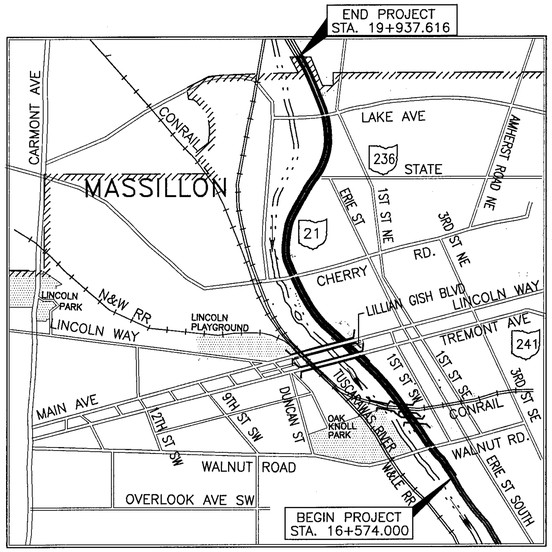

LOCATION MAP

LATITUDE: N48°48'23" LONGITUDE: W81°31'38"

0 1 2 3
SCALE IN KILOMETERS

PORTION TO BE IMPROVED
STATE AND FEDERAL ROUTES
OTHER ROADS

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

STA-21-16.574

CITY OF MASSILLON
STARK COUNTY

metric units

FEDERAL PROJECT NO. TE 21-G990(18)

FID NO. 12479

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT NONE

STA-21-16.574

1/120

PROJECT DESCRIPTION

REPAIRS AND RESURFACING OF STATE ROUTE 21 INCLUDING PAVEMENT PLANING, LINEAR GRADING, GUARDRAIL REPLACEMENT, IMPACT ATTENUATOR INSTALLATIONS, DRAINAGE IMPROVEMENTS, DITCH & DRAINAGE PIPE CLEANING, FULL & PARTIAL DEPTH PAVEMENT REPAIRS, REHABILITATION OF THREE CULVERT TYPE STRUCTURES, REMOVAL OF ABANDONED RAILROAD SUPERSTRUCTURE, SIGNAL REPLACEMENT AT FOUR INTERSECTIONS AND OTHER SAFETY RELATED IMPROVEMENTS, ALL WITHIN A PROJECT LENGTH OF 3.36 KILOMETERS.

1997 SPECIFICATIONS

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT AS NOTED ON SHEET 17, AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED David R Dreger

DATE 1-11-99 DISTRICT DEPUTY DIRECTOR

APPROVED Gordon Proctor

DATE 2-11-99 DIRECTOR, DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS

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DESIGN DESIGNATION

CURRENT YEAR ADT (2000)	16590
DESIGN YEAR ADT (2020)	19080
DESIGN HOURLY VOLUME (2020)	1908
DIRECTIONAL DISTRIBUTION	55
TRUCK (24 HOUR B&C)	13%
DESIGN SPEED	80 KM/H
LEGAL SPEED	50 MPH
DESIGN FUNTIONAL CLASSIFICATION	URBAN EXPRESSWAY

DESIGN EXCEPTIONS / APPROVAL DATE

CURBED SHOULDER WIDTH	01-21-99
HORIZONTAL CLEARANCE	01-21-99
GRADED SHOULDER WIDTH	01-21-99

UNDERGROUND UTILITIES
2 WORKING DAYS
BEFORE YOU DIG
CALL 800-362-2764 (TOLL FREE)
OHIO UTILITIES
PROTECTION SERVICE
NON-MEMBER
MUST BE CALLED DIRECTLY

STATE OF OHIO
KURT K. RIM
34505
REGISTERED PROFESSIONAL ENGINEER

Kurt K. Rim

PLANS PREPARED BY
OSBORN
THE OSBORN ENGINEERING COMPANY
CLEVELAND, OHIO 44114

STANDARD CONSTRUCTION DRAWINGS

BP-3.1M	10-28-94	GR-5.2M	11-30-94								
BP-5.1M	10-28-94	GR-5.3M	11-30-94			MT-35.10M	01/30/95	TC-21.20M	12/10/96		
						MT-35.11M	01/30/95	TC-22.10M	02/01/94	TC-71.10M	09/01/93
I-1.2M	09-06-95	RM-1.1M	04/08/97			MT-95.30M	04/25/94	TC-41.10M	03/31/94	TC-72.20M	09/01/93
I-2.2M	09-06-95	RM-4.3M	10/21/97			MT-95.81M	04/25/94	TC-41.20M	07/01/94	TC-81.20M	11/24/93
		RM-4.4M	10/21/97			MT-97.10M	04/25/94	TC-41.41M	03/31/94	TC-82.10M	11/24/93
GR-1.1M	10-21-97	CB-1.1M	07-12-95							TC-83.10M	11/24/93
GR-1.2M	01-03-96	CB-1.2M	07-12-95	HL-10.11M	05/01/95	MT-98.13M	06/24/93	TC-42.10M	03/31/94	TC-83.20M	11/24/93
GR-1.3M	11-30-94	CB-3.2M	07-12-95	HL-10.12M	05/01/95	MT-98.15M	06/24/93	TC-42.20M	03/31/94		
GR-2.1M	04-14-98	MH-1.2M	09-06-95	HL-30.11M	03/31/95	MT-98.16M	06/24/93	TC-52.10M	07/29/94	TC-85.10M	11/24/93
GR-3.1M	10-21-97			HL-30.21M	03/31/95	MT-99.20M	01/30/95	TC-52.20M	07/29/94	TC-85.20M	11/24/93
GR-3.2M	10-21-97	DM-1.1M	10-21-97	HL-30.22M	03/31/95	MT-101.60M	04/24/94	TC-61.10M	03/31/94		
GR-4.1M	10-30-94	DM-1.2M	10-21-97	HL-60.11M	05/01/95	MT-105.10M	04/25/94	TC-65.10M	11/01/95		
GR-4.2M	10-21-97	DM-2.1M	06-30-95	HL-60.12M	03/31/95	MT-105.11M	04/25/94	TC-65.11M	11/01/95		
GR-4.3M	10-21-97	DM-4.2M	06-30-95					TC-65.12M	11/01/95		
GR-4.4M	11-30-94	DM-4.3M	06-30-95								
GR-5.1M	04-21-95	DM-4.4M	06-30-95								

SUPPLEMENTAL SPECIFICATIONS	
SS 806	09/09/97
SS 932	10/02/96
SS 843	05/05/98
SPECIAL PROVISIONS	
WATERWAY PERMIT	
NO. 3 MAINTENANCE	
DATE: 12/10/98	

STA-21-16.574
990303
DIST. 04
05-12-99
PID # 12479

Filename : VOL1X/0007-M/0830/CIVIL/0830000.DWG
Plotted : 12/07/98 - 15:25
Drawn By/Date : KGrroll / 12-07-98 (15:25)

metric units

HORIZONTAL SCALE IN METERS

CALCULATED –

CHECKED –

SCHEMATIC PLAN

BEGIN WORK STA. 16+560

BEGIN PROJECT STA. 16+574
S.L.D.16.574 km

TEA 21

℄ WALNUT AVE. N66°22'18"E

9+900

PC STA. 16+897.973

TUSCARAWAS RIVER

℄ OF SURVEY AND AND R/W S.R 21

WETMORE CREEK PRESSURE CONDUIT

300 mm STORM

300 mm STORM

PT STA. 17+368.603

250 mm x 330 mm CONDUIT

CONRAIL SERVICE ROAD

110 mm CONC. PIPES

W. L. & E. R.R. CONRAIL R.R.

CONRAIL R.R.

9+900

STA. 17+637.668 ℄ S.R. 21 =
STA. 10+000 ℄ LILLIAN GISH BLVD. S.W.

STRUCTURE NO. STA-21-17756

MATCH LINE STA. 17+800 SEE SHEET

LINCOLN WAY

PC STA. 10+020.111

PC STA. 10+058.069

CURVE #2

CURVE #4

16+800

16+700

16+600

16+500

N40°18'29"W

CURVE #1A

N23°58'09"W

17+000

17+100 CURVE #1

17+200

17+300

17+400

N31°10'29"W

17+500

17+600

17+700

78°35'26"

00°36'04"

380 mm SAN.

10+100

LILLIAN GISH BLVD. S.W. N20°39'40"W

N70°14'05"E

TS STA. 17+692.220

SC STA. 17+783.660

89°39'33"

16+900

PT STA. 16+790.116

10+100

STA. 16+829.173 ℄ S.R. 21 =
STA. 10+000 ℄ WALNUT AVE.

STRUCTURE NO. STA-21-17122

STRUCTURE NO. STA-21-17193

STRUCTURE NO. STA-21-17250

CONRAIL R.R.

460 mm STORM

STRUCTURE NO. STA-21-17509

STRUCTURE NO. STA-21-17551

STA. 17+550.697 ℄ S.R. 21 =
STA. 10+000 ℄ TREMONT AVE. S.W.

℄ TREMONT AVE. S.W. N69°25'35"E

RAMP D

EDWIN AVE.

PC STA. 16+450.562

CURVE #1A DATA
P.I. STA. 16+621.499
Δ = 16°20'20" Rt.
R = 1190.713 m
T = 170.937 m
L = 339.554 m
E = 12.207 m
$e_{max.}$ = 0.027

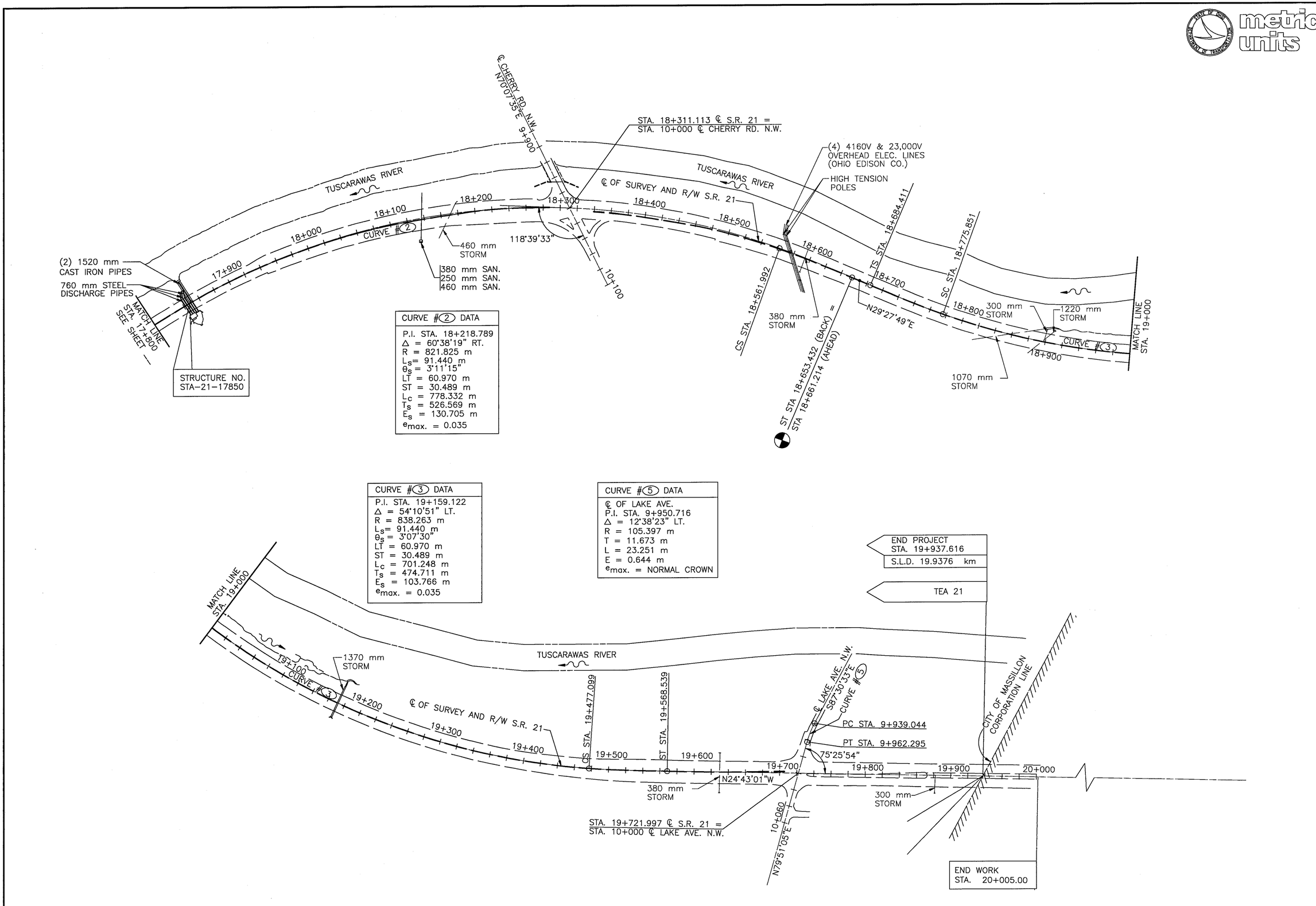
CURVE #1 DATA
P.I. STA. 17+133.599
Δ = 07°12'20" LT.
R = 3742.250 m
T = 235.626 m
L = 470.630 m
E = 7.411 m
$e_{max.}$ = NORMAL CROWN

CURVE #4 DATA ℄ LILIAN GISH BLVD.
P.I. STA. 10+044.415
Δ = 90°53'45" LT.
R = 23.927 m
T = 24.304 m
L = 37.959 m
E = 10.179 m
$e_{max.}$ = 0.040

CURVE #2 DATA
P.I. STA. 18+218.789
Δ = 60°38'19" RT.
R = 821.825 m
L_s = 91.440 m
θ_s = 3°11'15"
LT = 60.970 m
ST = 30.489 m
L_c = 778.332 m
T_s = 526.569 m
E_s = 130.705 m
$e_{max.}$ = 0.035

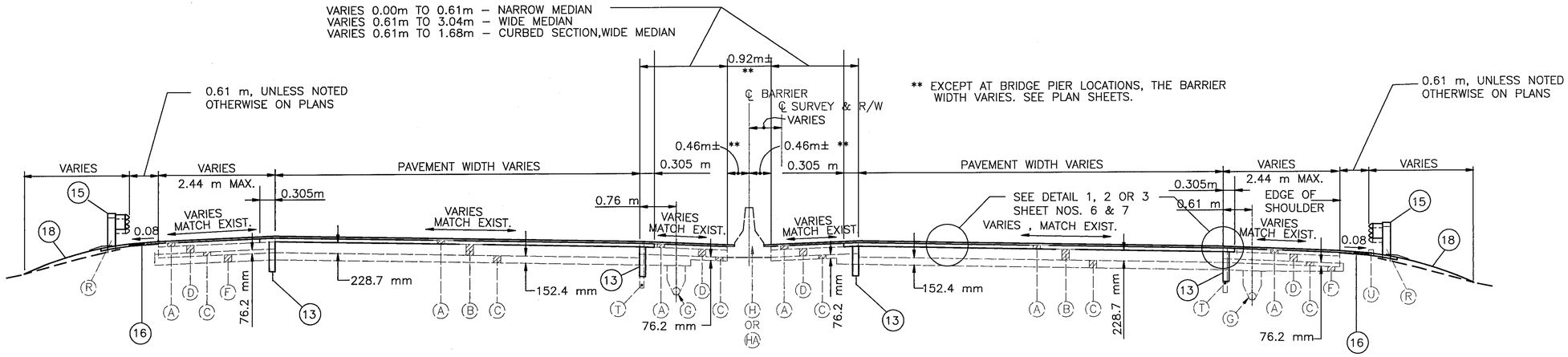
STA-21-16.574

Plotted: 9:01 AM 12-07-98
Plot Scale: 1"=1'
Drawn By/Date: KKerbs / 12-07-98 (18)
Name: V:\11M\ODOT-M\0839\CIVIL\08395002.DWG



metric units
HORIZONTAL SCALE IN METERS
20 0 20 60
CALCULATED
CHECKED
SCHEMATIC PLAN
STA-21-16.574
3
120
℄ CHERRY RD. N.W.
N70°07'35"E
9+900
STA. 18+311.113 ℄ S.R. 21 =
STA. 10+000 ℄ CHERRY RD. N.W.
(4) 4160V & 23,000V
OVERHEAD ELEC. LINES
(OHIO EDISON CO.)
HIGH TENSION
POLES
TUSCARAWAS RIVER
TUSCARAWAS RIVER
℄ OF SURVEY AND R/W S.R. 21
17+900
18+000
18+100
18+200
18+300
18+400
18+500
18+600
18+700
18+800
18+900
CURVE #2
CURVE #3
118°39'33"
10+100
460 mm
STORM
380 mm SAN.
250 mm SAN.
460 mm SAN.
(2) 1520 mm
CAST IRON PIPES
760 mm STEEL
DISCHARGE PIPES
MATCH LINE
STA. 17+800
SEE SHEET
STRUCTURE NO.
STA-21-17850
CS STA. 18+561.992
380 mm
STORM
ST STA 18+653.432 (BACK) =
STA 18+661.214 (AHEAD)
N29°27'49"E
TS STA. 18+684.411
SC STA. 18+775.851
300 mm
STORM
1220 mm
STORM
1070 mm
STORM
MATCH LINE
STA. 19+000
CURVE #2 DATA
P.I. STA. 18+218.789
Δ = 60°38'19" RT.
R = 821.825 m
Ls = 91.440 m
θs = 3°11'15"
LT = 60.970 m
ST = 30.489 m
Lc = 778.332 m
Ts = 526.569 m
Es = 130.705 m
emax. = 0.035
CURVE #3 DATA
P.I. STA. 19+159.122
Δ = 54°10'51" LT.
R = 838.263 m
Ls = 91.440 m
θs = 3°07'30"
LT = 60.970 m
ST = 30.489 m
Lc = 701.248 m
Ts = 474.711 m
Es = 103.766 m
emax. = 0.035
CURVE #5 DATA
℄ OF LAKE AVE.
P.I. STA. 9+950.716
Δ = 12°38'23" LT.
R = 105.397 m
T = 11.673 m
L = 23.251 m
E = 0.644 m
emax. = NORMAL CROWN
END PROJECT
STA. 19+937.616
S.L.D. 19.9376 km
TEA 21
MATCH LINE
STA. 19+000
19+100
CURVE #3
1370 mm
STORM
19+200
19+300
19+400
19+500
19+600
19+700
19+800
19+900
20+000
℄ OF SURVEY AND R/W S.R. 21
TUSCARAWAS RIVER
CS STA. 19+477.099
ST STA. 19+568.539
℄ LAKE AVE. N.W.
S87°30'33"E
CURVE #5
PC STA. 9+939.044
PT STA. 9+962.295
75°25'54"
N24°43'01"W
380 mm
STORM
300 mm
STORM
10+060
N79°51'05"E
STA. 19+721.997 ℄ S.R. 21 =
STA. 10+000 ℄ LAKE AVE. N.W.
CITY OF MASSILLON
CORPORATION LINE
END WORK
STA. 20+005.00

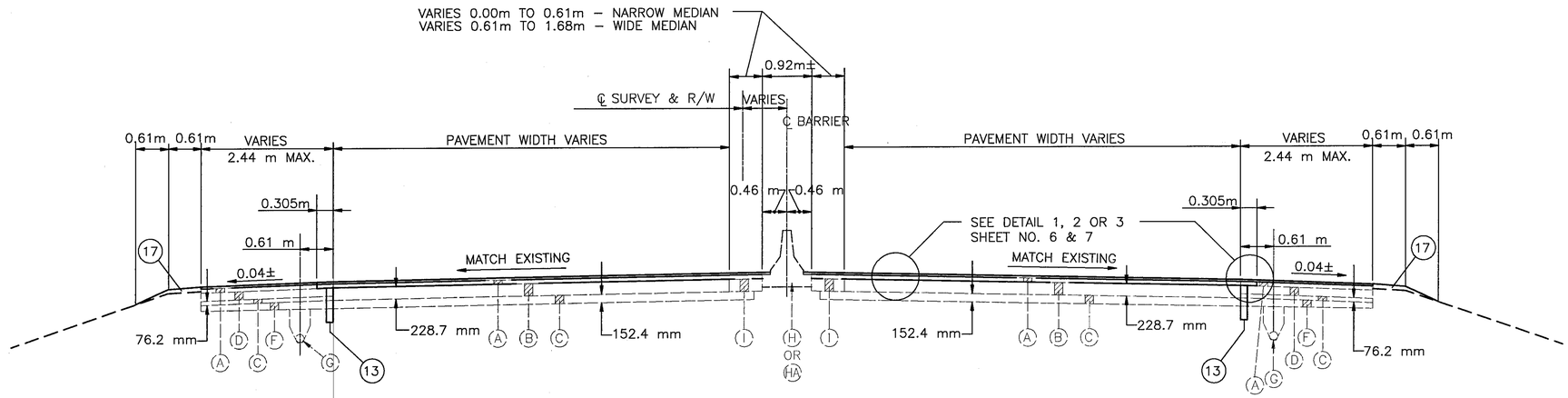
TYPICAL SECTIONS



SUPERELEVATED SECTION

CURVE 1A AREA	STA. 16+574.000	TO STA. 16+830.186	=	256.186 m	MAX. SUPER. 0.027
CURVE 2 AREA	STA. 17+650.421	TO STA. 18+653.432 BK.= STA. 18+661.214 AH'D.	=	1003.011 m	MAX. SUPER. 0.035
	STA. 18+661.214 AH'D.	TO STA. 18+672.813	=	11.599 m	
CURVE 3 AREA	STA. 18+672.813	TO STA. 19+610.339	=	937.526 m	MAX. SUPER. 0.035
		TOTAL		2208.322 m	

SUPERELEVATED TYPICAL SECTION SHOWN WITH WIDE MEDIAN SECTION.
FOR NARROW MEDIAN SECTION, SEE SECTION BELOW.



NORMAL SECTION

STA. 16+830.186	TO STA. 17+650.421	=	820.235 m	
STA. 19+610.339	TO STA. 19+720.599	=	110.260 m	
	TOTAL		930.495	

NORMAL TYPICAL SECTION SHOWN WITH NARROW MEDIAN SECTION.
FOR WIDE MEDIAN, SEE SECTION ABOVE.

FOR LEGEND, SEE SHEET 6 .

SEE PLAN SHEETS FOR:
- PAVEMENT & SHOULDER WIDTHS,
- INTERSECTION PAVEMENT WIDTHS,
- CURBED SECTION FOR NARROW & WIDE MEDIANS,
- BARRIER WIDTH TRANSITIONS AT BRIDGE PIERS,
- CURB/CURB & GUTTER SECTION AT EDGE OF PAVEMENT,
- ASPHALT CURB AT GUARDRAIL LOCATIONS,
- UNDERDRAIN LOCATIONS,
- GUARDRAIL LOCATIONS,
- LIMITING STATIONS FOR PORTIONS OF SHOULDER REPLACEMENT FOR MAINTENANCE OF TRAFFIC.

metric units

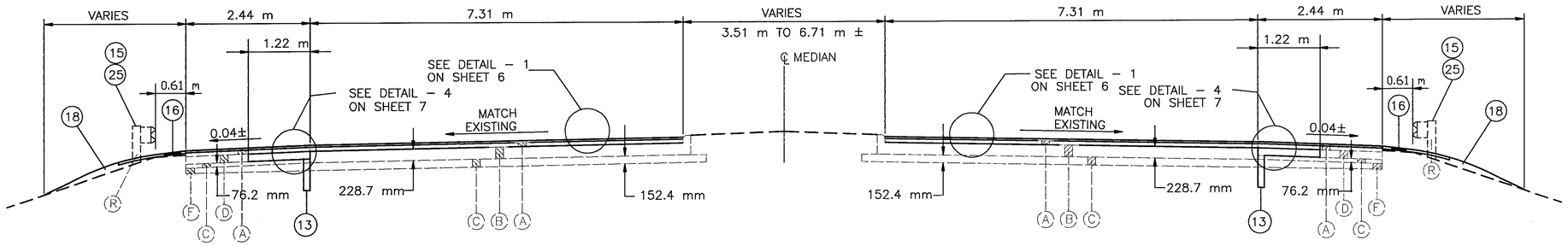
CALCULATED KNG
CHECKED GTA

TYPICAL SECTIONS

STA-21-16.574

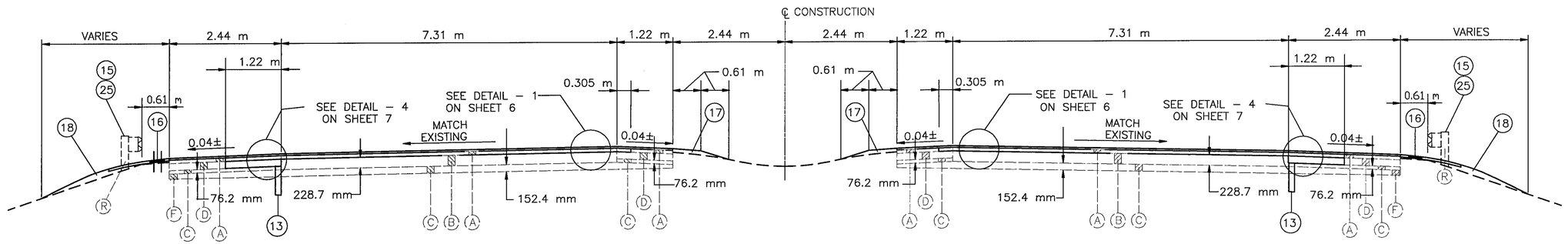
Filename : VOL1M/ODOT-M/0830/CIVIL/0830S004.DWG
Plot Scale : 1=1
Drawn By/Date : KKeracl / 12-07-98 (18:04)

TYPICAL SECTIONS



NORMAL SECTION

STA. 19+720.599 TO STA. 19+872.390 = 151.791 m



NORMAL SECTION

STA. 19+872.390 TO STA. 19+937.616 = 65.226 m

FOR TYPICAL SECTION NOTES, SEE SHEET 4 .
FOR LEGEND, SEE SHEET 6 .

