITIES

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

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

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

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

ITEM 623 - MONUMENT ASSEMBLY, AS PER PLAN

ADJUSTABLE MONUMENT ASSEMBLIES AS SHOWN ON STANDARD CONSTRUCTION DRAWING RM-1.1 WILL BE PLACED BY THE CONTRACTOR AT THE TIME OF CONSTRUCTION.

THE CONTRACTOR WILL BE PROVIDED A LOCATION LIST OF EXISTING MONUMENTATION WHICH IS TO BE REPLACED WITH NEW ADJUSTABLE MONUMENT BOX ASSEMBLIES AT THE PRE-CONSTRUCTION MEETING. THIS LIST MAY INCLUDE BOTH EXPOSED AND BURIED MONUMENTATION AND MAY ALSO INCLUDE SOME TIES TO AID IN RECOVERY.

PAYMENT FOR THE REMOVAL OF ANY EXISTING MONUMENT ASSEMBLIES SHALL ALSO BE INCLUDED IN THIS ITEM.

QUANTITY THAT WILL BE CARRIED TO THE GENERAL SUMMARY:
623, MONUMENT ASSEMBLY, AS PER PLAN, 9 EACH

SUM-76/77
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ITEM SPECIAL - TACK COAT, TRACKLESS TACK

ITEM SPECIAL - TACK COAT, TRACKLESS TACK FOR INTERMEDIATE COURSE

DESCRIPTION: THIS WORK CONSISTS OF PREPARING AND TREATING A PAVED SURFACE WITH A TRACKLESS TACK ASPHALT EMULSION.

FURNISH MATERIALS ACCORDING TO THE DEPARTMENT'S APPROVED LIST.

MEET ALL REQUIREMENTS OF ITEM 407 TACK COAT IN THE CONSTRUCTION AND MATERIALS SPECIFICATIONS REQUIRED BY THE CONTRACT, EXCEPT AS NOTED BELOW.

MATERIAL: MEET ALL PROPERTIES OF THE APPROVED MANUFACTURER'S TRACKLESS TACK SPECIFICATION REQUIREMENTS ON FILE WITH THE LABORATORY AT TIME OF PLACEMENT.

ACCEPTANCE AND SAMPLING OF MATERIALS: SUPPLY CERTIFIED TEST DATA TO THE ENGINEER AND TO THE DISTRICT LABORATORY DEMONSTRATING THE TRACKLESS TACK SUPPLIED WAS TESTED FOR AND MEETS ALL MATERIAL PROPERTIES SHOWN ON THE DEPARTMENT'S APPROVED LIST.

DURING CONSTRUCTION, ODOT PERSONNEL WILL SAMPLE FROM THE DISTRIBUTOR AND SUPPLY TO THE DISTRICT TEST LAB A MINIMUM OF ONE QUART OF TRACKLESS TACK FOR EVERY 25,000 GALLONS USED ON THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR SUPPLYING THE PROPER PLASTIC QUART SAMPLING CONTAINER. CLEARLY MARK ON THE SAMPLE WITH THE MANUFACTURER'S NAME, PROJECT NUMBER, AND THE WORDS "TRACKLESS TACK".

EQUIPMENT: FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR CORRECT DISTRIBUTOR SETTINGS. THOROUGHLY CLEAN ALL EQUIPMENT IF PREVIOUSLY USED MATERIAL CHARGE IS DIFFERENT THAN THE PROPOSED MATERIAL.

APPLICATION OF ASPHALT MATERIAL: UNIFORMLY APPLY THE TRACKLESS TACK WITH A DISTRIBUTOR ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS. IF TRACKLESS TACK IS STORED FOR AN EXTENDED PERIOD OF TIME, PRIOR TO APPLICATION, AGITATE OR GENTLY CIRCULATE THE MATERIAL.

ENSURE ALL NOZZLES AND SPRAY PATTERNS ARE IDENTICAL TO ONE ANOTHER ALONG THE DISTRIBUTOR SPRAY BAR. PLACE THE ANGLE OF THE NOZZLE AT A 15 TO 30 DEGREE ANGLE TO THE SPRAY BAR AXIS TO MAXIMIZE OVERLAP OR AS RECOMMENDED BY THE NOZZLE MANUFACTURER. CONTACT THE MANUFACTURER'S REPRESENTATIVE FOR REQUIRED SPRAY NOZZLE SIZE AND DISTRIBUTOR AND NOZZLE SETTINGS.

APPLY AT A RATE OF 0.04 TO 0.1 GALLONS PER SQUARE YARD. DO NOT DILUTE TRACKLESS TACK. RECOMMENDED APPLICATION TEMPERATURE IS 160 □F TO 180 □F. DO NOT EXCEED 180 □F. THE ENGINEER WILL APPROVE THE QUANTITY, RATE OF APPLICATION, TEMPERATURE, DISTRIBUTOR SETTINGS, AND AREAS TO BE TREATED BEFORE APPLICATION OF THE TRACKLESS TACK COAT. THE ENGINEER WILL DETERMINE THE ACTUAL APPLICATION IN GALLONS PER SQUARE YARD BY A CHECK ON THE PROJECT.

PERFORMANCE OF TRACKLESS TACK: DETERMINE THE TIME TO SET FOR THE MATERIAL TO BECOME TRACKLESS. THE ENGINEER WILL REPORT ANY ISSUES WITH EXCESSIVE TIME TO SET, OR AFTER SET ISSUES WITH STICKINESS, OR PICKUP OF THE TACK TO THE DISTRICT TESTING ENGINEER AND NEW PRODUCT ENGINEER, BRAD YOUNG 614-351-2882.

IF THE CERTIFIED TEST DATA FAILS TO MEET THE LAB TESTING CRITERIA, OR FIELD SAMPLES FAIL TO MEET THE LAB TEST CRITERIA, OR THE TRACKLESS TACK FAILS TO PERFORM SATISFACTORILY IN THE FIELD, AS NOTED ABOVE, THE CONTRACTOR WILL BE REQUIRED TO REPLACE AND SUPPLY ANOTHER APPROVED TRACKLESS TACK PRODUCT FOR THE REMAINDER OF THE PROJECT AT NO ADDITIONAL COST TO THE DEPARTMENT.

ANY FAILING TRACKLESS TACK PRODUCT WILL BE REMOVED FROM THE DEPARTMENT'S APPROVED LIST.

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS: ITEMS PROVIDED TO REPAIR CONTRACTOR DISTURBED AREAS AND EMBANKMENT SLOPE.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:
659, SOIL ANAYSIS TEST, 2 EACH
659, TOPSOIL, 2193 CU. YD.
659, SEEDING AND MULCHING, 19760 SQ. YD.
659, REPAIR SEEDING AND MULCHING, 988 SQ. YD.
659, COMMERICAL FERTILIZER, 2.67 TON
659, LIME, 4.08 ACRES
659, WATER, 124 M. GAL.

SEEDING AND MULCHING CALCULATIONS CROSS SECTIONS FROM
WIDENING AT RAMP A: 2362 SQ YD
WIDENING AT RAMP D: 3073 SQ YD
WIDENING AT RAMP T: 1105 SQ YD
WIDENING AT RAMP W: 8478 SQ YD
WIDENING AT RAMP B: 4742 SQ YD
TOTAL: 19760 SQ YD

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE OF THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

CALCULATED CNC
CHECKED LMP

GENERAL NOTES

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MAINTENANCE OF TRAFFIC

THIS ITEM SHALL CONSIST OF MAINTENANCE OF TRAFFIC ON EXISTING ROADWAYS AND RAMPS IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, LATEST REVISION, THE SPECIFICATIONS AND THE FOLLOWING:

1. THE CONTRACTOR SHALL INFORM THE DISTRICT OFFICE (330) 786-2208, AND THE CITY OF AKRON (330)-375-2355, EIGHTEEN (18) DAYS PRIOR TO THE BEGINNING OF WORK.

2. TRUCK MOUNTED ATTENUATORS [TMA'S] SHALL BE USED AS SHOWN IN THE STANDARD CONSTRUCTION DRAWINGS.

3. IN ADDITION TO THE REQUIREMENTS OF 614.11 WORK ZONE PAVEMENT MARKINGS, AT THE END OF EACH DAY OF WORK, THE CONTRACTOR SHALL REPLACE (WITH WORK ZONE MARKINGS) ALL LANE, CENTER, STOP OR CHANNELIZING LINES THAT WERE REMOVED OR COVERED DURING THE PAVEMENT REMOVAL OR PLACEMENT OPERATIONS. QUANTITIES FOR SUCH PLACEMENT ARE CARRIED AS PART OF THE ITEMS LISTED UNDER 614 WORK ZONE PAVEMENT MARKINGS.

4. A QUANTITY OF 100 CU. YDS. OF ITEM 614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC SHALL BE PROVIDED FOR USE IN MAINTAINING PAVEMENT, SHOULDERS AND OTHER LOCATIONS AS DIRECTED BY THE ENGINEER.

5. TRAFFIC SHALL NOT BE PLACED ON A MILLED SURFACE.

6. PRIOR TO OPENING TO TRAFFIC EACH LANE SHALL BE IN A SAFE, PASSABLE CONDITION. ALL TRANSVERSE JOINTS SHALL EXTEND ACROSS THE FULL LANE AND SHOULDER WIDTH AND EACH LANE SHALL BE FREE FROM UNEVEN LONGITUDINAL JOINTS. THE CONTRACTOR SHALL PROVIDE ASPHALT WEDGES FOR TRANSVERSE JOINTS WHEREVER THERE ARE PAVEMENT ELEVATION DIFFERENCES.

7. A QUANTITY OF ITEM 614 WORK ZONE MARKING SIGN HAS BEEN INCLUDED IN THE PLAN. THIS QUANTITY SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING SIGNS: W8-H13 [NO EDGE LINES]. THESE QUANTITIES SHALL BE AS PER 614.04.

THE FOLLOWING QUANTITIES SHALL BE USED FOR THE MAINTENANCE OF TRAFFIC ON THIS PROJECT:

TO BE USED AS DIRECTED BY THE ENGINEER
- 614, WORK ZONE MARKING SIGNS (ALL PHASES), 24 EACH
- 614, WORK ZONE EDGE LINE, CLASS III, 642 PAINT, 3.92 MILE

SHOULDER REPLACEMENT (I-77: SLM 7.44 TO SLM 9.34, I-77: SLM 15.87 TO SLM 16.90, I-277 SLM 0.10 TO SLM 0.89)
LIGHT POLE ERECTION:

1. A MINIMUM OF TWO TEN FOOT LANES IN EACH DIRECTION SHALL BE MAINTAINED ON THE EXISTING PAVEMENT AND COMPLETED PAVEMENT DURING CONSTRUCTION OF THE WORK.

2. LANE RESTRICTIONS OR LANE REDUCTIONS SHALL NOT BE PERMITTED AFTER NORMAL WORKING HOURS. NORMAL WORKING HOURS SHALL BE THOSE HOURS DURING WHICH THE CONTRACTOR HAS A FULL COMPLEMENT OF EMPLOYEES AND EQUIPMENT ACTIVELY REMOVING AND/OR PLACING PAVEMENT MATERIALS.

3. ALL FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT OPERATIONS SHALL BE COMPLETED THE SAME DAY THE EXCAVATION IS MADE. IF THE CONTRACTOR CANNOT COMPLETE THE WORK, THE EXCAVATION SHALL BE BACKFILLED OR PROTECTED AS PER STANDARD CONSTRUCTION DRAWING MT-101.90.

4. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR BE PERMITTED TO HAVE SUCCESSIVE WORK ZONES UNLESS THE DISTANCE BETWEEN THE DRUMS, BARRICADES OR CONES EXCEEDS ONE [1] MILE.

5. ONLY DURING OFF-PEAK PERIODS (ie ANY PERIOD OTHER THAN 6-8AM AND 3-6PM) SHALL THE CONTRACTOR INSTALL AND SUBSEQUENTLY RESET ALL TRAFFIC CONTROL NECESSARY FOR THE WORK ZONE FOR EACH CONSTRUCTION PHASE.

COOPERATION BETWEEN CONTRACTORS

THE CONTRACTOR SHALL BE ADVISED THAT PROJECT SUM-76/77-7.58/9.59 (PID 98061) MAY BE ONGOING IN AN AREA IMMEDIATELY ADJACENT TO AND WITHIN THE PROJECT LIMITS OF THIS PROJECT. THE CONTRACTOR SHALL SCHEDULE HIS WORK SO AS TO CAUSE A MINIMUM OF DELAY OR CONFLICT WITH THE OTHER PROJECTS. IN ACCORDANCE WITH 105.08, THE CONTRACTOR SHALL ARRANGE WITH THE OTHER CONTRACTORS APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL RECIEVE DAILY APPROVALS FROM THE ENGINEER PRIOR TO COMMENCING ANY OPERATIONS. ANY CONFLICT BETWEEN CONTRACTORS INVOVLING WRK SCHEDULES, WORK AREA, OR COOPERATION SHALL BE RESOLVED BY THE ENGINEER. COMPENSATION FOR THE ABOVE COOPERATION SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS INCLUDED WITHIN THIS PROJECT.

DETOUR NOTIFICATION [ODOT, CITY OF AKRON, COPELY-FAIRLAWN SCHOOLS, COPLEY TOWNSHIP, SUMMIT COUNTY ENGINEERS]

THE CONTRACTOR SHALL ADVISE THE ODOT DISTRICT OFFICE (330-786-3148),CITY OF AKRON (330-375-2355), COPLEY TOWNSHIP (330-666-1853), COPLEY-FAIRLAWN SCHOOLS (330)664-4810, AND SUMMIT COUNTY ENGINEERS (330)643-2850) EIGHTEEN (18) DAYS IN ADVANCE OF WHEN THE DETOUR ROUTE SHOULD BE IN EFFECT. ALL WORK ZONE DEVICES REQUIRED SHALL BE FURNISHED, ERECTED, MAINTAINED, AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. PAYMENT FOR ALL WORK ASSOCIATED WITH THE DETOUR SHALL BE INCLUDED UNDER THE LUMP SUM BID FOR ITEM 614, DETOUR SIGNING.

ITEM 614, MAINTAINING TRAFFIC (NOTICE OF CLOSURE SIGN)

NOTICE OF CLOSURE SIGNS, AS DETAILED IN THESE PLANS, SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED ROAD AND RAMP CLOSURES. THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE. THE SIGNS MAY BE ERECTED ANYWHERE ON RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.



W20-H14-60

ITEM 614, MAINTAINING TRAFFIC (TIME LIMITATION ON A DETOUR) (MINOR RD)

ALL LANES OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO THE "B" PORTION OF THE A+B BIDDING PLUS 5 DAYS, WHEN THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEETS 28-29. A DISINSENTIVE IN THE AMOUNT OF $10,000 FOR EACH CALENDAR DAY THAT THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.

TRAFFIC CONTROL INSPECTOR

THE CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL OTHER THAN THE SUPERINTENDENT AND SUBJECT TO THE APPROVAL OF THE ENGINEER, TO CONTINUOUSLY INSPECT ALL TRAFFIC CONTROL DEVICES WHENEVER CONSTRUCTION WORK IS BEING PERFORMED WITHIN THE WORK LIMITS OF THE PROJECT. THE DESIGNATED INDIVIDUAL SHALL ALSO INSPECT ALL TRAFFIC DEVICES AT THE BEGINNING AND AT THE END OF EACH WORK DAY. 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 INDIVIDUALS SHALL BE EQUIPPED WITH CELLULAR PHONES AND THEIR NAMES AND PHONE NUMBERS SHALL BE GIVEN TO THE PROJECT ENGINEER AT THE PRE-CONSTRUCTION MEETING. THE DESIGNATED INDIVIDUAL MAY HAVE OTHER CONSTRUCTION RELATED DUTIES AS LONG AS IMMEDIATE ATTENTION IS GIVEN TO TRAFFIC CONTROL. PAYMENT FOR THE SERVICES OF THE TRAFFIC CONTROL INSPECTOR SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

DETOUR SIGNS M4-9-SPECIAL AND M4-9-SPECIAL(2)

THE SIGNS SHOWN BELOW SHALL BE USED FOR THE MINOR RD DETOUR. THE SIGNS SHALL BE BLACK ON ORANGE. THE OHIO SIGN DESIGNS AND MARKINGS MANUAL SIGNS M4-9, M6-2, AND M6-3 SHALL BE REFERED TO FOR DESIGN.



M4-9-SPECIAL



M4-9-SPECIAL(2)

ITEM 614, MAINTAINING TRAFFIC (TIME LIMITATION ON A DETOUR) (RAMP A: I-227 EAST TO I-77 SOUTH)

ALL RAMP TRAFFIC SHALL BE MAINTAINED, EXCEPT FOR A PERIOD NOT TO EXCEED 5 CONSECUTIVE CALENDAR NIGHTS (8PM TO 6AM), WHEN TRAFFIC MAY BE DETOURED AS SHOWN ON SHEET 38. THE CONTRACTOR SHALL BE ASSESSED DISINCENTIVES IN THE AMOUNT OF $4500 PER HOUR OR PORTION THERE OF THAT THE RAMP REMAINS CLOSED BEYOND THE SPECIFIED LIMIT.

ITS MESSAGE BOARDS

THE EXISTING ITS MESSAGE BOARDS IN THE VICINITY OF THE PROJECT WILL BE UTILIZED TO PROVIDE SUPPLEMENTAL INFORMATION TO THE TRAVELING PUBLIC. THE CONTRACTOR WILL NOTIFY THE PROJECT ENGINEER ONE [1] WEEK IN ADVANCE OF EACH CLOSURE TO I-76. THE PROJECT ENGINEER WILL COORDINATE WITH EITHER LISA BOSE AT 330-786-4817 OR BRENT KOVACS AT 330-786-2208 TO GET THE ITS MESSAGE BOARDS ADJUSTED.

TRAFFIC SIGNAL AT MINOR RD

THE SIGNAL AT SR 21 AND MINOR RD SHALL BE COORDINATED WITH KEN GREENE (330-786-3146) DURING THE LEFT TURN CLOSURES AT THE INTERSECTION.

CALCULATED CNC CHECKED LAB

MAINTENANCE OF TRAFFIC GENERAL NOTES

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ITEM 614, MAINTAINING TRAFFIC (LANES OPEN DURING HOLIDAYS OR SPECIAL EVENTS)

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

CHRISTMAS — LABOR DAY
NEW YEARS — THANKSGIVING
WORLD GOLF CHAMPIONSHIPS- BRIDGESTONE INVITATIONAL (JULY 30, 2015 - AUGUST 10, 2015)

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 HOLIDAY OR EVENT	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00 AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00 AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00 AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00 AM FRIDAY
THURSDAY (THANKSGIVING ONLY)	12:00N WEDNESDAY THROUGH 6:00 AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00 AM 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 A DISINCENTIVE IN THE AMOUNT OF $4500 FOR EACH HOUR THE ABOVE DESCRIBED LANE CLOSURE RESTRICTIONS ARE VIOLATED.

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF CMS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

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 FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP). IN GENERAL, LEOS SHOULD BE POSITIONED AT THE POINT OF LANE RESTRICTION OR ROAD CLOSURE AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH INTERSECTIONS IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. ONCE THE LEO HAS COMPLETED THE DUTIES DESCRIBED ABOVE AND STILL HAS TIME REMAINING ON HIS/HER SHIFT, THE LEO MAY BE ASKED TO PATROL THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) OR BE PLACED AT A LOCATION TO DETER MOTORISTS FROM SPEEDING. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 1000 HOURS

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

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A PORTABLE CHANGEABLE MESSAGE SIGN, THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE OFFICE OF MATERIALS MANAGEMENT WEB PAGE. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCE OF 650 FEET AND 475 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. PCMS TRAILERS SHOULD BE DELINEATED ON A PERMANENT BASIS BY AFFIXING RETROREFLECTIVE MATERIAL, IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER AS SEEN BY ONCOMING ROAD USERS.

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 VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE PCMS SHOULD NOT BE LOCATED IN THE MEDIAN OF THE HIGHWAY UNLESS IT IS PROTECTED FROM BOTH DIRECTIONS OF TRAFFIC. THE PCMS SHALL BE LOCATED. IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE THE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS WILL BE OFF. ADDITIONALLY WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED, FACING AWAY FROM ALL TRAFFIC AND SHALL DISPLAY ONE OR MORE TYPE G 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 OPERATION INSTRUCTIONS TO ENABLE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT AND TO REVISE SIGN MESSAGES, IF NECESSARY.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE CONTRACTOR. A LIST OF ALL PROPOSED PREPROGRAMMED MESSAGES WILL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED 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 OF SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DE-ACTIVATED 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 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.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF 614. 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 TRAFFIC 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 HOURS PER DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF 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 614.02.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

614 PORTABLE CHANGEABLE MESSAGE SIGN,
AS PER PLAN, 36 SIGN MONTH

CALCULATED CNC CHECKED LAB

MAINTENANCE OF TRAFFIC GENERAL NOTES

SUM-76/77
277-VAR

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LANE CLOSURES (I-76, I-77, AND I-277)

DURATION OF LANE CLOSURES, SHOULDER CLOSURES, AND RESTRICTIONS SHALL BE AS PER THE PERMITTED LANE CLOSURE CHART. THE PERMITTED LANE CLOSURE CHART USED FOR THIS PROJECT SHALL BE THE MOST CURRENT CHART AVAILABLE ON THE DATE THIS PROJECT SELLS.

THE CHART CAN BE FOUND AT:
http://plcm.dot.state.oh.us

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THE REQUIREMENTS IN THE CHART, THE CONTRACTOR SHALL BE ASSESSED DISINCENTIVES IN THE AMOUNT OF $ 4500 PER HOUR OR PORTION THEREOF THAT THE LANE REDUCTION REMAINS BEYOND THE SPECIFIED LIMIT.

DETOUR DURATION (I-76)

ALL LANES OF I-76 (KENMORE LEG SLM 6.31 TO SLM 8.43) EAST AND WEST BOUND SHALL BE OPEN IN BOTH DIRECTIONS BY JULY 30, 2015.

ALL I-76 WESTBOUND WORK SHALL BE COMPLETED FIRST. ALL WORK SHALL BE COMPLETED IN THE WESTBOUND DIRECTION PRIOR TO OPENING TO TRAFFIC AND CLOSING I-76 EASTBOUND. IR-76 EAST AND WEST BOUND ARE NOT PERMITTED TO BE CLOSED CONCURRENTLY.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THE ABOVE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED DISINCENTIVES IN THE AMOUNT OF $10,000 PER CALENDAR DAY OR PORTION THEREOF THAT THE ROAD OR RAMPS REMAIN CLOSED BEYOND THE SPECIFIED LIMITS.

A+B BIDDING CONTRACT TABLE (I-76)

USE THE FOLLOWING INFORMATION IN COMBINATION WITH PROPOSAL NOTE 124: A+B BIDDING. ALL WORK TO THE MAINLINE, BRIDGES, MEDIAN LIGHT POLE FOUNDATIONS AND RAMPS (A, B, C, D, E, F, G, H, T, V, W, AND U) ON I-76 EAST AND WEST BOUND (KENMORE LEG SLM 6.31 TO SLM 8.43), EXCEPT THE LIGHT POLE ERECTION, SHALL BE COMPLETED DURING THIS TIME FRAME. THE CONTRACTOR WILL BID THE NUMBER OF CALENDAR DAYS TO COMPLETE THE PROJECT AS LISTED IN THE PROPOSAL.

A+B BIDDING CONTRACT TABLE

Contract Segment - Location of Critical Work	Minimum Days	Maximum Days	Incentive/ Disincentive $ per Day	Maximum Incentive $
Closure of I-76 between I-277 [SLM 6.31] and I-77 [SLM 8.58]	55	75	10,000	200,000

LANE CLOSURES (I-76 LIGHT POLE ERECTION)

NO LANE OR SHOULDER CLOSURERS SHALL OCCUR BETWEEN JULY 30, 2015 AND OCTOBER 30, 2015.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THE REQUIREMENTS IN THE CHART, THE CONTRACTOR SHALL BE ASSESSED DISINCENTIVES IN THE AMOUNT OF $ 10,000 PER DAY OR PORTION THEREOF THAT THE LANE REDUCTION REMAINS BEYOND THE SPECIFIED LIMIT.

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NON-GATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING'S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS WEB PAGE FOR ROADWAY STANDARDS APPROVED PRODUCTS.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDITIONAL BARRIER REQUIRED FOR A GATING IMPACT ATTENUATOR SHALL BE INCLUDED IN THE COST OF THE GATING IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614, WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL), 2 EACH

ITEM 622, PORTABLE BARRIER, 50", AS PER PLAN

THIS WORK SHALL CONSIST OF FURNISHING, MAINTAINING, AND SUBSEQUENTLY REMOVING A 50-INCH PORTABLE BARRIER AT THE LOCATIONS SHOWN ON THE PLANS. FOR DETAILS, SEE SCD RM-4.1.

PORTABLE STEEL BARRIER IS AN APPROVED ALTERNATIVE TO PORTABLE CONCRETE BARRIER. FOR INFORMATION ON APPROVED VENDORS, SEE THE APPROVED PRODUCTS LIST MAINTAINED BY ROADWAY STANDARDS.

PORTABLE BARRIER, 32 INCHES HIGH WITH AN 18-INCH MINIMUM HEIGHT GLARE SCREEN MAY BE USED AT THE OPTION OF THE CONTRACTOR. THE GLARE SCREEN SHALL BE CONSTRUCTED USING ONE OF THE SCREENS PROVIDED ON THE APPROVED LIST, AVAILABLE ON THE OFFICE OF ROADWAY ENIGNEERING WEBSITE.

PADDLE OR INTERMITTENT TYPE GLARE SCREENS SHALL BE DESIGNED USING A 20 DEGREE CUT-OFF ANGLE BASED ON TANGENT ALIGNMENT. THAT SPACING SHALL BE USED THROUGHOUT THE BARRIER LENGTH WITHOUT REGARD TO BARRIER CURVATURE.

THE GLARE SCREEN SYSTEM SHALL BE SECURELY FASTENED TO THE 32-INCH PORTABLE BARRIER USING THE HARDWARE AND PROCEDURES SPECIFIED BY THE MANUFACTURER.

FOR DIRECTIONS ON HOW TO INSTALL THE GLARE SCREEN AND THE BARRIER, SEE THE MANUFACTURER'S INSTRUCTIONS.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR ITEM 622, PORTABLE BARRIER, 50".

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 622, PORTABLE BARRIER, 50", AS PER PLAN, 1200 FT

DELINEATION OF PORTABLE AND PERMANENT BARRIER

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE BARRIER (PB) USED FOR TRAFFIC CONTROL AND ON PERMANENT CONCRETE BARRIER (INCLUDING BRIDGE PARAPETS) LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE.

BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THE SPACING SHALL BE AS PER TRAFFIC SCD MT-101.70. OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614.03 AND SCD MT-101.70. WHEN THE PB CONTAINS GLARE SCREEN, ONE SET OF THREE VERTICAL STRIPES OF SHEETING SHALL BE CONSIDERED EQUIVALENT TO AN OBJECT MARKER, ONE-WAY.

[INCREASED BARRIER DELINEATION, AS SPECIFIED HEREIN, SHALL BE INSTALLED ON ALL PB AND CONCRETE PERMANENT BARRIER LOCATED WITHIN 5 FEET OF THE EDGE OF THE TRAVELED LANE ALONG TAPERS AND TRANSITION AREAS AND ALONG CURVES (OUTSIDE ONLY) WITH DEGREE OF CURVATURE GREATER THAN OR EQUAL TO 3 DEGREES.]

[THE INCREASED BARRIER DELINEATION SHALL CONSIST OF EITHER DELINEATION PANELS OR THE TRIPLE STACKING OF WORK ZONE BARRIER REFLECTORS.]

[DELINEATION PANELS SHALL CONSIST OF PANELS OF DELINEATION, APPROXIMATELY 34 INCHES LONG AND 6 INCHES WIDE AND SHALL BE 7/32CRIMPED.9/32 PANELS SHALL BE INSTALLED AND SPACED PER TRAFFIC SCD MT-101.70.]

[TRIPLE-STACKED BARRIER REFLECTORS SHALL CONSIST OF ALIGNING THREE BARRIER REFLECTORS VERTICALLY, AT LOCATIONS WHERE A SINGLE BARRIER REFLECTOR WOULD BE OTHERWISE ATTACHED. THERE SHALL BE NO OPEN SPACE BETWEEN THE ADJACENT BARRIER REFLECTORS. THE TRIPLE-STACKED BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THEY SHALL BE SPACED AND ALIGNED PER TRAFFIC SCD MT-101.70.]

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE PLANS AND CARRIED TO THE GENERAL SUMMARY:

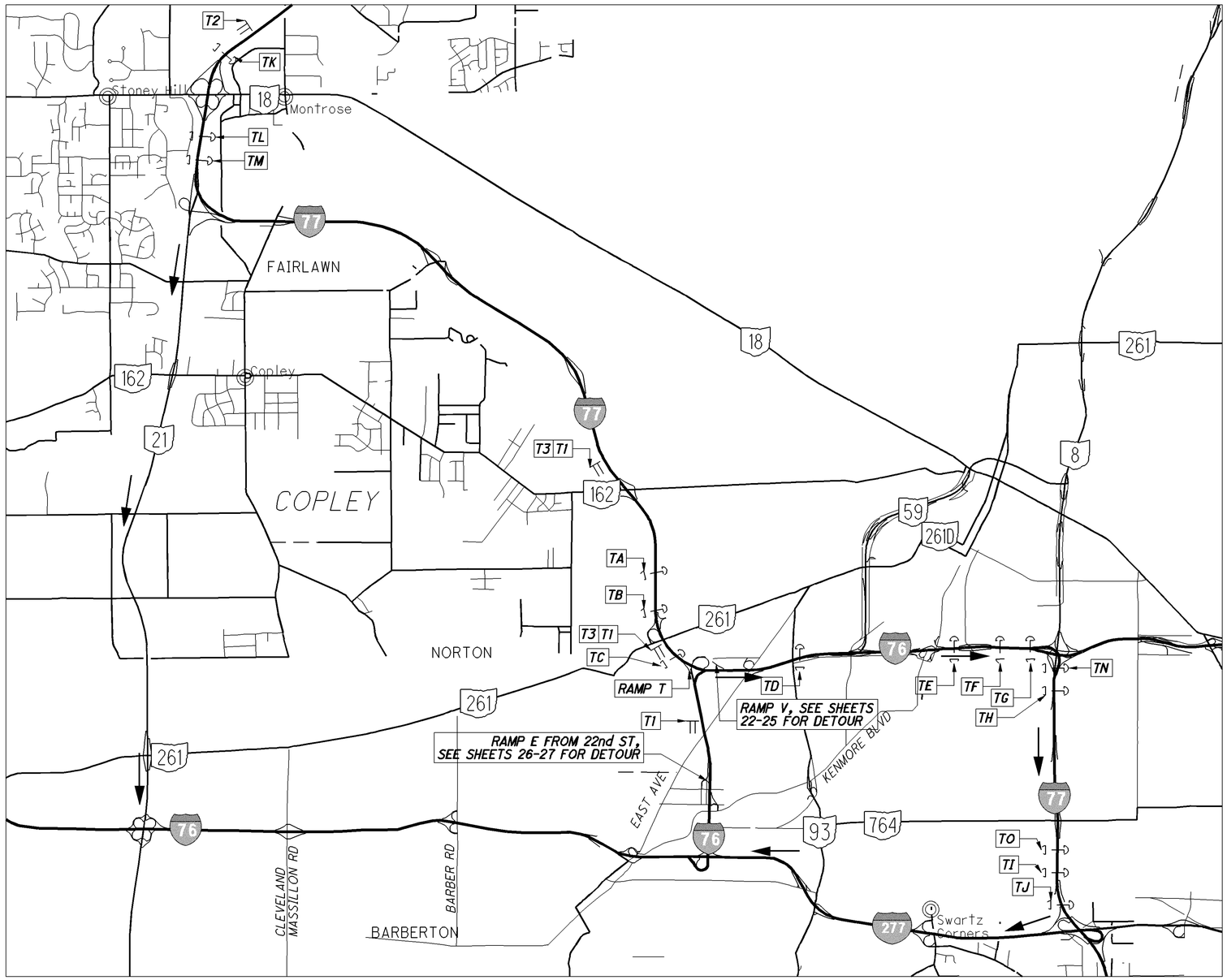
ITEM 614, BARRIER REFLECTOR, 26 EACH
ITEM 614, OBJECT MARKER, ONE-WAY 26 EACH

CALCULATED CNC CHECKED LAB

MAINTENANCE OF TRAFFIC GENERAL NOTES

SUM-76/77 277-VAR

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T1

PORTABLE CHANGEABLE MESSAGE SIGN
-PLACE 10 DAYS PRIOR TO CLOSURE AT 3 LOCATIONS

MESSAGE: 1) 76 WEST
TO 277
CLOSED

2) <DATES>

T2

PORTABLE CHANGEABLE MESSAGE SIGN

MESSAGE: 1) 76 WEST
TO 277
CLOSED

2) USE
21 SOUTH

T3

PORTABLE CHANGEABLE MESSAGE SIGN

MESSAGE: 1) 76 WEST
TO 277
CLOSED

2) USE
76 EAST

DETOUR PLAN FOR IR-76 WESTBOUND, RAMP T

— — CLOSE RAMPS T AND V AS PER STD. DWG. MT-98.29
(FOR LANE CLOSURES PRIOR TO RAMP, USE MT-95.30)

← RAMP T DETOUR ROUTE: IR-76 EAST / IR-77 SOUTH / IR-277 WEST
ALTERNATIVE: SR-21 SOUTH

N

NOT TO SCALE

NOTE: RAMP T SHALL BE CLOSED CONCURRENTLY WITH RAMPS V, E, AND MINOR ROAD.

REFER TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, FIGURE 6H-8 (TYPICAL APPLICATION 8), FOR SIGN SPACING.

COVER EXISTING SIGN

CALCULATED CNC
CHECKED LAB

DETOUR PLAN CLOSURE OF IR-76 WESTBOUND

SUM-76/77
277-VAR

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TA

EXIT 129

WEST TO

INTERSTATE 76 CLOSED INTERSTATE 277

W20-H15A-72

Canton

1 MILE

EXIT 130

261

Vernon Odom Blvd

¾ MILE

TB

DETOUR M4-8-30

WEST M3-4-36 INTERSTATE 76 M1-1-36-2

TO M4-5-36 INTERSTATE 277 M1-1-45-3

EXIT 129

EAST INTERSTATE 76 SOUTH INTERSTATE 77

Akron

WEST TO

INTERSTATE 76 CLOSED INTERSTATE 277

W20-H15A-72

Canton

EXIT ONLY

EXIT 130

261

Vernon Odom Blvd

TC

DETOUR M4-8-30

WEST M3-4-36 INTERSTATE 76 M1-1-36-2

TO M4-5-36 INTERSTATE 277 M1-1-45-3

EXIT 129

EAST INTERSTATE 76 SOUTH INTERSTATE 77

Akron

WEST TO

INTERSTATE 76 CLOSED INTERSTATE 277

W20-H15A-72

Canton

EXIT ONLY

TD

DETOUR M4-8-30

WEST M3-4-36 INTERSTATE 76 M1-1-36-2

TO M4-5-36 INTERSTATE 277 M1-1-45-3

EXIT 21C

INTERSTATE 76 EAST INTERSTATE 77 SOUTH

Youngstown

Canton

59 EAST

Downtown

ONLY

EXIT 21B

Lakeshore Blvd

Bowery St

TE

DETOUR M4-8-30

WEST M3-4-36 INTERSTATE 76 M1-1-36-2

TO M4-5-36 INTERSTATE 277 M1-1-45-3

EXIT 23A

INTERSTATE 76 EAST

Youngstown

INTERSTATE 77 SOUTH

Canton

¾ MILE

EXIT 22B

Wolf Ledges

Grant St

TF

DETOUR M4-8-30

WEST M3-4-36 INTERSTATE 76 M1-1-36-2

TO M4-5-36 INTERSTATE 277 M1-1-45-3

EXIT 23A

INTERSTATE 76 EAST

Youngstown

INTERSTATE 77 SOUTH

Canton

EXIT ONLY

CALCULATED CNC
CHECKED LAB

DETOUR PLAN CLOSURE OF IR-76 WESTBOUND

SUM-76/77
277-VAR

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TG

DETOUR M4-8-30 WEST M3-4-36 INTERSTATE 76 M1-1-36-2 TO M4-5-36 INTERSTATE 277 M1-1-45-3

EXIT 23A

INTERSTATE 76 EAST
Youngstown

INTERSTATE 77 SOUTH
Canton
ONLY

TH

DETOUR M4-8-30 WEST M3-4-36 INTERSTATE 76 M1-1-36-2 TO M4-5-36 INTERSTATE 277 M1-1-45-3

INTERSTATE 77 SOUTH
Canton

EXIT 124A
Archwood Ave
Firestone Blvd N
1/2 MILE

EXIT 124B
Lovers Lane
Cole Ave

TI

DETOUR M4-8-30 WEST M3-4-36 INTERSTATE 76 M1-1-36-2

EXIT 122A
224 EAST
Mogadore
LEFT 3/4 MILE

EXIT 122B
INTERSTATE 277 224 WEST
Barberton
1/2 MILE

EXIT 123A
Waterloo Rd
EXIT ONLY

TJ

DETOUR M4-8-30 WEST M3-4-36 INTERSTATE 76 M1-1-36-2

EXIT 122A
224 EAST
Mogadore
LEFT 1/2 MILE

EXIT 122B
INTERSTATE 277 224 WEST
Barberton
1/4 MILE

EXIT 123A
Waterloo Rd
EXIT ONLY

TK

DETOUR M4-8-30 WEST M3-4-36 INTERSTATE 76 M1-1-36-2

INTERSTATE 77 SOUTH
Akron - Canton

EXIT 136
21 SOUTH
Massillon
3/4 MILE

EXIT 137A
18 EAST
Fairlawn
EXIT ONLY

CALCULATED CNC
CHECKED LAB

DETOUR PLAN CLOSURE OF IR-76 WESTBOUND

SUM-76/77
277-VAR

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TL

DETOUR
M4-8-30
WEST
M3-4-36
INTERSTATE 76
M1-1-36-2

INTERSTATE 77 SOUTH
Akron - Canton

EXIT 136
21 SOUTH
Massillon
EXIT ONLY

TO

DETOUR
M4-8-30
WEST
M3-4-36
INTERSTATE 76
M1-1-36-2

EXITS 122A-B
INTERSTATE 277
224
Barberton
Mogadore
¾ MILE

EXIT 123A
Waterloo Rd
½ MILE

TM

DETOUR
M4-8-30
WEST
M3-4-36
INTERSTATE 76
M1-1-36-2

INTERSTATE 77 SOUTH
Akron - Canton

EXIT 136
21 SOUTH
Massillon

TN

DETOUR
M4-8-30
WEST
M3-4-36
INTERSTATE 76
M1-1-36-2

TO
M4-5-36
INTERSTATE 277
M1-1-45-3

INTERSTATE 77 SOUTH

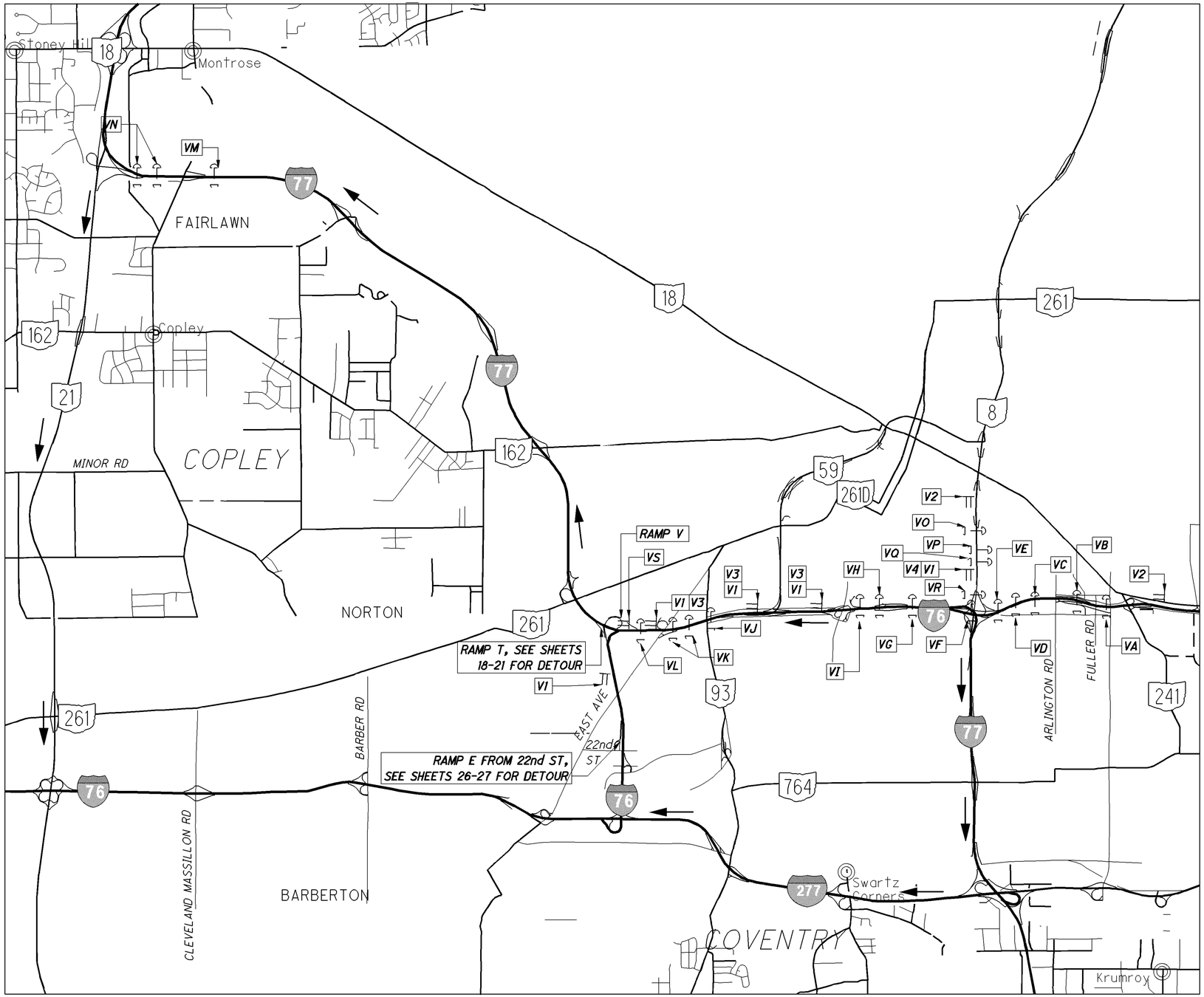
EXIT 124B
Lovers Lane
Cole Ave
KEEP RIGHT

CALCULATED CNC
CHECKED LAB

DETOUR PLAN CLOSURE OF IR-76 WESTBOUND

SUM-76/77
277-VAR

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DETOUR PLAN FOR IR-76 WESTBOUND, RAMP V

— — CLOSE RAMP V AND T AS PER STD. DWG. MT-98.29
(FOR LANE CLOSURES PRIOR TO RAMP, USE MT-95.30)

← RAMP V DETOUR ROUTE: IR-77 NORTH / SR-21 SOUTH
ALTERNATIVE ROUTE: IR-77 SOUTH / IR-277 WEST

N
NOT TO SCALE

NOTE: RAMP V SHALL BE CLOSED CONCURRENTLY WITH RAMPS T, E, AND MINOR ROAD.

REFER TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, FIGURE 6H-8 (TYPICAL APPLICATION 8), FOR SIGN SPACING.

COVER EXISTING SIGN

V1 PORTABLE CHANGEABLE MESSAGE SIGN
-PLACE 10 DAYS PRIOR TO CLOSURE AT 5 LOCATIONS

MESSAGE: 1) 76 WEST
TO 277
CLOSED

2) <DATES>

V2 PORTABLE CHANGEABLE MESSAGE SIGN

MESSAGE: 1) 76 WEST
TO 277
CLOSED

2) USE
77 SOUTH

V3 PORTABLE CHANGEABLE MESSAGE SIGN

MESSAGE: 1) 76 WEST
TO 277
CLOSED

2) USE
77 NORTH

V4 PORTABLE CHANGEABLE MESSAGE SIGN

MESSAGE: 1) 76 WEST
TO 277
CLOSED

2) USE
77 SOUTH

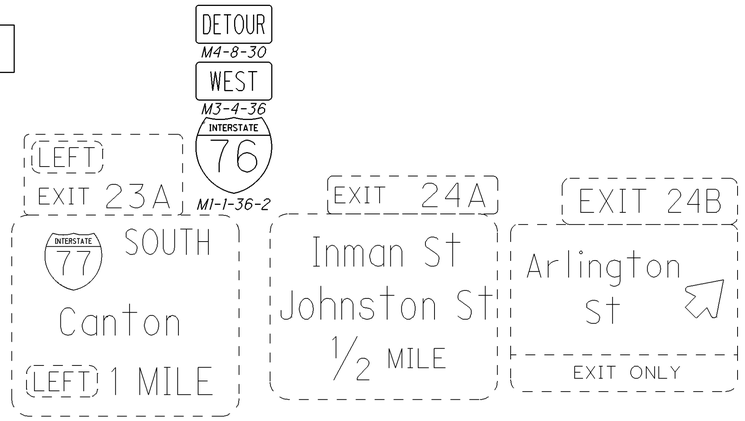
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DETOUR PLAN CLOSURE OF IR-76 WESTBOUND

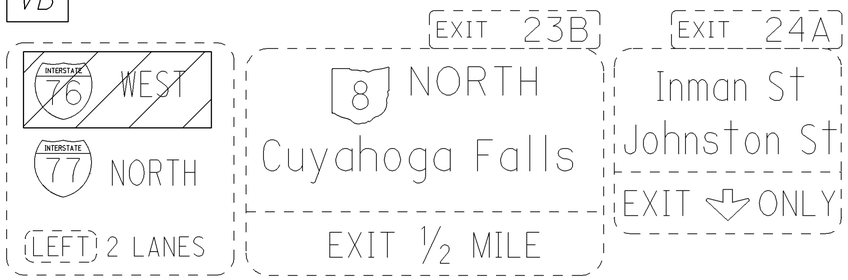
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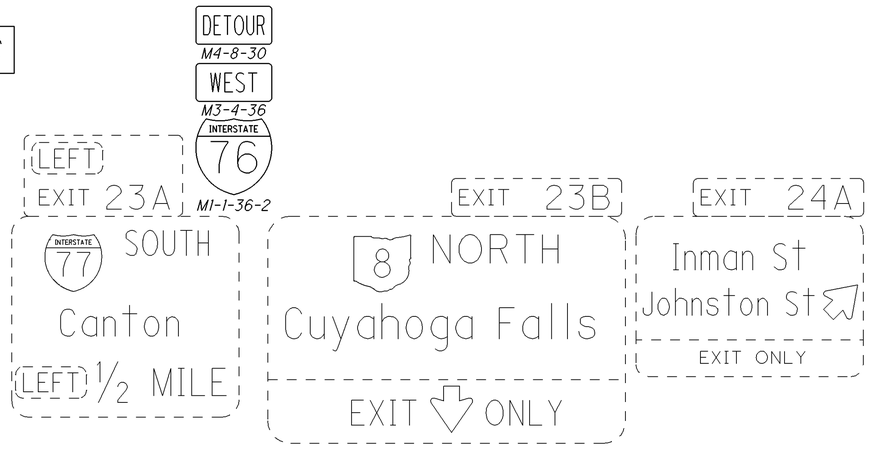
VA



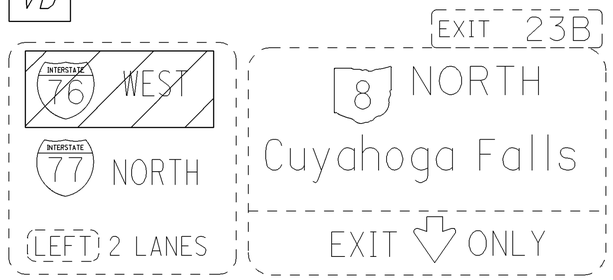
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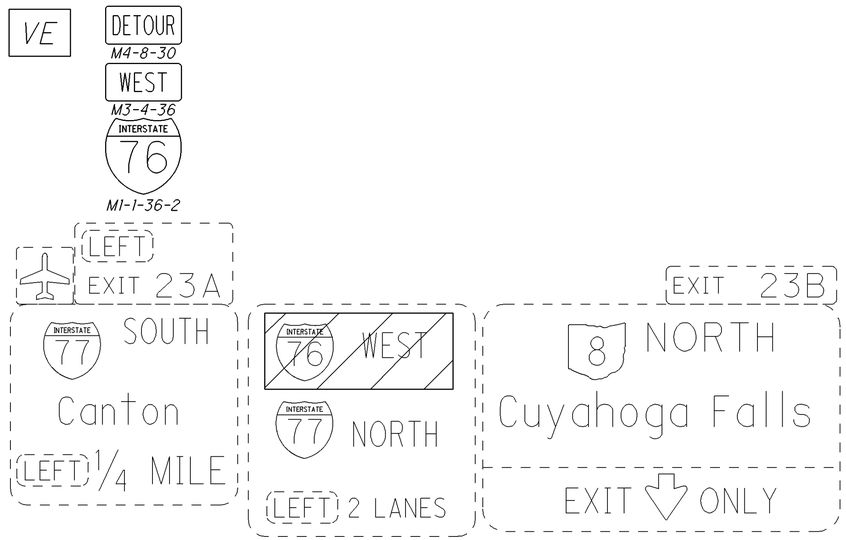
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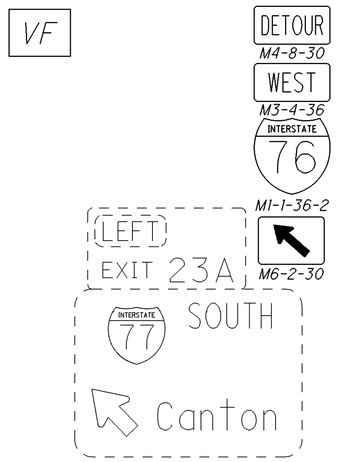
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VE



VF



CALCULATED CNC
CHECKED LAB

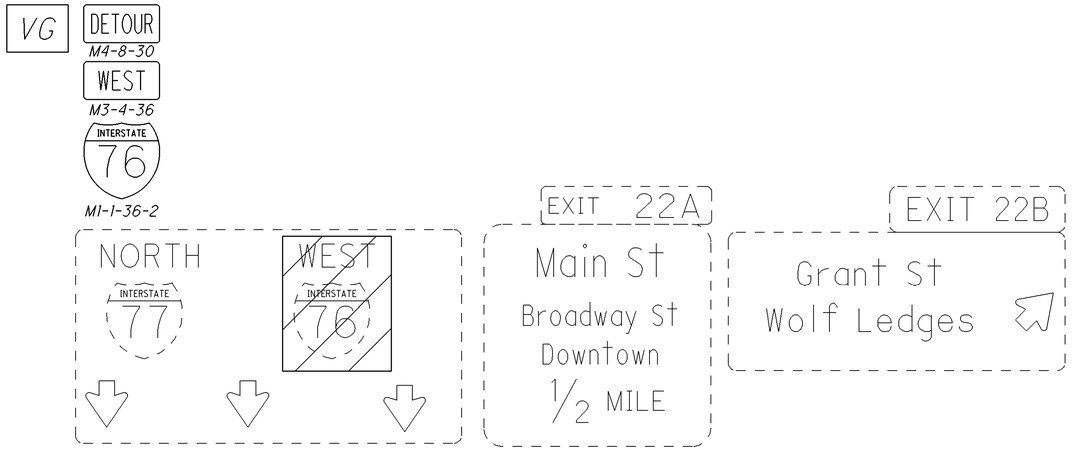
DETOUR PLAN CLOSURE OF IR-76 WESTBOUND

SUM-76/77
277-VAR

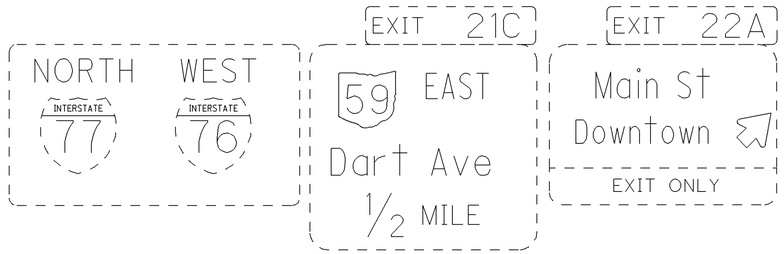
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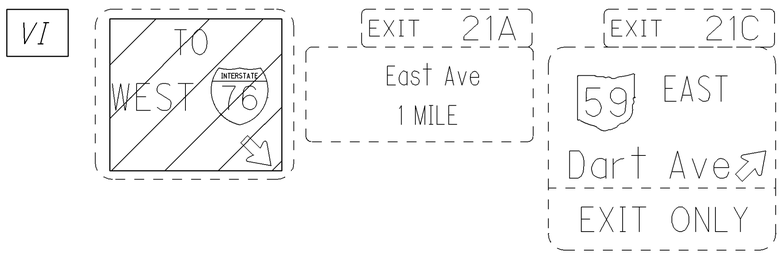
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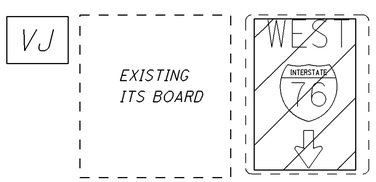
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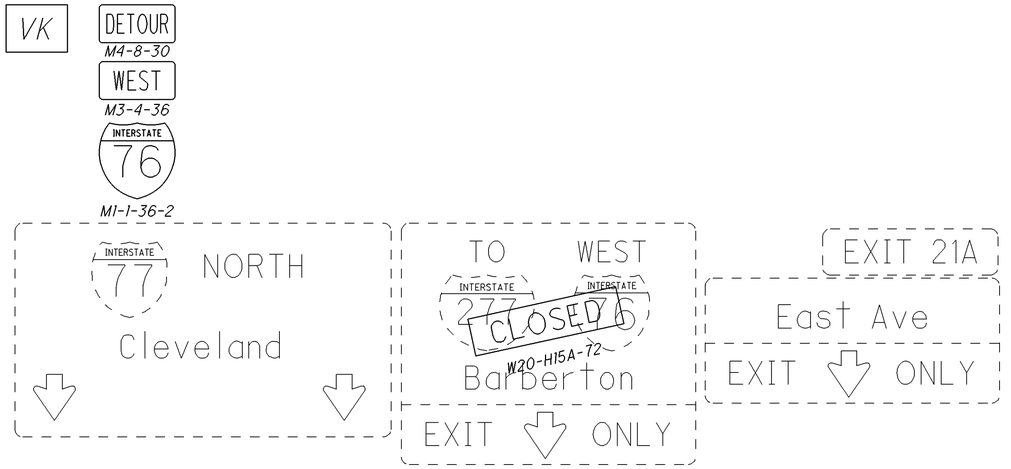
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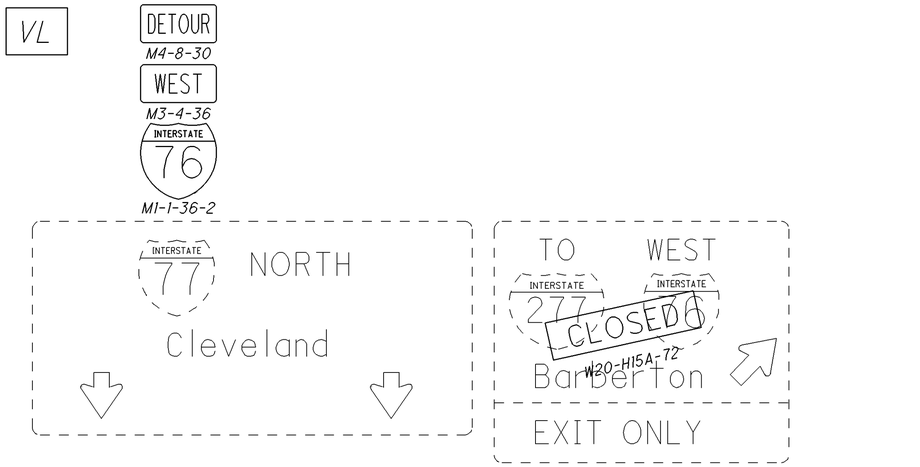
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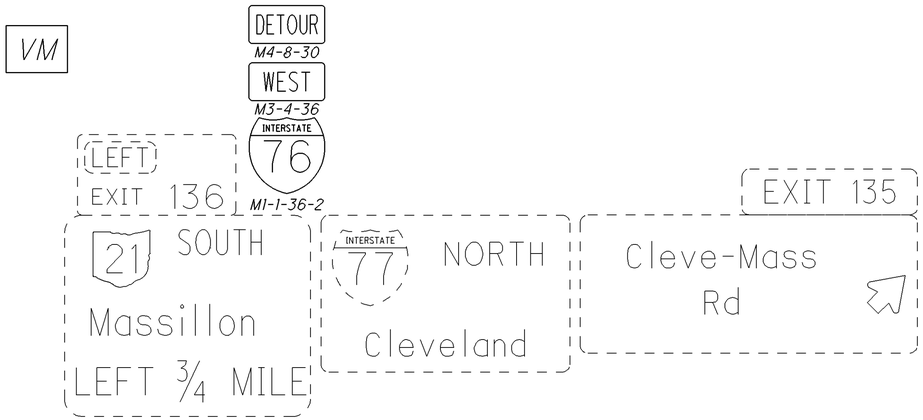
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DETOUR PLAN CLOSURE OF IR-76 WESTBOUND

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VN

DETOUR
M4-8-30
WEST
M3-4-36
INTERSTATE 76
M1-1-36-2

LEFT
EXIT 136

21 SOUTH
Massillon
EXIT ONLY

INTERSTATE 77 NORTH
Cleveland

VO

NORTH INTERSTATE 77
WEST INTERSTATE 76
Barberton
3/4 MILE

VP

DETOUR
M4-8-30
WEST
M3-4-36
INTERSTATE 76
M1-1-36-2

SOUTH INTERSTATE 77
Canton

EAST INTERSTATE 76
Youngstown

NORTH INTERSTATE 77
WEST INTERSTATE 76
Barberton
EXIT ONLY

VQ

DETOUR
M4-8-30
WEST
M3-4-36
INTERSTATE 76
M1-1-36-2

SOUTH INTERSTATE 77 END 8
Canton

EAST INTERSTATE 76
Youngstown
EXIT ONLY

NORTH INTERSTATE 77
WEST INTERSTATE 76
Barberton
EXIT ONLY

VR

INTERSTATE 76 EAST

INTERSTATE 77 NORTH
INTERSTATE 76 WEST

VS

INTERSTATE 76
EXIT
CLOSED
E5-2A-48

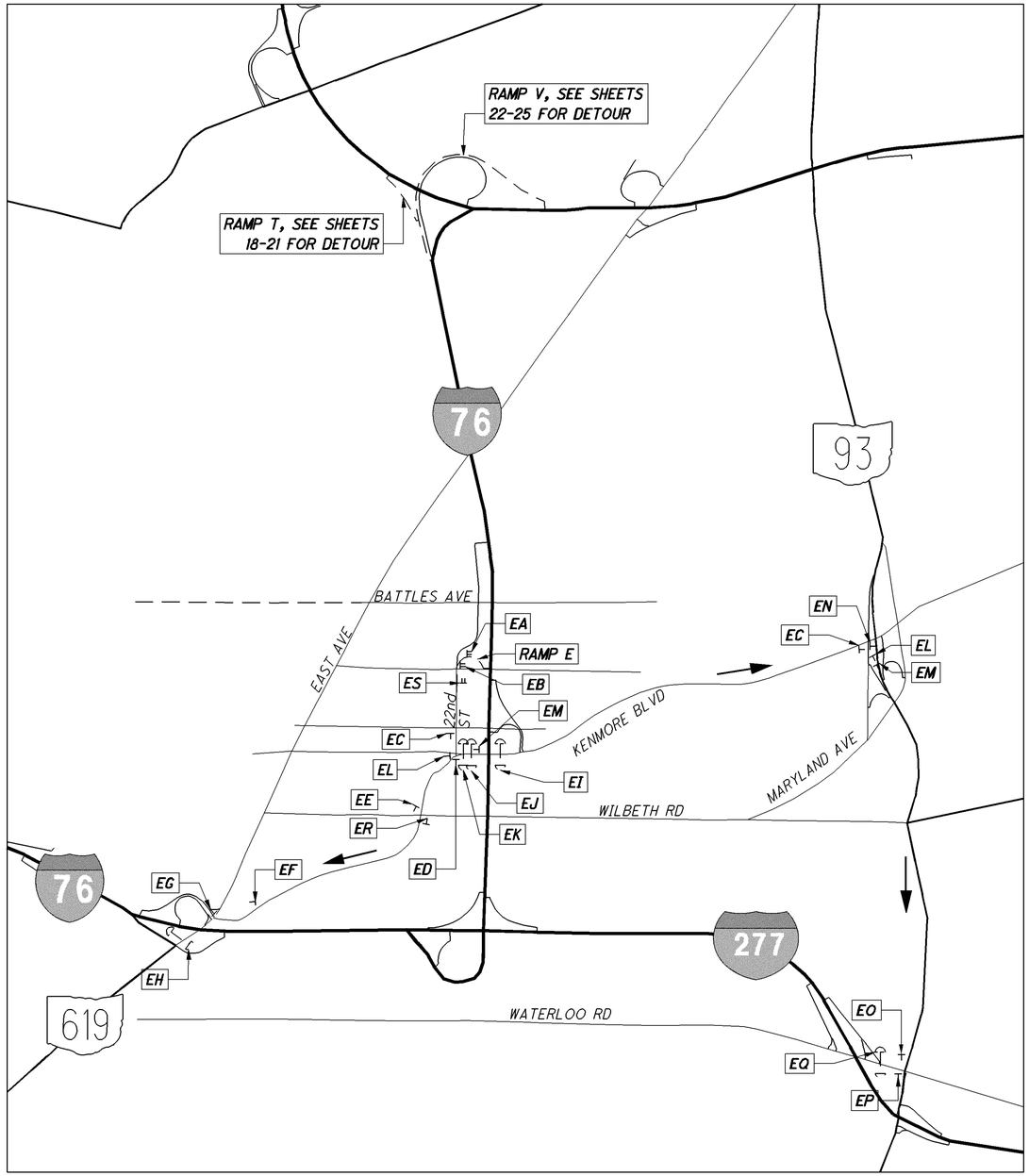
CALCULATED CNC
CHECKED LAB

DETOUR PLAN CLOSURE OF IR-76 WESTBOUND

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277-VAR

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DETOUR PLAN FOR SUM-76, WESTBOUND, RAMP E (22nd ST TO IR-76 EAST)

— — CLOSE RAMP AS PER STD. DWG. MT-101.60

OFFICIAL DETOUR ROUTE:
EB KENMORE BLVD:
IR-76 WEST: KENMORE BLVD / SR-93 SOUTH / WATERLOO RD / IR-277 WEST
IR-277 EAST: KENMORE BLVD / SR-93 SOUTH / WATERLOO RD
WB KENMORE BLVD:
IR-76 WEST: KENMORE BLVD
IR-277 EAST: KENMORE BLVD / SR-619

NOTE: RAMP E SHALL BE CLOSED CONCURRENTLY WITH RAMPS V, T AND MINOR ROAD.

