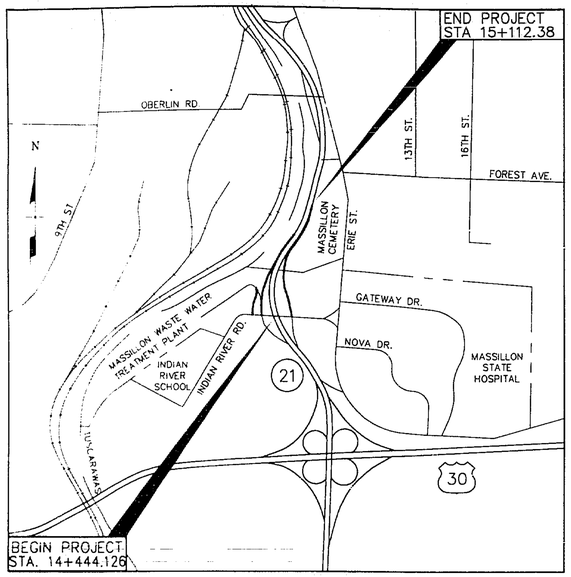
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
STA-21-14.452
CITY OF MASSILLON
STARK COUNTY

MICROFILMED
MAR 19 1998



LOCATION MAP

LATITUDE N 40°46'14" LONGITUDE W 81°31'06"
SCALE IN KILOMETERS
0 0.5 1 2

Portion to be improved
Other Roads

DESIGN DESIGNATION

CURRENT A.D.T. (1995 EST.)	=	14847
DESIGN YEAR A.D.T. (2015)	=	19756
D.H.V.	=	1976
D	=	52%
T (24 hr)	=	12%
DESIGN SPEED	=	90 km/h (S.R. 21)
LEGAL SPEED	=	50 mph (S.R. 21)
FUNCTIONAL CLASSIFICATION	=	URBAN ARTERIAL (S.R. 21)

DESIGN EXCEPTIONS

DESIGN FEATURE	APPROVAL DATE	SHEET NOS.
NONE		

INDEX OF SHEETS

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metric units

PROJECT DESCRIPTION

CONSTRUCTION OF THE SOUTH BOUND OFF-RAMP AND NORTH BOUND ON-RAMP FOR THE STATE ROUTE 21 AND ERIE ST. INTERCHANGE, INCLUDING A REINFORCED CONCRETE RETAINING WALL, EXTENDING A 2743mm C.M.P. CULVERT, INTERCHANGE LIGHTING, AND NECESSARY TRAFFIC CONTROL DEVICES.

PROJECT DESIGNATION STA-21-14.44 APPEARING THROUGHOUT THIS PLAN SHALL BE CONSIDERED TO READ STA-21-14.452

LIMITED ACCESS

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

1995 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 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 SET FORTH ON THE PLANS AND ESTIMATES.

UNDER AUTHORITY OF SECTION 4511.21, DIVISION (1) OF THE REVISED CODE OF OHIO, THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.

APPROVED David R Dreger
DATE 11-26-96 DISTRICT DEPUTY DIRECTOR

APPROVED [signature]
DATE 1-8-97 DIRECTOR, DEPARTMENT OF TRANSPORTATION

APPROVED [signature]
DATE 5/17/96 SERVICE DIRECTOR, CITY OF MASSILLON

FEDERAL PROJECT NO.	PID NO.	STATE PROJECT NO.	RAILROAD INVOLVEMENT
STP-48(23)	11110		NONE

STA-21-14.452

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

STATE OF OHIO
DAVID SCOTT BUCHANAN
48053
REGISTERED
PROFESSIONAL ENGINEER

PLANS PREPARED BY
URS CONSULTANTS INC.
ARCHITECTS ENGINEERS PLANNERS
AKRON COLUMBUS CLEVELAND
D.S. Buchanan
D.S. BUCHANAN REG. ENGINEER No. E 48053

STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS	
BP-2.1M	10/28/94	GR-1.1M	11/30/94	HL-10.12M	5/01/95	MT-95.40M	4/25/94	TC-41.20M	7/01/94	SS 924	6/14/95
BP-2.2M	10/28/94	GR-1.2M	1/3/96	HL-10.31M	3/31/95	RM-1.1M	6/30/95	TC-41.50M	7/01/94	SS 931	7/17/95
BP-3.1M	10/28/94	GR-1.3M	11/30/94	HL-20.11M	3/31/95	RM-4.2M	6/30/95	TC-42.10M	3/31/94	SS 944	12/7/95
BP-6.1M	10/28/94	GR-2.1M	11/30/94	HL-20.13M	5/01/95	RM-4.3M	6/30/95	TC-42.20M	3/31/94		
CB-3.2M	7/12/95	GR-3.1M	11/30/94	HL-20.21M	8/31/94	RM-4.4M	6/30/95	TC-51.11M	9/30/94		
DM-1.1M	6/30/95	GR-3.6M	11/30/94	HL-30.22M	3/31/95	TC-7.65M	2/01/94	TC-51.12M	3/31/94		
DM-4.3M	6/30/95	GR-4.2M	4/21/95	HL-60.21M	3/31/95	TC-21.10M	2/01/94	TC-52.10M	7/29/94		
DM-4.4M	6/30/95	GR-4.3M	11/30/94	HW-2.1M	7/12/95	TC-21.40M	2/01/94	TC-52.20M	7/29/94		
F-2.1M	4/21/95	GR-4.4M	11/30/94	HW-2.2M	7/12/95	TC-22.20M	2/01/94	TC-61.10M	3/31/94		
F-3.3M	4/21/95			MH-1.1M	9/6/95	TC-41.10M	3/31/94	TC-72.20M	9/01/93		
F-3.4M	4/21/95	MC-1	6/13/69	MH-1.2M	9/6/95						

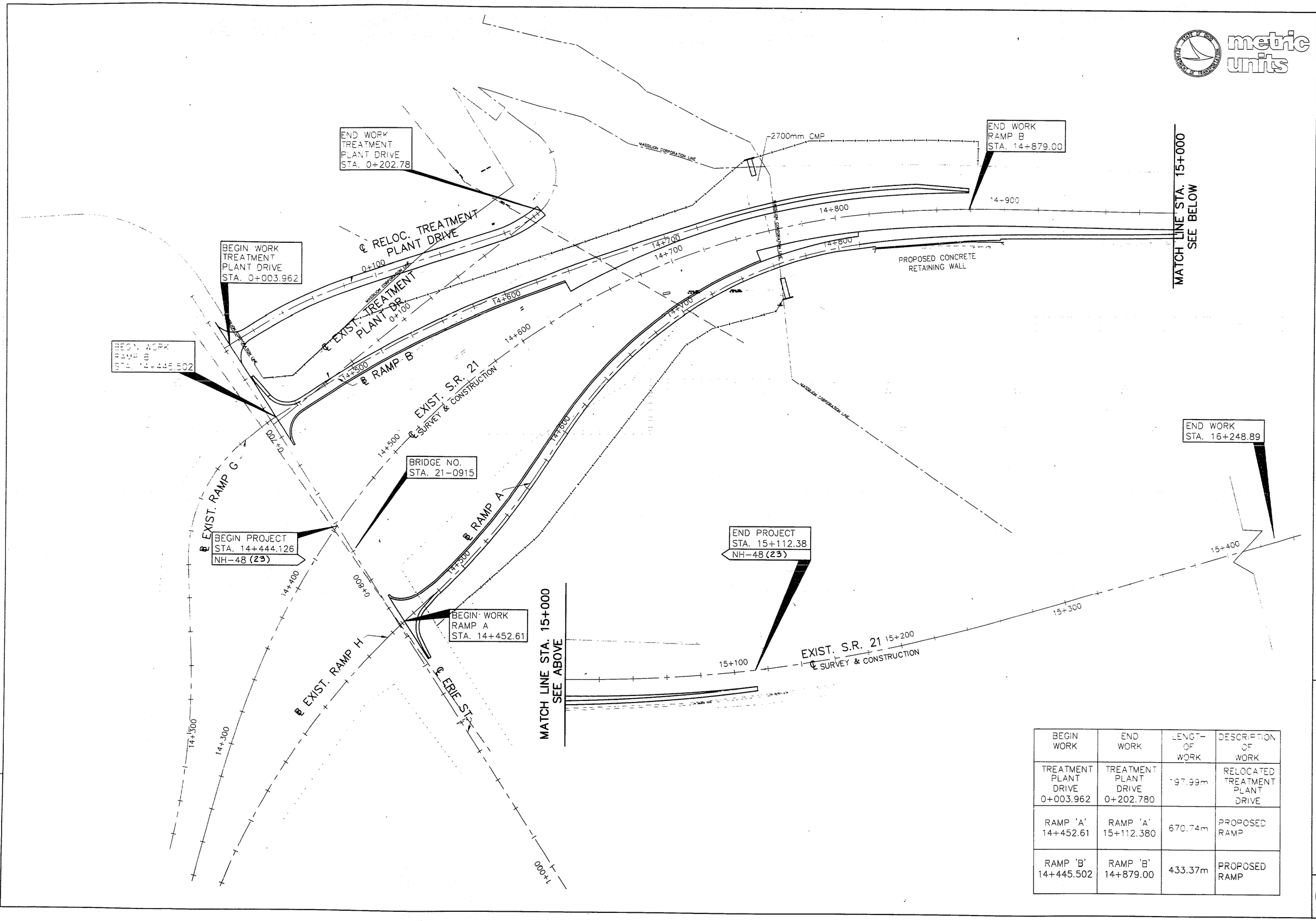
MICROFILMED BY THE O.D.O.T.
MICROFILM SECTION. DOCUMENT IS OF VERY POOR QUALITY
DATE
CAMERA OPERATOR

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

CAD FILE NAME: 7024700-TITLE



BEGIN WORK	END WORK	LENGTH OF WORK	DESCRIPTION OF WORK
TREATMENT PLANT DRIVE 0+003.962	TREATMENT PLANT DRIVE 0+202.780	197.99m	RELOCATED TREATMENT PLANT DRIVE
RAMP 'A' 14+452.61	RAMP 'A' 15+112.380	670.74m	PROPOSED RAMP
RAMP 'B' 14+445.502	RAMP 'B' 14+879.00	433.37m	PROPOSED RAMP

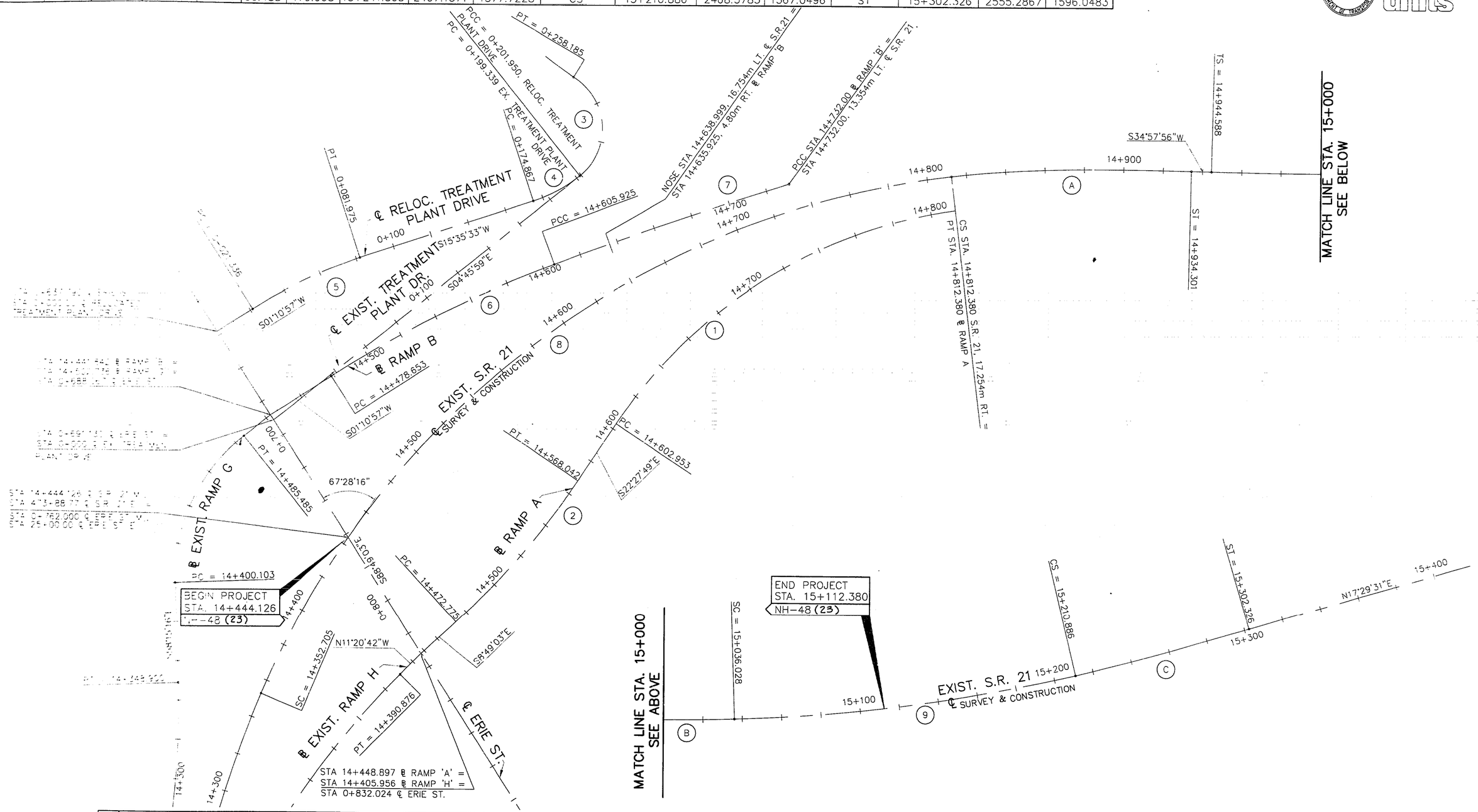
SCHEMATIC PLAN

STA-21-14.452

2
92

DATE: 6/15/95 DATE: 4/25/96
CAD FILE NAME: 7024700 - SCHEMA11

No.	LOCATION	Ls	DELTA	RADIUS (m)	L.T.	S.T.	Ts.	PI STA.	NORTH	EAST	CURVE PT.	STATION	NORTH	EAST	CURVE PT.	STATION	NORTH	EAST
A	S.R. 21	121.920	[illegible]	[illegible]	81.363	40.716	405.137	14+853.011	2161.0504	1386.2947	CS	14+812.380	2124.7613	1367.8320	ST	14+934.301	2227.7273	1432.9227
B	S.R. 21	91.440	[illegible]	[illegible]	60.969	30.488	179.968	15+005.549	2286.1213	1473.7584	TS	14+944.588	2236.1575	1438.8181	SC	15+036.028	2311.9863	1489.8990
C	S.R. 21	91.440	[illegible]	[illegible]	60.969	30.488	179.968	15+241.365	2497.1371	1577.7228	CS	15+210.886	2468.5783	1567.0496	ST	15+302.326	2555.2867	1596.0483



No.	LOCATION	DELTA	RADIUS (m)	TANGENT (m)	LENGTH (m)	E (m)	CHORD (m)	e_{MAX}	PI STA.	NORTH	EAST	PC STA.	NORTH	EAST	PT STA.	NORTH	EAST
1	RAMP A	47°59'49"	250.000	111.299	209.426	23.656	203.356	0.060	14+707.66	2016.5085	1335.2355	14+602.953	1913.6543	1377.7624	14+812.380	2116.9376	1383.2098
2	RAMP A	13°38'46"	400.000	47.860	95.267	2.853	95.042	0.032	14+520.408	1837.1631	1409.3891	14+472.775	1789.8687	1416.7254	14+568.042	1881.3917	1391.1020
3	RELOC. TREATMENT PLANT DR.	110°37'04"	30.480	44.033	58.846	23.073	50.123	–	0+228.670	2011.6180	1259.3076	0+201.950	1967.7370	1262.9665	0+258.094	1992.7416	1219.5256
4	RELOC. TREATMENT PLANT DR.	20°21'32"	76.221	13.686	27.084	1.219	26.941	–	0+188.409	1954.0983	1264.1037	0+174.867	1940.9159	1260.4250	0+201.950	1967.7370	1262.9665
5	RELOC. TREATMENT PLANT DR.	14°24'36"	241.106	30.480	60.639	1.919	60.479	–	0+051.655	1822.0840	1227.2633	0+021.336	1791.6103	1226.6343	0+081.975	1851.4424	1235.4562
6	RAMP B	12°01'26"	606.469	63.871	127.272	3.354	127.039	0.031	14+542.289	1869.9011	1278.5379	14+478.653	1806.0440	1277.2198	14+605.925	1932.0825	1293.1298
7	RAMP B	03°12'38"	2250.000	63.054	126.075	0.883	126.058	0.051	14+668.962	1993.4689	1307.5351	14+605.925	1932.0825	1293.1298	14+732.000	2053.9521	1325.3557
8	S.R. 21	60°19'30"	436.593	253.721	459.676	68.370	438.736	0.0833	14+582.543	1898.6253	1252.7811	14+352.705	1686.7081	1392.2993	14+812.380	2124.7613	1367.8320
9	S.R. 21	11°28'25"	873.190	87.722	174.858	4.395	174.566	0.0833	15+123.457	2386.4070	1536.3401	15+036.028	2311.9863	1489.8990	15+210.886	2468.5783	1567.0496

metric units

SCALE IN METERS 0 20 40

CALCULATED

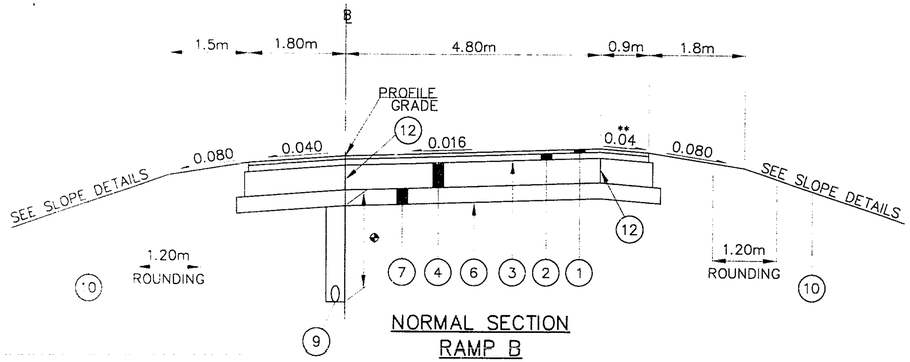
CHECKED

GEOMETRIC PLAN

STA-21-14.452

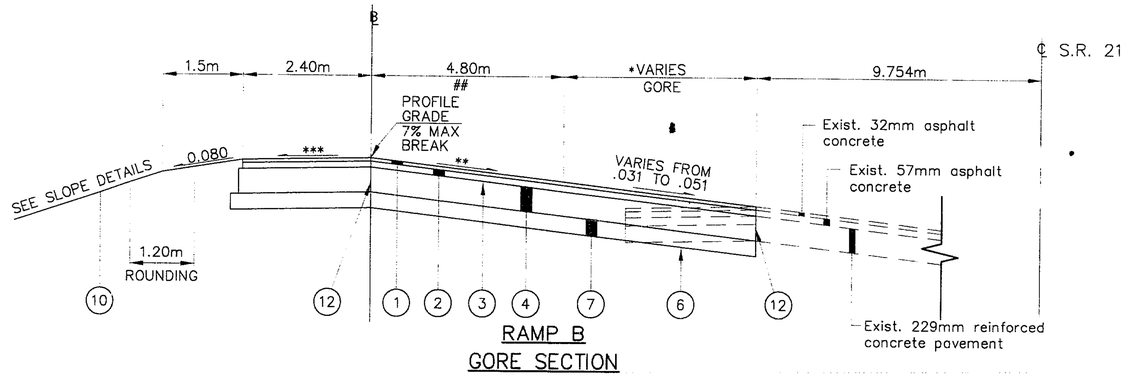
DATE: 6/15/95 DRAWN: 12/28/95
CAD FILE NAME: 7024700 - GLOM1

metric units



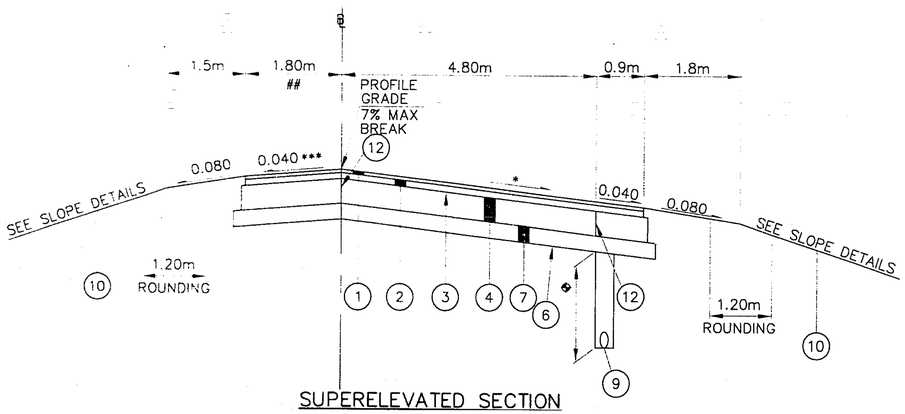
NORMAL SECTION
RAMP B

STA. 14+445.63 TO STA. 14+460 = 14.37m
14.37m



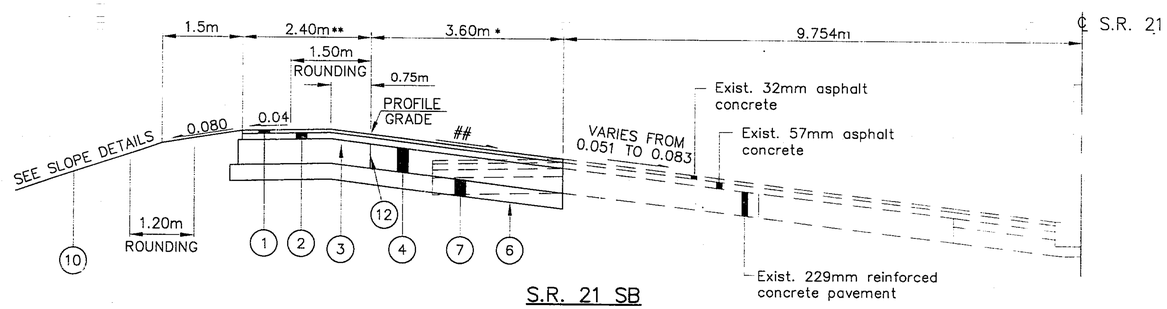
RAMP B
GORE SECTION

STA. 14+635.92 TO STA. 14+680 = 44.08m
(*VARIES 7.00m TO 1.34m; ** 0.031 TO 0.051; ***VARIES 0.039 TO 0.019)
STA. 14+680 TO 14+732 = 52.00m
(*VARIES 1.34m TO 0m; ** = 0.051; *** 0.019; ##VARIES 4.8 m TO 3.6m)
96.08m



SUPERELEVATED SECTION
RAMP B

STA. 14+460 TO STA. 14+471.15 = 11.15m
(*VARIES 0.016 TO LEVEL)
STA. 14+471.15 TO STA. 14+483 = 11.85m
(*VARIES LEVEL TO 0.017; ** = 0.04)
STA. 14+483 TO STA. 14+510 = 27.00m
(* = 0.017; ** = 0.04)
STA. 14+510 TO STA. 14+530 = 20.00m
(*VARIES 0.017 TO 0.031; ***VARIES 0.04 TO 0.039)
STA. 14+530 TO STA. 14+620.92 = 90.93m
(* = 0.031; *** = 0.039)
STA. 14+620.92 TO STA. 14+635.92 = 15.00m
(* = 0.031; ** = 0.039; ##VARIES 1.8m TO 2.4m)
175.93m



S.R. 21 SB

STA. 14+732 TO STA. 14+849 = 117.00m
STA. 14+849 TO 14+879 = 30.00m
(*VARIES 3.60m TO 0.60m; ** VARIES 2.40m TO 1.84m)
147.00m

MATCH EXISTING PAVEMENT CROSS SLOPE

NOTE: FOR PAVEMENT SLOPES ≤ 0.60 PAVED SHOULDER ROUNDING SHALL BE OMITTED & 7% MAX BREAK SHALL CONTROL.

NOTES:

1. TYPICAL SECTIONS SHOW THE GENERAL ROADWAY FEATURES ONLY. FOR DETAILS PAVEMENT WIDENING SEE PLAN SHEETS.
2. FOR SLOPE DETAIL SEE SHEET 6.
3. ◆ PLACE UNDERDRAINS 0.75m DEEP IN FILL & 1.3m DEEP IN CUT OR AS OTHERWISE SHOWN ON THE TYPICAL SECTIONS.
4. FOR SHOULDER DETAIL, SEE SHEET 6.

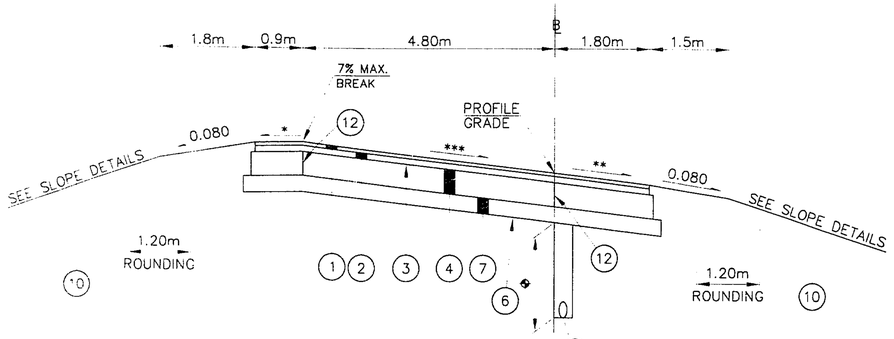
LEGEND

1. ITEM 446 – 32mm ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
2. ITEM 446 – 57mm ASPHALT CONCRETE, INTERMEDIATE COURSE TYPE 2, AC-20
3. ITEM 407 – TACK COAT, USING SS 924
4. ITEM 305 – 230mm CONCRETE BASE, AS PER PLAN
5. – LONGITUDINAL JOINT WITHOUT TIE BARS
6. ITEM 203 – SUBGRADE COMPACTION
7. ITEM 304 – 150mm AGGREGATE BASE
8. ITEM 408 – BITUMINOUS PRIME COAT (APPLIED @ 1.8 L * m^{-2})
9. ITEM 605 – 100mm SHALLOW PIPE UNDERDRAIN
9A. ITEM 605 – 100mm SHALLOW PIPE UNDERDRAIN, AS PER PLAN
10. ITEM 659 – SEEDING AND MULCHING
11. ITEM 606 – GUARDRAIL, TYPE 5
12. – LONGITUDINAL JOINT W/ TIEBARS
13. ITEM 448 – 75mm ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20 (UNDER GUARDRAIL)

TYPICAL SECTIONS

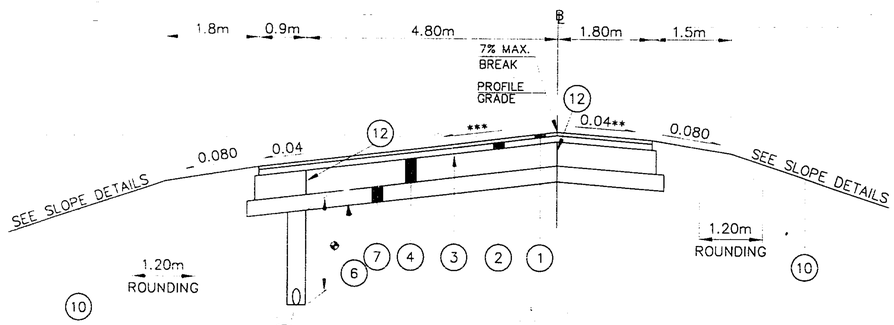
STA-21-14.452

CAD FILE NAME: 7024700 – TYPSEC2



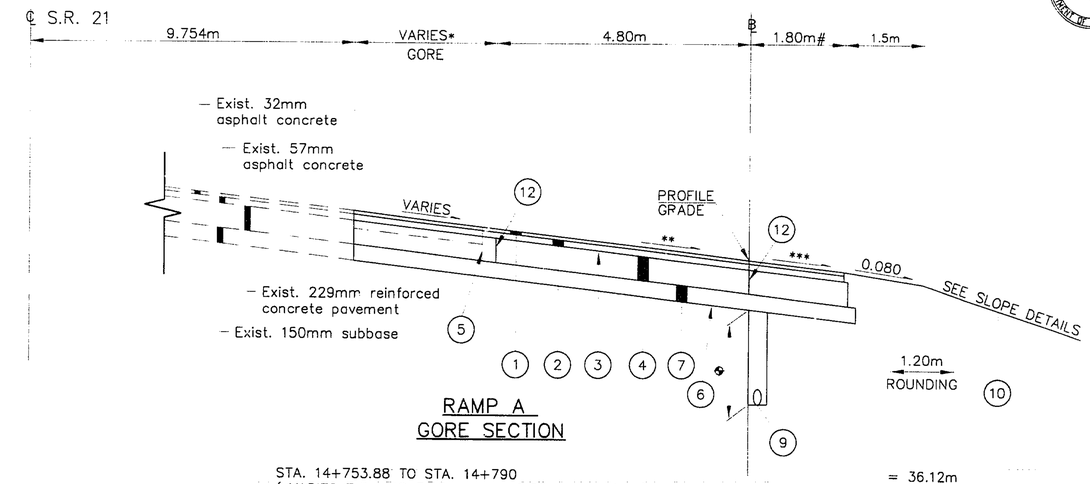
SUPERELEVATED LEFT RAMP A

STA. 14+580 TO STA. 14+604	= 24.00m
(***VARIES LEVEL TO 0.030; ** = 0.04; * = 0.04)	
STA. 14+604 TO STA. 14+612	= 8.00m
(***VARIES 0.03 TO 0.04; ** 0.04; * = 0.04 TO 0.03)	
STA. 14+612 TO STA. 14+620	= 8.00m
(***VARIES 0.04 TO 0.05; **VARIES 0.04 TO 0.05; *VARIES 0.03 TO 0.02)	
STA. 14+620 TO STA. 14+690	= 70.00m
(*** = 0.05; ** = 0.05; * = 0.02)	
STA. 14+690 TO STA. 14+710	= 20.00m
(***VARIES 0.05 TO 0.60; **VARIES 0.05 TO 0.60; *VARIES 0.02 TO 0.01)	
STA. 14+710 TO 14+753.88	= 43.88m
(*** = 0.06; ** = 0.06; * = 0.01)	
	173.88m



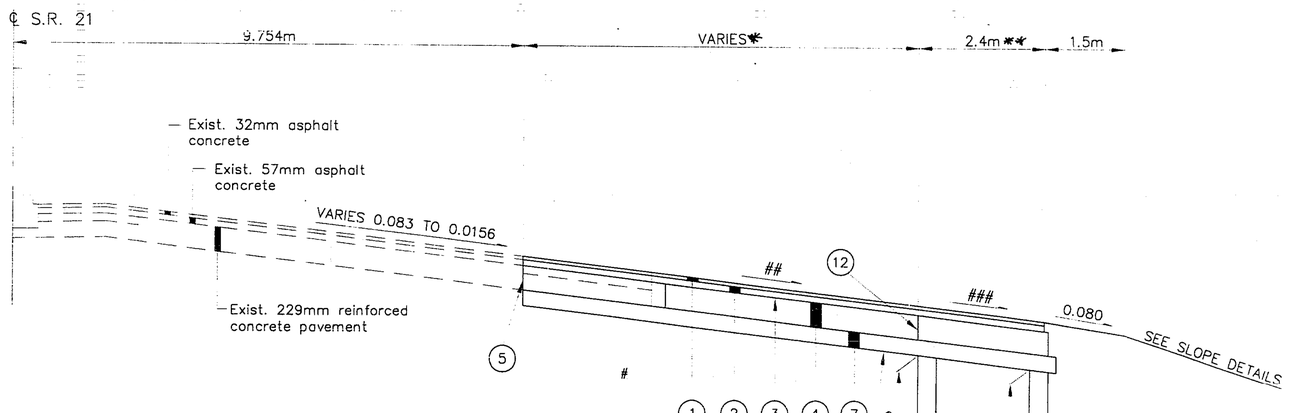
SUPERELEVATED RIGHT RAMP A

STA. 14+452.61 TO STA. 14+466 (*** = 0.016)	= 13.39m
STA. 14+466 TO 14+476.48 (***VARIES 0.016 TO 0.03)	
STA. 14+476.48 TO STA. 14+478	= 10.48m
(***VARIES 0.03 TO 0.032; **VARIES 0.04 TO 0.038)	= 1.52m
STA. 14+478 TO STA. 14+556 (*** = 0.032; ** = 0.038)	= 78.00m
STA. 14+556 TO 14+557.52	= 1.52m
(***VARIES 0.032 TO 0.03; **VARIES 0.038 TO 0.04)	= 22.48m
STA. 14+557.52 TO 14+580 (***VARIES 0.03 TO LEVEL)	127.39m



RAMP A GORE SECTION

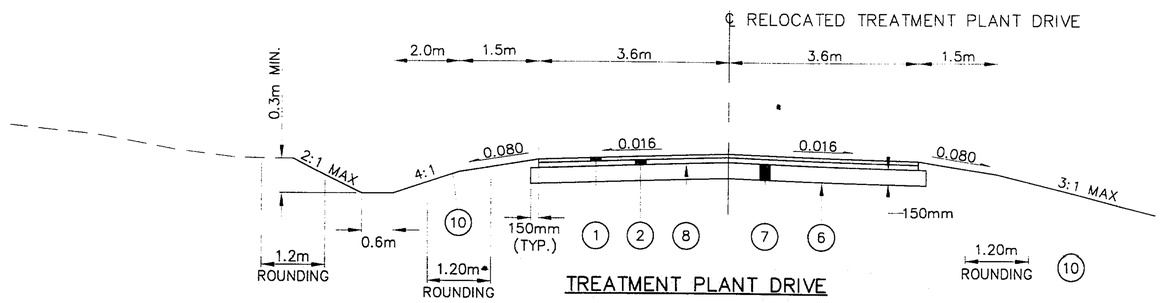
STA. 14+753.88 TO STA. 14+790	= 36.12m
(*VARIES 7.0m TO 3.68m; ** = 0.06; *** = 0.06)	
STA. 14+790 TO 14+797.38	= 7.38m
(*VARIES 3.68m TO 3.27m; **VARIES 0.06 TO 0.067; ***VARIES 0.06 TO 0.067)	
STA. 14+797.38 TO 14+812.38	= 15.00m
(*VARIES 3.27m TO 2.7m; **VARIES 0.067 TO 0.083; ***VARIES 0.067 TO 0.083)	
(#VARIES 1.80m TO 2.40m)	
	58.50m



S.R. 21 NB

STA. 14+812.380 TO STA. 15+088.72±	= 276.34m
(*VARIES 7.5m TO 0.60m)	
STA. 15+088.72± TO STA. 15+112.380	= 23.66m
(* = 0.60m; **VARIES 2.40m TO 1.80m)	
	300.00m

SEE PAVEMENT DETAILS FOR JOINT LOCATIONS
MATCH MAINLINE PAVEMENT CROSS SLOPE
MATCH PAVEMENT CROSS SLOPE OR 0.04, WHICHEVER IS GREATER



TREATMENT PLANT DRIVE

STA. 0+003.96 TO STA. 0+202.780 = 199.12 m

NOTES:

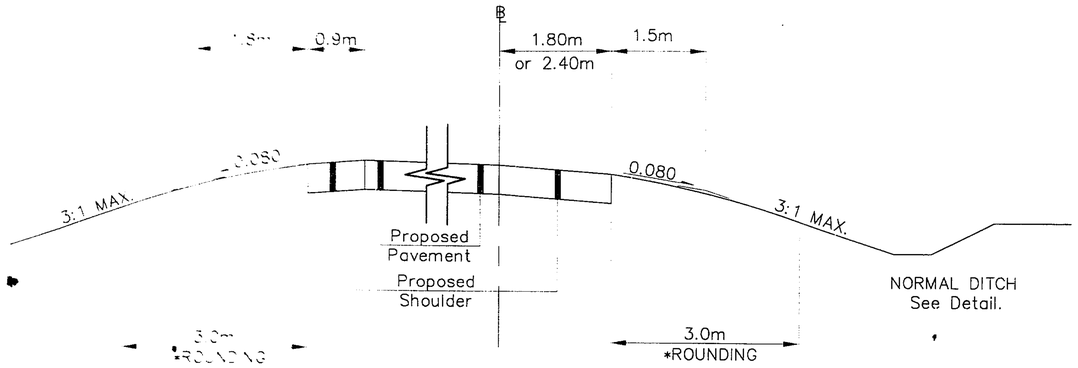
1. TYPICAL SECTIONS SHOW THE GENERAL ROADWAY FEATURES ONLY. FOR DETAILS PAVEMENT WIDENING SEE PLAN SHEETS.
2. FOR SLOPE DETAIL SEE SHEET 6.
3. FOR LEGEND SEE SHEET 4.
4. ◆ PLACE UNDERDRAINS 0.75m DEEP IN FILL & 1.3m DEEP IN CUT OR AS OTHERWISE SHOWN ON THE TYPICAL SECTIONS.
5. UNDERDRAINS ON THE HIGH SIDE OF SUPERELEVATED RAMPS WILL ONLY BE PROVIDED IN CUT SECTIONS
6. FOR SHOULDER DETAIL, SEE SHEET 6.

metric units

TYPICAL SECTIONS

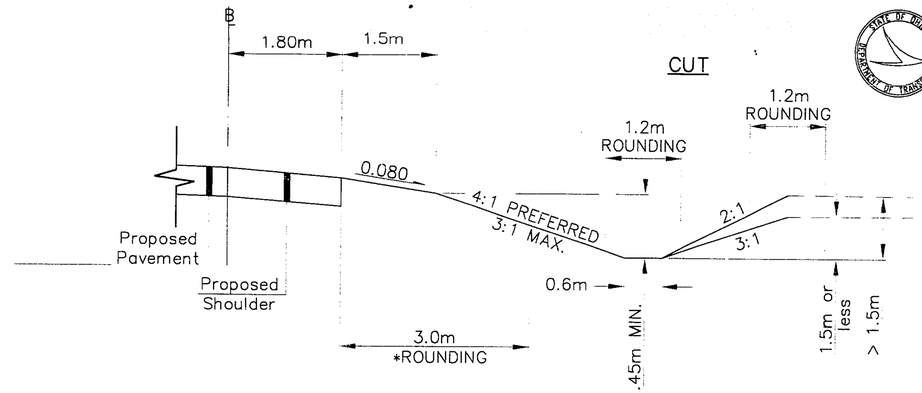
STA-21-14.452

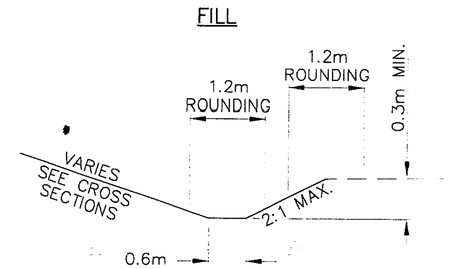
DATE: 6/95 DATE 4/25/96
CAD FILE NAME 702A700 TYP34 C1



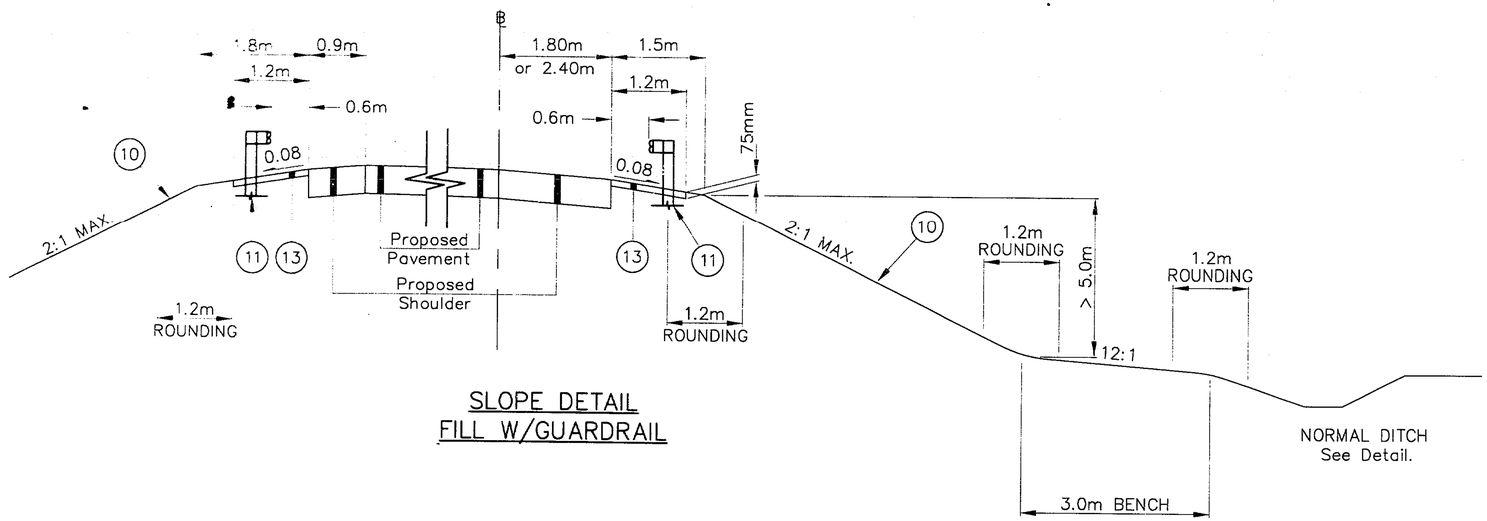
* ~ NO ROUNDING NECESSARY WHEN FORESLOPES ARE 6:1 OR FLATTER.

SLOPE DETAIL
FILL W/O GUARDRAIL

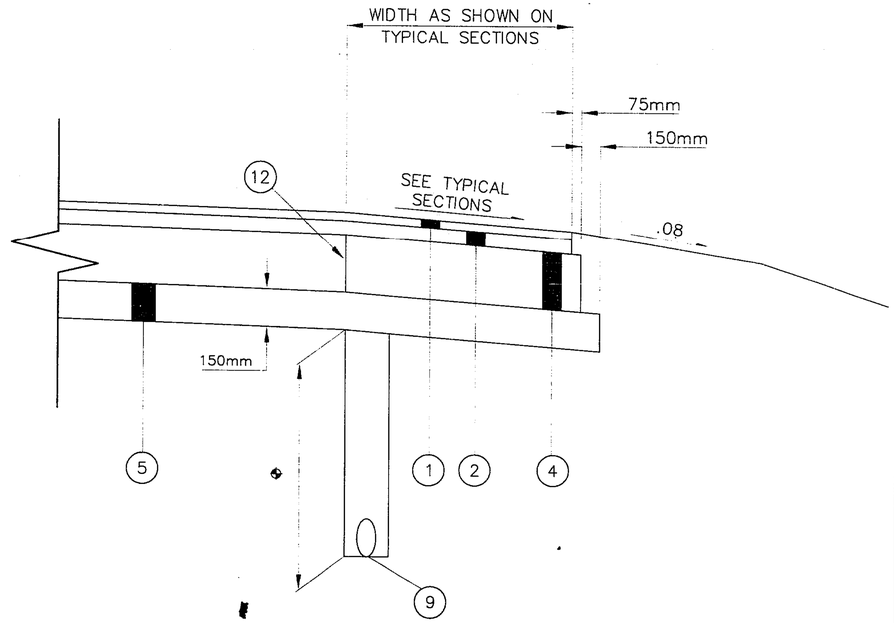




NORMAL DITCH SECTIONS



SLOPE DETAIL
FILL W/GUARDRAIL



SHOULDER DETAIL

NOTES:

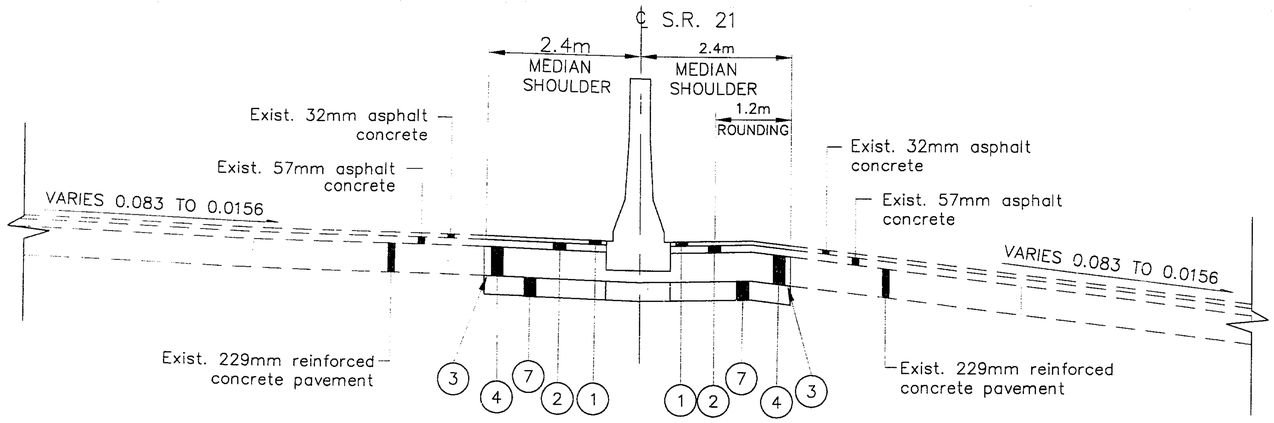
1. TYPICAL SECTIONS SHOW THE GENERAL ROADWAY FEATURES ONLY. FOR DETAILS PAVEMENT WIDENING SEE PLAN SHEETS.
2. FOR LEGEND SEE SHEET 4.
3. ◆ PLACE UNDERDRAINS 0.75m DEEP IN FILL & 1.3m DEEP IN CUT OR AS OTHERWISE SHOWN ON THE TYPICAL SECTIONS.

metric units

SLOPE DETAILS

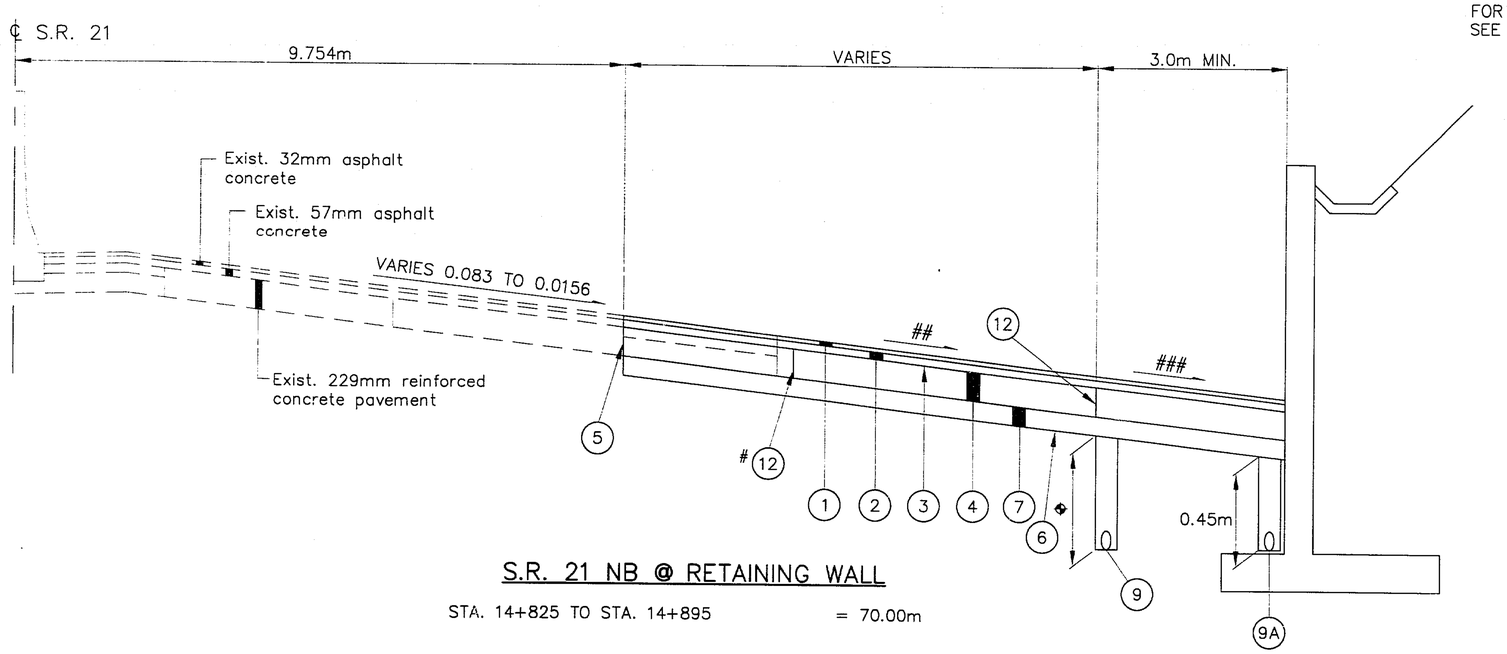
STA-21-14.452

CAD FILE NAME: 7024700 — TYPSEC3



MEDIAN SHOULDER REPLACEMENT DETAIL

FOR RETAINING WALL PLAN, SEE SHEET 85.



S.R. 21 NB @ RETAINING WALL

STA. 14+825 TO STA. 14+895 = 70.00m

SEE PAVEMENT DETAILS FOR JOINT LOCATIONS
MATCH MAINLINE PAVEMENT CROSS SLOPE
MATCH PAVEMENT CROSS SLOPE OR 0.04, WHICHEVER IS GREATER

NOTES:

1. TYPICAL SECTIONS SHOW THE GENERAL ROADWAY FEATURES ONLY. FOR DETAILS PAVEMENT WIDENING SEE PLAN SHEETS.
2. FOR LEGEND SEE SHEET 4.
3. ◆ PLACE UNDERDRAINS 0.75m DEEP IN FILL & 1.3m DEEP IN CUT OR AS OTHERWISE SHOWN ON THE TYPICAL SECTIONS.

metric units

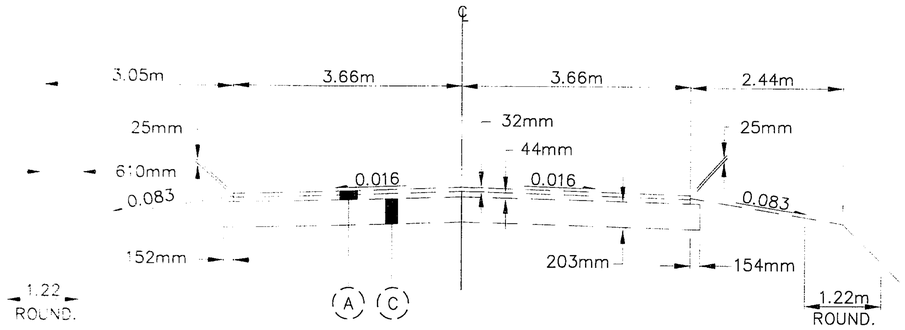
SLOPE DETAILS

STA-21-14.452

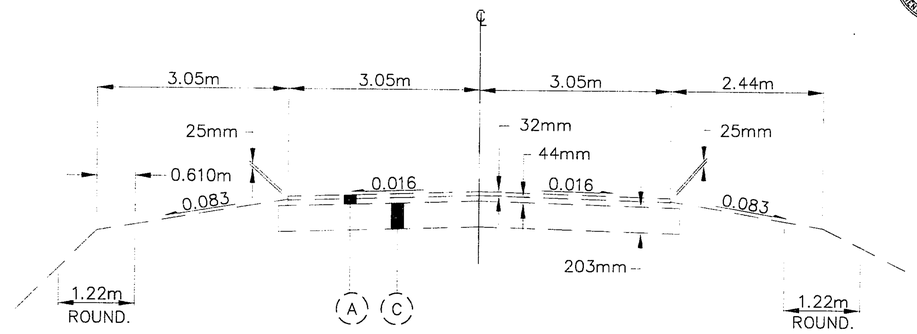
6A
92

CAD FILE NAME: 7024700 - TYPSECA

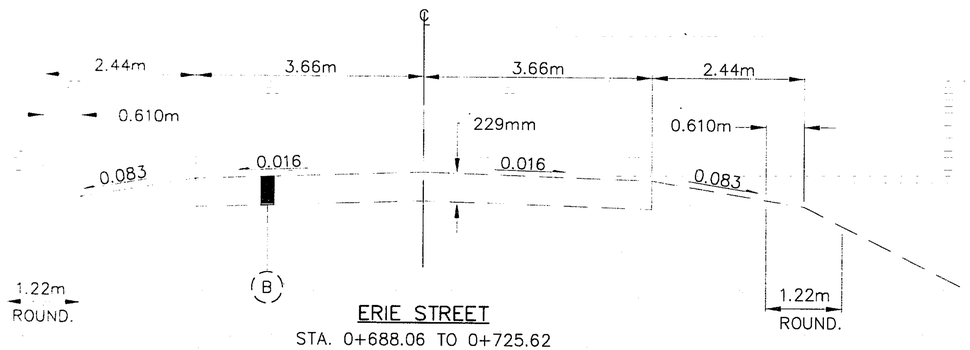
metric units



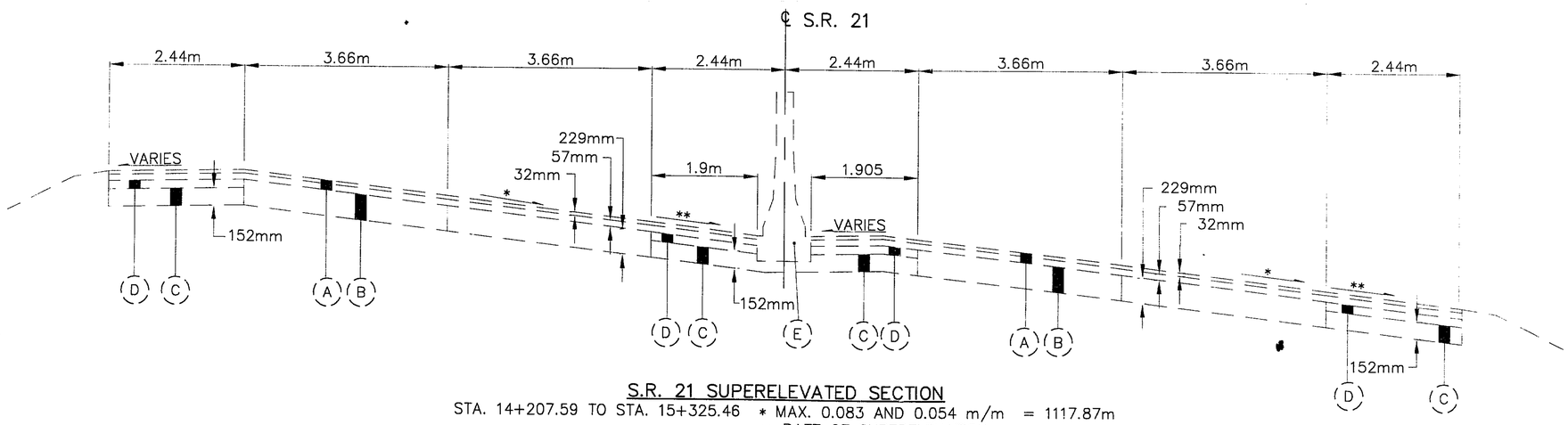
ERIE STREET
STA. 0+602.28 TO STA. 0+688.06



TREATMENT PLANT DRIVE
STA. 0+003.68 TO STA. 0+266.70



ERIE STREET
STA. 0+688.06 TO 0+725.62
STA. 0+725.62 TO 0+800.87 STRUCTURE
STA. 0+800.87 TO 1+219.10



S.R. 21 SUPERELEVATED SECTION
STA. 14+207.59 TO STA. 15+325.46 * MAX. 0.083 AND 0.054 m/m = 1117.87m
** RATE OF SUPERELEVATION

LEGEND

- (A) ASPHALT CONCRETE PAVEMENT
- (B) REINFORCED CONCRETE PAVEMENT
- (C) AGGREGATE BASE
- (D) 76mm BITUMINOUS BASE
- (E) CONCRETE BARRIER TYPE B50

CALCULATED
CHECKED

EXISTING TYPICAL SECTIONS

STA-21-14.452

7/92

CAD FILE NAME: 7024700 - EXTYP

GENERAL NOTES

metric units

CALCULATED NEL
CHECKED DSB

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:

GAS
EAST OHIO GAS COMPANY
4700 SOUTHWAY STREET, S.W.
CANTON, OHIO 44706
(330) 478-4708

WATER
CITY OF MASSILLON WATER
801 TWIGG STREET, N.W.
MASSILLON, OHIO 44648
(330) 833-3778

TELEPHONE
AMERITECH
50 W. BOWERY STREET, 6TH FLOOR
AKRON, OHIO 44308
(330) 384-8057

ELECTRIC
OHIO EDISON COMPANY
2600 SOUTH ERIE STREET
MASSILLON, OHIO 44646
(330) 830-7052

SANITARY
CITY OF MASSILLON
ENGINEERING DEPARTMENT
ONE JAMES DUNCAN PLAZA
MASSILLON, OHIO 44646
(330) 830-1722

CABLE
MASSILLON CABLE TV, INC.
P.O. BOX 814
MASSILLON, OHIO 44646
(330) 833-3778

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.

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.

REMOVAL OF TREES OR STUMPS

ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED:

SIZES	NO. TREES	NO. STUMPS	TOTAL
450mm	0	0	0

ITEM 203 – PROOF ROLLING

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

ADDITIONAL SOIL INFORMATION

THE SOIL PROFILE AND/OR STRUCTURE FOUNDATION INVESTIGATION SHEETS CONTAIN ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME ASPECT OF THE PROJECT. MORE INFORMATION, IF ANY, MAY BE OBTAINED IN DISTRICT FOUR , THE BUREAU OF TESTS AT 1600 WEST BROAD STREET, THE BUREAU OF LOCATION AND DESIGN, OR IN THE BUREAU OF BRIDGES AND STRUCTURAL DESIGN AT 25 SOUTH FRONT STREET IN COLUMBUS, OHIO.

MEDIAN SHOULDER REPLACEMENT

THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR THE REMOVAL AND REPLACEMENT OF THF MEDIAN SHOULDER WHERE NECESSARY DUE TO REMOVAL OF MEDIAN BARRIER, THE BORING OR JACKING OF CONDUIT UNDER PAVEMENT, OR AS DIRECTED BY THE ENGINEER.

ITEM 203 – EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	30	CU. METERS
ITEM 305 – 230mm CONCRETE BASE, AS PER PLAN	90	SQ. METERS
ITEM 304 – AGGREGATE BASE	14	CU. METERS
ITEM 407 – TACK COAT, USING SS 924	3	LITERS
ITEM 446 – 32mm ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20	3	CU. METERS
ITEM 446 – 57mm ASPHALT CONCRETE, INTERMEDIATE COURSE TYPE 1, AC-20	6	CU. METERS

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 ON STANDARD CONSTRUCTION DRAWING GR-1.1M. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

ITEM 606 – ANCHOR ASSEMBLY, TYPE E

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING AN ET-2000, OPTION "B", GUARDRAIL END TERMINAL AS MANUFACTURED BY SYRO STEEL COMPANY, 1170 NORTH STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE LENGTH OF THE ET-2000 SYSTEM IS CONSIDERED TO BE 15.24m INCLUSIVE OF TWO 7.62m LONG RAIL ELEMENTS. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND AT THE LOCATIONS SHOWN IN THE PLANS.

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

ITEM 607 – FENCE REBUILT, TYPE 47

THIS ITEM SHALL INCLUDE THE CAREFUL RECONDITIONING AND RE-ERECTION OF FENCE AND COMPONENT PARTS AS DETAILED ON THE PLANS AND AS DIRECTED BY THE ENGINEER. FENCE OR COMPONENT PARTS WHICH ARE DAMAGED OR ARE OTHERWISE UNSATISFACTORY FOR REUSE SHALL BE REPLACED IN KIND BY THE CONTRACTOR. ANY NEW PARTS WHICH ARE NEEDED, AS DETERMINED BY THE ENGINEER, SHALL BE SUPPLIED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE.

THE AMOUNT OF REBUILT FENCE TO BE PAID FOR WILL BE THE NUMBER OF METERS REBUILT, COMPLETE IN PLACE AND MEASURED AS PROVIDED FOR IN 607.10.

PAYMENT FOR THE ABOVE WILL BE PAID FOR AT THE CONTRACT PRICE PER METER FOR ITEM 607 – FENCE REBUILT, TYPE 47.

ITEM 622 – CONCRETE BARRIER, TYPE B1270, AS PER PLAN

CONCRETE BARRIER SHALL BE AS DETAILED ON SHEET 79 . ALL OTHER PROVISIONS OF 622 SHALL APPLY.

WATERING PERMANENT SEEDED AREAS

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

ITEM 659 – WATER	378	CU. METER

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

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

ITEM 207 – TEMPORARY SEEDING AND MULCHING	7700	SQ. METER
ITEM 207 – STRAW OR HAY BALES	50	EACH
ITEM 207 – TEMPORARY SLOPE DRAINS	59	METER
ITEM 207 – TEMPORARY BENCHES, DAMS, AND SEDIMENT BASINS	69	CU. METER
ITEM 207 – FILTER FABRIC FENCE	200	METER
ITEM 207 – TEMPORARY DIKES	1185	METER
ITEM 207 – TEMPORARY DITCH PROTECTION	487	SQ. METER
ITEM 601 – ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	4	CU. METER
ITEM 601 – ROCK CHANNEL PROTECTION, TYPE C, WITHOUT FILTER	1140	CU. METER
ITEM 659 – COMMERCIAL FERTILIZER	385	KILOGRAM
ITEM 659 – REPAIR SEEDING AND MULCHING	1950	SQ. METER
ITEM 659 – WATER	76	CU. METER

EROSION CONTROL

ITEMS 601, AND 660 ARE PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE SHALL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS AND TURF OF A STABLE NATURE SHALL NOT BE REMOVED IN ORDER TO PLACE 660. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES OF THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION. IN ADDITION, THESE ITEMS SHALL MEET THE REQUIREMENT OF 108.04.

GENERAL NOTES

STA-21-14.452

CAD FILE NAME: 7024700-GNOTE1

GENERAL NOTES

metric units

ITEM 202 - PORTIONS OF STRUCTURES REMOVED

PORTIONS OF THE EXISTING SHEETING AND CONCRETE APRON AS SHOWN ON SHEET 69, SHALL BE REMOVED TO A MINIMUM OF 0.6M BELOW THE FINISHED GROUND SURFACE OR INVERT OF ANY PROPOSED PIPES AS SHOWN ON THE PLAN. PORTIONS OF STRUCTURES SHALL BE REMOVED IN A MANNER THAT WILL NOT DAMAGE ANY EXISTING PIPES THAT ARE TO REMAIN. ANY DAMAGE TO EXISTING PIPES SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

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

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR THERE IS NO 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 WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

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

FARM DRAINS

ALL FARM DRAINS, WHICH ARE ENCOUNTERED DURING CONSTRUCTION, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS. EXISTING COLLECTORS WHICH ARE LOCATED BELOW THE ROADWAY DITCH ELEVATION AND WHICH CROSS THE ROADWAY, SHALL BE REPLACED WITHIN THE RIGHT-OF-WAY LIMITS BY ITEM 603 - CONDUIT, TYPE B, ONE COMMERCIAL SIZE LARGER THAN THE EXISTING CONDUIT.

EXISTING COLLECTORS AND ISOLATED FARM DRAINS, WHICH ARE ENCOUNTERED ABOVE THE ELEVATION OF THE ROADWAY DITCHES, SHALL BE OUTLETTED INTO THE ROADWAY DITCH BY 603 TYPE F CONDUIT. THE OPTIMUM OUTLET ELEVATION SHALL BE 300 MM ABOVE THE FLOWLINE ELEVATION OF THE DITCH. LATERAL FIELD TILE WHICH CROSS THE ROADWAY SHALL BE INTERCEPTED BY 603, TYPE E CONDUIT, AND CARRIED IN A LONGITUDINAL DIRECTION TO AN ADEQUATE OUTLET OR ROADWAY CROSSING.

THE LOCATION, TYPE, SIZE, AND GRADE OF REPLACEMENTS SHALL BE DETERMINED BY THE ENGINEER AND PAYMENT SHALL BE MADE ON FINAL MEASUREMENTS.

EROSION CONTROL PADS AND ANIMAL GUARDS SHALL BE PROVIDED AT THE OUTLET END OF ALL FARM DRAINS AS PER STANDARD CONSTRUCTION DRAWING DM-1.1M, EXCEPT WHEN THEY OUTLET INTO A DRAINAGE STRUCTURE. PAYMENT FOR THE EROSION CONTROL PADS AND ANIMAL GUARDS AND ANY NECESSARY BENDS OR BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEM.

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

ITEM 603	-	150	MM CONDUIT, TYPE B	30	METER
ITEM 603	-	150	MM CONDUIT, TYPE E	30	METER
ITEM 603	-	150	MM CONDUIT, TYPE F	30	METER
ITEM 601	-		ROCK CHANNEL PROTECTION TYPE C, WITH FILTER	5	CU. METER

SPRING DRAINS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR DRAINING ANY SPRINGS SHOWN IN THE PLAN OR ENCOUNTERED DURING CONSTRUCTION. THE FOLLOWING TYPES OF PIPES MAY BE USED: 707.17; ASTM D3034 SDR 35, SS 931 OR SS 944 PERFORATED PER 707.15.

SPRING DRAINS SHALL BE CONSTRUCTED AS SHOWN ON STANDARD CONSTRUCTION DRAWING MC-1 AND PAID FOR AT THE CONTRACT PRICE FOR:

ITEM 605	-	150 MM UNCLASSIFIED PIPE UNDERDRAIN, FOR SPRINGS	30 METER
ITEM 605	-	AGGREGATE DRAIN, FOR SPRINGS	30 METER

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 DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTIONS OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE 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 - PRECAST REINFORCED CONCRETE OUTLET

PRECAST REINFORCED CONCRETE OUTLETS SHALL BE PROVIDED AT THE OUTLET END OF ALL PIPE UNDERDRAINS, AS PER STANDARD DRAWING DM-1.1M EXCEPT WHEN OUTLETTED INTO A DRAINAGE STRUCTURE. THE UNIT PRICE BID FOR ITEM SPECIAL - PRECAST REINFORCED CONCRETE OUTLET SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, AND INCIDENTALS REQUIRED TO MAKE THIS ITEM COMPLETE.