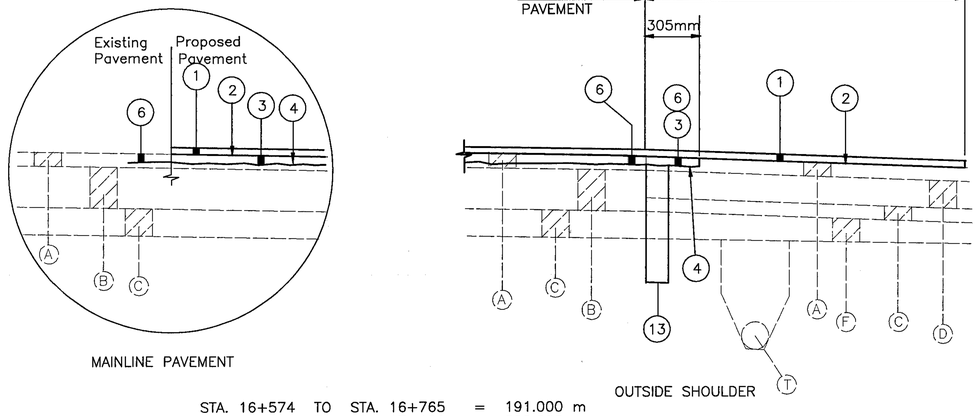
metric units

CALCULATED KNG
CHECKED GTA

TYPICAL SECTIONS

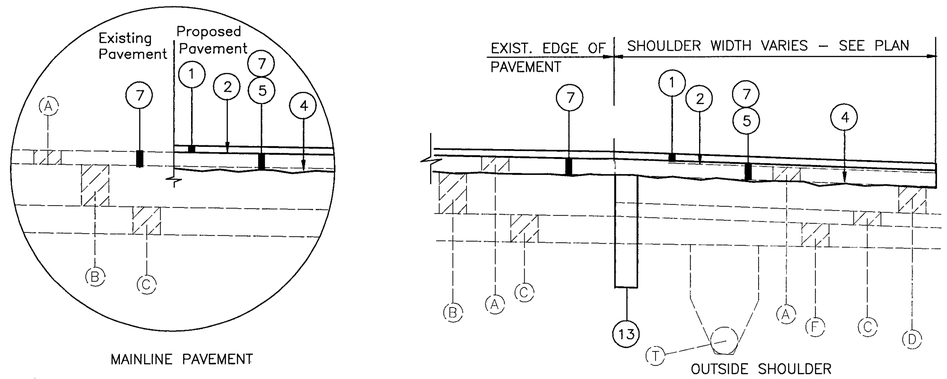
STA–21–16.574

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S005.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (18:04)



STA. 16+574	TO	STA. 16+765	=	191.000	m
STA. 16+890	TO	STA. 17+189	=	299.000	m
STA. 17+311	TO	STA. 17+487	=	176.000	m
STA. 17+820	TO	STA. 18+255	=	435.000	m
STA. 18+380	TO	STA. 19+660	=	1280.000	m
STA. 19+785	TO	STA. 19+937.616	=	152.616	m
		TOTAL		2533.616	m

DETAIL – 1
NORMAL RESURFACING



WALNUT RD.	STA. 16+765	TO	STA. 16+890	=	125.000 m
CHERRY RD.	STA. 18+255	TO	STA. 18+380	=	125.000 m
LAKE AVE.	STA. 19+660	TO	STA. 19+785	=	125.000 m
			TOTAL		375.000 m

DETAIL – 2
RESURFACING AT INTERSECTIONS

EXISTING PAVEMENT LEGEND

- (A) 76.2 mm ASPHALT CONCRETE
- (B) REINFORCED CONCRETE PAVEMENT
- (C) SUBBASE
- (D) 152.4 mm AGGREGATE BASE
- (E) 177.8 mm BITUMINOUS AGGREGATE BASE
- (F) 152.4 mm STABILIZED CRUSHED AGGREGATE
- (G) 152.4 mm UNDERDRAIN
- (H) CONCRETE BARRIER
- (HA) CONCRETE MEDIAN
- (I) 228.6 mm PLAIN CONCRETE
- (J) CONCRETE CURB, TYPE 2–A
- (K) 101.6 mm CONCRETE SIDEWALK
- (L) CONCRETE CURB & GUTTER
- (M) STONE UNDERDRAIN
- (N) 457.2 mm APPROACH SLAB
- (O) STONE CURB
- (P) LONGITUDINAL JOINT
- (Q) CONCRETE RETAINING WALL
- (R) GUARDRAIL
- (S) RAILING
- (T) SHALLOW UNDERDRAIN
- (U) ASPHALT CURB
- (V) 76.2 mm SUBBASE

PROPOSED PAVEMENT LEGEND:

- (1) ITEM 448 38mm ASPHALT CONCRETE SURFACE COURSE, TYPE 1H (SEE PROPOSAL NOTE)
- (2) ITEM 407 TACK COAT FOR INTERMEDIATE COURSE
- (3) ITEM 448 45mm ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64–28
- (3A) NOT USED
- (3B) ITEM 448 52mm ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64–28
- (4) ITEM 407 TACK COAT
- *(5) ITEM 448 90mm ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64–28
- (6) ITEM 254 PAVEMENT PLANING, BITUMINOUS (AVG. THICKNESS 45MM)
- (7) ITEM 254 PAVEMENT PLANING, BITUMINOUS (AVG. THICKNESS 90MM)
- (8) ITEM 305 230MM CONCRETE BASE
- (9) ITEM 304 AGGREGATE BASE
- (10) NOT USED
- (11) NOT USED
- (12) ITEM 301 125mm BITUMINOUS AGGREGATE BASE, PG64–22
- (13) ITEM 605 SHALLOW UNDERDRAIN
- (14) ITEM 203 EMBANKMENT, AS PER PLAN
- (15) ITEM 606 GUARDRAIL, TYPE 5
- (16) ITEM 448 50 mm ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 1, UNDER GUARDRAIL, PG64–22, AS PER PLAN
- (17) ITEM 203 LINEAR GRADING, METHOD A
- (18) NOT USED
- (19) NOT USED
- (20) NOT USED
- (21) ITEM 202 PAVEMENT REMOVED
- (22) NOT USED
- (23) NOT USED
- (24) ITEM 202 CONCRETE MEDIAN REMOVED
- (25) ITEM 202 GUARDRAIL REMOVED
- (26) ITEM 202 EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION

* ITEM 448 SHALL BE LAID IN TWO APPROXIMATE EQUAL LIFTS, FOR ADDITIONAL INFORMATION, SEE GENERAL NOTES

FOR TYPICAL SECTION NOTES, SEE SHEET 4.

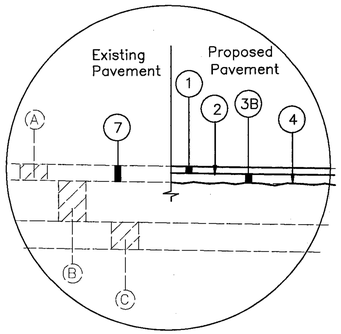
metric units

CALCULATED KNG
CHECKED GTA

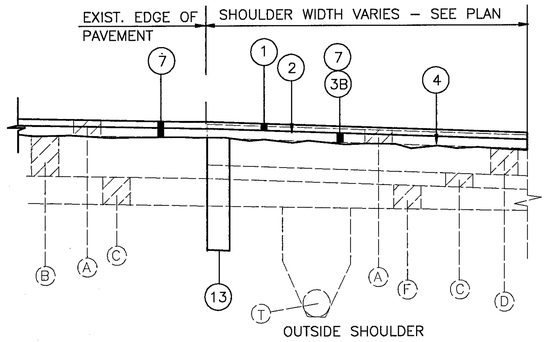
TYPICAL SECTION DETAILS

STA–21–16.574

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S006.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (18:04)



MAINLINE PAVEMENT

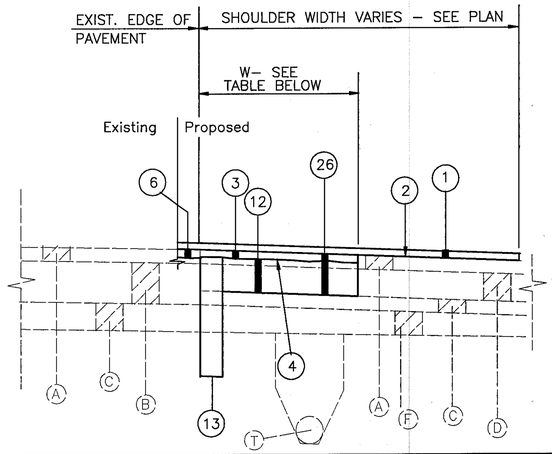


OUTSIDE SHOULDER

CONRAIL BR. AREA	STA. 17+189	TO	STA. 17+311	=	122.000 m
TREMONT AVE. BR. AREA THROUGH LINCOLN WAY BRIDGE AREA	STA. 17+487	TO	STA. 17+820	=	333.000 m
			TOTAL		455.000 m

DETAIL – 3
RESURFACING AT EXISTING OVERHEAD STRUCTURES AND LILLIAN GISH BOULEVARD INTERSECTION

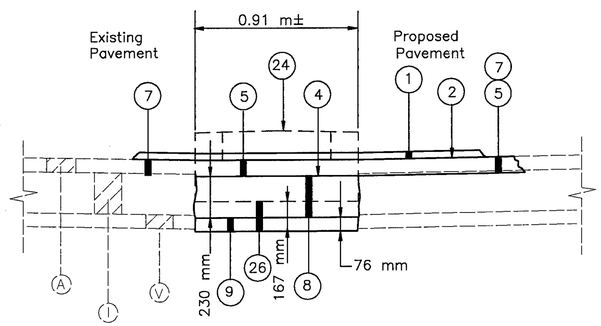
THE NORMAL RESURFACING (DETAIL 1 OR 2) SHALL TRANSITION TO THIS DETAIL IN 25 METER DISTANCE ON BOTHSIDES. THE STATIONS LISTED ABOVE INCLUDE THE 25 METER TRANSITIONS.



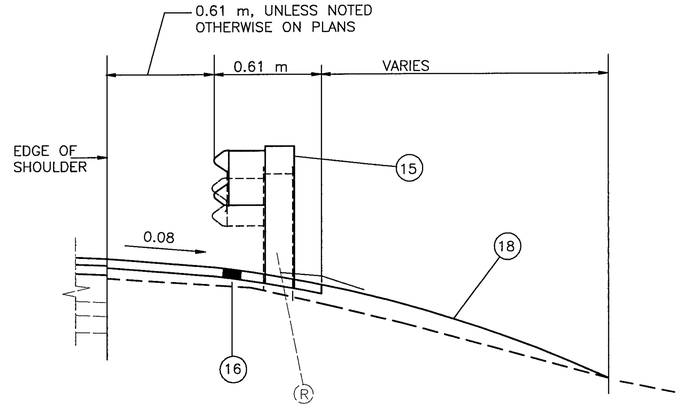
LOCATION	STA. TO STA.	LENGTH	AVERAGE WIDTH W	REMARKS
NORTHBOUND	16+500.00 TO 16+520.00	20.00 m	**2.44 m**	See Note 1
	16+660.00 TO 16+680.00	20.00 m	**2.44 m**	
	16+849.00 TO 17+540.00	691.00 m	1.22 m	
	17+945.00 TO 18+285.00	340.00 m	1.22 m	
	18+735.00 TO 19+566.80±	831.80 m	1.22 m	
	19+732.00 TO 19+996.18	264.18 m	1.22 m	
SUB–TOTAL NORTHBOUND		2166.98 m		
SOUTHBOUND	17+925.00 TO 18+280.00	355.00 m	1.22 m	
	18+480.00 TO 19+710.00	1230.00 m	1.22 m	
	19+845.00 TO 19+996.18	151.18 m	1.22 m	
SUB–TOTAL SOUTHBOUND		1736..18 m		

DETAIL – 4
OUTSIDE SHOULDER TREATMENT FOR MAINTENANCE OF TRAFFIC

NOTES:
1. SUBSTITUTE (3) WITH 45MM OF ITEM 448, TYPE 1H, AND OMIT (13), BETWEEN STA.16+500 AND STA.16+520

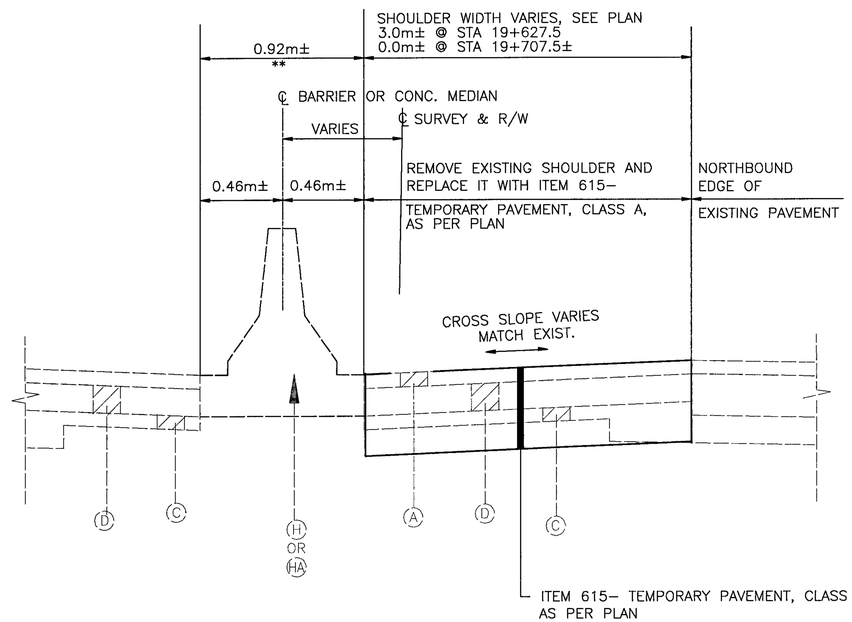


DETAIL – 6
EXISTING CONC. MEDIAN REMOVAL AND PAVEMENT PLACEMENT



DETAIL – 5
SHOULDER TREATMENT AT GUARDRAIL LOCATION

FOR LIMITS OF GUARDRAILS, SEE PLANS



LOCATION STA. TO STA.	LENGTH	AVERAGE WIDTH W
19+627.50 TO 19+706±	78.50m±	VARIES SEE PLAN

DETAIL – 7
INSIDE SHOULDER TREATMENT FOR MAINTENANCE OF TRAFFIC

FOR TYPICAL SECTION NOTES, SEE SHEET 4
FOR LEGEND, SEE SHEET 6.

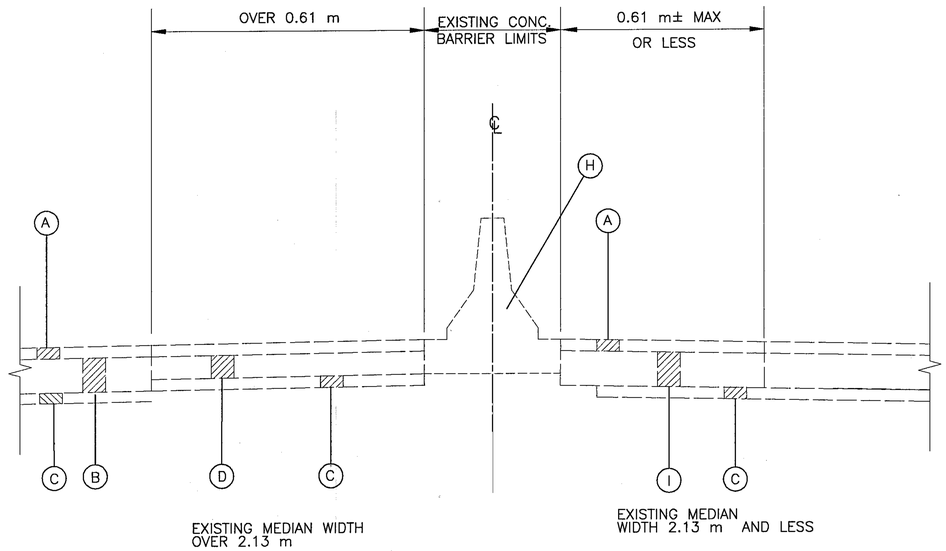
metric units

CALCULATED GTA
CHECKED KNG

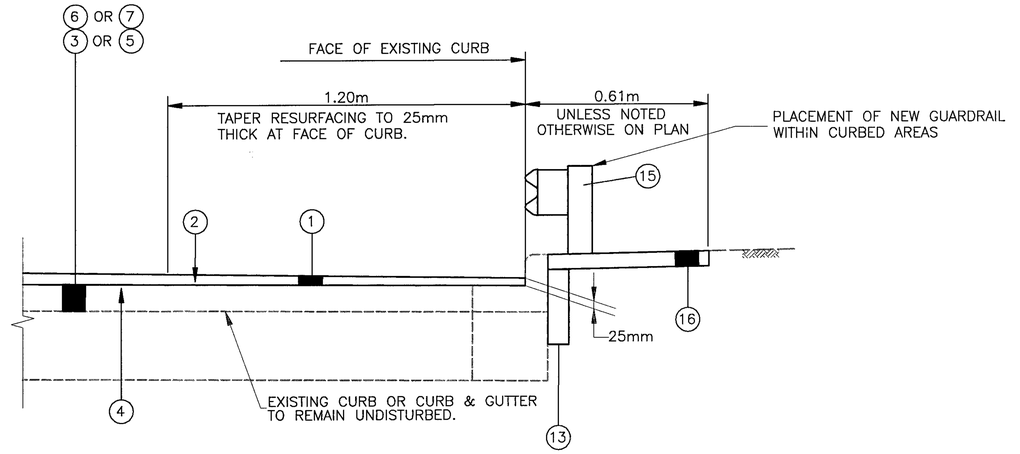
TYPICAL SECTION DETAILS

STA–21–16.574

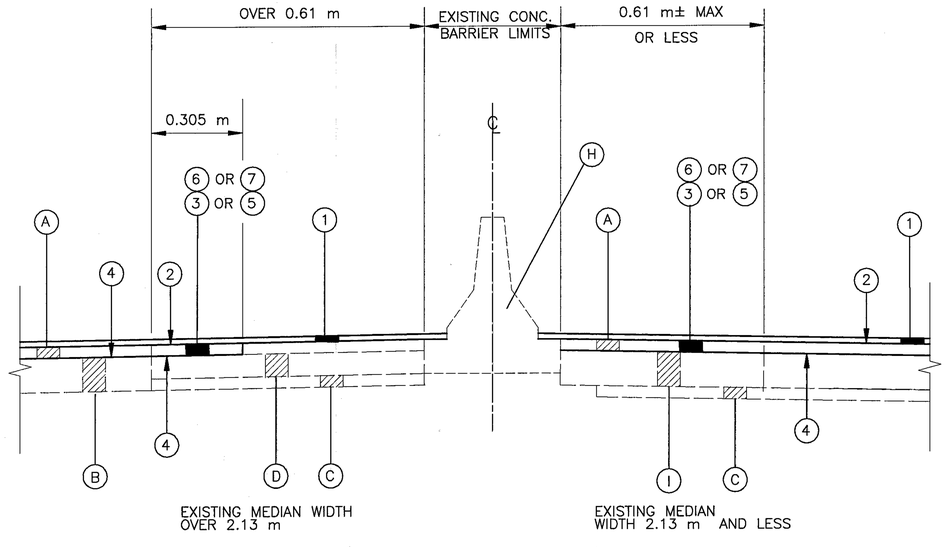
Filename : VOL1M/ODOT-M/0830/CIVIL/0830S007.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (18:04)



EXISTING PAVEMENT



PAVEMENT FEATHERING DETAIL AT CURB/CURB & GUTTER



PROPOSED PAVEMENT

INSIDE SHOULDER DETAIL

FOR TYPICAL SECTION NOTES, SEE SHEET 4.
FOR LEGEND, SEE SHEET 6.

metric units

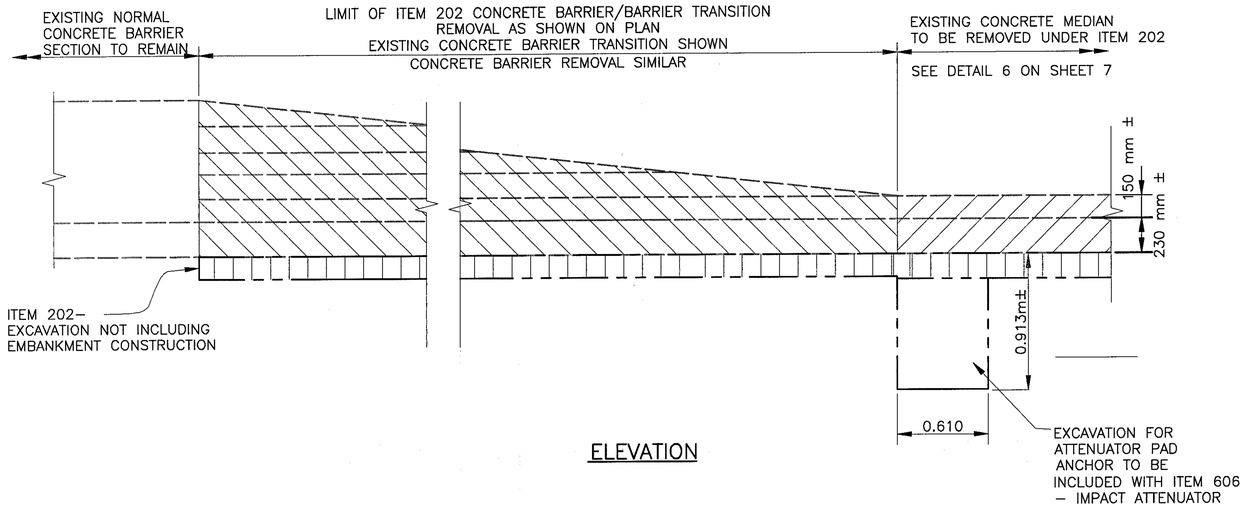
HORIZONTAL SCALE IN METERS 20 0 20 60

CALCULATED KNG
CHECKED GTA

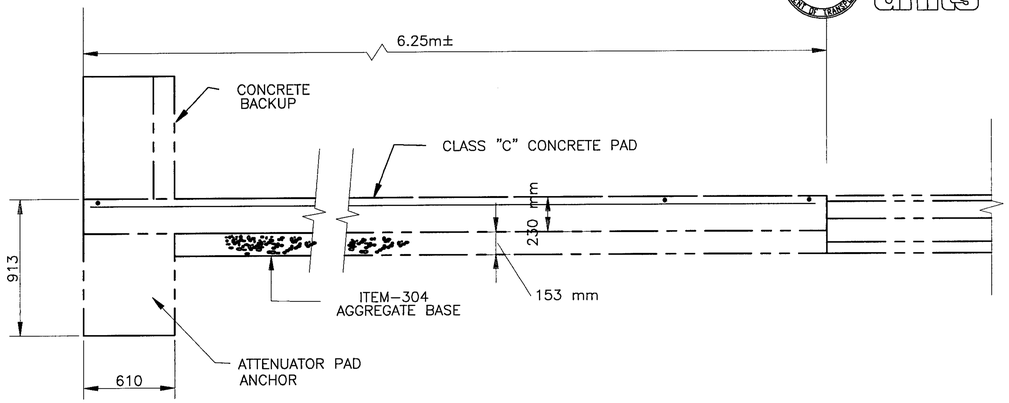
TYPICAL SECTION DETAILS

STA-21-16.574

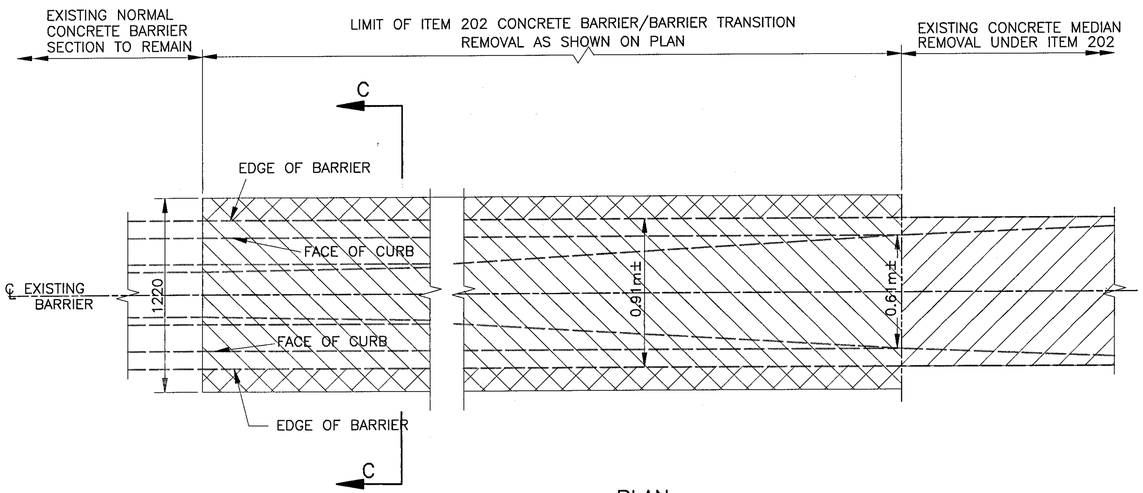
Filename : VOL1M/ODOT-M/0830/CIVIL/0830S008.DWG
Plot Scale : 1=0
Drawn By/Date : KGeroci / 12-07-98 (18:0)



