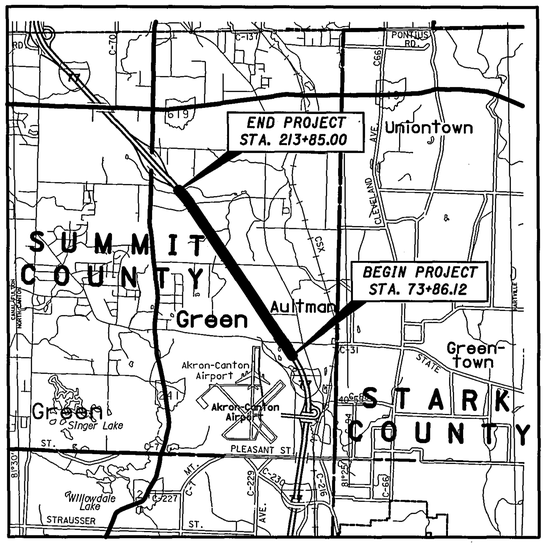
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
SUM-77-1.40
CITY OF GREEN
SUMMIT COUNTY



LOCATION MAP

LATITUDE: 41°00'35" LONGITUDE: 81°29'20"

SCALE IN MILES
0 1 2 3 4

N

PORTION TO BE IMPROVED
INTERSTATE & DIVIDED HIGHWAY
UNDIVIDED STATE & FEDERAL ROUTES
OTHER ROADS

DESIGN DESIGNATION

CURRENT ADT (2004)	66050
DESIGN YEAR ADT (2024)	78890
DESIGN HOURLY VOLUME (2024)	7179
DIRECTIONAL DISTRIBUTION	51%
TRUCKS (24 HOUR %C)	12%
DESIGN SPEED	70 MPH
LEGAL SPEED	65 MPH

DESIGN FUNCTIONAL CLASSIFICATION - "URBAN INTERSTATE"

DESIGN EXCEPTIONS:

DESIGN FEATURE	APPROVAL DATE	SHEET NO'S.
GRADED SHOULDER WIDTH @ WISE ROAD BRIDGE	3-09-03	243
GRADED SHOULDER WIDTH @ GRAYBILL ROAD BRIDGE	9-09-03	244

UNDERGROUND UTILITIES
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 (TOLL FREE)

PLAN PREPARED BY:
ms consultants, inc.
CONSULTING ENGINEERS, ARCHITECTS & PLANNERS
333 E. FEDERAL STREET
YOUNGSTOWN, OHIO 44503

ENGINEERS SEAL:

STATE OF OHIO
W. BRIAN HUGHES
E-57279
REGISTERED
PROFESSIONAL ENGINEER
SEAL

SIGNED W. Brian Hughes
DATE: 6/15/04

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EARTH DISTURBED AREAS:

PROJECT EARTH DISTURBED AREA	72.0 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	1.0 ACRE
NOTICE OF INTENT EARTH DISTURBED AREA	73.0 ACRES

STANDARD CONSTRUCTION DRAWINGS

AS-1-81	7-19-02	DM-1.1	7-18-03	GR-1.1	2-18-03	MH-2.1	7-19-02	SBR-1-99	7-19-02
		DM-1.2	7-19-02	GR-2.1	1-16-04	MH-3.1	7-20-01	SICD-1-96	7-19-02
		DM-1.4	7-19-02	GR-3.1	2-18-03				
BP-3.1	7-28-00	DM-4.1	7-19-02	GR-3.2	4-18-03	MT-35.10	4-20-01		
BP-5.1	7-28-00	DM-4.2	7-19-02	GR-3.6	1-16-04	MT-95.30	4-19-02		
BP-9.1	7-28-00	DM-4.3	7-19-02	GR-4.2	4-18-03	MT-95.40	7-18-03	TC-41.10	1-19-01
		DM-4.4	7-19-02	GR-5.1	4-18-03	MT-95.70	4-19-02	TC-41.20	1-19-01
				GR-5.2	1-16-04	MT-95.82	4-19-02	TC-42.10	1-19-01
BR-1	7-19-02			GR-5.3	1-16-04	MT-97.10	4-19-02	TC-42.20	4-20-01
				GR-6.1	4-18-03	MT-99.20	1-30-95	TC-51.11	4-20-01
BS-1-93	7-19-02					MT-100.00	4-19-02	TC-51.12	4-20-01
				GSD-1-96	7-19-02	MT-101.60	10-18-02	TC-52.10	4-20-01
CB-2.2	7-19-02	EXJ-2-81	7-19-02	HL-30.32	4-19-02	MT-102.10	10-18-02	TC-52.20	4-20-01
CB-3.1	7-19-02					MT-102.20	10-18-02	TC-65.10	10-19-01
CB-3.3	7-19-02			HW-1.1	7-20-01	MT-105.10	10-18-02	TC-65.11	10-19-01
CB-3.4	7-19-02			HW-2.1	7-19-02	MT-105.11	10-18-02	TC-72.20	1-19-01
				HW-2.2	7-19-02			TC-73.10	1-19-01
		F-1.1	7-28-00			PCB-91	7-19-02		
		F-2.1	7-28-00	I-2.2	7-19-02				
		F-3.1	7-28-00			RM-1.1	4-18-03	VPF-1-90	7-19-02
		F-3.3	7-28-00	MH-1.1	7-19-02	RM-4.2	4-18-03		
		F-3.4	7-28-00	MH-1.2	7-19-02	RM-4.5	4-18-03	LA-1.2	7-28-00
				MH-1.3	7-20-01	RM-4.6	1-16-04		

SUPPLEMENTAL SPECIFICATIONS

SS 802	7-19-02
SS 832	4-17-04
SS 833	2-12-03
SS 837	3-09-99
SS 864	7-11-00
SS 880	10-18-02
SS 894	10-18-02
SS 908	4-18-03
SS 925	4-19-02
SS 937	3-09-99

SPECIAL PROVISIONS

NOISE BARRIER CONCRETE PANEL SEALER/COATING DATE 3/27/02

WATERWAY PERMITS NATIONWIDE PERMIT No. 3 MAINTENANCE No. 14 - LINEAR TRANSPORTATION PROJECT DATE 12/29/03

PROJECT DESCRIPTION

WIDEN THE EXISTING FOUR LANE FACILITY TO SIX LANES INCLUDING UPGRADE OF STRUCTURES, DRAINAGE AND TRAFFIC CONTROL. THIS PROJECT HAS AN OVERALL LENGTH OF APPROXIMATELY 2.65 MILES.

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.

2002 SPECIFICATIONS

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

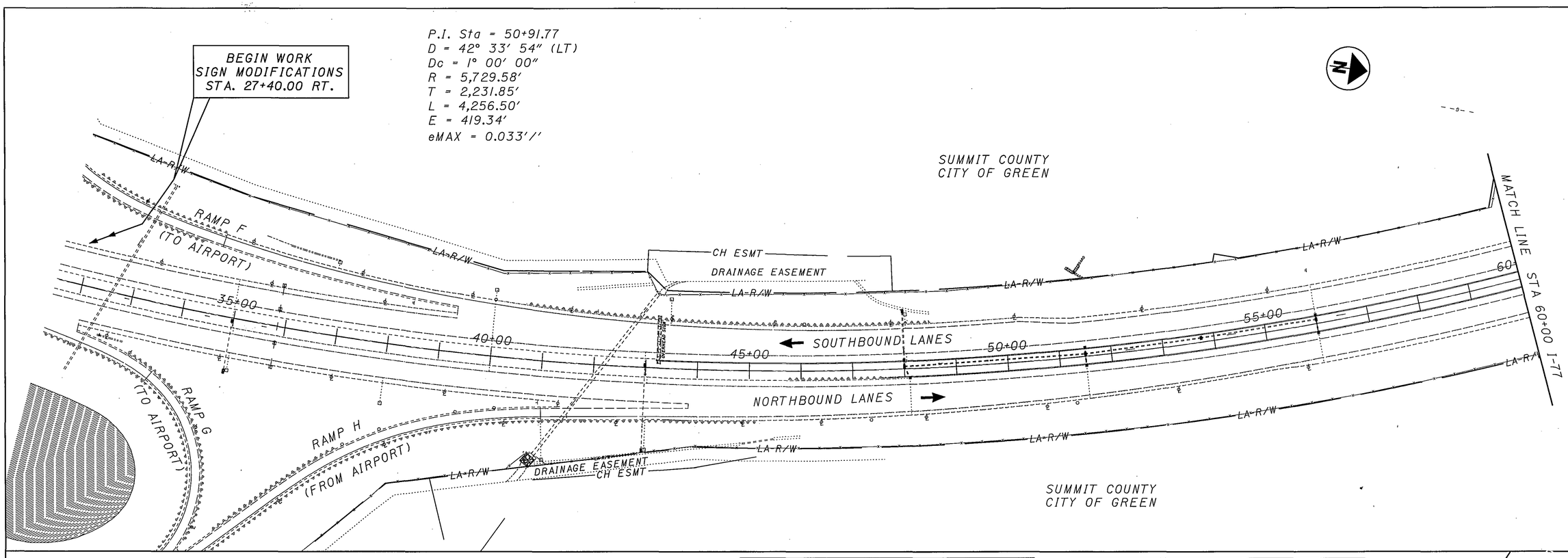
UNDER AUTHORITY OF SECTION 4511.21, DIVISION (H) OF THE OHIO REVISED CODE, THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR LIMITS HEREBY ESTABLISHED SHALL BECOME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

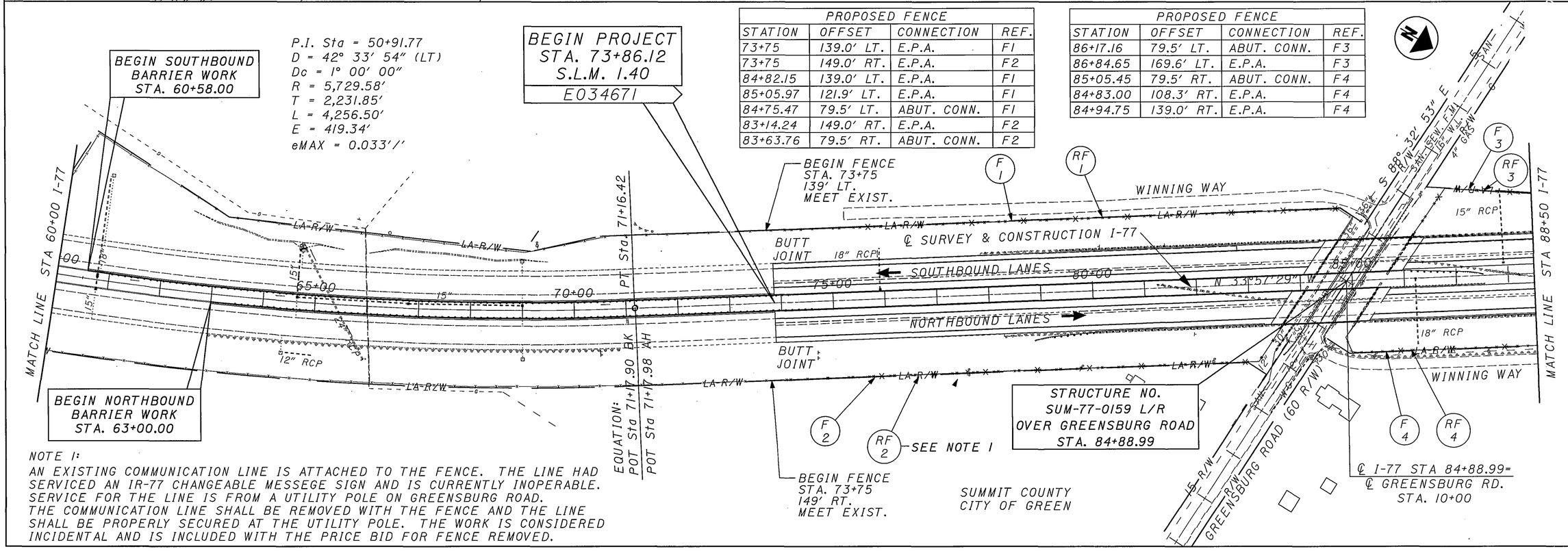
APPROVED _____
DATE 6-29-04 DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE 8-13-04 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. E034(671)
PID NO. 16372
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
SUM-77-1.40
1-381

SUM-IR 77-1.40
040582 PID-16372
DIST 4 11/17/2004





PROPOSED FENCE			
STATION	OFFSET	CONNECTION	REF.
73+75	139.0′ LT.	E.P.A.	F1
73+75	149.0′ RT.	E.P.A.	F2
84+82.15	139.0′ LT.	E.P.A.	F1
85+05.97	121.9′ LT.	E.P.A.	F1
84+75.47	79.5′ LT.	ABUT. CONN.	F1
83+14.24	149.0′ RT.	E.P.A.	F2
83+63.76	79.5′ RT.	ABUT. CONN.	F2

PROPOSED FENCE			
STATION	OFFSET	CONNECTION	REF.
86+17.16	79.5′ LT.	ABUT. CONN.	F3
86+84.65	169.6′ LT.	E.P.A.	F3
85+05.45	79.5′ RT.	ABUT. CONN.	F4
84+83.00	108.3′ RT.	E.P.A.	F4
84+94.75	139.0′ RT.	E.P.A.	F4

NOTE 1:
AN EXISTING COMMUNICATION LINE IS ATTACHED TO THE FENCE. THE LINE HAD SERVICED AN IR-77 CHANGEABLE MESSEGE SIGN AND IS CURRENTLY INOPERABLE. SERVICE FOR THE LINE IS FROM A UTILITY POLE ON GREENSBURG ROAD. THE COMMUNICATION LINE SHALL BE REMOVED WITH THE FENCE AND THE LINE SHALL BE PROPERLY SECURED AT THE UTILITY POLE. THE WORK IS CONSIDERED INCIDENTAL AND IS INCLUDED WITH THE PRICE BID FOR FENCE REMOVED.

HORIZONTAL SCALE IN FEET
0 50 100 200

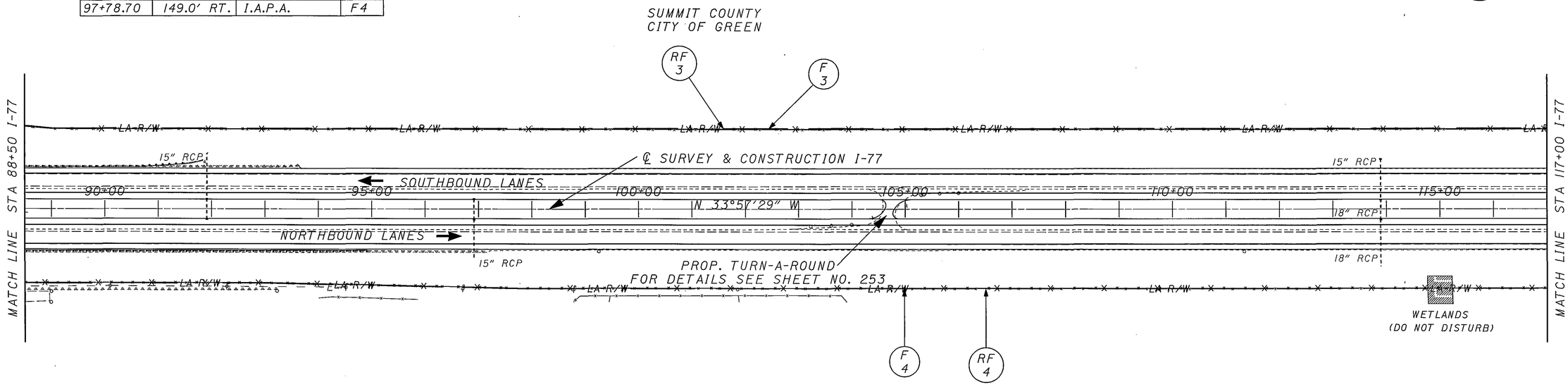
CALCULATED COY
CHECKED W.B.H.

SCHEMATIC PLAN
STA. 31+50 TO STA. 88+50

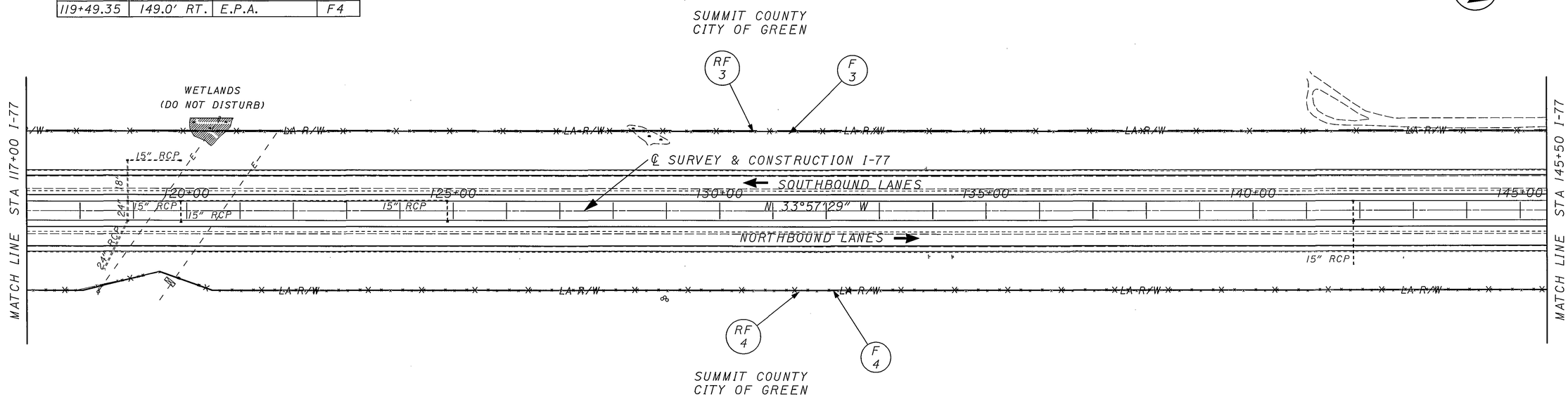
SUM-77-1.40

2
381

PROPOSED FENCE			
STATION	OFFSET	CONNECTION	REF.
89+01.69	149.0' LT.	E.P.A.	F3
93+04.65	139.0' RT.	I.A.P.A.	F4
97+78.70	149.0' RT.	I.A.P.A.	F4



PROPOSED FENCE			
STATION	OFFSET	CONNECTION	REF.
118+04.16	149.0' RT.	E.P.A.	F4
119+49.35	114.0' RT.	E.P.A.	F4
119+49.35	149.0' RT.	E.P.A.	F4



HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED COY
CHECKED W.B.H.

SCHEMATIC PLAN
STA. 88+50 TO STA. 145+50

SUM-77-1.40

3
381

PROPOSED FENCE			
STATION	OFFSET	CONNECTION	REF.
150+28.42	149.0' LT.	E.P.A.	F3
151+38.59	141.1' LT.	ABUT. CONN.	F3
148+68.48	149.0' RT.	E.P.A.	F4
149+34.79	141.6' RT.	ABUT. CONN.	F4
151+75.54	139.4' LT.	ABUT. CONN.	F5
152+21.33	149.0' LT.	E.P.A.	F5
149+71.74	143.4' RT.	ABUT. CONN.	F6

PROPOSED FENCE			
STATION	OFFSET	CONNECTION	REF.
149+99.57	149.0' RT.	E.P.A.	F6
158+89.76	149.0' LT.	E.P.A.	F5
160+89.79	169.0' LT.	E.P.A.	F5
169+89.87	169.0' LT.	E.P.A.	F5
169+89.91	149.0' RT.	E.P.A.	F6

SUMMIT COUNTY
CITY OF GREEN

WISE ROAD 5

R/W

S 88° 10' 26" E

STRUCTURE NO.
SUM-77-0284 UNDER
WISE ROAD
STA. 150+55.99

WETLANDS
(DO NOT DISTURB)

℄ SURVEY & CONSTRUCTION I-77

SOUTHBOUND LANES

NORTHBOUND LANES

N 33°57'29" W

MATCH LINE STA 145+50 I-77

MATCH LINE STA 174+00 I-77

150+00 155+00 160+00 165+00 170+00

15" RCP 18" RCP 18" RCP 15" RCP 24" RCP 15" RCP 18" RCP 24" RCP

84" CMP

STA 150+55.99 ℄ I-77 =
STA. 10+00.00 ℄ WISE RD.

WETLANDS
(DO NOT DISTURB)

SUMMIT COUNTY
CITY OF GREEN

F 3, RF 3, F 4, RF 4, F 5, RF 5, F 6, RF 6

LA R/W

M/R

15

PROPOSED FENCE			
STATION	OFFSET	CONNECTION	REF.
188+89.97	149.0' LT.	E.P.A.	F5
199+40.64	149.0' LT.	E.P.A.	F5
199+88.72	149.0' LT.	ABUT. CONN.	F5
175+43.61	259.2' RT.	E.P.A.	F6
175+43.61	449.0' RT.	E.P.A.	F6
181+89.57	449.0' RT.	E.P.A.	F6
184+89.59	179.0' RT.	E.P.A.	F6

PROPOSED FENCE			
STATION	OFFSET	CONNECTION	REF.
187+90.00	169.0' RT.	E.P.A.	F6
199+05.47	169.0' RT.	E.P.A.	F6
199+51.78	142.6' RT.	ABUT. CONN.	F6
200+22.23	141.1' LT.	ABUT. CONN.	F7
200+80.41	149.0' LT.	E.P.A.	F7
199+84.73	143.0' RT.	ABUT. CONN.	F8
200+27.09	155.2' RT.	E.P.A.	F8
200+87.89	149.0' RT.	E.P.A.	F8

ORIGINAL REST AREA
REMOVED

PROPOSED FENCE			
STATION	OFFSET	CONNECTION	REF.
175+20.89	214.1' LT.	E.P.A.	F5
175+20.89	319.4' LT.	E.P.A.	F5
176+40.90	364.3' LT.	E.P.A.	F5
176+40.90	449.0' LT.	E.P.A.	F5
182+38.96	449.0' LT.	E.P.A.	F5
182+38.96	264.2' LT.	E.P.A.	F5
185+49.82	189.0' LT.	E.P.A.	F5

12" SAN.

18" RCP

76"x48" RECP

42" CMP

℄ SURVEY & CONSTRUCTION I-77

PC Sta. 194+32.70

STA 199+86.84 ℄ I-77 =
STA. 10+00.00 ℄ GRAYBILL RD.

175+00 180+00 185+00 190+00 195+00 200+00

15" RCP 15" RCP 18" RCP 18" RCP

WETLANDS
(DO NOT DISTURB)

ORIGINAL REST AREA
REMOVED

WETLANDS
(DO NOT DISTURB)

SUMMIT COUNTY
CITY OF GREEN

F 5, RF 5, F 6, RF 6, F 7, RF 7, F 8, RF 8

2" GAS
GREAT LAKES ENERGY

GRAYBILL ROAD

N 61° 39' 32" E

20' GAS EASM'T

STRUCTURE NO.
SUM-77-0378 UNDER
GRAYBILL ROAD
STA 199+86.81

P.I. Sta = 207+68.48
D = 8° 53' 15" (LT)
Dc = 0° 20' 00"
R = 17,188.75'
T = 1,335.79'
L = 2,666.22'
E = 51.83'
eMAX = NONE (NC)

N 33°57'29" W
SUM-77-1.40 =
N 33°57'55" W
SUM-77-3.97

MATCH LINE STA 174+00 I-77

MATCH LINE STA 202+50 I-77

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED COY
CHECKED W.B.H.

SCHEMATIC PLAN
STA. 145+50 TO STA. 202+50

SUM-77-1.40

P.I. Sta = 207+68.48
D = 8° 53′ 15″ (LT)
Dc = 0° 20′ 00″
R = 17,188.75′
T = 1,335.79′
L = 2,666.22′
E = 51.83′
eMAX = NONE (NC)

END FENCE
STA. 209+35
149′ LT.
MEET EXIST.

MATCH EXIST.
STA. 209+35.00 SB
S.L.M. 3.97

SUMMIT COUNTY
CITY OF GREEN

RF 7

F 7

MATCH LINE STA 202+50 I-77

LA-R/W

BUTT JOINT

℄ SURVEY & CONSTRUCTION I-77

205+00

SOUTHBOUND LANES

210+00

215+00

220+00

225+00

230+00

PT Sta. 220+98.84
PROJECT SUM-77-1.40 =
PT Sta. 221+15.58
PROJECT SUM-77-3.97

N 42°50′44″ W

68" RCP

21" CMP

21" CMP

18" CMP

106′

27" RCP

NORTHBOUND LANES

BUTT JOINT

SR241 NOISE BARRIER

MATCH LINE STA 231+00 I-77

℄ W-7 60′ EASM'T

20" GAS

PROP. TURN-A-ROUND
FOR DETAILS,
SEE SHEET NO. 253

RF 8

F 8

SUMMIT COUNTY
CITY OF GREEN

END FENCE
STA. 213+85
149′ RT.
MEET EXIST.

END PROJECT
STA. 213+85.00 NB
S.L.M. 4.06
E034671

N 42°50′44″ W
SUM-77-1.40 =
N 42°50′49″ W
SUM-77-3.97

SUMMIT COUNTY
CITY OF GREEN

MATCH LINE STA 231+00 I-77

RAMP J

RAMP K

LA-R/W

R/W

235+00

240+00

245+00

250+00

255+00

N 42°50′44″ W

SR241 NOISE BARRIER

RAMP M

S.R. 241
(MASSILLON RD.)

END WORK
STA. 242+98.50

RAMP L

SUMMIT COUNTY
CITY OF GREEN

HORIZONTAL SCALE IN FEET
0 50 100 200

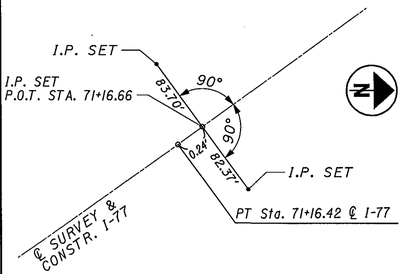
CALCULATED COY
CHECKED W.B.H.

SCHEMATIC PLAN
STA. 202+50 TO STA. 259+50

SUM-77-1.40

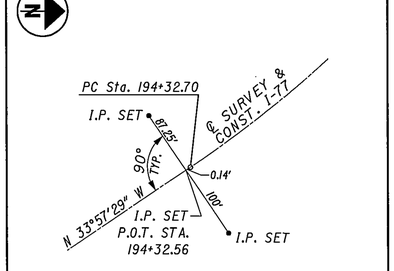
5
381

REFERENCE TIES



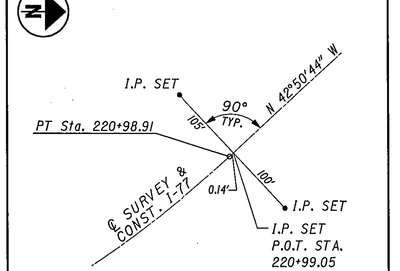
P.O.T. STA. 71+16.66
℄ SURVEY & CONSTR. I-77

REFERENCE TIES



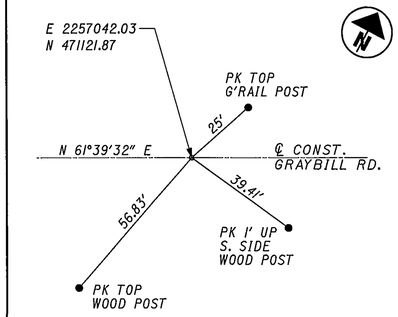
P.O.T. STA. 194+32.70
℄ SURVEY, R/W & CONST. I-77

REFERENCE TIES



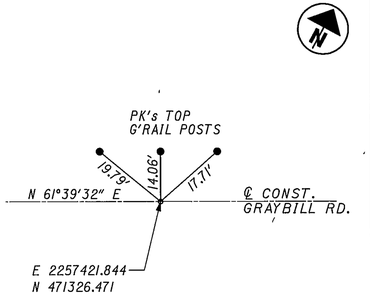
P.O.T. STA. 220+98.91
℄ SURVEY, R/W & CONST. I-77

REFERENCE TIES



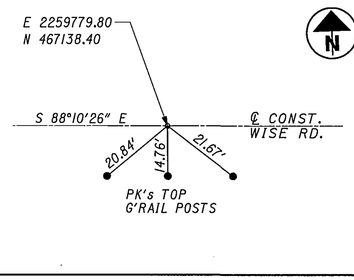
P.O.T. STA. 8+00
℄ CONST. GRAYBILL RD.

REFERENCE TIES



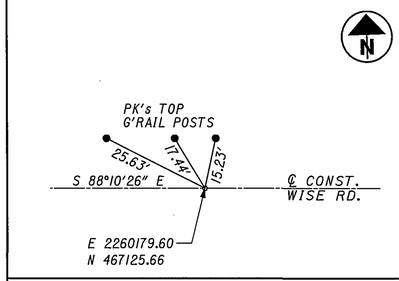
P.C. STA. 12+31.54
℄ CONST. GRAYBILL RD.

REFERENCE TIES



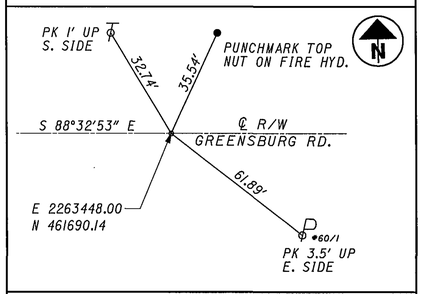
P.O.T. STA. 8+00
℄ CONST. WISE RD.

REFERENCE TIES



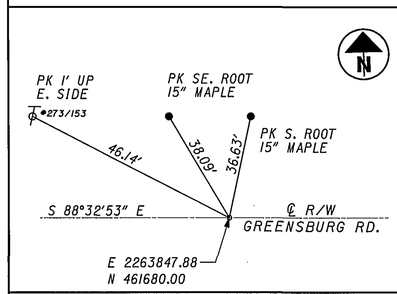
P.O.T. STA. 12+00
℄ CONST. WISE RD.

REFERENCE TIES



P.O.T. STA. 8+00
℄ CONST. GREENSBURG RD.

REFERENCE TIES



P.O.T. STA. 12+00
℄ CONST. GREENSBURG RD.

I-77 PROJECT BENCHMARKS

NUMBER	ELEV.	DESCRIPTION	℄ I-77 STATION	℄ I-77 OFFSET
55	1157.281	Chisel Sq. on Conc. Base of Lt. Pole #62-05 NB Lanes Rt.	46+38	98' RT.
56	1166.408	Chisel Sq. on Conc. Base of Lt. Pole #62-01 NB Lanes Rt.	55+69	80' RT.
57	1175.034	Top of Iron Pin in Conc. Mon. at Sta 71+17 +/-	71+14	C/L
58	1187.481	Chisel Sq. on Center of W Conc. Base of Elect. Rd. Sign on NB Lanes	74+66	99' RT.
59	1200.477	Top of Iron Pin in Conc. Mon. at Sta 86+00 +/-	85+92	C/L
60	1202.150	Chisel Sq. on NE Wingwall of Greensburg Br. NB Lane	85+00	87'RT.
61	1200.559	Chisel Sq. on NW Wingwall of Greensburg Br. SB Lane	86+24	87' LT.
62	1205.660	Spike in Guardrail Post on NB Lanes opposite Allwood Farm Sign	93+08	81' RT
63	1206.645	Top of Iron Pin in Conc. Mon. at Sta 105+00 +/-	104+90	C/L
64	1209.670	Iron Pin at R/W fence on SB Lanes at Sta 105+50 +/- Lt.	105+00	149' LT.
65		Destroyed		
66	1201.960	NW Cor. Of Abandoned Steel Sign Base at Sta 120+00 +/- NB Lane	119+87	98' RT.
67	1209.489	Top of Iron Pin in Conc. Mon. at Sta 132+00 +/-	131+89	C/L
68	1204.620	Top of Iron Pin at R/W fence on NB Lanes at Sta 132+50 +/- Rt.	132+37	121' RT.
69	1196.169	Top of Iron Pin at R/W fence on NB Lanes at Sta +/- Rt.	143+29	149' RT.
70	1174.210	Top of Iron Pin in Conc. Mon. at Sta 157+47 +/-	157+35	C/L
71	1169.000	Top of Iron Pin at R/W fence on NB Lanes at Golf Course Sign	158+36	148' RT.
72		Destroyed		
73	1151.950	Top Of Iron Pin on NB Lanes at Sta 170+00 +/- Rt.	171+26	109' RT.
74	1156.599	Top Of Iron Pin (Set by Const. Crew) on NB Lanes at Sta 182+00 +/- Rt.	181+23	132' RT.
75	1158.511	Top Of Iron Pin (Set by Const. Crew) on NB Lanes at Sta 189+50 +/- Rt.	189+25	113' RT.
76	1166.130	Top Of Iron Pin in Conc. Mon. at Sta 194+45.81 +/-	194+29	C/L
			SIDEROAD	BRIDGES
79	1183.98	Spike in Gate Post at Lane W of Graybill Rd. Bridge	8+52	70.0' RT.
80	1185.19	Boat spike in Top of 5th Guardrail Post @ NE Corner of Graybill Rd. Bridge	11+93	14.75' LT.
81	1203.18	Boat spike 1' Up N Side Gate Post @ SW Corner of Wise Rd. Bridge	7+58	40.0' RT.
82	1201.97	Boat spike 1' Up Power Pole @ SE Corner of Wise Rd. Bridge	12+07	12.60' RT.
83	1180.50	+ Cut on Top Frame, S Bolt on Hydrant @ NW Corner of Greensburg Rd. Bridge	8+31	18' LT.
84	1185.84	Boat spike in Telephone Pole #273/153 @ NE Corner of Greensburg Rd. Bridge	11+66	24.54' LT.

HORIZONTAL SCALE IN FEET

CALCULATED W dN CHECKED W BH

BENCHMARKS & REFERENCE TIES
C/L CONSTRUCTION I-77

SUM-77-1.40

SUM-77-1.40
SECTION 14, 15, 23, 25, & 26 – T 12 N – R 9 W
CITY OF GREEN, GREEN TOWNSHIP, SUMMIT COUNTY, OHIO

EXISTING CENTERLINE AND RIGHT OF WAY

THE EXISTING CENTERLINE OF SURVEY WAS ESTABLISHED USING THE PREVIOUS CENTERLINE SURVEY PLAT OF 1961 AS RECORDED IN PLAT BOOK 34 AT PAGE 136 AND PLAT BOOK 34 AT PAGE 176, AND THE UPDATED CENTERLINE SURVEY PLAT RECORDED IN PLAT BOOK 59 AT PAGE 87, OF THE STARK COUNTY RECORDS, AND THE 1961 CENTERLINE SURVEY PLAT RECORDED IN PLAT BOOK 60 AT PAGE 53 AND 54, AND THE UPDATED CENTERLINE SURVEY PLAT RECORDED IN CABINET 'J', SLIDE 45 OF THE SUMMIT COUNTY RECORDS.

THE EXISTING RIGHT OF WAY WIDTH AND LOCATION WERE DETERMINED USING THE I-77 STA-8-14.00 / SUM-8-0.00 AND THE I-77 SUM-8-0.00 PLANS ON FILE AT THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 4 OFFICE, AKRON, OHIO

BASIS FOR BEARINGS:

ALL BEARINGS ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD 83/1995 (HARN)

CO-ORDINATE SYSTEM:

DATUM IS NAD83/95 (HARN)
TO CONVERT FROM METRIC GRID TO US FEET GROUND USE PROJECT ADJUSTMENT FACTOR OF = 1.000105508

CENTERLINE MONUMENTS ARE TO BE SET DURING CONSTRUCTION AT THE FOLLOWING STATIONS AT A TOLERANCE OF ± 0.02 FT.

[M] NEW CENTERLINE MONUMENT ASSEMBLY

POINT	STATION	NORTHING	EASTING	OFFSET
P.O.T	STA 80+00	461279.4667	2263921.0905	C/L
P.O.T	STA 90+00	462108.9124	2263362.5031	C/L
P.O.T	STA 100+00	462938.3581	2262803.9157	C/L
P.O.T	STA 110+00	463767.8038	2262245.3283	C/L
P.C.	STA 120+00	464597.2494	2261686.7409	C/L
P.O.C.	STA 130+00	465426.6951	2261128.1535	C/L
P.O.C.	STA 140+00	466256.1408	2260569.5662	C/L
TOTAL = 7				

C/L CURVE DATA
P.I. STA. 50+91.77
DELTA = 42°33'54" LT.
R = 5729.58'
T = 2231.85'
L = 4256.50'
CH = 4159.29'
Dc = 1°00'00"

BEGIN PROJECT
STA 73+86.12
S.L.M. 1.40

PT = 71+16.42

STA 65+93.17
QTR. SEC. LINE

C/L GREENSBURG RD.
STA 84+89
QTR. SEC. LINE

C/L SURVEY AND CONSTRUCTION I-77

70+00 80±00 90±00 100±00 110±00 120±00 130±00 140±00

N33°57'29"W

54°35'24"

STATION EQUATION
STA AHEAD: 71+17.98
STA BACK: 71+17.90

C/L MON. FD.
STA 71+14.40 – 0.25' LT.

C/L MON. FD.
STA 85+91.39 – 0.28' RT.

C/L MON. FD.
STA 104+89.57 – 0.38' RT.

C/L MON. FD.
STA 131+88.57 – 0.69' RT.

STA 111+62.43
SEC. LINE CALC.

STA 117+78.89
SEC. LINE CALC.

I.P. FD. ON QTR. SEC. LINE
STA 93+71.90 1241.90' LT.

N88°32'53"W 1523.76'

S02°16'50"W 2179.53'

N88°11'33"W 2290.35'

N88°32'53"W 1085.79'

N01°43'04"E 1558.34'

IRON PIN FD. AT QTR SEC CORNER
STA 78+59.87 884.95' RT.

S02°16'50"W 500.22'

N88°11'33"W 364.43'

SEC. COR FD.
STA 115+65.89 295.70' RT.

QTR SEC. COR FD.
STA 131+17.53 1858.43' LT.

N01°23'48"E 2661.19'

N01°46'26"E 2855.57'

QTR SEC. COR FD.
STA 137+21.57 1846.54' RT.

N88°04'25"W 2279.12'

QTR SEC. COR FD.
STA 100+30.42 2442.36' RT.

N88°22'57"W 2639.27'

SW QTR SEC 25
NE QTR SEC 26
SW QTR SEC 23
SE QTR SEC 23
NW QTR SEC 25
SE QTR SEC 25
NE QTR SEC 25
SW QTR SEC 24
SE QTR SEC 23
NE QTR SEC 23

MATCH LINE STA. 145+00

CENTERLINE MONUMENTS AND CENTERLINE REFERENCE MONUMENTS ARE SHOWN ON STANDARD CONSTRUCTION DRAWING RM-1.1 (REV.4/29/99) OF THE OHIO DEPARTMENT OF TRANSPORTATION. THE PLACING OF THE MONUMENTS SHALL BE UNDER THE DIRECTION OF A REGISTERED PROFESSIONAL SURVEYOR AND ARE TO BE SET, AS SHOWN, BY THE HIGHWAY CONTRACTOR AT THE TIME OF CONSTRUCTION. ANY ALTERATIONS, WITH PRIOR APPROVAL OF THE DEPARTMENT OF TRANSPORTATION, SHALL BE NOTED AND O.D.O.T. SHALL BE NOTIFIED OF THE NEW LOCATIONS.

EXISTING CENTERLINE MONUMENTS WERE FOUND AT THE FOLLOWING STATIONS AND ARE LOCATED FROM THE CENTERLINE SURVEY & CONSTRUCTION

STATION (1961 PLAN)	C/L SURVEY STA.	OFFSET	NORTHING	EASTING
PT STA 71+17.95	STA 71+14.40	0.25' LT.	460544.8359	2264415.5189
POT STA 86+00	STA 85+91.39	0.28' RT.	461770.1528	2263590.9796
POT STA 105+00	STA 104+89.57	0.38' RT.	463344.6408	2262530.7608
POT STA 132+00	STA 131+88.57	0.69' RT.	465583.4922	2261023.3929
TOTAL = 4				

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

MONUMENT LEGEND
[M] CENTERLINE ADJUSTABLE MONUMENT ASSEMBLIES
⊡ EXISTING MONUMENT
O EXISTING I.P.'S, SPIKES, OR PIPES

RECEIVED _____,19__
RECORDED _____,19__
BOOK _____ PAGE _____
COUNTY RECORDER

I HEREBY CERTIFY THAT THIS PLAT IS A TRUE DELINEATION OF A SURVEY MADE FOR THE OHIO DEPARTMENT OF TRANSPORTATION IN MARCH 2001, BY ms consultants, inc.

Richard J Swan DATE 6/15/04
RICHARD JOHN SWAN REGISTERED PROFESSIONAL SURVEYOR No. 6574

HORIZONTAL SCALE IN FEET
0 150 300 600

STATE PID NO. 16372

STATE PROJECT NO.

CENTERLINE SURVEY PLAT

SUM-77-1.40

SHEET 1 OF 2

SEAL

7
381

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SUM–77–1.40
SECTION 14, 15, 23, 25, 26, – T 12 N – R 9 W
CITY OF GREEN, GREEN TOWNSHIP, SUMMIT COUNTY, OHIO

EXISTING CENTERLINE AND RIGHT OF WAY

THE EXISTING CENTERLINE OF SURVEY WAS ESTABLISHED USING THE PREVIOUS CENTERLINE SURVEY PLAT OF 1961 AS RECORDED IN PLAT BOOK 34 AT PAGE 136 AND PLAT BOOK 34 AT PAGE 176, AND THE UPDATED CENTERLINE SURVEY PLAT RECORDED IN PLAT BOOK 59 AT PAGE 87, OF THE STARK COUNTY RECORDS, AND THE 1961 CENTERLINE SURVEY PLAT RECORDED IN PLAT BOOK 60 AT PAGE 53 AND 54, AND THE UPDATED CENTERLINE SURVEY PLAT RECORDED IN CABINET 'J', SLIDE 45 OF THE SUMMIT COUNTY RECORDS.

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BASIS FOR BEARINGS:

ALL BEARINGS ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD 83/1995 (HARN)

CO–ORDINATE SYSTEM:

DATUM IS NAD83/95 (HARN)
TO CONVERT FROM METRIC GRID TO US FEET GROUND USE PROJECT ADJUSTMENT FACTOR OF = 1.000105508

MATCH LINE STA. 145+00

QTR. SEC. CORNER CALC.
STA 168+29.84 – 2461.08' LT.

IRON PIPE FD.
STA. 168+54.22 – 2443.60' LT.

N01°40'41"E
2667.56'

26.39.66'
N88°13'02"W

SW QTR SEC 23

NW QTR SEC 23

SE QTR SEC 23

SE QTR SEC 15

NE QTR SEC 23

NE QTR SEC 15

SW QTR SEC 14

N01°23'48"E
2661.19'

QTR. SEC. CORNER CALC.
STA 152+87.96 – 318.56' LT.

IRON PIPE FD. & USED
STA 153+42.25 – 278.82' LT.

S88°04'25"E
393.19'

N02°01'12"E
542.26'

C/L SURVEY AND CONSTRUCTION I–77

150+00 N33°57'29"W 160+00 170+00 180+00 190+00 200+00 210+00 220+00

C/L MON. FD.
STA 157+34.64 – 0.88' RT.

2279.12'
N88°04'25"W

QTR. SECTION LINE
STA 157+26.77 – 0.00' RT.

N02°01'12"E
2112.68'

1534.41'
N87°56'40"W

IRON PIN FD. AT QTR. SEC. CORNER
STA 174+36.44 – 1241.15' RT.

1121.15'
N87°58'40"W

STONE FD. AT SEC. CORNER
STA 189+97.85 – 906.87' LT.

SECTION LINE
STA 183+38.64 – 0.00' RT.

N01°48'11"E
1520.02'

PC = 194+32.70

C/L MON. FD.
STA 194+28.63 – 0.58' RT.

N01°48'11"E
1138.05'

C/L CURVE DATA
P.I. STA. 207+68.49
DELTA = 08°53'15"
R = 17188.75'
T = 1335.79'
L = 2666.22'
CH = 2663.55'
Dc = 00°20'00"

END PROJECT
STA 209+35.00 SB SLM=3.97
STA 213+85.00 NB SLM=4.06

SECTION LINE
STA 202+31.58 – 0.00' RT.

IRON PIN FD. AT QTR. SEC. CORNER
STA 210+87.22 – 729.47

984.67'
N88°20'37"W

IRON PIN FD. AT QTR. SEC. CORNER
STA 228+92.99 – 1182.07' LT.

1651.96'
S88°20'37"E

C/L MON. FD. & USED
STA 220+93.29 – 0.00' RT.

N42°50'44"W

N42°51'58"W

PT = 220+98.98

C/L MON. FD. & USED
STA 315+84.20 – 0.00' RT.

C/L MON. FD. & USED
STA 270+85.67 – 0.00' RT.
DEF. LT. = 0°01'14"

QTR. SECTION LINE
STA 217+35.06 – 0.00' RT.

CENTERLINE MONUMENTS ARE TO BE SET DURING CONSTRUCTION AT THE FOLLOWING STATIONS AT A TOLERANCE OF ± 0.02 FT.				
Ⓜ NEW CENTERLINE MONUMENT ASSEMBLY				
POINT	STATION	NORTHING	EASTING	OFFSET
P.O.T	STA 150+57.49	467133.2673	2259978.8684	C/L
P.O.T	STA 160+00	467915.0322	2259452.3914	C/L
P.O.T	STA 170+00	468744.4779	2258893.8040	C/L
P.O.T	STA 183+38.64	469854.8070	2258146.0566	C/L
P.C.	STA 194+32.70	470762.2732	2257534.9266	C/L
P.O.C.	STA 202+31.58	471414.2886	2257073.4514	C/L
P.O.C.	STA 210+00	472020.5742	2256601.4408	C/L
TOTAL = 7				

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MONUMENT LEGEND
Ⓜ CENTERLINE ADJUSTABLE MONUMENT ASSEMBLIES
⊡ EXISTING MONUMENT
O EXISTING I.P.'S, SPIKES, OR PIPES

EXISTING CENTERLINE MONUMENTS WERE FOUND AT THE FOLLOWING STATIONS AND ARE LOCATED FROM THE CENTERLINE SURVEY & CONSTRUCTION				
STATION (1961 PLAN)	C/L SURVEY STA.	OFFSET	NORTHING	EASTING
POT STA 157+47.3	STA 157+34.64	0.88' RT.	467695.4275	2259601.3489
PC STA 194+45.81	STA 194+28.63	0.58' RT.	470759.2168	2257537.6891
PT STA 221+10.81 BK= PT STA 221+11.75 AH	STA 220+93.29	0.00' RT.	472845.4925	2255884.2357
POT STA 271+00	STA 270+85.67	0.00' RT.	476501.7263	2252493.1223
POT STA 316+00 BK= POT STA 317+00 AH	STA 315+84.20	0.00' RT.	479798.8968	2249432.8266
TOTAL = 5				

SHEET 2 OF 2

SEAL

STATE OF OHIO
RICHARD JOHN ANSEL I
6516
REGISTERED
PROFESSIONAL SURVEYOR

HORIZONTAL SCALE IN FEET
0 150 300 600

STATE PID NO. 16372

STATE PROJECT NO.

CENTERLINE SURVEY PLAT

SUM–77–1.40

8
381

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PROPOSED LEGEND

(1) ITEM 880 - 12¾" ASPHALT CONCRETE WITH WARRANTY (7 YEARS), AS PER PLAN
(2) ITEM 302 - 4" ASPHALT CONCRETE BASE, PG64-22, AS PER PLAN
(3) ITEM 408 - PRIME COAT
(4) ITEM 304 - 6" AGGREGATE BASE
(5) ITEM 605 - 6" SHALLOW PIPE UNDERDRAINS, WTIH FABRIC WRAP
(6) NOT USED
(7) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D
(8) ITEM 606 - GUARDRAIL, TYPE 5
(9) ITEM 448 - 1¼" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I, PG 64-22, UNDER GUARDRAIL, AS PER PLAN
(9A) ITEM 448 - 1¼" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I, PG 64-22, AS PER PLAN (UNDER NOISE BARRIER)
(10) ITEM 204- SUBGRADE COMPACTION
(11) ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE B (446)
(12) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=1½")
(13) NOT USED
(14) ITEM 407 - TACK COAT
(15) ITEM 526 - REINFORCED CONCRETE APPROACH SLAB, T=15", AS PER PLAN
(16) ITEM 304 - 12" AGGREGATE BASE
(17) ITEM 659 - SEEDING AND MULCHING
(18) ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN, No. 2 (TO REMAIN - SEE M.O.T. PLANS FOR GENERAL NOTES AND QUANTITIES)
(19) ITEM 301 - 7" ASPHALT CONCRETE BASE, PG 64-22
(20) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE
(21) ITEM 448 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22
(22) ITEM 448 - 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE I, PG 64-22
(23) ITEM 302 - 4½" ASPHALT CONCRETE BASE, PG64-22, AS PER PLAN
(24) ITEM 609 - CURB, TYPE 4-C

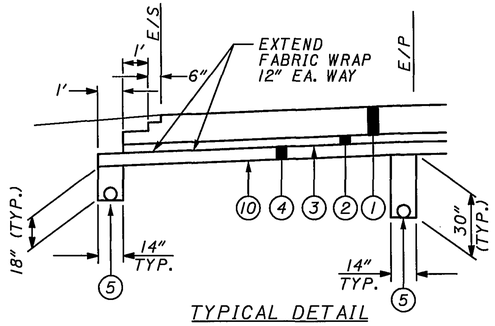
EXISTING LEGEND

(A) EXISTING 6"± ASPHALT CONCRETE
(B) EXISTING 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
(C) EXISTING 6"± SUBBASE
(D) EXISTING 3"± BITUMINOUS AGGREGATE BASE
(E) EXISTING VARIABLE THICKNESS AGGREGATE BASE COURSE
(F) EXISTING 6" PIPE UNDERDRAIN (30" DEEP FILL) (50" DEEP CUT)
(G) EXISTING SHALLOW UNDERDRAIN
(H) EXISTING 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP
(K) EXISTING GUARDRAIL, TYPE 5
(L) EXISTING 1¼" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I, PG 64-22 UNDER GUARDRAIL, AS PER PLAN
(M) EXISTING 13¼" ASPHALT CONCRETE WITH WARRANTY (7 YEARS), AS PER PLAN
(N) EXISTING 4" APHALT CONCRETE BASE, PG 64-22
(P) EXISTING 6" AGGREGATE BASE
(Q) EXISTING BITUMINOUS PRIME COAT
(R) EXISTING ¾" RUBBERIZED OPEN GRADED ASPHALT FRICTION COURSE, AS PER PLAN
(S) EXISTING 1¼" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I, PG 64-28, AS PER PLAN
(T) EXISTING 2 " ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2 , PG 64-28
(U) EXISTING 3" BITUMINOUS AGGREGATE BASE, PG 64-22
(V) EXISTING 8" BITUMINOUS AGGREGATE BASE, PG 64-22
(W) EXISTING 6" SHALLOW PIPE UNDERDRAIN
(X) EXISTING 4" SHALLOW PIPE UNDERDRAIN
(Y) EXISTING 3 " ASPHALT CONCRETE
(Z) EXISTING AGGREGATE BASE COURSE

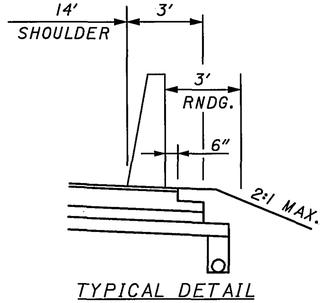
GENERAL LEGEND

SCALE : NONE
* - OR AS SHOWN ON CROSS SECTIONS
++ - 10' ROUNDING WHERE NO GUARDRAIL IS PROPOSED

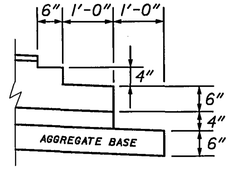
NOTE: THE MEDIAN CROSSOVERS AT STA. 104+69 AND AT STA. 206+03 SHALL HAVE THE SAME PAVEMENT COMPOSITION AS THE MAINLINE TYPICAL SECTION. SEE DETAILS ON SHEET 253.



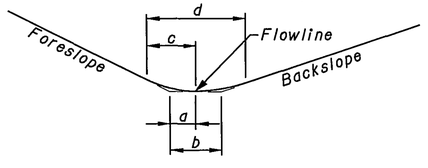
TYPICAL DETAIL
PAVEMENT EDGE & UNDERDRAIN



TYPICAL DETAIL
PAVEMENT EDGE W/
CONCRETE BARRIER



PAVEMENT EDGE
STEP DETAIL



OUTSIDE DITCH SAFETY GRADING
(IN DIRECTION OF TRAVEL)

Foreslope	20' RADIUS		Backslope					
			6:1		4:1		3:1	
	a	c	b	d	b	d	b	d
8:1	1'-3"	2'-6"	3'-0"	5'-9"	3'-9"	7'-4"	4'-6"	8'-10"
6:1	1'-8"	3'-3"	3'-4"	6'-7"	4'-2"	8'-2"	4'-11"	9'-7"
4:1	2'-6"	4'-10"	4'-2"	8'-2"	5'-0"	9'-8"		
3:1	3'-3"	6'-4"	4'-11"	9'-7"				

LEGENDS AND MISCELLANEOUS DETAILS - TYPICAL SECTIONS

SUM-77-1.40

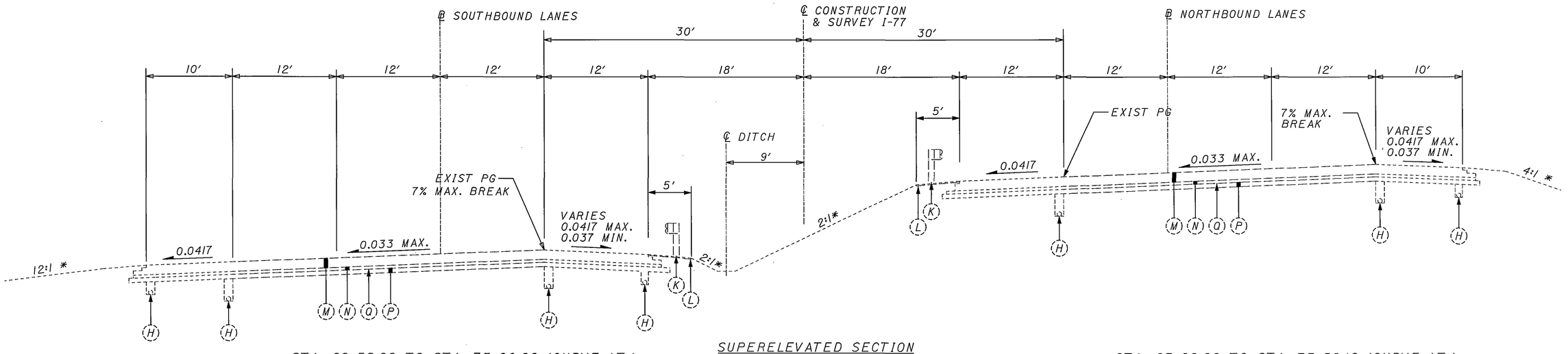
FOR ITEM LEGEND SEE SHEET NO. 9

GENERAL LEGEND

SCALE : NONE

* - OR AS SHOWN ON CROSS SECTIONS

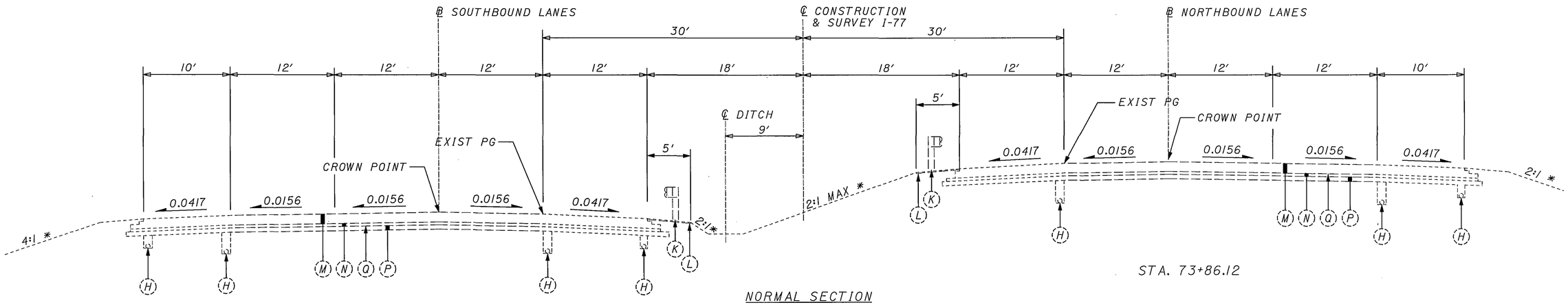
++ - 10' ROUNDING WHERE NO GUARDRAIL IS PROPOSED



STA. 60+58.00 TO STA. 73+06.22 (CURVE LT.)

SUPERELEVATED SECTION

STA. 63+00.00 TO STA. 73+86.12 (CURVE LT.)



STA. 73+06.22 TO STA. 73+86.12

NORMAL SECTION

STA. 73+86.12

EXISTING TYPICAL SECTIONS I-77

SUM-77-1.40

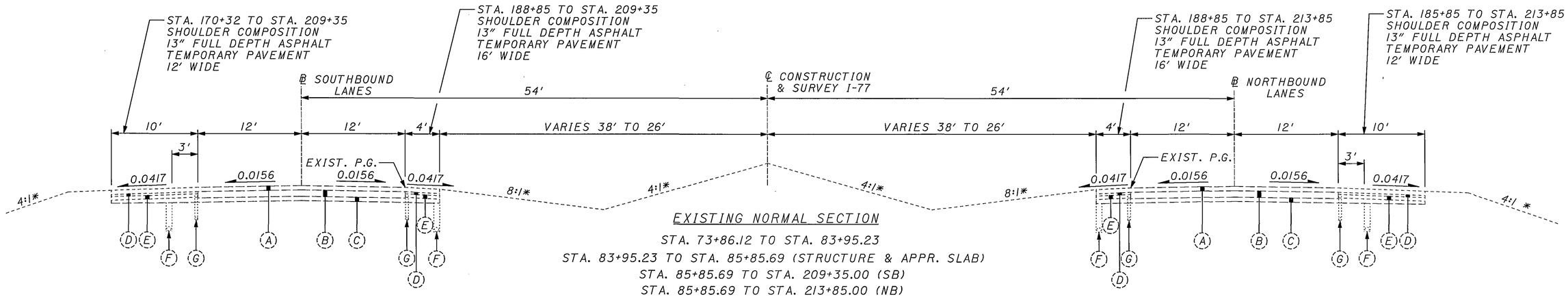
FOR ITEM LEGEND SEE SHEET NO. 9

GENERAL LEGEND

SCALE : NONE

* - OR AS SHOWN ON CROSS SECTIONS

++ - 10' ROUNDING WHERE NO GUARDRAIL IS PROPOSED



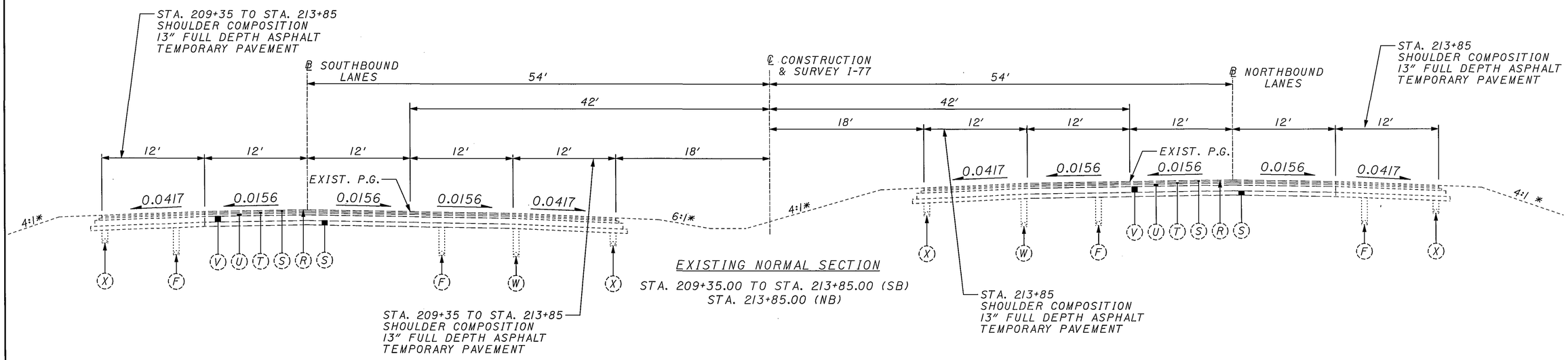
EXISTING NORMAL SECTION

STA. 73+86.12 TO STA. 83+95.23

STA. 83+95.23 TO STA. 85+85.69 (STRUCTURE & APPR. SLAB)

STA. 85+85.69 TO STA. 209+35.00 (SB)

STA. 85+85.69 TO STA. 213+85.00 (NB)



EXISTING NORMAL SECTION

STA. 209+35.00 TO STA. 213+85.00 (SB)

STA. 213+85.00 (NB)

EXISTING TYPICAL SECTIONS I-77

SUM-77-1.40

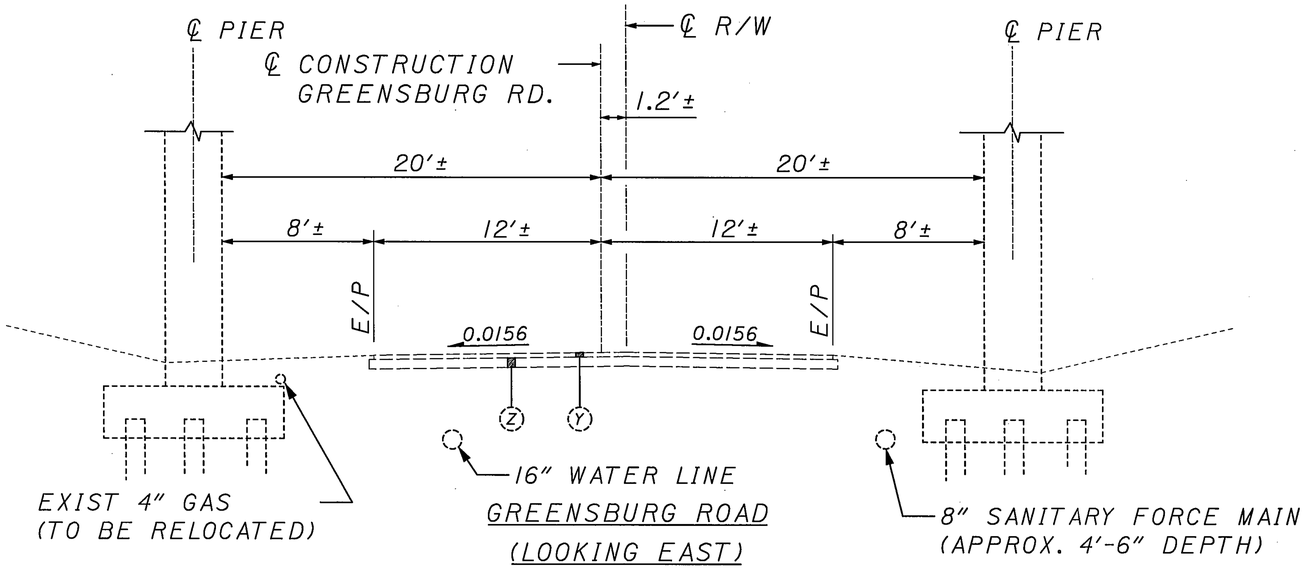
FOR ITEM LEGEND SEE SHEET NO. 9

GENERAL LEGEND

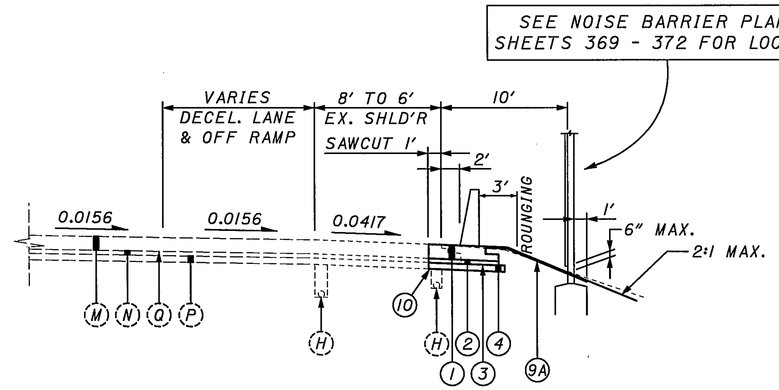
SCALE : NONE

* - OR AS SHOWN ON CROSS SECTIONS

++ - 10' ROUNDING WHERE NO GUARDRAIL IS PROPOSED

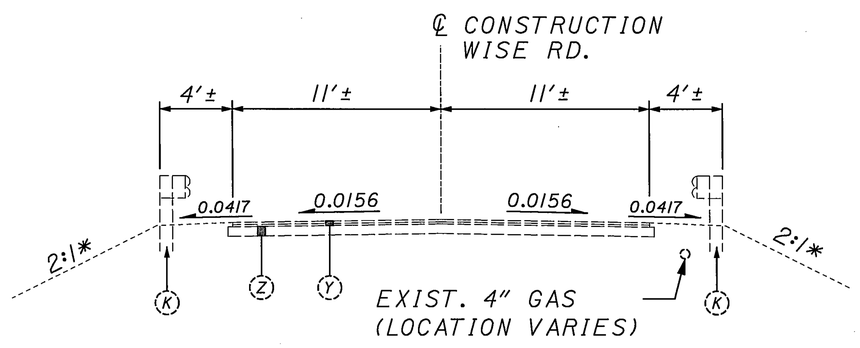


STA. 6+00.00 TO STA. 12+75.00



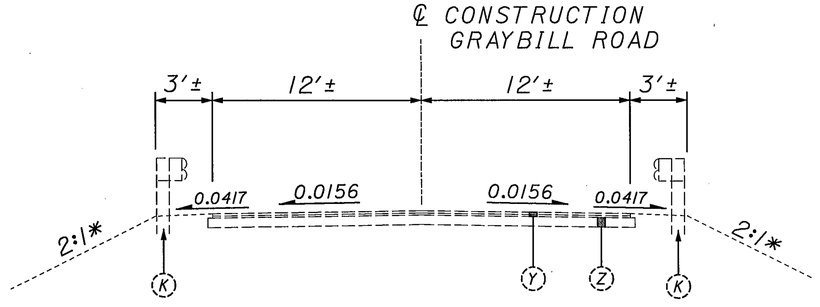
I-77 NORTHBOUND TO
SR 241 OFF RAMP

ML. STA. 227+49.93 TO
RAMP STA. 24+84.91



WISE ROAD

STA. 6+85+00 TO STA. 8+07.13
STA. 11+95.67 TO STA. 13+55.00



GRAYBILL ROAD

STA. 7+00.00 TO STA. 8+37.46
STA. 11+64.00 TO STA. 13+00.00

EXISTING SIDE ROAD TYPICAL SECTIONS I-77

SUM-77-1.40

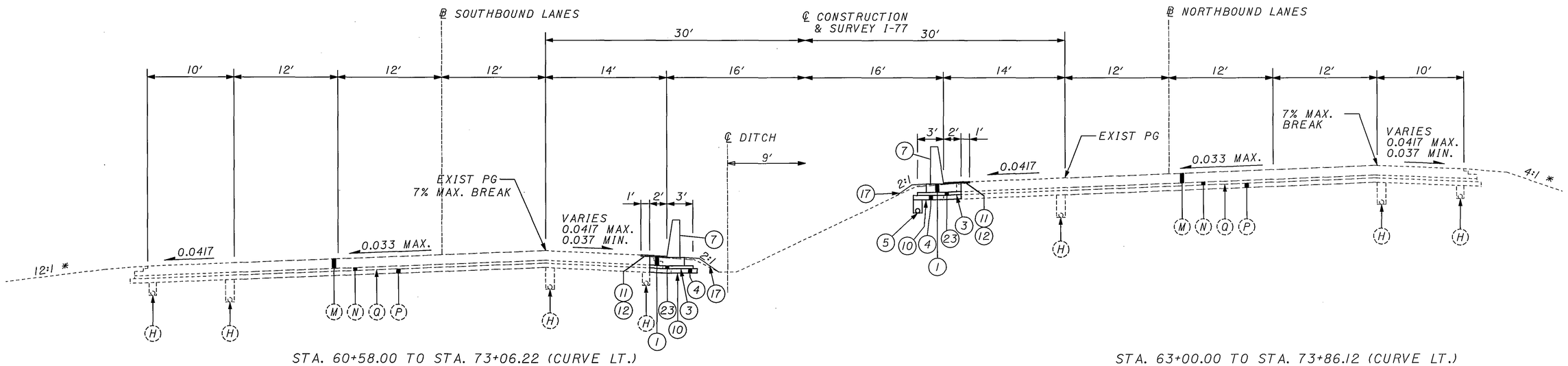
FOR ITEM LEGEND SEE SHEET NO. 9

GENERAL LEGEND

SCALE : NONE

* - OR AS SHOWN ON CROSS SECTIONS

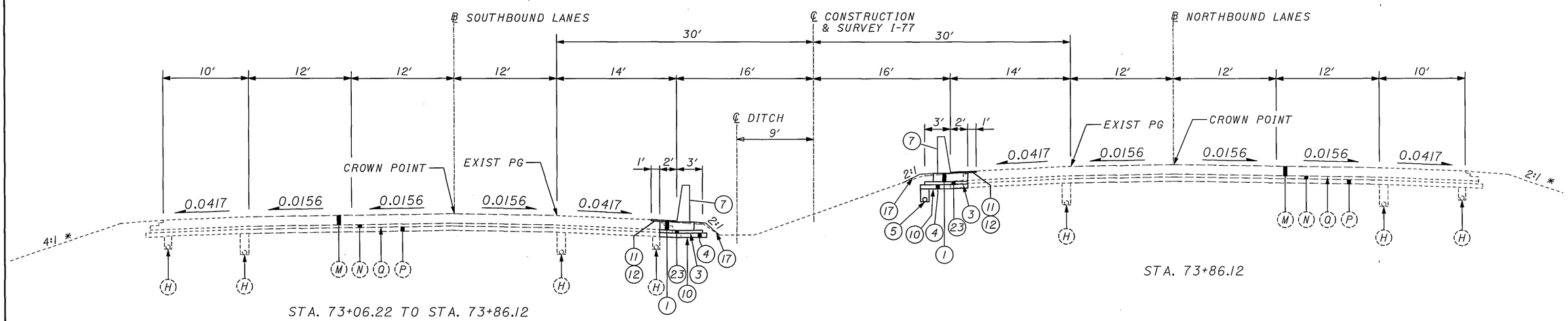
++ - 10' ROUNDING WHERE NO GUARDRAIL IS PROPOSED



STA. 60+58.00 TO STA. 73+06.22 (CURVE LT.)

STA. 63+00.00 TO STA. 73+86.12 (CURVE LT.)

SUPERELEVATED SECTION



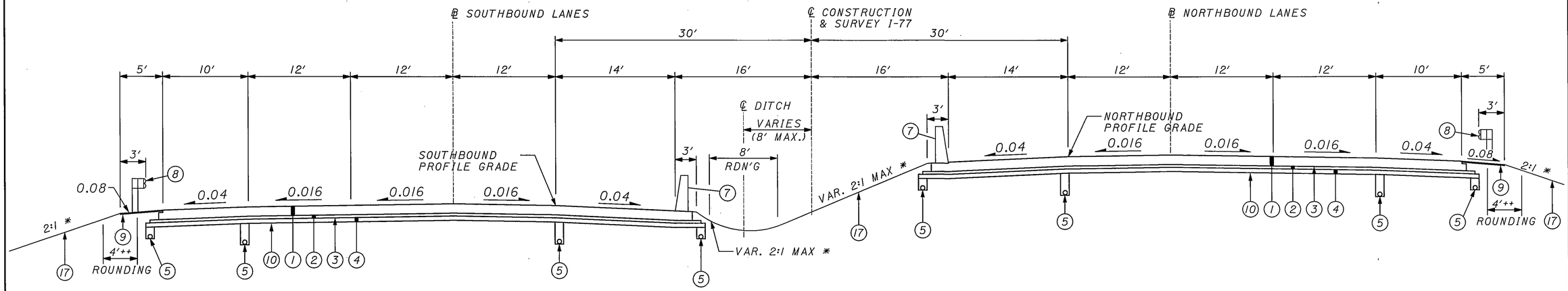
STA. 73+06.22 TO STA. 73+86.12

STA. 73+86.12

NORMAL SECTION

PROPOSED TYPICAL SECTIONS I-77

SUM-77-1.40



STA. 73+86.12 TO STA. 83+95.23 = 1,009.11′

STA. 73+86.12 TO STA. 83+95.23 = 1,009.11′

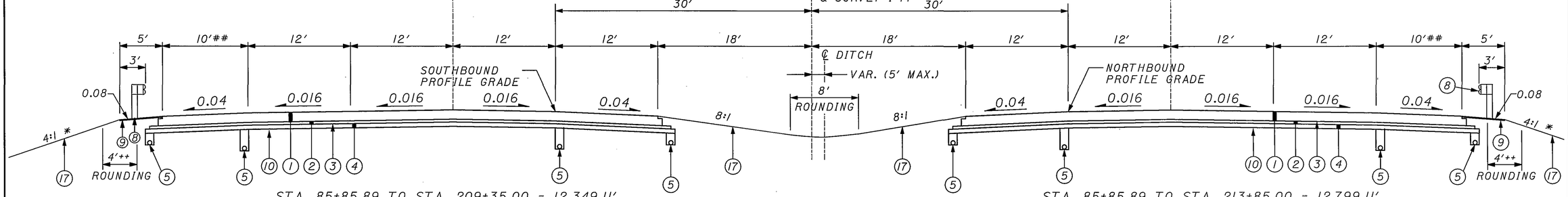
NORMAL SECTION

PROPOSED TYPICAL SECTIONS I-77

SUM-77-1.40

VARIES FROM 10′ @ STA. 208+85 TO 12′ @ STA. 209+35

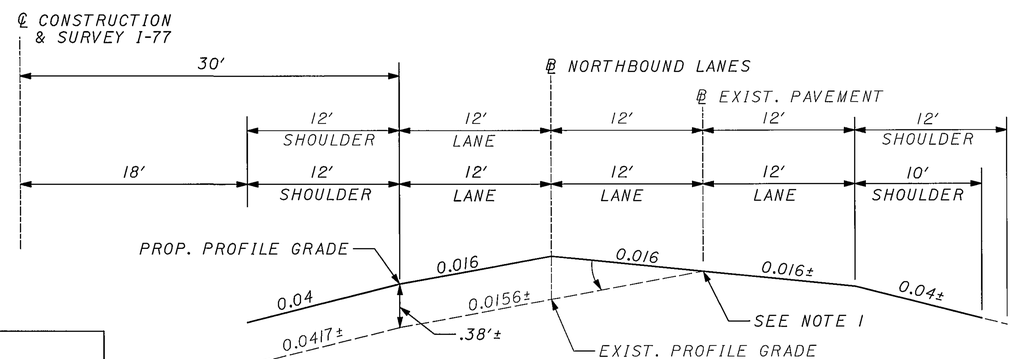
VARIES FROM 10′ @ STA. 213+35 TO 12′ @ STA. 213+85



STA. 85+85.89 TO STA. 209+35.00 = 12,349.11′

STA. 85+85.89 TO STA. 213+85.00 = 12,799.11′

NORMAL SECTION



CROWN TRANSITION DIAGRAM

NORTHBOUND SHOWN - SOUTHBOUND SIMILAR

FOR ITEM LEGEND SEE SHEET NO. 9

GENERAL LEGEND

SCALE : NONE

* - OR AS SHOWN ON CROSS SECTIONS

++ - 10′ ROUNDING WHERE NO GUARDRAIL IS PROPOSED

NOTE 1:

TRANSITION PROPOSED PAVEMENT CROWN OVER 100′ TO MEET EXISTING PAVEMENT CROWN BY REVOLVING ABOUT ℄ EXISTING PAVEMENT (EXIST. CROWN POINT) FROM STA. 212+85 TO STA. 213+85 NORTHBOUND AND FROM STA. 208+35 TO STA. 209+35 - SOUTHBOUND.

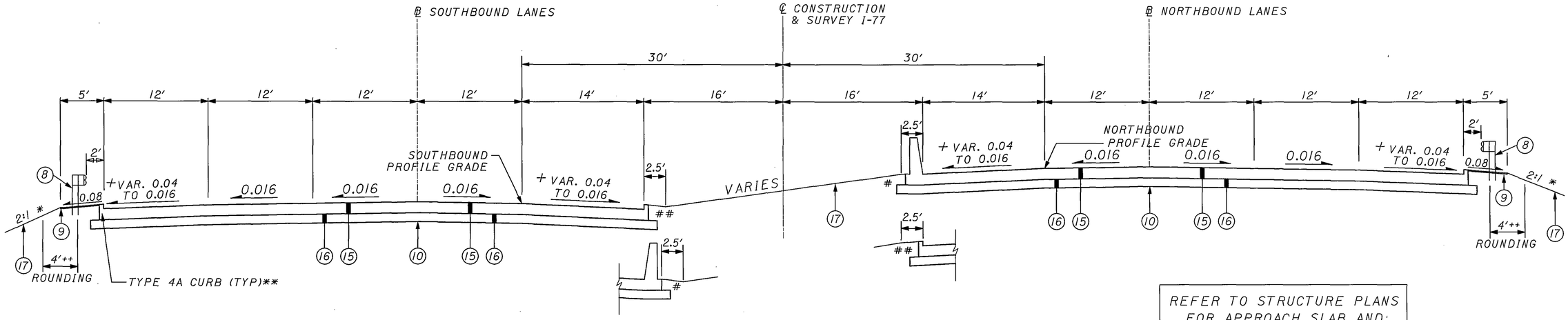
FOR ITEM LEGEND SEE SHEET NO. 9

GENERAL LEGEND

SCALE : NONE

* - OR AS SHOWN ON CROSS SECTIONS

++ - 10' ROUNDING WHERE NO GUARDRAIL IS PROPOSED



STA. 83+95.23 TO STA. 84+20.23 = 25'

STA. 84+20.23 TO STA. 85+60.69 (STRUCTURE OVER GREENSBURG RD.)

STA. 85+60.69 TO STA. 85+85.69 = 25'

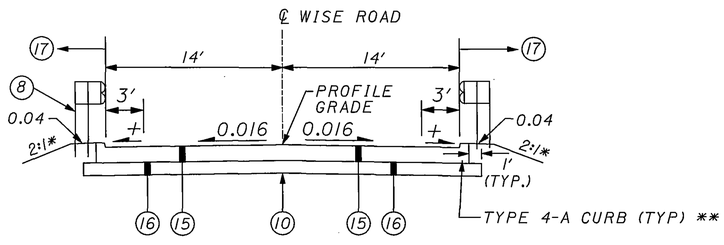
TOTAL = 50'

REFER TO STRUCTURE PLANS FOR APPROACH SLAB AND BARRIER DETAILS

+ TRANSITION SHOULDER CROSS SLOPE (0.04) TO MATCH BRIDGE CROSS SLOPE (0.016) OVER LENGTH OF APPROACH SLAB.

APPROACH SLAB

NORMAL SECTION



APPROACH SLAB

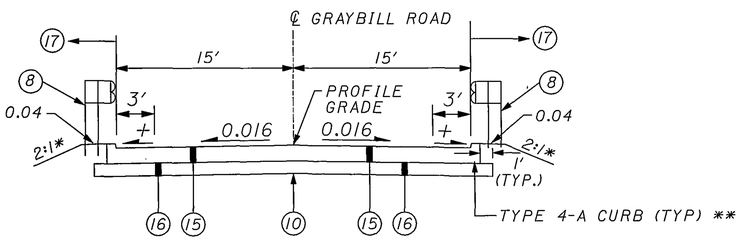
NORMAL SECTION

WISE ROAD

STA. 8+07.13 TO 8+27.13 = 20'

STA. 11+75.67 TO 11+95.67 = 20'

TOTAL = 40'



APPROACH SLAB

NORMAL SECTION

GRAYBILL ROAD

STA. 8+37.46 TO 8+57.46 = 20'

STA. 11+44.00 TO 11+64.00 = 20'

TOTAL = 40'

** COST FOR CURB OR BARRIER IS INCLUDED WITH ITEM 526 - REINFORCED CONCRETE APPROACH SLAB, T=15" (SEE STRUCTURE PLANS FOR PAYMENT

APPROACH SLAB TYPICAL SECTIONS I-77

PROPOSED APP

SUM-77-1.40

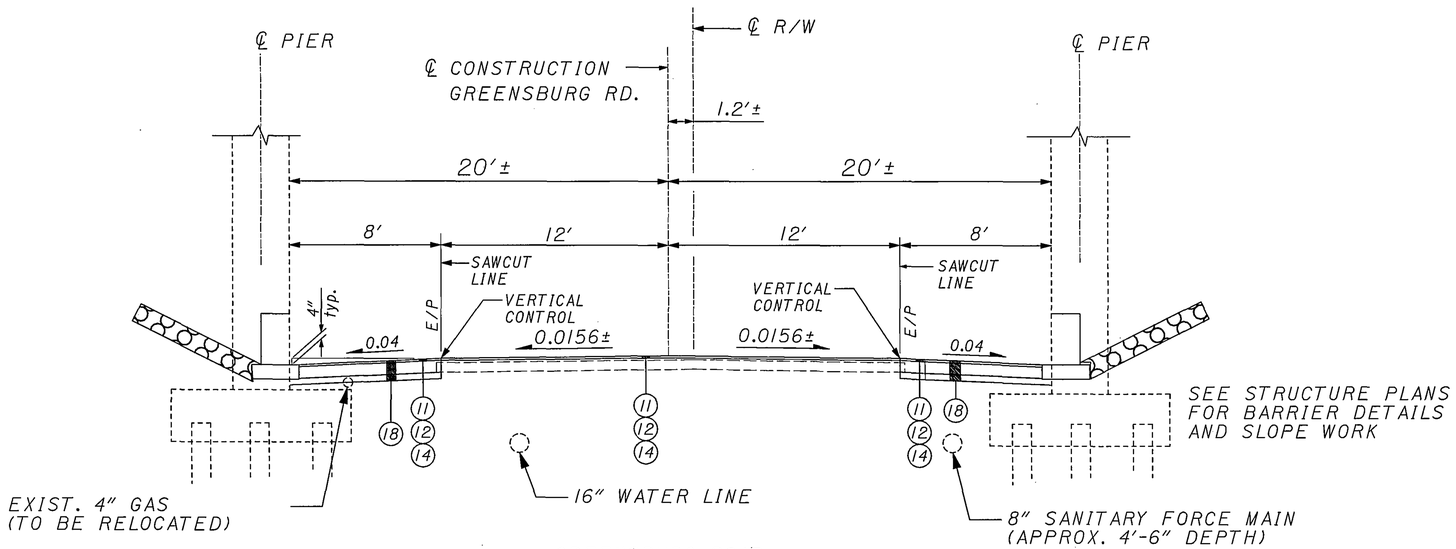
FOR ITEM LEGEND SEE SHEET NO. 9

GENERAL LEGEND

SCALE : NONE

* - OR AS SHOWN ON CROSS SECTIONS

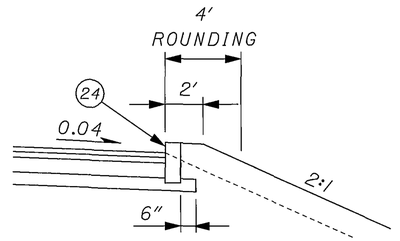
++ - 10' ROUNDING WHERE NO GUARDRAIL IS PROPOSED



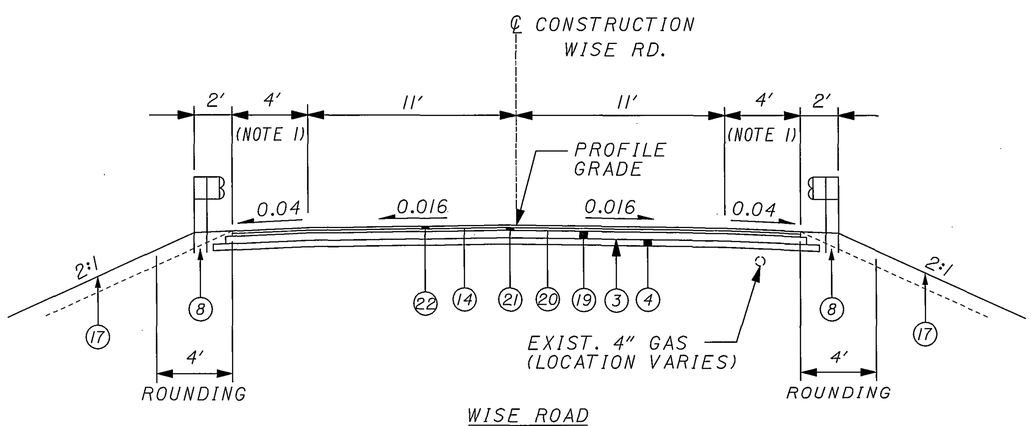
GREENSBURG ROAD

(LOOKING EAST)

STA. 6+00.00 TO STA. 12+75.00



PAVEMENT STEP DETAIL W/CURB FOR WISE ROAD & GRAYBILL ROAD



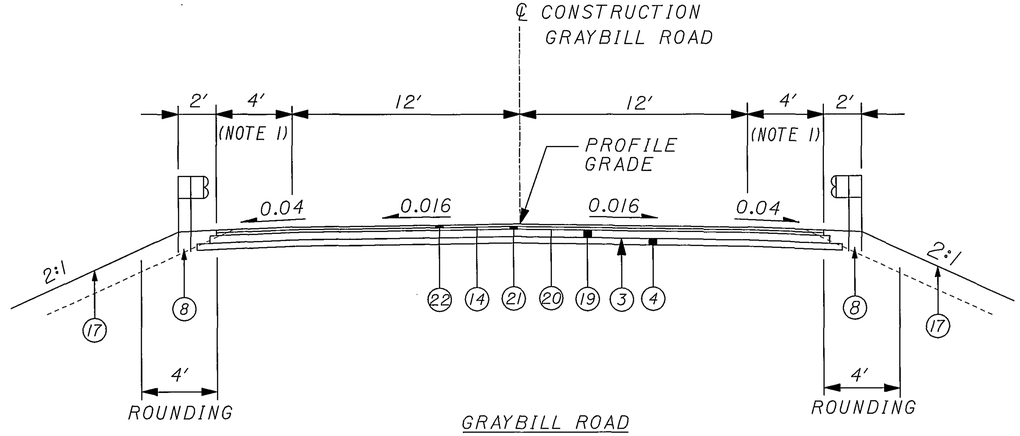
WISE ROAD

STA. 6+85.00 TO STA. 8+07.13 = 122.13'

STA. 11+95.67 TO STA. 13+55.00 = 159.33'

TOTAL = 281.46'

CURB, TYPE 4-C: FROM STA. 7+78.88 TO STA. 7+98.48 LT.
& STA. 11+87.02 TO STA. 12+03.73 LT. = 36 FT.
STA. 7+99.06 TO STA. 8+15.78 RT.
& STA. 12+04.32 TO STA. 12+23.91 RT. = 36 FT.



GRAYBILL ROAD

STA. 7+00.00 TO STA. 8+37.46 = 137.46'

STA. 11+64.00 TO STA. 13+00.00 = 136.00'

TOTAL = 273.46'

CURB, TYPE 4-C: FROM STA. 8+17.47 TO STA. 8+35.74 LT.
& STA. 11+62.29 TO STA. 11+80.31 LT. = 36 FT.
STA. 8+35.80 TO STA. 8+39.43 RT.
& STA. 11+65.71 TO STA. 11+83.99 RT. = 22 FT.

NOTE 1: TRANSITION THE 4' GUARDRAIL OFFSET TO 3' TO MEET THE BRIDGE BARRIER

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

UTILITIES

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

* DOMINION EAST OHIO
TRANSMISSION, STORAGE & GATHERING
7015 FREEDOM AVENUE, NW
NORTH CANTON, OHIO 44720-7381
(330) 497-5136
ATTN: MR. JOHN C. GRANT

* DOMINION EAST OHIO
DISTRIBUTION DIVISION
4725 SOUTHWAY, S.W.
CANTON, OHIO 44706
(330) 478-3140
ATTN: MS. KATE QUILLIN

OHIO EDISON
1910 WEST MARKET STREET
FAIRLAWN BUILDING #1
AKRON, OH 44313-6912
(330) 384-4931
ATTN: MS. HEIDI LONG

GREAT LAKES ENERGY PARTNERS, LLC
125 STATE ROUTE 43
P.O. BOX 550
HARTVILLE, OH 44632-0550
(330) 877-6747
ATTN: MS. SUE BARKLEY

COUNTY OF SUMMIT
DEPT. OF ENVIRONMENTAL SERVICES
2525 STATE ROAD
CUYAHOGA FALLS, OHIO 44223
(330) 926-2432
ATTN: MR. LARRY SHULER

SBC
50 W. BOWERY ST.
AKRON, OHIO 44308
(330) 384-8057
ATTN: MS. SABRENA LAMPLEY

CONSUMERS OHIO WATER COMPANY
870 Third Steet NW
MASSILON, OHIO 44647
(330) 832-5764
ATTN: MR. DON SNYDER

* DEO = THE EAST OHIO GAS COMPANY
dba DOMINION EAST OHIO : 1-800-362-7557

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.

CONTINGENCY QUANTITIES

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

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM, ADJUSTED TO NAVD 88.

WORK LIMITS

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

PROTECTION OF RIGHT-OF-WAY LANDSCAPING

THE CONTRACTOR SHALL CONSTRICT ALL OF HIS ACTIVITIES, EQUIPMENT STORAGE, AND STAGING TO WITHIN THE CONSTRUCTION LIMITS. UNLESS OTHERWISE IDENTIFIED IN THE PLANS OR PROPOSAL, THE CONSTRUCTION LIMITS ARE IDENTIFIED AS 30 FEET FROM THE EDGE OF PAVEMENT. SHOULD THE CONTRACTOR WISH TO USE ANY AREA OUTSIDE THESE LIMITS, A REQUEST IN WRITING MUST BE SUBMITTED TO THE PROJECT ENGINEER. THE DOCUMENT SUBMITTED MUST CLEARLY IDENTIFY THE AREA THAT THE CONTRACTOR PLANS TO USE AND EXPLAIN THE PROPOSED USE AND RESTORATION OF THE AREA. THE ENGINEER SHALL APPROVE THE REQUEST IN WRITING BEFORE THE CONTRACTOR HAS PERMISSION TO USE THE AREA. PRIOR TO BEGINNING WORK, THE CONTRACTOR, SUPERINTENDENT OR HIS REPRESENTATIVE, THE PROJECT ENGINEER, AND A REPRESENTATIVE OF THE MAINTAINING AGENCY SHALL REVIEW AND RECORD ALL LANDSCAPING ITEMS WITHIN THE RIGHT-OF-WAY (BOTH WITHIN AND OUTSIDE THE CONSTRUCTION LIMITS). A RECORD OF THIS REVIEW WILL BE KEPT IN THE PROJECT ENGINEER'S FILES. PRIOR TO FINAL ACCEPTANCE, A FINAL REVIEW OF LANDSCAPING ITEMS WILL BE MADE. ANY ITEMS DAMAGED BEYOND THE CONSTRUCTION LIMITS AS DEFINED ABOVE WILL BE REPLACED IN KIND OR AS DIRECTED BY THE PROJECT ENGINEER AT THE EXPENSE OF THE CONTRACTOR.

ENDANGERED SPECIES HABITAT

THIS PROJECT IS WITHIN THE RANGE OF THE FEDERALLY ENDANGERED INDIANA BAT (MYOTIS SODALIS) AND MAY IMPACT SUMMER ROOSTING HABITAT FOR THIS SPECIES. THE SUMMER ROOSTING HABITAT FOR THE INDIANA BAT CONSISTS OF LIVING OR DEAD TREES OR SNAGS WITH EXFOLIATING, PEELING OR LOOSE BARK, SPLIT TRUNKS AND/OR BRANCHES OR CAVITIES. THEREFORE, ANY UNAVOIDABLE CUTTING OF SUCH TREES WILL BE PERFORMED ONLY AFTER SEPTEMBER 15 AND BEFORE APRIL 15.

CLEARING AND GRUBBING

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

FENCE LENGTHS

THE LENGTHS OF FENCE SHOWN IN THE PLANS ARE HORIZONTAL DIMENSIONS. MEASUREMENTS OF THE FINAL QUANTITIES SHALL BE MADE IN ACCORDANCE WITH ITEM 607.

EXISTING PLANS

EXISTING PLANS ENTITLED STA/SUM-77-17.61/0.00, STA-8-14.00, SUM-8-0.00, SUM-77-3.97 AND SUM-8-1.89 MAY BE INSPECTED IN THE ODOT DISTRICT 4 OFFICE AT 2088 SOUTH ARLINGTON ROAD, AKRON, OHIO 44306.

PART-WIDTH CONSTRUCTION

BECAUSE OF THE NECESSITY TO BUILD THIS PROJECT UNDER TRAFFIC AND TO CONSTRUCT THE FULL PAVEMENT WIDTH IN STAGES, EXTREME CARE SHALL BE TAKEN TO PREVENT THE CONSTRUCTION OF A BUTT JOINT IN THE BASE COURSES. LONGITUDINAL JOINTS SHALL BE LAPPED AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3.1

ITEM 204 - PROOF ROLLING

AN ESTIMATED QUANTITY OF 67 HOURS FOR THIS ITEM HAS BEEN PROVIDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

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 RAIL SPLICE" AS SHOWN IN AASHTO M 180. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

MEDIAN AND/OR CURBING ON APPROACH SLABS

THE SHAPE OF THE MEDIAN AND/OR CURBING ON APPROACH SLABS SHALL BE TRANSITIONED, FROM THE STANDARD SECTION ON THE APPROACHES TO THE SECTION USED ON THE BRIDGE, WITHIN THE LIMITS OF THE APPROACH SLAB.

ITEM 604 - MONUMENT ASSEMBLY

ADJUSTABLE MONUMENT ASSEMBLIES AS SHOWN ON STANDARD CONSTRUCTION DRAWING RM-1.1, WILL BE PLACED BY THE CONTACTOR AT THE TIME OF CONSTRUCTION AT THE LOCATIONS SHOWN ON SHEETS 7 AND 8, ON THE CENTERLINE SURVEY PLAT OF THE RIGHT OF WAY PLAN. MONUMENTS SHALL BE PLACED IN ACCORDANCE WITH THE REFERENCE TIES PROVIDED WITHIN THIS PLAN. THE ACTUAL PLACEMENT OF THE DATUM POINT WITHIN THE MONUMENT ASSEMBLY SHALL BE DIRECTLY AND PHYSICALLY SUPERVISED IN THE FIELD BY A SURVEYOR, LICENSED IN THE STATE OF OHIO. SURVEY NOTES VERIFYING THE ACCURACY OF THE POINT SHALL BE SEALED BY THE SURVEYOR AND RETURNED TO THE DISTRICT 4 SURVEY OPERATIONS MANAGER. ANY REQUEST FOR NON-PERFORMANCE SHALL BE DIRECTED IN WRITING TO THE DISTRICT 4 PRODUCTION ADMINISTRATOR OR SURVEY OPERATIONS MANAGER AND MUST INCLUDE PROPER WRITTEN JUSTIFICATION.

WATERWAY PERMIT DETERMINATION (404/401)

All projects involving jurisdictional waters of the United States (streams, rivers, non-isolated wetlands) and/or isolated wetlands are subject to regulation under sections 404 and 401 of the Clean Water Act, and possibly Ohio EPA Isolated Wetland law. The Ohio Department of Transportation - Office of Environmental Services (OES) and/or the United States Army Corps of Engineers (USACE) has determined that the project meets the criteria of Nationwide Permit (NWP) 3 - Maintenance and Nationwide Permit (NWP) 14 - Linear Transportation Project; based upon the anticipated impacts to stream(s) and/or wetland(s). However, this permit determination did not include the use of temporary construction access fills that may be required for construction (i.e. causeway stream crossings, construction access pads, cofferdams, etc.). Information regarding the use of temporary construction access fills may not have been known at the time of the permit determination. The contractor should be aware that the use of temporary fill below the ordinary high water mark (OHWM), which is the USACE's jurisdictional limits, will require a pre-construction notification (PCN) and authorization by the USACE under NWP 33 - Temporary Construction Access and Dewatering. Should temporary construction access fill be required, the contractor shall coordinate such activities, including the PCN, through OES and allow 60 days minimum for processing with the USACE. The contractor shall not coordinate these activities directly with the USACE. The contractor shall not utilize temporary fills below OHWM until such activity is authorized by the USACE. Should a PCN be required, the PCN shall include pertinent information (i.e. volume and surface area of temporary fills) and drawings (plan and profile view) of temporary fills below OHWM. Only clean, non-erodible materials shall be used for temporary construction access fills. Any temporary fills below OHWM shall be removed following completion of the authorized activity and the area of stream where temporary fill was located shall be restored to its pre-construction condition. Please note that fording of waterways is not allowed per ODOT Construction and Material Specifications 2002, Item 207.03.

CALCULATED L.M.B. CHECKED W.B.H.

GENERAL NOTES

SUM-77-1.40

gn001.dgn

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, SOIL ANALYSIS TEST	2 EACH
659, TOPSOIL	14,316 CU. YD.
659, REPAIR SEEDING AND MULCHING	6448 SQ. YD.
659, INTER-SEEDING	6448 SQ. YD.
659, COMMERCIAL FERTILIZER	17.98 TON
659, AGRICULTURAL LIME	53.29 TON
659, WATER	714 M. GAL.
659, MOWING	32 M. SQ. FT.

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 THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING, ARE BASED ON THESE LIMITS.
THE QUANTITY FOR PERMANENT SEEDED AREA OF 128,969 SQ. YD. IS CALCULATED FROM THE CROSS-SECTIONS AND CONTINGENT QUANTITY IN THE GENERAL SUMMARY AND IS CARRIED TO THE GENERAL SUMMARY ON SHEET NO. 114.

SEEDING AND MULCHING CACULATIONS
SOIL ANALYSIS TEST: (1 TEST/10,000 C.Y.)x14,316 C.Y.=1.4 USE 2 EACH
TOPSOIL: (111 C.Y./1000 S.Y.)x128,969 S.Y. = 14,316 CU. YD.
REPAIR SEEDING AND MULCHING: 0.05x128,969 S.Y. = 6448 S.Y.
INTER-SEEDING: 0.05x128,969 S.Y. = 6448 S.Y.
COMMERCIAL FERTILIZER: (1 TON/7410 S.Y.)x128,969 S.Y. + (1 TON/11,110 S.Y.)x6448 S.Y. TOTAL=17.40+0.58= 17.98 TON
AGRICULTURAL LIME: (2 TONS/4840 S.Y.)x128,969 S.Y.= 53.29 TON
WATER: 2x(0.0027 MGAL./S.Y.)x128,969 S.Y. + (0.0027 MGAL/S.Y.)x6448 S.Y. = 714 MGAL.
MOWING: 0.25x128,969 S.Y./1000 = 32 M. SQ. FT.

SODDING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SODDED AREAS.
THE TOTAL QUANTITY FOR PERMANENT SODDED AREA OF 843 SQ. YD. IS CARRIED IN THE EROSION CONTROL SUB-SUMMARY ON SHEET NO. 125

659, TOPSOIL	94 CU. YD.
659, COMMERCIAL FERTILIZER	0.11 TON
659, AGRICULTURAL LIME	0.35 TON
660, WATER	18 M. GAL.

SODDING CALCULATIONS
TOPSOIL: (111 C.Y./1000 S.Y.)x843 S.Y. = 94 CU. YD.
COMMERCIAL FERTILIZER: (1 TON/7410 S.Y.)x843 S.Y. = 0.11 TON
AGRICULTURAL LIME: (2 TONS/4840 S.Y.)x843 S.Y.= 0.35 TON
WATER: 8x(0.0027 MGAL./S.Y.)x843 S.Y. = 18 M. GAL.

GREENSBURG ROAD IMPROVEMENTS

ALONG GREENSBURG ROAD, AT THE SOUTHEAST APPROACH CORNER TO THE BRIDGE, THE INSTALLATION OF THE PROPOSED DRAIN PIPE WILL REQUIRE THE PLACEMENT OF EMBANKMENT MATERIAL TO FILL THE EXISTING DITCH AND REPAIR THE ERODED AREA. THE WORK WILL ALSO REQUIRE REGRADING AND SEEDING TO RESTORE THE AREA.

ALONG GREENSBURG ROAD, AT THE SOUTHWEST APPROACH CORNER TO THE BRIDGE, AN EROSION CONTROL QUANTITY FOR ITEM 660 - SODDING REINFORCED IS INCLUDED IN THE PLANS. IN ADDITION TO THE REINFORCED SODDING, THE WORK WILL REQUIRE PLACEMENT OF EMBANKMENT MATERIAL, REGRADING AND SEEDING TO RESTORE THE AREA.

THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER TO FINISH GRADE AND RESTORE BOTH LOCATIONS TO HIS/HER SATISFACTION.

ITEM 203 - EMBANKMENT	30 CU YD
ITEM 203 - EXCAVATION	15 CU YD
ITEM 659 - SEEDING AND MULCHING	200 SQ YD

WETLANDS AVOIDANCE

SEVERAL WETLAND AREAS ARE LOCATED WITHIN, AND ADJACENT TO, THE EXISTING LIMITED ACCESS RIGHT-OF-WAY OF IR 77, AND/OR IDENTIFIED ON THE PROJECT SITE PLAN, PLAN/PROFILE SHEETS, CROSS SECTIONS, CULVERT PLAN/PROFILE/DETAILS, AND SIGNING/PAVEMENT MARKING PLAN SHEETS AS APPROPRIATE. NO EXCAVATION, GRADING, OR FILLING OPERATIONS SHALL BE PERFORMED IN ANY WETLANDS AREAS WITHIN AND/OR ADJACENT TO THE EXISTING IR 77 LIMITED ACCESS RIGHT-OF-WAY. TO DELINEATE THE BOUNDARIES OF AND PROTECT THE EXISTING WETLANDS AREAS WITHIN THE EXISTING IR 77 LIMITED ACCESS RIGHT-OF-WAY, THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN CONSTRUCTION FENCING ALONG THE PERIMETER OF AND OUTSIDE THE WETLANDS AREAS, AS DIRECTED BY THE ENGINEER. THE CONSTRUCTION FENCE SHALL BE 4'-0" IN HEIGHT (MIN.) AND SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES WITHIN THESE LIMITS AND ADJACENT AREAS INCLUDING ANY NECESSARY CLEARING AND GRUBBING ACTIVITIES. THE FENCE SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

A QUANTITY OF 1,125 LIN. FEET, ITEM 607 - FENCE MISC.: CONSTRUCTION FENCING (PLASTIC/NYLON) HAS BEEN ADDED TO THE PLAN FOR USE AS DIRECTED BY THE ENGINEER. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR STORE EQUIPMENT AND/OR MATERIALS IN ANY WETLANDS AREA.

STREAM CHANNEL EXCAVATION

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT ANY INCIDENTAL DISCHARGES ASSOCIATED WITH THE EXCAVATION AND HAULING OF MATERIAL FROM THE STREAM CHANNEL. THIS PERTAINS TO ANY EXCAVATION OPERATIONS (i.e. FOUNDATION PIER OR ABUTMENT EXCAVATION, CHANNEL CLEAN-OUT, EXCAVATION FOR ROCK CHANNEL PROTECTION, AND REMOVAL OF ANY TEMPORARY FILL ASSOCIATED WITH CONSTRUCTION OPERATIONS.)

CONSTRUCTION AND DEMOLITION DEBRIS

THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID AND/OR LIMIT CONSTRUCTION AND DEMOLITION DEBRIS FROM ENTERING A STREAM. ANY MATERIAL THAT DOES FALL INTO THE STREAM SHALL BE REMOVED AS SOON AS POSSIBLE.

MECHANICAL EQUIPMENT OPERATION AT STREAM CHANNEL

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

ITEM 204 - SUBGRADE COMPACTION, AS PER PLAN

THE WIDTH USED FOR MAINLINE PAYMENT PURPOSES IS EQUAL TO THE WIDTH OF ITEM 304 - AGGREGATE BASE. THIS AMOUNTS TO 2'-6" BEYOND THE EDGE OF SHOULDER, RATHER THAN 1'-6" AS SPECIFIED IN THE CMS.

ITEM 880 - ASPHALT CONCRETE WITH WARRANTY (7 YEARS), AS PER PLAN

LIFT THICKNESS (AND STEP WIDTHS) SHOWN IN THE PLAN ARE FOR QUANTITY ESTIMATION ONLY AND ARE NOT REQUIRED LIFT THICKNESSESS FOR ACTUAL CONSTRUCTION. THE CONTRACTOR SHALL DEVELOP EDGE COURSE DESIGN PER SECTION 403.3 OF ODOT PAVEMENT DESIGN AND REHABILITATION MANUAL BASED ON HIS WARRANTY PAVEMENT COMPOSITION.
SECTION 880.04 OF THE SUPPLEMENTAL SPECIFICATION 880 SHALL BE DELETED AND REPLACED WITH THE FOLLOWING:

880.04 MIX DESIGN AND MATERIALS.
THE MIX DESIGN AND MATERIALS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:

1. VIRGIN AGGREGATE USED IN THE TOP 1.5 INCHES (38 mm) SHALL BE AIR COOLED BLAST FURNACE SLAG AND MEET OR EXCEED THE QUALITY REQUIREMENT OF 703.05. ALL VIRGIN AGGREGATE BELOW THE TOP 1.5 INCHES (38 mm) TO 3.0 INCHES (75 mm) SHALL MEET OR EXCEED THE QUALITY REQUIREMENT OF 703.04.

2. IF THE DESIGN DESIGNATION INDICATES THE CURRENT YEAR'S TRUCKS TO BE GREATER THAN OR EQUAL TO 1500, THEN IN THE SURFACE COURSE THE MAXIMUM RECYCLED ASPHALT PAVEMENT THAT MAY BE USED IS 10 PERCENT. BELOW THE SURFACE COURSE TO 3.0 INCHES (75 mm), A MAXIMUM OF 30 PERCENT RECYCLED PAVEMENT MAY BE USED IN THE MIX PROVIDED THE VIRGIN BINDER CONTENT IS NOT LESS THAN 3.4 PERCENT.

IF THE DESIGN DESIGNATION INDICATES THE CURRENT YEAR TRUCKS ARE LESS THAN 1500, THEN IN THE TOP 1.5 INCHES (38 mm) THE MAXIMUM RECYCLED ASPHALT PAVEMENT THAT MAY BE USED IS 30 PERCENT PROVIDED THE VIRGIN BINDER CONTENT IS NOT LESS THAN 5.0 PERCENT. BELOW THE SURFACE COURSE TO 3.0 INCHES (75 mm), A MAXIMUM OF 30 PERCENT RECYCLED PAVEMENT MAY BE USED IN THE MIX PROVIDED THE VIRGIN BINDER CONTENT IS NOT LESS THAN 3.4 PERCENT.

BELOW 3.0 INCHES (75 mm), A MAXIMUM OF 50 PERCENT RECYCLED ASPHALT MAY BE PAVEMENT USED IN THE MIX.

RECYCLED ASPHALT PAVEMENT USED IN THE TOP 1.5 INCHES (38 mm) SHALL BE LIMITED TO RECLAIMED ASPHALT CONCRETE PAVEMENT OBTAINED FROM THIS PROJECT.

RECYCLED ASPHALT PAVEMENT USED BELOW THE TOP 1.5 INCHES (38 mm) SHALL BE LIMITED TO RECLAIMED ASPHALT CONCRETE PAVEMENT OR RECLAIMED BITUMINOUS AGGREGATE BASE PAVEMENT OBTAINED FROM EITHER A DEPARTMENT OR OHIO TURNPIKE COMMISSION PROJECT.

ITEM 302 - ASPHALT CONCRETE BASE, PG 64-22, AS PER PLAN

THE ASPHALT CONCRETE BASE SHALL BE DESIGNED TO PROVIDE A MAXIMUM OF 3% AIR VOIDS IN PLACE. ALL OTHER REQUIREMENTS OF SECTION 302 OF THE CMS SHALL APPLY.

ITEM 407 - TACK COAT AND
ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE

THE RATE OF APPLICATION OF THE 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. FOR ESTIMATING PURPOSES ONLY, THE PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF:

407, TACK COAT 0.075 GAL. PER SQ. YARD

407, TACK COAT FOR INTERMEDIATE COURSE 0.04 GAL. PER SQ. YARD

CALCULATED L.M.B.
CHECKED W.B.H.

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PIPE CONNECTIONS TO CORRUGATED METAL STRUCTURES

CONNECTIONS OF PROPOSED LONGITUDINAL DRAINAGE TO CORRUGATED METAL STRUCTURES SHALL BE MADE BY MEANS OF A SHOP FABRICATED OR FIELD WELDED STUB ON THE STRUCTURE. THE STUB SHALL MEET THE REQUIREMENTS OF 707 AND HAVE A MINIMUM LENGTH OF 2 FEET AND A MINIMUM WALL THICKNESS OF 0.064 INCHES.

THE LOCATION AND ELEVATION OF THE STUB ARE TO BE CONSIDERED APPROXIMATE AND MAY BE ADJUSTED BY THE ENGINEER TO AVOID CUTTING THROUGH JOINTS IN THE STRUCTURE.

THE FIELD WELDED JOINT, IF USED, SHALL BE THOROUGHLY CLEANED AND REGALVANIZED OR OTHERWISE SUITABLY REPAIRED. WELDING SHALL MEET THE REQUIREMENTS OF 863.23.

A MASONRY COLLAR, AS PER STANDARD DRAWING DM-1.1M, WILL BE REQUIRED TO CONNECT THE LONGITUDINAL DRAINAGE TO THE STUB, WHEN PIPE OTHER THAN CORRUGATED METAL IS PROVIDED FOR THE LONGITUDINAL DRAINAGE.

PAYMENT FOR CUTTING INTO THE STRUCTURE AND PROVIDING THE CONNECTION DESCRIBED, SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 603 OR 522.

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 603 CONDUIT ITEMS.

ITEM SPECIAL - PIPE CLEANOUT

THIS WORK SHALL CONSIST OF REMOVING SEDIMENT AND DEBRIS FROM THE EXISTING DRAINAGE CONDUITS SPECIFIED IN THE PLANS. ALL MATERIAL REMOVED SHALL BE DISPOSED OF AS PER 203.05. ALL SEWERS SHALL BE CLEANED OUT TO THE SATISFACTION OF THE ENGINEER.

CLEANOUT OF THE PIPE SHALL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM SPECIAL - PIPE CLEANOUT. THIS PRICE SHALL INCLUDE THE COST FOR MATERIAL, EQUIPMENT, LABOR, AND ALL INCIDENTALS REQUIRED TO COMPLETE THE CLEANOUT.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE ABOVE NOTED WORK:

STA. 84+40	30" RCP	CULVERT #1	34 FT.
STA. 84+40	36" RCP	CULVERT #2	284 FT.
STA. 96+90	15" RCP		60 FT.
STA. 175+48	6'-3"x4'-0" RECP	CULVERT #4	100 FT.
STA. 205+84	18" RCP		50 FT.
STA. 211+64	106"x68" RECP	CULVERT #6	50 FT.

SPECIAL, PIPE CLEANOUT TOTAL- 628 FT.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEM.

AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS

THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PUBLIC USE AIRPORT OR HELIPORT. THE CONTRACTOR IS ADVISED THAT NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT AT MAXIMUM OPERATING HEIGHT SHALL EXCEED A HEIGHT OF 100 Ft.. IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THIS HEIGHT, THE CONTRACTOR IS ADVISED THAT COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION (FAA) WILL BE NECESSARY PRIOR TO ERECTING SUCH TEMPORARY STRUCTURES OR OPERATING SUCH EQUIPMENT ON THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT FORM 7460-1 TO THE FAA. A COPY OF THE SUBMISSION AND TWO COPIES OF FORM 7460-1 SHALL BE FORWARDED TO THE ODOT OFFICE OF AVIATION. THE CONTRACTOR IS ADVISED THAT NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT SHALL EXCEED THE PERMISSIBLE HEIGHT, UNTIL A COPY OF THE FAA APPROVAL AND ODOT OFFICE OF AVIATION PERMIT HAS BEEN FURNISHED TO THE PROJECT ENGINEER.

THE FEDRAL AVIATION ADMINISTRATION
GREAT LAKES REGIONAL OFFICE
AIR TRAFFIC DIVISION AGL-530
2300 EAST DEVON AVENUE
DES PLAINES, ILLINOIS 60018
(847) 294-7566

OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF AVIATION
2829 WEST DUBLIN-GRANVILLE ROAD
COLUMBUS, OHIO 43235
(614) 793-5046

ITEM 606 - BRIDGE TERMINAL ASSEMBLY, REBUILT, TYPE 1, AS PER PLAN

TWO (2) EXISTING BRIDGE TERMINAL ASSEMBLIES ARE CALLED FOR REMOVAL IN THE GUARDRAIL SUBSUMMARY UNDER R1 AND R2. BOTH ASSEMBLIES ARE ITEMIZED TO BE REMOVED FOR REUSE AND ARE TO BE LATER INSTALLED AS PART OF THE GREENSBURG ROAD PIER PROTECTION SYSTEM. BOTH BRIDGE TERMINAL ASSEMBLIES SHALL BE REBUILT ACCORDING TO STD DWG GR-3.1 EXCEPT THAT THE CURVED SECTION OF TYPE 5 GUARDRAIL SHALL BEGIN AT THE 5TH POST, RATHER THAN THE 7TH POST AS SHOWN ON THE DRAWING.

ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN

AT THE SOUTHWEST CORNER OF THE GRAYBILL ROAD OVERPASS STRUCTURE, THE PROPOSED BRIDGE TERMINAL ASSEMBLY SHALL BE BUILT ACCORDING TO STD DWG GR-3.1 EXCEPT THAT THE CURVED SECTION OF TYPE 5 GUARDRAIL SHALL BEGIN AT THE 5TH POST, RATHER THAN THE 7TH POST AS SHOWN ON THE DRAWING.

ITEM 619 - FIELD OFFICE, TYPE C, AS PER PLAN

1. THE FIELD OFFICE SHALL BE A MINIMUM OF 1,200 SQUARE FEET AND AT GROUND LEVEL. PROVIDE TWO (2) OUTSIDE DOORS, LOCKABLE VANDAL PROOF CYLINDER TYPE DEAD BOLTS AND LOCKABLE WINDOWS.

2. THE FLOOR SPACE SHALL BE DIVIDED INTO ONE RESTROOM, ONE GENERAL OFFICE AREA (MINIMUM 200 SQ. FT.), NOT LESS THAN FOUR INDIVIDUAL OFFICES (MINIMUM 120 SQ. FT. EACH) AND ONE CONFERENCE ROOM (MINIMUM 300 SQ. FT.) AS DEEMED NECESSARY BY THE ENGINEER.

3. PARKING SPACES ARE TO BE FOR ODOT, GRADED FOR DRAINAGE AND PAVED.

4. THE RESTROOM FACILITY IS TO BE CONNECTED TO AN EXISTING SANITARY SEWER LINE FOR THE USE OF THE OCCUPANTS OF THE FIELD OFFICE, MEETING THE REQUIREMENTS OF THE GOVERNMENT AGENCIES HAVING RELEVANT JURISDICTION. POTABLE HOT AND COLD RUNNING WATER WILL BE PROVIDED IN THE RESTROOM FOR SANITARY PURPOSES.

5. THE COPIER SHALL BE ABLE TO PRODUCE COPIES OF DOCUMENTS UP TO 11" X 17" IN SIZE, AUTOMATIC 2-SIDED COPYING, SORTING CAPABILITIES, 20 PAGE MINIMUM AUTOMATIC SHEET FEEDER AND ZOOM REDUCTION/ENLARGEMENT FROM 50% TO 200%.

6. THE FACSIMILE MACHINE SHALL BE OF THE PLAIN PAPER TYPE, CAPABLE OF STORING INCOMING FAXES WHEN OUT OF INK/PAPER, 20 PAGE AUTO DOCUMENT FEEDER.

7. ONE DRAFTING/PLAN TABLE WITH A MINIMUM 30" X 72" WORKING SURFACE WITH AN APPROPRIATE DRAFTING CHAIR.

8. ONE OFFICE SUPPLY STORAGE CABINET.

9. FOUR WORK TABLES 30" X 72".

10. ONE 10' (120" X 44") RECTANGULAR CONFERENCE TABLE WITH CHAIRS.

11. THE TELEPHONE SERVICE SHALL BE SUPPLIED AT EACH DESK AND IN THE CONFERENCE ROOM, INTERCONNECTED BETWEEN OFFICES. THE PRIVATE OFFICES AND CONFERENCE ROOM INSTRUMENT SHALL BE EQUIPPED WITH SPEAKER PHONE CAPABILITIES. A TOTAL OF FIVE OUTSIDE LINES WILL BE PROVIDED, ONE OF WHICH WILL BE DEDICATED FOR USED OF THE FACSIMILE MACHINE AND ONE FOR THE THE COMPUTER. DIGITAL ANSWERING MACHINE WITH TIME/DATE STAMP.

12. ONE FIRST AID KIT MAINTAINED ON A MONTHLY BASIS.

13. CANON POWERSHOT S20 (OR EQUAL) DIGITAL CAMERA WITH THE FOLLOWING ACCESSORIES:
* RECHARGEABLE LITHIUM-ION BATTERY W/ CHARGER
* 8MB COMPACTFLASH MEMORY CARD
* EXTERNAL COMPACTFLASH READER - USB CASE

14. PROFESSIONAL JANITORIAL SERVICE WITH A CLEANING EVERY TWO WEEKS FOR THE ENTIRE OFFICE.

15. BOTTLED DRINKING WATER SERVICE (HOT/COLD DISPENSER WITH A MINI REFRIGERATOR).

EXPENSES FOR OPERATION OF THE FIELD OFFICE, SUCH AS: ELECTRICAL SERVICE, HEATING, TELEPHONE SERVICE, JANITORIAL SERVICE, BOTTLED WATER SERVICE, ETC., SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL ALSO PROVIDE ALL NECESSARY SUPPLIES AND MAINTENANCE FOR ALL EQUIPMENT THAT THE CONTRACTOR IS REQUIRED TO FURNISH.

THE CONTRACTOR SHALL RETAIN RESPONSIBILITY FOR RISK OF LOSS OR DAMAGE TO SAID FIELD OFFICE, FURNISHINGS, AND EQUIPMENT WHILE THE OFFICE IS IN USE FOR THIS CONTRACT.

THE FIELD OFFICE LOCATION SHALL BE ON, OR IN CLOSE PROXIMITY, TO THE JOB SITE AND SHALL BE APPROVED IN ADVANCE BY THE ENGINEER. THE FIELD OFFICE SHALL BE FULLY OPERATIONAL AS SOON AS POSSIBLE AFTER EXECUTION OF THE CONTRACT, AND SHALL BE IN PLACE AND FULLY OPERATIONAL PRIOR TO THE START OF ANY CONSTRUCTION WORK.

CALCULATED L.M.B. CHECKED W.B.H.

GENERAL NOTES

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ITEM 606 - ANCHOR ASSEMBLY, TYPE B-98

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS.

1) THE SRT-350, GUARDRAIL END TERMINAL AS MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-346-0721).

THE LENGTH OF THE SRT-350 SYSTEM IS CONSIDERED TO BE 37'-6", INCLUSIVE OF THREE 12'-6" LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. NO.	DRAWING NAME	DWG./ REV. DATE	ODOT APPROVAL DATE
SS444	SLOTTED RAIL TERMINAL POST LAYOUT AND ERECTION DETAILS SRT-350 (12.5, 8 POST)	7/12/99 Rev. 1	8/27/99
SS425M	SLOTTED RAIL TERMINAL SRT-350 POST LAYOUT AND ERECTION DETAILS (12.5, 9 POST)	6/21/97 Rev. 1	3/6/98

2) THE FLEAT-350 MANUFACTURED BY ROAD SYSTEMS, INC., 2516 MALLORY LANE, STOW, OHIO, 44224, (TELEPHONE: 815-464-5917).

THE LENGTH OF THE FLEAT-350 IS CONSIDERED TO BE 37'-6", INCLUSIVE OF THREE 12'-6" LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. NO.	DRAWING NAME	DWG./ REV. DATE	ODOT APPROVAL DATE
FLT-M	FLARED ENERGY ABSORBING TERMINAL (FLEAT-350) ASSEMBLY	4/16/98	7/31/98

REFER TO THE MANUFACTURER'S INSTRUCTION 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 27-3/4-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-98 IMPACT HEAD SHALL BE COVERED WITH TYPE G REFLECTIVE SHEETING, PER CMS 730.19: APPROXIMATELY 36" W X 12" H FOR THE SRT-350 AND 14" W X 20" H FOR THE FLEAT.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE B-98, 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, TYPE E-98

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS.

1) THE ET-2000 (1997) MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE LENGTH OF THE ET-2000 (1997) SYSTEM IS CONSIDERED TO BE 50'-0", INCLUSIVE OF TWO 25'-0" LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. NO.	DRAWING NAME	DWG./ REV. DATE	ODOT APPROVAL DATE
SSS265M	ET-2000 (1997) PLAN, ELEVATION AND SECTIONS	6/20/97	3/6/98
SS142	ET2000 PLUS 50'-0" PLAN, ELEVATION AND SECTION 25'-0" RAIL, SLEEVE W/PL POSTS 1-4	4/12/00	7/31/00
SS141	ET2000 PLUS PLAN, ELEVATION AND SECTION 25'-0" RAIL, HBA POSTS 1-4	2/29/00	7/31/00
SS158	ET2000 PLUS 50'-0" WITH 12'-6" PANELS AND HBA POSTS 1-4 PLAN, ELEVATION AND SECTION	5/22/00	7/31/00

2) THE SKT-350 MANUFACTURED BY ROAD SYSTEMS, INC., 2516 MALLORY LANE, STOW, OHIO, 44224, (TELEPHONE: 330-346-0721).

THE LENGTH OF THE SKT-350 SYSTEM IS CONSIDERED TO BE 50'-0", INCLUSIVE OF FOUR 12'-6" LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. NO.	DRAWING NAME	DWG./ REV. DATE	ODOT APPROVAL DATE
SKT-4M	SEQUENTIAL KINKING TERMINAL (SKT-350) ASSEMBLY WITH 4 FOUNDATION TUBES	12/11/97	3/6/98

THE FACE OF THE TYPE E-98 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 18" X 18".

REFER TO THE MANUFACTURER'S INSTRUCTION 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 27-3/4-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-98, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 606 - IMPACT ATTENUATOR, TYPE I-98 [(UNIDIRECTIONAL OR BIDIRECTIONAL)]

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING IMPACT ATTENUATORS:

1) THE C-A-T MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE LENGTH OF THE C-A-T SYSTEM IS CONSIDERED TO BE 31'-3" LONG. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. NO.	DRAWING NAME	DWG./ REV. DATE	ODOT APPROVAL DATE
SS245M	CRASH-CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS FOR USE AS A LONGITUDINAL MEDIAN BARRIER TERMINAL OR CRASH CUSHION ATTENUATOR	4/10/97 Rev. 4	3/6/98
SS224M	C-A-T TRANSITION TO MEDIAN BARRIER GUARDRAIL PLAN, ELEVATION & SECTIONS	4/26/96	3/6/98
SS226M	C-A-T TRANSITION TO VERTICAL WALL OR PIER PLAN, ELEVATION & SECTIONS	4/26/96	3/6/98

2) THE BRAKEMASTER MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., ONE EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312-467-6750).

THE LENGTH OF THE BRAKEMASTER SYSTEM IS CONSIDERED TO BE 32'-8" LONG. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. NO.	DRAWING NAME	DWG./ REV. DATE	ODOT APPROVAL DATE
92-00-01	BRAKEMASTER GENERAL ASSEMBLY (UNIDIRECTIONAL SYSTEM)	3/6/97 Rev. K	3/6/98
92-00-81	BRAKEMASTER (UNIDIRECTIONAL) WITH FOUNDATION TUBES	2/9/98	3/6/98
92-00-02	BRAKEMASTER GENERAL ASSEMBLY (BIDIRECTIONAL SYSTEM)	3/10/97 Rev. K	3/6/98
92-00-82	BRAKEMASTER (BIDIRECTIONAL) WITH FOUNDATION TUBES	2/9/98	3/6/98
9202024	ANCHOR ASSEMBLY, FOUNDATION TUBE, 6 1/2 FT., BRS	6/12/97 Rev. D	3/6/98

THE FACE OF THE TYPE I-98 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 36" X 12". PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE I-98 (UNIDIRECTIONAL OR BIDIRECTIONAL), EACH, AND SHALL INCLUDE ALL LABOR; TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED TRANSITIONS, HARDWARE, REFLECTIVE SHEETING AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

CALCULATED L.M.B. CHECKED W.B.H.

GENERAL NOTES

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ITEM SPECIAL - AS-BUILT CONSTRUCTION PLANS

PROCEDURE:
THE CONTRACTOR SHALL ARRANGE FOR THE PREPARATION OF AS-BUILT PLANS, UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER (PE) OR PROFESSIONAL SURVEYOR (PS) REGISTERED IN THE STATE OF OHIO. THE PE/PS SHALL BE IDENTIFIED FOR THE APPROVAL OF THE ENGINEER, PRIOR TO BEGINNING WORK ON THE PROJECT. TWO COMPLETE FULL SIZE SETS OF PRINTS WILL BE FURNISHED TO THE CONTRACTOR. ONE SET IS TO BE USED IN THE FIELD TO COLLECT AS-BUILT INFORMATION. THE SECOND SET SHALL REMAIN IN THE FIELD OFFICE AS A FINAL RECORD. DATA FROM THE FIELD SET SHALL BE TRANSCRIBED ONTO THE OFFICE SET (FINAL RECORD) AS SOON AS CHANGES ARE MADE.

CHANGES SHALL BE RECORDED AND DATED IN RED INDELIBLE INK (FELT TIPPED PENS AND MARKERS WILL NOT BE PERMITTED) ON THE OFFICE SET. WHERE APPROPRIATE, THE CHANGE OR EXTRA WORK ORDER NUMBER SHALL BE SHOWN ADJACENT TO THE CHANGES. THE PE/PS IN CHARGE OF THE OFFICE SET SHALL CERTIFY THE CORRECTNESS OF THE AS-BUILT PLAN AND, WHEN THE PLAN IS COMPLETED, SHALL SIGN, DATE AND SEAL THE TITLE SHEET OF THE OFFICE PLAN SET.

BOTH SETS OF AS-BUILT PLANS SHALL BE DELIVERED TO THE ENGINEER UPON COMPLETION ON THE WORK. THE ENGINEER WILL COMPARE THE OFFICE SET TO THE FIELD SET TO DETERMINE ACCURACY AND ACCEPTABILITY OF THE FINAL PLAN. ACCEPTANCE OF THESE PLANS IS REQUIRED PRIOR TO THE WORK BEING ACCEPTED AND THE FINAL ESTIMATE BEING APPROVED UNDER CMS 109.09. THE ENGINEER WILL DELIVER THE APPROVED PLANS TO THE DISTRICT PRODUCTION ADMINISTRATOR.

SCOPE WORK:
ANY PLAN MODIFICATION WHICH RESULT IN A CHANGE OF LOCATION, MATERIAL, TYPE OR SIZE OF ANY WORK, SHALL BE SHOWN ON THE AS-BUILT PLANS:

UNDERGROUND FEATURES SUCH AS PAVEMENTS, FOUNDATIONS OR OTHER MAJOR OBSTRUCTIONS DISCOVERED AND REMAINING IN PLACE WHICH ARE NOT SHOWN, OR DO NOT CONFORM TO LOCATIONS, OR DEPTHS SHOWN ON THE PLANS SHALL BE SHOWN ON THE AS-BUILT PLANS IN TERMS OF STATION, OFFSET AND DEPTH TO THE KNOWN LIMITS OF THE ITEM. AERIAL UTILITIES SHALL BE SHOWN ON THE PLANS IN TERMS OF STATION, OFFSET AND POLE NUMBER.

CHANGES TO ITEMS WHICH ALLOW A MATERIAL OPTION UNDER THE SPECIFICATIONS (I.E. CULVERT, CONDUITS) SHALL ALSO BE NOTED ON THE AS-BUILT PLANS.

EACH AND EVERY SHEET WHICH HAS HAD ANY MODIFICATION MADE TO IT SHALL BE MARKED "REVISED".

CONTROL OF THE WORK:
THE FIELD PLAN AND OFFICE PLAN SHALL BE AVAILABLE FOR REVIEW BY THE ENGINEER, UPON REQUEST. PAYMENT FOR ALL OF THE ABOVE WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM SPECIAL AS-BUILT CONSTRUCTION PLANS. PAYMENT WILL BE MADE AS FOLLOWS: 25% UPON APPROVAL OF THE CONTRACTOR'S AS-BUILT PLANS, 50% UPON DELIVERY OF BOTH PLANS TO THE ENGINEER AND 25% UPON ACCEPTANCE OF THE PLANS BY THE ENGINEER.

PAVING UNDER GUARDRAIL

THIS OPERATION SHALL INCLUDE PREPARATION OF THE GRADED SHOULDER USING 209, RESHAPING UNDER GUARDRAIL, AS PER PLAN, AND PAVING UNDER THE GUARDRAIL USING 448 ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I, PG 64-22, UNDER GUARDRAIL, AS PER PLAN.

ITEM 209, RESHAPING UNDER GUARDRAIL, AS PER PLAN, SHALL CONSIST OF EXCAVATING TOPSOIL, PLACING GRANULAR MATERIAL AND APPLYING HERBICIDE AS SPECIFIED IN THE PLANS AND IN ACCORDANCE WITH THE FOLLOWING:

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.

HERBICIDE SHALL BE EPA APPROVED FOR PAVING UNDER GUARDRAIL. IT SHALL BE APPLIED TO THE PREPARED AREA AFTER FINAL LEVELING AND GRADING HAS BEEN COMPLETED. THE APPLICATION SHALL BE JUST PRIOR TO PAVING AND SHALL STRICTLY ADHERE TO THE MANUFACTURER'S INSTRUCTIONS.

EACH SUCCESSFUL BIDDER MUST BE LICENSED BY THE OHIO DEPARTMENT OF AGRICULTURE AS A COMMERCIAL APPLICATOR AND ALL PERSONS INVOLVED IN THE ACTUAL SPRAYING SHALL BE LICENSED AS COMMERCIAL OPERATORS IN THE APPROPRIATE SPRAY CATEGORY.

HERBICIDE LABEL, MATERIAL SAFETY DATA SHEET AND COPY OF APPLICATORS LICENSES SHALL BE SUBMITTED TO THE ENGINEER FOR VERIFICATION PRIOR TO COMMENCING WORK.

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

PAVING UNDER GUARDRAIL SHALL CONSIST OF PLACING ITEM 448 TO THE DEPTH SPECIFIED USING ONE OF THE FOLLOWING METHODS:

METHOD A: 1) SET GUARDRAIL POSTS

2) PLACE ITEM 448

METHOD B: 1) PLACE ITEM 448

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 448, ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE I, PG 64-22, UNDER GUARDRAIL, AS PER PLAN.

PAVING UNDER NOISE BARRIERS

THIS OPERATION SHALL INCLUDE PREPARATION OF THE GRADED SHOULDER USING ITEM 203, EMBANKMENT OR EXCAVATION AND PAVING BEHIND THE CONCRETE BARRIER TO 1 FEET PAST THE THE NOISE BARRIER POSTS USING 448 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I, PG 64-22, AS PER PLAN.

ITEM 203, EMBANKMENT OR EXCAVATION, SHALL CONSIST OF CONSTRUCTING THE PLANNED EMBANKMENTS AND APPLYING HERBICIDE AS SPECIFIED IN THE PLANS AND IN ACCORDANCE WITH THE FOLLOWING:

ALL COLLECTED DEBRIS AND TOPSOIL, INCLUDING RHIZOMES, ROOTS AND OTHER VEGETATIVE PLANT MATERIAL SHALL BE REMOVED AND DISPOSED OF AS SPECIFIED IN 203.05.

THE REMOVED MATERIAL SHALL BE REPLACED WITH COMPACTABLE GRANULAR MATERIAL CONFORMING TO 203.02 PLACED TO GRADE AS DETAILED ON THE TYPICAL SECTION OR AS APPROVED BY THE ENGINEER.

HERBICIDE SHALL BE EPA APPROVED FOR PAVING UNDER GUARDRAIL. IT SHALL BE APPLIED TO THE PREPARED AREA AFTER FINAL LEVELING AND GRADING HAS BEEN COMPLETED. THE APPLICATION SHALL BE JUST PRIOR TO PAVING AND SHALL STRICTLY ADHERE TO THE MANUFACTURER'S INSTRUCTIONS.

EACH SUCCESSFUL BIDDER MUST BE LICENSED BY THE OHIO DEPARTMENT OF AGRICULTURE AS A COMMERCIAL APPLICATOR AND ALL PERSONS INVOLVED IN THE ACTUAL SPRAYING SHALL BE LICENSED AS COMMERCIAL OPERATORS IN THE APPROPRIATE SPRAY CATEGORY.

HERBICIDE LABEL, MATERIAL SAFETY DATA SHEET AND COPY OF APPLICATORS LICENCES SHALL BE SUBMITTED TO THE ENGINEER FOR VERIFICATION PRIOR TO COMMENCING WORK.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 203, EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION OR ITEM 203, EMBANKMENT.

PAVING UNDER NOISE BARRIERS SHALL CONSIST OF PLACING ITEM 448 TO THE DEPTH SPECIFIED USING ONE OF THE FOLLOWING METHODS:

METHOD A: 1) SET NOISE BARRIER POSTS

2) PLACE ITEM 448

METHOD B: 1) PLACE ITEM 448

2) BORE ASPHALT AT POST LOCATIONS (MAY BE OMITTED IF STEEL POSTS ARE USED)

3) SET NOISE BARRIER POSTS

4) PATCH AROUND POSTS. THE MATERIALS USED FOR PATCHING SHALL BE A BITUMINOUS 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 NOISE BARRIER POSTS, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 448, ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE I, PG64-22, AS PER PLAN.

CALCULATED L.M.B.
CHECKED W.B.H.

GENERAL NOTES

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CALCULATED L.M.B. CHECKED W.B.H.

GENERAL NOTES

ITEM 607 - FENCE, TYPE CLT, AS PER PLAN

THIS WORK SHALL CONSIST OF FURNISHING AND ERECTING A STEEL FENCE AT PLAN LOCATIONS. ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT TO FABRICATE, GALVANIZE, CLEAN, SURFACE PROFILE, AND APPLY TWO SHOP COATS (EPOXY/URETHANE) OF PAINT TO THE FENCE ELEMENTS (EXCEPT TO THE PVC COATED FABRIC), SHALL BE INCLUDED. THE FENCE SHALL CONFORM TO CMS ITEM 607 AND STANDARD DRAWING F-1.1 FOR A "TYPE CLT FENCE" EXCEPT AS SPECIFIED HEREIN.

PRIOR TO GALVANIZING, ALL CORNERS OF THERMALLY CUT OR SHEARED EDGES SHALL HAVE A 1/16 INCH RADIUS.

MATERIALS FOR FENCE POSTS, BRACES, TIES, BARS AND RODS SHALL BE IN ACCORDANCE WITH AASHTO M181 FOR TYPE I (ZINC-COATED STEEL), GRADE 1 OR 2. IF GRADE 2 STEEL IS USED, THE EXTERIOR COATING SHALL BE HOT-DIP ZINC WITHOUT AN ORGANIC TOP COAT. IN ADDITION, ALL FENCE ELEMENTS TO BE PAINTED SHALL NOT BE POST-TREATED WITH WATER QUENCHING NOR CHROMATE CONVERSION COATED, SINCE THEY WILL ADVERSELY AFFECT THE BOND BETWEEN THE GALVANIZED STEEL AND THE PAINT. THE CONTRACTOR SHALL VERIFY THEY HAVE NOT BEEN PERFORMED BY THE GALVANIZING SHOP, AND SHALL PERFORM A SPOT TEST PER ASTM B201 FOR CHECKING THE PRESENCE OF A CHROMATE CONVERSION COATING.

AFTER GALVANIZING, ZINC HIGH SPOTS SUCH AS METAL DRIP LINES AND OTHERS THAT WOULD DETRACT FROM THE PAINT APPEARANCE SHALL BE MADE FLUSH WITH THE SURROUNDING SURFACE BY SSPC-SP2 OR SP3. CARE SHALL BE TAKEN THAT THE BASE GALVANIZED COATING IS NOT REMOVED. REPAIRED AREAS SHALL BE CHECKED FOR REQUIRED COATING THICKNESS.

GALVANIZED COATINGS DAMAGED IN THE SHOP SHALL BE REPAIRED PER ASTM A780 METHOD A3. GALVANIZED COATINGS DAMAGED IN THE FIELD SHALL BE REPAIRED PER ASTM A780 METHOD A1.

AFTER REMOVING HIGH SPOTS THE GALVANIZED COATING SHALL BE CLEANED PER SSPC-SP1. THE CLEANING SOLUTION SHALL BE AN ALKALINE SOLUTION WITH A pH RANGING FROM A MINIMUM OF 11 TO A MAXIMUM OF 12. THIS SOLUTION CAN BE APPLIED BY IMMERSION, SPRAY OR SOFT NYLON BRUSH. IF IMMERSING OR SPRAYING, MAINTAIN A SOLUTION TEMPERATURE OF 140°F TO 180°F. FOLLOW CLEANING WITH A HOT WATER OR HOT PRESSURE WASH RINSE NOT EXCEEDING 1450 PSI. INDIVIDUAL PIECES SHALL BE SEPARATED AND POSITIONED TO FACILITATE DRAINAGE AND DRYING. THE PIECES SHALL BE COMPLETELY DRY BEFORE PROCEEDING.

AFTER CLEANING, THE PIECES SHALL BE ABRASIVE BLASTED PER SSPC-SP7 BRUSH-OFF BLAST CLEANING. THE BLASTING OPERATION SHALL ROUGHEN THE GALVANIZED SURFACE TO AN ANGULAR SURFACE PROFILE OF 0.25 TO 0.50 MILS. THE BLASTING EQUIPMENT, TECHNIQUE AND ABRASIVE MATERIAL SHALL BE SELECTED TO PROVIDE FOR THE SPECIFIED SURFACE PROFILE WITHOUT REMOVAL OF ZINC LAYERS. THE FINAL ZINC MILLAGE SHALL NOT BE LESS THAN 3.0 MILS. ALL ABRASIVE RESIDUE SHALL BE REMOVED WITH CLEAN COMPRESSED AIR OR OTHER METHODS ACCEPTABLE TO THE DEPARTMENT. FIELD CONNECTION AREAS SHALL HAVE A UNIFORM GALVANIZED COATING FREE OF LOCAL EXCESSIVE ROUGHNESS WHICH WOULD PREVENT THE FIELD CONNECTIONS FROM MAKING INTIMATE CONTACT.

ALL PARTS OF THE FENCE (EXCLUDING THE COATED FABRIC) SHALL BE SHOP PAINTED AFTER GALVANIZING. AFTER OBTAINING AN ACCEPTABLE SURFACE PROFILE, SHOP APPLY A TWO-COAT PAINT SYSTEM CONSISTING OF AN EPOXY INTERMEDIATE COAT AND A URETHANE FINISH COAT MEETING THE REQUIREMENTS OF CMS ITEM 708 - PAINT. THE FINISH COAT SHALL MATCH FEDERAL STANDARD FS-595B COLOR NO. 27040 (BLACK).

THE EPOXY INTERMEDIATE COATING SHALL BE APPLIED WITHIN 24 HOURS OF THE BRUSH-OFF BLASTING. THE COATINGS SHALL BE APPLIED PER ITEM 514 EXCEPT THAT REQUIREMENTS FOR SURFACE PREPARATION AND PRIMING SHALL NOT BE PERFORMED. THE COATING SHALL BE SHOP APPLIED AS SPECIFIED IN THESE NOTES WITHOUT THE WORK LIMITATION SPECIFIED IN ITEM 514. FIELD REPAIRS AND TOUCH-UPS SHALL FOLLOW WORK LIMITATIONS SPECIFIED PER ITEM 514 AND BE AS DIRECTED BY THE ENGINEER.

THE 9 GAGE (0.148") CORE WIRES OF THE STEEL FABRIC SHALL BE UNIFORMLY GALVANIZED WITH ZINC METAL OF 0.30 OZ/SQ. FT. MINIMUM WEIGHT IN ACCORDANCE WITH ASTM A641. THE GALVANIZED WIRE SHALL THEN BE PVC COATED TO MATCH FEDERAL STANDARD FS-595B COLOR NO. 27040 (BLACK) IN ACCORDANCE WITH ASTM F668, CLASS 2A OR 2B WITH THE FOLLOWING CHANGES:

A. THE COATING SHALL BE VIRGIN PVC OF 22 MILS THICKNESS FOR CLASS 2A AND 7 MILS FOR CLASS 2B.

B. THE FINISHED FABRIC SHALL BE COMPOSED OF A 2-INCH DIAMOND PATTERN IN WHICH THE INDIVIDUAL PICKETS ARE HELICALLY WOVEN AND INTERWOVEN IN THE FORM OF A CONTINUOUS CHAIN LINK MESH WITH KNUCKLED SELVAGES.

C. ALL PVC COATED FABRIC SHALL BE HANDLED WITH CARE. IF THE PVC COATING IS DAMAGED, THE CONTRACTOR SHALL REPLACE THE FABRIC OR REPAIR THE PVC COATING AS DIRECTED BY THE PROJECT ENGINEER AT NO COST TO THE DEPARTMENT.

EXPOSED SURFACES OF ALL NUTS, BOLTS, AND OTHER ACCESSORIES USED TO ASSEMBLE THE FENCE SHALL BE GALVANIZED AND FIELD PAINTED TO MATCH THE FENCE COMPONENTS.

FENCE SHALL BE MEASURED FOR PAYMENT PER CMS 607.10. ALL LABOR, EQUIPMENT AND MATERIALS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE LINEAR FOOT PRICE BID FOR:
ITEM 607 - FENCE, TYPE CLT, AS PER PLAN

ITEM SPECIAL - MAILBOX SUPPORT

THIS WORK SHALL CONSIST OF FURNISHING AND ERECTING MAILBOX SUPPORTS AND ANY ASSOCIATED MOUNTING HARDWARE IN ACCORDANCE WITH PLAN DETAILS, AND ATTACHING AN OWNER-SUPPLIED MAILBOX AT LOCATIONS SPECIFIED IN THE PLAN, OR OTHERWISE ESTABLISHED BY THE ENGINEER.

WOOD POSTS SHALL BE NOMINAL 4" BY 4" SQUARE OR 4 1/2" DIAMETER ROUND, AND CONFORM TO 710.14.

STEEL POSTS SHALL BE NOMINAL PIPE SIZE 2" I.D., AND CONFORM TO AASHTO M 181.

HARDWARE (PLATES, SCREWS, BOLTS, ETC.) SHALL BE COMMERCIAL-GRADE GALVANIZED STEEL.

POSTS SHALL BE SET PER THE FIRST PARAGRAPH OF 606.03, AND SHALL IN NO INSTANCE BE ENCASED IN CONCRETE.

SUPPORT HARDWARE SHALL ACCOMMODATE EITHER A SINGLE OR A DOUBLE MAILBOX INSTALLATION, AND NO MORE THAN TWO BOXES MAY BE MOUNTED ON A SINGLE POST.

THE MAILBOX SHALL BE SECURELY AND NEATLY ATTACHED BY THE CONTRACTOR TO THE NEW SUPPORT. THE CONTRACTOR SHALL FURNISH ALL NECESSARY ATTACHMENT HARDWARE (NUTS, BOLTS, PLATES, SPACERS, AND WASHERS) AS NECESSARY TO ACCOMMODATE THE COMPLETE INSTALLATION.

IN THE ABSENCE OF A NEW BOX SUPPLIED BY THE OWNER, THE CONTRACTOR SHALL SALVAGE THE EXISTING BOX AND PLACE IT ON THE NEW SUPPORT. DUE CARE SHALL BE EXERCISED IN SUCH AN OPERATION, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY BOX DAMAGED BY IMPROPER HANDLING ON HIS PART, AS JUDGED AND DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE LOCAL POST MASTER REGARDING THE TIMING OF THE MOVEMENT OF ANY MAILBOX TO A NEW LOCATION.

PAYMENT UNDER THIS ITEM SHALL BE LIMITED TO FINAL PERMANENT INSTALLATIONS. TEMPORARY INSTALLATIONS SHALL BE IN ACCORDANCE WITH 107.10. HOWEVER, THE SAME MATERIAL AND SIZE LIMITATIONS AS FOR PERMANENT INSTALLATIONS SHALL APPLY.

MAILBOX SUPPORTS, COMPLETE IN PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH, FOR ITEM SPECIAL MAILBOX SUPPORT, (SINGLE) (DOUBLE).

ITEM SPECIAL - GEOTEXTILE FABRIC

THIS ITEM SHALL BE USED TO AID IN THE STABILIZATION OF SOFT SUBGRADE, AS DESCRIBED IN ITEM 203, ENCOUNTERED IN CUTS OR UNDER EXISTING PAVEMENT WHICH HAS BEEN REMOVED.

THE GEOTEXTILE FABRIC SHALL CONFORM TO 712.09, "TYPE D" OF THE CMS. GEOTEXTILE FABRIC SHALL NOT BE USED IN LOCATIONS WHERE THE UNDERDRAINS ARE TO BE CONSTRUCTED.

WHERE THE SOFT SUBRADE MATERIAL IS ENCOUNTERED AND CANNOT BE SATISFACTORILY STABILIZED BY MOISTURE CONTROL AND COMPACTION, IT SHALL BE REMOVED AS DIRECTED BY THE ENGINEER. PAYMENT SHALL BE INCLUDED UNDER ITEM 203.

FOR DEPTHS OF REMOVAL OF 18" OR MORE, WHERE UNSUITABLE MATERIAL IS STILL ENCOUNTERED, THE GEOTEXTILE FABRIC SHALL BE USED AS DIRECTED BY THE ENGINEER.

THE GEOTEXTILE FABRIC SHALL BE PLACED AT THE BOTTOM OF THE CUT OR AT OTHER LOCATIONS DESIGNATED BY THE ENGINEER. PLACE THE GEOTEXTILE FABRIC SMOOTH AND FREE OF TENSION OR WRINKLES. FOLD OR CUT THE GEOTEXTILE FABRIC TO CONFORM TO CURVES. OVERLAP A MINIMUM LIFT THICKNESS OF 18" AT THE ENDS AND SIDES. HOLD THE FABRIC IN PLACE WITH PINS OR STAPLES.

END DUMP THE SUITABLE MATERIAL (304 AGGREGATE BASE) ON THE FABRIC. DO NOT OPERATE THE EQUIPMENT DIRECTLY ON THE FABRIC. UNLESS OTHERWISE DIRECTED BY THE ENGINEER. SPREAD THE END DUMPED MATERIAL AND MAINTAIN A MINIMUM LIFT THICKNESS OF 18".

THE DEPARTMENT WILL MEASURE GEOTEXTILE FABRIC BY THE NUBMER OF SQUARE YARDS OF SURFACE AREA OF GEOTEXTILE FABRIC PLACED. THE DEPARTMENT WILL NOT MEASURE THE SPECIFIED LAP LENGTH.

THE UNIT PRICE BID PER SQUARE YARD FOR ITEM SPECIAL - GEOTEXTILE FABRIC WILL INCLUDE FULL COMPENSATION FOR ALL LABOR, MATERIALS, EQUIPMENT AND ALL OTHER INCIDENTALS REQUIRED TOA MAKE THIS ITEM COMPLETE.

THE CONTINGENCY QUANTITY OF ITEM SPECIAL - GEOTEXTILE FABRIC HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE, AS DIRECTED BY THE ENGINEER.

SPECIAL, GEOTEXTILE FABRIC	17,500 SQ. YDS.

ITEM 204 - EXCAVATION OF SUBGRADE

A CONTINGENCY QUANTITY OF ITEM 204 - EXCAVATION OF SUBGRADE, HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER. THIS ITEM HAS BEEN PROVIDED FOR ADDITIONAL EXCAVATION OF ANY SOFT SUBGRADE, AS DETERMINED BY THE ENGINEER FOUND AFTER PAVEMENT HAS BEEN REMOVED. AN AVERAGE DEPTH OF 12" HAS BEEN USED FOR ESTIMATING PURPOSES.

ITEM 204 EXCAVATION OF SUBGRADE	6000 CU. YD.

ITEM 204 - EMBANKMENT

A CONTINGENCY QUANTITY OF ITEM 204 EMBANKMENT, HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER. THIS ITEM IS TO BE USED IN CONJUNCTION WITH ITEM 204 - EXCAVATION OF SUBGRADE AND ITEM SPECIAL - GEOTEXTILE FABRIC TO IMPROVE SUBGRADE AREAS DETERMINED TO BE UNSUITABLE. A DEPTH OF 12" HAS BEEN USED FOR ESTIMATING PURPOSES.

ITEM 204 EMBANKMENT	6000 CU. YD.

ITEM 304 - AGGREGATE BASE

A CONTINGENCY QUANTITY OF ITEM 304 AGGREGATE BASE, HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER. THIS ITEM IS TO BE USED IN CONJUNCTION WITH GEOTEXTILE FABRIC TO IMPROVE SUBGRADE AREAS DETERMINED TO BE UNSUITABLE. A DEPTH OF 12" HAS BEEN USED FOR ESTIMATING PURPOSES.

ITEM 304 AGGREGATE BASE	6000 CU. YD.

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614 MAINTAINING 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:

ON I-77 A MINIMUM OF TWO (2) ELEVEN-FOOT LANES IN EACH DIRECTION SHALL BE MAINTAINED ON THE EXISTING OR PROPOSED PAVEMENT, OR ON PAVEMENT FOR MAINTAINING TRAFFIC DURING CONSTRUCTION OF THE WORK, EXCEPT TRAFFIC MAY BE REDUCED TO ONE ELEVEN-FOOT LANE AT NIGHT AND DURING OTHER LOW TRAFFIC PERIODS, IF APPROVED BY THE PROJECT ENGINEER, TO REBUILD THE RIGHT SHOULDER OF THE SOUTHBOUND ROADWAY AND TO ACCOMPLISH FINAL SURFACING OF THE CENTER LANE OF THE NORTHBOUND ROADWAY DURING PHASE 4.

THE CONTRACTOR SHALL INFORM THE ODOT DISTRICT 4 OFFICE (330) 786-3100, EIGHTEEN (18) DAYS PRIOR TO THE BEGINNING OF WORK AND BEFORE ANY CHANGE IN THE MAINTENANCE OF TRAFFIC PHASE.

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

UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR BE PERMITTED TO HAVE WORK ZONES THAT ALTERNATELY CLOSE BOTH THE PASSING LANE AND THE DRIVING LANE UNLESS THE DISTANCE BETWEEN THE DRUMS, PCB, OR CONES EXCEEDS TWO (2) MILES.

CONES SHALL NOT BE ACCEPTABLE TRAFFIC CONTROL DEVICES FOR LANE RESTRICTIONS OF LANE REDUCTIONS THAT ARE IN OPERATION ONE-HALF HOUR AFTER SUNSET OR ONE-HALF HOUR BEFORE SUNRISE. ALL NIGHTTIME LANE RESTRICTIONS SHALL REQUIRE DRUMS OR BARRICADES AT A MAXIMUM SPACING OF FIFTY (50) FEET.

THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE ALL FLAGS, BARRICADES, SIGNS, SIGN SUPPORTS AND FURNISH AND MAINTAIN ALL FLAGGERS, WATCHERS AND INCIDENTALS RELATED THERETO. THE ABOVE ITEMS SHALL BE UTILIZED IN CONFORMANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, LATEST REVISION.

NO FULL DEPTH BRIDGE REPAIR, DECK REMOVAL, OR WIDENING SHALL BE PERFORMED OVER AN OPEN LANE WITHOUT A SAFETY NET OR PLATFORM. A SAFETY NET OR PLATFORM SHALL BE REQUIRED TO PROTECT THE ROADWAY, RAILROAD OR STREAM DURING THE REMOVAL OF THE EXISTING CONCRETE PARAPET AND DECK. THE CONTRACTOR SHALL PROVIDE A SAFETY NET OR PLATFORM OF SUITABLE STRENGTH ON THE UNDERSIDE OF THE DECK. THE DESIGN OF THE NET OR PLATFORM SHALL CONFORM WITH OSHA REQUIREMENTS AND THE APPROVAL OF THE ENGINEER AND SHALL REMAIN IN PLACE UNTIL THE WORK HAS BEEN COMPLETED AND ACCEPTED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL SUBMIT A DEMOLITION PLAN AND SAFETY NET OR PLATFORM DESIGN 10 DAYS PRIOR TO COMMENCING ANY DEMOLITION FOR APPROVAL BY THE ENGINEER. THE SUBMITTAL SHALL BE IN WRITING TO THE DISTRICT CONSTRUCTION ENGINEER WITH A COPY TO THE PROJECT ENGINEER.

THE CITY OF GREEN WILL AWARD A CONSTRUCTION PROJECT THAT INCLUDES A WORK LIMIT DETOUR ROUTE WHICH WILL OVERLAP INTO THE DETOUR ROUTE OF THIS PROJECT. EACH CONTRACTOR HAS THE RESPONSIBILITY TO COORDINATE AND MUTUALLY COOPERATE WITH EACH OTHERS WORK ACTIVITIES DURING THE ENTIRE CONSTRUCTION PROCESS AS PER CMS 105.05 AND 105.08.

PRIOR TO OPENING TO TRAFFIC, EACH LANE SHALL BE IN A SAFE AND PASSABLE CONDITION AS DETERMINED BY THE ENGINEER. 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.

THE LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

NIGHT LANE CLOSURES

NIGHT LANE CLOSURES SHALL BE LIMITED TO THE PERIOD FROM 9:00 PM TO 5:00 AM. NIGHT LANE CLOSURES SHALL BE PROHIBITED DURING HOLIDAY PERIODS AS DEFINED IN THE GENERAL NOTE HOLIDAYS. WORK SHALL BE CONCLUDED, ALL TRENCH FILLED IN ACCORDANCE WITH THE DROPOFF DETAILS ON SHEET 37, ALL GUARDRAIL AND/OR SAFETY DEVICES SHALL BE IN PLACE, AND TWO (2) LANES IN EACH DIRECTION (ONE LANE ON RAMPS) SHALL BE OPEN TO TRAFFIC BY 5:00 AM. FAILURE TO COMPLY WITH ANY OF THESE REQUIREMENTS ON TIME SHALL RESULT IN LIQUIDATED DAMAGES BEING CHARGED TO THE CONTRACTOR IN THE AMOUNT OF $2,000 PER HOUR OR PORTION OF AN HOUR THAT TWO (2) LANES IN EACH DIRECTION ON I-77 ARE NOT OPEN TO TRAFFIC AND/OR NON-COMPLIANCE WITH THE DROPOFF OR GUARDRAIL/SAFETY DEVICE REQUIREMENTS.

HOLIDAYS

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

CHRISTMAS	NEW YEARS
MEMORIAL DAY	FOURTH OF JULY
LABOR DAY	THANKSGIVING

THE CONTRACTOR SHALL PROVIDE TWO (2) ELEVEN-FOOT LANES IN EACH DIRECTION ON I-77 AT ALL TIMES.

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

DAY OF THE WEEK	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00 N FRIDAY THROUGH 12:00 N MONDAY
MONDAY	12:00 N FRIDAY THROUGH 12:00 N TUESDAY
TUESDAY	12:00 N MONDAY THROUGH 12:00 N WEDNESDAY
WEDNESDAY	12:00 N TUESDAY THROUGH 12:00 N THURSDAY
THURSDAY	12:00 N WEDNESDAY THROUGH 12:00 N MONDAY
FRIDAY	12:00 N THURSDAY THROUGH 12:00N MONDAY
SATURDAY	12:00 N FRIDAY THROUGH 12:00 N 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 NOTED IN THE PLANS OR PROPOSAL, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN THE AMOUNT OF $2,000 PER HOUR, OR PORTION OF AN HOUR WHEN LANES ARE NOT OPENED BY THE REQUIRED TIME.

SEQUENCE OF CONSTRUCTION

WORK IS DIVIDED INTO FOUR PHASES AND NUMEROUS SUBPHASES. THE WORK PHASES AND A DESCRIPTION OF TRAFFIC MAINTENANCE FOR EACH PHASE IS AS FOLLOWS:

PHASE I-A (NO PLAN VIEW PROVIDED, TYPICAL SECTION ONLY) SEE SHEET 36

I-77 MAINLINE

THE CONTRACTOR SHALL RECONSTRUCT THE RIGHT SHOULDER OF THE SOUTHBOUND ROADWAY PROVIDING AN 11-FOOT WIDTH OF ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN, NO. 1 AND NO. 2.

THE CONTRACTOR SHALL PERFORM THE SHOULDER WORK AT NIGHT (SEE NIGHT LANE CLOSURES) DURING WHICH TIME THE RIGHT-HAND TRAFFIC LANE SHALL BE CLOSED USING THE TRAFFIC CONTROLS SHOWN IN STANDARD DRAWING MT 95.30. PRIOR TO REOPENING THE RIGHT LANE TO TRAFFIC EACH MORNING, THE CONTRACTOR SHALL COMPLETE THE CONSTRUCTION OF REPLACEMENT PAVEMENT TO LEVEL WITH EXISTING, OR FAILING THIS, SHALL BACK FILL ANY OPEN TRENCH WITH ITEM 304 AGGREGATE BASE AND COMPACT IT LEVEL WITH ADJACENT PAVEMENT OR SHALL PROVIDE PROTECTION OF ANY PAVEMENT LEVEL DIFFERENTIAL OR DROPOFF IN ACCORDANCE WITH THE "DROPOFFS IN WORK ZONE" PLAN INSERT SHEET.

AT THE END OF EACH NIGHT'S WORK, DRUMS AND SIMILAR DEVICES SHALL BE MOVED BEYOND THE SHOULDER AND SIGNS SHALL BE REMOVED OR COVERED.

ALSO, AT THIS TIME, THE CONTRACTOR SHALL MODIFY VARIOUS SEGMENTS OF THE EXISTING GUARDRAIL ON THE OUTSIDE OF THE SOUTHBOUND ROADWAY.

GREENSBURG ROAD

PLACE PAVEMENT, FOR MAINTAINING TRAFFIC, UNDER THE I-77 STRUCTURE ON THE SOUTH SIDE OF GREENSBURG ROAD. MAINTAIN TRAFFIC BY THE USE OF FLAGGERS AS SHOWN IN STANDARD DRAWING MT-97.11.

PHASE I-B (NO PLAN VIEW PROVIDED, TYPICAL SECTION ONLY)

I-77 MAINLINE

SOUTHBOUND TRAFFIC SHALL BE MAINTAINED IN TWO LANES ON THE EXISTING PAVEMENT AND THE RIGHT SHOULDER, WHICH WAS REBUILT IN PHASE IA. SOUTHBOUND TRAFFIC SHALL BE SEPARATED FROM THE WORK AREA BY 50" PORTABLE CONCRETE BARRIER.

THE CONTRACTOR SHALL REMOVE THE EXISTING LEFT PAVED SHOULDER OF THE SOUTHBOUND ROADWAY AND CONSTRUCT AN 20 FOOT WIDTH (SEE TYPICAL SECTIONS, SHEET 36) OF 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN, NO. 1, ADJACENT TO THE MEDIAN SIDE OF THE SOUTHBOUND ROADWAY.

THE CONTRACTOR SHALL INSTALL TEMPORARY GUARDRAIL ALONG THE MEDIAN SIDE OF THE SOUTHBOUND ROADWAY ITEM 615 PAVEMENT FOR MAINTAINING. TRAFFIC.

DURING PHASE I-B THE CONTRACTOR SHALL COMPLETE THE CONSTRUCTION OF THE TEMPORARY BRIDGE WIDENING OVER GREENSBURG ROAD, SHALL PLACE THE TEMPORARY SHEETING AT THE SOUTH END CROSSOVER AND SHALL COMPLETE THE NORTHBOUND CROSSOVERS AT THE NORTH AND SOUTH ENDS OF THE PROJECT.

THE PATH OF SOUTHBOUND TRAFFIC DURING PHASE I-B IS THE SAME AS SHOWN FOR SOUTHBOUND TRAFFIC IN PHASE 2.

PHASE IX (PLANS AND TYPICAL SECTION PROVIDED) SEE SHEET 33

GREENSBURG ROAD

DURING THIS PHASE TRAFFIC ON GREENSBURG ROAD WILL BE SHIFTED TO THE SOUTH USING ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC PLACED ON THE SOUTH SIDE OF THE ROAD AND 32" PCB PLACED ALONG THE NORTH SIDE TO PROTECT THE CONSTRUCTION OF THE NORTH PIER WIDENING. 32" PCB WILL ALSO BE PLACED ALONG THE SOUTH SIDE TO PROTECT THE EXISTING PIERS. ALSO DURING THE FIRST USE OF PHASE IX, PLACE PAVEMENT FOR MAINTAINING TRAFFIC ON THE NORTH SIDE.

PHASE IY (PLANS AND TYPICAL SECTION PROVIDED)

GREENSBURG ROAD

DURING THIS PHASE TRAFFIC ON GREENSBURG ROAD WILL BE SHIFTED TO THE NORTH USING ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC PLACED ON THE NORTH SIDE OF THE ROAD AND 32" PCB PLACED ALONG THE SOUTH SIDE TO PROTECT THE CONSTRUCTION OF THE SOUTH PIER WIDENING. 32" PCB WILL ALSO BE PLACED ALONG THE NORTH SIDE TO PROTECT THE EXISTING PIERS.

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PHASE 2 (PLANS AND TYPICAL SECTION PROVIDED)

I-77 MAINLINE

SOUTHBOUND TRAFFIC WILL REMAIN ON EXISTING AND TEMPORARY SOUTHBOUND ROADWAY PAVEMENT AS CONTINUED FROM PHASE I-B. THE CONTRACTOR SHALL PLACE SIGNS, MARKINGS AND DEVICES TO REDUCE NORTHBOUND TRAFFIC TO TWO LANES AND SHIFT IT TO THE RIGHT IN PREPARATION FOR THE CROSSOVER TO THE SOUTHBOUND ROADWAY, MAKING USE OF PORTIONS OF THE EXISTING AND ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC ON THE SOUTHBOUND ROADWAY.

THE CONTRACTOR SHALL CONSTRUCT ALL PORTIONS OF THE NORTHBOUND ROADWAY (EXCEPT FINAL COURSE PAVEMENT), MOST OF THE MEDIAN BARRIER, BUT LEAVING OPENINGS IN THE PERMANENT BARRIER, TO ACCOMMODATE THE MAINLINE CROSSOVERS CURRENTLY IN USE OR WILL BE USED IN PHASE 3.

AT THE END OF PHASE 2, AFTER THE NORTHBOUND TRAFFIC IS BROUGHT BACK TO THE NORTHBOUND SIDE, MAINTAIN NORTHBOUND TRAFFIC IN THE 2 RIGHT LANES, PLACE 32" PCB AND AN IMPACT ATTENUATOR IN THE LEFT NORTHBOUND LANE (EXTENDING FROM THE BARRIER SHOWN AT ABOUT STA. 63+00 TO STA. 73+86) AND CONSTRUCT THE NORTHBOUND MEDIAN BARRIER PRIOR TO OPENING THE THIRD NORTHBOUND LANE. ALSO, IN THE SOUTHBOUND ROADWAY, BEFORE SHIFTING SOUTHBOUND TRAFFIC TO OVER WINTER LOCATIONS, REMOVE THE SOUTH CROSSOVER.

WISE ROAD

CLOSE WISE ROAD TO TRAFFIC AND DETOUR AS SHOWN IN THE PLANS. COMPLETE BRIDGE RECONSTRUCTION.

OVER WINTER

FOR OVER WINTER BOTH THE NORTHBOUND AND SOUTHBOUND FULL LANES AND SHOULDERS MUST BE OPEN TO TRAFFIC. THE CONTRACTOR SHALL PLACE THE PAINTED TEMPORARY MARKING REQUIRED FOR OVER WINTER ON BOTH ROADWAYS. THE NORTHBOUND ROADWAY SHALL BE OPEN INCLUDING THE NEWLY CONSTRUCTED INSIDE THIRD LANE.

THE SOUTHBOUND ROADWAY SHALL BE RESTRIPED TO ITS ORIGINAL LANE PATTERN FOR THE OVER-WINTER. THE 50" PCB SHALL BE REMOVED FROM SOUTHBOUND ROADWAY AND STORED IN SAFE LOCATIONS ON THE PROJECT, AS DETERMINED BY THE ENGINEER. CLOSURE OF ONE LANE, AT NIGHT, SHALL BE EMPLOYED TO ACCOMPLISHED LINE REMOVAL AND PAVEMENT MARKING PLACEMENT.

AFTER TRAFFIC IS IN THE OVER-WINTER POSITIONS, GAPS IN THE MEDIAN BARRIER SHALL BE PROTECTED WITH LENGTHS OF PCB SEGMENTS ARRANGED TO OVERLAP AND CLOSE THE OPENINGS.

PRIOR TO WINTER SHUTDOWN, OR THE FOLLOWING YEAR, PRIOR TO IMPLEMENTATION OF PHASE 3, THE CROSSOVER AT THE NORTH END OF THE PROJECT SHALL BE MODIFIED TO CARRY SOUTHBOUND TRAFFIC. THE PHASE 3 CROSSOVER AT THE SOUTH END SHALL BE CONSTRUCTED PRIOR TO IMPLEMENTING PHASE 3.

PHASE 3 (PLANS AND TYPICAL SECTION PROVIDED)

DURING THIS PHASE THE CONTRACTOR SHALL CONSTRUCT THE SOUTHBOUND ROADWAY AND PORTIONS OF THE MEDIAN. ALL FINAL PAVEMENT MARKINGS AND SIGNS SHALL BE COMPLETED FOR THE SOUTHBOUND ROADWAY DURING THIS PHASE.

I-77 MAINLINE

NORTHBOUND I-77 TRAFFIC SHALL BE REDUCED TO TWO LANES ON THE NEW NORTHBOUND ROADWAY, OCCUPYING TWO TEMPORARY LANES ON THE RIGHT HALF OF THE ROADWAY AND RIGHT SHOULDER.

SOUTHBOUND I-77 TRAFFIC SHALL BE DIVERTED THROUGH CROSSOVERS IN TWO LANES ON TO THE LEFT SIDE OF THE NEWLY CONSTRUCTED NORTHBOUND ROADWAY.

AT THE END OF PHASE 3, AFTER THE SOUTHBOUND TRAFFIC IS BROUGHT BACK TO THE SOUTHBOUND SIDE, REDUCE SOUTHBOUND TRAFFIC TO 2 LANES BY CLOSING THE MEDIAN LANES STARTING AT STA. 75+00 IN ACCORDANCE WITH MT-95.40 AND CONTINUE PCB (WITH AN IMPACT ATTENUATOR) SOUTHWARD IN THE SOUTHBOUND LEFT LANE TO ABOUT STA. 60+00 TO ENABLE CONSTRUCTION OF THE SOUTHBOUND MEDIAN BARRIER.

GRAYBILL ROAD

CLOSE GRAYBILL ROAD TO TRAFFIC AND DETOUR AS SHOWN IN THE PLANS. COMPLETE BRIDGE RECONSTRUCTION.

PHASE 4 (NO PLAN VIEW OR TYPICAL SECTION PROVIDED)

THE CONTRACTOR SHALL PROVIDE THE FINAL PAVING COURSE ON THE NORTHBOUND ROADWAY AS WELL AS ALL FINAL MARKINGS ON THE NORTHBOUND LANES.

I-77 MAINLINE

SHIFT SOUTHBOUND TRAFFIC ONTO NEWLY COMPLETED SOUTHBOUND LANES.

REMOVE ALL CROSSOVERS.

CONSTRUCT FINAL PAVEMENT COURSE OF LEFT LANE AND SHOULDER OF NORTHBOUND ROADWAY.

REMOVE PCB REMAINING IN NORTHBOUND ROADWAY AND CONSTRUCT FINAL SURFACE COURSE OF REMAINING LANES AND RIGHT SHOULDER OF NORTHBOUND ROADWAY. THE CENTER NORTHBOUND LANE SHALL BE CONSTRUCTED WITH TRAFFIC REDUCED TO ONE LANE, AT NIGHT (SEE NIGHT LANE CLOSURES ABOVE), AS SHOWN IN STANDARD DRAWING MT-95.30, AND THAT LANE SHALL BE MAINTAINED ON THE LEFT SHOULDER.

NOTICE OF CLOSURE SIGNS

NOTICE OF CLOSURE SIGNS, AS DETAILED IN THESE PLANS, SHALL BE ERECTED BY THE CONTRACTOR AT LEAST 14 DAYS IN ADVANCE OF THE SCHEDULED ROAD OR RAMP CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE.

CONTRACTOR'S EQUIPMENT - OPERATION AND STORAGE

THE CONTRACTOR'S EQUIPMENT SHALL BE OPERATED IN THE DIRECTION OF TRAFFIC. A QUALIFIED FLAGGER SHALL BE EMPLOYED WHERE THE CONTRACTOR'S EQUIPMENT MUST MERGE WITH THE TRAFFIC STREAM. THE CONTRACTOR'S EQUIPMENT SHALL BE EQUIPPED WITH AT LEAST ONE AMBER FLASHING LIGHT.

PAVERS, ROLLERS AND OTHER EQUIPMENT MAY BE PARKED IN AREAS ALONG THE HIGHWAY WHEN PAVING OPERATIONS ARE SCHEDULED TO CONTINUE WITHIN THE NEXT WORKDAY: OTHERWISE THE EQUIPMENT SHALL BE STORED AT A STORAGE AREA OUTSIDE THE L/A, THE LOCATION AT WHICH SHALL HAVE PRIOR APPROVAL OF THE ENGINEER. WHEN PARKING ALONG THE HIGHWAY, THE EQUIPMENT SHALL BE PLACED AND DELINEATED AS PER 614.03. NO EQUIPMENT SHALL BE PARKED IN THE MEDIAN OF THE HIGHWAY. ADEQUATE BARRICADES AND LIGHTS SHALL BE PLACED ON THE PAVEMENT SIDE OF THE EQUIPMENT TO IDENTIFY THE LIMITS OF THE EQUIPMENT. ALL OTHER EQUIPMENT, INCLUDING PRIVATE VEHICLES, SHALL BE STORED AT THE APPROVED CONTRACTOR'S STORAGE AREA. NO EQUIPMENT SHALL BE PARKED ON PRIVATE PROPERTY UNLESS PRIOR APPROVAL OF THE OWNER AND THE PROJECT ENGINEER/SUPERVISOR HAS BEEN GRANTED.

WINTER TRAFFIC LIMITATIONS

WINTER TRAFFIC PATTERNS WITH I-77 LANES AND SHOULDERS EQUAL TO OR GREATER THAN THE EXISTING SHALL BE IN PLACE BETWEEN DECEMBER 1, 2004 AND APRIL 1, 2005 AND WINTER TRAFFIC PATTERNS WITH I-77 LANES AND SHOULDERS AS NOTED ON SHEET 36 SHALL BE IN PLACE BETWEEN DECEMBER 1, 2005 AND APRIL 1, 2006. LIQUIDATED DAMAGES SHALL BE ACCESSED IN THE AMOUNT OF $5000.00/DAY FOR EACH CALENDAR DAY THE TRAFFIC PATTERNS AS NOTED HEREIN ARE NOT IN PLACE.

LANE AND SHOULDER CLOSURES MAY BE PERMITTED WITH WRITTEN APPROVAL FROM THE DISTRICT CONSTRUCTION ENGINEER PRIOR TO APRIL 1. HOWEVER, IF ADVERSE WEATHER OF TRAFFIC CONDITIONS SO DICTATE THE ENGINEER CAN REQUIRE ALL LANE AND SHOULDER ZONES OPEN TO TRAFFIC.

NO PORTABLE CONCRETE BARRIER SHALL BE STORED WITHIN THE RIGHT OF WAY DURING WINTER TRAFFIC LIMITATIONS WITHOUT WRITTEN APPROVAL OF THE ENGINEER.

TIME OF COMPLETION

ALL WORK NOTED ON I-77 IN PHASE 1A, PHASE 1B, AND PHASE 2 SHALL BE COMPLETED AND OPEN TO TRAFFIC BY SEPTEMBER 30, 2005. LIQUIDATED DAMAGES OF $5000.00/DAY SHALL BE ASSESSED THE CONTRACTOR FOR EACH CALENDAR DAY THIS CONDITION IS NOT MET.

ALL WORK NOTED ON I-77 IN PHASE 3 AND PHASE 4 SHALL BE COMPLETED AND OPEN TO TRAFFIC BY SEPTEMBER 29, 2006. LIQUIDATED DAMAGES OF $5000.00/DAY SHALL BE ASSESSED THE CONTRACTOR FOR EACH CALENDAR DAY THIS CONDITION IS NOT MET.

ALL WORK NOTED ON WISE ROAD SHALL BE COMPLETED AND OPEN TO TRAFFIC BY SEPTEMBER 30, 2005. LIQUIDATED DAMAGES OF $1000.00/DAY SHALL BE ASSESSED THE CONTRACTOR FOR EACH CALENDAR DAY THIS CONDITION IS NOT MET.

ALL WORK NOTED ON GRAYBILL ROAD SHALL BE COMPLETED AND OPEN TO TRAFFIC BY AUGUST 18, 2006. LIQUIDATED DAMAGES OF $1000.00/DAY SHALL BE ASSESSED THE CONTRACTOR FOR EACH CALENDAR DAY THIS CONDITION IS NOT MET.

DETOUR DURATION

THE MAXIMUM LENGTH OF TIME FOR THE WISE ROAD DETOUR ROUTE TO BE IN EFFECT SHALL BE ONE-HUNDRED-TWENTY CONSECUTIVE DAYS, AND THE MAXIMUM LENGTH OF TIME FOR THE GRAYBILL RD DETOUR ROUTE TO BE IN EFFECT SHALL BE SIXTY CONSECUTIVE CALENDAR DAYS.

CONSTRUCTION WORK MAY BE PERFORMED BEFORE AND AFTER THE DETOUR LIMITATION DATES, BUT THERE SHALL BE NO RESTRICTIONS (LANE WIDTH REDUCTIONS, TEMPORARY ROADWAYS, OR ONE WAY TRAFFIC) TO THROUGH OR LOCAL TRAFFIC. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE AND PERFORM THE CONSTRUCTION WORK WITHIN THE DETOUR LIMITATION TIME. THE FAILURE OF THE CONTRACTOR TO MEET THE DETOUR LIMITATION DATES WILL CAUSE SEPARATE LIQUIDATED DAMAGES OF $500 PER CALENDAR DAY OF OVERRUN OF DETOUR LIMITATION TIME TO BE ASSESSED. THE CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS OF 108.07 OF THE DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.

DETOUR NOTIFICATION

THE CONTRACTOR SHALL ADVISE THE ODOT DISTRICT OFFICE (330) 786-3100, AND THE SUMMIT COUNTY ENGINEER (330-643-2850) EIGHTEEN (18) DAYS IN ADVANCE OF WHEN THE DETOUR ROUTE SHOULD BE IN EFFECT. THE CONTRACTOR SHALL PROVIDE, INSTALL AND SUBSEQUENTLY REMOVE ALL DEVICES NECESSARY TO DEFINE THE ROUTE OF THE DETOUR AND SHALL MAINTAIN THE SAME THROUGHOUT THE DETOUR LIMITATION DATES.

THE CONTRACTOR SHALL ALSO NOTIFY THE FOLLOWING AGENCIES, 18 DAYS PRIOR TO DETOUR IMPLEMENTATION:

CITY OF GREEN 330-896-6606
GREEN LOCAL SCHOOLS 330-896-7500
COUNTY OF SUMMIT BOARD OF MENTAL RETARDATION AND DEVELOPMENTAL DISABILITIES (TRANSPORTATION SERVICES) 330-634-8000

LIMITATION DATES

TWO (2) TRAVEL LANES IN EACH DIRECTION SHALL BE MAINTAINED ON I-77. BI-DIRECTIONAL TRAFFIC ON THE EXISTING SOUTHBOUND LANES OF I-77 WILL NOT BE PERMITTED TO OCCUR UNTIL APRIL 1, 2005. AFTER BI-DIRECTIONAL TRAFFIC HAS BEEN ESTABLISHED, (2 LANES IN EACH DIRECTION) THE CONTRACTOR MAY BEGIN WORK ON THE PAVEMENT AND BRIDGE WIDENING AND REPLACEMENT OF THE NORTHBOUND LANES OF I-77. THE WORK ON THE I-77 NORTHBOUND LANES MUST BE COMPLETE BY SEPTEMBER 30, 2005. IF THIS PHASE IS NOT COMPLETE BY SEPTEMBER 30, 2005, THE CONTRACTOR SHALL BE ASSESSED INTERIM LIQUIDATED DAMAGES IN THE AMOUNT OF $5,000.00 PER CALENDAR DAY UNTIL SUCH TIME THAT THE ROAD IS OPENED TO TRAFFIC. COMPLETE SHALL BE DEFINED AS BEING TWO (2) 12-FOOT-WIDE TRAFFIC LANES SOUTHBOUND(THREE (3) 12' WIDE TRAFFIC LANES NORTHBOUND) WITH MINIMUM 10-FOOT-WIDE SHOULDERS, LEFT AND RIGHT, ON THE ROADWAYS OF I-77 AND ONE (1) LANE IN EACH DIRECTION ON ALL CROSS ROADS OPEN TO TRAFFIC INCLUDING ALL APPROPRIATE TRAFFIC CONTROL AND SAFETY DEVICES IN PLACE AND APPROVED BY THE ENGINEER, NO BI-DIRECTIONAL TRAFFIC WILL BE ALLOWED ON I-77 FROM SEPTEMBER 27, 2005 TO APRIL 1, 2006. THE CONTRACTOR MAY CLOSE LANES PRIOR TO APRIL 1 WITH WRITTEN APPROVAL FROM THE DISTRICT CONSTRUCTION ENGINEER.

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COVERING OF SIGNS

WHERE THE PLANS CALL FOR A PERMANENT SIGN TO BE COVERED, THE CONTRACTOR SHALL DO SO IN SUCH A MANNER AS TO AVOID DAMAGING THE PERMANENT SIGN WHEN THE COVER IS REMOVED. THE COVER SHALL BE TOTALLY OPAQUE. THE USE OF ADHESIVE TAPE APPLIED DIRECTLY TO A SIGN FACE IS STRICTLY PROHIBITED. THE CONTRACTOR SHALL PROVIDE ALL OF THE "CLOSED" PLAQUES NECESSARY.

WHERE THE PLANS CALL FOR A PERMANENT SIGN TO BE OVERLAYED, THE CONTRACTOR SHALL DO SO IN SUCH A MANNER AS TO AVOID DAMAGING THE PERMANENT SIGN WHEN THE OVERLAY IS REMOVED. THE OVERLAY SHALL BE TOTALLY OPAQUE. THE USE OF ADHESIVE TAPE APPLIED DIRECTLY TO A SIGN FACE IS STRICTLY PROHIBITED. THE OVERLAYS MAY BE RIVETED TO THE PERMANENT SIGN. THE CONTRACTOR SHALL PROVIDE ALL OF THE PLAQUES, SIGNS AND SIGN PANELS NECESSARY.

ROAD CLOSED SIGN

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48 X 30 INCHES ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES, GATES AND LIGHTS, AS DETAILED IN SCD MT-101.60 AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC:

WISE ROAD, IMMEDIATELY EAST OF I-77
WISE ROAD, IMMEDIATELY WEST OF I-77
GRAYBILL ROAD, IMMEDIATELY EAST OF I-77
GRAYBILL ROAD, IMMEDIATELY WEST OF I-77

DESCRIPTION	REQUIREMENT	LIQUIDATED DAMAGES (AS NOTED IN PLAN)
HOLIDAYS	TWO (2) LANES IN EACH DIRECTION AND ALL RAMPS OPEN NOON TO NOON (VARIOUS DAYS DEPENDING ON THE DAY OF WEEK OF HOLIDAY)	$2000/HOUR
WINTER LIMITATIONS	TWO (2) LANES AND SHOULDERS IN EACH DIRECTION OPEN 12/1/04 TO 4/1/05 AND 12/1/05 TO 4/1/06	$5000/DAY
PHASE 1A MAINLINE SHOULDER REPLACEMENT 5:00 AM TO 9:00 PM	TWO (2) LANES IN EACH DIRECTION OPEN AND DROP-OFF RESTRICTIONS MET	$2000/HOUR
COMPLETION OF WISE ROAD BRIDGE OPEN TO TRAFFIC	15-OCT-05	$5000/DAY
COMPLETION OF GRAYBILL ROAD BRIDGE OPEN TO TRAFFIC	18-AUGUST-06	$5000/DAY

SIGN PLACEMENT

SIGNS AND OTHER MAINTENANCE OF TRAFFIC DEVICES MAY HAVE TO BE ADJUSTED TO FIT GEOMETRIC ROADWAY CONDITIONS AND EXISTING SIGN LOCATIONS AS DETERMINED BY THE ENGINEER.

DROPOFFS IN WORK ZONES

ALL VERTICAL DROPOFFS WITHIN THE CONSTRUCTION ZONES SHALL BE ADDRESSED AS PER THE DROPOFFS IN THE WORK ZONES DETAIL SHOWN ON SHEET 37. ALL COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED UNDER ITEM 614 - MAINTAINING TRAFFIC.

MAINTENANCE OF LIGHTING

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUOUSLY MAINTAINING EXISTING LIGHTING ON THE ROAD AND RAMPS (THE ONLY EXISTING LIGHTING ON THE PROJECT IS LOCATED AT THE NORTH AND SOUTH ENDS AND SHOULD NOT NEED TO BE ALTERED DURING THE PROJECT).

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHTTIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE IN BOTH DIRECTIONS EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIVE PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN, NO. 1

IN ADDITION TO THE REQUIREMENTS OF 615.05 OF THE SPECIFICATIONS FOR FLEXIBLE PAVEMENT THE FLEXIBLE PAVEMENT SHALL BE REVISED AS FOLLOWS:

1-1/2" ITEM 448 TYPE 1 ASPHALT CONCRETE
1-3/4" ITEM 448 TYPE 2 ASPHALT CONCRETE
9" ITEM 302 ASPHALT CONCRETE BASE

ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN, NO. 2

THE PAVEMENT COMPOSITION AND CRITERIA FOR OPENING PAVEMENT TO TRAFFIC SHALL BE AS NOTED IN ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN, NO. 1. UPON COMPLETION OF THE PROJECT OR CONSTRUCTION PHASE, THE CONTRACTOR SHALL NOT REMOVE THE PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN, NO.2, INCLUDING ANY TEMPORARY DRAINAGE FACILITIES.

THE AFFECTED EXISTING EARTH MEDIAN AND PAVED SHOULDERS SHALL BE RESTORED TO THEIR ORIGINAL, OR AN APPROPRIATE, CONDITION AS DIRECTED BY THE ENGINEER AND AS PER 615.08.

PAVEMENTS FOR MAINTAINING TRAFFIC (EITHER NO. 1 OR NO. 2) SHALL NOT BE OPENED TO TRAFFIC UNTIL ALL TEMPORARY TRAFFIC CONTROL DEVICES, SIGNS, PAVEMENT MARKINGS AND PORTABLE CONCRETE BARRIERS HAVE BEEN ERECTED AND APPROVED BY THE ENGINEER.

ITEM 615 ROADS FOR MAINTAINING TRAFFIC, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 615 OF THE SPECIFICATIONS, THIS WORK SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY TO:

CONSTRUCT THE TEMPORARY CROSSOVERS WHILE MAINTAINING THE EXISTING DRAINAGE FACILITIES DURING CONSTRUCTION OR PROTECTING THE EXISTING DRAINAGE FACILITIES PLANNED TO REMAIN FOLLOWING CONSTRUCTION.

THE EXISTING CATCH BASINS LOCATED IN THE SOUTHBOUND MEDIAN DITCH SHALL BE MAINTAINED AS OPERATIVE, IN AS MUCH AS POSSIBLE. AT LOCATIONS WHERE SIDE SLOPES WILL OVER-RUN THE CATCH BASINS, THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN TEMPORARY HEADWALLS OR REMOVE AND RELOCATE THE CATCH BASINS TO PROPERLY DRAIN THE MEDIAN DITCH. THE MEDIAN DITCH SHALL BE REGRADED TO SUFFICIENTLY DRAIN.

EXISTING CATCH BASINS THAT ARE AFFECTED BY THE CROSSOVERS SHALL BE ADEQUATELY COVERED BY STEEL PLATES PRIOR TO PLACING THE TEMPORARY EMBANKMENT OR THEY CAN BE REMOVED AND RELOCATED. DRAINAGE TO AFFECTED FACILITIES SHALL BE ROUTED TO THE NEAREST AVAILABLE FACILITY.
THE CONTRACTOR IS ALSO RESPONSIBLE FOR THE INSTALLATION OF DRAINAGE PIPE OF A SUITABLE TYPE AND SIZE BENEATH THE CROSSOVERS. TO RESTORE UNINTERRUPTED FLOW OF THE MEDIAN DITCH DRAINAGE.

ITEM 614 - MAINTAINING TRAFFIC, MISC.: VEHICLE ASSISTANCE

THE CONTRACTOR SHALL PROVIDE A VEHICLE WITH OPERATOR ABLE TO ASSIST OR REMOVE DISABLED VEHICLES FROM THE TRAVELED LANE TO REESTABLISH FREE FLOWING TRAFFIC WITHIN THE WORK ZONE WHICH IS UNDER CONSTRUCTION. THE EXCEPTION IS TRAFFIC ACCIDENTS WHICH ARE NOT TO BE MOVED WITHOUT DIRECTION OF THE OHIO STATE HIGHWAY PATROL. VEHICLE ASSISTANCE DOES NOT APPLY DURING WINTER SHUTDOWN PERIODS.

THE RESPONSE TIME SHOULD BE WITHIN TEN MINUTES OF THE VEHICLE BEING REPORTED AS DISABLED. THE INTENT IS TO PERFORM THIS WORK IN A VERY SHORT TIME PERIOD TO AVOID TRAFFIC FROM BACKING UP. THE VEHICLE SHALL BE EQUIPPED WITH AT LEAST THE FOLLOWING: FUEL CANS OF GAS AND DIESEL, FLARES, CONES, JUMPER CABLES, AMBER LIGHTS, CELL PHONE (TO RECEIVE TROUBLE CALLS AND TO CALL TOW VEHICLES).

THE HOURS FOR THIS VEHICLE WITH OPERATOR ARE 24 HOURS PER DAY AND SEVEN DAYS PER WEEK.

THE CONTRACTOR IS NOT TO REMOVE THE VEHICLE EXCEPT TO THE SHOULDER OR OFF THE TRAVELED LANE. COMMERCIAL TOW OPERATORS ARE TO BE CONTACTED TO REMOVE THE DISABLED VEHICLE FROM THE ROADWAY AT THE VEHICLE OWNER'S EXPENSE.

ANY DAMAGE DONE TO DISABLED VEHICLES SHALL BE BORNE BY THE CONTRACTOR (THE STATE SHALL BE HELD HARMLESS).

IN ORDER TO VERIFY EACH INSTANCE, THE CONTRACTOR IS REQUIRED TO SUBMIT DOCUMENTATION THAT REFLECTS THE DATE, TIME, VEHICLE MAKE AND MODEL, LICENSE NUMBER OF THE VEHICLE AND THE DRIVER'S NAME. THIS DOCUMENTATION SHALL BE SUBMITTED TO THE ENGINEER WITHIN (3) WORKING DAYS. PAYMENT FOR EACH OCCURENCE WILL NOT BE PROCESSED FOR THIS ITEM UNTIL THIS DOCUMENTATION IS RECEIVED.

ALL COSTS ASSOCIATED WITH THE REQUIREMENTS MENTIONED ABOVE SHALL BE INCLUDED IN THE EACH PRICE BID FOR

ITEM 614 - MAINTAINING TRAFFIC, MISC.: VEHICLE ASSISTANCE 150 EACH

ITEM 614 - MAINTAINING TRAFFIC, MISC.: TRAFFIC SAFETY COORDINATOR

THE CONTRACTOR SHALL HAVE A FULL-TIME TRAFFIC SAFETY COORDINATOR (TSC) OR A QUALIFIED REPRESENTATIVE OF THE TSC ON DUTY AND AT THE PROJECT SITE 24 HOURS A DAY WHENEVER ACTIVE CONSTRUCTION WORK IS BEING PERFORMED AND/OR WHENEVER AN ACTIVE MAINTENANCE OF TRAFFIC ZONE IS IN PLACE OR BEING SET UP WITHIN THE LIMITS OF THIS PROJECT. A CERTIFIED TSC SHALL BE PRESENT WHEN THE CONTRACTOR OR SUBCONTRACTOR INSTALLS A TRAFFIC RESTRICTION, LANE CLOSURE, ETC. THE CONTRACTOR OR SUBCONTRACTOR MUST PRESENT A COPY OF CERTIFICATES FOR ALL TSC TO THE ENGINEER. A TSC MUST BE PRESENT WHEN THE WORK ZONE IS BEING SET UP OR REMOVED. THE TSC SHALL BE FAMILIAR WITH THE TRAFFIC CONTROL REQUIREMENTS IN THE PLAN AND HAVE NO OTHER DUTIES EXCEPT WHAT APPEARS IN THIS NOTE. THE TSC SHALL BE FAMILIAR WITH THE TRAFFIC CONTRACTOR'S MAINTENANCE OF TRAFFIC OPERATIONS. THE CONTRACTOR SHALL DESIGNATE A QUALIFIED INDIVIDUAL TO THE POSITION (OTHER THAN THE SUPERINTENDENT), IN WRITING TO THE DISTRICT CONSTRUCTION ENGINEER FOR APPROVAL, PRIOR TO THE PRECONSTRUCTION CONFERENCE. THE TSC MAY BE CERTIFIED FROM ONE OF THE FOLLOWING ORGANIZATIONS:

1. AMERICAN TRAFFIC SAFETY SERVICE ASSOCIATION A.T.S.S.A., PHONE NUMBER 1-800-272-8772, CERTIFIED WORKSITE TRAFFIC SUPERVISOR (WTS)
2. THE NATIONAL SAFETY COUNCIL, TRAFFIC CONTROL ZONES SUPERVISORS COURSE, PHONE NUMBER 1-800-441-5103
3. NATIONAL HIGHWAY INSTITUTE, DESIGN AND OPERATION OF WORK ZONE TRAFFIC CONTROL, PHONE NUMBER 1-703-235-0528

INCLUDED IN THIS SUBMITTAL SHALL BE THE TSC'S RESUME SHOWING TRAFFIC EXPERIENCE, TRAINING, AND EDUCATION, ETC. PROJECT WORK SHALL NOT BEGIN WITHOUT AN APPROVED TSC. ANY REPRESENTATIVE OF THE TSC MUST ALSO HAVE DISTRICT APPROVAL. THE APPOINTED TSC SHALL BE PRESENT AT THE PRECONSTRUCTION CONFERENCE.

THE TSC SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF TRAFFIC AS OUTLINED IN THE MAINTENANCE PLAN AND SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

A. UNDERSTAND AND BE FAMILIAR WITH THE REQUIREMENTS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, (OMUTCD) CURRENT EDITION, LATEST REVISION, THE TRAFFIC MAINTENANCE AND SAFETY PROVISIONS OF THE CONTRACT PROPOSAL, AND ODOT'S TRAFFIC MANAGEMENT PROGRAM (TMP).

B. CONSTANTLY MONITOR AND REVIEW THE TRAFFIC CONTROL DEVICES TO DETERMINE OPERATIONAL PROBLEMS OR AREAS OF NONCOMPLIANCE WITH THE MAINTENANCE OF TRAFFIC PLANS WHICH SHOULD BE IMMEDIATELY REPORTED TO THE CONTRACTOR FOR CORRECTIVE ACTION.

C. COORDINATE MAINTENANCE OF TRAFFIC OPERATIONS WITH THE PROJECT ENGINEER AND THE ODOT CONSTRUCTION PROJECT COORDINATOR (CPC).

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D. ATTEND MONTHLY MEETINGS WITH THE PROJECT ENGINEER AND CPC TO REVIEW AND RECOMMEND PROCEDURES FOR REVISIONS IN THE MAINTENANCE OF TRAFFIC OPERATIONS.

E. HOLD TRAFFIC SAFETY MEETINGS WITH THE CONTRACTOR AND SUBCONTRACTOR'S SUPERINTENDENTS AND FOREMEN PRIOR TO AND DURING CONSTRUCTION. (THE PROJECT ENGINEER AND CPC SHALL BE INVITED TO ATTEND THESE MEETINGS.)

F. A DAILY RECORD OF THE MAINTENANCE OF TRAFFIC INSPECTION SHALL BE GIVEN TO THE PROJECT ENGINEER, IN WRITING, AND SHALL INCLUDE A RECORD OF DEFICIENCIES AND RESOLUTION OF THE DEFICIENCIES. A MINIMUM OF TWO REVIEWS EACH WEEK SHALL BE PERFORMED DURING THE HOURS OF DARKNESS. ONE OF THE NIGHT INSPECTIONS SHALL BE PERFORMED ON A SATURDAY OR SUNDAY NIGHT. THE FOLLOWING ITEMS SHALL BE INCLUDED IN EACH REVIEW: TRAFFIC CONTROL DEVICE CONDITION, PLACEMENT, VISIBILITY, TRAFFIC FLOW CONDITIONS, INCIDENTS, CONGESTION POINTS, DELAYS, ADEQUACY OF ADVANCE INFORMATIONAL SIGNS BEYOND THE PROJECT LIMITS, INTERACTION OF WORK VEHICLES AND TRAFFIC, EVIDENCE OF ACCIDENTS, PROPER STORAGE OF MATERIALS AND EQUIPMENT, CONFORMANCE WITH THE TRAFFIC CONTROL PLAN, ADEQUACY OF THE TRAFFIC CONTROL PLAN, CONFLICTING OR NON-CONFORMING PAVEMENT MARKINGS.

G. WEEKLY THE TSC MUST RETRIEVE/COLLECT ALL CRASH REPORTS (OH-1) FROM ALL LAW ENFORCING AGENCIES, EVALUATE THE CRASHES AND RECOMMEND SOLUTIONS TO ADDRESS ANY ISSUES WITH THE TCP THAT ARE POTENTIALLY CREATING CRASHES WITHIN THE WORK ZONE. THE TSC MUST PRESENT THESE SOLUTIONS TO THE ENGINEER FOR APPROVAL WEEKLY. UPON APPROVAL BY THE ENGINEER AND THE DISTRICT WORK ZONE TRAFFIC MANAGER (DWZTM), THE CONTRACTOR MUST IMPLEMENT THE RECOMMENDED SOLUTIONS TO THE WORK ZONE WITHIN ONE WEEK - ADDITIONAL COST TO BE PAID UNDER CONSTRUCTION AND MATERIALS SPECIFICATIONS - 109.

H. THE TSC MUST INSPECT THE WORK ZONE AT THE BEGINNING AND THE END OF EACH WORK DAY AND ONE TIME PER WEEK DURING THE HOURS OF DARKNESS. THE FOLLOWING ITEMS SHALL BE INCLUDED BUT NOT RESTRICTED TO, IN EACH REVIEW: TRAFFIC CONTROL DEVICE CONDITION; PLACEMENT; VISIBILITY; TRAFFIC FLOW CONDITIONS; INCIDENTS; CONGESTION POINTS; DELAYS; ADEQUACY OF ADVANCED INFORMATIONAL SIGNS BEYOND PROJECT LIMITS INTERACTION OF WORK VEHICLES AND TRAFFIC; ACCIDENTS; PROPER STORAGE OF MATERIALS AND EQUIPMENT; CONFORMANCE WITH TCP; ADEQUACY OF TCP; CONFLICTING OR NON-CONFORMING PAVEMENT MARKINGS. THE TSC SHALL HAVE THE NECESSARY AUTHORITY TO IMMEDIATELY PERFORM ANY CORRECTIVE WORK. A RECORD OF EACH DAYS REVIEW SHALL BE GIVEN TO THE ENGINEER THE FOLLOWING WORKDAY IN WRITING AND SHALL INCLUDE ALL DEFICIENCIES AND RESOLUTIONS TO THE DEFICIENCIES. THE INSPECTION WILL BE DOCUMENTED ON THE LONG/SHORT TERM WORK ZONE REVIEW FORM PROVIDED BY ODOT. WEEKLY, THE INSPECTION FORM MUST BE ACCOMPANIED BY ALL OF THE OH-1 CRASH REPORTS AND THE PROPOSED SOLUTIONS TO ANY IDENTIFIED CRASH PROBLEMS.

IF THE RESTRICTIONS ARE SHORT TERM, THE TSC SHALL MONITOR THE ZONE FOR COMPLIANCE DURING LANE CLOSURES; HE SHALL MAKE SURE ALL TRAFFIC CONTROL ITEMS ARE FUNCTIONING PROPERLY. TRAFFIC CONTROL AND CRASH DATA EVALUATION WILL BE THE TSC MAIN RESPONSIBILITY DURING IMPLEMENTATION OF ZONES OR SHORT TERM ZONES. THE TSC SHALL PROVIDE THE ENGINEER A SKETCH OF THE TRAFFIC CONTROL PLAN (TCP) EVERYDAY THERE IS TO BE A SHORT TERM TRAFFIC RESTRICTION, LANE CLOSURE, ETC. THIS TCP SHALL SHOW HOW THE WORK ZONES ARE TO BE IMPLEMENTED.

IN ADDITION TO THE REQUIREMENTS OF ITEM 614 AND THE LATEST EDITION OF THE OMUTCD, THE TSC SHALL HAVE A VEHICLE, EQUIPPED WITH A CELLULAR TELEPHONE. THE TSC SHALL ALSO BE PROVIDED WITH AN ELECTRONIC PAGER. THE TELEPHONE AND PAGER NUMBERS SHALL BE PROVIDED TO THE PROJECT ENGINEER, LAW ENFORCEMENT PERSONNEL, AND THE ODOT CPC.

PAYMENT FOR THIS INDIVIDUAL AND EQUIPMENT SHALL BE AT THE PRICE BID PER HOUR FOR

ITEM 614 MAINTAINING TRAFFIC, MISC.- TRAFFIC SAFETY COORDINATOR. 12,000 HOURS

ITEM 614 - WORK ZONE CROSSOVER LIGHTING SYSTEM

THIS WORK SHALL CONSIST OF FURNISHING, ERECTING, OPERATING, MAINTAINING AND REMOVING A WORK ZONE LIGHTING SYSTEM FOR A SINGLE CROSSOVER OR OVERLAPPING A PAIR OF CROSSOVERS ON A TWO LANE TWO WAY OPERATION. THE SYSTEM SHALL BE AS SHOWN ON STANDARD CONSTRUCTION DRAWING MT- 100.00. THE CONTRACTOR SHALL ARRANGE FOR AND PAY FOR POWER. ALL MATERIALS AND CONSTRUCTION SHALL COMPLY WITH APPLICABLE PORTIONS OF 625 AND 725 EXCEPT: THE PERFORMANCE TEST OF 625.19F, AND CERTIFIED DRAWING REQUIREMENT OF 625.04, ARE WAIVED AND USED MATERIALS IN GOOD CONDITION ARE ACCEPTABLE. POLES MAY BE LESS THAN 30 FEET FROM EDGE OF PAVEMENT WHEN BEHIND GUARDRAIL. ADDITIONAL POLE LINES, CABLES AND APPURTENANCES NECESSARY TO FURNISH POWER TO THE LIGHTING SYSTEM SHALL BE INCLUDED IN THIS ITEM. THE CONTRACTOR SHALL NOT SPLICE INTO EXISTING PERMANENT LIGHTING CIRCUITS WITHOUT WRITTEN CONSENT FROM THE DISTRICT TRAFFIC ENGINEER. SERVICE POLES SHALL BE POSITIONED WITH THE SAME CONSTRAINTS AS THE LIGHTING POLES AS A MINIMUM. PAYMENT WILL BE MADE AT THE UNIT PRICE PER EACH FOR ITEM 614 - WORK ZONE CROSSOVER LIGHTING SYSTEM THROUGHOUT ALL PHASES OF WORK WHEN THE CROSSOVER ROADWAYS ARE USED.

A QUANTITY OF 3 EACH IS PROVIDED; ONE FOR THE SOUTHERN PHASE 2, ONE FOR THE SOUTHERN PHASE 3, AND ONE FOR THE NORTHERN CROSSOVERS.

ESTIMATED QUANTITIES

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC:

ITEM 410, TRAFFIC COMPACTED SURFACE, TYPE A OR B	50 CU. YD.
ITEM 410, TRAFFIC COMPACTED SURFACE, TYPE C	50 CU. YD.
ITEM 614, ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	200 CU. YD.
ITEM 616, WATER	50 M. GAL.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, TWO (2) PORTABLE CHANGEABLE MESSAGE SIGNS, CLASS I (PCMS), ON SITE, FOR THE DURATION OF TIME SPECIFIED IN THIS NOTE. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR. THE CLASS I UNITS HAVE A MINIMUM LEGIBILITY DISTANCE OF 1250 FT.

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.

THE PROBABLE PCMS LOCATIONS AND WORK LIMITS FOR THOSE LOCATIONS ARE SHOWN ON SHEET(S) OF THE PLAN. 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 CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED 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 HIGH-INTENSITY YELLOW REFLECTIVE SHEETING SURFACES OF 9-INCH BY 15-INCH MINIMUM SIZE FACING TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT 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 PRE-PROGRAMMED 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 SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST ONCE.

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

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF CMS 614.07. 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. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

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

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.

THE FOLLOWING QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER;

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN 24 SIGN-MONTH

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR

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

-FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED.
-DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
- DURING THE REMOVAL OF ANY BRIDGE PARAPETS OR THE REMOVAL OF OVERHEAD SIGNS WHERE TRAFFIC IS MAINTAINED.
-DURING PEAK TRAFFIC TIMES (6:00AM - 10:00AM AND 4:00PM - 8:00PM) MONDAY THROUGH FRIDAY. DURING THIS TIME, ONE OFFICER IN A PATROL CAR SHALL PATROL THE CONSTRUCTION AREA. THE ASSIGNMENT OF THE OFFICER WILL BE MADE EXCLUSIVELY BY THE POST COMMANDER.

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

OHIO STATE HIGHWAY PATROL NORTH CANTON/GREEN PATROL POST
4710 SHUFFEL DR. N.W.
NORTH CANTON, OHIO 44720
PHONE (330) 433-6300

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

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR 10,000 HOURS

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

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

ITEM 622 - PORTABLE CONCRETE BARRIER, 50 INCH, AS PER PLAN

THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING, AND SUBSEQUENTLY REMOVING A 50" PORTABLE CONCRETE BARRIER AT THE LOCATIONS SHOWN ON THE PLANS. THE INDIVIDUAL SECTIONS SHALL NOT BE LESS THAN 10' IN LENGTH. FOR DETAILS, SEE STANDARD CONSTRUCTION DRAWING RM-4.1.

PORTABLE CONCRETE BARRIER, 32", WITH AN 18" MINIMUM HEIGHT GLARE SCREEN MAY BE USED AT THE OPTION OF THE CONTRACTOR FOR LOCATIONS WITH TRAFFIC ON ONE SIDE ONLY. FOR DETAILS, SEE STANDARD CONSTRUCTION DRAWING RM-4.2. THE PORTABLE CONCRETE BARRIER, 32", SHALL BE CONSTRUCTED USING ONE (1) OF THE FOLLOWING SYSTEMS OR EQUAL APPROVED BY THE ENGINEER:

CARSONITE MODULAR GLARE SCREEN
CARSONITE INTERNATIONAL
900 LOCKHEED WAY, CARSON CITY, NEVADA 89701
702-883-5104 OR 800-648-7974

SYRO GLAREFOIL
SYRO STEEL, INC.
1170 N. STATE ST., GIRARD, OHIO 44420
330-545-4373 OR 330-648-7974

FORWARD GLARE SCREEN
PROVEN PRODUCTS, INC.
7560 S.W. LAVIEW DRIVE, PORTLAND, OREGON 97219
503-244-9185

PADDLE OR INTERMITTENT TYPE GLARE SCREEN 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 THE BARRIER CURVATURE.

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

PORTABLE CONCRETE BARRIER AND/OR GLARE SCREEN WHICH HAS BECOME DAMAGED BEYOND REPAIR BY TRAFFIC SHALL BE REPLACED BY THE CONTRACTOR WITHIN TWENTY-FOUR (24) HOURS OF THE INCIDENT WHICH CAUSED THE DAMAGE. REPLACEMENT BARRIER SHALL BE AS PER SECTION 622.04 OF THE SPECIFICATIONS.

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

ITEM 614 REPLACEMENT SIGN

FLATSHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT SIGNS SHALL BE NEW. OTHER MATERIALS MAY BE IN USED BUT GOOD CONDITION SUBJECT TO APPROVAL BY THE ENGINEER. PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT SIGN, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF DAMAGED SIGNS, HARDWARE AND SUPPORTS, AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC. AN ESTIMATED QUANTITY OF 40 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ITEM 614 REPLACEMENT DRUM

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL, WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT DRUMS SHALL BE NEW. PAYMENT FOR THE NEW DRUMS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT DRUM, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM, AND PROVIDING AND MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUM. AN ESTIMATED QUANTITY OF 100 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ITEM 614, WORK ZONE SPEED LIMIT SIGN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, COVER DURING SUSPENSION OF WORK, AND SUBSEQUENTLY REMOVE WORK ZONE SPEED LIMIT (R2-1) (55 MPH SPEED LIMIT) SIGNS AND SUPPORTS WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

THE CONTRACTOR SHALL COVER OR REMOVE ANY EXISTING SPEED LIMIT OR MINIMUM SPEED LIMIT (R2-4) SIGNS WITHIN THE REDUCED SPEED ZONE. THESE SIGNS SHALL BE RESTORED DURING SUSPENSION OR TERMINATION OF THE REDUCED SPEED LIMIT. THE EXPENSE OF COVERING OR REMOVAL AND RESTORATION OF EXISTING SPEED LIMIT OR MINIMUM SPEED LIMIT SIGNS SHALL BE INCLUDED IN THE PAY ITEM FOR THE WORK ZONE SPEED LIMIT SIGNS.

THE WORK ZONE SPEED LIMIT SIGNS MAY BE ERECTED OR UNCOVERED NO MORE THAN FOUR HOURS BEFORE THE ACTUAL START OF WORK. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN FOUR HOURS FOLLOWING RESTORATION OF ALL LANES TO TRAFFIC WITH NO RESTRICTIONS, OR SOONER AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL ERECT A WORK ZONE SPEED LIMIT SIGN IN ADVANCE OF ANY LANE RESTRICTION EXPECTED TO LAST AT LEAST 30 CONSECUTIVE CALENDAR DAYS, OR AS DIRECTED BY THE ENGINEER. THE SIGN SHALL BE MOUNTED ON BOTH SIDES OF DIVIDED HIGHWAYS. THE WORK ZONE SPEED LIMIT SIGNS SHALL BE PLACED AS SHOWN ON THE PLANS.

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED, BUT GOOD CONDITION, PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE REFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF CMS 730.19 AND U.S. DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL SPECIFICATION FOR TYPE III-C SHEETING, FP-85.

WORK ZONE SPEED LIMIT SIGNS SHALL BE MOUNTED ON TWO ITEM 630, GROUND MOUNTED SUPPORTS, NO. 4 POSTS. WORK ZONE SPEED LIMIT SIGNS AND SUPPORTS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGNS AND NECESSARY SUPPORTS. IF A SIGN AND SUPPORT COMBINATION IS REMOVED AND REERECTED AT ANOTHER LOCATION WITHIN THE PROJECT DUE TO CHANGES IN THE SPEED ZONE DIRECTED BY THE ENGINEER, IT SHALL BE CONSIDERED ANOTHER UNIT.

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE IN PLACE, WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT AND FURNISHING, ERECTING, MAINTAINING, COVERING DURING SUSPENSION OF WORK, AND REMOVING THE SIGNS AND SUPPORTS.

ITEM 614 CONSTRUCTION ZONE, FINES DOUBLED SIGN, AS PER PLAN

R11-H5 SIGNS SHALL BE FURNISHED, ERECTED, AND MAINTAINED IN GOOD CONDITION AND/OR REPLACED AS NECESSARY AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. SIGNS SHALL BE MOUNTED AT THE APPROPRIATE OFFSETS AND ELEVATIONS AS PRESCRIBED BY THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THEY SHALL BE MAINTAINED ON SUPPORTS MEETING CURRENT SAFETY CRITERIA.

THE SIGNS MAY BE ERECTED OR UNCOVERED NO MORE THAN FOUR HOURS BEFORE THE ACTUAL START OF WORK. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN FOUR HOURS FOLLOWING RESTORATION OF ALL LANES TO TRAFFIC WITH NO RESTRICTIONS, OR SOONER AS DIRECTED BY THE ENGINEER. TEMPORARY SIGN COVERING AND UNCOVERING DUE TO TEMPORARY LANE RESTORATIONS SHALL BE GUIDED BY THE FOUR-HOUR LIMITATIONS STATED ABOVE. SUCH LANE RESTORATIONS SHOULD BE EXPECTED TO REMAIN IN EFFECT FOR 30 OR MORE CONSECUTIVE CALENDAR DAYS, SUCH AS DURING WINTER SHUT-DOWNS.

THE SIGNS SHALL BE DUAL MOUNTED. THE FIRST SIGN SHALL BE PLACED BETWEEN THE ROAD CONSTRUCTION AHEAD (W20-1) SIGN AND THE NEXT SIGN IN THE SEQUENCE. SIGNS SHALL BE ERECTED ON EACH ENTRANCE RAMP.

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED, BUT GOOD, CONDITION PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE REFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF CMS 614.03.

CONSTRUCTION ZONE/ FINES DOUBLED SIGNS AND SUPPORTS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGN AND NECESSARY SUPPORTS. IF A SIGN AND SUPPORT COMBINATION IS REMOVED AND REERECTED AT ANOTHER LOCATION AS DIRECTED BY THE ENGINEER, IT SHALL BE CONSIDERED ANOTHER UNIT.

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE, IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING, ERECTING, MAINTAINING, COVERING DURING SUSPENSION OF WORK AND REMOVAL OF THE SIGN AND SUPPORT.

ITEM 614 BARRIER REFLECTORS AND/OR OBJECT MARKERS

BARRIER REFLECTORS AND/OR OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE CONCRETE BARRIER USED FOR TRAFFIC CONTROL. BARRIER REFLECTORS, OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO CMS 626, EXCEPT THAT THE SPACING SHALL BE 50 FEET. BARRIER REFLECTORS AND OBJECT MARKERS, ONE WAY ARE SUMMARIZED ON SHEET 31.

ITEM 614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL OR BIDIRECTIONAL), AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING IMPACT ATTENUATORS:

1. THE QUADGUARD CZ, (24 INCHES WIDE SIX-BAY) WORK ZONE IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., ONE EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312-467-6750).

THE LENGTH OF THE SIX-BAY QUADGUARD CZ IS 20'-9". INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE- APPROVED SHOP DRAWINGS:

DRAWING NUMBER: QSCZCVR-T4 DRAWING NAME: QUADGUARD CZ SYSTEM FOR CONSTRUCTION ZONES REVISION DATE: 5/13/99 REV. J ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-10 DRAWING NAME: QUADGUARD SYSTEM CONCRETE PAD, CZ, QG REVISION DATE: 11/19/97 REV. D ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-16 DRAWING NAME: QUADGUARD SYSTEM BACKUP ASSEMBLY, CZ, QG REVISION DATE: 7/30/99 REV. F ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35405IZ DRAWING NAME: QUADGUARD CZ SYSTEM NOSE ASSEMBLY, CZ, QG, 24, 30, 36 REVISION DATE: 5/17/99 ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-18 DRAWING NAME: TRANSITION ASSEMBLY, 4 OFFSET, QG REVISION DATE: 6/25/99 REV. F ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35400260 DRAWING NAME: QUADGUARD SYSTEM PCMB ANCHOR ASSEMBLY REVISION DATE: 11/19/97 REV. C ODOT APPROVAL DATE: 8/27/99

CALC. GSS 1-04
CHECKED DRB 1-04

MAINTENANCE OF TRAFFIC GENERAL NOTES

SUM-77-1.40

DATE: 06/14/2004 08:35:36 AM
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2. THE TRACC (TRINITY ATTENUATING CRASH CUSHION) MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE TRACC IS 21'-0" LONG AND 2'-7" WIDE. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE- APPROVED SHOP DRAWINGS:

DRAWING NUMBER: SS450 DRAWING NAME: CRASH-CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS REVISION DATE: 3/12/99 REV. 1 ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS455 DRAWING NAME: TRACC TRANSITION TO W-BEAM MEDIAN BARRIER PLAN, ELEVATION & SECTIONS REVISION DATE: 2/18/99 ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS461 DRAWING NAME: TRACC TRANSITION TO CONCRETE SAFETY SHAPE BARRIER PLAN, ELEVATION & SECTIONS REVISION DATE: 6/30/99 REV. 1 ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS462 DRAWING NAME: TRACC TRANSITION TO CONCRETE BARRIER SINGLE SLOPE PLAN, ELEVATION & SECTIONS REVISION DATE: 6/30/99 ODOT APPROVAL DATE: 8/27/99

3. THE GREAT CZ IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC. THIS ATTENUATOR MAY BE USED UNTIL JANUARY 1, 2007 IF THE ITEM WAS PURCHASED BEFORE OCTOBER 1, 1998 AND IS IN THE CONTRACTOR'S INVENTORY. THE CONTRACTOR SHALL PROVIDE A REPLACEMENT UNIT WHEN AN IMPACT IS SEVERE ENOUGH TO REQUIRE COMPLETE REPLACEMENT OF THE ATTENUATOR. THE CONTRACTOR SHALL HAVE A SPARE PARTS PACKAGE AVAILABLE ON THE PROJECT SITE AT ALL TIMES WHEN AN ATTENUATOR IS IN PLACE. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE COMPLETE SPARE PARTS PACKAGE FOR EVERY ONE TO SIX UNITS INSTALLED ON THE PROJECT SITE. FOR EXAMPLE, FIVE INSTALLED UNITS REQUIRE ONE SPARE PARTS PACKAGE AND SEVEN INSTALLED UNITS REQUIRE TWO SPARE PARTS PACKAGES.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 614, WORK ZONE IMPACT ATTENUATOR, (UNIDIRECTIONAL OR BIDIRECTIONAL), EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT, MAINTAIN, REPAIR, REPLACE OR RELOCATE 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.

ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC, AS PER PLAN

FOR THE PHASE 3 CROSSOVERS AT THE SOUTH END OF THE PROJECT, USE ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC. A 3 FOOT WIDTH OF THE EXISTING SHOULDER SHALL BE MILLED SO AS TO PROVIDE A GOOD ABUTTING EDGE TO THE PAVEMENT. THE ASPHALT CONCRETE SHALL BE PLACED OVER THE EXISTING SHOULDER USING VARIABLE THICKNESS TO PROVIDE A SMOOTH TRANSITION ALONG THE CROSSOVER. UPON COMPLETION OF THE PROJECT, THE SHOULDER OVERLAY SHALL BE REMOVED, AS NEEDED, AND THE SHOULDER RESTORED TO A CONDITION ACCEPTABLE TO THE ENGINEER.

A QUANTITY OF 45 CY OF ITEM "614-ASPHALT CONCRETE FOR MAINTAINING TRAFFIC, AS PER PLAN", IS CARRIED TO THE GENERAL SUMMARY FOR THIS PURPOSE.

ITEM SPECIAL - WORK ZONE GUARDRAIL

THIS ITEM SHALL BE TYPE 5, AS PER ITEM 606, EXCEPT THAT USED MATERIALS, IN GOOD CONDITION, MAY BE USED, AND SHALL INCLUDE THE SUBSEQUENT REMOVAL AND DISPOSAL WHEN NO LONGER REQUIRED, AS DIRECTED BY THE ENGINEER.

GUARDRAIL MISC.: WORK ZONE ANCHOR ASSEMBLY, TYPE T
GUARDRAIL MISC.: WORK ZONE BRIDGE TERMINAL ASSEMBLY, TYPE 2

THESE ITEMS SHALL BE AS PER ITEM 606, EXCEPT THAT USED MATERIALS, IN GOOD CONDITION, MAY BE USED, AND SHALL INCLUDE THE SUBSEQUENT REMOVAL AND DISPOSAL WHEN NO LONGER REQUIRED, AS DIRECTED BY THE ENGINEER.

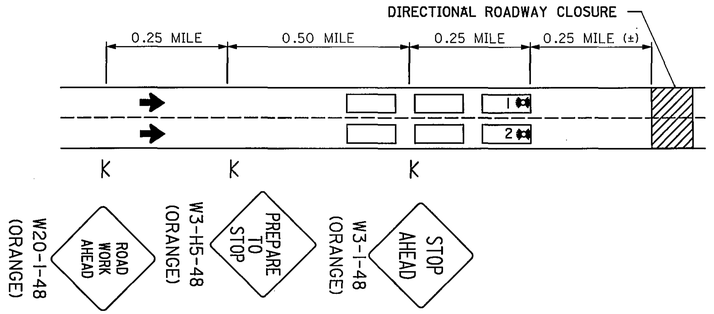
STOPPAGE OF INTERSTATE 77 TRAFFIC

WHEN TRAFFIC MUST BE COMPLETELY STOPPED ON I-77 IT SHALL BE DONE ONLY IF APPROVED BY THE ENGINEER AND IN THE FOLLOWING MANNER:

THE COMPLETE TRAFFIC STOPPAGE ON ALL LANES OF ANY DIRECTIONAL ROADWAY SHALL BE CONDUCTED BETWEEN MIDNIGHT AND 5:00AM FOR NO MORE THAN 10 MINUTES IN ANY ONE 30 MINUTE PERIOD. A MINIMUM OF TWO (2) LAW ENFORCEMENT PATROL VEHICLES SHALL BE USED TO PACE MOTORISTS TO A STOP. WHERE STOPPAGE OCCURS IN THE VICINITY OF RAMP ENTRANCES, THE CONTRACTOR SHALL PLACE FLAGGERS ON THE RAMPS TO STOP TRAFFIC. PATROL VEHICLES SHALL HAVE FLASHING BEACONS TO PROVIDE ADEQUATE VISIBILITY TO APPROACHING MOTORISTS. EACH SIGN SHALL BE EQUIPPED WITH A TYPE B FLASHING BARRICADE WARNING LIGHT IN ACCORDANCE WITH SECTION 7G-6 OF THE CMTCD.

A CONTRACTOR SUPPLIED PORTABLE CHANGEABLE MESSAGE SIGN, TYPE TO BE ON ODOT'S PREAPPROVED LIST, SHALL BE PLACED 1.5 TO 2 MILES IN ADVANCE OF THE CLOSURE OR AS DIRECTED BY THE ENGINEER.

PAYMENT FOR THE STOPPAGE OF INTERSTATE 77 TRAFFIC SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC. THE COST FOR THE LAW ENFORCEMENT OFFICERS WITH PATROL CAR IS LISTED SEPARATELY.



ITEM 503 COFFERDAMS, CRIBS AND SHEETING, A.P.P.

TEMPORARY SHEETING REQUIREMENTS

THE TEMPORARY SHEETING DETAILS REQUIRED FOR THE CONSTRUCTION OF THE PAVEMENT SHALL BE DESIGNED BY THE CONTRACTOR TO RESIST THE EARTH PRESSURE AND THE EFFECT OF THE HIGHWAY SURCHARGE BASED ON HS 20 LOADING (2 FOOT OF SURCHARGE) OR THE EFFECT OF THE 10 KIP RAILING LOADING PER AASHTO SPECIFICATIONS. THE DESIGN SHALL BE SUCH THAT NO SETTLEMENT OF THE PORTION OF PAVEMENT CARRYING TRAFFIC IS PERMITTED.

ANCHORS OR ATTACHMENTS, UNDER OR ADJACENT TO THE NEW PAVEMENT, WILL NOT BE ALLOWED. IT MAY BE APPROPRIATE TO LEAVE A PORTION OF THE TEMPORARY SHEETING IN PLACE AFTER CONSTRUCTION.

THE WORK SHALL ALSO INCLUDE THE FULL DEPTH REPAIR OF THE PAVEMENT AND UNDERDRAINS DAMAGED BY PLACEMENT OR REMOVAL OF THIS SHEETING AT THE END OF PHASE 2.

MATERIALS SHALL CONFORM TO SECTION 504.02 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS.

THE DESIGN OF THE TEMPORARY SHEETING, INCLUDING CALCULATIONS, SHALL BE SUBMITTED TO THE ENGINEER, FOR APPROVAL, AT LEAST FOUR (4) WEEKS PRIOR TO THE TIME OF INSTALLATION. PLANS AND CALCULATIONS SHALL BE PREPARED AND STAMPED BY AN ENGINEER REGISTERED IN THE STATE OF OHIO. THREE (3) SETS OF THE PLANS AND CALCULATIONS SHALL BE SUBMITTED FOR REVIEW.

ALL WORK ASSOCIATED WITH THE DESIGN OF THE TEMPORARY SHEETING, AS WELL AS THE PREPARATION OF ACCEPTABLE PLANS, AND ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO INSTALL AND/OR REMOVE THE TEMPORARY SHEETING SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 503 - COFFERDAMS, CRIBS AND SHEETING, A.P.P.

SUSPENSION OF WORK

IF THE CONTRACTOR FAILS TO COMPLY WITH THE PROVISIONS FOR MAINTENANCE OF TRAFFIC AS SET FORTH IN THESE PLANS OR WITH PROVISIONS OF THE MANUAL, THE ENGINEER MAY SUSPEND WORK UNTIL THE CONTRACTOR COMPLIES WITH THE NECESSARY REQUIREMENTS. NO COMPENSATION WILL BE PAID FOR SUSPENSION OF WORK.

ALTERNATE MAINTENANCE OF TRAFFIC PLANS

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

CALC. GSS 1-04
CHECKED ORB 1-04

MAINTENANCE OF TRAFFIC GENERAL NOTES

SUM-77-1.40

DATE: 06/15/2004 11:38:51 AM
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LOCATION					630	630	630	630	
					COVERING OF SIGN	SIGN, TEMPORARY OVERLAY	REMOVAL OF OVERLAY SIGN	SIGN ERECTED, TEMPORARY OVERLAY	
REF#	FROM TO	SHT.NO.	SIDE	SIZE	SQ. FT.	SQ. FT.	EACH	SQ. FT.	
	I-77								
8A	104+40 (ø 3)	67	R		9				
8B	104+40 (ø 3)	67	R		5				
	105+03± (ø IB)	44	L		5				
	105+03± (ø IB)	44	L		9				
	206+20± (ø IB)	54	L		9				
	206+20± (ø IB)	54	L		5				
22A	205+44 (ø 3)	77	R		9				
22B	205+44 (ø 3)	77	R		5				
	209+35 (ø IB)	54	L	22' X 7'		154			
	209+35 (ø 2)	54	L				1		
	235+70 (ø IB)	56	L	22' X 7'		154			
	235+70 (ø IB)	56	L				1		
	249+95 (ø IB)	58	L	2' X 2'		4			
	249+95 (ø 2)	↓	L				1		
	249+95 (ø 3)		L					4	
	249+95 (ø 3)	↓	L				1		
	262+33 (ø IB)	59	L	2' X 2'		4			
	262+33 (ø 2)	↓	L				1		
	262+33 (ø 3)		L					4	
	262+33 (ø 3)	↓	L				1		
TOTAL CARRIED TO GENERAL SUMMARY					56	316	6	8	

COLUMN A LOCATION			614	614	614	614	614	614	614	614	614	614	614
			WORK ZONE EDGE LINE, WHITE, CLASS I, 642 PAINT	WORK ZONE EDGE LINE, YELLOW, CLASS I, 642 PAINT	WORK ZONE LANE LINE, CLASS I, 642 PAINT	WORK ZONE CENTER LINE, CLASS I, 642 PAINT	WORK ZONE CHANNELIZING LINE, CLASS I, 642 PAINT	WORK ZONE EDGE LINE, WHITE, CLASS I, 740.06, TYPE I	WORK ZONE EDGE LINE, YELLOW, CLASS I, 740.06, TYPE I	WORK ZONE LANE LINE, CLASS I, 740.06, TYPE I	WORK ZONE DOTTED LINE, WHITE, CLASS I, 740.06, TYPE I	WORK ZONE CHANNELIZING LINE, CLASS I, 740.06, TYPE I	WORK ZONE TRANSVERSE LINE, CLASS I, 740.06, TYPE I
FROM TO	SHT. NO.	SIDE	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.
S/B I-77													
PHASE IA													
(NO QUANTITIES)													
PHASE IB													
64+50 - 74+00	41	L							950				
66+15 - 72+00		L								585			
66+80 - 74+00		L						720					
72+00 - 74+00		L										200	
74+00 - 209+35	42	L		13535									
74+00 - 78+65		L					465						
74+00 - 209+35		L	13535										
78+65 - 209+35		L			13070								
209+35 - 244+00	54	L							3465				
209+35 - 213+50		L								415			
209+35 - 217+64		L						829					
213+50 - 223+70		L										1020	
218+10 - 225+00	55	L									690		
N/B I-77													
PHASE 2													
66+50 - 73+00	41	R										650	
67+60 - 72+00		R							440				
68+00 - 73+50		R						550					
72+00 - 209+35		L/R		13735									
73+00 - 79+00		L/R					600						
73+50 - 209+35		L/R	13585										
79+00 - 209+35	42	L			13035								
209+35 - 222+83	54	L/R							1348				
209+35 - 210+50		L								115			
209+35 - 220+33		L/R						1098					
210+50 - 221+83		L/R										1133	
GREENSBURG RD.													
IX (IB,2,3)	33	L/R	4050			2025							
IY (IB,2,3)		L/R	4050			2025							
OVER-WINTER		L/R	1350			675							
TOTAL COLUMN A			36570	27270	26105	4725	1065	3197	6203	1115	690	3003	

CALC OSC 1-19-03
CHECKED DRB 1-10-04

WORK ZONE SIGNING & PAVEMENT MARKING SUBSUMMARY

SUM-77-1.40

DATE: 04/01/2004 09:27:54 AM
FILENAME: h:\drawing\V0647\310\mh647f2mn06.dgn

COLUMN B LOCATION

FROM TO	SHT. NO.	SIDE	614 WORK ZONE EDGE LINE, WHITE, CLASS I, 642 PAINT FT.	614 WORK ZONE EDGE LINE, YELLOW, CLASS I, 642 PAINT FT.	614 WORK ZONE LANE LINE, CLASS I, 642 PAINT FT.	614 WORK ZONE CENTER LINE, CLASS I, 642 PAINT FT.	614 WORK ZONE CHANNELIZING LINE, CLASS I, 642 PAINT FT.	614 WORK ZONE EDGE LINE, WHITE, CLASS I, 740.06, TYPE I FT.	614 WORK ZONE EDGE LINE, YELLOW, CLASS I, 740.06, TYPE I FT.	614 WORK ZONE LANE LINE, CLASS I, 740.06, TYPE I FT.	614 WORK ZONE DOTTED LINE, WHITE, CLASS I, 740.06, TYPE I FT.	614 WORK ZONE CHANNELIZING LINE, CLASS I, 740.06, TYPE I FT.	614 WORK ZONE TRANSVERSE LINE, CLASS I, 740.06, TYPE I FT.
OVER-WINTER													
S/B I-77													
64+50 - 213+00	41	L		14850									
66+15 - 223+70		L			15755								
66+80 - 217+64		L	15084										
216+00 - 223+70	54	L			770								
N/B I-77													
58+00 - 222+83	40	R		16483									
58+00 - 222+83	40	R			16483								
66+50 - 221+83	41	R			15533								
68+00 - 220+33	41	R	15233										
TOTAL COLUMN B			30317	31333	48541								

COLUMN C LOCATION

FROM TO	SHT. NO.	SIDE	614 WORK ZONE EDGE LINE, WHITE, CLASS I, 642 PAINT FT.	614 WORK ZONE EDGE LINE, YELLOW, CLASS I, 642 PAINT FT.	614 WORK ZONE LANE LINE, CLASS I, 642 PAINT FT.	614 WORK ZONE CENTER LINE, CLASS I, 642 PAINT FT.	614 WORK ZONE CHANNELIZING LINE, CLASS I, 642 PAINT FT.	614 WORK ZONE EDGE LINE, WHITE, CLASS I, 740.06, TYPE I FT.	614 WORK ZONE EDGE LINE, YELLOW, CLASS I, 740.06, TYPE I FT.	614 WORK ZONE LANE LINE, CLASS I, 740.06, TYPE I FT.	614 WORK ZONE DOTTED LINE, WHITE, CLASS I, 740.06, TYPE I FT.	614 WORK ZONE CHANNELIZING LINE, CLASS I, 740.06, TYPE I FT.	614 WORK ZONE TRANSVERSE LINE, CLASS I, 740.06, TYPE I FT.
S/B I-77													
PHASE 3													
38+60 (RAMP) - 39+25	61	L							80				
37+30 - 39+25		L						195					
37+83 - 73+66		L/R						3583					
36+83 - 50+65		L										1382	
38+40 - 73+66		L/R							3526				
39+25 - 40+50		L											184
39+25 - 40+50		L										250	
40+50 - 42+40	62	L									190		
50+65 - 73+66		R								2301			
73+66 - 214+50	65	R	14084										
73+66 - 214+50		R			14084								
73+66 - 214+50		R		14084									
214+50 - 231+00	77	L/R						1650					
214+50 - 225+00		L/R										1050	
214+50 - 244+00		L/R							2950				
N/B I-77													
PHASE 3													
10+40 - 73+66	59B	R							6326				
32+80 - 50+50	61	R										1770	
35+00 - 44+45		R						945					
43+45 - 44+45	62	R										100	
44+45 - 48+21		R									376		
50+50 - 73+66		R								2316			
52+00 - 73+66	63	R						2166					
73+66 - 214+50	65	R		14084									
73+66 - 214+50		R			14084								
73+66 - 214+50		R	14084										
214+50 - 224+95	78	R							1045				
214+50 - 223+95		R								945			
214+50 - 222+52		R						802					
SUBTOTAL THIS COLUMN			28168	28168	28168			9341	13927	5562	566	4552	184
SUBTOTAL COLUMN A			36570	27270	26105	4725	1065	3197	6203	1115	690	3003	
SUBTOTAL COLUMN B			30317	31333	48541								
TOTAL			95055	86771	102814	4725	1065	12538	20130	6677	1256	7555	184
COMBINED TOTAL			181826					32668					
TOTAL MILES			34.44		19.47	0.89		6.19		1.26			
TOTAL CARRIED TO GENERAL SUMMARY			34.44		19.47	0.89	1065	6.19		1.26	1256	7555	184

CALCULATED GSC 1-9-04
CHECKED DRB 1-10-04

WORK ZONE PAVEMENT MARKING SUBSUMMARY

SUM-77-1.40

DATE: 01/12/2004 11:41:10 AM
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(COLUMN A) LOCATION			606	606	SPECIAL	614	614	614	614	622	622	622
			GUARDRAIL, MISC.:WORK ZONE ANCHOR ASSEMBLY, TYPE T *	GUARDRAIL, MISC.:WORK ZONE BRIDGE TERMINAL ASSEMBLY, TYPE 2 *	WORK ZONE GUARDRAIL	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL), AS PER PLAN	BARRIER REFLECTOR, TYPE A	BARRIER REFLECTOR, TYPE B	OBJECT MARKER, ONE WAY	PORTABLE CONCRETE BARRIER, 32"	PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED	PORTABLE CONCRETE BARRIER, 50", AS PER PLAN
FROM TO	SHT. NO.	SIDE	EA.	EA.	FT.	EA.	EA.	EA.	EA.	FT.	FT.	FT.
PHASE 1A												
68+79.5 to 77+92	41	L	1		900		18					
148+80.80 TO 150+92	48	L	1	1	175		4					
190+27.83 TO 199+65.33	52	L	1		925		19					
PHASE IB												
85+95 TO 214+10	43	R	1					257	257	12815		
GREENSBURG												
PH IX:7+75 TO 11+30	33	L						8	8	355		
PH IX:8+85 TO 12+40		R						8	8	355		
PH IY:7+75 TO 11+30		L						8	8	355		
PH IY: 8+85 TO 12+40		R						8	8	355		
PRIOR TO PHASE 2												
67+60 - 75+70	41	R				1		17	17	810		
71+25 - 83+55	41	R/L				1		25	25	1230		
73+40 TO 215+12	41	L						568				14172
X02S 9+60 TO 17+75	41/85	R/L				1		17	17	815		
83+23 - 84+23	42	L								70	30	
PHASE 2												
GREENSBURG												
PH IX:7+75 TO 11+30	33	L						8	8	355		
PH IX:8+85 TO 12+40		R						8	8	355		
PH IY:7+75 TO 11+30		L						8	8	355		
PH IY: 8+85 TO 12+40		R						8	8	355		
AT END OF PHASE 2												
63+00 TO 73+86	24	R				1		22	22	1086		
SUBTOTAL COLUMN A			4	1	2000	4	41	970	402	19666	30	14172

* MAY BE REUSED IF UNDAMAGED

DATE: 04/01/2004 09:29:21 AM
FILENAME: f:\drawing\00647\310\mh6472ms03.dgn

CALCULATED GSC 11/2003
CHECKED DRB 10/2004

WORK ZONE BARRIER, GUARDRAIL & TERMINALS SUBSUMMARY

SUM-77-1.40

(COLUMN B) LOCATION			606	606	SPECIAL	614	614	614	614	622	622	622
			GUARDRAIL, MISC.:WORK ZONE ANCHOR ASSEMBLY, TYPE T *	GUARDRAIL, MISC.:WORK ZONE BRIDGE TERMINAL ASSEMBLY, TYPE 2 *	WORK ZONE GUARDRAIL	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL), AS PER PLAN	BARRIER REFLECTOR, TYPE A	BARRIER REFLECTOR, TYPE B	OBJECT MARKER, ONE WAY	PORTABLE CONCRETE BARRIER, 32"	PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED	PORTABLE CONCRETE BARRIER, 50", AS PER PLAN
FROM TO	SHT. NO.	SIDE	EA.	EA.	FT.	EA.	EA.	EA.	EA.	FT.	FT.	FT.
OVERWINTER												
PRIOR TO PHASE 3												
43+05 TO 47+60	62	R						10	10	455		
42+30 TO 218+14		L/R						701				17584
85+40 TO 213+00	66	R				1		256	256	12760		
PHASE 3												
GREENSBURG												
PH IX:7+75 TO 11+30	33	L						8	8	355		
PH IX:8+85 TO 12+40		R						8	8	355		
PH IY:7+75 TO 11+30		L						8	8	355		
PH IY: 8+85 TO 12+40		R						8	8	355		
AT END OF PHASE 3												
60+00 TO 75+00	40	L				1		30	30	1500		
SUBTOTAL COLUMN B						2		1029	328	16135		17584
SUBTOTAL COLUMN A			4	1	2000	4	41	970	402	19666	30	14172
TOTAL CARRIED TO GENERAL SUMMARY			**4**	**1**	**2000**	**6**	**41**	**1999**	**730**	**35801**	**30**	**31756**

* MAY BE REUSED IF UNDAMAGED

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CALCULATED GSC 11/2003
CHECKED DRB 1/2004

WORK ZONE BARRIER, GUARDRAIL & TERMINALS SUBSUMMARY

SUM-77-1.40

LOCATION			614 WORK ZONE SPEED LIMIT SIGN	614 CONSTRUCTION ZONE/ FINES DOUBLED SIGN, AS PER PLAN
FROM TO	SHT. NO.	SIDE	EA.	EA.
PHASE IB (SOUTHBOUND)				
94+00	43	L	1	
147+00	48	L	1	
200+80	53	L	1	
234+00 (RAMP)	56	L	1	
253+00	58	L	2	
171+00	50	L		1
237+00 (RAMP)	57	L		1
277+00	59	L		2
PHASE 2 (NORTHBOUND)				
53+00	40	R	2	
106+00	44	L	1	
159+00	49	L	1	
205+00	53	L	1	
41+00	38	R		3
145+00	48	L		1
PHASE 3				
(NORTHBOUND)				
5+40	59A	R	2	
55+00	63	R	1	
108+00	68	R	1	
160+50	72	R	1	
212+00	77	R	1	
454+00	59A	R		2
37+50 (RAMP)	61	R		1
140+00	71	R		1
(SOUTHBOUND)				
94+00	66	R	1	
147+00	71	R	1	
200+80	76	L	1	
234+00 (RAMP)	79	L	1	
253+00	58	L	2	
171+00	73	R		1
237+00 (RAMP)	79	L		1
277+00	59	L		2
TOTAL			23	16

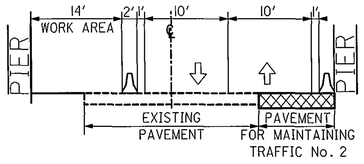
LOCATION			615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN, NO. 1	615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN, NO. 2
FROM TO	SHT. NO.	SIDE	SQ. YD.	SQ. YD.
PHASE IA				
73+86.12 TO 84+45.8	41	L	1177	
86+36.1 TO 170+37			9334	
GREENSBURG RD				
PHASE IX: 6+00 TO 12+75	33	R		378
PHASE IB				
76+06.6 TO 84+18.9	42	L	1625	
86+09.7 TO 188+85	43	L	22834	
GREENSBURG RD				
PHASE IY: 6+00 TO 11+20	33	L		352
PRIOR TO PHASE 2				
X02S:13+30 TO 18+15	85	L/R	1340	
X02N:21+18 TO 25+31.7	86	L/R	624	
PRIOR TO PHASE 3				
X03S:31+69 TO 37+02	88	L/R	798	
X03N:40+93 TO 46+51.5	87	L/R	699	
38+56.7 TO 39+26.5	87	L	63.2	
TOTAL			38494.2	730

CALCULATED GSC 11/2003
CHECKED DRB 1/2004

PAVEMENT FOR MAINTAINING TRAFFIC & WORK ZONE SPEED LIMIT SIGNS SUBSUMMARY

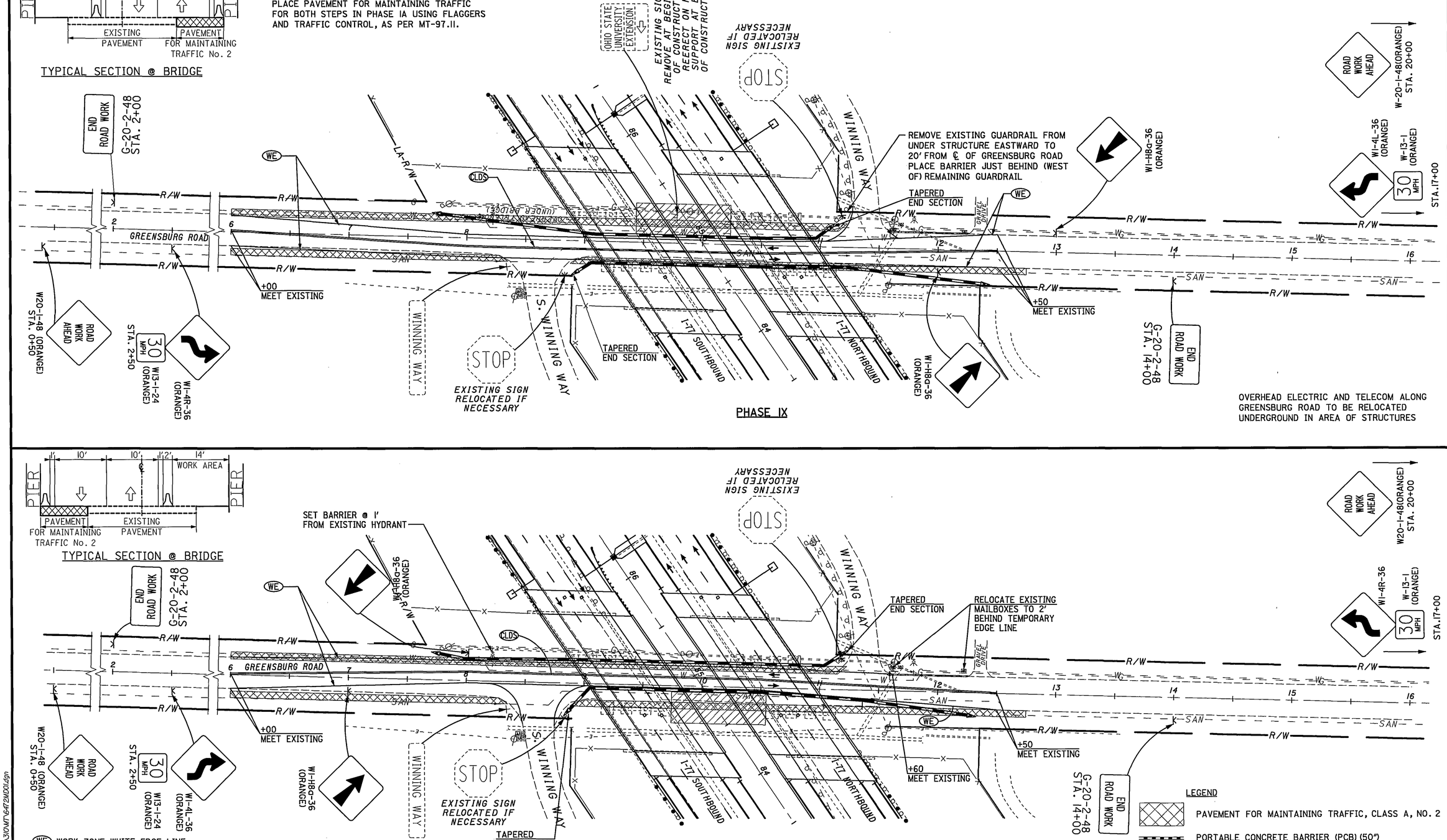
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TYPICAL SECTION @ BRIDGE

PLACE PAVEMENT FOR MAINTAINING TRAFFIC FOR BOTH STEPS IN PHASE IA USING FLAGGERS AND TRAFFIC CONTROL, AS PER MT-97.11.



PHASE IX

OVERHEAD ELECTRIC AND TELECOM ALONG GREENSBURG ROAD TO BE RELOCATED UNDERGROUND IN AREA OF STRUCTURES

TYPICAL SECTION @ BRIDGE

PHASE IY

(WE) WORK ZONE WHITE EDGE LINE
(YE) WORK ZONE YELLOW EDGE LINE
(CLDS) WORK ZONE CENTER LINE, SOLID DOUBLE
(LL) WORK ZONE LANE LINE
(WT) WORK ZONE TRANSVERSE LINE, WHITE
(DLW) DOTTED LINE, WHITE

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, NO. 2
- PORTABLE CONCRETE BARRIER (PCB) (50")
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL

N

HORIZONTAL SCALE IN FEET
0 40 80

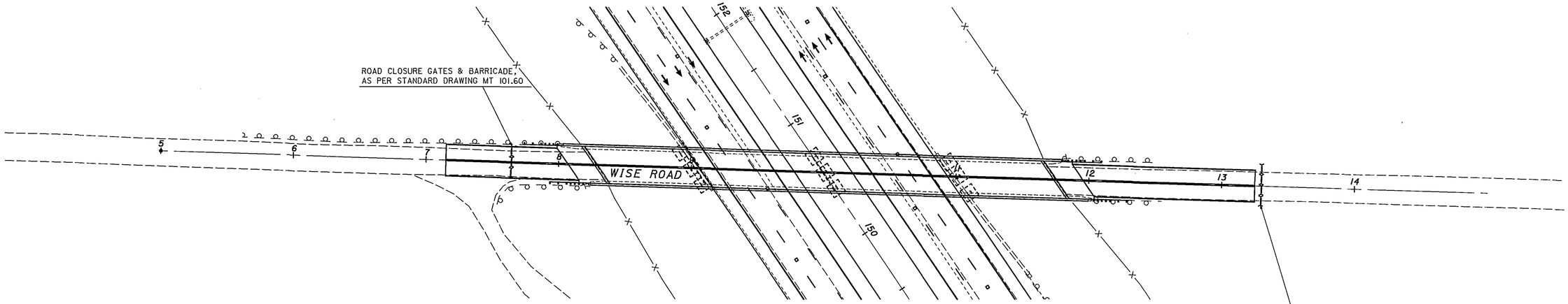
CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC GREENSBURG ROAD

SUM-77-1.40

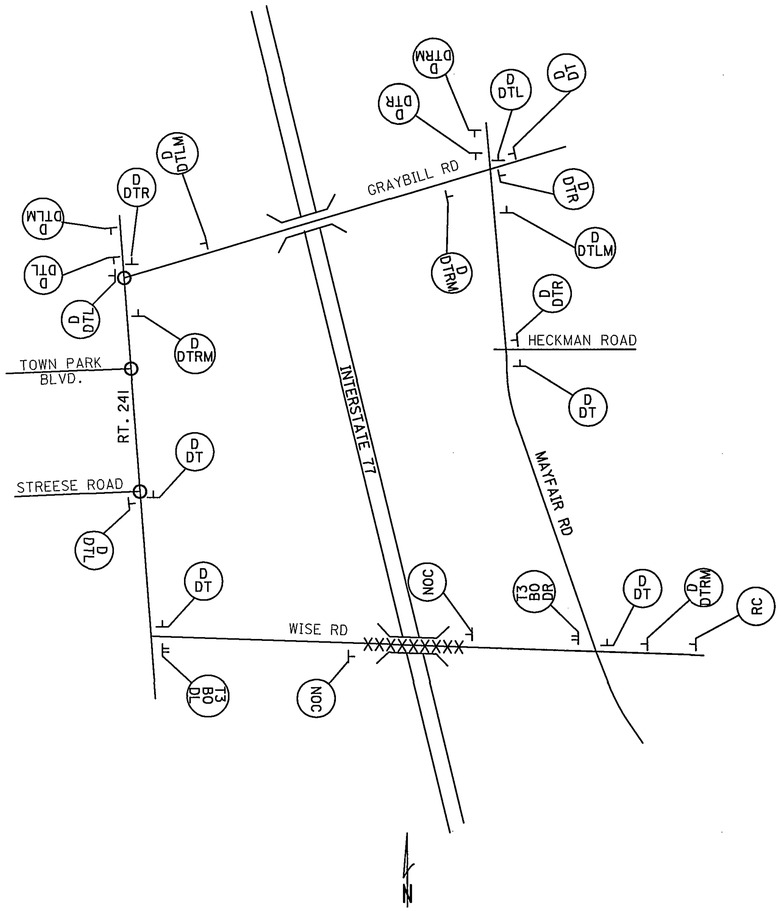
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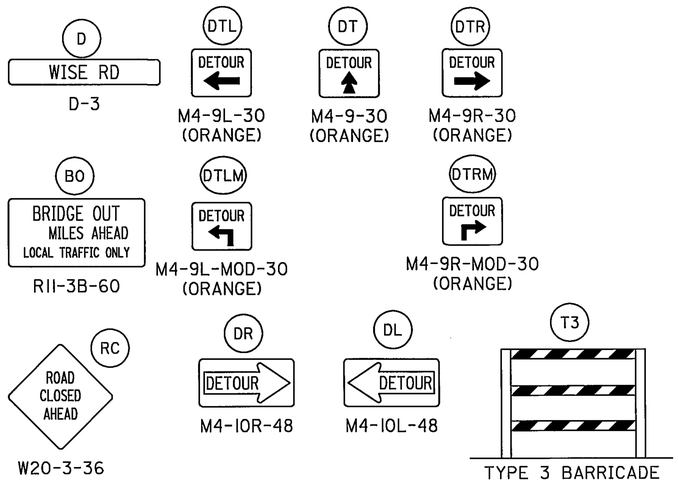
WISE RD BRIDGE CLOSURE PLAN

ALL DRIVES AT BRIDGE ENDS SHALL REMAIN ACCESSIBLE



WISE RD BRIDGE CLOSURE DETOUR

THE DESIGNATED LOCAL DETOUR ROUTE IS CONSIDERED TO BE THE OFFICIAL SIGNED DETOUR ROUTE.



NOC

W20-H13 72" X 36"

WISE RD. WILL BE CLOSED XX/XX/XX FOR 120 DAYS INFO: 330-297-0801

NOTICE OF CLOSURE SIGN
ERECT 14 DAYS PRIOR TO CLOSURE.
REMOVE UPON CLOSING WISE ROAD.
B/O

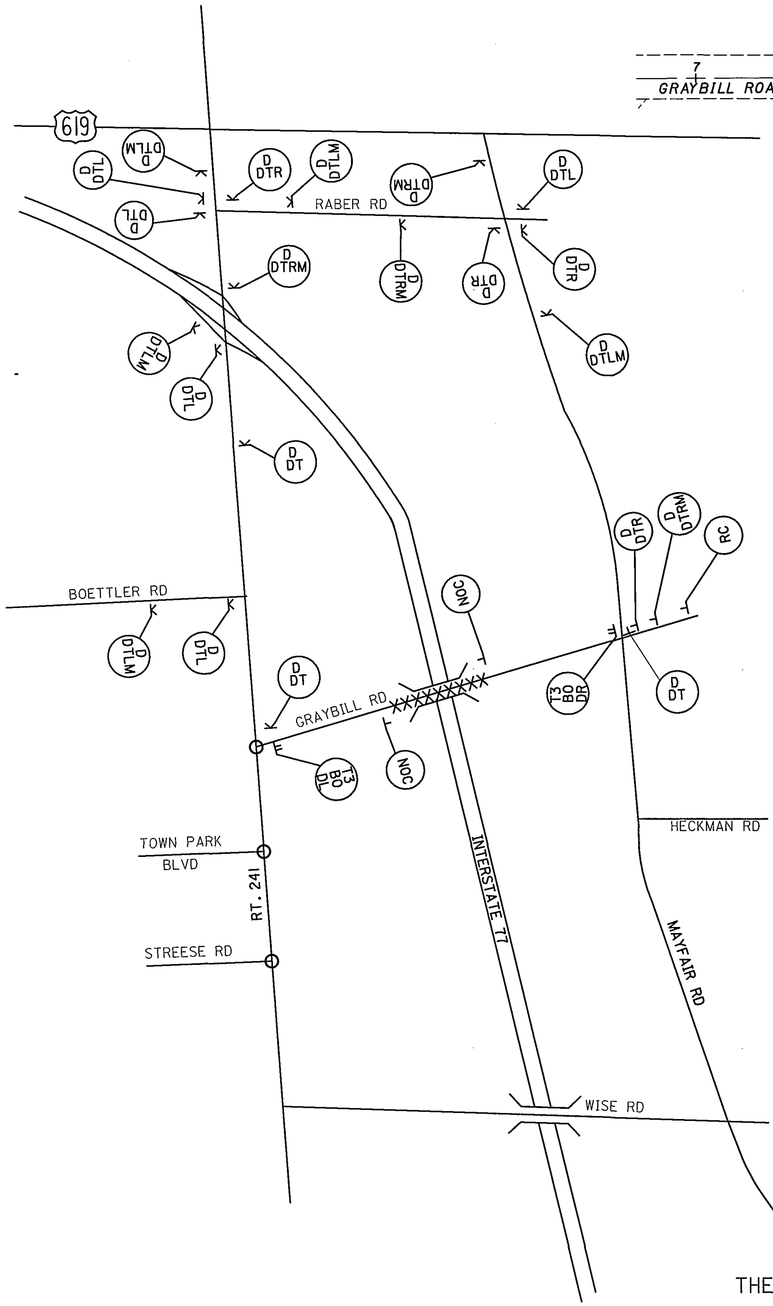
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0 40 80

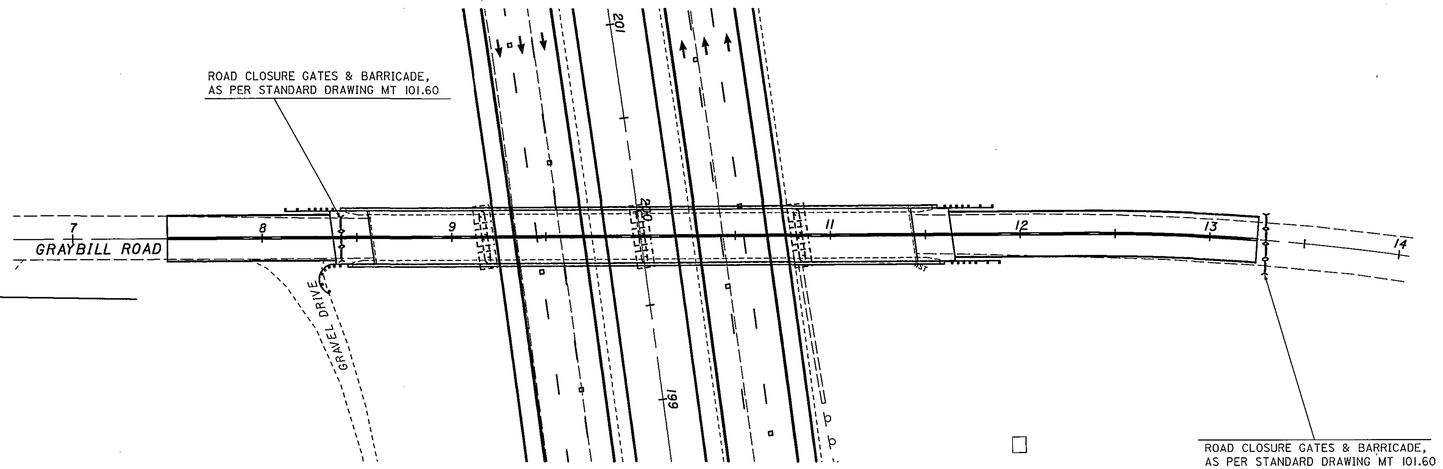
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CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC WISE ROAD DETOUR

SUM-77-1.40

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GRAYBILL RD BRIDGE CLOSURE PLAN

ALL DRIVES AT BRIDGE ENDS SHALL REMAIN ACCESSIBLE

N

NOT TO SCALE

XXXXXXX CLOSURE

DETOUR ROUTE

SIGNALIZED INTERSECTION

GRAYBILL RD BRIDGE CLOSURE DETOUR

THE DESIGNATED LOCAL DETOUR ROUTE IS AS FOLLOWS:
SR 241, WISE ROAD AND MAYFAIR ROAD

D — GRAYBILL RD — D-3

DTL — DETOUR ← — M4-9L-30 (ORANGE)

DT — DETOUR ↑ — M4-9-30 (ORANGE)

DTR — DETOUR → — M4-9R-30 (ORANGE)

BO — BRIDGE OUT MILES AHEAD LOCAL TRAFFIC ONLY — R11-3B-60

DTLM — DETOUR ↰ — M4-9L-MOD-30 (ORANGE)

DTRM — DETOUR ↱ — M4-9R-MOD-30 (ORANGE)

RC — ROAD CLOSED AHEAD — W20-3-36

DR — DETOUR → — M4-10R-48

DL — DETOUR ← — M4-10L-48

T3 — TYPE 3 BARRICADE

NOC — W20-H13 — 72" X 36"

GRAYBILL RD. WILL BE
CLOSED XX/XX/XX
FOR 60 DAYS
INFO: 330-297-0801

NOTICE OF CLOSURE SIGN
ERECT 14 DAYS PRIOR TO CLOSURE.
REMOVE UPON CLOSING GRAYBILL ROAD.
B/O

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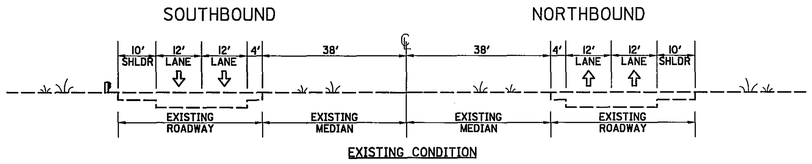
HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

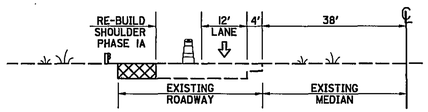
MAINTENANCE OF TRAFFIC
GRAYBILL ROAD DETOUR

SUM-77-1.40

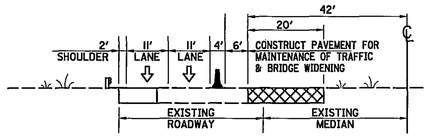
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381



EXISTING CONDITION

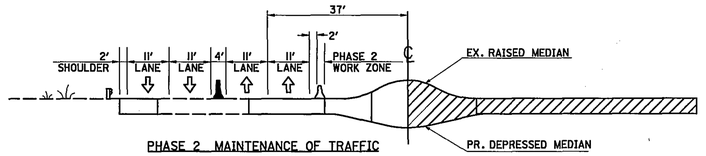


PHASE 1A MAINTENANCE OF TRAFFIC
CONSTRUCT SHOULDER LANE AT NIGHT

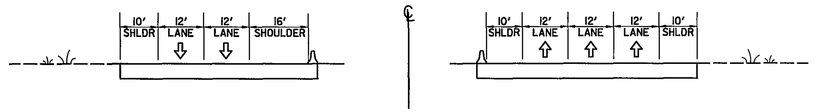


PHASE 1B MAINTENANCE OF TRAFFIC
BUILD TEMPORARY LANES

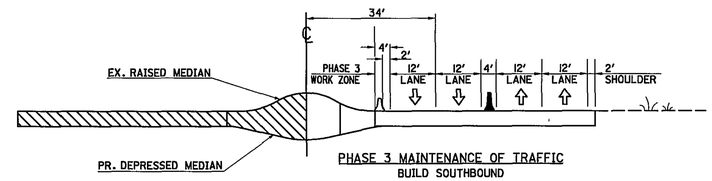
△ 32" PORTABLE CONCRETE BARRIER
▮ 50" PORTABLE CONCRETE BARRIER OR 32" P.C.B. WITH GLARE SCREEN



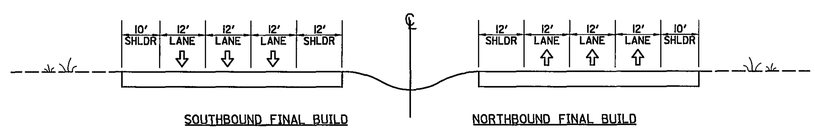
PHASE 2 MAINTENANCE OF TRAFFIC
BUILD NORTHBOUND



OVER WINTER BETWEEN PHASES 2 AND 3
PAINT PAVEMENT MARKINGS



PHASE 3 MAINTENANCE OF TRAFFIC
BUILD SOUTHBOUND



SOUTHBOUND FINAL BUILD

NORTHBOUND FINAL BUILD

PHASE 4 - FINAL SURFACE COURSE, PAINT

I-77 TYPICAL CONSTRUCTION SECTIONS

DRAWN SAS 1-6-04
CHECKED OSC 1-6-04

MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS

SUM-77-1.40

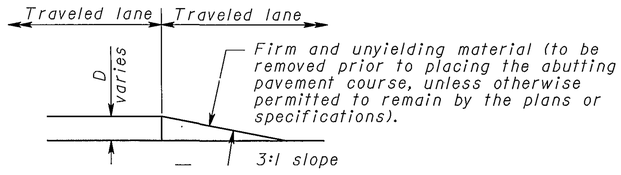
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GENERAL NOTES

1. It is intended that this drawing be used for treatment of drop-offs that develop during construction operations, and that are not otherwise provided for in the construction plans. The suggested treatments are intended for high volume projects that will last at least seven days and have an active work zone 1 mile [1.6 km] or less in length. For guidance on the use of this sheet, see L&D Manual Volume One, Section 500. Where the plans do not provide specific items for labor, equipment, or materials to implement the drop-off treatments specified hereon, they shall be included for payment in the lump sum bid for **Item 614 - Maintaining Traffic.**
2. While the need for certain advisory signing is noted hereon, it is not intended that this be indicative of all signing that may be required to advise or warn motorists, and all requirements of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) must be fulfilled.
3. In urban or otherwise heavily developed areas where pedestrians and/or bicyclists may be present in significant numbers, additional signing and protective measures other than those shown hereon may be required.
4. The drop-off treatment selected for use at any given location shall be as appropriate for the prevailing conditions at the site.
5. Where concrete barrier is specified, it shall be in accordance with **SCD RM-4.2** and Item 622.
6. When drums are specified for a drop-off condition, a minimum number of four drums shall be used. Spacing shall be as indicated in the plans or as specified in the OMUTCD.
7. When OW-151 (Low Shoulder) signs or OW-155 (Shoulder Drop-Off) signs or OW-171 (Uneven Lanes) signs are required, they shall be placed 750' [230 m] in advance of the condition, on all intersecting entrance ramps within the limits of the condition and immediately beyond all inter secting roadways within the limits of the condition. When the drop-off condition extends more than 0.5 mile [800 m], additional signs should be erected at intervals of 1.0 mile [1600 m] or less.
8. For locations, such as at ramps, lane shifts, lane closures, etc., where traffic is required to negotiate a difference in elevation between pavements, a 3:1 slope treatment similar to the Optional Wedge Treatment shall be provided.
9. Portable concrete barrier shall be placed on the same level as the traffic surface and shall not encroach on lane width(s) designated as the minimum required for traffic use. Where drums are used, and their presence would reduce traveled lane widths to less than 10' [3.0 m], drums may be placed on the opposite level from that of traffic provided the dropoff depth does not exceed 5" [125] and approval is granted by the Project Engineer.
10. Pavement Repairs (or similar work):
    a. Lengths greater than 60' [18 m] - utilize appropriate treatment from Condition I.
    b. Lengths of 60' [18 m] or less - repairs shall be effected in accordance with CMS 255.08. Drums may be used as a separtor adjacent to the traveled lane.

OPTIONAL WEDGE TREATMENT
(MILLING OR RESURFACING)

1. This treatment may be used when permitted for Condition I only.
2. OW-171 sign required.

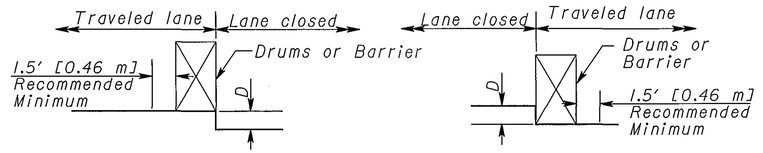


CONDITION I
DROP-OFFS BETWEEN TRAVELED LANES

1. These treatments are to be used for resurfacing, pavement planing, excavation, etc. between or within traveled lanes.

D	Treatment
≤1½" [≤40]	Erect OW-171 sign.
1½"-3" [40-75]	1) Lane closure utilizing drums* as shown below OR 2) Optional Wedge Treatment
>3"-5" [>75-125]	Lane closure utilizing drums as shown below.
>5" [>125]	Lane closure utilizing portable concrete barrier as shown below.

* Cones may be used for daytime only conditions.

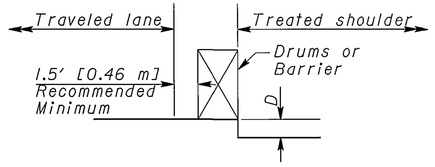


CONDITION II
DROP-OFFS WITHIN GRADED SHOULDER AREA

1. The treatments indicated below are for use in conjunction with resurfacing, planing, or excavations within the graded shoulder area.
2. The graded shoulder area is that flat or gradually sloping area between the edge of a normally traveled lane and the more steeply sloping ditch foreslope or embankment slope. Its surface may be soil or turf, and/or it may be inclusive of a "treated" area (improved with aggregates, asphaltic materials or concrete). For the purpose herein, its maximum width shall be considered to be 12' [3.6 m].

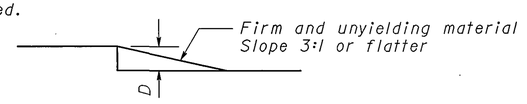
D	Treatment
≤1½" [≤40]	1) Erect OW-155 signs.
>1½"-5" [>40-125]	1) If minimum lane width* requirements can be met, maintain lanes utilizing drums as shown below OR 2) If minimum. lane width* requirements cannot be met, close adjacent lane utilizing drums OR 3) Optional Shoulder Treatment.
>5"-12" [125-305] Daylight only	If minimum lane width* requirements can be met, maintain lanes utilizing drums as shown below.
>5"-24" [>125-610]	1) If minimum lane width* requirements can be met, maintain lanes utilizing portable concrete barrier as shown below. OR 2) If minimum lane width* requirements cannot be met, close adjacent lane utilizing drums.
>24" [>610]	Lane closure utilizing portable concrete barrier as shown below.

* Minimum lane widths shall be 10' [3.0 m] unless otherwise specified in the plans.



OPTIONAL SHOULDER TREATMENT

1. This treatment may not be used within a bitumunos shoulder where a hot longitudnal joint per CMS 401.15 is required.
2. OW-151 signs required.