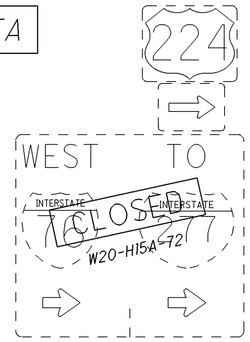
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NOT TO SCALE

REFER TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, FIGURE 6H-8 (TYPICAL APPLICATION 8), FOR SIGN SPACING.

ON TYPE III BARRICADE WITH TYPE B FLASHER MOUNTED PER MT 101.60

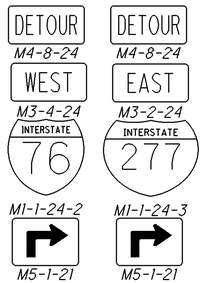
EA



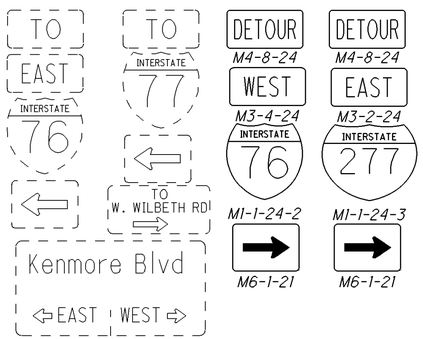
EB



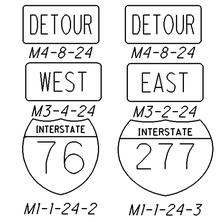
EC



ED



EE



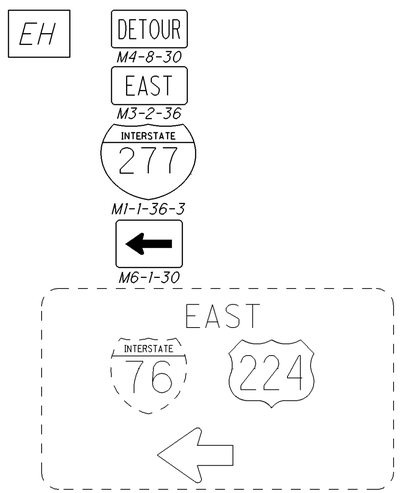
EF



EG



EH



CALCULATED CNC
CHECKED LAB

DETOUR PLAN CLOSURE OF IR-76 WESTBOUND

SUM-76/77
277-VAR

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EI

EJ

EK

EL

EM

EN

EO

EP

EQ

ER

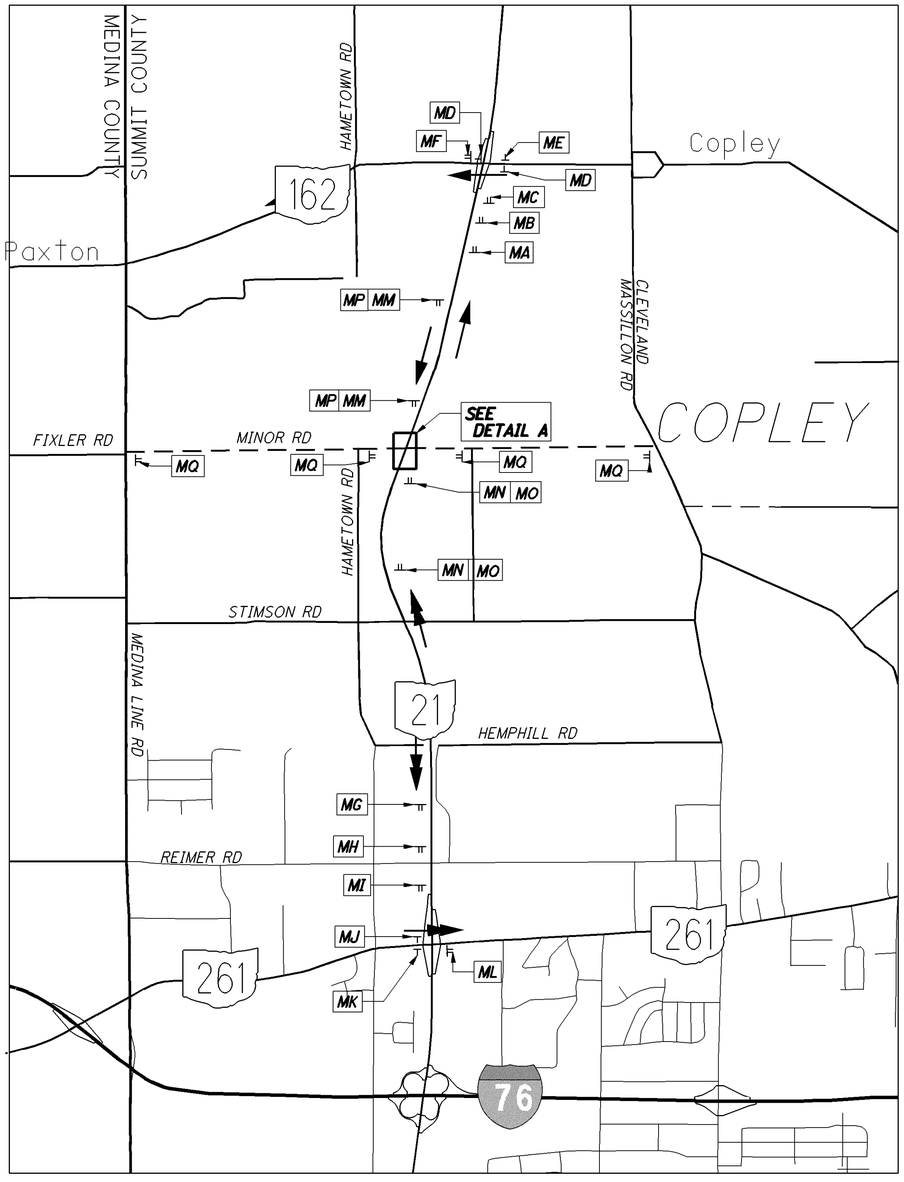
ES

CALCULATED CNC
CHECKED LAB

DETOUR PLAN CLOSURE OF IR-76 WESTBOUND

SUM-76/77
277-VAR

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NOT TO SCALE

CLOSE MINOR RD, SEE DETAIL A, ON SHEET 29, FOR MINOR RD AT SR 21

OFFICIAL DETOUR ROUTE:
SR-21 NORTHBOUND TO WESTBOUND MINOR RD
THRU MINOR RD WESTBOUND
WEST MINOR RD TO SR 21 SOUTH BOUND
> SR 21 NORTH / SR 162 / SR 21 SOUTH

SR 21 SOUTHBOUND TO EASTBOUND MINOR RD
THRU MINOR RD EAST
EAST MINOR RD TO SR 21 NORTH
> SR 21 SOUTH / SR 261 / SR 21 NORTH

REFER TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, FIGURE 6H-8 (TYPICAL APPLICATION 8), FOR SIGN SPACING.

COVER SIGN

MA

WEST M3-4-36 | Minor Rd D3-1-VAR | DETOUR M4-9-SPECIAL-48

DETOUR M4-8-30 | SOUTH M3-3-36 | 21 M1-5-36-2

162 Copley Rd Akron 1 MILE

MB

WEST M3-4-36 | Minor Rd D3-1-VAR | DETOUR M4-H9T-48

DETOUR M4-8-30 | SOUTH M3-3-36 | 21 M1-5-36-2

162 Copley Rd Akron ½ MILE

MC

WEST M3-4-36 | Minor Rd D3-1-VAR | DETOUR M4-H9T-SPECIAL(2)-48

DETOUR M4-8-30 | SOUTH M3-3-36 | 21 M1-5-36-2 | M6-2-30

162 Copley Rd Akron

MD

WEST M3-4-24 | Minor Rd D3-1-VAR | DETOUR M4-H9BL-30

DETOUR M4-8-24 | SOUTH M3-3-24 | 21 M1-5-24-2 | M5-1-21

ME

WEST M3-4-24 | Minor Rd D3-1-VAR | DETOUR M4-9L-30

DETOUR M4-8-24 | SOUTH M3-3-24 | 21 M1-5-24-2 | M6-1-21

MF

SOUTH 21 | Massillon 26

WEST M3-4-36 | Minor Rd D3-1-VAR | DETOUR M4-9L-30

MG

EAST M3-2-36 | Minor Rd D3-1-VAR | DETOUR M4-9-SPECIAL-48

DETOUR M4-8-30 | NORTH M3-1-36 | 21 M1-5-36-2

261 Norton Wadsworth 1 MILE

MH

EAST M3-2-36 | Minor Rd D3-1-VAR | DETOUR M4-9-SPECIAL-48

DETOUR M4-8-30 | NORTH M3-1-36 | 21 M1-5-36-2

261 Norton Wadsworth NEXT RIGHT

MI

EAST M3-2-36 | Minor Rd D3-1-VAR | DETOUR M4-9-SPECIAL(2)-48

DETOUR M4-8-30 | NORTH M3-1-36 | 21 M1-5-36-2 | M6-2-30

261 Norton Wadsworth

MJ

EAST M3-2-24 | Minor Rd D3-1-VAR | DETOUR M4-H9BL-30

DETOUR M4-8-24 | NORTH M3-1-24 | 21 M1-5-24-2 | M5-1-21

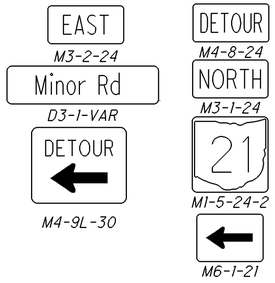
DETOUR PLAN CLOSURE OF MINOR RD

SUM-76/77
277-VAR

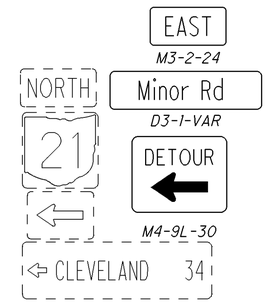
CALCULATED CNC
CHECKED LAB

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MK



ML



MM *PORTABLE CHANGEABLE MESSAGE SIGN -PLACE FOR 10 DAY PRIOR TO CLOSURE AT 2 LOCATIONS*

MESSAGE: 1) MINOR RD
EAST
CLOSED

2) <DATE>

MN *PORTABLE CHANGEABLE MESSAGE SIGN -PLACE FOR 10 DAY PRIOR TO CLOSURE AT 2 LOCATIONS*

MESSAGE: 1) MINOR RD
WEST
CLOSED

2) <DATE>

MO *PORTABLE CHANGEABLE MESSAGE SIGN*

MESSAGE: 1) MINOR RD
WEST
CLOSED

2) USE
SR 162

MP *PORTABLE CHANGEABLE MESSAGE SIGN*

MESSAGE: 1) MINOR RD
EAST
CLOSED

2) USE
SR 261

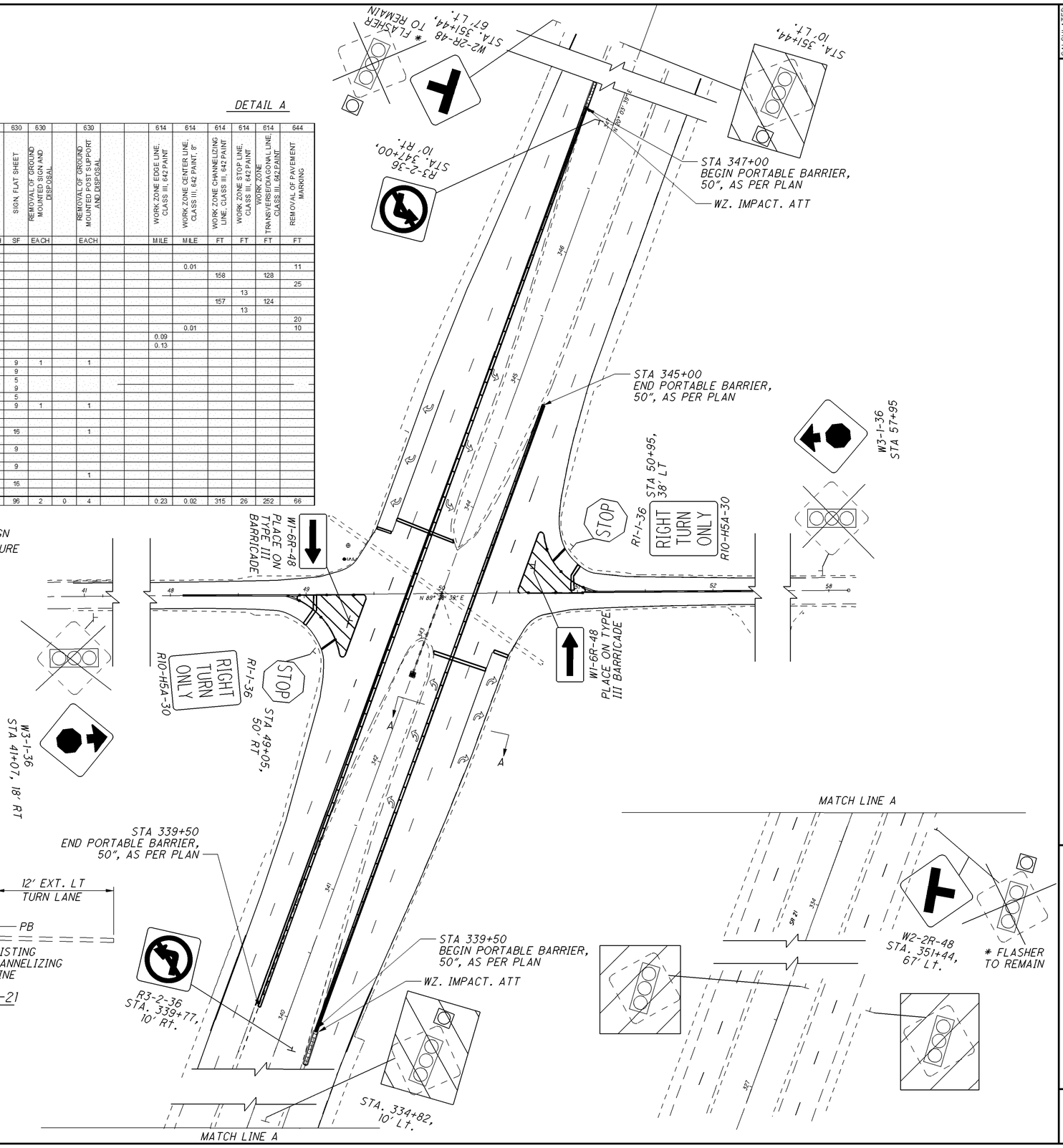
MQ *PORTABLE CHANGEABLE MESSAGE SIGN -PLACE FOR 10 DAY PRIOR TO CLOSURE AT 2 LOCATIONS*

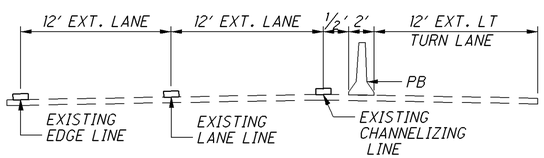
MESSAGE: 1) RT TURN
ONLY
AT SR 21

2) <DATE>

DETAIL A

LOCATION	DESCRIPTION	STATION TO STATION				630 ONE WAY SUPPORT, NO. 3 POST FT	630 SIGN POST REFLECTOR EACH	630 SIGN, FLAT SHEET SF	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL EACH		630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH			614 WORK ZONE EDGE LINE, CLASS III, 642 PAINT MILE	614 WORK ZONE CENTER LINE, CLASS III, 642 PAINT, 8" MILE	614 WORK ZONE CHANNELIZING LINE, CLASS III, 642 PAINT FT	614 WORK ZONE STOP LINE, CLASS III, 642 PAINT FT	614 WORK ZONE TRANSVERSE RUMBLE LINE, CLASS III, 642 PAINT FT	644 REMOVAL OF PAVEMENT MARKING FT
Minor Rd	CL	48+84.00	CL	TO	48+95.00	CL									0.01				11
Minor Rd	TransvL	48+96.00	RT		49+44.00	RT											158		128	
Minor Rd	ExStopL	48+98.00	21'RT		49+07.00	CL														25
Minor Rd	StopLine	49+11.00	40'RT		49+21.00	33'RT												13		
Minor Rd	TransvL	50+55.00	CL		5'+01.50	CL											157		124	
Minor Rd	StopLine	50+82.00	24'LT		50+91.00	33'LT												13		
Minor Rd	ExStopL	50+95.00	CL		5'+02.00	19'LT														20
Minor Rd	CL	5'+05.00	CL		5'+15.00	CL									0.01					10
SR 21	EL	339+97.00	23.5'RT		344+89.00	23'RT								0.09						
SR 21	EL	340+00.00	25'LT		347+05.00	23'LT								0.13						
Minor Rd	W3-1-36	41+07.00	18'RT		(Yellow sign post reflector)		15	1	9	1		1								
Minor Rd	R1-1-36	49+05	50'RT		(Red sign post reflector)		16	1	9											
Minor Rd	R10-H5A R1-1-36 R10-H5A	50+95.00	38'LT		(Red sign post reflector)		16	1	5 9 5											
Minor Rd	W3-1-36	57+95.00			(Yellow sign post reflector)		15	1	9	1		1								
SR 21	ExSignRem	334+82.00	10'RT		334+82.00	65'RT			16			1								
SR 21	W2-2R-48	334+80.00	65'RT																	
SR 21	R3-2-36	339+77.00	10'RT				14		9											
SR 21	R3-2-36	347+00.00	10'LT				13.5		9											
SR 21	ExSignRem	351+44.00	10'LT		351+44.00	67'LT						1								
SR 21	W2-2R-48	351+46.00	67'LT				15/16		16											
TOTALS CARRIED TO GENERAL SUMMARY							122	4	96	2	0	4		0.23	0.02	315	26	252	66	





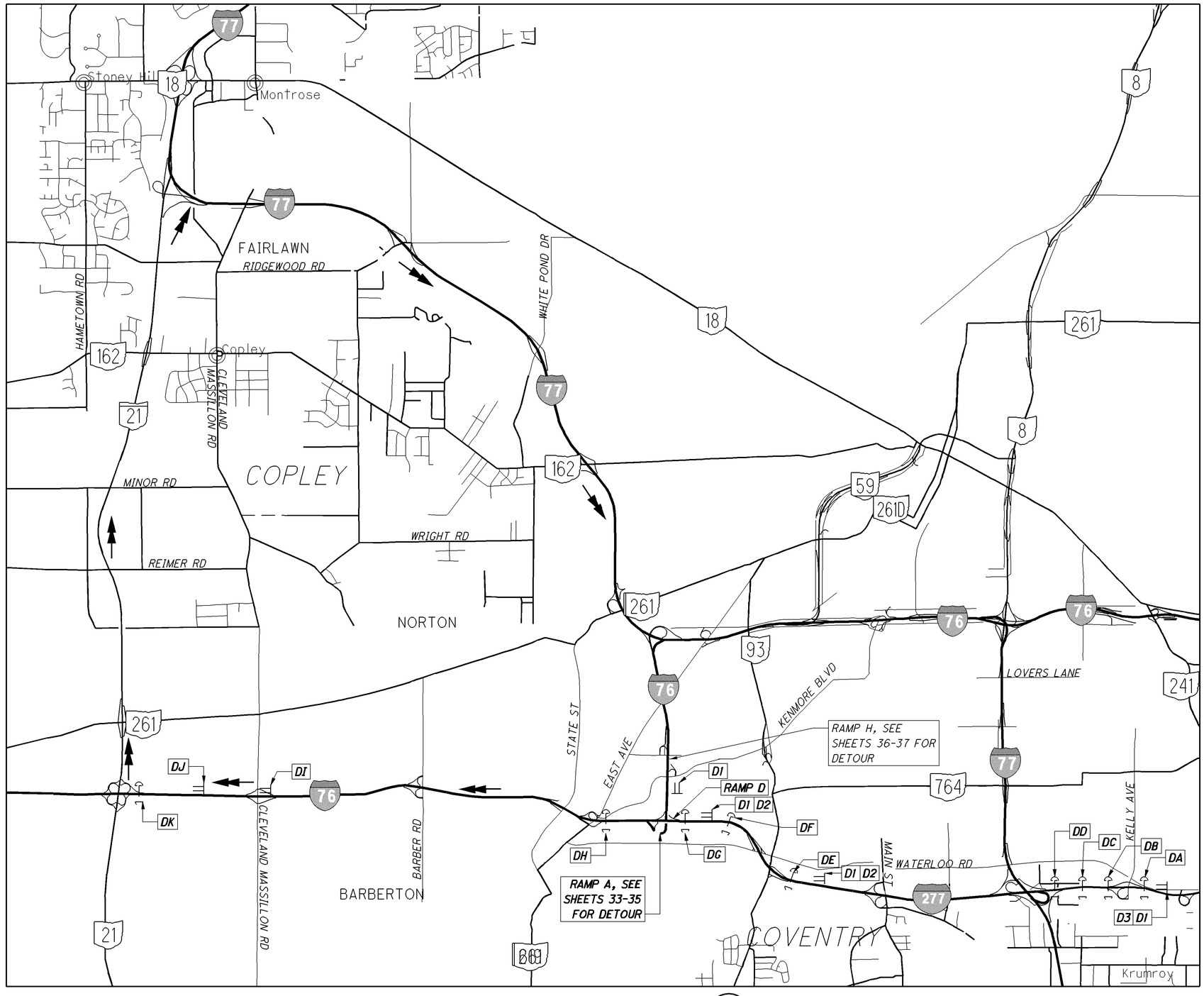
TYPICAL SECTION - SR-21
SECTION A-A

DETOUR PLAN CLOSURE OF MINOR RD

SUM-76/77
277-VAR

CALCULATED CNC
CHECKED LAB

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D1 PORTABLE CHANGEABLE MESSAGE SIGN
-PLACE 10 DAYS PRIOR TO CLOSURE AT 2 LOCATIONS

MESSAGE: 1) 76 EAST
TO 77N
CLOSED

2) <DATES>

D2 PORTABLE CHANGEABLE MESSAGE SIGN

MESSAGE: 1) 76 EAST
TO 77N
CLOSED

2) USE
76 WEST

D3 PORTABLE CHANGEABLE MESSAGE SIGN

MESSAGE: 1) 76 EAST
TO 77N
CLOSED

2) USE
77 NORTH

DETOUR PLAN FOR SUM-76, EASTBOUND, RAMP D

— — CLOSER RAMP AS PER STD. DWG. MT-98.29 (FOR LANE CLOSURES PRIOR TO RAMP, USE MT-95.30)

RAMP D DETOUR ROUTE: IR-76 WEST / SR-21 NORTH / IR-77 SOUTH
ALTERNATIVE ROUTE: IR-77 NORTH

N

NOT TO SCALE

NOTE: RAMP D SHALL BE CLOSED CONCURRENTLY WITH RAMPS A, H, AND MINOR ROAD.

REFER TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, FIGURE 6H-8 (TYPICAL APPLICATION 8), FOR SIGN SPACING.

CALCULATED CNC
CHECKED LAB

DETOUR PLAN FOR CLOSURE OF IR-76 EASTBOUND

SUM-76/77
277-VAR

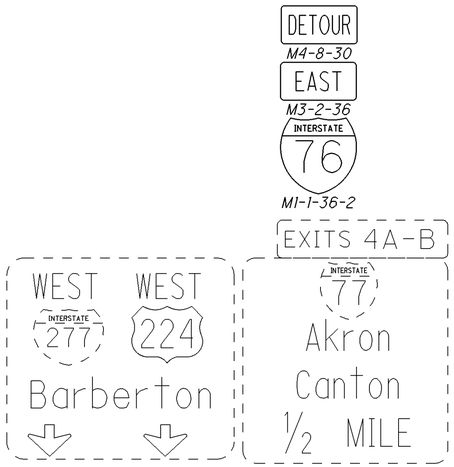
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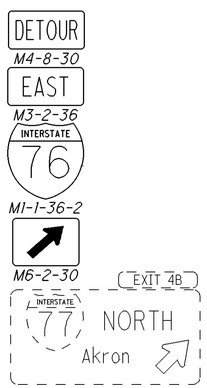
DA



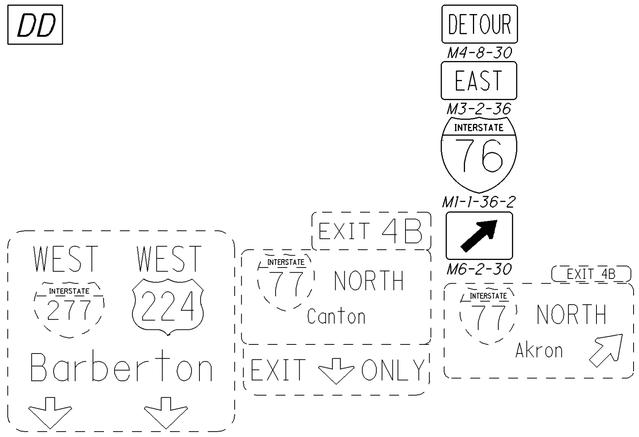
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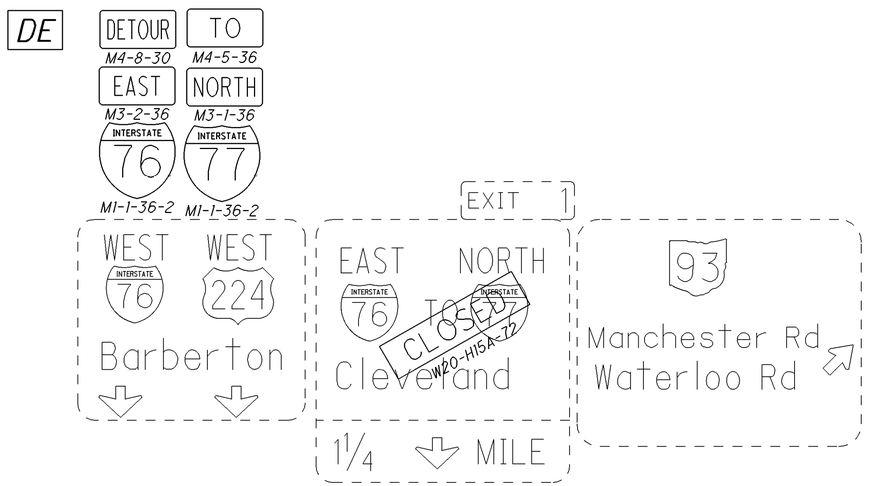
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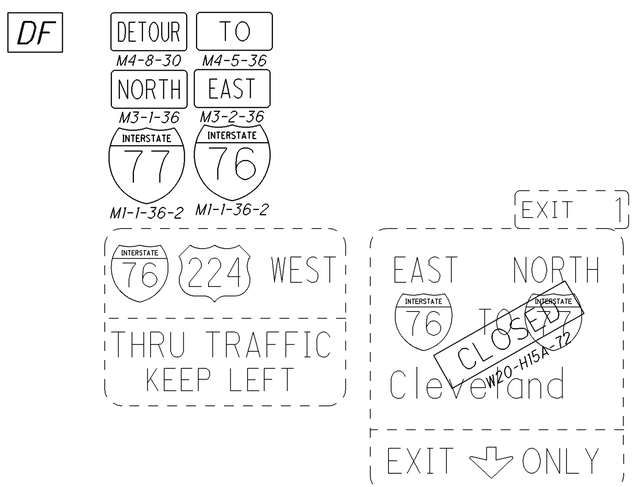
DD



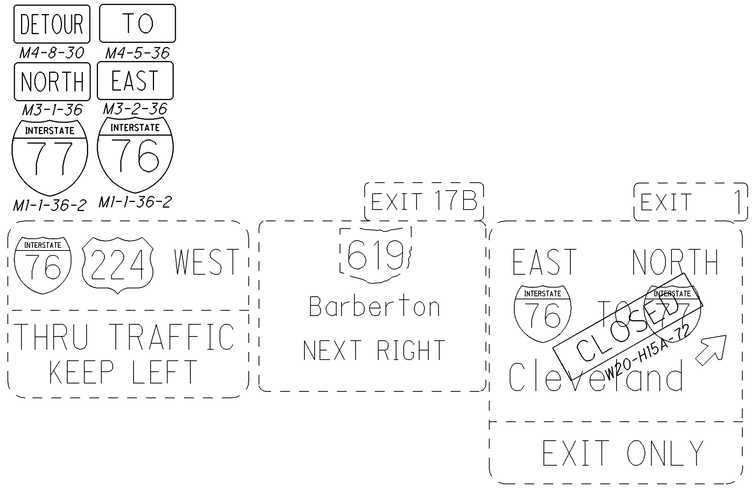
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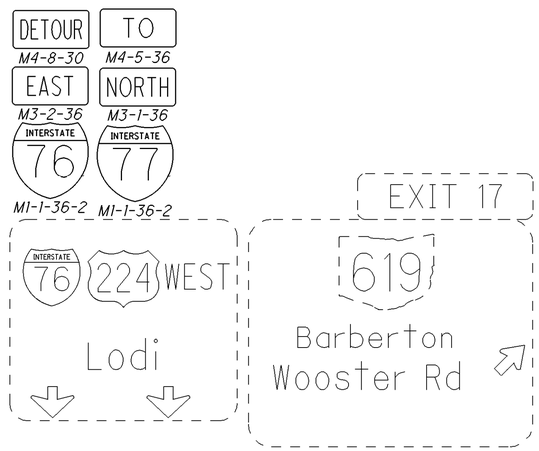
DF



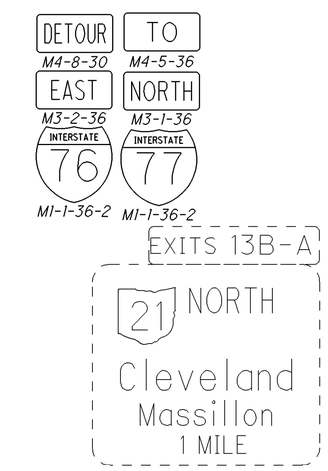
DG



DH



DI



CALCULATED CNC
CHECKED LAB

FOR CLOSURE OF IR-76 EASTBOUND

DETOUR PLAN FOR

SUM-76/77
277-VAR

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DJ

DK

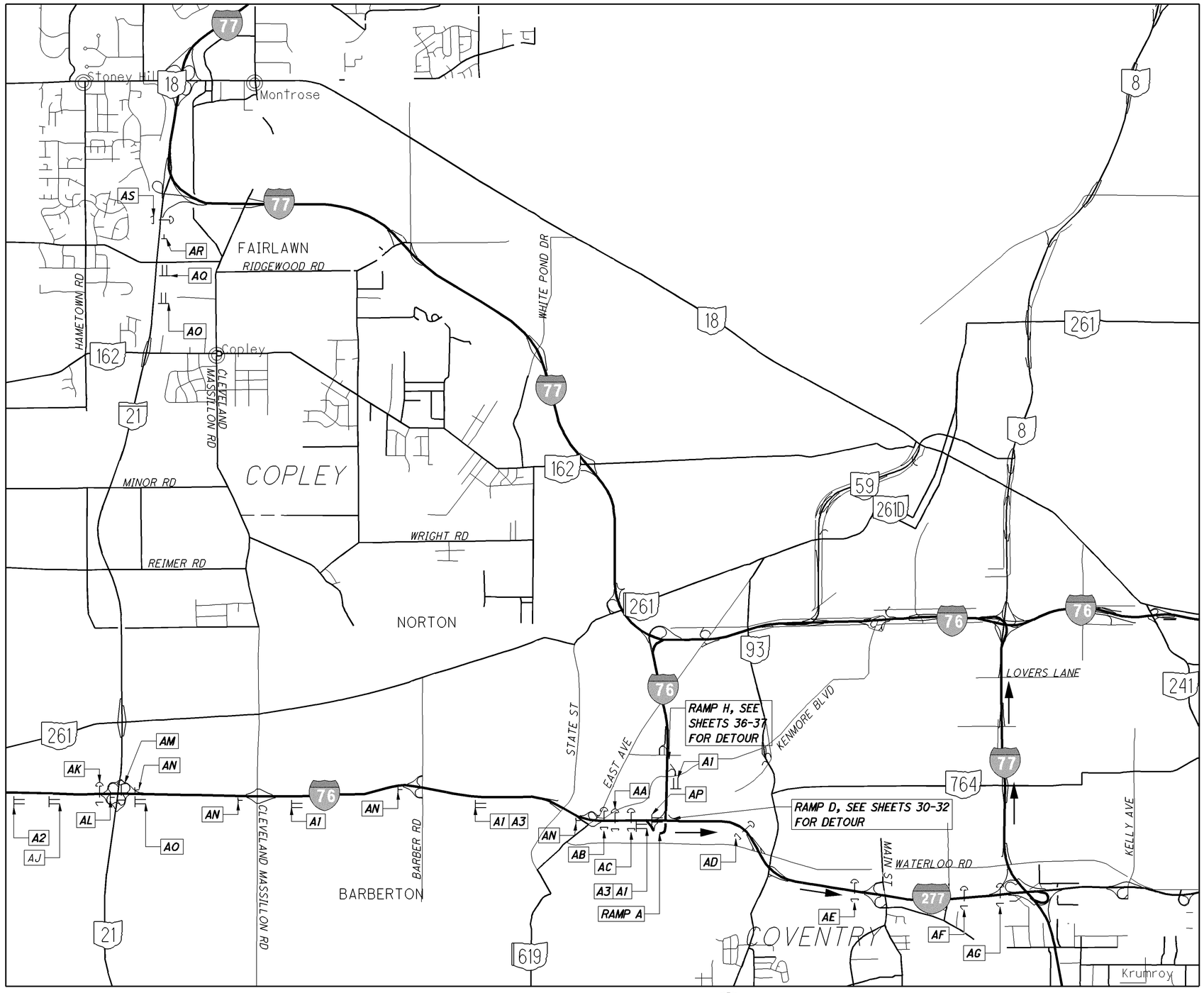
CALCULATED CNC
CHECKED LAB

DETOUR PLAN FOR CLOSURE OF IR-76 EASTBOUND

SUM-76/77
277-VAR

32
113

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DETOUR PLAN FOR SUM-76, EASTBOUND, RAMP A

— — CLOSER RAMP AS PER STD. DWG. MT-98.29 (FOR LANE CLOSURES PRIOR TO RAMP, USE MT-95.30)

→ RAMP A DETOUR ROUTE: IR-277 EAST / IR-77 NORTH
ALTERNATIVE ROUTE: SR-21 NORTH / IR-77 SOUTH

N

NOT TO SCALE

NOTE: RAMP A SHALL BE CLOSED CONCURRENTLY WITH RAMPS D, H, AND MINOR ROAD.

A1 PORTABLE CHANGEABLE MESSAGE SIGN
-PLACE 10 DAYS PRIOR TO CLOSURE AT 4 LOCATIONS

MESSAGE: 1) 76 EAST
CLOSED

2) <DATES>

A2 PORTABLE CHANGEABLE MESSAGE SIGN

MESSAGE: 1) 76 EAST
CLOSED

2) USE
21 NORTH

A3 PORTABLE CHANGEABLE MESSAGE SIGN

MESSAGE: 1) 76 EAST
CLOSED

2) USE
227 EAST

REFER TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, FIGURE 6H-8 (TYPICAL APPLICATION 8), FOR SIGN SPACING.

CALCULATED CNC
CHECKED LAB

DETOUR PLAN FOR CLOSURE OF IR-76 EASTBOUND

SUM-76/77
277-VAR

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AA

DETOUR
M4-8-30
EAST
M3-2-36
INTERSTATE 76
M1-1-36-2

INTERSTATE 277 | 224 EAST
Canton

INTERSTATE 76 EAST
CLOSED
W20-H15A
3/4 MILE

619
East Ave
Wooster Rd

AB

DETOUR
M4-8-30
EAST
M3-2-36
INTERSTATE 76
M1-1-36-2

INTERSTATE 277 | 224 EAST
Canton
ONLY

INTERSTATE 76 EAST
CLOSED
W20-H15A
1/4 MILE

AC

DETOUR
M4-8-30
EAST
M3-2-36
INTERSTATE 76
M1-1-36-2

INTERSTATE 277 | 224 EAST
Canton

INTERSTATE 76 EAST
CLOSED
W20-H15A
Akron

AD

DETOUR
M4-8-30
EAST
M3-2-36
INTERSTATE 76
M1-1-36-2

EXIT 4A-B
INTERSTATE 77
Canton
Akron
2 MILES

EXIT 3
S Main St
1 MILE

EXIT 2
93
Waterloo Rd
Manchester Rd

AE

DETOUR
M4-8-30
EAST
M3-2-36
INTERSTATE 76
M1-1-36-2

INTERSTATE 277 | 224 EAST

EXIT 4A-B
INTERSTATE 77
Canton
Akron
1 1/4 MILES

EXIT 3
S Main St

AF

DETOUR
M4-8-30
EAST
M3-2-36
INTERSTATE 76
M1-1-36-2

EXIT 4A-B
224 EAST
Mogadore

INTERSTATE 77
Canton
Akron
1/2 MILE

AG

DETOUR
M4-8-30
EAST
M3-2-36
INTERSTATE 76
M1-1-36-2

EXIT 4B
INTERSTATE 77 NORTH
Canton
EXIT ONLY

EXIT 4A
INTERSTATE 77 SOUTH
Canton

224 EAST
Mogadore

AH

DETOUR
M4-8-30
EAST
M3-2-36
INTERSTATE 76
M1-1-36-2
M6-2-30

EXIT 4B
INTERSTATE 77 NORTH
Akron

EXIT ONLY

224 EAST
Mogadore

AI

DETOUR
M4-8-30
EAST
M3-2-36
INTERSTATE 76
M1-1-36-2

INTERSTATE 77
Akron
Cleveland
1 MILE

CALCULATED CNC
CHECKED LAB

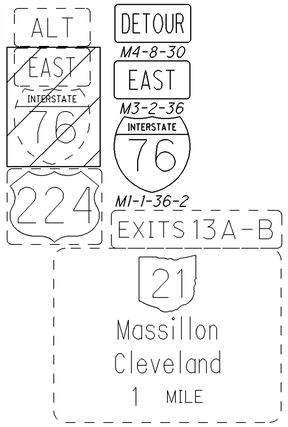
DETOUR PLAN FOR CLOSURE OF IR-76 EASTBOUND

SUM-76/77
277-VAR

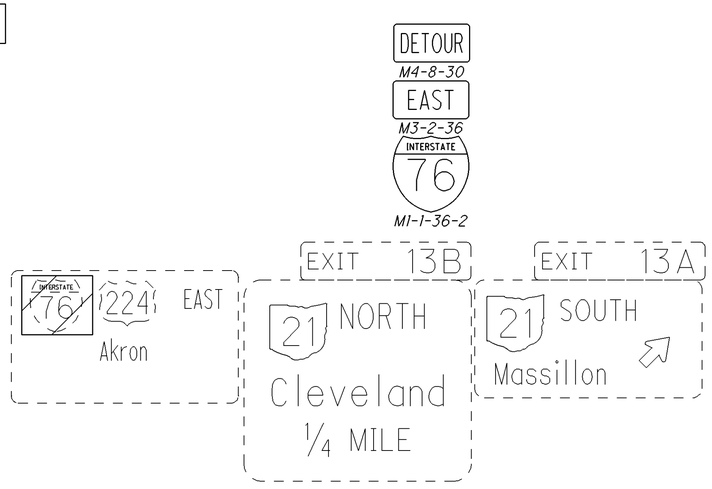
34
113

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AJ



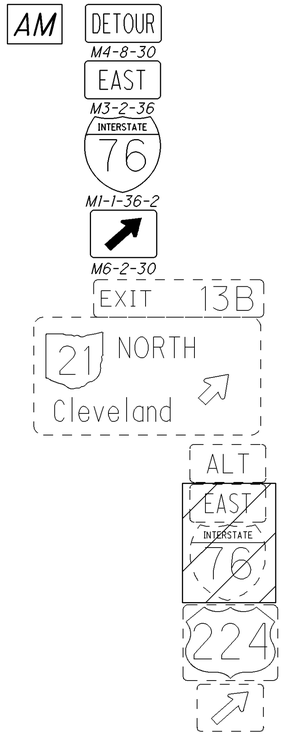
AK



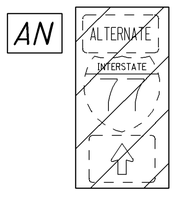
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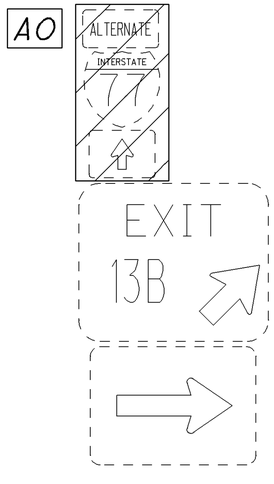
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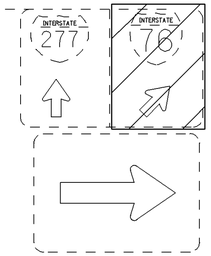
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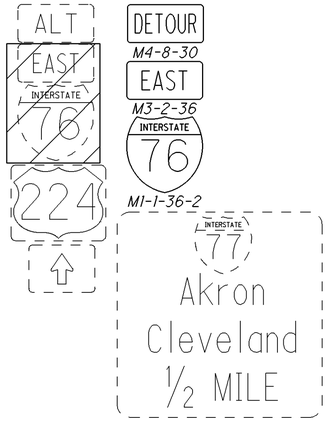
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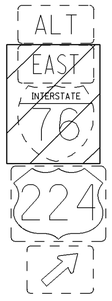
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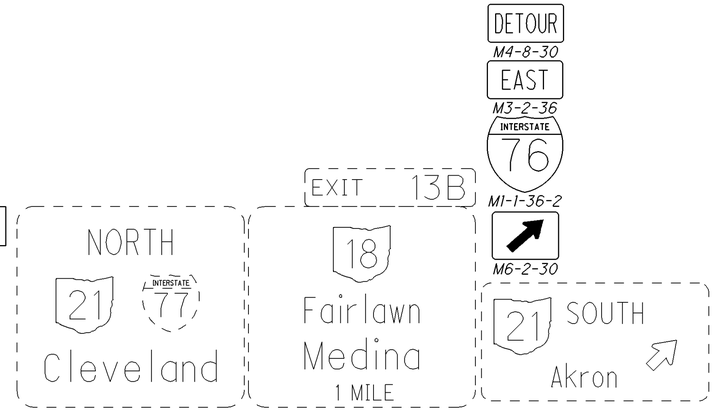
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AR



AS

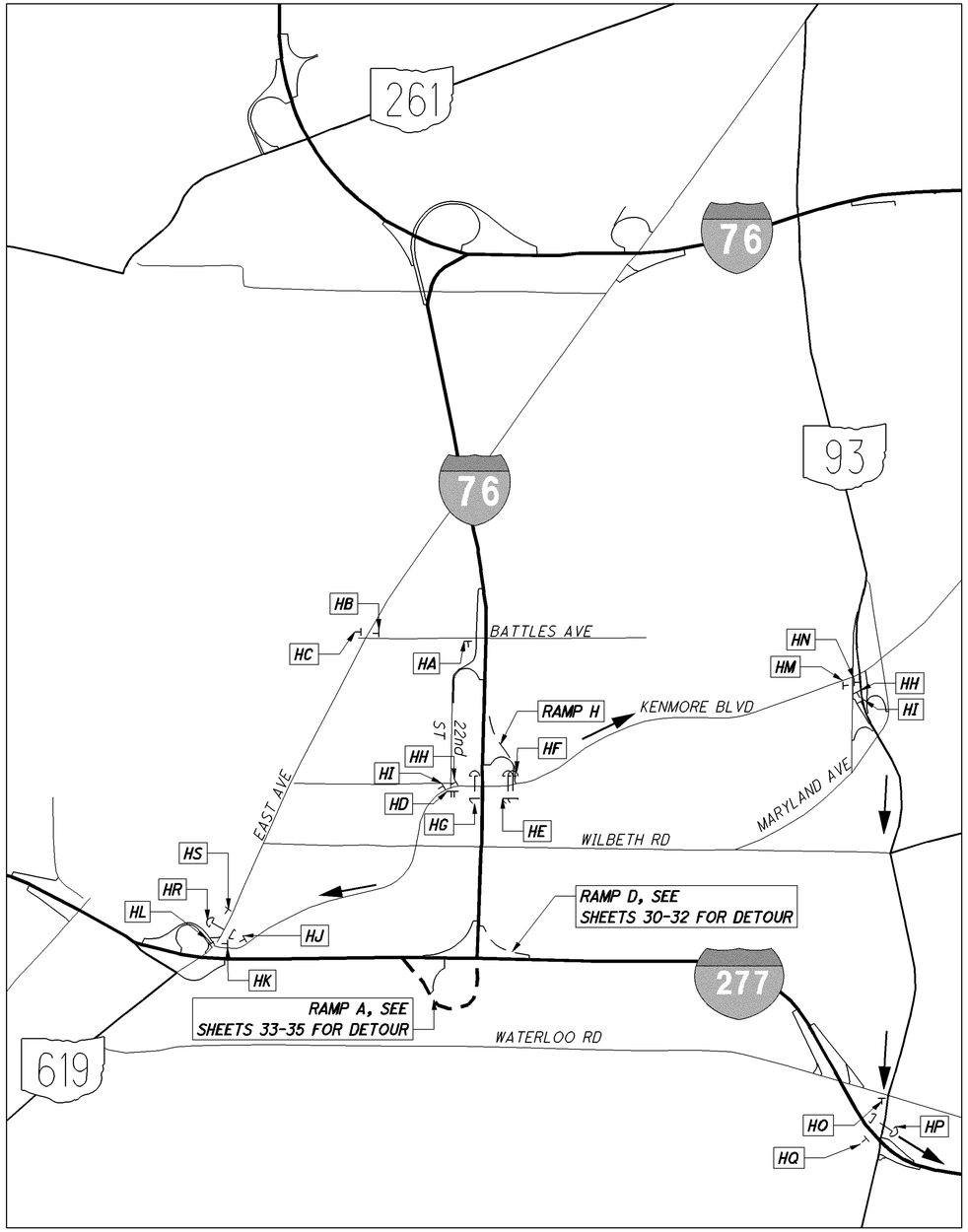


CALCULATED CNC
CHECKED LAB

DETOUR PLAN FOR CLOSURE OF IR-76 EASTBOUND

SUM-76/77
277-VAR

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DETOUR PLAN FOR SUM-76, EASTBOUND, RAMP H (KENMORE BLVD TO IR-76 EAST)

— — CLOSE RAMP AS PER STD. DWG. MT-101.60

← OFFICIAL DETOUR ROUTE:
EB KENMORE BLVD:
KENMORE BLVD / SR-93 SOUTH / WATERLOO RD / IR-277 EAST / IR-77 NORTH

WB KENMORE BLVD:
IR-76 EAST: KENMORE BLVD / EAST AVE
IR-77 NORTH: KENMORE BLVD / IR-76 EAST / SR-21 NORTH

N

NOT TO SCALE

REFER TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, FIGURE 6H-8 (TYPICAL APPLICATION 8), FOR SIGN SPACING.

NOTE: RAMP H SHALL BE CLOSED CONCURRENTLY WITH RAMPS A, D AND MINOR ROAD.

HA
TO INTERSTATE 77 EAST INTERSTATE 76
M6-1-21

HB
TO NORTH M3-1-24 INTERSTATE 77 M1-1-24-2 M5-1-21
TO EAST M3-2-24 INTERSTATE 76 M1-1-24-2 M5-1-21

HC
TO NORTH M3-1-24 INTERSTATE 77 M1-1-24-2 M6-1-21
TO EAST M3-2-24 INTERSTATE 76 M1-1-24-2 M6-1-21

HD
TO EAST INTERSTATE 76 M6-1-21
TO INTERSTATE 77 TO W. WILBETH RD M6-1-21
Kenmore Blvd ⇦EAST WEST⇨

HE
INTERSTATE 76 EAST CLOSED W20-H15A-72
TO NORTH M3-1-24 INTERSTATE 77 M1-1-24-2 M6-3-21
TO EAST M3-2-24 INTERSTATE 76 M1-1-24-2 M6-3-21

HF
INTERSTATE 76 EAST CLOSED W20-H15A-72
TO NORTH M3-1-24 INTERSTATE 77 M1-1-24-2 M6-3-21
TO EAST M3-2-24 INTERSTATE 76 M1-1-24-2 M6-3-21

HG
INTERSTATE 76 EAST CLOSED W20-H15A-72 INTERSTATE 77

HH
TO NORTH M3-1-24 INTERSTATE 77 M1-1-24-2 M5-2-21
TO EAST M3-2-24 INTERSTATE 76 M1-1-24-2 M5-2-21

HI
TO NORTH M3-1-24 INTERSTATE 77 M1-1-24-2 M6-2-21
TO EAST M3-2-24 INTERSTATE 76 M1-1-24-2 M6-2-21

HJ
TO EAST M3-2-24 INTERSTATE 76 M1-1-24-2 M5-1-21

COVER EXISTING SIGN

CALCULATED CNC
CHECKED LAB

DETOUR PLAN FOR CLOSURE OF IR-76 EASTBOUND

SUM-76/77
277-VAR

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HK

TO
M4-5-24
NORTH
M3-1-24
INTERSTATE 77
M1-1-24-2
M6-2-21

HL

TO
M4-5-24
EAST
M3-2-24
INTERSTATE 76
M1-1-24-2
M6-1-21

TO
M4-5-24
NORTH
M3-1-24
INTERSTATE 77
M1-1-24-2
M6-3-21

HM

TO
M4-5-24
EAST
M3-2-24
INTERSTATE 76
M1-1-24-2
M5-1-21

TO
M4-5-24
NORTH
M3-1-24
INTERSTATE 77
M1-1-24-2
M5-1-21

HN

TO
M4-5-24
EAST
M3-2-24
INTERSTATE 76
M1-1-24-2
M6-1-21

TO
M4-5-24
NORTH
M3-1-24
INTERSTATE 77
M1-1-24-2
M6-1-21

HO

TO
M4-5-24
EAST
M3-2-24
INTERSTATE 76
M1-1-24-2
M6-3-21

TO
M4-5-24
NORTH
M3-1-24
INTERSTATE 77
M1-1-24-2
M6-3-21

EAST INTERSTATE 277 WEST

EAST 224 WEST

HP

TO
M4-5-36
EAST
M3-2-36
INTERSTATE 76
M1-1-36-2

TO
M4-5-36
NORTH
M3-1-36
INTERSTATE 77
M1-1-36-2

EAST INTERSTATE 277 EAST 224
NEXT LEFT

HQ

EAST INTERSTATE 277 EAST 224
Mogadore

TO
M4-5-36
EAST
M3-2-36
INTERSTATE 76
M1-1-36-2
M6-1-30

TO
M4-5-36
NORTH
M3-1-36
INTERSTATE 77
M1-1-36-2
M6-1-30

HR

EAST WEST
INTERSTATE 76
KEEP LEFT 224

TO
M4-5-24
NORTH
M3-1-24
INTERSTATE 77
M1-1-24-2
M6-1-21

*DETOUR ASSEMBLY TO BE MOUNTED TO SUPPORT POLE

HS

TO
M4-5-24
NORTH
M3-1-24
INTERSTATE 77
M1-1-24-2
M5-1-21

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CALCULATED CNC
CHECKED LAB

DETOUR PLAN FOR CLOSURE OF IR-76 EASTBOUND

SUM-76/77
277-VAR



DETOUR PLAN FOR IR-277 EASTBOUND, RAMP A

— — CLOSE RAMP A AS PER STD. DWG. MT-98.29
(FOR LANE CLOSURES PRIOR TO RAMP, USE MT-95.30)

⟵ RAMP A DETOUR ROUTE: US 224 EAST / KELLY AVE / US 224 WEST

N

NOT TO SCALE

REFER TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, FIGURE 6H-8 (TYPICAL APPLICATION 8), FOR SIGN SPACING.