ELEVATION

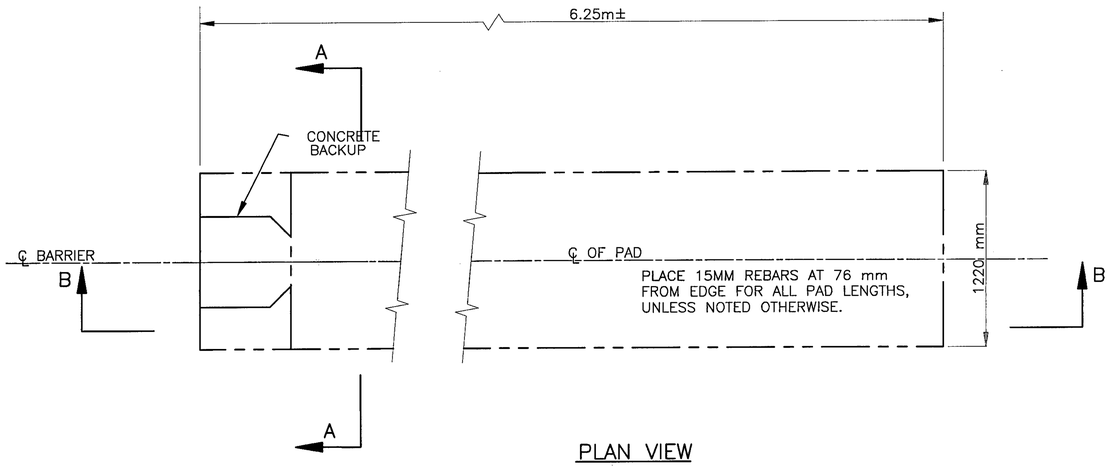


SECTION B–B



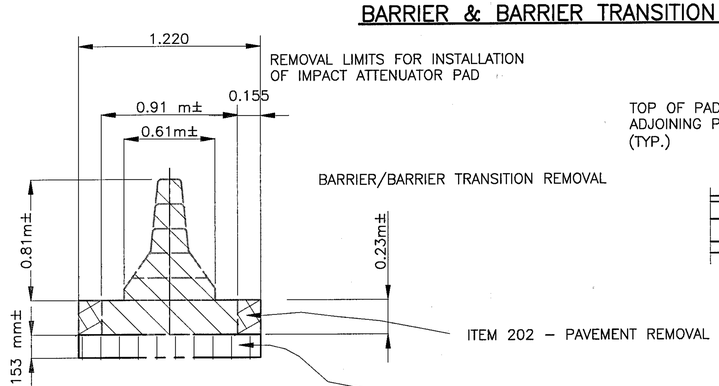
PLAN

BARRIER & BARRIER TRANSITION REMOVAL



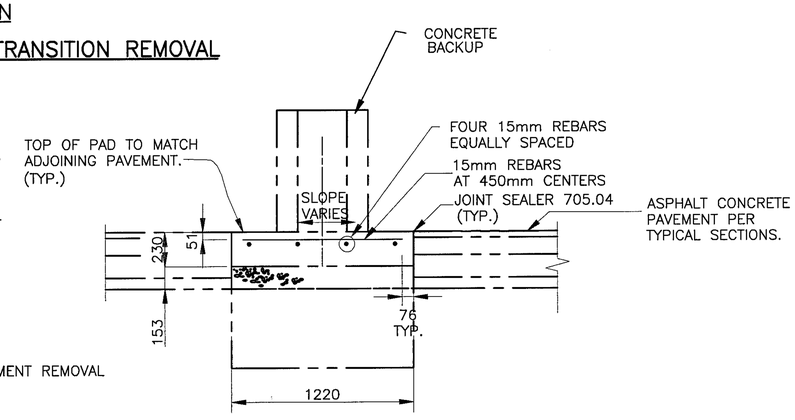
PLAN VIEW

CONCRETE PAD FOR IMPACT ATTENUATOR



EXISTING TRANSITION SECTION

SECTION C–C



SECTION A–A

NOTES:

1. CROSS SLOPE OF PAD SHALL NOT EXCEED 8 % AND NOT VARY MORE THAN 2 % FROM FRONT TO BACK
2. UNITS OF MEASUREMENT ARE MILLIMETERS UNLESS OTHERWISE NOTED.
3. FOR IMPACT ATTENUATOR ATTACHMENTS, CONCRETE BACKUP, CONCRETE ANCHOR, ADDITIONAL REINFORCEMENT & OTHER REQUIREMENTS SEE MANUFACTURER'S SHOP DRAWINGS.
4. ALL REINFORCING STEEL TO BE EPOXY COATED, GRADE–60
5. PAYMENT FOR CONCRETE PAD INCLUDING ALL REINFORCING SHALL BE INCLUDED WITH ITEM 606 – IMPACT ATTENUATOR, PER TYPE SPECIFIED.
   PAYMENT FOR AGGREGATE BASE AND EXCAVATION FOR PLACING AGGREGATE BASE SHALL BE CONSIDERED SEPARATELY IN ITEM 304 AND ITEM 202 RESPECTIVELY.

metric units

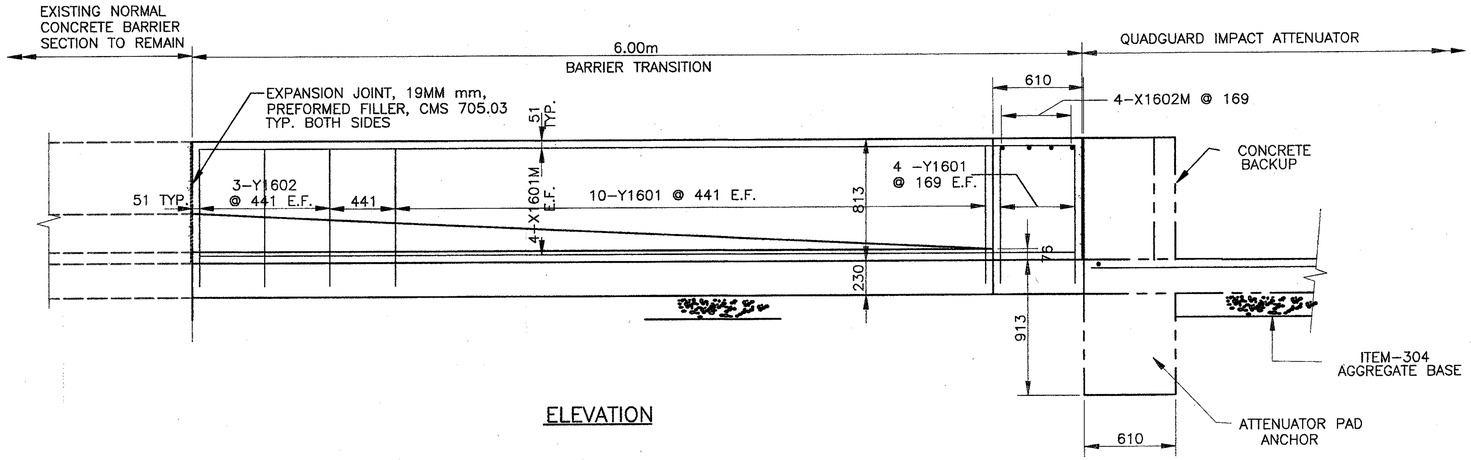
HORIZONTAL SCALE IN METERS 20 0 20 60

CALCULATED GTA
CHECKED KNG

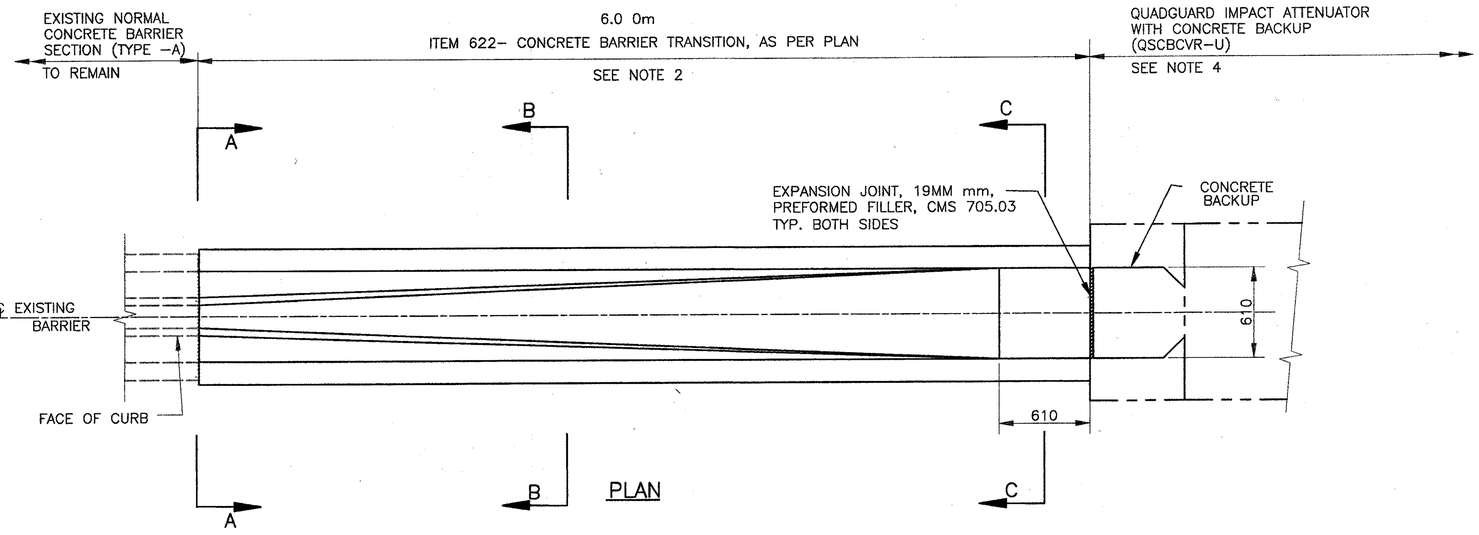
BARRIER REMOVAL & ATTENUATOR PAD DETAILS

STA–21–16.574

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S009.DWG
Plot Scale : 1:1=0
Drawn By/Date : KGeracci / 12-07-98 (18:0)



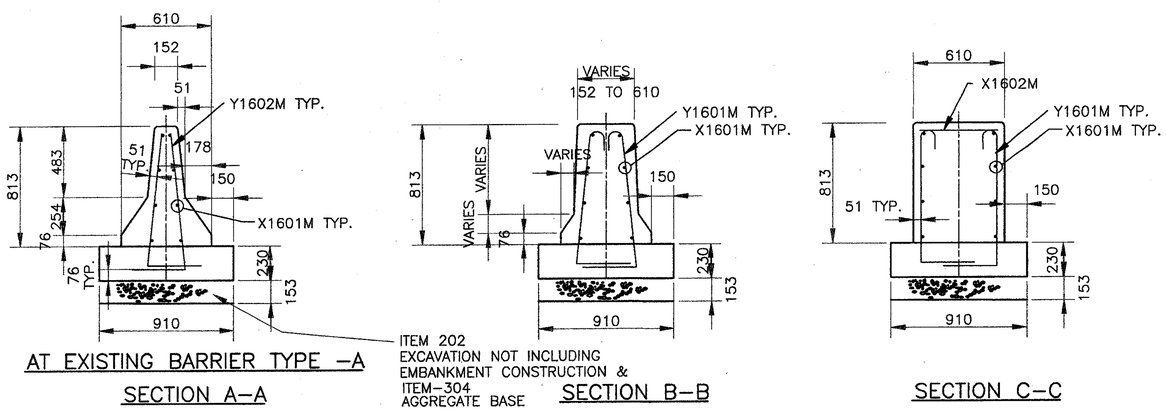
ELEVATION



PLAN

TRANSITION DETAILS

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



AT EXISTING BARRIER TYPE -A

SECTION A-A

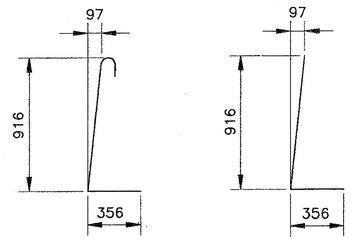
SECTION B-B

SECTION C-C

NOTES:

1. UNITS OF MEASUREMENT ARE MILLIMETERS UNLESS OTHERWISE NOTED.
2. FOR ADDITIONAL DETAILS, SEE STANDARD DRAWINGS RM-4.3M AND RM-4.4M.
3. PAYMENT FOR BARRIER TRANSITION SHALL BE CONSIDERED IN ITEM 622 - CONCRETE BARRIER, TYPE - A, AS PER PLAN.
4. FOR IMPACT ATTENUATOR ATTACHMENTS, CONCRETE BACKUP, CONCRETE ANCHOR, ADDITIONAL REINFORCEMENT & OTHER REQUIREMENTS SEE MANUFACTURER'S SHOP DRAWINGS.
5. ALL RINFORCING STEEL SHALL BE EPOXY COATED AND SHALL MEET THE REQUIREMENTS OF ITEM 509. THE REINFORCING STEEL SHALL NOT BE PAID SEPARATELY, IT SHALL BE INCLUDED WITH ITEM - 622 CONCRTE BARRIER, TYPE A, AS PER PLAN.
6. E.F. = EACH FACE

BAR MARK	LENGTH	SHAPE	QUANTITY	WEIGHT KG.
X1601M	5898	STR.	8	73.23
X1602M	508	STR.	4	3.15
Y1601M	1452	BENT	28	63.10
Y1602M	1272	BENT	6	11.84
TOTAL WEIGHT PER 6 METER LENGTH OF TRANSITION. FOR INFORMATION ONLY.				151.32



Y1601M

Y1602M

metric units

HORIZONTAL SCALE IN METERS 20 0 20 60

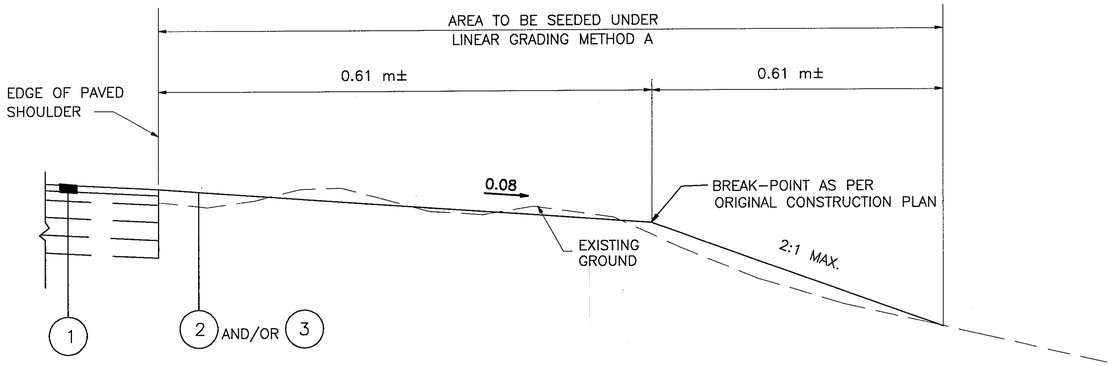
CALCULATED GTA

CHECKED KNG

BARRIER TRANSITION DETAILS

STA-21-16.574

METHOD A



LEGEND

1	VARIES	ASPHALT CONCRETE PAVED SHOULDER
2	203	LINEAR GRADING, METHOD A
3	203	EMBANKMENT, AS PER PLAN (IF REQUIRED, SEE NOTE THIS SHEET)

NOTE:
ITEM 203 – EMBANKMENT, AS PER PLAN SHALL MEET THE SPECIFICATIONS OF ITEM 203 EXCEPT THAT GRANULAR MATERIAL AS PER 203.02 SHALL BE EXCLUDED. THE METHOD OF MEASUREMENT SHALL BE DESCRIBED IN SECTION 203.15(e). THIS ITEM IS PROVIDED IN CASE WINDROWED MATERIAL IS NOT AVAILABLE NOR SUFFICIENT. EMBANKMENT MAY BE OBTAINED FROM WITHIN THE EXISTING R/W AS APPROVED BY THE ENGINEER.

LINEAR GRADING – METHOD A

THIS WORK SHALL CONSIST OF REGRADING THE EXISTING SHOULDER IN NON-GUARDRAIL AREAS ON THE MAINLINE OUTSIDE AND INSIDE SHOULDERS AND ON BOTH INSIDE AND OUTSIDE SHOULDERS OF THE RAMPS AS INDICATED IN THE SKETCH. REGRADING WILL BE ACCOMPLISHED BY REMOVING EXCESS TURF BETWEEN PAVED SHOULDER AND 0.61m± OUTSIDE THE BREAK-OVER POINT USING A SLOPE OF APPROXIMATELY 0.08. EXCESS MATERIAL SHALL BE WINDROWED ON THE SHOULDER AND REMOVED BY THE CONTRACTOR. ANY VOIDS OR IRREGULARITIES BETWEEN THE EDGE OF PAVED SHOULDER AND THE LIMITS SHOWN SHALL BE FILLED AND ADEQUATELY COMPACTED USING EXCESS MATERIAL. EXISTING RUTTED AREAS CAUSED BY SURFACE EROSION SHALL BE SCARIFIED PRIOR TO FILLING. ITEM 203 – EMBANKMENT, AS PER PLAN SHALL BE PROVIDED WHERE WINDROWED MATERIAL IS NOT AVAILABLE. ADEQUATE QUANTITY SHALL BE PROVIDED TO COMPLETE THE TYPICAL SECTION AS SHOWN. AFTER GRADING OPERATION IS COMPLETED THE DISTURBED AREA SHALL BE SEEDED AND MULCHED AS PER 659. ALL COMPACTION SHALL BE AS PER ITEM 203.

THE METHOD OF MEASUREMENT SHALL BE KILOMETERS MEASURED SEPARATELY FOR EACH SIDE OF EACH DIRECTIONAL LANE AND SHALL INCLUDE ALL WORK REQUIRED AS DESCRIBED ABOVE INCLUDING THE NECESSARY SEEDING.

THERE MAY BE AREAS WHERE LINEAR GRADING MAY NOT BE REQUIRED IN THE FIELD. THE ENGINEER SHALL DETERMINE THESE LOCATIONS AND APPROPRIATE DEDUCTION MADE AS A RESULT OF THIS FIELD INVESTIGATION.

THE COST OF THE ABOVE OPERATION, EXCEPT FOR ITEM 203 EMBANKMENT, AS PER PLAN, SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 203 – LINEAR GRADING, METHOD A

ESTIMATED QUANTITIES

ITEM 203 LINEAR GRADING, METHOD A (SEE SHEET No. 57 FOR LOCATIONS AND QUANTITIES)

ITEM 203 EMBANKMENT, AS PER PLAN = 165 CU M

metric units

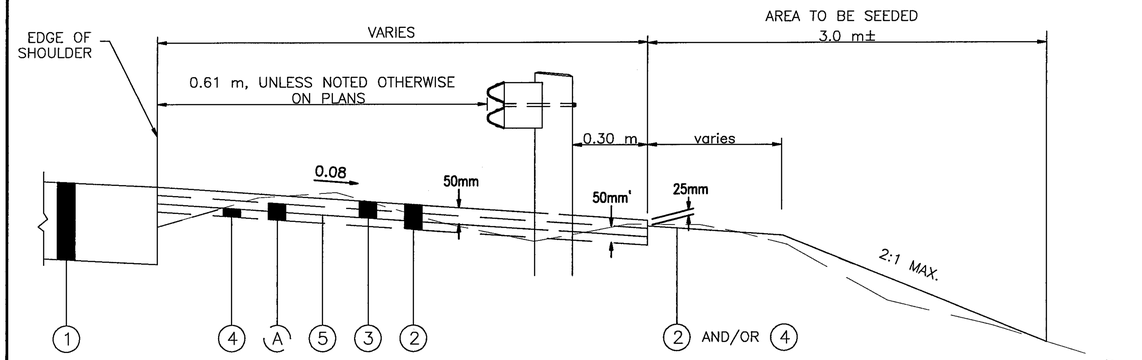
CALCULATED KNG
CHECKED GTA

LINEAR GRADING – METHOD A

STA-21-16.574

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S011.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (18:05)

METHOD C



LEGEND

(1)		PROPOSED ASPHALT SHOULDER
(2)	203	LINEAR GRADING, METHOD C
(3)	448	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, UNDER GUARDRAIL, PG64–22, AS PER PLAN
(4)	203	EMBANKMENT, AS PER PLAN (IF REQUIRED, SEE NOTE THIS SHEET)
(5)	SPECIAL	HERBICIDAL SPRAYING, MISC., APPLICATION UNDER ASPHALT
(A)		EXISTING PAVING UNDER GUARDRAIL

ITEM 203 LINEAR GRADING, METHOD C

THIS WORK SHALL CONSIST OF GRADING THE EXISTING OUTSIDE AND INSIDE SHOULDER BETWEEN THE EDGE OF SHOULDER AND THE LIMITS SHOWN IN AREAS WHERE PAVING UNDER GUARDRAIL EXISTS. IT SHALL ALSO CONSIST OF REMOVING THE EXISTING PAVING UNDER THE GUARDRAIL AND RESHAPING THE AREA TO PROVIDE A SUITABLE COMPACTED EMBANKMENT FOR THE 50 mm THICK COURSE OF ITEM 448 AS SHOWN IN THE ABOVE DETAIL.

THIS EXISTING PAVING SHALL BE REMOVED IN SUCH A MANNER AS TO LEAVE A STRAIGHT VERTICAL EDGE AND NOT DAMAGE THE EXISTING SHOULDER. ANY DAMAGE TO THE EXISTING SHOULDER SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AS DIRECTED BY THE ENGINEER.

ITEM 203 EMBANKMENT, AS PER PLAN HAS BEEN PROVIDED TO BE USED WHERE ADDITIONAL MATERIAL IS NECESSARY TO COMPLETE THE ABOVE DESCRIBED WORK. COMPACTION OF THE EMBANKMENT SHALL BE AS PER ITEM 203.

THE APPLICATION OF A HERBICIDE SUCH AS TREFLAN E.C. OR APPROVED EQUAL SHALL BE MADE ONLY WHEN THE FINAL GRADE IS ESTABLISHED AFTER ADDITIONS OF ANY EMBANKMENT. ALL PLANT MATERIAL SUCH AS RHIZOMES, ROOTS OR OTHER VEGETATIVE PLANT MATERIAL SHALL BE REMOVED PRIOR TO PLACEMENT OF EMBANKMENT. PAVING SHOULD FOLLOW HERBICIDE APPLICATIONS AS SOON AS POSSIBLE. THE CONTRACTOR SHALL BE PROPERLY LICENSED TO APPLY HERBICIDES AND ADHERE STRICTLY TO LABEL INSTRUCTIONS OF ANY HERBICIDE APPROVED FOR THIS USE. MANUFACTURER'S APPLICATION RATE LISTED ON THE PRODUCT WILL BE USED.

AREAS DISTURBED BEYOND THE ITEM 448 LIMIT SHALL BE GRADED TO MEET THE EXISTING BREAKPOINT AND SEEDED AND MULCHED AS PER 659.

THE METHOD OF MEASUREMENT SHALL BE KILOMETERS OF GUARDRAIL PAVED UNDER AND SHALL INCLUDE ALL WORK REQUIRED AS DESCRIBED ABOVE EXCEPT FOR ITEM 448 ASPHALT CONCRETE AND ITEM 203 EMBANKMENT, AS PER PLAN. THE COST FOR THE ABOVE OPERATION SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 203 LINEAR GRADING, METHOD C.

ITEM 203 EMBANKMENT, AS PER PLAN SHALL MEET THE SPECIFICATIONS OF ITEM 203 EXCEPT THAT GRANULAR MATERIAL AS PER 203.02 SHALL BE EXCLUDED. THE METHOD OF MEASUREMENT SHALL BE AS DESCRIBED IN SECTION 203.15(e). THIS ITEM IS PROVIDED IN CASE WINDROWED MATERIAL IS NOT AVAILABLE NOR SUFFICIENT. EMBANKMENT MAY BE OBTAINED FROM WITHIN THE EXISTING R/W, AS APPROVED BY THE ENGINEER.

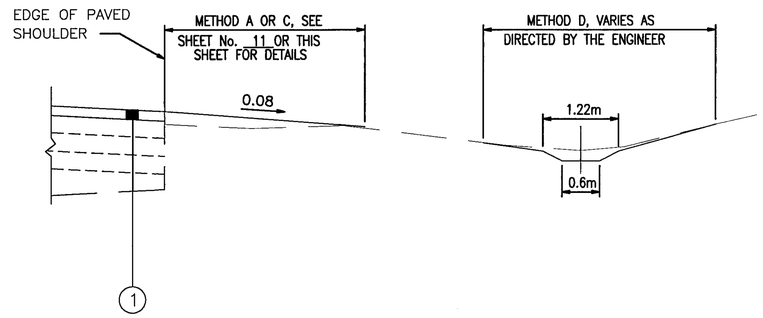
ESTIMATED QUANTITIES

ITEM 203 LINEAR GRADING, METHOD C (SEE SHEET No. 57 FOR LOCATIONS AND QUANTITIES)

ITEM 448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I, UNDER GUARDRAIL, PG64–22, AS PER PLAN SEE SHEET NO. 59 FOR LOCATION AND QUANTITY

ITEM 203 EMBANKMENT, AS PER PLAN = 305 , CU. METER

METHOD D



LINEAR GRADING – METHOD D

THIS WORK SHALL CONSIST OF REGRADING AND RE–ESTABLISHING THE EXISTING DITCH FLOW LINES.

ANY VOIDS OR IRREGULARITIES BETWEEN THE BREAK POINT AND THE DITCH SHALL BE FILLED AND COMPACTED, AS PER 203, USING THE EXCESS MATERIAL.

EMBANKMENT, AS PER PLAN, SHALL BE PROVIDED IF NO EXCESS MATERIAL EXISTS. EMBANKMENT, AS PER PLAN, SHALL MEET THE SPECIFICATIONS OF ITEM 203 EXCEPT GRANULAR MATERIAL AS PER 203.02 SHALL BE EXCLUDED. EMBANKMENT, AS PER PLAN MAY BE OBTAINED FROM WITHIN THE R/W AS APPROVED BY THE ENGINEER. WHERE AREAS ARE REGRADED, THEY SHALL BE SEEDED AND MULCHED AS PER ITEM 659.09. THE METHOD OF MEASUREMENT SHALL BE THE ACTUAL LENGTH MEASURED IN THE UNITS SPECIFIED AND SHALL INCLUDE ALL WORK REQUIERED AS DESCRIBED ABOVE.

PAYMENT FOR ALL OF THE WORK LISTED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203 – LINEAR GRADING METHOD D.

SEE SHEET No. 57 FOR LOCATIONS AND QUANTITIES.

metric units

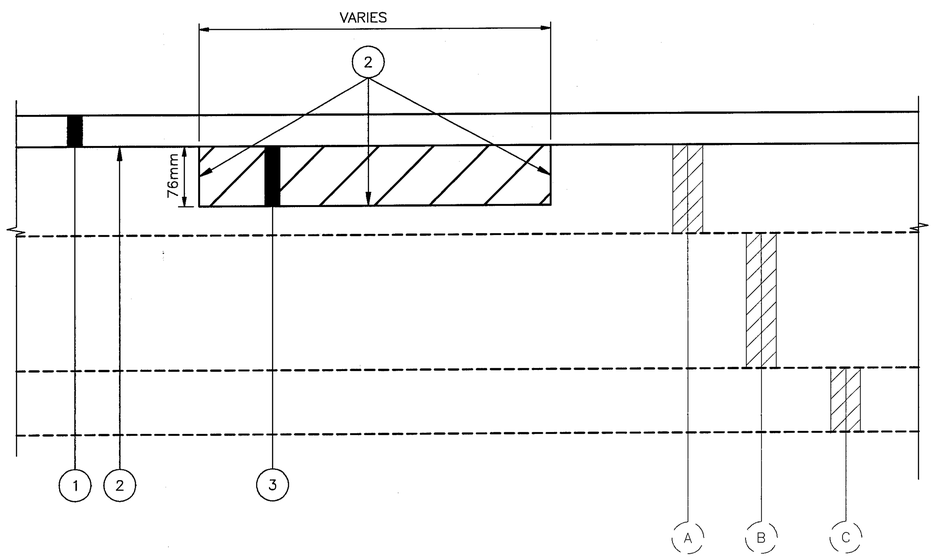
CALCULATED KNG
CHECKED GTA

LINEAR GRADING – METHOD C & D

STA–21–16.574

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S012.DWG
Last Saved By/Date : KGrecol / 12-07-98 (18:05)

ITEM 251 PARTIAL DEPTH PAVEMENT REPAIR



ITEM 251 PARTIAL DEPTH PAVEMENT REPAIR

A QUANTITY OF THIS ITEM SHALL BE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER.
THE ITEM SHALL CONSIST OF PARTIAL DEPTH REMOVAL OF EXISTING CONCRETE &/OR ASPHALT PAVEMENT IN AREAS EXHIBITING DETERIORATION AT THE SURFACE, APPLYING TACK COAT AND PLACING AND COMPACTING ASPHALT CONCRETE. THE ASPHALT CONCRETE SHALL MEET THE REQUIREMENTS OF ITEM 448 – ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, PG64–28.
THE ASPHALT CONCRETE SHALL BE COMPACTED WITH A TYPE I PNEUMATIC TIRE ROLLER AND A STEEL WHEEL ROLLER AS PER 401.11.