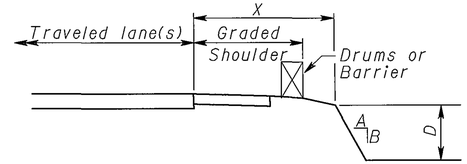


CONDITION III
DROP-OFFS BEYOND GRADED SHOULDER OR BACK OF CURB

1. See Note 2 under Condition II.
2. Use Chart A or B below, as applicable.

CHART A

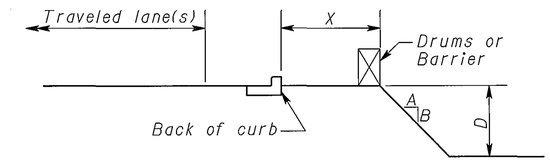
USE FOR: 1. Uncurbed Facilities.
2. Curbed Facilities, where:
   a. Curbs are less than 6" [150] in height.
   b. Curbs are 6" [150] or greater in height and the legal speed is greater than 40 mph [70 km/h].



X	D	A/B	Treatment Required	
			Day	Night
0-4' [0-1.2 m]	Any	Any	(a)	(a)
4'-30' [1.2-9.1 m]	Any	3:1 or Flatter	None	None
4'-12' [1.2-3.6 m]	≤3" [≤75]	Steeper than 3:1	None	None
4'-12' [1.2-3.6 m]	>3"-≤12" [>75-≤305]	Steeper than 3:1	Drums	Drums
4'-12' [1.2-3.6 m]	>12" [>305]	Steeper than 3:1	Drums	Barrier
>12'-20' [>3.6-6.1 m]	<12" [<305]	Steeper than 3:1	None	None
>12'-20' [>3.6-6.1 m]	>12"-≤24" [>305-≤610]	Steeper than 3:1	Drums	Drums
>12'-20' [>3.6-6.1 m]	>24" [>610]	Steeper than 3:1	Drums	Barrier
>20'-30' [>6.1-9.1 m]	<24" [<610]	Steeper than 3:1	None	None
>20'-30' [>6.1-9.1 m]	>24" [>610]	Steeper than 3:1	Drums	Barrier
>30' [>9.1 m]	Any	Any	None	None
(a) Use treatment specified under Condition II.				

CHART B

USE FOR: Curbed facilities, where the curb is 6" [150] or greater in height and the legal speed is 40 mph [70 km/h] or less.



X	D	A/B	Treatment Required	
			Day	Night
0-10' [0-3.0 m]	<12" [<305]	Any	None	Drums
0-10' [0-3.0 m]	>12" [>305]	Any	Drums	Drums
>10' [>3.0 m]	Any	Any	None	None

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

SAS 1-6-04 GSC 1-6-04

DROPOFFS IN WORK ZONES

SUM-77-1.40

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LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL

REMOVE 'LEFT LANE ENDS' SIGN, BRACKETS, LUMINAIRES, AND SIGN WIRING AT END OF PHASE 2

W20-1-48 (ORANGE) DUAL STA. 39+00 ON RAMP H AT STA. 39+00

ROAD WORK AHEAD

RII-H5-48 (DUAL) CONSTRUCTION ZONE FINES DOUBLED STA. 41+00

MATCH LINE STA. 42+00
SEE SHEET NO. 39

(WE) WORK ZONE WHITE EDGE LINE
(YE) WORK ZONE YELLOW EDGE LINE
(CH) WORK ZONE CHANNELIZING LINE
(LL) WORK ZONE LANE LINE
(WT) WORK ZONE TRANSVERSE LINE, WHITE
(DLW) DOTTED LINE, WHITE

NOTES:

1.) CROSSOVERS SHALL BE SIGNED AS PER STANDARD CONSTRUCTION DRAWING MT-95.70.
2.) LANE CLOSURES ON THE ENDS OF THE PROJECT SHALL BE SIGNED AS PER STANDARD CONSTRUCTION DRAWING MT-95.30
3.) LIGHTING IN THE CROSSOVERS SHALL BE PER STANDARD CONSTRUCTION DRAWING MT-100.00.

DATE: 04/01/2004 09:27:57 AM
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HORIZONTAL SCALE IN FEET
0 40 80

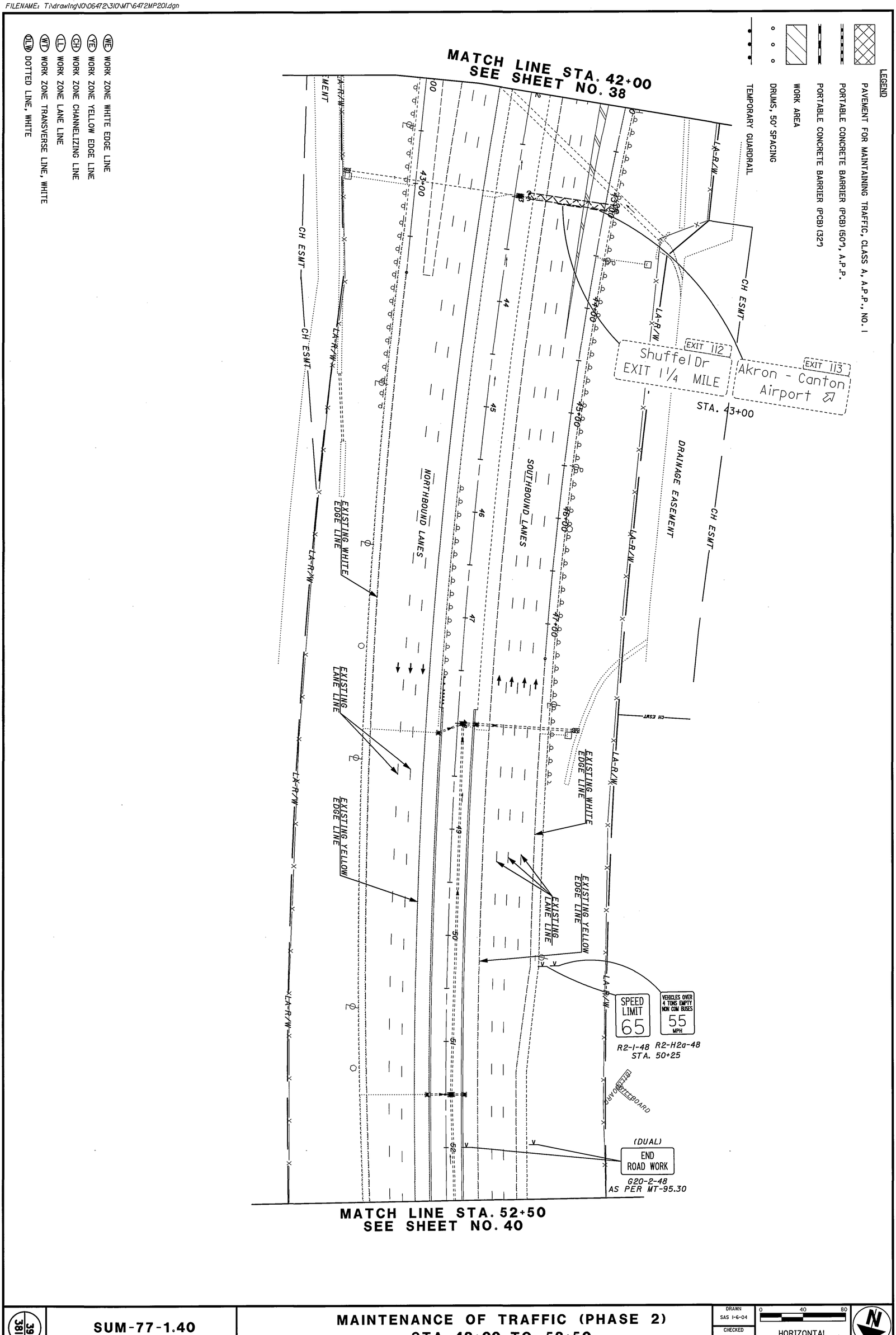
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CHECKED OSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 2)
STA. 32+00 TO 42+00

SUM-77-1.40

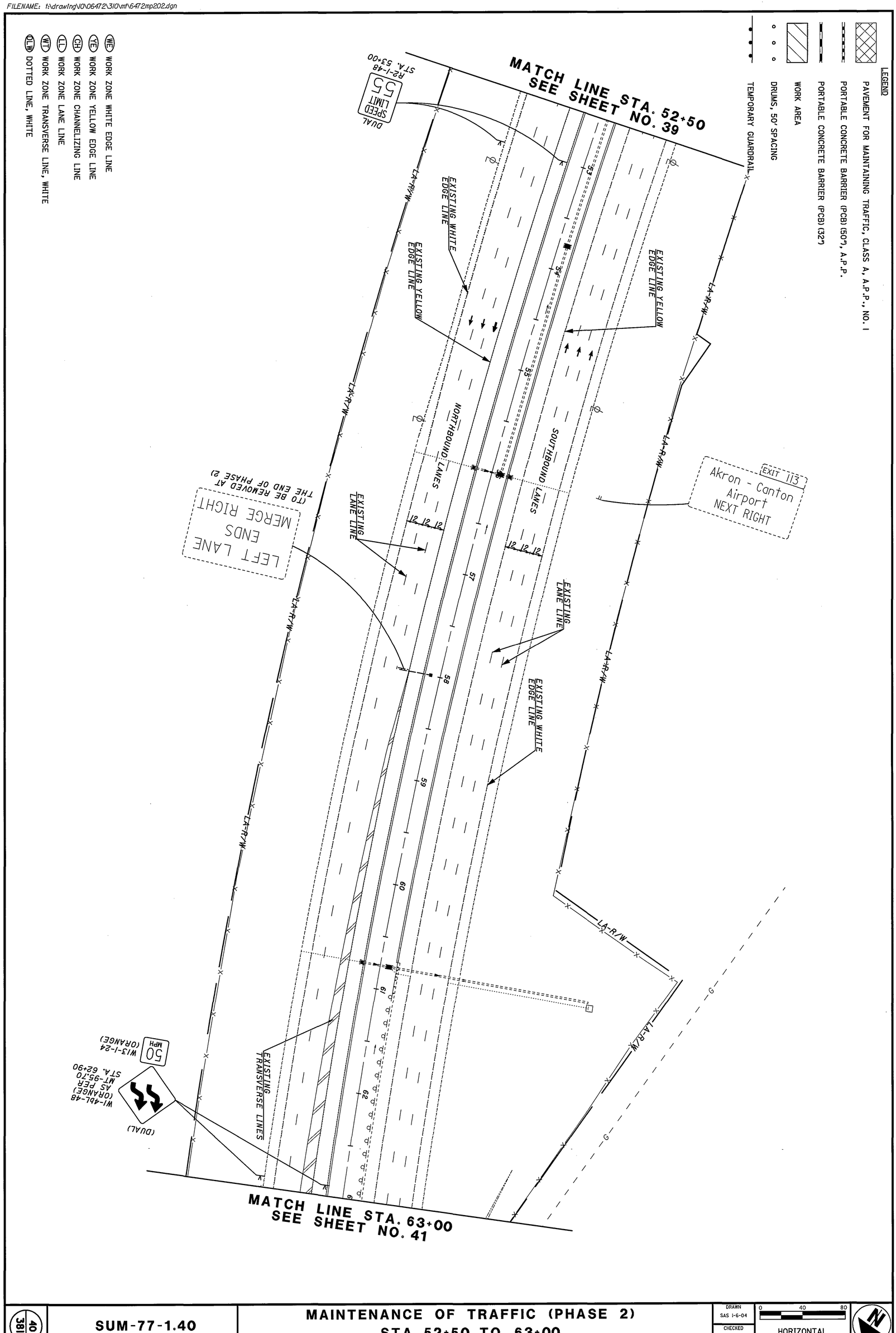
38
381

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39 / 381	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 2) STA. 42+00 TO 52+50	DRAWN SAS 1-6-04 / CHECKED GSC 1-6-04	0 40 80 HORIZONTAL SCALE IN FEET

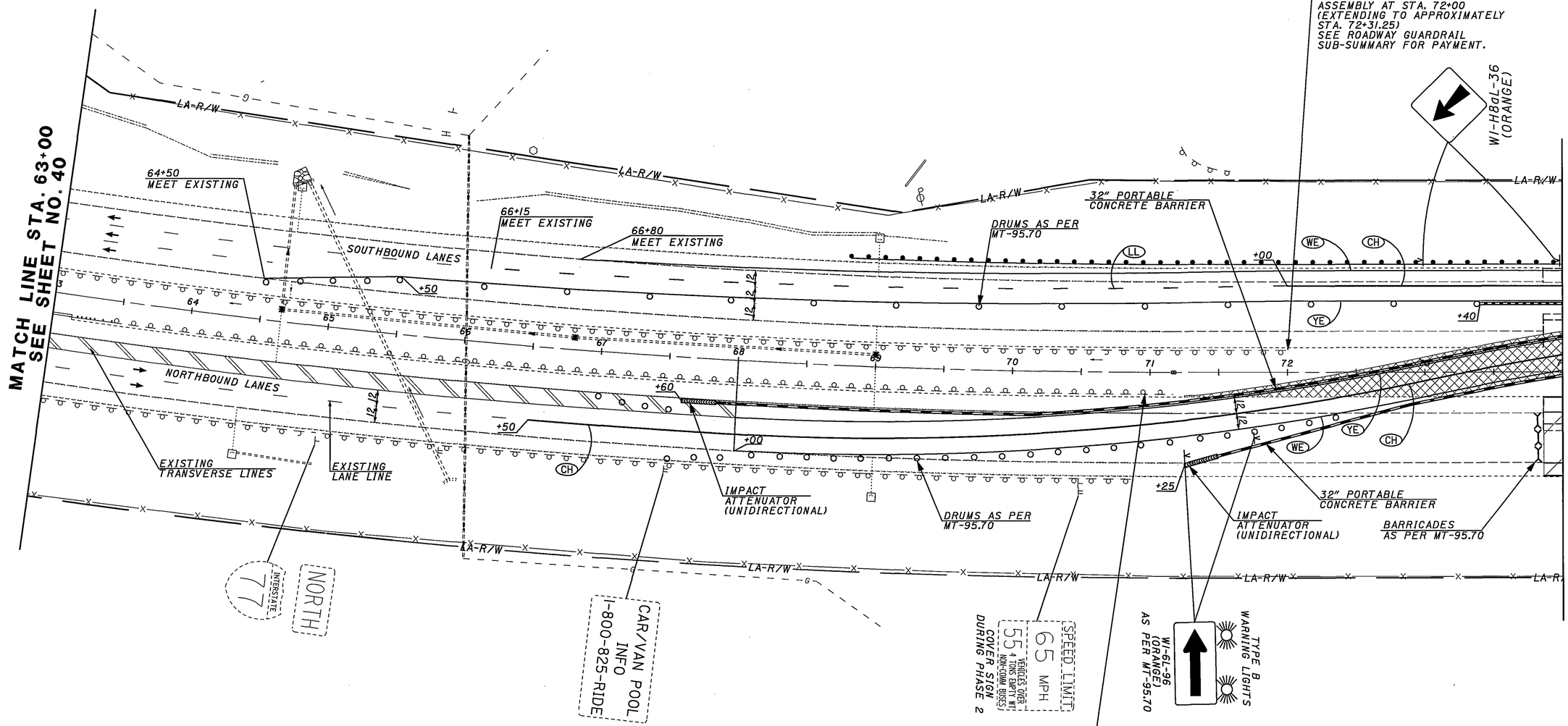
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40 / 381	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 2) STA. 52+50 TO 63+00	DRAWN SAS 1-6-04 / CHECKED GSC 1-6-04	0 40 80 HORIZONTAL SCALE IN FEET

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



- (WE) WORK ZONE WHITE EDGE LINE
- (YE) WORK ZONE YELLOW EDGE LINE
- (CH) WORK ZONE CHANNELIZING LINE
- (LL) WORK ZONE LANE LINE
- (WT) WORK ZONE TRANSVERSE LINE, WHITE
- (DLW) DOTTED LINE, WHITE

DATE: 04/01/2004 09:28:01 AM
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HORIZONTAL SCALE IN FEET
0 40 80

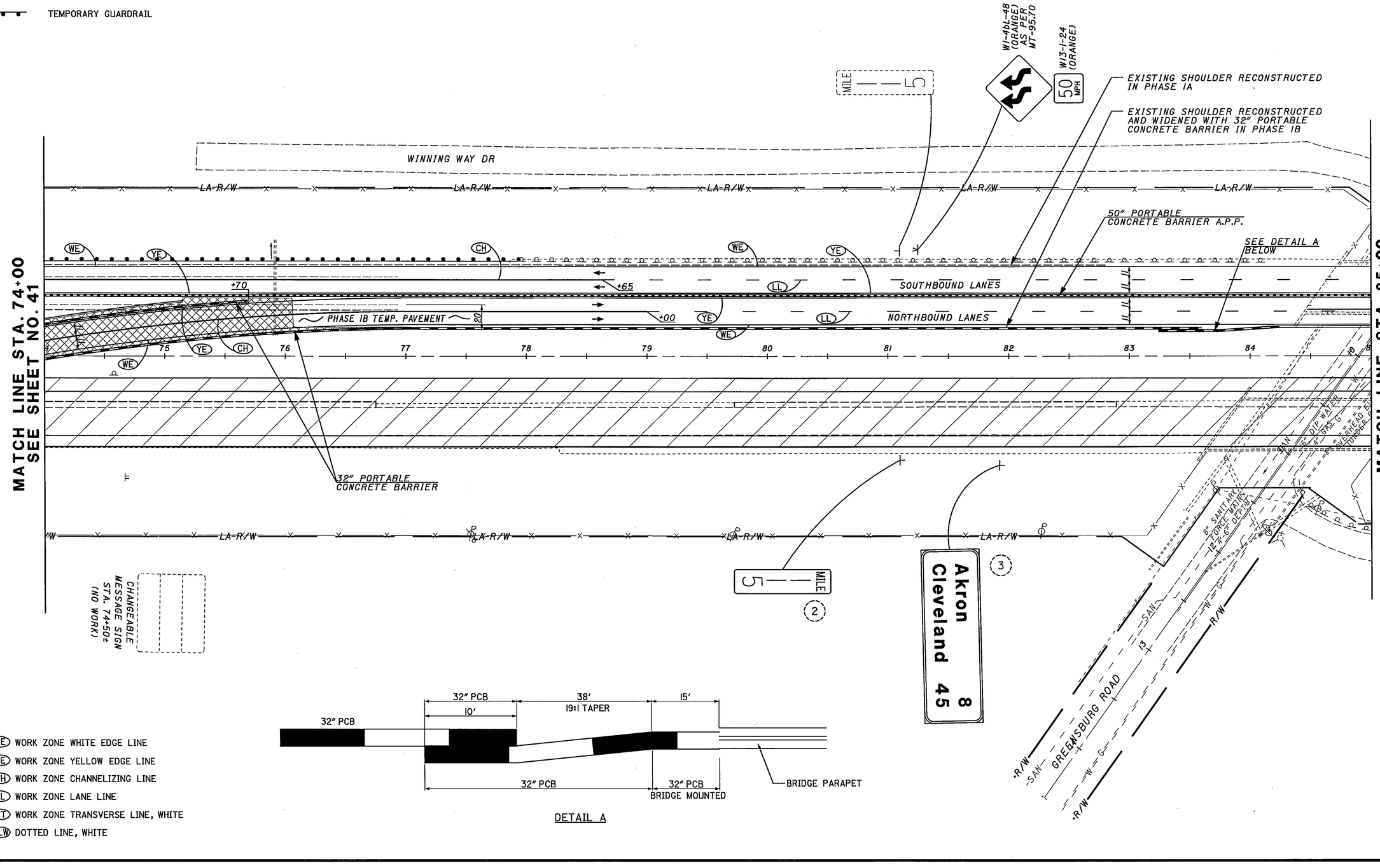
DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 2)
STA. 63+00 TO 74+00

SUM-77-1.40

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



DETAIL A

- (WE) WORK ZONE WHITE EDGE LINE
- (YE) WORK ZONE YELLOW EDGE LINE
- (CH) WORK ZONE CHANNELIZING LINE
- (LL) WORK ZONE LANE LINE
- (WT) WORK ZONE TRANSVERSE LINE, WHITE
- (DLW) DOTTED LINE, WHITE

DATE: 06/14/2004 11:31:24 AM
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HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED DSO 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 2) STA. 74+00 TO 85+00

SUM-77-1.40

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL

MATCH LINE STA. 85+00
SEE SHEET NO. 42

MATCH LINE STA. 96+00
SEE SHEET NO. 44

GREENSBURG ROAD

R/W

SAN

OVERHEAD ELECTRIC

OVERHEAD TELECOM

UNDER BRIDGE

4" GAS

LA-R/W

EXIT 113
Akron - Canton Airport
1 MILE
Lauby Rd

EXISTING SHOULDER RECONSTRUCTED IN PHASE 1A

EXISTING SHOULDER RECONSTRUCTED AND WIDENED WITH 32" PORTABLE CONCRETE BARRIER IN PHASE 1B

SPEED LIMIT 55
R2-1-48
STA. 94+00

50" PORTABLE CONCRETE BARRIER, A.P.P.

32" PORTABLE CONCRETE BARRIER

SOUTHBOUND LANES

NORTHBOUND LANES

WE YE LL

86 87 88 89 90 91 92 93 94 95

WINNING WAY DR

(WE) WORK ZONE WHITE EDGE LINE
(YE) WORK ZONE YELLOW EDGE LINE
(CH) WORK ZONE CHANNELIZING LINE
(LL) WORK ZONE LANE LINE
(WT) WORK ZONE TRANSVERSE LINE, WHITE
(DLW) DOTTED LINE, WHITE

DATE: 01/09/2004 02:57:59 PM
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HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

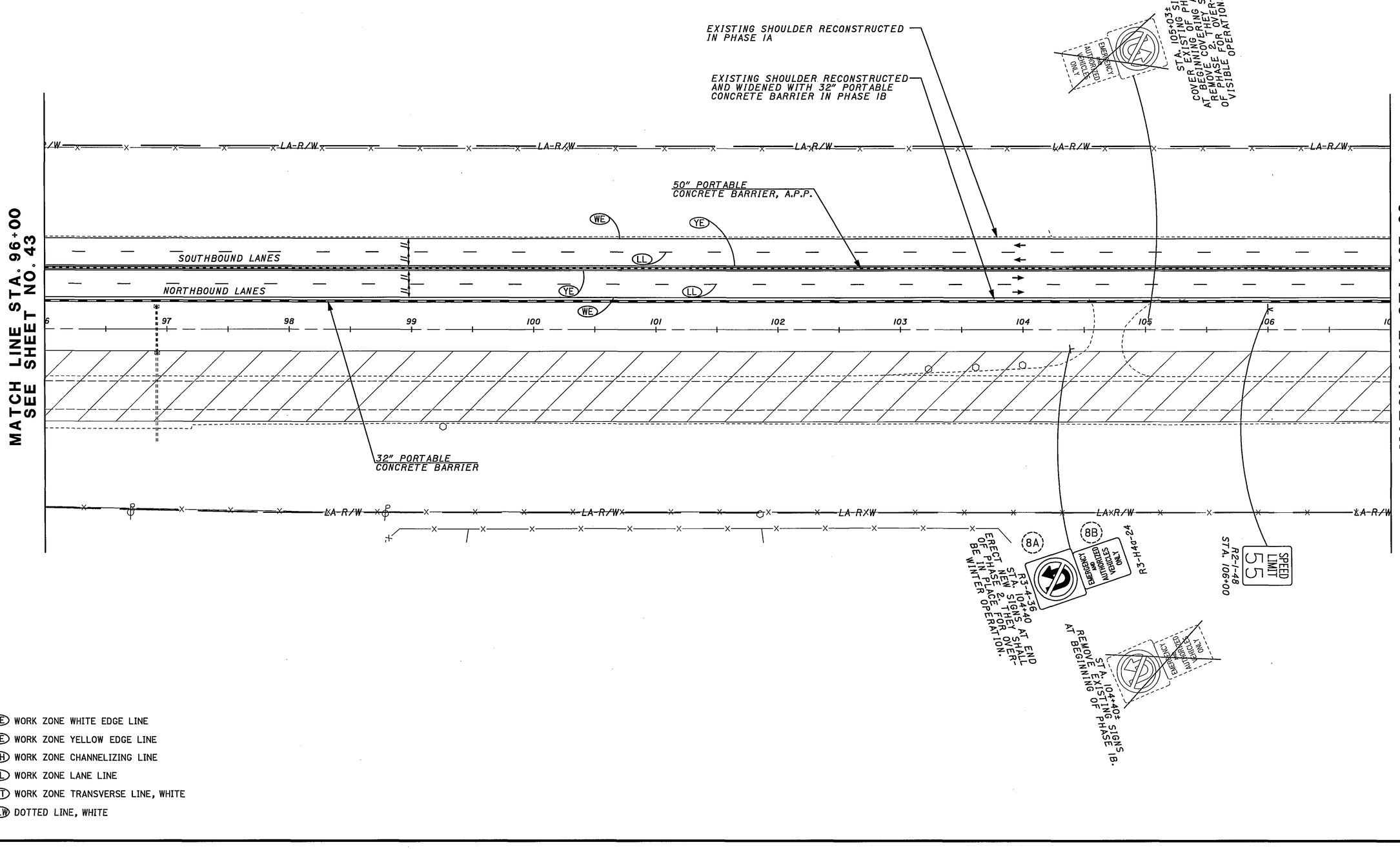
MAINTENANCE OF TRAFFIC (PHASE 2)
STA. 85+00 TO 96+00

SUM-77-1.40

43
381

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



- (WE) WORK ZONE WHITE EDGE LINE
- (YE) WORK ZONE YELLOW EDGE LINE
- (CH) WORK ZONE CHANNELIZING LINE
- (LL) WORK ZONE LANE LINE
- (WT) WORK ZONE TRANSVERSE LINE, WHITE
- (DLW) DOTTED LINE, WHITE

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HORIZONTAL SCALE IN FEET
0 40 80

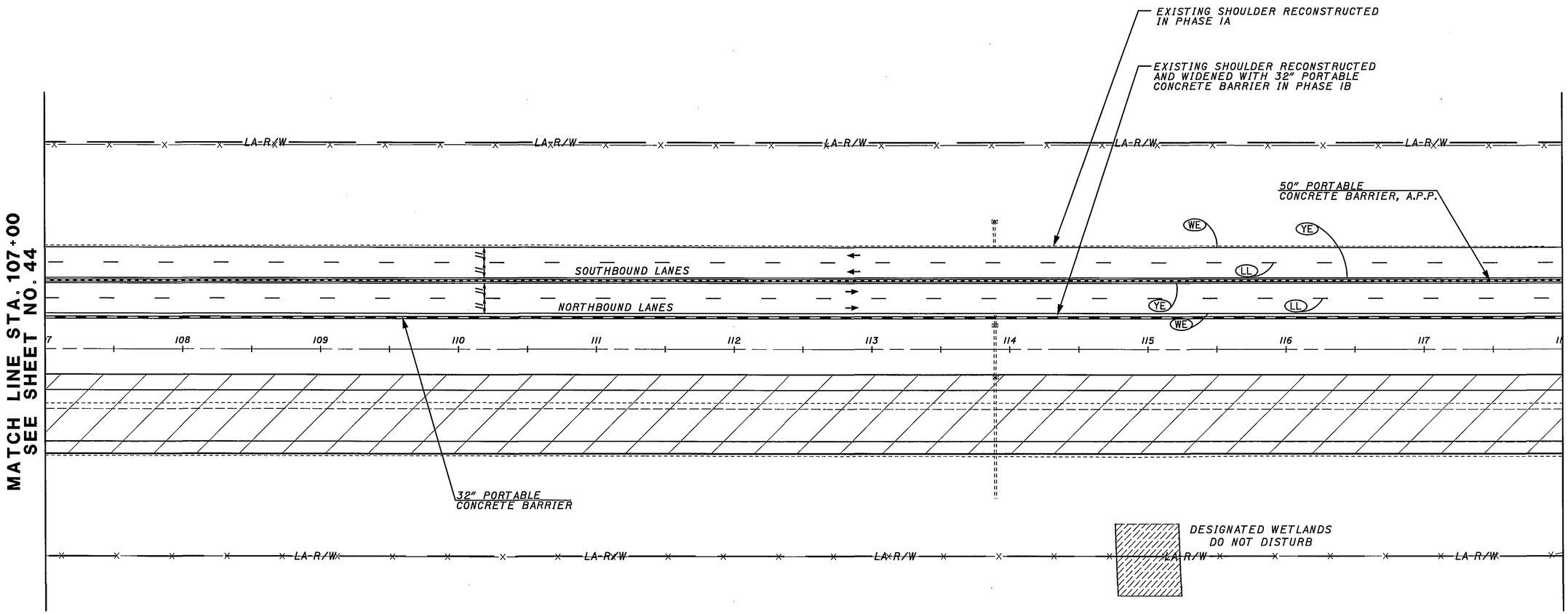
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MAINTENANCE OF TRAFFIC (PHASE 2)
STA. 96+00 TO 107+00

SUM-77-1.40

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



(WE) WORK ZONE WHITE EDGE LINE
(YE) WORK ZONE YELLOW EDGE LINE
(CH) WORK ZONE CHANNELIZING LINE
(LL) WORK ZONE LANE LINE
(WT) WORK ZONE TRANSVERSE LINE, WHITE
(DLW) DOTTED LINE, WHITE

DATE: 01/09/2004 02:59:00 PM
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HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

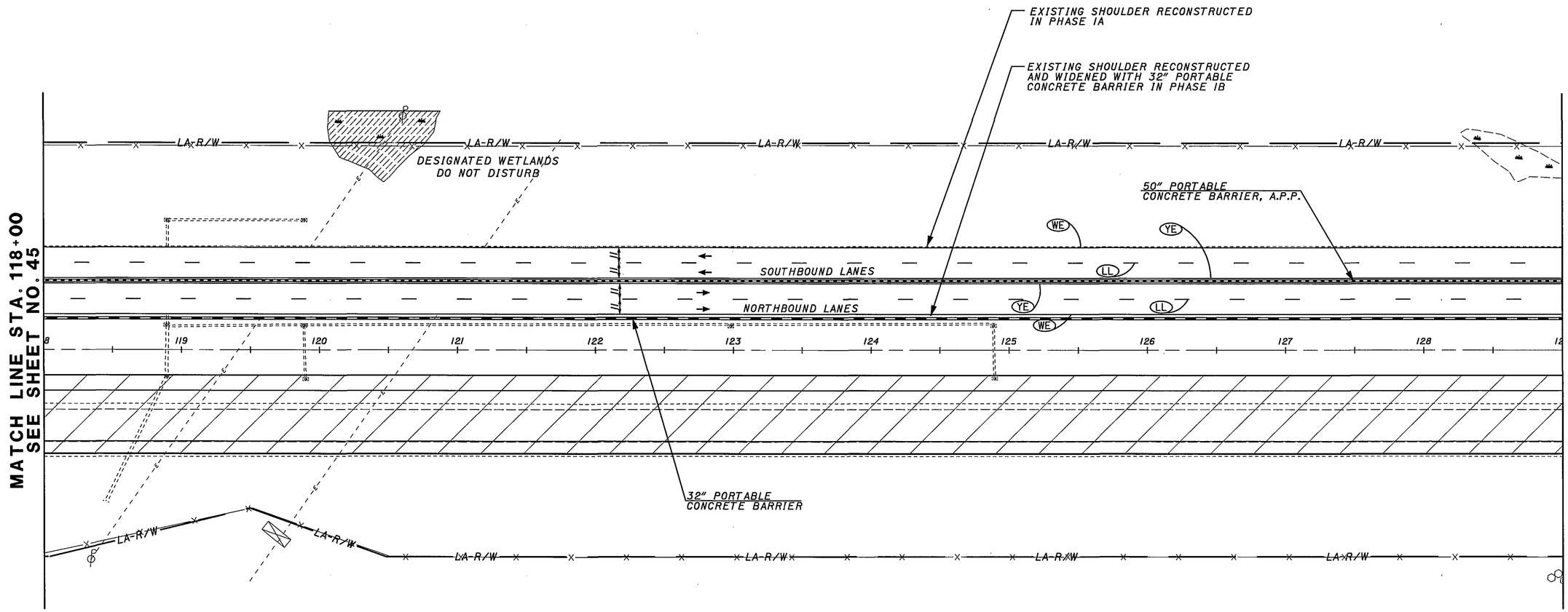
MAINTENANCE OF TRAFFIC (PHASE 2)
STA. 107+00 TO 118+00

SUM-77-1.40

45
381

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



- (WE) WORK ZONE WHITE EDGE LINE
- (YE) WORK ZONE YELLOW EDGE LINE
- (CH) WORK ZONE CHANNELIZING LINE
- (LL) WORK ZONE LANE LINE
- (WT) WORK ZONE TRANSVERSE LINE, WHITE
- (DLW) DOTTED LINE, WHITE

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HORIZONTAL SCALE IN FEET
0 40 80

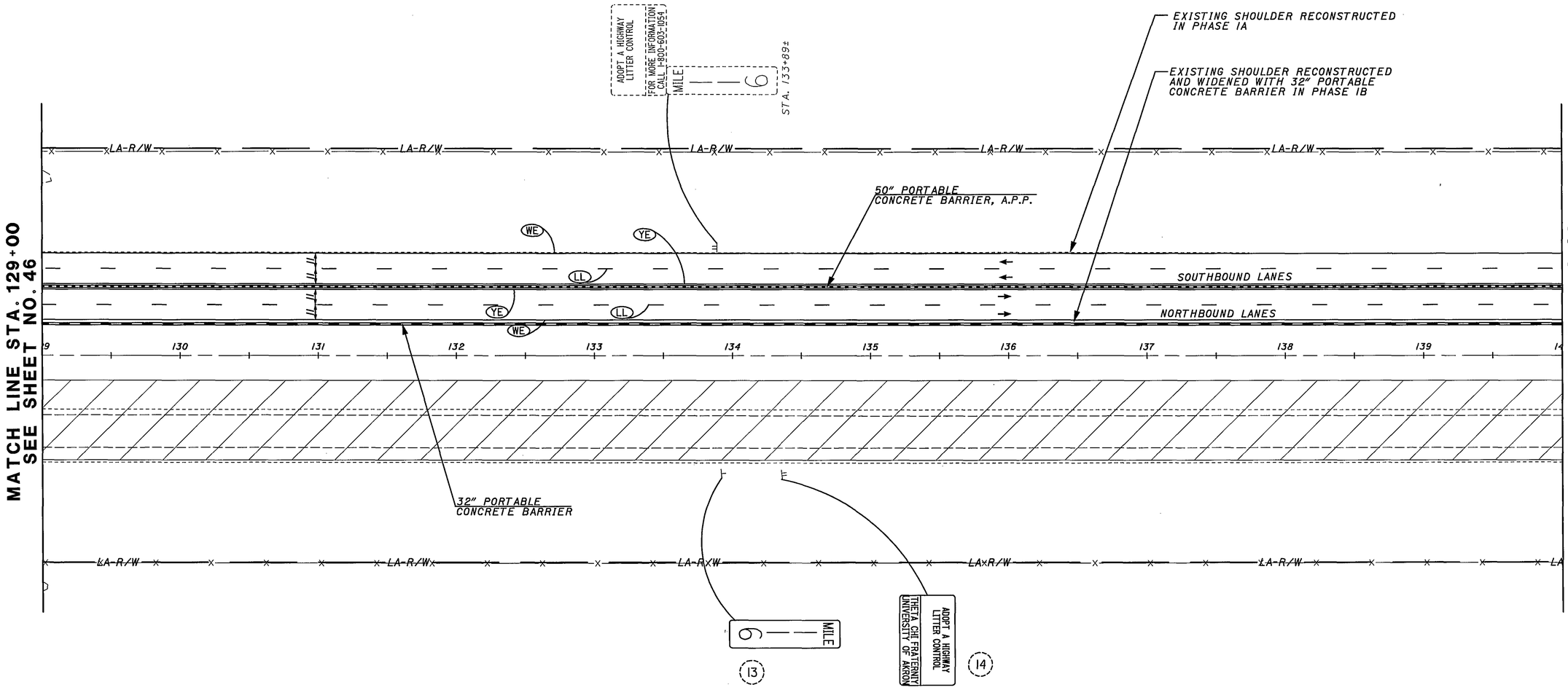
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CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 2) STA. 118+00 TO 129+00

SUM-77-1.40

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



(WE) WORK ZONE WHITE EDGE LINE
(YE) WORK ZONE YELLOW EDGE LINE
(CH) WORK ZONE CHANNELIZING LINE
(LL) WORK ZONE LANE LINE
(WT) WORK ZONE TRANSVERSE LINE, WHITE
(DLW) DOTTED LINE, WHITE

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HORIZONTAL SCALE IN FEET
0 40 80

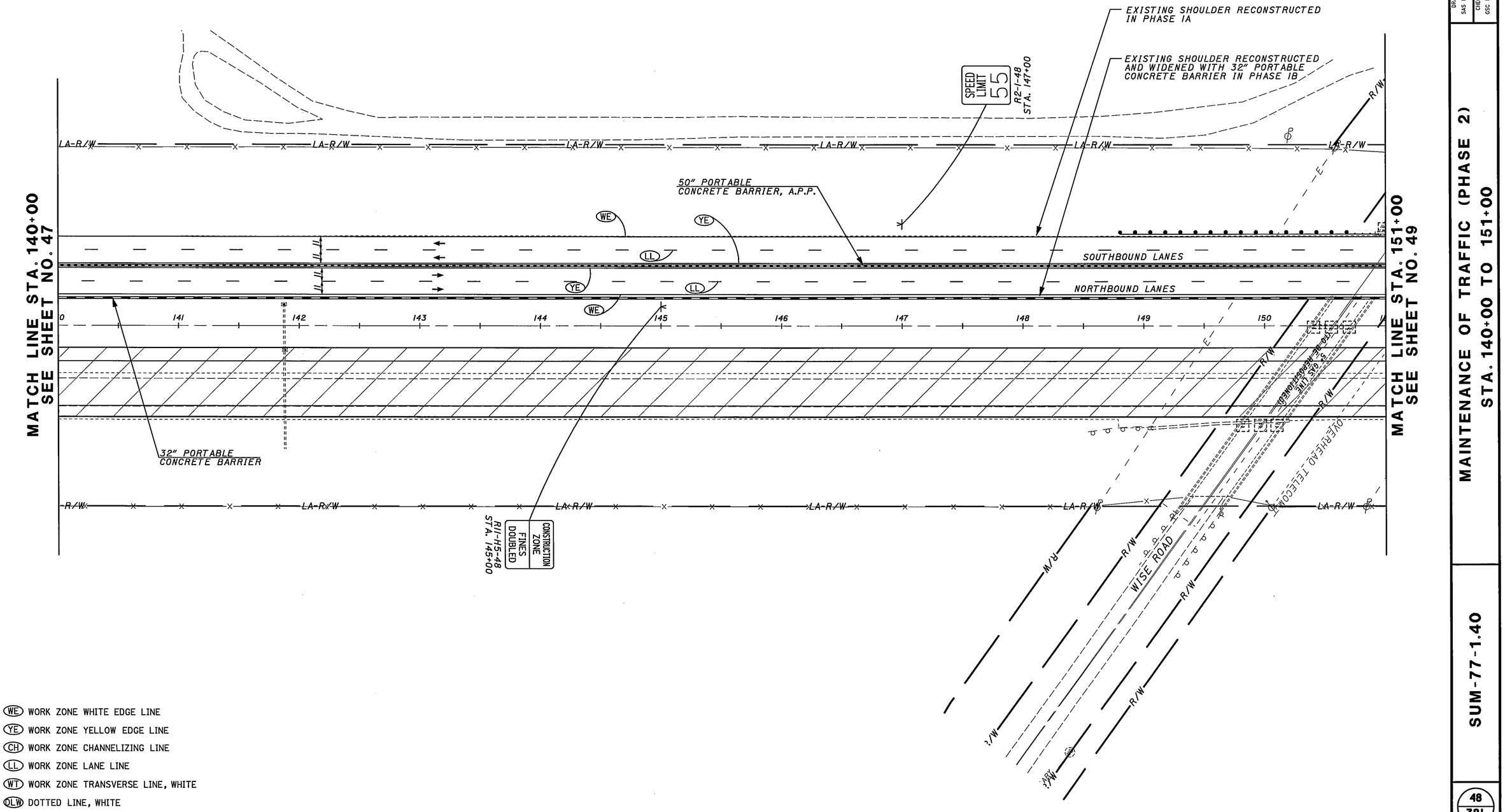
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MAINTENANCE OF TRAFFIC (PHASE 2)
STA. 129+00 TO 140+00

SUM-77-1.40

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



- (WE) WORK ZONE WHITE EDGE LINE
- (YE) WORK ZONE YELLOW EDGE LINE
- (CH) WORK ZONE CHANNELIZING LINE
- (LL) WORK ZONE LANE LINE
- (WT) WORK ZONE TRANSVERSE LINE, WHITE
- (DLW) DOTTED LINE, WHITE

HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 2)
STA. 140+00 TO 151+00

SUM-77-1.40

48
381

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LEGEND

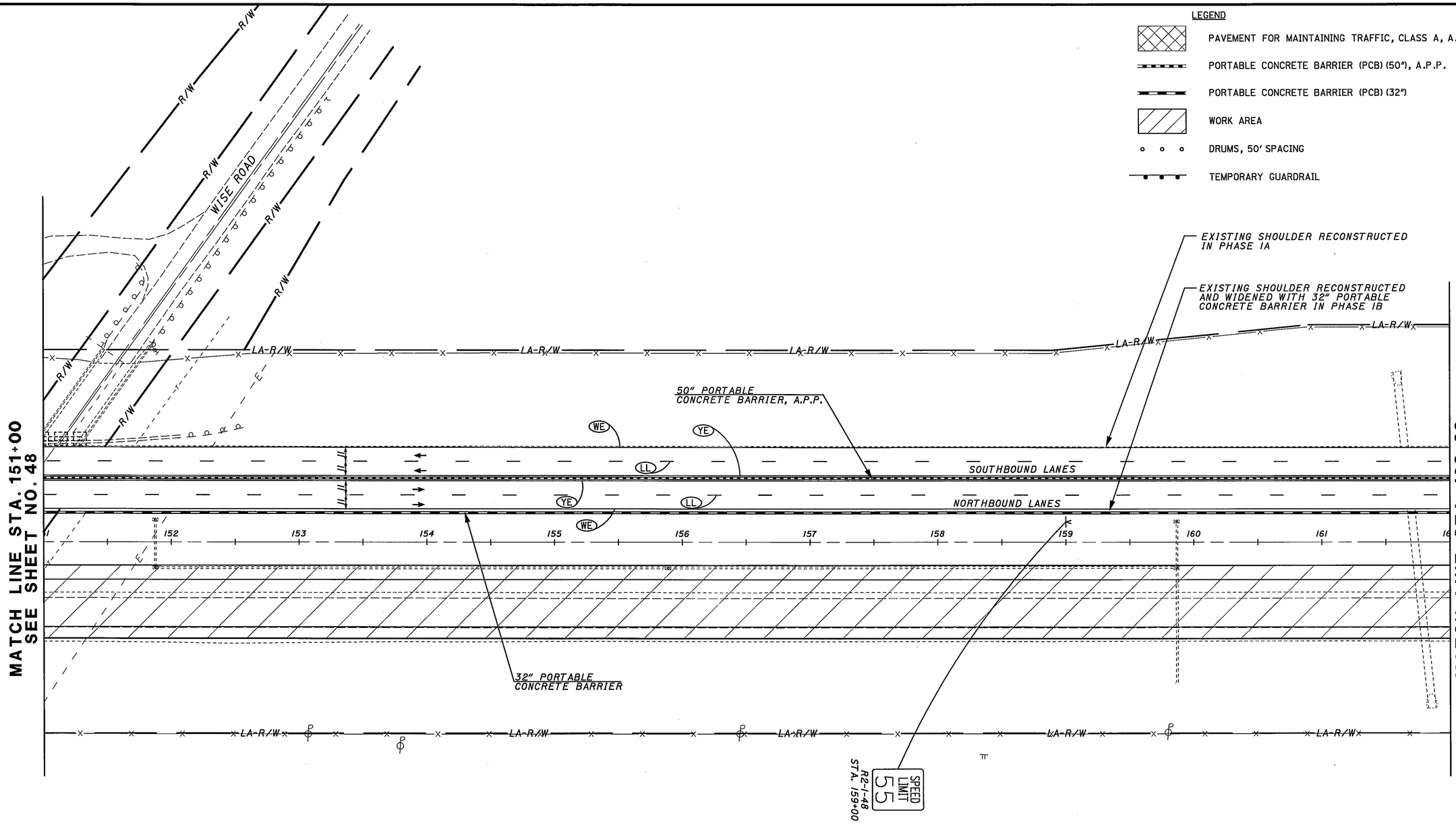
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- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL

HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 2)
STA. 151+00 TO 162+00

SUM-77-1.40

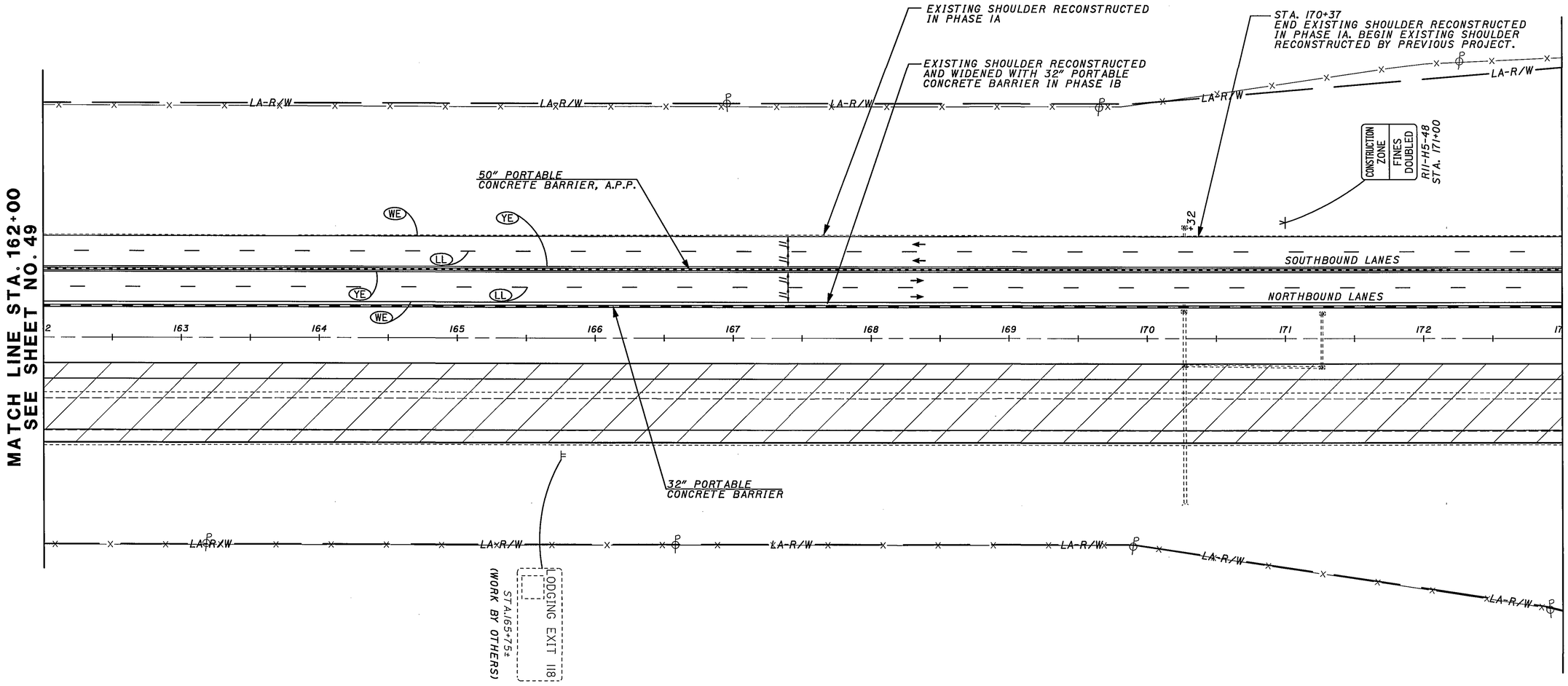


- (WE) WORK ZONE WHITE EDGE LINE
- (YE) WORK ZONE YELLOW EDGE LINE
- (CH) WORK ZONE CHANNELIZING LINE
- (LL) WORK ZONE LANE LINE
- (WT) WORK ZONE TRANSVERSE LINE, WHITE
- (DLW) DOTTED LINE, WHITE

DATE: 01/09/2004 03:01:03 PM
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LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



WE WORK ZONE WHITE EDGE LINE
YE WORK ZONE YELLOW EDGE LINE
CH WORK ZONE CHANNELIZING LINE
LL WORK ZONE LANE LINE
WT WORK ZONE TRANSVERSE LINE, WHITE
DLW DOTTED LINE, WHITE

DATE: 01/09/2004 03:01:29 PM
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HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 2) STA. 162+00 TO 173+00

SUM-77-1.40

50
381

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL

MATCH LINE STA. 173+00
SEE SHEET NO. 50

MATCH LINE STA. 184+00
SEE SHEET NO. 52

LA-R/W

SAN

INVERT
EL. 1145.42

383.95 L.F. 12" SANITARY SEWER
IN 24" STEEL CASING

EXISTING SHOULDER RECONSTRUCTED
BY PREVIOUS PROJECT

EXISTING SHOULDER RECONSTRUCTED
AND WIDENED WITH 32" PORTABLE
CONCRETE BARRIER IN PHASE 1B

50" PORTABLE
CONCRETE BARRIER, A.P.P.

SOUTHBOUND LANES

NORTHBOUND LANES

WE YE LL

173 174 175 176 177 178 179 180 181 182 183 184

32" PORTABLE
CONCRETE BARRIER

INVERT
EL. 1139.26

241 TO 619
Massillon Rd
1 MILE
STA. 181+57±

EXIT 118

(WE) WORK ZONE WHITE EDGE LINE
(YE) WORK ZONE YELLOW EDGE LINE
(CH) WORK ZONE CHANNELIZING LINE
(LL) WORK ZONE LANE LINE
(WT) WORK ZONE TRANSVERSE LINE, WHITE
(DLW) DOTTED LINE, WHITE

DATE: 01/09/2004 03:01:54 PM
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HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

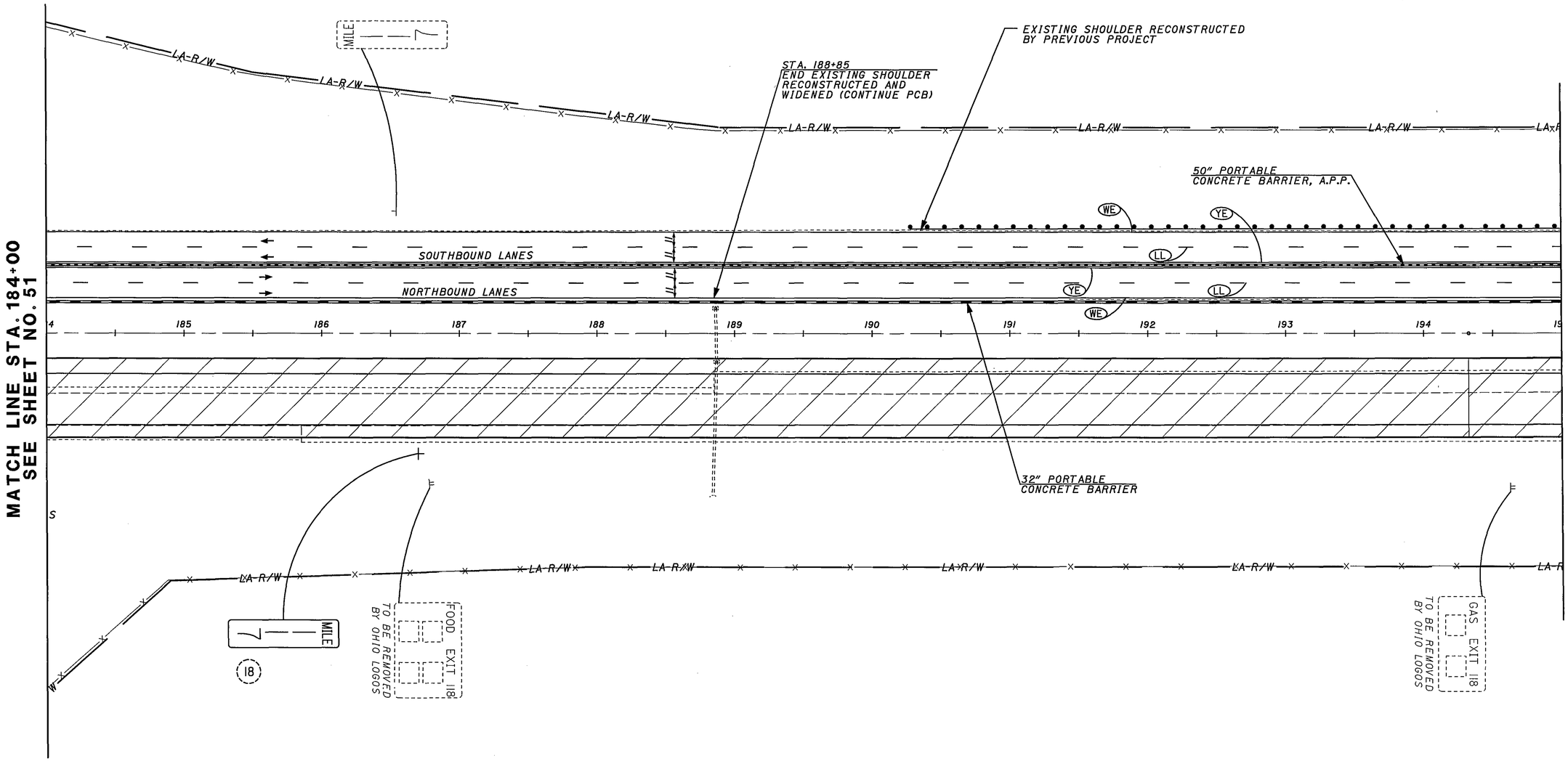
MAINTENANCE OF TRAFFIC (PHASE 2)
STA. 173+00 TO 184+00

SUM-77-1.40

51
381

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



MATCH LINE STA. 184+00
SEE SHEET NO. 51

MATCH LINE STA. 195+00
SEE SHEET NO. 53

- (WE) WORK ZONE WHITE EDGE LINE
- (YE) WORK ZONE YELLOW EDGE LINE
- (CH) WORK ZONE CHANNELIZING LINE
- (LL) WORK ZONE LANE LINE
- (WT) WORK ZONE TRANSVERSE LINE, WHITE
- (DLW) DOTTED LINE, WHITE

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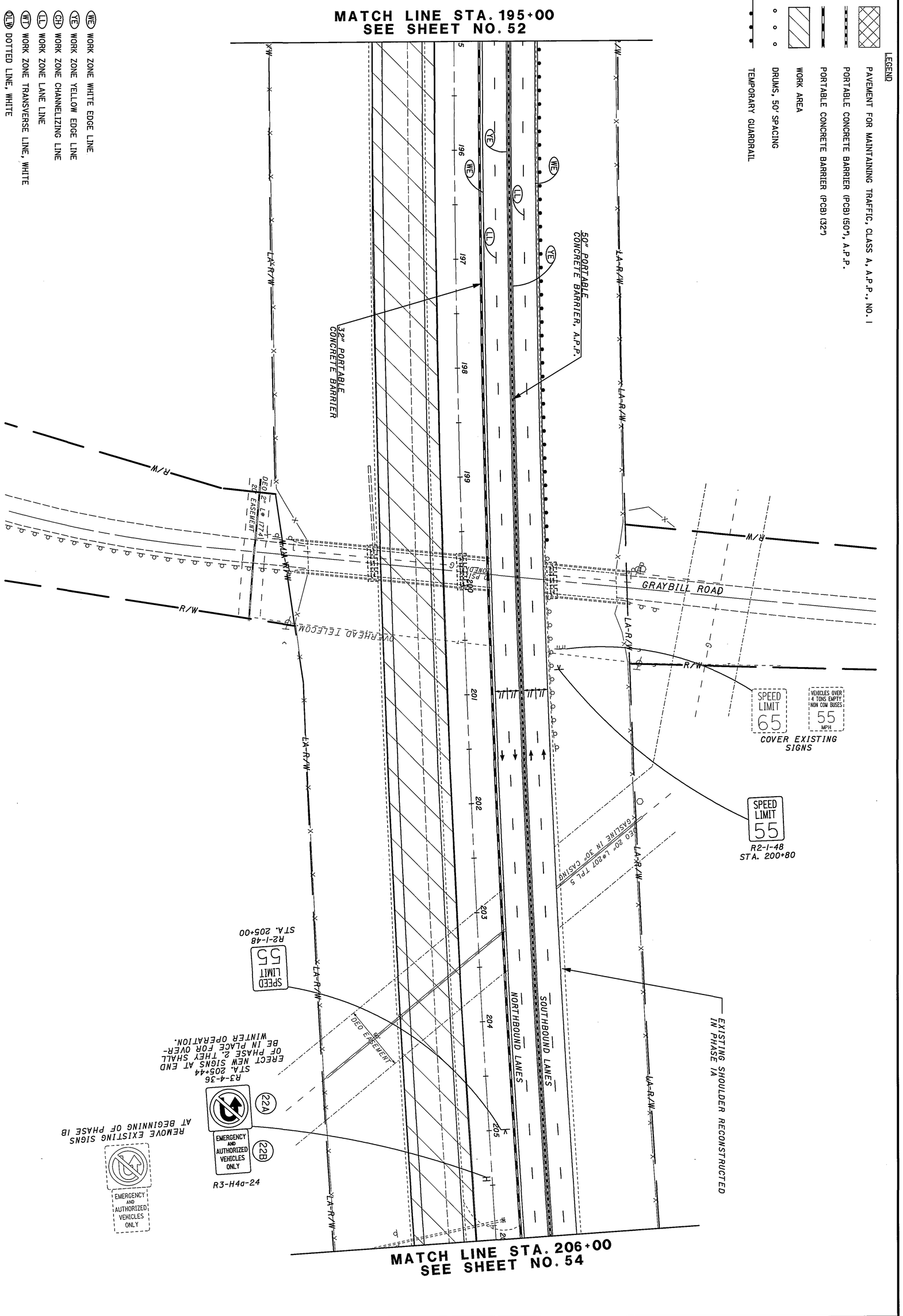
HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 2)
STA. 184+00 TO STA. 195+00

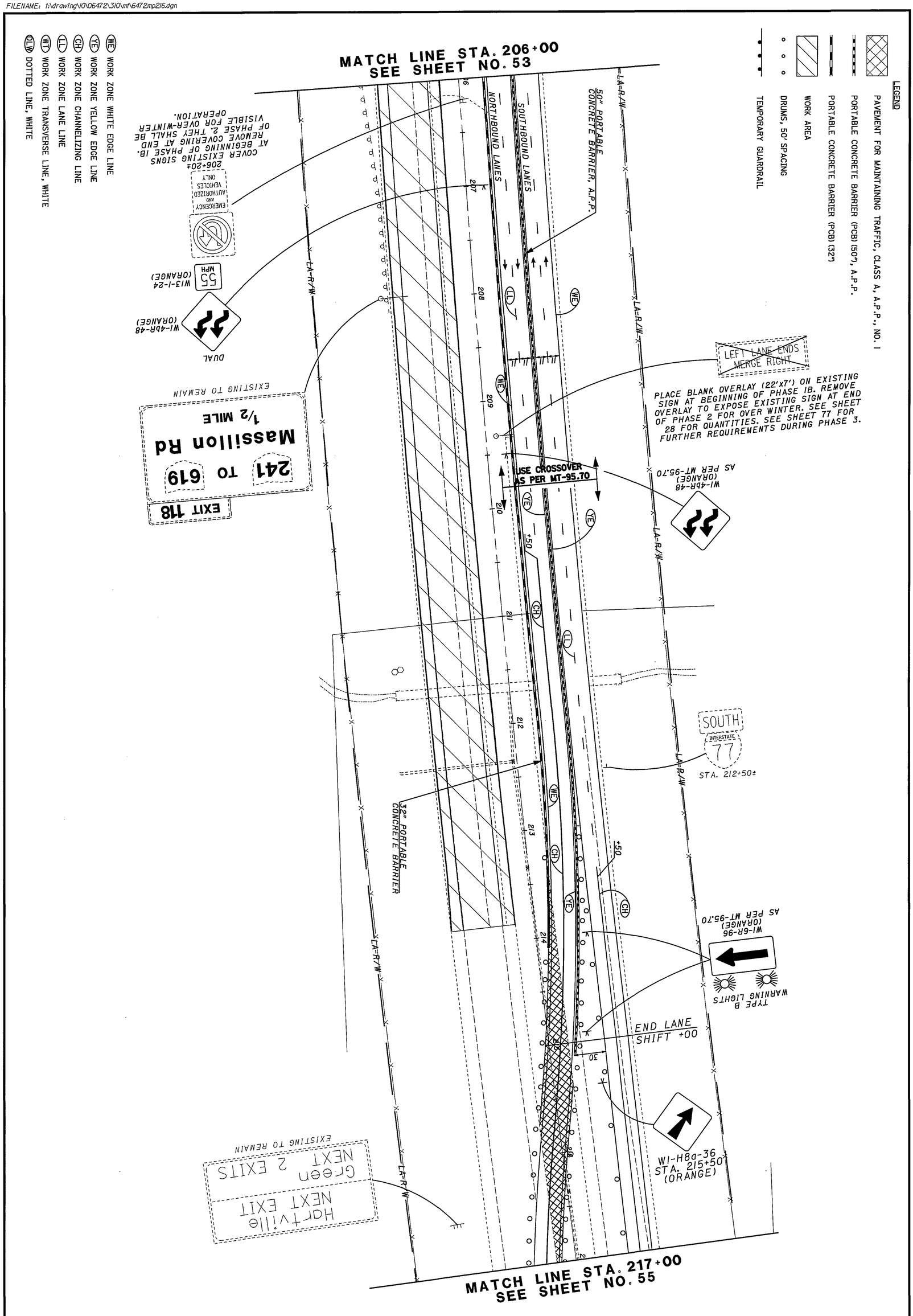
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53 / 381	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 2) STA. 195+00 TO 206+00	DRAWN SAS 1-6-04 / CHECKED GSC 1-6-04	0 40 80 HORIZONTAL SCALE IN FEET

DATE: 04/01/2004 09:28:05 AM
FILENAME: t:\drawing\10\06472\310\mt\6472mp216.dgn



54 / 381	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 2) STA. 206+00 TO 217+00	DRAWN SAS 1-6-04 / CHECKED GSC 1-6-04	0 40 80 HORIZONTAL SCALE IN FEET

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50'), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32')
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL

W1-4bR-48 (ORANGE) AS PER MT-95.70 STA. 223+90

W13-1-24 (ORANGE) 55 MPH

(DUAL)

YIELD

R1-2-60 STA. 225+50 (WORK ZONE SIGN)

MEET EXISTING STA. 223+70

EXISTING LANE LINE

LA-R/W

W1-4bR-36 (ORANGE) STA. 217+50

DOTTED LINE @ 12' OFF THE LANE LINE

BEGIN LANE SHIFT

DLW

MEET EXISTING STA. 217+64

+10 CH

WE

YE

12'

+50

+70

+00

N 42°50'44" W

217 218 219 220 221 222 223 224 225 226 227

MATCH LINE STA. 217+00 SEE SHEET NO. 54

MATCH LINE STA. 228+00 SEE SHEET NO. 56

MEET EXISTING STA. 222+83

MEET EXISTING STA. 221+83

MEET EXISTING STA. 220+33

DRUMS AS PER MT-95.70

(WE) WORK ZONE WHITE EDGE LINE

(YE) WORK ZONE YELLOW EDGE LINE

(CH) WORK ZONE CHANNELIZING LINE

(LL) WORK ZONE LANE LINE

(WT) WORK ZONE TRANSVERSE LINE, WHITE

(DLW) DOTTED LINE, WHITE

DATE: 01/09/2004 03:03:56 PM
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HORIZONTAL SCALE IN FEET
0 40 80

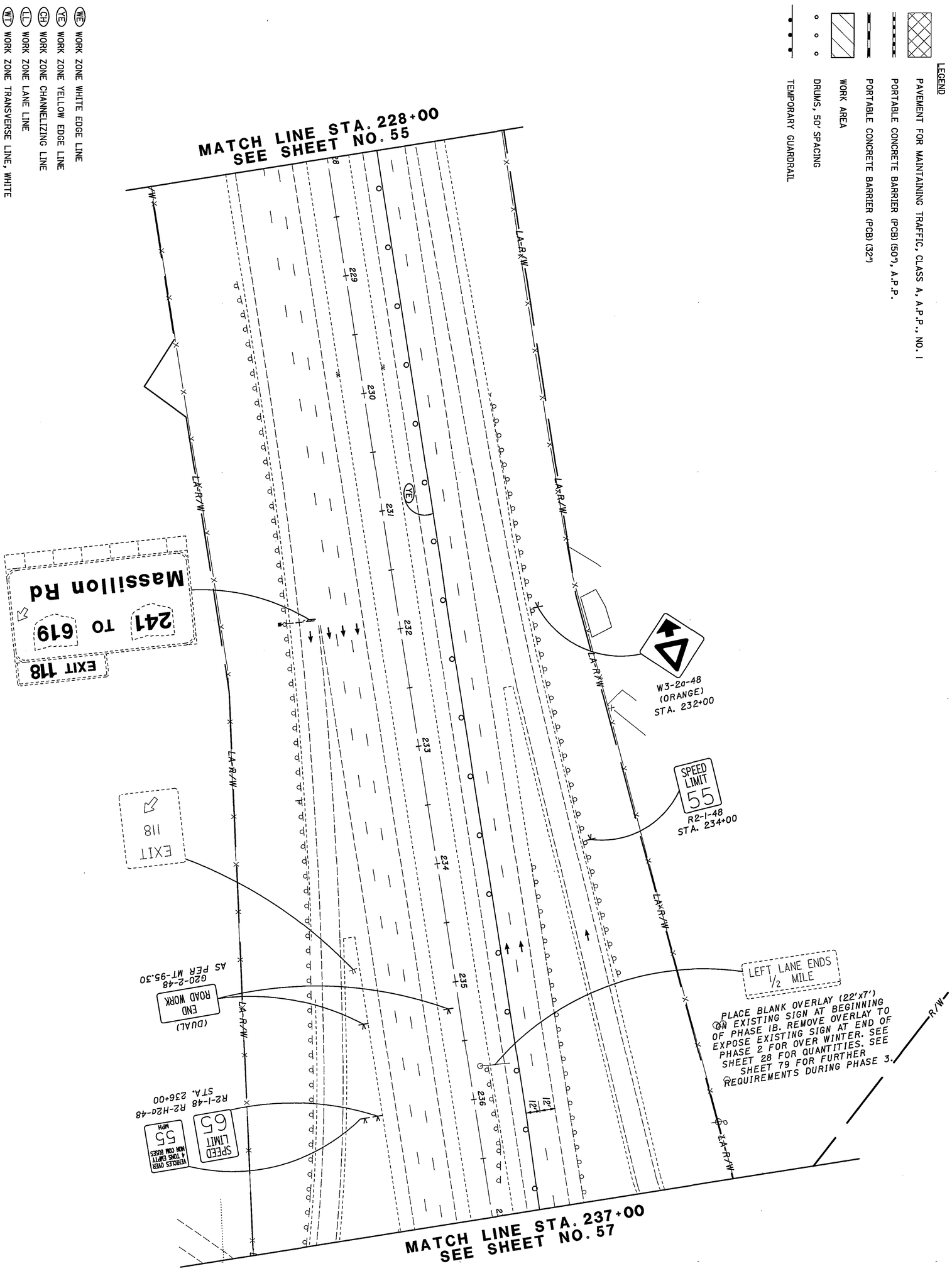
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CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 2)
STA. 217+00 TO 228+00

SUM-77-1.40

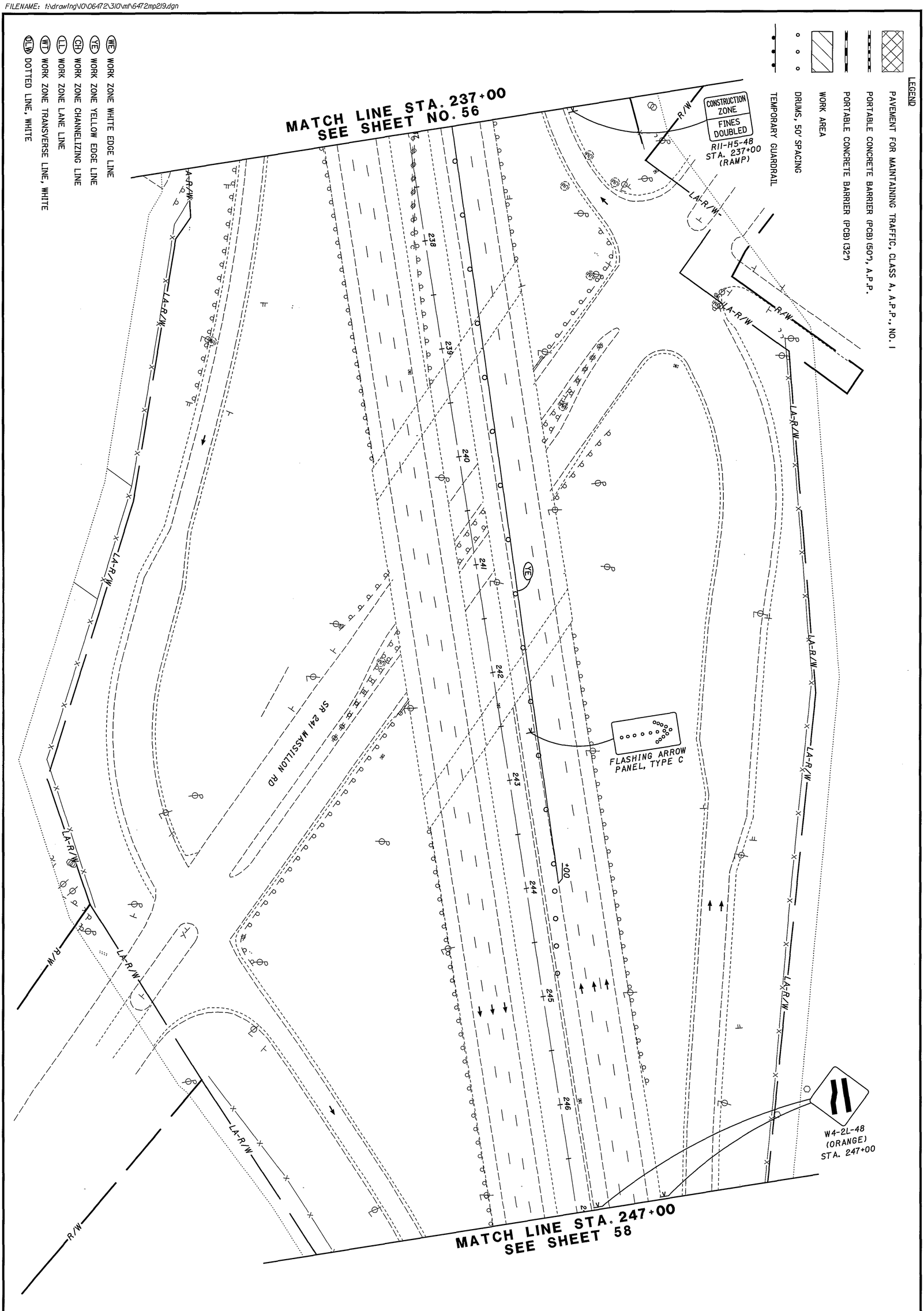
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56 / 381	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 2) STA. 228+00 TO 237+00	DRAWN SAS 1-6-04 / CHECKED GSC 1-6-04	0 40 80 HORIZONTAL SCALE IN FEET

DATE: 04/01/2004 09:28:09 AM
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57 / 381	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 2) STA. 237+00 TO 247+00	DRAWN SAS 1-6-04 / CHECKED GSC 1-6-04	0 40 80 HORIZONTAL SCALE IN FEET

DATE: 04/01/2004 09:28:11 AM
FILENAME: t:\drawing\NO\06472\310\mt\6472mp220.dgn

LEGEND

PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1

PORTABLE CONCRETE BARRIER (PCB) (50'), A.P.P.

PORTABLE CONCRETE BARRIER (PCB) (32')

WORK AREA

DRUMS, 50' SPACING

TEMPORARY GUARDRAIL

(WE) WORK ZONE WHITE EDGE LINE

(YE) WORK ZONE YELLOW EDGE LINE

(CH) WORK ZONE CHANNELIZING LINE

(LL) WORK ZONE LANE LINE

(WT) WORK ZONE TRANSVERSE LINE, WHITE

(DLW) DOTTED LINE, WHITE

MATCH LINE STA. 247+00
SEE SHEET NO. 57

EXIT 118

EXIT 118
241 TO 619
Massillon
EXIT ONLY
STA. 249+95

INTERSTATE 77 SOUTH
Canton

SPEED LIMIT 55
R2-1-48
STA. 253+00
(DUAL)

PLACE BLANK OVERLAY (2'x2') ON EXISTING SIGN AT BEGINNING OF PHASE IB. REMOVE OVERLAY AT END OF PHASE 2 FOR OVER WINTER. AGAIN PLACE BLANK OVERLAY OVER ARROW AT BEGINNING OF PHASE 3 AND REMOVE AT END OF PHASE 3.
SEE SHEET 28 FOR QUANTITIES.

SEE STA. 261+50
ON SHEET NO. 59

58 / 381	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 2) STA. 247+00 TO 257+00	DRAWN SAS 1-6-04 CHECKED GSC 1-6-04	0 40 80 HORIZONTAL SCALE IN FEET

DATE: 04/01/2004 09:28:13 AM
FILENAME: t:\drawing\10\06472\310\mt\6472mp221.dgn

(WE) WORK ZONE WHITE EDGE LINE
(YE) WORK ZONE YELLOW EDGE LINE
(CH) WORK ZONE CHANNELIZING LINE
(LL) WORK ZONE LANE LINE
(WT) WORK ZONE TRANSVERSE LINE, WHITE
(DLW) DOTTED LINE, WHITE

SEE STA. 257+00
ON SHEET 58

INTERSTATE 77 SOUTH
Canton
STA. 262+33

EXIT 118
241 TO 619
Massillon
EXIT ONLY
STA. 262+33

PLACE BLANK OVERLAY (2'x2') ON EXISTING SIGN AT BEGINNING OF PHASE IB. REMOVE OVERLAY AT END OF PHASE 2 FOR OVER WINTER. AGAIN PLACE BLANK OVERLAY OVER ARROW AT BEGINNING OF PHASE 3 AND REMOVE AT END OF PHASE 3. SEE SHEET 28 FOR QUANTITIES.

262
263
269
270
275
276
277
282
285
296
352
353
354

DUAL
LEFT LANE ENDS
W9-1L-48
(ORANGE)
STA. 270-00

(DUAL)
CONSTRUCTION ZONE
FINES DOUBLED
R11-H5-48
STA. 277+00

DUAL TYPE 'A'
ROAD WORK AHEAD 1 MILE
W20-1-48
(ORANGE)
STA. 296+00

DUAL TYPE 'A'
ROAD WORK AHEAD 2 MILES
W20-1-48
(ORANGE)
STA. 353+00

LEGEND
PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
PORTABLE CONCRETE BARRIER (PCB) (50'), A.P.P.
PORTABLE CONCRETE BARRIER (PCB) (32')
WORK AREA
DRUMS, 50' SPACING
TEMPORARY GUARDRAIL

SUM-77-1.40

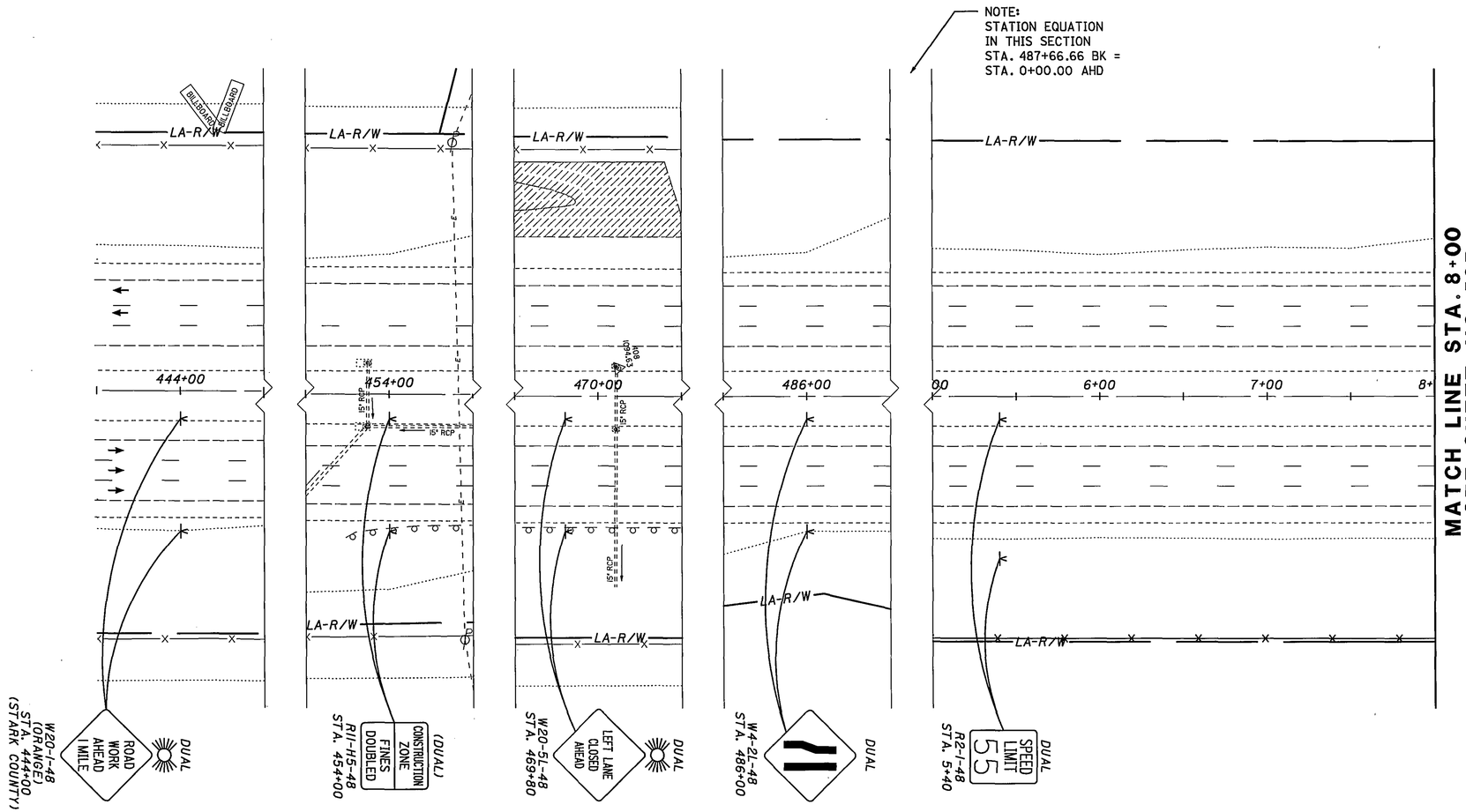
MAINTENANCE OF TRAFFIC (PHASE 2)
STA. 261+50 TO 354+00

DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

0 40 80
HORIZONTAL SCALE IN FEET

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. I
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



- (WE) WORK ZONE WHITE EDGE LINE
- (YE) WORK ZONE YELLOW EDGE LINE
- (CH) WORK ZONE CHANNELIZING LINE
- (LL) WORK ZONE LANE LINE
- (WT) WORK ZONE TRANSVERSE LINE, WHITE
- (DLW) DOTTED LINE, WHITE

NOTES:

1.) CROSSOVERS SHALL BE SIGNED AS PER STANDARD CONSTRUCTION DRAWING MT-95.70.
2.) LANE CLOSURES ON THE ENDS OF THE PROJECT SHALL BE SIGNED AS PER STANDARD CONSTRUCTION DRAWING MT-95.30
3.) LIGHTING IN THE CROSSOVER SHALL BE PER STANDARD CONSTRUCTION DRAWING MT-100.00.

HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 3)
STA. 443+50 TO 8+00

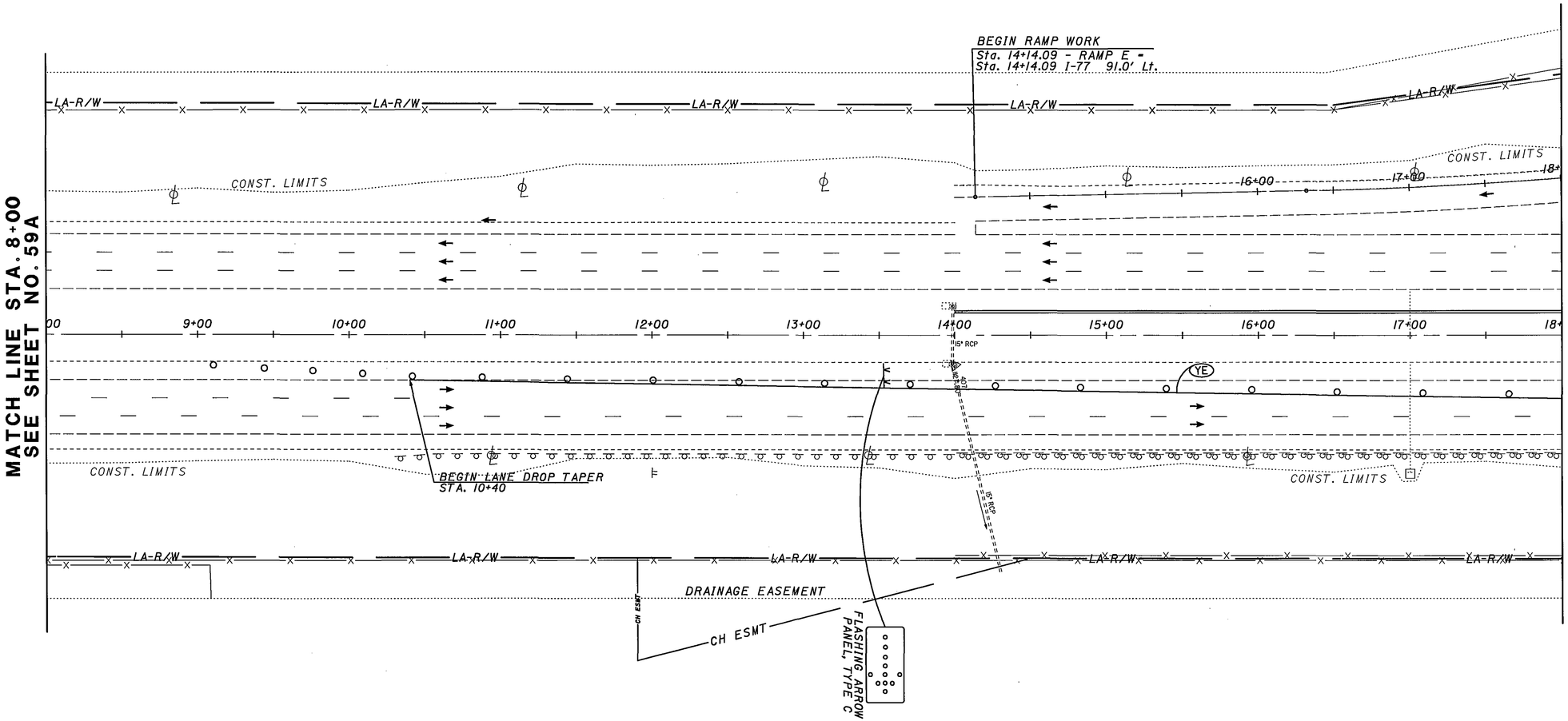
SUM-77-1.40

59A
381

DATE: 04/01/2004 09:28:40 AM
FILENAME: h:\drawing\d0064721\01\mt64721mp3000c.dgn

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



(WE) WORK ZONE WHITE EDGE LINE
(YE) WORK ZONE YELLOW EDGE LINE
(CH) WORK ZONE CHANNELIZING LINE
(LL) WORK ZONE LANE LINE
(WT) WORK ZONE TRANSVERSE LINE, WHITE
(DLW) DOTTED LINE, WHITE

NOTES:

1.) CROSSOVERS SHALL BE SIGNED AS PER STANDARD CONSTRUCTION DRAWING MT-95.70.
2.) LANE CLOSURES ON THE ENDS OF THE PROJECT SHALL BE SIGNED AS PER STANDARD CONSTRUCTION DRAWING MT-95.30
3.) LIGHTING IN THE CROSSOVER SHALL BE PER STANDARD CONSTRUCTION DRAWING MT-100.00.

HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 3)
STA. 8+00 TO 18+00

SUM-77-1.40

59B
381

DATE: 04/01/2004 09:28:25 AM
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LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL

MATCH LINE STA. 18+00
SEE SHEET NO. 59B

MATCH LINE STA. 29+00
SEE SHEET NO. 61

END LANE DROP TAPER
STA. 18+20

SC Sta. 23+99.37

SC Sta. 26+49.37

STA. 28+28.951, I-77 =
STA. 49+18.065, AIRPORT RD.

SIGN REMOVED AT END OF PHASE 2

LEFT LANE ENDS
3/4 MILE

Exit 113
Akron-Canton Airport

(WE) WORK ZONE WHITE EDGE LINE
(YE) WORK ZONE YELLOW EDGE LINE
(CH) WORK ZONE CHANNELIZING LINE
(LL) WORK ZONE LANE LINE
(WT) WORK ZONE TRANSVERSE LINE, WHITE
(DLW) DOTTED LINE, WHITE

NOTES:

1.) CROSSOVERS SHALL BE SIGNED AS PER STANDARD CONSTRUCTION DRAWING MT-95.70.
2.) LANE CLOSURES ON THE ENDS OF THE PROJECT SHALL BE SIGNED AS PER STANDARD CONSTRUCTION DRAWING MT-95.30
3.) LIGHTING IN THE CROSSOVER SHALL BE PER STANDARD CONSTRUCTION DRAWING MT-100.00.

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HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED OSC 1-6-04

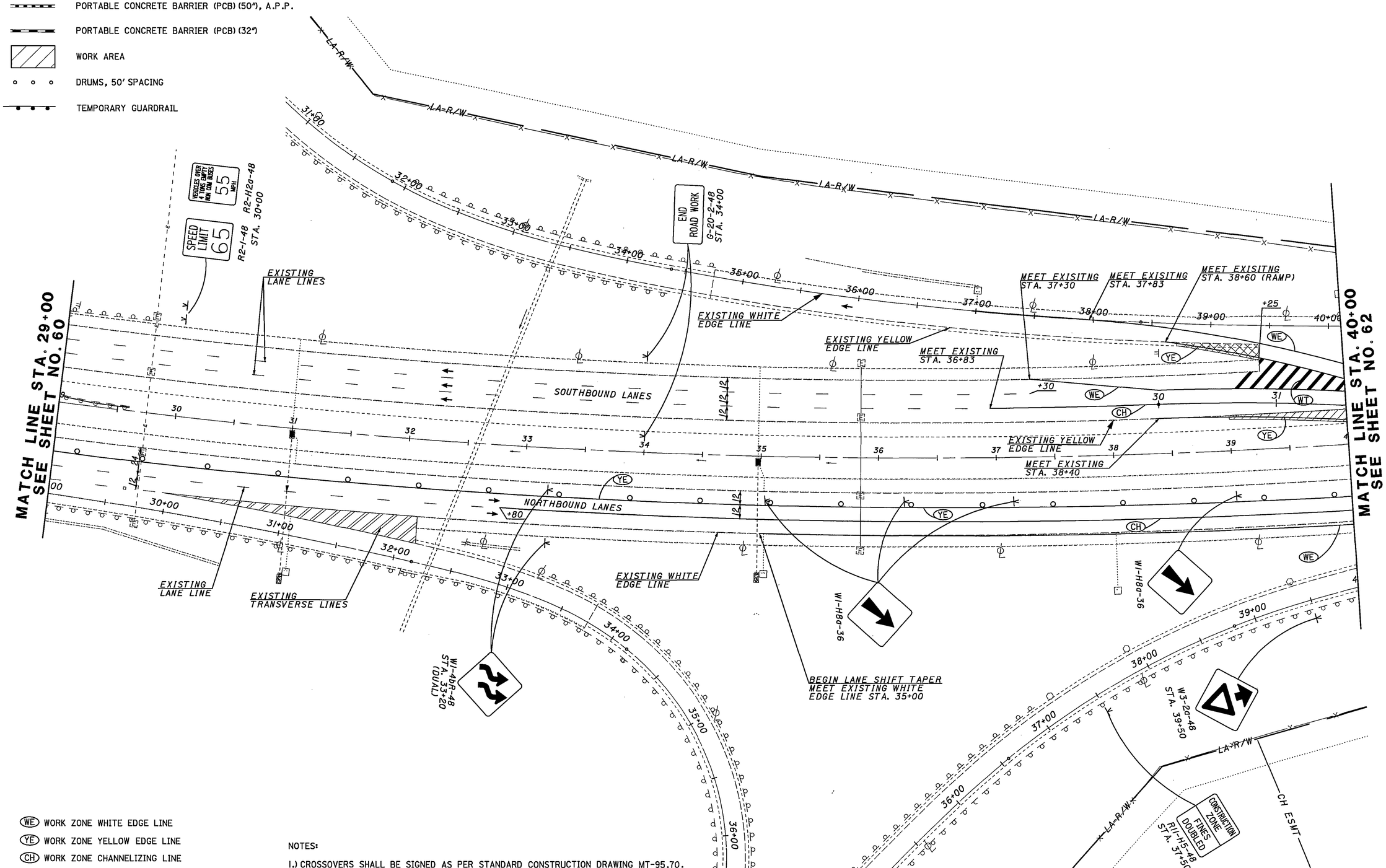
MAINTENANCE OF TRAFFIC (PHASE 3)
STA. 18+00 TO 29+00

SUM-77-1.40

60
381

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



(WE) WORK ZONE WHITE EDGE LINE
(YE) WORK ZONE YELLOW EDGE LINE
(CH) WORK ZONE CHANNELIZING LINE
(LL) WORK ZONE LANE LINE
(WT) WORK ZONE TRANSVERSE LINE, WHITE
(DLW) DOTTED LINE, WHITE

NOTES:

1.) CROSSOVERS SHALL BE SIGNED AS PER STANDARD CONSTRUCTION DRAWING MT-95.70.
2.) LANE CLOSURES ON THE ENDS OF THE PROJECT SHALL BE SIGNED AS PER STANDARD CONSTRUCTION DRAWING MT-95.30
3.) LIGHTING IN THE CROSSOVER SHALL BE PER STANDARD CONSTRUCTION DRAWING MT-100.00.

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HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 3)
STA. 29+00 TO 40+00

SUM-77-1.40

61
381

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL

MATCH LINE STA. 40+00
SEE SHEET NO. 61

EXIT 113
Akron - Canton Airport

EXIT 112
Shuffel Dr
EXIT 1 1/4 MILE

EXISTING OVERHEAD SUPPORT

TYPE B WARNING LIGHTS

W1-6-96
AS PER MT-95.70

EXIT OPEN
E5-2-48 (ORANGE)

LA-R/W
CH ESMT
DRAINAGE EASEMENT

END NORTHBOUND LANE SHIFT TAPER
STA. 40+50

END PCB @
STA. 47+60

REMOVE GUARDRAIL AND TYPE E-98 ANCHOR TO STA. 47+57 BUT RETAIN BRIDGE TERMINAL ASSEMBLY

50" PORTABLE CONCRETE BARRIER, A.P.P.

SIGN CROSSOVER
AS PER MT-95.70

R1-2-60
STA. 44+40

MATCH LINE STA. 51+00
SEE SHEET NO. 63

- (WE) WORK ZONE WHITE EDGE LINE
- (YE) WORK ZONE YELLOW EDGE LINE
- (CH) WORK ZONE CHANNELIZING LINE
- (LL) WORK ZONE LANE LINE
- (WT) WORK ZONE TRANSVERSE LINE, WHITE
- (DLW) DOTTED LINE, WHITE

DATE: 04/01/2004 09:28:43 AM
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HORIZONTAL SCALE IN FEET
0 40 80

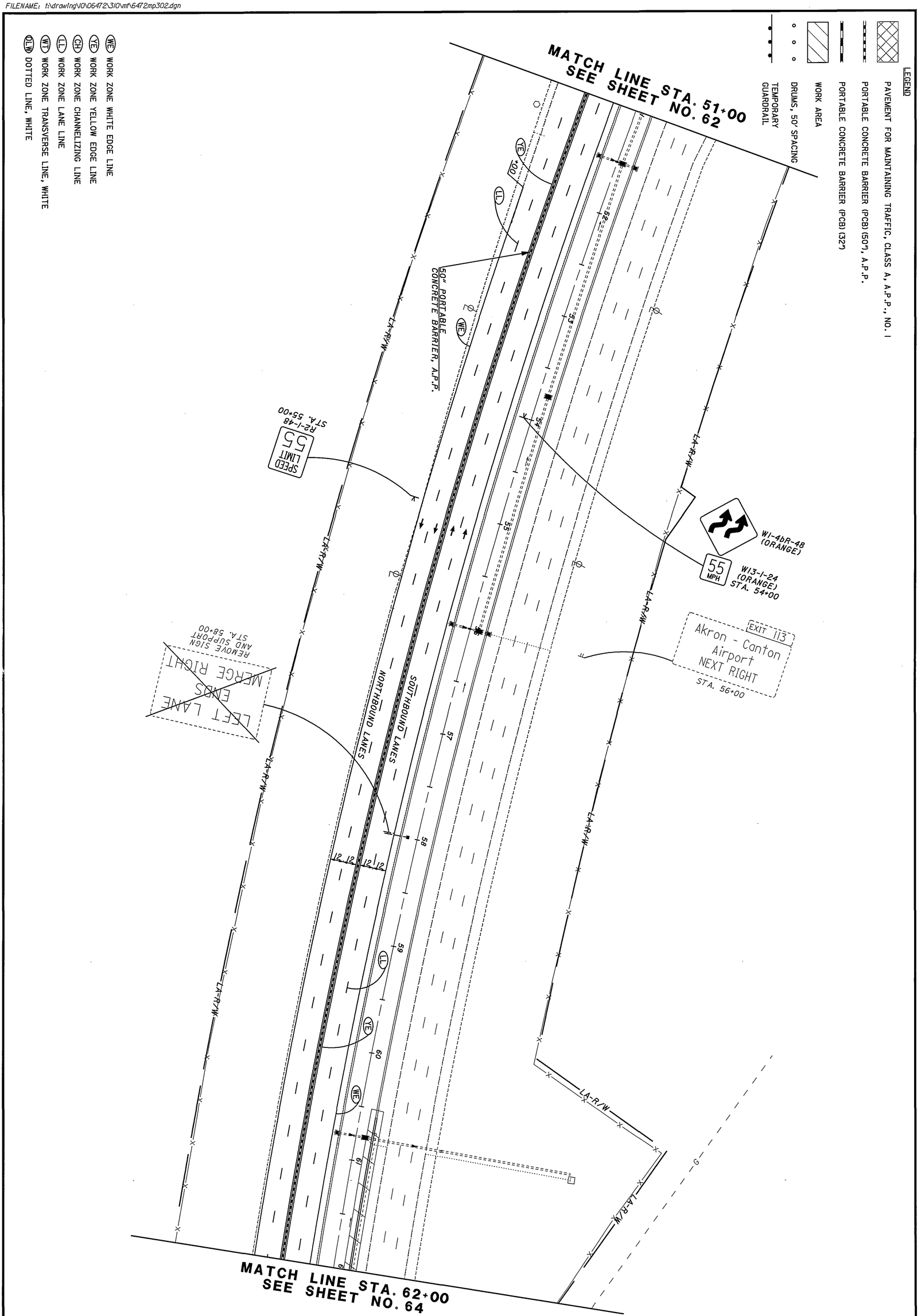
DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 3)
STA. 40+00 TO 51+00

SUM-77-1.40

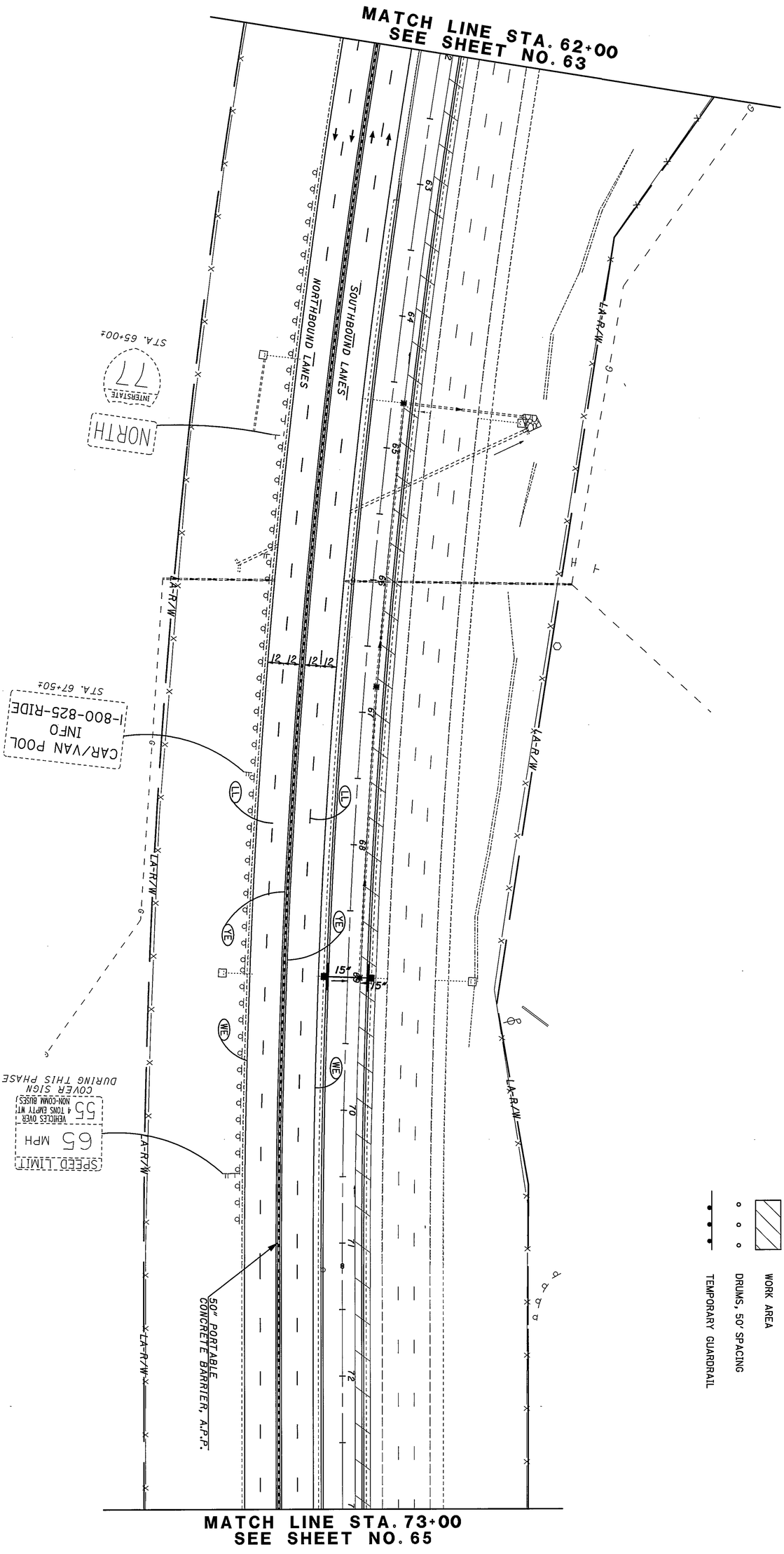
62
381

DATE: 04/01/2004 09:28:46 AM
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63 / 381	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 3) STA. 51+00 TO 62+00	DRAWN SAS 1-6-04 / CHECKED GSC 1-6-04	0 40 80 HORIZONTAL SCALE IN FEET

DATE: 04/01/2004 09:28:48 AM
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WE WORK ZONE WHITE EDGE LINE
YE WORK ZONE YELLOW EDGE LINE
CH WORK ZONE CHANNELIZING LINE
LL WORK ZONE LANE LINE
WT WORK ZONE TRANSVERSE LINE, WHITE
DLW DOTTED LINE, WHITE

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50'), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32')
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL

64 / 381	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 3) STA. 62+00 TO 73+00	DRAWN SAS 1-6-04 / CHECKED GSC 1-6-04

0 40 80
HORIZONTAL SCALE IN FEET

DATE: 06/14/2004 11:31:34 AM
FILENAME: t:\drawing\0\06472\310\mt\6472mp304.dgn

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50'), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32')
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL

(WE) WORK ZONE WHITE EDGE LINE
(YE) WORK ZONE YELLOW EDGE LINE
(CH) WORK ZONE CHANNELIZING LINE
(LL) WORK ZONE LANE LINE
(WT) WORK ZONE TRANSVERSE LINE, WHITE
(DLW) DOTTED LINE, WHITE

MATCH LINE STA. 73+00
SEE SHEET NO. 64

CHANGEABLE MESSAGE SIGN (NO WORK) STA. 74+50±

50" PORTABLE CONCRETE BARRIER, A.P.P.

NORTHBOUND LANES

SOUTHBOUND LANES

WINNING WAY DR

LA-R/W

12 12 12 12

15" 18" 18"

74 75 77 78 79 80 81 82 83

MILE 5 (1) N-41-12 STA. 81+10

MILE 5 (2) N-41-12 STA. 81+10

Akron 8 Cleveland 45 (3)

GREENSBURG ROAD

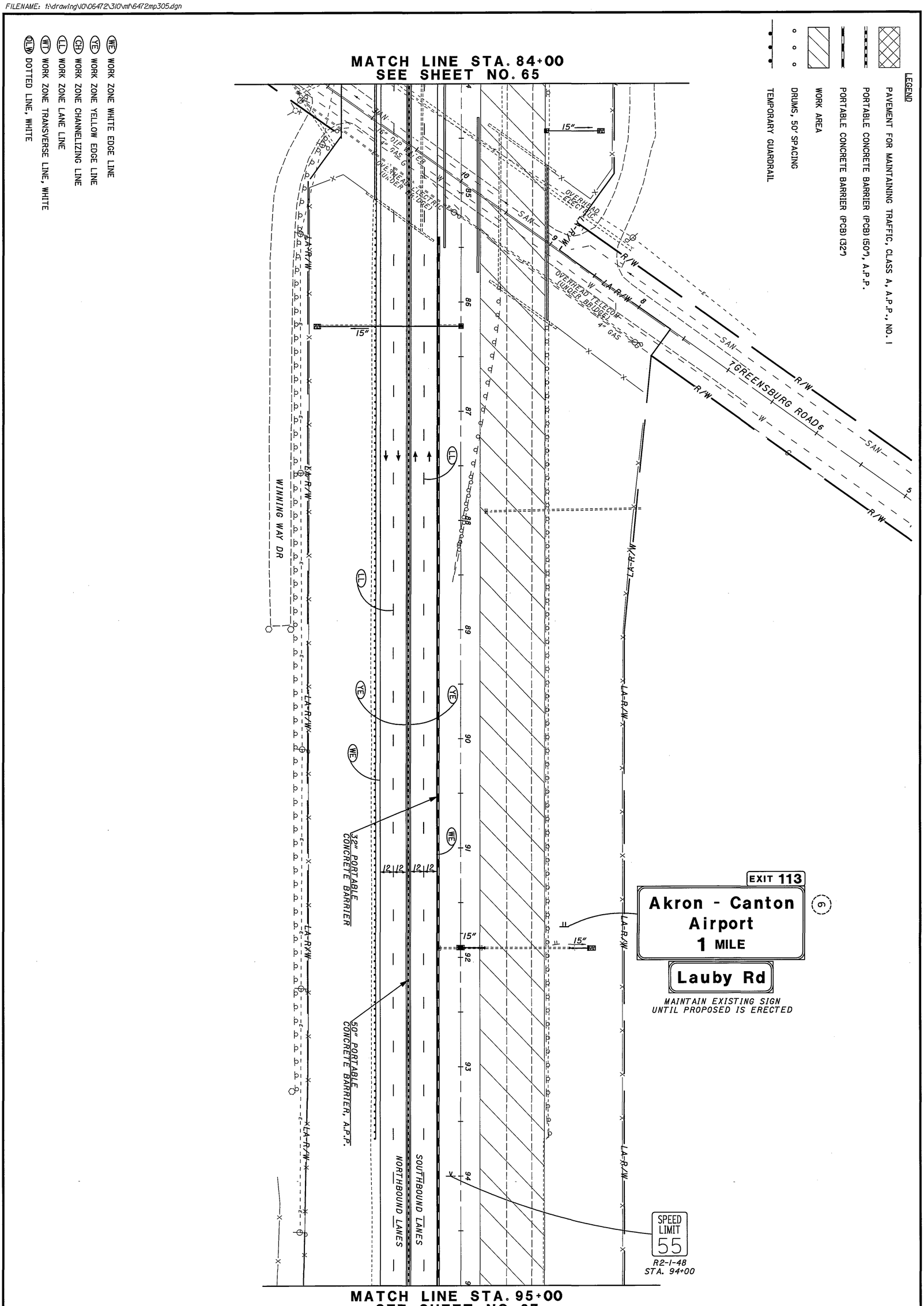
R/W SAN W G 15 13

8" SANITARY FORCE MAIN 12'-6" DEPTH

MATCH LINE STA. 84+00
SEE SHEET NO. 66

65 / 381	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 3) STA. 73+00 TO 84+00	DRAWN SAS 1-6-04	0 40 80 HORIZONTAL SCALE IN FEET	N
			CHECKED GSC 1-6-04		

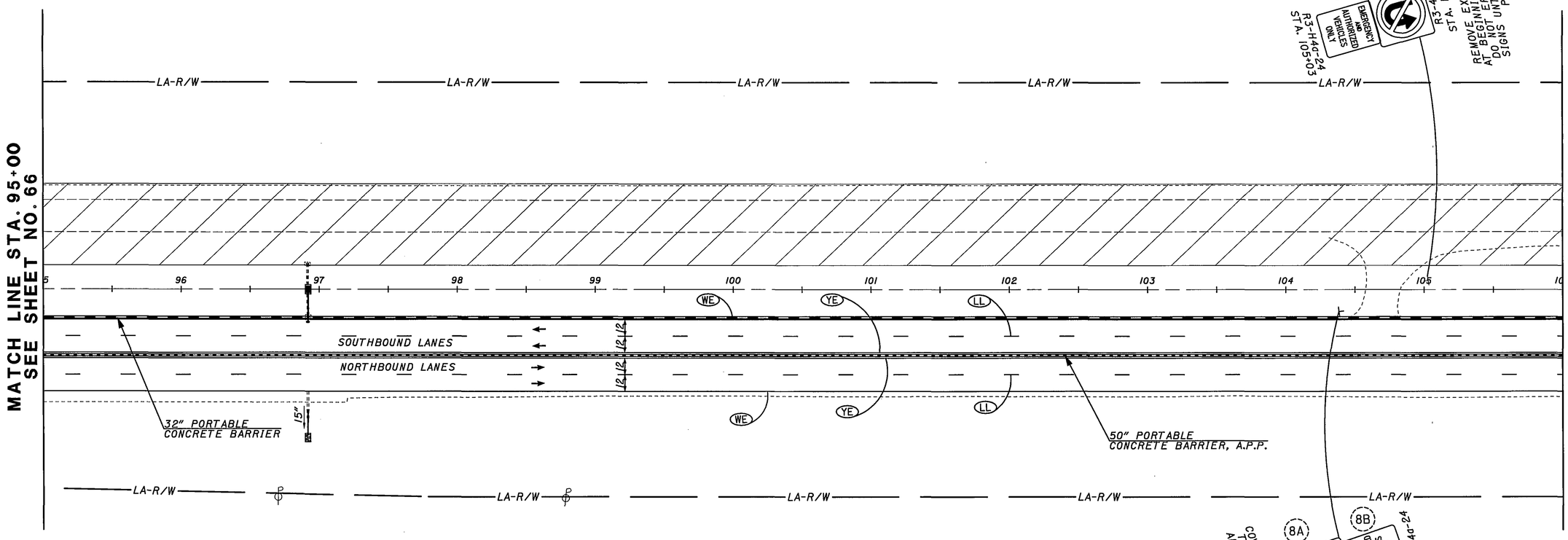
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66 / 381	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 3) STA. 84+00 TO 95+00	DRAWN SAS 1-6-04 / CHECKED GSC 1-6-04	0 40 80 HORIZONTAL SCALE IN FEET

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



- (WE) WORK ZONE WHITE EDGE LINE
- (YE) WORK ZONE YELLOW EDGE LINE
- (CH) WORK ZONE CHANNELIZING LINE
- (LL) WORK ZONE LANE LINE
- (WT) WORK ZONE TRANSVERSE LINE, WHITE
- (DLW) DOTTED LINE, WHITE

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HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED OSC 1-6-04

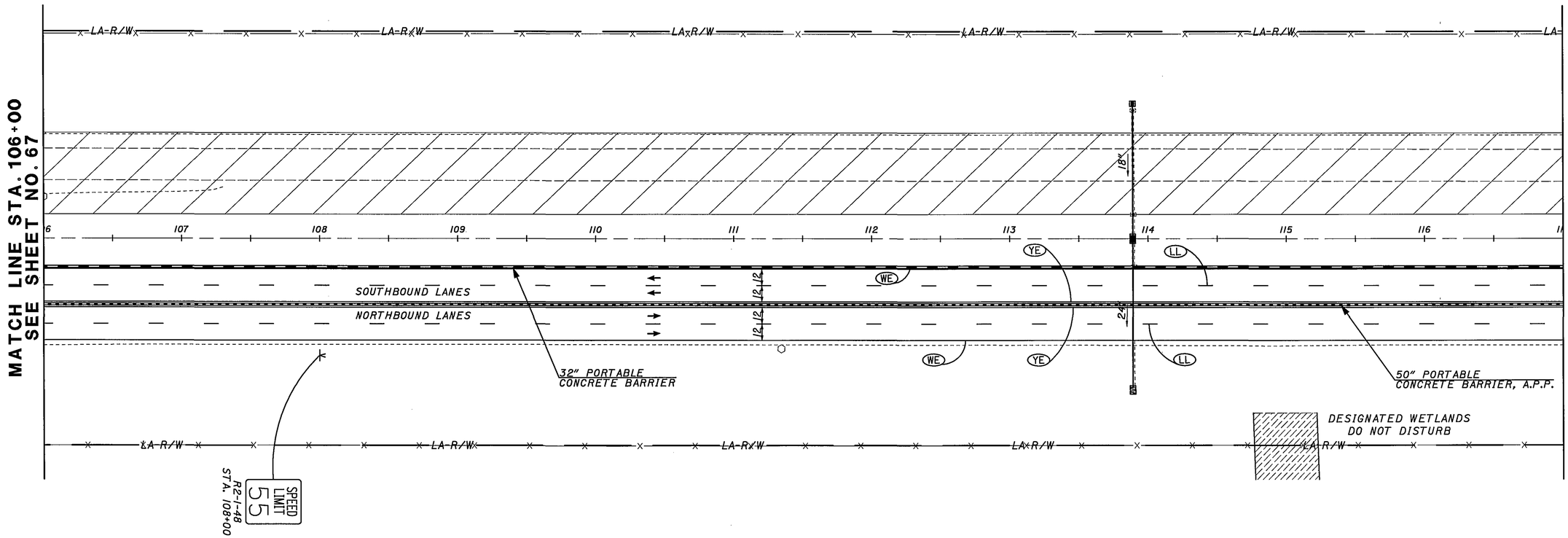
MAINTENANCE OF TRAFFIC (PHASE 3)
STA. 95+00 TO 106+00

SUM-77-1.40

67
381

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



- (WE) WORK ZONE WHITE EDGE LINE
- (YE) WORK ZONE YELLOW EDGE LINE
- (CH) WORK ZONE CHANNELIZING LINE
- (LL) WORK ZONE LANE LINE
- (WT) WORK ZONE TRANSVERSE LINE, WHITE
- (DLW) DOTTED LINE, WHITE

HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 3)
STA. 106+00 TO 117+00

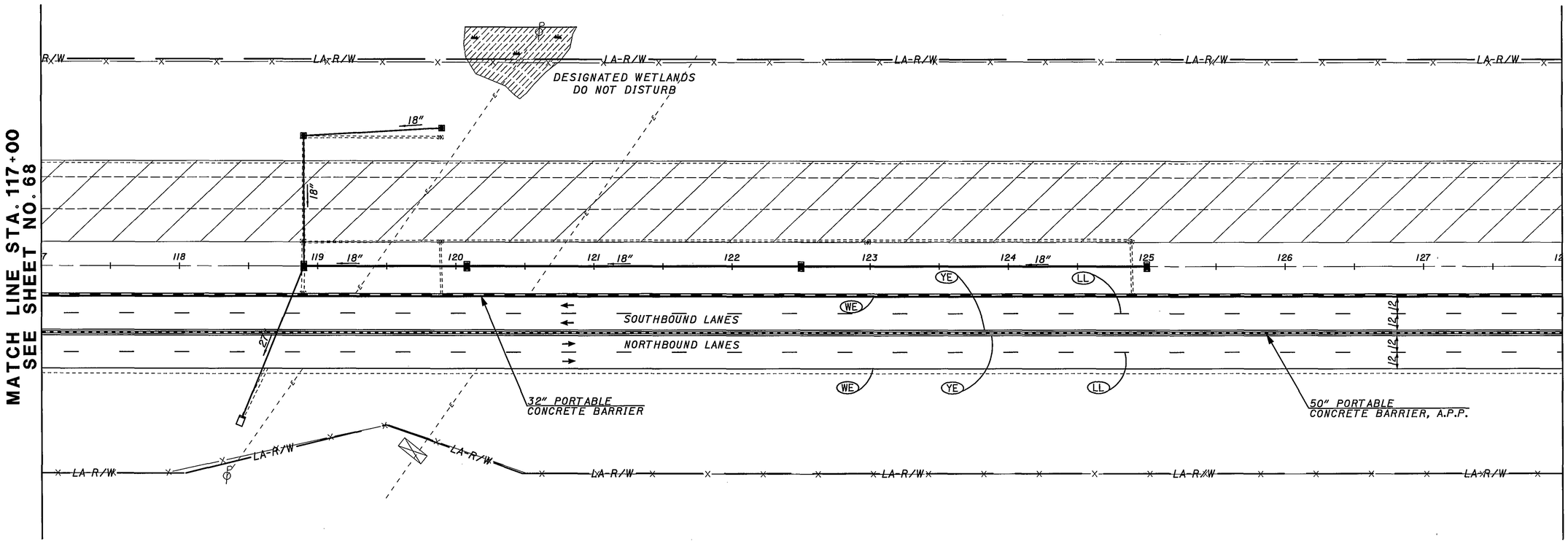
SUM-77-1.40

68
381

DATE: 04/01/2004 10:20:44 AM
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LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



(WE) WORK ZONE WHITE EDGE LINE
(YE) WORK ZONE YELLOW EDGE LINE
(CH) WORK ZONE CHANNELIZING LINE
(LL) WORK ZONE LANE LINE
(WT) WORK ZONE TRANSVERSE LINE, WHITE
(DLW) DOTTED LINE, WHITE

DATE: 04/01/2004 09:28:59 AM
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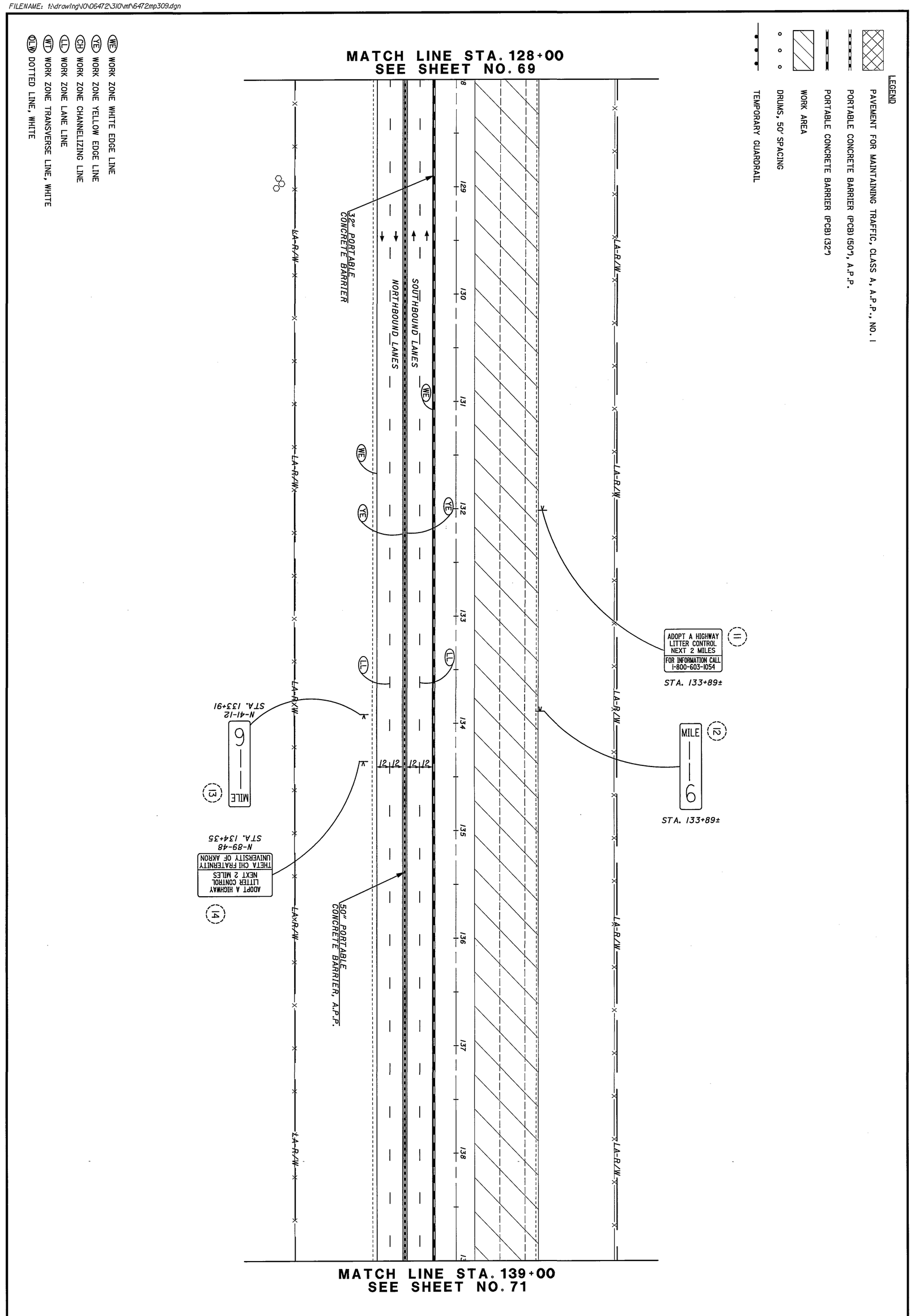
HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED GSS 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 3)
STA. 117+00 TO 128+00

SUM-77-1.40

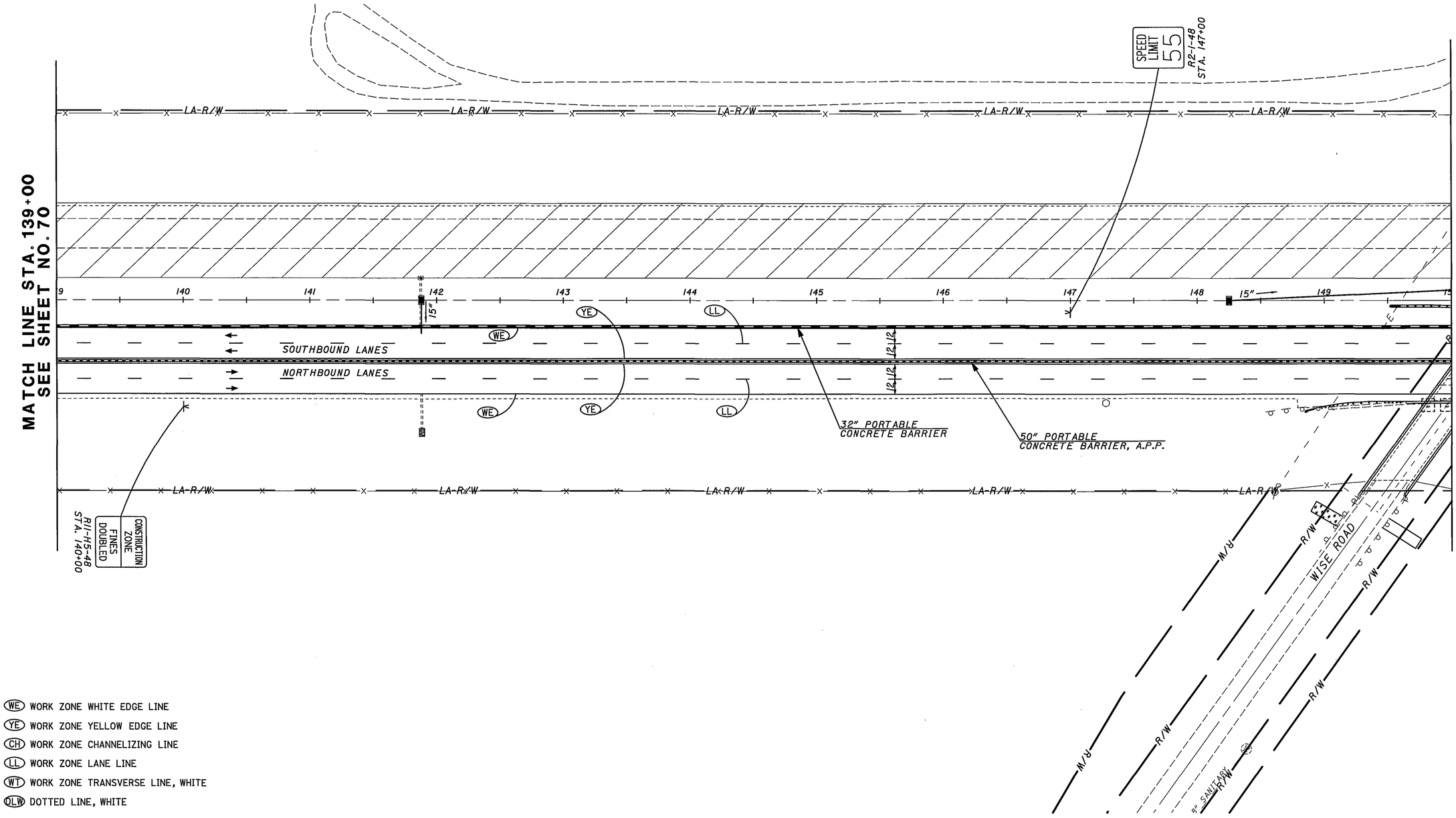
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70 / 381	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 3) STA. 128+00 TO 139+00	DRAWN SAS 1-6-04 CHECKED GSC 1-6-04	0 40 80 HORIZONTAL SCALE IN FEET

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



(WE) WORK ZONE WHITE EDGE LINE
(YE) WORK ZONE YELLOW EDGE LINE
(CH) WORK ZONE CHANNELIZING LINE
(LL) WORK ZONE LANE LINE
(WT) WORK ZONE TRANSVERSE LINE, WHITE
(DLW) DOTTED LINE, WHITE

HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 3)
STA. 139+00 TO 150+00

SUM-77-1.40

71
381

DATE: 04/01/2004 09:29:03 AM
FILENAME: h:\drawings\0\06472\310\mf6472mp310.dgn

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL

MATCH LINE STA. 150+00
SEE SHEET NO. 71

MATCH LINE STA. 161+00
SEE SHEET NO. 73

R/W

WISE ROAD

LA-R/W

SOUTHBOUND LANES

NORTHBOUND LANES

OVERHEAD TELECOM

15" 15" 15" 18" 18" 18"

152 153 154 155 156 157 158 159 160

WE YE LL

12 12 12 12

32" PORTABLE CONCRETE BARRIER

50" PORTABLE CONCRETE BARRIER, A.P.P.

SPEED LIMIT 55
R2-1-48
STA. 160+50

(WE) WORK ZONE WHITE EDGE LINE
(YE) WORK ZONE YELLOW EDGE LINE
(CH) WORK ZONE CHANNELIZING LINE
(LL) WORK ZONE LANE LINE
(WT) WORK ZONE TRANSVERSE LINE, WHITE
(DLW) DOTTED LINE, WHITE

DATE: 04/01/2004 09:29:05 AM
FILENAME: i:\drawing\00\54\12\30\mf54712mp31l.dgn

HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 3)
STA. 150+00 TO 161+00

SUM-77-1.40

72
381

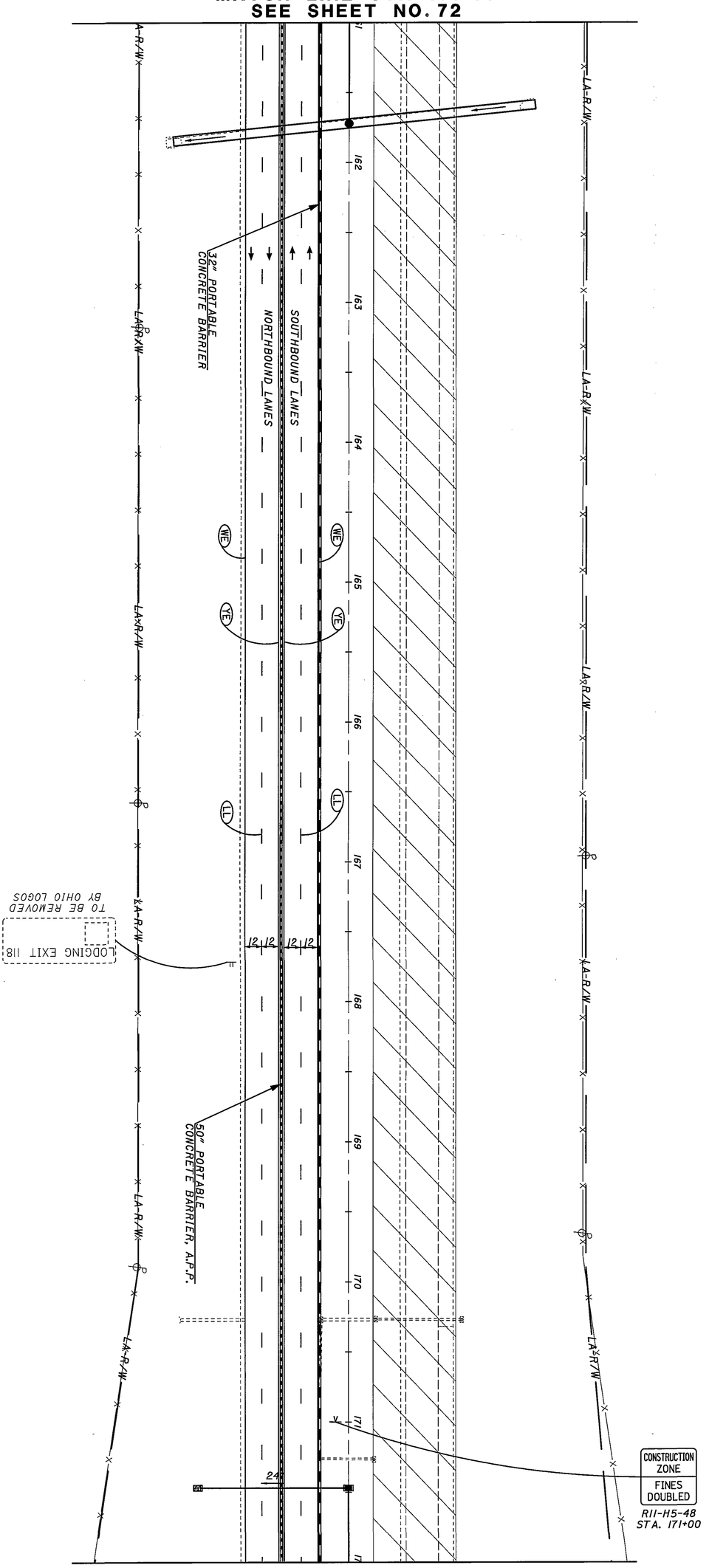
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LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50'), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32')
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL

(WE) WORK ZONE WHITE EDGE LINE
(YE) WORK ZONE YELLOW EDGE LINE
(CH) WORK ZONE CHANNELIZING LINE
(LL) WORK ZONE LANE LINE
(MT) WORK ZONE TRANSVERSE LINE, WHITE
(DLW) DOTTED LINE, WHITE

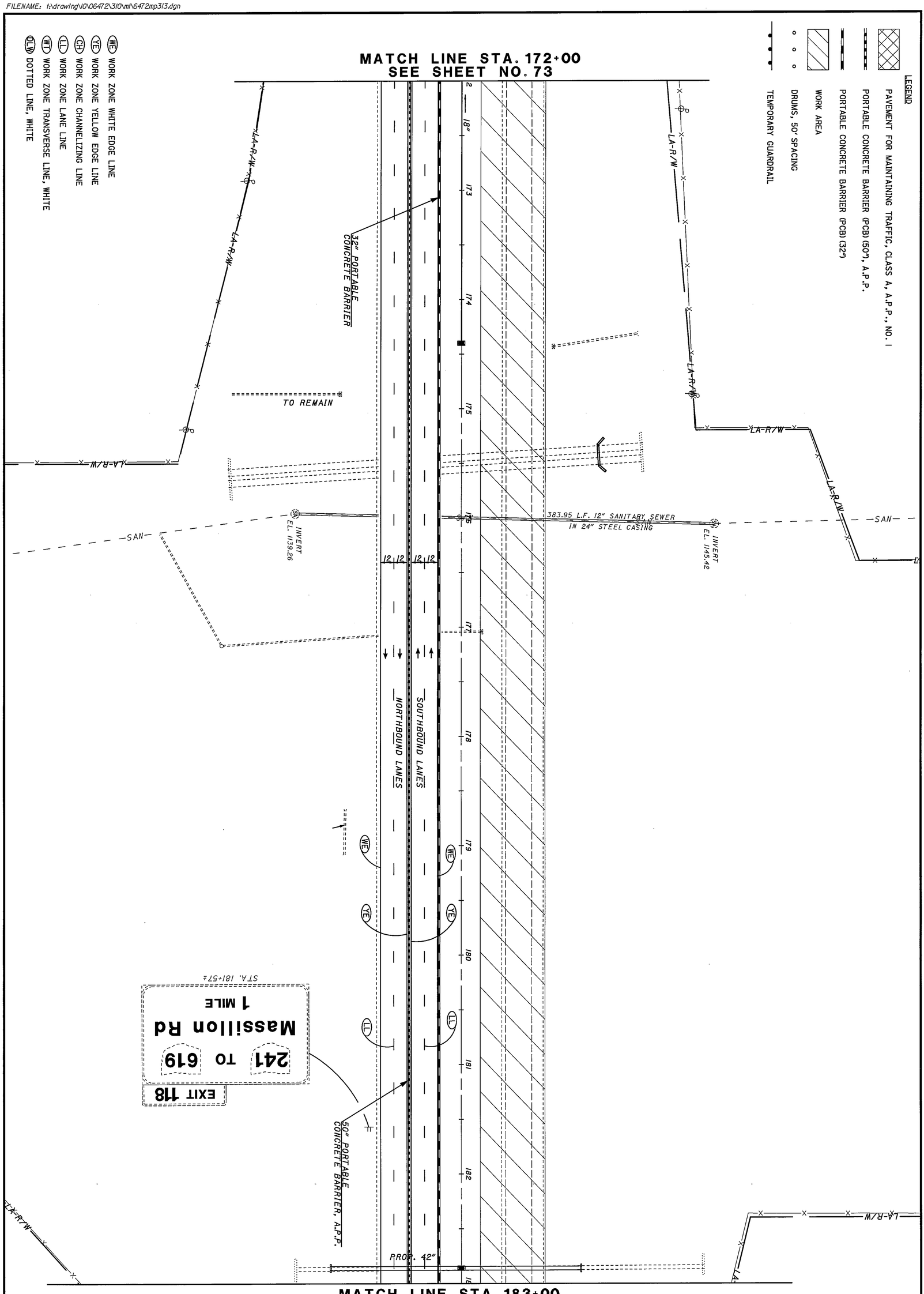
MATCH LINE STA. 161+00
SEE SHEET NO. 72



MATCH LINE STA. 172+00
SEE SHEET NO. 74

73 / 381	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 3) STA. 161+00 TO 172+00	DRAWN SAS 1-6-04 / CHECKED GSC 1-6-04	0 40 80 HORIZONTAL SCALE IN FEET

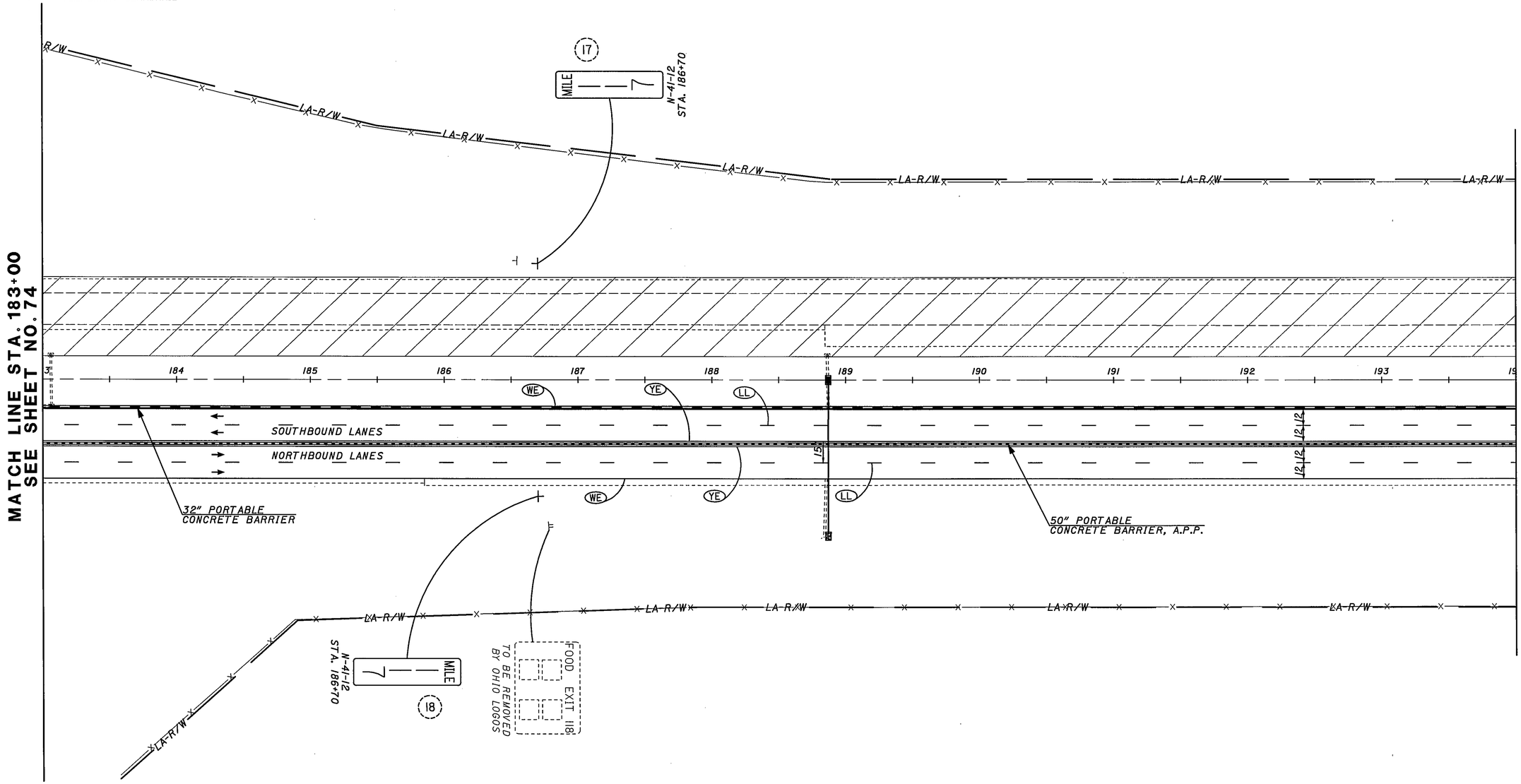
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74 / 381	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 3) STA. 172+00 TO 183+00	DRAWN SAS 1-6-04 / CHECKED GSC 1-6-04	0 40 80 HORIZONTAL SCALE IN FEET

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



- (WE) WORK ZONE WHITE EDGE LINE
- (YE) WORK ZONE YELLOW EDGE LINE
- (CH) WORK ZONE CHANNELIZING LINE
- (LL) WORK ZONE LANE LINE
- (WT) WORK ZONE TRANSVERSE LINE, WHITE
- (DLW) DOTTED LINE, WHITE

DATE: 06/14/2004 11:31:41 AM
FILENAME: f:\drawing\VO\064F23\10\mft64f23mp314.dgn

HORIZONTAL SCALE IN FEET
0 40 80

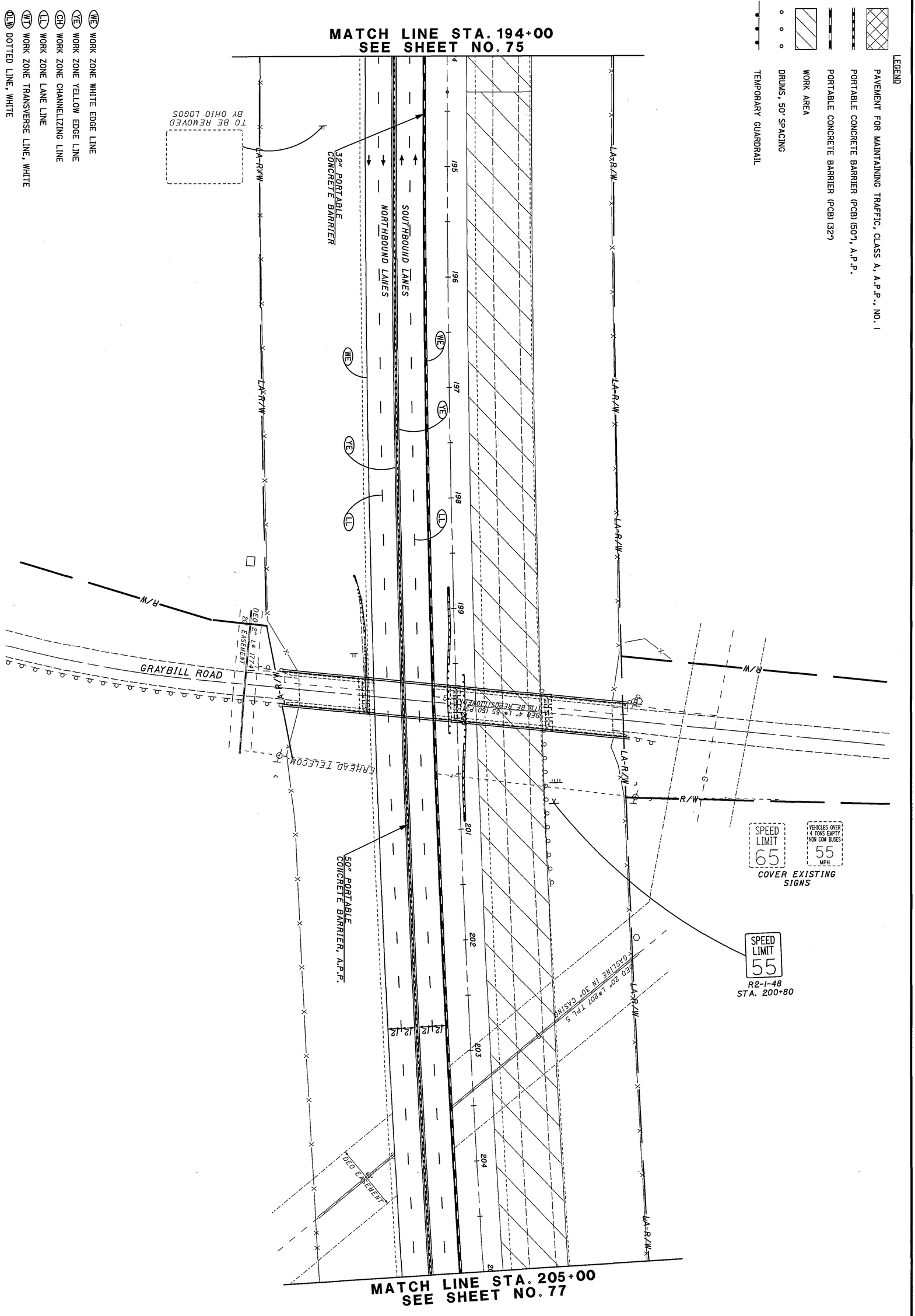
DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 3)
STA. 183+00 TO 194+00

SUM-77-1.40

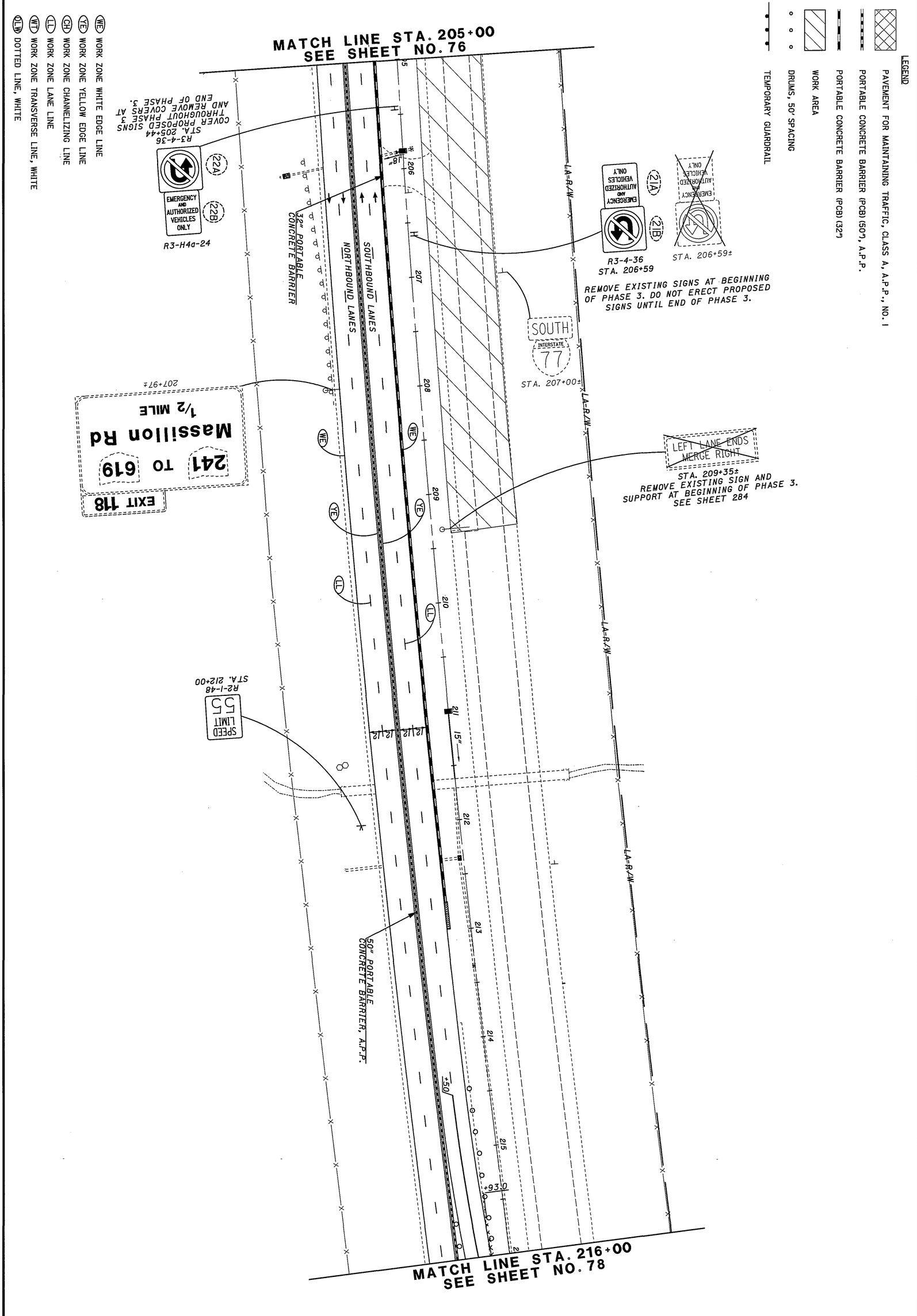
75
381

DATE: 04/01/2004 09:29:14 AM
FILENAME: t:\drawing\10\06472\310\mt\6472mp315.dgn



76 / 381	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 3) STA. 194+00 TO 205+00	DRAWN SAS 1-6-04 / CHECKED GSC 1-6-04	0 40 80 HORIZONTAL SCALE IN FEET

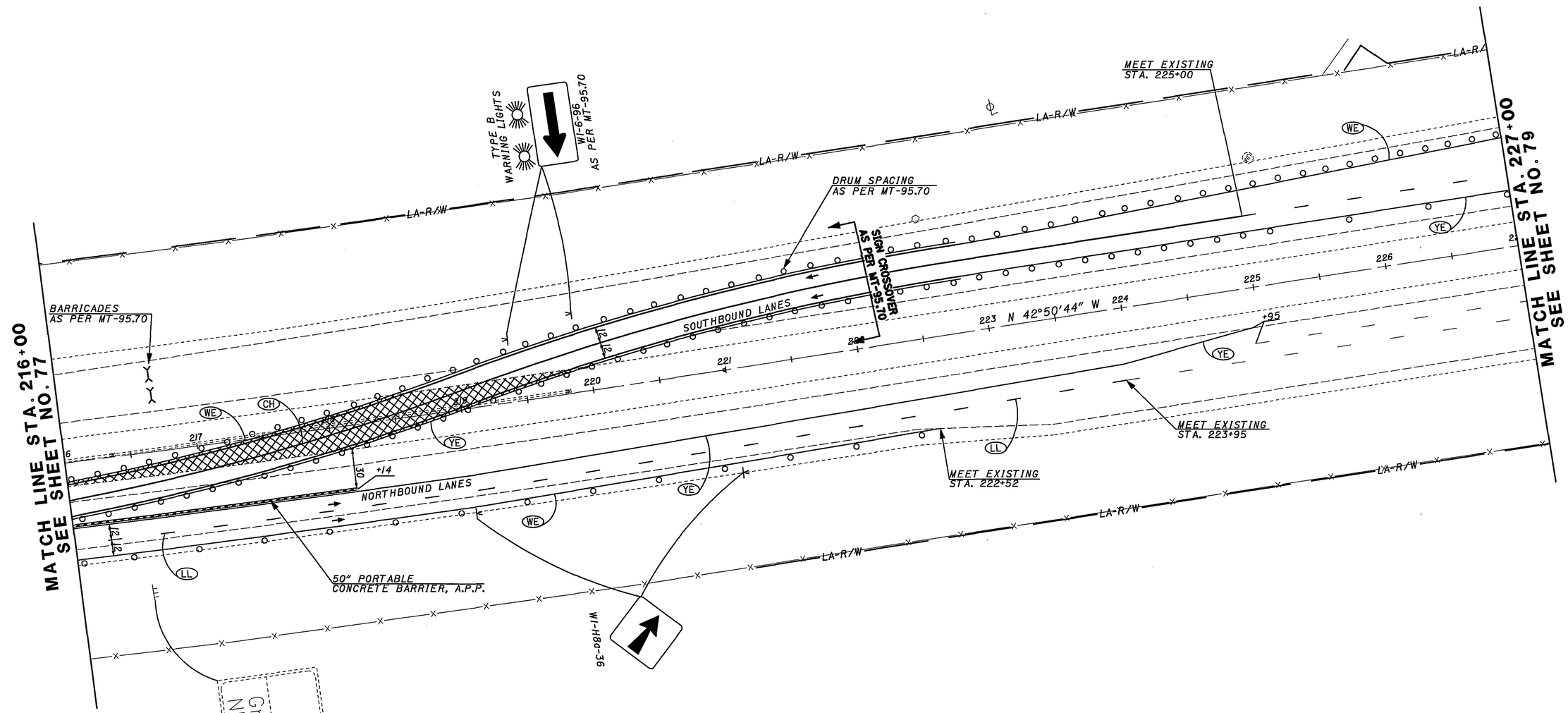
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381 / 77	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 3) STA. 205+00 TO 216+00	DRAWN SAS 1-6-04 / CHECKED GSC 1-6-04	0 40 80 HORIZONTAL SCALE IN FEET

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1
- PORTABLE CONCRETE BARRIER (PCB) (50"), A.P.P.
- PORTABLE CONCRETE BARRIER (PCB) (32")
- WORK AREA
- DRUMS, 50' SPACING
- TEMPORARY GUARDRAIL



- (WE) WORK ZONE WHITE EDGE LINE
- (YE) WORK ZONE YELLOW EDGE LINE
- (CH) WORK ZONE CHANNELIZING LINE
- (LL) WORK ZONE LANE LINE
- (WT) WORK ZONE TRANSVERSE LINE, WHITE
- (DLW) DOTTED LINE, WHITE

HORIZONTAL SCALE IN FEET
0 40 80

DRAWN SAS 1-6-04
CHECKED GSC 1-6-04

MAINTENANCE OF TRAFFIC (PHASE 3)
STA. 216+00 TO 227+00

SUM-77-1.40

78
381

DATE: 04/01/2004 09:29:18 AM
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DATE: 04/01/2004 09:29:20 AM
FILENAME: t:\drawing\00\06472\310\mt\6472mp318.dgn

LEGEND

PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, A.P.P., NO. 1

PORTABLE CONCRETE BARRIER (PCB) (50'), A.P.P.

PORTABLE CONCRETE BARRIER (PCB) (32')

WORK AREA

DRUMS, 50' SPACING

TEMPORARY GUARDRAIL

(WE) WORK ZONE WHITE EDGE LINE

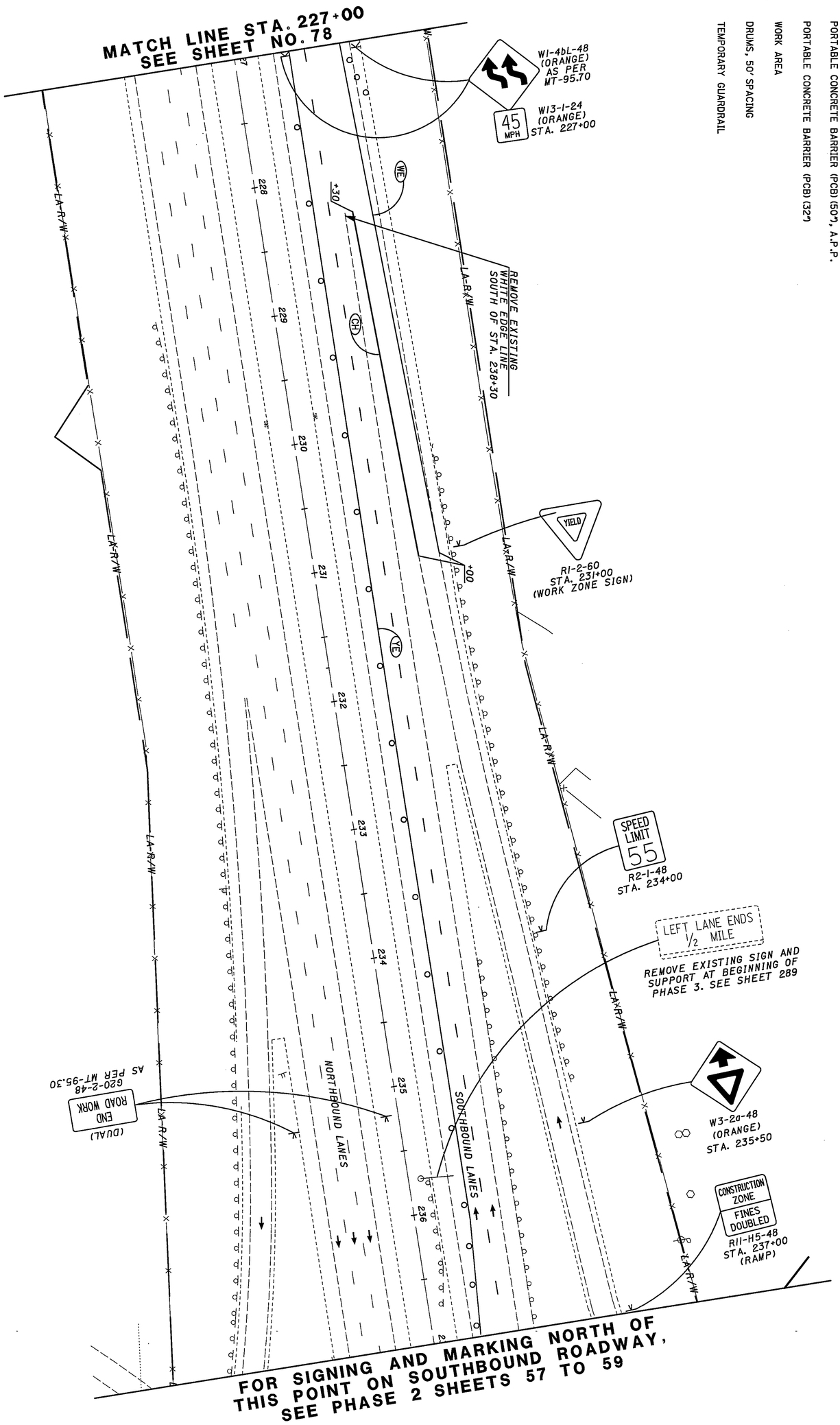
(YE) WORK ZONE YELLOW EDGE LINE

(CH) WORK ZONE CHANNELIZING LINE

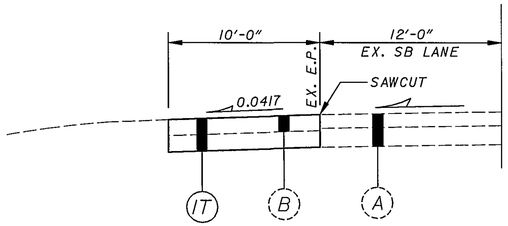
(LL) WORK ZONE LANE LINE

(WT) WORK ZONE TRANSVERSE LINE, WHITE

(DLW) DOTTED LINE, WHITE

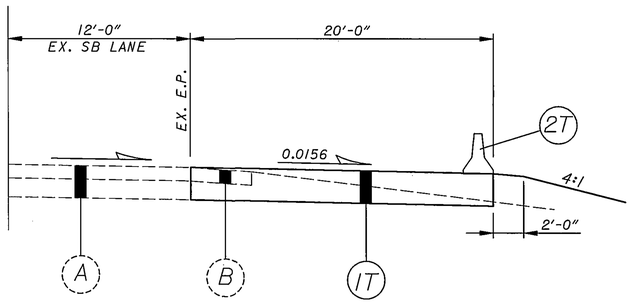


79 / 381	SUM-77-1.40	MAINTENANCE OF TRAFFIC (PHASE 3) STA. 227+00 TO 237+00	DRAWN SAS 1-6-04 / CHECKED GSC 1-6-04	0 40 80 HORIZONTAL SCALE IN FEET



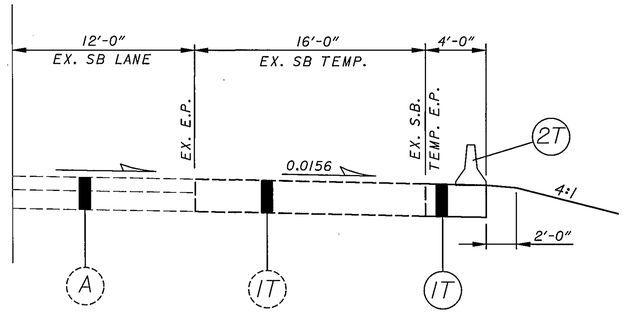
PHASE IA OUTSIDE SHOULDER REPLACEMENT

M.L. STA. 82+80 TO 84+68
M.L. STA. 86+13 TO 170+32



PHASE IB INSIDE SHOULDER REPLACEMENT

M.L. STA. 76+15 TO STA. 84+24
M.L. STA. 85+92 TO STA. 188+85



PHASE IB INSIDE SHOULDER REPLACEMENT

M.L. STA. 188+85 TO 209+33

LEGEND

- (1T) ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN No. 1
- (2T) ITEM 622 - PORTABLE CONCRETE BARRIER, 32" OR 50" (SEE PLAN FOR DETAILS)
- (3T) ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC, AS PER PLAN
- (4T) ITEM 254 - PAVEMENT PLANING (3' WIDE BY 1½" MAX. DEPTH)
- (A) 6" ASPHALT OVER 9" REINFORCED CONCRETE
- (B) 6" ASPHALT SHOULDER W/ 3" BIT. AGG. AND 5" POROUS BASE
- (C) EXISTING ITEM 880 - 13¼" ASPHALT CONCRETE WITH WARRANTY (7 YEARS)
- (D) EXISTING FULL DEPTH ASPHALT PAVEMENT FROM SUM-77-3.97 PROJECT
- (1T) EXISTING PAVEMENT FOR MAINTAINING TRAFFIC CLASS A (FROM PREVIOUS PROJECTS)

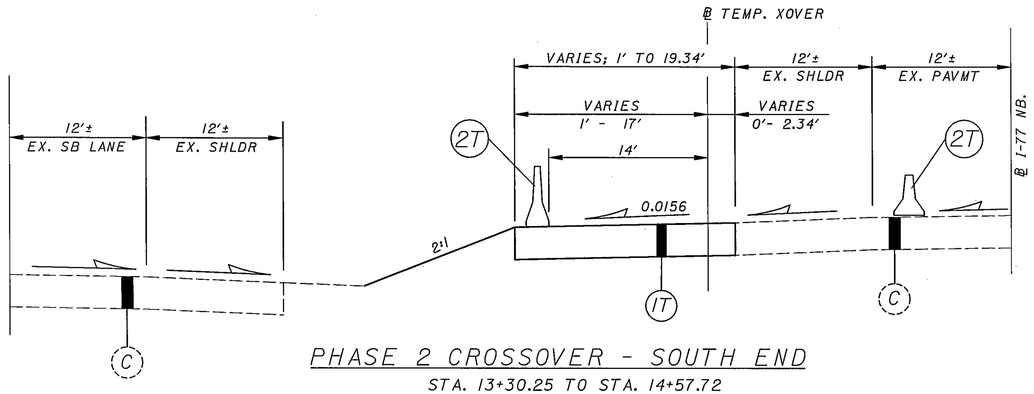
NOTES:

(3T) QUANTITY OF THIS ITEM TO BE PROVIDED AT PHASE 2 CROSSOVER, SOUTH END AND PHASE 3 CROSSOVER, SOUTH END TO SMOOTH SURFACES ACROSS NORTHBOUND TO SOUTHBOUND LANES.

CALCULATED S.P.C. CHECKED W.B.H.

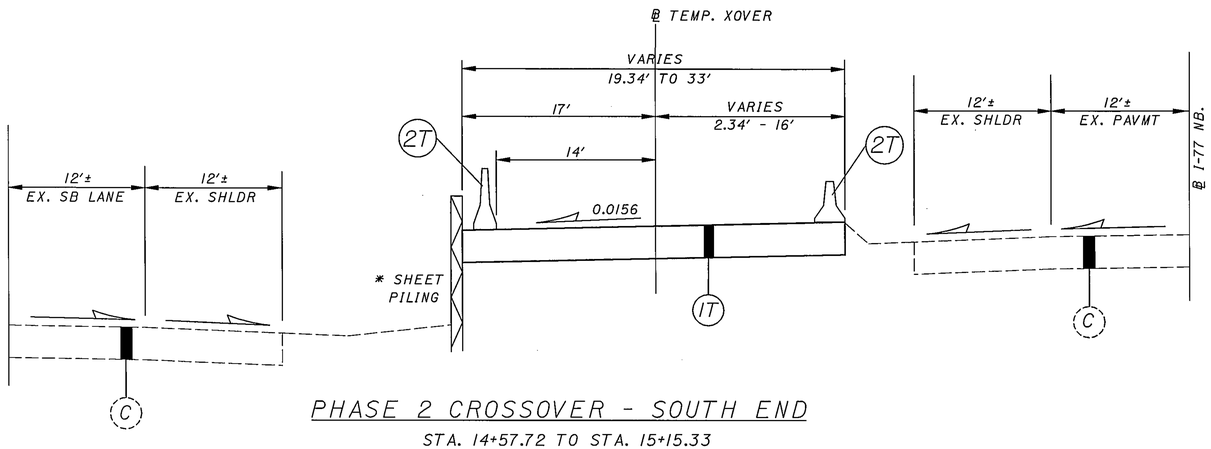
PHASE 1A & 1B CROSSOVER TYPICAL SECTIONS

SUM-77-1.40



PHASE 2 CROSSOVER - SOUTH END

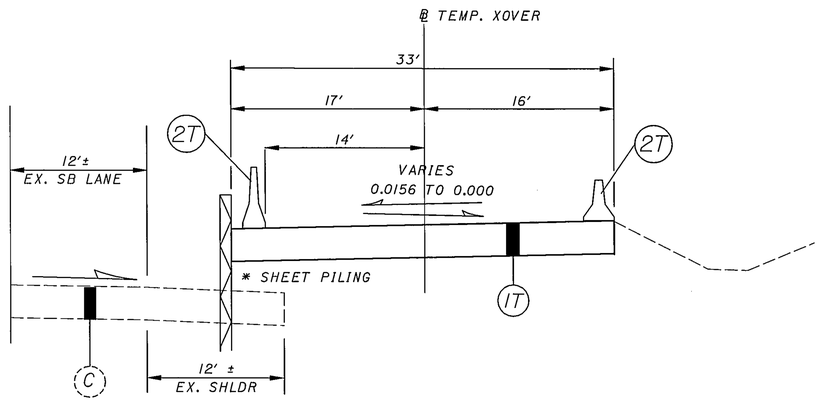
STA. 13+30.25 TO STA. 14+57.72



PHASE 2 CROSSOVER - SOUTH END

STA. 14+57.72 TO STA. 15+15.33

* STA. 14+57.72 TO STA. 17+25.00

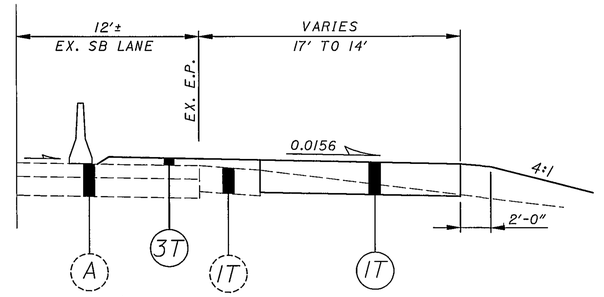


PHASE 2 CROSSOVER - SOUTH END

STA. 15+15.33 TO STA. 17+25.00

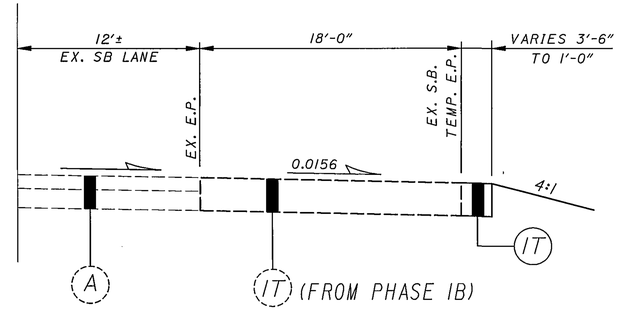
* STA. 14+57.72 TO STA. 17+25.00

(SEE SHEET 84 FOR DETAILS)



PHASE 2 CROSS OVER SOUTH END

STA. 17+25.00 TO STA. 18+15.00



PHASE 2 CROSS OVER SOUTH END

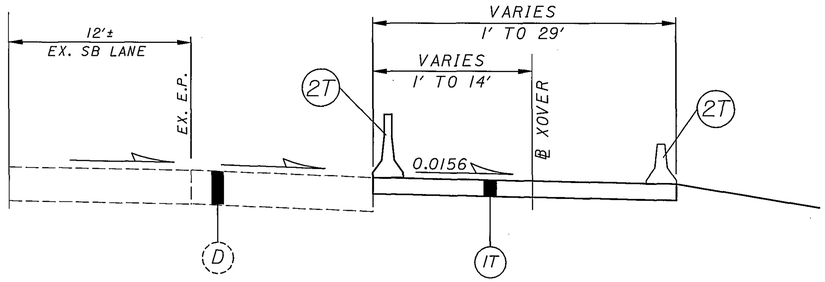
STA. 18+15.00 TO STA. 19+13.25

FOR LEGEND, SEE SHEET NO. 80

CALCULATED S.P.C. CHECKED W.B.H.

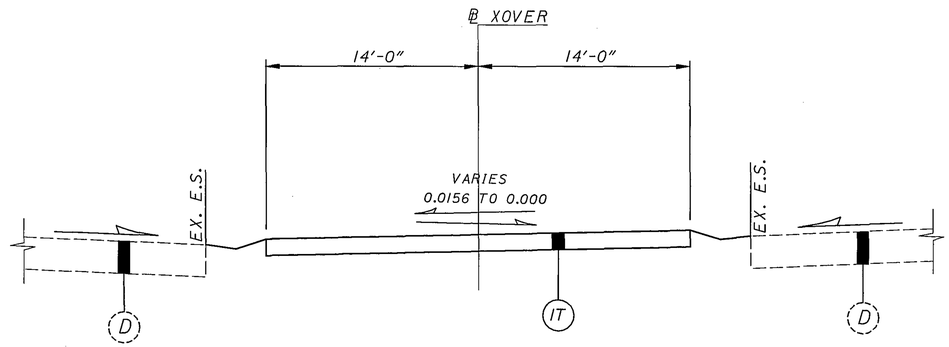
PHASE 2 SOUTH CROSSOVER TYPICAL SECTIONS

SUM-77-1.40



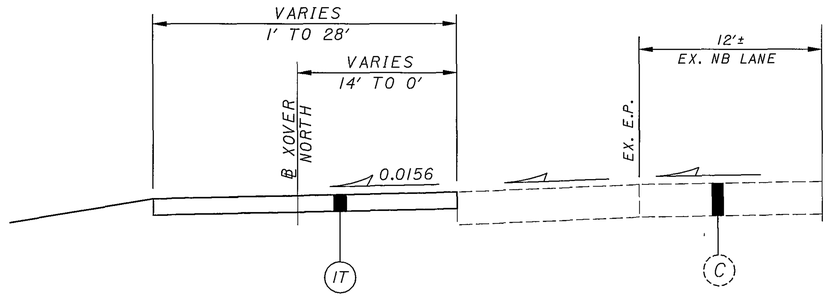
PHASE 2 CROSSOVER - NORTH END

STA. 21+31.50 TO STA. 23+35.40



PHASE 2 CROSSOVER - NORTH END

STA. 23+35.40 TO STA. 23+77.80



PHASE 2 CROSSOVER - NORTH END

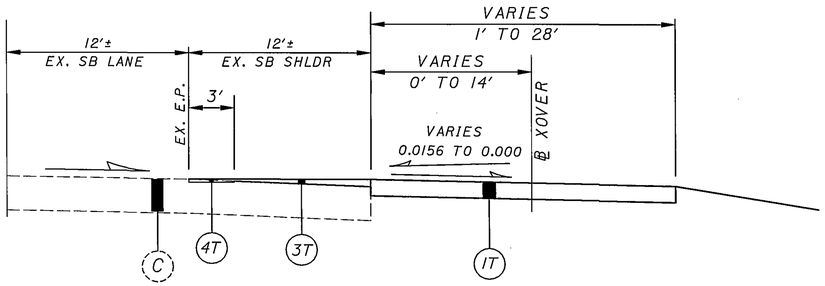
STA. 23+77.80 TO STA. 25+31.71

FOR LEGEND, SEE SHEET NO. 80

CALCULATED S.P.C.
CHECKED W.B.H.

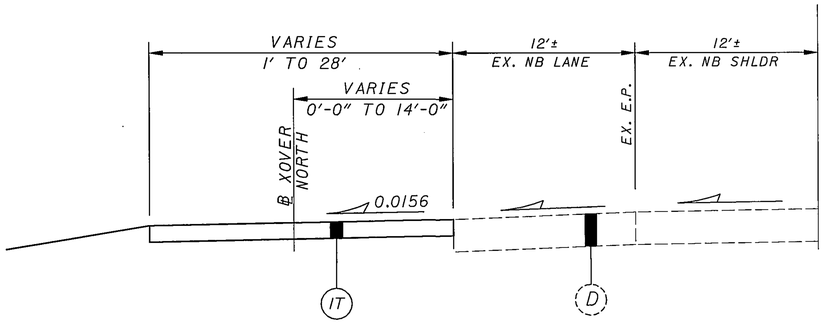
PHASE 2 NORTH CROSSOVER TYPICAL SECTIONS

SUM-77-1.40



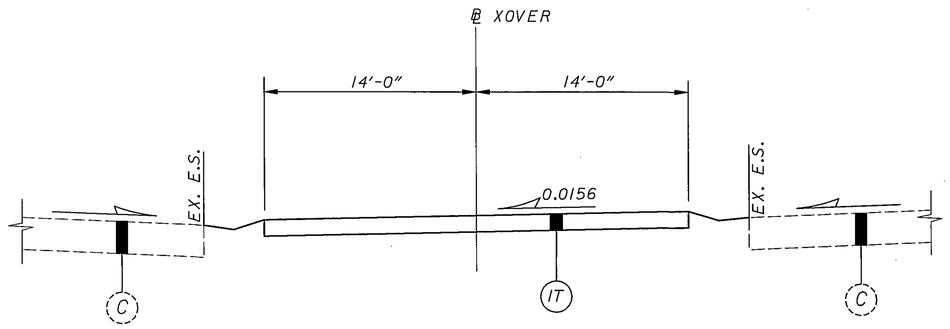
PHASE 3 CROSSOVER - SOUTH END

STA. 30+60.00 TO STA. 33+51.00



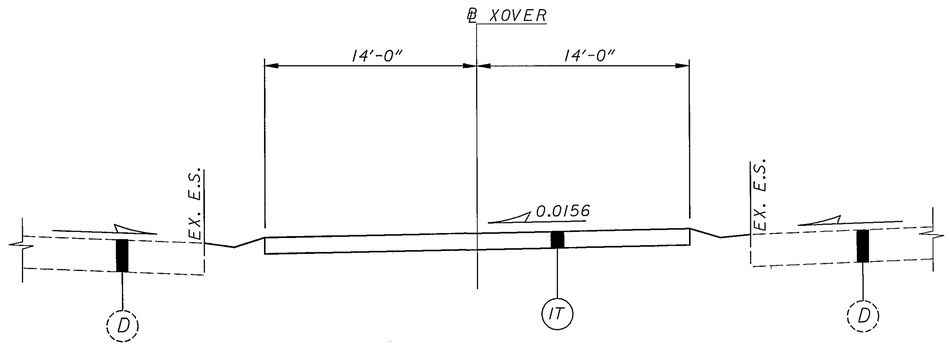
PHASE 3 CROSSOVER - NORTH END

STA. 40+93.0 TO STA. 43+58.21



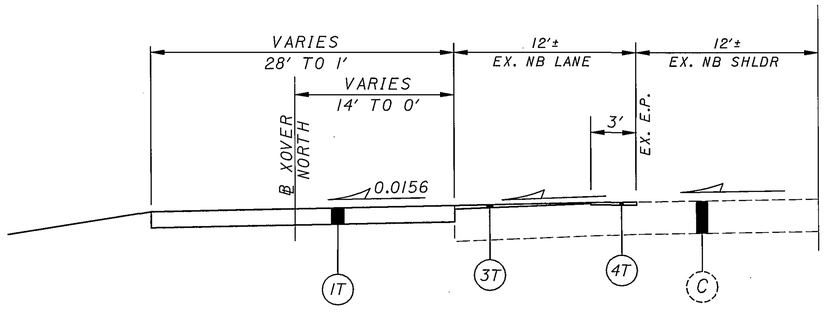
PHASE 3 CROSSOVER - SOUTH END

STA. 32+96.00 TO STA. 33+96.00



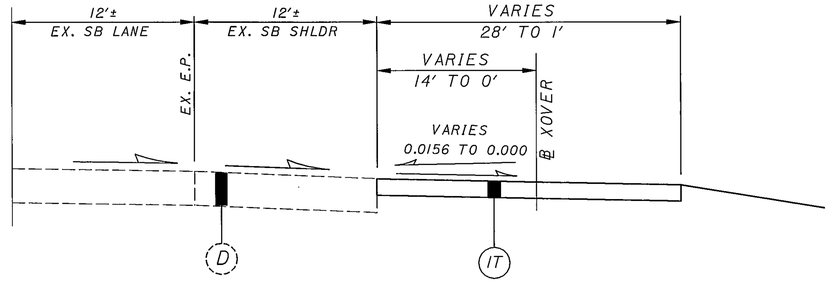
PHASE 3 CROSSOVER - NORTH END

STA. 43+58.21 TO STA. 44+05.95



PHASE 3 CROSSOVER - SOUTH END

STA. 33+96.00 TO STA. 37+00.00



PHASE 3 CROSSOVER - NORTH END

STA. 44+05.95 TO STA. 45+51.52

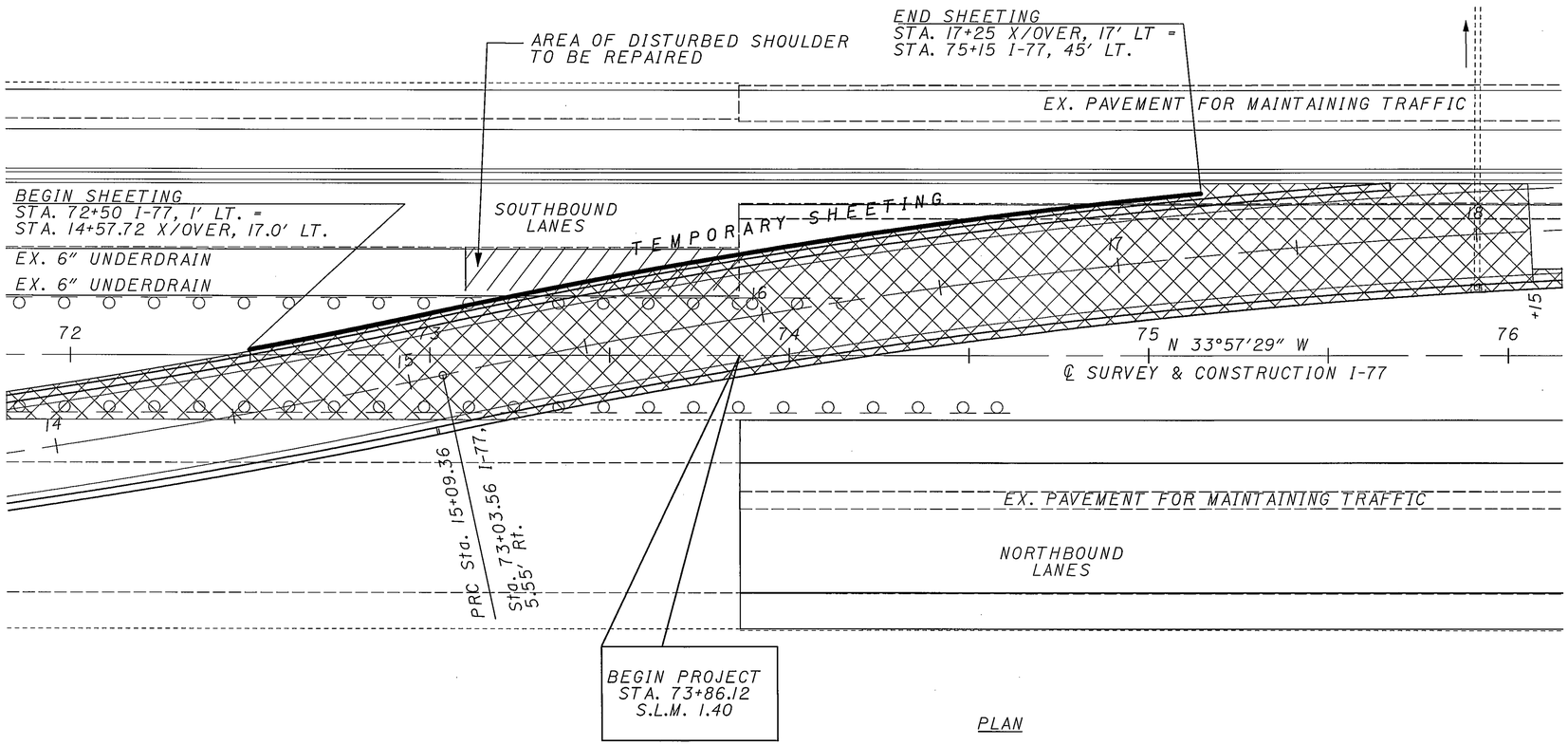
FOR LEGEND, SEE SHEET NO. 80

CALCULATED S.P.C.
CHECKED W.B.H.

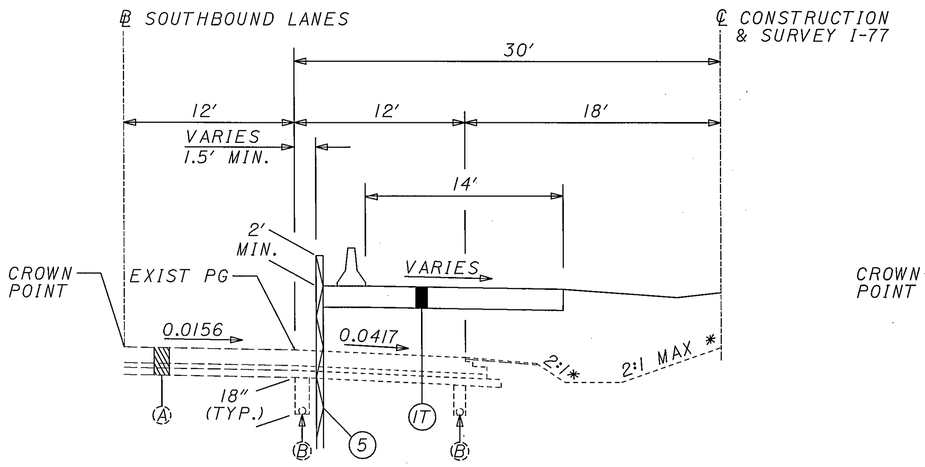
PHASE 3 CROSSOVER TYPICAL SECTIONS

SUM-77-1.40

83
381

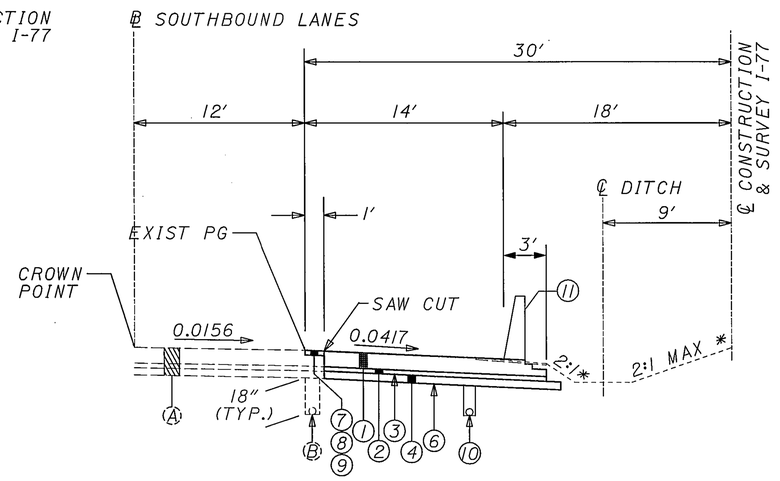


PLAN



DURING CROSSOVER CONDITIONS

STA. 73+10.00 TO STA. 73+86.12



AFTER CROSSOVER REMOVAL

STA. 73+10.00 TO STA. 73+86.12

SEQUENCE OF WORK

1. INSTALL SHEET PILING AT LIMITS SHOWN ON PLAN. AN AREA OF THE EXISTING SHOULDER AND UNDERDRAIN WILL BE DAMAGED AS SHOWN IN THE PLAN.
2. CONSTRUCT CROSSOVER AS SHOWN ON PLAN.
3. REMOVE CROSSOVER AT APPROPRIATE TIME.
4. REMOVE SHEETING.
5. SAW CUT EXISTING SHOULDER AS SHOWN ON DETAIL BELOW. REMOVE FULL DEPTH PAVEMENT AND DAMAGED PORTION OF 6" SHALLOW PIPE UNDERDRAIN.
6. REPLACE DAMAGED SECTION OF UNDERDRAIN. AND REPAIR FULL DEPTH PAVEMENT AS SHOWN.

FOR TEMPORARY SHEETING REQUIREMENTS, SEE MAINTENANCE OF TRAFFIC GENERAL NOTES, SHEET 27A.

LEGEND

(1) ITEM 880 - 12¾" ASPHALT CONCRETE WITH WARRANTY(7 YEARS), AS PER PLAN
(2) ITEM 302 - 4" ASPHALT CONCRETE BASE, PG64-22, AS PER PLAN
(3) ITEM 408 - PRIME COAT
(4) ITEM 304 - 6" AGGREGATE BASE
(5) ITEM 503 - COFFERDAMS, CRIBS, AND SHEETING, AS PER PLAN
(6) ITEM 204 - SUBGRADE COMPACTION
(7) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=1½")
(8) ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE B(446)
(9) ITEM 407 - TACK COAT
(10) ITEM 605 - 6" SHALLOW PIPE UNDERDRAINS, WITH FABRIC WRAP, AS PER PLAN
(11) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D
(IT) ITEM 615 - PAVEMENT FOR MAINTENANCE OF TRAFFIC, CLASS A, AS PER PLAN
(A) EXISTING 13¼" ASPHALT CONCRETE WITH WARRENTY(7 YEARS), AS PER PLAN
(B) EXISTING 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP

CALCULATED W.D.N. | CHECKED W.B.H.

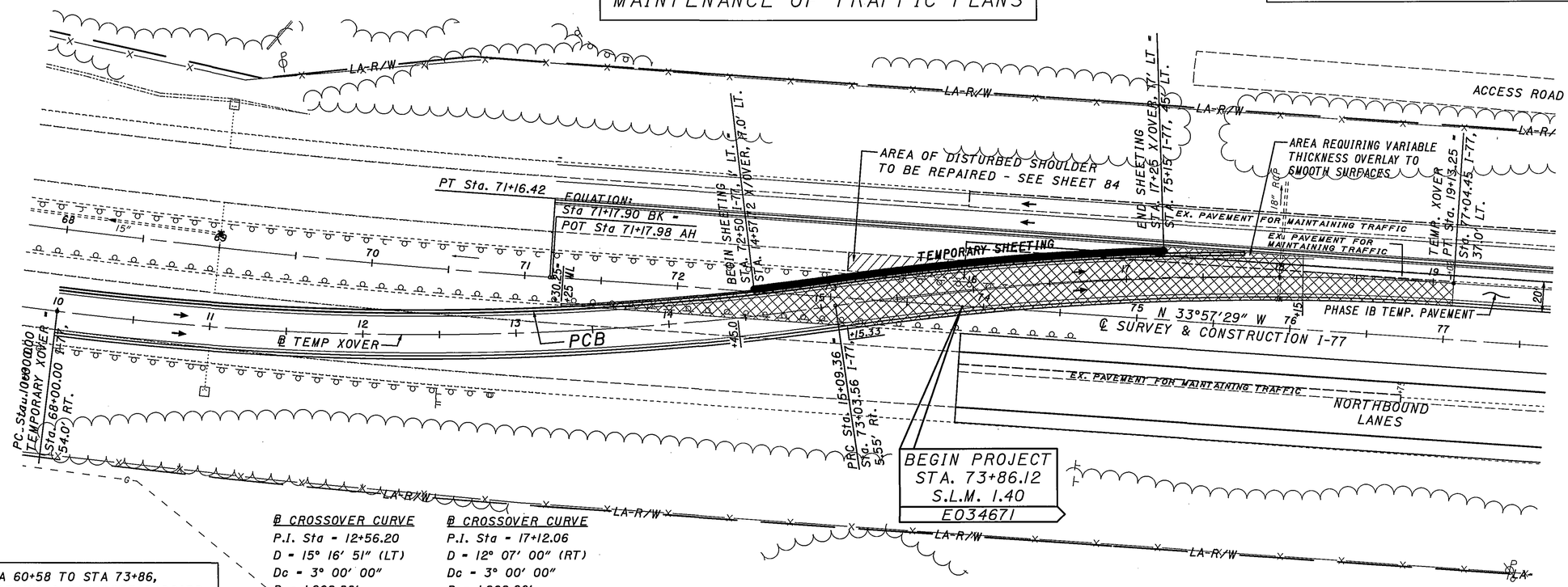
CROSSOVER DETAILS & SHOULDER REPAIR

SUM-77-1.40

℄ I-77 CURVE
P.I. Sta = 50+91.77
D = 42° 33′ 54″ (LT)
Dc = 1° 00′ 00″
R = 5,729.58′
T = 2,231.85′
L = 4,256.50′
E = 419.34′
e MAX. = 0.033 ′/′

USE THIS DRAWING WITH MAINTENANCE OF TRAFFIC PLANS

CONTRACTOR TO MAINTAIN EXISTING DRAINAGE AS PER ITEM 615- ROADS FOR MAINTAINING TRAFFIC SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.



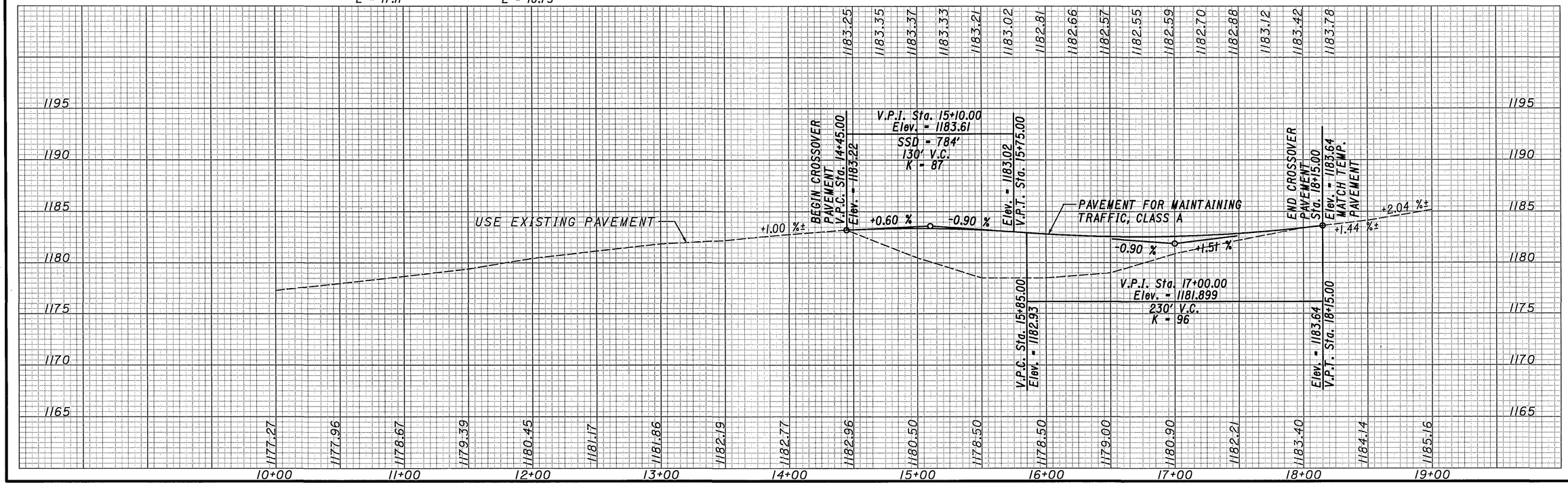
FROM STA 60+58 TO STA 73+86, PAVEMENT WIDENING & CONCRETE BARRIER TO BE PERFORMED BETWEEN PHASES 2 & 3 OR AFTER PHASE 3

℄ CROSSOVER CURVE
P.I. Sta = 12+56.20
D = 15° 16′ 51″ (LT)
Dc = 3° 00′ 00″
R = 1,909.86′
T = 256.20′
L = 509.36′
E = 17.11′

℄ CROSSOVER CURVE
P.I. Sta = 17+12.06
D = 12° 07′ 00″ (RT)
Dc = 3° 00′ 00″
R = 1,909.86′
T = 202.70′
L = 403.89′
E = 10.73′

DESIGN SPEED = 50 MPH

ITEM 615-PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN, No.1



HORIZONTAL SCALE IN FEET
0 20 40 80
CALCULATED L.M.B.
CHECKED W.B.H.

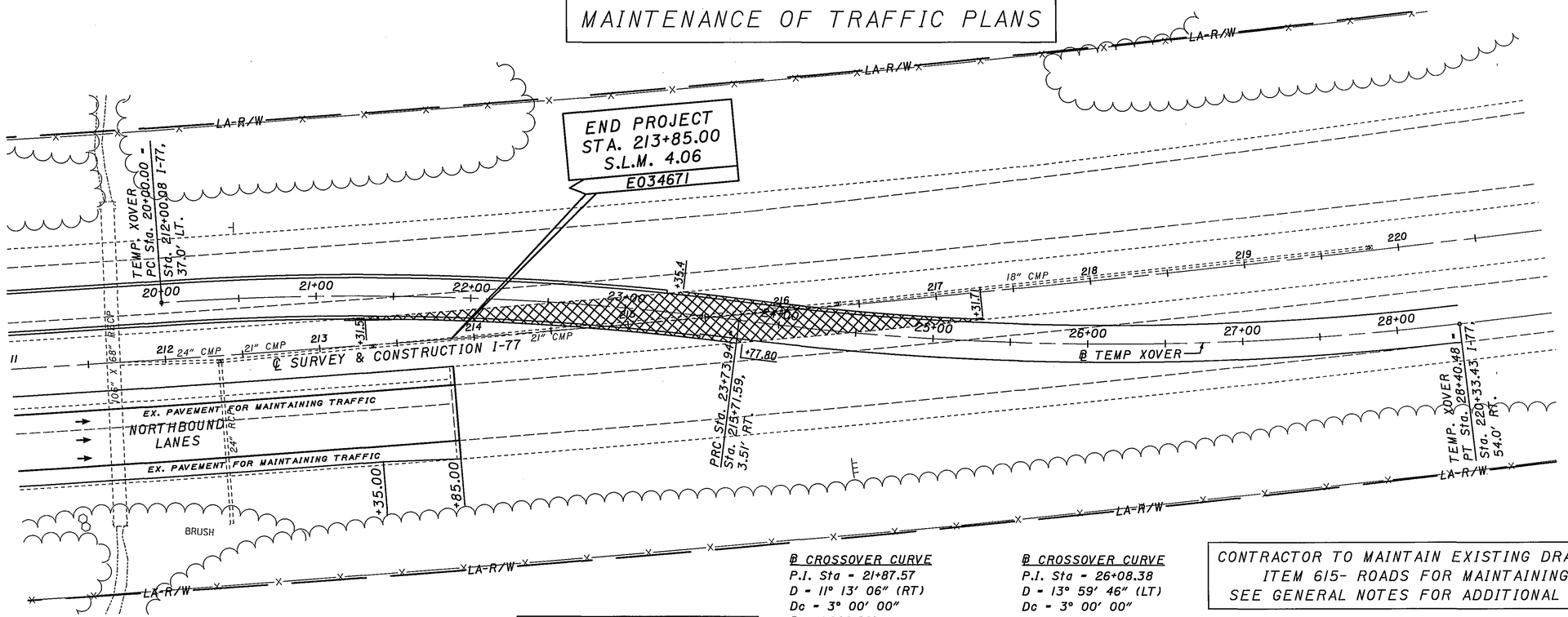
PLAN AND PROFILE FILE - PHASE 2 CROSSOVER SOUTH END

SUM-77-1.40

85
381

℄ I-77 CURVE
P.I. Sta = 207+68.41
D = 8° 53′ 15″ (LT)
Dc = 0° 20′ 00″
R = 17,188.75′
T = 1,335.79′
L = 2,666.22′
E = 51.83′
e MAX = NONE (NC)

USE THIS DRAWING WITH MAINTENANCE OF TRAFFIC PLANS



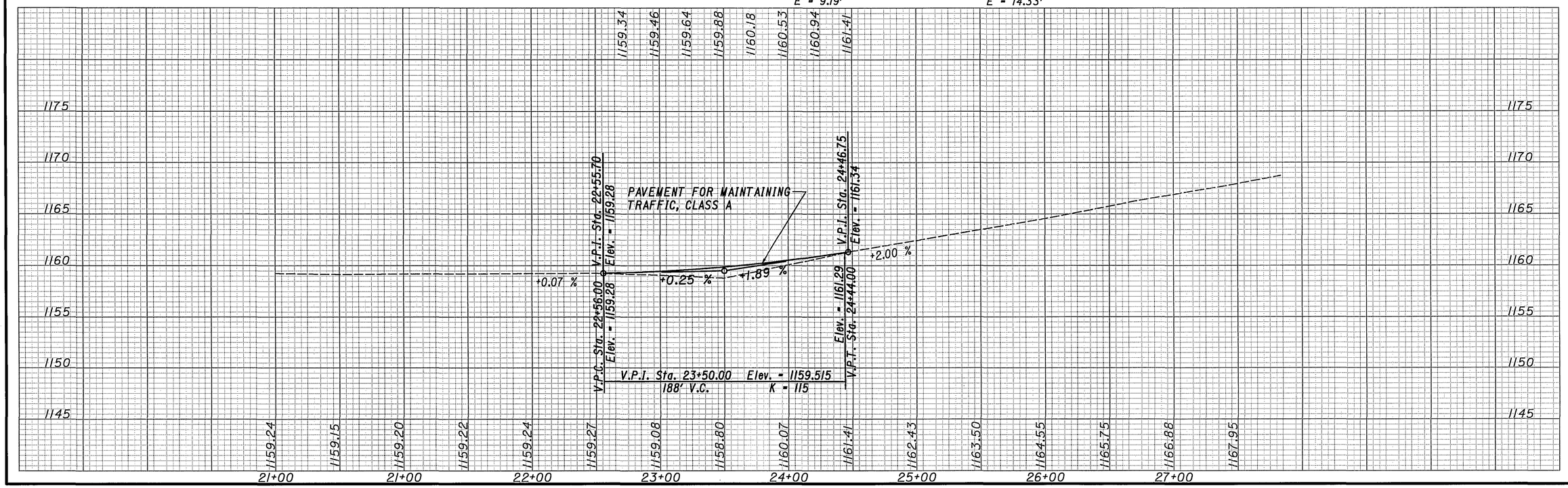
DESIGN SPEED = 55 MPH

℄ CROSSOVER CURVE
P.I. Sta = 21+87.57
D = 11° 13′ 06″ (RT)
Dc = 3° 00′ 00″
R = 1,909.86′
T = 187.57′
L = 373.94′
E = 9.19′

℄ CROSSOVER CURVE
P.I. Sta = 26+08.38
D = 13° 59′ 46″ (LT)
Dc = 3° 00′ 00″
R = 1,909.86′
T = 234.44′
L = 466.54′
E = 14.33′

CONTRACTOR TO MAINTAIN EXISTING DRAINAGE AS PER ITEM 615- ROADS FOR MAINTAINING TRAFFIC
SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.

ITEM 615-PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN, No. 1



HORIZONTAL SCALE IN FEET
0 20 40 80
CALCULATED L.M.B.
CHECKED W.B.H.

PLAN AND PROFILE - PHASE 2 CROSSOVER
NORTH END

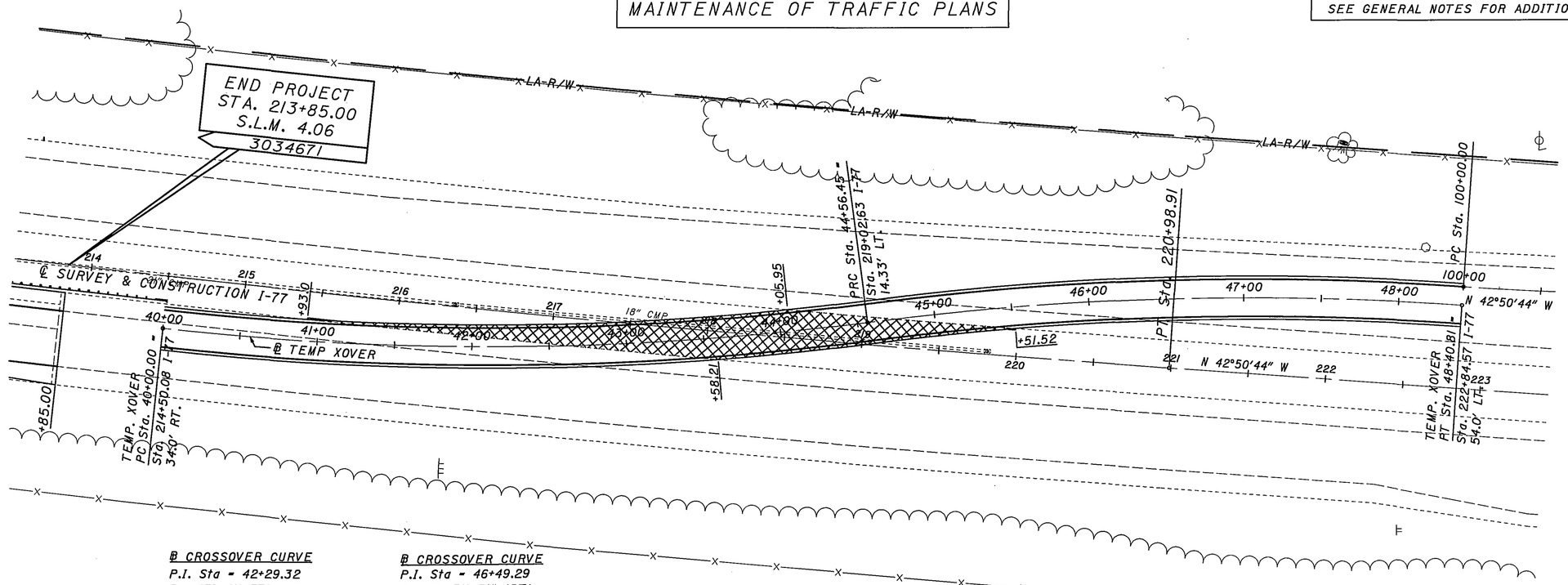
SUM-77-1.40

86
381

℄ I-77 CURVE
P.I. Sta = 207+68.41
D = 8° 53' 15" (LT)
Dc = 0° 20' 00"
R = 17,188.75'
T = 1,335.79'
L = 2,666.22'
E = 51.83'
e MAX = NONE (NC)

USE THIS DRAWING WITH MAINTENANCE OF TRAFFIC PLANS

CONTRACTOR TO MAINTAIN EXISTING DRAINAGE AS PER ITEM 615- ROADS FOR MAINTAINING TRAFFIC SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.

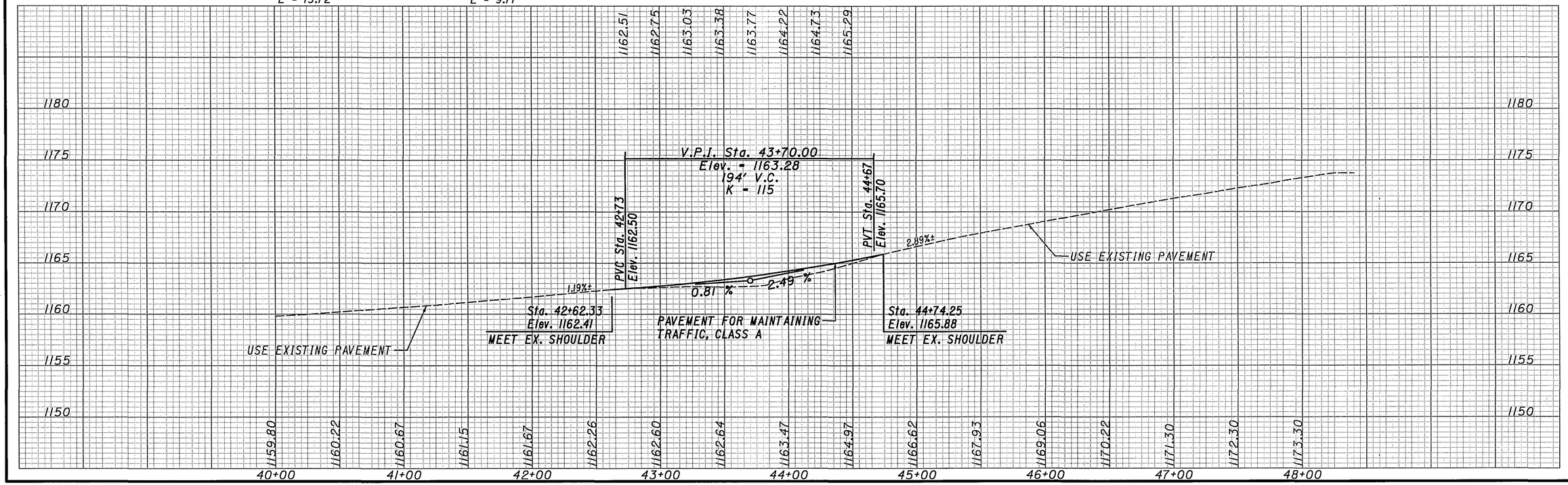


℄ CROSSOVER CURVE
P.I. Sta = 42+29.32
D = 13° 41' 37" (LT)
Dc = 3° 00' 00"
R = 1,909.86'
T = 229.32'
L = 456.45'
E = 13.72'

℄ CROSSOVER CURVE
P.I. Sta = 46+49.29
D = 11° 31' 51" (RT)
Dc = 3° 00' 00"
R = 1,909.86'
T = 192.83'
L = 384.36'
E = 9.71'

DESIGN SPEED = 55 MPH

ITEM 615-PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN, No. 1



HORIZONTAL SCALE IN FEET
0 20 40 80
CALCULATED L.M.B.
CHECKED W.B.H.

PLAN AND PROFILE - PHASE 3 CROSSOVER NORTH END

SUM-77-1.40

87
381

USE THIS DRAWING WITH MAINTENANCE OF TRAFFIC PLANS

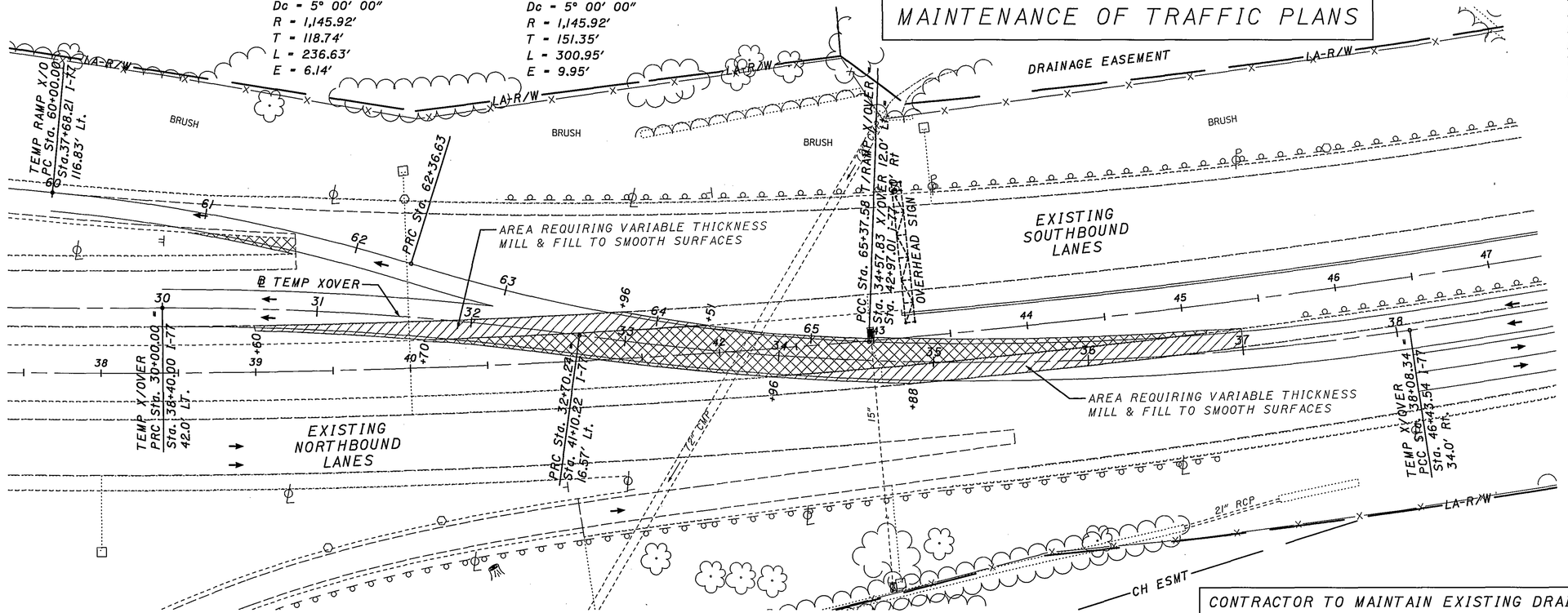
℄ EXIT RAMP CURVE
P.I. Sta = 61+18.74
D = 11° 49′ 53″ (RT)
Dc = 5° 00′ 00″
R = 1,145.92′
T = 118.74′
L = 236.63′
E = 6.14′

℄ EXIT RAMP CURVE
P.I. Sta = 63+87.98
D = 15° 02′ 51″ (LT)
Dc = 5° 00′ 00″
R = 1,145.92′
T = 151.35′
L = 300.95′
E = 9.95′

℄ 77 CURVE
P.I. Sta = 50+91.77
D = 42° 33′ 54″ (LT)
Dc = 1° 00′ 00″
R = 5,729.58′
T = 2,231.85′
L = 4,256.50′
E = 419.34′

℄ CROSSOVER CURVE
P.I. Sta = 31+35.35
D = 8° 06′ 26″ (RT)
Dc = 3° 00′ 00″
R = 1,909.86′
T = 135.35′
L = 270.24′
E = 4.79′

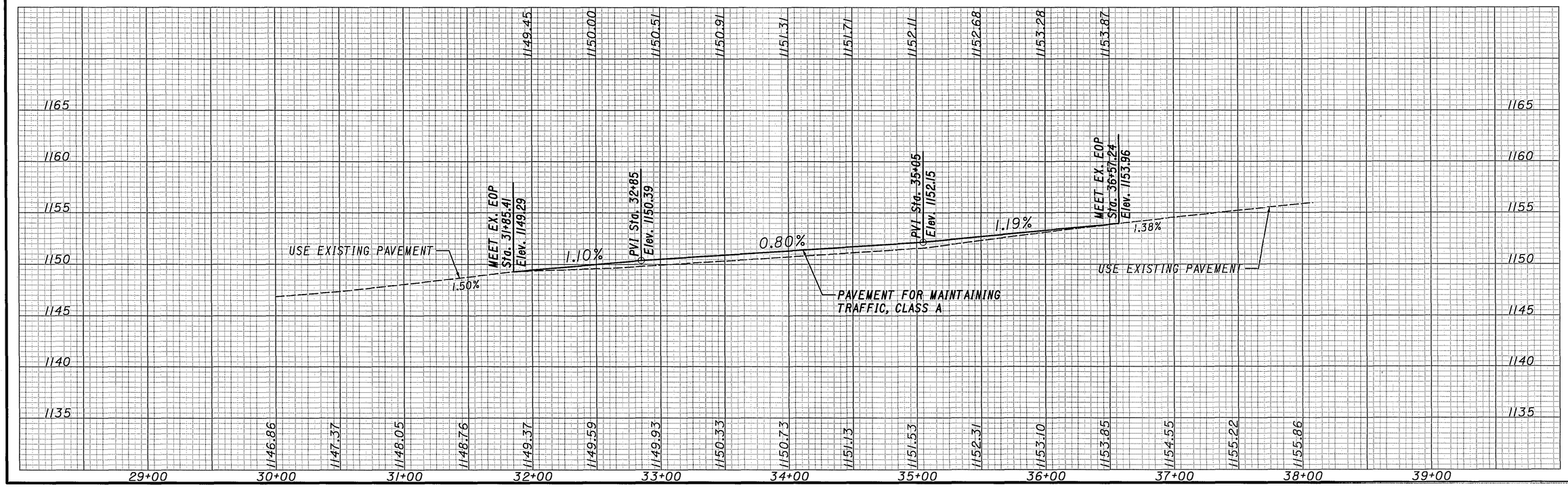
℄ CROSSOVER CURVE
P.I. Sta = 35+41.08
D = 16° 08′ 34″ (LT)
Dc = 3° 00′ 00″
R = 1,909.86′
T = 270.84′
L = 538.09′
E = 19.11′



DESIGN SPEED = 55 MPH

ITEM 615-PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN, No. 1

CONTRACTOR TO MAINTAIN EXISTING DRAINAGE AS PER ITEM 615- ROADS FOR MAINTAINING TRAFFIC SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.



HORIZONTAL SCALE IN FEET

CALCULATED SPC
CHECKED W.B.H.

PLAN & PROFILE PHASE 3
SOUTH END CROSSOVER

SUM-77-1.40

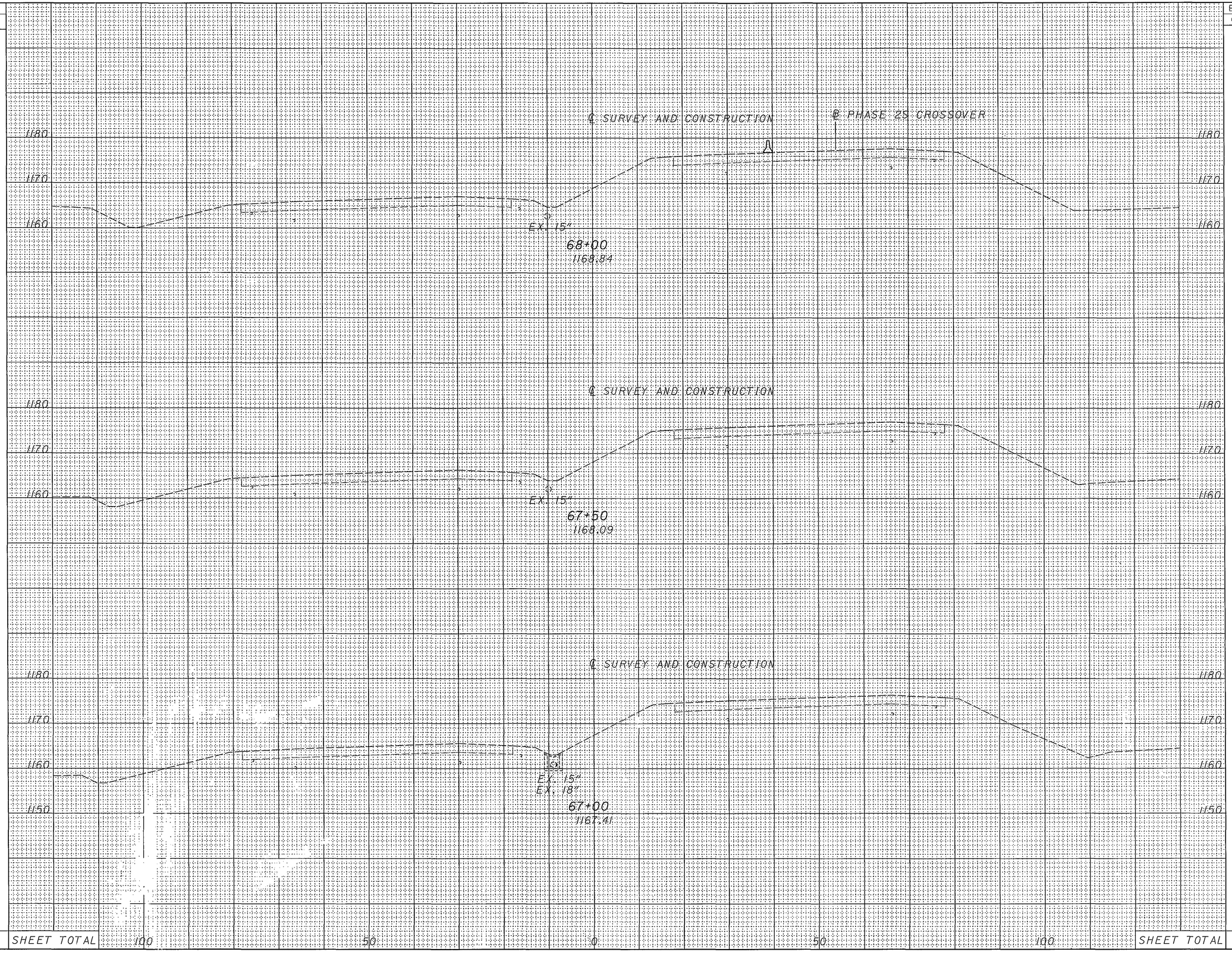
88
381

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED COY

CHECKED W.B.H.



SHEET TOTAL 100 50 0 50 100 SHEET TOTAL

CROSS SECTIONS PHASE 2S CROSSOVER STA. 67+00.00 TO STA. 68+00.00

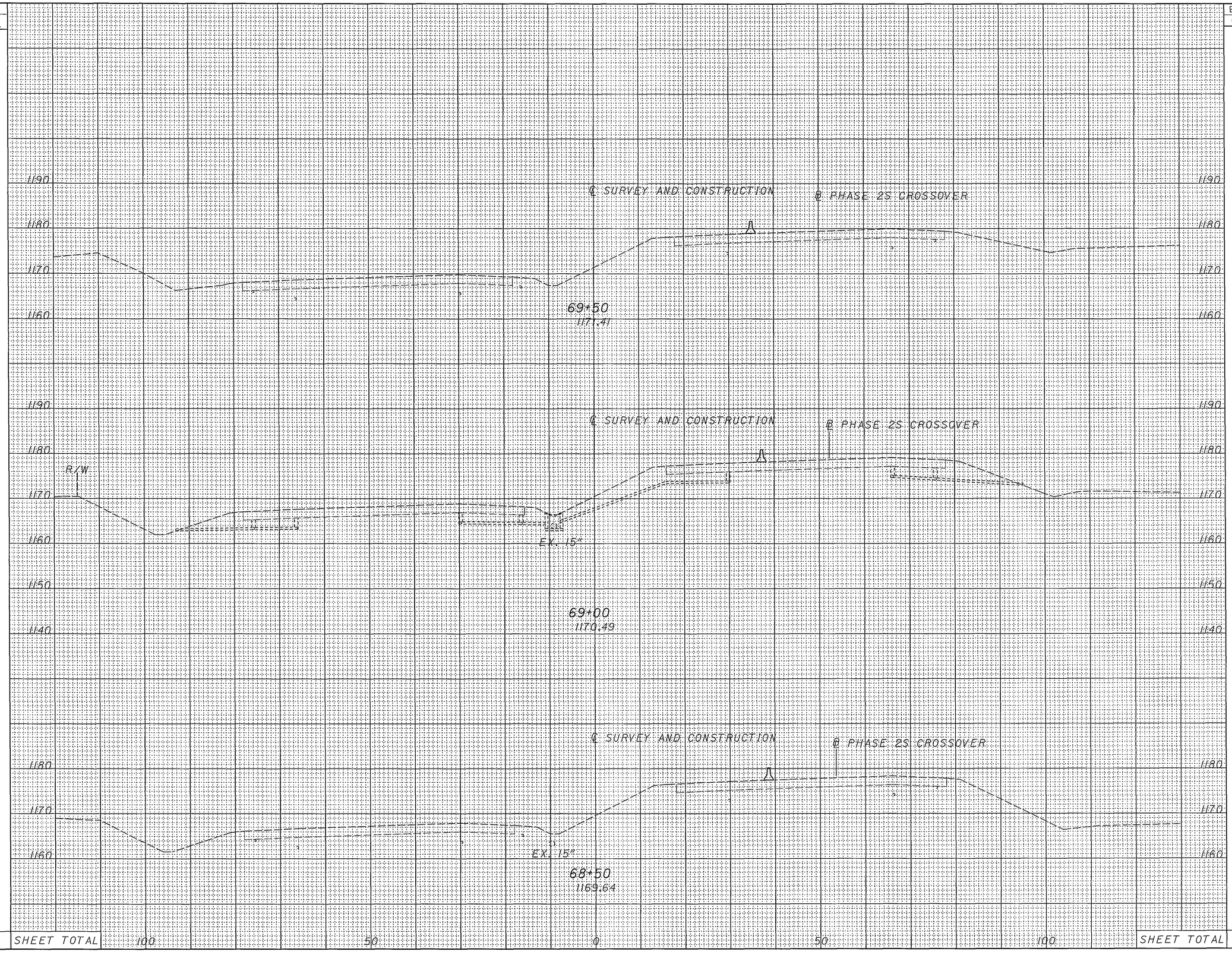
SUM-77-1.40

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED COY

CHECKED W.B.H.



CROSS SECTIONS PHASE 2S CROSSOVER
STA. 68+50.00 TO STA. 69+50.00

SUM-77-1.40

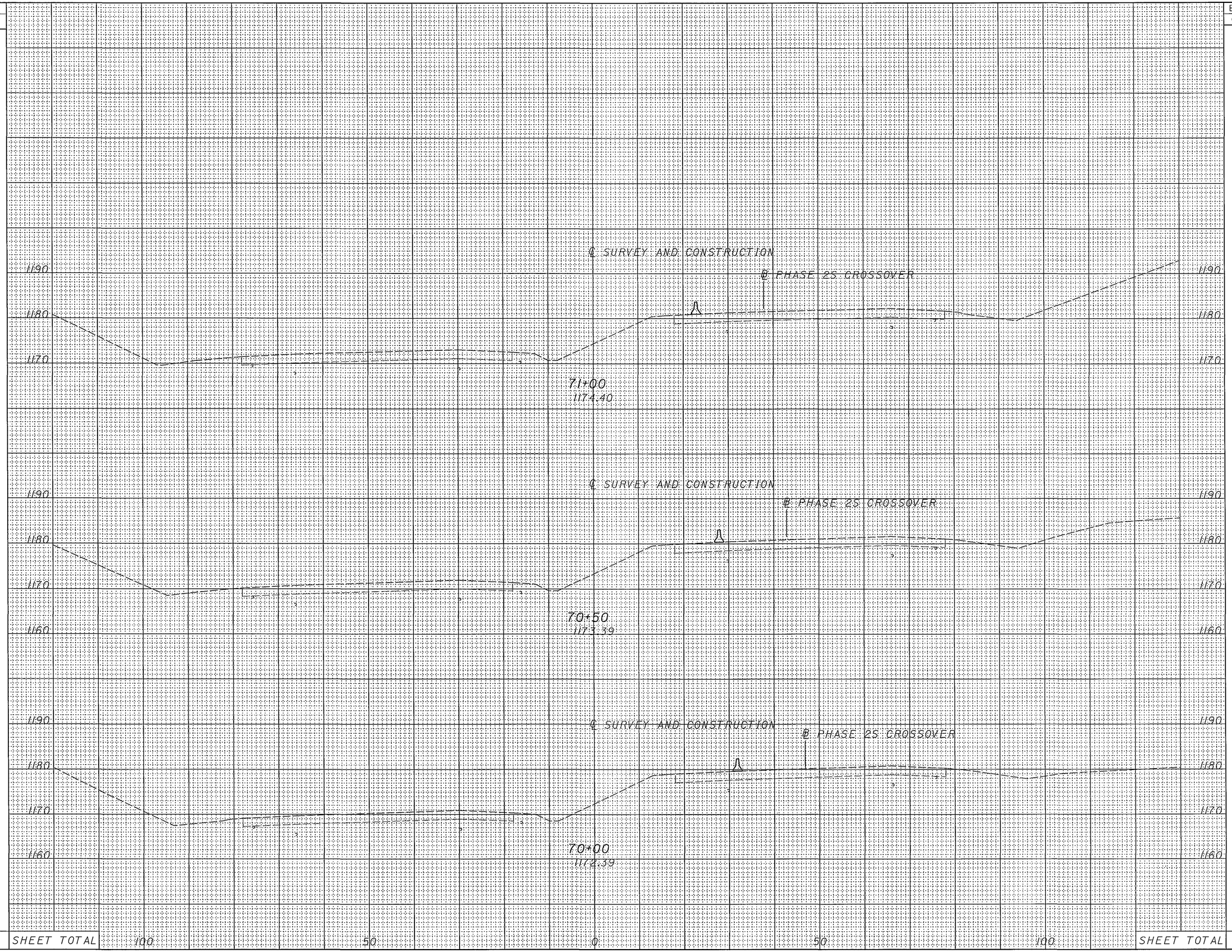
90
381

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED COY

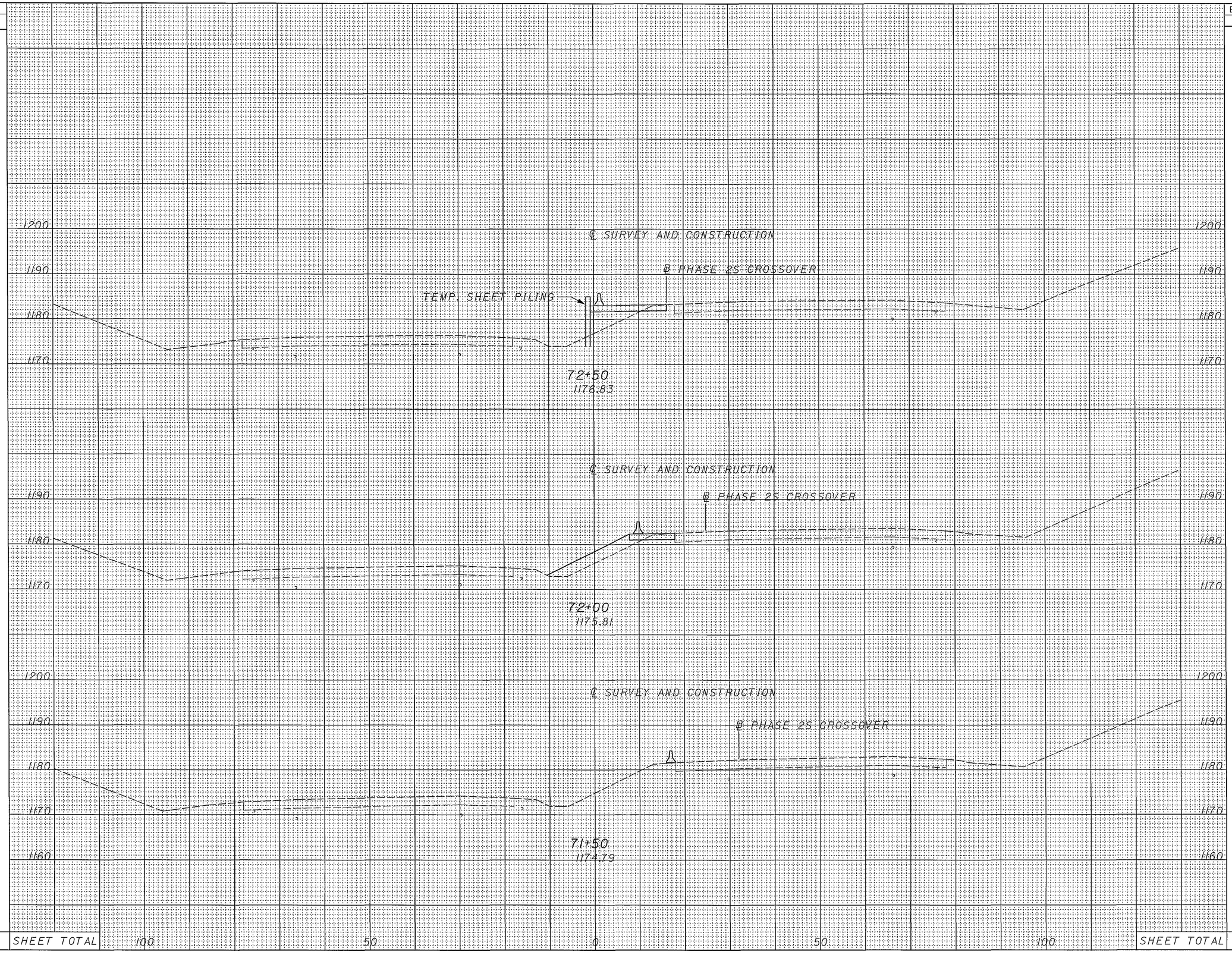
CHECKED W.B.H.



CROSS SECTIONS PHASE 2S CROSSOVER STA. 70+00.00 TO STA. 71+00.00

SUM-77-1.40

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
		5	30		
		12	68		
		7	44		
		0	0		
SHEET TOTAL					SHEET TOTAL

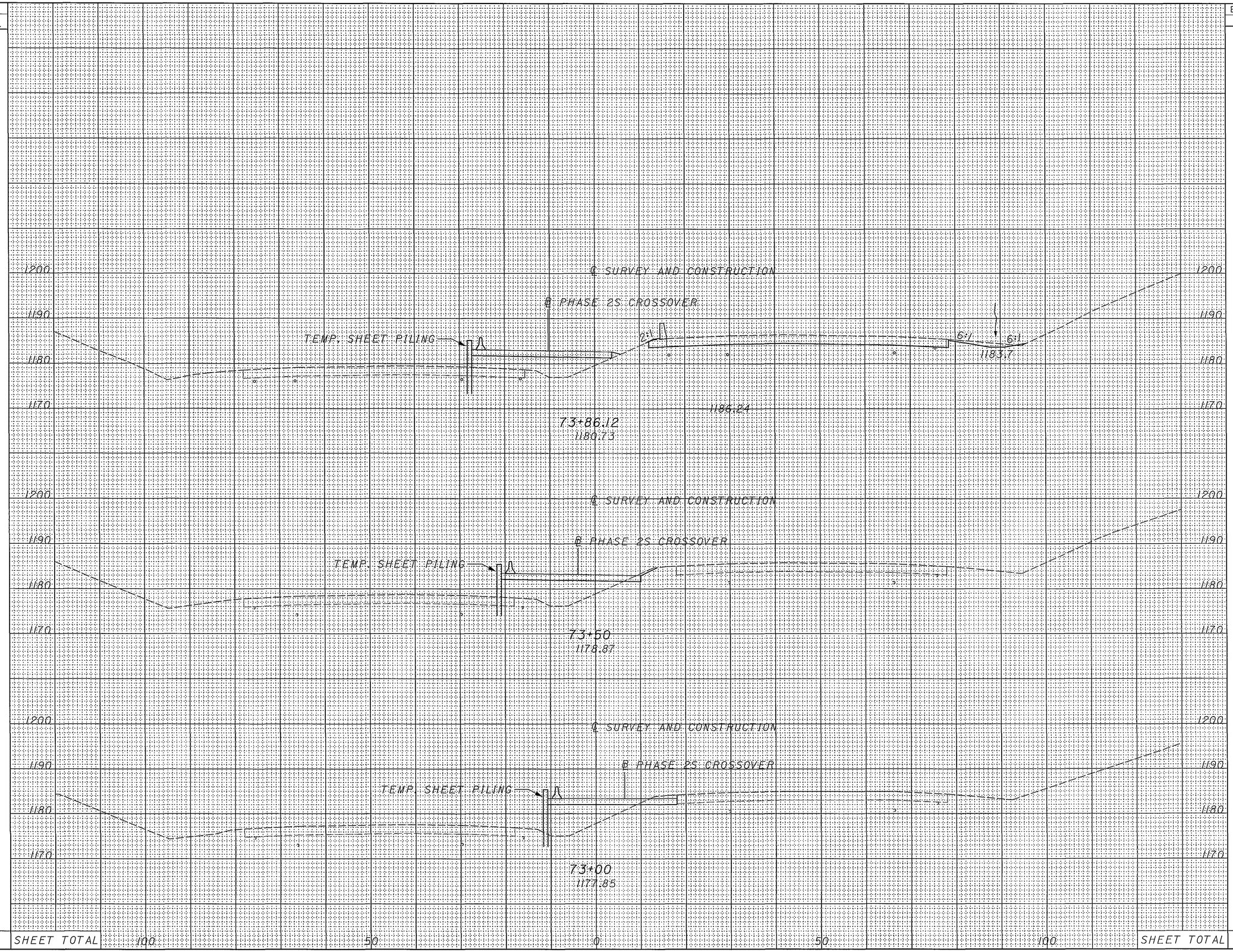


CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS PHASE 2S CROSSOVER STA. 71+50.00 TO STA. 72+50.00

SUM-77-1.40

SEEDING	
END WIDTH	SQ. YDS.



SHEET TOTAL	100	50	0	50	100	SHEET TOTAL

END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	93		
		3	133
5	105		
		17	176
13	85		
		17	106

CALCULATED COY

CHECKED W.B.H.

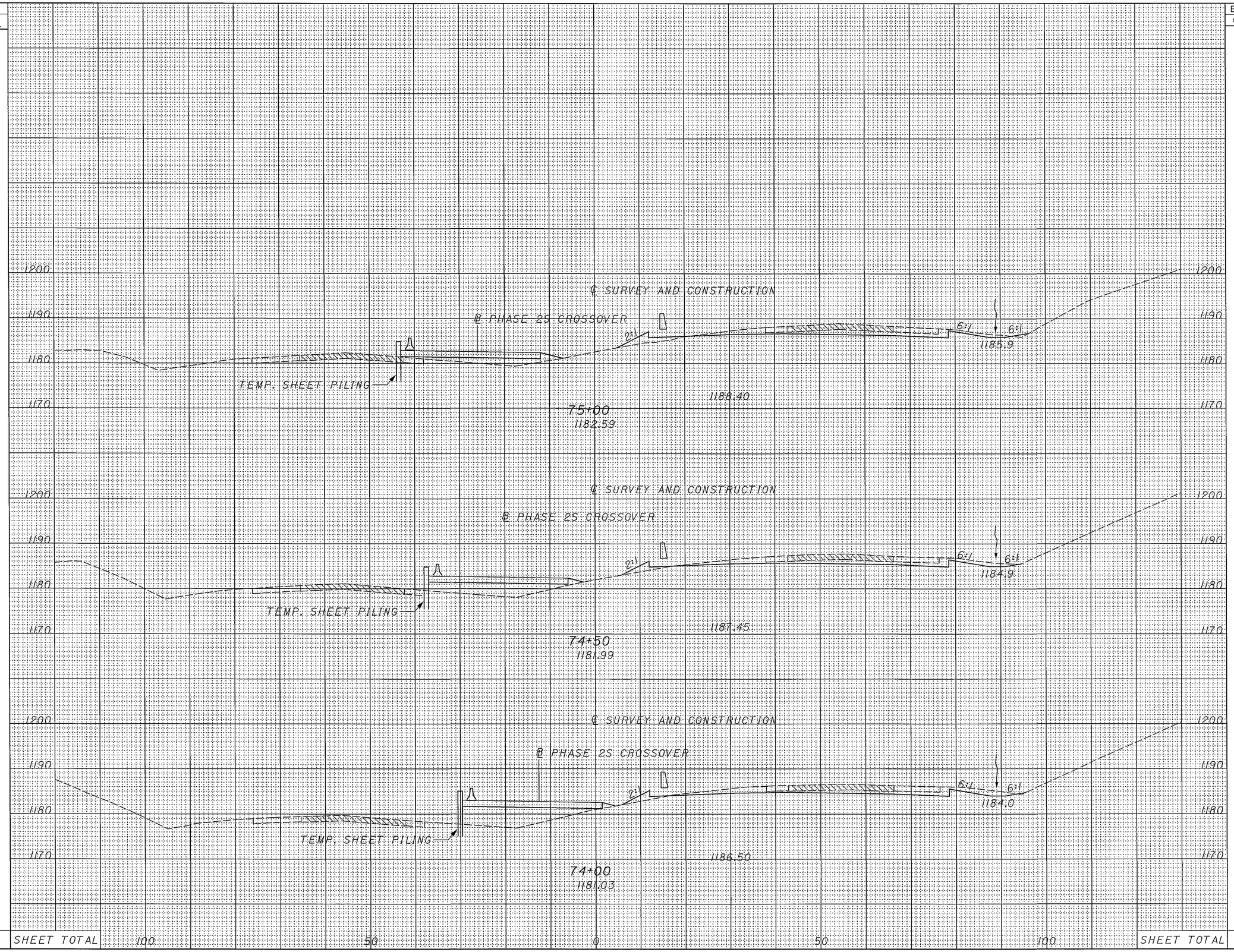
CROSS SECTIONS PHASE 2S CROSSOVER
STA. 73+00.00 TO STA. 73+86.12

SUM-77-1.40

93
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL

CALCULATED COY
CHECKED W.B.H.



		0	42		
				0	105
		0	72		
				0	155
		0	96		
				0	49

SHEET TOTAL 100 50 0 50 100 SHEET TOTAL

CROSS SECTIONS PHASE 2S CROSSOVER
STA. 74+00.00 TO STA. 75+00.00

SUM-77-1.40

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
		8	4		
				13	12
		7	8		
				9	18
		3	11		
				2	49
SHEET TOTAL					SHEET TOTAL

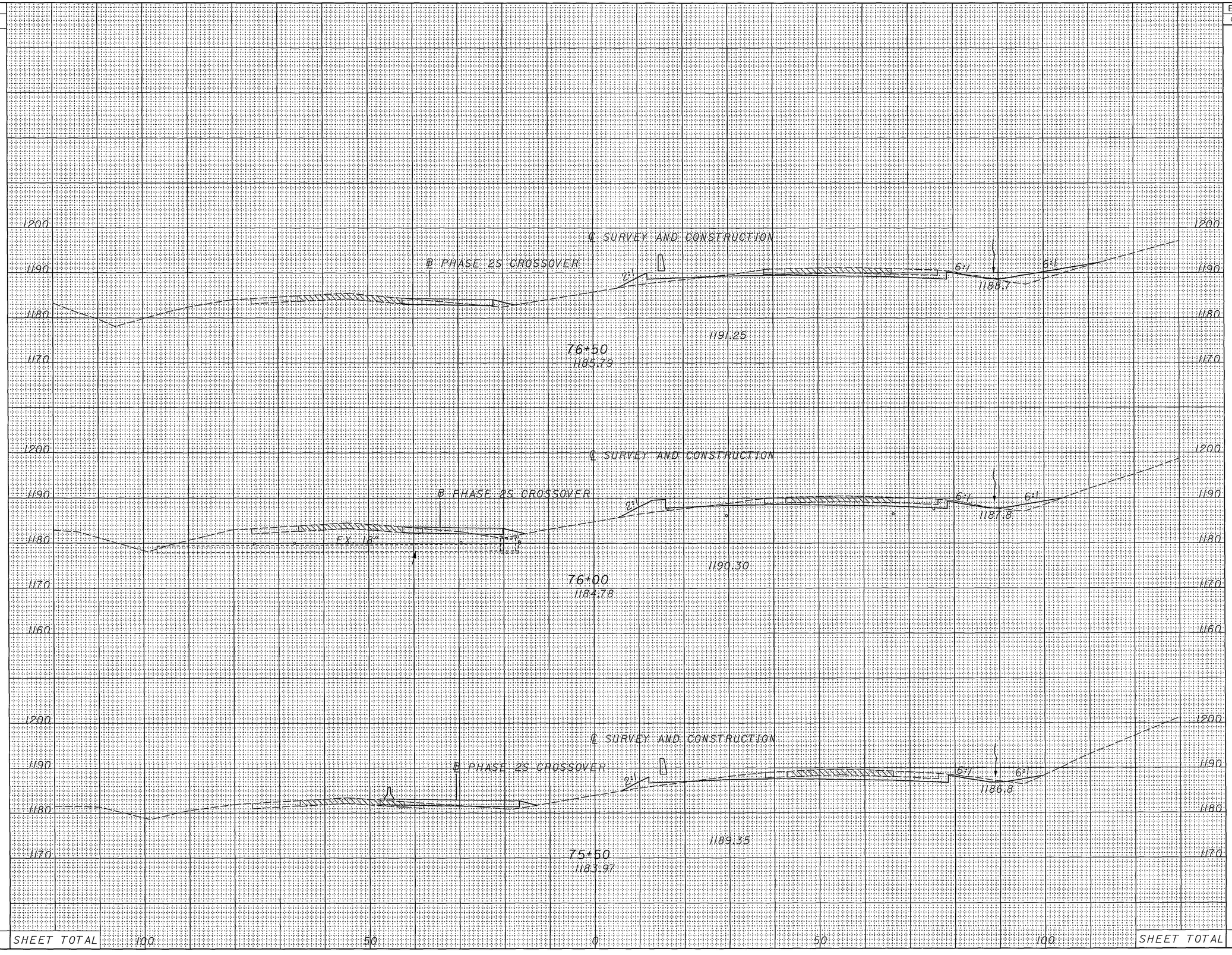
CALCULATED COY

CHECKED W.B.H.

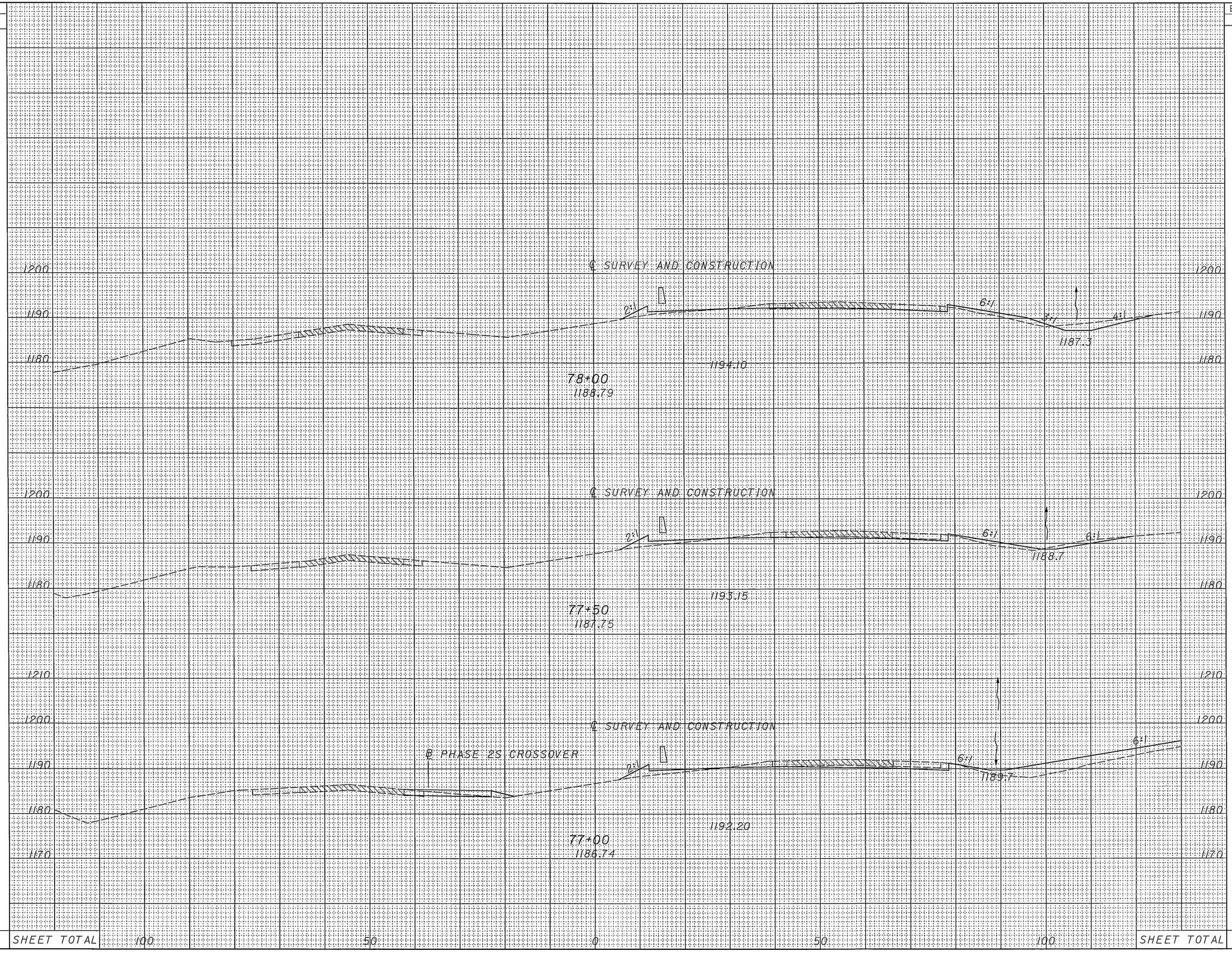
CROSS SECTIONS PHASE 2S CROSSOVER
STA. 75+50.00 TO STA. 76+50.00

SUM-77-1.40

95
381



SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
SHEET TOTAL					
				14	8
				SHEET TOTAL	
				8	4



CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS PHASE 2S CROSSOVER STA. 77+00.00 TO STA. 78+00.00

SUM-77-1.40

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS PHASE 2N CROSSOVER
STA. 20+00.00 TO STA. 21+00.00

B PHASE 2N CROSSOVER

1160
1150
1140

1159.20
21+00.00
1159.20

B PHASE 2N CROSSOVER

1160
1150
1140

1159.15
20+50.00
1159.15

B PHASE 2N CROSSOVER

1160
1150
1140

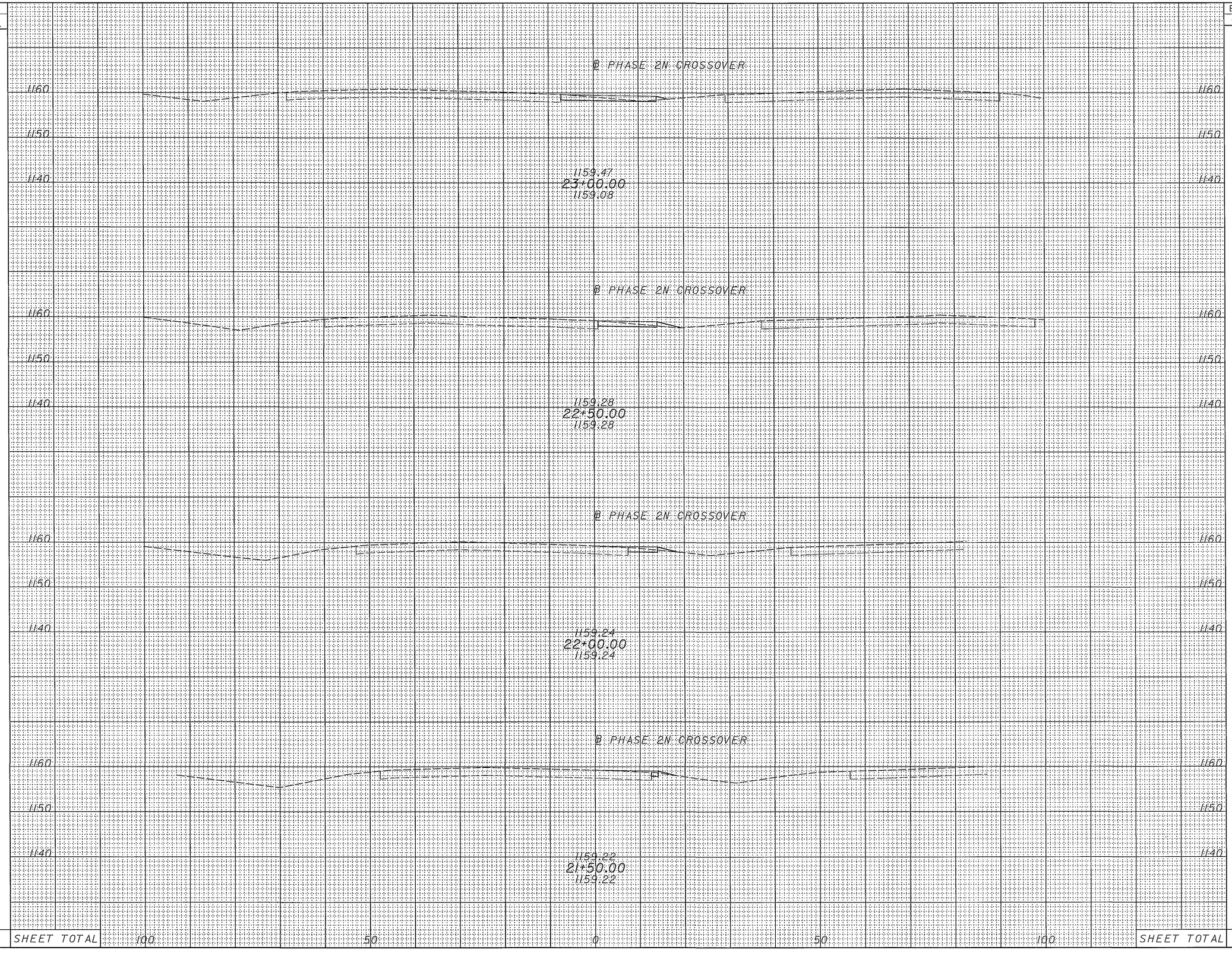
1159.24
20+00.00
1159.24

SHEET TOTAL 100 50 0 50 100 SHEET TOTAL

SUM-77-1.40

97
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
		12	1		
				20	4
		9	3		
				13	4
		5	2		
				6	2
		1	1		
				0	0
SHEET TOTAL					SHEET TOTAL



CALCULATED COY

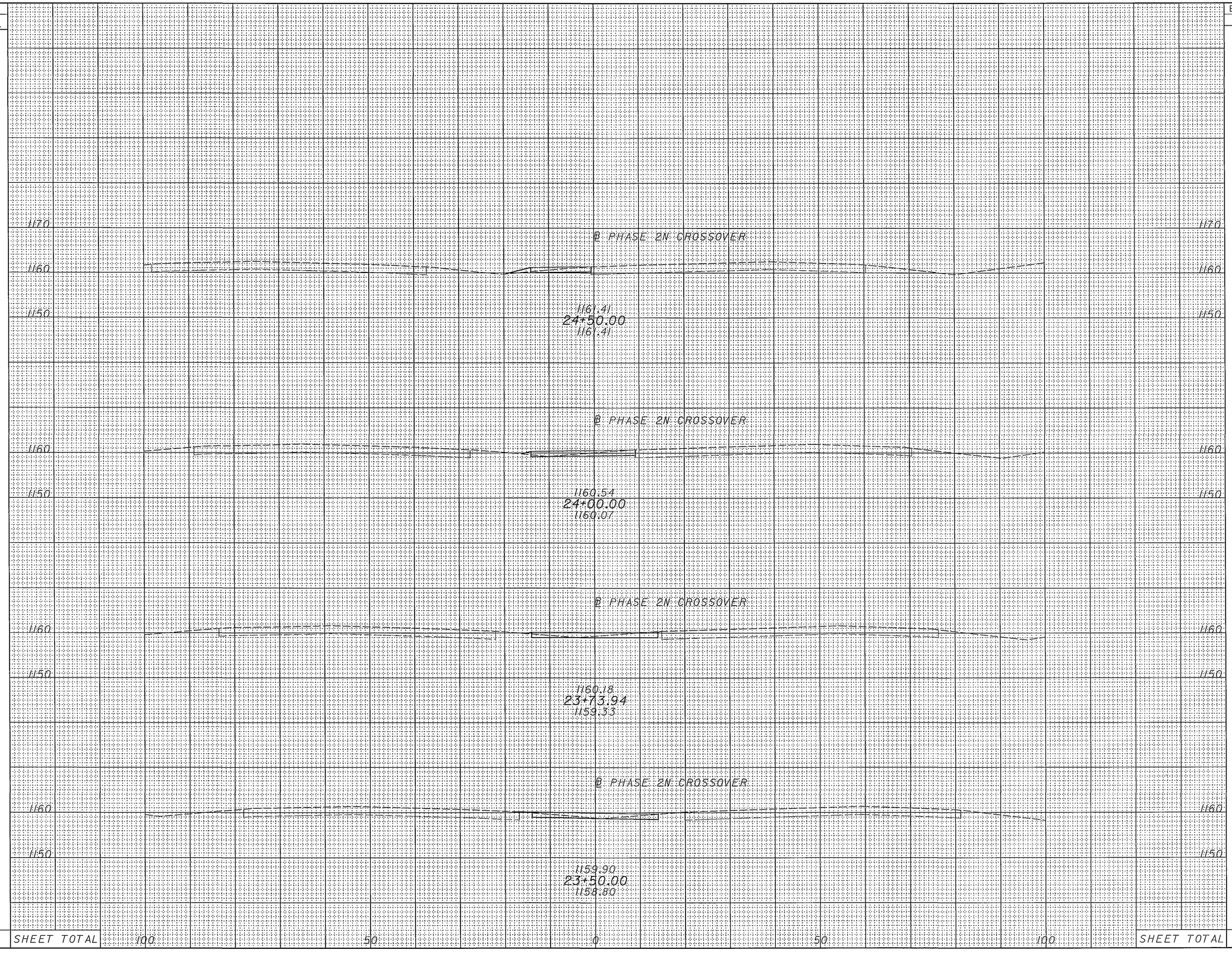
CHECKED W.B.H.

CROSS SECTIONS PHASE 2N CROSSOVER STA. 21+50.00 TO STA. 23+00.00

SUM-77-1.40

98
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
		10	3		
				21	3
		13	1		
				14	0
		16	0		
				14	0
		15	0		
				25	1



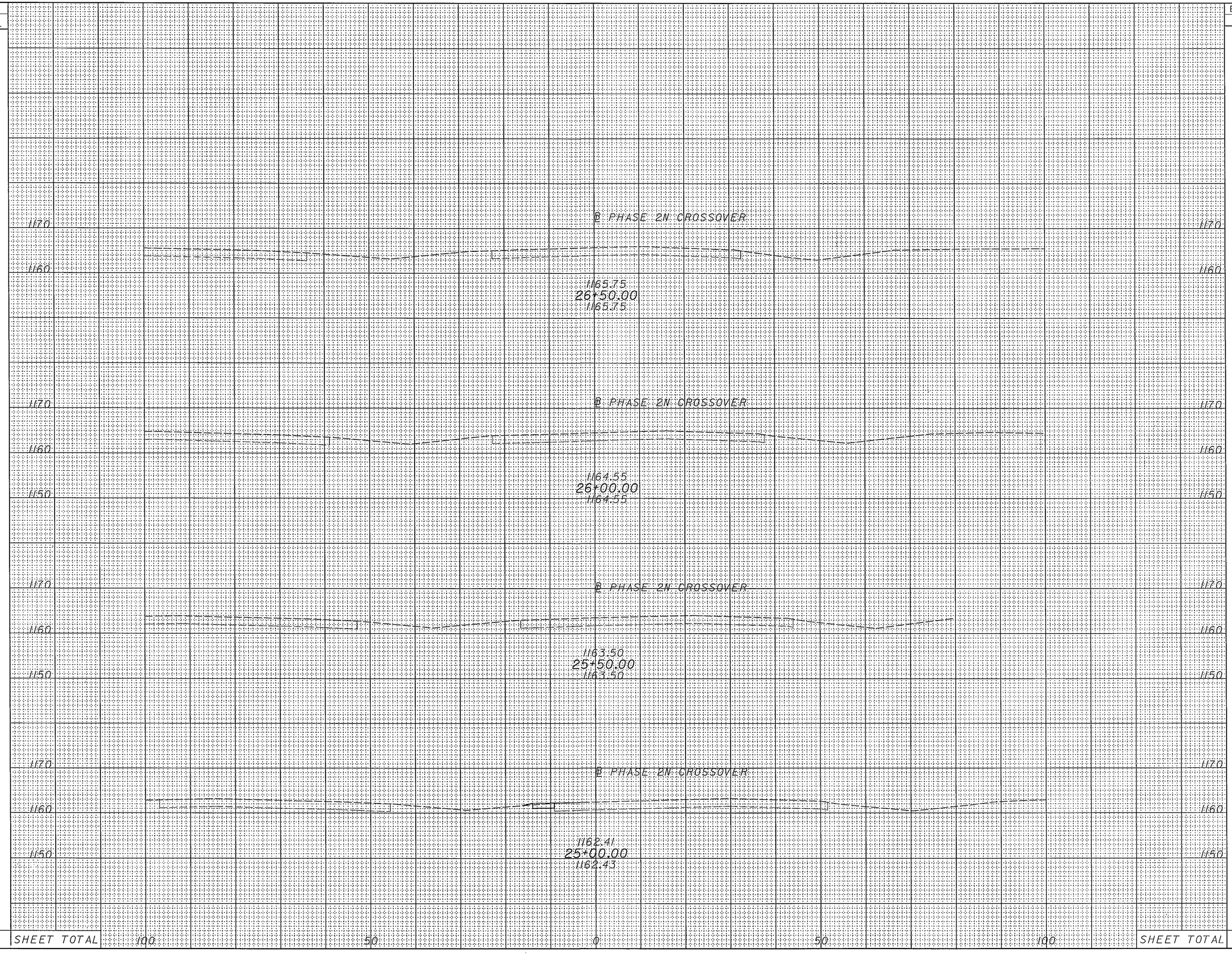
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS PHASE 2N CROSSOVER
STA. 23+50.00 TO STA. 24+50.00

SUM-77-1.40

99
381

SEEDING	
END WIDTH	SQ. YDS.



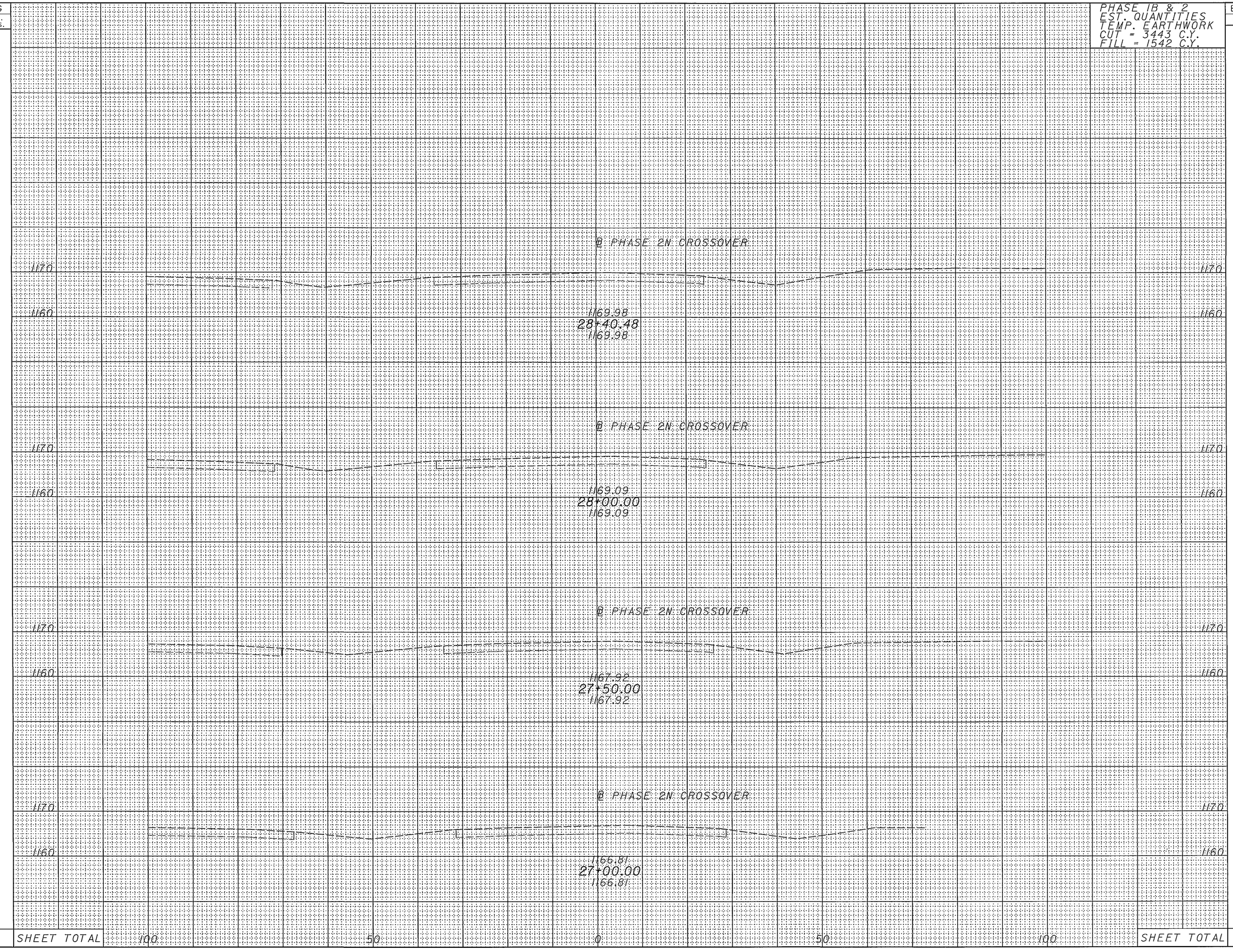
| | | |

SEEDING	
END WIDTH	SQ. YDS.

PHASE 1B & 2
EST. QUANTITIES
TEMP. EARTHWORK
CUT - 3443 C.Y.
FILL - 1542 C.Y.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED COY
CHECKED W.B.H.



SHEET TOTAL

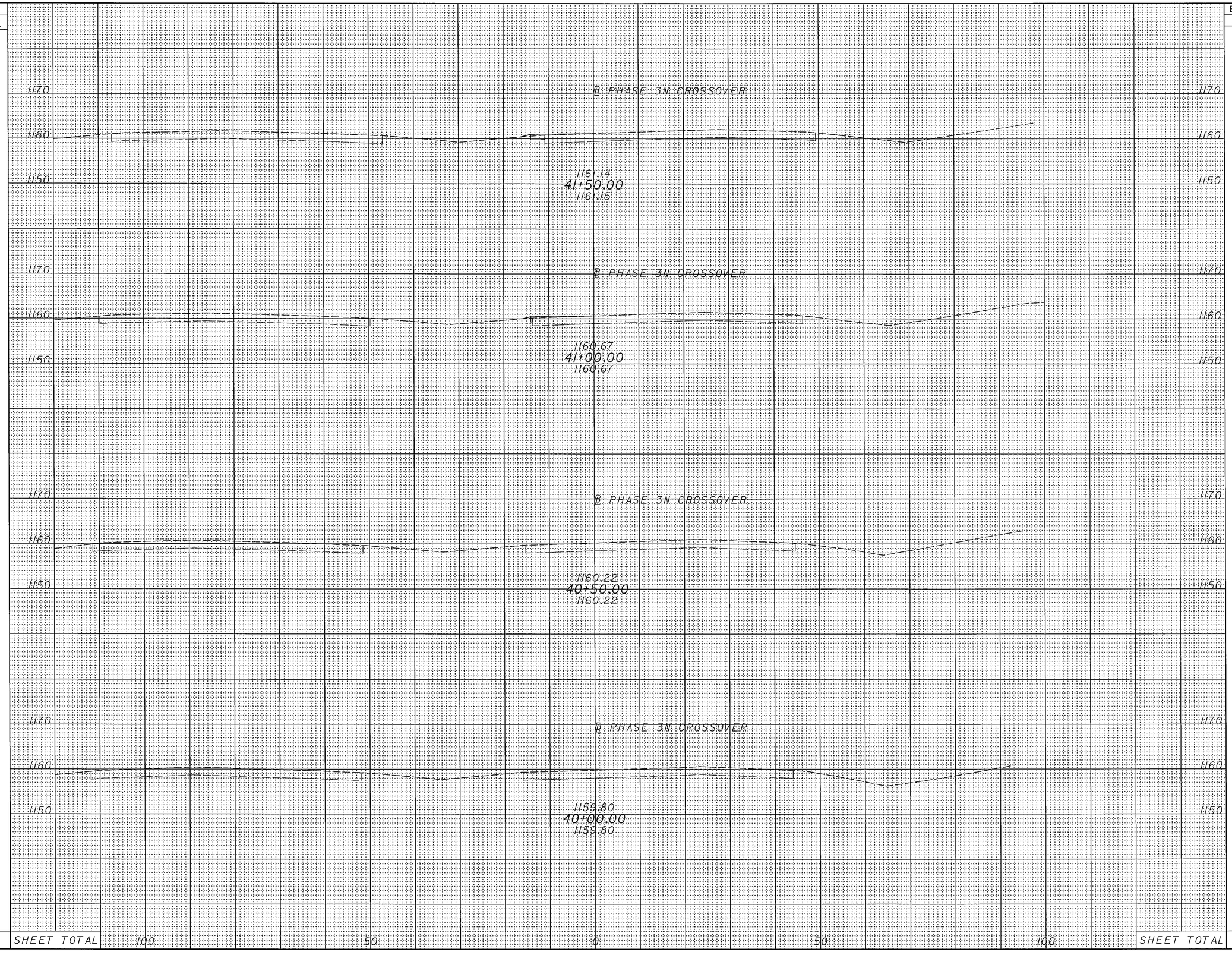
SHEET TOTAL

CROSS SECTIONS PHASE 2N CROSSOVER STA. 27+00.00 TO STA. 28+40.48

SUM-77-1.40

101
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
		3	0		
				3	1
		0	0		
				0	0
SHEET TOTAL					

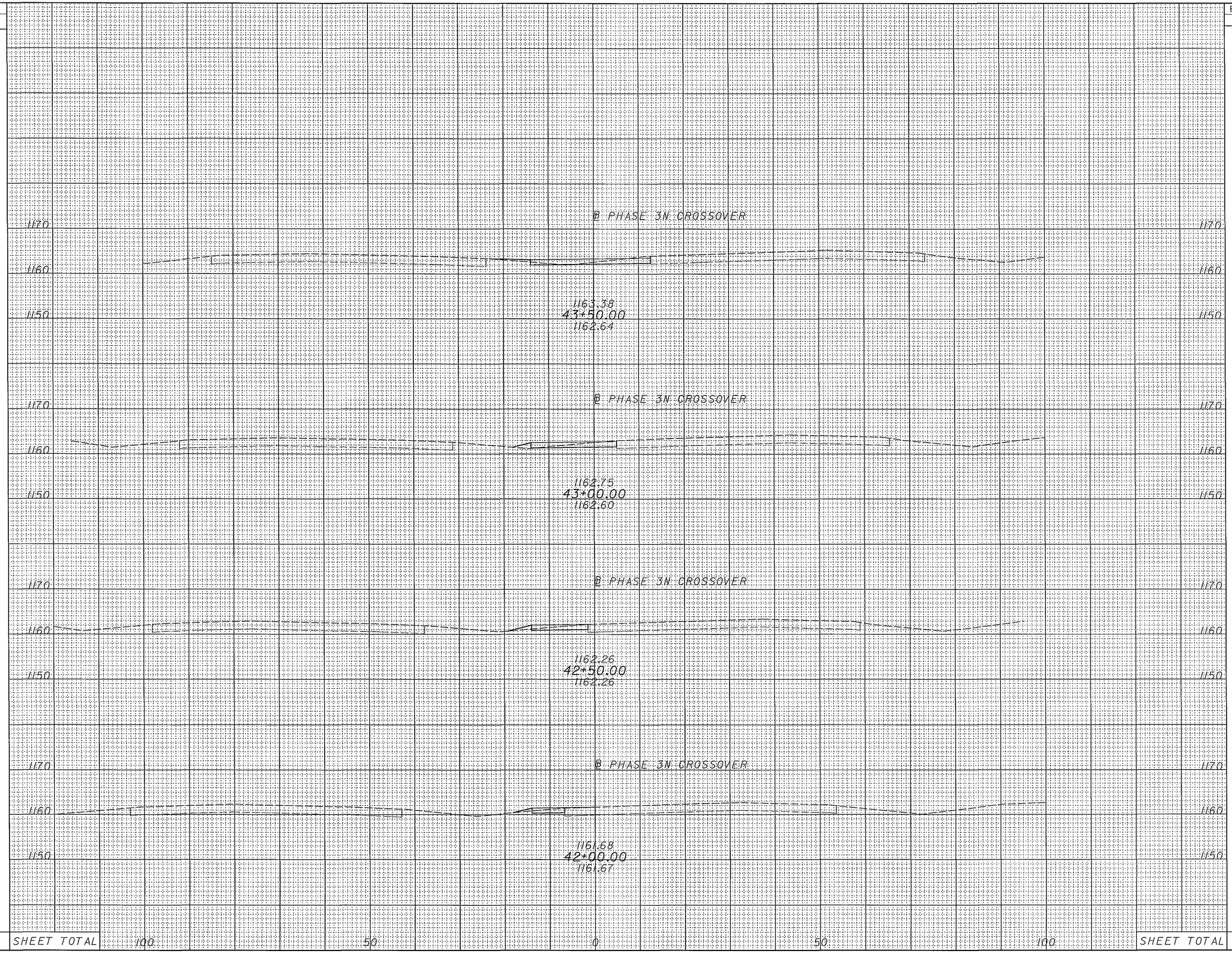


CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS PHASE 3N CROSSOVER
STA. 40+00.00 TO STA. 41+50.00

SUM-77-1.40

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
		16	3		
		13	3	27	5
		9	2	20	5
		6	1	14	3
				8	2



SHEET TOTAL 100 50 0 50 100 SHEET TOTAL

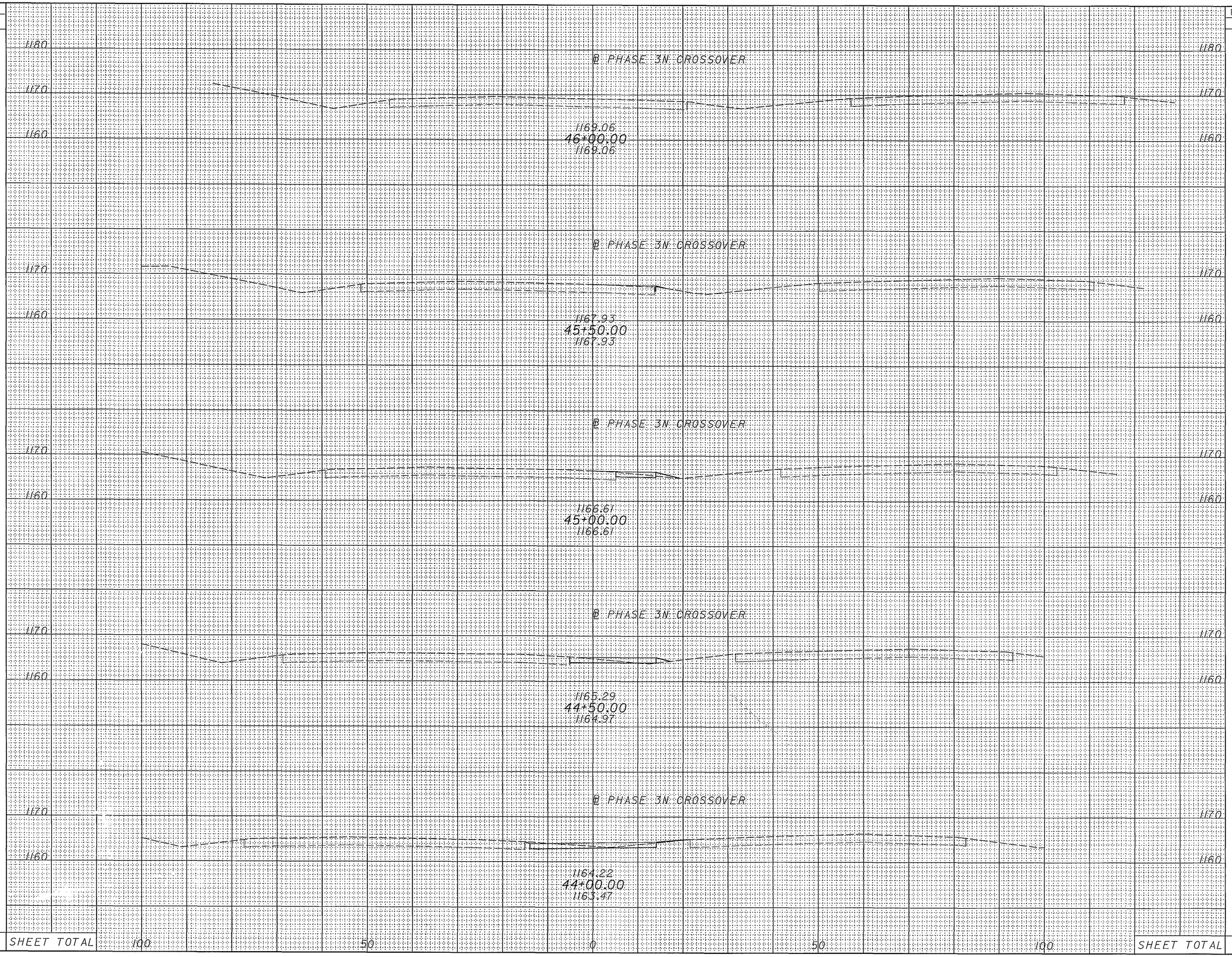
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS PHASE 3N CROSSOVER
STA. 42+00.00 TO STA. 43+50.00

SUM-77-1.40

103
381

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
		6	2
6	2		
		15	4
10	2		
		28	3
20	1		
		34	3

SHEET TOTAL	100	50	0	50	100	SHEET TOTAL

CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS PHASE 3N CROSSOVER
STA. 44+00.00 TO STA. 46+00.00

SUM-77-1.40

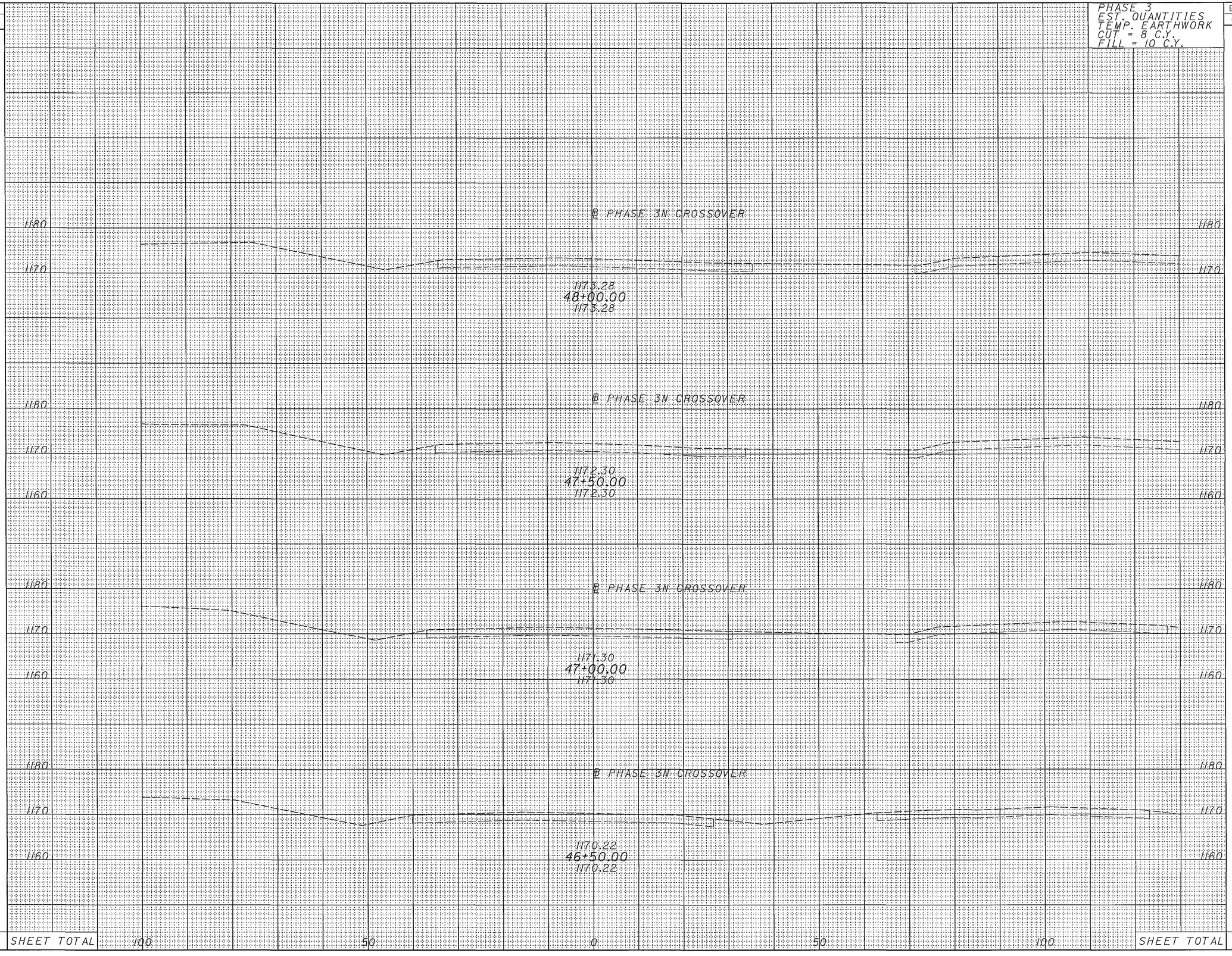
104
381

SEEDING	
END WIDTH	SQ. YDS.