CONDUIT END TREATMENT

IMMEDIATELY AFTER PLACEMENT OF ANY CONDUITS, THE CONTRACTOR SHALL CONSTRUCT THE END TREATMENTS REQUIRED BY THE PLANS AT BOTH THE OUTLET AND INLET ENDS. THIS SHALL INCLUDE HEADWALLS, CONCRETE RIPRAP, ROCK CHANNEL PROTECTION, SODDING, ETC.

ITEM 605 - 100MM SHALLOW PIPE UNDERDRAIN, AS PER PLAN

ALL PROVISIONS OF ITEM 605 - SHALLOW PIPE UNDERDRAIN SHALL APPLY WITH THE FOLLOWING EXCEPTION:

THE WIDTH OF THE TRENCH SHALL BE NO GREATER THAN 250mm.

CONTRACTION AND/OR EXPANSION JOINTS

ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN EXPANSION AND CONTRACTION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. PROVISION OF EXPANSION JOINTS AT ALL MAJOR STRUCTURES AND THE MAXIMUM SPACING BETWEEN CONTRACTION JOINTS SHALL, IN ALL CASES, BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-2.2M AND THE SPECIFICATIONS.

CONTRACTION JOINTS IN CONCRETE PAVEMENT OR BASE WIDENING

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

THE MAXIMUM DISTANCE BETWEEN THE JOINTS IN NEW CONCRETE SHALL BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-2.2M. IF NECESSARY, ADDITIONAL JOINTS SHALL BE PROVIDED IN NEW CONCRETE AT APPROXIMATELY EQUAL INTERVALS BETWEEN EXISTING JOINTS THAT EXCEED THE MAXIMUM SPACING.

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 0.6 METER AND A MINIMUM WALL THICKNESS OF 1.63 MM.

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 513.17.

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.

REMOVAL AND REPLACEMENT OF SOFT SUBGRADE

THE FOLLOWING CONTINGENCY QUANTITIES FOR THE REMOVAL AND REPLACEMENT OF SOFT SUBGRADE HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION 100 CUBIC METERS

ITEM 203 - EMBANKMENT 100 CUBIC METERS

ITEM 407 - TACK COAT, USING SS 924

THE RATE OF APPLICATION OF ITEM 407 - TACK COAT, USING SS 924 SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.032 LITERS PER SQUARE METER OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

ITEM 305 - 230MM CONCRETE BASE, AS PER PLAN

THE SECOND SENTENCE IN 305.01(A) SHALL READ "LOAD TRANSFER DEVICES ARE REQUIRED AT ALL TRANSVERSE CONTRACTION, CONSTRUCTION, AND EXPANSION JOINTS." ALL OTHER REQUIREMENTS OF SECTION 305 SHALL APPLY.

TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS

REFERENCES TO SUPPLEMENTAL SPECIFICATIONS 857, 858, 861, 847, 957, 958, 961, 947 AND 621 ON THE TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS IN THIS PLAN SHALL BE CONSIDERED TO READ AS RESPECTIVE REFERENCES TO ITEM 630, 631, 633, 645, 730, 731, 733, 740 AND 641.

SIGN PLACEMENT

THE EXACT LOCATION OF SIGNS ARE TO BE STAKED. THE LOCATIONS SHALL BE CHECKED BY THE ENGINEER PRIOR TO PLACEMENT TO INSURE CLEARANCE OF DRIVES, ROADWAYS, AND OTHER OBSTACLES. IF THERE ARE ANY CONFLICTS, THEY ARE TO BE ADJUSTED AS DIRECTED BY THE ENGINEER. PAYMENT IS INCIDENTAL TO ALL 630 ITEMS.

CALCULATED NEL CHECKED DSB

GENERAL NOTES

STA-21-14.452

DATE: 6/18/93 DATE: 4/29/98
CAD FILE NAME: 7024700 GNOTE2

MAINTENANCE OF TRAFFIC GENERAL NOTES

metric units

CALCULATED NEL | CHECKED DSB

ITEM 614 - MAINTAINING TRAFFIC

PHASE [illegible] - CONSTRUCTION OF SIGN SUPPORTS AND LIGHT TOWER IN THE MEDIAN BARRIER DURING WHICH TIME TWO (2) LANES OF TRAFFIC IN EACH DIRECTION MUST BE MAINTAINED ON S.R. 21.

PHASE [illegible] - COMPLETION PHASE - CONSTRUCTION MAY OCCUR IN ANY SEQUENCE AS LONG AS TWO (2) LANES OF TRAFFIC, ONE (1) [illegible] DIRECTION, ARE MAINTAINED ON ERIE STREET AND THE [illegible] AND EACH ALL LANES OF TRAFFIC, TWO (2) EACH DIRECTION, ARE MAINTAINED ON S.R. 21.

TWO (2) LANES OF TRAFFIC, ONE (1) EACH DIRECTION MUST BE MAINTAINED ON THE [illegible] ACCESS ROAD UNTIL THE COMPLETION OF THE RELOCATED ACCESS ROAD EXCEPT FOR A MAXIMUM [illegible] AS APPROVED BY THE ENGINEER, TO CONSTRUCT THE [illegible] THE RELOCATED ACCESS ROAD TO THE [illegible] TRAFFIC MAY BE RESTRICTED TO ONE LANE, WITH THE USE OF FLAGGERS FOR TRAFFIC CONTROL.

MAINTENANCE OF TRAFFIC PROCEDURES AND USE OF TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, THE BUREAU OF DESIGN SERVICES STANDARD CONSTRUCTION DRAWINGS AND TRAFFIC CONTROL DESIGN NOTES.

THE CONTRACTOR IS RESPONSIBLE FOR PLANNING, ERECTING, MAINTAINING AND REMOVAL OF ALL TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE PLANS.

BEFORE WORK IS STARTED THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAMES AND TELEPHONE NUMBERS OF PERSONS WHO CAN BE CONTACTED 24 HOURS A DAY BY THE OHIO DEPARTMENT OF TRANSPORTATION AND ALL INTERESTED POLICE AGENCIES. THESE PERSONS SHALL BE RESPONSIBLE FOR PLACING OR REPLACING WORK AND TRAFFIC CONTROL DEVICES TO MAINTAIN THE SAFETY OF THE TRAVELING PUBLIC.

THE WORK ZONES SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TRAFFIC CONTROL DEVICES REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR WITHIN AND BEYOND THE LIMITS OF THESE WORK ZONES.

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

ADVANCE WARNING SIGNS FOR ANY CONDITION WHICH MODIFIES TRAFFIC SHALL BE ERECTED BEFORE ANY SUCH RESTRICTION IS PUT INTO EFFECT. ALL SUCH SIGNS SHALL BE COVERED OR REMOVED FROM THE VIEW OF TRAFFIC WHEN THEY ARE NOT IN APPLICABLE AS DETERMINED BY THE ENGINEER.

IF THE CONTRACTOR FAILS TO COMPLY WITH THE PROVISIONS FOR TRAFFIC CONTROL AS SET FORTH IN THESE PLANS AND PROVISIONS OF THE OMUTCD AND THE FAILURE RESULTS IN A CONDITION AT THE WORK SITE WHICH IS UNSAFE FOR TRAFFIC, THE ENGINEER SHALL SUSPEND WORK UNTIL THE CONTRACTOR COMPLIES WITH THE NECESSARY REQUIREMENTS.

THE CONTRACTOR SHALL NOTIFY IN WRITING THE FOLLOWING AGENCIES AT LEAST 72 HOURS BEFORE IMPLEMENTING ANY SUBSTANTIAL CHANGE IN TRAFFIC PATTERN OR CLOSING ANY STREET TO TRAFFIC:

CITY OF MASSILLON
ONE JAMES DUNCAN PLAZA

POLICE DEPARTMENT	(330) 830-1735
FIRE DEPARTMENT	(330) 833-1053
SERVICE DEPARTMENT	(330) 830-1702
BOARD OF EDUCATION	(330) 830-1810

ITEM 614 - MAINTAINING TRAFFIC CONT.

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

ITEM 404 -	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	50	CU. METER
ITEM 410 -	TRAFFIC COMPACTED SURFACE, TYPE A OR B	50	CU. METER

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER AND CALCIUM CHLORIDE FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616 -	WATER	400	CU. METER
ITEM 616 -	CALCIUM CHLORIDE	10	METRIC TONS

INSTALLATION AND RESETTING CONSTRUCTION PHASES

INSTALLATION AND RESETTING OF TRAFFIC CONTROL DEVICES FOR MAINTENANCE OF TRAFFIC SHALL BE DONE DURING ANY PERIOD OTHER THAN 6:30 - 8:00 A.M. AND 4:30 - 6:00 P.M. AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION MUST BE MAINTAINED ON ALL ROADS AT ALL TIMES DURING INSTALLATION AND RESETTING OF TRAFFIC CONTROL DEVICES.

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. THE EQUIPMENT SHALL BE STORED AT A STORAGE AREA, THE LOCATION OF WHICH SHALL HAVE PRIOR APPROVAL OF THE ENGINEER. PAVERS, ROLLERS AND OTHER EQUIPMENT MAY BE PARKED IN AREAS ALONG THE HIGHWAY WHEN PAVING OPERATIONS ARE SCHEDULED TO CONTINUE WITHIN THE NEXT WORKDAY. WHEN PARKING ALONG THE HIGHWAY THE EQUIPMENT SHALL BE PARKED EITHER FIFTEEN (15) METERS FROM THE EDGE OF PAVEMENT OR TWO (2) METERS BEHIND GUARDRAIL WITH A MINIMUM OF FORTY (40) METERS OF GUARDRAIL PRECEDING THE EQUIPMENT. 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.

TRAFFIC CONTROL DEVICES INSPECTOR

THE CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL OTHER THAN THE SUPERINTENDENT AND SUBJECT TO THE APPROVAL OF THE ENGINEER, TO CONTINUOUSLY INSPECT ALL TRAFFIC CONTROL DEVICES WHENEVER CONSTRUCTION WORK IS BEING PERFORMED WITHIN THE WORK LIMITS OF THE PROJECT. THE DESIGNATED INDIVIDUAL SHALL ALSO INSPECT ALL TRAFFIC DEVICES AT THE BEGINNING AND AT THE END OF EACH WORK DAY. THE DESIGNATED INDIVIDUAL OR A QUALIFIED REPRESENTATIVE SHALL ALSO BE AVAILABLE ON AN AROUND THE CLOCK BASIS TO REPAIR AND/OR REPLACE DAMAGED OR MISSING TRAFFIC CONTROL DEVICES. THESE INDIVIDUALS NAMES AND PHONE NUMBERS SHALL BE GIVEN TO THE PROJECT ENGINEER AT THE PRE-CONSTRUCTION MEETING. PAYMENT FOR THE SERVICES OF THE TRAFFIC CONTROL INSPECTOR SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS

REFERENCES TO SUPPLEMENTAL SPECIFICATIONS 857, 858, 861, 847, 957, 958, 961, 947 AND ITEM 621 ON THE TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS IN THESE PLANS SHALL BE CONSIDERED TO READ AS RESPECTIVE REFERENCES TO ITEMS 630, 631, 633, 645, 730, 731, 733, 740 AND 641.

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 ALTERNATE PLAN SHALL BE PLACED IN EFFECT UNTIL APPROVAL HAS BEEN GRANTED IN WRITING BY THE ODOT DISTRICT CONSTRUCTION ENGINEER.

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 SIGNS AND SUPPORTS (R-10-48) (70 KM/H) WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE CONTRACTOR SHALL COVER OR REMOVE ANY EXISTING SPEED LIMIT OR MINIMUM SPEED 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 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 (4) HOURS BEFORE THE ACTUAL START OF WORK. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN FOUR (4) HOURS FOLLOWING RESTORATION OF ALL LANES OF 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 DAYS, OR AS DIRECTED BY THE ENGINEER. THE SIGN SHALL BE MOUNTED ON BOTH SIDES OF DIVIDED HIGHWAYS, 150 METERS IN ADVANCE OF THE LANE REDUCTION TAPER. THE SIGN SHALL BE MOUNTED ON THE RIGHT SIDE, 75 METERS IN ADVANCE OF THE LANE REDUCTION TAPER ON UNDIVIDED HIGHWAYS. THE SIGN SHALL BE REPEATED, ON THE SIDE NEAREST TRAFFIC, EVERY 1600 METERS FOR 90 KM/H ZONES AND EVERY 800 METERS FOR 70 KM/H ZONES. THESE SIGNS SHALL ALSO BE ERECTED IMMEDIATELY AFTER EACH OPEN ENTRANCE RAMP WITHIN THE ZONE. A SIGN TO INDICATE THE RESUMPTION OF THE STATUTORY SPEED LIMIT SHALL BE ERECTED AT THE END OF ANY REDUCED SPEED ZONE. THIS SIGN SHALL BE AN R-8A.

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 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 (2) 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 FOR FURNISHING, ERECTING, MAINTAINING, COVERING DURING SUSPENSION OF WORK, AND REMOVING THE SIGNS AND SUPPORTS.

ITEM 614 -	WORK ZONE SPEED LIMIT SIGN	2	EACH

COVERING OF SIGNS

WHERE THE PLANS CALL FOR A PERMANENT SIGN TO BE COVERED, THE CONTRACTOR SHALL DO 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.

ITEM SPECIAL - REPLACEMENT DRUM

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

AN ESTIMATED QUANTITY OF ITEM SPECIAL - REPLACEMENT DRUM HAS BEEN CARRIED TO THE MAINTENANCE OF TRAFFIC SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM SPECIAL -	REPLACEMENT DRUM	100	EACH

ITEM SPECIAL - REPLACEMENT SIGN

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

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE BID PRICE PER SQUARE FOOT FOR ITEM SPECIAL - REPLACEMENT SIGN AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED SIGNS, HARDWARE, AND SUPPORTS AND PROVIDING NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC. REPLACEMENT SIGNS SHALL BE NEW. SUPPORTS AND HARDWARE MAY BE SALVAGED SUBJECT TO THE APPROVAL OF THE ENGINEER. AN ESTIMATED QUANTITY OF ITEM SPECIAL - REPLACEMENT SIGN HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL -	REPLACEMENT SIGN	50	SQ METERS

ITEM 614 - BARRIER REFLECTORS

REFLECTORS AND THEIR MOUNTING SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 802 EXCEPT THAT SPACING SHALL BE AT 15 METER INTERVALS. (SEE PROPOSAL NOTE).

ITEM 622 - PORTABLE CONCRETE BARRIER, 813MM

IT IS ANTICIPATED THAT THE SAME BARRIER WILL BE USED IN VARIOUS STAGES OF CONSTRUCTION. MOVEMENT OF THE CONCRETE BARRIER BETWEEN STAGES SHALL BE ACCOMPLISHED IN ONE WORKING DAY. FLAGGERS SHALL BE UTILIZED FOR PROTECTION OF VEHICULAR TRAFFIC UNTIL MOVEMENT OF THE BARRIER IS COMPLETE.

ALL COSTS INVOLVED IN REMOVING AND REINSTALLING THE CONCRETE BARRIER WILL BE INCLUDED IN THE CONTRACT PRICE FOR

ITEM 622 - PORTABLE CONCRETE BARRIER, 813MM

MAINTENANCE OF TRAFFIC GENERAL NOTES

STA-21-14.452

CAD FILE NAME: 7024700 - MOTGN1

MAINTENANCE OF TRAFFIC GENERAL NOTES

metric units

[illegible] LAW ENFORCEMENT OFFICER WITH PATROL CAR

THE CONTRACTOR SHALL PROVIDE AND PAY ALL COSTS FOR THE [illegible] UNIFORMED LAW ENFORCEMENT OFFICERS (L.E.O.) [illegible] FOR THE EXCLUSIVE PURPOSE OF CONTROLLING TRAFFIC [illegible] A CHANGE IN THE TRAFFIC PATTERN OR ANY MAINTENANCE OF TRAFFIC SITUATION ON AN INTERSTATE FREEWAY [illegible]

THE NUMBER OF L.E.O.'S AND CARS REQUIRED FOR THIS PURPOSE [illegible] BY THE CONTRACTOR AND APPROVED BY THE [illegible] THE L.E.O.'S SHALL MOVE THEIR PATROL CARS AS [illegible] PRESENCE AT THE POINT [illegible] OR BACKUP.

PAYMENT [illegible] FOR THE ACTUAL [illegible] LAW ENFORCEMENT OFFICER [illegible]

[illegible] THE CONTRACTOR TO MAKE [illegible] AND PAYMENT OF LAW [illegible] PATROL CARS. THE CONTRACTOR [illegible]

[illegible]
[illegible]
[illegible]
[illegible] 44682
[illegible]

[illegible] WATER [illegible] HAS BEEN [illegible]
[illegible]

[illegible] LAW ENFORCEMENT OFFICER
[illegible] PATROL CAR 122 [illegible] HOURS

METHOD OF PAYMENT

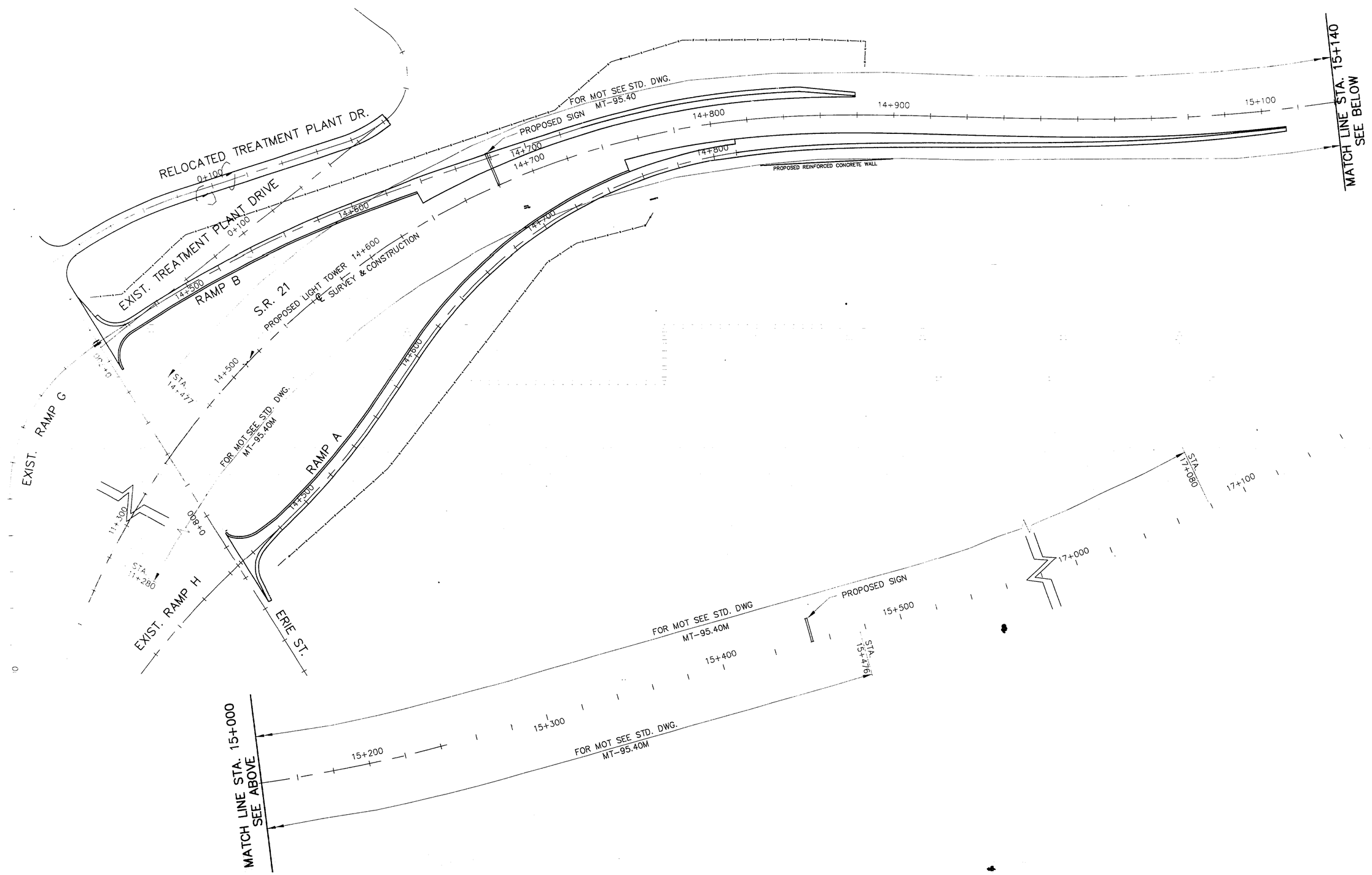
PAYMENT FOR THE MAINTENANCE OF TRAFFIC ITEMS, UNLESS [illegible] SHALL BE AT THE LUMP SUM PRICE BID FOR THE ITEM "MAINTAINING TRAFFIC, LAW ENFORCEMENT", WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS TO COMPLETE THE WORK AS DESCRIBED ON THE PLANS.

CALCULATED NFL
CHECKED DSB

MAINTENANCE OF TRAFFIC
GENERAL NOTES

STA-21-14.452

DATE: 11/07/95 DATE:
CAD FILE NAME: 7024700 - MOTGN2



metric units

SCALE IN METERS 0 20 40

CALCULATED

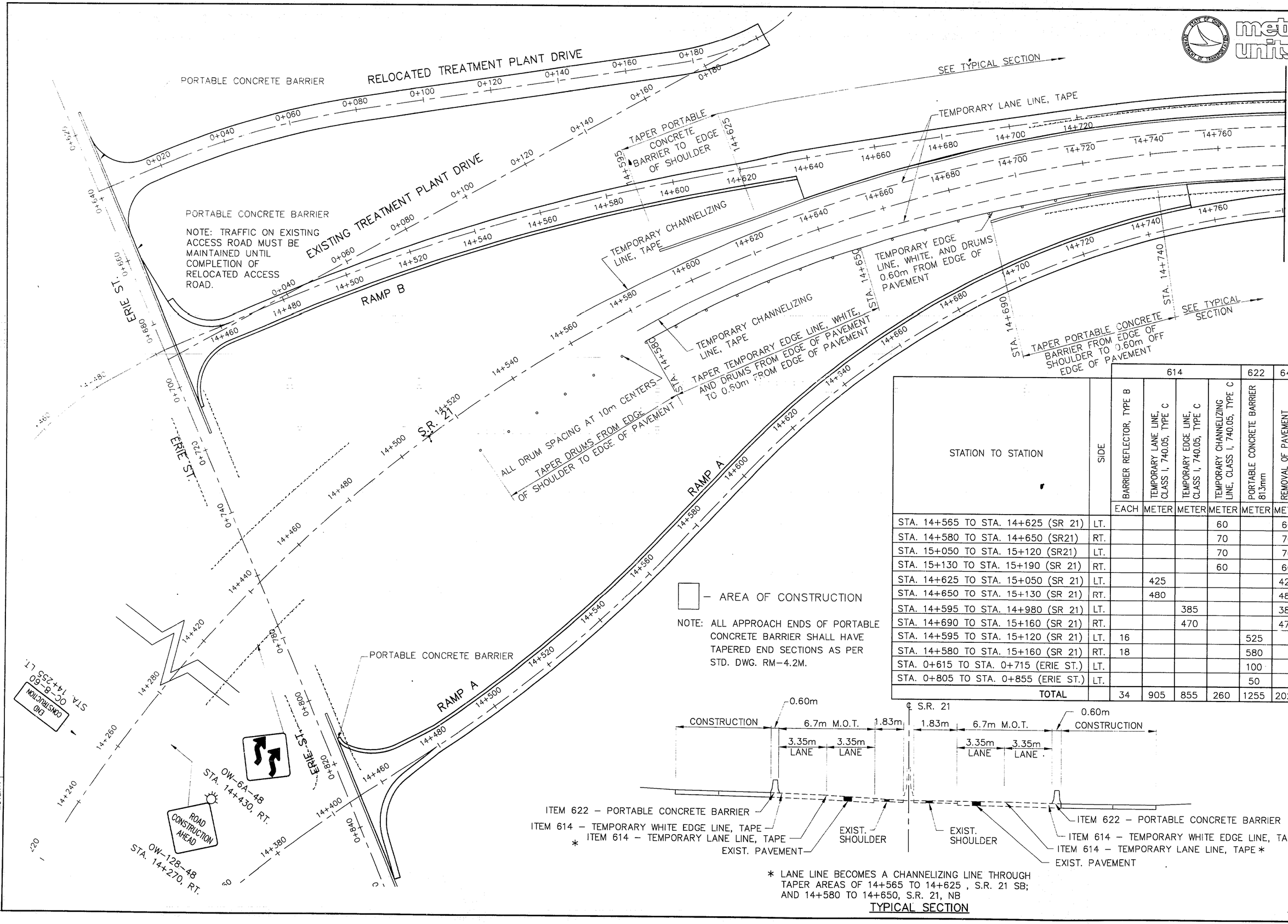
CHECKED

MAINTENANCE OF TRAFFIC PHASE I

STA-21-14.452

12/92

DESIGNED BY: JAN	CHECKED BY:
DATE: 6/15/95	DATE
DRAWN BY: NEL	REVISED BY
DATE: 6/15/95	DATE
CAD FILE NAME: 7024700 - MOTSH11A	



STATION TO STATION	SIDE	614 BARRIER REFLECTOR, TYPE B	614 TEMPORARY LANE LINE, CLASS I, 740.05, TYPE C	614 TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C	614 TEMPORARY CHANNELIZING LINE, CLASS I, 740.05, TYPE C	622 PORTABLE CONCRETE BARRIER 813mm	642 REMOVAL OF PAVEMENT MARKINGS
		EACH	METER	METER	METER	METER	METER
STA. 14+565 TO STA. 14+625 (SR 21)	LT.				60		60
STA. 14+580 TO STA. 14+650 (SR21)	RT.				70		70
STA. 15+050 TO STA. 15+120 (SR21)	LT.				70		70
STA. 15+130 TO STA. 15+190 (SR 21)	RT.				60		60
STA. 14+625 TO STA. 15+050 (SR 21)	LT.		425				425
STA. 14+650 TO STA. 15+130 (SR 21)	RT.		480				480
STA. 14+595 TO STA. 14+980 (SR 21)	LT.			385			385
STA. 14+690 TO STA. 15+160 (SR 21)	RT.			470			470
STA. 14+595 TO STA. 15+120 (SR 21)	LT.	16				525	
STA. 14+580 TO STA. 15+160 (SR 21)	RT.	18				580	
STA. 0+615 TO STA. 0+715 (ERIE ST.)	LT.					100	
STA. 0+805 TO STA. 0+855 (ERIE ST.)	LT.					50	
TOTAL		34	905	855	260	1255	2020

□ – AREA OF CONSTRUCTION

NOTE: ALL APPROACH ENDS OF PORTABLE CONCRETE BARRIER SHALL HAVE TAPERED END SECTIONS AS PER STD. DWG. RM-4.2M.

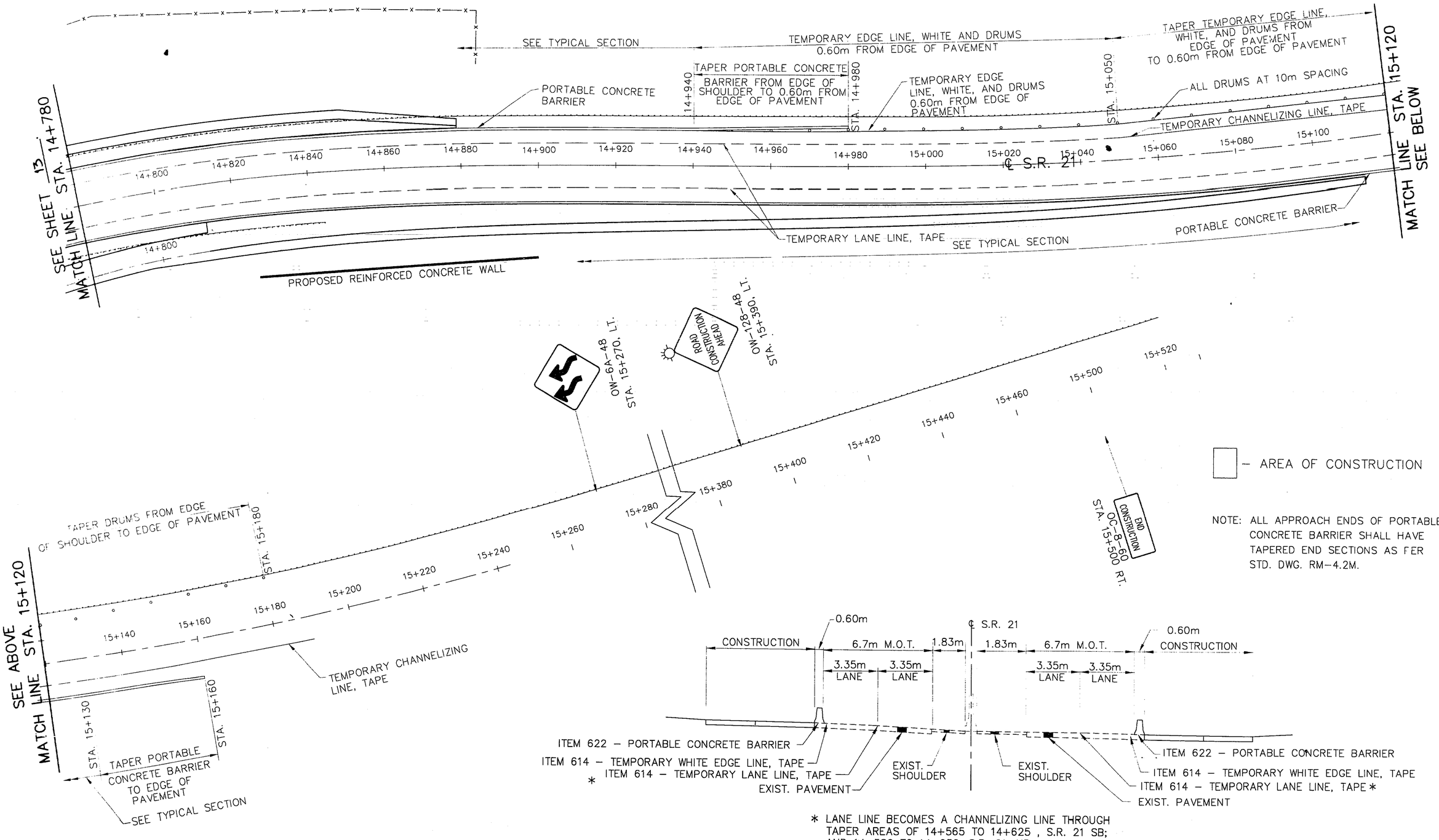
* LANE LINE BECOMES A CHANNELIZING LINE THROUGH TAPER AREAS OF 14+565 TO 14+625 , S.R. 21 SB; AND 14+580 TO 14+650, S.R. 21, NB

TYPICAL SECTION

MAINTENANCE OF TRAFFIC - PHASE II
STA. 14+240 TO STA. 14+780

STA-21-14.44

13
92



* LANE LINE BECOMES A CHANNELIZING LINE THROUGH TAPER AREAS OF 14+565 TO 14+625 , S.R. 21 SB; AND 14+580 TO 14+650, S.R. 21, NB

TYPICAL SECTION

metric units

0 10 20 SCALE IN METERS

CALCULATED

CHECKED

MAINTENANCE OF TRAFFIC - PHASE II
STA. 14+780 TO STA. 15+520

STA-21-14.44

14/92

CAD FILE NAME: 7024700 - MOTSHT2

GENERAL SUMMARY

SHEET NUMBER											PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
8	9	19	22	25	32	39	69	76	81	89	PROJECT							
																	ROADWAY	
LUMP											LUMP		201	11000	LUMP		CLEARING AND GRUBBING	
							LUMP				LUMP		202	11200	LUMP		PORTIONS OF STRUCTURE REMOVED	9
								68	1		69		202	30700	69	METER	CONCRETE BARRIER REMOVED	
					264						264		202	32600	264	METER	GUTTER REMOVED	
					61						61		202	35100	61	METER	PIPE REMOVED, 600 mm AND UNDER	
					164	199					363		202	38000	363	METER	GUARDRAIL REMOVED	
										637	637		202	75200	637	METER	FENCE REMOVED FOR REUSE	
									5		5		202	75403	5	EACH	LIGHT POLE REMOVED FOR STORAGE, AS PER PLAN	80
									5		5		202	75505	5	EACH	LUMINAIRE REMOVED FOR STORAGE, AS PER PLAN	80
30	100		45500								45630		203	12000	45630	CUBIC METER	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
	100		18206								18306		203	20000	18306	CUBIC METER	EMBANKMENT	
		4.2									4.2		203	45000	4.2	HOUR	PROOF ROLLING	
		10478									10478		203	50000	10478	SQUARE METER	SUBGRADE COMPACTION	
					148.6	217.2					365.8		606	13000	365.8	METER	GUARDRAIL, TYPE 5	
						1					1		606	26000	1	EACH	ANCHOR ASSEMBLY, TYPE B	
					1						1		606	26100	1	EACH	ANCHOR ASSEMBLY, TYPE E	
					1	2					3		606	26500	3	EACH	ANCHOR ASSEMBLY, TYPE T	
					1	1					2		606	32500	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE F	
					1						1		606	35000	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
										128	128		607	15000	128	METER	FENCE, TYPE 47	
										637	637		607	16000	637	METER	FENCE REBUILT, TYPE 47	
								48			48		622	23404	48	METER	CONCRETE BARRIER, TYPE B-1270	
								11			11		622	23405	11	METER	CONCRETE BARRIER, TYPE B-1270, AS PER PLAN	79
																	EROSION CONTROL	
7700											7700		207	10000	7700	SQUARE METER	TEMPORARY SEEDING AND MULCHING	
200				543							743		207	30000	743	METER	FILTER FABRIC FENCE	
59											59		207	40000	59	METER	TEMPORARY SLOPE DRAIN	
69				707							776		207	50000	776	CUBIC METER	TEMPORARY BENCHES, DAMS, AND SEDIMENT BASINS	
1185											1185		207	55000	1185	METER	TEMPORARY DIKES	
487											487		207	55500	487	SQUARE METER	TEMPORARY DITCH PROTECTION	
50				54							104		207	70000	104	EACH	STRAW OR HAY BALES	
							154				154		601	11000	154	SQ. METER	RIPRAP USING 150mm REINFORCED CONCRETE SLAB	
					288	61	47				396		601	32100	396	CUBIC METER	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	
4	5					550					559		601	32200	559	CUBIC METER	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
1140				32							1172		601	34200	1172	CUBIC METER	ROCK CHANNEL PROTECTION, TYPE C WITHOUT FILTER	
			38548								38548		659	10000	38548	SQUARE METER	SEEDING AND MULCHING	
1950											1950		659	14000	1950	SQUARE METER	REPAIR SEEDING AND MULCHING	
385			3855								4240		659	20000	4240	KILOGRAM	COMMERCIAL FERTILIZER	
454											454		659	35000	454	CUBIC METER	WATER	
					1396	552					1948		660	30000	1948	SQUARE METER	SODDING	

CALC'D/RAFT'D NEL
CHK'D/KT'D DSB

GENERAL SUMMARY

STA-21-14.452

GENERAL SUMMARY

SHEET NUMBER											PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
8	9	19	20	21	32	39	69	76	81	88	PROJECT							
																	DRAINAGE	
					0.28	0.22	12.78				13.28		602	20000	13.28	CUBIC METER	CONCRETE MASONRY	
					5.5	5.5					11		603	00100	11	METER	100mm CONDUIT, TYPE B	
					37	12					49		603	00406	49	METER	100mm CONDUIT, TYPE F	
	30										30		603	00900	30	METER	150 mm CONDUIT, TYPE B	
	30										30		603	01400	30	METER	150 mm CONDUIT, TYPE E	
	30										30		603	01500	30	METER	150 mm CONDUIT, TYPE F	
							12.5				12.5		603	04400	12.5	METER	300 mm CONDUIT, TYPE B	
						35.5					35.5		603	05900	35.5	METER	375 mm CONDUIT, TYPE B	
					26						26		603	07400	26	METER	450 mm CONDUIT, TYPE B	
							3				3		603	21100	3	METER	1200 mm CONDUIT, TYPE C	
							22.5				22.5		603	32000	22.5	METER	2700 mm CONDUIT, TYPE A, 707.02	
					1	1					2		604	01600	2	EACH	CATCH BASIN NO. 5	
							1				1		604	31500	1	EACH	MANHOLE, NO. 3	
					1					2	3		SPECIAL	60436600	3	EACH	PRECAST REINFORCED CONCRETE OUTLET	9
					301	164					465		605	05100	465	METER	100 mm SHALLOW PIPE UNDERDRAIN	
					203						203		605	05101	203	METER	100 mm SHALLOW PIPE UNDERDRAIN, AS PER PLAN	9
					120						120		605	05150	120	METER	100 mm DEEP PIPE UNDERDRAIN	
					269	26					295		605	05200	295	METER	100 mm UNCLASSIFIED PIPE UNDERDRAIN	
	30										30		605	13402	30	METER	150 mm UNCLASSIFIED PIPE UNDERDRAIN FOR SPRINGS	
	30										30		605	32200	30	METER	AGGREGATE DRAIN FOR SPRINGS	
																	PAVEMENT	
14			978								992		304	20000	992	CUBIC METER	AGGREGATE BASE	
90		8444									8534		305	13001	8534	SQUARE METER	230 mm CONCRETE BASE, AS PER PLAN	9
3				266							269		407	13900	269	LITER	TACK COAT USING SS 924	
			2691								2691		408	10000	2691	LITER	BITUMINOUS PRIME COAT	
6				561							567		446	01200	567	CUBIC METER	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20	
3			315								318		446	01400	318	CUBIC METER	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20	
					16	21					37		448	16006	37	CUBIC METER	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20 (UNDER GUARDRAIL)	
																	~~WATER WORK~~	
						~~1~~					~~1~~		~~678~~	~~10900~~	~~1~~	~~EACH~~	~~VALVE BOX ADJUSTED TO GRADE~~	
																	LIGHTING	
									6		6		625	01100	6	EACH	CONNECTOR KIT, TYPE VII C	
									2		2		625	13200	2	EACH	LIGHT TOWER, BBBB30.5	
									1		1		625	13400	1	EACH	LIGHT TOWER, BBBBBB30.5	
									2		2		625	15200	2	EACH	LIGHT TOWER FOUNDATION, 914mm X 7.6m DEEP	
									1		1		625	15700	1	EACH	LIGHT TOWER FOUNDATION, MISC.; MEDIAN MOUNTED, AS PER PLAN	80
									1		1		625	20000	1	EACH	PORTABLE POWER UNIT	
									746		746		625	23300	746	METER	NO. 2 AWG 5000 VOLT DISTRIBUTION CABLE	
									74		74		625	24100	74	METER	38mm DUCT CABLE WITH TWO NO.4 AWG 5000 VOLT CABLES	
									24		24		625	25900	24	METER	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, SIZE: 76mm	
									361		361		625	25910	361	METER	CONDUIT CLEANED AND CABLE REMOVED	
									14		14		625	26260	14	EACH	LUMINAIRE, HIGH MAST, SYMMETRIC, TYPE V, 400 WATT	
																	HIGH PRESSURE SODIUM, 480 VOLT, 713.21	
									44		44		625	29002	44	METER	TRENCH, 0.6m DEEP	
									1		1		625	31500	1	EACH	MEDIAN PULL BOX	
								4	6		10		625	32000	10	EACH	GROUND ROD	

CALCULATED NEL
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GENERAL SUMMARY

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GENERAL SUMMARY

SHEET NUMBER 13	71	75	76	77	80	81					PARTICIPATION PROJECT		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
																	LIGHTING (CONT.)	
					LUMP						LUMP		SPECIAL	62540000	LUMP		MAINTAIN EXISTING LIGHTING	80
						2					2		SPECIAL	62540020	2	EACH	DISCONNECT EXISTING CIRCUIT	80
						2					2		625	13200	2	EACH	LIGHT TOWER, BBBB30.5 – ALTERNATE BID (HOLOPHANE)	80
						1					1		625	13400	1	EACH	LIGHT TOWER, BBBBBB30.5 – ALTERNATE BID (HOLOPHANE)	80
						14					14		625	26260	14	EACH	LUMINAIRE, HIGH MAST, SYMMETRIC, TYPE V, 400 WATT HIGH PRESSURE SODIUM, 480 VOLT, 713.21 – ALTERNATE BID (HOLOPHANE)	80
																	TRAFFIC CONTROL	
	6										6		620	10300	6	EACH	DELINEATOR, TYPE C, POST MOUNTED	
	6										6		620	15300	6	EACH	DELINEATOR, TYPE D, POST MOUNTED	
			21.9								21.9		630	00000	21.9	CUBIC METER	CONCRETE FOR ANCHOR BASE FOUNDATION	
			93.9	12.1							106		630	03100	106	METER	GROUND MOUNTED SUPPORT, NO.3 POST	
			9.5								9.5		630	06400	9.5	METER	GROUND MOUNTED SUPPORT, S100 X 11.5 BEAM	
			17.7								17.7		630	08004	17.7	METER	ONE WAY SUPPORT, NO.3 POST	
			1								1		630	08500	1	EACH	STREET NAME SIGN SUPPORT	
			2								2		630	09000	2	EACH	BREAKAWAY BEAM CONNECTION	
			1								1		630	35500	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 6, 14.80M SPAN	
			1								1		630	36500	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 6, 20.24M SPAN	
			2								2		630	75000	2	EACH	SIGN ATTACHMENT ASSEMBLY	
			17.5	2.0							19.5		630	80102	19.5	SQ. METER	SIGN, FLAT SHEET, TYPE G	
			17								17		630	80204	17	SQ. METER	SIGN, EXTRUSHEET, TYPE G	
			1								1		630	80500	1	EACH	SIGN, DOUBLED FACED, STREET NAME	
			1								1		630	82000	1	EACH	SIGN BACKING ASSEMBLY	
			1								1		630	82500	1	EACH	EXISTING SIGN REVISED WITH DEMOUNTABLE COPY	
			17								17		630	84900	17	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
			12								12		630	85100	12	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
			2								2		630	85600	2	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND REERECTION	
			16								16		630	86002	16	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
			4								4		630	86102	4	EACH	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL	
			2								2		630	87100	2	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND REERECTION	
		3.30									3.30		642	00100	3.30	KILOMETER	EDGE LINE, TYPE 1	
		1.31									1.31		642	00200	1.31	KILOMETER	LANE LINE, TYPE 1	
		0.20									0.20		642	00300	0.20	KILOMETER	CENTER LINE, TYPE 1	
		214									214		642	00400	214	METER	CHANNELIZING LINE, TYPE 1	
		23									23		642	00500	23	METER	STOP LINE, TYPE 1	
		66									66		642	00700	66	METER	TRANSVERSE LINE, TYPE 1	
2020											2020		642	30000	2020	METER	REMOVAL OF PAVEMENT MARKING	

CALCULATED NEL
CHECKED DSB

GENERAL SUMMARY

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CAD FILE NAME

GENERAL SUMMARY

SHEET NUMBER											PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
		17	88								PROJECT							
																	RETAINING WALL	
			LUMP								LUMP		503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING	
			613								613		503	21100	613	CUBIC METER	UNCLASSIFIED EXCAVATION	
			10173								10173		509	15824	10173	KILOGRAM	EPOXY COATED REINFORCING STEEL, GRADE 400	
			255								255		511	46200	255	CUBIC METER	CLASS C CONCRETE	
			11								11		511	51100	11	CUBIC METER	CLASS C CONCRETE, MISC: MODIFIED BARRIER	
			8								8		512	44400	8	SQ. METER	TYPE B WATERPROOFING	
			230								230		SPECIAL	51267502	230	SQ. METER	SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)	
			18								18		516	13600	18	SQ. METER	25mm PREFORMED EXPANSION JOINT FILLER	
			103								103		518	21200	103	CUBIC METER	POROUS BACKFILL WITH FILTER FABRIC	
			57								57		518	40001	57	METER	150mm PERFORATED CORRUGATED PLASTIC PIPE, 707.16 (AS PER PLAN)	88
			24								24		518	40011	24	METER	150mm NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, 707.16 (AS PER PLAN)	88
																	MAINTENANCE OF TRAFFIC	
											50		404	35000	50	CUBIC METER	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	
											50		410	12000	50	CUBIC METER	TRAFFIC COMPACTED SURFACE, TYPE A OR B	
											100		614	11100	100	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
											2		614	12470	2	EACH	WORK ZONE SPEED LIMIT SIGN	
											50		SPECIAL	61412500	50	SQ. METER	REPLACEMENT SIGN	10
											100		SPECIAL	61412600	100	EACH	REPLACEMENT DRUM	10
		34									34		614	13300	34	EACH	BARRIER REFLECTOR, TYPE B	
		0.905									0.91		614	20300	0.91	KILOMETER	TEMPORARY LANE LINE, CLASS I, 740.05, TYPE C	
		0.855									0.86		614	22300	0.86	KILOMETER	TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C	
		260									260		614	23600	260	METER	TEMPORARY CHANNELIZING LINE, CLASS I, 740.05, TYPE C	
											400		616	10000	400	CUBIC METER	WATER	
											10		616	20000	10	METRIC TON	CALCIUM CHLORIDE	
		1255									1255		622	40020	1255	METER	PORTABLE CONCRETE BARRIER, 813mm	
											LUMP		614	11000	LUMP		MAINTAINING TRAFFIC	
											LUMP		619	15000	LUMP		FIELD OFFICE, TYPE A	
											LUMP		623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
											LUMP		624	10000	LUMP		MOBILIZATION	

CALCULATED NEL
CHECKED DSB

GENERAL SUMMARY

STA-21-14.452

DATE
CAD FILE

PAVEMENT CALCULATIONS

ITEM 203 - SUBGRADE COMPACTION

RAMP A
CURB RETURN

STA 14+452.61 TO STA 14+482.00		352.09 SQUARE METERS	-	352.09 SQUARE METERS
STA 14+482.00 TO STA 14+753.88		271.88 METERS X 8.42 METERS	-	2289.23 SQUARE METERS
STA 14+753.88 TO STA 14+790.00		36.12 METERS X 12.40 METERS AVG.	-	447.89 SQUARE METERS
STA 14+790.00 TO STA 14+797.38		7.38 METERS X 10.54 METERS AVG.	-	77.79 SQUARE METERS
STA 14+797.38 TO STA 14+812.38		15.00 METERS X 10.34 METERS AVG.	-	155.10 SQUARE METERS

STATE ROUTE 21 - RIGHT SIDE

STA 14+812.38 TO STA 14+822.00		9.62 METERS X 10.24 METERS AVG.	-	98.51 SQUARE METERS
STA 14+822.00 TO STA 14+898.00	(RETAINING WALL SECTION)	76.00 METERS X 8.73 METERS AVG.	-	663.48 SQUARE METERS
STA 14+898.00 TO STA 15+088.72		190.72 METERS X 5.84 METERS AVG.	-	1113.80 SQUARE METERS
STA 15+088.72 TO STA 15+112.38		23.66 METERS X 3.16 METERS AVG.	-	74.76 SQUARE METERS

RAMP B
CURB RETURN

STA 14+445.50 TO STA 14+462.71		252.54 SQUARE METERS	-	252.54 SQUARE METERS
STA 14+462.71 TO STA 14+635.92		173.21 METERS X 8.42 METERS	-	1458.43 SQUARE METERS
STA 14+635.92 TO STA 14+680.00		44.08 METERS X 11.83 METERS AVG.	-	521.47 SQUARE METERS
STA 14+680.00 TO STA 14+732.00		52.00 METERS X 7.73 METERS AVG.	-	401.96 SQUARE METERS

STATE ROUTE 21 - LEFT SIDE

STA 14+732.00 TO STA 14+849.00		117.00 METERS X 6.46 METERS	-	755.82 SQUARE METERS
STA 14+849.00 TO STA 14+879.00		30.00 METERS X 4.68 METERS AVG.	-	140.40 SQUARE METERS

TREATMENT PLANT DRIVE
CURB RETURN

STA 0+003.66 TO STA 0+015.660		161.33 SQUARE METERS	-	161.33 SQUARE METERS
STA 0+015.660 TO STA 0+201.95		186.29 METERS X 8.12 METERS	-	1512.67 SQUARE METERS

TOTAL ITEM 203 - SUBGRADE COMPACTION - 10477.27 SQUARE METERS

ITEM 203 - PROOF ROLLING

10477.27 SQUARE METERS (SUBGRADE COMPACTION AREA) X 1/2500 HOUR/SQUARE METERS - 4.19 HOURS

TOTAL ITEM 203 - PROOF ROLLING - 4.19 HOURS

ITEM 305 - 230mm CONCRETE BASE, AS PER PLAN

RAMP A
CURB RETURN

STA 14+452.61 TO STA 14+482.00		432.78 SQUARE METERS	-	432.78 SQUARE METERS
STA 14+482.00 TO STA 14+753.88		271.88 METERS X 7.65 METERS	-	2079.88 SQUARE METERS
STA 14+753.88 TO STA 14+790.00		36.12 METERS X 12.02 METERS AVG.	-	434.16 SQUARE METERS
STA 14+790.00 TO STA 14+797.38		7.38 METERS X 10.15 METERS AVG.	-	74.91 SQUARE METERS
STA 14+797.38 TO STA 14+812.38		15.00 METERS X 9.66 METERS AVG.	-	144.90 SQUARE METERS

STATE ROUTE 21 - RIGHT SIDE

STA 14+812.38 TO STA 15+088.72		276.34 METERS X 6.53 METERS AVG.	-	1804.50 SQUARE METERS
STA 15+088.72 TO STA 15+112.38		23.66 METERS X 2.78 METERS AVG.	-	72.87 SQUARE METERS
RETAINING WALL (ADDITIONAL SHOULDER AREA)				
STA 14+822.00 TO STA 14+898.00		76.00 METERS X 0.28 METERS AVG.	-	21.28 SQUARE METERS

RAMP B
CURB RETURN

STA 14+445.50 TO STA 14+462.71		287.14 SQUARE METERS	-	287.14 SQUARE METERS
STA 14+462.71 TO STA 14+635.92		173.21 METERS X 7.65 METERS	-	1325.06 SQUARE METERS
STA 14+635.92 TO STA 14+680.00		44.08 METERS X 11.44 METERS AVG.	-	504.28 SQUARE METERS
STA 14+680.00 TO STA 14+732.00		52.00 METERS X 7.95 METERS AVG.	-	413.40 SQUARE METERS

STATE ROUTE 21 - LEFT SIDE

STA 14+732.00 TO STA 14+849.00		117.00 METERS X 6.08 METERS	-	711.36 SQUARE METERS
STA 14+849.00 TO STA 14+879.00		30.00 METERS X 4.30 METERS AVG.	-	137.40 SQUARE METERS

TOTAL ITEM 305 - 230mm CONCRETE BASE AS PER PLAN- 8443.92 SQUARE METERS

ITEM 304 - AGGREGATE BASE

TREATMENT PLANT DRIVE
CURB RETURN

STA 0+003.66 TO STA 0+015.66	158.17 SQUARE METERS		X 0.150 METERS	-	23.73 CUBIC METERS
STA 0+015.66 TO STA 0+201.95	186.29 METERS	X 7.50 METERS	X 0.150 METERS	-	209.58 CUBIC METERS

RAMP A
CURB RETURN

STA 14+452.61 TO STA 14+482.00	311.14 SQUARE METERS		X 0.150 METERS	-	46.67 CUBIC METERS
STA 14+482.00 TO STA 14+753.88	271.88 METERS	X 4.80 METERS	X 0.150 METERS	-	195.75 CUBIC METERS
STA 14+753.88 TO STA 14+790.00	36.12 METERS	X 10.14 METERS AVG.	X 0.150 METERS	-	54.94 CUBIC METERS
STA 14+790.00 TO STA 14+797.38	7.38 METERS	X 8.28 METERS AVG.	X 0.150 METERS	-	9.17 CUBIC METERS
STA 14+797.38 TO STA 14+812.38	15.00 METERS	X 7.79 METERS AVG.	X 0.150 METERS	-	17.52 CUBIC METERS

CALCULATED JAM
CHECKED DSB

PAVEMENT CALCULATIONS

STA-21-14.452

CAD FILE NAME: 10-14.DGN

PAVEMENT CALCULATIONS

ITEM 304 - AGGREGATE BASE (CONT'D)

[illegible] CALCULATIONS

[illegible]	[illegible]	14+580	LT	127.39 X 1.125	X	0.150 METERS	-	21.50 CUBIC METERS
			RT	127.39 X 2.025	X	0.150 METERS	-	38.70 CUBIC METERS
[illegible]	[illegible]	14+604	LT	24.00 X 1.125	X	0.150 METERS	-	4.05 CUBIC METERS
			RT	24.00 X 2.025	X	0.150 METERS	-	7.29 CUBIC METERS
[illegible]	[illegible]	14+612	LT	8.00 X 1.125	X	0.150 METERS	-	1.35 CUBIC METERS
			RT	8.00 X 2.025	X	0.150 METERS	-	2.43 CUBIC METERS
[illegible]	[illegible]	14+620	LT	8.00 X 1.125	X	0.150 METERS	-	1.35 CUBIC METERS
			RT	8.00 X 2.025	X	0.150 METERS	-	2.43 CUBIC METERS
[illegible]	[illegible]	14+690	LT	70.00 X 1.125	X	0.150 METERS	-	11.81 CUBIC METERS
			RT	70.00 X 2.025	X	0.150 METERS	-	21.26 CUBIC METERS
[illegible]	[illegible]	14+710	LT	20.00 X 1.125	X	0.150 METERS	-	3.38 CUBIC METERS
			RT	20.00 X 2.025	X	0.150 METERS	-	6.08 CUBIC METERS
[illegible]	[illegible]	14+753.88	LT	43.88 X 1.125	X	0.150 METERS	-	7.40 CUBIC METERS
			RT	43.88 X 2.025	X	0.150 METERS	-	13.33 CUBIC METERS
[illegible]	[illegible]	14+790	RT	36.12 X 2.025	X	0.150 METERS	-	10.97 CUBIC METERS
[illegible]	[illegible]	14+797.38	RT	7.38 X 2.025	X	0.150 METERS	-	2.24 CUBIC METERS
[illegible]	[illegible]	14+812.38	RT	15.00 X 2.325 AVG.	X	0.150 METERS	-	5.23 CUBIC METERS

[illegible]

[illegible]	15+088.72	276.34 METERS	X	4.05 METERS AVG.	X	0.150 METERS	- 167.88 CUBIC METERS
[illegible]	15+112.38	23.66 METERS	X	0.60 METERS	X	0.150 METERS	- 2.13 CUBIC METERS

[illegible] CALCULATIONS

STA 14+812.38	TO STA	15+112.38	300 X 2.625		X	0.150 METERS	- 118.125 CUBIC METERS

RETAINING WALL (ADDITIONAL SHOULDER AREA)

STA 14+822.00	TO STA	14+898.00	70.13 SQUARE METERS		X	0.150 METERS	- 10.520 CUBIC METERS

RAMP B

CURB RETURN

STA 14+445.50	TO STA	14+462.71	223.02 SQUARE METERS		X	0.150 METERS	- 33.45 CUBIC METERS
[illegible]	[illegible]	14+635.92	173.21 METERS	X 4.80 METERS	X	0.150 METERS	- 124.71 CUBIC METERS
[illegible]	[illegible]	14+680.00	44.08 METERS	X 8.97 METERS AVG.	X	0.150 METERS	- 59.31 CUBIC METERS
[illegible]	[illegible]	14+732.00	52.00 METERS	X 5.47 METERS AVG.	X	0.150 METERS	- 42.67 CUBIC METERS

[illegible] CALCULATIONS

STA 14+445.50	TO STA	14+620.92	LT	175.42 X 2.025	X	0.150 METERS	- 53.28 CUBIC METERS
			RT	175.42 X 1.125	X	0.150 METERS	- 29.60 CUBIC METERS
STA 14+620.92	TO STA	14+635.92	LT	15.00 X 2.325 AVG.	X	0.150 METERS	- 5.23 CUBIC METERS
			RT	15.00 X 1.125	X	0.150 METERS	- 2.53 CUBIC METERS
STA 14+635.92	TO STA	14+732	RT	96.08 X 2.625	X	0.150 METERS	- 37.83 CUBIC METERS

STATE ROUTE 21 - LEFT SIDE

STA 14+732.00	TO STA	14+849.00	117.00 METERS	X 3.60 METERS	X	0.150 METERS	- 63.18 CUBIC METERS
STA 14+849.00	TO STA	14+879.00	30.00 METERS	X 2.10 METERS AVG.	X	0.150 METERS	- 9.45 CUBIC METERS

SHOULDER CALCULATIONS

STA 14+732	TO STA	14+849.00	117.00 X 2.625		X	0.150 METERS	- 46.07 CUBIC METERS
STA 14+849	TO STA	14+879.00	30.00 X 2.345 AVG.		X	0.150 METERS	- 10.55 CUBIC METERS

TOTAL ITEM 304 - AGGREGATE BASE - 977.315 CUBIC METERS

ITEM 408 - BITUMINOUS PRIME COAT

TREATMENT PLANT DRIVE

CURB RETURN

STA 0+003.66	TO STA	0+015.66	153.52 SQUARE METERS		X 1.800 LITERS/SQUARE METER-	276.34 LITERS
STA 0+015.66	TO STA	0+201.95	186.29 METERS	X 7.20 METERS	X 1.800 LITERS/SQUARE METER-	2414.32 LITERS

TOTAL ITEM 408 - BITUMINOUS PRIME COAT - 2690.65 LITERS

ITEM 446 - ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20

RAMP A

CURB RETURN

STA 14+452.51	TO STA	14+462.00	426.20 SQUARE METERS			X 0.032 METERS	- 13.64 CUBIC METERS
STA 14+462.00	TO STA	14+753.88	271.88 METERS	X 7.50 METERS	X	0.032 METERS	- 65.25 CUBIC METERS
STA 14+753.88	TO STA	14+790.00	36.12 METERS	X 11.94 METERS AVG.	X	0.032 METERS	- 13.80 CUBIC METERS
STA 14+790.00	TO STA	14+797.38	7.38 METERS	X 10.08 METERS AVG.	X	0.032 METERS	- 2.38 CUBIC METERS
STA 14+797.38	TO STA	14+812.38	15.00 METERS	X 9.59 METERS AVG.	X	0.032 METERS	- 4.60 CUBIC METERS

STATE ROUTE 21 - RIGHT SIDE

STA 14+812.38	TO STA	15+088.72	276.34 METERS	X 6.45 METERS AVG.	X	0.032 METERS	- 57.04 CUBIC METERS
STA 15+088.72	TO STA	15+112.38	23.66 METERS	X 3.00 METERS	X	0.032 METERS	- 2.27 CUBIC METERS

RETAINING WALL (ADDITIONAL SHOULDER AREA)

STA 14+822.00	TO STA	14+898.00	76.00 METERS	X 0.28 METERS AVG.	X	0.032 METERS	- 0.68 CUBIC METERS

RAMP B

CURB RETURN

STA 14+445.50	TO STA	14+462.71	263.03 SQUARE METERS			X 0.032 METERS	- 8.42 CUBIC METERS
STA 14+462.71	TO STA	14+635.92	173.21 METERS	X 7.50 METERS	X	0.032 METERS	- 41.57 CUBIC METERS
STA 14+635.92	TO STA	14+680.00	44.08 METERS	X 11.37 METERS AVG.	X	0.032 METERS	- 16.04 CUBIC METERS
STA 14+680.00	TO STA	14+732.00	52.00 METERS	X 7.87 METERS AVG.	X	0.032 METERS	- 13.10 CUBIC METERS

STATE ROUTE 21 - LEFT SIDE

STA 14+732.00	TO STA	14+879.00	147.00 METERS	X 6.00 METERS	X	0.032 METERS	- 28.22 CUBIC METERS

TREATMENT PLANT DRIVE

CURB RETURN

STA 0+003.66	TO STA	0+015.66	153.52 SQUARE METERS			X 0.032 METERS	- 4.91 CUBIC METERS
STA 0+015.66	TO STA	0+201.95	186.29 METERS	X 7.20 METERS	X	0.032 METERS	- 42.92 CUBIC METERS

TOTAL ITEM 446 - ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20 - 314.84 CUBIC METERS

CALCULATED JAM CHECKED DSB

PAVEMENT CALCULATIONS

STA-21-14.452

CAD FILE NAME

PAVEMENT CALCULATIONS

metric units

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

RAMP A

CURB RETURN

STA 14+452.61	TO STA	14+482.00	426.20 SQUARE METERS			X	0.057 METERS -	24.29 CUBIC METERS
STA 14+482.00	TO STA	14+753.88	271.88 METERS	X	7.50 METERS	X	0.057 METERS -	116.23 CUBIC METERS
STA 14+753.88	TO STA	14+790.00	36.12 METERS	X	11.94 METERS AVG.	X	0.057 METERS -	24.58 CUBIC METERS
STA 14+790.00	TO STA	14+797.38	7.38 METERS	X	10.08 METERS AVG.	X	0.057 METERS -	4.24 CUBIC METERS
STA 14+797.38	TO STA	14+812.38	15.00 METERS	X	9.59 METERS AVG.	X	0.057 METERS -	8.20 CUBIC METERS

STATE ROUTE 21 - RIGHT SIDE

STA 14+812.38	TO STA	15+088.72	276.34 METERS	X	6.45 METERS AVG.	X	0.057 METERS -	101.60 CUBIC METERS
STA 15+088.72	TO STA	15+112.38	23.66 METERS	X	3.00 METERS	X	0.057 METERS -	4.05 CUBIC METERS

RETAINING WALL (ADDITIONAL SHOULDER AREA)

STA 14+822.00	TO STA	14+898.00	76.00 METERS	X	0.28 METERS AVG.	X	0.057 METERS -	1.21 CUBIC METERS

RAMP B

CURB RETURN

STA 14+445.50	TO STA	14+462.71	263.03 SQUARE METERS			X	0.057 METERS -	14.99 CUBIC METERS
STA 14+462.71	TO STA	14+635.92	173.21 METERS	X	7.50 METERS	X	0.057 METERS -	74.05 CUBIC METERS
STA 14+635.92	TO STA	14+680.00	44.08 METERS	X	11.37 METERS AVG.	X	0.057 METERS -	28.57 CUBIC METERS
STA 14+680.00	TO STA	14+732.00	52.00 METERS	X	7.87 METERS AVG.	X	0.057 METERS -	23.33 CUBIC METERS

STATE ROUTE 21 - LEFT SIDE

STA 14+732.00	TO STA	14+849.00	147.00 METERS	X	6.00 METERS	X	0.057 METERS -	50.27 CUBIC METERS

[illegible]

STA [illegible]	TO STA	0+015.66	153.52 SQUARE METERS			X	0.057 METERS -	8.75 CUBIC METERS
STA 0+015.66	TO STA	0+201.95	186.29 METERS	X	7.20 METERS	X	0.057 METERS -	76.45 CUBIC METERS

TOTAL ITEM 446 - ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20 - 560.81 CUBIC METERS

ITEM 407 - TACK COAT, USING SS 924

RAMP A

CURB RETURN

STA 14+452.61	TO STA	14+482.00	426.20 SQUARE METERS			X	0.032 LITERS/SQUARE METER-	13.64 LITERS
STA 14+482.00	TO STA	14+753.88	271.88 METERS	X	7.50 METERS	X	0.032 LITERS/SQUARE METER-	65.25 LITERS
STA 14+753.88	TO STA	14+790.00	36.12 METERS	X	11.94 METERS AVG.	X	0.032 LITERS/SQUARE METER-	13.80 LITERS
STA 14+790.00	TO STA	14+797.38	7.38 METERS	X	10.08 METERS AVG.	X	0.032 LITERS/SQUARE METER-	2.38 LITERS
STA 14+797.38	TO STA	14+812.38	15.00 METERS	X	9.59 METERS AVG.	X	0.032 LITERS/SQUARE METER-	4.60 LITERS

STATE ROUTE 21 - RIGHT SIDE

STA 14+812.38	TO STA	15+088.72	276.34 METERS	X	6.45 METERS AVG.	X	0.032 LITERS/SQUARE METER-	57.04 LITERS
STA 15+088.72	TO STA	15+112.38	23.66 METERS	X	3.00 METERS AVG.	X	0.032 LITERS/SQUARE METER-	2.27 LITERS

RETAINING WALL (ADDITIONAL SHOULDER AREA)

STA 14+822.00	TO STA	14+898.00	76.00 METERS	X	0.28 METERS AVG.	X	0.032 LITERS/SQUARE METER-	0.68 LITERS

RAMP B

CURB RETURN

STA 14+445.50	TO STA	14+462.71	263.03 SQUARE METERS			X	0.032 LITERS/SQUARE METER-	8.42 LITERS
STA 14+462.71	TO STA	14+635.92	173.21 METERS	X	7.50 METERS	X	0.032 LITERS/SQUARE METER-	41.57 LITERS
STA 14+635.92	TO STA	14+680.00	44.08 METERS	X	11.37 METERS AVG.	X	0.032 LITERS/SQUARE METER-	16.04 LITERS
STA 14+680.00	TO STA	14+732.00	52.00 METERS	X	7.87 METERS AVG.	X	0.032 LITERS/SQUARE METER-	13.10 LITERS

STATE ROUTE 21 - LEFT SIDE

STA 14+732.00	TO STA	14+849.00	117.00 METERS	X	6.00 METERS	X	0.032 LITERS/SQUARE METER-	22.46 LITERS
STA 14+849.00	TO STA	14+879.00	30.00 METERS	X	4.50 METERS AVG.	X	0.032 LITERS/SQUARE METER-	4.32 LITERS

TOTAL ITEM 407 - TACK COAT, USING SS 924 - 265.57 LITERS

CALCULATED JAM CHECKED DSB

PAVEMENT CALCULATIONS

STA-21-14.452

CAD FILE

EARTHWORK SUMMARY

LOCATION	ITEM 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION (CUBIC METERS)	ITEM 203 EMBANKMENT (CUBIC METERS)	ITEM 659 SEEDING AND MULCHING (SQUARE METERS)
RAMP A			
STA. 14+452.15 TO STA. 14+500.00	1353.5	296.7	1755.1
STA. 14+500.00 TO STA. 14+560.00	5497.2	0.0	2576.9
STA. 14+560.00 TO STA. 14+620.00	9428.4	0.0	2830.2
STA. 14+640.00 TO STA. 14+700.00	7053.4	39.6	2539.8
STA. 14+720.00 TO STA. 14+760.00	102.2	2931.3	1171.3
STA. 14+780.00 TO STA. 14+812.38	58.4	2391.4	964.0
STA. 14+820.00 TO STA. 14+860.00	372.7	57.2	1469.5
STA. 14+880.00 TO STA. 14+898.00			
STATE ROUTE 21 - RIGHT SIDE			
STA. 14+920.00 TO STA. 14+940.00	365.9	152.7	2018.4
STA. 14+980.00 TO STA. 15+000.00	204.4	156.1	1965.0
STA. 15+020.00 TO STA. 15+060.00	210.3	71.4	1691.7
STA. 15+080.00 TO STA. 15+100.00	27.6	7.7	436.3
RAMP B			
STA. 14+445.48 TO STA. 14+500.00	1113.8	212.1	2618.2
STA. 14+520.00 TO STA. 14+560.00	791.0	1940.9	2726.8
STA. 14+580.00 TO STA. 14+620.00	485.8	2039.0	2124.6
STA. 14+635.92 TO STA. 14+660.00	568.8	973.0	1166.1
STA. 14+680.00 TO STA. 14+732.00	54.2	732.2	960.8
STATE ROUTE 21 - LEFT SIDE			
STA. 14+740.00 TO STA. 14+780.00	45.3	1753.4	1838.7
STA. 14+800.00 TO STA. 14+840.00	75.4	2082.5	2693.0
STA. 14+860.00 TO STA. 14+900.00	54.3	708.7	1612.4
TREATMENT PLANT DRIVE			
STA. 0+003.66 TO STA. 0+060.00	715.8	174.3	656.6
STA. 0+080.00 TO STA. 0+140.00	14980.0	1481.1	1292.2
STA. 0+160.00 TO STA. 0+201.95	1911.2	3.8	1439.6
TOTAL	45499.6	18205.1	38547.2

ITEM 659 COMMERCIAL FERTILIZER (38547.2 SQUARE METERS X 0.1 KILOGRAMS/SQUARE METER) - 3854.7KILOGRAMS

ACCEPTED JAM CHECKED DSB

EARTHWORK SUMMARY

STA-21-14.452

DATE 10 CAD FILE NAM

SYMBOL LEGEND

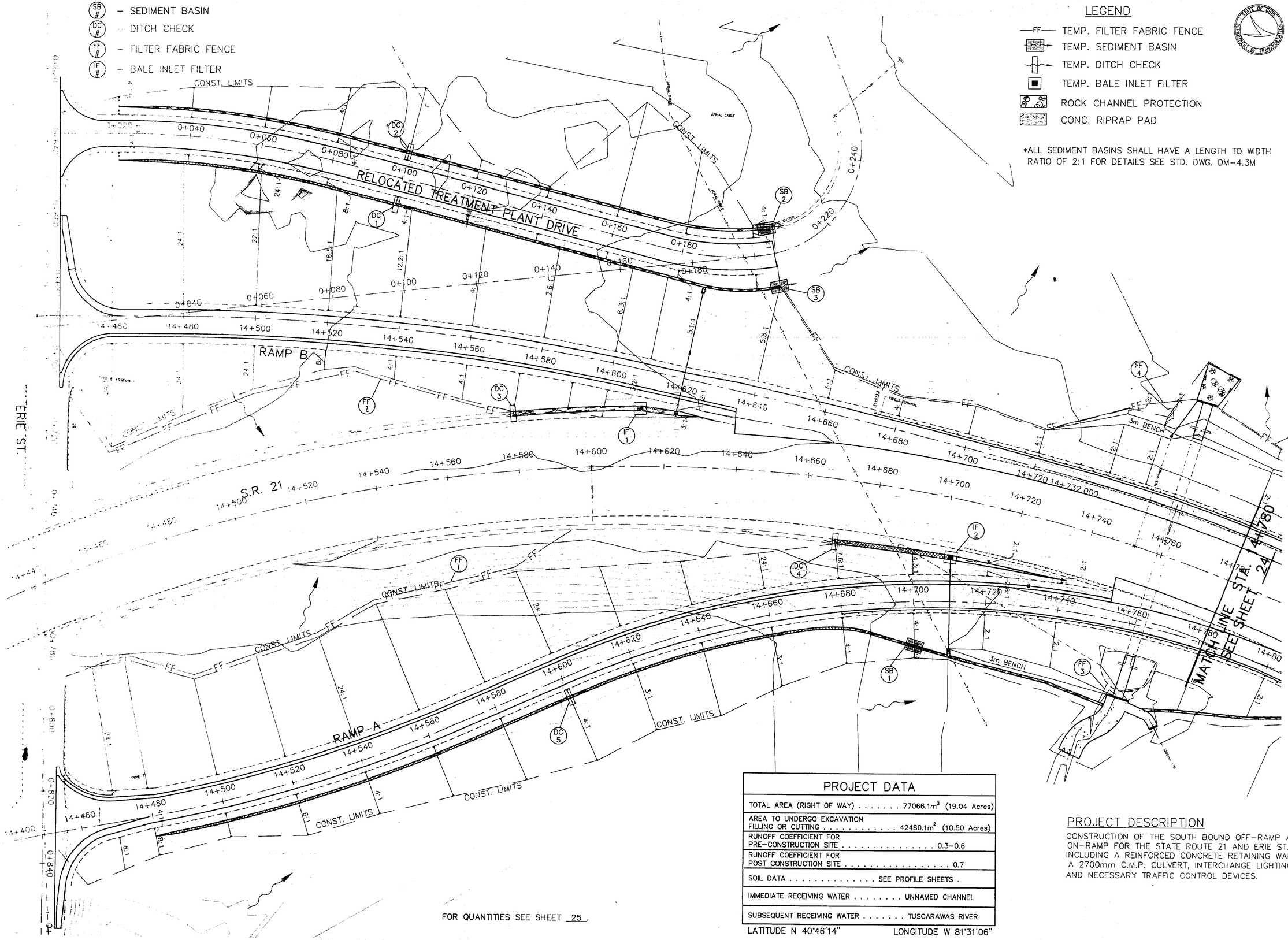
- SB # – SEDIMENT BASIN
- DC # – DITCH CHECK
- FF # – FILTER FABRIC FENCE
- IF # – BALE INLET FILTER

LEGEND

- —FF— TEMP. FILTER FABRIC FENCE
- TEMP. SEDIMENT BASIN
- TEMP. DITCH CHECK
- TEMP. BALE INLET FILTER
- ROCK CHANNEL PROTECTION
- CONC. RIPRAP PAD

*ALL SEDIMENT BASINS SHALL HAVE A LENGTH TO WIDTH RATIO OF 2:1 FOR DETAILS SEE STD. DWG. DM-4.3M

metric units



FOR QUANTITIES SEE SHEET 25.