A1 PORTABLE CHANGEABLE MESSAGE SIGN

MESSAGE: 1) I-77 SOUTH CLOSED
2) FOLLOW US-224 EAST

A2 PORTABLE CHANGEABLE MESSAGE SIGN

MESSAGE: 1) I-77 SOUTH CLOSED
2) USE KELLY AVE

AA

DETOUR M4-8-24
SOUTH M3-3-24
INTERSTATE 77 M1-1-24-2
M5-1-21

AB

DETOUR M4-8-24
SOUTH M3-3-24
INTERSTATE 77 M1-1-24-2
M6-1-21

CALCULATED HKS
CHECKED LAB

DETOUR PLAN CLOSURE OF IR-77 SOUTH RAMP A

SUM-76/77
277-VAR

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SHEET NUMBER												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
11	12	13	14	15	42	43	44	48-49	96-100	100A	105	01/IMS/PV							
																		ROADWAY	
LS												LS		201	11000	LS		CLEARING AND GRUBBING(RAMP A: I-277 TO I-77)	
						4750						4750		202	23000	4750	SY	PAVEMENT REMOVED	
					268	5174						5442		202	23500	5442	SY	WEARING COURSE REMOVED	
											29	29		202	30700	29	FT	CONCRETE BARRIER REMOVED	
							12356.25	2256.25				14612.5		202	38000	14612.5	FT	GUARDRAIL REMOVED	
							1					1		202	47800	1	EACH	IMPACT ATTENUATOR REMOVED	
	142											142		203	10000	142	CY	EXCAVATION(FOR PAVEMENT REPAIRS)	
					8223	13577		3913				25713		203	10000	25713	CY	EXCAVATION	
								5903				5903		203	20000	5903	CY	EMBANKMENT	
					21618	35249		9047				65914		204	10000	65914	SY	SUBGRADE COMPACTION	
3042												3042		204	13000	3042	CY	EXCAVATION OF SUBGRADE	
3042												3042		204	30010	3042	CY	GRANULAR MATERIAL, TYPE B	
					11	18		5				34		204	45000	34	HOUR	PROOF ROLLING	
9125												9125		204	50100	9125	SY	GEOTEXTILE FABRIC, 712.09, TYPE A	
	147											147		209	60200	147	STA	LINEAR GRADING	
	500											500		519	11101	500	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN(FOR BARRIER WALL)	12
							625	156.25				781.25		606	13000	781.25	FT	GUARDRAIL, TYPE 5	
							10818.75	3562.5				14381.25		606	15050	14381.25	FT	GUARDRAIL, TYPE MGS	
							50					50		606	15250	50	FT	GUARDRAIL, TYPE MGS QUARTER POST SPACING	
							6					6		606	26050	6	EACH	ANCHOR ASSEMBLY, MGS TYPE B	
								1				1		606	26100	1	EACH	ANCHOR ASSEMBLY, TYPE E	
							7	2				9		606	26150	9	EACH	ANCHOR ASSEMBLY, MGS TYPE E	
							16	2				18		606	26550	18	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
								3				3		606	35000	3	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
							2					2		606	35002	2	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
							12	3				15		606	35100	15	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
							13					13		606	35170	13	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE BR-1	
							1					1		606	60022	1	EACH	IMPACT ATTENUATOR, TYPE 2 (UNIDIRECTIONAL) (70MPH, 96")	12
											29	29		622	23303	29	FT	CONCRETE BARRIER, TYPE A, REINFORCED, AS PER PLAN	105
		9										9		623	38501	9	EACH	MONUMENT ASSEMBLY, AS PER PLAN	13
		7										7		SPECIAL	69098000	7	EACH	MISC.:VERTICAL CLEARANCE	13
	500											500		843	50000	500	SF	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR(FOR BARRIER WALL)	
9125												9125		861	10000	9125	SY	GEOGRID FOR SUBGRADE STABILIZATION	
																		EROSION CONTROL	
			2									2		659	00100	2	EACH	SOIL ANALYSIS TEST	
			1667									1667		659	00300	1667	CY	TOPSOIL	
	8167		15018									23185		659	10000	23185	SY	SEEDING AND MULCHING	
			751									751		659	14000	751	SY	REPAIR SEEDING AND MULCHING	
	1.1		2.03									3.13		659	20000	3.13	TON	COMMERCIAL FERTILIZER	
	1.69		3.1									4.79		659	31000	4.79	ACRE	LIME	
	44		98									142		659	35000	142	MGAL	WATER	
												50000		832	30000	50000	EACH	EROSION CONTROL	
																		DRAINAGE	
									27749	5761		33510		605	06020	33510	FT	4" BASE PIPE UNDERDRAINS WITH FABRIC WRAP	
									34918	5761		40679		605	13410	40679	FT	6" UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP	
									1091	90		1181		611	00410	1181	FT	4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET	
									1342	100		1442		611	00510	1442	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
	26											26		611	98630	26	EACH	CATCH BASIN ADJUSTED TO GRADE	
									44	6		50		611	99710	50	EACH	PRECAST REINFORCED CONCRETE OUTLET	
	1295											1295		611	99820	1295	LB	SPECIAL - MISCELLANEOUS METAL	12

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GENERAL SUMMARY

SUM-76/77 /277-VAR

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SHEET NUMBER												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
11	12	15	16	17	29	42	43	44	48-49	101-102	105	01/IMS/PV							
																		PAVEMENT	
									28838			28838		254	01000	28838	SY	PAVEMENT PLANING, ASPHALT CONCRETE	
						54813	35909					90722		254	01001	90722	SY	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN	11
850												850		255	10011	850	SY	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC1, AS PER PLAN	11
2550							1173					3723		255	20000	3723	FT	FULL DEPTH PAVEMENT SAWING	
						5039	7991		2011			15041		302	46000	15041	CY	ASPHALT CONCRETE BASE, PG64-22	
	142											142		304	20000	142	CY	AGGREGATE BASE(FOR PAVEMENT REPAIRS)	
						3464	5562		1412			10438		304	20001	10438	CY	AGGREGATE BASE, AS PER PLAN	12
						5482	3591		2884			11957		SPECIAL	40720500	11957	GAL	TACK COAT, TRACKLESS TACK	14
						3772	3919		794			8485		SPECIAL	40720510	8485	GAL	TACK COAT, TRACKLESS TACK FOR INTERMEDIATE COURSE	14
								287	43			330		441	50701	330	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), (UNDER GUARDRAIL), AS PER PLAN	12
						3107	2789		673			6569		442	20051	6569	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE B (448), AS PER PLAN	12
						3624	3254		785			7663		442	20250	7663	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE B (448)	
						140	377		103			620		617	10101	620	CY	COMPACTED AGGREGATE, AS PER PLAN	12
																		LIGHTING	
											48	48		625	00450	48	EACH	CONNECTION, FUSED PULL APART	
											24	24		625	10490	24	EACH	LIGHT POLE, CONVENTIONAL, A8BB47.50	
											3	3		625	14300	3	EACH	MEDIAN LIGHT POLE FOUNDATION, 8' DEEP	
											2952	2952		625	23400	2952	FT	NO. 10 AWG POLE AND BRACKET CABLE	
											2	2		625	26250	2	EACH	LUMINAIRE, CONVENTIONAL, STYLE C, TYPE III, 400W HPS FIXTURE, 725.11	
											46	46		625	27520	46	EACH	REMOVAL OF LUMINAIRE AND REERECTION	
											3	3		625	29940	3	EACH	BARRIER JUNCTION BOX	
											LS	LS		SPECIAL	62540000	LS		MAINTAIN EXISTING LIGHTING	105
											23	23		625	75400	23	EACH	LIGHT POLE REMOVED	
											3	3		625	75501	3	EACH	LIGHT POLE FOUNDATION REMOVED, AS PER PLAN	105
											3	3		625	75801	3	EACH	DISCONNECT CIRCUIT, AS PER PLAN	105
																		TRAFFIC CONTROL	
								568	27			595		626	00100	595	EACH	BARRIER REFLECTOR	
									32			32		630	06400	32	FT	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, S4X7.7	
					122							122		630	08004	122	FT	ONE WAY SUPPORT, NO. 3 POST	
					4							4		630	08600	4	EACH	SIGN POST REFLECTOR	
									2			2		630	09000	2	EACH	BREAKAWAY STRUCTURAL BEAM CONNECTION	
					96							96		630	80100	96	SF	SIGN, FLAT SHEET	
									2			2		630	84500	2	EACH	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION	
					2							2		630	84900	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
									1			1		630	85100	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
					4							4		630	86002	4	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
									2			2		630	86102	2	EACH	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL	
										2422		2422		642	00720	2422	FT	CHEVRON MARKING, TYPE 1	
					66							66		644	30000	66	FT	REMOVAL OF PAVEMENT MARKING	

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GENERAL SUMMARY

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11	12	15	16	17	29	42	43	44	48-49	101-102	105	01/IMS/PV							
																		MAINTENANCE OF TRAFFIC	
			1000									1000		614	11111	1000	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE, AS PER PLAN	16
				2								2		614	12336	2	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	
		LS										LS		614	12420	LS		DETOUR SIGNING	
		24										24		614	12460	24	EACH	WORK ZONE MARKING SIGN	
		100										100		614	13000	100	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
				26								26		614	13100	26	EACH	BARRIER REFLECTOR	
				26								26		614	13350	26	EACH	OBJECT MARKER, ONE WAY	
			32									32		614	18401	32	DAY	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	16
										3.02		3.02		614	20550	3.02	MILE	WORK ZONE LANE LINE, CLASS III, 642 PAINT	
					0.02							0.02		614	21550	0.02	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT	
		3.92			0.23					16.08		20.23		614	22350	20.23	MILE	WORK ZONE EDGE LINE, CLASS III, 642 PAINT	
					315					15093		15408		614	23680	15408	FT	WORK ZONE CHANNELIZING LINE, CLASS III, 642 PAINT	
										2933		2933		614	24610	2933	FT	WORK ZONE DOTTED LINE, CLASS III, 642 PAINT	
					252					1280		1532		614	25620	1532	FT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS III, 642 PAINT	
					26					54		80		614	26610	80	FT	WORK ZONE STOP LINE, CLASS III, 642 PAINT	
										5		5		614	30650	5	EACH	WORK ZONE ARROW, CLASS III, 642 PAINT	
				1300								1300		622	41011	1300	FT	PORTABLE BARRIER, 50", AS PER PLAN	15
																		STRUCTURE REPAIRS	
																		FOR STRUCTURE SUM-76-0657R ESTIMATED QUANTITIES	109
																		FOR STRUCTURE SUM-76-0672 ESTIMATED QUANTITIES	109
																		FOR STRUCTURE SUM-76-0684 ESTIMATED QUANTITIES	109
																		FOR STRUCTURE SUM-76-0700 ESTIMATED QUANTITIES	109
																		FOR STRUCTURE SUM-76-0736 ESTIMATED QUANTITIES	109
																		FOR STRUCTURE SUM-76-0758 ESTIMATED QUANTITIES	109
																		FOR STRUCTURE SUM-76-0772 ESTIMATED QUANTITIES	109
																		FOR STRUCTURE SUM-76-0824L ESTIMATED QUANTITIES	109
																		FOR STRUCTURE SUM-76-0825UR ESTIMATED QUANTITIES	109
																		FOR STRUCTURE SUM-76-0832L ESTIMATED QUANTITIES	109
																		INCIDENTALS	
												LS		SPECIAL	10810000	LS		CPM PROGRESS SCHEDULE	17
												LS		614	11000	LS		MAINTAINING TRAFFIC	
												9		619	16020	9	MNTH	FIELD OFFICE, TYPE C	
												LS		623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
												LS		624	10000	LS		MOBILIZATION	

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SLM TO SLM			TYPICAL SECTION	SIDE	DISTANCE (D)	AVERAGE WIDTH (W)	SURFACE AREA (A) A=DxW/9	CADD GENERATED AREA		202	254	SPEC	SPEC	442	442	617	202	203	204	204	302	304				
										WEARING COURSE REMOVED	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN (T =4"±)	TACK COAT, TRACKLESS TACK @ 0.10 GAL/SY	TACK COAT, TRACKLESS TACK FOR INTERMEDIATE COURSE @0.04 GAL/SY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE B (448), AS PER PLAN (T 1 1/2")	ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE B (448)(T= 1 3/4")	COMPACTED AGGREGATE, AS PER PLAN	PAVEMENT REMOVED	EXCAVATION (T = 15")	SUBGRADE COMPACTION	PROOF ROLLING	ASPHALT CONCRETE BASE, PG64-22 (T= 9")	AGGREGATE BASE, AS PER PLAN (T= 6")				
					FT	FT	SQ YD	SQ YD		SY	SY	GAL	GAL	CY	CY	CY	SY	CY	SY	HOUR	CY	CY				
IR-76 MAINLINE																									
6.31	TO	6.57	1	EB	1372.80	35.00	5338.67			31.11	5338.67	533.87	213.55	222.44	259.52										
6.61	TO	6.66	1	EB	264.00	35.00	1026.67			15.56	1026.67	102.67	41.07	42.78	49.91										
6.66	TO	6.72	1	EB	316.80	24.00	844.80			10.67	844.80	84.48	33.79	35.20	41.07										
6.76	TO	6.84	1	EB	422.40	46.00	2158.93			40.89	2158.93	215.89	86.36	89.96	104.95										
6.88	TO	7.00	1	EB	633.60	46.00	3238.40			40.89	3238.40	323.84	129.54	134.93	157.42										
7.03	TO	7.07	1	EB	211.20	24.00	563.20			10.67	563.20	56.32	22.53	23.47	27.38										
7.07	TO	7.19	1	EB	633.60	36.00	2534.40				2534.40	253.44	101.38	105.60	123.20										
7.19	TO	7.36	1	EB	897.60	36.00	3590.40			16.00	3590.40	359.04	143.62	149.60	174.53										
7.39	TO	7.94	1	EB	2904.00	24.00	7744.00			10.67	7744.00	774.40	309.76	322.67	376.44										
7.94	TO	8.19	1	EB	1320.00	27.00	3960.00				3960.00	396.00	158.40	165.00	192.50										
6.61	TO	6.72	1	WB	580.80	16.00	1032.53			14.22	1032.53	103.25	41.30	43.02	50.19										
6.76	TO	6.84	1	WB	422.40	24.00	1126.40			21.33	1126.40	112.64	45.06	46.93	54.76										
6.88	TO	7.00	1	WB	633.60	24.00	1689.60			21.33	1689.60	168.96	67.58	70.40	82.13										
7.03	TO	7.26	1	WB	1214.40	35.00	4722.67				4722.67	472.27	188.91	196.78	229.57										
7.26	TO	7.36	1	WB	528.00	24.00	1408.00			10.67	1408.00	140.80	56.32	58.67	68.44										
7.39	TO	7.50	1	WB	580.80	24.00	1548.80			10.67	1548.80	154.88	61.95	64.53	75.29										
7.50	TO	7.65	1	WB	792.00	38.00	3344.00				3344.00	334.40	133.76	139.33	162.56										
7.65	TO	8.06	1	WB	2164.80	24.00	5772.80				5772.80	577.28	230.91	240.53	280.62										
8.06	TO	8.24	1	WB	950.40	30.00	3168.00			13.33	3168.00	316.80	126.72	132.00	154.00										
IR-76 OUTSIDE SHOULDER																									
7.07	TO	7.19	1	EB	633.60	12.00	844.80				844.80		67.58	35.20	41.07	7.82		376.44	950.40	0.48	217.07	150.58				
7.39	TO	7.94	1	EB	2904.00	12.00	3872.00				3872.00		309.76	161.33	188.22	35.85		1725.37	4356.00	2.18	994.89	690.15				
7.94	TO	8.19	1	EB	1320.00	12.00	1760.00				1760.00		140.80	73.33	85.56	16.30		784.26	1980.00	0.99	452.22	313.70				
6.61	TO	6.72	1	WB	580.80	10.00	645.33				645.33		51.63	26.89	31.37	7.17		291.30	742.13	0.37	166.71	116.52				
6.76	TO	6.84	1	WB	422.40	13.00	610.13				610.13		48.81	25.42	29.66	5.21		270.52	680.53	0.34	156.44	108.21				
6.88	TO	7.00	1	WB	633.60	11.00	774.40				774.40		61.95	32.27	37.64	7.82		347.11	880.00	0.44	199.47	138.84				
7.03	TO	7.14	1	WB	580.80	10.00	645.33				645.33		51.63	26.89	31.37	7.17		291.30	742.13	0.37	166.71	116.52				
7.26	TO	7.36	1	WB	528.00	10.00	586.67				586.67		46.93	24.44	28.52	6.52		264.81	674.67	0.34	151.56	105.93				
7.39	TO	7.50	1	WB	580.80	10.00	645.33				645.33		51.63	26.89	31.37	7.17		291.30	742.13	0.37	166.71	116.52				
7.65	TO	8.06	1	WB	2164.80	10.00	2405.33				2405.33		192.43	100.22	116.93	26.73		1085.74	2766.13	1.38	621.38	434.30				
8.06	TO	8.24	1	WB	950.40	11.00	1161.60				1161.60		92.93	48.40	56.47	11.73		520.67	1320.00	0.66	299.20	208.27				
IR-76 GORE AREAS																									
GORE AREA 1				EB	237.00	46.00		605.67			605.67		48.45	25.24	29.44			252.36	605.67	0.30	151.42	100.94				
GORE AREA 2				EB	200.00	47.00		522.22			522.22		41.78	21.76	25.39			217.59	522.22	0.26	130.56	87.04				
GORE AREA 3				EB	530.00	21.00		618.33			618.33		49.47	25.76	30.06			257.64	618.33	0.31	154.58	103.06				
GORE AREA 4				EB	945.00	26.00		1365.00			1365.00		109.20	56.88	66.35			568.75	1365.00	0.68	341.25	227.50				
GORE AREA 5				WB	228.00	43.00		544.67			544.67		43.57	22.69	26.48			226.94	544.67	0.27	136.17	90.78				
GORE AREA 6				WB	397.00	20.00		441.11			441.11		35.29	18.38	21.44			183.80	441.11	0.22	110.28	73.52				
GORE AREA 7				WB	132.00	20.00		146.67			146.67		11.73	6.11	7.13			61.11	146.67	0.07	36.67	24.44				
GORE AREA 8				WB	770.00	36.00		1540.00			1540.00		123.20	64.17	74.86			641.67	1540.00	0.77	385.00	256.67				
									SUBTOTALS	0.00	268.00	74546.87	5481.23	3771.26	3106.12	3623.81	139.50	0.00	8658.68	21617.80	10.81	5038.27	3463.47	0.00	0.00	0.00	0.00
									TOTALS CARRIED TO GENERAL SUMMARY	0	268	74547	5482	3772	3107	3624	140	0	8659	21618	11	5039	3464	0	0	0	0

CALCULATED CNC
CHECKED RCB

PAVEMENT CALCULATIONS

SUM-76/77
277-VAR

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SLM TO SLM			TYPICAL SECTION	SIDE	DISTANCE (D)	AVERAGE WIDTH (W)	SURFACE AREA (A) A=DxW/9	CADD GENERATED AREA	202 WEARING COURSE REMOVED	254 PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN (T =4"±)	254 PAVEMENT PLANING, PORTLAND CEMENT CONCRETE, AS PER PLAN(VAR. T= 3 1/4" TO 1 3/4")	SPEC TACK COAT, TRACKLESS TACK @ 0.10 GAL/SY	SPEC TACK COAT, TRACKLESS TACK FOR INTERMEDIATE COURSE @0.04 GAL/SY	442 ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE B (448), AS PER PLAN (T 1 1/2")	442 ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE B (448)(T= 1 3/4")		202 PAVEMENT REMOVED	203 EXCAVATION	204 SUBGRADE COMPACTION	204 PROOF ROLLING	302 ASPHALT CONCRETE BASE, PG64-22 (T= 9")	304 AGGREGATE BASE, AS PER PLAN (T= 6")	617 COMPACTED AGGREGATE, AS PER PLAN	255 FULL DEPTH PAVEMENT SAWING		
					FT	FT	SQ YD	SQ YD	SY	SY	SY	GAL	GAL	CY	CY		SY	CY	SY	HOUR	CY	CY	CY	FT		
IR-76 RAMPS																										
RAMP C			3		1130.00	18.00	2260.00		16.00	2260.00		226.00	90.40	94.17	109.86											
RAMP C			3	LT	1130.00	4.00	502.22		3.56				40.18	20.93	24.41			252.85	690.56	0.35	136.02	101.14	13.95			
RAMP C			3	RT	1130.00	17.00	2134.44		15.11				170.76	88.94	103.76			932.95	2322.78	1.16	544.07	373.18	13.95			
RAMP E			2		850.00	24.00	2266.67			2266.67		226.67	90.67	94.44	110.19								10.49			
RAMP F			2		1500.00	VARIES		4220.00		4220.00		422.00	168.80	175.83	205.14								18.52			
RAMP G			2		770.00	24.00	2053.33			2053.33		205.33	82.13	85.56	99.81								9.51			
RAMP H			2		1860.00	24.00	4960.00			4960.00		496.00	198.40	206.67	241.11								22.96			
RAMP U			4		1165.00	24.00	3106.67			3106.67		310.67	124.27	129.44	151.02											
RAMP U			4		1165.00	4.00	517.78		3.56				41.42	21.57	25.17			260.69	711.94	0.36	140.23	104.27	14.38			
RAMP U			4		1165.00	10.00	1294.44		8.89				103.56	53.94	62.92			584.30	1488.61	0.74	334.40	233.72	14.38			
RAMP V			5		1311.84	34.00	4955.84			4955.84		495.58	198.23	206.49	240.91								16.20			
RAMP V (FULL DEPTH)			5		1125.00	38.00	4750.00		33.78				380.00	197.92	230.90		4750.00	674.19	4937.50	2.38	1197.92	809.03		1173.00		
I-76 MEDIAN SHOULDER																										
6.61	TO	8.04		EB	7550.40	5.00	4194.67				4194.67	419.47	167.79	174.78	203.91											
6.61	TO	8.04		EB	7550.40	1.00	838.93		838.93																	
8.04	TO	8.19		EB	792.00	5.00	440.00		440.00		440.00	44.00	17.60	18.33	21.39											
RAMP W				EB	2323.20	5.00	1290.67		1290.67		1290.67	129.07	51.63	53.78	62.74											
6.61	TO	6.72		WB	580.80	5.00	322.67		322.67		322.67	32.27	12.91	13.44	15.69											
6.72	TO	8.27		WB	8184.00	5.00	4546.67				4546.67	454.67	181.87	189.44	221.02											
6.72	TO	8.27		WB	8184.00	1.00	909.33		909.33																	
RAMP B				WB	739.20	5.00	410.67		410.67		410.67	41.07	16.43	17.11	19.96											
RAMP V				WB	1584.00	5.00	880.00		880.00		880.00	88.00	35.20	36.67	42.78											
I-77 SHOULDERS																										
15.87	TO	16.90		RT	5438.40	10.00	6042.67						483.41	251.78	293.74			3318.57	6949.07	3.47	1561.02	1091.04	67.14			
7.44	TO	9.34		RT	10032.00	10.00	11146.67						891.73	464.44	541.85			6121.64	12818.67	6.41	2879.56	2012.59	123.85			
I-277 SHOULDERS																										
0.10	TO	0.89		RT	4171.20	10.00	4634.67						370.77	193.11	225.30			2545.31	5329.87	2.66	1197.29	836.81	51.50			
								SUBTOTALS	5173.16	23822.51	12085.33	3590.78	3918.14	2788.78	3253.58	0.00	4750.00	14690.50	35248.99	17.53	7990.51	5561.79	376.83	1173.00	0.00	0.00
								TOTALS CARRIED TO GENERAL SUMMARY	5174	23823	12086	3591	3919	2789	3254	0	4750	14691	35249	18	7991	5562	377	1173	0	0

CALCULATED CNC
CHECKED RCB

PAVEMENT CALCULATIONS

SUM-76/77 277-VAR

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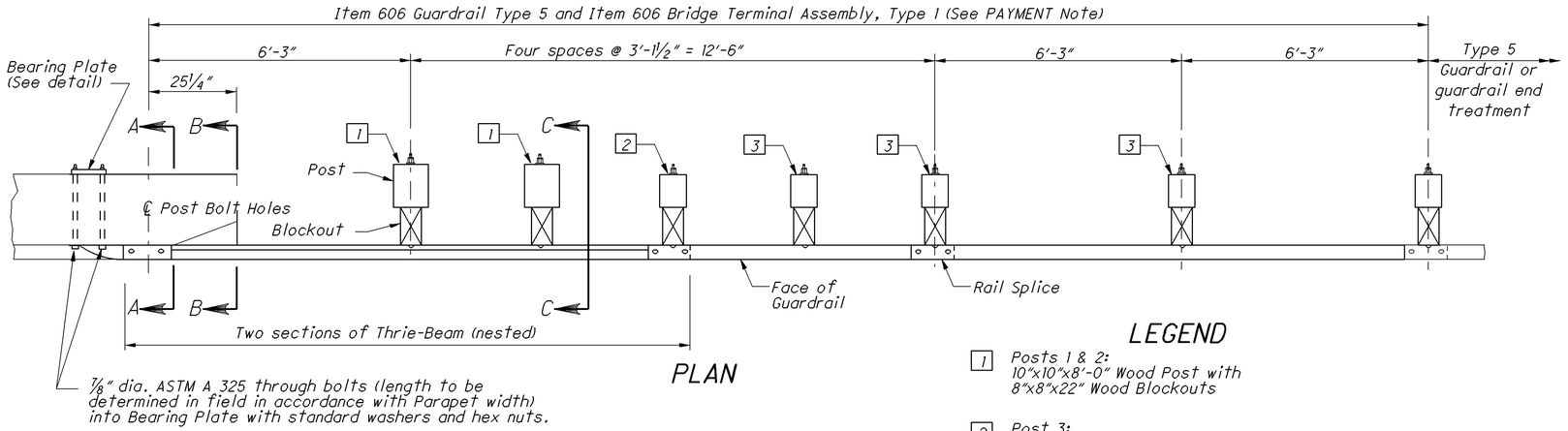
ROUTE	SIDE	SLM TO SLM			202 GUARDRAIL REMOVED FT	441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), (UNDER GUARDRAIL), AS PER PLAN CY	606 GUARDRAIL, TYPE 5 FT	606 GUARDRAIL, TYPE MGS FT	606 ANCHOR ASSEMBLY, MGS TYPE B EACH	606 ANCHOR ASSEMBLY, MGS TYPE E EACH	606 ANCHOR ASSEMBLY, MGS TYPE T EACH		202 IMPACT ATTENUATOR REMOVED EACH	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2 EACH	606 BRIDGE TERMINAL ASSEMBLY, TYPE BR-1 EACH	606 IMPACT ATTENUATOR, TYPE 2 (UNIDIRECTIONAL) (70MPH, 96") EACH	606 MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1 EACH	606 GUARDRAIL, TYPE MGS QUARTER POST SPACING FT	626 BARRIER REFLECTOR EACH	REMARKS
76E	RT	6.32	TO	6.59	1387.5	32.12	25	1312.5		1					1				28	RAMP A
76E	RT	6.61	TO	6.65	150	3.47	25	112.5			1			1					3	
76E	RT	6.79	TO	6.86	387.5	8.97	50	337.5						1	1				8	
76E	RT	6.90	TO	7.01	543.75	12.59	50	493.75						1	1				11	
76E	RT	7.24	TO	7.36	625	14.47	25	550		1					1				13	
76E	RT	7.40	TO	7.45	250	5.79	25	212.5			1			1					5	
76E	RT	7.57	TO	7.61	237.5	5.50		187.5	1		1								5	
76E	RT	7.70	TO	7.76	337.5	7.81		275		1	1								7	
76E	RT	7.92	TO	7.96	200	4.63		137.5		1	1								4	
76E	RT	8.04	TO	8.21	875	20.25	25	812.5	1						1				18	RAMP U
76E	RT	8.26	TO	8.30	162.5	3.76	25	125			1			1					4	RAMP U
76E	LT	8.23	TO	8.24	56.25	1.30		25					1			1	1		2	RAMP U
76E	LT	8.26	TO	8.31	250	5.79	25	175			1				1				5	RAMP U
76W	RT	6.61	TO	6.67	387.5	8.97	25	312.5		1					1				8	FIRST RUN 76W AT STRUCTURE SUM-76-0657R, TO RAMP B
76W	RT	6.76	TO	6.84	387.5	8.97	50	337.5						1	1				8	
76W	RT	6.88	TO	6.99	537.5	12.44	50	487.5						1	1				11	
76W	RT	7.03	TO	7.15	600	13.89	25	575	1						1				12	
76W	RT	7.28	TO	7.35	400	9.26	25	362.5			1			1					8	
76W	RT	7.38	TO	7.47	462.5	10.71	25	412.5	1						1				10	
76W	RT	7.58	TO	7.62	200	4.63		137.5		1	1								4	
76W	RT	7.71	TO	7.76	262.5	6.08		150		1	1							50	6	UNDER EAST AVE
76W	RT	7.98	TO	8.17	187.5	4.34	25	150			1			1					4	
76W	RT	RAMP V			200	4.63	25	162.5			1			1					4	SECOND RUN 76W AT STRUCTURE SUM-76-0832L
76W	RT	RAMP V			437.5	10.13	25	375	1						1				9	FIRST RUN 76W AT STRUCTURE SUM-76-0832L
76W	RT	RAMP C			812.5	18.81	25	775			1			1					17	
76W	LT	RAMP C			287.5	6.66		237.5	1		1								6	
76E	RT	RAMP G			325	7.52	25	287.5			1			1					7	FROM STRUCTURE SUM-76-0700
76W	RT	RAMP T			1350	31.25	25	1275			1				1				27	FROM STRUCTURE SUM-76-0824L TO I-76W
76E	RT	RAMP W			56.25	1.30		25									1		2	CONNECTED TO ATTENUATOR
76E		MEDIAN BARRIER AND PARAPETS																	156	
76W		MEDIAN BARRIER AND PARAPETS																	156	
TOTALS CARRIED TO GENERAL SUMMARY					12356.25	287.0	625.00	10818.75	6	7	16	0	1	12	13	1	2	50	568	

CALCULATED CNC
CHECKED RCB

GUARDRAIL SUB SUMMARY

SUM-76/77
277-VAR

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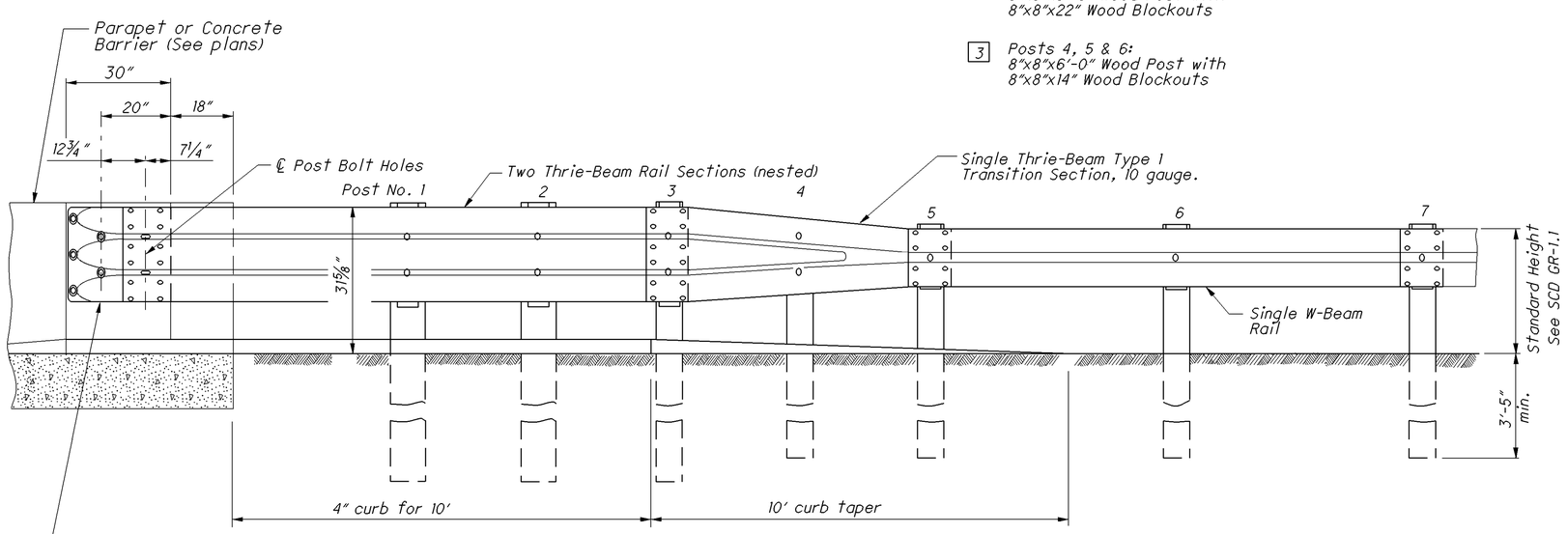


LEGEND

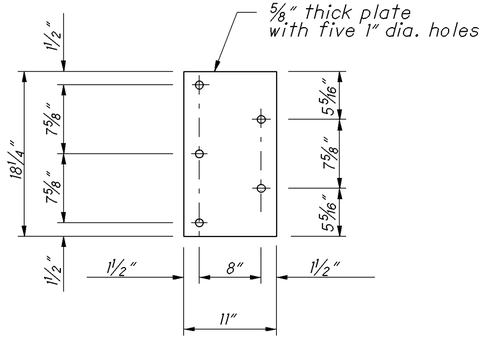
1 Posts 1 & 2:
10"x10"x8'-0" Wood Post with
8"x8"x22" Wood Blockouts

2 Post 3:
8"x8"x8'-0" Wood Post with
8"x8"x22" Wood Blockouts

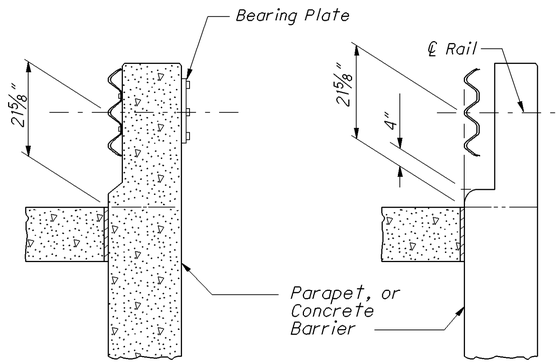
3 Posts 4, 5 & 6:
8"x8"x6'-0" Wood Post with
8"x8"x14" Wood Blockouts



ELEVATION

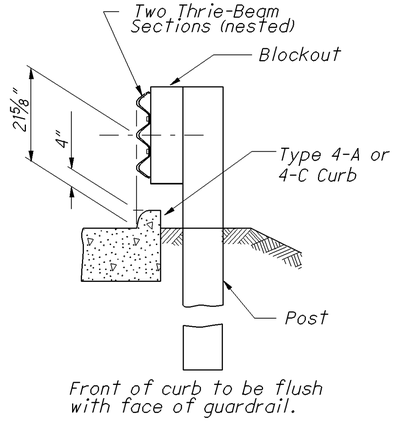


BEARING PLATE



SECTION A-A

SECTION B-B



SECTION C-C

NOTES

GENERAL: For additional details, see **SCD GR-1.1.**

APPLICATION: Use Type 1 Bridge Terminal Assembly to connect guardrail runs to bridges having deflector Parapet Type Bridge Railing (see **Structural Engineering's SCD BR-11.** It may also be used to connect guardrail runs to the approach ends of Concrete Barrier (see **SCD RM-4.6).**

On undivided, bi-directional roadways, Type 1's may be used to anchor guardrail runs to the trailing end of Deflector Parapets or Concrete Barrier installations.

THRIE BEAM TRANSITION: Symmetrical W-Beam to Thrie Beam transition panel shall be 10 gauge.

POSTS: Posts may be set in drilled holes or driven to grade. See **SCD GR-1.1** for additional Post embedment details.

WOOD POSTS - Use square sawed pressure treated wood as per CMS 710.14 and fabricate with square ends. Bore bolt holes and trim the tops of posts, if required, after the posts are set.

STEEL POSTS - are allowed as an alternate. Use W8x24 for 10"x10" wood posts and use W6x25 for 8"x8" posts. Use same post material throughout assembly.

BLOCKOUTS: Use wood blockouts only, steel or plastic blockouts are not permitted. Use notched blockouts with steel posts.

CURB: Provide a Type 4A or 4C concrete curb minimum of 20', or longer as shown on plans, including a 10' taper (from curb height to flush). Front of curb to be flush with face of guardrail.

FLARED GUARDRAIL: Begin Standard Guardrail Flares as shown on **SCD GR-5.1** preferably at or beyond Post No. 7; however, the flare may begin at Post No. 5.

PAYMENT: Item 606 - Bridge Terminal Assembly, Type 1, Each, includes the cost of extra components, in excess of normal guardrail, for additional and different size of posts and blockouts, nested Thrie-Beam, transition and connector sections, Bearing Plate, bolts, washers, nuts, and other hardware.

The curb is required in this design, and is paid separately under **Item 609 - Curb, Type 4A (or 4C), per Foot,** for the curb and taper sections, including materials, forming and labor needed to construct as shown.

OFFICE OF ROADWAY ENGINEERING

DESIGNED | REVIEWED

REVISION DATE | CHECKED

PIS NUMBER

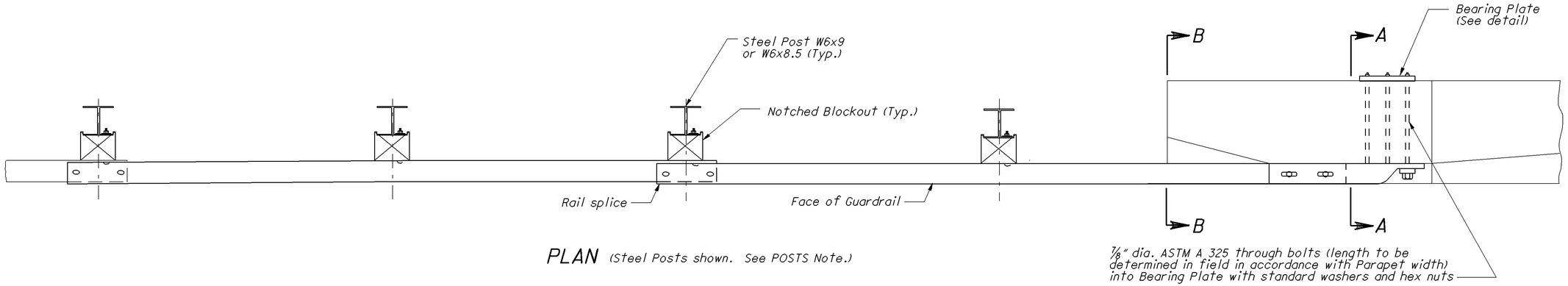
PLAN INSERT SHEET

BRIDGE TERMINAL ASSEMBLY, TYPE 1

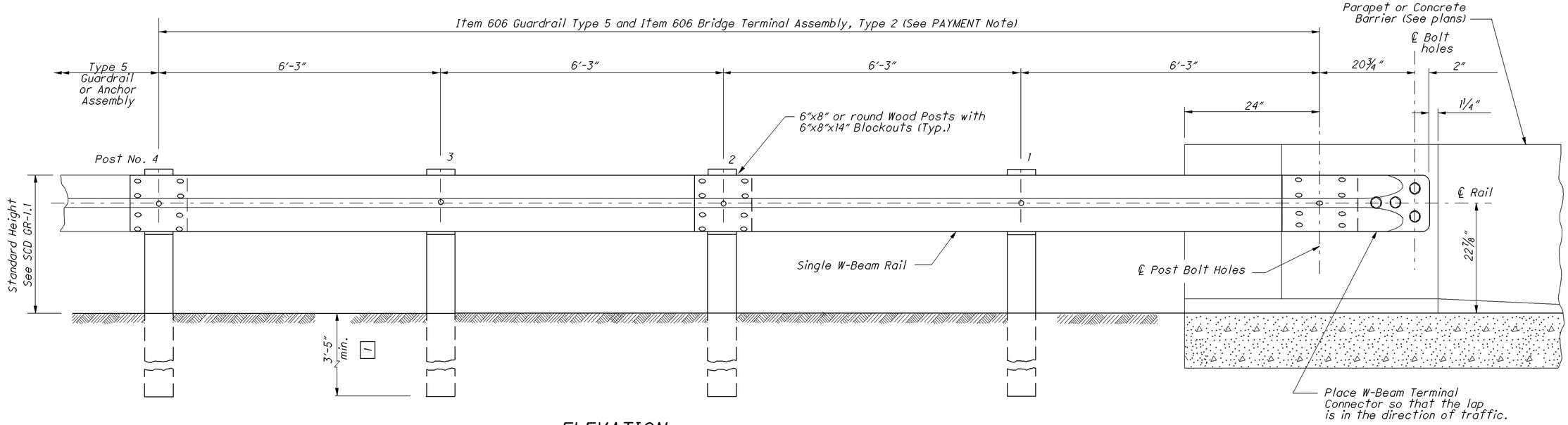
SUM-76/77
277-VAR

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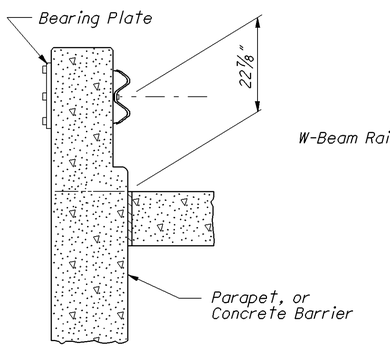
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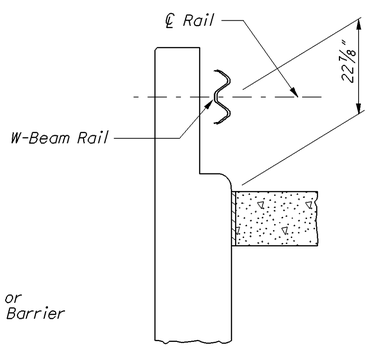
PLAN (Steel Posts shown. See POSTS Note.)



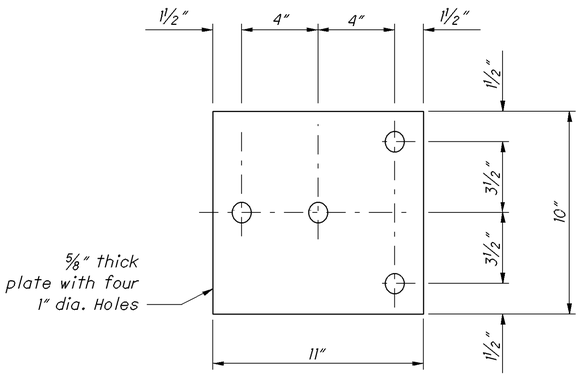
ELEVATION (Wood Posts shown. See POSTS Note.)



SECTION A-A



SECTION B-B



BEARING PLATE

NOTES

GENERAL: For additional rail and post details, see **SCD GR-1.1.**

APPLICATION: Use Type 2 Bridge Terminal Assembly to connect guardrail runs to the trailing end of Parapets or Concrete Barriers (see **SCD RM-4.6** for barrier) on one-directional roadways. Do not use if located within clear zone of opposing traffic.

POSTS: Posts shall be of standard size and material specified for the appropriate type of guardrail to be installed leaving the bridge or barrier. For Type 5 guardrail, see **SCD GR-2.1.**

BLOCKOUTS: Wood or plastic blockouts are permitted.

FLARED GUARDRAIL: Begin Standard Guardrail Flares as shown on **SCD GR-5.1,** preferably at or beyond Post No. 4, however, the flare may begin at Post No. 2.

PAYMENT: **Item 606 - Bridge Terminal Assembly, Type 2, Each.** includes the cost of extra components, in excess of normal guardrail for the Terminal connector, Bearing Plates, bolts, washers, nuts, and other hardware.

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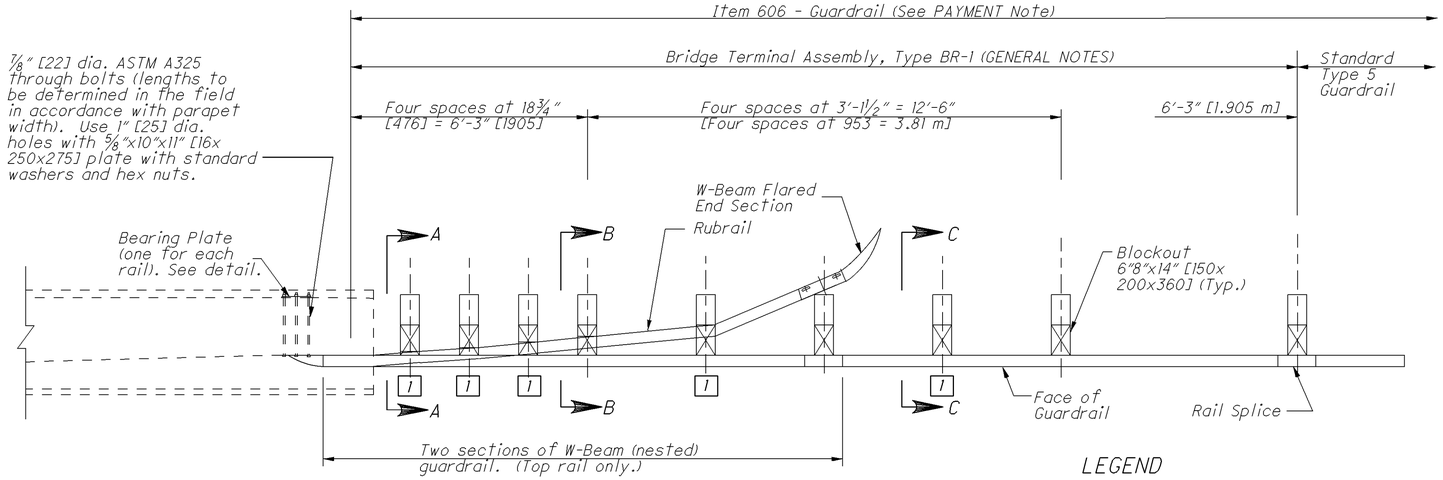
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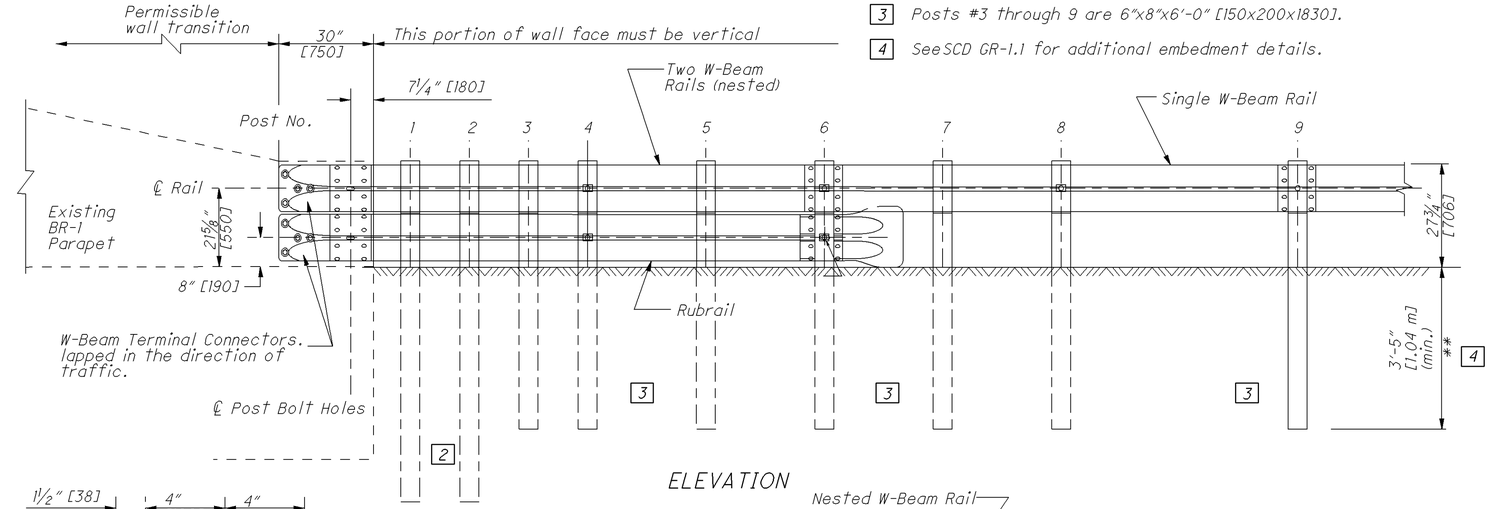
SUM-76/77
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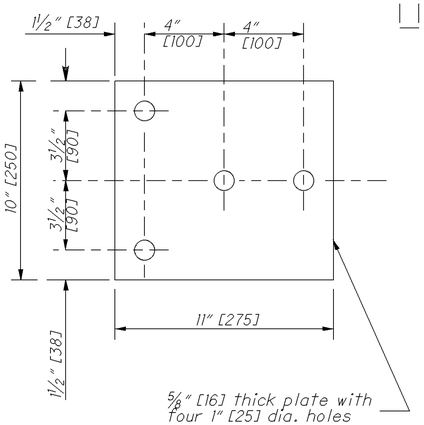
PLAN

LEGEND

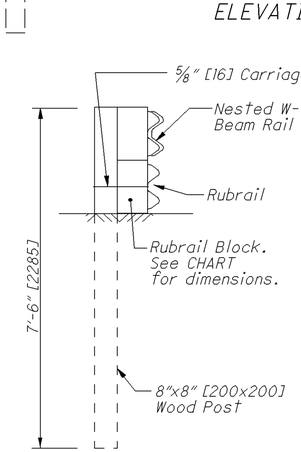
1. Guardrail not attached to Posts. Blockout fastened to Post with Standard Post Bolt.
2. Posts #1 and 2 are 8"x8"x7'-6" [150x200x2300].
3. Posts #3 through 9 are 6"x8"x6'-0" [150x200x1830].
4. See SCD GR-1.1 for additional embedment details.



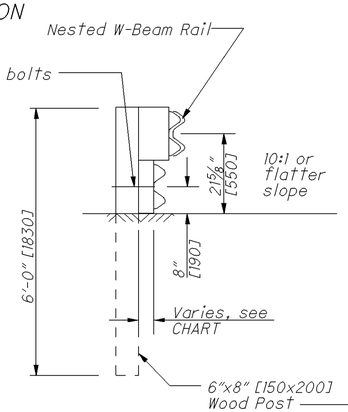
ELEVATION



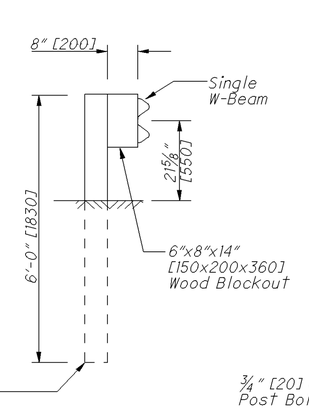
BEARING PLATE
2 required



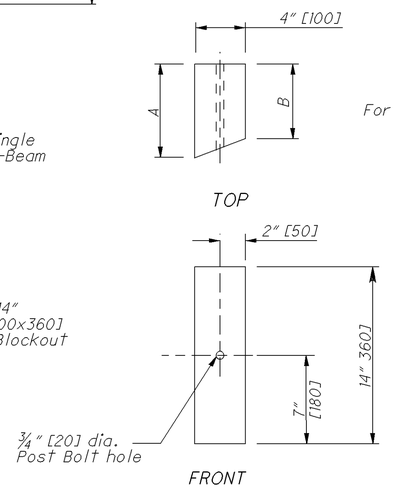
SECTION A-A



SECTION B-B



SECTION C-C



For A and B dimensions see CHART.

WOOD BLOCK FOR RUBRAIL

RUBRAIL BLOCK CHART		
POST	A	B
1	6½" [164]	6¼" [158]
2	5⅛" [131]	4⅞" [125]
3	3⅞" [99]	3⅝" [93]
4	2⅝" [67]	2⅜" [61]
5	No Block	No Block

NOTES

GENERAL: This design is intended to be used to upgrade bridge terminal assemblies utilizing 27" [786] BR-1 Bridge parapets in effect from 1979 to 1989. This assembly design is approved to NCHRP Report 350, Test Level 3.

This guardrail transition is only appropriate for connection to a vertical concrete end; it should not be connected directly to a concrete safety shape or single slope shape. If attached to a vertical concrete wall (other than a parapet), the wall must be adequately reinforced to resist the lateral and longitudinal forces transmitted through the terminal connectors. If the height of the vertical connection is 32" [813], use Bridge Terminal Assembly, Type 1 (SCD GR-3.1).

This design utilizes a lower rail (rubrail), and it cannot be used if there is a curb present.

RUBRAIL: The rubrail is a 12'-6" [3.81 m] standard 12 ga. W-Beam rail element. The last 3' [1 m] of the rubrail may be shop bent to facilitate field installation. Field drill rubrail hole at Post 6.

POST ATTACHMENTS: Posts No. 1, 2, 3, 4 and 6 require an additional 1" [25] dia. hole to attach the lower block and/or rubrail.

Do not bolt nested W-Beam or Rubrail to Posts and Blockouts on Posts No. 1, 2, 3, 5 and 7. Bolt blockouts directly to posts at those locations.

Center drill wood block for rubrails to sit squarely on Posts 1 through 4. Secure blocks to Posts No. 1, 2, & 3 with ⅝" [16] carriage bolts. See WOOD BLOCK FOR RUBRAIL Detail.

Use Wood posts only. Steel or plastic blockouts are not permitted. Use of rectangular plate washers is optional.

GUARDRAIL CONNECTION: At least one 12'-6" [3.81 m] section of Standard W-Beam Guardrail must be present before attaching any End Anchors. See SCD GR-2.1 for standard guardrail details.

PAYMENT: Item 606 - Bridge Terminal Assembly, Type BR-1, Each, includes the cost of the extra components, in excess of normal guardrail, for additional and different sizes of posts and block-outs, nested rail and rubrail, Bearing Plates, End Section and Connectors, and other hardware.

All metric dimensions (in brackets [] are in millimeters unless otherwise noted.

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REVISION DATE 10-20-06 | CHECKED

PLAN INSERT SHEET

BRIDGE TERMINAL ASSEMBLY, TYPE BR-1

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NOTES

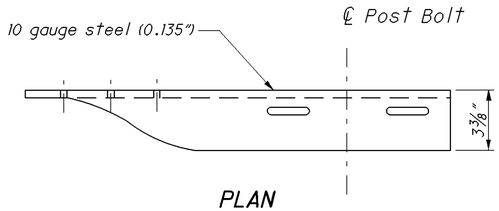
GENERAL: *Components shown on this drawing are used in a variety of guardrail systems. See individual guardrail drawing for specific applications.*

See CMS 606 for guardrail specifications not covered on these drawings.

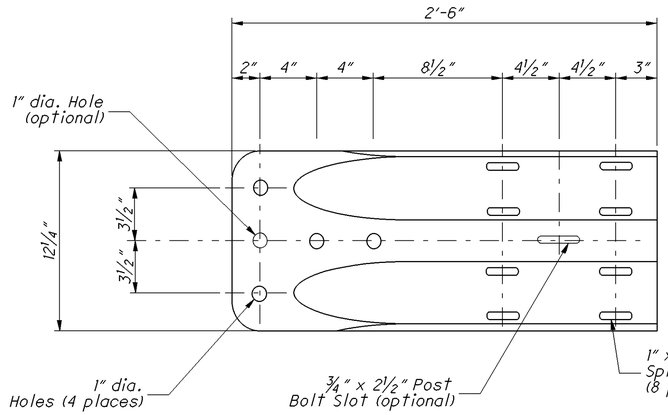
Refer to AASHTO M 180 for dimensional details of W-Beam and Thrie-Beam rail elements, related buffer and end sections, beam splices, post and splice bolts, nuts, and Type 1 W-Beam to Thrie-Beam Transition sections.

RAIL ELEMENTS: *W-Beam Rail has an effective length of 12'-6" unless otherwise specified, with ¾" x 2½" post bolt slots on 6'-3" centers regardless of post spacing. Field punch or drill bolt holes or slots for irregularly spaced posts as specified in CMS 606.04.*

RAIL SPLICES: *Lap splices between two rail elements or between a rail and terminal connector in the direction of traffic. Lap the buffer or flared end sections in the direction of traffic.*

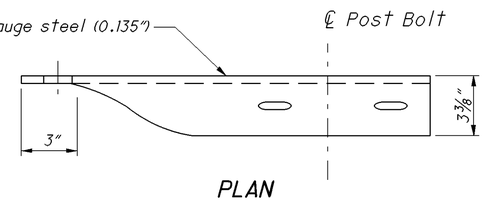


PLAN

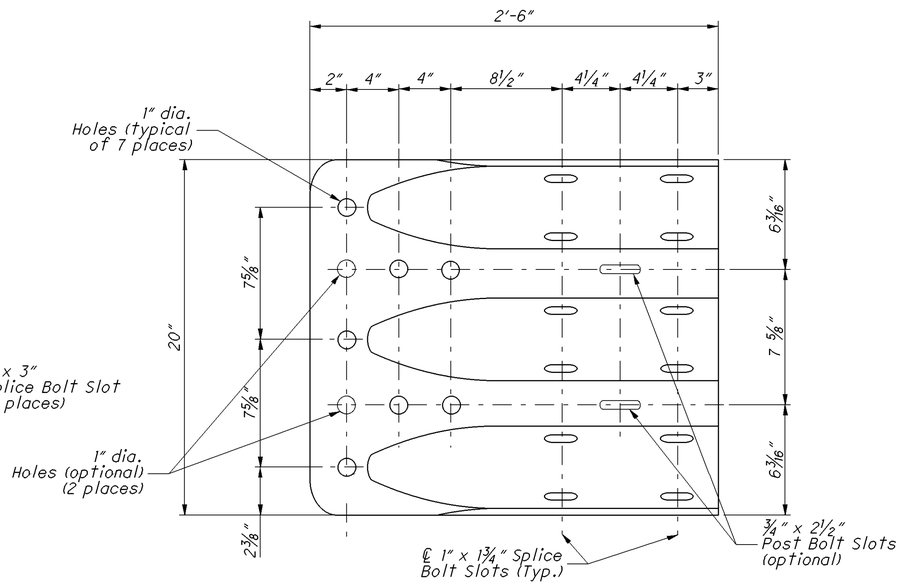


ELEVATION

W-BEAM TERMINAL CONNECTOR

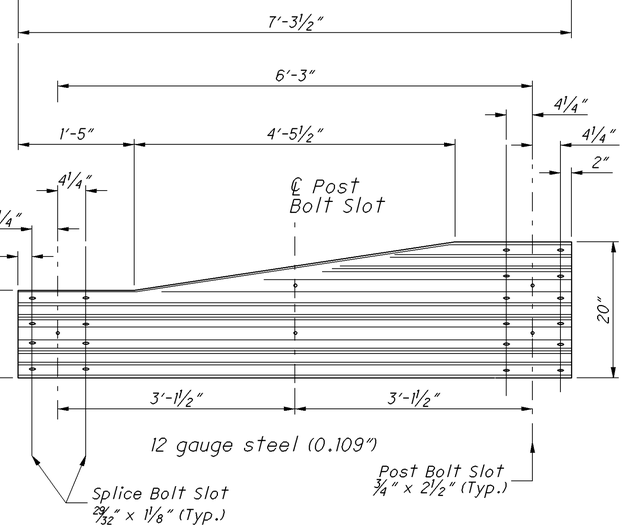


PLAN



ELEVATION

THRIE-BEAM TERMINAL CONNECTOR

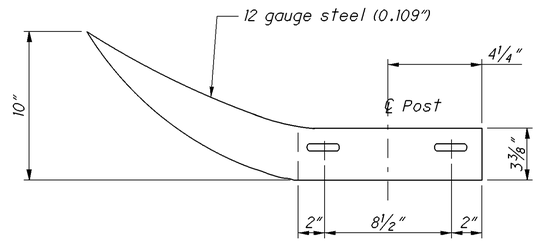


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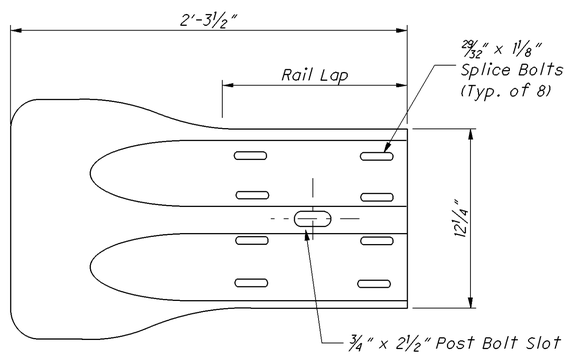
TYPE 2 TRANSITION SECTION

(Asymmetric W to Thrie-Beam)

For details of Type 1 Transition Section (Symmetric), refer to AASHTO M 180, Figure 4.

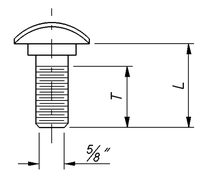


PLAN



ELEVATION

W-BEAM FLARED END SECTION



GUARDRAIL BOLT (For Post and Splice Bolts)		
L	**T min.**	**Bolt Use**
18" (Standard Rail)	4"	Type 5: WP/WB, PB
26" (Barrier Rail)		
10"	4"	Type 5: SP/WB, PB
1¼"	1⅛"	Splice Bolt

WP = Wood Post WB = Wood Blockout
SP = Steel Post PB = Plastic Blockout

Longer Bolt may be needed for round Wood Post larger than 8" dia.

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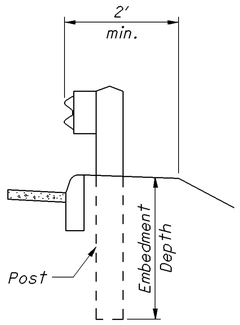
PLAN INSERT SHEET

GUARDRAIL DETAILS (Rail Components)

PIS GR-1.1

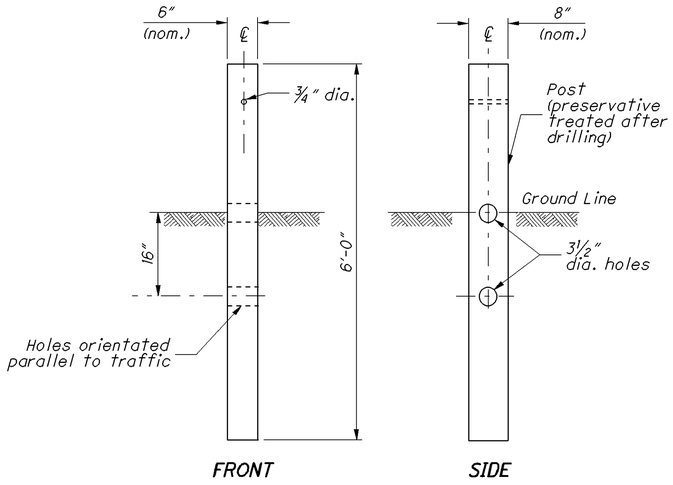
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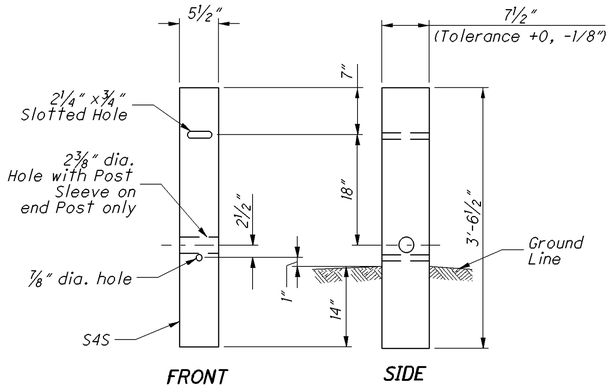


DETAIL A

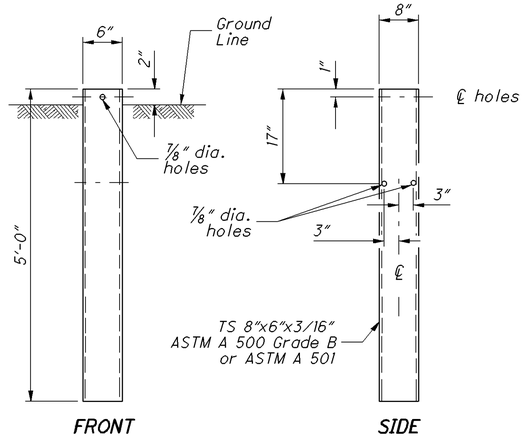
See POST EMBEDMENT DEPTH Note



TYPE 1 BREAKAWAY CRT POST



TYPE 2 BREAKAWAY CRT POST



STEEL GROUND TUBE

NOTES

GUARDRAIL HEIGHT: *For initial installation, construct the guardrail within ± 1″ of the standard height, h, or* ***29″*** *to the top of W-Beam rail. (See MEASURING GUARDRAIL HEIGHT Detail.)*
When subsequent projects, such as resurfacings, affect the height of existing guardrail, the finished height is to be within ±2.5″ of the standard height.

POST EMBEDMENT DEPTH: *Standard embedment is 3′-5″ min. Where less than 2′ of graded shoulder width (10:1 or flatter) exists, measured from the face of the guardrail (see DETAIL "A"), use longer posts so that a minimum of 5′-5″ embedment depth is provided. Payment for the longer posts will be made at the unit price bid for* ***ITEM 606 - GUARDRAIL POST, 9′, Each.***

SPECIAL POST MOUNTINGS: *Install posts located over a drainage inlet or structure as shown in the FOOTING ANCHOR Detail, or anchor per the details shown on* ***SCD GR-2.2.***

Install posts located over a footing with a cover of less than 2′-6″ with a footing anchor as detailed here. (A plate, as detailed on SECTION B-B of ***SCD GR-2.2****, may be used as an alternative attachment method.) Where the cover is between 2′-6″ and 3′-5″, the footing anchor may be omitted and the post encased instead with 4″ (min.) of concrete.*

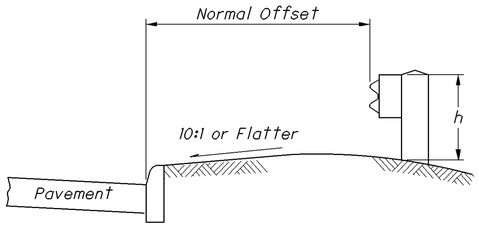
Do not drive posts located over a culvert with less than 4′-3″ of cover; instead set in drilled or dug holes. Where the available post embedment depth is less than 3′-5″, encase the post with a minimum of 4″ concrete.

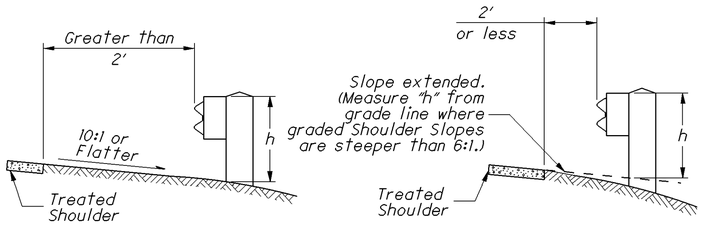
All costs associated with special post mountings are included in the unit price bid of Item 606 Guardrail of the type specified in the plans.

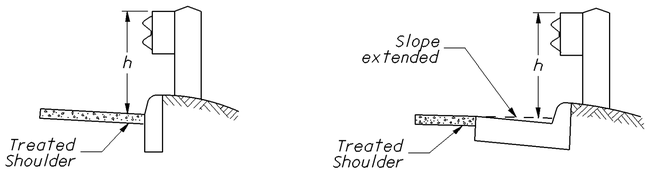
ANCHORS: *Holes and grouting shall comply with CMS 510. Use either cement or non-shrink, nonmetallic grout.*

Expansion shield anchors as specified in CMS 712.01 may be substituted except where concrete deterioration has occurred, as determined by the Engineer. Where self-drilling anchors are used, drill the holes with the expansion shield (not by a drill bit) and install the shield flush with the concrete surface.

PROTECTIVE COATING: *In lieu of the complying with CMS 710.06, coat expansion shields, anchors and concrete insert anchor assemblies embedded in concrete in accordance with ASTM A 153 or be of stainless steel. Any bolts screwed into these devices shall meet CMS 710.06. (See sheet 3 for Concrete Insert Anchor Assembly Detail.)*

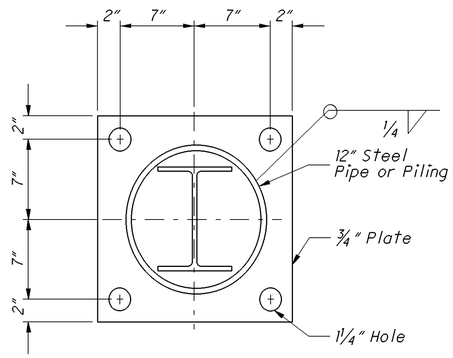






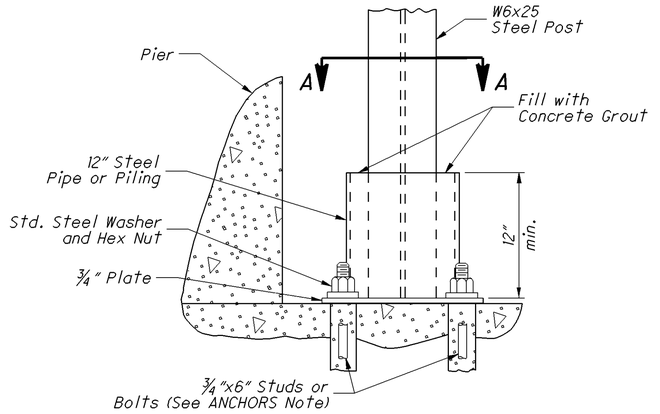
h = Standard Height (See GUARDRAIL HEIGHT Note)

MEASURING GUARDRAIL HEIGHT



Footing Anchor and hardware need not be galvanized

SECTION A-A



ELEVATION
FOOTING ANCHOR

See SPECIAL POST MOUNTINGS Note.