PHASE 3
EST. QUANTITIES
TEMP. EARTHWORK
CUT = 8 C.Y.
FILL = 10 C.Y.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED COY
CHECKED W.B.H.



CROSS SECTIONS PHASE 3N CROSSOVER
STA. 46+50.00 TO STA. 48+00.00

SUM-77-1.40

SEEDING	
END WIDTH	SQ. YDS.

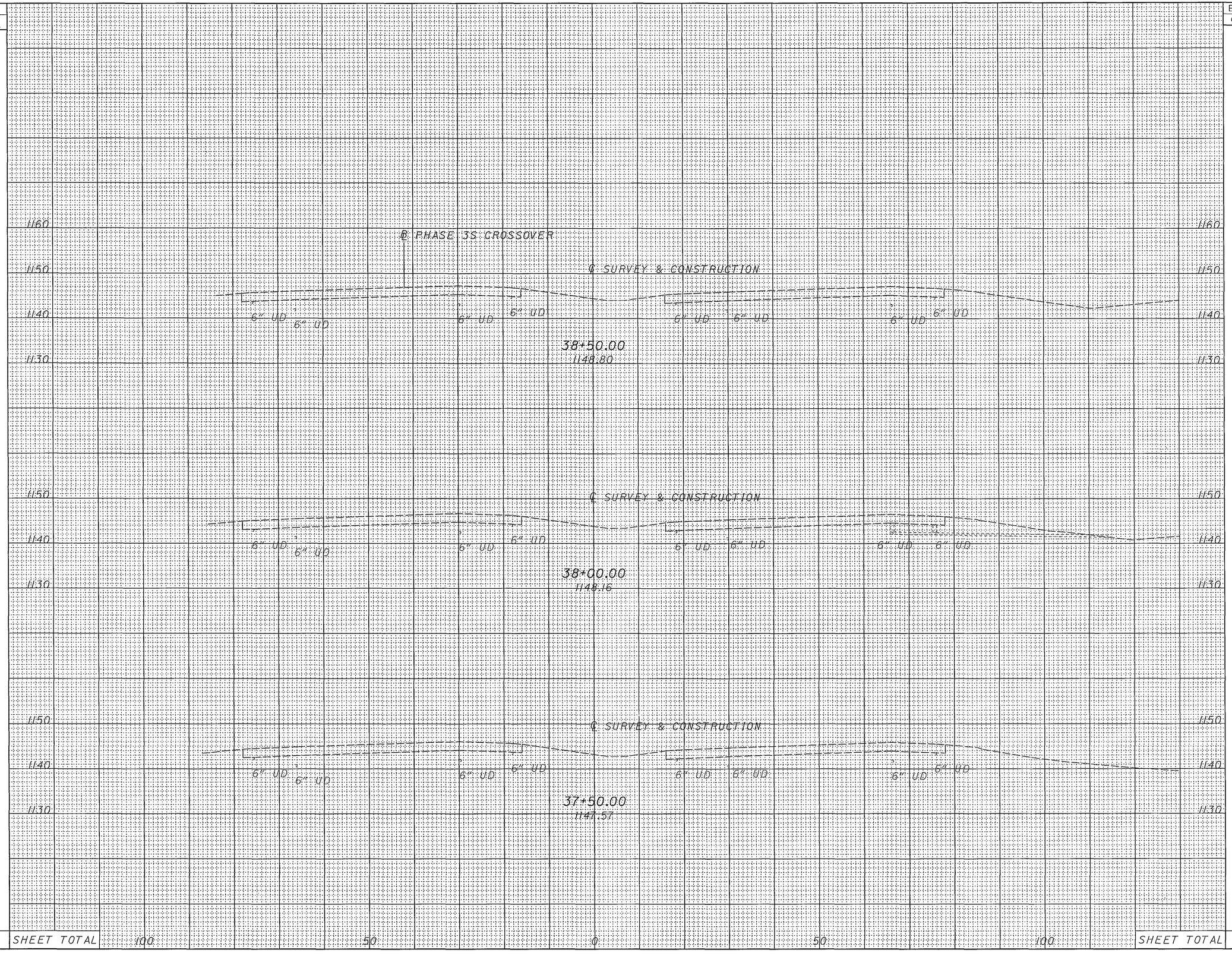
END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED COY

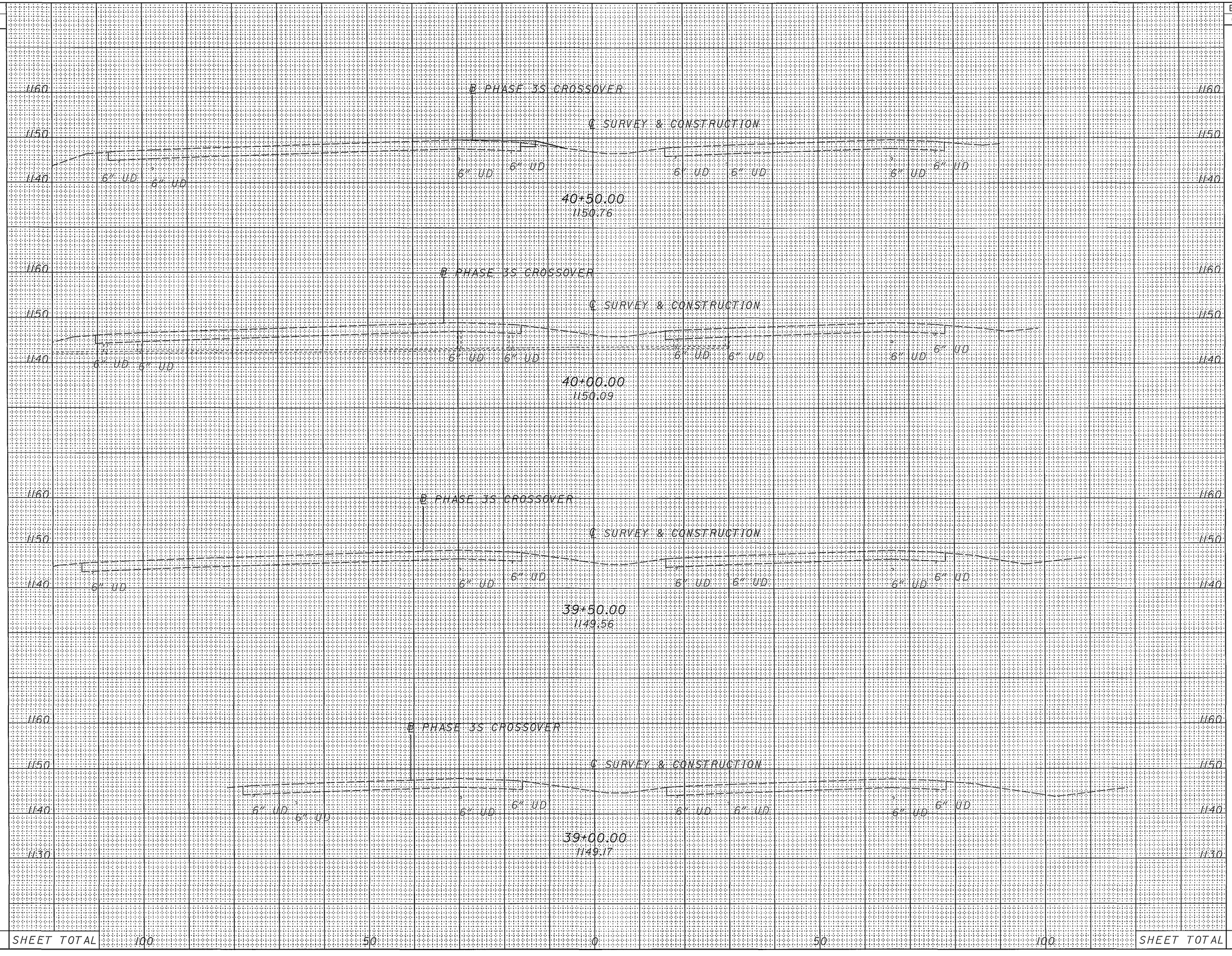
CHECKED W.B.H.

CROSS SECTIONS PHASE 3S CROSSOVER STA. 37+50.00 TO STA. 38+50.00

SUM-77-1.40



SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
2	3		
		0	0

CALCULATED COY

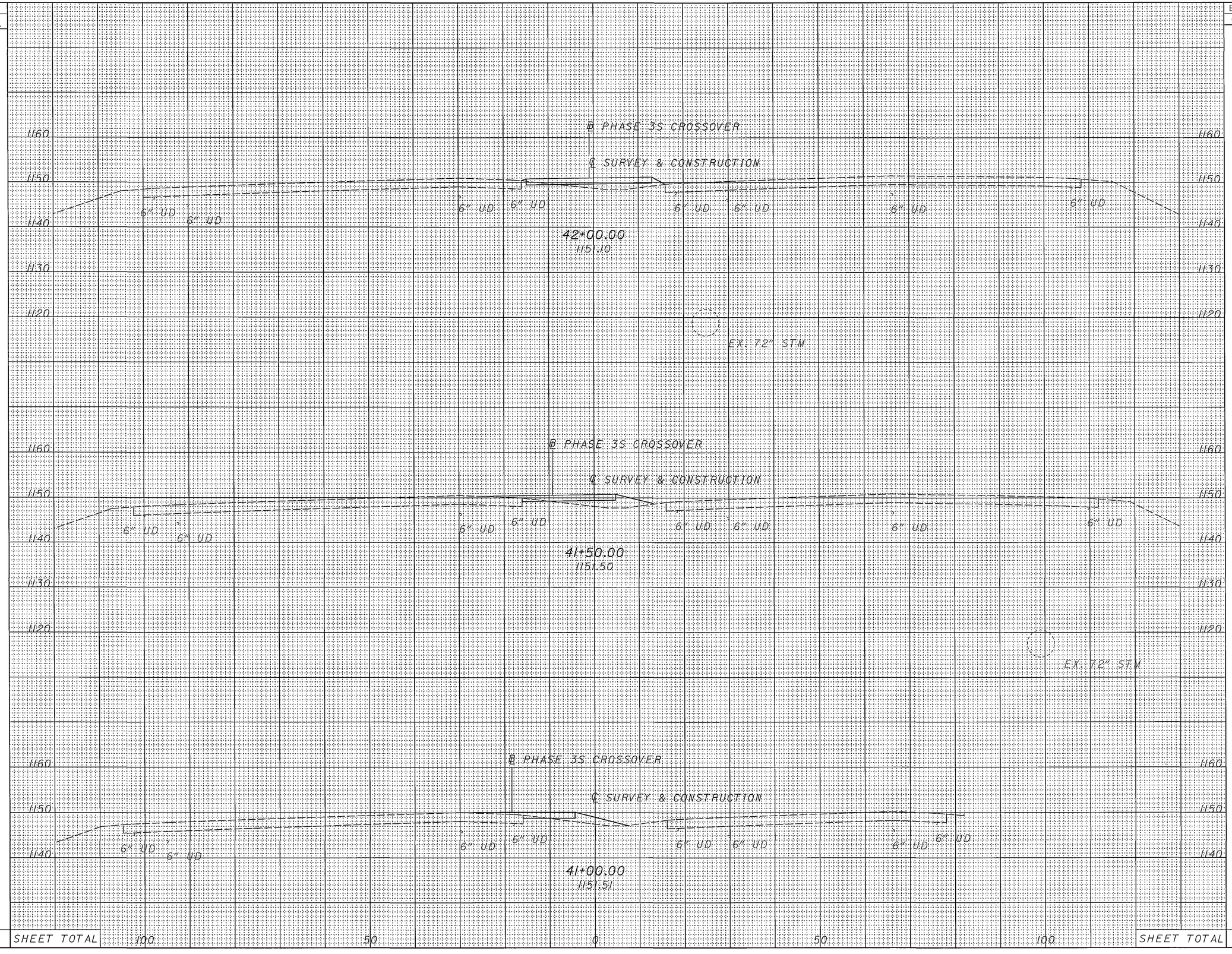
CHECKED W.B.H.

CROSS SECTIONS PHASE 3S CROSSOVER STA. 39+00.00 TO STA. 40+50.00

SUM-77-1.40

107
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL



		3	22
		2	28
		2	16
SHEET TOTAL		4	18

		5	46
		4	41
SHEET TOTAL		4	18

CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS PHASE 3S CROSSOVER
STA. 41+00.00 TO STA. 42+00.00

SUM-77-1.40

108
381

SEEDING	
END WIDTH	SQ. YDS.

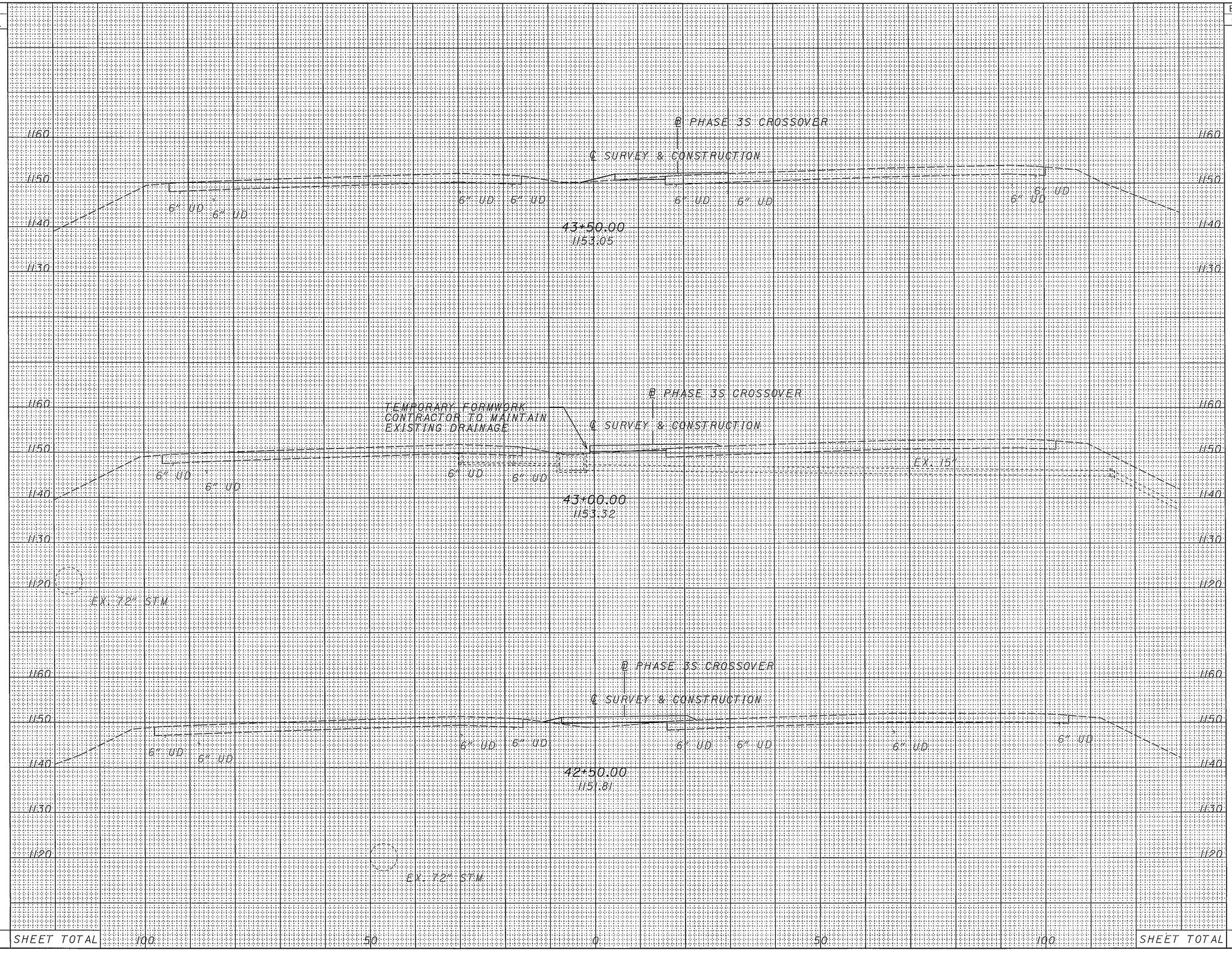
END AREA		VOLUME	
CUT	FILL	CUT	FILL
4	5		
		5	6
1	2		
		1	17
0	16		
		3	36

CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS PHASE 3S CROSSOVER STA. 42+50.00 TO STA. 43+50.00

SUM-77-1.40



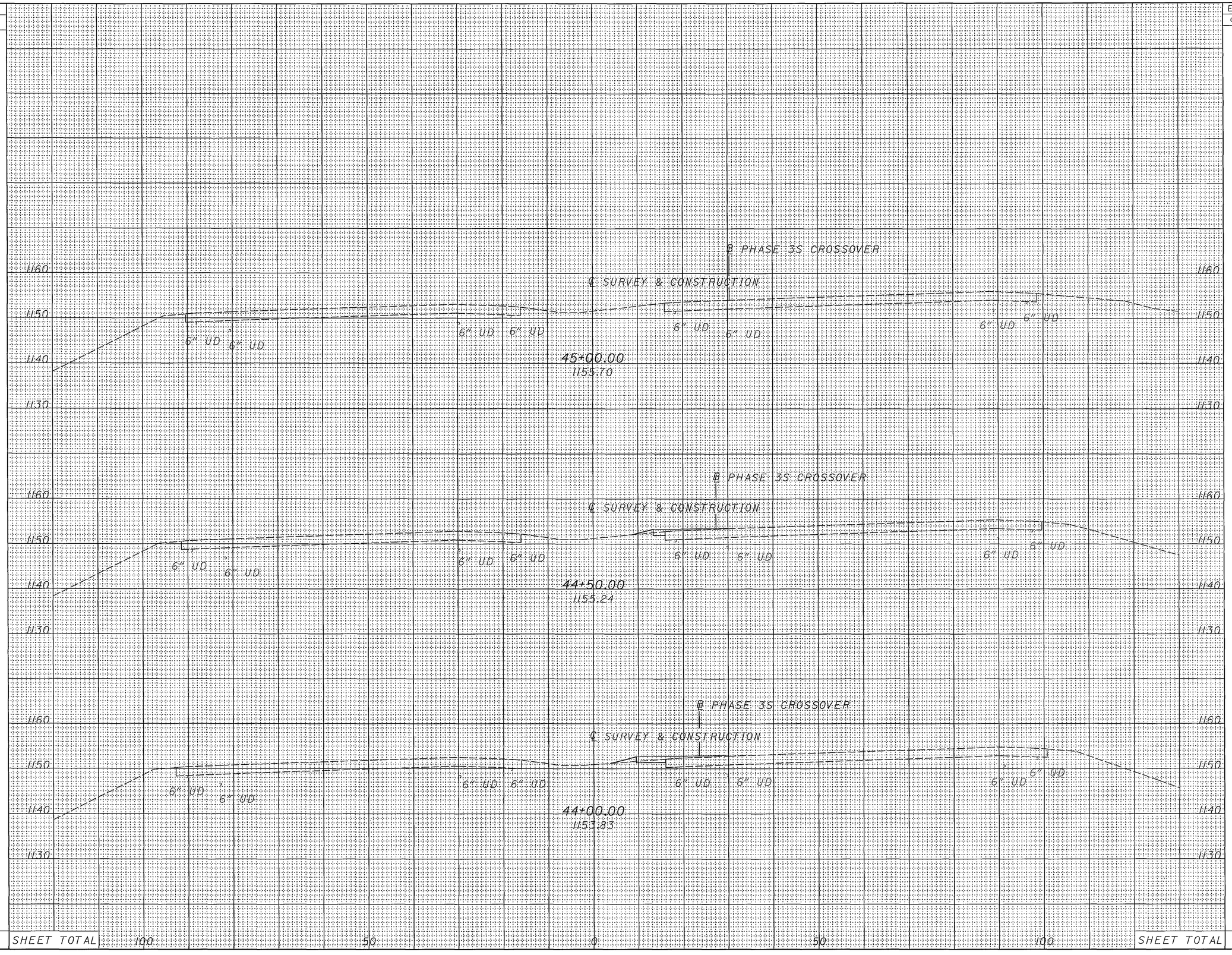
SHEET TOTAL 100 50 0 50 100 SHEET TOTAL

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL
2	2		
4	3	5	4
		7	7

CALCULATED COY

CHECKED W.B.H.



SHEET TOTAL	100	50	0	50	100	SHEET TOTAL

CROSS SECTIONS PHASE 3S CROSSOVER STA. 44+00.00 TO STA. 45+00.00

SUM-77-1.40

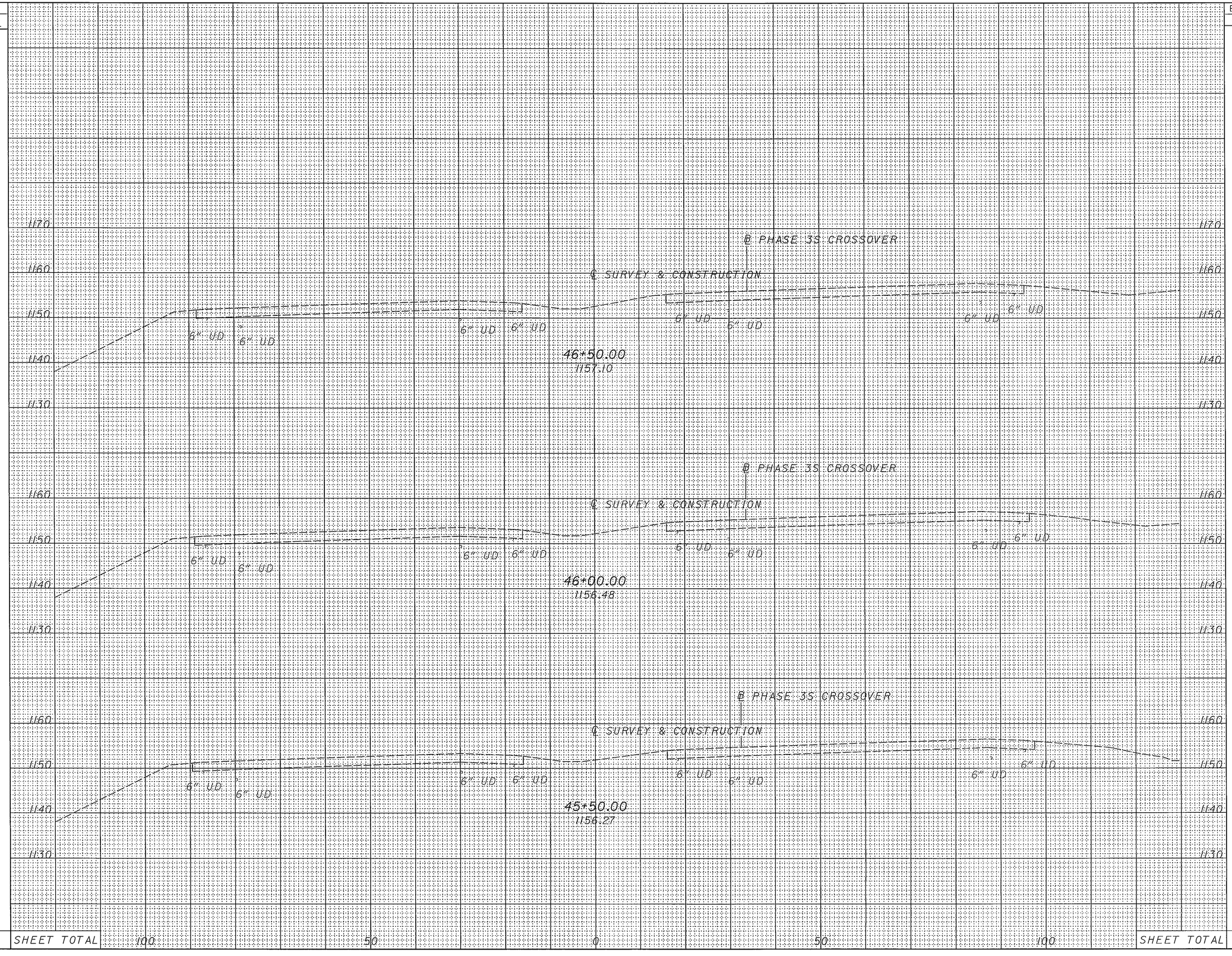
110
381

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED COY

CHECKED W.B.H.



CROSS SECTIONS PHASE 3S CROSSOVER STA. 45+50.00 TO STA. 46+50.00

SUM-77-1.40

SEEDING	
END WIDTH	SQ. YDS.

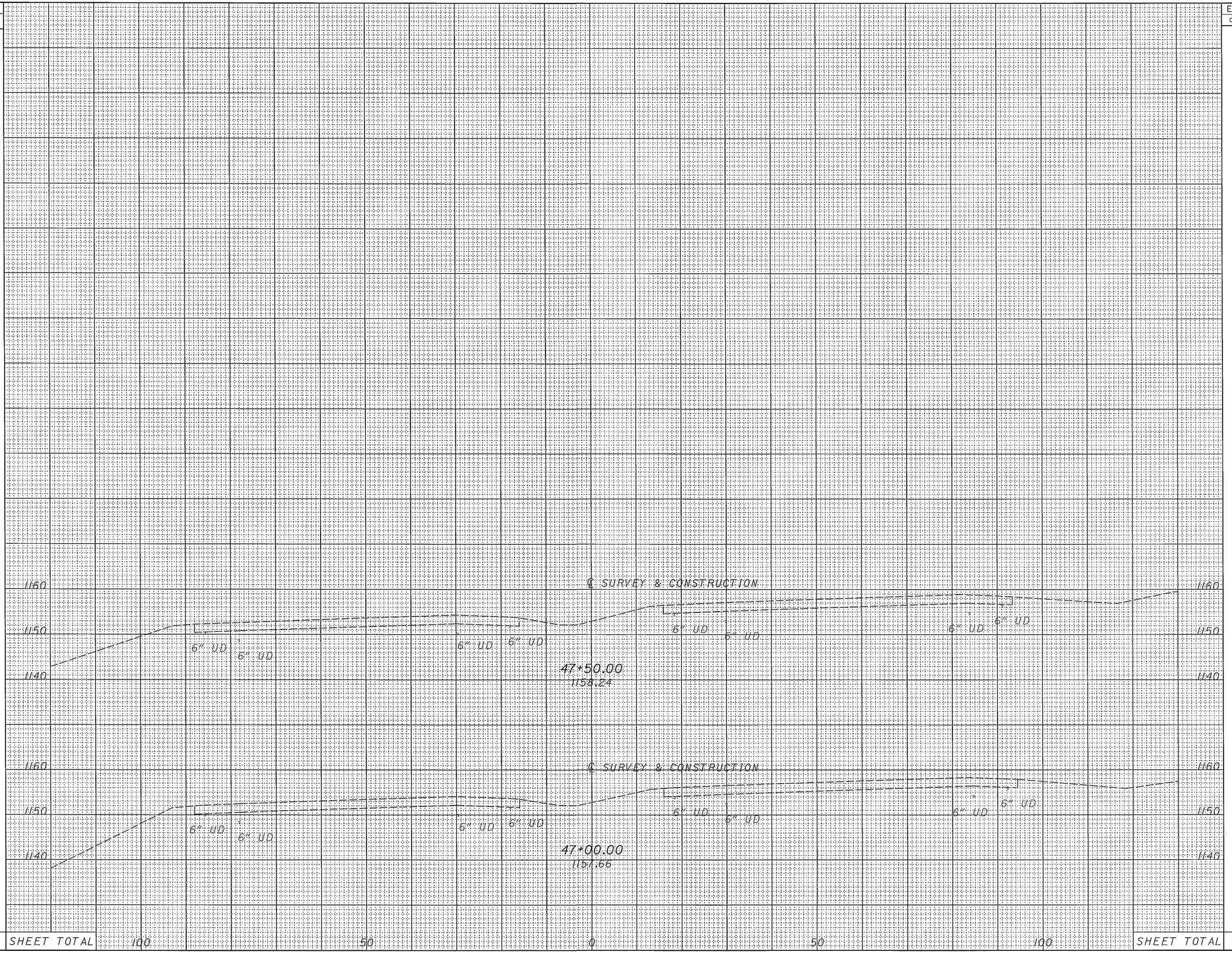
END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS PHASE 3S CROSSOVER STA. 47+00.00 TO STA. 47+50.00

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SHEET NUMBER																						PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
			7	8	17	18	19	22	118	119	120	124	125	126	127	128	242	247	251	252	258	259	IM	NHS						
																												ROADWAY	
																						LUMP		201	11000	LUMP		CLEARING AND GRUBBING	
									7												2		9		202	20010	9	EACH	HEADWALL REMOVED	
															495								495		202	22900	495	SQ YD	APPROACH SLAB REMOVED	
															72,445								72445		202	23000	72,445	SQ YD	PAVEMENT REMOVED	
															57,650								57650		202	23010	57,650	SQ YD	PAVEMENT REMOVED, ASPHALT	
										334													334		202	30700	334	FT	CONCRETE BARRIER REMOVED	
									3423														3423		202	35100	3,423	FT	PIPE REMOVED, 24" AND UNDER	
									20													375	395		202	35200	395	FT	PIPE REMOVED, OVER 24"	
										5307	509												5816		202	38000	5,816	FT	GUARDRAIL REMOVED	
										2446													2446		202	38200	2,446	FT	GUARDRAIL REMOVED FOR REUSE	
										225													225		202	38300	225	FT	GUARDRAIL REMOVED, BARRIER DESIGN	
											1												1		202	42620	1	EACH	ANCHOR ASSEMBLY REMOVED FOR REUSE, TYPE E-98	
											1												1		202	42806	1	EACH	ANCHOR ASSEMBLY REMOVED FOR REUSE	
										2													2		202	47200	2	EACH	BRIDGE TERMINAL ASSEMBLY, REMOVED FOR REUSE	
									40														40		202	58100	40	EACH	CATCH BASIN REMOVED	
									1														1		202	58700	1	EACH	MANHOLE ABANDONED	
														28,125									28125		202	75000	28,125	FT	FENCE REMOVED	
							628																628		SPECIAL	20270100	628	FT	PIPE CLEANOUT	19
						15											78,246	302	117				434	78246	203	10000	78,680	CU YD	EXCAVATION	
						30											17,885	484	471				985	17885	203	20000	18,870	CU YD	EMBANKMENT	
															195,590								133001	62589	204	10001	195,590	SQ YD	SUBGRADE COMPACTION, AS PER PLAN	18
								6000																6000	204	13000	6,000	CU YD	EXCAVATION OF SUBGRADE	22
								6000																6000	204	20000	6,000	CU YD	EMBANKMENT	22
					67																		67		204	45000	67	HOUR	PROOF ROLLING	17
														36									36		209	15001	36	STATION	RESHAPING UNDER GUARDRAIL, AS PER PLAN	21
																							LUMP		503	11101	LUMP		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN	27A/84
			7	7																			14		604	38500	14	EACH	MONUMENT ASSEMBLY	
										1968.75	162.50												2131.25		606	13000	2,131.25	FT	GUARDRAIL, TYPE 5	
										400													400		606	15500	400	FT	GUARDRAIL, BARRIER DESIGN, TYPE 5	
										1375	468.75												1843.75		606	16500	1,843.75	FT	GUARDRAIL REBUILT, TYPE 5	
										9	1												10		606	22000	10	EACH	ANCHOR ASSEMBLY, TYPE B-98	
											5												5		606	22010	5	EACH	ANCHOR ASSEMBLY, TYPE E-98	
										8	3												11		606	26500	11	EACH	ANCHOR ASSEMBLY, TYPE T	
											1												1		606	27900	1	EACH	ANCHOR ASSEMBLY REBUILT, TYPE T	
											1												1		606	28050	1	EACH	ANCHOR ASSEMBLY REBUILT, TYPE E-98	
										9	10												19		606	35000	19	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE I	
											2												2		606	35001	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE I, AS PER PLAN	19
											2												2		606	35011	2	EACH	BRIDGE TERMINAL ASSEMBLY REBUILT, TYPE I, AS PER PLAN	19
										2													2		606	35100	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
										4													4		606	60010	4	EACH	IMPACT ATTENUATOR, TYPE I-98 (BIDIRECTIONAL)	
														28125									28125		607	23001	28,125	FT	FENCE, TYPE CLT, AS PER PLAN	22
						1125																	1125		607	98000	1,125	FT	FENCE, MISC.: CONSTRUCTION FENCING (PLASTIC/NYLON)	18
										6148													1796	4352	622	10160	6,148	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D	
											418												418		622	90000	418	FT	BARRIER MISC.: SHOULDER PIER PROTECTION, AS PER PLAN	330
								17500															17500		SPECIAL	69012010	17,500	SQ YD	GEOTEXTILE FABRIC	22
																				2			2		SPECIAL	69050100	2	EACH	MAILBOX SUPPORT SYSTEM, SINGLE	22
																							LUMP		SPECIAL	69091000	LUMP		AS-BUILT CONSTRUCTION PLANS	21
																5695							5695		864	10100	5,695	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY URETHANE)	
																												EROSION CONTROL	
																					5		5		601	10001	5	SQ YD	RIPRAP, AS PER PLAN	258
																						5	5		601	11000	5	SQ YD	RIPRAP USING 6" REINFORCED CONCRETE SLAB	
												96											96		601	11001	96	SQ YD	RIPRAP USING 6" REINFORCED CONCRETE SLAB, AS PER PLAN	257
																						13	13		601	32100	13	CU YD	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	
													19										19		601	32200	19	CU YD	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	

CALCULATED SPC
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GENERAL SUMMARY

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SHEET NUMBER																		PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
					18	22	117	124	125	126	127	128	242	247	251	258	259	259A	IM		NHS						
																									EROSION CONTROL (CON'T.)	
					2														2			659	00100	2	EACH	SOIL ANALYSIS TEST	
					14410														14410			659	00300	14,410	CU YD	TOPSOIL	
					200								12629I	1343	1135				128969			659	10000	128,969	SQ YD	SEEDING AND MULCHING	
					6448														6448			659	14000	6,448	SQ YD	REPAIR SEEDING AND MULCHING	
					6448														6448			659	15000	6,448	SQ YD	INTER-SEEDING	
					18.09														18.09			659	20000	18.09	TON	COMMERCIAL FERTILIZER	
					53.64														53.64			659	30000	53.64	TON	AGRICULTURAL LIME	
					732														732			659	35000	732	M GAL	WATER	
					32														32			659	40000	32	M SQ FT	MOWING	
									307										307			660	20000	307	SQ YD	SODDING REINFORCED	
									536										536			660	25000	536	SQ YD	SODDING STAKED	
									5391										5391			670	00700	5,391	SQ YD	DITCH EROSION PROTECTION	
																			1			832	10000	1	EACH	STORM WATER POLLUTION PREVENTION PLAN	
																			24,000			832	30000	24,000	EACH	EROSION CONTROL	
																									DRAINAGE	
							4.25									6.60	3.00	19.95	33.80			602	20000	33.80	CU YD	CONCRETE MASONRY	
								1608											1528		80	603	00900	1,608	FT	6" CONDUIT, TYPE B	
								1416											1345		71	603	01500	1,416	FT	6" CONDUIT, TYPE F	
							58												55		3	603	04600	58	FT	12" CONDUIT, TYPE C, 707.41	
							206												196		10	603	05900	206	FT	15" CONDUIT, TYPE B	
							72												68		4	603	05900	72	FT	15" CONDUIT, TYPE B, 706.02	
							887												843		44	603	06100	887	FT	15" CONDUIT, TYPE C	
							36												34		2	603	06100	36	FT	15" CONDUIT, TYPE C, 706.02	
							158												150		8	603	06700	158	FT	15" CONDUIT, TYPE F	
							282												268		14	603	07400	282	FT	18" CONDUIT, TYPE B	
							1,600												1520		80	603	07600	1,600	FT	18" CONDUIT, TYPE C	
							6												6			603	07600	6	FT	18" CONDUIT, TYPE C, 706.02	
							218												207		11	603	10400	218	FT	24" CONDUIT, TYPE B	
							118												112		6	603	11900	118	FT	27" CONDUIT, TYPE B	
							24												23		1	603	13600	24	FT	30" CONDUIT, TYPE C, 706.02	
																	235		223		12	603	20700	235	FT	48" CONDUIT, TYPE A, 706.02	
							2												2			604	00800	2	EACH	CATCH BASIN, NO. 3A	
							18												18			604	01200	18	EACH	CATCH BASIN, NO. 4	
																	1		1			604	01400	1	EACH	CATCH BASIN, NO. 4A	
							5												5			604	02800	5	EACH	CATCH BASIN, NO. 8	
							1												1			604	09000	1	EACH	CATCH BASIN ADJUSTED TO GRADE	
							1												1			604	09500	1	EACH	CATCH BASIN RECONSTRUCTED TO GRADE	
							4												4			604	22500	4	EACH	INLET MISC.: SINGLE SLOPE CONCRETE BARRIER, TYPE D	254,255
							1												1			604	31500	1	EACH	MANHOLE NO. 3, WITH FLAT TOP	
																1			1			604	32101	1	EACH	MANHOLE NO. 5, AS PER PLAN	258
								98,484											98,484			605	11110	98,484	FT	6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP	
								10,083											10,083			605	13410	10,083	FT	6" UNCLASSIFIED PIPE UNDERDRAIN WITH FABRIC WRAP	
																265			265			837	10000	265	FT	78" LINER PIPE, 707.24	
																52			52			837	20000	52	CU YD	BACKFILL FOR LINER PIPE	
											2070														*PAVEMENT*	
											375								2070			254	01000	2,070	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE (t=1 1/2")	
											20,755								375			301	46000	375	CU YD	ASPHALT CONCRETE BASE, PG64-22	
						6000					32,940								20,755			302	46001	20,755	CU YD	ASPHALT CONCRETE BASE, PG64-22, AS PER PLAN	18
											370								26,479		12461	304	20000	38,940	CU YD	AGGREGATE BASE	22
											75								370			407	10000	370	GALLON	TACK COAT	
												75,535							75			407	14000	75	GALLON	TACK COAT FOR INTERMEDIATE COURSE	
												155							51,364		24171	408	10000	75,535	GALLON	PRIME COAT	
												63							155			442	10050	155	CU YD	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE B (446)	
												95							63			448	46021	63	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG64-22, AS PER PLAN	21
												82							95			448	46050	95	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22	
												70							82			448	46061	82	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, UNDER GUARDRAIL, PG64-22, AS PER PLAN	21
										158									70			448	47020	70	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	
												64,850							158			609	24510	158	FT	CURB, TYPE 4-C	
																			44098		20752	880	15001	64,850	CU YD	ASPHALT CONCRETE WITH WARRANTY (7 YEARS), AS PER PLAN	18

CALCULATED SPC
CHECKED W.B.H.

GENERAL SUMMARY

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SHEET NUMBER																		PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
									25	26	27	27A	28	29		31	32	259	IM		NHS						
																									STRUCTURES	
																		LUMP	LUMP			202	11000	LUMP		STRUCTURE REMOVED (FULL-HEIGHT HEADWALL)	
																									MAINTENANCE OF TRAFFIC	
										50									50			410	12000	50	CU YD	TRAFFIC COMPACTED SURFACE, TYPE A OR B	
										50									50			410	13000	50	CU YD	TRAFFIC COMPACTED SURFACE, TYPE C	
																4			4			606	98100	4	EACH	GUARDRAIL MISC.: WORK ZONE ANCHOR ASSEMBLY, TYPE T	27A
																1			1			606	98100	1	EACH	GUARDRAIL MISC.: WORK ZONE BRIDGE TERMINAL ASSEMBLY, TYPE 2	27A
											10,000								10,000			614	11100	10,000	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	27
																2,000			2,000			SPECIAL	61412200	2,000	FT	WORK ZONE GUARDRAIL	27A
																6			6			614	12337	6	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL), AS PER PLAN	27
																			LUMP			614	12420	LUMP		DETOUR SIGNING	
																	23		23			614	12470	23	EACH	WORK ZONE SPEED LIMIT SIGN	
																	16		16			614	12481	16	EACH	CONSTRUCTION ZONE/FINES DOUBLED SIGN, AS PER PLAN	27
											40								40			614	12500	40	EACH	REPLACEMENT SIGN	
											100								100			614	12600	100	EACH	REPLACEMENT DRUM	
										3									3			614	12756	3	EACH	WORK ZONE CROSSOVER LIGHTING SYSTEM	26
										200									200			614	13000	200	CU YD	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
												45							45			614	13001	45	CU YD	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC, AS PER PLAN	27A
																41			41			614	13200	41	EACH	BARRIER REFLECTOR, TYPE A	
																1,999			1,999			614	13300	1,999	EACH	BARRIER REFLECTOR, TYPE B	
																730			730			614	13350	730	EACH	OBJECT MARKERS, ONE WAY	
									150										150			614	18000	150	EACH	MAINTAINING TRAFFIC, MISC.: VEHICLE ASSISTANCE	25
										12,000									12,000			614	18020	12,000	HOUR	MAINTAINING TRAFFIC, MISC.: TRAFFIC SAFETY COORDINATOR	25
										24									24			614	18601	24	SIGN MNTH	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	26
															19.47				19.47			614	20100	19.47	MILE	WORK ZONE LANE LINE, CLASS I, 642 PAINT	
															1.26				1.26			614	20200	1.26	MILE	WORK ZONE LANE LINE, CLASS I, 740.06 TYPE I	
															0.89				0.89			614	21100	0.89	MILE	WORK ZONE CENTER LINE, CLASS I, 642 PAINT	
															34.44				34.44			614	22100	34.44	MILE	WORK ZONE EDGE LINE, CLASS I, 642 PAINT	
															6.19				6.19			614	22200	6.19	MILE	WORK ZONE EDGE LINE, CLASS I, 740.06 TYPE I	
															1,065				1,065			614	23200	1,065	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 642 PAINT	
															7,555				7,555			614	23400	7,555	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 740.06 TYPE I	
															1,256				1,256			614	24400	1,256	FT	WORK ZONE DOTTED LINE, CLASS I, 740.06 TYPE I	
															184				184			614	25400	184	FT	WORK ZONE TRANSVERSE LINE, CLASS I, 740.06 TYPE I	
																			LUMP			615	10001	LUMP		ROADS FOR MAINTAINING TRAFFIC, AS PER PLAN	25
																	38,494		38,494			615	20001	38,494	SQ YD	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN, NO. 1	25
																	730		730			615	20001	730	SQ YD	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN, NO. 2	25
										50									50			616	10000	50	M GAL	WATER	
																35,801			35,801			622	40020	35,801	FT	PORTABLE CONCRETE BARRIER, 32"	
																31,756			31,756			622	40031	31,756	FT	PORTABLE CONCRETE BARRIER, 50", AS PER PLAN	27
																30			30			622	40040	30	FT	PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED	
													316						316			630	80300	316	SQ FT	SIGN, TEMPORARY OVERLAY	
													8						8			630	81304	8	SQ FT	SIGN ERECTED, TEMPORARY OVERLAY	
													56						56			630	83000	56	SQ FT	COVERING OF SIGN	
													6						6			630	89900	6	EACH	REMOVAL OF OVERLAY SIGN	
																			LUMP			SPECIAL	10810000	LUMP		CPM PROGRESS SCHEDULE	
																			LUMP			614	11000	LUMP		MAINTAINING TRAFFIC	23
																			24			619	16021	24	MONTH	FIELD OFFICE, TYPE C, AS PER PLAN	19
																			LUMP			623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
																			LUMP			624	10000	LUMP		MOBILIZATION	
																										FOR NOISE WALL QUANTITIES, SEE SHEET NO. 378
																										FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 260
																										FOR STRUCTURE QUANTITIES, SEE SHEET NO. 298, 335 & 353
																										FOR LANDSCAPE PLAN QUANTITIES, SEE SHEET NO. 381A

CALCULATED SPC
CHECKED W.B.H.

GENERAL SUMMARY

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DRAINAGE SUBSUMMARY

CALCULATED L.M.B. CHECKED W.B.H.

REFERENCE NO.	SHEET NO.	STATION TO STATION	SIDE	602 CONCRETE MASONRY		603 12" CONDUIT, TYPE C, 707.41	603 15" CONDUIT, TYPE B	603 15" CONDUIT, TYPE B, 706.02	603 15" CONDUIT, TYPE C	603 15" CONDUIT, TYPE C, 706.02	603 15" CONDUIT, TYPE F	603 18" CONDUIT, TYPE B	603 18" CONDUIT, TYPE C	603 18" CONDUIT, TYPE C, 706.02	603 24" CONDUIT, TYPE B	603 27" CONDUIT, TYPE B	603 30" CONDUIT, TYPE C, 706.02	604 CATCH BASIN NO. 3A	604 CATCH BASIN NO. 4	604 CATCH BASIN NO. 8	604 CATCH BASIN ADJUSTED TO GRADE	604 CATCH BASIN RECONSTRUCTED TO GRADE	604 INLET MISC.: SINGLE SLOPE CONCRETE BARRIER, TYPE D	604 MANHOLE No. 3, WITH FLAT TOP				
				CU YD		FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	EA.	EA.	EA.	EA.	EA.	EA.	EA.				
D1	137	69+00	LT						7														1					
D2	137	69+00	RT						10		17										1		1					
D3	138	76+00	RT								20												1					
D4	138	76+00	LT										13							1								
D5	138	76+00	LT	0.33								86											1					
D6	139	83+32	RT	0.27					11		40							1										
D7	139	83+43	LT	0.27					11		42							1										
D8	139	86+22	RT	0.27			91		6		39								1									
D9	140	91+91	LT	0.25				22		18									1								1	
D10	140	96+92	RT	0.25				24		18									1									
D11	142	113+89	LT									98								1								
D12	142	113+89	RT	0.46											108				1									
D13	142	118+45 TO 118+90	RT	0.53												118			1									
D14	142	118+90	LT									98								1								
D15	142	118+90 TO 119+90	LT										100							1								
D16	142	118+90 TO 120+08	MED										118						1									
D17	143	120+08 TO 122+50	MED										242						1									
D18	143	122+50 TO 125+00	MED										250						1									
D19	145	141+88	RT	0.25				26											1									
D20	145,146	148+25 TO 150+60	MED						235										1									
D21	146	150+60 TO 153+00	MED						240																1			
D22	146	153+00 TO 156+00	MED						300										1									
D23	146	156+00 TO 159+00	MED										300						1									
D24	146,147	159+00 TO 161+72	MED										272						1									
D25	148	171+47	RT	0.46											110				1									
D26	148	171+47 TO 174+40	MED										293						1									
D27	149	188+87	RT	0.27			115												1									
D28	151	205+84 TO 205+99	RT	0.31										6					1									
D29	152	211+00 TO 211+67	MED						67										1									
D30	152	212+35	MED																				1					
D31	252	11+91 TO 12+45	RT			58																						
D32	252	11+67 TO 11+91	RT														24			1								
D33	252	11+91	RT	0.33									12															
TOTALS CARRIED TO GENERAL SUMMARY				**4.25**		**58**	**206**	**72**	**887**	**36**	**158**	**282**	**1600**	**6**	**218**	**118**	**24**	**2**	**18**	**5**	**1**	**1**	**4**	**1**				

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ds001.dgn

DRAINAGE SUBSUMMARY

CALCULATED L.M.B. CHECKED W.B.H.

REFERENCE NO.	SHEET NO.	STATION TO STATION	SIDE	202 PIPE REMOVED, 24" AND UNDER FT.	202 PIPE REMOVED, OVER 24" FT.	202 CATCH BASIN REMOVED EA.	202 HEADWALL REMOVED EA.	202 MANHOLE ABANDONED EA.
RD1	138	75+91	LT	78		1		
RD2	139	86+22	RT	128		1		
RD3	140	91+91	LT/RT	46		2	1	
RD4	140	96+92	LT/RT	48		2		
RD5	142	113+89	LT/RT	202		3		
RD6	142	118+45 TO 188+90	RT	102		1	1	
RD7	142	118+90	LT/RT	110		2		
RD8	142	118+90 TO 119+90	LT	100		1		
RD9	142	118+90 TO 119+90	LT	100		1		
RD10	142	119+90	LT/RT	38		1		
RD11	142,143	119+90 TO 124+90	LT	500		2		
RD12	143	124+90	LT/RT	38		2		
RD13	145	141+88	LT/RT	42		2		
RD14	146	151+88	LT/RT	38		1		
RD15	146	151+88 TO 159+88	RT	800		2		
RD16	146	159+88	LT/RT	128		2	1	
RD17	148	170+27	LT/RT	202		3	1	
RD18	148	170+27 TO 171+27	RT	100		1		
RD19	148	171+27	LT/RT	38		1		
RD20	148	177+00	LT/RT	102		2		
RD20A	148	177+16	RT					1
RD21	148	178+66 TO 179+08	RT	42				
RD22	149	182+86 TO 183+06	RT	20		1		
RD23	149	183+06	LT/RT	38		1		
RD24	149	188+87	LT/RT	137		2	1	
RD25	151	205+83 TO 206+00	LT/RT	24		1		
RD26	139	87+95	LT	142		1	1	
RD27	252	11+67 TO 11+87	RT		20			
RD28	148	174+30 TO 174+43	LT	80		1	1	
TOTALS CARRIED TO GENERAL SUMMARY				3,423	20	40	7	1

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GUARDRAIL QUANTITIES

REF NO.	SHEET NO.	STATION TO STATION	SIDE	202 GUARDRAIL REMOVED	202 BRIDGE TERMINAL ASSEMBLY, REMOVED FOR REUSE	202 GUARDRAIL REMOVED, BARRIER DESIGN	202 CONCRETE BARRIER REMOVED	202 GUARDRAIL REMOVED FOR REUSE	606 GUARDRAIL, TYPE 5	606 GUARDRAIL, BARRIER DESIGN, TYPE 5	606 ANCHOR ASSEMBLY, TYPE B-98	606 ANCHOR ASSEMBLY, TYPE T	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 IMPACT ATTENUATOR, TYPE I-98 (BIDIRECTIONAL)	606 GUARDRAIL REBUILT, TYPE 5	622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D		**626 BARRIER REFLECTOR, TYPE A	**626 BARRIER REFLECTOR, TYPE B
				FT	EACH	FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	FT	FT		EACH	EACH
R1*	137,138	60+58 TO 74+15	MED		1			1312												
R2*	137,138	63+00 TO 74+60	MED		1			1134												
B1	137-139	60+58 TO 84+08.04	MED														2306			24
B2	137-139	63+00 TO 83+83.70	MED														2046			21
R3	138,139	77+92 TO 84+74	LT	682																
R4	138,139	78+27 TO 83+62	RT	535																
GR1	138,139	78+86.12 TO 83+65.79	RT						443.75		1		1						6	
GR2	138,139	79+39.89 TO 84+77.39	LT									1		1		525			7	
R5	139	81+11 TO 83+92	MED	162.5		125														
R6	139,140	86+18 TO 93+65	LT	747																
R7	139	85+88 TO 88+56	MED	175		100														
R8	139,140	85+07 TO 97+15	RT	1208																
GR4	139,140	86+14.98 TO 91+83.20	LT								1		1			531.25			7	
GR5	139	85+70.58 TO 87+51.29	MED								1		1			131.25			4	
GR6	139	85+47.67 TO 87+53.92	MED						193.75			1	1					1	2	
GR7	139,140	85+03.38 TO 94+90.88	RT						975			1		1					10	
R9	145,146	148+54 TO 150+20	RT	50			117													
GR8	145	148+85.28 TO 149+66.15	RT						43.75		1		1						2	
B3	145,146	149+64.05 TO 150+12.05	RT														48			2
GR9	145,146	148+90.70 TO 150+84.22	MED							100		1			1				4	
GR10	146	150+26.40 TO 152+20	MED						50	100		1			1	50			4	
B4	146	150+96.45 TO 151+46.45	LT														50			2
GR11	146	151+44.35 TO 152+25.23	LT								1		1			43.75			2	
R10	146	150+92 TO 152+56	LT	50			116													
R11	150	198+38 TO 199+88	RT	50			101													
GR12	150,151	198+06.95 TO 200+12.90	MED						50	112.5		1			1				4	
GR13	150	198+68.08 TO 199+48.46	RT						43.75		1		1						2	
B5	150	199+46.37 TO 199+90.17	RT														44			2
GR14	150,151	199+60.47 TO 201+41.48	MED							87.5		1			1	50			4	
R12	150,151	199+65 TO 201+55	LT	275																
B6	150,151	199+83 TO 200+27	LT														44			2
GR15	151	200+25.02 TO 201+06.28	LT								1		1			43.75			2	
R13	151	205+84 TO 208+11	RT	227																
GR16	151	206+73.01 TO 208+09.39	RT						87.5		1	1							2	
R14	151,152	209+25 TO 210+33	MED	108																
GR17	369	226+33.78 TO 227+49.93	RT						81.25		1		1						2	
B7	369-372	227+49.93 TO 23+84.91(OFF RAMP)	RT														1610			27
R15	369-372	228+90.06 TO 19+50 (OFF RAMP)	RT	1037.5																
		GR3 NOT USED																		
		* CONTINUED ON SHEET NO. 120																		
		**ITEM 626 IS CARRIED IN THE TRAFFIC CONTROL SUMMARY, SEE SHEET NO. 260																		
TOTALS CARRIED TO GENERAL SUMMARY				**5307**	**2**	**225**	**334**	**2446**	**1968.75**	**400**	**9**	**8**	**9**	**2**	**4**	**1375**	**6148**		**64	**80

CALCULATED W.D.N.
CHECKED W.B.H.

GUARDRAIL SUBSUMMARY

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GUARDRAIL QUANTITIES

REF NO.	SHEET NO.	STATION TO STATION	SIDE	202 GUARDRAIL REMOVED (FT)	202 ANCHOR ASSEMBLY REMOVED FOR REUSE, TYPE E-98 (EACH)	202 ANCHOR ASSEMBLY REMOVED FOR REUSE (EACH)		606 GUARDRAIL, TYPE 5 (FT)	606 GUARDRAIL REBUILT, TYPE 5 (FT)	606 ANCHOR ASSEMBLY, TYPE B-98 (EACH)	606 ANCHOR ASSEMBLY, TYPE E-98 (EACH)	606 ANCHOR ASSEMBLY, TYPE T (EACH)	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1 (EACH)	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN (EACH)	606 BRIDGE TERMINAL ASSEMBLY REBUILT, TYPE 1, AS PER PLAN (EACH)	606 ANCHOR ASSEMBLY REBUILT, TYPE T (EACH)	606 ANCHOR ASSEMBLY REBUILT, TYPE E-98 (EACH)	622 BARRIER MISC.: SHOULDER PIER PROTECTION, A.P.P. (FT)	**626 BARRIER REFLECTOR, TYPE A (EACH)	**626 BARRIER REFLECTOR, TYPE B (EACH)
GR18	252	GREENSBURG 8+80 TO 9+10.12	RT						50			1			1				2	
GR19	252	GREENSBURG 7+99.26 TO 8+79.50	LT						31.25		1		1						2	
GR20	252	GREENSBURG 11+18.80 TO 11+85.53	RT						31.25	1			1						2	
GR21	252	GREENSBURG 10+88.09 TO 11+25.74	LT						43.75						1				2	
R16	252	GREENSBURG 11+13.16 TO 11+25.74	LT	25																
GR22	243	WISE ROAD 6+97 TO 8+01.03	LT						106.25				1						2	
R17	243	WISE ROAD 6+97 TO 8+01.30	LT	104																
GR23	243	WISE ROAD 7+47.23 TO 8+21.21	RT					68.75				1	1						2	
R18	243	WISE ROAD 7+44.20 TO 8+21	RT	75																
GR24	243	WISE ROAD 11+81.58 TO 12+61.86	LT						31.25		1		1						2	
R19	243	WISE ROAD 11+78.53 TO 12+47.11	LT	62.5																
GR25	243	WISE ROAD 12+01.76 TO 12+82.03	RT					31.25			1		1						2	
R20	243	WISE ROAD 12+01.76 TO 12+53.80	RT	37.5										1						
GR26	244	GRAYBILL 7+74 TO 8+41.62	LT						31.25		1		1						2	
R21	244	GRAYBILL 8+18 TO 8+45	LT	39.5																
GR27	244	GRAYBILL 8+25 TO 8+45.30	RT					31.25				1	1	1					2	
R22	244	GRAYBILL 8+33 TO 8+48	RT	15																
GR28	244	GRAYBILL 11+58.03 TO 13+00	LT						143.75				1						3	
R23	244	GRAYBILL 11+53.56 TO 13+00	LT	125																
GR29	244	GRAYBILL 11+61.97 TO 12+42.35	RT					31.25			1		1						2	
R24	244	GRAYBILL 11+57.51 TO 11+77.13	RT	25																
B8	252,330	GREENSBURG 9+10.53 TO 11+19.43	RT															209		4
B9	252,330	GREENSBURG 8+79.68 TO 10+88.58	LT															209		4
R1*	137,138	60+58 TO 74+15	MED		1												1			
R2*	137,138	63+00 TO 74+60	MED			1										1				
		* CONTINUED FROM SHEET NO. 119																		
		**ITEM 626 IS CARRIED IN THE TRAFFIC CONTROL SUMMARY, SEE SHEET NO. 260																		
TOTALS CARRIED TO GENERAL SUMMARY				509	1	1		162.50	468.75	1	5	3	10	2	2	1	1	418	**25	**8

CALCULATED W.D.N.
CHECKED W.B.H.

GUARDRAIL SUBSUMMARY

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UNDERDRAIN SUBSUMMARY

CALCULATED W.D.N. CHECKED W.B.H.

REFERENCE NUMBER	SHEET NUMBER	STATION TO STATION	SIDE	601 RIPRAP USING 6" REINFORCED CONCRETE SLAB, AS PER PLAN	603 6" CONDUIT, TYPE B	603 6" CONDUIT, TYPE F	605 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP	605 6" UNCLASSIFIED PIPE UNDERDRAIN WITH FABRIC WRAP							BENDS AND BRANCHES FOR INFORMATIONAL PURPOSES ONLY					
															6" 90 DEGREE BEND	6" TEE	6" CROSS	6" 30 DEGREE BEND		
				SQ YD	FT	FT	FT	FT							EA.	EA.	EA.	EA.		
137	UD1	63+00 to 64+62	Rt				160													
137	UD2	64+65 to 6895	Rt			22	420	10							1					
137,138	UD3	69+00 to 73+85	Rt			5	485								1					
138	UD4	73+86.12 to 75+95	Lt				170	39												
138	UD5	73+86.12 to 75+95	Lt				145	64												
138	UD6	73+86.12 to 75+95	Lt				145	64												
138	UD7	73+86.12 to 75+95	Lt	4	65	11	145	64							1	3				
138	UD8	73+86.12 to 75+95	Rt				199	10												
138	UD9	73+86.12 to 75+97	Rt				201	10												
138	UD10	73+86.12 to 75+97	Rt				211													
138	UD11	73+86.12 to 75+97	Rt		65	12	211								1	3				
138,139	UD12	76+05 to 84+47	Lt				832	10												
138,139	UD13	76+05 to 84+40	Lt	4	12	22	835								1	1				
138,139	UD14	76+05 to 84+14	Lt			13	809								1					
138,139	UD15	76+00 to 84+05	Lt				795	10								1				
138,139	UD16	76+00 to 83+81	Rt				771	10								1				
138,139	UD17	76+00 to 83+72	Rt				762	10												
138,139	UD18	76+00 to 83+46	Rt				746													
138,139	UD19	76+00 to 83+39	Rt		48	12	739								1	2				
139	UD20	85+78 to 86+17	Rt					39												
139	UD21	85+68 to 8617	Rt		14	18		49							1	1		1		
139,140	UD22	86+42 to 91+86	Lt				534	10												
139,140	UD23	86+42 to 91+86	Lt	4	12	11	544								1	1				
139,140	UD24	86+22 to 91+86	Lt		14	16	564								1	1				
139,140	UD25	86+22 to 91+86	Lt				554	10												
139,140	UD26	86+27 to 91+88	Rt				551	10												
139,140	UD27	86+27 to 91+88	Rt		14	18	561								1	1		1		
139,140	UD28	85+39 to 91+88	Rt	4	12	28	649								1	1				
139,140	UD29	85+39 to 91+88	Rt				639	10												
140,141	UD30	91+96 to 100+07	Lt				801	10												
140,141	UD31	91+96 to 100+07	Lt	4	12	21	811								1	1				
140,141	UD32	91+96 to 100+07	Lt		14	18	607	204							1	1		1		
140,141	UD33	91+96 to 100+07	Lt				811													
140,141	UD34	91+91 to 100+07	Rt				806	10												
140,141	UD35	91+91 to 100+07	Rt		14	16	816								1	1				
140,141	UD36	91+91 to 100+07	Rt	4	12	11	816								1	1				
140,141	UD37	91+91 to 100+07	Rt				806	10												
141	UD38	100+10 to 105+08	Lt				408	90												
141	UD39	100+10 to 105+08	Lt				258	240												
141	UD40	100+10 to 105+08	Lt				258	240												
141	UD41	100+10 to 105+08	Lt	4	62	18	358	140							1	3				
141	UD42	100+10 to 104+61	Rt	4	62	19	361	90							1	3				
141	UD43	100+10 to 104+61	Rt				236	215												
141	UD44	100+10 to 104+61	Rt				236	215												
141	UD45	100+10 to 104+61	Rt				451													
141,142	UD46	105+08 to 113+84	Lt				866	10												
141,142	UD47	105+08 to 113+84	Lt		12	20	876								1	1		1		
141,142	UD48	105+08 to 113+84	Lt		14	18	876								1	1		1		
141,142	UD49	105+08 to 113+84	Lt				866	10												
141,142	UD50	104+61 to 113+84	Rt				913	10												
TOTALS THIS SHEET				32	458	329	26,614	1923							20	28		5		

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REFERENCE NUMBER	SHEET NUMBER	STATION TO STATION	SIDE	601 RIPRAP USING 6" REINFORCED CONCRETE SLAB, AS PER PLAN SQ YD	603 6" CONDUIT, TYPE B FT	603 6" CONDUIT, TYPE F FT	605 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP FT	605 6" UNCLASSIFIED PIPE UNDERDRAIN WITH FABRIC WRAP FT							BENDS AND BRANCHES FOR INFORMATIONAL PURPOSES ONLY					
															6" 90 DEGREE BEND EA.	6" TEE EA.	6" CROSS EA.	6" 30 DEGREE BEND EA.		
141,142	UD51	104+61 to 113+84	Rt		14	18	923								1	1		1		
141,142	UD52	104+61 to 113+84	Rt	4	12	24	923								1	1				
141,142	UD53	104+61 to 113+84	Rt				913	10												
142	UD54	113+94 to 119+90	Lt				586	10												
142	UD55	113+94 to 119+90	Lt		12	21	596								1		1			
142,143	UD56	113+94 to 120+08	Lt		14	16	596								1		1			
142,143	UD57	113+94 to 120+08	Lt				586	10												
142,143	UD58	113+94 to 120+08	Rt				604	10												
142,143	UD59	113+94 to 120+08	Rt		14	16	614								1		1			
142,143	UD60	113+94 to 120+08	Rt	4	12	16	156	458							1		1			
142,143	UD61	113+94 to 120+08	Rt				306	308												
142,143	UD62	119+90 to 124+98	Lt				498	10												
142,143	UD63	119+90 to 124+98	Lt				508													
143	UD64	120+08 to 124+98	Lt				490													
143	UD65	120+08 to 124+98	Lt				480	10												
143	UD66	120+08 to 124+98	Rt				480	10												
143	UD67	120+08 to 124+98	Rt				490													
143	UD68	120+08 to 124+98	Rt				23	467												
143	UD69	120+08 * 124+98	Rt				198	292												
143,144	UD70	125+00 to 132+74	Lt		62	16	624	150							1	3				
143,144	UD71	125+00 to 132+74	Lt				624	150												
143,144	UD72	125+00 to 132+74	Lt				764	10												
143,144	UD73	125+00 to 132+74	Lt				764	10												
143,144	UD74	125+00 to 132+74	Rt				764	10												
143,144	UD75	125+00 to 132+74	Rt				764	10												
143,144	UD76	125+00 to 132+74	Rt				624	150												
143,144	UD77	125+00 to 132+74	Rt		62	16	624	150							1	3				
144,145	UD78	132+74 to 141+88	Lt				904	10												
144,145	UD79	132+74 to 141+88	Lt	4	12	21	876	38							1	1				
144,145	UD80	132+74 to 141+88	Lt		14	16	826	88							1	1				
144,145	UD81	132+74 to 141+88	Lt				876	38												
144,145	UD82	132+74 to 141+83	Rt				876	33												
144,145	UD83	132+74 to 141+83	Rt		14	12	826	83							1	1		1		
144,145	UD84	132+74 to 141+83	Rt	4	12	22	909								1	1				
144,145	UD85	132+74 to 141+83	Rt				899	10												
145	UD86	141+91 to 148+25	Lt				634								1	3				
145	UD87	141+91 to 148+25	Lt				634													
145	UD88	141+91 to 148+25	Lt				624	10												
145	UD89	141+91 to 148+25	Lt		62	16	624	10												
145	UD90	141+91 to 148+25	Rt				624	10												
145	UD91	141+91 to 148+25	Rt				624	10												
145	UD92	141+91 to 148+25	Rt				634													
145	UD93	141+91 to 148+25	Rt		62	16	634								1	3				
145,146	UD94	148+28 to 156+00	Lt		62	16	772								1	3				
145,146	UD95	148+28 to 156+00	Lt				772													
145,146	UD96	148+28 to 156+00	Lt				762	10												
145,146	UD97	148+28 to 156+00	Lt				762	10												
145,146	UD98	148+28 to 156+00	Rt				762	10												
145,146	UD99	148+28 to 156+00	Rt				762	10												
145,146	UD100	148+28 to 156+00	Rt				772													
TOTALS THIS SHEET				16	440	262	32,910	2615							15	21	4	2		

CALCULATED W.D.N. CHECKED W.B.H.

UNDERDRAIN SUBSUMMARY

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REFERENCE NUMBER	SHEET NUMBER	STATION TO STATION	SIDE	601 RIPRAP USING 6" REINFORCED CONCRETE SLAB, AS PER PLAN SQ YD	603 6" CONDUIT, TYPE B FT	603 6" CONDUIT, TYPE F FT	605 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP FT	605 6" UNCLASSIFIED PIPE UNDERDRAIN WITH FABRIC WRAP FT							BENDS AND BRANCHES FOR INFORMATIONAL PURPOSES ONLY 6" 90 DEGREE BEND EA.	6" TEE EA.	6" CROSS EA.	6" 30 DEGREE BEND EA.		
145,146	UD101	148+28 to 156+00	Rt		62	16	772								1	3			
146,147	UD94A	156+03 to 161+51	Lt				548												
146,147	UD95A	156+03 to 161+51	Lt	4	12	19	497	51							1	1			
146,147	UD96A	156+03 to 161+61	Lt		14	18	558								1	1		1	
146,147	UD97A	156+03 to 161+61	Lt				548	10											
146,147	UD98A	156+03 to 161+66	Rt				553	10											
146,147	UD99A	156+03 to 161+66	Rt		14	16	563								1	1		1	
146,147	UD100A	156+03 to 161+71	Rt	4	12	21	522	46							1	1			
146,147	UD101A	156+03 to 161+71	Rt				568												
147,148	UD102	161+73 to 171+47	Lt		62	16	974								1	3			
147,148	UD103	161+74 to 171+47	Lt				973												
147,148	UD104	161+77 to 171+47	Lt				960	10											
147,148	UD105	161+79 to 171+47	Lt				958	10											
147,148	UD106	161+82 to 171+42	Rt				950	10											
147,148	UD107	161+84 to 171+42	Rt		14	18	958								1	1		1	
147,148	UD108	161+87 to 171+42	Rt	4	12	31	955								1	1			
147,148	UD109	161+86 to 171+42	Rt				946	10											
148	UD110	171+47 to 174+37	Lt		62	16	290												
148	UD111	171+47 to 174+37	Lt				290												
148	UD112	171+47 to 174+37	Lt				280	10											
148	UD113	171+47 to 174+37	Lt				280	10											
148	UD114	141+52 to 174+37	Rt				275	10											
148	UD115	171+52 to 174+37	Rt		14	18	285								1	1		1	
148	UD116	171+52 to 174+37	Rt	4	12	31	285								1	1			
148	UD117	171+52 to 174+37	Rt				275	10											
148,149	UD118	174+40 to 182+81	Lt			20	331	490											
148,149	UD119	174+40 to 182+81	Lt	4	12	42	331	490							1	1			
148,149	UD120	174+40 to 182+81	Lt		14	36	331	490							1	1			
148,149	UD121	174+40 to 182+81	Lt			20	331	490											
148,149	UD122	174+40 to 182+81	Rt			20	331	490											
148,149	UD123	174+40 to 182+81	Rt			20	331	490											
148,149	UD124	174+40 to 182+81	Rt			20	331	490											
148,149	UD125	174+40 to 182+81	Rt		62	36	331	490							1	3			
149	UD118A	182+93 to 188+84	Lt				581	10											
149	UD119A	182+93 to 188+84	Lt		12	27	591								1	1			
149	UD120A	182+91 to 188+84	Lt		14	18	593								1	1		1	
149	UD121A	182+91 to 188+84	Lt				583	10											
149	UD122A	182+91 to 188+82	Rt				581	10											
149	UD123A	182+91 to 188+82	Rt		14	18	591								1	1		1	
149	UD124A	182+93 to 188+82	Rt		12	28	589								1	1			
149	UD125A	182+93 to 188+82	Rt				589												
149,150	UD126	188+87 to 197+56	Lt		62	16	869								1	3			
149,150	UD127	188+87 to 197+56	Lt				756	113											
149,150	UD128	188+87 to 197+56	Lt				831	38											
149,150	UD129	188+87 to 197+56	Lt				859	10											
149,150	UD130	188+92 to 197+56	Rt				864												
149,150	UD131	188+92 to 197+56	Rt		14	18	731	133							1	1		1	
149,150	UD132	188+92 to 197+56	Rt	4	12	43	731	133							1	1			
149,150	UD133	188+92 to 197+56	Rt				864												
150,151	UD134	197+56 to 205+50	Lt				794												
TOTALS THIS SHEET				24	518	602	29,708	4574							20	28		7	

CALCULATED W.D.N. CHECKED W.B.H.

UNDERDRAIN SUBSUMMARY

SUM-77-1.40

uds001.dgn 2/24/04

REFERENCE NUMBER	SHEET NUMBER	STATION TO STATION	SIDE	601 RIPRAP USING 6" REINFORCED CONCRETE SLAB, AS PER PLAN SQ YD	603 6" CONDUIT, TYPE B FT	603 6" CONDUIT, TYPE F FT	605 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP FT	605 6" UNCLASSIFIED PIPE UNDERDRAIN WITH FABRIC WRAP FT							BENDS AND BRANCHES FOR INFORMATIONAL PURPOSES ONLY					
															6" 90 DEGREE BEND EA.	6" TEE EA.	6" CROSS EA.	6" 30 DEGREE BEND EA.		
150.151	UD135	197+56 to 205+50	Lt	4	12	20	644	150							1	1				
150.151	UD136	197+56 to 205+84	Lt		14	16	825								1	1				
150.151	UD137	197+56 to 205+84	Lt				818	10												
150.151	UD138	197+56 to 205+82	Rt				816	10												
150.151	UD139	197+56 to 205+82	Rt		14	16	826								1	1		1		
150.151	UD140	197+56 to 205+90	Rt	4	12	25	669	165							1	1				
150.151	UD141	197+56 to 205+90	Rt				834													
151	UD142	205+83 to 209+31	Lt				297	81												
151	UD143	205+83 to 209+31	Lt				247	131												
151	UD144	205+87 to 209+31	Lt				213	131												
151	UD145	205+87 to 209+31	Lt	4	62	23	263	81							1	3				
151.152	UD146	205+94 to 211+56	Rt				496	66												
151.152	UD147	205+94 to 211+56	Rt		14	15	506	56							1	1		1		
151.152	UD148	206+00 to 211+52	Rt	4	12	24	552								1	1				
151.152	UD149	206+00 to 211+52	Rt				542	10												
152	UD150	211+75 to 212+30	Rt				45	10												
152	UD151	211+75 to 212+30	Rt		14	18	55								1	1		1		
152	UD152	211+75 to 212+30	Rt	4	12	21	55								1	1				
152	UD153	211+75 to 212+30	Rt				45	10												
152	UD150A	212+35 to 213+81	Rt				131	10								1				
152	UD151A	212+40 to 213+81	Rt		14	15	141								1					
152	UD152A	212+40 to 213+81	Rt	4	12	30	141								1					
152	UD153A	212+40 to 213+81	Rt				91	50								1				
		SHEET NO. 121 TOTALS		32	458	329	26,614	1923							20	28		5		
		SHEET NO. 122 TOTALS		16	440	262	32,910	2615							15	21	4	2		
		SHEET NO. 123 TOTALS		24	518	602	29,708	4574							20	28		7		
		SHEET NO. 124 TOTALS		24	192	223	9,252	971							11	13		3		
TOTALS CARRIED TO THE GENERAL SUMMARY				96	1608	1416	98,484	10,083							66	90	4	17		

CALCULATED W.D.N. CHECKED W.B.H.

UNDERDRAIN SUBSUMMARY

SUM-77-1.40

uds001.dgn 2/24/04

REF NO.	SHEET NO.	STATION TO STATION	SIDE	601 ROCK CHANNEL PROTECTION. TYPE C WITH FILTER C.Y.	660 SODDING REINFORCED S.Y.	670 DITCH EROSION PROTECTION S.Y.			REF NO.	SHEET NO.	STATION TO STATION	SIDE	601 ROCK CHANNEL PROTECTION. TYPE C WITH FILTER C.Y.	660 SODDING REINFORCED S.Y.	660 SODDING STAKED S.Y.	670 DITCH EROSION PROTECTION S.Y.	
EC1	138	76+00	LT	1.33													
EC2	139	83+32	RT	1.60					EC31	151	8+15 GRAYBILL RD.	LT		32			
EC3	139	84+43	LT	1.78					EC32	151	204+27 TO 205+77	MED				125	
EC4	140	91+91	LT	2.22					EC33	151,152	209+43 TO 210+93	MED				125	
EC5	140	96+92	RT	1.33					EC34	152	211+76 TO 212+28	MED				43	
									EC35	152	212+42 TO 213+27	MED				71	
EC6	142	118+45	RT	2.00					EC36	142	113+89	RT	1.56				
EC7	145	141+88	RT	1.11					EC37	148	171+47	RT	1.11				
EC8	149	188+87	RT	1.33					EC38	151	205+99	RT	1.78				
EC9	138	76+07 TO 77+57	MED			125			EC39	148	171+54 TO 173+04	MED				125	
EC10	139	86+22	RT	1.11					EC40	139	84+56 TO 86+50	RT			216		
EC11	139	9+07 GREENSBURG RD.	LT		26				EC41	139	86+50 TO 90+00	LT			320		
EC12	139	86+29 TO 87+79	MED			125			EC42	140	90+00 TO 94+00	LT				360	
EC13	140	91+98 TO 93+48	MED			125			EC43	140	94+35 TO 97+50	RT				350	
EC14	140	96+99 TO 98+49	MED			125			EC44	142,143	118+45 TO 120+50	RT				224	
EC15	142	112+32 TO 113+82	MED			125			EC45	145,146	149+24 TO 156+20	RT				928	
									EC46	146	150+00 TO 151+50	LT				167	
EC16	142	117+33 TO 118+83	MED			125			EC47	148	174+00 to 175+25	LT				144	
EC16A	142	117+33 TO 118+83	LT			125											
EC16B	142	119+08 TO 119+83	LT			63											
EC16C	142	119+10 TO 120+00	MED			75											
EC16D	142, 143	119+97 TO 121+47	LT			125											
EC17	143	125+07 TO 126+57	MED			125											
EC17A	143	120+15 TO 121+65	MED			125											
EC17B	143	122+57 TO 124+07	MED			125											
EC18	145	140+31 TO 141+81	MED			125											
EC19	145	146+68 TO 148+18	MED			125											
EC19A	146	152+15 TO 152+93	MED			91											
EC19B	146	154+43 TO 155+93	MED			125											
EC19C	146	157+43 TO 158+93	MED			125											
EC19D	146	160+14 TO 161+64	MED			125											
EC20	145	12+27 WISE RD.	RT		24												
EC21	145	12+11 WISE RD.	LT		31												
EC22	146	7+97 WISE RD.	RT		22												
EC23	146	7+77 WISE RD.	LT		38												
EC24	147,148	169+90 TO 171+40	MED			125											
EC25	148	174+47 TO 175+97	MED			125											
EC26	149	182+93 TO 184+43	MED			125											
EC27	149,150	188+94 TO 190+44	MED			125											
EC28	150	11+86 GRAYBILL RD.	RT		15												
EC29	150	11+82 GRAYBILL RD.	LT		39												
EC30	150	8+35 GRAYBILL RD.	RT		80												
											COLUMN B		5	32	536	2662	
											COLUMN A		14	275	0	2729	
		COLUMN A		14	275	2729					TOTALS CARRIED TO GENERAL SUMMARY		19	307	536	5391	

CALCULATED SPC
CHECKED W.B.H.

EROSION CONTROL SUBSUMMARY

SUM-77-1.40

geo001.dgn

REF NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	202 FENCED REMOVED	607 FENCE, TYPE CLT, AS PER PLAN	609 CURB, TYPE 4-C
					FT	FT	FT
RF1	2	73+75.00	84+75.47	LT.	1193		
RF2	2	73+75.00	83+63.76	RT.	1025		
RF3	2	86+17.16	88+50.00	LT.	279		
RF4	2	85+05.45	88+50.00	RT.	425		
RF3	3	88+50.00	145+50.00	LT.	5700		
RF4	3	88+50.00	145+50.00	RT.	5700		
RF3	4	145+50.00	151+38.59	LT.	589		
RF4	4	145+50.00	149+34.79	RT.	385		
RF5	4	151+75.54	199+88.72	LT.	5207		
RF6	4	149+71.74	199+51.78	RT.	5298		
RF7	4	200+22.23	202+50.00	LT.	226		
RF8	4	199+84.73	202+50.00	RT.	270		
RF7	5	202+50.00	209+35.00	LT.	679		
RF8	5	202+50.00	213+85.00	RT.	1149		
F1	2	73+75.00	84+75.47	LT.		1193	
F2	2	73+75.00	83+63.76	RT.		1025	
F3	2	86+17.16	88+50.00	LT.		279	
F4	2	85+05.45	88+50.00	RT.		425	
F3	3	88+50.00	145+50.00	LT.		5700	
F4	3	88+50.00	145+50.00	RT.		5700	
F3	4	145+50.00	151+38.59	LT.		589	
F4	4	145+50.00	149+34.79	RT.		385	
F5	4	151+75.54	199+88.72	LT.		5207	
F6	4	149+71.74	199+51.78	RT.		5298	
F7	4	200+22.23	202+50.00	LT.		226	
F8	4	199+84.73	202+50.00	RT.		270	
F7	5	202+50.00	209+35.00	LT.		679	
F8	5	202+50.00	213+85.00	RT.		1149	
C1	243	7+78.88	7+98.48	LT.			20
C2	243	7+99.06	8+15.78	RT.			17
C3	243	11+87.02	12+03.73	LT.			17
C4	243	12+04.32	12+23.91	RT.			20
C5	244	8+17.47	8+35.74	LT.			18
C6	244	8+35.80	8+39.43	RT.			4
C7	244	11+62.29	11+80.31	LT.			18
C8	244	11+65.71	11+83.99	RT.			18
C9	139	83+27.73	83+40.73	RT.			13
C10	139	84+38.11	84+51.00	LT.			13
TOTALS CARRIED TO GENERAL SUMMARY					**28,125**	**28,125**	**158**

CALCULATED COY
CHECKED W.B.H.

FENCE & CURB SUB-SUMMARY

SUM-77-1.40

fen_curb001.dgn

ITEM 202 - PAVEMENT REMOVED

	LENGTH (FEET)	WIDTH (FEET)	AREA (SQ. YDS.)
(NORTHBOUND)			
STA. 73+86.12 TO STA. 83+95.23	1,009.11	24.00	2,690.96
STA. 85+85.69 TO STA. 213+85	12,799.31	24.00	34,131.49
		SUB TOTAL =	36,822.45
(SOUTHBOUND)			
STA. 73+86.12 TO STA. 83+95.23	1,009.11	24.00	2,690.96
STA. 85+85.69 TO STA. 209+35	12,349.31	24.00	32,931.49
		SUB TOTAL =	35,622.45
		GRAND TOTAL =	72,444.90

ITEM 202 - PAVEMENT REMOVED — USE = 72,445 SQ. YDS.

ITEM 202 - PAVEMENT REMOVED, ASPHALT

	LENGTH (FEET)	WIDTH (FEET)	AREA (SQ. YDS.)
(NORTHBOUND)			
STA. 73+86.12 TO STA. 76+75	288.88	14.00	449.37
STA. 76+75 TO STA. 78+27	152.00	13.00	219.56
STA. 78+27 TO STA. 83+56	529.00	15.00	881.67
STA. 85+47 TO STA. 87+40		(20'+19')/2	
	193.00	19.50	418.17
STA. 87+40 TO STA. 97+20	980.00	19.00	2,068.89
STA. 97+20 TO STA. 148+79	5,159.00	16.00	9,171.56
STA. 148+79 TO STA. 150+66		(21'+15')/2	
	187.00	18.00	374.00
STA. 150+66 TO STA. 185+85	3,519.00	15.00	5,865.00
STA. 185+85 TO STA. 188+85	300.00	16.00	533.33
STA. 188+85 TO STA. 213+85	2,500.00	25.00	6,944.44
STA. 104+70 EMERGENCY TURNAROUND (ABC)			233.78
STA. 206+03 EMERGENCY TURNAROUND (ABC)			104.63
		SUB TOTAL =	27,264.39
(SOUTHBOUND)			
STA. 73+86.12 TO STA. 77+88	401.88	14.00	625.15
STA. 77+88 TO STA. 84+33	645.00	19.00	1,361.67
STA. 86+24 TO STA. 93+65	741.00	19.00	1,564.33
STA. 93+65 TO STA. 188+85	9,520.00	19.00	20,097.78
STA. 188+85 TO STA. 199+00	1,015.00	26.00	2,932.22
STA. 199+00 TO STA. 202+00		(26'+28')/2	
	300.00	27.00	900.00
STA. 202+00 TO STA. 209+35	735.00	28.00	2,286.67
STA. 104+70 EMERGENCY TURNAROUND (ABC)			340.03
STA. 206+03 EMERGENCY TURNAROUND (ABC)			95.14
		SUB TOTAL =	30,202.98
SR 241 OFF RAMP (STATIONING MAINLINE TO RAMP)			
STA. 227+48 TO STA. 23+87	1,634.00	1.00	181.56
		GRAND TOTAL =	57,648.93

ITEM 202 - PAVEMENT REMOVED, ASPHALT — USE= 57,650 SQ. YDS.

ITEM 202 - APPROACH SLAB REMOVED

	AREA (SQ. YDS.)
(NORTHBOUND)	
STA. 83+95.23 TO STA. 84+20.23 (ABC)	65.84
STA. 85+60.69 TO STA. 85+85.69 (ABC)	66.78
SUB TOTAL =	132.62
(SOUTHBOUND)	
STA. 83+95.23 TO STA. 84+20.23 (ABC)	64.94
STA. 85+60.69 TO STA. 85+85.69 (ABC)	64.33
SUB TOTAL =	129.26
WISE ROAD	
STA. 8+03.43 TO STA. 8+28.43 (ABC)	57.11
STA. 11+74.81 TO STA. 11+99.81 (ABC)	57.67
GRAYBILL ROAD	
STA. 8+33.66 TO STA. 8+58.66 (ABC)	58.78
STA. 11+43 TO STA. 11+68 (ABC)	57.11
SUB TOTAL =	230.67
GRAND TOTAL =	492.55

ITEM 202 - APPROACH SLAB REMOVED — USE = 495 SQ. YDS.

ITEM 209 - RESHAPING UNDER GUARDRAIL, AS PER PLAN

FOR PAVING UNDER GUARDRAIL	LENGTH (FEET)
(NORTHBOUND)	
STA. 78+81 TO STA. 80+23	142.00
STA. 80+23 TO STA. 83+63.76	340.76
STA. 85+05.45 TO STA. 94+96 EXTERIOR	990.55
STA. 85+49.85 TO STA. 87+59 MEDIAN	209.15
STA. 148+80 TO STA. 149+33	53.00
STA. 149+33 TO STA. 150+13	80.00
STA. 198+63 TO STA. 199+17	54.00
STA. 199+17 TO STA. 199+91	74.00
(SOUTHBOUND)	
STA. 79+45 TO STA. 84+75.47	530.47
STA. 80+00 TO STA. 80+70	70.00
STA. 85+73 TO STA. 87+56	183.00
STA. 86+17.16 TO STA. 90+59	441.84
STA. 90+59 TO STA. 91+88	129.00
STA. 150+96 TO STA. 151+76	80.00
STA. 151+76 TO STA. 152+30	54.00
STA. 199+83 TO STA. 200+57	74.00
STA. 200+57 TO STA. 201+11	54.00
TOTAL =	3559.77
GRAND TOTAL = 36 STATIONS	

ITEM 209 - RESHAPING UNDER GUARDRAIL, AS PER PLAN — USE = 36 STATIONS

ITEM 204 - SUBGRADE COMPACTION, AS PER PLAN

	LENGTH (FEET)	WIDTH (FEET)	AREA (SQ. YDS.)
(NORTHBOUND)			
STA. 63+00 TO STA. 73+86.12	1086.12	5.50	663.74
STA. 73+86.12 TO STA. 83+27.81	941.69	63.00	6,591.83
STA. 83+27.81 TO STA. 83+83.77 (ABC)			260.91
STA. 85+85.69 TO STA. 213+85	12799.31	63.00	89,595.17
STA. 213+35 TO STA. 213+85 FLARE		(2.5'+4.5')/2	
	50.00	3.50	19.44
STA. 104+70 EMERGENCY TURNAROUND (ABC)			51.96
STA. 206+03 EMERGENCY TURNAROUND (ABC)			52.56
		SUB TOTAL =	97,235.62
(SOUTHBOUND)			
STA. 60+58 TO STA. 73+86.12	1328.12	5.50	811.63
STA. 73+86.12 TO STA. 84+08.12	1022.00	63.00	7,154.00
STA. 84+08.12 TO STA. 84+51.08 (ABC)			147.74
STA. 85+85.69 TO STA. 209+35	12349.31	63.00	86,445.17
STA. 208+85 TO STA. 209+35 FLARE		(2.5'+4.5')/2	
	50.00	3.50	19.44
STA. 104+70 EMERGENCY TURNAROUND (ABC)			52.86
STA. 206+03 EMERGENCY TURNAROUND (ABC)			52.02
		SUB TOTAL =	94,682.87
WISE ROAD			
STA. 6+85 TO STA. 8+27.13	142.13	33.00	521.14
STA. 11+75.67 TO STA. 13+55	179.33	33.00	657.54
GRAYBILL ROAD			
STA. 7+00 TO STA. 8+57.46	157.46	35.00	612.34
STA. 11+44 TO STA. 13+00	156.00	35.00	606.67
SR 241 OFF RAMP (STATIONING MAINLINE TO RAMP)			
STA. 227+48 TO STA. 23+87	1634.00	7.00	1,270.89
		SUB TOTAL =	3,668.59
		GRAND TOTAL =	195,587.07

ITEM 204 - SUBGRADE COMPACTION, AS PER PLAN — USE = 195,590 SQ. YDS.

ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=1½")

	LENGTH (FEET)	WIDTH (FEET)	AREA (SQ. YDS.)
(NORTHBOUND)			
STA. 63+00 TO STA. 73+86.12	1086.12	1.00	120.68
(SOUTHBOUND)			
STA. 60+58 TO STA. 73+86.12	1328.12	1.00	147.57
GREENSBURG ROAD			
STA. 6+00 TO STA. 12+75	675.00	24.00	1,800.00
		GRAND TOTAL =	2,068.25

ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=1½") — USE = 2,070 SQ. YDS.

ITEM 301 - ASPHALT CONCRETE BASE, PG64-22

APPLICATION RATE: 7" DEPTH = 0.583'

	LENGTH (FEET)	WIDTH (FEET)	VOLUME (CU. YDS.)
WISE ROAD			
STA. 6+85 TO STA. 8+07.13	122.13	30.00	79.11
STA. 11+95.67 TO STA. 13+55	159.33	30.00	103.21
GRAYBILL ROAD			
STA. 7+00 TO STA. 8+37.46	137.46	32.00	94.98
STA. 11+64 TO STA. 13+00	136.00	32.00	93.97
		GRAND TOTAL =	371.27

ITEM 301 - ASPHALT CONCRETE BASE, PG64-22 — USE = 375 CU. YDS.

ITEM 302 - ASPHALT CONCRETE BASE, PG64-22, AS PER PLAN

(NORTHBOUND)	LENGTH (FEET)	WIDTH (FEET)	VOLUME (CU. YDS.)
APPLICATION RATE: 4½" DEPTH = 0.375'			
STA. 63+00 TO STA. 73+86.12	1086.12	5.00	75.43
APPLICATION RATE: 4" DEPTH = 0.333'			
STA. 73+86.12 TO STA. 83+27.81	941.69	61.00	708.46
STA. 83+27.81 TO STA. 83+83.77 (ABC)			28.02
STA. 85+85.69 TO STA. 213+85	12799.31	61.00	9,629.35
STA. 213+35 TO STA. 213+85 FLARE		(1.5'+3.5')/2	
	50.00	2.50	1.54
STA. 104+70 EMERGENCY TURNAROUND (ABC)			4.44
STA. 206+03 EMERGENCY TURNAROUND (ABC)			4.46
		SUB TOTAL =	10,451.70
(SOUTHBOUND)			
APPLICATION RATE: 4½" DEPTH = 0.375'			
STA. 60+58 TO STA. 73+86.12	1328.12	5.00	92.23
APPLICATION RATE: 4" DEPTH = 0.333'			
STA. 73+86.12 TO STA. 84+08.12	1022.00	61.00	768.88
STA. 84+08.12 TO STA. 84+51.08 (ABC)			15.71
STA. 85+85.69 TO STA. 209+35	12349.31	61.00	9,290.80
STA. 208+85 TO STA. 209+35 FLARE		(1.5'+3.5')/2	
	50.00	2.50	1.54
STA. 104+70 EMERGENCY TURNAROUND (ABC)			4.44
STA. 206+03 EMERGENCY TURNAROUND (ABC)			4.45
		SUB TOTAL =	10,178.06
SR 241 OFF RAMP (STATIONING MAINLINE TO RAMP)			
STA. 227+49.93 TO STA. 23+84.91	1634.00	6.00	120.92
		GRAND TOTAL =	20,750.68

ITEM 302 - ASPHALT CONCRETE BASE, PG64-22, AS PER PLAN — USE = 20,755 CU. YDS.

ITEM 304 - AGGREGATE BASE

APPLICATION RATE: 6" DEPTH = 0.50'

	LENGTH (FEET)	WIDTH (FEET)	VOLUME (CU. YDS.)
(NORTHBOUND)			
STA. 63+00 TO STA. 73+86.12	1,086.12	5.50	110.62
STA. 73+86.12 TO STA. 83+27.81	941.69	63.00	1,098.64
STA. 83+27.81 TO STA. 83+83.77 (ABC)			43.49
STA. 85+85.69 TO STA. 213+85	12,799.31	63.00	14,932.53
STA. 213+35 TO STA. 213+85 FLARE		(2.5'+4.5')/2	
	50.00	3.50	3.24
STA. 104+70 EMERGENCY TURNAROUND (ABC)			8.66
STA. 206+03 EMERGENCY TURNAROUND (ABC)			8.76
		TOTAL =	16,205.94
(SOUTHBOUND)			
STA. 60+58 TO STA. 73+86.12	1,328.12	5.50	135.27
STA. 73+86.12 TO STA. 84+08.12	1,022.00	63.00	1,192.33
STA. 84+08.12 TO STA. 84+51.08 (ABC)			24.62
STA. 85+85.69 TO STA. 209+35	12,349.31	63.00	14,407.53
STA. 208+85 TO STA. 209+35 FLARE		(2.5'+4.5')/2	
	50.00	3.50	3.24
STA. 104+70 EMERGENCY TURNAROUND (ABC)			8.81
STA. 206+03 EMERGENCY TURNAROUND (ABC)			8.67
		TOTAL =	15,780.48
WISE ROAD			
STA. 6+85 TO STA. 8+27.13	142.13	32.00	84.23
STA. 11+75.67 TO STA. 13+55	179.33	32.00	106.27
GRAYBILL ROAD			
STA. 7+00 TO STA. 8+57.46	157.46	34.00	99.14
STA. 11+44 TO STA. 13+00	156.00	34.00	98.22
SR 241 OFF RAMP (STATIONING MAINLINE TO RAMP)			
STA. 227+48 TO STA. 23+87	1,634.00	7.00	211.81
RESIDENTIAL DRIVE - GRAYBILL RD.			
STA. 8+09.20 (ABC)			12.14
		TOTAL =	611.81
		SUB TOTAL =	32,598.23

APPLICATION RATE: 12" DEPTH = 1'

	AREA (SQ. FT.)	VOLUME (CU. YDS.)
(NORTHBOUND)		
STA. 83+95.23 TO STA. 84+20.23 (ABC)	1,650.00	61.11
STA. 85+60.69 TO STA. 85+85.69 (ABC)	1,625.00	60.19
	TOTAL =	121.30
(SOUTHBOUND)		
STA. 83+95.23 TO STA. 84+20.23 (ABC)	1,645.00	60.93
STA. 85+60.69 TO STA. 85+85.69 (ABC)	1,625.00	60.19
	TOTAL =	120.11
WISE ROAD		
STA. 8+07.13 TO STA. 8+27.13 (ABC)	648.04	24.00
STA. 11+75.67 TO STA. 11+95.67 (ABC)	648.00	24.00
GRAYBILL ROAD		
STA. 8+37.46 TO STA. 8+57.46 (ABC)	687.48	25.46
STA. 11+44 TO STA. 11+64 (ABC)	688.00	25.48
TOTAL =	98.95	
SUB TOTAL =	341.35	
GRAND TOTAL =	32,939.58	

ITEM 304 - AGGREGATE BASE — USE = 32,940 CU. YDS.

ITEM 407 - TACK COAT

APPLICATION RATE: 0.075 GAL./SQ. YD.

	LENGTH (FEET)	WIDTH (FEET)	AREA (SQ. YDS.)	VOLUME (GAL.)
WISE ROAD				
STA. 6+85 TO STA. 8+07.13	122.13	30.00	407.10	30.53
STA. 11+95.67 TO STA. 13+55	159.33	30.00	531.10	39.83
GRAYBILL ROAD				
STA. 7+00 TO STA. 8+37.46	137.46	32.00	488.75	36.66
STA. 11+64 TO STA. 13+00	136.00	32.00	483.56	36.27
GREENSBURG ROAD				
STA. 6+00 TO STA. 11+07.85	507.85	39.00	2,200.68	165.05
STA. 11+07.85 TO STA. 11+56.70		(39'+34')/2		
	48.85	36.50	198.11	14.86
STA. 11+56.70 TO STA. 12+75	118.30	34.00	446.91	33.52
STA. 8+62 RESIDENTIAL DRIVE (ABC)			86.48	6.49
STA. 11+32 RESIDENTIAL DRIVE (ABC)			72.42	5.43
		GRAND TOTAL =	368.63	

ITEM 407 - TACK COAT — USE = 370 GAL.

ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE

APPLICATION RATE: 0.04 GAL./SQ. YD.

	LENGTH (FEET)	WIDTH (FEET)	AREA (SQ. YDS.)	VOLUME (GAL.)
WISE ROAD				
STA. 6+85 TO STA. 8+07.13	122.13	30.00	407.10	16.28
STA. 11+95.67 TO STA. 13+55	159.33	30.00	531.10	21.24
GRAYBILL ROAD				
STA. 7+00 TO STA. 8+37.46	137.46	32.00	488.75	19.55
STA. 11+64 TO STA. 12+75	111.00	32.00	394.67	15.79
		GRAND TOTAL =	72.86	

ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE — USE = 75 GAL.

(ABC) = AREA BY COMPUTER

CALCULATED

CHECKED W.B.H.

CALCULATIONS

SUM-77-1.40

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ITEM 408 - PRIME COAT

APPLICATION RATE: 0.40 GAL./SQ. YDS.

	LENGTH (FEET)	WIDTH (FEET)	AREA (SQ. YDS.)	VOLUME (GAL.)
(NORTHBOUND)				
STA. 63+00 TO STA. 73+86.12	1,086.12	4.50	543.06	217.22
STA. 73+86.12 TO STA. 83+95.82	1,009.70	61.00	6,843.52	2,737.41
STA. 85+85.69 TO STA. 213+85	12,799.31	61.00	86,750.88	34,700.35
STA. 213+35 TO STA. 213+85 FLARE		(1.5'+3.5')/2		
	50.00	2.50	13.89	5.56
STA. 104+70 EMERGENCY TURNAROUND (ABC)			44.69	17.88
STA. 206+03 EMERGENCY TURNAROUND (ABC)			44.79	17.91
			SUB TOTAL =	37,696.33
(SOUTHBOUND)	1,328.12	4.50	664.06	265.62
STA. 60+58 TO STA. 73+86.12	1,009.70	61.00	6,843.52	2,737.41
STA. 73+86.12 TO STA. 83+95.82	12,349.31	61.00	83,700.88	33,480.35
STA. 85+85.69 TO STA. 209+35		(1.5'+3.5')/2		
STA. 208+85 TO STA. 209+35 FLARE	50.00	2.50	13.89	5.56
			44.69	17.88
STA. 104+70 EMERGENCY TURNAROUND (ABC)			44.87	17.95
STA. 206+03 EMERGENCY TURNAROUND (ABC)			SUB TOTAL =	36,524.77
WISE ROAD	142.13	30.00	473.77	189.51
STA. 6+85 TO STA. 8+27.13	179.33	30.00	597.77	239.11
STA. 11+75.67 TO STA. 13+55				
GRAYBILL ROAD	157.46	32.00	559.86	223.94
STA. 7+00 TO STA. 8+57.46	156.00	32.00	554.67	221.87
STA. 11+44 TO STA. 13+00				
SR 241 OFF RAMP (STATIONING MAINLINE TO RAMP)				
STA. 227+48 TO STA. 23+87	1,634.00	6.00	1,089.33	435.73
			SUB TOTAL =	1,310.16
			GRAND TOTAL =	75,531.26

ITEM 408 - PRIME COAT — USE = 75,535 GAL.

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, TYPE B (446)

APPLICATION RATE: 1½" DEPTH = 0.125'

	LENGTH (FEET)	WIDTH (FEET)	AREA (SQ. FT.)	VOLUME (CU. YDS.)
(NORTHBOUND)				
STA. 60+58 TO STA. 73+86.12 SB.	1,328.12	3.00	3,984.36	18.45
(SOUTHBOUND)				
STA. 63+00 TO STA. 73+86.12 NB.	1,086.12	3.00	3,258.36	15.09
GREENSBURG ROAD				
STA. 6+00 TO STA. 11+07.85	507.85	39.00	19,806.15	91.70
STA. 11+07.85 TO STA. 11+56.70		(39'+34')/2		
	48.85	36.50	198.11	0.92
STA. 11+56.70 TO STA. 12+75	118.30	34.00	4,022.20	18.62
STA. 8+62 RESIDENTIAL DRIVE (ABC)			778.33	3.60
STA. 11+32 RESIDENTIAL DRIVE (ABC)			651.76	3.02
			GRAND TOTAL =	151.39

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, TYPE B (446) — USE = 155 CU. YDS.

ITEM 448 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG64-22, UNDER GUARDRAIL, AS PER PLAN

APPLICATION RATE: 1 1/4" DEPTH = 0.104'

	LENGTH (FEET)	WIDTH (FEET)	AREA (SQ. FT.)	VOLUME (CU. YDS.)
(NORTHBOUND)				
STA. 78+81 TO STA. 80+23 (ABC)			1,883.57	7.26
STA. 80+23 TO STA. 83+63.76	340.76	5.00		6.56
STA. 85+05.45 TO STA. 94+96 EXTERIOR	990.55	5.00		19.08
STA. 85+49.85 TO STA. 87+59 MEDIAN	209.15	5.00		4.03
STA. 148+80 TO STA. 149+33 (ABC)			628.02	2.42
STA. 149+33 TO STA. 150+13	80.00	5.00		1.54
STA. 198+63 TO STA. 199+17 (ABC)			711.11	2.74
STA. 199+17 TO STA. 199+91	74.00	5.00		1.43
			SUB TOTAL =	45.05
(SOUTHBOUND)				
STA. 79+45 TO STA. 84+75.47	530.47	5.00		10.22
STA. 80+00 TO STA. 80+70	70.00	5.00		1.35
STA. 85+73 TO STA. 87+56 (ABC)			1,976.43	7.61
STA. 86+17.16 TO STA. 90+59	441.84	5.00		8.51
STA. 90+59 TO STA. 91+88 (ABC)			1,653.84	6.37
STA. 150+96 TO STA. 151+76	80.00	5.00		1.54
STA. 151+76 TO STA. 152+30 (ABC)			528.17	2.03
STA. 199+83 TO STA. 200+57	74.00	5.00		1.43
STA. 200+57 TO STA. 201+11 (ABC)			589.05	2.27
			SUB TOTAL =	35.60
			GRAND TOTAL =	80.65

ITEM 448 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG64-22 UNDER GUARDRAIL, AS PER PLAN — USE = 82 CU. YDS.

ITEM 448 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG64-22, AS PER PLAN

FOR PAVING UNDER NOISE WALL
APPLICATION RATE: 1¼" DEPTH = 0.104'
SR 241 NOISE WALL
STA. 10+00 TO STA. 26+32

LENGTH (FEET)	WIDTH (FEET)	VOLUME (CU. YDS.)
1632.00	10.00	62.86
	GRAND TOTAL =	62.86

ITEM 448 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG64-22, AS PER PLAN — USE = 63 CU. YDS.

ITEM 448 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22

APPLICATION RATE: 1¼" DEPTH = 0.104'

	LENGTH (FEET)	WIDTH (FEET)	VOLUME (CU. YDS.)
WISE ROAD			
STA. 6+85 TO STA. 8+07.13	122.13	30.00	14.11
STA. 11+95.67 TO STA. 13+55	159.33	30.00	18.41
GRAYBILL ROAD			
STA. 7+00 TO STA. 8+37.46	137.46	32.00	16.94
STA. 11+64 TO STA. 13+00	136.00	32.00	16.76
		GRAND TOTAL =	66.23

ITEM 448 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22 — USE = 70 CU. YDS.

ITEM 448 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22

APPLICATION RATE: 1¾" DEPTH = 0.146'

	LENGTH (FEET)	WIDTH (FEET)	VOLUME (CU. YDS.)
WISE ROAD			
STA. 6+85 TO STA. 8+07.13	122.13	30.00	19.81
STA. 11+95.67 TO STA. 13+55	159.33	30.00	25.85
GRAYBILL ROAD			
STA. 7+00 TO STA. 8+37.46	137.46	32.00	23.79
STA. 11+64 TO STA. 13+00	136.00	32.00	23.53
		GRAND TOTAL =	92.28

ITEM 448 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22 — USE = 95 CU. YDS.

ITEM 880 - ASPHALT CONCRETE WITH WARRANTY (7 YEARS), AS PER PLAN

APPLICATION RATE: 12¾" DEPTH = 1.0625'

	LENGTH (FEET)	WIDTH (FEET)	VOLUME (CU. YDS.)
(NORTHBOUND)			
STA. 63+00 TO STA. 73+86.12	1,086.12	5.00	213.70
STA. 73+86.12 TO STA. 83+27.81	941.69	63.00	2,334.61
STA. 83+27.81 TO STA. 83+83.77 (ABC)			89.39
STA. 85+85.69 TO STA. 213+85	12,799.31	61.00	30,724.27
STA. 213+35 TO STA. 213+85 FLARE		(1.5'+3.5')/2	
	50.00	2.50	4.92
STA. 104+70 EMERGENCY TURNAROUND (ABC)			16.77
STA. 206+03 EMERGENCY TURNAROUND (ABC)			16.51
		SUB TOTAL =	33,400.18
(SOUTHBOUND)			
STA. 60+58 TO STA. 73+86.12	1,328.12	5.00	261.32
STA. 73+86.12 TO STA. 84+08.12	1,022.00	63.00	2,533.71
STA. 84+08.12 TO STA. 84+51.08 (ABC)			50.13
STA. 85+85.69 TO STA. 209+35	12,349.31	61.00	29,644.06
STA. 208+85 TO STA. 209+35 FLARE		(1.5'+3.5')/2	
	50.00	2.50	4.92
STA. 104+70 EMERGENCY TURNAROUND (ABC)			16.80
STA. 206+03 EMERGENCY TURNAROUND (ABC)			16.48
		SUB TOTAL =	32,527.32
SR 241 OFF RAMP (STATIONING MAINLINE TO RAMP)			
STA. 227+48 TO STA. 23+87	1,634.00	6.00	385.81
DEDUCT AREA FROM STEPPING COURSES WITHOUT BARRIER WALL:			
(53,954.16 LF x 0.708 SF)/27 =			-1,414.80
DEDUCT AREA FROM STEPPING COURSES WITH BARRIER WALL:			
(1,623.58 LF x 0.864 SF)/27 =			-51.95
		GRAND TOTAL =	64,846.65

ITEM 880 - ASPHALT CONCRETE WITH WARRANTY (7 YEARS), AS PER PLAN — USE = 64,850 CU. YDS.

ITEM 864 - SEALING OF CONCRETE SURFACES (EPOXY URETHANE (CONCRETE BARRIER)

FOR SEALING OF CONCRETE BARRIER

	LENGTH (FEET)	WIDTH (FEET)	AREA (SQ. FT.)	AREA (SQ. YDS.)
(NORTHBOUND)				
STA. 63+00 TO STA. 83+95.23	2,095.23	7.90'	16,552.32	1,839.15
(SOUTHBOUND)				
STA. 60+58 TO STA. 83+95.23	2,337.23	7.90'	18,464.12	2,051.57
GREENSBURG ROAD				
STA. 8+79 TO STA. 10+88 WB	209.00	7.90'	1,651.10	183.46
STA. 9+10 TO STA. 11+19 EB	209.00	7.90'	1,651.10	183.46
SR 241 OFF RAMP (STATIONING MAINLINE TO RAMP)				
STA. 227+49.93 TO STA. 23+83.91	1,634.00	7.90'	12,908.60	1,434.29
			GRAND TOTAL =	5,691.93

ITEM 864 - SEALING OF CONCRETE SURFACES (EPOXY URETHANE (CONCRETE BARRIER) — USE = 5,695 SQ. YDS.

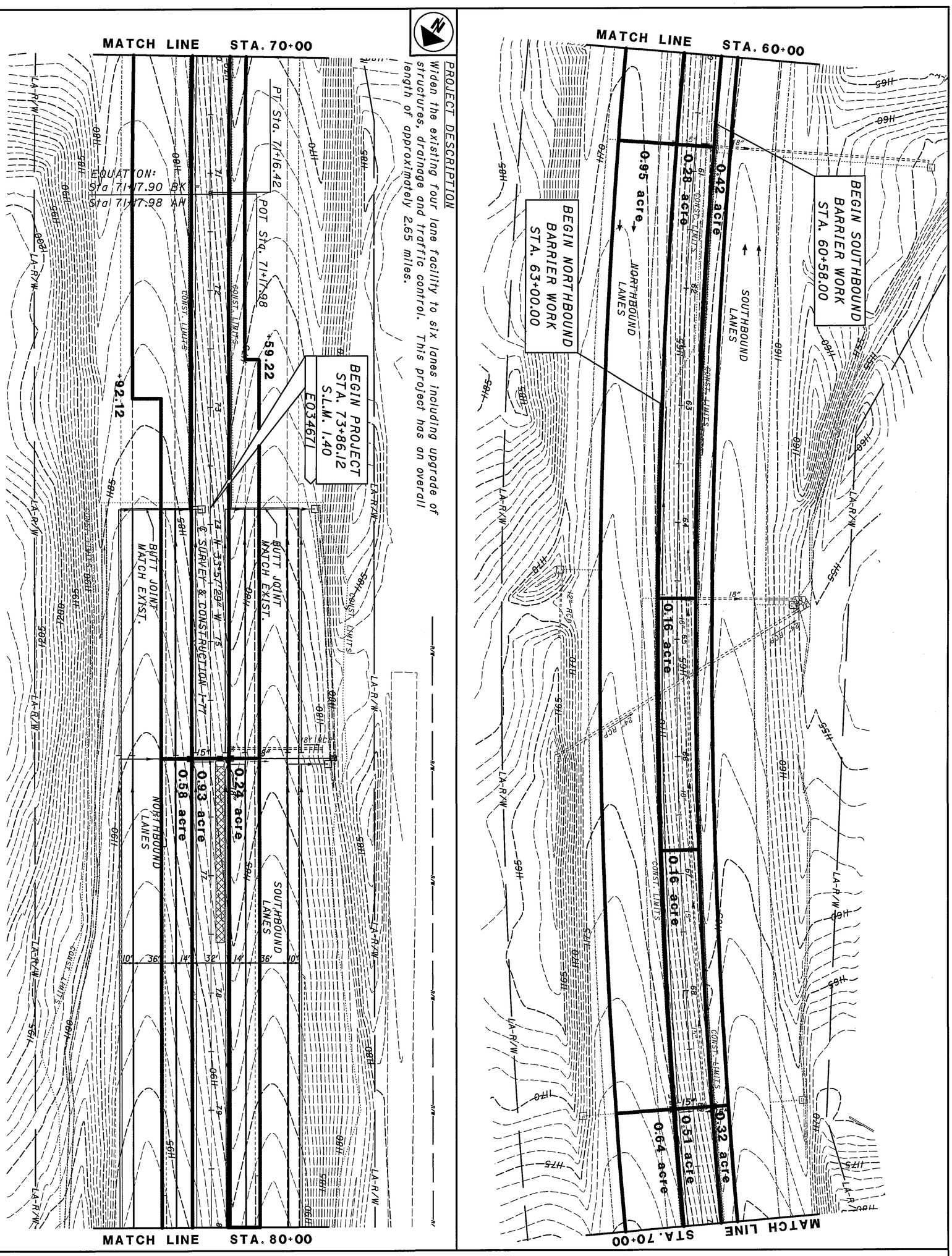
(ABC) = AREA BY COMPUTER

CALCULATED SPC
CHECKED W.B.H.

CALCULATIONS

SUM-77-1.40

gc001.dgn



PROJECT SITE DATA FOR SUM-77-1.40

Total Area (Right-of-Way)	136.0 Acres
Project Earth Disturbed Area	72.0 Acres
Estimated Contractor Disturbed Area	1.00 Acres
Notice of Intent Earth Disturbed Area	73.0 Acres
Runoff Coefficient for Pre-Construction Site	0.59
Runoff Coefficient for Post-Construction Site	0.64
Impervious (Paved) Area for Pre-Construction Site	24.0 Acres
Impervious (Paved) Area for Post-Construction Site	38.0 Acres

Immediate Receiving Waters — Heckman Ditch; Branch of Schumacher Ditch

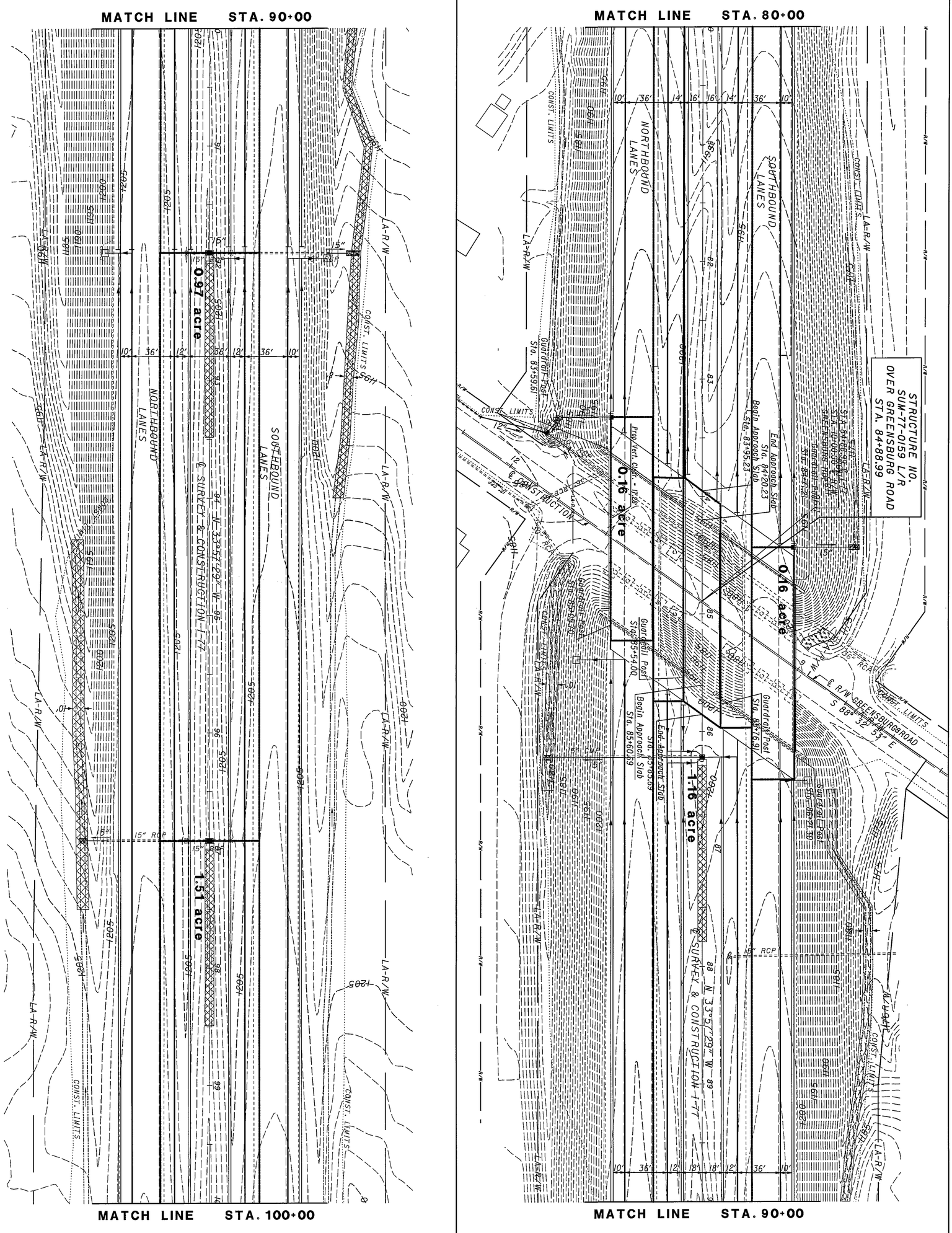
Subsequent Receiving Waters — Branch of Tuscarawas River; Schumacher Ditch

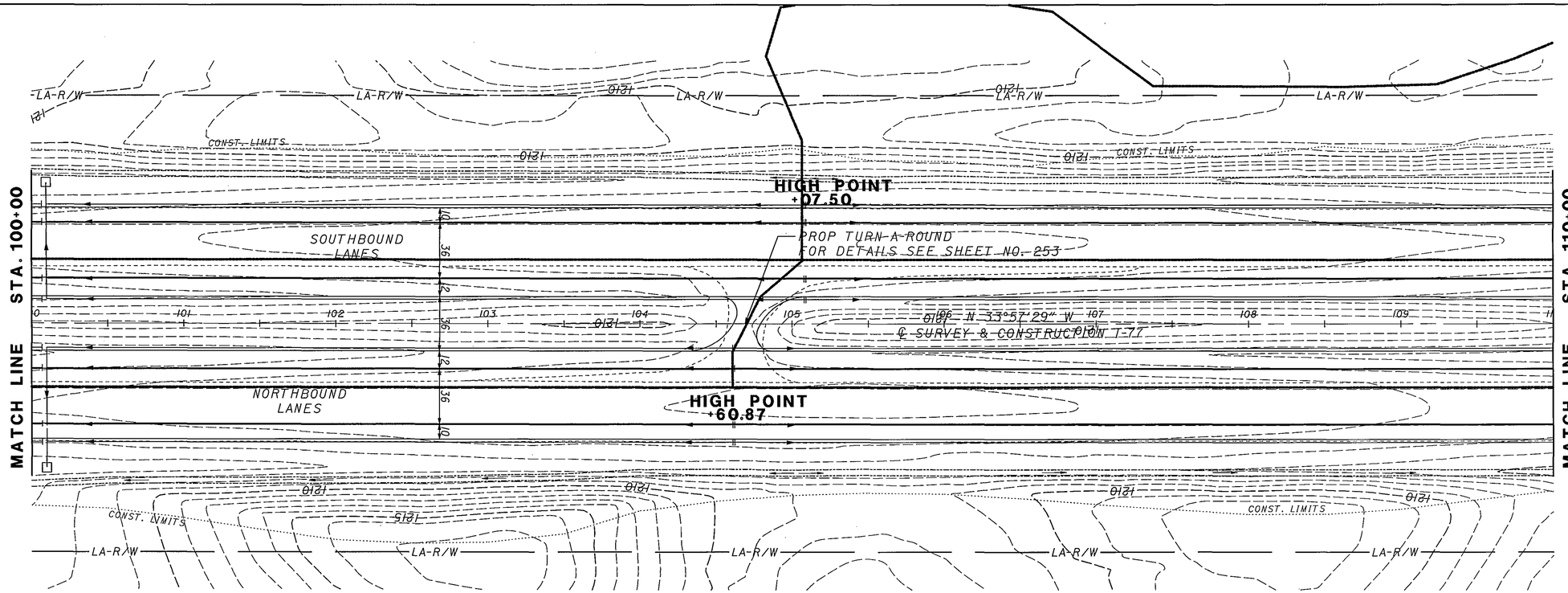
Approximate Center of Project: Latitude N41°00′35″ Longitude W81°29′20″

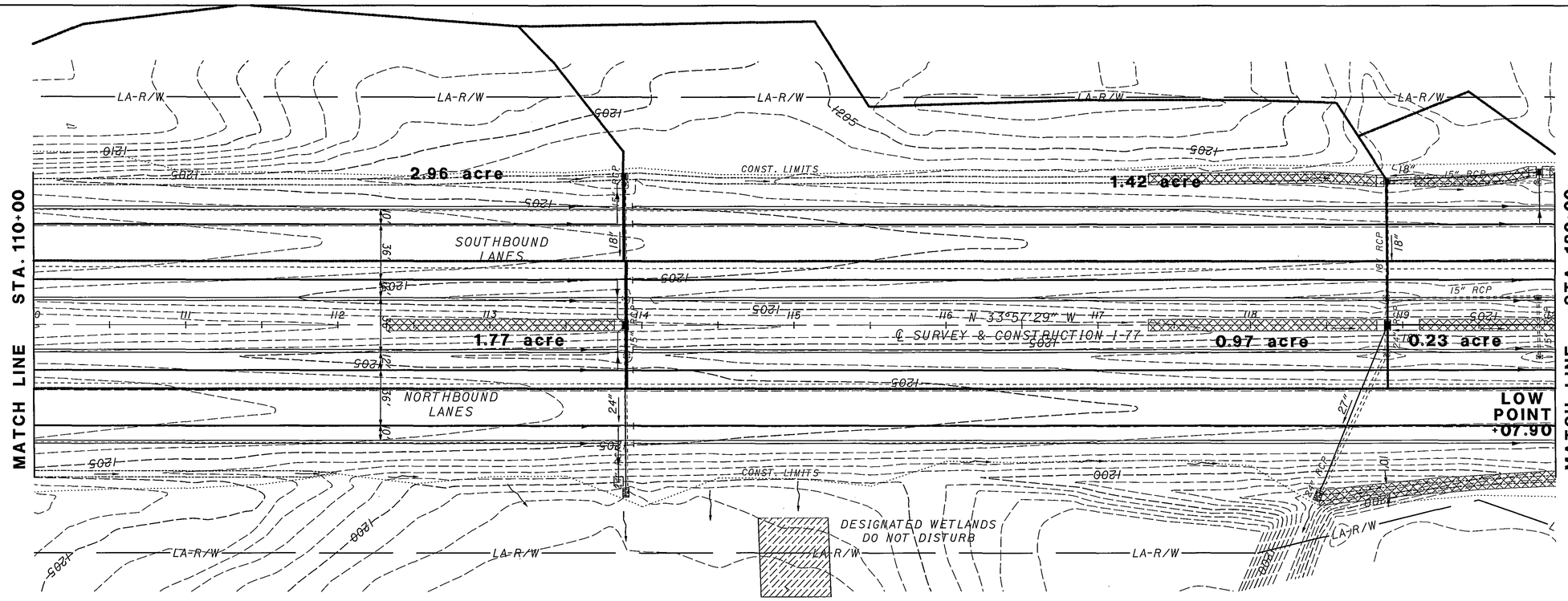
USGS Quadrant No. 40081-H4-TF-024 NORTH CANTON, OHIO

Soil Survey of Summit County, Ohio Map Nos. 30 and 34

381 / 129	SUM-77-1.40	PROJECT SITE PLAN STA. 60+00 TO STA. 80+00	CALCULATED J.L.G. / CHECKED A.R.N.	0 40 / 20 80 HORIZONTAL SCALE IN FEET


MATCH LINE STA. 90+00
MATCH LINE STA. 80+00
MATCH LINE STA. 100+00
MATCH LINE STA. 90+00
STRUCTURE NO. SUM-77-0159 L/R OVER GREENSBURG ROAD STA. 84+88.99
NORTHBOUND LANES
SOUTHBOUND LANES
0.97 acre
0.16 acre
0.16 acre
1.16 acre
1.51 acre
CONST. LIMITS
LA-R/W
Begin Approach Slab Sta. 83+95.23
End Approach Slab Sta. 84+20.23
Begin Approach Slab Sta. 85+54.00
End Approach Slab Sta. 85+79.00
Guardrail Post Sta. 83+59.61
Guardrail Post Sta. 85+76.91
Guardrail Post Sta. 85+60.39
Guardrail Post Sta. 85+54.00
Prop. Vert. Guide - Typ.
℄ R/W GREENSBURG ROAD
S 88° 32' 57" E
℄ SURVEY & CONSTRUCTION I-77
S 3°57'29" W
N 3°57'29" W
15" RCP
18" RCP
SGH
SGL
SGRT
SGRH
SGRL
SGRT
SGRH
SGRL
SGRT
SGRH
SGR





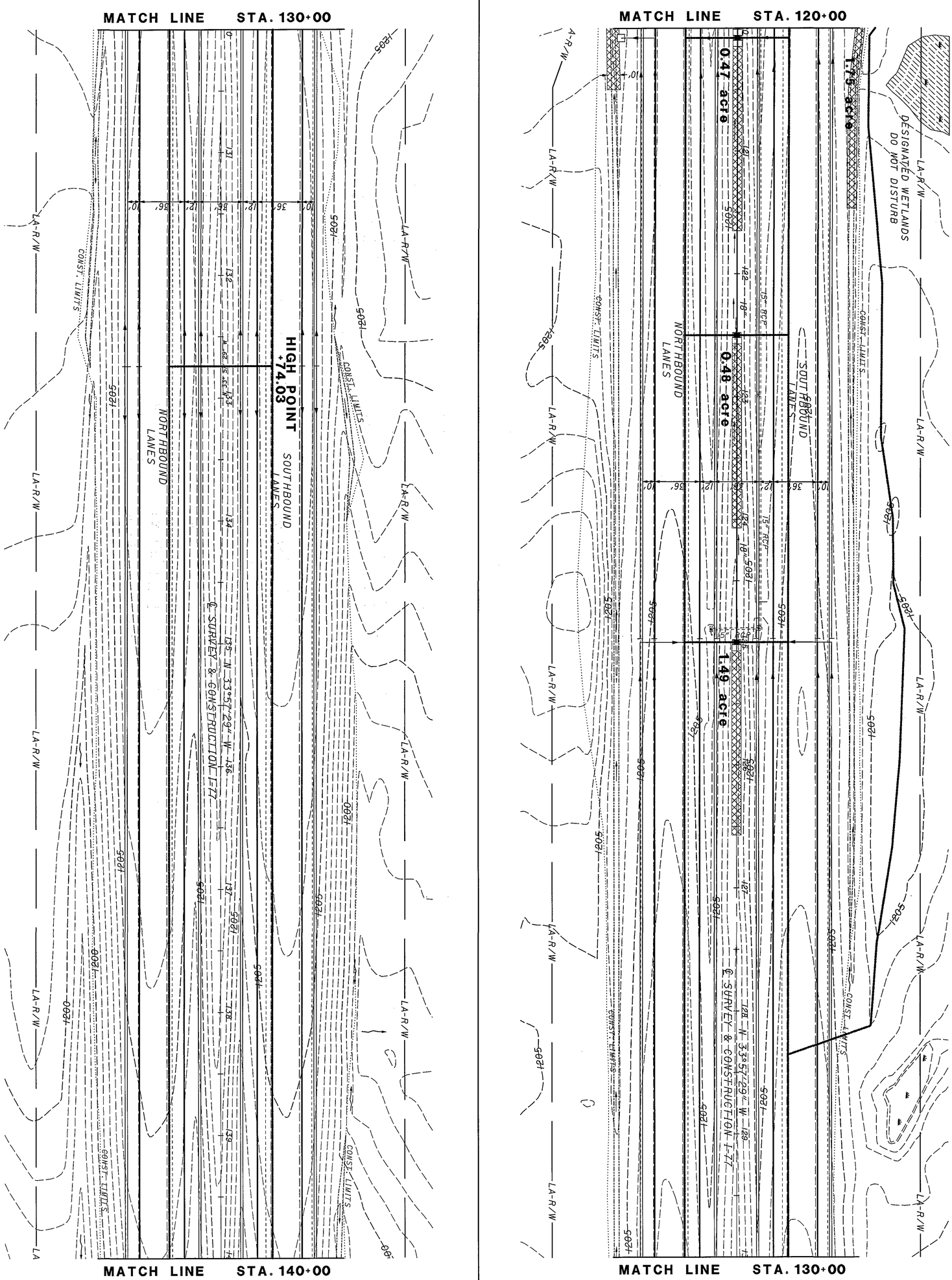
HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED J.L.G.
CHECKED A.R.N.

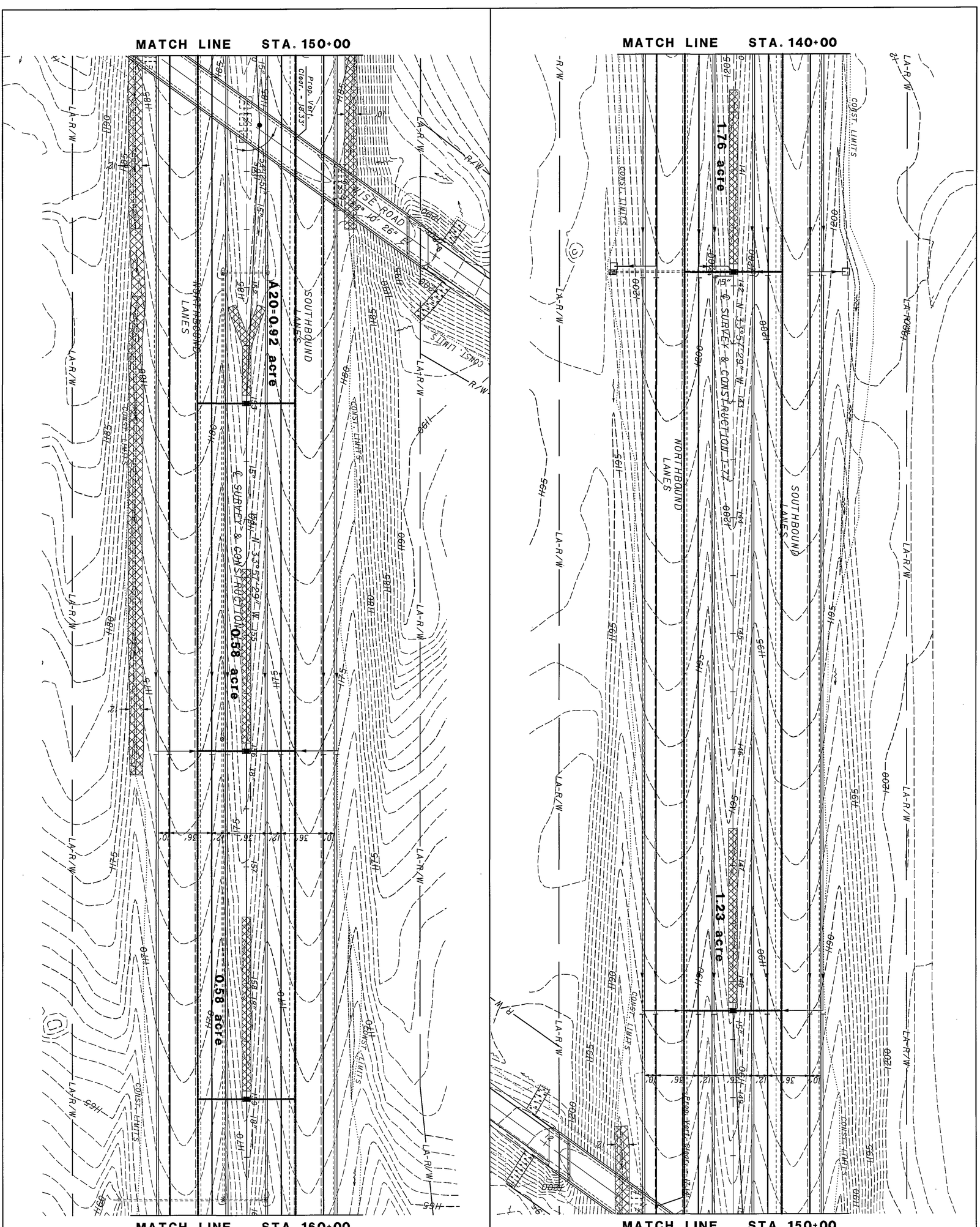
PROJECT SITE PLAN
STA. 100+00 TO STA. 120+00

SUM-77-1.40

131
381



132/381	SUM-77-1.40	PROJECT SITE PLAN STA. 120+00 TO STA. 140+00	CALCULATED J.L.G. CHECKED A.R.N.	0 40 20 80 HORIZONTAL SCALE IN FEET



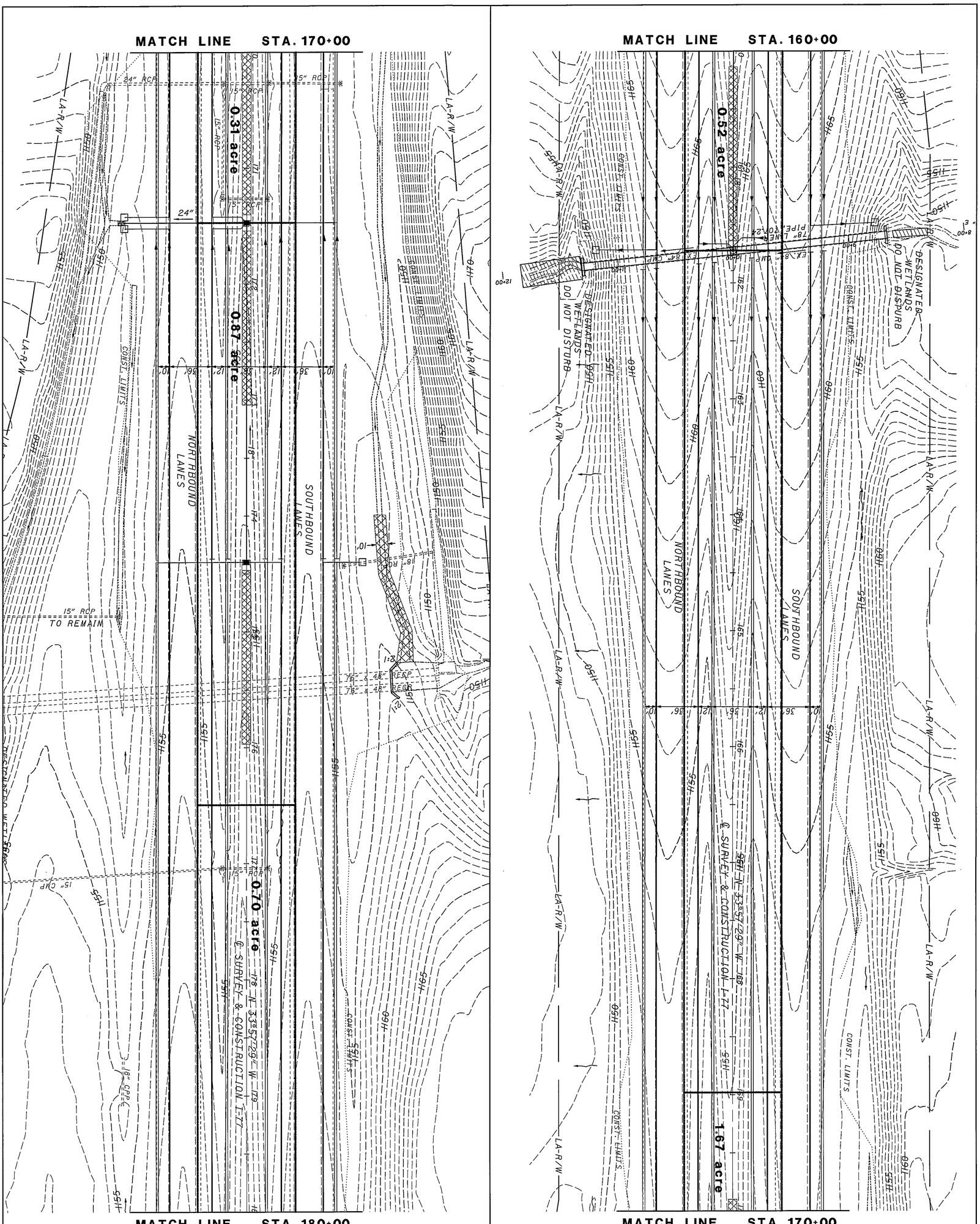
PROJECT SITE PLAN
STA. 60+00 TO STA. 80+00

SUM-77-1.40

133
381

CALCULATED J.L.G.
CHECKED A.R.N.

0 20 40 80
HORIZONTAL SCALE IN FEET



SUM-77-1.40

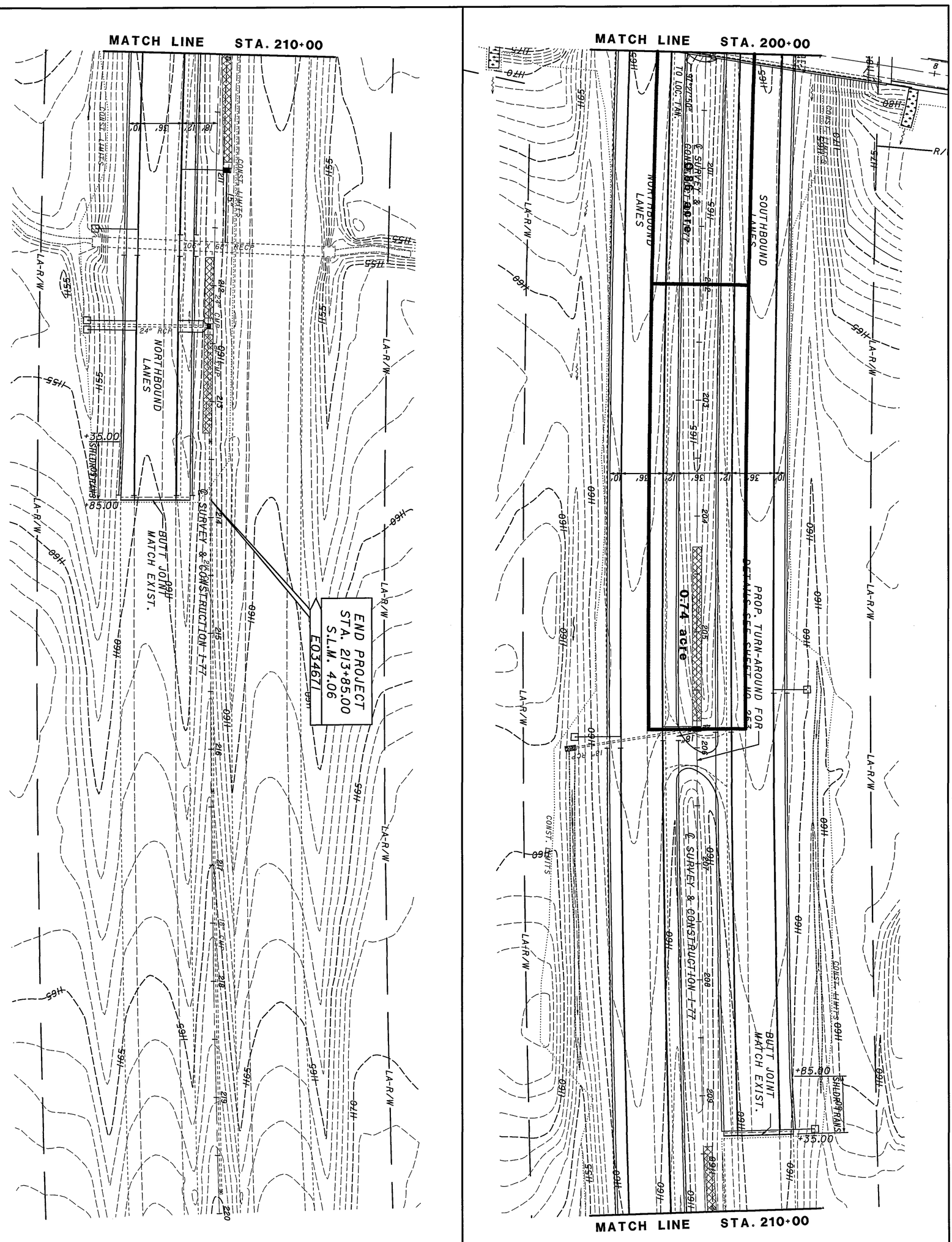
PROJECT SITE PLAN
STA. 160+00 TO STA. 180+00

CALCULATED J.L.G.
CHECKED A.R.N.

0 20 40 80
HORIZONTAL SCALE IN FEET



135/381	SUM-77-1.40	PROJECT SITE PLAN STA. 180+00 TO STA. 200+00	CALCULATED J.L.G. CHECKED A.R.N.	0 40 80 20 HORIZONTAL SCALE IN FEET



136 / 381	SUM-77-1.40	PROJECT SITE PLAN STA. 200+00 TO STA. 220+00	CALCULATED J.L.G. CHECKED A.R.N.	0 40 20 80 HORIZONTAL SCALE IN FEET	N

HORIZONTAL SCALE IN FEET
0 50 100 200

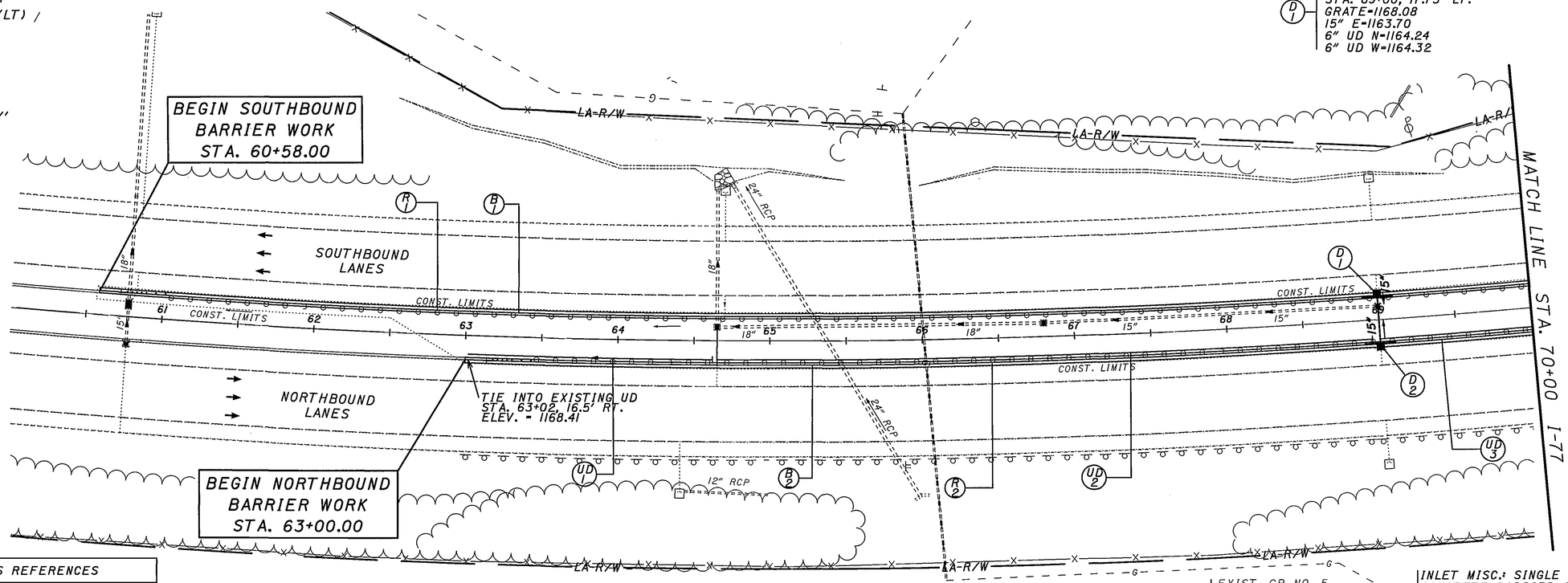
PROJECT SITE PLAN
SR 241 INTERCHANGE

SUM-77-1.40

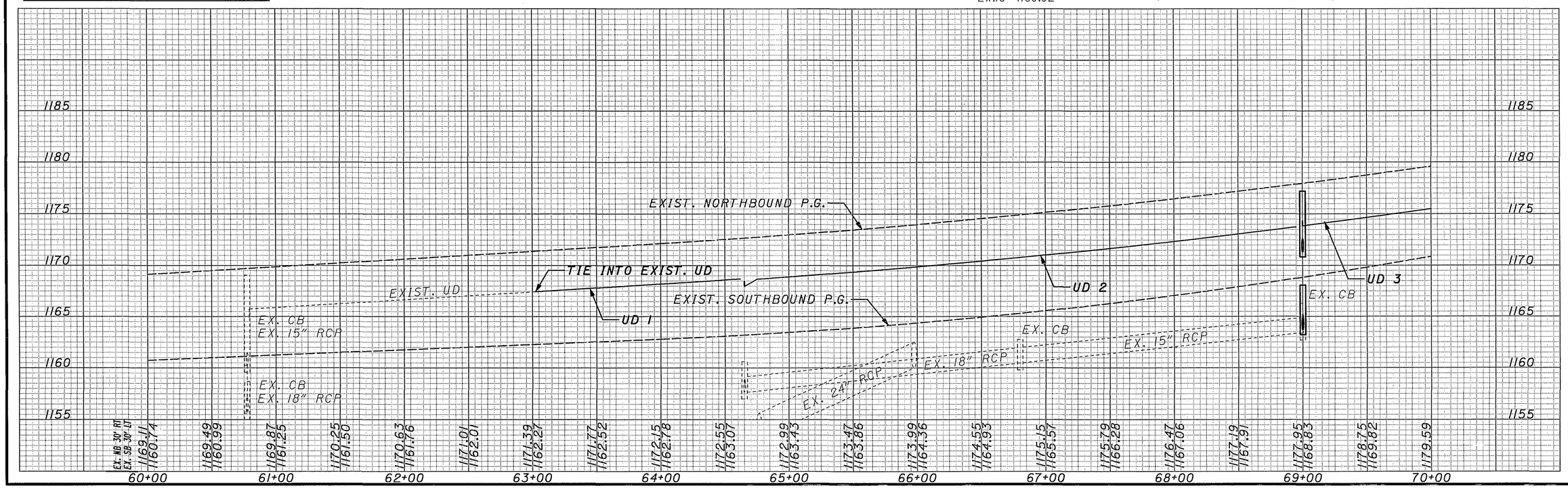
136A
381

SR241.dgn

℄ I-77 CURVE
P.I. Sta = 50+91.77
D = 42° 33′ 54″ (LT) /
Dc = 1° 00′ 00″
R = 5,729.58′
T = 2,231.85′
L = 4,256.50′
E = 419.34′
e MAX. = 0.033 ′/′



SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL/BARRIER SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
160	PIPE PROFILES D1 & D2



PLAN AND PROFILE
STA. 60+00.00 TO STA. 70+00.00

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED COY
CHECKED W.B.H.

SUM-77-1.40

137
381

℄ I-77 CURVE
P.I. Sta = 50+91.77
D = 42° 33' 54" (LT)
Dc = 1° 00' 00"
R = 5,729.58'
T = 2,231.85'
L = 4,256.50'
E = 419.34'
e MAX. = 0.033 '/'

6" RC RIPRAP
STA. 73+87, 88.4' LT.
6" UD-1175.85

INLET MISC.: SINGLE SLOPE CONCRETE BARRIER, TYPE D
STA. 76+00, 17.75' LT.
GRATE-1183.55
18" SW&NE-1178.37
6' UD N-1179.77

6" RC RIPRAP
STA. 76+05, 99.8' LT.
6" UD-1179.43

HW-2.1 OR 2.2
STA. 76+00, 103.1' LT.
18"-1177.51

BEGIN PROJECT
STA. 73+86.12
S.L.M. 1.40
E034671

MATCH LINE STA. 70+00 I-77

MATCH LINE STA. 80+00 I-77

LA-R/W

CONST. LIMITS

ROCK CHANNEL PROTECTION, TYPE C, W/FILTER
4'Wx6'Lx1.5'/27-1.83 CY

L.O.N. POINT-
STA. 79+52.39

EX. PAVEMENT FOR MAINTAINING TRAFFIC

BUTT JOINT MATCH EXIST.

PT Sta. 71+16.42

POT Sta. 71+17.98

EQUATION:
Sta 71+17.90 BK =
Sta 71+17.98 AH

SOUTHBOUND LANES

℄ SURVEY & CONSTRUCTION I-77

N 33°57'29" W

NORTHBOUND LANES

BUTT JOINT MATCH EXIST.

L.O.N. POINT-
STA. 78+98.66

CB NO. 8
STA. 76+00, 4.12' LT.
GRATE-1181.65
15" NE-1178.75
18" SW-1178.50

6" RC RIPRAP
STA. 73+87, 0.1' RT.
6" UD-1178.94

INLET MISC.: SINGLE SLOPE CONCRETE BARRIER, TYPE D
STA. 76+00, 17.75' RT.
GRATE-1189.60
15" SW-1184.75
6" UD N-1187.36
6" UD E-1185.75

ITEM 670-DITCH EROSION PROTECTION

SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY
165	PIPE PROFILES D3 THRU D5

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED COY
CHECKED W.B.H.

PLAN AND PROFILE
STA. 70+00.00 TO STA. 80+00.00

SUM-77-1.40

138
381

gpm102.dgn

STA. 73+86.12 NB & SB
BEGIN PROP. PAVEMENT 30' L/R
ELEV. - 1,186.23 NB
ELEV. - 1,179.33 SB

EXIST. NORTHBOUND P.G.
EX. +1.72 %±

EXIST. SOUTHBOUND P.G.
EX. +2.19 %±

UD 3

UD 8, 9, 10, 11

UD 4, 5, 6, 7

PROP. NORTHBOUND P.G.
+1.90 %

+2.30 %

PROP. SOUTHBOUND P.G.

UD 12, 13, 14, 15

UD 16, 17, 18, 19

Sta. 79+50.00 SB
Elev. 1,192.30
P.V.C.

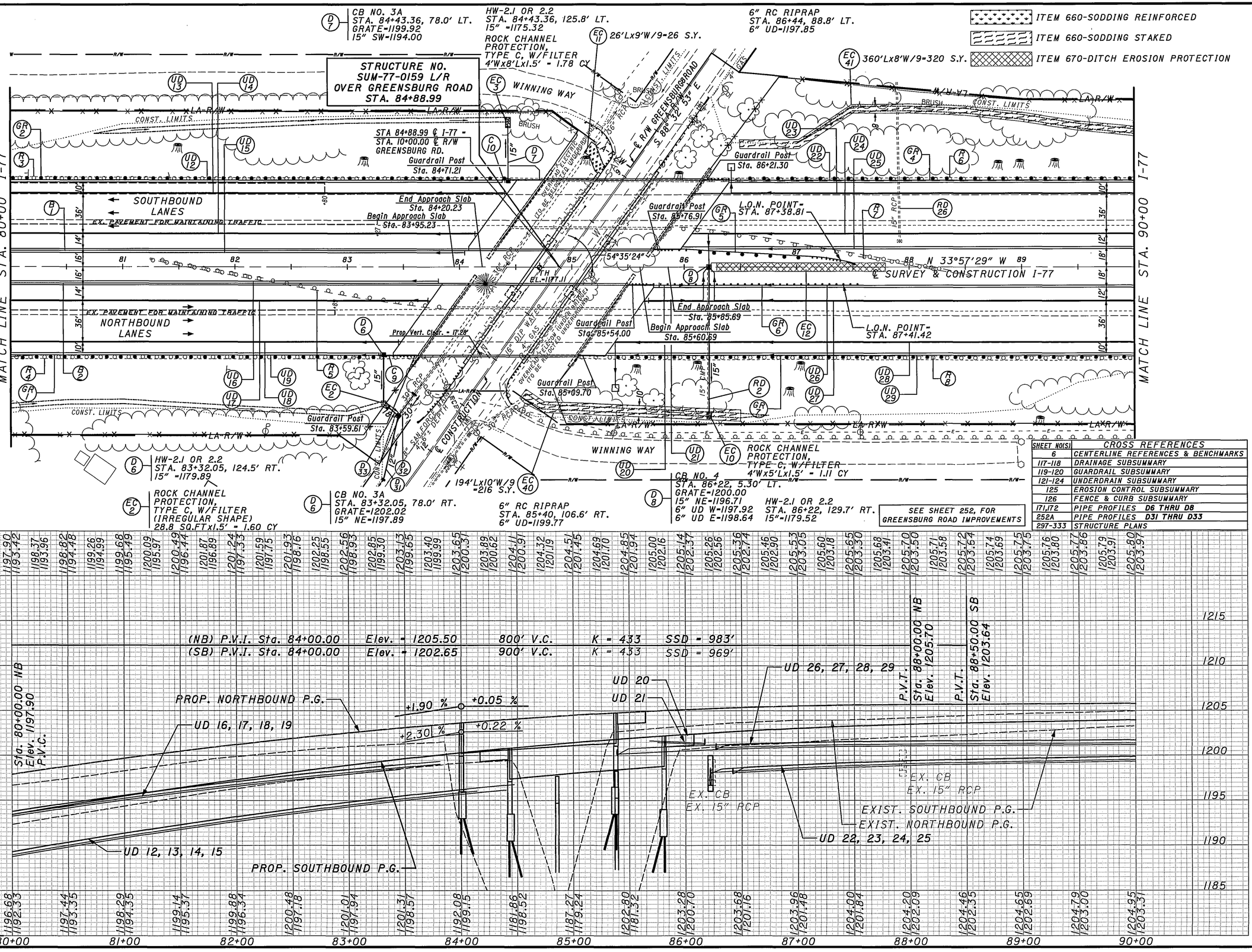
EX. CB
EX. 18" RCP

PR. NB 30" RT
PR. SB 30" LT
1186.50 1179.65
1186.97 1180.22
1187.45 1180.80
1187.92 1181.37
1188.40 1181.95
1188.87 1182.52
1189.35 1183.10
1189.82 1183.68
1190.30 1184.25
1190.77 1184.82
1191.25 1185.40
1191.72 1185.97
1192.20 1186.55
1192.67 1187.12
1193.15 1187.70
1193.62 1188.27
1194.10 1188.85
1194.57 1189.42
1195.05 1190.00
1195.52 1190.57
1196.00 1191.15
1196.47 1191.73
1196.95 1192.30
1197.42 1192.87
1197.90 1193.42

EX. NB 30" RT
EX. SB 30" LT
1179.59 1170.88
1180.45 1171.97
1181.31 1173.07
1182.17 1174.16
1183.03 1175.26
1183.89 1176.35
1184.75 1177.44
1185.61 1178.54
EX. NB 42" RT
EX. SB 42" LT
1186.25 1179.33
1187.26 1180.57
1188.28 1181.74
1189.16 1182.84
1190.04 1183.94
1190.93 1184.99
1191.73 1186.05
1192.55 1187.10
1193.39 1188.15
1194.25 1189.20
1195.11 1190.25
1195.92 1191.29
1196.68 1192.33

1200 1195 1190 1185 1180 1175 1170

70+00 71+00 72+00 73+00 74+00 75+00 76+00 77+00 78+00 79+00 80+00



CROSS REFERENCES	
SHEET NO(S)	
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY
171,172	PIPE PROFILES D6 THRU D8
252A	PIPE PROFILES D31 THRU D33
297-333	STRUCTURE PLANS

HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED COY CHECKED W.B.H.

PLAN AND PROFILE STA. 80+00.00 TO STA. 90+00.00

SUM-77-1.40

139 381

ITEM 660-SODDING REINFORCED

ITEM 670-DITCH EROSION PROTECTION

HW-2.2
STA. 91+91, 117.6' LT.
15" - 1192.46

ROCK CHANNEL PROTECTION, TYPE C, W/FILTER
4'Wx10'Lx1.5' - 2.22 CY

EC 42 405'Lx8'W/9-360 S.Y.

UD 25, UD 24, UD 23, UD 22

LA R/W

CONST. LIMITS

D 9 — 15" RCP

6" RC RIPRAP
STA. 91+96
99.1' LT.
6" UD-1199.47

RD 3

GR 4

R 6

L.O.N. POINT-
STA. 91+70.73

SOUTHBOUND LANES

NORTHBOUND LANES

℄ SURVEY & CONSTRUCTION I-77

N 33°57'29" W

MATCH LINE STA. 90+00 I-77

MATCH LINE STA. 100+00 I-77

91 92 93 94 95 96 97 98 99

36' 12' 10'

EC 4, EC 13, EC 14

UD 32, UD 31, UD 30, UD 33

UD 34, UD 36, UD 35, UD 37

GR 7, R 8

L.O.N. POINT-
STA. 94+78.38

D 10 — 15" RCP

RD 4

EC 5

UD 26, UD 27, UD 28, UD 29

CB NO. 4
STA. 91+91, 0.70' LT.
GRATE-1201.78
15" SW-1198.99
6" UD E-1200.84
6" UD W-1200.26

6" RC RIPRAP
STA. 91+91, 89.2' RT.
6" UD-1201.07

EC 43 315'Lx10'W/9-350 S.Y.

CB NO. 4
STA. 96+92
GRATE-1203.62
15" NE-1200.84

HW-2.2
STA. 96+92, 105.3' RT.
15"-1199.79

ROCK CHANNEL PROTECTION, TYPE C, W/FILTER
4'Wx6'Lx1.5' - 1.33 CY

SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY
178,181	PIPE PROFILES D9 & D10

PR. NB 30" RT
PR. SB 30" LT

1205.80 1203.97 | 1205.81 1204.02 | 1205.82 1204.08 | 1205.84 1204.13 | 1205.85 1204.19 | 1205.86 1204.24 | 1205.87 1204.30 | 1205.89 1204.35 | 1205.90 1204.41 | 1205.91 1204.46 | 1205.92 1204.52 | 1205.94 1204.57 | 1205.95 1204.63 | 1206.03 1204.73 | 1206.10 1204.83 | 1206.18 1204.94 | 1206.25 1205.04 | 1206.33 1205.14 | 1206.40 1205.24 | 1206.47 1205.35 | 1206.55 1205.45 | 1206.63 1205.55 | 1206.70 1205.66 | 1206.78 1205.76 | 1206.85 1205.86 | 1206.93 1205.96 | 1207.00 1206.07 | 1207.08 1206.17 | 1207.15 1206.27 | 1207.23 1206.37 | 1207.30 1206.47 | 1207.38 1206.58 | 1207.45 1206.68 | 1207.53 1206.78 | 1207.60 1206.89 | 1207.68 1206.99 | 1207.75 1207.09 | 1207.83 1207.19 | 1207.90 1207.30 | 1207.98 1207.40 | 1208.05 1207.50

1220 1215 1210 1205 1200 1195 1190

P.V.I. Sta. 93+00.00 NB
Elev. - 1205.95
NO CURVE

P.V.I. Sta. 93+00.00 SB
Elev. - 1204.63
NO CURVE

UD 26, 27, 28, 29

EXIST. NORTHBOUND P.G.

+0.05 %

+0.22 %

+0.30 %

+0.41 %

PROP. NORTHBOUND P.G.

PROP. SOUTHBOUND P.G.

UD 30, 31, 32, 33

2 - EX. CB
EX. 15" RCP

UD 22, 23, 24, 25

EXIST. SOUTHBOUND P.G.

2 - EX. CB
EX. 15" RCP

UD 34, 35, 36, 37

EX. NB 42" RT
EX. SB 42" LT

1204.95 1203.31 | 1205.13 1203.68 | 1205.26 1203.77 | 1205.40 1203.95 | 1205.56 1204.14 | 1205.63 1204.30 | 1205.70 1204.41 | 1205.82 1204.62 | 1206.04 1204.74 | 1206.24 1204.79 | 1206.48 1205.33 | 1206.63 1205.33 | 1206.76 1205.55 | 1206.87 1205.79 | 1206.96 1205.99 | 1207.03 1206.15 | 1207.23 1206.34 | 1207.42 1206.53 | 1207.54 1206.70 | 1207.68 1206.96 | 1207.84 1207.28

90+00 91+00 92+00 93+00 94+00 95+00 96+00 97+00 98+00 99+00 100+00

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED COY
CHECKED W.B.H.

PLAN AND PROFILE
STA. 90+00.00 TO STA. 100+00.00

SUM-77-1.40

140
381

6" RC RIPRAP
STA. 100+10, 95.7' LT.
6" UD-1203.63

6" RC RIPRAP
STA. 100+10, 97.1' RT.
6" UD-1203.94

MATCH LINE STA. 100+00 I-77

MATCH LINE STA. 110+00 I-77

UD 41, UD 40, UD 39, UD 38, UD 42, UD 43, UD 45, UD 44, UD 49, UD 48, UD 47, UD 46, UD 50, UD 51, UD 52, UD 53

LA-R/W

CONST. LIMITS

BRUSH

SOUTHBOUND LANES

NORTHBOUND LANES

10 36 12 36 12 36 10

PROP TURN-A-ROUND
FOR DETAILS SEE SHEET NO. 253

101 102 103 104 105 106 107 108 109

N 33°57'29" W
℄ SURVEY & CONSTRUCTION I-77

SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY

PR. NB 30" RT
PR. SB 30" LT
1208.05 1207.50 | 1208.13 1207.60 | 1208.20 1207.71 | 1208.28 1207.81 | 1208.35 1207.91 | 1208.43 1208.01 | 1208.50 1208.12 | 1208.58 1208.22 | 1208.65 1208.32 | 1208.72 1208.42 | 1208.79 1208.51 | 1208.84 1208.59 | 1208.89 1208.66 | 1208.94 1208.73 | 1208.97 1208.79 | 1209.00 1208.83 | 1209.02 1208.87 | 1209.03 1208.91 | 1209.04 1208.93 | 1209.04 1208.94 | 1209.03 1208.95 | 1209.02 1208.95 | 1209.00 1208.94 | 1208.97 1208.92 | 1208.93 1208.89 | 1208.89 1208.86 | 1208.84 1208.82 | 1208.78 1208.76 | 1208.71 1208.70 | 1208.64 1208.65 | 1208.56 1208.56 | 1208.47 1208.47 | 1208.38 1208.38 | 1208.28 1208.28 | 1208.18 1208.18 | 1208.09 1208.09 | 1207.99 1207.99 | 1207.89 1207.89 | 1207.80 1207.80 | 1207.70 1207.70 | 1207.60 1207.60

1220 1215 1210 1205 1200 1195 1190

(NB) P.V.I. Sta. 105+00.00 Elev. = 1209.55 600' V.C. K = 870 SSD = 1864'
(SB) P.V.I. Sta. 105+00.00 Elev. = 1209.55 600' V.C. K = 750 SSD = 1649'

BEGIN COMMON PROFILE NB & SB

HIGH POINT N.B.
STA. 104+60.87
ELEV. 1209.04

HIGH POINT S.B.
STA. 105+07.50
ELEV. 1208.95

Sta. 102+00.00 NB
Elev. 1208.65
Sta. 102+00.00 SB
Elev. 1208.32
P.V.C.

PROP. NORTHBOUND P.G.
PROP. SOUTHBOUND P.G.

+0.30 %
+0.41 %
-0.39 %
-0.39 %

P.V.T.
Sta. 108+00.00
Elev. 1208.38

UD 50, 51, 52, 53

PROP. NORTHBOUND
& SOUTHBOUND P.G.

EXIST. NORTHBOUND P.G.
EXIST. SOUTHBOUND P.G.

UD 38, 39, 40, 41

UD 42, 43, 44, 45

UD 46, 47, 48, 49

EX. NB 42" RT
EX. SB 42" LT
1207.84 1207.28 | 1207.99 1207.50 | 1208.14 1207.71 | 1208.34 1207.87 | 1208.53 1207.94 | 1208.58 1208.07 | 1208.64 1208.29 | 1208.77 1208.45 | 1208.85 1208.51 | 1209.00 1208.58 | 1208.81 1208.88 | 1209.04 1208.87 | 1209.01 1208.85 | 1208.93 1208.81 | 1208.75 1208.66 | 1208.58 1208.48 | 1208.40 1208.31 | 1208.21 1208.14 | 1207.97 1207.92 | 1207.71 1207.71 | 1207.22 1207.75

100+00 101+00 102+00 103+00 104+00 105+00 106+00 107+00 108+00 109+00 110+00

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED COY
CHECKED W.B.H.

PLAN AND PROFILE
STA. 100+00.00 TO STA. 110+00.00

SUM-77-1.40

141
381

PLAN AND PROFILE
STA. 110+00.00 TO STA. 120+00.00

HORIZONTAL SCALE IN FEET: 0, 20, 40, 80

CALCULATED COY | CHECKED W.B.H.

SUM-77-1.40

142 / 381

ITEM 660-SODDING REINFORCED

ITEM 670-DITCH EROSION PROTECTION

LOW WIRE
STA. 119+43.5±
ELEV. = 1229.9±

D11 — CB NO. 8
STA. 113+89, 97.8' LT.
GRATE=1202.29
18" NE=1199.29
6" UD E=1201.16

D15 — CB NO. 8 (SAG)
STA. 119+90, 100.4' LT.
GRATE=1200.45
18" SE=1197.65
6" UD NE=1198.49

D14 — CB NO. 8
STA. 118+90, 98.4' LT.
GRATE=1200.25
18" NE&NW=1197.15

D12 — CB NO. 4
STA. 113+89, 0' RT.
GRATE=1203.49
18" SW=1198.60
24" NE=1198.10
6" UD SW,SE=1201.37

6" RC RIPRAP
STA. 113+84, 101.4' RT.
6" UD=1201.15

HW-2.1 OR 2.2
STA. 113+89, 108' RT.
24"=1197.56
ROCK CHANNEL PROTECTION, TYPE C, W/FILTER
4'Wx7'Lx1.5' = 1.56 CY

HW-2.1 OR 2.2
STA. 118+45
109.9' RT.
24"=1194.85
ROCK CHANNEL PROTECTION, TYPE C, W/FILTER
4.5'Wx8'Lx1.5' = 2.00 CY

202'Lx10'W/9-224 S.Y. (EC 44)

D13 — CB NO. 4
STA. 118+90, 0' RT.
GRATE=1201.77
18" SW&NW=1196.37
27" E=1195.62

SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY
190,192	PIPE PROFILES D11 THRU D14

MATCH LINE STA. 110+00 I-77

MATCH LINE STA. 120+00 I-77

SOUTHBOUND LANES

NORTHBOUND LANES

℄ SURVEY & CONSTRUCTION I-77

N 33°57'29" W

CONST. LIMITS

DESIGNATED WETLANDS DO NOT DISTURB

BRUSH

LA R/W

UD 46, UD 47, UD 48, UD 49, UD 50, UD 51, UD 52, UD 53, UD 54, UD 55, UD 56, UD 57, UD 58, UD 59, UD 60, UD 61

EC 15, EC 16, EC 16A, EC 16B, EC 16C, EC 16D, EC 36, EC 6

RD 5, RD 6, RD 7, RD 8, RD 9, RD 10, RD 11

18" RCP, 24" RCP, 27" RCP

PR. WB 30' RT
PR. SB 30' LT
EX. WB 42' RT
EX. SB 42' LT

EXIST. NORTHBOUND P.G.

EXIST. SOUTHBOUND P.G.

PROP. NORTHBOUND & SOUTHBOUND P.G.

-0.39 %

P.V.I. Sta. 120+00.00
Elev. = 1203.70
600' V.C.
K = 7.90
SSD = N.A.

Sta. 117+00.00
Elev. 1204.87
P.V.C.

D16 — 118'-18" CONDUIT, TYPE C

D15 — 100'-18" CONDUIT, TYPE C

UD 46, 47, 48, 49
UD 50, 51, 52, 53

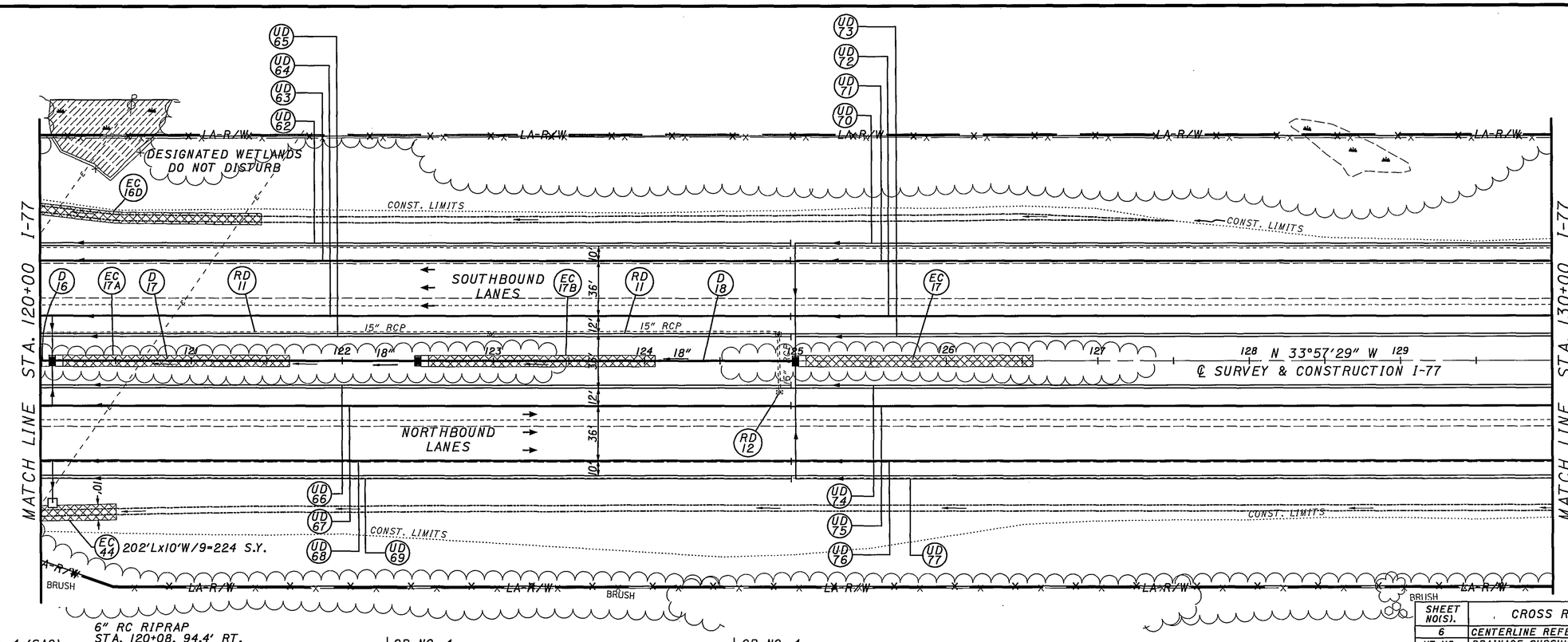
UD 54, 55, 56, 57
UD 58, 59, 60, 61

2 - EX. CB
EX. 15" RCP
EX. 24" RCP

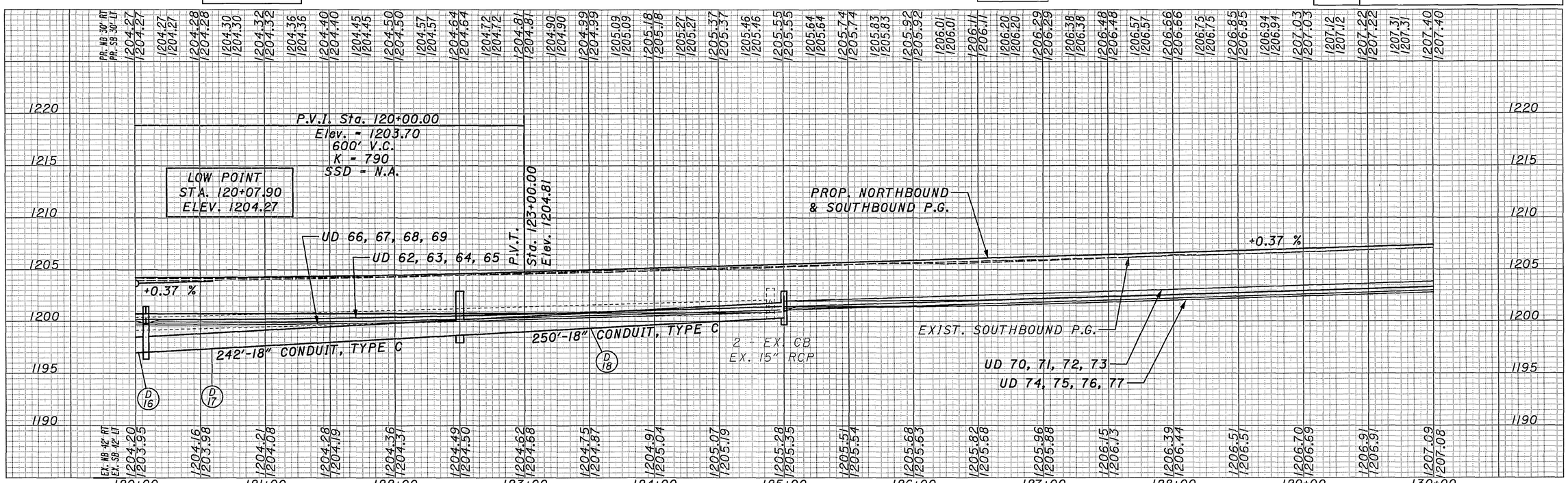
2 - EX. CB
EX. 15" RCP
EX. 18" RCP
EX. 24" RCP

1220 1215 1210 1205 1200 1195 1190

110+00 111+00 112+00 113+00 114+00 115+00 116+00 117+00 118+00 119+00 120+00



SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY



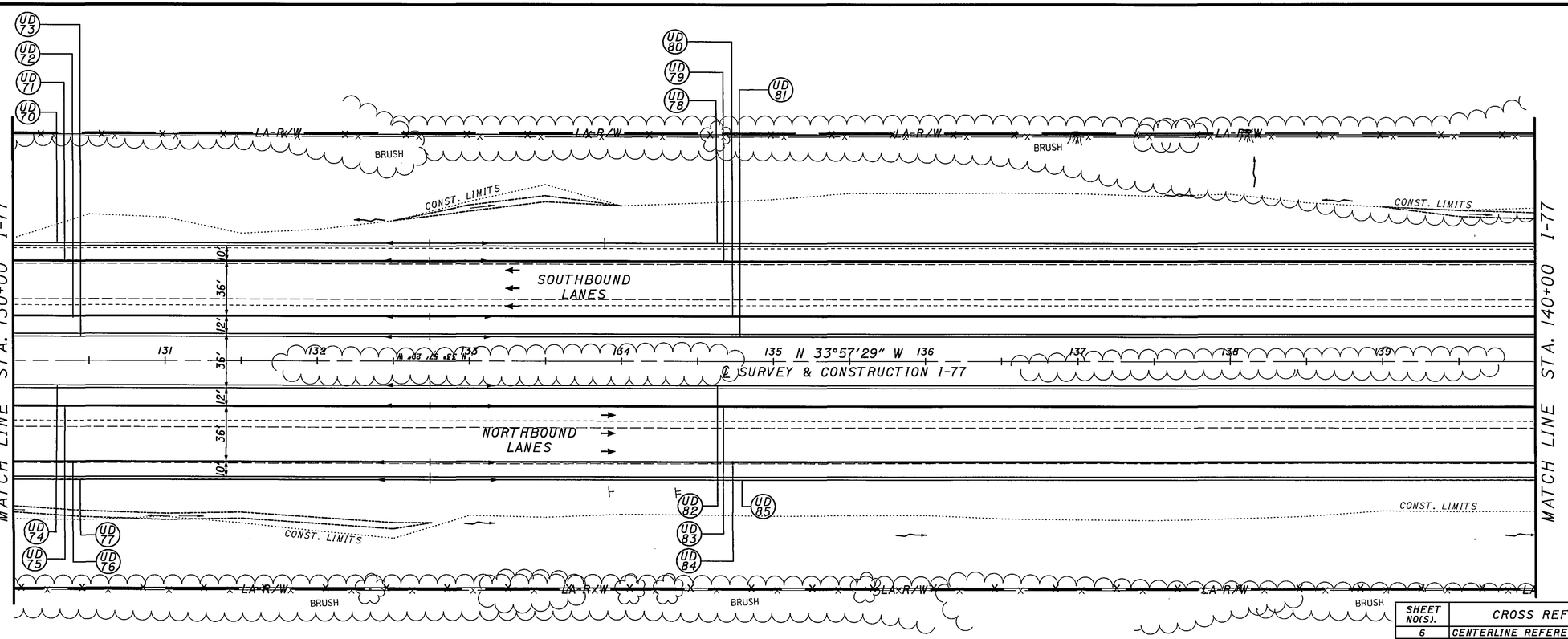
HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED COY
CHECKED W.B.H.

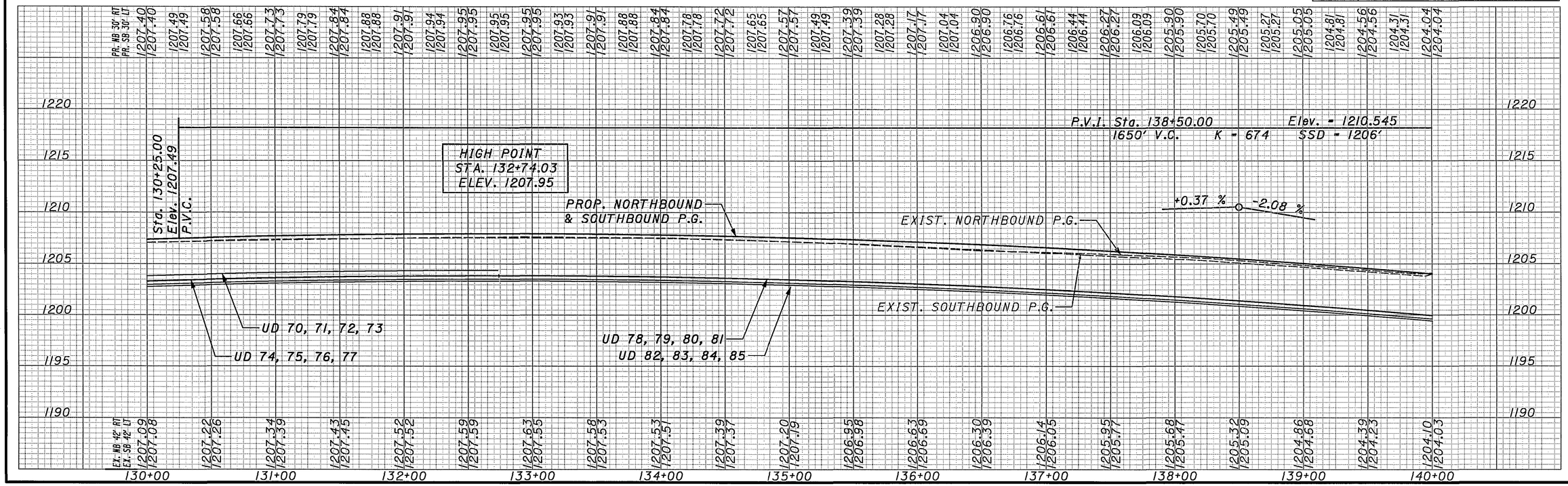
PLAN AND PROFILE
STA. 120+00.00 TO STA. 130+00.00

SUM-77-1.40

143
381



SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY



HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED COY
CHECKED W.B.H.

PLAN AND PROFILE
STA. 130+00.00 TO STA. 140+00.00

SUM-77-1.40

6" RC RIPRAP
STA. 141+88, 98.7' LT.
6" UD-1197.23

CB NO. 4
STA. 148+25, 0' RT.
GRATE-1187.65
15" NW-1184.00
6" UD SW,NE-1185.00

LOW WIRE
STA. 149+54.4±
ELEV. - 1220.4±

MATCH LINE STA. 140+00 I-77

MATCH LINE STA. 150+00 I-77

LA-R/W

BRUSH

CONST. LIMITS

SOUTHBOUND LANES

NORTHBOUND LANES

℄ SURVEY & CONSTRUCTION I-77

N 33°57'29" W

L.O.N. POINT-
STA. 149+68.70

Prop. Vert. Clear. - 17.14'

WISE ROAD

L.O.N. POINT-
STA. 148+97.74

6" RC RIPRAP
STA. 141+83, 99.8' RT.
6" UD-1196.99

CB NO. 4
STA. 141+88, 0' RT.
GRATE-1199.27
15" NE-1197.13
6" UD E,SW-1197.96

ROCK CHANNEL PROTECTION, TYPE C, W/FILTER
4'Wx5'Lx1.5' - 1.11 CY

HW-2.2
STA. 141+88, 102.2' RT.
EX. 15"-1195.73

ITEM 670-DITCH EROSION PROTECTION

ITEM 660-SODDING REINFORCED

24'Lx9'W/9-24 S.Y.

31'Lx9'W/9-31 S.Y.

696'Lx12'W/9-928 S.Y.

SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY
203	PIPE PROFILES D19

PR. WB 30' RT
PR. SB 30' LT

EX. WB 42' RT
EX. SB 42' LT

P.V.I. Sta. 138+50.00
1650' V.C. K - 674
Elev. - 1210.545
SSD - 1206'

UD 90, 91, 92, 93

UD 86, 87, 88, 89

EXIST. NORTHBOUND P.G.

2 - EX. CB
EX. 15" RCP

EXIST. SOUTHBOUND P.G.

UD 78, 79, 80, 81

UD 82, 83, 84, 85

PROP. NORTHBOUND & SOUTHBOUND P.G.

P.V.T.
Sta. 146+75.00
Elev. 1,193.38

WISE ROAD
N.B. VERT. CL. - 17.14'

P.V.I. Sta. 149+80.77
Elev. 1187.025

-2.08 %
-1.95 %

235'-15" CONDUIT, TYPE C

1210
1205
1200
1195
1190
1185
1180

140+00 141+00 142+00 143+00 144+00 145+00 146+00 147+00 148+00 149+00 150+00

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED COY
CHECKED W.B.H.

PLAN AND PROFILE
STA. 140+00.00 TO STA. 150+00.00

SUM-77-1.40

145
381

STRUCTURE NO.
SUM-77-0284 UNDER
WISE ROAD
STA. 150+55.99

150'Lx10'W/9-167 S.Y. (EC 22) 22'Lx9'W/9-22 S.Y.

(EC 23) 38'Lx9'W/9-38 S.Y.

(EC 46)

(C 2)

(C 1)

(GR 11)

(B 4)

(R 10)

L.O.N. POINT-
STA. 152+12.76

(UD 95) (UD 96) (UD 94) (UD 97)

(UD 94A) (UD 96A) (UD 95A) (UD 97A)

(GR 10)

(D 21)
MH NO. 3
WITH FLAT TOP
STA. 150+60, 11' LT.
TOP=1184.30
15" NW,SE=1179.54

WISE ROAD
108° 10' 26" E

LA-R/W

BRUSH

CONST. LIMITS

MATCH LINE STA. 150+00 I-77

MATCH LINE STA. 160+00 I-77

Prop. Vert.
Clear. = 18.33'

SOUTHBOUND
LANES

(D 20) (D 21) (EC 19A) (D 22) (EC 19B) (D 23) (EC 19C) (D 24)

L.O.N. POINT-
STA. 151+41.94

54°12'51"

15" RCP

18" RCP

N 33°57'29" W

℄ SURVEY & CONSTRUCTION I-77

NORTHBOUND
LANES

(GR 9) (RD 14) (R 9) (RD 15) (RD 16)

(B 3)

(UD 98) (UD 99) (UD 101) (UD 100)

(UD 98A) (UD 99A) (UD 100A) (UD 101A)

STA 150+55.99 ℄ I-77 =
STA. 10+00.00 ℄ WISE RD.

(EC 45) 696'Lx12'W/9-928 S.Y.

(D 24) CB NO. 4
STA. 159+00, 0' RT.
GRATE=1166.48
18" SE,NW=1163.03

(D 22) CB NO. 4
STA. 153+00, 0' RT.
GRATE=1178.18
15" SE,NW=1174.98

(D 23) CB NO. 4
STA. 156+00, 0' RT.
GRATE=1172.33
15" SE=1168.98
18" NW=1168.73
6" UD SW,NE=1169.68

ITEM 660-SODDING REINFORCED

ITEM 670-DITCH EROSION PROTECTION

SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY
243	WISE ROAD PLAN & PROFILE
334-351	STRUCTURE PLANS

PR. WB 30" RT
PR. SB 30" LT
EX. WB 42" RT
EX. SB 42" LT

WISE ROAD
S.B. VERT. CL. = 18.33'

2-EX. CB
EX. 15" RCP
EX. 18" RCP

PROP. NORTHBOUND
& SOUTHBOUND P.G.

-1.95 %

EXIST. NORTHBOUND P.G.

EXIST. SOUTHBOUND P.G.

240'-15" CONDUIT, TYPE C

300'-15" CONDUIT, TYPE C

300'-18" CONDUIT, TYPE C

UD 86, 87, 88, 89
UD 90, 91, 92, 93

UD 94, 95, 96, 97
UD 98, 99, 100, 101

UD 94A, 95A, 96A, 97A
UD 98A, 99A, 100A, 101A

EX. CB
EX. 18" RCP

2 EX. CB
EX. 15" RCP
EX. 18" RCP

1190 1185 1180 1175 1170 1165 1160

150+00 151+00 152+00 153+00 154+00 155+00 156+00 157+00 158+00 159+00 160+00

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED COY
CHECKED W.B.H.

PLAN AND PROFILE
STA. 150+00.00 TO STA. 160+00.00

SUM-77-1.40

146
381

6" RC RIPRAP
STA. 161+47, 121.3' LT.
6" UD-1153.63

HW-2.1
STA. 161+58.65
132.85' LT.
EX. 84"-1145.27±
78"-1145.52

DESIGNATED WETLANDS DO NOT DISTURB

MATCH LINE STA. 160+00 I-77

MATCH LINE STA. 170+00 I-77

SOUTHBOUND LANES

NORTHBOUND LANES

℄ SURVEY & CONSTRUCTION I-77

N 33°57'29" W

CONST. LIMITS

BRUSH

LA-R/W

UD 94A, 95A, 96A, 97A, 98A, 99A, 100A, 101A, 102, 103, 104, 105, 106, 107, 108, 109

D 24, EC 19D, EC 24

78" LINER PIPE, 170.24'

EX. 84" CMP

MANHOLE, NO. 5, A.P.P.
STA. 161+72.40, 0' RT.
GRATE-1161.21
18" SE-1156.23
78" E,W-1144.15
EX. 84" E,W-1143.09±
6" UD E-1159.20
6" UD S-1159.28

HW-2.1
STA. 161+85.90
130.52' RT.
EX. 84"-1142.58±
78"-1142.83

6" RC RIPRAP
STA. 161+71, 117.8' RT.
6" UD-1151.55

ITEM 660-SODDING REINFORCED

ITEM 670-DITCH EROSION PROTECTION

SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY
258	CULVERT DETAILS

PR. WB 30' RT
PR. SB 30' LT
1167.15 1166.66 1166.18 1165.69 1165.20 1164.71 1164.22 1163.74 1163.25 1162.77 1162.30 1161.84 1161.40 1160.97 1160.56 1160.15 1159.76 1159.38 1159.02 1158.66 1158.33 1158.00 1157.68 1157.38 1157.10 1156.82 1156.56 1156.31 1156.07 1155.85 1155.64 1155.44 1155.25 1155.08 1154.92 1154.78 1154.64 1154.52 1154.41 1154.32 1154.24

EX. WB 42" RT
EX. SB 42" LT
1167.45 1167.36 1166.42 1166.32 1165.39 1165.32 1164.35 1164.26 1163.29 1163.25 1162.25 1162.27 1161.26 1161.37 1160.22 1160.34 1159.14 1159.35 1158.17 1158.41 1157.38 1157.52 1156.61 1156.72 1155.88 1155.97 1155.23 1155.28 1154.67 1154.65 1154.15 1154.10 1153.78 1153.82 1153.42 1153.55 1153.35 1153.34 1153.28 1153.20 1153.02 1153.05

1175 1170 1165 1160 1155 1150 1145

UD 98A, 99A, 100A, 101A

UD 94A, 95A, 96A, 97A

PVC Sta. 162+00.00
Elev. 1163.25

272'-18" CONDUIT, TYPE C

D 24

EX. 84" CMP
PR. 78" LINER

EXIST. NORTHBOUND P.G.

UD 102, 103, 104, 105
UD 106, 107, 108, 109

PROP. NORTHBOUND & SOUTHBOUND P.G.

P.V.I. Sta. 168+00.00 Elev. = 1151.550
1200' V.C. K = 486 SSD = 2336'

-1.95 % +0.52 %

UD 107, 108, 109

EXIST. SOUTHBOUND P.G.

160+00 161+00 162+00 163+00 164+00 165+00 166+00 167+00 168+00 169+00 170+00

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED COY
CHECKED W.B.H.

PLAN AND PROFILE
STA. 160+00.00 TO STA. 170+00.00

SUM-77-1.40

147
381

gpmill.dgn

ITEM 660-SODDING REINFORCED

ITEM 670-DITCH EROSION PROTECTION

6" RC RIPRAP
STA. 174+40, 99.3' LT.
6" UD-1151.17

130'Lx10'W/9-144 SQ.YD.

HW-1.1, AS PER PLAN
STA. 175+42.54, 126.0' LT.
EX. 76"x48"-1146.66±
FOR DETAIL, SEE SHEET NO. 259A

383.95 L.F. 12" SANITARY SEWER IN 24" STEEL CASING

EX. PAVEMENT FOR MAINTAINING TRAFFIC

SOUTHBOUND LANES

NORTHBOUND LANES

MATCH LINE STA. 170+00 I-77

MATCH LINE STA. 180+00 I-77

℄ SURVEY & CONSTRUCTION I-77

N 33°57'29" W

CONST. LIMITS

BRUSH

LA-R/W

TO BE REMOVED

PLUG

TO BE ABANDONED

TO REMAIN

INVERT EL. 1139.26

DESIGNATED WETLANDS DO NOT DISTURB

MATCHLINE

TO BE ABANDONED

CB NO. 4 (SAG)
STA. 171+47, 0' RT.
GRATE-1151.15
18" NW-1148.09
24" NE-1147.59
6" UD SW-1148.74
6" UD E,N-1149.28

HW-2.1 OR 2.2
STA. 171+47, 110.0' RT.
24"-1147.04

ROCK CHANNEL PROTECTION, TYPE C, W/FILTER
4'Wx5'Lx1.5' - 1.11 CY

CB NO. 4
STA. 174+40, 0' RT.
GRATE-1152.26
18" SE-1149.26
6" UD NE,SW-1150.26

6" RC RIPRAP
STA. 171+42, 109.1'RT.
6" UD-1148.98

6" RC RIPRAP
STA. 171+52, 109.1' RT.
6" UD-1148.98

SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY
219	PIPE PROFILES D25
259A	CULVERT/HEADWALL DETAIL

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED COY
CHECKED W.B.H.

PLAN AND PROFILE
STA. 170+00.00 TO STA. 180+00.00

SUM-77-1.40

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381

FOR VERTICAL CURVE DATA SEE PREVIOUS SHEET

LOW POINT
STA. 171+47.32
ELEV. 1154.01

Elev. 1154.67
PVT Sta. 174+00.00

+0.52 %

UD 102, 103, 104, 105

UD 110, 111, 112, 113

EXIST. NORTHBOUND & SOUTHBOUND P.G.

PROP. NORTHBOUND & SOUTHBOUND P.G.

UD 118, 119, 120, 121

UD 122, 123, 124, 125

UD 106, 107, 108, 109

UD 114, 115, 116, 117

293'-18" CONDUIT, TYPE C

2-EX. CB
EX. 15" RCP
EX. 24" RCP

2-EX. CB
EX. 15" RCP

EX. CB
EX. 15" RCP

2 - EX. CB
EX. 15" RCP

EX. MH
EX. 15" CMP

EX. TWIN
76"x48"RECP

EXIST. 12" SANITARY SEWER IN 24" STEEL CASING

PR. WB 30' RT
PR. SB 30' LT
EX. WB 42' RT
EX. SB 42' LT

1154.24 1154.17 1154.11 1154.07 1154.04 1154.02 1154.01 1154.02 1154.04 1154.08 1154.12 1154.18 1154.25 1154.34 1154.44 1154.55 1154.67 1154.80 1154.93 1155.06 1155.19 1155.32 1155.45 1155.58 1155.71 1155.84 1155.97 1156.10 1156.23 1156.36 1156.49 1156.62 1156.75 1156.88 1157.01 1157.14 1157.27 1157.40 1157.53 1157.66 1157.79

1153.02 1153.05 1153.03 1152.97 1153.12 1153.14 1153.21 1153.30 1153.31 1153.43 1153.56 1153.66 1153.83 1153.94 1154.12 1154.16 1154.40 1154.40 1154.68 1154.68 1154.95 1154.92 1155.19 1155.18 1155.39 1155.44 1155.69 1155.71 1155.98 1155.98 1156.28 1156.27 1156.64 1156.55 1157.00 1156.84 1157.32 1157.12 1157.53 1157.40 1157.74 1157.67

1170 1165 1160 1155 1150 1145 1140

170+00 171+00 172+00 173+00 174+00 175+00 176+00 177+00 178+00 179+00 180+00

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PLAN AND PROFILE
STA. 180+00.00 TO STA. 190+00.00

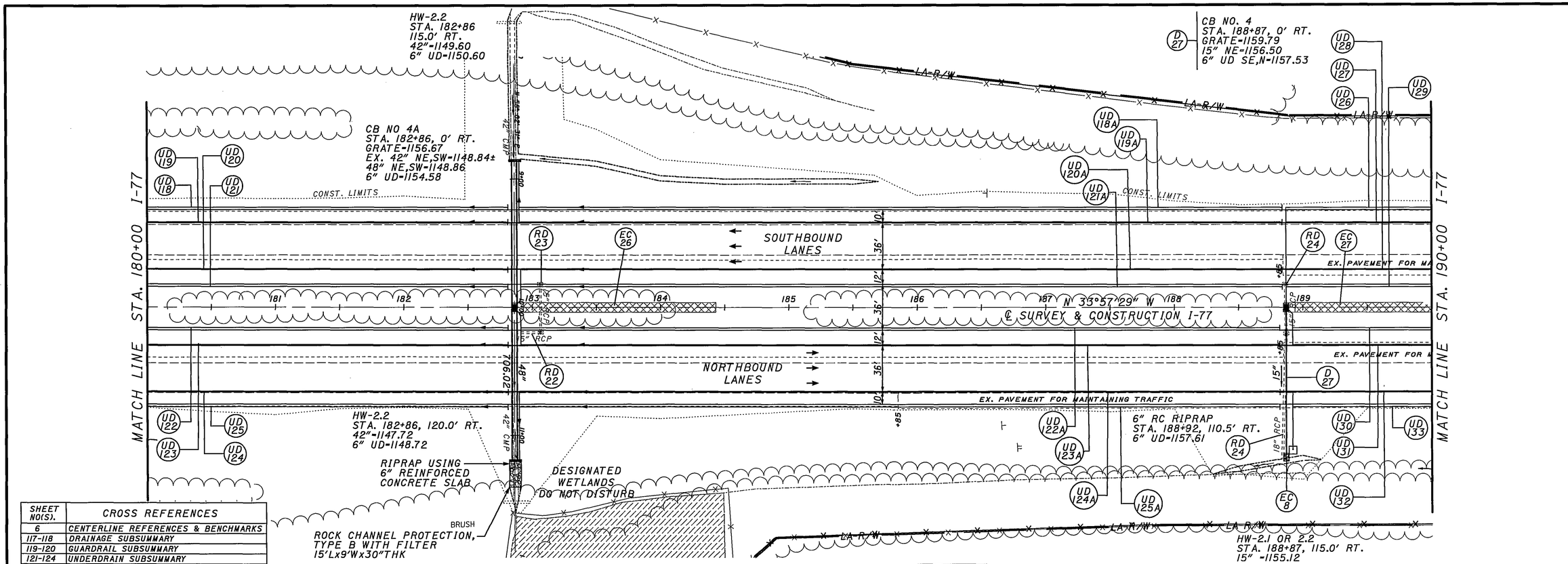
CALCULATED COY
CHECKED W.B.H.

HORIZONTAL SCALE IN FEET
0 20 40 80

SUM-77-1.40

149
381

SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY
228	PIPE PROFILES D27
259	CULVERT DETAILS & QUANTITIES



STRUCTURE NO. SUM-77-0378 UNDER GRAYBILL ROAD STA. 199+86.81

℄ I-77 CURVE
P.I. Sta = 207+68.41
D = 8° 53′ 15″ (LT)
Dc = 0° 20′ 00″
R = 17,188.75′
T = 1,335.79′
L = 2,666.22′
E = 51.83′
e MAX = NONE (NC)

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED COY
CHECKED W.B.H.

PLAN AND PROFILE
STA. 190+00.00 TO STA. 200+00.00

SUM-77-1.40

150
381

SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY
244	GRAYBILL ROAD PLAN & PROFILE
352-368	STRUCTURE PLANS

ITEM 660-SODDING REINFORCED
ITEM 670-DITCH EROSION PROTECTION

MATCH LINE STA. 190+00 I-77
MATCH LINE STA. 200+00 I-77
SOUTHBOUND LANES
NORTHBOUND LANES
MAINTAINING TRAFFIC
CONST. LIMITS
191 N 33°57′29″ W 192
PC Sta. 194+32.70
TH 5 EL.=1152.51
TH 4 EL.=1155.82
TH 11 EL.=1179.67
L.O.N. POINT= STA. 198+97.45
L.O.N. POINT= STA. 198+80.45
Prop. Vert. Clear. = 17.19′
Prop. Vert. Clear. = 17.01′
STA 199+86.81 ℄ I-77 = STA. 10+00.00 ℄ GRAYBILL RD.
GRAYBILL ROAD N 6° 39′ 32″ E
PLAN & PROFILE SHEET FOR DRIVE DETAILS
GRAVEL DRIVE
UNDERGROUND ELEC.
2" GAS GREAT LAKES ENERGY
DEO 2" LA/TEL 20' EASEMENT
BRUSH
LA-R/W
81′Lx9′W/9-80 S.Y.
15′Lx9′W/9-15 S.Y.
39′Lx9′W/9-39 S.Y.
EC 27, EC 28, EC 29, EC 30
UD 126, UD 127, UD 128, UD 129, UD 130, UD 131, UD 132, UD 133, UD 134, UD 135, UD 136, UD 137, UD 138, UD 139, UD 140, UD 141
GR 12, GR 13, GR 14
C 6, C 7, C 8
B 5, B 6
R 11, R 12

HIGH POINT
STA. 197+00.13
ELEV. 1166.09

S.B. VERT. CL. = 17.19′
N.B. VERT. CL. = 17.01′
GRAYBILL RD.

P.V.I. Sta. 196+90.00
Elev. = 1166.582
400′ V.C. K = 404 SSD = 1290′

PVC Sta. 195+50.00
Elev. 1165.30

PVT Sta. 198+90.00
Elev. 1165.64

+0.52 %
-0.47 %

EXIST. NORTHBOUND P.G.
EXIST. SOUTHBOUND P.G.
PROP. NORTHBOUND & SOUTHBOUND P.G.
EXIST. 2" GAS LINE IN 4¾" STEEL CASING
UD 126, 127, 128, 129
UD 130, 131, 132, 133
UD 134, 135, 136, 137
UD 138, 139, 140, 141

PR. NB 39' RT
PR. SB 39' LT
EX. NB 42' RT
EX. SB 42' LT

1175
1170
1165
1160
1155
1150
1145

190+00 191+00 192+00 193+00 194+00 195+00 196+00 197+00 198+00 199+00 200+00

℄ I-77 CURVE
P.I. Sta = 207+68.41
D = 8° 53′ 15″ (LT)
Dc = 0° 20′ 00″
R = 17,188.75′
T = 1,335.79′
L = 2,666.22′
E = 51.83′
e MAX = NONE (NC)

EC 31 32′Lx9′W/9-32 S.Y.
L.O.N. POINT- STA. 200+93.75
6″ RC RIPRAP STA. 205+50, 97.5′ LT. 6″ UD-1158.37
6″ RC RIPRAP STA. 209+31, 100.4′ LT. 6″ UD-1156.45
MATCH LINE STA. 200+00 I-77
MATCH LINE STA. 210+00 I-77
2″ GAS GREAT LAKES ENERGY
OVERHEAD ELECTRIC (TO BE RELOCTED)
DEO 20″ L#20 TPL 5 (435psig) GASLINE IN 30″ CASING
CONST. LIMITS
BRUSH
LA-R/W
TH 7 EL.-1158.16
TH 6 EL.-1154.15
DEO EASEMENT
SOUTHBOUND LANES
NORTHBOUND LANES
EX. PAVEMENT FOR MAINTAINING TRAFFIC
PROP. TURN-AROUND FOR DETAILS SEE SHEET NO. 253
BUTT JOINT MATCH EXIST.
50′ SHLDR TRANS
+85.00
+35.00
L.O.N. POINT- STA. 206+76.00
℄ SURVEY & CONSTRUCTION I-77
97°27′50″ TO LOC. TAN.
TO REMAIN
18″ RCP
PUBLIC ROAD TELECOM
CB NO. 4
STA. 205+83.70, 0′ RT.
GRATE-1159.80
18″ N-1156.60
6″ UD E,SW-1157.60
HW-2.2
STA. 205+99, 106.0′ RT.
EX.18″-1156.06
6″ RC RIPRAP STA. 205+90, 102.6′ RT. 6″ UD-1158.03
ROCK CHANNEL PROTECTION, TYPE C, W/FILTER 4′Wx8′Lx1.5′ - 1.78 CY
ITEM 660-SODDING REINFORCED
ITEM 670-DITCH EROSION PROTECTION

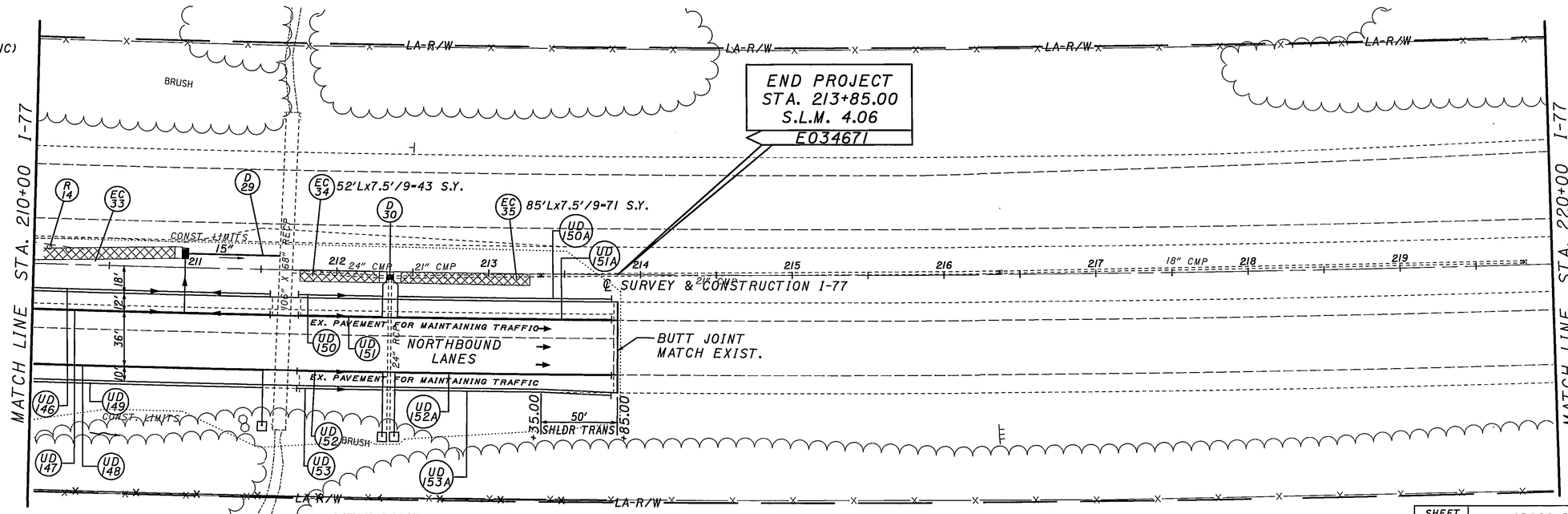
SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY
238	PIPE PROFILES D28

PROP. NORTHBOUND & SOUTHBOUND P.G.
EXIST. NORTHBOUND & SOUTHBOUND P.G.
SB V.P.I. Sta. 208+00.00 Elev. = 1161.37 NO CURVE
BEGIN SEPARATE PROFILES
-0.47 % (NB & SB)
-0.47 % (NB)
-0.752 % (SB)
Sta. 209+35.00 END SOUTHBOUND WORK Elev. 1160.35
UD 134, 135, 136, 137
UD 138, 139, 140, 141
UD 142, 143, 144, 145
UD 146, 147, 148, 149
EXIST. 20″ GAS LINE IN 30″ CASING
EX. CB
EX. 18″ RCP
PR. NB 30′ RT PR. SB 30′ LT
EX. NB 42′ RT EX. SB 42′ LT
1175 1170 1165 1160 1155 1150 1145
200+00 201+00 202+00 203+00 204+00 205+00 206+00 207+00 208+00 209+00 210+00

HORIZONTAL SCALE IN FEET
0 20 40 80
CALCULATED COY
CHECKED W.B.H.

PLAN AND PROFILE
STA. 200+00.00 TO STA. 210+00.00
SUM-77-1.40
151
381

℄ I-77 CURVE
P.I. Sta = 207+68.41
D = 8° 53′ 15″ (LT)
Dc = 0° 20′ 00″
R = 17,188.75′
T = 1,335.79′
L = 2,666.22′
E = 51.83′
e MAX = NONE (NC)



D 29 CATCH BASIN NO. 4
STA. 211+00, 9.2′ LT.
GRATE=1157.15
15″ NW=1154.15
6″ UD NE=1155.26

6″ RC RIPRAP
STA. 211+52, 102.3′ RT.
6″ UD=1154.74

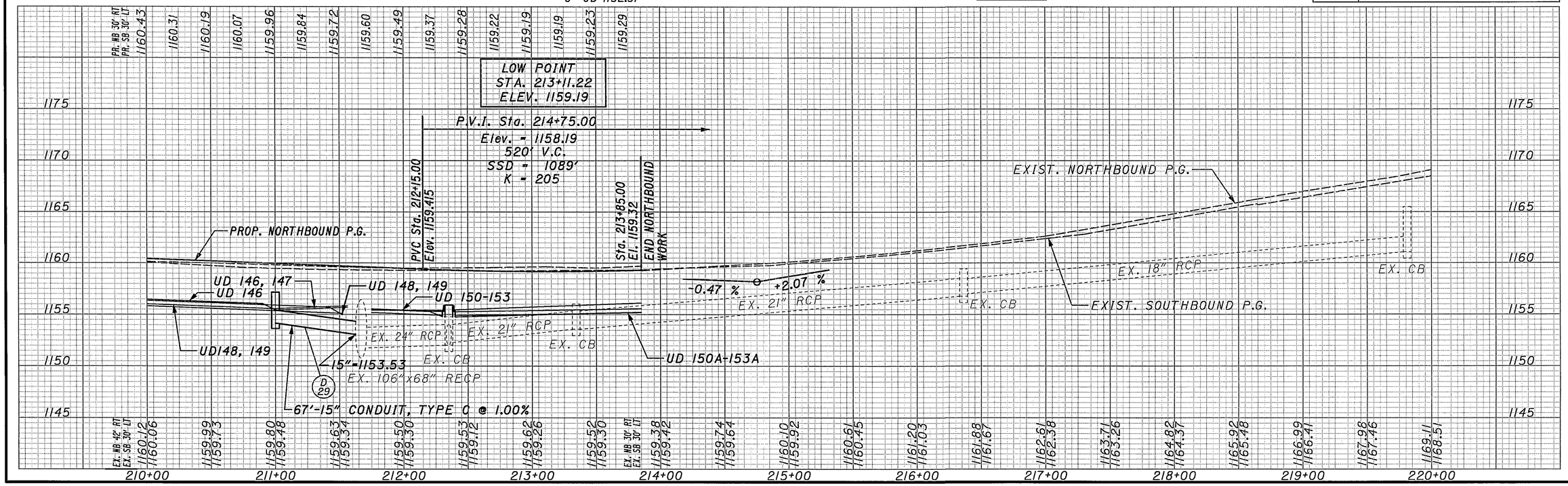
D 30 CATCH BASIN
RECONSTRUCTED TO GRADE
STA. 212+35, 3.53′ RT.
EXIST. GRATE=1154.79±
PROP. GRATE=1155.90
EX. 24″=1152.04
6″ UD E&N=1153.00

6″ RC RIPRAP
STA. 212+30, 108′ RT.
6″ UD=1152.51

6″ RC RIPRAP
STA. 212+40, 108′ RT.
6″ UD=1152.51

ITEM 660-SODDING REINFORCED
ITEM 670-DITCH EROSION PROTECTION

SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY



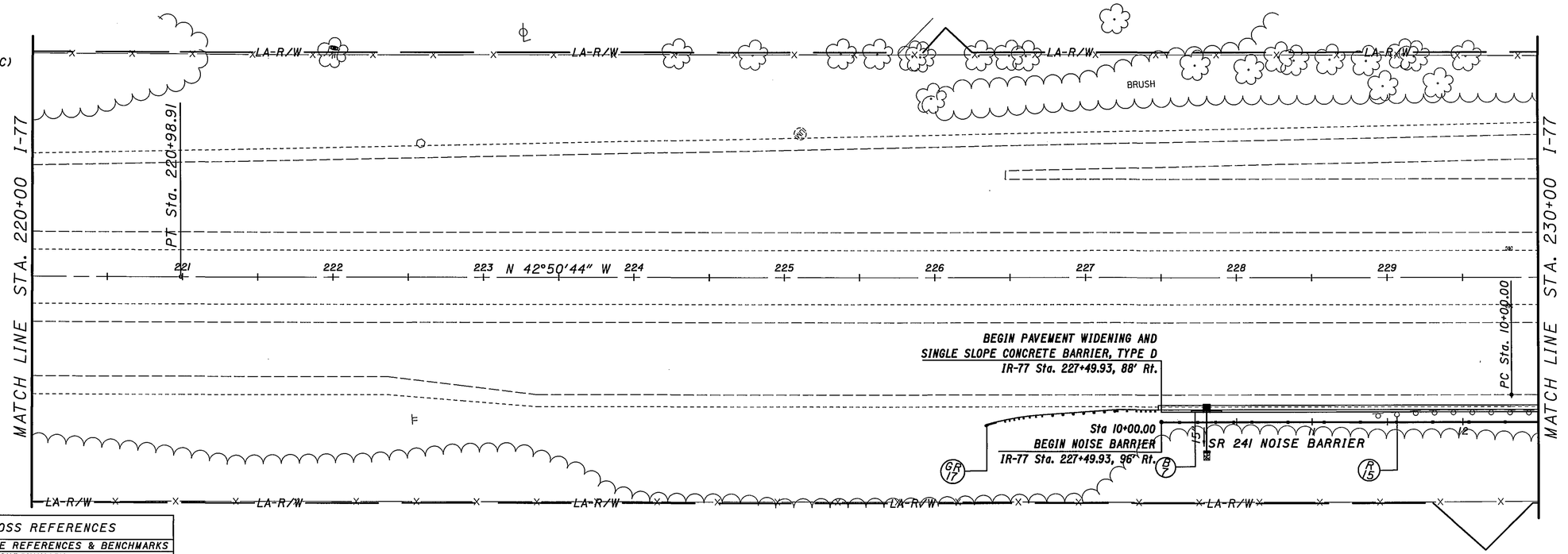
HORIZONTAL SCALE IN FEET
0 20 40 80
CALCULATED COY
CHECKED W.B.H.

PLAN AND PROFILE
STA. 210+00.00 TO STA. 220+00.00

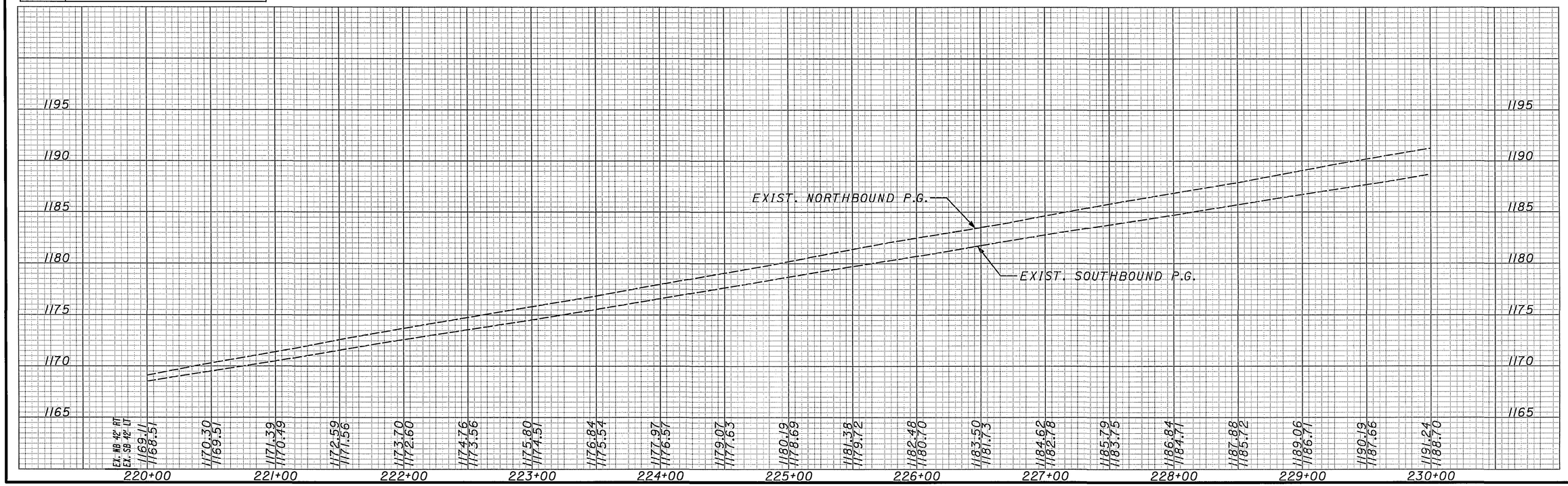
SUM-77-1.40

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℄ I-77 CURVE
P.I. Sta = 207+68.41
D = 8° 53′ 15″ (LT)
Dc = 0° 20′ 00″
R = 17,188.75′
T = 1,335.79′
L = 2,666.22′
E = 51.83′
e MAX = NONE (NC)



SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY
369-381	NOISE BARRIER PLANS



HORIZONTAL SCALE IN FEET
0 20 40 80
CALCULATED COY
CHECKED W.B.H.

PLAN AND PROFILE
STA. 220+00.00 TO STA. 230+00.00

SUM-77-1.40

153
381

SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY
369-381	NOISE BARRIER PLANS

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED COY
CHECKED W.B.H.

PLAN AND PROFILE
STA. 230+00.00 TO STA. 240+00.00

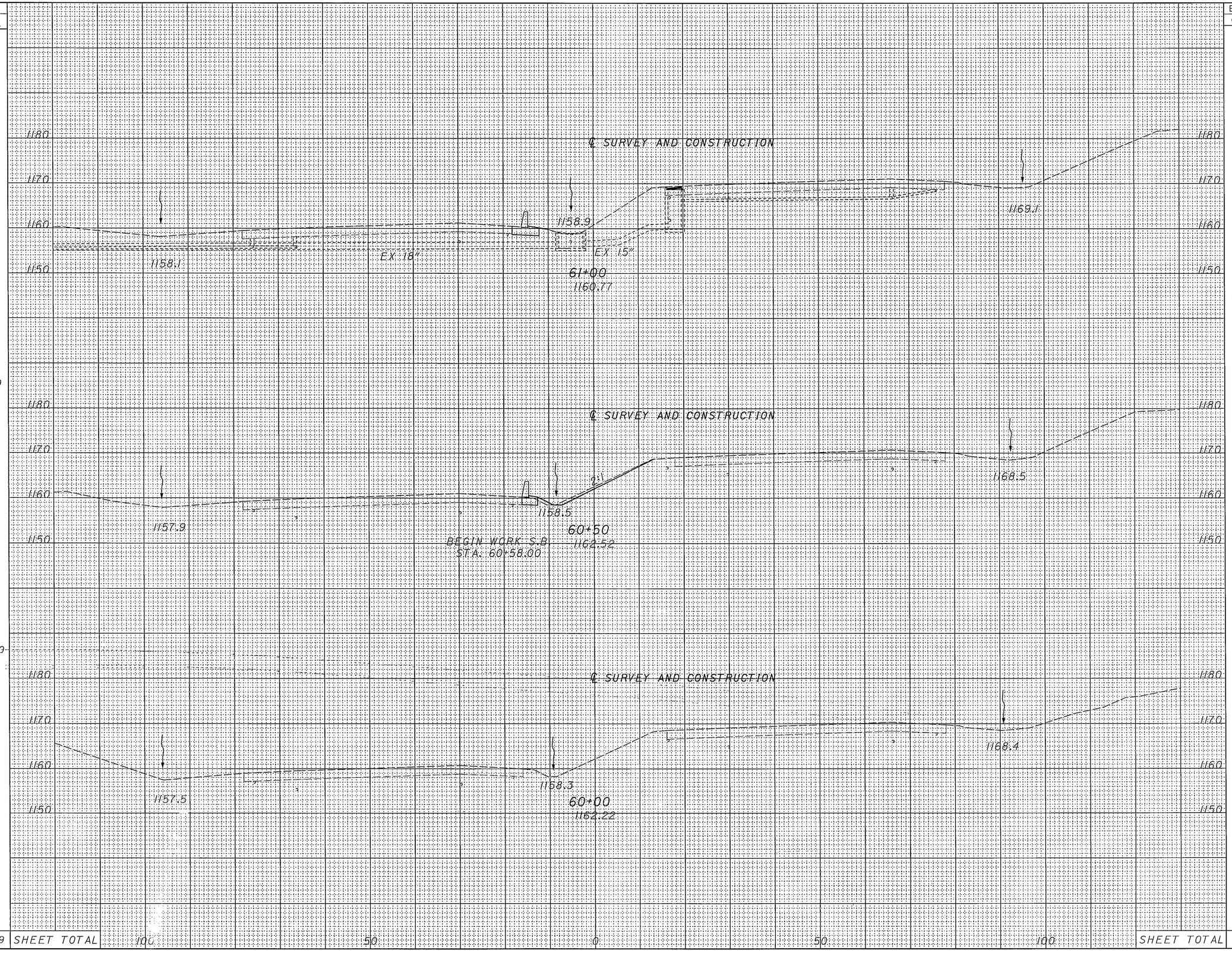
SUM-77-1.40

154
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
4.92	29	10	0	22	2
31.09	100	14	2	0	0
	129 SHEET TOTAL			22	2

CALCULATED COY

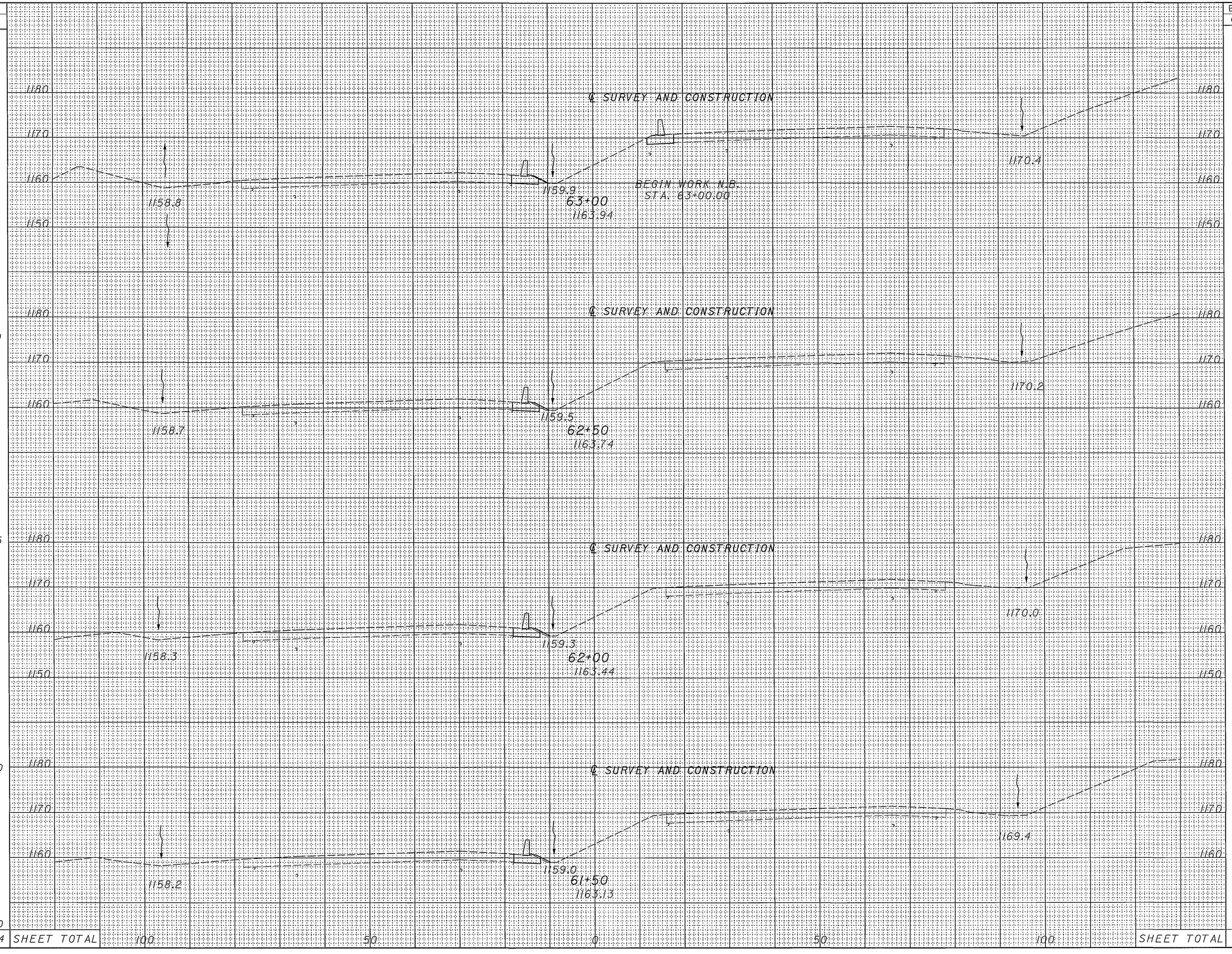
CHECKED W.B.H.



CROSS SECTIONS I-77
STA. 60+00.00 TO STA. 61+00.00

SUM-77-1.40

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
7.15	39	21	0	29	1
5.49		10	1		
	35			19	1
5.45		10	1		
	30			19	1
5.49		10	1		
	30			19	1
	134	SHEET TOTAL		86	4



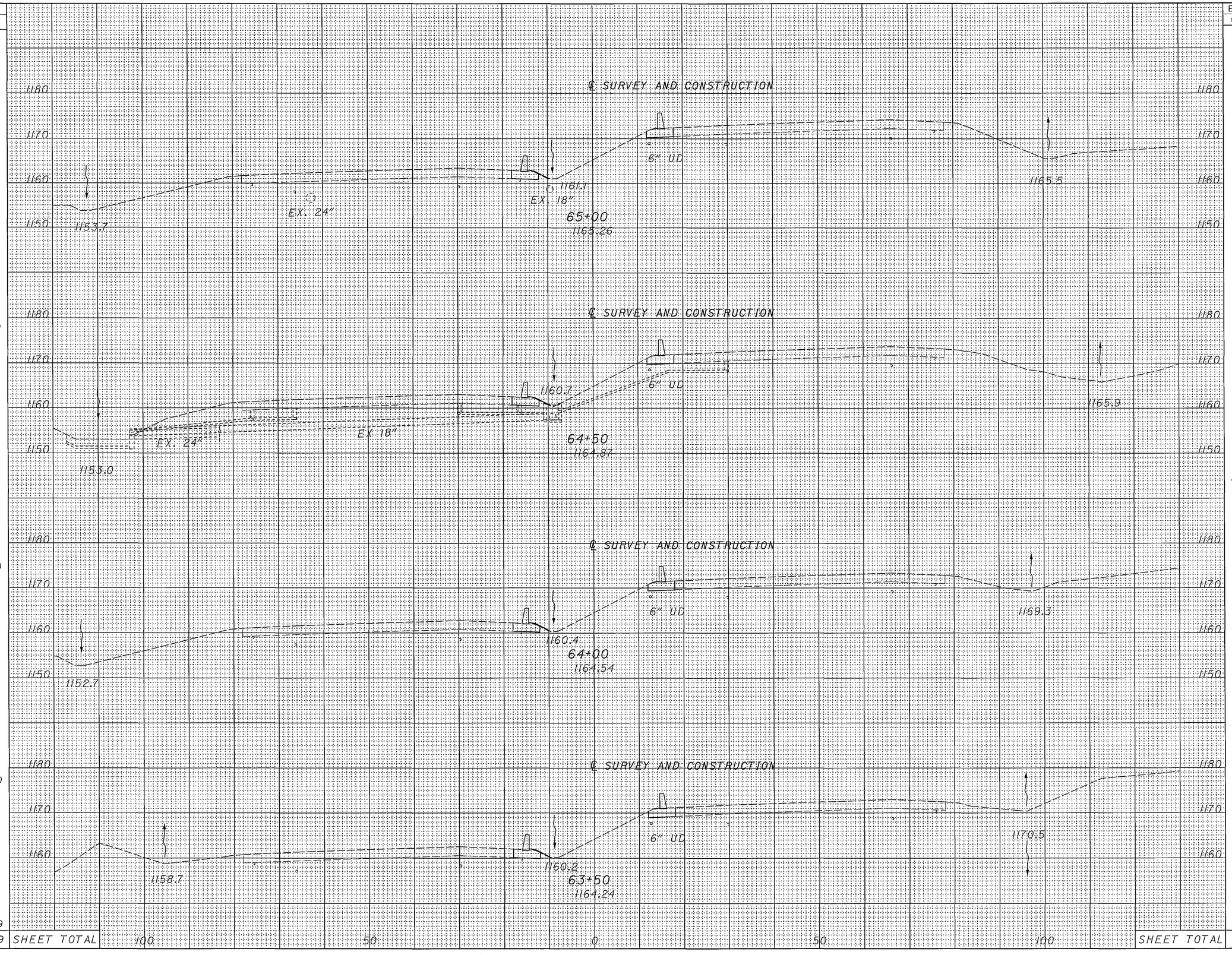
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 61+50.00 TO STA. 63+00.00

SUM-77-1.40

156
381

SEEDING		END AREA		VOLUME		
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL	
						CALCULATED COY
						CHECKED W.B.H.



7.11	40			21	0		
						40	1
7.11				22	0		
	40					40	1
7.10				22	0		
	40					40	1
7.02				22	0		
	39					40	1
	159	SHEET TOTAL				160	4

100 50 0 50 100

CROSS SECTIONS I-77
STA. 63+50.00 TO STA. 65+00.00

SUM-77-1.40

157
381

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
		1180 / 1170 / 1160 / 1150					
7.11		℄ SURVEY AND CONSTRUCTION; 1155.5; 1162.6; EX. 18"; 6" UD; 1161.6; 66+50; 1166.79	22	0			
	40	1180 / 1170 / 1160 / 1150			40	1	
7.11		℄ SURVEY AND CONSTRUCTION; 1155.3; 1162.0; EX. 18"; 6" UD; 1159.8; 66+00; 1166.22	22	0			
	40	1180 / 1170 / 1160 / 1150			40	1	
7.11		℄ SURVEY AND CONSTRUCTION; 1154.6; 1161.5; EX. 18"; EX. 24"; 6" UD; 1164.0; 65+50; 1165.71	22	0			
	40				40	1	
	120	SHEET TOTAL			120	3	

100 50 0 50 100

CALCULATED COY

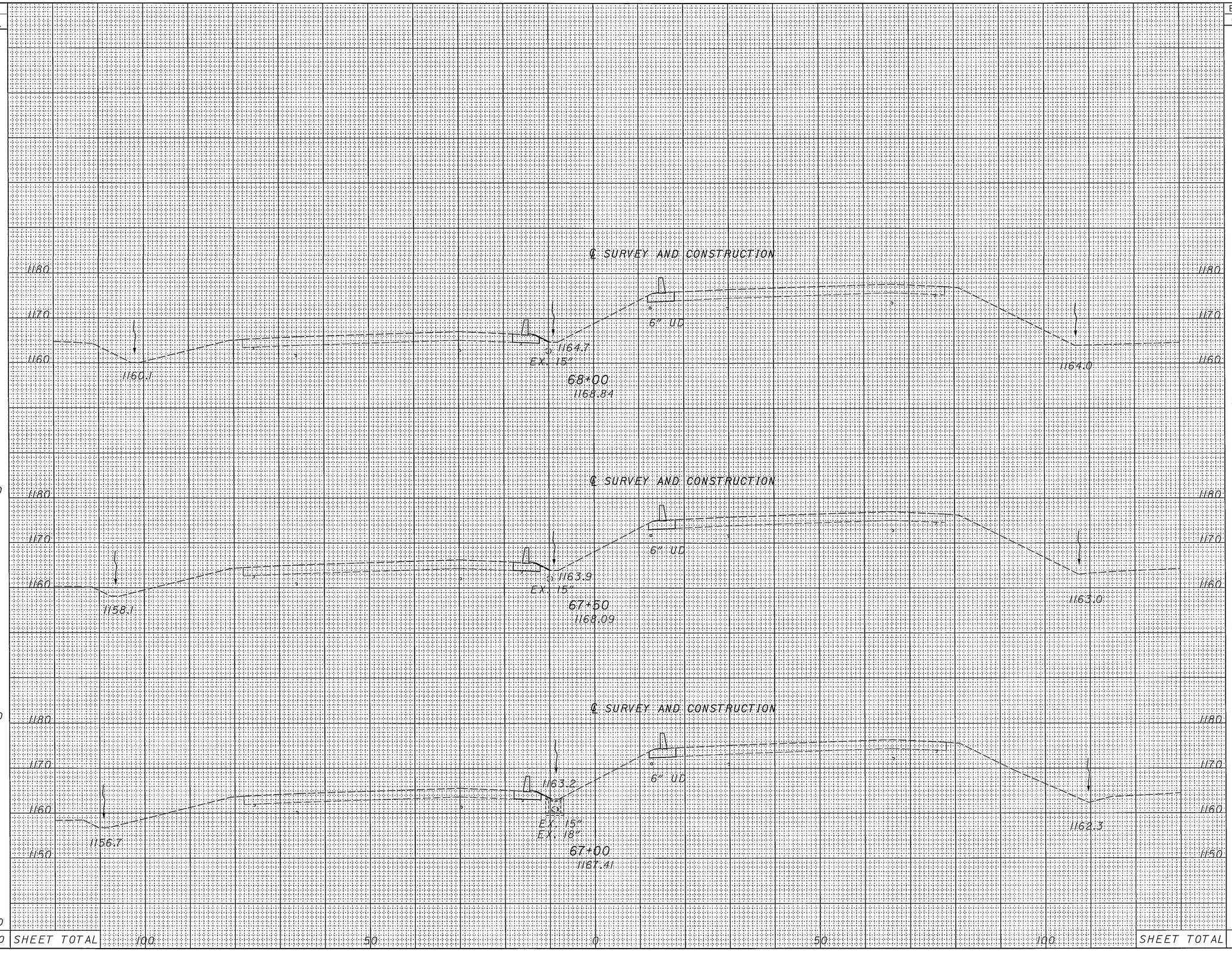
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 65+50.00 TO STA. 66+50.00

SUM-77-1.40

158
381

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
		SHEET TOTAL					SHEET TOTAL
		100					
		50					
		0					
		50					
		100					
7.11	40		22	0	40	1	
7.11	40		22	0	40	1	
7.15	40		22	0	40	1	
	120				120	3	



CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 67+00.00 TO STA. 68+00.00

SUM-77-1.40

159
381

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
		1190					
		1180					
		1170					
		1160					
7.11			21	0			
	40	1190			38	7	
		1180					
		1170					
		1160					
		1150					
		1140					
32.77			19	7			
	111	1180			38	7	
		1170					
		1160					
7.11			22	0			
	111				40	1	
	262	SHEET TOTAL			78	15	SHEET TOTAL

℄ SURVEY AND CONSTRUCTION

1166.3

1167.5

69+50

1171.41

6" UD

1174.6

℄ SURVEY AND CONSTRUCTION

R/W

1162.0

7 FT-15" CONDUIT, TYPE C @ 5.00%

UNDERDRAIN OUTLET TO BE REMOVED

INLET MISC.: SINGLE SLOPE CONCRETE BARRIER, TYPE D (D-1)
STA. 69+00, 17.75' LT.
GRATE=1168.08
15" E=1163.70
EX. 6" UD N=1164.24
EX. 6" UD W=1164.32

1166.8

21

6" UD

5 FT-15" CONDUIT, TYPE C @ 5.00%

MASONRY COLLAR

EX. 15"

(D-2) 17 FT-15" CONDUIT, TYPE F @ 50.00%

UNDERDRAIN OUTLET TO BE REMOVED

MASONRY COLLAR

5 FT-15" CONDUIT, TYPE C @ 5.00%

69+00
1170.49

CATCH BASIN, ADJUSTED TO GRADE
STA. 69+00, 9.00' LT.
EX. GRATE= 1166.30
PROP. GRATE=1166.80
15" E,W&S= 1163.35

INLET MISC.: SINGLE SLOPE CONCRETE BARRIER, TYPE D 1170.3
STA. 69+00, 17.75' RT.
GRATE=1177.20
15" W=1171.35
6" UD N=1174.95
EX. 6" UD E=1173.38

℄ SURVEY AND CONSTRUCTION

1165.5

1177.0

EX. 15"

6" UD

1166.4

1161.5

68+50
1169.64

0 50 100 50 100

CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 68+50.00 TO STA. 69+50.00

SUM-77-1.40

160
381

| SEEDING | | |

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
		1190					
		1180					
		1170					
7.11			22	0			
	40	1190			40	1	
		1180					
		1170					
7.11			22	0			
		1200					
	40	1190			40	1	
		1180					
		1170					
		1160					
7.11			22	0			
	40				40	1	
	120	SHEET TOTAL			120	3	

℄ SURVEY AND CONSTRUCTION

1173.2

1174.0

72+50

1176.83

6" UD

1182.2

℄ SURVEY AND CONSTRUCTION

1172.0

1172.9

7.2+00

1175.81

6" UD

1181.6

℄ SURVEY AND CONSTRUCTION

1170.7

1171.8

7.1+50

1174.79

6" UD

1180.6

100 50 0 50 100

CALCULATED COY

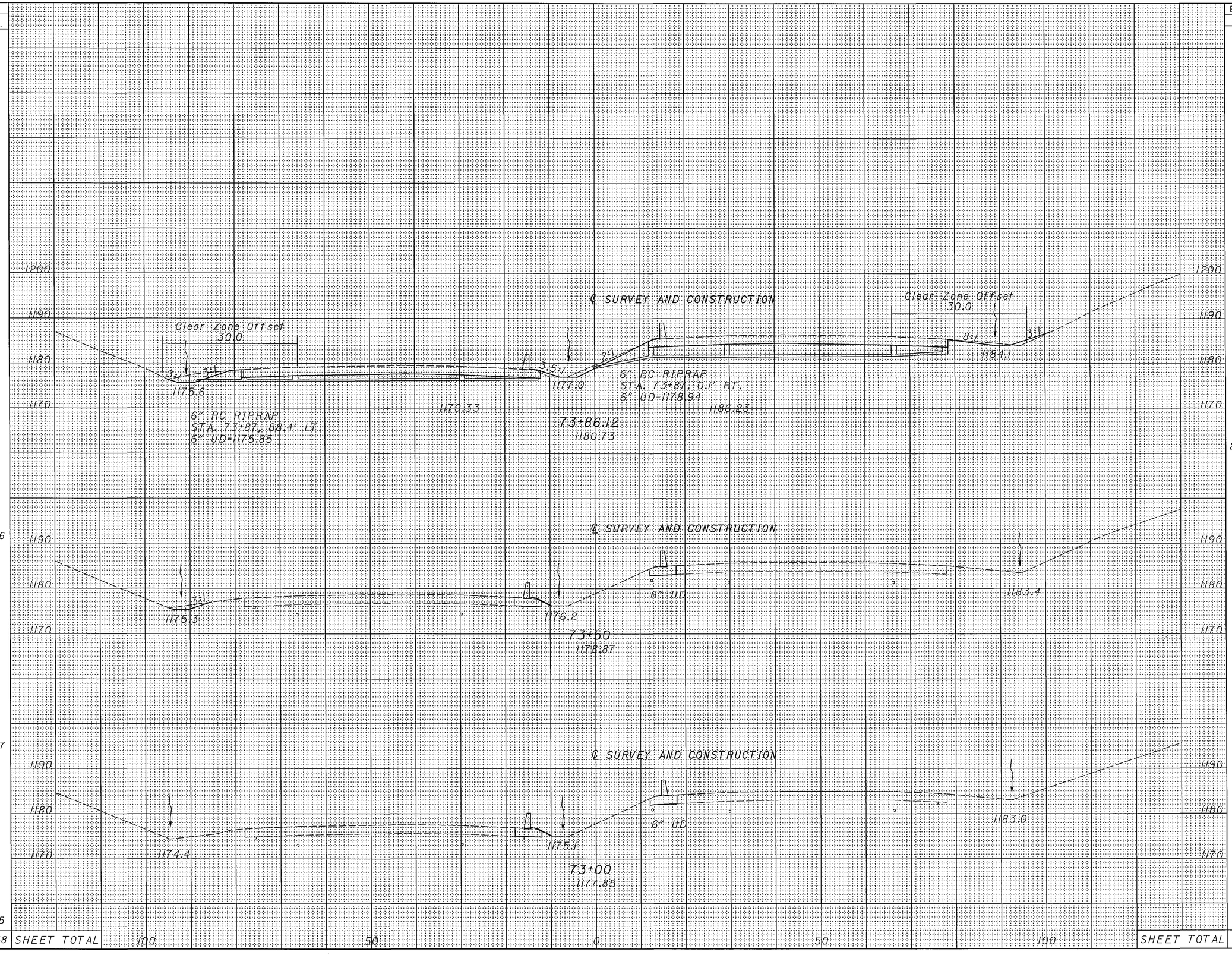
CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 71+50.00 TO STA. 72+50.00

SUM-77-1.40

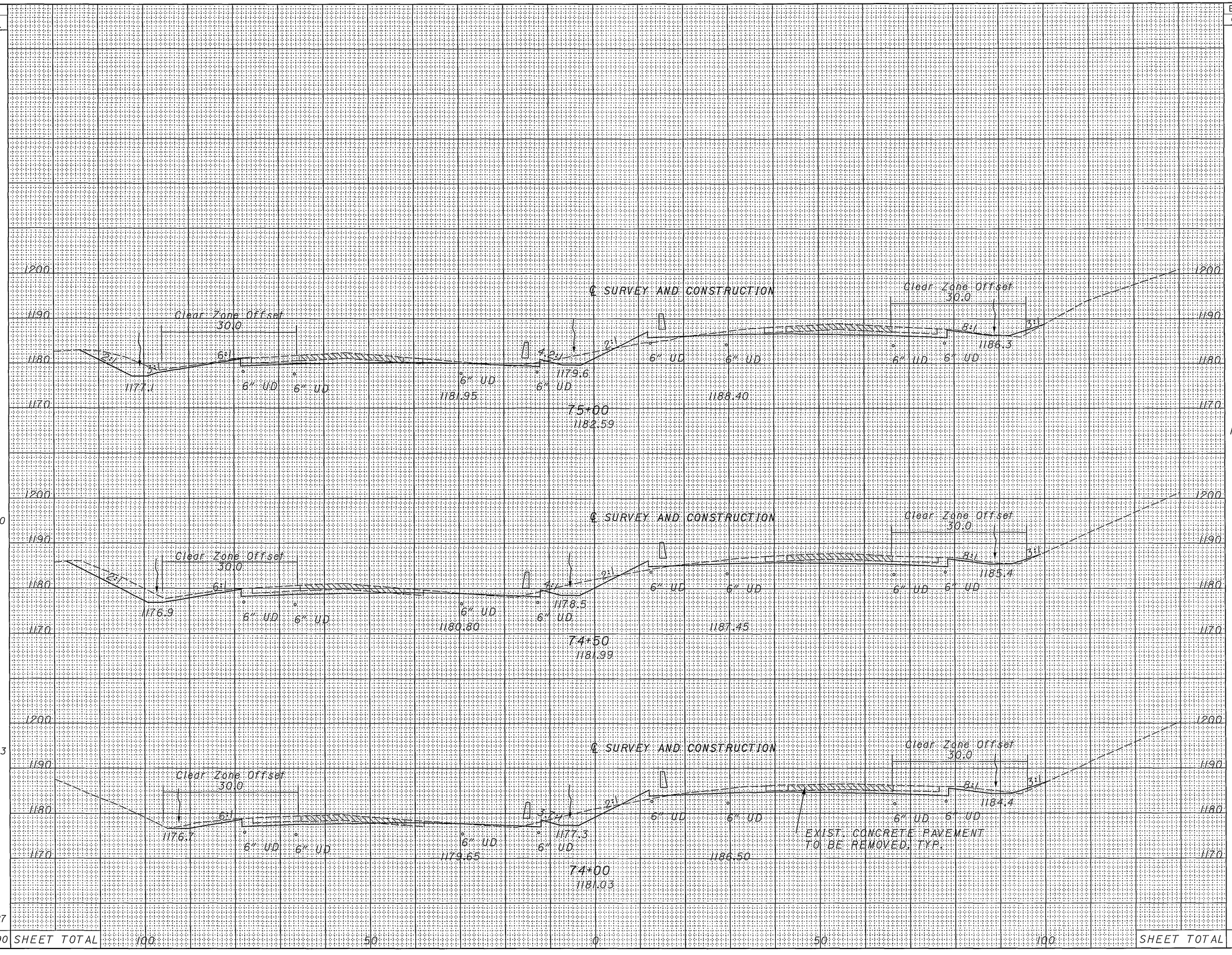
SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
71.73		275	5		
	106			201	4
16.40		26	0		
	177			44	1
7.11		22	0		
	65			40	1
	348	SHEET TOTAL		285	6



CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 73+00.00 TO STA. 73+86.12

SUM-77-1.40

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
							
85.47					148	20	
88.29					161	14	
65.45					114	18	
	1390	SHEET TOTAL				SHEET TOTAL	

480					287	32	
483					255	30	
	427				100	6	
		SHEET TOTAL			642	68	

100 50 0 50 100

CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 74+00.00 TO STA. 75+00.00

SUM-77-1.40

164
381

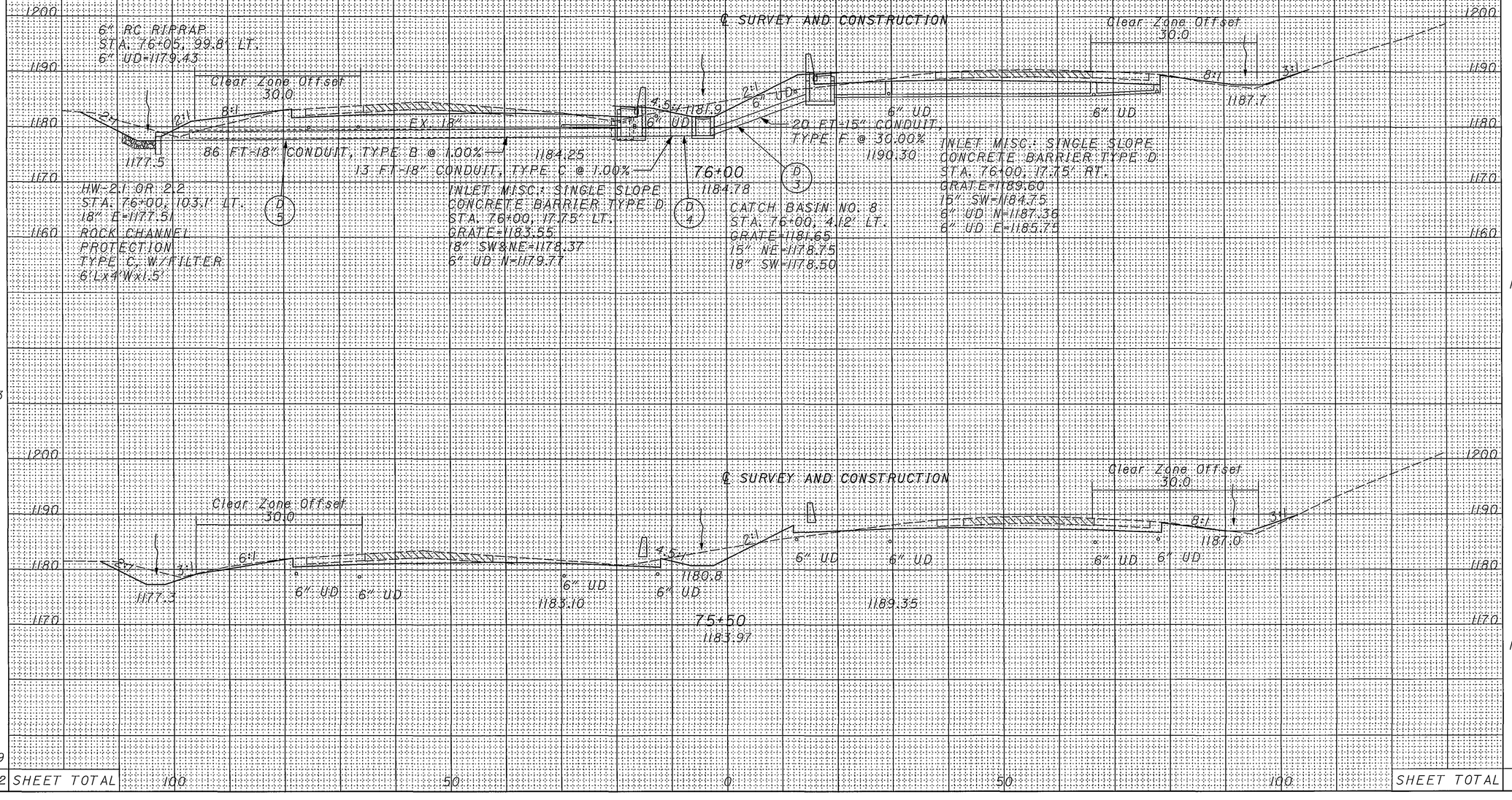
SEEDING		END AREA		VOLUME		
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL	
103.24	503			110	59	
87.33	529			140	17	
	1032	SHEET TOTAL				
				232	70	
				267	34	
		SHEET TOTAL		499	104	

CALCULATED COY
CHECKED W.B.H.

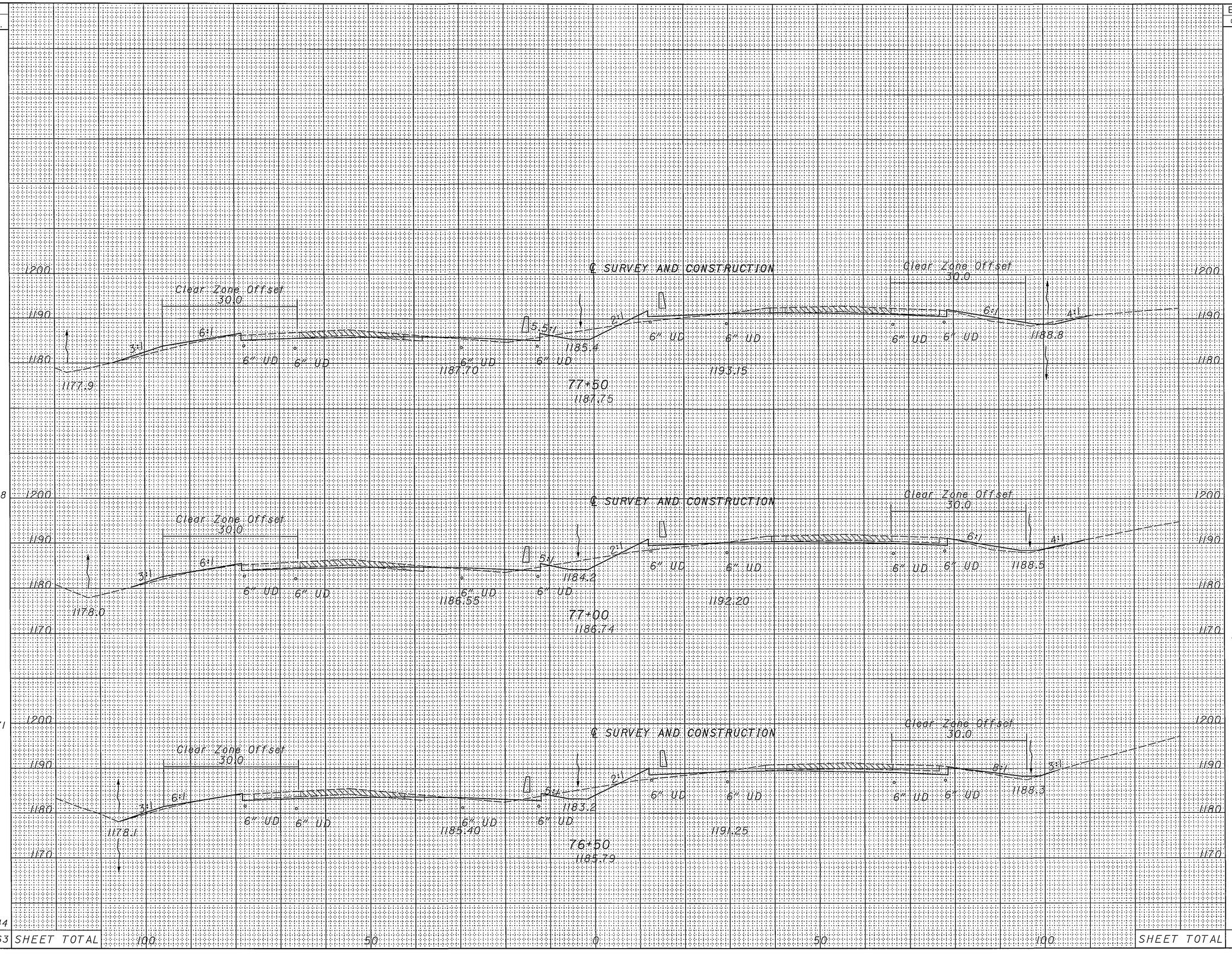
CROSS SECTIONS I-77
STA. 75+50.00 TO STA. 76+00.00

SUM-77-1.40

165
381



SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
		1200					
		1190					
		1180					
87.33		1170	41	51			
	548	1200			88	90	
		1190					
		1180					
82.04		1170	55	46			
	471	1200			115	76	
		1190					
		1180					
77.90		1170	70	36			
	444				167	88	
	1463	SHEET TOTAL			370	254	



CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 76+50.00 TO STA. 77+50.00

SUM-77-1.40

166
381

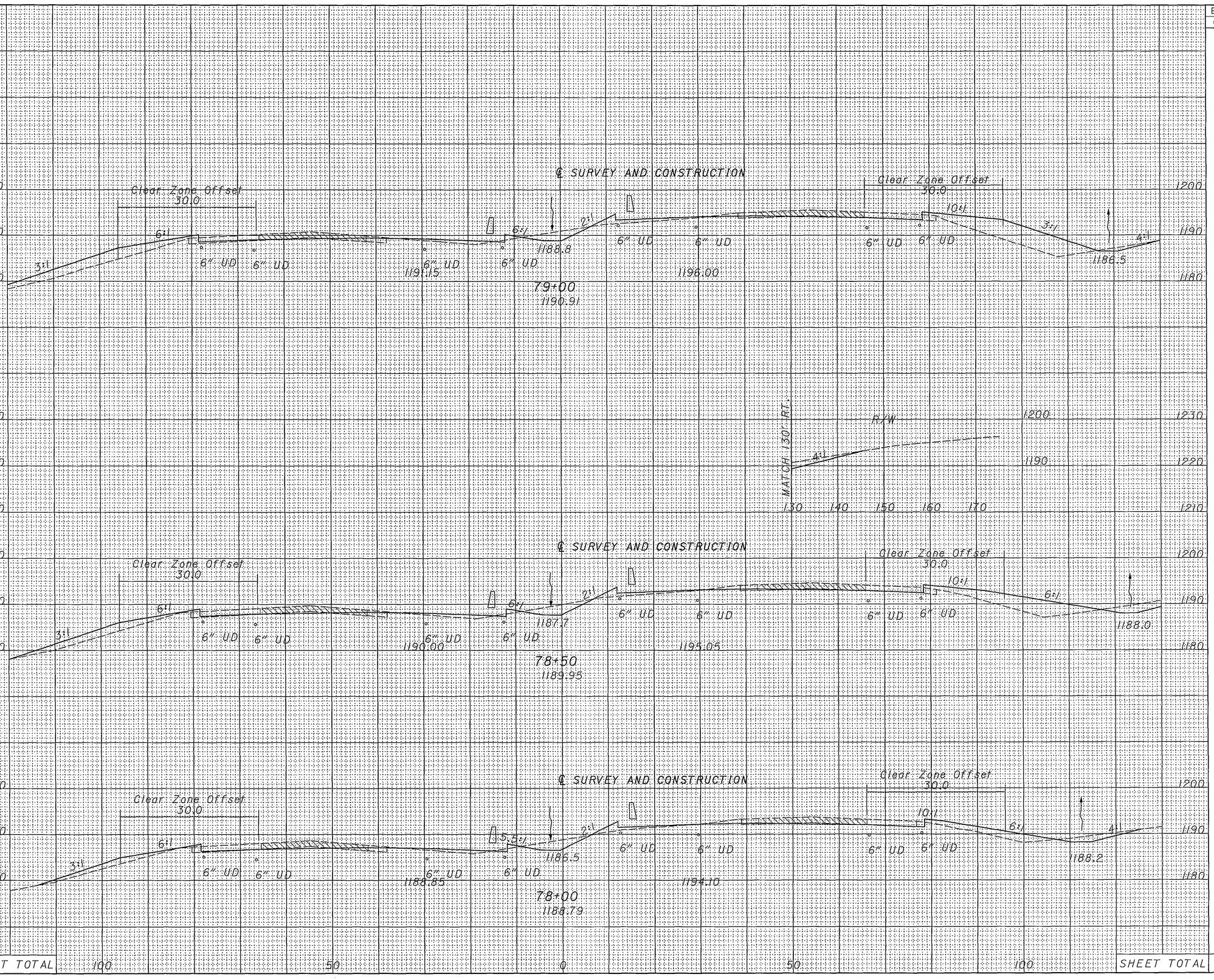
SEEDING		END AREA		VOLUME		
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL	
130.24	675	28	221	75	349	
136.60	741	53	156	89	224	
110.10	685	43	86	77	127	
	2101			241	700	SHEET TOTAL

CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 78+00.00 TO STA. 79+00.00

SUM-77-1.40

167
381



SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
		1210 / 1200 / 1190 / 1180				
		Clear Zone Offset 30.0				
		2:1				
		1175.6				
		6" UD 6" UD				
		1194.48				
		6" UD 6" UD				
		8:1				
		℄ SURVEY AND CONSTRUCTION				
		2:1				
		1192.2				
		80+50				
		1193.52				
		6" UD 6" UD				
		1198.82				
		6" UD 6" UD				
		Clear Zone Offset 30.0				
		10:1				
		2:1				
		1181.2				
121.54			18	222		
		1210 / 1200 / 1190 / 1180				
	726	Clear Zone Offset 30.0				
		2:1				
		1175.8				
		6" UD 6" UD				
		1193.42				
		6" UD 6" UD				
		6.5:1				
		℄ SURVEY AND CONSTRUCTION				
		2:1				
		1191.1				
		80+00				
		1192.88				
		6" UD 6" UD				
		1197.90				
		6" UD 6" UD				
		Clear Zone Offset 30.0				
		10:1				
		2:1				
		3:1				
		1182.6				
108.44			24	283		
		1210 / 1200 / 1190 / 1180				
	639	Clear Zone Offset 30.0				
		2.5:1				
		1175.5				
		6" UD 6" UD				
		1192.30				
		6" UD 6" UD				
		6:1				
		℄ SURVEY AND CONSTRUCTION				
		2:1				
		1190.0				
		79+50				
		1191.94				
		6" UD 6" UD				
		1196.95				
		6" UD 6" UD				
		Clear Zone Offset 30.0				
		10:1				
		2.5:1				
		4:1				
		1185.1				
112.57			23	222		
	614				47	410
	1979	SHEET TOTAL			129	1346

100 50 0 50 100

CALCULATED COY

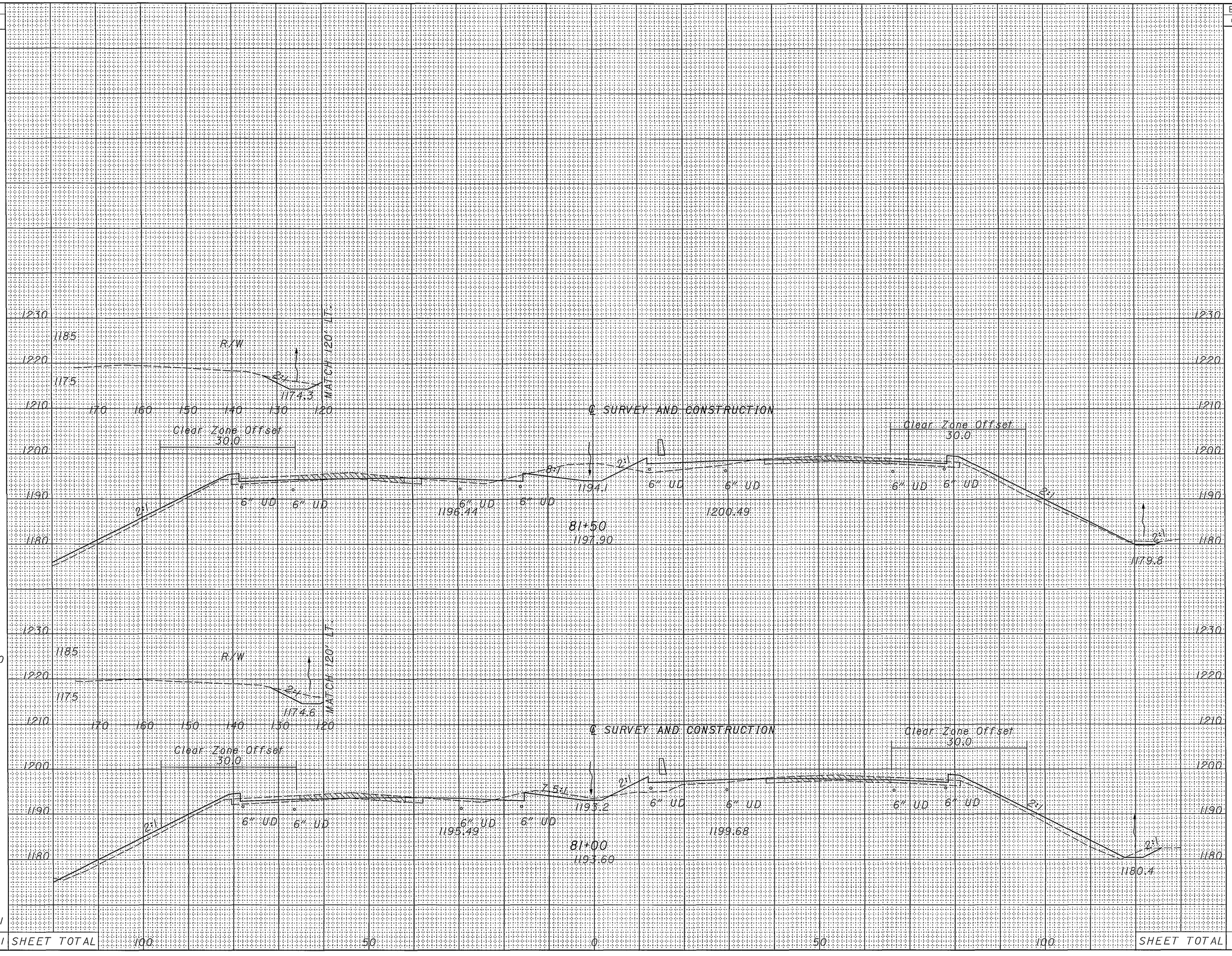
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 79+50.00 TO STA. 80+50.00

SUM-77-1.40

168
381

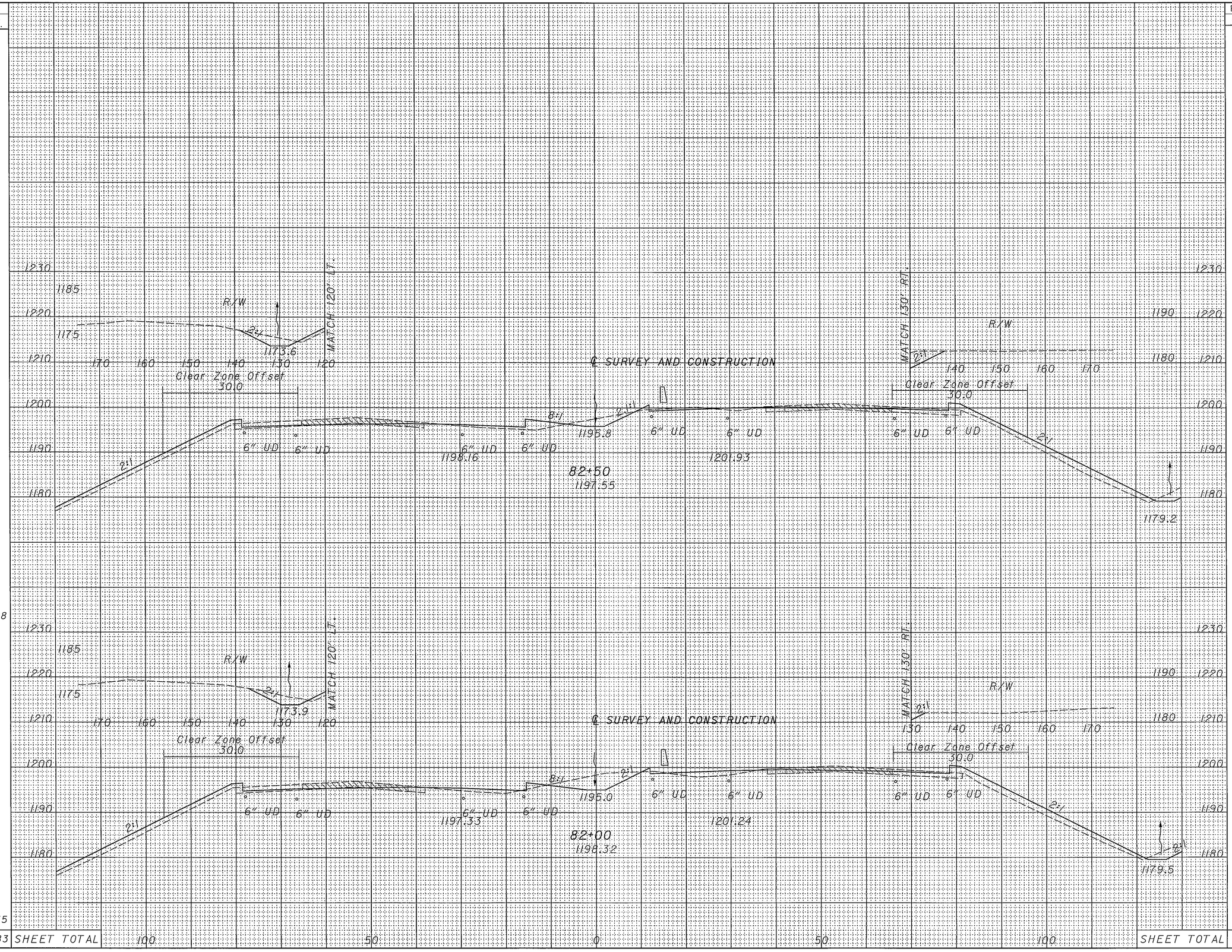
SEEDING		END AREA		VOLUME		CALCULATED COY	CHECKED W.B.H.
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL		
141.22	820			73	159		
139.76	781			107	305		
	1601	SHEET TOTAL		56	363		
				SHEET TOTAL		163	668



SUM-77-1.40

CROSS SECTIONS I-77
STA. 81+00.00 TO STA. 81+50.00

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
160.93	908	66	174	133	328
154.10	875	78	180	140	312
	1783			273	640



CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 82+00.00 TO STA. 82+50.00

SUM-77-1.40

170
381

SEEDING		END AREA		VOLUME		
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL	
98.45		21	1013			
				146	2725	
165.83		45	211			
	1765			103	357	
	1765			249	3082	

CALCULATED COY

CHECKED W.B.H.