PROJECT DATA

TOTAL AREA (RIGHT OF WAY)	77066.1m² (19.04 Acres)
AREA TO UNDERGO EXCAVATION FILLING OR CUTTING	42480.1m² (10.50 Acres)
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.3–0.6
RUNOFF COEFFICIENT FOR POST CONSTRUCTION SITE	0.7
SOIL DATA	SEE PROFILE SHEETS .
IMMEDIATE RECEIVING WATER	UNNAMED CHANNEL
SUBSEQUENT RECEIVING WATER	TUSCARAWAS RIVER

LATITUDE N 40°46'14" LONGITUDE W 81°31'06"

PROJECT DESCRIPTION

CONSTRUCTION OF THE SOUTH BOUND OFF-RAMP AND NORTH BOUND ON-RAMP FOR THE STATE ROUTE 21 AND ERIE ST. INTERCHANGE, INCLUDING A REINFORCED CONCRETE RETAINING WALL, EXTENDING A 2700mm C.M.P. CULVERT, INTERCHANGE LIGHTING, AND NECESSARY TRAFFIC CONTROL DEVICES.

N

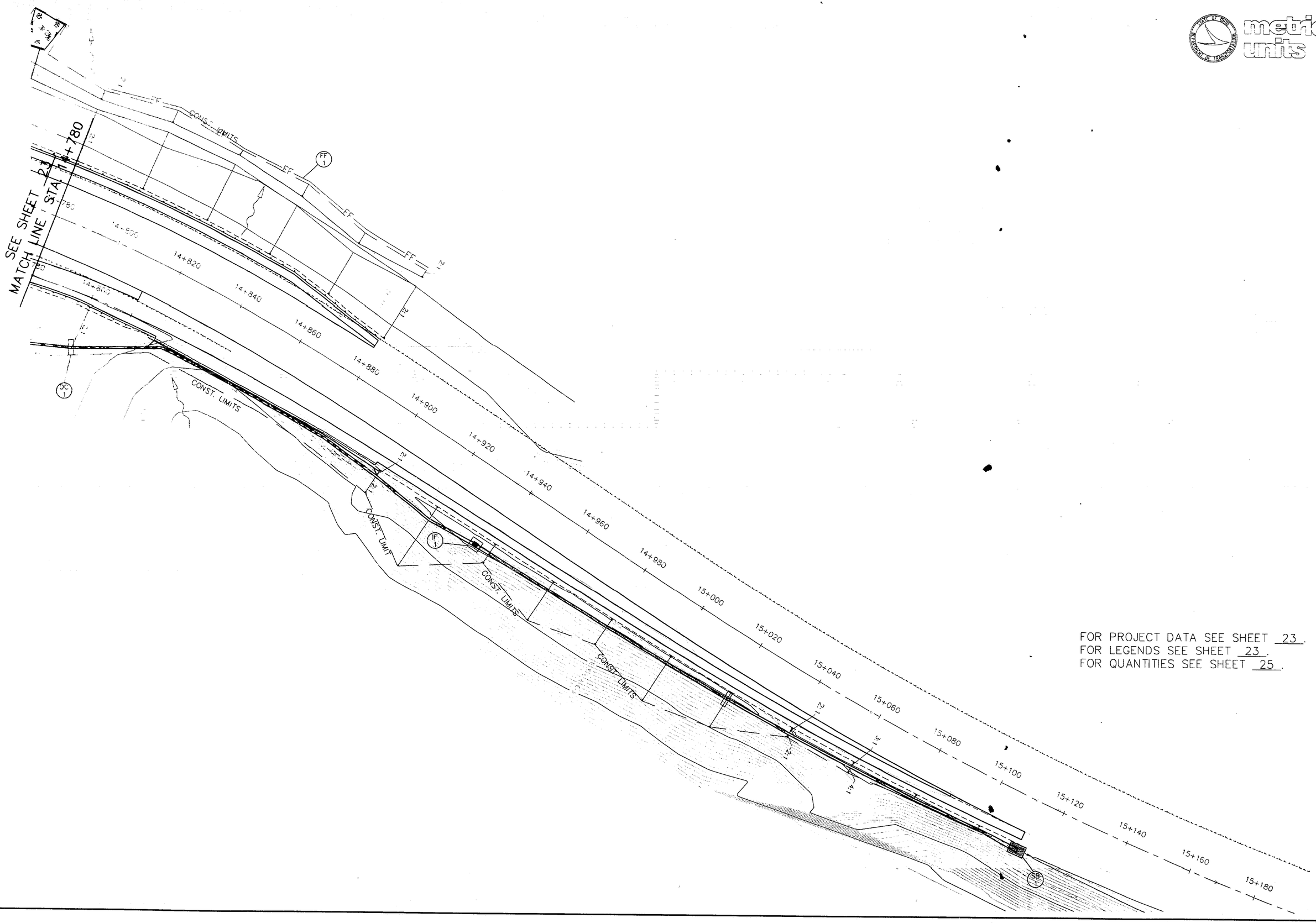
0 50 100 SCALE IN METERS

CALCULATED | CHECKED

STORM WATER POLLUTION PREVENTION PLAN
STA. 14+240 TO STA. 14+780

STA-21-14.452

DATE: 6/29/95 DATE: 4/25/96
CAD FILE NAME 20240.00 SWPPP



FOR PROJECT DATA SEE SHEET 23.
FOR LEGENDS SEE SHEET 23.
FOR QUANTITIES SEE SHEET 25.

metric units

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

N

0 10 20
SCALE IN METERS

CALCULATED
CHECKED

STORM WATER POLLUTION PREVENTION PLAN
STA. 14+780 TO STA. 15+520

STA-21-14.452

CAD FILE NAME 7024/00 SWPPP2

SWPPP SUBSUMMARY

metric units

LOCATION				ITEM NUMBERS				
				207			60*	
SHEET No.	REFERENCE No.	STATION TO STATION	SIDE	TEMPORARY BERMS, DAMS, AND SEDIMENT BASINS	STRAW OR HAY BALES	FILTER FABRIC FENCE	ROCK CHANNEL PROTECTION, TYPE C, W/O FILTER	
				CU. M.	EACH	METER	CU. M.	
		[illegible] RAMP B	RT.		8			
		[illegible] RAMP A	LT.		8			
		[illegible] RAMP A	RT.	37.1			8	
		[illegible] TREATMENT PLANT DRIVE	LT.	[illegible]			8	
		[illegible] TREATMENT PLANT DRIVE	RT.	293.1			8	
		[illegible] TREATMENT PLANT DRIVE	LT.		5			
		[illegible] TREATMENT PLANT DRIVE	RT.		5			
		[illegible] RAMP B	RT.		5			
		[illegible] RAMP A	LT.		5			
		[illegible] RAMP A	RT.		5			
		[illegible] 14+620, RAMP A	LT.			130		
		[illegible] STA. 14+575, RAMP B	LT.			150		
		[illegible] RAMP A	RT.			5		
		[illegible] RAMP A TO STA. 14+758 SP 21	LT.			128		
		[illegible] STA. 14+782, SP 21	LT.			22		
		[illegible] SP 21	RT.		8			
		STA. 14+812.38, SP 21	RT.	135.2			8	
		STA. 14+800, SP 21	RT.		5			
		[illegible] 14+880, RAMP A	LT.			108		
		TOTAL		706.4	54	543	32	

CALCULATED NEL
CHECKED DSB

STORM WATER POLLUTION PREVENTION PLAN SUBSUMMARY

STA-21-14.452

STA 14+448.897 ℄ RAMP 'A' =
STA 14+405.956 ℄ RAMP 'H' =
STA 0+832.024 ℄ ERIE ST.

CURVE DATA
℄ RAMP A
Δ = 13°38'46"
R = 400.000m
T = 47.860m
L = 95.267m
CH= 95.042m
E = 2.853m
e_{max} = 0.032

℄ ERIE ST.
12m TAPER
+470.00 6.00m LT.
+482.00 4.80m LT.
80°00'00"
EXIST. RAMP H
S08°49'03"E
77°28'21"
N88°49'03"W
RAMP A
0.90m
4.80m
1.80m
MATCH LINE STA. 14+540 SEE SHEET 27
+466.79 1.20m RT.
+478.79
+845.62 4.86m LT.
12m TAPER
12m TAPER
+857.62 3.66m LT.

DRILLHOLE SE CORNER CONC. BASE OF A LIGHT
16.600m
℄ RAMP A
14+448.897
℄ ERIE ST.
8.935m
19.208m
DRILLHOLE NW CORNER ELEC. BOX
DRILLHOLE IN ⊙ OF STA. 27+00 STAMPED ON E.P.

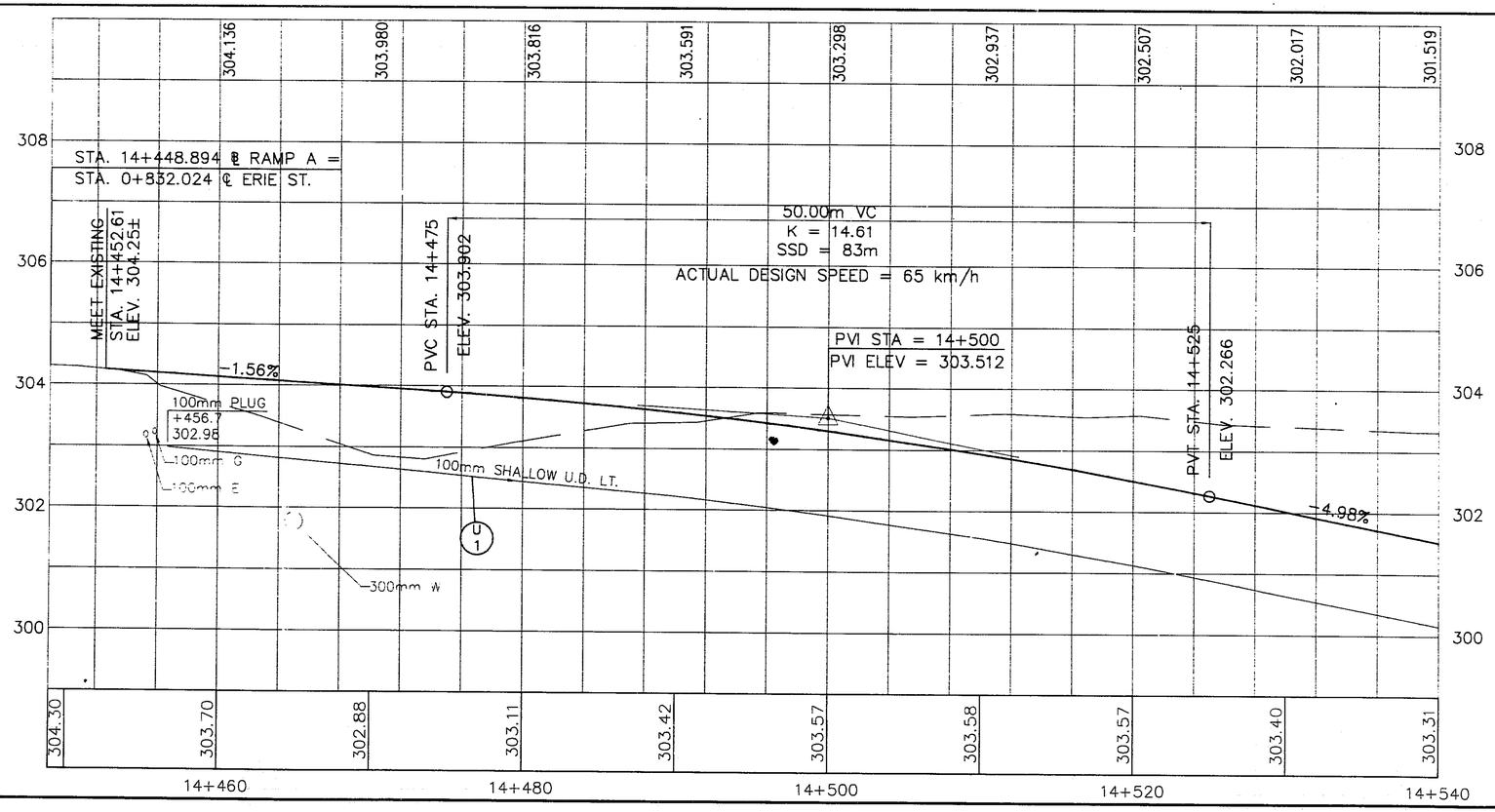
BENCHMARK:
CITY OF MASSILLON, TOP OF RR SPIKE N. SIDE OF ⊅ #488 3)
STA. 1+024±, 6.71m RT.
ELEV. 305.07

CH. LINK FENCE
PK W. END WOOD FENCE
23.167
PK N. SIDE F.P.
25.080
REBAR STA. 14+472.275 RAMP A
22.876
℄ ERIE ST.
DRILLHOLE STA. 14+448.897

FOR FENCE PLAN SEE SHEET 89.
FOR QUANTITES SEE SHEET 32.

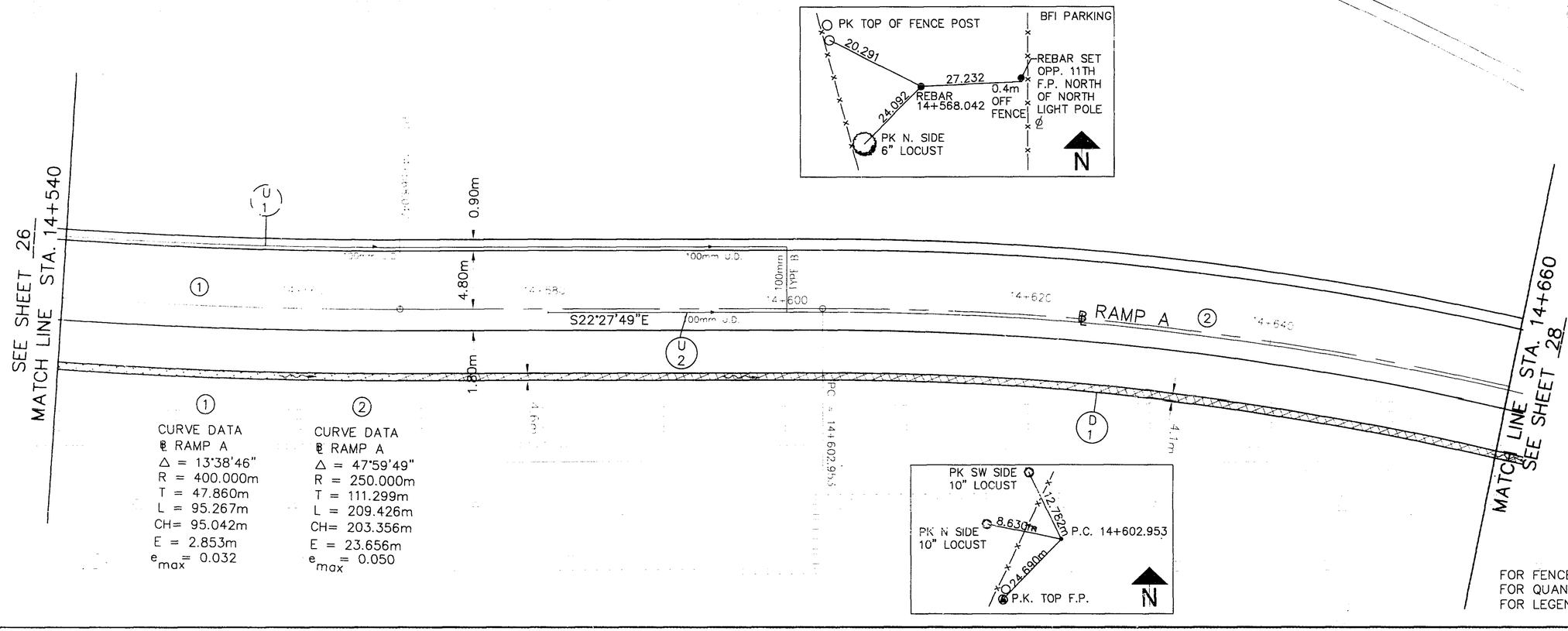
LEGEND

- ROCK CHANNEL PROTECTION
- SODDING
- (D #) DRAINAGE ITEMS
- (G #) GUARDRAIL
- (U #) UNDERDRAIN
- (X #) REMOVAL ITEM



PLAN AND PROFILE - RAMP A
STA. 14+437.895 TO STA. 14+540

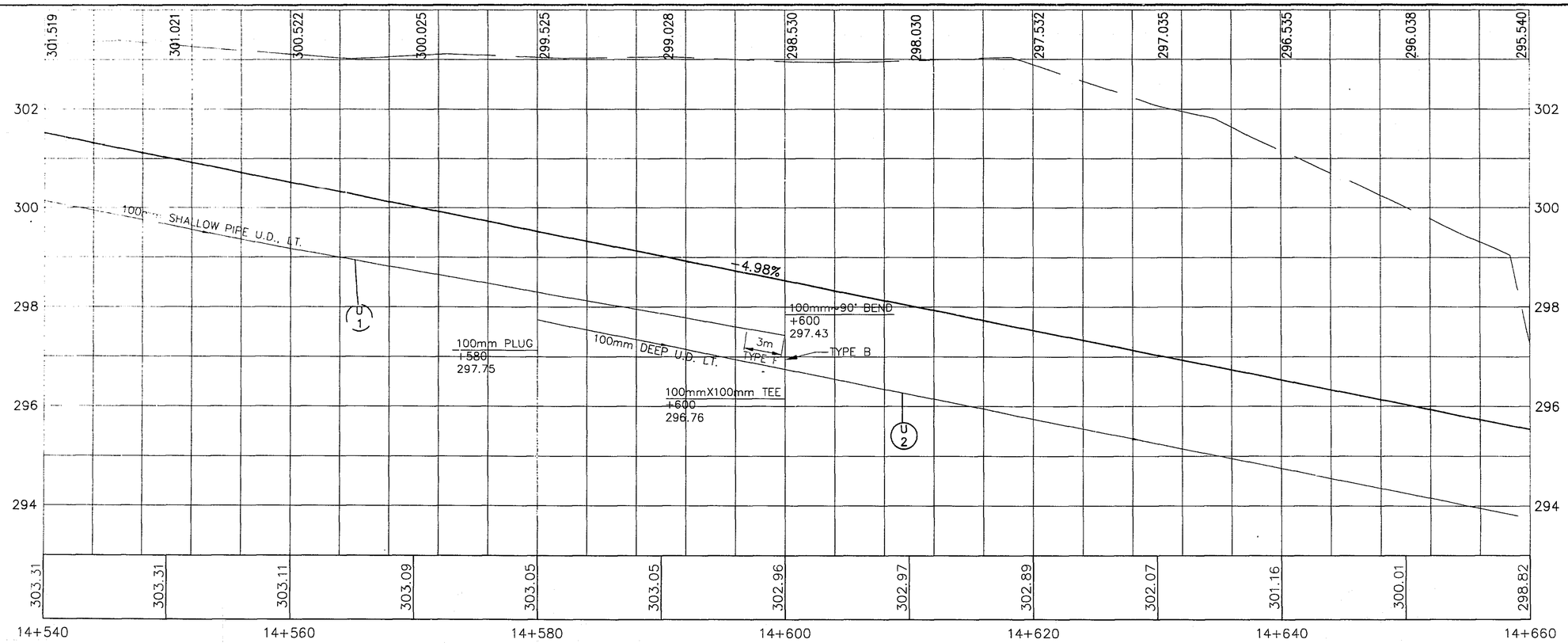
STA-21-14.452



CURVE DATA
℄ RAMP A
Δ = 13°38'46"
R = 400.000m
T = 47.860m
L = 95.267m
CH= 95.042m
E = 2.853m
e_{max}= 0.032

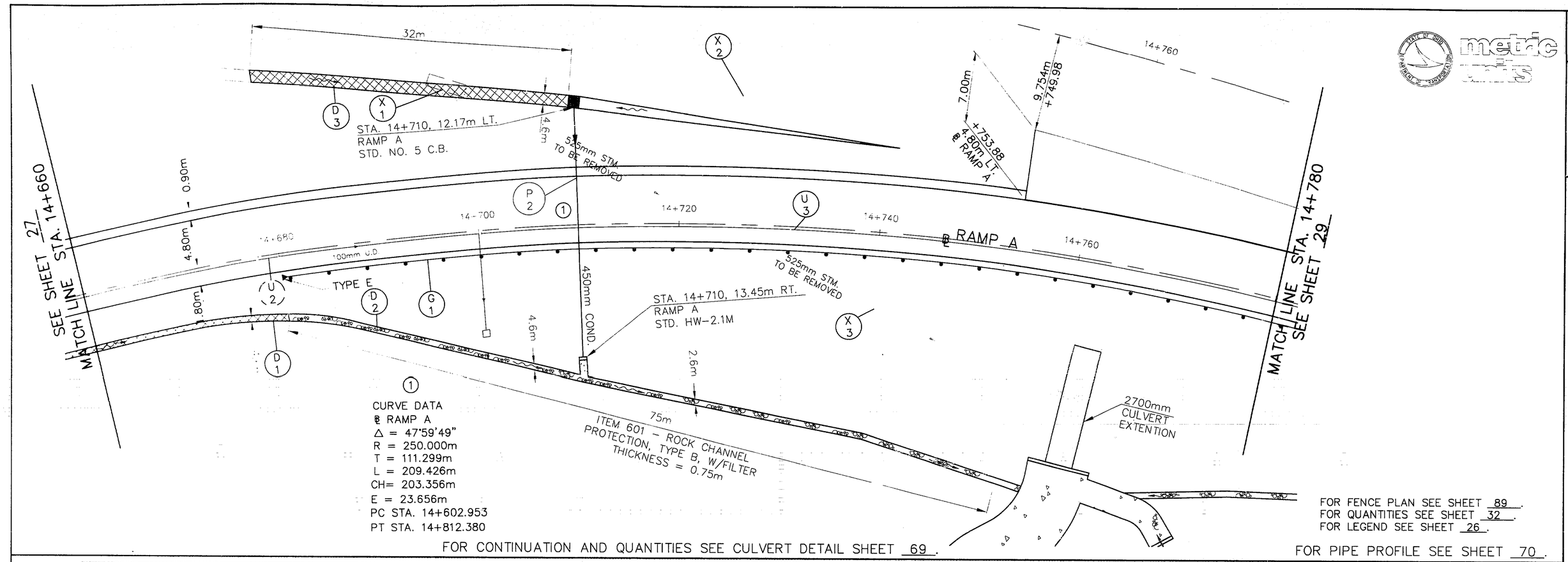
CURVE DATA
℄ RAMP A
Δ = 47°59'49"
R = 250.000m
T = 111.299m
L = 209.426m
CH= 203.356m
E = 23.656m
e_{max}= 0.050

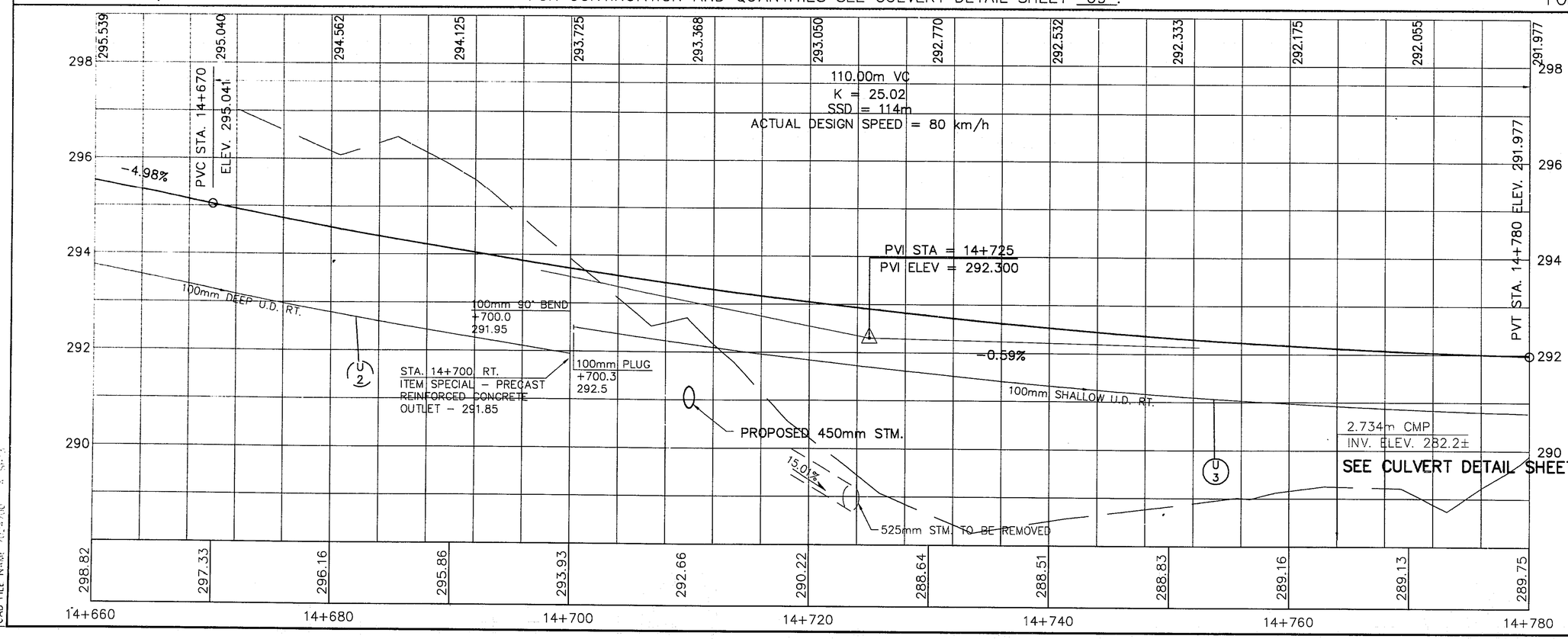
FOR FENCE PLAN SEE SHEET 89.
FOR QUANTITIES SEE SHEET 32.
FOR LEGEND SEE SHEET 26.



PLAN AND PROFILE - RAMP A
STA. 14+540 TO STA. 14+660

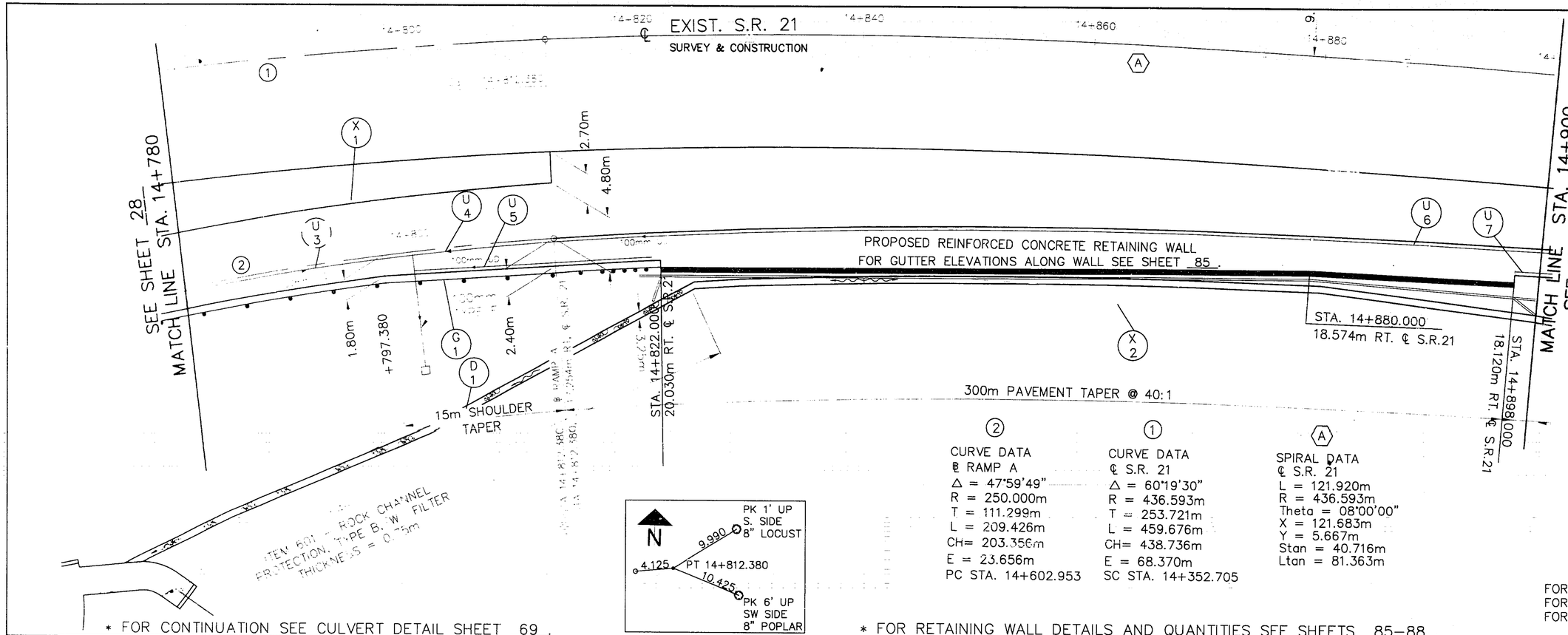
STA-21-14.452

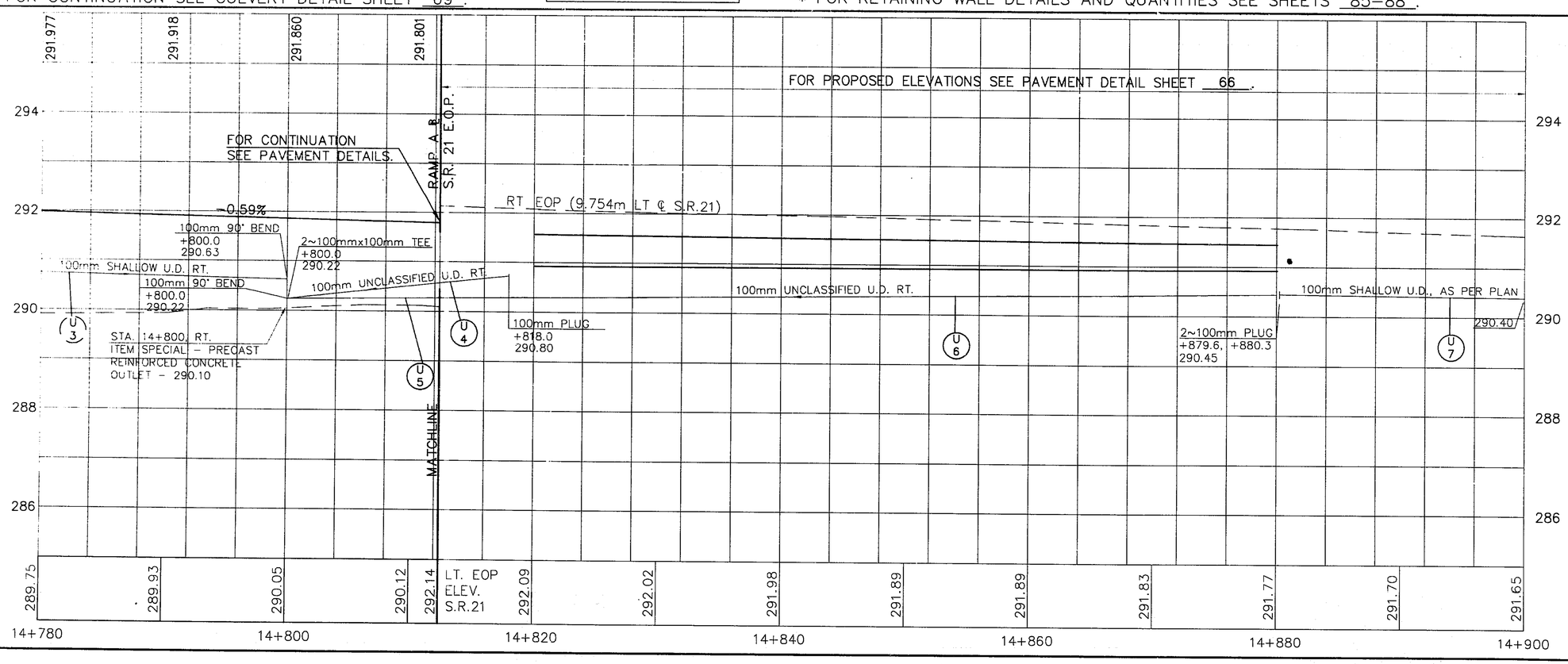




PLAN AND PROFILE - RAMP A
STA. 14+660 TO STA. 14+780

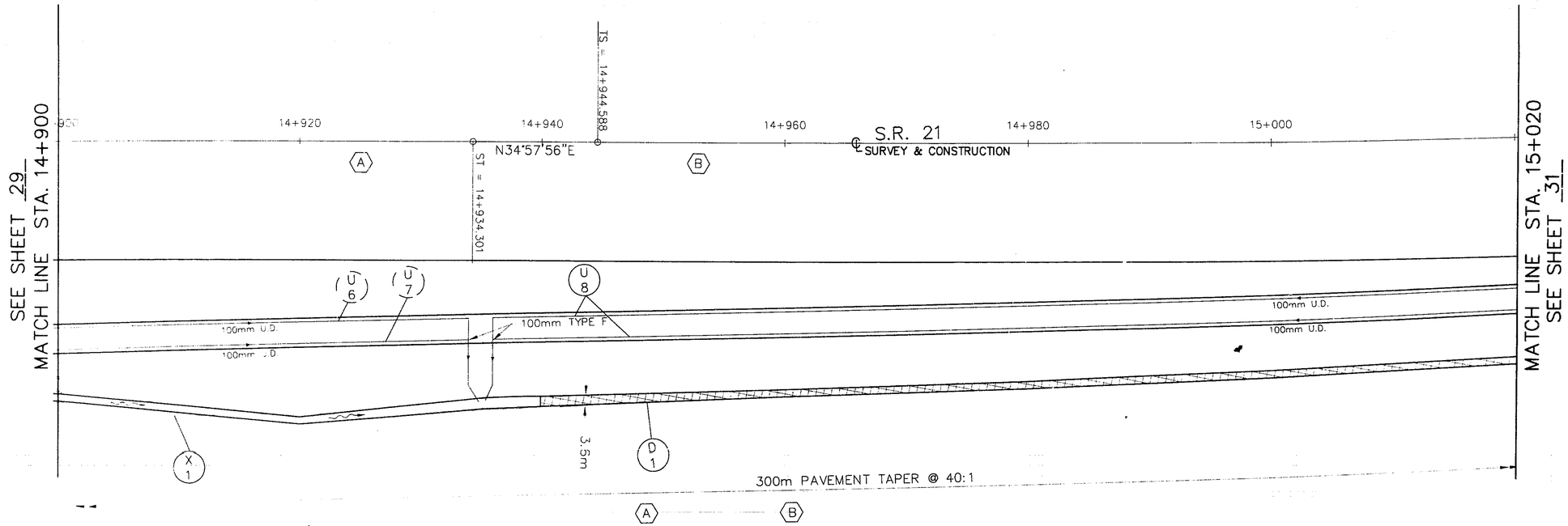
STA-21-14.452





PLAN AND PROFILE - RAMP A
STA. 14+780 TO STA. 14+900

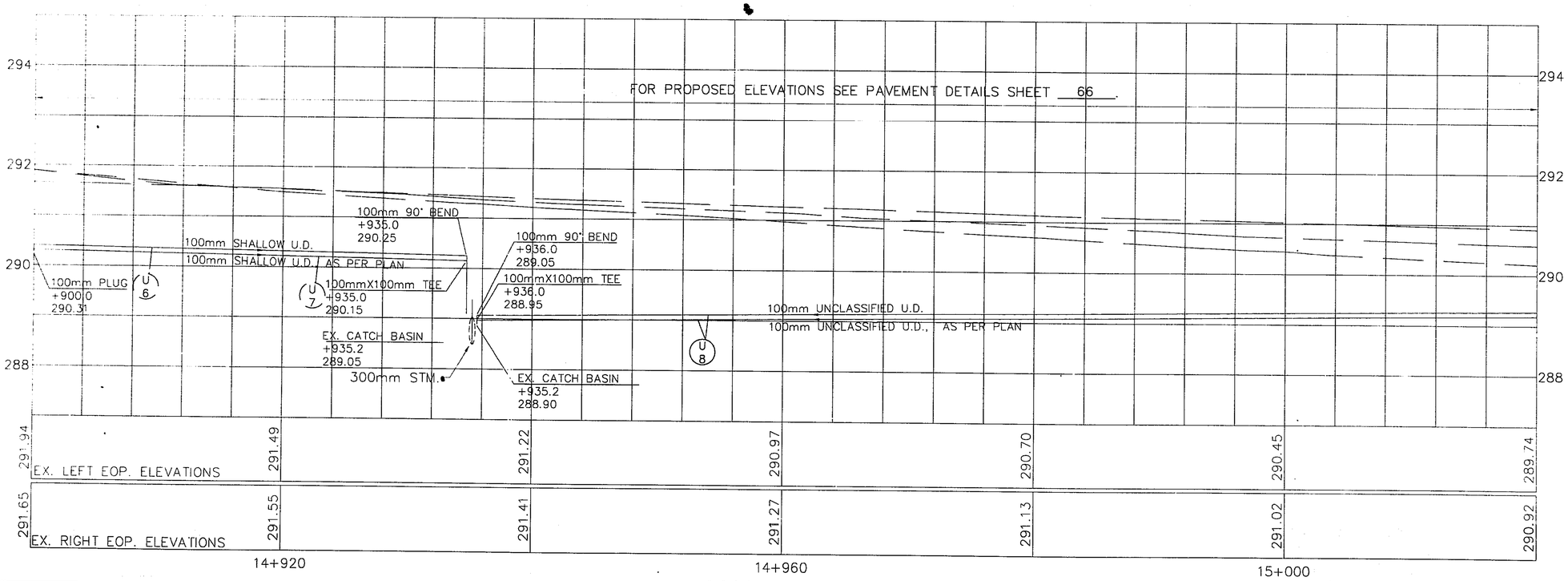
STA-21-14.452



SPIRAL DATA
℄ S.R. 21
L = 121.920m
R = 436.593m
Theta = 08°00'00"
X = 121.683m
Y = 5.667m
Stan = 40.716m
Ltan = 81.363m

SPIRAL DATA
℄ S.R. 21
L = 91.440m
R = 873.190m
Theta = 03°00'00"
X = 91.415m
Y = 1.596m
Stan = 30.488m
Ltan = 60.969m

FOR FENCE PLAN SEE SHEET 89.
FOR QUANTITIES SEE SHEET 32.
FOR LEGEND SEE SHEET 26.



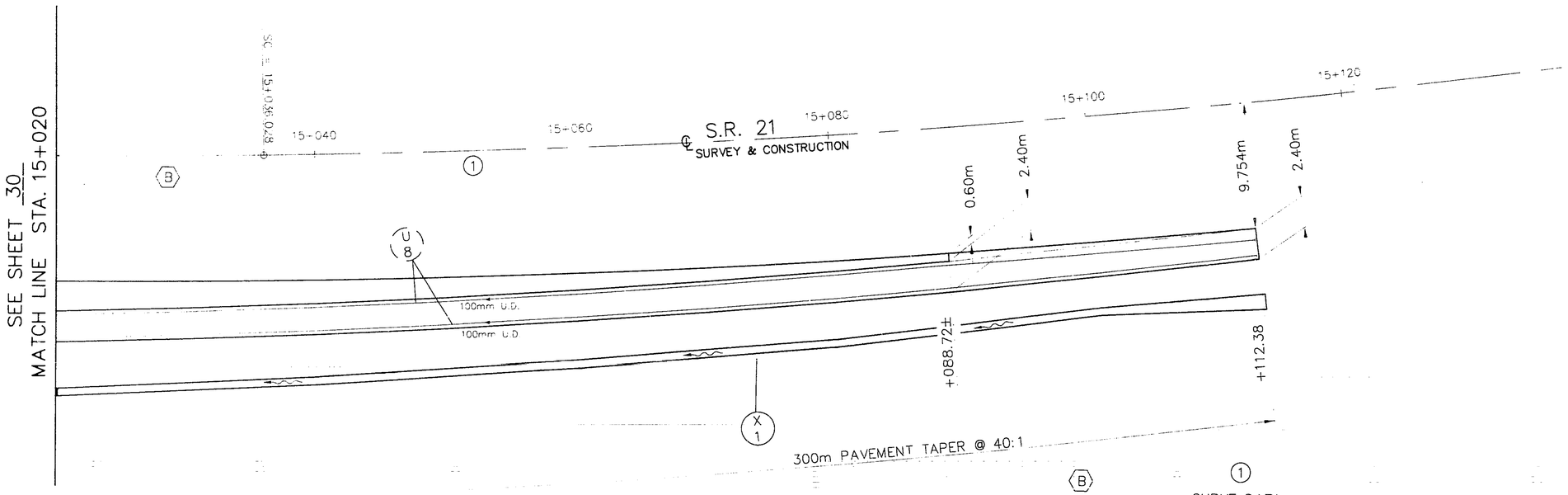
metric units

SCALE IN METERS 0 5 10

PLAN AND PROFILE - RAMP A ACCELERATION LANE
STA. 14+900 TO STA. 15+020

STA-21-14.452

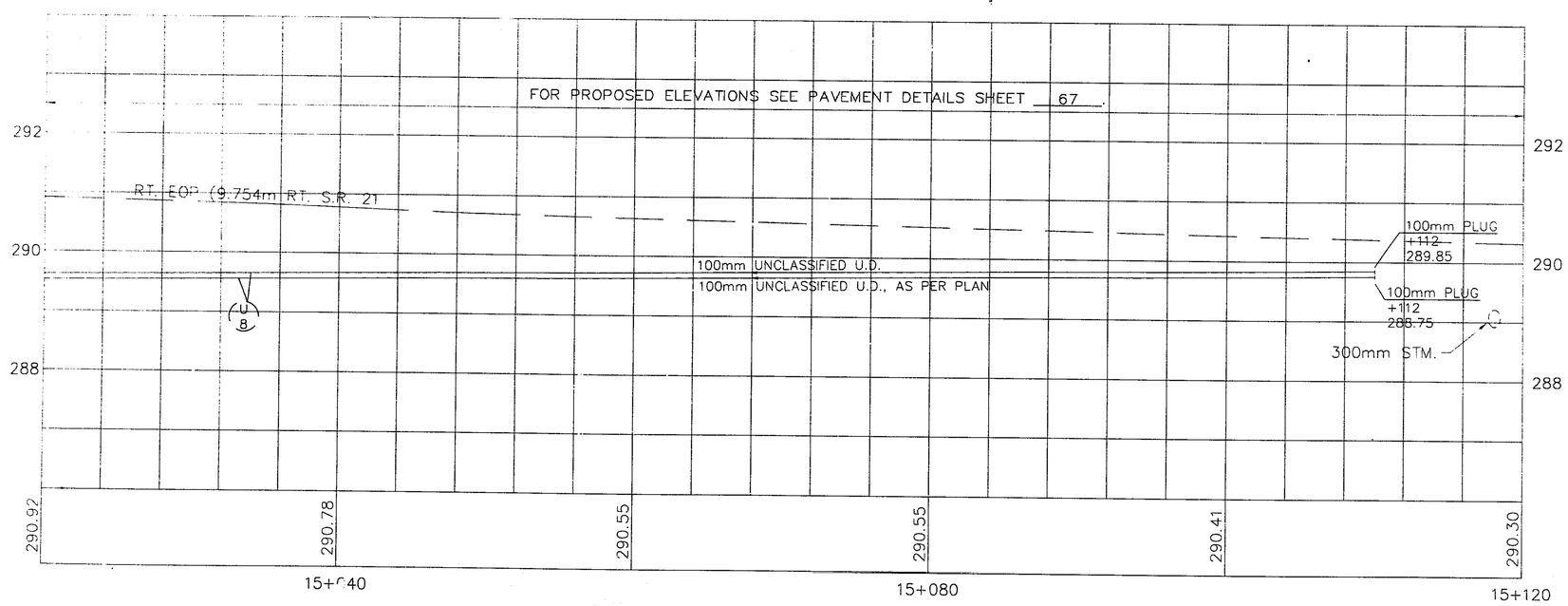
DATE: 6/21/95 DATE
CAD FILE NAME: 7024100 A-SHTS



SPIRAL DATA
℄ S.R. 21
L = 91.440m
R = 873.190m
Theta = 03°00'00"
X = 91.415m
Y = 1.596m
Stan = 30.488m
Ltan = 60.969m

CURVE DATA
℄ RAMP A
Δ = 11°28'25"
R = 873.190m
T = 87.722m
L = 174.858m
CH= 174.566m
E = 4.395m

FOR FENCE PLAN SEE SHEET 89.
FOR QUANTITIES SEE SHEET 32.
FOR LEGEND SEE SHEET 26.



metric units

SCALE IN METERS 0 5 10

PLAN AND PROFILE - RAMP A ACCELERATION LANE
STA. 15+020 TO STA. 15+140

STA-21-14.452

DATE 6/27/95
CAD FILE NAME

QUANTITY SUBSUMMARY

metric units

LOCATION				ITEM NUMBERS																													
				202				448	601		602	603				604	605				FOR INFORMATION ONLY				606					660	SPEC.
SHEET No.	REFERENCE No.	STATION TO STATION	SIDE	GUARDRAIL REMOVED	GUTTER REMOVED	PIPE REMOVED, 600mm AND UNDER		ASPHALT CONCRETE, SURFACE COURSE, TYPE 1 AC-20 (UNDER GUARDRAIL)	ROCK CHANNEL PROTECTION, TYPE B, W/ FILTER		CONCRETE MASONRY	100mm CONDUIT, TYPE B	100mm CONDUIT, TYPE F		450mm CONDUIT, TYPE B		CATCH BASIN, NO. 5	100mm SHALLOW PIPE UNDERDRAIN, AS PER PLAN	100mm SHALLOW PIPE UNDERDRAIN	100mm DEEP PIPE UNDERDRAIN	100mm UNCLASSIFIED PIPE UNDERDRAIN	100mm 45° BEND	100mm 90° BEND	100mm X 100mm TEE	100mm PLUG		GUARDRAIL, TYPE 5	ANCHOR ASSEMBLY, TYPE E	ANCHOR ASSEMBLY, TYPE T	BRIDGE TERMINAL ASSEMBLY, TYPE F	BRIDGE TERMINAL ASSEMBLY, TYPE 1	SODDING	PRECAST REINFORCED CONCRETE OUTLET
				METER	METER	METER		CU. M.	CU. M.		CU. M.	METER	METER		METER		EACH	METER	METER	METER	METER	EACH	EACH	EACH	EACH		METER	EACH	EACH	EACH	EACH	SQ. M.	EACH
		RAMP A																															
		STA. 14+480 TO STA. 14+540	RT.																														
		STA. 14+450 TO STA. 14+600	LT									5.5	3						147				1		1						276	
		STA. 14+[illegible] TO STA. 14+470	LT.					3.78																			38.10		1	1			
		STA. 14+[illegible] TO STA. C+825 ERIE ST	LT	34																													
		STA. 14+[illegible] TO STA. 14+660	RT.																														
		STA. 14+[illegible] TO STA. 14+700	RT.																	120			1	1	1						527	
		STA. 14+[illegible] TO STA. 14+680	RT.																														
		STA. 14+68[illegible] TO STA. 14+755	RT.						191.25																						87		
		STA. 14+68[illegible] TO STA. 14+770	LT.																														
		STA. 14+[illegible]	RT/LT								0.28				26		1														138		
		STA. 14+700 TO STA. 14+800	RT.										10						100				2		1								
		STA. 14+680 TO STA. 14+780	RT.					9.38																			87.63	1					
		STA. 14+696 TO STA. 14+710	LT.		4																												
		STA. 14+[illegible] TO STA. 14+780	LT.	65																													
		STA. 14+700 TO STA. 14+755	RT/LT			61																											
		STA. 14+760 TO STA. 14+825	RT.						96.33																								
		STA. 14+800 TO STA. 14+880	RT.										10								80			1	1								
		STA. 14+800 TO STA. 14+822	RT.																		22			1	1								
		STA. 14+880 TO STA. 14+934	RT.										7						54			1	1	1	1								
		STA. 14+898 TO STA. 14+934	RT.															36							1								
		STA. 14+780 TO STA. 14+822	RT.					2.06																			22.86						
		STA. 14+780 TO STA. 14+845	RT.	65																													
		STA. 14+852 TO STA. 14+900	RT.		48																												
		STA. 14+940 TO STA. 15+020	RT.																														
		STA. 14+935 TO STA. 15+112.38	RT.										7					167			167	1	1	1	2						368		
		STA. 14+900 TO 15+020	RT.		120																												
		STA. 15+020 TO STA. 15+112.38	RT.		92																												
		TOTAL		164	264	61		15.22	287.58		0.28	5.5	37		25.5		1	203	301	120	269	2	6	5	9		148.59	1	1	1	1	1396	1

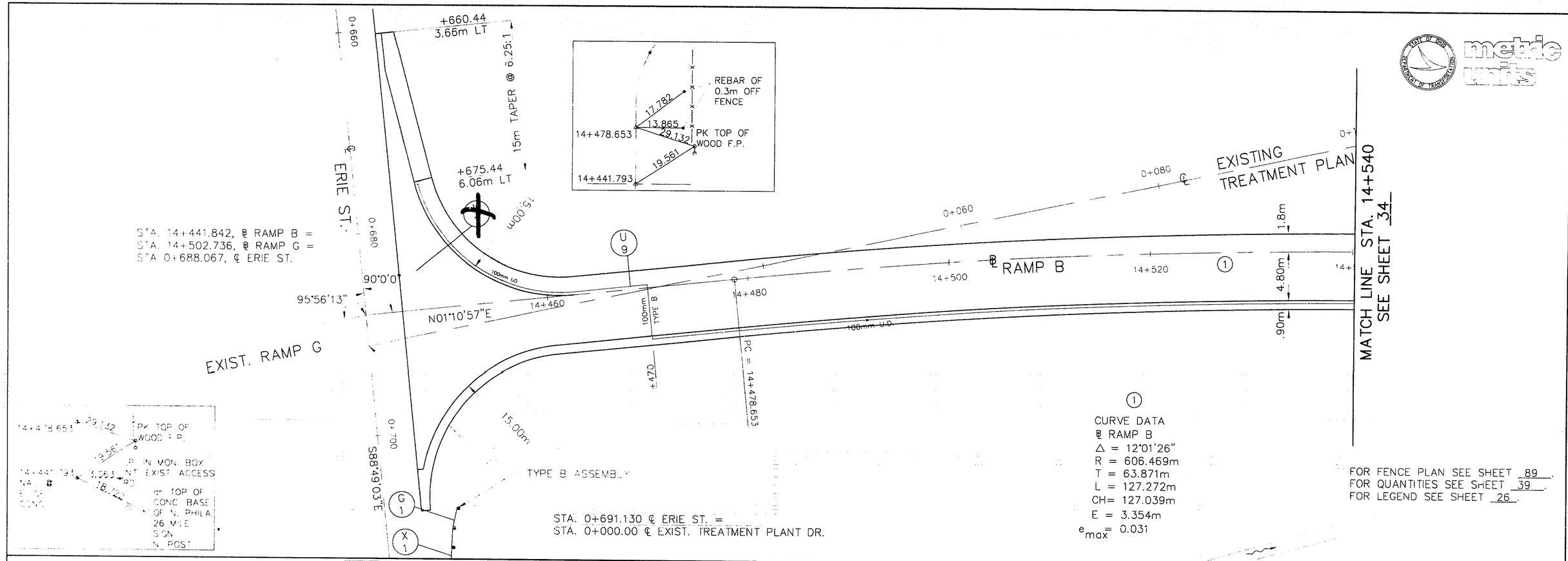
QUANTITY SUBSUMMARY

STA-21-14.452

32
92

CALCULATED NEL
CHECKED DSB

DRAWN BY
DATE 11/1
CAD FILE

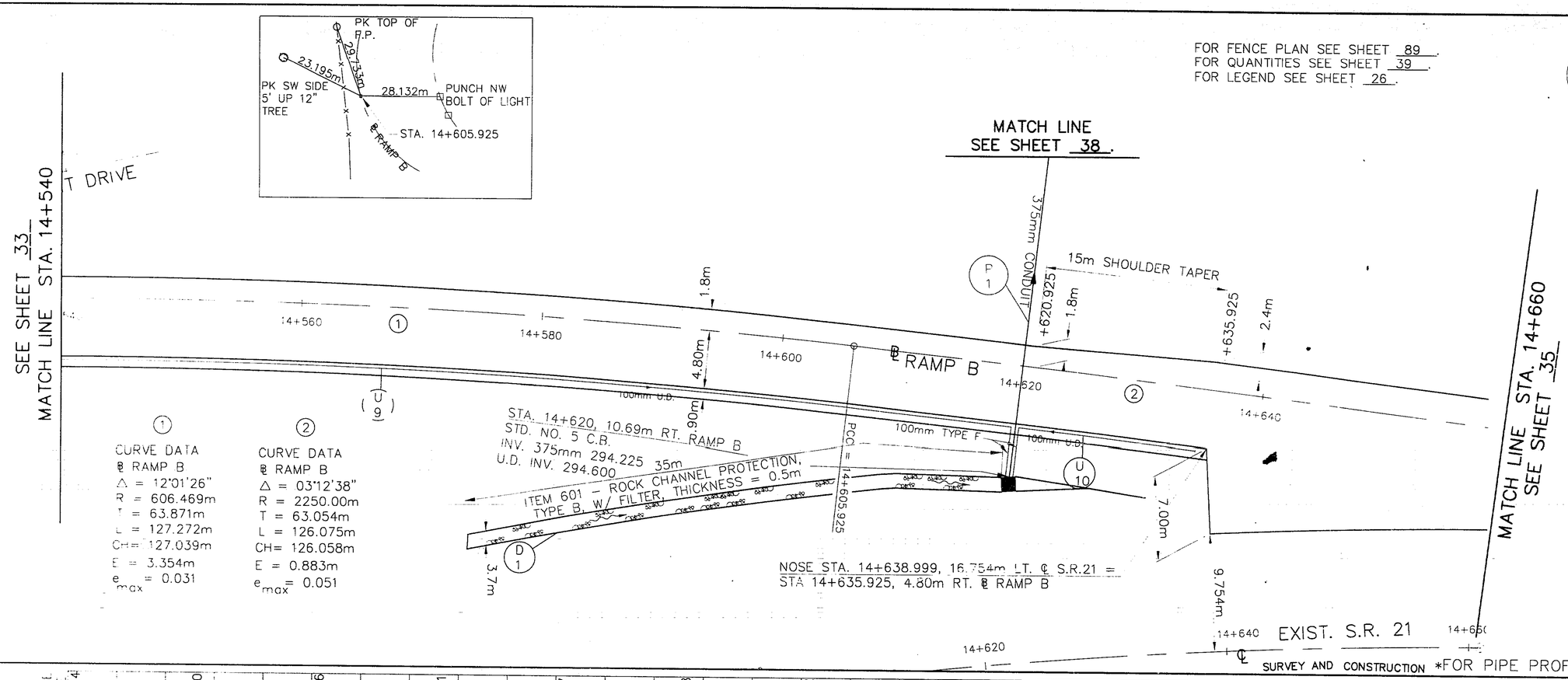


PLAN AND PROFILE - RAMP B
STA. 14+441.84 TO STA. 14+540

STA-21-14.452

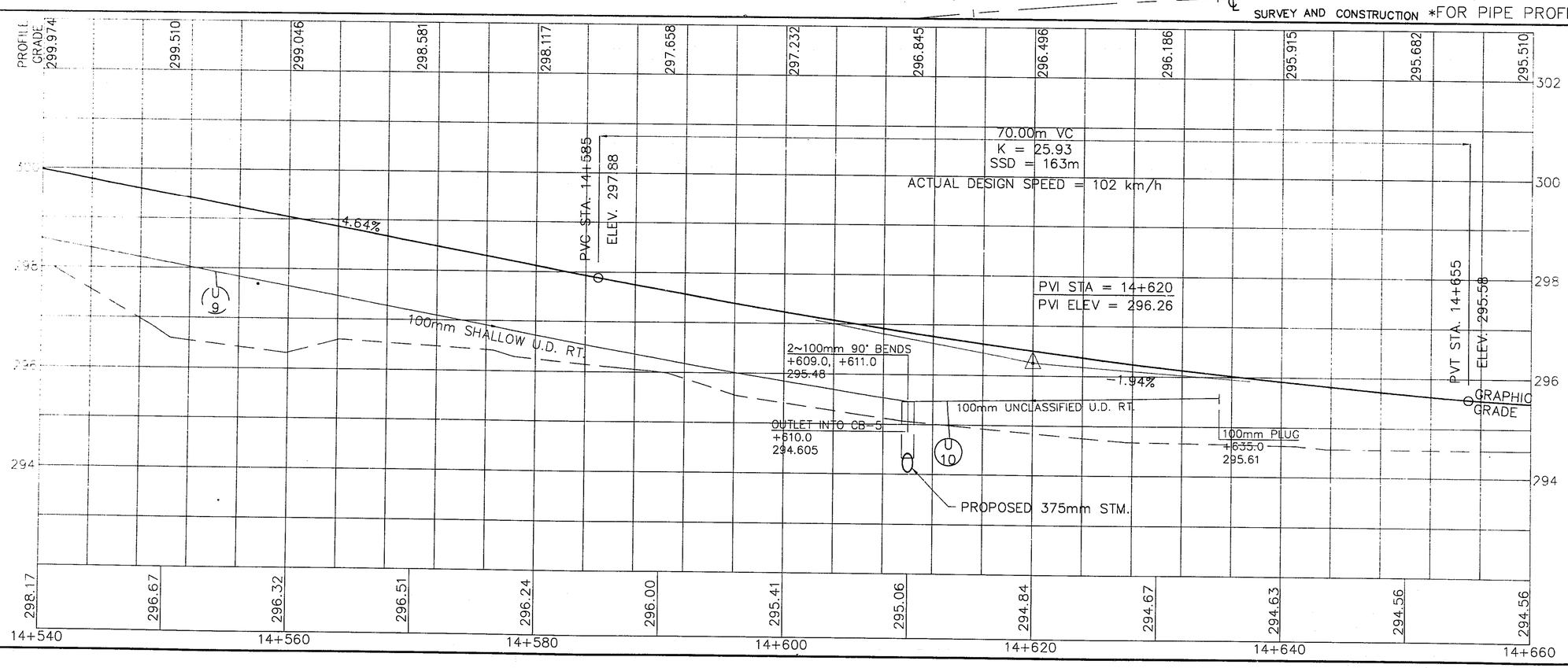
DATE 6/94
CAD FILE NAME

FOR FENCE PLAN SEE SHEET 89.
FOR QUANTITIES SEE SHEET 39.
FOR LEGEND SEE SHEET 26.