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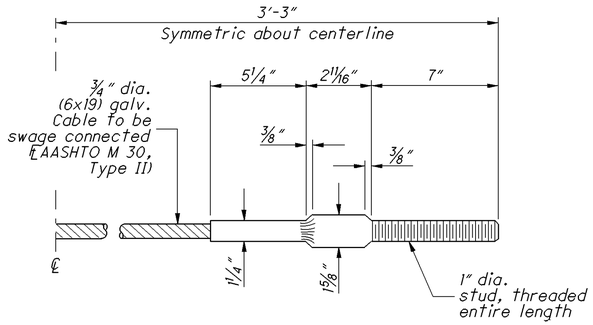
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GUARDRAIL DETAILS (Rail Components)

PIS GR-1.1

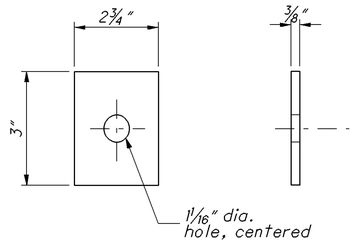
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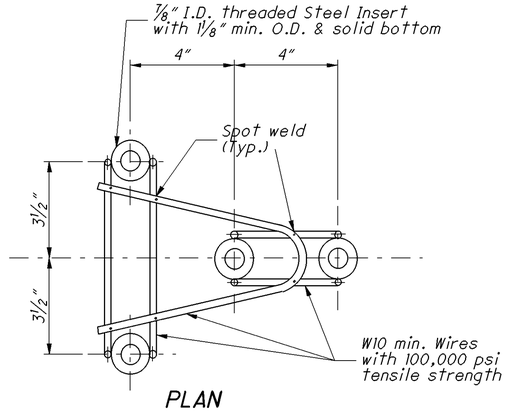


STANDARD SWAGED FITTING AND STUD

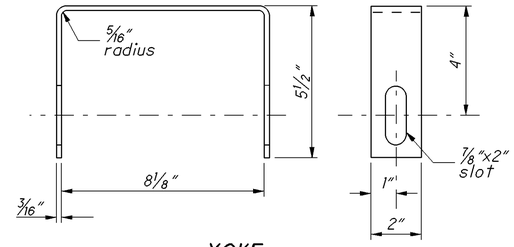
CABLE ANCHOR



END PLATE

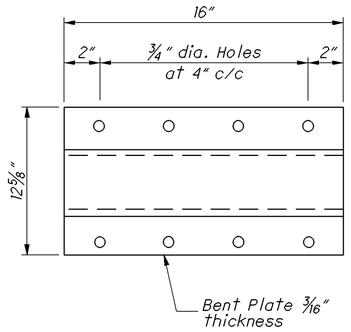


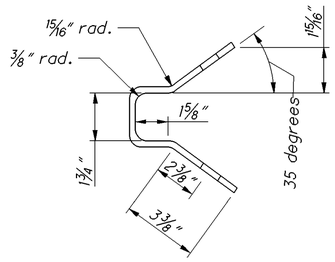
PLAN



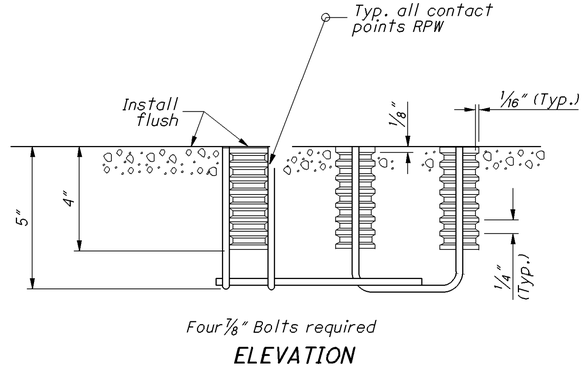
YOKE

Two required in Assembly





ANCHOR BRACKET

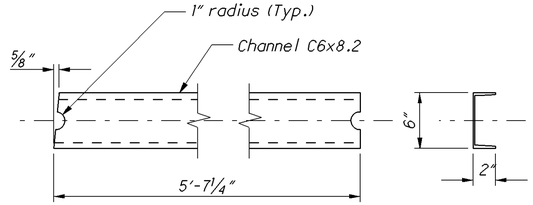


Four ⅞" Bolts required

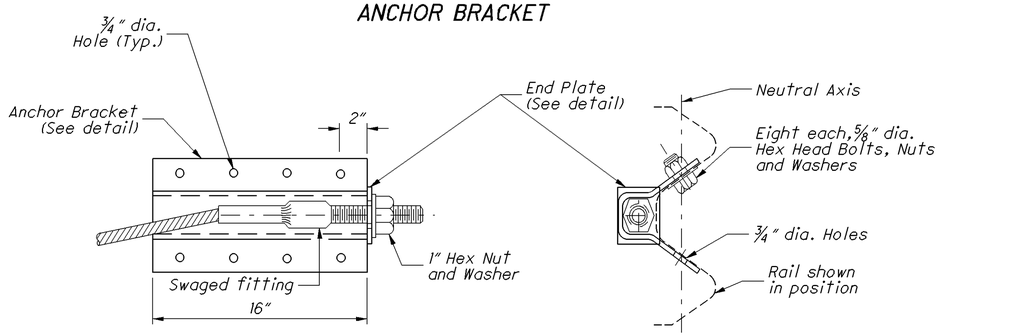
ELEVATION

CONCRETE INSERT ANCHOR ASSEMBLY (W-BEAM ONLY)

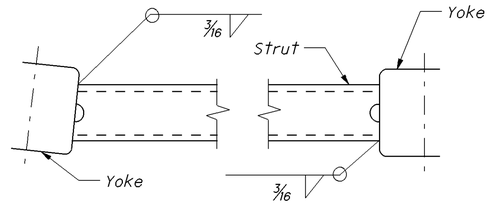
See ANCHORS and PROTECTIVE COATINGS Notes on Sheet 2



STRUT

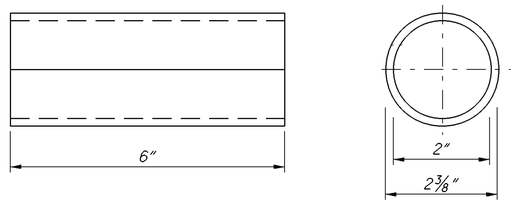


ANCHOR BRACKET ASSEMBLY DETAILS

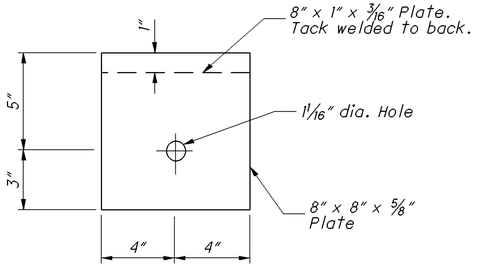


Channel legs shown down. For opposite hand, install Channel legs up.

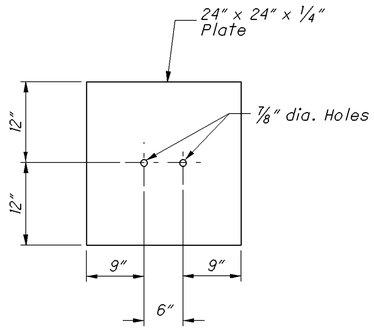
STRUT AND YOKE ASSEMBLY



POST SLEEVE



BEARING PLATE



SOIL PLATE

OFFICE OF ROADWAY ENGINEERING

DESIGNED | REVIEWED

REVISION DATE | CHECKED

PIS NUMBER

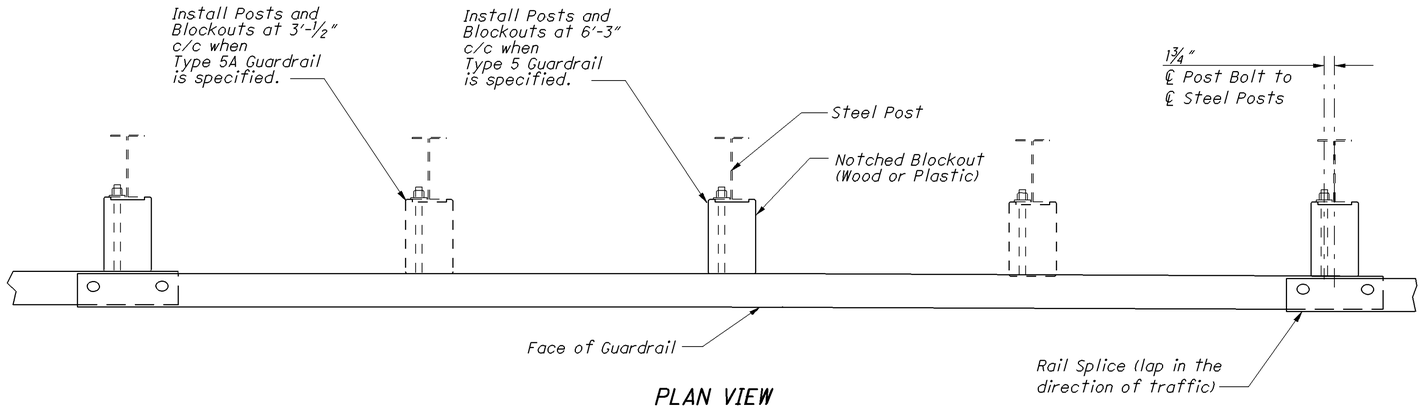
PLAN INSERT SHEET

GUARDRAIL DETAILS (Rail Components)

PIS GR-1.1

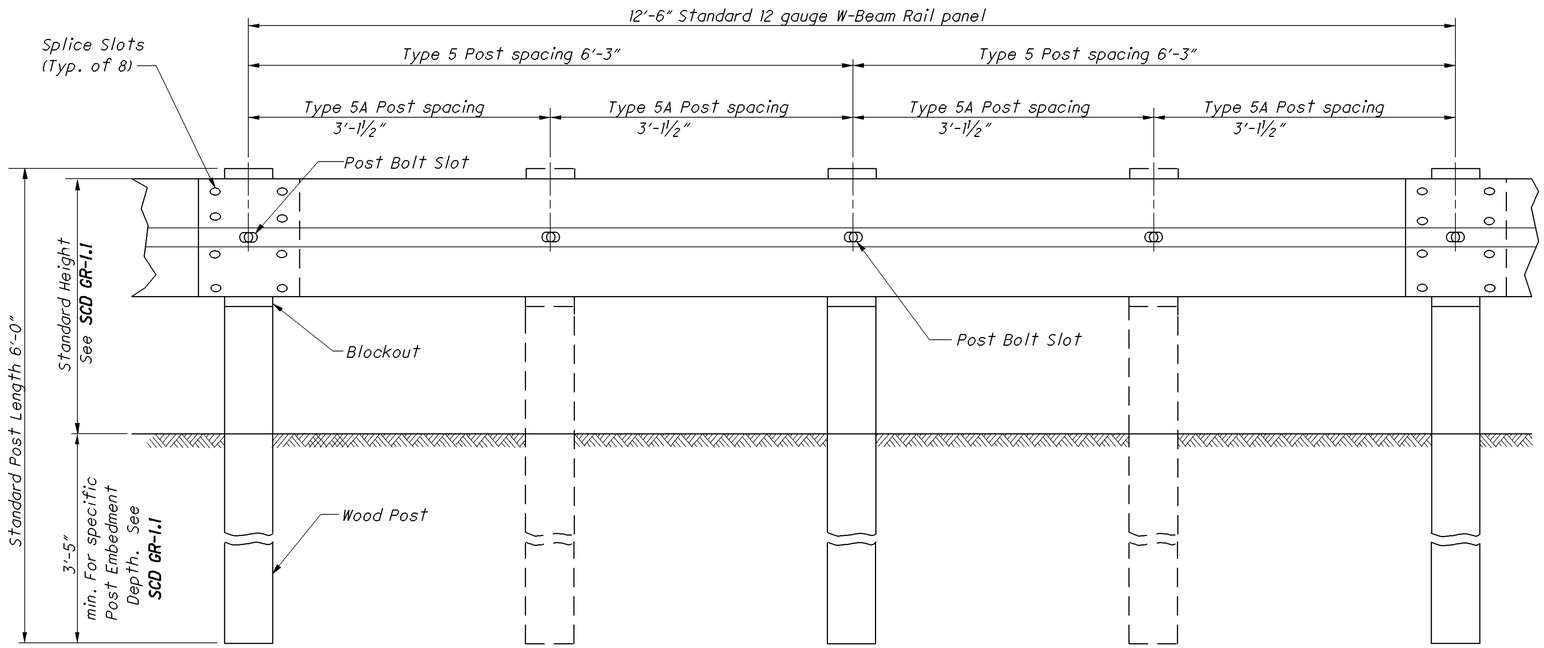
3 / 3

47C / 113



PLAN VIEW

(Steel Posts shown)



ELEVATION

(Wood Posts shown)

NOTES

RAIL: *Use W-Beam rail meeting AASHTO M 180 Type II Class A, as specified in CMS 606.*

POSTS: *Posts may be constructed of wood or steel. Wood posts may be round or 6"x8" square-sawed.*

Use round wood posts on runs of single-sided rail. The round posts shall be 8"±1 in diameter at the top and not more than 3" larger at the butt with a uniform taper.

Fabricated wood posts with square ends. Posts shall be pressure-treated as per CMS 710.14. Bore bolt holes and, if required, trim the tops of posts after the posts are set.

Steel posts are to be W6x9 or W6x8.5 galvanized steel. Use the same type of post throughout the length of the project unless otherwise specified in the plans or permitted by the Engineer.

All posts are 6'-0" long unless specified otherwise in the Contract Document. Posts may be set in drilled holes or may be driven to grade.

WELDED BEAM POSTS: *Welded beam guardrail posts may be used for Item 606, Guardrail, provided the web and flange sizes are as shown here. Welding of the web to the flanges must comply with ASTM A 769, Class 1, using Grade 36 steel [250 MPa yield point] with the following exceptions:*

Sec. 7.2 *Test reports of tensile properties for each lot shall accompany each shipment.*

Sec. 12 *Beams that have imperfections repaired by welding shall not be accepted for use in Item 606.*

Sec. 13 *Random samples shall be tested by the Department from materials delivered to the project site, or other locations designated by the Laboratory.*

ALTERNATE POSTS: Engineered guardrail posts having met NCHRP 350 criteria, and listed on the ***Office of Materials Management's*** *Approved List are permitted as an equal alternate when installed according to the Manufacturer's instructions and within the limitations shown on the Approved List.*

BLOCKOUTS: *Blockout dimensions are dependent on post used. Wood Blockouts are to be pressure treated as specified in CMS 710.14. Bore bolt holes. Approved alternate blockouts may be used in lieu of the wood blockouts shown. The approved list is maintained by the* ***Office of Roadway Engineering.***

WASHERS: *Install appropriate sized standard galvanized steel washers on the nut side of bolts installed on wood posts.*

DELINEATION: *For barrier reflectors, see CMS 626.*

MISCELLANEOUS: *For other guardrail details, see* ***SCD GR-1.1.***

STEEL BEAM POSTS (English)				
Size	**Beam depth**	**Flange width**	**Flange thickness**	**Web thickness**
Rolled W6x8.5	5.8"	3.94"	0.193"	0.170"
Rolled W6x9	5.9"	3.94"	0.215"	0.170"
Welded 6x8.5	6.0"	3.94"	0.193"	0.170"
Welded 6x9	6.0"	3.94"	0.215"	0.170"

OFFICE OF ROADWAY ENGINEERING

DESIGNED | REVIEWED

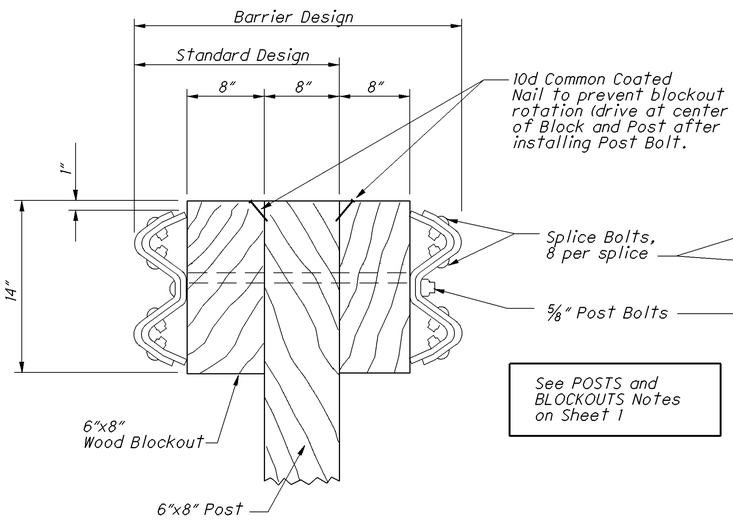
REVISION DATE | CHECKED

PIS NUMBER

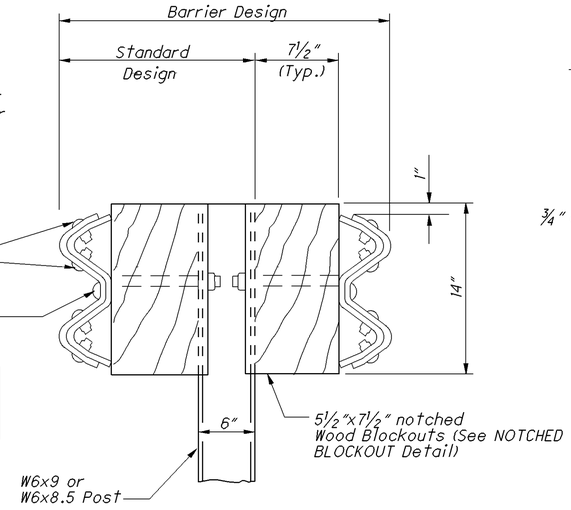
PLAN INSERT SHEET

GUARDRAIL TYPE 5 & 5A

PIS GR-2.1



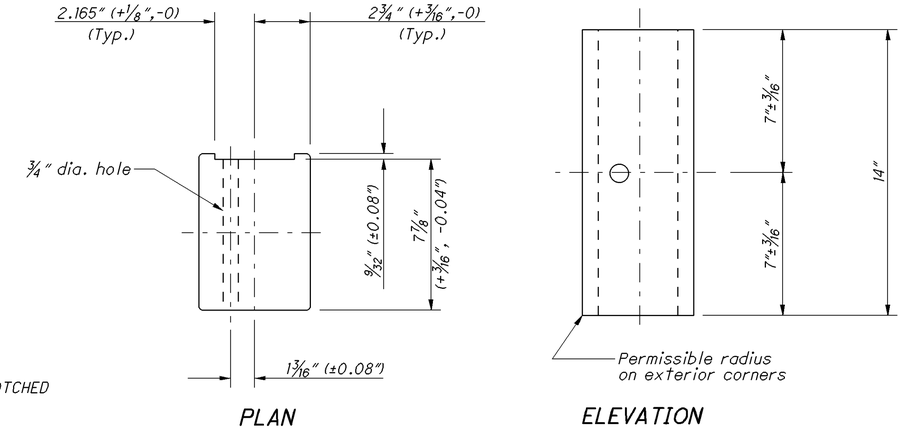
SQUARE WOOD POST



STEEL POST

See POSTS and BLOCKOUTS Notes on Sheet 1

See POSTS Note, Sheet 1

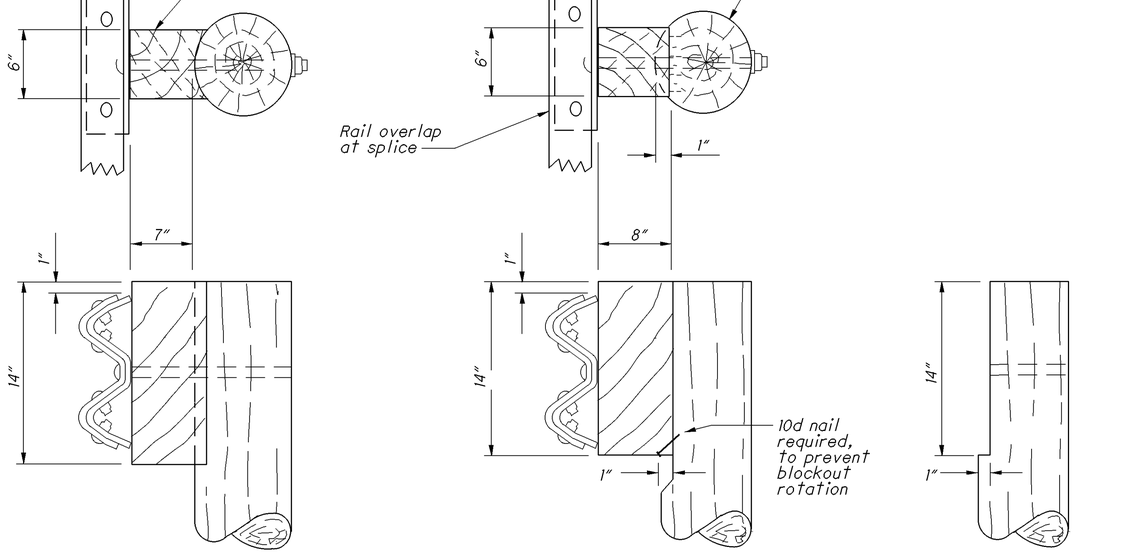


PLAN

ELEVATION

NOTCHED BLOCKOUTS FOR STEEL POSTS

See BLOCKOUTS Note on Sheet 1



Toenail not required if post is cut as shown

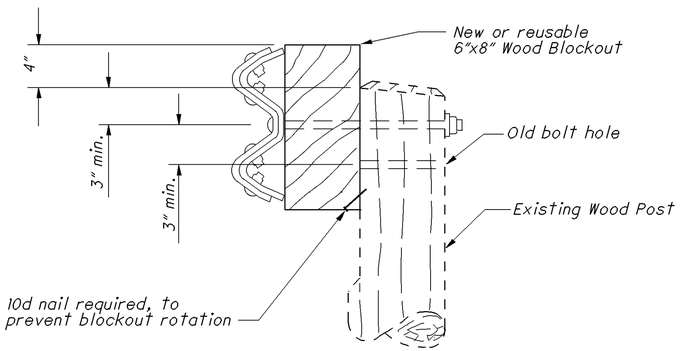
Method 1
Routed Blockout

Method 2
Notched Post

Alternate methods of placing the Blockouts on round Posts may be submitted for consideration and approved by the Engineer.

ROUND WOOD POSTS

Single Sided runs only (Standard Design)



WOOD POSTS WITH WOOD BLOCK RAISING EXISTING GUARDRAIL HEIGHT

OFFICE OF ROADWAY ENGINEERING

DESIGNED | REVIEWED

REVISION DATE | CHECKED

PIS NUMBER

PLAN INSERT SHEET

GUARDRAIL TYPE 5 & 5A

PIS GR-2.1

2 / 2

47E
113

STATION RANGE			TYPICAL SECTION	SHEETS	DISTANCE (D)	AVERAGE WIDTH (W)	CADD GENERATED AREA PAVEMENT PLANING	CADD GENERATED AREA NEW PAVEMENT	203 EXCAVATION	203 EMBANKMENT	254 PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN (T=4"±)		204 SUBGRADE COMPACTION	204 PROOF ROLLING	302 ASPHALT CONCRETE BASE, PG64-22(T=9")	304 AGGREGATE BASE, AS PER PLAN(T= 6")		SPEC TACK COAT, TRACKLESS TACK @ 0.10 GAL/SY	SPEC TACK COAT, TRACKLESS TACK FOR INTERMEDIATE COURSE @ 0.04 GAL/SY	442 ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE B (448), AS PER PLAN (T= 1 1/2")	442 ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE B (448) (T= 1 3/4")	617 COMPACTED AGGREGATE, AS PER PLAN				
					FT	FT	SQ YD	SQ YD	CY	CY	SY		SY	HOUR	CY	CY		GAL	GAL	CY	CY	CY				
I.R 277/ RAMP A																										
4+50.00	TO	17+00.00		53-61	1250.00	VARIES		2311.05	1004	943			2563.78	1.28	596.48	416.70			184.88	96.29	112.34	30.86				
I-76 / RAMP D																										
2+50.00	TO	13+50.00		65-71	1100.00	VARIES	2729.63	3397.65	636	2070	2729.63		1590.87	0.80	301.96	214.50		272.96	88.91	141.57	165.16	27.16				
I-76 / RAMP T																										
4+00.00	TO	12+51.31		74-79	851.31	VARIES	1968.93	2931.77	705	232	1968.93		1550.67	0.78	365.59	257.18		196.89	105.15	122.16	142.52	21.02				
RAMP W @ I.R. 76																										
89+88.00	TO	10+00.00		83-95	2234.23	VARIES	4608.27	2882.79	1568	2658	4608.27							460.83	414.95	312.13	364.15	23.81				
	302							2984.99							746.25											
	304							3137.73								522.96										
	204							3341.32					3341.32	1.67												
RAMPS A & B @ I.R. 277 E.B.																										
17+53.51	TO	7+67.81			1605.00	VARIES	2594.19	3935.51	1684	2345	2594.19							259.42	418.61	272.07	317.42	24.01				
	302							4005.92							1001.48											
	304							4111.31								685.22										
	204							4251.59					4251.59	2.13												
SUBTOTALS									5597.00	8248.00	11901.02	0.00	13298.23	6.65	3011.75	2096.56	0.00	1190.10	1212.50	944.22	1101.59	126.86	0.00	0.00	0.00	0.00
TOTALS CARRIED TO GENERAL SUMMARY									5597	8248	11902	0	13299	7	3012	2097	0	1191	1213	945	1102	127	0	0	0	0

CALCULATED CNC
CHECKED RCB

RAMP SUB SUMMARY

SUM-76/77 277-VAR

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REF NO.	SHEET NO.	STATION TO STATION				202 GUARDRAIL REMOVED FT	606 GUARDRAIL, TYPE 5 FT	606 GUARDRAIL, TYPE MGS FT	606 ANCHOR ASSEMBLY, MGS TYPE E EACH	606 ANCHOR ASSEMBLY, TYPE E EACH	606 ANCHOR ASSEMBLY, MGS TYPE T EACH		606 BRIDGE TERMINAL ASSEMBLY, TYPE 2 EACH	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1 EACH	626 BARRIER REFLECTOR EACH	441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), (UNDER GUARDRAIL), AS PER PLAN CY	630 GROUND MOUNTED STRUCTURAL BEAM SUPPORT, S4X7.7 FT	630 BREAKAWAY STRUCTURAL BEAM CONNECTION EACH	630 GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION EACH	630 REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED SIGN AND REERECTION EACH		202 HEADWALL REMOVED EACH	602 CONCRETE MASONRY CY	611 27" CONDUIT, TYPE B FT	202 PIPE REMOVED, OVER 24" FT
R1	50	247+35.18	RT	TO	248+35.18	100																					
GR1	50	247+85.18	RT	TO	248+35.18					1																	
RS1	50																				2	1					
S1	50	5+84.00	LT														32	2	2								
R2	51	5+94.31	LT	TO	14+71.51			887.5																			
GR2	51	6+00.00	LT	TO	14+00.00			737.5	1		1				16	18.52											
R5	63-64	8+62.77	RT	TO	13+64.52	506.25																					
GR5	63-64	8+62.77	RT	TO	13+64.52		31.25	425	1					1	11	11.86											
R6	72-73	4+57.03	RT		12+51.31	837.5																					
GR6	72-73	4+57.03	RT		12+51.31		50	787.5					1	1													
R7	80	89+87.64		TO	95+17.02	512.5																					
GR7	80	89+87.64		TO	95+17.02		50	462.5					1	1		11.86											
R8	80-81	97+51.52		TO	100+58.02	300																					
GR8	80-81	97+51.52		TO	100+58.02		25	262.5			1		1														
R4	61C	13+97.82		TO	17+53.51	350																					
GR4	61C	13+97.82		TO	17+53.51		25	325			1		1														
RHW1	61B	3+00.00																							1		
HW1	61B	3+00.00																								0.53	
C1	61B	3+00.00																									15
TOTALS CARRIED TO GENERAL SUMMARY						2606.25	181.25	3887.50	2	1	3	0	4	3	27	43	32	2	2	2	1	0	1	0.5	15	5

CALCULATED CNC
CHECKED RCB

RAMP SUB SUMMARY

SUM-76/77
277-VAR

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251
250
N 84° 41' 15" E
249
℄ I-277
248
247
M.N.S.
STA 248+35.18, 55.94 RT
STA 247+85.18, 55.79 RT
GR1
END GORE AREA
STA 5+34
R1
S1
BEGIN NEW
PAVEMENT
STA 4+65.87
RS1
STA 6+00, 31.23 LT
STA 5+84, 34.5' LT
CONSTRUCTION LIMITS
R2
GR2
PROPOSED EDGE OF SHOULDER
EXISTING EDGE OF
CONCRETE BASE
5'± VARIES
16'-18'
9'±
EXISTING EDGE
OF SHOULDER
℄ RAMP A
MATCH LINE 10+00 RAMP A
SEE SHEET 51 / 113
EXISTING AND PROPOSED
EDGE OF SHOULDER
CONSTRUCTION LIMITS
EXISTING GUARDRAIL
TO REMAIN
BEGIN SHOULDER
REPLACEMENT
STA 5+00
CS Sta. 5+09.70
SC Sta. 9+59.70
SHOULDER
REPLACEMENT AREAS
* SEE CROSS SECTIONS FOR
RESURFACING AND WIDENING DIMENSIONS

HORIZONTAL
SCALE IN FEET
0 10 20 40
CALCULATED CNC
CHECKED LMP

PLAN - RAMP A (I-277 TO I-77)
STA 5+00 TO STA 10+00

SUM-76/77/
277-VAR

50
113

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SHOULDER
REPLACEMENT AREAS

* SEE CROSS SECTIONS FOR
RESURFACING AND WIDENING DIMENSIONS

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HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED CNC
CHECKED LMP

PLAN - RAMP A (I-277 TO I-77)
STA 10+00 TO STA 15+00

SUM-76/77/
277-VAR

N

0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED CNC
CHECKED LMP

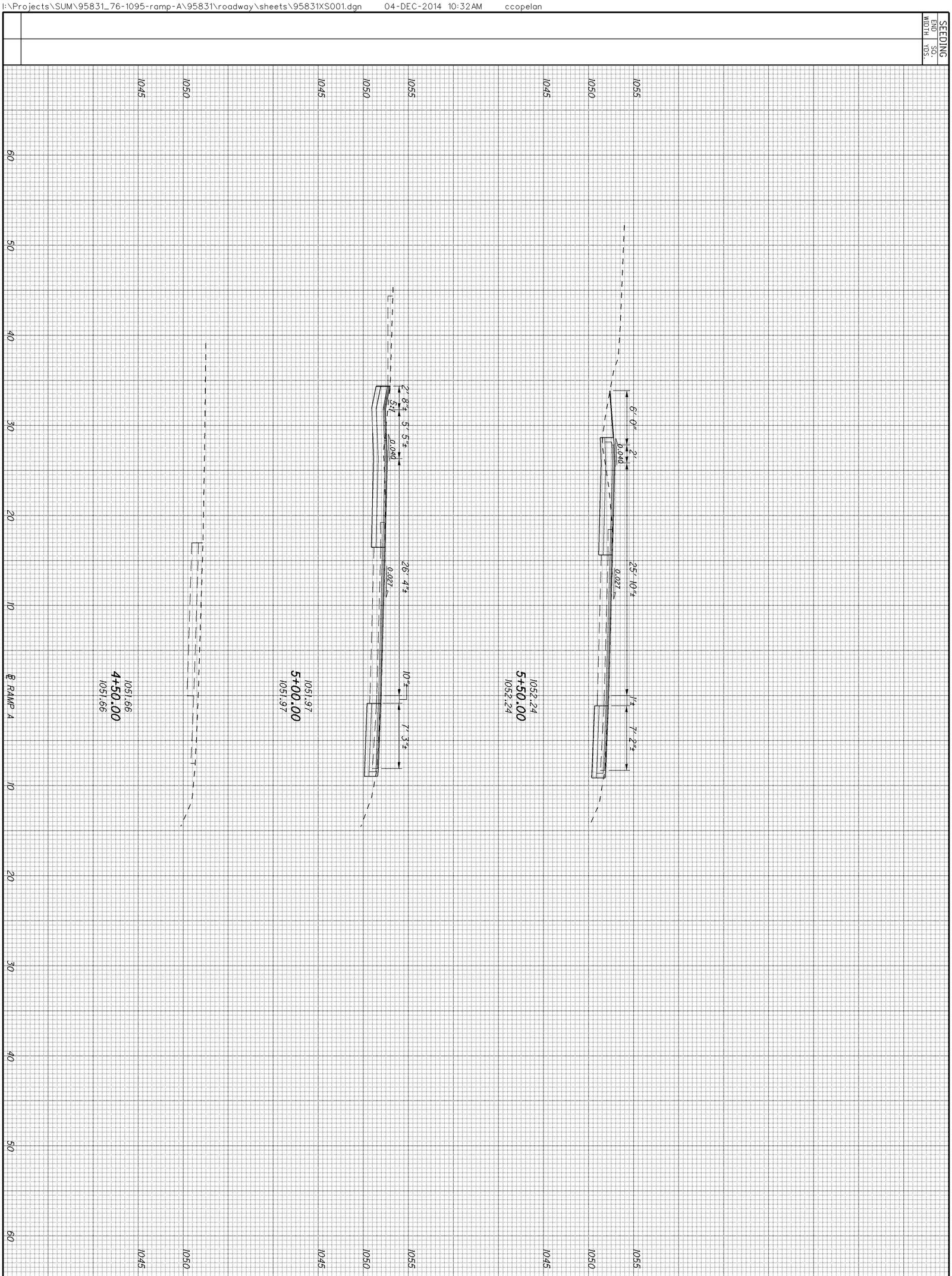
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SUM-76/77/277-VAR

52
113

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53 / 113	SUM-76/77/ 277-VAR	CROSS SECTIONS RAMP A (I-277 TO I-77) STA. 4+50.00 TO STA. 5+50.00	CALCULATED CNC CHECKED LMP

SEEDING	
END WIDTH	SQ. YDS.

60 50 40 30 20 10 ℄ RAMP A 10 20 30 40 50 60

END AREA		VOLUME	
CUT	FILL	CUT	FILL
21	10		
		40	16
22	7		
		41	15
22	9		
		44	12
		125	43

CALCULATED CNC
CHECKED LMP

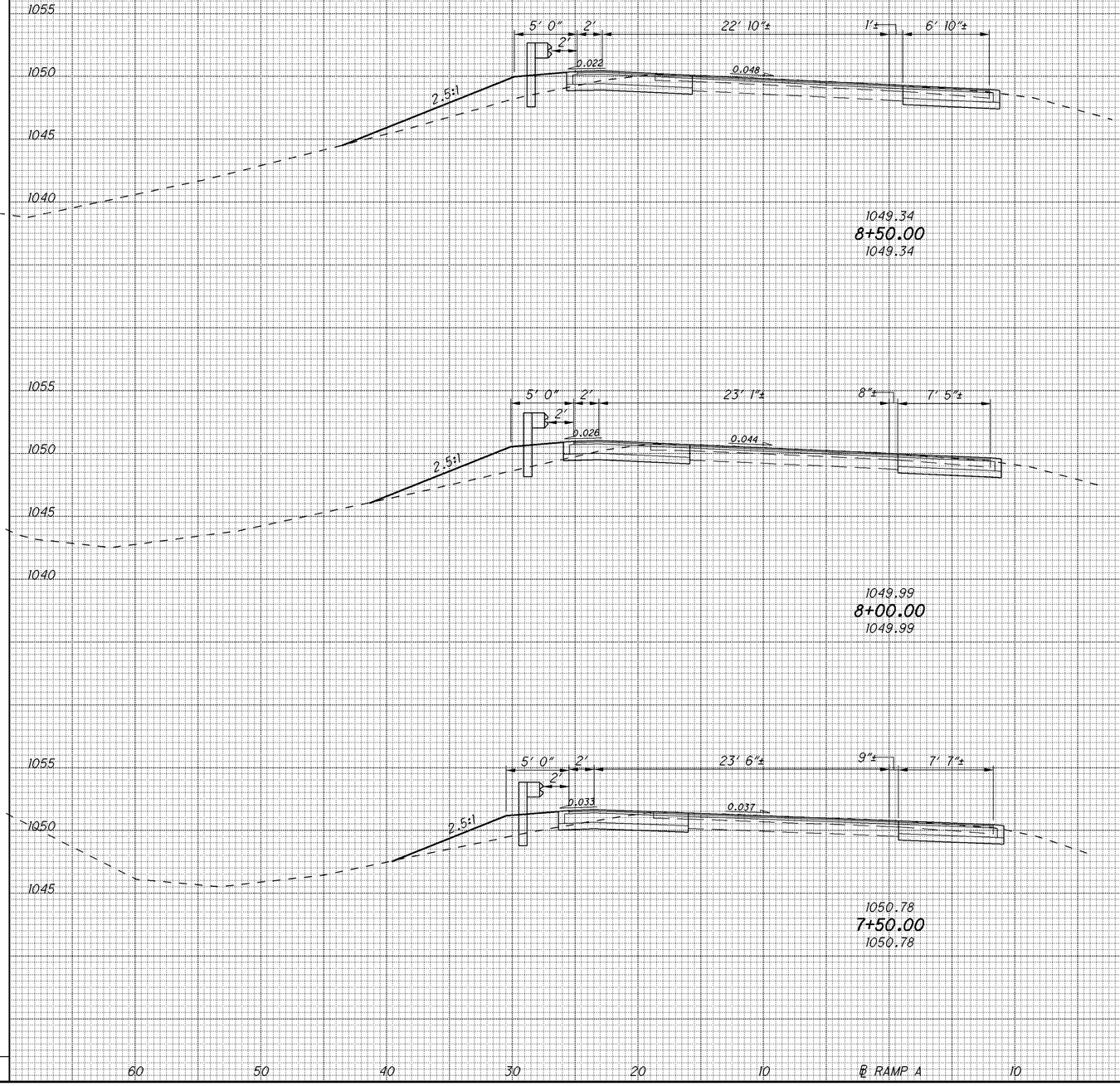
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SUM-76/77/277-VAR

54
113

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SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
19	19		
		35	34
19	18		
		36	30
20	14		
		38	22
		109	86

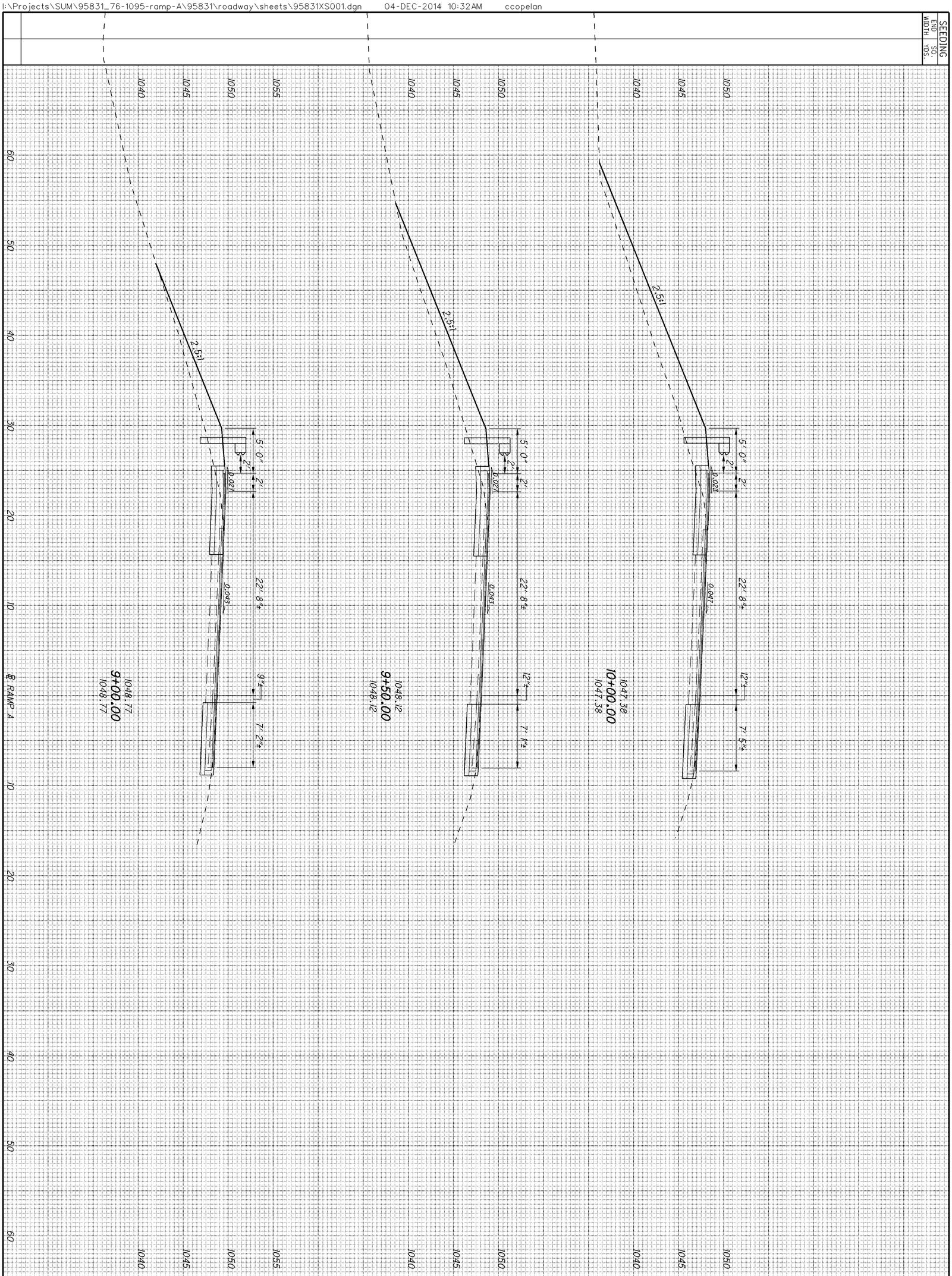
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SUM-76/77/277-VAR

55
113

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END AREA	CUT	20	20	19
	FILL	23	40	55
VOLUME	CUT	109	36	37	36
	FILL	185	39	58	88

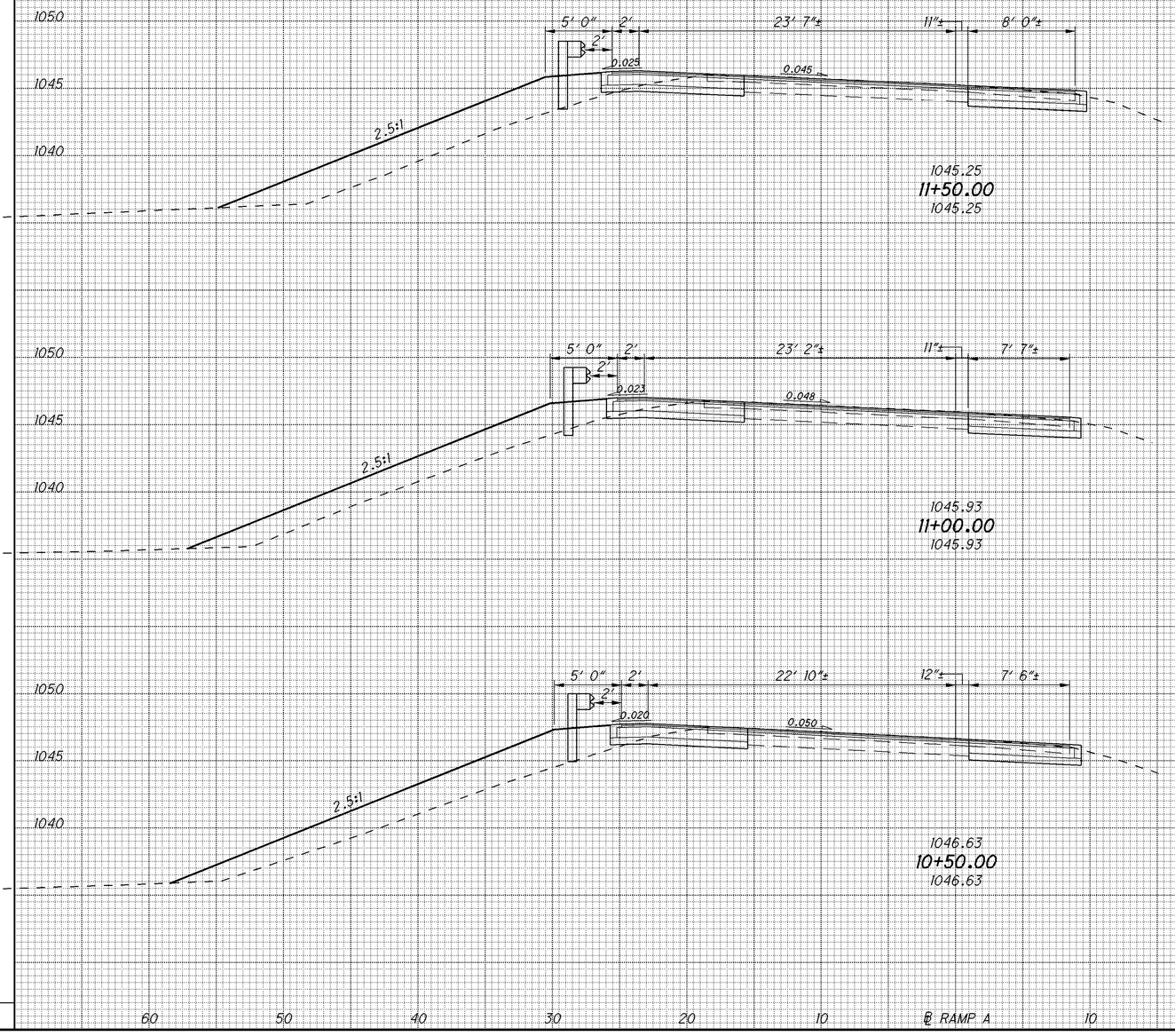
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SUM-76/77/277-VAR

CROSS SECTIONS RAMP A (I-277 TO I-77)
STA. 9+00.00 TO STA. 10+00.00

CALCULATED CNC
CHECKED LMP

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
19	62		
		36	108
20	55		
		36	111
19	65		
		35	111
		107	330

CALCULATED CNC
CHECKED LMP

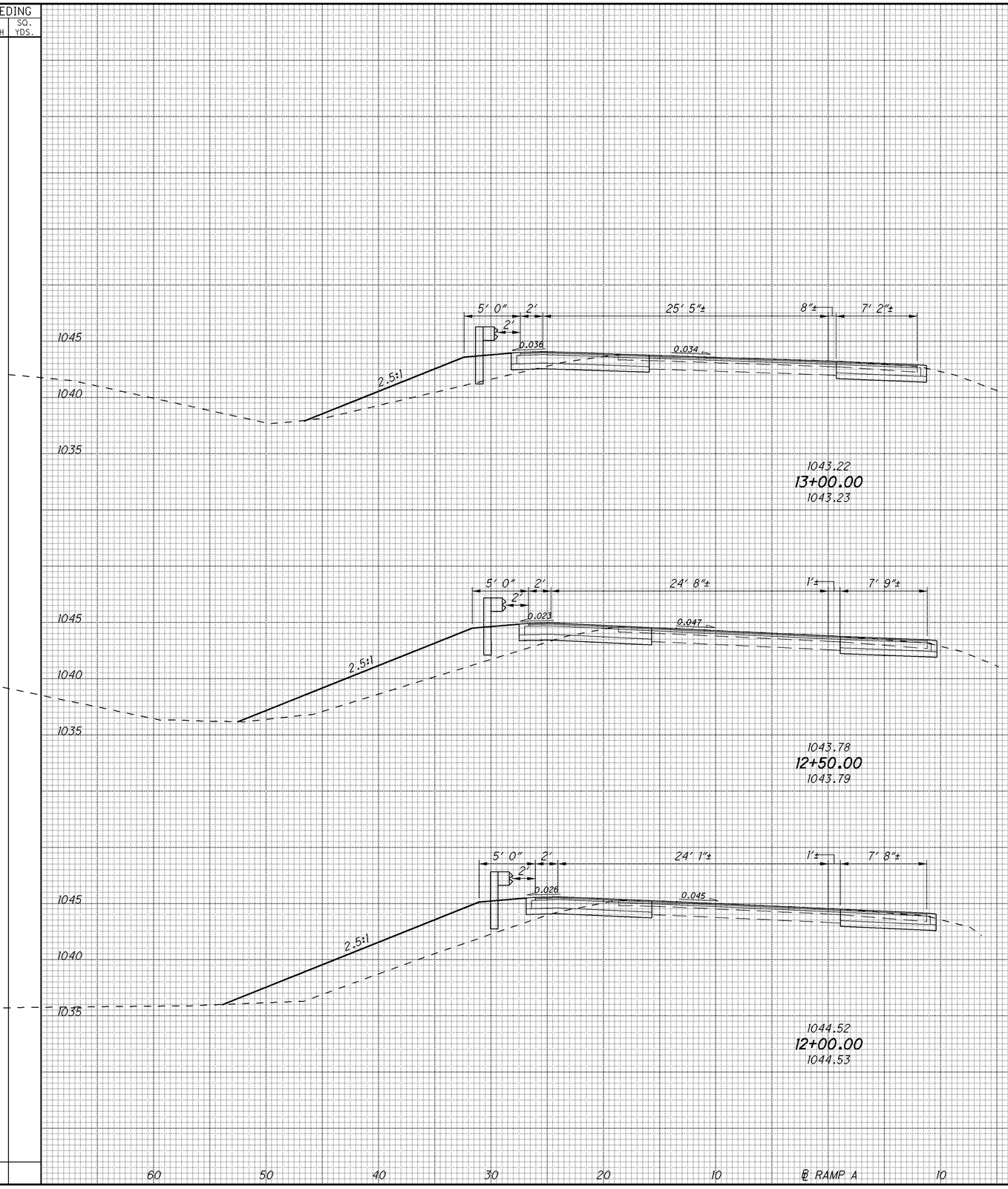
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SUM-76/77/277-VAR

57
113

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SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
19	30		
		34	82
18	59		
		79	71
67	18		
		80	74
		193	227

CALCULATED CNC
CHECKED LMP

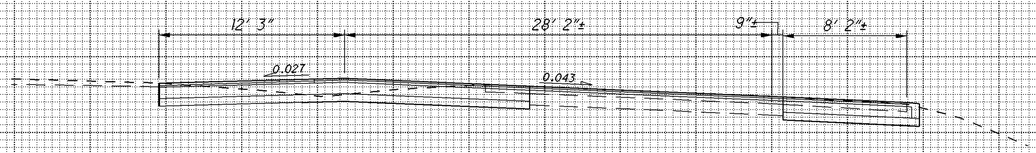
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STA. 12+00.00 TO STA. 13+00.00

SUM-76/77/277-VAR

58
113

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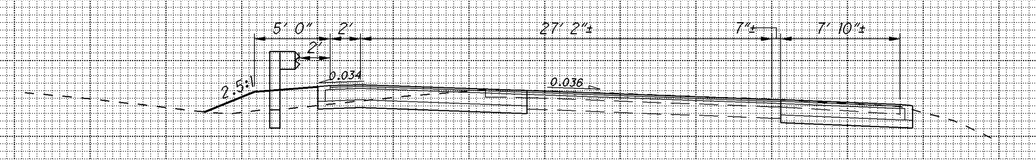
SEEDING		END AREA		VOLUME		CALCULATED CNC
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL	CHECKED LMP



1042.38
14+50.00
1042.38

34

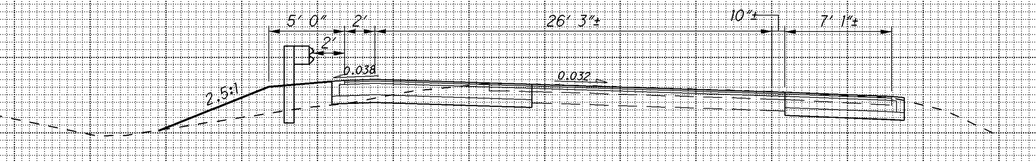
53 7



1042.43
14+00.00
1042.43

23 8

40 20



1042.71
13+50.00
1042.71

20 14

36 41

60 50 40 30 20 10 ℄ RAMP A 10 20 30 40 50 60

129 68

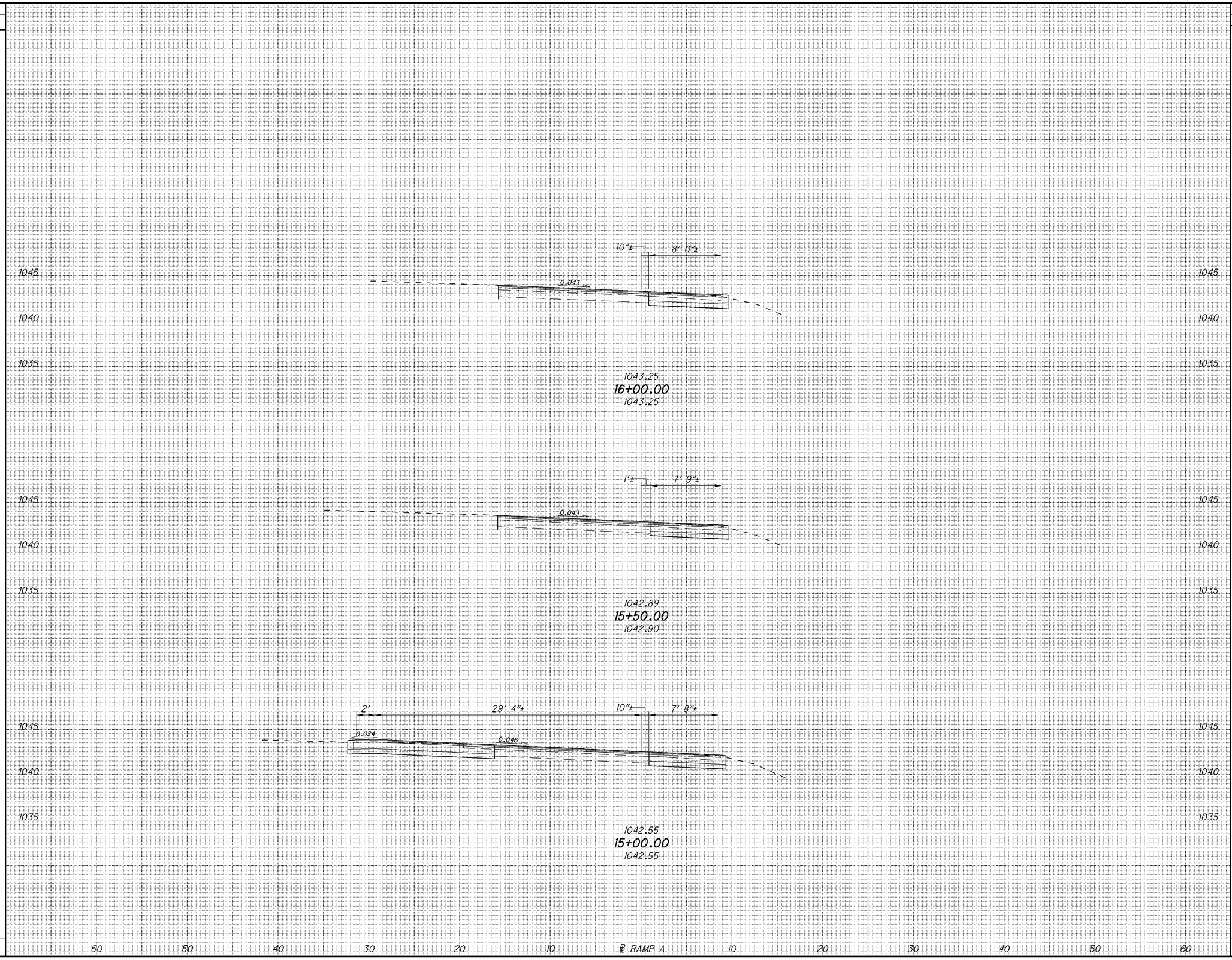
CROSS SECTIONS RAMP A (I-277 TO I-77)
STA. 13+50.00 TO STA. 14+50.00

SUM-76/77/
277-VAR

59
113

I:\Projects\SUM\95831_76-1095-ramp-A\95831\roadway\sheets\95831XS001.dgn 04-DEC-2014 10:32AM ccopelan

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
11		19	
10		37	
30		59	
		115	

CALCULATED CNC
CHECKED LMP

CROSS SECTIONS RAMP A (I-277 TO I-77)
STA. 15+00.00 TO STA. 16+00.00

SUM-76/77/277-VAR

60
113

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SEEDING	
END WIDTH	SQ. YDS.

END AREA	
CUT	FILL

VOLUME	
CUT	FILL
10	
20	
30	

CALCULATED CNC

CHECKED LMP

10:45
10:40
10:35

1043.76
17+00.00
1043.76

4"±
7' 11"±
0.041

1043.55
16+50.00
1043.55

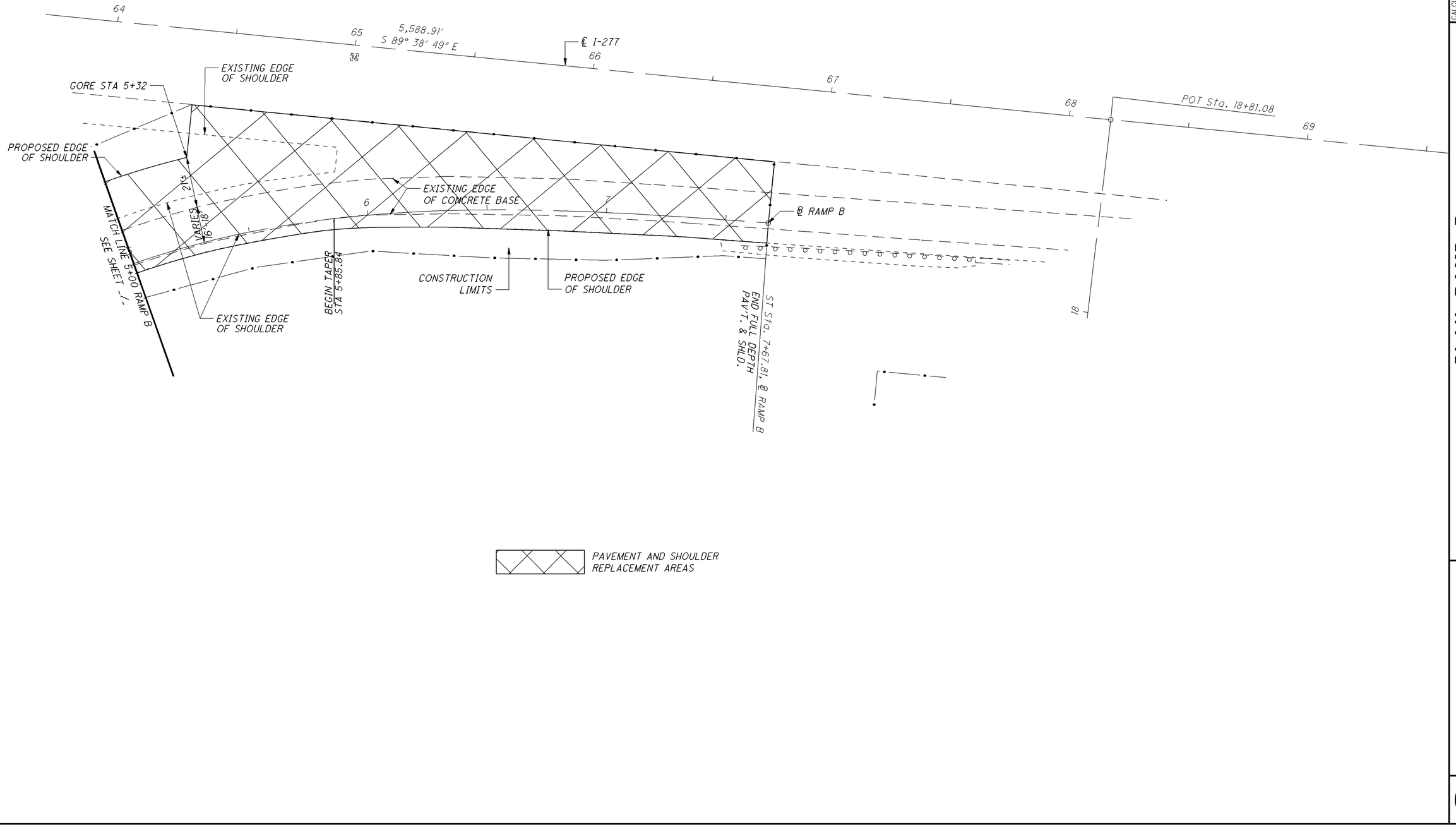
60 50 40 30 20 10 ℄ RAMP A 10 20 30 40 50 60

CROSS SECTIONS RAMP A (I-277 TO I-77)
STA. 16+50.00 TO STA. 17+00.00

SUM-76/77/277-VAR

61
113

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N

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED CNC
CHECKED

PLAN RAMP B
STA 5+00 TO STA 7+67.81

SUM-76/77/277-VAR

61A
113

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HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED CNC
CHECKED

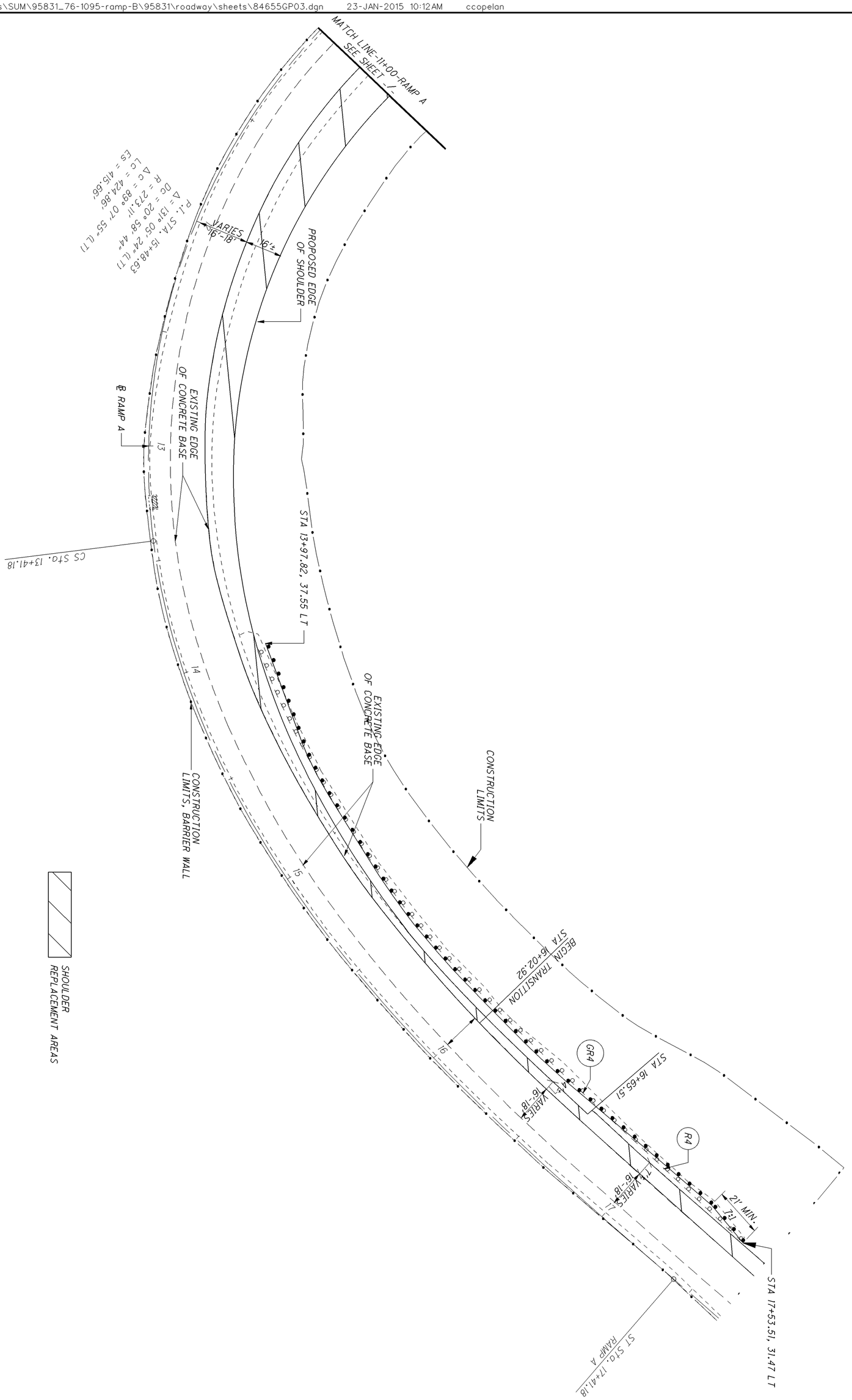
PLAN RAMP A/B
STA 11+00 (RAMP A) TO STA 5+00 (RAMP B)

SUM-76/77/
277-VAR

61B
113

I:\Projects\SUM\95831_76-1095-ramp-B\95831\roadway\sheets\84655GP01.dgn 23-JAN-2015 10:12AM ccopelan

I:\Projects\SUM\95831_76-1095-ramp-B\95831\roadway\sheets\84655GP03.dgn 23-JAN-2015 10:12AM ccopelan



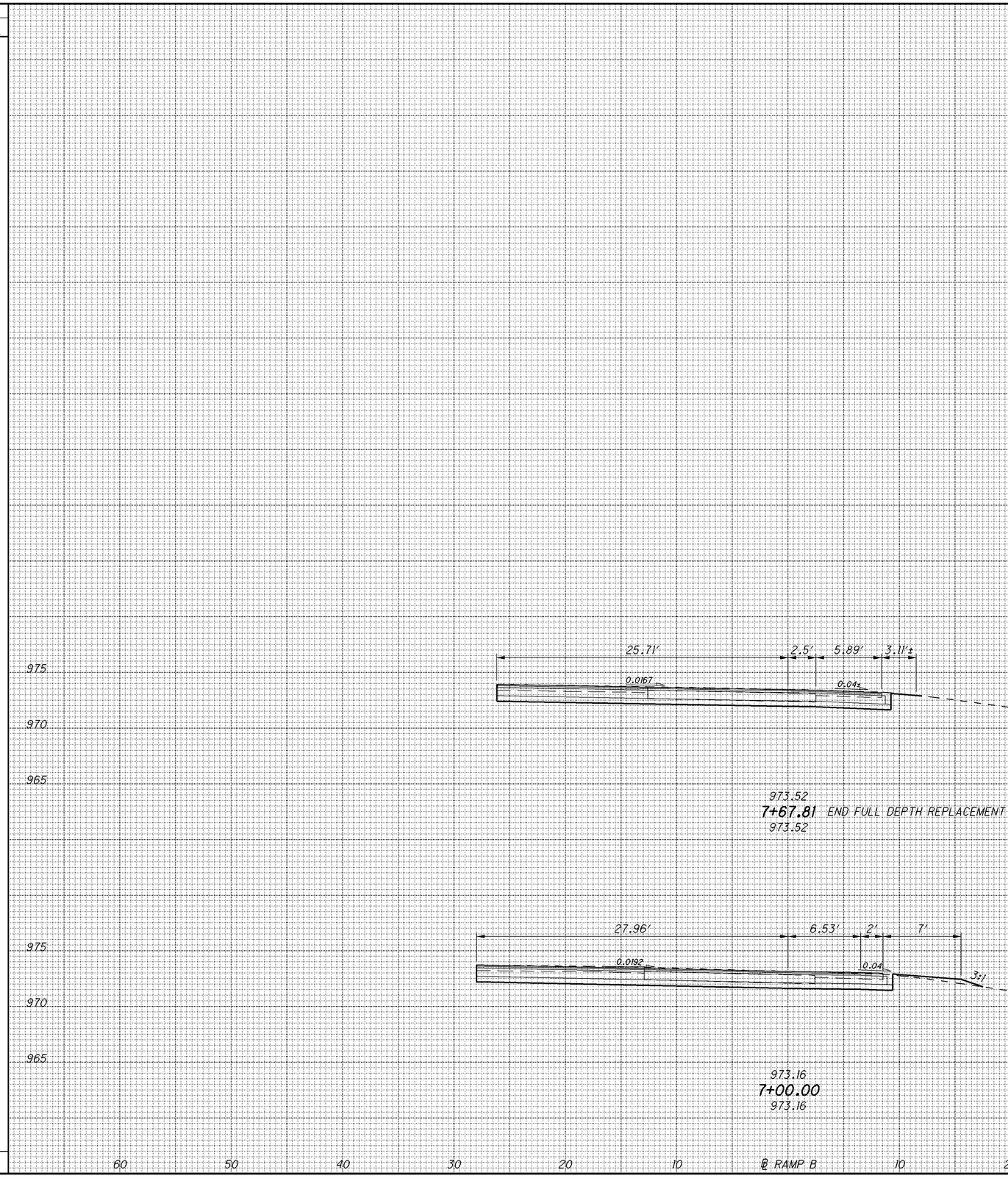
113 / 319	SUM-76/77/ 277-VAR	PLAN RAMP A STA 11+00 TO STA 17+50	CALCULATED CNC / CHECKED	0 10 20 40 HORIZONTAL SCALE IN FEET

SEEDING	
END WIDTH	SQ. YDS.