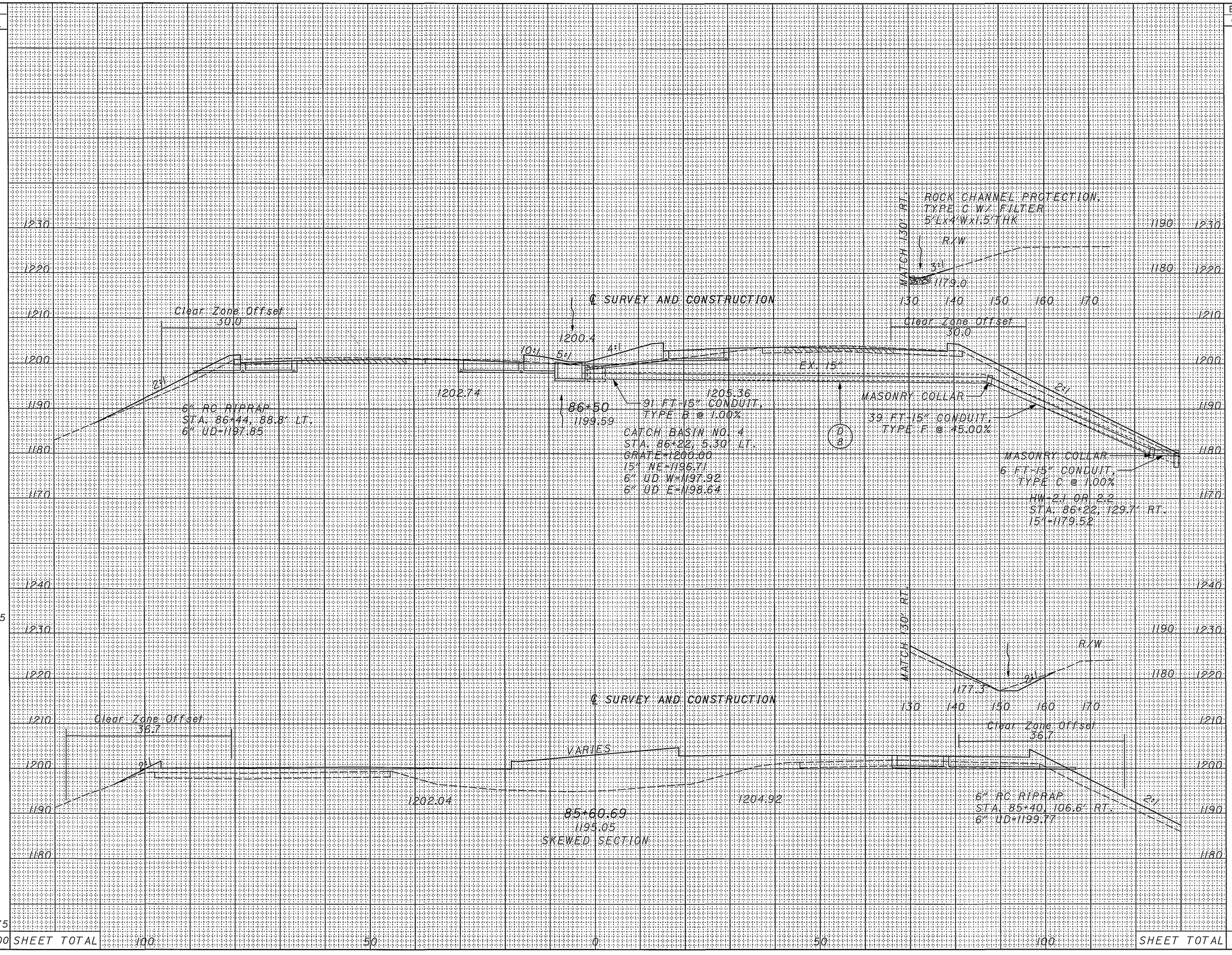
CROSS SECTIONS I-77

STA. 83+00.00 TO STA. 84+20.23

SUM-77-1.40

171
381

SEEDING	
END WIDTH	SQ. YDS.
134.68	
	725
122.22	
	1275
	2000



END AREA		VOLUME	
CUT	FILL	CUT	FILL
5	246		
		23	1771
8	825		
		0	0
		23	1771

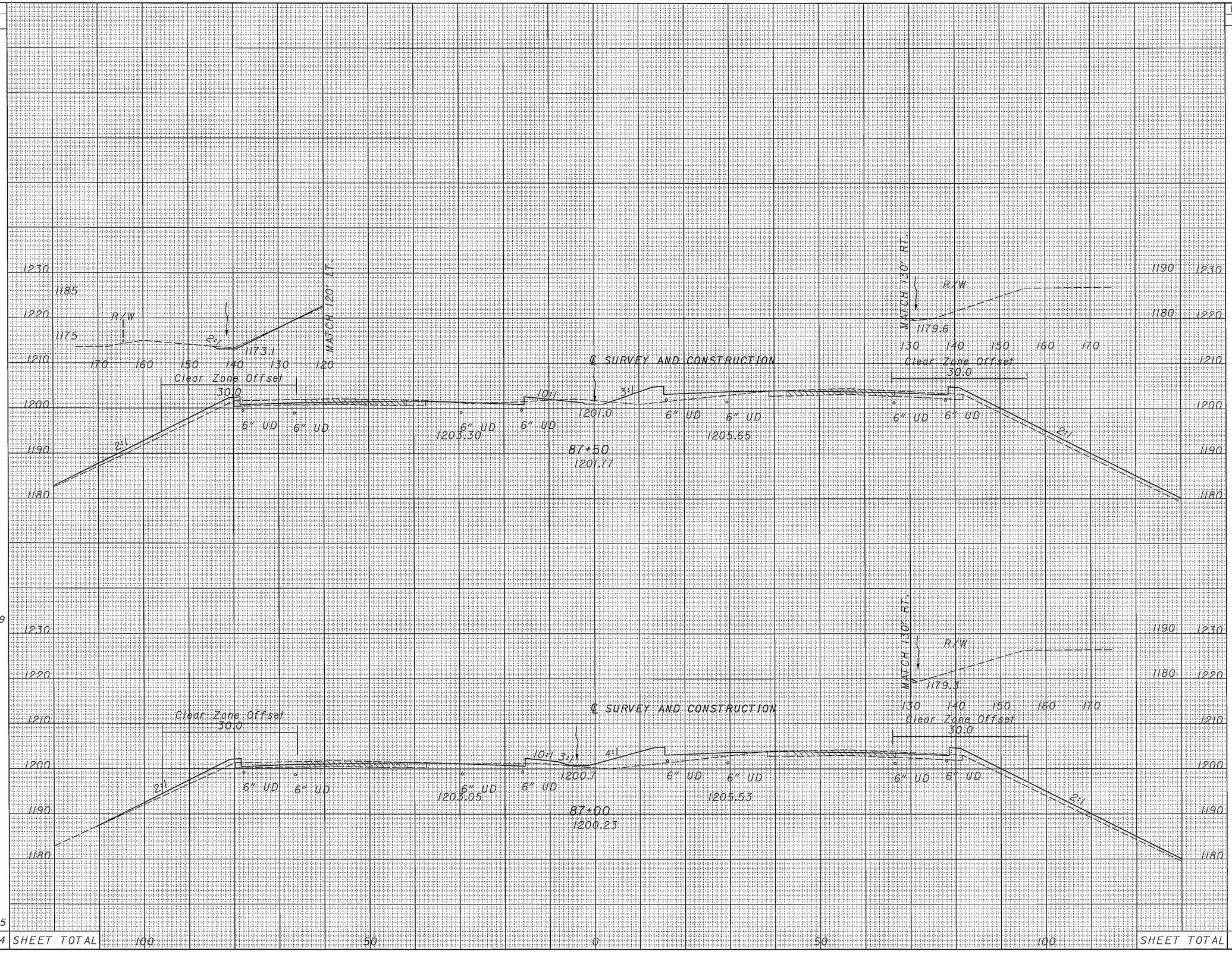
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 85+60.69 TO STA. 86+50.00

SUM-77-1.40

172
381

SEEDING	
END WIDTH	SQ. YDS.
163.48	
	909
126.13	
	805
	1714



END AREA		VOLUME	
CUT	FILL	CUT	FILL
15	204		
		18	383
4	210		
		9	422
		27	805
SHEET TOTAL			

CALCULATED COY

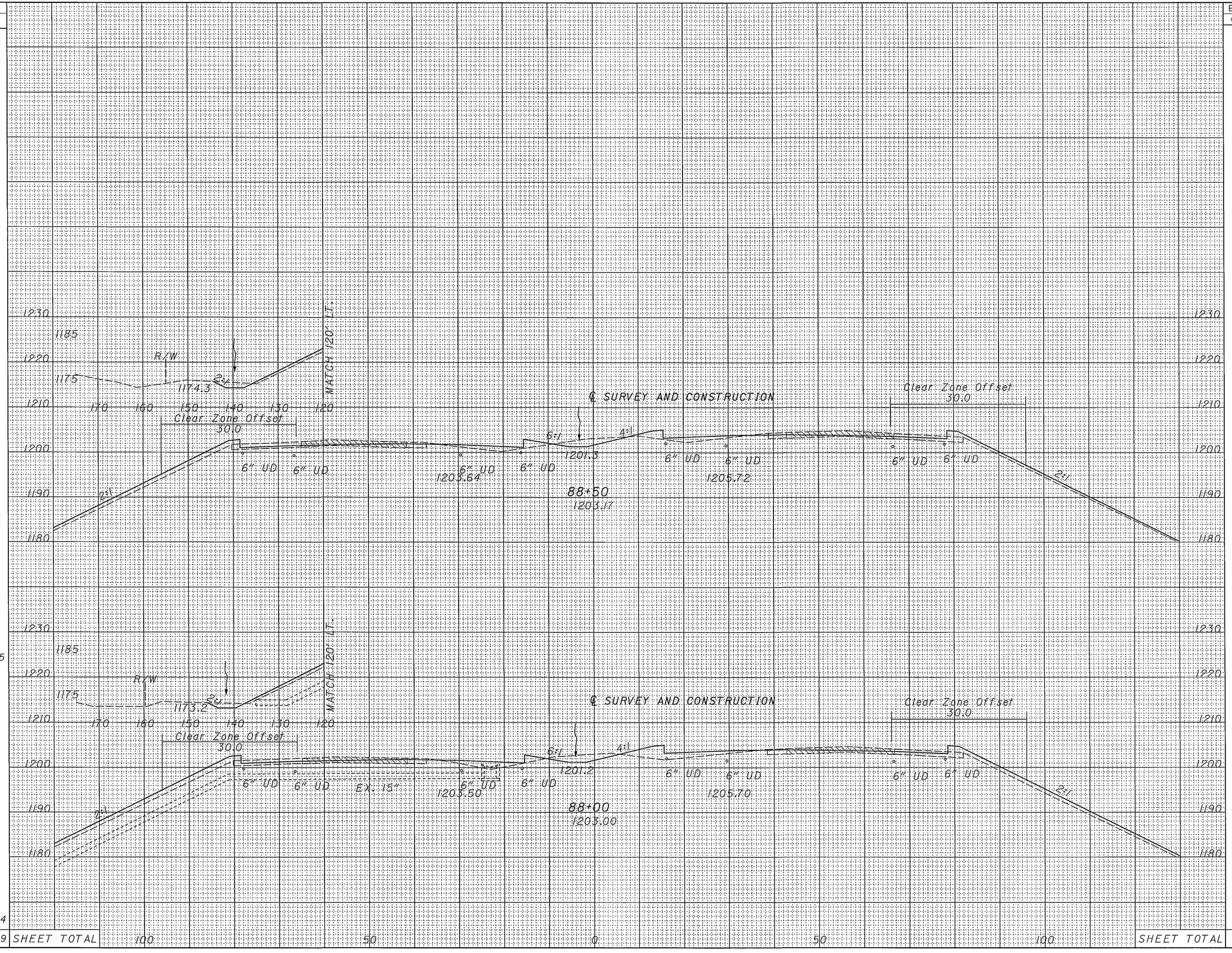
CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 87+00.00 TO STA. 87+50.00

SUM-77-1.40

SEEDING	
END WIDTH	SQ. YDS.
161.59	875
163.82	904
	1779



END AREA		VOLUME	
CUT	FILL	CUT	FILL
25	162		
		45	347
24	212		
		36	386
		81	733

CALCULATED COY

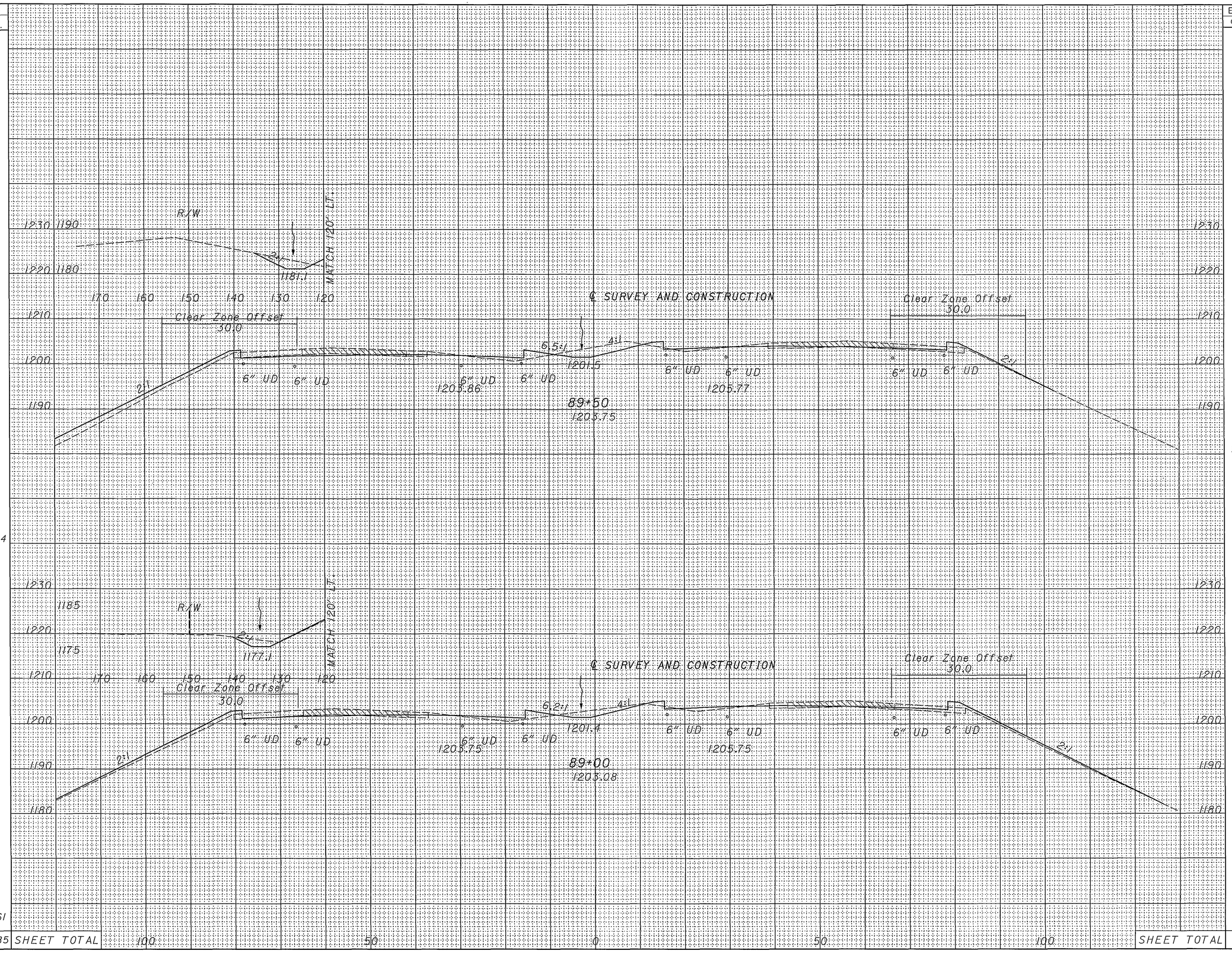
CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 88+00.00 TO STA. 88+50.00

SUM-77-1.40

SEEDING		END AREA		VOLUME		
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL	
120.62	624	57	96	84	177	
153.29	761	34	96	54	239	
	1385 SHEET TOTAL			SHEET TOTAL	138	416



CALCULATED COY
CHECKED W.B.H.

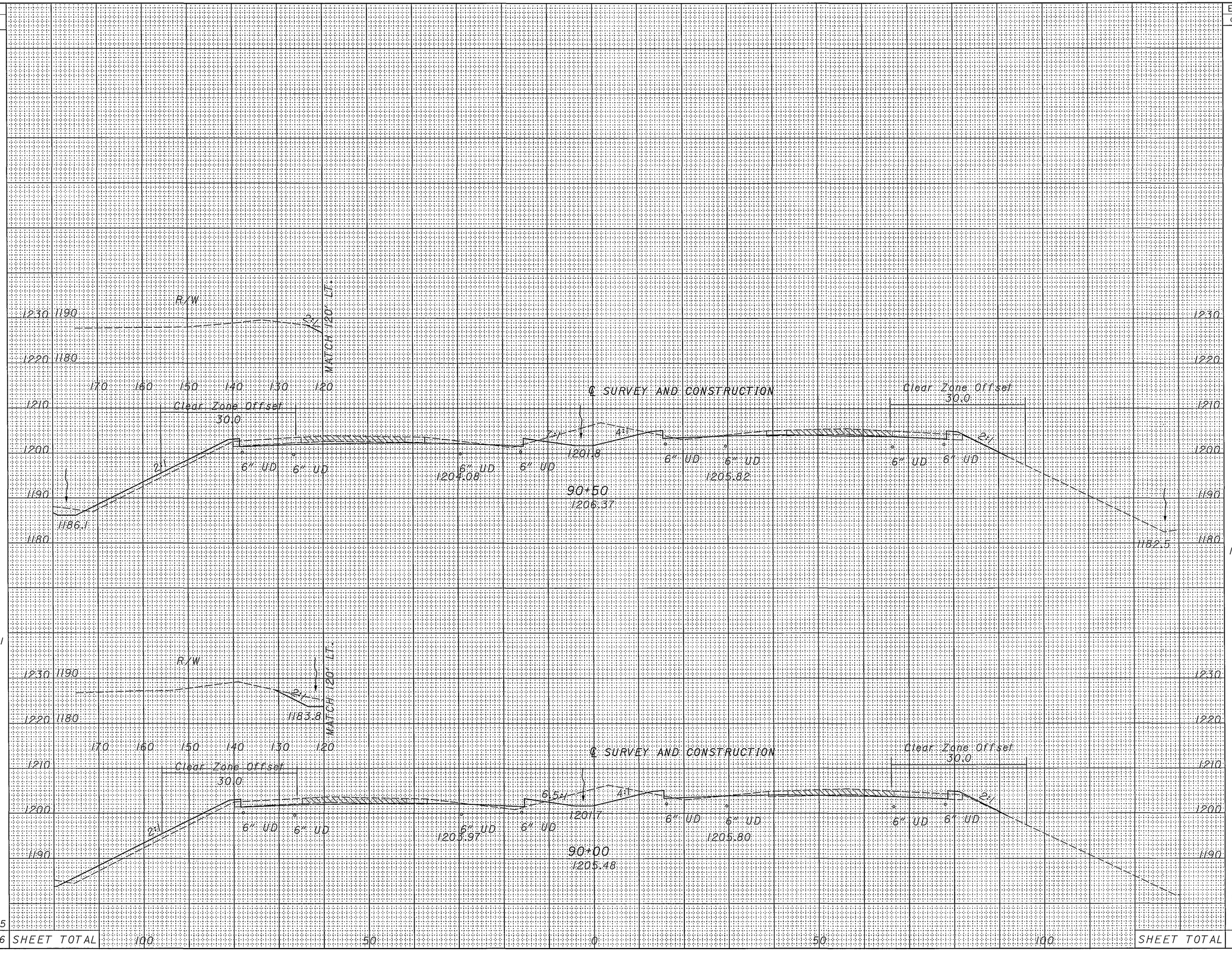
CROSS SECTIONS I-77

STA. 89+00.00 TO STA. 89+50.00

SUM-77-1.40

175
381

SEEDING	
END WIDTH	SQ. YDS.
95.73	551
103.99	555
	1106



SHEET TOTAL	100	50	0	50	100	SHEET TOTAL

END AREA		VOLUME	
CUT	FILL	CUT	FILL
107	49		
		179	108
86	67		
		133	151
		312	259

CALCULATED COY

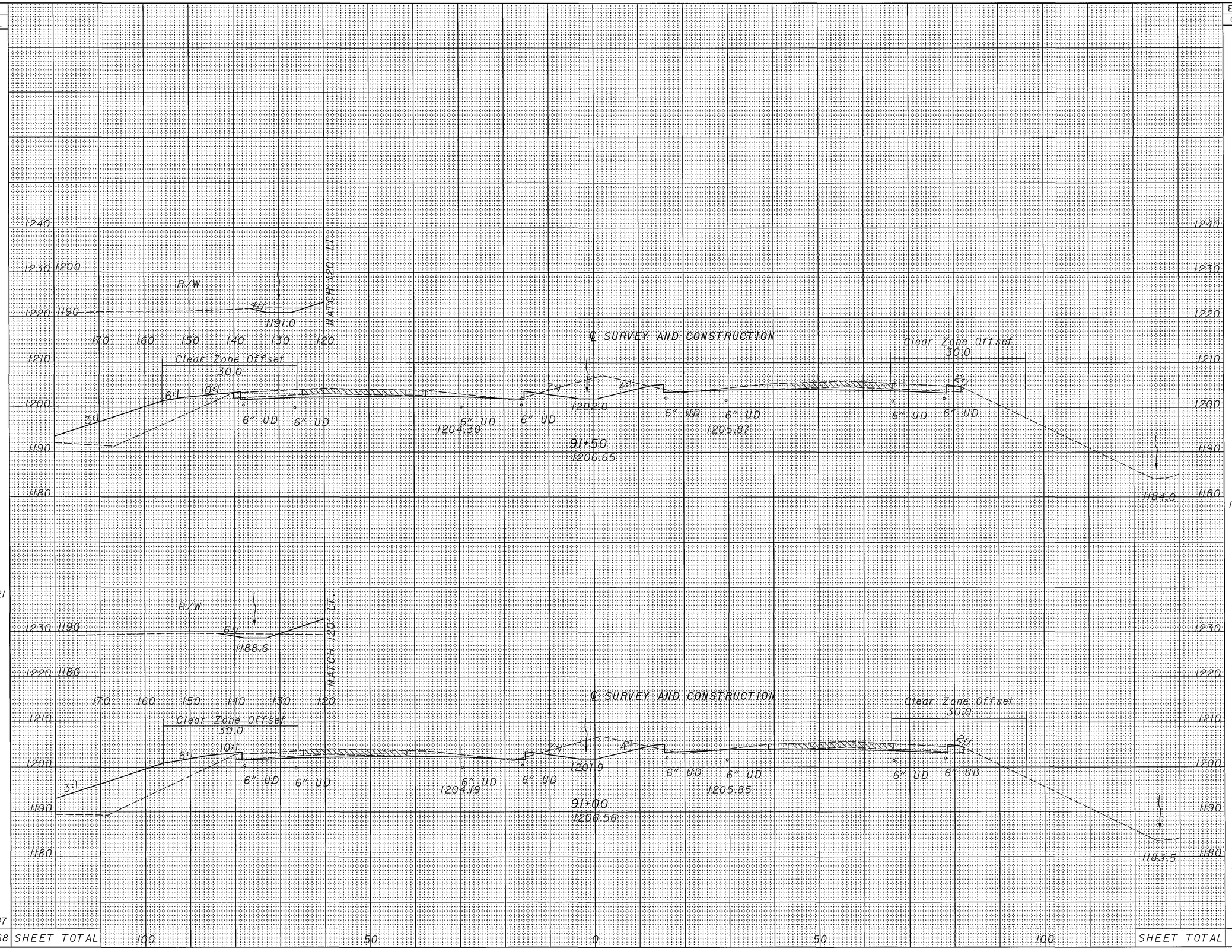
CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 90+00.00 TO STA. 90+50.00

SUM-77-1.40

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
94.47		130	176		
	521			224	376
102.49		112	230		
	547			203	258
	1068	SHEET TOTAL		427	634



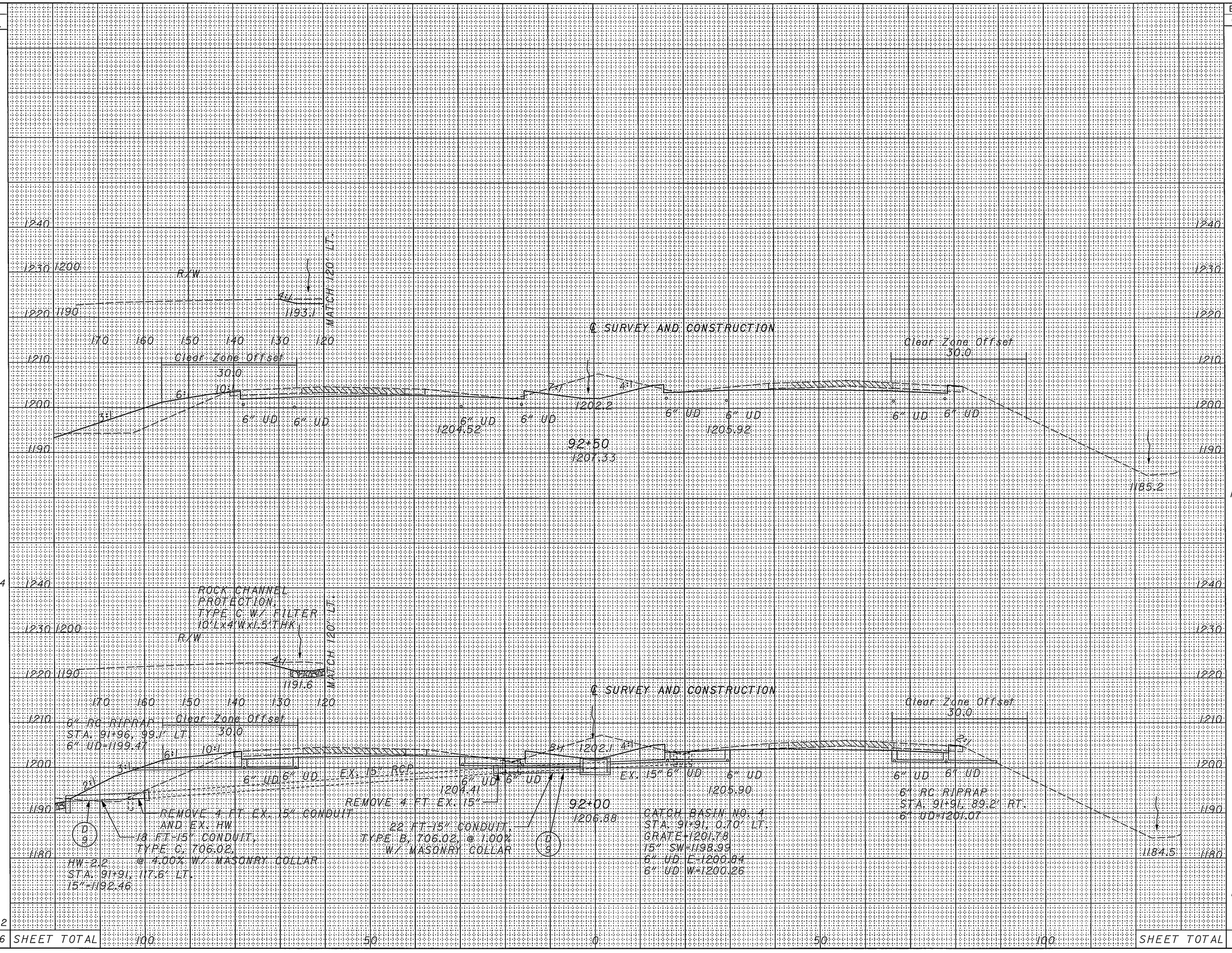
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 91+00.00 TO STA. 91+50.00

SUM-77-1.40

177
381

SEEDING	
END WIDTH	SQ. YDS.
87.79	474
93.06	502
	976



END AREA		VOLUME	
CUT	FILL	CUT	FILL
159	102		
		288	228
152	144		
		261	297
SHEET TOTAL		549	523

CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 92+00.00 TO STA. 92+50.00

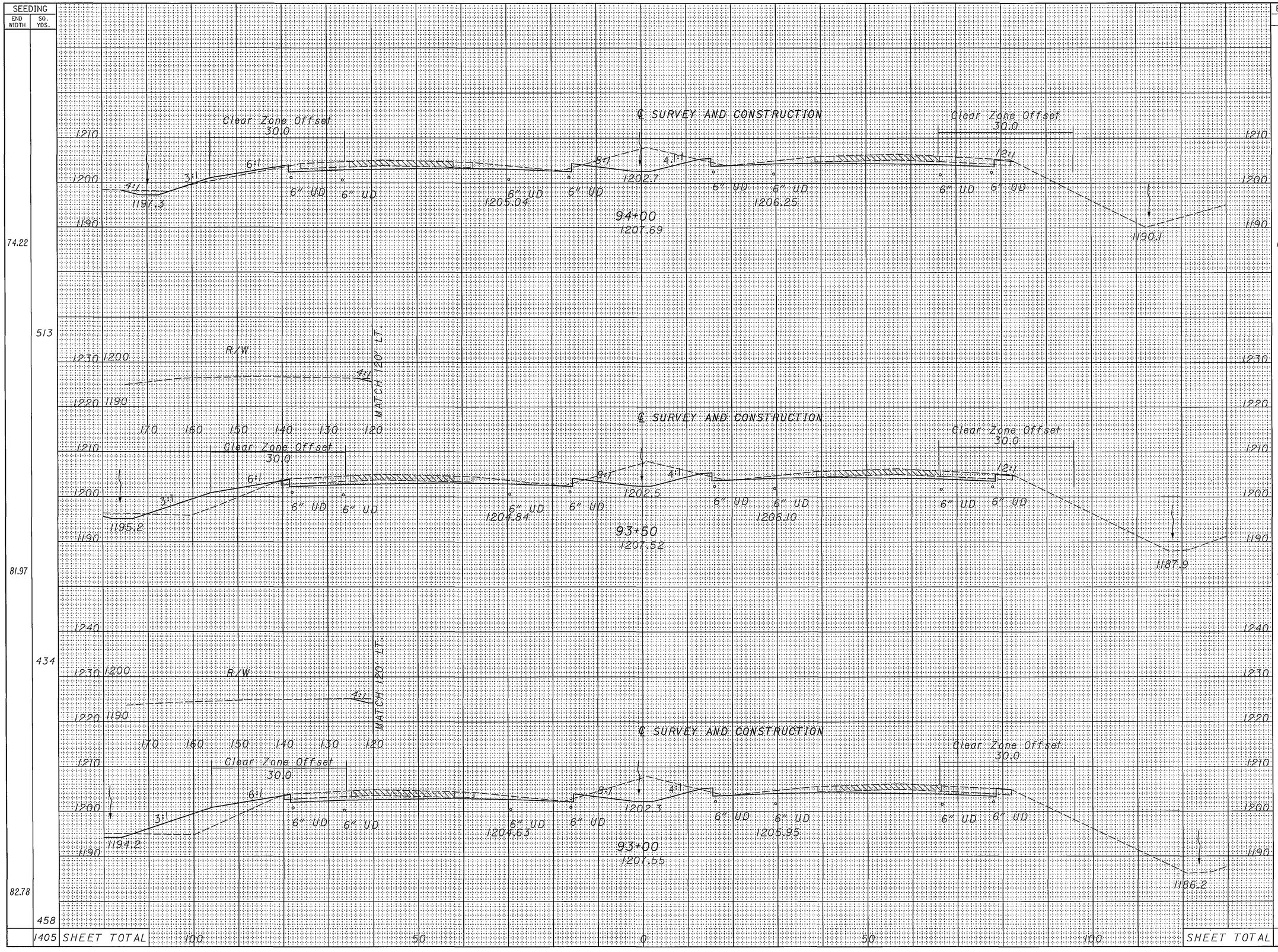
SUM-77-1.40

178
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
74.22	513	159	17	294	78
81.97	434	158	67	296	146
82.78	458	162	91	297	179
	1405 SHEET TOTAL			887	403

CALCULATED COY

CHECKED W.B.H.

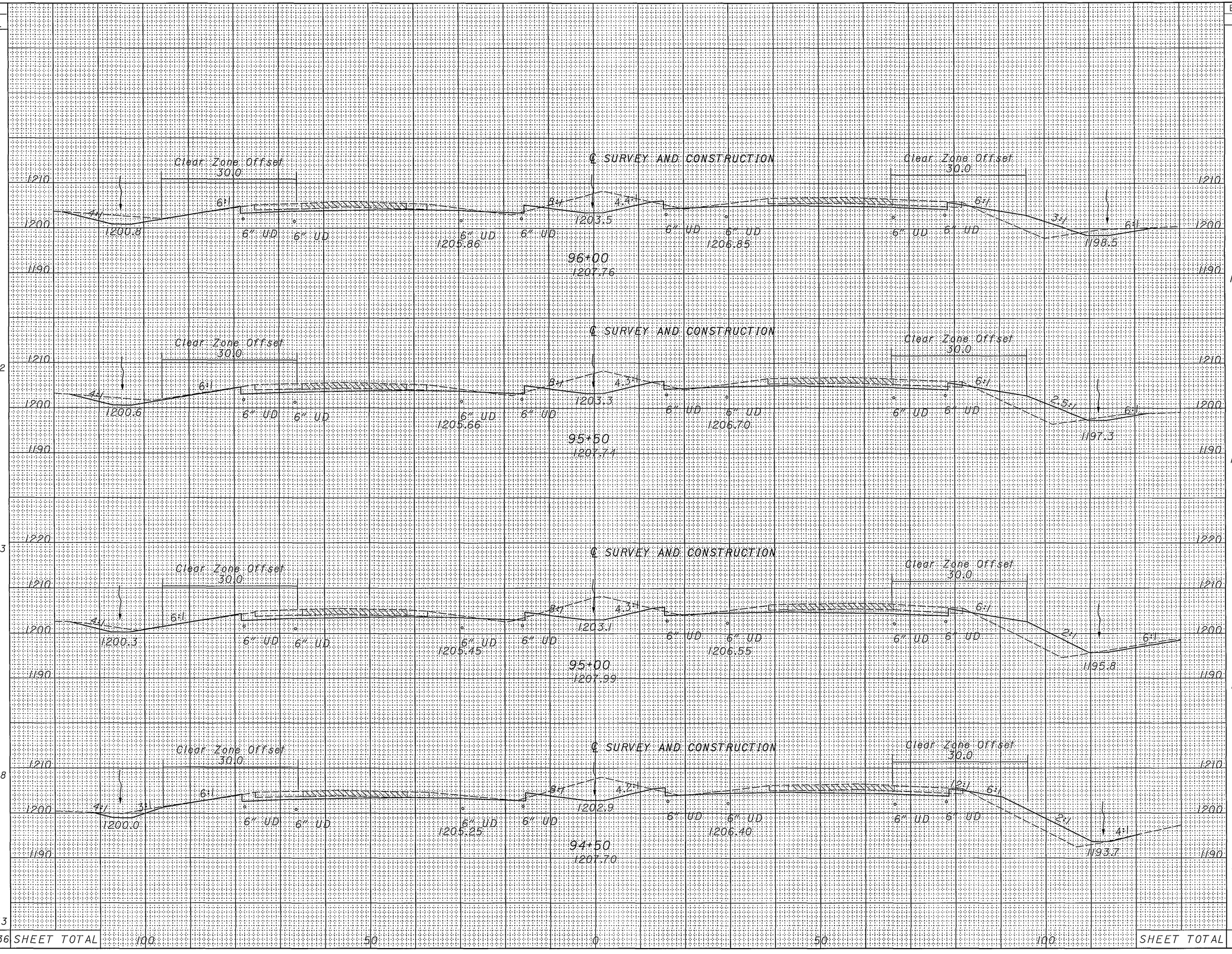


CROSS SECTIONS I-77
STA. 93+00.00 TO STA. 94+00.00

SUM-77-1.40

179
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
119.28	662	172	60	314	118
115.89		168	67		
124.72	653	166	78	309	135
110.45	668	154	70	296	137
	653			290	81
	2636	SHEET TOTAL		1209	471



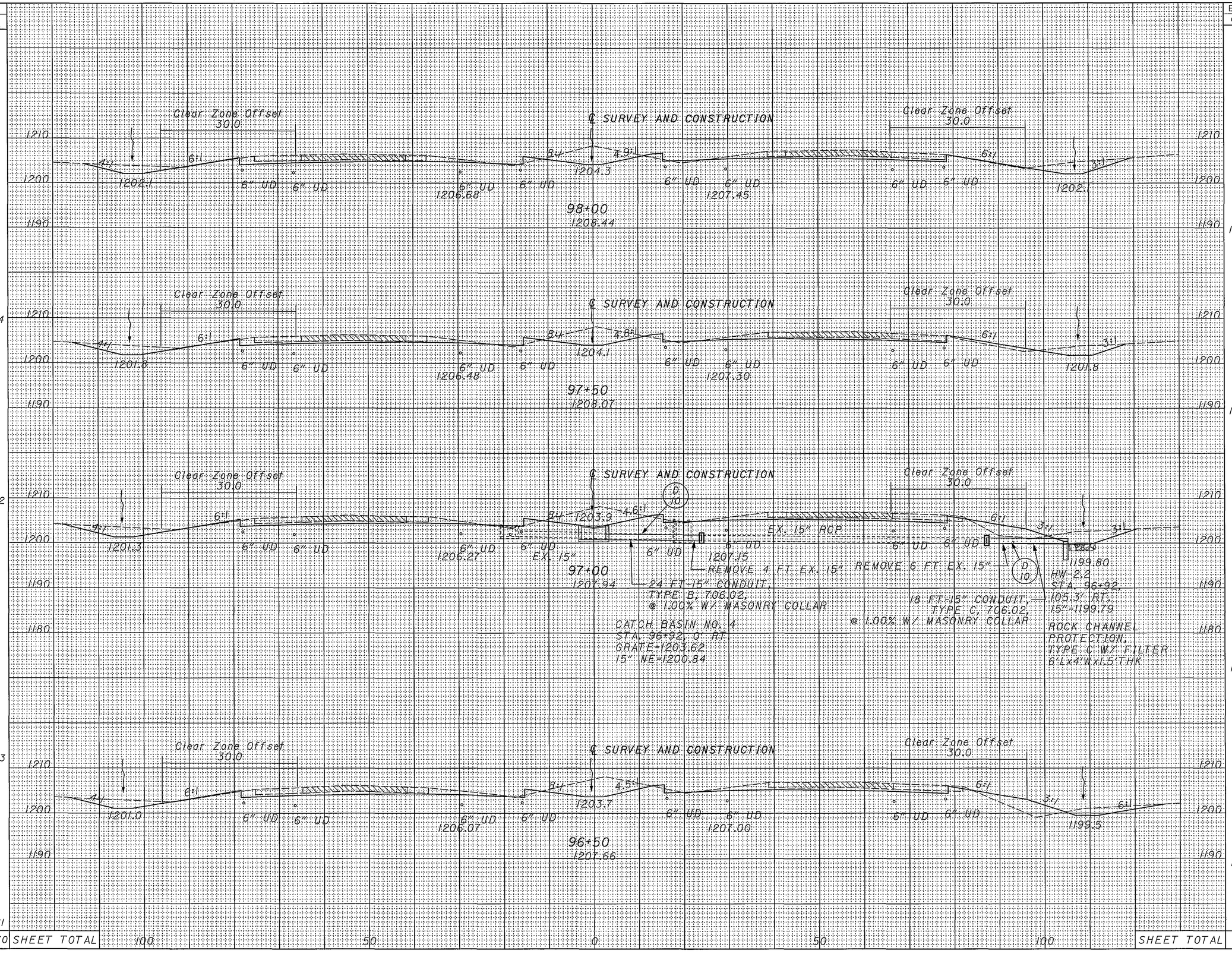
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 94+50.00 TO STA. 96+00.00

SUM-77-1.40

180
381

SEEDING		END AREA		VOLUME		
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL	
118.37		168	12			
	644			304	28	
119.85		160	18			
	662			321	54	
126.13		187	40			
	683			335	79	
119.11		176	45			
	681			322	97	
	2670 SHEET TOTAL			1282	258	SHEET TOTAL



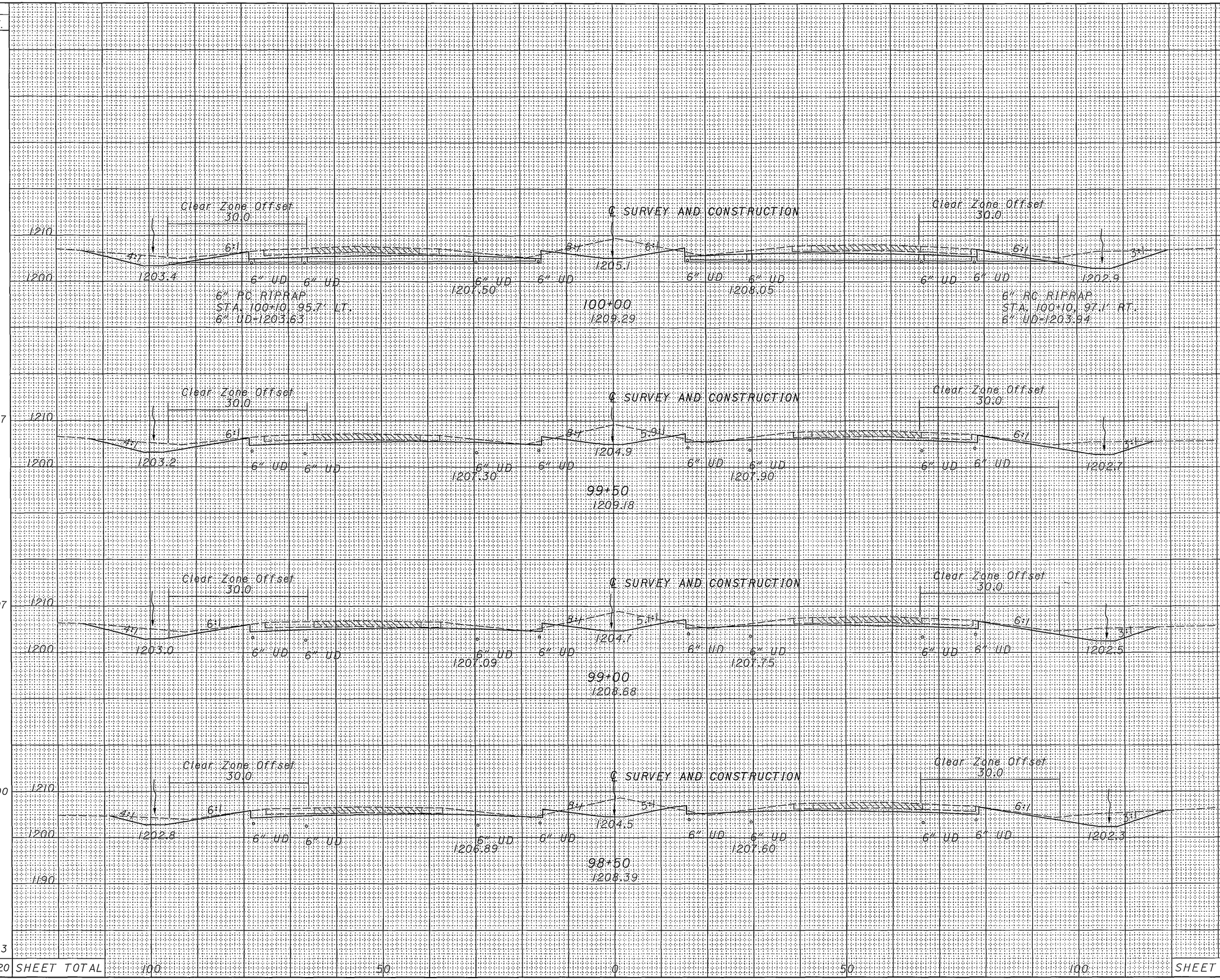
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 96+50.00 TO STA. 98+00.00

SUM-77-1.40

181
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL



109.82				240	2	
108.73	607			210	4	417 5
107.33	607			203	4	382 7
113.37	600			187	5	361 9
	613					329 16
	1820	SHEET TOTAL				1489 37

100 50 0 50 100

CALCULATED: COY
CHECKED: W.B.H.

CROSS SECTIONS I-77
STA. 98+50.00 TO STA. 100+00.00

SUM-77-1.40

182
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL

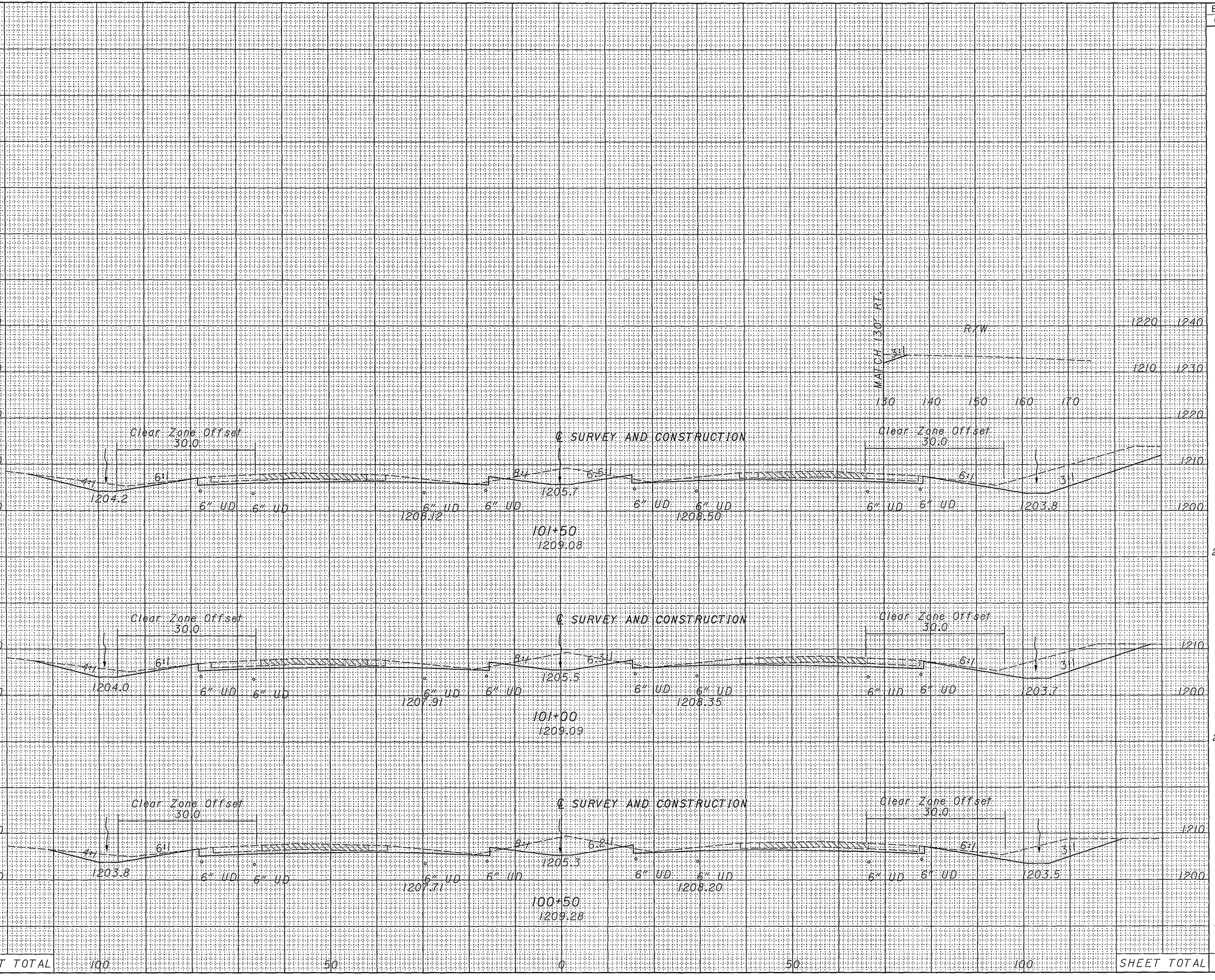
CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS I-77

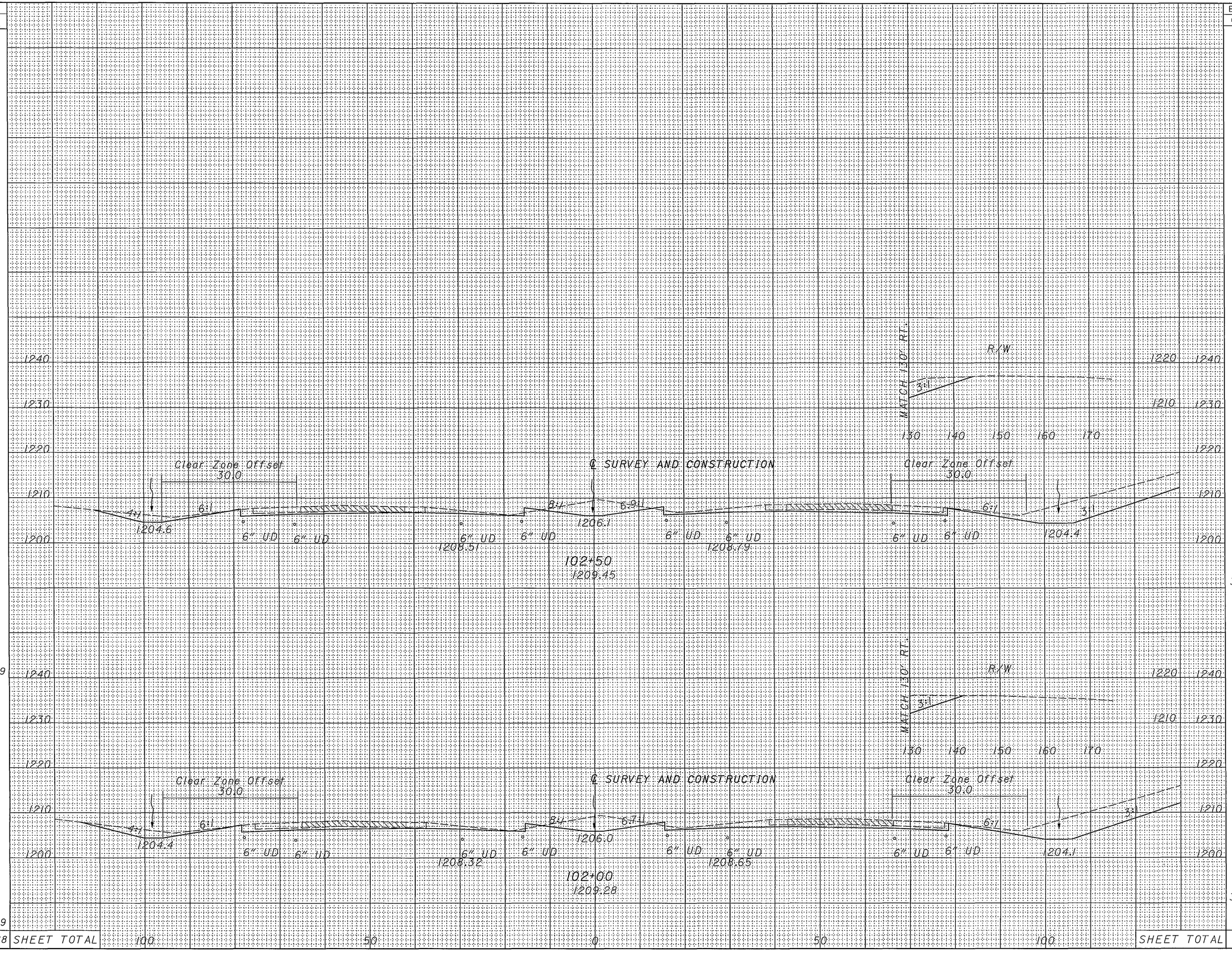
STA. 100+50.00 TO STA. 101+50.00

SUM-77-1.40

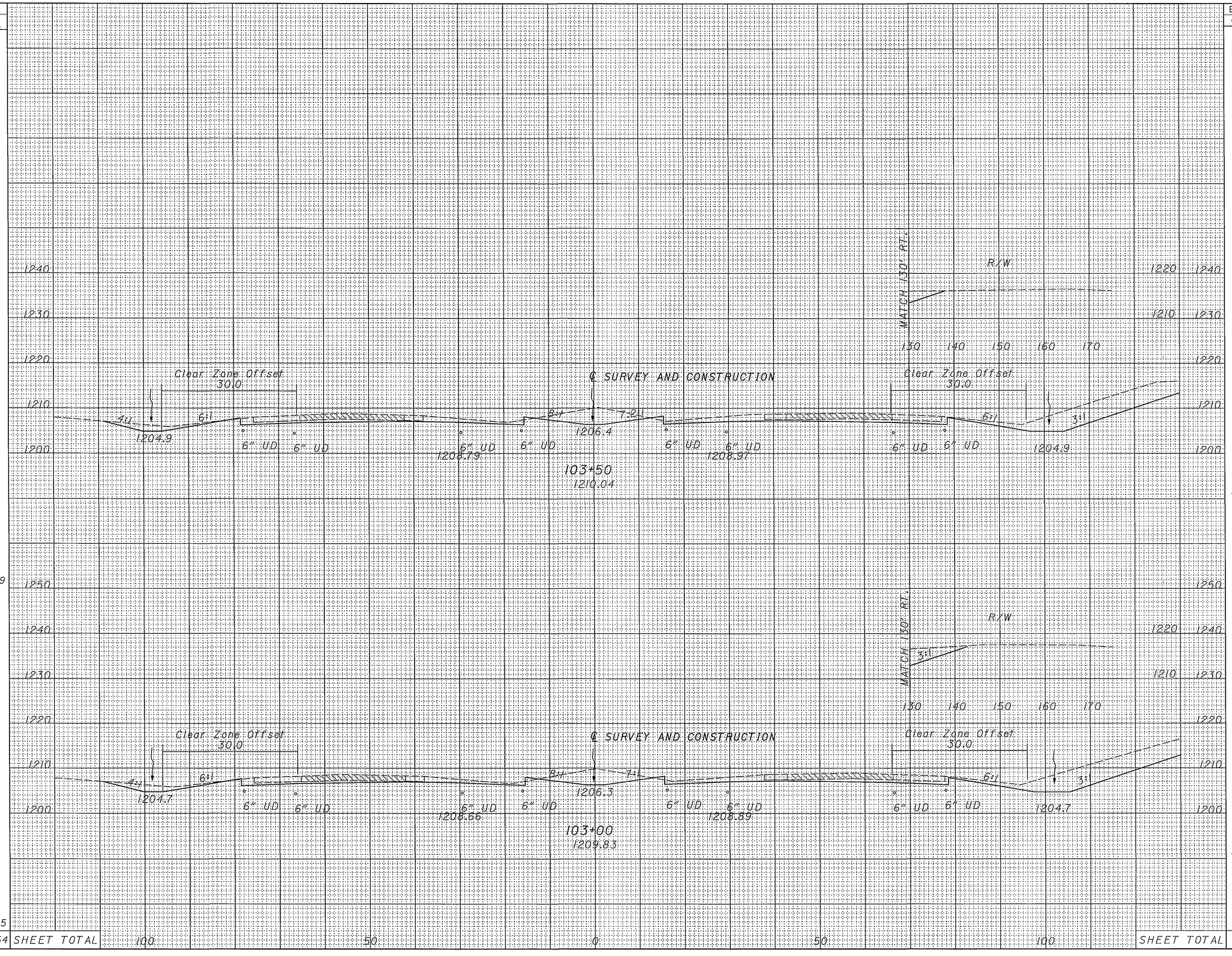


127.08							296	3	
118.28	723						519	6	
108.55	682						264	3	
	630						468	4	
							241	2	
	2035	SHEET TOTAL	100	50	0	50	100	SHEET TOTAL	1433 14

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
							CALCULATED COY
							CHECKED W.B.H.
							CROSS SECTIONS I-77
							STA. 102+00.00 TO STA. 102+50.00
							SUM-77-1.40
136.11	739				310	3	
133.35	749				323	3	
	1488	SHEET TOTAL			573	6	
					586	6	
					1159	12	



SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
123.94		311	3		
	649			584	5
129.99		321	3		
	705			584	5
	1354 SHEET TOTAL			1168	10



CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 103+00.00 TO STA. 103+50.00

SUM-77-1.40

SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
		1230				
		1220				
		1210				
		1200				
93.51		105+50 1210.53	192	5		
		1220				
		1210				
	521	1200			340	7
103.33		105+00 1208.76	175	3		
	547	1230			342	3
		1220				
		1210				
		1200				
101.99		104+50 1208.19	194	0		
		1220				
		1210				
	570	1200			386	3
109.56		104+00 1210.20	223	3		
	588				494	5
	2226	SHEET TOTAL			1562	18

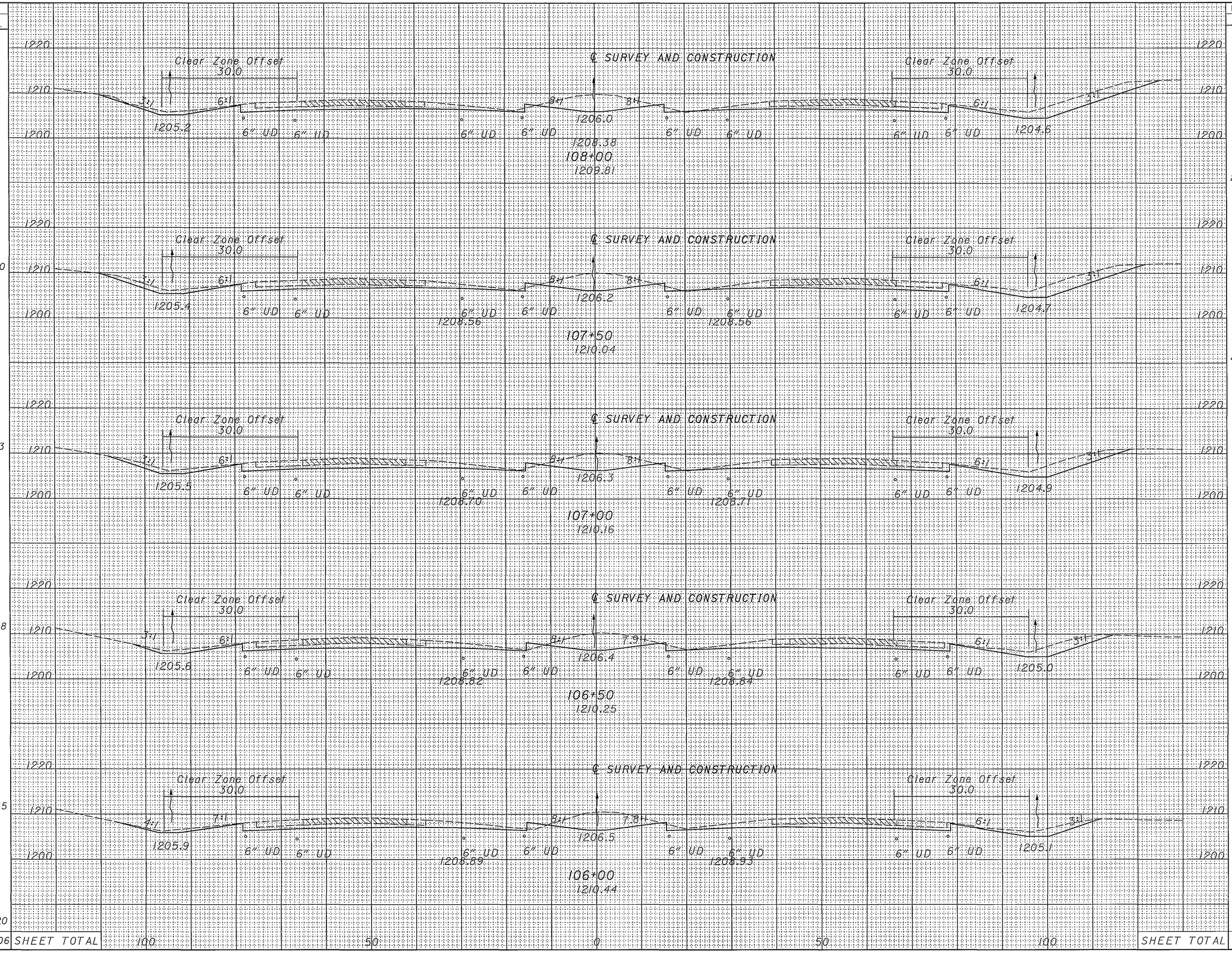
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 104+00.00 TO STA. 105+50.00

SUM-77-1.40

186
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
111.94	640	246	2	452	5
108.57	613	242	3	438	5
103.09	588	231	3	416	6
93.22	545	219	4	393	8
93.92	520	206	5	368	9
	2906 SHEET TOTAL			2067 SHEET TOTAL	33



CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 106+00.00 TO STA. 108+00.00

SUM-77-1.40

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
		Clear Zone Offset 30.0 — ℄ SURVEY AND CONSTRUCTION — Clear Zone Offset 30.0					CALCULATED COY / CHECKED W.B.H.
96.76		1210 / 1200; 3:1, 6:1, 8:1, 8:1, 6:1, 3:1; 1204.2; 1205.0; 1203.6; 6" UD ×6; 1207.41; 110+50; 1208.66	163	3			
	500	1210 / 1200; 3:1, 6:1, 8:1, 8:1, 6:1, 3:1; 1204.4; 1205.2; 1203.8; 6" UD ×6; 1207.60; 110+00; 1208.96			306	5	
99.96			168	3			
	547	1210 / 1200; 3:1, 6:1, 8:1, 8:1, 6:1, 3:1; 1204.6; 1205.4; 1204.0; 6" UD ×6; 1207.79; 109+50; 1209.30			357	3	
110.06			218	1			
	583	1210 / 1200; 3:1, 6:1, 8:1, 8:1, 6:1, 3:1; 1204.8; 1205.6; 1204.2; 6" UD ×6; 1207.99; 109+00; 1209.41			430	2	
112.05			247	1			
	617	1210 / 1200; 3:1, 6:1, 8:1, 8:1, 6:1, 3:1; 1205.0; 1205.8; 1204.4; 6" UD ×6; 1208.18; 108+50; 1209.62			472	2	
118.36			263	1			
	640				471	3	
	2887	SHEET TOTAL			2036	15	

CROSS SECTIONS I-77
STA. 108+50.00 TO STA. 110+50.00

SUM-77-1.40

188
381

SEEDING		END AREA		VOLUME		
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL	
75.28	415	140	6			Clear Zone Offset 30.0 — ℄ SURVEY AND CONSTRUCTION — Clear Zone Offset 30.0 1210 / 1200 / 1190 3:1, 6:1, 8:1, 6:1, 3:1 1203.0 — 6" UD, 6" UD, 6" UD, 6" UD, 6" UD, 6" UD, 6" UD, 6" UD — 1204.1 1206.43 113+00 1207.74
77.26	415	139	9	258	14	Clear Zone Offset 30.0 — ℄ SURVEY AND CONSTRUCTION — Clear Zone Offset 30.0 1210 / 1200 / 1190 3:1, 6:1, 8:1, 8:1, 6:1, 3:1 1203.4 — 6" UD, 6" UD, 6" UD, 6" UD, 6" UD, 6" UD, 6" UD, 6" UD — 1204.3 1206.63 112+50 1207.80
71.98	424	152	3	269	10	Clear Zone Offset 30.0 — ℄ SURVEY AND CONSTRUCTION — Clear Zone Offset 30.0 1210 / 1200 / 1190 3:1, 6:1, 8:1, 8:1, 6:1, 3:1 1203.6 — 6" UD, 6" UD, 6" UD, 6" UD, 6" UD, 6" UD, 6" UD, 6" UD — 1204.5 1206.82 112+00 1208.01 — 1202.4
80.31	415	164	2	292	4	Clear Zone Offset 30.0 — ℄ SURVEY AND CONSTRUCTION — Clear Zone Offset 30.0 1210 / 1200 / 1190 3:1, 6:1, 8:1, 8:1, 6:1, 3:1 1203.8 — 6" UD, 6" UD, 6" UD, 6" UD, 6" UD, 6" UD, 6" UD, 6" UD — 1204.6 1207.01 111+50 1208.13 — 1203.2
83.07	423	165	2	304	4	Clear Zone Offset 30.0 — ℄ SURVEY AND CONSTRUCTION — Clear Zone Offset 30.0 1210 / 1200 3:1, 6:1, 8:1, 8:1, 6:1, 3:1 1204.0 — 6" UD, 6" UD, 6" UD, 6" UD, 6" UD, 6" UD, 6" UD, 6" UD — 1204.8 1207.21 111+00 1208.33 — 1203.4
	454			304	4	
	2131	SHEET TOTAL		1427	36	SHEET TOTAL

100 50 0 50 100

CALCULATED COY

CHECKED W.B.H.

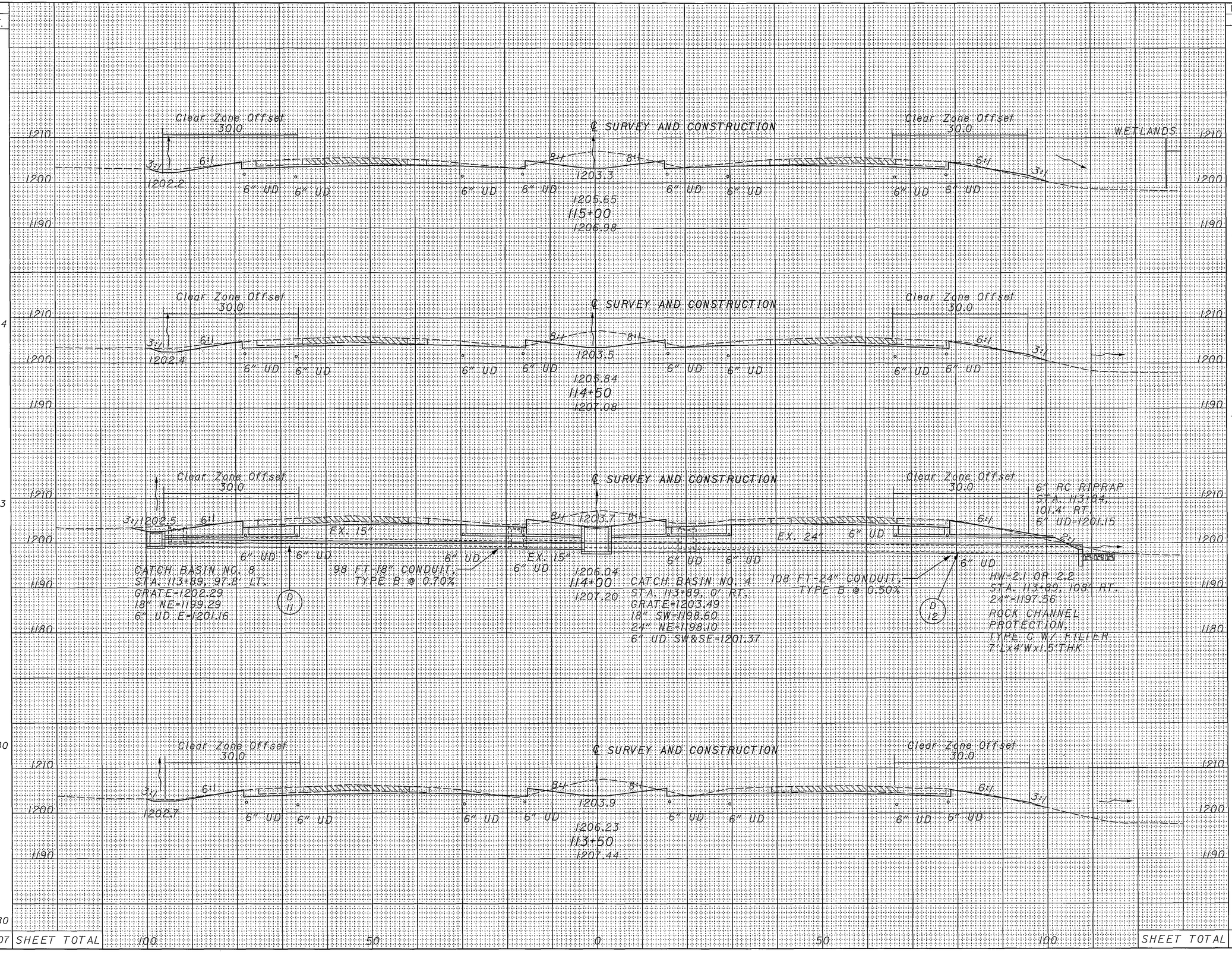
CROSS SECTIONS I-77

STA. 111+00.00 TO STA. 113+00.00

SUM-77-1.40

189
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
74.58		131	7		
	434			247	11
74.25		135	6		
	413			265	14
98.54		151	10		
	480			260	16
74.19		130	7		
	480			250	12
	1807	SHEET TOTAL		1022	53



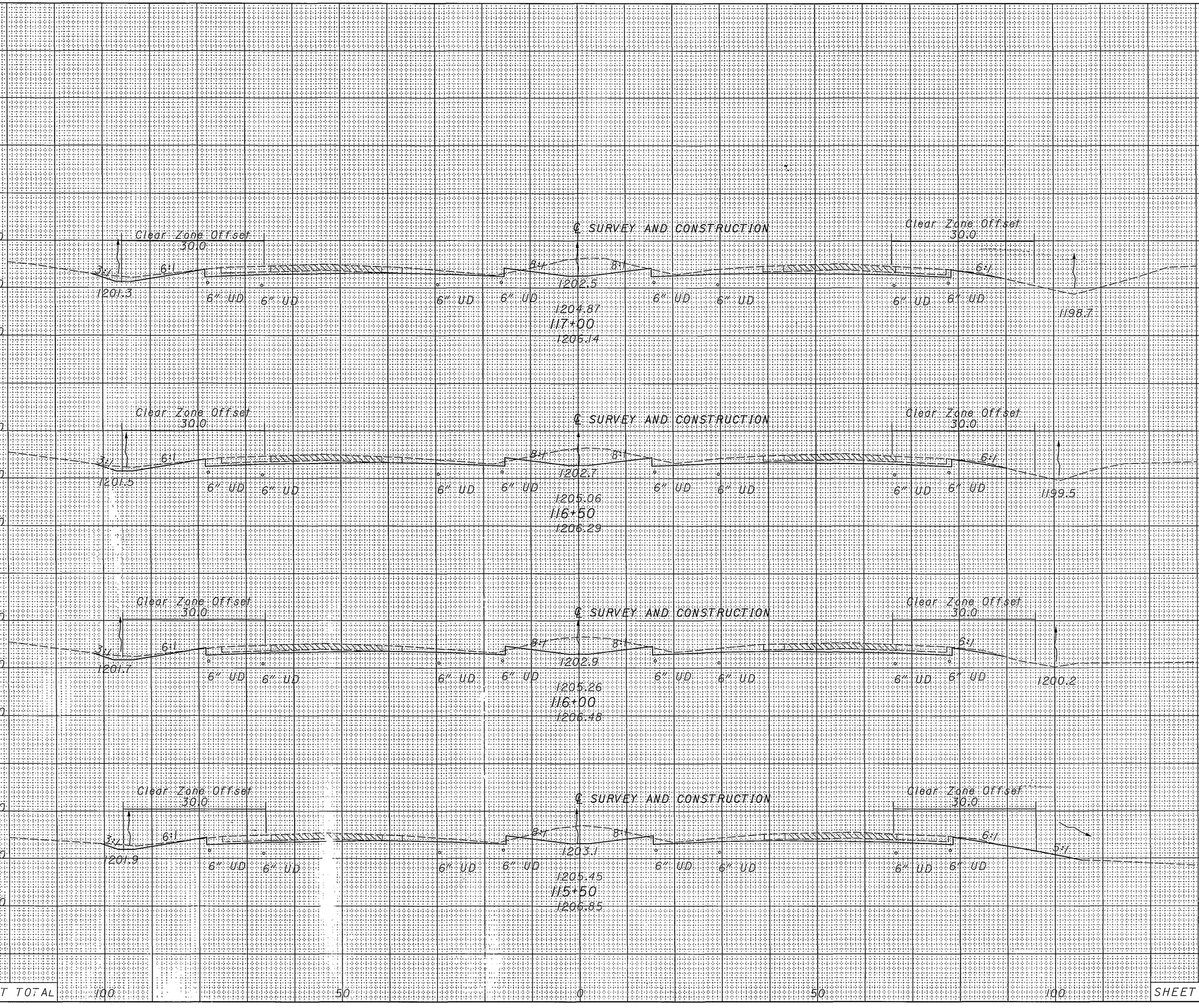
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 113+50.00 TO STA. 115+00.00

SUM-77-1.40

190
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
66.16	375	158	2	292	3
66.51	369	157	1	285	3
66.29	369	150	2	272	4
81.55	411	143	3	254	9
	1524 SHEET TOTAL			SHEET TOTAL 1204	19



100 50 0 50 100

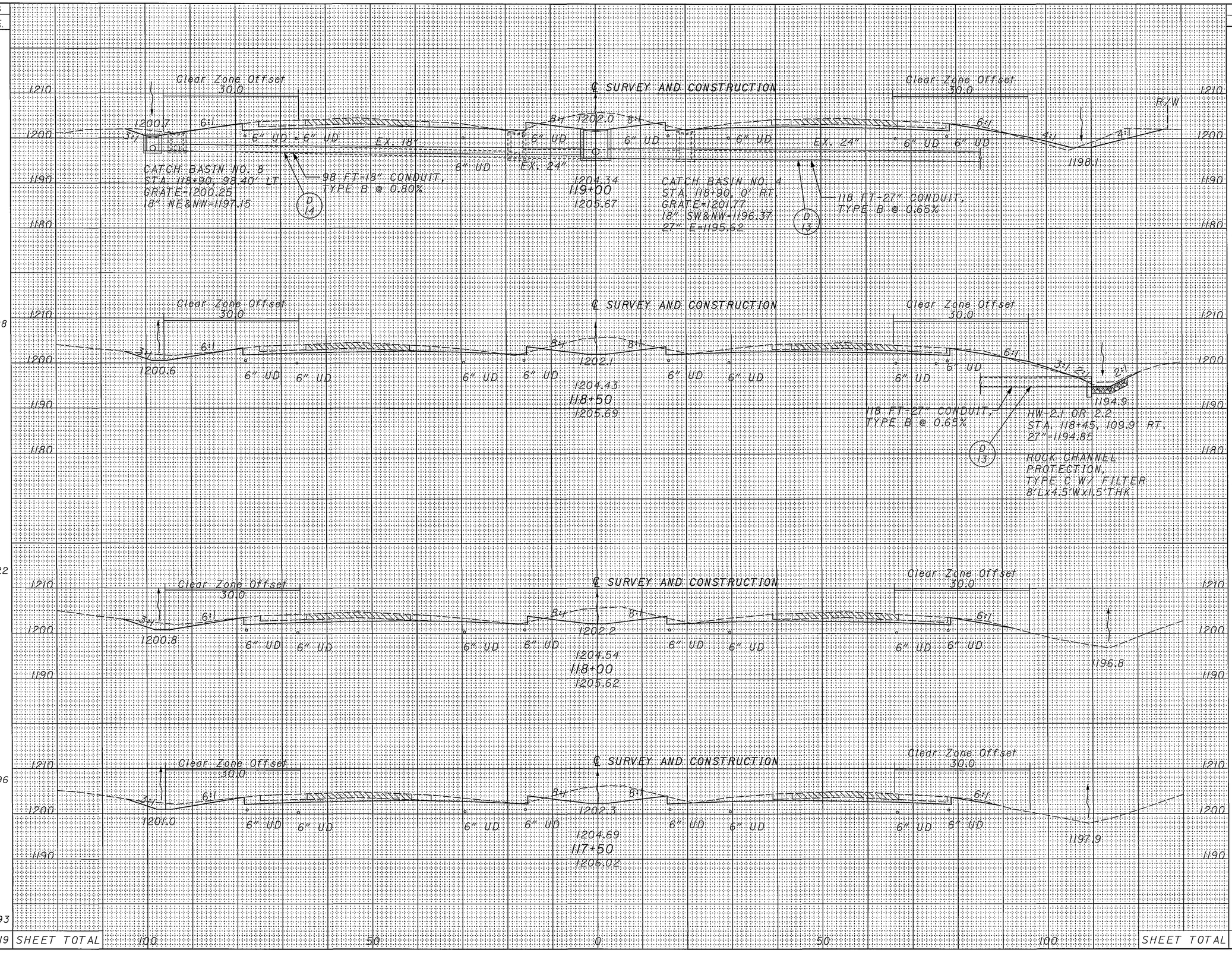
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 115+50.00 TO STA. 117+00.00

SUM-77-1.40

191
381

SEEDING					END AREA		VOLUME	
END WIDTH	SQ. YDS.				CUT	FILL	CUT	FILL
118.24	608				175	13	314	19
105.57	622				165	8	303	10
72.80	496				163	3	304	5
68.68	393				166	3	300	4
	2119	SHEET TOTAL	100	50			1221	38

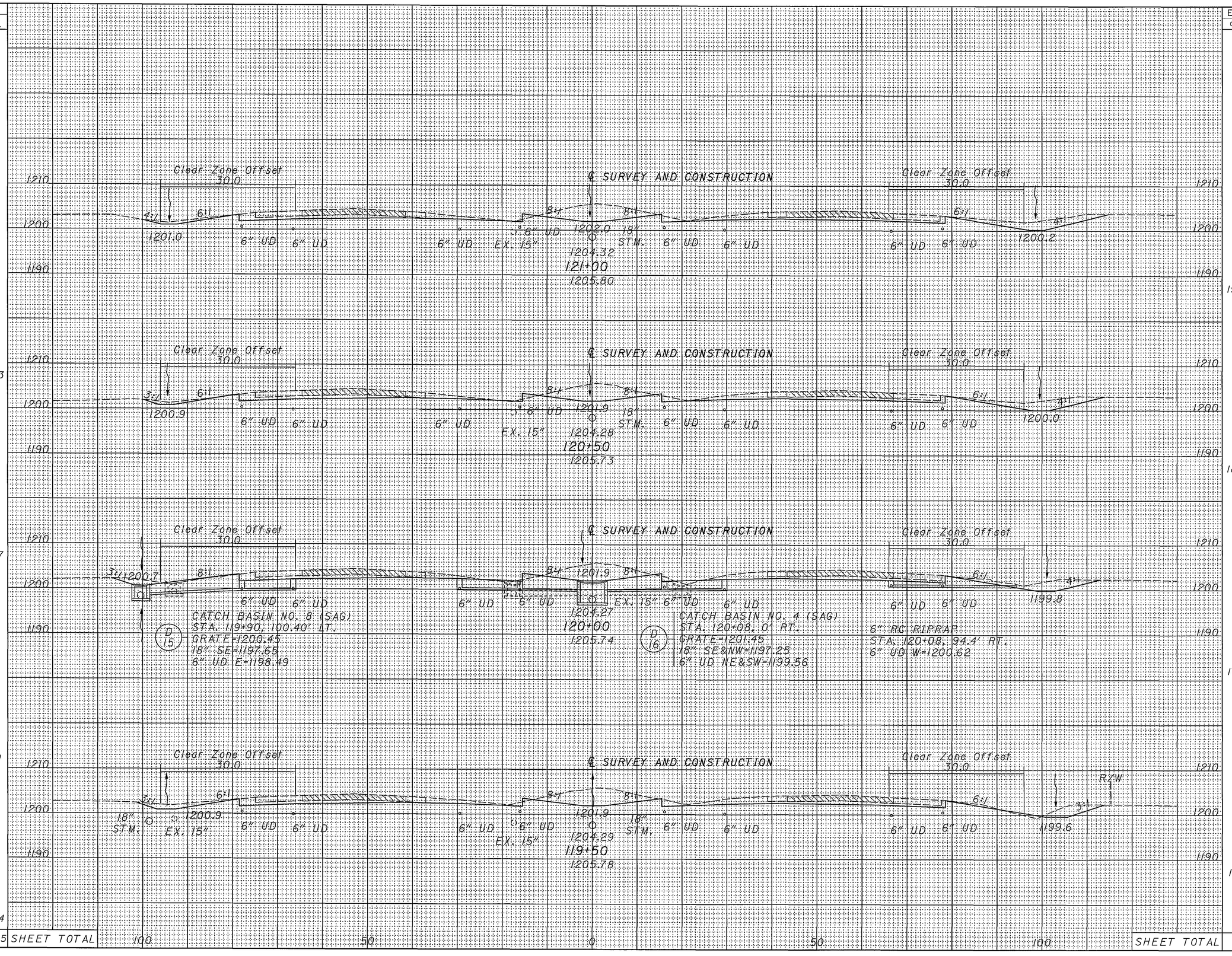


CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 117+50.00 TO STA. 119+00.00

SUM-77-1.40

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
90.14		192	2		
	503			347	5
88.88		183	3		
	497			333	13
95.09		177	11		
	511			340	13
100.74		191	4		
	544			338	15
2055	SHEET TOTAL			1358	46



100 50 0 50 100

SHEET TOTAL

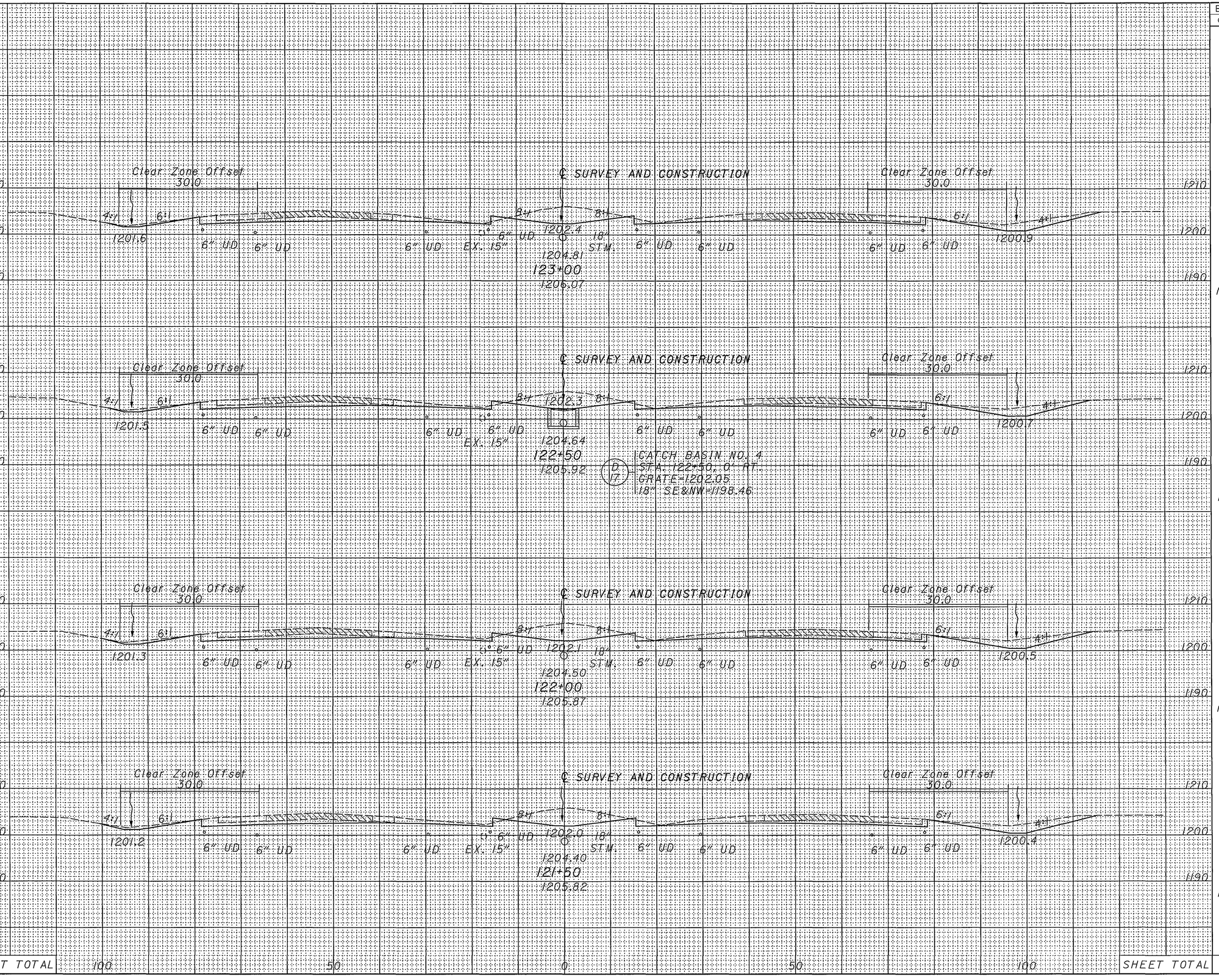
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 119+50.00 TO STA. 121+00.00

SUM-77-1.40

193
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
100.25	573	177	3	331	5
97.81		181	2		
	550			343	4
89.46		190	2		
	520			355	3
91.07		194	2		
	502			357	4
	2145	SHEET TOTAL		1386	16



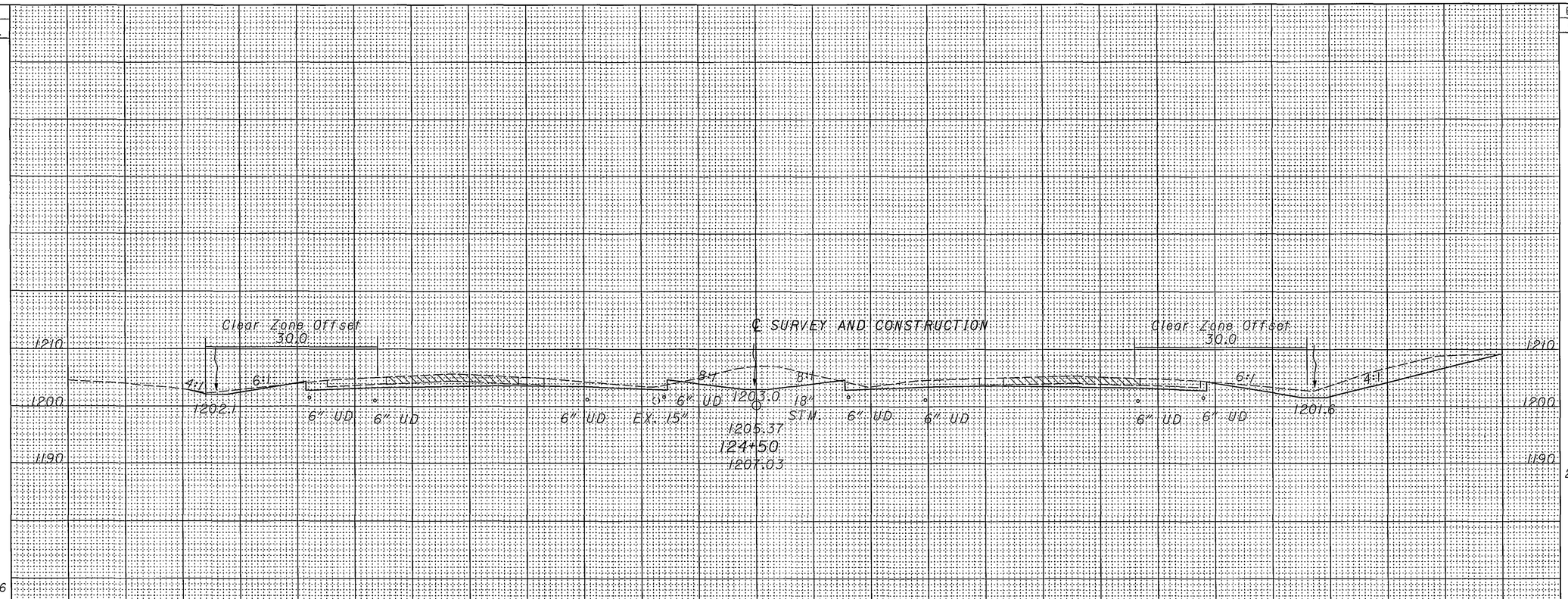
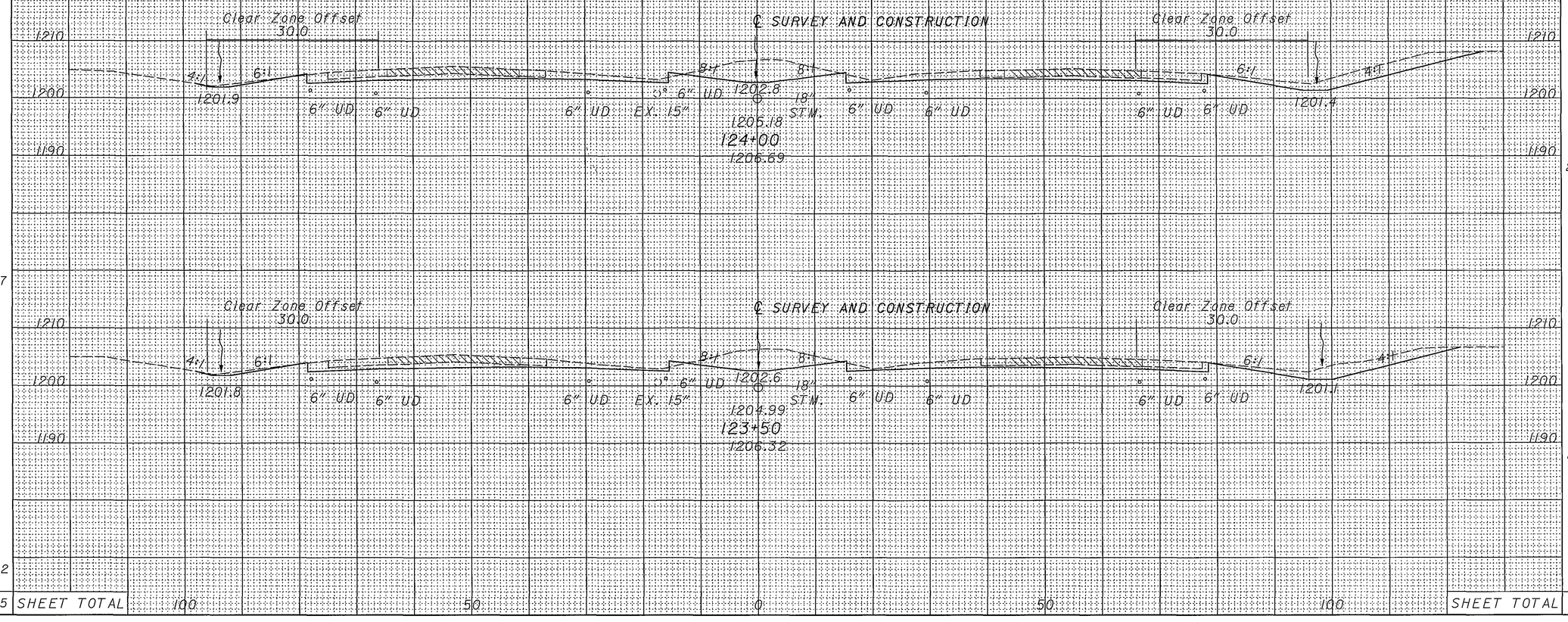
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 121+50.00 TO STA. 123+00.00

SUM-77-1.40

194
381

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
							
104.20			236	2			
	576				426	3	
99.90			223	2			
	567				395	3	
105.94			204	2			
	572				352	4	
	1715	SHEET TOTAL			1173	10	

100 50 0 50 100

SHEET TOTAL

CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 123+50.00 TO STA. 124+50.00

SUM-77-1.40

195
381

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
							CALCULATED COY / CHECKED W.B.H.
85.79	465	Clear Zone Offset 30.0 — 4:1 — 6:1 — 1202.6 — 6" UD 6" UD — 6" UD 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 — 8:1 — 1203.7 — 1206.11 — 126+50 — 1207.18 — Clear Zone Offset 30.0 — 6:1 — 4:1 — 1202.3 — 6" UD 6" UD — 6" UD 6" UD	128	7			
92.26	495	Clear Zone Offset 30.0 — 4:1 — 6:1 — 1202.5 — 6" UD 6" UD — 6" UD 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 — 8:1 — 1203.6 — 1205.92 — 126+00 — 1207.13 — Clear Zone Offset 30.0 — 6:1 — 4:1 — 1202.1 — 6" UD 6" UD — 6" UD 6" UD	156	3	263	9	
100.55	536	Clear Zone Offset 30.0 — 4:1 — 6:1 — 1202.4 — 6" UD 6" UD — 6" UD 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 — 8:1 — 1203.4 — 1205.73 — 125+50 — 1207.58 — Clear Zone Offset 30.0 — 6:1 — 4:1 — 1202.0 — 6" UD 6" UD — 6" UD 6" UD	205	3	334	6	
103.18	566	Clear Zone Offset 30.0 — 4:1 — 6:1 — 1202.2 — 6" UD 6" UD — 6" UD 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 — 8:1 — 1203.2 — EX. 15" 6" UD — 6" UD — 1205.55 — 125+00 — 1207.25 — CATCH BASIN NO. 4 STA. 125+00, 0' RT. GRATE-1202.95 18" SE-1199.71 6" SE&NW-1200.86 — D 18 — Clear Zone Offset 30.0 — 6:1 — 4:1 — 1201.8 — 6" UD 6" UD — 6" UD 6" UD	219	4	393	7	
					422	5	
	2082	SHEET TOTAL			1412	27	SHEET TOTAL

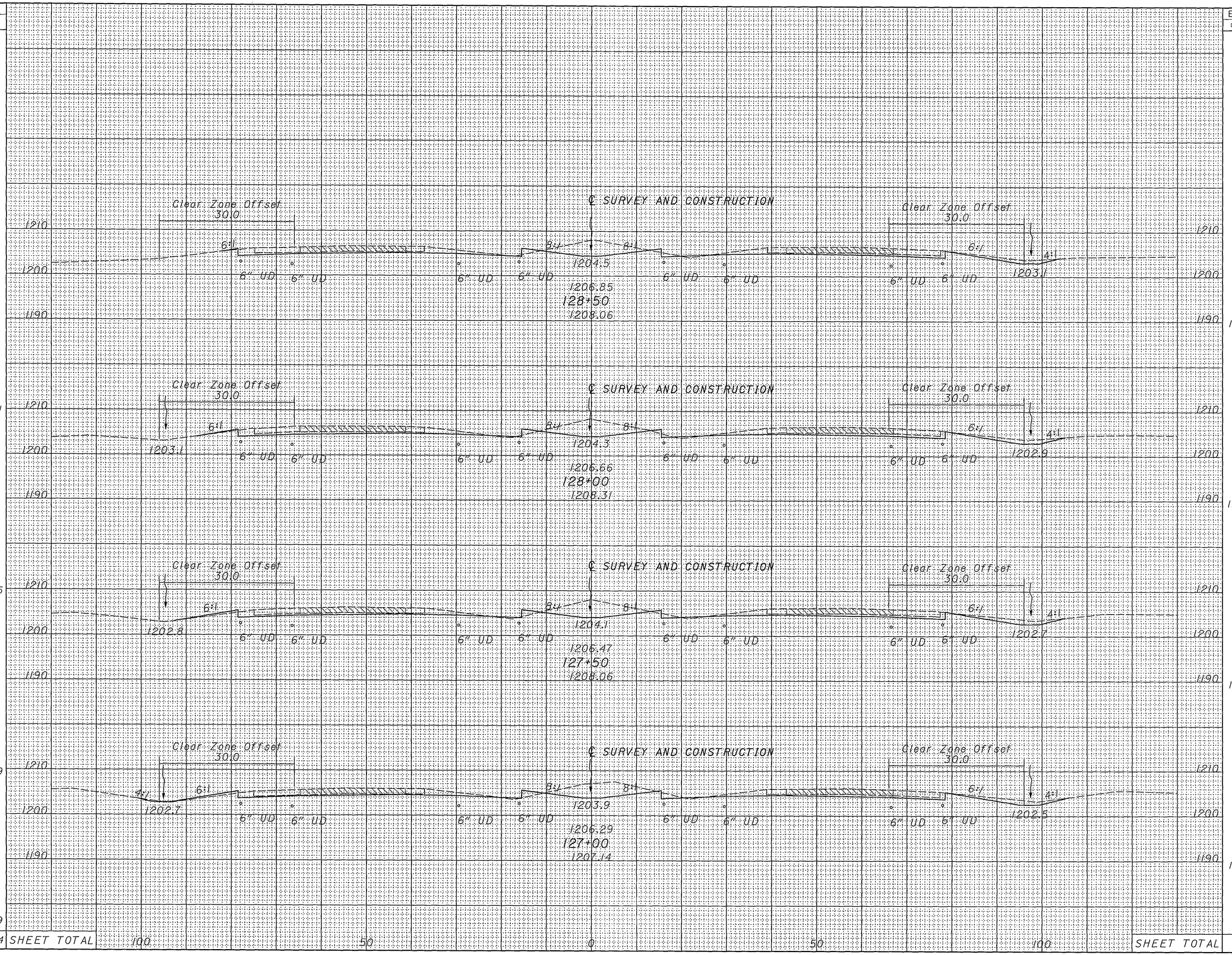
100 50 0 50 100

CROSS SECTIONS I-77
STA. 125+00.00 TO STA. 126+50.00

SUM-77-1.40

196
381

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
60.14	331		115	6	226	12
67.47	355		129	7	231	15
72.69	389		121	9	221	18
81.62	429		118	11	228	16
	1504	SHEET TOTAL			906	61



CALCULATED COY

CHECKED W.B.H.

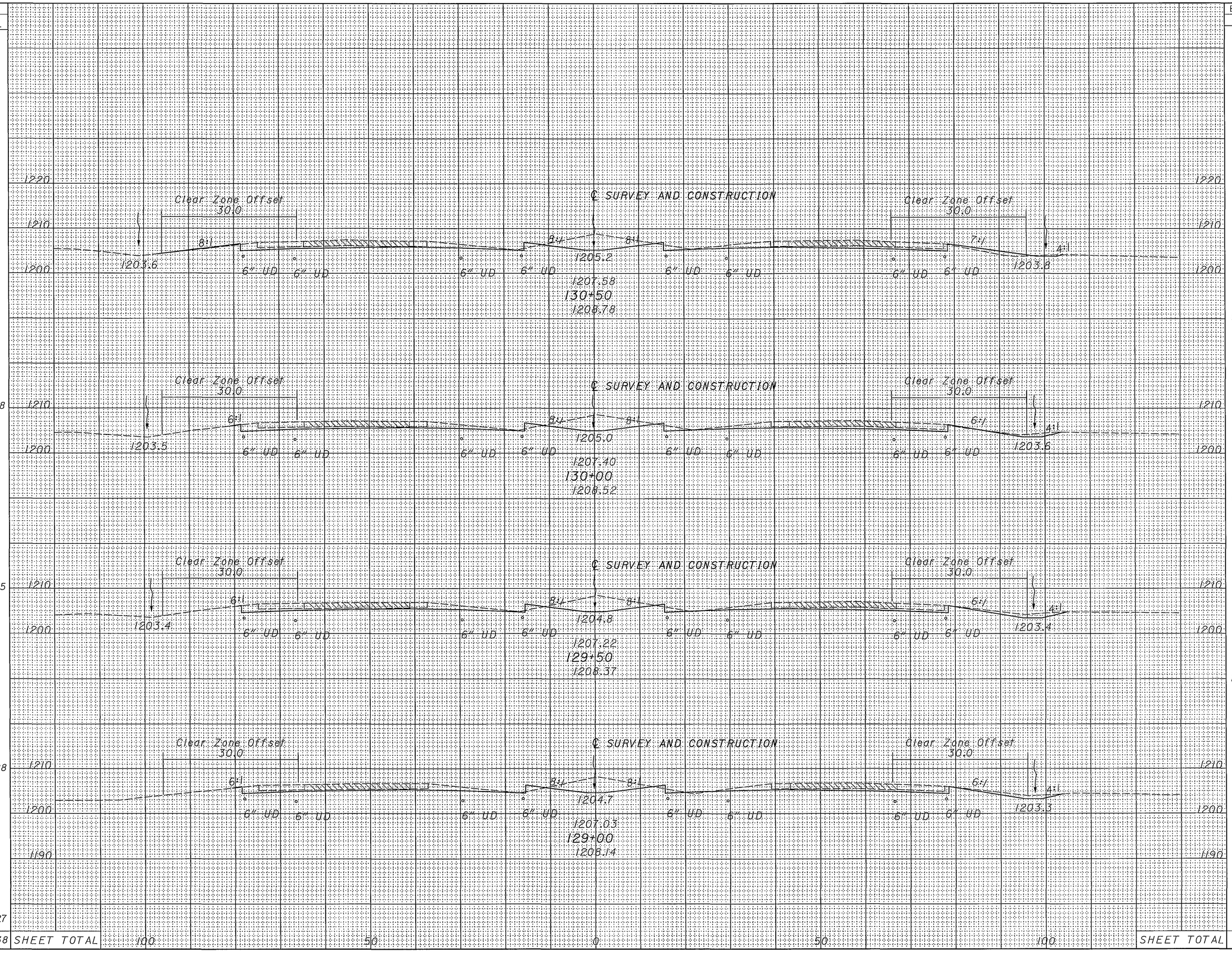
CROSS SECTIONS I-77

STA. 127+00.00 TO STA. 128+50.00

SUM-77-1.40

197
381

SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
75.50	408	130+50	116	14		
59.14		130+00	121	4	219	17
58.80	375	129+50	125	4	227	8
58.94	328	129+00	115	6	222	9
	327				213	11
	1438	SHEET TOTAL			881	45



CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 129+00.00 TO STA. 130+50.00

SUM-77-1.40

198
381

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
		1220					
		Clear Zone Offset 30.0					
		1210					
		6:1 6:1					
		1203.5					
		1200					
		6" UD 6" UD					
		℄ SURVEY AND CONSTRUCTION					
		8:1 8:1					
		1205.6					
		6" UD 6" UD 6" UD 6" UD					
		1207.95					
		133+00					
		1209.48					
		Clear Zone Offset 30.0					
		6:1 6:1 3:1					
		1201.0					
81.36		1220					
		1210					
		1200					
		6" UD 6" UD					
		6" UD 6" UD					
		6" UD 6" UD					
		6" UD 6" UD					
		6" UD 6" UD					
		6" UD 6" UD					
		1220	117	16			
		Clear Zone Offset 30.0					
		1210					
	487	6:1					
		1204.0					
		1200					
		6" UD 6" UD					
		℄ SURVEY AND CONSTRUCTION					
		8:1 8:1					
		1205.6					
		6" UD 6" UD 6" UD 6" UD					
		1207.95					
		132+50					
		1209.38					
		Clear Zone Offset 30.0					
		6:1 4:1					
		1202.4					
83.70		1210			229	30	
		1200					
		6" UD 6" UD					
		6" UD 6" UD					
		6" UD 6" UD					
		6" UD 6" UD					
		6" UD 6" UD					
		1210	130	17			
		Clear Zone Offset 30.0					
		1210					
	459	6:1					
		1203.9					
		1200					
		6" UD 6" UD					
		℄ SURVEY AND CONSTRUCTION					
		8:1 8:1					
		1205.5					
		6" UD 6" UD 6" UD 6" UD					
		1207.91					
		132+00					
		1209.17					
		Clear Zone Offset 30.0					
		6:1 4:1					
		1203.0					
73.14		1210					
		1200					
		6" UD 6" UD					
		6" UD 6" UD					
		6" UD 6" UD					
		6" UD 6" UD					
		6" UD 6" UD					
		1210	119	11			
		Clear Zone Offset 30.0					
		1210					
	436	6:1					
		1203.8					
		1200					
		6" UD 6" UD					
		℄ SURVEY AND CONSTRUCTION					
		8:1 8:1					
		1205.5					
		6" UD 6" UD 6" UD 6" UD					
		1207.84					
		131+50					
		1208.94					
		Clear Zone Offset 30.0					
		6:1 4:1					
		1203.4					
65.14		1210			213	18	
		1200					
		6" UD 6" UD					
		6" UD 6" UD					
		6" UD 6" UD					
		6" UD 6" UD					
		6" UD 6" UD					
		1210	112	9			
		Clear Zone Offset 30.0					
		1210					
	384	8:1					
		1203.7					
		1200					
		6" UD 6" UD					
		℄ SURVEY AND CONSTRUCTION					
		8:1 8:1					
		1205.4					
		6" UD 6" UD 6" UD 6" UD					
		1207.73					
		131+00					
		1206.90					
		Clear Zone Offset 30.0					
		8:1 8:1					
		1203.9					
71.36		1210					
		1200					
		6" UD 6" UD					
		6" UD 6" UD					
		6" UD 6" UD					
		6" UD 6" UD					
		6" UD 6" UD					
		1210	117	20			
	379				216	32	
	2145	SHEET TOTAL			1099	132	SHEET TOTAL

100 50 0 50 100

CALCULATED COY

CHECKED W.B.H.

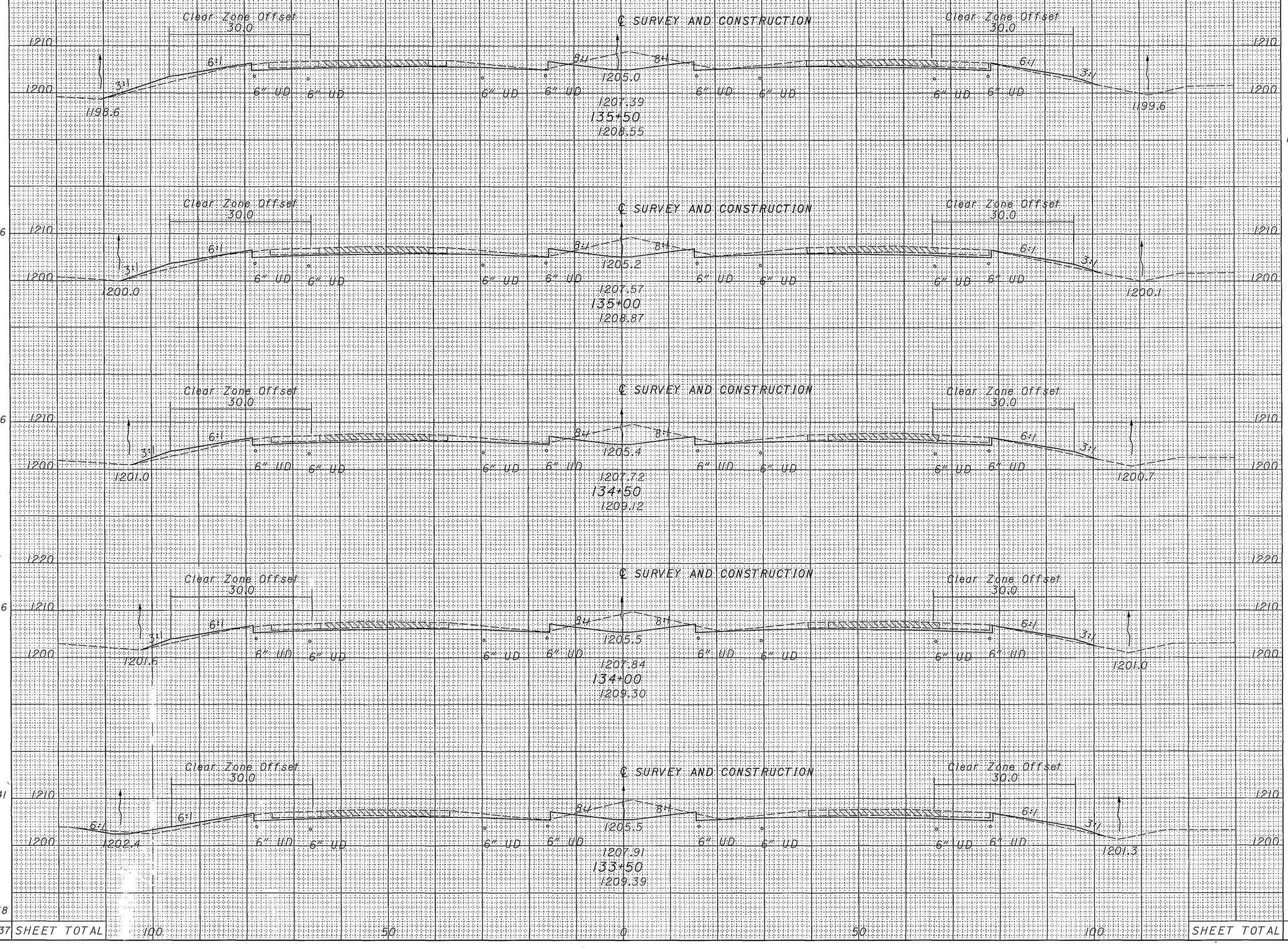
CROSS SECTIONS I-77

STA. 131+00.00 TO STA. 133+00.00

SUM-77-1.40

199
381

SEEDING		END AREA		VOLUME		
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL	
87.57	486	104	31	204	52	
83.74	476	117	26	226	48	
80.43	456	127	26	233	42	
78.14	441	124	20	236	44	
93.18	478	131	27	229	40	
	2337 SHEET TOTAL			1128	226	SHEET TOTAL



CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 133+50.00 TO STA. 135+50.00

SUM-77-1.40

200
381

SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
89.18	475	1196.4 / 1205.90 / 138+00 / 1206.94 / 1203.5 / 1197.6	117	42	209	75
89.00	495	1196.8 / 1206.27 / 137+50 / 1207.21 / 1203.9 / 1197.9	108	39	197	75
90.26	498	1197.2 / 1206.61 / 137+00 / 1207.56 / 1204.2 / 1198.1	105	42	177	74
90.02	501	1197.6 / 1206.90 / 136+50 / 1207.75 / 1204.5 / 1198.3	86	38	161	70
87.25	492	1197.9 / 1207.17 / 136+00 / 1208.10 / 1204.8 / 1199.0	88	37	177	63
	2451	SHEET TOTAL			921	357

Clear Zone Offset 30.0 — ℄ SURVEY AND CONSTRUCTION — Clear Zone Offset 30.0

6:1 — 3:1 — 8:1 — 6:1 — 3:1 — 6" UD

1210 — 1200 — 1190

CALCULATED COY

CHECKED W.B.H.

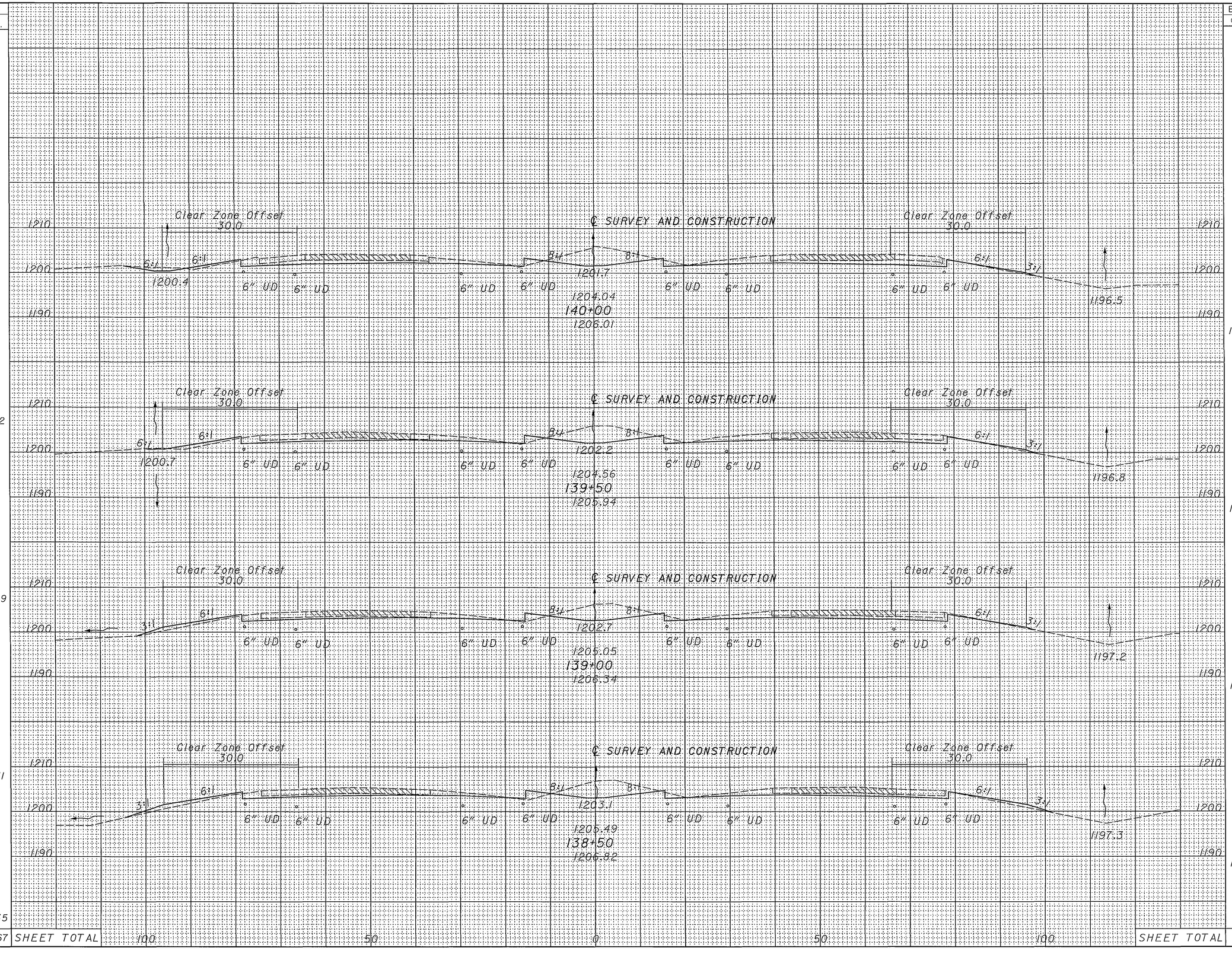
CROSS SECTIONS I-77

STA. 136+00.00 TO STA. 138+00.00

SUM-77-1.40

201
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
74.11	412	163	12	278	26
73.09	409	137	16	245	33
74.88	411	128	20	233	46
81.65	435	123	30	223	67
	1667 SHEET TOTAL			979	172



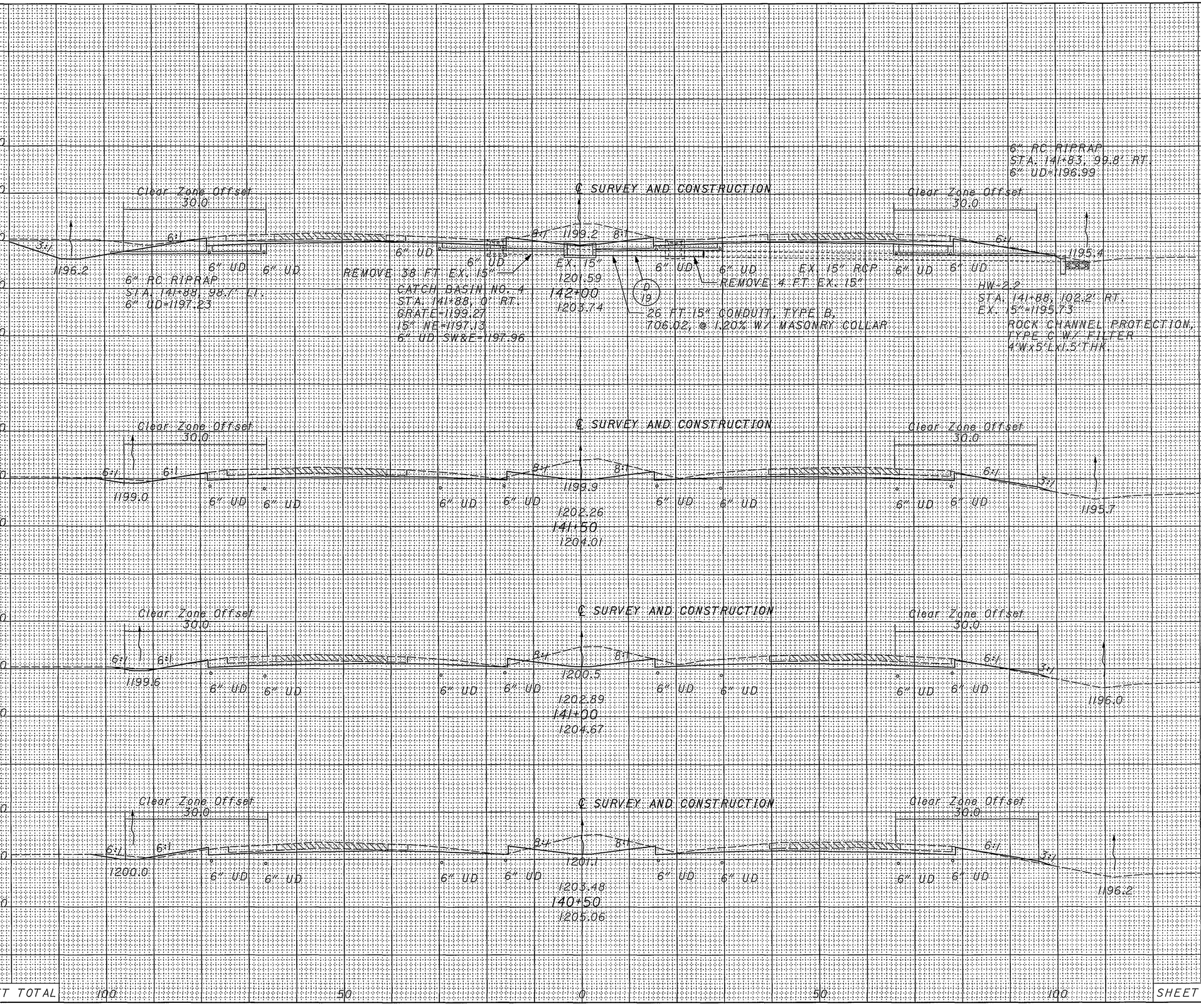
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 138+50.00 TO STA. 140+00.00

SUM-77-1.40

202
381

SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
		1220				
		1210				
		1200				
		1190				
107.32		1180	279	0		
	557	1210			417	6
		1200				
		1190				
63.68			172	6		
	475	1210			314	11
		1200				
		1190				
63.08			167	6		
	352	1210			292	16
		1200				
		1190				
74.18			148	12		
	381				288	22
	1765	SHEET TOTAL			1311	55



CALCULATED COY

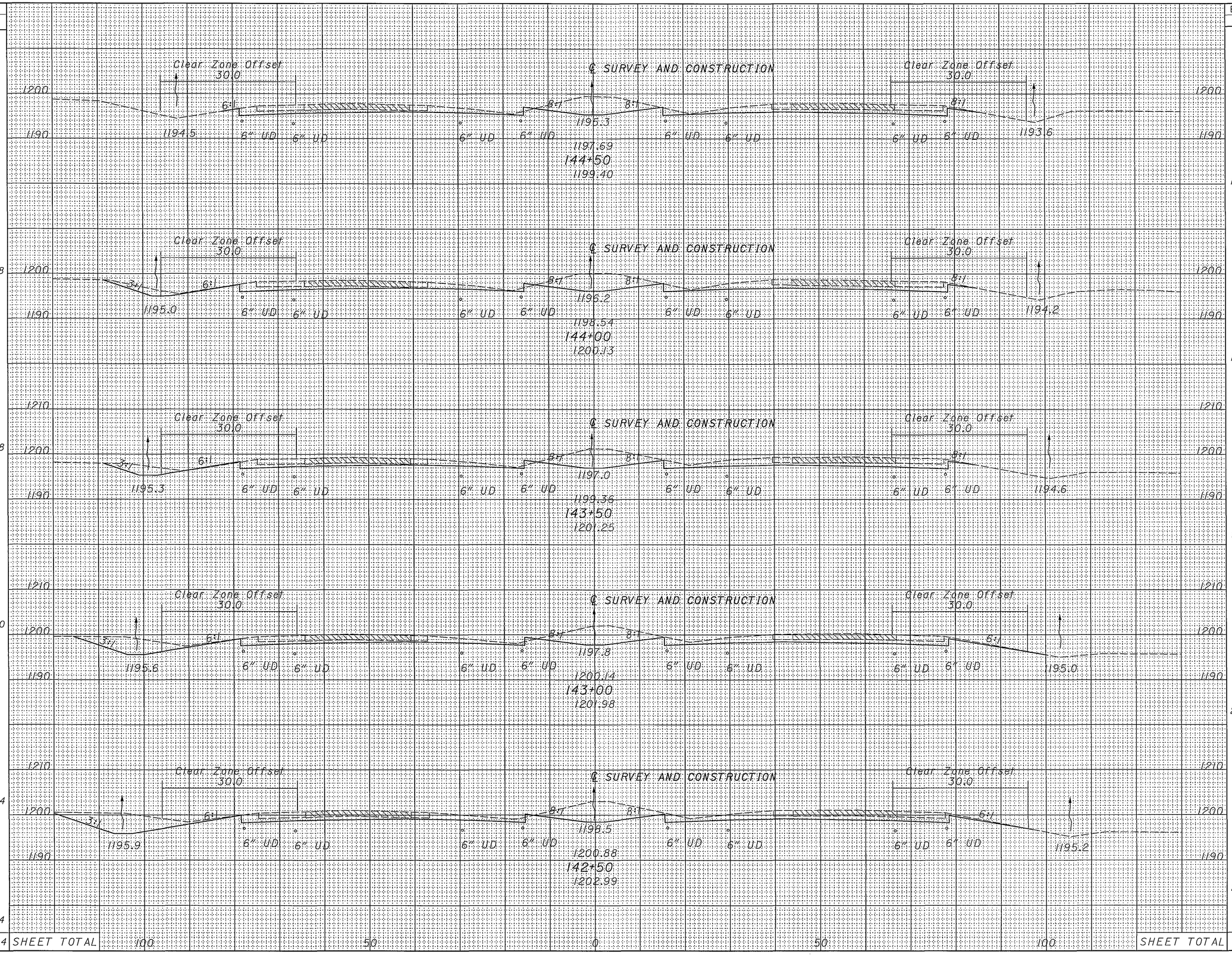
CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 140+50.00 TO STA. 142+00.00

SUM-77-1.40

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
42.20		174	1		
	238			336	2
68.56		189	1		
	308			355	4
68.25		194	3		
	380			394	4
91.50		232	1		
	444			467	2
93.34		272	1		
	514			510	1
	1884			2082	13



CALCULATED COY

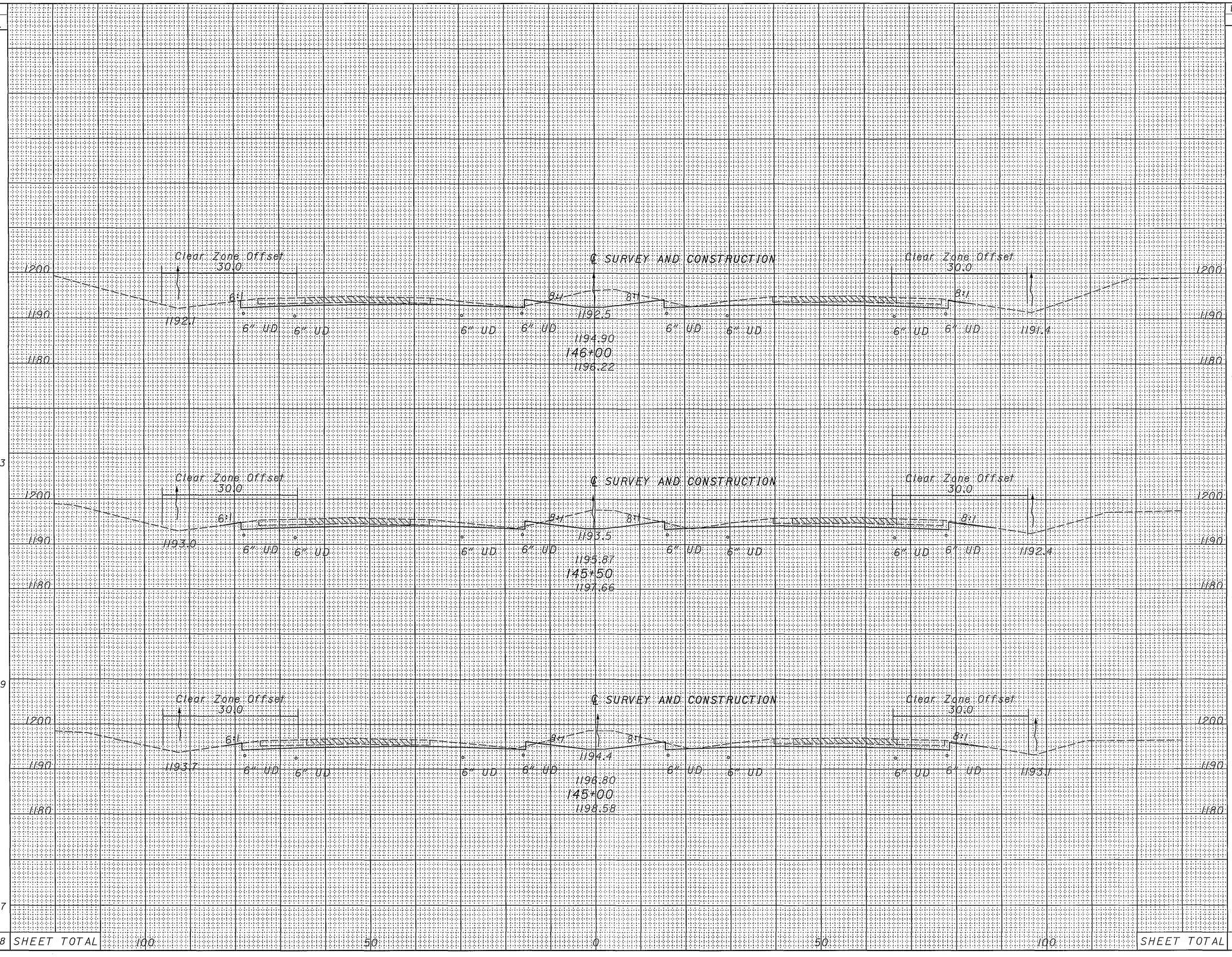
CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 142+50.00 TO STA. 144+50.00

SUM-77-1.40

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
36.92	223	147	3	280	5
45.47	229	156	2	294	4
43.31	247	162	2	311	3
	698			885	12



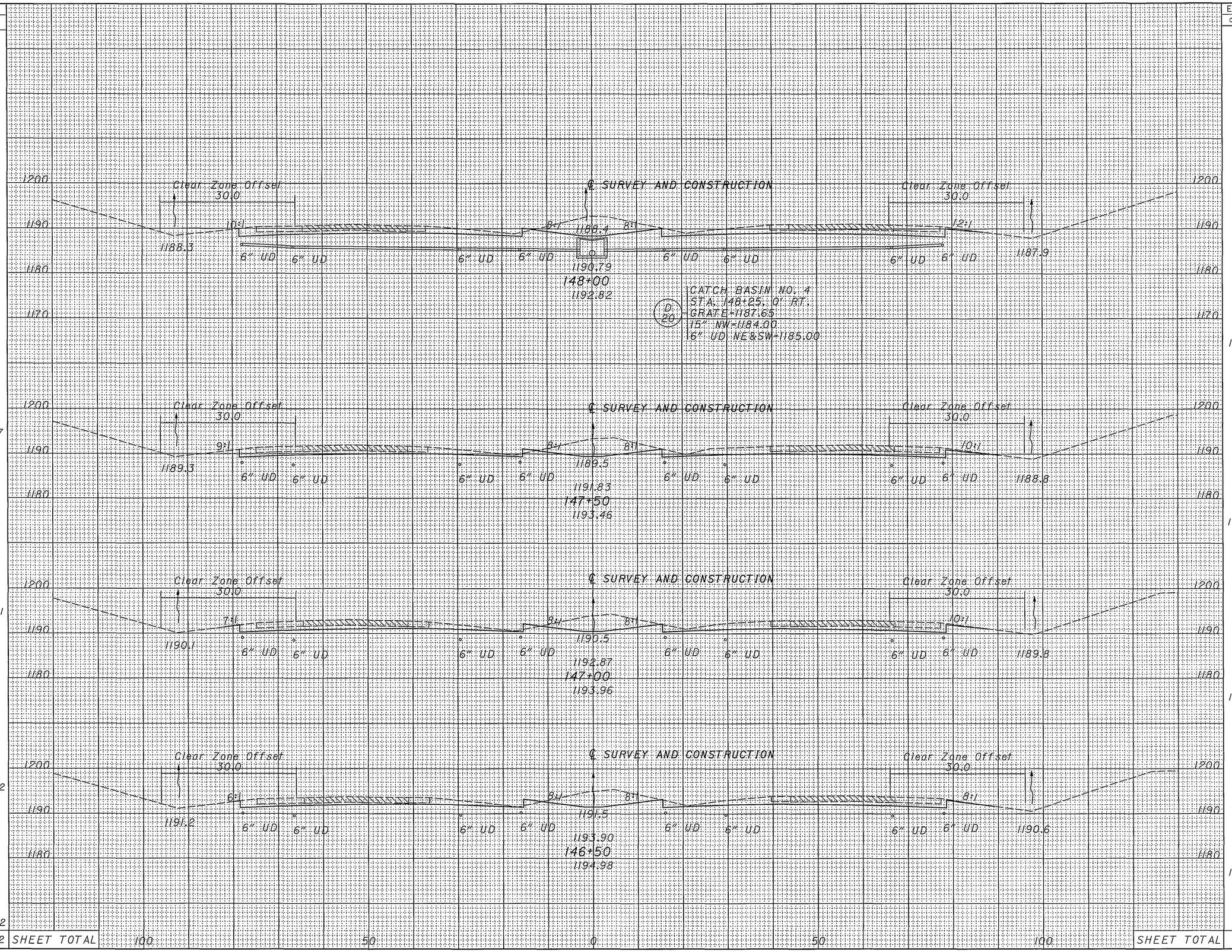
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 145+00.00 TO STA. 146+00.00

SUM-77-1.40

205
381

SEEDING	
END WIDTH	SQ. YDS.
39.67	
	247
43.29	
	231
43.90	
	242
43.33	
	242
	962



END AREA		VOLUME	
CUT	FILL	CUT	FILL
191	1		
		348	2
185	2		
		327	4
167	3		
		294	5
150	3		
		275	6
SHEET TOTAL		1244	17

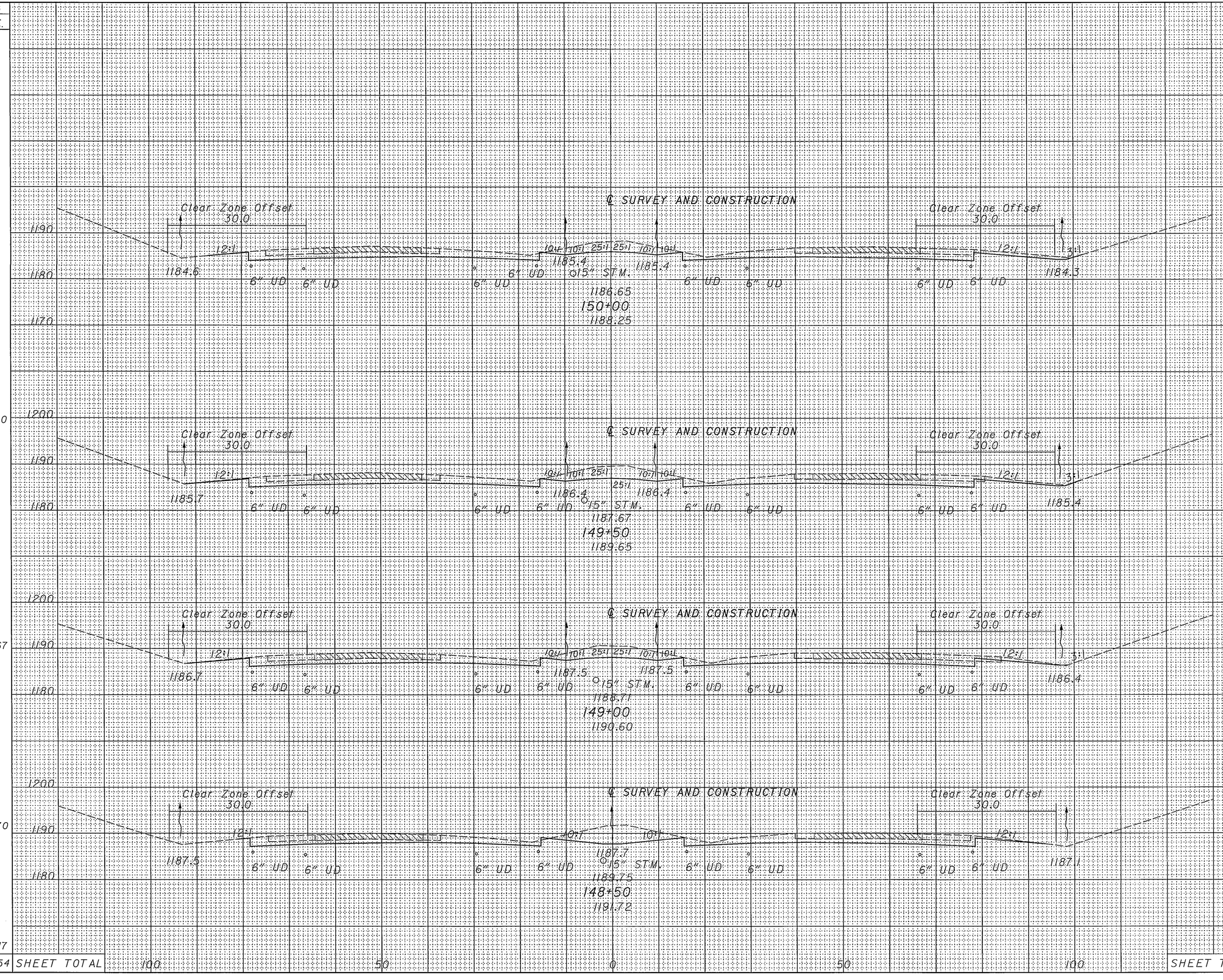
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 146+50.00 TO STA. 148+00.00

SUM-77-1.40

206
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
63.52	400	207	0	392	1
68.50	367	216	1	386	4
64.78	370	201	3	375	3
49.18	317	204	1	365	1
	1454 SHEET TOTAL			1518	9



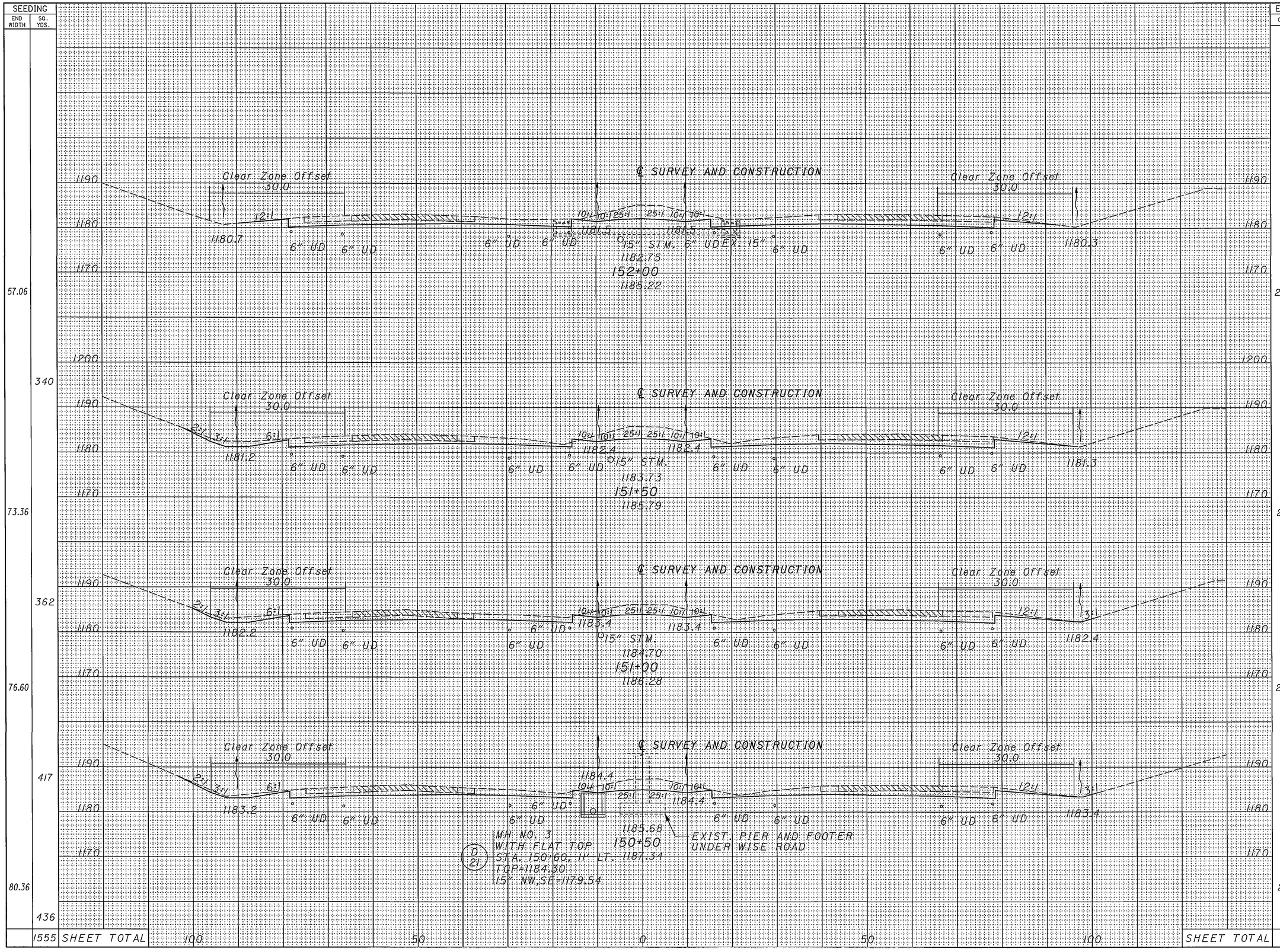
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 148+50.00 TO STA. 150+00.00

SUM-77-1.40

207
381

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
57.06	340	220	0	404	1
73.36		216	1		
	362			387	1
76.60		202	0		
	417			373	0
80.36		201	0		
	436			378	0
	1555 SHEET TOTAL			1542	2



CALCULATED COY

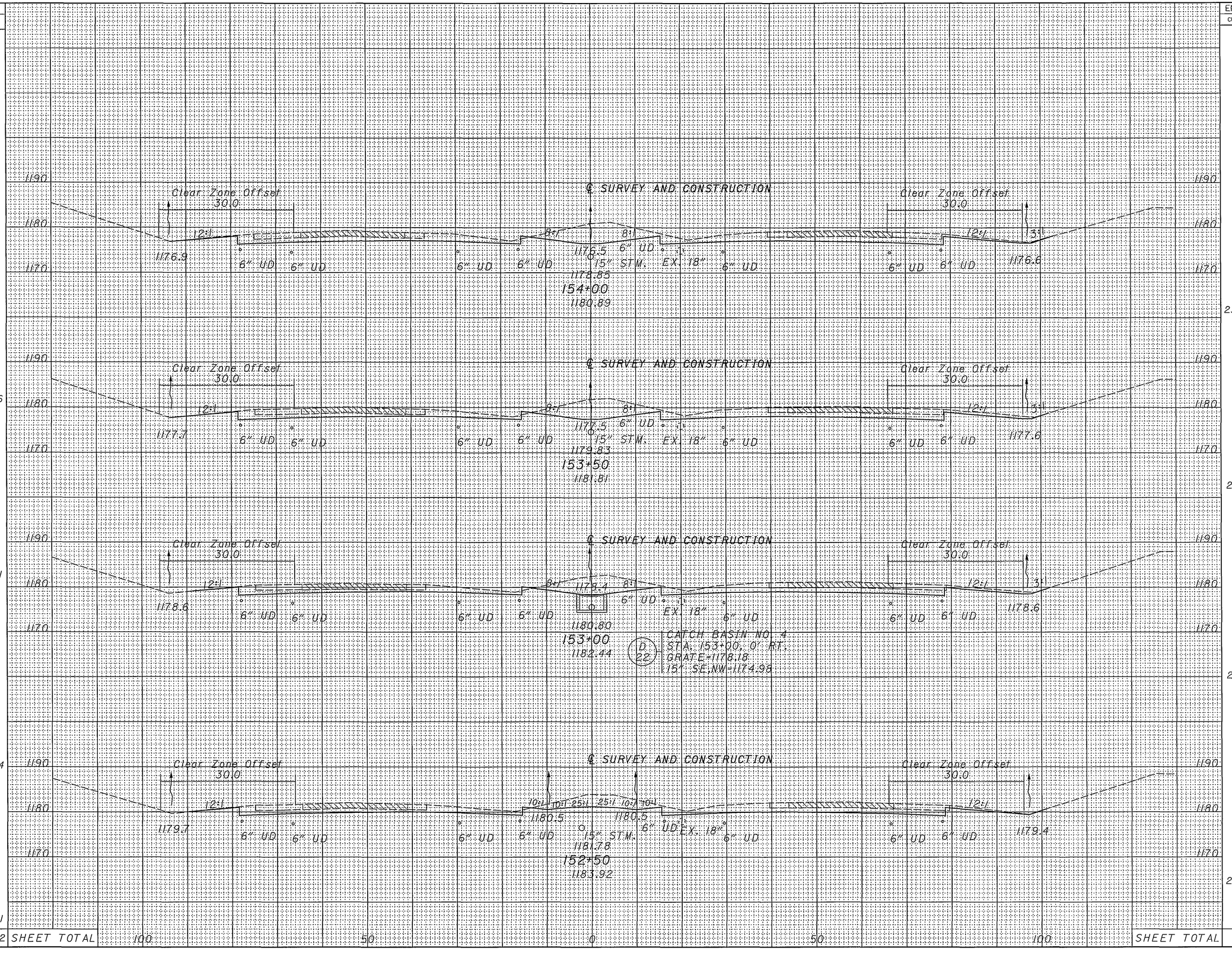
CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 150+50.00 TO STA. 152+00.00

SUM-77-1.40

SEEDING		END AREA		VOLUME		
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL	
						CALCULATED COY / CHECKED W.B.H.
70.95	366	233	1	421	1	
69.85	391	221	1	400	2	
64.60	374	210	1	379	2	
65.26	361	200	1	388	1	
	1492			1588	6	

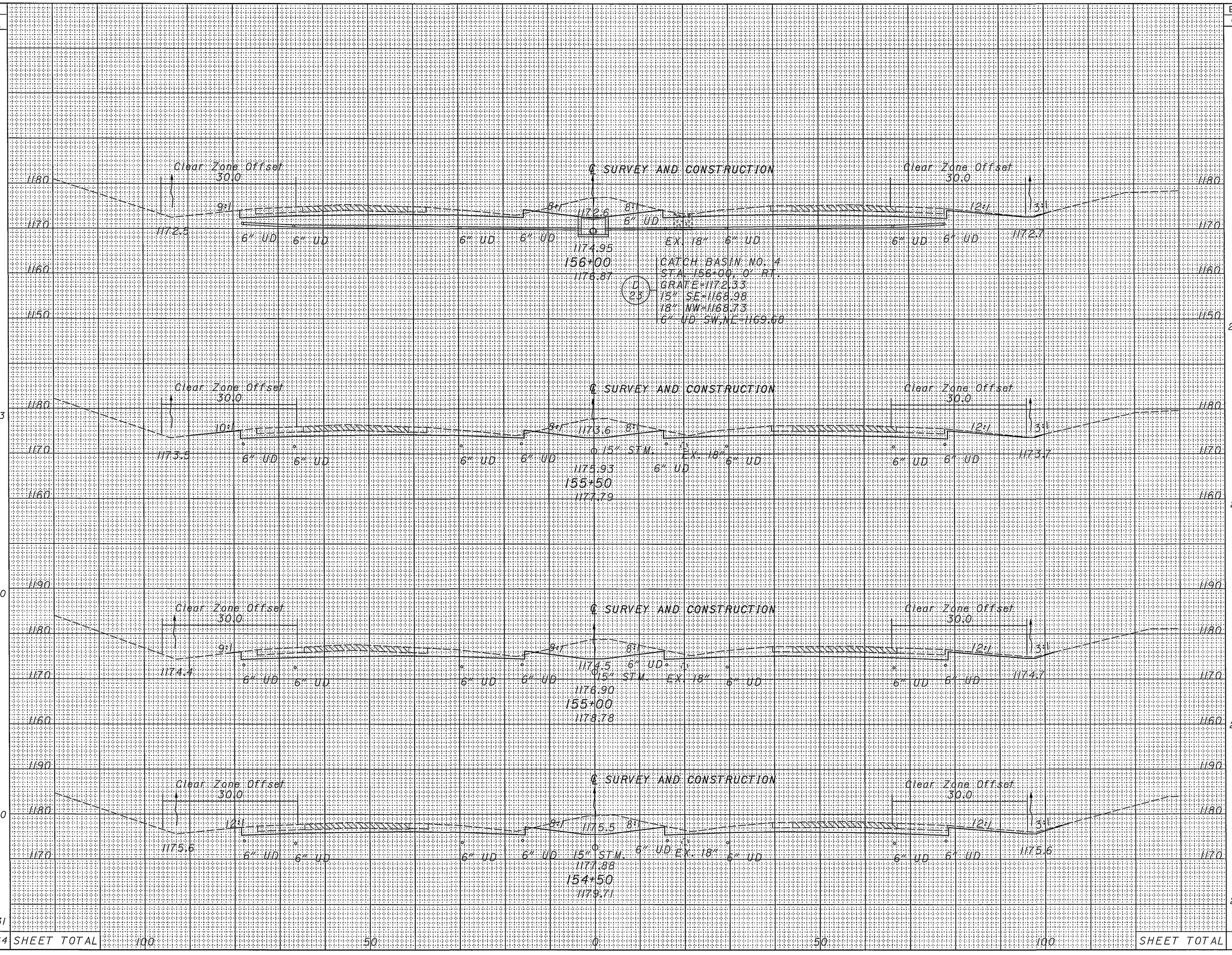


CROSS SECTIONS I-77
STA. 152+50.00 TO STA. 154+00.00

SUM-77-1.40

209
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
54.38	263	203	1	382	2
64.27	330	210	1	403	2
58.25	340	226	1	417	1
60.75	331	225	0	424	1
	1264			1626	6



SHEET TOTAL 100 50 0 50 100 SHEET TOTAL

CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 154+50.00 TO STA. 156+00.00

SUM-77-1.40

210
381

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
		1180					
		1170					
		1160					
63.30			221	2			
	342	1180			402	3	
		1170					
		1160					
50.84			213	1			
		1180					
	317	1170			395	2	
		1160					
41.36			213	1			
		1180					
	256	1170			389	2	
		1160					
40.38			207	1			
	227				380	2	
	1142	SHEET TOTAL			SHEET TOTAL	1566	9

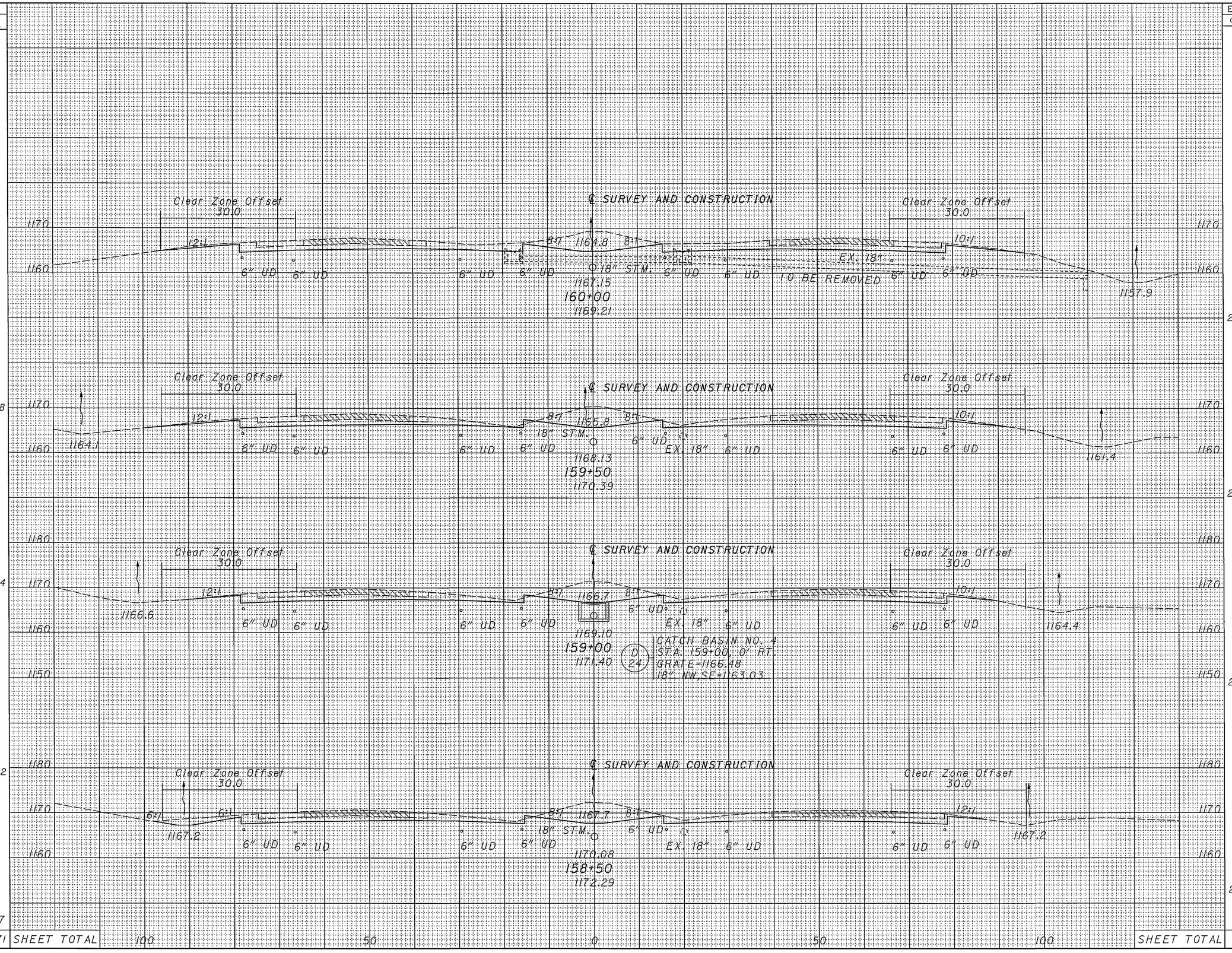
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 156+50.00 TO STA. 158+00.00

SUM-77-1.40

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
65.81		246	0		
	358			434	1
65.08		223	1		
	364			418	2
54.43		229	1		
	332			431	1
59.64		237	1		
	317			424	3
	1371 SHEET TOTAL			1707	7



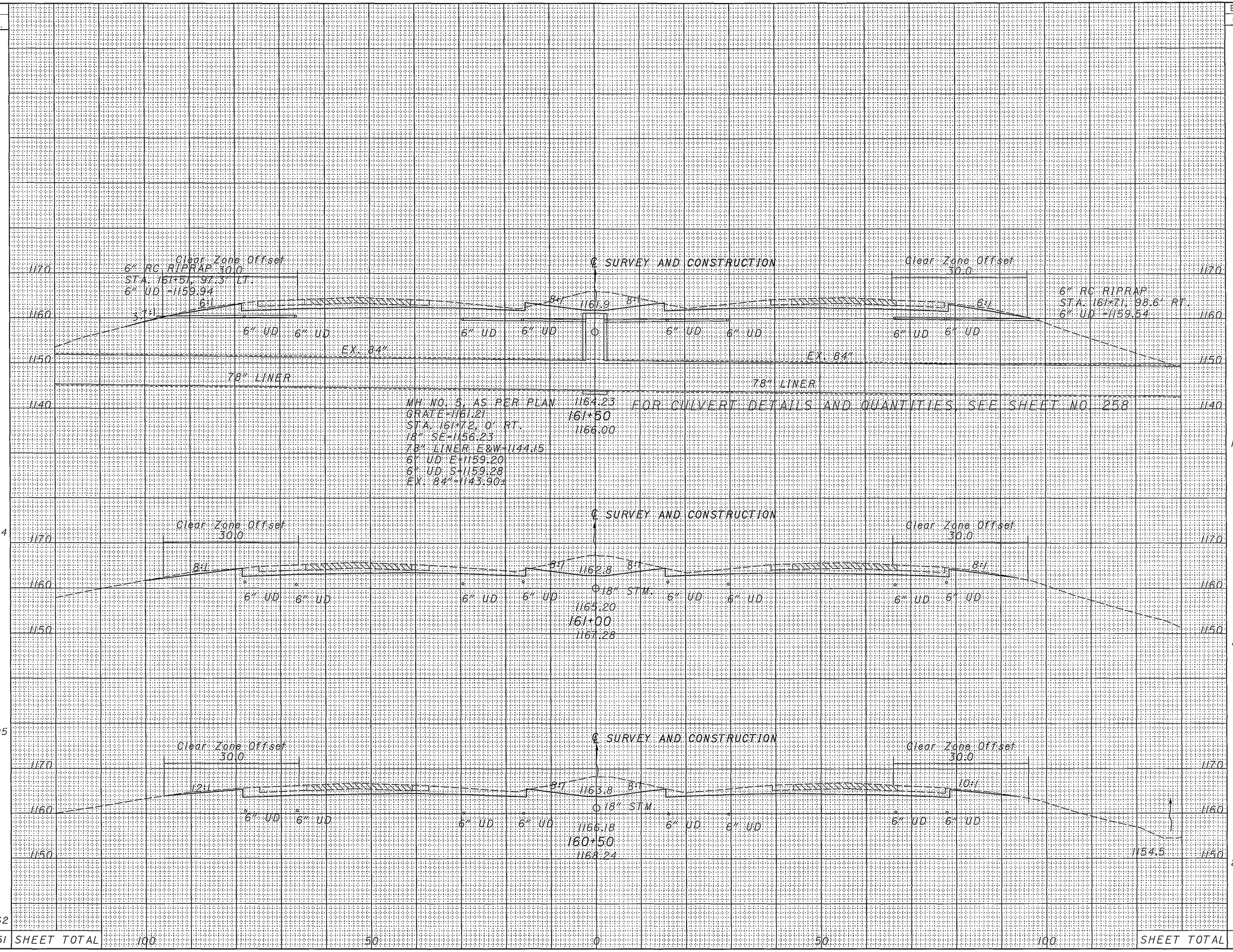
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 158+50.00 TO STA. 160+00.00

SUM-77-1.40

212
381

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
74.97			195	2			
	394				385	2	
67.28			221	0			
	395				416	0	
62.88			229	0			
	362				440	0	
	1151	SHEET TOTAL			1241	2	



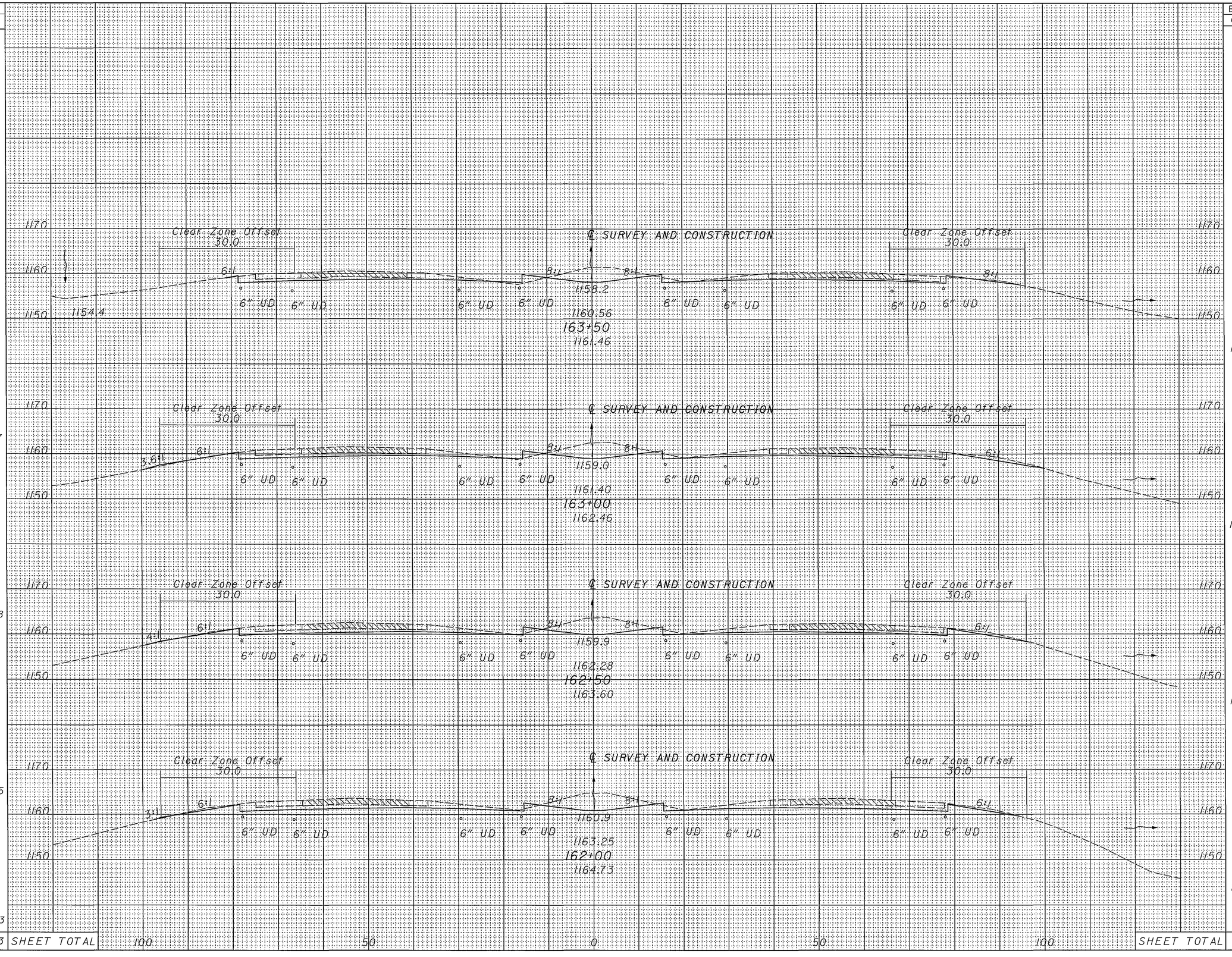
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 160+50.00 TO STA. 161+50.00

SUM-77-1.40

213
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
50.31	277	113	9	236	14
74.85	348	142	6	275	9
70.99	405	156	4	302	6
66.80	383	170	3	338	5
	1413 SHEET TOTAL			1151 SHEET TOTAL	34



CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 162+00.00 TO STA. 163+50.00

SUM-77-1.40

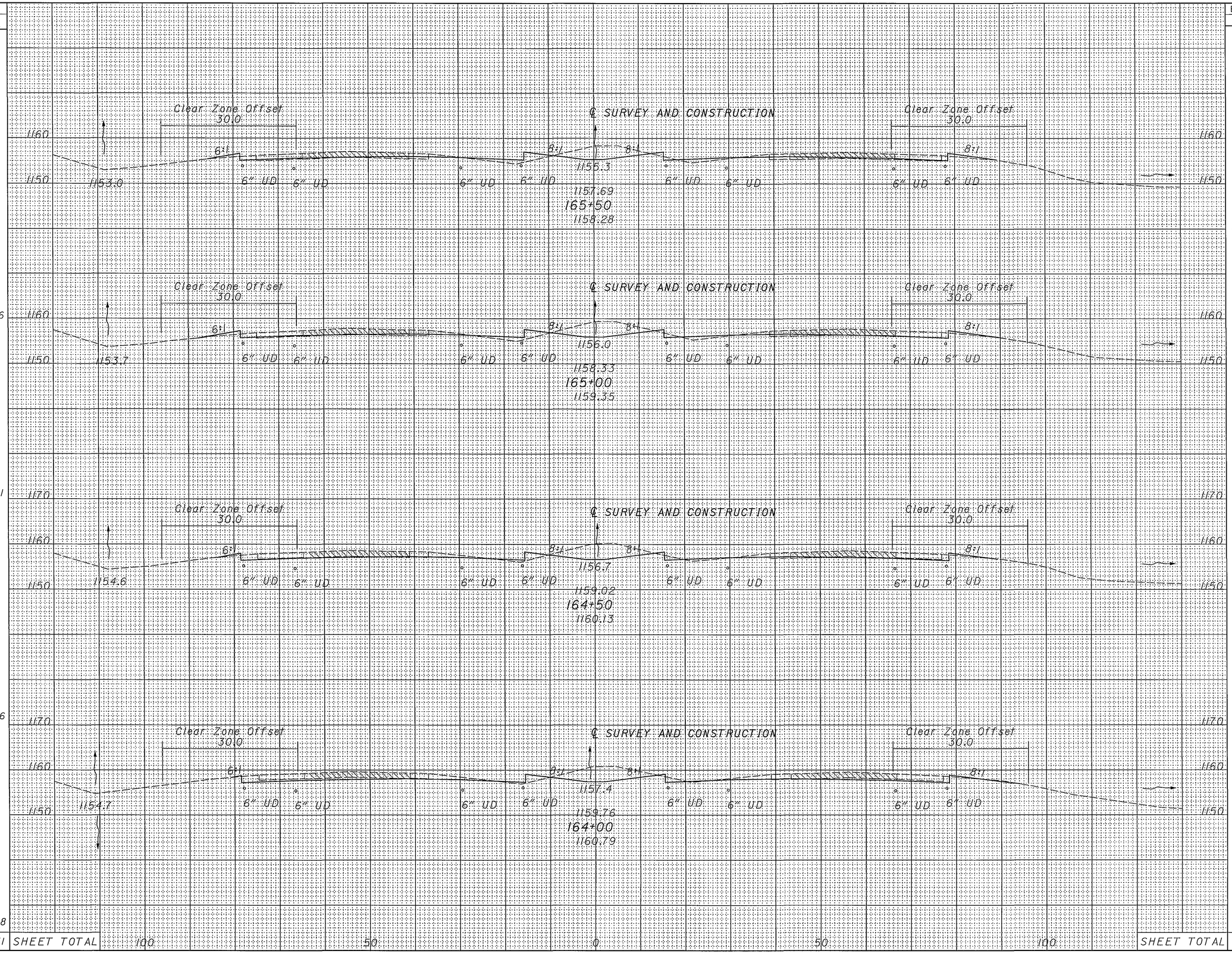
SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
49.22	286	50	47	103	75
51.96		61	34		
47.21	281	75	18	126	48
49.20	276	95	10	158	25
	268			193	17
	1131	SHEET TOTAL		580	165

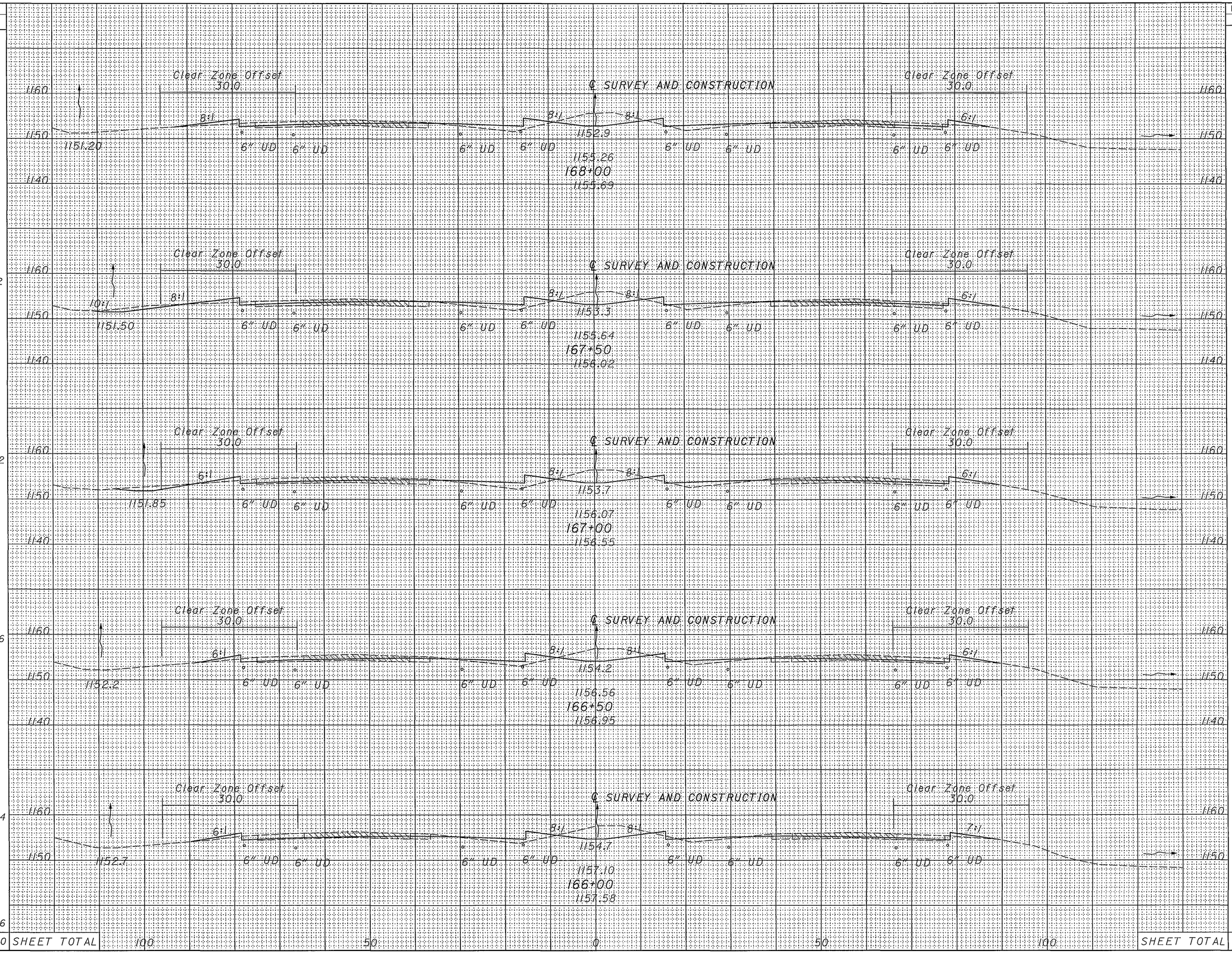
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 164+00.00 TO STA. 165+50.00

SUM-77-1.40

215
381



SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
						
55.05			40	96		
	312				81	190
75.42			47	108		
	362				89	186
70.71			49	93		
	406				84	157
53.09			41	76		
	344				80	128
53.46			46	63		
	296				89	101
	1720	SHEET TOTAL			423	762

100 50 0 50 100

CALCULATED COY

CHECKED W.B.H.

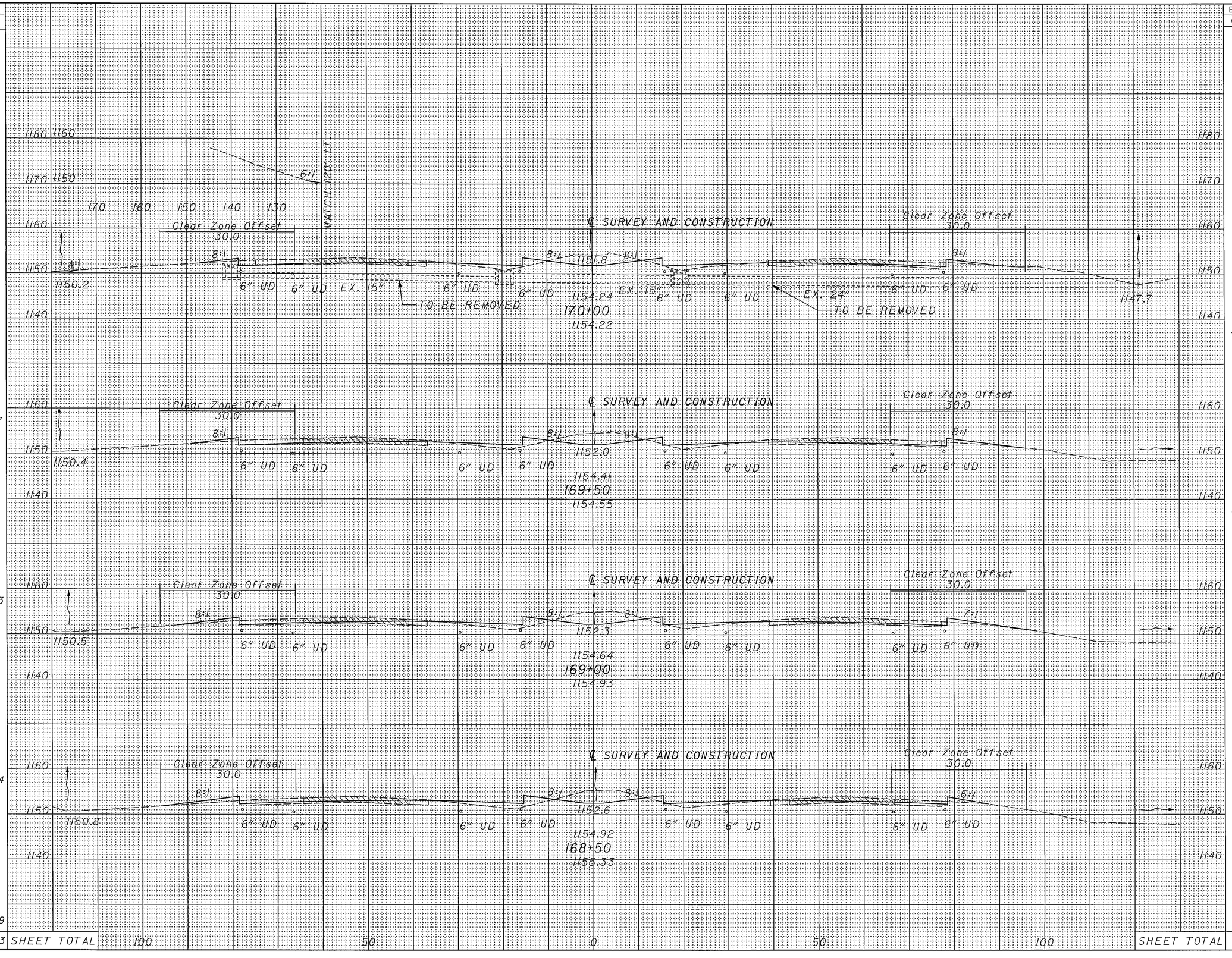
CROSS SECTIONS I-77

STA. 166+00.00 TO STA. 168+00.00

SUM-77-1.40

216
381

SEEDING END WIDTH	SEEDING SQ. YDS.
60.46	437
59.21	333
64.78	344
57.10	339
	1453



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
42	64		
		79	118
43	64		
		79	129
42	76		
		77	155
41	92		
		75	175
		310	577

SHEET TOTAL 100 50 0 50 100 SHEET TOTAL

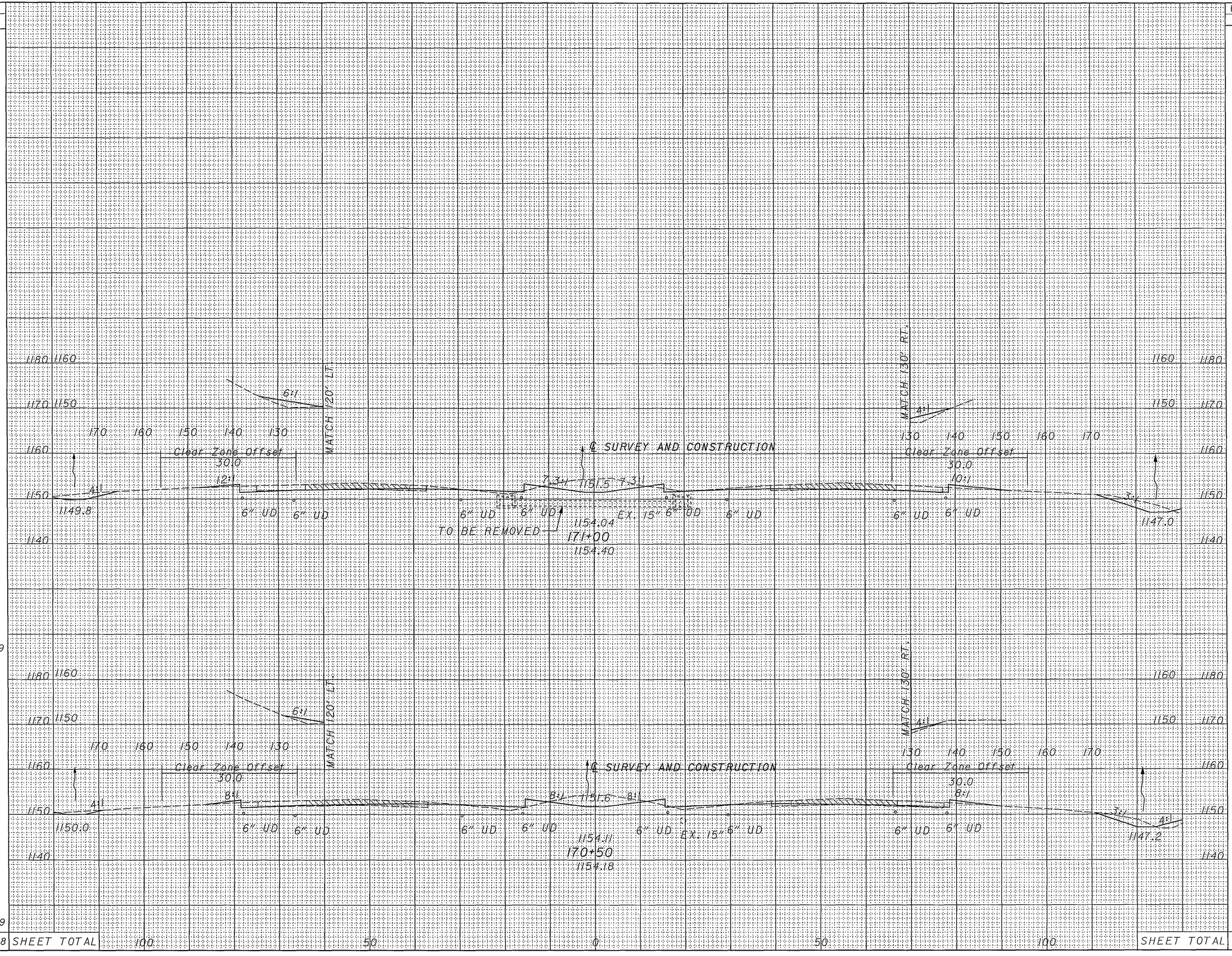
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 168+50.00 TO STA. 170+00.00

SUM-77-1.40

217
381

SEEDING	
END WIDTH	SQ. YDS.
111.20	689
97.02	579
	1268



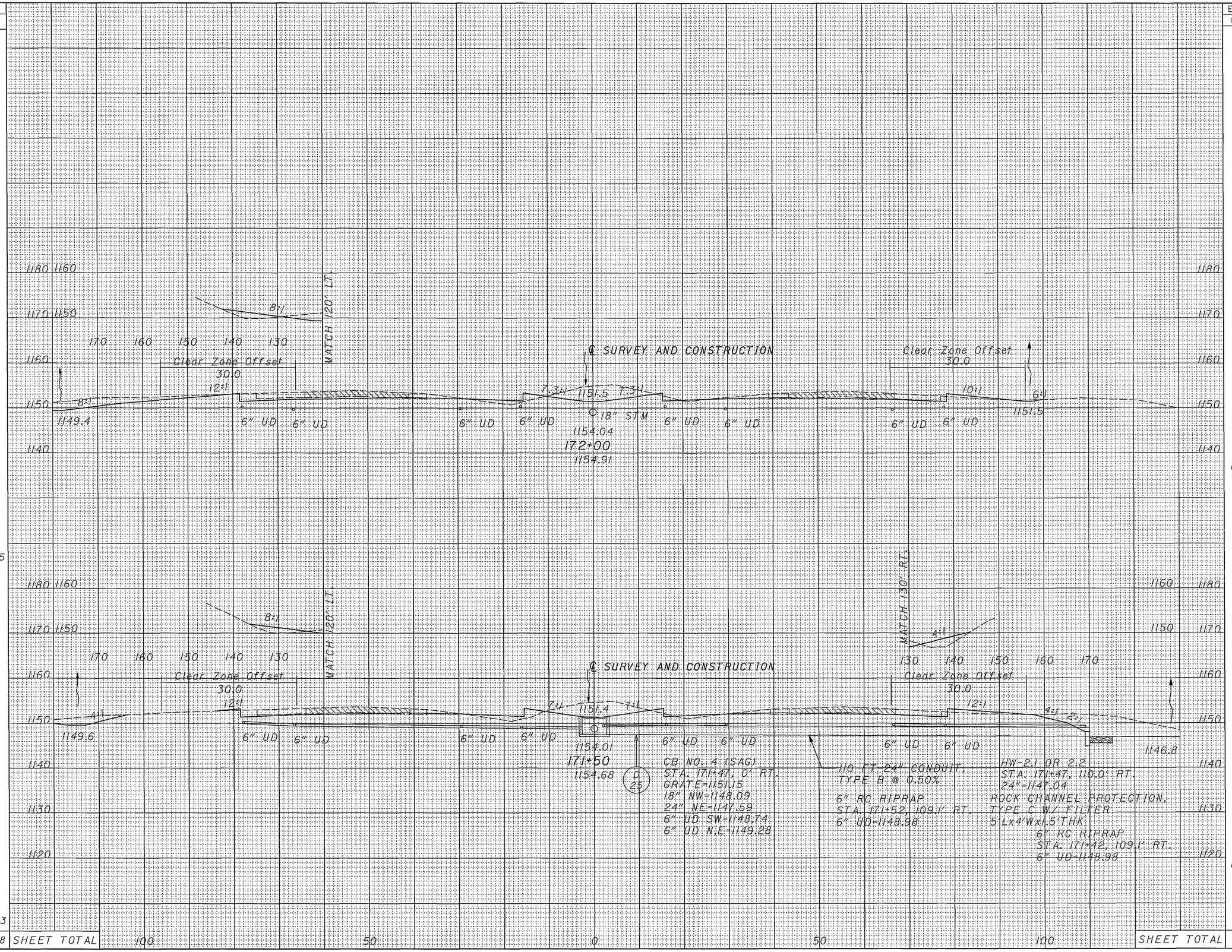
END AREA		VOLUME	
CUT	FILL	CUT	FILL
		94	41
		144	88
		61	54
		96	109
SHEET TOTAL		240	197

CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 170+50.00 TO STA. 171+00.00

SUM-77-1.40

SEEDING	
END WIDTH	SQ. YDS.
91.18	535
136.72	633
	1168



SHEET TOTAL	100	50	0	50	100	SHEET TOTAL

END AREA		VOLUME	
CUT	FILL	CUT	FILL
116	30		
		282	79
189	55		
		262	89
		544	168

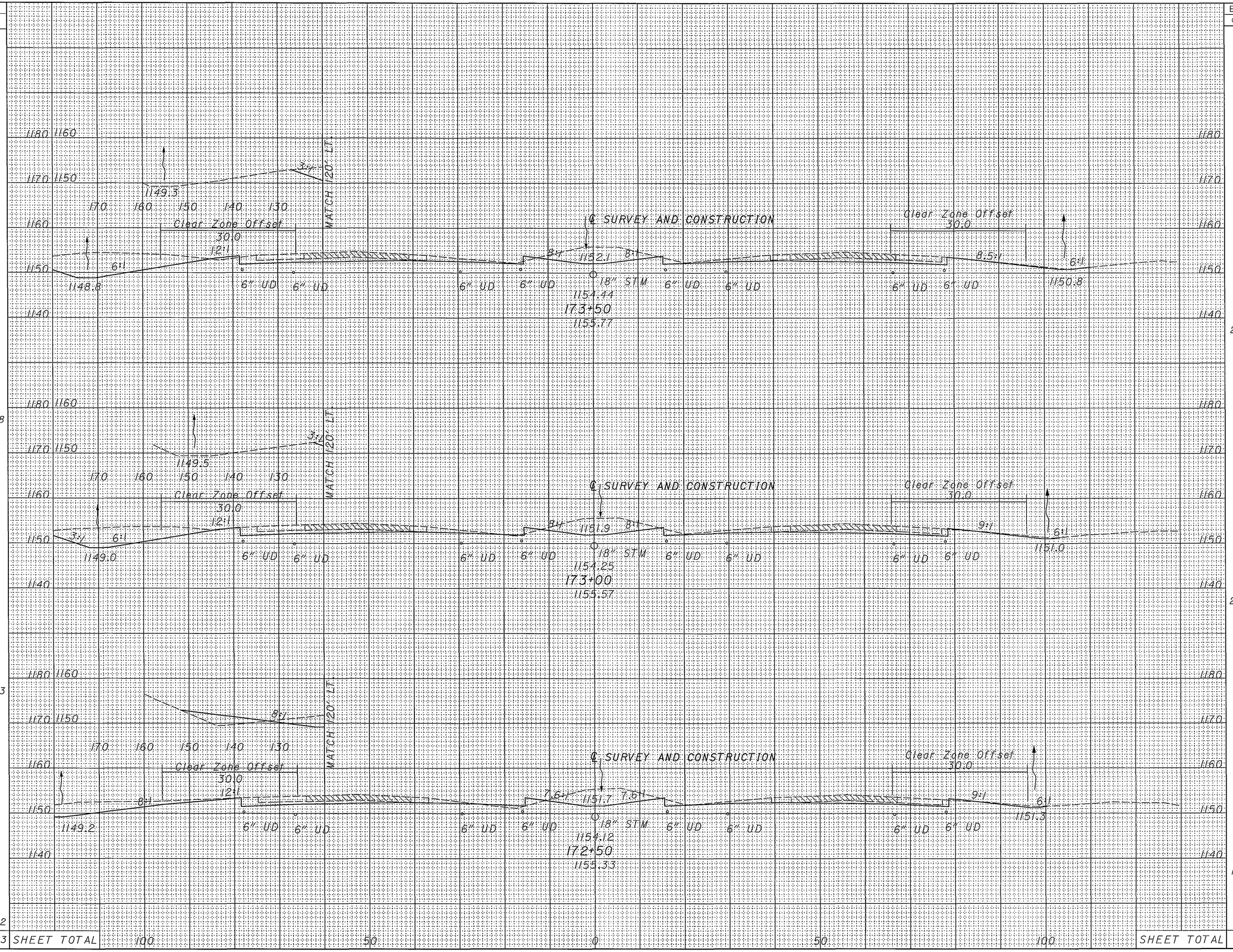
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 171+50.00 TO STA. 172+00.00

SUM-77-1.40

219
381

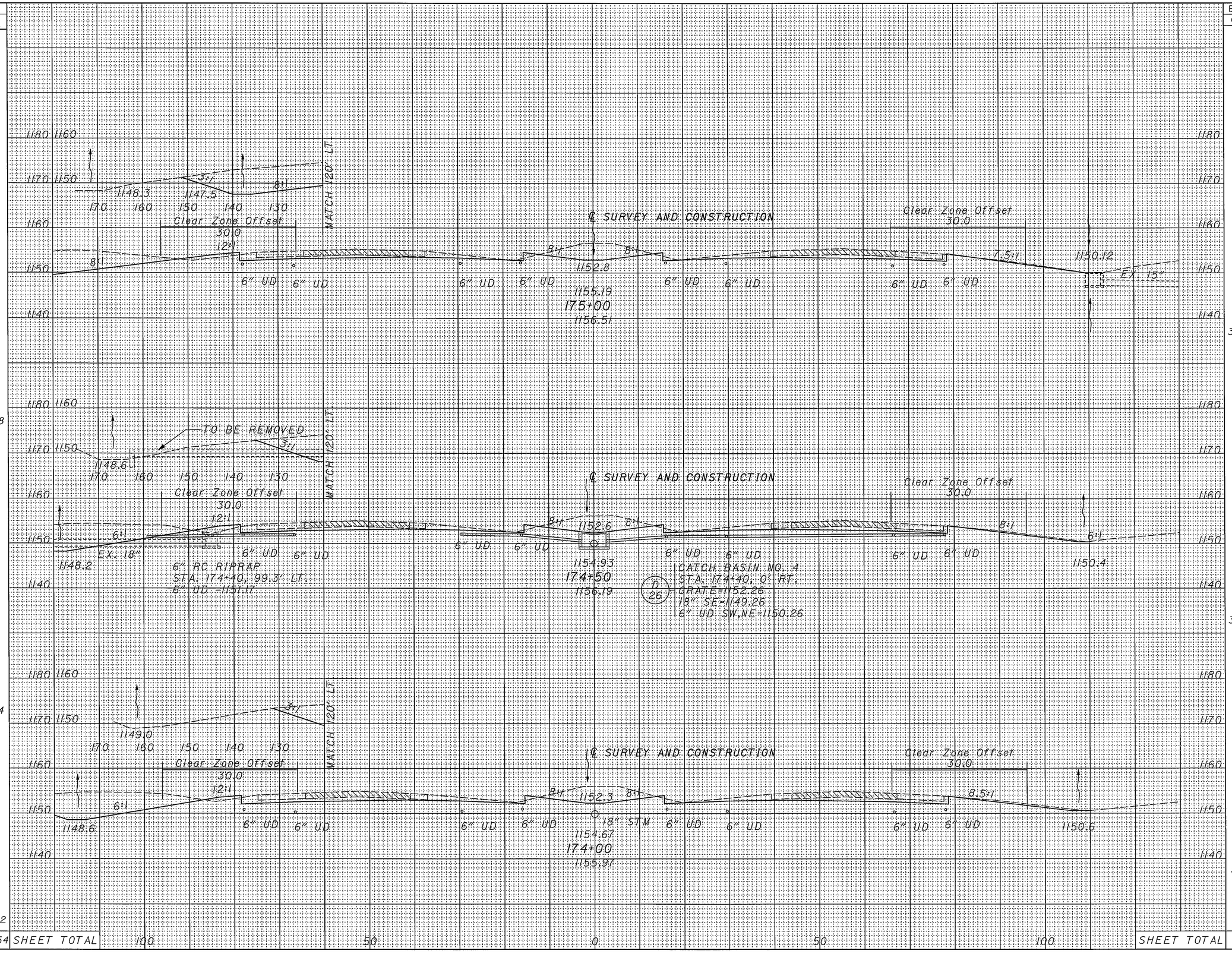
SEEDING		END AREA		VOLUME		CALCULATED COY	CHECKED W.B.H.
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL		
112.69	638	281	5	483	8		
100.92	593	240	4	374	35		
101.38	562	163	33	259	59		
	1793 SHEET TOTAL			1116	102		



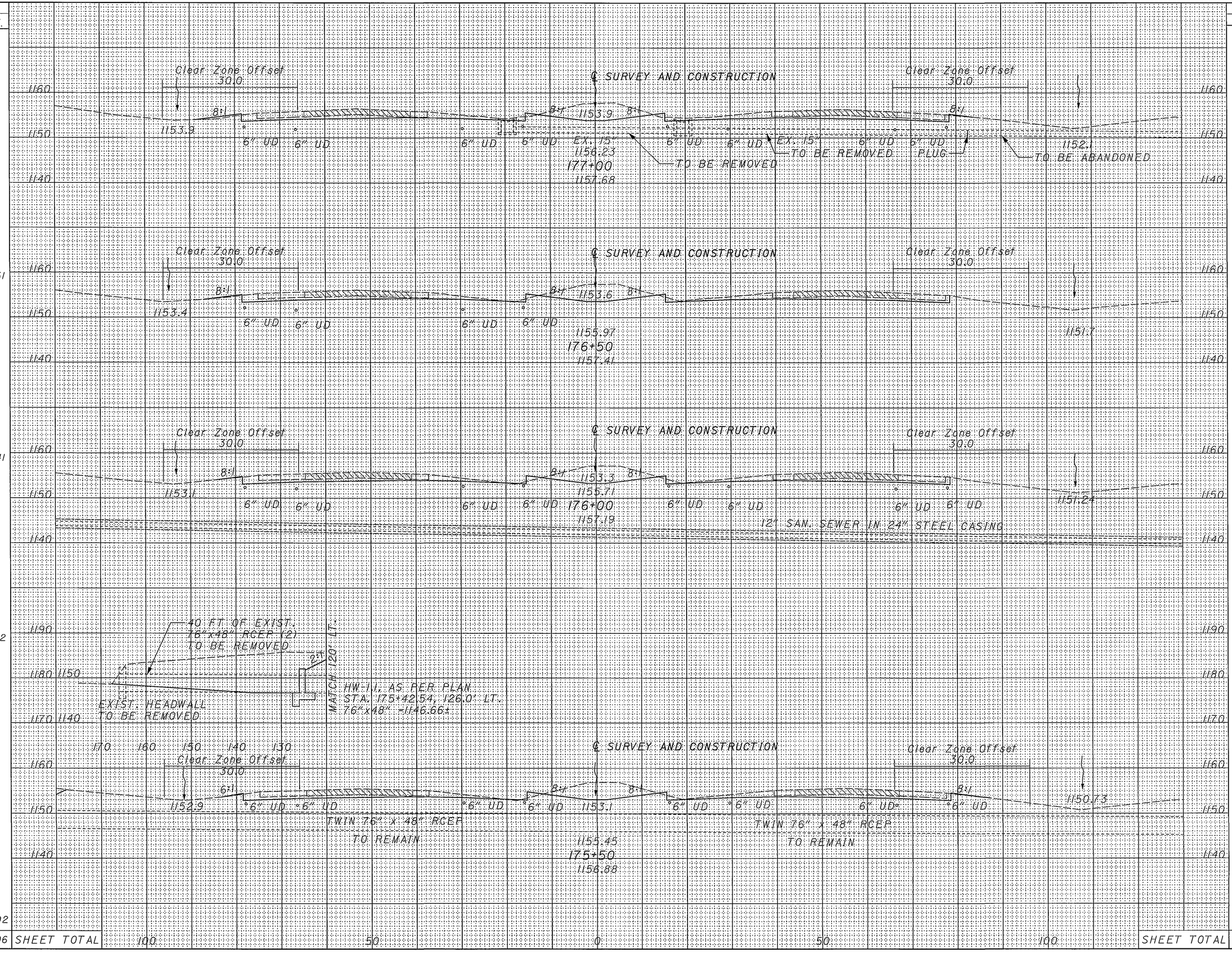
SUM-77-1.40

CROSS SECTIONS I-77
STA. 172+50.00 TO STA. 173+50.00

SEEDING		END AREA		VOLUME		
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL	
						CALCULATED COY / CHECKED W.B.H.
135.82		357	12			CROSS SECTIONS I-77
	678			613	22	STA. 174+00.00 TO STA. 175+00.00
121.23		305	12			
	714			570	18	
116.94		310	7			
	662			548	11	SUM-77-1.40
	2054 SHEET TOTAL		SHEET TOTAL	1731	51	22 / 38



SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
46.87	251		142	6	257	9
39.78			136	3		
	241				248	6
36.52			132	3		
	212				527	7
108.28			437	4		
	402				735	15
	1106	SHEET TOTAL			1767	37



CALCULATED COY

CHECKED W.B.H.

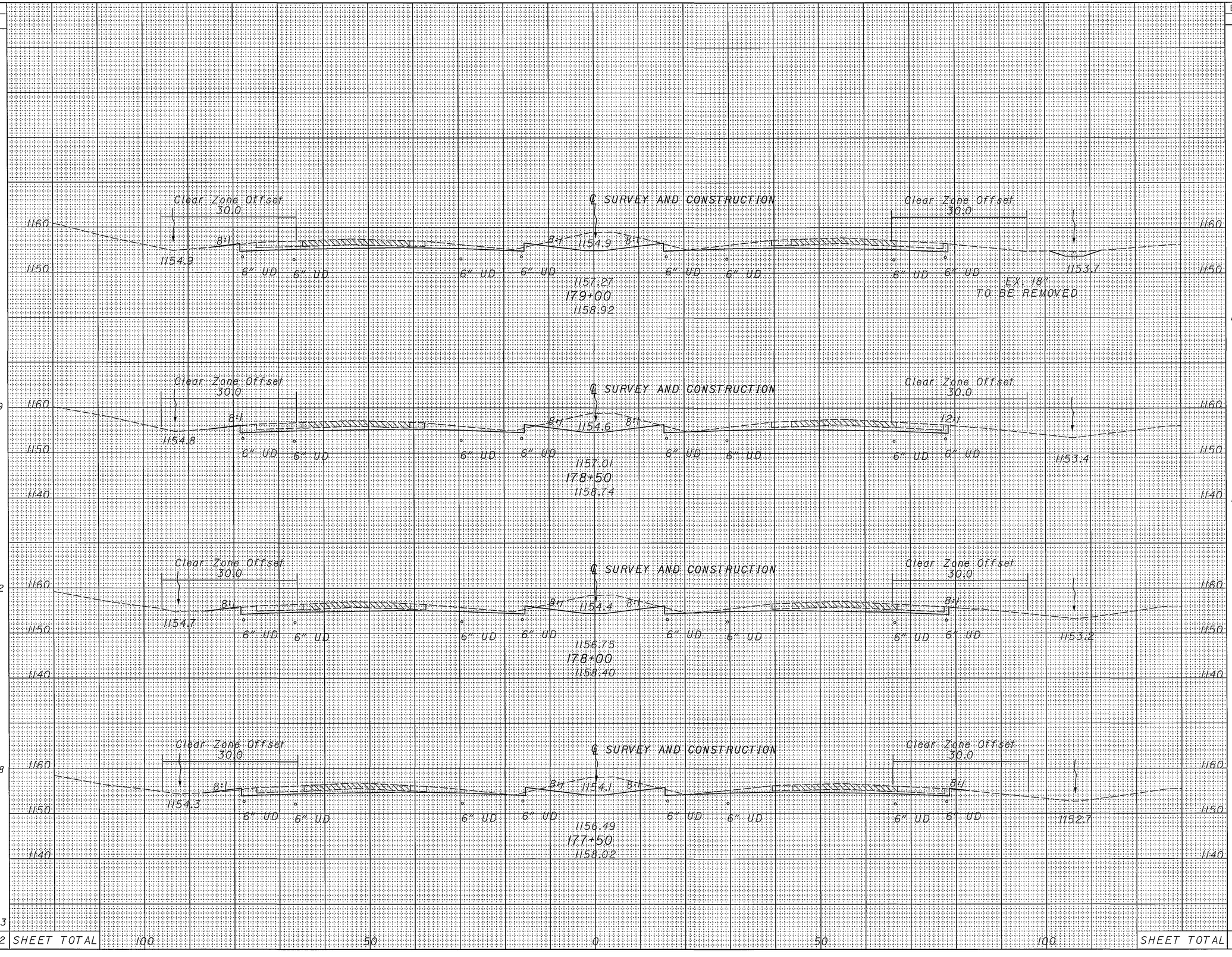
CROSS SECTIONS I-77

STA. 175+50.00 TO STA. 177+00.00

SUM-77-1.40

222
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
37.97	219	165	2	304	3
38.25	212	163	2	295	3
40.17	218	155	2	274	5
43.60	233	141	4	262	9
	882 SHEET TOTAL			1135	20



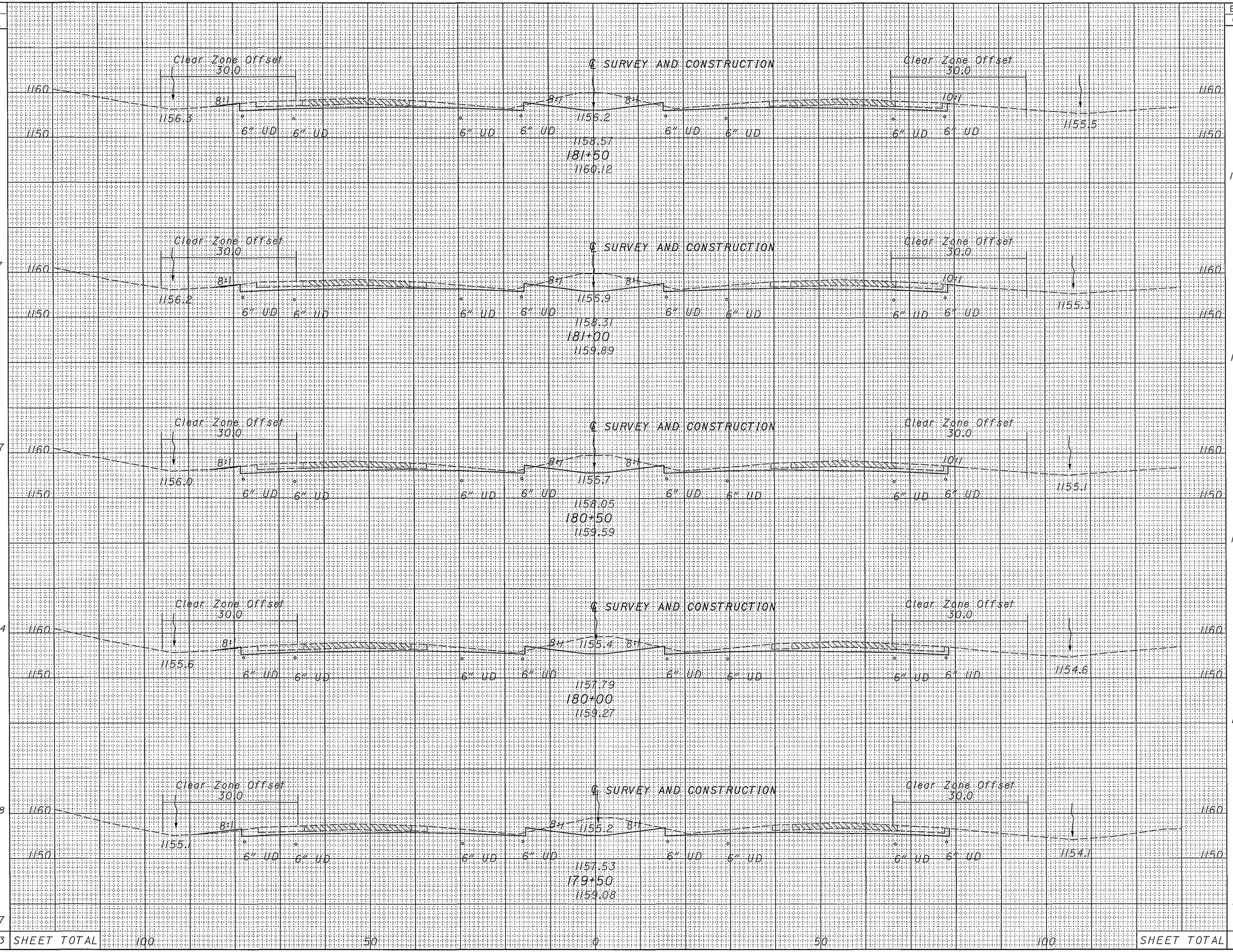
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 177+50.00 TO STA. 179+00.00

SUM-77-1.40

223
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
38.73	217	152	2	286	4
43.09	227	157	2	293	4
41.14	234	160	2	295	4
37.37	218	159	2	299	6
40.86	217	164	4	305	5
	1113 SHEET TOTAL			1478	23



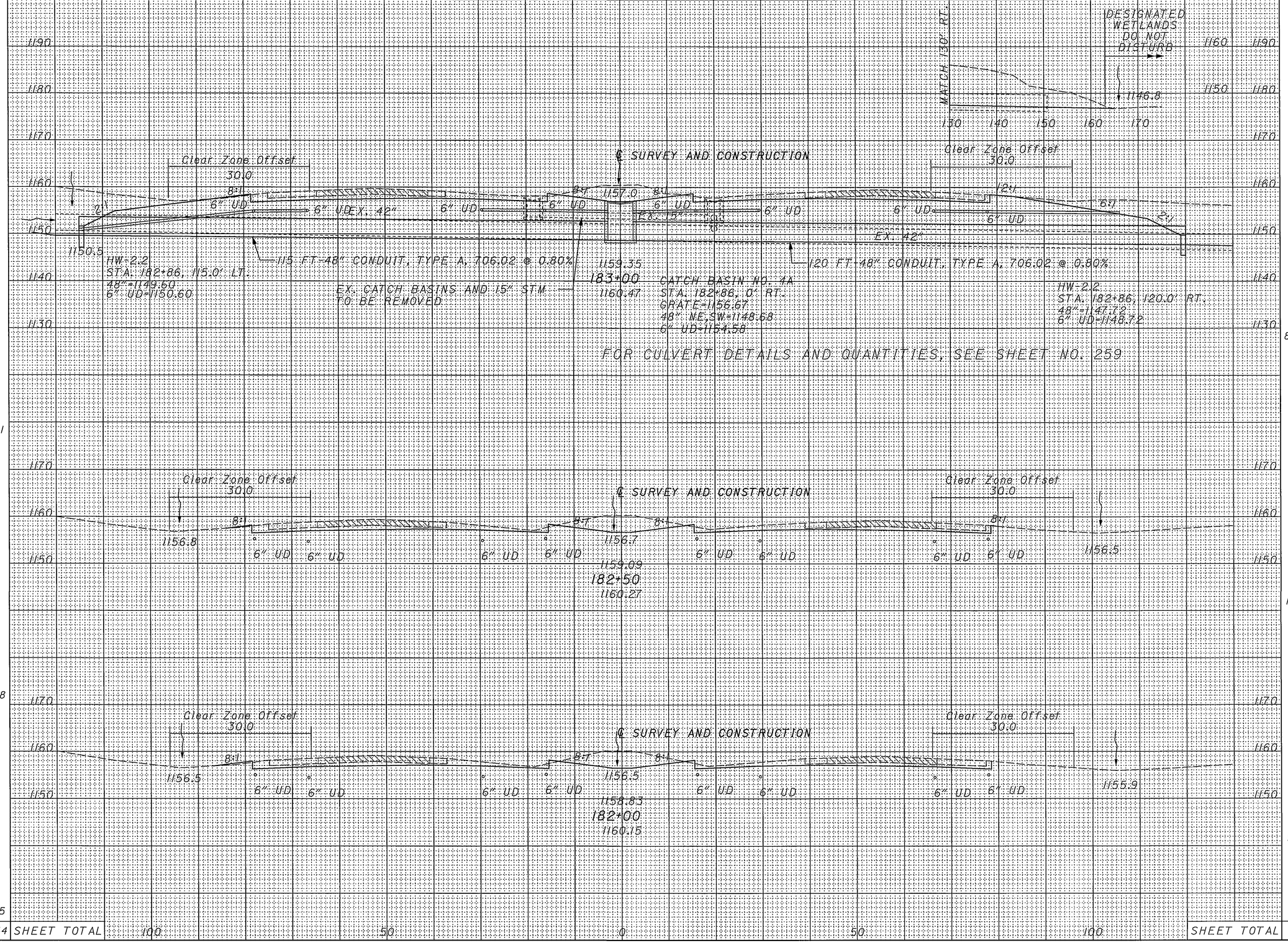
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 179+50.00 TO STA. 181+50.00

SUM-77-1.40

224
381

SEEDING						END AREA		VOLUME	
END WIDTH	SQ. YDS.					CUT	FILL	CUT	FILL
		1190							
		1180							
		1170							
		1160							
		1150							
		1140							
206.13		1130				800	3		
	851	1170						885	4
37.81		1160				155	2		
		1150							
	678	1170						280	5
39.55		1160				147	3		
		1150							
	215	1170						277	5
	1744	SHEET TOTAL	100	50	0	50	100	SHEET TOTAL	1442	19



CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 182+00.00 TO STA. 183+00.00

SUM-77-1.40

225
381

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
		1170 1160 1150 Clear Zone Offset 30.0 4:1 8:1 12:1 1157.6 6" UD 6" UD 6" UD 6" UD ℄ SURVEY AND CONSTRUCTION 8:1 8:1 1158.0 6" UD 6" UD 6" UD 6" UD Clear Zone Offset 30.0 6:1 1160.39 185+00 1159.68					
69.50			149	10			
	352	1170 1160 1150 Clear Zone Offset 30.0 4:1 8:1 12:1 1157.3 6" UD 6" UD 6" UD 6" UD ℄ SURVEY AND CONSTRUCTION 8:1 8:1 1157.8 6" UD 6" UD 6" UD 6" UD Clear Zone Offset 30.0 8:1 1160.13 184+50 1161.28			277	12	
69.70			150	4			
	387	1170 1160 1150 Clear Zone Offset 30.0 4:1 8:1 12:1 1156.8 6" UD 6" UD 6" UD 6" UD ℄ SURVEY AND CONSTRUCTION 8:1 8:1 1157.5 6" UD 6" UD 6" UD 6" UD Clear Zone Offset 30.0 8:1 1159.87 184+00 1161.07			290	9	
76.74			164	6			
	407	1190 1160 1180 1150 1170 1160 1150 3:1 MATCH H 120' LT. 170 160 150 140 130 Clear Zone Offset 30.0 6:1 12:1 1154.0 6" UD 6" UD 6" UD 6" UD ℄ SURVEY AND CONSTRUCTION 8:1 8:1 1157.2 6" UD 6" UD 6" UD 6" UD Clear Zone Offset 30.0 8:1 1159.61 183+50 1160.75			416	9	
100.09			285	4			
	491				1005	6	
	1637	SHEET TOTAL 100 50 0 50 100		SHEET TOTAL		1988	36

CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 183+50.00 TO STA. 185+00.00

SUM-77-1.40

226
381

SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
		1170				
		1160				
		1150				
42.53		Clear Zone Offset 30.0 — 12:1 — 6" UD 6" UD — 6" UD 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 — 8:1 — 1159.1 — 1161.43 — 187+00 — 1162.46 — 6" UD 6" UD — 6" UD 6" UD — Clear Zone Offset 30.0 — 10:1	129	4		
	242	1170			234	7
		1160				
		1150				
43.81		Clear Zone Offset 30.0 — 12:1 — 6" UD 6" UD — 6" UD 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 — 8:1 — 1158.8 — 1161.17 — 186+50 — 1162.13 — 6" UD 6" UD — 6" UD 6" UD — Clear Zone Offset 30.0 — 10:1	125	4		
		1170				
	240	1160			235	7
		1150				
40.59		Clear Zone Offset 30.0 — 12:1 — 6" UD 6" UD — 6" UD 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 — 8:1 — 1158.5 — 1160.91 — 186+00 — 1162.16 — 6" UD 6" UD — 6" UD 6" UD — Clear Zone Offset 30.0 — 8:1	129	3		
		1170				
	235	1160			262	6
		1150				
57.25		4:1 — 8:1 — Clear Zone Offset 30.0 — 12:1 — 1157.9 — 6" UD 6" UD — 6" UD 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 — 8:1 — 1158.3 — 1160.65 — 185+50 — 1161.99 — 6" UD 6" UD — 6" UD 6" UD — Clear Zone Offset 30.0 — 8:1	154	3		
	272				280	12
	989	SHEET TOTAL			1011	32

100 50 0 50 100

SHEET TOTAL

CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 185+50.00 TO STA. 187+00.00

SUM-77-1.40

227
381

SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
63.79	278	6" RC RIPRAP STA. 188+92, 110.5' RT. 6" UD=1157.61 Clear Zone Offset 30.0 ℄ SURVEY AND CONSTRUCTION Clear Zone Offset 30.0 12:1 10:1 8:1 8:1 12:1 1159.4 1160.1 1155.1 6" UD 6" UD 6" UD 6" UD 6" UD 6" UD 6" UD EX. 15" 6" UD EX. 18" 1162.47 189+00 1163.71 CATCH BASIN NO. 4 STA. 188+87, 0' RT. GRATE=1159.79 15" NE=1156.50 6" UD SE&N=1157.53 D 27 115 FT-15" CONDUIT, TYPE B @ 1.20% HW-2.1 OR 2.2 STA. 188+87 115.0' RT. 15"=1155.12 ROCK CHANNEL PROTECTION TYPE C W/ FILTER 6'Lx4'Wx1.5'THK = 1.33 C.Y.		137	15		
58.39		Clear Zone Offset 30.0 ℄ SURVEY AND CONSTRUCTION Clear Zone Offset 30.0 10:1 8:1 8:1 12:1 4:1 1158.4 1159.8 1154.8 6" UD 6" UD 6" UD 6" UD 6" UD 6" UD 6" UD 6" UD 1162.21 188+50 1163.37		175	1	288	15
36.52	339	Clear Zone Offset 30.0 ℄ SURVEY AND CONSTRUCTION Clear Zone Offset 30.0 10:1 8:1 8:1 12:1 1157.8 1159.6 6" UD 6" UD 6" UD 6" UD 6" UD 6" UD 6" UD 6" UD 1161.95 188+00 1163.04		137	3	289	4
44.49	264	Clear Zone Offset 30.0 ℄ SURVEY AND CONSTRUCTION Clear Zone Offset 30.0 12:1 8:1 8:1 10:1 1157.1 1159.3 6" UD 6" UD 6" UD 6" UD 6" UD 6" UD 6" UD 6" UD 1161.69 187+50 1162.72		120	5	239	8
	225				231	8
	1106	SHEET TOTAL 100 50 0 50 100			SHEET TOTAL 1047	35

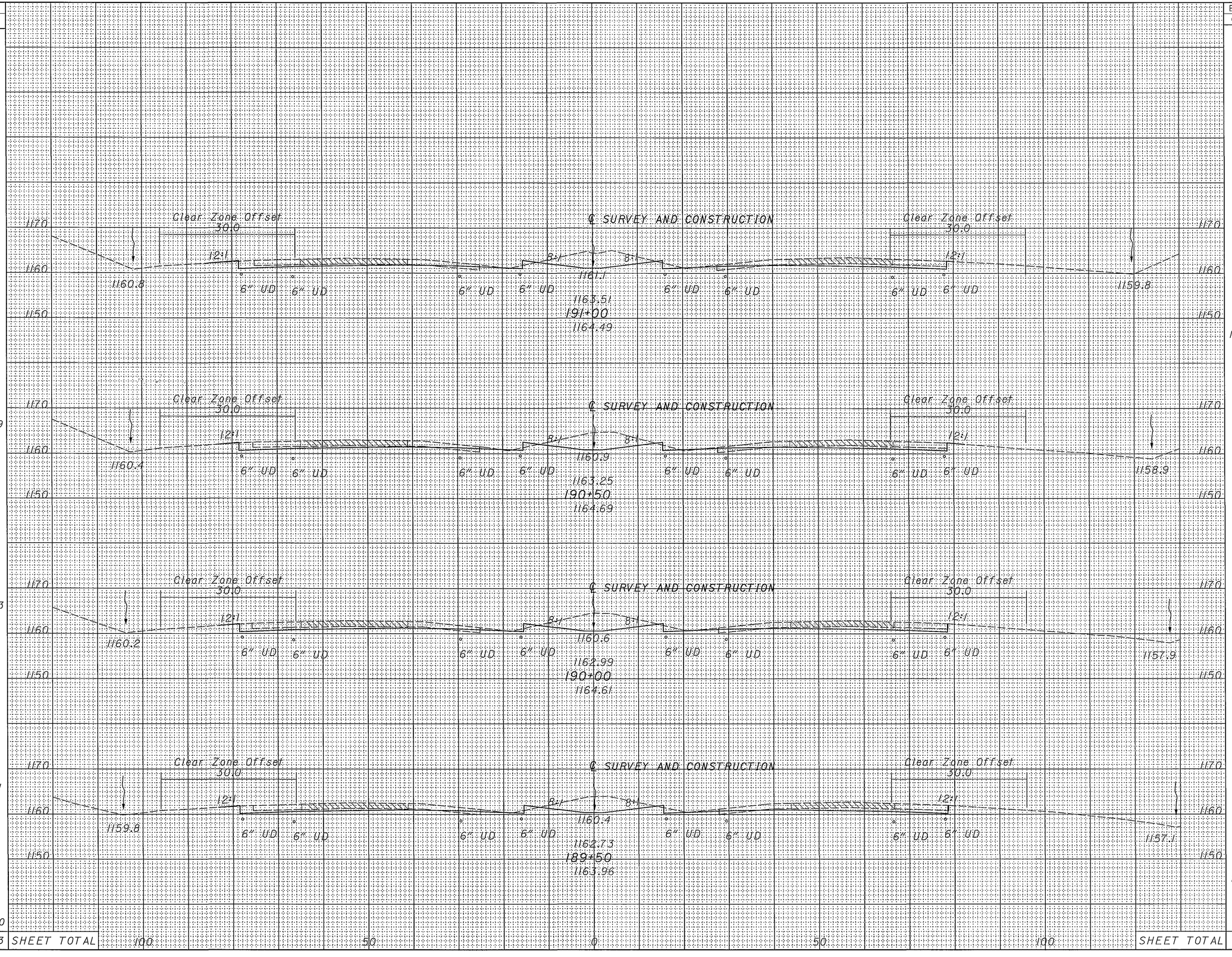
CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 187+50.00 TO STA. 189+00.00

SUM-77-1.40

SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
40.13	229	191+00	100	12	183	24
40.23		190+50	97	14		
35.80	223	190+00	110	10	192	22
36.14	211	189+50	104	10	197	19
	200				222	23
	863	SHEET TOTAL			794	88



CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 189+50.00 TO STA. 191+00.00

SUM-77-1.40

229
381

SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
		11180 / 11170 / 11160 / 11150				
41.99		Clear Zone Offset 30.0 — 12:1 — 11161.6 — 6" UD 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 8:1 — 11162.2 — 6" UD 6" UD — 11164.55 — 193+00 — 11165.57 — Clear Zone Offset 30.0 — 12:1 — 11161.7	97	13		
	237	11180 / 11170 / 11160 / 11150			182	26
46.64		Clear Zone Offset 30.0 — 10:1 — 11161.4 — 6" UD 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 8:1 — 11161.9 — 6" UD 6" UD — 11164.29 — 192+50 — 11165.56 — Clear Zone Offset 30.0 — 12:1 — 11161.6	100	15		
	246	11180 / 11170 / 11160 / 11150			188	26
39.91		Clear Zone Offset 30.0 — 10:1 — 11161.1 — 6" UD 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 8:1 — 11161.7 — 6" UD 6" UD — 11164.03 — 192+00 — 11165.41 — Clear Zone Offset 30.0 — 12:1 — 11161.3	103	14		
	240	11170 / 11160 / 11150			194	23
42.27		Clear Zone Offset 30.0 — 12:1 — 11161.0 — 6" UD 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 8:1 — 11161.4 — 6" UD 6" UD — 11163.77 — 191+50 — 11165.31 — Clear Zone Offset 30.0 — 12:1 — 11161.0	107	12		
	228				191	22
	951	SHEET TOTAL			755	97

100 50 0 50 100

CALCULATED COY

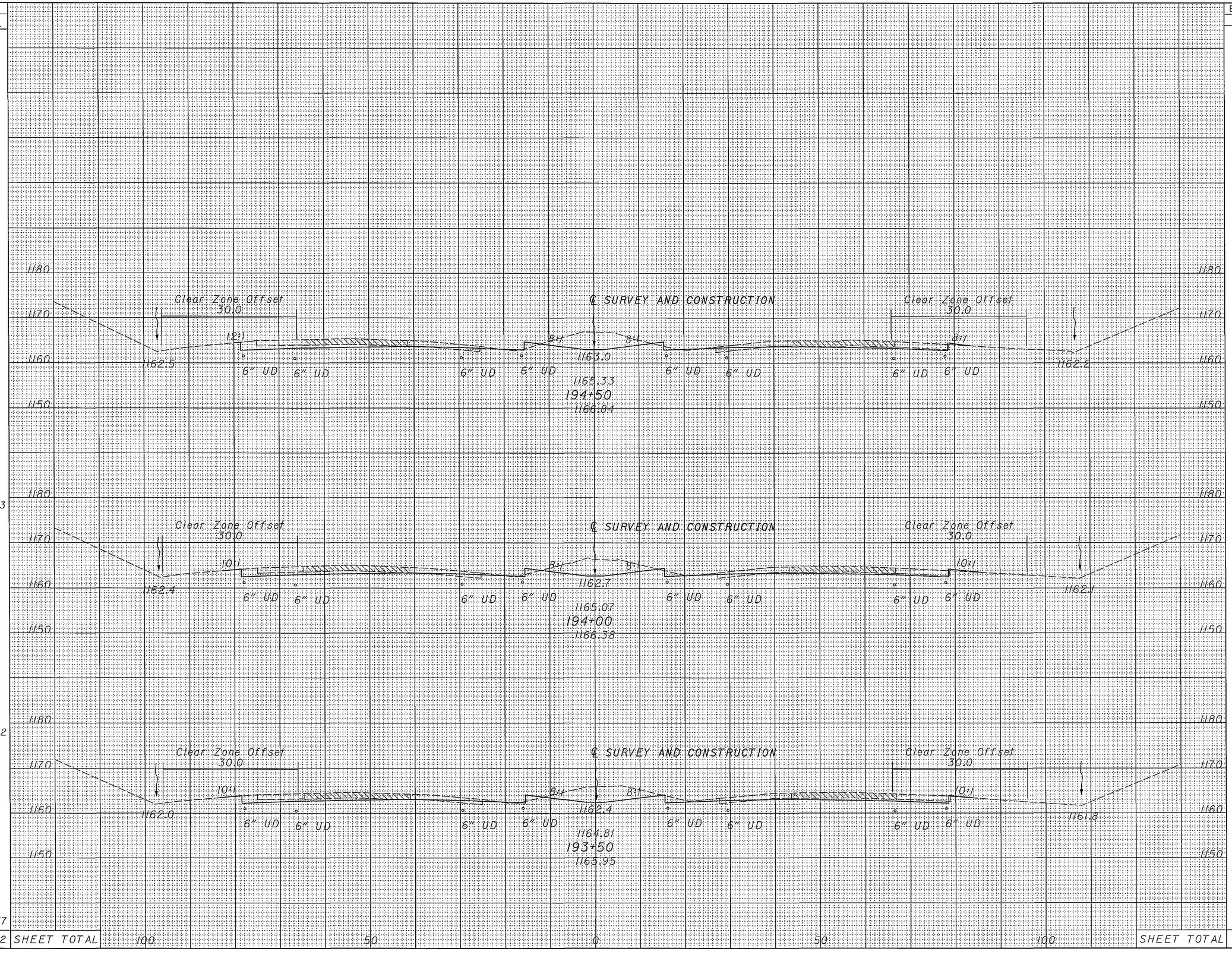
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 191+50.00 TO STA. 193+00.00

SUM-77-1.40

230
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
37.76	203	96	16		
41.94	222	181	29		
43.19	237	99	15		
		103	13		
		187	26		
		185	24		
	662	SHEET TOTAL			
				SHEET TOTAL	
				553	79



CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 193+50.00 TO STA. 194+50.00

SUM-77-1.40

231
381

SEEDING			END AREA		VOLUME		
END WIDTH	SO. YDS.		CUT	FILL	CUT	FILL	
		1180					
		1170					
		1160					
		1150					
39.45	218	Clear Zone Offset 30.0 — 6:1 — 1162.8 — 6" UD 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 8:1 — 1163.6 — 1165.96 — 196+00 — 1167.31 — Clear Zone Offset 30.0 — 8:1 — 1163.1 — 6" UD 6" UD	82	18			
41.17	224	Clear Zone Offset 30.0 — 8:1 — 1162.7 — 6" UD 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 8:1 — 1163.4 — 1165.81 — 195+50 — 1166.84 — Clear Zone Offset 30.0 — 8:1 — 1162.9 — 6" UD 6" UD	77	22	147	37	
35.22	212	Clear Zone Offset 30.0 — 8:1 — 1162.6 — 6" UD 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 8:1 — 1163.2 — 1165.59 — 195+00 — 1166.87 — Clear Zone Offset 30.0 — 8:1 — 1162.8 — 6" UD 6" UD	90	18	155	37	
	654	SHEET TOTAL			173	31	
		100 50 0 50 100			SHEET TOTAL		
					475	105	

CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 195+00.00 TO STA. 196+00.00

SUM-77-1.40

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
		1180					
		1170					
		1160					
		1150					
40.03		Clear Zone Offset 30.0 — 6:1 — 1162.8 — 6" UD — 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 — 8:1 — 1163.7 — 1166.06 — 197+50 — 1167.16 — 6" UD — 6" UD — 6" UD — 6" UD — 6" UD — 6" UD — Clear Zone Offset 30.0 — 8:1 — 1163.5	95	10			
	212	1180					
		1170					
		1160					
		1150					
38.43		Clear Zone Offset 30.0 — 6:1 — 1162.9 — 6" UD — 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 — 8:1 — 1163.7 — 1166.09 — 197+00 — 1167.47 — EX. 2" GAS LINE IN 4¼" STEEL CASING-RIPE — 6" UD — 6" UD — 6" UD — 6" UD — 6" UD — 6" UD — Clear Zone Offset 30.0 — 8:1 — 1163.4	90	10	172	19	
	218	1180					
		1170					
		1160					
		1150					
39.04		Clear Zone Offset 30.0 — 6:1 — 1163.0 — 6" UD — 6" UD — ℄ SURVEY AND CONSTRUCTION — 8:1 — 8:1 — 1163.7 — 1166.06 — 196+50 — 1167.51 — 6" UD — 6" UD — 6" UD — 6" UD — 6" UD — 6" UD — Clear Zone Offset 30.0 — 8:1 — 1163.3	91	11	168	20	
	215				160	27	
	645	SHEET TOTAL			SHEET TOTAL		
		100 50 0 50 100			500	66	

CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 196+50.00 TO STA. 197+50.00

SUM-77-1.40

233
381

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
							CALCULATED COY
							CHECKED W.B.H.
		1180 / 1170 / 1160 / 1150					
		Clear Zone Offset 30.0					
		7:1					
		1162.3					
		6" UD 6" UD					
		℄ SURVEY AND CONSTRUCTION					
		10:1 10:1 25:1 25:1 10:1 10:1					
		1164.4 1164.1					
		6" UD 6" UD 6" UD 6" UD					
		1165.60					
		199+00					
		1166.85					
		Clear Zone Offset 30.0					
		12:1					
		1163.2					
		6" UD 6" UD					
76.09			100	8			
	421	1180 / 1170 / 1160 / 1150			173	14	
		Clear Zone Offset 30.0					
		7:1					
		1162.5					
		6" UD 6" UD					
		℄ SURVEY AND CONSTRUCTION					
		10:1 10:1 25:1 25:1 10:1 10:1					
		1164.6 1164.6					
		6" UD 6" UD 6" UD 6" UD					
		1165.81					
		198+50					
		1167.00					
		Clear Zone Offset 30.0					
		10:1					
		1163.6					
		6" UD 6" UD					
48.96			87	7			
	347	1180 / 1170 / 1160 / 1150			168	14	
		Clear Zone Offset 30.0					
		6:1					
		1162.7					
		6" UD 6" UD					
		℄ SURVEY AND CONSTRUCTION					
		10:1 10:1					
		1163.9					
		6" UD 6" UD 6" UD 6" UD					
		1165.97					
		198+00					
		1167.00					
		Clear Zone Offset 30.0					
		8:1					
		1163.6					
		6" UD 6" UD					
36.21			95	8			
	237				176	16	
	1005	SHEET TOTAL			537	44	SHEET TOTAL

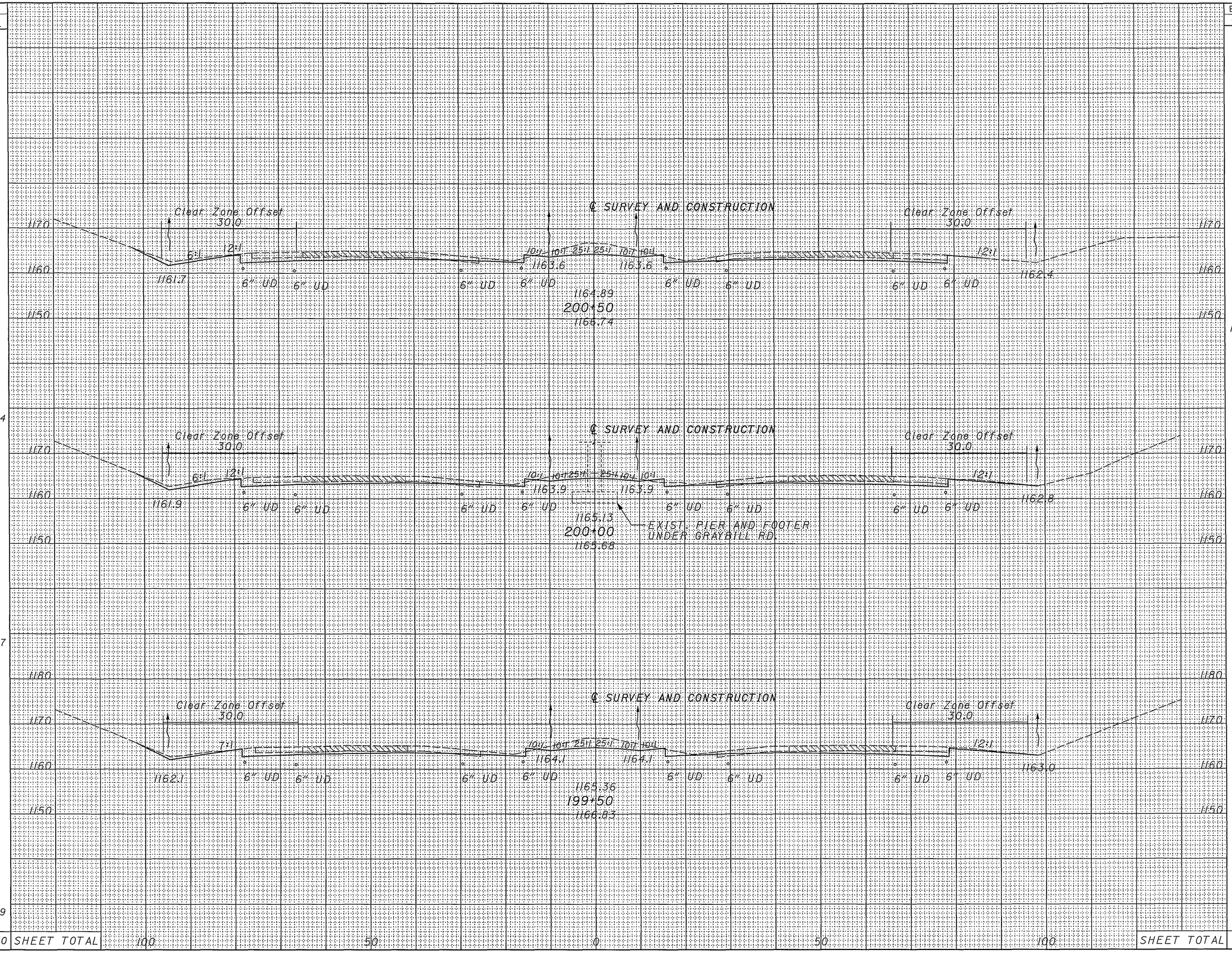
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CROSS SECTIONS I-77
STA. 198+00.00 TO STA. 199+00.00

SUM-77-1.40

234
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
63.93		127	4		
	324			208	10
75.37		98	7		
	387			195	12
75.57		113	6		
	419			197	13
	1130 SHEET TOTAL			600	35

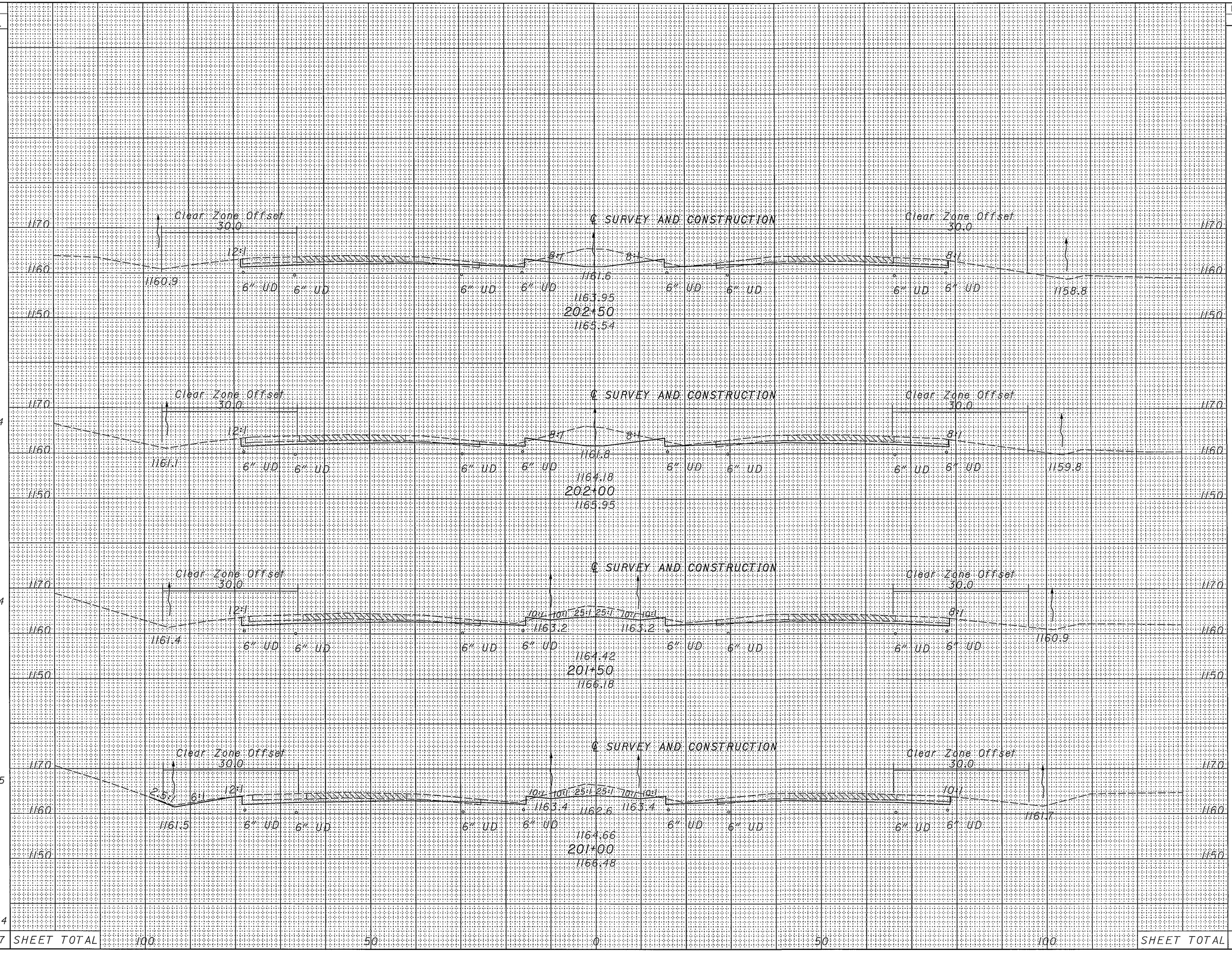


CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 199+50.00 TO STA. 200+50.00

SUM-77-1.40

235
381

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
							
31.22			117	7			
	174				223	12	
31.22			124	6			
	174				218	9	
31.77			112	4			
	175				209	8	
52.60			114	5			
	234				223	8	
	757	SHEET TOTAL			873	37	

100 50 0 50 100

CALCULATED COY

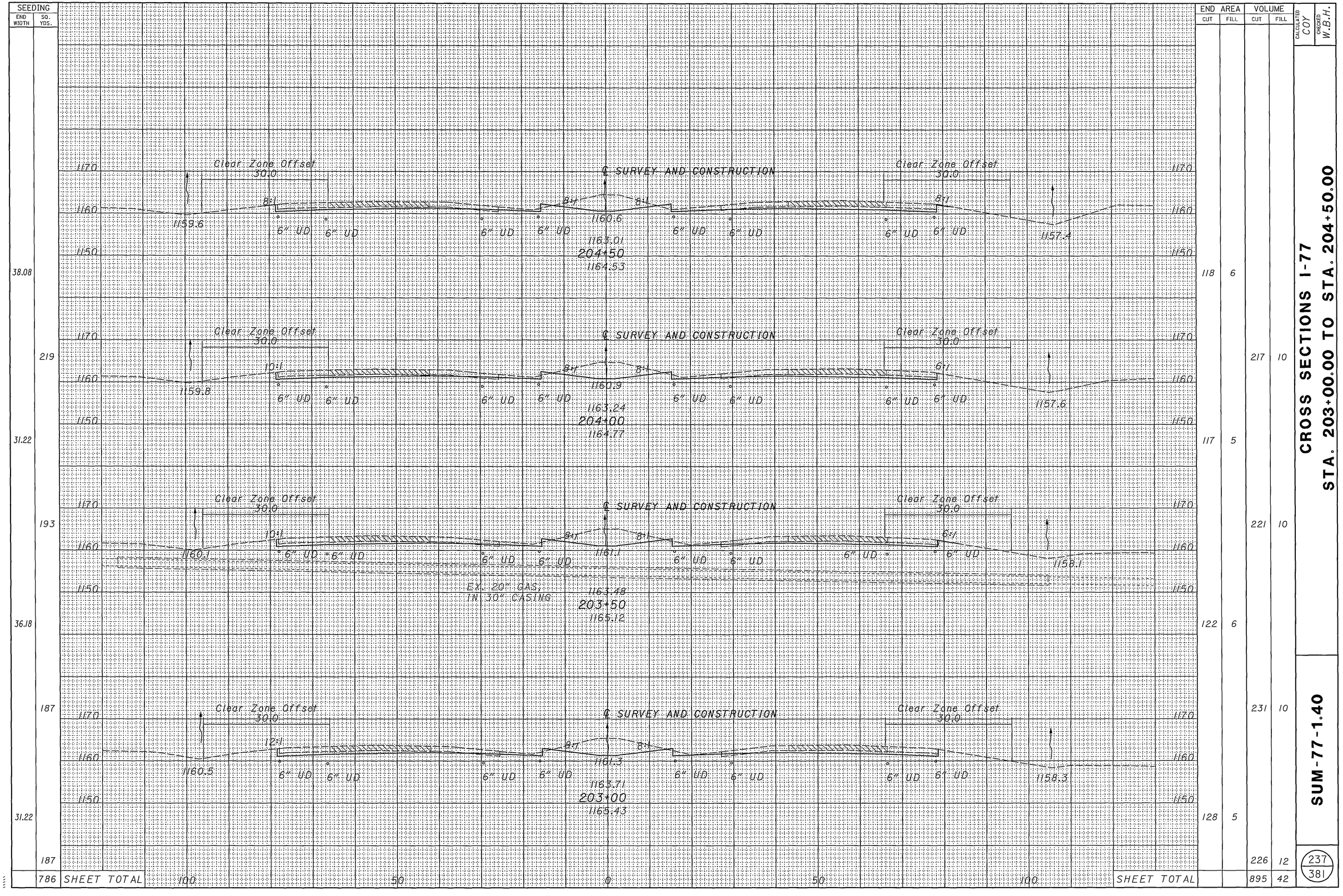
CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 201+00.00 TO STA. 202+50.00

SUM-77-1.40

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
38.08	219	118	6	217	10
31.22		117	5		
36.18	193	122	6	221	10
31.22	187	128	5	231	10
	187			226	12
	786 SHEET TOTAL			895	42



CALCULATED COY
CHECKED W.B.H.

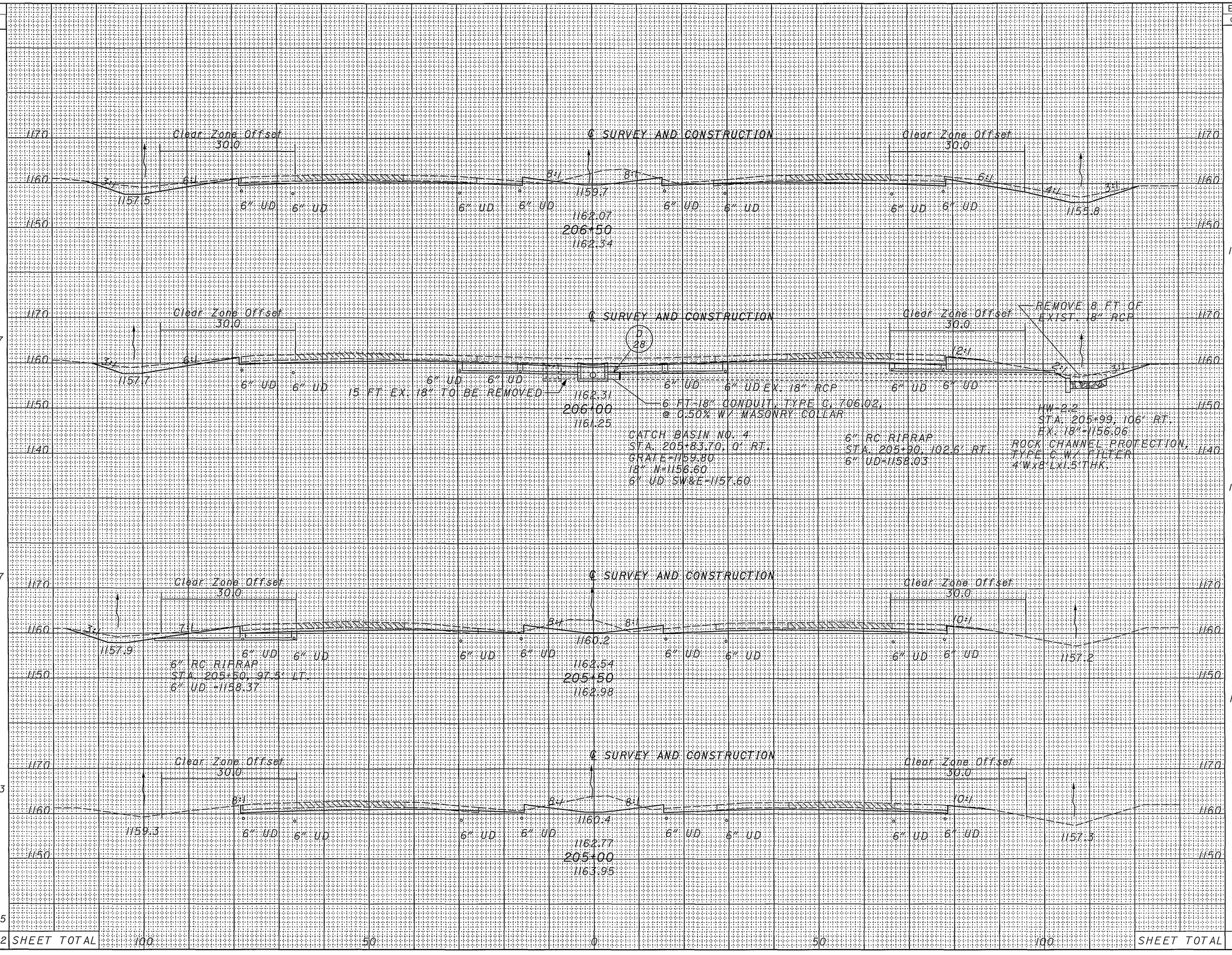
CROSS SECTIONS I-77

STA. 203+00.00 TO STA. 204+50.00

SUM-77-1.40

237
381

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
109.92	627	188	8	298	7
65.41		134	0		
79.64	487	140	10	254	9
40.80	403	117	7	237	16
	335			217	12
	1852			1006	44



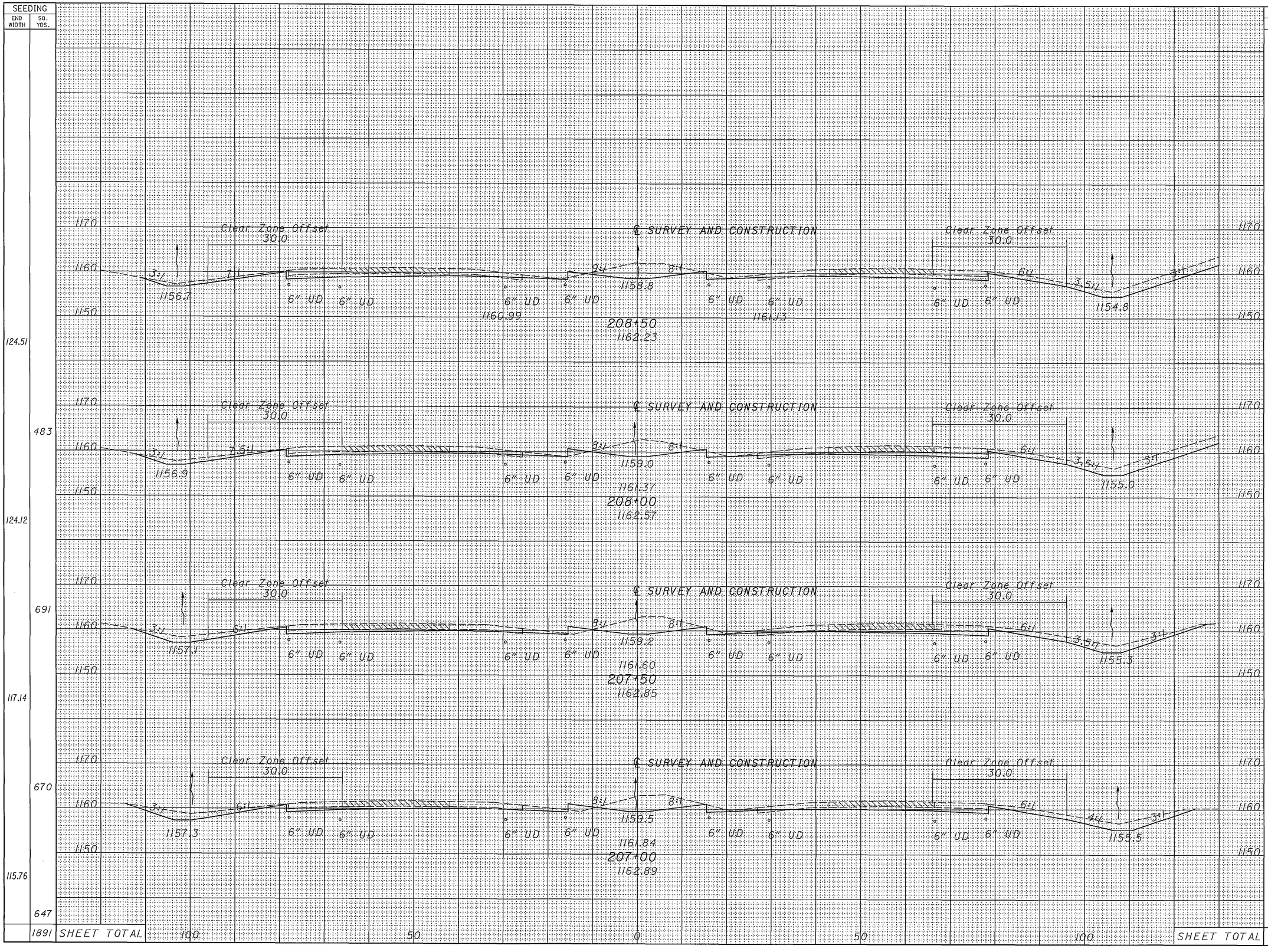
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 205+00.00 TO STA. 206+50.00

SUM-77-1.40

238
381

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
124.51	483	215	8	397	16
124.12	691	214	9	390	17
117.14	670	207	9	386	16
115.76	647	209	9	368	15
	1891 SHEET TOTAL			1541 SHEET TOTAL	64



100	50	0	50	100

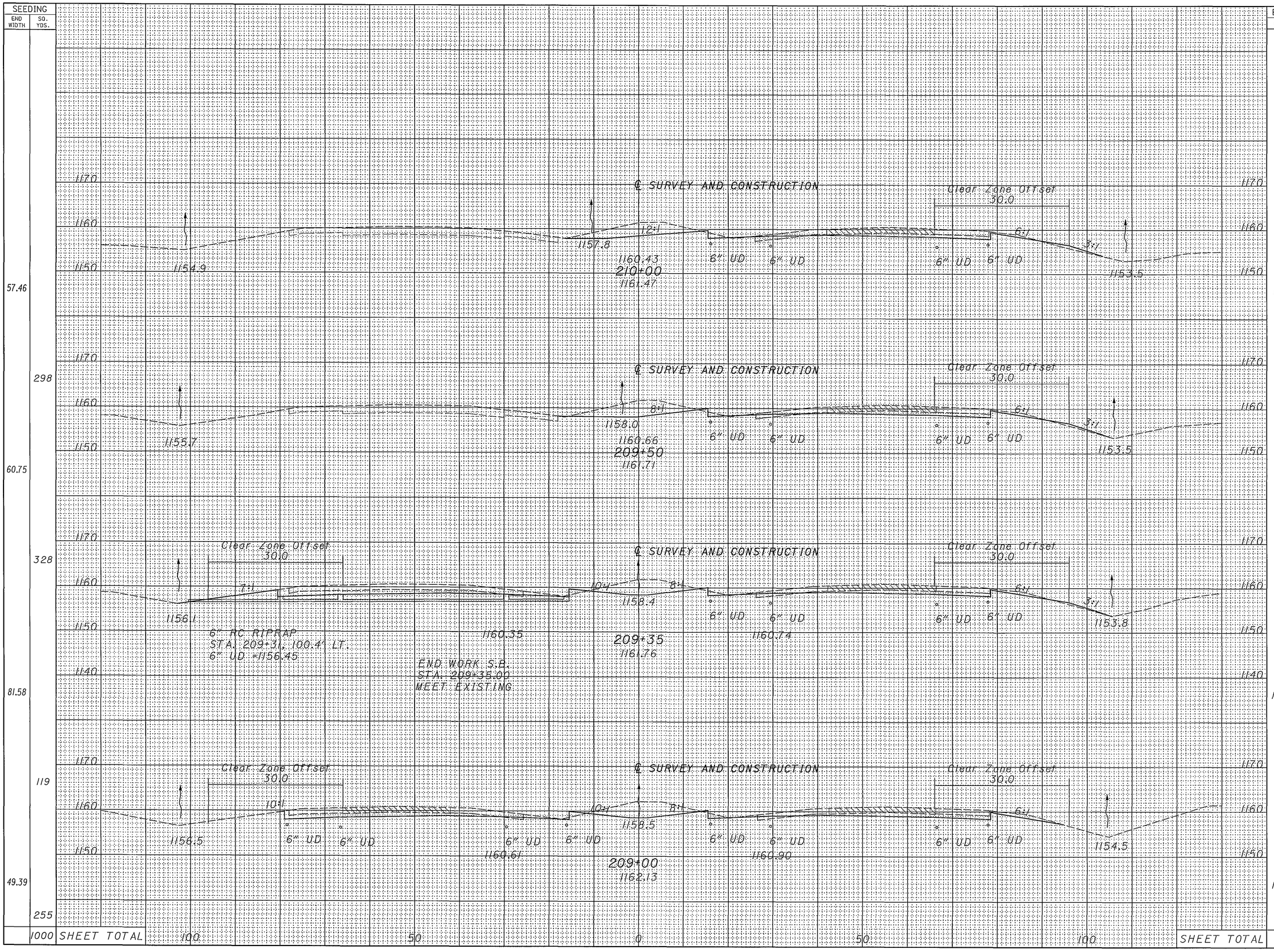
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 207+00.00 TO STA. 208+50.00

SUM-77-1.40

239
381

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
57.46	298	84	12	161	21
60.75		91	10		
	328			61	6
81.58		130	12		
	119			173	13
49.39		136	8		
	255			324	15
	1000 SHEET TOTAL			719	55



CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77

STA. 209+00.00 TO STA. 210+00.00

SUM-77-1.40

240
381

SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
63.46	388	1152.5 ℄ SURVEY AND CONSTRUCTION 15.4:1 11.8:1 1157.5 1159.49 212+00 1157.29 6" UD 6" UD Clear Zone Offset 30.0 6:1 6" UD 6" UD 1151.3	82	16		
72.86	379	1152.3 ℄ SURVEY AND CONSTRUCTION 1159.72 211+50 1159.53 1157.4 12:1 CB NO. 4 STA. 211+00, 9.2' LT. GRATE=1157.15 15" NW=1154.15 6" UD NE=1155.26 D 29 1159.96 211+00 1160.66 6" UD 6" UD Clear Zone Offset 30.0 6:1 6" UD 6" UD 1150.5	85	23	155	29
48.61	337	1153.7 ℄ SURVEY AND CONSTRUCTION 1.53' DEPTH OF COVER 1158.6 12:1 EX. 106" x 68" RCCP STA. 211+64 TO REMAIN 6" RC RIPRAP STA. 211+52 102.3' RT. 6" UD =1154.74 10:1 6" UD 6" UD Clear Zone Offset 30.0 6:1 6" UD 6" UD 1152.4	83	9	155	36
49.95	274	1154.5 ℄ SURVEY AND CONSTRUCTION 1157.6 12:1 1160.19 210+50 1161.32 6" UD 6" UD Clear Zone Offset 30.0 6:1 6" UD 6" UD 1152.9	88	7	158	15
	1378	SHEET TOTAL 100 50 0 50 100		SHEET TOTAL	159	18
					627	98

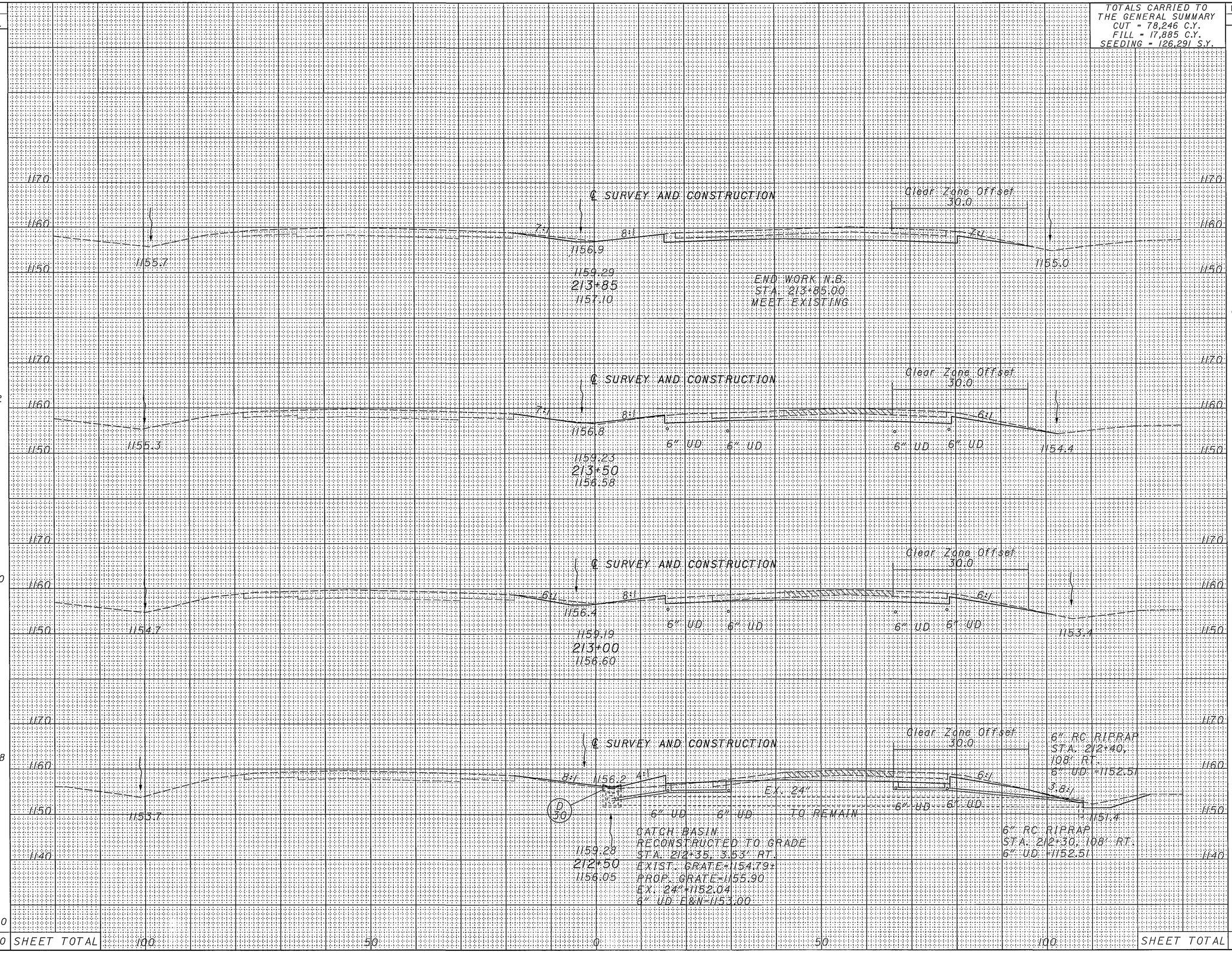
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 210+50.00 TO STA. 212+00.00

SUM-77-1.40

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
50.61	42	100	0	126	2
57.53		95	4		
56.98	210	80	5	162	8
76.07	318	64	29	133	32
	370			136	41
	840 SHEET TOTAL			557	83

TOTALS CARRIED TO THE GENERAL SUMMARY
CUT = 78,246 C.Y.
FILL = 17,885 C.Y.
SEEDING = 126,291 S.Y.



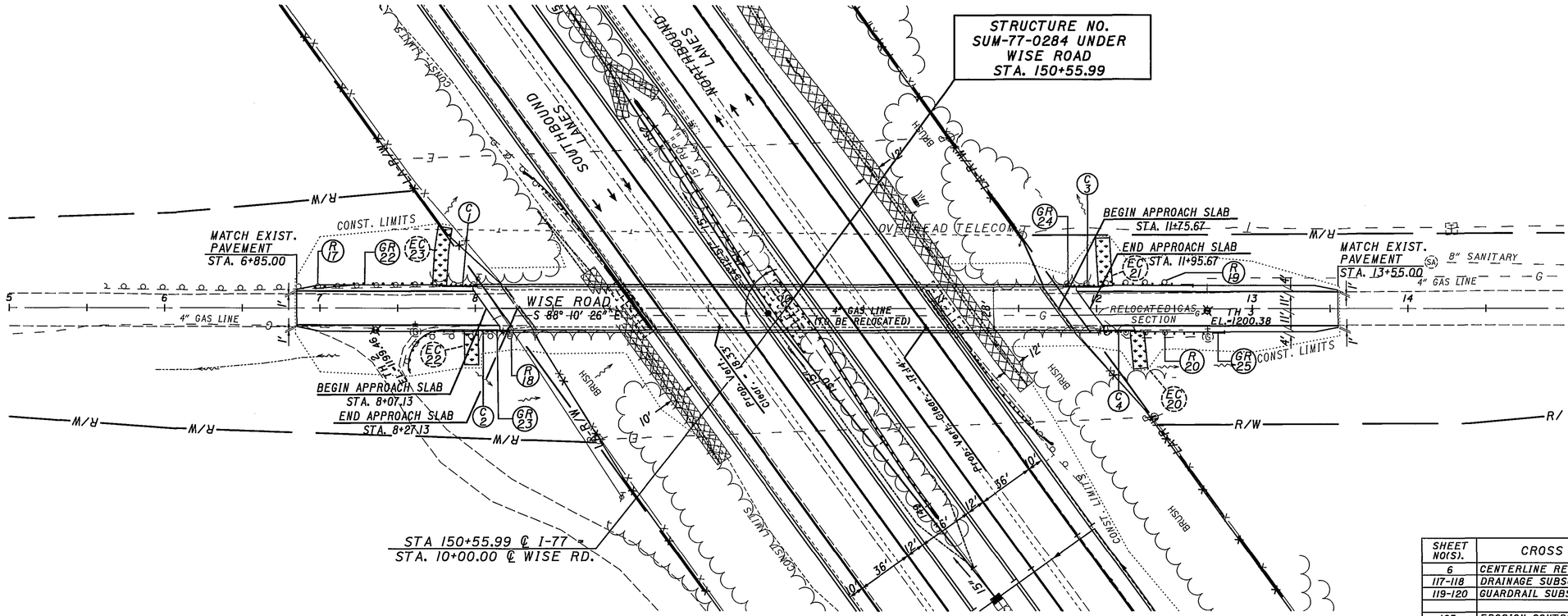
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS I-77
STA. 212+50.00 TO STA. 213+85.00

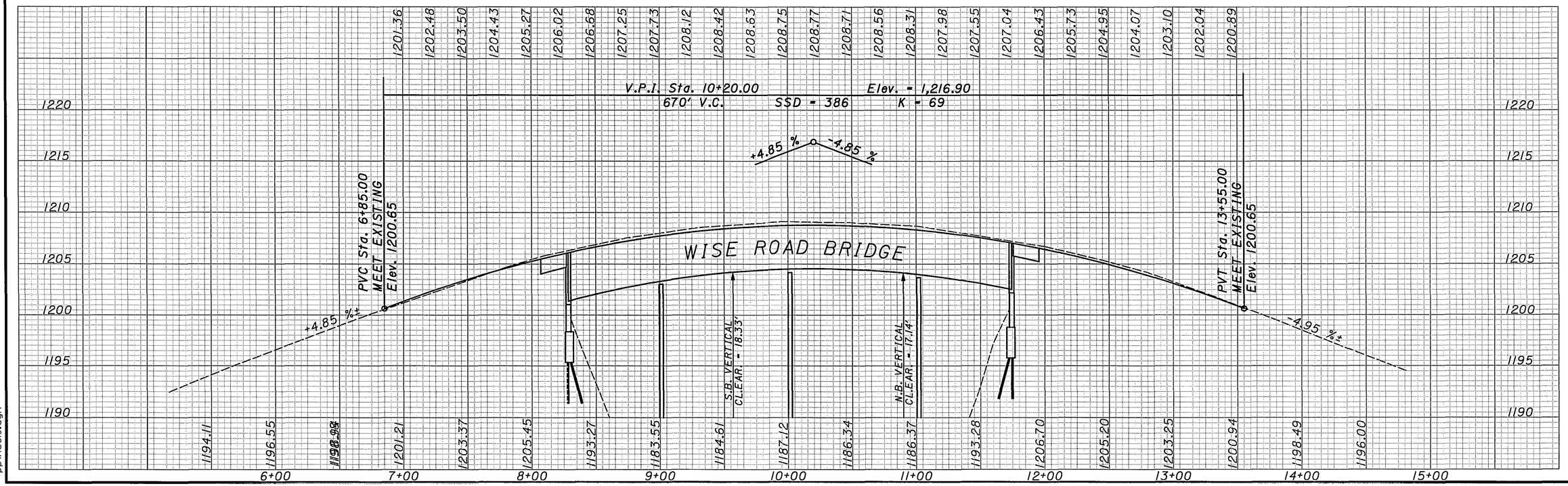
SUM-77-1.40

242
381

DESIGN SPEED - 45 MPH



SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY
334-351	STRUCTURE PLANS



CALCULATED L.M.B. CHECKED W.B.H.