PAYMENT SHALL BE BASED ON THE ACTUAL NUMBER OF SQUARE METERS OF PAVEMENT REPAIRED.
FOR ESTIMATED QUANTITIES SEE SHEET 15.

LEGEND

1	VARIES	PROPOSED SURFACE TREATMENT (38mm TO 90mm)
2	407	TACK COAT
3	251	76mm PARTIAL DEPTH PAVEMENT REPAIR

A EXISTING ASPHALT PAVEMENT – THICKNESS VARIES FROM 76.2mm TO 90mm.

B EXISTING REINFORCED CONCRETE PAVEMENT AT MAINLINE PAVEMENT, CONCRETE BASE OR 152.4 mm AGGREGATE BASE AT SHOULDERS.

C EXISTING SUBBASE UNDER MAINLINE PAVEMENT AND SHOULDERS.

NOTE:
FOR EXISTING PAVEMENT MAKE–UP, SEE TYPICAL SECTIONS.

metric units

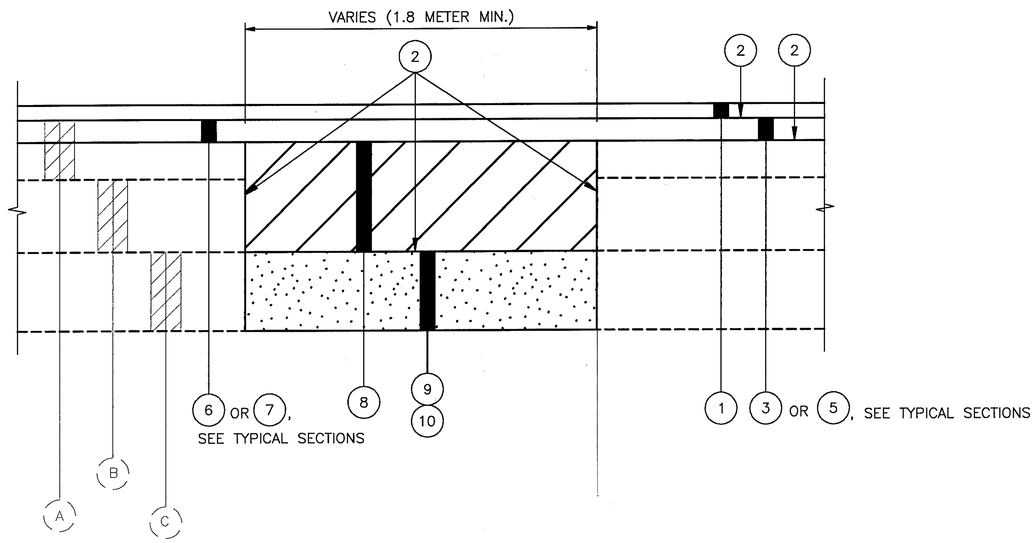
CALCULATED KNG
CHECKED GTA

PAVEMENT REPAIR – PARTIAL DEPTH

STA–21–16.574

Filename : VOL1M/ODOT-M/0830/CIVIL/08305013.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (18:05)

ITEM 253 PAVEMENT REPAIR (FULL-DEPTH)



LEGEND

(1)	448	ASPHALT CONCRETE, SURFACE COURSE, TYPE 1H (SEE PROPOSAL NOTES)
(2)	407	TACK COAT
(3)	448	ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, PG64-28
(4)		NOT USED
(5)	301	BITUMINOUS AGGREGATE BASE COURSE, PG64-22, AS PER PLAN
(6)	254	PAVEMENT PLANING, BITUMINOUS, AS PER PLAN (AVG. THICKNESS 45 mm)
(7)	254	PAVEMENT PLANING, BITUMINOUS, AS PER PLAN (AVG. THICKNESS, 90mm)
(8)	253	PAVEMENT REPAIR
(9)	304	AGGREGATE BASE
(10)	203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION

(A) EXISTING ASPHALT PAVEMENT

(B) EXISTING REINFORCED CONCRETE PAVEMENT (229mm-254mm)

(C) EXISTING SUBBASE

ITEM 253 PAVEMENT REPAIR (MAINLINE PAVEMENT ONLY)

A QUANTITY OF THIS ITEM SHALL BE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER. THIS ITEM SHALL CONSIST OF REPAIRING EXISTING LOCATIONS EXIBITING EVIDENCE OF BASE OR SUBBASE FAILURE. NO REPAIR SHALL BE LESS THAN 1.8 METERS WIDE.

THE DETERIORATED PAVEMENT SHALL BE REMOVED FULL-DEPTH AND REPLACED WITH 301 BITUMINOUS AGGREGATE BASE. THE MAXIMUM COMPACTED DEPTH OF ANY ONE LAYER SHALL BE 100 mm.

THE FINAL LIFT SHALL BE COMPACTED WITH A TYPE 1 PNEUMATIC TIRE ROLLER IN ACCORDANCE WITH 401.11. AT LEAST EIGHTEEN PASSES SHALL BE MADE OVER ANY GIVEN POINT ON THE SURFACE OF THE PATCH. A PASS IS DEFINED AS ONE MOVEMENT OF THE ROLLER SURFACE OF THE PATCH. AS THE ROLLING PROGRESSES, ADDITIONAL PATCHING MATERIAL SHALL BE ADDED AS NECESSARY TO PRODUCE A SMOOTH SURFACE WHICH IS AT LEAST FLUSH WITH BUT NOT MORE THAN 9.5 mm ABOVE THE SURFACE OF THE EXISTING PAVEMENT. VARIATION IN EXCESS OF THIS TOLERANCE SHALL BE CORRECTED BY ADDING AND COMPACTING OR BY REMOVING MATERIAL IN A MANNER SATISFACTORY TO THE ENGINEER.

PAYMENT SHALL BE BASED ON THE ACTUAL NUMBER OF SQUARE METERS OF PAVEMENT REMOVED AND REPLACED TO THE LIMITS DESIGNATED BY THE ENGINEER.
FOR ESTIMATED QUANTITY SEE SHEET NO. 15 .

ITEM 203 EXCAVATON NOT INCLUDING EMBANKMENT CONSTRUCTION

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AND DISPOSING OF ALL UNSUITABLE MATERIAL BY EXCAVATING THE EXISTING SUBGRADE AND SUBBASE TO AN AVERAGE DEPTH OF 152 mm OR AS DIRECTED BY THE ENGINEER. EXACT LIMITS OF REMOVAL SHALL BE DETERMINED BY THE ENGINEER. ALL EQUIPMENT, LABOR, TOOLS, AND INCIDENTIALS NECESSARY TO COMPLETE THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 203 EXCAVATON NOT INCLUDING EMBANKMENT CONSTRUCTION 1200 CU M

ITEM 304 AGGREGATE BASE

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED AND SHALL BE USED AS DIRECTED BY THE ENGINEER TO BACKFILL AREAS WHICH WERE EXCAVATED UNDER ITEM 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION.

ITEM 304 AGGREGATE BASE 1200 CU M

ITEM 605 AGGREGATE DRAIN

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED AND SHALL BE USED, IN CONJUNCTION WITH ITEM 203, AND AS DIRECTED BY THE ENGINEER, AT AREAS WHERE UNSUITABLE SUBGRADE HAS BEEN EXCAVATED AND REPLACED WITH ITEM 304 AGGREGATE BASE.

ITEM 605 AGGREGATE DRAINS 600 M

FOR PAVEMENT REPAIR LOCATIONS, SEE GENERAL NOTE, SHEET 15 .

filename : V:\LIN\CIVIL\98350\CIVIL\98350014.DWG
Scale : 1:1
Plot Date : 12-07-98 (18:05)

metric units

CALCULATED KNG
CHECKED GTA

PAVEMENT REPAIR - FULL DEPTH

STA-21-16.574

GENERAL NOTES

ELEVATION DATUM

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

ORIGINAL CONSTRUCTION PLANS

THIS PROJECT INCLUDES CONSTRUCTION PROJECTS AS LISTED BELOW, WITH COPIES FILE IN THE DISTRICT 4 OFFICE, 705 OAKWOOD STREET, RAVENNA, OHIO 44266.

STA-21- 8.25
STA-21-10.23
STA-21-10.24
STA-21-11.39
STA-21-11.49

STAGING AND STORAGE AREA

FOR SAFETY PURPOSES, NO MATERIAL OR EQUIPMENT SHALL BE STORED OR PARKED IN THE MEDIAN OR WITHIN 20 METERS OF THE OUTSIDE EDGE OF PAVEMENT UNLESS BEHIND GUARDRAIL.

PRIVATE VEHICLES BELONGING TO THE CONTRACTOR'S EMPLOYEES OR TO ODOT PERSONNEL PERMANENTLY ASSIGNED TO THE PROJECT SHALL BE PARKED WITHIN THE LIMITS OF THE HIGHWAY PROJECT. ALL PARKING WILL BE DONE AT THE APPROVED CONTRACTOR'S STAGING AREA. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING TRANSPORT VEHICLES TO TRANSPORT PERSONNEL FROM THE STAGING AREA TO THE WORK SITE.

PROFILE AND ALIGNMENT

THE PROPOSED PAVEMENT RESURFACING SHALL FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. PREVIOUS CONSTRUCTION PLANS (LISTED ON THIS SHEET) SHOWING THE ORIGINAL ALIGNMENT AND PROFILE, ARE AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 4 OFFICE. THE PROPOSED ASPHALT CONCRETE OVERLAY SHALL BE AS SHOWN ON THE TYPICAL SECTIONS.

EMERGENCY PHONE NUMBERS

THE FOLLOWING PHONE NUMBERS CAN BE USED IN CASE OF AN EMERGENCY. THESE AGENCIES WILL PROVIDE INFORMATION RELATING TO CHEMICALS.

1. CHEMICAL TRANSPORTATION EMERGENCY CENTER 1-800-424-9300

2. ENVIRONMENTAL PROTECTION AGENCY HOTLINE 1-800-282-0272

UTILITY OWNERSHIP

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT:

ELECTRIC: OHIO EDISON COMPANY
1910 WEST MARKET STREET
AKRON, OHIO 44313
ATTN.: MR. GLENN BOWMAN
(330) 384-4711

TELEPHONE: AMERITECH
50 WEST BOWERY STREET, 4TH FLOOR
AKRON, OHIO 44308
ATTN.: JIM McLAUGHLIN
(330) 384-8057

NATURAL GAS: THE EAST OHIO GAS COMPANY
4725 SOUTHWAY S.W.
CANTON, OHIO 44706
ATTN.: KATE ELLIS
(330) 478-3135

WATER LINES: CONSUMERS OHIO WATER SERVICE
P O BOX 584
MASSILLON, OHIO 44648-0584
ATTN.: WILLIE MAURER
(330) 833-4156

CABLE T.V.: MASSILLON CABLE TV, INC.
P. O. BOX 814
MASSILLON, OHIO 44648
ATTN.: MR. NEIL TRAVIS
(330) 833-4134

SANITARY: CITY OF MASSILLON
1 JAMES DUNCAN PLAZA
MASSILLON, OHIO 44646
ATTN.: JIM BENEKOS
(330) 830-1722

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY 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 AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

CLEARING AND GRUBBING

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

PAVEMENT REPAIR QUANTITIES

LOCATIONS	251	253	
	PARTIAL DEPTH PAVEMENT REPAIR (SEE SHEET 13)	PAVEMENT REPAIR (FULL-DEPTH) (SEE SHEET 14)	
FROM TO	SQ. METER	SQ. METER	
NORTHBOUND LANES			
BEGIN PROJECT – WALNUT ROAD		140	
WALNUT ROAD – LILLIAN GISH BLVD.		1020	
LILLIAN GISH BLVD.– CHERRY ROAD		640	
CHERRY ROAD – LAKE AVENUE		760	
LAKE AVENUE – END PROJECT		410	
NORTHBOUND TOTAL	3000	2970	
SOUTHBOUND LANES			
BEGIN PROJECT – WALNUT ROAD		100	
WALNUT ROAD – LILLIAN GISH BLVD.		1200	
LILLIAN GISH BLVD.– CHERRY ROAD		610	
CHERRY ROAD – LAKE AVENUE		730	
LAKE AVENUE – END PROJECT		480	
SOUTHBOUND TOTAL	3000	3120	
SUBTOTAL	6000	6090	
ADDITIONAL CONTINGENCY QUANTITY	1200	1220	
TOTAL CARRIED TO GENERAL SUMMARY	7200	7310	

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.

207 STRAW OR HAY BALES	100 EACH
207 TEMPORARY SEEDING AND MULCHING	1000 SQ. METER
659 REPAIR SEEDING AND MULCHING	50 SQ. METER

ITEM 202 – INLET REMOVED, AS PER PLAN

THIS ITEM SHALL CONSIST OF REMOVAL OF EXISTING INLET IN ACCORDANCE WITH SECTION 202.08 EXCEPT THAT ALL VOIDS CREATED BY THE REMOVAL OPERATION SHALL BE BACKFILLED WITH LOW STRENGTH MORTAR BACKFILL, 613.02, AFTER PLACEMENT OF NEW DRAINAGE STRUCTURE AND ASSOCIATED STORM SEWERS AND UNDERDRAINS. THE BACKFILL MATERIAL SHALL BE PLACED UP TO THE LEVEL OF SUBGRADE. REMOVAL OF PORTIONS OF EXISTING CONCRETE ENCASED INLET AND OUTLET PIPES, IF NECESSARY, AS A RESULT OF INLET REMOVAL SHALL BE INCLUDED WITH THIS PAY ITEM.

ITEM 604 – MANHOLE ADJUSTED TO GRADE, AS PER PLAN

THIS ITEM SHALL CONSIST OF MANHOLE ADJUSTMENT IN ACCORDANCE WITH ITEM 604, EXCEPT SECTION 604.03(B) SHALL NOT BE PERMITTED.

ITEM 604 – MANHOLE, RECONSTRUCTED TO GRADE, AS PER PLAN

THE EXISTING SANITARY BRICK MANHOLE SHALL BE REMOVED DOWN TO A DEPTH NECESSARY TO RECONSTRUCT IT TO THE PROPOSED GRADE. THE PROPOSED RECONSTRUCTION SHALL MATCH THE EXISTING CONSTRUCTION AND SHALL BE AS DIRECTED BY THE ENGINEER IN THE FIELD.

ITEM 604 – MONUMENT ASSEMBLY, AS PER PLAN

THIS ITEM SHALL CONSIST OF REMOVAL OF EXISTING MONUMENT CASTING AND REPLACING IT WITH A NEW ADJUSTABLE MONUMENT CASTING AS PER STANDARD DRAWING RM-1.1M. THE EXISTING STEEL PIN INSIDE THE CASTING SHALL NOT BE DISTURBED, BUT IF DISTURBED, IT SHALL BE REPLACED AND RESET IN ACCORDANCE WITH ITEM 604 AND DWG. RM-1.1M, AT CONTRACTOR'S EXPENSE.

ITEM 604 – CATCH BASIN, NO. 5, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING AND CONSTRUCTING NEW CATCH BASIN IN ACCORDANCE WITH SECTION 604 AND STANDARD DRAWING CB-3.2M, WITH GRATE "B". THIS PAY ITEM SHALL ALSO INCLUDE PORTIONS OF NEW INLET AND OUTLET STORM SEWER PIPES, TO MATCH EXISTING, FOR CONNECTION OF EXISTING STORM SEWERS.

ITEM 604 CATCH BASIN NO. 6, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING AND CONSTRUCTING NEW CATCH BASIN IN ACCORDANCE WITH STANDARD DRAWING CB-6M AND SECTION 604. CURBS, AS SHOWN IN THE STANDARD DRAWING SHALL NOT BE REQUIRED. THIS PAY ITEM SHALL ALSO INCLUDE PORTIONS OF NEW INLET AND OUTLET STORM SEWER PIPES, TO MATCH EXISTING, FOR CONNECTION OF EXISTING STORM SEWERS. ALL BACKFILLING FOR CATCH BASIN AND PIPES SHALL BE PERFORMED USING LOW STRENGTH MORTAR BACKFILL, 613.02, AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 604 – CATCH BASIN NO. 6, AS PER PLAN.

ITEM 604 – INLET, NO. 3C, TYPE A, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING AND CONSTRUCTING NEW INLET IN ACCORDANCE WITH STANDARD DRAWING I-1.1M AND SECTION 604. ALL BACKFILLING FOR INLET AND PIPES SHALL BE PERFORMED USING LOW STRENGTH MORTAR BACKFILL, 613.02, AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE ABOVE ITEM.

ITEM 604 – INLET, PAVEMENT, 1.8M, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING AND CONSTRUCTING PAVEMENT INLET IN ACCORDANCE WITH SECTION 604 AND STANDARD DRAWING I-1.2M, EXCEPT THAT THE CONCRETE APRON SHALL BE 610MM RATHER THAN 450MM AS SHOWN IN THE STANDARD DRAWING. IN ADDITION, THE BID PRICE SHALL INCLUDE REMOVAL AND REPLACEMENT OF TEN (10) METERS OF CONCRETE CURB AND GUTTER (FIVE (5) METERS ON EACH SIDE OF THE INLET). THE NEW CONCRETE CURB AND GUTTER SHALL BE TYPE 2, AS PER STANDARD DRAWING BP-5.1M AND REMOVAL SHALL BE PER SECTION 202. ALL BACKFILLING FOR INLET AND PIPE SHALL BE PERFORMED USING LOW STRENGTH MORTAR BACKFILL, 613.02, AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 604 – INLET, PAVEMENT, 1.8M, AS PER PLAN.

ITEM 605 – SHALLOW UNDERDRAIN, AS PER PLAN

THIS ITEM SHALL CONSIST OF CONSTRUCTION OF SHALLOW UNDERDRAIN IN ACCORDANCE WITH ITEM 605 AND STANDARD CONSTRUCTION DRAWING DM-1.2M EXCEPT THAT THE LOCATIONS OF SUCH UNDERDRAINS WILL BE IN NARROW PAVED MEDIAN SHOULDER CONSISTING OF CONCRETE AND/OR ASPHALT MATERIAL. IT WILL BE NECESSARY TO TRENCH FULL DEPTH CONCRETE AND/OR ASPHALT PAVEMENT IN ORDER TO INSTALL UNDERDRAIN. NO SEPARATE PAYMENT WILL BE CONSIDERED FOR THE TRENCHING, IT SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 605 – SHALLOW UNDERDRAIN, AS PER PLAN.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

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

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

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

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

ITEM SPECIAL – PIPE CLEANOUT:

EXISTING SEWERS WHICH ARE TO REMAIN IN PLACE, SHALL BE CLEANED OUT, AS DIRECTED BY THE ENGINEER, THIS WORK SHALL CONSIST OF THE REMOVAL OF ALL MATERIAL FROM THE INSIDE OF THE EXISTING PIPE AND RELATED INLETS OR BASINS. THE MATERIAL REMOVED SHALL BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 203.05.

THE LOCATION, TYPE AND SIZE OF ALL EXISTING PIPES ARE SHOWN ON LINE SHEETS 60 THRU 85 AS NEARLY EXACT AS THE AVAILABLE INFORMATION WILL PERMIT. THE STATE OF OHIO WILL NOT BE RESPONSIBLE FOR ANY VARIATION IN SIZES ENCOUNTERED DURING CONSTRUCTION. PAYMENT FOR ANY WORK REQUIRED TO DETERMINE EXACT SIZES AND LOCATIONS SHALL BE INCLUDED IN THE PRICE BID, PER LINEAR METER, FOR ITEM SPECIAL – PIPE CLEANOUT.

THE LENGTH TO BE PAID FOR, SHALL BE THE ACTUAL NUMBER OF LINEAR METER OF EXISTING PIPE CLEANED OUT AS DIRECTED BY THE ENGINEER. PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR REMOVAL AND DISPOSAL OF MATERIAL FOUND AND FURNISHINGS OF ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

SHEET SHEET 58 FOR LOCATION AND QUANTITY.

NONE OF THE ABOVE DESCRIBED WORK SHALL BE PERFORMED UNTIL AUTHORIZED IN WRITING BY THE ENGINEER.

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S015.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (18:)

GENERAL NOTES

ASBESTOS NOTIFICATION

AN ASBESTOS SURVEY OF THE ABANDONED RAILROAD BRIDGE OVER SR21 SCHEDULED FOR DEMOLITION WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THE BRIDGE.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORM, PARTIALLY COMPLETED AND SIGNED BY THE BRIDGE OWNER, WILL BE PROVIDED TO THE SUCCESSFUL BIDDER. THE CONTRACTOR SHALL COMPLETE THE FORM AND SUBMIT IT TO:

DIVISION OF AIR POLLUTION CONTROL (330) 489-3385
420 MARKET AVE. NORTH FAX: (330) 489-3335
CANTON, OHIO 44702
BRUCE BLANKENSHIP, ADMIN..

AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF THE DEMOLITION OF THE BRIDGE. THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER. INFORMATION REQUIRED ON THE FORM WILL INCLUDE:1) THE CONTRACTORS NAME AND ADDRESS, 2) THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL AND 3) A DESCRIPTION OF THE PLANNED DEMOLITION WORK AND THE METHOD(S) TO BE USED. A COPY OF THE OEPA FORM IS AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 4 OFFICE, 705 OAKWOOD STREET, RAVENNA, OHIO, 44266.

BASIS FOR PAYMENT-THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM.. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN ITEM 202-PORTIONS OF STRUCTURE REMOVED, OVER 6M SPAN, AS PER PLAN.

ITEM 601 – PAVED GUTTER, MISC.: GUTTER CLEANOUT:

THIS WORK SHALL CONSIST OF UNCOVERING THE FLOWLINE OF EXISTING CONCRETE GUTTER BY REMOVING DIRT, SILT, VEGETATION AND ANYTHING ELSE THAT HAS ACCUMULATED IN THE GUTTER. DUE CARE SHOULD BE TAKEN TO USE APPROPRIATE EQUIPMENT NOT TO DAMAGE THE GUTTER. THE CONTRACTOR SHALL NOT CROSS THE GUTTER WITH HIS EQUIPMENT. SURPLUS OR UNSUITABLE MATERIAL SHALL BE WASTED PER 203.05.
SEE SHEET 58 FOR LOCATION AND QUANTITY.

ITEM 448 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, UNDER GUARDRAIL, PG64-22, AS PER PLAN

THIS ITEM SHALL CONSIST OF PAVING UNDER GUARDRAIL AS SPECIFIED IN THE PLANS AND IN ACCORDANCE WITH THE FOLLOWING: PAVING UNDER GUARDRAIL SHALL CONSIST OF PLACING ITEM 448 TO DEPTH SPECIFIED USING ONE OF THE FOLLOWING METHODS:

METHOD A:

1) SET GUARDRAIL POSTS
2) PLACE ITEM 448

METHOD B:

1) PLACE ITEM 448
2) BORE ASPHALT AT POST LOCATIONS (MAY BE OMITTED IF STEEL POSTS ARE USED)
3) SET GUARDRAIL POSTS
4) PATCH AROUND POSTS. THE MATERIALS USED FOR PATCHING SHALL BE A BITUMINOUS CONCRETE APPROVED BY THE ENGINEER. PATCHED AREAS SHALL BE COMPACTED USING EITHER HAND OR MECHANICAL METHODS. FINISHED SURFACES SHALL BE SMOOTH AND SLOPED TO DRAIN AWAY FROM THE POSTS.

ALTERNATE METHODS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER. ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE WITH THE EXCEPTION OF SETTING GUARDRAIL POSTS, SHALL BE INCLUDED FOR PAYMENT UNDER THIS ITEM.

ITEM 407 – TACK COAT

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

407, TACK COAT	0.34 LITERS PER SQ. METER
407, TACK COAT FOR INTERMEDIATE COURSE	0.34 LITERS PER SQ. METER

GUARDRAIL REPLACEMENT

GUARDRAIL OPERATIONS, AS SPECIFIED IN THE SUB-SUMMARY ON SHEETS 30 AND 31 SHALL BE COMPLETED IN A TIMELY MANNER FOLLOWING THE PAVING OPERATION. IN ALL CASES, THE GUARDRAIL WORK MUST BE COMPLETED IN THE SAME CONSTRUCTION SEASON AS THE ADJACENT PAVING WORK. NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR THE ACTUAL TIME NECESSARY TO REMOVE, GRADE AND INSTALL GUARDRAIL IN A CONTINUOUS OPERATION. THE REMOVAL OF ALL GUARDRAIL SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER. NO GUARDRAIL SHALL BE REMOVED UNTIL THE REPLACEMENT MATERIAL IS ON SITE, READY FOR INSTALLATION. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER THE WORK SUSPENSION UNTIL SUCH TIME THAT THE ENGINEER IS ASSURED OF SAID COMPLIANCE. WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED OR PUNCHED. THE CONNECTION SHALL BE MADE USING A "W-BEAM RAIL SPLICE" AS SHOWN IN AASHTO M180. THE PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE RESPECTIVE GUARDRAIL ITEMS.

LOCATION OF GUARDRAIL

THE LOCATIONS OF GUARDRAIL RUNS AS SHOWN IN THESE PLANS, ARE SUBJECT TO ADJUSTMENT PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

NEW GUARDRAILS AS SHOWN ON THE PLANS MAY BE SHIFTED LONGITUDINALLY SO THAT THE LOCATIONS OF THE NEW POSTS DO NOT COINCIDE WITH THE OLD POST LOCATIONS.