END AREA	
CUT	FILL
28	0
30	2

VOLUME	
CUT	FILL
73	3
59	4
132	7

CALCULATED CNC
CHECKED



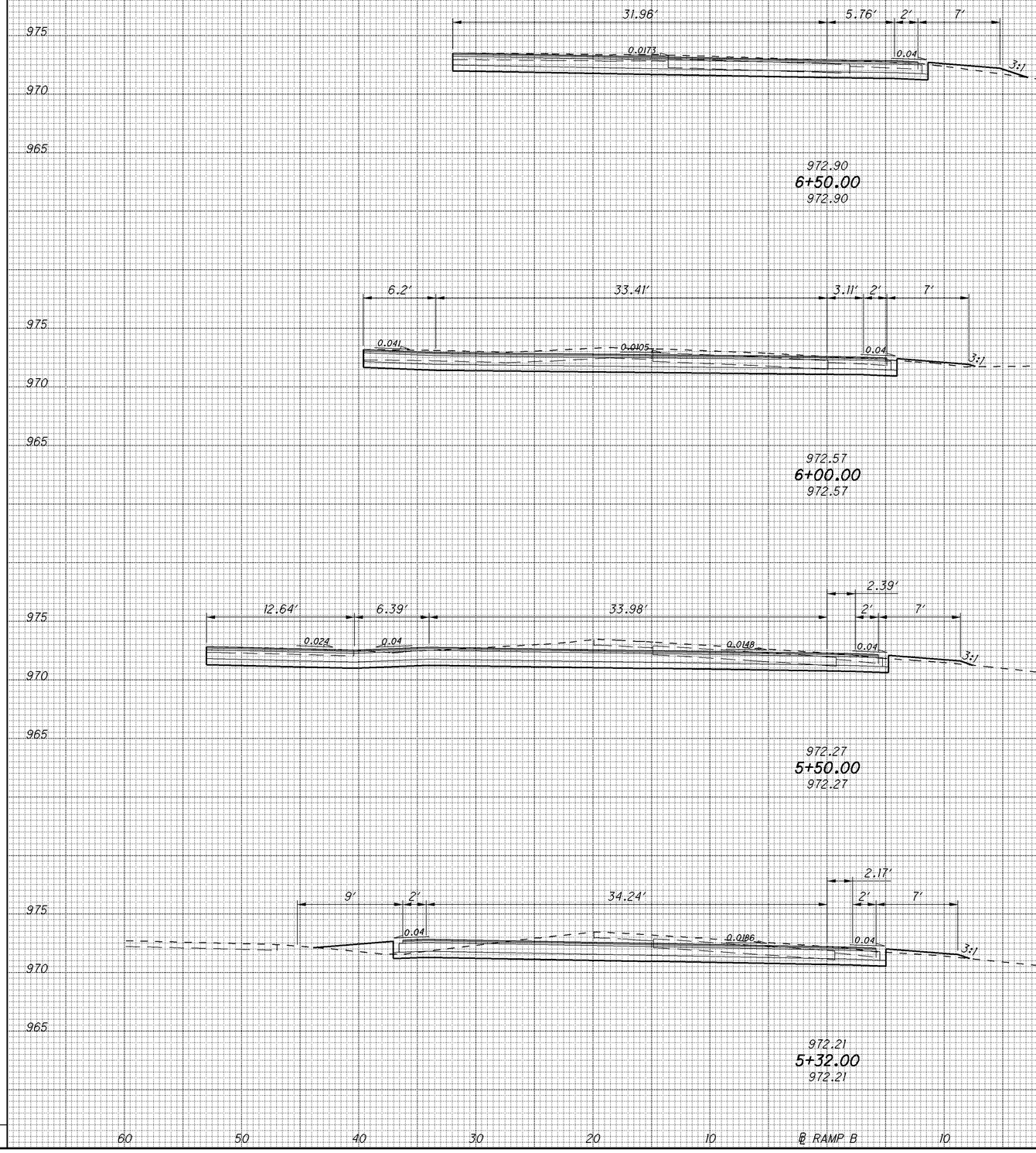
CROSS SECTIONS RAMP B
STA. 7+00.00 TO STA. 7+50.00

SUM-76/77/
277-VAR

61D
113

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SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
34	2		
		67	3
38	1		
		102	3
72	2		
		40	3
48	6		
		56	14
		265	23

CALCULATED CNC
CHECKED

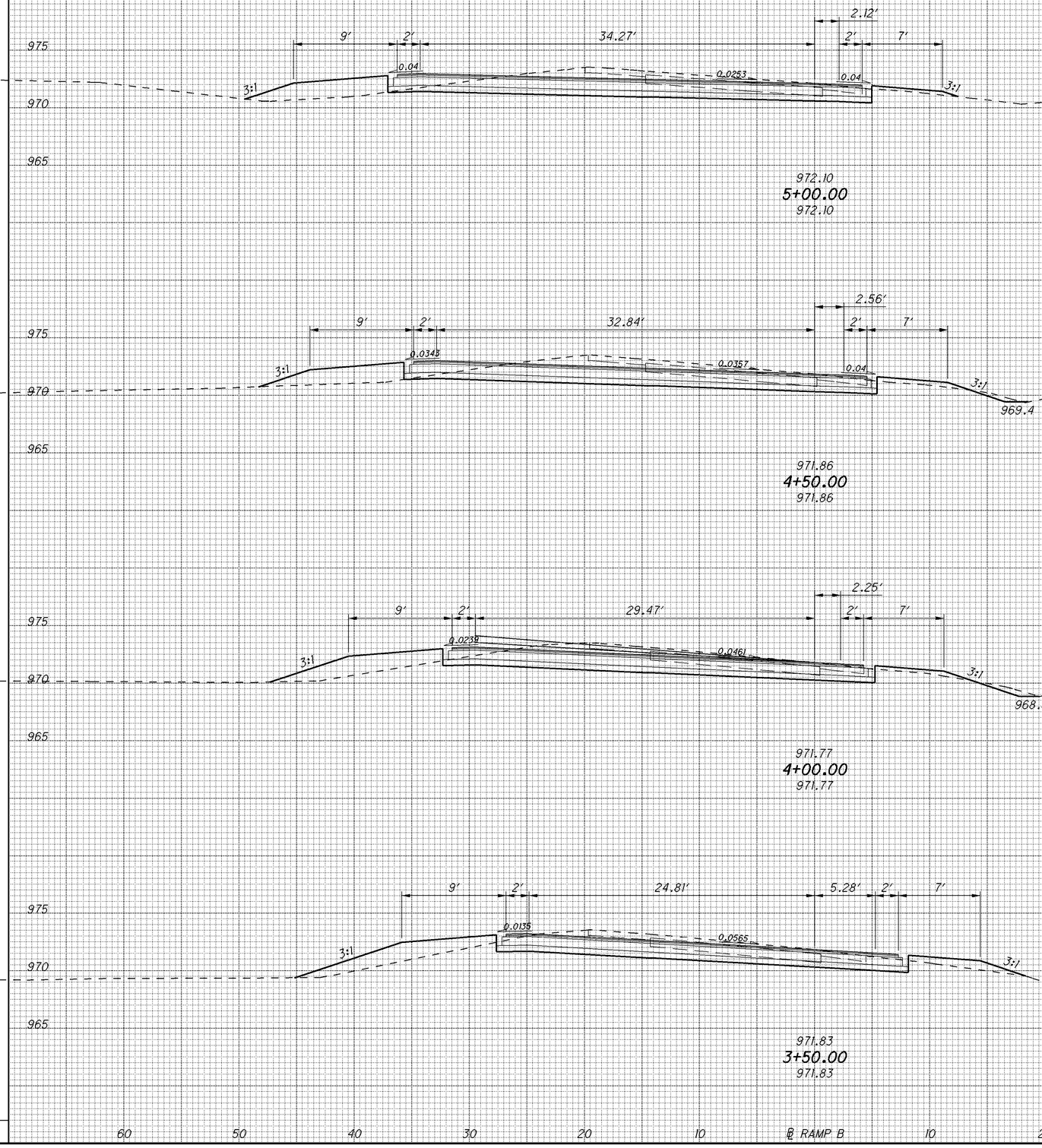
CROSS SECTIONS RAMP B
STA. 5+32.00 TO STA. 6+50.00

SUM-76/77/277-VAR

61E
113

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SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
46	18		
		86	33
47	18		
		85	36
45	21		
		78	42
39	24		
		87	62
		336	173

CALCULATED CNC
CHECKED

CROSS SECTIONS RAMP B
STA. 3+50.00 TO STA. 5+00.00

SUM-76/77/
277-VAR

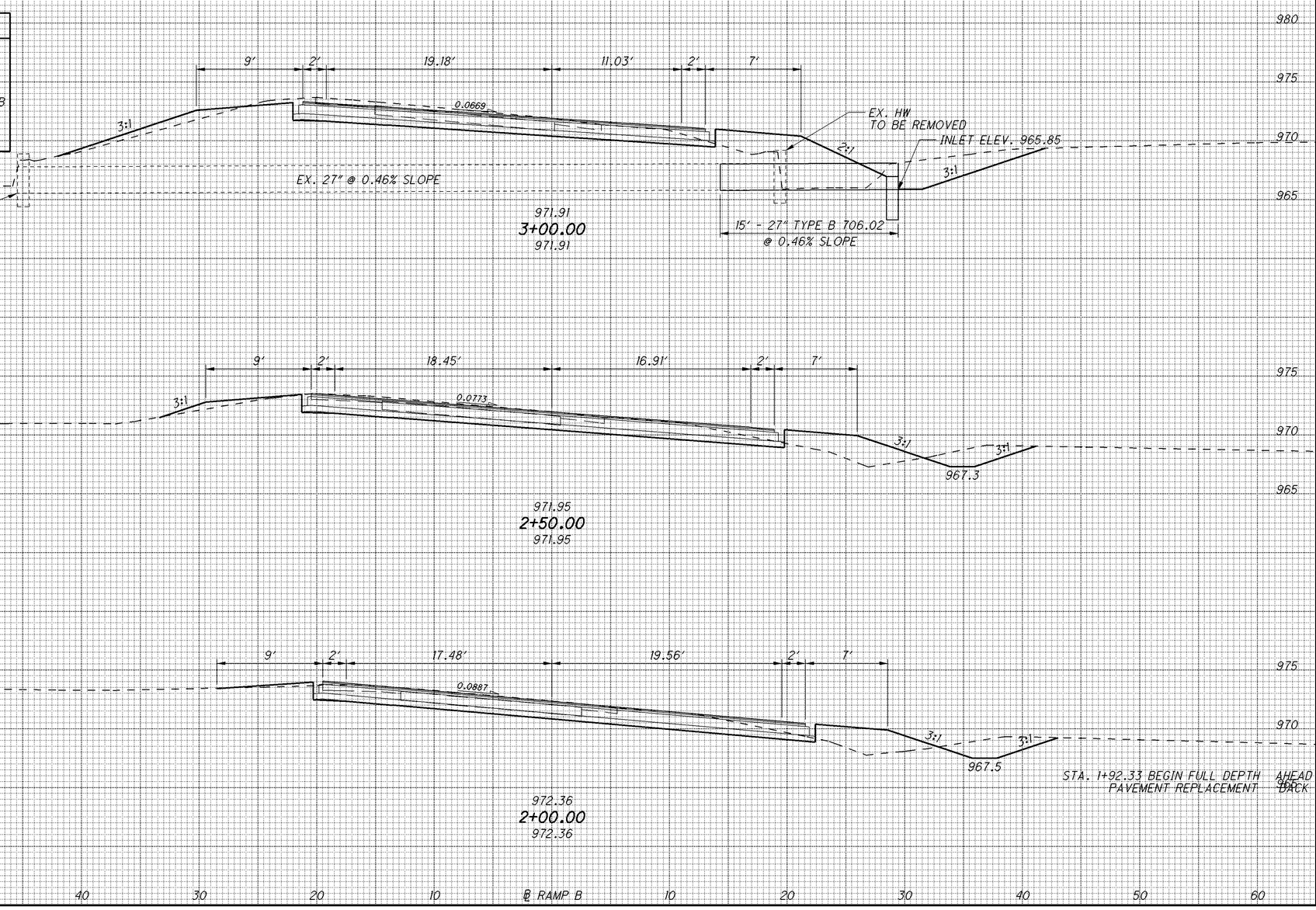
61F
113

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SEEDING	
END WIDTH	SQ. YDS.

CULVERT DATA

EX. TYPE:	27" CONCRETE
EX. LENGTH:	65'
EX. SKEW:	NONE
PR. EXTENSION TYPE:	27" TYPE B
PR. EXTENSION LENGTH:	75'
PR. SKEW:	NONE



END AREA		VOLUME	
CUT	FILL	CUT	FILL
55	43		
46	21		
		94	59
		86	35
47	17		
		13	5
AHEAD 47	17		
BACK 20	16		
		31	25
		224	124

STA. 1+92.33 BEGIN FULL DEPTH PAVEMENT REPLACEMENT

CALCULATED CNC CHECKED

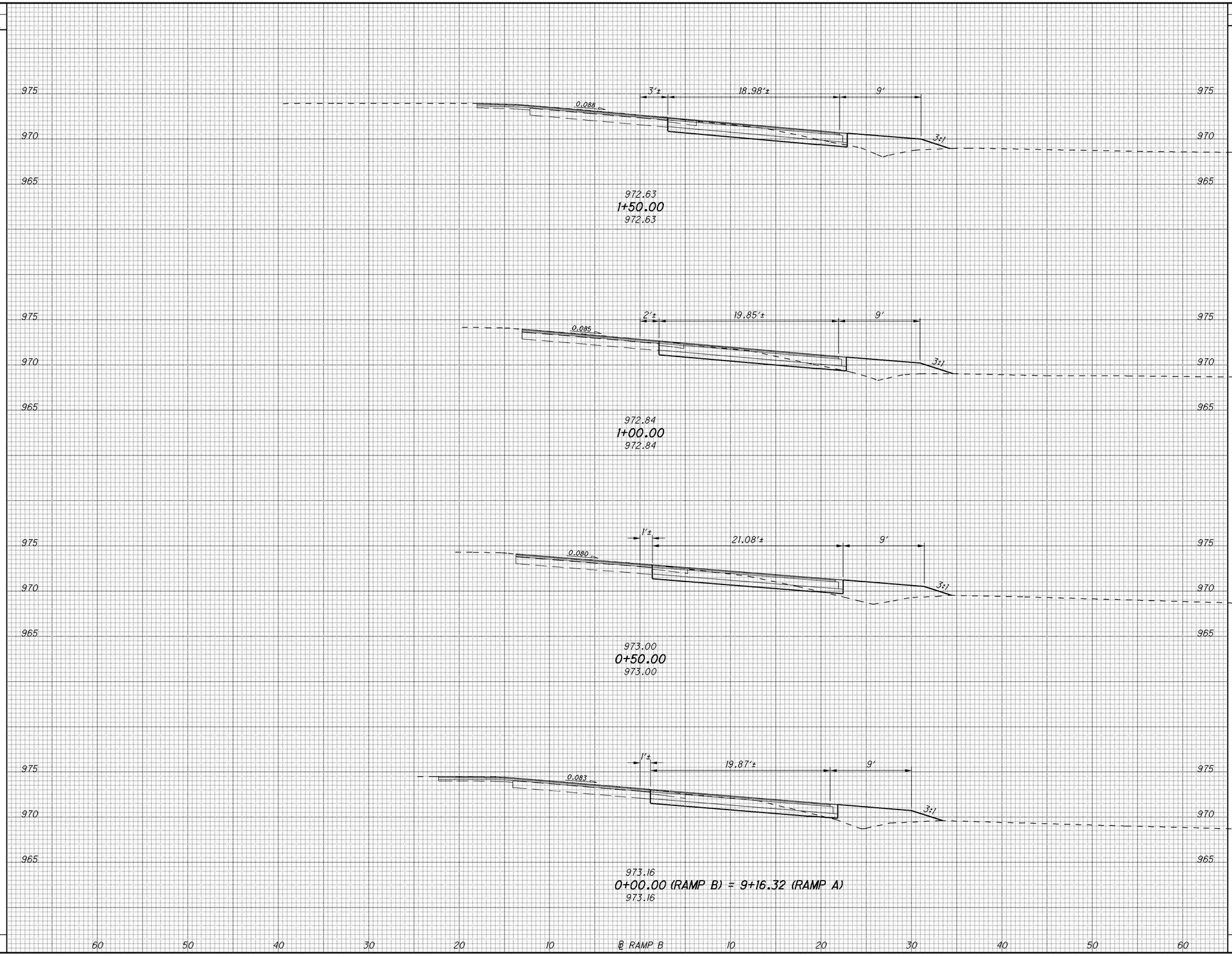
CROSS SECTIONS RAMP B
STA. 2+00.00 TO STA. 3+00.00

SUM-76/77/277-VAR

616
113

I:\Projects\SUM\95831_76-1095-ramp-B\95831\roadway\sheets\95831XS001.dgn 23-JAN-2015 10:12AM ccopelan

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
20	16		
		36	30
19	16		
		33	32
17	19		
		33	34
19	18		
		102	96

CALCULATED CNC
CHECKED

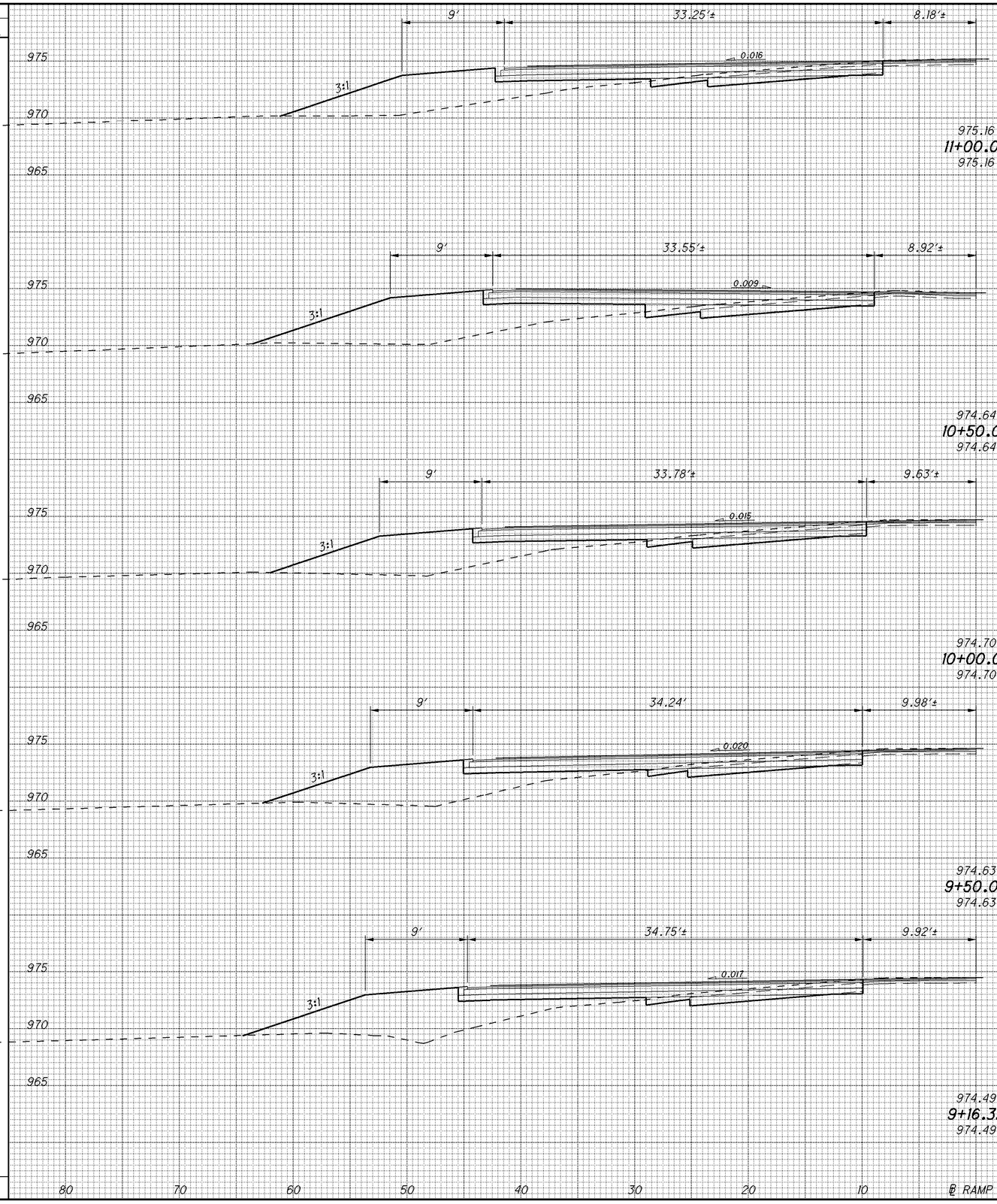
CROSS SECTIONS RAMP B
STA. 0+00.00 TO STA. 1+50.00

SUM-76/77/
277-VAR

61H
113

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SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
19	64		
		35	144
19	92		
		34	147
18	67		
		33	123
18	66		
		22	89
18	77		
		124	503

CALCULATED CNC
CHECKED

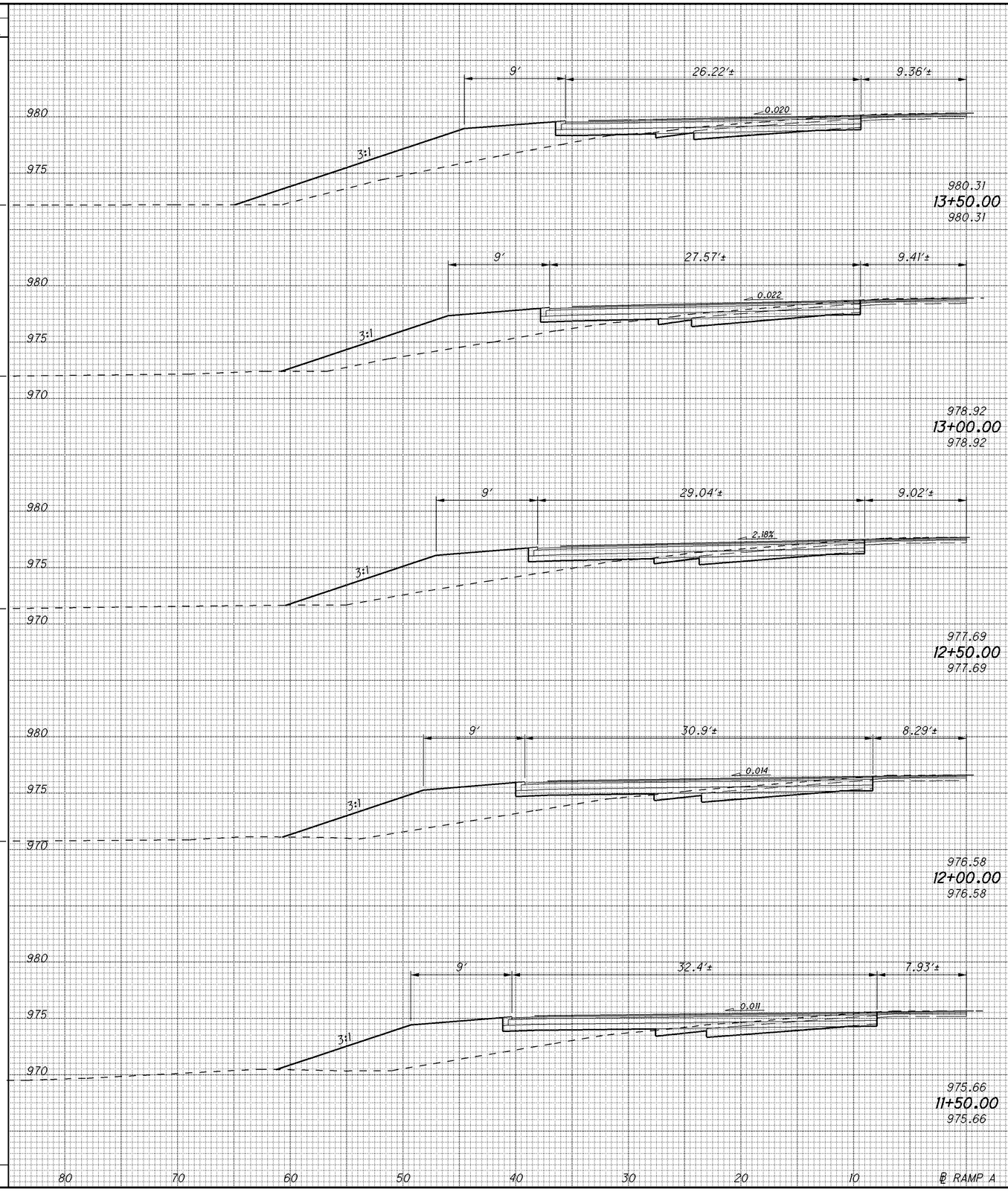
CROSS SECTIONS RAMP A/B
STA. 9+16.32 TO STA. 11+00.00

SUM-76/77/277-VAR

611
113

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SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
18	65		
		33	113
18	57		
		32	105
17	56		
		32	113
18	66		
		34	128
19	72		
		35	126
		166	585

CALCULATED CNC
CHECKED

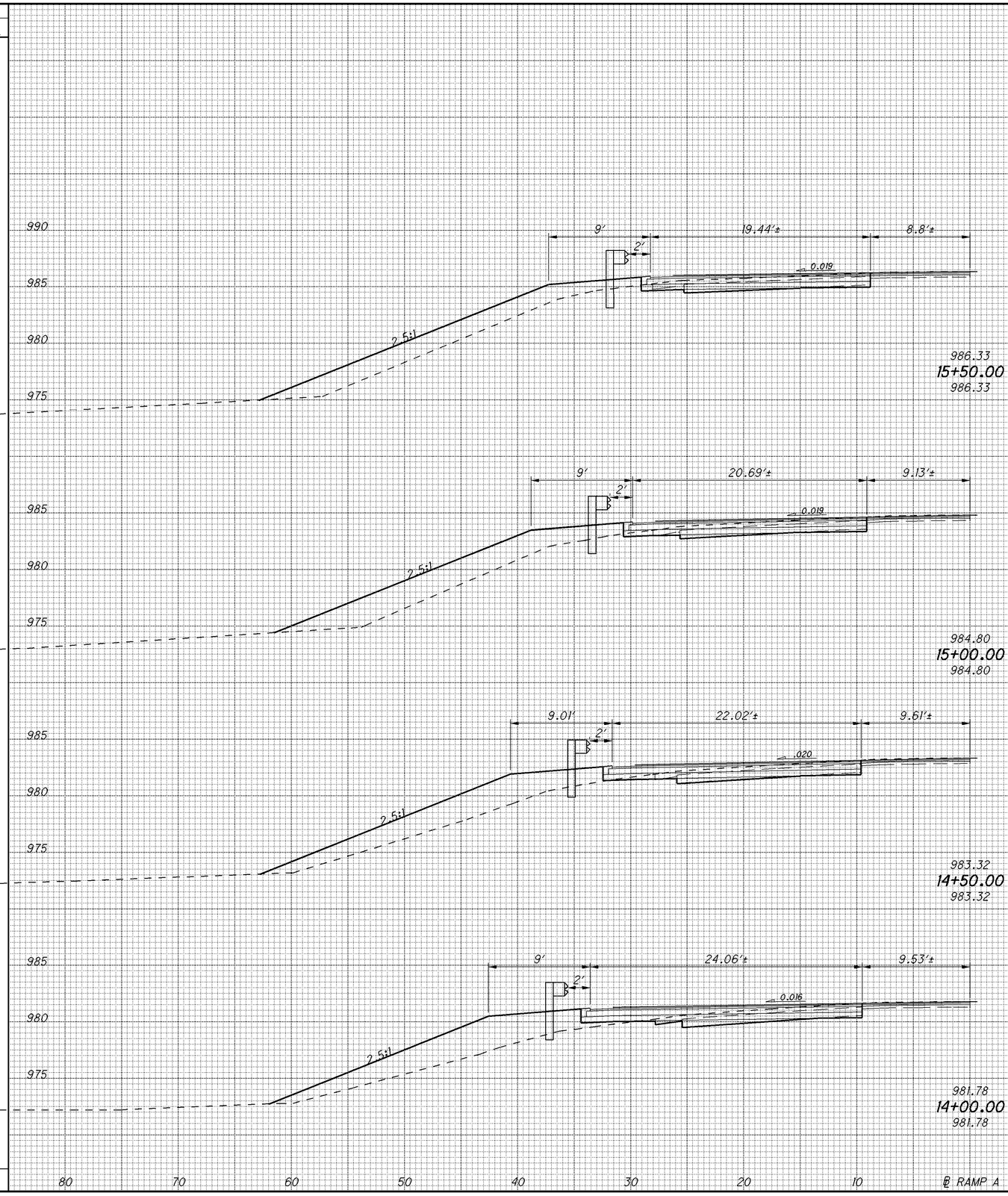
CROSS SECTIONS RAMP A/B
STA. 11+50.00 TO STA. 13+50.00

SUM-76/77/277-VAR

61J
113

I:\Projects\SUM\95831_76-1095-ramp-B\95831\roadway\sheets\95831XS002.dgn 23-JAN-2015 10:12:AM ccopelan

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
21	51		
		38	102
20	59		
		36	106
19	56		
		34	107
18	60		
		33	116
		141	431

CALCULATED CNC
CHECKED

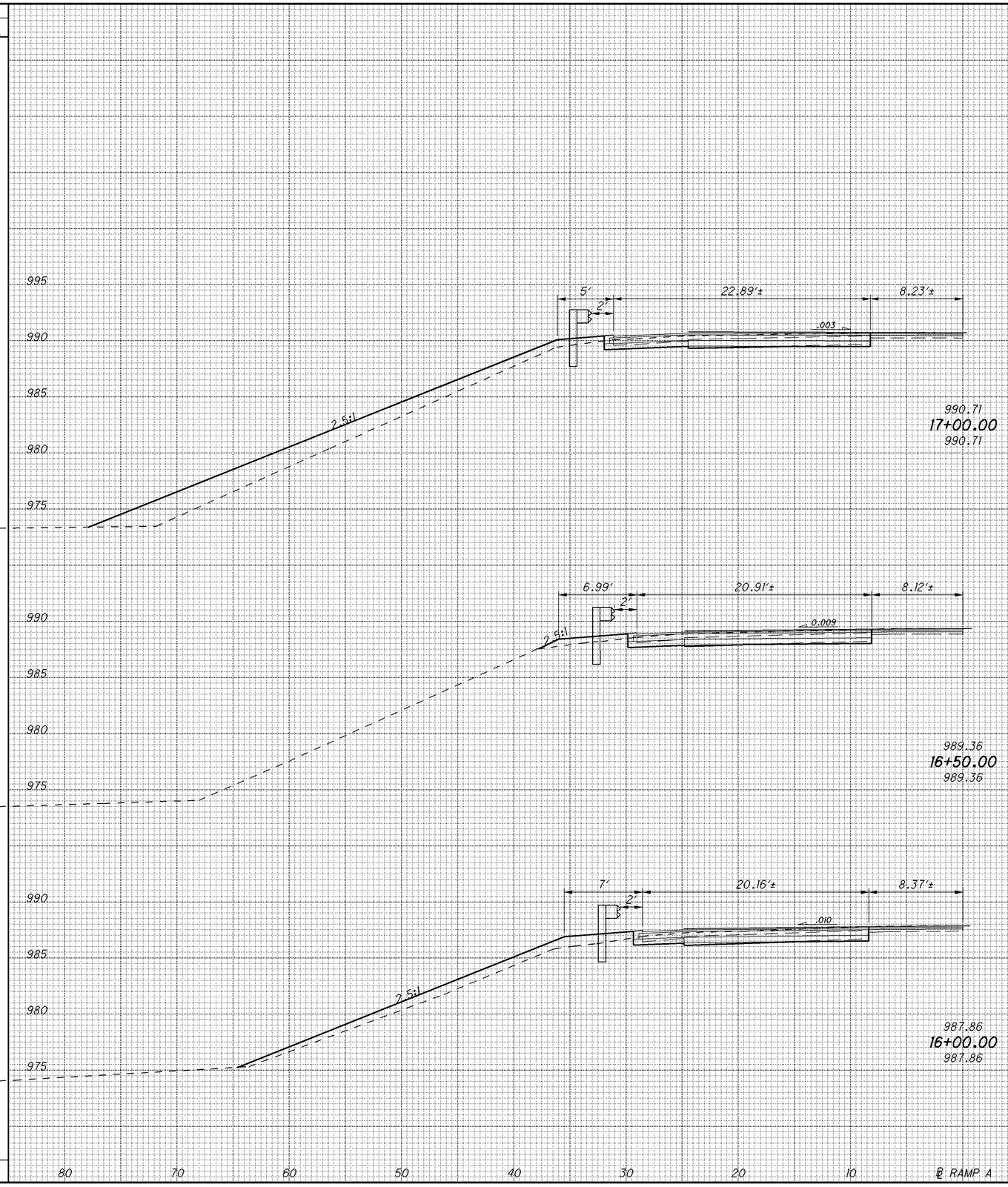
CROSS SECTIONS RAMP A/B
STA. 14+00.00 TO STA. 15+50.00

SUM-76/77/
277-VAR

61K
113

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SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
24	64		
		43	63
22	4		
		41	28
22	26		
		40	71
		124	162

CALCULATED CNC
CHECKED

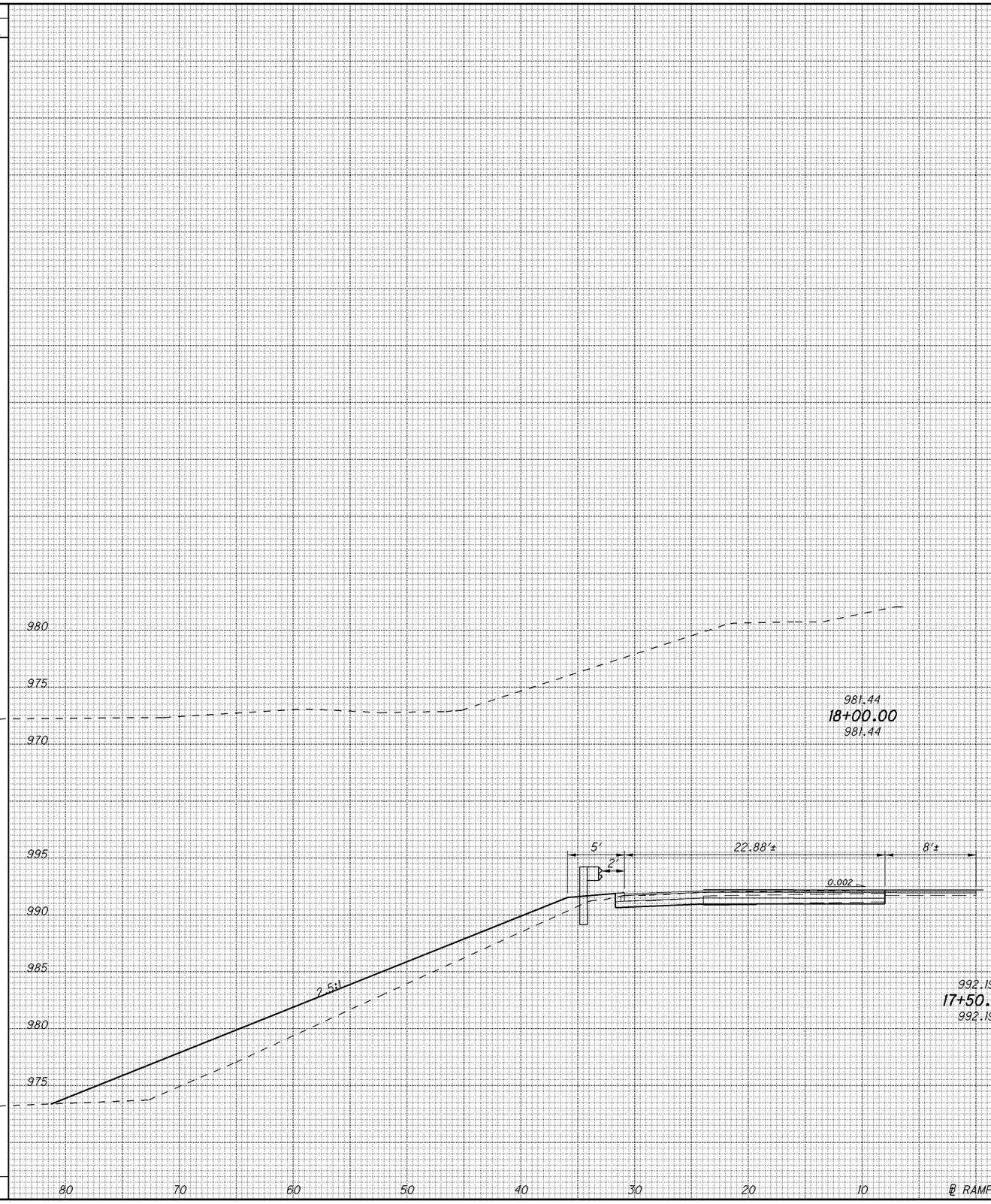
CROSS SECTIONS RAMP A/B
STA. 16+00.00 TO STA. 17+00.00

SUM-76/77/277-VAR

61L
113

I:\Projects\SUM\95831_76-1095-ramp-B\95831\roadway\sheets\95831XS002.dgn 23-JAN-2015 10:12AM ccopelan

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
		24	91
26	98		
		46	150
		70	241

CALCULATED CNC
CHECKED

CROSS SECTIONS RAMP A/B
STA. 17+50.00 TO STA. 18+00.00

SUM-76/77/
277-VAR

61M
113

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* SEE CROSS SECTIONS FOR RESURFACING AND WIDENING DIMENSIONS

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED CNC
CHECKED LMP

PLAN - RAMP D
STA. 00+00 TO STA. 5+00

SUM-76/77/277-VAR

CONSTRUCTION LIMITS

PROPOSED EDGE OF SHOULDER

EXISTING EDGE OF SHOULDER

EXISTING EDGE OF CONCRETE BASE

5'± VARIES 16'-18'

10'±

℄ RAMP D

PROPOSED EDGE OF SHOULDER

EXISTING EDGE OF SHOULDER

SC Sta. 7+00.87

STA 8+62.77, 17.91 RT

R5

GR5

MATCH LINE 5+00 RAMP D
SEE SHEET 62/113

BEGIN TRANSITION/ TAPER
STA 5+30.71

TS Sta. 5+00.87

MATCH LINE 10+00 RAMP D
SEE SHEET 64/113

P.I. STA. 9+79.91
Δ = 54° 56' 01" (RT)
Dc = 13° 00' 00"
R = 440.74'
Ls = 200.00'
s = 130° 00' 00"
LT = 153.69'
ST = 67.00'
X = 198.97'
Y = 15.07'
P = 3.17'
P = 54° 56' 01" (RT)
Ls = 422.57'
Lc = 479.03'
Ts = 143.55'

SHOULDER REPLACEMENT AREAS

* SEE CROSS SECTIONS FOR RESURFACING AND WIDENING DIMENSIONS

HORIZONTAL SCALE IN FEET
0 10 20 40

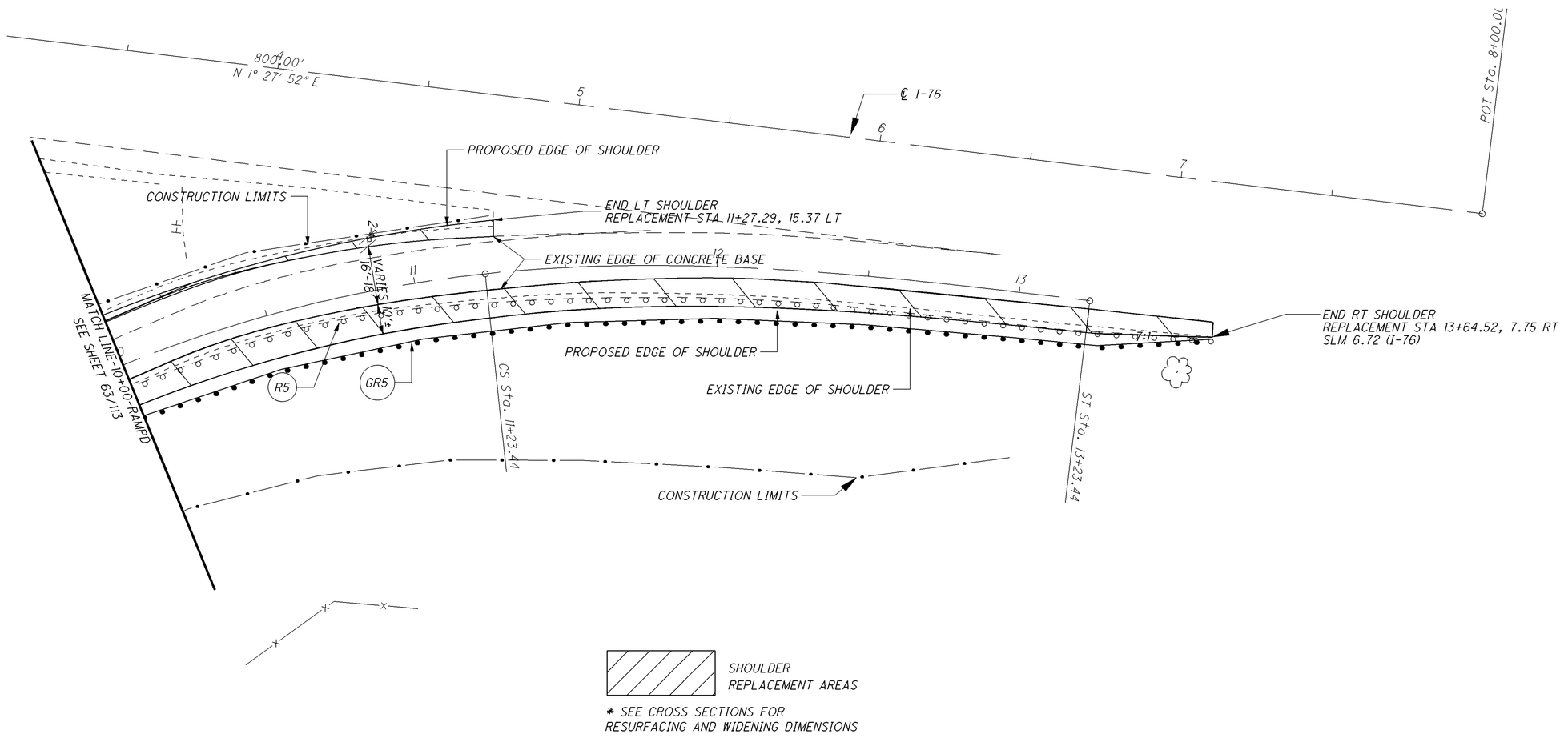
CALCULATED CNC
CHECKED LMP

PLAN - RAMP D
STA. 5+00 TO STA. 10+00

SUM-76/77/
277-VAR

63
113

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HORIZONTAL SCALE IN FEET
0 10 20 40

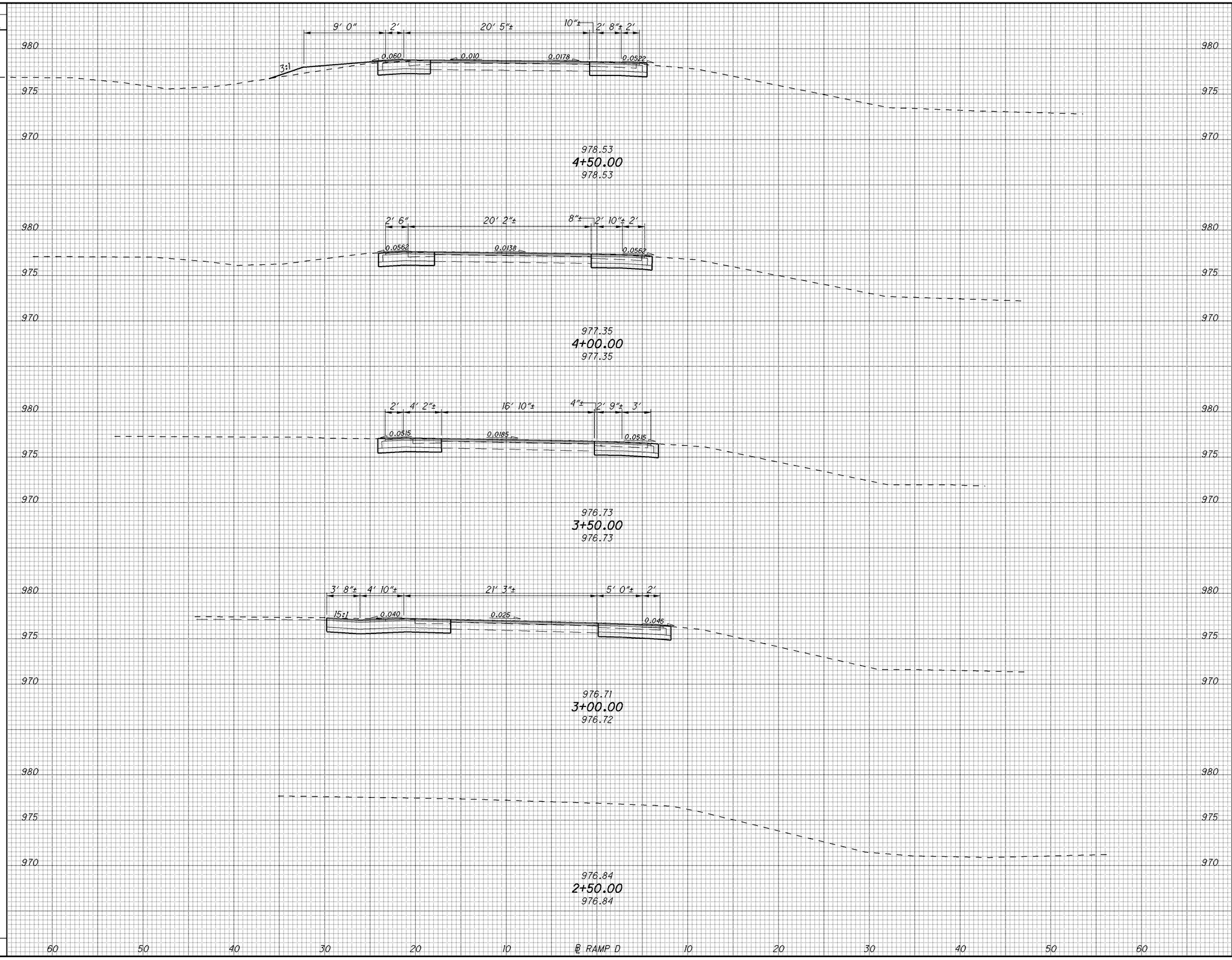
CALCULATED CNC
CHECKED LMP

PLAN - RAMP D
STA. 10+00 TO STA. 13+23.44

SUM-76/77/277-VAR

64
113

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
14	5		
		27	5
15			
		30	
17			
		40	
26			
		24	
		121	5

CALCULATED CNC
CHECKED LMP

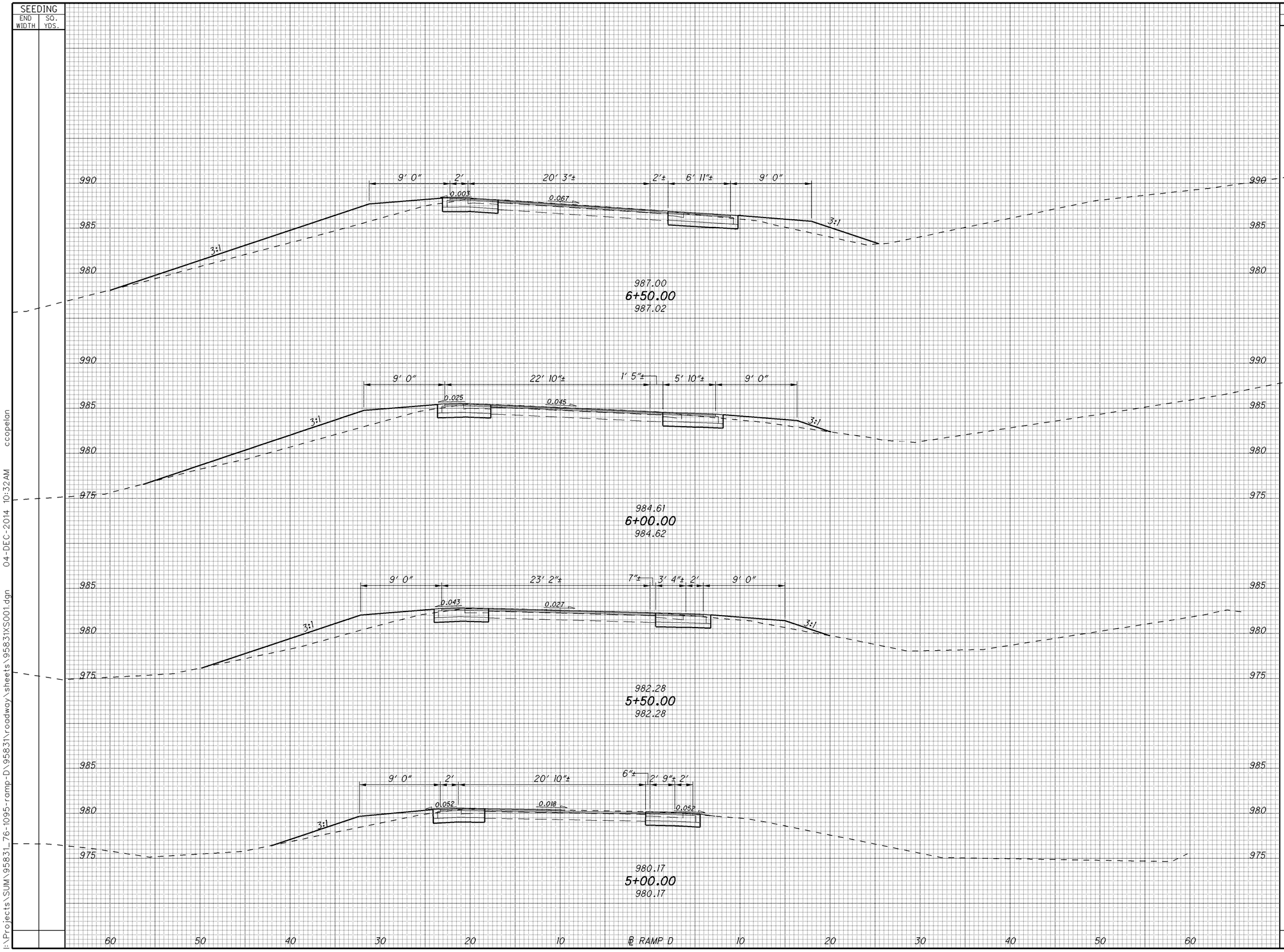
CROSS SECTIONS RAMP D
STA. 2+50.00 TO STA. 4+50.00

SUM-76/77/277-VAR

65
113

I:\Projects\SUM\95831_76-1095-ramp-D\95831\roadway\sheets\95831XS001.dgn 04-DEC-2014 10:32AM ccopelan

SEEDING	
END WIDTH	SQ. YDS.



END AREA	
CUT	FILL
51	16
14	39
14	31
14	13

VOLUME	
CUT	FILL
60	51
26	65
26	41
26	17
138	174

CALCULATED	CHECKED
CNC	LMP

CROSS SECTIONS RAMP D
STA. 5+00.00 TO STA. 6+50.00

SUM-76/77/277-VAR

I:\Projects\SUM\95831_76-1095-ramp-D\95831\roadway\sheets\95831XS001.dgn 04-DEC-2014 10:32AM ccopelan

SEEDING	
END WIDTH	SQ. YDS.

END AREA	
CUT	FILL
18	28
16	30
16	36
17	41

VOLUME	
CUT	FILL
31	54
30	61
31	71
63	53
155	239

CALCULATED	CHECKED
CNC	LMP

CROSS SECTIONS RAMP D
STA. 7+00.00 TO STA. 8+50.00

SUM-76/77/277-VAR

I:\Projects\SUM 95831_76-1095-ramp-D\95831\roadway\sheets\95831XS001.dgn 04-DEC-2014 10:32AM ccopelan

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL
12	72		
		25	119
15	56		
		28	64
15	13		
		31	38
		84	221

CALCULATED CNC
CHECKED LMP

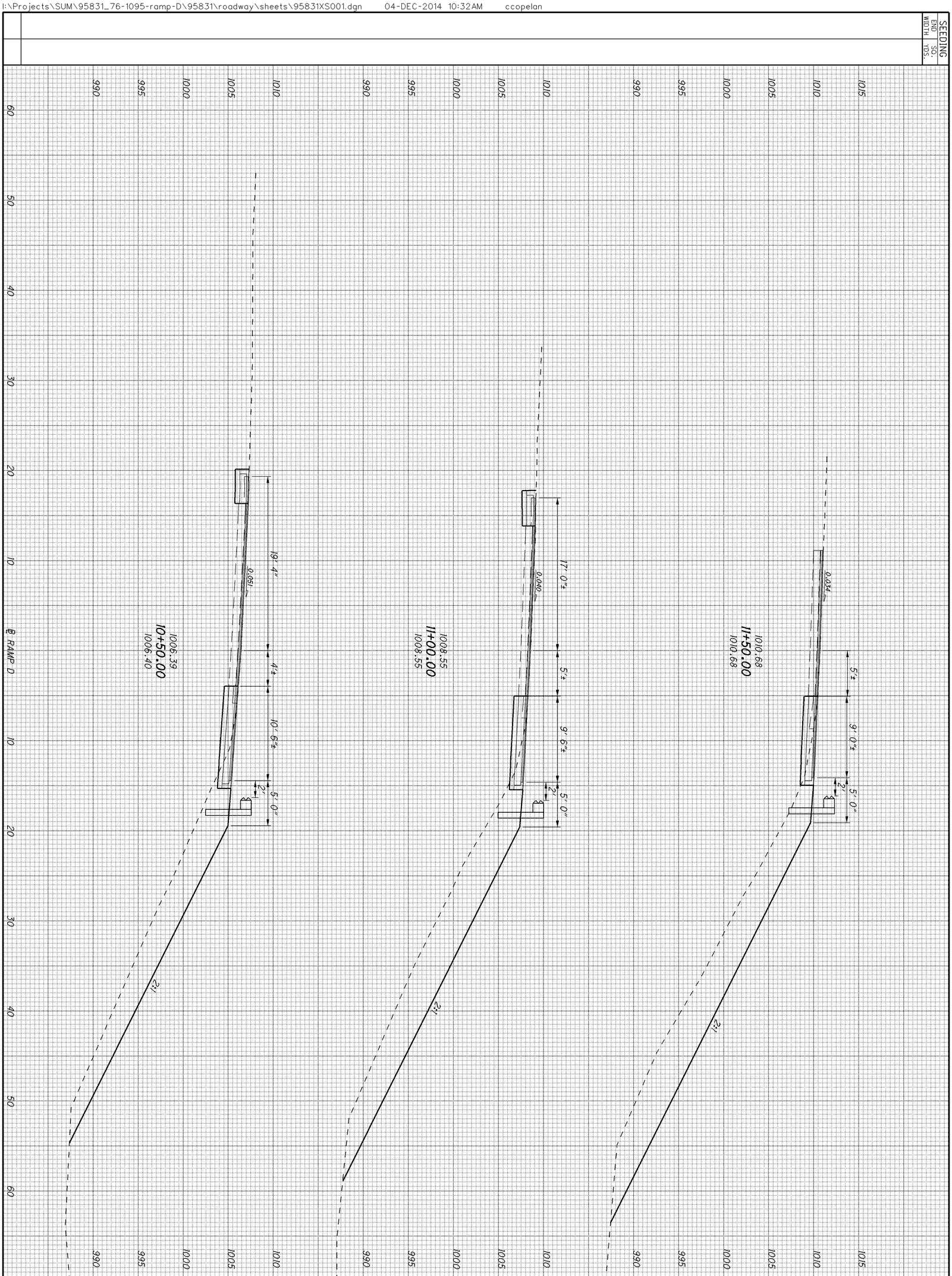
CROSS SECTIONS RAMP D
STA. 9+00.00 TO STA. 10+00.00

SUM-76/77/277-VAR

68
113

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SUM-76/77/
277-VAR

CROSS SECTIONS RAMP D
STA. 10+50.00 TO STA. 11+50.00

CALCULATED CNC
CHECKED LMP

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL
11	124		
		19	256
10	152		
		18	282
		37	538

CALCULATED CNC
CHECKED LMP

CROSS SECTIONS RAMP D
STA. 12+50.00 TO STA. 12+00.00

SUM-76/77/277-VAR

70
113

I:\Projects\SUM\95831_76-1095-ramp-D\95831\roadway\sheets\95831XS001.dgn 04-DEC-2014 10:33AM ccopelan

SEEDING	
END WIDTH	SQ. YDS.