HORIZONTAL SCALE IN FEET

PLAN AND PROFILE
WISE ROAD

SUM-77-1.40

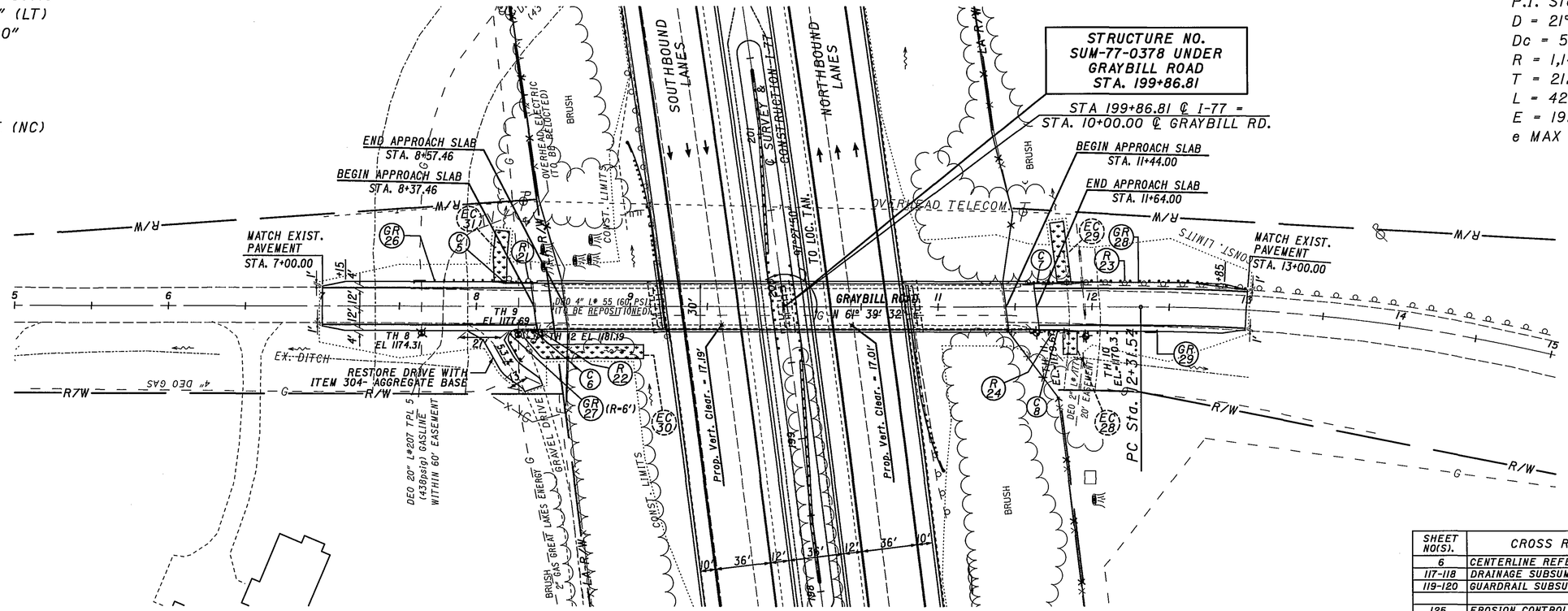
243
381

ppwisel9.dgn

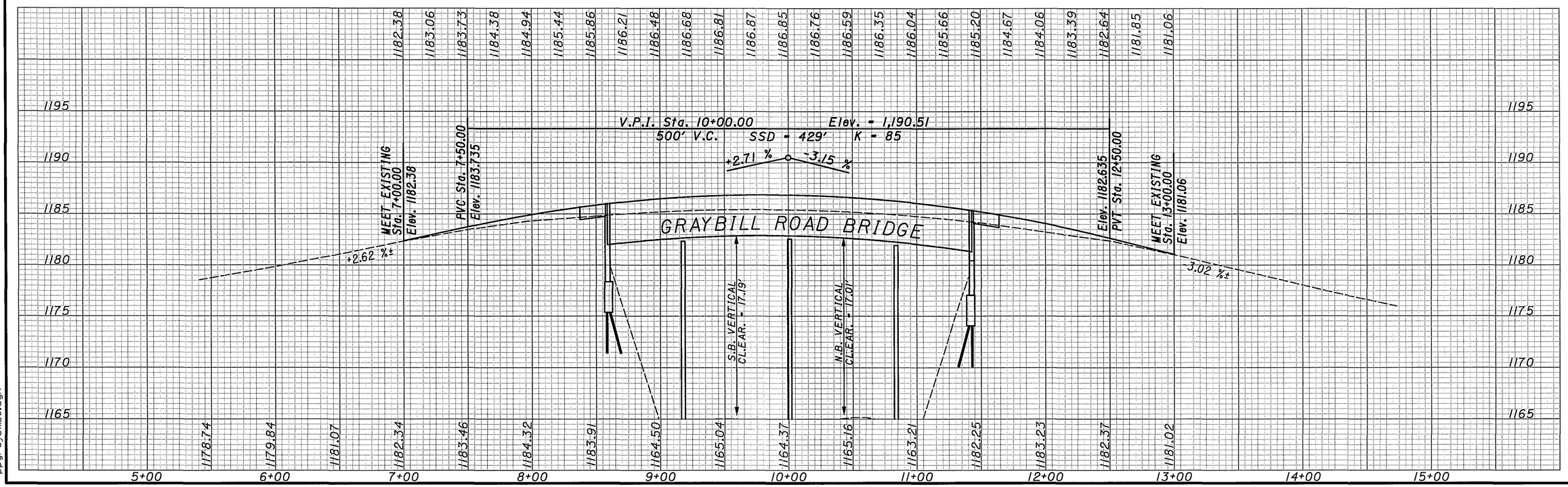
℄ I-77 CURVE
P.I. Sta = 207+68.48
D = 8° 53′ 15″ (LT)
Dc = 0° 20′ 00″
R = 17,188.73′
T = 1,335.79′
L = 2,666.22′
E = 51.83′
e MAX = NONE (NC)

DESIGN SPEED = 50 MPH

GRAYBILL ROAD CURVE
P.I. Sta = 14+43.99
D = 21° 00′ 21″ (RT)
Dc = 5° 00′ 00″
R = 1,145.92′
T = 212.44′
L = 420.12′
E = 19.53′
e MAX = 0.051 '/' (exist)



SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY
352-368	STRUCTURE PLANS



ppgraybill20.dgn

CALCULATED L.M.B.
CHECKED W.B.H.
HORIZONTAL SCALE IN FEET 0 20 40 80

PLAN AND PROFILE
GRAYBILL ROAD

SUM-77-1.40

244
381

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
		1210					1210
		1200					1200
60.7		1190	19	51			1190
	333				11	16	
		1210					1210
		1200					1200
15.6		1190	22	7			1190
	64				0	0	
		1200					1200
		1190					1190
		1190					1190
	397	SHEET TOTAL			11	16	SHEET TOTAL

CALCULATED COY

CHECKED W.B.H.

CROSS SECTIONS - WISE ROAD
STA. 6+00.00 TO STA. 7+00.00

SUM-77-1.40

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381

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
		1210					
		1200					
		1190					
31.5		℄ WISE ROAD 2:1 2:1 EXIST. 4" GAS LINE 1207.02 11+75.67 1207.19 BEGIN APPROACH SLAB SKEWED SECTION	0	260			
	66	1210			0	0	
		1200					
		1190					
34.5		℄ WISE ROAD 2:1 2:1 EXIST. 4" GAS LINE 1206.08 8+27.13 1202.13 END APPROACH SLAB SKEWED SECTION	0	242			
		1210					
		1200					
		1190					
42.7		℄ WISE ROAD R/W 3:1 EXIST. 4" GAS LINE 1205.50 8+07.13 1205.68 BEGIN APPROACH SLAB SKEWED SECTION R/W	34	39	13	104	
		1210					
		1200					
		1190					
59.0	86	℄ WISE ROAD R/W 3:1 12:1 EXIST. 4" GAS LINE 1203.50 7+50.00 1202.89 EXIST. DRIVE R/W	16	46	53	89	
	323				32	90	
	475	SHEET TOTAL			98	283	

100 50 0 50 100

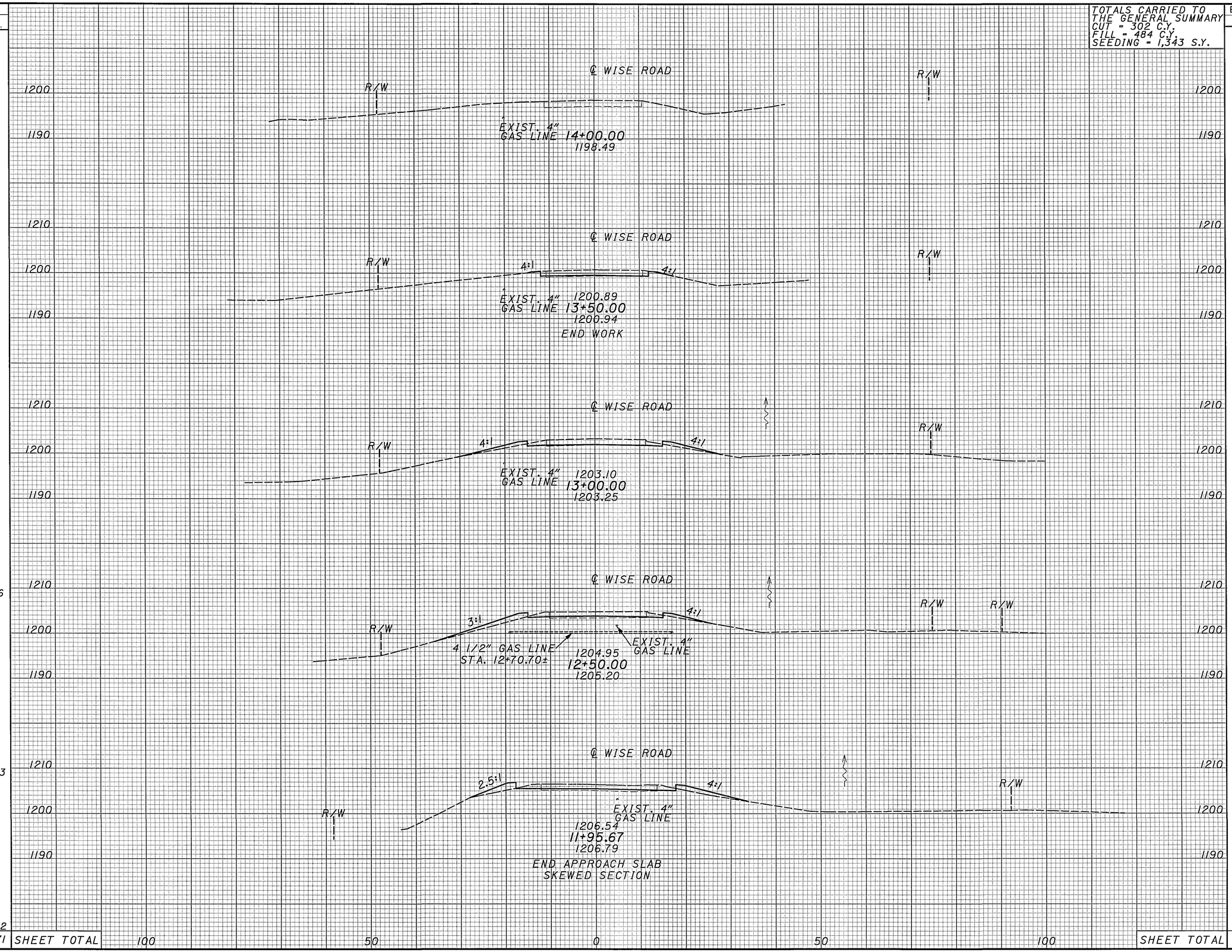
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS - WISE ROAD
STA. 7+50.00 TO STA. 11+75.67

SUM-77-1.40

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381

TOTALS CARRIED TO THE GENERAL SUMMARY
CUT - 302 C.Y.
FILL - 484 C.Y.
SEEDING - 1,343 S.Y.



SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		28	1		
				62	14
29.3		33	13		
	116			57	29
33.0		28	18		
	173			62	38
27.4		33	20		
	182			12	104
	471	SHEET TOTAL		193	185

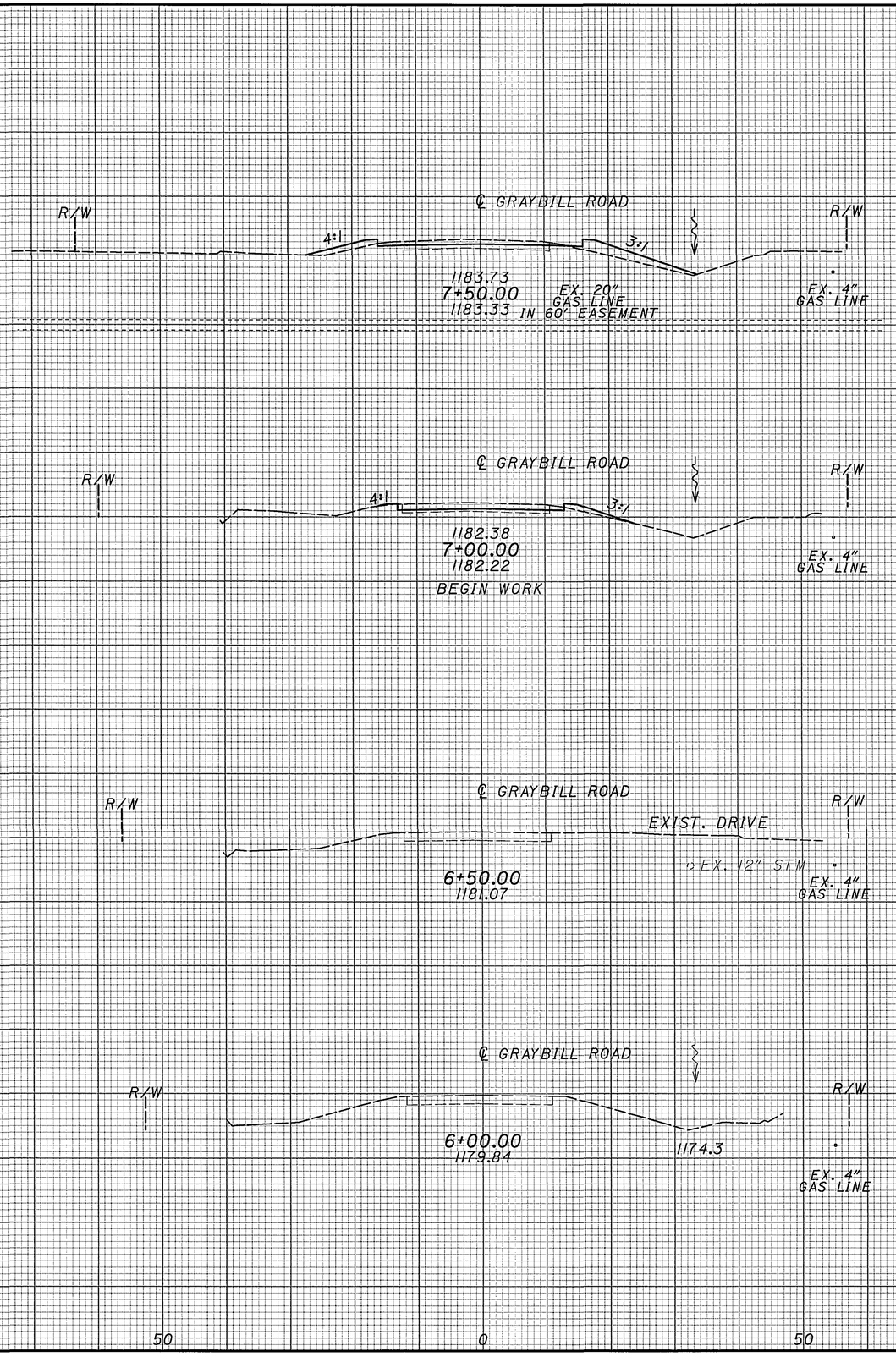
CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS - WISE ROAD
STA. 11+95.67 TO STA. 14+00.00

SUM-77-1.40

247
381

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
		1190					1190
		1180					1180
30.2							
			17	30			
	149	1190			38	33	1190
		1180					1180
		1170					1170
14.8			23	6			
	126				0	0	
		1180					1180
		1170					1170
	275	SHEET TOTAL			38	33	SHEET TOTAL



CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS - GRAYBILL ROAD
STA. 6+00.00 TO STA. 7+50.00

SUM-77-1.40

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381

SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
		1190					1190
		1180					1180
		1170					1170
		1160					1160
44.5			0	95			
		1190					1190
	102	1180			0	0	1180
		1170					1170
19.2			0	34			
		1190					1190
		1180			0	24	1180
		1170					1170
29.2			0	31			
		1190					1190
	54	1180			1	33	1180
23.5			1	17			
	110				17	44	
	266	SHEET TOTAL			18	101	SHEET TOTAL

℄ GRAYBILL ROAD
2:1
2:1
EX. 4" GAS LINE
1185.32
11+44.00
1180.17
BEGIN APPROACH SLAB SKEWED SECTION

℄ GRAYBILL ROAD
2:1
2:1
EX. 4" GAS LINE
1185.97
8+57.46
1181.12
END APPROACH SLAB SKEWED SECTION

℄ GRAYBILL ROAD
R/W
2.5:1
4:1
EXIST. DRIVE
R/W
EX. 4" GAS LINE
1185.66
8+37.46
1184.28
EX. 2" GAS LINE GREAT LAKES ENERGY
BEGIN APPROACH SLAB SKEWED SECTION

℄ GRAYBILL ROAD
R/W
4:1
4:1
R/W
1184.94
8+00.00
1183.75
EX. 4" GAS LINE

-100 -50 0 50 100

CALCULATED COY
CHECKED W.B.H.

CROSS SECTIONS - GRAYBILL ROAD
STA. 8+00.00 TO STA. 12+50.00

SUM-77-1.40

249
381

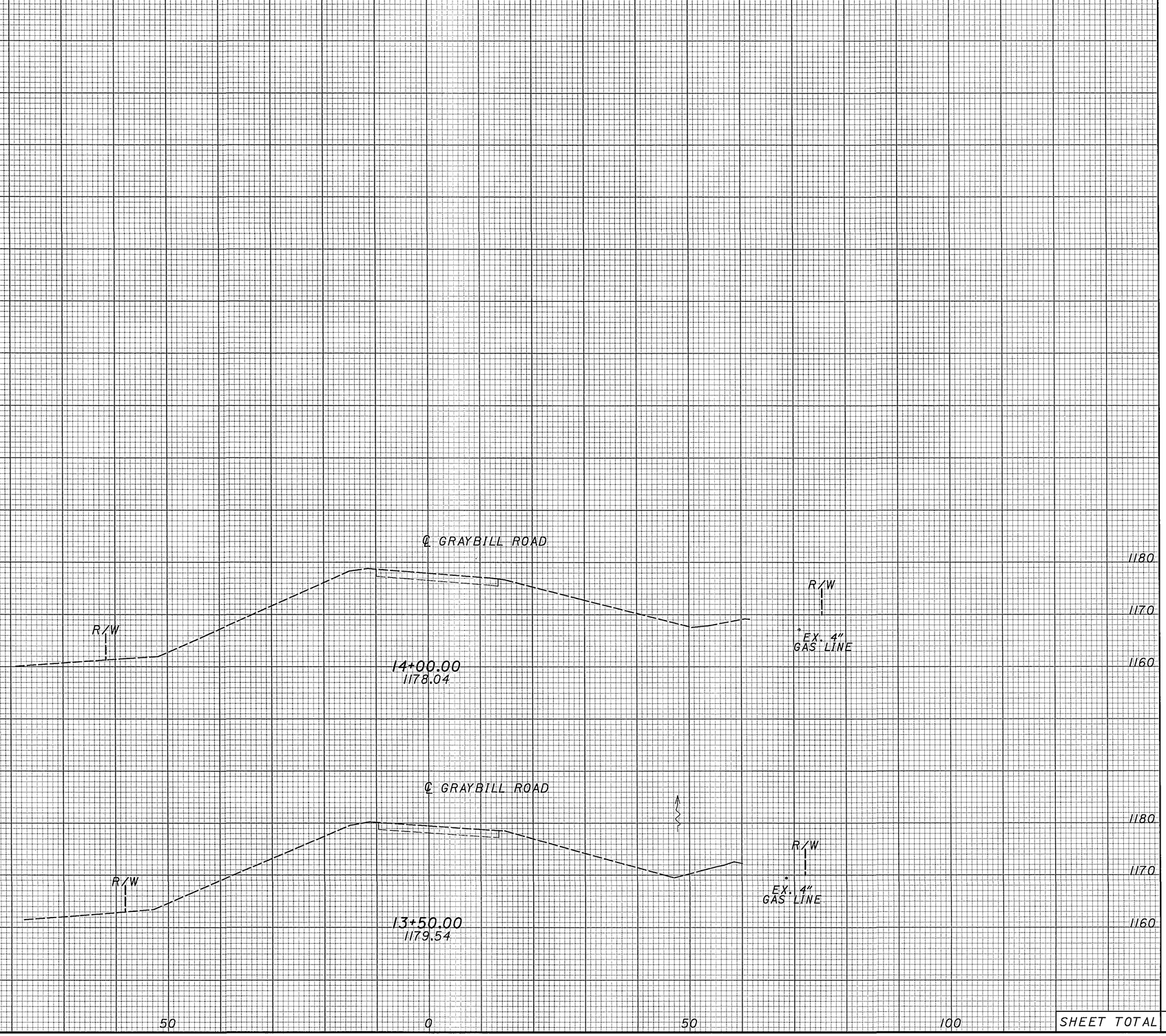
SEEDING			END AREA		VOLUME		
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL	
17.5		1190 / 1180 / 1170 / 1160 ℄ GRAYBILL ROAD R/W, 2:1, 3:1, R/W, EX. 4" GAS LINE 1181.06 13+00.00 1181.02 END WORK 1172.6	25	6			CALCULATED COY CHECKED W.B.H.
52.3		1190 / 1180 / 1170 ℄ GRAYBILL ROAD R/W, 2:1, 3:1, R/W, EX. 4" GAS LINE 1182.64 12+50.00 1182.37 1175.3			41	81	
	19	1190 / 1180 / 1170 ℄ GRAYBILL ROAD R/W, 2.5:1, 4:1, R/W EX. 2" GAS LINE IN 20' EASEMENT EX. 4" GAS LINE 1184.06 12+00.00 1183.23 1180.9	19	82			CROSS SECTIONS - GRAYBILL ROAD STA. 13+00.00 TO STA. 14+00.00
33.5			1	44	19	116	
	238	1190 / 1180 / 1170 ℄ GRAYBILL ROAD R/W, 2:1, 4:1 EX. 4" GAS LINE 1184.91 11+64.00 1183.88 END APPROACH SLAB SKEWED SECTION 1181.2			1	78	SUM-77-1.40
47.5		1160	0	73			
162					0	62	250 381
419	SHEET TOTAL	100 50 0 50 100	SHEET TOTAL		61	337	

SEEDING	
END WIDTH	SQ. YDS.

TOTALS CARRIED TO THE GENERAL SUMMARY
CUT = 117 C.Y.
FILL = 471 C.Y.
SEEDING = 1135 S.Y.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED COY
CHECKED W.B.H.



CROSS SECTIONS - GRAYBILL ROAD
STA. 13+50.00 TO STA. 14+00.00

SUM-77-1.40

- PAVEMENT RESURFACING FROM STA. 6+00 TO 13+00

ITEM 615-PAVEMENT FOR MAINTAINING TRAFFIC, AS PER PLAN, NO. 2 (SEE MAINTENANCE OF TRAFFIC PLANS)

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED COY
CHECKED W.B.H.

BEGIN WORK STA. 6+00

END WORK STA. 12+75

STA 84+88.99 ℄ I-77 = STA. 10+00.00 ℄ R/W GREENSBURG RD.

℄ CONSTRUCTION

℄ R/W GREENSBURG ROAD

S 88°32'53" E

8" SAN. FM (4'-6" DEPTH)

16" DIP WATER

GAS LINE TO BE RELOCATED (BY OTHERS)

OVERHEAD TELECOM (UNDER BRIDGE) (TO BE RELOCTED UNDERGROUND) (BY OTHERS)

OVERHEAD ELECTRIC (TO BE RELOCATED UNDERGROUND) (BY OTHERS)

SEE STRUCTURE PLANS, SHEET 330 FOR BARRIER DETAILS

Prop. Vert. Clear. = 17.28'

TIE TO EXISTING

WINNING WAY

S. WINNING WAY

EXISTING RESIDENCE

GRAVEL DRIVE

TP (TO BE RELOCATED) (BY OTHERS)

MB (TO BE REPLACED)

MASONRY COLLAR

COLLAR

B D32 PIPE

B D31 PIPE 12"

12" CPP

36" RCP

30" RCP

(30" RCP MH)

15" CMP

BRUSH

CB NO. 8
STA. 11+91
40.7' RT.-
℄ STA. 1+00
GRATE=1181.25
12" NE=1179.29
18" S=1178.79
30" W=1177.49

(HW=2.1 OR 2.2
STA. 11+89.96
52.65' RT.-
℄ STA. 1+00
18" =1179.39

SOUTHBOUND LANES

NORTHBOUND LANES

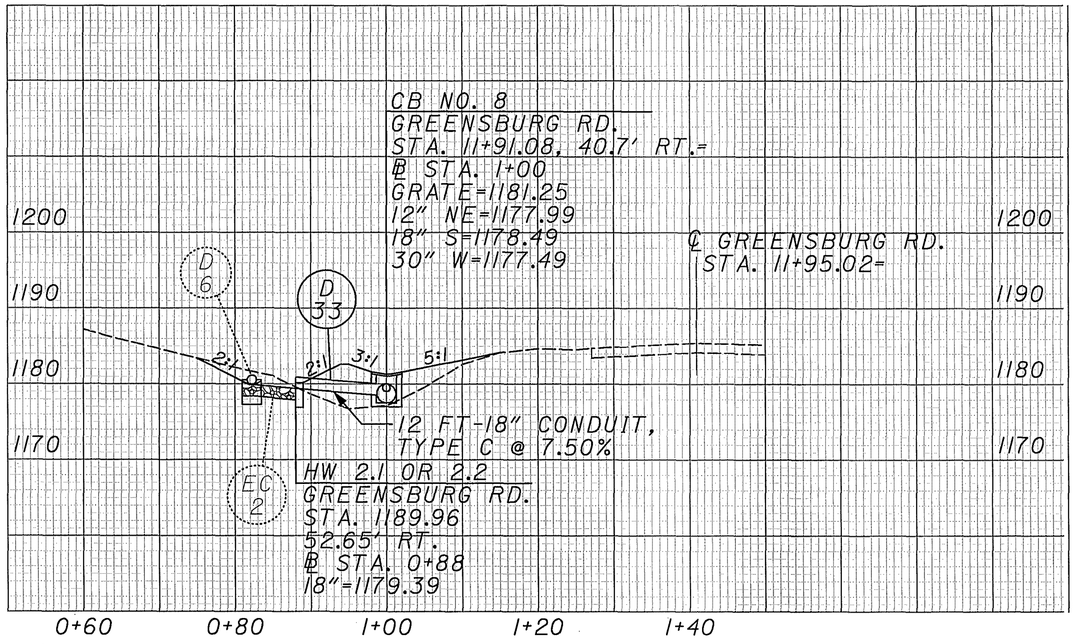
SHEET NO(S).	CROSS REFERENCES
6	CENTERLINE REFERENCES & BENCHMARKS
117-118	DRAINAGE SUBSUMMARY
119-120	GUARDRAIL SUBSUMMARY
121-124	UNDERDRAIN SUBSUMMARY
125	EROSION CONTROL SUBSUMMARY
126	FENCE & CURB SUBSUMMARY
297-333	GREENSBURG ROAD STRUCTURE PLANS
252A	D31, D31, D33 PIPE PROFILES
171	D6 PIPE PROFILE

FOR PIER PROTECTION, SEE STRUCTURES SHEET NO. 330

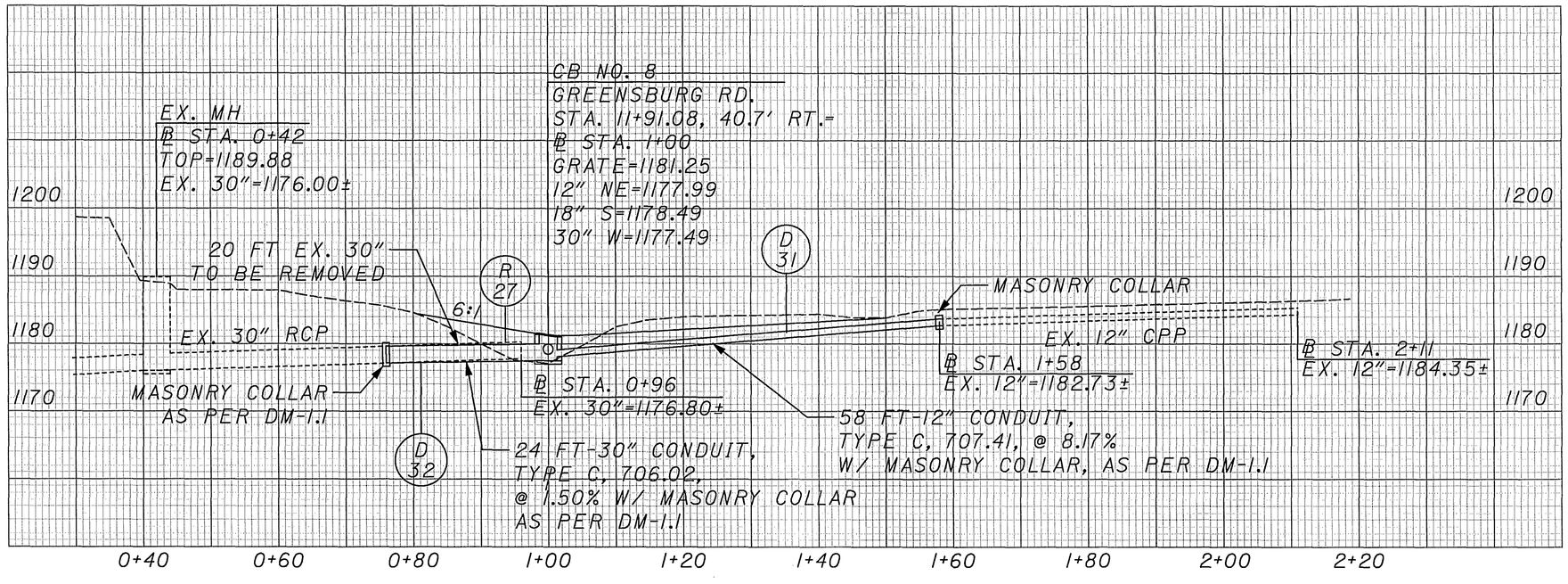
GREENSBURG ROAD IMPROVEMENTS

SUM-77-1.40

252
381



D33 PIPE PROFILE

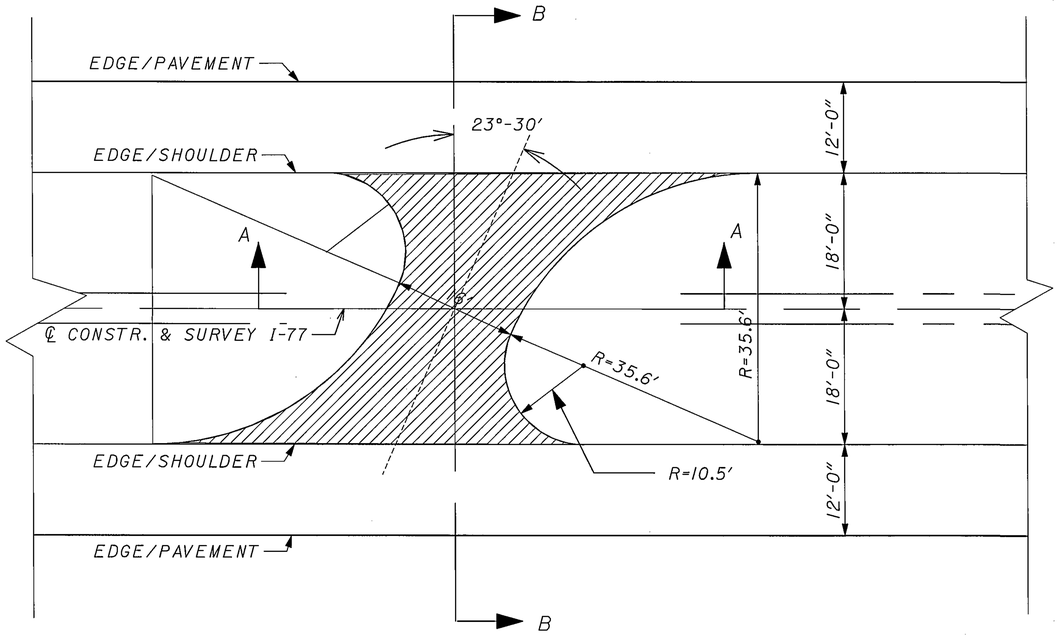


D31 AND D32 PIPE PROFILE

GREENSBURG ROAD
D31, D32 AND D33 PIPE PROFILES

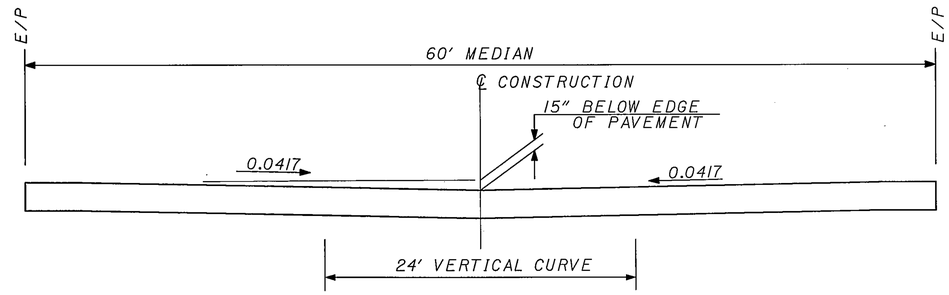
SUM-77-1.40

252A
381

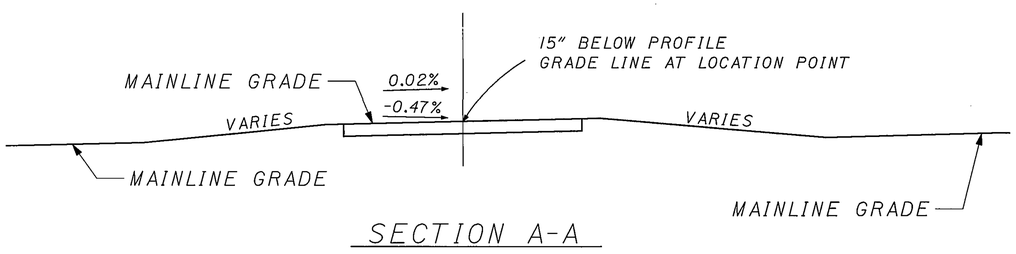


MEDIAN TURN-A-ROUND DETAIL

STA. 104+69, 0.02% PROFILE GRADE
STA. 206+11, -0.47% PROFILE GRADE



SECTION B-B



SECTION A-A

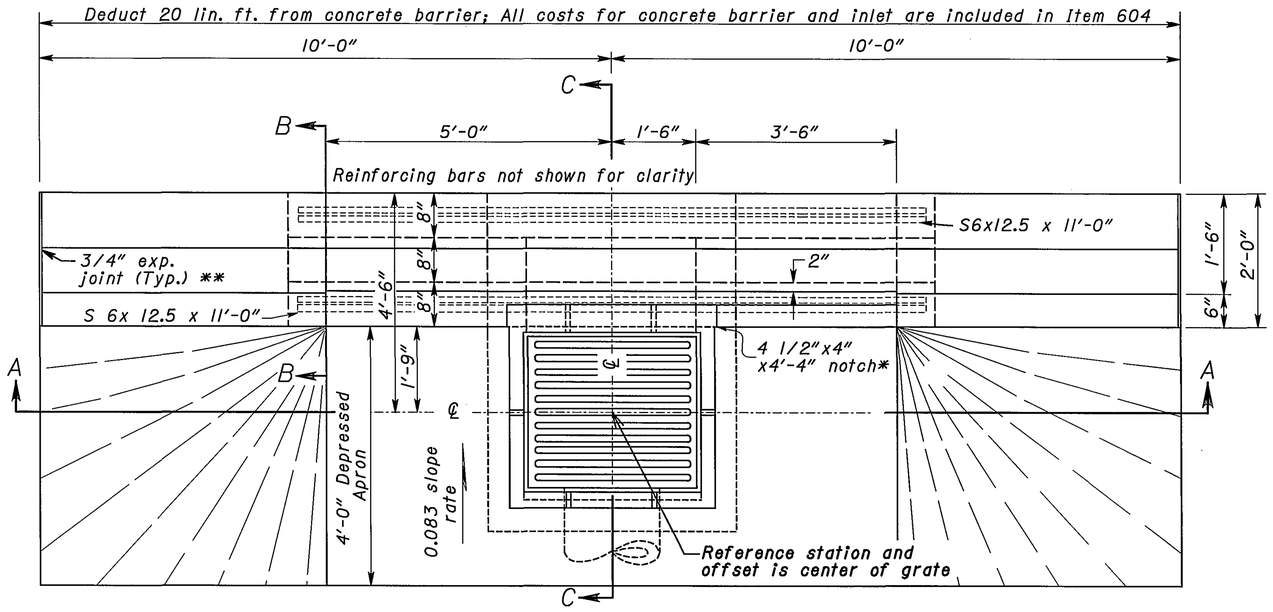
MEDIAN CROSSOVER PAVEMENT

NOTES: REFER TO SHEET NO. 9 FOR CROSSOVER PAVEMENT COMPOSITION.
REFER TO CALCULATION SHEET NO. 127 FOR PAVEMENT QUANTITIES.
REFER TO SHEET NO. 151 FOR DRAINAGE INFORMATION AT STA. 206+11.

CALCULATED W.B.H.
CHECKED L.M.B.

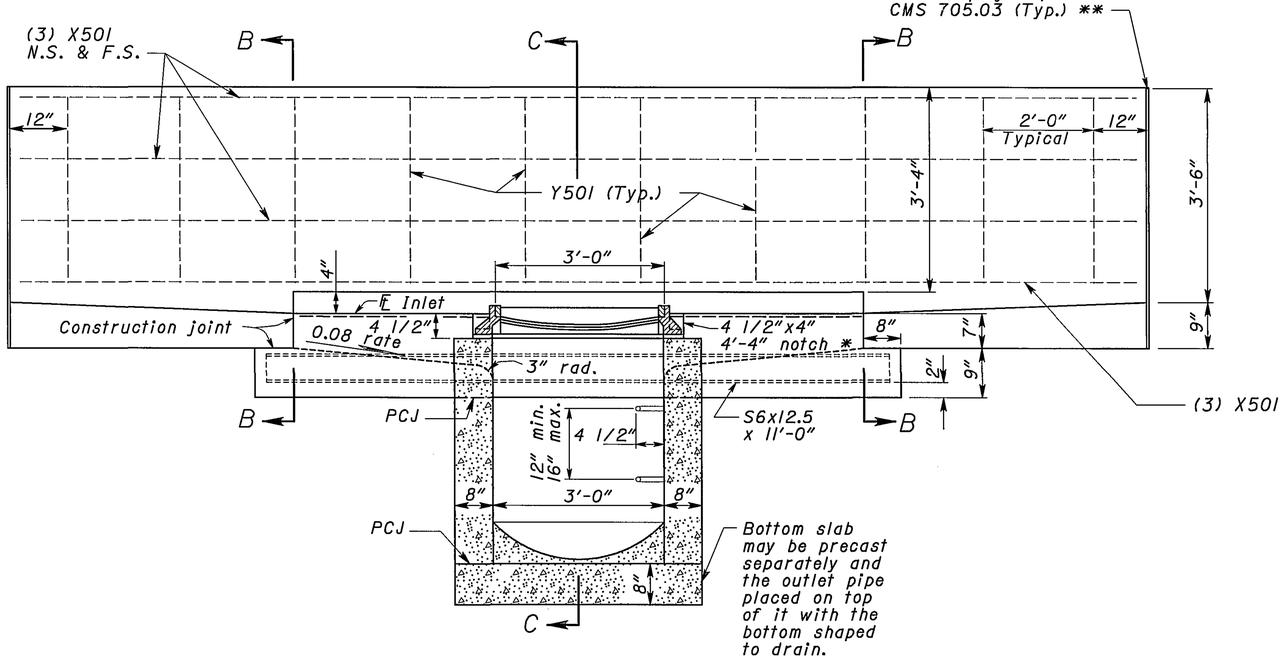
MEDIAN TURN-A-ROUND DETAIL

SUM-77-1.40



N.S. = Near Side
F.S. = Far Side

PLAN VIEW



SECTION A-A

NOTES

GENERAL: For details of barriers, see SCD RM-4.5 for Concrete Barrier, Single Slope, Type D. Minimum weight of frame and cover shall be 540 lbs.

WALLS: The walls between the bottom slab and the upper permissible construction joint may be built of brick, concrete block or cast-in-place concrete, 8 in. nominal thickness for depths of 12 ft. or less. Precast walls shall have a minimum thickness of 6 in. and be reinforced sufficiently to permit shipping and handling without damage. The unit above the upper permissible construction joint may be precast or cast-in-place.

CONCRETE: Cast-in-place concrete is to be Class C. All precast concrete shall meet the requirements of CMS 706.13 with a minimum of 4% entrained air content in the hardened concrete. Required markings shall include the inlet number. Exposed concrete surfaces of the barrier shall be sealed with an approved sealer.

REINFORCING STEEL: Reinforcing steel shall be epoxy coated in accordance with CMS 509.10.

STEPS: Steps shall be in accordance with SCD MH-1.1.

INLETS OVER 12 ft. IN DEPTH: Such inlets shall be precast or cast-in-place concrete; reinforced with #4 bars on 12" centers both vertically and horizontally with 2 in. clearance from the inside wall face.

OPENINGS: Pipe openings shall be the outside diameter of the pipe being supplied plus 2 in. when fabricated or field cut. The interstitial space shall be filled with grout per CMS 601.

PAYMENT: Payment will be made at the unit price bid per Each for Item 604 - Inlet Misc.: Single Slope Concrete Barrier, Type D and shall include all materials, reinforcing steel, castings, and labor required to construct the inlet as shown.

See Sheet No. 255 for Sections B-B & C-C

LEGEND

* After casting is placed, fill notch with Class C concrete

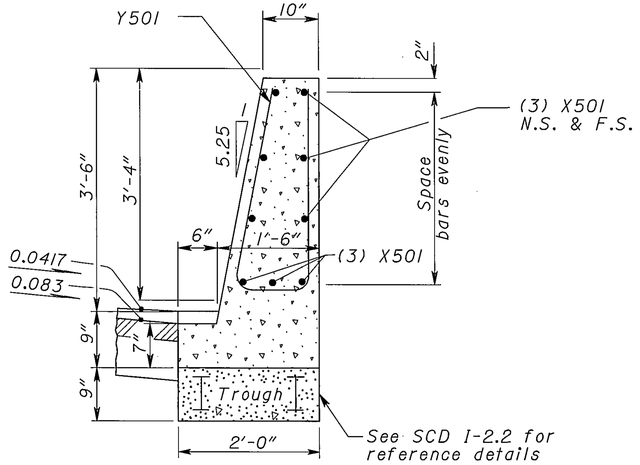
** A 1 1/2 in. minimum exp. joint shall be provided in concrete pavement or concrete shoulders.

PCJ = Permissible construction joint.

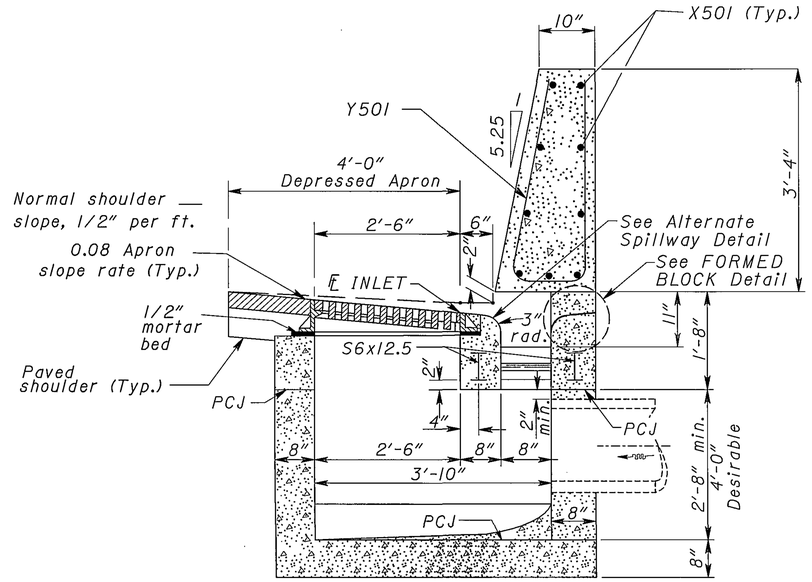
CALCULATED W.B.H. CHECKED A.R.N.

INLET MISC.: SINGLE SLOPE CONCRETE BARRIER, TYPE D

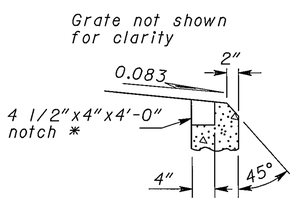
SUM-77-1.40



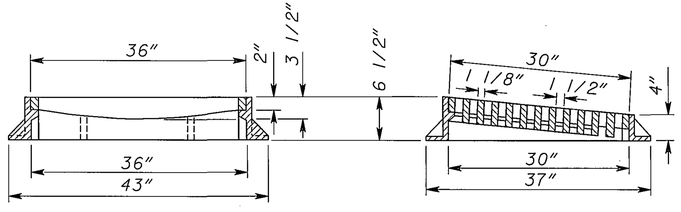
SECTION B-B



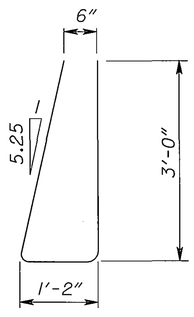
SECTION C-C



ALTERNATE SPILLWAY SHAPE



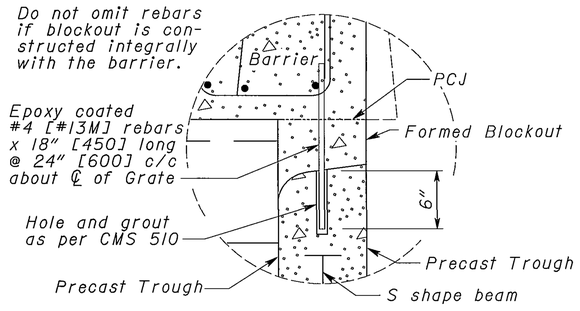
CASTING DETAILS



Y501

BENDING DIAGRAM

STEEL LIST (For Estimating Purposes Only)					
Y501 Bent		X501 Straight		S6x12.5	
No.	Length	No.	Length	No.	Length
10	7'-0"	9	19'-8"	2	11'-0"



FORMED BLOCKOUT DETAIL

See Sheet No. 254 for Notes

LEGEND

* After casting is placed, fill notch with Class C concrete

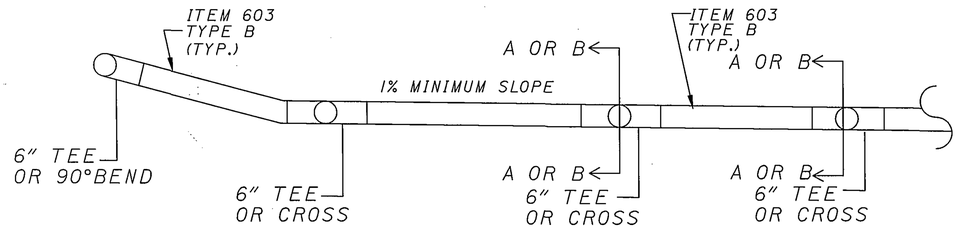
** A 1 1/2" minimum exp. joint shall be provided in concrete pavement or concrete shoulders.

PCJ = Permissible construction joint.

CALCULATED W.B.H. CHECKED A.R.N.

INLET MISC.: SINGLE SLOPE CONCRETE BARRIER, TYPE D

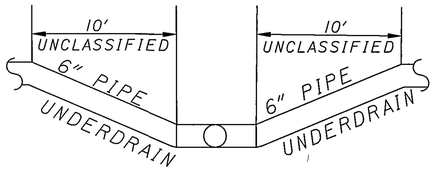
SUM-77-1.40



TYPICAL UNDERDRAIN OUTLET PIPE SECTION

SECTION C-C

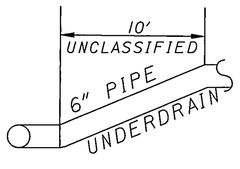
N.T.S.



A-A

SECTION FOR 6" CROSS TYPE CONNECTION

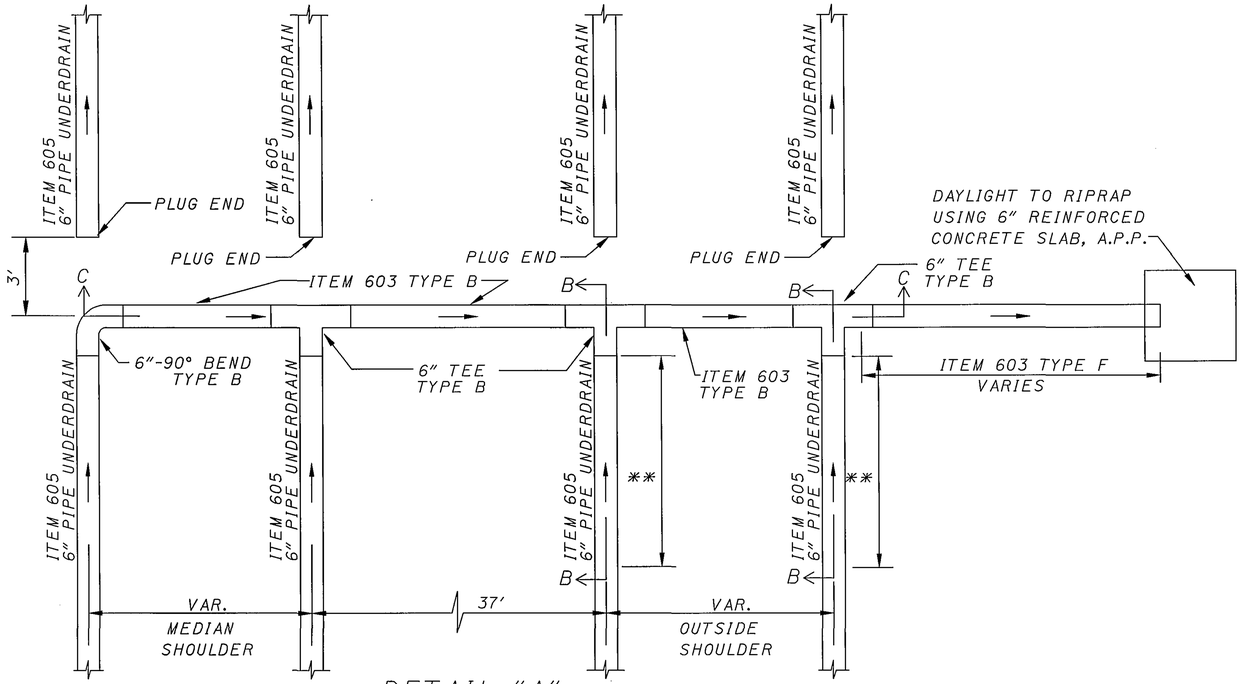
N.T.S.



B-B

SECTION FOR 6" TEE TYPE CONNECTION

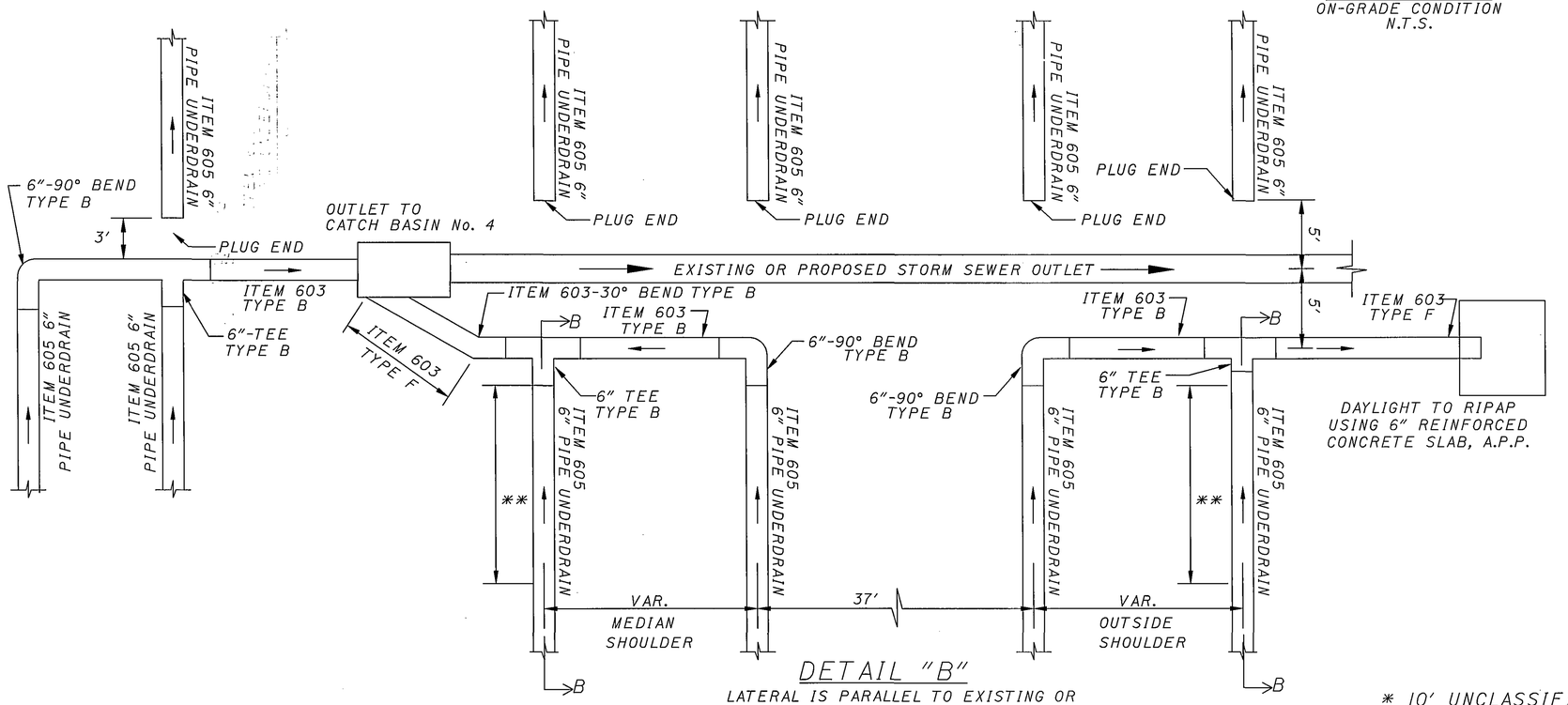
N.T.S.



DETAIL "A"

ON-GRADE CONDITION

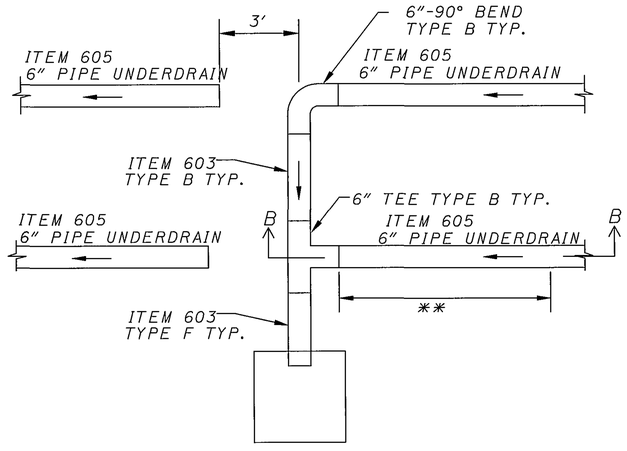
N.T.S.



DETAIL "B"

LATERAL IS PARALLEL TO EXISTING OR
PROPOSED STORM SEWER OUTLET

N.T.S.



DETAIL "C"

OUTLET TO RIPRAP
USING 6" REINFORCED
CONCRETE SLAB, A.P.P.

N.T.S.

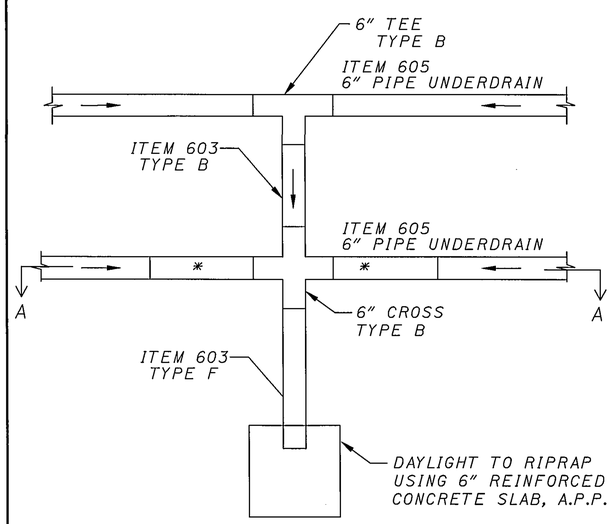
* 10' UNCLASSIFIED 6"
PIPE UNDERDRAIN
SEE SECTION A-A ABOVE

**10' UNCLASSIFIED
6" PIPE UNDERDRAIN
SEE SECTION B-B ABOVE
(AS PER PLAN)

CALCULATED L.M.B.
CHECKED W.B.H.

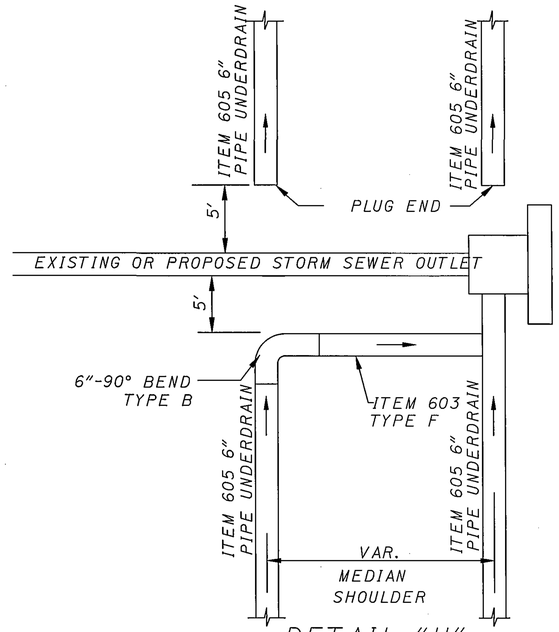
UNDERDRAIN DETAILS

SUM-77-1.40



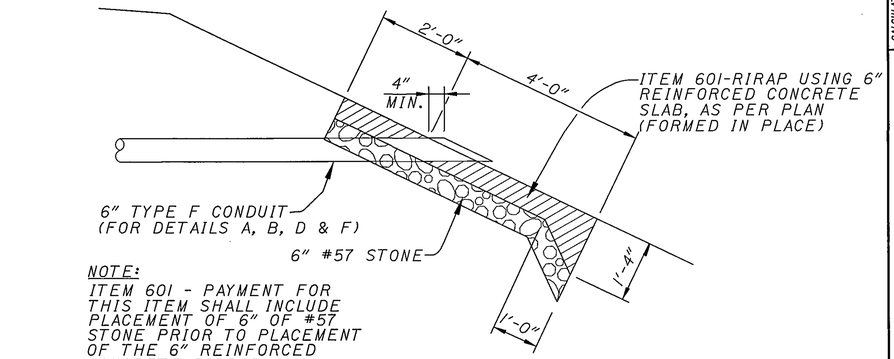
DETAIL "D"

SUMP CONDITION OUTLET TO RIPRAP USING 6" REINFORCED CONCRETE SLAB, A.P.P.

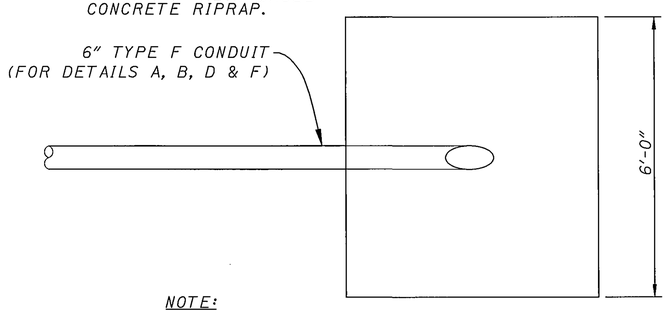


DETAIL "H"

ON-GRADE CONDITION OUTLET INTO MEDIAN BARRIER INLET



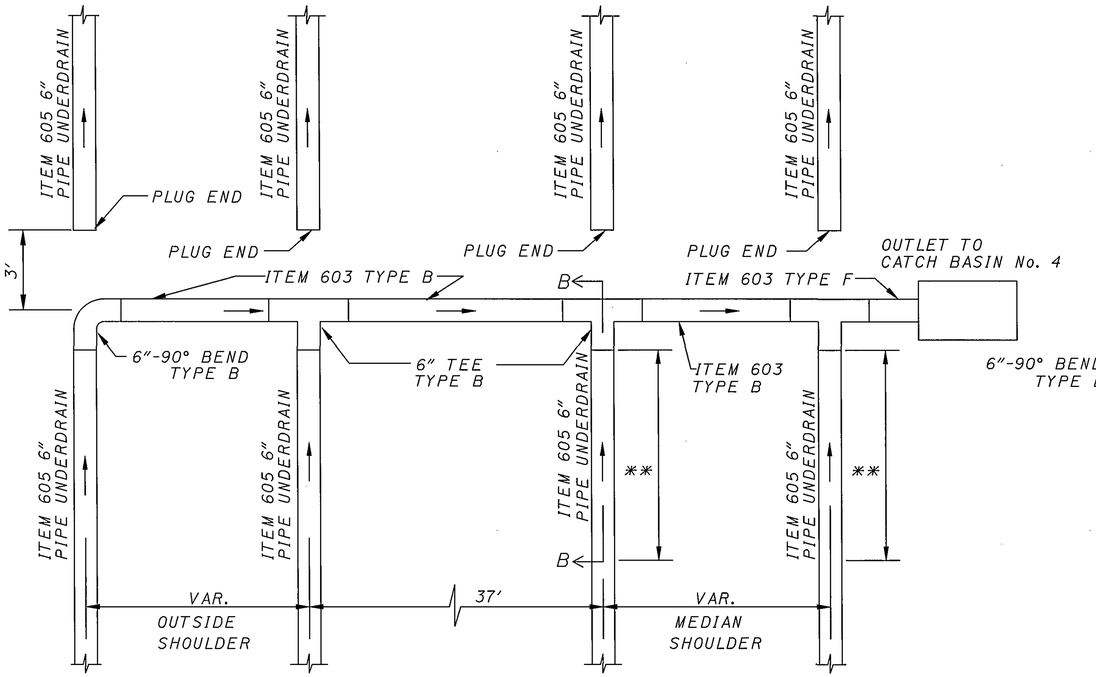
NOTE:
ITEM 601 - PAYMENT FOR THIS ITEM SHALL INCLUDE PLACEMENT OF 6" OF #57 STONE PRIOR TO PLACEMENT OF THE 6" REINFORCED CONCRETE RIPRAP.



NOTE:

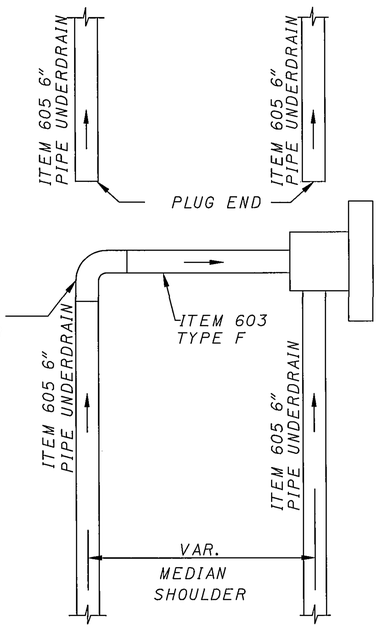
SOME LOCATIONS FOR RIPRAP PLACEMENT WILL HAVE AN EXISTING HEADWALL NEARBY, DO NOT DISTURB THESE HEADWALLS. THE OUTLET SHALL BE PLACED SO THERE IS POSITIVE DRAINAGE FLOW AND SHALL NOT OUTLET BEHIND THE HEADWALL OR BE PLACED IN A MANNER THAT WILL ERODE THE GROUND AROUND THE HEADWALLS AS DIRECTED BY THE ENGINEER.

ITEM 601 - RIPRAP USING 6" REINFORCED CONCRETE SLAB, AS PER PLAN



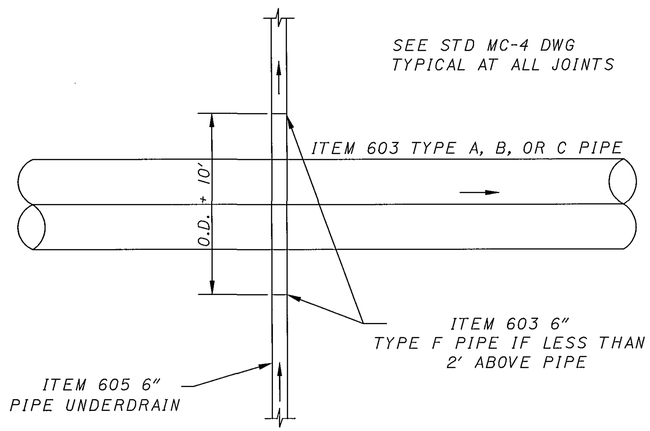
DETAIL "E"

ON-GRADE CONDITION INTO MEDIAN BARRIER INLET



DETAIL "F"

ON-GRADE CONDITION INTO MEDIAN BARRIER INLET



DETAIL "G"

UNDERDRAIN PASSING OVER EXISTING OR PROPOSED STORM SEWER OUTLET

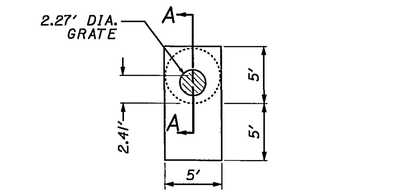
* 10' UNCLASSIFIED 6" PIPE UNDERDRAIN SEE SECTION A-A SHT. 256

** 10' UNCLASSIFIED 6" PIPE UNDERDRAIN SEE SECTION B-B SHT. 256 (AS PER PLAN)

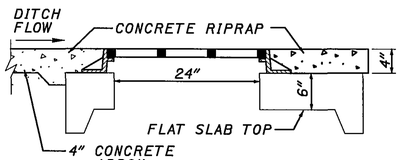
CALCULATED L.M.B. CHECKED W.B.H.

UNDERDRAIN DETAILS

SUM-77-1.40



PLAN
ITEM 601-RIPRAP, A.P.P.



SECTION A-A
GRATE AND FRAME ON MANHOLE NO. 5, A.P.P.

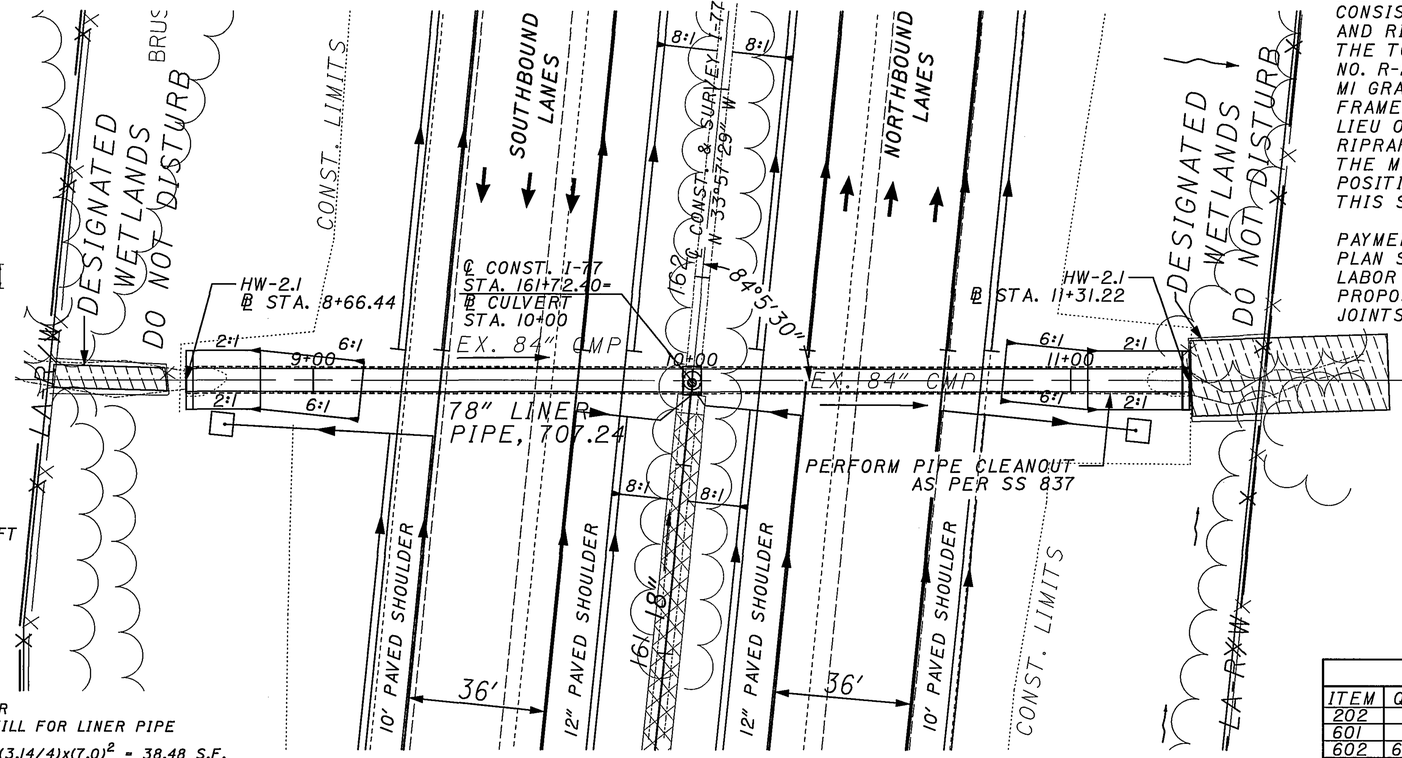
RIPRAP AREA CALCULATION:
AREA = (5'x10') - (3.14x2.27x2.27/4) = 46.0 SQ FT
AREA = 46.0 SQ FT / 9 = 5.11 SQ. YD.

USE 5 SQ. YD.

EXISTING STRUCTURE
TYPE: CMP
SIZE: 84" CIRCULAR
SKEW: 5°54'30"
ALIGNMENT: TANGENT
DATE BUILT: 1963
CONDITION: FAIR

CALCULATION FOR
ITEM 837-BACKFILL FOR LINER PIPE

84" PIPE AREA=(3.14/4)x(7.0)^2 = 38.48 S.F.
78" PIPE AREA=(3.14/4)x(6.5)^2 = 33.18 S.F.
VOLUME OF LOW STRENGTH MORTAR
BACKFILL = (38.48-33.18 S.F.) x 265'/ 27= 52 C.Y.



ITEM 604-MANHOLE NO. 5, AS PER PLAN

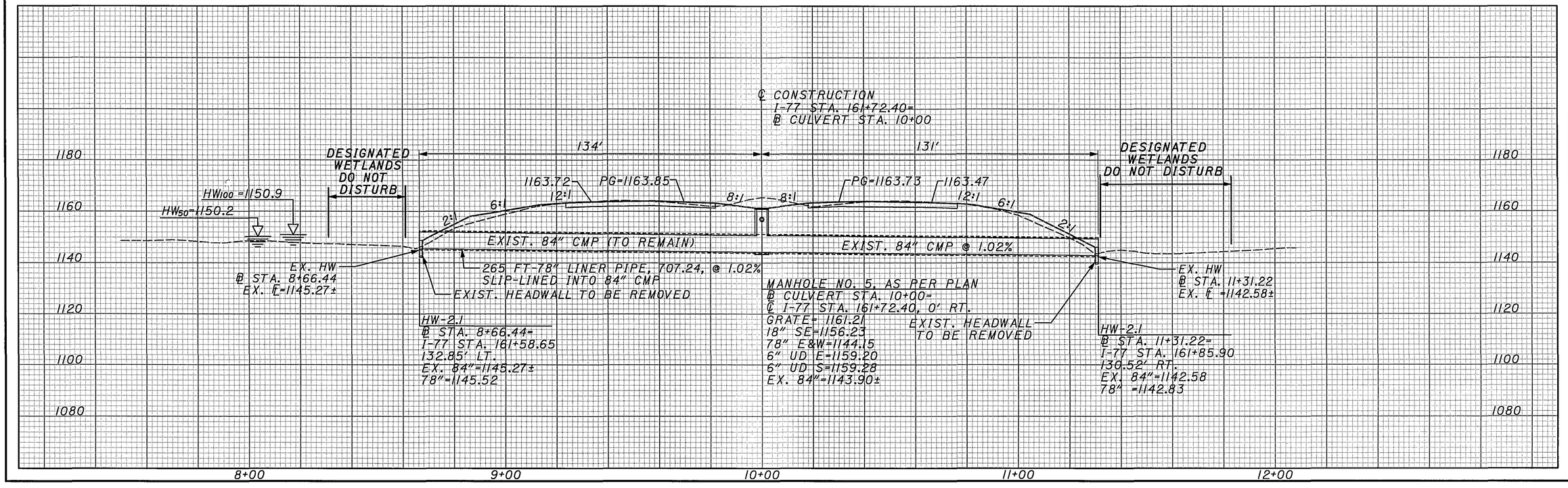
ITEM 604-MANHOLE NO. 5, AS PER PLAN SHALL CONSIST OF A BASE AS DETAILED ON SCD MH-1.3 AND RISER AND TOP AS DETAILED ON SCD MH-1.2. THE TOP SHALL BE A FLAT SLAB TOP, NEENAH NO. R-2556-A, OR EAST JORDAN NO. 1046 WITH MI GRATE, OR APPROVED EQUAL.
FRAME AND GRATE AND SHALL BE INSTALLED IN LIEU OF FRAME AND COVER. PROVIDE 4" THICK RIPRAP CONCRETE OVER THE FLAT SLAB TOP OF THE MANHOLE AROUND THE GRATE TO PROVIDE POSITIVE FLOW INTO THE GRATE. SEE DETAILS THIS SHEET.

PAYMENT FOR ITEM 604-MANHOLE NO. 5, AS PER PLAN SHALL ALSO INCLUDE THE MATERIALS AND LABOR TO CUT INTO THE EXISTING PIPE AND THE PROPOSED LINER PIPE AND THE SEALING OF THE JOINTS FOR THE MANHOLE/PIPE CONNECTION.

HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 440 ACRE
Q_{50}	= 305 C.F.S
Q_{100}	= 355 C.F.S.
HW_{50}	= 1150.2
HW_{100}	= 1150.9
V_{50}	= 17.1 F.P.S.
V_{100}	= 17.8 F.P.S.

ESTIMATED QUANTITIES			
ITEM	QTY.	UNIT	DESCRIPTION
202	2	EA.	HEADWALL REMOVED
601	5	S.Y.	RIPRAP, AS PER PLAN
602	6.60	C.Y.	CONCRETE MASONRY
604	1	EA.	MANHOLE NO. 5, AS PER PLAN
837	265	FT.	78" LINER PIPE, 707.24
837	52	C.Y.	BACKFILL FOR LINER PIPE

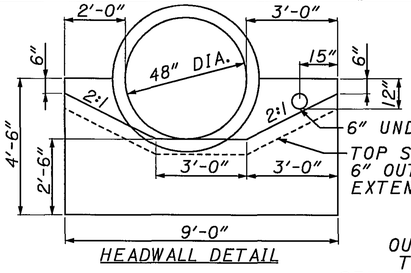
QUANTITIES CARRIED TO GENERAL SUMMARY, SEE SHEETS NO. 114 & 115



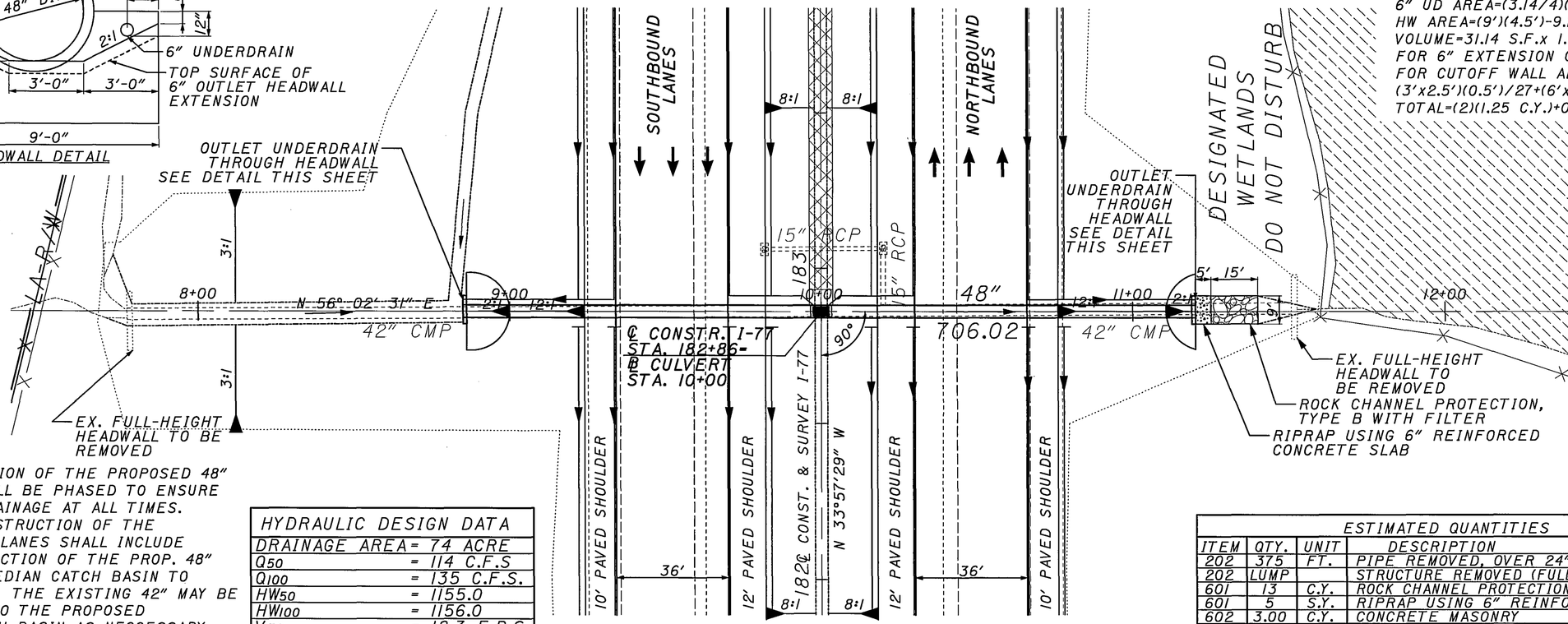
PLAN AND PROFILE
CULVERT DETAIL STA. 161+72.40
SUM-77-1.40

CALCULATED L.M.B.
CHECKED A.R.N.

HORIZONTAL SCALE IN FEET
0 10 20 40



HEADWALL DETAIL



CONCRETE MASONRY CALCULATION

48" PIPE AREA=(3.14/8)(4.83')^2=9.16 S.F.
6" UD AREA=(3.14/4)(0.5')^2=0.20 S.F.
HW AREA=(9')(4.5')-9.16-0.20=31.14 S.F.
VOLUME=31.14 S.F.x 1.08'THK/27=1.25 C.Y.
FOR 6" EXTENSION ON HEADWALL
FOR CUTOFF WALL ADD:
(3'x2.5')(0.5')/27+(6'x3.25')(0.5')/27=0.50 C.Y.
TOTAL=(2)(1.25 C.Y.)+0.50 C.Y.=3.00 C.Y.

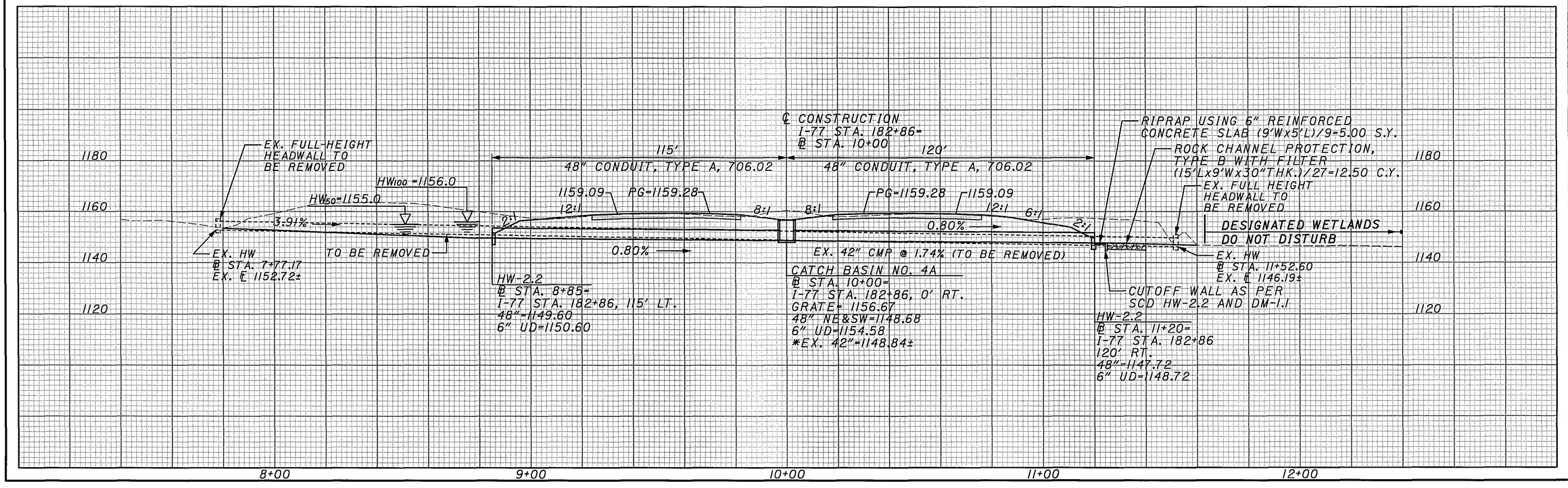
EXISTING STRUCTURE
TYPE: CMP
SIZE: 42" CIRCULAR
SKEW: 0°
ALIGNMENT: TANGENT
DATE BUILT: 1963
CONDITION: FAIR

* CONSTRUCTION OF THE PROPOSED 48" CONDUIT SHALL BE PHASED TO ENSURE POSITIVE DRAINAGE AT ALL TIMES. PHASE I CONSTRUCTION OF THE NORTHBOUND LANES SHALL INCLUDE THE CONSTRUCTION OF THE PROP. 48" FROM THE MEDIAN CATCH BASIN TO THE OUTLET. THE EXISTING 42" MAY BE CONNECTED TO THE PROPOSED MEDIAN CATCH BASIN AS NECCESSARY UNTIL CONSTRUCTION OF THE SOUTHBOUND LANES.

HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 74 ACRE
Q_{50}	= 114 C.F.S
Q_{100}	= 135 C.F.S.
HW_{50}	= 1155.0
HW_{100}	= 1156.0
V_{50}	= 12.3 F.P.S.
V_{100}	= 12.7 F.P.S.

QUANTITIES CARRIED TO GENERAL SUMMARY, SEE SHEETS NO. 114 & 115

ESTIMATED QUANTITIES			
ITEM	QTY.	UNIT	DESCRIPTION
202	375	FT.	PIPE REMOVED, OVER 24"
202	LUMP		STRUCTURE REMOVED (FULL-HEIGHT HEADWALL)
601	13	C.Y.	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER
601	5	S.Y.	RIPRAP USING 6" REINFORCED CONCRETE SLAB
602	3.00	C.Y.	CONCRETE MASONRY
603	235	FT.	48" CONDUIT, TYPE A, 706.02
604	1	EA.	CATCH BASIN NO. 4A

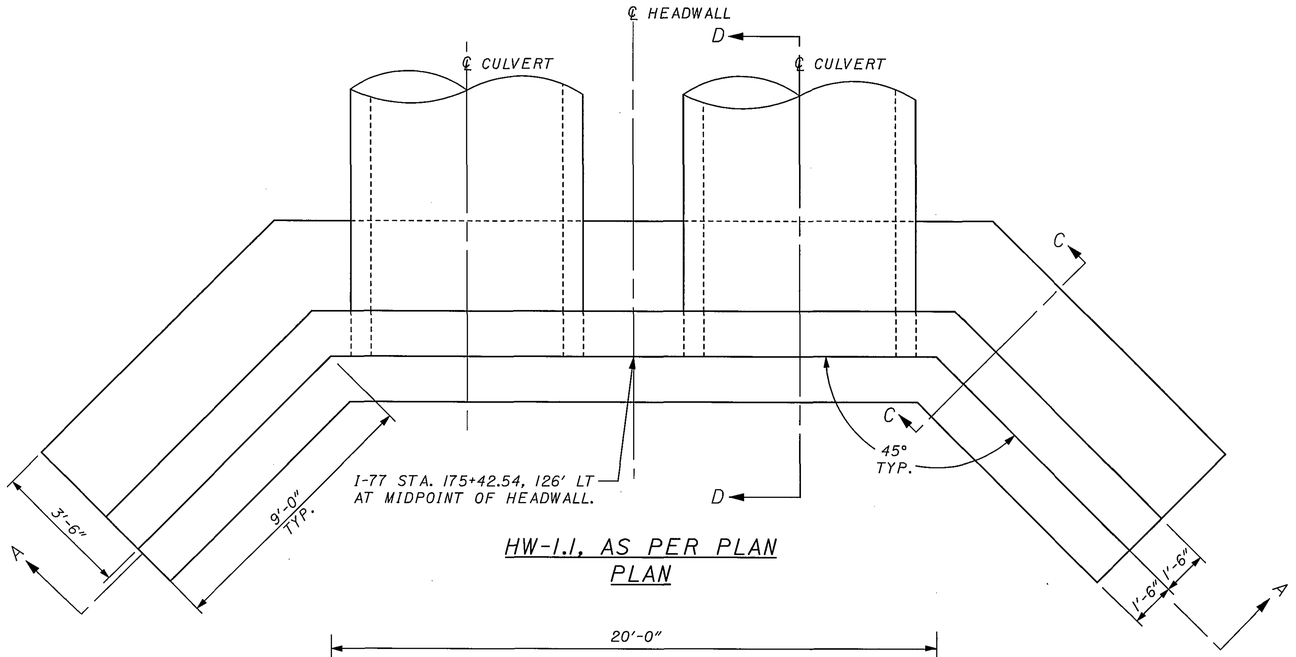


CALCULATED L.M.B. CHECKED A.R.N.

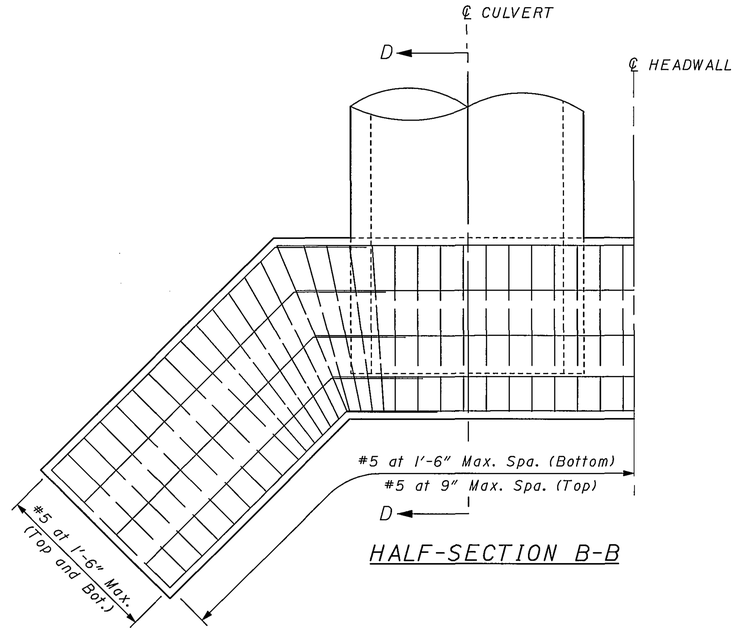
HORIZONTAL SCALE IN FEET 0 10 20 40

PLAN AND PROFILE
CULVERT
SUM-77-1.40

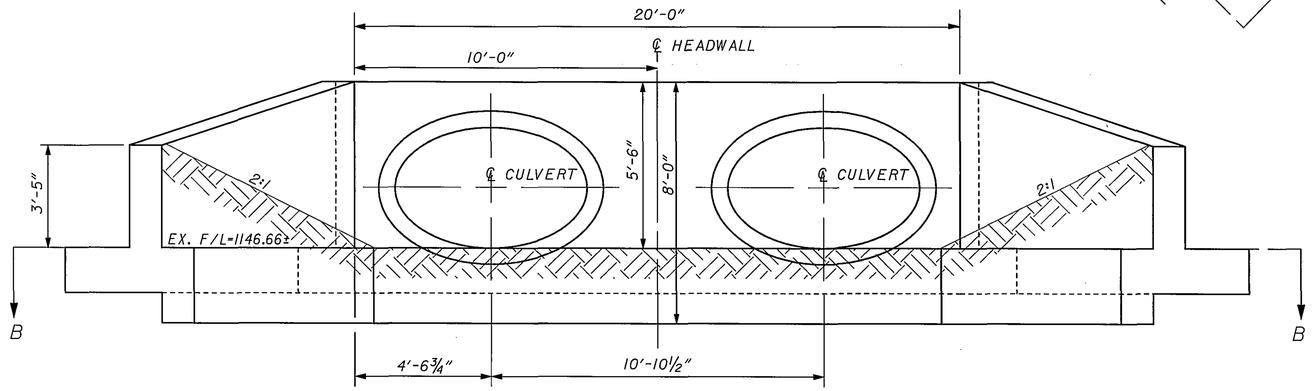
259
381



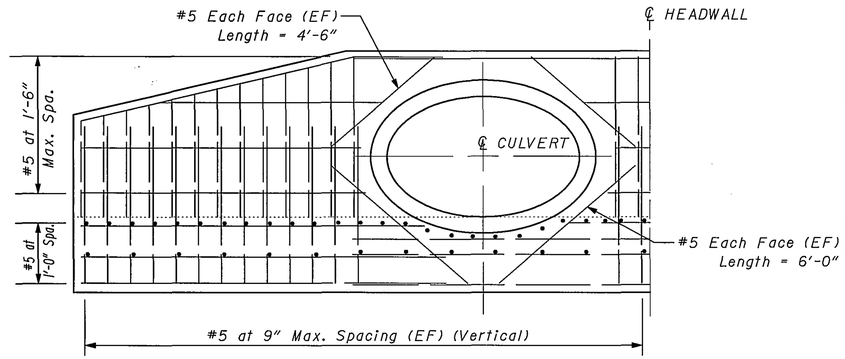
HW-1.1, AS PER PLAN
PLAN



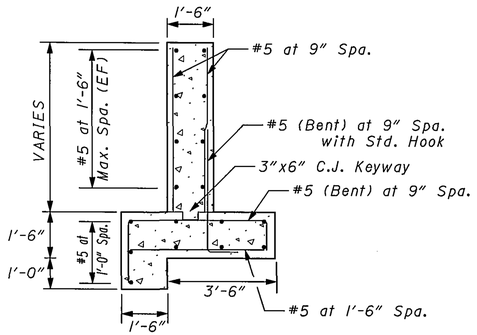
HALF-SECTION B-B



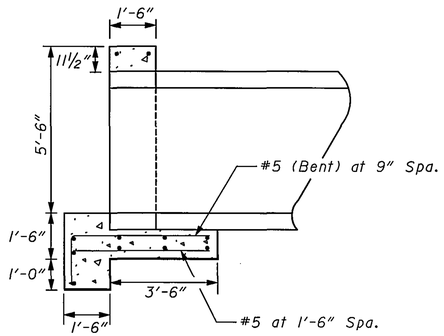
HW-1.1, AS PER PLAN
ELEVATION



HALF-SECTION A-A



SECTION C-C



SECTION D-D

ITEM 602 - CONCRETE MASONRY		
	CALCULATION OF CONCRETE MASONRY	CU.YD.
MAIN HEADWALL	20'x5.5'x1.5'/27=	6.11
WINGWALLS	2x((3.42'+5.5')/2)x9'x1.5'/27=	4.46
FOOTER	((3.5'x1.5')+(2.5'x1.5"))x38'/27=	12.67
CULVERT VOLUMES	2x29.60 S.F.x1.5'/27=	-3.29
TOTAL VOLUME	6.11+4.46+12.67-3.29=	19.95 CU.YD.

THE QUANTITY FOR ITEM 602 - CONCRETE MASONRY HAS BEEN CARRIED TO THE GENERAL SUMMARY, SHEET NO. 115

ALL REINFORCING STEEL IS TO BE EPOXY COATED.

THE ESTIMATED WEIGHT OF REINFORCING STEEL IS 1760 POUNDS.
COST OF REINFORCING IS INCIDENTAL TO ITEM 602 - CONCRETE MASONRY.

SEE ODOT STD. CONST. DWG HW-1.1 FOR ADDITIONAL NOTES AND APPLICABLE DETAILS.

76" x 48" TWIN HEADWALL DETAIL
STA. 175+42.54, 126' LT.

SUM-77-1.40

259A
381

TOTAL FROM SHEET NO.									PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
		119	120	261	267	268	269	270	IM	NHS						
															TRAFFIC CONTROL	
						230			230		202	54000	230	EACH	RPM REMOVED AND DISPOSED	
								11.16	11.16		618	40600	11.16	MILE	RUMBLE STRIPS, TYPE 2 (ASPHALT CONCRETE)	
						460			460		621	00100	460	EACH	RPM	261
						278			278		621	00300	278	EACH	RPM REFLECTOR	
		64	25						89		626	00100	89	EACH	BARRIER REFLECTOR, TYPE A	
		80	8						88		626	00200	88	EACH	BARRIER REFLECTOR, TYPE B	
							223		223		630	02100	223	FT.	GROUND MOUNTED SUPPORT, NO. 2 POST	
					162		55		217		630	03100	217	FT.	GROUND MOUNTED SUPPORT, NO. 3 POST	
						47			47		630	07600	47	FT.	GROUND MOUNTED SUPPORT, W10 x 12 BEAM	
						63			63		630	08000	63	FT.	GROUND MOUNTED SUPPORT, W12 x 30 BEAM	
						4			4		630	09000	4	EACH	BREAKAWAY BEAM CONNECTION	
							124		124		630	80100	124	SQ. FT.	SIGN, FLAT SHEET	
						290			290		630	80201	290	SQ. FT.	SIGN, GROUND MOUNTED EXTRUSHEET, AS PER PLAN	261
					28				28		630	81000	28	EACH	MAINLINE REFERENCE MARKER	
						4			4		630	84500	4	EACH	GROUND MOUNTED BEAM SUPPORT FOUNDATION	
				22					22		630	84900	22	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	261
				3					3		630	85400	3	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	261
				20					20		630	86002	20	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	261
				4					4		630	86102	4	EACH	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL	261
				4					4		630	87400	4	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	261
				3					3		630	88101	3	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE,	261
															TYPE TC-12.30, AS PER PLAN	
							6		6		630	97700	6	EACH	SIGNING, MISC.: STRUCTURE IDENTIFICATION SIGN	261
				9					9		631	94200	9	EACH	REMOVAL OF LUMINAIRE AND DISPOSAL	261
				9					9		631	94404	9	EACH	REMOVAL OF BALLAST AND DISPOSAL	261
				3					3		631	94408	3	EACH	REMOVAL OF SIGN WIRING AND DISPOSAL	261
								0.91	0.91		642	00090	0.91	MILE	EDGE LINE	
								0.36	0.36		642	00290	0.36	MILE	CENTER LINE	
								15.39	15.39		646	10000	15.39	MILE	EDGE LINE	
								15.68	15.68		646	10100	15.68	MILE	LANE LINE	
								1300	1300		646	10300	1300	FT.	CHANNELIZING LINE	

CALCULATED JMS 6/2003
CHECKED JRB 3/2004

GENERAL SUMMARY

SUM-77-1.40

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381

DATE: $DATE$ $TIME$
FILENAME: $FILE$

GENERAL

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR PLAN ITEMS SET UP TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER.

UNDERGROUND UTILITIES

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLAN ARE AS OBTAINED FROM THE OWNERS OF THE UTILITIES AS REQUIRED BY SECTION 153.64 ORC.

AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN AN AREA WHICH MAY INVOLVE UNDERGROUND UTILITY FACILITIES, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE REGISTERED UTILITY PROTECTION SERVICE AND THE OWNERS OF EACH UNDERGROUND UTILITY FACILITY SHOWN IN THE PLANS. SEE SHEET 17 FOR ADDITIONAL UTILITY INFORMATION.

SIGNING AND PAVEMENT MARKING

MILE MARKER LOCATION

THE LOCATION OF MILE MARKERS ON THE PLANS ARE APPROXIMATE AND A MORE PRECISE LOCATION WILL BE PROVIDED BY THE DEPARTMENT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 30 DAYS IN ADVANCE OF THE PLANNED DATE OF MARKER INSTALLATION. THE ENGINEER WILL CONTACT THE BUREAU OF TECHNICAL SERVICES WHICH WILL LOCATE THE LONGITUDINAL POSITION OF MILE MARKERS BY MEANS OF A PAINT MARK ON THE PAVEMENT EDGE. ALTERNATE MARKS WILL NOT BE PROVIDED ON DIVIDED HIGHWAYS AND THE CONTRACTOR SHALL SET MARKERS FOR THE OPPOSITE ROADWAY ACROSS FROM THE PROVIDED MARK. DELINEATORS WHICH HAVE A NORMAL POSITION WITHIN 50 FEET OF A MILE MARKER SHALL BE OMITTED.

ITEM 630 REMOVAL OF GROUND MOUNTED SIGNS, OVERHEAD SIGNS AND SUPPORTS, AND DISPOSAL

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING ALL EXISTING GROUND MOUNTED SIGNS, POST SUPPORTS, AND BEAM SUPPORTS INDICATED ON THE PLANS AS PER 630.12 AND 630.14. THE APPROXIMATE LOCATIONS OF THE ITEMS TO BE REMOVED ARE SHOWN ON THE SIGNING PLAN SHEETS. THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY.

ITEM 630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	22 EACH
ITEM 630 REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	4 EACH
ITEM 630 REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	3 EACH
ITEM 630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	20 EACH
ITEM 630 REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL	4 EACH

PAYMENT FOR 630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL, 630 REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL, 630 REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL, 630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL, AND 630 REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL WILL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH SIGN AND SUPPORT REMOVED AND DISPOSED, INCLUDING MATERIALS, EQUIPMENT, LABOR, AND INCIDENTALS.

ITEM 630 SIGN, GROUND MOUNTED EXTRUSHEET, AS PER PLAN

SIGNS SHALL BE TYPE J SHEETING ON TYPE G BACKGROUND.

ITEM 631 REMOVAL OF SIGN LIGHTING LUMINAIRES, BALLASTS AND SIGN WIRING AND DISPOSAL

THE CONTRACTOR IS RESPONSIBLE FOR REMOVING AND DISPOSING OF SIGN LIGHTING ITEMS AT THE LOCATIONS INDICATED IN THE PLANS AND LISTED BELOW, ANY REMAINING SIGN LIGHTING SYSTEM COMPONENTS OR SIGNS AND SUPPORTS SHALL NOT BE DAMAGED AND SHALL BE IN CONFORMANCE WITH THE SPECIFICATIONS.

STA 27+40, RT, 3-LUMINAIRES, 3-BALLASTS, 1-SIGN WIRING
STA 209+50, LT, 3-LUMINAIRES, 3-BALLASTS, 1-SIGN WIRING
STA 235+90, LT, 3-LUMINAIRES, 3-BALLASTS, 1-SIGN WIRING

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE TRAFFIC CONTROL GENERAL SUMMARY FOR THIS WORK:

ITEM 631 - REMOVAL OF LUMINAIRE AND DISPOSAL	9-EACH
ITEM 631 - REMOVAL OF BALLAST AND DISPOSAL	9-EACH
ITEM 631 - REMOVAL OF SIGN WIRING AND DISPOSAL	3-EACH

ITEM 630 REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE, TYPE TC-12.30, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 630, THE CONTRACTOR SHALL DELIVER THE OVERHEAD SIGN SUPPORT TO THE ODOT MAINTENANCE FACILITY ON MT. PLEASANT ROAD. THE SUPPORTS ARE LOCATED:

STA 58+00, RT
STA 209+50, LT
STA 235+90, LT

A QUANTITY OF 3 EACH - ITEM 630 - REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE, TYPE TC-12.30, AS PER PLAN HAS BEEN CARRIED TO THE TRAFFIC CONTROL GENERAL SUMMARY FOR THIS WORK.

LOGO SIGNS

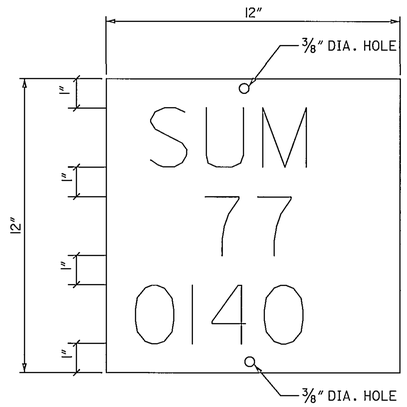
OHIO LOGOS, INC. IS RESPONSIBLE FOR THE REMOVAL AND ERECTION OF LOGO SIGNS.

THE CONTRACTOR SHALL CONTACT OHIO LOGOS (1-800-860-LOGO) AT LEAST 60 DAYS PRIOR TO THE DATE THAT SIGNS MUST BE REMOVED.

ITEM 630 - SIGNING, MISC.: STRUCTURE IDENTIFICATION SIGN

SIGNS SHALL BE DIMENSIONED AS PER THE EXAMPLE. THEY WILL BE PLACED OFF THE RIGHT SHOULDER, FACING TRAFFIC, AND BEHIND THE GUARDRAIL. SIGNS SHALL BE ALUMINUM AND HAVE NON-REFLECTIVE WHITE SHEETING BACKGROUND. LETTERS SHALL BE BLACK 2" HEIGHT. SERIES C STROKE WIDTH AND SILK SCREENED AS PER 730.22. SIGNS SHALL BE BOLTED USING TWO 5/16" ALUMINUM BOLTS 2 1/2" IN LENGTH AND TWO NUTS. NEW NO. 2 POSTS SHALL BE INSTALLED AS PER STANDARD CONSTRUCTION DRAWING TC-41.20 MOST CURRENT REVISION.

EACH POST SHALL BE 7 LIN. FT. LONG. ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK IS TO BE INCLUDED IN THE CONTRACT BID PRICE PER EACH ITEM 630, SIGNING MISC.: STRUCTURE IDENTIFICATION SIGN



STRUCTURE IDENTIFICATION SIGN EXAMPLE

CALCULATED CJD 10/2003
CHECKED ISC 11/ 2003

TRAFFIC CONTROL GENERAL NOTES

SUM-77-1.40

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DATE: $DATE$ $TIME$
FILENAME: $FILE$

ITEM 630 MAINLINE REFERENCE MARKERS

REFERENCE MARKERS SHALL BE LOCATED AND INSTALLED AS INDICATED ON THESE PLANS.

THE CONTRACTOR SHALL LAYOUT ALL REFERENCE MARKER LOCATIONS TO ASSURE PROPER PLACEMENT. THE LAYOUT SHALL BE APPROVED BY THE ENGINEER BEFORE INSTALLATIONS ARE STARTED.

THE WHOLE DIGIT REFERENCE MARKERS, E.G. 16.0, SHALL BE PLACED AT THE SAME STATION AS THE MILE MARKER.

MAINLINE REFERENCE MARKERS SHALL BE INSTALLED IN THE MEDIAN AS INDICATED ON SHEETS 263-264. ON RAMPS, THE REFERENCE MARKERS SHALL BE INSTALLED ON THE RIGHT SIDE. FOR DIRECTIONAL MAINLINE SEGMENTS, THE MARKER SHALL BE PLACED ON THE LEFT SIDE.

THE HEIGHT OF THE REFERENCE MARKERS SHALL BE SUCH THAT A UNIFORM APPEARANCE IS PRESENTED TO THE MOTORIST.

WHEN A REFERENCE MARKER IS OBSTRUCTED BY A SIGN TRUSS, BRIDGE, PIER OR THE LIKE, THE REFERENCE MARKER SHALL BE RELOCATED ±50 FEET FROM THE LAYOUT LOCATION OR NOT INSTALLED WITH THE APPROVAL OF THE ENGINEER.

IF ANY MILE MARKERS ARE MISSING, A PRECISE LOCATION WILL BE PROVIDED BY THE DEPARTMENT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 30 DAYS IN ADVANCE OF THE PLANNED REFERENCE MARKER INSTALLATION. THE ENGINEER WILL CONTACT THE OFFICE OF TECHNICAL SERVICES WHICH WILL LOCATE THE LONGITUDINAL POSITION OF MISSING MILE MARKERS BY MEANS OF A POINT MARK ON THE PAVEMENT EDGE.

PAYMENT SHALL BE MADE AT THE UNIT BID PRICE PER EACH FOR 630 MAINLINE REFERENCE MARKER AND SHALL INCLUDE ALL LABOR AND MATERIAL FOR INSTALLATION. THE SUMMARY TOTAL IS FOR ESTIMATING ONLY. PAYMENT WILL BE FOR THE ACTUAL NUMBER INSTALLED.

LIGHT POLE MOUNTING

WHERE LIGHT POLES EXIST IN THE MEDIAN, THE REFERENCE MARKERS SHALL BE INSTALLED ON THE LIGHT POLE IF THE LAYOUT LOCATION IS WITHIN ± 50 FEET OF THE LIGHT POLE. NO REFERENCE MARKERS SHALL BE ATTACHED TO LIGHT POLES EQUIPPED WITH LOWERING DEVICES.

CALCULATED GSC 2/03 | CHECKED 2/03

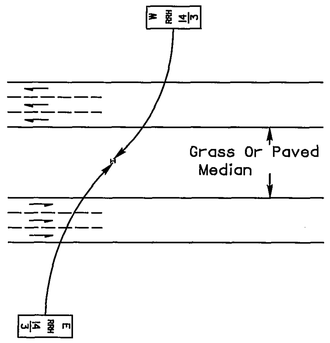
TYPICAL REFERENCE MARKER NOTES

SUM-77-1.40

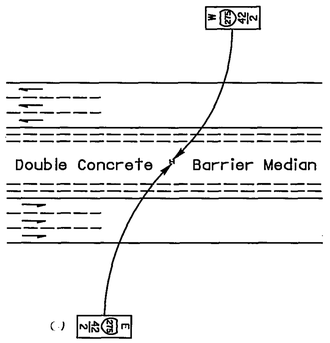
DATE: 06/14/2004 08:37:54 AM
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Typical Reference Marker Placement

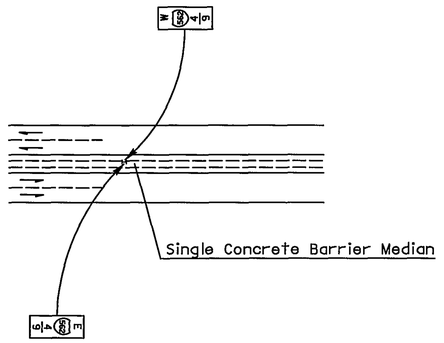
Median



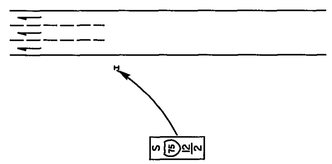
Double Concrete Barrier Median



Single Concrete Barrier Median

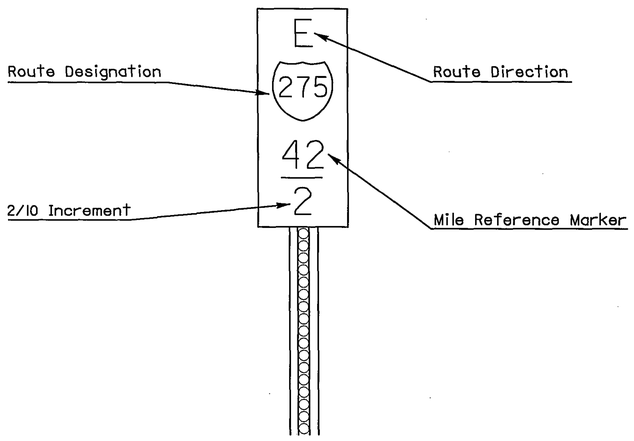


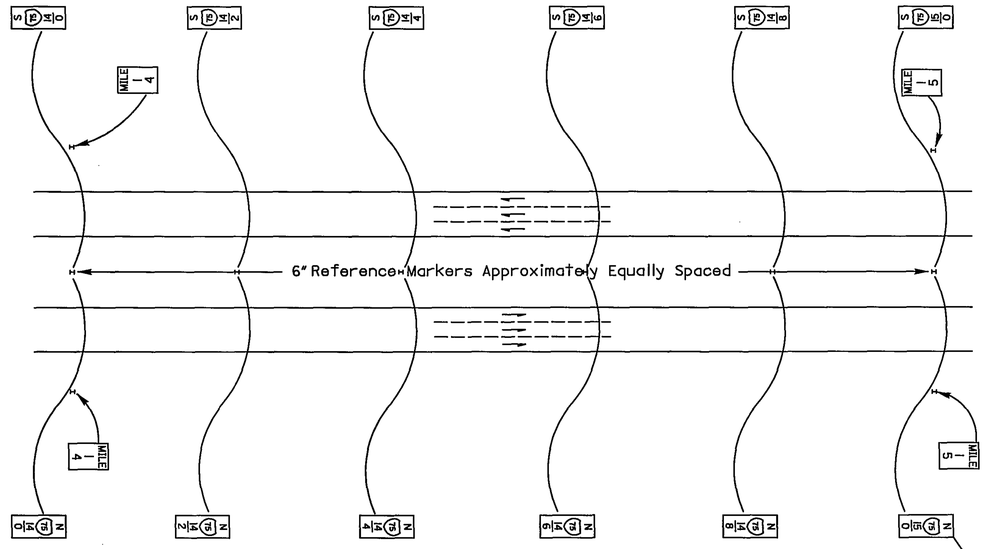
No Median Single Direction Traffic



Note: See Separate Sheet For Ramp Marker Installation.

NOTE: Placement other than those depicted here may apply.





CALCULATED DSC 2/03
CHECKED 2/03

TYPICAL REFERENCE MARKER PLACEMENT

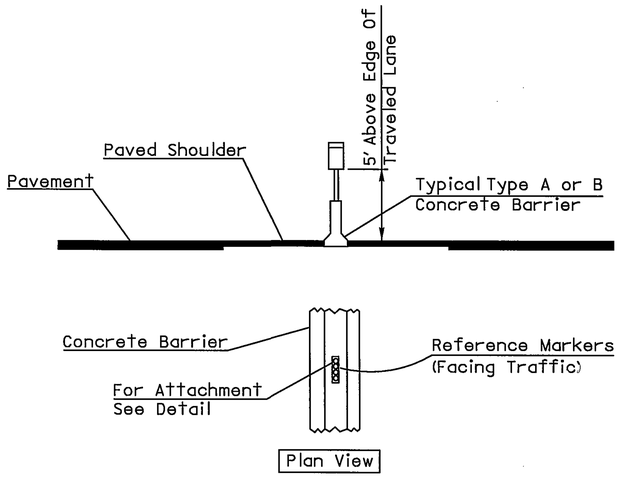
SUM-77-1.40

263
381

DATE: 01/09/2004 02:19:17 PM
FILENAME: T:\Drawing\0\0647231\NT\647231RM02.dgn

Typical Mainline Reference Marker Installation Plans

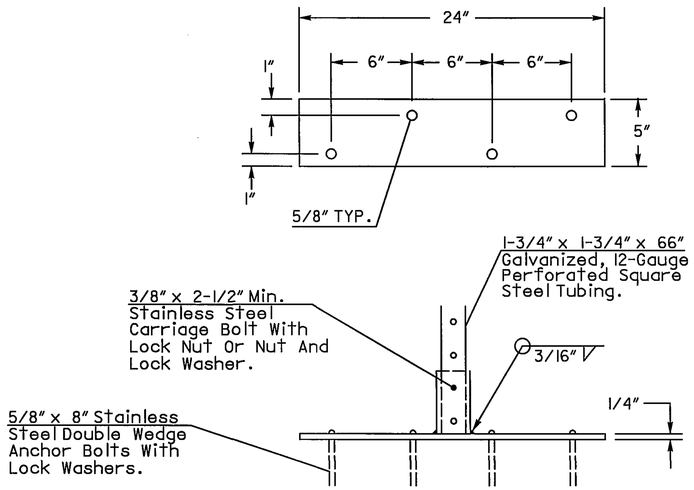
Single Median Barrier



Note:

1. Typical installed height is 2' from top of barrier wall to bottom of sign.

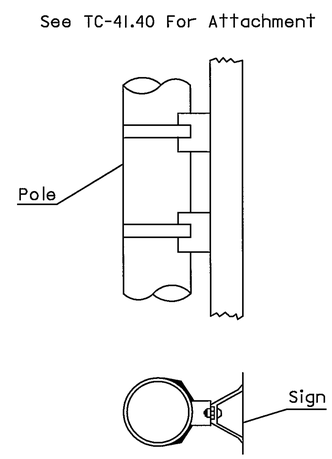
Barrier Mounting Bracket



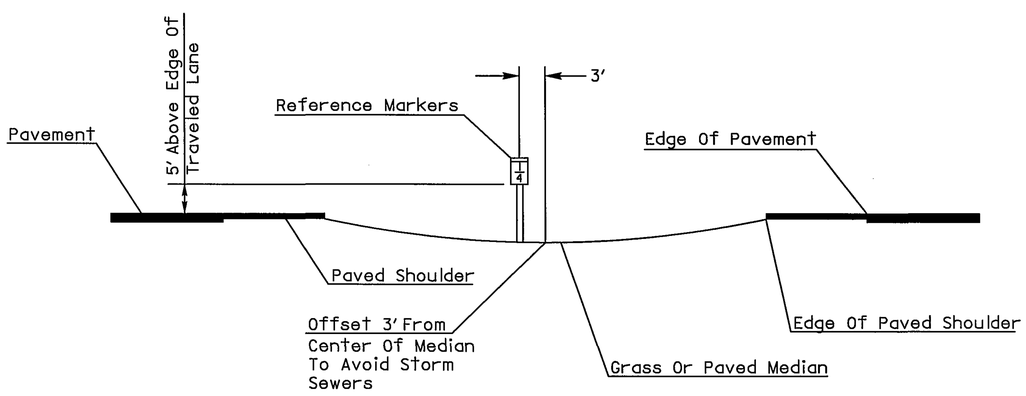
Note:

1. All Hardware Shall Be Galvanized Steel Or Stainless Steel As Specified.
2. All Work And Materials Shall Be In Accordance With Standard Specification.

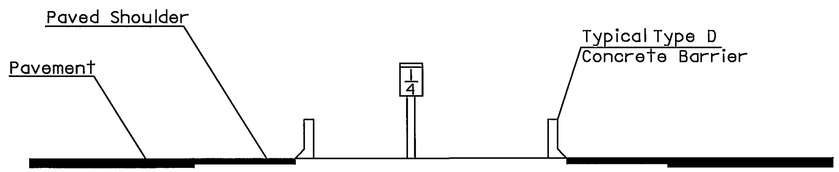
Light Poles



Median



Double Median Barrier



Note:

1. Typical installed height on a raised median is 4' from top of median to bottom of sign.

CALCULATED GSC 2/03 CHECKED

TYPICAL MAINLINE REFERENCE MARKER INSTALLATION PLANS

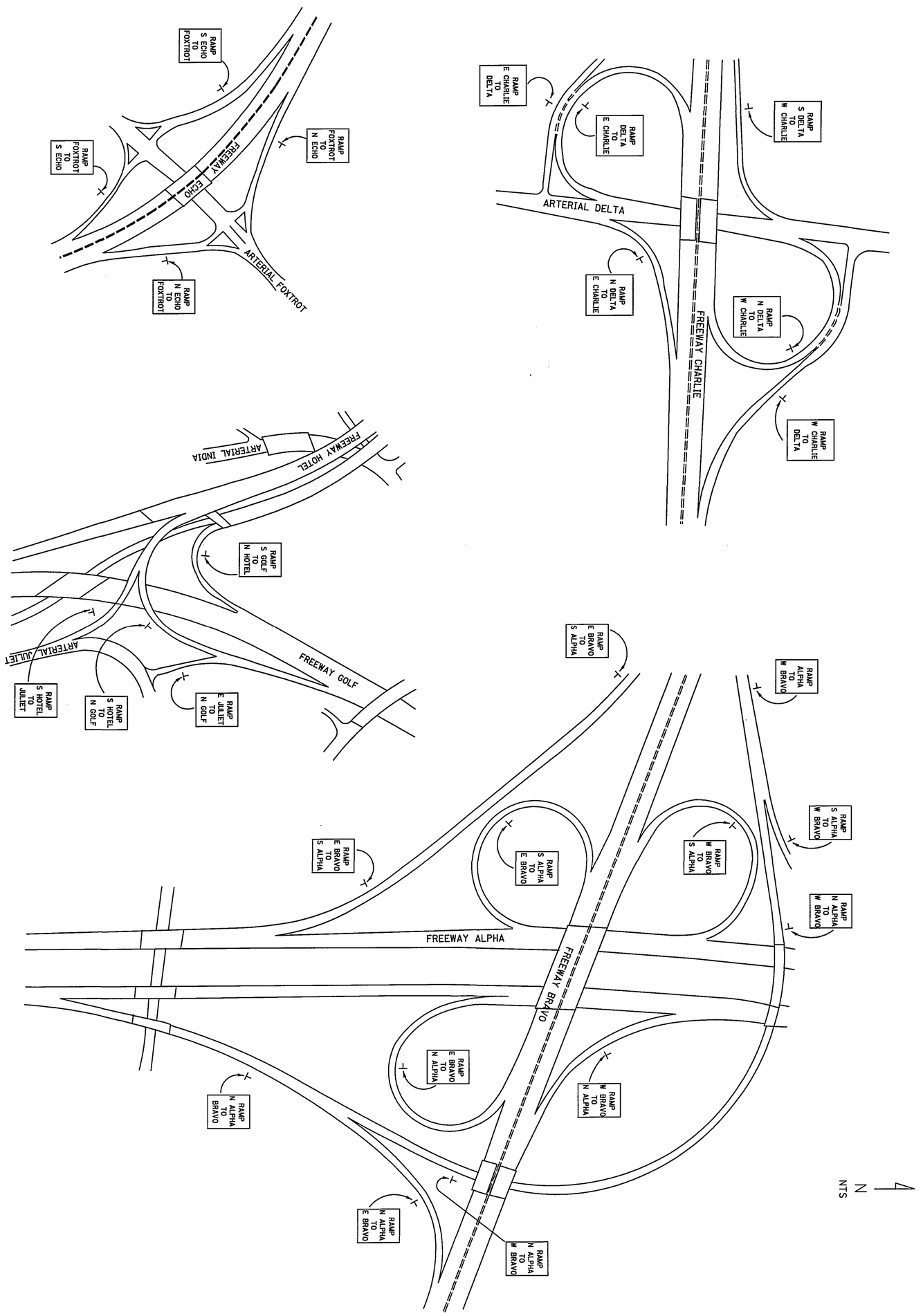
SUM-77-1.40

264
381

DATE: 01/09/2004 02:9:47 PM
FILENAME: T:\drawings\0\06472\3\0\TC\6472RM03.dgn

DATE: 01/09/2004 02:20:9 PM
FILENAME: T:\drawing\D\06472\310\TC\6472RM04.dgn

Typical Ramp Marker Installation



N
NTS

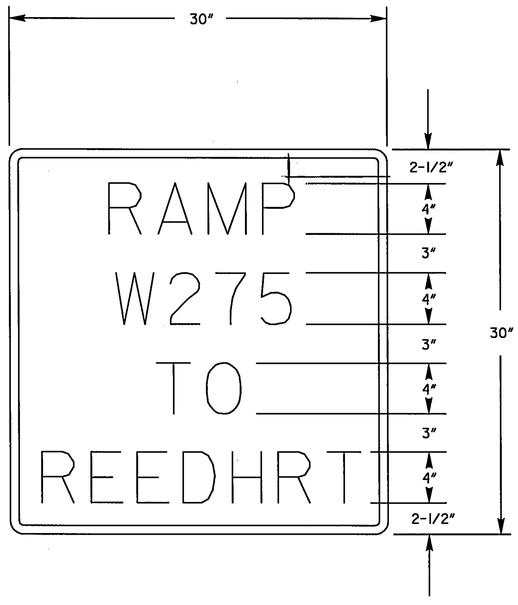
265 / 381	SUM-77-1.40	TYPICAL RAMP REFERENCE MARKER INSTALLATION PLANS	CALCULATED GSC 2/03 / CHECKED 2/03

Typical Reference Markers

Typical Ramp Reference Marker

Color: White On Blue
Series C

Type G sheeting



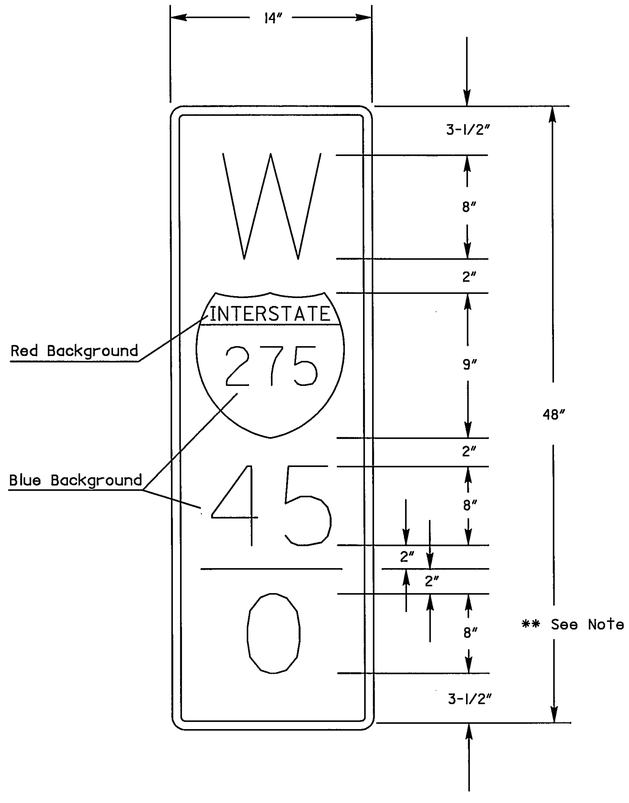
Note:
1. See Ramp Marker Installation Detail Sheets For Placement.
2. No Marker Installation On Bridges.
3. Stroke Width = 3/4″
4. Border is white, width = 3/4″

Note:
1. See Detail Sheets For Placement And Installation.
2. See Quantities For Specific Ramp Marker Lettering.

Typical Mainline Reference Marker

Color: White On Blue
Series C

Type G sheeting



** Note:
Divider Line Thinckness = 1″
Divider Line Length = Width of Numbers above Line
Stroke Width = 1.60″
Border is white, width = 3/4″
Width of dual route marker shall be 24″

CALCULATED GSC 2/03
CHECKED 2/03

TYPICAL REFERENCE MARKER LAYOUTS

SUM-77-1.40

266
381

DATE: 01/09/2004 02:20:48 PM
FILENAME: T:\drawings\0\06472\310\TC\647RM05.dgn

Estimated Quantities

Reference Marker Signs

COUNTY	ROUTE	COUNTY LOG FROM	COUNTY LOG TO	STATE LOG FROM	STATE LOG TO	TYPE OF INSTALLATION	630	
							MAINLINE REFERENCE MARKER	GROUND MOUNTED SUPPORT, NO.3 POST
							EA	FT
SUM	I-77	1.40	1.41	114.8		BACK TO BACK	2	12
		1.41	4.06	115.0	117.6	BACK TO BACK	26	149.5
					TOTAL		28	161.5
			TOTAL CARRIED TO GENERAL SUMMARY				28	162

NOTE: TYPE OF INSTALLATION
BACK-TO-BACK OR DUAL.

CALCULATED CJD 10/03
CHECKED GSC 11/03

REFERENCE MARKER ESTIMATED QUANTITIES

SUM-77-1.40

DATE: 04/01/2004 09:06:16 AM
FILENAME: I:\drawing\V0\06472\310\tc16472rm06.dgn

LOCATION				SIGN CODE AND SIZE																	
				156" X 42"	216" X 102"	96" X 24"	180" X 60"								630	630	630	630	630		
				D3-H3	E1-2	E1-H5-96	E7								SIGN, GROUND MOUNTED EXTRUSHEET, AS PER PLAN	GROUND MOUNTED SUPPORT, W10 X 12 BEAM	GROUND MOUNTED SUPPORT, W12 X 30 BEAM	BREAKAWAY BEAM CONNECTION	GROUND MOUNTED BEAM SUPPORT FOUNDATION		
REF #	STATION	SIDE	SHT.												SQ FT	FT	FT	EACH	EACH		
	I-77																				
3	81+90	R	275				1								75.0	21.0/25.2		2	2		
6A	90+50	L	276	1											45.5		28.6/33.6	2	2		
6B	90+50	L			1										153.0						
6C	90+50	L				1									16.0						
TOTALS				1	1	1	1								289.5	46.2	62.2	4	4		
TOTALS CARRIED TO GENERAL SUMMARY															290	47	63	4	4		

ITEM 621 RAISED PAVEMENT MARKER SUBSUMMARY

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ROADWAY	SHEET NO.	STATION TO STATION		SIDE	INTERVAL	RPM REFLECTOR			RPM REMOVED AND DISPOSED (EACH)
						RPM WITH 1-WAY WHITE REFLECTOR	1-WAY WHITE	2-WAY WHITE/RED	
I-77									
	271	10+40	73+86	R	120		53		
		32+80	73+86	R	120		35		
		37+30	73+86	L	120		31		
		36+83	73+86	L	120		31		
		39+28	44+28	L	40			13	
		39+49	73+86	R	120		29		
		44+28	47+28	L	120		3		
		45+04	47+44	R	120		3		
	272	73+86	209+35	L	120	226			113
		73+86	213+85	R	120	234			117
	284								
		209+35	244+00	L	120		58		
	285	213+85	224+95	R	120		20		
		223+55	225+20	L	120		2		
TOTAL						460	265	13	230
TOTALS CARRIED TO GEN. SUMMARY						460	278		230

DATE: $DATE$ $TIME$
FILENAME: $FILE$

CALCULATED J.D. 11/03
CHECKED XXX XXXX

SIGN AND RPM SUBSUMMARY

MAJOR SIGN

SUM-77-1.40

LOCATION COLUMN A

REF #	STATION	SIDE	SHT	V.CLR.	SIGN CODE NUMBER AND SIZE: DIO-3-12 12" x 48"	I-HI4-48 48" x 30"	OM-3L-12 12" x 36"	OM-3R-12 12" x 36"	R3-H4a-24 24" x 30"	R3-4-36 36" x 36"	SID-12 12" x 12"			630 GROUND MOUNTED SUPPORT, NO. 2 POST FT.	630 GROUND MOUNTED SUPPORT, NO. 3 POST FT.	630 SIGN, FLAT SHEET SQ FT	630 SIGNING MISC.: STRUCTURE IDENTIFICATION SIGN EA.
	I-77																
1	81+10	L	275	4'	1									12.0		4	
2	81+10	R		4'	1									12.0		4	
3	SEE SHEET 268	R															
4	83+40	R		4'							1						1
5	86+45	L		4'							1						1
6A	SEE SHEET 268	L	276														
6B	SEE SHEET 268	L															
6C	SEE SHEET 268	L															
7	NOT USED																
8A	104+40	R	277	6'						1					13.5	9	
8B	104+40	R		6'					1							5	
9A	105+03	L		6'					1						13.5	5	
9B	105+03	L		6'						1						9	
10	NOT USED																
11	132+00	L	279	6'		1								13.5/13		10	
12	133+89	L	280	4'	1									12.0		4	
13	133+91	R		4'	1									12.0		4	
14	134+35	R		6'		1								13/13.5		10	
15	149+35	R	281	4'							1						1
16	151+80	L		4'							1						1
17	186+70	L	284	4'	1									12.0		4	
18	186+70	R		4'	1									12.0		4	
19	199+50	R	286	4'							1						1
20	200+20	L		4'							1						1
21A	206+59	L		6'						1					13.5	9	
21B	206+59	L		6'					1							5	
22A	205+44	R		6'						1				13.5		9	
22B	205+44	R		6'					1							5	
	TOTAL COLUMN A				6	2			4	4	6			138.5	40.5	100	6

LOCATION COLUMN B

REF #	STATION	SIDE	SHT	V.CLR.	SIGN CODE NUMBER AND SIZE: DIO-3-12 12" x 48"	I-HI4-48 48" x 30"	OM-3L-12 12" x 36"	OM-3R-12 12" x 36"	R3-H4a-24 24" x 30"	R3-4-36 36" x 36"	SID-12 12" x 12"			630 GROUND MOUNTED SUPPORT, NO. 2 POST FT.	630 GROUND MOUNTED SUPPORT, NO. 3 POST FT.	630 SIGN, FLAT SHEET SQ FT	630 SIGNING MISC.: STRUCTURE IDENTIFICATION SIGN EA.
	GREENSBURG RD.																
31	9+75	L	290	7'											14.0		
	WISE RD.																
23	7+70	L	291	4'			1							10.5		3	
24	7+75	R		4'				1						10.5		3	
25	12+12	L		4'				1						10.5		3	
26	12+33	R		4'			1							10.5		3	
	GRAYBILL RD.																
27	8+10	L	292	4'			1							10.5		3	
28	8+25	R		4'				1						10.5		3	
29	11+90	L		4'				1						10.5		3	
30	11+90	R		4'			1							10.5		3	
	TOTAL COLUMN B						4	4						84.0	14.0	24	
	TOTAL COLUMN A				6	2			4	4	6			138.5	40.5	100	6
	TOTAL				6	2	4	4	4	4	6			222.5	54.5	124	6
	TOTAL CARRIED TO GENERAL SUMMARY													223	55	124	6

CALCULATED MRS 10/03
CHECKED CJD 11/03

MINOR SIGN SUBSUMMARY

SUM-77-1.40

DATE: 04/01/2004 11:23:14 AM
FILENAME: T:\drawing\00647\2\3\01\C64727SS02.dgn

PAVEMENT MARKING SUBSUMMARY

CALCULATED MRS 10/03
CHECKED AD 11/03

SUM-77-1.40

SHEET NO.	STATION FROM	STATION TO	SIDE	646 EDGE LINE, WHITE FT.	646 EDGE LINE, YELLOW FT.	646 LANE LINE FT.	646 CHANNELIZING LINE FT.		642 EDGE LINE, WHITE FT.	642 CENTER LINE, SOLID DOUBLE FT.		618 RUMBLE STRIPS, TYPE 2 (ASPHALT CONCRETE) FT.			
	I-77														
271	10+40	224+95	R		21455										
	10+40	224+95	R			21455									
	32+80	224+95	R			19215									
	35+00	45+04	R						1004						
	36+83	244+00	L			20617									
	37+83	39+28	L	145											
	37+83	244+00	L			20670									
	37+83	231+00	L	19317											
	38+40	244+00	L		20560										
	39+28	44+28	L				1000								
	43+84	45+04	R				120								
	44+28	47+28	L			300									
272	45+04	47+44	R			240									
272	47+44	224+95	R	17751											
274	73+86	84+06	L									2040			
274	73+86	83+40	R									1908			
275	86+41	225+20	L									27758			
275	85+74	221+83	R									27218			
288	223+55	226+50	L			295									
288	226+50	228+30	L				180								
288	226+51	244+00	L	1750											
288	228+30	231+00	L		270										
	GREENSBURG RD.														
290	6+00	12+75	R/L						1350						
	6+00	12+75	℄							675					
	WISE RD.														
291	7+13	13+22	R/L						1218						
	7+13	13+22	℄							609					
	GRAYBILL RD.														
292	8+50	14+75	R/L						1250						
	8+50	14+75	℄							625					
TOTAL				38963	42285	82792	1300		4822	1909		58924			
TOTAL (FT)				81248		82792	1300		4822	1909		58924			
TOTAL (MI)				15.39		15.68			0.91	0.36		11.16			
TOTAL CARRIED TO GEN. SUMMARY				15.39		15.68	1300		0.91	0.36		11.16			

DATE: 06/14/2004 02:08:23 PM
FILENAME: t:\drawing\V0\06472\3\0\tc6472ts01.dgn

ITEM 642	ITEM 646	ODOT LINE SPECIFICATIONS
WE	WE	EDGE LINE, WHITE
	YE	EDGE LINE, YELLOW
	LL	LANE LINE, 4"
DY		CENTER LINE, SOLID DOUBLE 4"
	CH	CHANNELIZING LINE

SIGN LEGEND

- PROPOSED
- EXISTING TO REMAIN
- EXISTING TO BE REMOVED
- RUMBLE STRIPS

RAISED PAVEMENT MARKER (RPM) LEGEND

- □ RPM, WHITE, (ONE WAY)
- ○ RPM, WHITE/RED, (TWO WAY)

MEET EXISTING LL YE STA. 10+40

ON EXISTING TC 7.65 DESIGN 8 SUPPORT. REMOVE SIGN, SIGN BRACKETS AND ASSOCIATED SIGN WIRING BACK TO DISCONNECT SWITCH. DO NOT DISTURB REMAINING SIGN OR SIGN LIGHTING.

STA. 27+40

LEFT LANE ENDS 1/4 MILE

Akron-Canton Airport

EXIT 113

MEET EXISTING LL STA. 32+80

MATCH LINE STA. 33+10 SEE THIS SHEET

MEET EXISTING LL WE STA. 37+83

MEET EXISTING YE WE STA. 37+83

MEET EXISTING YE STA. 38+40

MEET EXISTING LL STA. 36+83

MEET EXISTING WE STA. 35+00

MATCH LINE STA. 33+10 SEE THIS SHEET

MATCH LINE STA. 44+50 SEE SHEET NO. 272

LA-R/W

72" CMP

18" RCP

HORIZONTAL SCALE IN FEET 0 40 80

DESIGNED

DRAFTED

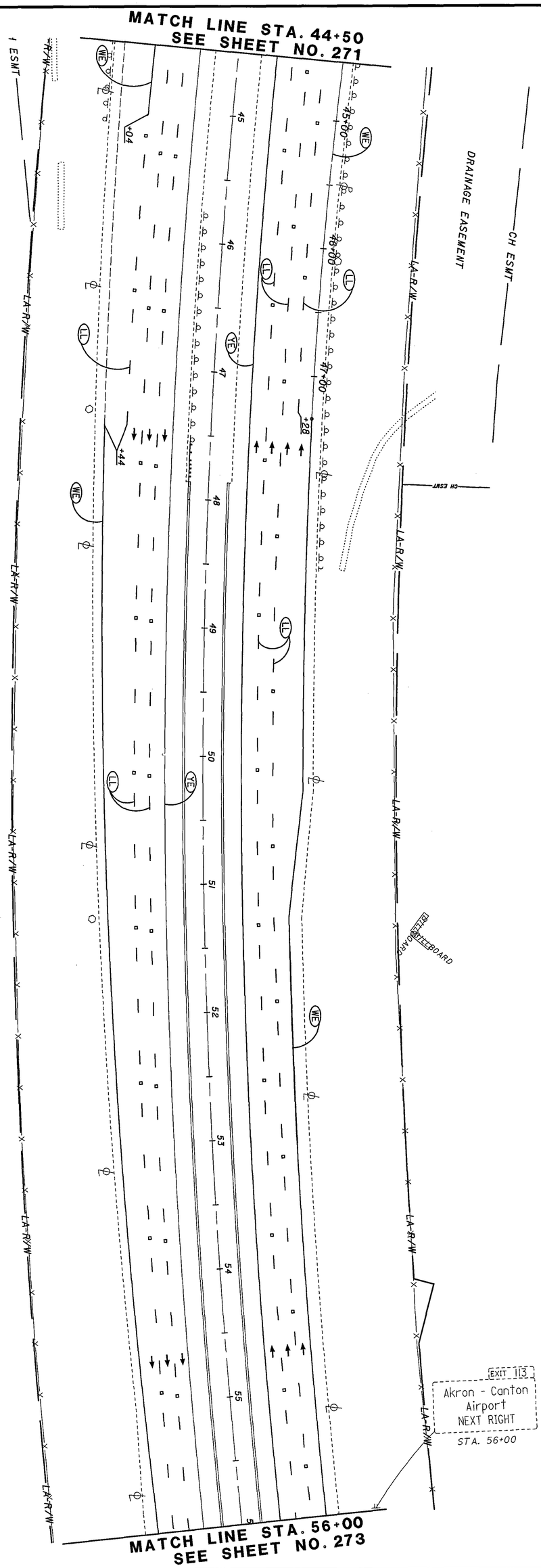
SIGNING & PAVEMENT MARKING
STA. 26+00 TO 44+50

SUM-77-1.40

271
381

DATE: 06/14/2004 02:08:11 PM
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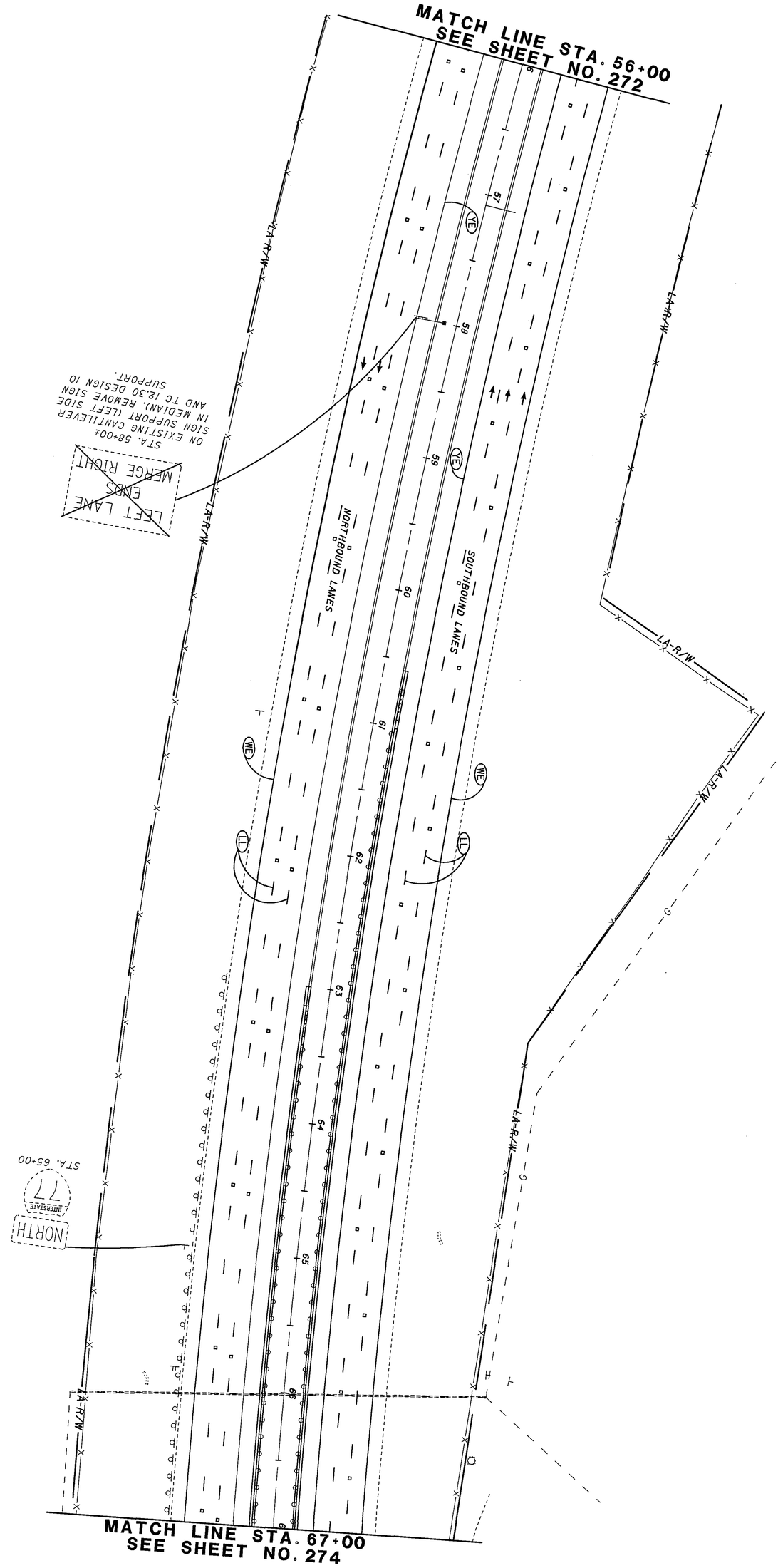
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FILENAME: t:\drawing\V0\06472\310\tc\6472tp01a.dgn



FOR SIGNING & PAVEMENT MARKING LEGEND, SEE SHEET 271

272 / 381	SUM-77-1.40	SIGNING & PAVEMENT MARKING STA. 44+50 TO 56+00	DESIGNED / DRAFTED	0 40 80 HORIZONTAL SCALE IN FEET

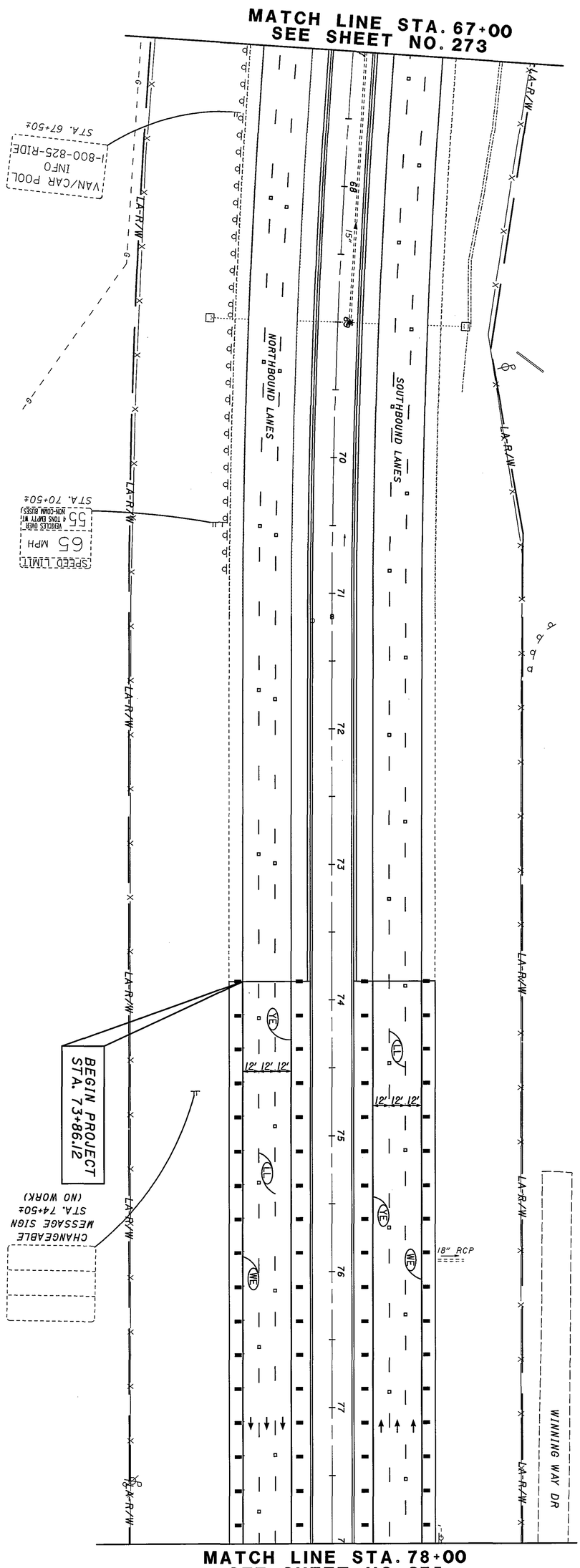
DATE: 06/14/2004 02:08:17 PM
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FOR SIGNING & PAVEMENT MARKING LEGEND, SEE SHEET 271

273 / 381	SUM-77-1.40	SIGNING & PAVEMENT MARKING STA. 56+00 TO 67+00	DESIGNED / DRAFTED	0 40 80 HORIZONTAL SCALE IN FEET

DATE: 06/14/2004 02:08:18 PM
FILENAME: t:\drawing\D\06472\310\ds\64721p02.dgn



FOR SIGNING & PAVEMENT MARKING LEGEND, SEE SHEET 271

274 / 381	SUM-77-1.40	SIGNING & PAVEMENT MARKING STA. 67+00 TO 78+00	DESIGNED / DRAFTED	0 40 80 HORIZONTAL SCALE IN FEET

DATE: 06/14/2004 02:08:9 PM
FILENAME: t:\drawing\D\06472\310\tc\6472tp03.dgn

MATCH LINE STA. 78+00
SEE SHEET NO. 274

NORTHBOUND LANES

SOUTHBOUND LANES

LA-R/W

MILE 5
(1)
D10-3-12
STA. 81+10
(12" X 48")

MILE 5
(2)
D10-3-12
STA. 81+10

STA. 81+00±

Akron 8
Cleveland 45
(3)
ET
(15'-0" X 5'-0")
STA. 81+90

(4)
SUM 77 0159
SID-12
STA. 83+40
STRUCTURE IDENTIFICATION SIGN

R/W

15
14
12
12

NOTE:
BARRIER REFLECTORS PROVIDED WITH BARRIER & GUARDRAIL.
SEE ROADWAY PLAN

GREENSBURG ROAD

WINNING WAY DR

12' 12' 12'

12' 12' 12'

Δ=35°24"

(5)
STRUCTURE IDENTIFICATION SIGN
SUM 77 0159
SID-12
STA. 86+45

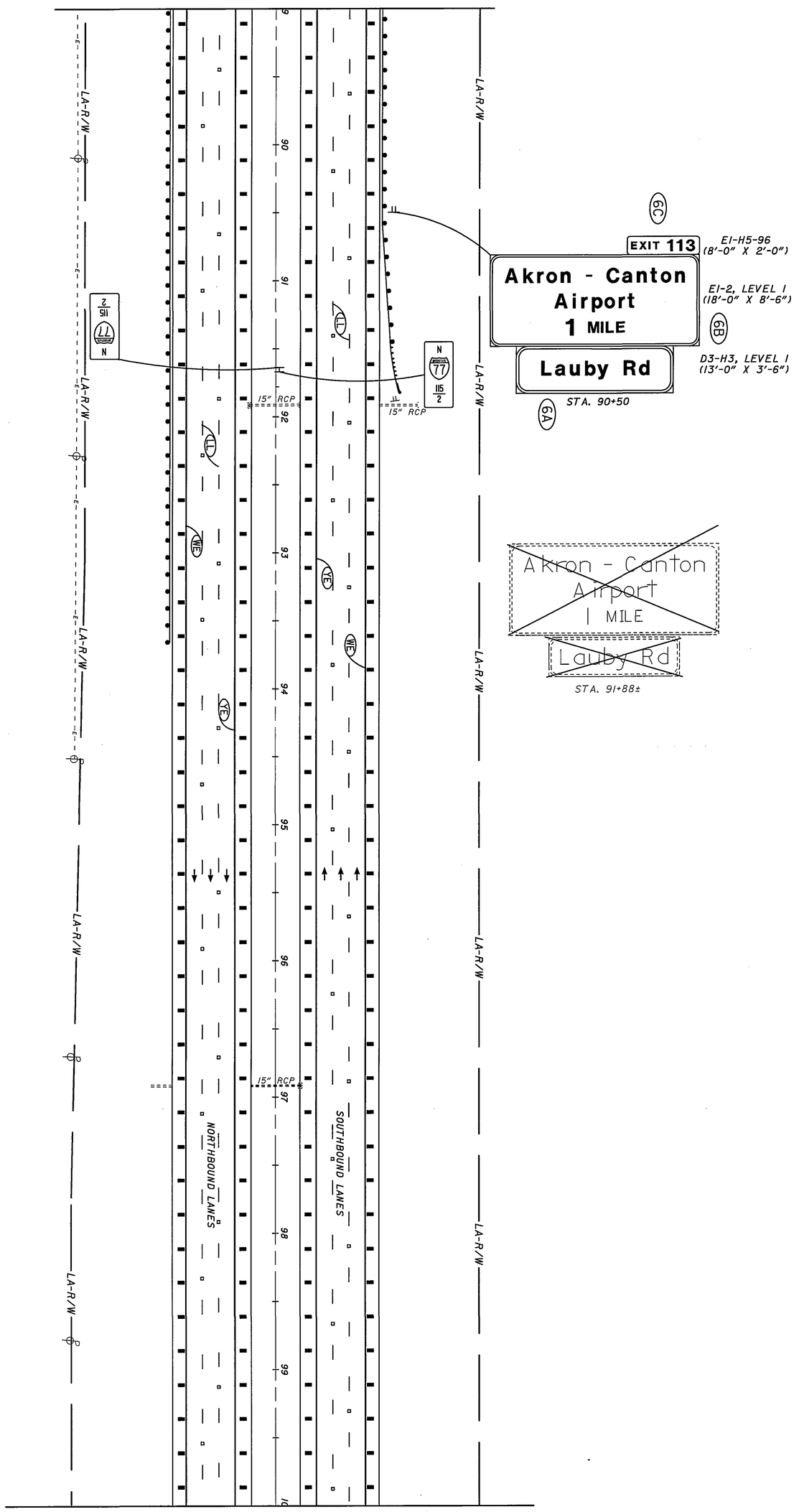
MATCH LINE STA. 89+00
SEE SHEET NO. 276

FOR SIGNING & PAVEMENT MARKING LEGEND, SEE SHEET 271

275 / 381	SUM-77-1.40	SIGNING & PAVEMENT MARKING STA. 78+00 TO 89+00	DESIGNED / DRAFTED	0 40 80 HORIZONTAL SCALE IN FEET

DATE: 04/01/2004 09:06:27 AM
FILENAME: t:\drawing\N0\06472\310\tc\64721p04.dgn

MATCH LINE STA. 89+00
SEE SHEET NO. 275



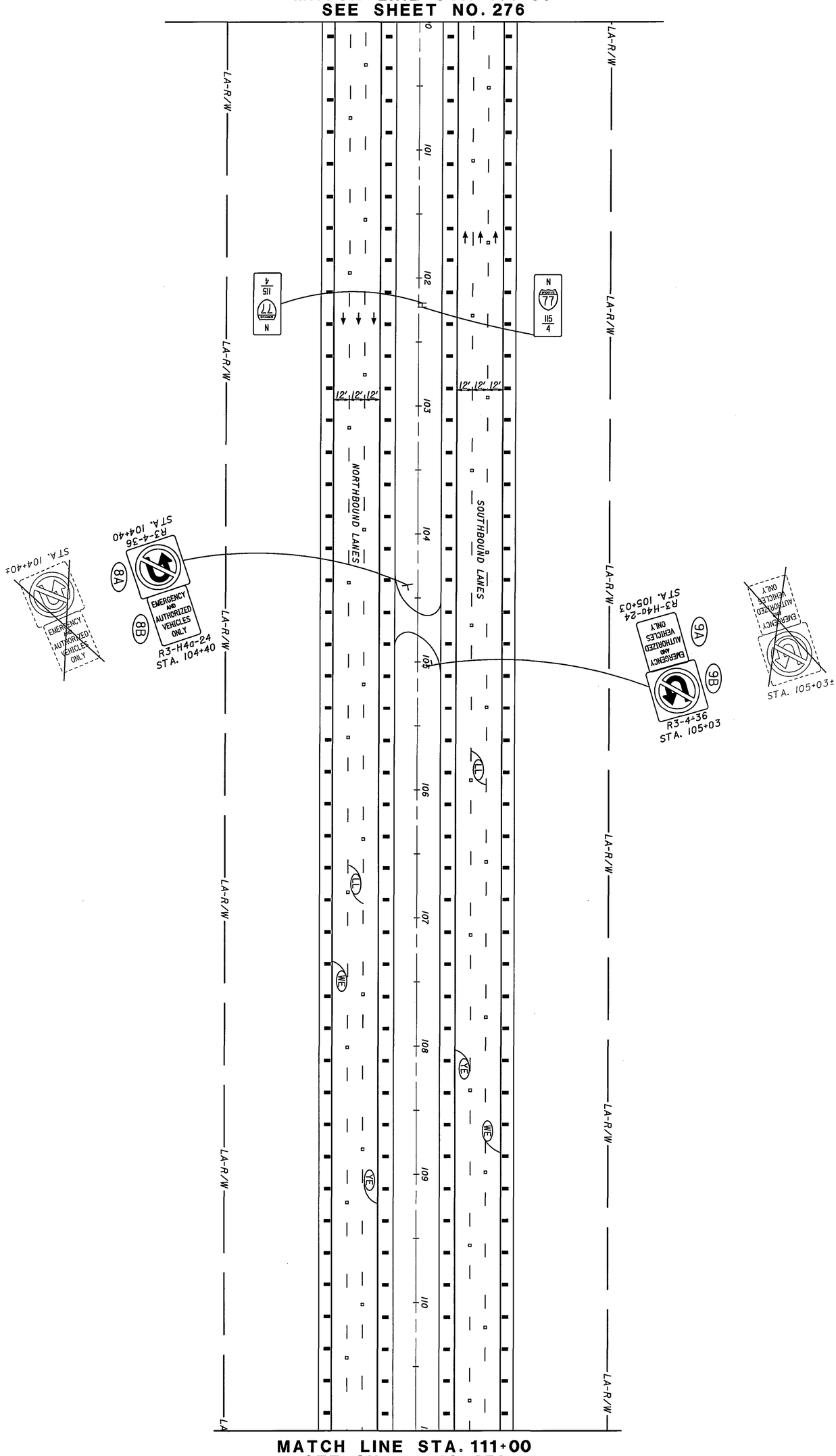
MATCH LINE STA. 100+00
SEE SHEET NO. 277

FOR SIGNING & PAVEMENT MARKING LEGEND, SEE SHEET 271

276 / 381	SUM-77-1.40	SIGNING & PAVEMENT MARKING STA. 89+00 TO 100+00	DESIGNED / DRAFTED; 0 40 80 HORIZONTAL SCALE IN FEET

DATE: 04/01/2004 09:06:28 AM
FILENAME: t:\drawing\0\06472\310\tc\6472tp05.dgn

MATCH LINE STA. 100+00
SEE SHEET NO. 276



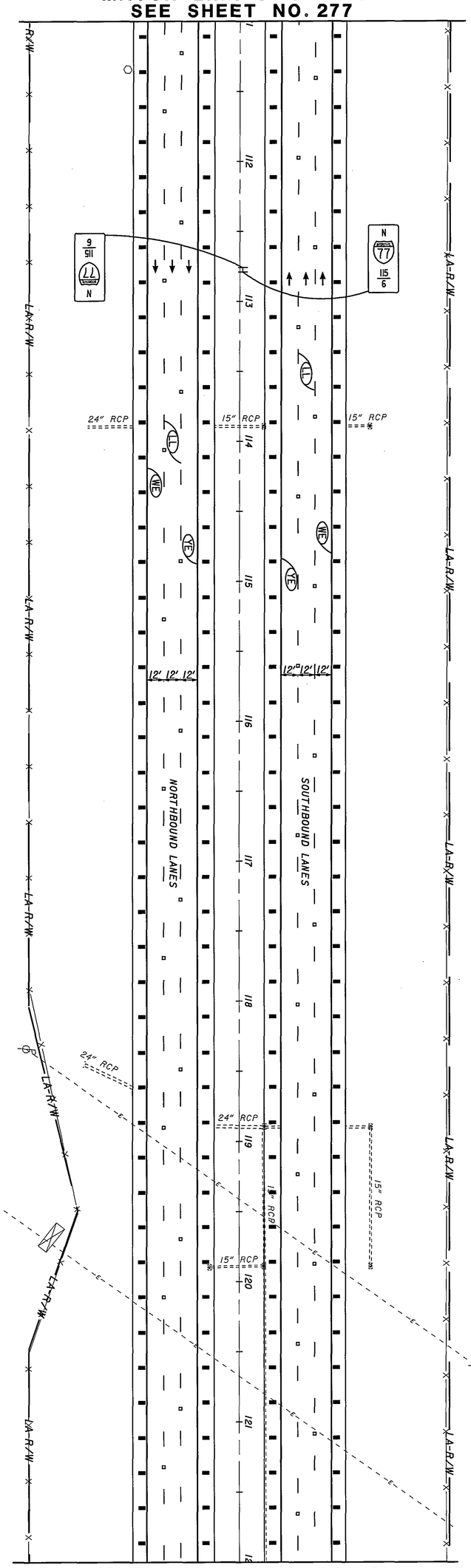
MATCH LINE STA. 111+00
SEE SHEET NO. 278

FOR SIGNING & PAVEMENT MARKING LEGEND, SEE SHEET 271

277 / 381	SUM-77-1.40	SIGNING & PAVEMENT MARKING STA. 100+00 TO 111+00	DESIGNED / DRAFTED	0 40 80 HORIZONTAL SCALE IN FEET

DATE: 01/09/2004 02:29:31 PM
FILENAME: T:\drawing\DO\06472\310\TC\6472TP06.dgn

MATCH LINE STA. 111+00
SEE SHEET NO. 277



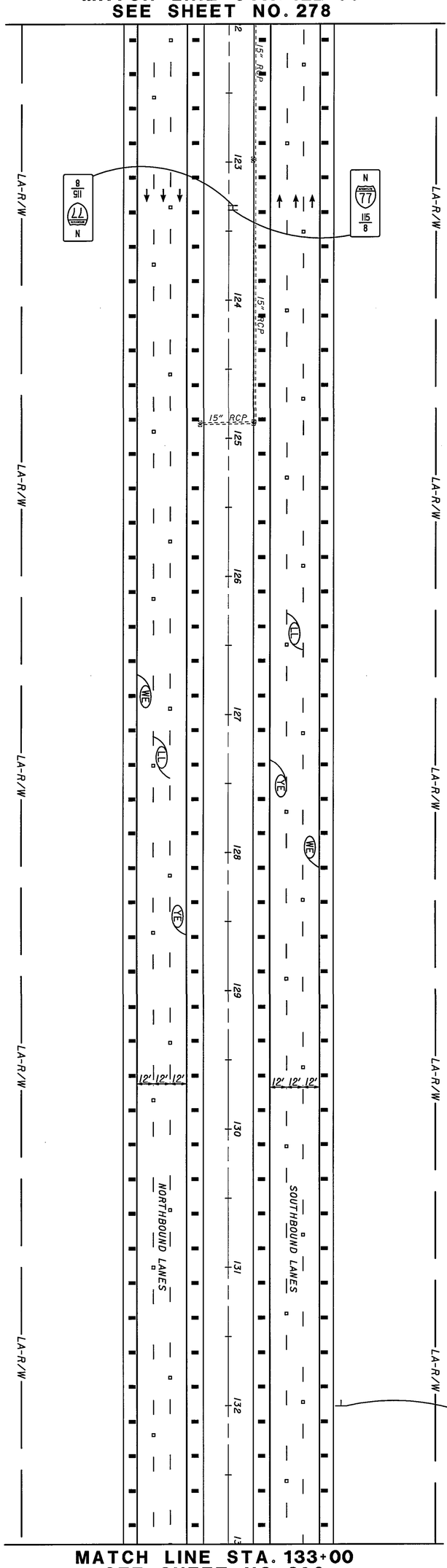
MATCH LINE STA. 122+00
SEE SHEET NO. 279

FOR SIGNING & PAVEMENT MARKING LEGEND, SEE SHEET 271

278/381	SUM-77-1.40	SIGNING & PAVEMENT MARKING STA. 111+00 TO 122+00	DESIGNED / DRAFTED	0 40 80 HORIZONTAL SCALE IN FEET

DATE: 01/09/2004 02:30:05 PM
FILENAME: T:\drawing\0\06472\310\TC\6472TP07.dgn

MATCH LINE STA. 122+00
SEE SHEET NO. 278



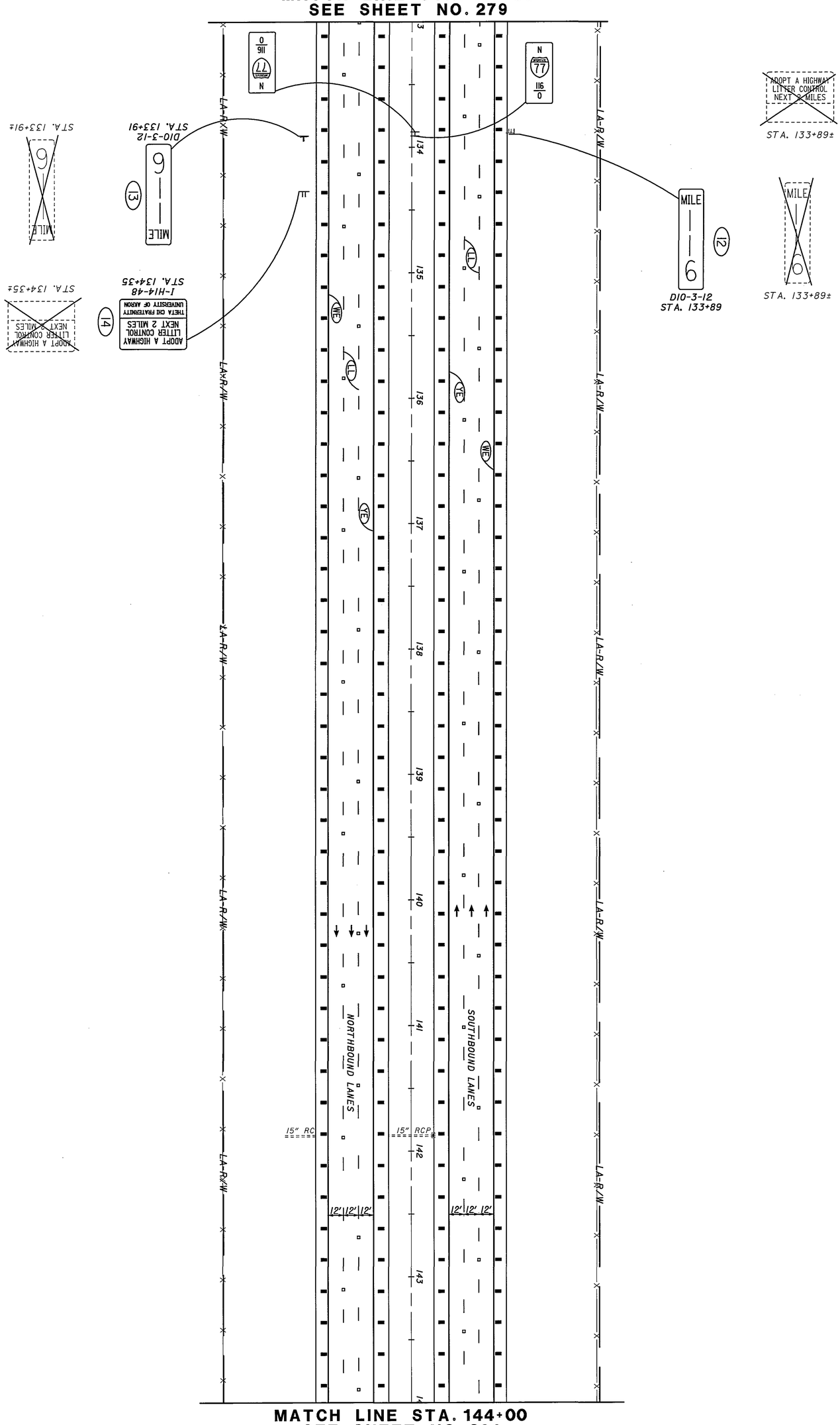
MATCH LINE STA. 133+00
SEE SHEET NO. 280

FOR SIGNING & PAVEMENT MARKING LEGEND, SEE SHEET 271

279 / 381	SUM-77-1.40	SIGNING & PAVEMENT MARKING STA. 122+00 TO 133+00	DESIGNED / DRAFTED	0 40 80 HORIZONTAL SCALE IN FEET

DATE: 01/09/2004 02:30:37 PM
FILENAME: T:\drawing\NO\06472\310\TC\6472TP08.dgn

MATCH LINE STA. 133+00
SEE SHEET NO. 279



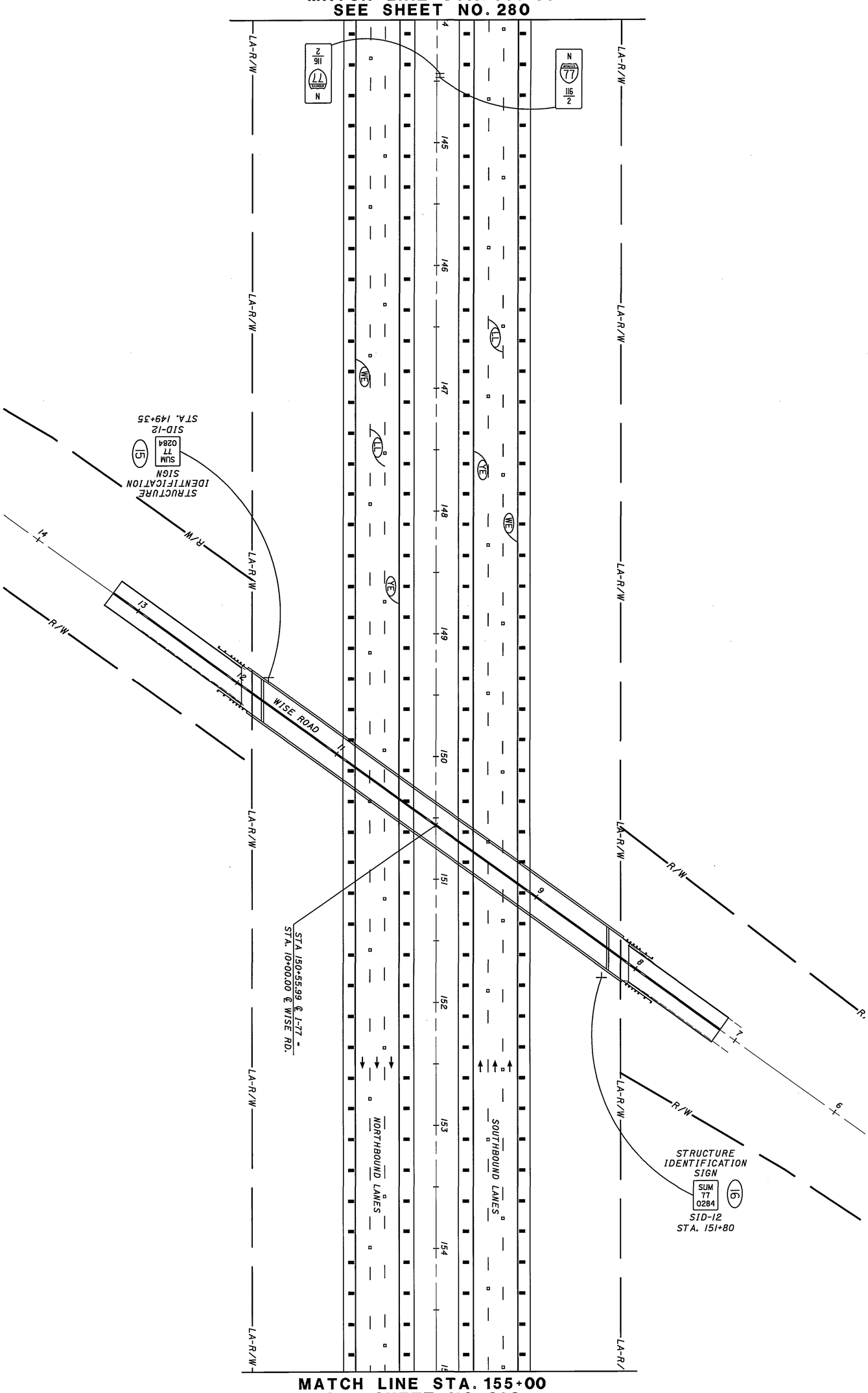
MATCH LINE STA. 144+00
SEE SHEET NO. 281

FOR SIGNING & PAVEMENT MARKING LEGEND, SEE SHEET 271

280 / 381	SUM-77-1.40	SIGNING & PAVEMENT MARKING STA. 133+00 TO 144+00	DESIGNED / DRAFTED	0 40 80 HORIZONTAL SCALE IN FEET

DATE: 01/09/2004 02:31:05 PM
FILENAME: T:\drawing\ON06472\310\TC\64727P09.dgn

MATCH LINE STA. 144+00
SEE SHEET NO. 280

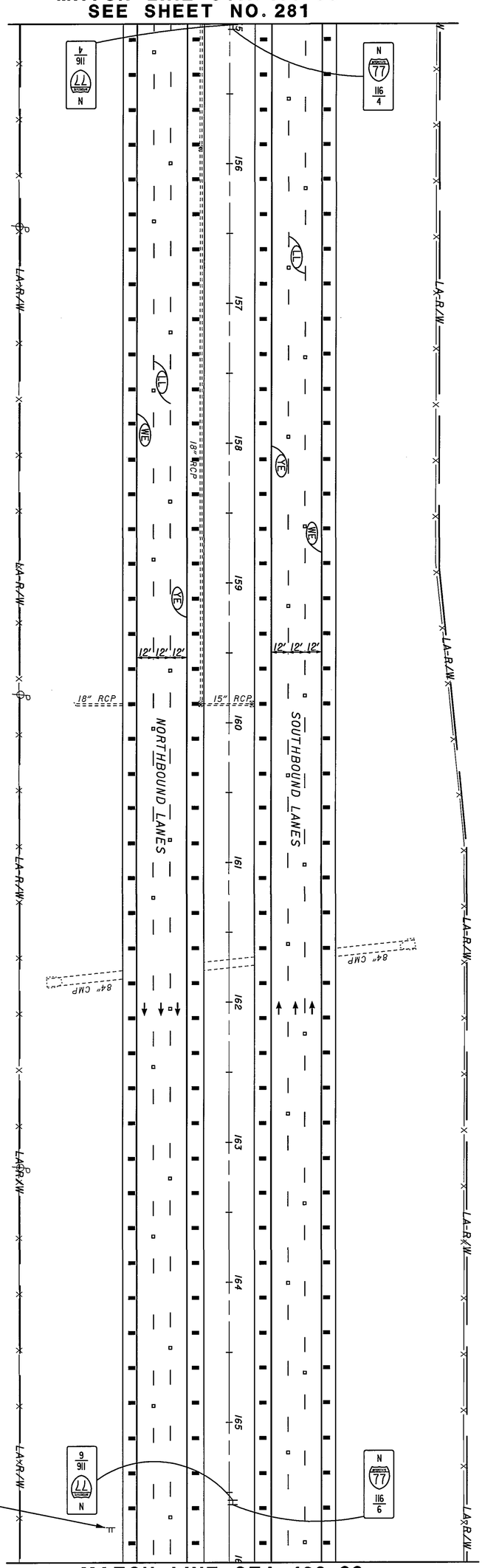


MATCH LINE STA. 155+00
SEE SHEET NO. 282

FOR SIGNING & PAVEMENT MARKING
LEGEND, SEE SHEET 271

DATE: 01/09/2004 02:31:43 PM
FILENAME: T:\drawing\N\06472\310\TC\6472TP10.dgn

MATCH LINE STA. 155+00
SEE SHEET NO. 281



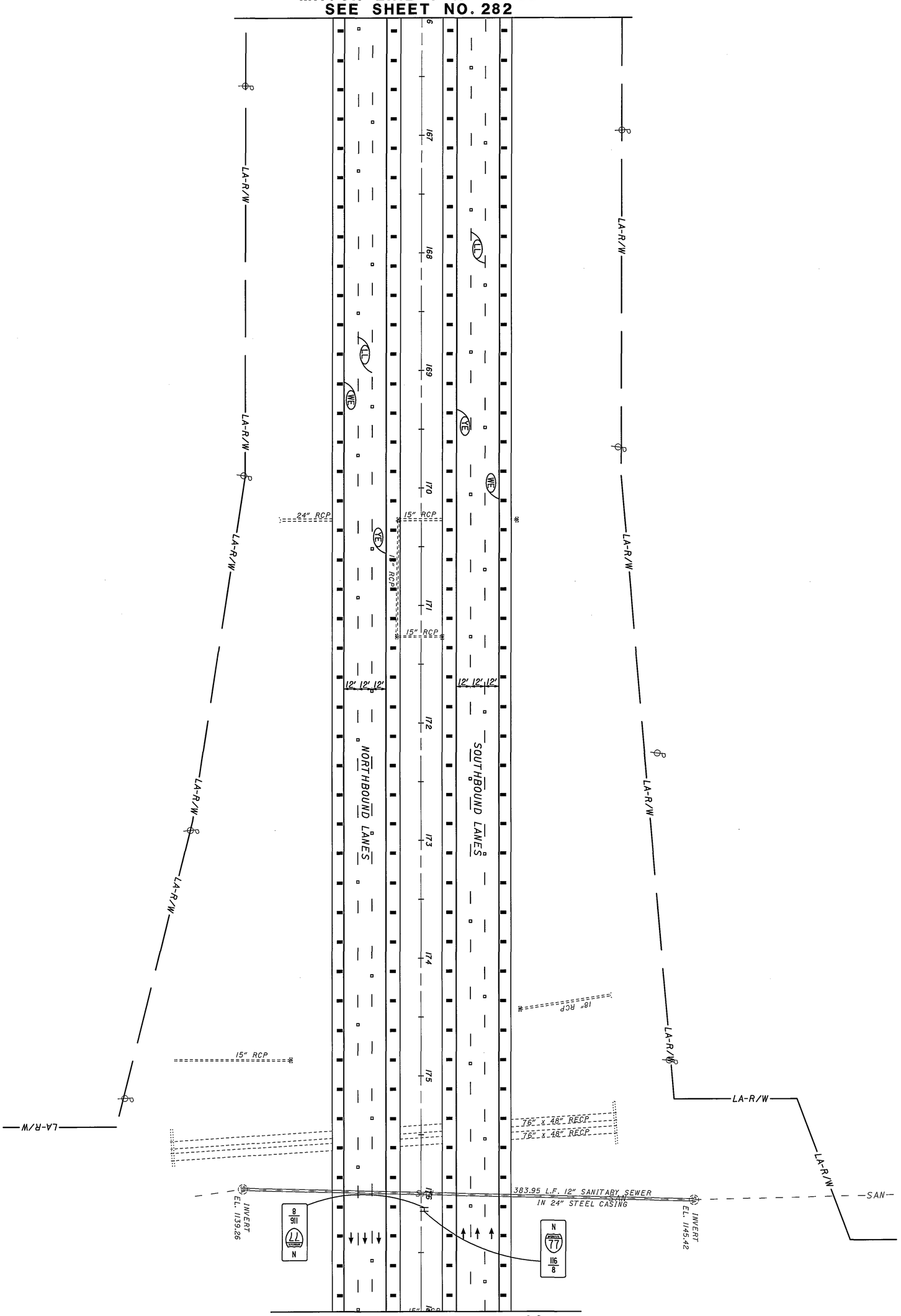
MATCH LINE STA. 166+00
SEE SHEET NO. 283

FOR SIGNING & PAVEMENT MARKING
LEGEND, SEE SHEET 271

282 / 381	SUM-77-1.40	SIGNING & PAVEMENT MARKING STA. 155+00 TO 166+00	DESIGNED / DRAFTED	0 40 80 HORIZONTAL SCALE IN FEET

DATE: 01/09/2004 02:32:23 PM
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MATCH LINE STA. 166+00
SEE SHEET NO. 282



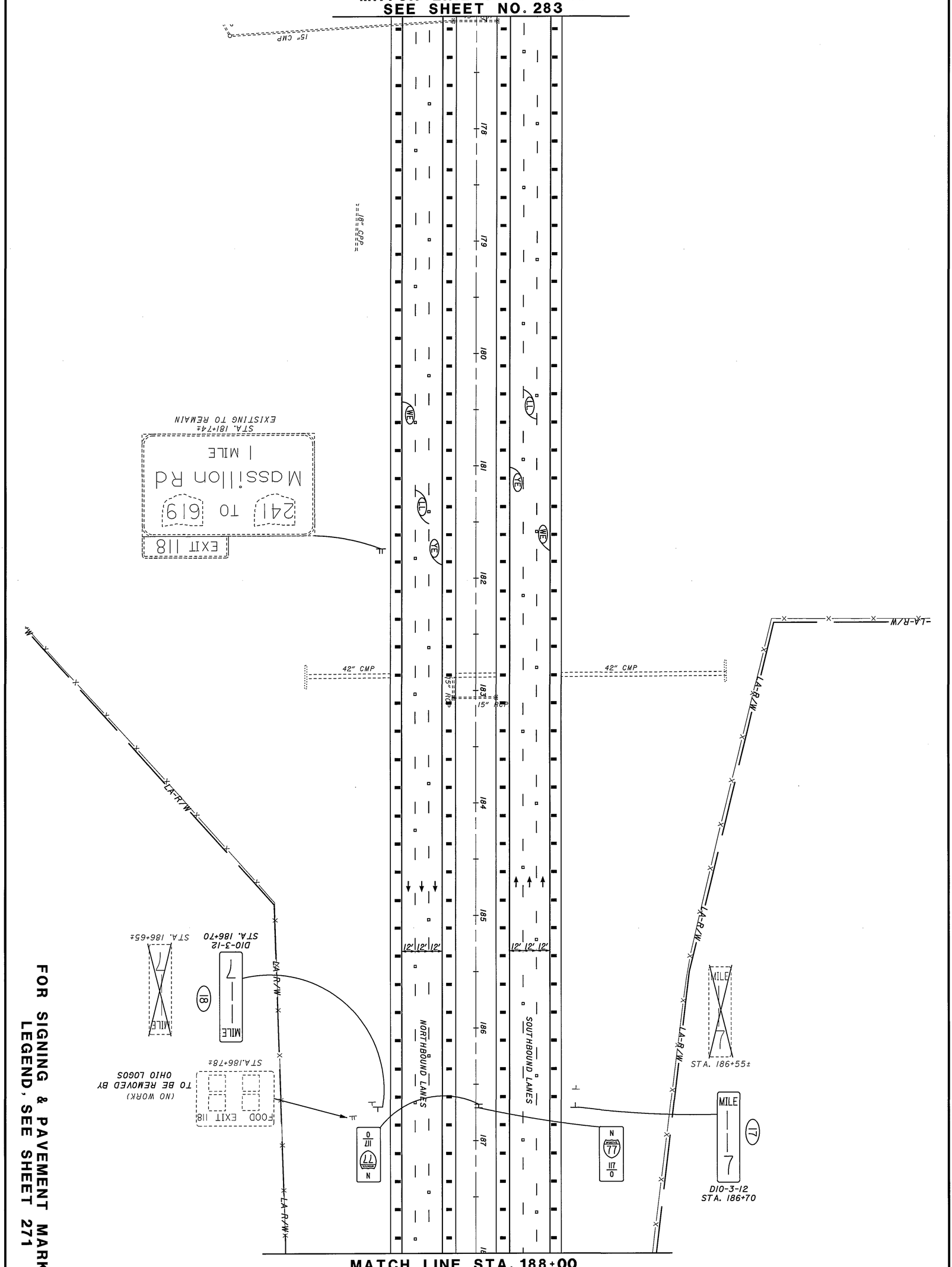
MATCH LINE STA. 177+00
SEE SHEET NO. 284

FOR SIGNING & PAVEMENT MARKING LEGEND, SEE SHEET 271

283 / 381	SUM-77-1.40	SIGNING & PAVEMENT MARKING STA. 166+00 TO 177+00	DESIGNED / DRAFTED	0 40 80 HORIZONTAL SCALE IN FEET

DATE: 01/09/2004 02:32:56 PM
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MATCH LINE STA. 177+00
SEE SHEET NO. 283



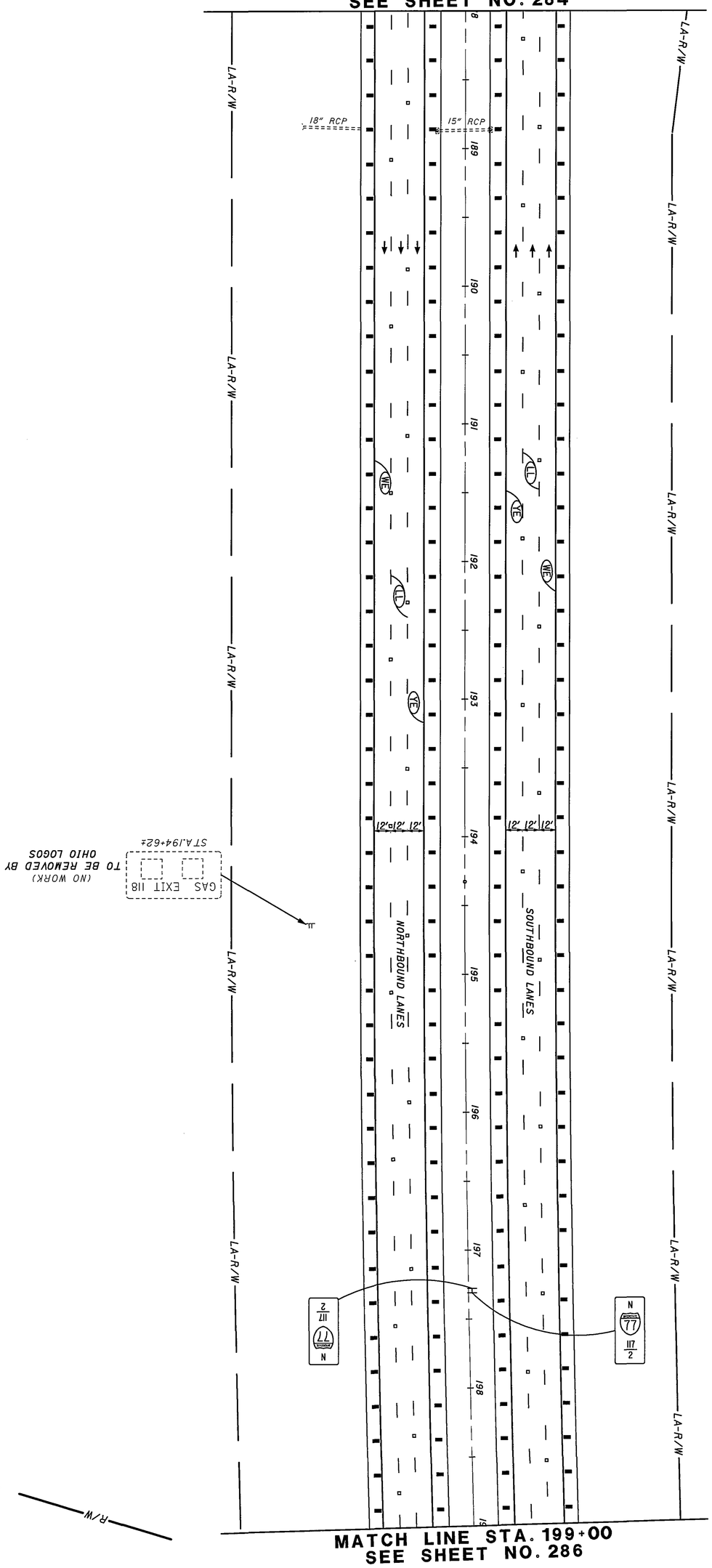
MATCH LINE STA. 188+00
SEE SHEET NO. 285

FOR SIGNING & PAVEMENT MARKING
LEGEND, SEE SHEET 271

284 / 381	SUM-77-1.40	SIGNING & PAVEMENT MARKING STA. 177+00 TO 188+00	DESIGNED DRAFTED	0 40 80 HORIZONTAL SCALE IN FEET

DATE: 01/09/2004 02:34:05 PM
FILENAME: T:\drawing\ON06472\310\TC\64721PI3.dgn

MATCH LINE STA. 188+00
SEE SHEET NO. 284



MATCH LINE STA. 199+00
SEE SHEET NO. 286

FOR SIGNING & PAVEMENT MARKING
LEGEND, SEE SHEET 271

285 / 381	SUM-77-1.40	SIGNING & PAVEMENT MARKING STA. 188+00 TO 199+00	DESIGNED DRAFTED	0 40 80 HORIZONTAL SCALE IN FEET

DATE: 04/01/2004 09:06:30 AM
FILENAME: t:\drawing\ON\06472\310\tc\6472tpl4.dgn

MATCH LINE STA. 199+00
SEE SHEET NO. 285

PC STA

GRAVEL DRIVE

M/U

GRAYBILL RD

R/W

LA-R/W

STA. 199+50
SID-12
STRUCTURE IDENTIFICATION SIGN
SUM 77 0378
19

STA 199+86.81 ℄ I-77 -
STA. 10+00.00 ℄ GRAYBILL RD.

NORTHBOUND LANES

SOUTHBOUND LANES

SPEED LIMIT 65
VEHICLES OVER 4 TONS EMPTY, NON COM BUSES 55 MPH
STA.200+61±
EXISTING TO REMAIN

STRUCTURE IDENTIFICATION SIGN
SUM 77 0378
20
SID-12
STA. 200+20

STA. 205+44
R3-4-36
22A
22B
EMERGENCY AND AUTHORIZED VEHICLES ONLY
R3-H4a-24

STA. 205+44±
EMERGENCY AND AUTHORIZED VEHICLES ONLY

R3-H4a-24
21A
21B
EMERGENCY AND AUTHORIZED VEHICLES ONLY
R3-4-36
STA. 206+59

STA. 206+59±
EMERGENCY AUTHORIZED VEHICLES ONLY

STA. 208+14±
EXISTING TO REMAIN
EXIT 118
1/2 MILE
Massillon Rd
241 TO 619

N
77
117
4

N
11
11
4

END PROJECT
STA. 209+35
SOUTH BOUND LANES

LEFT LANE ENDS
MERGE RIGHT
STA. 209+33±
ON EXISTING CANTILEVER
(LEFT SIDE) REMOVE SIGN
& TC-12.30 DESIGN IO SUPPORT.

MATCH LINE STA. 210+00
SEE SHEET NO. 287

FOR SIGNING & PAVEMENT MARKING
LEGEND, SEE SHEET 271

286 / 381	SUM-77-1.40	SIGNING & PAVEMENT MARKING STA. 199+00 TO 210+00	DESIGNED / DRAFTED	0 40 80 HORIZONTAL SCALE IN FEET

FOR SIGNING & PAVEMENT MARKING
LEGEND, SEE SHEET 271

SIGNING & PAVEMENT MARKING
STA. 210+00 TO 221+00

SUM-77-1.40

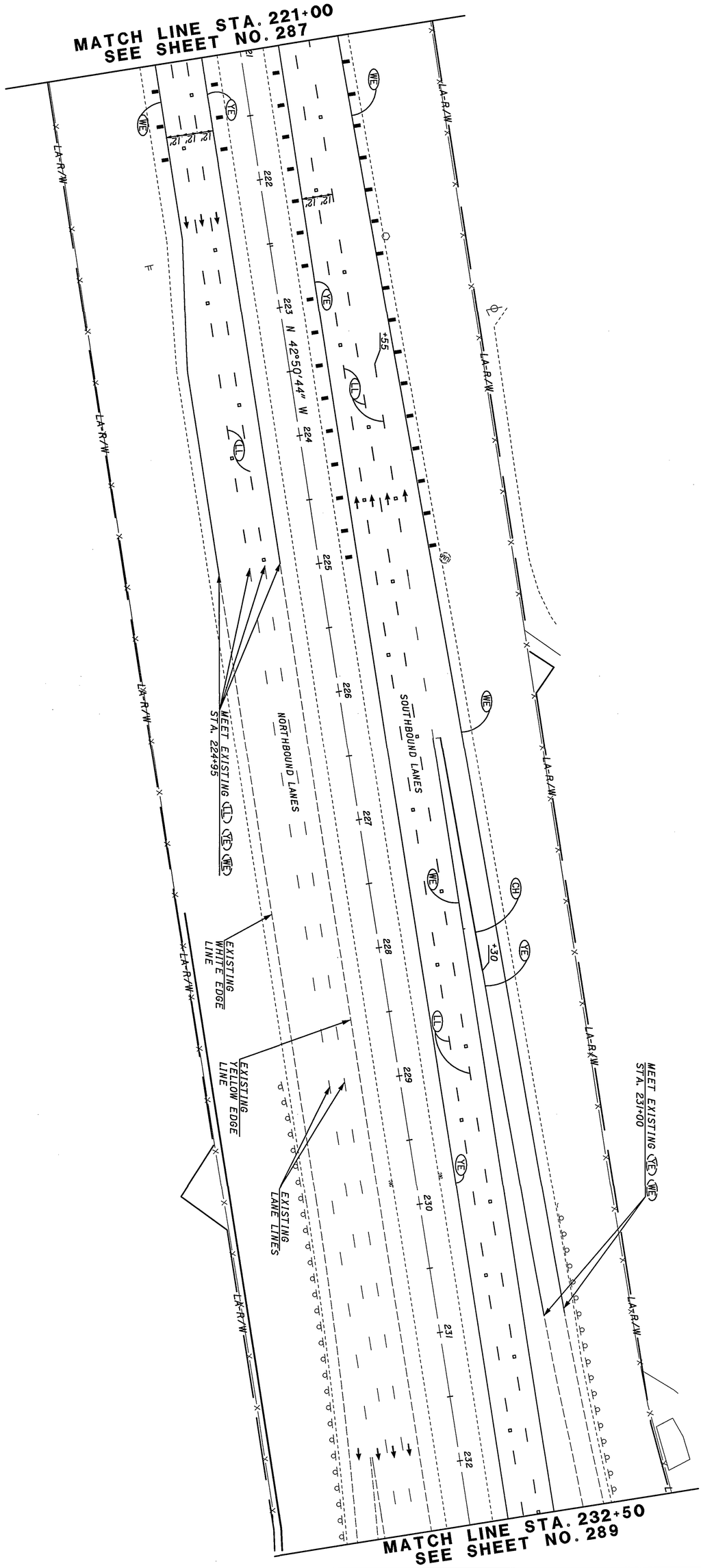
287
381

DESIGNED | DRAFTED

HORIZONTAL
SCALE IN FEET
0 40 80

DATE: 01/09/2004 02:35:37 PM
FILENAME: T:\drawing\0\06472\3\0\T0647127P15.dgn

DATE: 06/14/2004 02:08:21 PM
FILENAME: t:\drawing\D\06472\310\ds\64721pl6.dgn



FOR SIGNING & PAVEMENT MARKING
LEGEND, SEE SHEET 271

288 / 381	SUM-77-1.40	SIGNING & PAVEMENT MARKING STA. 221+00 TO 232+50	DESIGNED DRAFTED	0 40 80 HORIZONTAL SCALE IN FEET

LEFT LANE ENDS 1/4 MILE

STA. 235+90± EXISTING CANTILEVER SIGN REMOVE SIGN (LEFT SIDE) & TC-12.30 DESIGN 10 SUPPORT.

LA-R/W

A-R/W

MEET EXISTING (LL) (YE) (WE) STA. 244+00

EXISTING LANE LINES

EXISTING WHITE EDGE LINE

EXISTING YELLOW EDGE LINE

MATCH LINE STA. 232+50 SEE SHEET NO. 288

233 234 235 236 237 238 239 240 241 242 243 244

(WE) (LL) (YE)

LA-R/W

SIGNING & PAVEMENT MARKING STA. 232+50 TO 244+00

HORIZONTAL SCALE IN FEET

0 40 80

DESIGNED

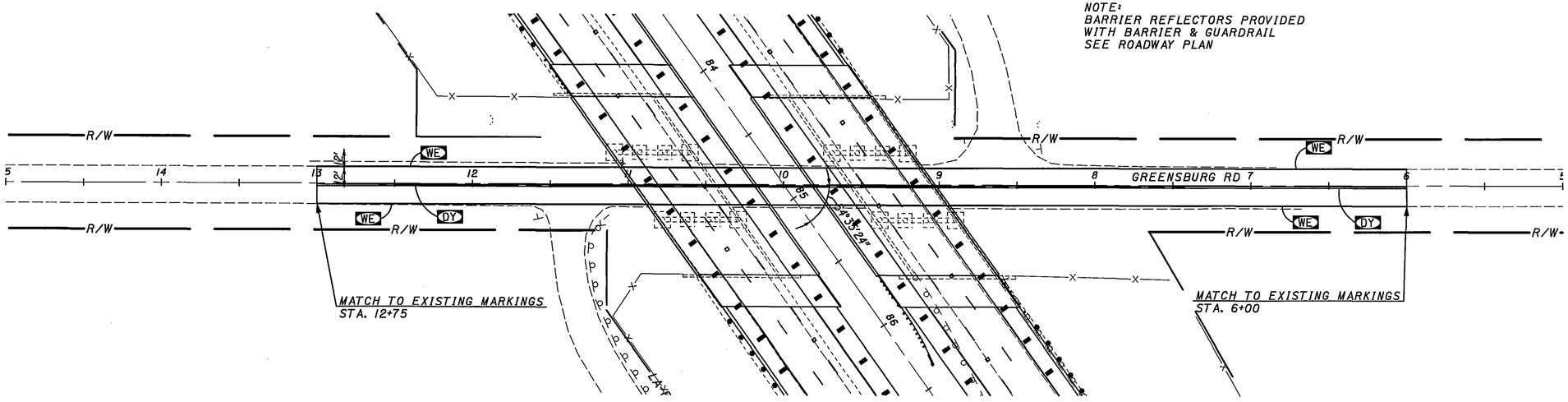
DRAFTED

SUM-77-1.40

289
381

FOR SIGNING & PAVEMENT MARKING LEGEND, SEE SHEET 271

DATE: 04/01/2004 09:06:32 AM
FILENAME: h:\drawing\010647f2\310\tc647f2tpl6a.dgn



FOR SIGNING QUANTITIES, SEE SHEETS 268 & 269.

FOR PAVEMENT MARKING QUANTITIES, SEE SHEET 270.

FOR SIGNING & PAVEMENT MARKING LEGEND, SEE SHEET 271

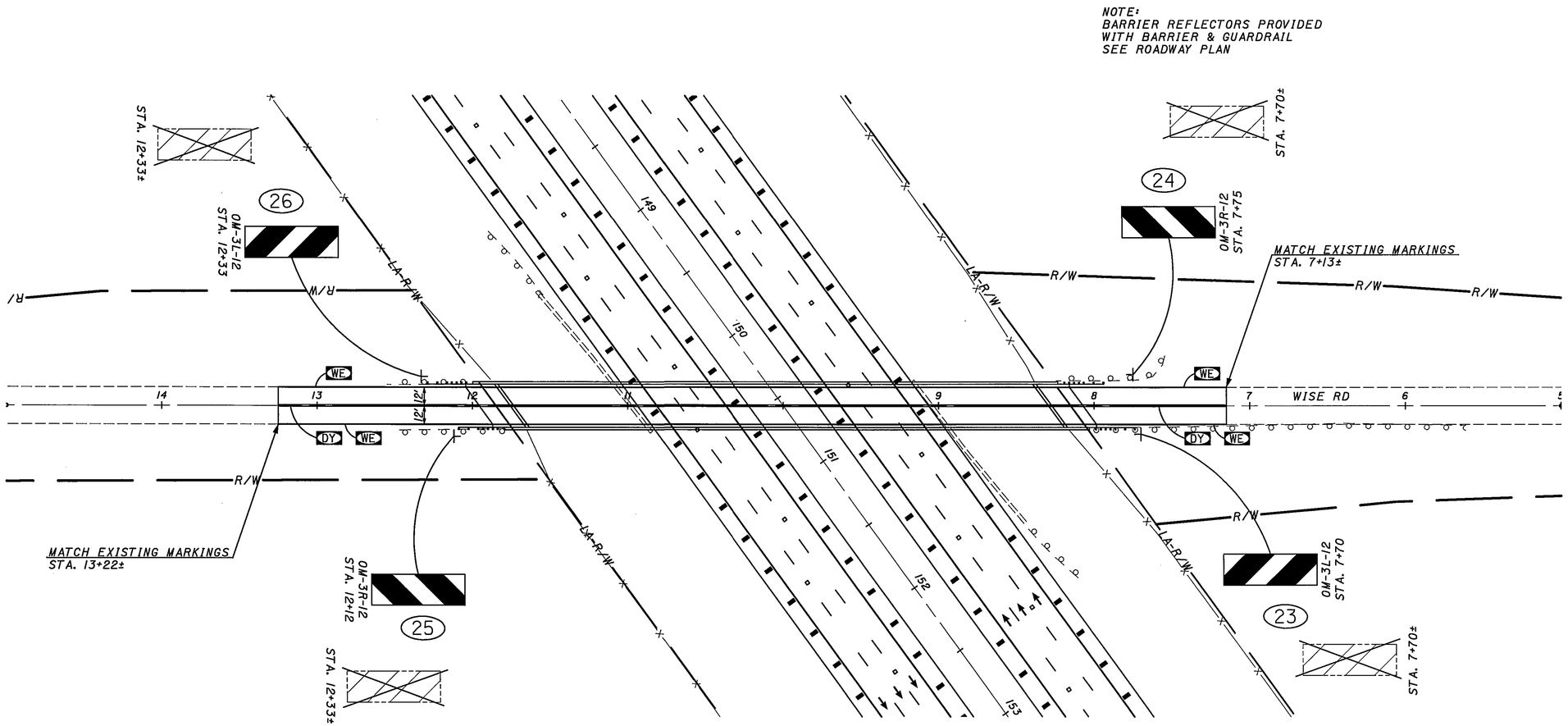
HORIZONTAL SCALE IN FEET
0 40 80

DESIGNED | DRAFTED

SIGNING & PAVEMENT MARKING GREENSBURG ROAD

SUM-77-1.40

DATE: 01/09/2004 02:37:54 PM
FILENAME: T:\drawing\D0064f2\3j0\TC\64f2TP1f.dgn



FOR SIGNING QUANTITIES, SEE SHEETS 268 & 269.

FOR PAVEMENT MARKING QUANTITIES, SEE SHEET 270.

FOR SIGNING & PAVEMENT MARKING LEGEND, SEE SHEET 271

HORIZONTAL SCALE IN FEET
0 40 80

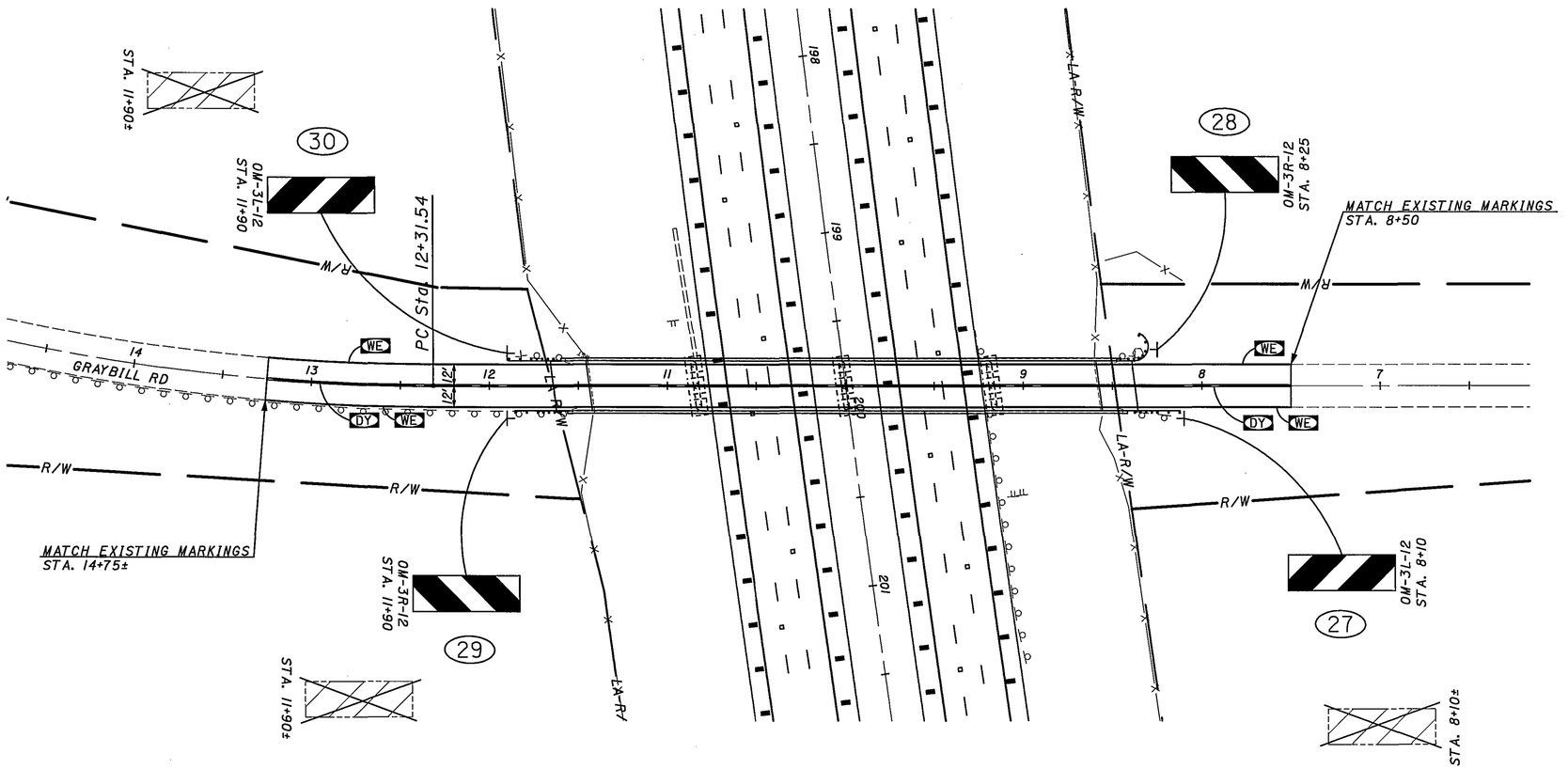
DESIGNED
DRAFTED

SIGNING & PAVEMENT MARKING
WISE ROAD

SUM-77-1.40

DATE: 01/09/2004 02:38:34 PM
FILENAME: T:\drawing\N\0647\2\3\0\TC\647_2TP18.dgn

NOTE:
BARRIER REFLECTORS PROVIDED
WITH BARRIER & GUARDRAIL
SEE ROADWAY PLAN



**FOR SIGNING QUANTITIES,
SEE SHEETS 268 & 269.**

**FOR PAVEMENT MARKING QUANTITIES,
SEE SHEET 270.**

**FOR SIGNING & PAVEMENT MARKING
LEGEND, SEE SHEET 271**

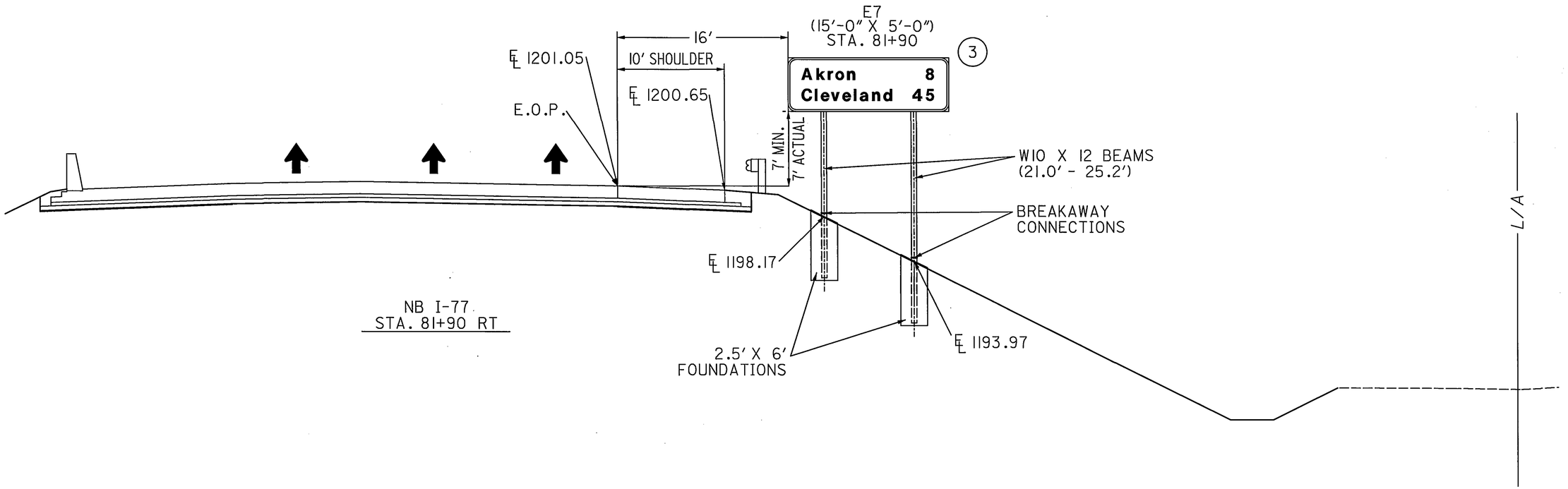
HORIZONTAL
SCALE IN FEET
0 40 80

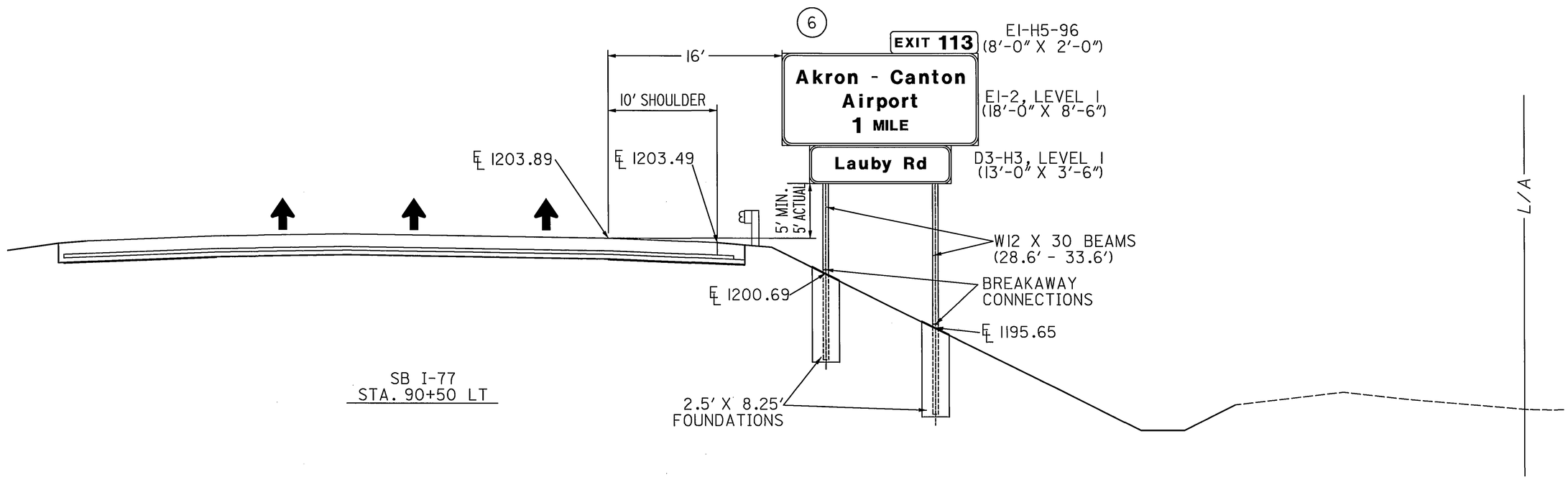
DESIGNED
DRAFTED

SIGNING & PAVEMENT MARKING
GRAYBILL ROAD

SUM-77-1.40

DATE: 01/09/2004 02:39:05 PM
FILENAME: T:\drawing\D0647213\07\C64727P19.dgn





HORIZONTAL SCALE IN FEET
0 5 10

CALCULATED ACH 11/03
CHECKED GCC 11/03

SIGN ELEVATION VIEWS

SUM-77-1.40

293
381

DATE: 04/01/2004 0906:15 AM
FILENAME: t:\drawings\0\06472\310\tc64728a01.dgn

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

AS-1-81	REVISED 07-19-02	SBR-1-99	REVISED 07-19-02
BR-1	REVISED 07-19-02	SICD-1-96	REVISED 07-19-02
BS-1-93	REVISED 07-19-02	PCB-91	REVISED 07-19-02
EXJ-2-81	REVISED 07-19-02	VPF-1-90	REVISED 07-19-02
GSD-1-96	REVISED 07-19-02	HL-30.32	DATED 04-19-02

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:
864 DATED 07-11-00
894 DATED 10-18-02

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, INCLUDING THE INTERIM SPECIFICATIONS THRU 2002 AND THE O.D.O.T BRIDGE DESIGN MANUAL.

DESIGN LOADING:

HS25, CASE I AND THE ALTERNATE MILITARY LOADING (SUM-77-0159 L/R)
HS25, CASE II AND THE ALTERNATE MILITARY LOADING (SUM-77-0284)
HS20-44, CASE II AND THE ALTERNATE MILITARY LOADING (SUM-77-0378)

FUTURE WEARING SURFACE (FWS) OF 60 PSF.
(SUM-77-0159 L/R AND SUM-77-0284)

FUTURE WEARING SURFACE (FWS) OF 30 PSF.
(SUM-77-0378)

DESIGN STRESSES:

CONCRETE CLASS HP - COMPRESSIVE STRENGTH 4500 P.S.I. (SUPERSTRUCTURE)

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 P.S.I. (SUBSTRUCTURE)

CONCRETE CLASS S - COMPRESSIVE STRENGTH 4500 P.S.I. (SUPERSTRUCTURE
TEMPORARY WIDENING ONLY: SUM-77-0159 L)

REINFORCING STEEL - ASTM A615 OR A996 GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I. SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615

STRUCTURAL STEEL
ASTM A588/A709 GRADE 50W - YIELD STRENGTH 50,000 P.S.I.
(AT SUM-77-0159 L/R AND SUM-77-0284)

ASTM A36/A709 GRADE 36 - YIELD STRENGTH 36,000 P.S.I.
(TEMPORARY WIDENING ONLY: SUM-77-0159 L)

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL
2-1/2" CONCRETE COVER
SEALING OF CONCRETE SURFACES

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:
(SUM-77-0284 & SUM-77-0159 L/R)

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

REMOVAL OF THE EXISTING 4" GAS LINES ON THE SUM-77-0284 (SFN 7702221) (WISE ROAD OVER I-77) AND SUM-77-0378 (SFN 7702256) (GRAYBILL ROAD OVER I-77) BRIDGES: DUE TO THE PRESENCE OF ASBESTOS IN THESE LINES, THEIR REMOVAL SHALL BE THE RESPONSIBILTY OF THE DOMINION EAST OHIO GAS COMPANY. THE CONTRACTOR SHALL NOTIFY DOMINION EAST OHIO GAS THREE WEEKS (MINIMUM) TO THE START OF BRIDGE DEMOLITION WORK TO ARRANGE FOR THE GAS LINE REMOVALS.

PROTECTION OF TRAFFIC:
PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. MAINTAIN THE TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR. ALL COSTS ASSOCIATED WITH THIS TRAFFIC PROTECTION WILL BE INCLUDED WITH ITEM 202 FOR PAYMENT.

PAYMENT:
THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:
(SUM-77-0378 & TEMPORARY WIDENING AT SUM-77-0159 L)

DESCRIPTION:
THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECKS INCLUDING SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

PROTECTION OF TRAFFIC
PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. MAINTAIN TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

PROTECTION OF STEEL SUPPORT SYSTEMS
BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF DECK. DRILL SMALL DIAMETER PILOT HOLES 2" OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2" OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2" OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS
THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER BRIDGE MEMBERS (PRESTRESSED BOX BEAM, I-BEAM, STEEL BEAM, STEEL GIRDER, ETC.), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35-POUNDS BUT NOT TO EXCEED 90-POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS
DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURE STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.), PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. REPLACE OR REPAIR STRINGERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. SUBMIT PROPOSED REPAIRS, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, IN WRITING TO THE DIRECTOR AT LEAST 20 DAYS BEFORE PERFORMING REPAIR WORK.

EXTRANEOUS MEMBERS
REMOVE EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC., AND THE SUPPORT FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTION TO THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

LOADING LIMITATIONS
NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES DEFINED IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. SUBMIT STRUCTURAL ANALYSIS COMPUTATIONS, BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE REMOVAL METHODS OR EQUIPMENT TO THE DIRECTOR AT LEAST 20 DAYS BEFORE CONSTRUCTION BEGINS.

MEASUREMENT & PAYMENT
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 PER ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

ITEM SPECIAL - ASBESTOS NOTIFICATION

AN ASBESTOS SURVEY OF THE SUM-77-0159 L/R (SFN 7702132L/7702167R) (I-77 OVER GREENSBURG ROAD) BRIDGES SCHEDULED FOR REHABILITATION AND WIDENING WERE CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THESE BRIDGES.

AN ASBESTOS SURVEY OF THE SUM-77-0284 (SFN 7702221) (WISE ROAD OVER I-77) AND SUM-77-0378 (SFN 7702256) (GRAYBILL ROAD OVER I-77) BRIDGES SCHEDULED FOR REHABILITATION WERE CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST.

SUM-77-0284 (WISE ROAD OVER I-77)

APPROXIMATELY 388 LINEAL FEET OF CATEGORY II NONFRIABLE ASBESTOS MATERIAL (CHRYSOTILE) WAS IDENTIFIED IN A 4" GAS LINE BLACK TAR COATING ON THE SUM-77-0284 (SFN 7702221) (WISE ROAD OVER I-77) BRIDGE. THE REMOVAL AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIVE (OSHA) REGULATIONS AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) STANDARD FOR ASBESTOS. DUE TO THE PRESENCE OF ASBESTOS IN THIS LINE, ITS REMOVAL SHALL BE THE RESPONSIBILITY OF THE DOMINION EAST OHIO GAS COMPANY.

DOMINION EAST OHIO GAS COMPANY SHALL PROVIDE AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THE NESHAP ON SITE TO DIRECT THE REMOVAL OF THE ASBESTOS CONTAINING MATERIAL. THE CONTRACTOR SHALL COORDINATE BRIDGE DEMOLITION WITH DOMINION EAST OHIO GAS COMPANY AS PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

SUM-77-0378 (GRAYBILL ROAD OVER I-77)

APPROXIMATELY 326 LINEAL FEET OF CATEGORY II NONFRIABLE ASBESTOS MATERIAL (CHRYSOTILE) WAS IDENTIFIED IN A 4" GAS LINE BLACK TAR COATING ON THE SUM-77-0378 (SFN 7702256) (GRAYBILL ROAD OVER I-77) BRIDGE. THE REMOVAL AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIVE (OSHA) REGULATIONS AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) STANDARD FOR ASBESTOS. DUE TO THE PRESENCE OF ASBESTOS IN THIS LINE, ITS REMOVAL SHALL BE THE RESPONSIBILITY OF THE DOMINION EAST OHIO GAS COMPANY.

DOMINION EAST OHIO GAS COMPANY SHALL PROVIDE AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THE NESHAP ON SITE TO DIRECT THE REMOVAL OF THE ASBESTOS CONTAINING MATERIAL. THE CONTRACTOR SHALL COORDINATE BRIDGE DEMOLITION WITH DOMINION EAST OHIO GAS COMPANY AS PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

A COPY OF THE OHIO ENVIROMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORM, PARTIALLY COMPLETED AND SIGNED BY THE BRIDGE OWNER, FOR EACH BRIDGE STRUCTURE WILL BE PROVIDED TO THE SUCCESSFUL BIDDER. THE CONTRACTOR SHALL COMPLETE THE FORMS AND SUBMIT THEM TO:

AKRON REGIONAL AIR QUALITY MANAGEMENT DISTRICT
146 S. HIGH STREET, SUITE 904
AKRON, OHIO 44308
LYNN M. MALCOLM, ADMINISTRATOR
TELEPHONE: (330) 375-2480
FAX: (330) 375-2402

AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF THE DEMOLITION/ REHABILITATION OF THE BRIDGES, THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORMS TO THE ENGINEER.

(CONTINUED ON SHEET G2/G3)

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.			

STRUCTURE GENERAL NOTES

SUM-77-1.40

G1 / G3

294
381

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ITEM SPECIAL – ASBESTOS NOTIFICATION (CONTINUED FROM SHEET G1/G3)

FOR THE BRIDGES WITH NO ASBESTOS PRESENT, INFORMATION REQUIRED ON THE FORMS WILL INCLUDE:

–THE NAME, ADDRESS, TELEPHONE/FAX NUMBERS AND CONTACT PERSON OF THE DEMOLITION/GENERAL CONTRACTOR.

–THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL OR RENOVATION/REHABILITATION.

–A DESCRIPTION OF THE PLANNED DEMOLITION OR RENOVATION/REHABILITATION WORK AND THE METHOD(S) TO BE USED.

FOR THE BRIDGES WITH ASBESTOS PRESENT, INFORMATION REQUIRED ON THE FORMS WILL INCLUDE:

–THE NAME, ADDRESS, TELEPHONE/FAX NUMBERS AND CONTACT PERSON OF THE DEMOLITION/GENERAL CONTRACTOR.

–THE NAME, ADDRESS, TELEPHONE/FAX NUMBERS AND CONTACT PERSON OF THE ASBESTOS REMOVAL CONTRACTOR.

–THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL OR RENOVATION/REHABILITATION.

–THE DATE(S) AND HOURS OF OPERATION FOR THE ASBESTOS REMOVAL.

–A DESCRIPTION OF THE PLANNED DEMOLITION OR RENOVATION/REHABILITATION WORK AND THE METHOD(S) TO BE USED.

–A DESCRIPTION OF THE WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE SITE.

–THE NAME(S), ADDRESS(ES), TELEPHONE/FAX NUMBERS AND CONTACT PERSON(S) OF THE WASTE TRANSPORTER(S) TO BE USED.

–THE NAME, ADDRESS, TELEPHONE/FAX NUMBERS AND CONTACT PERSON OF THE WASTE DISPOSAL FACILITY TO BE USED.

–A DESCRIPTION OF THE PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED OR REDUCED TO POWDER.

A COPY OF THE OEPA FORMS ARE AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 4 OFFICE, 2088 SOUTH ARLINGTON RD., AKRON, OHIO 44306.

BASIS OF PAYMENT

THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COORDINATE THE SUBMITTAL OF THE OEPA NOTIFICATION FORMS ADDRESSING THE REMOVAL, TRANSPORTATION AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL FROM THE SUM–77–0284 (SFN 7702221) (WISE ROAD OVER I–77) AND SUM–77–0378 (SFN 7702256) (GRAYBILL ROAD OVER I–77) BRIDGES.

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE COMPLETION OF THE FORMS FOR THE SUM–77–0159 L/R (SFN 7702132L/7702167R) (I–77 OVER GREENSBURG ROAD) BRIDGES THAT DO NOT HAVE ASBESTOS CONTAINING MATERIAL ASSOCIATED WITH THEM.

PAYMENT FOR THIS WORK SHALL BE MADE UNDER THE CONTRACT LUMP SUM PRICE BID FOR:

ITEM SPECIAL, ASBESTOS NOTIFICATION

ITEM 516 – SEMI–INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN:

INSTALL A 3 FOOT WIDE NEOPRENE SHEET AT LOCATIONS SHOWN IN THE PLANS. SECURE THE NEOPRENE SHEETING TO THE CONCRETE WITH 1 1/4" X #10 GAGE (LENGTH x SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 1 INCH OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. USE OF OTHER SIMILAR GALVANIZED DEVICES, WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 6 INCHES, ±, FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 6 INCHES, ±, FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 6 INCHES, CENTER TO CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

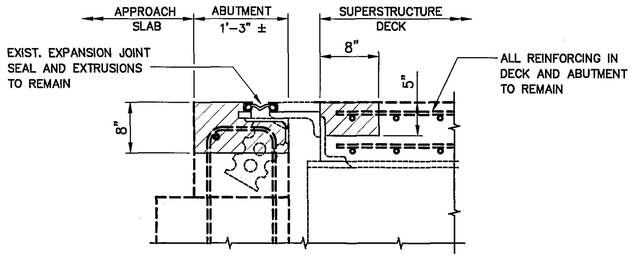
THE VERTICAL NEOPRENE STRIPS SHOULD COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAP LENGTHS OF THE HORIZONTAL STRIPS THAT ARE NOT VULCANIZED OR ADHESIVE BONDED, SHALL BE AT LEAST 1 FOOT IN LENGTH, OR 6" IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 3/32" THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN–0003", BY E.I. DUPONT DE NEMOURS AND COMPANY, INC., "WINGPRENE" BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, INCHES	D751	0.094"±.01
BREAKING STRENGTH, GRAB, LBS, MINIMUM (LONG. X TRANS.)	D751	700 X 700
ADHESIVE STRIP, 1" WIDE X 2" LONG, LBS MINIMUM	D751	9
BURST STRENGTH PSI MINIMUM	D751	1400
HEAT AGING, 70 HR, 212 °F, 180 BEND WITHOUT CRACKING	D2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLENESS 1 HR, –40 °F, BEND AROUND 1/4" MANDREL	D2136	NO CRACKING OF COATING

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE TOTAL LENGTH OF JOINT TO BE SEALED BY THE NUMBER OF FEET.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, SEMI–INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.



TEMPORARY EXPANSION JOINT REPAIR

– DENOTES LIMITS OF CLASS FS CONCRETE USING NO. 8 AGGREGATE

ITEM 511 – CONCRETE, MISC.: TEMPORARY EXPANSION JOINT REPAIR

THIS ITEM CONSISTS OF THE REMOVAL OF ALL DISINTEGRATED CONCRETE TO THE LIMITS SHOWN ABOVE OR AS DIRECTED BY THE ENGINEER, THE PREPARATION OF THE SURFACE, FORMS, PROVIDING AND PLACING OF CLASS FS (CMS 499) CONCRETE WITH NO. 8 AGGREGATE.

PAYMENT SHALL BE MADE AT THE CONTRACT PRICE PER CU. YD. FOR ITEM 511 – CONCRETE, MISC.: TEMPORARY EXPANSION JOINT REPAIR WHICH SHALL INCLUDE ALL MATERIALS AND LABOR INCLUDING REMOVAL AND DISPOSAL OF THE EXISTING CONCRETE, REQUIRED TO MAKE THIS ITEM COMPLETE.

ALL TRAFFIC CONTROL NEEDED TO CONSTRUCT THE TEMPORARY EXPANSION JOINT SHALL BE IN ACCORDANCE WITH ITEM 614 – MAINTAINING TRAFFIC AND SHALL BE INCLUDED FOR PAYMENT IN THE CONTRACT LUMP SUM PRICE BID FOR ITEM 614 – MAINTAINING TRAFFIC.

THE FOLLOWING QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 511 – CONCRETE, MISC.: TEMPORARY EXPANSION JOINT REPAIR

5 CU. YD. (SUM–77–0159 L)

ITEM 864 – SEALING OF CONCRETE SURFACES (EPOXY–URETHANE):

THIS ITEM SHALL CONSIST OF THE APPLICATION OF BOTH AN EPOXY AND URETHANE SEALER TO THE CONCRETE SURFACES DESIGNATED ON THE PLANS IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 864 EXCEPT THAT THE COLOR OF THE URETHANE COATING SHALL BE FEDERAL STANDARD NO. 595B–17778 (LIGHT NEUTRAL). SEALING SHALL NOT BE DONE UNTIL ALL STAGES OF THE SUPERSTRUCTURE CONCRETE HAVE BEEN PLACED. IN ADDITION TO THE REQUIRED CLEANING, SURFACE PREPARATION SHALL INCLUDE REMOVAL OF ANY RUST STAINS BY EITHER WATER BLAST OR SAND BLAST METHODS AS DESCRIBED IN THE SPECIFICATIONS.

STRUCTURE PAINTING/CONCRETE SEALING OPERATIONS

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT EPOXY URETHANE SEALER, PAINT, OR OTHER MATERIAL USED TO CLEAN, SEAL, TREAT OR REPAIR ANY STRUCTURE FROM ENTERING ANY DITCHES, STREAMS, WETLANDS OR OTHER WATERS OF THE UNITED STATES AND TAKE THE APPROPRIATE ACTIONS IN THE EVENT OF AN ACCIDENTAL RELEASE.

ABBREVIATIONS:

N.F. – NEAR FACE
F.F. – FAR FACE
E.F. – EACH FACE
C.J. – CONSTRUCTION JOINT
C.P.P. – CORRUGATED PLASTIC PIPE
N.B. – NORTHBOUND
S.B. – SOUTHBOUND
M.O.T. – MAINTENANCE OF TRAFFIC
EL. – ELEVATION
TYP. – TYPICAL
C.I.P. – CAST–IN–PLACE
P.E.J.F. – PREFORMED EXPANSION JOINT FILLER
R.A. – REAR ABUTMENT
F.A. – FORWARD ABUTMENT

UTILITY RELOCATION (SUM–77–0284 UNDER WISE RD.)

DOMINION EAST OHIO GAS WILL SHUT DOWN THE LINE PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE BRIDGE DEMOLITION WITH DOMINION EAST OHIO GAS AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

THE CONTRACTOR SHALL INSTALL PIPE SUPPORT BRACKETS TO THE STRUCTURAL STEEL FRAMING AS SHOWN ON SHEETS 10 & 11/18, AND A 10 3/4" DIA. O.D. CASING (SLEEVE) THROUGH THE REAR AND FORWARD SUPERSTRUCTURE DIAPHRAGMS AT ABUTMENTS AS SHOWN ON SHEET 5/18. D.E.O. WILL FURNISH THE PIPE ROLLER WITH 3/4" ROD, NUTS AND WASHERS, AND THE CASING WHICH SHALL BE INSTALLED BY THE CONTRACTOR. D.E.O. WILL FURNISH AND INSTALL THE 6 5/8" DIA. O.D. GAS LINE.

ALL WORK INVOLVING THIS UTILITY RELOCATION SHALL BE COMPLETED BETWEEN APRIL 15 AND OCTOBER 15 OF ANY YEAR.

PAYMENT SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 513, STRUCTURAL STEEL, MISC.: PIPE SUPPORT BRACKETS AND SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS TO COMPLETE THE WORK.

UTILITY RE–INSTALLATION (SUM–77–0378 UNDER GRAYBILL RD.)

DOMINION EAST OHIO GAS WILL SHUT DOWN THE LINE PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE BRIDGE DEMOLITION WITH DOMINION EAST OHIO GAS AS PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

THE CONTRACTOR SHALL INSTALL AN 8 5/8" O.D. CASING (SLEEVE) THROUGH THE REAR AND FORWARD SUPERSTRUCTURE DIAPHRAGMS AT ABUTMENTS AS SHOWN ON SHEET 6/17. D.E.O. WILL FURNISH THE CASING. D.E.O. WILL FURNISH AND INSTALL A NEW 4 1/2" DIA. O.D. GAS LINE WITH NEW U–BOLTS, NUTS AND WASHERS.

ALL WORK INVOLVING THIS UTILITY RE–INSTALLATION SHALL BE COMPLETED BETWEEN APRIL 15 AND OCTOBER 15 OF ANY YEAR.

PAYMENT SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 513, STRUCTURAL STEEL, MISC.: STEEL PIPE CASING AND SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS TO COMPLETE THE WORK.

ITEM 514 – FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE AND FINISH COAT, SYSTEM IZEU:
(SUM–77–0159 L/R AND SUM–77–0284)

THE FOLLOWING EXPOSED SURFACES OF FASCIA BEAM LINES SHALL BE PAINTED OVER THE ENTIRE LENGTH USING SYSTEM IZEU WITH A TOP COAT COLOR THAT CLOSELY APPROACHES FEDERAL STANDARD NO. 595B–14272 (GREEN): ALL EXPOSED OUTSIDE SURFACES OF THE BEAM INCLUDING BOTTOM AND INSIDE VERTICAL SURFACES OF THE BOTTOM FLANGE, SPLICES, LOAD BEARING PLATES AND ANCHOR BOLTS. THE PRIME COAT SHALL BE 708.02. REFER TO SHEETS 323 AND 345.

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
330 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

REVIEWED G.T. DATE 1–04 | STRUCTURE FILE NUMBER
DRAWN S.J.R. | REVISED
DESIGNED S.J.R. | CHECKED W.H.

STRUCTURE GENERAL NOTES

SUM–77–1.40

G2 / G3

295 / 381

T:\DRAWING\08\06472\308\GREENSBURG\ST_NOTE2.DWG SC: 1=1 11–07–03

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS; IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

SUBSTRUCTURE CONCRETE REMOVAL:

REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18-INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18-INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

PILES TO BEDROCK:

DRIVE PILES TO REFUSAL ON BEDROCK. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES TO A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR BY CONTACTING HARD BEDROCK AND THE PILE RECEIVING AT LEAST 20 BLOWS. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL.

(SUM-77-0159 L/R)

THE ULTIMATE BEARING VALUE IS 98 TONS PER PILE FOR THE HP10X42 ABUTMENT PILES. THE ULTIMATE BEARING VALUE IS 93 TONS PER PILE FOR THE HP10X42 PIER PILES.

REAR ABUTMENT (LEFT) PILES:
26 PILES 55 FEET LONG, ORDER LENGTH

REAR ABUTMENT (RIGHT) PILES:
26 PILES 60 FEET LONG, ORDER LENGTH

PIER 1 (LEFT) PILES:
5 PILES 35 FEET LONG, ORDER LENGTH

PIER 1 (RIGHT) PILES:
5 PILES 40 FEET LONG, ORDER LENGTH

PIER 2 (LEFT) PILES:
5 PILES 30 FEET LONG, ORDER LENGTH

PIER 2 (RIGHT) PILES:
5 PILES 40 FEET LONG, ORDER LENGTH

FORWARD ABUTMENT (LEFT) PILES:
26 PILES 60 FEET LONG, ORDER LENGTH

FORWARD ABUTMENT (RIGHT) PILES:
28 PILES 60 FEET LONG, ORDER LENGTH

(SUM-77-0378)

THE ULTIMATE BEARING VALUE IS 77 TONS PER PILE FOR THE HP10X42 ABUTMENT PILES.

REAR ABUTMENT PILES:
6 PILES 40 FEET LONG, ORDER LENGTH

FORWARD ABUTMENT PILES:
6 PILES 45 FEET LONG, ORDER LENGTH

ITEM SPECIAL - VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC

THIS ITEM SHALL CONFORM IN ALL RESPECTS TO STANDARD DRAWING VPF-1-90 EXCEPT THAT THE COLOR OF THE PVC COATING FOR THE FENCE FABRIC SHALL BE BLACK IN COLOR CONFORMING TO FEDERAL COLOR NO. 27040 IN LIEU OF GRAY (FED. COLOR NO. 16251) AND THE FENCE POSTS, BASE PLATES, RAILS, TIES, BARS, RODS, CLAMPS, WIRES AND ALL HARDWARE AND FITTINGS SHALL BE PAINTED IN ACCORDANCE WITH ITEM 607 - FENCE, TYPE CLT, AS PER PLAN AS DESCRIBED ON SHEET 22/381.

ITEM 507, STEEL POINTS, AS PER PLAN:
(SUM-77-0159 L/R AND SUM-77-0378)

USE STEEL PILE POINTS TO PROTECT THE TIPS OF THE PROPOSED STEEL "H" PILING. FURNISH STEEL POINTS FROM THE FOLLOWING MANUFACTURERS/ SUPPLIERS: ASSOCIATED PILE AND FITTING CORPORATION, 262 RUTHERFORD BLVD, CLIFTON, NEW JERSEY 07014; INTERNATIONAL CONSTRUCTION EQUIPMENT, INC., 301 WAREHOUSE DRIVE, MATTHEWS, NORTH CAROLINA 28015; DOUGHERTY FOUNDATION PRODUCTS, INC., P.O. BOX 688, FRANKLIN LAKES, NEW JERSEY 07417; VERSA STEEL INC, 1618 N.E. FIRST AVE, PORTLAND, OREGON 97232; PILING ACCESSORIES INC., 3467 GRIBBLE ROAD, MATHEWS, NORTH CAROLINA 28105; OR BY A MANUFACTURER THAT CAN FURNISH A STEEL POINT THAT IS ACCEPTABLE TO THE DIRECTOR. THE MATERIAL USED FOR THE MANUFACTURING OF PILE POINTS SHALL CONFORM TO ASTM A27/A27M 65/35 - CLASS 2 - HEAT TREATED OR AASHTO M103/M103M 65/35 - HEAT TREATED. WELD THE PILE POINTS TO THE PILE IN ACCORDANCE WITH AWSD1.5 OR THE MANUFACTURER'S WRITTEN WELDING PROCEDURE SUPPLIED TO THE ENGINEER BEFORE THE WELDING IS PERFORMED. SUBMIT A NOTARIZED COPY OF THE MILL TEST REPORT TO THE ENGINEER.

UTILITY LINES:

THE UTILITY(IES) SHALL BORE ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MIMINUM.

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 EXISTING 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.

ITEM 509 REINFORCING STEEL REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN:

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE.

REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

A CONTINGENCY QUANTITY OF 100 POUNDS HAS BEEN INCLUDED IN THE ESTIMATED QUANTITY FOR EACH BRIDGE.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:
(SUM-77-0378)

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

SUBMITTAL REQUIREMENTS:
AN OHIO REGISTERED ENGINEER SHALL PREPARE, SEAL AND DATE PLANS FOR A JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS, SUFFICIENT TO PERFORM THE WORK DESCRIBED IN THE PLANS. SUBMIT THREE SETS OF PLANS TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE OHIO REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSES OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

JACKING SYSTEM REQUIREMENTS:
THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS. FOR LIFTS GREATER THAN 1", JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT. JACKS WILL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK. DO NOT USE JACKS ALONE TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. USE TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR. DO NOT USE SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM. HAVE SPARE EQUIPMENT AVAILABLE ON SITE IN ORDER TO PROCEED WITH THE JACKING IN THE EVENT OF BREAKDOWN. PROVIDE A LIST OF SPARE EQUIPMENT TO THE ENGINEER.

JACKING OPERATION REQUIREMENTS:
AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1/4". THE MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1" OR LESS. IF THIS 1" LIMIT IS TO BE EXCEEDED, PROVIDE CALCULATIONS SHOWING THAT THE SUPERSTRUCTURE COMPONENTS WILL NOT BE TEMPORARILY STRESSED BEYOND ALLOWABLE STRESSES AND THAT NO PERMANENT STRESSES WILL BE INDUCED IN THE COMPONENTS AFTER THEY OBTAIN THEIR FINAL POSITION. IF DURING THE JACKING OPERATIONS, 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 SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. THE DEPARTMENT WILL NOT PAY FOR THE COST OF THE REQUIRED REPAIRS. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT 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.

METHOD OF MEASUREMENT:
THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

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

INSPECTION OF EXISTING STRUCTURAL STEEL: (SUM-77-0378)

THE ENGINEER WILL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THE WELDS, PLATES AND BEAMS OR GIRDERS ARE FREE OF DEFECTS AND CRACKS. IF NECESSARY, REMOVE ALL DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS THAT MAY INTERFERE WITH THE ENGINEER'S INSPECTION. THE INSPECTION WILL NOT TAKE PLACE UNTIL THE TOP FLANGES ARE CLEANED ACCORDING TO 511.10, BUT IT WILL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE DEPARTMENT WILL PAY FOR THE COST ASSOCIATED WITH THIS INSPECTION WITH ITEM 511, SUPERSTRUCTURE CONCRETE. THE ENGINEER WILL REPORT ALL CRACKS FOUND TO THE OFFICE OF CONSTRUCTION ADMINISTRATION, BRIDGE CONSTRUCTION SPECIALIST, ALONG WITH SPECIFIC INFORMATION ON LOCATION OF THE CRACKS, LENGTH, AND DEPTH SO AN EVALUATION AND REPAIR OR REPLACEMENT RECOMMENDATION CAN BE MADE.

T:\DRAWING\08\06472\308\GREENSBURG\ST_NOTE3.DWG SC: 1=1 10-09-03

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

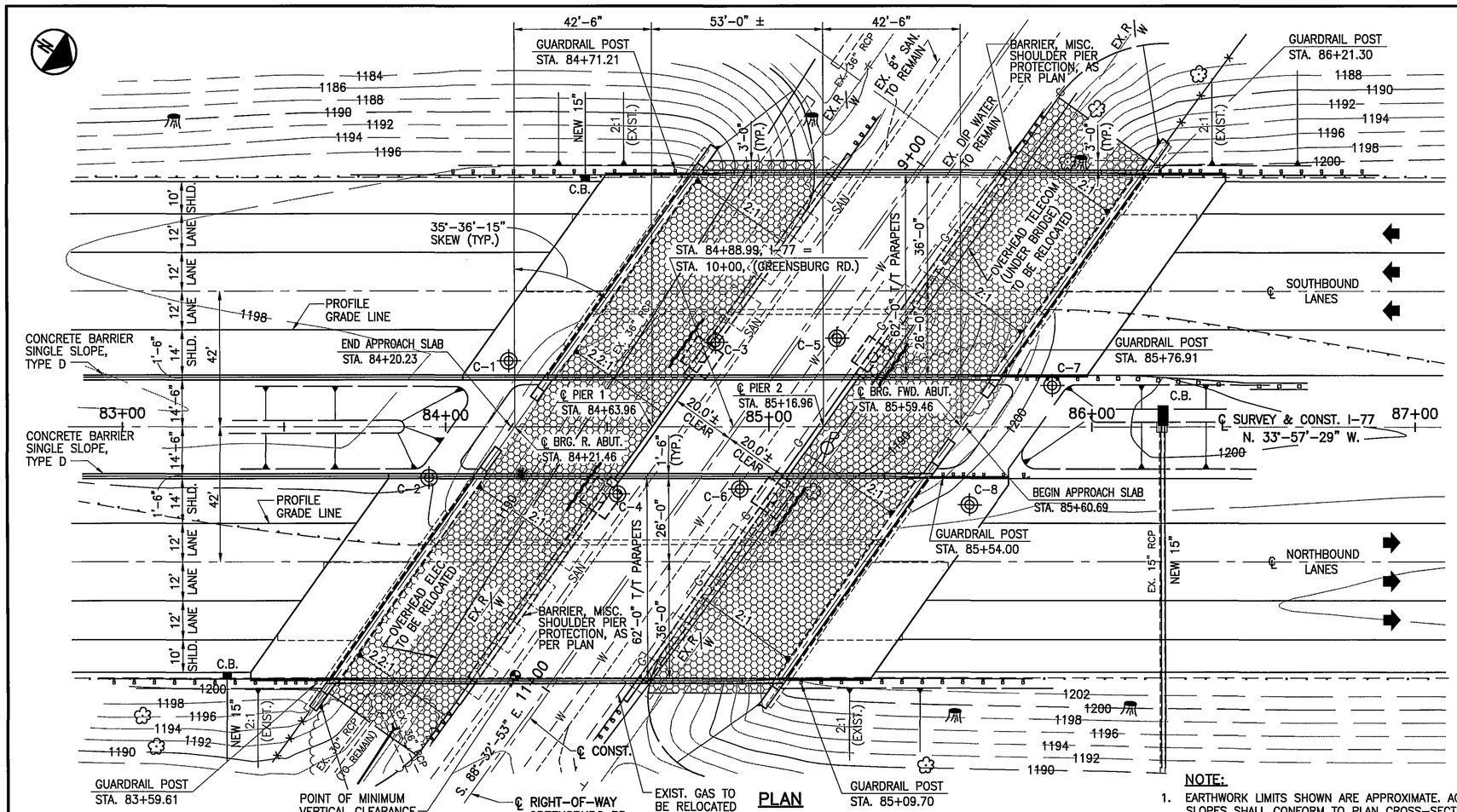
DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.			

STRUCTURE GENERAL NOTES

SUM-77-1.40

G3 / G3

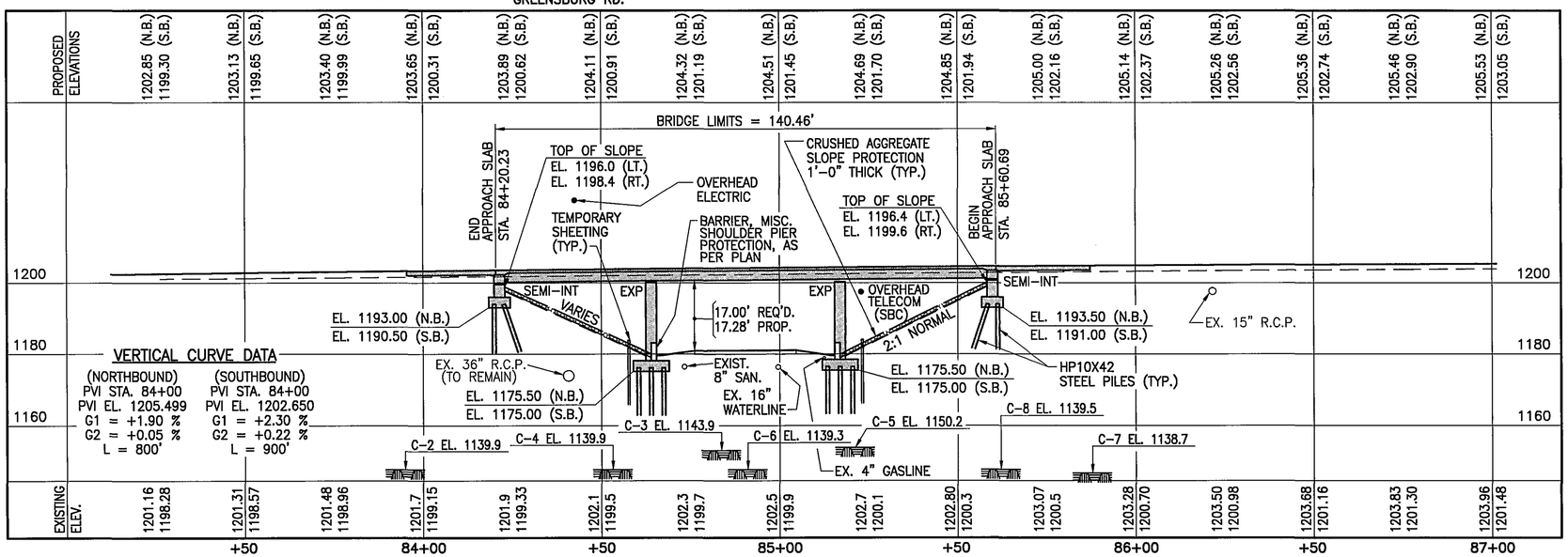
296
381



PLAN

NOTE:

1. EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTIONS.



VERTICAL CURVE DATA

(NORTHBOUND)	(SOUTHBOUND)
PVI STA. 84+00	PVI STA. 84+00
PVI EL. 1205.499	PVI EL. 1202.650
G1 = +1.90 %	G1 = +2.30 %
G2 = +0.05 %	G2 = +0.22 %
L = 800'	L = 900'

PROFILE ALONG ℄ SURVEY & CONSTRUCTION

ESTIMATED AVERAGE PILE LENGTHS HP10X42 (SOUTHBOUND)				
	R.A. LT.	P-1 LT.	P-2 LT.	F.A. LT.
EST. LT.	50'	30'	25'	55'

ESTIMATED AVERAGE PILE LENGTHS HP10X42 (NORTHBOUND)				
	R.A. RT.	P-1 RT.	P-2 RT.	F.A. RT.
EST. LT.	55'	35'	35'	55'

KEY:

NEW CRUSHED AGGREGATE SLOPE PROTECTION, 1'-0" THICK

C-1 BORING LOCATION

APPROX. TOP OF ROCK

BENCH MARK No. 59
TOP IRON PIN IN CONCRETE MONUMENT STA. 85+92, CENTERLINE ELEV. = 1200.477
BENCH MARK No. 60
CHISEL SQ. ON NE WINGWALL OF BRIDGE STA. 85+00, 87' Rt. ELEV. = 1202.150
BENCH MARK No. 61
CHISEL SQ. ON NW WINGWALL OF BRIDGE STA. 86+24, 87' Lt. ELEV. = 1200.559

EXISTING STRUCTURE

TYPE: CONTINUOUS A7 STEEL BEAM WITH REINFORCED CONCRETE DECK & SUBSTRUCTURE.

SPANS: 42'-4" ±, 53'-0" ±, 42'-5" ± C/C BEARINGS

ROADWAY: 41'-0" ± TOE/TOE OF CURBS

DESIGN LOADING: C.F. 2000 (57)

SKEW: 35°-36'-15" ± L.F.

WEARING SURFACE: CONCRETE OVERLAY

ALIGNMENT: TANGENT

APPROACH SLABS: 25'-0" LONG

CROWN: 3/16" PER FT.

YEAR BUILT: 1963

CONDITION: FUNCTIONALLY OBSOLETE

DISPOSITION: DECK TO BE REPLACED & WIDENED

STRUCTURE FILE NUMBER: 7702132 L/ 7702167 R

PROPOSED STRUCTURE

PROPOSED WORK: NEW SUPERSTRUCTURE ON NEW ABUTMENTS AND WIDENED PIERS

TYPE: CONTINUOUS COMPOSITE STEEL BEAM (A588) WITH REINFORCED CONCRETE DECK ON SEMI-INTEGRAL ABUTMENTS & MODIFED CAP AND COLUMN PIERS

SPANS: 42'-6", 53'-0" ±, 42'-6" C/C BEARINGS

ROADWAY: 62'-0" TOE TO TOE OF PARAPETS

DESIGN LOADING: HS25-44 (CASE I) AND THE ALTERNATE MILITARY LOADING

SKEW: 35°-36'-15" L.F.

WEARING SURFACE: MONOLITHIC CONCRETE

ALIGNMENT: TANGENT

APPROACH SLABS: AS-1-81 (25'-0" LONG)

CROWN: .016' PER FT.

AVERAGE DAILY TRAFFIC: 33,320 (2004) 39,800 (2024)

AVERAGE DAILY TRUCK TRAFFIC: 4000 (2004) 4775 (2024)

COORDINATES: LAT. N 40°55'44", LONG. W 81°25'58"

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

SUMMIT COUNTY
STA. 84+20.23
STA. 85+60.69

SITE PLAN
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

1 / 37

297
381

T:\DRAWINGS\08\06472\308\GREENSBURG\GRBR_SP1 SC: 1=20 11-04-03

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	LEFT BRIDGE TOTAL	LEFT BRIDGE IM FUNDING	LEFT BRIDGE NHS FUNDING	RIGHT BRIDGE TOTAL	RIGHT BRIDGE IM FUNDING	RIGHT BRIDGE NHS FUNDING	UNIT	DESCRIPTION	LEFT BRIDGE ABUTS.	LEFT BRIDGE PIERS	LEFT BRIDGE SUPER.	LEFT BRIDGE GENERAL	RIGHT BRIDGE ABUTS.	RIGHT BRIDGE PIERS	RIGHT BRIDGE SUPER.	RIGHT BRIDGE GENERAL	NOTE REF. SHEET NO.
202	11203	LUMP	LUMP		LUMP	LUMP			PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP				LUMP	G1
202	11203	LUMP	LUMP						PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN (TEMPORARY WIDENING)				LUMP					G1
502	11100	LUMP	LUMP						STRUCTURE FOR MAINTAINING TRAFFIC				LUMP					3, 5, 6, 8 TO 15
503	11100	LUMP	LUMP		LUMP	LUMP			COFFERDAMS, CRIBS AND SHEETING				LUMP				LUMP	
503	21100	372	212	160	384	220	164	CU. YD.	UNCLASSIFIED EXCAVATION	321	51			333	51			
505	11100	LUMP	LUMP		LUMP	LUMP			PILE DRIVING EQUIPMENT MOBILIZATION				LUMP				LUMP	
507	00100	3,315	1,973	1,342	3,640	2,138	1,502	FT.	STEEL PILES HP10 X 42, FURNISHED *	2,990	325			3,240	400			
507	00150	3,005	1,802	1,203	3,320	1,960	1,360	FT.	STEEL PILES HP10 X 42, DRIVEN	2,730	275			2,970	350			
507	93301	62	34	28	64	36	28	EACH	STEEL POINTS, OR SHOES, AS PER PLAN	52	10			54	10			G2
509	10000	129,619	85,548	44,071	130,671	86,242	44,429	POUND	EPOXY COATED REINFORCING STEEL *	22,760	21,378	85,481		23,232	21,949	85,490		
509	20001	100	100	0	100	100	0	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN *				100				100	G2
511	43200	106	70	36	120	79	41	CU. YD.	CLASS C CONCRETE, PIER (REPAIR OR RECONSTRUCTION)		106				120			
511	43500	216	143	73	224	148	76	CU. YD.	CLASS C CONCRETE, ABUTMENT INCLUDING FOOTING	216				224				
511	50100	44	44	0	44	44	0	CU. YD.	CLASS HP CONCRETE, BRIDGE DECK (PARAPET)			44				44		
511	52000	LUMP	LUMP		LUMP	LUMP			CLASS HP CONCRETE, TEST SLAB			LUMP				LUMP		
511	71100	5	5	0	0	0	0	CU. YD.	CONCRETE, MISC.: TEMPORARY EXPANSION JOINT REPAIR ⊙	5								G3
513	10060	LUMP	LUMP		LUMP	LUMP			STRUCTURAL STEEL MEMBERS, LEVEL 3, (A588/A709 GRADE 50W) *			LUMP				LUMP		
513	20000	3,744	2,471	1,273	3,744	2,471	1,273	EACH	WELDED STUD SHEAR CONNECTORS			3744				3744		
514	00060	1,128	744	384	1,128	744	384	SQ. FT.	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT **			1128				1128		G3
514	00066	1,128	744	384	1,128	744	384	SQ. FT.	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT **			1128				1128		G3
514	10000	2	1	1	2	1	1	EACH	FINAL INSPECTION REPAIR **				2				2	
516	13900	53	35	18	53	35	18	SQ. FT.	2" PREFORMED EXPANSION JOINT FILLER	53				53				
516	14021	176	116	60	176	116	60	FT.	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN			176				176		G3
516	44000	16	10	6	16	10	6	EACH	ELASTOMERIC BEARING (9" X 14" X 1.86") WITH INTERNAL LAMINATES (NEOPRENE) AND LOAD PLATE (11" X 15" X 1.50")	16				16				
516	44000	16	10	6	16	10	6	EACH	ELASTOMERIC BEARING (10.5" X 17" X 1.76") WITH INTERNAL LAMINATES (NEOPRENE) AND LOAD PLATE (11.5" X 18" X 2.13")		16				16			
518	21200	85	56	29	88	58	30	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC	85				88				
518	40000	193	127	66	200	132	68	FT.	6" PERFORATED CORRUGATED PLASTIC PIPE	193				200				
518	40010	18	18	0	18	18	0	FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	18				18				
519	11100	15	15	0	16	16	0	SQ. FT.	PATCHING CONCRETE STRUCTURE		15				16			
526	25001	350	231	119	353	233	120	SQ. YD.	REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN				350				353	33
601	20000	878	579	299	877	579	298	SQ. YD.	CRUSHED AGGREGATE SLOPE PROTECTION				878				877	
SPECIAL	69072000	LUMP	LUMP		LUMP	LUMP			ASBESTOS NOTIFICATION				LUMP				LUMP	G1
864	10100	837	552	285	883	583	300	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	111 □	348	378		116 □	389	378		G3
894	10000	314	207	107	314	207	107	CU. YD.	HIGH PERFORMANCE CONCRETE, FOR BRIDGE DECK WITH WARRANTY			314				314		

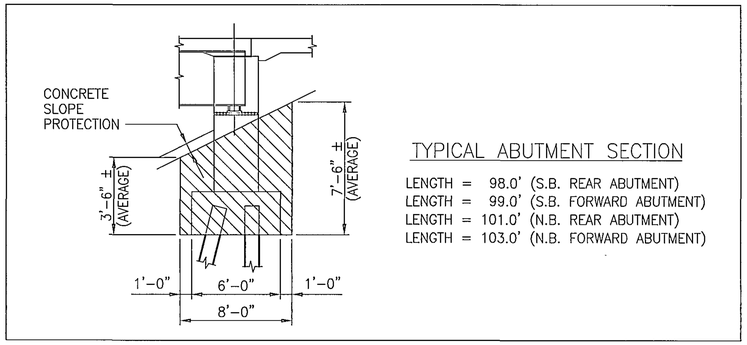
COMPUTED BY : S.J.R. DATE : 10-03
CHECKED BY : W.E.R. DATE : 1-04

□ INCLUDES APPROACH SLAB BARRIERS

⊙ REPAIR ALONG FULL PAVEMENT WIDTH OF EXISTING SOUTHBOUND LANES

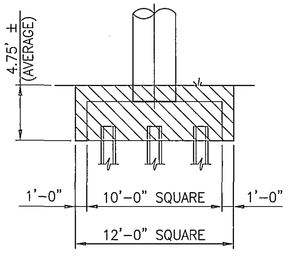
* SEE PROPOSAL NOTE 525

** SEE PROPOSAL NOTE 891



TYPICAL ABUTMENT SECTION

LENGTH = 98.0' (S.B. REAR ABUTMENT)
LENGTH = 99.0' (S.B. FORWARD ABUTMENT)
LENGTH = 101.0' (N.B. REAR ABUTMENT)
LENGTH = 103.0' (N.B. FORWARD ABUTMENT)



TYPICAL PIER SECTION
(TOTAL 4 PIER LOCATIONS)

LIMITS OF EXCAVATION
(ITEM 503 - UNCLASSIFIED EXCAVATION)

T:\DRAWING\08\06472\308\GREENSBURG\GRBG_EQ1.DWG SC: 1=1 10-13-03

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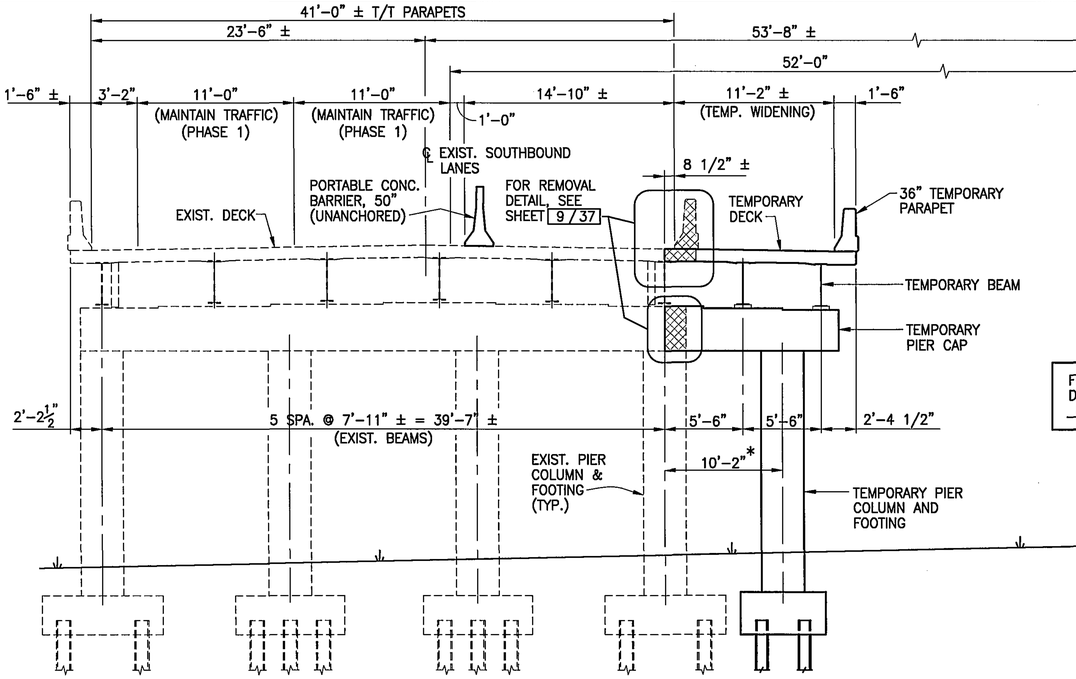
DESIGNED S.J.R. | DRAWN S.J.R. | CHECKED W.H. | REVIEWED G.T. DATE 1-04 | REVISED | STRUCTURE FILE NUMBER 7702132 L/ 7702167 R

ESTIMATED QUANTITIES
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

2 / 37

298 / 381



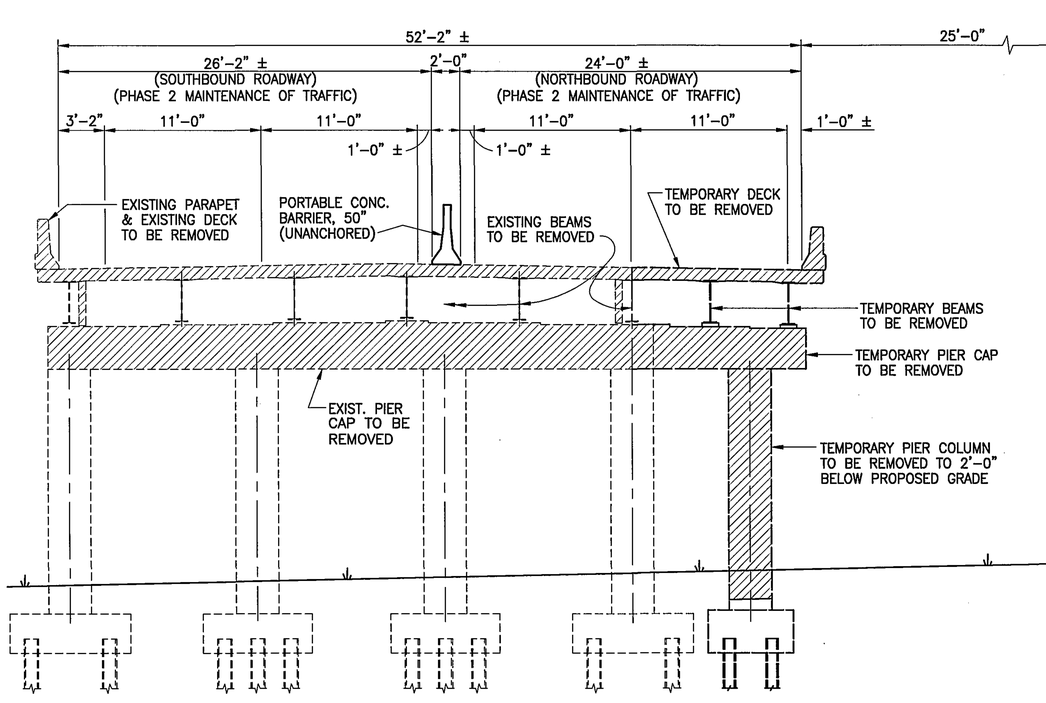
(SOUTHBOUND)
(SHOWING PHASE 1 REMOVALS & CONSTRUCTION & M.O.T.)

(NORTHBOUND)
(SHOWING PHASE 1 M.O.T. AND PHASE 2 REMOVALS)

PHASE 1 REMOVALS AND CONSTRUCTION AND M.O.T.
PHASE 2 REMOVALS

KEY: REMOVAL PER ITEM 202–PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN

* MEASURED ALONG SKEW



(SOUTHBOUND)
(SHOWING PHASE 2 M.O.T. AND PHASE 3 REMOVALS)

(NORTHBOUND)
(SHOWING PHASE 2 CONSTRUCTION)

PHASE 2 M.O.T. & CONSTRUCTION
PHASE 3 REMOVALS

NOTES:
1. SEE DESCRIPTION OF PROPOSED WORK ON SHEET 4 / 37
2. FOOTINGS AND PILES ARE NOT SHOWN AS SKEWED.

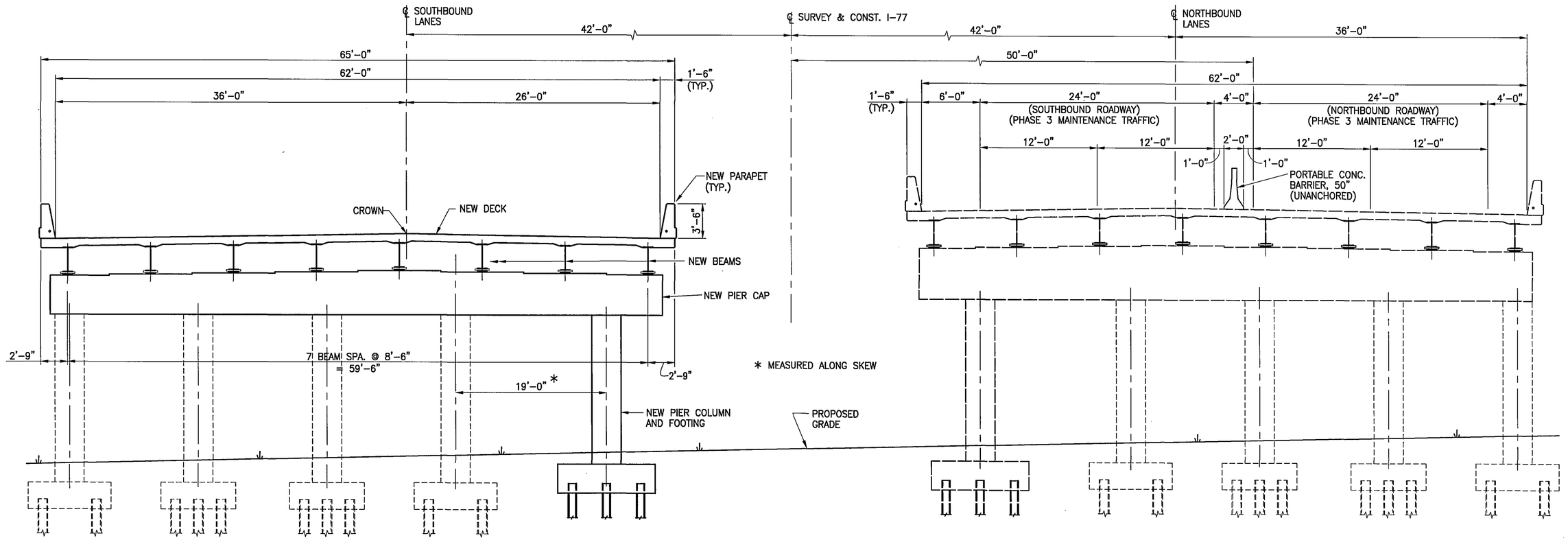
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DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

PHASE CONSTRUCTION (AT PIERS)
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40



(SOUTHBOUND)

(NORTHBOUND)

PHASE 3 M.O.T. & CONSTRUCTION

PROPOSED WORK

PHASE 1 CONSTRUCTION

(SOUTHBOUND BRIDGE)

1. PLACE PORTABLE CONCRETE BARRIER FOR PHASE CONSTRUCTION.
2. INSTALL TEMPORARY STRIPING.
3. INSTALL TEMPORARY SHEETING AT ABUTMENTS.
4. INSTALL FALSEDECKING.
5. REMOVE PORTIONS OF EXISTING SOUTHBOUND DECK, PARAPETS PIERS AND ABUTMENTS AS NOTED ON THE PLANS.
6. PLUG EXISTING SCUPPERS AND PATCH DECK ACCORDINGLY.
7. CONSTRUCT TEMPORARY ABUTMENT FOOTING EXTENSIONS, WINGWALLS AND BREASTWALLS.
8. CONSTRUCT TEMPORARY PIER WIDENING.
9. INSTALL TEMPORARY BEARINGS AND PLACE TEMPORARY BEAM, INTERMEDIATE CROSSFRAMES, END CROSSFRAMES AND WIDENED DECK SECTION TO REMAINING PORTION OF EXISTING STRUCTURE.
10. CONSTRUCT TEMPORARY BACKWALLS AND APPROACHES.

PHASE 2 CONSTRUCTION

(SOUTHBOUND BRIDGE)

1. PLACE PORTABLE CONCRETE BARRIER AND DIVERT AND MAINTAIN TWO LANES OF TRAFFIC IN EACH DIRECTION.
2. INSTALL TEMPORARY STRIPING.

(NORTHBOUND BRIDGE)

3. INSTALL FALSEDECKING.
4. ON NORTHBOUND BRIDGE, REMOVE EXISTING DECK, PARAPETS, STRUCTURAL STEEL, APPROACH SLABS, ABUTMENTS AND PORTIONS OF PIERS AS NOTED ON THE PLANS.
5. CONSTRUCT NEW ABUTMENTS, PIER FOOTING, COLUMN AND CAP.
6. PLACE SLOPE PROTECTION.
7. INSTALL NEW ELASTOMERIC BEARINGS, STEEL BEAMS, INTERMEDIATE CROSSFRAMES, AND DIAPHRAGM CONCRETE.
8. PLACE CONCRETE DECK, PARAPETS AND APPROACH SLABS.
9. SEAL CONCRETE SURFACES

PHASE 3 CONSTRUCTION

(NORTHBOUND BRIDGE)

1. PLACE PORTABLE CONCRETE BARRIER AND DIVERT AND MAINTAIN TWO LANES OF TRAFFIC IN EACH DIRECTIONS.
2. INSTALL TEMPORARY STRIPING.

(SOUTHBOUND BRIDGE)

3. INSTALL FALSEDECKING.
4. ON SOUTHBOUND BRIDGE, REMOVE EXISTING DECK, PARAPETS, STRUCTURAL STEEL, APPROACH SLABS, ABUTMENTS AND PORTIONS OF PIERS AS NOTED ON THE PLANS.
5. CONSTRUCT NEW ABUTMENTS, PIER FOOTING, COLUMN AND CAP.
6. PLACE SLOPE PROTECTION.
7. INSTALL NEW ELASTOMERIC BEARINGS, STEEL BEAMS, INTERMEDIATE CROSSFRAMES AND DIAPHRAGM CONCRETE.
8. PLACE CONCRETE DECK, PARAPETS AND APPROACH SLABS.
9. SEAL CONCRETE SURFACES.
10. REMOVE PORTABLE CONCRETE BARRIERS FROM NORTHBOUND BRIDGE AND RESUME NORMAL TRAFFIC.

NOTE:

1. FOOTINGS AND PILES ARE NOT SHOWN AS SKEWED.

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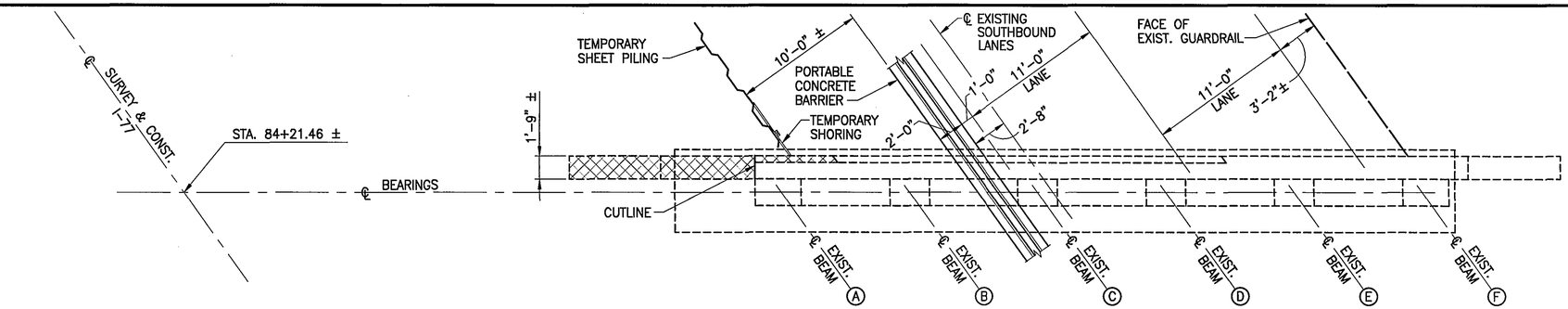
DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1–04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

PHASE CONSTRUCTION (AT PIERS)

BRIDGE NO. SUM–77–0159 L/R
OVER GREENSBURG RD.