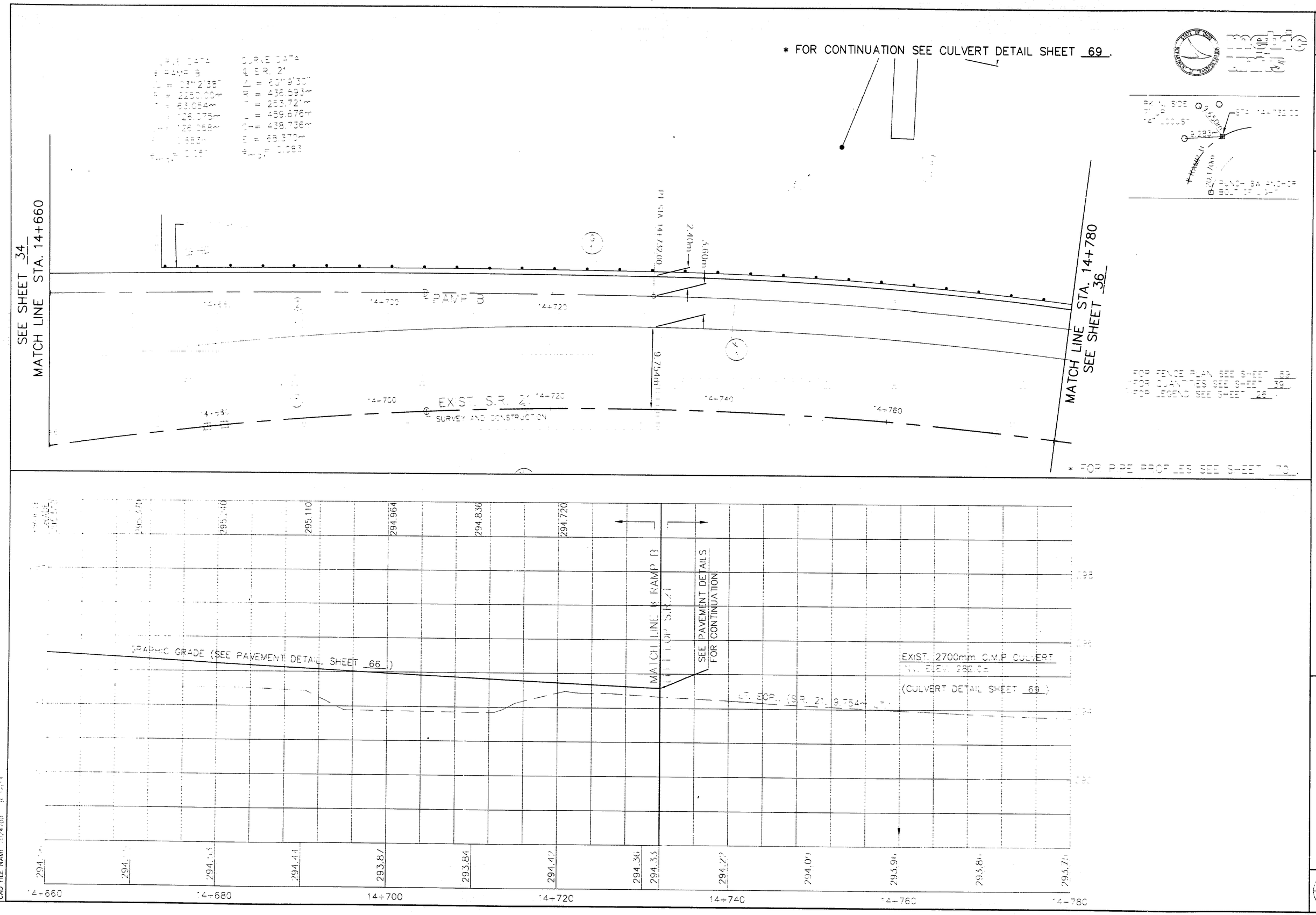
① CURVE DATA ℄ RAMP B
Δ = 12°01'26"
R = 606.469m
T = 63.871m
L = 127.272m
CH= 127.039m
E = 3.354m
e_{max} = 0.031

② CURVE DATA ℄ RAMP B
Δ = 03°12'38"
R = 2250.00m
T = 63.054m
L = 126.075m
CH= 126.058m
E = 0.883m
e_{max} = 0.051



PLAN AND PROFILE - RAMP B
STA. 14+540 TO STA. 14+660

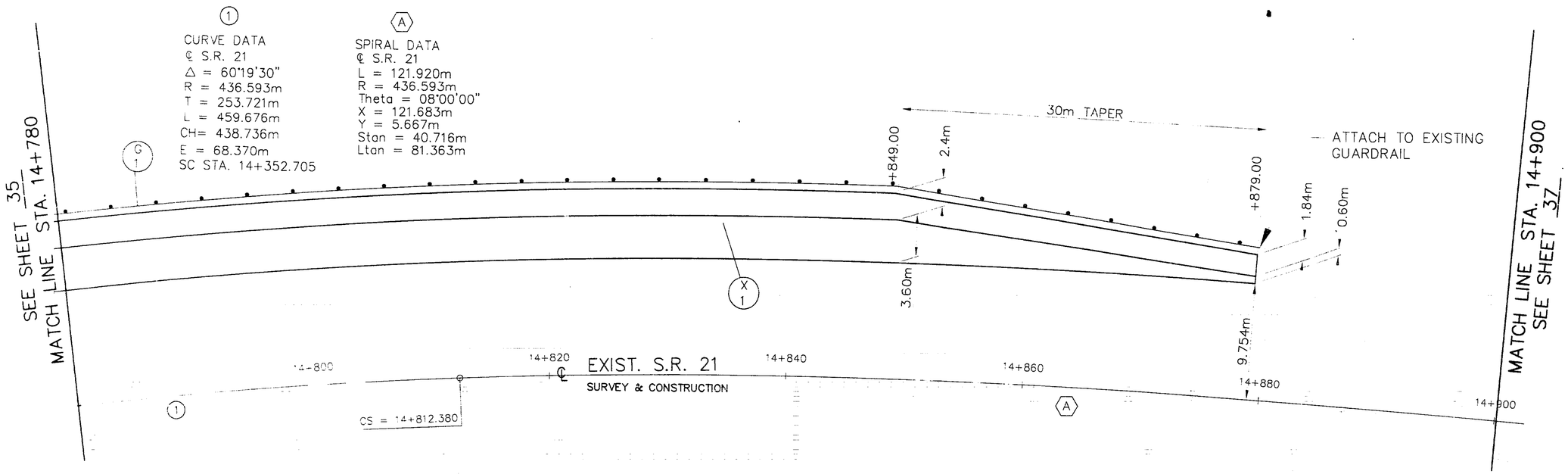
STA-21-14.452

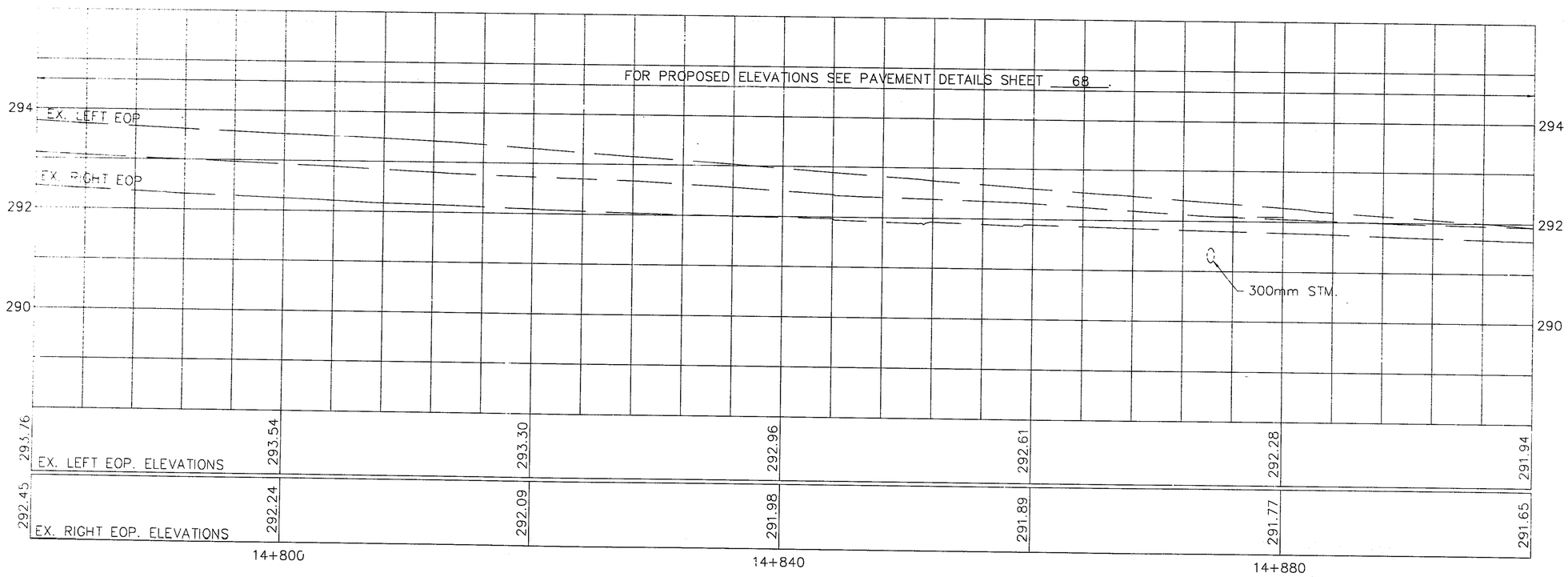

* FOR CONTINUATION SEE CULVERT DETAIL SHEET 69.
CURVE DATA
℄ RAMP B
Δ = 33°2'38"
R = 2280.00m
T = 63.094m
L = 126.075m
C = 124.288m
E = 1.483m
Δ = 0.181
CURVE DATA
℄ S.R. 21
Δ = 60°9'30"
R = 436.693m
T = 253.721m
L = 459.676m
C = 438.736m
E = 68.370m
Δ = 0.083
SEE SHEET 34
MATCH LINE STA. 14+660
℄ RAMP B
14+700
14+720
14+740
14+760
EXIST. S.R. 21
℄ SURVEY AND CONSTRUCTION
PI STA 14+742.00
2.40m
5.60m
9.754m
MATCH LINE STA. 14+780
SEE SHEET 36
FOR FENCE PLAN SEE SHEET 89
FOR QUANTITIES SEE SHEET 39
FOR LEGEND SEE SHEET 26.
* FOR PIPE PROFILES SEE SHEET 70.
SCALE IN METERS
PLAN AND PROFILE - RAMP B
STA. 14+660 TO STA. 14+780
STA-21-14.452
295.110
294.964
294.836
294.720
MATCH LINE ℄ RAMP B
SEE PAVEMENT DETAILS FOR CONTINUATION
GRAPHIC GRADE (SEE PAVEMENT DETAIL, SHEET 66)
EXIST. 2700mm C.M.P. CULVERT
(CULVERT DETAIL SHEET 69)
294.36
294.33
293.84
294.42
293.87
294.41
294.43
294.36
294.09
293.96
293.86
293.75
14+660
14+680
14+700
14+720
14+740
14+760
14+780
35
92

FOR FENCE PLAN SEE SHEET 89.
FOR QUANTITIES SEE SHEET 39.
FOR LEGEND SEE SHEET 26.

metric units

SCALE IN METERS 0 5 10

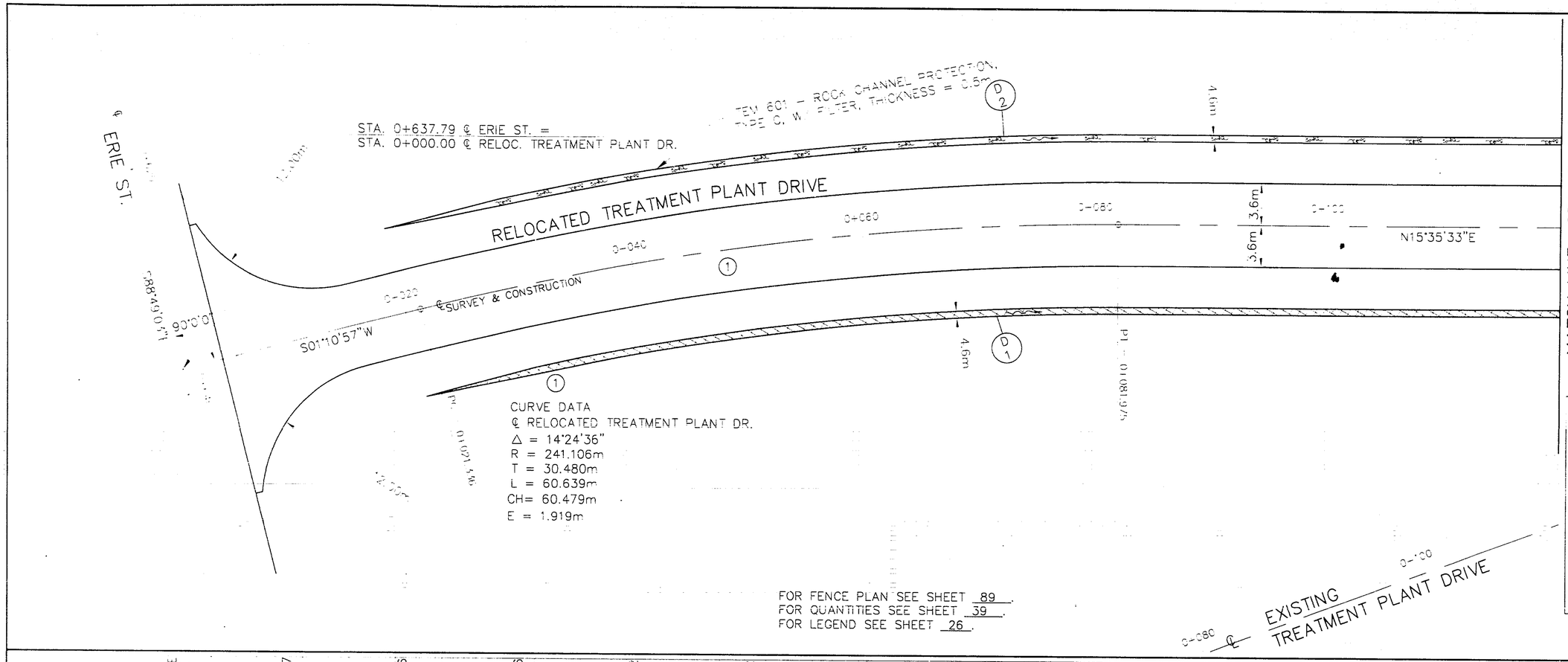


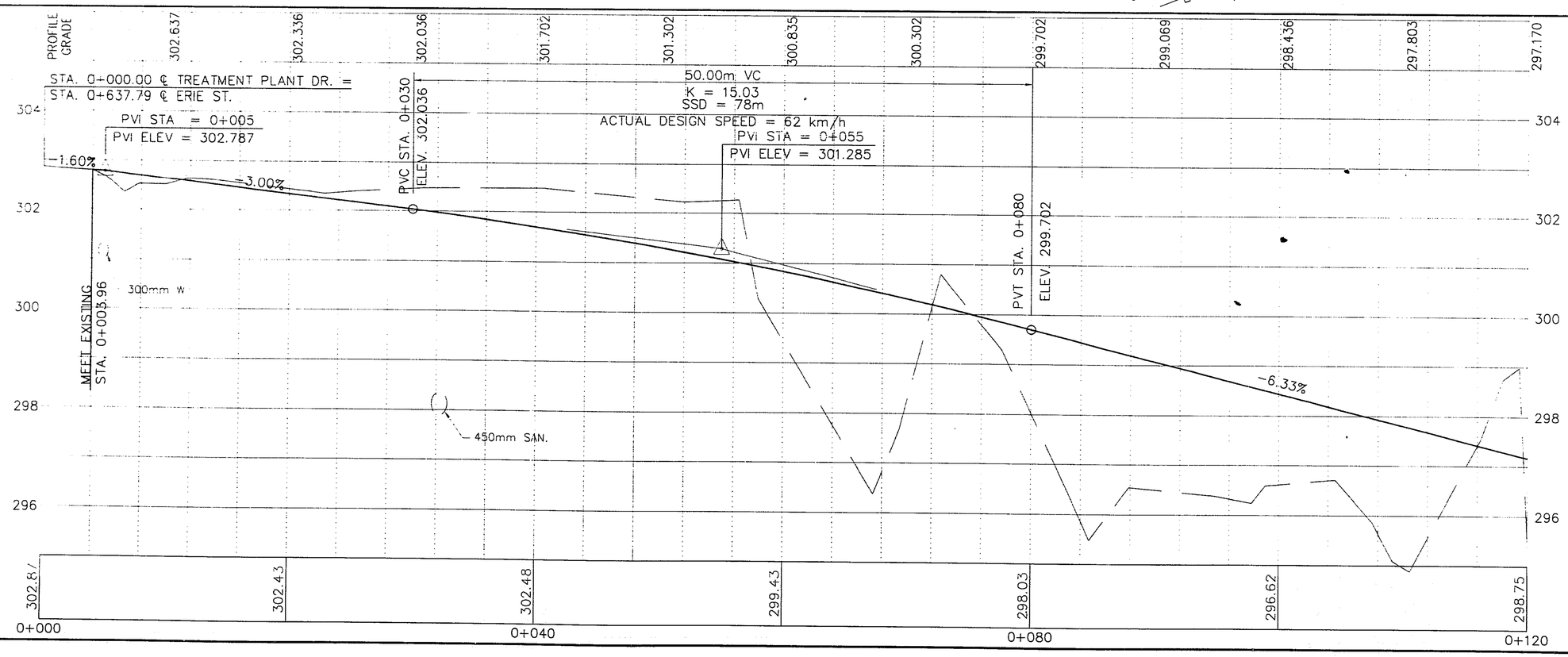


PLAN AND PROFILE - DECELEREATION LANE RAMP B
STA. 14+780 TO STA. 14+900

STA-21-14.452

CAD FILE NAME 02/24/00 B SH14

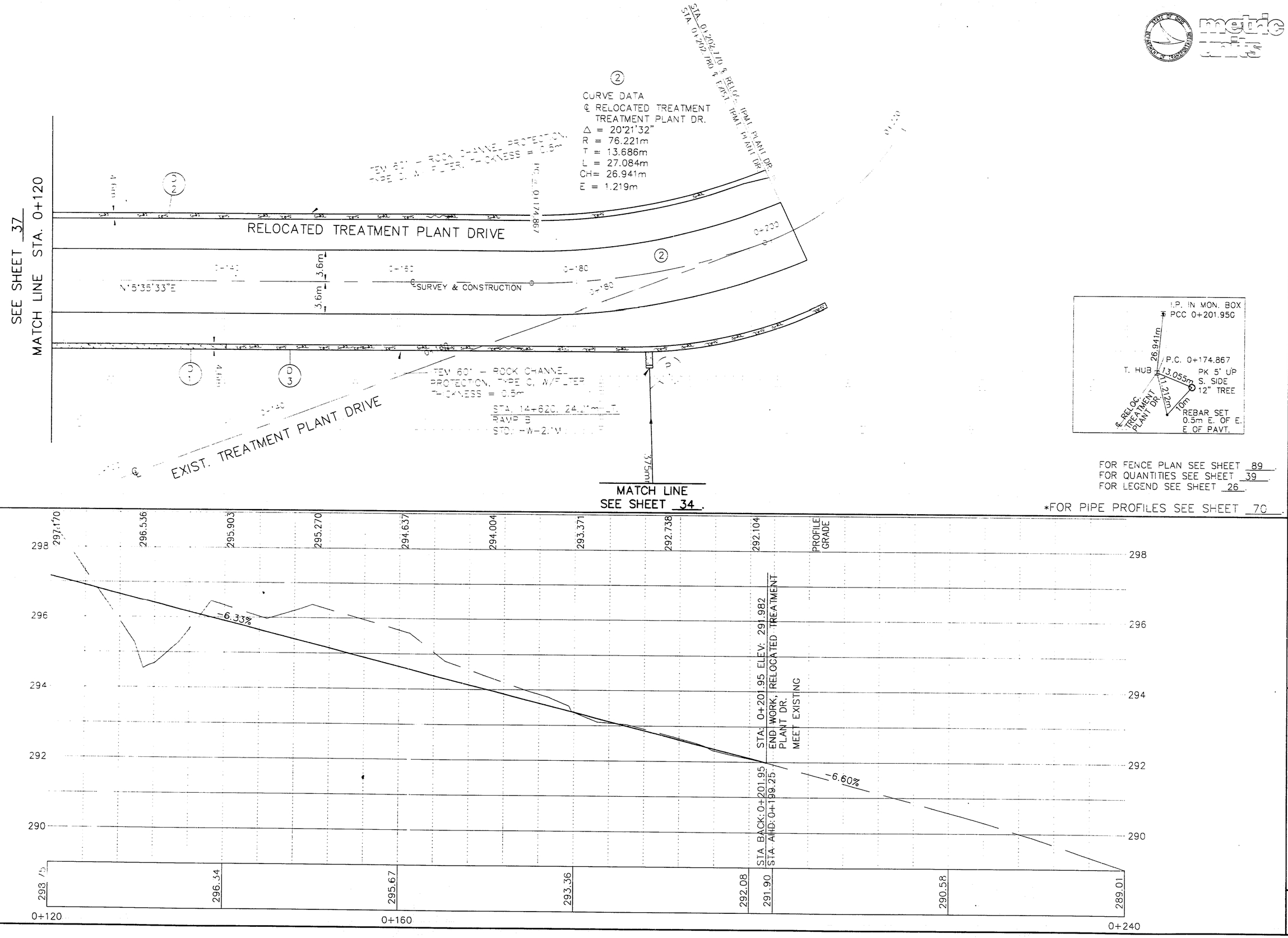




PLAN AND PROFILE - TREATMENT PLANT DRIVE
STA. 0+000 TO STA. 0+120

STA-21-14.452

DATE: 1/17/96 TIME: 8:15:11
CAD FILE NAME: 7024.dgn



PLAN AND PROFILE - TREATMENT PLANT DRIVE
STA. 0+120 TO STA. 0+201.95

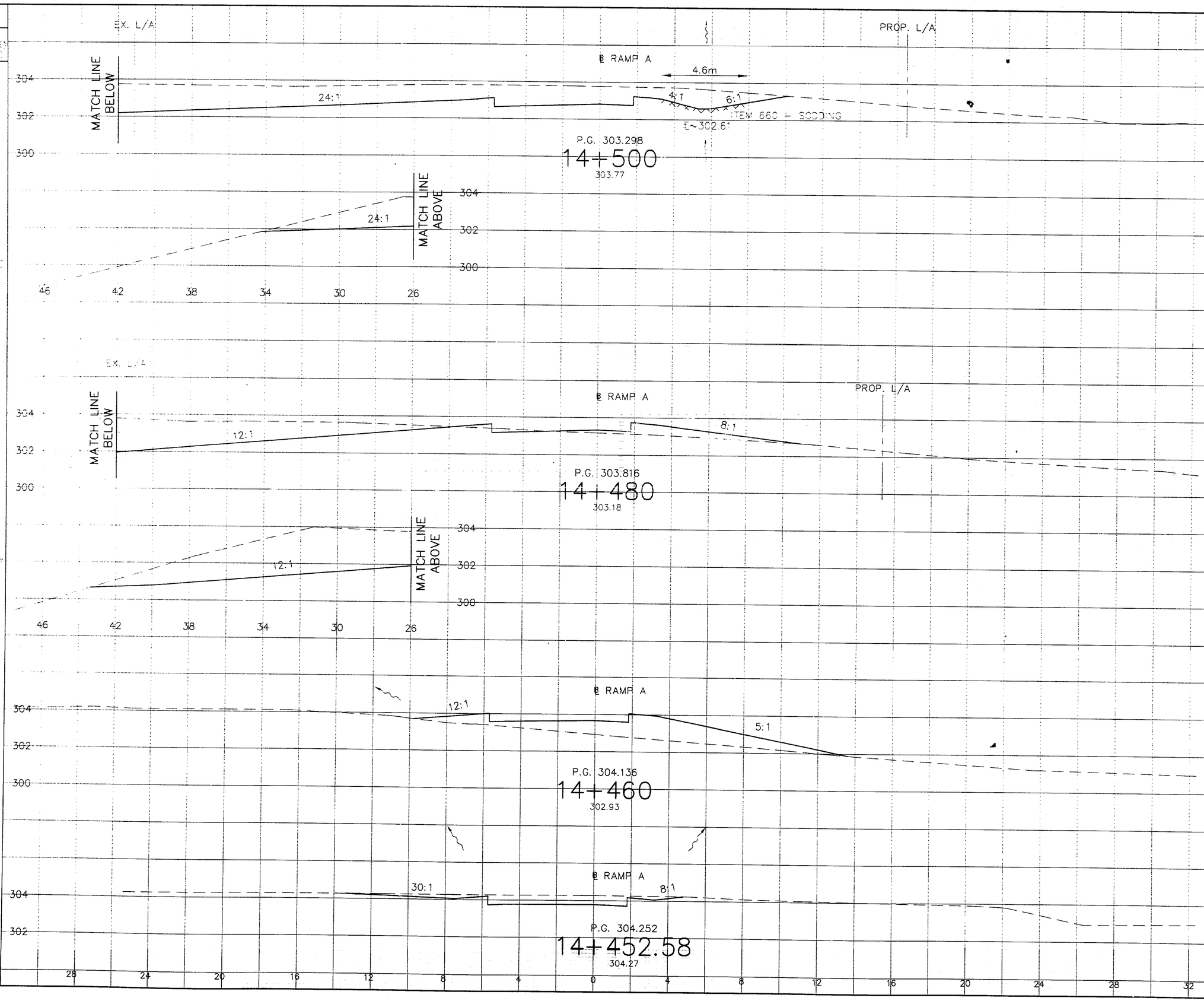
STA-21-14.452

QUANTITY SUBSUMMARY

metric units

| LOCATION | | | | ITEM NUMBERS | | | |

SEEDING	
END WIDTH (METER)	AREA (SQUARE METER)
36.1	
5.0	
23.4	
14.7	
TOTAL	1755.1



EARTHWORK			
END AREA (SQUARE METER)		VOLUME (CUBIC METER)	
CUT	FILL	CUT	FILL
42.7	0.0		
		880.9	36.2
45.4	3.6		
		454.1	199.8
0.0	16.4		
		18.5	60.7
5.0	0.0		
TOTALS		1353.5	296.7

SCALE 1:100

CALCULATED N.I.
CHECKED J.AN

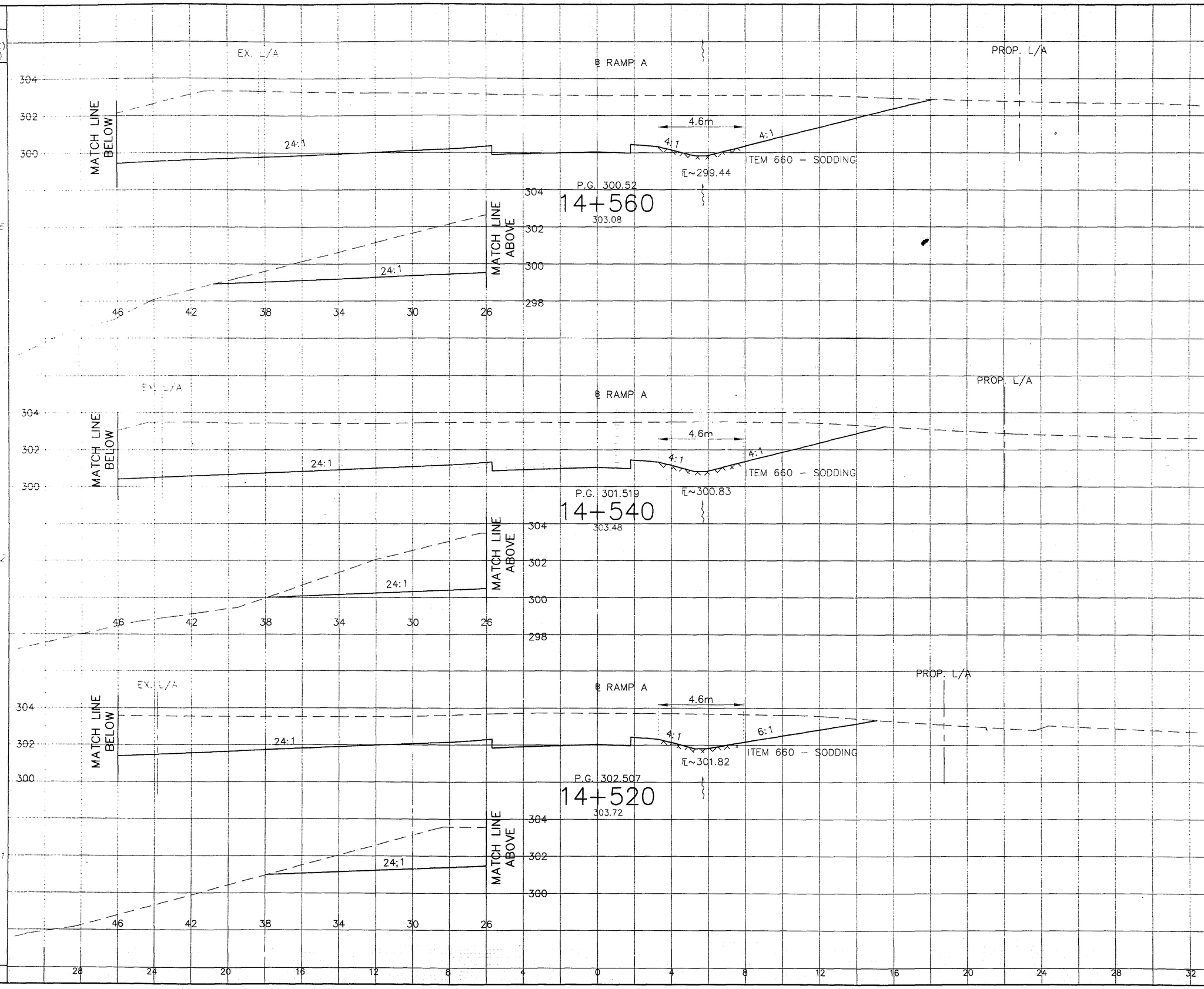
CROSS SECTIONS - RAMP A
STA. 14+452.8 TO 14+500

STA-21-14.44

40/92

CAD FILE NAME

SEEDING	
END WIDTH (METER)	AREA (SQUARE) (METER)
48.8	
	921.6
43.4	
	863.2
42.9	
	792.1
TOTAL	2576.9



EARTHWORK			
END AREA (SQUARE METER)		VOLUME (CUBIC METER)	
CUT	FILL	CUT	FILL
139.2	0.0		
		2481.2	0.0
109.0	0.0		
		1839.4	0.0
75.0	0.0		
		1176.6	0.0
TOTALS		5497.2	0.0

SCALE 1:100

CALCULATED NEI
CHECKED JAN

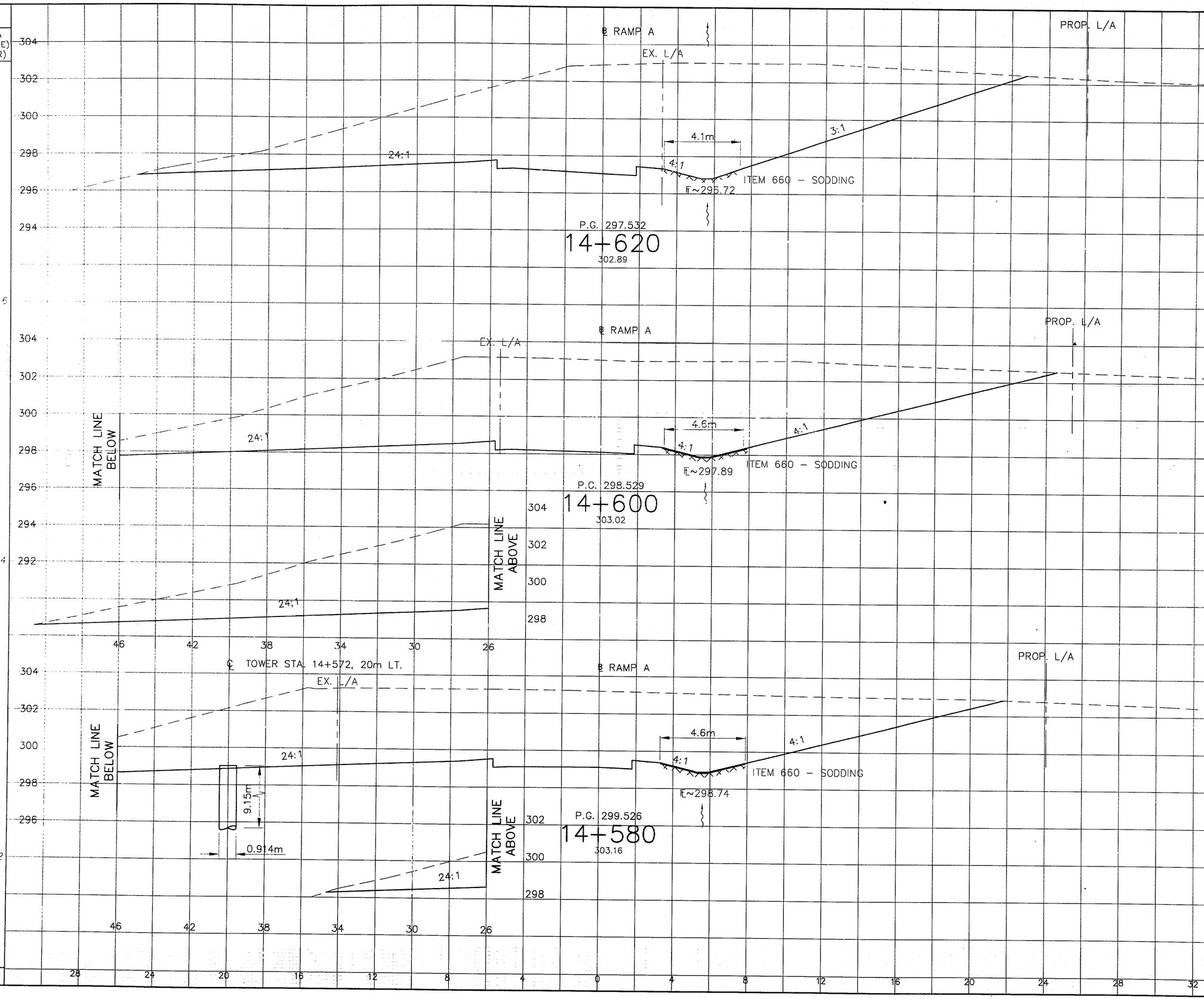
CROSS SECTIONS – RAMP A
STA. 14+520 TO 14+560

STA-21-14.44

41/92

CAD FILE NAME

SEEDING	
END WIDTH (METER)	AREA (SQUARE) (METER)
47.8	
	960.6
48.3	
	932.4
44.9	
	937.2
TOTAL	2830.2



EARTHWORK			
END AREA (SQUARE METER)		VOLUME (CUBIC METER)	
CUT	FILL	CUT	FILL
154.2	0.0		
		3189.1	0.0
164.7	0.0		
		3247.3	0.0
160.1	0.0		
		2992.0	0.0
TOTALS		9428.4	0.0

SCALE 1:100

CALCULATED NEL
CHECKED JAN

CROSS SECTIONS - RAMP A
STA. 14+580 TO 14+620

STA-21-14.452

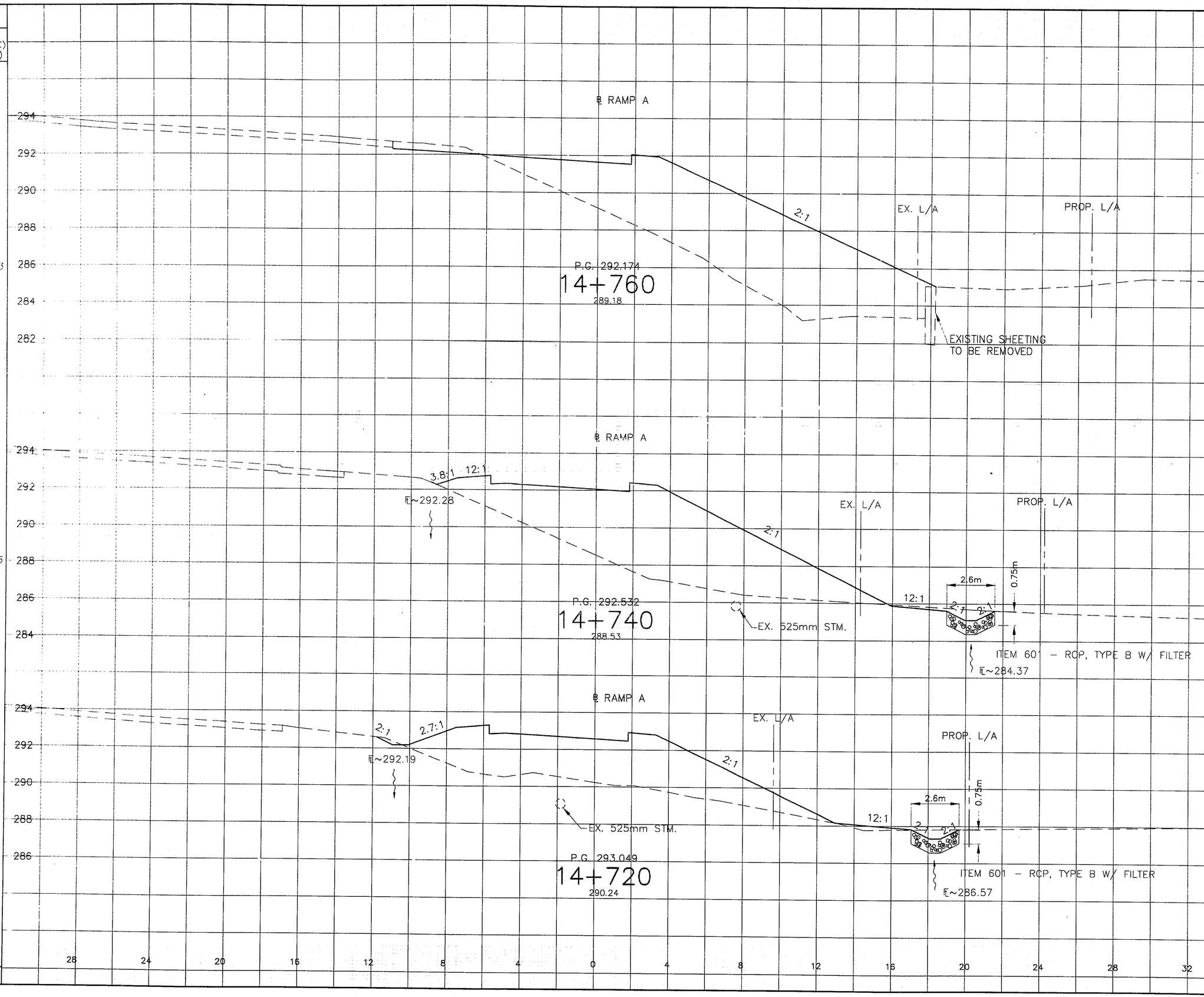
DATE: 9/17/96 DATE: 9/18/96
CAD FILE NAME: XS A 5

SEEDING

END WIDTH (METER)	AREA (SQUARE) (METER)

SEEDING

END WIDTH (METER)	AREA (SQUARE) (METER)
22.7	
	115.3
18.8	
	369.6
18.1	
	401.4
TOTAL	1171.3



EARTHWORK

END AREA (SQUARE METER) CUT	END AREA (SQUARE METER) FILL	VOLUME (CUBIC METER) CUT	VOLUME (CUBIC METER) FILL
1.5	73.8		
		15.0	1395.3
0.0	65.7		
		1.7	1076.6
0.170	42.0		
		85.5	459.4
TOTALS		102.2	2931.3

0 2 4 SCALE 1:100

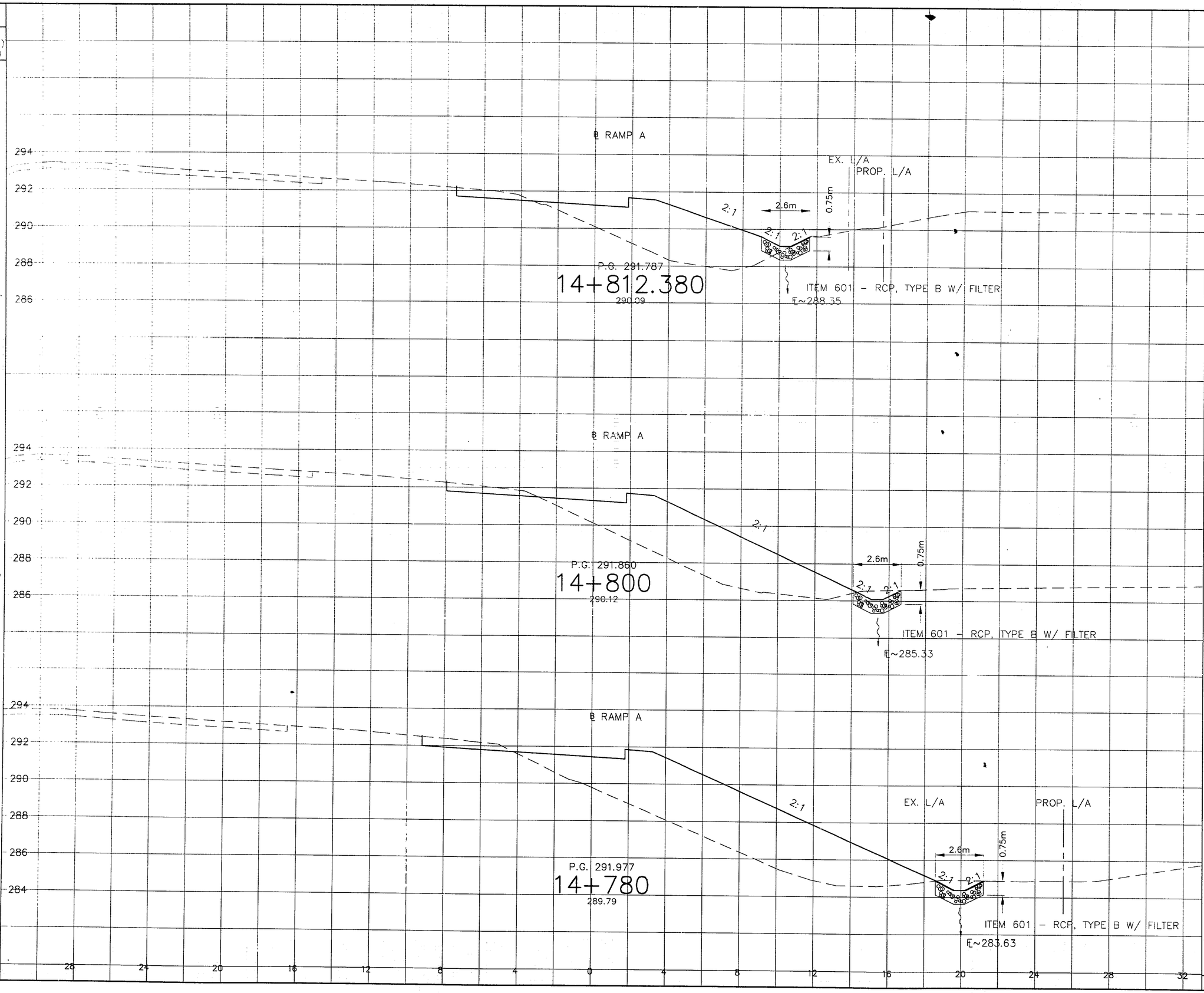
NEL
CHECKED JAN

CROSS SECTIONS - RAMP A
STA. 14+720 TO 14+780

STA-21-14.44

CAD FILE NAME: VS_A_5

SEEDING	
END WIDTH (METER)	AREA (SQUARE) (METER)
	361.2
	431.2
TOTAL	964.0



EARTHWORK			
END AREA (SQUARE METER)		VOLUME (CUBIC METER)	
CUT	FILL	CUT	FILL
1.5	22.9		
		19.2	346.6
1.6	33.1		
		35.2	846.0
1.9	51.5		
		34.0	1198.8
TOTALS		88.4	2391.4

0 2 4 SCALE 1:100

CALCULATED NLI
CHECKED JAN

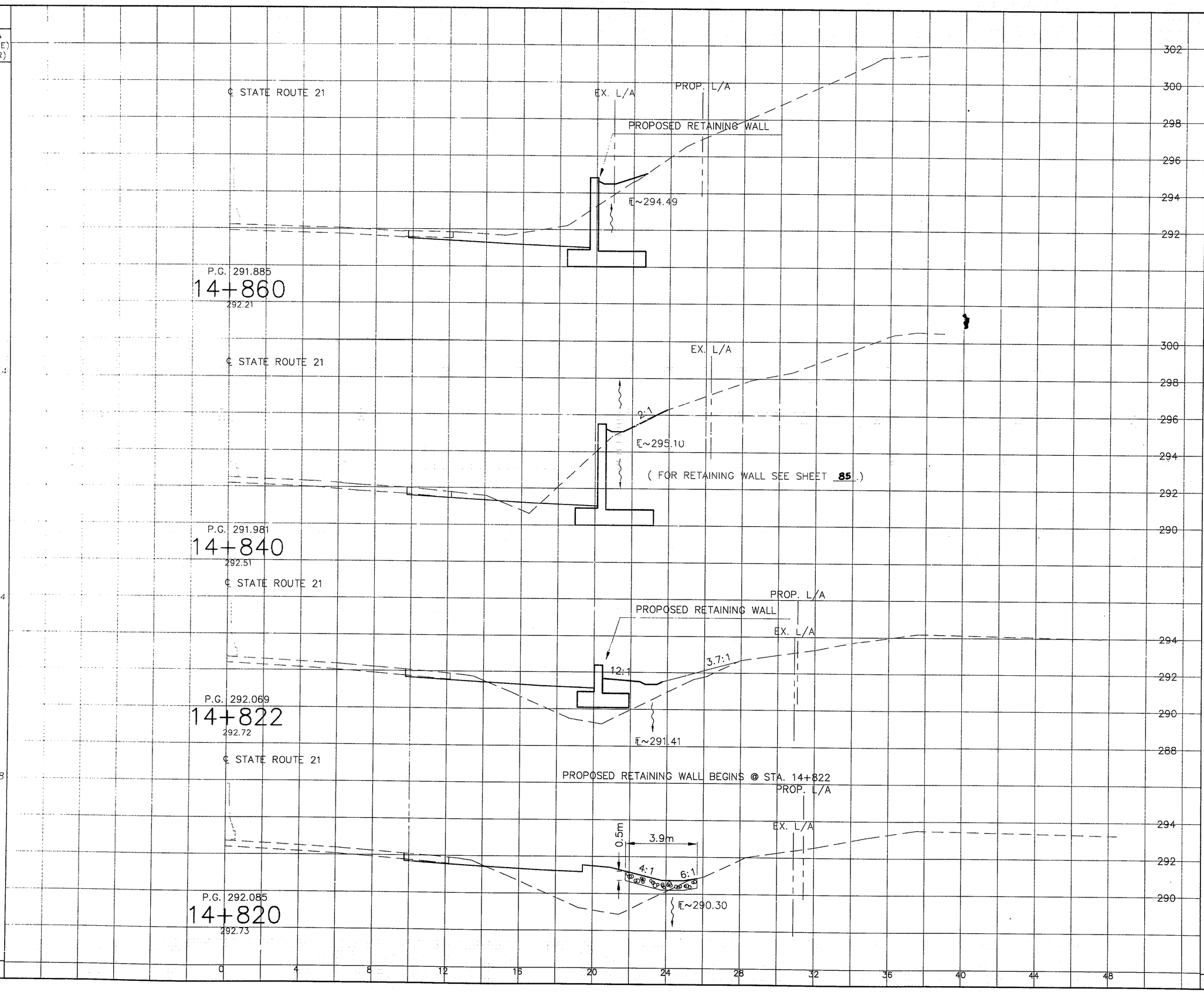
CROSS SECTIONS - RAMP A
STA. 14+780 TO 14+812.380

STA-21-14.44

45
92

CAD FILE NAME: A_R_C

SEEDING	
END WIDTH (METER)	AREA (SQUARE) (METER)
	479.4
	489.4
	500.8
TOTAL	1469.5



EARTHWORK			
END AREA (SQUARE METER)		VOLUME (CUBIC METER)	
CUT	FILL	CUT	FILL
7.7	1.3		
		154.0	21.0
7.7	0.8		
		202.5	19.8
14.8	1.4		
		16.2	16.4
1.4	15.0		
TOTALS		372.7	57.2

SCALE 1:100

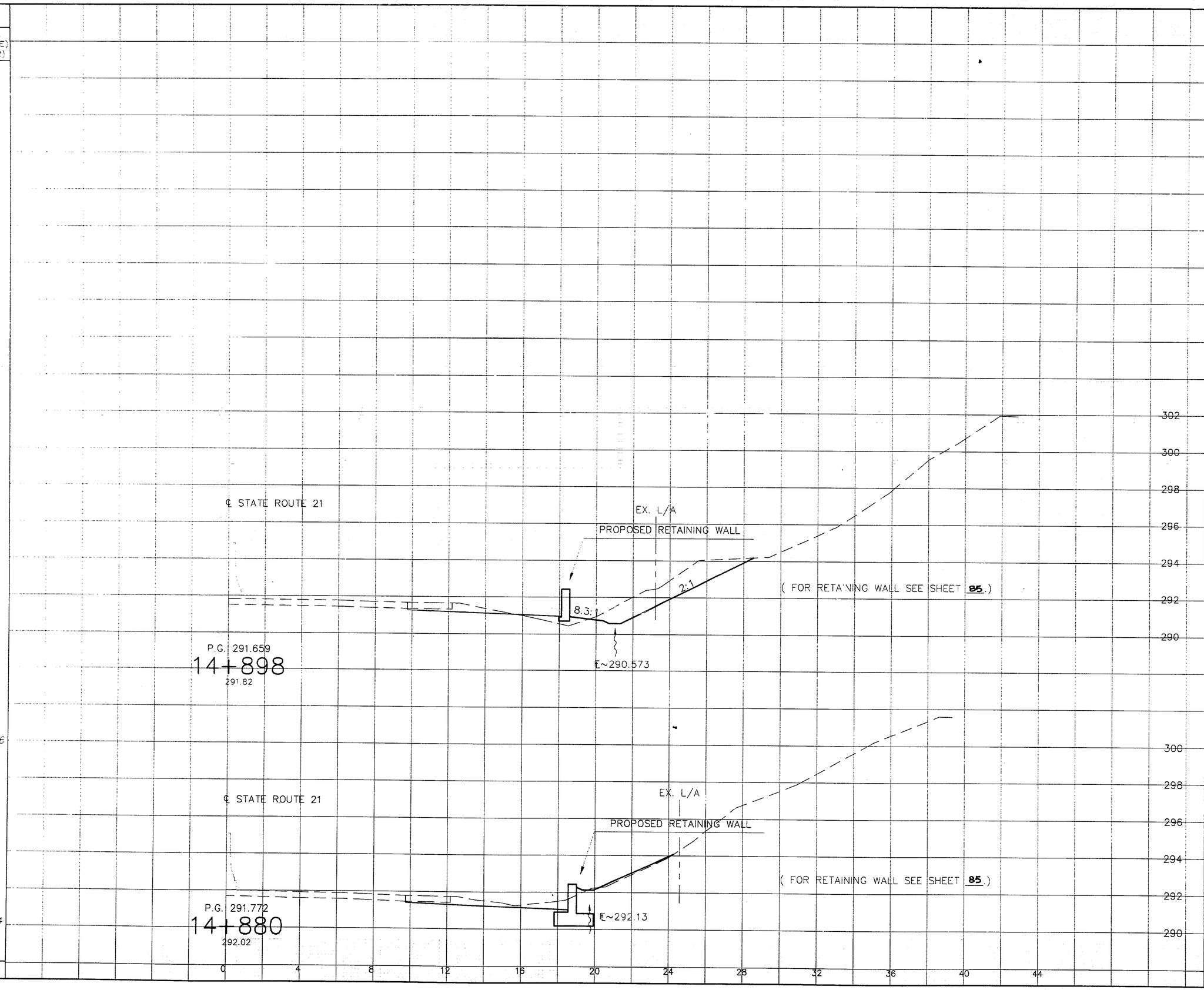
NEL

JAN

CROSS SECTIONS - STATE ROUTE 21 RIGHT
STA. 14+820 TO 14+860

STA-21-14.452

SEEDING	
END WIDTH (METER)	AREA (SQUARE) (METER)
23.7	
	426.6
23.7	
	479.4
TOTAL	906.0



EARTHWORK			
END AREA (SQUARE METER)		VOLUME (CUBIC METER)	
CUT	FILL	CUT	FILL
1.9	4.3		
		47.7	43.2
3.4	0.5		
		111.0	18.0
TOTALS		158.7	61.2

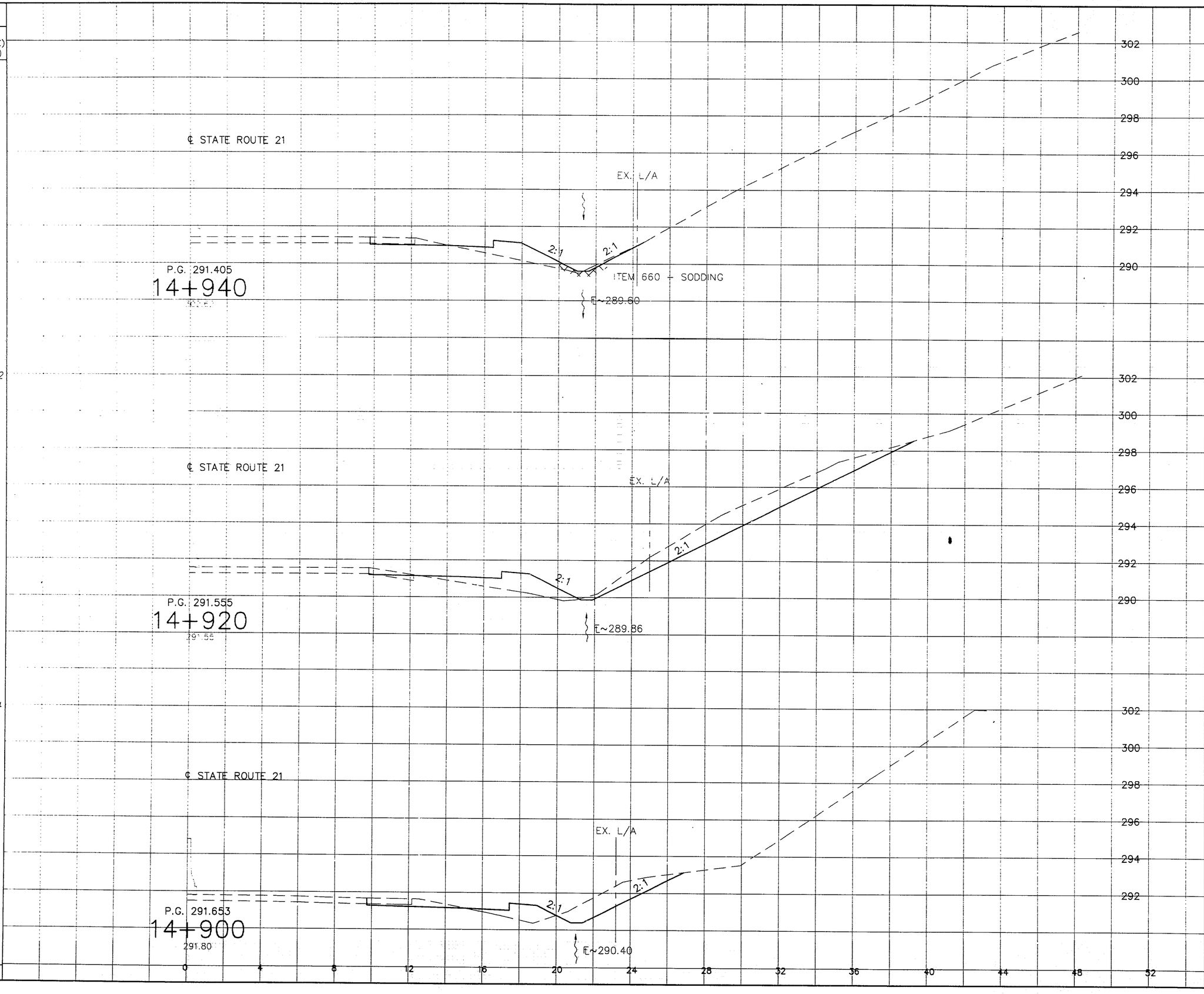
0 2 4
SCALE 1:100

CALCULATED NLT
CHECKED JAN

CROSS SECTIONS - STATE ROUTE 21 RIGHT
STA. 14+880 TO 14+900

STA-21-14.44

SEEDING	
END WIDTH (METER)	AREA (SQUARE) (METER)
28.8	
	723.2
43.5	
	746.4
31.2	
	548.7
TOTAL	2018.4



EARTHWORK			
END AREA (SQUARE METER)		VOLUME (CUBIC METER)	
CUT	FILL	CUT	FILL
1.5	3.4		
		152.5	78.7
13.8	4.5		
		204.8	67.5
6.7	2.2		
		8.6	6.5
TOTAL		365.9	152.7

CROSS SECTIONS - STATE ROUTE 21, RIGHT
STA. 14+900 TO 14+940

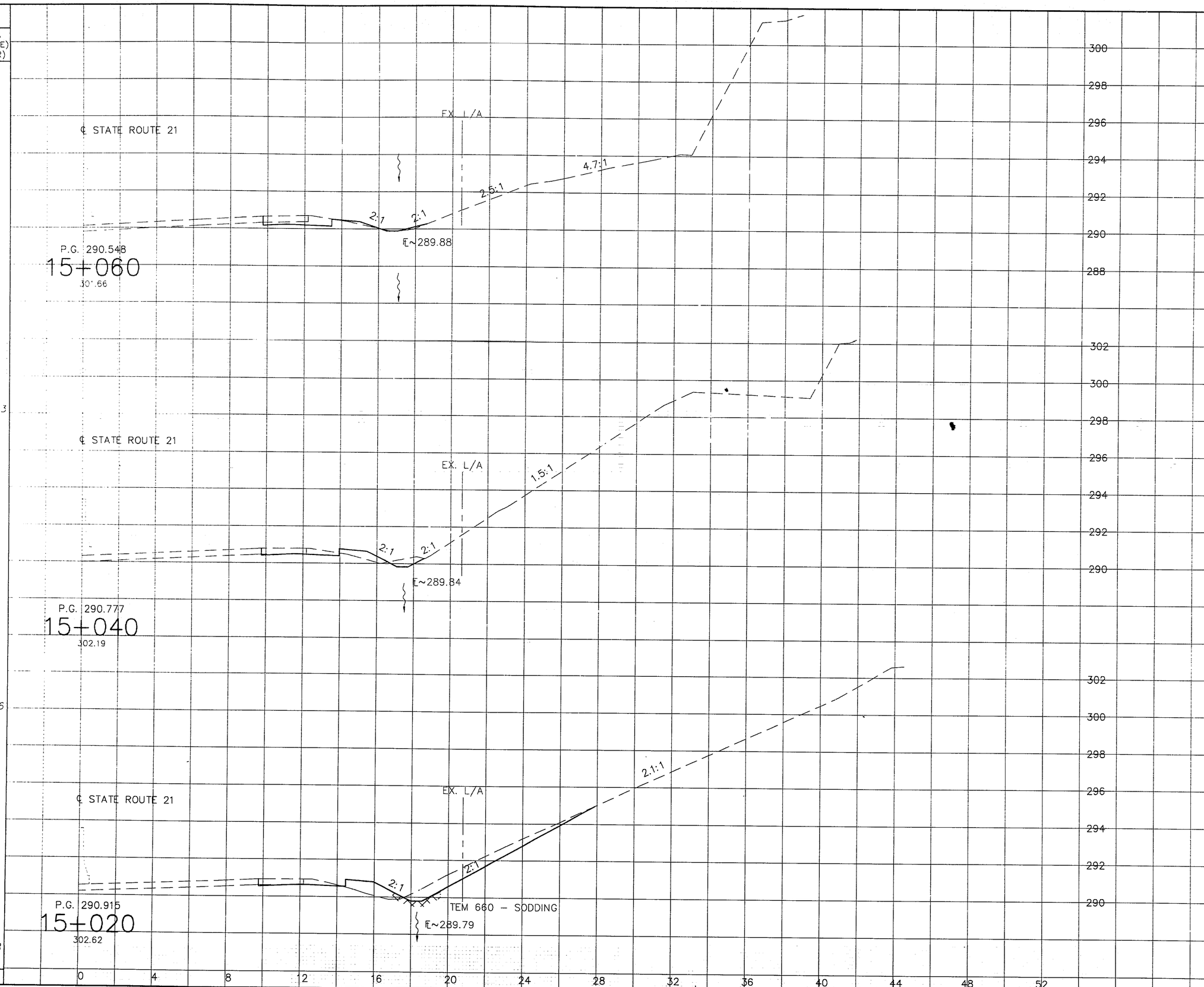
STA-21-14.44

SEEDING

END WIDTH (METER)	AREA (SQUARE) (METER)

SEEDING

END WIDTH (METER)	AREA (SQUARE) (METER)
22.9	
	457.3
22.8	
	549.6
32.1	
	684.8
TOTAL	1691.7



EARTHWORK

END AREA (SQUARE METER) CUT	END AREA (SQUARE METER) FILL	VOLUME (CUBIC METER) CUT	VOLUME (CUBIC METER) FILL
1.7	0.3		
		35.3	10.7
1.8	0.8		
		71.2	24.2
5.3	1.6		
		103.8	36.5
TOTAL		210.3	71.4

SCALE 1:100

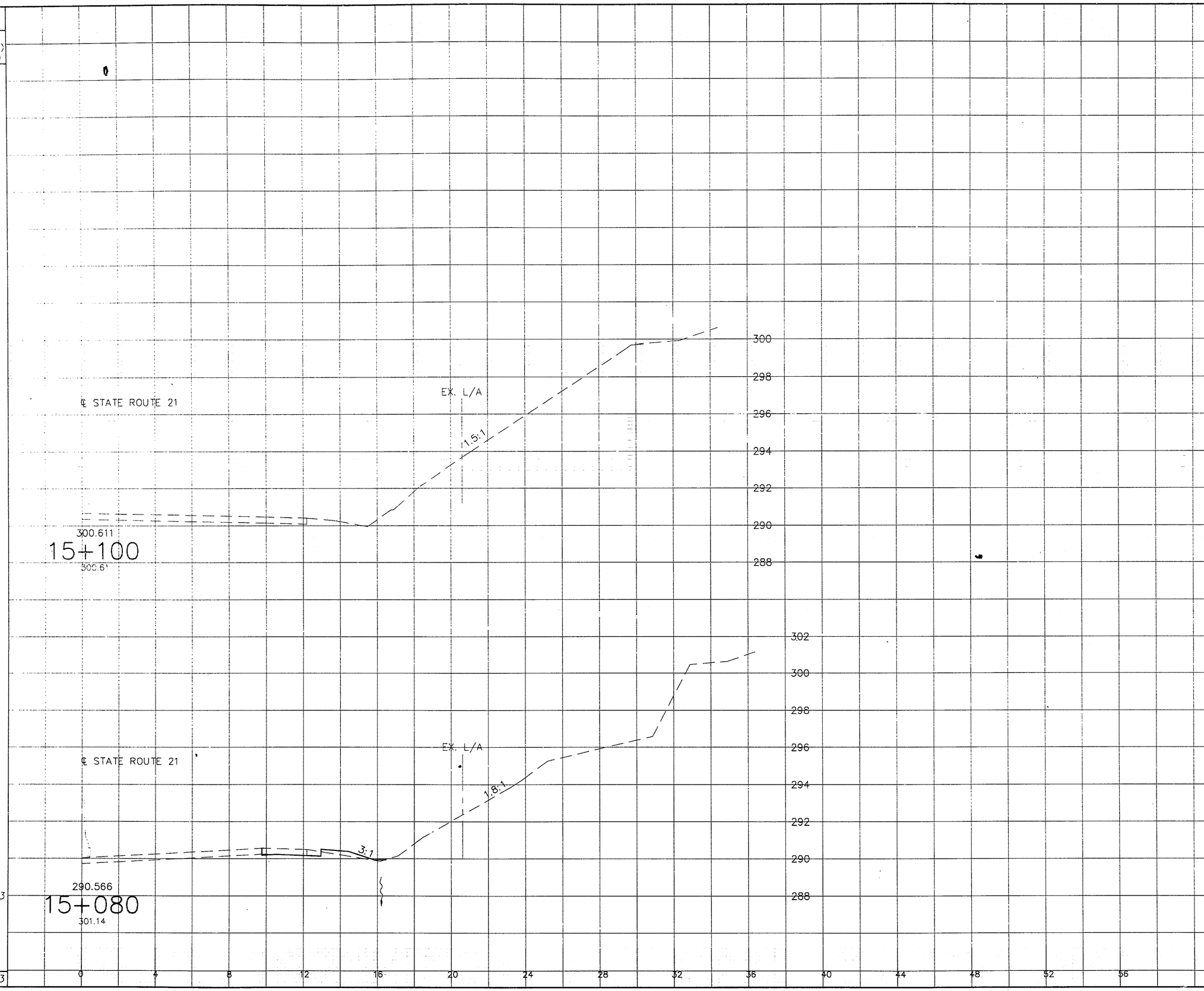
CALCULATED NEL
CHECKED JAN

CROSS SECTIONS - STATE ROUTE 21, RIGHT
STA. 15+020 TO 15+060

STA-21-14.44

DATE: 9/12/96
CAD FILE NAME: 96_021.dgn

SEEDING	
END WIDTH (METER)	AREA (SQUARE) (METER)
20.7	436.3
TOTAL	436.3



EARTHWORK			
END AREA (SQUARE METER)		VOLUME (CUBIC METER)	
CUT	FILL	CUT	FILL
0.0	0.0		
		10.0	5.0
1.0	0.5		
		27.6	7.7
TOTAL		37.6	13.7