ITEM 606 – IMPACT ATTENUATOR, TYPE 2–98, BI–DIRECTIONAL (MODEL # QS2406Y):

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING QUADGUARD IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., ONE EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312–467–6750)

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE–APPROVED SHOP DRAWINGS:

DWG. NO.	DRAWING NAME	DWG./REV. DATE	ODOT APP. DATE
QSC BCVR–U	QUADGUARD SYSTEM WITH CONCRETE BACKUP	4/28/97	3/6/98

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE 2–98, BI–DIRECTIONAL (MODEL # QS2406Y), EACH AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, ANCHORS, HARDWARE, REINFORCING, CONCRETE PAD AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER. (SEE SHEET NO. 9 FOR ADDITIONAL DETAILS.) THE CONCRETE BARRIER TRANSITION BEHIND THE ATTENUATOR SHALL BE PAID UNDER ITEM 622 – CONCRETE BARRIER, TYPE – A, AS PER PLAN.

ITEM 606 – ANCHOR ASSEMBLY, TYPE B–98:

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

1) SRT–350, GUARDRAIL END TERMINAL AS MANUFACTURED BY SYRO, INC., 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330.545.4373).

THE LENGTH OF THE SRT–350 SYSTEM IS CONSIDERED TO BE 11.43 m, INCLUSIVE OF THREE 3.81 m LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE–APPROVED SHOP DRAWINGS:

DWG. NO.	DRAWING NAME	DWG./REV. DATE	ODOT APP. DATE
SS425M	SLOTTED RAIL TERMINAL SRT–350 POST LAYOUT AND ERECTION DETAILS (12.5, 9 POST)	6/21/97	3/6/98

2) THE FLEAT –350, GUARDRAIL END TERMINAL AS MANUFACTURED BY ROAD SYSTEMS INC., 7631 NEW CASTEL DRIVE, FRANKFORT, IL 6023 (TELEPHONE: 815–464–5917).

THE LENGTH OF THE FLEAT–350 SYSTEM IS CONSIDERED TO BE 11.43 m, INCLUSIVE OF THREE 3.81 m LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE–APPROVED SHOP DRAWINGS:

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

GRADING SHALL BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING GR–4.3M.

THE FACE OF TYPE B–98 IMPACT HEAD SHALL BE COVERED WITH TYPE G REFLECTIVE SHEETING, PER CMS 730.19: APPROXIMATELY 915mm W X 305mm H FOR THE SRT–350 AND 350mm W X 500mm H FOR THE FLEAT–350.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE B–98, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING REFLECTIVE SHEETING AND ALL RELATED HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 606 – ANCHOR ASSEMBLY, TYPE E–98:

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

1) THE ET–2000 (1997) MANUFACTURED BY SYRO, INC., 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330–545–4373).

THE LENGTH OF THE ET–2000 (1997) SYSTEM IS CONSIDERED TO BE 15.24 M, INCLUSIVE OF TWO 7.62 M LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE–APPROVED SHOP DRAWINGS:

DWG. NO.	DRAWING NAME	DWG./REV. DATE	ODOT APP. DATE
SS265M	ET–2000(1997) PLAN, ELEVATION & SECTIONS	6/20/97	3/6/98

2) THE SKT–350 MANUFACTURED BY ROAD SYSTEMS, INC., 7631 NEW CASTLE DRIVE, FRANKFORT, IL 60423 (TELEPHONE: 815–464–5917).

THE LENGTH OF THE SKT–350 SYSTEM IS CONSIDERED TO BE 15.24 m, INCLUSIVE OF FOUR 3.81 m LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE–APPROVED SHOP DRAWINGS:

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

THE FACE OF TYPE E–98 IMPACT HEAD SHALL BE COVERED WITH TYPE G REFLECTIVE SHEETING, PER CMS 730.19: APPROXIMATELY 450mm X 450mm.

A TYPE C DELINEATOR SHALL BE INSTALLED AT THE HEAD OF ALL TYPE E–98 UNITS LOCATED ON THE RIGHT SIDE OF THE THROUGH ROADWAY. A TYPE D DELINEATOR SHALL BE INSTALLED AT THE HEAD OF ALL TYPE E–98 UNITS LOCATED ON THE LEFT SIDE OF THE THROUGH ROADWAY. DELINEATORS SHALL BE ITEMIZED SEPARATELY AND COMPLY WITH STANDARD TRAFFIC DRAWING TC–61.10M AND CMS 620.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE E–98, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

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

THIS ITEM SHALL CONSIST OF CONSTRUCTION OF CONCRETE BARRIER TRANSITION IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 622 AND STANDARD CONSTRUCTION DRAWINGS RM–4.3M & RM–4.4M EXCEPT THAT THE TRANSITION SHALL BE CONSTRUCTED AS DETAILED IN THE PLANS AND SHALL INCLUDE ALL REINFORCING STEEL.

CONTINGENCY QUANTITIES FOR ITEM 254 AND ITEM 448

THE FOLLOWING ESTIMATED CONTINGENT QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY , SHEET 56 FOR USE AS DIRECTED BY THE ENGINEER, TO REPLACE FULL DEPTH INTERMEDIATE COURSE DUE TO DETERIORATED CONDITION AT VARIOUS LOCATIONS.

ITEM 254	PAVEMENT PLANING, BITUMINOUS (AVG. THICKNESS 45MM)	500 SQ. METER
ITEM 448	45MM, ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64–28	23 CU. METER

ITEM 623 – CONSTRUCTION LAYOUT STAKES, AS PER PLAN

ALL PROVISIONS OF ITEM 623 SHALL APPLY WITH THE FOLLOWING ADDITIONS:
AFTER ALL PROPOSED CONSTRUCTION HAS BEEN COMPLETED, A REGISTERED SURVEYOR SHALL TAKE VERTICAL CLEARANCE MEASUREMENTS AT LOCATIONS INDICATED ON APPROVED ODOT VERTICAL CLEARANCE FORM(AVAILABLE IN THE DISTRICT 4 HIGHWAY MANAGEMENT DEPARTMENT). THESE FINAL MEASUREMENTS SHALL BE RECORDED ON THE FORM AND SUBMITTED TO THE PROJECT ENGINEER AND DISTRICT 4 HIGHWAY ADMINISTRATOR.
THE RECORD SHALL BEAR THE SEAL OF THE LINCENSED SURVEYOR WHO HAS TAKEN THE MEASUREMENTS.

THE MEASUREMENTS SHALL BE TAKEN AT THE FOLLOWING LOCATIONS:

STA–21–17250 – CONRAIL RAIL ROAD BRIDGE
STA–21–17551 – TREMONT AVENUE BRIDGE
STA–21–17756 – LINCLON WAY BRIDGE

metric units
CALCULATED GTA
CHECKED KNG
GENERAL NOTES
STA–21–16.574

Filename : VOL1M/ODOT–M/0830/CIVIL/0830S016.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12–07–98 (18:)

MAINTENANCE OF TRAFFIC NOTES

STAGE CONSTRUCTION

THE PROJECT REQUIRES CONSTRUCTION OF WORK ITEMS IN STAGES IN ORDER TO MAINTAIN TRAFFIC.

STAGE I

IN STAGE I, THE PAVEMENT AND PORTIONS OF SHOULDER RECEIVING TRAFFIC DURING STAGE II SHALL BE PREPARED. THE CONTRACTOR SHALL REPLACE THE EXISTING NORTHBOUND INSIDE SHOULDER (LEFT SHOULDER) BETWEEN STA. 19+627.50 TO STA. 19+705.50± NEAR THE LAKE AVENUE INTERSECTION. THE SHOULDER REPLACEMENT SHALL BE IN ACCORDANCE WITH THE M.O.T. TYPICAL SECTION FOR THE INSIDE SHOULDER TREATMENT DETAIL SHOWN ON SHEET 5. THE TRAFFIC SHALL BE MAINTAINED AS PER STANDARD DRAWING MT−95.30M. THE WORK SHALL ALSO INCLUDE PATCHING REPAIRS, INSTALLATION OF TEMPORARY BARRIER REFLECTORS ON EXISTING BARRIERS AND INSTALLATION OF TEMPORARY PAVEMENT MARKINGS & SIGNS FOR STAGE II.

STAGE II

STAGE II WILL BE UTILIZED FOR PAVEMENT WORK UP TO PLACEMENT OF THE INTERMEDIATE COURSE ON EXISTING RIGHT LANE AND RIGHT SHOULDER, WHILE MAINTAINING TRAFFIC ON THE EXISTING LEFT LANE. SUPERSTRUCTURE MEMOVAL OF THE EXISTING ABANDONED RR TRACK STRUCTURE SHALL BE CARRIED OUT IN THIS STAGE.

STAGE III

STAGE III WILL BE UTILIZED FOR PAVEMENT WORK UP TO THE PLACEMENT OF INTERMEDIATE COURSE ON EXISTING LEFT LANE AND LEFT SHOULDER WHILE MAINTAINING TRAFFIC ON RIGHT LANE AND RIGHT SHOULDER. REMOVAL OF PIER FOR THE EXISTING ABANDONED RR TRACK STRUCTURE SHALL BE CARRIED OUT IN THIS STAGE.

STAGE IV

STAGE IV WILL BE UTILIZED TO PLACE THE FINAL SURFACE COURSE ON THE ENTIRE PAVEMENT. IT WILL ALSO INCLUDE TEMPORARY PAVEMENT MARKINGS ON FINAL SURFACE PRIOR TO PLACEMENT OF THE PERMANENT TRAFFIC CONTROL PAVEMENT MARKINGS.

RESTRICTIONS

A MINIMUM OF ONE 3.0 m LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT, THE COMPLETED PAVEMENT, AND TEMPORARY SURFACES USING 410 AND 614.

CONES SHALL NOT BE ACCEPTABLE TRAFFIC CONTROL DEVICES FOR LANE RESTRICTIONS OR LANE REDUCTIONS THAT ARE IN OPERATION MORE THAN ONE−HALF HOUR BEFORE SUNRISE OR ONE−HALF HOUR AFTER SUNSET. ALL NIGHTTIME LANE RESTRICTIONS OR LANE REDUCTIONS SHALL REQUIRE DRUMS AT A MAXIMUM SPACING OF TWELVE (12) METERS.

PRIOR TO OPENING TO TRAFFIC, EACH LANE SHALL BE IN A SAFE PASSABLE CONDITION, FREE FROM UNEVEN LONGITUDINAL JOINTS. ALL TRANSVERSE JOINTS SHALL EXTEND ACROSS THE FULL LANE AND SHOULDER WIDTH.

ONLY DURING NON−PEAK PERIODS, THE CONTRACTOR SHALL INSTALL AND SUBSEQUENTLY REMOVE & RESET ALL TRAFFIC CONTROL DEVICES FOR EACH CONSTRUCTION STAGE. THE PEAK TRAFFIC HOURS ARE 7−9 A.M. AND 3:30−6 P.M.

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

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

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

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

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

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

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

TRAFFIC CONTROL INSPECTOR

THE CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL ,OTHER THAN THE SUPERINTENDENT AND SUBJECT TO THE APPROVAL OF THE ENGINEER, TO CONTINUOUSLY INSPECT ALL TRAFFIC CONTROL DEVICES WHENEVER CONSTRUCTION WORK IS BEING PERFORMED WITHIN THE WORK LIMITS OF PROJECT. 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. THE TRAFFIC CONTROL INSPECTOR SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

WORK LIMITS

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

EXTENSION OVER ONE CONSTRUCTION SEASON

IF THIS PROJECT EXTENDS OVER ONE CONSTRUCTION SEASON, THE SURFACE COURSE MUST BE PLACE OVER THE WINTER. NO BINDER COURSE, LEVELING COURSE, BASE COURSE OR INTERMEDIATE COURSE WILL BE PERMITTED TO BE EXPOSED OVER THE WINTER MONTHS BETWEEN CONSTRUCTION SEASONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING THE SURFACING TO BE COMPLETE BY THE END OF CONSTRUCTION SEASON.

COOPERATION BETWEEN CONTRACTORS

THE CONTRACTOR SHALL BE ADVISED THAT OTHER PROJECTS MAY BE ONGOING IN AREAS IMMEDIATELY ADJACENT TO AND WITHIN THE PROJECT LIMITS OF THIS PROJECT. THE CONTRACTOR SHALL SCHEDULE HIS WORK SO AS TO CAUSE A MINIMUM OF DELAY OR CONFLICT WITH THE OTHER PROJECT OR WITH THE OTHER CONTRACTORS, A MUTUALLY ACCEPTABLE WORK SCHEDULE, SUBJECT TO THE APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL RECEIVE DAILY APPROVAL FROM THE ENGINEER PRIOR TO COMMENCING ANY OPERATIONS. ANY CONFLICT BETWEEN CONTRACTORS INVOLVING WORK SCHEDULES, WORK AREA OR COOPERATION SHALL BE RESOLVED BY THE ENGINEER. COMPENSATION FOR THE ABOVE COOPERATION SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS INCLUDED WITHIN THIS PROJECT.

REMOVAL OF ABANDONED RAILROAD STRUCTURE

EACH SPAN REMOVAL OPERATION SHALL BE PERFORMED BETWEEN THE HOURS OF 11.00 P.M. AND 5.00 A.M. DURING THIS TIME THE CONTRACTOR IS PERMITTED TO CLOSE NORTHBOUND AND SOUTHBOUND S.R 21 TRAFFIC BETWEEN WALNUT STREET AND LILLIAN GISH BOULEVARD. THIS CLOSURE SHALL BE PERMITTED FOR A MAXIMUM OF TWO NIGHTS (ONE PER SPAN). THE TRAFFIC INTERRUPTIONS SHALL BE KEPT TO A MINIMUM. AFTER THE ACTUAL LIFTING OF OF A SPAN IS COMPLETED, THE OPPOSING LANE TRAFFIC SHALL BE REOPENED.

LAW ENFORCEMENT OFFICERS WITH PATROL CARS SHALL BE PROVIDED BY THE CONTRACTOR AT WALNUT STREET AND LILLIAN GISH BOULEVARD INTERSECTIONS TO DIRECT THE S.R. 21 TRAFFIC ONTO THE DETOUR ROUTE. TEMPORARY BARRICADES AND GATES SHALL BE ERECTED AT POINT OF CLOUSERS IN ACCORDANCE WITH STANDARD DRAWING MT−101.60M.

IF NOT REMOVED OFF SITE WITHIN THE SIX (6) HOURS TIME LIMIT, THE LIFTED SPAN MAY TEMPORARILY BE PLACED BEHIND EXISTING GUARDRAIL AS PER 614.03 OR BEHIND PORTABLE CONCRETE BARRIER (PCB) WITHIN THE WORK ZONE, FOR DISMANTLING PURPOSES. THE TEMPORARY PCB SHALL BE PLACED IN ACCORDANCE WITH THE STANDARD CONSTRUCTION DRAWING MT−95.40M AND SHALL BE IN−PLACE PRIOR TO PERMITTING ANY TRAFFIC ON THE ADJOINING LANE. THE PCB LOCATION SHALL BE AS FAR AS POSSIBLE FORM ANY INTERSECTION AND CLOSER TO THE EXISTING BRIDGE. THE LOCATION SHALL BE APPROVED BY THE ENGINEER. ALL AREAS DAMAGED BY THE REMOVAL OPERATION SHALL BE REPAIRED AND RESTORED AT THE CONTRACTOR'S EXPENSE. NO EQUIPMENT OR MATERIAL SHALL BE LOCATED OTHER THAN BEHIND THE PCB OR THE EXISTING GUARDRAIL.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE ODOT DISTRICT OFFICE (330−297−0801, EXT. 209), AND THE CITY OF MASSILLON (330−830−1700) AT LEAST FIFTEEN (15) DAYS PRIOR TO THE INTENDED CLOUSER DATE. THE CONTRACTOR MUST RECEIVE CONSENT FROM THE PROJECT ENGINEER PRIOR TO THE ACTUAL CLOSURE.

THE FOLLOWING ESTIMATED QUANTITIES ARE CARRIED TO THE MOT GENERAL SUMMARY FOR THIS PURPOSE.

ITEM 622 − PORTABLE CONCRETE BARRIER, 813MM	250 METER
ITEM 614 − BARRIER REFLECTOR, TYPE B	38 EACH
ITEM 614 − OBJECT MARKER	38 EACH
ITEM 614 − LAW ENFORCEMENT OFFICER WITH PATROL CAR	32 HOURS

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 38 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.

SIGNS AND BARRICADES

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN SIGNS AND SIGN SUPPORTS, AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

PLACEMENT OF ASPHALT CONCRETE

TWO−WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT THAT ONE−WAY TRAFFIC WILL BE PERMITTED FOR MINIMUM PERIODS OF TIME CONSISTENT WITH THE REQUIREMENTS OF THE SPECIFICATIONS FOR PROTECTION OF COMPLETED ASPHALT CONCRETE COURSES.

TRENCH FOR EXCAVATION

TRENCH EXCAVATION FOR ANY REPAIRS SHALL BE ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES. PLACEMENT OF PROPOSED SUBBASE AND BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND EXCAVATION OPERATIONS. THE LENGTH OF WIDENING TRENCH WHICH IS OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO APPROVAL OF THE ENGINEER. SEE SHEET. 20, "DROPOFFS IN WORK ZONES" TO DETERMINE THE NECESSARY TREATMENT OR PROTECTION.

OVERNIGHT TRENCH CLOSING

THE BASE CONSTRUCTION SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 90 MILLIMETERS BELOW THE EXISTING PAVEMENT BY THE END OF EACH WORK DAY. NO TRENCH SHALL BE LEFT OPEN OVERNIGHT EXCEPT FOR A SHORT LENGTH (7.5 METERS OR LESS) OF A WORK SECTION AT THE END OF THE TRENCH. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED BASE WIDENING SHALL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER.

GUARDRAIL REPLACEMENT

NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR THE ACTUAL TIME NECESSARY TO REMOVE THE EXISTING GUARDRAIL, PREPARE THE SITE, AND INSTALL NEW GUARDRAIL IN A CONTINUOUS OPERATION. THE REMOVAL OF ALL GUARDRAIL SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER. NO GUARDRAIL SHALL BE REMOVED UNTIL THE REPLACEMENT MATERIAL IS ON THE SITE, READY FOR INSTALLATION. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER WORK SUSPENDED UNTIL SUCH TIME AS THE ENGINEER IS ASSURED OF COMPLIANCE.

LANE WIDTH RESTRICTION NOTIFICATION

THE CONTRACTOR SHALL NOTIFY THE DISTRICT OFFICE 18 DAYS PRIOR TO THE RESTRICTION. (330)297−0801 ext 211

Filename : VOL1M/ODOT−M/0830/CIVIL/0830S017.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12−07−98 (18:)

MAINTENANCE OF TRAFFIC NOTES

metric units

CALCULATED GTA
CHECKED KNG

ITEM 614 – LAW ENFORCEMENT OFFICER WITH PATROL CAR

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

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

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

FOR CONTROL OF SIGNALIZED INTERSECTIONS DURING RECONSTRUCTION OF THE SAME, AT FOUR LOCATIONS WITHIN THE PROJECT LIMITS.

DURING INTERSECTION TRAFFIC SIGNAL INSTALLATIONS AT FOUR LOCATIONS WITHIN THE PROJECT LIMITS.

DURING SUPERSTRUCTURE REMOVAL OPERATION OF EXISTING ABANDONED RAILROAD STRUCTURE LOCATED AT APPROXIMATE STA. 17+193.

LAW ENFORCEMENT OFFICERS (L.E.O.'S) SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED. THE LEO'S ARE CONSIDERED TO BE EMPLOYED BY THE CONTRACTOR AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACTIONS. ALTHOUGH

THEY ARE EMPLOYED BY THE CONTRACTOR, THE PROJECT ENGINEER SHALL HAVE CONTROL OVER THEIR PLACEMENT. THE OFFICIAL PATROL CAR SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED BY THE OHIO REVISED CODE.

THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES WITH :
THE CITY OF MASSILLON POLICE DEPARTMENT
MASSILLON MUNICIPAL GOVERNMENT CENTER
MASSILLON, OHIO 44646
PHONE: 330–830–1762

THE LAW ENFORCEMENT OFFICERS WITH PATROL CAR REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614 – LAW ENFORCEMENT OFFICER WITH PATROL CAR. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE M.O.T. GENERAL SUMMARY, SHEET 21 .

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR	300	HOURS

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

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

NIGHT CONSTRUCTION

UNLESS OTHERWISE REQUIRED BY SPECIFIC NOTE, NO WORK SHALL BE DONE AT NIGHT UNLESS WRITTEN APPROVAL BY THE ENGINEER HAS BEEN RECEIVED. THE CONTRACTOR SHALL REQUEST PERMISSION 15 DAYS PRIOR TO BEGINNING WORK.
IF NIGHT CONSTRUCTION APPROVAL IS APPROVED, THE REQUIREMENTS STATED IN FLOOD LIGHTING SECTION SHALL BE COMPLIED WITH.

THE REQUEST SHALL INCLUDE: THE TYPE OF WORK TO BE DONE, THE DURATION OF THE WORK, THE LOCATION OF THE INTENDED WORK, AND THE CONTRACTOR'S TEMPORARY LIGHTING PLAN. ALL TEMPORARY LIGHTING REQUIRED FOR THE NIGHT WORK SHALL BE AT THE CONTRACTOR'S EXPENSE.

FLOODLIGHTING

THE REQUIREMENTS STATED IN THIS SECTION SHALL APPLY ONLY IF NIGHT CONSTRUCTION APPROVAL IS GRANTED BY THE ENGINEER.

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

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

SHOULDER AND PAVEMENT REPAIRS

THE CONTRACTOR SHALL MAKE REPAIRS TO SHOULDER AND PAVEMENT AS DEEMED NECESSARY BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE M.O.T. SUMMARY, SHEET 21 , FOR USE AS DIRECTED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC. THE DETAILS OF PARTIAL DEPTH REPAIR ARE SHOWN ON SHEET 13 .

ITEM 251 – PARTIAL DEPTH PAVEMENT REPAIR	2300	SQ. METER
ITEM 614 – BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	60	CU. METER

TEMPORARY WORK ZONE MARKINGS, SIGNS AND BARRIER REFLECTORS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE M.O.T. SUMMARY, SHEET 21 , FOR USE AS DIRECTED BY THE ENGINEER FOR TEMPORARY WORK ZONE PAVEMENT MARKINGS AND SIGNS PER THE REQUIREMENTS 614.04 AND 614.10. THE QUANTITY OF WORK ZONE MARKING SIGNS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING SIGNS: OW–62 (BUMP), OW–171 (UNEVEN PAVEMENT SYMBOL)

ITEM 614 TEMPORARY LANE LINE, CLASS I	7.0	KILOMETER
ITEM 614 TEMPORARY CENTERLINE, CLASS I	0.8	KILOMETER
ITEM 614 TEMPORARY EDGE LINE, CLASS I	14.0	KILOMETER
ITEM 614 TEMPORARY CHANNELIZING LINE, CLASS I	400	METER
ITEM 614 TEMPORARY TRANSVERSE LINE, CLASS I	100	METER
ITEM 614 TEMPORARY STOP LINE, CLASS I	130	METER
ITEM 614 TEMPORARY CROSSWALK LINE, CLASS I	350	METER
ITEM 614 TEMPORARY LANE ARROW, CLASS I	28	EACH
ITEM 614 TEMPORARY WORD ON PAVEMENT, 2500MM, CLASS I	12	EACH
ITEM 614 WORK ZONE MARKING SIGN	32	EACH
ITEM 614 BARRIER REFLECTORS, TYPE B	100	EACH
ITEM 614 OBJECT MARKER	20	EACH

ITEM SPECIAL – REPLACEMENT SIGN

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

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

REPLACEMENT HARDWARE, SUPPORTS, ETC.

AN ESTIMATED QUANTITY OF 10 SQUARE METERS HAS BEEN PROVIDED IN THE M.O.T. SUMMARY, SHEET 21 .

ITEM SPECIAL – REPLACEMENT DRUM

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

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

AN ESTIMATED QUANTITY OF 50 EACH HAS BEEN PROVIDED IN THE M.O.T. SUMMARY, SHEET 21 .

ITEM 614 – BARRIER REFLECTORS AND OBJECT MARKERS

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE CONCRETE BARRIER (IF USED) FOR TRAFFIC CONTROL. BARRIER REFLECTORS, OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO THE APPROPRIATE PROPOSAL NOTE AND ITEM 626 EXCEPT THAT THE SPACING SHALL BE 8 METERS.

BARRIER REFLECTORS ARE TO BE PERMANENTLY INSTALLED ON BOTH FACES OF EXISTING CONCRETE MEDIAN BARRIER IN STAGE I. THE BARRIER REFLECTORS INSTALLED ON THE CONCRETE BARRIER SHALL NOT BE REMOVED, BUT SHALL REMAIN PERMANENTLY. THEIR INSTALLATION SHALL CONFORM TO THE APPROPRIATE PROPOSAL NOTE AND ITEM 626 EXCEPT THAT THE SPACING SHALL BE EIGHT (8) METERS.

ESTIMATED QUANTITIES ARE SHOWN IN MOT SUB SUMMARY, SHEET 22 .

ITEM 615 – TEMPORARY PAVEMENT CLASS A, AS PER PLAN

THE EXCAVATION REQUIRED TO CONSTRUCT THE TEMPORARY PAVEMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM. PORTIONS OF TEMPORARY PAVEMENT MAY BE LEFT IN PLACE, PROVIDED IT DOES NOT INTERFERE WITH THE PROPOSED CONSTRUCTION. THE PORTIONS OF TEMPORARY PAVEMENT TO REMAIN SHALL BE DETERMINED IN THE FIELD AND AS DIRECTED BY THE ENGINEER.

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.

METHOD OF PAYMENT

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND AS DETAILED IN THE PLANS.
PAYMENT FOR THE MAINTENANCE OF TRAFFIC ITEMS, UNLESS SPECIFIED SEPARATELY, SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT AND INCIDENTALS TO COMPLETE THE WORK AS DETAILED IN THE PLANS.