SUM–77–1.40

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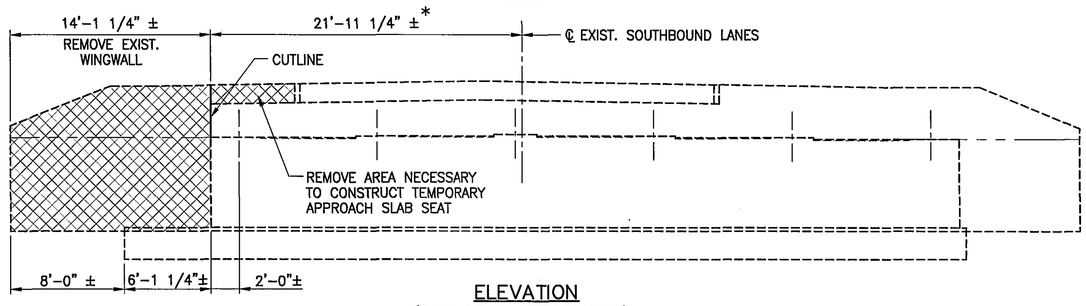
PLAN

KEY:

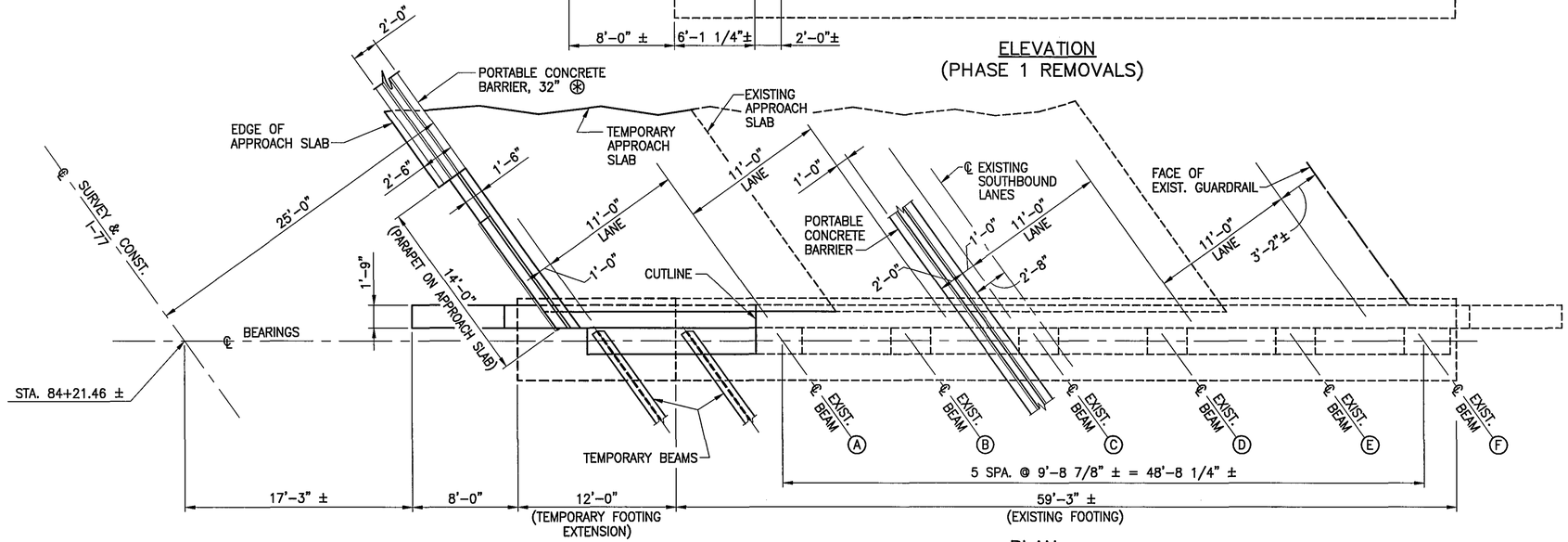
ITEM 202–PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN (TEMPORARY WIDENING)

* MEASURED ALONG FACE OF BACKWALL

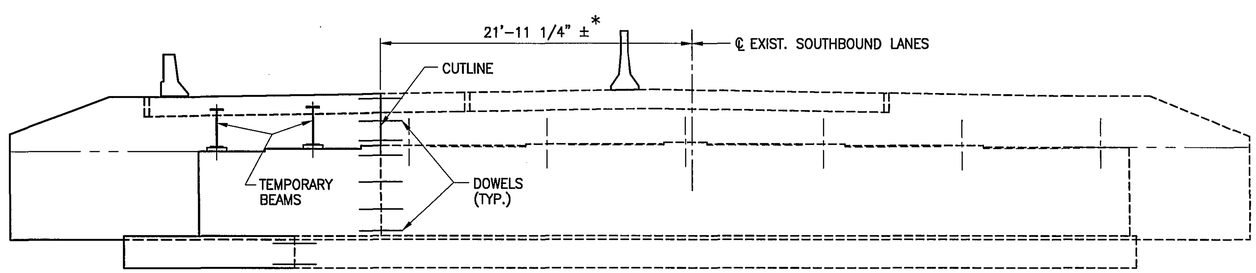
⊛ BRIDGE MOUNTED AT REAR ABUTMENT ONLY



ELEVATION
(PHASE 1 REMOVALS)



PLAN



ELEVATION
(PHASE 1 CONSTRUCTION)

NOTE:

1. FOR TEMPORARY WIDENING DETAILS, SEE SHEETS 8 THRU 15 OF 37.

T:\DRAWING\08\06472\308\GREENSBURG\GRBG_PC3.DWG SC: 1=64 10-02-03

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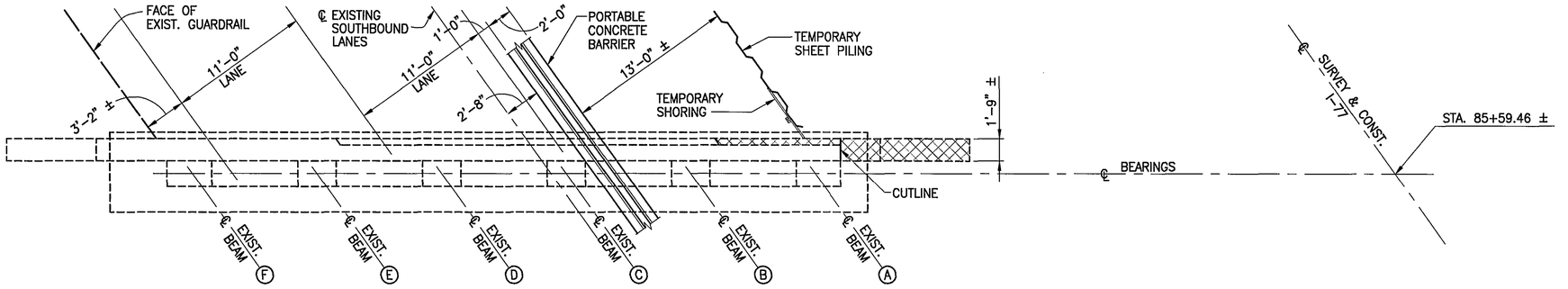
DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

PHASE CONSTRUCTION (REAR ABUTMENT, SOUTHBOUND)
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

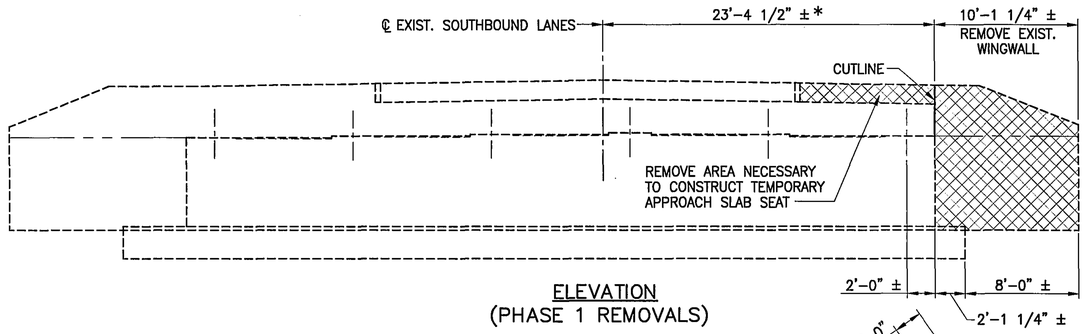
SUM-77-1.40

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PLAN

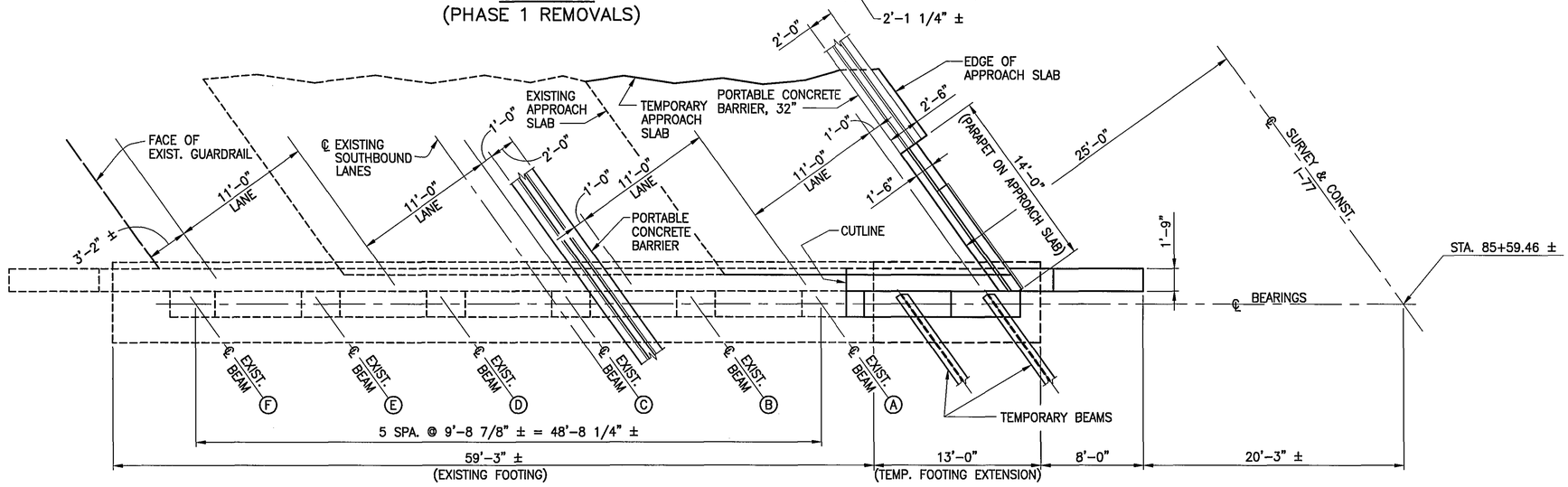


ELEVATION
(PHASE 1 REMOVALS)

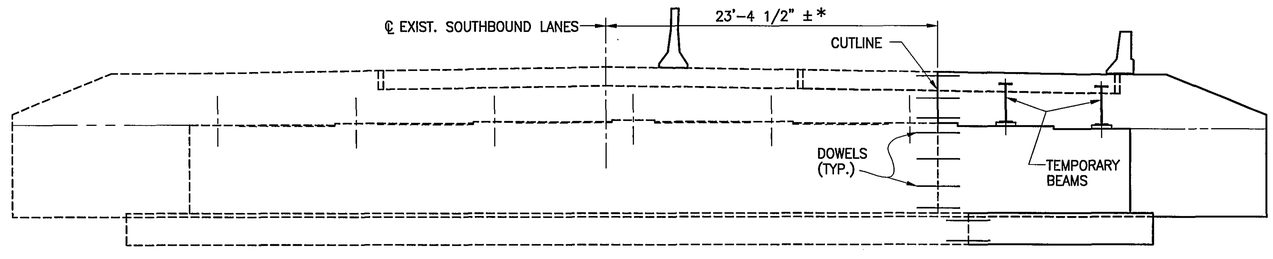
KEY:

ITEM 202—PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN (TEMPORARY WIDENING)

* MEASURED ALONG FACE OF BACKWALL



PLAN



ELEVATION
(PHASE 1 CONSTRUCTION)

NOTE:

1. FOR TEMPORARY WIDENING DETAILS, SEE SHEETS 8 THRU 15 OF 37.

PHASE CONSTRUCTION (FORWARD ABUTMENT, SOUTHBOUND)
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

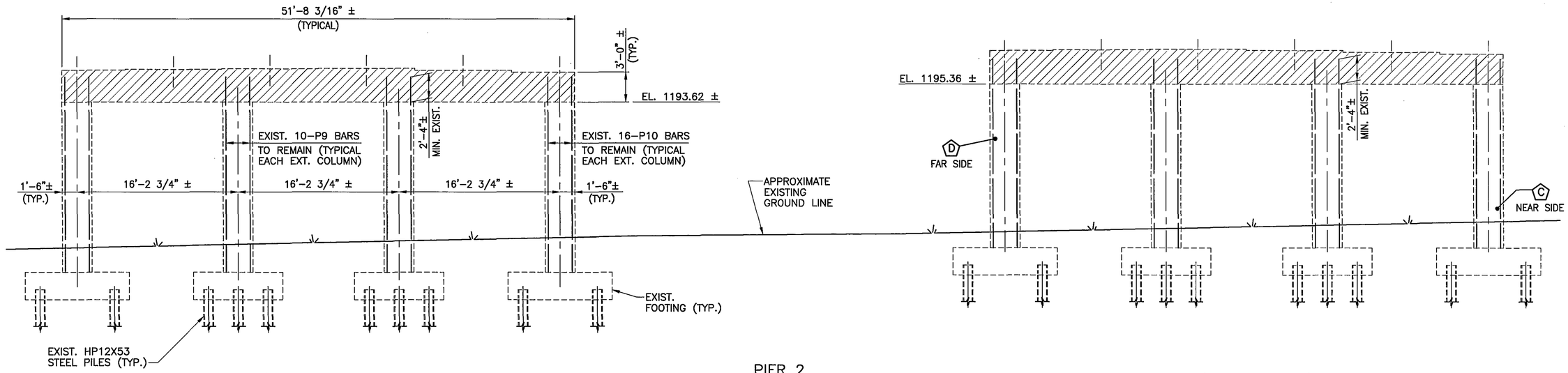
6 / 37

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381

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DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

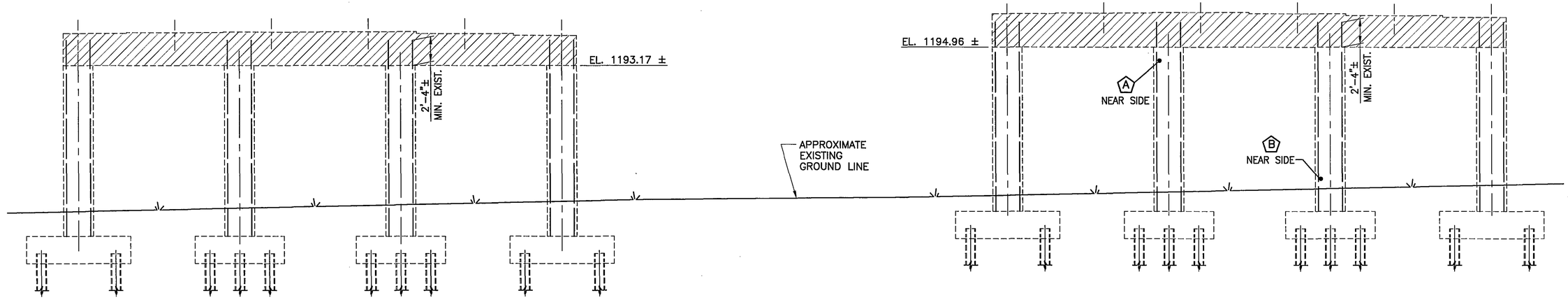
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(SOUTHBOUND)

PIER 2
(LOOKING UP-STATION)

(NORTHBOUND)



(SOUTHBOUND)

PIER 1
(LOOKING UP-STATION)

(NORTHBOUND)

PATCHING:

- (A) 3" DIA. POP-OUT – AREA = 0.05 SQ. FT.
- (B) 4" DIA. POP-OUT – AREA = 0.09 SQ. FT.
- (C) 6" DIA. POP-OUT – AREA = 0.20 SQ. FT.
- (D) 3" DIA. POP-OUT – AREA = 0.05 SQ. FT.

KEY

- ITEM 202-PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN
- AREA TO BE PATCHED PER ITEM 519

ITEM 519-PATCHING CONCRETE STRUCTURES

PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN JUNE OF 2003.

ESTIMATED QUANTITIES HAVE BEEN INCREASED BY 50% OVER MEASURED QUANTITIES TO ALLOW FOR ADDITIONAL DETERIORATION.

EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.

ESTIMATED PATCHING QUANTITIES (SQ. FEET)

LOCATION	MEASURED QUANTITIES	POP-OUT QUANTITIES	ESTIMATED QUANTITIES
PIER 1 (SOUTHBOUND)	0	5	7.50
PIER 1 (NORTHBOUND)	0.14	5	7.71
PIER 2 (SOUTHBOUND)	0	5	7.50
PIER 2 (NORTHBOUND)	0.25	5	7.88
TOTAL	0.39	20	31

THE ABOVE ESTIMATED QUANTITIES ARE CARRIED TO THE TABLE ON SHEET 2/37

NOTE:

DUE TO THE LARGE QUANTITY OF POP-OUTS ON THE FACE OF EXISTING PIER COLUMNS, THE CONTRACTOR SHALL LOCATE ALL POP-OUTS AS DIRECTED BY THE ENGINEER.

A QUANTITY OF 5 SQ. FT. FOR EACH PIER HAS BEEN INCLUDED IN THE ESTIMATED PATCHING QUANTITIES.

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DESIGNED S.J.R. | DRAWN S.J.R. | REVIEWED G.T. | DATE 1-04
CHECKED W.H. | REVISED | STRUCTURE FILE NUMBER 7702132 L/ 7702167 R

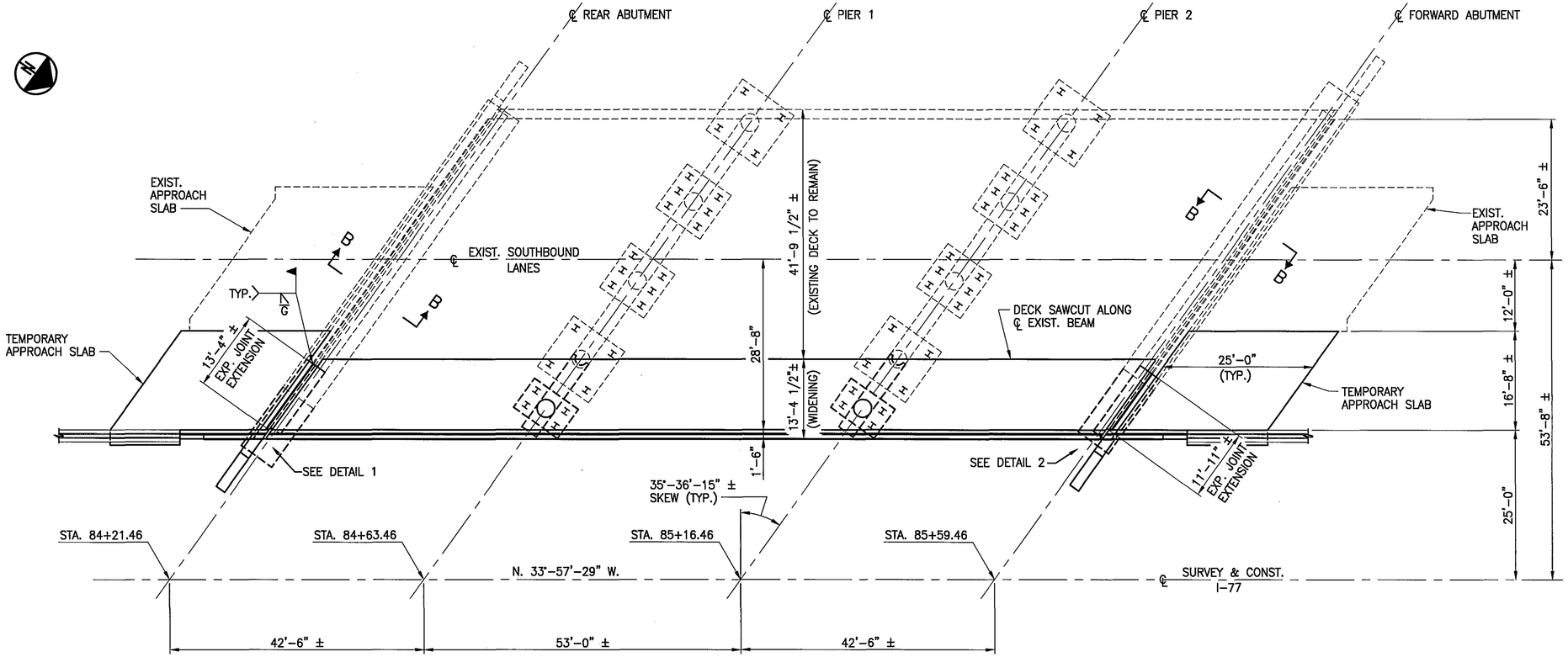
PIER PATCHING DETAILS
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

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GENERAL PLAN
(SOUTHBOUND TEMPORARY WIDENING)

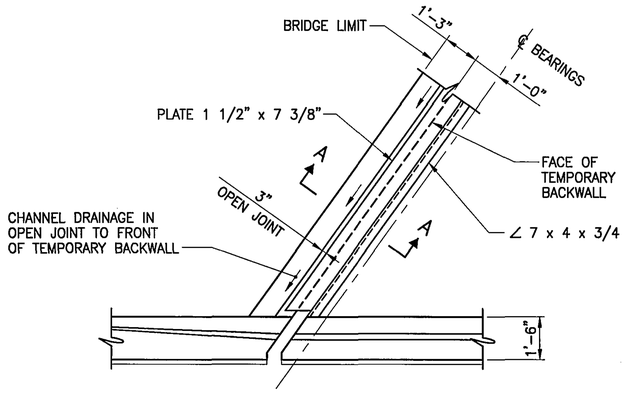
BELOW ARE APPROXIMATE QUANTITIES OF MAJOR ITEMS THAT ARE TO BE INCLUDED IN THE LUMP SUM PRICE FOR ITEM 502 – STRUCTURE FOR MAINTAINING TRAFFIC. IT IS NOT INCLUSIVE OF ALL WORK AS REQUIRED IN THE PLANS, AND IS GIVEN HERE FOR INFORMATION ONLY. THE CONTRACTOR SHALL OBTAIN HIS OWN QUANTITIES FOR DETERMINING HIS LUMP SUM PRICE BID FOR ITEM 502, FOR ALL THE WORK REQUIRED:

APPROXIMATE QUANTITIES FOR ITEM 502

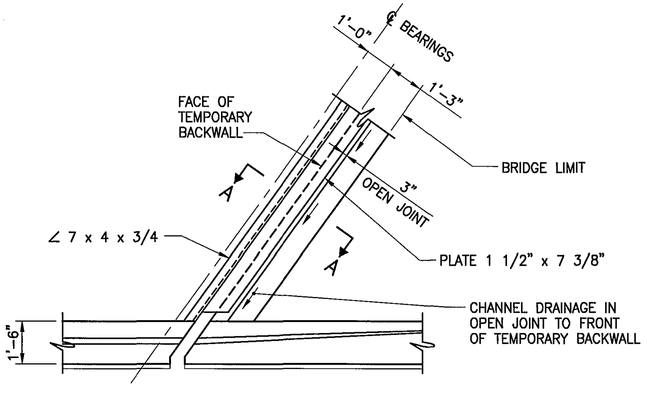
PER ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS.	PIERS	SUPER.
507	220	FOOT	STEEL PILES HP10X42, FURNISHED **		220	
507	220	FOOT	STEEL PILES HP10X42, DRIVEN		220	
509	26,260	POUNDS	EPOXY COATED REINFORCING STEEL **	5217	5701	15,342
510	70	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	54	16	
511	78	CU. YD.	CLASS S CONCRETE, SUPERSTRUCTURE			78
511	31	CU. YD.	CLASS C CONCRETE, PIER		31	
511	61	CU. YD.	CLASS C CONCRETE, ABUTMENT *	61		
513	34,600	POUNDS	STRUCTURAL STEEL MEMBERS, LEVEL TWO (2) FABRICATION **			34,600
516	4	EACH	BEARING DEVICE, MISC.: 8" X 1'-6 1/2" BEARING	4		
516	2	EACH	BEARING DEVICE, MISC.: 10" X 1'-7 1/2" BEARING		2	
516	2	EACH	BEARING DEVICE, MISC.: 10" X 1'-6 1/2" BEARING		2	
516	26	LIN. FT.	HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT	26		
518	14	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC	14		
526	98	SQ. YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")	98		

* INCLUDES CONCRETE FOR PARAPET ON APPROACH SLABS

** SEE PROPOSAL NOTE 525



DETAIL 1
(REAR ABUTMENT)



DETAIL 2
(FORWARD ABUTMENT)

NOTES:

1. PAYMENT FOR THE TEMPORARY WIDENING SHALL BE INCLUDED WITH ITEM 502 – STRUCTURE FOR MAINTAINING TRAFFIC, AND SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS AND TO THE SATISFACTION OF THE ENGINEER.
2. FOR SECTION A–A AND B–B, SEE SHEET 14/37

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DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

PHASE 1 TEMPORARY WIDENING GENERAL PLAN

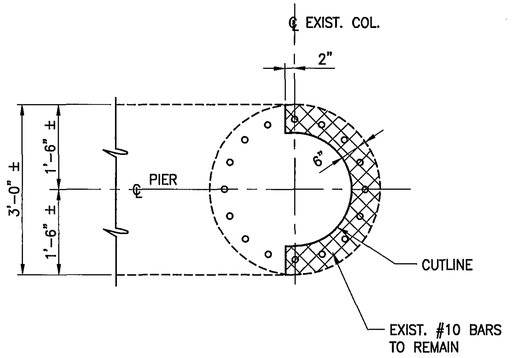
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

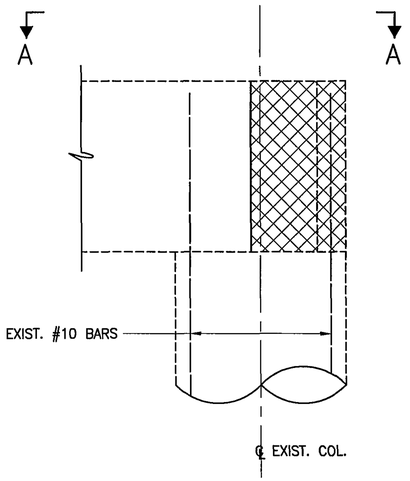
8 / 37

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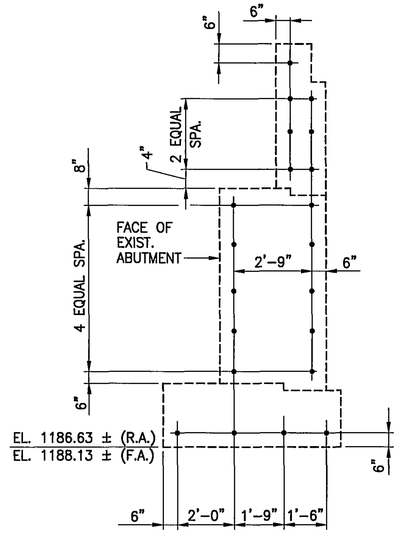
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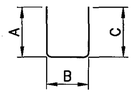
VIEW A-A



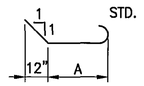
PARTIAL ELEVATION
(PIER CAP REMOVAL)



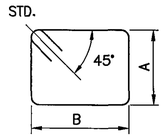
DETAIL 1
DOWEL HOLE LAYOUT
(REAR & FWD. ABUTMENT)
(END VIEW)



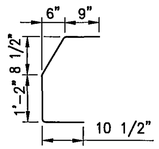
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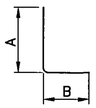
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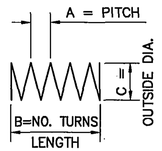
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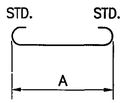
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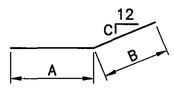
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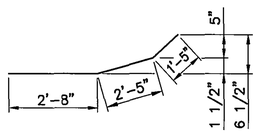
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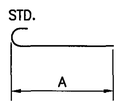
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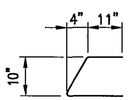
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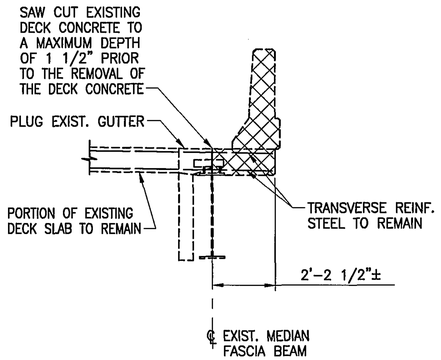
TYPE 10



TYPE 11



TYPE 12



PARTIAL TRANSVERSE SECTION
(DECK REMOVAL)

KEY:

REMOVAL PER ITEM 202--PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN (TEMPORARY WIDENING)

NOTE:

1. FOR ABUTMENT REMOVAL, SEE SEE SHEETS 5 AND 6 OF 37.

TEMPORARY STRUCTURE REINFORCING SCHEDULE

MARK	NUMBER	LENGTH	WEIGHT (LBS.)	TYPE	DIMENSIONS A	B	C	INC.
					PIERS			
TSP401	2	17'-3"	514	7	4 1/2	49	2'-6"	
TP501	16	10'-10"	181	3	2'-6"	2'-8"		
TP502	8	10'-6"	88	3	2'-4"	2'-8"		
TP503	8	14'-10"	124	ST.				
TP601	16	3'-2"	76	ST.				
TP602	6	6'-3"	56	1	2'-0"	2'-6 1/2"	2'-0"	
TP801	4	14'-10"	158	ST.				
TP802	6	13'-10"	222	ST.				
TP1001	12	11'-6"	594	8	8'-8"			
TP1002	12	8'-6"	439	8	5'-8"			
TP1003	20	8'-4"	717	6	6'-8"	2'-0"		
TP1004	20	19'-4"	1664	ST.				
TP1101	4	16'-11"	360	6	15'-0"	2'-3"		
TP1102	6	15'-11"	508	6	14'-0"	2'-3"		
	TOTAL WT. PIERS = 5701 LBS. (INCLUDED IN ITEM 502 FOR PAYMENT)							
					ABUTMENTS			
TA501	25	9'-1"	237	6	8'-2"	1'-0"		
TA502	18	7'-2"	135	1	2'-0"	3'-5"	2'-0"	
TA503	8	14'-10"	124	1	5'-10"	3'-5"	5'-10"	
TA504	26	12'-10"	348	ST.				
TA505	7	19'-0"	139	ST.				
TA506	10	15'-0"	156	ST.				
TA507	4	9'-0"	38	ST.				
TA508	4	8'-0"	33	ST.				
TA509	4	5'-10"	24	ST.				
TA510	4	9'-5"	39	9	2'-0"	7'-5"	4 7/8"	
TA511	10	12'-0"	125	ST.				
TA512	7	16'-0"	117	ST.				
TA513	2	11'-10"	25	ST.				
TA514	2	12'-7"	26	ST.				
TA515	16	6'-6"	109	ST.				
TA516	28	3'-0"	88	11	2'-5"			
TA517	16	10'-0"	167	ST.				
TA601	54	2'-6"	203	ST.				
TA602	25	13'-5"	504	6	8'-2"	5'-5"		
TA603	39	8'-7"	503	1	3'-9"	1'-5"	3'-9"	
TA604	34	5'-7"	285	1	2'-3"	1'-5"	2'-3"	
TA605	34	6'-7"	336	1	3'-0"	11"	3'-0"	
TA606	4 SER OF 7	7'-4" TO 9'-9"	359	ST.				4 7/8
TA607	4	6'-3"	38	ST.				
TA608	5	8'-1"	61	1	3'-6"	1'-5"	3'-6"	
TA609	24	4'-10"	174	6	3'-6"	1'-6"		
TA610	OMITTED							
TA611	24	3'-4"	120	4				
TA612	4	3'-4"	20	6	2'-4"	1'-2"		
TA613	4	2'-9"	17	12				
TA614	4	11'-10"	71	ST.				
TA615	4	12'-10"	77	ST.				
TA801	18	5'-11"	285	2	3'-7"			
TA1001	2	13'-3"	114	11	11'-10"			
TA1002	2	14'-0"	120	11	12'-7"			
	TOTAL WT. ABUTMENTS = 5217 LBS. (INCLUDED IN ITEM 502 FOR PAYMENT)							

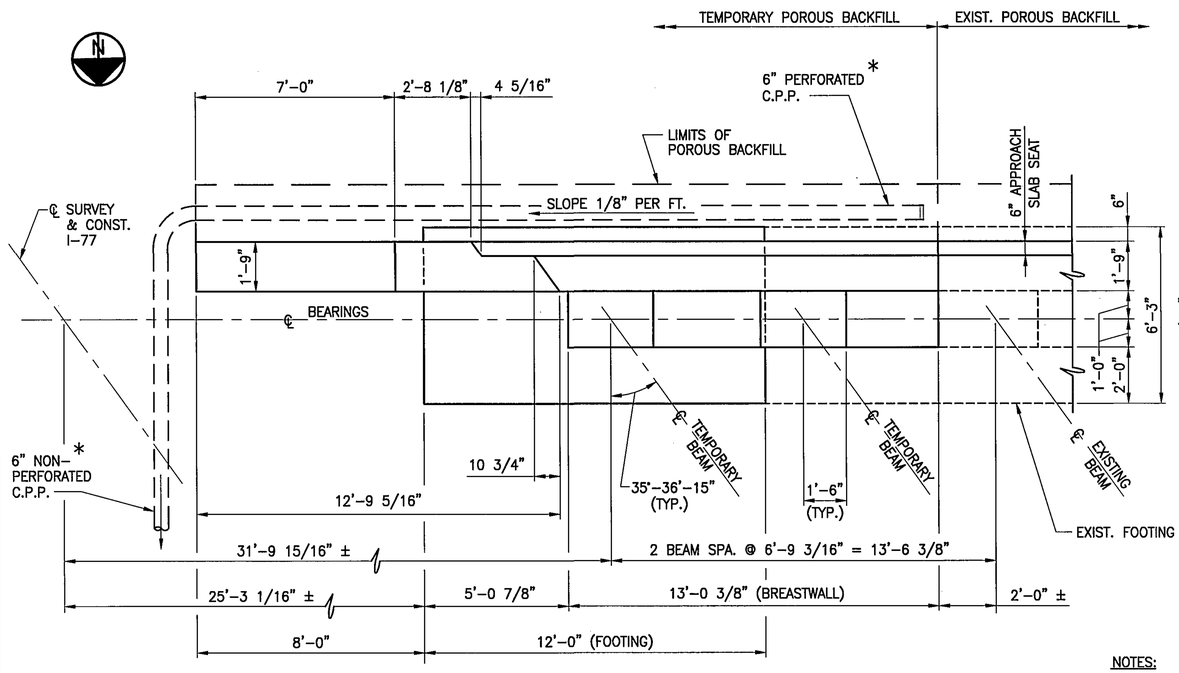
PREPARED BY ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

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W.H.		7702132 L/ 7702167 R	

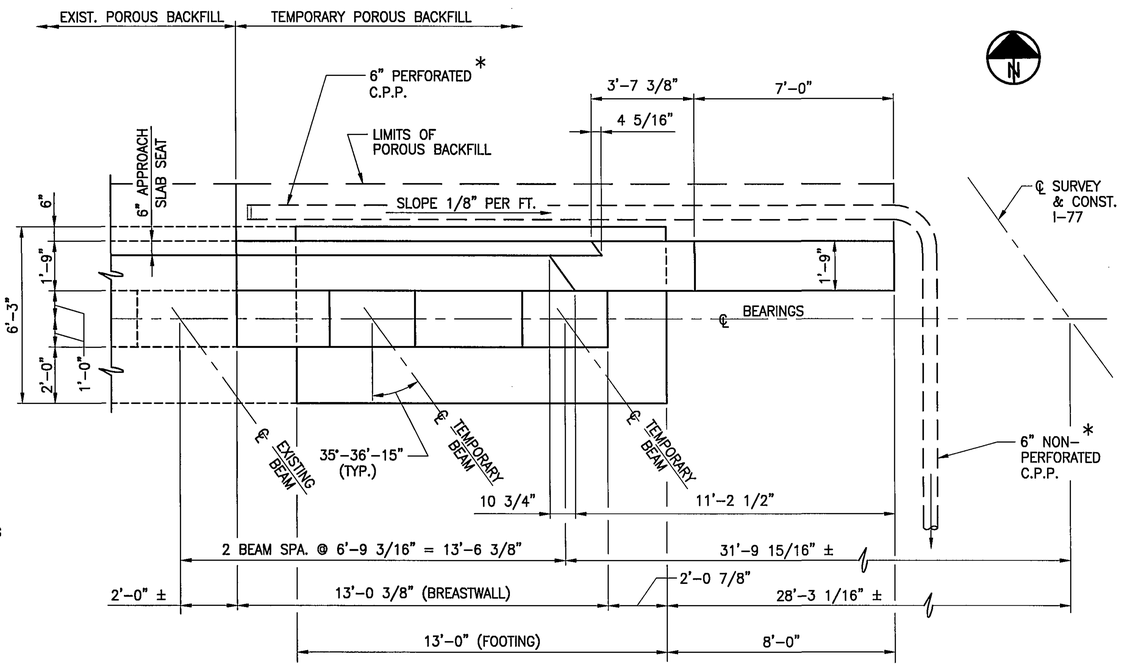
TEMPORARY WIDENING PHASE 1 REMOVAL DETAILS
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

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REAR ABUTMENT PLAN

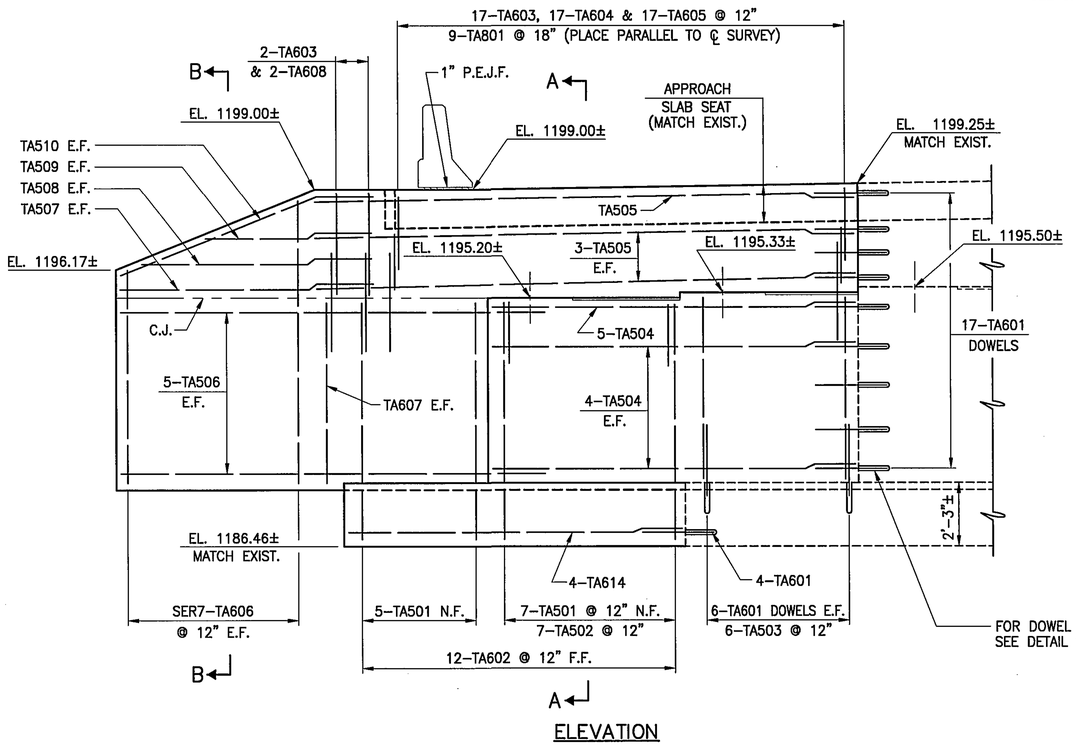


FORWARD ABUTMENT PLAN

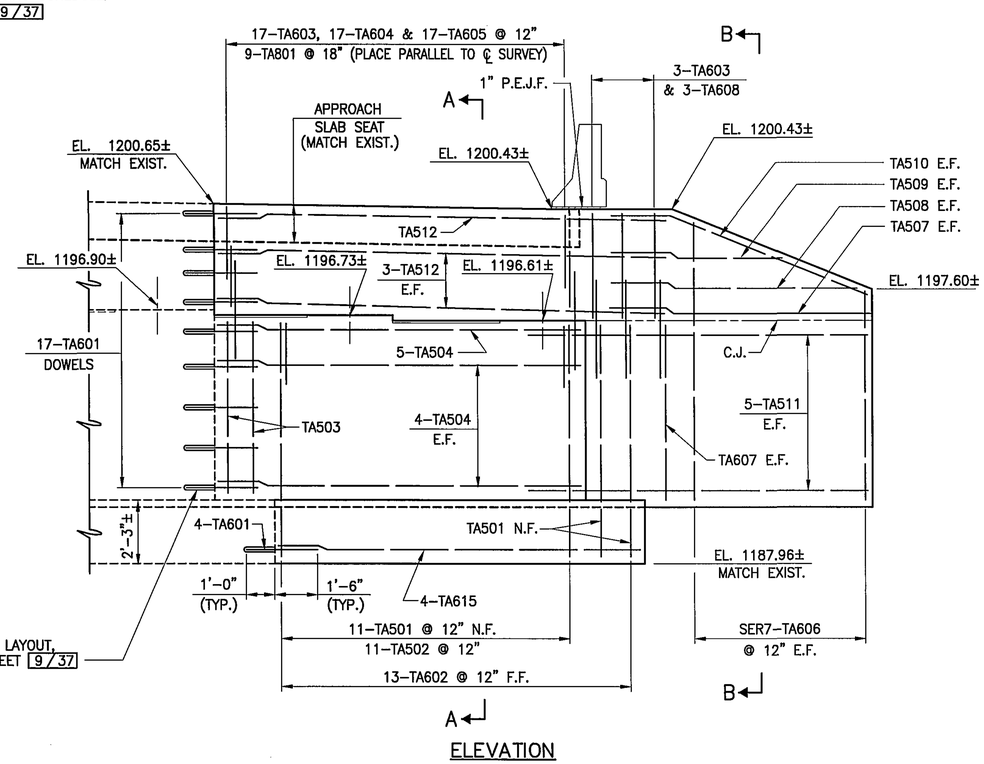
* INCLUDE WITH POROUS BACKFILL FOR PAYMENT

NOTES:

1. FOR SECTION A-A AND B-B, SEE SHEET 11/37
2. FOR REINFORCING SCHEDULE, SEE SHEET 9/37



ELEVATION



ELEVATION

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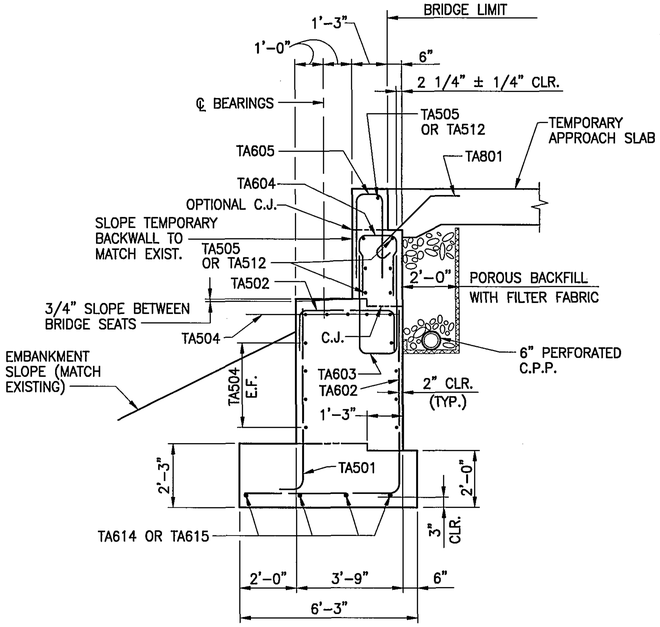
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TEMPORARY WIDENING ABUTMENT DETAILS
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

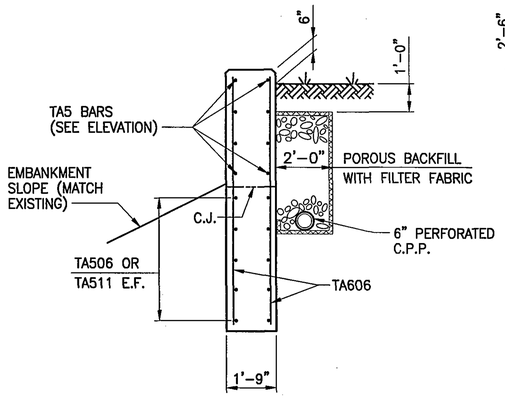
SUM-77-1.40

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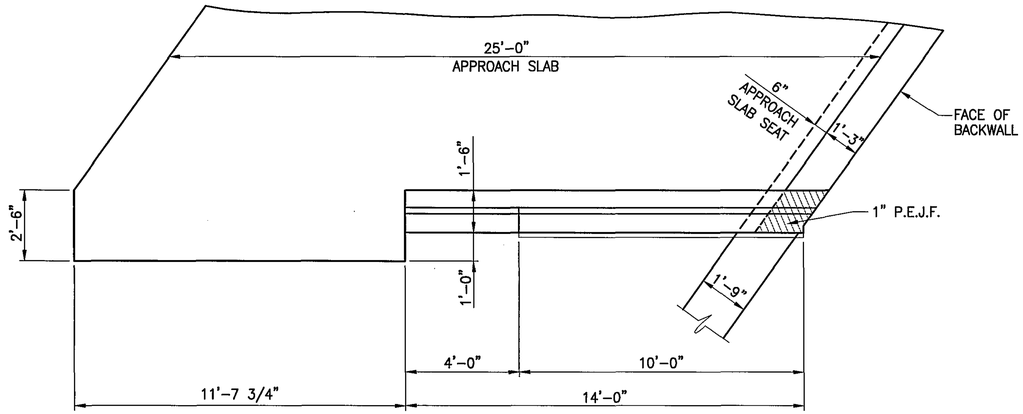
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SECTION A–A
(PHASE 1 CONSTRUCTION)



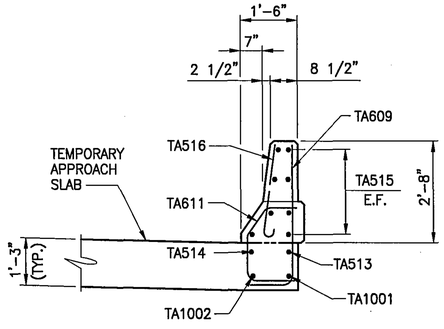
SECTION B–B



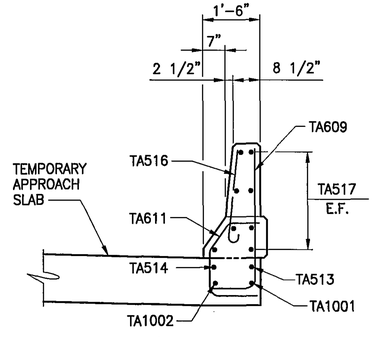
PARTIAL PLAN
REAR ABUTMENT SHOWN (FORWARD ABUTMENT SIMILAR)

NOTES:

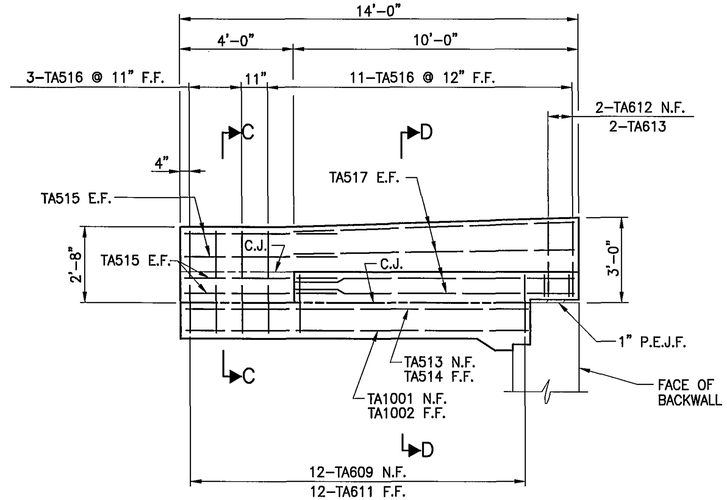
1. FOR ADDITIONAL BRIDGE PARAPET DETAILS, SEE STANDARD BRIDGE DRAWING BR–1, SHEET 1 OF 2.
2. FOR ADDITIONAL APPROACH SLAB DETAILS, SEE STANDARD BRIDGE DRAWING AS–1–81, SHEET 1 OF 3.
3. FOR REINFORCING SCHEDULE, SEE SHEET 9/37



SECTION C–C



SECTION D–D



ELEVATION
REAR ABUTMENT (AS SHOWN)
FORWARD ABUTMENT (OPPOSITE HAND)

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TEMPORARY WIDENING ABUTMENT DETAILS

BRIDGE NO. SUM–77–0159 L/R
OVER GREENSBURG RD.

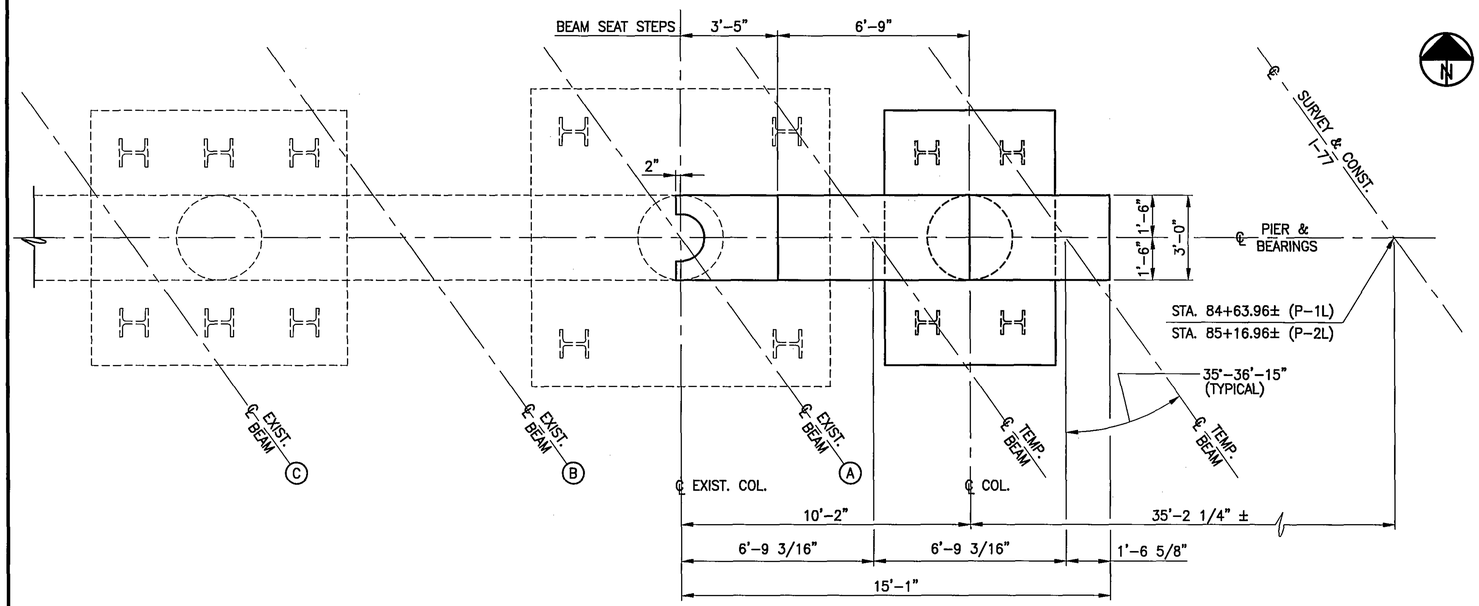
SUM–77–1.40

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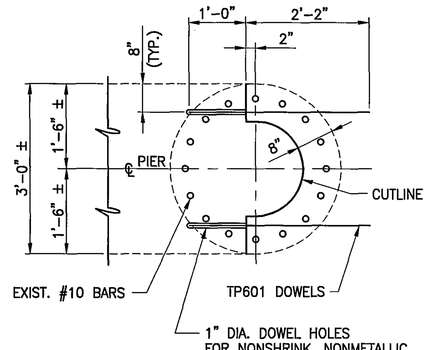
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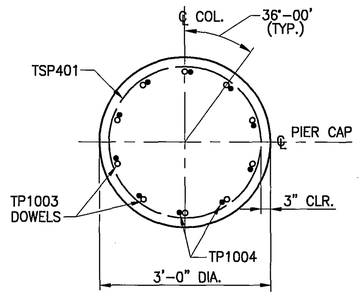
ELEVATION TABLE					
LOCATION	A	B	C	D	E
PIER 1	1173.13±	1193.17±	1196.17±	1195.97±	1195.84±
PIER 2	1173.58±	1193.62±	1196.62±	1196.47±	1196.35±



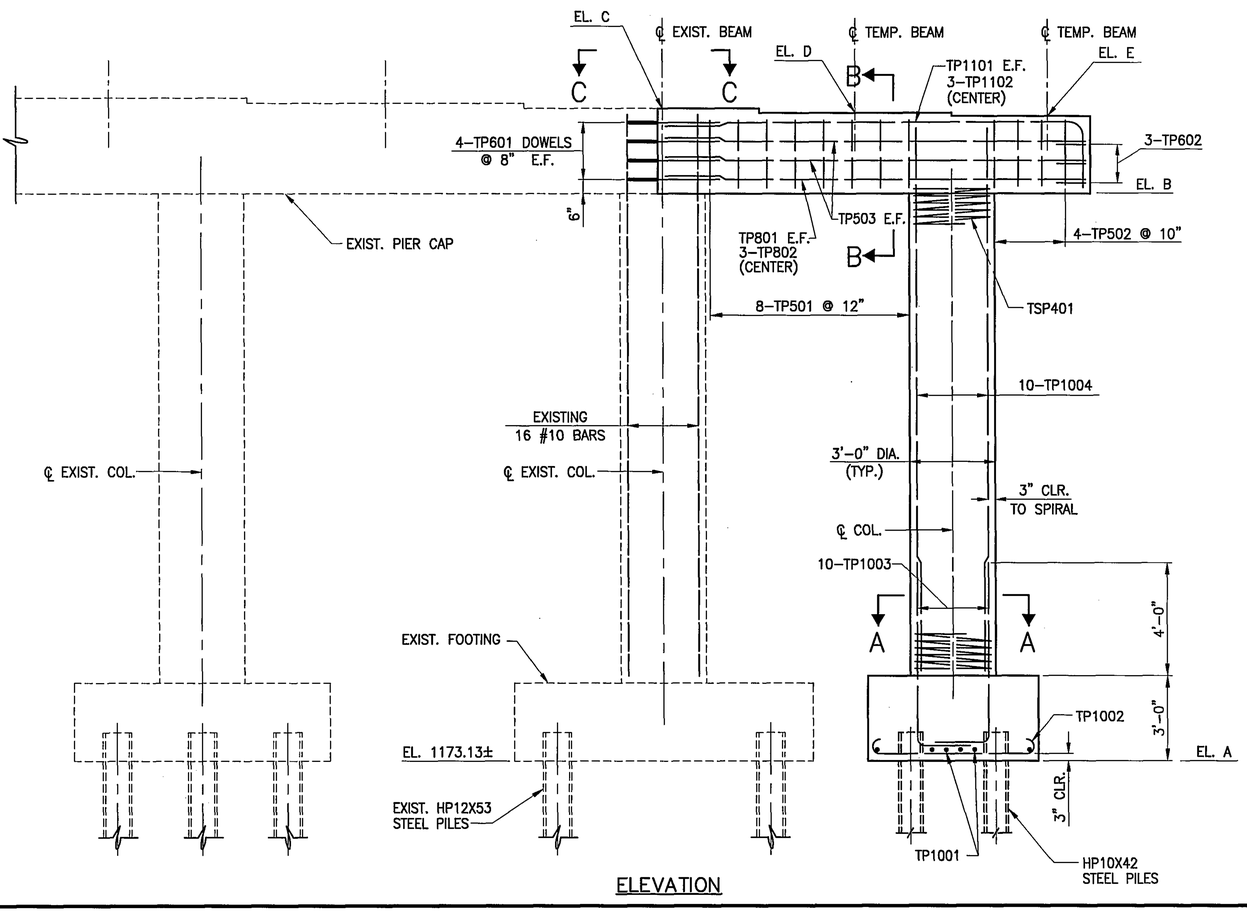
PLAN



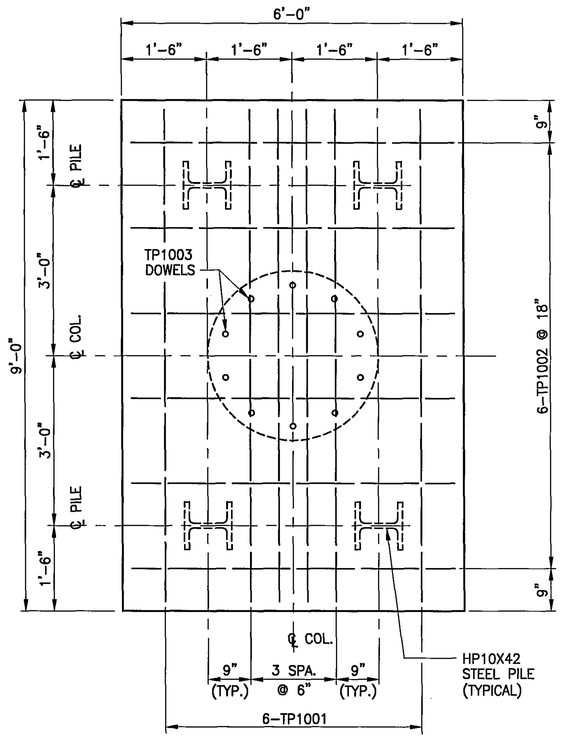
VIEW C–C



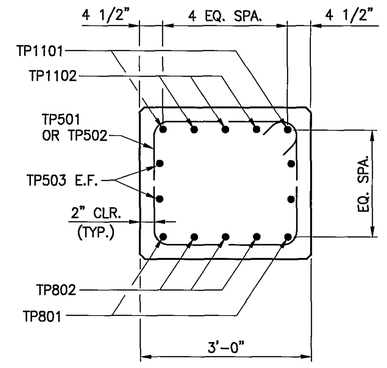
SECTION A–A



ELEVATION



FOOTING PLAN



SECTION B–B

NOTES:

1. SPIRAL REINFORCEMENT AT TOP OF COLUMNS SHALL BE EMBEDDED A MINIMUM OF 2" INTO THE PIER CAP CONCRETE.
2. ESTIMATED AVERAGE PILE LENGTHS FOR THE HP10X42 STEEL PIER PILES IS:
   30' (PIER 1L)
   25' (PIER 2L)
3. PILES TO BEDROCK: DRIVE PILES TO REFUSAL ON BEDROCK. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES TO A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR BY CONTACTING HARD BEDROCK AND THE PILE RECEIVING AT LEAST 20 BLOWS. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL.

   THE ULTIMATE BEARING VALUE IS 84 TONS PER PILE FOR THE HP10X42 PIER PILES.

   PIER PILES:
   4 PILES 30 FEET LONG, ORDER LENGTH
   4 PILES 25 FEET LONG, ORDER LENGTH
4. FOR REINFORCING SCHEDULE, SEE SHEET 9/37

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TEMPORARY WIDENING PIER DETAILS

BRIDGE NO. SUM–77–0159 L/R
OVER GREENSBURG RD.

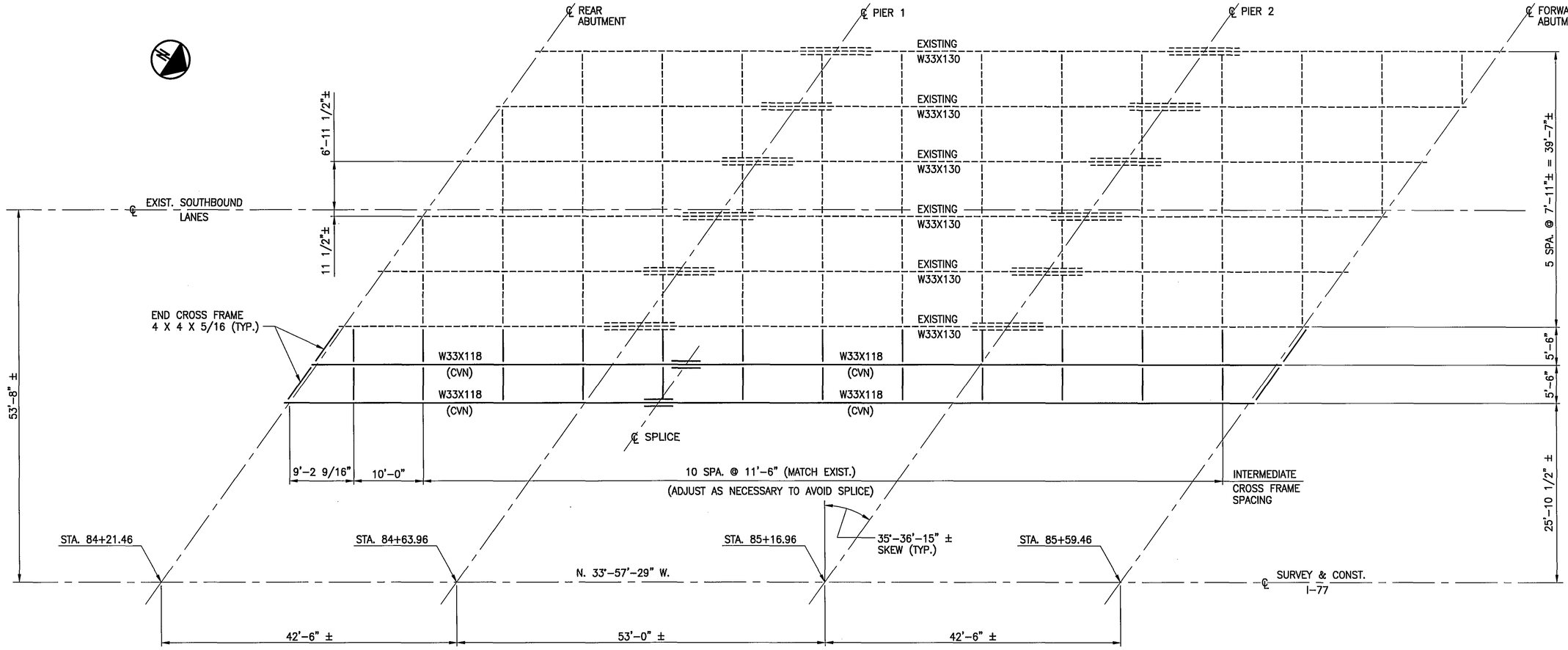
SUM–77–1.40

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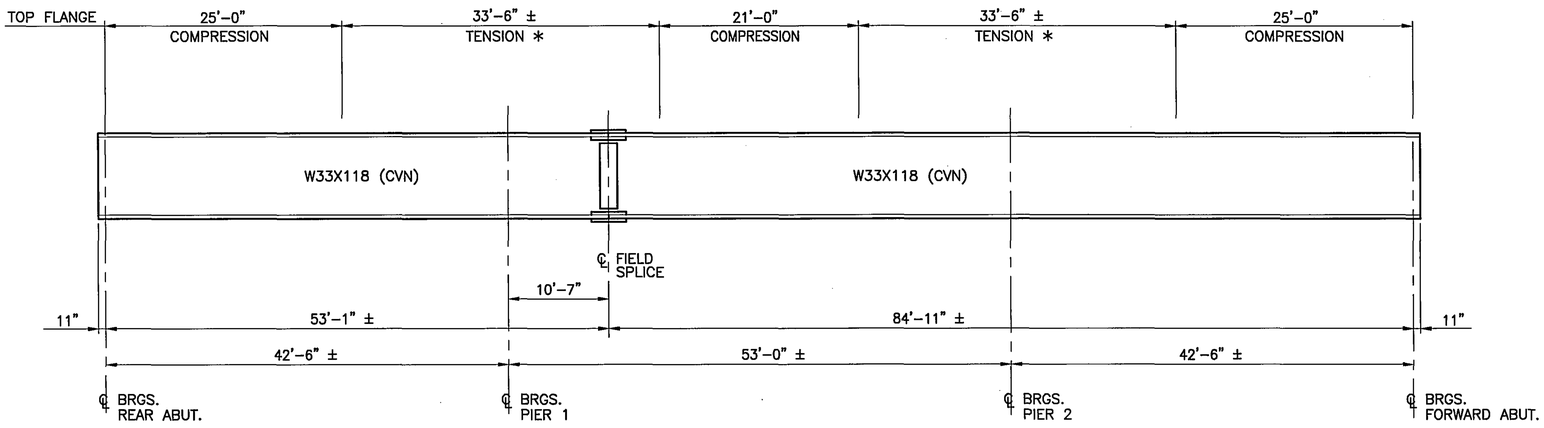
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FRAMING PLAN (SOUTHBOUND)



* INCLUDES STRESS REVERSAL AREAS

BEAM ELEVATION
(DIMENSIONS ARE ALONG ℄ BEAM)

NOTE:
1. FOR NOTES, CAMBER DIAGRAM, AND DEFLECTION AND CAMBER TABLE, SEE SHEET 14/37

T:\DRAWING\08\06472\308\GREENSBURG\GRBG_TW6.DWG SC: 1=96 10-02-03

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CHECKED	REVISED	STRUCTURE FILE NUMBER	
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TEMPORARY WIDENING FRAMING PLAN
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

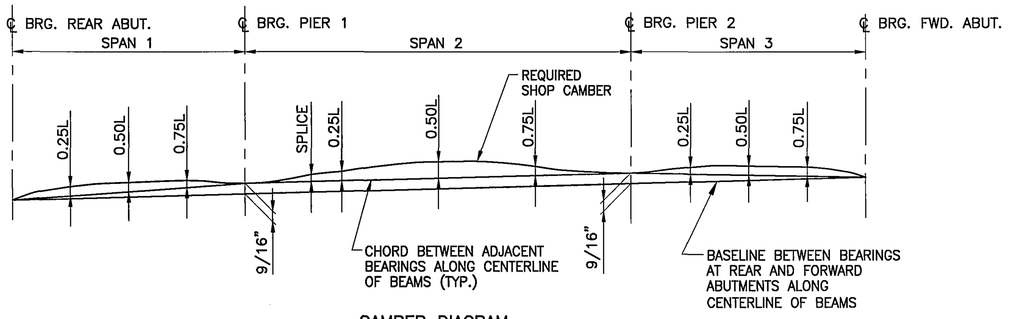
SUM-77-1.40

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NOTES:

1. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE AT LEAST 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.
2. REFER TO STD. DWG. BS-1-93, SHEETS 1/3 & 2/3 FOR ADDITIONAL SPLICE DETAILS AND NOTES.
3. FOR TYPE 1 INTERMEDIATE AND END CROSS FRAME DETAILS, REFER TO STANDARD DWG. GSD-1-96.
4. CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
5. ALL STRUCTURAL STEEL SHALL BE A36/A709 GRADE 36 AND SUBJECT TO LEVEL TWO (2) FABRICATION REQUIREMENTS OF ODOT SPECIFICATION 513 UNLESS NOTED OTHERWISE.

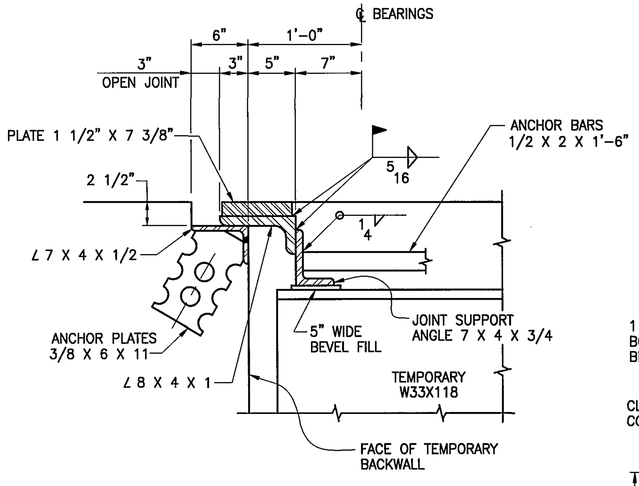


CAMBER DIAGRAM

DEFLECTION AND CAMBER (TYPICAL BEAMS 1 THRU 16)										
	SPAN 1			SPAN 2				SPAN 3		
	0.25L	0.50L	0.75L	SPLICE	0.25L	0.50L	0.75L	0.25L	0.50L	0.75L
DEFLECTION DUE TO WEIGHT OF STEEL	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	3/16"	1/16"	1/8"	1/8"	1/4"	1/8"	1/16"	3/16"	3/16"
ADJUSTMENT DUE TO VERTICAL & HORIZ. CURVE	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"
TOTAL CAMBER	3/16"	3/16"	1/16"	1/8"	1/8"	1/4"	1/8"	1/16"	3/16"	3/16"

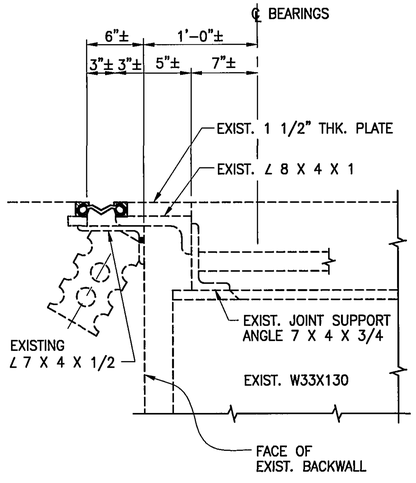
L = SPAN LENGTH

POSITIVE VALUES INDICATE REQUIRED CAMBER IS ABOVE THE CHORD BETWEEN ADJACENT BEARINGS.



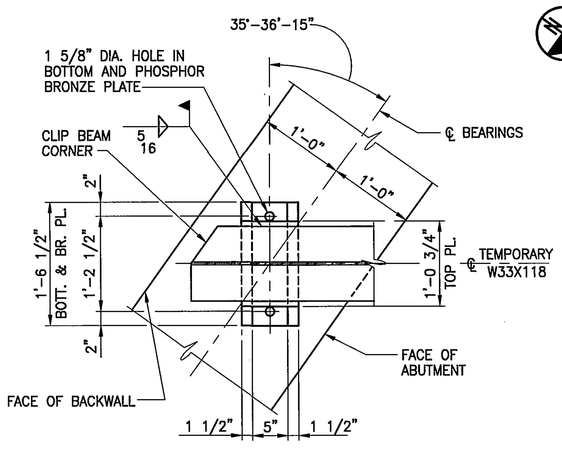
SECTION A-A (SHEET 8/37)

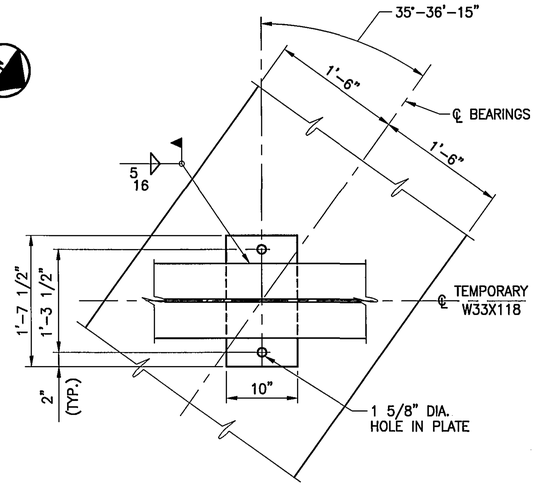
NOTE: FOR ADDITIONAL DETAIL, REFER TO STANDARD DRAWINGS EXJ-2-81.

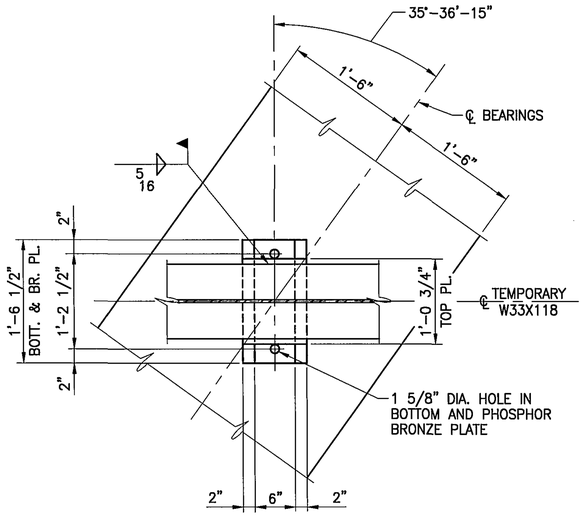


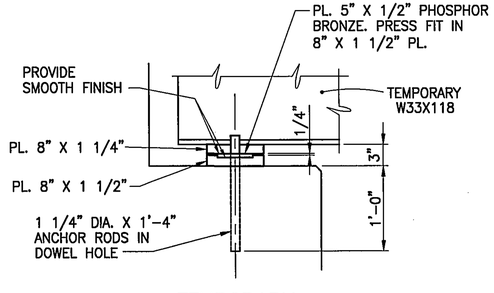
SECTION B-B (SHEET 8/37)

SHOWING EXISTING CONDITIONS WITH EXISTING EXPANSION JOINT RETROFIT



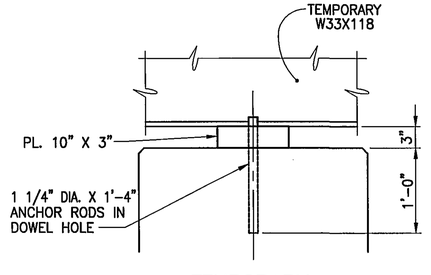






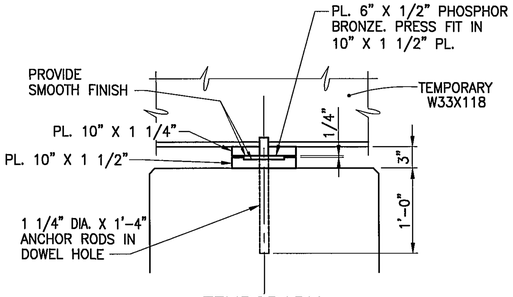
TEMPORARY EXPANSION BEARING DETAIL

REAR AND FORWARD ABUTMENTS



TEMPORARY FIXED BEARING DETAIL

PIER 1



TEMPORARY EXPANSION BEARING DETAIL

PIER 2

PREPARED BY ms consultants, inc. CONSULTING ENGINEERS & PLANNERS 333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

REVIEWED G.T.	DATE 1-04	STRUCTURE FILE NUMBER 7702132 L/ 7702167 R
DRAWN S.J.R.	REVISED	
DESIGNED S.J.R.	CHECKED W.H.	

TEMPORARY WIDENING FRAMING DETAILS

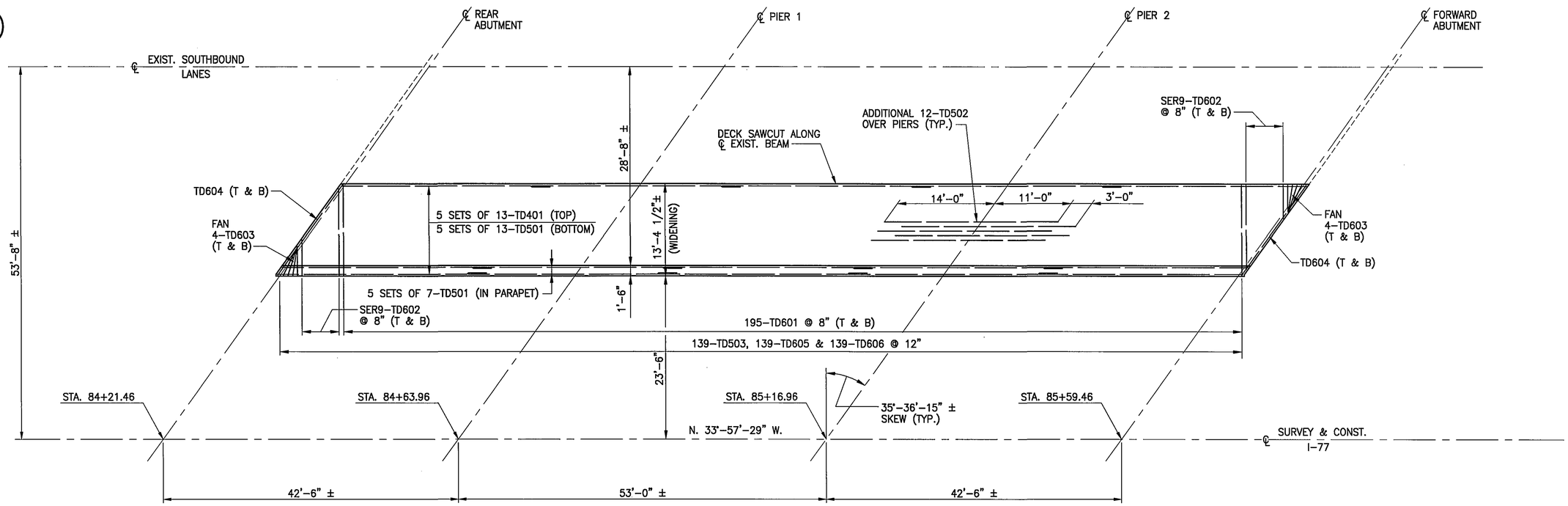
BRIDGE NO. SUM-77-0159 L/R OVER GREENSBURG RD.

SUM-77-1.40

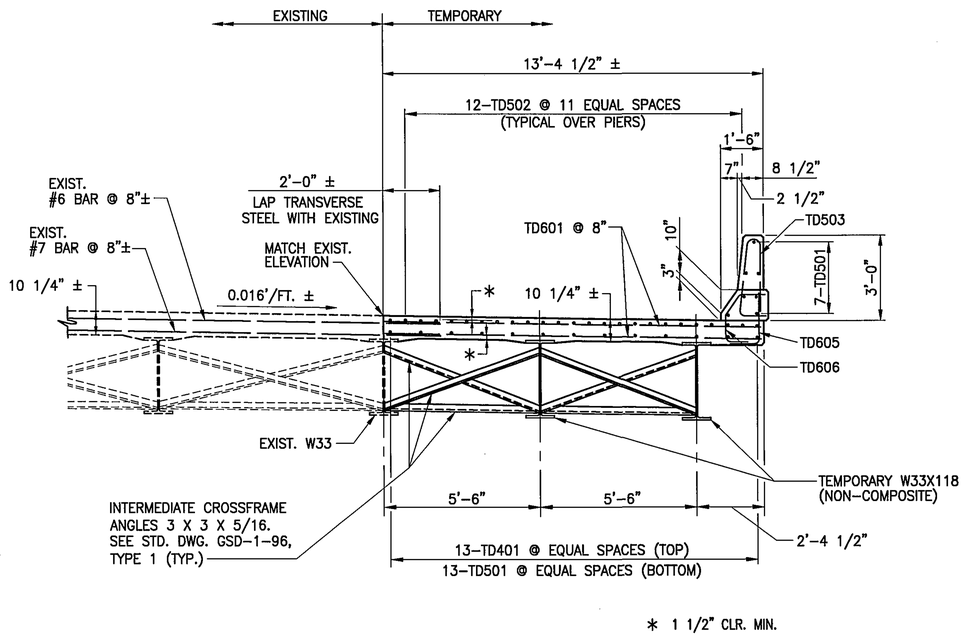
14/37

310/381

T:\DRAWING\08\06472\308\GREENSBURG\GRBG_TW7.DWG SC: 1=96 10-02-03



PLAN



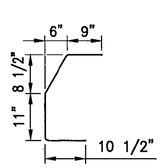
* 1 1/2" CLR. MIN.

TRANSVERSE SECTION

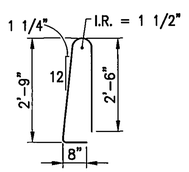
TEMPORARY STRUCTURE REINFORCING SCHEDULE

MARK	NUMBER	LENGTH	WEIGHT (LBS.)	TYPE	DIMENSIONS A	B	C	INC.
			SUPERSTRUCTURE					
TD401	65	30'-0"	1303	ST.				
TD501	100	30'-0"	3129	ST.				
TD502	24	25'-0"	626	ST.				
TD503	139	6'-0"	870	5				
TD601	390	13'-0"	7615	ST.				
TD602	4 SER OF 9	4'-10" TO 12'-3"	462	ST.				11 1/8"
TD603	16	3'-10"	92	ST.				
TD604	4	16'-0"	96	ST.				
TD605	139	2'-5"	505	6	1'-8"	0'-11"		
TD606	139	3'-1"	644	4				

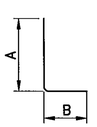
TOTAL WT. = 15,342 LBS. (INCLUDED IN ITEM 502 FOR PAYMENT)



TYPE 4



TYPE 5



TYPE 6

NOTE:

1. MINIMUM REBAR LAPS:
   LONGITUDINAL
   #4 BARS = 1'-7"
   #5 BARS = 2'-7"

T:\DRAWING\08\06472\308\GREENSBURG\GRBG_TW8.DWG SC: 1=96 10-02-03

PREPARED BY ms consultants, inc. CONSULTING ENGINEERS & PLANNERS 2525 EAST CARSON STREET, PITTSBURGH, 15203

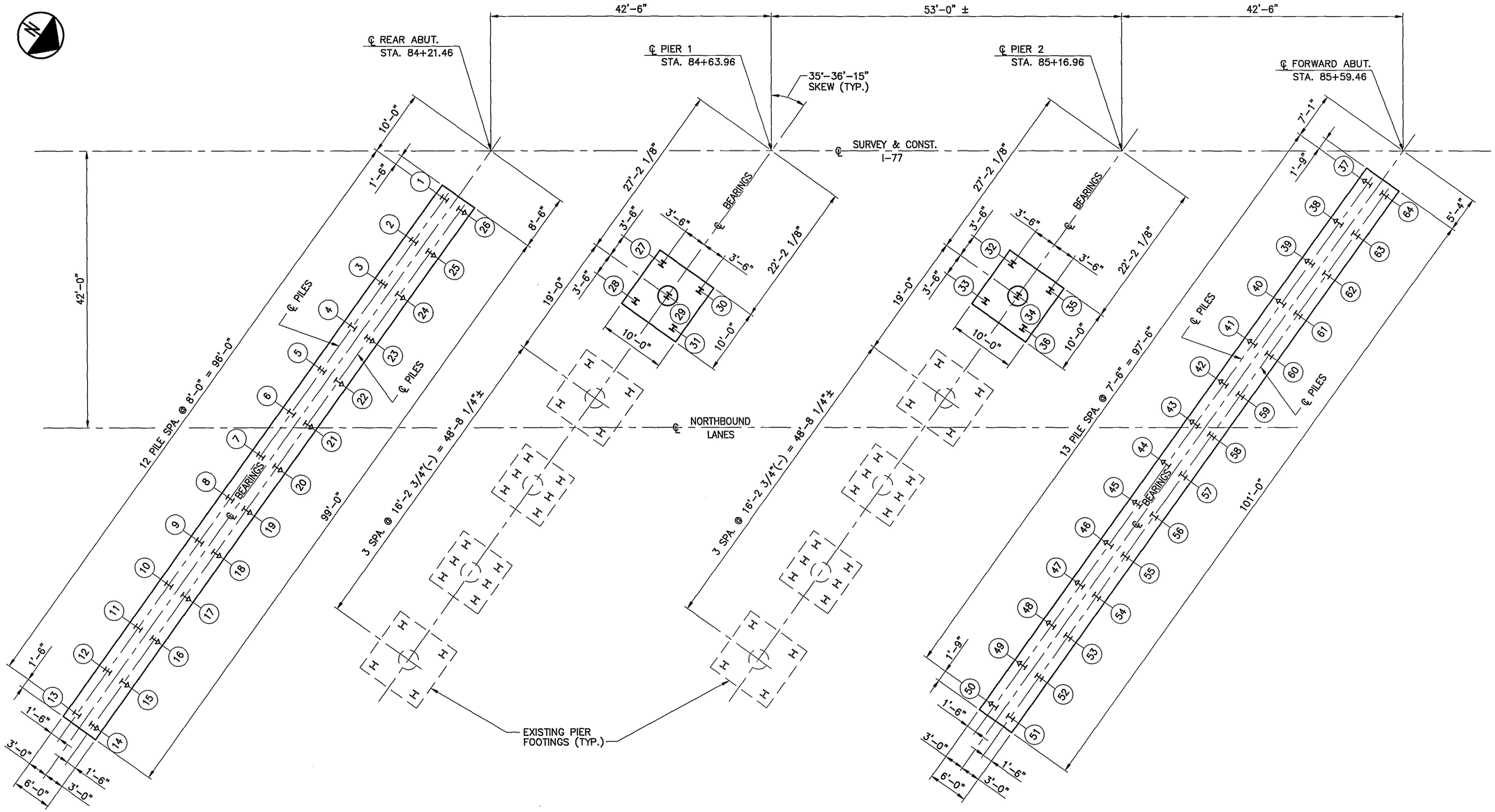
DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

TEMPORARY WIDENING DECK PLAN & TRANSVERSE SECTION
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

15 / 37

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NORTHBOUND FOUNDATION PLAN

LEGEND

(26) – INDICATES PILE NUMBER

– INDICATES DIRECTION OF 1:3 BATTER.

NOTES:

1. ALL PILES ARE HP10X42 STEEL PILES.

T:\DRAWING\08\06472\308\GREENSBURG\GRBG_FP1.DWG SC: 1=96 10-02-03

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ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
100 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

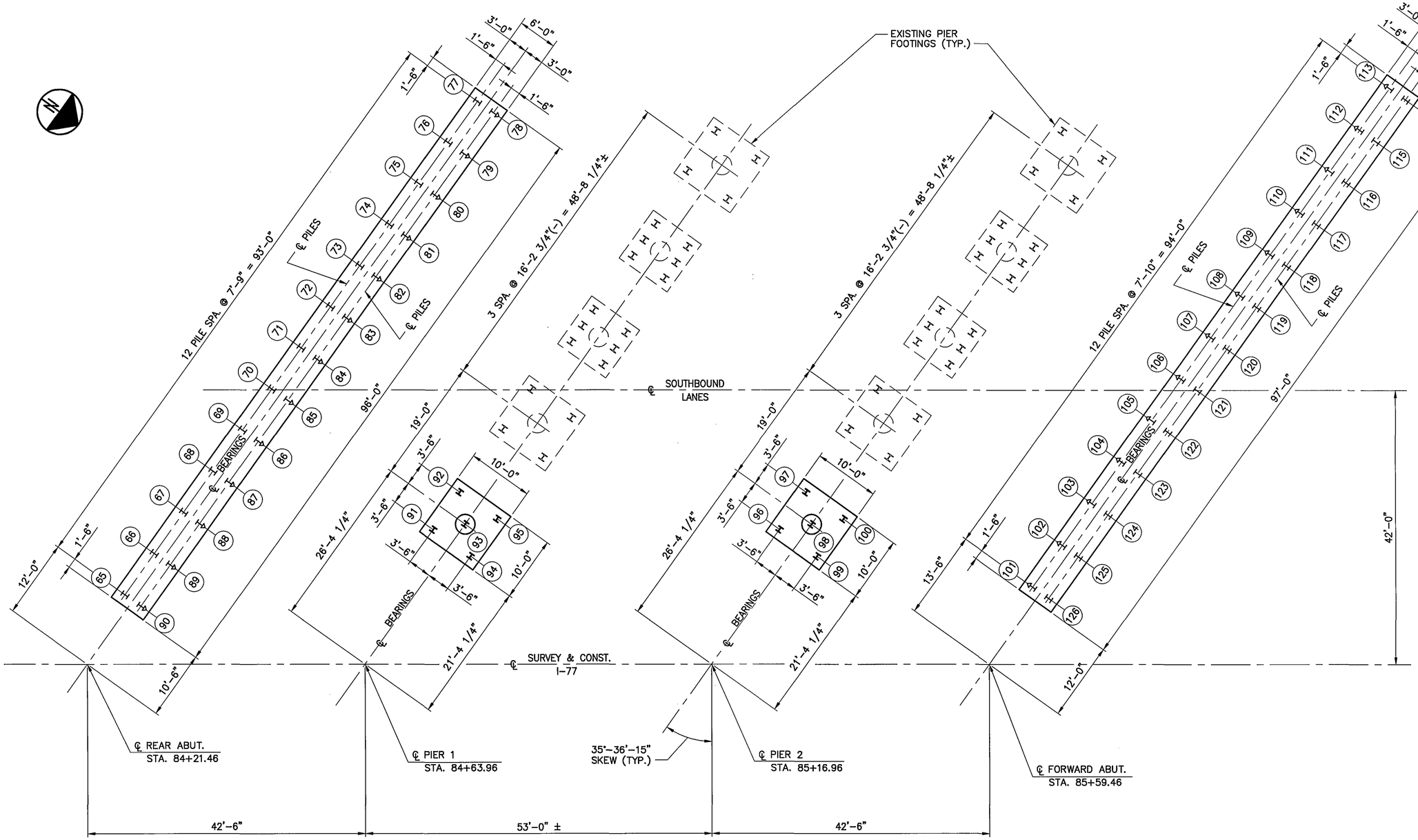
FOUNDATION LAYOUT PLAN (NORTHBOUND)

BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

16 / 37

312
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SOUTHBOUND FOUNDATION PLAN

LEGEND

(26) – INDICATES PILE NUMBER

↧ – INDICATES DIRECTION OF 1:3 BATTER.

NOTES:

1. ALL PILES ARE HP10X42 STEEL PILES.

T:\DRAWING\08\06472\308\GREENSBURG\GRBG_FP2.DWG SC: 1=96 10-02-03

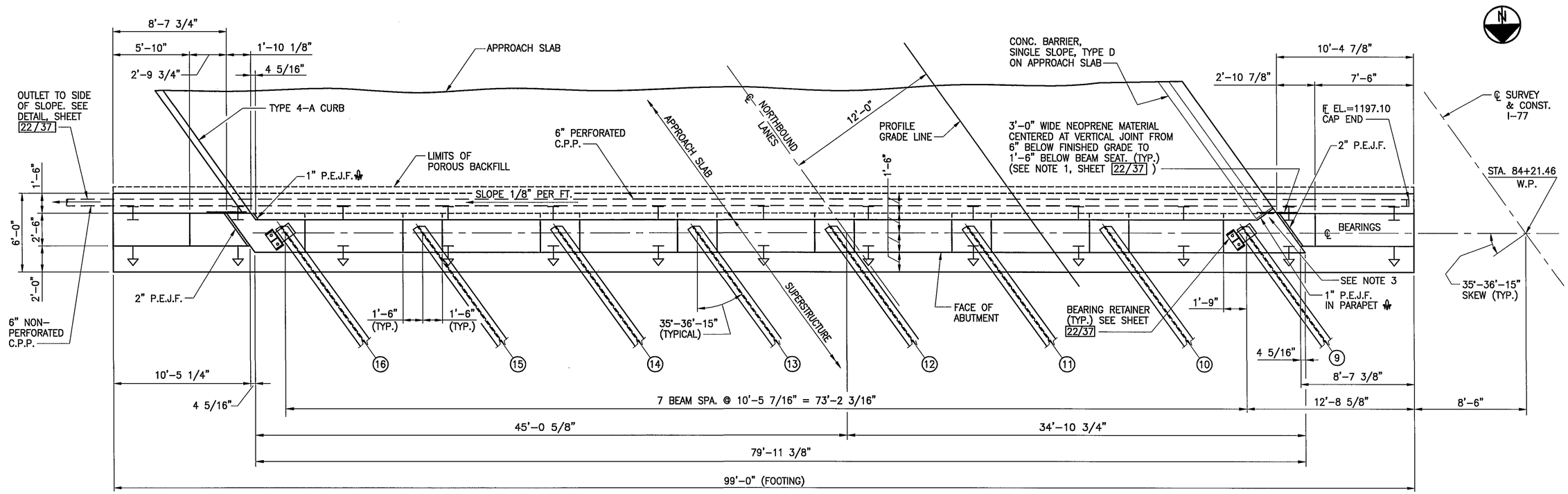
DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
155 EAST BROAD STREET, COLUMBUS, OHIO

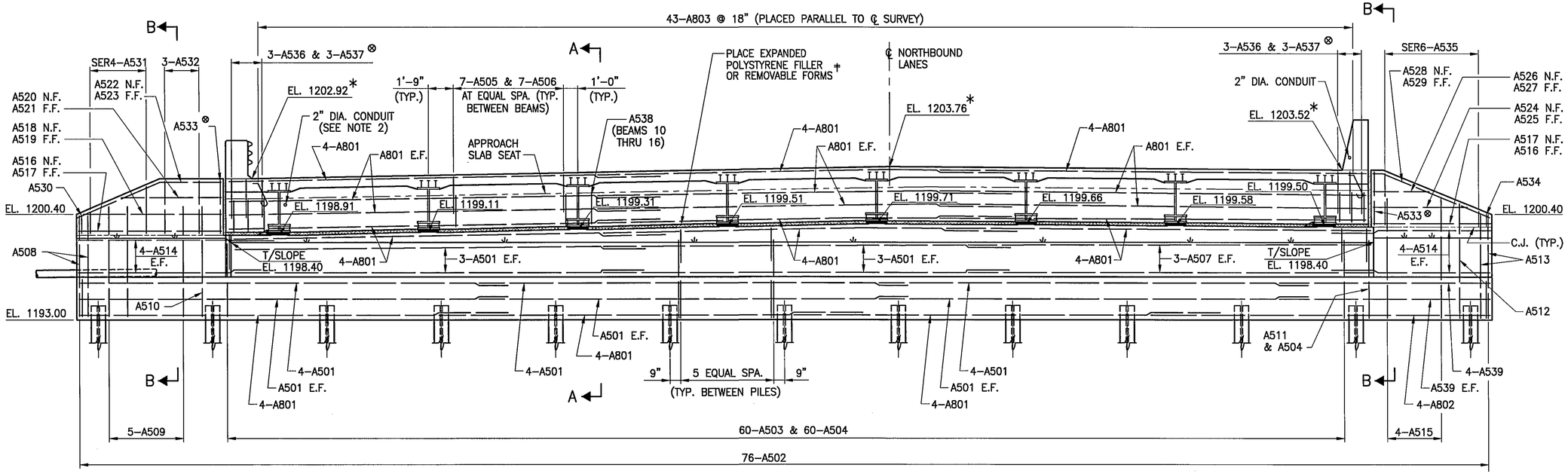
FOUNDATION LAYOUT PLAN (SOUTHBOUND)

BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40



PLAN
(SUPERSTRUCTURE NOT SHOWN FOR CLARITY)



LEGEND

* ELEVATIONS ARE GIVEN AT ℄ BEARINGS
⊗ SKEWED PARALLEL TO ℄ SURVEY
† INCLUDE WITH ITEM 894, HIGH PERFORMANCE CONCRETE, FOR BRIDGE DECK WITH WARRANTY
INCLUDE WITH APPROACH SLAB FOR PAYMENT

ELEVATION

MIN. REBAR LAP
#5 = 2'-0"
#8 = 5'-0"

NOTES:

1. FOR SECTIONS A-A AND B-B AND ABUTMENT NOTES, SEE SHEET 22/37
2. SEE LIGHTING PLANS AND STANDARD DRAWING HL-30.32 FOR CONDUIT IN END DIAPHRAGM.
3. CONSTRUCT BACK CORNER EDGE ABOVE APPROACH SLAB SEAT NORMAL TO ℄ SURVEY.

PREPARED BY ms consultants, inc. CONSULTING ENGINEERS & PLANNERS 250 GUT PENNSYLVANIA, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

REAR ABUTMENT PLAN AND ELEVATION (NORTHBOUND)

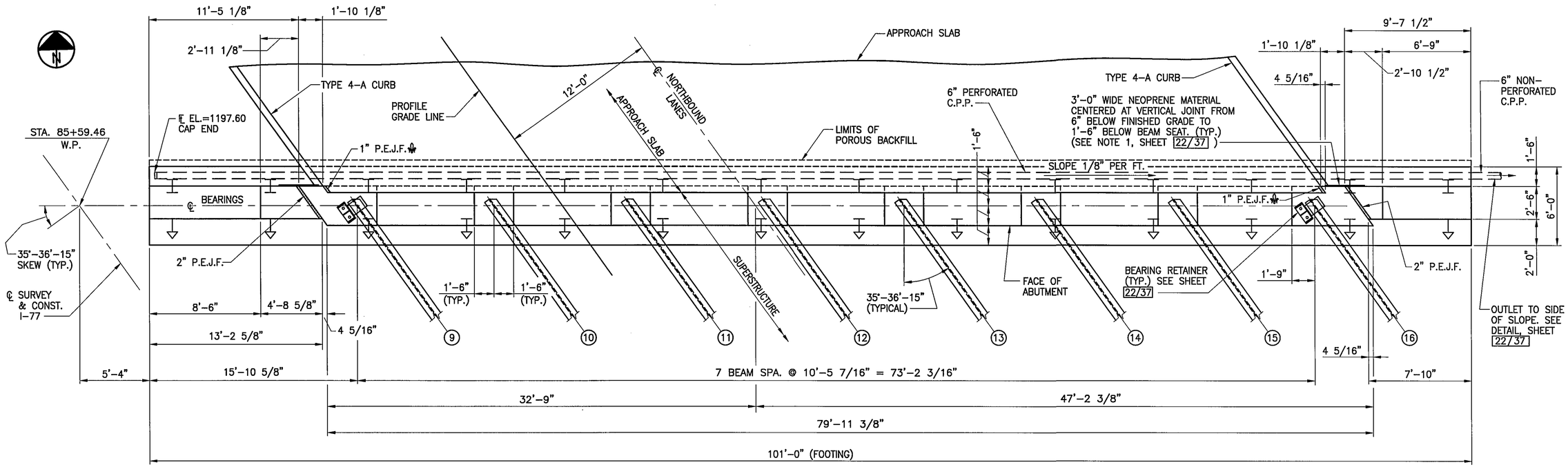
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

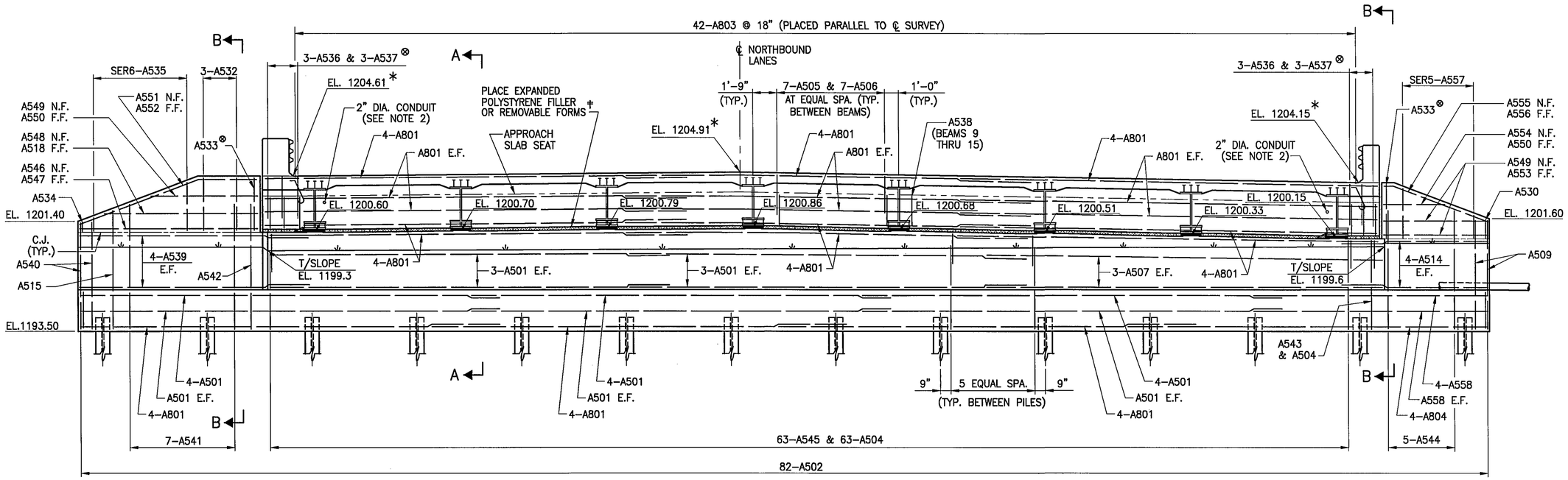
18 / 37

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T:\DRAWING\08\06472\308\GREENSBURG\GRBG_RA1.DWG SC: 1=48 10-02-03



PLAN
(SUPERSTRUCTURE NOT SHOWN FOR CLARITY)



ELEVATION

LEGEND

* ELEVATIONS ARE GIVEN AT ℄ BEARINGS

⊗ SKEWED PARALLEL TO ℄ SURVEY

‡ INCLUDE WITH ITEM 894, HIGH PERFORMANCE CONCRETE, FOR BRIDGE DECK WITH WARRANTY

INCLUDE WITH APPROACH SLAB FOR PAYMENT

MIN. REBAR LAP
#5 = 2'-0"
#8 = 5'-0"

NOTES:

1. FOR SECTIONS A-A AND B-B AND ABUTMENT NOTES, SEE SHEET 22/37
2. SEE LIGHTING PLANS AND STANDARD DRAWING HL-30.32 FOR CONDUIT IN END DIAPHRAGM.

PREPARED BY ms consultants, inc. CONSULTING ENGINEERS & PLANNERS 100 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

FORWARD ABUTMENT PLAN AND ELEVATION (NORTHBOUND)

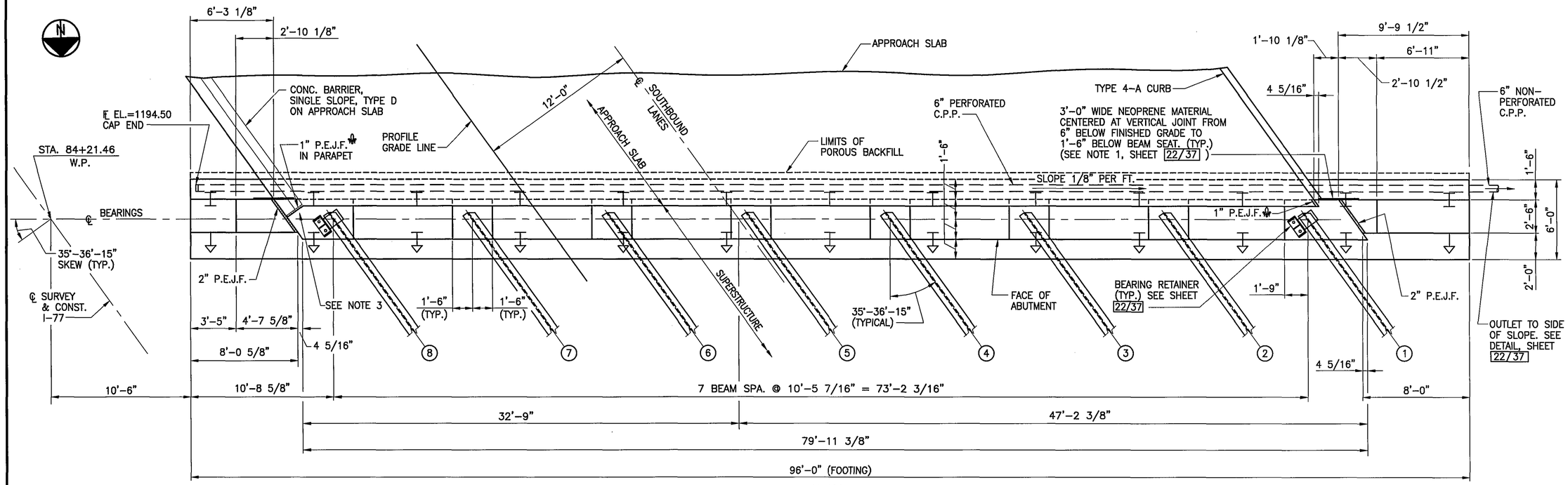
BRIDGE NO. SUM-77-0159 L/R OVER GREENSBURG RD.

SUM-77-1.40

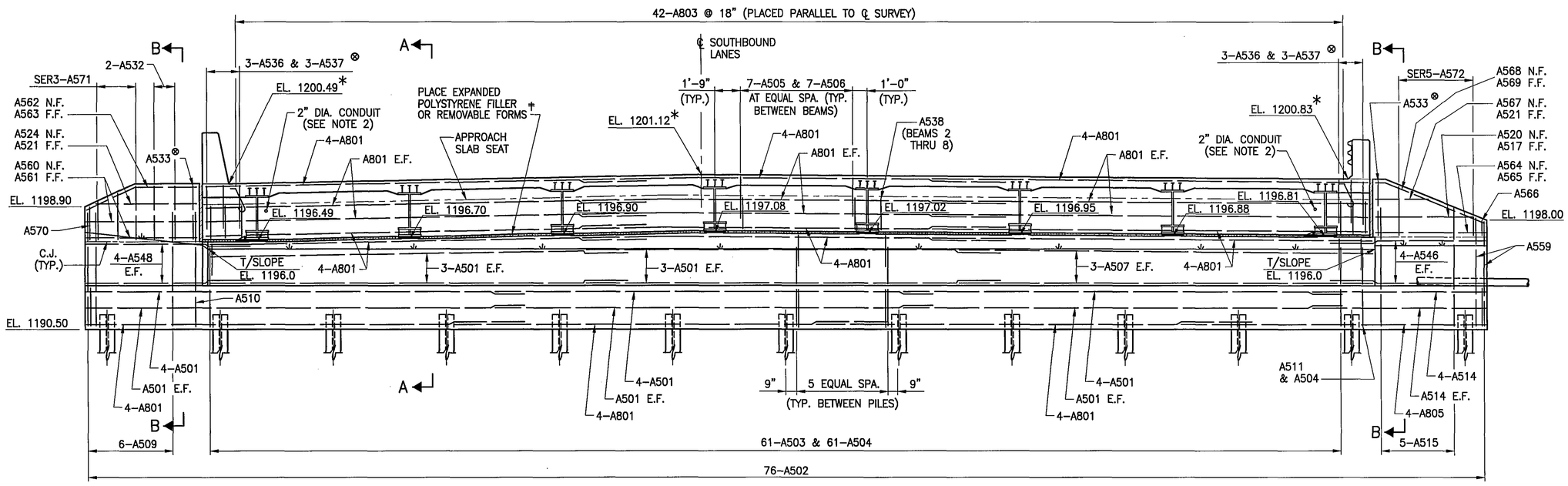
19 / 37

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PLAN
(SUPERSTRUCTURE NOT SHOWN FOR CLARITY)



ELEVATION

LEGEND

* ELEVATIONS ARE GIVEN AT ℄ BEARINGS

⊗ SKEWED PARALLEL TO ℄ SURVEY

‡ INCLUDE WITH ITEM 894, HIGH PERFORMANCE CONCRETE, FOR BRIDGE DECK WITH WARRANTY

INCLUDE WITH APPROACH SLAB FOR PAYMENT

MIN. REBAR LAP
#5 = 2'-0"
#8 = 5'-0"

NOTES:

1. FOR SECTIONS A-A AND B-B AND ABUTMENT NOTES, SEE SHEET 22/37
2. SEE LIGHTING PLANS AND STANDARD DRAWING HL-30.32 FOR CONDUIT IN END DIAPHRAGM.
3. CONSTRUCT BACK CORNER EDGE ABOVE APPROACH SLAB SEAT NORMAL TO ℄ SURVEY.

T:\DRAWING\08\06472\308\GREENSBURG\GRBG_RA2.DWG SC: 1=48 10-02-03

PREPARED BY ms consultants, inc. CONSULTING ENGINEERS & PLANNERS 333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

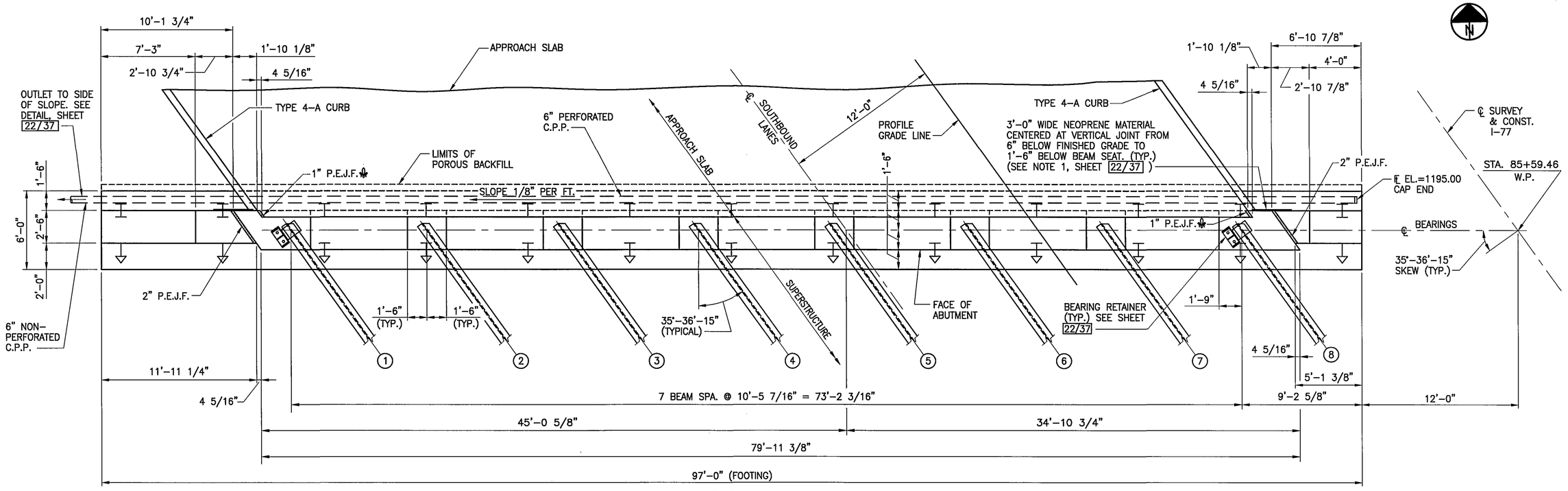
REAR ABUTMENT PLAN AND ELEVATION (SOUTHBOUND)

BRIDGE NO. SUM-77-0159 L/R OVER GREENSBURG RD.

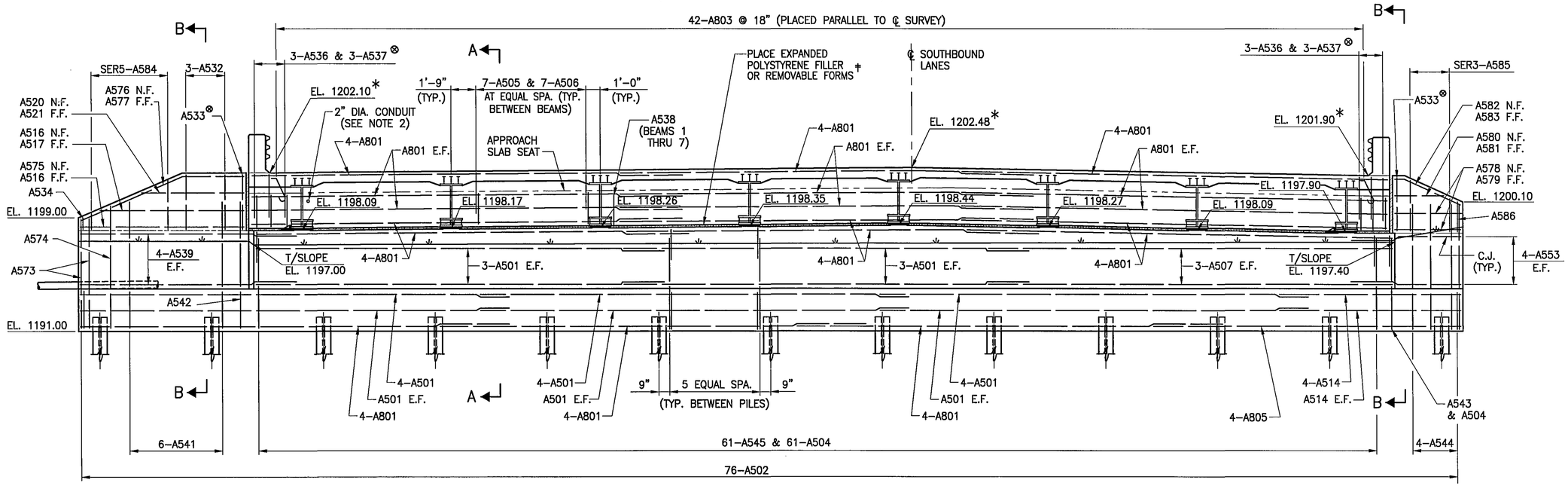
SUM-77-1.40

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PLAN
(SUPERSTRUCTURE NOT SHOWN FOR CLARITY)



ELEVATION

LEGEND

* ELEVATIONS ARE GIVEN AT ℄ BEARINGS

⊗ SKEWED PARALLEL TO ℄ SURVEY

† INCLUDE WITH ITEM 894, HIGH PERFORMANCE CONCRETE, FOR BRIDGE DECK WITH WARRANTY

INCLUDE WITH APPROACH SLAB FOR PAYMENT

MIN. REBAR LAP
#5 = 2'-0"
#8 = 5'-0"

NOTES:

1. FOR SECTIONS A-A AND B-B AND ABUTMENT NOTES, SEE SHEET 22/37
2. SEE LIGHTING PLANS AND STANDARD DRAWING HL-30.32 FOR CONDUIT IN END DIAPHRAGM.

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
100 EAST DIAMOND STREET, TITUSVILLE, PA.

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

FORWARD ABUTMENT PLAN AND ELEVATION (SOUTHBOUND)

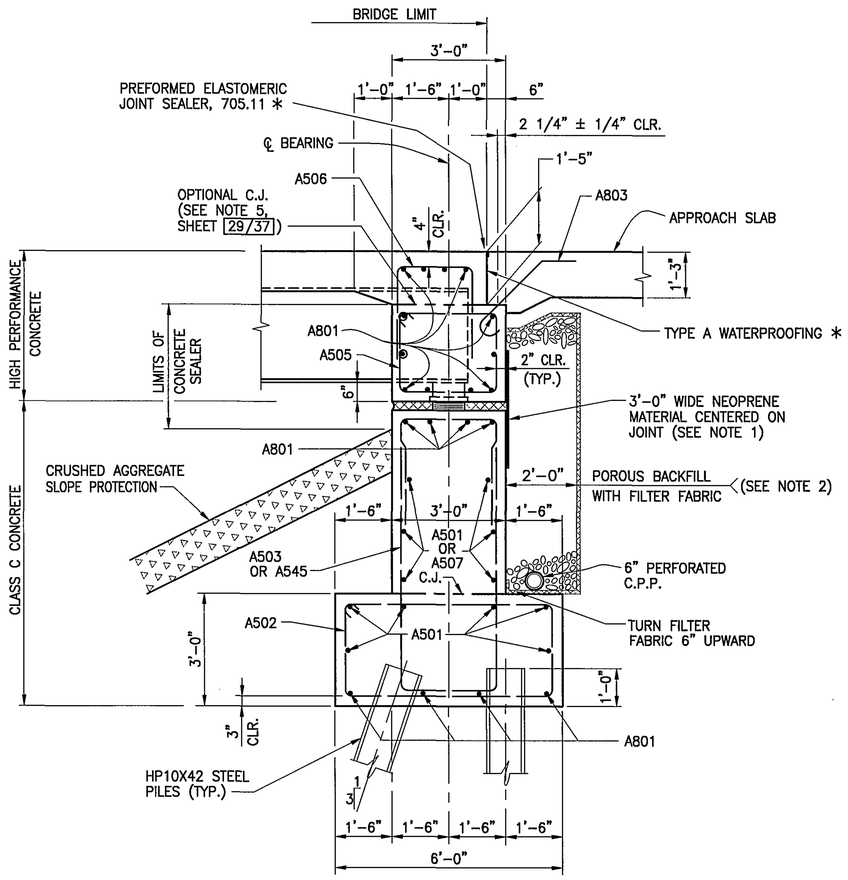
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

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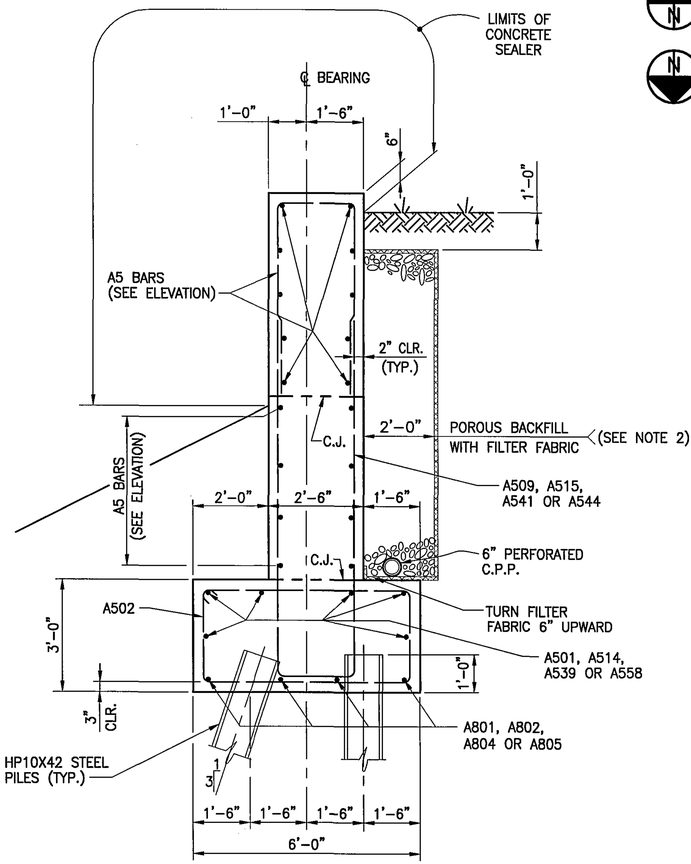
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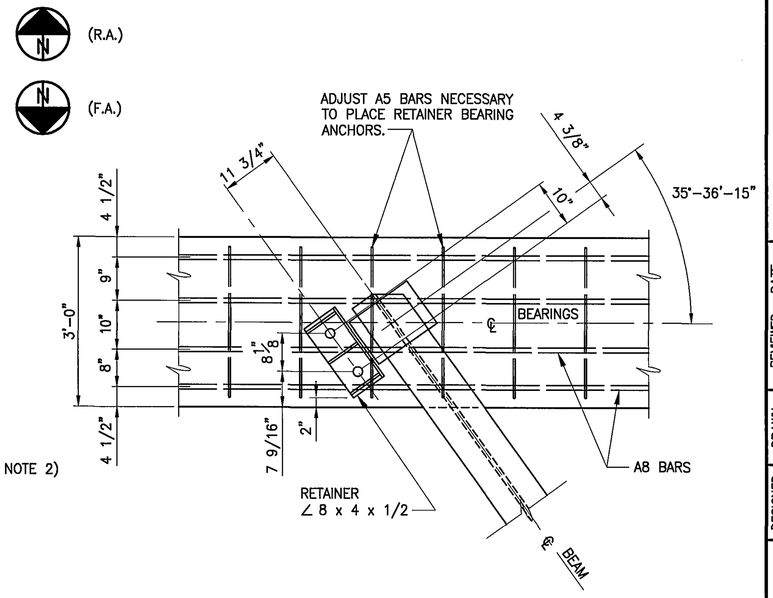


SECTION A–A

* INCLUDE WITH APPROACH SLAB FOR PAYMENT



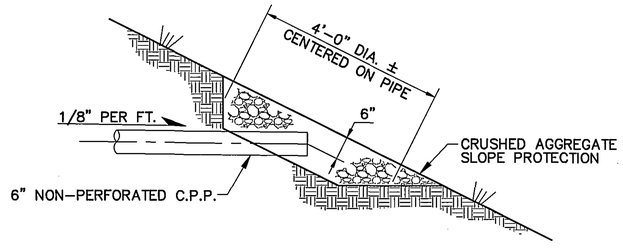
SECTION B–B



BRIDGE SEAT REINFORCING, SETTING ANCHORS: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE–SETTING OF BEARING ANCHORS.

BEARING RETAINER DETAIL

FOR ADDITIONAL BEARING RETAINER DETAILS, SEE STANDARD DRAWING SICD–1–96



DRAIN PIPE OUTLET DETAIL

NOTES:

1. 3'–0" WIDE NEOPRENE MATERIAL SHALL BE PAID PER THE LINEAR FOOT PRICE BID FOR ITEM 516, SEMI–INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.
2. POROUS BACKFILL WITH FILTER FABRIC, 2'–0" THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
333 BAFT AVENUE, STREET, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1–04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

ABUTMENT DETAILS

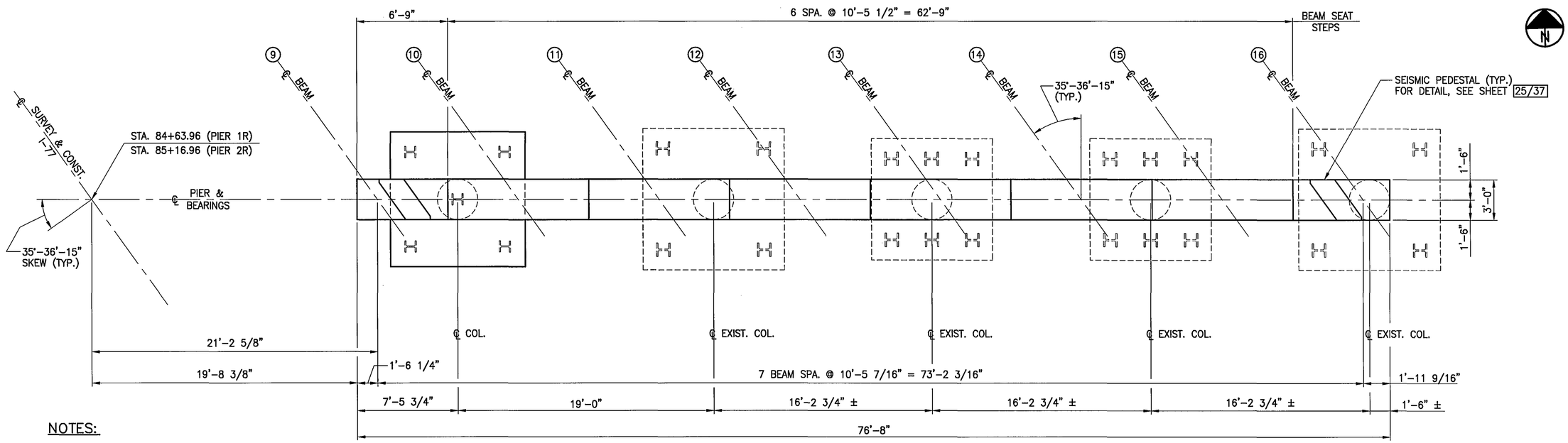
BRIDGE NO. SUM–77–0159 L/R
OVER GREENSBURG RD.

SUM–77–1.40

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318
381

T:\DRAWING\08\06472\J08\GREENSBURG\GRBG_AD1.DWG SC: 1=24 10–02–03



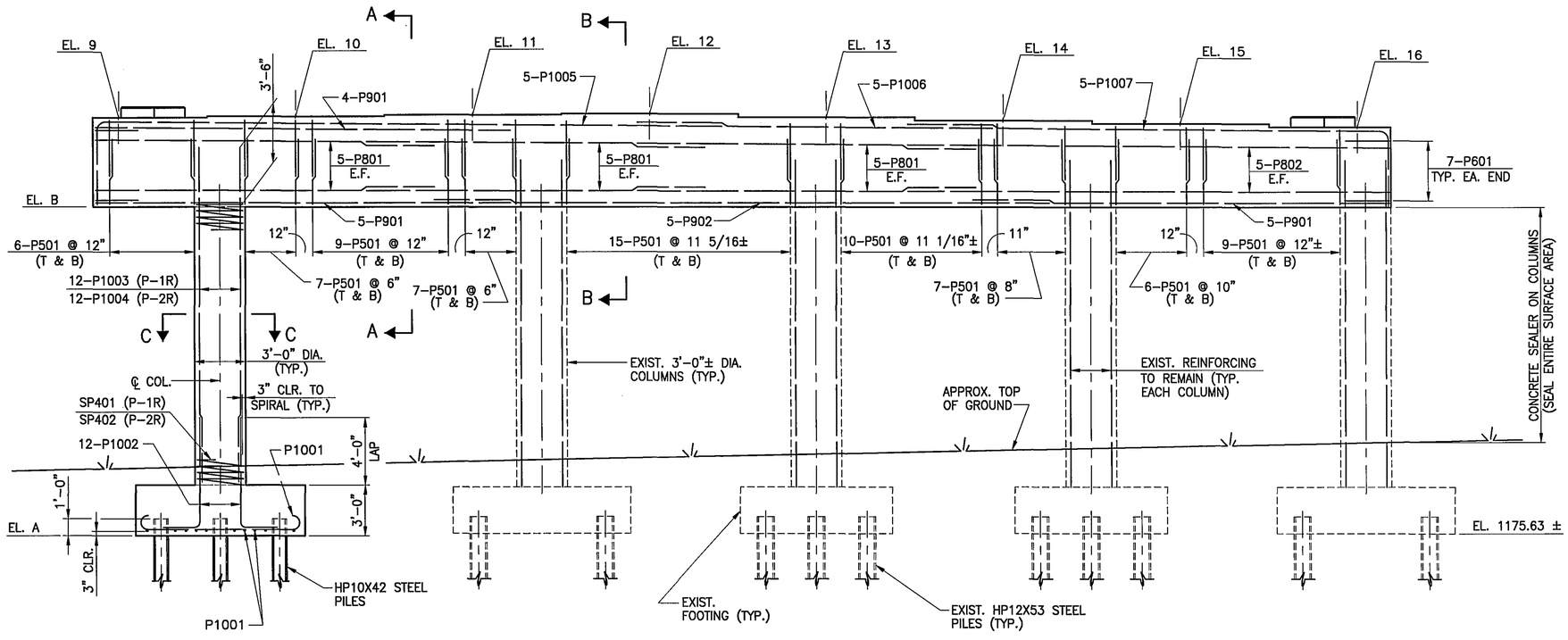
PLAN

NOTES:

1. SPIRAL REINFORCEMENT AT TOP OF COLUMNS SHALL BE EMBEDDED A MINIMUM OF 2" INTO THE PIER CAP CONCRETE.
2. FOR FOOTING PLAN, SECTIONS A–A, B–B AND C–C, SEE SHEET 25/37
3. MINIMUM REBAR LAPS:

   #8 BARS = 4'-0"
   #9 BARS = 4'-6"
   #10 BARS = 5'-0"

ELEVATION TABLE		
	PIER 1R	PIER 2R
9	1200.22	1200.64
10	1200.31	1200.74
11	1200.39	1200.83
12	1200.45	1200.89
13	1200.26	1200.71
14	1200.06	1200.52
15	1199.87	1200.34
16	1199.68	1200.15
A	1175.50	1175.50
B	1194.96	1195.36



ELEVATION

T:\DRAWING\08\064772\308\GREENSBURG\GRBG_P11.DWG SC: 1=48 10-02-03

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

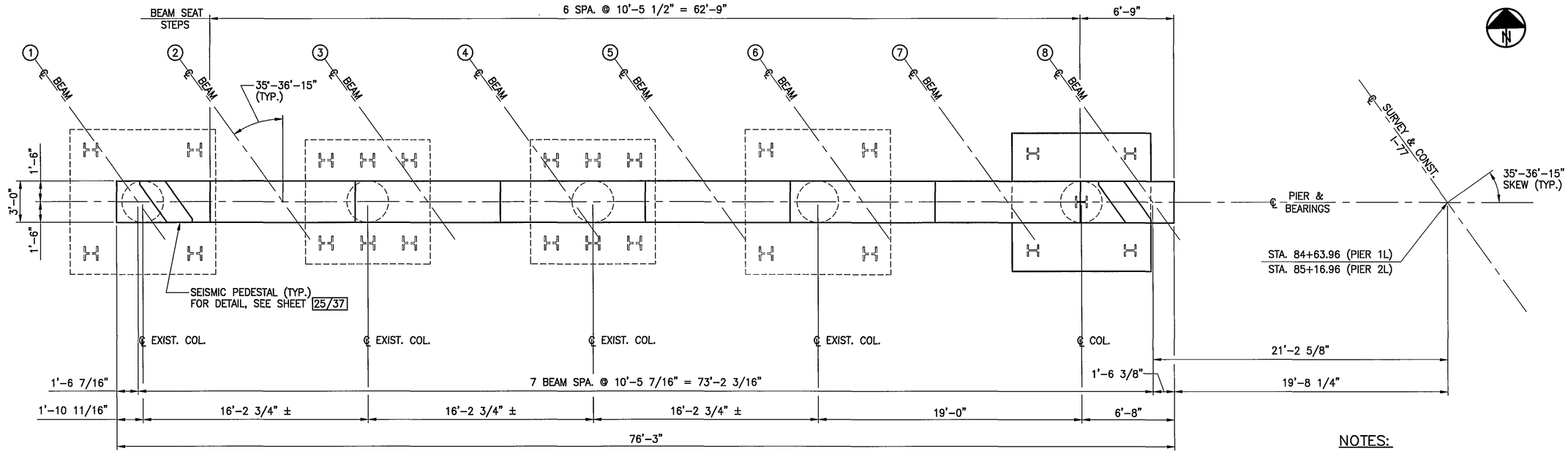
DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

PIER 1R AND 2R DETAILS
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

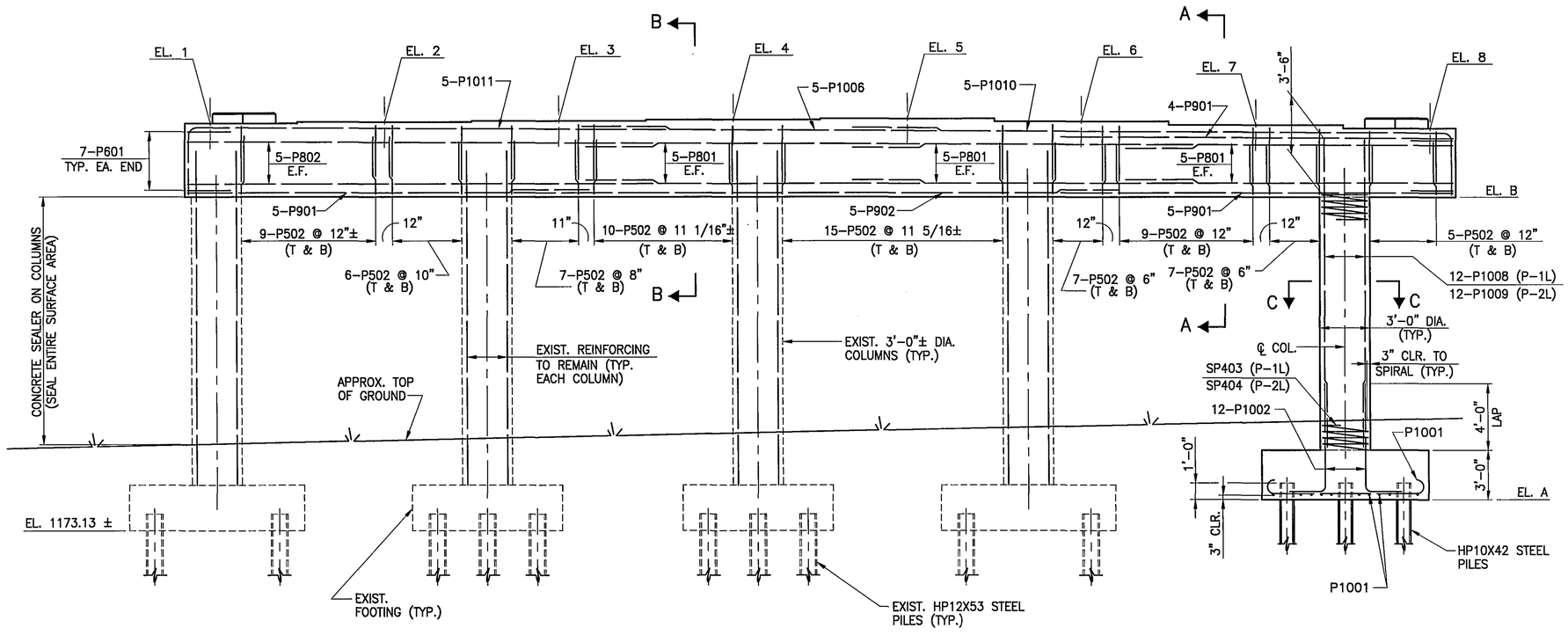
SUM-77-1.40

23 / 37

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PLAN



ELEVATION

NOTES:

1. SPIRAL REINFORCEMENT AT TOP OF COLUMNS SHALL BE EMBEDDED A MINIMUM OF 2" INTO THE PIER CAP CONCRETE.
2. FOR FOOTING PLAN, SECTIONS A-A, B-B AND C-C, SEE SHEET 25/37
3. MINIMUM REBAR LAPS:

   #8 BARS = 4'-0"
   #9 BARS = 4'-6"
   #10 BARS = 5'-0"

ELEVATION TABLE		
	PIER 1L	PIER 2L
1	1197.59	1198.08
2	1197.66	1198.16
3	1197.74	1198.24
4	1197.81	1198.32
5	1197.88	1198.40
6	1197.71	1198.24
7	1197.51	1198.04
8	1197.31	1197.85
A	1175.00	1175.00
B	1193.17	1193.62

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
333 JAFFE FIELD, STREET, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

PIER 1L AND 2L DETAILS

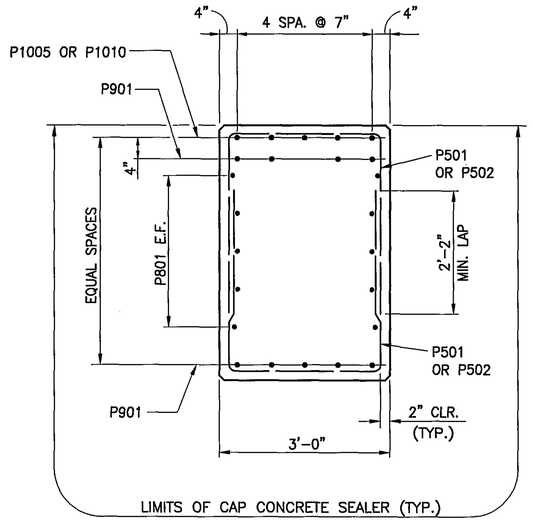
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

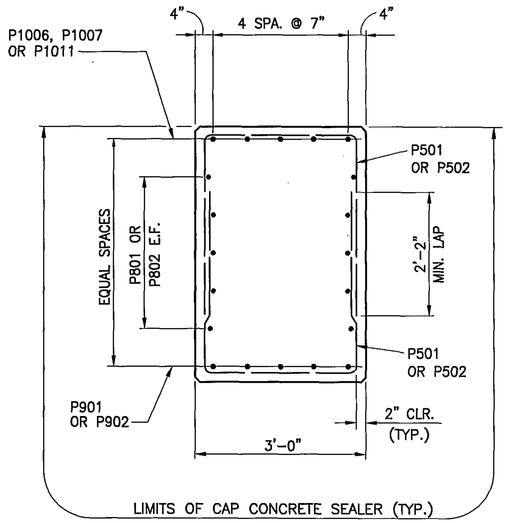
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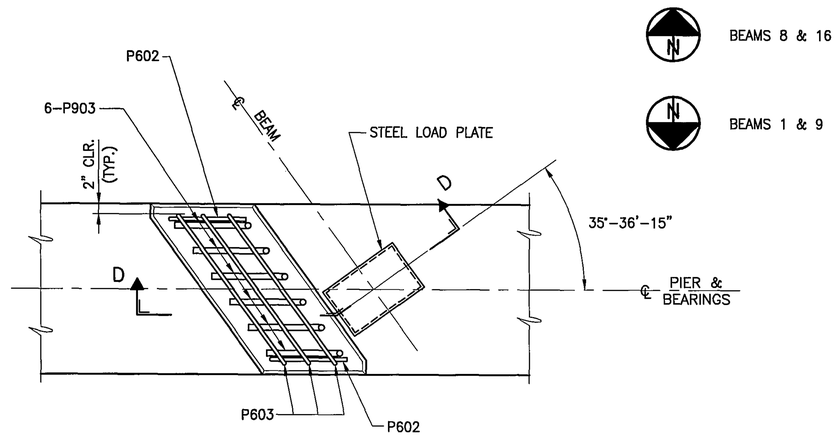
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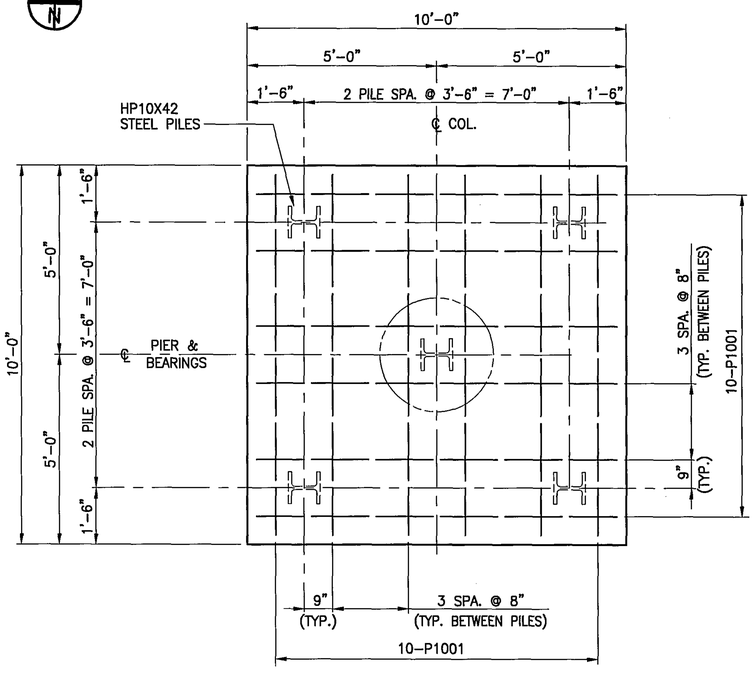
SECTION A–A



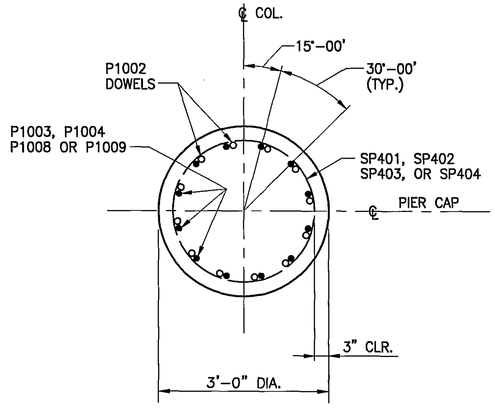
SECTION B–B



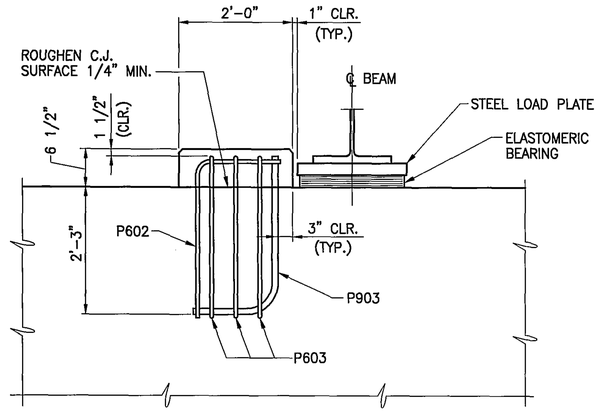
SEISMIC PEDESTAL PLAN



FOOTING PLAN



SECTION C–C



SECTION D–D

NOTE: ADJUST PIER CAP REINFORCEMENT
NECESSARY TO PLACE SEISMIC REINFORCEMENT.

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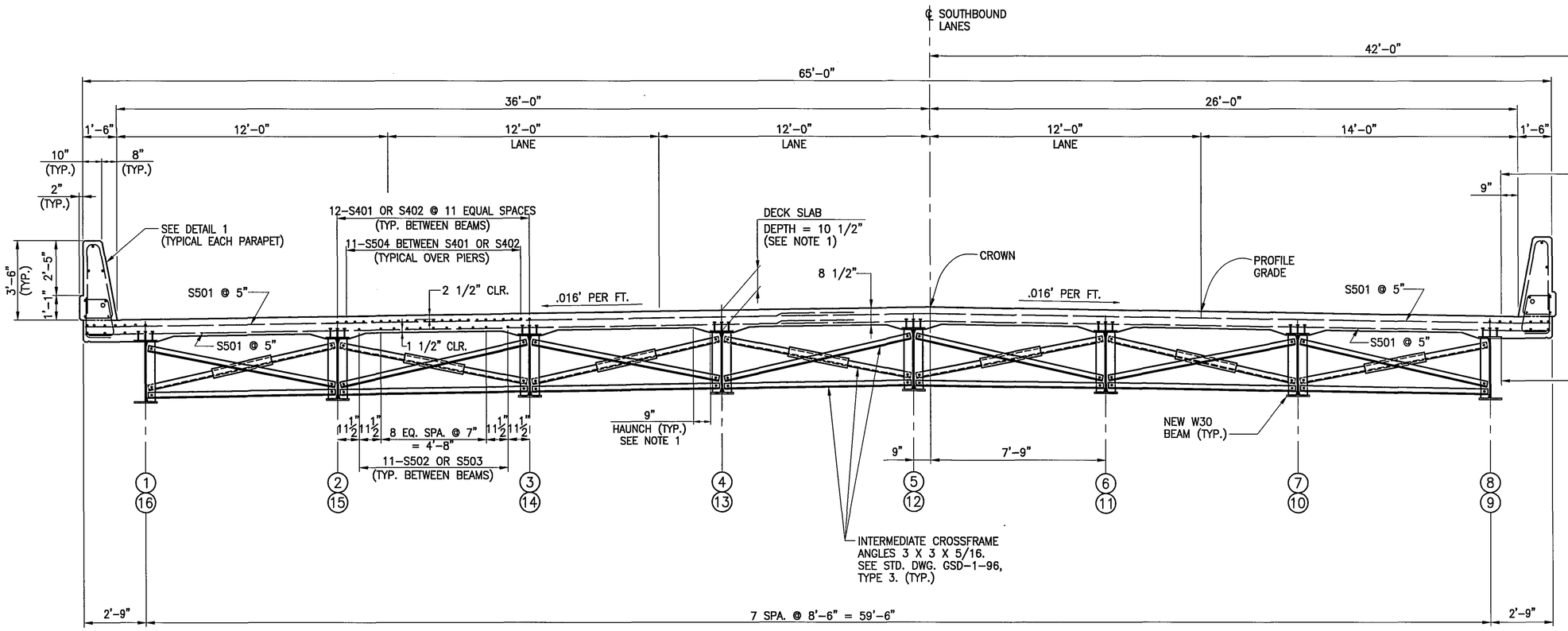
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S.J.R.	S.J.R.	G.T.	1–04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
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PIER DETAILS
BRIDGE NO. SUM–77–0159 L/R
OVER GREENSBURG RD.

SUM–77–1.40

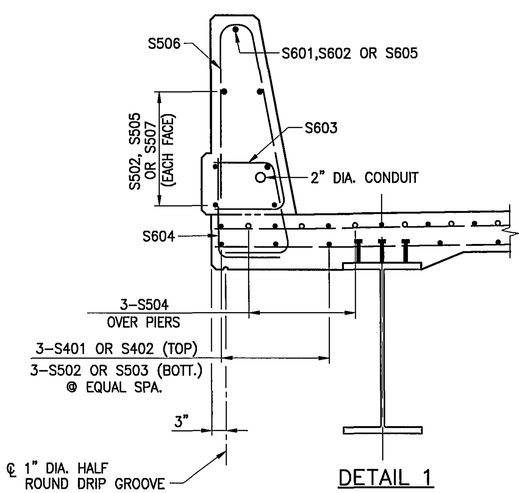
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TRANSVERSE SECTION

(SOUTHBOUND BRIDGE SHOWN, NORTHBOUND OPPOSITE HAND)



DETAIL 1

NOTE:
TERMINATE DRIP GROOVES AT 2'-0" FROM ABUTMENT DIAPHRAGMS

NOTES:

1. DECK SLAB CONCRETE QUANTITY:

   THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 2 7/8 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE IS ± 3 INCHES.

   THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.24.

2. FOR PARAPET DETAILS, REFER TO O.D.O.T. STANDARD SBR-1-99, REV. 7-19-02

T:\DRAWING\08\06472\308\GREENSBURG\GRBG_TS1.DWG SC: 1=32 10-02-03

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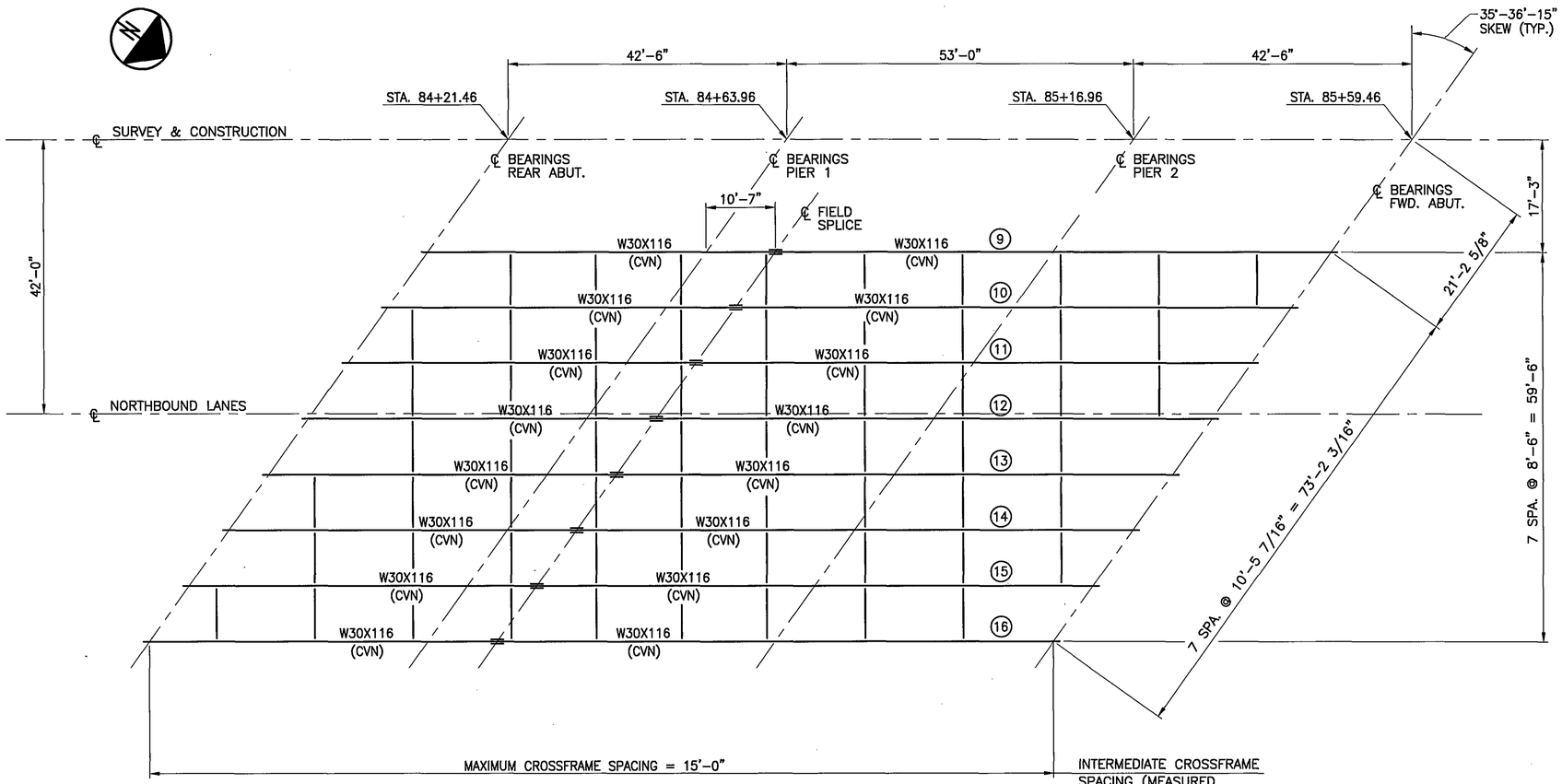
DESIGNED	DRAWN	REVIEWED	DATE
SJR	SJR	G.T.	1-04
CHECKED	REWISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

TRANSVERSE SECTION
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

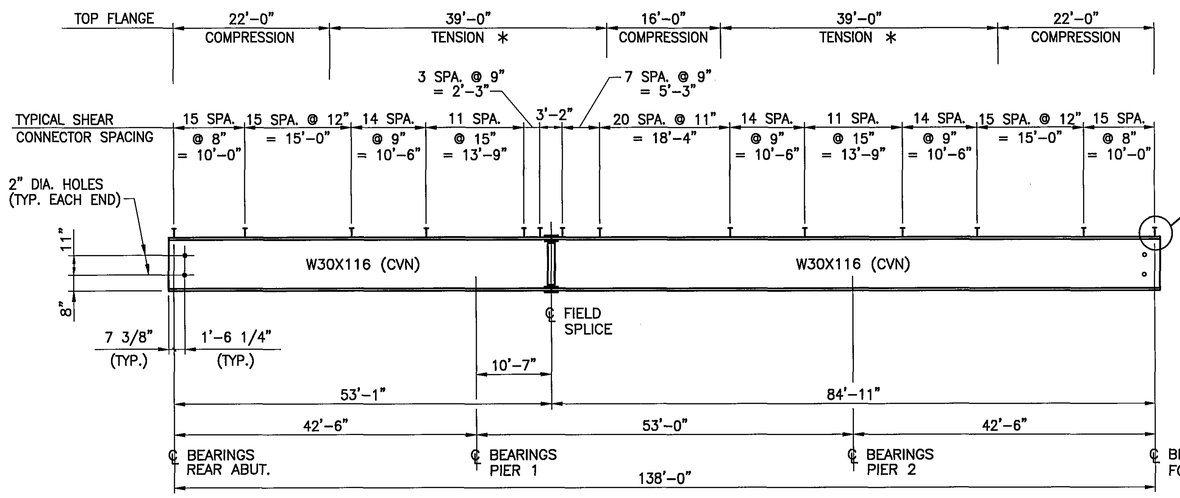
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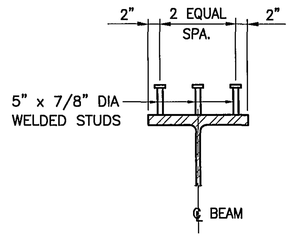


FRAMING PLAN
(NORTHBOUND)

* INCLUDES STRESS REVERSAL AREAS



TYPICAL BEAM ELEVATION

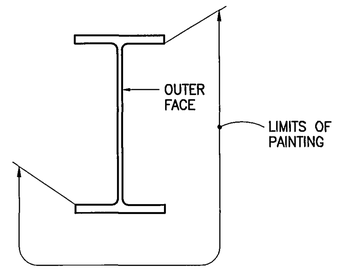


SHEAR CONNECTOR DETAIL

NOTE: SHEAR STUDS SHALL BE LOCATED NO CLOSER THAN 3" FROM EDGE OF BEAM SPLICE PLATE

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A588/A709 GRADE 50W AND SUBJECT TO LEVEL THREE (3) FABRICATION REQUIREMENTS OF ODOT CONSTRUCTION AND MATERIAL SPECIFICATION 513 UNLESS NOTED OTHERWISE.
2. CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
3. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE AT LEAST 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.
4. REFER TO STD. DWG. BS-1-93 SHEETS 1/3 AND 3/3 FOR ADDITIONAL SPLICE DETAILS AND NOTES.
5. FOR INTERMEDIATE CROSSFRAME DETAILS, REFER TO STANDARD DWG. GSD-1-96. TYPE 3 CROSSFRAMES ARE SHOWN ON THESE PLANS, TYPE 4 MAY BE USED INSTEAD, AT THE CONTRACTOR'S OPTION.
6. FOR ELASTOMERIC BEARING DETAILS, SEE SHEET 35/37
7. FIELD PAINTING OF A588 STEEL FASCIA BEAMS: THE OUTSIDE OF THE FASCIA BEAMS SHALL BE PAINTED AS DETAILED BELOW. PAINT SHALL BE SYSTEM IZEU. THE PRIME COAT SHALL BE 708.01. THE TOP COAT COLOR SHALL CLOSELY APPROACH FEDERAL STANDARD NO. 595B-14272 (GREEN). SEE SHEET G2/G3 FOR ADDITIONAL PAINTING REQUIREMENTS.



FASCIA BEAM PAINTING DETAIL
(AT BEAMS 1, 8, 9 AND 16)

NOTE:

1. FOR SOUTHBOUND FRAMING PLAN, CAMBER DIAGRAM AND DEFLECTION AND CAMBER TABLE, SEE SHEET 28/37

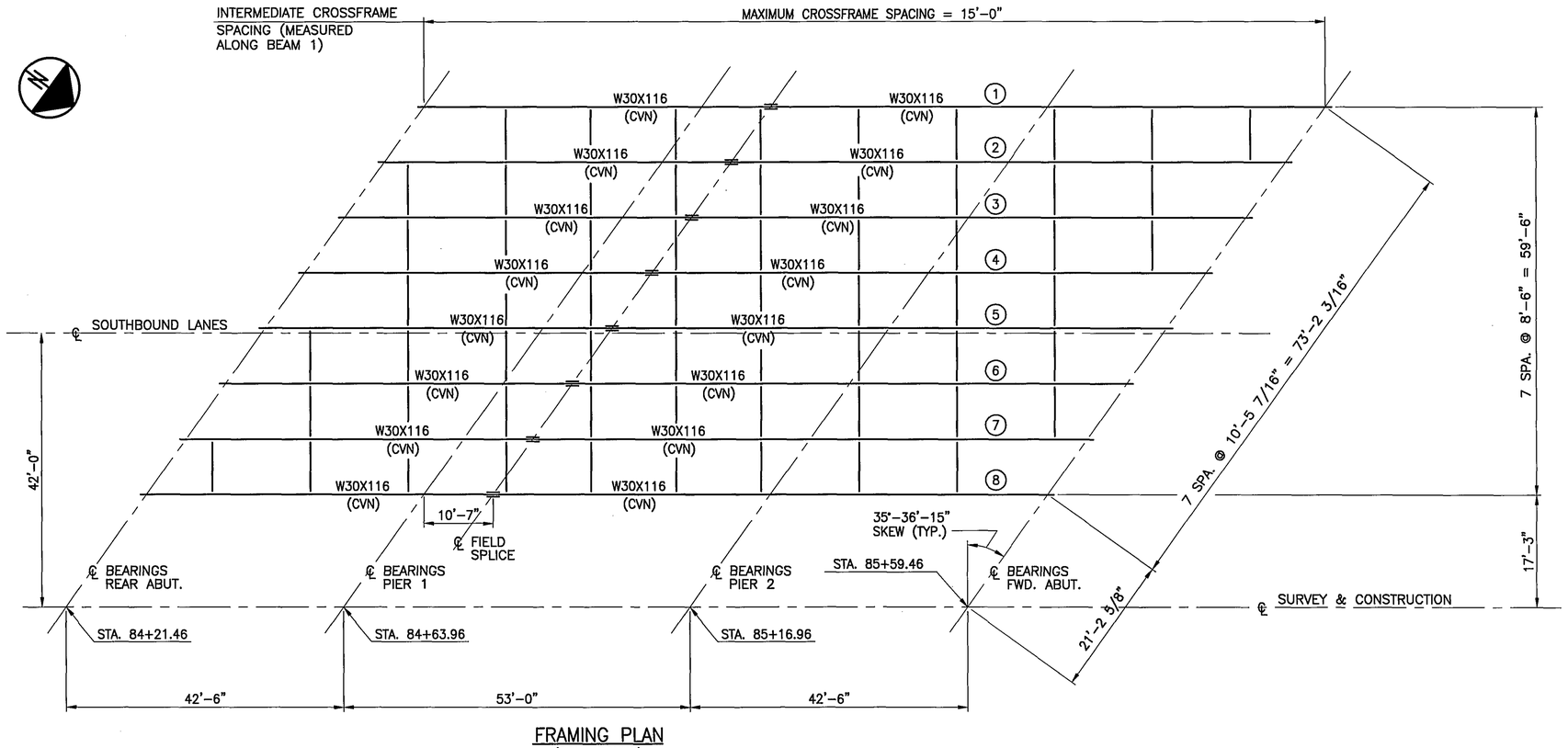
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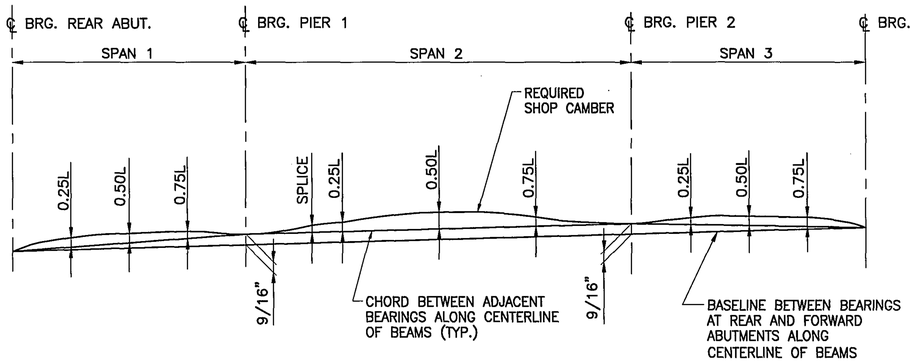
FRAMING PLAN (NORTHBOUND)
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

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FRAMING PLAN
(SOUTHBOUND)



CAMBER DIAGRAM
(TYPICAL FOR BOTH SOUTHBOUND AND NORTHBOUND BRIDGES)

DEFLECTION AND CAMBER (TYPICAL BEAMS 1 THRU 16)

	SPAN 1			SPAN 2				SPAN 3		
	0.25L	0.50L	0.75L	SPLICE	0.25L	0.50L	0.75L	0.25L	0.50L	0.75L
DEFLECTION DUE TO WEIGHT OF STEEL	0"	0"	0"	0"	0"	1/16"	0"	0"	0"	0"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	3/16"	1/8"	1/8"	3/16"	1/4"	3/16"	1/8"	3/16"	3/16"
ADJUSTMENT DUE TO VERTICAL & HORIZ. CURVE	1/16"	1/16"	1/16"	1/16"	1/16"	1/8"	1/16"	1/16"	1/16"	1/16"
TOTAL CAMBER	1/4"	1/4"	3/16"	3/16"	1/4"	7/16"	1/4"	3/16"	1/4"	1/4"

L = SPAN LENGTH

POSITIVE VALUES INDICATE REQUIRED CAMBER IS ABOVE THE CHORD BETWEEN ADJACENT BEARINGS.

NOTES

1. FOR STRUCTURE NOTES, SEE SHEET 27/37

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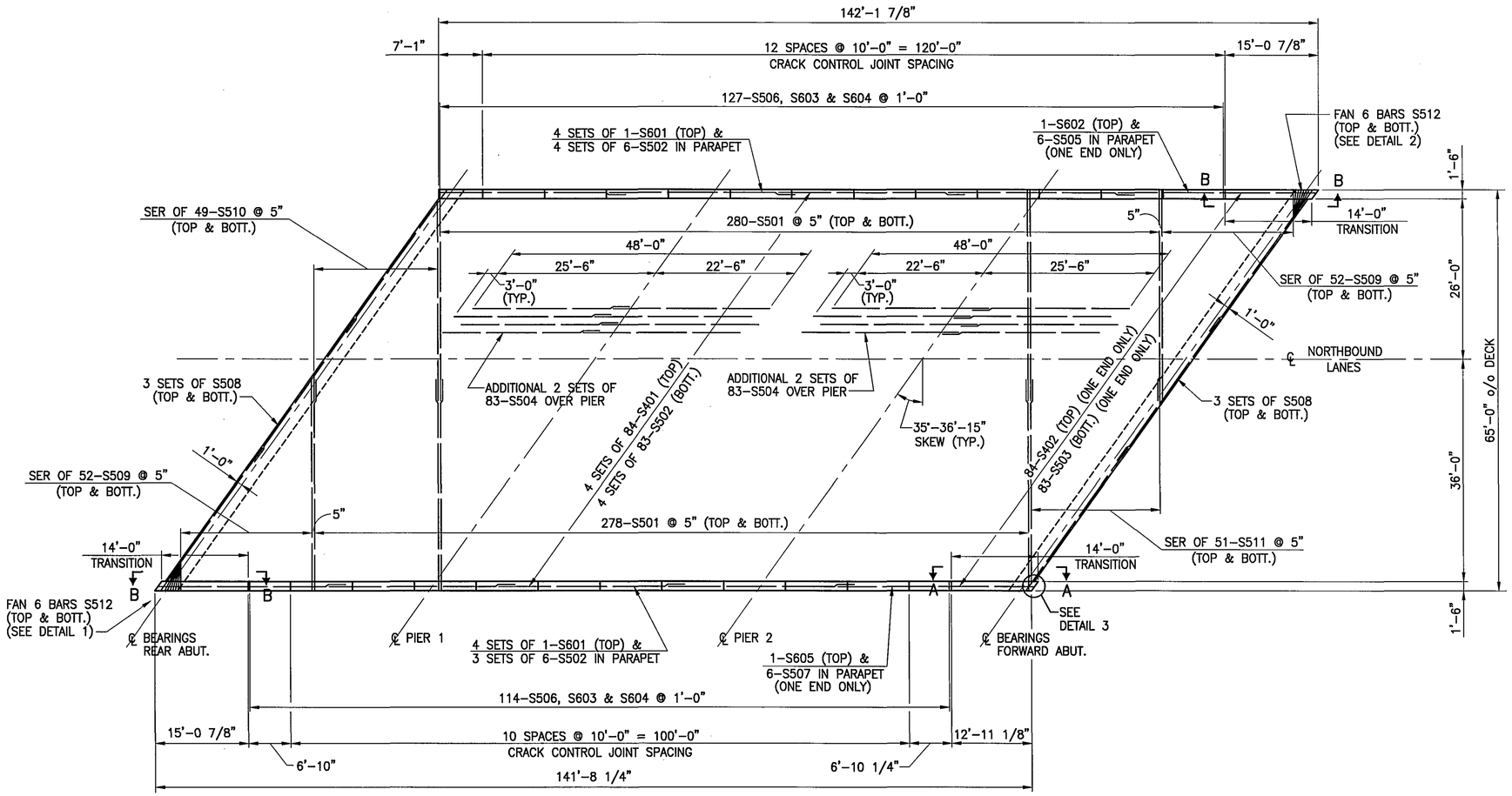
FRAMING PLAN (SOUTHBOUND)
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

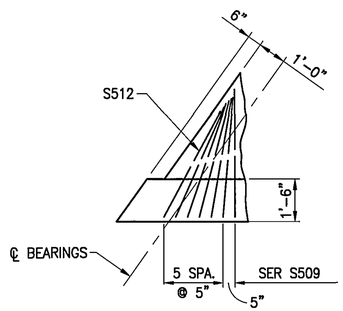
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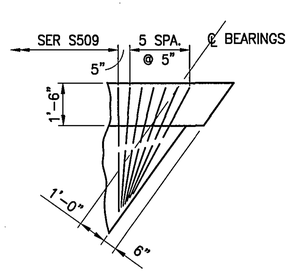
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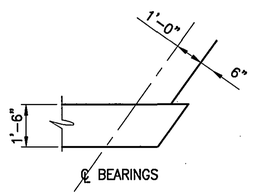
DECK PLAN (NORTHBOUND)



DETAIL 1



DETAIL 2



DETAIL 3

NOTES:

1. FOR REINFORCEMENT SCHEDULE, SEE SHEET 36/37
2. MINIMUM REBAR LAPS:
   LONGITUDINAL
   #4 BARS = 1'-7"
   #5 BARS = 2'-7"
   #6 BARS = 3'-4"
   TRANSVERSE
   #5 BARS = 3'-2"
3. FOR VIEW A-A & VIEW B-B, SEE SHEET 30/37
4. FOR SEMI-INTEGRAL DIAPHRAGM DETAILS AND NOTES, SEE SHEETS 18 THRU 22.
5. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTRUCTURE: THE CONCRETE ENCASING STRUCTURAL STEEL MEMBERS SUPPORTED IN SEMI-INTEGRAL TYPE ABUTMENTS MAY BE PLACED BEFORE THE ACTUAL DECK CONCRETE IS PLACED. IF THE CONTRACTOR CHOOSES THIS OPTION THE CONCRETE SHALL HAVE HAD AT LEAST 48 HOURS OF SET TIME BEFORE DECK CONCRETE IS PLACED.

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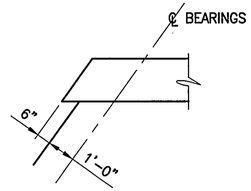
DECK PLAN (NORTHBOUND)
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

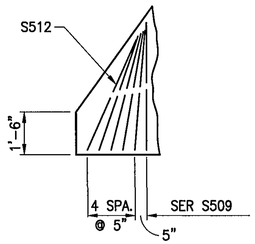
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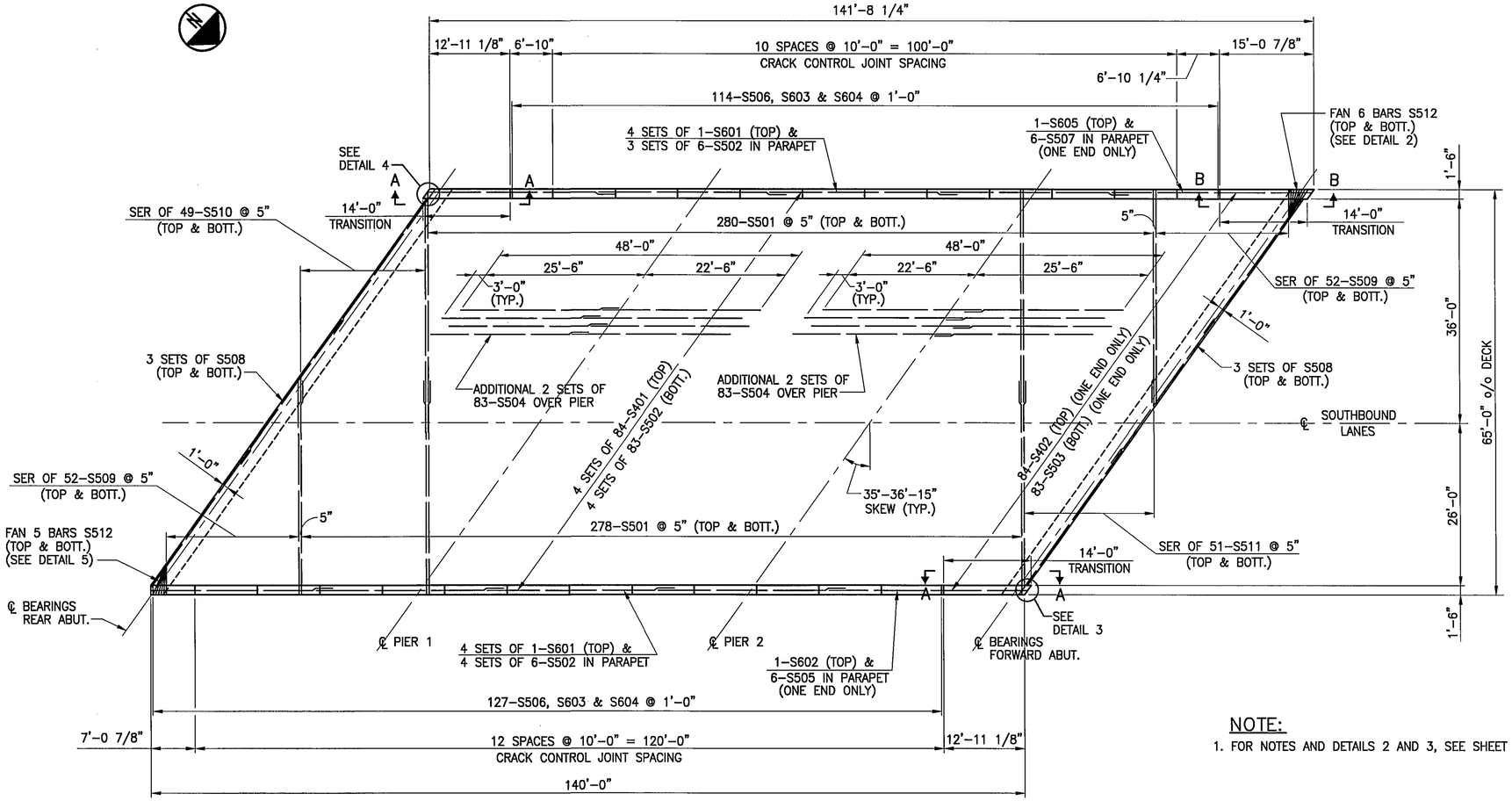
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DETAIL 4



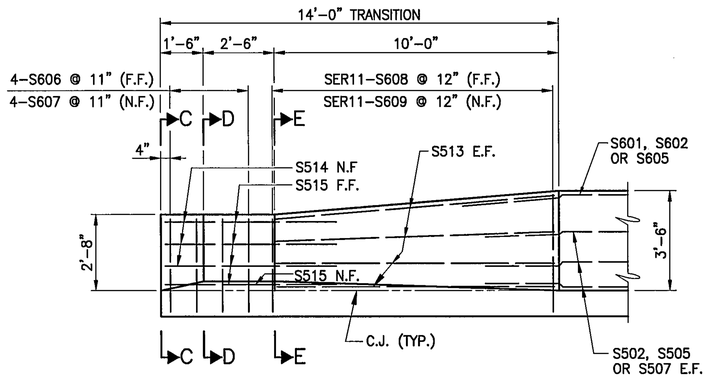
DETAIL 5



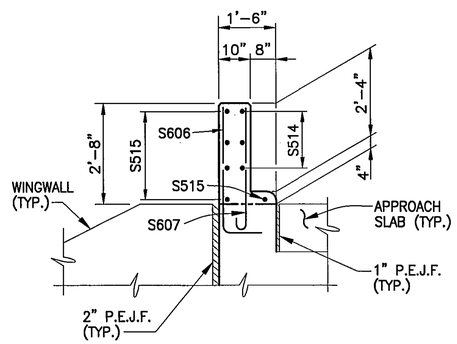
DECK PLAN (SOUTHBOUND)

NOTE:

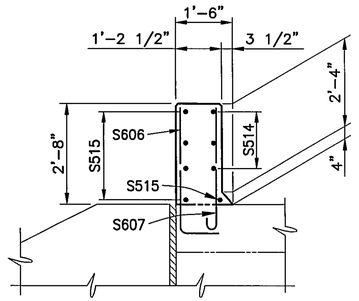
1. FOR NOTES AND DETAILS 2 AND 3, SEE SHEET 29/37



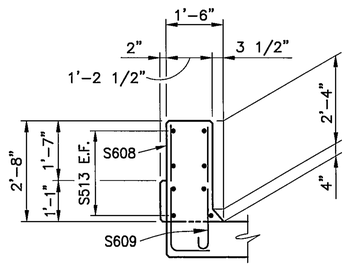
VIEW A-A (AS SHOWN)
VIEW B-B (OPPOSITE HAND)



SECTION C-C



SECTION D-D



SECTION E-E

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DECK PLAN (SOUTHBOUND)
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

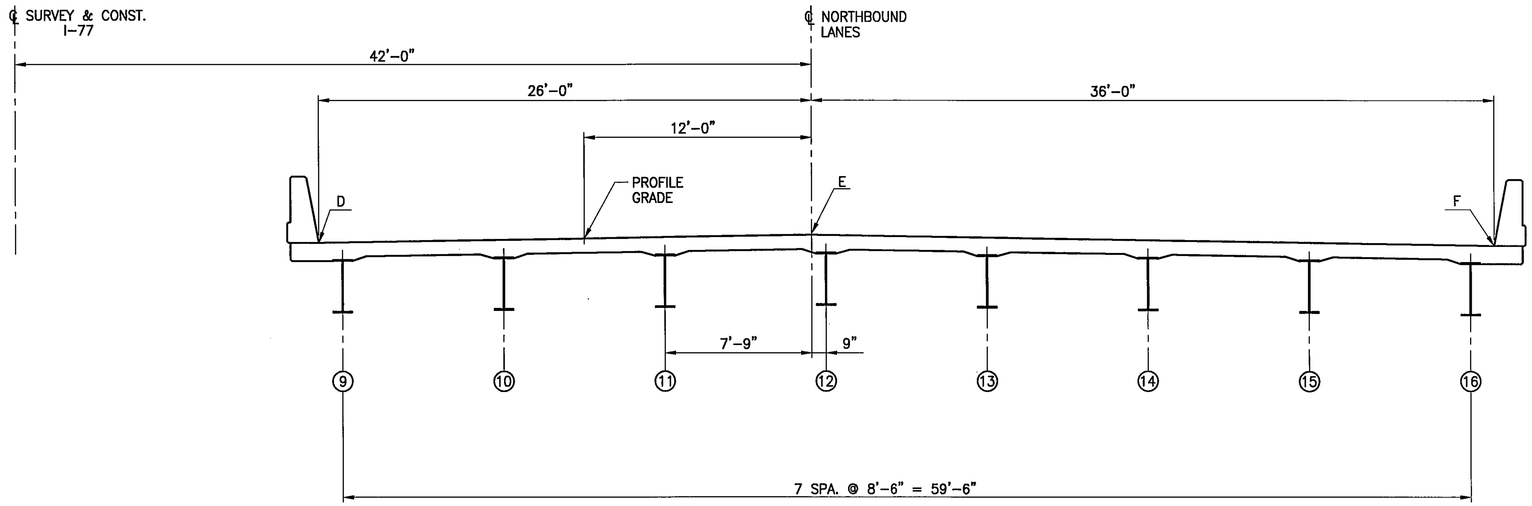
SUM-77-1.40

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SCREED ELEVATION TABLE (RIGHT BRIDGE)

		BEAM 9		BEAM 10		BEAM 11		BEAM 12		BEAM 13		BEAM 14		BEAM 15		BEAM 16		D		E		F	
SPAN NO.	LOCATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION
1	0.00 L	84+09.11	1203.53	84+03.02	1203.61	83+96.94	1203.69	83+90.85	1203.74	83+84.76	1203.54	83+78.68	1203.34	83+72.59	1203.15	83+66.51	1202.95	84+10.00	1203.52	83+91.39	1203.76	83+65.61	1202.92
	0.25 L	84+19.73	1203.65	84+13.65	1203.73	84+07.56	1203.81	84+01.48	1203.86	83+95.39	1203.66	83+89.30	1203.47	83+83.22	1203.27	83+77.13	1203.07	84+20.63	1203.64	84+02.01	1203.88	83+76.24	1203.04
	0.50 L	84+30.36	1203.75	84+24.27	1203.83	84+18.19	1203.91	84+12.10	1203.96	84+06.01	1203.77	83+99.93	1203.57	83+93.84	1203.38	83+87.76	1203.18	84+31.25	1203.74	84+12.64	1203.98	83+86.86	1203.15
	0.75 L	84+40.98	1203.84	84+34.90	1203.92	84+28.81	1204.00	84+22.73	1204.06	84+16.64	1203.86	84+10.55	1203.67	84+04.47	1203.48	83+98.38	1203.28	84+41.88	1203.82	84+23.26	1204.07	83+97.49	1203.25
2	0.00 L	84+51.61	1203.92	84+45.52	1204.00	84+39.44	1204.08	84+33.35	1204.14	84+27.26	1203.95	84+21.18	1203.76	84+15.09	1203.57	84+09.01	1203.37	84+52.50	1203.91	84+33.89	1204.16	84+08.11	1203.34
	SPLICE	84+62.21	1204.02	84+56.12	1204.10	84+50.04	1204.19	84+43.95	1204.25	84+37.86	1204.06	84+31.78	1203.87	84+25.69	1203.68	84+19.61	1203.48	84+63.10	1204.01	84+44.49	1204.26	84+18.71	1203.45
	0.25 L	84+64.86	1204.05	84+58.77	1204.13	84+52.69	1204.22	84+46.60	1204.27	84+40.51	1204.09	84+34.43	1203.90	84+28.34	1203.70	84+22.26	1203.51	84+65.75	1204.03	84+47.14	1204.29	84+21.36	1203.48
	0.50 L	84+78.11	1204.16	84+72.02	1204.25	84+65.94	1204.33	84+59.85	1204.39	84+53.76	1204.21	84+47.68	1204.02	84+41.59	1203.83	84+35.51	1203.64	84+79.00	1204.14	84+60.39	1204.41	84+34.61	1203.61
	0.75 L	84+91.36	1204.26	84+85.27	1204.34	84+79.19	1204.43	84+73.10	1204.50	84+67.01	1204.31	84+60.93	1204.12	84+54.84	1203.94	84+48.76	1203.75	84+92.25	1204.24	84+73.64	1204.51	84+47.86	1203.72
3	0.00 L	85+04.61	1204.34	84+98.52	1204.43	84+92.44	1204.52	84+86.35	1204.59	84+80.26	1204.40	84+74.18	1204.22	84+68.09	1204.03	84+62.01	1203.85	85+05.50	1204.33	84+86.89	1204.60	84+61.11	1203.82
	0.25 L	85+15.23	1204.43	85+09.15	1204.52	85+03.06	1204.61	84+96.98	1204.68	84+90.89	1204.50	84+84.80	1204.31	84+78.72	1204.13	84+72.63	1203.94	85+16.13	1204.41	84+97.51	1204.69	84+71.74	1203.92
	0.50 L	85+25.86	1204.51	85+19.77	1204.60	85+13.69	1204.69	85+07.60	1204.76	85+01.51	1204.58	84+95.43	1204.40	84+89.34	1204.22	84+83.26	1204.03	85+26.75	1204.49	85+08.14	1204.78	84+82.36	1204.01
	0.75 L	85+36.48	1204.58	85+30.40	1204.67	85+24.31	1204.77	85+18.23	1204.84	85+12.14	1204.66	85+06.05	1204.48	84+99.97	1204.30	84+93.88	1204.12	85+37.38	1204.56	85+18.76	1204.85	84+92.99	1204.09
	1.00 L	85+47.11	1204.63	85+41.02	1204.73	85+34.94	1204.82	85+28.85	1204.89	85+22.76	1204.72	85+16.68	1204.54	85+10.59	1204.36	85+04.51	1204.18	85+48.00	1204.62	85+29.39	1204.91	85+03.61	1204.15



SCREED LINE LOCATIONS
RIGHT BRIDGE

NOTE:

1. SCREED ELEVATIONS:

   SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

   L = SPAN LENGTH

PREPARED BY ms consultants, inc. CONSULTING ENGINEERS & PLANNERS 130 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

DESIGNED S.J.R. | DRAWN S.J.R. | REVIEWED G.T. | DATE 1-04 | CHECKED W.H. | REVISED | STRUCTURE FILE NUMBER 7702132 L/ 7702167 R

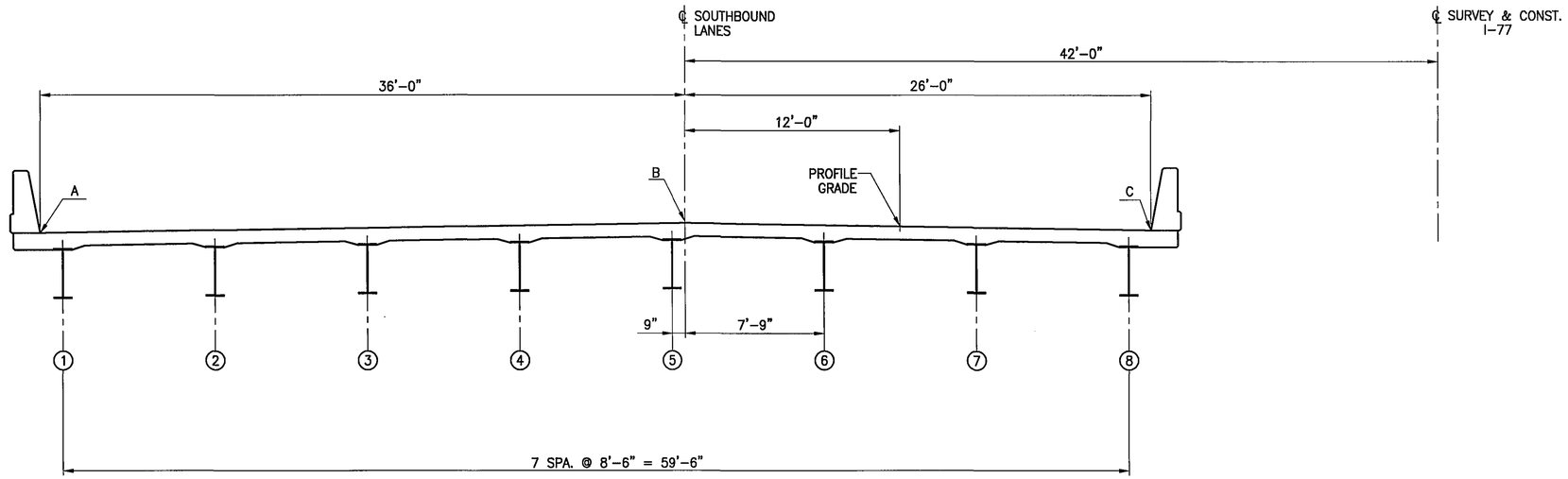
SCREED ELEVATIONS
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

T:\DRAWING\08\06472\308\GREENSBURG\GR86_SD5.DWG SC: 1=48 10-02-03

SCREED ELEVATION TABLE (LEFT BRIDGE)

		BEAM 1		BEAM 2		BEAM 3		BEAM 4		BEAM 5		BEAM 6		BEAM 7		BEAM 8		A		B		C	
SPAN NO.	LOCATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION
1	0.00 L	84+76.41	1200.84	84+70.33	1200.91	84+64.24	1200.98	84+58.16	1201.05	84+52.07	1201.11	84+45.98	1200.93	84+39.90	1200.73	84+33.81	1200.52	84+77.31	1200.83	84+51.53	1201.12	84+32.92	1200.49
	0.25 L	84+87.04	1200.97	84+80.95	1201.04	84+74.87	1201.11	84+68.78	1201.18	84+62.69	1201.25	84+56.61	1201.07	84+50.52	1200.86	84+44.44	1200.66	84+87.93	1200.96	84+62.16	1201.26	84+43.54	1200.63
	0.50 L	84+97.66	1201.08	84+91.58	1201.15	84+85.49	1201.23	84+79.41	1201.30	84+73.32	1201.37	84+67.23	1201.19	84+61.15	1200.98	84+55.06	1200.78	84+98.56	1201.07	84+72.78	1201.37	84+54.17	1200.75
	0.75 L	85+08.29	1201.19	85+02.20	1201.26	84+96.12	1201.33	84+90.03	1201.41	84+83.94	1201.48	84+77.86	1201.30	84+71.77	1201.10	84+65.69	1200.89	85+09.18	1201.17	84+83.41	1201.48	84+64.79	1200.86
2	0.00 L	85+18.91	1201.28	85+12.83	1201.36	85+06.74	1201.43	85+00.66	1201.51	84+94.57	1201.58	84+88.48	1201.40	84+82.40	1201.20	84+76.31	1201.00	85+19.81	1201.27	84+94.03	1201.58	84+75.42	1200.97
	SPLICE	85+29.51	1201.39	85+23.43	1201.47	85+17.34	1201.55	85+11.26	1201.62	85+05.17	1201.70	84+99.08	1201.52	84+93.00	1201.32	84+86.91	1201.12	85+30.41	1201.38	85+04.63	1201.70	84+86.02	1201.09
	0.25 L	85+32.16	1201.43	85+26.08	1201.50	85+19.99	1201.58	85+13.91	1201.65	85+07.82	1201.73	85+01.73	1201.56	84+95.65	1201.36	84+89.56	1201.16	85+33.06	1201.41	85+07.28	1201.74	84+88.67	1201.13
	0.50 L	85+45.41	1201.55	85+39.33	1201.63	85+33.24	1201.71	85+27.16	1201.79	85+21.07	1201.87	85+14.98	1201.69	85+08.90	1201.50	85+02.81	1201.30	85+46.31	1201.54	85+20.53	1201.87	85+01.92	1201.27
	0.75 L	85+58.66	1201.67	85+52.58	1201.75	85+46.49	1201.83	85+40.41	1201.91	85+34.32	1201.99	85+28.23	1201.82	85+22.15	1201.62	85+16.06	1201.43	85+59.56	1201.66	85+33.78	1202.00	85+15.17	1201.40
3	0.00 L	85+71.91	1201.77	85+65.83	1201.85	85+59.74	1201.94	85+53.66	1202.02	85+47.57	1202.10	85+41.48	1201.93	85+35.40	1201.74	85+29.31	1201.54	85+72.81	1201.76	85+47.03	1202.10	85+28.42	1201.51
	0.25 L	85+82.54	1201.87	85+76.45	1201.96	85+70.37	1202.04	85+64.28	1202.12	85+58.19	1202.20	85+52.11	1202.04	85+46.02	1201.85	85+39.94	1201.65	85+83.43	1201.86	85+57.66	1202.21	85+39.04	1201.62
	0.50 L	85+93.16	1201.96	85+87.08	1202.05	85+80.99	1202.14	85+74.91	1202.22	85+68.82	1202.30	85+62.73	1202.14	85+56.65	1201.95	85+50.56	1201.76	85+94.06	1201.95	85+68.28	1202.31	85+49.67	1201.73
	0.75 L	86+03.79	1202.05	85+97.70	1202.14	85+91.62	1202.22	85+85.53	1202.31	85+79.44	1202.39	85+73.36	1202.23	85+67.27	1202.04	85+61.19	1201.85	86+04.68	1202.04	85+78.91	1202.40	85+60.29	1201.82
	1.00 L	86+14.41	1202.12	86+08.33	1202.21	86+02.24	1202.29	85+96.16	1202.38	85+90.07	1202.47	85+83.98	1202.31	85+77.90	1202.12	85+71.81	1201.93	86+15.31	1202.10	85+89.53	1202.48	85+70.92	1201.90



SCREED LINE LOCATIONS
LEFT BRIDGE

NOTE:

1. SCREED ELEVATIONS:

   SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

   L = SPAN LENGTH

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
130 EAST MAIN STREET, YOUNGSTOWN, OHIO

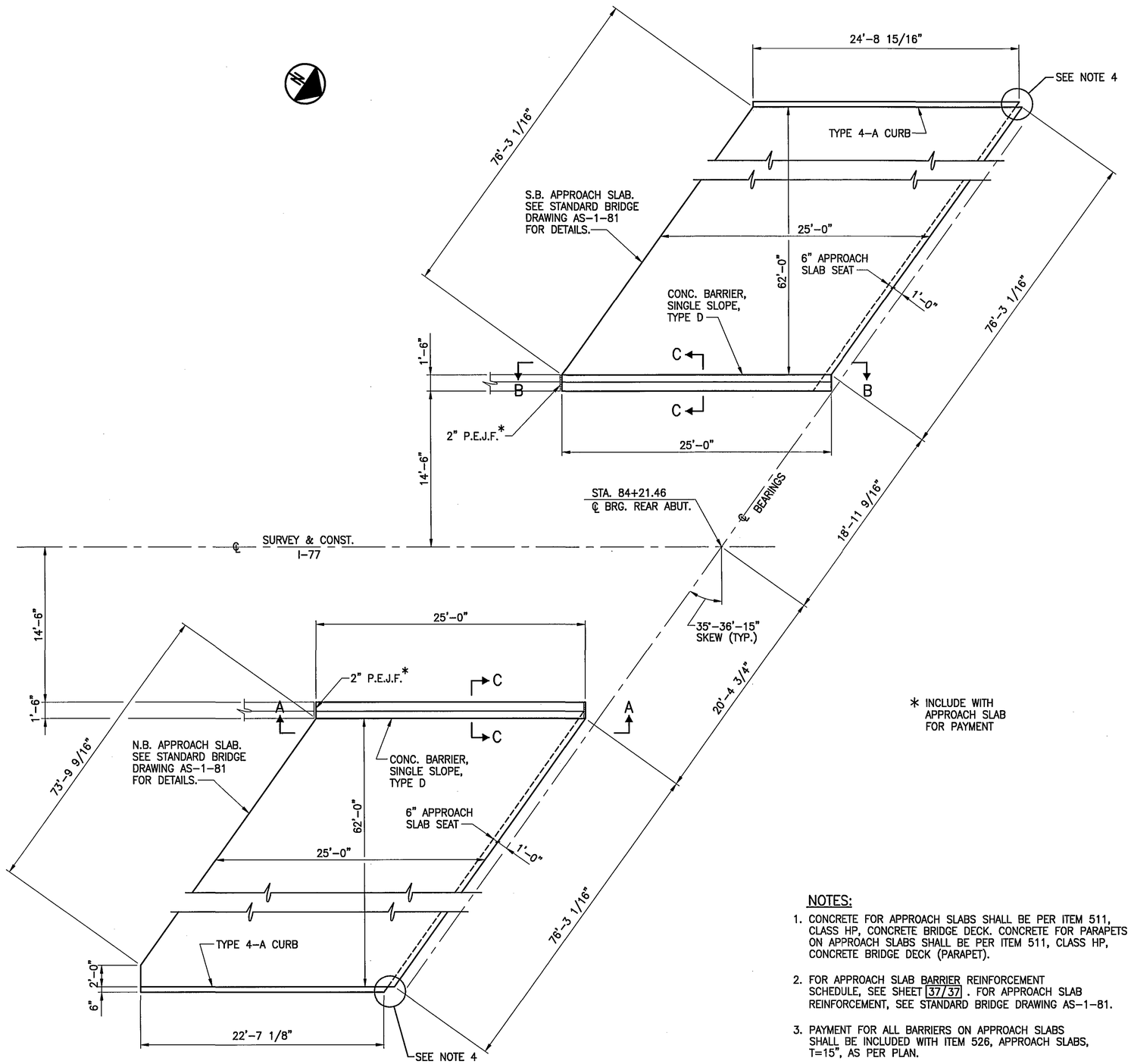
DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04

CHECKED W.H.
REVISED
STRUCTURE FILE NUMBER 7702132 L/ 7702167 R

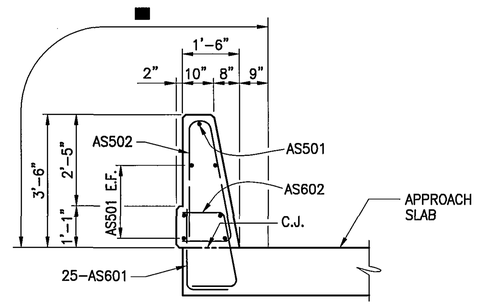
SCREED ELEVATIONS
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

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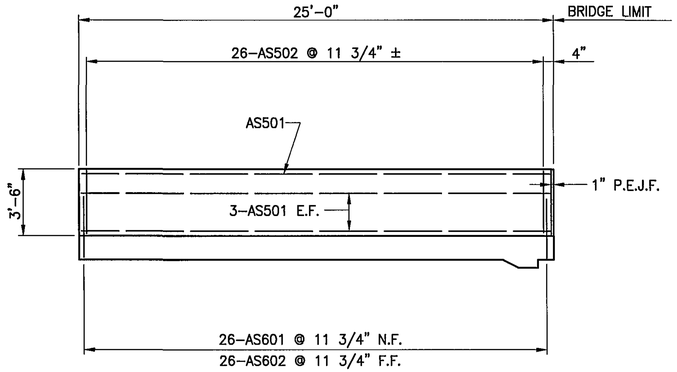
REAR APPROACH SLAB PLAN



SECTION C-C

■ DENOTES SEALING OF CONCRETE SURFACES PER ITEM 864

* INCLUDE WITH APPROACH SLAB FOR PAYMENT



VIEW A-A (AS SHOWN)

VIEW B-B (OPPOSITE HAND)

NOTES:

1. CONCRETE FOR APPROACH SLABS SHALL BE PER ITEM 511, CLASS HP, CONCRETE BRIDGE DECK. CONCRETE FOR PARAPETS ON APPROACH SLABS SHALL BE PER ITEM 511, CLASS HP, CONCRETE BRIDGE DECK (PARAPET).
2. FOR APPROACH SLAB BARRIER REINFORCEMENT SCHEDULE, SEE SHEET 37/37 . FOR APPROACH SLAB REINFORCEMENT, SEE STANDARD BRIDGE DRAWING AS-1-81.
3. PAYMENT FOR ALL BARRIERS ON APPROACH SLABS SHALL BE INCLUDED WITH ITEM 526, APPROACH SLABS, T=15", AS PER PLAN.
4. USE SIMILAR DETAIL AT FORWARD APPROACH SLAB CORNERS.

T:\DRAWING\08\06472\308\GREENSBURG\GRBG_MD1.DWG SC: 1=64 10-03-03

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
2221 JAMES P. KELLEY, YOUNGSTOWN, OHIO

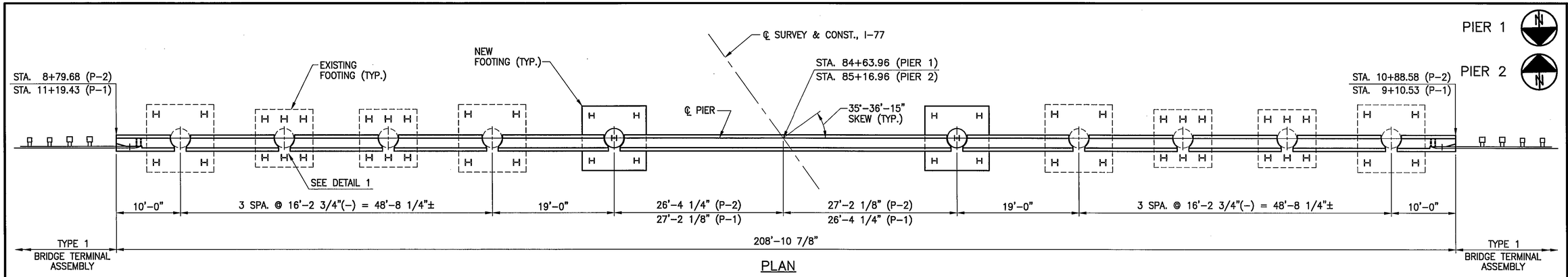
DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

APPROACH SLAB & BARRIER DETAILS
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

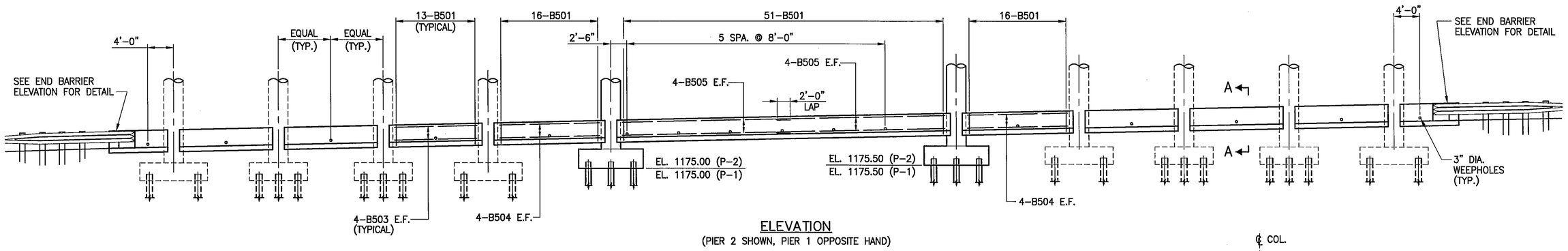
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329
381



PLAN



ELEVATION
(PIER 2 SHOWN, PIER 1 OPPOSITE HAND)

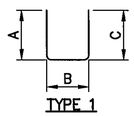
NOTES:

1. FOR BRIDGE TERMINAL ASSEMBLY, SEE STANDARD CONSTRUCTION DRAWING GR-3.1
2. PAYMENT FOR THE CONCRETE BARRIER SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 622 – BARRIER, MISC.: SHOULDER PIER PROTECTION. THE FOLLOWING QUANTITY IS CARRIED IN THE ROADWAY PLANS GENERAL SUMMARY:

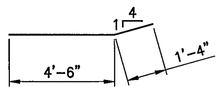
   ITEM 622 – BARRIER, MISC.: SHOULDER PIER PROTECTION, AS PER PLAN___418 LIN. FT.
3. CONTRACTOR SHALL MAINTAIN PROFILE OF EXISTING GRADE AT THIS POINT.

REINFORCING SCHEDULE

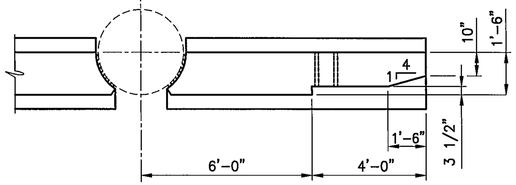
MARK	NUMBER	LENGTH	TYPE	DIMENSIONS		
				A	B	C
B501	342	6'-11"	1	3'-0"	1'-2"	3'-0"
B502	12	6'-8"	1	3'-0"	10 1/2"	3'-0"
B503	96	12'-9"	ST.			
B504	32	15'-6"	ST.			
B505	32	26'-0"	ST.			
B506	16	4'-1"	ST.			
B507	16	5'-10"	2			
B508	16	8'-1"	ST.			
B509	4	6'-3"	1	3'-0"	6"	3'-0"
B510	4	6'-6"	1	3'-0"	9"	3'-0"



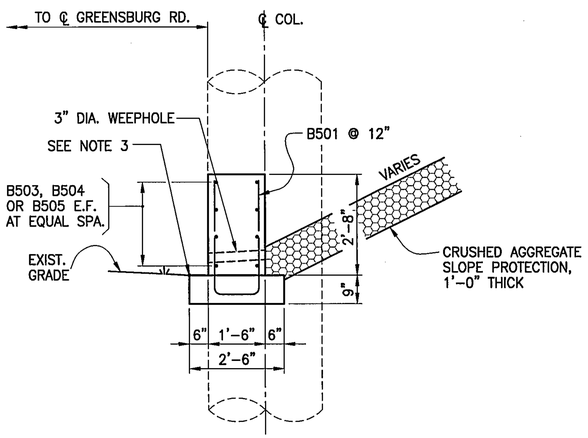
TYPE 1



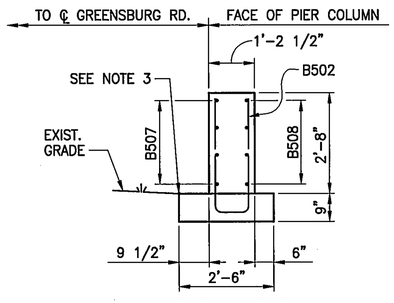
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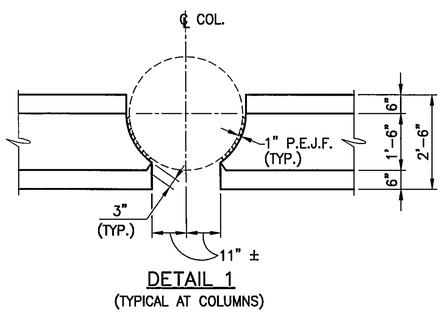
END BARRIER PLAN



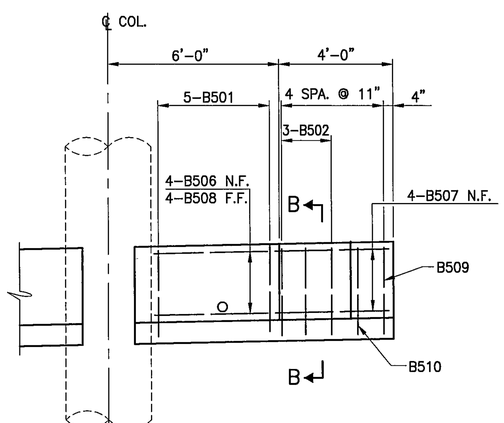
SECTION A–A



SECTION B–B



DETAIL 1
(TYPICAL AT COLUMNS)



END BARRIER ELEVATION

T:\DRAWING\08\06472\308\GREENSBURG\GRBG_M02.DWG SC: 1=96 10-02-03

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
300 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

REVIEWED G.T.	DATE 1-04	STRUCTURE FILE NUMBER 7702132 L/ 7702167 R
DRAWN S.J.R.	REVISED	
DESIGNED S.J.R.	CHECKED W.H.	

BARRIER DETAILS AT PIERS
BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

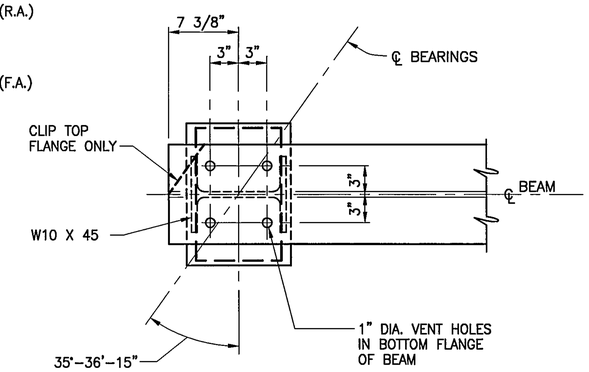
SUM-77-1.40

34 / 37

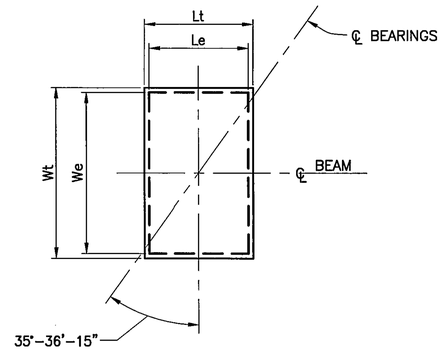
330
381

(R.A.)

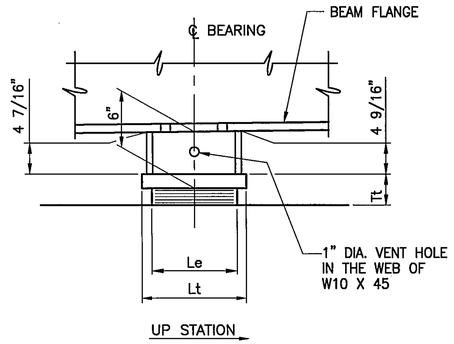
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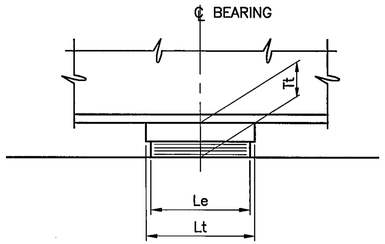
PLAN



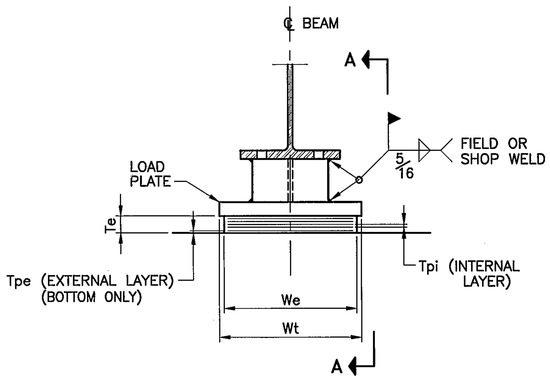
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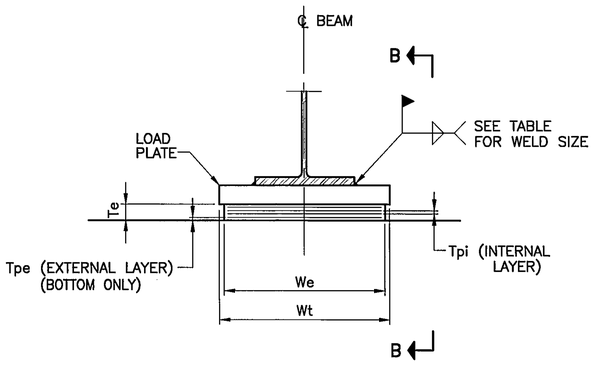
VIEW A-A



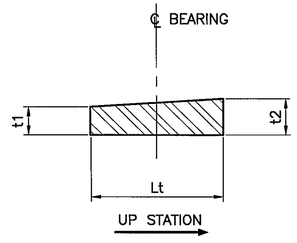
VIEW B-B



LAMINATED ELASTOMERIC EXPANSION BEARING
(ABUTMENTS)



LAMINATED ELASTOMERIC EXPANSION BEARING
(PIERS)



STEEL LOAD PLATE DETAIL

BEARING LOCATION	BEARING TYPE	NO. REQ'D.	DEAD LOAD KIPS	LIVE LOAD KIPS	TOTAL LOAD (DL+LL) KIPS	Le (inches)	We (inches)	Tpi (inches)	NO. OF Tpi'S	Tpe (1 EA.) (inches)	NUMBER OF INTERNAL LAMINATES (14 GAGE)	Te (inches)	STEEL LOAD PLATE				Tt (inches)	FILLET WELD SIZE (inches)	RETAINER ANGLE
													Wt (inches)	Lt (inches)	t1 (inches)	t2 (inches)			
REAR ABUTMENT	EXP.	16	57	57	114	9	14	0.26	5	0.19	5	1.86	15	11	1 1/2	1 1/2	3.36		4
PIER 1	EXP.	16	95	70	165	10 1/2	17	0.31	4	0.22	4	1.76	18	11 1/2	2	2 1/8	3.82	5/16	NONE
PIER 2	EXP.	16	95	70	165	10 1/2	17	0.31	4	0.22	4	1.76	18	11 1/2	2	2 1/8	3.82	5/16	NONE
FORWARD ABUTMENT	EXP.	16	57	57	114	9	14	0.26	5	0.19	5	1.86	15	11	1 1/2	1 1/2	3.36		4

NOTE: FOR BEARING RETAINER DETAIL, SEE SHEET 22/37 AND STD. DWG. SICD-1-96.

NOTES:

LOAD PLATE & HP SHAPE

THE STEEL LOAD PLATE AND HP SHAPE SHALL BE THE SAME MATERIAL AS THE ATTACHED STRUCTURAL STEEL. THE HP SHAPE IS CONSIDERED A COMPONENT OF THE BEARING.

THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.

WELDING OF THE LOAD PLATE OR HP SHAPE TO THE SUPERSTRUCTURE SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE SHALL NOT EXCEED 300° F AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

ELASTOMERIC BEARINGS

THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.

BEARING REPOSITIONING

IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80° F OR LOWER THAN 40° F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60° F ± 10° F, THE BEAMS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60° F ± 10° F.

BASIS OF PAYMENT

THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS, EXPANSION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516, EACH, ELASTOMERIC BEARING WITH INTERNAL LAMINATES (NEOPRENE) AND LOAD PLATE.

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
700 EAST DIAMOND STREET, CRANBERRY TWP., 16066

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702132 L/ 7702167 R	

ELASTOMERIC BEARING DETAILS

BRIDGE NO. SUM-77-0159 L/R
OVER GREENSBURG RD.

SUM-77-1.40

35/37

331/381

T:\DRAWING\08\06472\308\GREENSBURG\GRBG_EX1.DWG SC: 1=8 10-02-03

PIERS

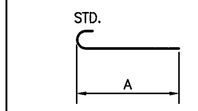
MARK	NUMBER				TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS			
	P-1R	P-2R	P-1L	P-2L					A	B	C	INC.
SP401	1				1	16'-8"	245	7	4 1/2"	48	2'-6"	
SP402		1			1	17'-1"	250	7	4 1/2"	49	2'-6"	
SP403			1		1	15'-4"	226	7	4 1/2"	44	2'-6"	
SP404				1	1	15'-10"	233	7	4 1/2"	46	2'-6"	
P501	152	152			304	9'-9"	3091	2	3'-8"	2'-8"	3'-8"	
P502			150	150	300	8'-11"	2790	2	3'-3"	2'-8"	3'-3"	
P601	14	14	14	14	56	7'-3"	610	2	2'-6"	2'-6 1/2"	2'-6"	
P602	4	4	4	4	16	4'-1"	98	2	2'-8"	1'-7"	0	
P603	6	6	6	6	24	13'-2"	475	23				
P801	30	30	30	30	120	20'-0"	6408	ST.				
P802	10	10	10	10	40	28'-0"	2990	ST.				
P901	14	14	14	14	56	24'-0"	4570	ST.				
P902	5	5	5	5	20	37'-0"	2516	ST.				
P903	12	12	12	12	48	4'-0"	653	2	2'-8"	1'-7"	0	
P1001	20	20	20	20	80	12'-6"	4303	14	9'-8"			
P1002	12	12	12	12	48	8'-5"	1738	2	6'-9"	2'-0"	0	
P1003	12				12	20'-0"	1033	ST.				
P1004		12			12	20'-5"	1054	ST.				
P1005	5	5			10	41'-4"	1779	2	4'-8"	37'-0"	0	
P1006	5	5	5	5	20	21'-0"	1807	ST.				
P1007	5	5			10	32'-10"	1413	2	4'-2"	29'-0"	0	
P1008			12		12	18'-8"	964	ST.				
P1009				12	12	19'-2"	990	ST.				
P1010			5	5	10	39'-3"	1689	2	3'-7"	36'-0"	0	
P1011			5	5	10	32'-7"	1402	2	3'-11"	29'-0"	0	

TOTAL = 43,327 LB.

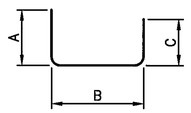
SUPERSTRUCTURE

MARK	NUMBER		TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS			
	N.B.	S.B.					A	B	C	INC.
S401	336	336	672	30'-0"	13,467	ST.				
S402	84	84	168	28'-6"	3198	ST.				
S501	1116	1116	2232	34'-0"	79,151	ST.				
S502	374	374	748	30'-0"	23,405	ST.				
S503	83	83	166	32'-6"	5627	ST.				
S504	332	332	664	25'-6"	17,660	ST.				
S505	6	6	12	20'-0"	250	ST.				
S506	241	241	482	7'-5"	3729	4				
S507	6	6	12	37'-0"	463	ST.				
S508	12	12	24	28'-6"	713	ST.				
S509	4 SER OF 52	4 SER OF 52	8 SER OF 52	4'-3" TO 34'-0"	8298	ST.				7"
S510	2 SER OF 49	2 SER OF 49	4 SER OF 49	4'-0" TO 32'-0"	3680	ST.				7"
S511	2 SER OF 51	2 SER OF 51	4 SER OF 51	4'-0" TO 33'-2"	3954	ST.				7"
S512	24	22	46	4'-2"	200	ST.				
S513	24	24	48	10'-0"	501	ST.				
S514	9	9	18	5'-6"	103	16				
S515	15	15	30	5'-6"	172	ST.				
S601	8	8	16	30'-0"	721	ST.				
S602	1	1	2	27'-0"	81	ST.				
S603	241	241	482	3'-6"	2534	5	1'-8"	1'-1"	1'-1"	
S604	241	241	482	2'-7"	1870	2	1'-1"	1'-8"	0	
S605	1	1	2	14'-0"	42	ST.				
S606	12	12	24	4'-1"	147	2	3'-2"	1'-1"	0	
S607	12	12	24	3'-10"	138	1	3'-2"			
S608	3 SER OF 11	3 SER OF 11	6 SER OF 11	4'-1" TO 4'-11"	446	2	3'-2" TO 4'-0"	1'-1"	0	1"
S609	3 SER OF 11	3 SER OF 11	6 SER OF 11	3'-10" TO 4'-8"	421	1	3'-2" TO 4'-0"			1"

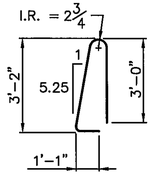
TOTAL = 170,971 LB.



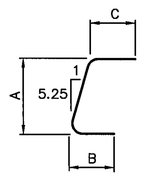
TYPE 1



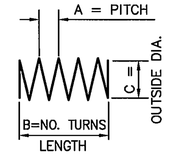
TYPE 2



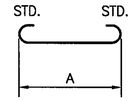
TYPE 4



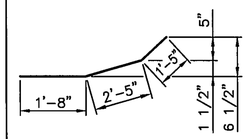
TYPE 5



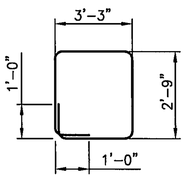
TYPE 7



TYPE 14



TYPE 16



TYPE 23

NOTES:

BAR SIZE: THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

ALL BARS TO BE EPOXY COATED.

REINFORCING BAR SAMPLES: REFER TO C.M.S. SECTION 700, 709.01 THROUGH 709.05 AND 709.08. SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING FOR EACH BRIDGE. RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURES BY THE ADDITIONAL STEEL, SPLICED IN ACCORDANCE WITH THE PROJECT PLANS.

SPIRAL REINFORCING BARS:

COLUMN LENGTH: THE LENGTH SHOWN IN THE STEEL LIST FOR THE SPIRAL BARS IS THE DISTANCE FROM THE TOP OF THE FOOTING TO THE BOTTOM LAYER OF BARS IN THE PIER CAP.

THE NUMBER OF TURNS SHOWN IS THE LENGTH DIVIDED BY THE PITCH, PLUS 3 TURNS (TOTAL NUMBER OF CLOSED COILS), EXPRESSED AS THE NEAREST WHOLE NUMBER. SPIRAL REINFORCING BARS MAY HAVE DEFORMATION AND SHALL IN OTHER RESPECTS CONFORM TO ITEM 509. 1 1/2 CLOSED COILS SHALL BE PROVIDED AT THE ENDS OF EACH SPIRAL UNIT. FOUR STEEL CHANNEL, TEE OR ANGLE SPACERS, WEIGHING APPROXIMATELY 1.01 LB. PER LIN. FT. OF SPACERS, SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG THE PERIPHERY OF THE COIL. INCLUDE SPACERS WITH ITEM 511 FOR PAYMENT.

SPACERS:

CONCRETE SPACERS OR OTHER APPROVED NONCORROSIVE SPACING DEVICES SHALL BE USED AT SUFFICIENT INTERVALS (NEAR THE BOTTOM AND AT INTERVALS NOT EXCEEDING 10 FEET) TO INSURE CONCENTRIC SPACING FOR THE ENTIRE CAGE LENGTH. SPACERS SHALL BE CONSTRUCTED OF APPROVED MATERIAL EQUAL IN QUALITY AND DURABILITY TO THE CONCRETE SPECIFIED FOR THE SHAFT. THE SPACERS SHALL HAVE ADEQUATE DIMENSIONS TO ENSURE A MINIMUM 3 INCH CLEAR SPACE BETWEEN THE OUTSIDE OF THE REINFORCING CAGE AND THE DESIGN DIMENSION OF THE COLUMN.

PREPARED BY ms consultants, inc. CONSULTING ENGINEERS & PLANNERS 100 EAST PENGUIN, YOUNGWOOD, PA. 15697

REVIEWED G.T. DATE 1-04 STRUCTURE FILE NUMBER 7702132 L/ 7702167 R

DRAWN S.J.R. REVISED

DESIGNED S.J.R. CHECKED W.H.

REINFORCING STEEL LIST

BRIDGE NO. SUM-77-0159 L/R OVER GREENSBURG RD.

SUM-77-1.40

T:\DRAWING\08\06472\308\GREENSBURG\GRBG_RL1.DWG SC: 1=1 10-02-03

ABUTMENTS

MARK	NUMBER R.A. (N.B.)	NUMBER F.A. (N.B.)	NUMBER R.A. (S.B.)	NUMBER F.A. (S.B.)	TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	DIMENSIONS INC
A501	30	30	30	30	120	30'–0"	3755	ST.				
A502	76	82	76	76	310	17'–1"	5524	18	2'–7"	5'–8"		
A503	60		61		121	13'–5"	1693	2	5'–6"	2'–8"	5'–6"	
A504	61	64	62	62	249	7'–11"	2056	2	2'–9"	2'–8"	2'–9"	
A505	49	49	49	49	196	10'–1"	2061	18	2'–1"	2'–8"		
A506	49	49	49	49	196	6'–11"	1414	2	2'–8"	1'–10"	2'–8"	
A507	6	6	6	6	24	24'–0"	601	ST.				
A508	2				2	15'–11"	33	2	7'–0"	2'–2"	7'–0"	
A509	5	2	6		13	17'–3"	234	2	7'–8"	2'–2"	7'–8"	
A510	1		1		2	15'–1"	31	2	7'–8"	2'–2"	5'–6"	
A511	1		1		2	16'–0"	33	2	8'–3"	2'–2"	5'–10"	
A512	1				1	17'–11"	19	2	8'–0"	2'–2"	8'–0"	
A513	2				2	16'–5"	34	2	7'–3"	2'–2"	7'–3"	
A514	16	8	6	6	36	12'–8"	476	ST.				
A515	4	1	5		10	18'–5"	192	2	8'–3"	2'–2"	8'–3"	
A516	2			2	4	9'–8"	40	ST.				
A517	2		1	1	4	8'–2"	34	ST.				
A518	1	1			2	9'–4"	19	ST.				
A519	1				1	7'–10"	8	ST.				
A520	1		1	1	3	6'–9"	21	ST.				
A521	1		2	1	4	5'–3"	22	ST.				
A522	1				1	10'–2"	11	8	6'–2"	4'–0"	5 3/16"	
A523	1				1	8'–8"	9	8	6'–2"	2'–6"	5 3/16"	
A524	1		1		2	6'–7"	14	ST.				
A525	1				1	8'–1"	8	ST.				
A526	1				1	4'–0"	4	ST.				
A527	1				1	5'–6"	6	ST.				
A528	1				1	8'–9"	9	8	8'–0"	0'–9"	5"	
A529	1				1	10'–3"	11	8	8'–0"	2'–3"	5"	
A530	1	1			2	4'–7"	10	2	1'–4"	2'–2"	1'–4"	
A531	1 SER OF 4				1 SER OF 4	5'–3" TO 8'–9"	29	2	1'–8" TO 3'–5"	2'–2"	1'–8" TO 3'–5"	14"
A532	3	3	2	3	11	9'–5"	108	2	3'–9"	2'–2"	3'–9"	
A533	2	2	2	2	8	9'–9"	81	2	3'–9"	2'–6"	3'–9"	
A534	1	1		1	3	3'–5"	11	2	0'–9"	2'–2"	0'–9"	
A535	1 SER OF 6	1 SER OF 6			2 SER OF 6	4'–1" TO 9'–1"	82	2	1'–1" TO 3'–7"	2'–2"	1'–1" TO 3'–7"	12"
A536	6	6	6	6	24	11'–3"	282	18	2'–1"	3'–3"		
A537	6	6	6	6	24	7'–4"	184	2	2'–8"	2'–3"	2'–8"	
A538	7	7	7	7	28	8'–1"	236	18	2'–1"	1'–8"		
A539	6	8		8	22	15'–0"	344	ST.				
A540		2			2	16'–11"	35	2	7'–6"	2'–2"	7'–6"	
A541		7		6	13	19'–7"	266	2	8'–10"	2'–2"	8'–10"	
A542		1		1	2	16'–11"	35	2	6'–8"	2'–2"	8'–10"	
A543		1		1	2	16'–9"	35	2	6'–2"	2'–2"	8'–8"	
A544		5		4	9	19'–3"	181	2	8'–8"	2'–2"	8'–8"	
A545		63		61	124	14'–9"	1908	2	6'–2"	2'–8"	6'–2"	
A546		1	8		9	12'–6"	117	ST.				
A547		1			1	11'–0"	11	ST.				
A548		1	8		9	10'–9"	101	ST.				
A549		3			3	7'–5"	23	ST.				
A550		2			2	5'–11"	12	ST.				
A551		1			1	13'–0"	14	8	9'–0"	4'–0"	4 1/2"	
A552		1			1	11'–6"	12	8	9'–0"	2'–6"	4 1/2"	
A553		2		8	10	8'–11"	93	ST.				
A554		1			1	4'–5"	5	ST.				
A555		1			1	7'–10"	8	8	7'–1"	0'–9"	4 9/16"	
A556		1			1	9'–4"	10	8	7'–1"	2'–3"	4 9/16"	
A557		1 SER OF 5			1 SER OF 5	5'–3" TO 9'–1"	37	2	1'–8" TO 3'–7"	2'–2"	1'–8" TO 3'–7"	11 1/2"
A558		6			6	17'–0"	106	ST.				
A559			2		2	16'–1"	34	2	7'–1"	2'–2"	7'–1"	
A560			2		2	7'–4"	15	ST.				
A561			2		2	5'–10"	12	ST.				
A562			1		1	7'–7"	8	8	3'–7"	4'–0"	5 9/16"	
A563			1		1	6'–1"	6	8	3'–7"	2'–6"	5 9/16"	
A564			1		1	7'–7"	8	ST.				
A565			1		1	9'–1"	9	ST.				
A566			1		1	3'–11"	4	2	1'–0"	2'–2"	1'–0"	
A567			1		1	3'–9"	4	ST.				
A568			1		1	8'–1"	8	8	7'–4"	0'–9"	4 7/8"	
A569			1		1	9'–7"	10	8	7'–4"	2'–3"	4 7/8"	

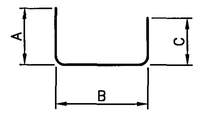
ABUTMENTS (CONT')

MARK	NUMBER R.A. (N.B.)	NUMBER F.A. (N.B.)	NUMBER R.A. (S.B.)	NUMBER F.A. (S.B.)	TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	DIMENSIONS INC
A570			1		1	6'–5"	7	2	2'–3"	2'–2"	2'–3"	
A571			1 SER OF 3		1 SER OF 3	7'–1" TO 9'–5"	26	2	2'–7" TO 3'–9"	2'–2"	2'–7" TO 3'–9"	14"
A572			1 SER OF 5		1 SER OF 5	4'–5" TO 8'–7"	34	2	1'–3" TO 3'–4"	2'–2"	1'–3" TO 3'–4"	12 1/2"
A573				2	2	17'–1"	36	2	7'–7"	2'–2"	7'–7"	
A574				1	1	18'–11"	20	2	8'–6"	2'–2"	8'–6"	
A575				1	1	11'–2"	12	ST.				
A576				1	1	11'–9"	12	8	7'–9"	4'–0"	5 1/8"	
A577				1	1	10'–3"	11	8	7'–9"	2'–6"	5 1/8"	
A578				2	2	4'–8"	10	ST.				
A579				2	2	6'–2"	13	ST.				
A580				1	1	3'–6"	4	ST.				
A581				1	1	5'–0"	5	ST.				
A582				1	1	5'–0"	5	8	4'–3"	0'–9"	5 3/8"	
A583				1	1	6'–6"	7	8	4'–3"	2'–3"	5 3/8"	
A584				1 SER OF 5	1 SER OF 5	3'–11" TO 8'–7"	33	2	1'–0" TO 3'–4"	2'–2"	1'–0" TO 3'–4"	14"
A585				1 SER OF 3	1 SER OF 3	6'–7" TO 9'–1"	25	2	2'–4" TO 3'–7"	2'–2"	2'–4" TO 3'–7"	15"
A586				1	1	5'–11"	6	2	2'–0"	2'–2"	2'–0"	
A801	60	60	60	60	240	30'–0"	19,224	ST.				
A802	4				4	24'–0"	256	ST.				
A803	43	42	42	42	169	5'–10"	2632	17	3'–6"			
A804		4			4	26'–0"	278	ST.				
A805			4	4	8	22'–0"	470	ST.				
						TOTAL = 45,992 LB.						

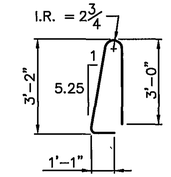
APPROACH SLAB BARRIER

MARK	NUMBER R.A. (N.B.)	NUMBER R.A. (S.B.)	TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	DIMENSIONS INC.
AS501	7	7	14	24'–7"	359	ST.				
AS502	26	26	52	7'–5"	402	4				
AS601	26	26	52	3'–0"	234	2	2'–0"	1'–2"	0	
AS602	26	26	52	3'–10"	299	5	2'–0"	1'–1"	1'–1"	
				TOTAL = 1294 LB.						

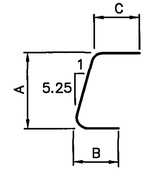
NOTE:
1. FOR REINFORCING NOTES, SEE SHEET 36/37



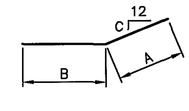
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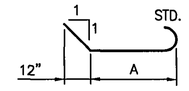
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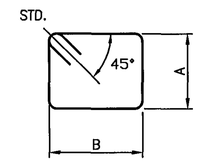
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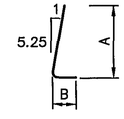
TYPE 8



TYPE 17



TYPE 18



TYPE 22

PREPARED BY ms consultants, inc. CONSULTING ENGINEERS & PLANNERS 333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

REVIEWED G.T.	DATE 1–04	STRUCTURE FILE NUMBER 7702132 L/ 7702167 R
DRAWN S.J.R.	REVISED	
DESIGNED S.J.R.	CHECKED W.H.	

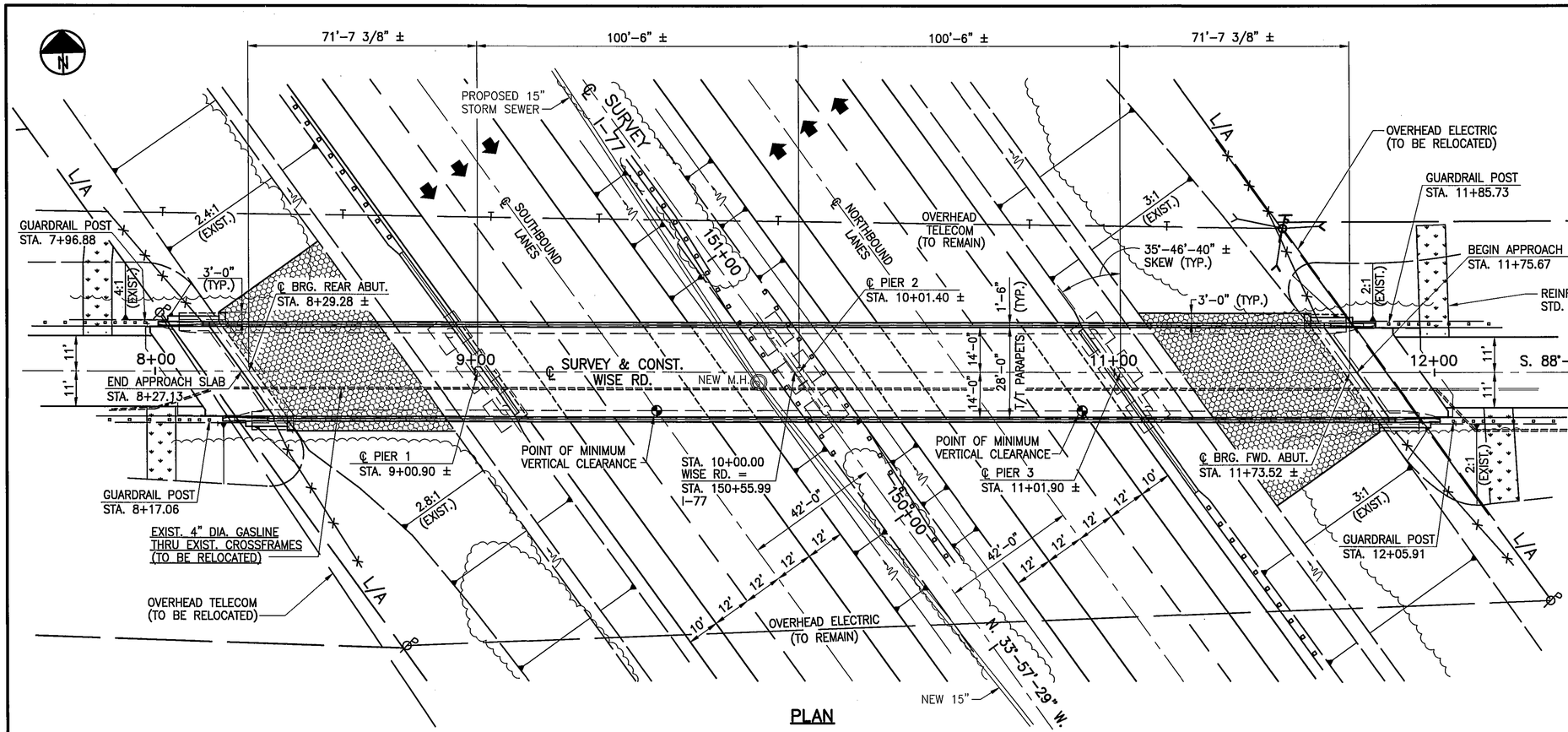
REINFORCING STEEL LIST
BRIDGE NO. SUM–77–0159 L/R
OVER GREENSBURG RD.

SUM–77–1.40

37 / 37

333
381

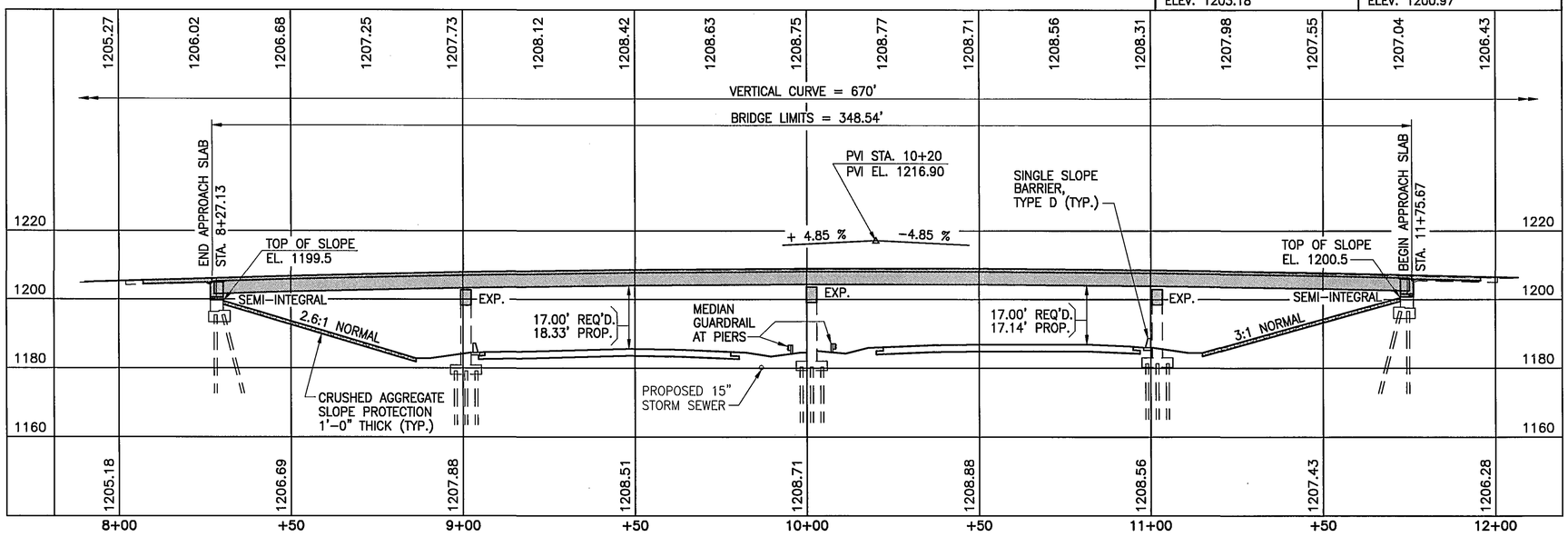
T:\DRAWING\08\06472\308\GREENSBURG\GRBG_RL2.DWG SC: 1=1 10–02–03



PLAN

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTIONS.

BENCH MARK No. 81	BENCH MARK No. 82
TOP OF BOAT SPIKE IN GATE POST STA. 8+13, 12.58' Rt. ELEV. 1203.18	TOP OF BOAT SPIKE IN POWER POLE STA. 12+07, 12.60' Rt. ELEV. 1200.97



PROFILE ALONG ℄ SURVEY & CONSTRUCTION

EXISTING STRUCTURE

TYPE: CONTINUOUS A7 STEEL GIRDERS WITH REINFORCED CONCRETE DECK & SUBSTRUCTURE.

SPANS: 71'-0"±, 100'-6"±, 100'-6"±, 71'-0"± C/C BEARINGS

ROADWAY: 24'-0" ± F/F OF CURBS

DESIGN LOADING: C.F. 30 (57)

SKEW: 35°-46'-40" ± R.F.

WEARING SURFACE: CONCRETE OVERLAY

ALIGNMENT: TANGENT

APPROACH SLABS: SPECIAL 25'-0" LONG

CROWN: 3/16" PER FT.

YEAR BUILT: 1964

CONDITION: FUNCTIONALLY OBSOLETE

DISPOSITION: DECK & GIRDERS TO BE REPLACED

STRUCTURE FILE NUMBER: 7702221

PROPOSED STRUCTURE

PROPOSED WORK: NEW SUPERSTRUCTURE, REMOVE BACKWALLS, PROVIDE NEW CONC. BEAM SEATS WITH NEW BEARINGS, PATCH AND SEAL SUBSTRUCTURES, AND PROVIDE NEW APPROACH SLABS.

TYPE: CONTINUOUS COMPOSITE STEEL GIRDER (A588) WITH REINFORCED CONCRETE DECK ON MODIFIED SEMI-INTEGRAL ABUTMENTS AND PIERS

SPANS: 71'-7 3/8", 100'-6"±, 100'-6"±, 71'-7 3/8" C/C BEARINGS

ROADWAY: 28'-0" TOE TO TOE OF PARAPETS

DESIGN LOADING: HS25-44 (CASE II) AND THE ALTERNATE MILITARY LOADING

SKEW: 35°-46'-40" ± R.F.

WEARING SURFACE: MONOLITHIC CONCRETE

ALIGNMENT: TANGENT

APPROACH SLABS: AS-1-81 (20'-0" LONG)

CROWN: 0.016' PER FT.

AVERAGE DAILY TRAFFIC: 1940 (2004) 2280 (2024)

AVERAGE DAILY TRUCK TRAFFIC: 58 (2004) 68 (2024)

COORDINATES: LAT. N 40°56'38", LONG. W81°26'45"

STRUCTURE FILE NUMBER: 7702221

PREPARED BY ms consultants, inc. CONSULTING ENGINEERS & PLANNERS 333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

DESIGNED S.J.R. | DRAWN S.J.R. | REVIEWED G.T. 1-04 | DATE | CHECKED W.H. | REVISED | STRUCTURE FILE NUMBER 7702221

SUMMIT COUNTY
STA. 8+27.13
STA. 11+75.67

SITE PLAN
BRIDGE NO. SUM-77-0284
UNDER WISE RD.

SUM-77-1.40

1 / 18

334
381

T:\DRAWING\08\06472\308\WISE\WISE_SP1 SD: 1=20 10-02-03

COMPUTED BY : W.E.R. DATE : 10–03
CHECKED BY : S.J.R. DATE : 1–04

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	IM FUNDING TOTAL	UNIT	DESCRIPTION	ABUTS.	PIERS	SUPER.	GENERAL	NOTE REF. SHEET NO.
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	G1
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING				LUMP	
503	21100	45	CU. YD.	UNCLASSIFIED EXCAVATION	45				
509	10000	121,862	POUND	EPOXY COATED REINFORCING STEEL *	11,352	10,734	99,776		
509	20001	100	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN *				100	G2
510	10000	232	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	232				
511	41000	49	CU. YD.	CLASS C CONCRETE, PIER ABOVE FOOTINGS		49			
511	43500	49	CU. YD.	CLASS C CONCRETE, ABUTMENT INCLUDING FOOTING	49				
511	50100	110	CU. YD.	CLASS HP CONCRETE, BRIDGE DECK (PARAPET)			110		
511	52000	LUMP		CLASS HP CONCRETE, TEST SLAB			LUMP		
513	10080	LUMP		STRUCTURAL STEEL MEMBERS, LEVEL 4, (A588/A709 GRADE 50W) *			LUMP		
513	20000	2760	EACH	WELDED STUD SHEAR CONNECTORS			2760		
513	95020	LUMP		STRUCTURAL STEEL, MISC.: PIPE SUPPORT BRACKETS ⊕			LUMP		G3
514	00060	3814	SQ. FT.	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT **			3814		G3
514	00066	3814	SQ. FT.	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT **			3814		G3
514	10000	4	EACH	FINAL INSPECTION REPAIR **				4	
516	13600	17	SQ. FT.	1" PREFORMED EXPANSION JOINT FILLER	17				
516	13900	130	SQ. FT.	2" PREFORMED EXPANSION JOINT FILLER	130				
516	14021	96	FT.	SEMI–INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN			96		G3
516	44100	4	EACH	ELASTOMERIC BEARING (14" X 22" X 2.23") WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (15" X 23" X 2.13")		4			
516	44100	8	EACH	ELASTOMERIC BEARING (13.5" X 21" X 2.60") WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (14.5" X 22" X 2.25")		8			
516	44200	8	EACH	ELASTOMERIC BEARING (13" X 17" X 3.81") WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (14" X 18" X 1.50")	8				
518	21200	57	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC	57				
518	40000	84	FT.	6" PERFORATED CORRUGATED PLASTIC PIPE	84				
518	40010	40	FT.	6" NON–PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	40				
519	11100	31	SQ. FT.	PATCHING CONCRETE STRUCTURE	2	29			
SPECIAL	51912600	9	FT.	CONCRETE REPAIR BY EPOXY INJECTION ⊙	9				
526	15001	136	SQ. YD.	REINFORCED CONCRETE APPROACH SLABS (T=13"), AS PER PLAN				136	8
601	20000	566	SQ. YD.	CRUSHED AGGREGATE SLOPE PROTECTION				566	
SPECIAL	69072000	LUMP		ASBESTOS NOTIFICATION				LUMP	G1
SPECIAL	60739900	694	FT.	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC			694		G3
864	10100	1201	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY–URETHANE)	133 □	274	794		G3
894	10000	361	CU. YD.	HIGH PERFORMANCE CONCRETE, FOR BRIDGE DECK WITH WARRANTY			361		

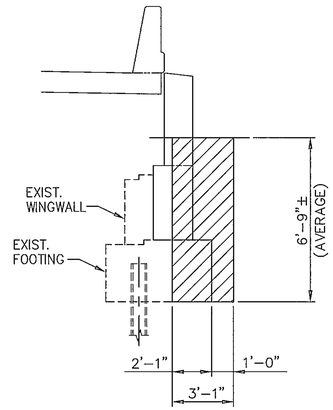
□ INCLUDES APPROACH SLAB BARRIERS

⊙ SEE PROPOSAL NOTE

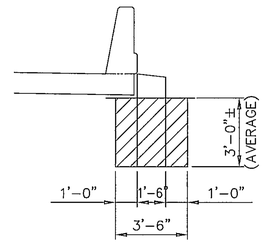
⊕ ITEMS TO BE PAID 100% BY THE DOMINION EAST OHIO GAS COMPANY TO THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION

* SEE PROPOSAL NOTE 525

** SEE PROPOSAL NOTE 891



TYPICAL SECTION AT EXISTING WINGWALL
(AVG. LENGTH = 12.71'±)



TYPICAL SECTION AT NEW WINGWALL OVERHANG
(AVG. LENGTH = 3.81')

LIMITS OF EXCAVATION

(ITEM 503, UNCLASSIFIED EXCAVATION)
(TYPICAL 4 PLACES)

PROPOSED WORK

1. SET TRAFFIC CONTROL DEVICES AND PLACE DETOUR INTO EFFECT.
2. INSTALL FALSEDECKING.
3. REMOVE EXISTING DECK, SAFETY CURBS, STRUCTURAL STEEL, BEARINGS, APPROACH SLABS, PIER CAPS AND PORTIONS OF ABUTMENTS AS NOTED ON THE PLANS.
4. CONSTRUCT NEW PIER CAP AND ABUTMENT CONCRETE.
5. PLACE CRUSHED AGGREGATE SLOPE PROTECTION.
6. INSTALL NEW ELASTOMERIC BEARINGS, STEEL GIRDERS, INTERMEDIATE CROSSFRAMES AND DIAPHRAGM CONCRETE.
7. PLACE CONCRETE DECK, PARAPETS AND APPROACH SLABS.
8. CLEAN AND REPAIR THE DESIGNATED CRACKS BY EPOXY INJECTION AND PATCH CONCRETE SURFACES AS NOTED ON THE PLANS.
9. SEAL CONCRETE SURFACES.
10. AFTER THE WORK IS COMPLETE, OPEN THE STRUCTURE TO TRAFFIC.

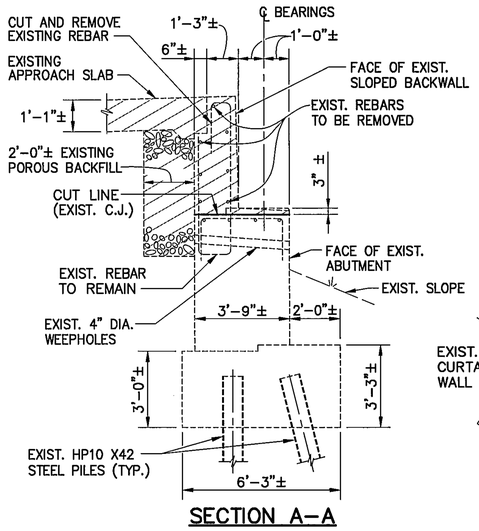
PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

REVIEWED G.T. DATE 1–04
STRUCTURE FILE NUMBER 7702221
DRAWN S.J.R. REVISED
DESIGNED S.J.R. CHECKED W.H.

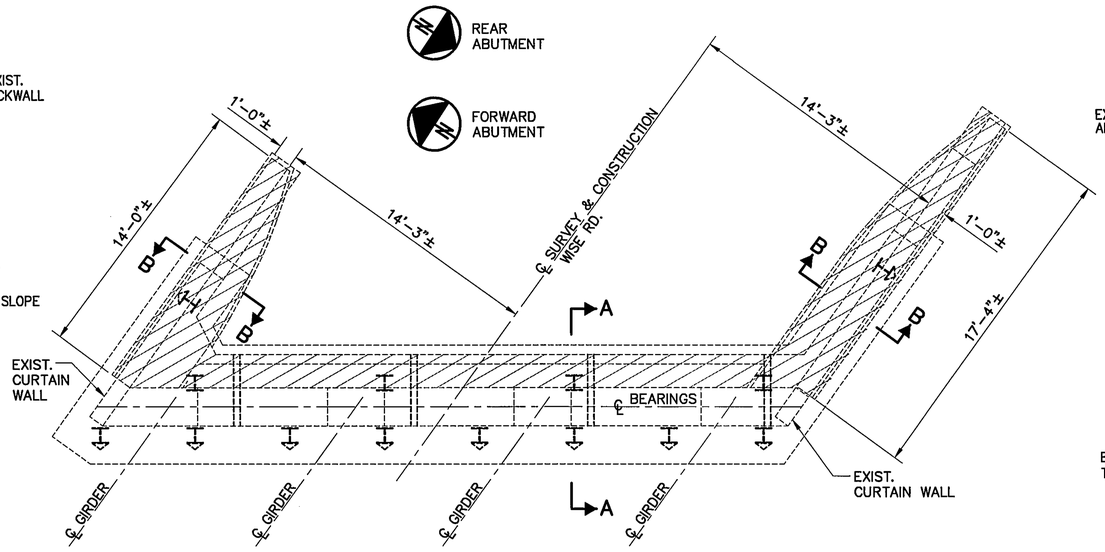
ESTIMATED QUANTITIES
BRIDGE NO. SUM–77–0284
UNDER WISE RD.

SUM–77–1.40

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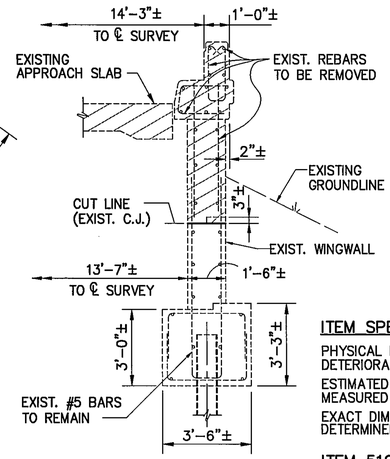


SECTION A–A



PLAN

(APPROACH SLAB NOT SHOWN)



SECTION B–B

KEY

- ITEM 202–PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN
- AREA TO BE PATCHED PER ITEM 519
- CRACK REPAIR PER ITEM SPECIAL

CRACKS:

- (A) – 0.002" WIDE & 7" LONG
- (B) – 0.006" WIDE & 16" LONG
- (C) – 0.002" WIDE & 3" LONG
- (D) – 0.002" WIDE & 6" LONG
- (E) – 0.014" WIDE & 9" LONG
- (F) – 0.002" WIDE & 10" LONG VERTICAL – 0.002" WIDE & 16" LONG HORIZONTAL
- (G) – 0.006" WIDE & 3" LONG

ITEM SPECIAL– CRACK REPAIR BY EPOXY INJECTION

PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN JUNE OF 2003.

ESTIMATED QUANTITIES HAVE BEEN INCREASED BY 50% OVER MEASURED QUANTITIES TO ALLOW FOR ADDITIONAL DETERIORATION.

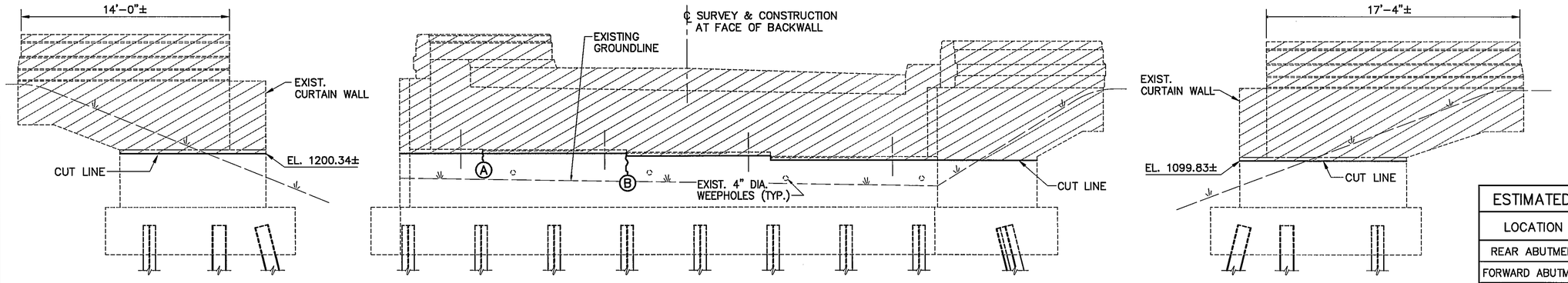
EXACT DIMENSIONS AND LOCATIONS OF CRACK REPAIRS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.

ITEM 519–PATCHING CONCRETE STRUCTURES

PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN JUNE OF 2003.

ESTIMATED QUANTITIES HAVE BEEN INCREASED BY 50% OVER MEASURED QUANTITIES TO ALLOW FOR ADDITIONAL DETERIORATION.

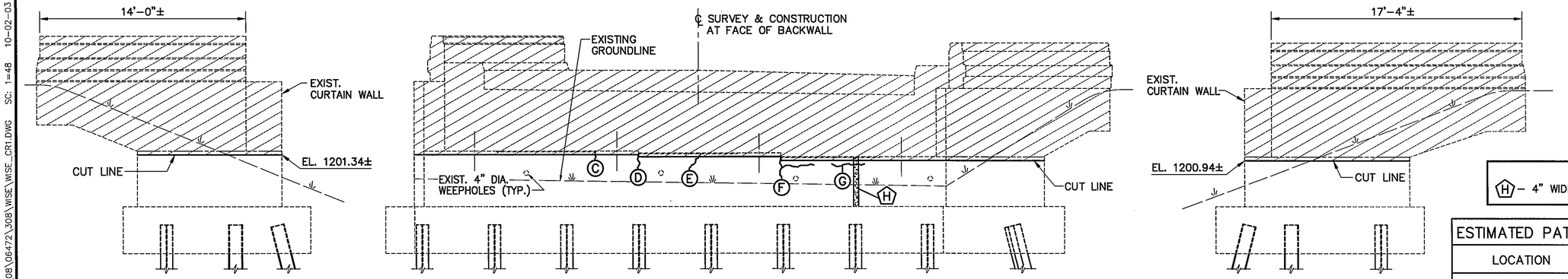
EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.



REAR ABUTMENT ELEVATION

ESTIMATED CRACK REPAIRS (FEET)		
LOCATION	MEASURED QUANTITIES	ESTIMATED QUANTITIES
REAR ABUTMENT	1.9	2.9
FORWARD ABUTMENT	3.9	5.9
TOTAL	5.8	9

THE ABOVE ESTIMATED QUANTITIES ARE CARRIED TO THE TABLE ON SHEET 2/18



FORWARD ABUTMENT ELEVATION

PATCHING:

- (H) – 4" WIDE & 41" HIGH DELAMINATED

ESTIMATED PATCHING QUANTITIES (SQ. FT.)		
LOCATION	MEASURED QUANTITIES	ESTIMATED QUANTITIES
FORWARD ABUTMENT	1.14	2

THE ABOVE ESTIMATED QUANTITIES ARE CARRIED TO THE TABLE ON SHEET 2/18

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

REVIEWED	DATE
CT	1-04

STRUCTURE FILE NUMBER 7702221

DRAWN	REVISED
LAW	

DESIGNED	CHECKED
LAW	WH

ABUTMENT REMOVAL DETAILS

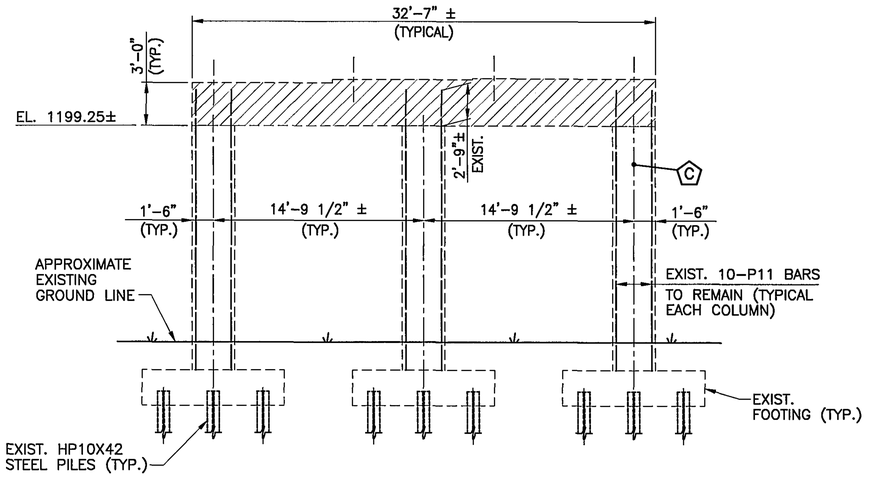
BRIDGE NO. SUM 77-0284
UNDER WISE RD.

SUM-77-1.40

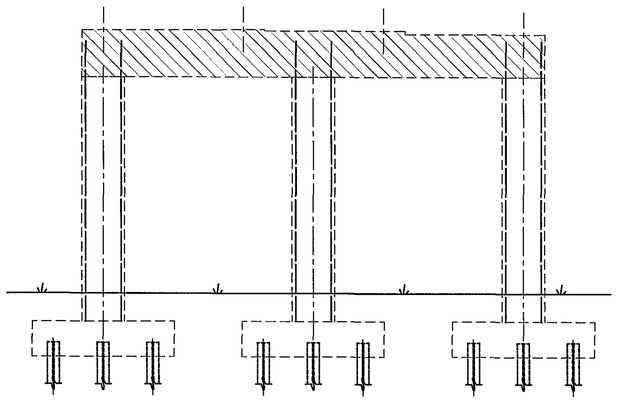
3 / 18

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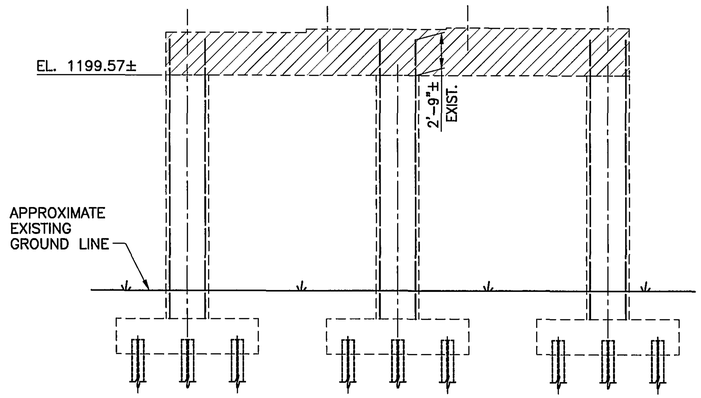


ELEVATION LOOKING EAST

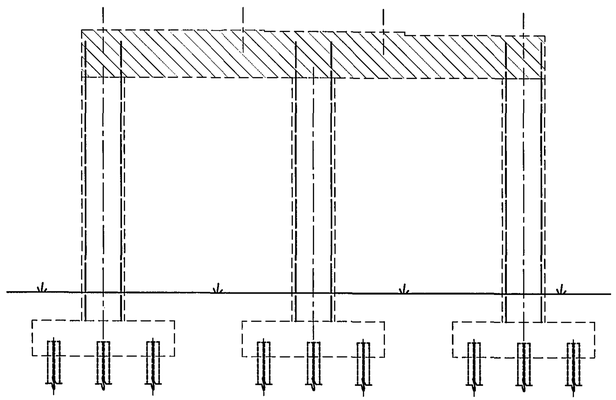


ELEVATION LOOKING WEST

PIER 3

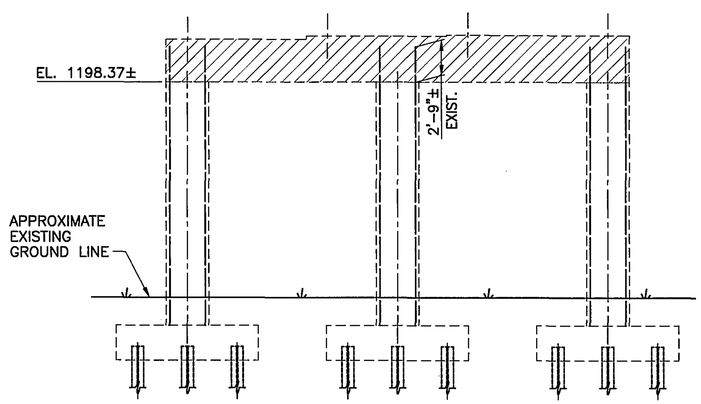


ELEVATION LOOKING EAST

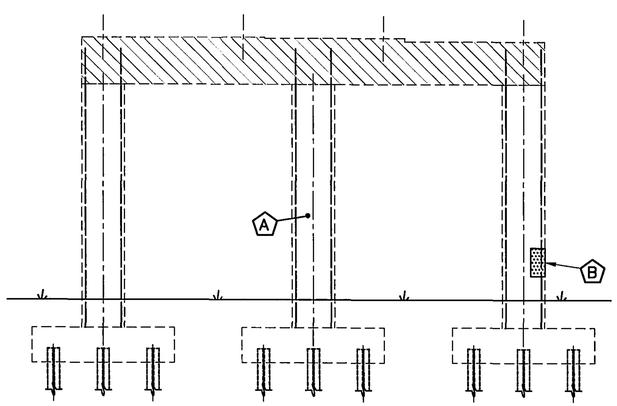


ELEVATION LOOKING WEST

PIER 2



ELEVATION LOOKING EAST



ELEVATION LOOKING WEST

PIER 1

PATCHING:

- (A) 24" X 24" SPALLED AREA = 4.00 SQ. FT.
- (B) 3" DIA. POP-OUT – AREA = 0.05 SQ. FT.
- (C) 2" DIA. POP-OUT – AREA = 0.03 SQ. FT.

KEY

- ITEM 202–PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN
- AREA TO BE PATCHED PER ITEM 519

ITEM 519–PATCHING CONCRETE STRUCTURES

PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN JUNE OF 2003.

ESTIMATED QUANTITIES HAVE BEEN INCREASED BY 50% OVER MEASURED QUANTITIES TO ALLOW FOR ADDITIONAL DETERIORATION.

EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.

ESTIMATED PATCHING QUANTITIES (SQ. FEET)

LOCATION	MEASURED QUANTITIES	POP-OUT QUANTITIES	ESTIMATED QUANTITIES
PIER 1	4.05	5	13.58
PIER 2	0	5	7.50
PIER 3	0.03	5	7.55
TOTAL	4.08	15	29

THE ABOVE ESTIMATED QUANTITIES ARE CARRIED TO THE TABLE ON SHEET 2/18

NOTES:

DUE TO THE LARGE QUANTITY OF POP-OUTS ON THE FACE OF EXISTING PIER COLUMNS, THE CONTRACTOR SHALL LOCATE ALL POP-OUTS AS DIRECTED BY THE ENGINEER.

A QUANTITY OF 5 SQ. FT. FOR EACH PIER HAS BEEN INCLUDED IN THE ESTIMATED PATCHING QUANTITIES.

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

REVIEWED	DATE
G.T.	1-04

STRUCTURE FILE NUMBER 7702221

DRAWN	REVISED
S.J.R.	

DESIGNED	CHECKED
S.J.R.	W.H.

PIER REMOVAL AND PATCHING DETAILS

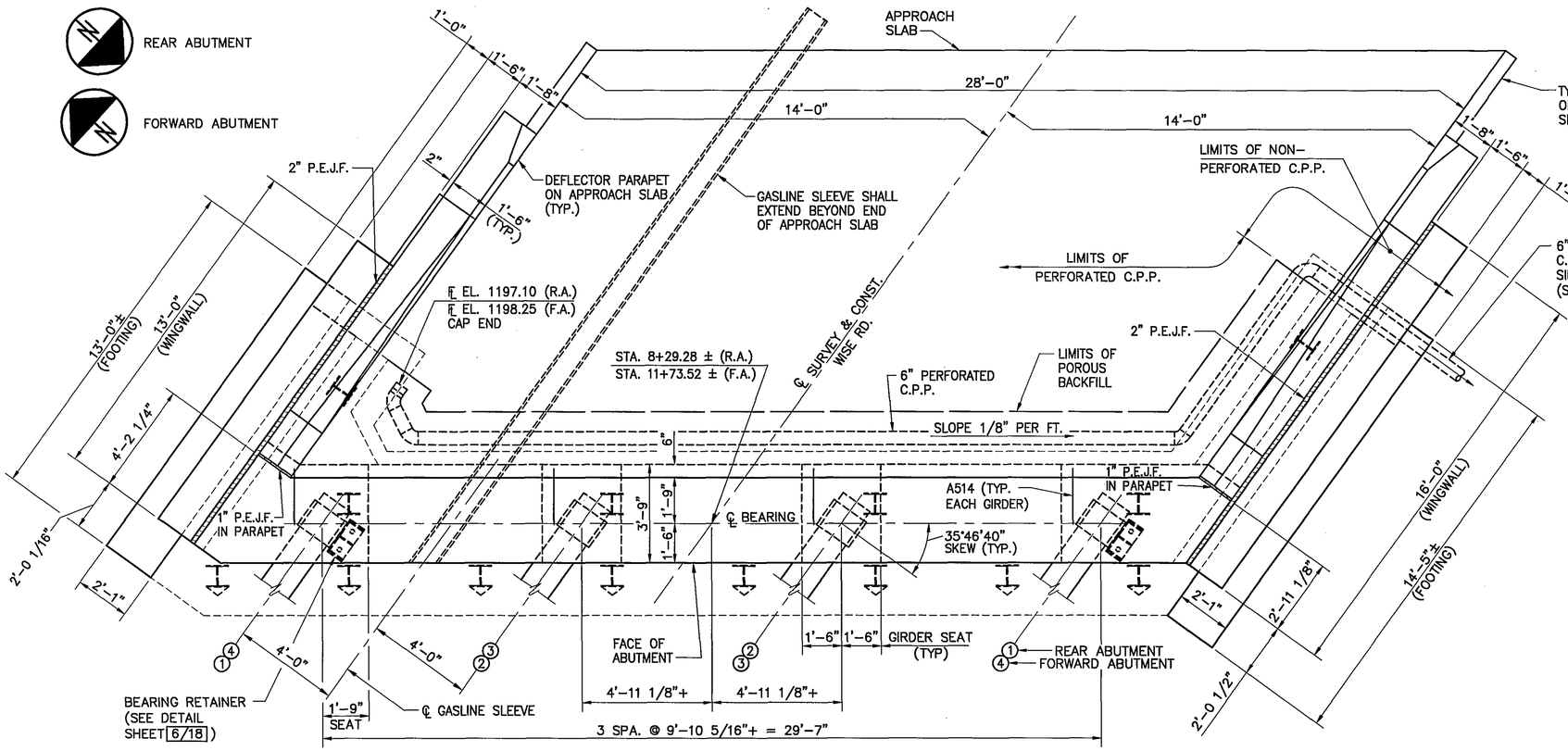
BRIDGE NO. SUM-77-0284
UNDER WISE RD.

SUM-77-1.40

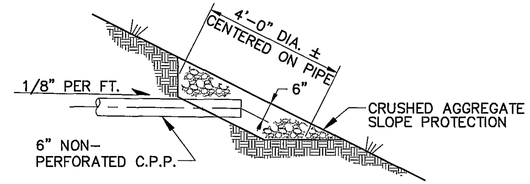
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REAR ABUTMENT

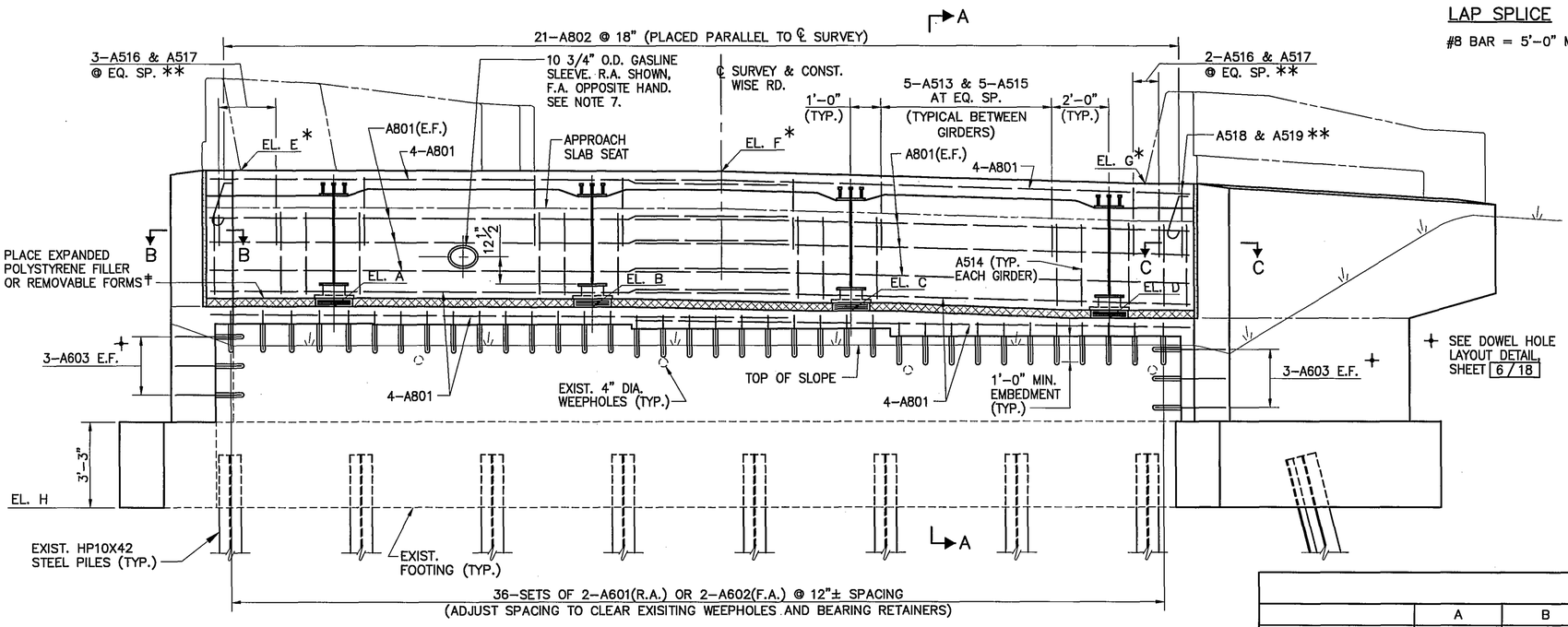
FORWARD ABUTMENT



PLAN



DRAIN PIPE OUTLET DETAIL



ELEVATION

LAP SPLICE

#8 BAR = 5'-0" MINIMUM

LEGEND

* ELEVATIONS ARE GIVEN AT ℄ BEARINGS

** PLACED PARALLEL TO GIRDERS

† INCLUDE WITH ITEM 894, HIGH PERFORMANCE CONCRETE, FOR BRIDGE DECK WITH WARRANTY

NOTES:

1. 3'-0" WIDE NEOPRENE MATERIAL SHALL BE PAID PER THE LINEAR FOOT PRICE BID FOR ITEM 516, SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.
2. POROUS BACKFILL WITH FILTER FABRIC, 2'-0" THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.
3. THE CONTRACTOR SHALL INSPECT AND CLEAN OUT ALL EXISTING WEEPHOLES AND ADD BAGGED AGGREGATE. INCLUDE WITH POROUS BACKFILL FOR PAYMENT.
4. FOR SECTION A-A AND FOUNDATION LAYOUT PLAN, SEE SHEET 6/18
5. FOR WINGWALL ELEVATIONS AND SECTIONS B-B AND C-C, SEE SHEET 7/18
6. FOR APPROACH SLAB DETAILS, SEE SHEET 8/18
7. DOMINION EAST OHIO WILL FURNISH 10 3/4" O.D. SLEEVES TO BE INSTALLED BY THE CONTRACTOR THROUGH THE SUPERSTRUCTURE DIAPHRAGMS AT EACH ABUTMENT. THE SLEEVES SHALL CONTINUE UNDER AND TO THE ENDS OF THE APPROACH SLABS. THE CENTERLINE OF THE SLEEVE SHALL BE CONCENTRIC WITH THE PROPOSED CENTERLINE OF THE PIPE ON THE BRIDGE.