0 2 4 SCALE 1:100

CALCULATED NEL CHECKED JAN

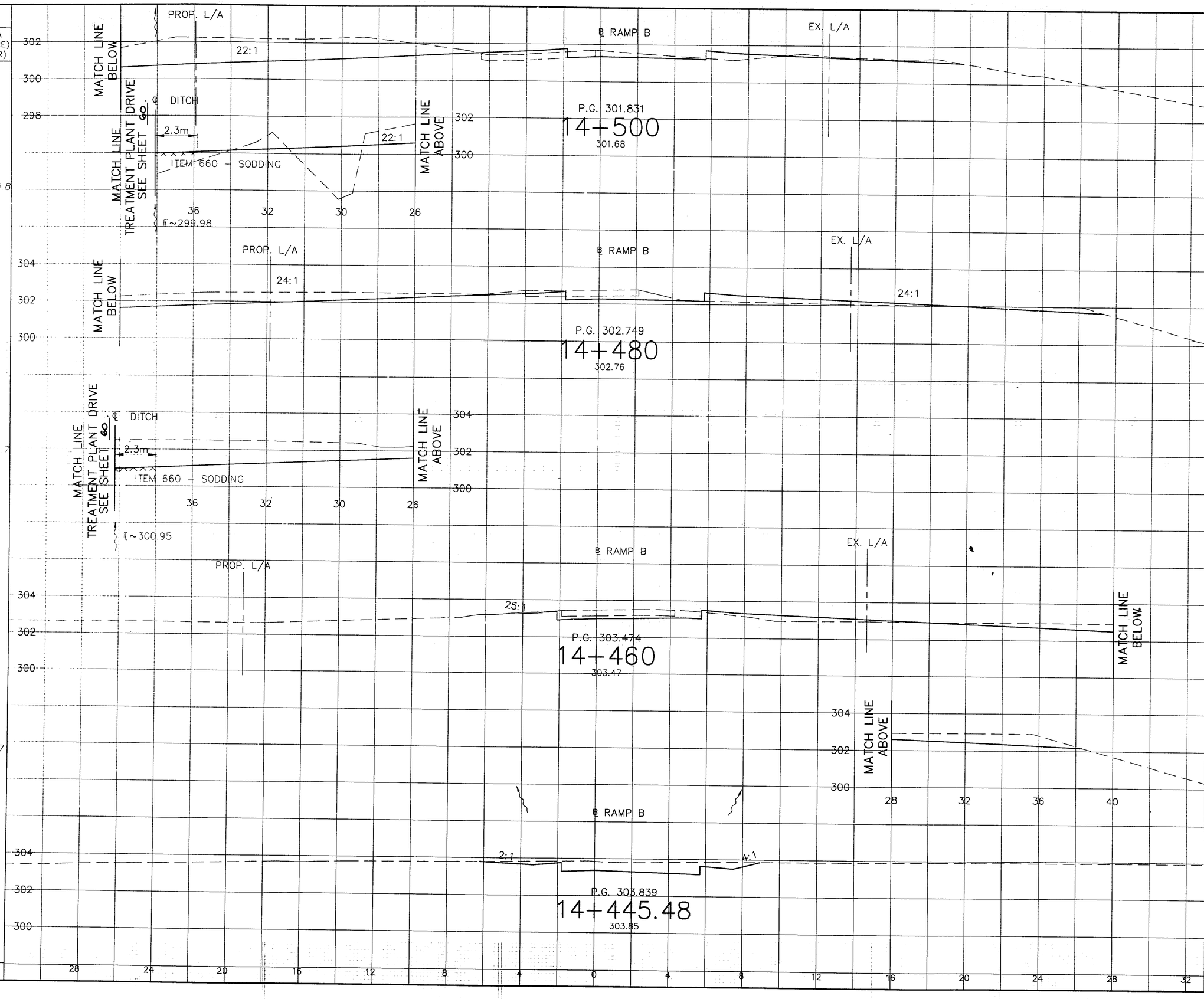
CROSS SECTIONS - STATE ROUTE 21, RIGHT
STA. 15+080 TO 15+100

STA-21-14.44

51
92

SEEDING

END WIDTH (METER)	AREA (SQUARE) (METER)
56.6	
	229.8
66.4	
	134.7
37.1	
	353.7
11.7	
TOTAL	2618.2



EARTHWORK

END AREA (SQUARE METER) CUT	END AREA (SQUARE METER) FILL	VOLUME (CUBIC METER) CUT	VOLUME (CUBIC METER) FILL
26.2	11.8		
		586.6	147.6
32.4	3.0		
		419.5	49.9
9.5	2.0		
		107.7	14.6
5.3	0.0		
TOTALS		1113.8	212.1

SCALE 1:100

CALCULATED NEL
CHECKED JAN

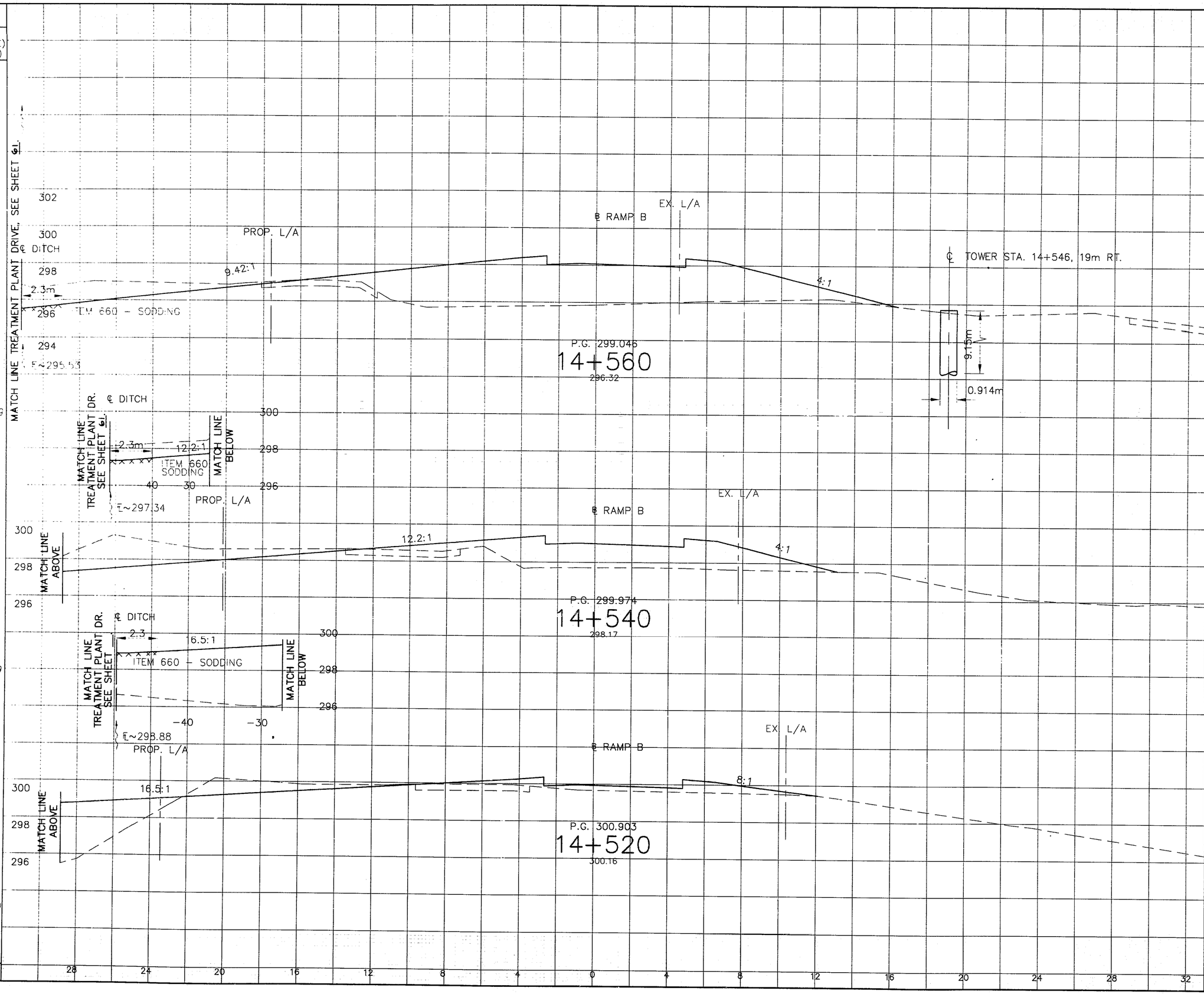
CROSS SECTIONS - RAMP B
STA. 14+445.48 TO 14+500

STA-21-14.44

52/92

CAD FILE NAME

SEEDING	
END WIDTH (METER)	AREA (SQUARE) (METER)
	420.0
	836.9
	417.7
	858.9
	44.2
	1031.0
TOTAL	2726.8



EARTHWORK			
END AREA (SQUARE METER)		VOLUME (CUBIC METER)	
CUT	FILL	CUT	FILL
9.8	50.7		
		266.2	739.4
16.9	23.2		
		215.6	657.8
4.7	42.6		
		309.2	543.7
TOTALS		791.0	1940.9

SCALE 1:100

CALCULATED NEL
CHECKED JAN

CROSS SECTIONS - RAMP B
STA. 14+520 TO 14+560

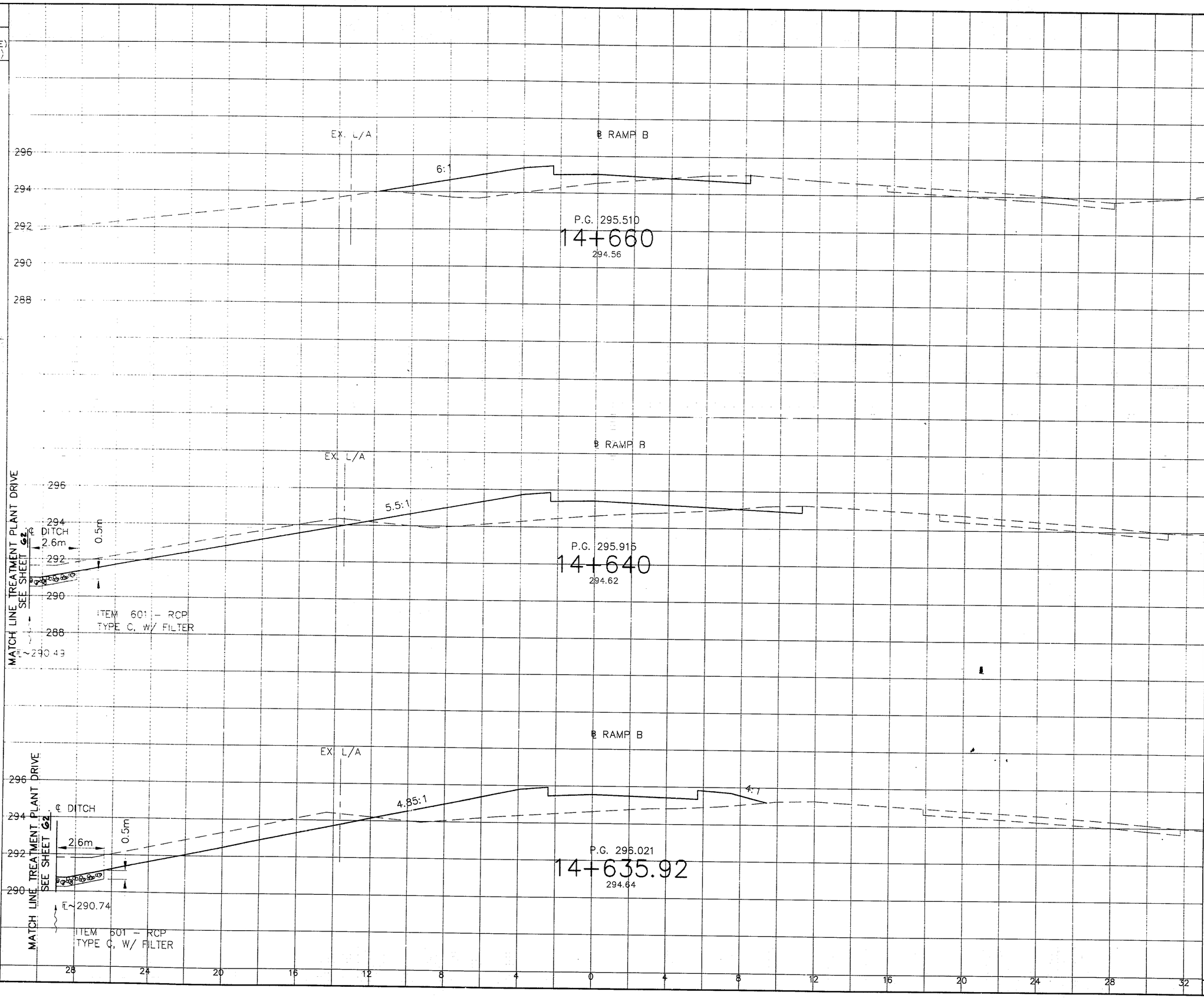
STA-21-14.452

53
92

CAD FILE NAME

| SEEDING | | |

SEEDING	
END WIDTH (METER)	AREA (SQUARE) (METER)
35.8	
139.1	
32.4	
503.5	
TOTAL	1166.1



EARTHWORK			
END AREA (SQUARE METER)		VOLUME (CUBIC METER)	
CUT	FILL	CUT	FILL
1.1	10.9		
		105.7	260.2
9.5	15.1		
		225.8	321.0
13.1	17.0		
		188.7	312.0
TOTALS		520.2	893.2

0 2 4
SCALE 1:100

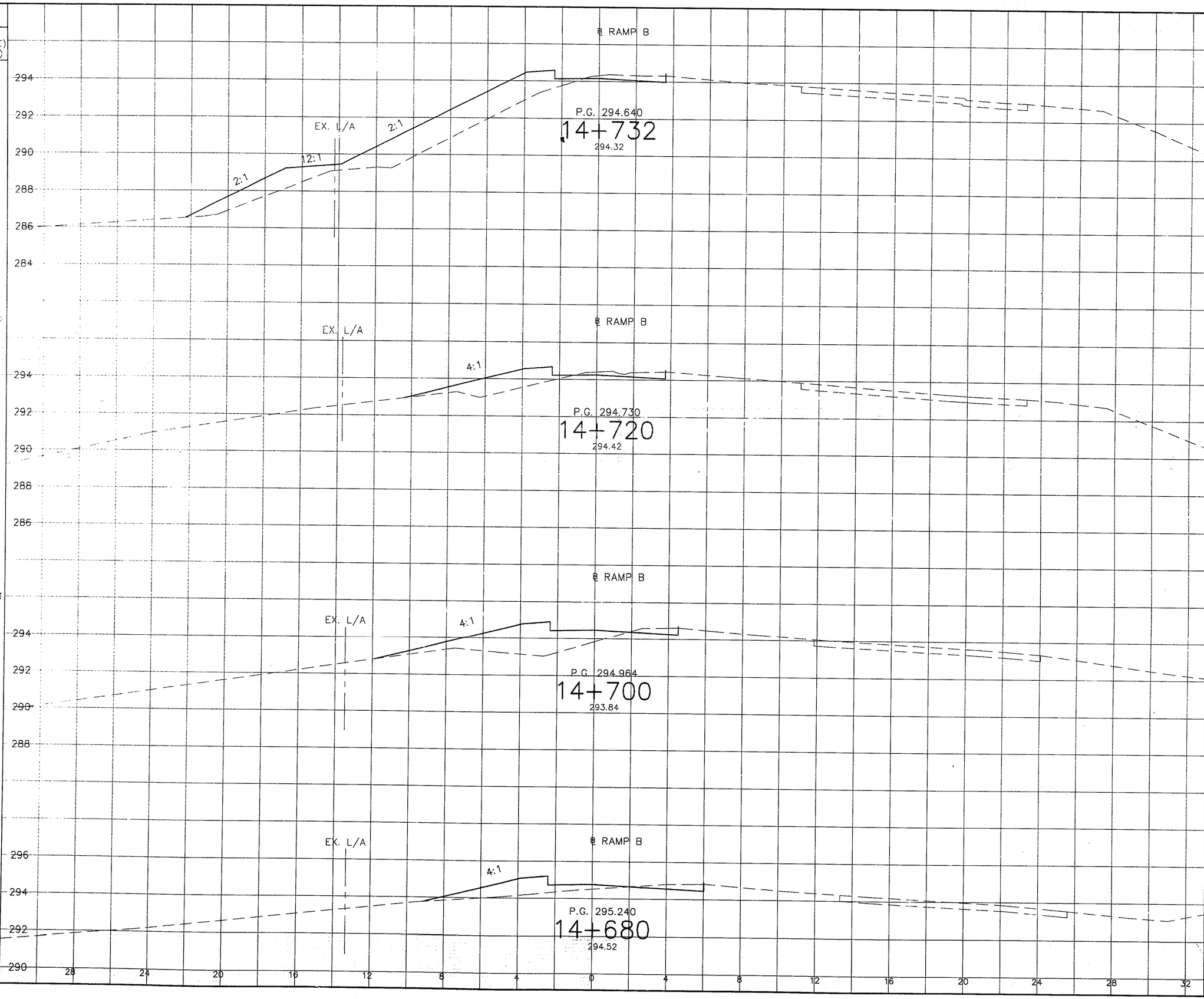
CALCULATED NLL
CHECKED JAN

CROSS SECTIONS - RAMP B
STA. 14+635.92 TO 14+660

STA-21-14.44

55/92

SEEDING	
END WIDTH METER)	AREA (SQUARE) (METER)
22.4	
	198.2
12.6	
	235.3
12.9	
	245.5
11.6	
	281.8
TOTAL	960.8



EARTHWORK			
END AREA (SQUARE METER)		VOLUME (CUBIC METER)	
CUT	FILL	CUT	FILL
1.0	21.4		
		12.6	159.6
1.1	5.2		
		17.5	156.1
0.7	10.5		
		15.8	152.9
0.9	4.8		
		19.7	157.7
TOTALS		65.6	626.3

SCALE 1:100

CALCULATED NEL
CHECKED JAN

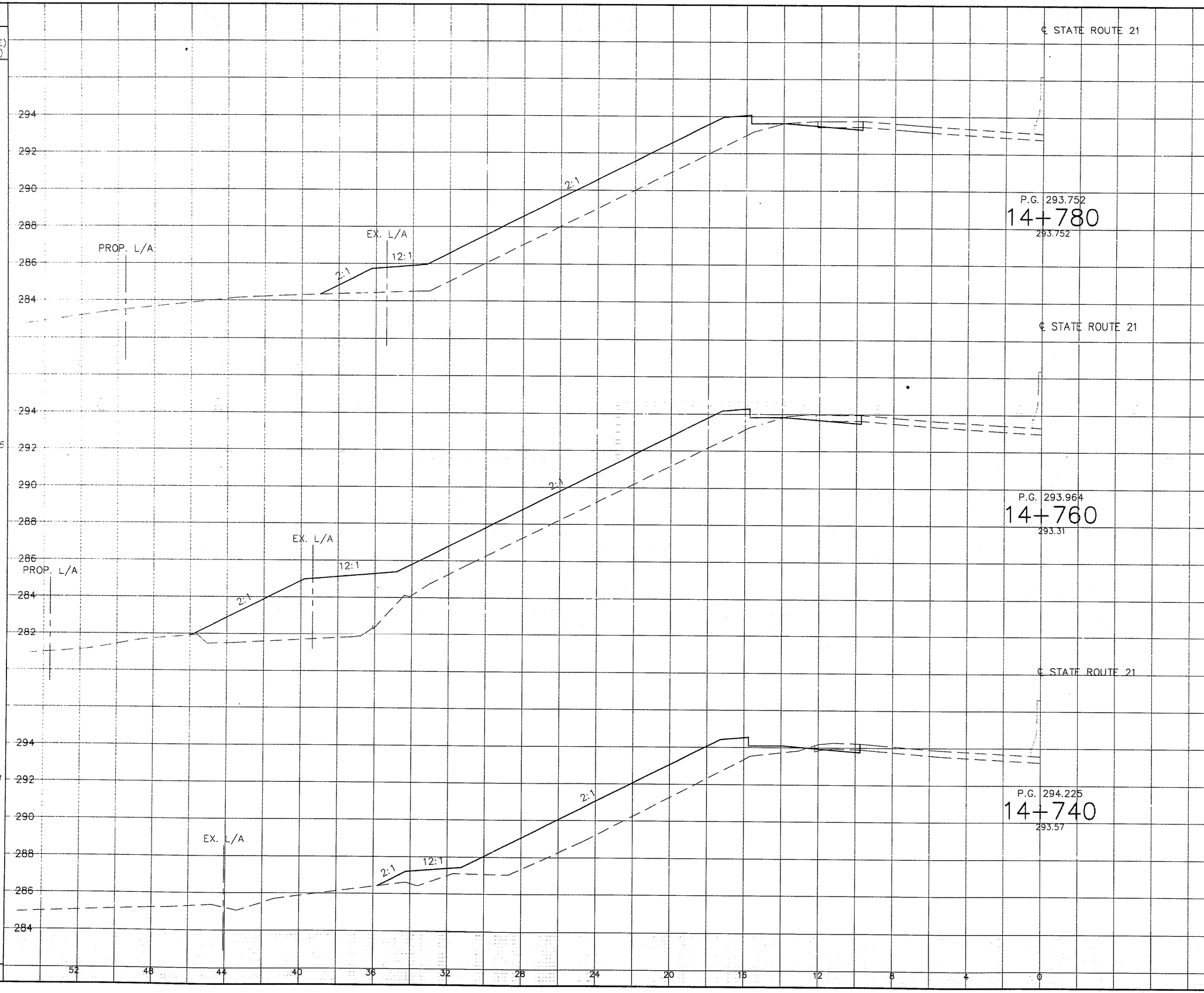
CROSS SECTIONS - RAMP B
STA. 14+680 TO 14+732

STA-21-14.44

56/92

CAD FILE NAME

SEEDING	
END WIDTH (METER)	AREA (SQUARE) (METER)
45.3	
	935.6
50.3	
	903.1
40.0	
TOTAL	1838.7



EARTHWORK			
END AREA (SQUARE METER)		VOLUME (CUBIC METER)	
CUT	FILL	CUT	FILL
1.1	33.1		
		23.5	900.8
1.3	56.9		
		21.8	852.6
1.0	28.3		
TOTALS		45.3	1753.4

SCALE 1:100

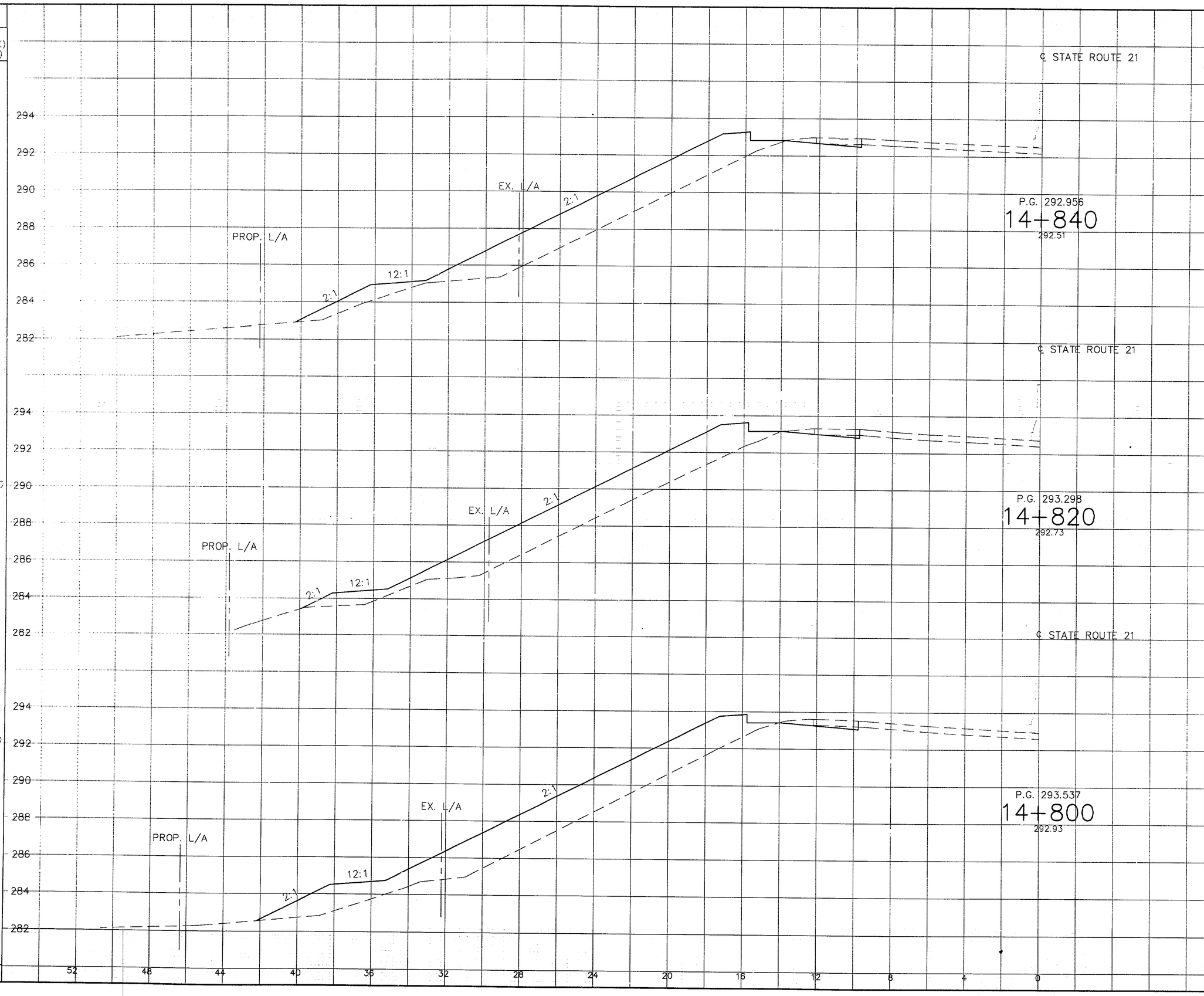
CALCULATED NFL
CHECKED JAN

CROSS SECTIONS - STATE ROUTE 21 LEFT
STA. 14+740 TO 14+780

STA-21-14.44

CAD FILE NAME

SEEDING	
END WIDTH (METER)	AREA (SQUARE) (METER)
44.6	
	888.0
44.2	
	907.0
46.5	
	898.0
TOTAL	2693.0



EARTHWORK			
END AREA (SQUARE METER)		VOLUME (CUBIC METER)	
CUT	FILL	CUT	FILL
1.2	32.5		
		23.9	643.6
1.2	31.9		
		26.1	713.2
1.4	39.4		
		25.4	725.7
TOTALS		75.4	2082.5

0 2 4 SCALE 1:100

CALCULATED NLL
CHECKED JAN

CROSS SECTIONS - STATE ROUTE 21, LEFT
STA. 14+800 TO 14+840

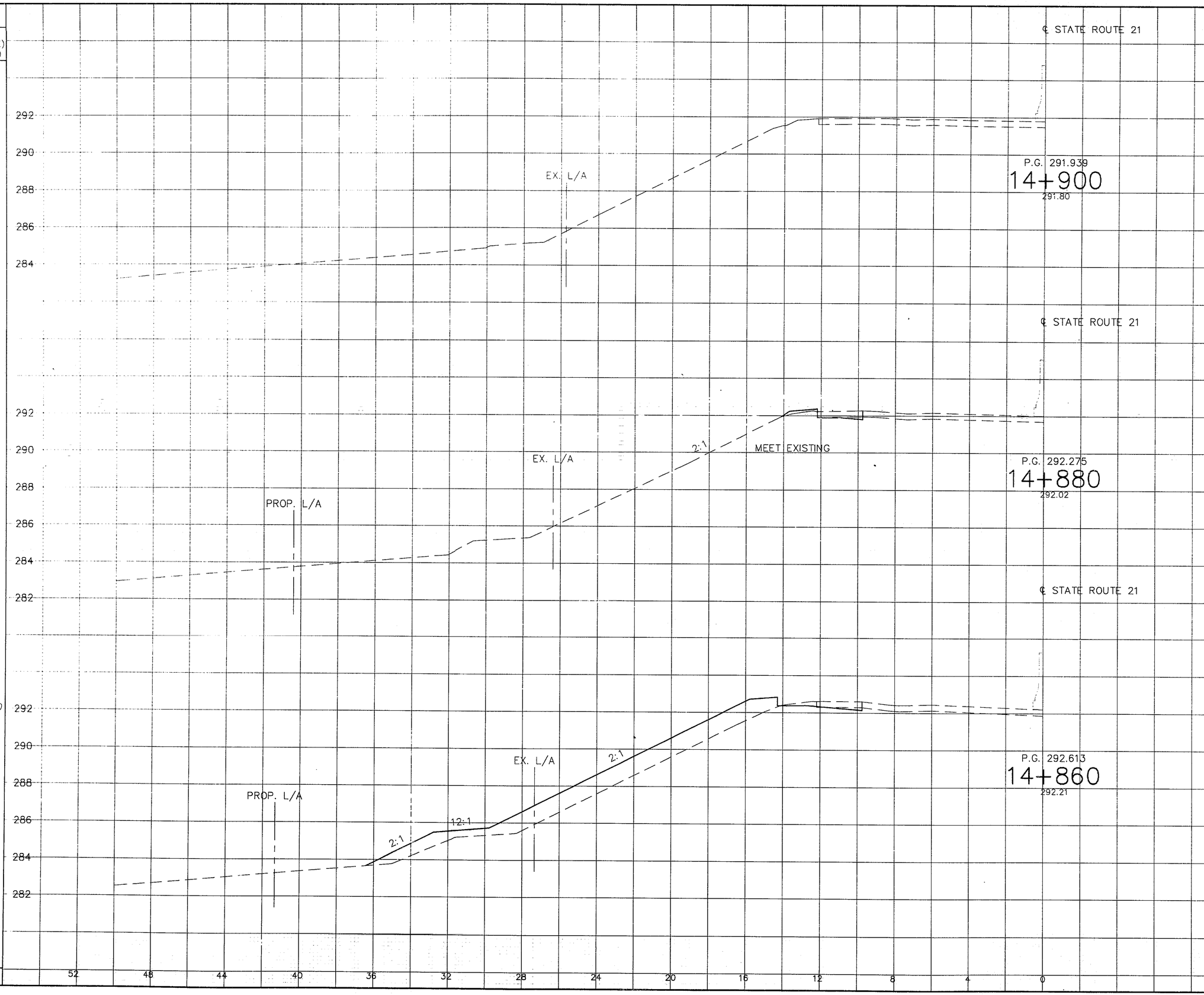
STA-21-14.44

58
92

CAD FILE NAME

SEEDING

END WIDTH (METER)	AREA (SQUARE) (METER)
27.3	
40.7	680.0
	853.0
TOTAL	1612.4



EARTHWORK

END AREA (SQUARE METER) CUT	END AREA (SQUARE METER) FILL	VOLUME (CUBIC METER) CUT	VOLUME (CUBIC METER) FILL
0.0	0.0		
		9.1	8.8
0.9	0.9		
		21.2	191.9
1.2	18.3		
		24.0	508.0
TOTALS		54.3	708.7

SCALE 1:100

CALCULATED NEL
CHECKED JAN

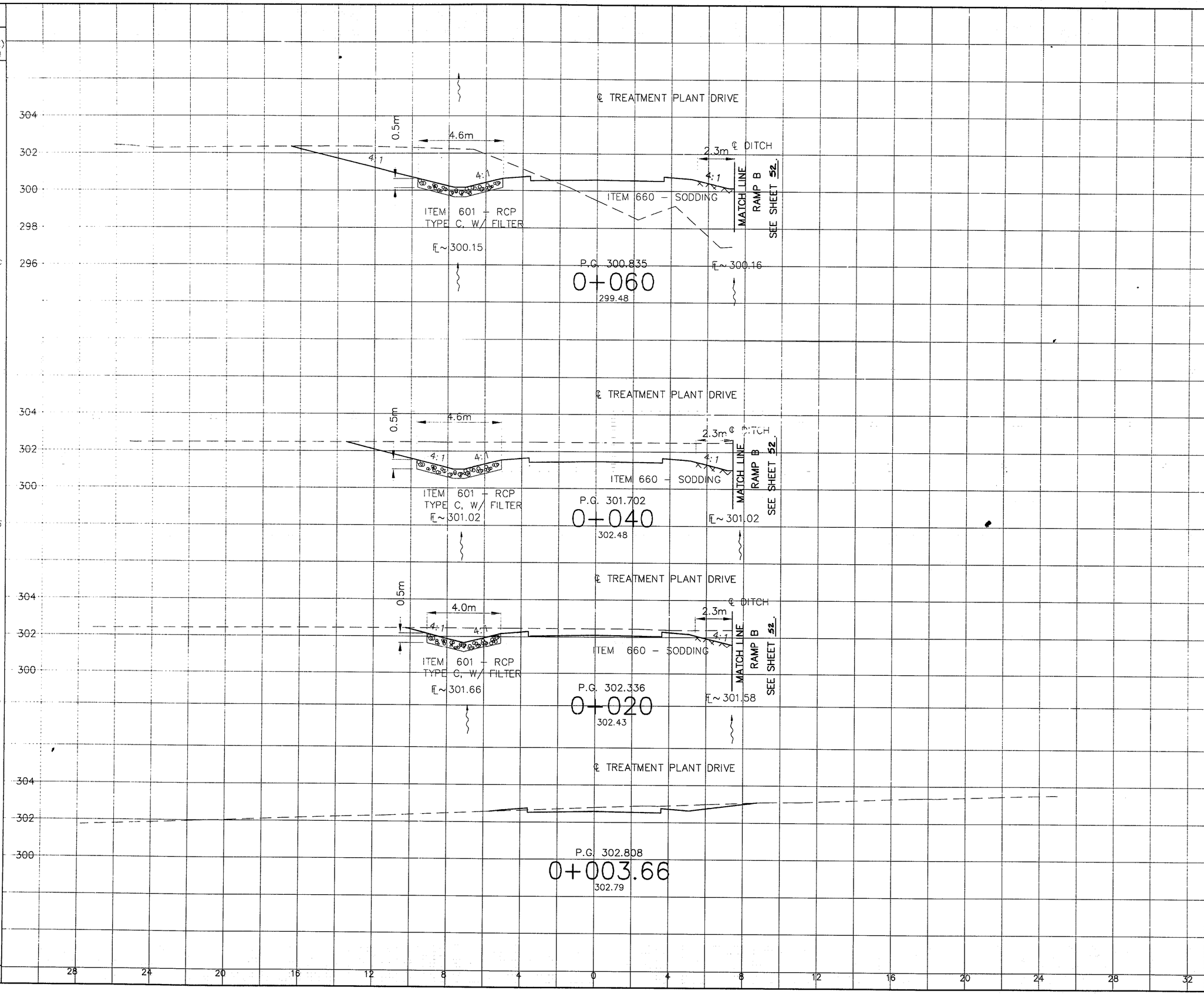
CROSS SECTIONS - STATE ROUTE 21 LEFT
STA.14+860 TO 14+900

STA-21-14.44

DATE: 5/19/
CAD FILE NAME:

SEEDING

END WIDTH (METER)	AREA (SQUARE) (METER)
13.5	
28.5	
14.3	221.6
7.9	153.5
10.9	
TOTAL	656.6



EARTHWORK

END AREA (SQUARE METER) CUT	END AREA (SQUARE METER) FILL	VOLUME (CUBIC METER) CUT	VOLUME (CUBIC METER) FILL
15.1	17.3		
		361.6	173.3
21.1	0.0		
		277.6	0.0
6.7	0.0		
		76.6	1.0
2.7	0.1		
TOTALS		715.8	174.3

SCALE 1:100

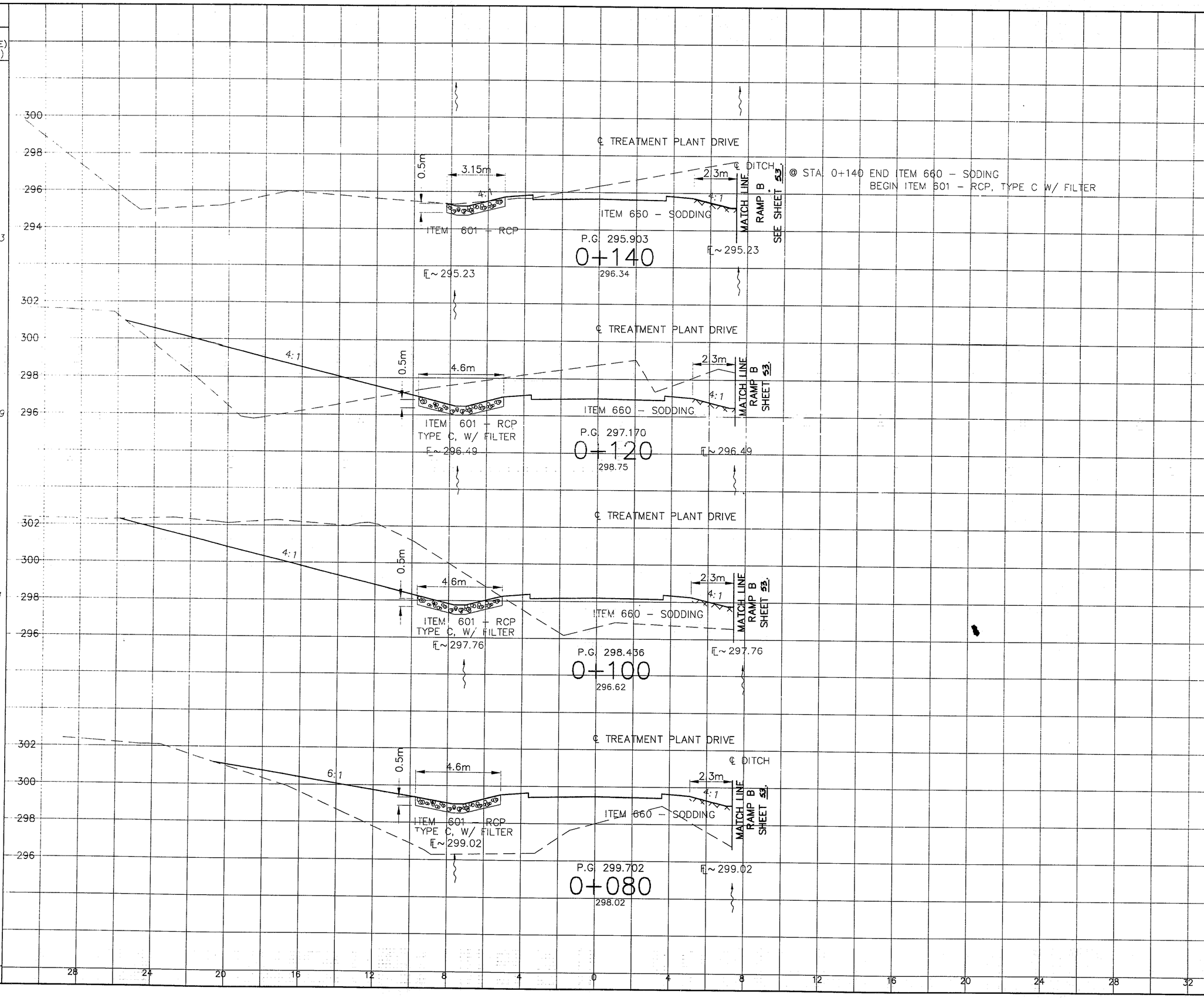
CALCULATED NEL
CHECKED JAN

CROSS SECTIONS - TREATMENT PLANT DR. STA. 0+003.66 TO 0+060

STA-21-14.44

SEEDING

END WIDTH (METER)	AREA (SQUARE) (METER)
	218.3
	344.9
23.2	
	411.1
18.0	
	318.0
TOTAL	1292.2



EARTHWORK

END AREA (SQUARE METER) CUT	END AREA (SQUARE METER) FILL	VOLUME (CUBIC METER) CUT	VOLUME (CUBIC METER) FILL
12.8	0.3		
		361.8	2.5
23.3	0.0		
		609.4	74.8
37.6	17.5		
		376.0	652.6
0.0	47.8		
		150.8	651.2
TOTALS		1498.0	1481.1

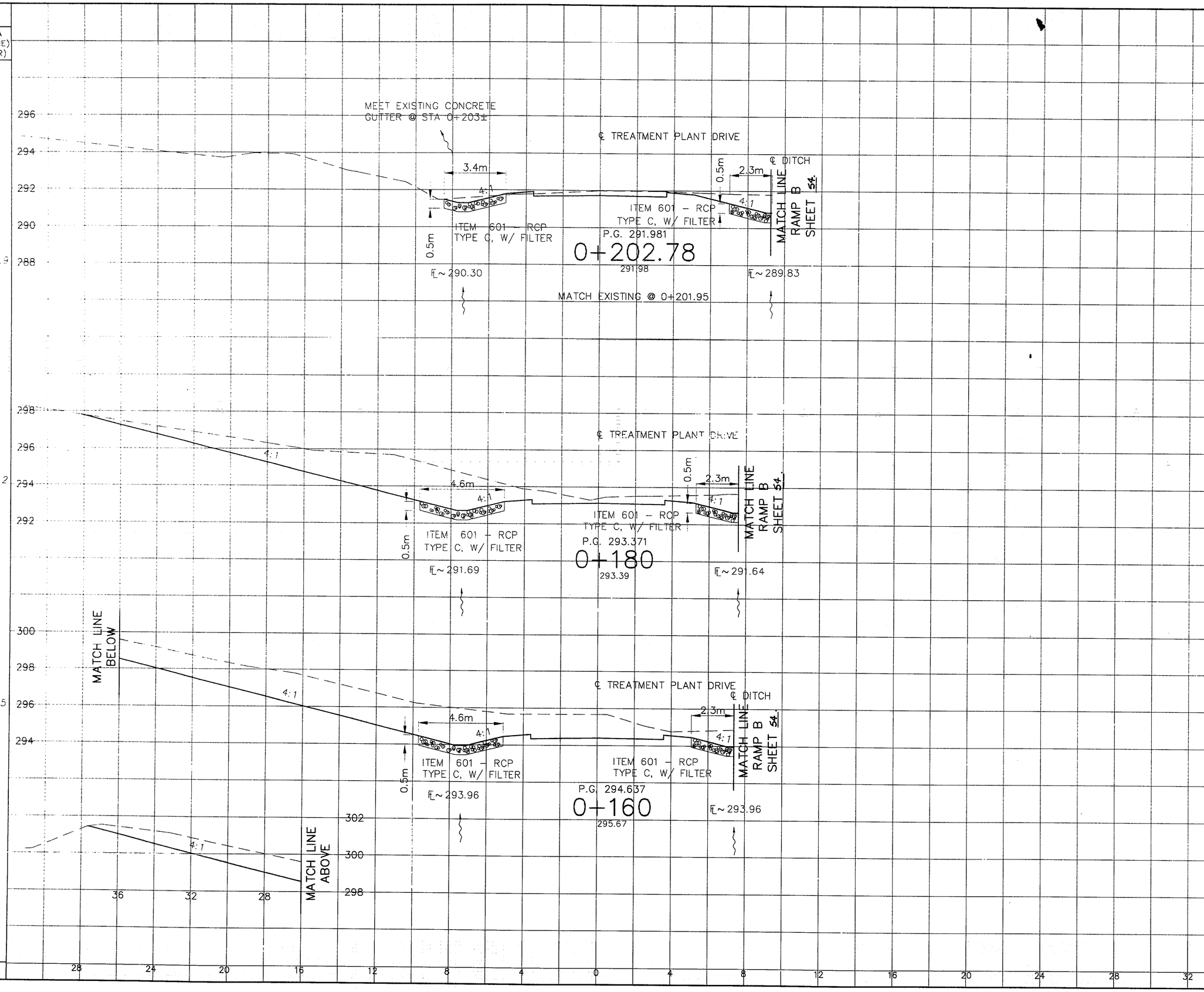
SCALE 1:100

CALCULATED NEI
CHECKED JAN

CROSS SECTIONS – TREATMENT PLANT DRIVE
STA. 0+080 TO 0+140

STA-21-14.44

SEEDING	
END WIDTH (METER)	AREA (SQUARE) (METER)
	378.9
	606.2
35.0	
	454.5
TOTAL	1439.6



EARTHWORK			
END AREA (SQUARE METER)		VOLUME (CUBIC METER)	
CUT	FILL	CUT	FILL
4.9	0.1		
		389.2	1.3
34.0	0.0		
		867.0	0.0
52.7	0.0		
		655.0	2.5
TOTALS		1911.2	3.8

CHANGE NIL
CHECKED JAN

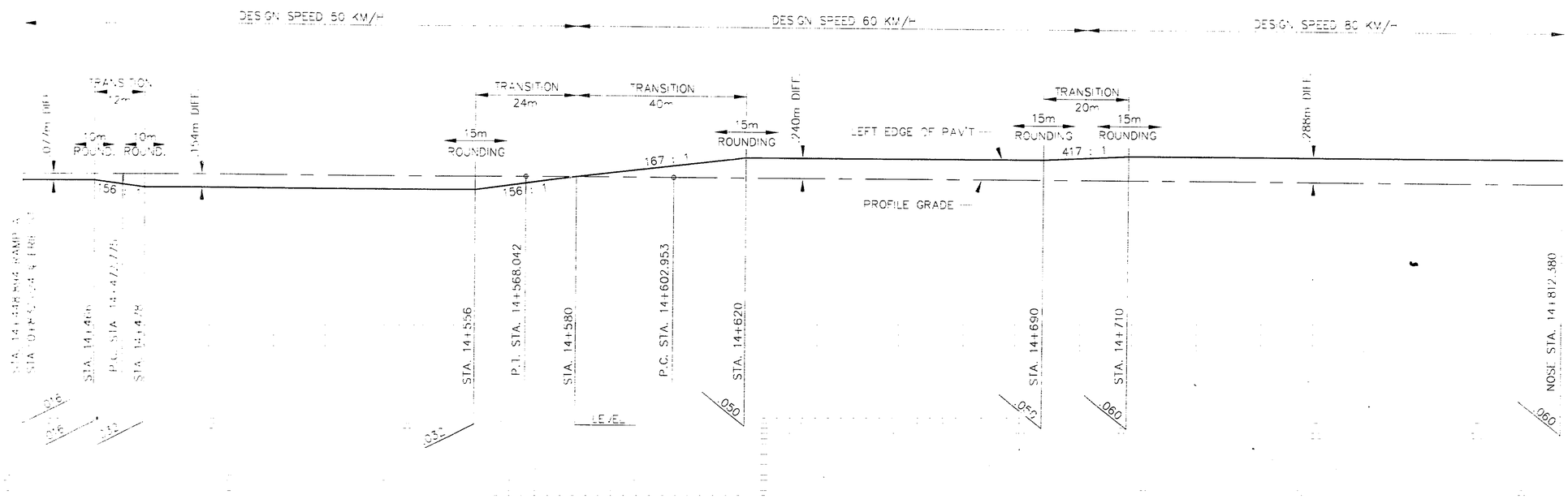
CROSS SECTIONS – TREATMENT PLANT DRIVE STA. 0+160 TO 0+201.95

STA-21-14.44

62/92

CAD FILE NAME

RAMP A – SUPERELEVATION DIAGRAM



NOTE: ELEVATIONS AND OFFSETS ARE SHOWN IN METERS

STATION	LEFT EDGE OF SHOULDER		LEFT EDGE OF PAVEMENT		PROFILE GRADE	RIGHT EDGE OF SHOULDER		DESCRIPTION
	ELEVATION	OFFSET	ELEVATION	OFFSET	ELEVATION	ELEVATION	OFFSET	
14+460	304.023	5.7	304.059	4.8	304.136	304.064	1.8	
+466	303.930	5.7	303.966	4.8	304.043	303.971	1.8	NORMAL (0.016)
+470	303.842	5.7	303.878	4.8	303.980	303.908	1.8	
+476.48	303.698	5.7	303.734	4.8	303.878	303.806	1.8	BEGIN RIGHT SHOULDER MAXIMUM BREAK = 7%
+478	303.663	5.7	303.699	4.8	303.853	303.784	1.8	FULL SUPER (0.032)
+480	303.626	5.7	303.662	4.8	303.816	303.747	1.8	
+490	303.401	5.7	303.437	4.8	303.591	303.523	1.8	
+500	303.108	5.7	303.144	4.8	303.298	303.230	1.8	
+510	302.747	5.7	302.783	4.8	302.937	302.868	1.8	
+520	302.317	5.7	302.353	4.8	302.507	302.439	1.8	
+530	301.827	5.7	301.863	4.8	302.017	301.948	1.8	
+540	301.329	5.7	301.365	4.8	301.518	301.450	1.8	
+550	300.830	5.7	300.866	4.8	301.020	300.952	1.8	
+556	300.531	5.7	300.567	4.8	300.721	300.653	1.8	FULL SUPER (0.032)
+557.52	300.465	5.7	300.501	4.8	300.645	300.573	1.8	END RIGHT SHOULDER MAXIMUM BREAK = 7% (START 0.040)
+560	300.358	5.7	300.394	4.8	300.522	300.450	1.8	
+570	299.923	5.7	299.959	4.8	300.023	299.951	1.8	
+580	299.489	5.7	299.525	4.8	299.525	299.453	1.8	LEVEL
+590	299.051	5.7	299.087	4.8	299.027	298.955	1.8	
+600	298.612	5.7	298.648	4.8	298.528	298.456	1.8	
+604	298.437	5.7	298.473	4.8	298.329	298.257	1.8	BEGIN LEFT SHOULDER MAX BREAK = 7%
+610	298.181	5.7	298.210	4.8	298.030	297.958	1.8	
+612	298.099	5.7	298.122	4.8	297.930	297.859	1.8	BEGIN RIGHT SHOULDER = SUPER RATE
+620	297.754	5.7	297.772	4.8	297.532	297.442	1.8	FULL SUPER (0.050)
+630	297.255	5.7	297.273	4.8	297.034	296.944	1.8	

STATION	LEFT EDGE OF SHOULDER		LEFT EDGE OF PAVEMENT		PROFILE GRADE	RIGHT EDGE OF SHOULDER		DESCRIPTION
	ELEV.	OFFSET	ELEV.	OFFSET	ELEV.	ELEV.	OFFSET	
14+640	296.757	5.7	296.775	4.8	296.535	296.445	1.8	
+650	296.259	5.7	296.277	4.8	296.037	295.947	1.8	
+660	295.761	5.7	295.779	4.8	295.539	295.449	1.8	
+670	295.262	5.7	295.280	4.8	295.040	294.950	1.8	
+680	294.784	5.7	294.802	4.8	294.562	294.472	1.8	
+690	294.346	5.7	294.364	4.8	294.124	294.034	1.8	FULL SUPER (0.050)
+700	293.976	5.7	293.989	4.8	293.725	293.626	1.8	
+710	293.646	5.7	293.655	4.8	293.367	293.259	1.8	FULL SUPER (0.060)
+720	293.327	5.7	293.336	4.8	293.048	292.940	1.8	
+730	293.049	5.7	293.058	4.8	292.770	292.662	1.8	
+740	292.811	5.7	292.820	4.8	292.532	292.424	1.8	
+750	292.612	5.7	292.621	4.8	292.333	292.225	1.8	
+753.880	292.546	5.7	292.555	4.8	292.267	292.159	1.8	BEGIN PAVEMENT TAPER
+760	292.855	11.350	292.462	4.8	292.174	292.067	1.8	
+770	292.693	10.615	292.344	4.8	292.056	291.948	1.8	
+780	292.570	9.880	292.265	4.8	291.977	291.869	1.8	
+790	292.467	9.145	292.206	4.8	291.918	291.810	1.8	
+800	292.364	8.410	292.148	4.8	291.860	291.745	1.904	
+810	292.261	7.674	292.089	4.8	291.801	291.663	2.304	
+812.380	292.237	7.5	292.075	4.8	291.787	291.643	2.399	NOSE STATION, END PAVEMENT TAPER, FULL SUPER (0.060)

CALCULATED JAN
CHECKED DSB

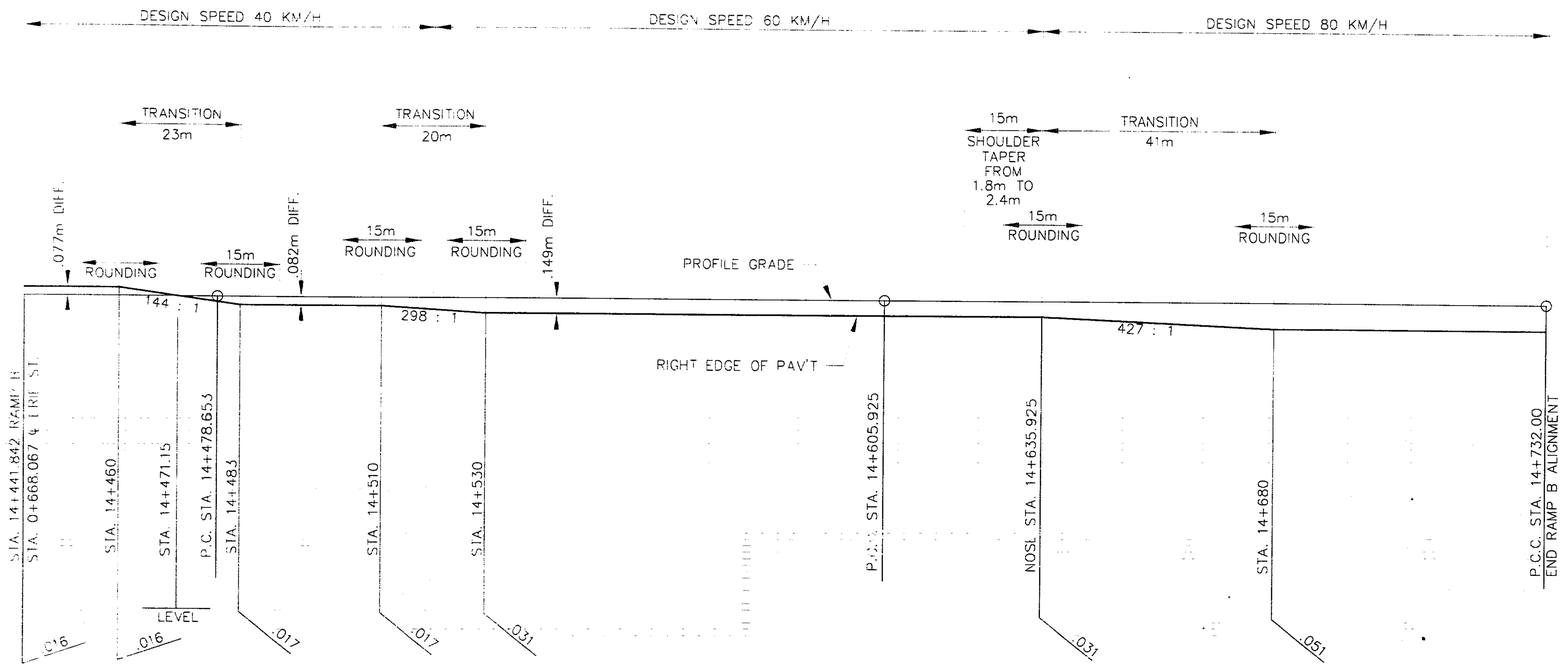
SUPERELEVATION DIAGRAM – RAMP A

STA-21-14.452

CAD FILE NAME 7024700 SUPRTEL

RAMP B – SUPERELEVATION DIAGRAM

metric units



NOTE: ELEVATIONS AND OFFSETS ARE SHOWN IN METERS

STATION	LEFT EDGE OF SHOULDER		PROFILE GRADE	RIGHT EDGE OF PAVEMENT		RIGHT EDGE OF SHOULDER		DESCRIPTION
	ELEVATION	OFFSET	ELEVATION	ELEVATION	OFFSET	ELEVATION	OFFSET	
+460	303.402	1.8	303.474	303.550	4.8	303.514	5.7	
+470	303.071	1.8	303.143	303.151	4.8	303.115	5.7	
+471.150	303.029	1.8	303.101	303.101	4.8	303.065	5.7	LEVEL
+480	302.677	1.8	302.749	302.688	4.8	302.652	5.7	
+483	302.546	1.8	302.618	302.536	4.8	302.500	5.7	
+490	302.223	1.8	302.295	302.213	4.8	302.178	5.7	
+500	301.759	1.8	301.831	301.749	4.8	301.713	5.7	
+510	301.295	1.8	301.367	301.285	4.8	301.249	5.7	
+520	300.830	1.8	300.902	300.787	4.8	300.751	5.7	
+528.570	300.433	1.8	300.505	300.361	4.8	300.325	5.7	
+530	300.368	1.8	300.438	300.289	4.8	300.253	5.7	BEGIN LEFT SHOULDER MAXIMUM BREAK = 7%(START -0.039) FULL SUPER (0.031)
+540	299.904	1.8	299.974	299.825	4.8	299.789	5.7	
+550	299.439	1.8	299.510	299.361	4.8	299.325	5.7	
+560	298.975	1.8	299.045	298.897	4.8	298.861	5.7	
+570	298.511	1.8	298.581	298.432	4.8	298.396	5.7	
+580	298.047	1.8	298.117	297.968	4.8	297.932	5.7	
+590	297.587	1.8	297.657	297.509	4.8	297.472	5.7	
+600	297.161	1.8	297.232	297.083	4.8	297.047	5.7	
+610	296.774	1.8	296.844	296.696	4.8	296.660	5.7	
+620	296.426	1.8	296.496	296.347	4.8	296.311	5.7	
+620.925	296.396	1.8	296.466	296.317	4.8	296.281	5.7	BEGIN LEFT SHOULDER WIDTH TRANSITION
+630	296.102	2.163	296.186	296.038	4.8	296.002	5.7	
+635.925	295.927	2.4	296.021	295.872	4.8	295.692	8.75	FULL SUPER, (0.031) NOSE STATION, END SHOULDER WIDTH TAPER
+640	295.826	2.4	295.915	295.757	4.8	295.428	11.264	
+650	295.604	2.4	295.682	295.503	4.8	295.240	9.948	

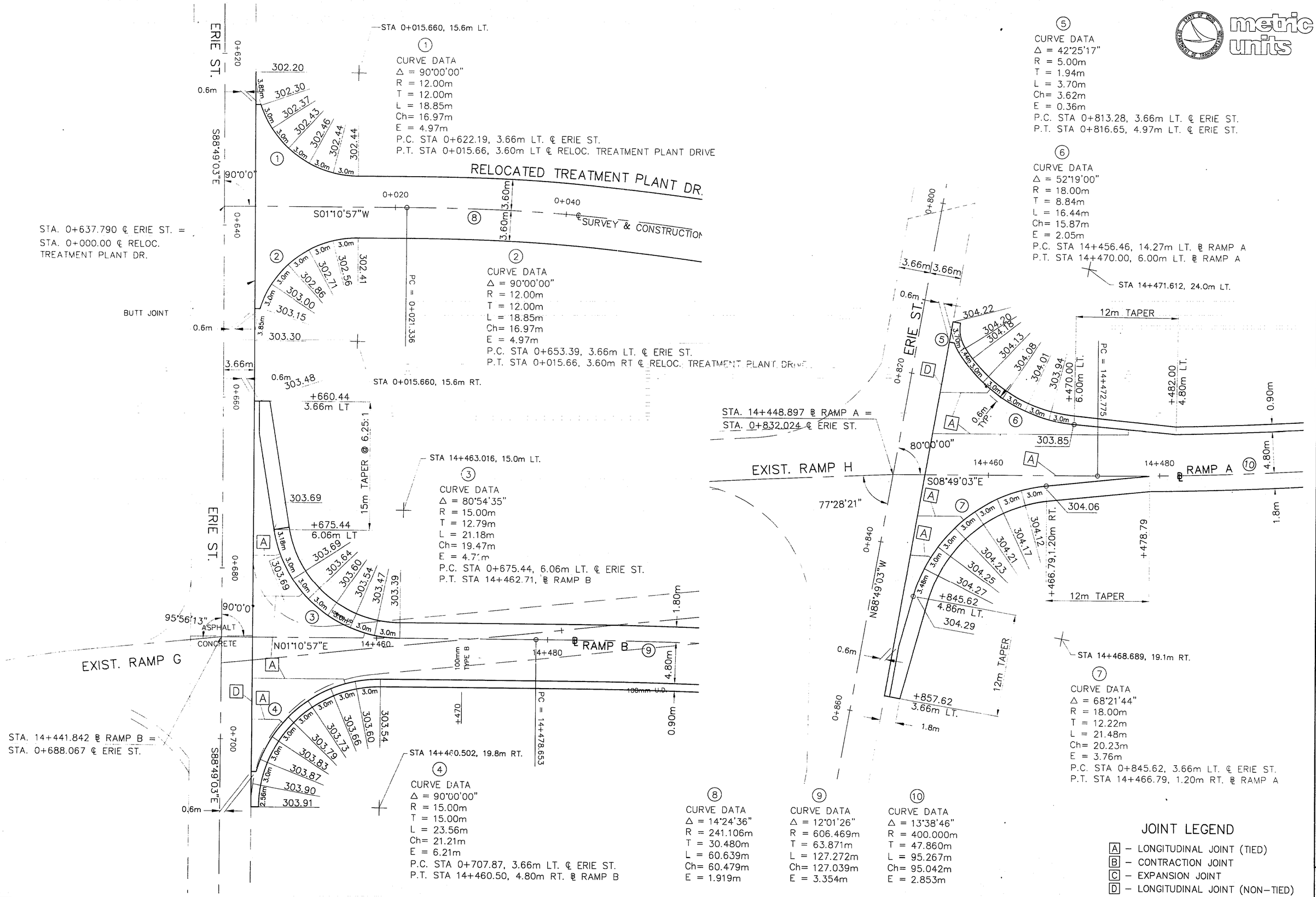
STATION	LEFT EDGE OF SHOULDER		PROFILE GRADE	RIGHT EDGE OF PAVEMENT		RIGHT EDGE OF SHOULDER		DESCRIPTION
	ELEVATION	OFFSET	ELEVATION	ELEVATION	OFFSET	ELEVATION	OFFSET	
+660	295.443	2.4	295.510	295.309	4.8	295.113	8.632	
+670	295.313	2.4	295.370	295.147	4.8	295.019	7.316	
+680	295.194	2.4	295.240	294.995	4.8	294.934	6.001	FULL SUPER (0.051), BEGIN PAVEMENT TAPER
+690	295.064	2.4	295.110	294.877				
+700	294.914	2.4	294.960	294.739				
+710	294.790	2.4	294.836	294.626				
+720	294.684	2.4	294.730	294.532				
+730	294.609	2.4	294.655	294.469				
+732	294.594	2.4	294.640	294.456				

CALCULATED JAN
CHECKED DSB

SUPERELEVATION DIAGRAM - RAMP B

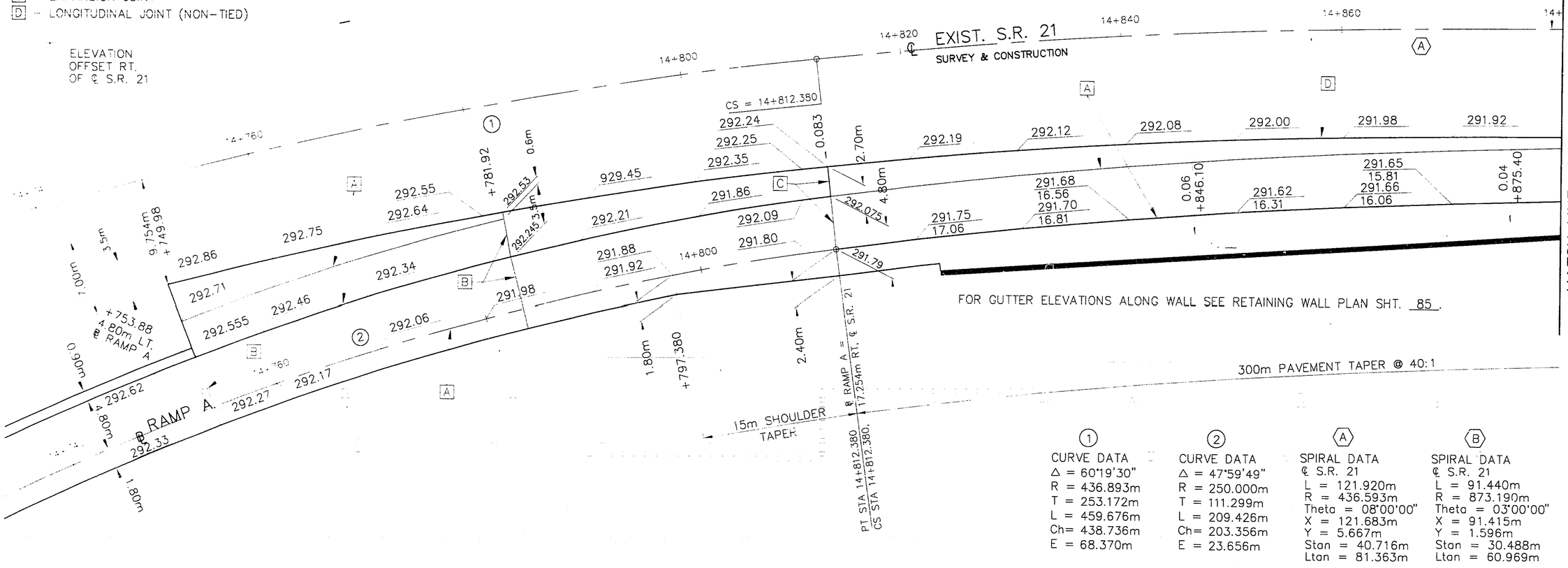
STA-21-14.452

CAD FILE NAME: 7024700 - SUPR1B1.2

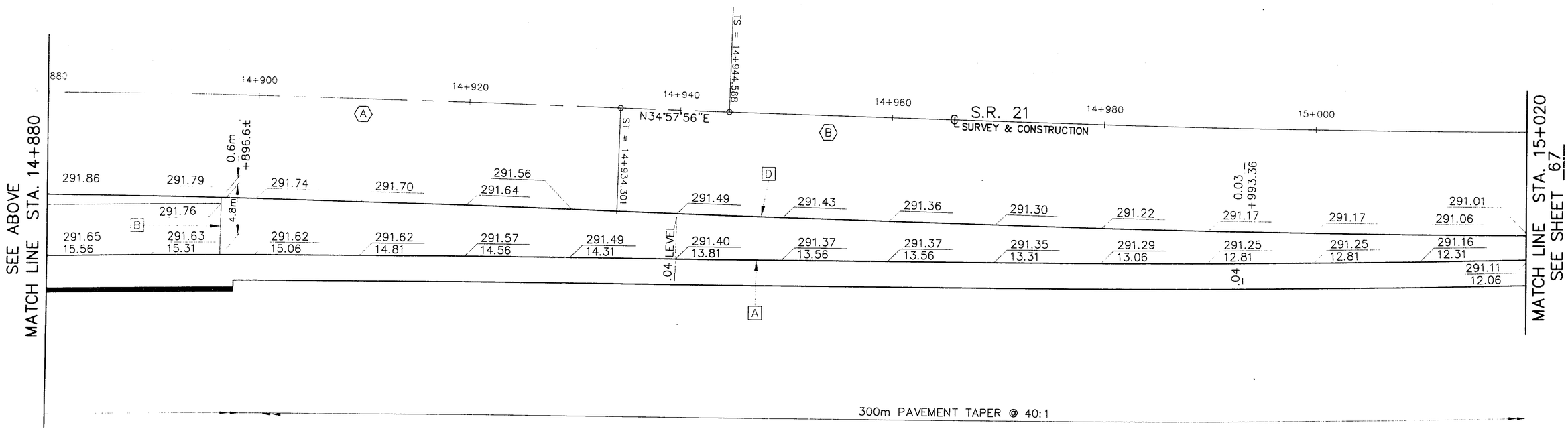

ERIE ST.
STA 0+015.660, 15.6m LT.
CURVE DATA
Δ = 90°00'00"
R = 12.00m
T = 12.00m
L = 18.85m
Ch= 16.97m
E = 4.97m
P.C. STA 0+622.19, 3.66m LT. ℄ ERIE ST.
P.T. STA 0+015.66, 3.60m LT ℄ RELOC. TREATMENT PLANT DRIVE
RELOCATED TREATMENT PLANT DR.
S88°49'03"E
90°0'0"
S01°10'57"W
℄ SURVEY & CONSTRUCTION
STA. 0+637.790 ℄ ERIE ST. =
STA. 0+000.00 ℄ RELOC.
TREATMENT PLANT DR.
BUTT JOINT
CURVE DATA
Δ = 90°00'00"
R = 12.00m
T = 12.00m
L = 18.85m
Ch= 16.97m
E = 4.97m
P.C. STA 0+653.39, 3.66m LT. ℄ ERIE ST.
P.T. STA 0+015.66, 3.60m RT ℄ RELOC. TREATMENT PLANT DRIVE
PC = 0+021.336
STA 0+015.660, 15.6m RT.
+660.44
3.66m LT
15m TAPER @ 6.25:1
STA 14+463.016, 15.0m LT.
CURVE DATA
Δ = 80°54'35"
R = 15.00m
T = 12.79m
L = 21.18m
Ch= 19.47m
E = 4.71m
P.C. STA 0+675.44, 6.06m LT. ℄ ERIE ST.
P.T. STA 14+462.71, ℄ RAMP B
+675.44
6.06m LT
95°56'13"
ASPHALT
CONCRETE
N01°10'57"E
EXIST. RAMP G
℄ RAMP B
100mm TYPE B
100mm U.D.
PC = 14+478.653
STA. 14+441.842 ℄ RAMP B =
STA. 0+688.067 ℄ ERIE ST.
STA 14+460.502, 19.8m RT.
CURVE DATA
Δ = 90°00'00"
R = 15.00m
T = 15.00m
L = 23.56m
Ch= 21.21m
E = 6.21m
P.C. STA 0+707.87, 3.66m LT. ℄ ERIE ST.
P.T. STA 14+460.50, 4.80m RT. ℄ RAMP B
STA. 14+448.897 ℄ RAMP A =
STA. 0+832.024 ℄ ERIE ST.
80°00'00"
EXIST. RAMP H
77°28'21"
N88°49'03"W
S08°49'03"E
℄ RAMP A
12m TAPER
PC = 14+472.775
+470.00
6.00m LT.
+482.00
4.80m LT.
+466.79, 1.20m RT.
+478.79
+845.62
4.86m LT.
+857.62
3.66m LT.
STA 14+468.689, 19.1m RT.
CURVE DATA
Δ = 68°21'44"
R = 18.00m
T = 12.22m
L = 21.48m
Ch= 20.23m
E = 3.76m
P.C. STA 0+845.62, 3.66m LT. ℄ ERIE ST.
P.T. STA 14+466.79, 1.20m RT. ℄ RAMP A
CURVE DATA
Δ = 42°25'17"
R = 5.00m
T = 1.94m
L = 3.70m
Ch= 3.62m
E = 0.36m
P.C. STA 0+813.28, 3.66m LT. ℄ ERIE ST.
P.T. STA 0+816.65, 4.97m LT. ℄ ERIE ST.
CURVE DATA
Δ = 52°19'00"
R = 18.00m
T = 8.84m
L = 16.44m
Ch= 15.87m
E = 2.05m
P.C. STA 14+456.46, 14.27m LT. ℄ RAMP A
P.T. STA 14+470.00, 6.00m LT. ℄ RAMP A
STA 14+471.612, 24.0m LT.
CURVE DATA
Δ = 14°24'36"
R = 241.106m
T = 30.480m
L = 60.639m
Ch= 60.479m
E = 1.919m
CURVE DATA
Δ = 12°01'26"
R = 606.469m
T = 63.871m
L = 127.272m
Ch= 127.039m
E = 3.354m
CURVE DATA
Δ = 13°38'46"
R = 400.000m
T = 47.860m
L = 95.267m
Ch= 95.042m
E = 2.853m
JOINT LEGEND
A – LONGITUDINAL JOINT (TIED)
B – CONTRACTION JOINT
C – EXPANSION JOINT
D – LONGITUDINAL JOINT (NON-TIED)
metric units
SCALE IN METERS
CALCULATED
CHECKED
ERIE STREET CONNECTIONS
PAVEMENT DETAILS
STA-21-14.452
65
92
CAD FILE NAME: 7024700 - PVDET - A1