END AREA	
CUT	FILL

VOLUME	
CUT	FILL
10	59
11	64
20	174
30	233

CALCULATED CNC
CHECKED LMP

1020
1015
1010
1005
1000
995

1016.52
13+50.00
1016.51

1015.80
13+00.00
1015.80

3'±
7' 11"±
5' 0"
2"
0.028
2:1

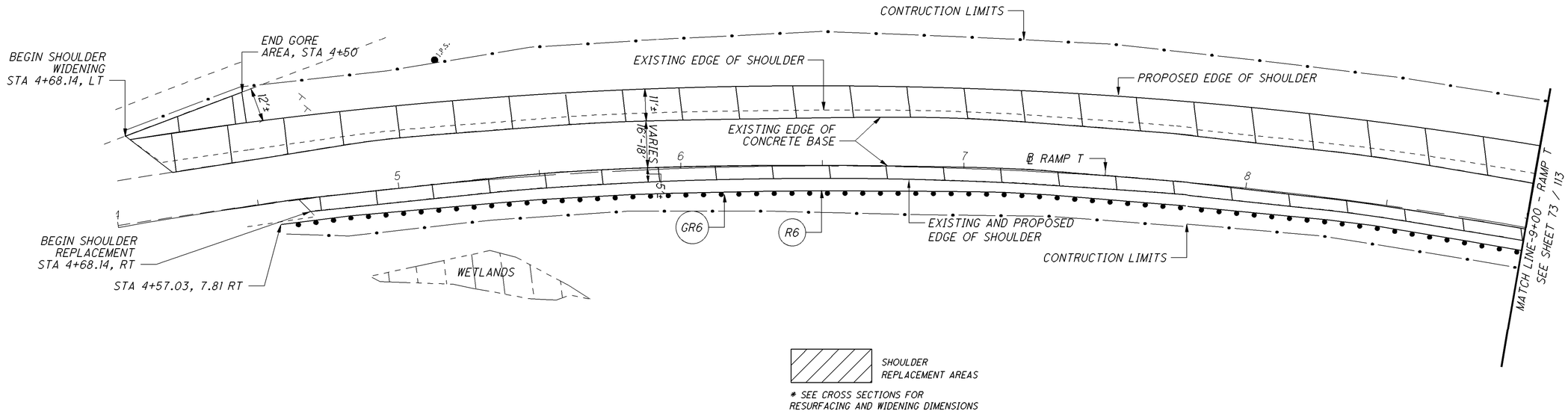
60 50 40 30 20 10 ℄ RAMP D 10 20 30 40 50 60

CROSS SECTIONS RAMP D
STA. 13+00.00 TO STA. 13+23.44

SUM-76/77/
277-VAR

71
113

i:\Projects\SUM\95831_76-1095-ramp-D\95831\roadway\sheets\95831XS001.dgn 04-DEC-2014 10:33AM ccopelan



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED CNC
CHECKED LMP

PLAN RAMP T
STA 4+00.00 TO STA 9+00.00

SUM-76/77/277-VAR

72
113

I:\Projects\SUM\95831_76-1095-ramp-T\95831\roadway\sheets\84655GP01.dgn 04-DEC-2014 10:33AM ccopelan

I:\Projects\SUM\95831_76-1095-ramp-T\95831\roadway\sheets\84655GP02.dgn 04-DEC-2014 10:33AM ccopelan

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED CNC
CHECKED LMP

PLAN RAMP T
STA 9+00.00 TO STA 12+51.31

SUM-76/77/277-VAR

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL
23	6		
		59	6
41			
		41	
		100	6

CALCULATED CNC
CHECKED LMP

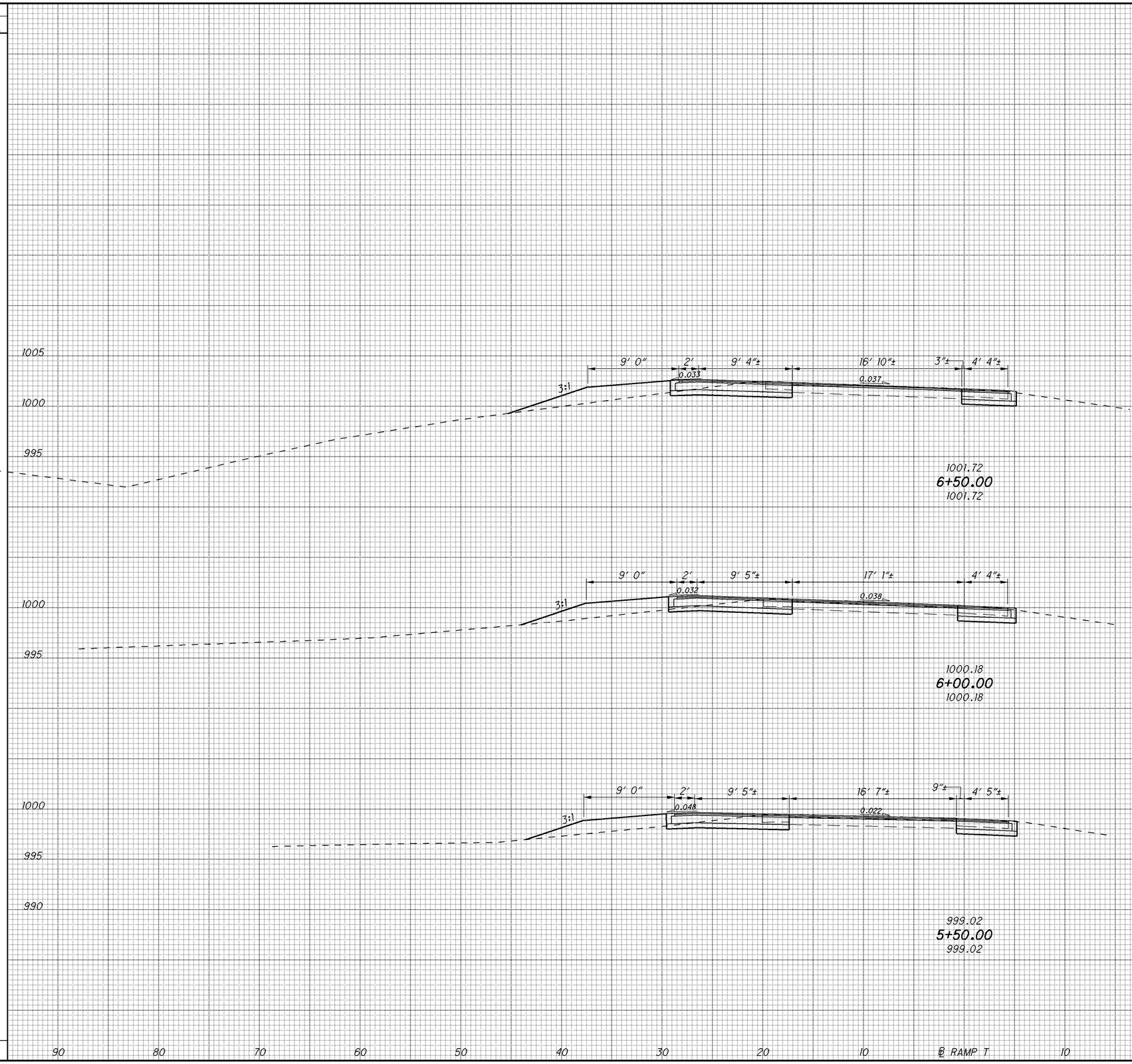
CROSS SECTIONS RAMP T
STA. 4+00.00 TO STA. 5+00.00

SUM-76/77/277-VAR

74
113

I:\Projects\SUM\95831_76-1095-ramp-T\95831\roadway\sheets\95831XS001.dgn 04-DEC-2014 10:33AM ccopelan

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
18	18	32	32
17	17	32	30
18	15	38	19
		102	81

CALCULATED CNC
CHECKED LMP

CROSS SECTIONS RAMP T
STA. 5+50.00 TO STA. 6+50.00

SUM-76/77/277-VAR

75
113

I:\Projects\SUM\95831_76-1095-ramp-T\95831\roadway\sheets\95831XS001.dgn 04-DEC-2014 10:33AM ccopelan

SEEDING	
END WIDTH	SQ. YDS.

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL
20	6		
		36	19
19	14		
		35	26
19	14		
		36	24
		107	69

CALCULATED CNC
CHECKED LMP

CROSS SECTIONS RAMP T
STA. 8+50.00 TO STA. 9+50.00

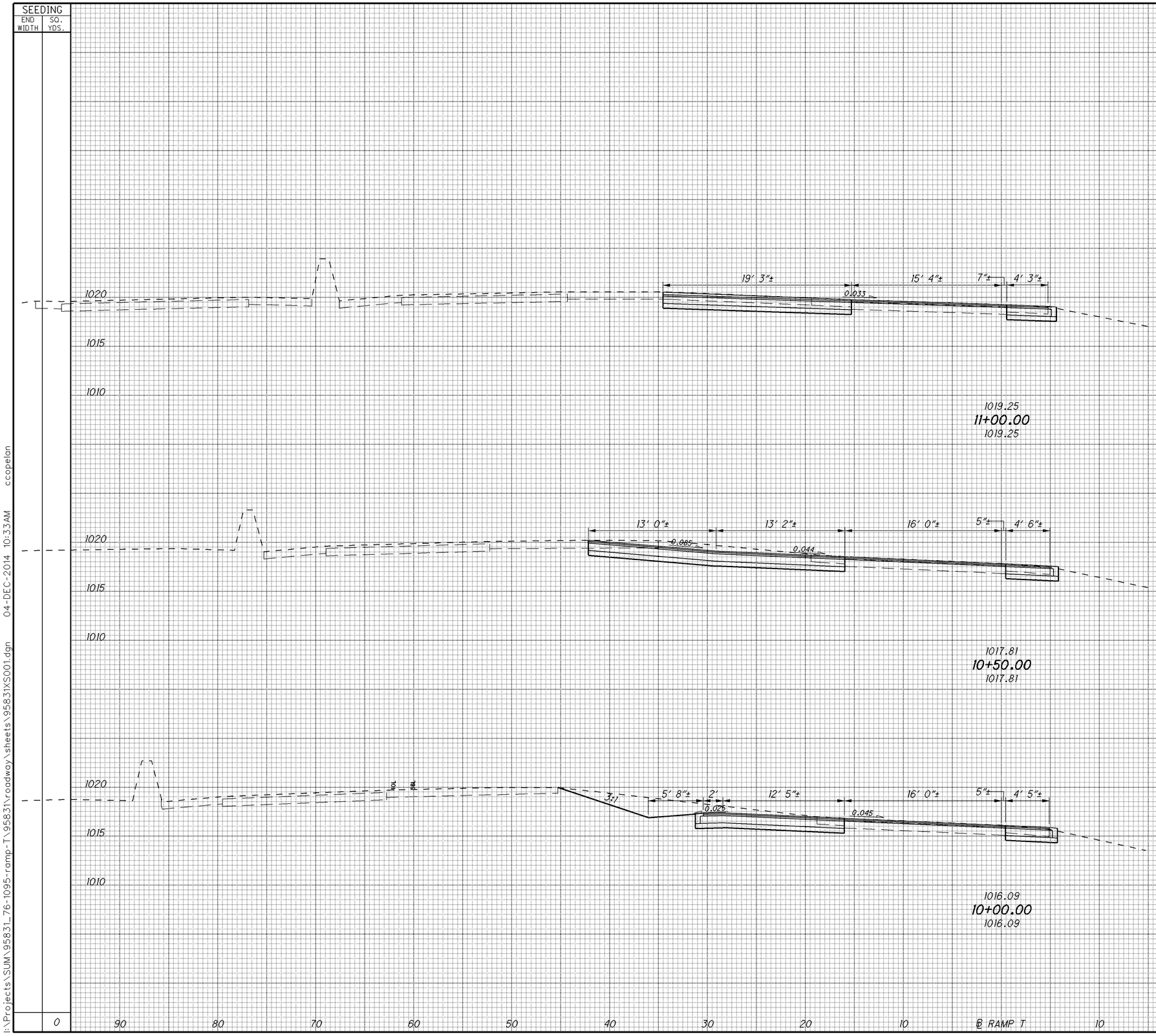
SUM-76/77/277-VAR

77
113

90 80 70 60 50 40 30 20 10 ℄ RAMP T 10 20 30

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SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
30		78	
54		98	
52		67	6
		243	6

CALCULATED CNC
CHECKED LMP

CROSS SECTIONS RAMP T
STA. 10+00.00 TO STA. 11+00.00

SUM-76/77/277-VAR

78
113

I:\Projects\SUM\95831_76-1095-ramp-T\95831roadway\sheets\95831XS001.dgn 04-DEC-2014 10:33AM ccopelan

SEEDING	
END WIDTH	SQ. YDS.

1025
1020
1015

1021.85
12+51.31
1021.85

1025
1020
1015

1' 3"
5' 2"±
0.020

1021.16
12+00.00
1021.16

1025
1020
1015

3"±
4' 8"±
0.031

1020.32
11+50.00
1020.32

90 80 70 60 50 40 30 20 10 ℄ RAMP T 10 20 30

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		7	
			7
		13	
			7
		34	
		54	

CALCULATED CNC
CHECKED LMP

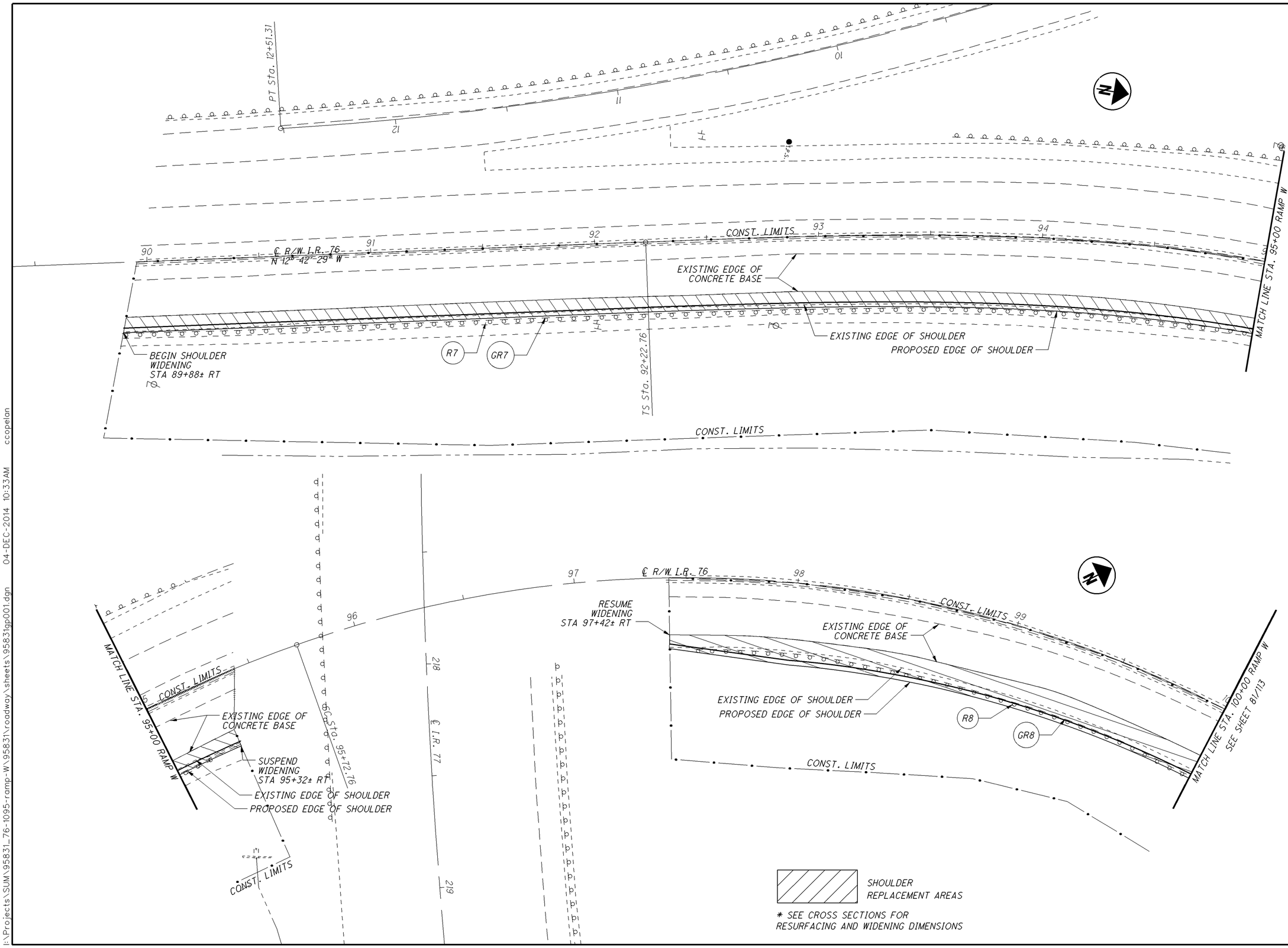
CROSS SECTIONS RAMP T
STA. 11+50.00 TO STA. 12+51.31

SUM-76/77/
277-VAR

79
113

ccopelan

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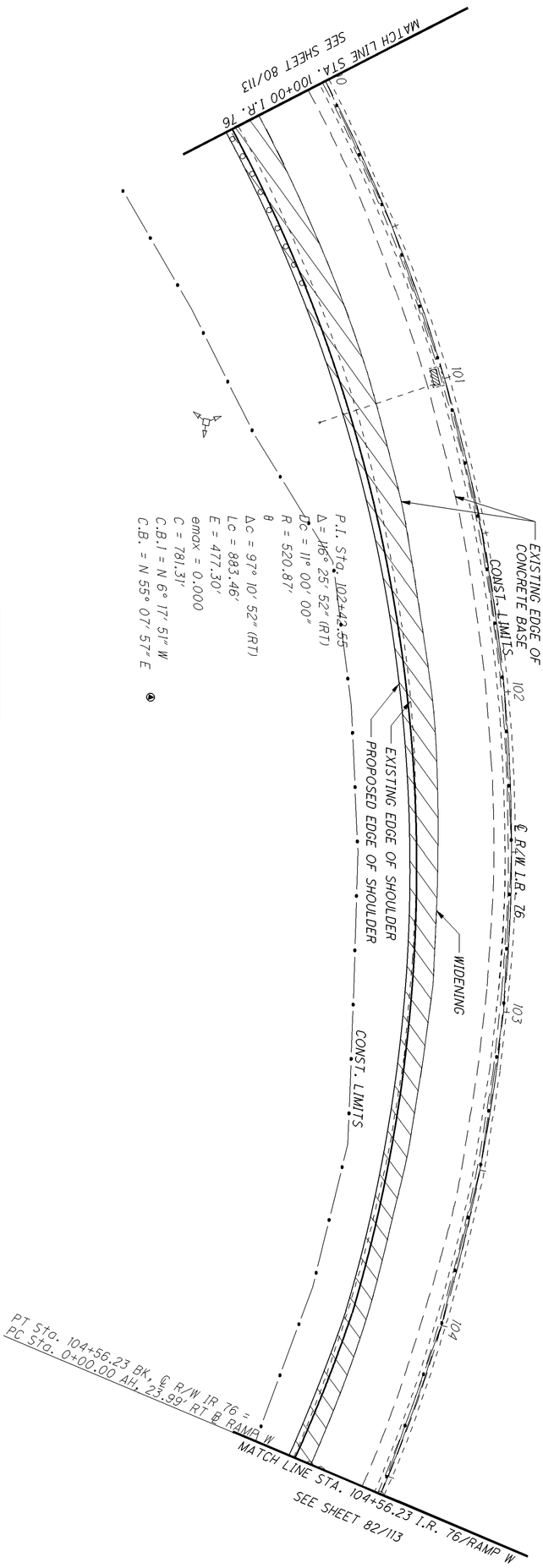
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED RCB
CHECKED LMP

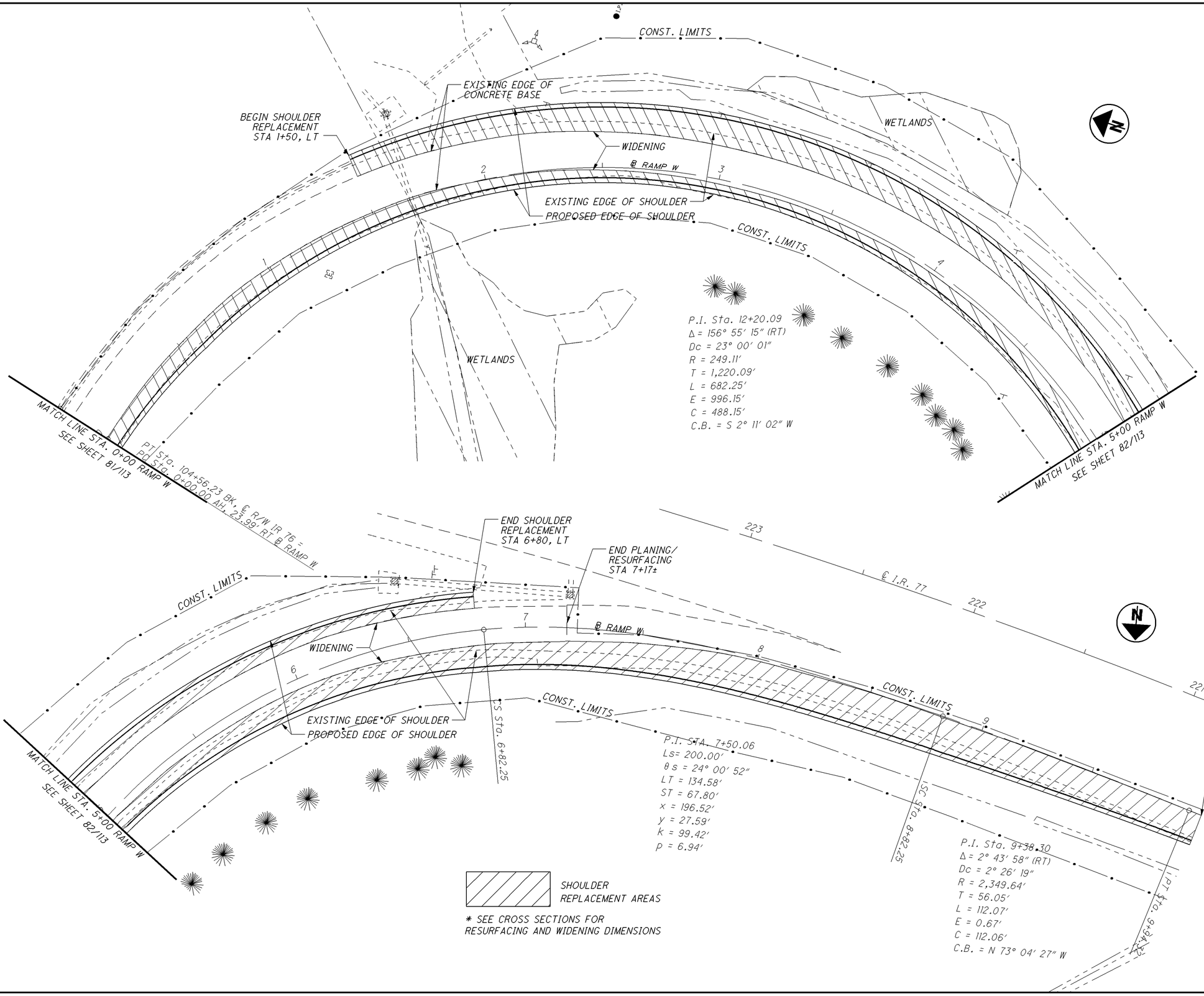
PLAN SHEET - I.R. 76/RAMP W
STA. 89+88+/- TO STA. 100+00.00

SUM-76/77/277-VAR

80
113



81/113	SUM-76/77/277-VAR	PLAN SHEET - I.R. 76/RAMP W STA. 100+00.00 TO STA. 104+56.23	CALCULATED RCB CHECKED LMP	0 20 10 40 HORIZONTAL SCALE IN FEET



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED RCB
CHECKED LMP

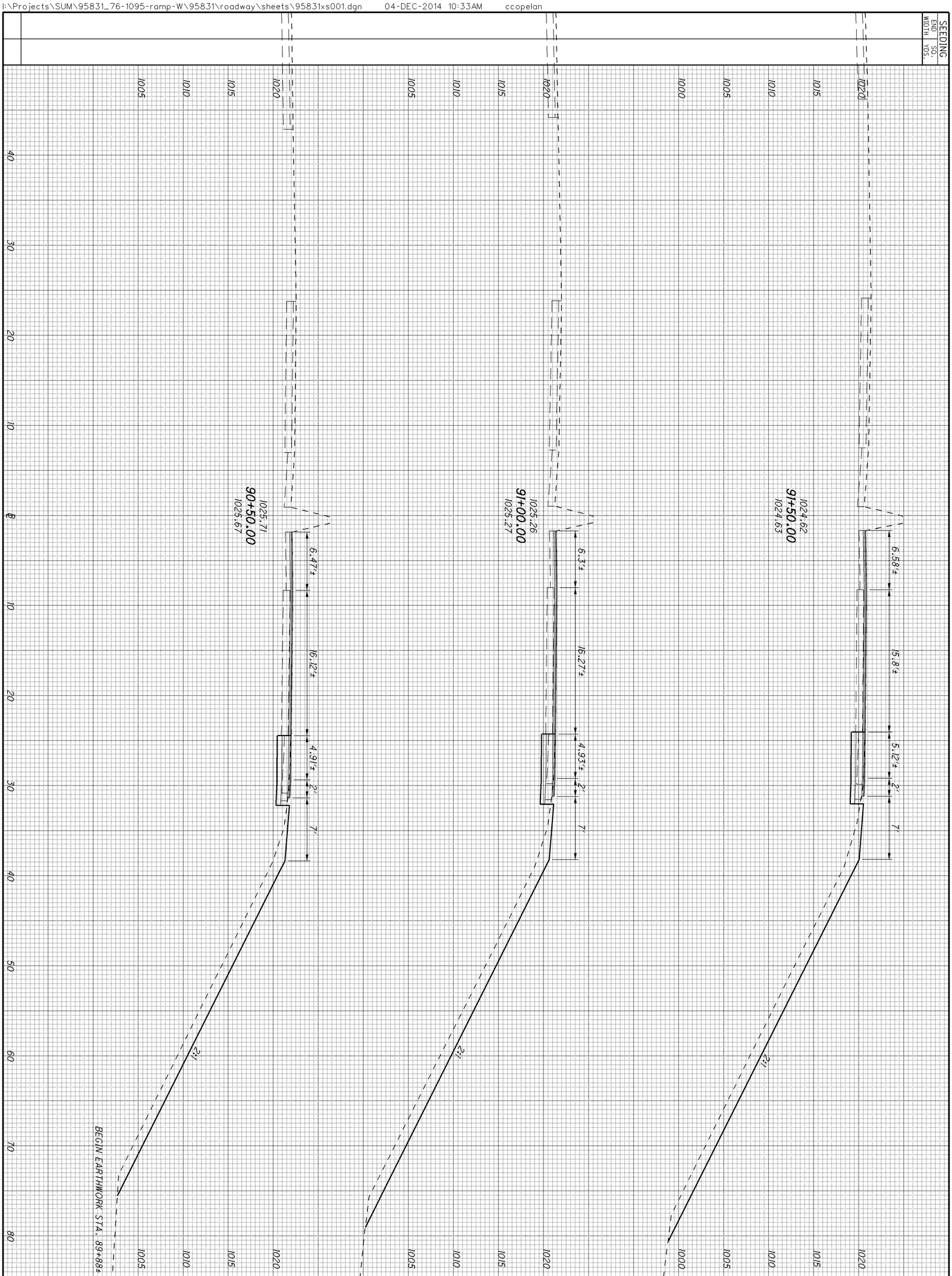
PLAN SHEET - RAMP W
STA. 0+00.00 TO STA. 10+00.00

SUM-76/77/277-VAR

82/113

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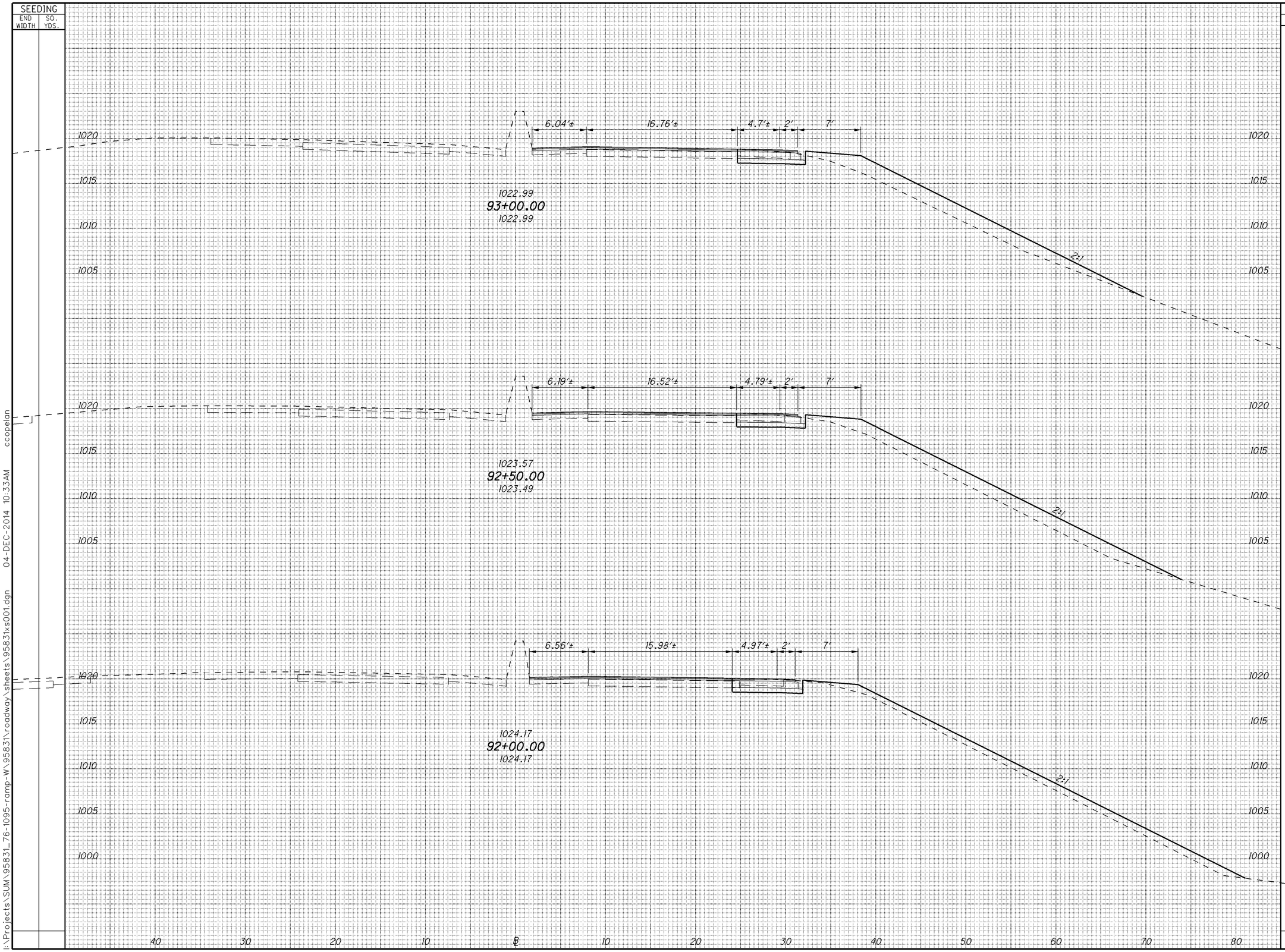
I:\Projects\SUM\95831_76-1095-ramp-W\95831\roadway\sheets\95831xs001.dgn 04-DEC-2014 10:33AM ccopelan



83 / 113	SUM-76/77/ 277-VAR	CROSS SECTIONS - I.R. 76/RAMP W STA. 90+50.00 TO STA. 91+50.00

CALCULATED RCB
CHECKED LMP

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
10	48		
		19	92
11	51		
		21	80
12	35		
		21	82
		61	254

CALCULATED RCB
CHECKED LMP

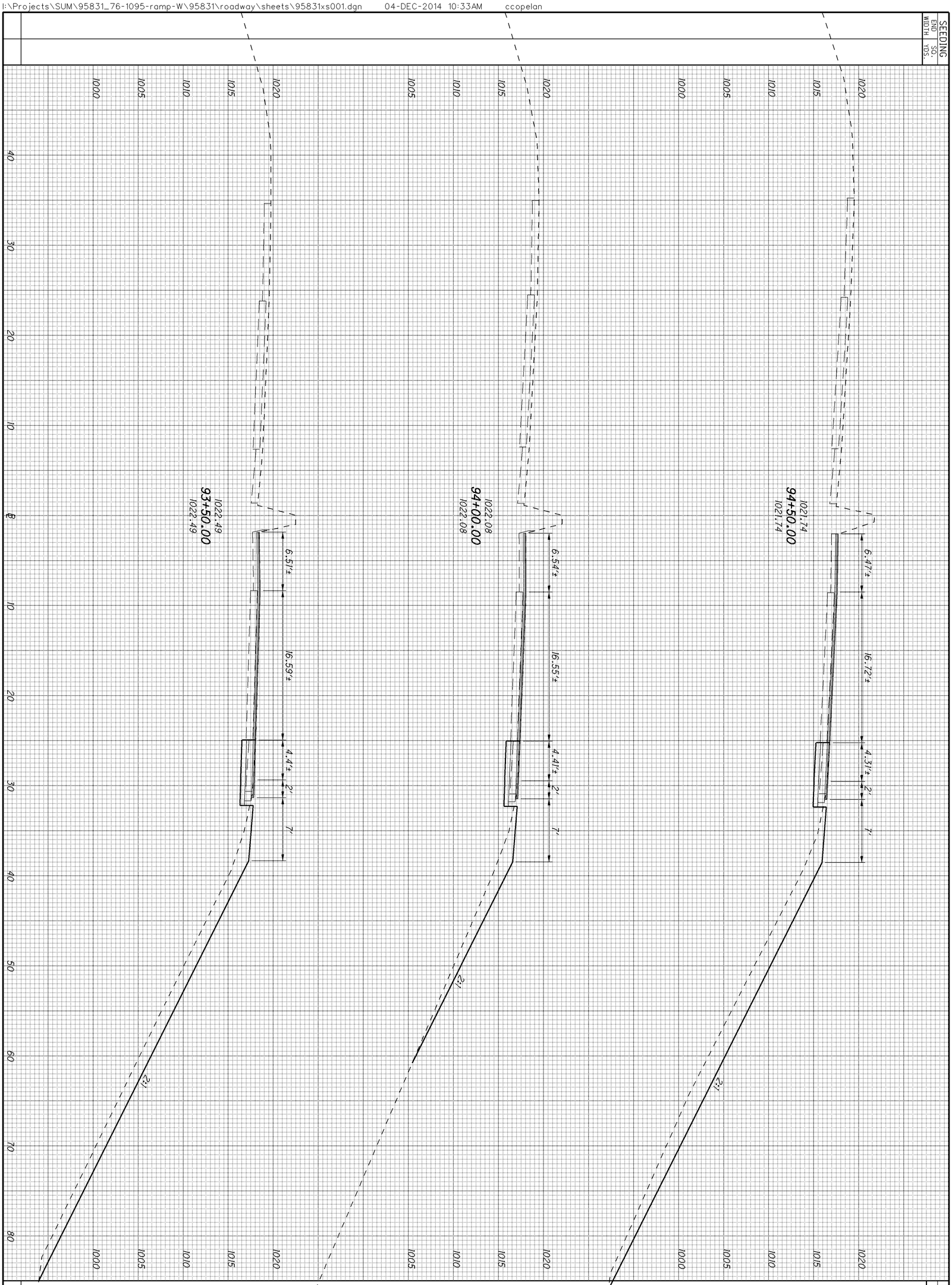
CROSS SECTIONS - I.R. 76/RAMP W
STA. 92+00.00 TO STA. 93+00.00

SUM-76/77/
277-VAR

84
113

04-DEC-2014 10:33AM ccopelan
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85
113

SUM-76/77/277-VAR

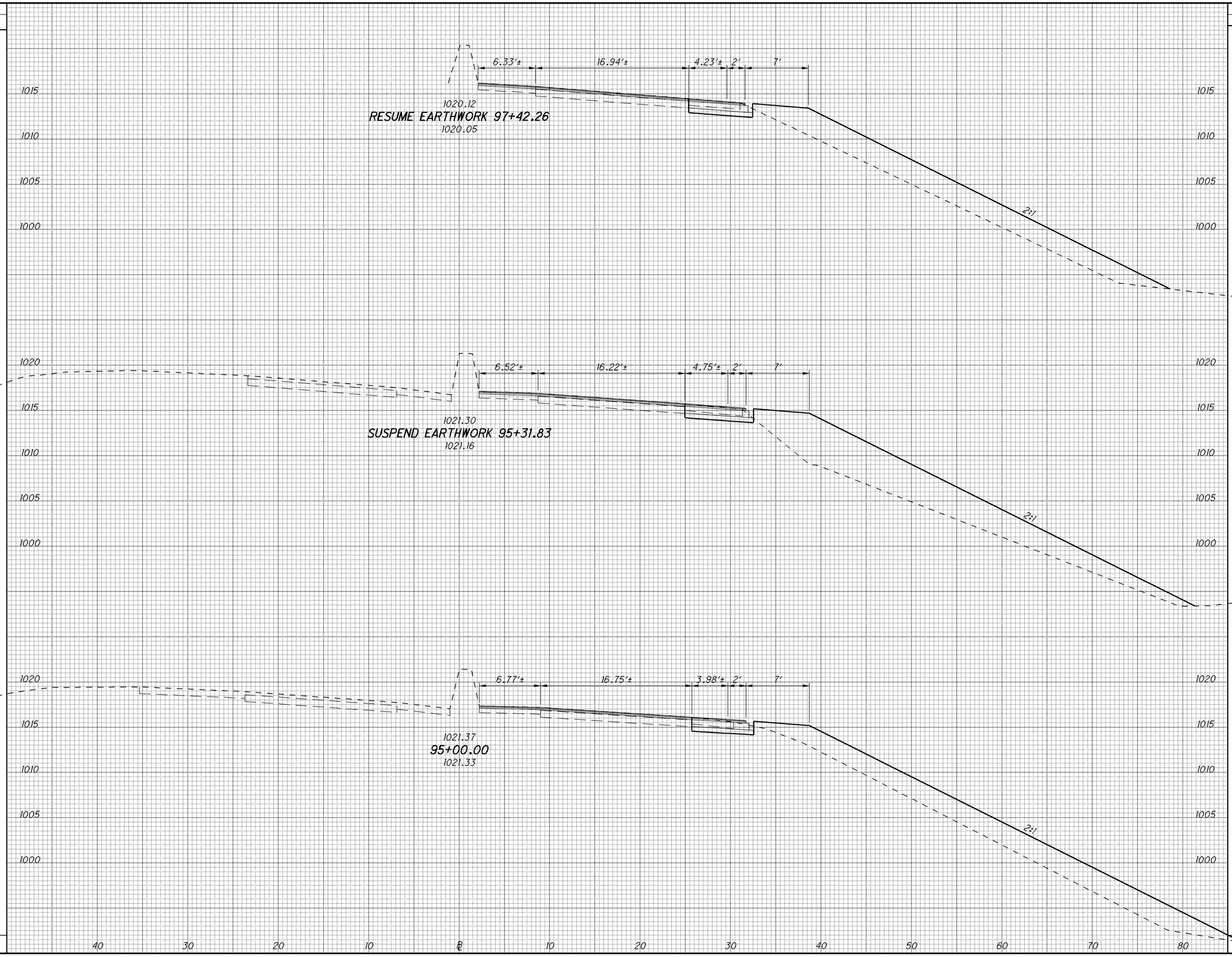
CROSS SECTIONS - I.R. 76/RAMP W
STA. 93+50.00 TO STA. 94+50.00

CALCULATED RCB
CHECKED LMP

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL
10	106		
10	150		
12	151		
9	119		
18	182		
30	333		

CALCULATED RCB
CHECKED LMP



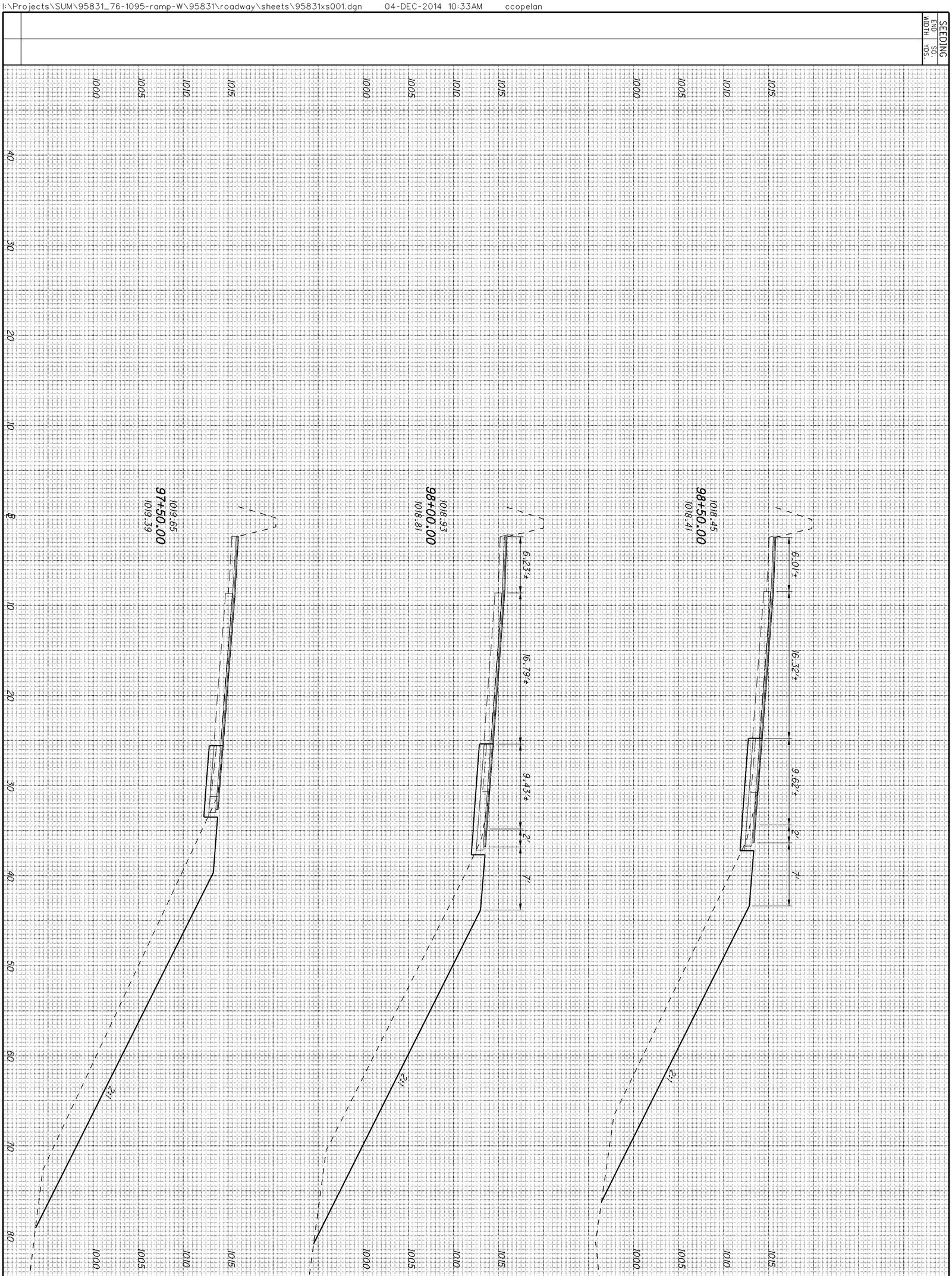
CROSS SECTIONS - I.R.76/RAMP W
STA. 95+00.00 TO STA. 97+42.26

SUM-76/77/
277-VAR

86
113

ccopelan
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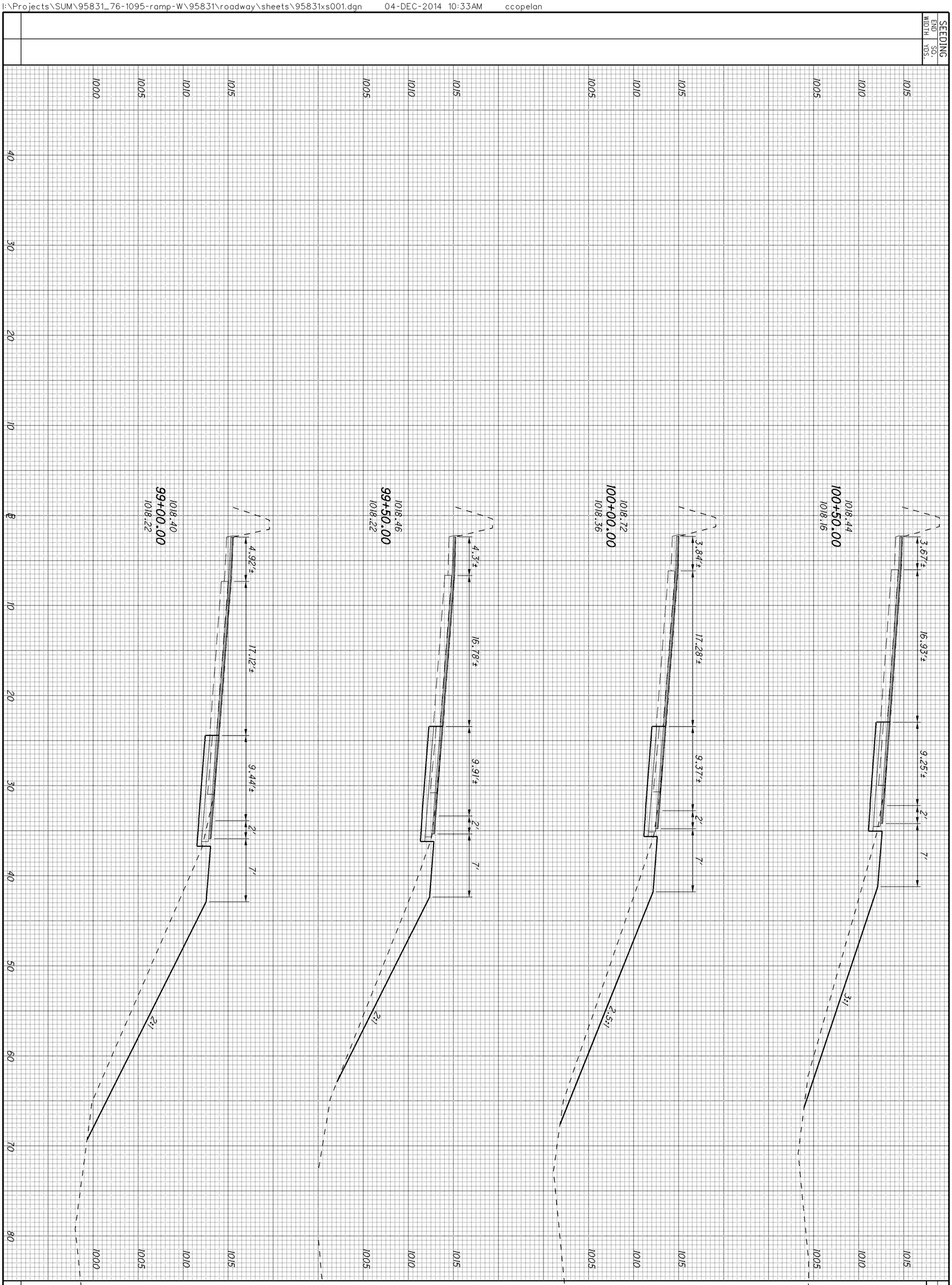
87
113

SUM-76/77/277-VAR

CROSS SECTIONS - I.R. 76/RAMP W
STA. 97+50.00 TO STA. 98+50.00

CALCULATED RCB
CHECKED LMP

I:\Projects\SUM\95831_76-1095-ramp-W\95831\roadway\sheets\95831xs001.dgn 04-DEC-2014 10:33AM ccopelan

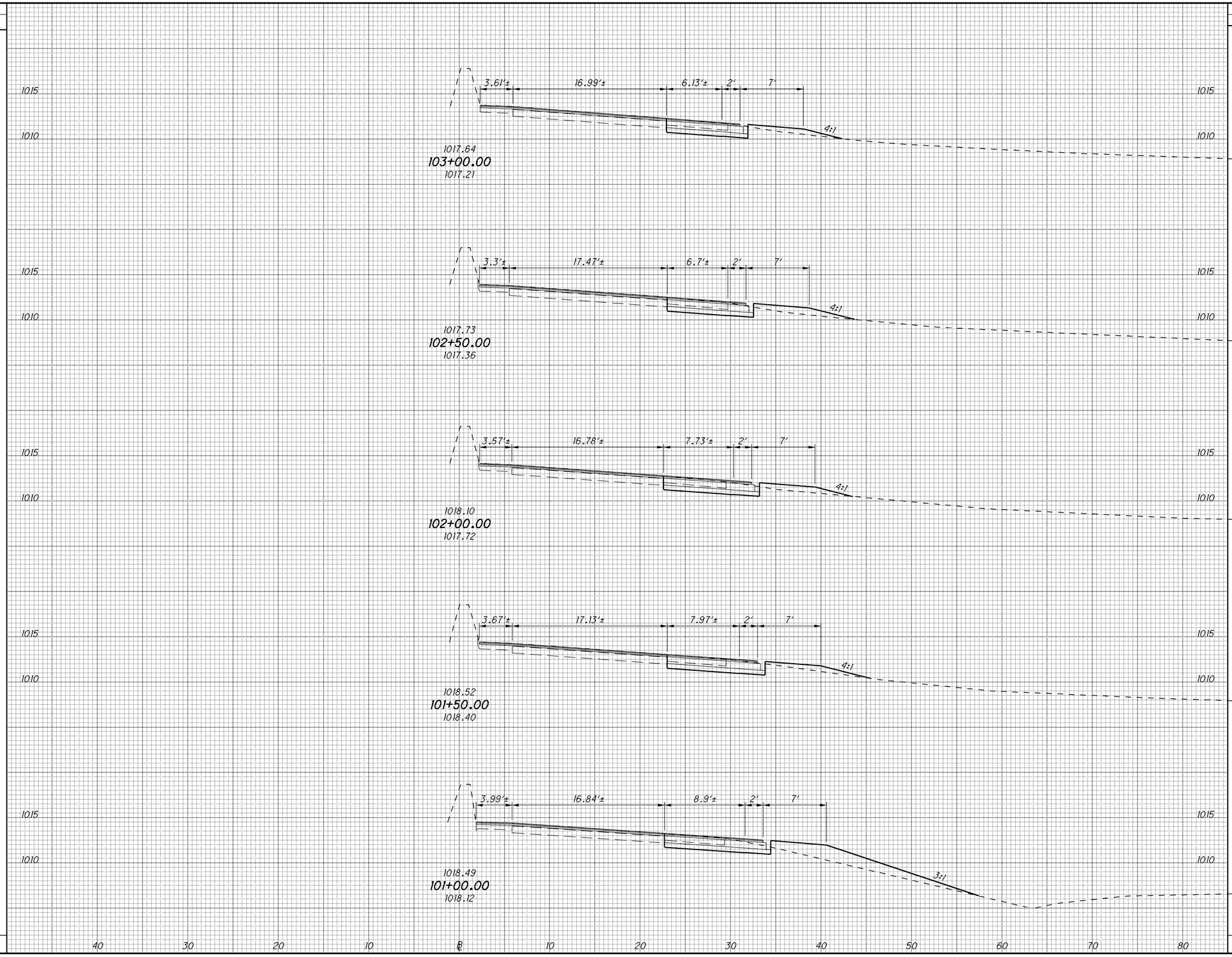


88
113

SUM-76/77/277-VAR

CROSS SECTIONS - I.R. 76/RAMP W
STA. 99+00.00 TO STA. 100+50.00

CALCULATED RCB
CHECKED LMP



SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		13	4		
				24	9
		13	6		
				25	10
		14	5		
				27	8
		15	4		
				29	23
		16	21		
				31	51
				136	101

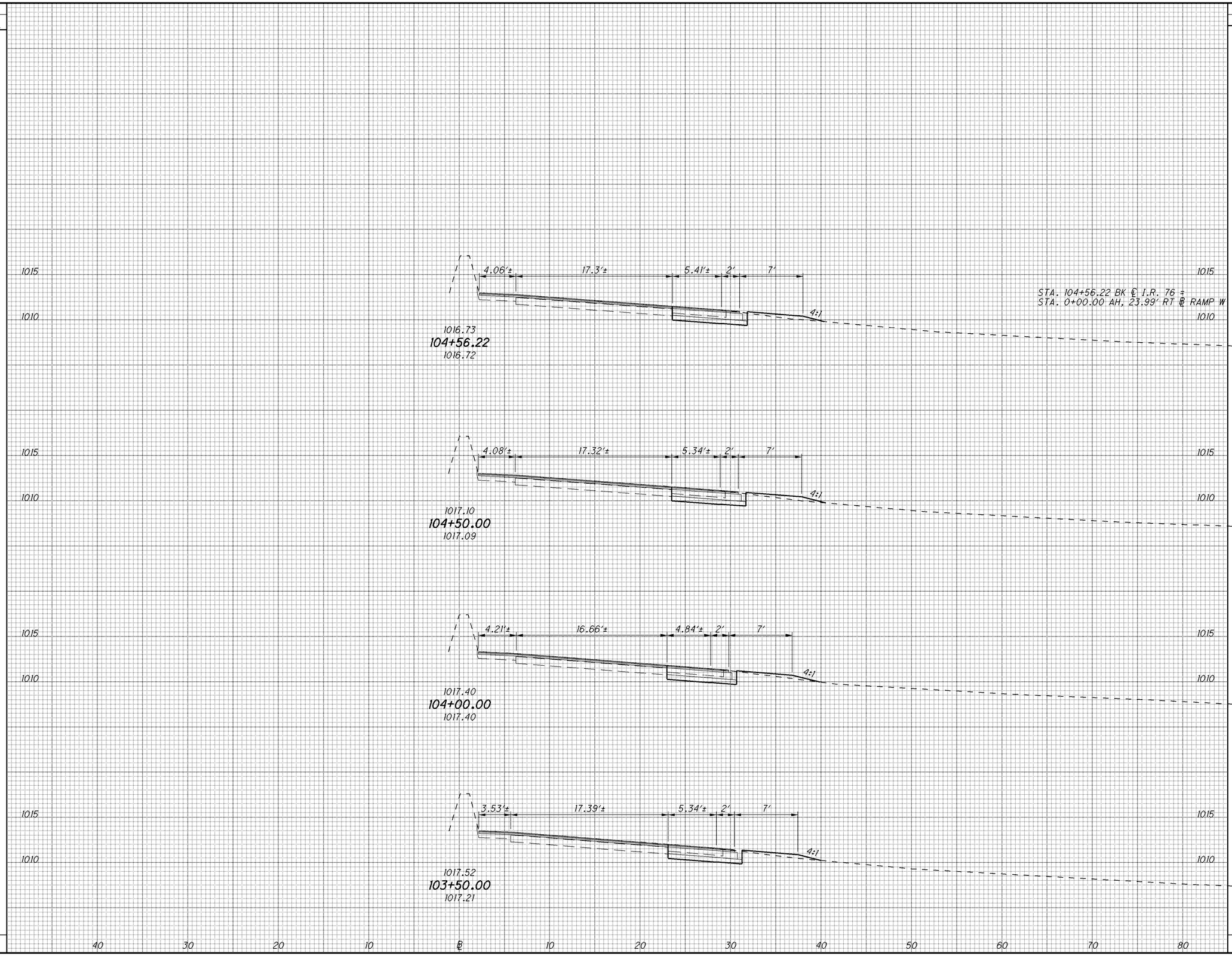
CALCULATED RCB
CHECKED LMP

CROSS SECTIONS - I.R.76/RAMP W STA. 101+00.00 TO STA. 103+00.00

SUM-76/77/277-VAR

89
113

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SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		12	2	3	1
		12	2	22	4
		12	2	22	4
		12	2	23	6
				70	15

CALCULATED RCB
CHECKED LMP

CROSS SECTIONS - I.R. 76/RAMP W
STA. 103+50.00 TO STA. 104+56.22

SUM-76/77/277-VAR

I:\Projects\SUM\95831_76-1095-ramp-W\95831\roadway\sheets\95831xs001.dgn 04-DEC-2014 10:33AM ccopelan

SEEDING	
END WIDTH	SQ. YDS.

STA. 0+00.00 AH, 23.99' RT ℄ RAMP W =
STA. 104+56.22 BK ℄ I.R. 76

END AREA		VOLUME	
CUT	FILL	CUT	FILL
13	4		
		25	7
14	4		
		26	7
14	4		
		24	6
12	2		
		75	20

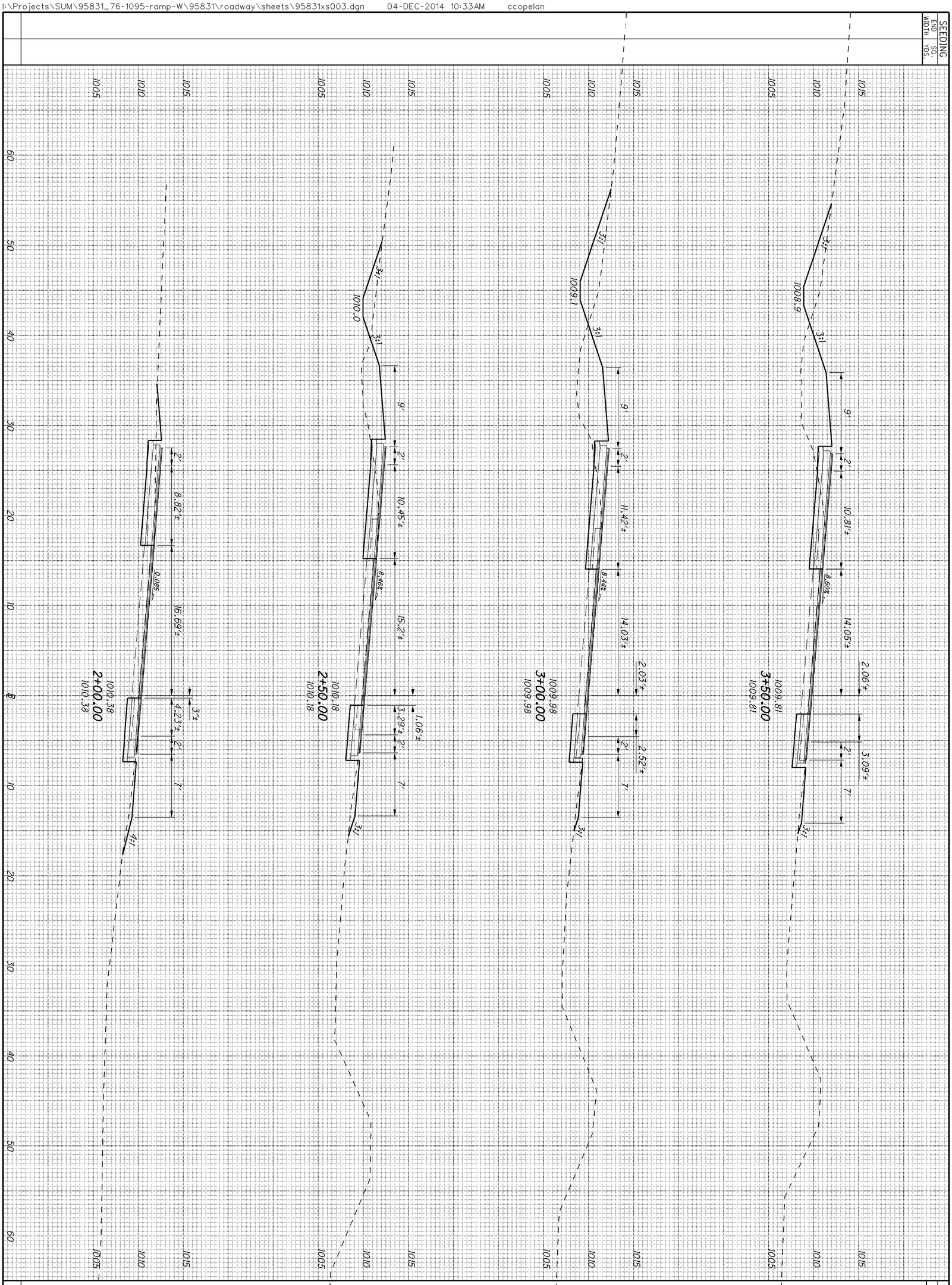
CALCULATED RCB
CHECKED LMP

CROSS SECTIONS - RAMP W
STA. 0+00.00 TO STA. 1+50.00

SUM-76/77/277-VAR

91
113

I:\Projects\SUM 95831_76-1095-ramp-W\95831\roadway\sheets\95831xs003.dgn 04-DEC-2014 10:33AM ccopelan



92 / 113	SUM-76/77/277-VAR
CROSS SECTIONS - RAMP W STA. 2+00.00 TO STA. 3+50.00	CALCULATED RCB CHECKED LMP

SEEDING	
END WIDTH	SQ. YDS.