ELEVATION TABLE

	A	B	C	D	E	F	G	H
REAR ABUTMENT	1201.00	1200.97	1200.81	1200.52	1206.19	1206.14	1205.63	1193.34±
FORWARD ABUTMENT	1201.88	1201.88	1201.75	1201.49	1207.06	1207.07	1206.61	1194.49±

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ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
330 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
LAW	LAW	GT	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
WH		7702221	

ABUTMENT PLAN AND ELEVATION

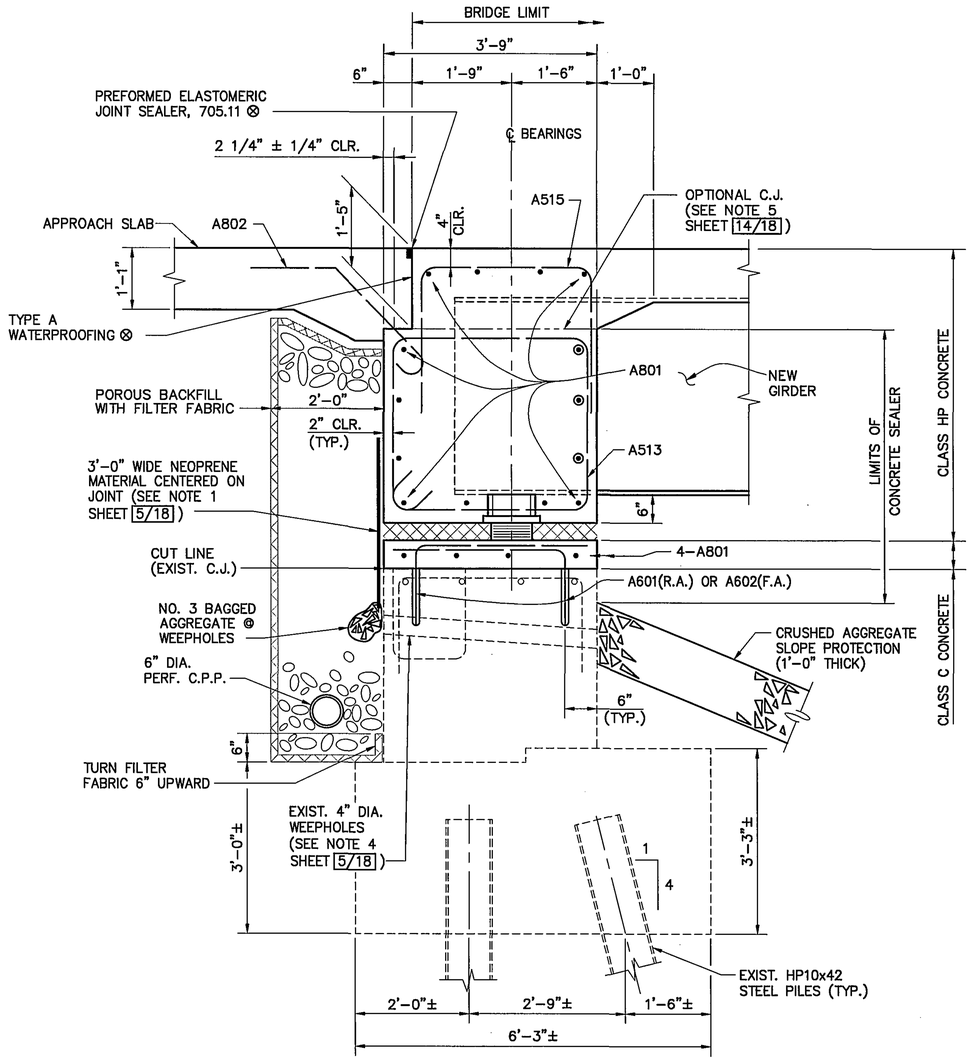
BRIDGE NO. SUM 77-0284
OVER
UNDER WISE RD.

SUM-77-1.40

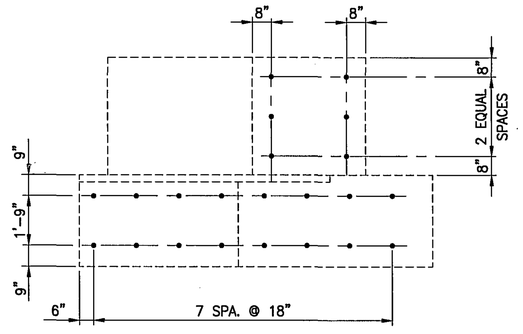
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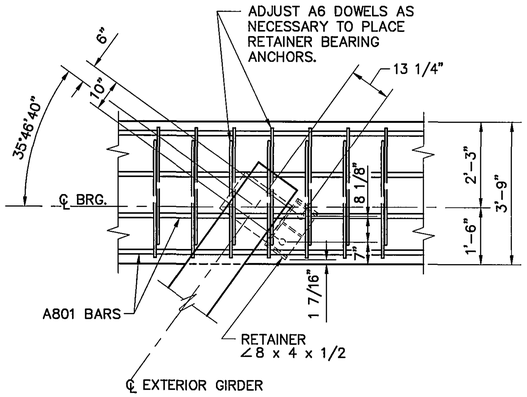


SECTION A-A



DOWEL HOLE LAYOUT DETAIL

R.A. RIGHT & F.A. LEFT SHOWN
R.A. LEFT & F.A. RIGHT OPPOSITE HAND



BRIDGE SEAT REINFORCING, SETTING ANCHORS: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.

BEARING RETAINER DETAIL

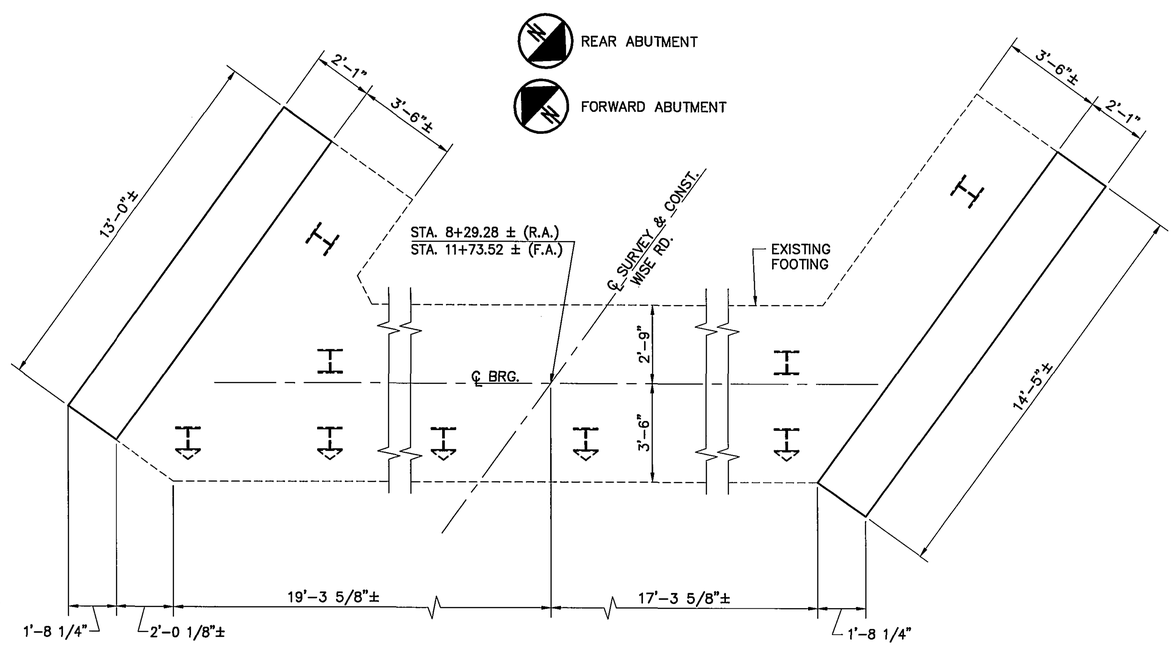
FOR ADDITIONAL BEARING RETAINER DETAILS, SEE STANDARD DRAWING SICD-1-96

LEGEND

⊗ INCLUDE WITH APPROACH SLAB FOR PAYMENT

NOTE

FOR ADDITIONAL NOTES SEE SHEET 5/18.



FOUNDATION PLAN

(R.A.)

(F.A.)

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WH		7702221	

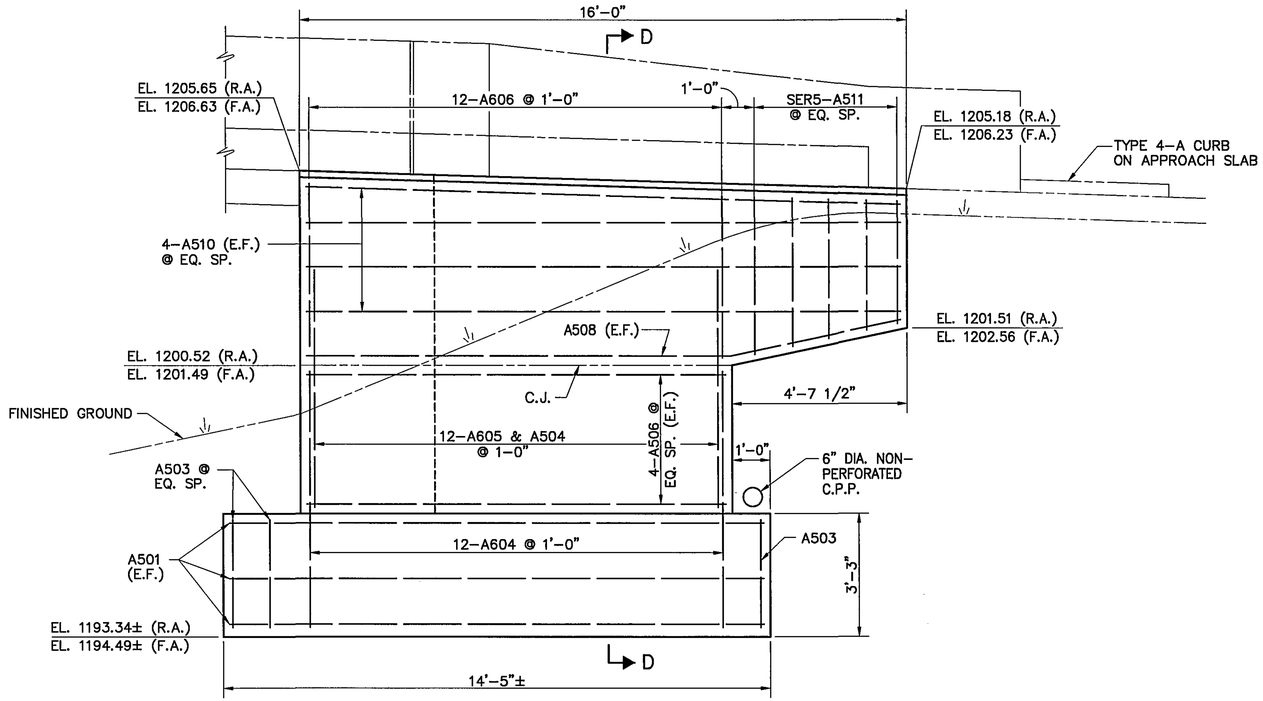
ABUTMENT SECTIONS & DETAILS
BRIDGE NO. SUM 77-0284
UNDER WISE RD.

SUM-77-1.40

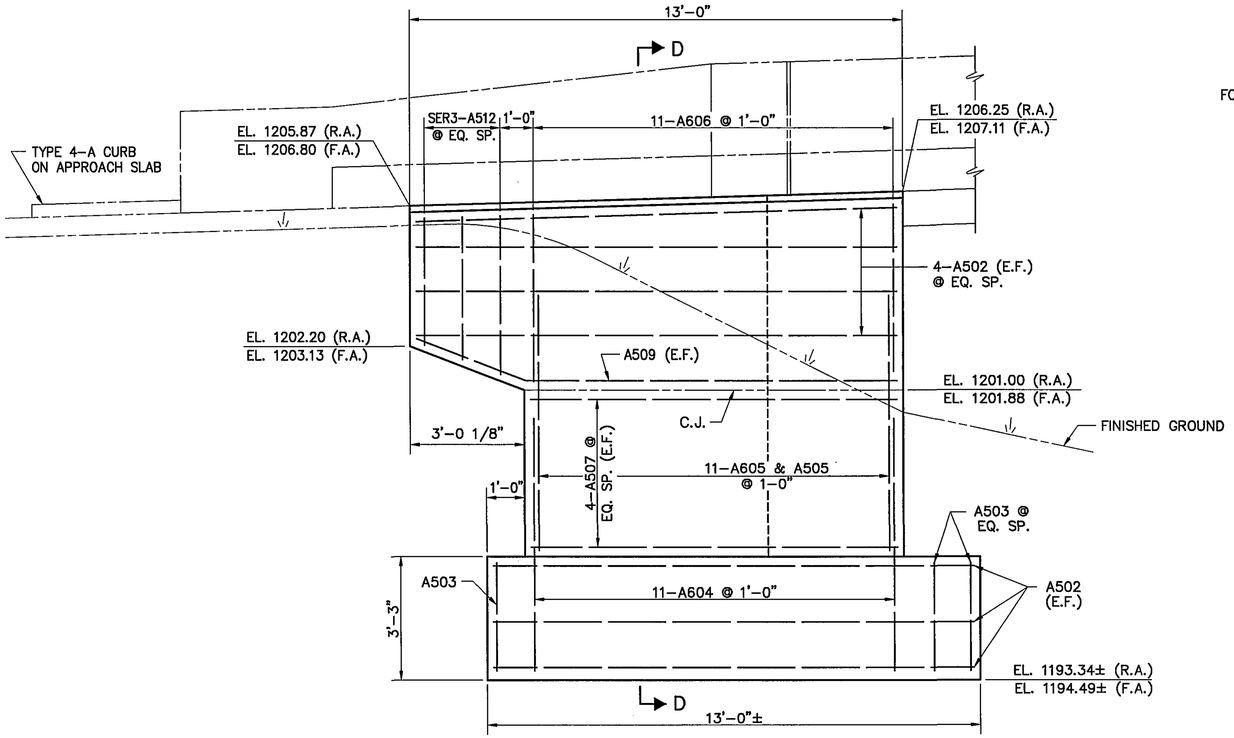
6 / 18

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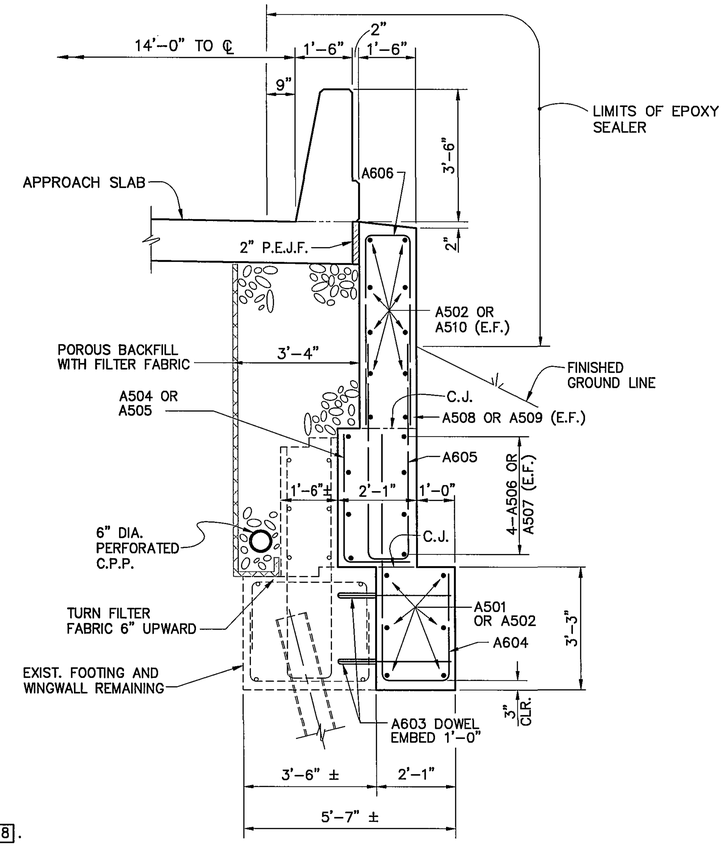
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LEFT REAR ABUTMENT WINGWALL
RIGHT FORWARD ABUTMENT WINGWALL



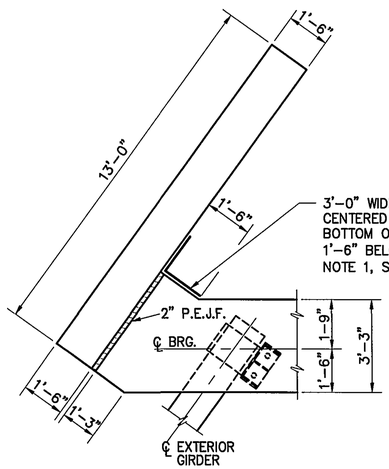
RIGHT REAR ABUTMENT WINGWALL
LEFT FORWARD ABUTMENT WINGWALL



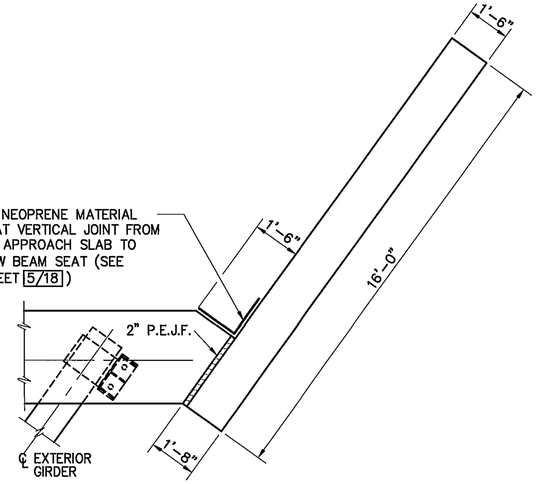
SECTION D-D

NOTE

FOR ADDITIONAL NOTES SEE SHEET 5/18.



SECTION B-B



SECTION C-C

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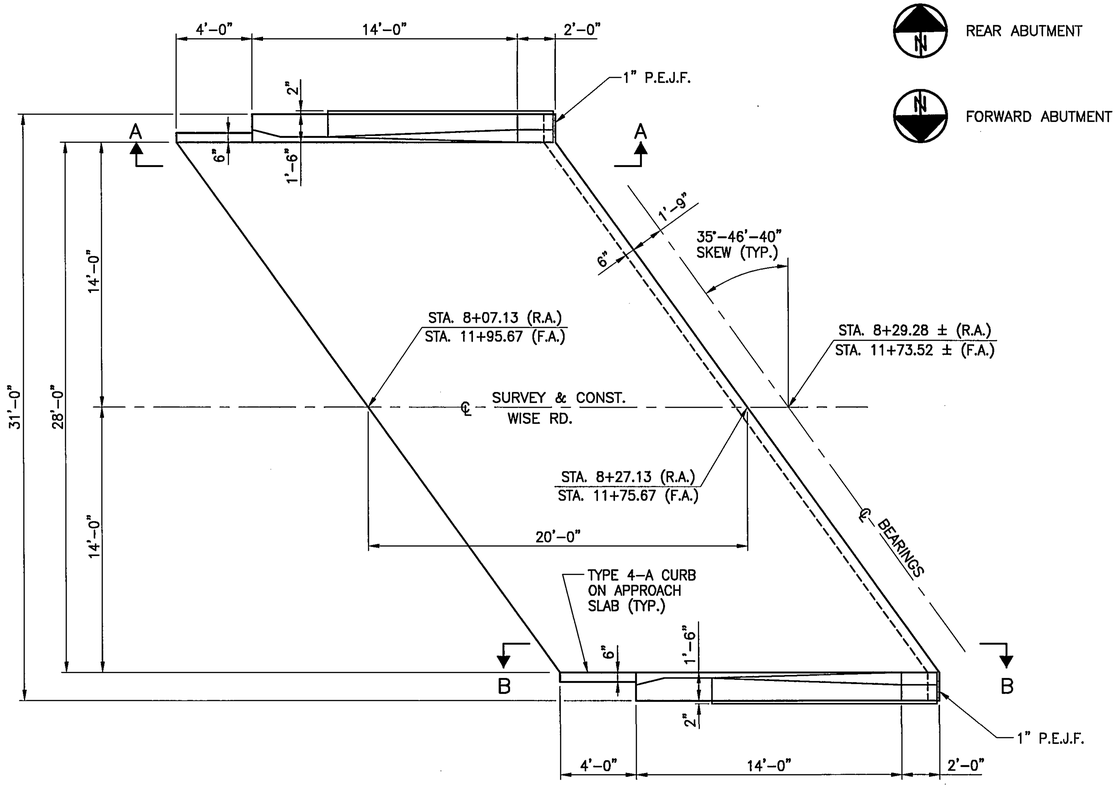
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LAW	LAW	GT	10-03
CHECKED	REVISED	STRUCTURE FILE NUMBER	
WH		7702221	

ABUTMENT SECTIONS & DETAILS
BRIDGE NO. SUM 77-0284
UNDER WISE RD.

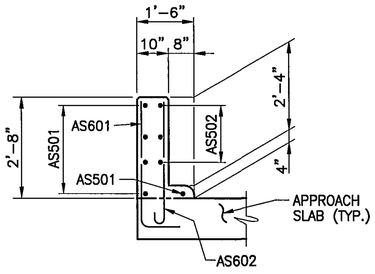
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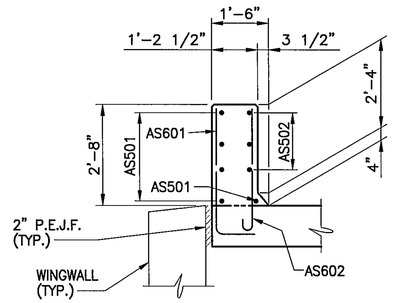
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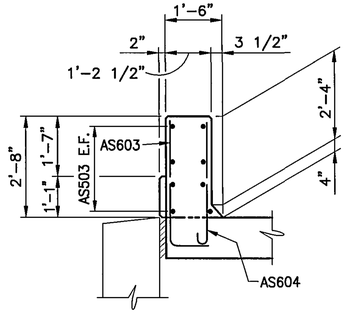
PLAN



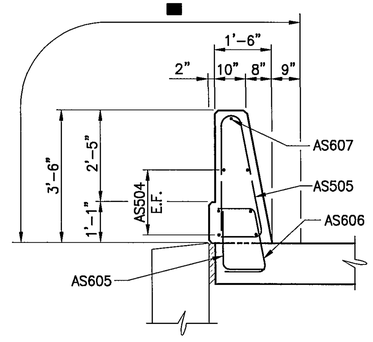
SECTION C-C



SECTION D-D

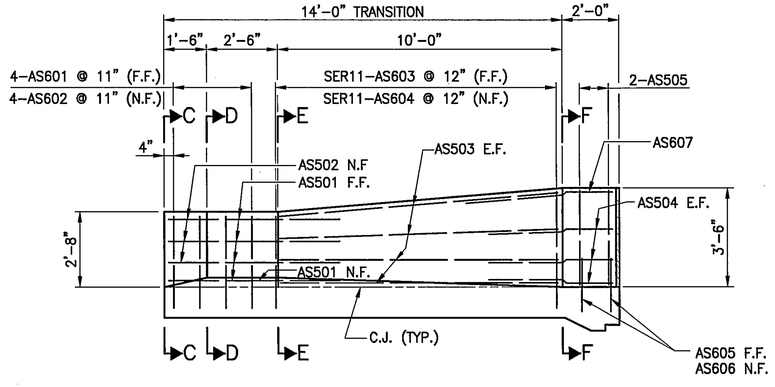


SECTION E-E



SECTION F-F

■ DENOTES SEALING OF CONCRETE SURFACES PER ITEM 864



VIEW A-A (AS SHOWN)
VIEW B-B (OPPOSITE HAND)

NOTES:

1. CONCRETE FOR APPROACH SLABS SHALL BE PER ITEM 511, CLASS HP, CONCRETE BRIDGE DECK. CONCRETE FOR PARAPETS ON APPROACH SLABS SHALL BE PER ITEM 511, CLASS HP, CONCRETE BRIDGE DECK (PARAPET).
2. FOR APPROACH SLAB BARRIER REINFORCEMENT SCHEDULE, SEE SHEET 18/18 . FOR APPROACH SLAB REINFORCEMENT, SEE STANDARD BRIDGE DRAWING AS-1-81.
3. FOR ADDITIONAL APPROACH SLAB DETAILS, REFER TO STANDARD BRIDGE DRAWING AS-1-81.
4. PAYMENT FOR ALL BARRIERS ON APPROACH SLABS SHALL BE INCLUDED WITH ITEM 526, APPROACH SLABS, T=13", AS PER PLAN.

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W.H.		7702221	

APPROACH SLAB DETAILS

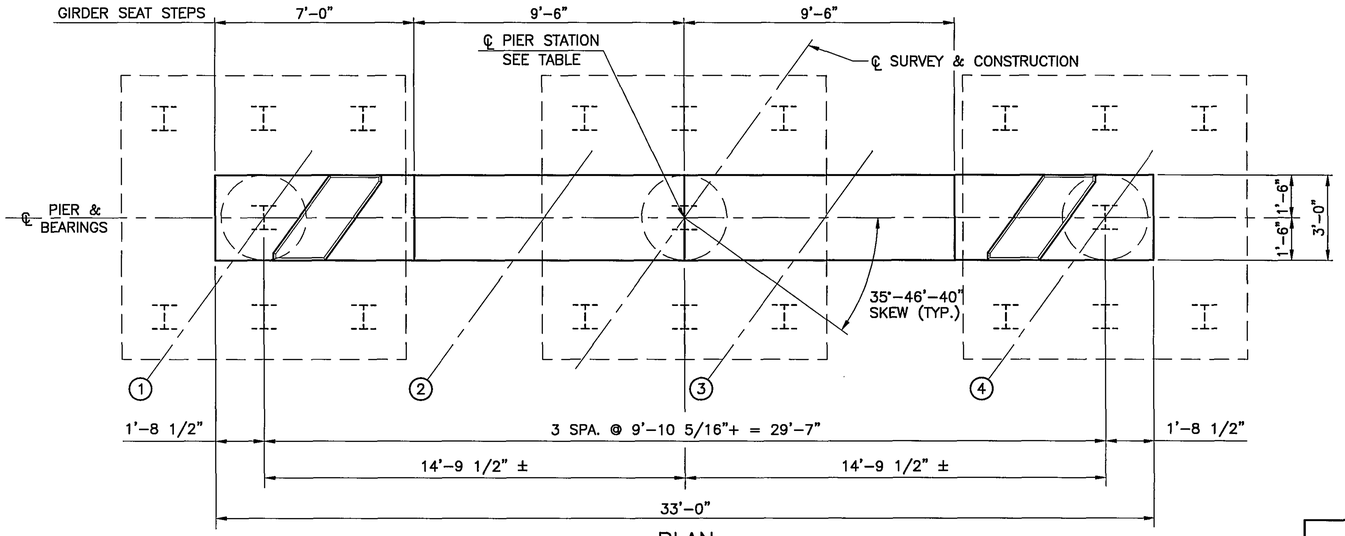
BRIDGE NO. SUM-77-0284
UNDER WISE RD.

SUM-77-1.40

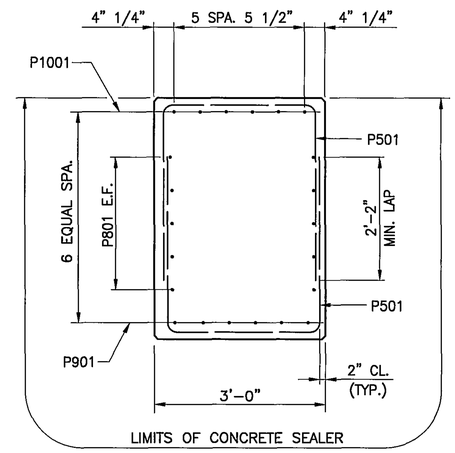
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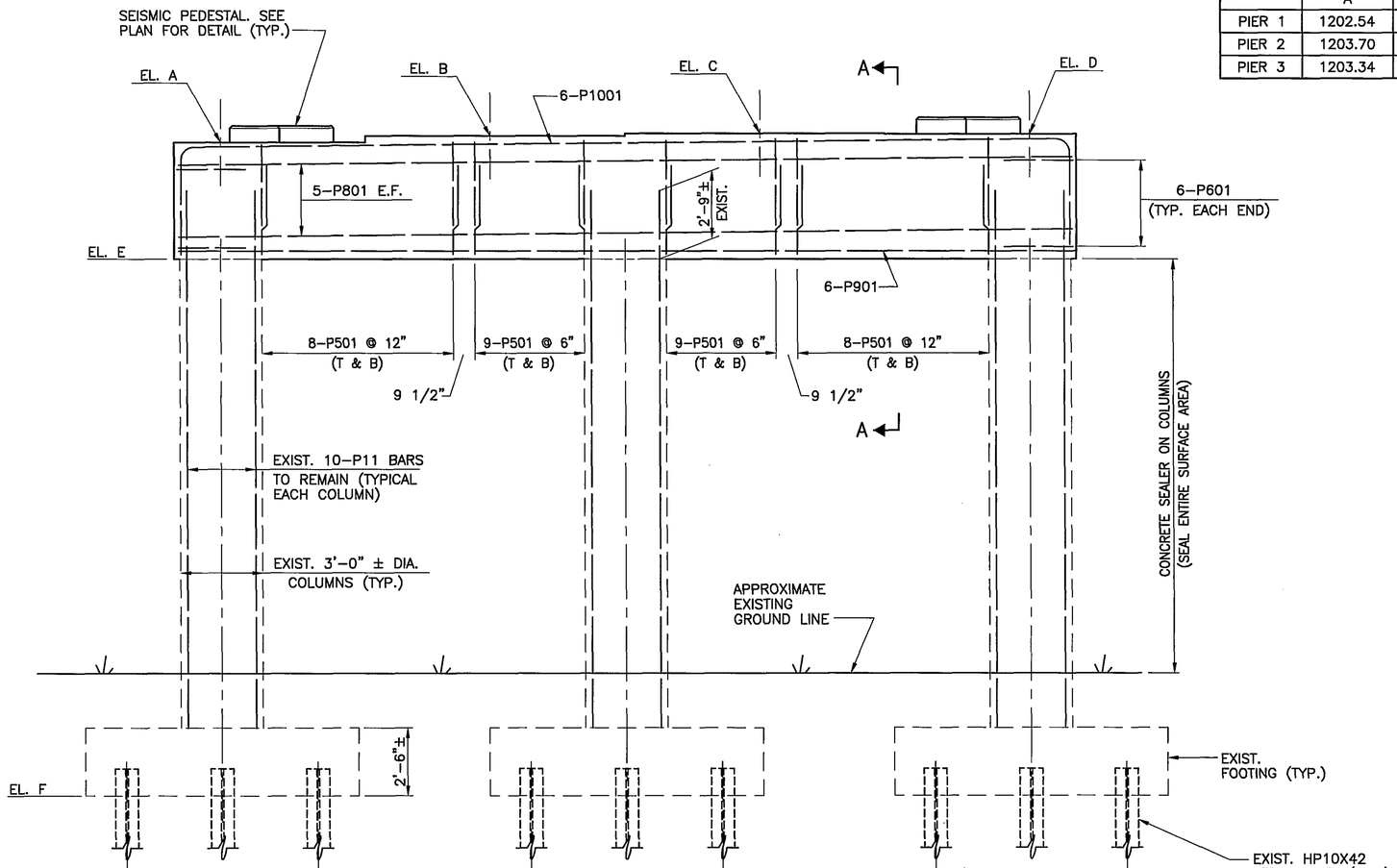
PLAN



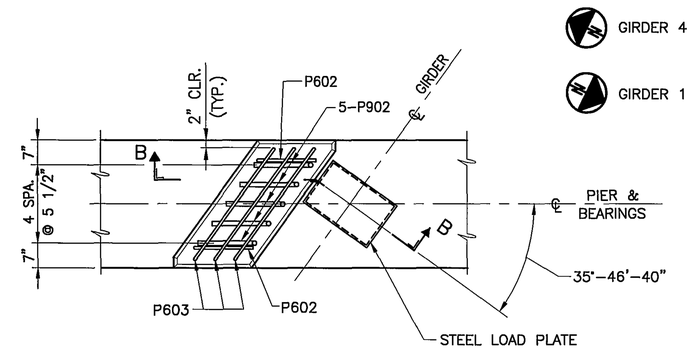
SECTION A-A

CL PIER STATIONS	
LOCATION	STATION
CL PIER 1	STA. 9+00.90
CL PIER 2	STA. 10+01.40
CL PIER 3	STA. 11+01.90

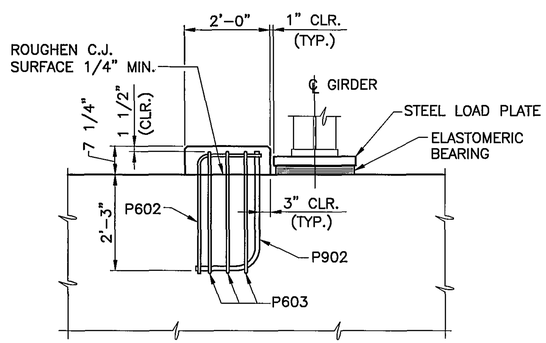
ELEVATION TABLE						
	A	B	C	D	E	F
PIER 1	1202.54	1202.77	1202.87	1202.84	1198.37±	1178.12±
PIER 2	1203.70	1203.85	1203.86	1203.75	1199.57±	1179.32±
PIER 3	1203.34	1203.40	1203.33	1203.13	1199.25±	1180.29±



ELEVATION



SEISMIC PEDESTAL PLAN



SECTION B-B

NOTE: ADJUST PIER CAP REINFORCEMENT NECESSARY TO PLACE SEISMIC REINFORCEMENT.

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DESIGNED S.J.R. | DRAWN S.J.R. | REVIEWED G.T. | DATE 1-04 | CHECKED W.H. | REVISED | STRUCTURE FILE NUMBER 77022221

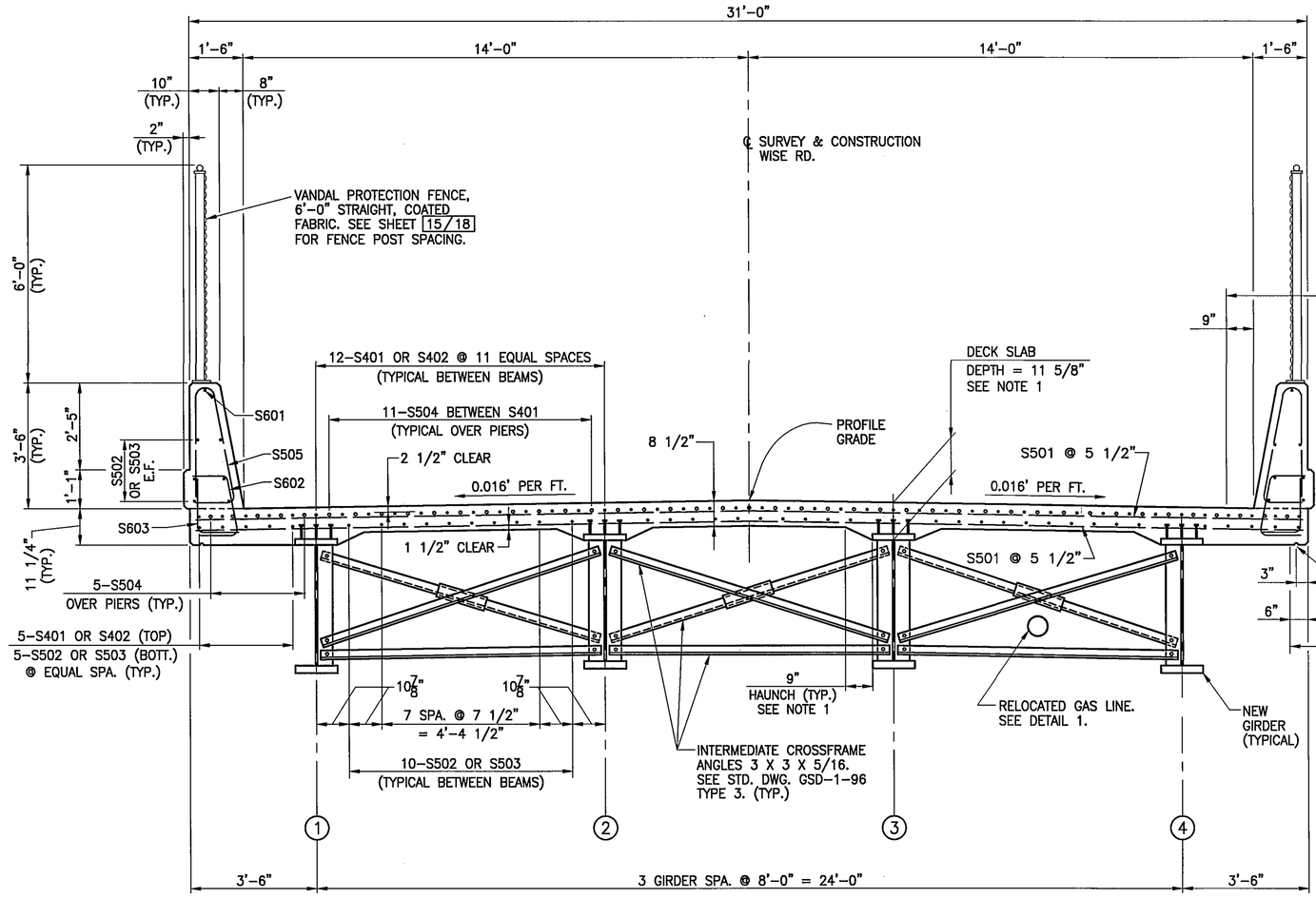
PIER DETAILS
BRIDGE NO. SUM-77-0284
UNDER WISE RD.

SUM-77-1.40

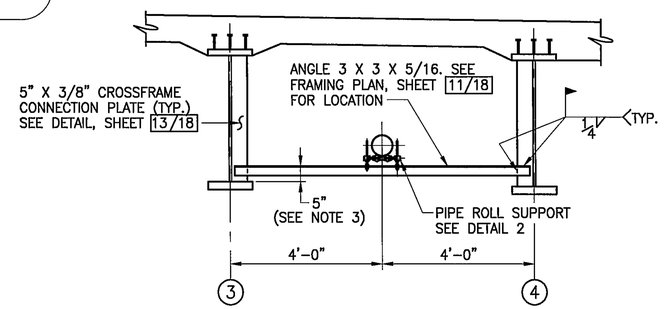
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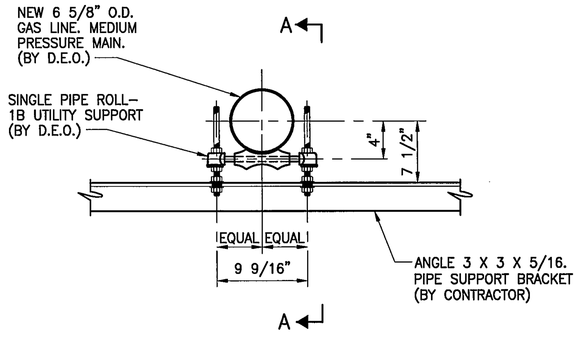
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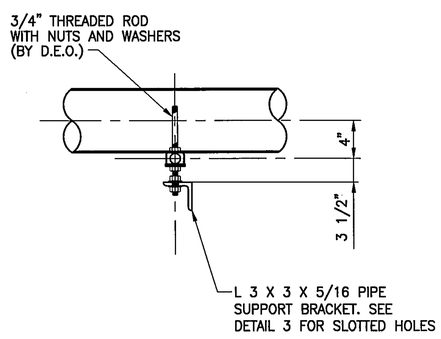
TRANSVERSE SECTION



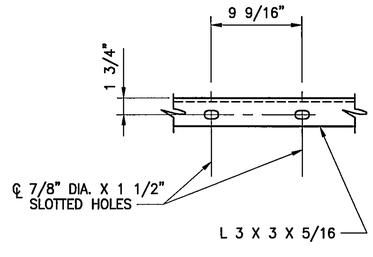
DETAIL 1



DETAIL 2



SECTION A-A



DETAIL 3

NOTES:

1. DECK SLAB CONCRETE QUANTITY:

   THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 3 1/8 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE IS ± 3 INCHES.

   THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE GIRDER, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.24.

2. FOR PARAPET DETAILS, REFER TO O.D.O.T. STANDARD SBR-1-99, REV. 7-19-02

3. THIS DIMENSION SHALL BE FROM THE TOP OF THE BOTTOM FLANGE OF GIRDER 3 TO THE TOP OF THE ANGLE. THE TOP OF THE ANGLE SHALL BE LEVEL.

PREPARED BY ms consultants, inc. CONSULTING ENGINEERS & PLANNERS 130 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

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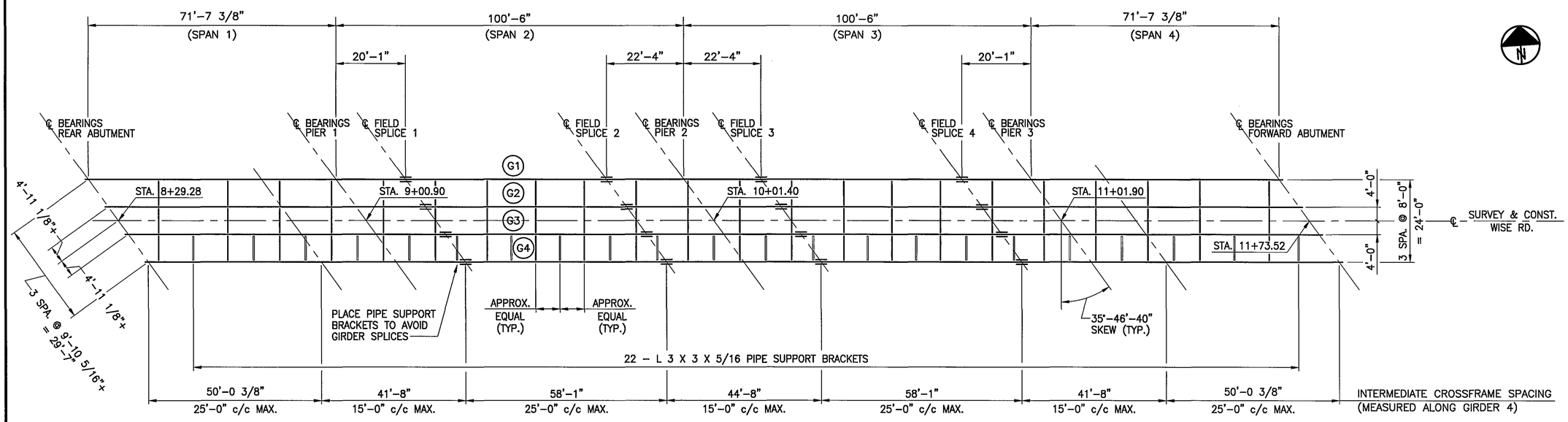
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BRIDGE NO. SUM-77-0284
UNDER WISE RD.

SUM-77-1.40

10 / 18

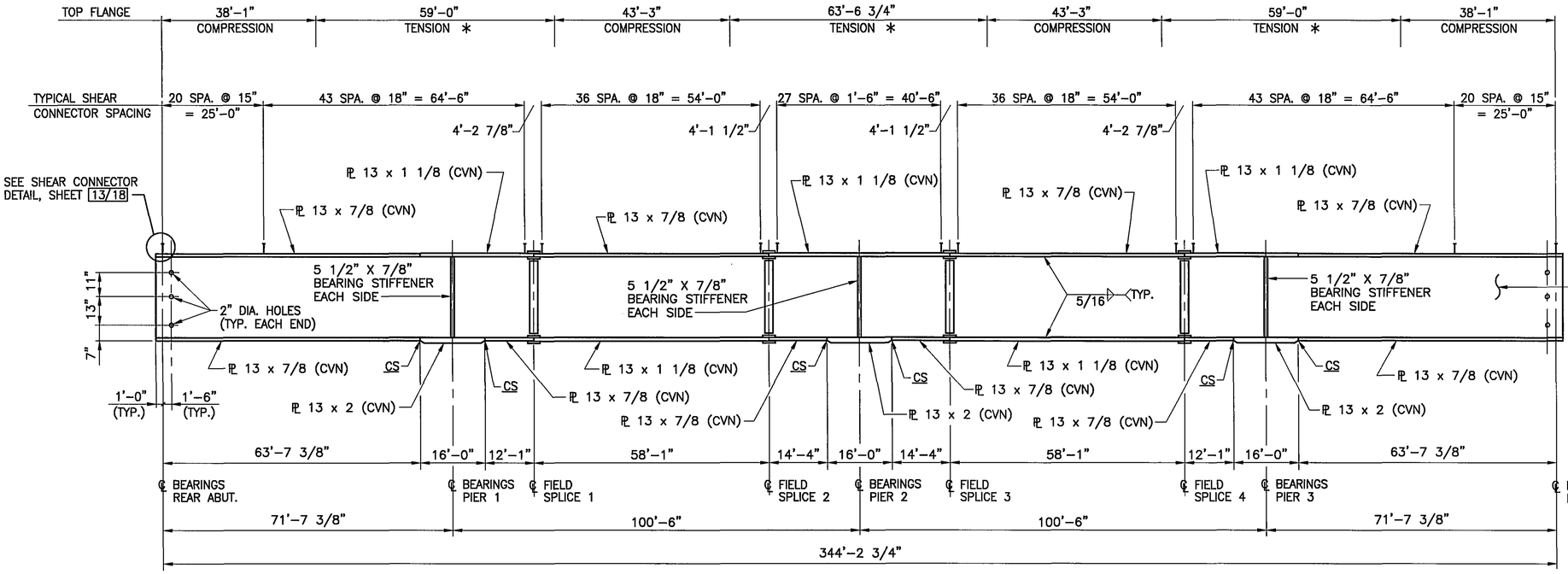
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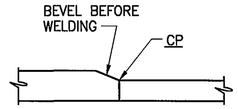


FRAMING PLAN

* INCLUDES STRESS REVERSAL AREAS



TYPICAL GIRDER ELEVATION



TYPICAL FLANGE SPLICE DETAIL

(TOP FLANGE SHOWN, BOTTOM SIMILAR)

WELD NOTES:

1. GIRDER FLANGE WELDS SHALL BE GROUND FLUSH. ALL GRINDING SHALL BE MADE PARALLEL TO THE DIRECTION OF THE STRESS (LENGTHWISE ALONG THE GIRDER).
2. CP – COMPLETE JOINT PENETRATION GROOVE WELD
3. CS – INDICATES BUTT WELD SUBJECT TO COMPRESSIVE STRESSES ONLY.

NOTES

1. FOR CAMBER DIAGRAM, DEFLECTION AND CAMBER TABLE AND ADDITIONAL DETAILS, SEE SHEET 13/18
2. FOR STRUCTURE NOTES AND SPLICE DETAILS, SEE SHEET 12/18

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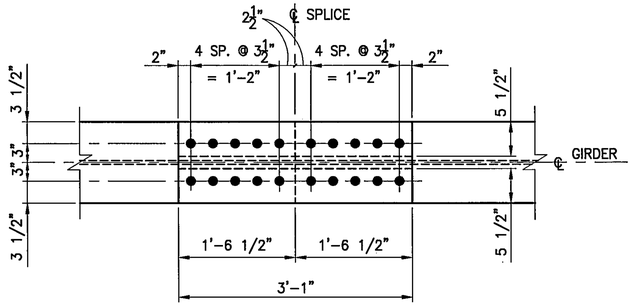
FRAMING PLAN
BRIDGE NO. SUM-77-0284
UNDER WISE RD.

SUM-77-1.40

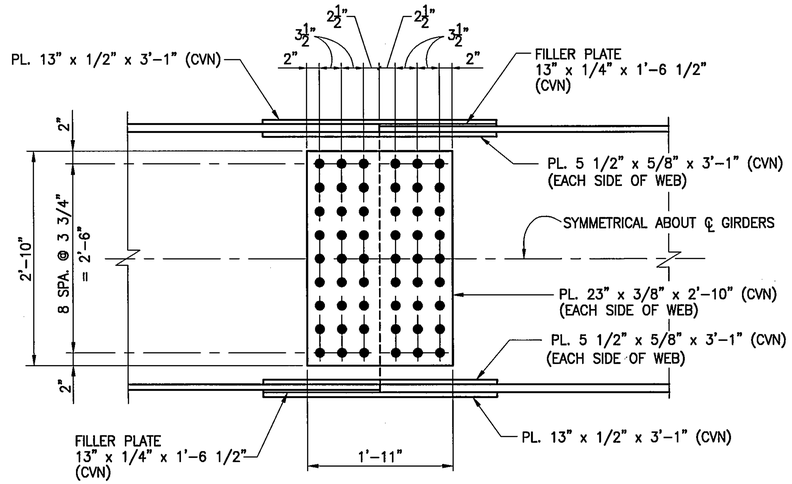
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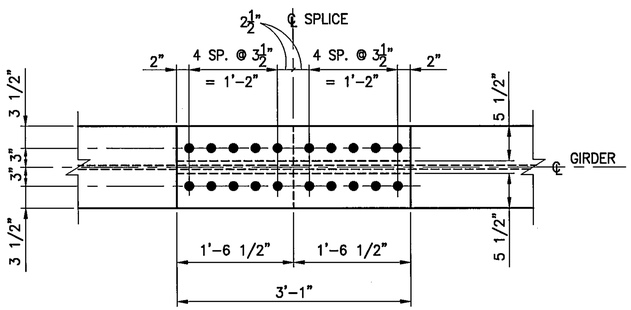


TOP SPLICE PLAN



ELEVATION

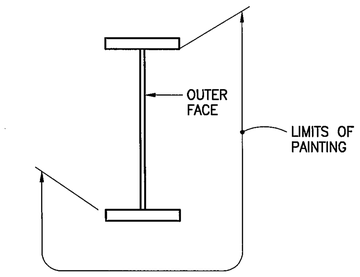
SPLICE NO. 1 & 3 (AS SHOWN)
SPLICE NO. 2 & 4 (OPPOSITE HAND)



BOTTOM SPLICE PLAN

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A588/A709 GRADE 50W AND SUBJECT TO LEVEL FOUR (4) FABRICATION REQUIREMENTS OF ODOT CONSTRUCTION AND MATERIAL SPECIFICATION 513 UNLESS NOTED OTHERWISE.
2. CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
3. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE AT LEAST 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.
4. HIGH STRENGTH BOLTS SHALL BE 1" DIAMETER ASTM A-325, TYPE III, UNLESS NOTED OTHERWISE. PLACE BOLT HEADS ON BOTTOM SURFACE OF BOTTOM FLANGE SPLICE AND ON OUTER FACE OF FASCIA GIRDER WEB SPLICES.
5. FOR INTERMEDIATE CROSSFRAME DETAILS, REFER TO STANDARD DWG. GSD-1-96. TYPE 3 CROSSFRAMES ARE SHOWN ON THESE PLANS, TYPE 4 MAY BE USED INSTEAD, AT THE CONTRACTOR'S OPTION.
6. FIELD PAINTING OF A588 STEEL FASCIA BEAMS: THE OUTSIDE OF THE FASCIA BEAMS SHALL BE PAINTED AS DETAILED BELOW. PAINT SHALL BE SYSTEM IZEU. THE PRIME COAT SHALL BE 708.01. THE TOP COAT COLOR SHALL CLOSELY APPROACH FEDERAL STANDARD NO. 595B-14272 (GREEN). SEE SHEET G2/G3 FOR ADDITIONAL PAINTING REQUIREMENTS.



FASCIA GIRDER PAINTING DETAIL
(AT GIRDERS 1 AND 4)

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
155 EAST POPLAR STREET, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702221	

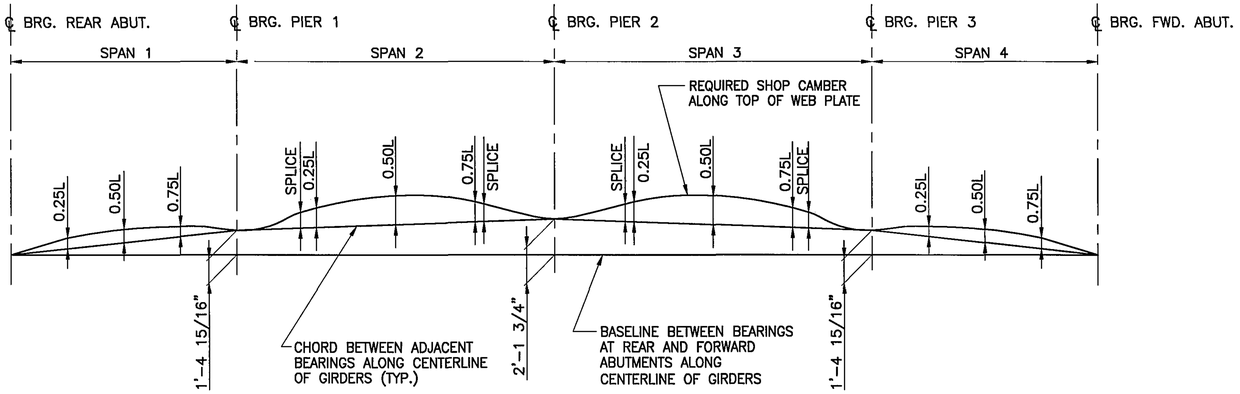
FRAMING DETAILS
BRIDGE NO. SUM-77-0284
UNDER WISE RD.

SUM-77-1.40

12 / 18

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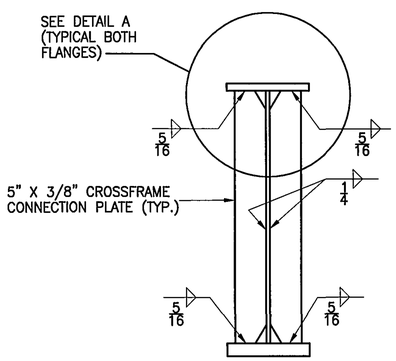
CAMBER DIAGRAM
(TYPICAL ALL GIRDERS)

DEFLECTION AND CAMBER (TYPICAL ALL GIRDERS)

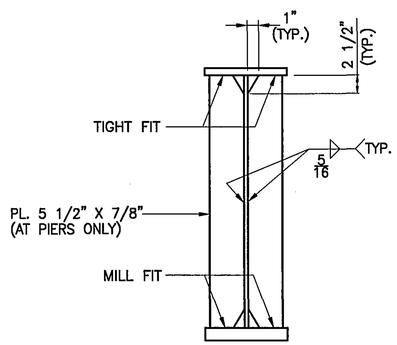
	SPAN 1			SPAN 2					SPAN 3					SPAN 4		
	0.25L	0.50L	0.75L	SPLICE 1	0.25L	0.50L	0.75L	SPLICE 2	SPLICE 3	0.25L	0.50L	0.75L	SPLICE 4	0.25L	0.50L	0.75L
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/16"	0"	1/8"	1/8"	3/16"	1/8"	1/8"	1/8"	1/8"	3/16"	1/8"	1/8"	0"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/2"	1/2"	3/16"	9/16"	3/4"	1 1/4"	11/16"	9/16"	9/16"	11/16"	1 1/4"	3/4"	9/16"	3/16"	1/2"	1/2"
ADJUSTMENT DUE TO VERTICAL CURVE	13/16"	1 1/8"	13/16"	1 3/8"	1 5/8"	2 3/16"	1 5/8"	1 1/2"	1 1/2"	1 5/8"	2 3/16"	1 5/8"	1 3/8"	13/16"	1 1/8"	13/16"
TOTAL CAMBER	1 3/8"	1 11/16"	1"	2 1/16"	2 1/2"	3 5/8"	2 7/16"	2 3/16"	2 3/16"	2 7/16"	3 5/8"	2 1/2"	2 1/16"	1"	1 11/16"	1 3/8"

L = SPAN LENGTH

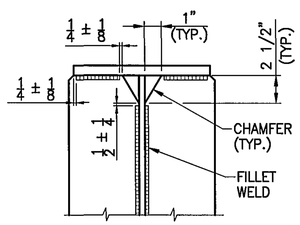
POSITIVE VALUES INDICATE REQUIRED CAMBER IS ABOVE THE CHORD BETWEEN ADJACENT BEARINGS.



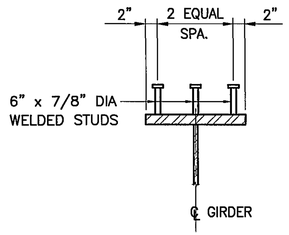
CROSSFRAME CONNECTION PLATE DETAIL



BEARING STIFFENER DETAIL



DETAIL A



SHEAR CONNECTOR DETAIL

NOTE: SHEAR STUDS SHALL BE LOCATED NO CLOSER THAN 3" FROM EDGE OF GIRDER SPLICE PLATE

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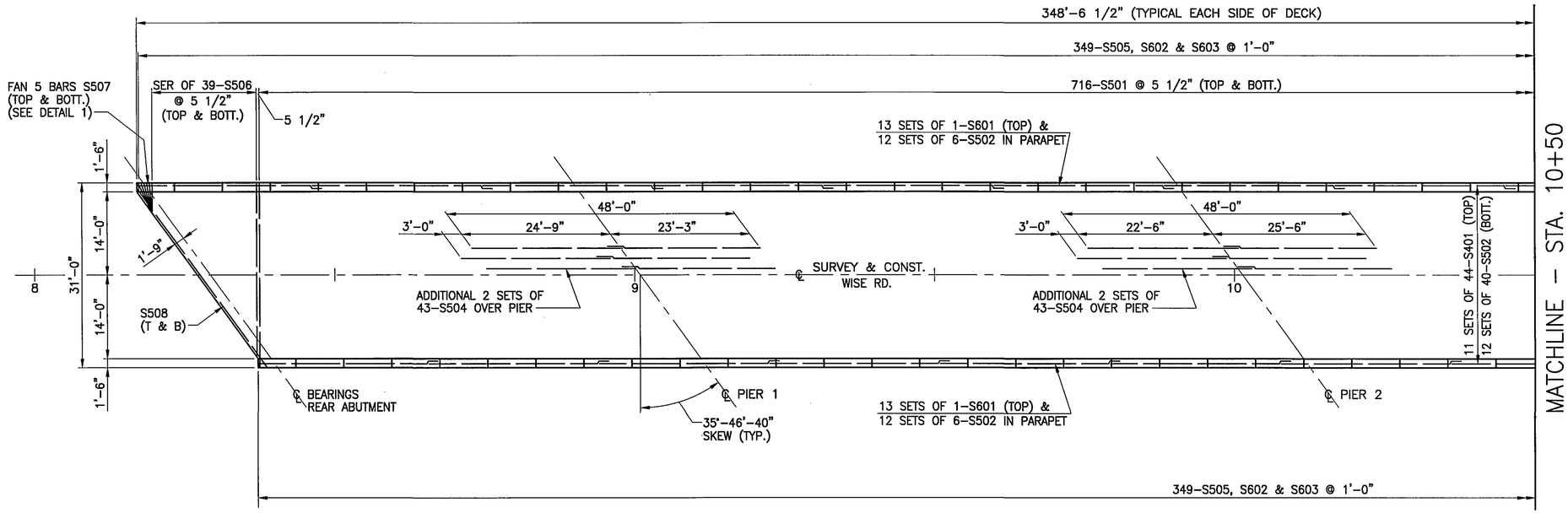
DESIGNED S.J.R.	DRAWN S.J.R.	REVIEWED G.T.	DATE 1-04
CHECKED W.H.	REWSED	STRUCTURE FILE NUMBER 7702221	

FRAMING DETAILS
BRIDGE NO. SUM-77-0284
UNDER WISE RD.

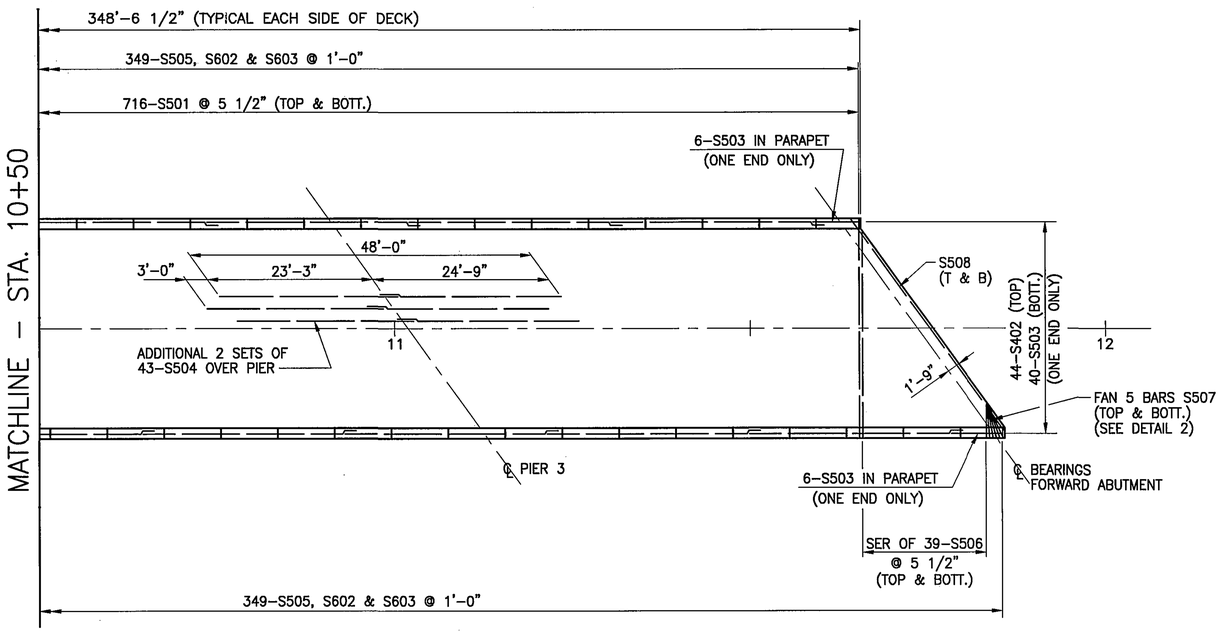
SUM-77-1.40

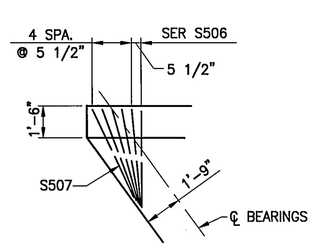
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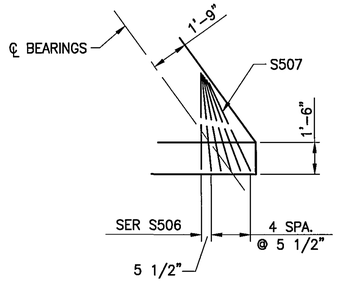


DECK PLAN





DETAIL 1



DETAIL 2

NOTES:

1. FOR REINFORCEMENT SCHEDULE, SEE SHEET 18/18
2. MINIMUM REBAR LAPS:
   LONGITUDINAL
   #4 BARS = 1'-7"
   #5 BARS = 2'-7"
   #6 BARS = 3'-4"
3. FOR LOCATION OF PARAPET CRACK CONTROL JOINTS, SEE SHEET 15/18 .
4. FOR SEMI-INTEGRAL DIAPHRAGM DETAILS AND NOTES, SEE SHEETS 5 THRU 7 .
5. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTRUCTURE: THE CONCRETE ENCASING STRUCTURAL STEEL MEMBERS SUPPORTED IN SEMI-INTEGRAL TYPE ABUTMENTS MAY BE PLACED BEFORE THE ACTUAL DECK CONCRETE IS PLACED. IF THE CONTRACTOR CHOOSES THIS OPTION THE CONCRETE SHALL HAVE HAD AT LEAST 48 HOURS OF SET TIME BEFORE DECK CONCRETE IS PLACED.

PREPARED BY ms consultants, inc. CONSULTING ENGINEERS & PLANNERS 101 EAST POPPER, VICTORIA, KANSAS

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702221	

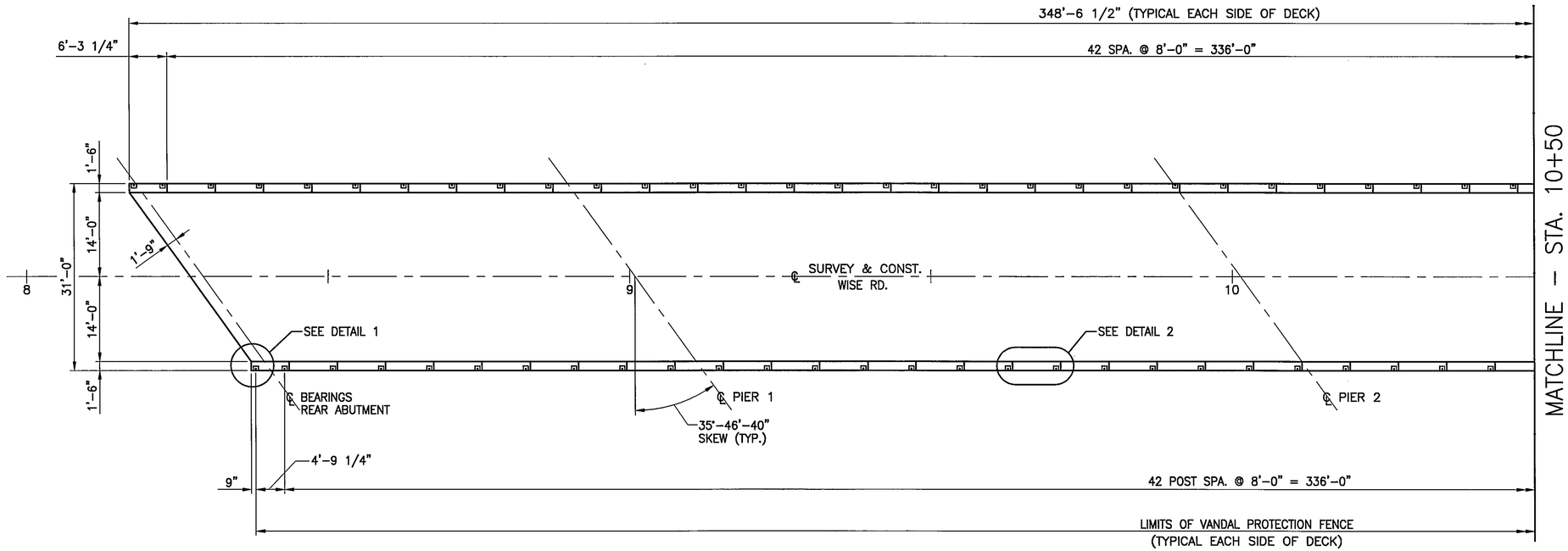
DECK PLAN
BRIDGE NO. SUM-77-0284
UNDER WISE RD.

SUM-77-1.40

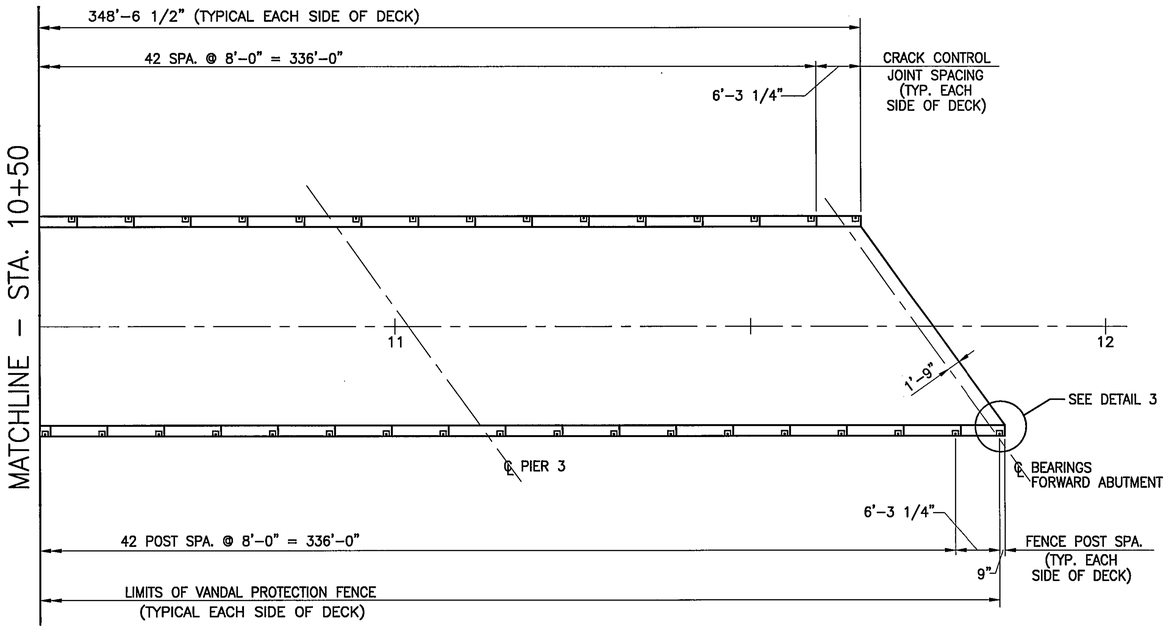
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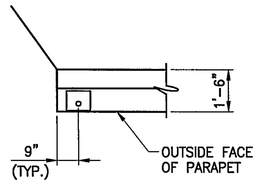
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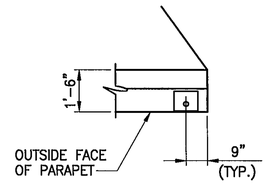


DECK PLAN

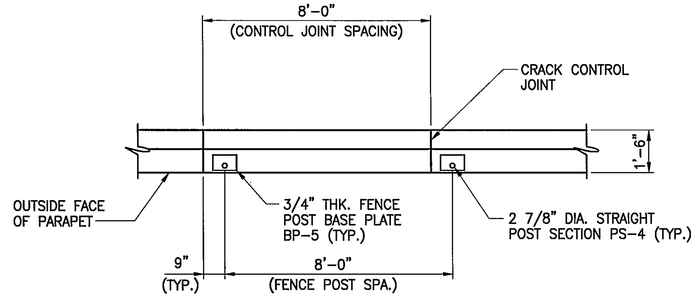




DETAIL 1



DETAIL 3



DETAIL 2

FOR ADDITIONAL VANDAL PROTECTION FENCE DETAILS, REFER TO STANDARD BRIDGE DRAWING VPF-1-90.

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CONSULTING ENGINEERS & PLANNERS
100 EAST BROAD STREET, COLUMBUS, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702221	

CONTROL JOINT AND FENCE DETAILS
BRIDGE NO. SUM-77-0284
UNDER WISE RD.

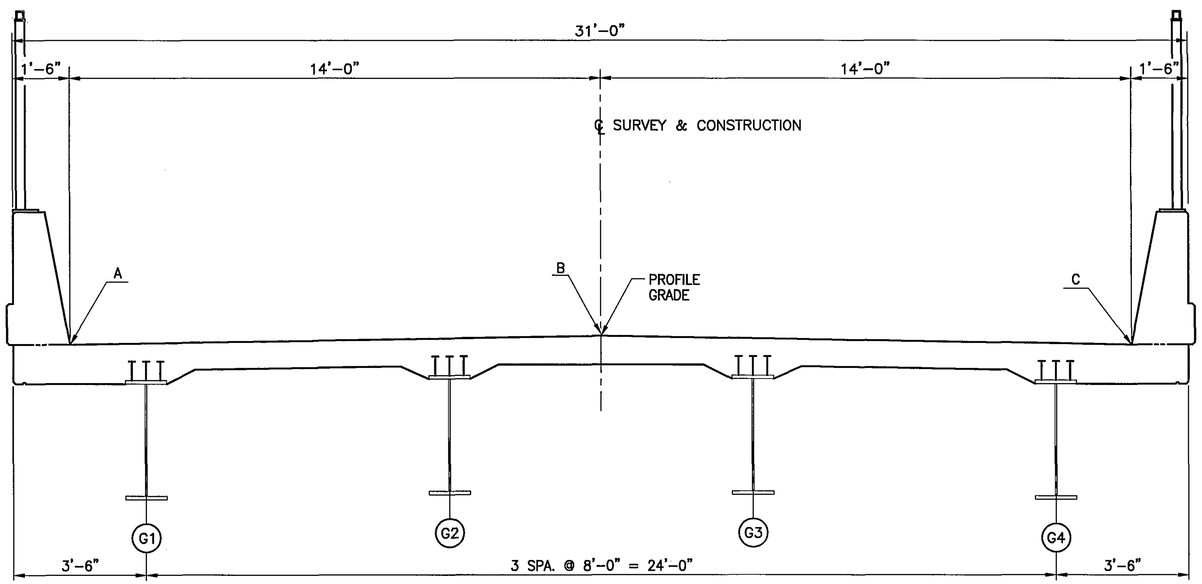
SUM-77-1.40

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SCREED ELEVATIONS TABLE

		GIRDER 1		GIRDER 2		GIRDER 3		GIRDER 4		A		B		C	
SPAN NO.	LOCATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION
SPAN NO.1	0.00 L	8+20.63	1205.71	8+26.40	1206.00	8+32.16	1206.16	8+37.93	1206.18	8+19.19	1205.63	8+29.28	1206.14	8+39.37	1206.19
	0.25 L	8+38.54	1206.24	8+44.30	1206.52	8+50.07	1206.66	8+55.83	1206.67	8+37.09	1206.17	8+47.18	1206.66	8+57.27	1206.68
	0.50 L	8+56.44	1206.69	8+62.20	1206.95	8+67.97	1207.08	8+73.73	1207.08	8+55.00	1206.62	8+65.09	1207.08	8+75.18	1207.08
	0.75 L	8+74.34	1207.06	8+80.11	1207.31	8+85.87	1207.43	8+91.64	1207.41	8+72.90	1207.00	8+82.99	1207.43	8+93.08	1207.40
SPAN NO.2	0.00 L	8+92.25	1207.40	8+98.01	1207.64	9+03.78	1207.73	9+09.54	1207.70	8+90.81	1207.34	9+00.89	1207.75	9+10.98	1207.69
	SPLICE	9+12.35	1207.79	9+18.11	1208.01	9+23.88	1208.09	9+29.64	1208.04	9+10.91	1207.74	9+20.99	1208.11	9+31.08	1208.03
	0.25 L	9+17.37	1207.88	9+23.14	1208.10	9+28.90	1208.17	9+34.67	1208.12	9+15.93	1207.83	9+26.02	1208.20	9+36.11	1208.11
	0.50 L	9+42.50	1208.25	9+48.26	1208.44	9+54.03	1208.50	9+59.79	1208.43	9+41.06	1208.21	9+51.14	1208.54	9+61.23	1208.41
	0.75 L	9+67.62	1208.44	9+73.39	1208.61	9+79.15	1208.65	9+84.92	1208.55	9+66.18	1208.40	9+76.27	1208.70	9+86.36	1208.53
	SPLICE	9+70.41	1208.45	9+76.18	1208.62	9+81.94	1208.65	9+87.71	1208.56	9+68.97	1208.41	9+79.06	1208.70	9+89.15	1208.53
SPAN NO.3	0.00 L	9+92.75	1208.53	9+98.51	1208.68	10+04.28	1208.69	10+10.04	1208.58	9+91.31	1208.49	10+01.39	1208.75	10+11.48	1208.55
	SPLICE	10+15.08	1208.63	10+20.85	1208.76	10+26.61	1208.76	10+32.38	1208.62	10+13.64	1208.60	10+23.73	1208.82	10+33.82	1208.59
	0.25 L	10+17.87	1208.64	10+23.64	1208.77	10+29.40	1208.76	10+35.17	1208.62	10+16.43	1208.61	10+26.52	1208.83	10+36.61	1208.59
	0.50 L	10+43.00	1208.65	10+48.76	1208.76	10+54.53	1208.73	10+60.29	1208.57	10+41.56	1208.62	10+51.64	1208.81	10+61.73	1208.53
	0.75 L	10+68.12	1208.48	10+73.89	1208.56	10+79.65	1208.52	10+85.42	1208.34	10+66.68	1208.46	10+76.77	1208.61	10+86.86	1208.29
	SPLICE	10+73.15	1208.43	10+78.91	1208.51	10+84.68	1208.46	10+90.44	1208.27	10+71.71	1208.41	10+81.79	1208.55	10+91.88	1208.23
SPAN NO.4	0.00 L	10+93.25	1208.20	10+99.01	1208.26	11+04.78	1208.19	11+10.54	1207.99	10+91.81	1208.18	11+01.89	1208.29	11+11.98	1207.94
	0.25 L	11+11.15	1208.00	11+16.92	1208.05	11+22.68	1207.96	11+28.45	1207.75	11+09.71	1207.99	11+19.80	1208.07	11+29.89	1207.69
	0.50 L	11+29.05	1207.77	11+34.82	1207.80	11+40.58	1207.70	11+46.35	1207.47	11+27.61	1207.76	11+37.70	1207.82	11+47.79	1207.41
	0.75 L	11+46.96	1207.46	11+52.72	1207.48	11+58.49	1207.37	11+64.25	1207.12	11+45.52	1207.45	11+55.61	1207.49	11+65.69	1207.06
	1.00 L	11+64.86	1207.07	11+70.63	1207.07	11+76.39	1206.94	11+82.16	1206.68	11+63.42	1207.06	11+73.51	1207.07	11+83.60	1206.61



SCREED LINE LOCATIONS

NOTE:

1. SCREED ELEVATIONS:

   SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

   L = SPAN LENGTH

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
150 EAST BROAD STREET, COLUMBUS, OHIO

DESIGNED S.J.R. | DRAWN S.J.R. | REVIEWED G.T. | DATE 1-04 | CHECKED W.H. | REWSED | STRUCTURE FILE NUMBER 7702221

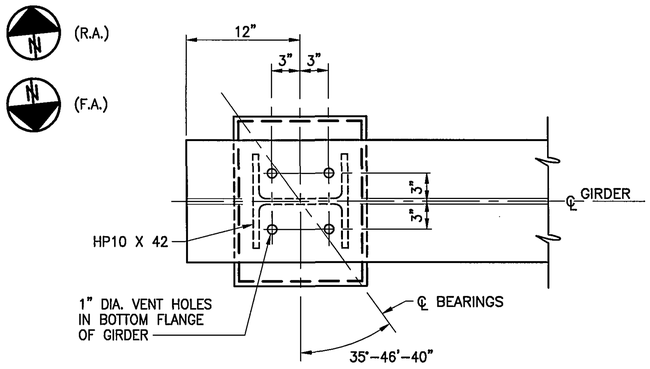
SCREED ELEVATIONS
BRIDGE NO. SUM-77-0284
UNDER WISE RD.

SUM-77-1.40

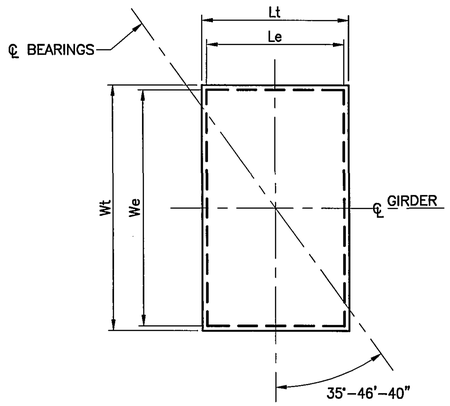
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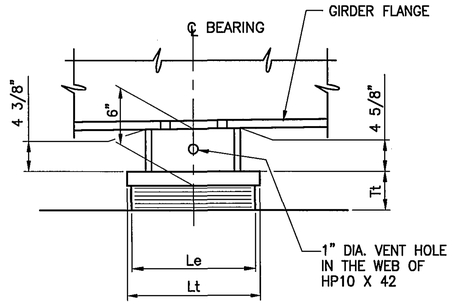
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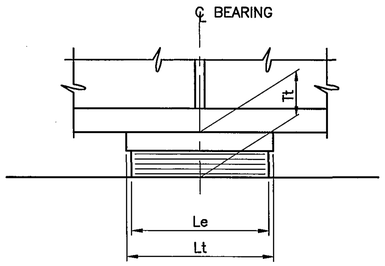
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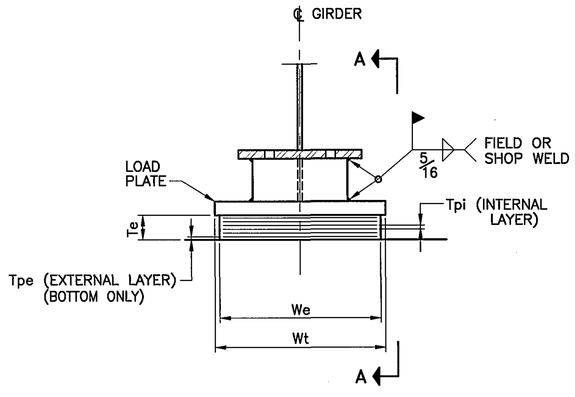
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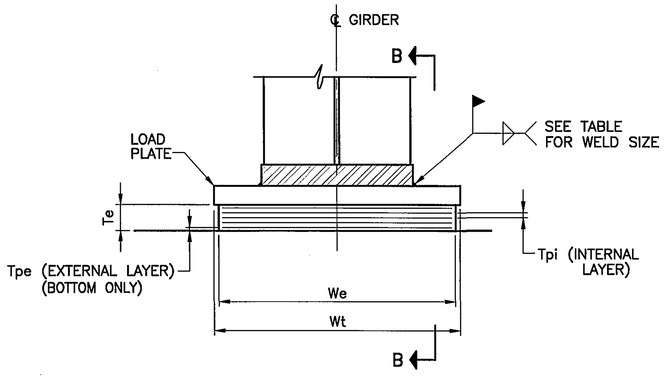
VIEW A–A



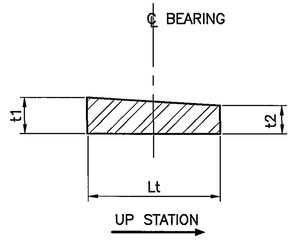
VIEW B–B



LAMINATED ELASTOMERIC
EXPANSION BEARING
(ABUTMENTS)



LAMINATED ELASTOMERIC
EXPANSION BEARING
(PIERS)



STEEL LOAD PLATE DETAIL

BEARING LOCATION	BEARING TYPE	NO. REQ'D.	DEAD LOAD KIPS	LIVE LOAD KIPS	TOTAL LOAD (DL+LL) KIPS	Le (inches)	We (inches)	Tpi (inches)	NO. OF Tpi'S	Tpe (1 EA.) (inches)	NUMBER OF INTERNAL LAMINATES (14 GAGE)	Te (inches)	STEEL LOAD PLATE				Tt (inches)	FILLET WELD SIZE (inches)	RETAINER ANGLE
													Wt (inches)	Lt (inches)	t1 (inches)	t2 (inches)			
REAR ABUTMENT	EXP.	4	82	61	143	13	17	0.50	6	0.36	6	3.81	18	14	1 1/2	1 1/2	5.31		2
PIER 1	EXP.	4	180	85	265	13 1/2	21	0.39	5	0.28	5	2.60	22	14 1/2	2	2 1/4	4.73	3/8	NONE
PIER 2	EXP.	4	192	89	281	14	22	0.41	4	0.29	4	2.23	23	15	2 1/8	2 1/8	4.35	1/2	NONE
PIER 3	EXP.	4	180	85	265	13 1/2	21	0.39	5	0.28	5	2.60	22	14 1/2	2 1/4	2	4.73	3/8	NONE
FORWARD ABUTMENT	EXP.	4	82	61	143	13	17	0.50	6	0.36	6	3.81	18	14	1 1/2	1 1/2	5.31		2

NOTE: FOR BEARING RETAINER DETAIL,
SEE SHEET 6/18 AND
STD. DWG. SICD-1-96.

NOTES:

LOAD PLATE & HP SHAPE

THE STEEL LOAD PLATE AND HP SHAPE SHALL BE THE SAME MATERIAL AS THE ATTACHED STRUCTURAL STEEL. THE HP SHAPE IS CONSIDERED A COMPONENT OF THE BEARING.

THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.

WELDING OF THE LOAD PLATE OR HP SHAPE TO THE SUPERSTRUCTURE SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE SHALL NOT EXCEED 300° F AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

ELASTOMERIC BEARINGS

THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.

BEARING REPOSITIONING

IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80° F OR LOWER THAN 40° F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60° F ± 10° F, THE GIRDERS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60° F ± 10° F.

BASIS OF PAYMENT

THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS, EXPANSION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516, EACH, ELASTOMERIC BEARING WITH INTERNAL LAMINATES (NEOPRENE) AND LOAD PLATE.

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
555 EAST ARROWHEAD, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702221	

ELASTOMERIC BEARINGS DETAILS
BRIDGE NO. SUM-77-0284
UNDER WISE RD.

SUM-77-1.40

17 / 18

350
381

T:\DRAWING\08\06472\308\WISE\WISE_EX1.DWG SC: 1=8 9-30-03

ABUTMENTS

MARK	NUMBER R.A.	NUMBER F.A.	TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	DIMENSIONS INC.
A501	6	6	12	14'–0"	175	ST.				
A502	14	14	28	12'–8"	370	ST.				
A503	6	6	12	9'–9"	122	18	2'–10"	1'–9"		
A504	12	12	24	5'–1"	127	2	3'–5"	1'–9"	0	
A505	11	11	22	5'–6"	126	2	3'–10"	1'–9"	0	
A506	8	8	16	11'–0"	184	ST.				
A507	8	8	16	9'–8"	161	ST.				
A508	2	2	4	15'–6"	65	8	4'–6"	11'–0"	3	
A509	2	2	4	12'–10"	54	8	3'–1"	9'–9"	4	
A510	8	8	16	15'–8"	262	ST.				
A511	1 SER OF 5	1 SER OF 5	2 SER OF 5	7'–3" TO 9'–1"	85	2	3'–2" TO 4'–1"	1'–2"	3'–2" TO 4'–1"	5 1/2"
A512	1 SER OF 3	1 SER OF 3	2 SER OF 3	7'–7" TO 9'–3"	53	2	3'–4" TO 4'–2"	1'–2"	3'–4" TO 4'–2"	10"
A513	15	15	30	13'–5"	420	18	3'–0"	3'–5"		
A514	4	4	8	10'–9"	90	18	3'–0"	2'–1"		
A515	15	15	30	8'–0"	250	2	2'–8"	2'–11"	2'–8"	
A516	5	5	10	14'–11"	156	18	3'–0"	4'–2"		
A517	5	5	10	8'–8"	90	2	2'–8"	3'–7"	2'–8"	
A518	1	1	2	8'–11"	19	18	3'–0"	3'–3"		
A519	1	1	2	7'–9"	16	2	2'–8"	2'–8"	2'–8"	
A601	72		72	4'–5"	478	2	1'–6"	3'–1"	0	
A602		72	72	4'–3"	460	2	1'–4"	3'–1"	0	
A603	44	44	88	2'–9"	363	ST.				
A604	23	23	46	10'–11"	754	2	6'–8"	1'–9"	2'–10"	
A605	23	23	46	13'–4"	921	2	6'–3"	1'–2"	6'–3"	
A606	23	23	46	9'–8"	668	2	4'–5"	1'–2"	4'–5"	
A801	36	36	72	22'–0"	4229	ST.				
A802	21	21	42	5'–10"	654	17	3'–6"			

TOTAL = 11,352 LB.

SUPERSTRUCTURE

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	DIMENSIONS INC.
S401	484	30'–0"	9699	ST.				
S402	44	36'–0"	1058	ST.				
S501	1432	30'–8"	45,808	ST.				
S502	624	30'–0"	19,525	ST.				
S503	52	20'–0"	1085	ST.				
S504	258	25'–6"	6862	ST.				
S505	698	7'–5"	5402	4				
S506	4 SER OF 39	4'–7" TO 28'–9"	2712	ST.				7 5/8"
S507	20	4'–6"	94	ST.				
S508	4	36'–6"	152	ST.				
S601	26	30'–0"	1172	ST.				
S602	698	3'–5"	3586	5	1'–7"	1'–1"	1'–1"	
S603	698	2'–6"	2621	2	1'–1"	1'–7"	0	

TOTAL = 99,776 LB.

PIERS

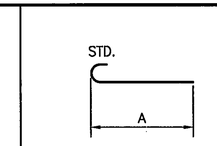
MARK	NUMBER P–1	NUMBER P–2	NUMBER P–3	TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	DIMENSIONS INC.
P501	68	68	68	204	8'–11"	1898	2	3'–3"	2'–8"	3'–3"	
P601	12	12	12	36	7'–3"	392	2	2'–6"	2'–6 1/2"	2'–6"	
P602	4	4	4	12	4'–2"	75	2	2'–9"	1'–7"	0	
P603	6	6	6	18	12'–2"	329	23				
P801	10	10	10	30	32'–8"	2617	ST.				
P901	6	6	6	18	32'–8"	1999	ST.				
P902	10	10	10	30	4'–1"	416	2	2'–9"	1'–7"	0	
P1001	6	6	6	18	38'–10"	3008	2	3'–6"	32'–6"	3'–6"	

TOTAL = 10,734 LB.

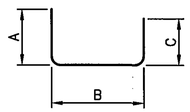
APPROACH SLABS

MARK	NUMBER REAR	NUMBER FWD.	TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	DIMENSIONS INC.
AS501	10	10	20	5'–6"	115	ST.				
AS502	6	6	12	5'–6"	69	16				
AS503	16	16	32	10'–0"	334	ST.				
AS504	12	12	24	4'–6"	113	ST.				
AS505	4	4	8	7'–5"	62	4				
AS601	8	8	16	4'–2"	100	2	3'–3"	1'–1"	0	
AS602	8	8	16	3'–11"	94	1	3'–3"			
AS603	2 SER OF 11	2 SER OF 11	4 SER OF 11	4'–2" TO 5'–0"	303	2	3'–3" TO 4'–1"	1'–1"		1"
AS604	2 SER OF 11	2 SER OF 11	4 SER OF 11	3'–11" TO 4'–9"	286	1	3'–3" TO 4'–1"			1"
AS605	4	4	8	3'–1"	37	2	1'–8"	1'–7"	0	
AS606	4	4	8	3'–5"	41	5	1'–1"	1'–7"	1'–1"	
AS607	2	2	4	5'–0"	30	ST.				

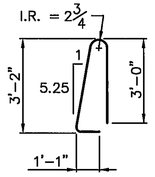
TOTAL = 1584 LB.



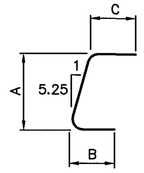
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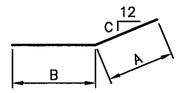
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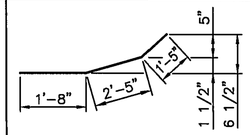
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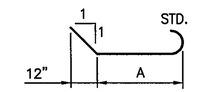
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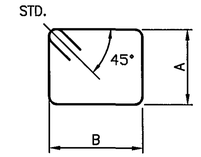
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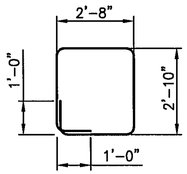
TYPE 16



TYPE 17



TYPE 18



TYPE 23

NOTES:

BAR SIZE: THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

ALL BARS TO BE EPOXY COATED.

REINFORCING BAR SAMPLES: REFER TO C.M.S. SECTION 700, 709.01 THROUGH 709.05 AND 709.08. SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING FOR EACH BRIDGE. RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURES BY THE ADDITIONAL STEEL, SPLICED IN ACCORDANCE WITH THE PROJECT PLANS.

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
430 EAST BROADWAY, FOSTORIA, OHIO 44830

REVIEWED G.T. DATE 1–04 | STRUCTURE FILE NUMBER 7702221
DRAWN S.J.R. | REVISED
DESIGNED S.J.R. | CHECKED W.H.

REINFORCING STEEL LIST

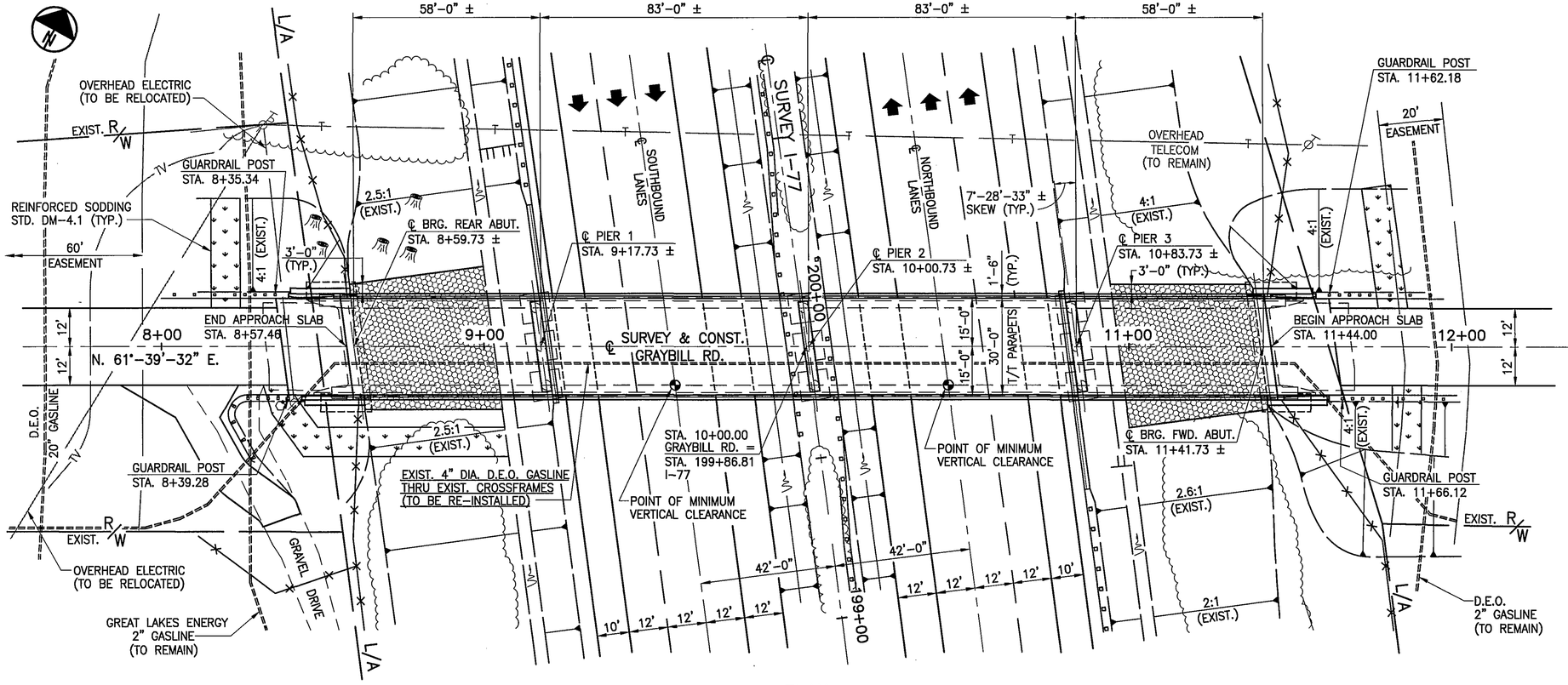
BRIDGE NO. SUM–77–0284
UNDER WISE RD.

SUM–77–1.40

18 / 18

351
381

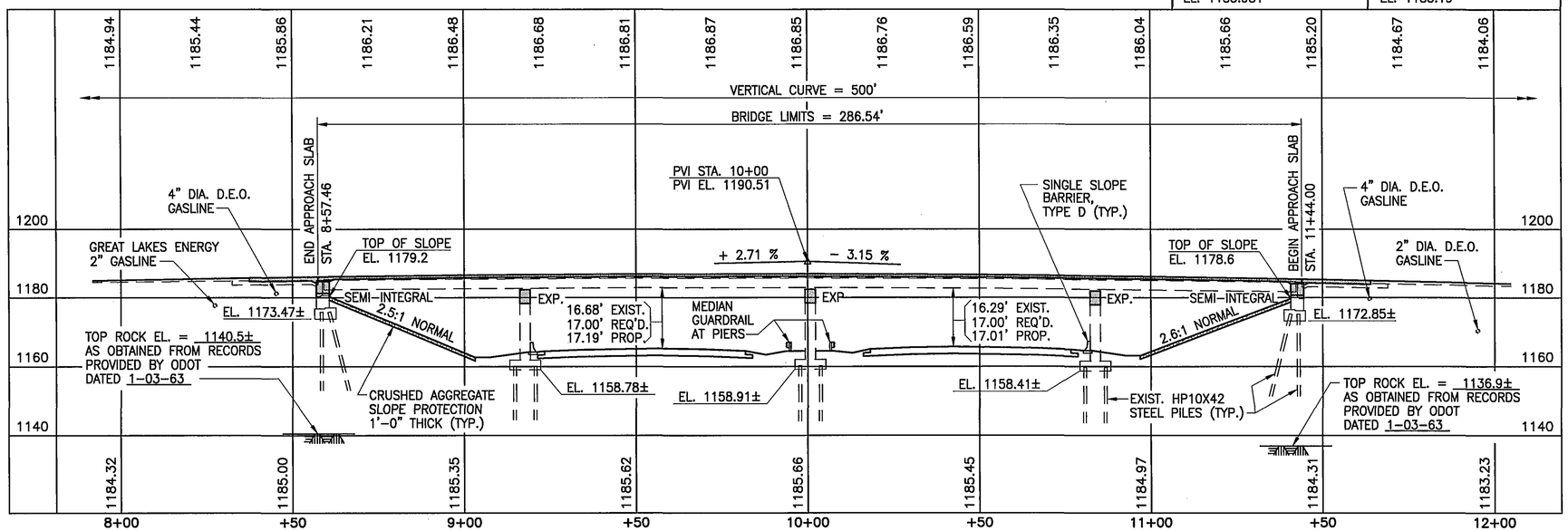
T:\DRAWING\08\06472\308\WSE\WISE_RL1.DWG SC: 1=1 10–01–03



PLAN

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTIONS.

BENCH MARK No. 79	BENCH MARK No. 80
TOP OF SPIKE IN GATE POST STA. 8+02, 14.38' Rt. EL. 1183.981	TOP OF BOAT SPIKE IN 5th GUARDRAIL POST STA. 12+32, 12.81' Lt. EL. 1185.19



PROFILE ALONG ℄ SURVEY & CONSTRUCTION

HORIZONTAL CURVE DATA

℄ SURVEY I-77

P.I. = STA. 207+68.48
Δ = 8°-53'-15" Lt.
D_C = 0°-20'-00"
L = 2666.22'
T = 1335.79'
R = 17,188.73'
E = 51.83'
M = 51.67'
P.C. = STA. 194+32.69
P.T. = STA. 220+98.91

NOTE:
NEW PILES AT WIDENED ABUTMENT WINGWALL FOOTINGS ARE NOT SHOWN. ESTIMATED AVERAGE PILE LENGTH FOR THE HP10X42 STEEL PILES IS:
35 FEET AT THE REAR ABUTMENT
40 FEET AT THE FORWARD ABUTMENT

EXISTING STRUCTURE

TYPE: CONTINUOUS A7 STEEL BEAM WITH REINFORCED CONCRETE DECK & SUBSTRUCTURE.
SPANS: 58'-0"±, 83'-0"±, 83'-0"±, 58'-0"± C/C BEARINGS
ROADWAY: 24'-0" ± F/F OF CURBS
DESIGN LOADING: C.F. 30 (57)
SKEW: 7°-28'-33" ± R.F.
WEARING SURFACE: CONCRETE OVERLAY
ALIGNMENT: TANGENT
APPROACH SLABS: SPECIAL 25'-0" LONG
CROWN: 3/16" PER FT.
YEAR BUILT: 1964
CONDITION: FUNCTIONALLY OBSOLETE
DISPOSITION: DECK TO BE REPLACED
STRUCTURE FILE NUMBER: 7702256

PROPOSED STRUCTURE

PROPOSED WORK: REPLACE DECK, RAISE EXIST. BEAMS, REMOVE BACKWALLS, NEW CONC. BEAM SEATS WITH NEW BEARINGS, PATCH AND SEAL SUBSTRUCTURES, PAINT, AND PROVIDE NEW APPROACH SLABS.
TYPE: CONTINUOUS A7 STEEL BEAM (EXIST.) WITH NEW REINF. CONC. COMPOSITE DECK ON MODIFIED PIERS AND SEMI-INTEGRAL ABUTMENTS
SPANS: 58'-0"±, 83'-0"±, 83'-0"±, 58'-0"± C/C BEARINGS
ROADWAY: 30'-0" TOE TO TOE OF PARAPETS
DESIGN LOADING: HS20-44 (CASE II) AND THE ALTERNATE MILITARY LOADING
SKEW: 7°-28'-33" ± R.F.
WEARING SURFACE: MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
APPROACH SLABS: AS-1-81 (20'-0" LONG)
CROWN: 0.016' PER FT.
AVERAGE DAILY TRAFFIC: 3570 (2004) 4540 (2024)
AVERAGE DAILY TRUCK TRAFFIC: 107 (2004) 136 (2024)
COORDINATES: LAT. N 40°57'20", LONG. W81°27'20"
STRUCTURE FILE NUMBER: 7702256

PREPARED BY: ms consultants, inc. CONSULTING ENGINEERS & PLANNERS 333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO
REVIEWED G.T. DATE 1-04 STRUCTURE FILE NUMBER 7702256
DRAWN S.J.R. REVISED
DESIGNED S.J.R. CHECKED W.H.
SUMMIT COUNTY STA. 8+57.46 STA. 11+44.00
SITE PLAN
BRIDGE NO. SUM-77-0378 UNDER GRAYBILL RD.
SUM-77-1.40
1 / 17
352 / 381

T:\DRAWINGS\08\06472\398\GRAYBILL\GRAY_SP1 1=20 9-11-03

COMPUTED BY : W.E.R. DATE : 9-03
CHECKED BY : S.J.R. DATE : 1-04

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	IM FUNDING TOTAL	UNIT	DESCRIPTION	ABUTS.	PIERS	SUPER.	GENERAL	NOTE REF. SHEET NO.
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	G1
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING				LUMP	
503	21100	110	CU. YD.	UNCLASSIFIED EXCAVATION	110				
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION				LUMP	
507	00100	510	FT.	STEEL PILES HP10 X 42, FURNISHED *	510				
507	00150	450	FT.	STEEL PILES HP10 X 42, DRIVEN	450				
507	93301	12	EACH	STEEL POINTS, OR SHOES, AS PER PLAN	12				G2
509	10000	132,048	POUND	EPOXY COATED REINFORCING STEEL *	10,359	8129	113,560		
509	20001	100	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN *				100	G2
510	10000	208	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	208				
511	41000	46	CU. YD.	CLASS C CONCRETE, PIER ABOVE FOOTINGS		46			
511	43500	80	CU. YD.	CLASS C CONCRETE, ABUTMENT INCLUDING FOOTING	80				
511	50100	91	CU. YD.	CLASS HP CONCRETE, BRIDGE DECK (PARAPET)			91		
511	52000	LUMP		CLASS HP CONCRETE, TEST SLAB			LUMP		
513	20000	2244	EACH	WELDED STUD SHEAR CONNECTORS			2244		
513	95020	LUMP		STRUCTURAL STEEL, MISC.: STEEL PIPE CASING ⊛			LUMP		G3
514	00050	11,600	SQ. FT.	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL **			11,600		
514	00056	11,600	SQ. FT.	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT **			11,600		12
514	00060	11,600	SQ. FT.	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT **			11,600		12
514	00066	11,600	SQ. FT.	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT **			11,600		12
514	00504	45	MAN HOUR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL **			45		
514	10000	4	EACH	FINAL INSPECTION REPAIR **				4	
516	13600	17	SQ. FT.	1" PREFORMED EXPANSION JOINT FILLER	17				
516	13900	139	SQ. FT.	2" PREFORMED EXPANSION JOINT FILLER	139				
516	14021	86	FT.	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN			86		G3
516	44000	4	EACH	ELASTOMERIC BEARING (12" X 19" X 1.95") WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (13" X 20" X 2.25")		4			
516	44100	8	EACH	ELASTOMERIC BEARING (12" X 19" X 2.37") WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (13" X 20" X 2.13")		8			
516	44200	8	EACH	ELASTOMERIC BEARING (10" X 16.5" X 3.30") WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (11" X 17.5" X 1.50")	8				
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN			LUMP		G2
518	21200	64	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC	64				
518	40000	76	FT.	6" PERFORATED CORRUGATED PLASTIC PIPE	76				
518	40010	70	FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	70				
519	11100	26	SQ. FT.	PATCHING CONCRETE STRUCTURE		26			
SPECIAL	51912600	7	FT.	CONCRETE REPAIR BY EPOXY INJECTION ⊙	7				
526	15001	145	SQ. YD.	REINFORCED CONCRETE APPROACH SLABS (T=13"), AS PER PLAN				145	9
601	20000	430	SQ. YD.	CRUSHED AGGREGATE SLOPE PROTECTION				430	
SPECIAL	69072000	LUMP		ASBESTOS NOTIFICATION				LUMP	G1
SPECIAL	60739900	570	FT.	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC			570		G3
864	10100	1049	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	137 □	258	654		G3
894	10000	317	CU. YD.	HIGH PERFORMANCE CONCRETE, FOR BRIDGE DECK WITH WARRANTY			317		

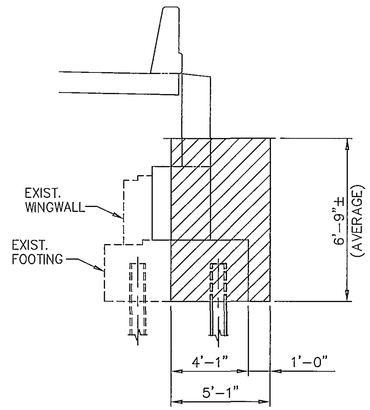
□ INCLUDES APPROACH SLAB BARRIERS

⊙ SEE PROPOSAL NOTE

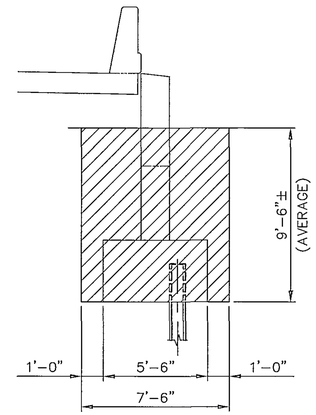
⊛ ITEMS TO BE PAID 100% BY THE DOMINION EAST OHIO GAS COMPANY TO THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION

* SEE PROPOSAL NOTE 525

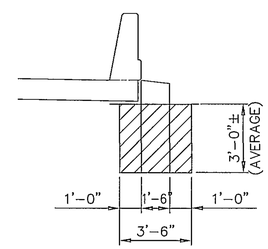
** SEE PROPOSAL NOTE 891



TYPICAL SECTION AT EXISTING WINGWALL
(LENGTH = 12'-0"±)



TYPICAL SECTION AT NEW WINGWALL
(LENGTH = 3'-9"±)



TYPICAL SECTION AT NEW WINGWALL OVERHANG
(LENGTH = 6'-0")

LIMITS OF EXCAVATION
(ITEM 503, UNCLASSIFIED EXCAVATION)
(TYPICAL 4 PLACES)

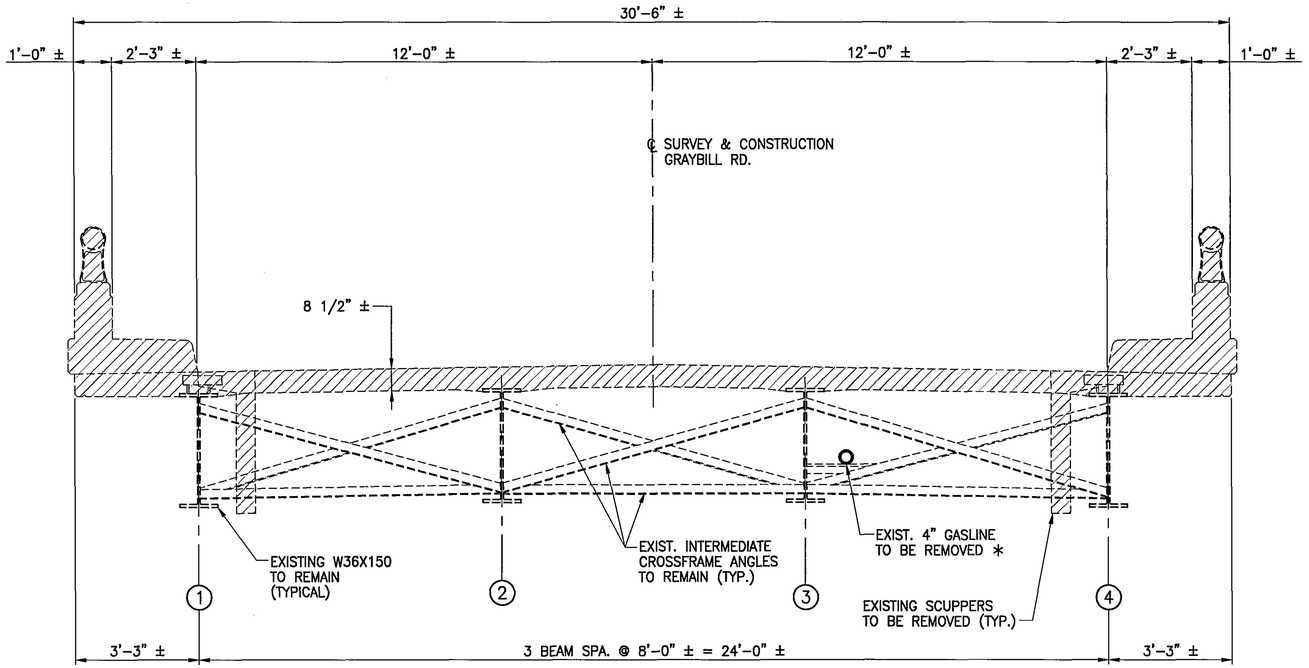
PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
333 EAST MAIN STREET, YOUNGSTOWN, OHIO

REVIEWED G.T. DATE 1-04
STRUCTURE FILE NUMBER 7702256
DRAWN S.J.R. REVISED
DESIGNED S.J.R. CHECKED W.H.

ESTIMATED QUANTITIES
BRIDGE NO. SUM-77-0378
UNDER GRAYBILL RD.

SUM-77-1.40

T:\DRAWING\08\06472\308\GRAYBILL\GRAY_EQ1.DWG SC: 1=1 11-07-03



TRANSVERSE SECTION
(EXISTING)

* PIPE SUPPORT BRACKETS SHALL REMAIN. U-BOLTS SHALL BE REMOVED.

KEY

REMOVAL PER ITEM 202-PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN

PROPOSED WORK:

1. SET TRAFFIC CONTROL DEVICES AND PLACE DETOUR INTO EFFECT.
2. INSTALL FALSEDECKING.
3. REMOVE EXISTING DECK, SAFETY CURBS, SCUPPERS, END CROSSFRAMES AND APPROACH SLABS.
4. JACK AND TEMPORARILY SUPPORT EXISTING FRAMING.
5. REMOVE EXISTING BEARINGS, PIER CAPS, AND PORTIONS OF ABUTMENTS AS NOTED ON THE PLANS.
6. CONSTRUCT NEW PIER CAP AND ABUTMENT CONCRETE.
7. INSTALL NEW ELASTOMERIC BEARINGS AND RESET FRAMING.
8. INSTALL STUD SHEAR CONNECTORS AND PLACE DIAPHRAGM CONCRETE.
9. PLACE CONCRETE DECK, PARAPETS AND APPROACH SLABS.
10. CLEAN AND REPAIR THE DESIGNATED CRACKS BY EPOXY INJECTION AND PATCH CONCRETE SURFACES AS NOTED ON THE PLANS.
11. SEAL CONCRETE SURFACES.
12. PLACE CRUSHED AGGREGATE SLOPE PROTECTION.
13. AFTER THE WORK IS COMPLETE, OPEN THE STRUCTURE TO TRAFFIC.

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ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REWSED	STRUCTURE FILE NUMBER	
W.H.		7702256	

DECK REMOVAL & PROPOSED WORK NOTE

BRIDGE NO. SUM-77-0378
UNDER GRAYBILL RD.

SUM-77-1.40

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REAR ABUTMENT

FORWARD ABUTMENT

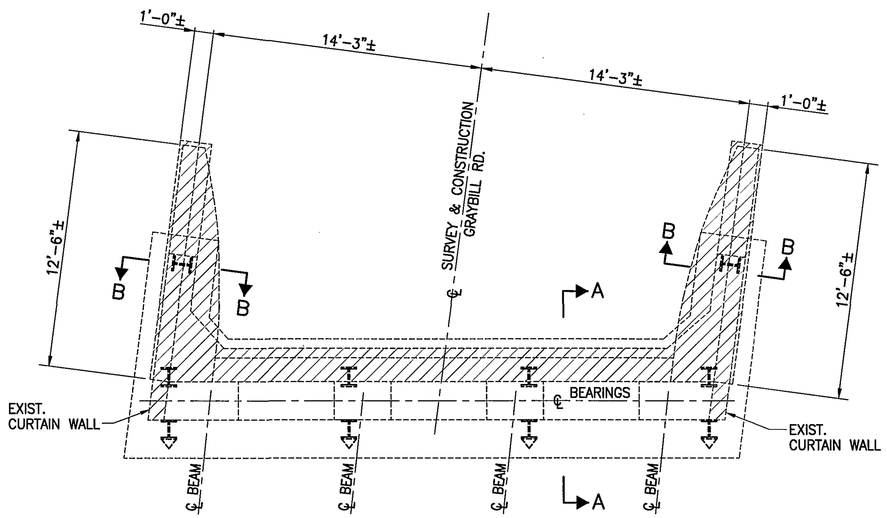
KEY

ITEM 202–PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN

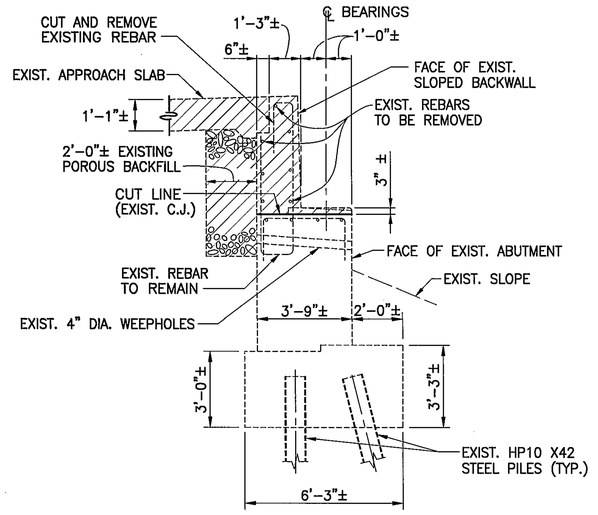
CRACK REPAIR PER ITEM SPECIAL

CRACKS:

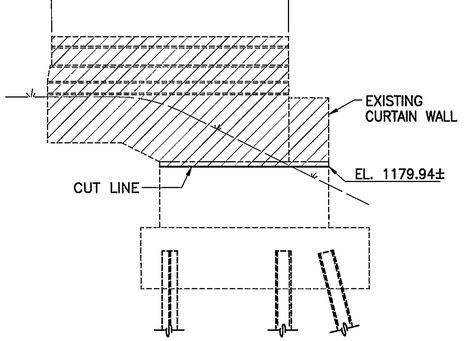
- (A) – 0.006" WIDE & 10" LONG
- (B) – 0.006" WIDE & 14" LONG
- (C) – 0.006" WIDE & 10" LONG
- (D) – 0.006" WIDE & 9" LONG
- (E) – 0.002" WIDE & 6" LONG
- (F) – 0.002" WIDE & 6" LONG

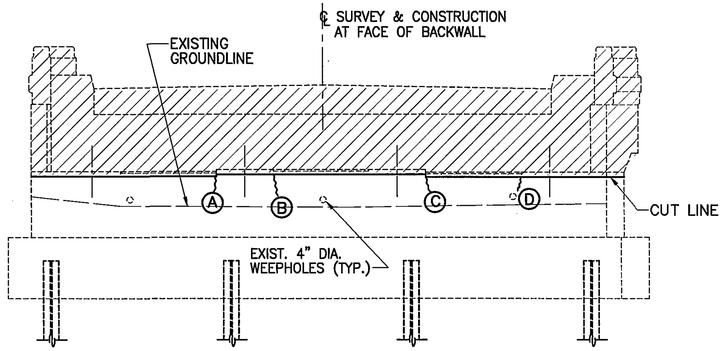


PLAN
(APPROACH SLAB NOT SHOWN)

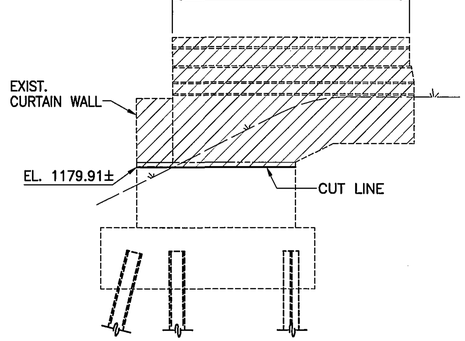


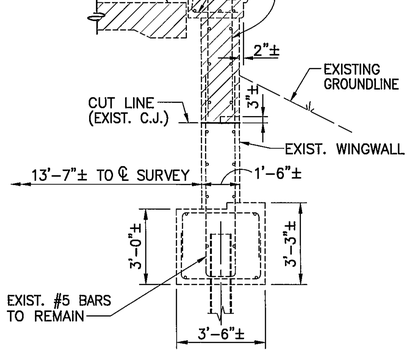
SECTION A–A



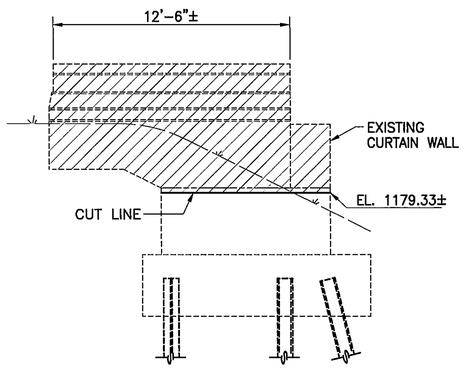


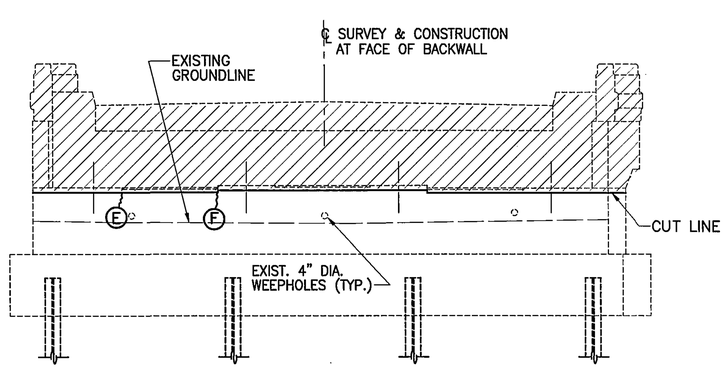
REAR ABUTMENT ELEVATION



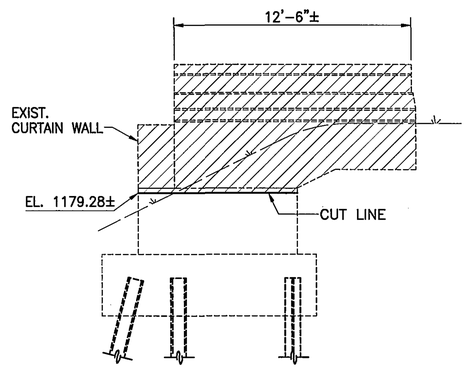


SECTION B–B





FORWARD ABUTMENT ELEVATION



ITEM SPECIAL– CRACK REPAIR BY EPOXY INJECTION

PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN JUNE OF 2003.

ESTIMATED QUANTITIES HAVE BEEN INCREASED BY 50% OVER MEASURED QUANTITIES TO ALLOW FOR ADDITIONAL DETERIORATION.

EXACT DIMENSIONS AND LOCATIONS OF CRACK REPAIRS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.

ESTIMATED CRACK REPAIRS (FEET)

LOCATION	MEASURED QUANTITIES	ESTIMATED QUANTITIES
REAR ABUTMENT	3.6	5.5
FORWARD ABUTMENT	1.0	1.5
TOTAL	4.6	7

THE ABOVE ESTIMATED QUANTITIES ARE CARRIED TO THE TABLE ON SHEET 2/17

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1–04

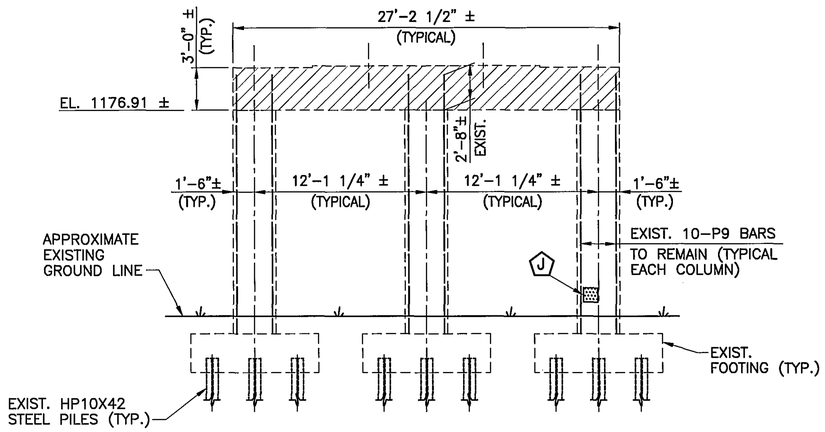
CHECKED	REVISED	STRUCTURE FILE NUMBER
W.H.		7702256

ABUTMENT REMOVAL DETAILS

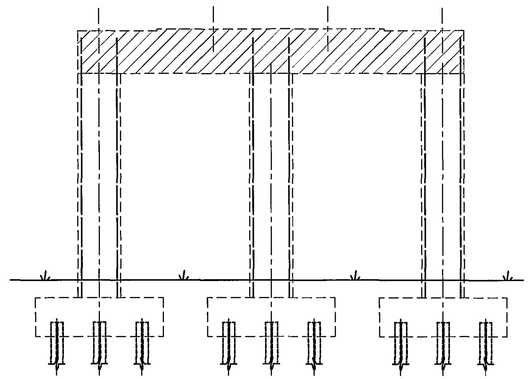
BRIDGE NO. SUM–77–0378
UNDER GRAYBILL RD.

SUM–77–1.40

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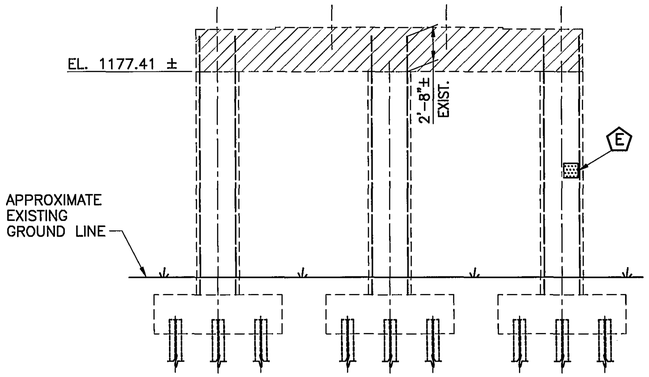


ELEVATION LOOKING EAST

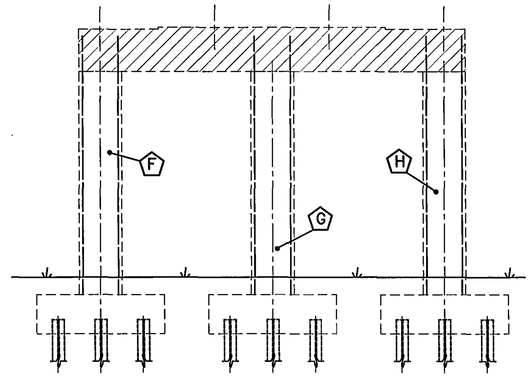


ELEVATION LOOKING WEST

PIER 3

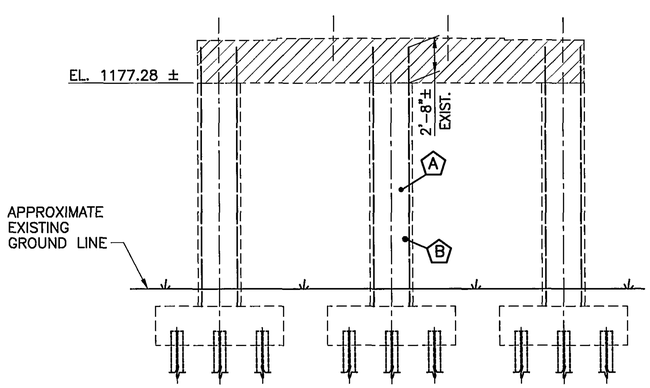


ELEVATION LOOKING EAST

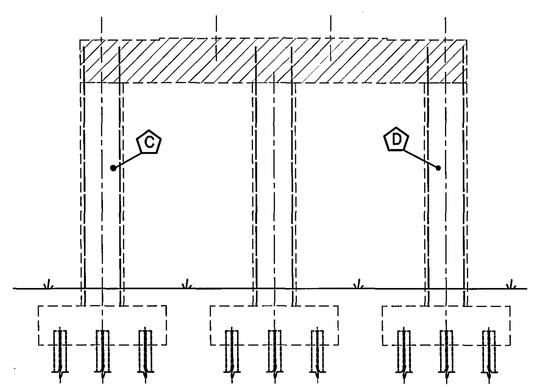


ELEVATION LOOKING WEST

PIER 2



ELEVATION LOOKING EAST



ELEVATION LOOKING WEST

PIER 1

PATCHING:	
A	3" DIA. POP-OUT – AREA = 0.05 SQ. FT.
B	4" DIA. POP-OUT – AREA = 0.09 SQ. FT.
C	4" DIA. POP-OUT – AREA = 0.09 SQ. FT.
D	3" DIA. POP-OUT – AREA = 0.05 SQ. FT.
E	12" X 12" SPALLED AREA = 1.00 SQ. FT.
F	3" DIA. POP-OUT – AREA = 0.05 SQ. FT.
G	3" DIA. POP-OUT – AREA = 0.05 SQ. FT.
H	3" DIA. POP-OUT – AREA = 0.05 SQ. FT.
J	12" X 12" SPALLED AREA = 1.00 SQ. FT.

KEY

ITEM 202–PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN

AREA TO BE PATCHED PER ITEM 519

ITEM 519–PATCHING CONCRETE STRUCTURES

PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN JUNE OF 2003.

ESTIMATED QUANTITIES HAVE BEEN INCREASED BY 50% OVER MEASURED QUANTITIES TO ALLOW FOR ADDITIONAL DETERIORATION.

EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.

ESTIMATED PATCHING QUANTITIES (SQ. FEET)

LOCATION	MEASURED QUANTITIES	POP-OUT QUANTITIES	ESTIMATED QUANTITIES
PIER 1	0.28	5	7.92
PIER 2	1.15	5	9.23
PIER 3	1.00	5	9.00
TOTAL	2.43	15	26

THE ABOVE ESTIMATED QUANTITIES ARE CARRIED TO THE TABLE ON SHEET 2/17

NOTES:

DUE TO THE LARGE QUANTITY OF POP-OUTS ON THE FACE OF EXISTING PIER COLUMNS, THE CONTRACTOR SHALL LOCATE ALL POP-OUTS AS DIRECTED BY THE ENGINEER.

A QUANTITY OF 5 SQ. FT. FOR EACH PIER HAS BEEN INCLUDED IN THE ESTIMATED PATCHING QUANTITIES.

PREPARED BY: ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

DESIGNED S.J.R. | DRAWN S.J.R. | REVIEWED G.T. | DATE 1-04 | CHECKED W.H. | REVISED | STRUCTURE FILE NUMBER 7702256

PIER REMOVAL & PATCHING DETAILS
BRIDGE NO. SUM-77-0378
UNDER GRAYBILL RD.

SUM-77-1.40

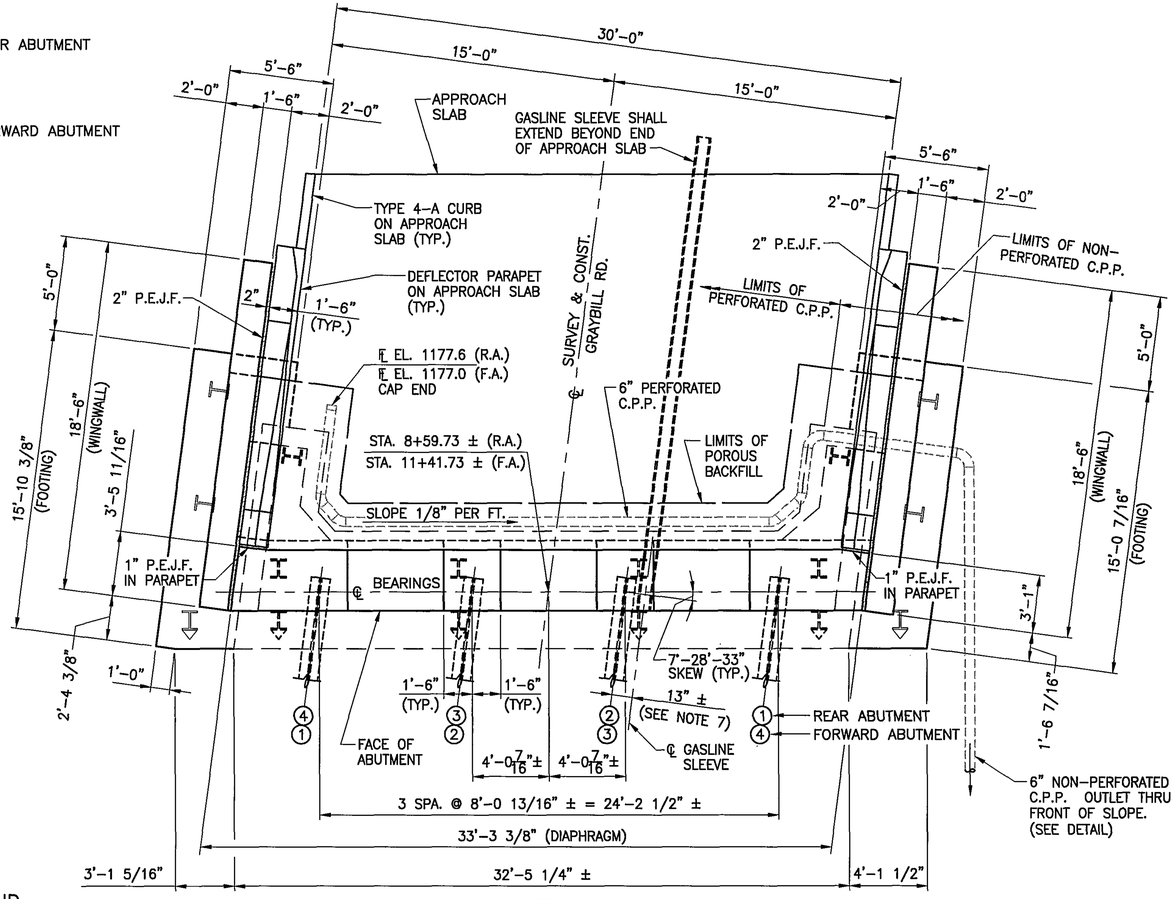
5 / 17

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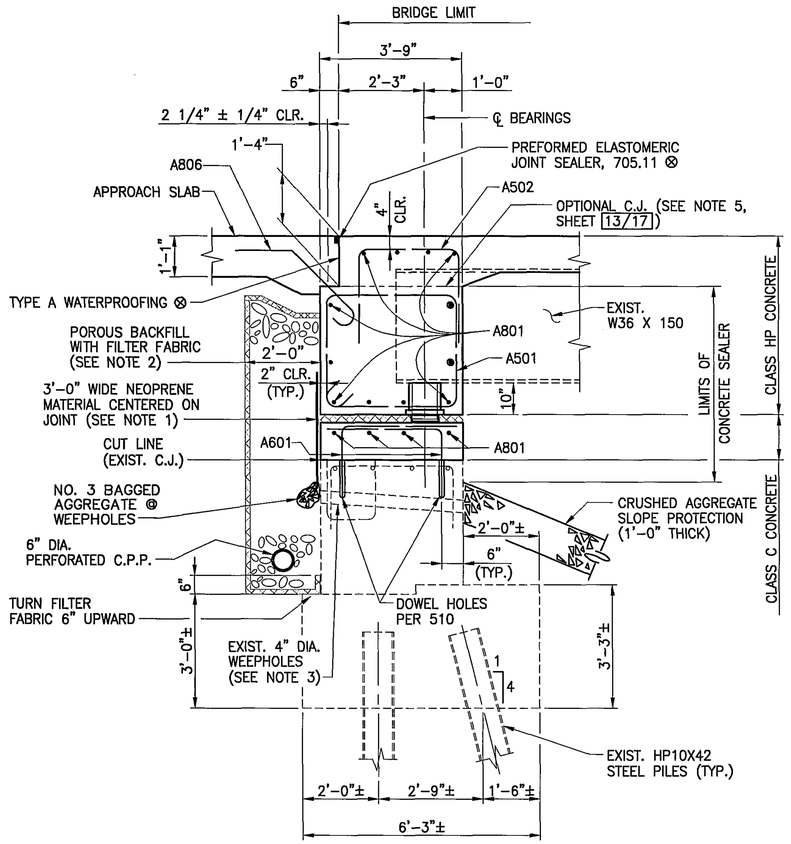
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REAR ABUTMENT

FORWARD ABUTMENT



PLAN



SECTION A-A

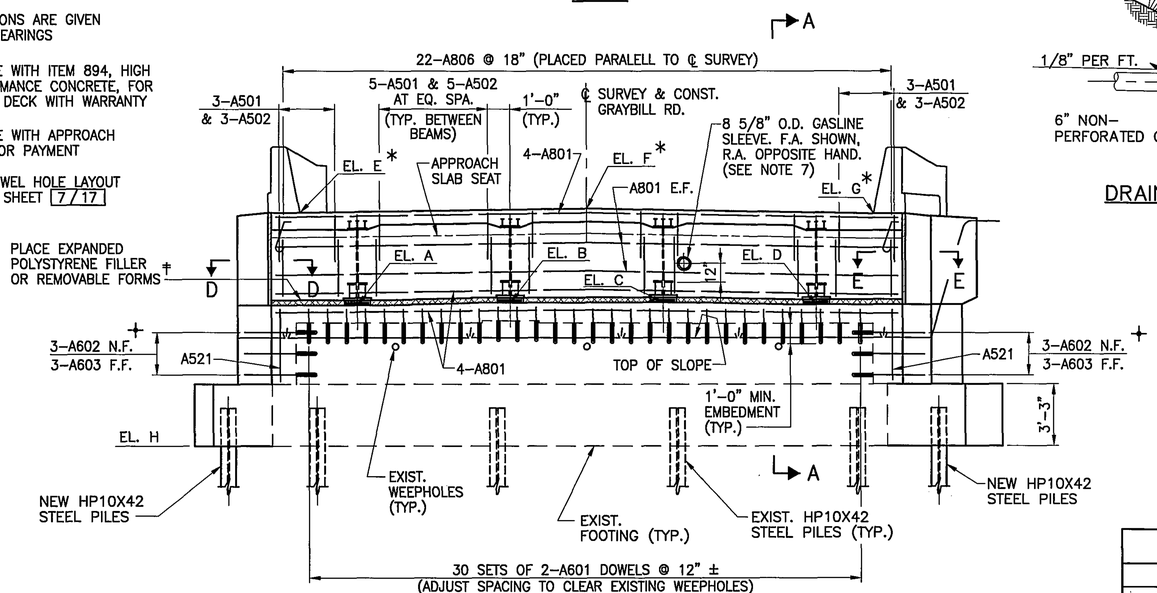
LEGEND

* ELEVATIONS ARE GIVEN AT ℄ BEARINGS

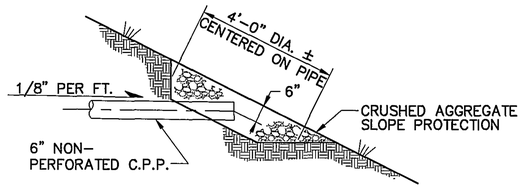
† INCLUDE WITH ITEM 894, HIGH PERFORMANCE CONCRETE, FOR BRIDGE DECK WITH WARRANTY

⊗ INCLUDE WITH APPROACH SLAB FOR PAYMENT

+ SEE DOWEL HOLE LAYOUT DETAIL, SHEET 7/17



ELEVATION



DRAIN PIPE OUTLET DETAIL

NOTES:

1. 3'-0" WIDE NEOPRENE MATERIAL SHALL BE PAID PER THE LINEAR FOOT PRICE BID FOR ITEM 516, SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.
2. POROUS BACKFILL WITH FILTER FABRIC, 2'-0" THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.
3. THE CONTRACTOR SHALL INSPECT AND CLEAN OUT ALL EXISTING WEEPHOLES AND ADD BAGGED AGGREGATE. INCLUDE WITH POROUS BACKFILL FOR PAYMENT.
4. FOR R.A. RIGHT AND F.A. LEFT WINGWALL ELEVATIONS AND FOUNDATION LAYOUT PLAN, SEE SHEET 7/17
5. FOR R.A. LEFT AND F.A. RIGHT WINGWALL ELEVATIONS AND SECTIONS D-D AND E-E, SEE SHEET 8/17
6. FOR APPROACH SLAB DETAILS, SEE SHEET 9/17
7. DOMINION EAST OHIO WILL FURNISH 8 5/8" O.D. SLEEVES TO BE INSTALLED BY THE CONTRACTOR THROUGH THE SUPERSTRUCTURE DIAPHRAGMS AT EACH ABUTMENT. THE SLEEVES SHALL CONTINUE UNDER AND TO THE ENDS OF THE APPROACH SLABS. THE DIMENSIONS GIVEN TO LOCATE THE SLEEVE ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF THE GASLINE PRIOR TO INSTALLING THE SLEEVE. THE CENTERLINE OF THE SLEEVE SHALL BE CONCENTRIC WITH THE PROPOSED CENTERLINE OF THE PIPE ON THE BRIDGE.

ELEVATION TABLE

	A	B	C	D	E	F	G	H
REAR ABUTMENT	1180.90	1181.02	1181.00	1180.86	1185.79	1186.00	1185.73	1173.47±
FORWARD ABUTMENT	1180.31	1180.42	1180.40	1180.25	1185.16	1185.36	1185.08	1172.85±

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702256	

ABUTMENT DETAILS

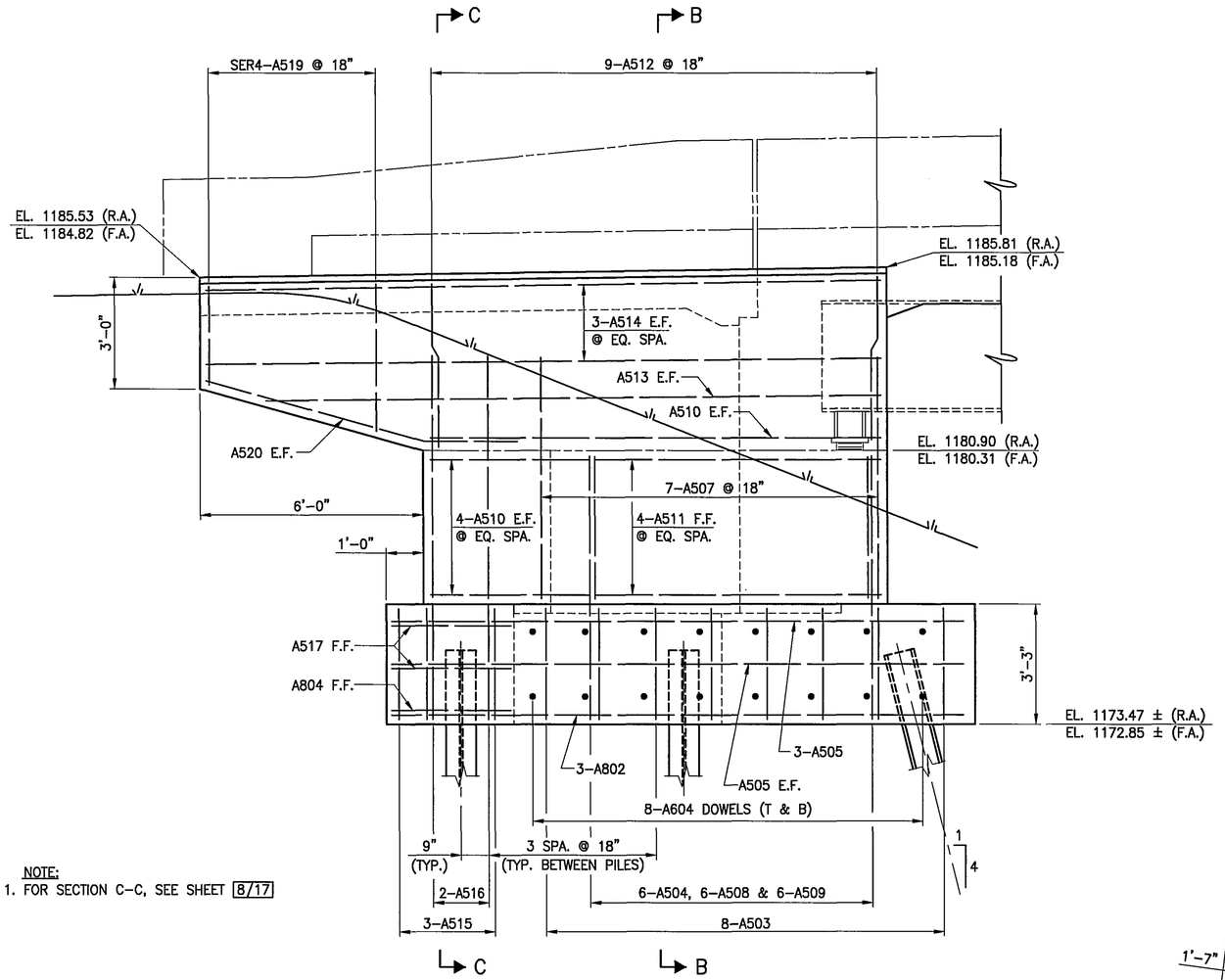
BRIDGE NO. SUM-77-0378
UNDER GRAYBILL RD.

SUM-77-1.40

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NOTE:
1. FOR SECTION C–C, SEE SHEET 8/17

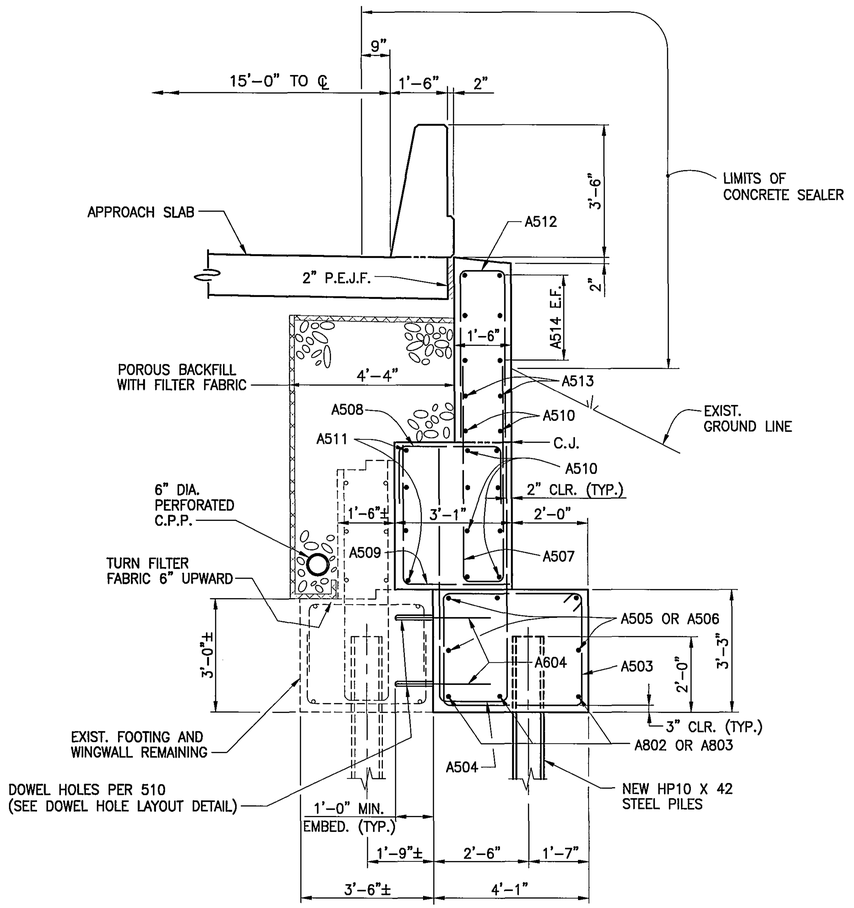
ELEVATION – REAR ABUTMENT (RIGHT)
ELEVATION – FORWARD ABUTMENT (LEFT)

DOWEL HOLE LAYOUT DETAIL
R.A. RIGHT & F.A. LEFT SHOWN
R.A. LEFT & F.A. RIGHT OPPOSITE HAND

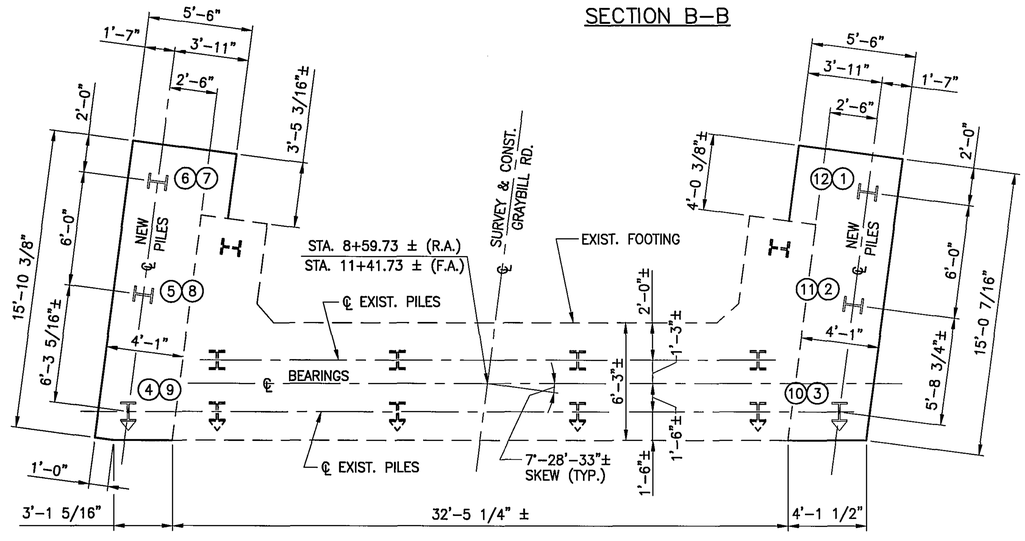
REAR ABUTMENT

FORWARD ABUTMENT

LEGEND
(9) – INDICATES PILE NUMBER
PILES 1 THRU 6 ARE AT REAR ABUTMENT
PILES 7 THRU 12 ARE AT FORWARD ABUTMENT
– INDICATES DIRECTION OF 1:4 BATTER.
– INDICATES NEW HP10 X 42 STEEL PILE
– INDICATES EXISTING HP10 X 42 STEEL PILE



SECTION B–B



FOUNDATION LAYOUT PLAN

PREPARED BY
ms consultants, inc.
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333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1–04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702256	

FOUNDATION LAYOUT PLAN & WINGWALL DETAILS

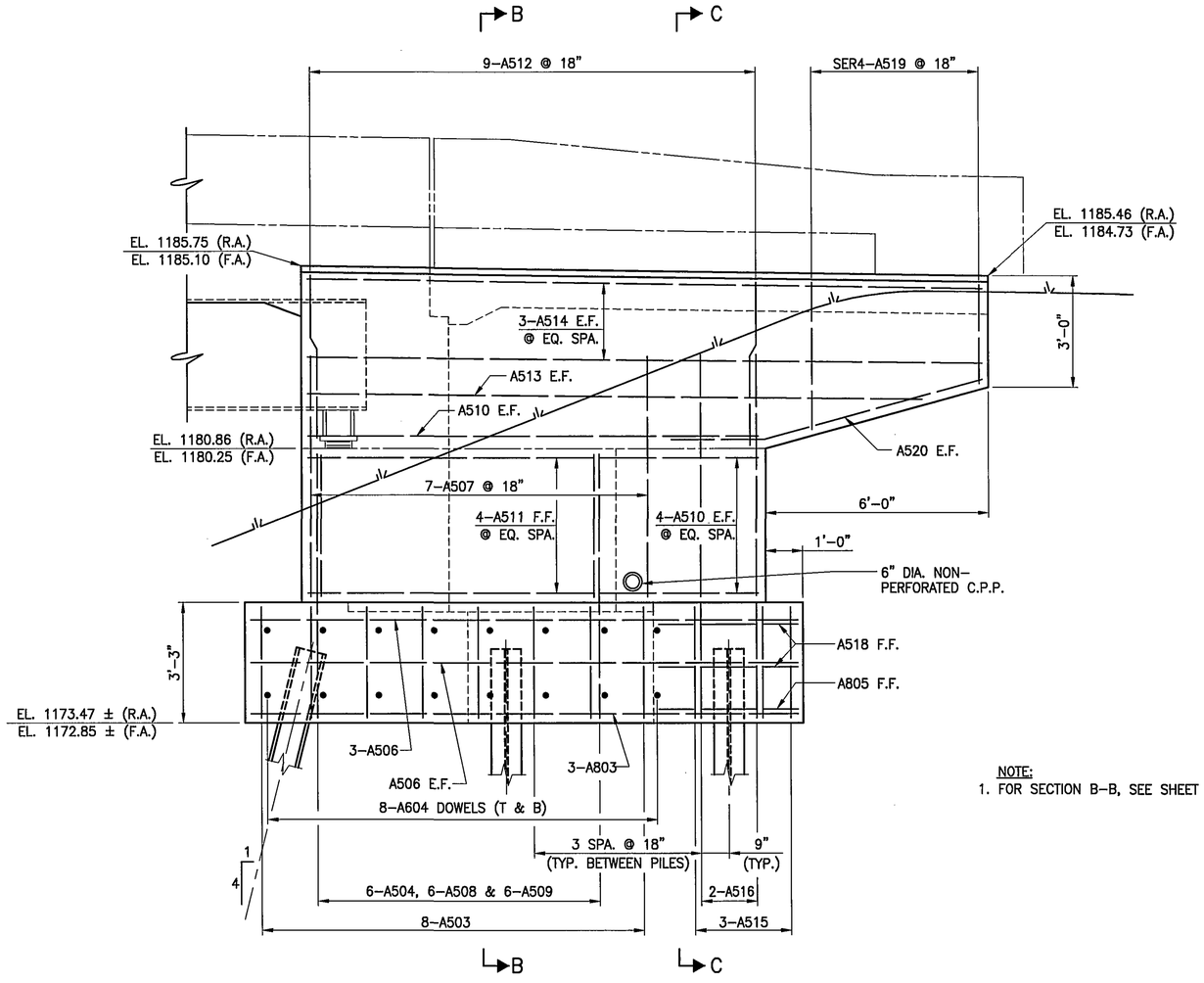
BRIDGE NO. SUM–77–0378
UNDER GRAYBILL RD.

SUM–77–1.40

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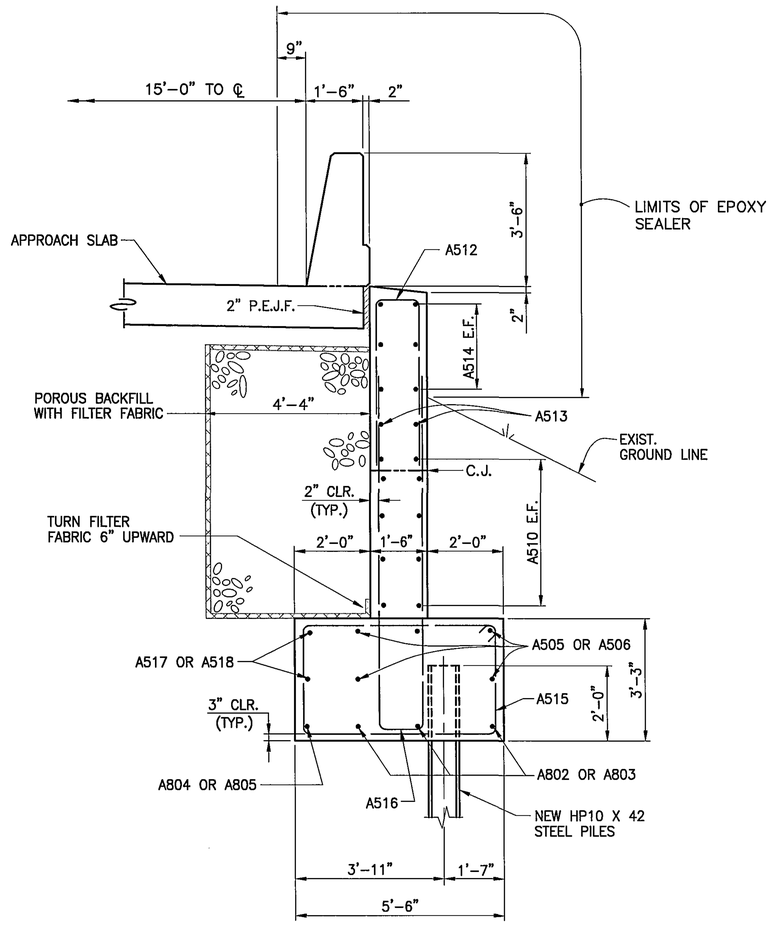
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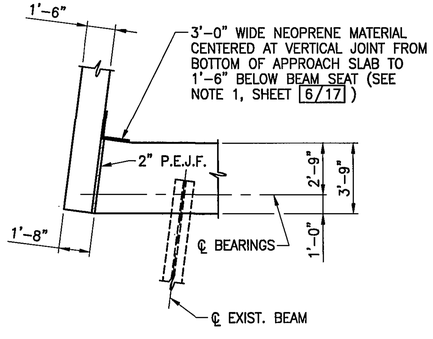
ELEVATION – REAR ABUTMENT (LEFT)

ELEVATION – FORWARD ABUTMENT (RIGHT)

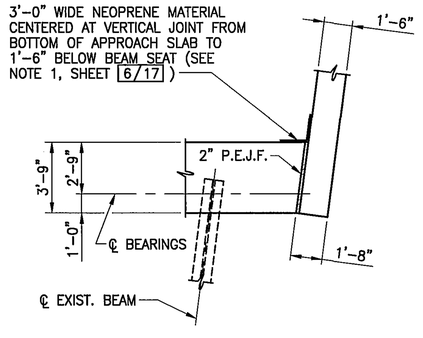
NOTE:
1. FOR SECTION B–B, SEE SHEET 7/17



SECTION C–C



SECTION D–D



SECTION E–E

PREPARED BY
ms consultants, inc.
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333 EAST FEDERAL STREET, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1–04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702256	

WINGWALL DETAILS
BRIDGE NO. SUM–77–0378
UNDER GRAYBILL RD.

SUM–77–1.40

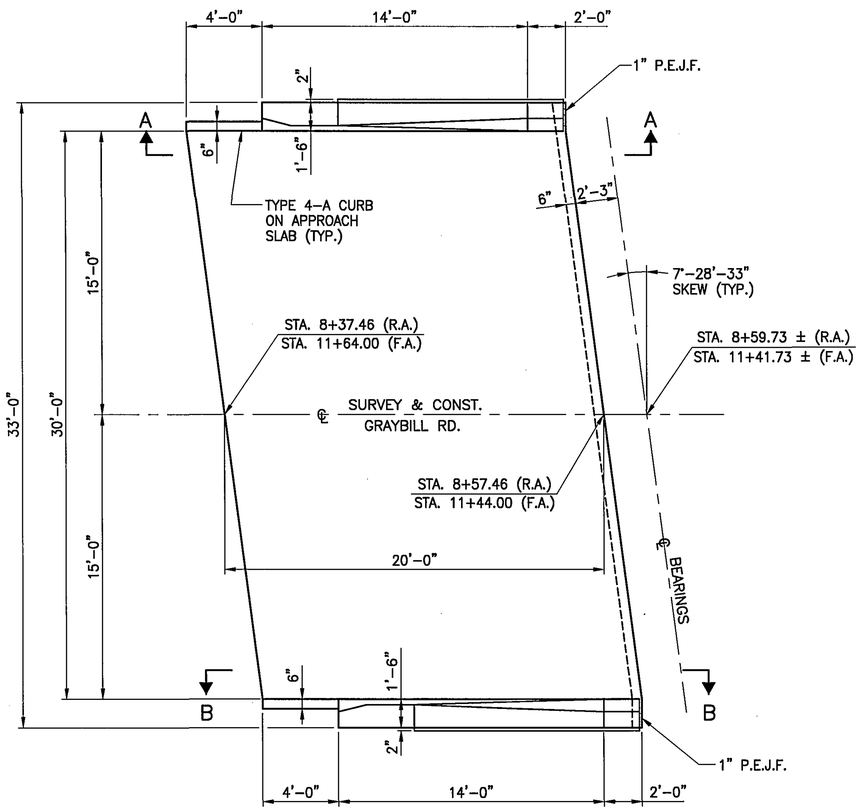
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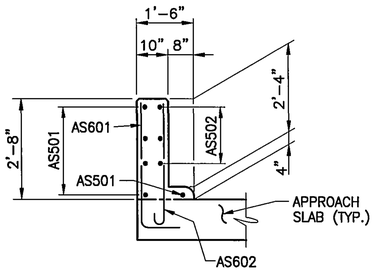
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REAR ABUTMENT

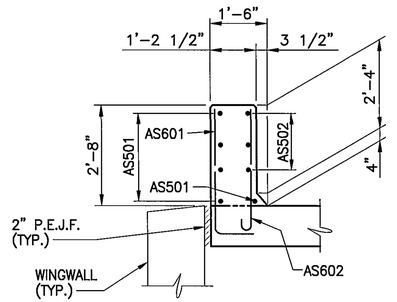
FORWARD ABUTMENT



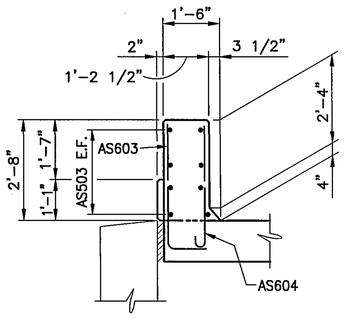
PLAN



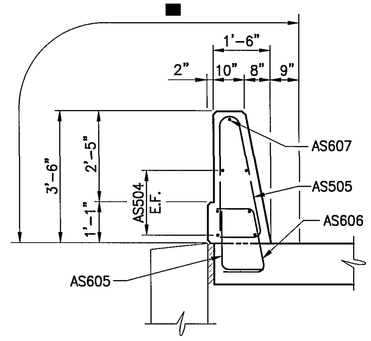
SECTION C-C



SECTION D-D

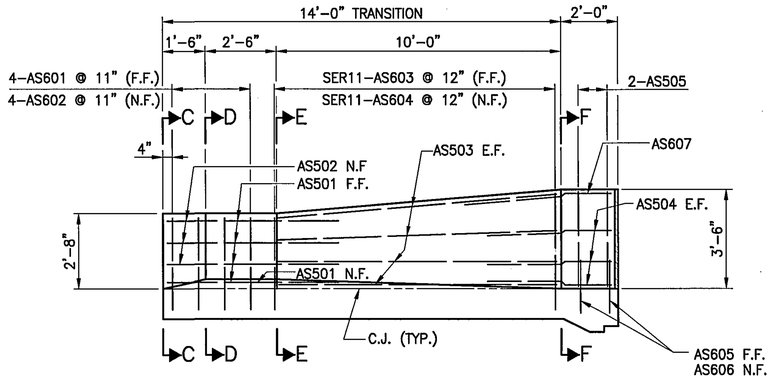


SECTION E-E



SECTION F-F

■ DENOTES SEALING OF CONCRETE SURFACES PER ITEM 864



VIEW A-A (AS SHOWN)
VIEW B-B (OPPOSITE HAND)

NOTES:

1. CONCRETE FOR APPROACH SLABS SHALL BE PER ITEM 511, CLASS HP, CONCRETE BRIDGE DECK. CONCRETE FOR PARAPETS ON APPROACH SLABS SHALL BE PER ITEM 511, CLASS HP, CONCRETE BRIDGE DECK (PARAPET).
2. FOR APPROACH SLAB BARRIER REINFORCEMENT SCHEDULE, SEE SHEET 17/17 . FOR APPROACH SLAB REINFORCEMENT, SEE STANDARD DRAWING AS-1-81.
3. FOR ADDITIONAL APPROACH SLAB DETAILS, REFER TO STANDARD BRIDGE DRAWING AS-1-81.
4. PAYMENT FOR ALL BARRIERS ON APPROACH SLABS SHALL BE INCLUDED WITH ITEM 526, APPROACH SLABS, T=13", AS PER PLAN.

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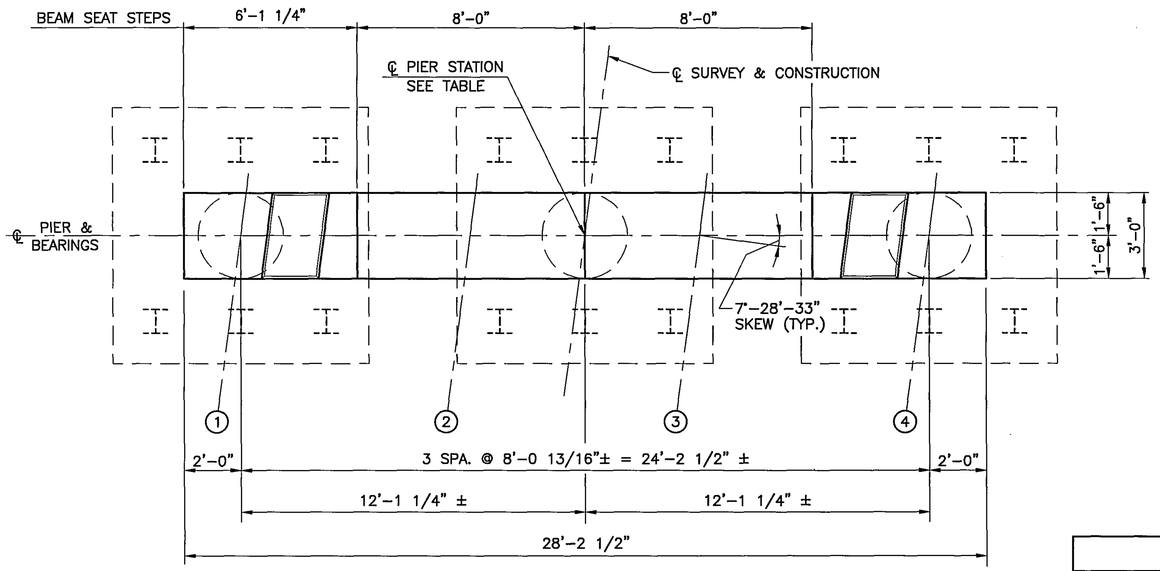
APPROACH SLAB DETAILS
BRIDGE NO. SUM-77-0378
UNDER GRAYBILL RD.

SUM-77-1.40

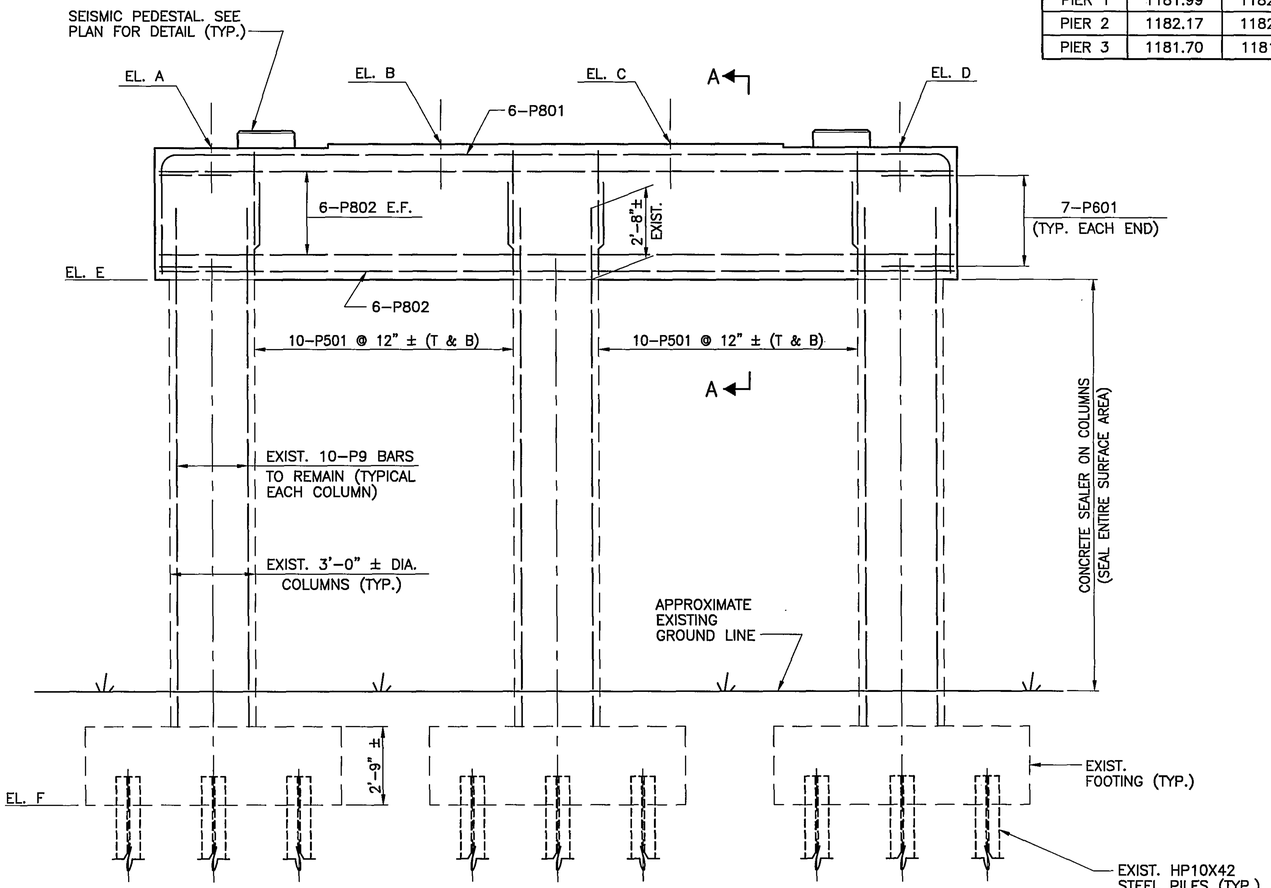
9 / 17

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T:\DRAWING\08\06472\308\GRAYBILL\GRAY_AS1.DWG SC: 1=48 9-18-03



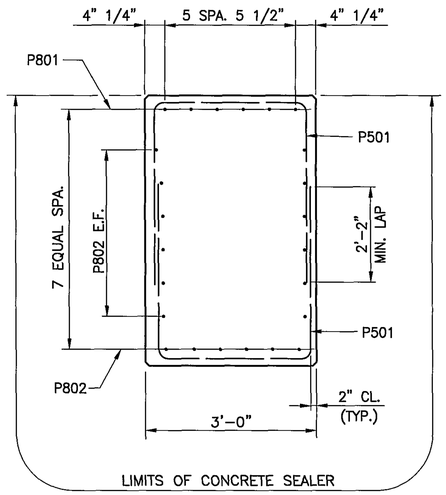
PLAN



ELEVATION

CL PIER STATIONS	
LOCATION	STATION
CL PIER 1	STA. 9+17.73 ±
CL PIER 2	STA. 10+00.73 ±
CL PIER 3	STA. 10+83.73 ±

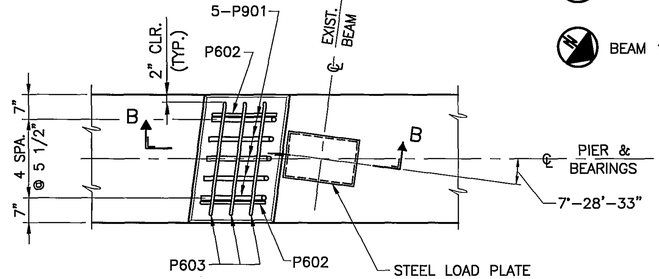
ELEVATION TABLE						
	A	B	C	D	E	F
PIER 1	1181.99	1182.12	1182.13	1182.01	1177.28±	1158.78±
PIER 2	1182.17	1182.30	1182.29	1182.16	1177.41±	1158.91±
PIER 3	1181.70	1181.81	1181.80	1181.66	1176.91±	1158.41±



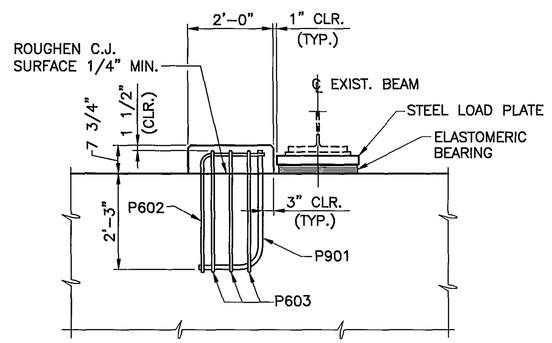
SECTION A-A

BEAM 4

BEAM 1



SEISMIC PEDESTAL PLAN



SECTION B-B

NOTE: ADJUST PIER CAP REINFORCEMENT NECESSARY TO PLACE SEISMIC REINFORCEMENT.

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PIER DETAILS
BRIDGE NO. SUM-77-0378
UNDER GRAYBILL RD.

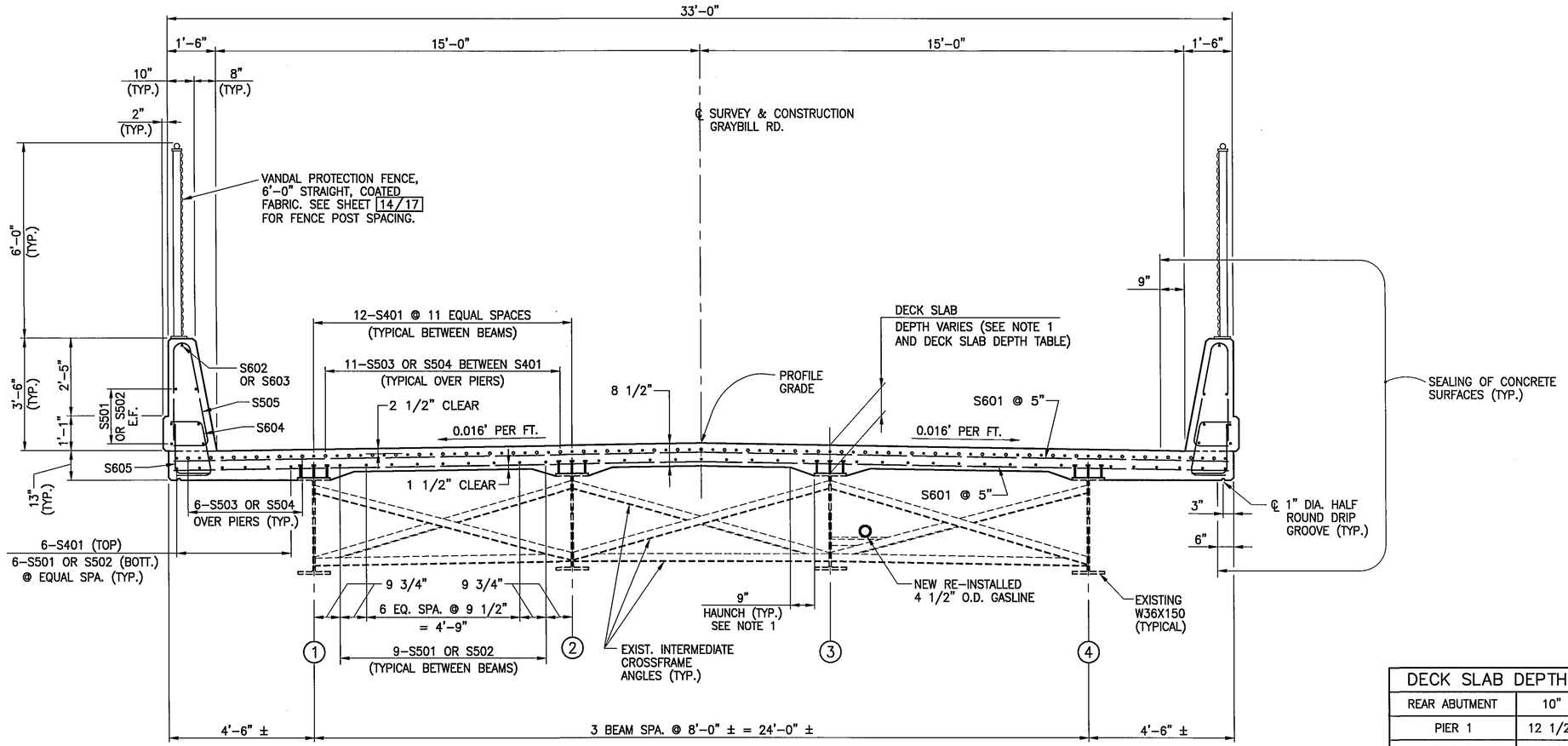
SUM-77-1.40

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TRANSVERSE SECTION

DECK SLAB DEPTH	
REAR ABUTMENT	10"
PIER 1	12 1/2"
PIER 2	13 3/16"
PIER 3	11 13/16"
FORWARD ABUTMENT	9 1/2"

NOTES:

1. DECK SLAB CONCRETE QUANTITY:

   THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM HAUNCH. THE ESTIMATE ASSUMES A VARIABLE HAUNCH THICKNESS AS SHOWN IN THE TABLE AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE IS ± 3 INCHES.

   THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.24.

2. FOR PARAPET DETAILS, REFER TO O.D.O.T. STANDARD SBR-1-99, REV. 7-19-02

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TRANSVERSE SECTION
BRIDGE NO. SUM-77-0378
UNDER GRAYBILL RD.

SUM-77-1.40

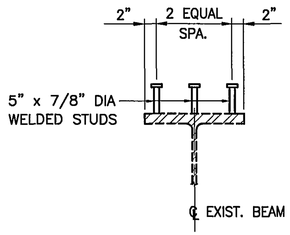
11/17

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DEFLECTION AND CAMBER											
SPAN 1			SPAN 2			SPAN 3			SPAN 4		
0.25L	0.50L	0.75L	0.25L	0.50L	0.75L	0.25L	0.50L	0.75L	0.25L	0.50L	0.75L
1/4"	5/16"	1/16"	1/2"	7/8"	7/16"	7/16"	7/8"	1/2"	1/16"	5/16"	1/4"

L = SPAN LENGTH



SHEAR CONNECTOR DETAIL

NOTE: SHEAR STUDS SHALL BE LOCATED NO CLOSER THAN 3" LONGITUDINALLY FROM END OF EXISTING TOP PLATE.

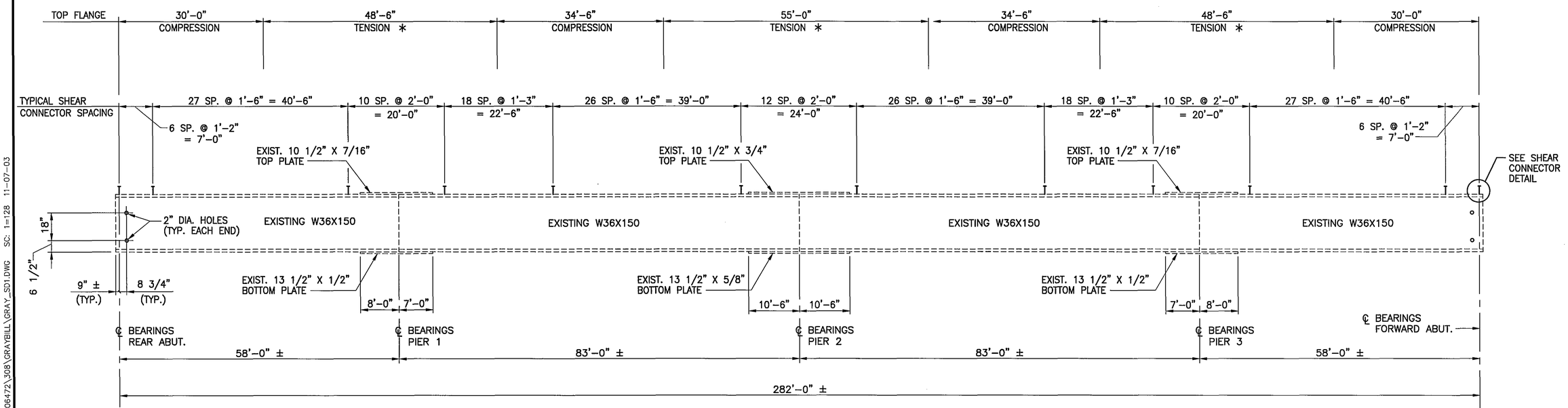
NOTES:

1. THE CONTRACTOR SHALL COMPLETELY REMOVE THE EXISTING END CROSSFRAMES AND DRILL 2" DIA. HOLES AT EACH END AS SHOWN IN THE EXISTING BEAM ELEVATION. INCLUDE WITH ITEM 202 FOR PAYMENT.

2. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE AT LEAST 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.

3. FIELD PAINTING OF EXISTING STEEL BEAMS: THE EXISTING STEEL BEAMS AND CROSSFRAMES SHALL BE PAINTED WITH A THREE-COAT PAINT SYSTEM CONSISTING OF AN ORGANIC ZINC PRIME COAT, AN EPOXY INTERMEDIATE COAT, AND A URETHANE FINISH COAT. THE COATING SYSTEM SHALL CONFORM TO 708.02. THE TOP COAT COLOR SHALL CLOSELY APPROACH FEDERAL STANDARD NO. 595B-14272 (GREEN).

* INCLUDES STRESS REVERSAL AREAS



TYPICAL EXISTING BEAM ELEVATION

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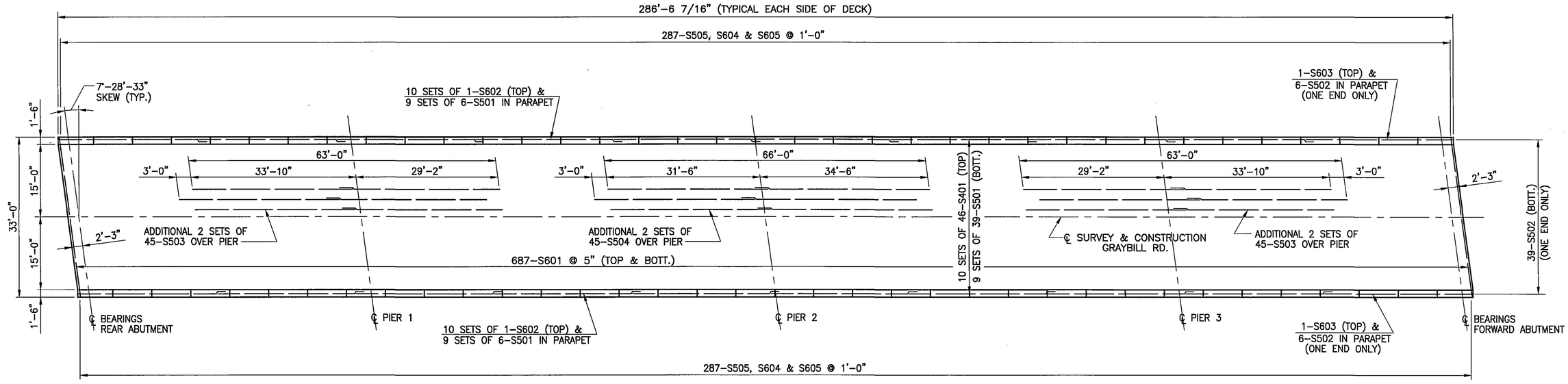
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FRAMING DETAILS
BRIDGE NO. SUM-77-0378
UNDER GRAYBILL RD.

SUM-77-1.40

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DECK PLAN

NOTES:

1. FOR REINFORCEMENT SCHEDULE, SEE SHEET 17/17
2. MINIMUM REBAR LAPS:
   LONGITUDINAL
   #4 BARS = 1'-7"
   #5 BARS = 2'-7"
   #6 BARS = 3'-4"
3. FOR LOCATION OF PARAPET CRACK CONTROL JOINTS, SEE SHEET 14/17 .
4. FOR SEMI-INTEGRAL DIAPHRAGM DETAILS AND NOTES, SEE SHEETS 6 THRU 8 .
5. ABUTMENT DIAPHRAGM CONCRETE, STEEL SUPERSTRUCTURE: THE CONCRETE ENCASING STRUCTURAL STEEL MEMBERS SUPPORTED IN SEMI-INTEGRAL TYPE ABUTMENTS MAY BE PLACED BEFORE THE ACTUAL DECK CONCRETE IS PLACED. IF THE CONTRACTOR CHOOSES THIS OPTION THE CONCRETE SHALL HAVE HAD AT LEAST 48 HOURS OF SET TIME BEFORE DECK CONCRETE IS PLACED.

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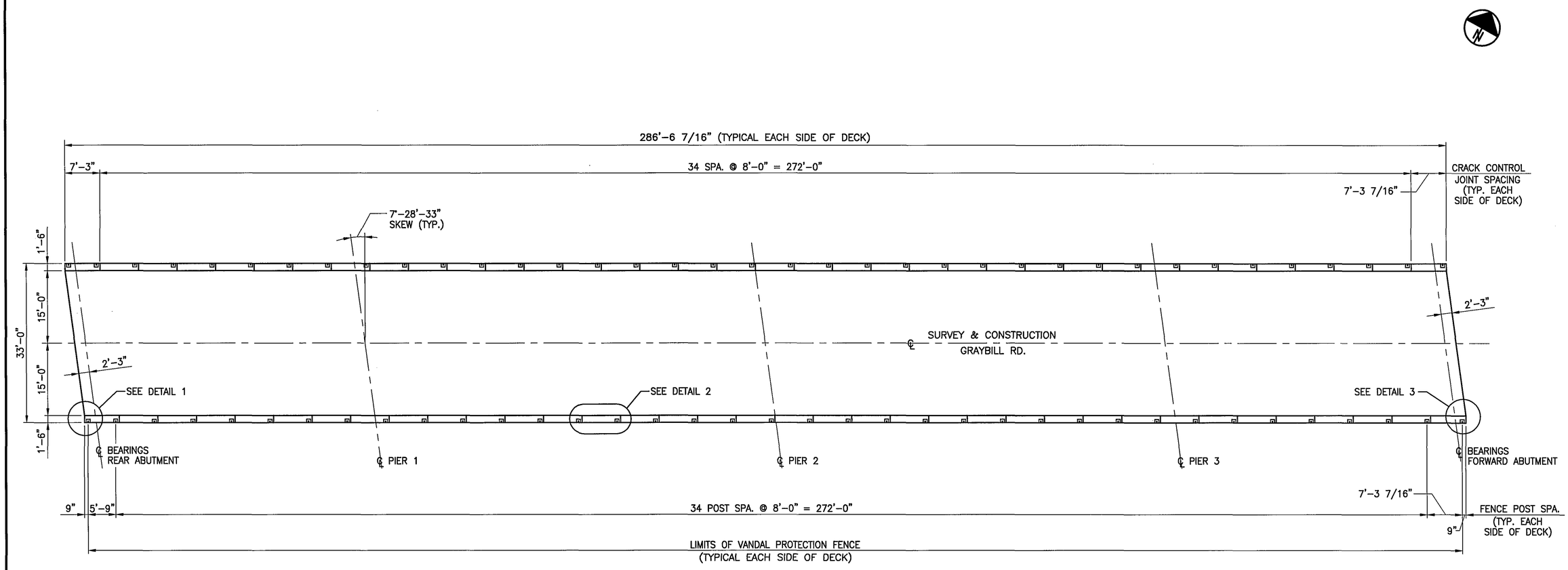
DECK PLAN
BRIDGE NO. SUM-77-0378
UNDER GRAYBILL RD.

SUM-77-1.40

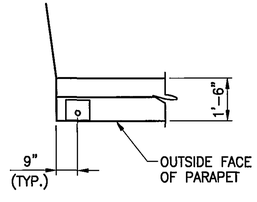
13 / 17

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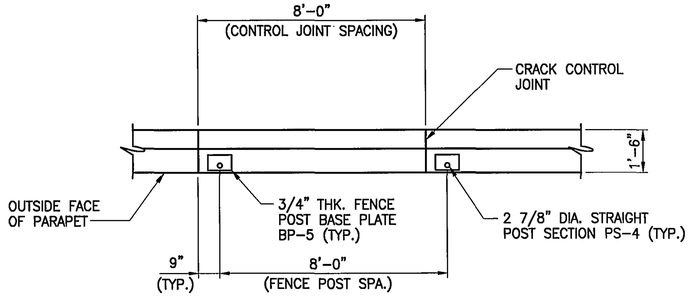
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DECK PLAN

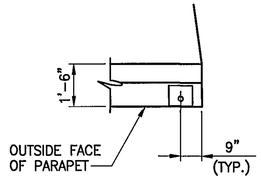


DETAIL 1



DETAIL 2

FOR ADDITIONAL VANDAL PROTECTION FENCE DETAILS, REFER TO STANDARD BRIDGE DRAWING VPF-1-90.



DETAIL 3

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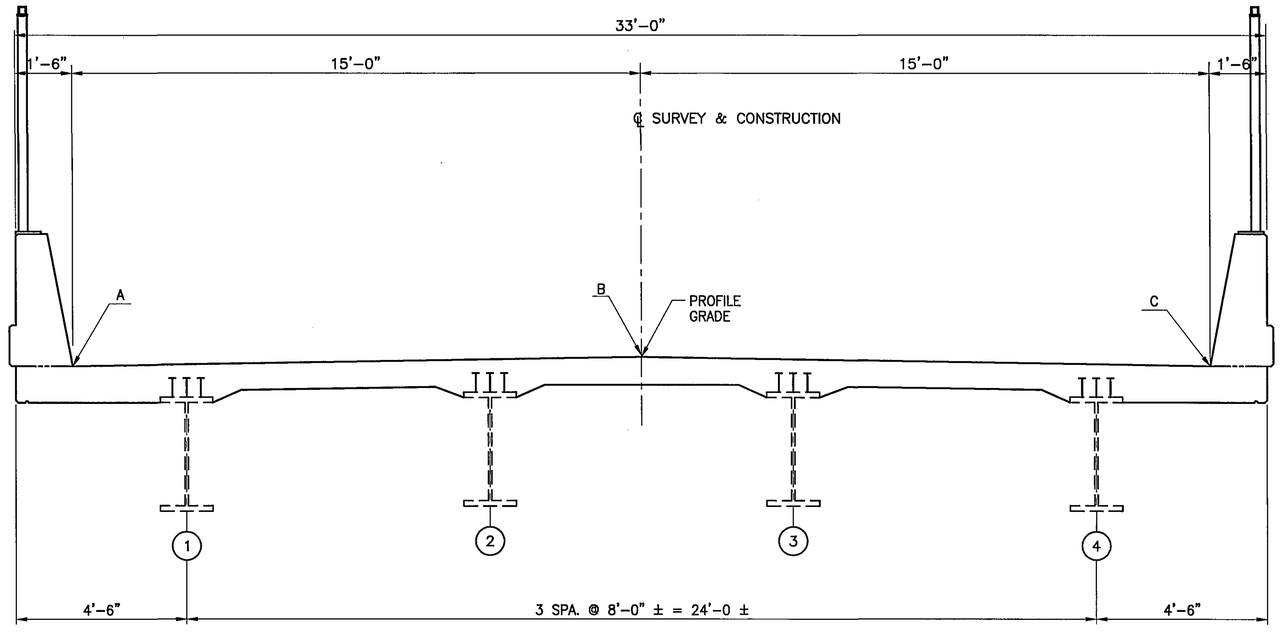
CONTROL JOINT & FENCE DETAILS

BRIDGE NO. SUM-77-0378
UNDER GRAYBILL RD.

SUM-77-1.40

SCREED ELEVATIONS TABLE

		BEAM 1		BEAM 2		BEAM 3		BEAM 4		A		B		C	
SPAN NO.	LOCATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION	STATION	SCREED ELEVATION
SPAN NO.1	0.00 L	8+58.16	1185.79	8+59.21	1185.93	8+60.25	1185.95	8+61.30	1185.83	8+57.76	1185.73	8+59.73	1186.00	8+61.70	1185.79
	0.25 L	8+72.66	1186.01	8+73.71	1186.15	8+74.75	1186.16	8+75.80	1186.05	8+72.26	1185.95	8+74.23	1186.22	8+76.20	1186.00
	0.50 L	8+87.16	1186.18	8+88.21	1186.32	8+89.25	1186.33	8+90.30	1186.22	8+86.76	1186.13	8+88.73	1186.39	8+90.70	1186.17
	0.75 L	9+01.66	1186.31	9+02.71	1186.45	9+03.75	1186.46	9+04.80	1186.34	9+01.26	1186.26	9+03.23	1186.52	9+05.20	1186.29
SPAN NO.2	0.00 L	9+16.16	1186.43	9+17.21	1186.56	9+18.25	1186.57	9+19.30	1186.45	9+15.76	1186.38	9+17.73	1186.63	9+19.70	1186.41
	0.25 L	9+36.91	1186.60	9+37.96	1186.74	9+39.00	1186.74	9+40.05	1186.62	9+36.51	1186.55	9+38.48	1186.80	9+40.45	1186.57
	0.50 L	9+57.66	1186.72	9+58.71	1186.85	9+59.75	1186.85	9+60.80	1186.72	9+57.26	1186.67	9+59.23	1186.91	9+61.20	1186.68
	0.75 L	9+78.41	1186.71	9+79.46	1186.84	9+80.50	1186.84	9+81.55	1186.71	9+78.01	1186.66	9+79.98	1186.90	9+81.95	1186.66
SPAN NO.3	0.00 L	9+99.16	1186.66	10+00.21	1186.78	10+01.25	1186.78	10+02.30	1186.65	9+98.76	1186.61	10+00.73	1186.85	10+02.70	1186.60
	0.25 L	10+19.91	1186.62	10+20.96	1186.75	10+22.00	1186.74	10+23.05	1186.61	10+19.51	1186.58	10+21.48	1186.81	10+23.45	1186.56
	0.50 L	10+40.66	1186.54	10+41.71	1186.66	10+42.75	1186.66	10+43.80	1186.52	10+40.26	1186.50	10+42.23	1186.72	10+44.20	1186.47
	0.75 L	10+61.41	1186.34	10+62.46	1186.46	10+63.50	1186.45	10+64.55	1186.31	10+61.01	1186.30	10+62.98	1186.52	10+64.95	1186.26
SPAN NO.4	0.00 L	10+82.16	1186.08	10+83.21	1186.19	10+84.25	1186.18	10+85.30	1186.04	10+81.76	1186.04	10+83.73	1186.25	10+85.70	1185.99
	0.25 L	10+96.66	1185.90	10+97.71	1186.01	10+98.75	1186.00	10+99.80	1185.86	10+96.26	1185.86	10+98.23	1186.07	11+00.20	1185.80
	0.50 L	11+11.16	1185.71	11+12.21	1185.82	11+13.25	1185.81	11+14.30	1185.66	11+10.76	1185.67	11+12.73	1185.88	11+14.70	1185.61
	0.75 L	11+25.66	1185.47	11+26.71	1185.58	11+27.75	1185.57	11+28.80	1185.42	11+25.26	1185.43	11+27.23	1185.64	11+29.20	1185.37
	1.00 L	11+40.16	1185.20	11+41.21	1185.30	11+42.25	1185.28	11+43.30	1185.14	11+39.76	1185.16	11+41.73	1185.36	11+43.70	1185.08



SCREED LINE LOCATIONS

NOTE:

1. SCREED ELEVATIONS:

   SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

   L = SPAN LENGTH

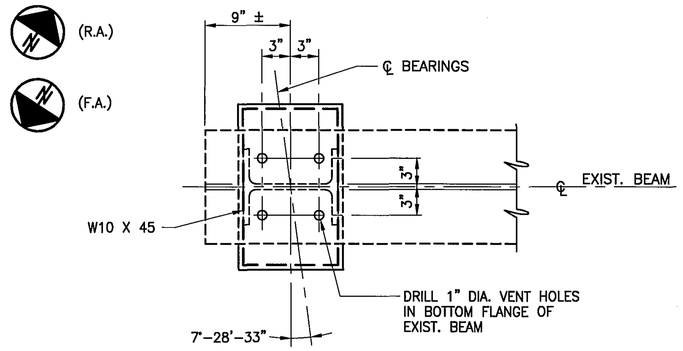
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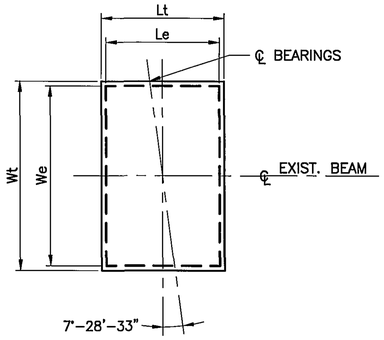
SCREED ELEVATIONS
BRIDGE NO. SUM-77-0378
UNDER GRAYBILL RD.

SUM-77-1.40

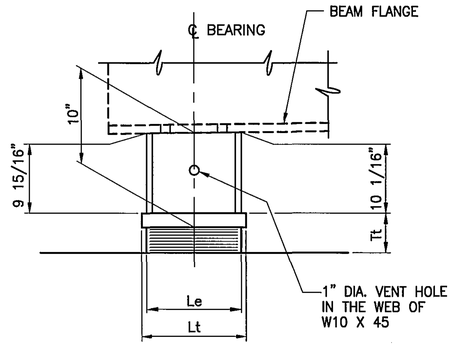
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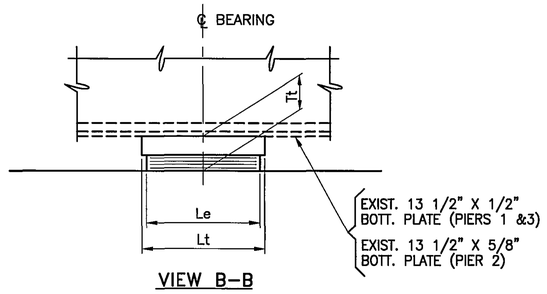
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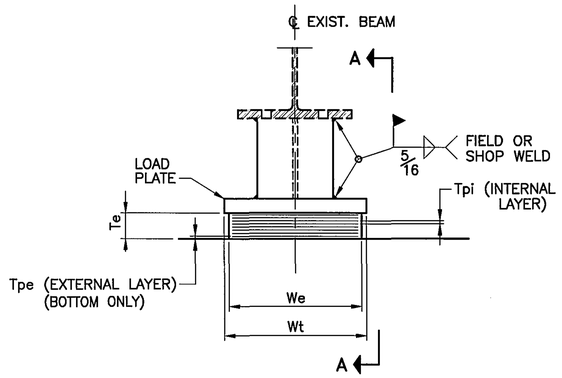
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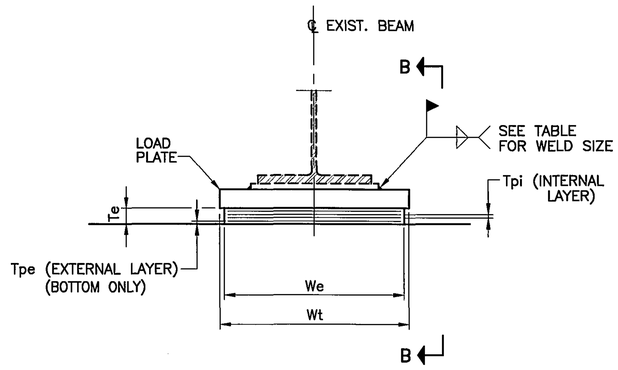
VIEW A-A



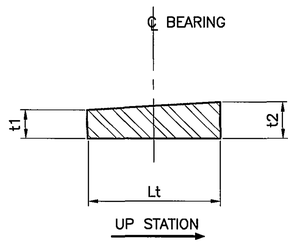
VIEW B-B



LAMINATED ELASTOMERIC EXPANSION BEARING
(ABUTMENTS)



LAMINATED ELASTOMERIC EXPANSION BEARING
(PIERS)



STEEL LOAD PLATE DETAIL

NOTES:

LOAD PLATE & HP SHAPE

THE STEEL LOAD PLATE AND HP SHAPE SHALL BE ASTM A36 STEEL. THE HP SHAPE IS CONSIDERED A COMPONENT OF THE BEARING.

THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.

WELDING OF THE LOAD PLATE OR HP SHAPE TO THE SUPERSTRUCTURE SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE SHALL NOT EXCEED 300° F AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

ELASTOMERIC BEARINGS

THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.

BEARING REPOSITIONING

IF THE DECK CONCRETE IS PLACED AT AN AMBIENT TEMPERATURE HIGHER THAN 80° F OR LOWER THAN 40° F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60° F ± 10° F, THE BEAMS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60° F ± 10° F.

BASIS OF PAYMENT

THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS, EXPANSION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516, EACH, ELASTOMERIC BEARING WITH INTERNAL LAMINATES (NEOPRENE) AND LOAD PLATE.

BEARING LOCATION	BEARING TYPE	NO. REQ'D.	DEAD LOAD KIPS	LIVE LOAD KIPS	TOTAL LOAD (DL+LL) KIPS	Le (inches)	We (inches)	Tpi (inches)	NO. OF Tpi'S	Tpe (1 EA.) (inches)	NUMBER OF INTERNAL LAMINATES (14 GAGE)	Te (inches)	STEEL LOAD PLATE				Tt (inches)	FILLET WELD SIZE (inches)	RETAINER ANGLE
													Wt (inches)	Lt (inches)	t1 (inches)	t2 (inches)			
REAR ABUTMENT	EXP.	4	66	47	113	10	16.5	0.31	8	0.22	8	3.30	17.5	11	1 1/2	1 1/2	4.80		NONE
PIER 1	EXP.	4	146	59	205	12	19	0.35	5	0.25	5	2.37	20	13	2	2 1/8	4.43	3/8	NONE
PIER 2	EXP.	4	163	63	226	12	19	0.35	4	0.25	4	1.95	20	13	2 1/4	2 1/4	4.20	3/8	NONE
PIER 3	EXP.	4	146	59	205	12	19	0.35	5	0.25	5	2.37	20	13	2 1/8	2	4.43	3/8	NONE
FORWARD ABUTMENT	EXP.	4	66	47	113	10	16.5	0.31	8	0.22	8	3.30	17.5	11	1 1/2	1 1/2	4.80		NONE

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
300 EAST CAMPUS DRIVE, YOUNGSTOWN, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
S.J.R.	S.J.R.	G.T.	1-04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
W.H.		7702256	

ELASTOMERIC BEARING DETAILS
BRIDGE NO. SUM-77-0378
UNDER GRAYBILL RD.

SUM-77-1.40

16 / 17

367
381

T:\DRAWING\08\06472\308\GRAYBILL\GRAY_EX1.DWG SC: 1=8 9-11-03

ABUTMENTS

MARK	NUMBER R.A.	NUMBER F.A.	TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	DIMENSIONS INC.
A501	21	21	42	13'–3"	580	18	2'–11"	3'–5"		
A502	21	21	42	7'–7"	332	2	2'–6"	2'–10"	2'–6"	
A503	16	16	32	13'–9"	459	18	2'–10"	3'–9"		
A504	12	12	24	21'–0"	526	2	9'–9"	1'–9"	9'–9"	
A505	5	5	10	15'–0"	156	ST.				
A506	5	5	10	14'–6"	151	ST.				
A507	14	14	28	13'–11"	407	2	6'–6"	1'–2"	6'–6"	
A508	12	12	24	6'–6"	163	2	2'–0"	2'–9"	2'–0"	
A509	12	12	24	6'–6"	163	2	3'–10"	2'–9"	0	
A510	20	20	40	12'–2"	508	ST.				
A511	8	8	16	8'–2"	136	ST.				
A512	18	18	36	9'–5"	354	2	4'–3"	1'–2"	4'–3"	
A513	4	4	8	16'–6"	138	ST.				
A514	12	12	24	18'–2"	455	ST.				
A515	6	6	12	16'–7"	208	18	2'–10"	5'–2"		
A516	4	4	8	20'–5"	170	2	9'–9"	1'–2"	9'–9"	
A517	2	2	4	3'–2"	13	ST.				
A518	2	2	4	3'–9"	16	ST.				
A519	2 SER OF 4	2 SER OF 4	4 SER OF 4	5'–11" TO 8'–7"	121	2	2'–6" TO 3'–10"	1'–2"	2'–6" TO 3'–10"	$10\frac{11}{16}$"
A520	4	4	8	8'–9"	73	8	6'–1"	2'–8"	3 1/8	
A521	2	2	4	11'–2"	47	2	4'–0"	3'–5"	4'–0"	
A601	60	60	120	4'–8"	842	2	1'–9"	3'–1"	0	
A602	6	6	12	5'–7"	101	2	3'–9"	2'–0"	0	
A603	6	6	12	4'–7"	83	2	2'–9"	2'–0"	0	
A604	32	32	64	2'–6"	240	ST.				
A801	16	16	32	32'–11"	2813	ST.				
A802	3	3	6	15'–0"	240	ST.				
A803	3	3	6	14'–6"	232	ST.				
A804	1	1	2	3'–2"	17	ST.				
A805	1	1	2	3'–9"	20	ST.				
A806	22	22	44	5'–1"	597	17	2'–9"			

TOTAL = 10,359 LB.

APPROACH SLABS

MARK	NUMBER REAR	NUMBER FWD.	TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	DIMENSIONS INC.
AS501	10	10	20	5'–6"	115	ST.				
AS502	6	6	12	5'–6"	69	16				
AS503	16	16	32	10'–0"	334	ST.				
AS504	12	12	24	4'–6"	113	ST.				
AS505	4	4	8	7'–5"	62	4				
AS601	8	8	16	4'–2"	100	2	3'–3"	1'–1"	0	
AS602	8	8	16	3'–11"	94	1	3'–3"			
AS603	2 SER OF 11	2 SER OF 11	4 SER OF 11	4'–2" TO 5'–0"	303	2	3'–3" TO 4'–1"	1'–1"		1"
AS604	2 SER OF 11	2 SER OF 11	4 SER OF 11	3'–11" TO 4'–9"	286	1	3'–3" TO 4'–1"			1"
AS605	4	4	8	3'–1"	37	2	1'–8"	1'–7"	0	
AS606	4	4	8	3'–5"	41	5	1'–1"	1'–7"	1'–1"	
AS607	2	2	4	5'–0"	30	ST.				

TOTAL = 1584 LB.

SUPERSTRUCTURE

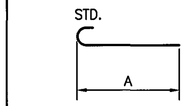
MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	DIMENSIONS INC.
S401	460	30'–0"	9218	ST.				
S501	459	30'–0"	14,362	ST.				
S502	51	39'–6"	2101	ST.				
S503	180	33'–0"	6195	ST.				
S504	90	34'–6"	3239	ST.				
S505	574	7'–5"	4442	4				
S601	1374	32'–11"	67939	ST.				
S602	20	30'–0"	901	ST.				
S603	2	19'–6"	59	ST.				
S604	574	3'–5"	2949	5	1'–7"	1'–1"	1'–1"	
S605	574	2'–6"	2155	2	1'–1"	1'–7"	0	

TOTAL = 113,560 LB.

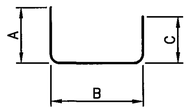
PIERS

MARK	NUMBER P–1	NUMBER P–2	NUMBER P–3	TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	DIMENSIONS INC.
P501	40	40	40	120	9'–1"	1136	2	3'–4"	2'–8"	3'–4"	
P601	14	14	14	42	7'–3"	457	2	2'–6"	2'–6 1/2"	2'–6"	
P602	4	4	4	12	4'–2"	75	2	2'–9"	1'–7"	0	
P603	6	6	6	18	12'–2"	329	23				
P801	6	6	6	18	35'–8"	1714	2	4'–2"	27'–9"	4'–2"	
P802	18	18	18	54	27'–9"	4001	ST.				
P901	10	10	10	30	4'–1"	416	2	2'–9"	1'–7"	0	

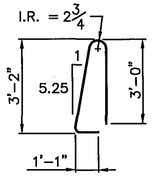
TOTAL = 8,129 LB.



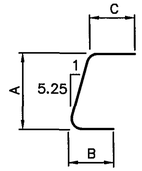
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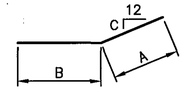
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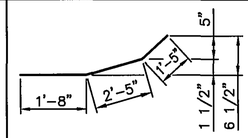
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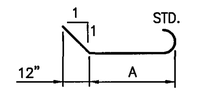
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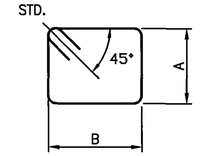
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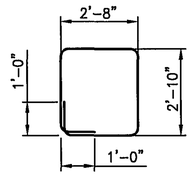
TYPE 16



TYPE 17



TYPE 18



TYPE 23

NOTES:

BAR SIZE: THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

ALL BARS TO BE EPOXY COATED.

REINFORCING BAR SAMPLES: REFER TO C.M.S. SECTION 700, 709.01 THROUGH 709.05 AND 709.08. SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING FOR EACH BRIDGE. RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURES BY THE ADDITIONAL STEEL, SPLICED IN ACCORDANCE WITH THE PROJECT PLANS.

PREPARED BY
ms consultants, inc.
CONSULTING ENGINEERS & PLANNERS
333 EAST ENGINEERING, YOUNGSTOWN, OHIO

REVIEWED G.T. DATE 1-04 STRUCTURE FILE NUMBER 7702256
DRAWN S.J.R. REVISED
DESIGNED S.J.R. CHECKED W.H.

REINFORCING STEEL LIST

BRIDGE NO. SUM-77-0378
UNDER GRAYBILL RD.

SUM-77-1.40

17 / 17

368
381

T:\DRAWING\08\06472\308\GRAYBILL\GRAY_RL1.DWG SC: 1=1 9-22-03

℄ SURVEY & CONSTRUCTION I-77

℄ SR 241 OFF RAMP
P.I. Sta = 12+33.62
D = 7° 00' 00" (RT)
Dc = 1° 30' 00"
R = 3819.72'
T = 233.62'
L = 466.67'
E = 7.14'

226 227 228 229 230

N 42°50'44" W

NORTHBOUND LANES

BEGIN PAVEMENT WIDENING AND SINGLE SLOPE CONCRETE BARRIER, TYPE D
IR-77 Sta. 227+49.93, 88' Rt.

℄ SR 241 RAMP PC Sta. 10+00.00 = I-77 Sta. 229+82.25, 78.0' Rt.

℄ SR 241 RAMP

CONST. LIMITS

B-2

Sta 10+00.00
BEGIN NOISE BARRIER
IR-77 Sta. 227+49.93, 96' Rt.

BORING B-1 LOCATED @ STA. 225+06, 104' Rt.

GR 17

15"

30 LF-15" CONDUIT, TYPE C @ 5.00%

B 7

B-3

R 15

P.I. Sta 12+64 = SR 241 RAMP Sta. 10+31.91, 18' Rt.

MATCH LINE STA. 13+00

LA-R/W

NOTE 1:
THE NOISE WALL PANEL ELEVATIONS AND FOUNDATION DEPTHS ARE DESIGNED FOR THE POST SPACINGS AS SHOWN. ANY CHANGES MADE BY THE CONTRACTOR SHALL BE HIS RESPONSIBILITY TO INSURE PROPER PANEL ELEVATIONS AND FOUNDATION DEPTHS ARE MET. MAXIMUM PANEL STEPS OF APPROXIMATELY 1'-0" SHALL BE MAINTAINED, EXCEPT FOR THE END PANELS WHICH CAN HAVE A MAXIMUM STEP OF 2'-0".

INLET MISC.: SINGLE SLOPE CONC. BARRIER, TYPE D
I-77 STA. 227+80, 88.0' RT.
N.W. ℄ STA. 10+30, 8.0' LT.
GRATE=1185.43
15" NE=1181.50

HW-2.1 OR 2.2
STA. 227+80, 116.3' RT.
15"=1180.00

ROCK CHANNEL PROTECTION, TYPE C W/ FILTER
6'Lx4'Wx1.5'THK=1.33 C.Y.

SEE SHEET 119 FOR GUARDRAIL AND BARRIER QUANTITIES

SEE SHEET 373B FOR FINIAL AND ICON PANEL DETAILS AND LOCATIONS.

FOR QUANTITIES, SEE ODOT NOISE BARRIER DETAILS, SHEET 378

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED S.P.C.
CHECKED W.B.H.

PLAN AND ELEVATION
SR 241 NOISE BARRIER

SUM-77-1.40

369
381

PROPOSED GROUND
EXIST. GROUND

1184.82 1185.07 1185.33 1185.59 1185.84 1186.10 1186.35 1186.61 1186.85

24' POST SPACING TYP.

24' POST SPACING TYP.

THEORETICAL TOP OF WALL

TOP OF WALL CAP (TYP.)

10+00 1189.69
10+12 1191.69
10+24 1193.69
10+36 1195.69
10+48 1197.69
10+60 1199.69
10+84 1200.69
11+08 1201.69
11+56 1202.69
11+80 1203.69
12+52 1204.69
12+64
12+88

FINIAL (TYP)

℄ SR 241 P.G.

2.56%

6" MAX. TYP.

PROP. GROUND FACE OF WALL

EX. GROUND FACE OF WALL

ICON

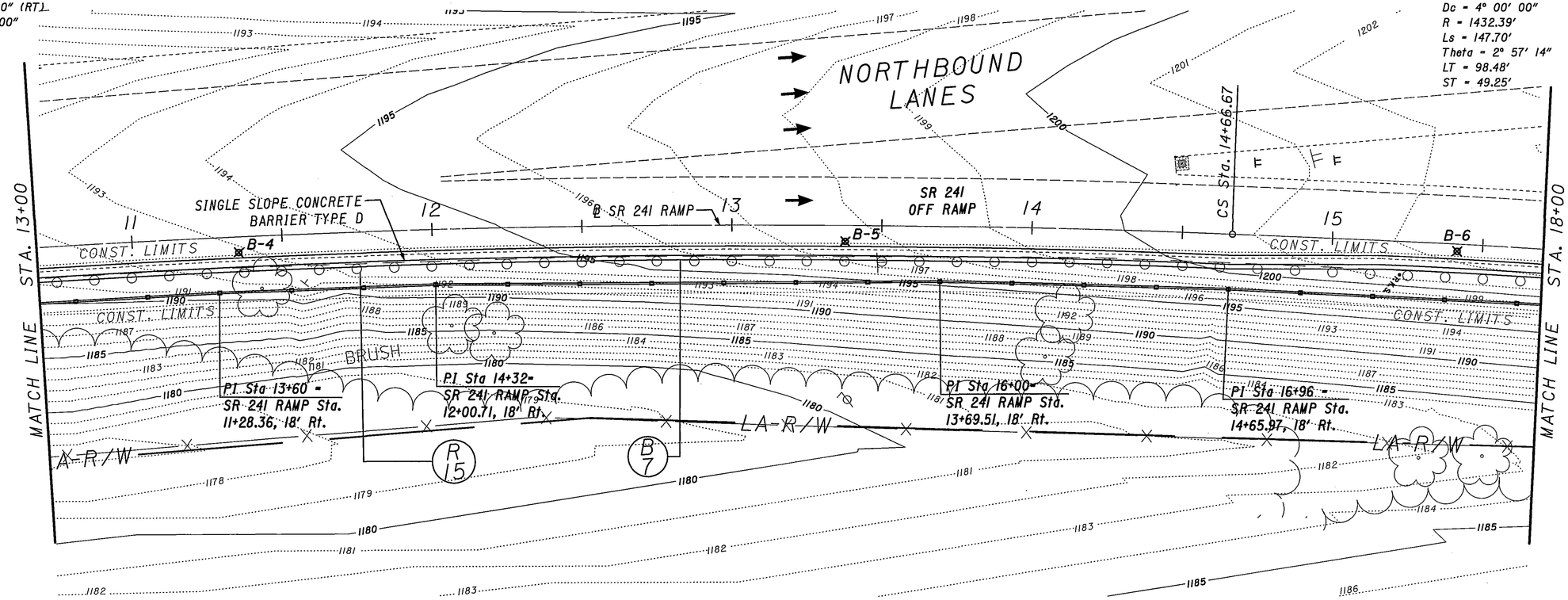
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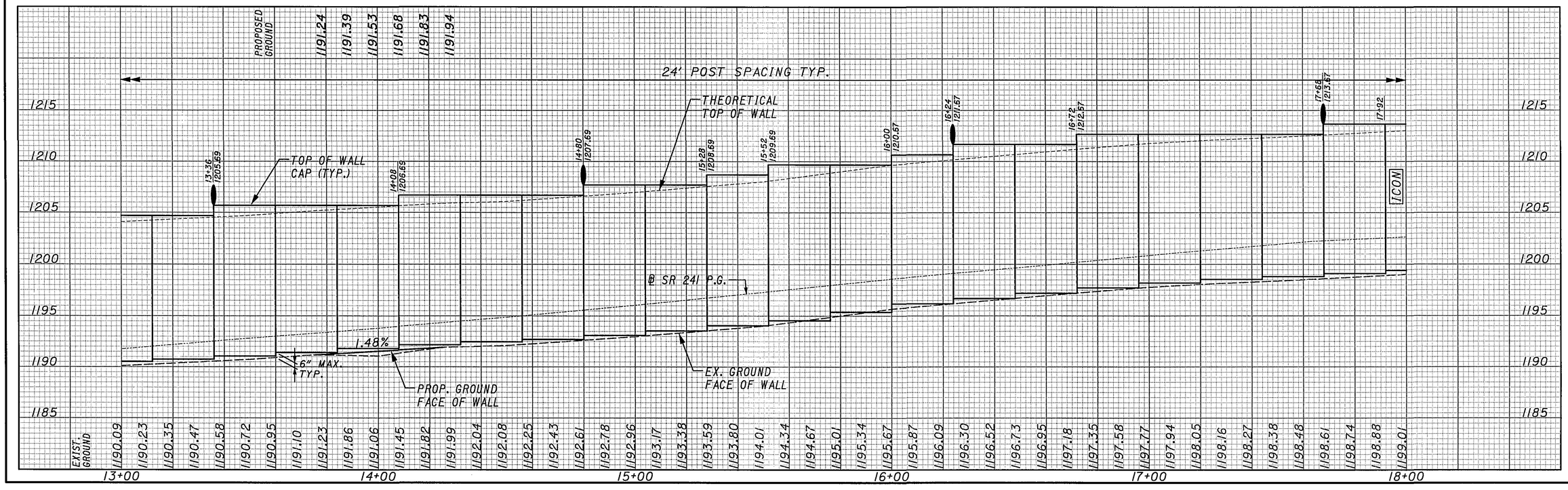
1183.94 1184.13 1184.32 1184.51 1184.67 1184.82 1184.99 1185.05 1184.92 1185.13 1185.84 1186.39 1186.63 1186.85 1187.07 1187.30 1187.55 1187.80 1188.04 1188.36 1188.64 1188.76 1188.95 1189.16 1189.43 1189.56 1189.72 1189.87 1190.00 1190.04 1190.09

10+00 11+00 12+00 13+00

℄ SR 241 OFF RAMP
P.I. Sta = 12+33.62
D = 7° 00′ 00″ (RT)
Dc = 1° 30′ 00″
R = 3819.72′
T = 233.62′
L = 466.67′
E = 7.14′

℄ SR 241 OFF RAMP
P.I. Sta = 17+54.68
D = 17° 00′ 00″ (RT)
Dc = 4° 00′ 00″
R = 1432.39′
Ls = 147.70′
Theta = 2° 57′ 14″
LT = 98.48′
ST = 49.25′
x = 147.66′
y = 2.54′
k = 73.84′
p = 0.63′
Dc = 11° 05′ 31″ (RT)
Lc = 277.30′
Ts = 288.01′
Es = 16.55′





HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED S.P.C.
CHECKED W.B.H.

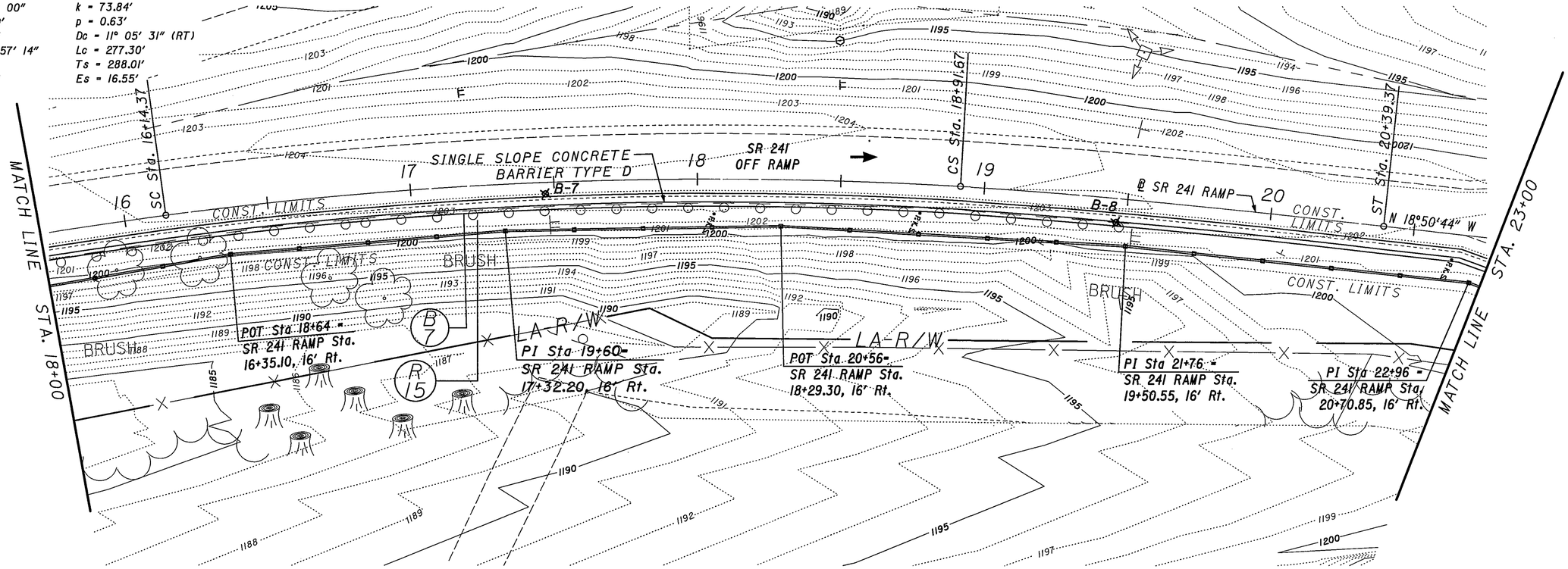
PLAN AND ELEVATION
SR 241 NOISE BARRIER

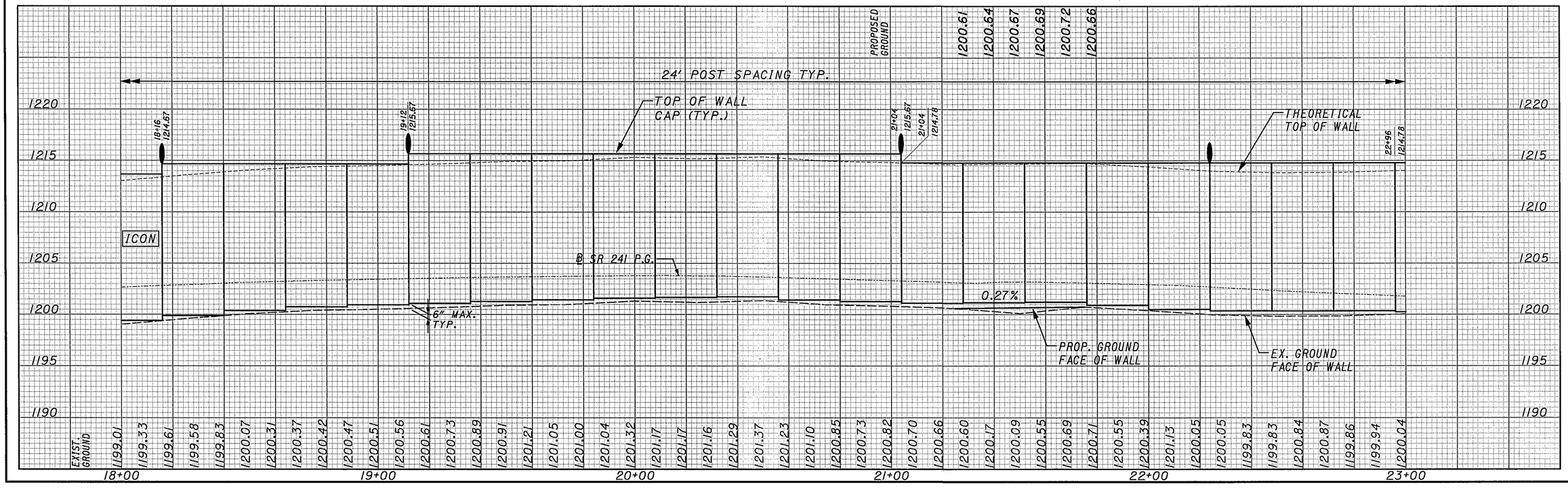
SUM-77-1.40

370
381

℄ SR 241 OFF RAMP

P.I. Sta = 17+54.68	x = 147.66'
D = 17° 00' 00" (RT)	y = 2.54'
Dc = 4° 00' 00"	k = 73.84'
R = 1432.39'	p = 0.63'
Ls = 147.70'	Dc = 11° 05' 31" (RT)
Theta = 2° 57' 14"	Lc = 277.30'
LT = 98.48'	Ts = 288.01'
ST = 49.25'	Es = 16.55'





PLAN AND ELEVATION
SR 241 NOISE BARRIER

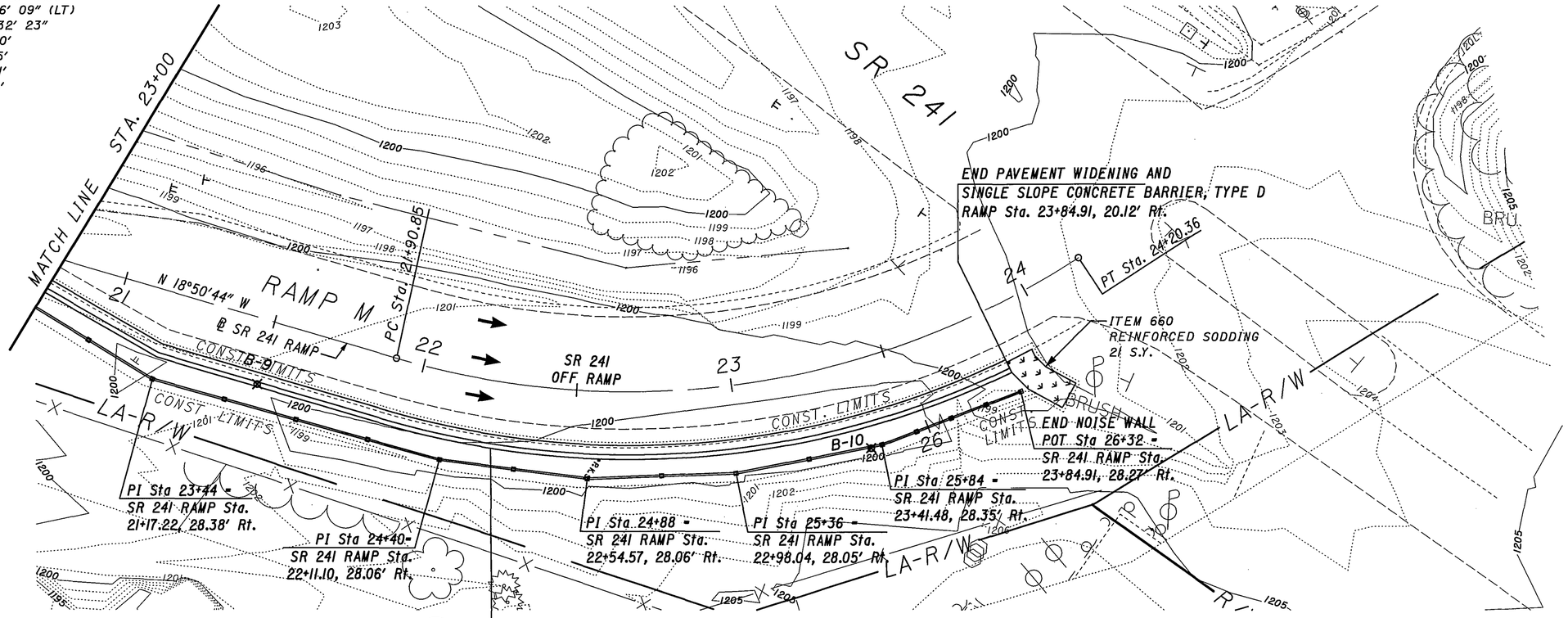
HORIZONTAL SCALE IN FEET
0 10 20 40

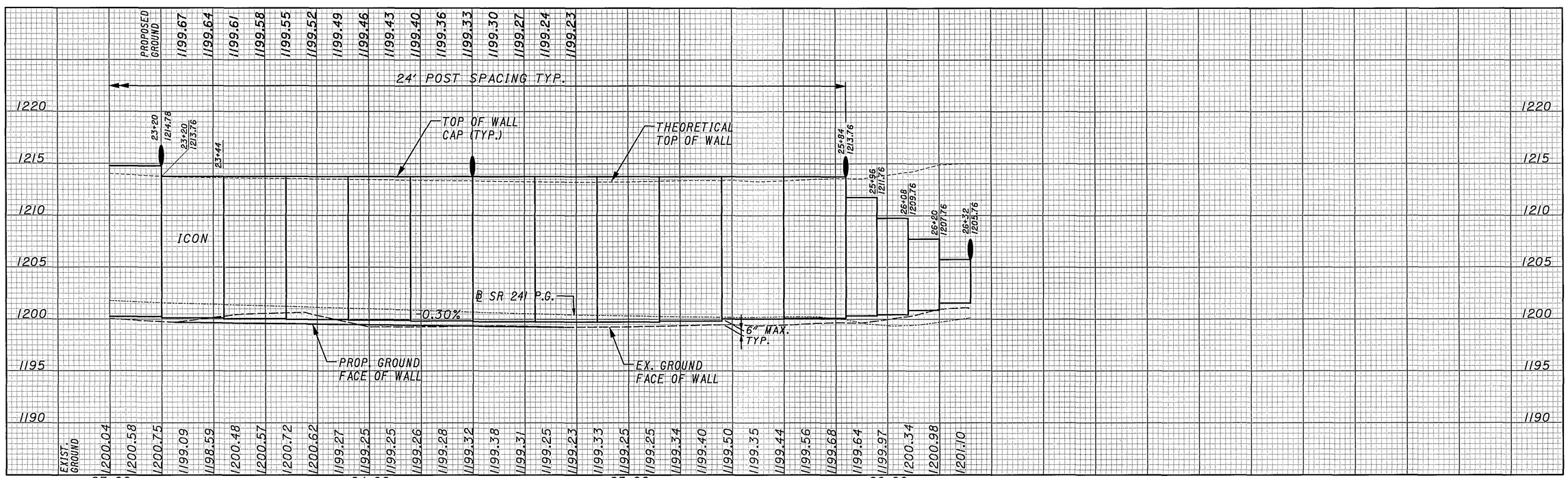
CALCULATED S.P.C.
CHECKED W.B.H.

SUM-77-1.40

371
381

℄ SR 241 OFF RAMP
P.I. Sta = 23+13.30
D = 49° 26′ 09″ (LT)
Dc = 21° 32′ 23″
R = 266.00′
T = 122.45′
L = 229.51′
E = 26.83′



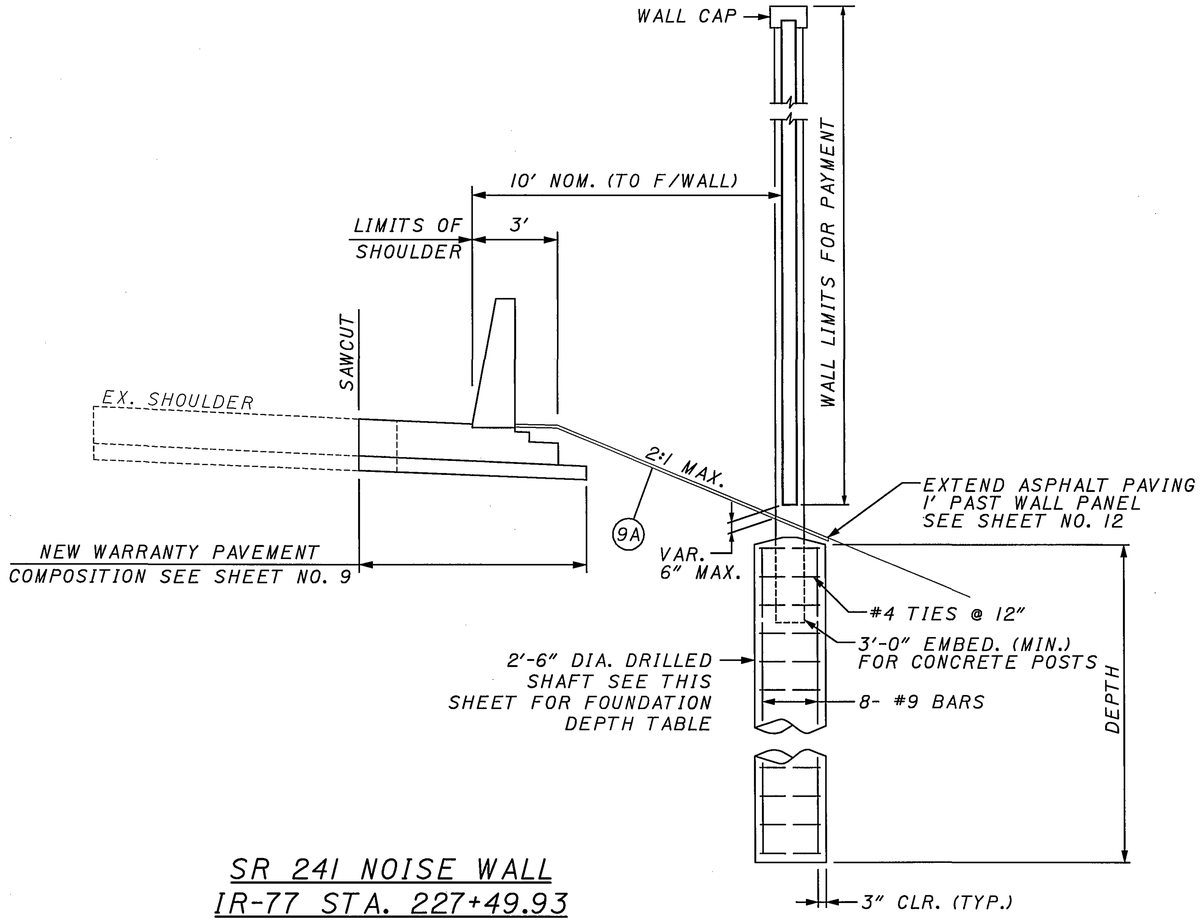


HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED S.P.C.
CHECKED W.B.H.

PLAN AND ELEVATION
SR 241 NOISE BARRIER

SUM-77-1.40

372
381



SR 241 NOISE WALL
IR-77 STA. 227+49.93
TO 241 RAMP STA. 23+84.91

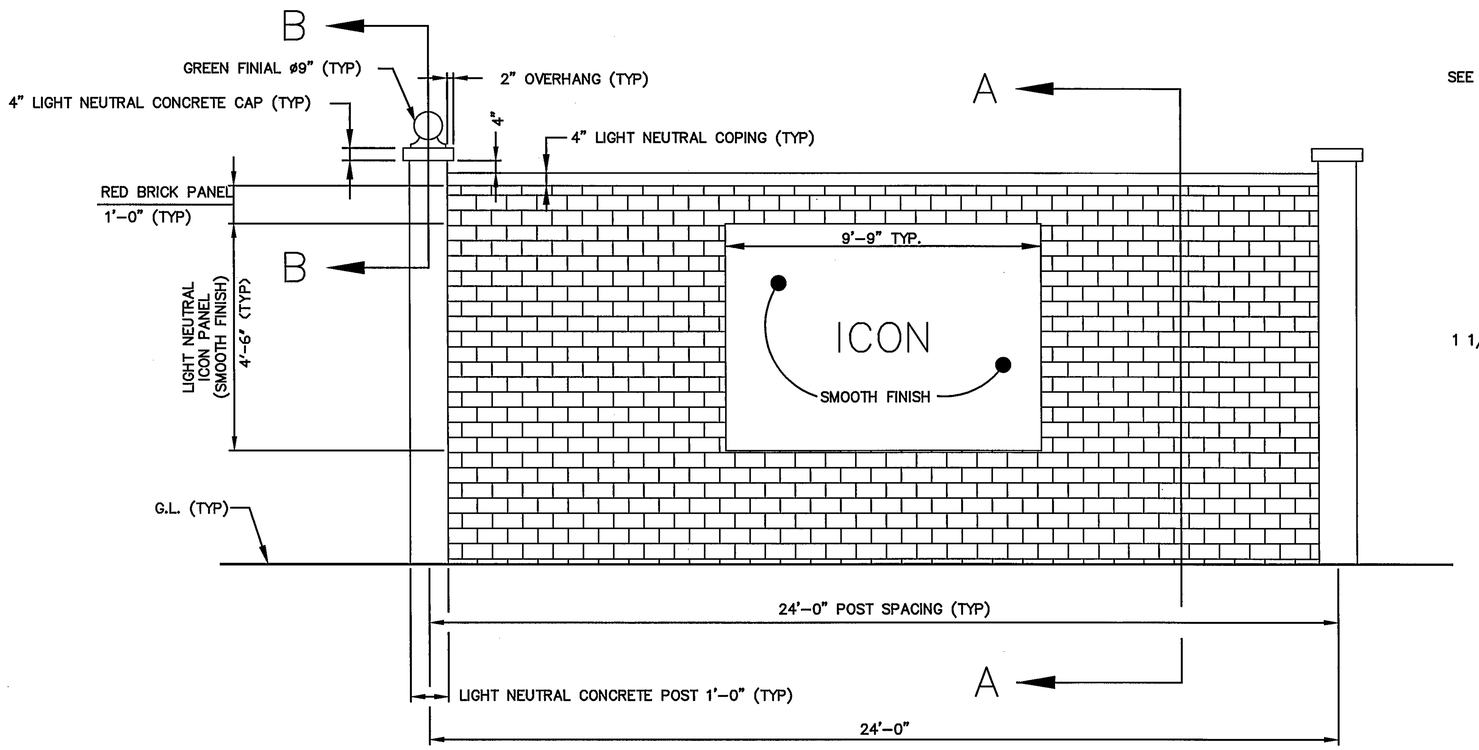
DRILLED SHAFT FOUNDATIONS

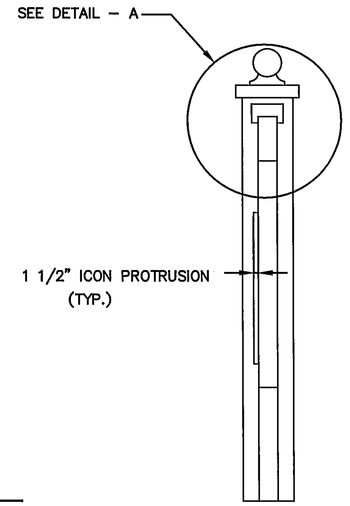
STATION		SPACING (FT)	DEPTH (FT)
FROM	TO		
10+00	10+48	12	12
10+60	25+84	24	18
25+96	26+32	12	12

REFER TO TYPICAL SECTIONS, SHEET 9, FOR ROADWAY PAY ITEMS

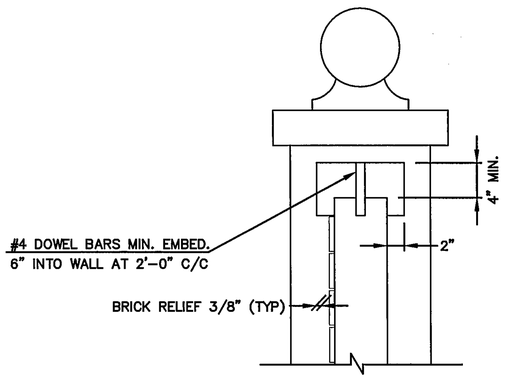
NOISE WALL DETAILS

SUM-77-1.40

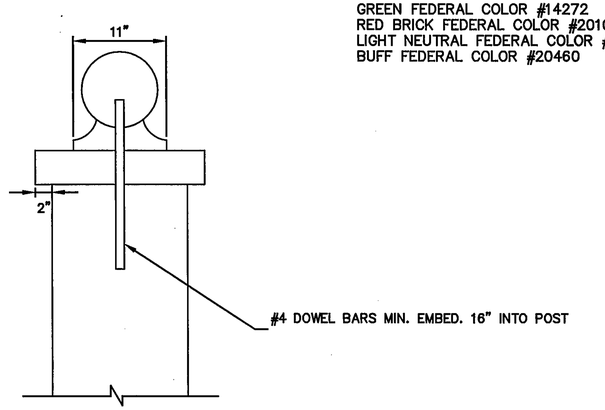




SECTION A-A



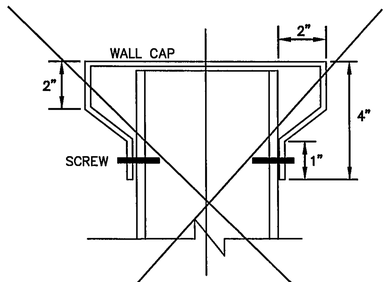
DETAIL-A



SECTION B-B

GREEN FEDERAL COLOR #14272
RED BRICK FEDERAL COLOR #20109
LIGHT NEUTRAL FEDERAL COLOR #17778
BUFF FEDERAL COLOR #20460

NOTE: BUFF FEDERAL COLOR IS TO BE APPLIED ON THE SURFACE OF THE ICON PROTRUSION.



CAP DETAIL FOR THE NOISE WALL, ALUMINUM, ON THE STRUCTURE

URS
564 White Pond Drive
Akron, Ohio 44320-1100
(330) 836-9111

DESIGNED	DRAWN	REVIEWED	DATE
CHECKED	REVISED	STRUCTURE FILE NUMBER	

NOISE WALL DETAILS

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373A
381

URS_Details.DWG 6-15-04 8:56:47 am EST

ITEM SPECIAL - NOISE BARRIER MISC.: ICON:

THIS ITEM SHALL CONSIST OF PROVIDING ICON NOISE BARRIER PANELS AS DETAILED ON THIS SHEET, AT THE LOCATIONS AS NOTED IN THE PLANS.

THIS WORK SHALL INCLUDE PROVIDING THE FORM LINERS FOR EACH ICON AND ANY ADDITIONAL MATERIAL AND LABOR REQUIRED TO PRODUCE THE ICON ON THE NOISE WALL PANEL.

NOISE WALL PANELS WILL BE PAID FOR AT THE UNIT PRICE PER SQUARE FOOT UNDER ITEM SPECIAL - NOISE BARRIER

AFTER ALL PANELS HAVE BEEN CAST AND ACCEPTED THE ICON FORM LINERS SHALL BECOME THE PROPERTY OF ODOT. THE CONTRACTOR SHALL BOX OR CRATE, (OR OTHER APPROVED MEANS) THE FORM LINERS FOR STORAGE AND SHALL DELIVER THEM TO.

ODOT STARK COUNTY GARAGE
4505 ATLANTIC BLVD N.E.
CANTON, OHIO 44705
330.452.0365

THE UNIT PRICE BID FOR EACH ITEM SPECIAL - NOISE BARRIER MISC.: ICON: SHALL BE FULL COMPENSATION FOR ALL LABOR AND MATERIALS AND OTHER INCIDENTALS REQUIRED TO MAKE THIS ITEM COMPLETE.

ITEM SPECIAL - NOISE BARRIER MISC.: ICON: 3 EACH

ICON AND FINIAL LOCATIONS

Sta. 10+00	Finial
Sta. 11+56	Finial
Sta. 12+64 to 12+88	Icon - Barn
Sta. 13+12	Finial
Sta. 14+80	Finial
Sta. 16+48	Finial
Sta. 17+92 to 18+16	Icon - Plane
Sta. 18+16	Finial
Sta. 19+84	Finial
Sta. 21+52	Finial
Sta. 23+20	Finial
Sta. 23+20 to 23+44	Icon - Golfer
Sta. 24+88	Finial
Sta. 26+32	Finial

ICON DETAILS



GOLFER



BARN



PLANE

nw_icons.dgn

CALCULATED SPC | CHECKED WBH

NOISE WALL FINIAL & ICON LOCATIONS & DETAILS

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373B
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GENERAL NOTES
Noise Barrier

I. Description
II. Posts
III. Barrier Materials
IV. Construction Methods
V. Acceptance Criteria
VI. Project-Specific Requirements
VII. Method of Measurement
VIII. Basis of Payment

Item Special-Noise Barrier

I. Description

This work shall consist of furnishing and installing noise barriers including all material, labor and equipment required in accordance with these provisions and applicable standards and in conformity with the dimensions, lines and grades shown on the plans.

No mixing of barrier material types or colors at any one noise barrier unless otherwise specified in the plans will be allowed, except where a run of noise barrier includes placement on a bridge.

Noise barrier walls shall not be attached to bridge railing unless the system has been crash tested and meets the acceptability requirements of NCHRP 350 - for additional information refer to the BDM Section 304.

Barrier material type supplied for reflective noise barrier projects shall be concrete as listed on sheets 376 and 377 unless otherwise specified. Barrier material type supplied for absorptive noise barrier projects shall be any listed on sheet 378 unless otherwise specified.

Individual barrier fabrication and erection details, except for posts and foundations, shall be as per approved Manufacturer's drawings listed on sheets 376 - 378. Posts and foundations shall be as detailed in these plans. Posts and foundations shall be as detailed in these plans unless alternative Manufacturer's details are submitted and approved by the Engineer.

Post spacing shown in the noise barrier material Manufacturer's approved drawings may be used in lieu of the post spacing shown in the plans. Any interference with utilities or other post spacing adjustments required to meet design plan alignment, connections to structures, or other conditions created due to changing of post spacings shall be at the Contractor's expense.

Copies of the Manufacturer's drawings listed on sheets 376 - 378 shall be furnished the Engineer before any work is initiated All project specific details not covered by the plans or the Manufacturer's drawings shall be approved by the Engineer before work is initiated.

The barrier and the associated work shall conform to sections 499 and 501 of the CMS as appropriate.

II. Posts

~~A. SAWN TIMBER POSTS (to be used with wooden noise barriers only)~~

~~B. GLULAM POSTS (to be used with wooden noise barriers only)~~

C. STEEL POSTS

Steel posts shall be ASTM A-588 and manufactured in accordance with item 863 of the CMS unless otherwise specified. Exposed portions of the posts shall be painted to match the noise panel's color or receive a flashing matching the noise panel's color unless otherwise specified.

The portion of any posts in contact with soil and an additional 6 inches above and below the soil contact line on the post shall be coated with coal tar epoxy paint. The paint shall conform to Structural Steel Painting Council (SSPC) Paint Specification 16; be black in color; be applied as per the paint manufacturer's recommendations; and have a minimum dry film thickness of 16 mils. All surfaces that receive paint on the steel posts, whether coal tar epoxy or paint to match the noise panel color, shall be blast cleaned to conform to SSPC - SP10, near white metal.

The Contractor, in lieu of applying coal tar epoxy paint to post surfaces in contact with soil, may choose to supply galvanized posts. The post shall be ASTM A572, grade 50, steel, galvanized in accordance with ASTM A123.

Steel posts not mounted on drilled shafts shall be ASTM A572, grade 50, steel galvanized in accordance with ASTM A123.

The use of galvanized posts does not eliminate the Contractor from the requirement to paint or flash any exposed portion of the posts to match the noise panel's color.

D. CONCRETE NOISE BARRIER PANELS AND POSTS

The concrete supplied for concrete posts and panels shall be as specified by the supplier on their ODOT approved plan sheets. The concrete panels and posts shall not exhibit any efflorescence for a period of 3 years after the completion of the project. The contractor will be held responsible for the repair of efflorescence on the sound wall for this period of time at no expense to ODOT.

Concrete noise barrier panels and posts require a reinforced integral or non-integral cap on the top of the posts and the top of the top noise barrier panels as per BDM Section 802.2. When called out on the plans, the concrete noise barrier panels and posts should be coated with an ODOT approved coating from a supplier on the Noise Barrier Concrete Panel Sealer/Coating Specification available from the ODOT Office of Materials Management. All concrete noise barrier panel edges shall be sealed/coated at the manufacturing plant. The sealer/coating shall be identical to the sealer/coating which is applied to the front and back surfaces of the panels. Horizontal joint lines between panels shall match for a minimum distance of 500 feet for aesthetic purposes.

E. CONCRETE POSTS AND PANELS (with and without integral cap), PEDESTALS, SPREAD FOOTINGS, and DRILLED SHAFTS

Reinforcing steel shall be ASTM A615, Grade 60, epoxy coated except in the case of the prestressing strands. The prestressing strands shall have an ODOT approved corrosion inhibitor added to the concrete mix.

Concrete shall be Class C concrete, CMS 842, except for drill shaft concrete which shall conform to section H. Concrete for Drilled Shafts.

Post concrete shall be colored to match the noise panel material unless otherwise specified in the plans.

The non-integral cap shall be attached to the top of the post and panel by means of a structural designed mechanical attachment which has been approved by the ODOT Office of Structural Engineering.

F. PRESTRESSED CONCRETE POSTS (with and without integral cap)

Item 515 of the CMS shall apply except as modified below.
Prestressed Concrete;
compressive strength - 5,000 PSI,
compressive strength at transfer of prestress - 4,000 PSI
prestressing strand - ASTM A416.
Ultimate strength F's = 270,000 PSI.
Initial stress = 0.70 F's.

Prestressing strand shall be ½" diameter with an area of 0.153 sq. in. An initial tensile force of 28900 lbs. shall be applied to each strand. Exposed strand ends shall be painted with approved epoxy. See section C. above for specifications and application rates.

Post concrete shall be colored to match the noise panel material unless otherwise specified in the plans.

G. REINFORCED MASONRY POSTS

Reinforcing steel shall be as per section II.E. above. Concrete pea gravel for posts shall conform to ASTM C 476. Portland Cement, Type I, II or III, shall be used in the grout mix.

Posts shall be faced either with brick or concrete block. Color and texture shall be similar to barrier material furnished unless otherwise specified in the plans.

For additional masonry notes, see masonry wall plans.

H. DRILLED SHAFTS

Drilled shafts shall be constructed as per CMS Item 524. The Designer is responsible to determine the "N" value and soil type based on the noise wall borings and the design data sheet. ~~The Designer can then determine the drilled shaft length from the Noise Barrier Table (Post and Panel Construction) on sheet 7 of 7.~~ Only the station locations, the top elevation of the drilled shaft and the actual drilled shaft lengths should be shown on the project plans.

The design data sheet and the Noise Barrier Table (Post and Panel Construction) sheet should not be included in the plans. The Contractor at no time should be required to determine the drilled shaft length.

ODOT requires for all noise walls that soil borings shall be supplied by the consultant or in the case of an in-house project, by the ODOT Office of Geotechnical Engineering. Soil Borings shall be located directly along the alignment of the noise barrier wall. Soil borings shall be obtained according to the ODOT manual: "Specifications for Subsuface Investigation".

I. BEARING PADS

All bottom noise wall panels require a neoprene preformed bearing pad between the bottom of the noise panel and the bearing surface. The bearing pads shall be a minimum ¼" thick and cover a minimum of 25 square inches. The bearing pads shall conform to ODOT CMS Section 711.21 Preformed Bearing Pads.

ITEM SPECIAL - SEALING MISC.: SACRIFICIAL GRAFFITI GUARD:

A sacrificial graffiti guard with a non-gloss matt finish, such as the TEX-COAT Sacrificial Graffiti Guard by Textured Coatings of America, Inc. 4101 Ravenswood Rd., Suite 105A, Ft. Lauderdale, FL 33312-5371, phone 954.581.0771 or approved equal shall be applied to the residential side of the SR 241 Noise Wall. The graffiti guard shall be applied in accordance with the manufacturer's recommended method.

The graffiti guard supplier shall state in writing that the concrete sealer and graffiti guard systems used are compatible with each with each other.

The graffiti guard system is to be approved by the Engineer.

Quantities for the graffiti guard have been included in the estimated quanitities. The quantity of graffiti guard for payment shall be based on the exposed surface area of the ashlar stone finish following application and acceptance by the Engineer. Payment will be made at the contract square feet unit price for Item Special - Sealing Misc.: Sacrificial Graffiti Guard

III. Barrier Materials

Acceptable Noise panel designs are listed on sheets 376 and 377. For reflective barrier see sheet 376 and 377 and for absorbtive barrier see sheet 377. Materials shall either meet the manufacturer's requirements listed on their approved drawings or CMS requirements if not listed on manufacturer's approved drawings.

IV. Construction Methods

A. Noise barriers shall be installed in accordance with the plans. Joints and connections shall be secured in such a manner as to be structurally sound with no visible openings for sound transmission. Noise panel attachments to posts and installation methods shall be structurally sound, give adequate support to the noise panels, and be secured to the post or adequately blocked between the post's flanges to eliminate movement at the support and eliminate any possible vibration.

Exclusive of the Contractor's choice of noise barrier panel, the top of installed noise barriers shall match the top of wall design elevations, with no variation between posts, unless the design plans require an elevation change.

B. Marred, chipped, scratched, spalled, or any other damage deemed detrimental to the noise barriers by the Engineer shall be replaced, as approved by the Engineer, at the Contractor's expense.

C. Preservative treatment of all wood materials used in the noise barrier shall be in accordance with section 712.06 of the CMS and the requirements of one of the following optional materials:

DESIGN AGENCY
OFFICE OF STRUCTURAL ENGINEERING

DESIGNED	DRAWN	REVISED	DATE
CHECKED	REVISED	STRUCTURE FILE NUMBER	11-21-97
REVISED	REVISED		10/19/03

NOISE BARRIER DETAILS

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TYPE	RETENTION RATE (pcf)	
	Above Ground	In Ground Contact
CCA-Type C	0.4	0.6
Penta/LPG	0.4	0.6

Penta/LPG shall be penta-chlorophenol in AWPA P9 Section 2 solvent.

Laminated components shall be in conformance with AWPA Standard C28 for Glulam. Sawn lumber shall be in conformance with AWPA Standard C2.

Additional requirements for CCA-Type C are:

1. All lumber materials shall be dried to 19 percent moisture content or less prior to treatment. The treatment shall be in accordance with the AWPA Standards.

2. The same preservative shall be used to treat bolt holes, saw cuts, etc. (if any), and for additional dressing deemed necessary by the Engineer.

3. All wood members, except posts, shall be kiln-dried to a moisture content of 15 percent or less after preservative treatment.

4. After completion of the preservative treatment, all lumber materials shall be protected from increases in moisture content until they are incorporated into the wall.

5. CCA-Type C shall meet AWPA P-5.

Payment for all the above shall be included in the unit price bid for Item Special, Noise Barrier.

D. Trench backfill shall be with Class S concrete modified as per II.H. above. The method of placement shall not allow voids or excessive segregation and shall be performed to the satisfaction of the Engineer.

E. All excess excavation shall be disposed of in a manner satisfactory to the Engineer.

F. After erection of the noise barrier, the disturbed area shall be left in a finished condition at the direction of the Engineer and a growth of grass established, at the Contractor's expense, in accordance with CMS Item 659.

G. Tolerances

1. Posts (measured at top)
   a. Vertical alignment shall be within 0.05 inch/ft. of height.
   b. Posts shall be set within +/- ½ inch of their specified location.

2. Noise barriers
   a. Vertical alignment shall be within 0.05 inch/ft. of height.

H. For noise barriers that are built on top of earth berms, the berms shall be constructed of earthwork fill material in accordance with Item 203 of the CMS.

I. Inlet No. 3E shall be constructed as per the details and notes on Standard Construction Drawings 1-2.3, "CONCRETE BARRIER (TYPE D) INLET"

J. Concrete Epoxy Sealer where Noise Barriers are constructed adjacent to bridge parapet or type D concrete barriers and the Noise Barrier is not constructed to the ground line, the exposed concrete surface shall be coated with a concrete epoxy sealer of a color matching that of the noise barrier. The sealer shall be applied in accordance with the manufacturer's recommendation. A urethane top coat sealer shall also be applied over the concrete areas coated with epoxy sealer. The urethane coating shall be applied in accordance with the manufacturer's recommendation.

K. Stainless Steel unless otherwise specified, shall be ASTM F593 Austentitic Alloy Groups 1,2, or 3, except the free-machining grades 303 or 303Se used to make fasteners. All stainless steel used in ODOT noise walls shall be capable of passing the test for susceptibility to intergranular corrosion as specified in Practice E of ASTM Practices A 262.

V. Acceptance Requirements

In addition to conforming with the structural requirements as shown in the plans, it is also necessary to comply with the following aesthetic requirements.

The Contractor shall deliver to the job site one full size noise panel, and one full size post representative of the product the contractor is going to supply. The Engineer will evaluate whether both the noise panel and post meet all plan specified federal color standard, texture, trim, and/or coating requirements. To facilitate this comparison, the contractor shall supply the Engineer with a copy of "Federal Standard 595B Color Used in Government Procurement". If either the noise panel or post do not meet the plan requirements the Contractor shall have another noise panel or post manufactured and delivered to the job site for approval by the Engineer. If the plans do not specify a color, texture, trim, or coating requirement, it will still be necessary to deliver the sample post and panel to the job site for approval, prior to the production of any additional noise barriers or posts.

The sample post and panel will become the control post and panel with which all subsequent posts and panels will be compared. This control post and panel shall be delivered to, and if necessary, moved to different locations to facilitate comparisons with the remaining posts and panels.

Any delivered and/or erected posts and panels which do not match the control post and panel or do not conform with the structural requirements as shown in the plans shall be removed and replaced at no additional costs.

All noise barrier panels shall be manufactured using the same method of construction so as to produce a uniform panel finish.

VI. Project-Specific Requirements

Color & Stain: The front face (highway side) of the barrier panels having the brick finish shall be stained to a color of Brick Red, meeting Federal Standard No. 20109. The Brick Red stain/coating shall be applied to the raised brick pattern with a short nap roller in order to show the mortar joints, the mortar joints of the brick pattern shall not be coated with brick red stain. The front face of the icon panels having a smooth finish shall be stained to a color of Light Neutral, meeting Federal Standard No. 17778. The panel cap (coping) and concrete posts shall be stained to the same Light Neutral color. The back face (residential side) of the barrier panels having ashlar stone finish shall be stained to a color of buff meeting Federal Standard No. 20460. The finials shall be stained to a color of Green, meeting Federal Standard No. 14272. The materials used shall be pre-approved and applied in accordance with the ODOT Noise Barrier Concrete Panel Sealer/Coating Special Provision dated 3-27-02. The sealer/coating shall be applied. The preparation technique and the stain are to be approved by the Engineer.

ABBREVIATIONS

AITC	American Institute of Timber Construction
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers' Association
BIA	Brick Institute of America
CCA	Cromated Copper Arsenate
CMS	Construction and Materials Specifications of ODOT
ILI	Indiana Limestone Institute
LPG	Volatile Petroleum Solvent (liquid propane gas)
SSPC	Structural Steel Painting Council
VPS	Voluntary Product Standard

Steel Posts: Steel posts shall be used only in conjunction with the aluminum noise barrier panels used on the structures. These posts shall be galvanized. A flashing shall be mounted onto the highway and residential sides of each post. This flashing is intended to fully cover the post. The mounting method and fasteners shall be approved by the Engineer. The steel posts shall be painted to match the aluminum panels.

Concrete Posts: Concrete posts shall be used in conjunction with the concrete noise barrier panels.

Concrete Noise Barrier Panels: The highway side of the concrete noise barrier shall be a reflective formlined brick matching the Scott System #115 Old Brick or approved equal. The residential side of the concrete noise barrier shall be a rolled ashlar stone finish with a minimum ½ inch texture depth.

~~Aluminum Noise Barrier Panels: Only aluminum noise barrier panels, meeting the weight restriction listed on sheet 374 will be accepted (no steel or fiberglass). The panels shall be absorptive. The textured imprint and color on the highway side shall match the brick style of the concrete panels. The residential side shall be painted to match the Ashlar Stone color of the concrete panels. The aluminum panels are to be placed horizontally between posts.~~

Post and Panel Cap: A cap will be required on both posts and panels. A concrete cap shall be constructed as shown on sheet 373A of the Noise Barrier Details and meet the requirements of CMS Sections 509 and 510. ~~An aluminum cap for use with the aluminum panels shall be constructed as shown on sheet 373A. A cap will not be required on the steel posts used with the aluminum panels.~~

Additional Noise Barrier Panels: ~~Additional aluminum panels (to replace 3 spans at the maximum aluminum noise barrier height)~~, additional concrete panels (4 - 24'-0" long center panel sections and 6 - 24'-0" long top panel sections with cap) and 6 additional finials shall be stained to the appropriate colors as described above, prepared for storage, and delivered to the ODOT Stark County Garage, 4505 Atlantic Blvd. NE, Canton, Ohio 44705, ph 330.452.0365 as directed by the Engineer.

Sample Barrier Panels: One sample each of a concrete ~~and aluminum barrier panel~~, with caps, shall be delivered and evaluated by the Engineer in accordance with note "V. Acceptance Requirements" of the Noise Barrier Details. The back side of the concrete panel shall be coated with the approved graffiti guard system.

After all panels have been cast and accepted, the icon form liners are to become the property of ODOT.

VII. Method of Measurement

Noise barrier plan quantities are measured in square feet of acceptable barrier using a height from bottom of wall to top of wall including the cap and a length from post to post as detailed in the plans. Where a noise barrier is constructed behind a concrete parapet the bottom of the wall shall be defined as the top of the parapet for measurement purposes.

Final plan quantities of noise barrier in square feet shall not include any addition for noise barrier heights greater than plan requirements. The additional heights of noise barrier required to accomodate the contractor's selected manufactured barrier materials or post spacing either greater or less than plan post spacing shall not be included for payment. Square feet of noise barrier constructed below the ground line shall also not be included for payment.

The completed and accepted inlets, whether new, reconstructed, or adjusted to grade will be measured by the unit for each type of structure and class of work itemized.

VIII. Basis of Payment

Noise barriers, completed and in place, as described in method of measurement, will be paid for at the contract unit price per square foot. This payment shall be full compensation for all materials, including panels, panels with an integral cap, including finishes as noted in the plans, posts, foundations, protective coatings, labor and equipment necessary to construct the noise barrier. All excavation, backfill with suitable material and any adjustment in earthwork quantities required due to the contractor's selected noise panel, sealing concrete with epoxy and urethane, aggregate drains, compaction, disposal of surplus or unsuitable materials, seeding, fertilizing and mulching of disturbed areas shall also be included for payment.