JOINT LEGEND

- [A] – LONGITUDINAL JOINT (TIED)
- [B] – CONTRACTION JOINT
- [C] – EXPANSION JOINT
- [D] – LONGITUDINAL JOINT (NON-TIED)



① CURVE DATA	② CURVE DATA	Ⓐ SPIRAL DATA ℄ S.R. 21	Ⓑ SPIRAL DATA ℄ S.R. 21
Δ = 60°19'30"	Δ = 47°59'49"	L = 121.920m	L = 91.440m
R = 436.893m	R = 250.000m	R = 436.593m	R = 873.190m
T = 253.172m	T = 111.299m	Theta = 08°00'00"	Theta = 03°00'00"
L = 459.676m	L = 209.426m	X = 121.683m	X = 91.415m
Ch= 438.736m	Ch= 203.356m	Y = 5.667m	Y = 1.596m
E = 68.370m	E = 23.656m	Stan = 40.716m	Stan = 30.488m
		Ltan = 81.363m	Ltan = 60.969m



metric units

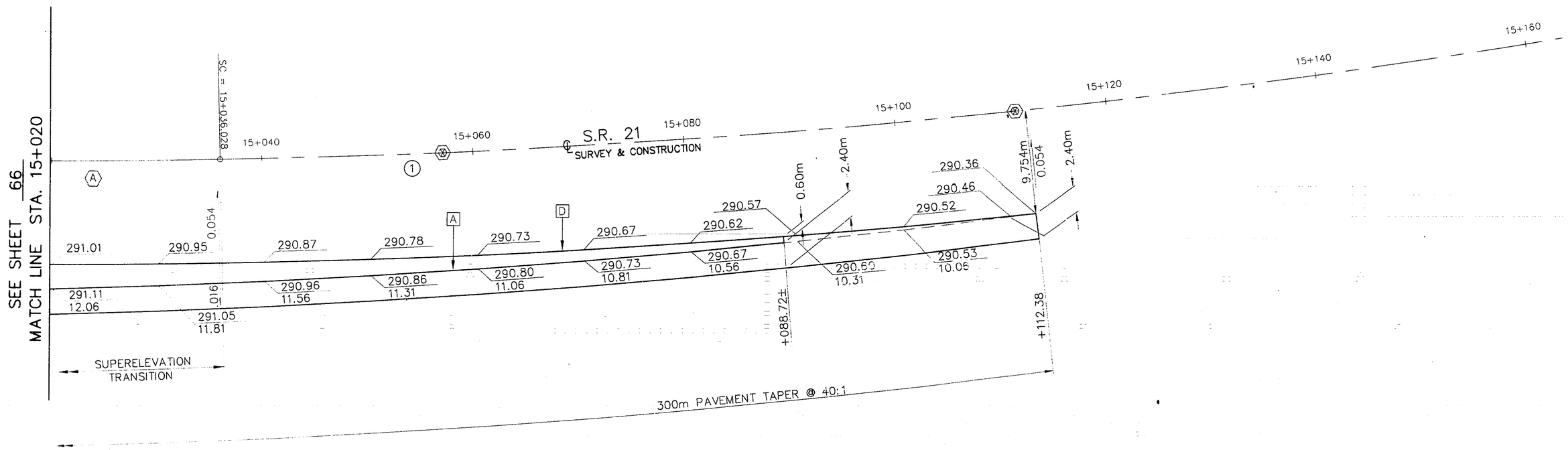
SCALE IN METERS 0 5 10

CALCULATED

CHECKED

PAVEMENT DETAILS – RAMP A ACCELERATION LANE
STA. 14+740 TO STA. 15+020

STA-21-14.452



metric units

SCALE IN METERS 0 5 10

CALCULATED

CHECKED

PAVEMENT DETAILS - RAMP A ACCELERATION LANE
STA. 15+020 TO STA. 15+112.38

STA-21-14.452

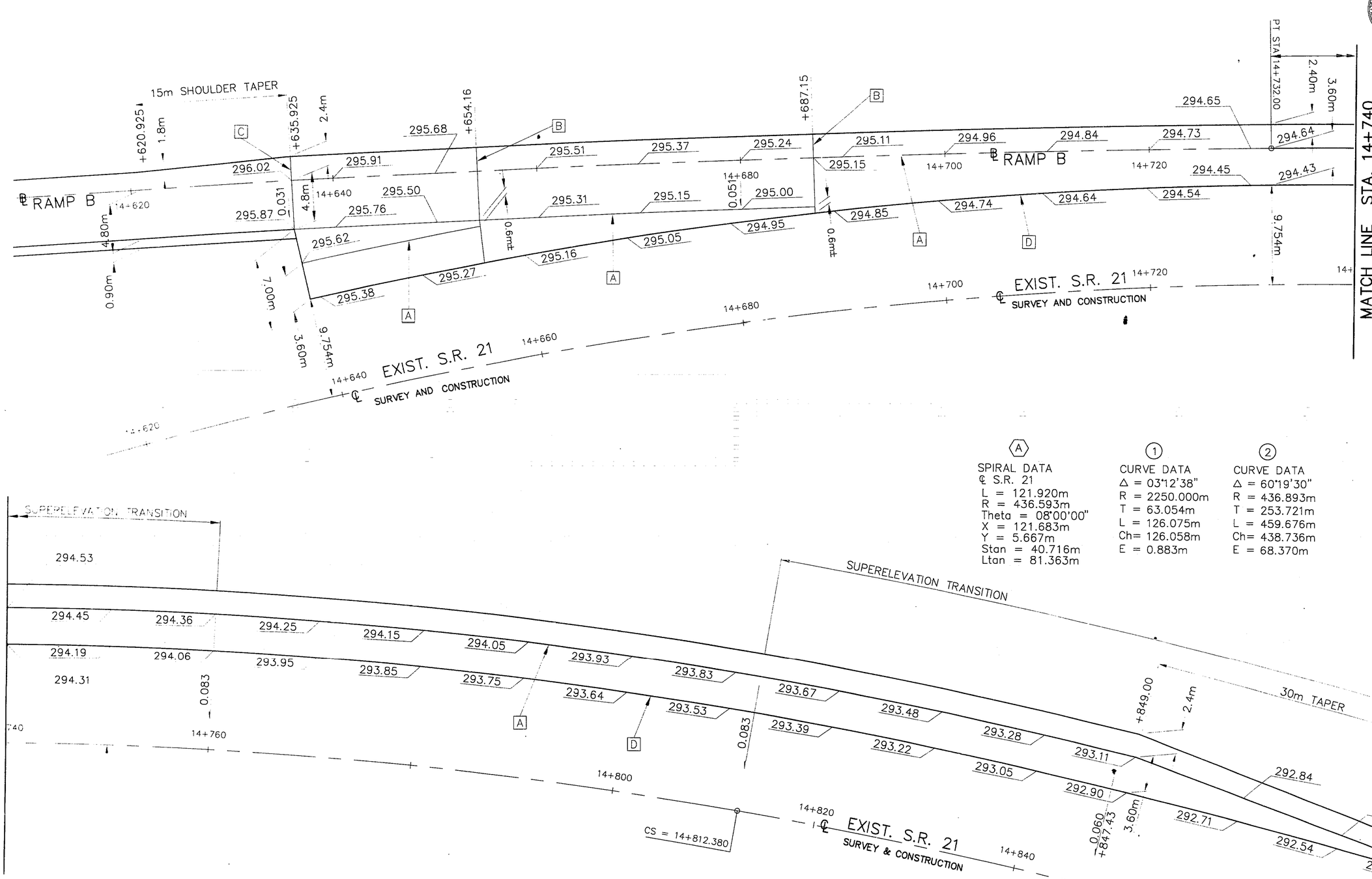
(A) SPIRAL DATA
℄ S.R. 21
L = 91.440m
R = 873.190m
Theta = 03°00'00"
X = 91.415m
Y = 1.596m
Stan = 30.488m
Ltan = 60.969m

(1) CURVE DATA
Δ = 11°28'25"
R = 873.190m
T = 87.722m
L = 174.858m
Ch= 174.566m
E = 4.395m

JOINT LEGEND

A – LONGITUDINAL JOINT (TIED)
B – CONTRACTION JOINT
C – EXPANSION JOINT
D – LONGITUDINAL JOINT (NON-TIED)

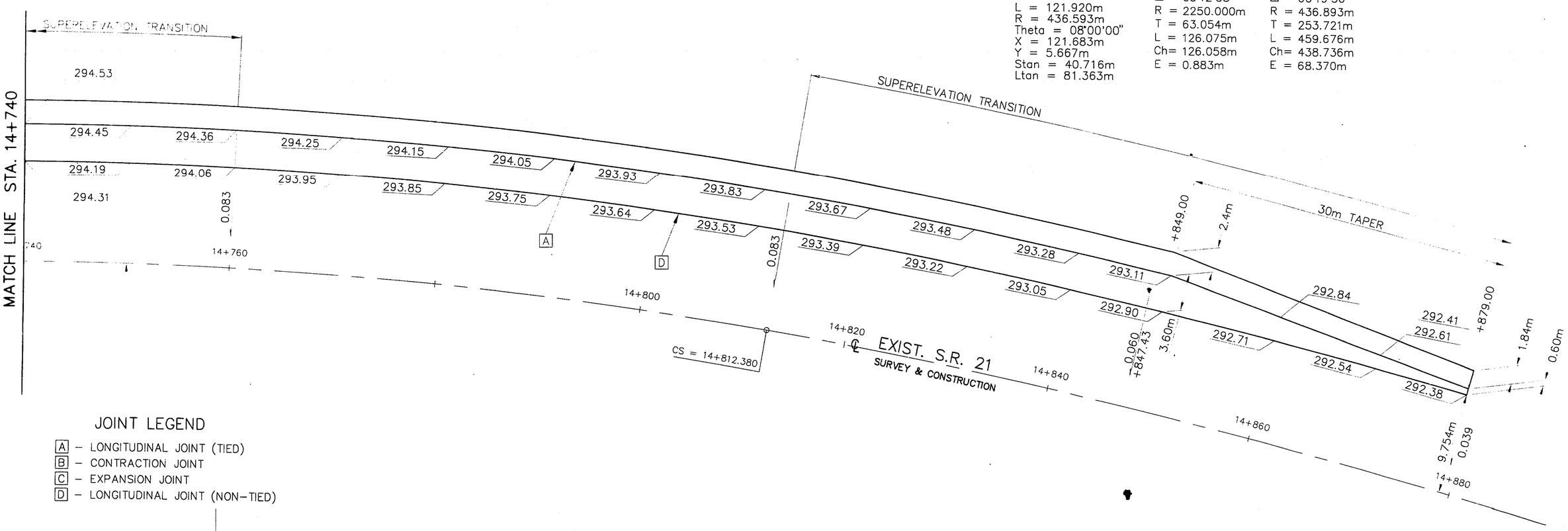
ELEVATION
OFFSET RT.
OF ℄ S.R. 21



(A)
SPIRAL DATA
℄ S.R. 21
L = 121.920m
R = 436.593m
Theta = 08°00'00"
X = 121.683m
Y = 5.667m
Stan = 40.716m
Ltan = 81.363m

(1)
CURVE DATA
Δ = 03°12'38"
R = 2250.000m
T = 63.054m
L = 126.075m
Ch= 126.058m
E = 0.883m

(2)
CURVE DATA
Δ = 60°19'30"
R = 436.893m
T = 253.721m
L = 459.676m
Ch= 438.736m
E = 68.370m



JOINT LEGEND

- [A] – LONGITUDINAL JOINT (TIED)
- [B] – CONTRACTION JOINT
- [C] – EXPANSION JOINT
- [D] – LONGITUDINAL JOINT (NON-TIED)

metric units

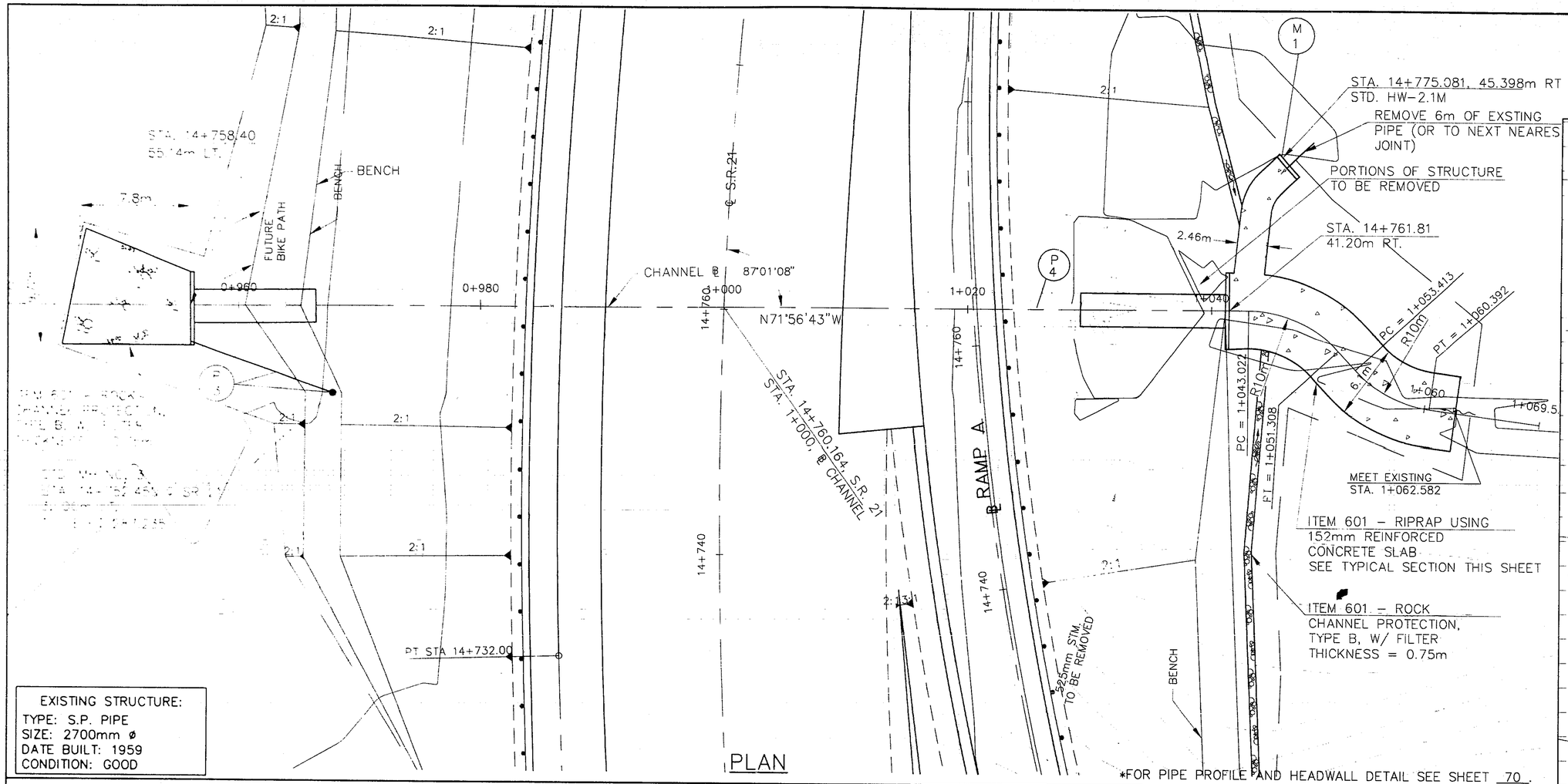
SCALE IN METERS 0 5 10

CALCULATED
CHECKED

PAVEMENT DETAILS - RAMP B DECELERATION LANE
STA. 14+620 TO STA. 14+879

STA-21-14.452

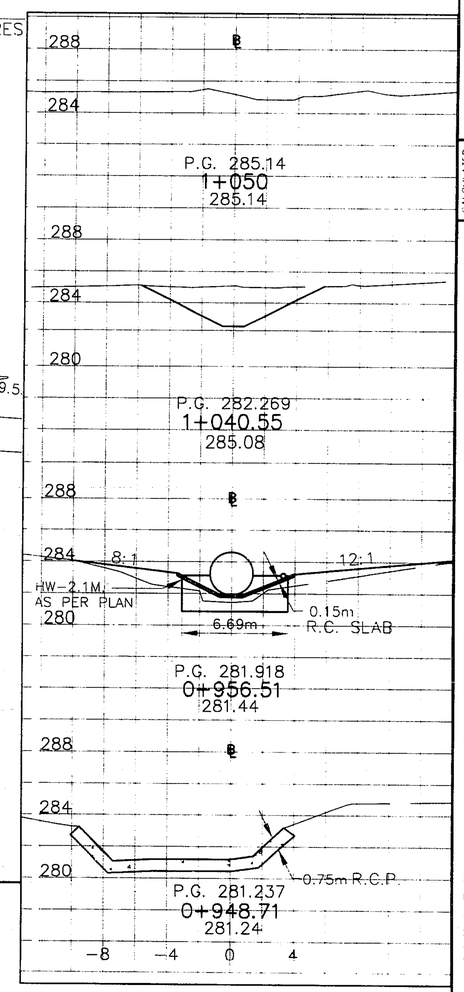
CAD FILE NAME 7024700 PVDE1 B1



EXISTING STRUCTURE:
TYPE: S.P. PIPE
SIZE: 2700mm ø
DATE BUILT: 1959
CONDITION: GOOD

PLAN

*FOR PIPE PROFILE AND HEADWALL DETAIL SEE SHEET 70.

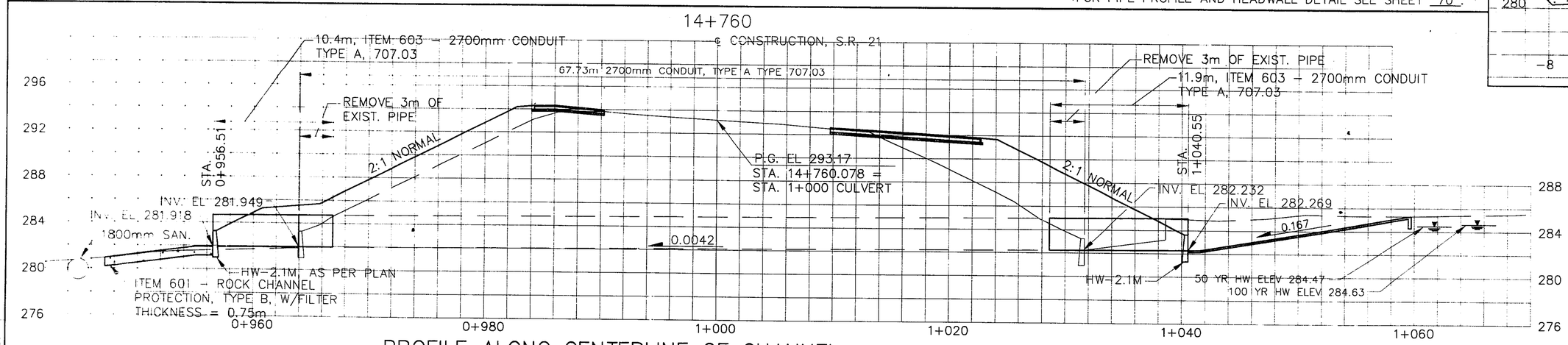


CULVERT DETAIL - 2700mm C.M.P. CULVERT
STA. 14+760.16, S.R. 21

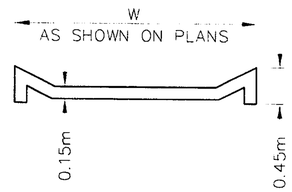
metric units

SCALE IN METERS 0 5 10

CALCULATED JAN
CHECKED DSB



PROFILE ALONG CENTERLINE OF CHANNEL



TYPICAL RIPRAP SECTION

HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 3,192,970m² (789 Ac.)
Q_{50}	= 9.56m³/s (338 CFS)
Q_{100}	= 10.86m³/s (384 CFS)
HW_{50}	= 284.47
HW_{100}	= 284.63
V_{50}	= 3.27m/s (10.74 FPS)
V_{100}	= 3.41m/S (11.18 FPS)

ESTIMATED QUANTITIES - M1

ITEM	QUAN.	UNIT	DESCRIPTION
601	23.81	SQ. M	RIPRAP USING 152mm REINFORCED CONCRETE SLAB
602	1.01	CU. M	CONCRETE MASONRY
603	3	METER	1200mm CONDUIT, TYPE C

ESTIMATED QUANTITIES - P3

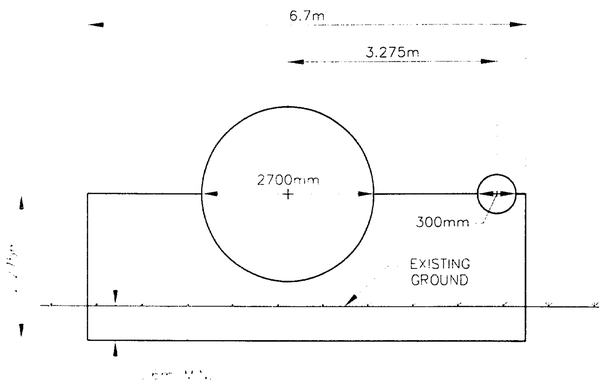
ITEM	QUAN.	UNIT	DESCRIPTION
603	12.50	METER	300mm CONDUIT, TYPE C
604	1	EACH	MANHOLE, NO. 3

ESTIMATED QUANTITIES - P4

ITEM	QUAN.	UNIT	DESCRIPTION
202	LUMP		PORTIONS OF STRUCTURE REMOVED
601	46.7	CU. M	ROCK CHANNEL PROTECTION, TYPE B W/FILTER
601	129.50	SQ. M	RIPRAP USING 152mm REINFORCED CONCRETE SLAB
602	11.77	CU. M	CONCRETE MASONRY
603	22.30	METER	2700mm CONDUIT, TYPE A, 707.03

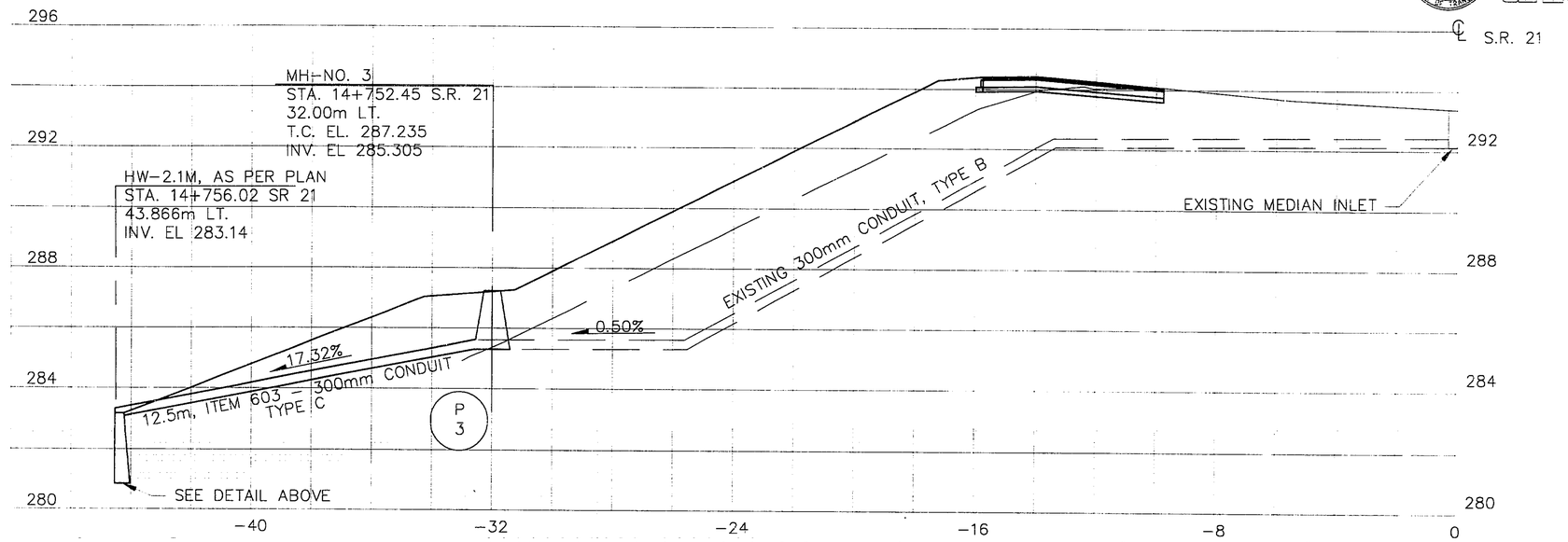
STA-21-14.452

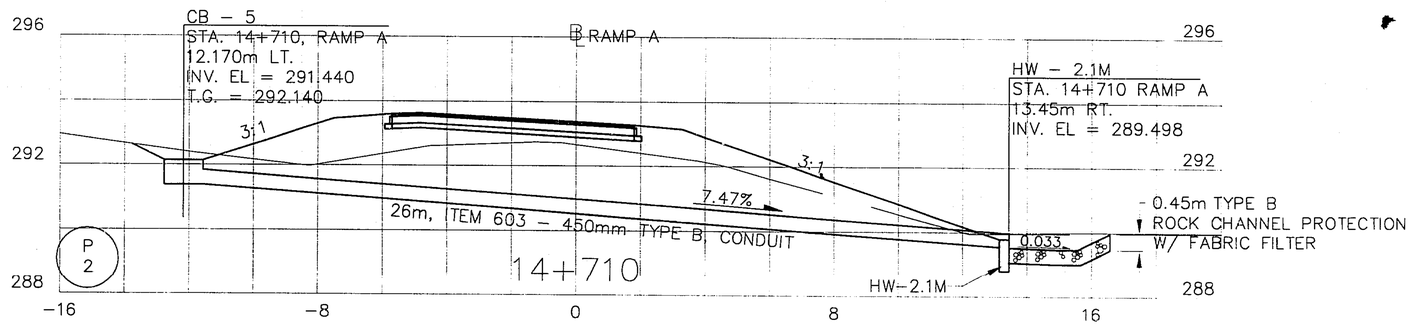
CAD FILE NAME 7024700

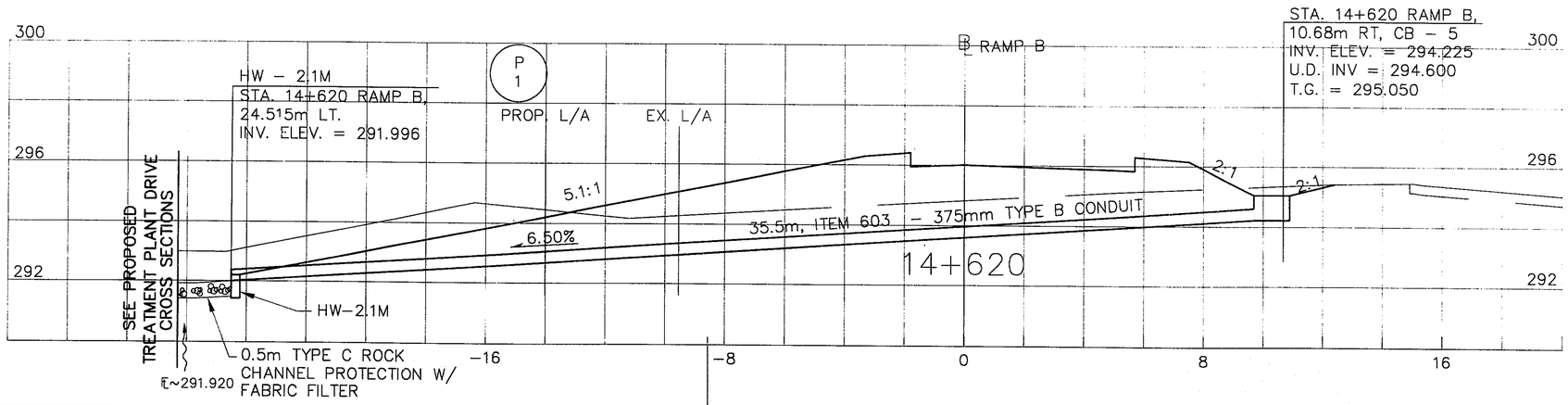


(FOR ALL OTHER DIMENSIONS REFER TO STD. DWG. NO. HW-2.1M)

HW – 2.1M, AS PER PLAN
DETAIL
(NTS)







metric units

SCALE 1:100

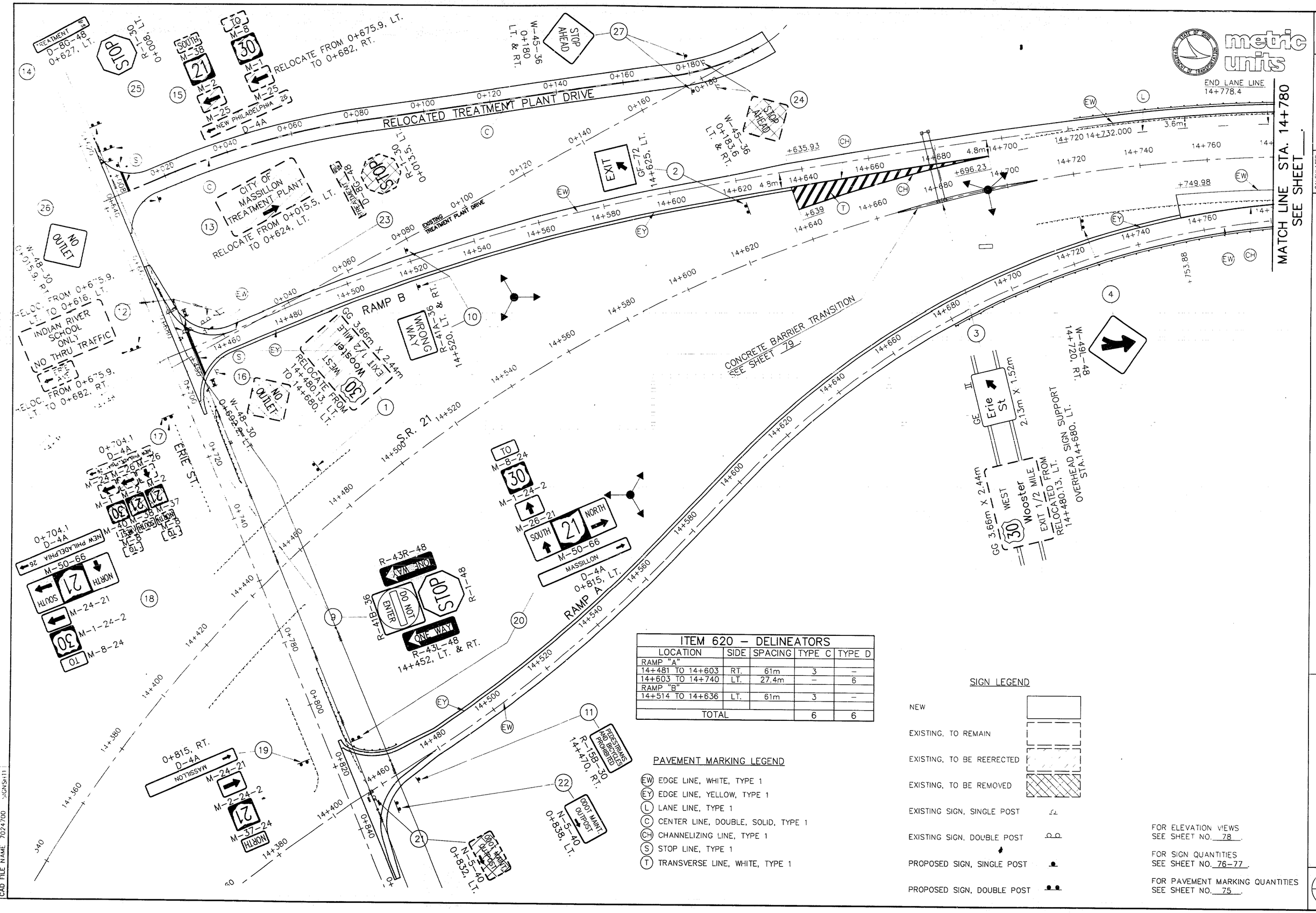
CALCULATED NEL
CHECKED DSB

PIPE PROFILES

STA-21-14.452

70
92

CAD FILE NAME 7024/00 PP-2



ITEM 620 – DELINEATORS

LOCATION	SIDE	SPACING	TYPE C	TYPE D
RAMP "A"				
14+481 TO 14+603	RT.	61m	3	–
14+603 TO 14+740	LT.	27.4m	–	6
RAMP "B"				
14+514 TO 14+636	LT.	61m	3	–
TOTAL			6	6

PAVEMENT MARKING LEGEND

- (EW) EDGE LINE, WHITE, TYPE 1
- (EY) EDGE LINE, YELLOW, TYPE 1
- (L) LANE LINE, TYPE 1
- (C) CENTER LINE, DOUBLE, SOLID, TYPE 1
- (CH) CHANNELIZING LINE, TYPE 1
- (S) STOP LINE, TYPE 1
- (T) TRANSVERSE LINE, WHITE, TYPE 1

SIGN LEGEND

- NEW
- EXISTING, TO REMAIN
- EXISTING, TO BE REERECTED
- EXISTING, TO BE REMOVED
- EXISTING SIGN, SINGLE POST
- EXISTING SIGN, DOUBLE POST
- PROPOSED SIGN, SINGLE POST
- PROPOSED SIGN, DOUBLE POST

FOR ELEVATION VIEWS SEE SHEET NO. 78.

FOR SIGN QUANTITIES SEE SHEET NO. 76–77.

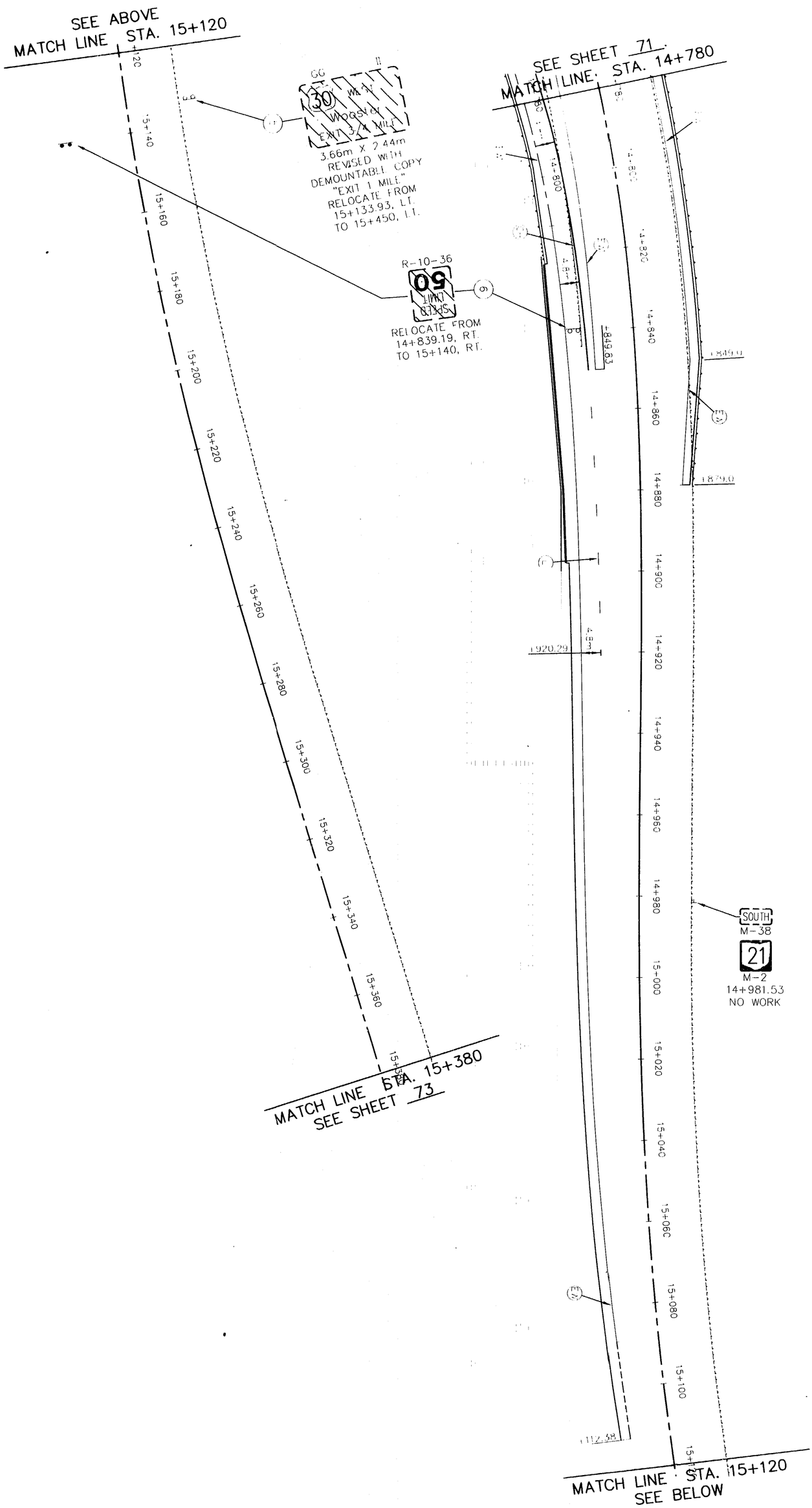
FOR PAVEMENT MARKING QUANTITIES SEE SHEET NO. 75.

TRAFFIC CONTROL PLAN
STA. 14+240 TO STA. 14+780

STA-21-14.452

DATE: 7/17/95 DATE 4/23/96
CAD FILE NAME: 7024700 SIGNSH11

CAD FILE NAME 7024700 SIGNSH12

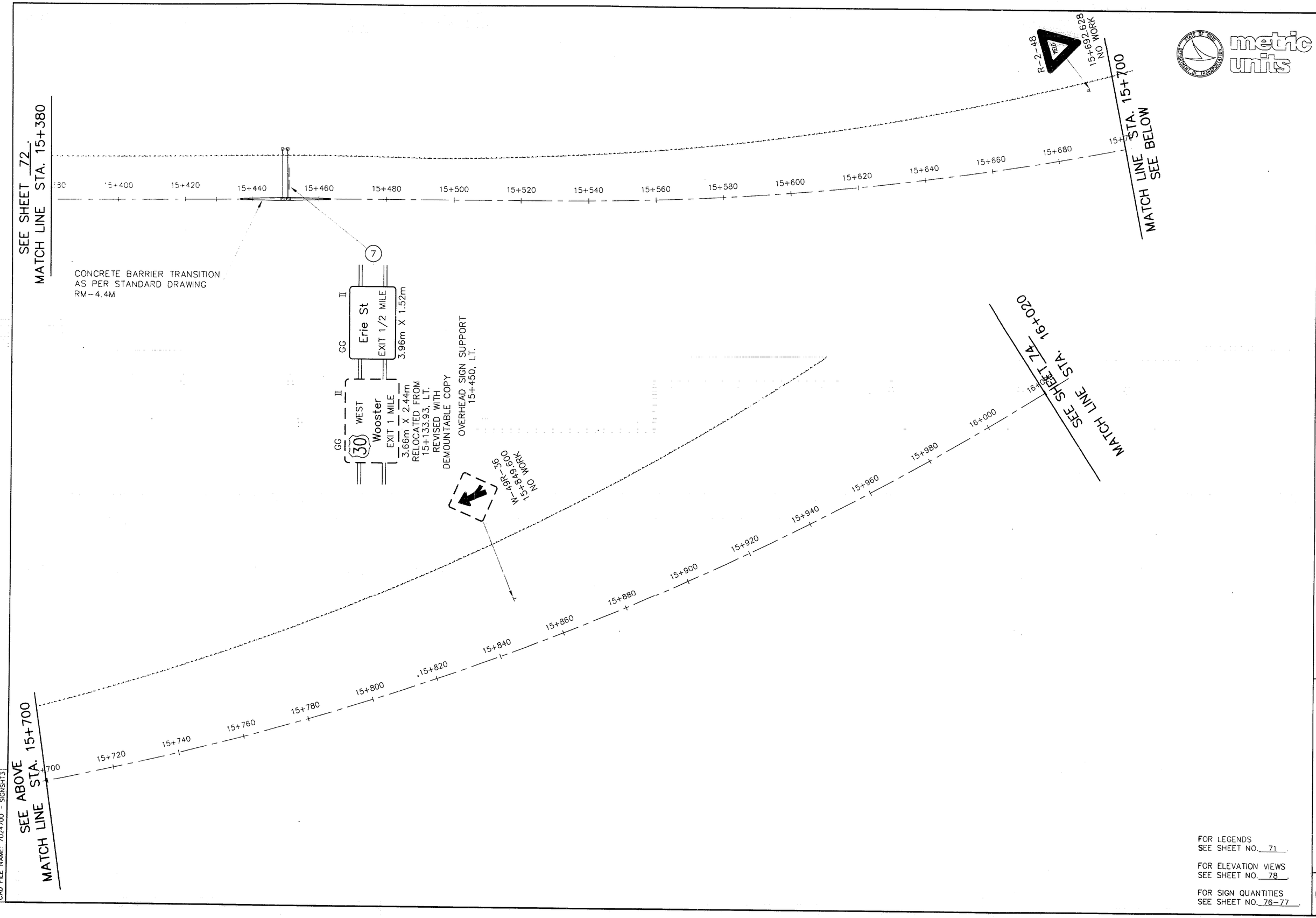


FOR LEGENDS
SEE SHEET NO. 7
FOR QUANTITIES
SEE SHEET NO. 75-77

72/92	STA-21-14.452	TRAFFIC CONTROL PLAN STA. 14+780 TO STA. 15+380	CALCULATED CHECKED

0 10 20
SCALE IN METERS

metric units



FOR LEGENDS
SEE SHEET NO. 71.

FOR ELEVATION VIEWS
SEE SHEET NO. 78.

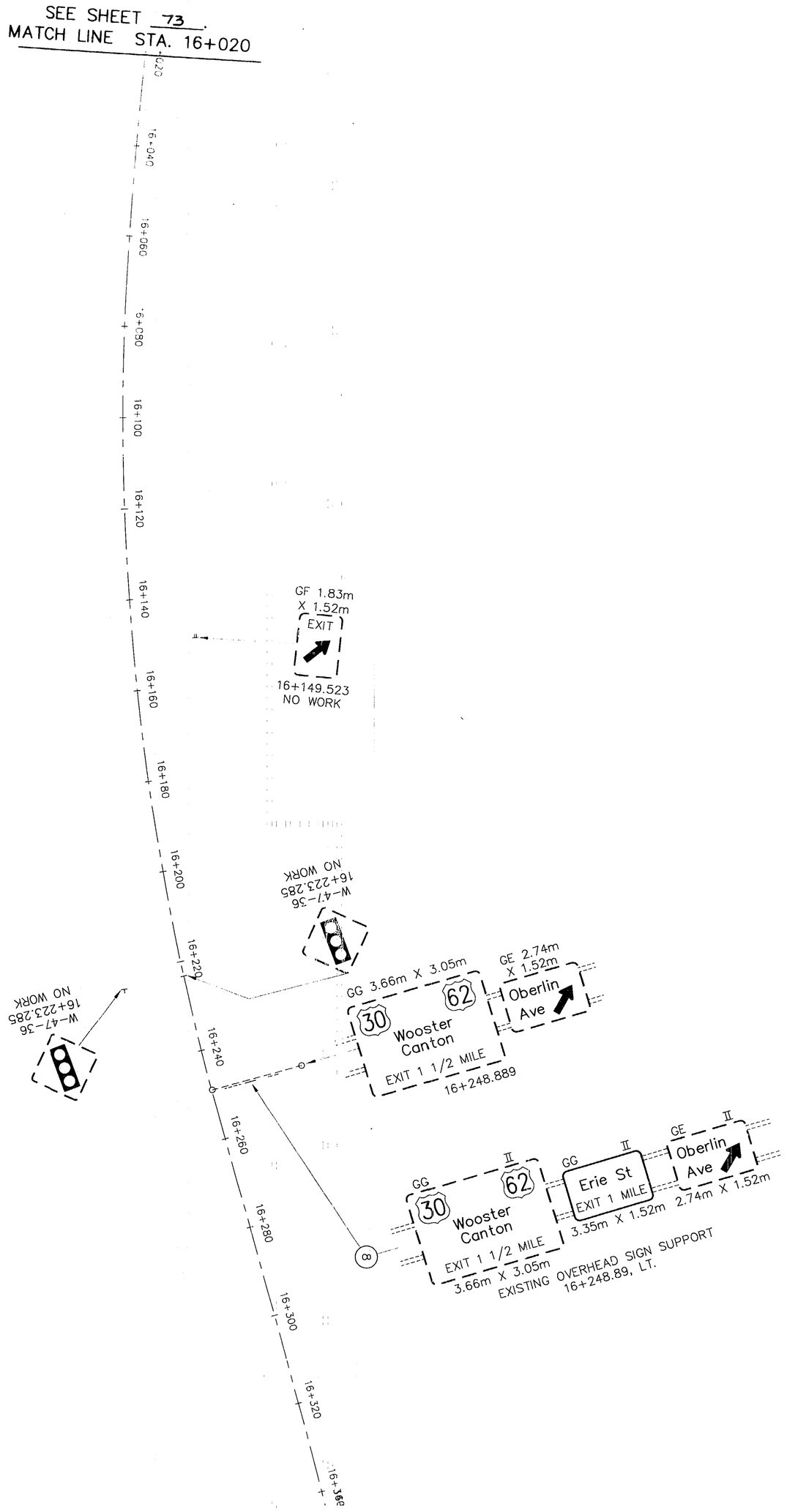
FOR SIGN QUANTITIES
SEE SHEET NO. 76-77.

CALCULATED
CHECKED

TRAFFIC CONTROL PLAN
STA. 15+380 TO STA. 16+020

STA-21-14.452

DATE: 6/29/95 DATE:
CAD FILE NAME: 7024700 - SIGNSH13



FOR LEGEND
SEE SHEET NO. 71

FOR ELEVATION VIEWS
SEE SHEET NO. 78

FOR QUANTITIES
SEE SHEET NO. 76-77

metric units

74 / 92	STA-21-14.44	TRAFFIC CONTROL PLAN STA. 16+020 TO STA. 16+320	CALCULATED CHECKED	0 10 20 SCALE IN METERS

PAVEMENT MARKING SUB-SUMMARY

metric units

CALCULATED T.K.I.
CHECKED E.W.K.

SHEET NO.	REFERENCE NO.	LOCATION	STATION FROM	STATION TO	SIDE	ITEM NUMBERS 642 EDGE LINE, WHITE, TYPE 1	EDGE LINE, YELLOW, TYPE 1		LANE LINE, TYPE 1		CENTER LINE, DOUBLE, SOLID, TYPE 1		CHANNELIZING LINE, TYPE 1		STOP LINE, TYPE 1		TRANSVERSE LINE, WHITE, TYPE 1
						km	km		km		km		m		m		m
[illegible]	E.A.	S.R. 21	14+580	14+639	LT.	0.059											
[illegible]	E.A.	S.R. 21	14+879	15+120	LT.	0.241											
[illegible]	E.A.	S.R. 21	14+696.23	14+879	LT.	0.183											
[illegible]	E.A.	S.R. 21	14+580	14+849.83	RT.	0.270											
[illegible]	E.A.	S.R. 21	14+849.83	15+160	RT.	0.310											
[illegible]	E.A.	S.R. 21	14+749.98	14+849.83	RT.	0.100											
[illegible]	[illegible]	S.R. 21	14+580	15+160	LT/RT		1.160										
[illegible]	[illegible]	S.R. 21	14+580	15+160	LT/RT				1.16								
[illegible]	[illegible]	S.R. 21	14+696.23	14+778.4	LT.				0.082								
[illegible]	[illegible]	S.R. 21	14+849.83	14+920.29	RT.				0.070								
[illegible]	[illegible]	S.R. 21	14+639	14+696.23	LT.								114				
[illegible]	[illegible]	S.R. 21	14+749.98	14+849.83	RT.								100				
[illegible]	[illegible]	S.R. 21	14+639	14+696.23	LT.												66
[illegible]	E.A.	RAMP "A"	14+455	14+753.88	RT.	0.299											
[illegible]	E.A.	RAMP "A"	14+455	14+753.88	LT.		0.299										
[illegible]	E.A.	RAMP "B"	14+450	14+635.93	LT.	0.186											
[illegible]	E.A.	RAMP "B"	14+450	14+635.93	RT.		0.186										
[illegible]	S	RAMP "B"	14+450	–	LT/RT										16		
[illegible]	S	RELOCATED TREATMENT PLANT DRIVE	0+008	–	LT/RT										7		
[illegible]	C	RELOCATED TREATMENT PLANT DRIVE	0+008	0+201.95	℄						0.194						
SUBTOTAL						1.648	1.645										
TOTAL						3.293			1.31		0.194		214		23		66

PAVEMENT MARKING SUB-SUMMARY

STA-21-14.452

CAD FILE NAME: [illegible]

SIGNING SUB-SUMMARY

metric units

CALCULATED T.K.I. CHECKED E.W.K.

SHEET NO.	REFERENCE NO.	STATION	SIDE	CODE	SIZE (MILLIMETERS)	202 CONCRETE BARRIER REMOVED	622 CONCRETE BARRIER, TYPE B1270mm	625 GROUND ROD	CONCRETE FOR ANCHOR BASE FOUNDATION	GROUND MOUNTED SUPPORT, NO.3 POST	GROUND MOUNTED SUPPORT, S100 X 11.5 BEAM	ONE WAY SUPPORT, NO.3 POST	STREET NAME SIGN SUPPORT	BREAKAWAY BEAM CONNECTION		OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 6, 14.80m SPAN	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 6, 20.24m SPAN	SIGN ATTACHMENT ASSEMBLY		630 SIGN, FLAT SHEET, TYPE G	SIGN, EXTRUSHEET, TYPE G	SIGN, DOUBLE FACED, STREET NAME		SIGN BACKING ASSEMBLY	EXISTING SIGN REMVSED WITH DEMOUNTABLE COPY		REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND REERECTION		REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL		REMOVAL OF OVERHEAD MOUNTED SIGN AND REERECTION		622 CONCRETE BARRIER TYPE B1270, AS PER PLAN		
						m	m	EACH	CU. m	m	m	m	EACH	EACH		EACH	EACH	EACH		SQ. m	SQ. m	EACH		EACH	EACH		EACH	EACH	EACH		EACH	EACH		EACH		m		
		S.R. 21																																						
		14+480.13	LT.	–	–																																			
		14+625	LT.	GF-72	1800 X 1500				0.48		9.5			2															1			2							
		14+680	LT.	OVERHEAD	–	41	24	2	10.71								1				3.2																		
		14+720	RT.	W-49L-48	1200 X 1200					8.84										1.44																11			
		14+735.94	LT.	–	–																																			
		14+740	RT	R-10-36	900 X 1200					8.84															1				1			2							
		15+450	LT.	OVERHEAD	–	27	24	2	10.71							1					6.0										2								
4	8	16+248.89	LT.	EXIST.OVERHEAD	–													2			5.1														2					
		RAMP "B"																																						
		14+452	LT/RT	(2) R-11-48	1200 X 1200							17.68								2.88																				
		14+452	LT/RT	(2) R-41B-36	900 X 900															1.62																				
		14+452	LT/RT	(2) R-43R-48	1200 X 450															1.08																				
		14+452	LT/RT	(2) R-43L-48	1200 X 450															1.08																				
		14+520	LT/RT	(2) R-41A-36	900 X 600					15.24										1.08																				
		RAMP "A"																																						
		14+470	RT.	R-15B-30	750 X 450					3.66										0.34																				
		ERIE STREET																																						
71	12	0+616	LT.	–	–					8.84																			2			2								
	13	0+624	LT.	–	–					8.84																			2			2								
	14	0+627	LT.	D-8G-48	1200 X 450								1									1																		
	15	0+682	RT.	–	–					7.01																			7			2								
	16	0+692.2	LT.	–	–																							1				1								
	17	0+704.1	RT.	–	–																							12				2								
	18	0+704.1	RT.	D-4A	1800 X 600					8.84										1.08				1																
	18	0+704.1	RT.	M-50-66	1650 X 600															0.99																				
	18	0+704.1	RT.	M-24-21	525 X 375															0.20																				
	18	0+704.1	RT.	M-1-24-2	600 X 600															0.36																				
	18	0+704.1	RT.	M-8-24	600 X 300															0.18																				
	19	0+815	RT.	D-4A	1800 X 600					7.62										1.08																				
	19	0+815	RT.	M-24-21	525 X 375															0.20																				
	19	0+815	RT.	M-2-24-2	600 X 600															0.36																				
	19	0+815	RT.	M-37-24	600 X 300															0.18																				
	20	0+815	LT.	D-4A	1800 X 600					8.84										1.08																				
	20	0+815	LT.	M-50-66	1650 X 600															0.99																				
	20	0+815	LT.	M-26-21	525 X 375															0.20																				
	20	0+815	LT.	M-1-24-2	600 X 600															0.36																				
	20	0+815	LT.	M-8-24	600 X 300															0.18																				
	21	0+832	LT.	–	–																							1				2								
71	22	0+838	LT.	N-5-40	1000 X 500					7.32										0.50																				
		EXISTING TREATMENT PLANT DRIVE																																						
71	23	0+013.5	LT.	–	–																							1				1								
71	24	0+183.6	LT/RT	–	–																							2				2								
		TOTAL				68	48	4	21.9	93.89	9.5	17.68	1	2		1	1	2		17.46	17.0	1		1	1		17	12	2		16	4		2		11		

SIGNING SUB-SUMMARY

STA-21-14.452

DATE 9/
CAD FILE NAME

SIGNING SUB-SUMMARY

metric units

CALCULATED T.K.I.
CHECKED E.W.K.

SHEET NO.	REFERENCE NO.	STATION	SIDE	CODE	SIZE (MILLIMETERS)	GROUND MOUNTED SUPPORT, NO.3 POST (630)	SIGN, FLAT SHEET, TYPE C
						m	SQ. m
	RELOCATED TREATMENT PLANT DRIVE						
71	25	0+008	LT.	R-1-30	750 X 750	3.96	0.56
71	26	0+015.9	RT.	W-48-30	750 X 750	3.96	0.56
71	27	0+180	LT/RT	W-45-36	900 X 900	4.12	0.81
		TOTAL				12.04	1.93

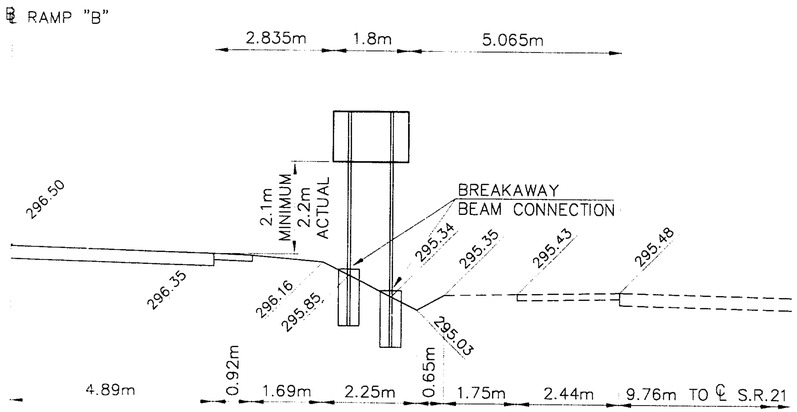
ITEM NUMBERS

SIGNING SUB-SUMMARY

STA-21-14.44

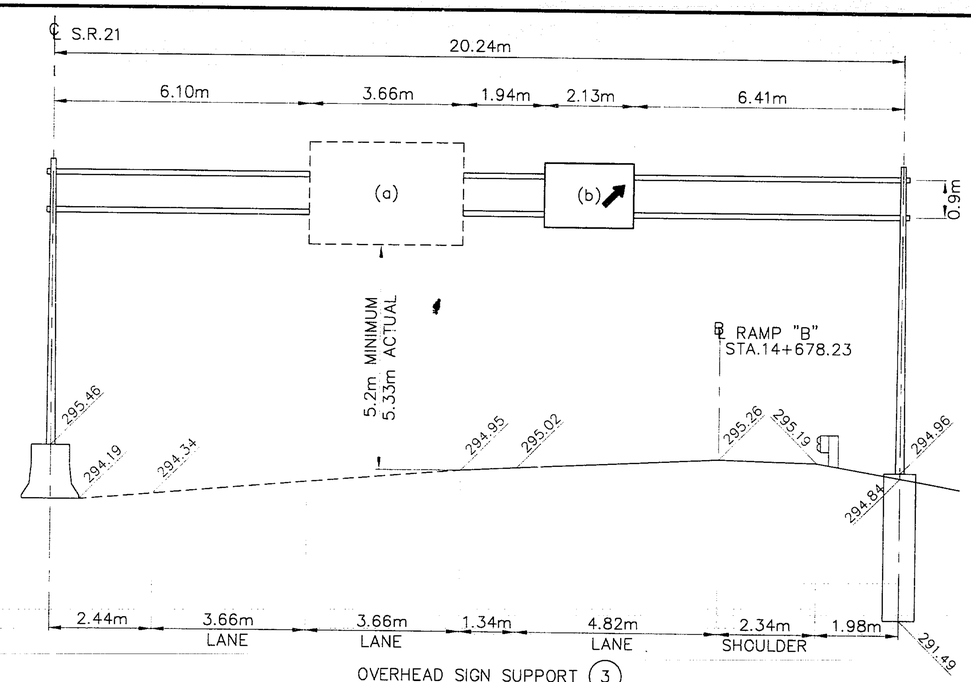
71/92

DRAWN B.
DATE: 9
CAD FILE NAME:



SIGN NO. (2)
CF-72
STA.14+625, 15.725m LT. ℄ S.R.21
SIGN AREA = 2.7 SQ.m
LEFT BEAM = 3.9m
RIGHT BEAM = 5.6m

FOR SIGN PLAN VIEW
SEE SHEET NO. 71.

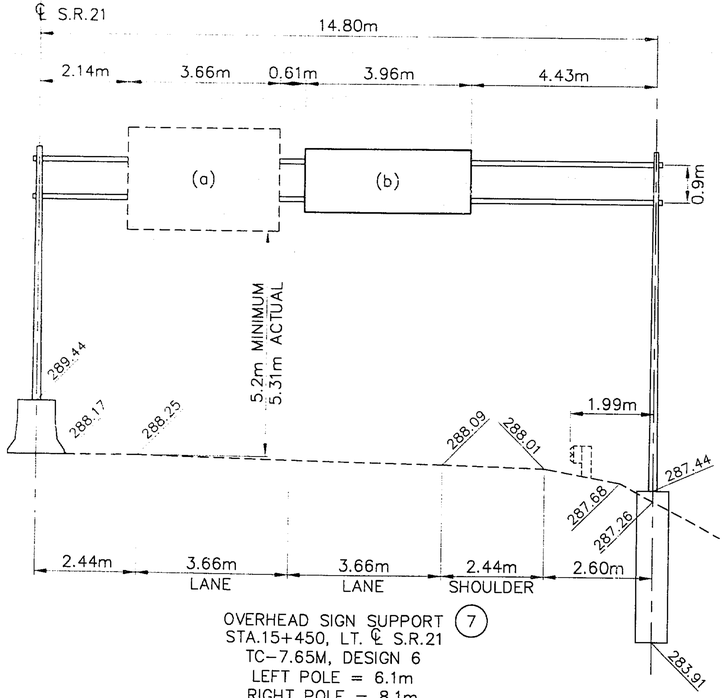


OVERHEAD SIGN SUPPORT (3)
STA.14+680, LT. ℄ S.R.21
TC-7.65M, DESIGN 6
LEFT POLE = 6.8m
RIGHT POLE = 7.3m

FOR SIGN PLAN VIEW
SEE SHEET NO. 71.

(a) EXISTING
RELOCATED FROM STA.14+480.13, LT.
SIGN – 3.66m X 2.44m = 8.9 SQ. m
BRACKETS – 3 AT 2.44m

(b)
SIGN – 2.13m X 1.52m = 3.2 SQ. m
BRACKETS – 3 AT 1.52m

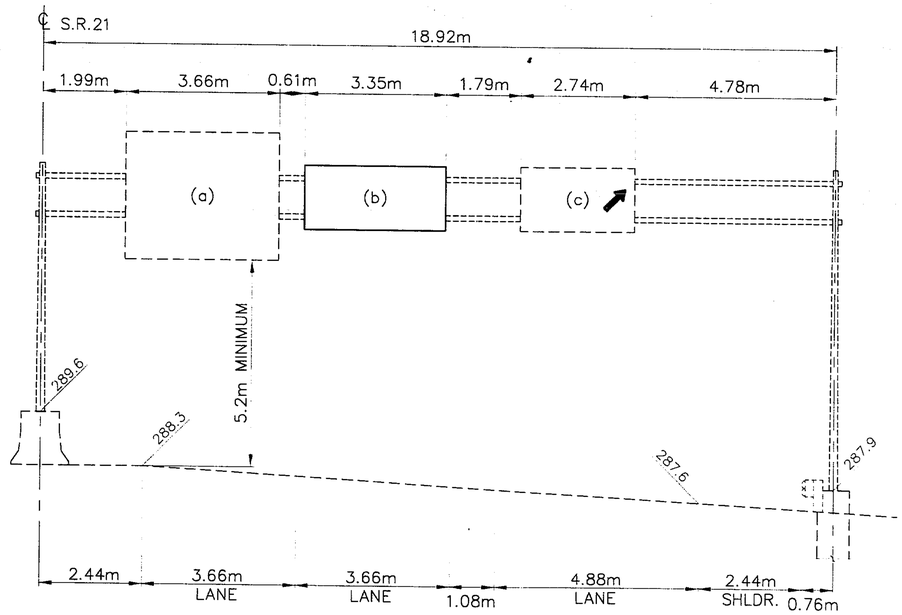


OVERHEAD SIGN SUPPORT (7)
STA.15+450, LT. ℄ S.R.21
TC-7.65M, DESIGN 6
LEFT POLE = 6.1m
RIGHT POLE = 8.1m

(a) EXISTING
RELOCATED FROM STA.15+133.93, LT.
SIGN – 3.66m X 2.44m = 8.9 SQ. m
BRACKETS – 3 AT 2.44m

(b)
SIGN – 3.96m X 1.52m = 6.0 SQ. m
BRACKETS – 3 AT 1.52m

FOR SIGN PLAN VIEW
SEE SHEET NO. 73.