END AREA	
CUT	FILL
29	25
29	30
28	33
36	30

VOLUME	
CUT	FILL
54	51
53	58
59	58
64	60
230	227

CALCULATED RCB
CHECKED LMP

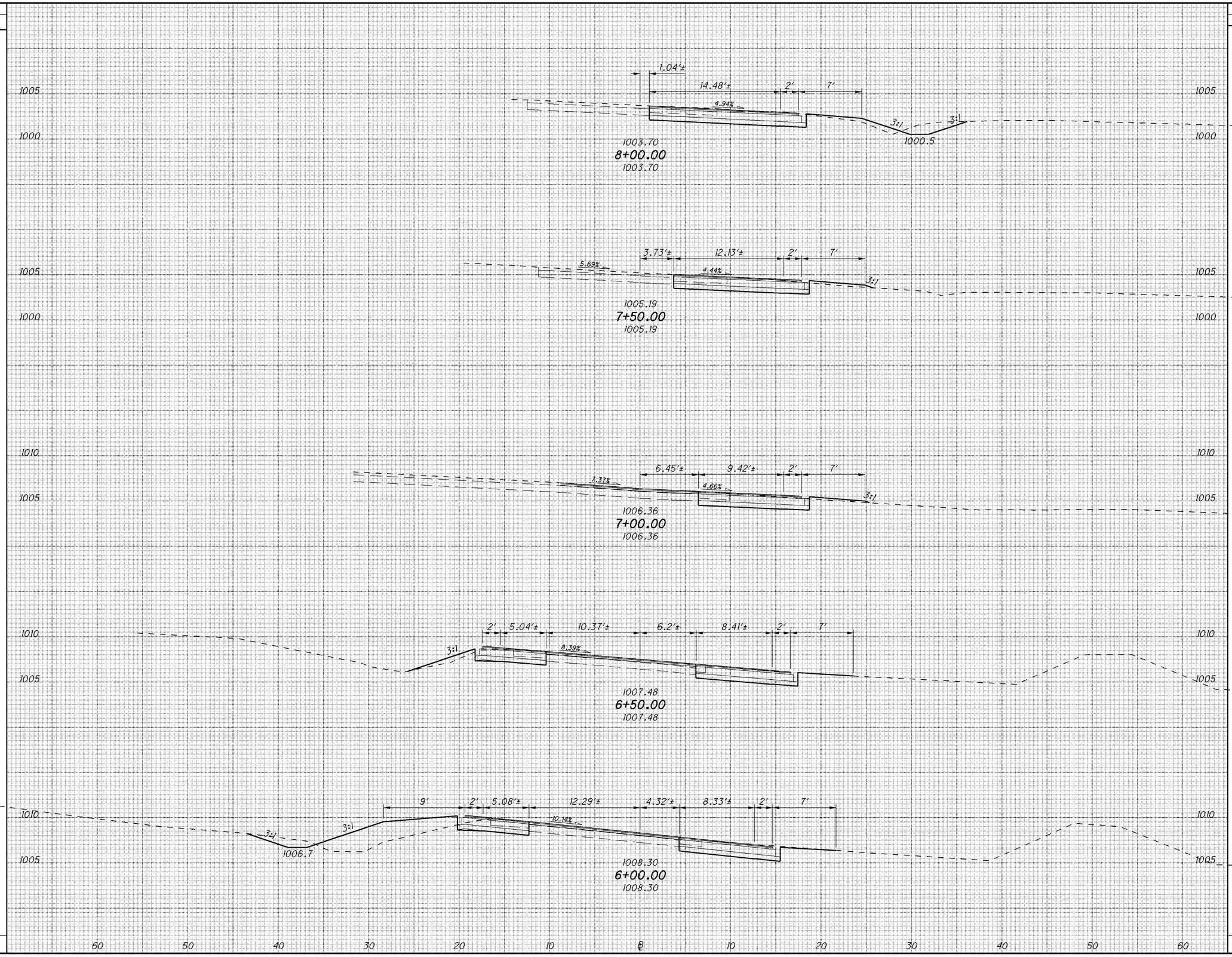
CROSS SECTIONS - RAMP W
STA. 4+00.00 TO STA. 5+50.00

SUM-76/77/277-VAR

I:\Projects\SUM\95831_76-1095-ramp-W\95831\roadway\sheets\95831xs003.dgn 04-DEC-2014 10:33AM ccopelan

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
		32	4	50	6
		22	2	36	3
		17	1	41	4
		27	3	54	29
		31	28	56	49
				237	91

CALCULATED RCB
CHECKED LMP



CROSS SECTIONS - RAMP W
STA. 6+00.00 TO STA. 8+00.00

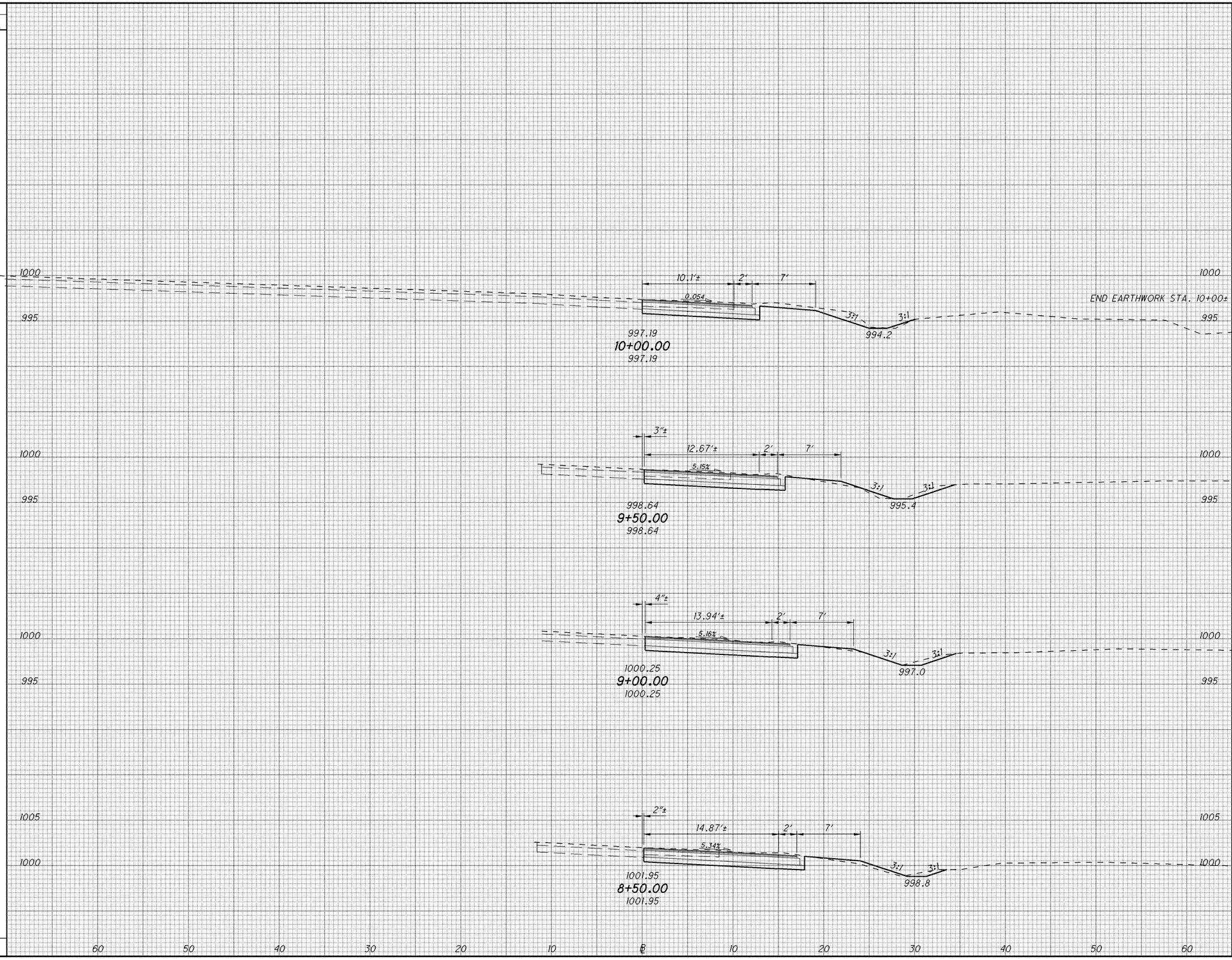
SUM-76/77/
277-VAR

94
113

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SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
28	1		
		51	3
27	2		
		52	3
29	1		
		55	3
30	2		
		57	6
		215	15

CALCULATED	CHECKED
RCB	LMP

CROSS SECTIONS - RAMP W
STA. 8+50.00 TO STA. 10+00.00

SUM-76/77/277-VAR

REF NO.	SHEET NO. (SUM-5-9.33)	STATION TO STATION (I-76)				BEGIN ELEVATION	END ELEVATION	OUTLET BEGIN ELEVATION	OUTLET BEGIN OFFSET	OUTLET STATION SHALLOW UNDERDRAIN OUTLET	OUTLET STATION OUTLET TO DRAINAGE STRUCTURE	OUTLET END ELEVATION	OUTLET END OFFSET	605 6" UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP	605 6" UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP	605 4" BASE PIPE UNDERDRAINS WITH FABRIC WRAP	611 4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET	611 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	611 PRECAST REINFORCED CONCRETE OUTLET	FOR INFORMATION ONLY WYE	FOR INFORMATION ONLY TEE	FOR INFORMATION ONLY 45° BEND	FOR INFORMATION ONLY 60° BEND	FOR INFORMATION ONLY 90° BEND	FOR INFORMATION ONLY END CAP
														FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH
U-1	69	1+25.00	TO	5+85.00	LT	1010.36	996.52	1010.36	3	3+96.00				455				20	1					1	
										1+25.00								20	1					1	
U-1A		1+25.00	TO	5+85.00	RT	1010.36	996.52	1010.36	10							455	13			2	4	2			
U-4	69	9+70.00	TO	10+00.00	LT			1019.60	3	9+70.00		1019.30		35				20	1					1	
U4A		9+70.00	TO	10+00.00	LT			1019.60	10	9+70.00		1019.30				35	13			1	2	1		1	
U-1	70	10+00.00	TO	13+26.00	LT	1020.96	1019.6		3					316				20							1
U-1A		10+00.00	TO	13+26.00	LT	1020.96	1019.6		10							316	13			1	2	1			1
U-4	70	15+53.00	TO	20+00.00	LT	1017.94	1009.4		3					437				20							1
U-4A		15+53.00	TO	20+00.00	LT	1017.94	1009.4		10							437	13			1	2	1			
U-1	72	20+00.00	TO	21+10.00	LT	1009.4	1007.98		3					120				40	1		1				1
U-1A		20+00.00	TO	21+10.00	LT	1009.4	1007.98		10							120	26			1	3	1			1
U-3	72	20+00.00	TO	21+10.00	RT	1009.2	1007.78		3					110				20	1		1				1
U-3A		20+00.00	TO	21+10.00	RT	1009.2	1007.78		10							110	13			1	3	1			1
U-4	72	23+02.00	TO	30+00.00	LT	1003.67	991.38		3					538	150										1
U-4A		23+02.00	TO	30+00.00	LT	1003.67	991.38		10							688									1
U-6	72	24+96.00	TO	30+00.00	RT	1000.04	991.88		3					150	354										1
U-6A		24+96.00	TO	30+00.00	RT	1000.04	991.88		10							504									1
U-1	75	30+00.00	TO	33+83.00	LT				3						385			30		3					2
U-1A		30+00.00	TO	33+83.00	LT				10							385	13			4	2	1			2
U-3	75	30+00.00	TO	32+96.00	RT				3						348			20		2					3
U-3A			TO						10							348	13			3	2	1	1		3
																							1		
U-4	75	33+20.00	TO	39+98.00	LT				3	39+98.00		994.41		445	215			60	1	1				1	
U-4A		33+20.00	TO	39+98.00	LT				10	39+98.00		994.41				660	13			2	2	1		1	
TOTALS CARRIED TO GENERAL SUMMARY														2606	1452	4058	130	270	6	22	24	10	2	6	21

CALCULATED CNC
CHECKED RCB

UNDERDRAIN SUB SUMMARY

SUM-76/77
277-VAR

04-DEC-2014 10:33AM ccopelan
I:\Projects\SUM\84655_SUM-76-6.3\84655\roadway\sheets\84655GS002.dgn

REF NO.	SHEET NO. (SUM-5-9.33)	STATION TO STATION (I-76)	BEGIN ELEVATION	END ELEVATION	OUTLET BEGIN ELEVATION	OUTLET BEGIN OFFSET	OUTLET STATION SHALLOW UNDERDRAIN OUTLET	OUTLET STATION OUTLET TO DRAINAGE STRUCTURE	OUTLET END ELEVATION	OUTLET END OFFSET	605 6" UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP	605 6" UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP	605 4" BASE PIPE UNDERDRAINS WITH FABRIC WRAP	611 4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET	611 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	611 PRECAST REINFORCED CONCRETE OUTLET	FOR INFORMATION ONLY WYE	FOR INFORMATION ONLY TEE	FOR INFORMATION ONLY 45º BEND	FOR INFORMATION ONLY 60º BEND	FOR INFORMATION ONLY 90º BEND	FOR INFORMATION ONLY END CAP
											FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH
U-1	77	41+50.00 LT TO 50+00.00 RT	992.76	986.33		3		44+00.00			648				20					3	2	
U-1A		41+50.00 LT TO 50+00.00 RT	992.76	986.33		10		44+00.00					648	10						3	2	
U-3	77	41+50.00 TO 50+00.00 RT				3		44+00.00			550	300			10					1		2
U-3A		41+50.00 TO 50+00.00 RT				10		44+00.00					850	10			1	2	1	1		2
U-4	77	48+80.00 TO 50+00.00 LT				3						120										
U-4A		48+80.00 TO 50+00.00 LT				10							120									
U-3	79	50+00.00 TO 63+50.00 RT	984.66	987.84		3					411	574			40		3			1		5
U-3A		50+00.00 TO 63+50.00 RT	984.66	987.84		10							985	20			4	2	1	1		5
U-1	82	63+50.00 TO 70+97.00 LT	987.74	1010.18		3					729	16								1		2
U-1A		63+50.00 TO 70+97.00 LT	987.74	1010.18		10							745							1		2
U-3	82	63+50.00 TO 70+98.00 RT	987.86	1010.27								746			37					1		2
																						2
U-1	85	9+16.32 TO 17+63	988.88								845											1
U-1	86	0+00 TO 2+98 RT	969.34	967.59			2+98				301				20						1	
U-2	86	3+02 TO 7+67.81 RT					3+02				469				20						1	
U-1	87	5+96.00 TO 15+77.00 RT									986				20	1	1					
U-1A		5+96.00 TO 15+77.00 RT											986	13			2	2	1			
U-2	87	15+85.00 TO 18+27.00 RT									259				20	1	2	1	1			
													259	13			3	3	2			
TOTALS CARRIED TO GENERAL SUMMARY											5198	1756	4593	66	187	2	16	10	6	13	6	23

CALCULATED CNC
CHECKED RCB

UNDERDRAIN SUB SUMMARY

SUM-76/77
277-VAR

I:\Projects\SUM\84655_SUM-76-6.3\84655\roadway\sheets\84655GS002.dgn 04-DEC-2014 10:34 AM ccopelan

REF NO.	SHEET NO. (SUM-18-8.21, SUM-5-10.62)	STATION TO STATION (I-76)			BEGIN ELEVATION	END ELEVATION	OUTLET BEGIN ELEVATION	OUTLET BEGIN OFFSET	OUTLET STATION SHALLOW UNDERDRAIN OUTLET	OUTLET STATION OUTLET TO DRAINAGE STRUCTURE	OUTLET END ELEVATION	OUTLET END OFFSET	605 6" UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP	605 6" UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP	605 4" BASE PIPE UNDERDRAINS WITH FABRIC WRAP	611 4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET	611 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	611 PRECAST REINFORCED CONCRETE OUTLET	FOR INFORMATION ONLY WYE	FOR INFORMATION ONLY TEE	FOR INFORMATION ONLY 45° BEND	FOR INFORMATION ONLY 60° BEND	FOR INFORMATION ONLY 90° BEND	FOR INFORMATION ONLY END CAP
													FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH
U-1	63	97+43.80	TO	100+96.00	RAMP V			3	100+96		1007.3		404				20	1					1	1
U-1A		97+43.80	TO	100+96.00	RAMP V			10	100+96		1007.3				404	13			1	2	1		1	1
U3	63	97+47.2	TO	103+00	RAMP W			3					546				20			2				1
																								1
U-4	63	101+02.00	TO	103+00.00	RAMP V			3	101+50.00		1009.8		232				20	1		1				1
U-4A		101+02.00	TO	103+00.00	RAMP V			10	101+50.00		1009.8				232	13			1	3	1			1
U-6	63	103+00.00	TO	14+02.00	RAMP V			3					375				30			1				1
U-6A		103+00.00	TO	14+02.00	RAMP V			10							375	30				1				1
U8	63	103+00.00	TO	1+62 RAMP W	RAMPW			3					322				20						1	
U-9	63	1+71	TO	7+82.226	RAMP W			3					625				20				1			
U-10	63	7+00.00	TO	13+96.00	RAMP V			3					25	300								1		
U-10A		7+00.00	TO	13+96.00	RAMP V			10								325						1		
U-15	65	3+55.40	TO	12+99.00									961				20	1		1				1
U-16	65	90+66.50	TO	95+66.50									542				20			1				2
U-18	65	89+94.00	TO	95+28.20						95+13.00		992.2	583					1		1				2
U-19	65	9+91.00	TO	18+80.00									904				20	1		1				1
U-1	72	71+04.00	TO	80+00.00	LT		1010.45	3	71+04.00		1008.25		916				20	1					1	
U-1A		71+04.00	TO	80+00.00	LT		1010.45	10							916	13			1	2	1		1	
U-3	72	71+00.00	TO	80+00.00	RT			3		71+00.00			900				43						1	
U-3A		71+00.00	TO	80+00.00	RT			10		71+00.00					900		43						1	
U-1	73	80+00.00	TO	84+75.00	LT			3	84+75.00		1011.00		510				20	1					1	
U-1A		80+00.00	TO	84+75.00	LT			10	84+75.00		1011.00				510	13			1	2	1		1	
U-3	73	0+21.00	TO	8+60.00	RT			3	8+60.00		1014.00		859				20	1					1	
U-3A		0+21.00	TO	8+60.00	RT			10	8+60.00		1014.00				859	13			1	2	1		1	
U-6	73	87+50.00	TO	88+32.50				3					63				20							2
U-6A		87+50.00	TO	88+32.50				10							63	13			1	2	1			2
TOTALS CARRIED TO GENERAL SUMMARY													8767	300	4259	433	356	8	6	22	7	2	11	18

CALCULATED CNC
CHECKED RCB

UNDERDRAIN SUB SUMMARY

SUM-76/77
277-VAR

I:\Projects\SUM\84655_SUM-76-6.31\84655\roadway\sheets\84655GS002.dgn 04-DEC-2014 10:34 AM ccopelan

REF NO.	SHEET NO.	STATION TO STATION (I-77)			BEGIN ELEVATION	END ELEVATION	OUTLET BEGIN ELEVATION	OUTLET BEGIN OFFSET	OUTLET STATION SHALLOW UNDERDRAIN OUTLET	OUTLET STATION OUTLET TO DRAINAGE STRUCTURE	OUTLET END ELEVATION	OUTLET END OFFSET	605 6" UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP	605 6" UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP	605 4" BASE PIPE UNDERDRAINS WITH FABRIC WRAP	611 4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET	611 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	611 PRECAST REINFORCED CONCRETE OUTLET	FOR INFORMATION ONLY WYE	FOR INFORMATION ONLY TEE	FOR INFORMATION ONLY 45° BEND	FOR INFORMATION ONLY 60° BEND	FOR INFORMATION ONLY 90° BEND	FOR INFORMATION ONLY END CAP
													FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH
		SEE PLANS SUM-8-6.70																						
	28	385+00.00	TO	395+00.00	1107.00	1095.00		3						1000			20	1					1	
		385+00.00	TO	395+00.00	1107.00	1095.00		10							1000	20			1	2	1		1	
	33	395+00.00	TO	405+00.00		1070.00		3						1000			20	1					1	
		395+00.00	TO	405+00.00		1070.00		10							1000	20			1	2	1		1	
	34	405+00.00	TO	412+00.00	1070.00	1055.00		3			1044.00			700		50		1	1				1	
		405+00.00	TO	412+00.00	1070.00	1055.00		10							700		25		2	2	1		1	
	34	412+00.00	TO	415+00.00	1055.00	1047.00		3						300										
		412+00.00	TO	415+00.00	1055.00	1047.00		10							300									
	35	415+00.00	TO	418+70.00	1060.5	1037.00		3	418+95.00		1026.00			370			32	1	1				1	
		415+00.00	TO	418+70.00	1060.5	1037.00		10	418+95.00		1026.00				370	32			2	2	1		1	
	35	418+70.00	TO	424+94.00	1026.00	1022.00		3	425+10.00		1011.50			615			20	1	1				1	
		418+70.00	TO	424+94.00	1026.00	1022.00		10	425+10.00		1011.50				615	13			2	2	1		1	
	36	424+94.00	TO	425+28.00	1022.00	1019.00		3	425+20.00		1011.50			34			20	1	1					1
		424+94.00	TO	425+28.00	1022.00	1019.00		10	425+20.00		1011.50				34	13			2	2	1			1
	36	426+89.00	TO	428+51.00	1018.00	1013.00		3	428+85.00		998.00			162			20	1	1					1
		426+89.00	TO	428+51.00	1018.00	1013.00		10	428+85.00		998.00				162	13			2	2	1			1
	36	428+51.00	TO	429+26.00	1013.00	1013.00		3	428+95.00		998.00			75			20	1	1					1
		428+51.00	TO	429+26.00	1013.00	1013.00		10	428+95.00		998.00				75	13			2	2	1			1
	36	431+37.00	TO	431+68.00	1011.00	1010.00		3	431+95.00		997.00			31			20	1	1					1
		431+37.00	TO	431+68.00	1011.00	1010.00		10	431+95.00		997.00				31	13			2	2	1			1
	36	431+68.00	TO	432+40.00	1010.00	1010.00		3	432+00.00		998.50			72			20	1	1					
		431+68.00	TO	432+40.00	1010.00	1010.00		10	432+00.00		998.50				72	13			2	2	1			
	36,38	432+40.00	TO	436+20.00	1010.00	1013.00		3	436+20.00		1002.00			380			20	1	1					
		432+40.00	TO	436+20.00	1010.00	1013.00		10	436+20.00		1002.00				380	13			2	2	1			
	38,39	436+20.00	TO	445+71.00	1013.00	1023.00		3	445+50.00		1021.50			951			20	1	1					
		436+20.00	TO	445+71.00	1013.00	1023.00		10	445+50.00		1021.50				951	13			2	2	1			
	39,40	445+71.00	TO	455+71.00	1023.00			3						1000			20	1	1					
		445+71.00	TO	455+71.00	1023.00			10							1000	13			2	2	1			
	40	455+71.00	TO	458+06.00				3	458+00.00		1036.50			235					1					
		455+71.00	TO	458+06.00				10	458+00.00		1036.50				235	13		1	1					
	40	458+06.00	TO	465+00.00	1036.50			3						1000		20		1	1					
		458+06.00	TO	465+00.00	1036.50			10							1000		13		2	2	1			
	41	465+00.00	TO	475+00.00				3						1000		20		1	1					
		465+00.00	TO	475+00.00				10							1000		13		2	2	1			
	45	475+00.00	TO	480+00.00				3						500		20		1	1					
		475+00.00	TO	480+00.00				10							500		13		2	2	1			
		SEE PLANS SUM-8-9.07																						
1-U	20-21	481+79.00	TO	14+50 "A"	RT			3					1369			20		1						
		481+79.00	TO	14+50 "A"	RT			10							1369		13		1	2	1			
TOTALS CARRIED TO GENERAL SUMMARY													1369	9425	10794	332	329	18	47	34	17	0	10	8

CALCULATED CNC CHECKED RCB

UNDERDRAIN SUB SUMMARY

SUM-76/77
277-VAR

I:\Projects\SUM\84655_SUM-76-6.31\84655\roadway\sheets\84655GS002.dgn 04-DEC-2014 10:34AM ccopelan

REF NO.	SHEET NO.	STATION TO STATION (I-277)			BEGIN ELEVATION	END ELEVATION	OUTLET BEGIN ELEVATION	OUTLET BEGIN OFFSET	OUTLET STATION SHALLOW UNDERDRAIN OUTLET	OUTLET STATION OUTLET TO DRAINAGE STRUCTURE	OUTLET END ELEVATION	OUTLET END OFFSET	605 6" UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP FT	605 6" UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP FT	605 4" BASE PIPE UNDERDRAINS WITH FABRIC WRAP FT	611 4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET FT	611 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT	611 PRECAST REINFORCED CONCRETE OUTLET EACH	FOR INFORMATION ONLY WYE EACH	FOR INFORMATION ONLY TEE EACH	FOR INFORMATION ONLY 45° BEND EACH	FOR INFORMATION ONLY 60° BEND EACH	FOR INFORMATION ONLY 90° BEND EACH	FOR INFORMATION ONLY END CAP EACH
		SEE PLANS SUM-277/224-.00/6.31-10.22																						
	11	66+77.00	TO	87+50.00				2	66+75.00					2073			20	1		1				1
								10	66+75.00						2073	13			1	1	1			1
								2	71+75.00								20	1		1				
								10	71+75.00							13			1	1				
								2	76+75.00								20	1		1				
								10	76+75.00							13			1	1	1			
								2	81+00.00								20	1		1				
								10	81+00.00							13			1	1	1			
								2	85+00.00								20	1		1				1
								10	85+00.00							13			1	1	1			1
	11	87+60.00	TO	107+32.00				2	87+60.00					1972			20	1		1				1
								10	87+60.00						1972	13			1	1	1			1
								2	91+60.00								20	1		1				
								10	91+60.00							13			1	1	1			
								2	95+60.00								20	1		1				
								10	95+60.00							13			1	1	1			
								2	99+30.00								20	1		1				
								10	99+30.00							13			1	1	1			
								2	104+00.00								20	1		1				1
								10	104+00.00							13			1	1	1			1
TOTALS CARRIED TO GENERAL SUMMARY													0	4045	4045	130	200	10	10	20	10	0	0	8

CALCULATED CNC
CHECKED RCB

UNDERDRAIN SUB SUMMARY

SUM-76/77
277-VAR

100
113

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REF NO.	SHEET NO.	STATION TO STATION (I-77)				BEGIN ELEVATION	END ELEVATION	OUTLET BEGIN ELEVATION	OUTLET BEGIN OFFSET	OUTLET STATION SHALLOW UNDERDRAIN OUTLET	OUTLET STATION OUTLET TO DRAINAGE STRUCTURE	OUTLET END ELEVATION	OUTLET END OFFSET	605 6" UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP	605 6" UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP	605 4" BASE PIPE UNDERDRAINS WITH FABRIC WRAP	611 4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET	611 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	611 PRECAST REINFORCED CONCRETE OUTLET	FOR INFORMATION ONLY WYE	FOR INFORMATION ONLY TEE	FOR INFORMATION ONLY 45º BEND	FOR INFORMATION ONLY 60º BEND	FOR INFORMATION ONLY 90º BEND	FOR INFORMATION ONLY END CAP
														FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH
		I-77 SEE EXISTING CONSTRUCTION PLANS AKRON EXPRESSWAY SYSTEM PAR 14-A, SUM-18-6.54																							
U-8	62	54+04.00	TO	134+00.00	RT	977.68	981.75	977.68	3					887				20	1		1				1
U-8A		54+04.00	TO	134+00.00	RT	977.68	981.75	977.68	10							887	10			1	3	1			1
U-1	66	134+00.00	TO	146+00.00	RT	981.75	984.92	981.75	3	134+52.00		977.71		13				20	1		1				
U-1A		134+00.00	TO	146+00.00	RT	981.75	984.92	981.75	10	134+52.00		977.71				13	10			1	3	1			
U-1	68	146+00.00	TO	152+85.00	RT	984.92	982.76	984.92	3					710				20	1			1			
U-1A		146+00.00	TO	152+85.00	RT	984.92	982.76	984.92	10							710	10			1	2	2			
U-5	68	152+89.00	TO	158+00.00	RT	982.72	977.74	982.72	3					211	300										1
U-5A		152+89.00	TO	158+00.00	RT	982.72	977.74	982.72	10							511									1
U-1	69	158+00.00	TO	164+77.60	RT	977.74	975.00	977.74	3						668			10							
U-1A	69	158+00.00	TO	164+77.60	RT	977.74		977.74	10							668	20		1						
U-7	69	164+88.00	TO	170+00.00	RT	975	980.62	975	3					450	52			10							
U-7A		164+88.00	TO	170+00.00	RT	975	980.62	975	10							502	20		1						
U-1	71	170+00.00	TO	170+06.00	RT	980.62	980.64	980.62	3					6											1
U-1A		170+00.00	TO	170+06.00	RT	980.62	980.64	980.62	10							6									1
U-4	71	170+10.00	TO	185+00.00	RT	980.65	977	980.65	3	170+10.00		978.9		1515				20	1					1	
U-4A		170+10.00	TO	185+00.00	RT	980.65	977	980.65	10	170+10.00		978.9				1515	20			1	2	1		1	
U-8	71	183+41.00	TO	185+00.00	RT	979.17	977.76	979.17	3			978.98		159											1
U-8A		183+41.00	TO	185+00.00	RT	979.17	977.76	979.17	10			978.98				159									1
U-1	72	185+00.00	TO	189+88.00	RT	977.76	974.35	977.76	3					300	214					1					1
U-1A		185+00.00	TO	189+88.00	RT	977.76	974.35	977.76	10							514				2	2	1			1
U-8	72	189+96.00	TO	192+46.00	RT	974.55	979.84		3					146	130					1					2
U-8A	72	189+96.00	TO	192+46.00	RT	974.55	979.84		10							276				2	2	1			2
TOTALS CARRIED TO GENERAL SUMMARY														4397	1364	5761	90	100	6	10	16	8	0	2	14

CALCULATED CNC
CHECKED RCB

UNDERDRAIN SUB SUMMARY

SUM-76/77
277-VAR

100A
113

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GENERAL SPEC: 640
MATERIAL TYPE: 614

CALCULATED CNC
CHECKED LAB

EDGE LINE

CTY	ROUTE	TRUE LOG	FROM	TRUE LOG	TO	WHITE EDGE LINE TOTAL	WHITE EDGE LINE HIGHWAY	WHITE EDGE LINE RAMP	YELLOW EDGE LINE TOTAL	YELLOW EDGE LINE HIGHWAY	YELLOW EDGE LINE RAMP	COMMENTS
SUM	76E	6.31	I-76 EAST (RAMP A)	8.19	RAMP U / RAMP W SPLIT	1.88			1.88			
SUM	76W	6.57	APP. SLAB SUM-76-6.57	8.27	RAMP T/ RAMP V MERGE	1.70			1.70			
SUM	76E		RAMP D		RAMP D	0.13		0.13	0.13		0.13	
SUM	76E		RAMP G		RAMP G	0.11		0.11	0.11		0.11	
SUM	76E		RAMP H		RAMP H	0.17		0.17	0.17		0.17	
SUM	76E		RAMP U		RAMP U	0.22		0.22	0.22		0.22	
SUM	76E		RAMP W		RAMP W	0.44		0.44	0.44		0.44	
TOTAL						4.65		1.07	4.65		1.07	

LANE LINE

CTY	ROUTE	TRUE LOG	FROM	TRUE LOG	TO	TOTAL MILES	4" LANE LINE DASHED	4" LANE LINE SOLID	COMMENTS
SUM	76E	6.31	I-76 EAST (RAMP A)	8.00	RAMP U / RAMP V SPLIT	1.69			
SUM	76W	6.83	I-76 WEST (RAMP C / RAMP B) SPLIT	8.16	RAMP T/ RAMP V MERGE	1.33			
TOTAL						3.02			

CENTER LINE

CTY	ROUTE	TRUE LOG	FROM	TRUE LOG	TO	TOTAL MILES	EQUIVALENT SOLID LINE	COMMENTS
TOTAL								

AUXILIARY

CTY	ROUTE LOCATION	TRUE LOG	CHANNEL LINE, 12"	CHANNEL LINE, 8"	STOP LINE	CHEVRON MARKING	TRANSVERSE DIAGONAL LINES WHITE	TRANSVERSE DIAGONAL LINES YELLOW	SYMBOL MARKINGS RxR	SYMBOL MARKINGS SCHOOL 72"	SYMBOL MARKINGS SCHOOL 96"	LANE ARROWS TURN LEFT	LANE ARROWS TURN RIGHT	LANE ARROWS THRU	LANE ARROWS COMB.	WORD ON PVMT ONLY 72"	WORD ON PVMT ONLY 96"	DOTTED LINES	COMMENTS
			FT	FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	
SUM	I-76/US-224 @I-76 SPLIT	6.310	1090			471													USE 642 FOR CHEVRON MARKINGS
SUM	I-277/US-224 @ I-76	0.110	1440			321													USE 642 FOR CHEVRON MARKINGS
SUM	I-76 SB RAMP "C"	6.680	1020			340													USE 642 FOR CHEVRON MARKINGS
SUM	I-76 EAST @ I-277 RAMP	6.670	500															803	
SUM	I-76 EAST @ KENMORE BLVD	7.060	1220	117	24							2							
SUM	I-76 @ 22ND ST	7.270	1860															850	
SUM	I-76 EAST @ BATTLES AVE	7.490	296	190	30							3						560	
SUM	I-77 TO I-76	8.240	1500				980												
SUM	I-76 EAST TO I-76 EAST	8.250	2190			579													USE 642 FOR CHEVRON MARKINGS
SUM	WEST INTERCHANGE I-76 AND I-7	8.420	2360			711	300												USE 642 FOR CHEVRON MARKINGS
SUM	I-77 TO I-77N	15.010	300																
SUM	I-77 @ I-277	9.340	1010															720	
TOTAL			14786	307	54	2422	1280					5						2933	

PAVEMENT MARKING SUB SUMMARY

SUM-76/77
277-VAR

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GENERAL SPEC: 640
MATERIAL TYPE: 614

CALCULATED CNC CHECKED LAB

EDGE LINE

CTY	ROUTE	TRUE LOG	FROM	TRUE LOG	TO	WHITE EDGE LINE TOTAL	WHITE EDGE LINE HIGHWAY	WHITE EDGE LINE RAMP	YELLOW EDGE LINE TOTAL	YELLOW EDGE LINE HIGHWAY	YELLOW EDGE LINE RAMP	COMMENTS
SUM	76W		RAMP V			0.51		0.51	0.51		0.51	
SUM	76W		RAMP T			0.16		0.16	0.16		0.16	
SUM	76W		RAMP F			0.12		0.12	0.12		0.12	
SUM	76W		RAMP E			0.05		0.05	0.05		0.05	
SUM	76W		RAMP C			0.21		0.21	0.21		0.21	
SUM	76W		RAMP B			0.28		0.28	0.28		0.28	
SUM	77	7.44	KILLIAN RD	9.34	JCT. 277 RAMP	1.90						
SUM	77		RAMP A			0.20		0.20	0.20		0.20	
SUM	77	15.87	STRUCTURE SUM-277-0089	16.90	BEGIN CONCRETE	1.03						
SUM	277	0.10	JCT. RAMP FROM I-76	0.89	STRUCTURE SUM-277-0089	0.79						
TOTAL						5.25		1.53	1.53		1.53	

LANE LINE

CTY	ROUTE	TRUE LOG	FROM	TRUE LOG	TO	TOTAL MILES	4" LANE LINE DASHED	4" LANE LINE SOLID	COMMENTS
TOTAL									

CENTER LINE

CTY	ROUTE	TRUE LOG	FROM	TRUE LOG	TO	TOTAL MILES	EQUIVALENT SOLID LINE	COMMENTS
TOTAL								

AUXILIARY

CTY	ROUTE LOCATION	TRUE LOG	CHANNEL LINE	STOP LINE	CROSS WALK LINES	TRANSVERSE DIAGONAL LINES WHITE	TRANSVERSE DIAGONAL LINES YELLOW	ISLAND MARKING	SYMBOL MARKINGS RxR	SYMBOL MARKINGS SCHOOL 72"	SYMBOL MARKINGS SCHOOL 96"	LANE ARROWS TURN LEFT	LANE ARROWS TURN RIGHT	LANE ARROWS THRU	LANE ARROWS COMB.	WORD ON PVMT ONLY 72"	WORD ON PVMT ONLY 96"	DOTTED LINES	COMMENTS
			FT	FT	FT	FT	FT	SQ FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	
TOTAL																			

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PAVEMENT MARKING SUB SUMMARY

SUM-76/77
277-VAR

CALC. BY BAM DATE 2-26-85
CHK'D BY JWZ DATE 2-28-85

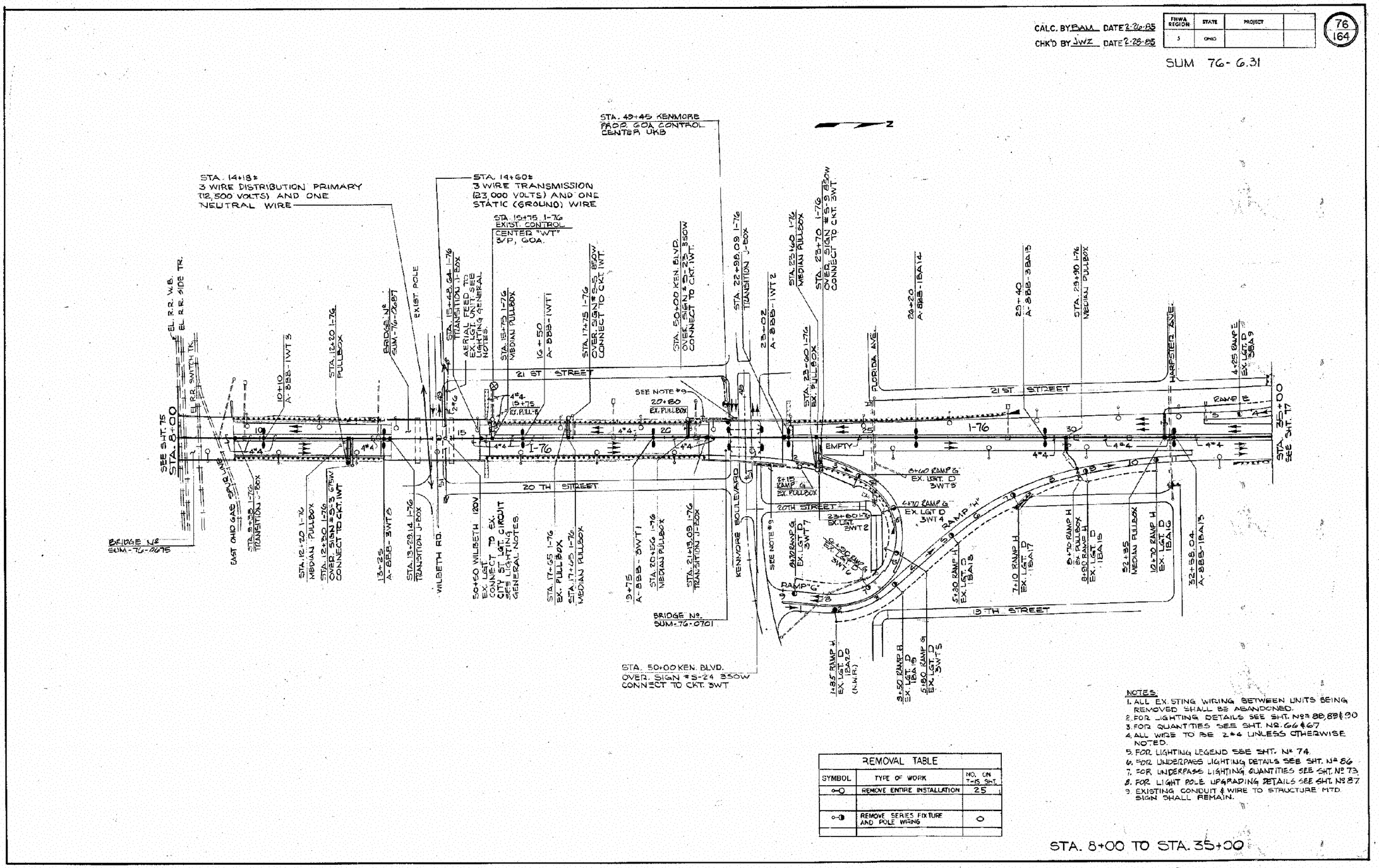
FHWA REGION	STATE	PROJECT	
5	OHIO		

76/164

SUM 76-6.31

CALCULATED RMB
CHECKED LAB

LIGHTING PLAN



REMOVAL TABLE		
SYMBOL	TYPE OF WORK	NO. ON T-15 SHT.
○—○	REMOVE ENTIRE INSTALLATION	25
○—◐	REMOVE SERIES FIXTURE AND POLE WIRING	0

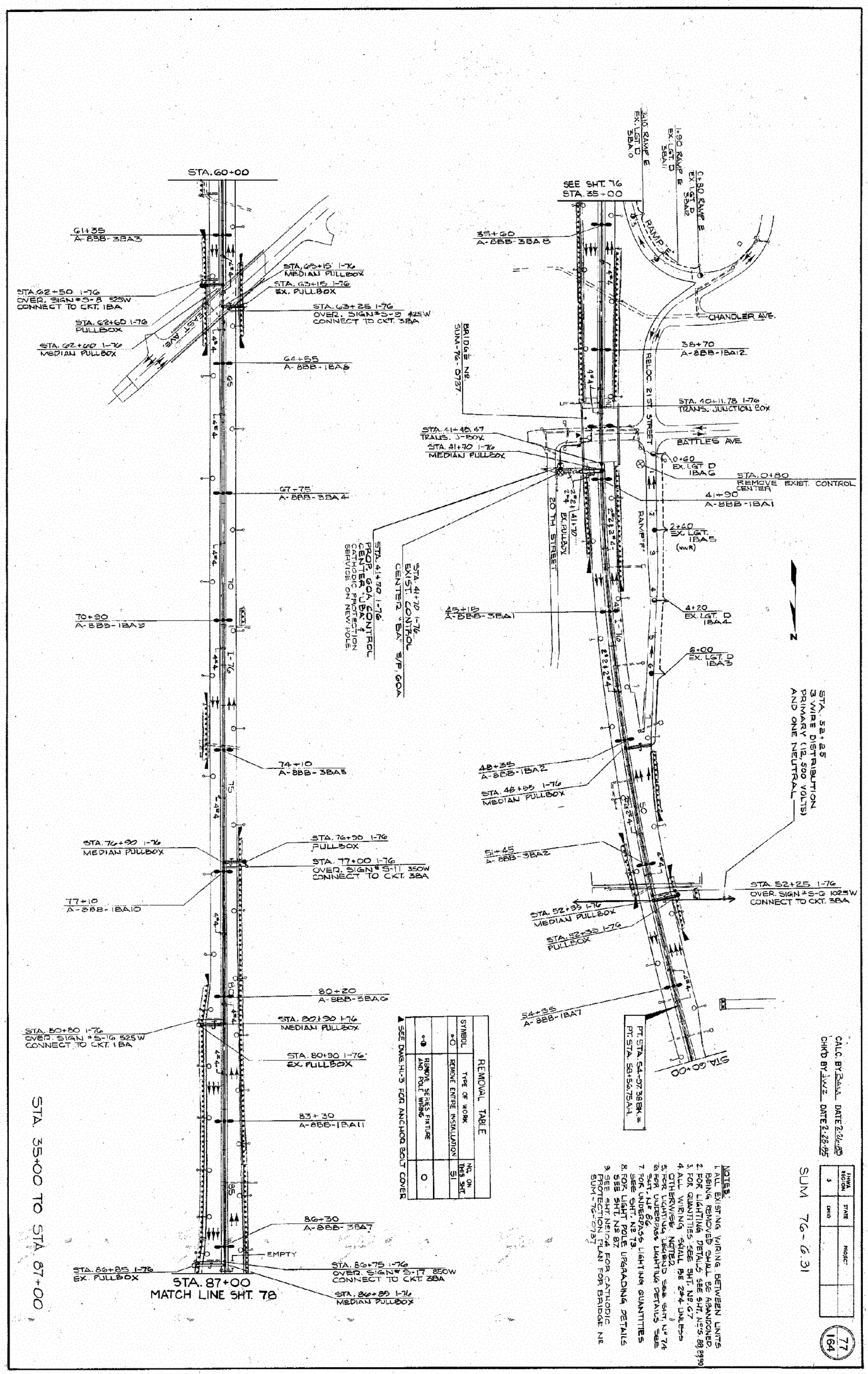
NOTES.
1. ALL EX. STING WIRING BETWEEN UNITS BEING REMOVED SHALL BE ABANDONED.
2. FOR LIGHTING DETAILS SEE SHT. Nos 88, 89 & 90
3. FOR QUANTITIES SEE SHT. NO. 66 & 67
4. ALL WIRE TO BE 2#4 UNLESS OTHERWISE NOTED.
5. FOR LIGHTING LEGEND SEE SHT. No 74
6. FOR UNDERPASS LIGHTING DETAILS SEE SHT. No 86
7. FOR UNDERPASS LIGHTING QUANTITIES SEE SHT. No 73
8. FOR LIGHT POLE UPGRADING DETAILS SEE SHT. No 87
9. EXISTING CONDUIT & WIRE TO STRUCTURE MTD. SIGN SHALL REMAIN.

STA. 8+00 TO STA. 35+00

SUM-76/77
277-VAR

103/113

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STA. 60+00
SEE SHT. 76 STA. 35+00
61+35 A-8BB-3BA3
STA. 62+50 1-76 OVER. SIGN #S-8 525W CONNECT TO CKT. 1BA
STA. 62+60 1-76 PULLBOX
STA. 62+60 1-76 MEDIAN PULLBOX
STA. 63+15' 1-76 MEDIAN PULLBOX
STA. 63+15 1-76 EX. PULLBOX
STA. 63+25 1-76 OVER. SIGN #S-9 #25W CONNECT TO CKT. 3BA
64+55 A-8BB-1BA6
67+75 A-8BB-3BA4
70+90 A-8BB-1BA5
74+10 A-8BB-3BA5
STA. 76+90 1-76 MEDIAN PULLBOX
STA. 76+90 1-76 PULLBOX
STA. 77+00 1-76 OVER. SIGN #S-11 350W CONNECT TO CKT. 3BA
77+10 A-8BB-1BA10
80+20 A-8BB-3BA6
STA. 80+80 1-76 OVER SIGN #S-16 525W CONNECT TO CKT. 1BA
STA. 80+90 1-76 MEDIAN PULLBOX
STA. 80+90 1-76 EX. PULLBOX
83+30 A-8BB-1BA11
86+30 A-8BB-3BA7
EMPTY
STA. 86+85 1-76 EX. PULLBOX
STA. 86+75 1-76 OVER. SIGN #S-17 350W CONNECT TO CKT. 3BA
STA. 86+85 1-76 MEDIAN PULLBOX
STA. 87+00 MATCH LINE SHT. 78
STA. 35+00 TO STA. 87+00
35+60 A-8BB-3BA8
I-90 RAMP E EX. LGT. D 3BA10
I-90 RAMP E EX. LGT. D 3BA11
I-90 RAMP E EX. LGT. D 3BA12
RAMP E
CHANDLER AVE.
38+70 A-8BB-1BA12
RELOC. 21ST STREET
BRIDGE NO. SUM-76-0737
STA. 40+11.78 1-76 TRANS. JUNCTION BOX
STA. 41+48.47 TRANS. J-BOX
STA. 41+70 1-76 MEDIAN PULLBOX
BATTLES AVE.
40+60 EX. LGT. D 1BA6
STA. 0+80 REMOVE EXIST. CONTROL CENTER
41+90 A-8BB-1BA1
20TH STREET
RAMP F
2+40 EX. LGT. 1BA5 (mR)
PROP. 60A CONTROL CENTER W/ DISCONNECTION SERVICE ON NEW POLE
STA. 41+70 1-76 EXIST. CONTROL CENTER "BA" S/P 60A
43+15 A-8BB-3BA1
4+20 EX. LGT. D 1BA4
6+00 EX. LGT. D 1BA3
N
STA. 52+25 3 WIRE DISTRIBUTION PRIMARY (12,300 VOLTS) AND ONE NEUTRAL
48+35 A-8BB-1BA2
STA. 48+85 1-76 MEDIAN PULLBOX
51+45 A-8BB-3BA2
STA. 52+25 1-76 OVER. SIGN #S-01 1025W CONNECT TO CKT. 3BA
STA. 52+35 1-76 MEDIAN PULLBOX
STA. 52+35 1-76 PULLBOX
54+35 A-8BB-1BA7
PT. STA. 54+97.38 BK. = PT. STA. 50+56.75 AH.
STA. 60+00
REMOVAL TABLE
SYMBOL
TYPE OF WORK
REMOVE ENTIRE INSTALLATION
NO. ON THIS SHT.
REMOVE SERIES FIXTURE AND POLE WIRING
SEE DWG. H-3 FOR ANCHOR BOLT COVER
NOTES:
1. ALL EXIST. NO. WIRING BETWEEN UNITS ALSO TO BE REMOVED & SHALL BE ABANDONED
2. FOR LIGHTING DETAILS SEE SHT. NOS. 88 & 89
3. FOR QUANTITIES SEE SHT. NO. 67
4. ALL WIRING SHALL BE #4 UNLESS OTHERWISE NOTED
5. FOR LIGHTING LEGEND SEE SHT. NO. 74
6. FOR UNDERPASS LIGHTING DETAILS SEE SHT. NO. 86
7. FOR UNDERPASS LIGHTING QUANTITIES SEE SHT. NO. 78
8. FOR LIGHT POLE UPGRADING DETAILS SEE SHT. NO. 87
9. SEE SHT. NO. 104 FOR CATHODIC PROTECTION PLAN FOR BRIDGE NO. SUM-76-0737
CALC BY RMB DATE 2-26-15
CHK'D BY JWZ DATE 2-26-15
SUM 76-6.31
77
164

625, DISCONNECT CIRCUIT, AS PER PLAN

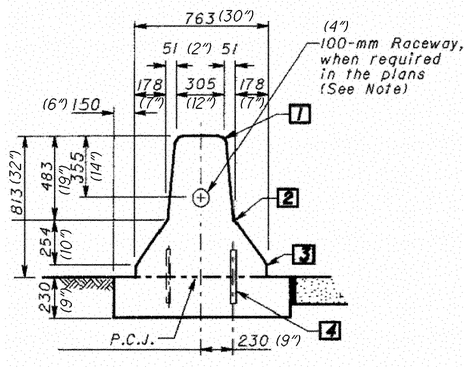
THIS ITEM OF WORK SHALL CONSIST OF THE DISCONNECTION & RECONNECTION OF AN EXISTING LIGHT CIRCUIT AT A JUNCTION BOX.

DISCONNECTION AT A JUNCTION BOX SHALL INVOLVE CUTTING THE EXISTING CIRCUIT AND REMOVING ALL CONNECTOR KITS. THE CONTRACTOR SHALL THEN PULL THE CABLE OUT OF THE SECTION OF MEDIAN WALL TO BE REMOVED. UPON COMPLETION OF THE THE POURING OF THE FOUNDATION/MEDIAN WALL & THE INSTALLATION OF THE NEW LIGHT POLE WITH THE EXISTING LUMINAIRES, THE CONTRACTOR CAN RECONNECT THE EXISTING CIRCUIT.

PAYMENT SHALL BE MADE AT THE UNIT BID PRICE UNDER CMS ITEM 625, "DISCONNECT EXISTING CIRCUIT, AS PER PLAN" AT EACH LOCATION WHERE DISCONNECTION IS REQUIRED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

CONCRETE BARRIER, TYPE A, REINFORCED, AS PER PLAN

THE CONCRETE BARRIER SHALL BE AS DIMENSIONED BELOW.



TYPE B

LEGEND

(1 INCH radius)

1. 25-mm radius or 19-mm chamfer.
2. Permissible 250-mm radius. (10 INCH radius)
3. Permissible 25-mm radius. (1 INCH radius)
4. #25M epoxy coated deformed steel bars, 305 mm long, spaced 1220 mm between successive bars on a staggered pattern except in Type D. Omit dowels when the top is constructed integrally with the base.

RACEWAY: The contractor shall ensure that the electrical raceway is clear of internal obstructions. Cost of the 100 mm (4") polyvinyl chloride raceway and No. 10 AWG copper-clad or aluminum-clad wire if needed for future installation of circuits shall be included in the unit cost per foot for Item 622, Concrete Barrier.

625 - LIGHT POLE FOUNDATION REMOVED, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LIGHT POLE FOUNDATION TO A MINIMUM OF 1 BELOW FINISHED GRADE, OR REMOVING THE FOUNDATION COMPLETELY, AND POURING THE NEW FOUNDATION/MEDIAN WALL.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE UNDER CMS ITEM 625 "LIGHT POLE FOUNDATION REMOVED, AS PER PLAN" FOR EACH FOUNDATION REMOVED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM OF WORK IN A SATISFACTORY AND WORKMAN LIKE MANNER.

EXISTING CIRCUITRY

THE EXISTING LIGHTING WIRING/CABLE IS TO BE REUSED WHERE POSSIBLE.

ITEM SPECIAL - MAINTAIN EXISTING LIGHTING

EXISTING ROADWAYS WHICH ARE TO REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION OF THIS PROJECT AND ARE LIGHTED SHALL HAVE THE LIGHTING MAINTAINED AS DESCRIBED HEREIN.

BEFORE ANY WORK IS STARTED IN THE IMMEDIATE VICINITY OF ANY EXISTING LIGHTING CIRCUITS, REPRESENTATIVES OF THE STATE, THE MAINTAINING AGENCY, AND THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE EXISTING ROADWAY LIGHTING CIRCUITS TO BE MAINTAINED. DURING THIS INSPECTION A WRITTEN RECORD OF THE CONDITION OF THE EXISTING LIGHTING SHALL BE MADE BY THE STATE'S REPRESENTATIVE. THIS WRITTEN REPORT SHALL NOTE INDIVIDUAL LUMINAIRES WHICH ARE NOT OPERATIONAL, AND INDIVIDUAL CIRCUITS WHICH ARE NOT IN WORKING ORDER. THE COMPLETED REPORT SHALL BE SIGNED BY THE REPRESENTATIVES OF THE STATE, THE MAINTAINING AGENCY, AND THE CONTRACTOR. IF, AS A RESULT OF THIS INSPECTION, IT IS DETERMINED THAT THE CONDITION OF THE EXISTING SYSTEM IS BELOW THAT REQUIRED FOR THE SAFETY OF THE TRAVELING PUBLIC, THEN THE MAINTAINING AGENCY SHALL MAKE REPAIRS NECESSARY TO RETURN THE SYSTEM TO AN ACCEPTABLE CONDITION. FOLLOWING THESE REPAIRS, THE SYSTEM SHALL AGAIN BE INSPECTED AND A REPORT MADE AND SIGNED AS OUTLINED HEREIN.

WHEN THE EXISTING SYSTEM IS IN AN ACCEPTABLE CONDITION, IT SHALL BE TURNED OVER TO THE CONTRACTOR WHO SHALL THEN BE REQUIRED TO MAINTAIN THE EXISTING LIGHTING TO THE CONDITION OUTLINED IN THIS REPORT WITH THE EXCEPTION OF KNOCKDOWNS DUE TO TRAFFIC ACCIDENTS. REPLACEMENTS OF KNOCKED DOWN UNITS SHALL BE DONE ONLY WHEN THE ENGINEER HAS DETERMINED THAT THE REPLACEMENT OF THE KNOCKED DOWN UNIT IS NECESSARY AND SHALL BE PAID SEPARATELY ON A PER UNIT BASIS. BETTERMENTS SHALL BE COVERED IN ITEMS OF WORK PERTAINING TO THE CONSTRUCTION OF PERMANENT IMPROVEMENTS.

THE MAINTAINING AGENCY SHALL GIVE THE CONTRACTOR ONE COPY OF THE EXISTING LIGHTING CIRCUITRY LAYOUT. WHEN THE CONTRACTOR HAS TAKEN OVER THE MAINTENANCE OF THE EXISTING SYSTEM, HE SHALL PROVIDE ALL REQUIRED LAYOUT AND LOCATING OF EXISTING LIGHTING CIRCUITS WITHIN THE PROJECT.

SHOULD THE CONTRACTOR DESIRE THE REMOVAL OF THE EXISTING LIGHTING BEFORE THE NEW LIGHTING IS OPERATIONAL, THE CONTRACTOR SHALL THEN BE RESPONSIBLE FOR ADEQUATE TEMPORARY LIGHTING OF THAT PORTION OF THE EXISTING ROADWAY AFFECTED BY THE REMOVAL OF THE EXISTING LIGHTING. TWO (2) WEEKS PRIOR TO INSTALLING SUCH LIGHTING, THE CONTRACTOR SHALL PREPARE AND SUBMIT FOUR (4) SETS OF THE TEMPORARY LIGHTING PLANS TO THE ENGINEER FOR REVIEW AND APPROVAL. THIS PLAN SHALL SHOW LOCATION OF POLES, LENGTH OF BRACKET ARMS, STYLE OF LUMINAIRES, MOUNTING HEIGHT, WIRING METHODS, AND OTHER PERTINENT INFORMATION. THE TEMPORARY LIGHTING SHALL PROVIDE AN AVERAGE INITIAL INTENSITY OF 1.2 FOOTCANDLES WITH AN AVERAGE TO MINIMUM UNIFORMITY RATIO NOT TO EXCEED 4:1. MOUNTING HEIGHT FOR TEMPORARY LUMINAIRES SHALL NOT BE LESS THAN 27 FEET AND MINIMUM OVERHEAD CONDUCTOR CLEARANCE SHALL BE 20 FEET. TEMPORARY OVERHEAD CONSTRUCTION SHALL NOT BE LESS THAN GRADE "A" FOR STRENGTH REQUIREMENTS AS DEFINED BY THE NATIONAL ELECTRIC SAFETY CODE. WOOD POLES WITH OVERHEAD WIRING MAY BE USED. HOWEVER, TEMPORARY LIGHTING SHALL MEET FEDERAL AND STATE SAFETY CRITERIA. IF BREAKAWAY POLES ARE USED TO MEET THIS CRITERIA, THEN UNDERGROUND WIRING WILL BE USED. RECONDITIONED OR USED MATERIALS MAY BE FURNISHED FOR TEMPORARY LIGHTING. ALL MATERIALS NECESSARY TO COMPLETE THE TEMPORARY LIGHTING SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. A SEPARATE POWER SERVICE WILL BE PROVIDED BY THE CONTRACTOR FOR THE TEMPORARY LIGHTING SYSTEM. THE TEMPORARY LIGHTING SHALL NOT BE SPLICED INTO EXISTING LIGHTING CIRCUITS. THE CONTRACTOR SHALL PAY ALL HOOK-UP FEES AND ELECTRICAL COSTS FOR THE TEMPORARY SYSTEM. THESE COSTS SHALL BE PAID FOR UNDER THE LUMP SUM ITEM SPECIAL MAINTAIN EXISTING LIGHTING. WHEN NO LONGER NEEDED THE TEMPORARY LIGHTING INSTALLATION SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.

THE LUMP SUM BID FOR ITEM SPECIAL - MAINTAIN EXISTING LIGHTING, SHALL INCLUDE PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS, INCIDENTALS, AND TEMPORARY POWER SERVICES NECESSARY TO MAINTAIN THE EXISTING LIGHTING AS SPECIFIED HEREIN.

REF NO.	LOCATION	STATION	625 CONNECTION, FUSED PULL APART EACH	625 LIGHT POLE, CONVENTIONAL, A8BB47.50 EACH	625 MEDIAN LIGHT POLE FOUNDATION, 8' DEEP EACH	625	625 NO. 10 AWG POLE AND BRACKET CABLE FT	625 LUMINAIRE, CONVENTIONAL, STYLE C, TYPE III, 400W HPS FIXTURE, 725.11 EACH	625 REMOVAL OF LUMINAIRE AND REERECTION EACH	625 BARRIER JUNCTION BOX EACH	625 LIGHT POLE REMOVED EACH	625 LIGHT POLE FOUNDATION REMOVED, AS PER PLAN EACH	625 DISCONNECT CIRCUIT, AS PER PLAN EACH	202 CONCRETE BARRIER REMOVED FT	622 CONCRETE BARRIER, TYPE A, REINFORCED, AS PER PLAN FT
	I-76	10+10.00	2	1			123		2		1				
	I-76	13+25.00	2	1			123		2		1				
	I-76	16+50.00	2	1			123		2		1				
	I-76	19+75.00	2	1			123		2		1				
	I-76	23+02.00	2	1			123		2		1				
	I-76	26+20.00	2	1			123		2		1				
	I-76	29+40.00	2	1			123		2		1				
	I-76	32+58.00	2	1	1		123		2	1	1	1	1	5	5
	I-76	35+60.00	2	1			123		2		1				
	I-76	38+70.00	2	1			123		2		1				
	I-76	41+90.00	2	1			123		2		1				
	I-76	45+15.00	2	1			123		2		1				
	I-76	48+35.00	2	1	1		123		2	1	1	1	1	18.5	18.5
	I-76	51+45.00	2	1			123		2		1				
	I-76	54+55.00	2	1			123		2		1				
	I-76	61+35.00	2	1			123		2		1				
	I-76	64+55.00	2	1			123		2		1				
	I-76	67+75.00	2	1			123		2		1				
	I-76	70+90.00	2	1	1		123	2		1		1	1	5	5
	I-76	74+10.00	2	1			123		2		1				
	I-76	77+10.00	2	1			123		2		1				
	I-76	80+20.00	2	1			123		2		1				
	I-76	83+30.00	2	1			123		2		1				
	I-76	86+30.00	2	1			123		2		1				
TOTALS CARRIED TO GENERAL SUMMAR			48	24	3	0	2952	2	46	3	23	3	3	29	29

THE QUANTITIES BELOW HAVE BEEN INCLUDED IN THE LIGHTING GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

SPECIAL, MAINTAIN EXISTING LIGHTING, LUMP

CALCULATED RMB CHECKED LAB

LIGHTING NOTES & SUBSUMMARY

SUM-76/77 277-VAR

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STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):

843 DATED 04/18/2003
847 DATED 12/31/2012
849 DATED 1/181/2013

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17TH EDITION, INCLUDING THE 2002 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXSITING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.