FOR ESTIMATED QUANTITIES, SEE SHEET 378

DESIGN AGENCY
OFFICE OF STRUCTURAL ENGINEERING

	DATE	
REVISED	11-21-97	STRUCTURE FILE NUMBER
REVISED	10/19/03	
DESIGNED	DRAWN	CHECKED
REVISED		

NOISE BARRIER DETAILS

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APPROVED REFLECTIVE BARRIER SUPPLIERS

	SUPPLIERS	DRAWINGS & NOTES	VARIABLES COLOR TEXTURE PATTERN BRICK STYLE	
METAL	Empire International 36744 Constitution Drive Trinidad, Colorado 81082 Telephone: (719) 846-2300 Fax: (719) 846-7466	SB1 (3/11/92) Reflective Horizontal/Continuous Wall SB1 (3/11/92) Reflective Horizontal/One Span Shadowbox SB1 (3/11/92) Reflective Horizontal/Two Span Shadowbox SB2 (3/11/92) Reflective Vertical/Continuous Wall SB2 (3/11/92) Reflective Vertical/One Span Shadowbox SB2 (3/11/92) Reflective Vertical/Two Span Shadowbox		METAL
FIBERGLASS WOOD PANEL	CorTec Company 3401 S. Delaware Milwaukee, Wisconsin 53207 Telephone:(414) 486 - 1876 or 1-800-879-4377 Fax: (740) 636-3250	Crane CorTec Sound Barrier System Manual (4/1/90)		FIBERGLASS WOOD PANEL
RECYCLED RUBBER	Carsonite International 10 Bob Gifford P.O. Box 98 Early Branch, South Carolina 29916 Telephone:(803) 943-1172 or (614) 873-5216 or (800) 380-1718 Fax: (614) 873-8095	#9106121-02-2 (3/5/92) Product Binder #30-02180-92 #SBSA1001, SHEETS 1 THRU 8, (10/22/97) #SBSA1002, SHEET 1, (10/22/97)		RECYCLED RUBBER

NOTE: ADDITIONAL REFLECTIVE SUPPLIERS-SEE SHEET 377

DESIGN AGENCY: OFFICE OF STRUCTURAL ENGINEERING
REVIEWED
DATE 11-21-97
STRUCTURE FILE NUMBER
DRAWN
REVISED 10/19/03
DESIGNED
CHECKED
REVISED

NOISE BARRIER DETAILS

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APPROVED REFLECTIVE BARRIER SUPPLIERS

	SUPPLIERS	DRAWINGS & NOTES	VARIABLES COLOR TEXTURE PATTERN BRICK STYLE
CONCRETE	Faddis Concrete Products 3515 Kings Hwy. Downingtown, PA 19335 Telephone: (800) 777-7973 or (610) 269-4685 Fax: 1-(215)-873-8431 OR 1-(610) 873-8431	USODOT-1 Sheets 1-6 Nov. 1993 Noteup to 3283 N per meter on structures Note:Panels per Evercrete Limited D -7700297 - Sheets 1 & 2 Feb. 18,1997	
	The Reinforced Earth Company Midwest Region 3884 Penbrook Lane Layfeyette, Ind. 47905 Telephone:(765) 449-1200 Fax: (765) 449-7970	FW-1 & FW-2 of 3 (5/17/83) Fanwall/Durisol Technical Handbook (10/1/89) with ODOT posts	
	Soundcore 4043 Maple Road, Suite 106 Amherst, NY 14226 Telephone: (716) 833-7651	Soundcore - Standard Hollowcore Precast Noise Barriers Drawing No. DET-1 (2-12-97)	
	Prestress Engineering Corp. P.O. Box 609 Algonquin, Illinois 60102-0609 Telephone: (815) 459-4545 Fax:(815) 459-6855	Precast Noise Abatement Wall January, 1994	
	Sidley Precast Div. P.O. Box 70 Thompson, Ohio 44086 Telephone: (440) 951-1919 Fax:(440) 951-1921	Noise Barrier March 04, 1994	
	Hanson Pipe and Products, Inc. Building 1A Kiem Street Pottstown Industrial Complex P.O. Box 955 Pottstown, PA 19464 Telephone: (800) 970-2216 Fax: 1-610-970-9412	Hanson Pipe and Products, Inc. Precast Concrete Post and Panel Noise Barrier System Job Number 602-132-00-01 (Sheets No. 1 thru 5 of 5) Dated February 2, 2002	
	Durisol Inc. 67 Frid Street Hamilton, Ontario Canada, L8P 4M3 Telephone: (905) 521-0999 Fax: 1-905-521-8658 E-mail: edwards@durisol.com	Durisol Noise Barrier Wall System - Reflective OHIO REFLECTIVE -1,2 & 3 Drawings:OHIO-R1, OHIO-R2 & OHIO-R3 (R1-DATED 5-1-02, R2 & R3 DATED 5-2-02) Sound Barriers for Ohio D.O.T.	
	North American Precast, Inc. 837 Seasons Road Stow, Ohio 44224 Telephone: (330) 528-0022 (Cleve.) or (330) 655-9336 (Akron) Fax:(330) 656-5155 E-mail: northamericanprecast.com	North American Precast, Inc. Noise Barrier Drawings - Sheets 1 thru 5 ODOT Approval Date: September 25, 2002	
BRICK OR BLOCK MASONRY	Masonry Institute of Dayton 2077 Embury Park Road P.O. Box 14026 Dayton,Ohio 45414 Telephone: (937) 278-7821 Fax:(937) 599-3683	Block Masonry Drawing Rev.(4/83) Notes Rev.(3/83) Brick Masonry Drawings Rev.(3/83)(2/85) Notes Rev.(12/91)	
	Advanced Masonry Technology, Inc 2786 Center Road P.O. Box 878 Brunswick,Ohio 44212 Telephone: (330) 225-9496 Fax: (330) 273-0046	Advanced Masonry Technology Brick Masonry Sound Barrier Panel Drawings: SBC1, SB1, SB2, & SB3, Dated 8/6/02	

NOTE: ADDITIONAL REFLECTIVE SUPPLIERS-SEE SHEET 376

DESIGN AGENCY
OFFICE OF
STRUCTURAL ENGINEERING

REVISED	DESIGNED	DRAWN	REVISED
	CHECKED		10/19/03

DATE 11-21-97
REVIEWED
STRUCTURE FILE NUMBER

CONCRETE

BRICK OR BLOCK MASONRY

NOISE BARRIER DETAILS

SUM-77-1.40

APPROVED ABSORPTIVE BARRIER SUPPLIERS

	SUPPLIERS	DRAWINGS & NOTES	VARIABLES COLOR TEXTURE PATTERN BRICK STYLE
METAL	Empire International 36744 Constitution Drive Trinidad, Colorado 81082 Telephone: (719) 846-2300 Fax: (719) 846-7466	88SSA-101 Empire Silent Screen (1of2)(6/6/88) 88SSA-102 Empire Silent Screen (2of2)(6/6/88) 88SSA-301 Empire Sight and Sound Wall (1of2)(6/6/88) 88SSA-302 Empire Sight and Sound Wall (2of2)(6/6/88)	SEE PROJECT SPECIFIC REQUIREMENTS, SHEET 375
	Industrial Acoustics Company, Inc. 1160 Commerce Ave. Bronx, New York 10462 Telephone (718) 931-8000 or (718) 863-1138	Industrial Acoustics Metal Sound Absorptive Dwg. C-9413-444-1 issue B dated 9/2/94	SEE PROJECT SPECIFIC REQUIREMENTS, SHEET 375
	Faddis Concrete Products 3515 Kings Hwy. Downingtown, PA 19335 Telephone: (800) 777-7973 or (610) 269-4685 Fax: 1-(215)-873-8431 OR 1-(610) 873-8431	Faddis - Metal Noise Barrier "ACOUSTAX " (AIR FORCE I) Sound Absorptive Noise Barrier Panels Drawings 1 thru 8 June 7, 2001	SEE PROJECT SPECIFIC REQUIREMENTS, SHEET 375
CONCRETE	Soundcore 4043 Maple Road, Suite 106 Amherst, NY 14226 Telephone: (716) 833-7651	Soundcore - Concrete Absorptive Noise Barrier Panel Drawing No. DET-1 (2-14-97)	SEE PROJECT SPECIFIC REQUIREMENTS, SHEET 375
	Faddis Concrete Products 3515 Kings Hwy. Downingtown, PA 19335 Telephone: (800) 777-7973 or (610) 269-4685 Fax: 1-215-873-8431	"Faddis Concrete Standard and Sound Absorptive Ground Mounted Sound Barriers for Ohio D.O.T." D -7702499 - Sheets 1 thru 3 August 14, 2001 D -7700297 - Sheets 1 & 2 Feb. 18,1997	SEE PROJECT SPECIFIC REQUIREMENTS, SHEET 375
	Durisol Inc. 67 Frid Street Hamilton, Ontario Canada, L8P 4M3 Telephone: (905) 521-0999 Fax: 1-905-521-8658 E-mail: edwards@durisol.com	Durisol Noise Barrier Wall System (Sound Absorptive) Noise Barrier Panel Details - OHDNBP (7-24)A Drawings: OHIO-A1, OHIOA2, & OHIO-A3 (DATED 05-02-02) Sound Barriers for Ohio D.O.T.	SEE PROJECT SPECIFIC REQUIREMENTS, SHEET 375
	North American Precast, Inc. 837 Seasons Road Stow, Ohio 44224 Telephone: (330) 528-0022 (Cleve.) or (330) 655-9336 (Akron) Fax:(330) 656-5155 E-mail: northamericanprecast.com	North American Precast, Inc. Noise Barrier Drawings - Sheets 1 thru 5 ODOT Approval Date: September 25, 2002	SEE PROJECT SPECIFIC REQUIREMENTS, SHEET 375

	ESTIMATED QUANTITES			TOTAL (IM FUNDS)	UNIT	SEE SHEET
	ITEM	ITEM EXT.	DESCRIPTION			
SR 241 NOISE WALL	SPECIAL	60610200	NOISE BARRIER (REFLECTIVE), 10' HT. AND UNDER	496	SQ. FT.	374
	SPECIAL	60610210	NOISE BARRIER (REFLECTIVE), OVER 10' TO 14' HT.	7,042	SQ. FT.	374
	SPECIAL	60610220	NOISE BARRIER (REFLECTIVE), OVER 14' TO 20' HT.	15,075	SQ. FT.	374
	602	20000	CONCRETE MASONRY	0.27	CU. YD.	
	603	06100	15" CONDUIT, TYPE C	30	FT.	
	604	22500	INLET MISC.: SINGLE SLOPE CONCRETE BARRIER, TYPE D	1	EACH	
	601	32200	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	0.33	CU. YD.	
	660	20000	SODDING REINFORCED	21	SQ. YD.	
	SPECIAL	60610810	NOISE BARRIER, MISC.: ICON	3	EACH	373B
	SPECIAL	51275500	SEALING, MISC.: SACRIFICIAL GRAFFITI GUARD	2,515	SQ. YD.	375

OFFICE OF STRUCTURAL ENGINEERING

DESIGN AGENCY

REVISED	DATE	STRUCTURE FILE NUMBER
	11-21-97	
DRAWN	REVISED	10/19/03
DESIGNED	CHECKED	
REVISED		

NOISE BARRIER DETAILS

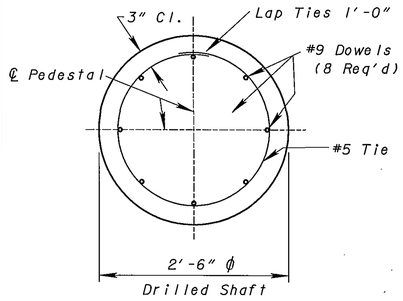
SUM-77-1.40

TABLE - DETAILS FOR SPREAD FOOTINGS*

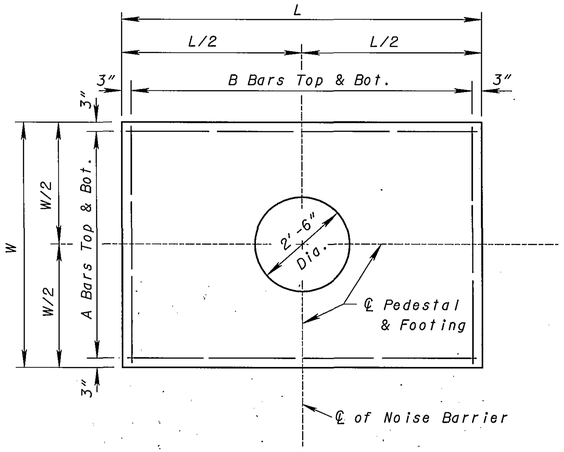
PANEL GROUP	LENGTH L	WIDTH W	A BARS	B BARS
I	7'-6"	3'-6"	4-#5x7'-2" Top 4-#6x7'-2" Bot.	6-#5x3'-2" Top & Bottom
II	9'-0"	5'-6"	6-#5x8'-8" Top 6-#6x8'-8" Bot.	7-#5x5'-2" Top & Bottom
III	10'-6"	7'-6"	7-#5x10'-2" Top 7-#6x10'-2" Bot.	7-#5x7'-2" Top & Bottom
IV	12'-0"	9'-6"	9-#5x11'-8" Top 9-#6x11'-8" Bot.	9-#5x9'-2" Top & Bottom

Note: Soil should be able to handle a minimum allowable bearing pressure = 1.25 tons per sq. ft.

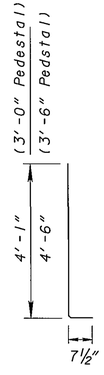
* All post and panel noise barriers shall utilize drilled shaft foundations unless otherwise indicated on the plans or directed by the Engineer.



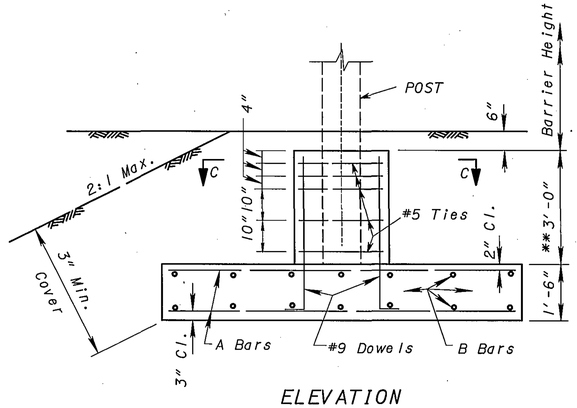
SECTION C-C



PLAN



#9 DOWEL



ELEVATION

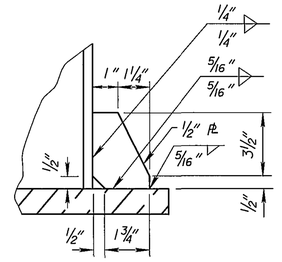
SPREAD FOOTING FOUNDATION

** 3'-6" Pedestal for all embedded posts except concrete.

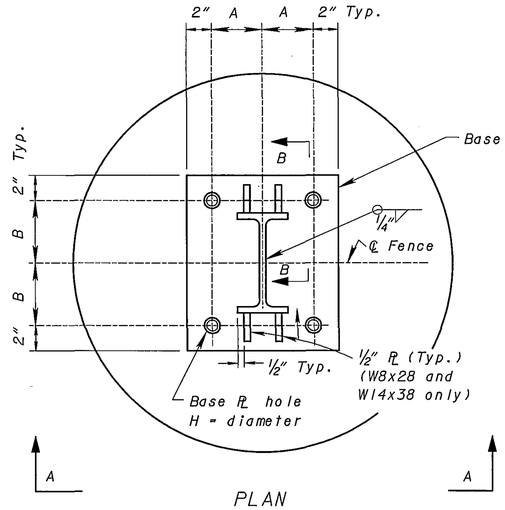
TABLE - OPTIONAL POST MOUNTING DETAILS
BOLTED CONNECTION

Steel Post	Base Plate	Dim. A	Dim. B	Min. Weld Size	Anchor Bolts	Proj.	Threaded Length	Base ℄ Hole Dim. H
W 8x13	12"x14"x5/8"	4"	5"	1/4"	4 - 5/8"ϕ x 12"	2"	4"	7/8"
W 8x18	12"x14"x1"	4"	5"	1/4"	4 - 7/8"ϕ x 14"	2½"	4½"	1¼"
W 8x28	14"x14"x1 3/8"	5"	5"	5/16"	4- 1¼"ϕ x 17"	3¼"	5¼"	1¾"
W 14x38	14"x20"x1½"	5"	8"	5/16"	4- 1⅜"ϕ x 18"	3½"	5½"	1⅞"

Note: All anchor bolts, nuts, plain washers and lock washers shall be galvanized and conform to the physical properties of ASTM A325 except that the minimum elongation shall be 10%. The chemical properties are waived.

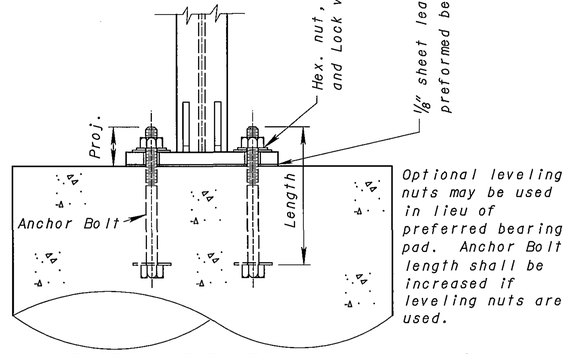


SECTION B-B



PLAN

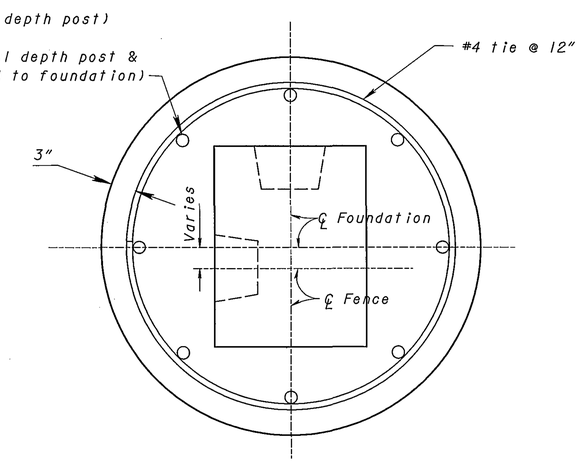
OPTIONAL POST ATTACHMENT



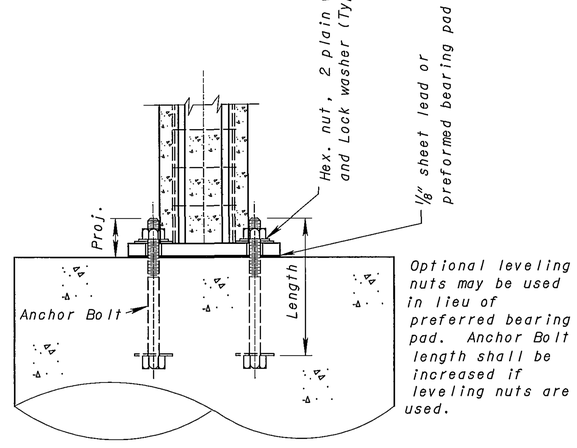
Optional leveling nuts may be used in lieu of preferred bearing pad. Anchor Bolt length shall be increased if leveling nuts are used.

PARTIAL ELEVATION A-A
STEEL POST

8-#6 (Full depth post)
or
8-#9 (Partial depth post &
Posts bolted to foundation)



TYPICAL DRILLED SHAFT CROSS-SECTION



Optional leveling nuts may be used in lieu of preferred bearing pad. Anchor Bolt length shall be increased if leveling nuts are used.

PARTIAL ELEVATION A-A
CONCRETE POST

DESIGN AGENCY
BUREAU OF BRIDGES
AND
STRUCTURAL DESIGN

DATE REVISED 11-21-97
STRUCTURE FILE NUMBER

DRAWN REVISED 10/19/03

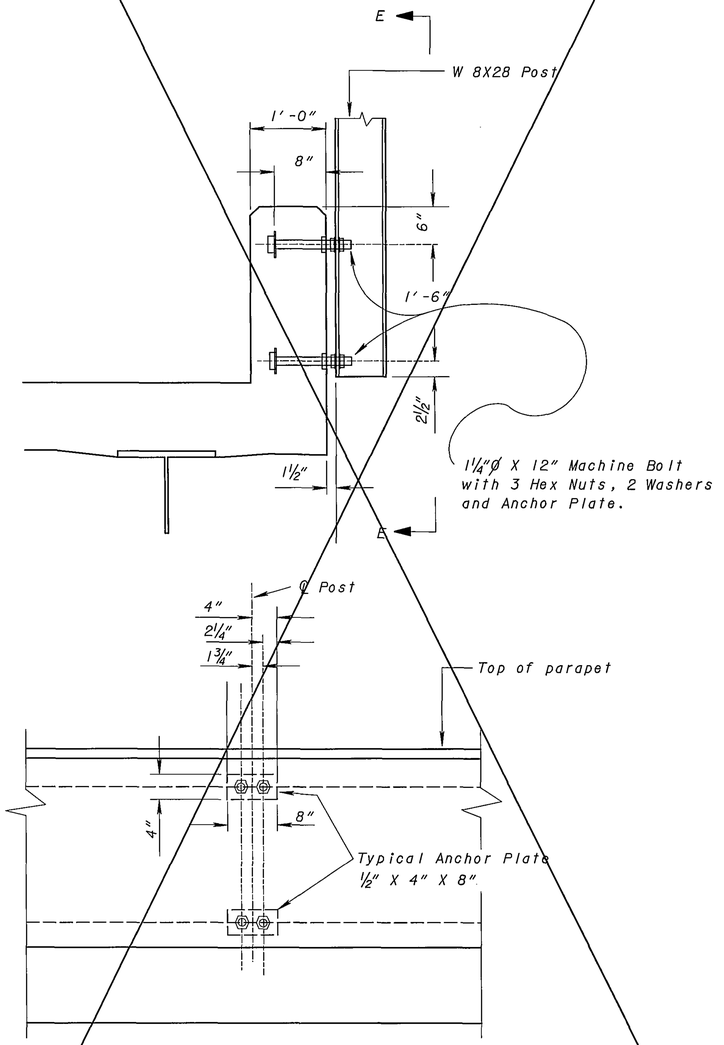
DESIGNED
CHECKED

NOISE BARRIER DETAILS

SUM-77-1.40

POST CONNECTION TO BIKEWAY STRUCTURE DETAIL

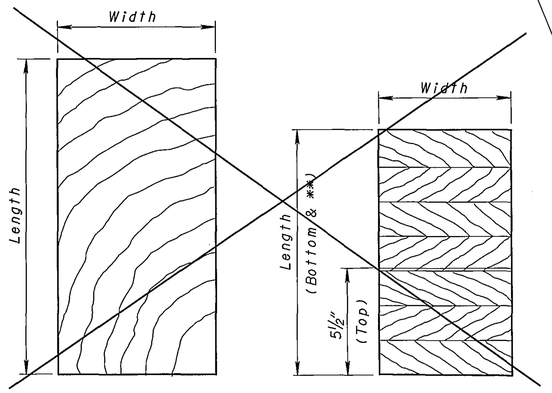
POST SPACING ON BIKEWAY BRIDGES: For all bridge mounted posts, including the first post off the bridge, the maximum post spacing shall be 12 feet.



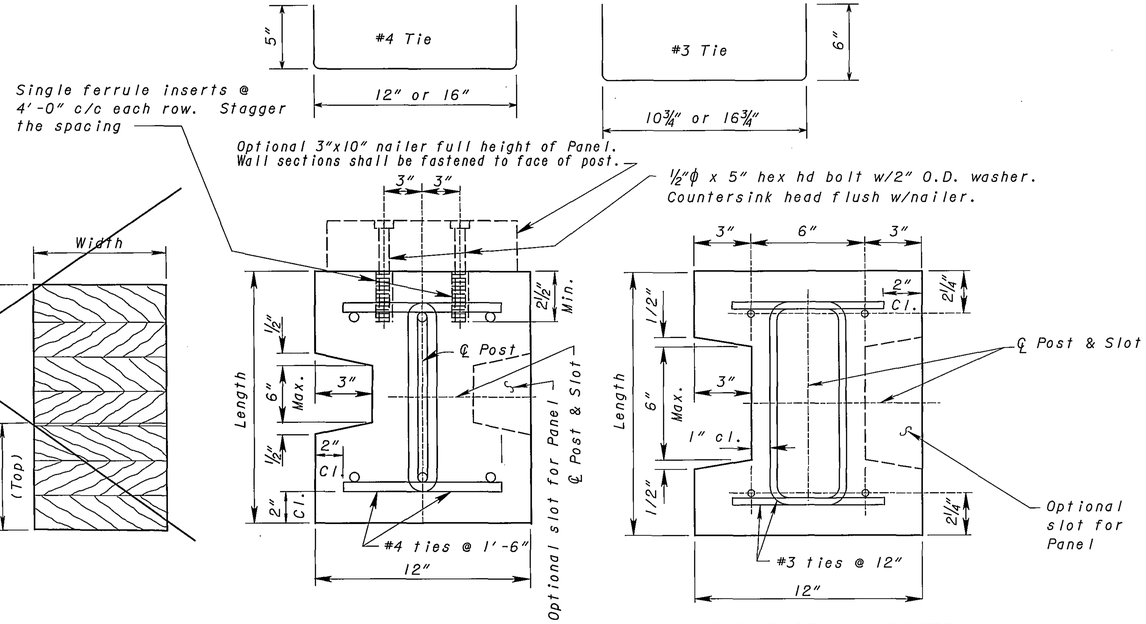
View E-E

MATERIAL: All machine bolts, nuts, washers and plates shall conform to the physical properties of ASTM A325 except that the minimum elongation shall be 10%. The chemical properties are waived.

LINE POST DETAILS

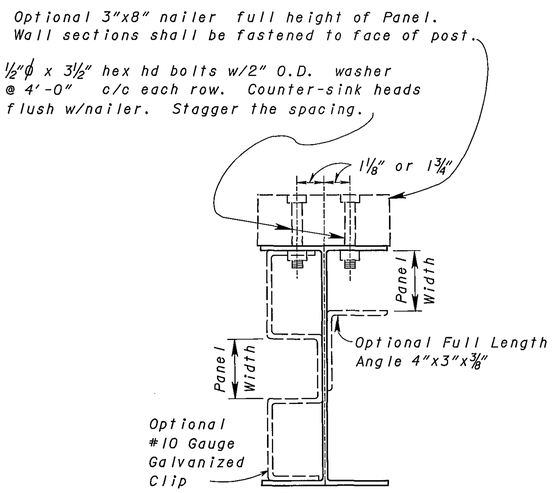


SAWN WOOD GLULAM

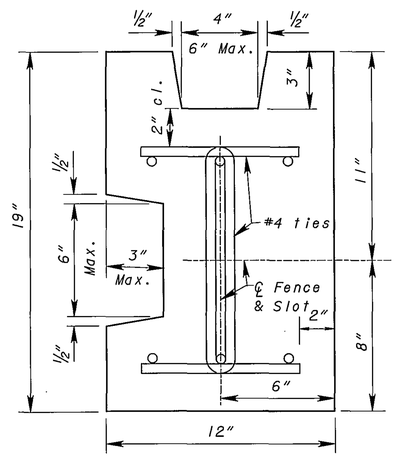


REINFORCED CONCRETE (Precast)

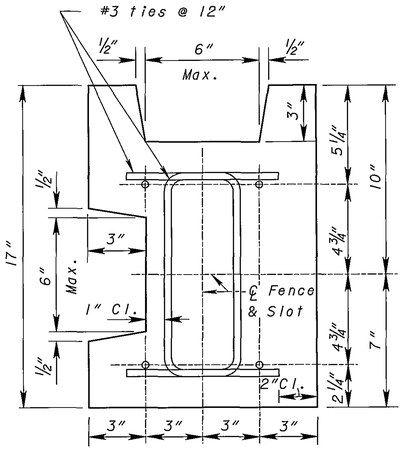
PRESTRESSED CONCRETE (4-½"ø strands)



STEEL



REINFORCED CONCRETE CORNER POST



PRESTRESSED CONCRETE CORNER POST

DESIGN AGENCY: BUREAU OF BRIDGES AND STRUCTURAL DESIGN

DATE REVIEWED: 11-21-97

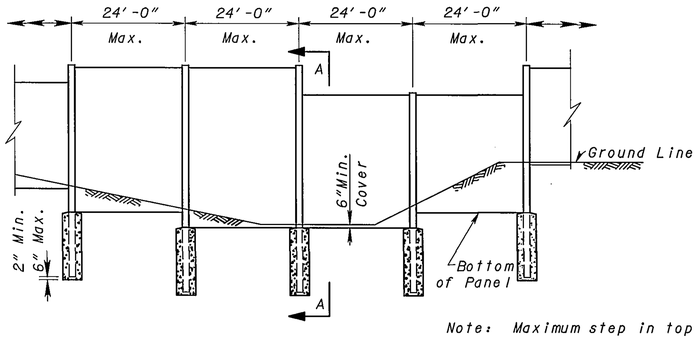
DRAWN REVISED: 10/19/03

DESIGNED CHECKED

STRUCTURE FILE NUMBER

NOISE BARRIER DETAILS

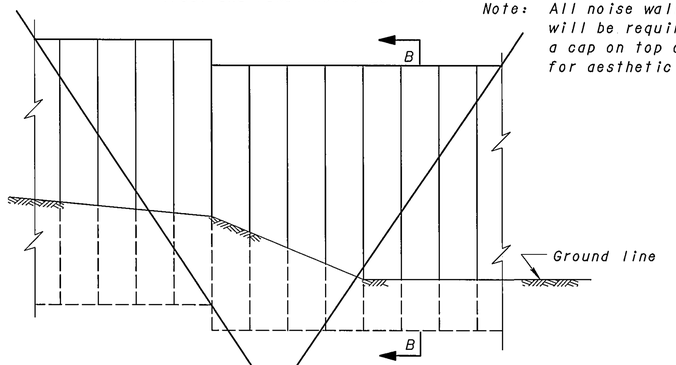
SUM-77-1.40



FRONT ELEVATION
(Post and Panel Noise Barrier)

Note: Maximum step in top elevation will be 12 inches for aesthetic purposes.

Note: All noise wall designs will be required to have a cap on top of the wall for aesthetic purposes.



FRONT ELEVATION
(Trench Wall Noise Barrier)

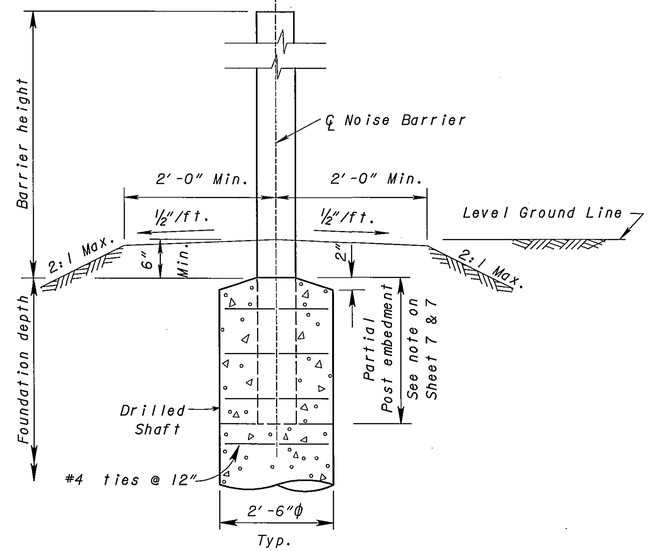
Note: A noise wall alignment which encounters an obstruction in its path will be required to veer 30° from its original alignment to avoid the obstruction. It should continue at least 10 feet parallel to the original alignment and then return 30° back to the original alignment after having cleared the obstruction. (i.e. light posts, sign supports ect.)

NOISE BARRIER TABLE (TRENCH WALL)

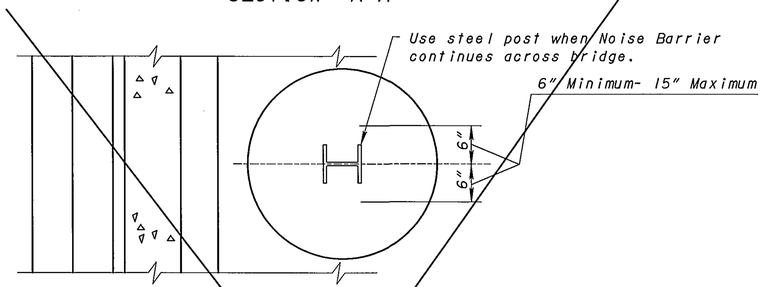
BARRIER HEIGHT (FEET)	EMBEDMENT DEPTH (FEET) LEVEL	SLOPED
11 and Less	7	10
Greater than 11 thru 16	9	13
Greater than 16 thru 20	10	14

For drainage inlets below Type D concrete barrier consult the STANDARD CONSTRUCTION DRAWING - I-2.3

CONCRETE BARRIER (TYPE D) INLET



SECTION A-A



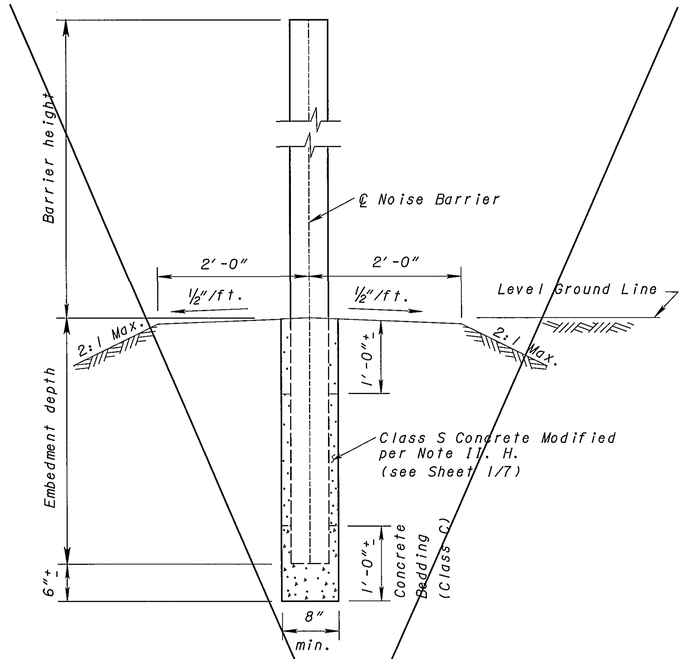
SECTION C-C

NOISE BARRIER DETAIL
BEHIND SAFETY BARRIER

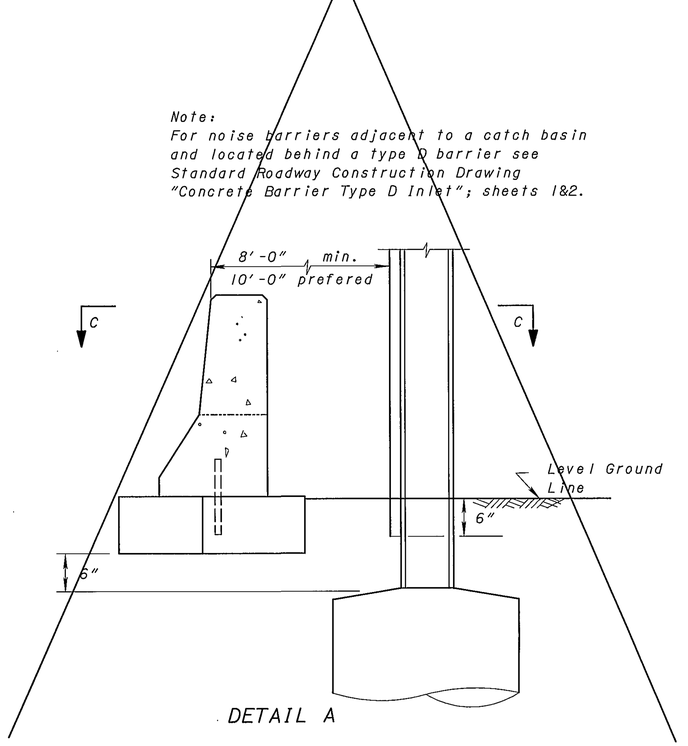
IF A FRONT MOUNTED NOISE WALL PANEL IS REQUIRED TO BE CUT OR PHYSICALLY ALTERED IN SOME OTHER MANNER THAT WILL STRUCTURALLY DAMAGE THE MANUFACTURER'S STANDARD PANEL SECTION, THE DETAILS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

A MINIMUM OF 8 FEET (10 FEET PREFERRED) SHOULD BE BETWEEN THE FACE OF THE SAFETY BARRIER AND THE FRONT OF THE NOISE WALL. THE CONTRACTOR MAY CHOOSE TO MOVE THE CENTERLINE OF THE POST FARTHER IN BACK OF THE ROADWAY BARRIER TO INCREASE THE DISTANCE TO THE FRONT OF THE POST. THE NOISE WALL PANELS SHALL EXTEND DOWN TO THE TOP OF THE POST FOOTING OR BE EMBEDDED A MINIMUM 6 INCHES BELOW THE FINISHED GRADELINE. NO ADDITIONAL PAYMENT SHALL BE MADE TO THE CONTRACTOR FOR ANY ADDITIONAL MATERIALS OR LABOR REQUIRED TO CONSTRUCT THE OPTION.

FOR INSTALLATION OF POSTS BEHIND TRAFFIC BARRIERS WITH NOISE BARRIER PANELS THAT ARE INSTALLED INSIDE THE POST'S FLANGES, THE NOISE BARRIER PANELS SHALL EXTEND DOWN TO THE TOP OF THE FOOTER OR BE EMBEDDED A MINIMUM OF 6 NCHES BELOW THE FINISHED GRADELINE FOR DETAIL A.



SECTION B-B



DETAIL A

DESIGN AGENCY
OFFICE OF STRUCTURAL ENGINEERING

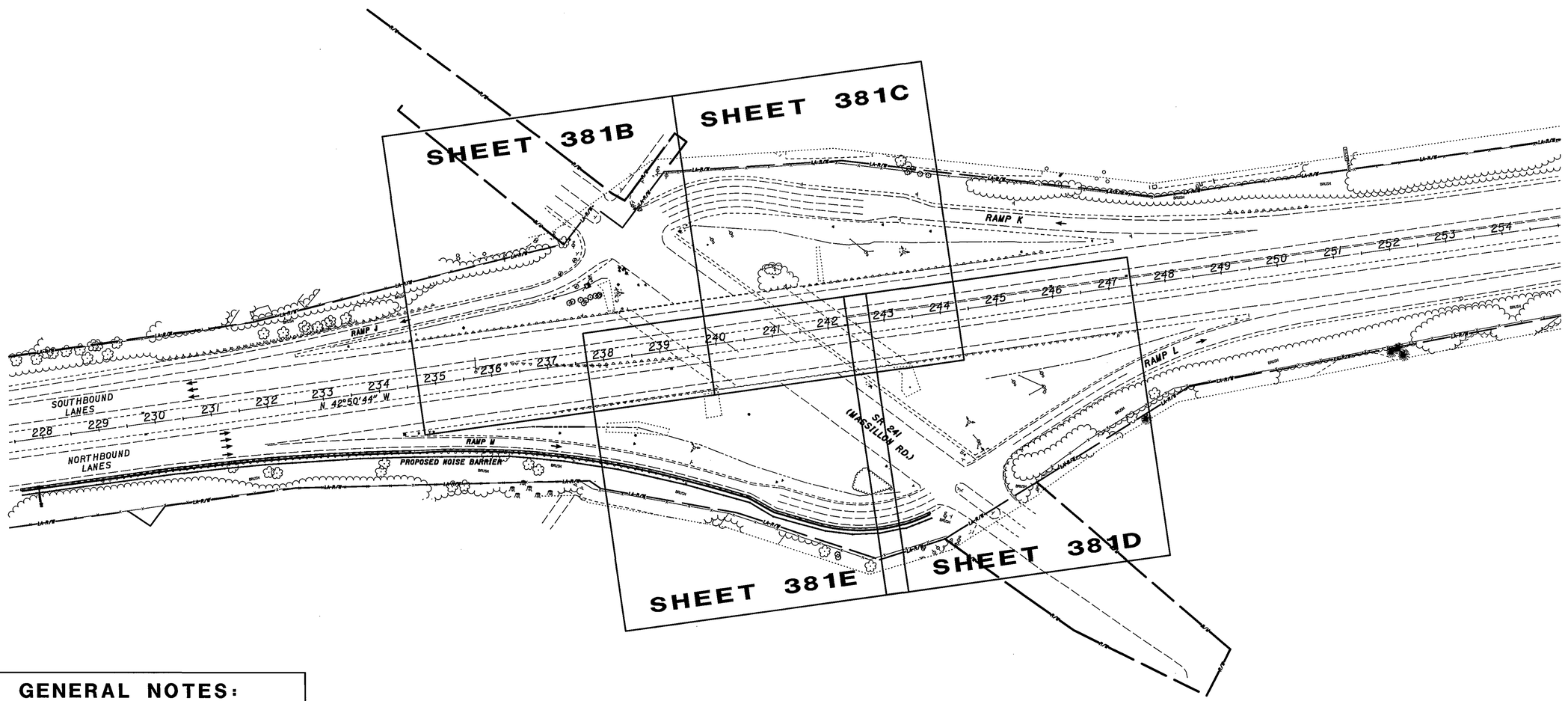
REVIEWED	DATE	STRUCTURE FILE NUMBER
	11-21-97	
DRAWN	REVISED	10/19/03
DESIGNED	CHECKED	
REVISED		

NOISE BARRIER DETAILS

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6 | 6

381
381



GENERAL NOTES:

1. CONTRACTOR TO PERFORM ITEM 201 - CLEARING AND GRUBBING WITHIN LIMITS OF CONSTRUCTION, AS INDICATED BY THE LIMITS OF SEEDING AND MULCHING. AND GENERAL NOTE ON SHEET 17.

2. CONTRACTOR TO STAKE THE LANDSCAPE LAYOUT, SETBACKS AND PLANTINGS PRIOR TO INSTALLATION AND SUBJECT TO THE APPROVAL OF THE ENGINEER.

3. CONTRACTOR TO MAINTAIN 5 FT. SETBACK FROM ALL DITCH FLOW LINES.

4. STD DWG LA-1.2 SHALL APPLY.

5. ALL PERENNIAL PLANTING BEDS SHALL HAVE 4" OF GRADE "A" CYPRESS MULCH. ALL WORK SHALL BE PERFORMED AS PER CMS 661.

LANDSCAPE GENERAL SUMMARY

SHEET NUMBER				PARTICPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
381B	381C	381D	381E	IM	NHS					
120	420	430	640	1610		653	10000	1610	CU YD	TOPSOIL FURNISHED AND PLACED
1				1		659	00100	1	EACH	SOIL ANALYSIS TEST
886	3421	3561	5512	13380		659	00530	13,380	SQ YD	SEEDING AND MULCHING, CLASS 3B
23	40	56	27	146		661	00500	146	CU YD	MULCH
810	1790	2650	615	5865		661	14000	5865	EACH	PERENNIALS (DAYLILLY)
		50	75	125		661	14000	125	EACH	PERENNIALS (FOUNTAIN GRASS)
65	95			160		661	20040	160	EACH	DECIDUOUS SHRUB, 2' HEIGHT (CRANBERRY COTONEASTER)
		120	100	220		661	30060	220	EACH	EVERGREEN SHRUB, 2' HEIGHT (SEA GREEN JUNIPER)
		7	5	12		661	40120	12	EACH	DECIDUOUS TREE, 3" CALIPER (RED MAPLE) (B&B)
9	11			20		661	50120	20	EACH	EVERGREEN TREE, 6' HEIGHT (WHITE SPRUCE) (B&B)

0 50 100 200
HORIZONTAL SCALE IN FEET

SR 241 INTERCHANGE LANDSCAPE PLAN
PLAN KEY AND GENERAL SUMMARY

SUM-77-1.40

381A
381

SR241.dgn

PROJECT INFORMATION

AREA OF DL BED (DAYLILLY) - 810 SQ FT
AREA OF CC BED (COTONEASTER) - 1035 SQ FT
AREA OF SEEDING AND MULCHING - 7975 SQ FT - 886 SQ YD
AREA OF TOPSOIL (4" THK), TOTAL - 9820 SQ FT

CALCULATIONS

VOLUME OF TOPSOIL = (9820 S.F.)(0.33 FT.)/27 = 120 CU.YD.
VOLUME OF MULCH = (1845 S.F.)(0.33 FT.)/27 = 23 CU.YD.

FOR GENERAL NOTES, SEE SHEET 381A.

ITEM	KEY	DESCRIPTION:	CONT.	NOTES	QTY.	UNIT
661	WS	EVERGREEN TREE, 6' HEIGHT (WHITE SPRUCE)	B&B	6' HT.	9	EACH
661	CC	DECIDUOUS SHRUB, 2' HEIGHT (CRANBERRY COTONEASTER)	#3	SPACING 4' O.C.	65	EACH
661	DL	PERENNIALS (DAYLILLY)	#1	SPACING 1' O.C.	810	CU.YD.
653		TOPSOIL FURNISHED AND PLACED			120	SQ.YD.
659		SEEDING AND MULCHING, CLASS 3B		CYPRESS	886	CU.YD.
661		MULCH	4" THK.		23	

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED BSC CHECKED WBH

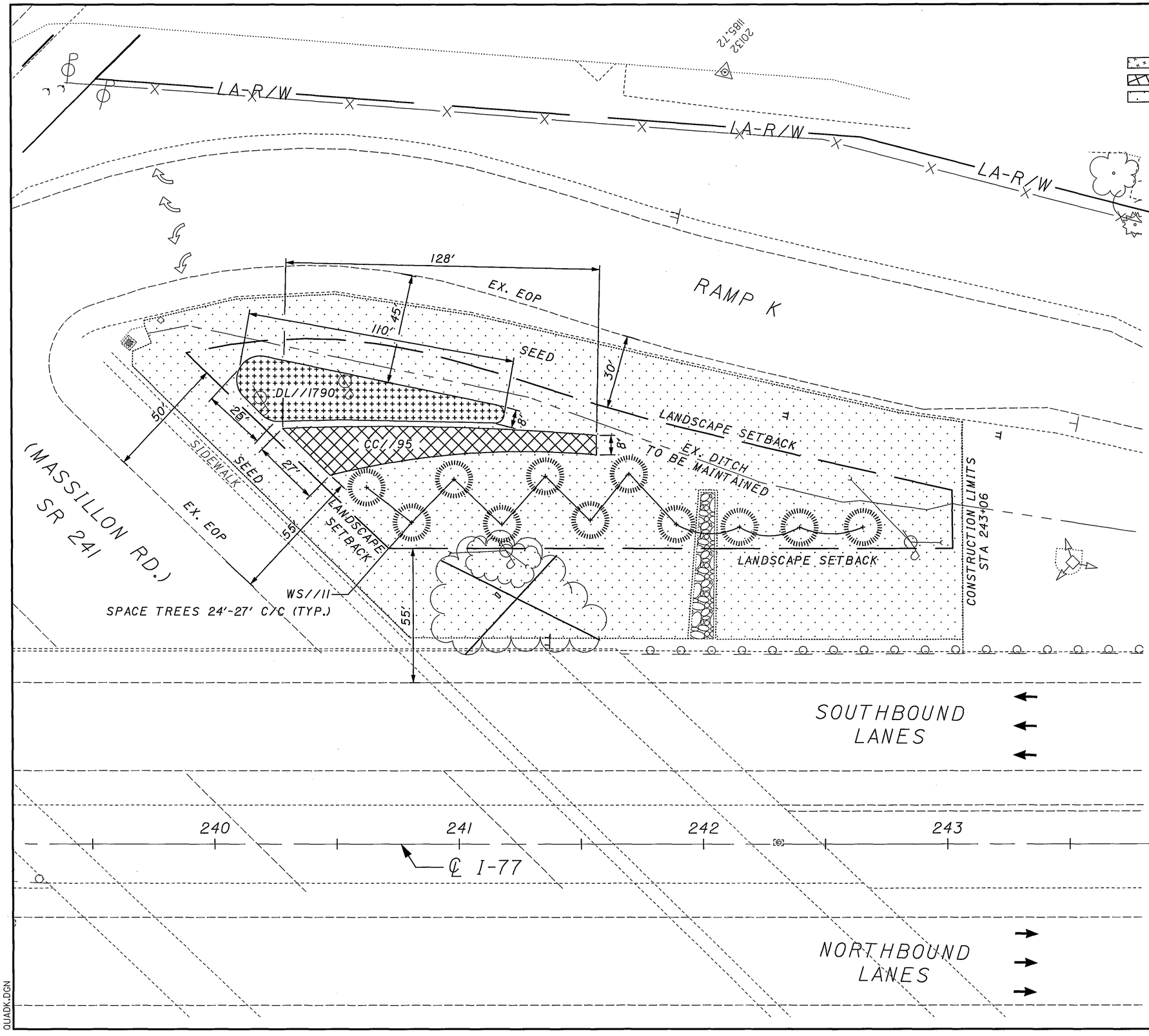
SR 241 INTERCHANGE

LANDSCAPE PLAN - SR 241 (MASSILLON RD.)

SUM-77-1.40

381B
381

QUAD-J.DGN



PROJECT INFORMATION

AREA OF DL BED (DAYLILLY) = 1790 SQ FT

AREA OF CC BED (COTONEASTER) = 1480 SQ FT

AREA OF SEEDING AND MULCHING = 30,790 SQ FT = 3421 SQ YD

AREA OF TOPSOIL (4" THK), TOTAL = 34,060 SQ FT

CALCULATIONS

VOLUME OF TOPSOIL = 34,060 S.F.)(0.33 FT.)/27 = 420 CU.YD.

VOLUME OF MULCH = (3270 S.F.)(0.33 FT.)/27 = 40 CU.YD.

FOR GENERAL NOTES, SEE SHEET 381A.

ITEM	KEY	DESCRIPTION:	CONT.	QTY.	UNIT
661	WS	EVERGREEN TREE, 6' HEIGHT (WHITE SPRUCE)	B&B	11	EACH
661	CC	DECIDUOUS SHRUB, 2' HEIGHT (CRANBERRY COTONEASTER)	#3	95	EACH
661	DL	PERENNIALS (DAYLILLY)	#1	1790	EACH
653		TOPSOIL FURNISHED AND PLACED		420	CU.YD.
659	SEED	SEEDING AND MULCHING, CLASS 3B		3421	SQ.YD.
661		MULCH	4" THK.	40	CU.YD.

HORIZONTAL SCALE IN FEET
0 10 20 40

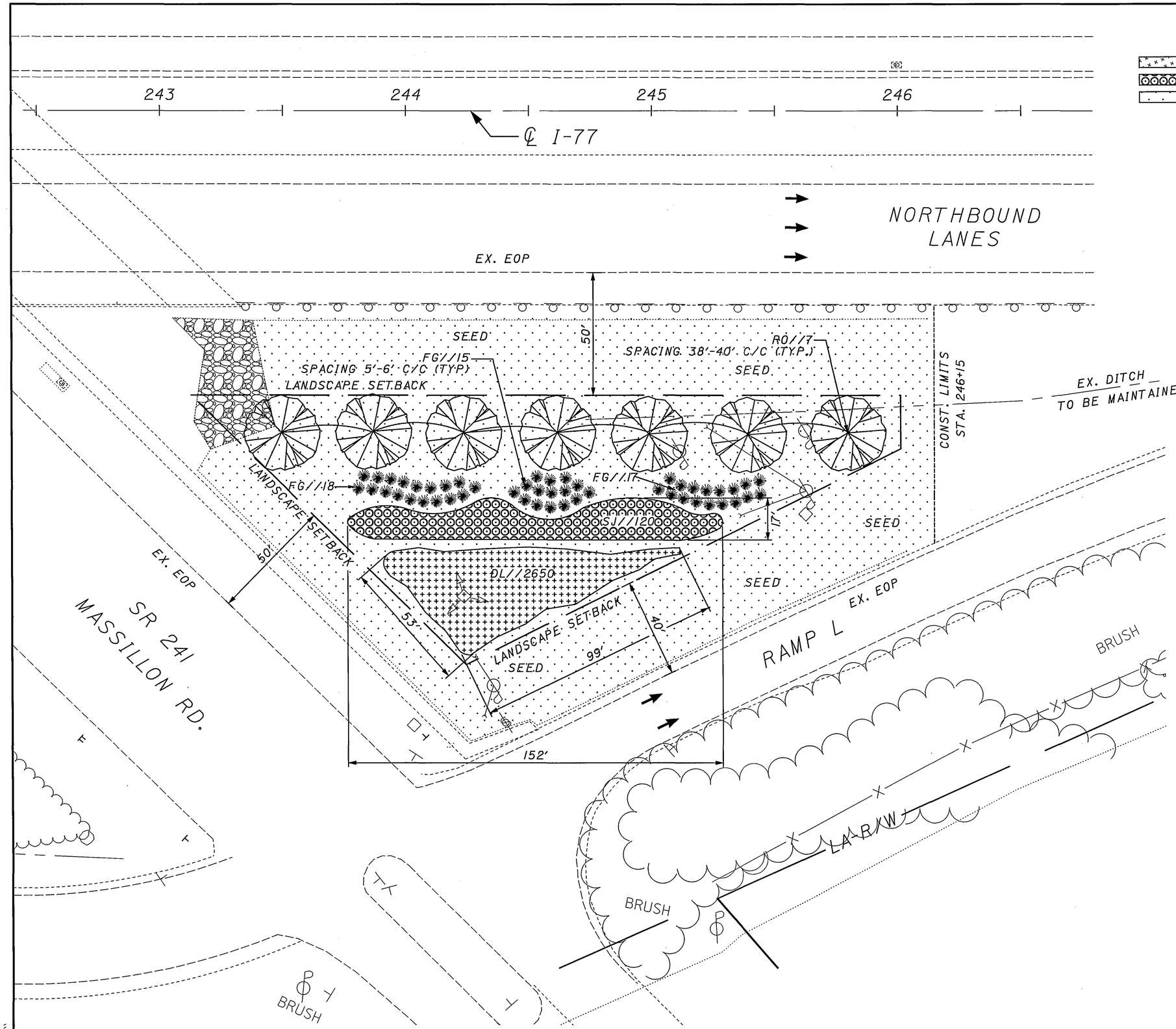
CALCULATED BSC
CHECKED WBH

SR 241 INTERCHANGE - SUM-77-1.40

LANDSCAPE PLAN

381C
381

QUADK.DGN



PROJECT INFORMATION

AREA OF DL BED (DAYLILLY) = 2650 SQ FT
AREA OF SJ BED (JUNIPER) = 1900 SQ FT
AREA OF SEEDING AND MULCHING = 32,053 SQ FT = 3561 S.Y.
AREA OF TOPSOIL (4" THK), TOTAL = 36,603 SQ FT

CALCULATIONS

VOLUME OF TOPSOIL = (36,603 S.F.)(0.33 FT.)/27 = 448 CU.YD.
VOLUME OF MULCH = (4550 S.F.)(0.33 FT.)/27 = 56 CU.YD.

FOR GENERAL NOTES, SEE SHEET 381A.

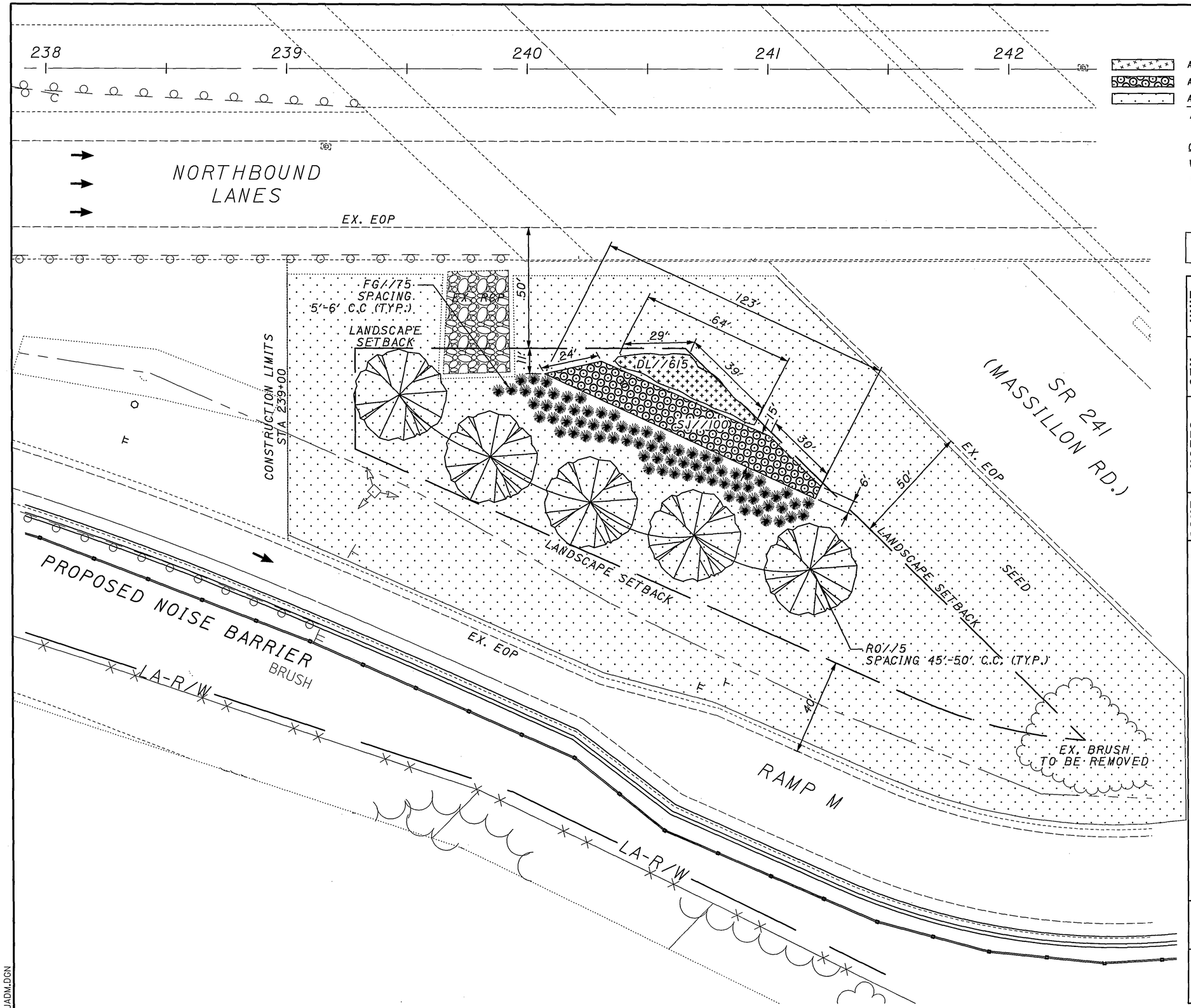
ITEM	KEY	DESCRIPTION:	CONT.	NOTES	QTY.	UNIT
661	RO	DECIDUOUS TREE, 3" CALIPER (RED MAPLE)	B&B	3" CALIPER	7	EACH
661	FG	PERENNIALS (FOUNTAIN GRASS)	#1	SPACING 1' O.C.	50	EACH
661	DL	PEREWIALS (DAYLILLY)	2' HT.	SPACING 4' O.C.	2650	EACH
661	SJ	EVERGREEN SHRUB, 2' HEIGHT (SEA GREEN JUNIPER)			120	CU.YD.
653		TOPSOIL FURNISHED AND PLACED			448	SQ.YD.
659	SEED	SEEDING AND MULCHING, CLASS 3B			3561	CU.YD.
661		MULCH	4" THK.	CYPRESS	56	

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED BSC
CHECKED WBH

LANDSCAPE PLAN - SR 241 INTERCHANGE

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PROJECT INFORMATION

AREA OF DL BED (DAYLILLY) = 615 SQ FT
AREA OF SJ BED (JUNIPER) = 1590 SQ FT
AREA OF SEEDING AND MULCHING = 49,615 SQ FT = 5512 SQ YD
AREA OF TOPSOIL (4" THK), TOTAL = 51,820 SQ FT

CALCULATIONS

VOLUME OF TOPSOIL = (51,820 S.F.)(0.33 FT.)/27 = 640 CU.YD.
VOLUME OF MULCH = (2205 S.F.)(0.33 FT.)/27 = 27 CU.YD.

FOR GENERAL NOTES, SEE SHEET 381A.

ITEM	KEY	DESCRIPTION:	CONT.	NOTES	QTY.	UNIT
661	FG	PERENNIALS (FOUNTAIN GRASS)		SPC. 4' O.C./ 2' HT.	75	EACH
661	SJ	EVERGREEN SHRUB, 2' HEIGHT (SEA GREEN JUNIPER)		SPACING 1' O.C.	100	EACH
661	DL	PERENNIALS (DAYLILLY)	#1		615	EACH
661	RO	DECIDUOUS TREE, 3" CALIPER (RED MAPLE)	B&B	3" CALIPER	5	EACH
653		TOPSOIL FURNISHED AND PLACED			640	CU.YD.
659	SEED	SEEDING AND MULCHING, CLASS 3B			5512	SQ.YD.
661		MULCH		4" THK.	27	CU.YD.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED BSC
CHECKED WBH

LANDSCAPE PLAN - SR 241 INTERCHANGE

SUM-77-1.40

QUADM.DGN

ITEM 617 - COMPACTED AGGREGATE, TYPE A, AS PER PLAN

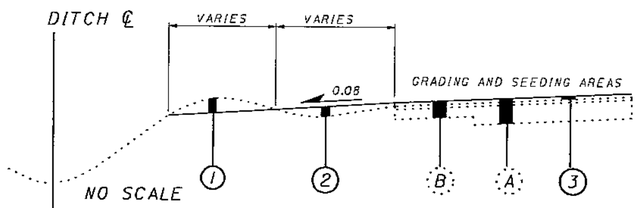
IN LOW SHOULDER AREAS EXCEEDING 1" OR AS DIRECTED BY THE ENGINEER, RECYCLED ASPHALT PAVEMENT (RAP) SHALL BE USED IN AREAS ADJACENT TO THE PAVED BERM. THE RAP SHALL HAVE A MINIMUM PG CONTENT OF 4.5% AND MEET THE GRADATION PER 703.18. ONCE THE STOCKPILE MEETS THE GRADATION, THE PG CONTENT OF THE RAP SHALL 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 REQUIRMENTS OF ITEM 617. ALL MATERIALS, LABOR, EQUIPEMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 617 COMPACTED AGGREGATE, TYPE A, 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

AN ESTIMATED QUANTITY OF 219 CU. YD. ITEM 617, COMPACTED AGGREGATE, TYPE A, AS PER PLAN HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS WORK.

LINEAR GRADING, RAMP REHABILITATION



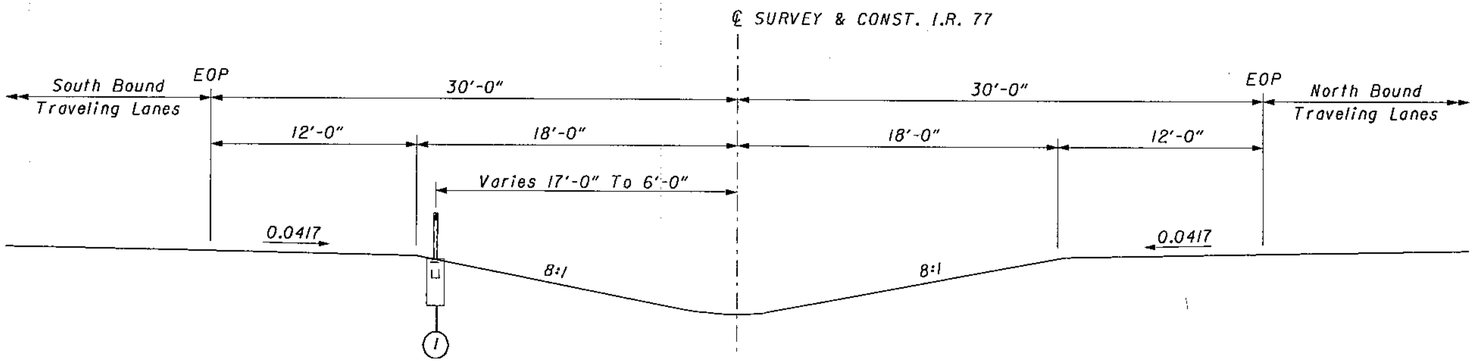
(1) 209, LINEAR GRADING
(2) 617, COMPACTED AGGREGATE, TYPE A, AS PER PLAN (2" AVG.)
(3) PROPOSED PLANING & ASPHALT OVERLAY
(A) EXISTING ASPHALT PAVEMENT
(B) EXISTING PAVED SHOULDER

CALCULATED P.A.S. CHECKED R.A.M.

GENERAL NOTES

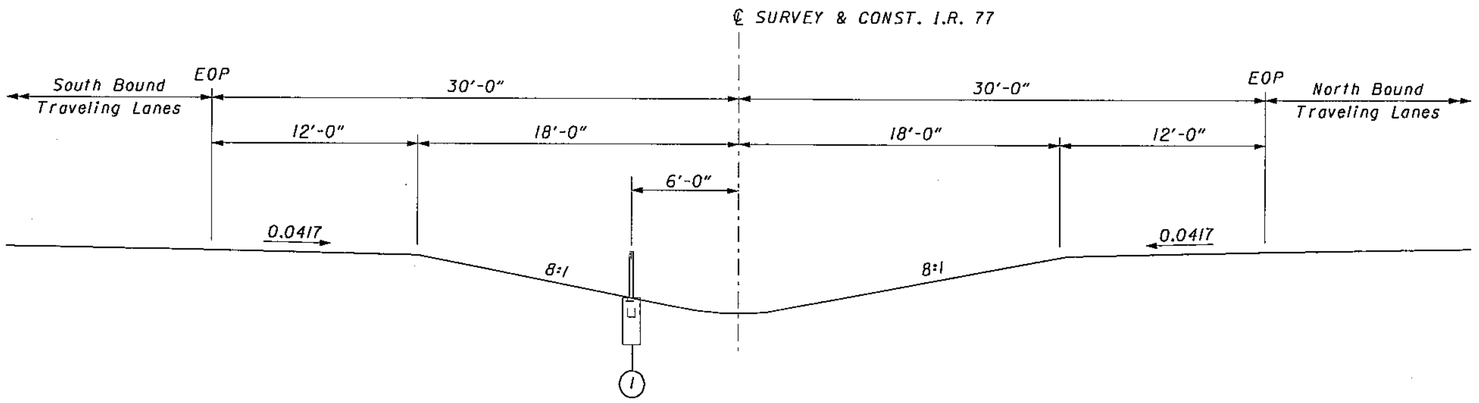
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22A
381



CONCRETE FOUNDATION POST SECTION I.R. 77
SECTION APPLIES:

Sta. 87+00.00 To Sta. 92+50.00 = 550.00 FT



CONCRETE FOUNDATION POST SECTION I.R. 77
SECTION APPLIES:

Sta. 92+50.00	To Sta. 104+48.00	=	1198.00 FT
Sta. 104+98.00	To Sta. 149+40.00	=	4442.00 FT
Sta. 151+72.00	To Sta. 198+55.00	=	4683.00 FT
Sta. 200+95.00	To Sta. 205+80.00	=	485.00 FT

LEGEND

(1) 606 GUARDRAIL MISC.: TENSIONED CABLE WITH CONCRETE FOUNDATION LINE POST (SOCKETED)

TENSIONED CABLE TYPICAL SECTIONS

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ITEM 606 - GUARDRAIL, MISC.: TENSIONED CABLE WITH CONCRETE FOUNDATION LINE POST (SOCKETED)
ITEM 606 - GUARDRAIL, MISC.: TENSIONED CABLE ANCHOR TERMINAL

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A TENSIONED CABLE GUARDRAIL SYSTEM MEETING NCHRP REPORT 350 TEST LEVEL-3 REQUIREMENTS BY USING ONE OF THE THREE FOLLOWING PRODUCTS:

1) BRIFEN WIRE ROPE SAFETY FENCE, BRIFEN USA, 9215 S. SHIELDS BLVD. OKLAHOMA CITY, OKLAHOMA 73160
PH: 405-793-9500 OR 866-427-4336

2) TRINITY CABLE SAFETY SYSTEM (CASS), TRINITY INDUSTRIES, 2525 STEMMONS FREEWAY, DALLAS, TEXAS 75207
(CONTACT: BRIAN SMITH 214-631-4420 OR 800 527-6050 EXT. 8140)

3) MARION STEEL'S WIRE ROPE BARRIER, MARION STEEL COMPANY, 912 CHENEY AVE., MARION, OHIO 43302
(CONTACT: RICK MAUER, 603-430-9350 OR 603-490-1603).

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

THE SYSTEM SHALL HAVE A MAXIMUM DEFLECTION OF 6.75 FT.

PAYMENT FOR THE ABOVE WORK SHALL BE AT THE UNIT BID PRICE FOR:

ITEM 606 - GUARDRAIL, MISC.: TENSIONED CABLE WITH CONCRETE FOUNDATION LINE POST (SOCKETED)
ITEM 606 - GUARDRAIL, MISC.: TENSIONED CABLE ANCHOR TERMINAL

THE BID PRICE SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT, AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL CABLE GUARDRAIL SYSTEM, INCLUDING ALL RELATED HARDWARE, GRADING, EMBANKMENT, AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER AND ODOT PROJECT ENGINEER.

SEQUENCE OF CONSTRUCTION:
THERE IS ONE RUN OF TENSIONED CABLE GUARDRAIL ON THIS PROJECT (BEGIN RUN ANCHOR TERMINAL TO END RUN ANCHOR TERMINAL).

POSTS ARE SET IN SOCKETED CONCRETE FOUNDATIONS AND SHALL NOT BE PERMANENTLY INSTALLED UNTIL THEIR RESPECTIVE RUNS OF TENSIONED CABLE GUARDRAIL ARE READY FOR FINAL CONNECTION TO THE END TERMINAL ASSEMBLY.

THE CONTRACTOR SHALL REPLACE ANY POST DAMAGED DURING INSTALLATION AS DETERMINED BY THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.

STATION TO STATION	SIDE		606 Guardrail, Misc.: Tensioned Cable With Concrete Foundation Line Post (Socketed)		606 Guardrail, Misc.: Tensioned Cable Anchor Terminal
			Ft.		Each
I.R. 77					
Sta. 87+00.00 to Sta. 104+48.00	Lt.		1645.5		2
Sta. 104+98.00 to Sta. 149+40.00	Lt.		4339.5		2
Sta. 151+72.00 to Sta. 198+55.00	Lt.		4580.5		2
Sta. 200+95.00 to Sta. 205+80.00	Lt.		382.5		2
Total			10948		8

TENSIONED CABLE SUBSUMMARY & GENERAL NOTES

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GENERAL INFORMATION

INTRODUCTION

THIS REPORT CONSISTS OF INFORMATION FOR THE PROPOSED WIDENING OF BRIDGE STRUCTURES SUM-77-0159 L/R, LOCATED ALONG I-77 OVER GREENSBURG ROAD IN SUMMIT COUNTY, OHIO. THE PROPOSED BRIDGE WIDENING WILL INCLUDE REPLACING AND WIDENING THE DECK SLABS, INSTALLING ADDITIONAL BEAMS, AND INSTALLATION OF ADDITIONAL SUBSTRUCTURE UNITS. THE SUM-77-0159 L/R BRIDGE SUPERSTRUCTURES WILL BE WIDENED FROM
39'-8"± FACE/FACE OF EXISTING CURBS TO 59'-0"± TOE TO TOE OF PARAPETS.

SITE GEOLOGY

THE BEDROCK UNDERLYING SUMMIT COUNTY CONSISTS MAINLY OF SANDSTONE, SILTSTONE, SHALE, COAL, AND LIMESTONE, ALL OF WHICH FORMED FROM SEDIMENTS LAID DOWN THE PENNSYLVANIAN PERIOD.

EXPLORATION

EXPLORATORY BORINGS WERE MADE BY MEANS OF A TRUCK-MOUNTED DRILL RIG BETWEEN MAY 14 AND MAY 22, 1998. INCLUDED IN THIS REPORT ARE THE LOGS OF BORINGS MADE FOR THE BRIDGE WIDENING.

INVESTIGATIONAL FINDINGS

MATERIALS ENCOUNTERED FOR THE BRIDGE WIDENING WERE PREDOMINATLY COMPRISED OF SILT (A-4b), SANDY SILT (A-4a), SILT AND CLAY (A-6a), COARSE AND FINE SAND (A-3a and A-3) AND GRAVEL AND/OR STONE FRAGMENTS CONTAINING VARIABLE AMOUNTS OF SAND, SILT, AND CLAY, GENERALLY HAVING MOISTURE CONTENTS RANGING FROM THREE (3) TO TWENTY-SEVEN (27) PERCENT.

WITHIN THE ROADWAY EXCAVATION AREAS, BEDROCK IS ANTICIPATED AT ALL BORINGS AT AN ELEVATION VARYING FROM 1140 TO 1143 FT MSL.

LEGEND OF MATERIAL CLASSIFICATION

- Gravel and/or Stone Fragments (A-1-a)
- Gravel and/or Stone Fragments with Sand (A-1-b)
- Gravel and/or Stone Fragments with Sand and Silt (A-2-4)
- Gravel and/or Stone Fragments with Sand, Silt and Clay (A-2-6)
- Fine Sand (A-3)
- Coarse and Fine Sand (A-3a)
- Sandy Silt (A-4a)
- Silt (A-4b)
- Elastic Silt and Clay (A-5)
- Silt and Clay (A-6a)
- Silty Clay (A-6b)
- Elastic Clay (A-7-5)
- Clay (A-7-6)
- Shale
- Weathered Shale
- Sandstone
- Limestone
- Mudstone
- Random Fill
- Various Other Materials
- Dolomite
- Leached Limestone
- Leached Dolomite
- Silts Stone
- Peat (Pt)

CLASS	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	M.C.	# TESTS
(A-1-a)	62	17	13	8		---	---	9	9
(A-1-b)	42	27	16	15		---	---	11	7
(A-2-4)	44	13	20	15	8	13	5	16	2
(A-2-6)	52	24	11	7	6	28	12	12	2
(A-3)	0	19	74	7		---	---	19	1
(A-3a)	15	20	44	21		--	--	17	9
(A-4a)	13	9	28	34	16	17	5	12	10
(A-4b)	3	2	24	55	16	11	2	19	2
(A-6a)	9	11	33	30	17	14	6	12	2

1 — Water Content of Soil in Percent

● — Water Content nearly Equal to or Greater Than Liquid Limit

⊖ — Indicates a Non-Plastic Material with a High Water Content

Static Water Level (Encountered)

Static Water Level (Completion)

W-X-Y — Number of Blows for "STANDARD PENETRATION" Test.
W=Number of Blows for First 6 inches
X=Number of Blows for Second 6 inches
Y=Number of Blows for Third 6 inches

Sod and/or Topsoil

Berm Material

Press and/or Drive Sample and/or Core Boring-Plan View

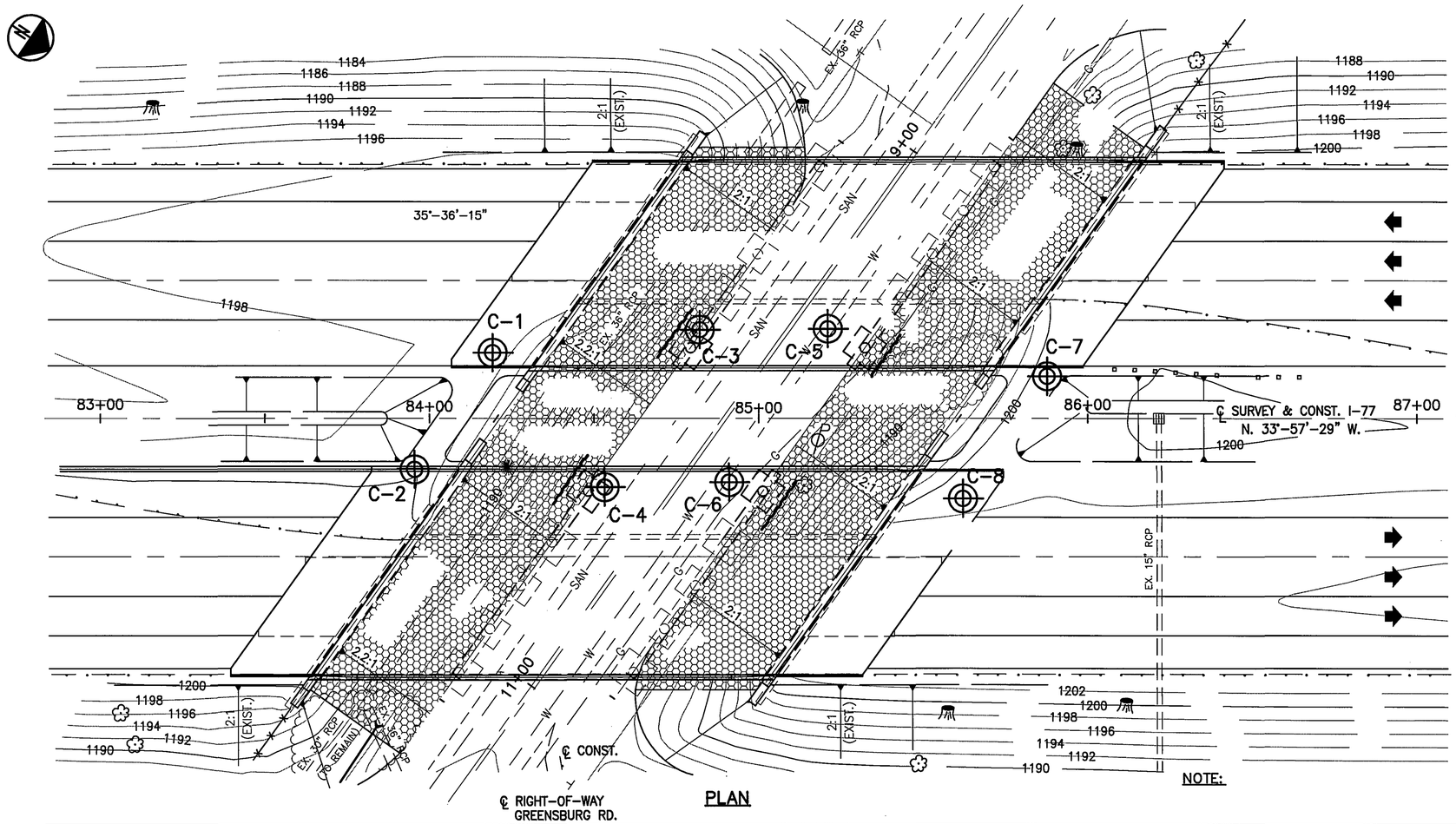
Press and/or Drive Sample and/or Core Boring Plotted to Vertical Scale Only

DRAWN BY: SNP | REVIEW BY: CRD | REVIEW DATE: 12/08/03 | SCALE: NTS

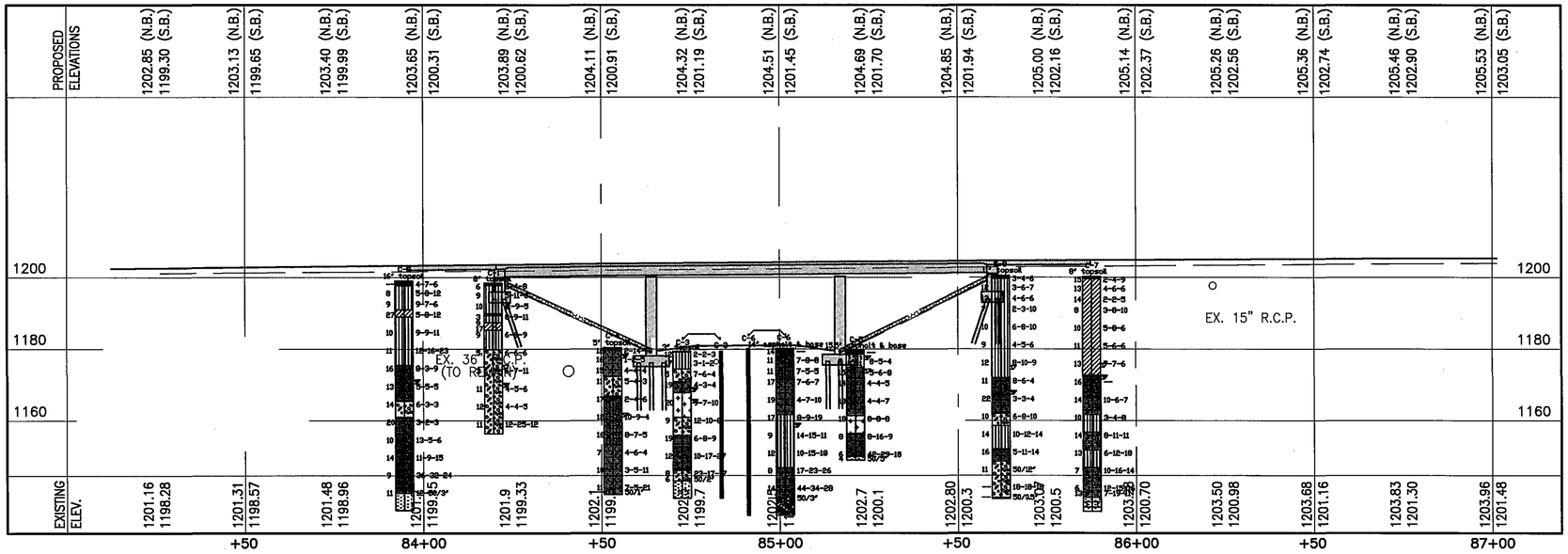
GENERAL NOTES

SUM-77-1.40

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PLAN



0 20
10 40
HORIZONTAL SCALE IN FEET

DRAWN BY: SNP
REVIEW BY: SNP
REVIEW DATE: 12/06/03
SCALE: 1" = 20'

PLAN AND PROFILE
GREENSBURG RD.

SUM-77-1.40

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Information To Build On
Engineering • Consulting • Testing

Project I.D.	139-85018 Greensburg Road
Date Started	5/14/1998
Dated Completed	5/14/1998

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	1170.06'		
Water on Completion	1174.67'		
Surface Elevation-MSL	1198.62'		

Boring No.	C-1
Station & Offset	84+18.86' & 20.70' LT

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
1198.62'		Surface											
1197.95'	2-4-8	Stiff to Very Stiff,moist,brown to gray,Sandy Silt w/some clay and little gravel		SS-1								6	
	5-11-8			SS-2								9	
1190.12'	11-9-5		5	SS-3	14	11	22	32	21	21	7	10	A-4a
1189.60'		*		AU-4									A-1-a
1187.63'	8-9-11	***	10	SS-4	77	2	14	(7)		--	--	3	A-1-a
1185.50'		****		AU-5	6	11	44	25	14	--	--	9	A-4a
	6-8-9	Very Stiff,moist,brown,Sandy Silt	15	SS-5	10	12	23	27	28	32	13	17	A-4a
				SS-6								9	A-4a
1180.12'	6-6-6	Loose to dense,moist,brown,Gravel and/or Stone fragments with sand and trace of silt	20	SS-7	55	19	18	(8)		--	--	5	A-1-a
	6-7-11			SS-8								3	
	4-5-6		25	SS-9	60	24	10	(6)		--	--	11	A-1-a
	4-4-5		30	SS-10								12	
	12-25-12		35	SS-11	70	12	9	(9)		--	--	11	A-1-a
1158.63'		End of Boring @ 1156.63'	40	SS-12									
		* 6" Topsoil	45	*** Very Stiff,moist,brown,Sandy Silt, little Clay, trace of Gravel				**** Very Stiff,moist,black,Silt and Clay w/some sand and trace of gravel					
		** Medium Dense,moist,brown,Gravel/Stone Fragments with little sand and trace of silt	50										

Information To Build On
Engineering • Consulting • Testing

Project I.D.	139-85018 Greensburg Road
Date Started	5/19/1998
Dated Completed	5/20/1998

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	1170.80'		
Water on Completion	--		
Surface Elevation-MSL	1199.36'		

Boring No.	C-2
Station & Offset	83+94.19' & 15.55' RT

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
1199.36'		Surface											
1198.03'	4-7-6	Stiff to Very Stiff,moist,brown to gray,Sandy Silt w/some Gravel and little Clay		SS-1								--	
	5-8-12			SS-2								8	
1191.37'	9-7-6		5	SS-3	28	11	10	40	11	20	5	9	A-4a
1189.37'	5-8-12	Very Stiff,wet,black,Silt and Clay		SS-4								27	A-6a
	9-9-11	Very Stiff to hard,moist,brown,Sandy Silt with little clay and little gravel	10	SS-5	13	10	27	35	15	23	8	10	A-4a
	12-16-23		15	SS-6								11	
1175.85'	8-3-9	Medium Dense,moist,brown,Gravel and/or Stone fragments with Sand,Silt, and Clay	20	SS-7								16	
	5-5-5		25	SS-8	52	24	10	7	7	30	13	13	A-2-6
1165.85'	6-3-3	Loose,moist,brown,Gravel and/or Stone Fragments with some Sand	30	SS-9	69	12	12	(7)		--	--	14	A-1-a
	3-2-3	Loose,moist,brown,Gravel and/or Stone Fragments with Sand	35	SS-10	28	58	9	(4)		--	--	20	A-1-b
1156.63'	13-5-6	Medium Dense to Very Dense,moist,brown, Gravel and/or Stone Fragments with Sand,Silt, and Clay	40	SS-11								10	A-2-6
	11-9-15		45	SS-12								14	
	38-32-24	Medium Dense to Very Dense,moist,brown, Gravel and/or Stone Fragments with Sand,Silt, and Clay	50	SS-13								9	A-2-6
1139.86'	12-50/3"	Hard,gray,Sandstone	55	SS-14								11	
1135.02'		**	60	NX-15									
		End of Boring @ 1135.02'	65										
		* 16" Topsoil	70										
		** Core Data Run: 1139.98 - 1135.02 Recovery: 63% RQD - 50% Longest Piece - 5.75"	75										
			80										

DRAWN BY: SNP | REVIEW BY: SNP | REVIEW DATED: 12/08/03 | SCALE: NTS

BORING LOGS

SUM-77-1.40

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Information To Build On
Engineering • Consulting • Testing

Project I.D.	139-85018 Greensburg Road
Date Started	5/19/1998
Dated Completed	5/20/1998

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	1168.73'		
Water on Completion	1165.45'		
Surface Elevation-MSL	1179.90'		

Boring No.	C-3
Station & Offset	84+82.91' & 26.48' LT

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
1179.90'		Surface											
1179.66'	2-2-3	Soft,moist,brown,Sandy Silt with little Clay and trace of Gravel		SS-1								12	
1174.90'	3-1-2			SS-2	10	11	24	37	18	25	8	17	A-4a
1171.39'	7-6-4	Medium Dense,moist,brown,Gravel and/or Stone Fragments,Sand, little Silt	5	SS-3	50	19	20	(11)		--	--	5	A-1-a
1168.41'	4-3-4	**		SS-4	9	16	50	(25)		--	--	19	A-3a
1161.38'	9-7-10	Very Stiff,moist,brown,Silt with some Sand and trace of Gravel	10	SS-5	4	3	18	57	18	21	3	20	A-4b
1156.40'	12-10-8	Medium Dense,moist,brown,Gravel and/or Stone Fragments with some Sand	15	SS-6	62	22	9	(7)		--	--	9	A-1-a
1152.89'	6-8-9	Medium Dense,moist,brown,Fine Sand with trace of Silt	20	SS-7	0	19	74	(7)		--	--	19	A-3
1146.39'	10-17-27	Dense,moist,brown,Gravel and/or Stone fragments with little Silt	25	SS-8	20	52	15	(13)		--	--	12	A-1-b
1143.90'	23-17-17	Dense,moist,brown to gray,Gravel and/or Stone fragments	30	SS-9								8	A-1-a
1138.55'	50/2"	Red to gray,Sandstone Gravel with Granite cobbles	35	SS-10								6	
			40	NX-11									
		End of Boring: 1138.55'	45										
		* Topsoil 3"		Core Data: Run 1143.48' - 1138.55'									
		** Loose,moist,brown,Coarse and Fine Sand with some Silt and trace of Gravel	50	Recovery: 23%									
				Longest Piece: 7"									
				RQD: 50%									

Information To Build On
Engineering • Consulting • Testing

Project I.D.	139-85018 Greensburg Road
Date Started	5/22/1998
Dated Completed	5/22/1998

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	1177.92'		
Water on Completion	1161.52'		
Surface Elevation-MSL	1180.88'		

Boring No.	C-4
Station & Offset	84+52.43' & 20.60' RT

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
1180.88'		Surface											
1180.46'	2-14-18	Loose,moist,brown,Coarse and Fine Sand,some Silt and Gravel		SS-1								12	
	1-2-5			SS-2								16	
1172.88'	4-4-4		5	SS-3	22	17	35	(26)		--	--	15	A-3a
	5-4-3	Loose,moist,brown,Gravel and/or Stone fragments with Sand and Silt, trace of Clay	10	SS-4	50	25	17	(8)		--	--	11	A-1-a
1167.39'	2-4-6		15	SS-5	38	13	20	20	9	--	--	17	A-2-4
	10-9-4	Medium Dense,moist,brown,Gravel and/or Stone fragments with Sand and Silt,trace of Clay	20	SS-6								12	
1153.87'	8-7-5		25	SS-7								16	
	4-6-4	Medium Dense,moist,brown,Coarse and Fine Sand, some Clay,little Silt	30	SS-8								7	
	3-5-11		35	SS-9								10	
1139.54'	7-5-21			SS-10	17	18	32	13	20	--	--	13	A-3a
	50/1"	**	40	SS-11								--	
		End of Boring: 1139.54'	45										
		* Topsoil 5"											
		** Gray,Limestone	50										

PSI
DRAWN BY: SNP | REVIEW BY: SNP | REVIEW DATE: 12/09/03 | SCALE: NTS

BORING LOGS

SUM-77-1.40

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psi Information To Build On
Engineering • Consulting • Testing

Project I.D.	139-85018 Greensburg Road
Date Started	5/22/1998
Dated Completed	5/22/1998

Boring No.	C-5
Station & Offset	85+20.47' & 27.59' LT

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	1177.30'		
Water on Completion	1173.69'		
Surface Elevation-MSL	1180.24'		

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
1180.24'		Surface											
1178.91'	–	* Loose to Medium Dense,moist,brown, Random Fill and Ashpalt pieces		SS-1								1	
1175.23'	8-5-4			SS-2								3	
	5-6-8		5	SS-3	24	25	33	(18)		–	–	15	A-3a
	4-4-5	Loose to Medium Dense,moist,brown,Coarse and Fine Sand,some Gravel and little silt		SS-4	22	23	41	(14)		–	–	14	A-3a
	4-4-7		10	SS-5	5	25	53	(17)		–	–	18	A-3a
1161.75'	8-8-8	Very Stiff,moist,brown to gray,Silt with some Sand,little Clay,trace of Gravel	15	SS-6	1	1	31	54	13	–	–	18	A-4b
1156.73'	8-16-9		20	SS-7								8	
1150.23'	42-29-18 50/5"	Medium Dense,moist,brown,Gravel and/or Stone fragments with Sand,traces of Silt and Clay	25	SS-8	57	14	13	10	6	18	3	6	A-1-b
		**	30	SS-9								4	
		End of Boring: 1139.54'	35										
		* 15.6" Topsoil	40										
		** Hard,gray,Sandstone	45										
			50										

psi Information To Build On
Engineering • Consulting • Testing

Project I.D.	139-85018 Greensburg Road
Date Started	5/22/1998
Dated Completed	5/22/1998

Boring No.	C-6
Station & Offset	84+90.29' & 19.03' RT

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	1159.35'		
Water on Completion	--		
Surface Elevation-MSL	1181.35'		

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
1181.35'		Surface											
1180.18'	–	* Medium Dense,moist,brown,Gravel and/or Stone fragments with Sand,Silt and Clay		AU-1								14	
	7-8-8			SS-2								11	
1172.83'	7-5-5		5	SS-3	52	23	11	7	7	25	11	11	A-2-6
	7-6-7			SS-4	0	12	74	(14)		–	–	17	A-3a
	4-7-10	Medium Dense,moist,brown,Coarse and Fine Sand,little Silt	10	SS-5								19	
1162.86'	8-9-19	Very Stiff to Hard,moist,brown to gray,Sandy Silt with little Clay and little Gravel	15	SS-6	11	3	38	34	14	18	2	17	A-4a
	14-15-11		20	SS-7	33	7	19	29	12	17	2	9	
	10-15-18		25	SS-8								12	
1147.83'	17-23-26	Very Dense,moist,brown,Gravel and/or Stone fragments with Sand	30	SS-9	52	13	12	(23)		–	–	8	A-1-b
1142.85'	44-34-28		35	SS-10								14	A-3a
1139.34'	50/3"	Very Dense,moist,brown,Coarse and Fine Sand Hard,gray,Limestone and Weathered Shale	40	SS-11								–	
				NX-12								–	
1134.43'		End of Boring @ 1134.43'	45										
		* 14" Topsoil	50		Core Data: Run 1139.19' to 1134.43' Recovery - 47 % Longest Piece - 1" RQD - 0%								

Information To Build On
Engineering • Consulting • Testing

Project I.D.	139-85018 Greensburg Road
Date Started	5/22/1998
Dated Completed	5/22/1998

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	1172.15'		
Water on Completion	1175.43'		
Surface Elevation-MSL	1200.70'		

Boring No.	C-7
Station & Offset	85+87.04' & 13.06' LT

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
1200.70'		Surface											
1200.03'	2-4-9	Medium Stiff to Very Stiff,moist,brown, Silt and Clay with some Sand and little Gravel		SS-1								15	
	4-6-6			SS-2								13	
	2-2-5		5	SS-3	12	10	22	35	21	27	11	14	A-6a
	3-8-10		10	SS-4								8	
	5-8-6			SS-5								10	
	5-6-6		15	SS-6								11	
	7-7-6		20	SS-7								13	
1173.20'			25										
	–	Medium Dense,moist,brown,Gravel and/or Stone Fragments with Sand and Silt,trace of Clay		AU-8								16	
1167.20'	10-6-7	Medium Dense,moist,brown,Gravel and/or Stone Fragments with Sand,trace of Silt	30	SS-9	50	13	19	11	7	26	10	14	A-2-4
1162.20'	3-4-8	Very Stiff,moist,brown,Sandy Silt,little Clay,trace of Gravel	35	SS-10	43	21	28	(8)		–	–	10	A-1-b
1157.20'	8-11-11	Medium Dense,moist,gray,Gravel and/or Stone Fragments with Sand	40	SS-11	3	6	44	32	15	17	3	14	A-4a
1152.20'	6-12-18	Very Stiff,moist,gray,Sandy Silt,little Gravel and little Clay	45	SS-12	45	10	24	(21)		–	–	13	A-1-b
1147.20'		Very Stiff,moist,gray,Sandy Silt,little Gravel and little Clay	50										A-4a
	10-16-14	Dense,moist,gray,Gravel and/or Stone fragments with Sand.	55	SS-13	20	13	26	30	11	16	2	7	A-1-b
	12-15-16			SS-14								6	
1138.70'	7-19-11	Bituminous Coal in SS-15	60	SS-15								13	
1134.76'		Hard,gray,Limestone and Sandstone		NX-16								–	
		End of Boring @ 1134.76' * 8" Topsoil Core Data Run: 1139.68' - 1134.76' Recovery : 80% Longest Piece: 10" RQD: 31%	65 70 75 80										

Information To Build On
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Project I.D.	139-85018 Greensburg Road
Date Started	5/15/1998
Dated Completed	5/15/1998

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	1168.67'		
Water on Completion	1175.56'		
Surface Elevation-MSL	1201.79'		

Boring No.	C-8
Station & Offset	85+61.29' & 24.02' RT

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
1201.79'		Surface											
1200.87'	3-4-6	Stiff to Very Stiff,moist,brown,Sandy Silt, some Clay,trace Gravel		SS-1								7	
	3-6-7			SS-2								12	
	4-6-6		5	SS-3								13	
	2-3-10	Sandstone fragments in SS-4		SS-4								7	
	6-8-10		10	SS-5	7	8	22	38	25	26	10	10	A-4a
	4-5-6		15	SS-6								9	
	8-10-9		20	SS-7								12	
1173.29'	8-6-4	Medium Dense,moist,brown,Gravel and/or Stone fragments with Sand	25	SS-8	48	21	13	14	4	--	--	11	A-1-b
1168.31'	3-3-4	Loose,moist,brown,Coarse and Fine Sand,some silt,some Gravel	30	SS-9	23	25	27	(25)		--	--	22	A-3a
1163.29'	6-8-10	Medium Dense,moist,brown,Gravel and/or Stone fragments,some Sand	35	SS-10	66	18	8	(8)		--	--	10	A-1-a
1159.81'	10-12-14	Very Stiff,moist,gray,Sandy Silt,little Clay,trace of Gravel	40	SS-11	7	9	32	36	16	--	--	14	A-4a
1153.28'	5-11-14		45	SS-12	10	19	54	(17)		--	--	16	
	50/12"	Dense to Very Dense,moist,brown,Gravel and/or Stone fragments	50										A-1-a
	18-18-18		55	SS-13								11	
1139.47'	50/0.5"		60	SS-14								--	
		End of Boring @ 1139.14' * 11" Topsoil ** SS-15 : Hard,gray,Limestone	65 70	**									

Geotechnical • Environmental • Construction Services
850 Ridge Lake Blvd., Memphis, TN 38120 (901) 682-9676

DRAWN BY	SNP
REVIEW BY	SNP
REVIEW DATED	12/08/03
SCALE	NTS

BORING LOGS

SUM-77-1.40

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GENERAL INFORMATION

INTRODUCTION

THIS REPORT CONSISTS OF THE SUBSURFACE INVESTIGATION OF A 2.66 MILE SECTION OF I-77 WIDENING, STA-77-1.40 BEGINNING AT STA. 73+86.12 AND ENDING AT STA. 214+05.00. THE WIDENING WILL INCLUDE 2 NEW LANES, INCLUDING 1 LANE TO THE EXISTING NORTHBOUND LANE AND 1 LANE TO THE EXISTING SOUTHBOUND LANE.

SITE GEOLOGY

THE GLACIAL DEPOSITS IN NORTHERN PART OF STARK COUNTY WERE DEPOSITED DURING THE WISCONSINAN GLACIATION, WHICH WAS THE LAST GLACIAL ADVANCE IN OHIO DURING THE PLEISTOCENE EPOCH. BASED ON REGIONAL GEOLOGIC REFERENCES, THE SOILS MAPPED IN THE CONSTRUCTION AREA CONSIST OF VALLEY TRAIN COMPRISED OF WELL WASHED GRAVEL AND SANDS IN KNOLLS. IT ALSO COMPRISES KETTLEHOLES CONTAINING PEAT AND/OR ORGANIC SOIL DEPOSITS. THE BEDROCK ANTICIPATED AT THE SITE IS OF PENNSYLVANIAN AGE, WHICH IS COMPRISED OF SANDSTONES, LIMESTONES, COAL, AND SHALE.

EXPLORATION

EXPLORATORY BORINGS WERE MADE BY MEANS OF A TRUCK-MOUNTED DRILL RIG BETWEEN SEPTEMBER 4 AND SEPTEMBER 8, 2003. INCLUDED IN THIS REPORT ARE THE LOGS OF BORINGS MADE FOR THE ROADWAY INVESTIGATION.

INVESTIGATIONAL FINDINGS

THE SURFACE OF THE SITE WAS GENERALLY COVERED WITH TOPSOIL RANGING FROM APPROXIMATELY 2 TO 18 INCHES IN THICKNESS. THE TOPSOIL WAS UNDERLAIN BY NATURAL SOILS AND MISCELLANEOUS FILL MATERIALS CONSISTING OF SILT (A-4B), SILTY CLAY (A-6B), SILT AND CLAY (A-6A), SANDY SILT (A-4A), COARSE AND FINE SAND (A-3A), GRAVEL AND/OR STONE FRAGMENTS WITH SAND (A-1-B), AND GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT (A-2-5). THE MOISTURE CONTENT OF THE SUBSURFACE MATERIALS RANGED FROM 4 TO 27 PERCENT.

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS – 36 SAMPLES TESTED

DESCRIPTION	ODOT CLASS	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	M.C.	# TESTS
Gravel and/or Stone Fragments	(A-1-a)									
Gravel and/or Stone Fragments with Sand	(A-1-b)	36	27	22	14	5	0	0	10	3
Gravel and/or Stone Fragments with Sand and Silt	(A-2-4)	19	23	28	19	13	23	8	12	2
Gravel and/or Stone Fragments with Sand, Silt and Clay	(A-2-6)									
Fine Sand	(A-3)									
Coarse and Fine Sand	(A-3a)	22	20	30	28	0	0	0	9	1
Sandy Silt	(A-4a)	8	15	26	37	14	7	2	12	24
Silt	(A-4b)	3	12	25	40	20	0	0	14	1
Elastic Silt and Clay	(A-5)									
Silt and Clay	(A-6a)	4	12	25	30	29	26	11	17	3
Silty Clay	(A-6b)	0	11	20	36	34	39	20	25	2
Elastic Clay	(A-7-5)									
Clay	(A-7-6)									

Shale
Weathered Shale
Sandstone
Limestone
Mudstone
Random Fill
Various Other Materials
Dolomite
Leached Limestone
Leached Dolomite
Silts Stone
Peat (Pt)

1 — Water Content of Soil in Percent

● — Water Content nearly Equal to or Greater Than Liquid Limit

-⊖- — Indicates a Non-Plastic Material with a High Water Content

▼ — Static Water Level (Encountered)

▽ — Static Water Level (Completion)

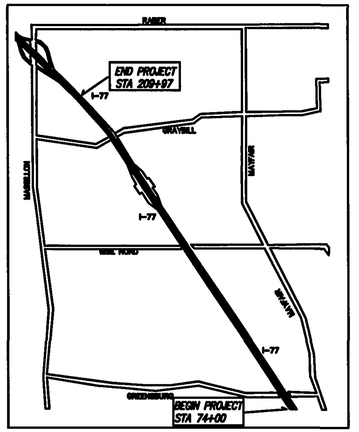
W-X-Y — Number of Blows for "STANDARD PENETRATION" Test.
W=Number of Blows for First 6 Inches
X=Number of Blows for Second 6 Inches
Y=Number of Blows for Third 6 Inches

Sod and/or Topsoil

Berm Material

Press and/or Drive Sample and/or Core Boring-Plan View

Press and/or Drive Sample and/or Core Boring Plotted to Vertical Scale Only



SUMMARY OF SOIL TEST DATA

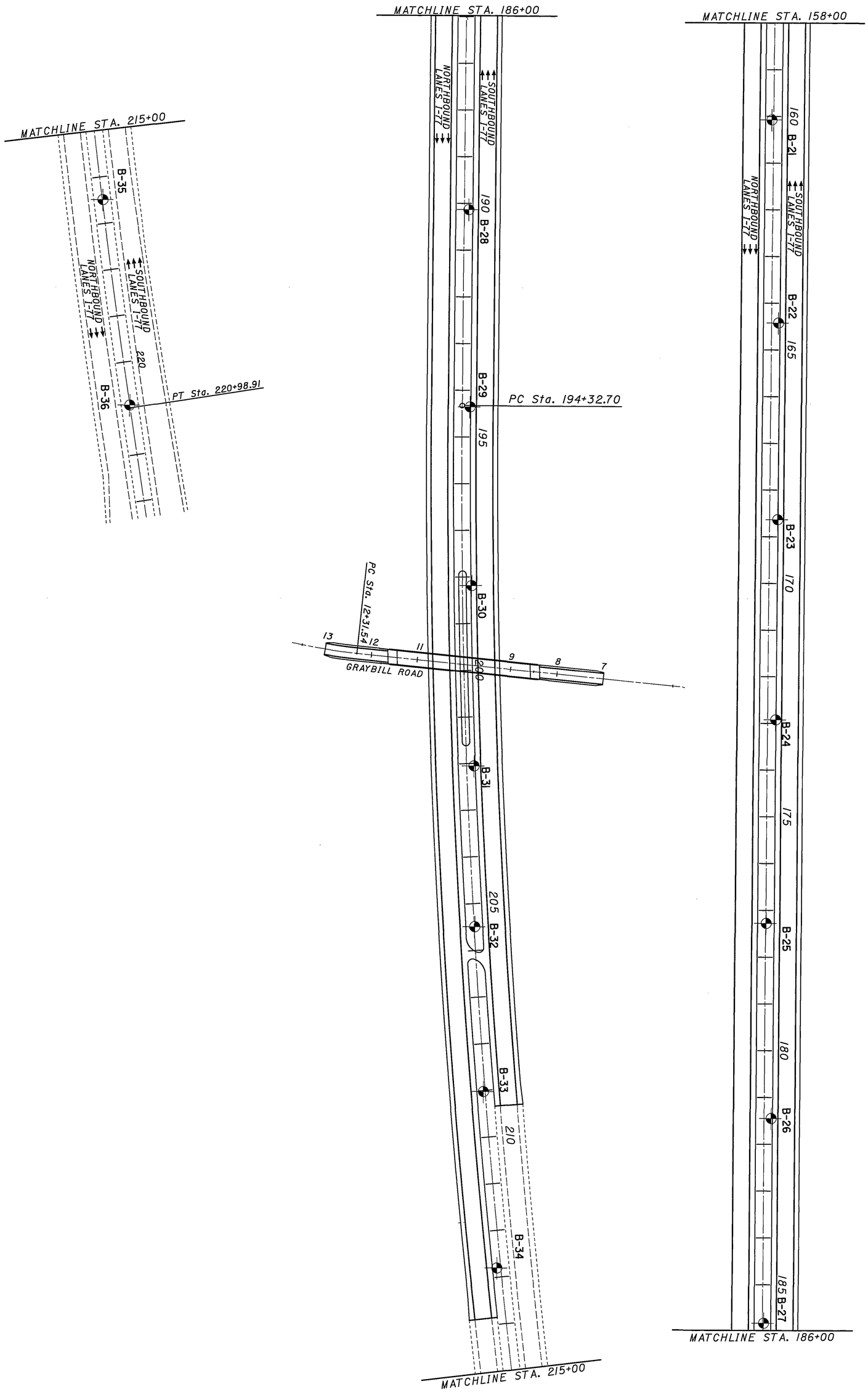
Station & Offset	Depth From	To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	M.C.	ODOT Class
74+00	0.00	1.50	5	18	21	58		—	—	11	A-4a (Fill)
CL	2.50	4.00	Gray Coarse and Fine Sand							11	Visual (A-3a)
	5.50	7.00	Gray Coarse and Fine Sand							13	Visual (A-3a)
	8.50	10.00	Gray Silt							22	Visual (A-4b)
78+00	0.00	1.50	12	19	26	25	18	25	7	10	A-4a (Fill)
CL	2.50	4.00	5	13	22	60		—	—	12	A-4a (Fill)
	5.50	7.00	Brown/Gray Sandy Silt							15	A-4a (Fill)
	8.50	10.00	Brown/Gray Sandy Silt							15	A-4a (Fill)
82+05.47	0.17	1.50	Brown Coarse and Fine Sand							9	A-3a (Fill)
18.5' RT	2.50	4.00	Brown Coarse and Fine Sand							9	A-3a (Fill)
	5.50	7.00	22	20	30	28		—	—	9	A-3a (Fill)
	8.50	10.00	Gray Coarse and Fine Sand							7	A-3a (Fill)
86+40.41	0.25	1.50	Brown/Black Sandy Silt							13	A-4a (Fill)
13.2' LT	2.50	4.00	4	12	24	31	29	28	9	21	A-4a (Fill)
	5.50	7.00	Brown Sandy Silt							21	A-4a (Fill)
	8.50	10.00	Brown Silty Clay							18	Visual (Fill)
91+24.70	0.25	1.50	Brown/Dark Brown Silt							20	Visual (Fill)
2.4' RT	2.50	4.00	Brown/Dark Brown Silt							12	Visual (Fill)
	5.50	7.00	Brown Silt and Clay							16	Visual (Fill)
	8.50	10.00	4	13	26	57		—	—	11	A-4a
95+57.25	0.25	1.50	Dark Brown Silt and Clay							19	A-6a (Fill)
0.9' LT	2.50	4.00	Brown/Gray Silt and Clay							12	A-6a (Fill)
	5.50	7.00	5	13	14	31	37	27	9	15	A-6a (Fill)
	8.50	10.00	Brown Sandy Silt							20	Visual (A-4a)
99+80.86	0.25	1.50	Brown Sandy Silt							21	A-4a (Fill)
2.9' LT	2.50	4.00	4	16	20	60		—	—	16	A-4a (Fill)
	5.50	7.00	Brown/Gray Sandy Silt							14	A-4a (Fill)
	8.50	10.00	Brown Coarse and Fine Sand							9	Visual (A-3a)
103+86.82	0.25	1.50	Brown Silt							11	Visual (Fill)
3.9' LT	2.50	4.00	Brown Sandy Silt							11	Visual (A-4a)
	5.50	7.00	Brown Gravel and/or Stone Fragments With Sand							13	Visual (A-1-b)
	8.50	10.00	5	16	34	26	17	25	10	9	A-4a
108+16.17	1.00	1.50	Brown Sandy Silt							21	Visual (A-4a)
23.9' LT	2.50	4.00	Brown Coarse and Fine Sand							11	Visual (A-3a)
	5.50	7.00	Brown Sandy Silt							12	Visual (A-4a)
	8.50	10.00	Gray Sandy Silt							12	Visual (A-4a)
112+69.22	0.83	1.50	2	9	21	38	32	27	10	15	A-4a (Fill)
23.9' LT	2.50	4.00	Brown/Gray Sandy Silt							12	A-4a (Fill)
	5.50	7.00	5	13	27	55		—	—	11	A-4a
	8.50	10.00	Brown Sandy Silt							14	A-4a
116+90.89	0.00	1.50	Topsoil							21	Visual
0.7' RT	2.50	4.00	Dark Brown Silt							15	Visual (Fill)
	5.50	7.00	Brown Gravel and/or Stone Fragments With Sand and Silt							15	Visual (Fill)
	8.50	10.00	23	14	18	45		—	—	15	A-4a
121+26.38	0.90	1.50	Brown/Black Sandy Silt							4	A-4a (Fill)
0.8' RT	2.50	4.00	26	17	20	22	15	—	—	13	A-4a (Fill)
	5.50	7.00	Brown Sandy Silt							15	Visual (A-4a)
	8.50	10.00	Brown Sandy Silt							15	Visual (A-4a)
125+65.45	1.33	1.50	Brown/Gray Silt							19	Visual (A-4b)
0.5' LT	2.50	4.00	Brown/Gray Silt							16	Visual (A-4b)
	5.50	7.00	Brown/Black Sandy Silt							14	Visual (A-4a)
	8.50	10.00	Brown Sandy Silt							14	Visual (A-4a)
129+83.69	1.17	1.50	Dark Brown Silt and Clay							23	Visual (Fill)
2.3' RT	2.50	4.00	Brown Silt and Clay							24	Visual (Fill)
	5.50	7.00	7	16	31	30	16	26	10	12	A-4a
	8.50	10.00	Brown Silt							15	Visual (A-4b)
133+95.25	0.25	1.50	Dark Brown Silt and Clay							21	A-6a (Fill)
28.9' LT	2.50	4.00	Brown/Gray Silt and Clay							12	A-6a (Fill)
	5.50	7.00	3	12	25	60		—	—	16	A-6a (Fill)
	8.50	10.00	Brown/Gray Silty Clay							27	Visual (A-6b)
138+26.73	0.67	1.50	Dark Brown Silt							19	Visual (Fill)
2.1' RT	2.50	4.00	Brown/Black Silt							13	Visual (Fill)
	5.50	7.00	Brown Sandy Silt							13	Visual (A-4a)
	8.50	10.00	0	4	15	42	39	39	20	23	A-6b
142+63.46	1.08	1.50	Dark Brown/Gray Sandy Silt							16	Visual (Fill)
1.1' RT	2.50	4.00	Brown Gravel and/or Stone Fragments With Sand and Silt							11	Visual (Fill)
	5.50	7.00	Dark Brown/Gray Silt and Clay							22	Visual (Fill)
	8.50	10.00	3	14	28	55		—	—	12	A-4a
147+07.33	1.00	1.50	Brown Sandy Silt							10	Visual (A-4a)
1.0' LT	2.50	4.00	Brown Sandy Silt							10	Visual (A-4a)
	5.50	7.00	Brown Sandy Silt							10	Visual (A-4a)
	8.50	10.00	28	25	19	16	12	—	—	11	A-2-4
151+24.52	0.83	1.50	7	17	30	46		—	—	10	A-4a
23.1' LT	2.50	4.00	Gray Sandy Silt							8	A-4a
	5.50	7.00	Gray Sandy Silt							9	A-4a
	8.50	10.00	Gray Sandy Silt							8	A-4a
155+73.83	0.83	1.50	Brown/Black/Gray Gravel and/or Stone Fragments With Sand							10	A-1-b (Fill)
13.7' LT	2.50	4.00	27	35	20	13	5	—	—	11	A-1-b (Fill)
	5.50	7.00	Brown Silt							20	Visual (A-4b)
	8.50	10.00	Brown Coarse and Fine Sand							19	Visual (A-3a)
160+08.61	0.83	1.50	Brown Silt							13	Visual (Fill)
0.5' RT	2.50	4.00	Brown Sandy Silt							8	Visual (Fill)
	5.50	7.00	Brown/Gray Sandy Silt							11	Visual (A-4a)
	8.50	10.00	Brown Silt and Clay							16	Visual (A-6a)
164+45.49	0.83	1.50	Dark Brown Silty Clay							24	Visual (Fill)
3.3' RT	2.50	4.00	Brown/Black Sandy Silt							11	Visual (Fill)
	5.50	7.00	9	20	37	21	13	23	8	13	A-2-4
	8.50	10.00	Brown Silt							15	Visual (A-4b)
169+67.61	0.33	1.50	Brown/Gray/Black Silt and Clay							13	Visual (Fill)
14.4' LT	2.50	4.00	Brown/Gray Coarse and Fine Sand							17	Visual (A-3a)
	5.50	7.00	8	14	30	48		—	—	16	A-4a
	8.50	10.00	Gray Sandy Silt							10	A-4a
172+91.86	0.67	1.50	10	16	26	29	17	26	8	14	A-4a (Fill)
28.3' LT	2.50	4.00	Brown/Gray Sandy Silt							11	A-4a (Fill)
	5.50	7.00	Brown Sandy Silt							13	A-4a
	8.50	10.00	2	11	22	65		—	—	13	A-4a
177+30.38	0.00	1.50	Topsoil							25	Visual
1.7' RT	2.50	4.00	3	10	19	68		—	—	11	A-4a
	5.50	7.00	Brown Sandy Silt							12	A-4a
	8.50	10.00	Brown Sandy Silt							11	A-4a
181+46.70	0.25	1.50	Brown Sandy Silt							15	A-4a
21.1' LT	2.50	4.00	5	11	38	29	17	19	3	13	A-4a
	5.50	7.00	Brown Silty Clay							14	Visual (A-6b)
	8.50	10.00	Brown Coarse and Fine Sand							24	Visual (A-3a)
185+81.22	1.00	1.50	Dark Brown Sandy Silt							10	A-4a (Fill)
0.4' LT	2.50	4.00	4	21	30	45		—	—	9	A-4a (Fill)
	5.50	7.00	Dark Brown/Gray Sandy Silt							18	A-4a (Fill)
	8.50	10.00	Brown/Black Silty Clay							23	Visual (Fill)
190+05.74	0.83	1.50	Dark Brown Coarse and Fine Sand							10	Visual (Fill)
1.3' LT	2.50	4.00	Brown Sandy Silt							11	Visual (A-4a)
	5.50	7.00	51	16	16	11	4	—	—	8	A-1-b
	8.50	10.00	Gray Sandy Silt							11	Visual (A-4a)
194+35.35	0.67	1.50	Black Gravel and/or Stone Fragments With Sand							19	Visual (Fill)
24.7' LT	2.50	4.00	Brown/Gray Gravel and/or Stone Fragments With Sand							4	Visual (Fill)
	5.50	7.00	13	17	25	45		—	—	7	A-4a
	8.50	10.00	Gray Sandy Silt							10	A-4a
198+10.50	0.50	1.50	Black Gravel and/or Stone Fragments With Foundry Sand							15	Visual (Fill)
23.5' LT	2.50	4.00	Brown/Gray Gravel and/or Stone Fragments With Sand							6	Visual (Fill)
	5.50	7.00	Gray Sandy Silt							6	A-4a
	8.50	10.00	10	16	32	25	17	20	5	8	A-4a
202+05.47	0.67	1.50	Dark Gray/Brown Sandy Silt							11	Visual (Fill)
23.7' LT	2.50	4.00	Brown Coarse and Fine Sand							11	Visual (A-3a)
	5.50	7.00	Brown Coarse and Fine Sand							14	Visual (A-3a)
	8.50	10.00	33	26	24	15		—	—	12	A-1-b
205+57.89	0.75	1.50	11	17	31	25	16	—	—	9	A-4a (Fill)
2.6' LT	2.50	4.00	0	17	25	58		—	—	27	A-6b (Fill)
	5.50	7.00	Brown/Gray Coarse and Fine Sand							14	Visual (Fill)
	8.50	10.00	Brown Silt							12	Visual (A-4b)
209+99.17	0.25	1.50	3	12	25	60		—	—	14	A-4b
6.1' RT	2.50	4.00	Brown Silt							13	A-4b
	5.50	7.00	Brown Silt							13	A-4b
	8.50	10.00	Gray/Brown Sandy Silt							8	Visual (A-4a)
212+57.24	0.17	1.50	Brown/Gray Sandy Silt							8	Visual (Fill)
6.4' RT	2.50	4.00	3	11	37	28	21	28	11	19	A-6a
	5.50	7.00	Brown Gravel and/or Stone Fragments With Sand							15	Visual (A-1-b)
	8.50	10.00	Gray Silt							9	Visual (A-4b)
216+51.39	0.17	1.50	Brown/Gray Coarse and Fine Sand							13	Visual (A-3a)
8.4' RT	2.50	4.00	Brown Silt							14	Visual (A-4b)
	5.50	7.00	Brown Sandy Silt							11	Visual (A-4a)
	8.50	10.00	Gray Sandy Silt							10	Visual (A-4a)
220+97.56	0.25	1.50	Brown Sandy Silt							13	A-4a
5.0' RT	2.50	4.00	Brown Sandy Silt							12	A-4a
	5.50	7.00	11	22	29	22	16	—	—	13	A-4a
	8.50	10.00	22	13	25	40		—	—	12	A-4a

HORIZONTAL SCALE IN FEET
0 50 100 200

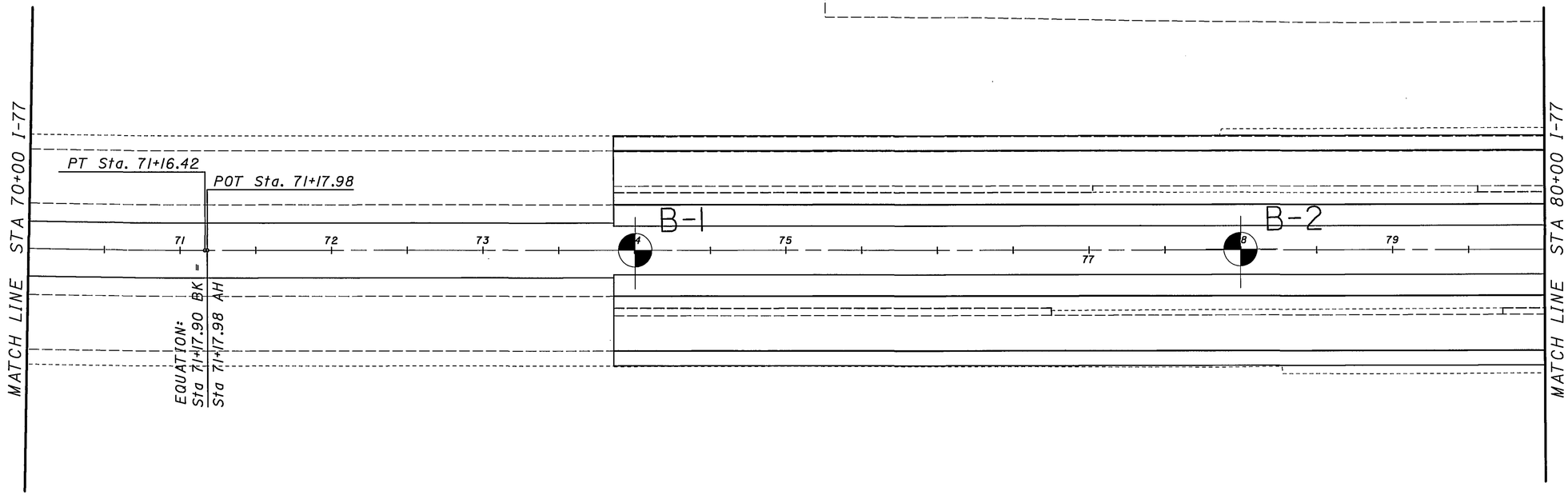
SOIL BORING PLAN
STA. 74+00 TO STA. 158+00

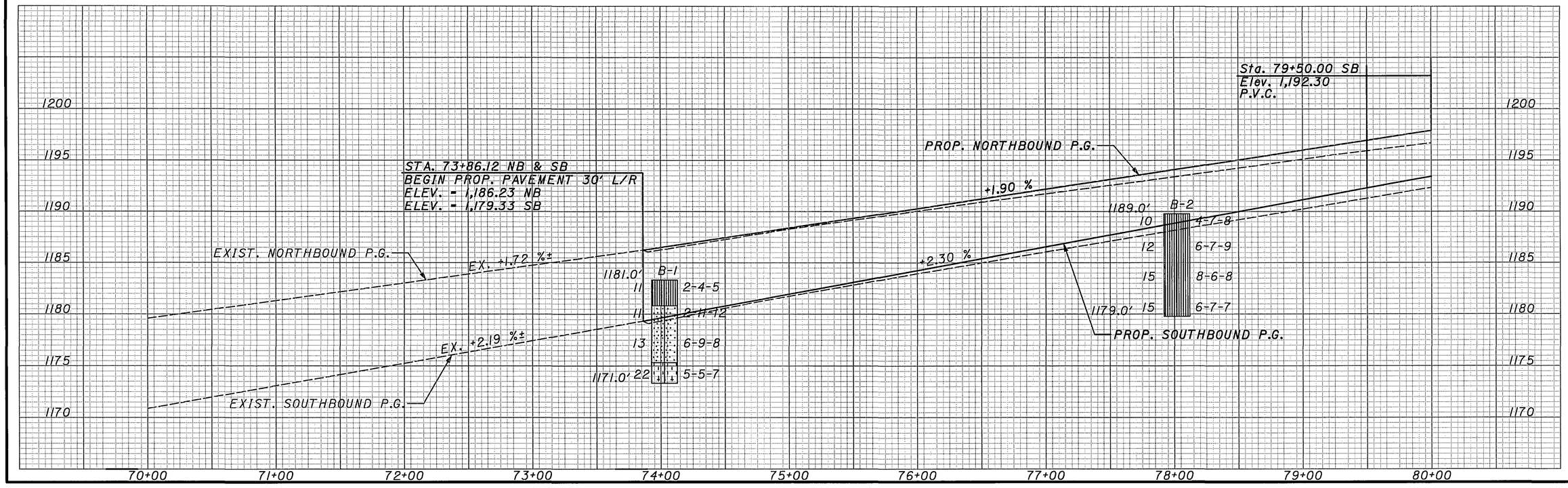
SUM-77-1.40

2 / 19



3/19	SUM-77-1.40	SOIL BORING PLAN STA. 158+00 TO STA. 223+00	0 100 50 200 HORIZONTAL SCALE IN FEET



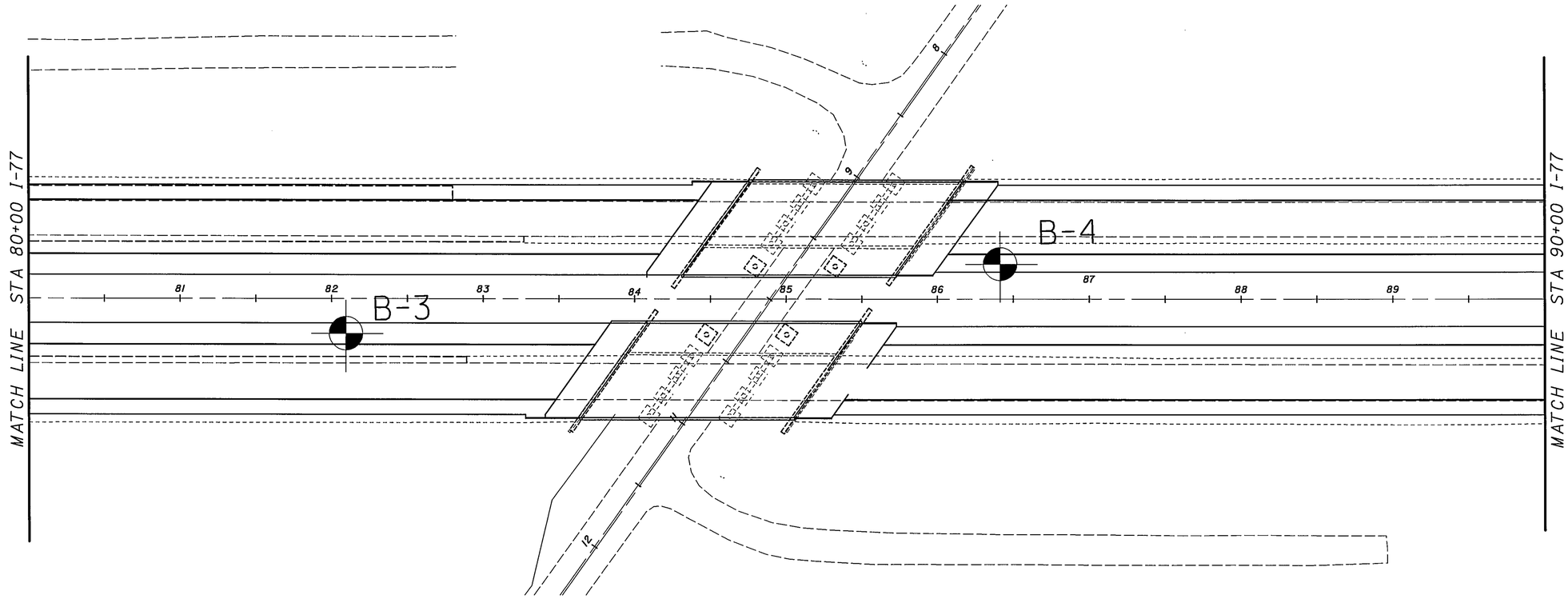


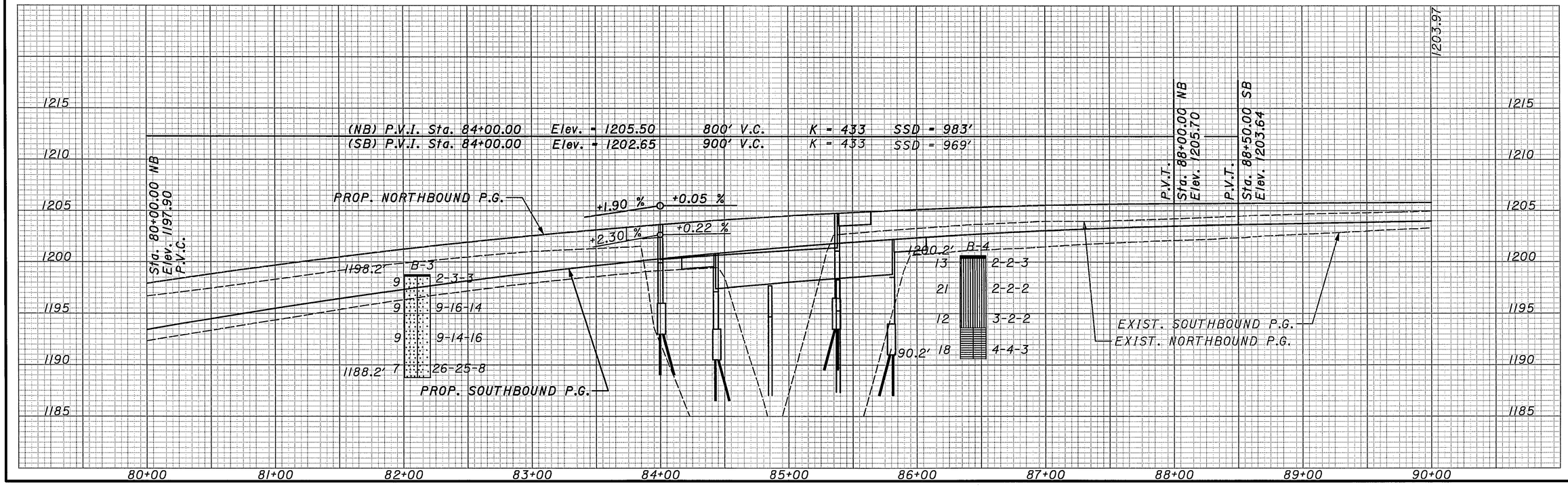
HORIZONTAL SCALE IN FEET
0 20 40 80

SOIL PROFILE
STA. 70+00.00 TO STA. 80+00.00

SUM-77-1.40

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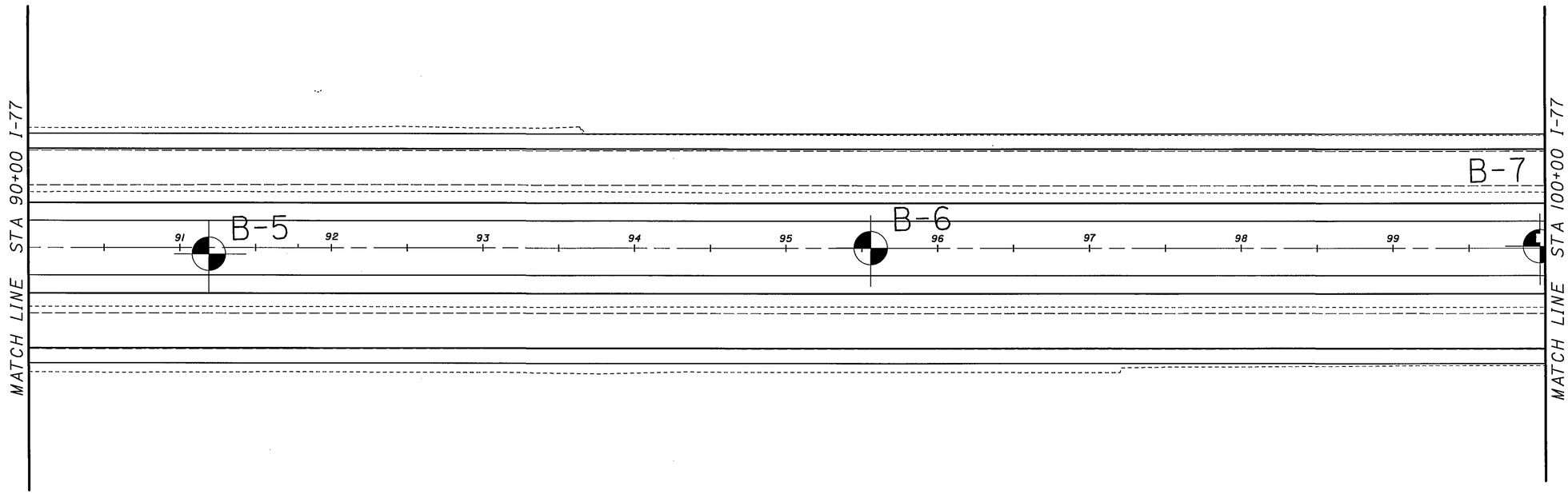


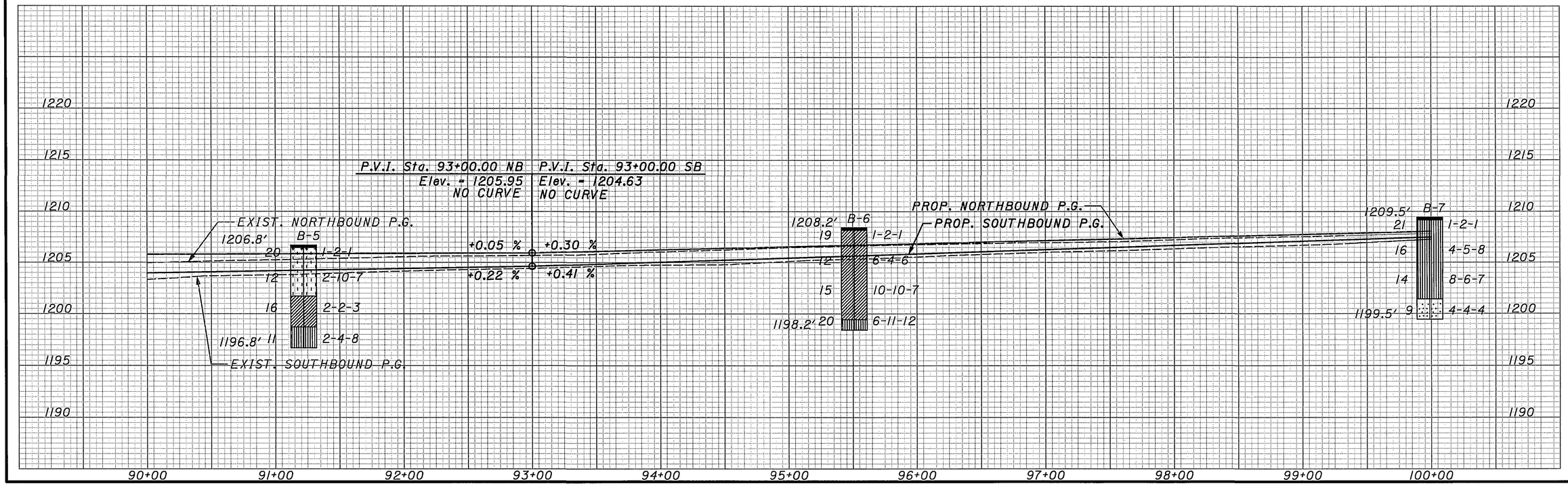
HORIZONTAL SCALE IN FEET
0 20 40 60

SOIL PROFILE
STA. 80+00.00 TO STA. 90+00.00

SUM-77-1.40

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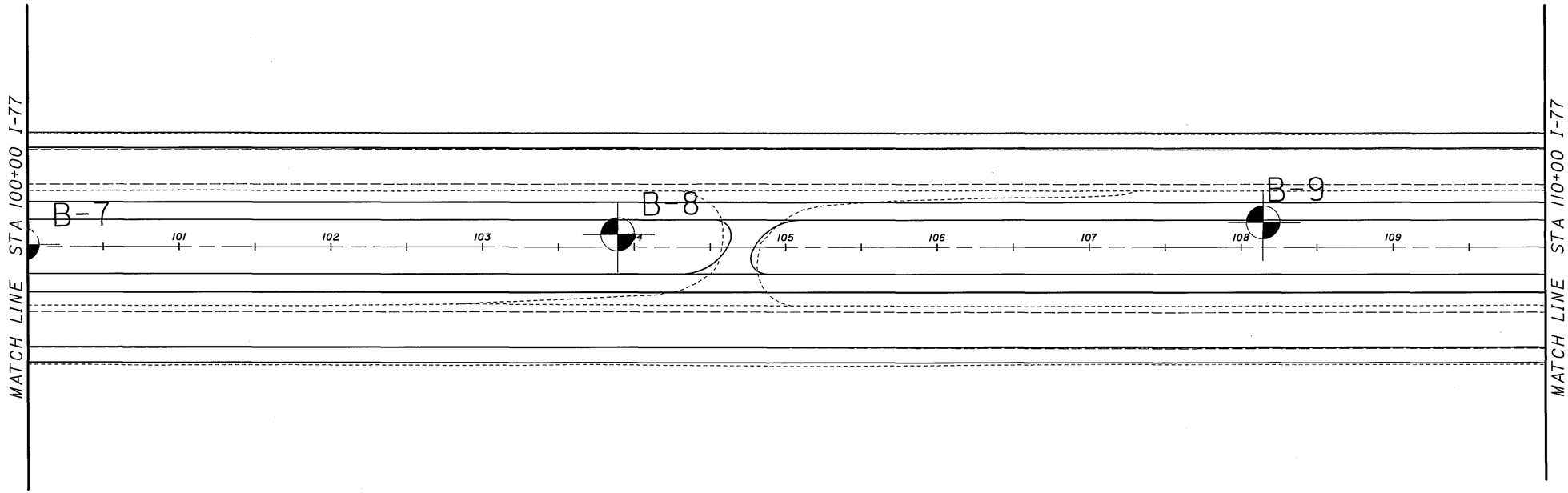


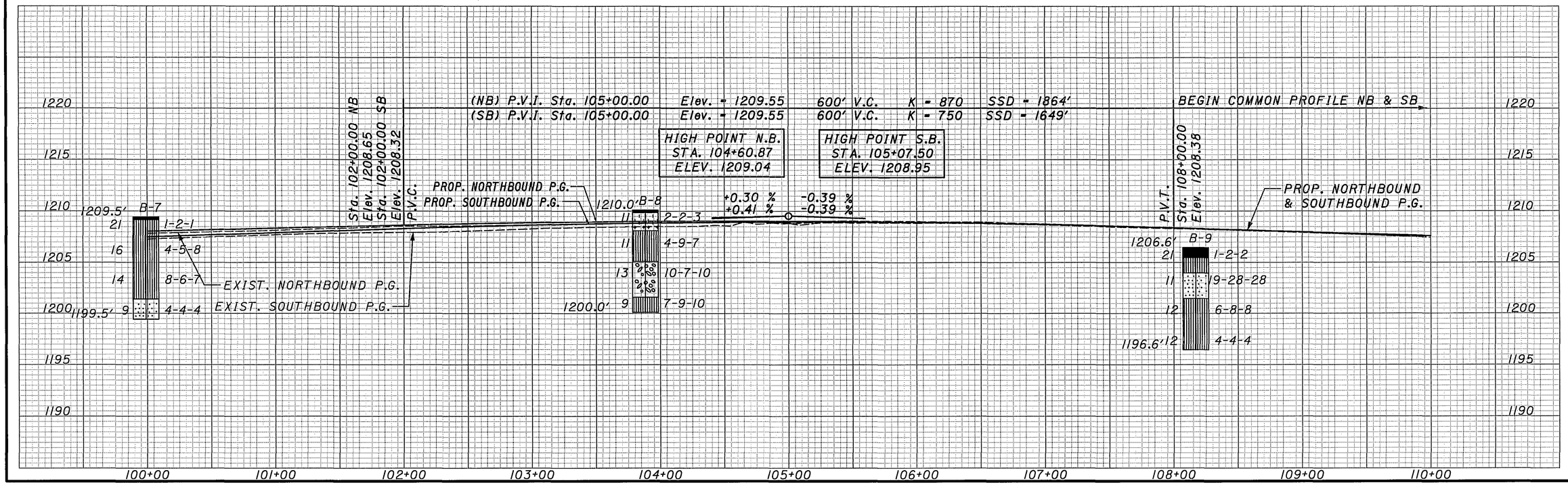
HORIZONTAL SCALE IN FEET
0 20 40 80

SOIL PROFILE
STA. 90+00.00 TO STA. 100+00.00

SUM-77-1.40

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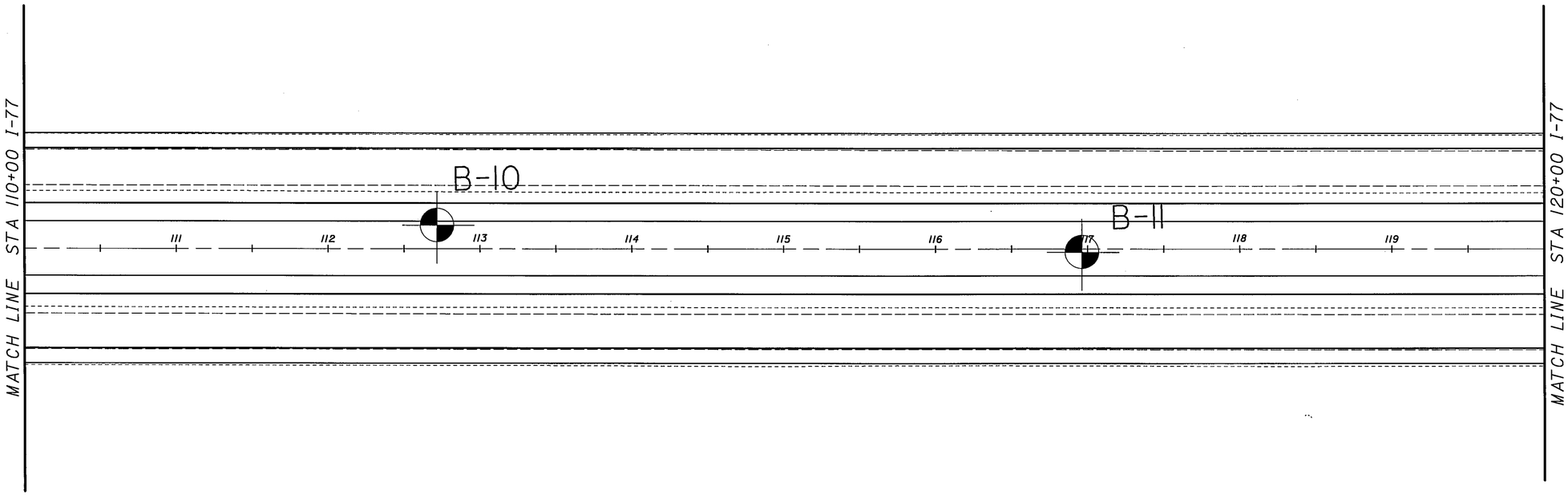


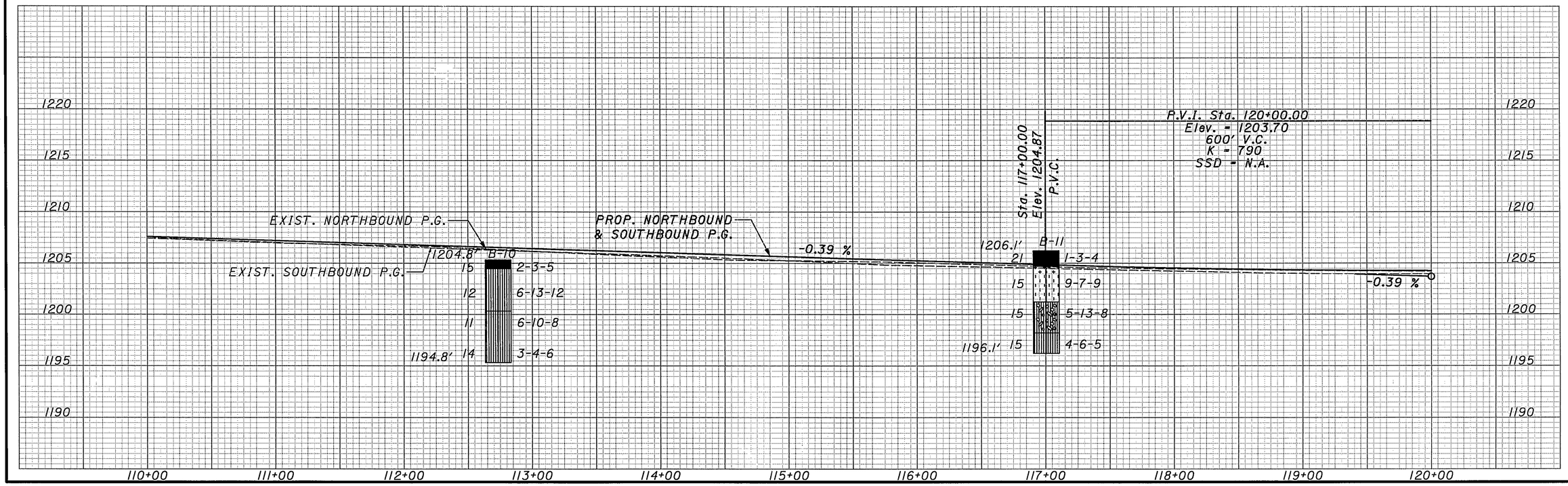
HORIZONTAL SCALE IN FEET
0 20 40 80

SOIL PROFILE
STA. 100+00.00 TO STA. 110+00.00

SUM-77-1.40

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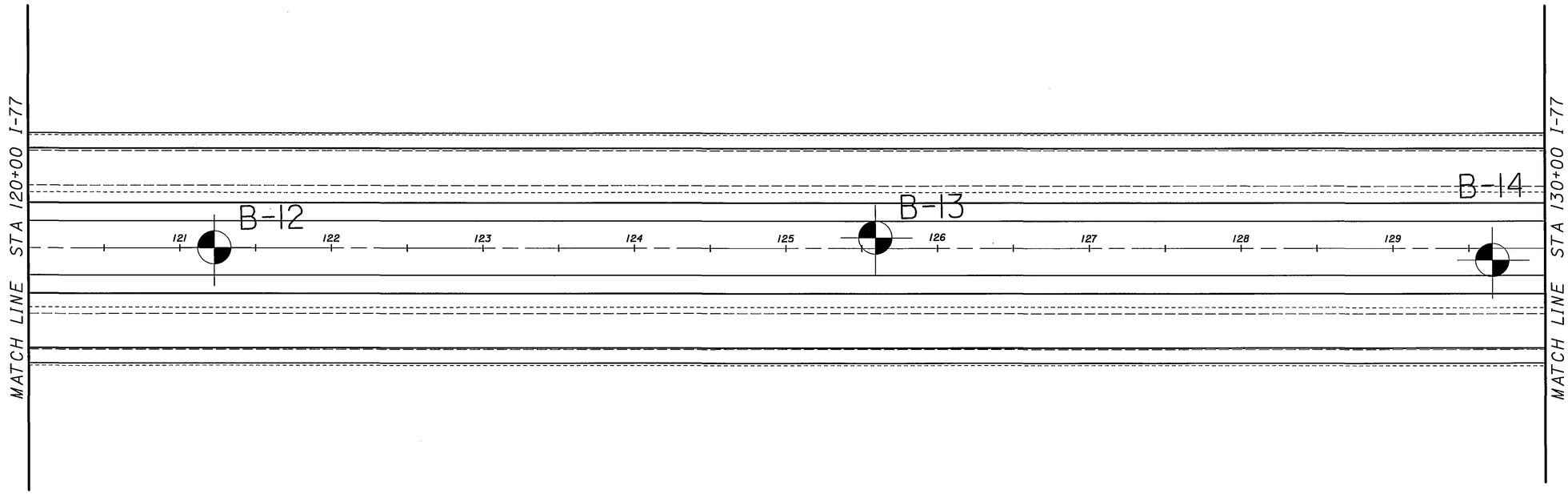


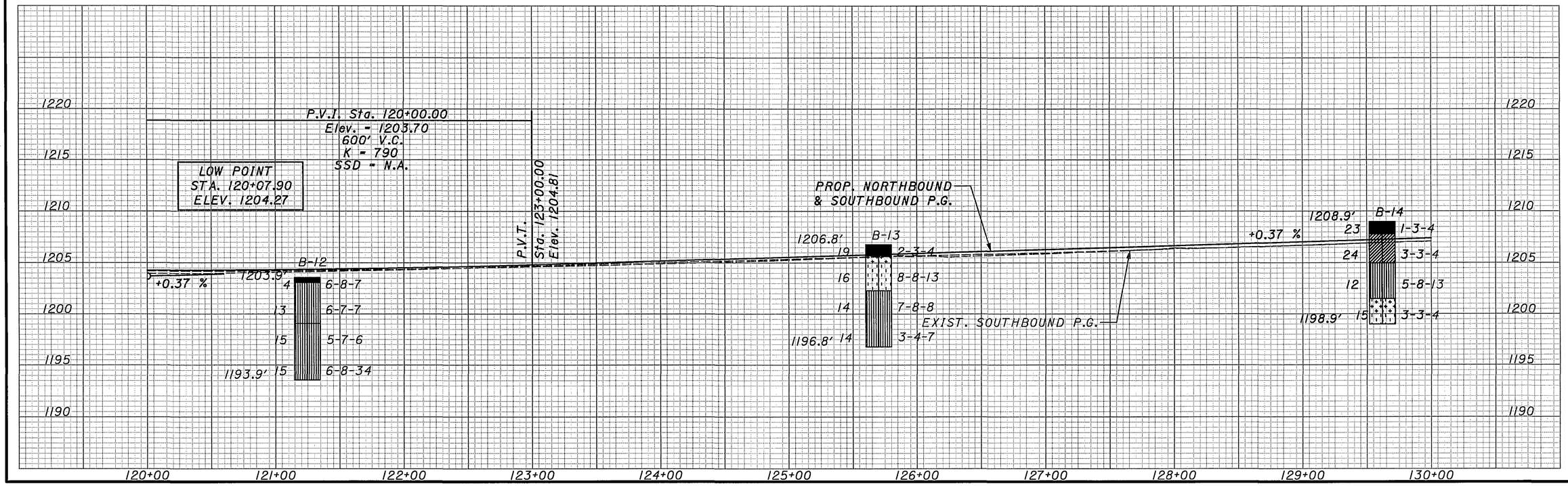
0 20 40 80
HORIZONTAL SCALE IN FEET

SOIL PROFILE
STA. 110+00.00 TO STA. 120+00.00

SUM-77-1.40

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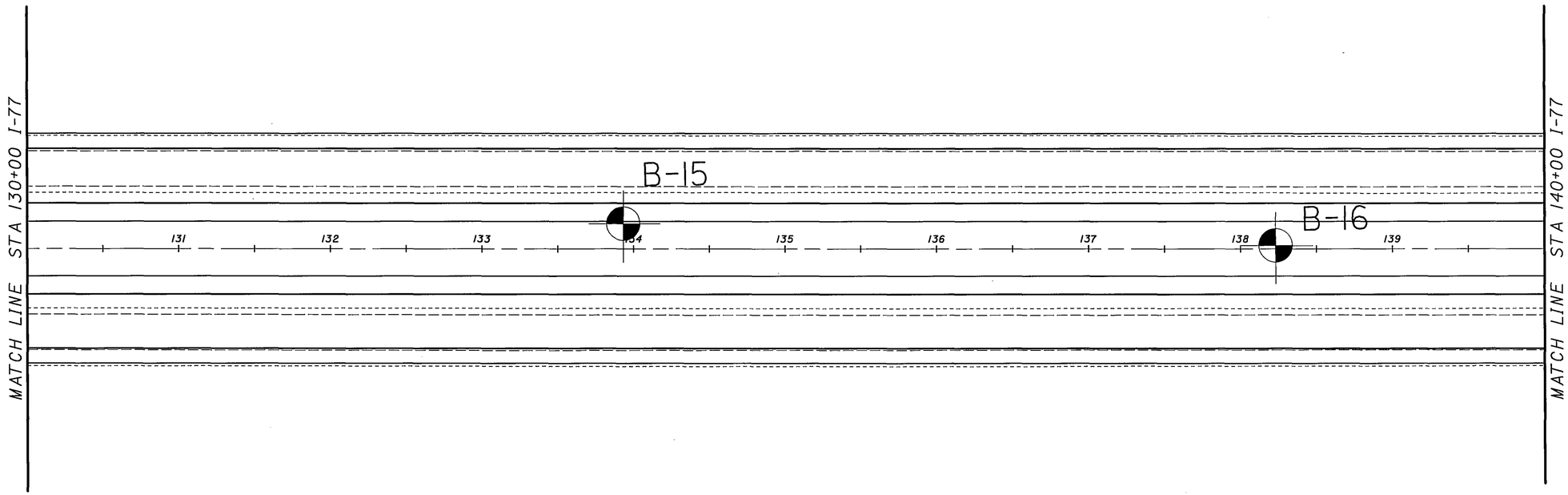


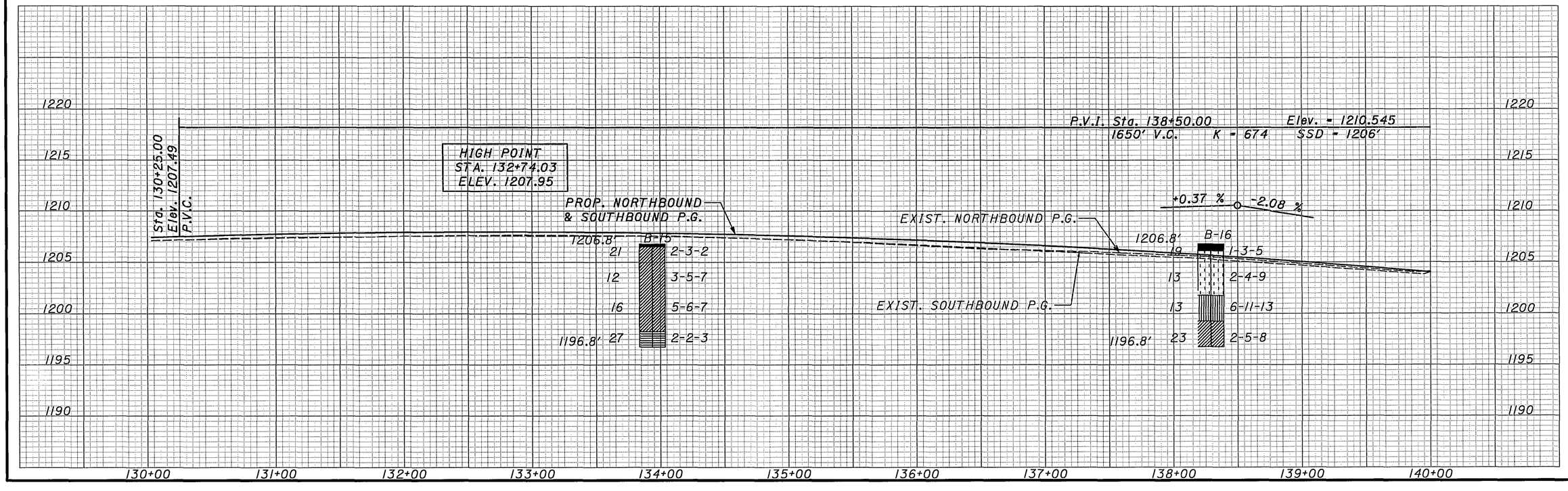
HORIZONTAL SCALE IN FEET
0 20 40 80

SOIL PROFILE
STA. 120+00.00 TO STA. 130+00.00

SUM-77-1.40

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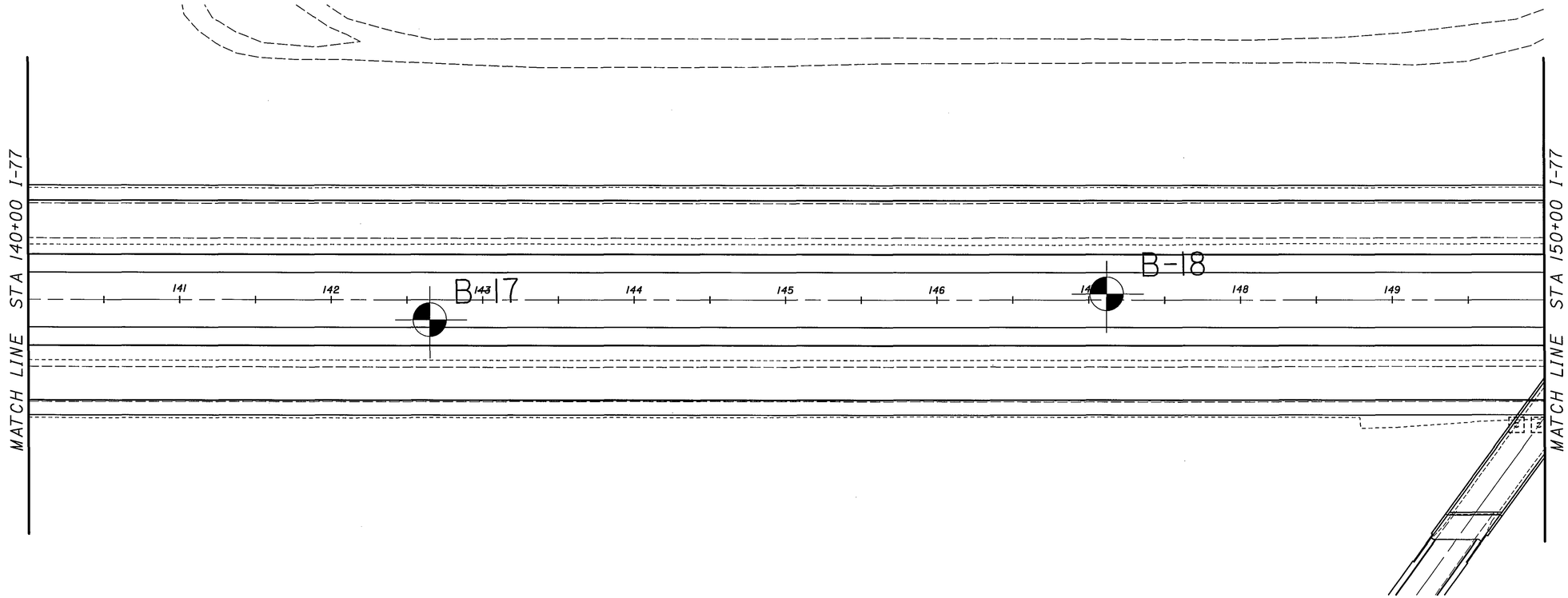


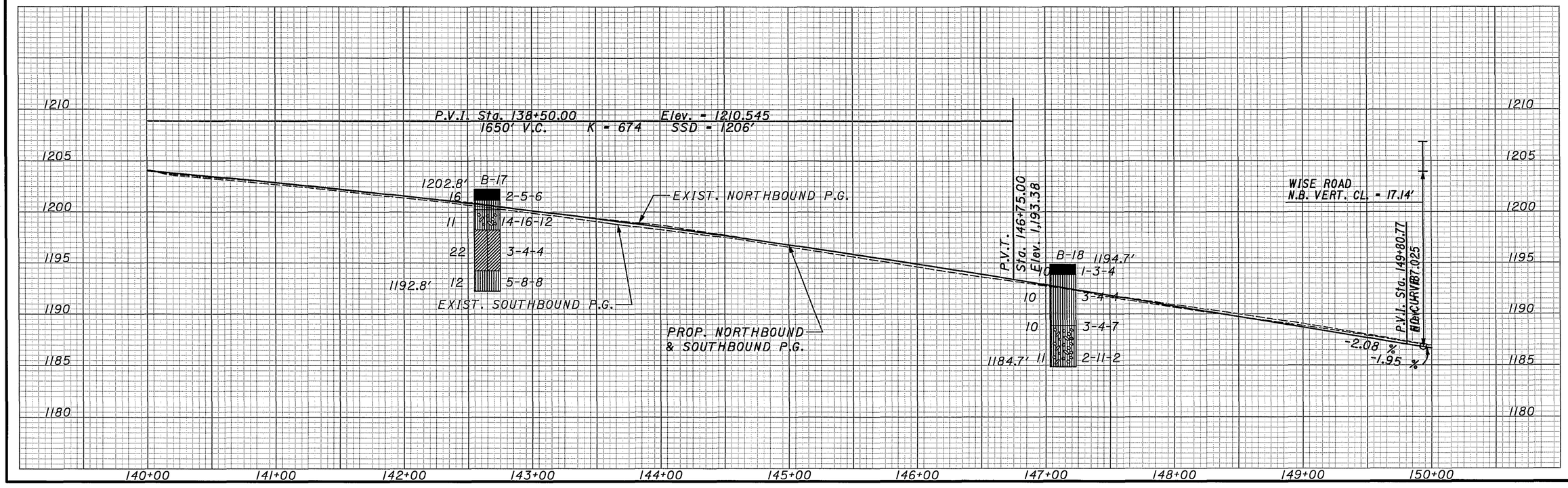
SOIL PROFILE

STA. 130+00.00 TO STA. 140+00.00

SUM-77-1.40

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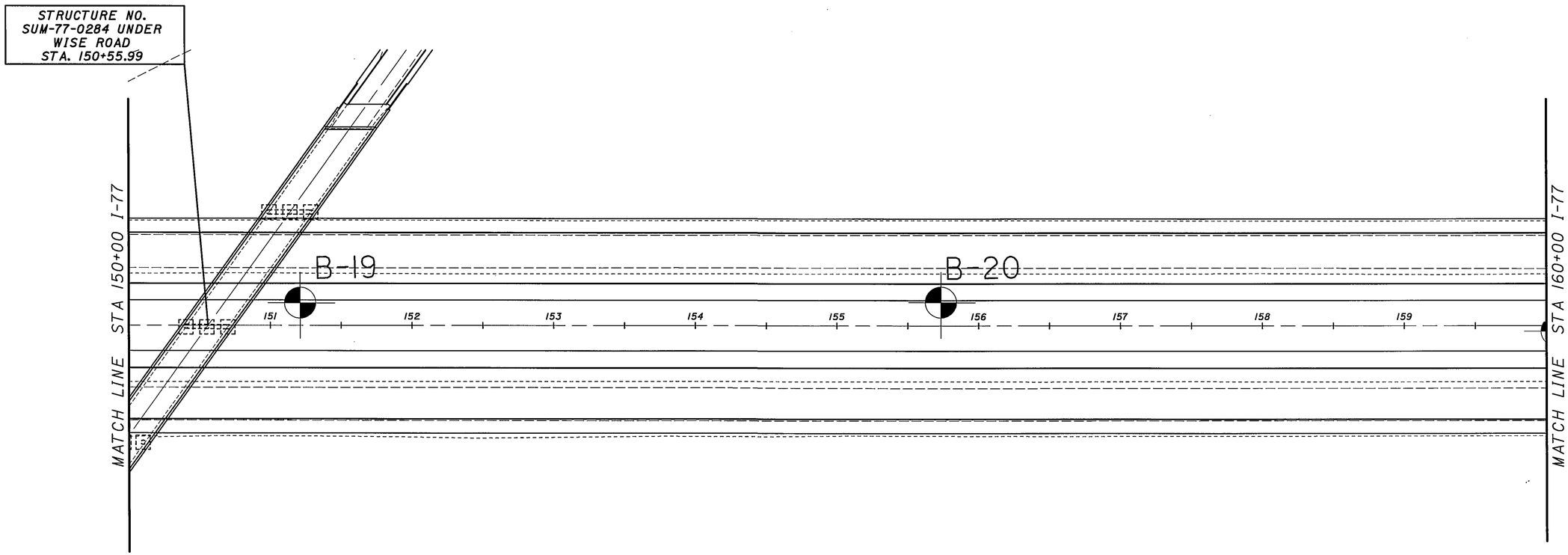


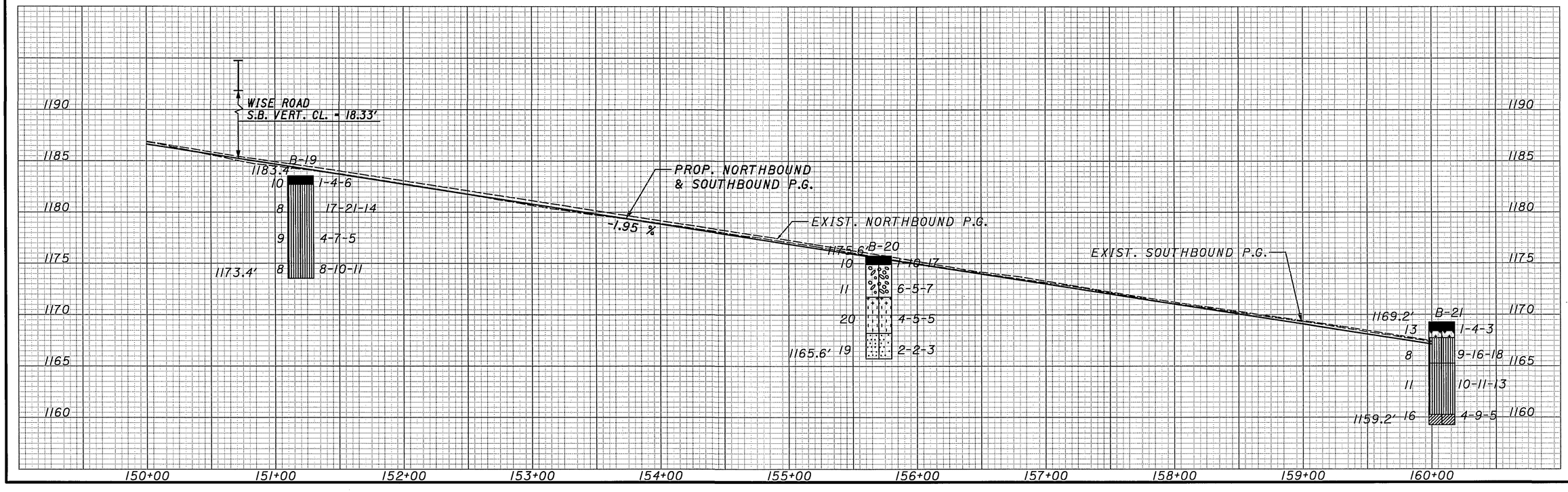
HORIZONTAL SCALE IN FEET
0 20 40 80

SOIL PROFILE
STA. 140+00.00 TO STA. 150+00.00

SUM-77-1.40

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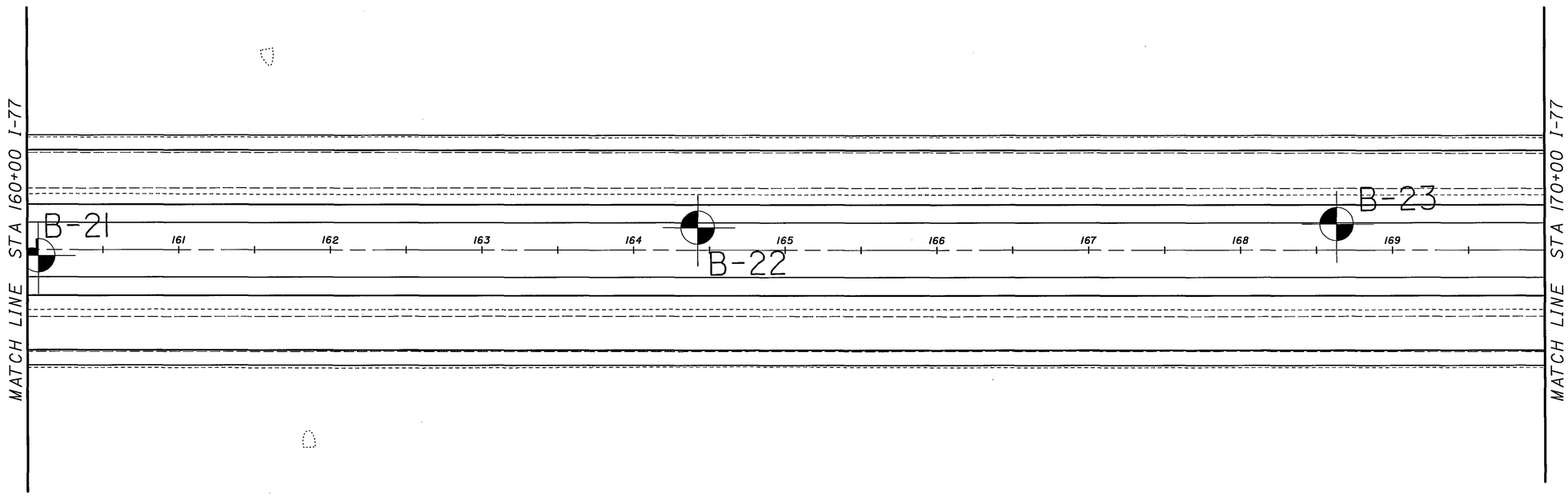


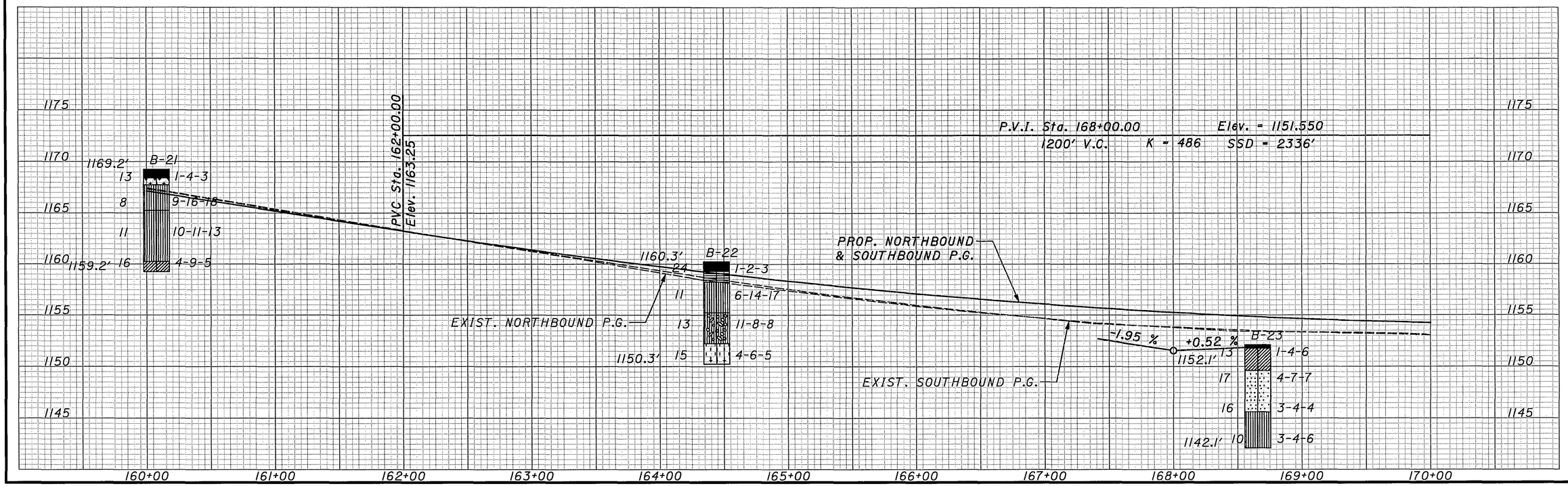
HORIZONTAL SCALE IN FEET
0 20 40 80

SOIL PROFILE
STA. 150+00.00 TO STA. 160+00.00

SUM-77-1.40

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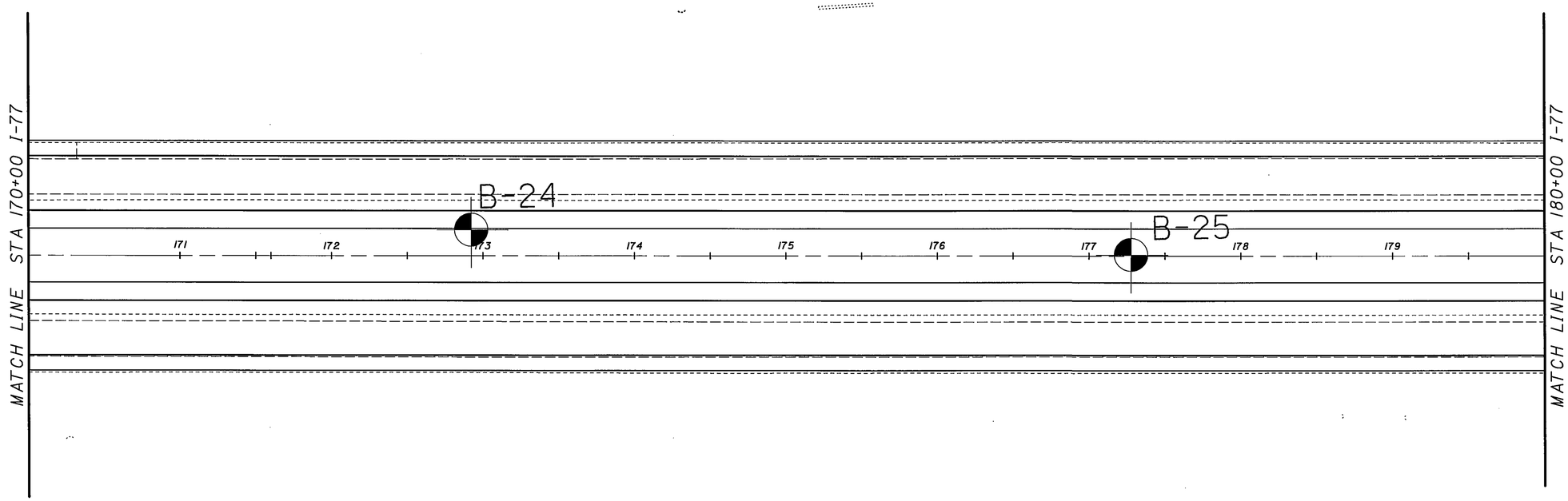


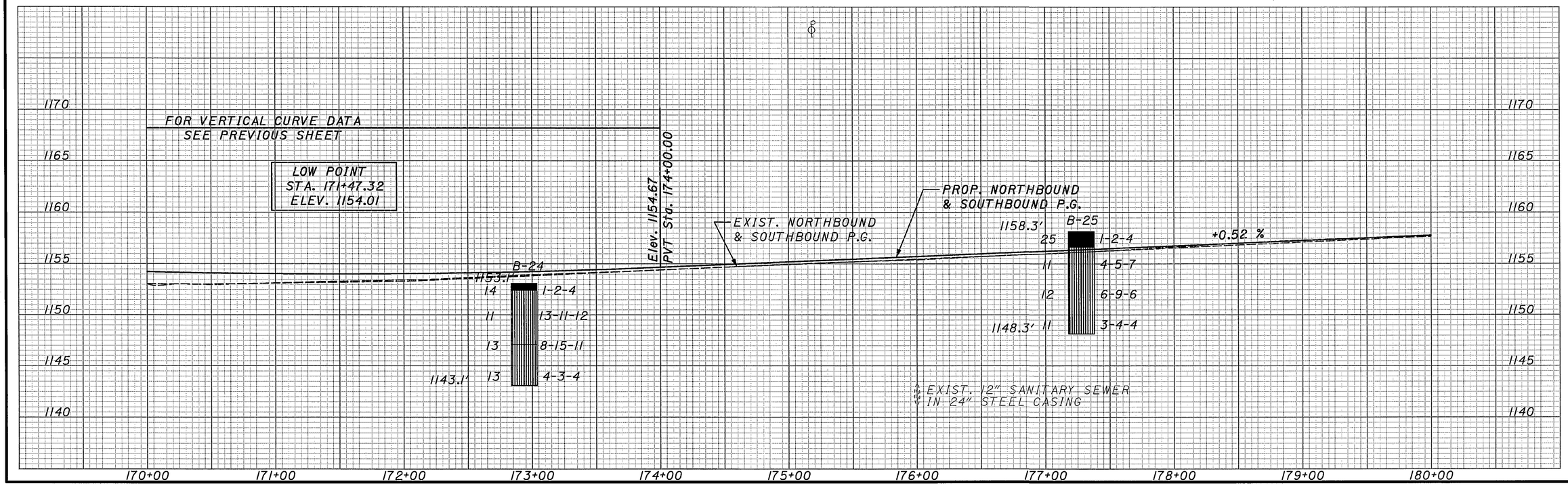
HORIZONTAL SCALE IN FEET
0 20 40 80

SOIL PROFILE
STA. 160+00.00 TO STA. 170+00.00

SUM-77-1.40

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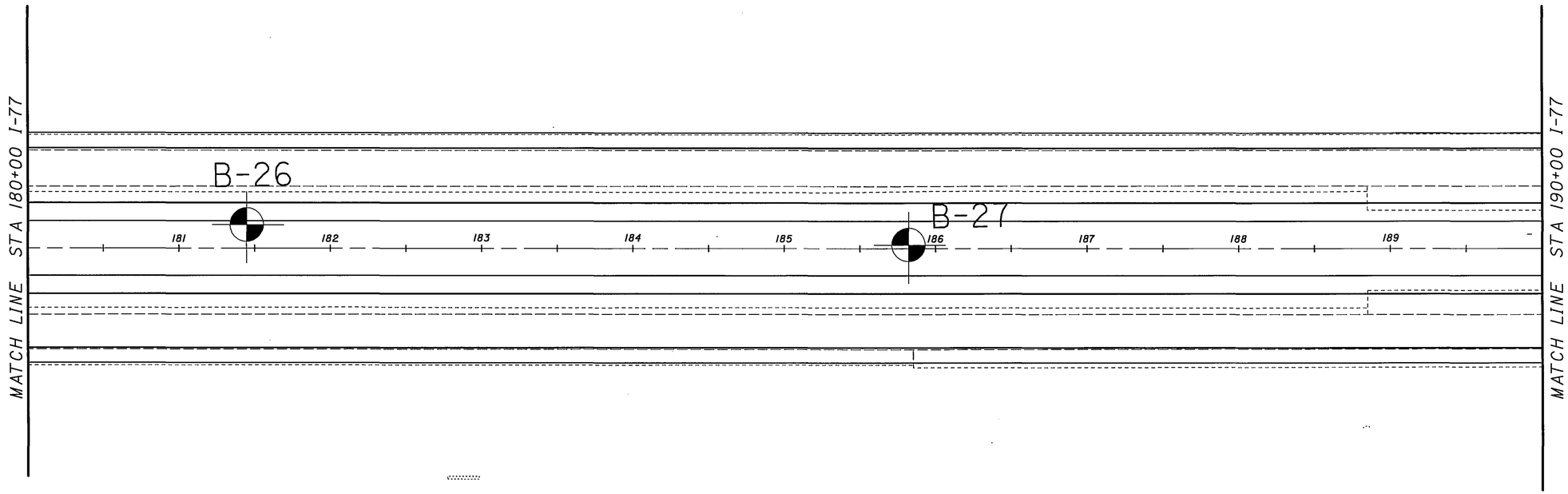


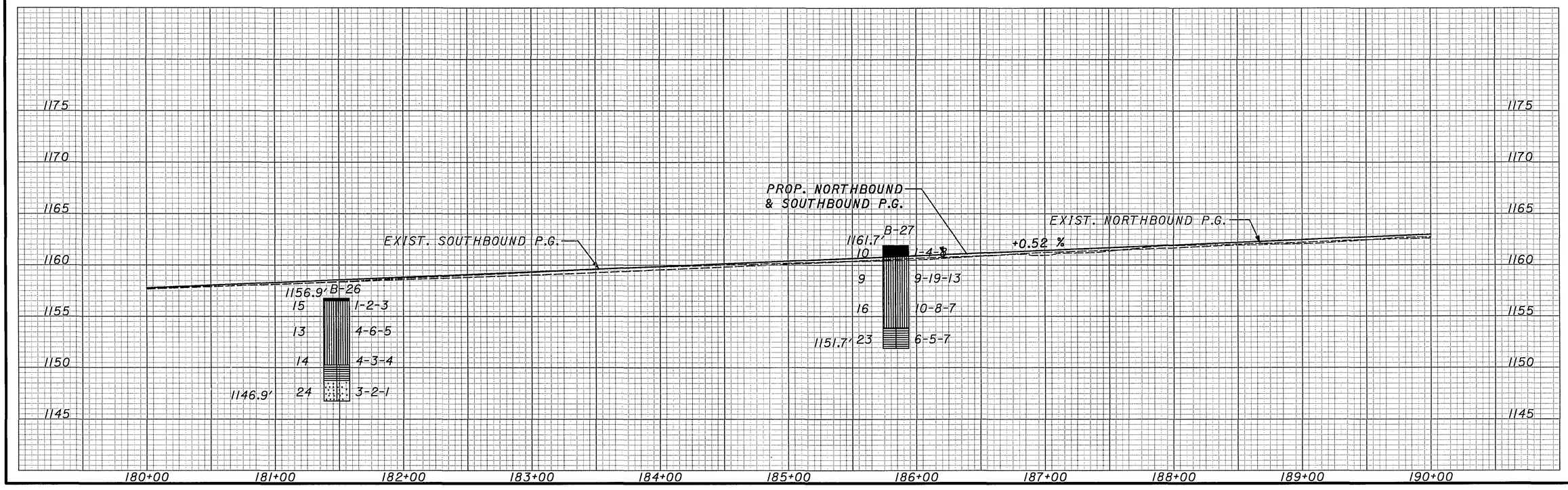


HORIZONTAL SCALE IN FEET
0 20 40 80

SOIL PROFILE
STA. 170+00.00 TO STA. 180+00.00

SUM-77-1.40



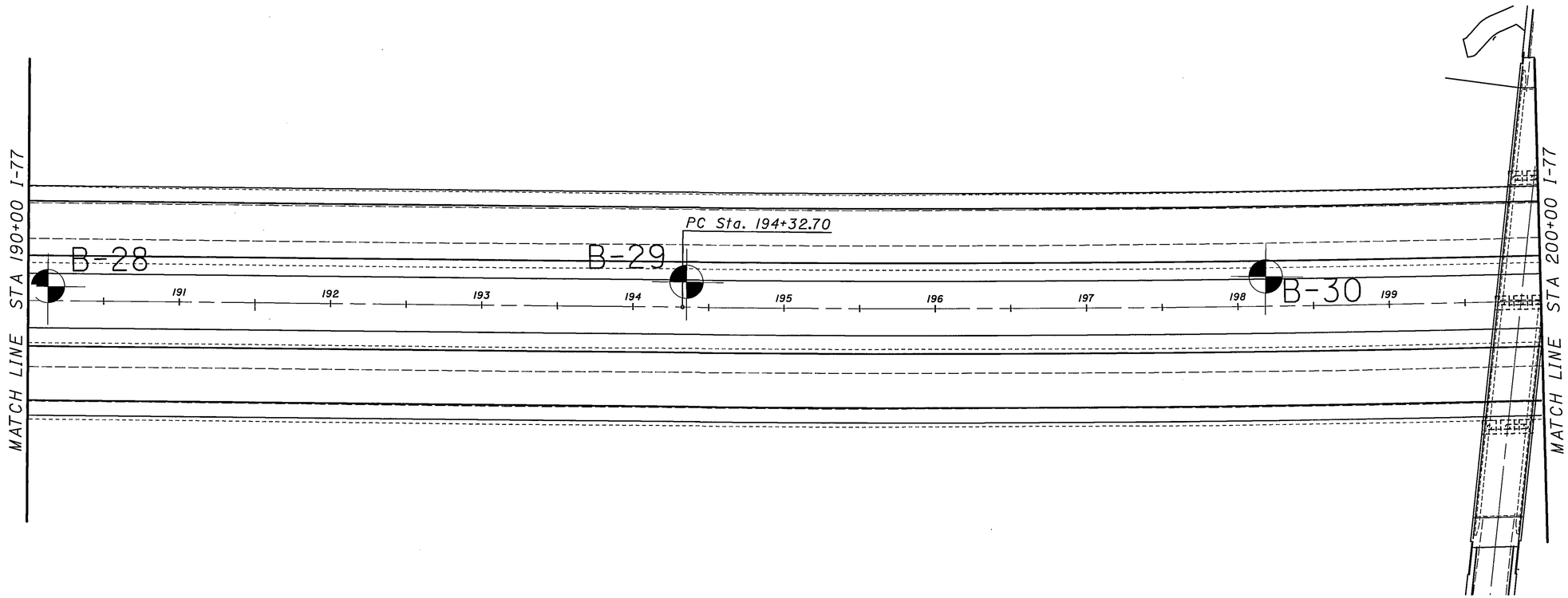


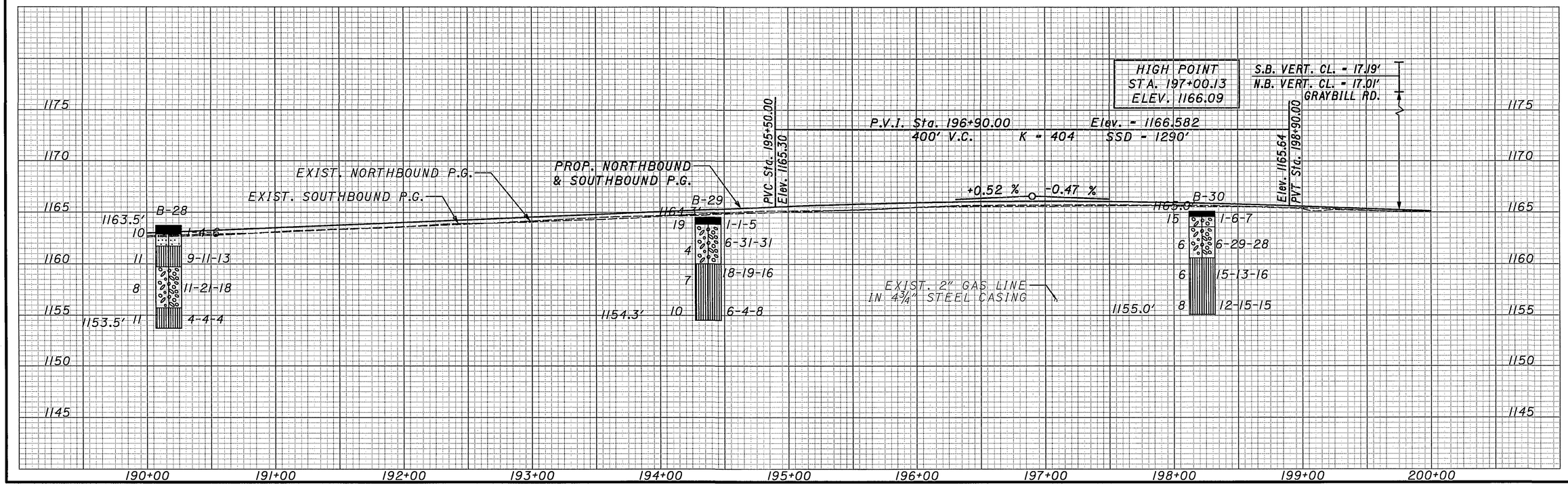
HORIZONTAL SCALE IN FEET
0 20 40 80

SOIL PROFILE
STA. 180+00.00 TO STA. 190+00.00

SUM-77-1.40

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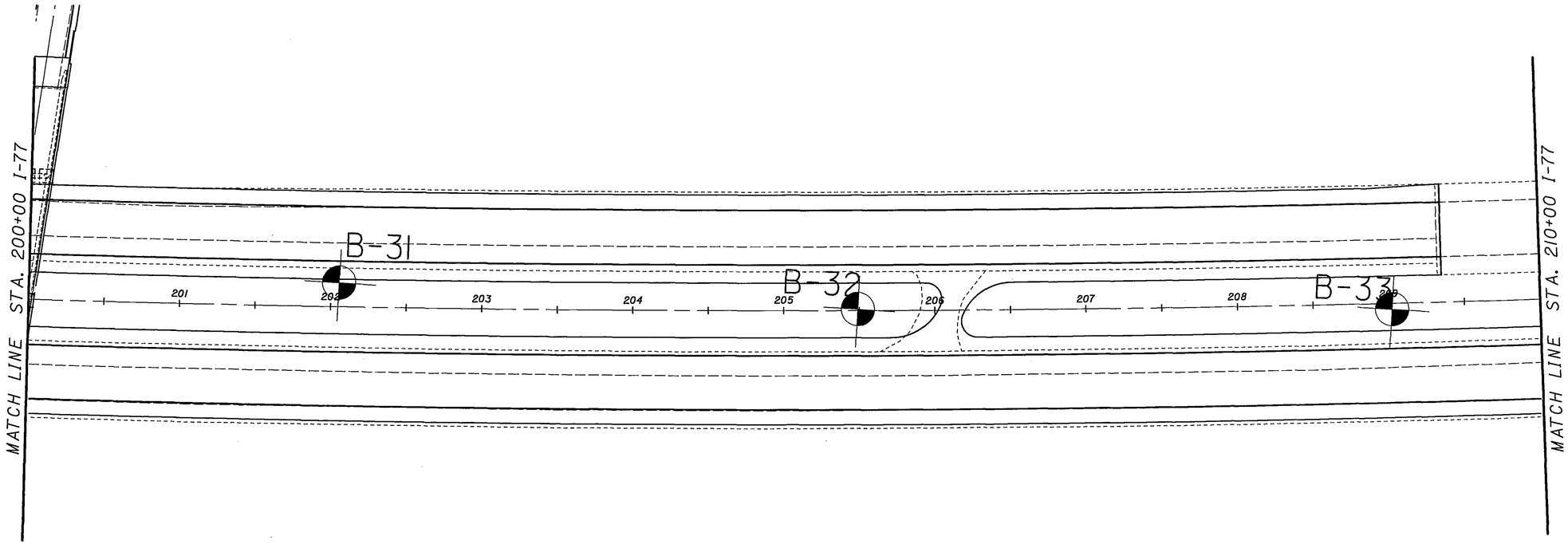
HORIZONTAL SCALE IN FEET
0 20 40 80

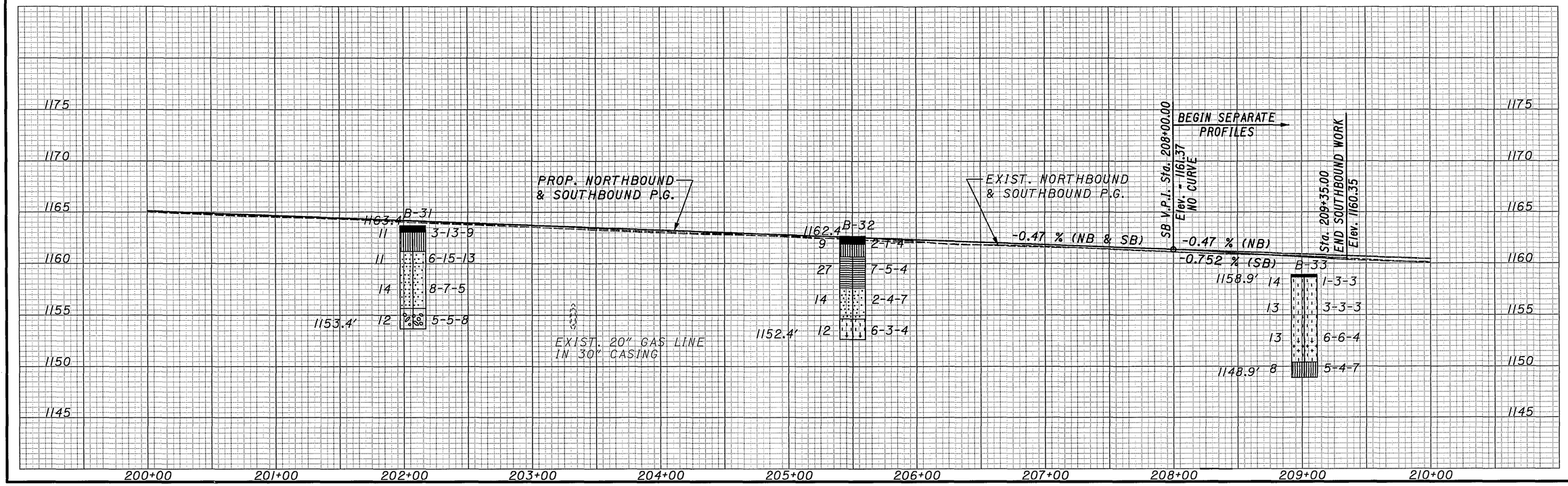
SOIL PROFILE

STA. 190+00.00 TO STA. 200+00.00

SUM-77-1.40

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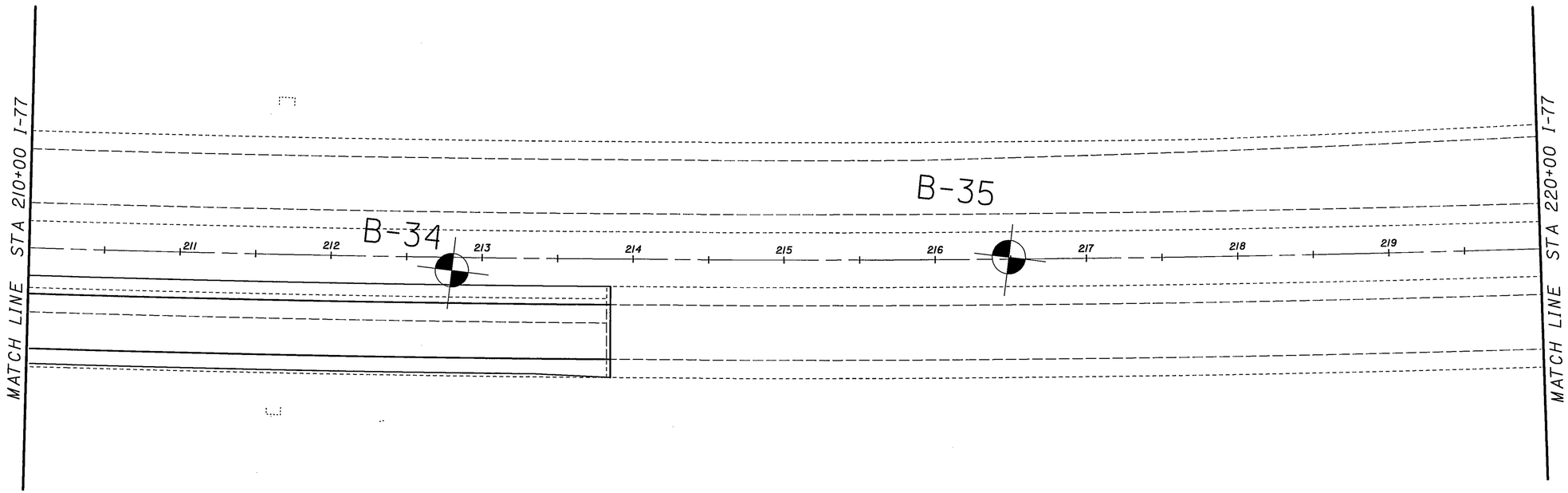
HORIZONTAL SCALE IN FEET
0 20 40 80

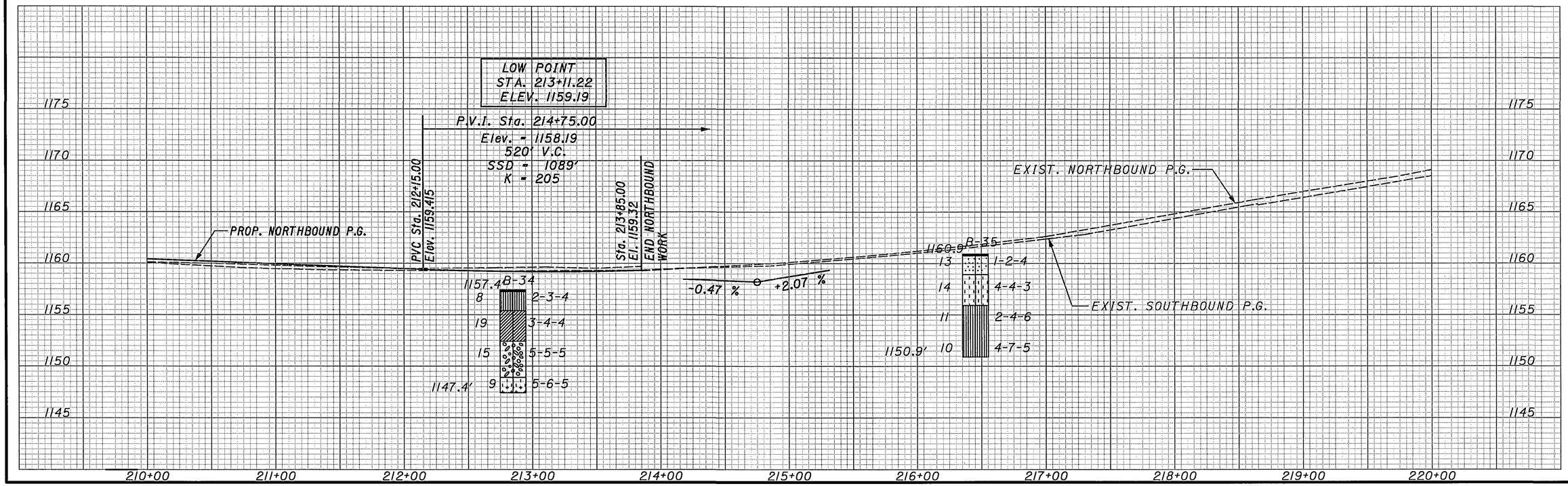
SOIL PROFILE

STA. 200+00.00 TO STA. 210+00.00

SUM-77-1.40

17/19





HORIZONTAL SCALE IN FEET
0 20 40 80

SOIL PROFILE
STA. 210+00.00 TO STA. 220+00.00

SUM-77-1.40

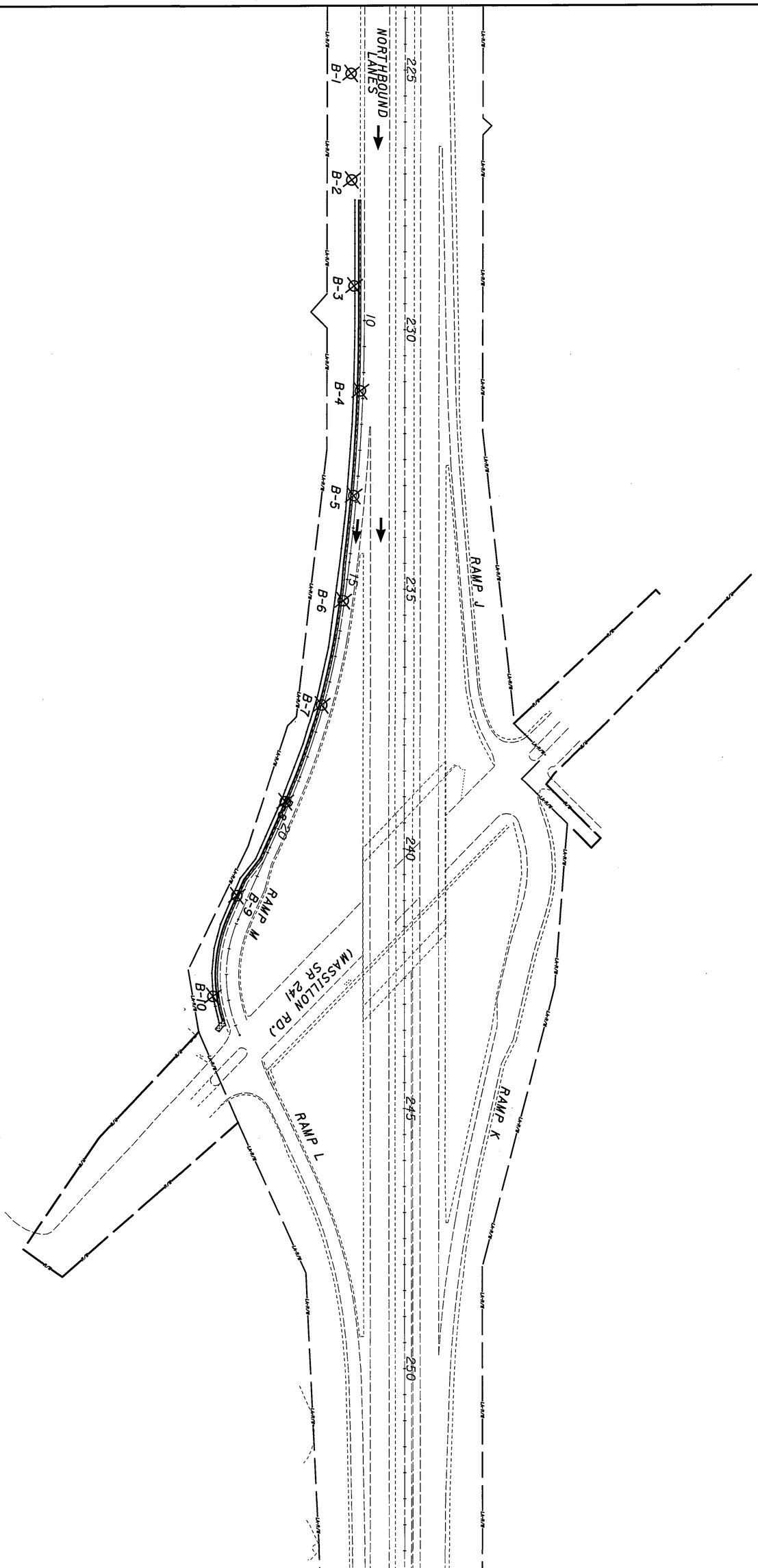
18/19

HORIZONTAL SCALE IN FEET
0 20 40 80

SOIL PROFILE
STA. 220+00.00 TO STA. 230+00.00

SUM-77-1.40

19/19



4	SUM-77-1.40	S.R. 241 INTERCHANGE NOISE WALL SOIL BORING PLAN	CALCULATED CHECKED	0 HORIZONTAL SCALE IN FEET

Project I.D.	139-35033 SR 241 Noise Barrier Wall
Date Started	8/25/2003
Dated Completed	8/25/2003

Boring No.	B-1
Station & Offset	Sta. 225+06, 104 ft. Rt.

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	1160.32 ft.		
Water on Completion	1156.57 ft.		
Surface Elevation-MSL	1177.57 ft.		

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
		Surface											
	2-2-2	*		SS-1								15	
	2-4-3	Soft to very stiff brown SILT, moist		SS-2								14	
	4-5-5		5	SS-3	13	8	26	33	20	23	7	13	A-4a
1167.57	7-7-9			SS-4								10	
		Soft to stiff gray SANDY SILT, moist	10										A-4a
	2-3-4			SS-5	20	11	21	48	—	—	—	9	
			15										
	3-2-3			SS-6								9	
			20										
1152.57	2-1-2			SS-7								12	
		End of Boring @ 25'0"	25										
		*3" Topsoil	30										
			35										
			40										
			45										
			50										

Project I.D.	139-35033 SR 241 Noise Barrier Wall
Date Started	8/25/2003
Dated Completed	8/25/2003

Boring No.	B-2
Station & Offset	Sta. 227+11, 102 ft. Rt.

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	1164.15 ft.		
Water on Completion	1164.15 ft.		
Surface Elevation-MSL	1182.15 ft.		

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
		Surface											
	4-5-8			SS-1								7	A-2-4
	4-6-6	Medium dense brown GRAVEL and/or STONE FRAGMENTS with sand and silt, moist		SS-2								12	
1175.65	8-6-7		5	SS-3								13	
	6-6-10	Stiff to very stiff brown SANDY SILT, moist		SS-4	22	8	16	38	16	23	5	14	A-4a
1170.15			10										
	12-16-19	Loose to dense brown to gray GRAVEL and/or STONE FRAGMENTS with sand and silt, moist		SS-5								11	A-2-4
			15										
	5-5-5			SS-6								10	
			20										
1159.15													
1157.15	2-2-3	Loose gray COARSE and FINE SAND, moist		SS-7								17	A-3a
		End of Boring @ 25'0"	25										
			30										
			35										
			40										
			45										
			50										

Project I.D.	139-35033 SR 241 Noise Barrier Wall
Date Started	8/25/2003
Dated Completed	8/25/2003

Boring No.	B-3
Station & Offset	Sta. 229+15, 98 ft. Rt.

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	1170.30 ft.		
Water on Completion	1164.80 ft.		
Surface Elevation-MSL	1187.80 ft.		

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
		Surface											
	2-4-4			SS-1								9	A-2-4
	9-10-10	Loose to medium dense brown GRAVEL and/or STONE FRAGMENTS with sand and silt, moist		SS-2								10	
	11-9-7		5	SS-3								11	
1179.80	3-6-8	Stiff to very stiff brown SANDY SILT, moist		SS-4								16	
			10										
	11-9-10			SS-5								14	
			15										
	6-6-7			SS-6	20	11	23	29	17	19	5	10	A-4a
			20										
1162.80	5-4-6			SS-7								11	
		End of Boring @ 25'0"	25										
			30										
			35										
			40										
			45										
			50										

Project I.D.	139-35033 SR 241 Noise Barrier Wall
Date Started	8/25/2003
Dated Completed	8/25/2003

Boring No.	B-4
Station & Offset	Sta. 231+17, 86 ft. Rt.

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	1169.70 ft.		
Water on Completion	1169.70 ft.		
Surface Elevation-MSL	1193.20 ft.		

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
		Surface											
	—	*		AU-1								7	A-1-b
	15-19-22	Medium dense to dense brown GRAVEL and/or STONE FRAGMENTS with sand, moist		SS-2								7	
	7-8-12		5	SS-3								10	
1185.20	11-15-11	Very stiff brown SANDY SILT, moist		SS-4								10	
			10										
	11-9-8			SS-5	18	9	25	28	20	24	9	11	A-4a
			15										
	5-10-5			SS-6								16	
			20										
1171.20	11-17-20	Dense gray GRAVEL and/or STONE FRAGMENTS with sand and silt, moist		SS-7	36	13	28	23	—	—	—	10	A-2-4
			25										
1163.20	11-21-21			SS-8								8	
		End of Boring @ 30'0"	30										
		*17" Asphalt Concrete	35										
			40										
			45										
			50										

CALCULATED SPC CHECKED W.B.H.

Soil Boring Logs
Prepared by psi, inc.
psi File No. 139-25008B

SOIL BORING LOGS

SUM-77-1.40

Project I.D.	139-35033 SR 241 Noise Barrier Wall
Date Started	8/26/2003
Dated Completed	8/26/2003

Boring No.	B-5
Station & Offset	Sta. 233+19, 98 ft. Rt.

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	—		
Water on Completion	—		
Surface Elevation-MSL	1197.92 ft.		

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
		Surface											
	—	*		AU-1								5	A-1-b
	10-12-13	Medium dense brown GRAVEL and/or STONE FRAGMENTS with sand, moist		SS-2								7	
1190.92	11-12-11		5	SS-3								8	
	7-7-10	Stiff to very stiff brown to gray SANDY SILT, moist		SS-4								11	
			10										
	7-8-9			SS-5								13	
			15										
	9-8-11			SS-6								14	
			20										
	6-7-5			SS-7								15	
			25										
1167.92	6-5-6			SS-8	14	9	27	30	20	20	6	11	A-4a
		End of Boring @ 30'0"	30										
		*17" Asphalt Concrete											
			35										
			40										
			45										
			50										

Project I.D.	139-35033 SR 241 Noise Barrier Wall
Date Started	8/26/2003
Dated Completed	8/26/2003

Boring No.	B-6
Station & Offset	Sta. 235+22, 118 ft. Rt.

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	—		
Water on Completion	—		
Surface Elevation-MSL	1202.27 ft.		

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
		Surface											
	—	*		AU-1								6	
	10-10-9	Medium dense brown GRAVEL and/or STONE FRAGMENTS with sand, moist		SS-2								3	A-1-b
1195.27	5-5-6		5	SS-3								8	
	10-12-14	Medium dense to dense brown GRAVEL and/or STONE FRAGMENTS with sand and silt, moist		SS-4								11	A-2-4
		moist	10										
	18-26-22			SS-5								10	
1186.27			15										
	13-14-12	Medium stiff to very stiff brown to gray SANDY SILT, moist		SS-6	9	10	38	26	17	19	4	11	A-4a
			20										
	5-4-4			SS-7								16	
			25										
1172.27	4-4-5			SS-8								16	
		End of Boring @ 30'0"	30										
		*15" Asphalt Concrete											
			35										
			40										
			45										
			50										

Project I.D.	139-35033 SR 241 Noise Barrier Wall
Date Started	8/26/2003
Dated Completed	8/26/2003

Boring No.	B-7
Station & Offset	Sta. 237+22, 160 ft. Rt.

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	1177.01 ft.		
Water on Completion	1175.01 ft.		
Surface Elevation-MSL	1203.51 ft.		

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
		Surface											
	—	*		AU-1								6	
	10-12-10	Medium dense brown GRAVEL and/or STONE FRAGMENTS with sand, moist		SS-2								11	A-1-b
1197.51	13-13-15		5	SS-3								7	
	14-10-9	Medium stiff to very stiff brown SANDY SILT, moist		SS-4	17	10	26	30	17	20	5	9	A-4a
			10										
	11-12-12			SS-5								11	
			15										
	6-9-8			SS-6								14	
			20										
	4-3-4			SS-7								15	
1177.51			25										A-1-b
1173.51	2-4-10	Medium dense brown GRAVEL and/or STONE FRAGMENTS with sand, moist		SS-8								15	
		End of Boring @ 30'0"	30										
		*15" Asphalt Concrete											
			35										
			40										
			45										
			50										

Project I.D.	139-35033 SR 241 Noise Barrier Wall
Date Started	8/26/2003
Dated Completed	8/26/2003

Boring No.	B-8
Station & Offset	Sta. 239+08, 229 ft. Rt.

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	1177.92 ft.		
Water on Completion	1177.92 ft.		
Surface Elevation-MSL	1202.42 ft.		

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
		Surface											
	—			AU-1								8	
	10-11-10	Medium dense brown GRAVEL and/or STONE FRAGMENTS with sand, moist		SS-2								10	A-1-b
1197.42	10-12-13	Stiff to very stiff brown SANDY SILT, moist	5	SS-3	10	8	28	33	21	21	6	10	A-4a
	7-7-8			SS-4								16	
			10										
	7-7-6			SS-5								15	
			15										
	9-9-10			SS-6								20	
1179.42			20										
1177.42	4-10-14	*		SS-7								12	**
		End of Boring @ 25'0"	25										
		*Medium dense brown GRAVEL and/or STONE FRAGMENTS with sand, moist	30										**A-1-b
			35										
			40										
			45										
			50										

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Soil Boring Logs
Prepared by psi, inc.
psi File No. 139-25008B

SOIL BORING LOGS

SUM-77-1.40

Project I.D.	139-35033 SR 241 Noise Barrier Wall
Date Started	8/26/2003
Dated Completed	8/26/2003

Boring No.	B-9
Station & Offset	Sta. 240+89, 323 ft. Rt.

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	1185.89 ft.		
Water on Completion	1176.89 ft.		
Surface Elevation-MSL	1200.39 ft		

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
		Surface											
	—	Loose brown COARSE and FINE SAND, moist		AU-1								7	A-3a
1197.39	3-3-3	Stiff brown SANDY SILT, moist		SS-2								16	
	2-4-3		5	SS-3								16	A-4a
1192.89	10-16-15	Dense brown GRAVEL and/or STONE FRAGMENTS with sand, moist		SS-4								15	
	7-16-21		10	SS-5	55	10	18	12	5	NP	NP	8	A-1-a
			15										
1181.89	4-4-5	Loose to medium dense gray GRAVEL and/or STONE FRAGMENTS with sand and silt, moist		SS-6	38	12	18	32	—	—	—	14	A-2-4
			20										
1175.39	5-8-8			SS-7								10	
		End of Boring @ 25'0"	25										
			30										
			35										
			40										
			45										
			50										

Project I.D.	139-35033 SR 241 Noise Barrier Wall
Date Started	8/26/2003
Dated Completed	8/26/2003

Boring No.	B-10
Station & Offset	Sta. 242+83, 369 ft. Rt.

Sampler Type	Split Spoon	Dia.	2"
Casing Type	Hollow Auger	Dia.	3.25"
Water Encountered	—		
Water on Completion	—		
Surface Elevation-MSL	1199.76 ft.		

Elev. Ft.	Std. Pen. Test	Description	Depth(ft)	Sample Number	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
		Surface											
	8-12-12	*Stiff to very stiff brown SANDY SILT, moist to wet		SS-1								6	
	8-9-11			SS-2								24	
	8-9-6		5	SS-3								12	A-4a
	6-8-11			SS-4								10	
1187.76		Medium stiff to stiff gray SANDY SILT, moist	10										
	7-4-4			SS-5								11	
			15										
	4-6-7			SS-6								11	
			20										
1174.76	4-5-6			SS-7	24	10	20	30	16	19	5	9	A-4a
		End of Boring @ 25'0"	25										
		*3" Topsoil	30										
			35										
			40										
			45										
			50										

CALCULATED SPC CHECKED W.B.H.

Soil Boring Logs
Prepared by psi, inc.
psi File No. 139-25008B

SOIL BORING LOGS

SUM-77-1.40

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SPECIAL PROVISIONS

NOISE BARRIER CONCRETE PANEL SEALER/COATING

CO-RT-SEC

SUM-77-1.40
PID: 16372

DATE: 3-27-02

ITEM SPECIAL – NOISE BARRIER CONCRETE PANEL SEALER/COATING -Dated 3-27-2001(rev 3-27-02)

Description

Apply a sealer/coating to all concrete surface areas of noise barrier panels and concrete posts, even concrete to concrete contact surfaces.

Apply the color defined by the federal color standard identification number in the noise wall plans. If there is no number, the Engineer will specify the color.

Materials One coat of the sealer/coating shall meet the following performance requirements:

1. Freeze-Thaw Test. The applied finish coating shall be subjected to freeze-thaw cycle tests as follows:

   a. Three concrete specimens, not less than 4" x 6" by 6", minimum 5000 psi @ 28 days, shall be cast and cured. Fourteen days moist curing with a drying period at room temperature, 60° to 80° F, for 24 hours will be required before the specimens are coated with the applied finish. Caution shall be taken that there be no excessive oil on specimen forms. The finish coating shall be applied to the sides of specimens at a spreading rate of 50 +/- 10 square feet per gallon. Brush application will be permitted. Cementitious coating shall be cured at room temperature and 50 percent relative humidity for 24 hours, at room temperature and 90 percent relative humidity for 48 hours, at room temperature and 50 percent relative humidity for four days for a total curing time of seven days. Other coatings shall be cured at room temperature for 48 hours after completing of curing.

   b. The specimens shall be immersed in water at room temperature for three hours, then removed.

   c. The specimens shall be placed in cold storage at -15° F for one hour, then removed.

   d. The specimens shall be thawed at room temperature for one hour.

   e. Steps c and d above shall be repeated for a total of 300 cycles. At the end of 300 cycles the specimens shall show no visible defects.

2. Accelerated Weathering. The applied coating shall be subjected to a 5,000 hour exposure test in a Twin-Carbon-Arc-Weatherometer, ASTM G 23, Type D, at an operating temperature of 145° F. The test shall be made at 20-minute cycles consisting of 17 minutes of light and 3 minutes of water spray plus light. At the end of the exposure test, the exposed samples shall show no chipping, flaking, or peeling. The panels for this test shall be prepared by applying the coating at a spreading rate of 50 +/- 10 sq feet per gallon to both sides and edges of panels cut from asbestos cement shingles in accordance with Federal

Specification SS-S-346, type I. Curing time shall be in accordance with (1).

3. Fungus Growth Resistance. The applied finish coating shall pass the fungus resistance test in accordance with Federal Specification TT-P-29g. Fungus Growth shall not be indicated after a minimum incubation period of 21 days.

4. Impact resistance. The coating shall be applied to a concrete panel prepared according to Federal Test Method Standard 141s, Method 2051, at a spreading rate of 50 +/- 10 square feet per gallon, and allowed to cure for 21 days at room temperature. The test shall then be run using the Gardner Mandrel Impact Tester in accordance with ASTM D 2794 using a ½ of an inch indenter with an impact load of 6 inch-pounds. The coating shall show no chipping under this impact load.

5. Salt-Spray Resistance Test. A concrete specimen shall be coated at the rate of 50 +/- 10 square feet per gallon and cured for 21 days at room temperature. The coated specimen shall be exposed to a 5% salt solution in accordance with ASTM B117 for 2000 hours where the atmospheric temperature is maintained at 90° +/- 2°F. At the end of 2000 hours of exposure, the coating shall show no ill effects, loss of adhesion, or deterioration.

6. Flexibility Test. A sheet metal specimen shall be coated with the applied finish coating at a rate of 50 +/- 10 square feet per gallon and allowed to cure for 48 hours at room temperature. The coated specimen shall be bent 180 degrees over a one(1) inch round mandrel. After bending, the coating shall show no breaking.

7. Absorption - The absorption of treated concrete under total immersion shall not exceed 1.0% after 48 hours or 2.0% after 50 days (ASTM C642, non-air entrained concrete). Concrete should be proportioned and mixed in accordance with ASTM C672.

8. Scaling Resistance - treated concrete shall pass ASTM C672, Scaling Resistance test with a rating of "No Scaling" after 50 cycles (non-air entrained concrete) as compared to "Severe Scaling' on untreated concrete.

9. NCHRP 244, Series IV - Southern Exposure
   4.1 Absorbed chloride - not to exceed 10% of untreated concrete

Materials Approval Submit certified test data to the Engineer that shows the sealer/coating meets the material properties.

These products are pre-approved:

Pre-approved products and coverage thickness for the product

1. **TammsCoat Fine ODOT**
   Tamms Industries Company
   61 American Street

Chagrin Falls, Ohio 44022

Application Dry Film Thickness 20 mils (380 um)
Smooth surface - rate of 50 sq ft/gal
Textured surface (Ashlar Stone) - rate of 40 sq. ft./gal
Textured surface (3/4 fluted) - 25 sq. ft./gal

2. **BRIDGE COTE XL-70 w/SILANE (Fine Texture) by TEX COTE or BRIDGE COTE XL-70 by TEX COTE**
   Textured Coatings of America
   4101 Ravenswood Rd.
   Suite 101A
   Ft. Lauderdale, Florida 33312-5371

   Application Dry Film Thickness 15 mils (380 um)
   Smooth surface - rate of 50 sq ft/gal
   Textured surface (Ashlar Stone) - rate of 40 sq. ft./gal
   Textured surface (3/4 fluted) - 25 sq. ft./gal

3. **TextureDOT by ChemMasters**
   300 Edwards Street
   Madison, Ohio 44057

   Application Dry Film Thickness 15 mils (380 um)
   Smooth surface - rate of 50 sq ft/gal
   Textured surface (Ashlar Stone) - rate of 40 sq. ft./gal
   Textured surface (3/4 fluted) - 25 sq. ft./gal

Take a verification sample during the coating operation by collecting a quart (1 liter) sample from the spray gun during application. Send the sample to Materials Management for testing. This sample is for verification of materials not acceptance.

Contractor Testing Equipment Provide, in good working order, the following testing equipment:

1. One Sling Psychrometer including Psychometric tables - Used to determine relative humidity and dew point temperature.

2. Two steel surface thermometers accurate within 2°F or L.C. One (1) portable infrared thermometer available from:

   Model: Raynger ST Series (-40°F to 750°F)
   Manufacturer: Raytek Inc.
   Santa Cruz, Ca.
   (800)227-8074
   or approved equal to the portable infrared thermometer

3. SSPC Visual Standard for Abrasive Blast Cleaned Steel SSPC-Vis 1-89

4. One Recorder Thermometer capable of recording the date, time, and temperature over a period of at least 12 hours.

Surface Preparation: Thoroughly clean all concrete surfaces. Remove dust, dirt, oil, wax, curing components, efflorescence, laitance, coatings and other foreign materials. Provide written acceptance from the sealer/coating manufacturer for any chemicals and other cleaning compounds used to help remove foreign materials. Apply the sealer/coating within 48 hours after surface preparation.

Use cleaning equipment fitted with suitable traps, filters, drip pans and other devices to prevent oil or other foreign material being deposited on the surface.

Clean the concrete as follows:

Water cured new concrete surfaces.

Water blast with 7,000 p.s.i. minimum

New concrete surfaces with curing compounds or concrete surfaces exposed to a highway environment for more than 180 days.

A water blast at 7,000 p.s.i. minimum or
A sandblast followed by air brooming or power sweeping to remove dust and sand from the surfaces and opened pores.

Apply the sealer/coating after new concrete has air dried for at least three (3) days in addition to the required curing time. Any grout filled cavities will be cured the same time as the new concrete and air-dried for three days.

Apply the sealer/coating to accelerated cured precast concrete after the concrete has reached its required 28 day design strength, any cavities have been grout filled and cured; and the total component is air-dried for three(3) days.

Blast clean any rust stained areas on the concrete twice.

If exposed reinforcing steel chair legs or other bare support steel is visible, sandlblast clean that location to a SSPC-SP6 commercial blast. Contact the Engineer to determine if the concrete component is still acceptable. If the exposed steel is reinforcing, the concrete component is rejected. If the Engineer approves the piece, re-clean the area of any rust before applying the sealer/coating.

Give the Engineer an application procedure that describes how all concrete surfaces are coated and any damaged areas are touched up. Pre-coating in the precaster's yard, whether partial or

total, is acceptable. The Engineer can require additional field application before final acceptance.

Equipment. Use application equipment recommended by the sealer/coating manufacturer. Spray equipment, tanks, hoses, rollers, etc., shall be thoroughly clean, free of foreign matter, oil residue and water prior to applying the concrete sealer/coating.

Application Temperatures

Minimum Ambient temperature: 40° F
Maximum Ambient temperature 100° F
Do not apply sealer/coating if the expected ambient temperature is expected to be below or above the above temperature range for up to 12 hours after application. Do not apply the sealer/coating if rain is anticipated within 4 hours after application.

Follow the manufacturer's recommended temperatures if more restrictive than specified above. Cleanly note where application has stopped. If unable to complete the entire application continuously, re-inspect and reblast at the new start point to meet specifications.

Mixing. Mix sealer/coating according to the manufacturer's recommended written procedures. Mix to a uniform consistency and maintain that during the application.

Test Application: Apply the sealer/coating to a measured test coverage area of different noise wall components to demonstrate the desired physical and visual effect of the sealer/coating and to show the Engineer coverage is achieved.

Appearance. Apply the sealer/coating to achieve a uniform appearance.

Storage. Store sealer/coating components in tightly sealed containers, in a dry location, and as recommended by the manufacturer. Provide the Engineer with the manufacturer's written documentation on storage and required temperature.

Protection of Adjoining Surfaces and the Public. When applying a sealer/coating, protect adjoining surfaces that shouldn't be coated by masking off, or by other means. Protect the public when applying sealer/coating in an area used by the public.

Protect asphalt and mastic type surfaces from spillage and heavy overspray. Don't apply the sealer/coating on joint sealants which have not cured according to the manufacturer's instructions. Joint sealants, may be applied to the coated surfaces after the sealer/coating has been applied and is dry to the touch.

Environmental Requirements. Protect plants and vegetation from overspray by covering with drop cloths. Comply with all Federal, State and local environmental restrictions.

Precautions. Follow precautions on the manufacturer's MSDS.

Basis of Payment. Payment for materials, labor and application of sealer/coating shall be

incidental to the square foot cost of the noise wall.

SPECIAL PROVISIONS

WATERWAY PERMITS
FOR
CRS: SUM-77-1.40 PID 16372

U.S. ARMY CORPS OF ENGINEERS
PERMIT NUMBER: NWPs 3/14

OHIO EPA
PERMIT NUMBER: NA

EFFECTIVE DATE: 12/29/03

NATIONWIDE PERMIT #3 - MAINTENANCE
and
NATIONWIDE PERMIT #14 - LINEAR TRANSPORTATION PROJECTS

NATIONWIDE PERMIT #3 - MAINTENANCE

Activities related to:
(i) The repair, rehabilitation, or replacement of any previously authorized, currently serviceable, structure or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards which are necessary to make repair, rehabilitation, or replacement, are permitted, provided the adverse environmental effects resulting from such repair, rehabilitation, or replacement are minimal. Currently serviceable means useable as is or with some maintenance, but not so degraded as to essentially require reconstruction. This NWP authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed by storms, floods, fire or other discrete events, provided the repair, rehabilitation, or replacement is commenced, or under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, this two-year limit may be waived by the District Engineer, provided the permittee can demonstrate funding, contract, or other similar delays.

(ii) Discharges of dredged or fill material, including excavation, into all waters of the United States to remove accumulated sediments and debris in the vicinity of, and within, existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.) and the placement of new or additional rip rap to protect the structure, provided the permittee notifies the District Engineer in accordance with General Condition 13. The removal of sediment is limited to the minimum necessary to restore the waterway in the immediate vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend further than 200 feet in any direction from the structure. The placement of rip rap must be the minimum necessary to protect the structure or to ensure the safety of the structure. All excavated materials must be deposited and retained in an upland area unless otherwise specifically approved by the District Engineer under separate authorization. Any bank stabilization measures not directly associated with the structure will require a separate authorization from the District Engineer.

(iii) Discharges of dredged or fill material, including excavation, into all waters of the United States for activities associated with the restoration of upland areas damaged by a storm, flood, or other discrete event, including the construction, placement, or installation of upland protection structures and minor dredging to remove obstructions in water of the US. (Uplands lost as a result of a storm, flood, or other discrete event can be replaced without a Section 404 permit provided the uplands are

restored to their original pre-event location. This NWP is for the activities in waters of the US associated with the replacements of the uplands.) The permittee must notify the District Engineer, in accordance with General Condition 13, within 12 months of the date of the damage and the work must commence, or be under contract to commence, within two years of the date of the damage. The permittee should provide evidence, such as a recent topographic survey or photographs, to justify the extent of the proposed restoration. The restoration of the damaged areas cannot exceed the contours, or ordinary high water mark, that existed before the damage. The District Engineer retains the right to determine the extent of the pre-existing conditions and the extent of any restoration work authorized by this permit. Minor dredging to remove obstructions from the adjacent waterbody is limited to 50 cubic yards below the plane of the ordinary high water mark, and is limited to the amount necessary to restore the pre-existing bottom contours of the waterbody. The dredging may not be done primarily to obtain fill for any restoration activities. The discharge of dredged or fill material and all related work needed to restore the upland must be part of a single and complete project. This permit cannot be used in conjunction with NWP 18 or NWP 19 to restore damaged upland areas. This permit cannot be used to reclaim historic lands lost, over an extended period, to normal erosion processes.

This permit does not authorize maintenance dredging for the primary purpose of navigation and beach restoration. This permit does not authorize new stream channelization or stream relocation projects. Any work authorized by this permit must not cause more than minimal degradation of water quality, more than minimal changes to the flow characteristics of the stream, or increase flooding (See General Conditions 9 and 21).

Note: This NWP authorizes the repair, rehabilitation, or replacement of any previously authorized structure of fill that does not qualify for the Section 404(f) exemption for maintenance.

Nationwide 3 Specific Regional Conditions

i. Notification required prior to the use of vertical sheet piling and closed structures in the special habitat waters of Lake Erie (See General Conditions, Critical Resource waters (1)).

ii. The Pre-Construction Notification (PCN) for activities involving the removal of accumulated sediments and debris in the vicinity of existing structures, to restore the waterway to the approximate dimensions that existed when the structure was built, must include evidence of such dimensions. If this information is not available, the PCN must include evidence of the existing depths immediately outside the proposed work area.

WATER QUALITY CERTIFICATION

Pursuant to Section 401 of the Clean Water Act, the Ohio Environmental Protection Agency hereby certifies that activities authorized by these Permits, undertaken in accordance with all of the special and general conditions listed below, will comply with the applicable provisions of the Clean Water Act and applicable Ohio water quality standards. Those NWPs with no special Water Quality Certification (WQC) conditions remain subject to general WQC conditions unless otherwise

indicated (Reference 1 below).

Water Quality Certification – Special Conditions:

The Ohio State Certification General Limitations and Conditions apply to this nationwide permit.

Ohio State Water Quality Certification Special Conditions and Limitations:

1. Total surface water and vegetation impacts on either side of the replacement structure shall be limited to the greater of 25 feet beyond the structure, or 25 feet beyond the toe of the slope of the structure's approach embankment. [Where the use of a crane is necessary to conduct a maintenance activity, total impacts shall not exceed 50 feet on either side of the structure or approach embankment]. In either case, total impacts, including the structure, shall not exceed 200 feet [except for stabilization projects]. Width shall be measured at the structure's narrowest point as it crosses the waterbody, and be measured parallel to stream flow.

2. Culvert replacement:
   a. This Certification shall only authorize minor deviations from the existing structure's centerline and minor deviations in culvert dimensions, unless these deviations are necessary to follow current safety standards.

3. Bridge Replacement:
   a. This Certification shall only authorize minor deviations from the existing structure's centerline, unless these deviations are necessary to follow current safety standards.
   b. Bridge replacements shall not result in additional lanes unless necessary to follow current safety standards.

4. Maintenance or repair of existing fills (stabilization projects):
   a. Impacts from maintenance or repair of existing fills shall not exceed the dimensions of the fill prior to the damage; and
   b. This nationwide shall not authorize the replacement of existing structures that are open to the flow of water with structures that are not open to the flow of water.

5. For replacement vertical bulkheads, the following conditions apply:
   a. For ship channels and harbors adjacent to federal navigation channels within the following harbors: Sandusky Harbor, Huron Harbor, Vermilion Harbor, Lorain Harbor, Conneaut Harbor, Port Clinton Harbor, Rocky River Harbor, Cleveland Harbor, Fairport Harbor, Ashtabula Harbor, and Toledo Harbor, 1,000 feet of existing vertical bulkheads may be replaced if recessed areas for aquatic habitat, or other aquatic habitat improvements, are incorporated within the design and construction of the replacement vertical bulkhead;
   b. For all other areas, except Lake Erie, Lake Erie Islands, or Sandusky Bay, up to 1,000 feet of existing vertical bulkheads may be replaced. Toe stone shall be placed at the base of these

replacement vertical bulkheads except in areas where the shoreline is composed of bedrock and slopes are predominately greater than 75 percent;

c. Replacement vertical bulkheads are not to be placed more than one foot waterward of the intersection of the ordinary high water level of the waterbody and the existing shoreline;

d. Minor dredging necessary for the installation of the replacement vertical bulkhead is authorized;

e. Placement of fill between the replacement vertical bulkhead and existing shoreline is authorized; and

f. Toe stone shall be placed at the base of these replacement vertical bulkheads except in areas where the original shoreline is composed of bedrock and slopes are predominately greater than 75 percent or where the placement of toe stone would interfere with shipping activity. When required, toe stone shall be placed at an average rate of one-third the total height of the replacement vertical bulkhead at a 2:1 slope.

6. Removal of accumulated sediment:

a. Removal of accumulated sediment shall occur only once per year, except in cases of emergency situations which threaten life of property.

B. Removal of accumulated sediments shall be limited to low-flow conditions whenever practicable, except in cases of emergency situations which threaten life or property.

NATIONWIDE PERMIT #14 - LINEAR TRANSPORTATION PROJECTS

Activities required for the construction, expansion, modification, or improvement of linear transportation crossings (e.g., highways, railways, trails, airport runways, and taxiways) in waters of the US, including wetlands, if the activity meets the following criteria:

a. This NWP is subject to the following acreage limits:
   (1) For linear transportation projects in non-tidal waters, provided the discharge does not cause the loss of greater than 1/2-acre of waters of the US; or
   (2) For linear transportation projects in tidal waters, provided the discharge does not cause the loss of greater than 1/3-acre of waters of the US.

b. The permittee must notify the District Engineer in accordance with General Condition 13 if any of the following criteria are met:
   (1) The discharge causes the loss of greater than 1/10-acre of waters of the US; or
   (2) There is a discharge in a special aquatic site, including wetlands;

c. The notification must include a compensatory mitigation proposal to offset permanent losses of waters of the US to ensure that those losses result only in minimal adverse effects to the aquatic environment and a statement describing how temporary losses will be minimized to the maximum extent practicable;

d. For discharges in special aquatic sites, including wetlands, and stream riffle and pool complexes, the notification must include a delineation of the affected special aquatic

sites;

e. The width of the fill is limited to the minimum necessary for the crossing;

f. This permit does not authorize stream channelization, and the authorized activities must not cause more than minimal changes to the hydraulic flow characteristics of the stream, increase flooding, or cause morethan minimal degradation of water quality of any stream (see General Conditions 9 and 21);

g. This permit cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars; and

h. The crossing is a single and complete project for crossing waters of the US. Where a road segment (i.e., the shortest segment of a road with independent utility that is part of a larger project) has multiple crossings of streams (several single and complete projects) the Corps will consider whether it should use its discretionary authority to require an Individual Permit. **(Sections 10 and 404)**

Note: Some discharges for the construction of farm roads, forest roads, or temporary roads for moving mining equipment may be eligible for an exemption from the need for a Section 404 permit (see 33 CFR 323.4).

Nationwide 14 Specific Regional Conditions:

i. Notification is required for activities in Section 10 waters.

ii. Notification is required for all perennial and intermittent stream impacts greater than 200 feet and all ephemeral stream impacts greater than 300 feet.

WATER QUALITY CERTIFICATION

Pursuant to Section 401 of the Clean Water Act, the Ohio Environmental Protection Agency hereby certifies that activities authorized by these Permits, undertaken in accordance with all of the special and general conditions listed below, will comply with the applicable provisions of the Clean Water Act and applicable Ohio water quality standards. Those NWPs with no special Water Quality Certification (WQC) conditions remain subject to general WQC conditions unless otherwise indicated (Reference 1 below).

Water Quality Certification – Special Conditions:

The Ohio State Certification General Limitations and Conditions apply to this nationwide permit.

Ohio State Certification Special Conditions and Limitations:

1) Total surface water and vegetation impacts on either side of the structure shall be limited to the greater of 25 feet beyond the structure, or 25 feet beyond the toe of the slope of the structure's approach embankment. [Where the use of a crane is necessary to construct a linear transportation project, total width of the impacts

shall not exceed 50 feet on either side of the structure or approach embankment]. In either case, total impacts, including the structure, shall not exceed 200 feet. Width shall be measured at the structure's narrowest point as it crosses the waterbody, and be measured parallel to stream flow.

2) Stream crossings shall not exceed a total of three (3) per stream mile per stream.

3) Culverts [except for ephemeral streams]

a) At least the lower 10% of all culvert bottoms shall be buried below the existing stream grade. Hydraulic design shall be based upon the remaining open portion of the culvert.

b) Additional flood plain culverts shall be installed where the flood prone area is greater than twice the width of the stream at Ordinary High Water Mark (OHWM).

NATIONWIDE PERMIT CONDITIONS

GENERAL CONDITIONS:

The following general conditions must be followed in order for any authorization by a NWP to be valid:

1. Navigation. No activity may cause more than a minimal adverse effect on navigation.

2. Proper Maintenance. Any structure or fill authorized shall be properly maintained, including maintenance to ensure public safety.

3. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

4. Aquatic Life Movements. No activity may substantially disrupt the necessary life-cycle movements of those species of aquatic life indigenous to the waterbody, including those species which normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

5. Equipment. Heavy equipment working in wetlands must be placed on mats, or other measures must be taken to minimize soil disturbance.

6. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions which may have been added by the division engineer (see 33 CFR 330.4(e) and with any case specific conditions added by the Corps or by the State or tribe in its section 401 Water

Quality Certification and Coastal Zone management Act consistency determination.

7. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System; or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status; unless the appropriate Federal agency, with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation, or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

8. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

9. Water Quality.

(a) In certain States and tribal lands an individual Section 401 water quality certification must be obtained or waived (see 33 CFR 330.4(c)).

(b) For NWPs 12, 14, 17, 18, 32, 39, 40, 42, 43, and 44, where the State or tribal 401 certification (either generically or individually) does not require or approve water quality management measures, the permittee must provide water quality management measures that will ensure that the authorized work does not result in more than minimal degradation of water quality (or the Corps determines that compliance with state or local standards, where applicable, will ensure no more than minimal adverse effect on water quality). An important component of water quality management includes stormwater management that minimizes degradation of the downstream aquatic system, including water quality (refer to General Condition 21 for stormwater management requirements). Another important component of water quality management is the establishment and maintenance of vegetated buffers next to open waters, including streams (refer to General Condition 19 for vegetated buffer requirements for the NWPs). This condition is only applicable to projects that have the potential to affect water quality. While appropriate measures must be taken, in most cases it is not necessary to conduct detailed studies to identify such measures or to require monitoring.

10. Coastal Zone Management. In certain states, an individual state coastal zone management consistency concurrence must be obtained or waived (see Section 330.4(d)).

11. Endangered Species.

(a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which is likely to destroy or adversely modify the critical habitat of such species. Non-federal permittees shall notify the District Engineer if any listed species or critical habitat might be affected or is in the vicinity of the project, or is located in the designated critical habitat and shall not begin work on the activity until notified by the District Engineer that the requirements of the ESA have been satisfied and

that the activity is authorized. For activities that may affect Federally-listed endangered or threatened species or designated critical habitat, the notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. As a result of formal or informal consultation with the FWS or NMFS, the District Engineer may add species-specific regional endangered species conditions to the NWPs.

(b) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS or the National Marine Fisheries Service (NMFS), both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS and NMFS or their World Wide Web pages at http://www.fws.gov/r9endspp/endspp.html and http://www.nmfs.noaa.gov/prot_res/overview/es.html, respectively.

12. Historic properties. No activity which may affect historic properties listed, or eligible for listing, in the National Register of Historic Places is authorized, until the District Engineer has complied with the provisions of 33 CFR Part 325, Appendix C. The prospective permittee must notify the District Engineer if the authorized activity may affect any historic properties listed, determined to be eligible, or which the prospective permittee has reason to believe may be eligible for listing on the National Register of Historic Places, and shall not begin the activity until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historic resources can be obtained from the State Historic Preservation Office and the National Register of Historic Places (see 33 CFR 330.4(g)). For activities that may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the notification must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.

13. Notification.

(a) Timing: where required by the terms of the NWP, the prospective permittee must notify the District Engineer with a preconstruction notification (PCN) as early as possible. The District Engineer must determine if the PCN is complete within 30 days of the date of receipt and can request the additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the District Engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the District Engineer. The prospective permittee shall not begin the activity:

(1) Until notified in writing by the District Engineer that the activity may proceed under the NWP with any special conditions imposed by the District or Division Engineer; or

(2) If notified in writing by the District or Division Engineer that an individual

permit is required; or

(3) Unless 45 days have passed from the District Engineer's receipt of the complete notification and the prospective permittee has not received written notice from the District or Division Engineer. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Notification: The notification must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) Brief description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), Regional General Permit(s), or Individual Permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP (Sketches usually clarify the project and when provided result in a quicker decision.);

(4) For NWPs 7, 12, 14, 18, 21, 34, 38, 39, 40, 41, 42, and 43, the PCN must also include a delineation of affected special aquatic sites, including wetlands, vegetated shallows (e.g., submerged aquatic vegetation, seagrass beds), and riffle and pool complexes (see paragraph 13(f));

(5) For NWP 7 (Outfall Structures and Maintenance), the PCN must include information regarding the original design capacities and configurations of those areas of the facility where maintenance dredging or excavation is proposed.

(6) For NWP 14 (Linear Transportation Crossings), the PCN must include a compensatory mitigation proposal to offset permanent losses of waters of the US and a statement describing how temporary losses of waters of the US will be minimized to the maximum extent practicable;

(7) For NWP 21 (Surface Coal Mining Activities), the PCN must include an Office of Surface Mining (OSM) or state-approved mitigation plan, if applicable. To be authorized by this NWP, the District Engineer must determine that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are minimal both individually and cumulatively and must notify the project sponsor of this determination in writing;

(8) For NWP 27 (Stream and Wetland Restoration Activities), the PCN must include documentation of the prior condition of the site that will be reverted by the permittee.

(9) For NWP 29 (Single-Family Housing), the PCN must also include:

(i) Any past use of this NWP by the individual permittee and/or the permittee's spouse;

(ii) A statement that the single-family housing activity is for a personal residence of the permittee;

(iii) A description of the entire parcel, including its size, and a delineation

of wetlands. For the purpose of this NWP, parcels of land measuring 1/4 acre or less will not require a formal on-site delineation. However, the applicant shall provide an indication of where the wetlands are and the amount of wetlands that exists on the property. For parcels greater than 1/4 acre in size, formal wetland delineation must be prepared in accordance with the current method required by the Corps. (See paragraph 13(f));

(iv) A written description of all land (including, if available, legal descriptions) owned by the prospective permittee and/or the prospective permittee's spouse, within a one mile radius of the parcel, in any form of ownership (including any land owned as a partner, corporation, joint tenant, co-tenant, or as a tenant-by-the-entirety) and any land on which a purchase and sale agreement or other contract for sale or purchase has been executed;

(10) For NWP 31 (Maintenance of Existing Flood Control Facilities), the prospective permittee must either notify the District Engineer with a PCN prior to each maintenance activity or submit a five year (or less) maintenance plan. In addition, the PCN must include all of the following:

(i) Sufficient baseline information identifying the approved channel depths and configurations and existing facilities. Minor deviations are authorized, provided that the approved flood control protection or drainage is not increased;

(ii) A delineation of any affected special aquatic sites, including wetlands; and,

(iii) Location of the dredged material disposal site;

(11) For NWP 33 (Temporary Construction, Access, and Dewatering), the PCN must also include a restoration plan of reasonable measures to avoid and minimize adverse effects to aquatic resources;

(12) For NWPs 39, 43, and 44, the PCN must also include a written statement to the District Engineer explaining how avoidance and minimization for losses of waters of the US were achieved on the project site;

(13) For NWP 39 and NWP 42, the PCN must include a compensatory mitigation proposal to offset losses of waters of the US or justification explaining why compensatory mitigation should not be required. For discharges that cause the loss of greater than 300 linear feet of an intermittent stream bed, to be authorized, the District Engineer must determine that the activity complies with the other terms and conditions of the NWP, determine adverse environmental effects are minimal both individually and cumulatively, and waive the limitation on stream impacts in writing before the permittee may proceed;

(14) For NWP 40 (Agricultural Activities), the PCN must include a compensatory mitigation proposal to offset losses of waters of the US. This NWP does not authorize the relocation of greater than 300 linear-feet of existing serviceable drainage ditches constructed in non-tidal streams unless, for drainage ditches constructed in intermittent non-tidal streams, the District Engineer, waives this criterion in writing, and the District Engineer has determined that the project

complies with all terms and conditions of this NWP, and that any adverse impacts of the project on the aquatic environment are minimal, both individually and cumulatively;

(15) For NWP 43 (Stormwater Management Facilities), the PCN must include, for the construction of new stormwater management facilities, a maintenance plan (in accordance with state and local requirements, if applicable) and a compensatory mitigation proposal to offset losses of waters of the US. For discharges that cause the loss of greater than 300 linear feet of an intermittent stream bed, to be authorized, the District Engineer must determine that the activity complies with the other terms and conditions of the NWP, determine adverse environmental effects are minimal both individually and cumulatively, and waive the limitation on stream impacts in writing before the permittee may proceed;

(16) For NWP 44 (Mining Activities), the PCN must include a description of all waters of the US adversely affected by the project, a description of measures taken to minimize adverse effects to waters of the US, a description of measures taken to comply with the criteria of the NWP, and a reclamation plan (for all aggregate mining activities in isolated waters and non-tidal wetlands adjacent to headwaters and any hard rock/mineral mining activities);

(17) For activities that may adversely affect Federally-listed endangered or threatened species, the PCN must include the name(s) of those endangered or threatened species that may be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work; and

(18) For activities that may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.

(c) Form of Notification: The standard Individual Permit application form (Form ENG 4345) may be used as the notification but must clearly indicate that it is a PCN and must include all of the information required in (b) (1)-(18) of General Condition 13. A letter containing the requisite information may also be used.

(d) District Engineer's Decision: In reviewing the PCN for the proposed activity, the District Engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. The prospective permittee may submit a proposed mitigation plan with the PCN to expedite the process. The District Engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. If the District Engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the District Engineer will notify the permittee and include any conditions the District Engineer deems necessary. The District Engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee is required to submit a

compensatory mitigation proposal with the PCN, the proposal may be either conceptual or detailed. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the District Engineer will expeditiously review the proposed mitigation plan. The District Engineer must review the plan within 45 days of receiving a complete PCN and determine whether the conceptual or specific proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the District Engineer to be minimal, the District Engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP. If the District Engineer determines that the adverse effects of the proposed work are more than minimal, then the District Engineer will notify the applicant either:

(1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an Individual Permit;
(2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation proposal that would reduce the adverse effects on the aquatic environment to the minimal level; or
(3) that the project is authorized under the NWP with specific modifications or conditions.

Where the District Engineer determines that mitigation is required in order to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation proposal that would reduce the adverse effects on the aquatic environment to the minimal level. When conceptual mitigation is included, or a mitgation plan is required under item (2) above, no work in waters of the US will occur until the District Engineer has approved a specific mitigation plan.

(e) Agency Coordination: The District Engineer will consider any comments from Federal and State agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level. For activities requiring notification to the District Engineer that result in the loss of greater than ½ acre of waters of the US, the District Engineer will provide immediately (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy to the appropriate Federal or state offices (USFWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the District Engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the District Engineer will wait an additional 15 calendar days before making a decision on the notification. The District Engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The District Engineer will indicate in the administrative record associated with each notification that the resource agencies' concerns were considered. As required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act, the District Engineer will provide a

response to NMFS within 30 days of receipt of any Essential Fish Habitat conservation recommendations. Applicants are encouraged to provide the Corps multiple copies of notifications to expedite agency notification.

(f) Wetland Delineations: Wetland Delineations must be prepared in accordance with the current method required by the Corps (For NWP 29 see paragraph (b)(9)(iii) for parcels less than 1/4-acre in size). The permittee may ask the Corps to delineate the special aquatic site. There may be some delay if the Corps does the delineation. Furthermore, the 45-day period will not start until the wetland delineation has been completed and submitted to the Corps, where appropriate.

14. Compliance Certification. Every permittee who has received NWP verification from the Corps will submit a signed certification regarding the completed work and any required mitigation. The certification will be forwarded by the Corps with the authorization letter and will include:

(a) A statement that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions;
(b) A statement that any required mitigation was completed in accordance with the permit conditions; and
(c) The signature of the permittee certifying the completion of the work and mitigation .

15. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the US authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit (e.g. if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the US for the total project cannot exceed 1/3-acre).

16. Water Supply Intakes. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may occur in the proximity of a public water supply intake except where the activity is for repair of the public water supply intake structures or adjacent bank stabilization.

17. Shellfish Beds. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4.

18. Suitable Material. No activity, including structures and work in navigable waters of the US discharges of dredged or fill material, may consist of unsuitable material (e.g. trash, debris, car bodies, asphalt, etc.) and material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the CWA).

19. Mitigation. The District Engineer will consider the factors discussed below when determining the acceptability of appropriate and practicable mitigation necessary to offset

adverse affects on the aquatic environment that are more than minimal.

(a) The project must be designed and constructed to avoid and minimize adverse effects to waters of the US to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland impacts requiring a PCN, unless the District Engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. Consistent with National policy, the District Engineer will establish a preference for restoration of wetlands as compensatory mitigation, with preservation used only in exceptional circumstances.

(d) Compensatory mitigation (i.e., replacement or substitution of aquatic resources for those impacted) will not be used to increase the acreage losses allowed by the acreage limits of some of the NWPs. For example, 1/4-acre of wetlands cannot be created to change a 3/4-acre loss of wetlands to a ½-acre loss associated with NWP 39 verification. However, ½-acre of created wetlands can be used to reduce the impacts of a ½-acre loss of wetlands to the minimum impact level in order to meet the minimal impact requirement associated with NWPs.

(e) To be practicable, the mitigation must be available and capable of being done considering costs, existing technology, and logistics in light of the overall project purposes. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferably in the same watershed;

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., easements, deed restrictions) of vegetated buffers to open waters. In many cases, vegetated buffers will be the only compensatory mitigation required. Vegetated buffers should consist of native species. The width of the vegetated buffers required will address documented water quality or aquatic habitat loss concerns. Normally, the vegetated buffer will be 25 to 50 feet wide on each side of the stream, but the District Engineer may require slightly wider vegetated buffers to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the Corps will determine the appropriate compensatory mitigation (e.g., stream buffers or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where vegetated buffers are determined to be the most appropriate form of compensatory mitigation, the District Engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland impacts.

(g) Compensatory mitigation proposals submitted with the "notification" may be either conceptual or detailed. If conceptual plans are approved under the verification, then the Corps will condition the verification to require detailed plans be submitted and approved by the Corps prior to construction of the authorized activity in waters of the US.

(h) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases that require compensatory

mitigation, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

20. Spawning Areas. Activities, including structures and work in navigable waters of the US or discharges of dredged or fill material, in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., excavate, fill, or smother downstream by substantial turbidity) of an important spawning area are not authorized.

21. Management of Water Flows. To the maximum extent practicable, the activity must be designed to maintain preconstruction downstream flow conditions (e.g., location, capacity, and flow rates). Furthermore, the activity must not permanently restrict or impede the passage of normal or expected high flows (unless the primary purpose of the fill is to impound waters) and the structure or discharge of dredged or fill material must withstand expected high flows. The activity must, to the maximum extent practicable, provide for retaining excess flows from the site, provide for maintaining surface flow rates from the site similar to preconstruction conditions, and provide for not increasing water flows from the project site, relocating water, or redirecting water flow beyond preconstruction conditions. Stream channelizing will be reduced to the minimal amount necessary, and the activity must, to the maximum extent practicable, reduce adverse effects such as flooding or erosion downstream and upstream of the project site, unless the activity is part of a larger system designed to manage water flows. In most cases, it will not be a requirement to conduct detailed studies and monitoring of water flow. This condition is only applicable to projects that have the potential to affect waterflows. While appropriate measures must be taken, it is not necessary to conduct detailed studies to identify such measures or require monitoring to ensure their effectiveness. Normally, the Corps will defer to state and local authorities regarding management of water flow.

22. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to the acceleration of the passage of water, and/or the restricting its flow shall be minimized to the maximum extent practicable. This includes structures and work in navigable waters of the US, or discharges of dredged or fill material.

23. Waterfowl Breeding Areas. Activities, including structures and work in navigable waters of the US or discharges of dredged or fill material, into breeding areas for migratory waterfowl must be avoided to the maximum extent practicable.

24. Removal of Temporary Fills. Any temporary fills must be removed in their entirety and the affected areas returned to their preexisting elevation.

25. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, National Wild and Scenic Rivers, critical habitat for Federally listed threatened and endangered species, coral reefs, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the District

Engineer after notice and opportunity for public comment. The District Engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Except as noted below, discharges of dredged or fill material into waters of the US are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, and 44 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. Discharges of dredged or fill materials into waters of the US may be authorized by the above NWPs in National Wild and Scenic Rivers if the activity complies with General Condition 7. Further, such discharges may be authorized in designated critical habitat for Federally listed threatened or endangered species if the activity complies with General Condition 11 and the USFWS or the NMFS has concurred in a determination of compliance with this condition.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with General Condition 13, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The District Engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

26. Fills Within 100-Year Floodplains. For purposes of this General Condition, 100-year floodplains will be identified through the existing Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps or FEMA-approved local floodplain maps.

(a) Discharges in Floodplain; Below Headwaters. Discharges of dredged or fill material into waters of the US within the mapped 100-year floodplain, below headwaters (i.e., five cfs), resulting in permanent above-grade fills, are not authorized by NWPs 39, 40, 42, 43, and 44.

(b) Discharges in Floodway; Above Headwaters. Discharges of dredged or fill material into waters of the US within the FEMA or locally mapped floodway, resulting in permanent above-grade fills, are not authorized by NWPs 39, 40, 42, and 44.

(c) The permittee must comply with any applicable FEMA-approved state or local floodplain management requirements.

27. Construction Period. For activities that have not been verified by the Corps and the project was commenced or under contract to commence by the expiration date of the NWP (or modification or revocation date), the work must be completed within 12-months after such date (including any modification that affects the project). For activities that have been verified and the project was commenced or under contract to commence within the verification period, the work must be completed by the date determined by the Corps. For projects that have been verified by the Corps, an extension of a Corps approved completion date may be requested. This request must be submitted at least one month before the previously approved completion date.

FURTHER INFORMATION

1. District Engineers have authority to determine if an activity complies with the terms and

conditions of an NWP.
2. NWPs do not obviate the need to obtain other Federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

DEFINITIONS

Best Management Practices (BMPs): BMPs are policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural. A BMP policy may affect the limits on a development.

Compensatory Mitigation: For purposes of Section 10/404, compensatory mitigation is the restoration, creation, enhancement, or in exceptional circumstances, preservation of wetlands and/or other aquatic resources for the purpose of compensating for unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Creation: The establishment of a wetland or other aquatic resource where one did not formerly exist.

Enhancement: Activities conducted in existing wetlands or other aquatic resources that increase one or more aquatic functions.

Ephemeral Stream: An ephemeral stream has flowing water only during and for a short duration after, precipitation events in a typical year. Ephemeral streambeds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Farm Tract: A unit of contiguous land under one ownership that is operated as a farm or part of a farm.

Flood Fringe: That portion of the 100-year floodplain outside of the floodway (often referred to as "floodway fringe").

Floodway: The area regulated by Federal, state, or local requirements to provide for the discharge of the base flood so the cumulative increase in water surface elevation is no more than a designated amount (not to exceed one foot as set by the National Flood Insurance Program) within the 100-year floodplain.

Independent Utility: A test to determine what constitutes a single and complete project in the Corps regulatory program. A project is considered to have independent utility if it would be

constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Intermittent Stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water from stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of Waters of the US: Waters of the US that include the filled area and other waters that are permanently adversely affected by flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent above-grade, at-grade, or below-grade fills that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the US is the threshold measurement of the impact to existing waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and values. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Impacts to ephemeral streams are not included in the linear foot measurement of loss of stream bed for the purpose of determining compliance with the linear foot limits of NWPs 39, 40, 42, and 43. Water of the US temporarily filled, flooded, excavated, or drained, but restored to preconstruction contours and elevations after construction, are not included in the measurement of loss of waters of the US.

Non-tidal Wetland: A non-tidal wetland is a wetland (i.e., a water of the US) that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open Water: An area that, during a year with normal patterns of precipitation, has standing or flowing water for sufficient duration to establish an ordinary high water mark. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. The term "open water" includes rivers, streams, lakes, and ponds. For the purposes of the NWPs, this term does not include ephemeral waters.

Perennial Stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Permanent Above-grade Fill: A discharge of dredged or fill material into waters of the US, including wetlands, that results in a substantial increase in ground elevation and permanently converts part or all of the waterbody to dry land. Structural fills authorized by NWPs 3, 25, 36,

etc. are not included.

Preservation: The protection of ecologically important wetlands or other aquatic resources in perpetuity through the implementation of appropriate legal and physical mechanisms. Preservation may include protection of upland areas adjacent to wetlands as necessary to ensure protection and/or enhancement of the overall aquatic ecosystem.

Restoration: Re-establishment of wetland and/or other aquatic resource characteristics and function(s) at a site where they have ceased to exist, or exist in a substantially degraded state.

Riffle and Pool Complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Single and Complete Project: The term single and complete project is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers (see definition of independent utility). For linear projects, the single and complete project (i.e., a single and complete crossing) will apply to each crossing of a separate water of the US (i.e., a single waterbody) at that location. An exception is for linear projects crossing a single waterbody several times at separate and distant locations: each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies.

Stormwater Management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater Management Facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and BMPs, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream Bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream Channelization: The manipulation of a stream channel to increase the rate of water flow through the stream channel. Manipulation may include deepening, widening, straightening, armoring, or other activities that change the stream cross-section or other aspects of stream channel geometry to increase the rate of water flow through the stream channel. A channelized stream remains a water of the US, despite the modifications to increase the rate of water flow.

Tidal Wetland: A tidal wetland is a wetland (i.e., water of the US) that is inundated by tidal waters. The definition of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line (i.e., spring high tide line) and are inundated by tidal waters two times per lunar month, during spring high tides.

Vegetated Buffer: A vegetated upland or wetland area next to rivers, streams, lakes, or other open waters which separates the open water from developed areas, including agricultural land. Vegetated buffers provide a variety of aquatic habitat functions and values (e.g., aquatic habitat for fish and other aquatic organisms, moderation of water temperature changes, and detritus for aquatic food webs) and help improve or maintain local water quality. A vegetated buffer can be established by maintaining an existing vegetated area or planting native trees, shrubs, and herbaceous plants on land next to open-waters. Mowed lawns are not considered vegetated buffers because they provide little or no aquatic habitat functions and values. The establishment and maintenance of vegetated buffers is a method of compensatory mitigation that can be used in conjunction with te restoration, creation, enhancement, or preservation of aquatic habitats to ensure that activities authorized by NWPs result in minimal adverse effects to the aquatic environment. (See General Condition 19.)

Vegetated Shallows: Vegetated shallows are special aquatic sties under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: A waterbody is any area that in a normal year has water flowing or standing above ground to the extent that evidence of an ordinary high water mark is established. Wetlands contiguous to the waterbody are considered part of the waterbody.

REGIONAL GENERAL CONDITIONS

1. Notifications for all Nationwide permits should include a location map (USGS topographical map) and project drawings on 8.5" x 11" paper.

2. Nationwide Permits shall not authorize any activity which impact bogs and/or fens.

3. No Nationwide permit may be used in Lake Erie for purposes of diverting water from the Great Lakes.

4. In order to determine if a project meets the terms and conditions of the Ohio EPA's 401 water quality certification, two copies of the following information is necessary:

(a) All wetland delineations must include the latest approved version of the Ohio Rapid Assessment Method (ORAM) for wetland evaluation, long form. (This will assist OEPA in determining the category of wetland the applicant proposes to impact.)

(b) Photographs of the wetland.

NOTE: This information is in addition to the required information listed under General Condition 13 (Notification) of the NWP.

5. Notification is required for all work in the following designated Critical Resource Waters:

Special Habitat water of Lake Erie: Special habitat waters of Lake Erie including the shoreline, off shore islands, rock outcrops, and adjacent waters within the boundaries defined as 82 22' 30" West Longitude, 83 07' 30" West Longitude, 41 33' 00" North Latitude and 42 00' 00" North Latitude.

Piping Plover Critical Habitat: In Ohio, two areas have been designated critical habitat for the piping plover (Charadrius melodus) and are defined as lands 0.62 miles inland from normal high water line. Unit OH-1, extends from the mouth of Sawmill Creek to the western property boundary of Sheldon Marsh State Natural Area, Erie County, encompassing approximately 2.0 miles. Unit OH-2, extends from the eastern boundary line of Headland Dunes Nature Preserve to the western boundary of the Nature Preserve and Headland Dunes State Park, Lake County, encompassing approximately 0.5 mile.

Big and Little Darby Creeks (National Wild and Scenic River System): Big Darby Creek from Champaign-Union County line downstream to the Conrail railroad trestle and from the confluence with the Little Darby Creek downstream to the Scioto River. Little Darby Creek from the Lafayette-Plain City Road Bridge downstream to within 0.8 mile from the confluence with Big Darby Creek. Total designation is approximately 82 miles.

Little Beaver Creek (National Wild and Scenic River System): Little Beaver Creek main stem, from the confluence of West Fork with Middle Fork near Williamsport to mouth; North Fork from confluence of Brush Run and North Fork to confluence of North Fork with main stem at Fredericktown; Middle Fork from vicinity of Co. Rd. 901 (Elkton Road) bridge crossing to confluence of Middle Fork with West Fork near Williamsport; West Form from vicinity of Co. Rd. 914 (Y-Camp Road) bridge crossing east to confluence of West Fork with Middle Fork near Williamsport. Total designation is 33 miles

Little Miami River: (Scenic component of the National System from Clifton to Foster) The portion from Foster to the Ohio River was designated a Recreational component of the National System. Total designation is 92 miles.

6. Notification is required for all activities in state Wild and Scenic Rivers (see list below). The following are **State Wild and Scenic Rivers**:

Little Miami River - Clermont County line at Loveland to headwaters, including North Fork, Clermont County line at Loveland to confluence with East Fork and from the confluence with East Fork to Ohio River. Miles designated (approximate): 105

Sandusky River - US Rt. 30 in Upper Sandusky to Roger Young Memorial Park in Fremont. Miles designated (approximate): 65

Olentangy River - Delaware Dam to Old Wilson Road in Worthington. Miles designated (approximate): 22

Little Beaver Creek - Wild segments - West Fork from 1/4 mile downstream from Twp. Rd. 914 to confluence with Middle Fork. North Fork from Twp. Rd. 952 to confluence with Little Beaver Creek. Little Beaver Creek from confluence of West and Middle Forks downstream to 3/4 mile north of Grimm's Bridge. Scenic segments - North Fork from Ohio-Pennsylvania line downstream to Jackman Road. Middle Fork from Elkton Rd. (Twp. Rd. 901) downstream to confluence with West Fork. Little Beaver Creek from 3/4 mile north of Grimm's Bridge downstream to the Ohio-Pennsylvania line. Miles designated (approximate): Wild 20, Scenic 16

Grand River - Wild segment - from Harpersfield covered bridge downstream to Norfolk and Western Railroad trestle south of Painesville. Scenic segment - from St. Rt. 322 bridge in Ashtabula County downstream to Harpersfield covered bridge. Miles designated (approximate): Scenic 33, Wild 23

Upper Cuyagoga River - Troy-Burton Township line in Geauga County to US Rt. 14. Miles designated (approximate): 25

Maumee River - Scenic segment - Ohio-Indiana line to St. Rt. 24 bridge west of Defiance. Recreational segment - St. Rt. 24 bridge west of Defiance to US Rt. 25 bridge near Perrysburg. Miles designated (approximate): Scenic 43, Recreational 53

Stillwater River System - Recreational segment - Englewood dam to confluence with Great Miami River. Scenic segments - Stillwater River from Riffle Road bridge in Darke Co. to Englewood dam. Greenville Creek from the Ohio-Indiana state line to the confluence with the Stillwater. Miles designated (approximate): Scenic 83, Recreational 10

Chagrin River - Aurora Branch from St. Rt. 82 bridge downstream to confluence with Chagrin. Chagrin River from confluence with Aurora Branch downstream to St. Rt. 6 bridge. East Branch from Heath Road bridge downstream to confluence with Chagrin. Miles designated (approximate): 49

Big and Little Darby Creeks - Big Darby Creek from the Champaign-Union County line downstream to the U.S. Rt. 40 Bridge, from the northern boundary of Battelle-Darby Creek Metro Park to the confluence with the Little Darby Creek downstream to the Scioto River. Little Darby Creek from the Lafayette-Plain City Road Bridge downstream to the confluence with Big Darby Creek. Miles designated (approximate): 84

Kokosing River - Knox/Morrow County line to confluence with Mohican River. North Branch of Kokosing from confluence with East Branch downstream to confluence with main stem. Miles designated (approximate): 48

OHIO STATE CERTIFICATION GENERAL LIMITATIONS AND CONDITIONS (WATER QUALITY CERTIFICATION)

1. Streams

a) Temporary or permanent impacts to intermittent and perennial streams for any single and complete project are limited to a maximum of two hundred (200) linear feet [except for NWPs 3, 12, 21, 27, and 41];

b) Temporary or permanent impacts to ephemeral streams for any single and complete project are limited to a maximum of three hundred (300) linear feet [except for NWPs 3, 12, 21, 27, and 41];

c) Temporary or permanent impacts to Exceptional Warmwater Habitat (EWH), Cold Water Habitat (CWH), Seasonal Salmonid (SS), or any equivalent designation, or with an antidegradation category of State Resource Water, Superior High Quality Water (except as it applies to Lake Erie), Outstanding National Resource Waters, or Outstanding High Quality Waters are prohibited [except for NWP 3 and maintenance activities covered under NWP 7, 12, and 33];

d) Temporary or permanent impacts to the designated portions of national or state scenic rivers are prohibited [except for NWP 3 and maintenance activities under NWP 12];

e) Stream reconstruction activities shall adhere to natural channel design techniques;

f) Off-site stream or buffer improvements and/or mitigative measures required by the Corps:

i. In order of priority, these measures shall focus on 1) the stream segment being impacted, 2) upstream segments and tributaries, 3) the receiving stream. The

measures should, to the extent practicable, consider the causes and sources of impairment of the stream where the measures would be undertaken if the stream is listed as impaired in the most recent final report submitted to the United States environmental protection agency by the director of Ohio EPA to fulfill the requirements of Section 303(d) of the Clean Water Act. The current list of impaired streams, as of the date of this certification, can be found on the Ohio EPA web site at (Tables 1 through 6):
http://www.epa.state.oh.us/dsw/tmdl/303dnotc.html

ii. If the applicant cannot find appropriate mitigation on streams listed in section a) above, mitigation shall be in the Ohio EPA 8-digit watershed.

g) On-site stream or buffer improvements and/or mitigative measures required by the Corps:

i. Vegetative buffers on both stream banks an appropriate length; and

ii. A minimum width of 25 feet for preservation of existing vegetative buffers; or
iii. A minimum width of 50 feet for re-vegetating buffers cleared during construction.

h) Compensatory mitigation for linear projects (e.g., highways) in streams may be mitigated for by the following, in descending order of practicability:

i. Stream impacts associated with a linear project may be mitigated on-site, defined as within one mile of the linear project, in each Ohio EPA 8-digit watershed as shown in OAC 3745-1-54(F)(2); or
ii. Stream impacts associated with a linear project may be mitigated at a single stream mitigation location or stream mitigation bank (if and when such a bank is established), acceptable to the director, within each Ohio EPA 8-digit watershed in which the impacts occur; or
iii. If no stream mitigation bank, acceptable to the director, is located within the Ohio EPA 8-digit watershed in which the impact occurs, then mitigation may occur in another Ohio EPA 8-digit watershed impacted by the linear project; at a single stream mitigation location, or a stream mitigation bank acceptable to the director; or
iv. In no stream mitigation bank exists within any of the watersheds connected with the linear project, then mitigation should occur within the watershed in which the largest impacts (in terms of area) occur.

2. Wetlands

a) Temporary or permanent impacts to Category 3 wetlands are prohibited.

b) Temporary or permanent impacts to Category 1 and 2 wetlands for any single and complete project are limited to a maximum total of ½ acre [except for NWP 21 & 27].

c) Wetland mitigation shall adhere to the requirements set forth in Ohio EPA's Wetland Water Quality Standards (OAC 3745-1-50 through 54). [In the event that suitable mitigation cannot be located on-site (within one mile) or within the watershed, mitigation may be located outside of the watershed if there are significant ecological reasons to do so].

3. General

a) Impacts shall be measured linearly from upstream to downstream, including the length of stream impoundments, when calculating the total length of stream impacts [except for NWP 12, for which impacts shall be measured bank-to-bank].

b) NWPs cannot be combined to increase any of the aforementioned limitations.

c) Authorization under this Certification does not relieve the permittee from the responsibility of obtaining any other federal, state or local permits, approvals or authorizations required by law including without limitation, National Pollutant Discharge Elimination System (NPDES) permits or Permits to install (PTIs).

d) In order to control pollution of public waters by soil sediment from accelerated stream channel erosion and flood plain erosion caused by accelerated stormwater runoff from development areas, permittees shall comply with Ohio Administrative Code 1501:15-1-05 Stream Channel and Floodplain Erosion, or successor rule, as applicable to the project pursuant to OAC 1501:15-1-02.

e) OAC 1501:15-1-05 states that the peak rates of runoff from an area after development may be no greater than the peak rates of runoff from the same area before development for all twenty-four-hour storms from one to one-hundred-year frequency.

f) Locally required post development stormwater ponds shall incorporate specific design features for water quality such as those listed in Chapter One of the Ohio Department of Natural Resource's *Rainwater and Land Development: Ohio's Standards for Stormwater Management, Land Development and Urban Stream Protection, 2nd Ed. Mecklenburg, Dan. Ohio Department of Natural Resources, Division of Soil and Water Conservation. 1996* (or successor document), to the extent allowed by local stormwater requirements. These features include: infiltration trenches, extended detention, wet pools, forebays, aquatic benches and wetlands, optimum flow length, reverse flow pipe, optimum pool depth, shading and buffer plants, and runoff reuse.

g) The Best Management Practices (BMPs) listed below shall be utilized with all NWPs when applicable.

i. The filling of, and discharge of dredged material into, Category 3 wetlands is prohibited under this permit;
ii. Only suitable material, free of toxic contaminants in other than trace quantities, shall be used as fill material;

iii. The use of asphalt and rubber tires as fill is prohibited under this permit;
iv. All hydric topsoil removed from a trench shall be separated and saved for later placement as the topmost backfill layer when the trench is refilled;
v. The stockpiling of side-cast dredged material in wetlands in excess of three (3) months is prohibited;
vi. The applicant will comply with all requirements for final stabilization of the site contained in applicable NPDES construction stormwater permits for the site;
vii. Vegetated buffer strips extending to the top of both stream banks and beyond as stipulated by the Corps or Ohio EPA, using native tree and shrub species with rapid growth characteristics, shall be planted as soon as practicable after impacting stream channel slopes;
viii. Impacts to surface water buffer vegetation shall be minimized to the maximum extent practicable;

ix. Excavating equipment shall not be placed below the Ordinary High Water Mark (OHWM) of any surface water, except when no other alternative is practicable. When no other alternative is practicable to placing excavating equipment below the OHWM, entry to surface waters shall be through a single point of access per stream bank whenever practicable to minimize disturbance to buffer vegetation;
x. In-stream activities shall not result in the permanent destabilization of the stream banks or stream bed so that aquatic habitat from turbidity, erosion or scouring is minimized;
xi. In-stream work shall be conducted during low-flow conditions whenever practicable in order to minimize adverse impacts to water quality away from the project site, except in cases of emergency situations which threaten life or property;
xii. All dredged material placed at an upland site shall be controlled so that sediment runoff to remaining streams and wetlands is minimized to the maximum extent practicable; and
xiii. Disturbed areas shall be controlled so that sediment runoff to remaining streams and wetlands is minimized to the maximum extent practicable.

INFORMATION ON NATIONWIDE PERMIT VERIFICATION

Verification of the applicability of this Nationwide permit is valid for two years from the date of affirmation unless the Nationwide permit is modified, suspended or revoked. This verification will remain valid for two years if during this two year period the Nationwide permit is reissued without modification or your activity complies with any subsequent permit modification. Please note that if you commence or are under contract to commence this activity in reliance of your permit prior to the date this Nationwide permit is suspended or revoked, or is modified such that your activity no longer complies with the terms and conditions, you have twelve months from the date of permit modification, expiration, or revocation to complete the activity under the present terms and conditions of this permit, unless this permit has been subject

to the provisions of discretionary authority.

It is your responsibility to remain informed of changes to the Nationwide Permit program. A public notice announcing any changes will be issued when they occur. Finally, note that if your activity is not undertaken within the two year period or the project specifications have changed, you must immediately notify this office to determine the need for further approval or reverification.

Possession of this permit does not obviate you of the need to contact all appropriate state and/or local government officials to insure that the project complies with their requirements.