MAINTENANCE OF TRAFFIC NOTES

STA–21–16.574

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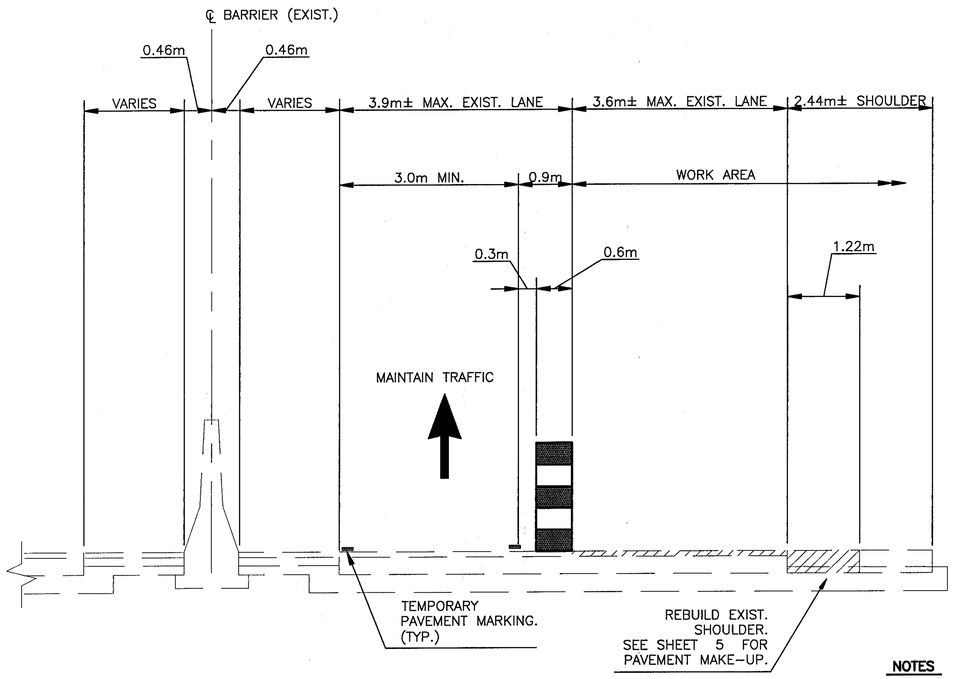
Drawn By/Date : KCerasi / 12-07-98 (18)

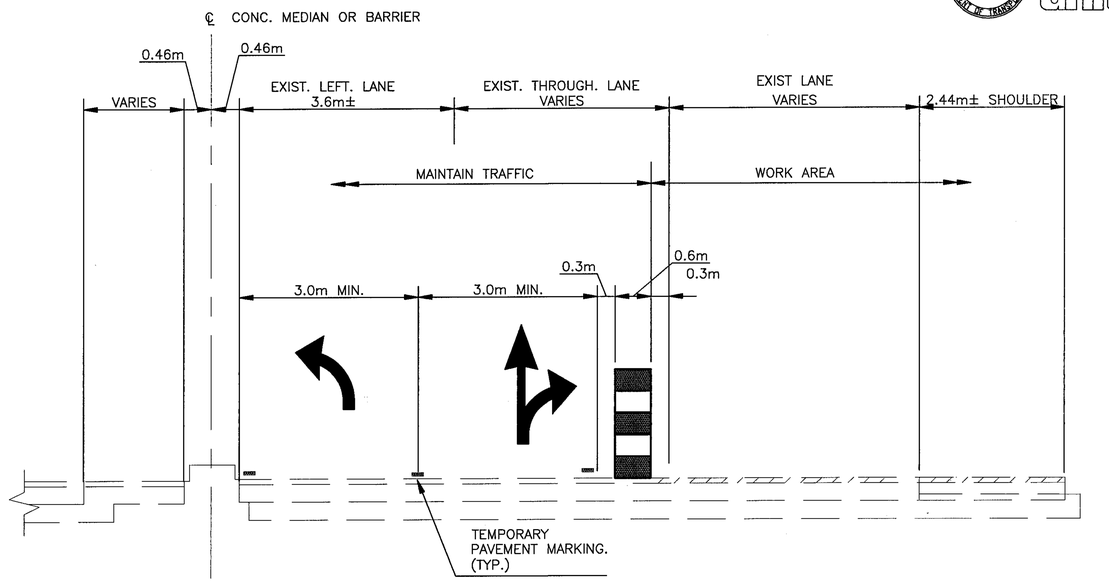
metric units



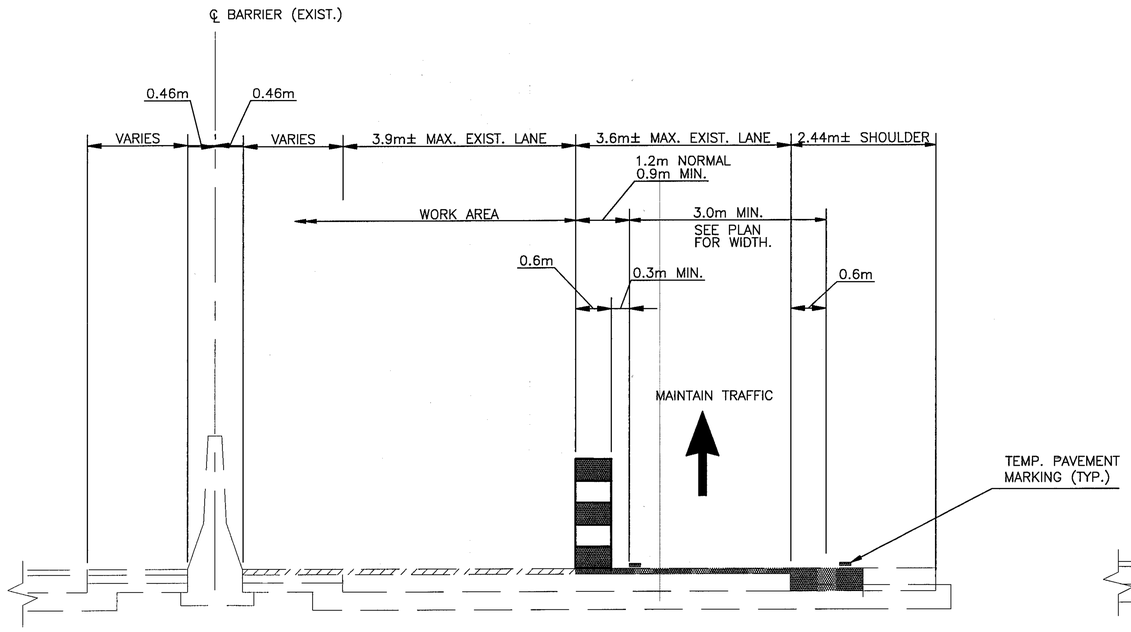
STAGE II

NOTES

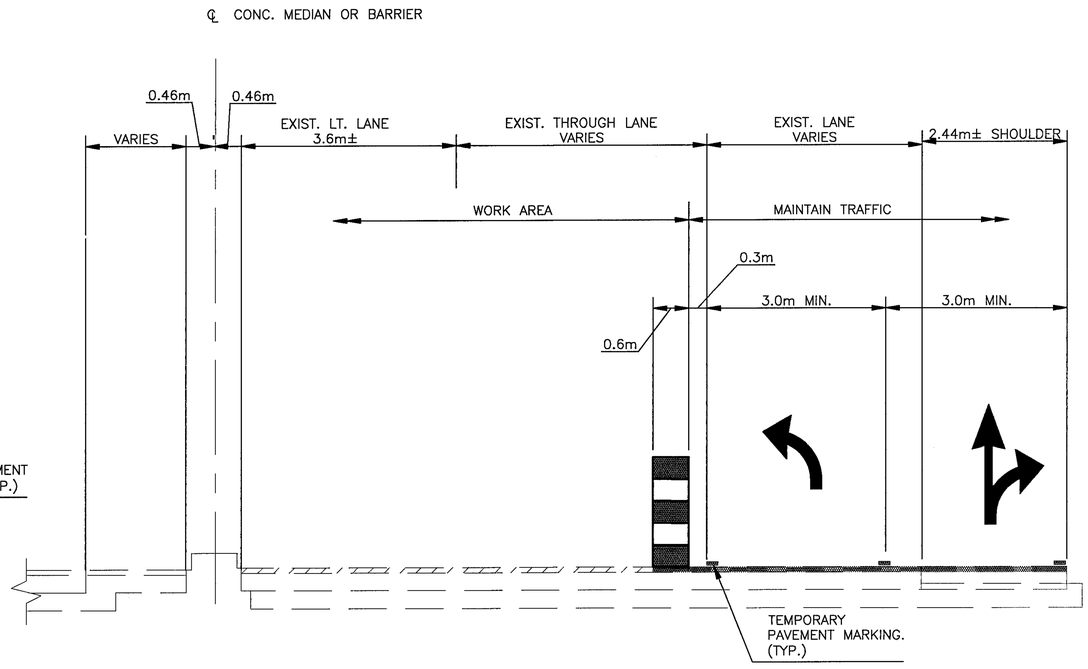
1. FOR PAVEMENT WIDTHS, SEE PLAN.
2. FOR PAVEMENT COMPOSITION, SEE TYPICAL SECTIONS.



STAGE II INTERSECTIONS



STAGE III



STAGE III INTERSECTIONS
EXCEPT. NO TEMPORARY LEFT TURN LANE AT SOUTHBOUND LILLIAN GISH BLVD. AND CHERRY ROAD

HORIZONTAL SCALE IN METERS
5 0 5 15

CALCULATED MAS
CHECKED GTA

MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS

STA-21-16.574

Plotted: 15:16:AM 2007-Jul-18 BY: MAS
Dgn: Sheet1
Drawn By: Mas
Xrefs: (17-07-06 (1).dgn)

GENERAL NOTES

1. It is intended that this drawing be used for treatment of drop–offs that develop during construction operations, and that are not otherwise provided for in the construction plans. Where the plans do not provide specific items for labor, equipment, or materials to implement the drop–off treatments specified herein, they shall be included for payment in the lump sum bid for Item 614 – Maintaining Traffic.

2. While the need for certain advisory signing is noted herein, it is not intended that this be indicative of all signing that may be required to advise or warn motorist, and all requirements of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) must be fulfilled.

3. In urban or otherwise heavily developed areas where pedestrians and/or bicyclists may be present in significant numbers, additional signing and protective measures other than those shown herein may be required.

4. The drop–off treatment selected for use at any given location shall be appropriate for the prevailing conditions at the site.

5. Where concrete barrier is specified, it shall be in accordance with Standard Construction Drawing MC – 9.2 and Item 622.

6. When drums are specified for a drop–off condition, a minimum number of four drums shall be used. Spacing shall be as indicated in the plans or as specified in the OMUTCD.

7. When OW–151 (Low Shoulder) signs or OW–171 (Uneven Lanes symbol), OWP–171 (uneven lane plaque), and OC–53 (Maintain Present Lane) signs are required, they shall be placed 225 meters in advance of the condition, on all intersecting entrance ramps within the limits of the condition and immediately beyond all intersecting roadways within the limits of the condition. When the drop–off condition extends more than 800 meters, additional signs shall be erected at intervals of a maximum of one mile.

8. For locations, such as at ramps, lane shifts, lane closures, etc., where traffic is required to negotiate any difference in elevation between pavements, a 8:1 min. slope treatment similar to the Optional Wedge Treatment shall be provided.

9. Portable concrete barrier shall be placed on the same level as the traffic surface and shall not encroach on lane width(s) designated as the minimum required for traffic use. Where drums are used, and their presence would reduce traveled lane widths to less than 3m, drums may be placed on the opposite level from that of traffic provided the drop–off depth does not exceed 125mm and approval is granted by the Project Engineer.

10. Pavement Repairs (or similar work):

   a. Lengths greater than 20 meters – utilize appropriate treatment from Condition I.

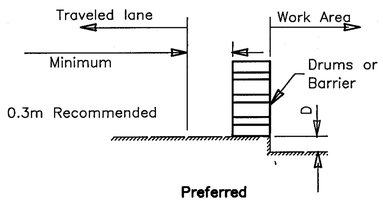
   b. Lengths of 20 meters or less – repairs shall be affected in accordance with Item 255.08. Drums may be used as a separator adjacent to the traveled lane.

CONDITION I

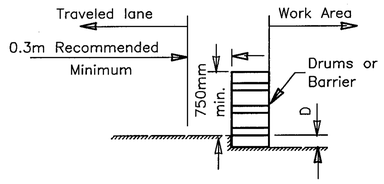
1. These treatments are to be used for resurfacing, pavement planing excavation, etc., between, beside or within traveled lanes.

D (mm)	Treatment
< 38	Erect OW–171, AND OWP–171.
38 – 75	1. Lane closure utilizing drums* as shown below. (use only on 3 or more lanes) 2. Optional Wedge Treatment.
75 – 125	Lane closure utilizing drums as shown below.
> 125	Lane closure utilizing portable concrete barrier as shown below.

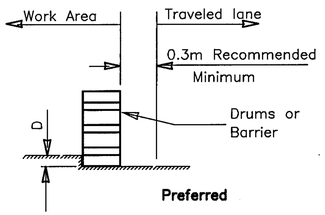
*Cones may be used for daytime only conditions.



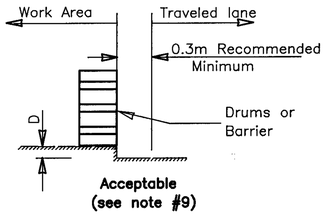
Preferred



Acceptable (see note #9)



Preferred



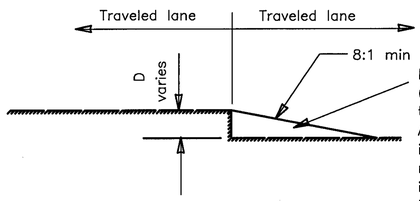
Acceptable (see note #9)

OPTIONAL WEDGE TREATMENT

(MILLING OR RESURFACING)

1. This treatment may be used when permitted for Condition I only.

2. OW–171, OWP–171, and OC–53 signs required.



Firm and unyielding material (to be removed prior to placing the abutting pavement course) All labor, equipment, materials, and incidentals to provide and subsequently remove the pavement wedge shall be included and paid under the lump sum bid for Item 614– Maintaining Traffic

CONDITION II

metric units

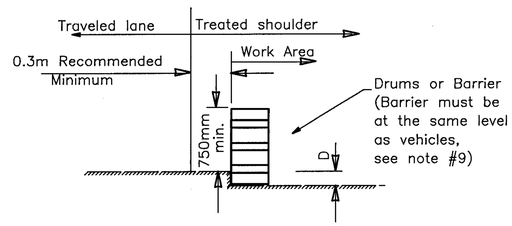
DROPOFFS WITHIN GRADED SHOULDER AREA

1. The treatments indicated below are for use in conjunction with resurfacing, planing, or excavation within the graded shoulder area.

2. The graded shoulder area is that flat or gradually sloping area between the edge of a normally traveled lane and the more steeply sloping ditch foreslope or embankment slope. Its surface may be soil or turf, and/or it may be inclusive of a "treated" area (improved with aggregates, asphaltic materials, or concrete). For the purposes herein, its maximum width shall be considered to be 3.60 meters.

D (mm)	Treatment
< 38	1.) If edgelines are present, no treatment necessary. – or – 2.) Erect OW–171, OWP–171, and OC–53 signs
38 – 125	1) If min. lane widths* requirements can be met, maintain lanes utilizing drums as shown below. 2) If min. lane width* requirements cannot be met, close adjacent lane utilizing drums. (use only on 3 or more lanes) 3) Optional shoulder treatment

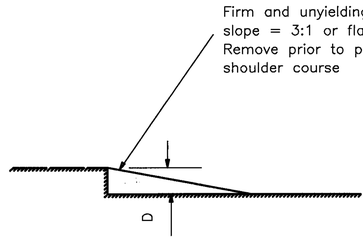
*Minimum lane widths shall be 10' unless otherwise specified in the plans.



OPTIONAL SHOULDER TREATMENT

1. This treatment shall not be used within a bituminous shoulder where a hot longitudinal joint per 401.15 is required.

2. OW–151 signs required.



CALCULATED KNG CHECKED GTA

DROPOFFS IN WORK ZONES

STA–21–16.574

Filename : VOL1:W/ODOT-W/DB35/CivIL/DB35D20.DWG
Plot Scale : 1.0000 '/ Inch
Plot Date/Time : 12-07-98 (18:06)
Plotted By/Data : KCarroll

MAINTENANCE OF TRAFFIC SUMMARY

ITEM	SHEET NUMBER							ITEM	ITEM EXTENSION	QUANTITY	UNIT	DESCRIPTION	SEE SHEET
			17	18	19	20	22						
251				2300				251	01000	2300	SQ METER	PARTIAL DEPTH PAVEMENT REPAIR	13
614			32	300				614	11100	332	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
614				32				614	12460	32	EACH	WORK ZONE MARKING SIGN	
SPECIAL				10				SPECIAL	61412500	10	SQ METER	REPLACEMENT SIGN	18
SPECIAL				50				SPECIAL	61412600	50	EACH	REPLACEMENT DRUM	18
614				60				614	13000	60	CU METER	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	
614			38	100			454	614	13300	592	EACH	BARRIER REFLECTOR, TYPE B	
614			38	20			26	614	13350	84	EACH	OBJECT MARKER	
614				7.0				614	20000	7.0	KILOMETER	TEMPORARY LANE LINE, CLASS I	
614				0.8				614	21000	0.8	KILOMETER	TEMPORARY CENTER LINE, CLASS I	
614				14.0			29.616	614	22000	43.616	KILOMETER	TEMPORARY EDGE LINE, CLASS I	
614				400			957	614	23000	1357	METER	TEMPORARY CHANNELIZING LINE, CLASS I	
614				100				614	25000	100	METER	TEMPORARY TRANSVERSE LINE, CLASS I	
614				130			101	614	26000	231	METER	TEMPORARY STOP LINE, CLASS I	
614				350				614	27000	350	METER	TEMPORARY CROSSWALK LINE, CLASS I	
614							44	614	28000	44	METER	TEMPORARY GORE MARKING, CLASS II	
614				28			24	614	30000	52	EACH	TEMPORARY LANE ARROW, CLASS I	
614				12			10	614	31640	22	EACH	TEMPORARY WORD ON PAVEMENT, 2500 mm, CLASS I	
615							139	615	20001	139	SQ METER	TEMPORARY PAVEMENT, CLASS A, AS PER PLAN	18
622			250					622	40020	250	METER	PORTABLE CONCRETE BARRIER, 813 mm	

metric units

CALCULATED GTA
CHECKED KNG

MAINTENANCE OF TRAFFIC SUMMARY

STA-21-16.574

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S021.DWG
Plot Scale : 1=1
Drawn By/Date : KGerasi / 12-07-98 (18)

TEMPORARY PAVEMENT MARKINGS AND BARRIER REFLECTORS

metric units

CALC'ATED GTA
CHECKED KNG

	STAGE	LOCATION	STATION FROM	STATION TO	SIDE	614 TEMPORARY EDGE LINE WHITE CLASS I	TEMPORARY EDGE LINE YELLOW CLASS I	TEMPORARY CHANNELIZING LINE CLASS I	TEMPORARY STOP LINE CLASS I	TEMPORARY LANE ARROW CLASS I	TEMPORARY WORD "ONLY" CLASS I		BARRIER REFLECTOR TYPE B	OBJECT MARKER	TEMPORARY EDGE LINE WHITE CLASS I, TYPE I	TEMPORARY EDGE LINE YELLOW CLASS I, TYPE I	TEMPORARY CHANNELIZING LINE CLASS I, TYPE I	TEMPORARY GORE, MARKING CLASS II	
						METER	METER	METER	METER	EACH	EACH		EACH	EACH	METER	METER	METER	METER	
	I	NB	19+295	19+705	M										–	410			
	I	NB & SB	16+574	16+777	M								54	26					
	I	NB & SB	16+943	17+620	M								172						
	I	NB & SB	17+680	18+260	M								148						
	I	NB & SB	18+365	18+671	M								80						
	II	NB & SB	15+998	16+560	L & R										652		300	44	
	II	NB & SB	16+560	20+005	L & R	6853	6853												
	II	NB & SB	16+743	16+903	L & R			106	12	4	2								
	II	NB & SB	17+585	17+712	L & R	56		56	9	2	1								
	II	NB & SB	18+240	18+455	L & R			155	16	4	2								
	II	NB & SB	19+671	19+800	L & R			81	17	4	1								
	II	NB & SB	20+005	20+367	L & R										362				
	III	NB & SB	16+198	16+560	L & R											362			
	III	NB & SB	16+560	20+005	L & R	6853	6853												
	III	NB & SB	16+743	16+903	L & R			106	12	4	2								
	III	NB & SB	17+585	17+712	L & R			–	8	–	–								
	III	NB & SB	18+245	18+455	L & R			71	12	2	1								
	III	NB & SB	19+670	19+800	L & R			82	15	4	1								
	III	NB & SB	20+005	20+367	L & R											362			
			SUBTOTAL			13762	13706	657	101	24	10				1014	1134	300	44	
						27.468 km									2.148 km.				
		CLASS I, TYPE I LINES FROM RIGHT				2.148 km.		300											
		TOTAL				29.616		957	101	24	10		454	26	–	–	–	44	

ITEM 615 – TEMPORARY PAVEMENT CLASS A, AS PER PLAN

IN STAGE I, NORTH BOUND, NEAR LEFT TURN LANE AT LAKE AVE. INTERSECTION
REFERENCE DRAWINGS SHEET 36 & 37, TYPICAL SECTION DETAIL 7 ON SHEET 7.

STA. 19+627.50 TO 19+671.15 TO 19+694 TO 19+706

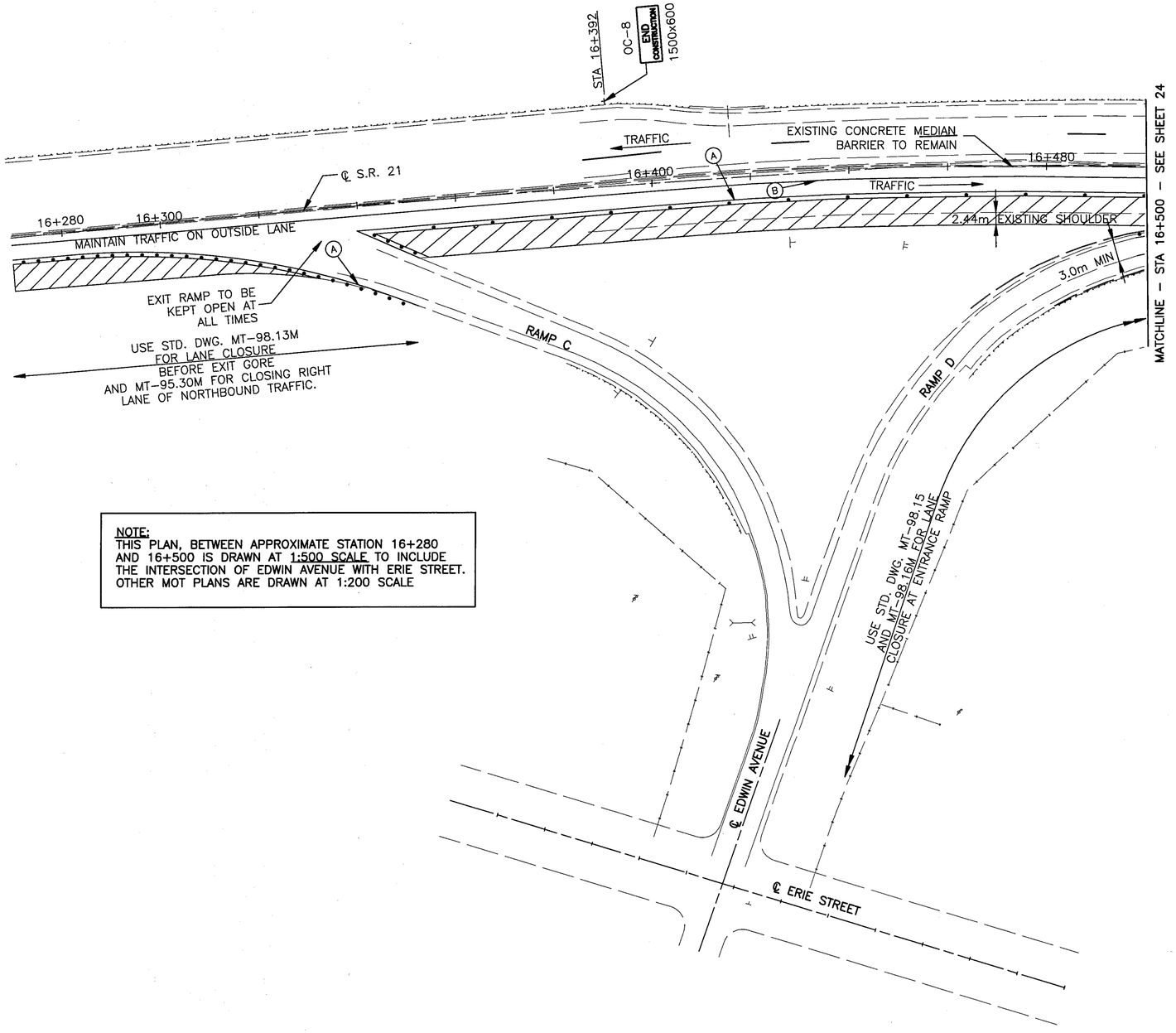
43.65 X (3.1+1.4)/2 = 98.21 SQ. M
22.85 X 1.4 = 31.99 SQ. M
12.00 X (1.4+0.0)/2 = 8.40 SQ. M

TOTAL CARRIED TO MOT 138.60 SQ. M
SUMMARY ON SHEET 21

M.O.T. SUB-SUMMARIES

STA-21-16.574

Filename : \03\HW\0001-hw\0630\DWG\0630922.DWG
Plotted : 12-07-98
Drawn By/Date : KGerrai / 12-07-98 (18)



NOTE:
THIS PLAN, BETWEEN APPROXIMATE STATION 16+280 AND 16+500 IS DRAWN AT 1:500 SCALE TO INCLUDE THE INTERSECTION OF EDWIN AVENUE WITH ERIE STREET. OTHER MOT PLANS ARE DRAWN AT 1:200 SCALE

LEGEND

	WORK ZONE
	TEMPORARY DRUM
Ⓐ	TEMPORARY EDGE LINE (WHITE)
Ⓑ	TEMPORARY EDGE LINE (YELLOW)
Ⓒ	TEMPORARY LANE LINE
Ⓓ	TEMPORARY CENTERLINE
Ⓔ	TEMPORARY CHANNELIZING LINE
Ⓕ	TEMPORARY STOP LINE
Ⓖ	TEMPORARY TRANSVERSE LINE
Ⓗ	TEMPORARY LANE ARROW
Ⓘ	TEMPORARY WORD "ONLY" ON PAVEMENT, 2500mm
Ⓙ	TEMPORARY CROSSWALK LINE

NOTES:

1. UNLESS OTHERWISE NOTED ON PLANS, THE MAXIMUM SPACING OF DRUMS SHALL BE 3.0m AT THE INTERSECTIONS AND 12.0m ELSEWHERE.

metric units

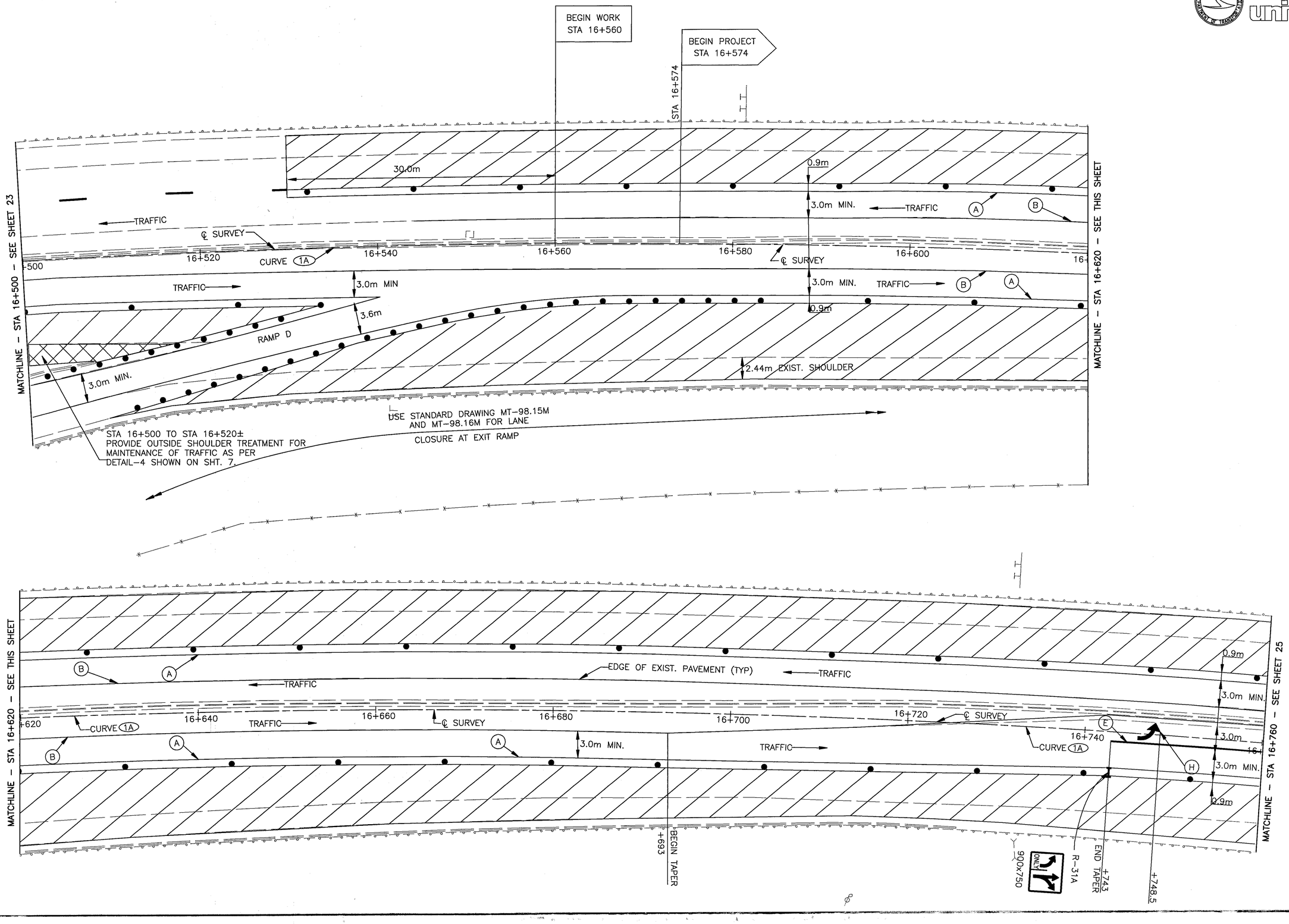
HORIZONTAL SCALE IN METERS 5 0 5 15

CALCULATED KNG
CHECKED GTA

MAINTENANCE OF TRAFFIC - STAGE II
STA 16+280± TO STA 16+500

STA-21-16.574

Filename : VOL1M/ODOT-M/0830/CIVIL/08305023.DWG
Plot Scale : 1=0
Drawn By/Date : KGerasi / 12-07-98 (16:5)



metric units

HORIZONTAL SCALE IN METERS

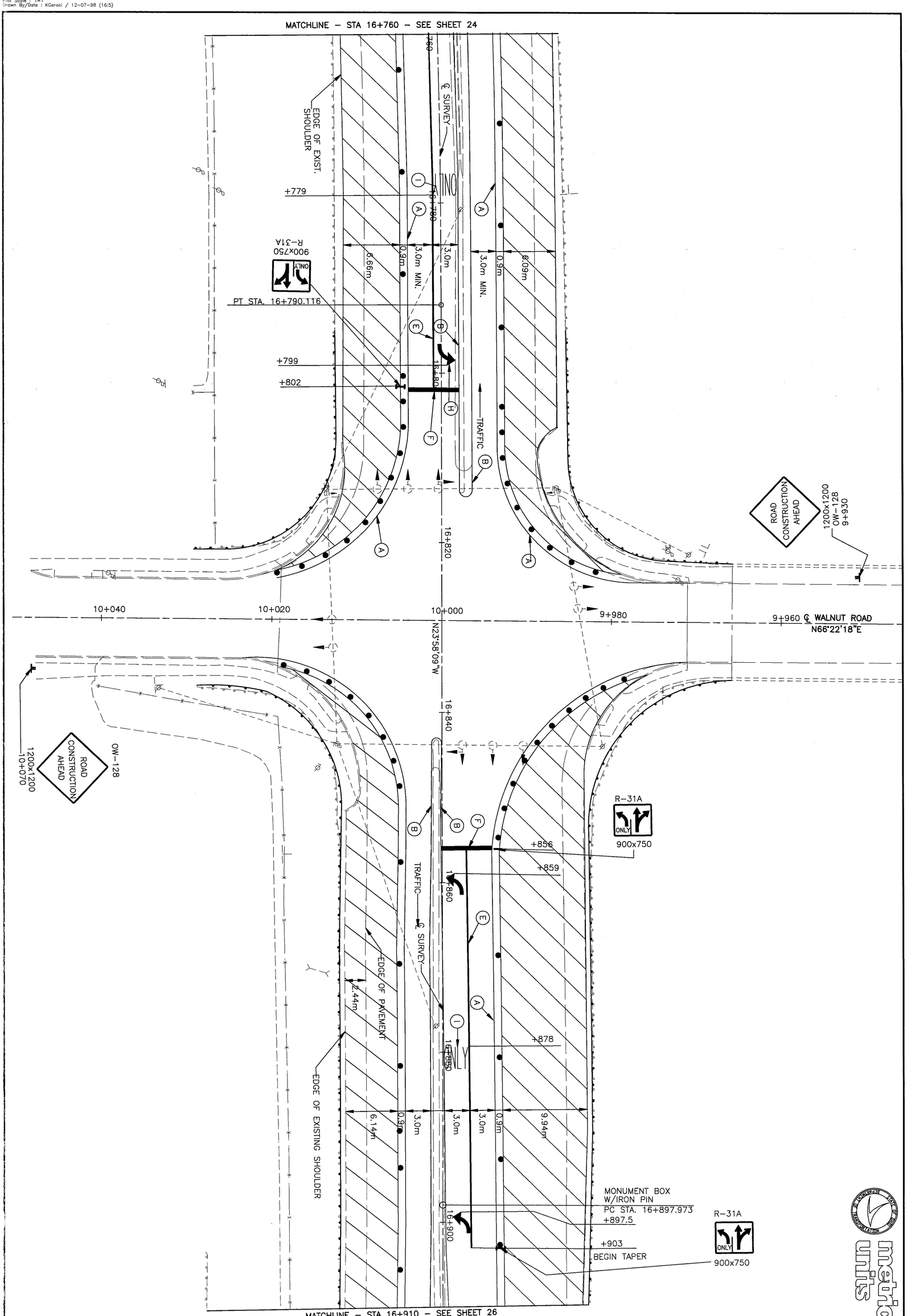
CALCULATED KNG

CHECKED GTA

MAINTENANCE OF TRAFFIC – STAGE II
STA 16+500 TO STA 16+760

STA-21-16.574

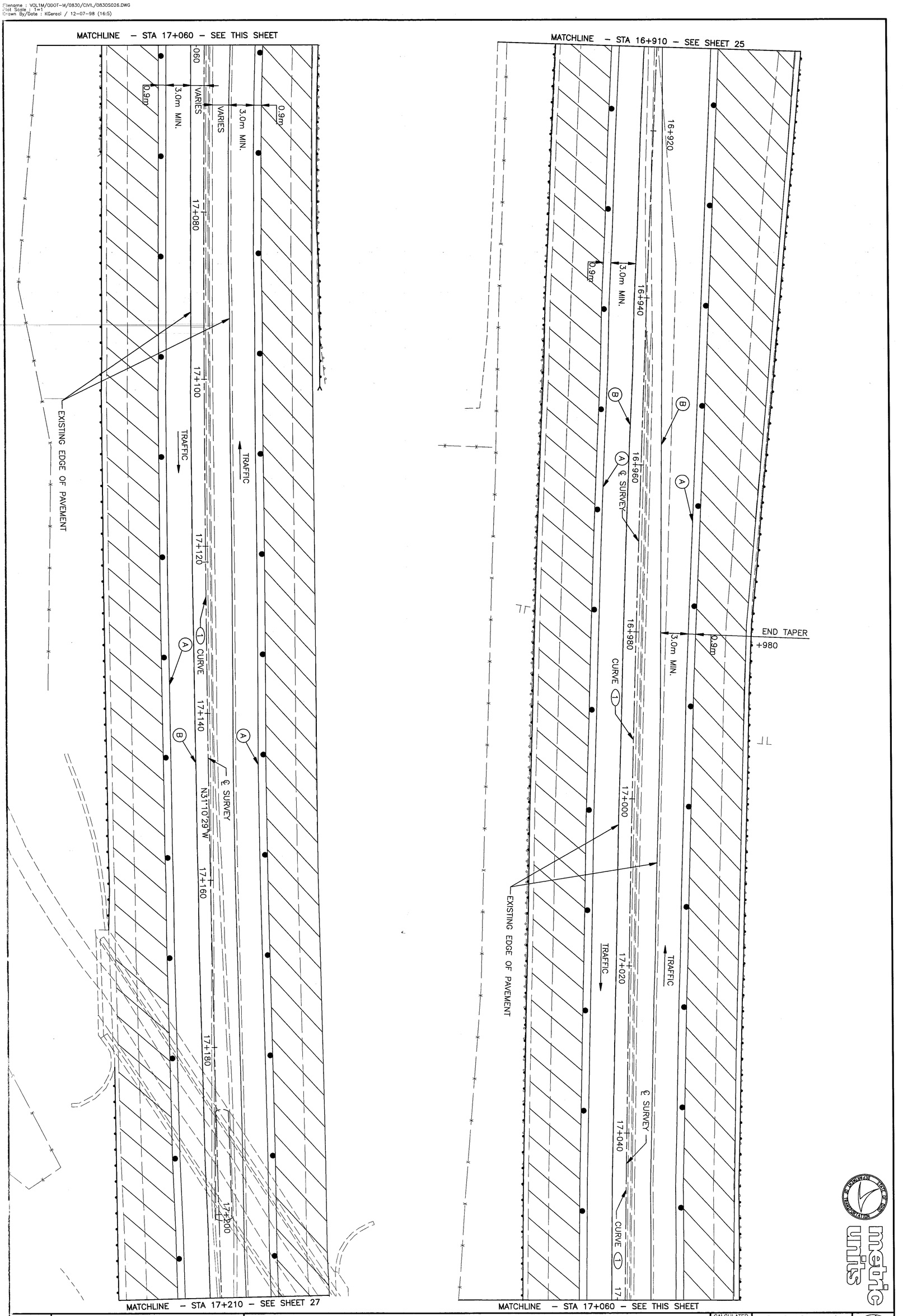
Filename : VOL1M/ODOT-M/0830/CIVIL/0830S025.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (16:5)



25/120	STA–21–16.574	MAINTENANCE OF TRAFFIC – STAGE II STA 16+760 TO STA 16+910	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS

metric units

Filename : VOL1M/0007-M/0830/CIVIL/08305026.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (16:5)



26/120	STA-21-16.574	MAINTENANCE OF TRAFFIC – STAGE II STA 16+910 TO STA 17+210	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS

metric units

metric units

CONRAIL

MATCHLINE – STA 17+210– SEE SHEET 26

TRAFFIC

℄ SURVEY

CURVE (1)

17+220 17+240 17+260 17+280 17+300 17+320 17+340 17+

A B

MATCHLINE – STA 17+360 – SEE THIS SHEET

EXISTING EDGE OF PAVEMENT

MATCHLINE – STA 17+360 – SEE THIS SHEET

PT STA. 17+368.603

0.9m
3.0m MIN
VARIES
3.0m MIN.
0.9m

-360 VARIES N31°10'29"W 17+380 17+400 VARIES 17+420 17+440 ℄ SURVEY 17+460 N31°10'29"W 17+480 17+500

TRAFFIC

EXISTING EDGE OF PAVEMENT

MATCHLINE – STA 17+510 – SEE SHEET 28

HORIZONTAL SCALE IN METERS
2 0 2 6

CALCULATED KNG
CHECKED GTA

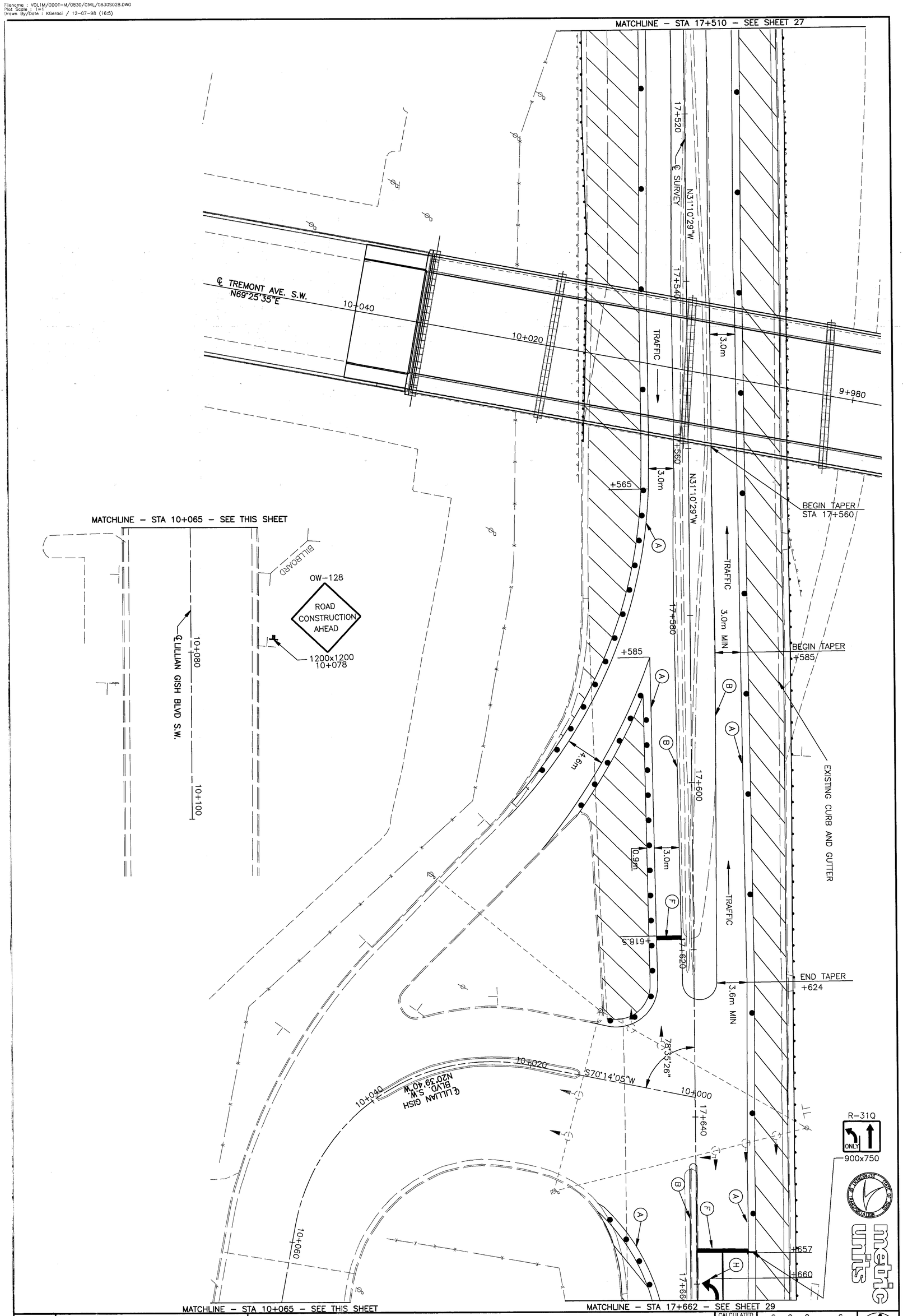
MAINTENANCE OF TRAFFIC – STAGE II
STA 17+210 TO STA 17+510

STA–21–16.574

27
120

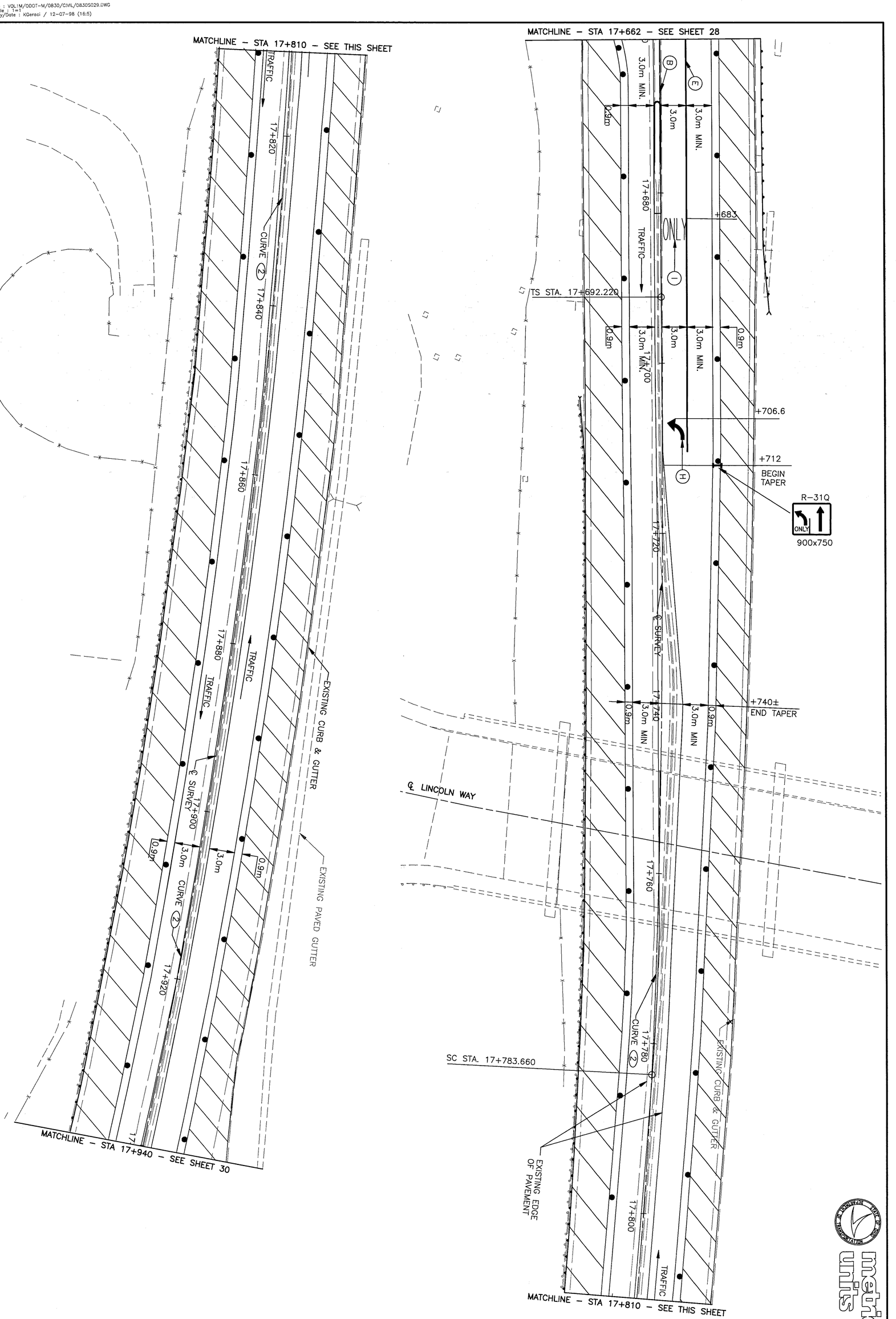
Filename : VOL1M/ODOT-M/3830/CIVIL/3830S027.DWG
Plot Scale 1=1
Plotted By/Date : KGenni / 12-07-98 (16:5)

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S028.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (16:5)



28 / 120	STA-21-16.574	MAINTENANCE OF TRAFFIC – STAGE II STA 17+510 TO STA 17+662	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S029.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (16:5)