PROPOSED WORK

SUM-76-0657R (OVER SUM-271-0017)
- -SEAL EXISTING WEARING SURFACE ON THE BRIDGE DECK AND APPROACH SLABS WITH SRS CONCRETE TREATMENT
- -PATCH AND SEAL ALL UNSOUND AREAS OF SUBSTRUCTURE
- -CLEAN OUT SCUPPERS
- -REMOVE ALL SPALLED AREAS OF THE BOTTOM DECK FLOOR AND SEAL AREAS WITH EPOXY-URETHANE
- -CLEAN EXISTING STRUCTURAL STEEL, BEAMS SEATS AND PIER CAPS
- -SEAL ALL EXPOSED CONCRETE SURFACES OF THE PARAPETS WITH EPOXY-URETHANE
- -CLEARING AND GRUBBING 15' AROUND THE STRUCTURE FOR SEALING OPERATIONS
- -NEW STRUCTURE IDENTIFICTAION SIGNS

SUM-76-0672 (OVER CSX TRANSPORTATION)
- -SEAL EXISTING WEARING SURFACE ON THE BRIDGE DECK WITH SRS CONCRETE TREATMENT
- -CLEAN OUT SCUPPERS
- -CLEAN EXISTING STRUCTURAL STEEL, BEAM SEATS AND PIER CAPS
- -CLEARING AND GRUBBING 15' AROUND THE STRUCTURE TO REMOVE VEGETATION
- -NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-0684 (OVER WILBETH ROAD)
- -SEAL EXISTING WEARING SURFACE ON THE BRIDGE DECK WITH SRS CONCRETE TREATMENT
- -CLEAN OUT SCUPPERS
- -CLEAN EXISTING STRUCTURAL STEEL, BEAM SEATS AND PIER CAPS
- -REPAIR EXISTING SLOPE PROTECTION AT FORWARD ABUTMENT
- -CLEARING AND GRUBBING 15' AROUND THE STRUCTURE TO REMOVE VEGETATION
- -NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-0700 (OVER KENMORE BLVD)
- -SEAL EXISTING WEARING SURFACE WITH SRS CONCRETE TREATMENT
- -REPLACE EXISTING ELASTOMERIC STRIP SEAL WITH NEW STRIP SEAL
- -REPAIR FASCIA BEAM ON EAST SIDE OF STRUCTURE BY GRINDING BOTTOM FLANGE AND REPAIR PAINT
- -CLEAN EXISTING STRUCTURAL STEEL, BEAM SEATS AND PIER CAPS
- -REPAIR CROSSFRAME AT REAR ABUTMENT THAT HAS BROKEN WELD
- -REFURBISH BEARING DEVICES AT SOUTHEAST CORNER OF REAR ABUTMENT
- -CLEARING AND GRUBBING 15' AROUND THE STRUCTURE TO REMOVE VEGETATION
- -NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-0736 (OVER BATTLES AVE)
- -REMOVE EXISTING ASPHALT CONCRETE OVERLAY ON THE DECK AND APPROACH SLABS
- -REMOVE AND REPLACE THE EXISTING CONCRETE OVERLAY ON THE DECK AND TOP OF BACKWALLS
- -REPLACE ASPHALT CONCRETE OVERLAY ON THE APPROACH SLABS
- -REMOVE EXISTING CATHODIC PROTECTION SYSTEM AND THE POWER SERVICE
- -REPLACE EXISTING ELASTOMERIC STRIP SEAL WITH NEW STRIP SEAL
- -PATCH ALL UNSOUND AREAS OF PARAPETS AND SUBSTRUCTURE
- -REPAIR EXISTING CONCRETE SLOPE PROTECTION AT FORWARD AND REAR OF STRUCTURE
- -CLEAN OUT AND LENGTHEN SCUPPERS
- -CLEAN EXISTING STRUCTURAL STEEL, BEAM SEATS AND PIER CAPS
- -SEAL ALL EXPOSED CONCRETE SURFACES OF THE PARAPETS, ABUTMENTS, BACK WALLS, WING WALLS, AND PIERS WITH EPOXY-URETHANE
- -CLEARING AND GRUBBING 15' AROUND THE STRUCTURE FOR SEALING OPERATIONS
- -NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-0758 (UNDER PED BRIDGE AT CHESTER)
- -NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-0772 (UNDER EAST AVE)
- -PATCH ALL UNSOUND AREAS OF THE CONCRETE DECK AND THE APPROACH SLABS
- -SEAL EXISTING WEARING SURFACE ON THE BRIDGE DECK AND APPROACH SLABS WITH SRS CONCRETE TREATMENT
- -PATCH ALL UNSOUND AREAS OF SUBSTRUCTURE
- -CLEAN EXISTING STRUCTURAL STEEL, BEAM SEATS AND PIER CAPS
- -SEAL ALL EXPOSED CONCRETE SURFACES OF ABUTMENTS, WING WALLS, PARAPETS AND PIERS WITH EPOXY-URETHANE
- -CLEARING AND GRUBBING 15' AROUND THE STRUCTURE FOR SEALING OPERATIONS
- -NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-0824L (OVER MORSE STREET)
- -REMOVE EXISTING ASPHALT CONCRETE OVERLAY ON THE DECK AND APPROACH SLABS
- -REMOVE AND REPLACE THE EXISTING CONCRETE OVERLAY ON THE DECK AND TOP OF BACKWALLS
- -REPLACE ASPHALT CONCRETE OVERLAY ON THE APPROACH SLABS
- -REMOVE EXISTING CATHODIC PROTECTION SYSTEM AND THE POWER SERVICE
- -REPLACE EXISTING ELASTOMERIC STRIP SEAL WITH NEW STRIP SEAL
- -CLEANOUT AND LENGTHEN SCUPPERS; REPLACE COLLECTOR PIPE
- -CLEAN EXISTING STRUCTURAL STEEL, BEAM SEATS AND PIER CAPS
- -REPAIR EXISTING CONCRETE SLOPE PROTECTION AT FORWARD AND REAR OF STRUCTURE
- -PATCH ALL UNSOUND AREAS OF SUBSTRUCTURE INCLUDING PARAPETS
- -REMOVE ALL SPALLED AREAS OF BOTTOM OF DECK FLOOR AND SEAL WITH EPOXY-URETHANE
- -SEAL ALL EXPOSED CONCRETE SURFACES OF ABUTMENTS, PARAPETS, WING WALLS, AND PIERS WITH EPOXY-URETHANE.
- -CLEARING AND GRUBBING 15' AROUND THE STRUCTURE FOR SEALING OPERATIONS
- -NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-0825UR (RAMP U OVER MORSE STREET)
- -REMOVE EXISTING ASPHALT CONCRETE OVERLAY ON THE DECK AND APPROACH SLABS
- -REMOVE AND REPLACE THE EXISTING CONCRETE OVERLAY ON THE DECK AND APPROACH SLABS
- -REMOVE EXISTING CATHODIC PROTECTION SYSTEM AND THE POWER SERVICE
- -PATCH ALL UNSOUND AREAS OF SUBSTRUCTURE INCLUDING PARAPETS
- -REMOVE ALL SPALLED AREAS OF BOTTOM OF DECK FLOOR AND SEAL WITH EPOXY-URETHANE
- -REPAIR EXISTING CONCRETE SLOPE PROTECTION
- -SEAL ALL EXPOSED CONCRETE SURFACES OF ABUTMENTS, SIDEWALK, WING WALLS, AND PIERS WITH EPOXY-URETHANE.
- -CLEARING AND GRUBBING 15' AROUND THE STRUCTURE FOR SEALING OPERATIONS
- -NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-0832L (IR 76 WB OVER IR 77)
- -REMOVE EXISTING ASPHALT CONCRETE OVERLAY ON THE DECK AND APPROACH SLABS
- -REMOVE AND REPLACE THE EXSITING CONCRETE OVERLAY ON THE DECK AND TOP OF BACK WALLS
- -REPLACE ASPHALT CONCRETE OVERLAY ON THE APPROACH SLABS
- -REMOVE EXISTING CATHODIC PROTECTION SYSTEM AND THE POWER SERVICE
- -REPLACE EXISTING ELASTOMERIC STRIP SEAL WITH NEW STRIP SEAL
- -PATCH ALL UNSOUND AREAS OF SUBSTRUCTURE INCLUDING PARAPETS
- -REMOVE ALL SPALLED AREAS OF THE BOTTOM OF DECK FLOOR AND SEAL AREAS WITH EPXOY-URETHANE
- -CLEAN OUT AND LENGTHEN SCUPPERS
- -CLEAN EXISTING STRUCTURAL STEEL, BEAM SEATS AND PIER CAPS
- -SEAL ALL EXPOSED CONCRETE SURFACES OF ABUTMENTS, PARAPETS, MEDIAN, WING WALLS AND PIERS WITH EPOXY-URETHANE.
- -CLEARING AND GRUBBING 15' AROUND THE STRUCTURE FOR SEALING OPERATIONS
- -NEW STRUCTURE IDENTIFICATION SIGNS

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

CONCRETE SLOPE PROTECTION REPAIR

THIS WORK WILL CONSIST OF REMOVING AND REPLACING SLABS OF THE CONCRETE SLOPE PROTECTION UNDER STRUCTURES SUM-76-0684, SUM-76-0736, SUM-76-0824L AND SUM-76-0825UR WITH ITEM 613, LOW STRENGTH MORTAR BACKFILL AND ITEM 601, CONCRETE SLOPE PROTECTION.

LOW STRENGTH MORTAR BACKFILL WILL BE USED TO FILL ALL EROSION UNDER THE OLD CONCRETE SLOPE PROTECTION AND THEN PLACE NEW CONCRETE SLOPE PROTECTION SLABS PER CMS 601.07 AS DIRECTED BY THE PROJECT ENGINEER.

CONCRETE SLOPE PROTECTION REPLACEMENT WILL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM 601, CONCRETE SLOPE PROTECTION AND ITEM 613, LOW STRENGTH MORTAR BACKFILL. REMOVAL OF EXISTING CONCRETE SLOPE PROTECTION WILL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM 202, CONCRETE SLOPE PROTECTION REMOVED. THE PRICE FOR EACH ITEM WILL INCLUDE THE COST OF LABOR, EQUIPMENT, AND ALL INCIDENTALS REQUIRED TO COMPLETE THIS WORK.

ITEM 849 - REPAIRING DAMAGED MEMBERS BY GRINDING

THIS WORK CONSISTS OF GRINDING DAMAGED BOTTOM FLANGE ON STRUCTURE SUM-76-0700, AS DESIGNATED BY THE PROJECT ENGINEER. PER SUPPLEMENTAL SPEC 849.

GRINDING WILL BE PAID FOR AT THE UNIT BID PRICE FOR ITEM 849 - REPAIRING DAMAGED MEMBERS BY GRINDING. ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK WILL BE INCLUDED IN THE UNIT PRICE FOR THE PERTINENT BID ITEMS. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

849 - DAMAGE ASSESSMENT, LUMP
849 - SURFACE PREPARATION, LUMP
849 - REPAIRING DAMAGED MEMBERS BY GRINDING, 1 HOUR

GRINDING LOCATION: BOTTOM FLANGE OF FASCIA BEAM 1 (EAST SIDE OF STRUCTURE SUM-76-0700), LOCATED OVER WB DRIVING LANE OF KENMORE BLVD.

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE	STRUCTURE FILE NUMBER
NRC	NRC	LMP	10/28/14	
CHECKED	REVISED			

STRUCTURE GENERAL NOTES
SUM-76-0657R, SUM76-0672, SUM-76-0684, SUM-76-0700, SUM-76-0736
SUM-76-0758, SUM-76-0772, SUM-76-0824L, SUM-76-0825UR, & SUM-76-0832L

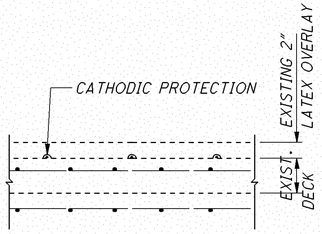
SUM-76/77/277-VAR
PID No. 84655

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ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

THIS WORK CONSISTS OF REMOVING THE EXISTING CATHODIC PROTECTION UNDER THE EXISTING LATEX MODIFIED CONCRETE OVERLAY AS SHOWN BELOW. ALL MATERIAL REMOVED WILL BECOME THE PROPERTY OF THE CONTRACTOR AND WILL BE DISPOSED OF OFF THE PROJECT SITE.

THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202, PORTION OF STRUCTURE REMOVED, AS PER PLAN.



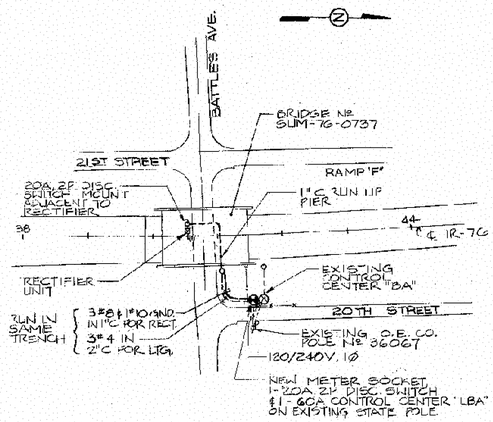
ITEM 202 REMOVAL, MISC.; POWER SERVICE FOR CATHODIC PROTECTION

THIS ITEM OF WORK SHALL CONSIST OF REMOVING A 120/240V POWER SERVICE FOR CATHODIC PROTECTION ATTACHED TO A SERVICE POLE LOCATED ON 20TH STREET FOR STRUCTURE SUM-76-0736 AND ON MORSE RD. FOR STRUCTURES SUM-76-0824, SUM-76-0825UR AND SUM-76-0832L (SEE BELOW). REMOVAL SHALL INCLUDE THE POLE, THE RECTIFIER UNIT THAT IS ATTACHED TO THE STRUCTURE ABUTMENT OR PIER, PULLBOX, DISCONNECT SWITCH, ASSOCIATED CONDUITS, WIRING AND ALL THE MATERIAL AND HARDWARE NORMALLY COMPRISING A POWER SERVICE. CUT THE CABLE ENCLOSED IN CONDUIT WHICH RUNS INTO THE GROUND AT THE LOWER END OF THE BEND TO HORIZONTAL APPROXIMATELY 2 FEET BELOW GRADE. ALL RESULTANT OPENINGS SHALL BE BACKFILLED TO GRADE WITH SUITABLE COMPACTED SOIL AND RESTORED TO MATCH THE SURROUNDING AREA.

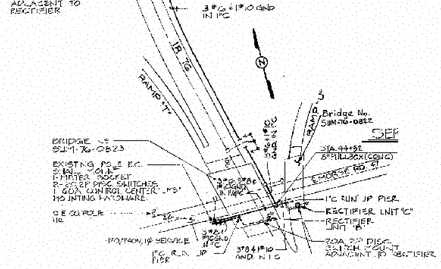
ALL MATERIAL REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE PROJECT SITE. THE CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY TO INSURE THAT THE COMPANY DISCONNECTS THE SERVICE AND THAT ITEMS WHICH BELONG TO THE POWER COMPANY THAT ARE REMOVED, SUCH AS THE METER BASE, ARE RETURNED TO THE POWER COMPANY. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ALL CHARGES MADE BY THE POWER COMPANY FOR REMOVAL OR RE-ARRANGEMENT OF POWER COMPANY EQUIPMENT, ELECTRICITY, AND ELECTRICAL SERVICE.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE FOR ITEM 202, REMOVAL, MISC.; POWER SERVICE FOR CATHODIC PROTECTION INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

SUM-76-0736



SUM-76-0824L, SUM-76-0825UR & SUM-76-0832L



ITEM 513 - STRUCTURAL STEEL MISC., REPAIR OF BROKEN SECONDARY MEMBER WELDS, FILLET WELDING:

INSPECT ALL END CROSSFRAMES FOR BROKEN WELDS AND REPAIR AREAS AS DIRECTED BY THE ENGINEER. PREPARE THE DAMAGED MATERIAL FOR WELDING AND PERFORM 5/16 INCH FILLET WELDS ACCORDING TO ITEM 513 USING APPROVED ELECTRODES, PROCEDURES, AND WELDERS. MAGNETIC PARTICLE INSPECT ALL FILLET WELDS ACCORDING TO C&MS 513.25B. THE ENGINEER MAY OBTAIN TECHNICAL ASSISTANCE FROM THE OFFICE OF MATERIALS MANAGEMENT. THE DEPARTMENT WILL INCLUDE ALL MATERIALS, TOOLS, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK FOR PAYMENT WITH ITEM 513 - STRUCTURAL STEEL MISC., REPAIR OF BROKEN SECONDARY MEMBER WELDS: FILLET WELDING. FOOT.

SUM-76-0700:
513, STRUCTURAL STEEL MISC., REPAIR OF BROKEN SECONDARY MEMEBER WELDS, FILLET WELDING: 1 FT.

ITEM 514 - FIELD PAINTING, MISC.; REPAIR PAINTING

THIS WORK CONSISTS OF PAINTING AREAS OF STRUCTURAL STEEL ON STRUCTURE SUM-76-0700 THAT UNDERWENT GRINDING, AS DESIGNATED BY THE PROJECT ENGINEER . THE CMS 514.22 PROCESS WILL BE USED TO REPAIR THESE AREAS.

THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH ALL NECESSARY EQUIPMENT TO INSPECT THIS WORK.

REPAIR PAINTING WILL BE PAID FOR AT THE UNIT BID PRICE FOR ITEM 514 - FIELD PAINTING, MISC; REPAIR PAINTING. THIS PRICE WILL INCLUDE THE COST FOR LABOR, EQUIPMENT, AND ALL INCIDENTIALS REQUIRED TO COMPLETE THIS WORK. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

514 - FIELD PAINTING, MISC.; REPAIR PAINTING, 10 SQ FT

TO BE PAINTED:
- BEAM 1, BOTTOM FLANGE (AFTER GRINDING)

MATCH PAINT COLOR WITH COLOR WHEEL
(FEDERAL PAINT COLOR: 15526, LIGHT BLUE)

SPECIAL - STRUCTURE MISC.: STRUCTURE CLEANING

THIS WORK WILL CONSIST OF CLEANING THE BEAMS/GIRDERS AND BEARINGS OF STRUCTURE(S) SUM-76-0657R, SUM-76-0672, SUM-76-0684, SUM-76-0700, SUM-76-0736, SUM-76-0772, SUM-76-0824L, AND SUM-76-0832L AS PER CMS 514.14. ALSO, ALL DIRT AND DEBRIS FROM THE ABUTMENTS, BEAM SEATS, AND PIER CAPS WILL BE REMOVED AND WASHED WITH POTABLE WATER. THIS WORK WILL BE COMPLETED PRIOR TO THE REPAIR PAINTING OPERATIONS.

STRUCTURE CLEANING WILL BE PAID FOR AT THE LUMP SUM BID FOR SPECIAL, STRUCTURE MISC.: STRUCTURE CLEANING. THIS PRICE WILL INCLUDE THE COST FOR LABOR, EQUIPMENT, AND ALL INCIDENTALS REQUIRED TO COMPLETE THIS WORK.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

THIS WORK CONSISTS OF RAISING OR RE-POSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, IMMEDIATELY CEASE THE JACKING OPERATION AND INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. ANALYZE THE DAMAGE AND SUB- MIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. EPOXY INJECT ALL BEAMS THAT SEPARATE FROM THE DECK FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH CMS 512.07. THE DEPARTMENT WILL NOT PAY FOR THE COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CON- TACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS.

THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

ITEM 516 - REFURBISHING BEARING DEVICES, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS AS WELL AS THEIR CLEANING AND PAINTING. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), PAINTING ACCORDING TO ITEM 514, REPLACEMENT OF ANY DAMAGED SHEET LEAD WITH PREFORMED BEARING PADS (711.21), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60 DEGREES F, LUBRICATING SLIDING SURFACES, AND REASSEMBLY OF THE BEARINGS. ASSURE ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". AT NO ADDITIONAL COST TO THE STATE, THE CONTRACTOR MAY INSTALL NEW BEARINGS OF THE SAME TYPE AS THE EXISTING IN PLACE OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL OF THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 - REFURBISH BEARING DEVICES, AS PER PLAN.

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

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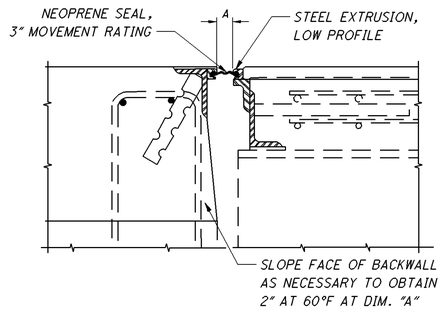
STRUCTURE GENERAL NOTES
SUM-76-0657R, SUM-76-0672, SUM-76-0684, SUM-76-0700, SUM-76-0736
SUM-76-0758, SUM-76-0772, SUM-76-0824L, SUM-76-0825UR, & SUM-76-0832L

SUM-76/77/277-VAR
PID No. 84655

ITEM 516 - ELASTOMERIC STRIP SEAL WITH STEEL EXTRUSION, AS PER PLAN

THIS ITEM WILL INCLUDE THE REMOVAL AND REPLACEMENT OF THE EXISTING STRIP SEAL GLANDS FROM EDGE TO EDGE OF DECK. UPON REMOVAL OF THE SEAL, THE CONTRACTOR WILL ATTEMPT TO MATCH THE REPLACEMENT SEAL AS CLOSELY AS POSSIBLE WITH THE EXISTING SEAL SO AS TO PROVIDE A SNUG, WATERTIGHT SEAL. THE EXISTING STRIP SEAL WILL BE FIELD MEASURE PRIOR TO ORDERING MATERIAL. THE STRIP SEAL AND INSTALLATION WILL MEET THE REQUIREMENTS OF STANDARD DRAWING EXJ-4-87.

THIS WORK WILL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM 516, ELASTOMERIC STRIP SEAL WITH STEEL EXTRUSION, AS PER PLAN. THIS PRICE WILL INCLUDE THE REMOVAL OF THE EXISTING STRIP SEAL, LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS REQUIRED TO REPLACE THE STRIP SEAL.



REQUIRED JOINT OPENING (DIM. "A") - 3" STRIP SEAL

BRIDGE NO.	EXP. JT. LOCATION	TYPE \ TEMP	30°	40°	50°	60°	70°	80°	90°
SUM-76-0700	FWD & REAR	A	2"	1.83"	1.66"	1.49"	1.33"	1.17"	1.00"
SUM-76-0736	FWD ABUT.	A	1.79"	1.76"	1.74"	1.71"	1.69"	1.66"	1.63"
	REAR ABUT.	A	1.86"	1.79"	1.71"	1.66"	1.58"	1.50"	1.48"
SUM-76-0824L	FWD ABUT.	A	1.80"	1.75"	1.69"	1.65"	1.60"	1.58"	1.55"
	REAR ABUT.	A	1.86"	1.79"	1.72"	1.65"	1.58"	1.49"	1.40"
SUM-76-0832L	FWD ABUT.	A	1.88"	1.80"	1.72"	1.62"	1.52"	1.48"	1.38"
	REAR ABUT.	A	1.81"	1.76"	1.70"	1.65"	1.59"	1.51"	1.45"

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

SPECIAL - STRUCTURE MISC.: CONCRETE SPALL REMOVAL

THIS WORK WILL CONSIST OF REMOVING ALL VISIBLY SPALLED AREAS OF THE BOTTOM DECK FLOOR OF STRUCTURES SUM-76-0657R, SUM-76-0700, SUM-76-0824L, SUM-76-0825UR, AND SUM-76-0832L WITHOUT SOUNDING. AFTER SPALLED CONCRETE AREAS HAS BEEN REMOVED. REMOVAL AREAS WILL BE SEALED WITH ITEM 512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

CONCRETE SPALL REMOVAL WILL BE PAID FOR AT THE UNIT BID PRICE FOR SPECIAL - STRUCTURE MISC.: CONCRETE SPALL REMOVAL. THIS PRICE WILL INCLUDE THE COST OF LABOR, EQUIPMENT, AND ALL INCIDENTALS REQUIRED TO COMPLETE THIS WORK.

SUM-76-0657R:
SPEC, STRUCTURE MISC.: CONCRETE SPALL REMOVAL, 50 SQ YD
512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), 50 SQ YD
SUM-76-0700:

SPEC, STRUCTURE MISC.: CONCRETE SPALL REMOVAL, 50 SQ YD
512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), 50 SQ YD
SUM-76-0824L:

SPEC, STRUCTURE MISC.: CONCRETE SPALL REMOVAL, 50 SQ YD
512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), 50 SQ YD

SUM-76-0825UR:
SPEC, STRUCTURE MISC.: CONCRETE SPALL REMOVAL, 50 SQ YD
512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), 50 SQ YD
SUM-76-0832L:

SPEC, STRUCTURE MISC.: CONCRETE SPALL REMOVAL, 50 SQ YD
512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), 50 SQ YD

CORRECTING BRIDGE IDENTIFICATION SIGN NUMBERS:

SOME OF THE EXISTING BRIDGE NUMBER SIGNS HAVE INCORRECT BRIDGE NUMBERS ON THEM. THE FOLLOWING BRIDGE NUMBERS ARE THE CORRECT ONES AND WILL BE USED ON THE NEW BRIDGE IDENTIFICATIONS SIGNS.

STRUCTURE SUM-76-0657R (SFN:7705611) THE EXISTING SIGN SHOWS 06.57R. THE CORRECT BRIDGE IDENTIFICATION NUMBER IS 0657R.

STRUCTURE SUM-76-0736 (SFN:7705735) THE EXISTING SIGN SHOWS 07.35. THE CORRECT BRIDGE IDENTIFICATION NUMBER IS 0736.

STRUCTURE SUM-76-0772 (SFN:7705824) THE EXISTING SIGN SHOWS 0773. THE CORRECT BRIDGE IDENTIFICATION NUMBER IS 0772.

STRUCTURE SUM-76-0824L (SFN:7702795) THE EXISTING SIGN SHOWS 08.22L. THE CORRECT BRIDGE IDENTIFICATION NUMBER IS 0824L.

STRUCTURE SUM-76-0825UR (SFN:7705883) THE EXISTING SIGN SHOWS 08.22. THE CORRECT BRIDGE IDENTIFICATION NUMBER IS 0825UR.

STRUCTURE SUM-76-0832L (SFN:7703570) THE EXISTING SIGN SHOWS 08.32L. THE CORRECT BRIDGE IDENTIFICATION NUMBER IS 0832L.

STRUCTURE IDENTIFICATION SIGNS

STRUCTURE IDENTIFICATION SIGNS (I-H25a) WILL BE PLACED ON EACH APPROACH OFF THE RIGHT SHOULDER, FACING TRAFFIC, AND BEHIND THE GUARDRAIL IF APPLICABLE. A QUANTITY OF ONE SIGN PER APPROACH WILL BE INSTALLED. THE SIGNS WILL HAVE A NON-REFLECTIVE WHITE SHEETING BACKGROUND.

THE SIGNS WILL BE MOUNTED ON NEW NO. 2 POSTS AND WILL BE INSTALLED AS PER STANDARD CONSTRUCTION DRAWING TC-41.20, MOST CURRENT REVISION. EACH POST WILL BE 7.5' IN LENGTH.

INSTALL SIGNS FOR THE FOLLOWING STRUCTURES:
SUM-76-0657R (2 APPROACHES), SUM-76-0672 (2 APPROACHES),
SUM-76-0684 (2 APPROACHES), SUM-76-0700 (2 APPROACHES),
SUM-76-0736 (2 APPROACHES), SUM-76-0758 (2 APPROACHES),
SUM-76-0772 (2 APPROACHES), SUM-76-0824L (2 APPROACHES),
SUM-76-0825UR (2 APPRAOCHES), SUM-76-0832L (2 APPROACHES)

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED FOR EACH APPROACH:
- ITEM 630 - SIGN, FLAT SHEET, 730.20, 1 SQ FT
- ITEM 630 - GROUND MOUNTED SUPPORT, NO. 2 POST, 7.5 FT
- ITEM 630 - REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL, 1 EACH
- ITEM 630 - REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL, 1 EACH

ITEM 847 - MICRO-SILICA MODIFIED CONCRETE OVERLAY, AS PER PLAN
ITEM 847 - MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN
ITEM 847 - FULL DEPTH REPAIR, AS PER PLAN
ITEM 847 - WEARING COURSE REMOVED, ASPHALT, AS PER PLAN
ITEM 847 - EXISTING CONCRETE OVERLAY REMOVED, AS PER PLAN

THESE ITEMS SHALL BE PERFORMED PER SUPPLEMENTAL SPECIFICATION BRIDGE DECK REPAIR AND OVERLAY WITH CONCRETE SCARIFICATION AND CHIPPING WITH THE FOLLOWING REVISIONS:

THE THICKNESS OF THE CONCRETE OVERLAY REMOVED, ASPHALT WEARING COURSE REMOVED, PROPOSED OVERLAY, AND THE DEPTH OF REMOVAL BY SCARIFICATION SHALL BE AS SPECIFIED IN THE PLANS.

CONSTRUCTION JOINTS WILL NOT BE PERMITTED IN THE WHEEL LINE.

(SEE 847.11) THE COMPONENTS OF THE MICRO-SILICA MODIFIED CONCRETE SHALL BE PROPORTIONED AS FOLLOWS.

CONCRETE TABLE
QUANTITIES PER CUBIC YARD
AGGREGATES (SSD)

AGGREGATE TYPE	FINE AGRRE. (LB)	* # 8 COARSE AGGRE. (LB)	AGGRE. TOTAL (LB)	CEMENT CONTENT (LB)	MICRO-SILICA (LB)	WATER TO CEMENTITIOUS RATIO	AIR CONTENT ± 2%	**FIBER (1 1/4" POLYPROPYLENE) (LB)
GRAVEL	1410	1430	2840	600	50	0.4	8	1
LIMESTONE	1410	1450	2860	600	50	0.4	8	1
SLAG	1300	1350	2650	600	50	0.4	8	1

* ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127

** FIBER MESH SHALL BE 100% VIRGIN POLYPROPYLENE IN A FIBRILLATED-NETWORK FORM AND SHALL BE 1¼" IN LENGTH.

THE WEIGHTS SPECIFIED IN THE CONCRETE TABLE WERE CALCULATED FOR MATERIALS OF THE FOLLOWING BULK SPECIFIC GRAVITIES (SSD): NATURAL SAND AND GRAVEL 2.62, LIMESTONE SAND 2.68, LIMESTONE 2.65, SLAG 2.30, MICRO-SILICA SOLIDS 2.20, AND PORTLAND CEMENT 3.15. FOR AGGREGATES OF SPECIFIC GRAVITIES DIFFERING MORE THAN PLUS OR MINUS 0.02 FROM THESE, THE WEIGHTS IN THE TABLE WILL BE CORRECTED. FIBER MESH WEIGHTS NOT INCLUDED IN MIX DESIGN.

ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED BY ASTM C127

ALL OTHER REQUIREMENTS OF THE SUPPLEMENTAL SPECIFICATION SHALL REMAIN IN EFFECT.

(SEE 847.18) THE FINAL DECK SOUNDING MAY TAKE PLACE WITHIN 24 HOURS OF A RAIN, AND THE DECK DOES NOT HAVE TO BE COMPLETELY DRY.

(SEE 847.19) FULL DEPTH REPAIR IS NOT REQUIRED IF LESS THAN ONE HALF OF THE DECK ORIGINAL CONCRETE THICKNESS IS SOUND.

(SEE 847.25) THE WET CURE TIME IS REDUCED FROM 72 HOURS TO 24 HOURS OR UNTIL A BEAM BREAK OF 600 PSI IS ACHIEVED, WHICHEVER IS GREATER. AFTER THE 24 HOUR WET CURE, THE FINISHED OVERLAY SURFACE SHALL BE CURED BY SPRAYING A UNIFORM APPLICATION OF CURING MATERIAL OF 705.07, TYPE 1 OR ID, AS PER CMS 511.14 METHOD (B) MEMBRANE CURING. IF THE CURING COMPOUND CAN NOT BE PLACED WITHIN THE SAME SHORT TERM CLOSURE PERIOD AS THE OVERLAY, THE CONTRACTOR MAY ALLOW TRAFFIC ONTO THE OVERLAY, AND SHALL, AT THE NEXT AVAILABLE SHORT TERM CLOSURE PERIOD, APPLY THE MEMBRANE CURING COMPOUND.

(SEE 847.25) TRAFFIC WILL NOT BE PERMITTED ON THE FINISHED OVERLAY SURFACE UNTIL AFTER THE COMPLETION OF THE 24 HOUR WET CURE, AND AFTER TWO TEST BEAMS HAVE ATTAINED AN AVERAGE MODULUS OF RUPTURE OF 600 PST (4.2 Mpa).

(SEE 847.26) THE OVERLAY SURFACE EVAPORATION RATE REQUIREMENTS ARE IN EFFECT FROM 9:30 AM TO 11:00 PM. THEY ARE NOT IN EFFECT FROM 11:00 PM TO 11:00 AM.

(SEE 847.27) FOR EACH PHASE, THE CONTRACTOR SHALL PROVIDE ENOUGH MATERIAL FOR TWO BEAM BREAKS EACH AT 12 HOURS, 24 HOURS, 36 HOURS, AND 48 HOURS. THE DEPARTMENT WILL PERFORM THE BEAM BREAK TESTS AND DOCUMENT THE TIME OF THE POUR, THE TIME OF THE BEAM BREAK TESTS, AND THE MODULUS OF RUPTURE FOR EACH BEAM UNTIL THE MODULUS OF RUPTURE OF THE TWO TESTS IS NOT LESS THAN 650 PSI (4.5 MPa). TRAFFIC IS ALLOWED ON THE OVERLAY AT 600 PSI (4.5 Mpa).

ALL OTHER REQUIREMENTS OF THE SUPPLEMENTAL SPECIFICATION SHALL REMAIN IN EFFECT.

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

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STRUCTURE GENERAL NOTES
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SUM-76-0758, SUM-76-0772, SUM-76-0824L, SUM-76-0825UR, & SUM-76-0832L

SUM-76/77/277-VAR
PID No. 84655

CALC:	NRC	DATE:	8/26/2014
CHECKED:	LMP	DATE:	10/28/2014

ESTIMATED QUANTITIES

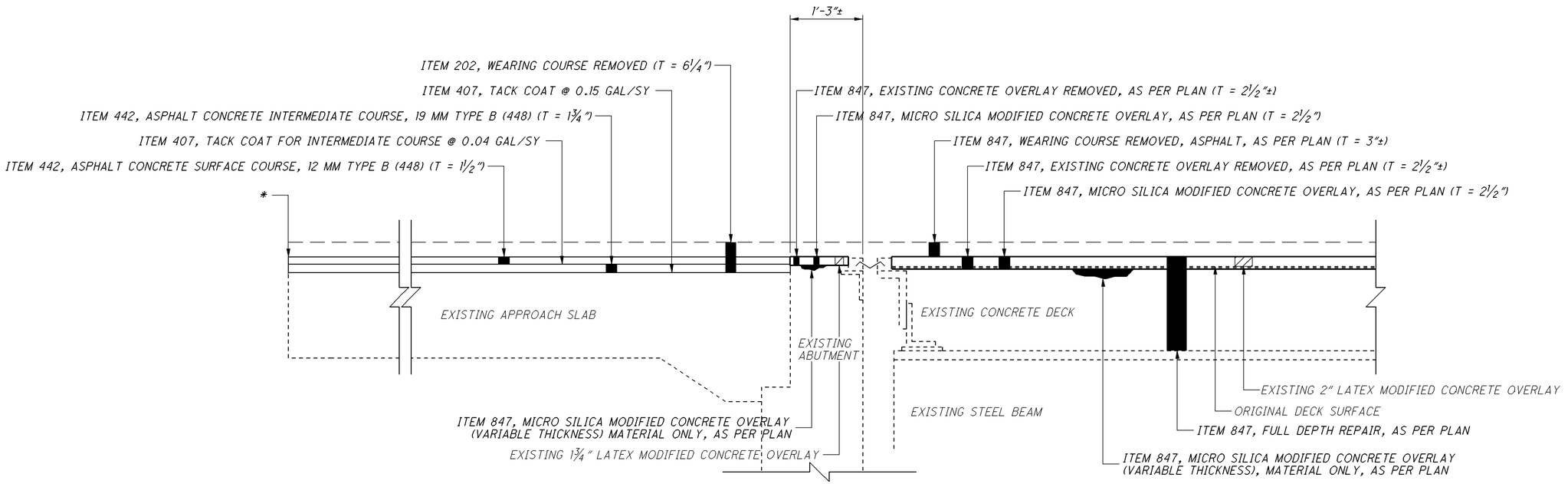
BRIDGE NO. / STRUCTURE FILE NO.										ITEM	EXTENSION	UNIT	DESCRIPTION	SEE SHEET
SUM-76-0657R 7705611 02 / IMS / BR	SUM-76-0672 7705646 02 / IMS / BR	SUM-76-0684 7705670 02 / IMS / BR	SUM-76-0700 7705700 02 / IMS / BR	SUM-76-0736 7705735 02 / IMS / BR	SUM-76-0758 7705794 02 / IMS / BR	SUM-76-0772 7705824 02 / IMS / BR	SUM-76-0824L 7705859 02 / IMS / BR	SUM-76-0825UR 7705883 02 / IMS / BR	SUM-76-0832L 7703570 02 / IMS / BR					
LUMP	LUMP	LUMP	LUMP	LUMP		LUMP	LUMP	LUMP	LUMP	201	11000		CLEARING AND GRUBBING	
				LUMP			LUMP	LUMP	LUMP	202	11201		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	2/9
				298			355		230	202	23500	SY	WEARING COURSE REMOVED	
		14		140			84	20		202	32800	SY	CONCRETE SLOPE PROTECTION REMOVED	
				LUMP			LUMP	LUMP	LUMP	202	98000		REMOVAL MISC.: POWER SERVICE FOR CATHODIC PROTECTION	2/9
				45			54		35	407	10000	GAL	TACK COAT	
				12			15		10	407	14000	GAL	TACK COAT FOR INTERMEDIATE COURSE	
				13			15		10	442	20051	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE B (448), AS PER PLAN	
				15			18		12	442	20250	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE B (448)	
1440				961		1542	1154	606	1424	512	10100	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
1794	2785	2236	1942			1291				512	10400	SY	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
			1							513	95000	FT	STRUCTURAL STEEL, MISC.: REPAIR OF BROKEN SECONDARY MEMBER WELDS, FILLET WELDING	2/9
			10							514	27700	SF	FIELD PAINTING, MISC.: REPAIR PAINTING	2/9
			203	175			203		156	516	01301	FT	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN	3/9
			3							516	46801	EACH	REFURBISH AND RESET BEARING, AS PER PLAN	2/9
			LUMP							516	47001		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	2/9
10	15	15		9			11		11	518	12500	EACH	SCUPPER, MISC.:CLEANOUT	7/9
				9			11		11	518	12901	EACH	SCUPPER, LENGTHENING, AS PER PLAN	7/9
							25			518	62100	FT	STRUCTURE DRAINAGE, MISC.: 8" COLLECTOR PIPE	
200				150		200	150	100	300	519	11101	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	3/9
						16				SPEC	51912304	SY	PATCHING CONCRETE BRIDGE DECK - TYPE C	
LUMP	LUMP	LUMP	LUMP	LUMP		LUMP	LUMP		LUMP	SPEC	53000200		STRUCTURE, MISC.: STRUCTURE CLEANING	2/9
50							50	50	50	SPEC	53000800	SY	STRUCTURE, MISC.: CONCRETE SPALL REMOVAL	3/9
		14		140			84	20		601	21000	SY	CONCRETE SLOPE PROTECTION	
		1		2			2	1		613	41200	CY	LOW STRENGTH MORTAR BACKFILL	
15	15	15	15	15	15	15	15	7.5	15	630	02100	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
2	2	2	2	2	2	2	2	1	2	630	80100	SF	SIGN, FLAT SHEET, 730.20	
2	1	2	2	2		1	1	1	1	630	84900	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
2	1	2	2	2		1	1	1	1	630	86002	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
150				75		150	75	50	200	843	50000	SF	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR	
				1184			1471	972	1508	847	10001	SY	MICRO SILICA MODIFIED CONCRETE OVERLAY, AS PER PLAN (T = 2 1/2" ±)	3/9
				30			37	21	38	847	20001	CY	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	3/9
				LUMP			LUMP	LUMP	LUMP	847	30000		TEST SLAB	
				1			1	1	1	847	30201	CY	FULL DEPTH REPAIR, AS PER PLAN	3/9
				1184			1471	972	1508	847	30301	SY	WEARING COURSE REMOVED, ASPHALT, AS PER PLAN (T = 3" ±)	3/9
				1184			1471	972	1508	847	30401	SY	EXISTING CONCRETE OVERLAY REMOVED, AS PER PLAN (T = 2 1/2" ±)	3/9
				356			442	292	453	847	50000	SY	HAND CHIPPING	
			LUMP							849	10000		DAMAGE ASSESSMENT	
			LUMP							849	10500		SURFACE PREPARATION	
			1							849	10600	HOUR	REPAIRING DAMAGED MEMBERS BY GRINDING	

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRC	NRC	LMP	10/28/14
CHECKED	REVISED	STRUCTURE FILE NUMBER	

STRUCTURE ESTIMATED QUANTITIES
SUM-76-0657R, SUM76-0672, SUM-76-0684, SUM-76-0700, SUM-76-0736
SUM-76-0758, SUM-76-0772, SUM-76-0824L, SUM-76-0825UR, & SUM-76-0832L

SUM-76/77/277-VAR
PID No. 84655



SUM-76-0736, SUM-76-0824L AND SUM-76-0832L

APPROACH SHOWN, TRAILING SIMILAR

* PAVEMENT SHALL TAPER TO THE APPROACH SLAB PER BP - 3.1

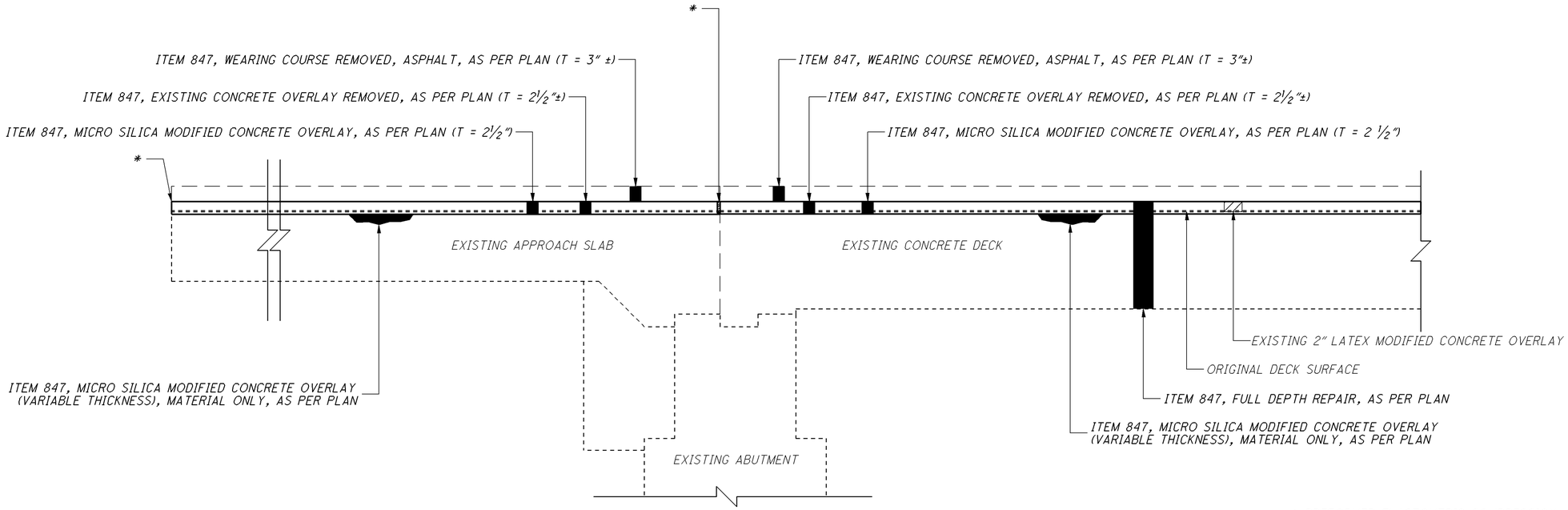
BRIDGE NUMBER	BRIDGE DECK AND 1'-3" BACKWALL														APPROACH SLABS										
								847	847	847	847	847	847	847					202	407	407	442	442		
	LENGTH (BRIDGE LIMITS)	BRIDGE WIDTH	DECK AREA	BACKWALL (APPROACH SLABS)	BACKWALL WIDTH	BACKWALL AREA	(FORWARD / REAR)	MICRO SILICA MODIFIED CONCRETE OVERLAY, AS PER PLAN (T = 2 1/2")	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	TEST SLAB	FULL DEPTH REPAIR, AS PER PLAN	WEARING COURSE REMOVED, ASPHALT, AS PER PLAN (T = 3" +/-)	EXISTING CONCRETE OVERLAY REMOVED, AS PER PLAN (T = 2 1/2")	HAND CHIPPING	LENGTH (APPROACH SLABS)	APPROACH SLABS WIDTH	APPROACH SLABS AREA	APPROACH (FORWARD / REAR)	WEARING COURSE REMOVED (T = 6 1/4" ±)	TACK COAT@ 0.15 GAL/SY	TACK COAT FOR INTERMEDIATE COURSE @ 0.04 GAL/SY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE B (448), AS PER PLAN (T = 1 1/2")	ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE B (448) (T = 1 3/4")		
	FT	FT	SY	FT	FT	SY		SY	CY	LUMP	CY	SY	SY	SY	FT	FT	SQ YD		SY	GAL	GAL	CY	CY		
SUM-76-0736	131.50	80.00	1168.89	1.25	51.88	7.21	FWD	1183.76	29.59	LUMP	1.00	1183.76	1183.76	355.13	25.00	51.88	144.11	FWD	144.11	21.62	5.76	6.00	7.01		
				1.25	55.19	7.67	REAR								25.00	55.19	153.31	REAR	153.31	23.00	6.13	6.39	7.45		
SUM-76-0824L	152.00	86.00	1452.44	1.25	65.70	9.13	FWD	1470.18	36.75	LUMP	1.00	1470.18	1470.18	441.05	25.00	65.70	182.50	FWD	182.50	27.38	7.30	7.60	8.87		
				1.25	61.96	8.61	REAR								25.00	61.96	172.11	REAR	172.11	25.82	6.88	7.17	8.37		
SUM-76-0832L	198.00	68.00	1496.00	1.25	40.00	5.56	FWD	1507.49	37.69	LUMP	1.00	1507.49	1507.49	452.25	25.00	40.00	111.11	FWD	111.11	16.67	4.44	4.63	5.40		
				1.25	42.73	5.93	REAR								25.00	42.73	118.69	REAR	118.69	17.80	4.75	4.95	5.77		

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STRUCTURE DETAILS
SUM-76-0736
SUM-76-0824L, & SUM-76-0832L

SUM-76/77/277-VAR
PID No. 84655



SUM-76-0825UR

APPROACH SHOWN, TRAILING SIMILAR

* PREFORMED ELASTOMERIC COMPRESSION JOINT, SEAL, 705.11 (1¼" WIDE FOR A ½" WIDE GROOVE) PLACED IN ½" X 2¼" GROOVE.

PAVEMENT SHALL TAPER TO THE APPROACH SLAB PER BP - 3.1

	BRIDGE DECK												APPROACH SLABS												
BRIDGE NUMBER	LENGTH (BRIDGE LIMITS)	BRIDGE WIDTH	DECK AREA	512 TREATING OF CONCRETE BRIDGE DECK WITH SRS	SPEC PATCHING CONCRETE BRIDGE DECK - TYPE C	847 MICRO SILICA MODIFIED CONCRETE OVERLAY, AS PER PLAN (T=2 1/2")	847 MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	847 TEST SLAB	847 FULL DEPTH REPAIR, AS PER PLAN	847 WEARING COURSE REMOVED, ASPHALT, AS PER PLAN (T = 3" ±)	847 EXISTING CONCRETE OVERLAY REMOVED, AS PER PLAN (T = 2 1/2"±)	847 HAND CHIPPING	LENGTH (APPROACH SLABS)	APPROACH SLAB WIDTH	APPROACH SLAB AREA	APPROACH (FORWARD / REAR)	512 TREATING OF CONCRETE BRIDGE DECK WITH SRS	SPEC PATCHING CONCRETE BRIDGE DECK - TYPE C	847 MICRO SILICA MODIFIED CONCRETE OVERLAY, AS PER PLAN (T=2 1/2")	847 MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	847 WEARING COURSE REMOVED, ASPHALT, AS PER PLAN (T = 3" ±)	847 EXISTING CONCRETE OVERLAY REMOVED, AS PER PLAN (T = 2 1/2"±)	847 HAND CHIPPING		
	FT	FT	SQ YD	SY	SY	SY	CY	LUMP	CY	SY	SY	SY	FT	FT	SQ YD		SY	SY	SY	CY	SY	SY	SY		
SUM-76-0657R	203.75	69.42	1571.59	1571.59									25.00	40.00	111.11	FWD	111.11								
													25.00	40.00	111.11	REAR	111.11								
SUM-76-0672	221.00	113.40	2784.60	2784.60																					
SUM-76-0684	217.50	92.50	2235.42	2235.42																					
SUM-76-0700	183.00	95.50	1941.83	1941.83																					
SUM-76-0772	264.00	44.00	1290.67	1290.67	12.91								25.00	44.00	122.22	FWD	122.22	1.22							
													25.00	44.00	122.22	REAR	122.22	1.22							
SUM-76-0825UR	188.60	40.00	838.22			838.22	20.96	LUMP	1.00	838.22	838.22	251.47	25.00	24.00	66.67	FWD				5.56	66.67	66.67	20.00		
													25.00	24.00	66.67	REAR				5.56	66.67	66.67	20.00		

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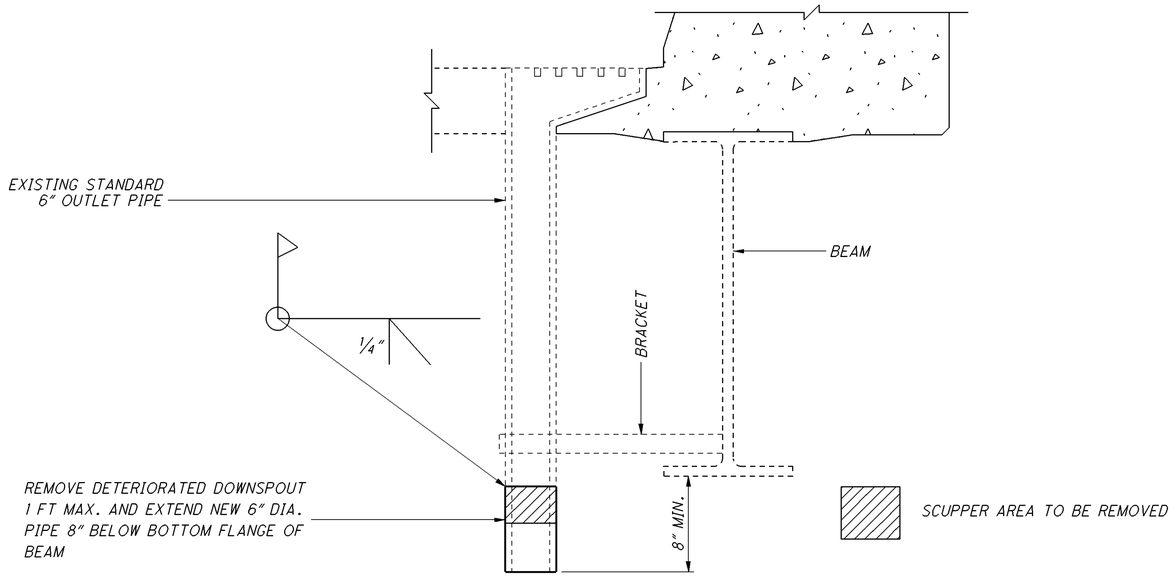
STRUCTURE DETAILS

SUM-76-0657R, SUM76-0672, SUM-76-0684, SUM-76-0700, SUM-76-0772, & SUM-76-0825UR,

SUM-76/77/277-VAR

PID No. 84655

SCUPPER LENGTHENING DETAIL



NOTES

ITEM 518 - SCUPPER MISC.: CLEANOUT

THIS WORK WILL CONSIST OF REMOVING ALL DEBRIS FROM ON TOP AND INSIDE OF THE SCUPPERS. SCUPPER CLEANOUT WILL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM 518, SCUPPER MISC.: CLEANOUT. THIS PRICE WILL INCLUDE THE COST FOR LABOR, EQUIPMENT, AND ALL INCIDENTALS REQUIRED TO COMPLETE THIS WORK.

ITEM 518, SCUPPER, LENGTHENING, AS PER PLAN

THIS WORK SHALL CONSIST OF THE REPAIR AND LENGTHENING OF SCUPPERS FOR THE FOLLOWING STRUCTURES: SUM-76-0736, SUM-76-0824L AND SUM-76-0832L.

1. THE PIPE EXTENSIONS WILL BE WELDED IN PLACE AFTER THE EXISTING SURFACE HAS BEEN ABRASIVE BLASTED TO A SA-1.

2. ADDITIONAL LENGTH OF SCUPPER PIPE TO BE REPLACED IS TO BE DETERMINED BY THE PROJECT ENGINEER.

3. AFTER SCUPPER EXTENSION IS COMPLETE PAINT NEW SCUPPER EXTENSIONS PER CMS 514.22 USING PAINT COLOR 15526 FOR STRUCTURE SUM-76-0736 AND 14277 FOR STRUCTURES SUM-76-0824L AND SUM-76-0832L.

4. IF ADDITIONAL INFORMATION IS REQUIRED, EXPIRED STD. DWG. SD-1-69 IS AVAILABLE UPON REQUEST.

5. THIS WORK WILL BE PAID FOR AT THE UNIT BID PRICE FOR ITEM 518 - SCUPPER, LENGTHENING, AS PER PLAN. THIS PRICE WILL INCLUDE THE COST OF LABOR, MATERIALS, EQUIPMENT, PAINTING AND ALL INCIDENTALS REQUIRED TO COMPLETE THIS WORK.

ITEM 518, STRUCTURE DRAINAGE, MISC.: 8" COLLECTOR PIPE

THIS WORK SHALL CONSIST OF THE REMOVAL AND REPLACEMENT OF THE 8" COLLECTOR PIPE (WROUGHT IRON OR GALVANIZED STEEL) LOCATED AT THE NORTHWEST CORNER OF THE FORWARD ABUTMENT ON STRUCTURE SUM-76-0824L.

1. AFTER THE 8" COLLECTOR PIPE REMOVAL AND REPLACMENT IS COMPLETE PAINT NEW SECTION PER ITEM 514, FIELD PAINTING, MISC.; REPAIR PAINTING.

2. THIS WORK WILL BE PAID FOR AT THE UNIT BID PRICE FOR ITEM 518 - STRUCTURE DRAINAGE MISC.: 8" COLLECTOR PIPE, 25FT. THIS PRICE WILL INCLUDE THE COST OF LABOR, MATERIALS, EQUIPMENT, PAINTING AND ALL INCIDENTALS ITEMS REQUIRED TO COMPLETE THIS WORK.

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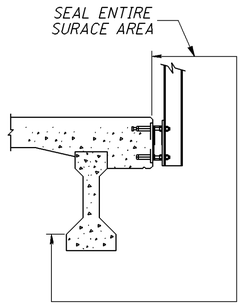
SCUPPER LENGTHENING DETAIL
SUM-76-0736, SUM-76-0824L, & SUM-76-0832L

SUM-76/77/277-VAR
PID No. 84655

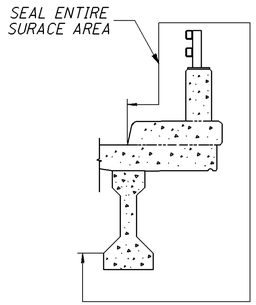
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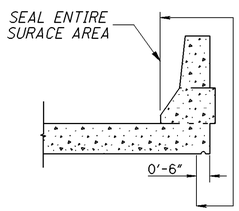
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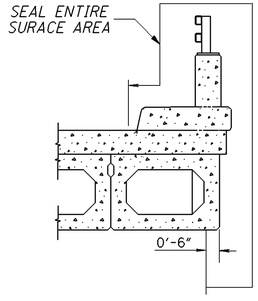
DETAIL A
CONCRETE DECKS WITH
OVER THE SIDE DRAINAGE



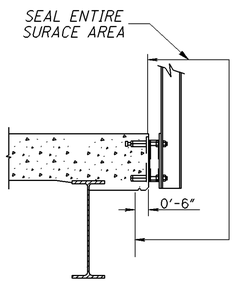
DETAIL B
CONCRETE DECKS WITH CURBS,
SIDEWALKS AND PARAPET



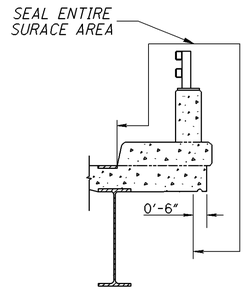
DETAIL C
CONCRETE SLAB WITH
DEFLECTOR PARAPET



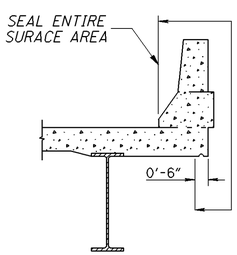
DETAIL D
PRESTRESSED BOX BEAM DECK
WITH DEFLECTOR PARAPET



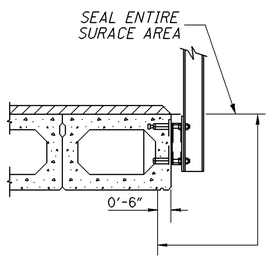
DETAIL E
CONCRETE DECKS WITH
OVER THE SIDE DRAINAGE



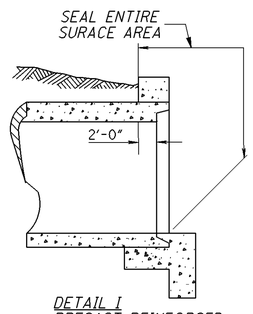
DETAIL F
CONCRETE DECKS WITH CURBS,
SIDEWALKS AND PARAPET



DETAIL G
CONCRETE DECK WITH
DEFLECTOR PARAPET



DETAIL H
PRESTRESSED BOX BEAM DECK
WITH OVER THE SIDE DRAINAGE



DETAIL I
PRECAST REINFORCED
CONCRETE BOX CULVERT

BRIDGE NUMBER	STRUCTURE TYPE	PROPOSED SEALING	FEDERAL COLOR NUMBER	ESTIMATED QUANTITIES				
				ABUT (SQ YD)	PIER (SQ YD)	SUPER (SQ YD)	GENERAL (SQ YD)	TOTAL (SQ YD)
SUM-76-0657R	4 SPAN CONTINUOUS STEEL BEAM	SEAL PARAPETS PER DETAIL G SEAL ALL EXPOSED CONCRETE AT ABUTMENTS SEAL ALL EXPOSED CONCRETE AT PIERS SEAL SPALL REMOVAL AREAS OF BOTTOM OF DECK	PER CMS	182	685	573	50	1490
SUM-76-0700	4 SPAN CONTINUOUS STEEL BEAM	SEAL SPALL REMOVAL AREAS OF BOTTOM OF DECK	PER CMS				50	50
SUM-76-0736	3 SPAN CONTINUOUS STEEL BEAM	SEAL PARAPETS PER DETAIL G SEAL ALL EXPOSED CONCRETE AT ABUTMENTS SEAL ALL EXPOSED CONCRETE AT PIERS	PER CMS	166	425	370	0	961
SUM-76-0772	4 SPAN CONTINUOUS STEEL BEAM	SEAL PARAPETS PER DETAIL F SEAL ALL EXPOSED CONCRETE AT ABUTMENTS SEAL ALL EXPOSED CONCRETE AT PIERS	PER CMS	299	495	748	0	1542
SUM-76-0824L	3 SPAN CONTINUOUS STEEL BEAM	SEAL PARAPETS PER DETAIL G SEAL ALL EXPOSED CONCRETE AT ABUTMENTS SEAL ALL EXPOSED CONCRETE AT PIERS SEAL SPALL REMOVAL AREAS OF BOTTOM OF DECK	PER CMS	186	541	427	50	1204
SUM-76-0825UR	3 SPAN CONTINUOUS CONCRETE SLAB	SEAL PARAPETS PER DETAIL C SEAL ALL EXPOSED CONCRETE AT ABUTMENTS SEAL ALL EXPOSED CONCRETE AT PIERS SEAL SPALL REMOVAL AREAS OF BOTTOM OF DECK	PER CMS	49	329	210	50	638
SUM-76-0832L	4 SPAN CONTINUOUS STEEL BEAM	SEAL PARAPETS PER DETAIL G SEAL ALL EXPOSED CONCRETE AT ABUTMENTS SEAL ALL EXPOSED CONCRETE AT PIERS SEAL SPALL REMOVAL AREAS OF BOTTOM OF DECK	PER CMS	245	625	555	50	1475

NOTES:
- EPOXY-URETHANE SEALER SHALL BE USED UNLESS SHOWN OTHERWISE
- DETAILS E, F, G AND H ALSO APPLY TO CONCRETE SLAB BRIDGES

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ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

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CONCRETE SEALING DETAILS
SUM-76-0657R, SUM76-0672, SUM-76-0684, SUM-76-0700, SUM-76-0736
SUM-76-0758, SUM-76-0772, SUM-76-0824L, SUM-76-0825UR, & SUM-76-0832L

SUM-76/77/277-VAR
PID No. 84655

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