EXISTING OVERHEAD SIGN SUPPORT (8)
STA.16+248.89, LT. ℄ S.R.21

FOR SIGN PLAN VIEW
SEE SHEET NO. 74.

(a) EXISTING
SIGN – 3.66m X 3.05m = 11.2 SQ. m
BRACKETS – 3 AT 3.05m

(b)
SIGN – 3.35m X 1.52m = 5.1 SQ. m
BRACKETS – 2 AT 1.52m

(c)EXISTING
SIGN – 2.74m X 1.52m = 4.2 SQ. m
BRACKETS – 2 AT 1.52m

HORIZONTAL SCALE IN METERS
0 1 2 3

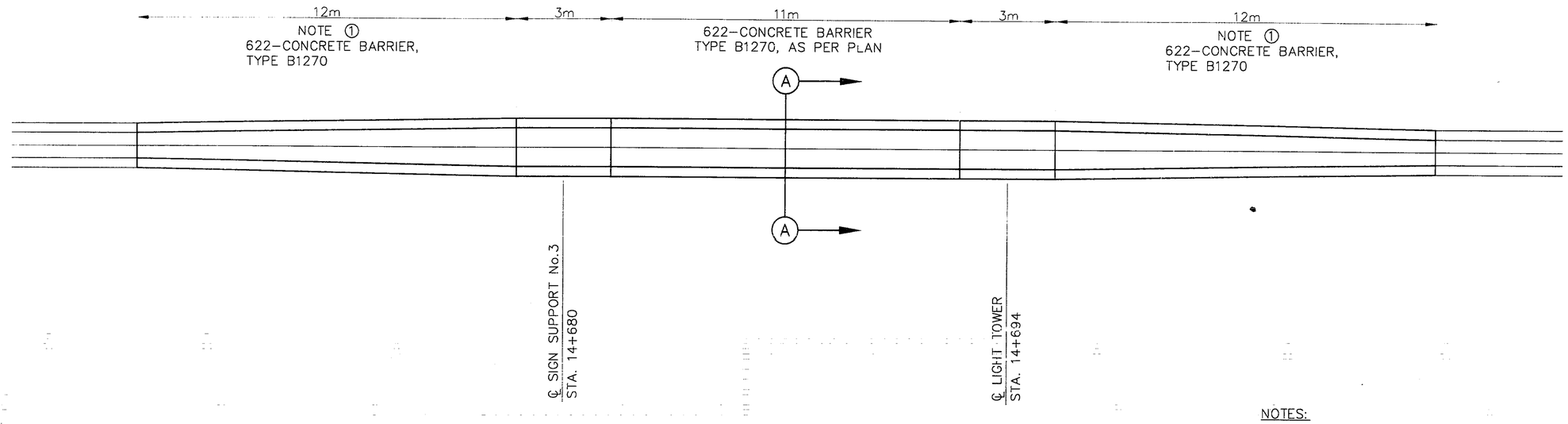
CHECKED

SIGN ELEVATION VIEWS – S.R.21
SIGN NO.'S 3, 7, AND 8

STA-21-14.452

CAD FILE NAME 7024700 SIGNE11

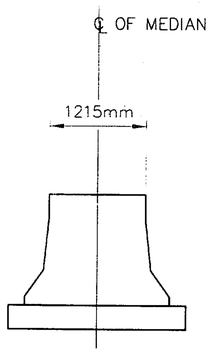
metric units



NOTES:

① FOR BARRIER TRANSITION SEE STD. DWG. RM-4.4M

② FOR ADDITIONAL DETAILS, SEE STD. DWG. RM-4.3M



SECTION A-A

ITEM 622-CONCRETE BARRIER, TYPE B1270, AS PER PLAN

SEE NOTE ②

BARRIER DETAIL

STA-21-14.452

CAD FILE NAME: 7024700-LITDET2

LIGHTING GENERAL NOTES

metric units

CALCULATED E.D.R. CHECKED D.S.B.

HIGH MAST LUMINAIRES

THE LUMINAIRE ARRAYS AND ASSOCIATED ILLUMINATION TEST AREAS SPECIFIED IN SECTION 713.21 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS ARE HEREBY WAIVED FOR THIS PROJECT. INSTEAD, THE LUMINAIRES FOR TOWER LIGHTING SHALL MEET THE FOLLOWING REQUIREMENTS.

SYMMETRIC, TYPE V, LUMINAIRES FOR TOWER LIGHTING MAY BE HOLOPHANE "HMST" TEST #36383 OR GENERAL ELECTRIC "HM" TEST #[illegible] OR COOPER "HAL" TEST #4838".

IN ADDITION, OTHER LUMINAIRES WILL BE CONSIDERED IF THE DESIGNED INTENSITY AND UNIFORMITY ARE PROVIDED USING THE DESIGNED POLE LOCATIONS AND THE DESIGNED NUMBER AND TYPE OF FIXTURES PER POLE.

PADLOCKS AND KEYS

PADLOCKS FURNISHED SHALL BE EITHER BRASS OR BRONZE, MASTER NO. 4 BRAND, ALSON, BOHANNAN 660A, OR APPROVED EQUAL AND SHALL BE KEYED IN ACCORDANCE WITH SPECIFICATION 631.08, PARAGRAPH 3. PAYMENT SHALL BE INCLUDED IN THE BID FOR THE ITEM(S) BEING LOCKED.

ITEM SPECIAL - MAINTAIN OF EXISTING LIGHTING

THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE INCOMING POWER AND THE OUTGOING LIGHTING CIRCUITRY UP TO THE POINT SHOWN:

CONTROL CENTER	OUTER LIMIT
"B" [illegible] S.R. 21 LIGHTING	LIGHT POLE STA.13+749, L S.R. 21
"B" [illegible] S.R. 21 LIGHTING	LIGHT POLE STA.15+057, L S.R. 21

POWER FOR THE HIGHWAY LIGHTING CIRCUITS SHALL BE AVAILABLE EVERY NIGHT FROM DUSK TILL DAWN. AT NO TIME SHALL AN EXISTING LIGHTING CIRCUIT BE INOPERATIVE DUE TO THE CONTRACTOR'S FAILURE TO PROVIDE POWER FOR THE CIRCUIT.

THE MAINTAINING AGENCY WILL PAY FOR ELECTRICAL ENERGY CONSUMED BY EXISTING POWER SERVICES AND BY PROPOSED PERMANENT POWER SERVICES AFTER ACCEPTANCE. THE CONTRACTOR WILL PAY FOR ELECTRICAL ENERGY, REMOVAL AND MAINTENANCE OF ANY TEMPORARY POWER SERVICES.

THE MAINTAINING AGENCIES WILL BE RESPONSIBLE FOR THE CIRCUITRY FROM THE POINTS NOTED ABOVE ONWARD INCLUDING POLES, LUMINAIRES, LAMPS, ETC.

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

ITEM SPECIAL - DISCONNECT EXISTING CIRCUIT

THIS ITEM OF WORK SHALL CONSIST OF THE DISCONNECTION OF AN EXISTING LIGHT CIRCUIT AT A PULL BOX OR A LIGHT POLE.

DISCONNECTION AT A PULL BOX SHALL INVOLVE CUTTING THE EXISTING CIRCUIT AND REMOVING ALL SPLICE KITS. ANY CABLE THAT IS TO BE ABANDONED SHALL BE TERMINATED IN A MANNER SUCH THAT NO CABLE IS LEFT REMAINING IN THE PULL BOX.
ANY CABLE THAT IS TO BE REUSED IN A PULL BOX OR LIGHT POLE JUNCTION BOX SHALL BE CUT IN A MANNER SO THAT THERE IS SUFFICIENT LENGTH OF CABLE LEFT FOR RECONNECTION. CABLE SPLICE KITS WILL BE PAID FOR UNDER ITEM 625. CONNECTION IN A JUNCTION BOX ON A PIER IS INCIDENTAL TO THE CONTRACTORS.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH ITEM SPECIAL "DISCONNECT EXISTING CIRCUIT" AND SHALL BE FULL COMPENSATION INCLUDING ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THE WORK.

ITEM 202 - LUMINAIRE REMOVED FOR STORAGE, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LUMINAIRE. THE CONTRACTOR SHALL DELIVER THE LUMINAIRE TO THE CITY OF MASSILLON GARAGE.

401 WALNUT RD. SW
MASSILLON, OHIO 44647
(330) 833-5746
CONTACT: GEORGE PATTERSON

PAYMENT WILL BE MADE FOR EACH ITEM 202 - LUMINAIRE REMOVED FOR STORAGE, AS PER PLAN.

ITEM 202 - LIGHT POLE REMOVED FOR STORAGE, AS PER PLAN

THE ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LIGHT POLE INCLUDING THE BRACKET ARM(S) AND TRANSFORMER BASE (IF USED). EXISTING ANCHOR BOLTS AND CONDUIT SHALL BE CUT-OFF FLUSH WITH THE TOP OF THE BARRIER. EXISTING CONDUIT SHALL BE PLUGGED AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL DELIVER THE LIGHT POLES TO THE CITY OF MASSILLON GARAGE.

401 WALNUT RD. SW
MASSILLON, OHIO 44647
(330) 833-5746
CONTACT: GEORGE PATTERSON

ALL LABOR AND MATERIALS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR EACH ITEM 202 - LIGHT POLE REMOVED FOR STORAGE, AS PER PLAN.

ITEM 625 - LUMINAIRE, HIGH MAST, SYMMETRIC, TYPE V, 400 WATT HIGH PRESSURE SODIUM, 480 VOLT, 713.21 - ALTERNATE BID (HOLOPHANE)

THE LUMINAIRE SHALL BE SYMMETRIC, TYPE V, LUMINAIRES FOR TOWER LIGHTING, HOLOPHANE "HMST" TEST #36383.

LIGHT TOWER FOUNDATIONS

LIGHT TOWER FOUNDATIONS SHALL EXTEND 152mm ABOVE GROUND. THE 152mm EXTENSION IS INCLUDED IN THE FOUNDATION DEPTH.

ITEM 625 - LIGHT TOWER, BY TYPE - ALTERNATE BID (HOLOPHANE)

THE LIGHT TOWER SHALL BE HOLOPHANE CATALOG NUMBER H4532, FOR A 30.5 METER MOUNTING HEIGHT LIGHT TOWER.

THE LIGHT TOWER, COMPLETE WITH LOWERING DEVICE AND LUMINAIRES IN PLACE, SHALL BE CAPABLE OF WITHSTANDING A SUSTAINED WIND OF VELOCITY OF NOT LESS THAN 90 M.P.H. WITH GUSTS UP TO 130%.

ITEM 625 - EXISTING CONDUIT CLEANED AND CABLES REMOVED

THIS ITEM SHALL CONSIST OF LOCATING AND CLEANING AN EXISTING CONDUIT OF ALL EXISTING CABLES, MUD, AND DEBRIS SO THAT NEW CABLES MAY BE INSTALLED. INCIDENTAL TO THE CLEANING IS THE INSTALLATION OF BUSHINGS AND/OR COUPLINGS ON THE ENDS OF THE EXISTING CONDUIT AS REQUIRED. DRAIN OUTLETS SHALL BE FREE OF ALL OBSTRUCTIONS. MATERIAL REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE PROJECT SITE. DISTURBED AREAS SHALL BE PROPERLY RESTORED.

PAYMENT WILL BE MADE FOR EACH LINEAR FOOT OF ITEM 625 - EXISTING CONDUIT CLEANED AND CABLES REMOVED AND SHALL BE FULL COMPENSATION INCLUDING ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THE WORK IN A WORKMANLIKE MANNER.

625.03 GENERAL

THE POWER SUPPLY AGENCY FOR THIS PROJECT IS:

OHIO EDISON CO.
2600 SOUTH ERIE STREET
MASSILLON, OHIO 44646
PHONE: (330) 830-7052

POWER SERVICE: 480 VOLT, 2 WIRE, SINGLE PHASE, GROUNDED NEUTRAL. THIS PROJECT HAS BEEN DESIGNED ON THE BASIS OF 5% VOLTAGE DROP WITH A MAXIMUM UNIFORMITY OF 4.0 TO 1.0 FOR CONVENTIONAL UNITS AND 3.0 TO 1.0 FOR HIGH MAST UNITS.

THE CONTRACT SHALL PAY ELECTRICAL ENERGY CHARGES FOR NEW POWER SERVICES ESTABLISHED BY THIS PROJECT. UPON COMPLETION OF THIS PROJECT. POWER SERVICE ELECTRICAL ENERGY ACCOUNTS SHALL BE TRANSFERRED TO ODOT. THIS SHALL INCLUDE NEW POWER SERVICE ESTABLISHED BY THIS PROJECT AS WELL AS REASSIGNMENT OF EXISTING SERVICE DUE TO WORK PERFORMED BY THIS PROJECT.

ITEM 625 - LIGHT TOWER FOUNDATION, MISC.; MEDIAN MOUNTED AS PER PLAN

SEE DETAIL A ON SHEET 83 FOR THE MEDIAN MOUNTED LIGHT TOWER FOUNDATION.

UTILITIES

THE FOLLOWING UTILITIES AND OWNERS AND LOCATED WITHIN THE WORK AREA OF THE PROJECT.

AMERITECH
50 W. BOWERY ST., 6TH FLOOR
AKRON, OH 44308
ATTN.: MR. LARRY HARRIS
DIST. MGR.
(330)384-8057

CONSUMERS OHIO WATER
123 THIRD STREET, S.E.
MASSILLON, OHIO 44646
ATTN.: MR. MERRILL SLOAN
(330)833-3778

MASSILLON CABLE TV. INC.
P.O. BOX 814
MASSILLON, OHIO 44646
ATTN.: MR. NEIL TRAVIS
(330)833-4134

THE EAST OHIO GAS CO.
4725 SOUTHWAY S.W.
CANTON, OHIO 44706
ATTN.: MR. MARK MESSERSMITH
DIV. ENGR. SUPV.
(330)478-3129

OHIO EDISON CO.
2600 SOUTH ERIE STREET
MASSILLON, OHIO 44646
ATTN.: MR. DAVID J. BLAKE
(330)830-7052

CITY OF MASSILLON
ONE JAMES DUNCAN PLAZA
MASSILLON, OHIO 44646
ATTN.: MR. JAMES BENEKOS
(330)830-1722

UTILITIES NOTIFICATION

AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN ANY AREA WHICH MAY INVOLVE UNDERGROUND FACILITIES, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE REGISTERED UNDERGROUND UTILITY PROTECTION SERVICES AND THE OWNERS OF ALL UNDERGROUND UTILITY FACILITIES SHOWN IN THE PLANS. AFTER NOTICE IS RECEIVED, THE OWNER OF ANY UNDERGROUND UTILITY FACILITY THAT IS TO REMAIN IN SERVICE DURING AND/OR AFTER CONSTRUCTION SHALL, WITHIN 48 HOURS, EXCLUDING SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS, STAKE, MARK OR OTHERWISE DESIGNATE THE LOCATION OF THE UNDERGROUND FACILITIES IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR COURSE TOGETHER WITH THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING OR LOCATION SHALL BE COORDINATED TO STAY APPROXIMATELY TWO (2) DAYS AHEAD OF PLANNED CONSTRUCTION.

UNDERGROUND UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITIES AS REQUIRED BY SECTION 153.64 ORC. SEE ABOVE FOR LIST OF UTILITIES.

CAD FILE NAME: 7024700-LITGN011

LIGHTING QUANTITY SUBSUMMARY

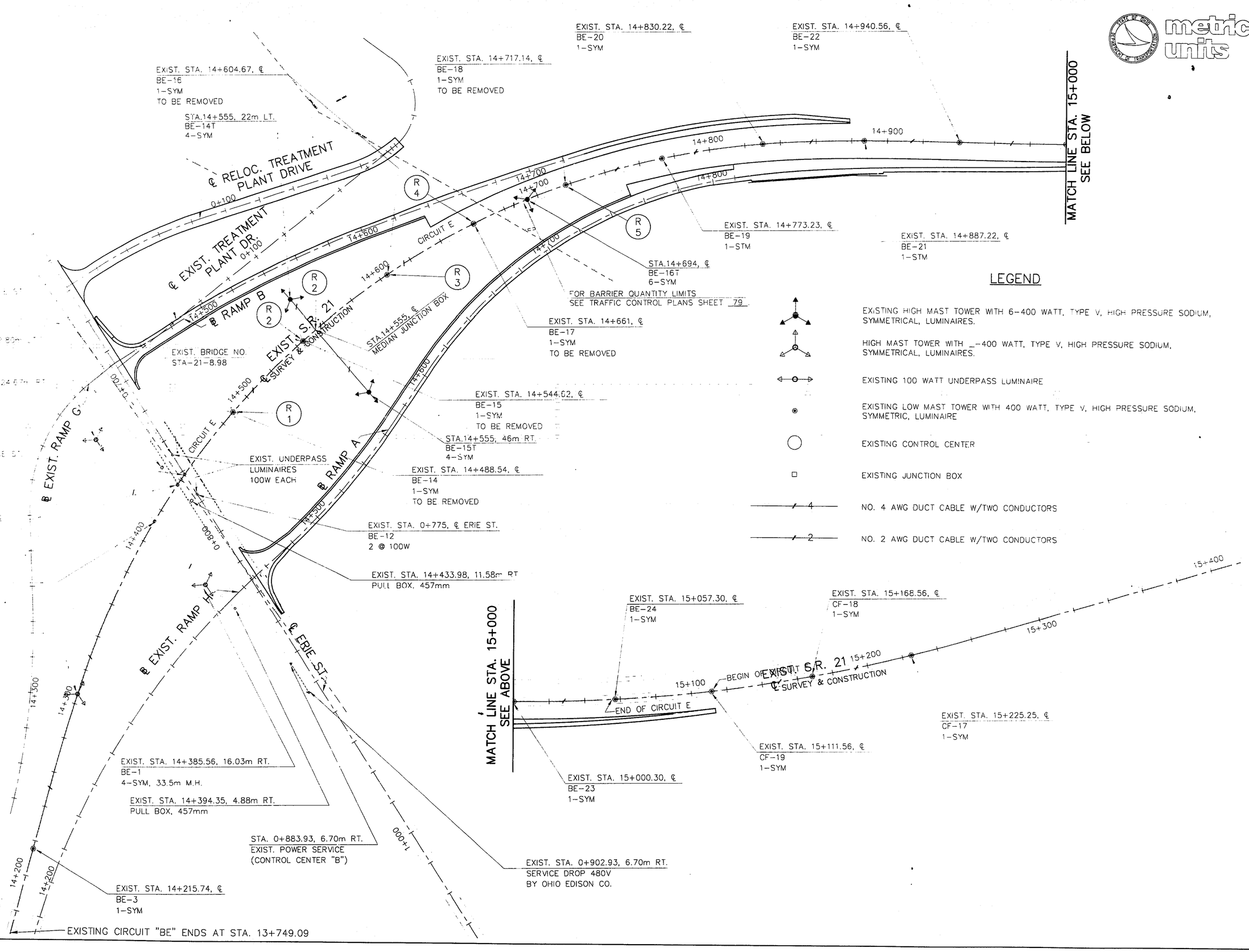
metric units

CALCULATED E.D.R.
CHECKED D.S.B.

LOCATION				ITEM NUMBERS																																	
				202					625																							SPECIAL					
SHEET No.	REFERENCE No.	STATION TO STATION	SIDE	LUMINAIRE REMOVED FOR STORAGE, AS PER PLAN	LIGHT POLE REMOVED FOR STORAGE, AS PER PLAN		CONCRETE BARRIER REMOVED		LIGHT TOWER, BBBB30.5	LIGHT TOWER, BBBBBB30.5	LIGHT TOWER FOUNDATION, 914mm X 7.6m DEEP	LIGHT TOWER FOUNDATION, MEDIAN MOUNTED, AS PER PLAN	LUMINAIRE, HIGH MAST, SYMMETRIC,TYPE V, 400W, H.P.S., 480V., 713.21	GROUND ROD	TRENCH, 0.6m DEEP	CONDUIT JACKED OR DRILLED UNDER PAVEMENT, 76mm	NO.2 AWG 5000V. DISTRIBUTION CABLE	38mm DUCT-CABLE WITH 2 NO.4 AWG 5000V. CABLES	MEDIAN PULL BOX	CONNECTOR KIT, TYPE VIC	PORTABLE POWER UNIT		CONDUIT CLEANED AND CABLE REMOVED		LIGHT TOWER, BBBB30.5 - ALTERNATE BID	LIGHT TOWER, BBBBBB30.5 - ALTERNATE BID	LUMINAIRE, HIGH MAST, SYMMETRIC, TYPE V, 400W, H.P.S., 480V., 713.21 - ALTERNATE BID				DISCONNECT EXISTING CIRCUIT						
				EACH	EACH		METER		EACH	EACH	EACH	EACH	EACH	EACH	METER	METER	METER	METER	EACH	EACH	EACH		METER		EACH	EACH	EACH				EACH						
		S.R. 21																																			
[illegible]	[illegible]	14+488.54	℄	1	1																																
[illegible]	[illegible]	14+544.62	℄	1	1																																
[illegible]	[illegible]	14+604.67	℄	1	1																																
[illegible]	[illegible]	14+661	℄	1	1																																
[illegible]	[illegible]	14+717.14	℄	1	1																																
[illegible]	[illegible]	14+412.64	℄																	2	1									1							
[illegible]	[illegible]	14+412.64 TO 14+437.03	℄														56			2			25														
[illegible]	[illegible]	14+437.03 TO 14+555	℄				1										242		1	2			118														
[illegible]	[illegible]	14+555	LT.						1		1		4	2	10	12		25							1		4										
[illegible]	[illegible]	14+555	RT.						1		1		4	2	34	12		49							1		4										
[illegible]	[illegible]	14+555 TO 14+694	℄							1		1	6	2			284						139			1	6										
		14+694 TO 14+773.23															164						79								1						
		TOTAL		5	5		1		2	1	2	1	14	6	44	24	746	74	1	6	1		361		2	1	14				2						

LIGHTING QUANTITY SUBSUMMARY

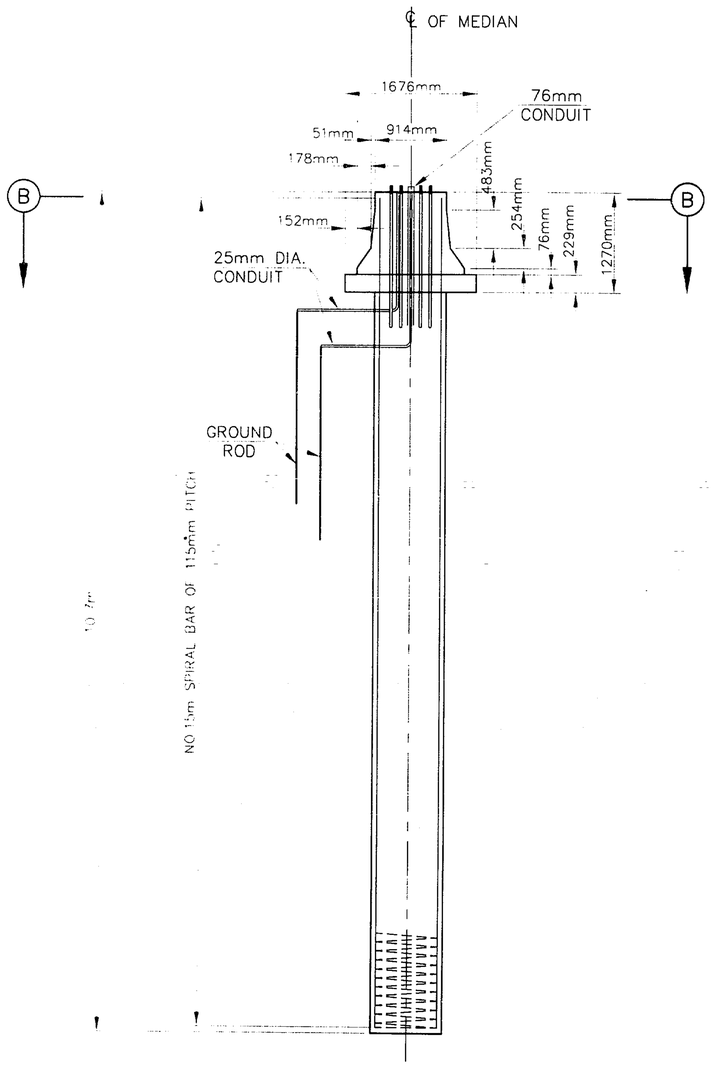
STA-21-14.452



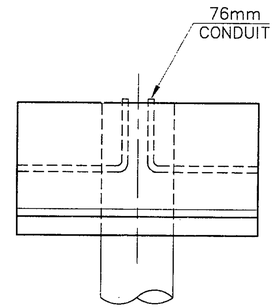
LIGHTING PLAN - S.R.21 / ERIE ST. INTERCHANGE

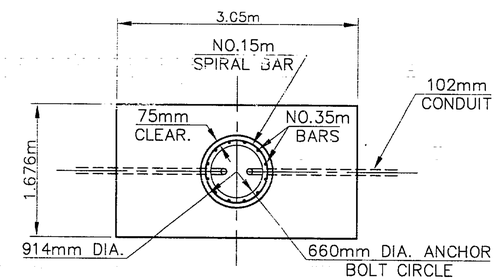
STA-21-14.452

CAD FILE NAME 7024100 LIGH11



ITEM 625 – LIGHT TOWER FOUNDATION, MEDIAN MOUNTED, AS PER PLAN





SECTION B–B

NOTE: SEE HL–20.21M FOR ADDITIONAL DETAILS

metric units

SCALE IN METERS 0 1 2

CALCULATED

CHECKED

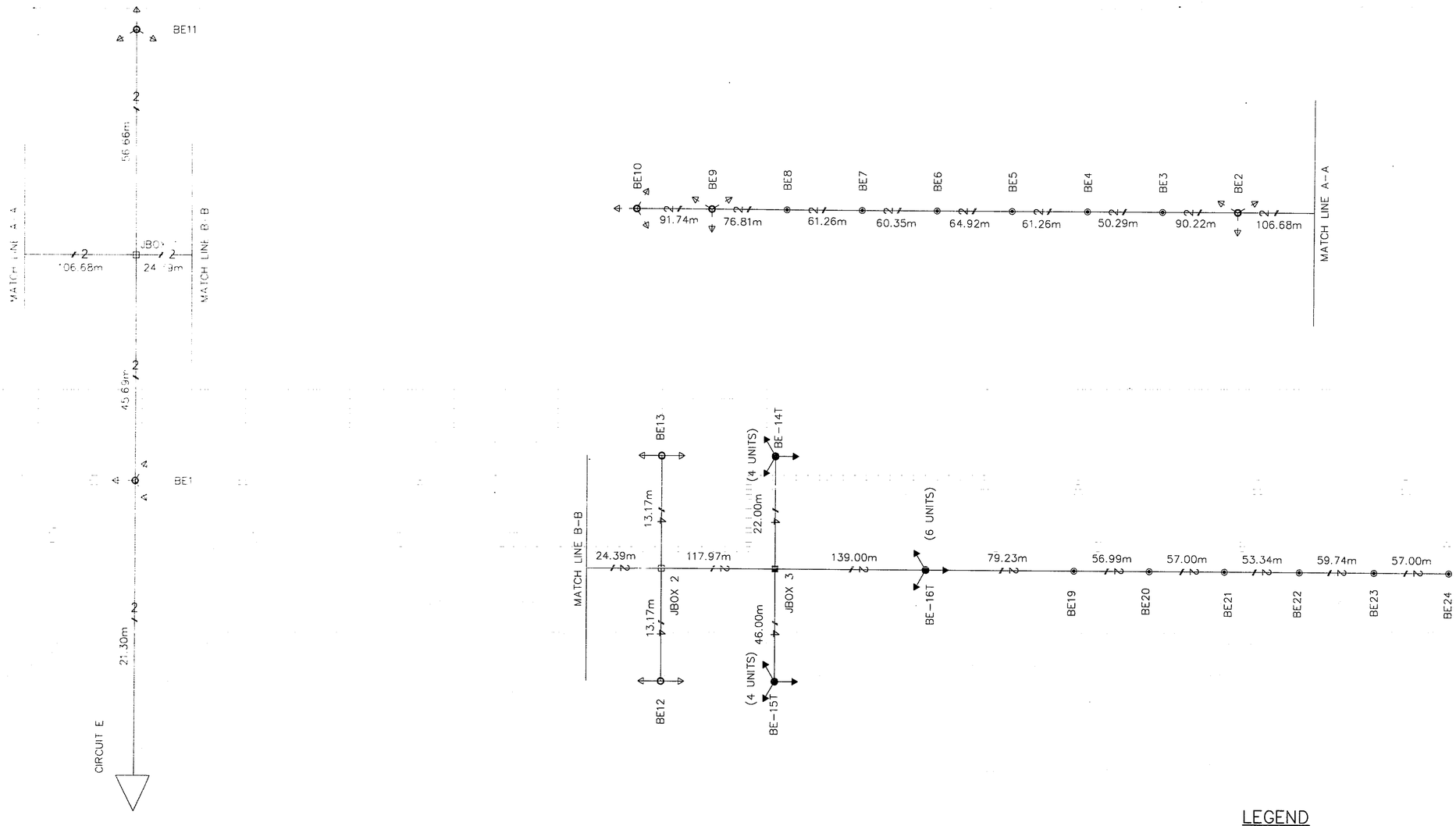
LIGHTING DETAIL

STA-21-14.452

83
92

DATE: 3/15/96 DATE:

CAD FILE NAME: 7024700-L1TDE11



CONTROL CENTER B

LEGEND

- EXISTING HIGH MAST TOWER WITH 6-400 WATT, TYPE V, HIGH PRESSURE SODIUM, SYMMETRICAL, LUMINAIRES.
- HIGH MAST TOWER WITH _-400 WATT, TYPE V, HIGH PRESSURE SODIUM, SYMMETRICAL, LUMINAIRES.
- EXISTING 100 WATT UNDERPASS LUMINAIRE
- EXISTING LOW MAST TOWER WITH 400 WATT, TYPE V, HIGH PRESSURE SODIUM, SYMMETRIC, LUMINAIRE
- EXISTING CONTROL CENTER
- EXISTING JUNCTION BOX
- NO. 4 AWG DUCT CABLE W/TWO CONDUCTORS
- NO. 2 AWG DUCT CABLE W/TWO CONDUCTORS

POWER SERVICE DATA

CONTROL CENTER	MAINTAINING AGENT	SERVICE LOAD	CONNECTED LOAD KVA	SERVICE ENTRANCE CONDUCTOR	ENCLOSURE TYPE	CIRCUIT NUMBER	CIRCUIT LOAD	CIRCUIT FUSE SIZE
B	O.D.O.T.	480 V, 2 W	27.18	2, #2 AWG	SC-100	E	56.62 AMPS	100 AMP

DESIGNED BY: JAN	CHECKED BY:
DATE: 6/15/95	DATE:
DRAWN BY: LDG	REVISED BY: T.K.I.
DATE: 8/31/95	DATE: 3/04/96
CAD FILE NAME: 7024700	CIRSCHEM

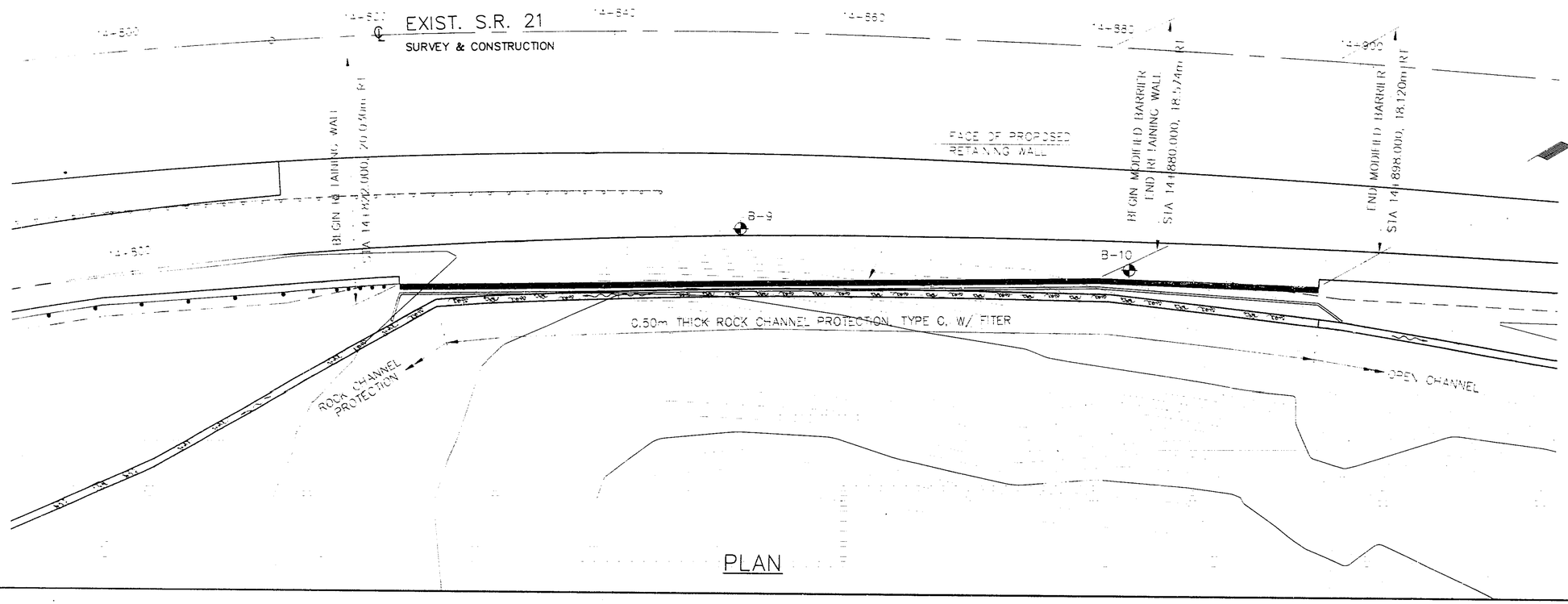
metric units

NOT TO SCALE

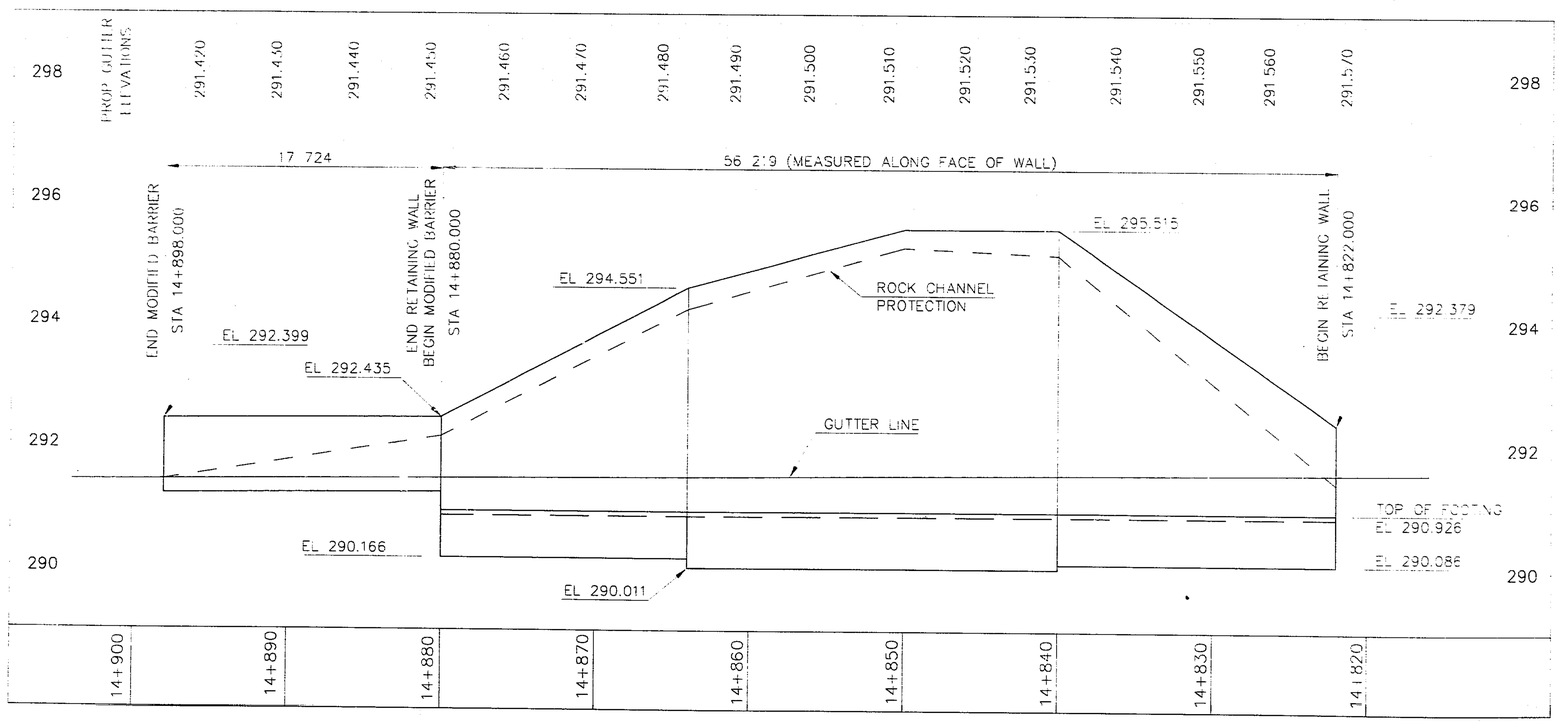
AS-BUILT: E.D.R.
CHECKED: D.S.B.

CIRCUIT SCHEMATIC

STA-21-14.452



PLAN



PROFILE

DRAWN BY KMH REVIEWED
DATE DATE
CAD FILE NAME 7024700VI A4PG4

URS CONSULTANTS
564 WHITE POND DRIVE
AKRON, OHIO 44320-1100

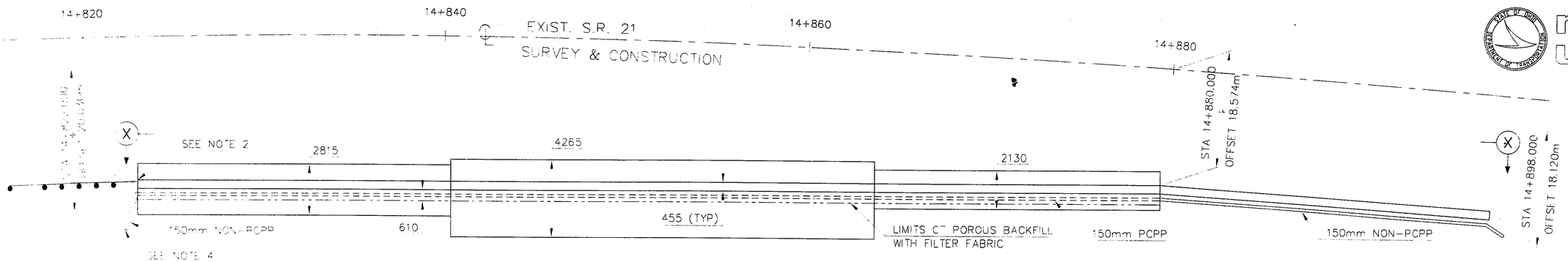
DESIGNED	DRAWN	REVIEWED	DATE
KMH	KMH		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RLR			

GENERAL PLAN
RETAINING WALL ALONG RAMP A

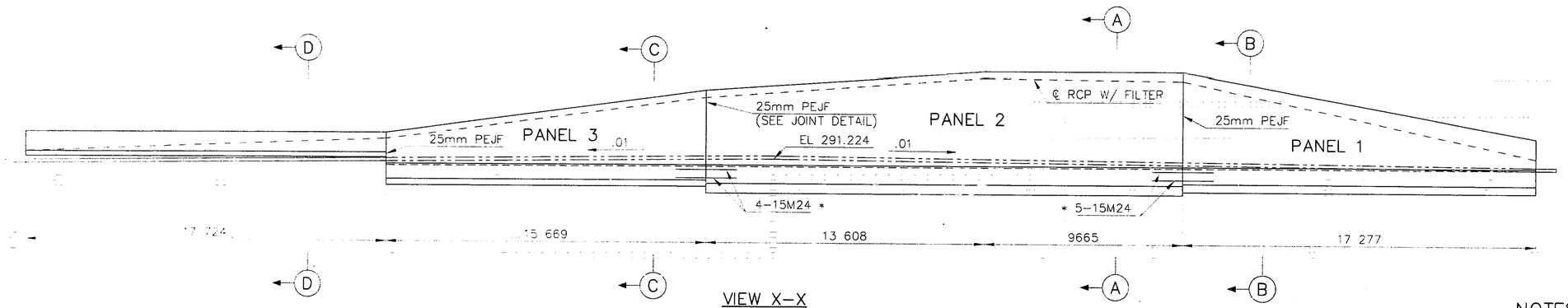
STA-21-14.44

1/4

85/92

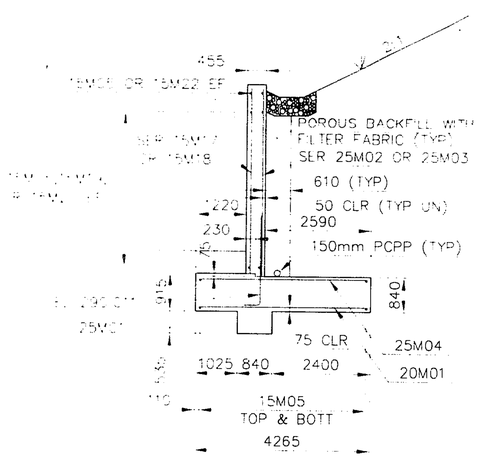


PLAN



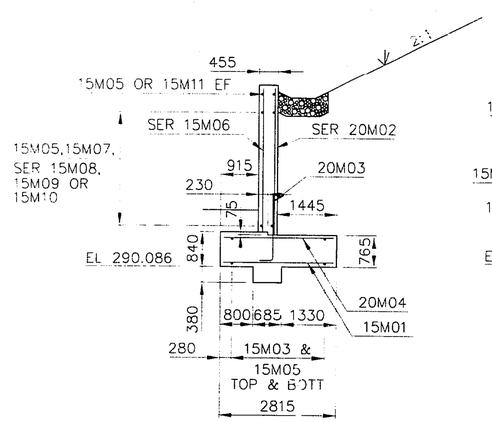
VIEW X-X

* 15M24 BARS TO BE CENTERED UNDER EXPANSION JOINTS AND PLACED BETWEEN 15M05 BARS.



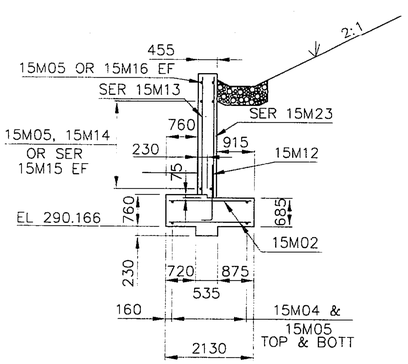
SECTION A-A

* USE 1470mm LAP IN STEM



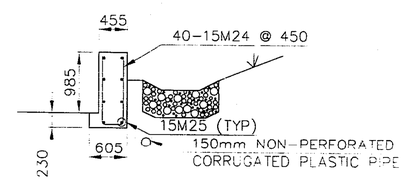
SECTION B-B

* USE 1000mm LAP IN STEM

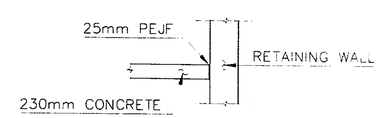


SECTION C-C

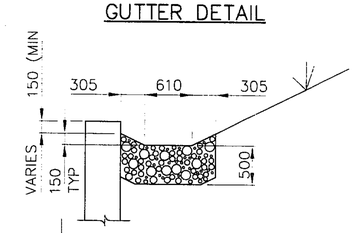
* USE 800mm LAP IN STEM



SECTION D-D



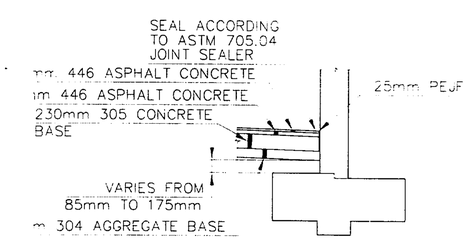
GUTTER DETAIL



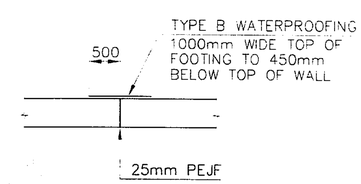
ROCK CHANNEL PROTECTION

NOTES

1. FOR PANELS 1,2 AND 3, SEE SHEET 3/4.
2. FOR ATTACHMENT OF GUARDRAIL TO RETAINING WALL REFER TO STD DWG GR-3.1M, BRIDGE TERMINAL ASSEMBLY TYPE 1.
3. POROUS BACKFILL WITH FILTER FABRIC, 610mm THICK SHALL EXTEND FROM THE TOP OF THE FOOTING TO THE BOTTOM OF THE ROCK CHANNEL PROTECTION WITH FILTER AND LATERALLY TO THE ENDS OF THE RETAINING WALL.
4. FOR TERMINATION OF 150mm NON-PERFORATED PLASTIC PIPE, SEE STD DWG DM-1.1M.



SHOULDER/WALL INTERFACE DETAIL



JOINT DETAIL

URS CONSULTANTS
564 WHITE POND DRIVE
AKRON, OHIO 44320-1100

metric units

DESIGNED	DRAWN	REVISED	DATE
KMH	KMH	REVISED	STRUCTURE FILE NUMBER
CHECKED	REVISED		
ALH			

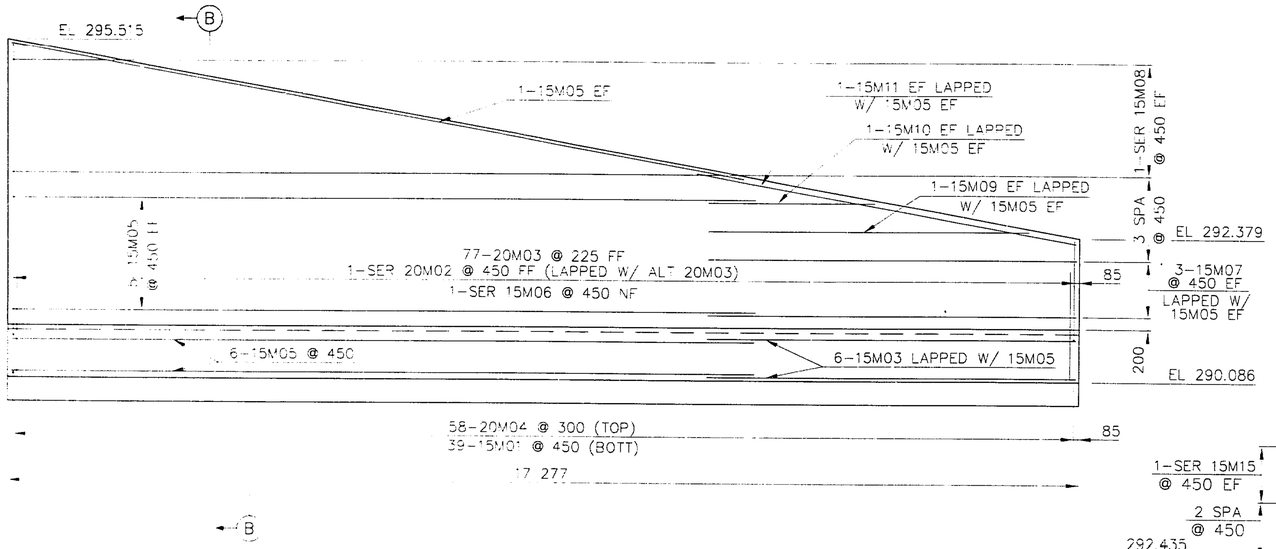
WALL DETAILS

STA-21-14.44

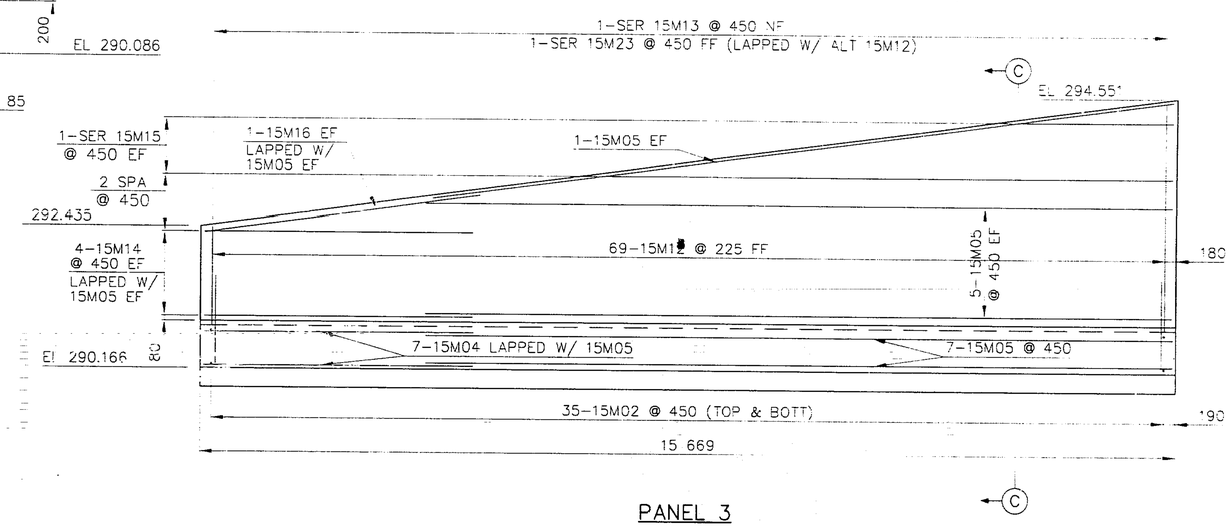
2/4

86/92

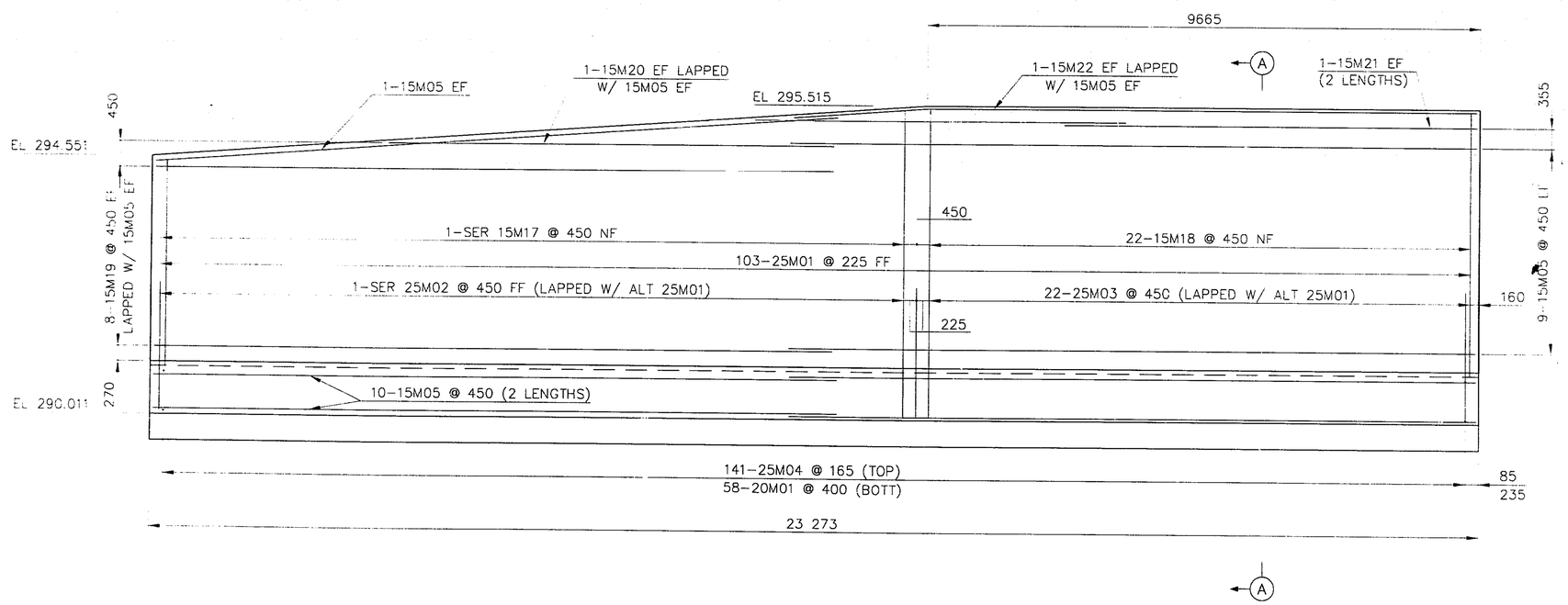
DATE:
CAD FILE NAME: 1024100\WA-1



PANEL 1



PANEL 3



PANEL 2

NOTES

1. FOR SECTIONS A-A, B-B AND C-C, SEE SHEET 2/4.
2. FOR ADDITIONAL DETAILS SEE SHEET 2/4

metric units

URS CONSULTANTS
564 WHITE POND DRIVE
AKRON, OHIO 44320-1100

DESIGNED	DRAWN	REVIEWED	DATE
KMH	KMH		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALH			

WALL DETAILS

STA-21-14.44

3/4

87/92

DATE:
CAD FILE NAME: 702470\PANELS
DATE

STRUCTURAL GENERAL NOTES

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS(S):
BR-3.1M DATED 11-30-94
BM-1.1M DATED 11-30-94
AND TO SUPPLEMENTAL SPECIFICATION(S):
944 DATED 12-7-95

DESIGN DATA

DESIGN STRESSES

REF. DATA

CONCRETE CLASS C COMPRESSIVE STRENGTH 27.5 MPa

REINFORCING STEEL - ASTM A615M, A616M OR A617M GRADE 400 MINIMUM YIELD STRENGTH 400MPa.

FOUNDATION BEARING PRESSURE

FOUNDATION BEARING PRESSURE: THE FOOTINGS AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF 0.140 MPa. THE ALLOWABLE BEARING [illegible] 0.200 MPa.

ITEM 518, 150mm PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN:

CORRUGATED PIPE USED IN RETAINING WALL DRAINAGE SHALL BE 150mm DIAMETER PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE SP.

ITEM 518, 150mm NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN:

CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 150mm DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE SP. THIS ITEM SHALL INCLUDE ALL ELBOWS, TEES AND END CAPS REQUIRED TO COMPLETE THE ABUTMENT DRAINAGE SYSTEM.

ABBREVIATIONS

ALT	ALTERNATING	NF	NEAR FACE
BOTT	BOTTOM	NON-PCPP	NON-PERFORATED CORRUGATED PLASTIC PIPE
℄	CENTERLINE	PCPP	PERFORATED CORRUGATED PLASTIC PIPE
CLR	CLEARANCE	PEJF	PREFORMED EXPANSION JOINT FILLER
EF	EACH FACE	RCP	ROCK CHANNEL PROTECTION
EL	ELEVATION	STA	STATION
FF	FAR FACE	TYP	TYPICAL
℄	FLOWLINE	UN	UNLESS NOTED
MIN	MINIMUM	W/	WITH

REINFORCING SCHEDULE

MARK	No. REQD.	LGTH.	TYPE	DIMENSIONS A	B	C	D	INCRM.	WEIGHT KG
RETAINING WALL									
15M01	39	2715	ST						166.239
15M02	70	2030	ST						223.097
15M03	12	5940	ST						111.910
15M04	10	4325	ST						67.903
15M05	106	12 000	ST						1997.040
SERS	1 SET	1405							
OF	OF	TO	ST					82	181.394
15M06	39 BARS	4520							
15M07	6	5940	ST						55.955
SERS	2 SETS	1540							
OF	OF	TO	ST					2475	101.893
15M08	5 BARS	11 440							
15M09	2	5160	ST						16.202
15M10	2	2680	ST						8.415
15M11	2	6205	ST						19.484
15M12	69	1630	1	260	1410				176.578
SERS	1 SET	1475							
OF	OF	TO	ST					61	138.062
15M13	35 BARS	3550							
15M14	8	4325	ST						54.322
SERS	2 SETS	2480							
OF	OF	TO	ST					3335	54.777
15M15	3 BARS	9150							
15M16	2	4445	ST						13.957
SERS	1 SET	3570							
OF	OF	TO	ST					33	190.637
15M17	30 BARS	4525							
15M18	22	4535	ST						156.639
15M19	16	11 930	ST						299.682
15M20	2	7800	ST						24.492
15M21	4	7200	ST						45.216
15M22	2	11 940	12	9600	2340	165			37.492
SERS	1 SET	1550							
OF	OF	TO	ST					61	142.183
15M23	35 BARS	3625							
15M24	18	3000	ST						84.780
20M01	58	4165	ST						568.897
SERS	1 SET	1480							
OF	OF	TO	ST					82	278.979
20M02	39 BARS	4595							
20M03	77	1960	1	320	1690				355.417
20M04	58	2715	ST						370.842
25M01	103	2575	1	400	2235				1041.008
SERS	1 SET	3645							
OF	OF	TO	ST					33	485.424
25M02	30 BARS	4600							
25M03	22	4610	ST						398.074
25M04	141	4165	ST						2305.015

RETAINING WALL TOTAL = 10,172.010 KG

QUANTITY SUBSUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
503	COFFERDAMS, CRIBS AND SHEETING	LUMP	LUMP
503	UNCLASSIFIED EXCAVATION	CU. METER	612.776
509	EPOXY COATED REINFORCING STEEL, GRADE 400	KILOGRAM	10,172.010
511	CLASS C CONCRETE	CU. METER	254.129
511	CLASS C CONCRETE, MISC: MODIFIED BARRIER	CU. METER	10.409
512	TYPE B WATERPROOFING	SQ. METER	7.314
SPEC.	SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)	SQ. METER	229.630
516	25MM PREFORMED EXPANSION JOINT FILLER	SQ. METER	17.288
518	POROUS BACKFILL WITH FILTER FABRIC	CU. METER	102.22
518	150MM PERFORATED CORRUGATED PLASTIC PIPE, 707.16	METER	56.219
518	150MM NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, 707.16	METER	24
SPEC.	PRECAST REINIFORCED CONCRETE OUTLET	EACH	2

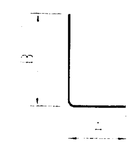
metric units

NOTES

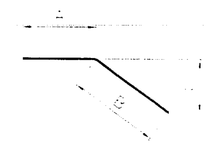
1. ALL REINFORCING STEEL SHALL BE EPOXY-COATED.
2. REINFORCING STEEL SAMPLES

   REFER TO CMS SECTIONS 106.03, 700, 709.01 THROUGH 709.05 AND 709.08. SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING. RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURES BY THE ADDITIONAL STEEL, SPLICED IN ACCORDANCE WITH 509.08.
3. ALL DIMENSIONS ARE TAKEN TO THE OUTSIDE OF THE BARS.

BAR TYPES



TYPE 1



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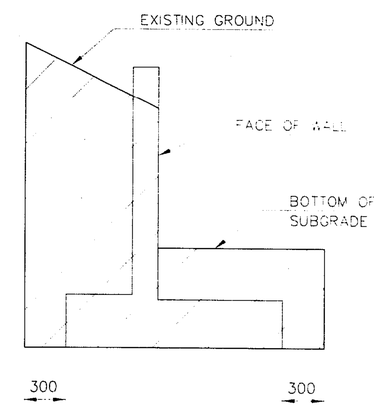


LIMITS OF EXCAVATION

URS CONSULTANTS
564 WHITE POND DRIVE
AKRON, OHIO 44320-1100

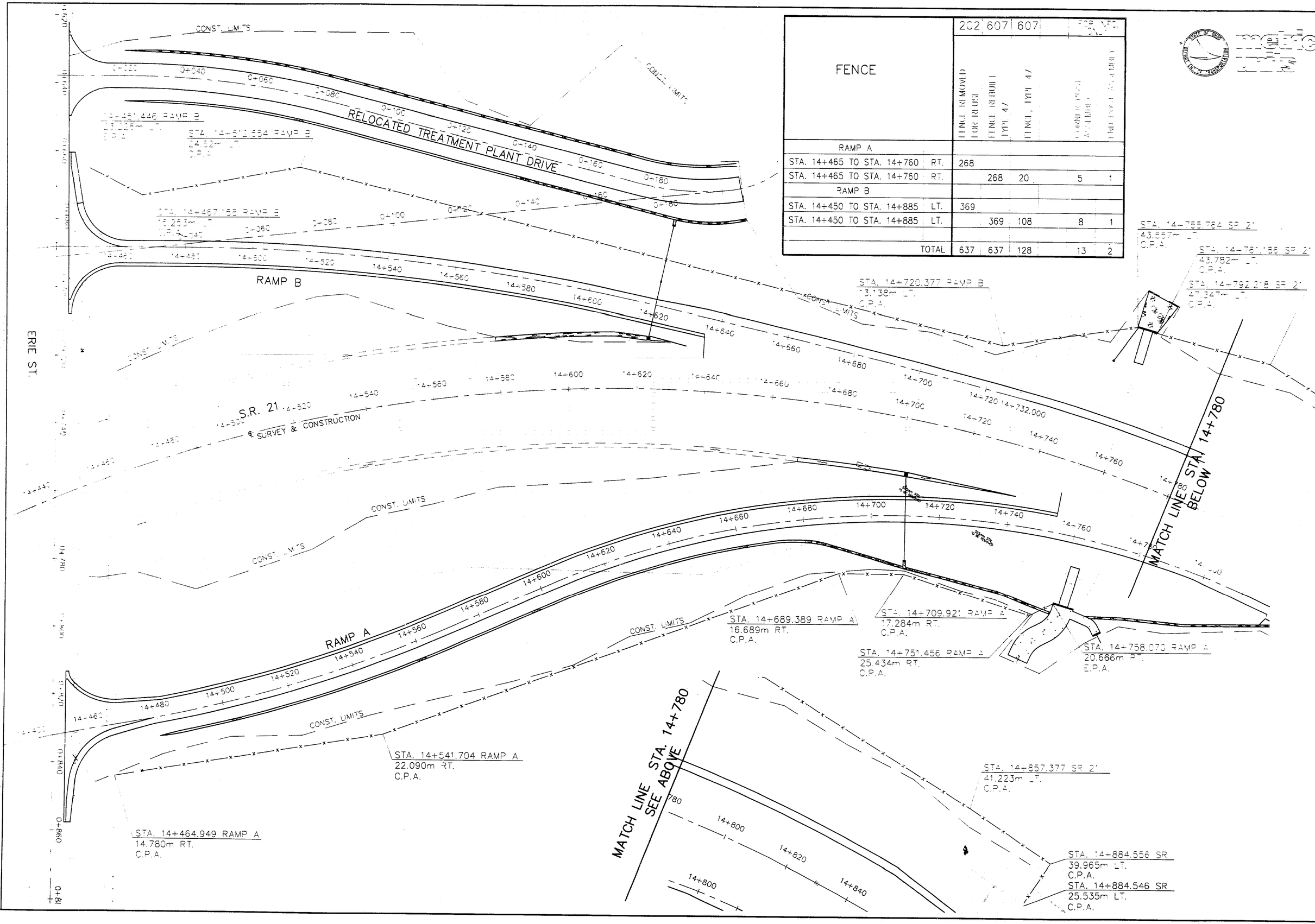
DESIGNED	DRAWN	REVIEWED	DATE
KMH	KMH		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALH			

STRUCTURAL GENERAL NOTES + REINFORCING SCHEDULE

STA-21-14.452

CAD FILE NAME 7024.7303\REINFOW

FENCE		FENCE REMOVED FOR REUSE	FENCE REBUILT TYPE 4/	FENCE, TYPE 4/	[illegible]	[illegible]
		202	607	607	FOR INFO. ONLY	
RAMP A						
STA. 14+465 TO STA. 14+760	RT.	268				
STA. 14+465 TO STA. 14+760	RT.		268	20	5	1
RAMP B						
STA. 14+450 TO STA. 14+885	LT.	369				
STA. 14+450 TO STA. 14+885	LT.		369	108	8	1
	TOTAL	637	637	128	13	2



TOTAL NUMBER OF:
5 OWNERSHIP
0 TOTAL TAKES
0 OWNERSHIPS W/ STRUCTURES INVOLVED
0 OWNERSHIPS WITH "P" ITEMS

SUMMARY OF ADDITIONAL RIGHT OF WAY

metric units

NET RESIDUE = RECORD AREA – TOTAL PRO – NET TAKE

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD BOOK	OWNERS RECORD PAGE	AUDITORS PARCEL	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. INTAKE	NET TAKE	STRUCTURE	NET RESIDUE LEFT	NET RESIDUE RIGHT	TYPE FUND		REMARKS AND PERSONALTY	AS ACQUIRED BOOK	AS ACQUIRED PAGE
1A	MASSILLON DEVELOPMENT FOUNDATION,	2	O.R. 4	450	06-80007	7,102.2	0	6,259.1	0	6,259.1	—	—	843.1 LL	STATE				
	INC. FKA MASSILON INDUSTRIAL					(76,448)		(67,373)		(67,373)			(9,075) LL					
	DEVELOPMENT FOUNDATION AN OHIO CORP.																	
2LA	CITY OF MASSILLON	2	3792	415	06-80639	62,300.8	0	508.6	0	508.6	—	61,792.2	—			OVERLAP WITH EXISTING CHANNEL EASMENT*		
			845	288		(670,606)		(5,475)		(5,475)		(665,131)						
		2				48,707.5	0	6,912.6	0	6,912.6	—					TO RELOCATE ACCESS DRIVE		
						(524,288)		(74,407)		(74,407)								
3A	MASSILLON CEMETERY ASSOCIATION	2&3	273	75	06-80578	153,657.9	0	1,705.5	0	1,705.5	—	—	199,174.8					
						(1,653,973)		(18,358)		(18,358)			(2,143,910)					
			63	75	06-80684	47222.4	0				—	—						
						(508,302)												
3L		2						440.0	0	440.0	—					CONSTRUCT AND MAINTAIN CHANNEL		
								(4,736)		(4,736)								
3T		2&3						3,755.0	0	3,755.0	—					TO REGRADE		
								(40,419)		(40,419)								
4LA	STATE OF OHIO	2	3510	395	06-80677	14,321.7	0	0	0	0	—	14,321.7	—			RELOCATING LIMITED ACCESS LINE		
						(154,159)						(154,159)						
5SL	UNITED STATES OF AMERICA	2&3	1341	190	06-80513	52,972.9	0	1,899.7	0	1,899.7	—	51,073.2	—			OVERLAP WITH EXISTING CHANNEL EASEMENT AND EXISTING SEWER EASEMENT*		
						(570,200)		(20,448)		(20,448)		(549,752)		STATE				

* OVERLAP TABLE

PARCEL	EXIST. CHANNEL	EXIST. SEWER	EXIST. WD
2WL	212.3	—	
	(2,285)		
4LA	—	—	4,272.0
			(45,984)
5SL	47.8	1,899.7	—
	(515)	(20,448)	

NOTE: UNLESS SPECIFIED OTHERWISE AREAS ARE STATED IN SQUARE METERS WITH THE ENGLISH EQUIVALENT IN (SQUARE FEET)

1 SQUARE METER=10.764 SQUARE FEET

NOTE: ALL TEMPORARY PARCELS TO BE OF 18 MONTHS DURATION

NO.	DATE	DESCRIPTION	BY

DATE OF COMPLETION: MARCH 20, 1996

FEDERAL PROJECT NO. NH-48

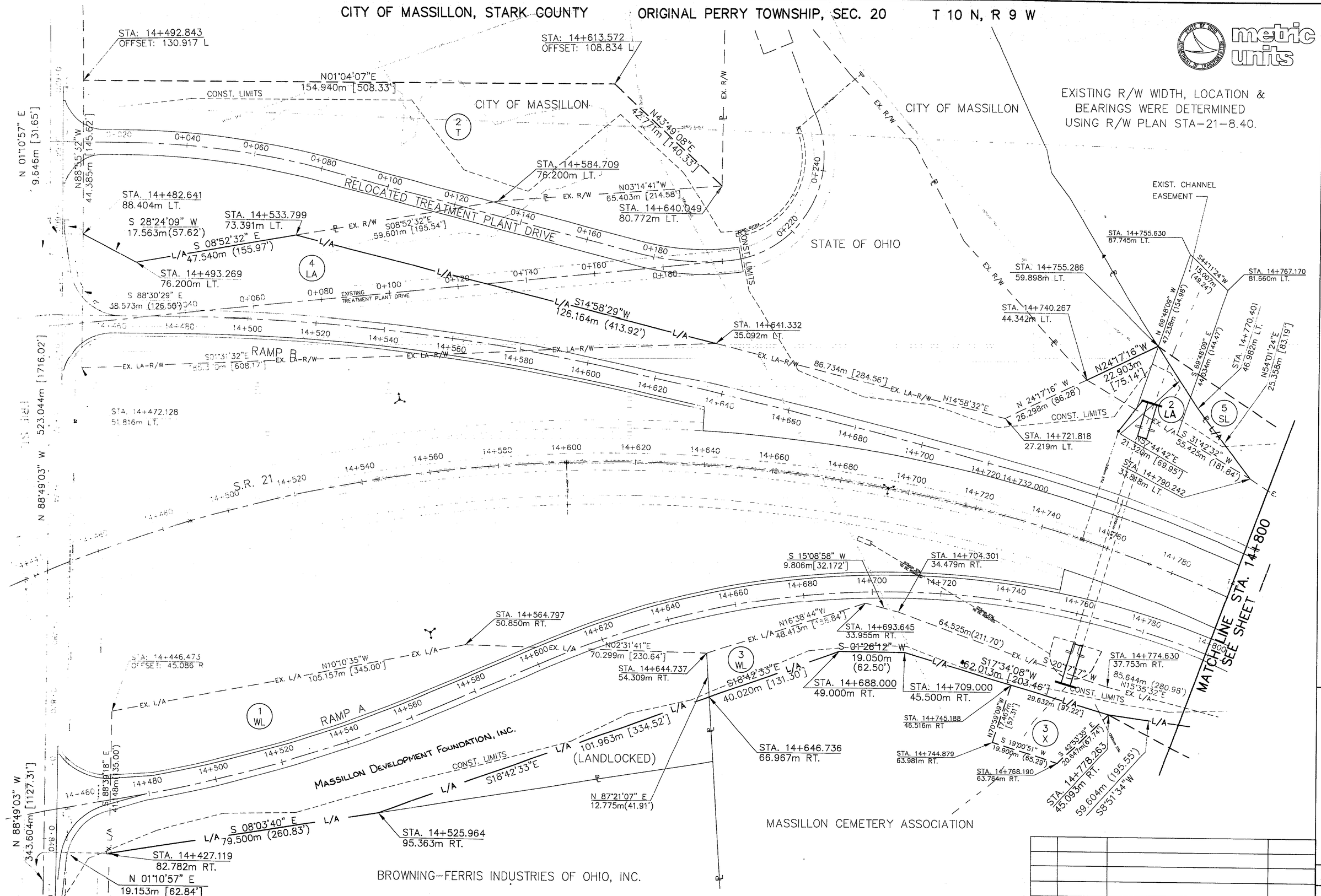
PID NO. 11110

SUMMARY OF ADDITIONAL RIGHT OF WAY

STA-21-14.452

CAD FILE NAME: 7024700 ROWSUM

CITY OF MASSILLON, STARK COUNTY ORIGINAL PERRY TOWNSHIP, SEC. 20 T 10 N, R 9 W



CITY OF MASSILLON, STARK COUNTY ORIGINAL PERRY TOWNSHIP, SEC. 20 T 10 N, R 9 W

NO.	DATE	DESCRIPTION	BY

DATE OF COMPLETION: MARCH 20, 1996

metric units

SCALE IN METERS 0 50 100

PID NO. 11110

RIGHT-OF-WAY
STA. 14+240 TO STA. 14+800

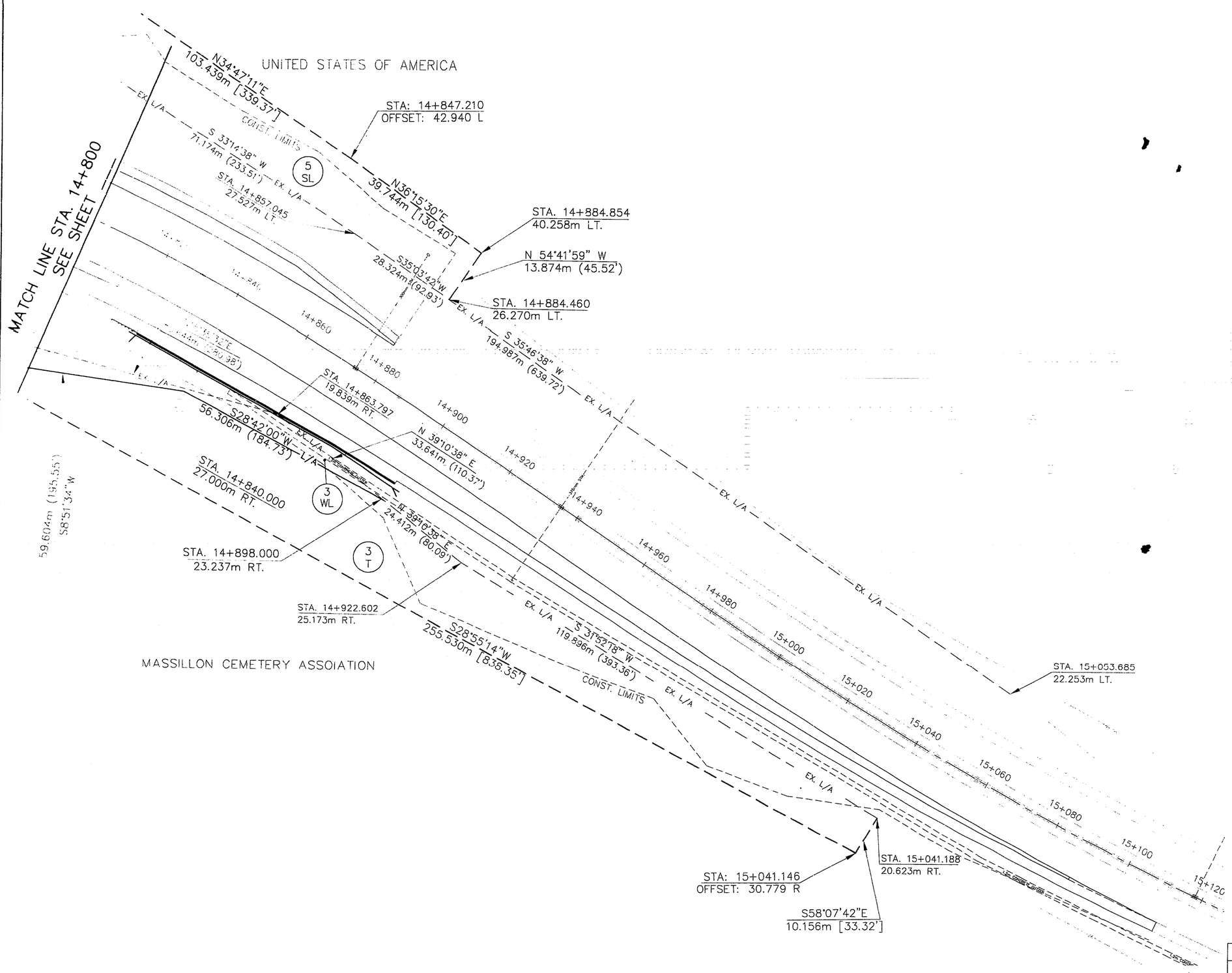
STA-21-14.452

2/3

91/92

CAD FILE NAME: 7024700 - ROWSH11

CITY OF MASSILLON, STARK COUNTY ORIGINAL PERRY TOWNSHIP, SEC. 20 T 10 N, R 9 W



CITY OF MASSILLON, STARK COUNTY ORIGINAL PERRY TOWNSHIP, SEC. 20 T 10 N, R 9 W

NO.	DATE	DESCRIPTION	BY

DATE OF COMPLETION: MARCH 20, 1996

metric units

SCALE 1:1 METERS 0 10 20

PID NO. 11110

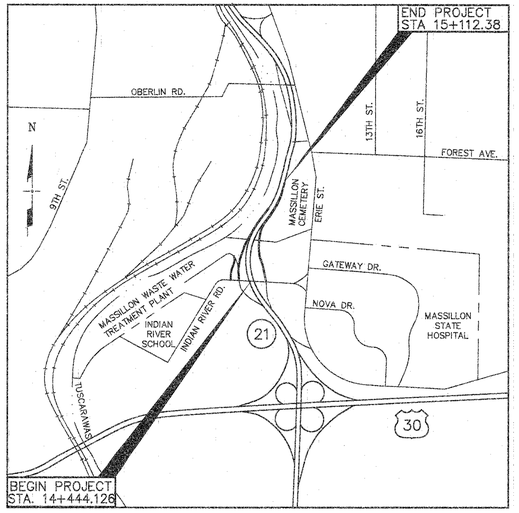
RIGHT-OF-WAY
STA. 14+800 TO STA. 15+520

STA-21-14.452

3/3

92/92

CAD FILE NAME: 7024700 - ROWSHT2



LOCATION MAP
LATITUDE N 40°46'14" LONGITUDE W 81°31'06"
SCALE IN KILOMETERS
0 0.5 1 2

Portion to be Improved
Other Roads

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
STA-21-14.452
CITY OF MASSILLON
STARK COUNTY

RIGHT OF WAY

INDEX OF SHEETS

TITLE SHEET . . . . . .
RIGHT OF WAY SUMMARY 1
RIGHT OF WAY PLANS 2-3

metric units

PROJECT DESCRIPTION

CONSTRUCTION OF THE SOUTH BOUND OFF-RAMP AND NORTH BOUND ON-RAMP FOR THE STATE ROUTE 21 AND ERIE ST. INTERCHANGE, INCLUDING A REINFORCED CONCRETE RETAINING WALL, EXTENDING A 2743mm C.M.P. CULVERT, INTERCHANGE LIGHTING, AND NECESSARY TRAFFIC CONTROL DEVICES.

ACQUIRING AGENCY: STATE OF OHIO

LIMITED ACCESS

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

1995 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 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 SET FORTH ON THE PLANS AND ESTIMATES.

UNDER AUTHORITY OF SECTION 4511.21, DIVISION (1) OF THE REVISED CODE OF OHIO, THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.

APPROVED _____

DATE _____ ASSISTANT DEPUTY DIRECTOR, OFFICE OF REAL ESTATE ADMINISTRATION

APPROVED _____

DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

DESIGN DESIGNATION

CURRENT A.D.T. (1995 EST.)	=	14847
DESIGN YEAR A.D.T. (2015)	=	19756
D.H.V.	=	1976
D	=	52%
T (24 hr)	=	12%
DESIGN SPEED	=	90 km/h (S.R. 21)
LEGAL SPEED	=	50 mph (S.R. 21)
FUNCTIONAL CLASSIFICATION	=	URBAN ARTERIAL (S.R. 21)

DESIGN EXCEPTIONS

DESIGN FEATURE	APPROVAL DATE	SHEET NOS.
NONE		

UNDERGROUND UTILITIES
2 WORKING DAYS
BEFORE YOU DIG
Call...800-362-2764 (Toll Free)
OHIO UTILITIES PROTECTION SERVICE

NON-MEMBERS
MUST BE CALLED DIRECTLY

PLANS PREPARED BY
URS CONSULTANTS INC.
ARCHITECTS ENGINEERS PLANNERS
AKRON COLUMBUS CLEVELAND

D.S. BUCHANAN REG. ENGINEER No. E 48053

STANDARD CONSTRUCTION DRAWINGS					SUPPLEMENTAL SPECIFICATIONS

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR _____ DATE _____

DESIGNED BY:	CHECKED BY:
DATE:	DATE:
DRAWN BY: GMA	REVISED BY: T.K.I.
DATE: 6/10/95	DATE: 3/14/96
CAD FILE NAME: 7024700-TITLE	

FEDERAL PROJECT NO. NH-48

PID NO. 11110

STATE PROJECT NO. 040790

RAILROAD INVOLVEMENT NONE

STA-21-14.452

TOTAL NUMBER OF:
5 OWNERSHIP
0 TOTAL TAKES
0 OWNERSHIPS W/ STRUCTURES INVOLVED
0 OWNERSHIPS WITH "P" ITEMS

SUMMARY OF ADDITIONAL RIGHT OF WAY

metric units

NET RESIDUE = RECORD AREA – TOTAL PRO – NET TAKE

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD BOOK	OWNERS RECORD PAGE	AUDITORS PARCEL	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. INTAKE	NET TAKE	STRUCTURE	NET RESIDUE LEFT	NET RESIDUE RIGHT	TYPE FUND		REMARKS AND PERSONALTY	AS ACQUIRED BOOK	AS ACQUIRED PAGE
1WL	MASSILLON DEVELOPMENT FOUNDATION,	2	O.R. 4	450	06-80007	7,102.2	0	6,259.1	0	6,259.1	—	—	843.1 LL	STATE				
	INC. FKA MASSILON INDUSTRIAL DEVELOPMENT FOUNDATION AN OHIO CORP.					(76,448)		(67,373)		(67,373)			(9,075) LL					
2LA	CITY OF MASSILLON	2	3792	415	06-80639	62,300.8	0	508.6	0	508.6	—	61,792.2	—			OVERLAP WITH EXISTING CHANNEL EASMENT*		
			845	288		(670,606)		(5,475)		(5,475)		(665,131)						
2T		2				48,707.5	0	6,912.6	0	6,912.6	—					TO RELOCATE ACCESS DRIVE		
						(524,288)		(74,407)		(74,407)								
3WL	MASSILLON CEMETERY ASSOCIATION	2&3	273	75	06-80578	153,657.9	0	1,705.5	0	1,705.5	—	—	199,174.8					
						(1,653,973)		(18,358)		(18,358)			(2,143,910)					
			63	75	06-80684	47222.4	0				—	—						
						(508,302)												
3X		2						440.0	0	440.0	—					CONSTRUCT AND MAINTAIN CHANNEL		
								(4,736)		(4,736)								
3T		2&3						3,755.0	0	3,755.0	—					TO REGRADE		
								(40,419)		(40,419)								
4LA	STATE OF OHIO	2	3510	395	06-80677	14,321.7	0	0	0	0	—	14,321.7	—			RELOCATING LIMITED ACCESS LINE		
						(154,159)						(154,159)						
5SL	UNITED STATES OF AMERICA	2&3	1341	190	06-80513	52,972.9	0	1,899.7	0	1,899.7	—	51,073.2	—			OVERLAP WITH EXISTING CHANNEL EASEMENT AND EXISTING SEWER EASEMENT*		
						(570,200)		(20,448)		(20,448)		(549,752)		STATE				

* OVERLAP TABLE

PARCEL	EXIST. CHANNEL	EXIST. SEWER	EXIST. WD
2WL	212.3	—	
	(2,285)		
4LA	—	—	4,272.0
			(45,984)
5SL	47.8	1,899.7	—
	(515)	(20,448)	

NOTE: UNLESS SPECIFIED OTHERWISE AREAS ARE STATED IN SQUARE METERS WITH THE ENGLISH EQUIVALENT IN (SQUARE FEET)

1 SQUARE METER=10.764 SQUARE FEET

NOTE: ALL TEMPORARY PARCELS TO BE OF 18 MONTHS DURATION

NO.	DATE	DESCRIPTION	BY

DATE OF COMPLETION: MARCH 20, 1996

DESIGNED BY: BHB CHECKED BY: BHB
DATE: 1/96 DATE: 2/15/96
DRAWN BY: NEL REVISED BY: NEL
DATE: 1/96 DATE: 3/19/96
CAD FILE NAME: 7024700-ROWSUM

FEDERAL PROJECT NO. NH-48

PID NO. 11110

STATE PROJECT NO. 040790

SUMMARY OF ADDITIONAL RIGHT OF WAY

STA-21-14.452

CITY OF MASSILLON, STARK COUNTY ORIGINAL PERRY TOWNSHIP, SEC. 20 T 10 N, R 9 W

metric units

EXISTING R/W WIDTH, LOCATION & BEARINGS WERE DETERMINED USING R/W PLAN STA-21-8.40.

STA: 14+492.843 OFFSET: 130.917 L

STA: 14+613.572 OFFSET: 108.834 L

N01°04'07"E 154.940m [508.33']

CONST. LIMITS

CITY OF MASSILLON

N43°49'08"E 42.77m [140.33']

EX. R/W

STA. 14+584.709 76.200m LT.

N03°14'41"W 65.403m [214.58']

STA. 14+640.049 80.772m LT.

RELOCATED TREATMENT PLANT DRIVE

STATE OF OHIO

EXIST. CHANNEL EASEMENT

STA. 14+482.641 88.404m LT.

S 28°24'09" W 17.563m (57.62')

STA. 14+533.799 73.391m LT.

S08°52'32"E 59.601m [195.54']

S 08°52'32" E 47.540m (155.97')

STA. 14+493.269 76.200m LT.

S 88°30'29" E 38.573m (126.56')

EXISTING TREATMENT PLANT DRIVE

S14°58'29"W 126.164m (413.92')

STA. 14+641.332 35.092m LT.

86.734m [284.56']

N14°58'32"E

STA. 14+755.630 87.745m LT.

STA. 14+755.286 59.898m LT.

STA. 14+740.267 44.342m LT.

S44°11'24"W 15.007m (49.24')

STA. 14+767.170 81.660m LT.

N 69°48'09" W 47.238m (154.98')

S 69°48'09" E 44.053m (144.47')

STA. 14+770.401 46.982m LT.

N54°01'24"E 25.358m [83.19']

N24°17'16"W 22.903m [75.14']

N 24°17'16" W 26.298m (86.28')

STA. 14+721.818 27.219m LT.

S 31°42'32" W 55.425m (181.84')

N57°44'42"E 21.320m [69.95']

STA. 14+790.242 33.818m LT.

N 01°10'57" E 9.646m [31.65']

N88°55'32"W 44.385m [145.62']

N 88°49'03" W 523.044m [1716.02']

ERIE ST.

STA. 14+472.128 51.816m LT.

S01°31'32"E 185.370m [608.17']

RAMP B

S.R. 21

S 15°08'58" W 9.806m[32.172']

STA. 14+704.301 34.479m RT.

STA. 14+564.797 50.850m RT.

N16°38'44"W 48.413m [158.84']

STA. 14+693.645 33.955m RT.

64.525m(211.70')

S 01°26'12" W 19.050m (62.50')

STA. 14+688.000 49.000m RT.

STA. 14+709.000 45.500m RT.

S17°34'08"W 62.013m [203.46']

S 20°17'17" W 29.632m [97.22']

STA. 14+774.630 37.753m RT.

85.644m (280.98') N15°35'32"E

MATCHLINE STA. 14+800 SEE SHEET

STA: 14+446.473 OFFSET: 45.086 R

N10°10'35"W 105.157m [345.00']

N02°31'41"E 70.299m [230.64']

STA. 14+644.737 54.309m RT.

S18°42'33"E 40.020m [131.30']

RAMP A

MASSILLON DEVELOPMENT FOUNDATION, INC.

101.963m [334.52'] (LANDLOCKED)

S18°42'33"E

STA. 14+646.736 66.967m RT.

STA. 14+745.188 46.516m RT

STA. 14+744.879 63.981m RT.

N70°59'09"W 17.746m [57.31']

S 19°00'51" W 19.900m (65.29')

S 42°33'35" E 20.647m(67.74')

STA. 14+768.190 63.764m RT.

STA. 14+778.263 45.093m RT.

59.604m (195.55') S8°51'34"W

N 88°49'03" W 343.604m [1127.31']

S 88°39'18" E 41.148m [135.00']

S 08°03'40" E 79.500m (260.83')

STA. 14+427.119 82.782m RT.

N 01°10'57" E 19.153m [62.84']

N 87°21'07" E 12.775m(41.91')

STA. 14+525.964 95.363m RT.

MASSILLON CEMETERY ASSOCIATION

BROWNING-FERRIS INDUSTRIES OF OHIO, INC.

CITY OF MASSILLON, STARK COUNTY ORIGINAL PERRY TOWNSHIP, SEC. 20 T 10 N, R 9 W

NO.	DATE	DESCRIPTION	BY

DATE OF COMPLETION: MARCH 20, 1996

DESIGNED BY: NEL	CHECKED BY:
DATE: 11/27/95	DATE:
DRAWN BY: NEL	REVISED BY: BHB
DATE: 11/27/95	DATE: 1/15/96
CAD FILE NAME: 7024700 - ROWSHT1	

N 0 50 100 SCALE IN METERS

PID NO. 11110

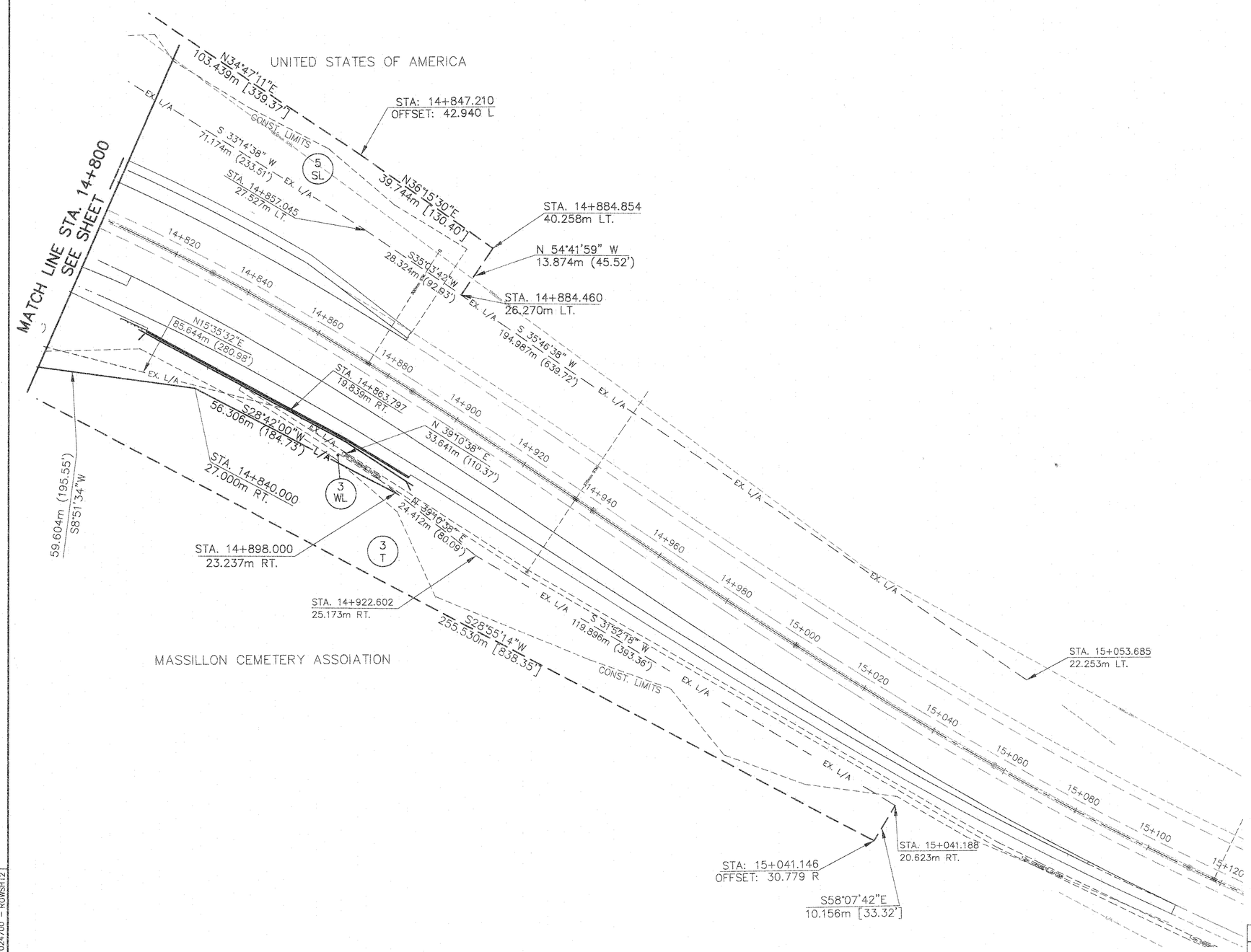
RIGHT-OF-WAY STA. 14+240 TO STA. 14+800

STA-21-14.452

2/3

91/92

CITY OF MASSILLON, STARK COUNTY ORIGINAL PERRY TOWNSHIP, SEC. 20 T 10 N, R 9 W



CITY OF MASSILLON, STARK COUNTY ORIGINAL PERRY TOWNSHIP, SEC. 20 T 10 N, R 9 W

DESIGNED BY: NEL	CHECKED BY:		
DATE: 11/22/95	DATE:		
DRAWN BY: NEL	REVISED BY: BHB		
DATE: 11/22/95	DATE: 1/16/96		
CAD FILE NAME: 7024700 - ROWSHT2			

NO.	DATE	DESCRIPTION	BY

DATE OF COMPLETION: MARCH 20, 1996

metric units

SCALE IN METERS 0 10 20

PID NO. 11110

RIGHT-OF-WAY
STA. 14+800 TO STA. 15+520

STA-21-14.452

3/3

92/92

COVER SHEET

S.R. 21 / ERIE ST. INTERCHANGE
STA-21-8.98
MASSILLON, OHIO

1/5

BBC & M ENGINEERING, INC.
6190 ENTERPRISE COURT DUBLIN, OHIO 43016-7297

GENERAL INFORMATION

INTRODUCTION

IT IS PLANNED TO ADD AN EXIT AND ENTRANCE RAMP AT THE INTERSECTION OF STATE ROUTE 21 AND ERIE STREET SOUTH IN MASSILLON, OHIO. THE PROPOSED RAMPS ARE TO BE LOCATED ON THE NORTH SIDE OF THE PRESENT ERIE STREET BRIDGE. THE WESTERN RAMP INCLUDES AN ESTIMATED 365 METERS OF ROADWAY AND THE EASTERN RAMP WILL BE 245 METERS LONG. ADDITIONALLY, AN APPROXIMATELY 60 METER LONG, 6 METER HIGH CONCRETE RETAINING WALL IS PROPOSED ALONG THE EAST SIDE OF S.R. 21 AND A NEW CONCRETE HEADWALL STRUCTURE IS PROPOSED FOR AN EXISTING 2.74-METER-DIAMETER PIPE THAT LIES BENEATH S.R. 21, WHICH IS TO BE EXTRENDED.

GEOLOGY

INFORMATION AVAILABLE FROM GEOLOGICAL LITERATURE INDICATES THAT THE SOIL IN THE AREA OF THE PROJECT CONSISTS OF CLAY, SILT, AND ALLUVIUM DEPOSITS OF THE TUSCARAWAS RIVER OVERLYING INTERBEDDED LAYERS OF SAND AND GRAVEL DEPOSITED IN THE BURIED VALLEYS BY GLACIAL MELTWATERS. THE UPPERMOST BEDROCK CONSISTS OF SANDSTONE ASSOCIATED WITH THE POTTSVILLE AND ALLEGHENY FORMATIONS OF THE PENNSYLVANIAN SYSTEM AND IS PRESENT AT DEPTHS FROM 14 TO 152 METERS IN THIS AREA.

EXPLORATION

ON JUNE 12 AND 13, 1995, EIGHT ROADWAY BORINGS WERE DRILLED ALONG THE PROPOSED RAMPS. IN ADDITION, ONE BORING WAS DRILLED NEAR THE LOCATION OF THE CULVERT HEADWALL AND TWO BORINGS WERE DRILLED ADJACENT TO THE LOCATION OF THE PROPOSED RETAINING WALL. THE BORINGS WERE ADVANCED THROUGH THE SOIL BY A DRILL RIG, MOUNTED ON AN ALL-TERRAIN-VEHICLE, USING EITHER A 115 MM CONTINUOUS-FLIGHT AUGER OR AN 83 MM I.D. HOLLOW-STEM AUGER. AT REGULAR INTERVALS, DISTURBED, BUT REPRESENTATIVE, SOIL SAMPLES WERE OBTAINED BY CAREFULLY LOWERING A 50 MM O.D. SPLIT-BARREL SAMPLER TO THE SAMPLING DEPTH WHERE THE SAMPLER WAS DRIVEN INTO THE SOIL WITH BLOWS FROM A 64 KG HAMMER FREELY FALLING 760 MM (STANDARD PENETRATION TEST). SOIL SAMPLES WERE EXAMINED IN THE FIELD, AND REPRESENTATIVE PORTIONS WERE PRESERVED IN AIRTIGHT GLASS JARS.

FINDINGS OF THIS INVESTIGATION

RAMP "A" AND RETAINING WALL

BORINGS B-5 THROUGH B-7 WERE DRILLED ALONG THE PROPOSED RAMP "A" ALIGNMENT. BORINGS B-9 AND B-10 WERE DRILLED IN THE VICINITY OF THE PROPOSED RETAINING WALL AND ALSO ADJACENT TO RAMP "A". ALL FIVE BORINGS ENCOUNTERED BETWEEN 150 AND 280 MM OF TOPSOIL. THE TOPSOIL WAS UNDERLAIN BY 0.82 M OF HARD BROWN SILTY CLAY IN BORING B-5. IN THE REMAINING BORINGS, THE TOPSOIL WAS UNDERLAIN BY PREDOMINATELY GRANULAR SOIL CONSISTING OF LOOSE TO MEDIUM-DENSE BROWN AND GRAY FINE TO COARSE SAND AND GRAVEL (A-1-a, A-1-b, EST. A-3 AND EST. A-2-4). ALL FIVE BORINGS WERE TERMINATED IN THE GRANULAR MATERIAL. DURING DRILLING, GROUNDWATER WAS ENCOUNTERED IN BORINGS B-9 AND B-10 AT A DEPTH OF 11.43 M. AT COMPLETION, WATER LEVELS IN BORINGS B-9 AND B-10 MEASURED 11.64 M AND 12.65 M, RESPECTIVELY, BELOW THE GROUND SURFACE. THE REMAINING THREE BORINGS DID NOT ENCOUNTER ANY GROUNDWATER DURING DRILLING AND WERE "DRY" AT COMPLETION; THAT IS TO SAY, NO WATER HAD ACCUMULATED IN THE BORINGS.

RAMP "B"

BORINGS B-1 THROUGH B-4 WERE DRILLED ALONG THE PROPOSED RAMP "B" ALIGNMENT. BORINGS B-1 AND B-2 ENCOUNTERED 215 MM OF TOPSOIL AND BORING B-3 ENCOUNTERED 325 MM OF BERM MATERIAL. BORING B-4 ENCOUNTERED 280 MM OF ASPHALT UNDERLAIN BY 0.48 M OF FILL CONSISTING OF DENSE BROWN FINE TO COARSE SAND, "AND" FINE TO COARSE GRAVEL (EST. A-1-b). IN BORING B-2, IMMEDIATELY BENEATH THE TOPSOIL, 0.40 M OF MEDIUM-DENSE GRAY SILT (EST. A-4b) WERE ENCOUNTERED. THE BORINGS ENCOUNTERED PREDOMINATELY LOOSE TO MEDIUM-DENSE BROWN AND GRAY FINE TO COARSE SAND AND GRAVEL (A-1-a, A-1-b, A-2-4) UNTIL THE BORINGS WERE TERMINATED AT A DEPTH OF 3.05 M. NO GROUNDWATER WAS ENCOUNTERED DURING DRILLING AND AT COMPLETION ALL BORINGS WERE "DRY".

CULVERT HEADWALL

BORING B-8 WAS DRILLED IN THE VICINITY OF THE PROPOSED HEADWALL THAT IS TO BE CONSTRUCTED AS PART OF THE EXTENSION OF THE EXISTING 2.74-METER-DIAMETER PIPE. BORING B-8 ENCOUNTERED 255 MM OF TOPSOIL WHICH WAS UNDERLAIN BY 1.58 M OF LOOSE TO MEDIUM-DENSE BROWN AND GRAY FINE TO COARSE SAND (A-1-b). THIS STRATUM WAS UNDERLAIN BY 0.61 M OF VERY-STIFF BROWN SILTY CLAY (A-6b) AND 0.91 M OF MEDIUM-DENSE BROWN FINE TO COARSE GRAVEL (EST. A-2-6). BORING B-8 WAS TERMINATED AFTER PENETRATING 2.75 M INTO LOOSE TO DENSE BROWN AND GRAY FINE TO COARSE SAND AND GRAVEL (A-1-a, A-1-b). DURING DRILLING, SEEPAGE WAS ENCOUNTERED AT A DEPTH OF 4.0 M AND AT COMPLETION, THE BORING WAS "DRY".

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS – 23 SAMPLES TESTED

DESCRIPTION	H.R.B. CLASS.	OHIO CLASS.	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
GRAVEL AND/OR STONE FRAGMENTS	A-1-a	A-1-a	60	25	7	--	8 --	--	--	--	9
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	A-1-b	36	41	13	--	10 --	--	--	--	10
GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT	A-2-4	A-2-4	27	22	19	22	10	23	7	13	1
SILT	A-4	A-4b	0	2	20	70	8	--	--	--	1
SILTY CLAY	A-6	A-6b	1	6	13	50	30	37	18	18	2

TOPSOIL = "X" ≡ APPROXIMATE DEPTH

ASPHALT = "X" ≡ APPROXIMATE DEPTH

AUGER BORING – PLAN VIEW

AUGER BORING PLOTTED TO VERTICAL SCALE ONLY

NUMBER OF BLOWS FOR "STANDARD PENETRATION TEST"
X = NUMBER OF BLOWS FOR FIRST 150mm
Y = NUMBER OF BLOWS FOR SECOND 150mm
Z = NUMBER OF BLOWS FOR THIRD 150mm

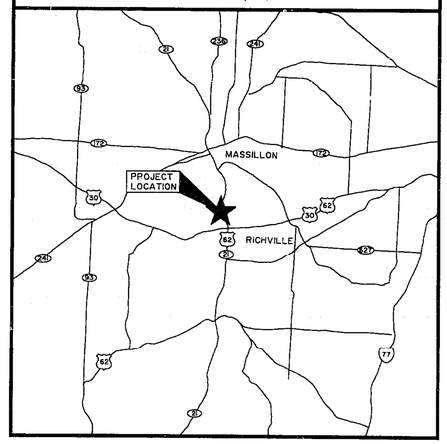
—W— STATIC WATER LEVEL

NOTE: NUMERALS ADJACENT TO THE BORINGS IN PROFILE VIEW INDICATE THE NATURAL MOISTURE CONTENT IN PERCENT.

NOTE: INFORMATION SHOWN ON THIS SUBGRADE PROFILE WAS OBTAINED SOLELY FOR USE IN ESTABLISHING DESIGN CONTROLS FOR THIS PROJECT. BBC&M ENGINEERING, INC. DOES NOT GUARANTEE THE ACCURACY OF THESE DATA AND THEY SHOULD NOT BE CONSTRUED AS A PART OF THE PLANS GOVERNING CONSTRUCTION OF THIS PROJECT.

THE SOIL PROFILE SHEETS CONTAIN ALL AVAILABLE SOIL INFORMATION WHICH CAN BE CONVENIENTLY SHOWN. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN PERFORMED TO STUDY SOME ASPECT OF THE PROJECT. MORE INFORMATION, IF ANY, MAY BE OBTAINED AT THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 4

LOCATION MAP



SUMMARY OF SOIL TEST DATA

NOTE : THE LOCATIONS OF THE BORINGS ARE GIVEN WITH RESPECT TO STATIONING ALONG THE EXISTING CENTERLINE OF STATE ROUTE 21.

STATION & OFFSET	DEPTH (metric) FROM – TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	% W.C.	SHTL CLASS.
RAMP "B"										
14+494.17 61.43m Lt.	0.30 – 0.76	48	27	14	--	11 --	--	--	--	A-1-b
14+602.08 33.29m Lt.	0.30 – 0.76	0	2	20	70	8	--	--	--	A-4b
	1.83 – 2.29	67	16	7	--	10 --	--	--	--	A-1-a
14+721.50 10.98m Lt.	1.07 – 1.52	57	26	12	--	5 --	--	--	--	A-1-a
14+844.06 10.76m Lt.	1.07 – 1.52	46	22	20	--	12 --	--	--	--	A-1-b
	1.83 – 2.29	27	22	19	22	10	23	7	13	A-2-4
RAMP "A"										
14+428.27 64.79m Rt.	0.30 – 0.76	1	3	13	53	30	40	21	16	A-6b
14+538.10 56.47m Rt.	4.11 – 4.57	51	34	7	--	8 --	--	--	--	A-1-a
	6.40 – 6.86	48	29	17	--	6 --	--	--	--	A-1-b
14+661.99 23.03m Rt.	2.59 – 3.05	65	19	7	--	9 --	--	--	--	A-1-a
	4.88 – 5.33	22	62	5	--	11 --	--	--	--	A-1-b
14+751.10 34.25m Rt.	1.07 – 1.52	29	31	20	--	20 --	--	--	--	A-1-b
	1.83 – 2.29	1	9	13	46	31	35	16	21	A-6b
	3.35 – 3.81	56	22	9	--	13 --	--	--	--	A-1-a
	5.64 – 6.10	25	58	9	--	8 --	--	--	--	A-1-b
14+850.45 15.76m Rt.	1.07 – 1.52	40	45	6	--	9 --	--	--	--	A-1-b
	3.35 – 3.81	69	20	5	--	6 --	--	--	--	A-1-a
	7.16 – 7.62	58	32	5	--	5 --	--	--	--	A-1-a
	11.73 – 12.19	40	44	11	--	5 --	--	--	--	A-1-b
14+882.50 17.78m Rt.	2.59 – 3.05	47	30	10	--	13 --	--	--	--	A-1-b
	4.11 – 4.57	63	18	8	--	11 --	--	--	--	A-1-a
	7.16 – 7.62	52	37	5	--	6 --	--	--	--	A-1-a
	13.26 – 13.72	18	62	14	--	6 --	--	--	--	A-1-b

DRILLING – BBC&M ENGINEERING (6/12/95–6/13/95)
DRAFTING – B.L.R. (8/14/95–8/21/95)

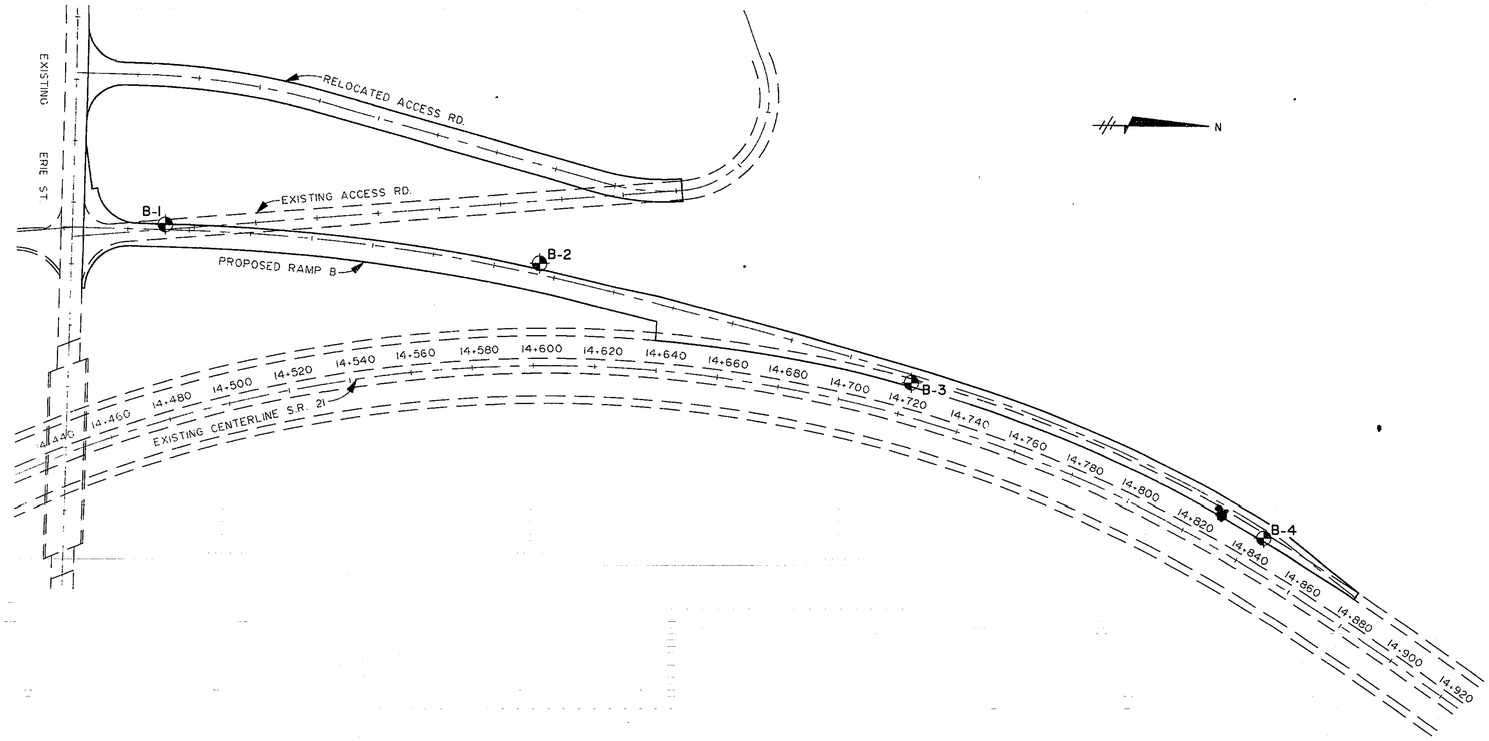
PROJECT INDEX				
STATION FROM	STATION TO	PLAN AND PROFILE VIEW SHEET NUMBERS	CUT (MAXIMUM)	FILL (MAXIMUM)
RAMP "B"				
14+470	14+880	2	0	2.9
RAMP "A"				
14+420	14+920	3	5.5	4.5

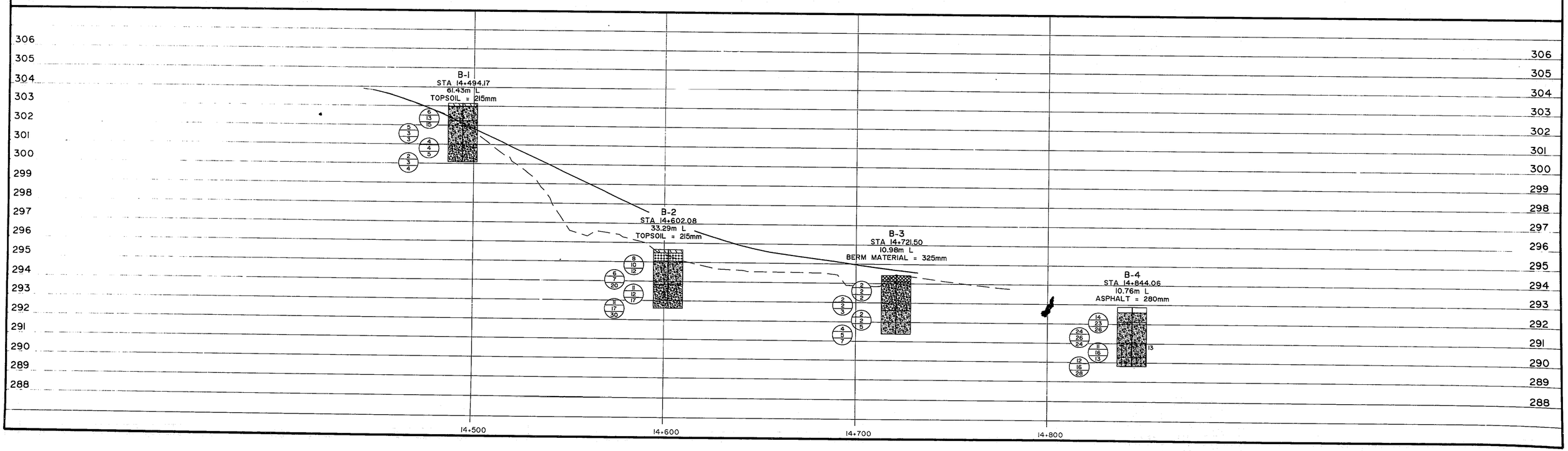
PLAN AND PROFILE

S.R. 21 / ERIE ST. INTERCHANGE
STA-21-8.98
MASSILLON, OHIO

2/5

BBC & M ENGINEERING, INC.
6190 ENTERPRISE COURT DUBLIN, OHIO 43016-7297



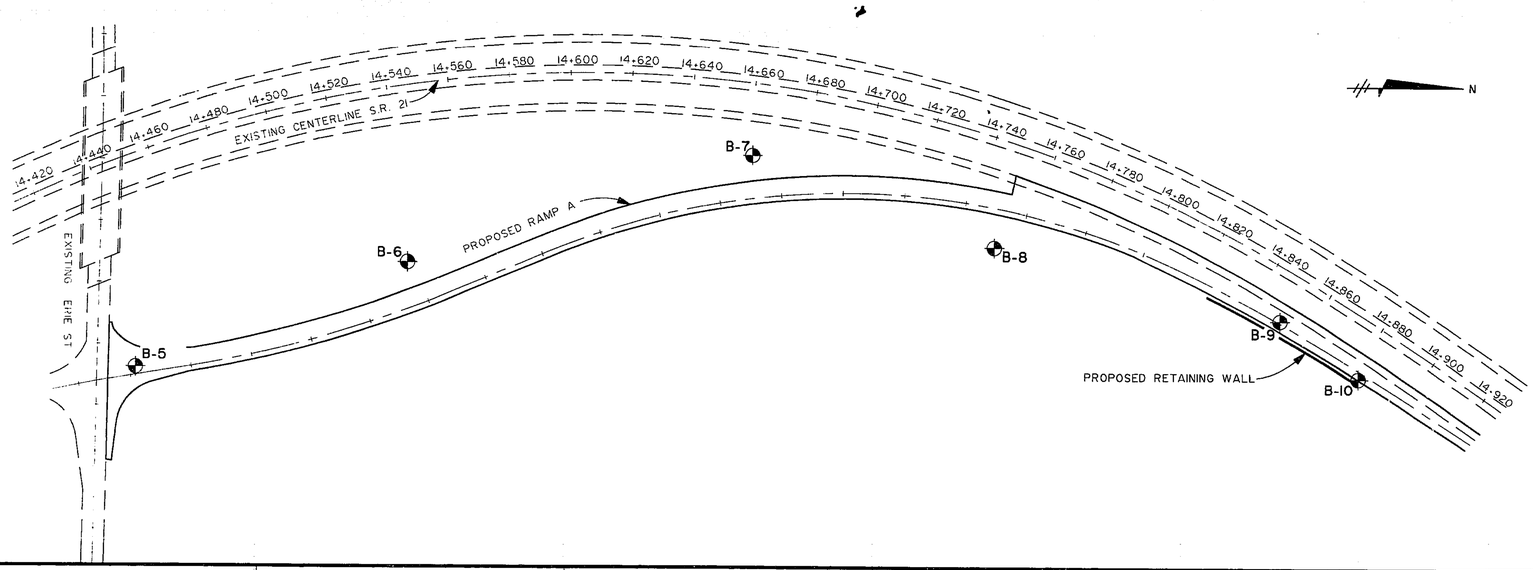


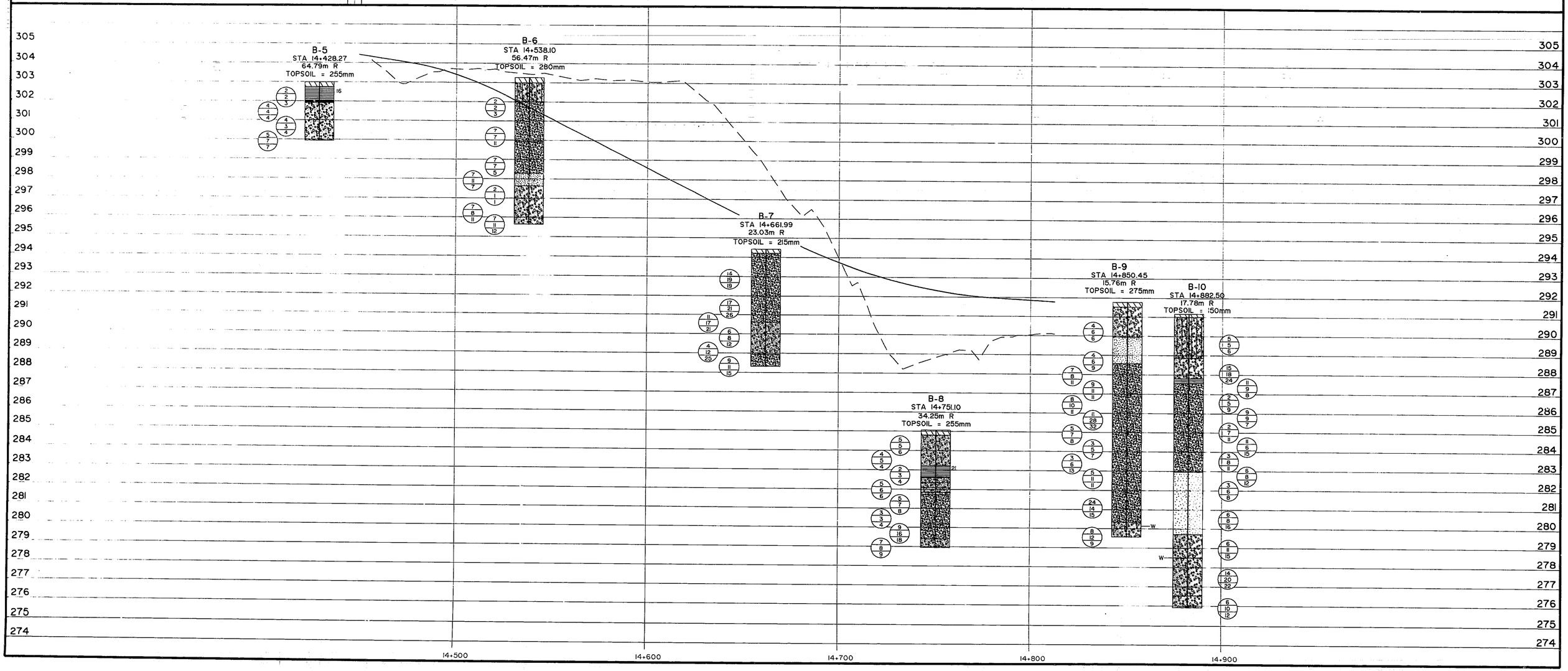
PLAN AND PROFILE

S.R. 21 / ERIE ST. INTERCHANGE
STA-21-8.98
MASSILLON, OHIO

3/5

BBC & M ENGINEERING, INC.
6190 ENTERPRISE COURT DUBLIN, OHIO 43016-7297





BORING LOG DATA

S.R. 21 / ERIE ST. INTERCHANGE
STA-21-8.98
MASSILLON, OHIO

4/5

BBC & M ENGINEERING, INC.
6190 ENTERPRISE COURT DUBLIN, OHIO 43016-7297

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-1
STA-21-8.98
MASSILLON, OHIO

TYPE: 115mm O.D. Continuous-flight Auger; 50mm O.D. Split-barrel Sampler
LOCATION: STA. 14+494.17; 61.43m Left of Centerline
COMPLETION DEPTH: 3.05m ELEVATION: 303.14 DATE: 6/12/95

SAMPLE NO.	SAMPLES: SAMPLING EFFORT	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
							TOPSOIL - 215 MILLIMETERS
1	6/13/15	48	27	14	11		Medium-dense brown and gray fine to coarse sand, "and" fine to coarse gravel, little clayey silt. A-1-b(0)
2	5/3/3						Loose brown fine to coarse sand, trace to little fine gravel, trace to little clayey silt. Est. A-1-b
3	4/4/5						
4	2/3/4						Loose brown fine to coarse gravel, "and" fine to coarse sand, trace clayey silt. Est. A-1-a

WATER LEVEL: "Dry"
WATER NOTE: At completion
DATE: 06/12/95

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-2
STA-21-8.98
MASSILLON, OHIO

TYPE: 115mm O.D. Continuous-flight Auger; 50mm O.D. Split-barrel Sampler
LOCATION: STA. 14+602.08; 33.29m Left of Centerline
COMPLETION DEPTH: 3.05m ELEVATION: 295.66 DATE: 6/12/95

SAMPLE NO.	SAMPLES: SAMPLING EFFORT	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
							TOPSOIL - 215 MILLIMETERS
1	8/10/12	0	2	20	70	8	Medium-dense gray-brown silt, some fine to coarse sand, trace clay. Est. A-4b
2	6/7/20						Medium-dense brown and gray fine to coarse sand, little fine to coarse gravel, trace silt. - Encountered cobbles at 1.4m. Est. A-1-b
3	11/12/17	67	16	7	10		Medium-dense to dense brown and gray fine to coarse gravel, "and" fine to coarse sand, trace clayey silt.
4	11/17/30						A-1-a(0)

WATER LEVEL: "Dry"
WATER NOTE: At completion
DATE: 06/12/95

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-3
STA-21-8.98
MASSILLON, OHIO

TYPE: 115mm O.D. Continuous-flight Auger; 50mm O.D. Split-barrel Sampler
LOCATION: STA. 14+721.50; 10.98m Left of Centerline
COMPLETION DEPTH: 3.05m ELEVATION: 294.43 DATE: 6/12/95

SAMPLE NO.	SAMPLES: SAMPLING EFFORT	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
							BERM MATERIAL - 325 MILLIMETERS
1	2/2/2						Very-loose to loose gray-brown fine to coarse sand, "and" fine to coarse gravel, trace clayey silt, few roots.
2	2/2/3	57	26	12	5		A-1-a(0)
3	2/2/5						Loose to medium-dense brown and gray fine to coarse sand, trace fine gravel, trace silt.
4	4/5/7						Est. A-1-b

WATER LEVEL: "Dry"
WATER NOTE: At completion
DATE: 06/12/95

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-4
STA-21-8.98
MASSILLON, OHIO

TYPE: 115mm O.D. Continuous-flight Auger; 50mm O.D. Split-barrel Sampler
LOCATION: STA. 14+844.06; 10.76m Left of Centerline
COMPLETION DEPTH: 3.05m ELEVATION: 292.88 DATE: 6/12/95

SAMPLE NO.	SAMPLES: SAMPLING EFFORT	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
							ASPHALT - 280 MILLIMETERS
1	14/23/26						FILL: Dense brown fine to coarse sand, "and" fine to coarse gravel, little clayey silt. Est. A-1-b
2	24/26/24	46	22	20	12		Dense to very-dense brown fine to coarse sand, some fine to coarse gravel, little clayey silt. A-1-b(0)
3	11/16/13	13	23	16	27	22	Medium-dense gray fine to coarse sand, some organic clayey silt, little fine to coarse gravel, few pieces of wood. A-2-4(0)
4	12/16/28						Dense brown and gray fine to coarse sand, some fine to coarse gravel, little clayey silt. Est. A-2-4

WATER LEVEL: "Dry"
WATER NOTE: At completion
DATE: 06/12/95

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-5
STA-21-8.98
MASSILLON, OHIO

TYPE: 115mm O.D. Continuous-flight Auger; 50mm O.D. Split-barrel Sampler
LOCATION: STA. 14+428.27; 64.79m Right of Centerline
COMPLETION DEPTH: 3.05m ELEVATION: 302.99 DATE: 6/12/95

SAMPLE NO.	SAMPLES: SAMPLING EFFORT	HAND PENETROMETER (kPa)	MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
											TOPSOIL - 255 MILLIMETERS
1	2/2/3	430	16	40	19	1	3	13	53	30	Hard brown silty clay, little fine to coarse sand, few roots. A-6b(12)
2	4/4/4										Loose to medium-dense brown fine to coarse sand, some to "and" fine to coarse gravel, trace clayey silt.
3	4/3/4										
4	5/7/7										Est. A-1-b

WATER LEVEL: "Dry"
WATER NOTE: At completion
DATE: 06/12/95

BBC&M ENGINEERING, INC.

LOG OF BORING NO. B-6
STA-21-8.98
MASSILLON, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 50mm O.D. Split-barrel Sampler
LOCATION: STA. 14+538.10; 56.47m Right of Centerline
COMPLETION DEPTH: 7.62m ELEVATION: 303.27 DATE: 6/12/95

SAMPLE NO.	SAMPLES: SAMPLING EFFORT	AGG.	C.S.	F.S.	SILT	CLAY	DESCRIPTION
							TOPSOIL - 280 MILLIMETERS
1	2/2/3						Very-loose brown fine to coarse sand, some clayey silt, little fine gravel. Est. A-2-4
2	7/7/11						Loose to medium-dense brown fine to coarse gravel, some fine to coarse sand, trace silt. -Encountered cobbles at 2m. Est. A-1-a
3	7/7/5	51	34	7	8		Medium-dense gray and brown fine to coarse sand, some fine gravel, trace clayey silt. A-1-a(0)
4	7/11/7						Medium-dense brown fine to coarse sand, trace fine gravel, trace clayey silt. Est. A-3a
5	2/1/1						Very-loose to medium-dense brown and gray fine to coarse sand, some fine to coarse gravel, trace silt.
6	7/8/11	48	29	17	6		
7	7/11/12						A-1-b(0)

WATER LEVEL: "Dry"
WATER NOTE: At completion
DATE: 06/12/95

BORING LOG DATA

S.R. 21 / ERIE ST. INTERCHANGE
STA-21-8.98
MASSILLON, OHIO

BBC & M ENGINEERING, INC.
6190 ENTERPRISE COURT DUBLIN, OHIO 43016-7297

LOG OF BORING NO. B-7
STA-21-8.98
MASSILLON, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 50mm O.D. Split-barrel Sampler
LOCATION: STA. 14+661.99; 23.03m Right of Centerline
COMPLETION DEPTH: 6.10m ELEVATION: 294.43 DATE: 6/13/95

Sample No.	Sampling Effort	Hand Penetrometer (kPa)	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Agg.	C.S.	F.S.	Silt	Clay	Description
											TOPSOIL - 215 MILLIMETERS
											Dense brown and gray fine to coarse gravel, some to "and" fine to coarse sand, trace clayey silt. - Encountered cobbles at 1.1m.
1	4/9/9										
2	17/21/26					65	19	7	9		
											A-1-a(0)
3	11/17/21										
											Medium-dense to dense brown and gray fine to coarse sand, little fine to coarse gravel, trace clayey silt.
4	6/8/12										
5	4/2/25					22	62	5	11		
											A-1-b(0)
6	9/11/15										
											Medium-dense brown and gray fine to coarse gravel, some fine to coarse sand, trace clayey silt. Est. A-1-a

WATER LEVEL: "Dry"
WATER NOTE: At completion
DATE: 06/13/95

LOG OF BORING NO. B-8
STA-21-8.98
MASSILLON, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 50mm O.D. Split-barrel Sampler
LOCATION: STA. 14+751.10; 34.25m Right of Centerline
COMPLETION DEPTH: 6.10m ELEVATION: 285.06 DATE: 6/13/95

Sample No.	Sampling Effort	Hand Penetrometer (kPa)	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Agg.	C.S.	F.S.	Silt	Clay	Description
											TOPSOIL - 255 MILLIMETERS
1	5/5/6										Loose to medium-dense dark-brown and gray fine to coarse sand, some fine to coarse gravel, little clayey silt.
2	4/5/4					29	31	20	20		
											A-1-b(0)
3	2/3/4	190-235	21	35	19	1	9	13	46	31	Very-stiff brown silty clay, some fine to coarse sand, trace fine to coarse gravel, few roots.
											A-6b(10)
4	5/6/6										Medium-dense brown fine to coarse gravel, some fine to coarse sand, some silty clay. Est. A-2-6
5	5/7/8					56	22	9	13		Loose to medium-dense brown fine to coarse sand, some to "and" fine to coarse gravel, little silty clay.
6	3/3/4										
											A-1-a(0)
7	9/16/18										Dense brown fine to coarse gravel, some fine to coarse sand, trace clayey silt. Est. A-1-a
8	7/8/9					25	58	9	8		Medium-dense brown and gray fine to coarse sand, trace fine gravel, trace silt.
											A-1-b(0)
											-Encountered seepage at 4.0m.

WATER LEVEL: "Dry"
WATER NOTE: At completion
DATE: 06/13/95

LOG OF BORING NO. B-9
STA-21-8.98
MASSILLON, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 50mm O.D. Split-barrel Sampler
LOCATION: STA. 14+850.45; 15.76m Right of Centerline
COMPLETION DEPTH: 12.19' ELEVATION: 291.78 DATE: 6/13/95

Sample No.	Sampling Effort	Hand Penetrometer (kPa)	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Agg.	C.S.	F.S.	Silt	Clay	Description
											TOPSOIL - 275 MILLIMETERS
1	4/6/6					40	45	6	9		Very-loose to loose brown fine to coarse sand, some fine to coarse gravel, trace clayey silt.
											A-1-b(0)
2	4/6/9										Medium-dense brown fine to medium sand, trace coarse sand, trace fine to coarse gravel, trace clayey silt, few cobbles.
											Est. A-3
3	7/8/11					69	20	5	6		Medium-dense brown fine to coarse sand, "and" fine to coarse gravel, trace silt, few cobbles.
4	9/11/11										
5	8/10/1										
6	11/28/32										
7	5/7/8										
8	3/5/7					58	32	5	5		
9	3/6/13										
10	5/11/11										-Below 8.69m, few seams of clayey silt.
											-From 8.84m to 9.60m, many cobbles.
11	24/14/15										-From 10.97m to 11.43m, many cobbles.
											A-1-a(0)
12	8/12/9					40	44	11	5		Medium-dense brown fine to coarse sand, some fine to coarse gravel, trace clayey silt.
											A-1-b(0)
											-Encountered water at 11.43m.

WATER LEVEL: 11.64
WATER NOTE: At completion
DATE: 06/13/95

LOG OF BORING NO. B-10
STA-21-8.98
MASSILLON, OHIO

TYPE: 83mm I.D. Hollow-stem Auger; 50mm O.D. Split-barrel Sampler
LOCATION: STA. 14+862.50; 17.78m Right of Centerline
COMPLETION DEPTH: 15.24' ELEVATION: 291.16 DATE: 6/13/95

Sample No.	Sampling Effort	Hand Penetrometer (kPa)	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Agg.	C.S.	F.S.	Silt	Clay	Description
											TOPSOIL - 150 MILLIMETERS
1	5/5/6										Loose to medium-dense brown fine to medium sand, trace coarse sand, little fine to coarse gravel, little clayey silt (possible fill).
											- Encountered cobbles at 1.52m.
											Est. A-2-4
2	15/18/24					47	30	10	13		Dense brown fine to coarse sand, some fine to coarse gravel, little clayey silt.
											A-1-b(0)
3A 3B	11/9/8	430									Hard brown silty clay, little fine to coarse sand, trace fine gravel.
											Est A-6b
4	2/5/9					63	18	8	11		Medium-dense brown fine to coarse sand, some to "and" fine to coarse gravel, trace silt.
5	9/9/7										
6	2/7/11										
7	11/6/15										- From 6.4m to 7.3m, many cobbles.
8	3/8/11					52	37	5	6		
											A-1-a(0)
9A 9B	6/8/12										Medium-dense brown fine to medium sand, trace coarse sand, trace fine gravel, trace clayey silt.
10	3/6/8										
11	6/8/16										
											Est. A-3
12	6/11/15										Medium-dense brown fine to coarse sand, some fine to coarse gravel, trace clayey silt.
											Est. A-1-b
13	14/20/22					18	62	14	6		Dense brown fine to coarse sand, trace fine gravel, trace clayey silt.
											A-1-b(0)
14	6/10/12										Medium-dense brown fine to coarse sand, some fine to coarse gravel, trace clayey silt.
											Est. A-1-b
											- Encountered water at 11.43m.

WATER LEVEL: 12.65
WATER NOTE: Caved at 13.11m
DATE: 06/13/95