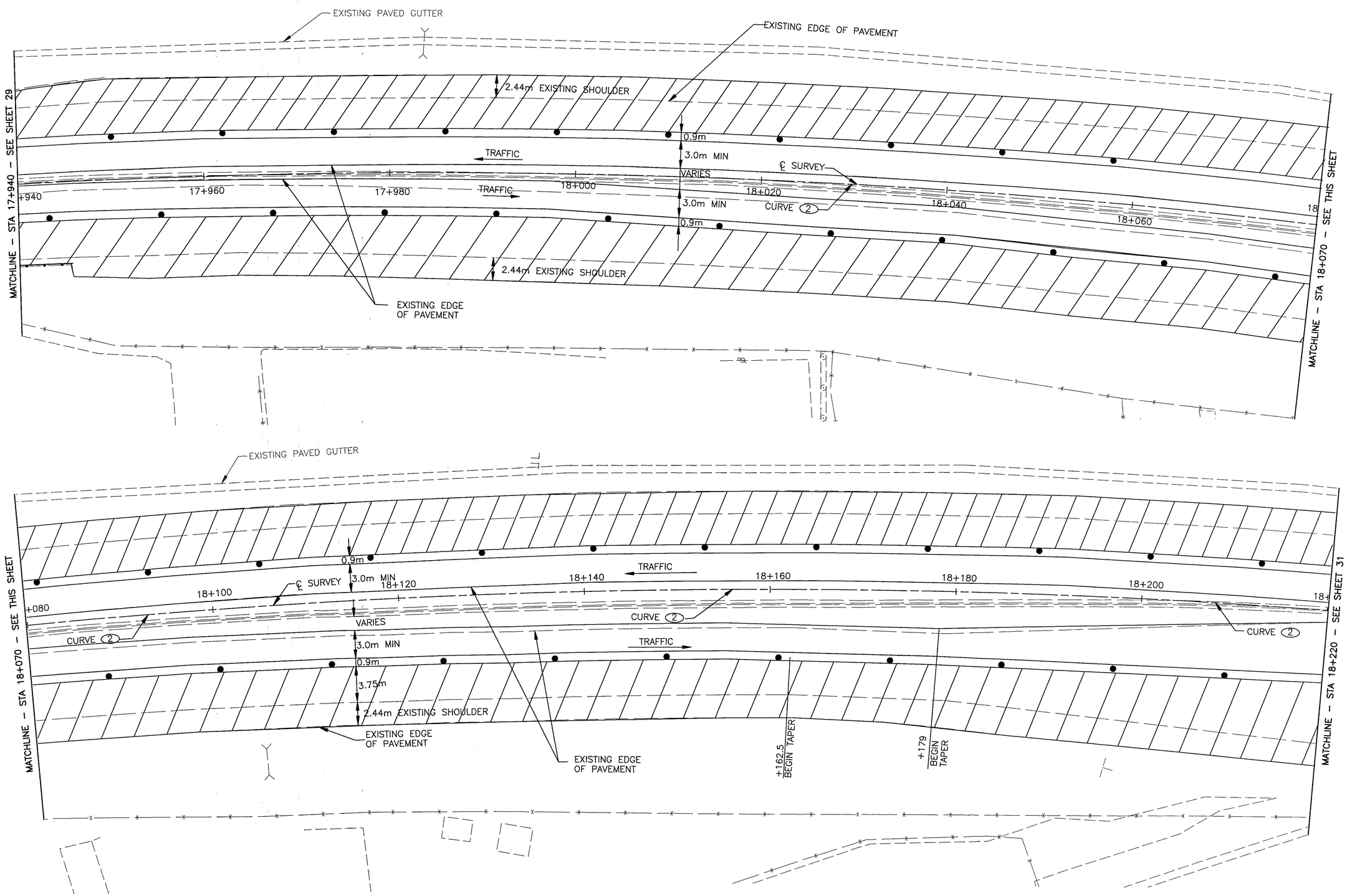
STA-21-16.574

MAINTENANCE OF TRAFFIC – STAGE II
STA 17+662 TO STA 17+940

CALCULATED KNG
CHECKED GTA

2 0 2 6
HORIZONTAL SCALE IN METERS

metric units



metric units

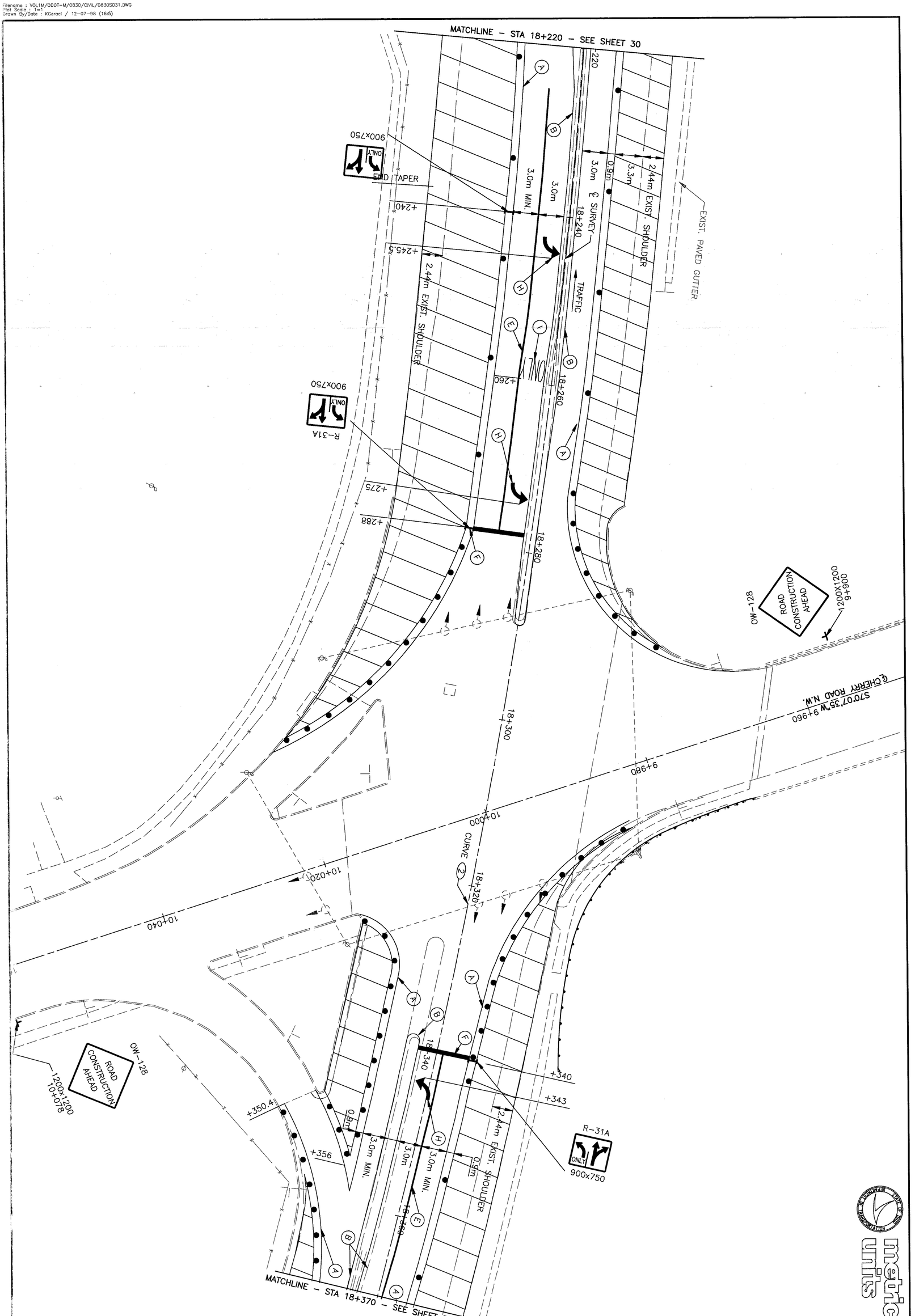
HORIZONTAL SCALE IN METERS

CALCULATED KNG
CHECKED GTA

MAINTENANCE OF TRAFFIC - STAGE II
STA 17+940 TO STA 18+220

STA-21-16.574

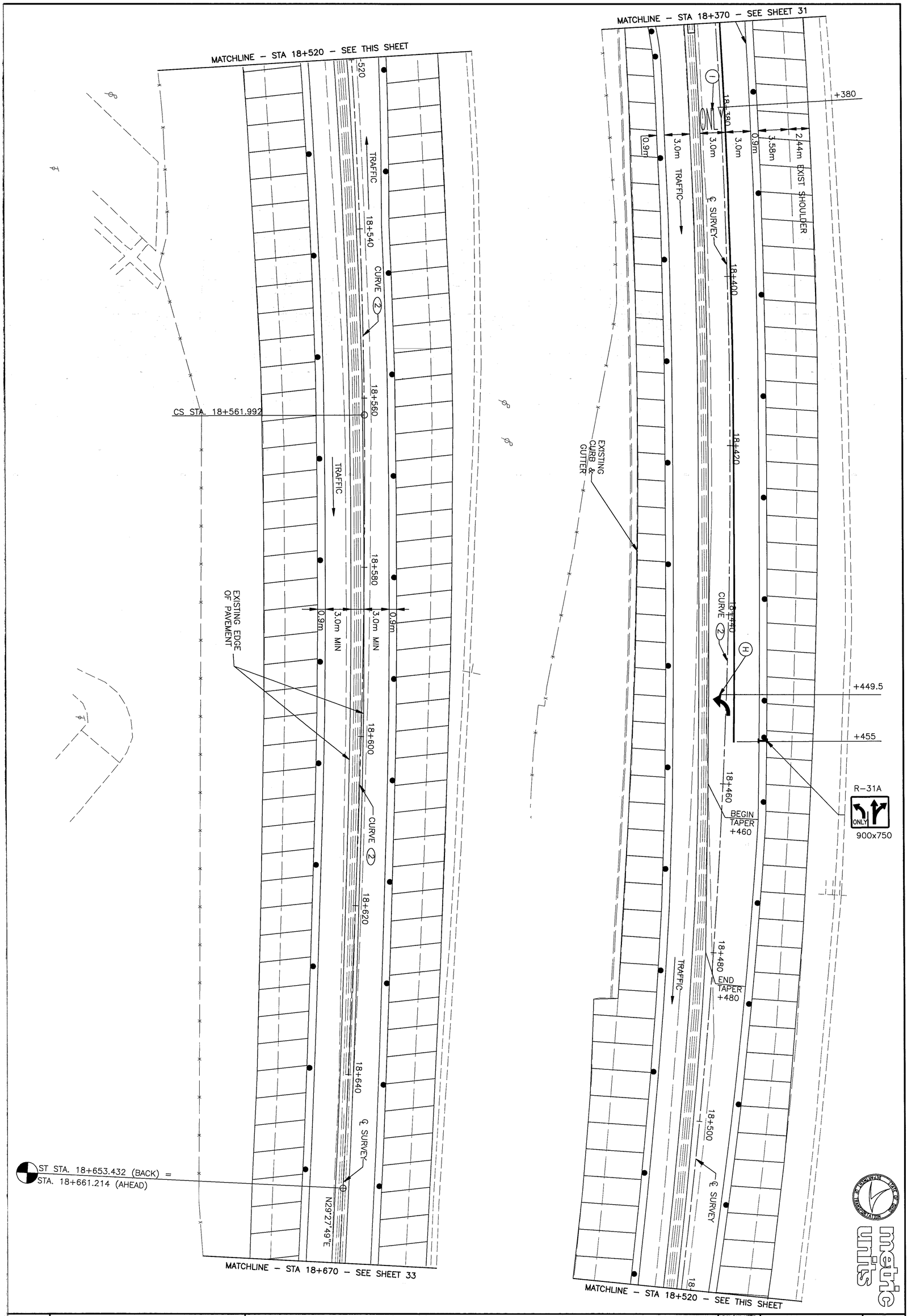
Filename : VOL1M/ODOT-M/0830/CIVIL/0830S031.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (16:5)



metric units

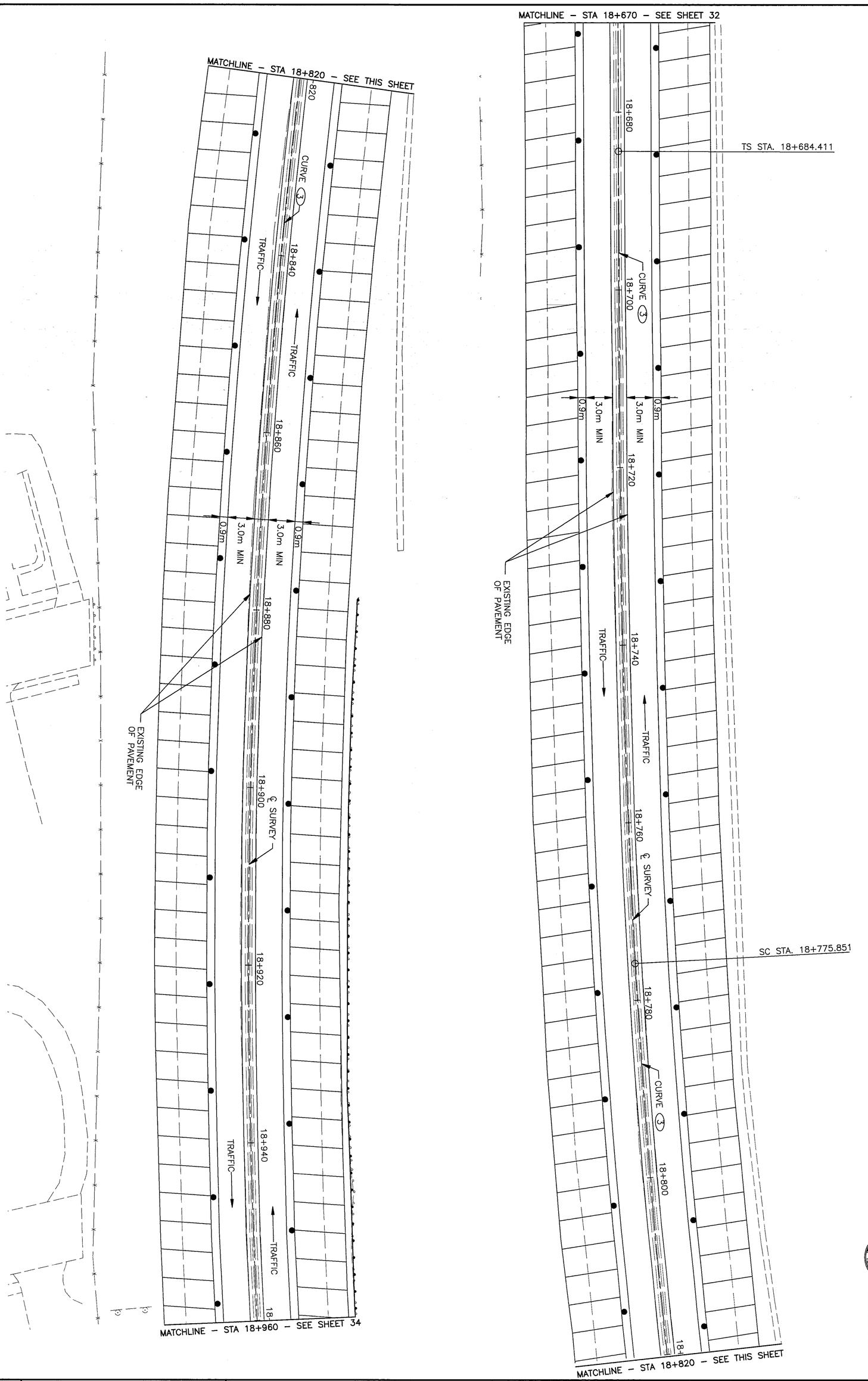
31/120	STA-21-16.574	MAINTENANCE OF TRAFFIC – STAGE II STA 18+220 TO STA 18+370	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S032.DWG
Plot Scale : 1=1
Drawn By/Date : KGeroci / 12-07-98 (16:5)



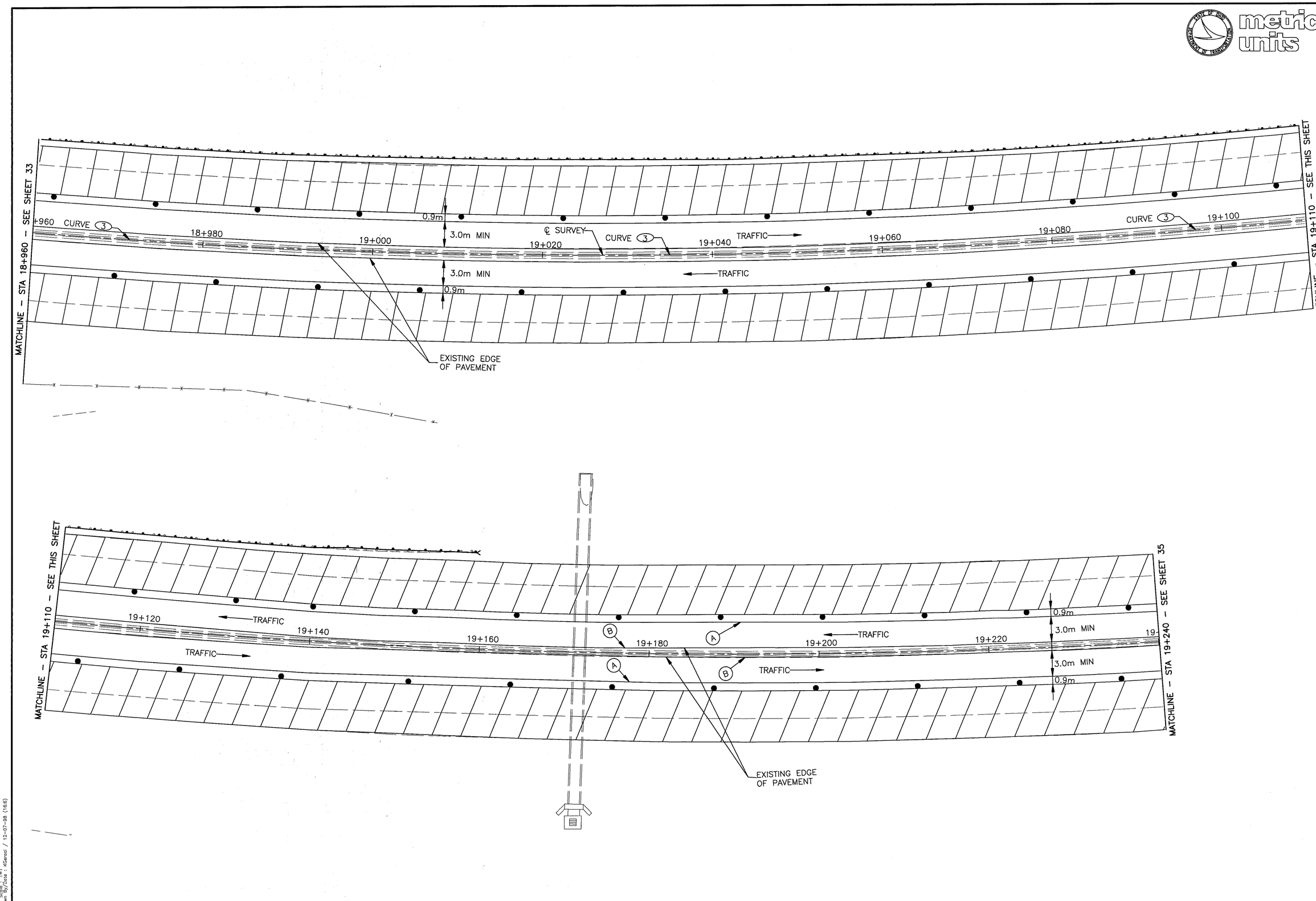
32 / 120	STA-21-16.574	MAINTENANCE OF TRAFFIC – STAGE II STA 18+370 TO STA 18+670	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS

Filename : VOL1M/ODOT-M/0830/CIVIL/08305033.DWG
Plot Scale : 1w1
Drawn By/Date : KGeroci / 12-07-98 (16:6)



metric units

33/120	STA-21-16.574	MAINTENANCE OF TRAFFIC – STAGE II STA 18+670 TO STA 18+960	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS



metric units

HORIZONTAL SCALE IN METERS

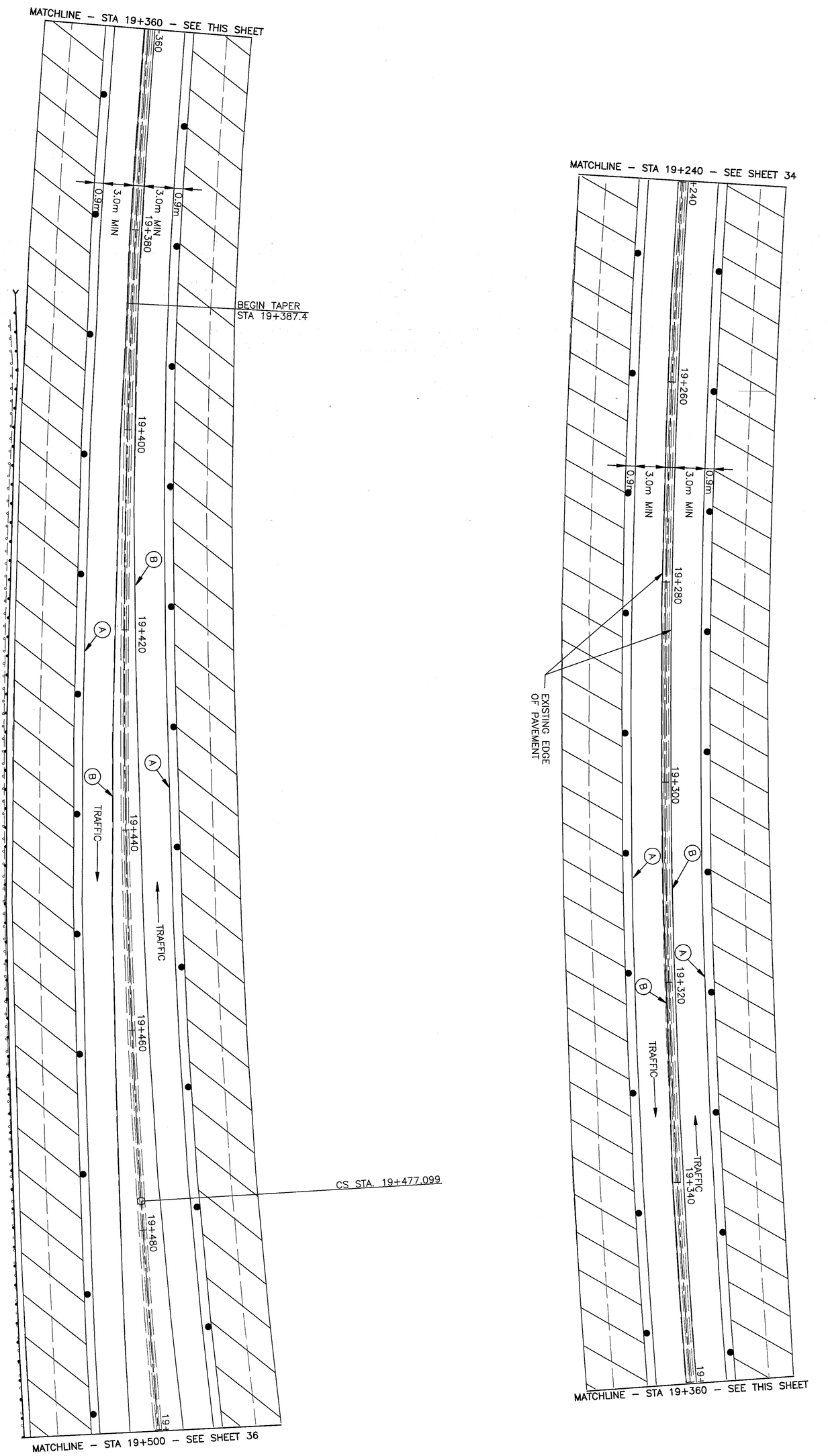
CALCULATED KNG

CHECKED GTA

MAINTENANCE OF TRAFFIC - STAGE II
STA 18+960 TO STA 19+240

STA-21-16.574

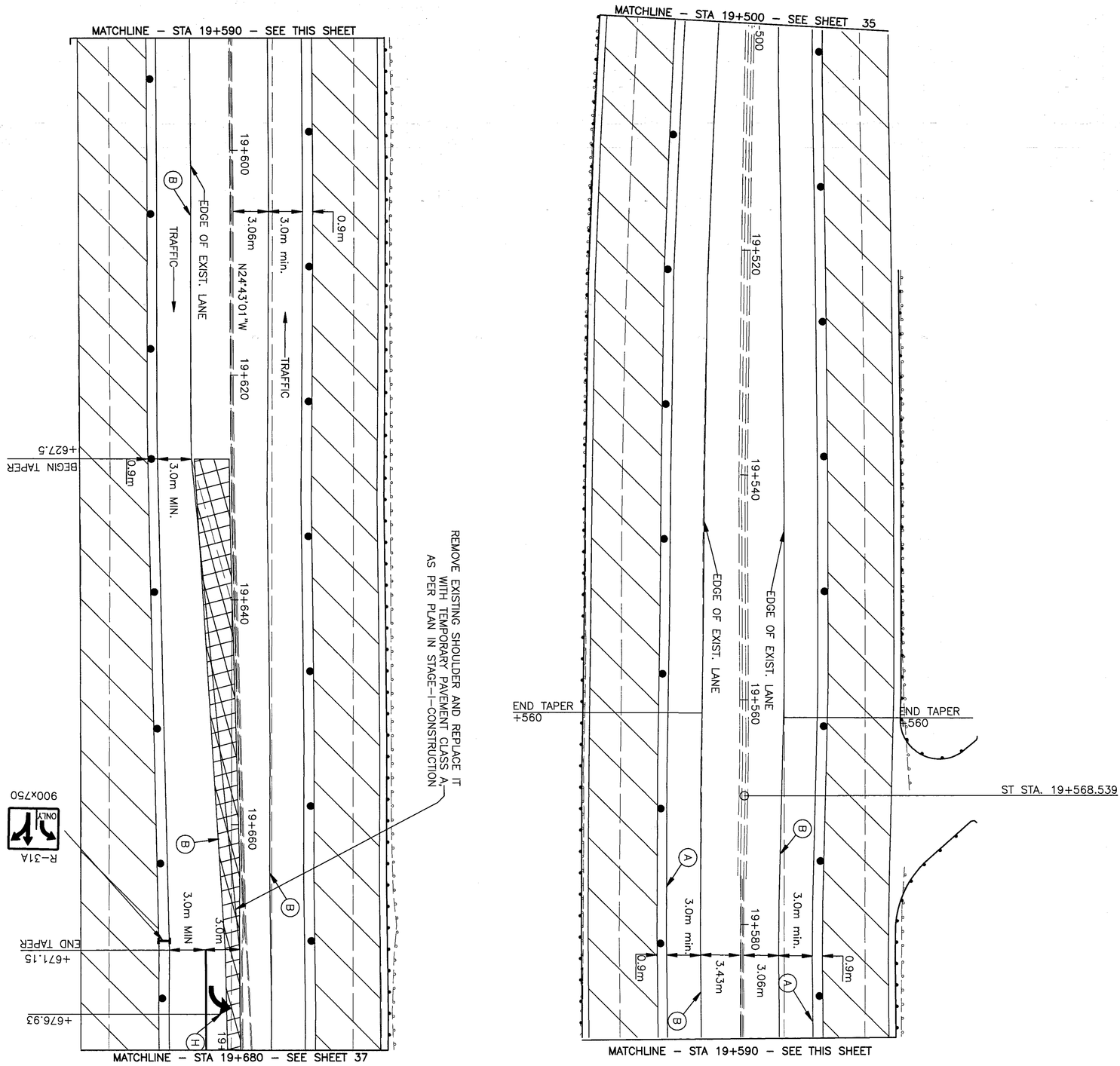
Filename : V0L1M/ODOT-M/0830/CIVIL/0830S035.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (16:6)



metric units

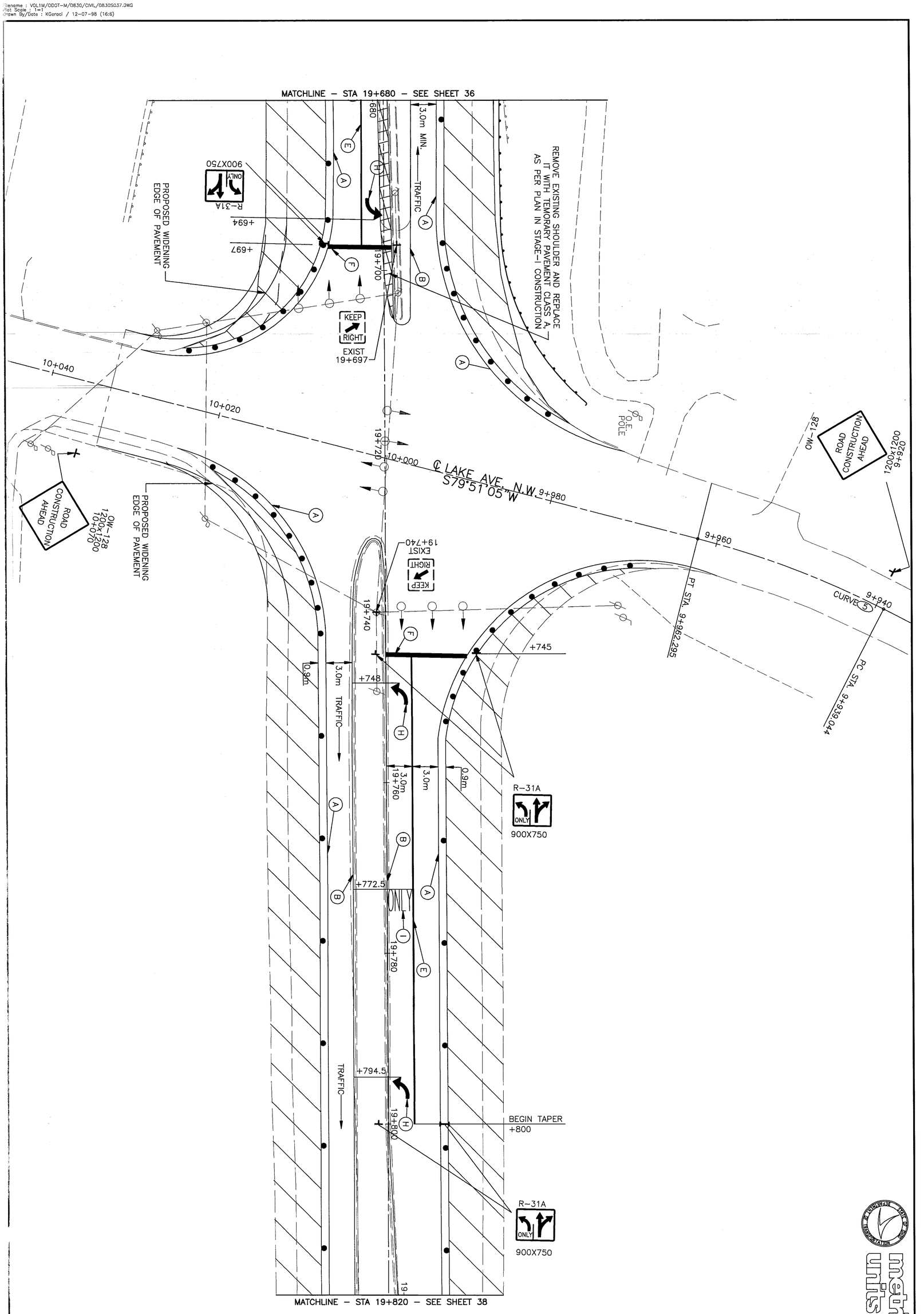
35 / 120	STA–21–16.574	MAINTENANCE OF TRAFFIC – STAGE II STA 19+240 TO STA 19+500	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S036.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (16:6)



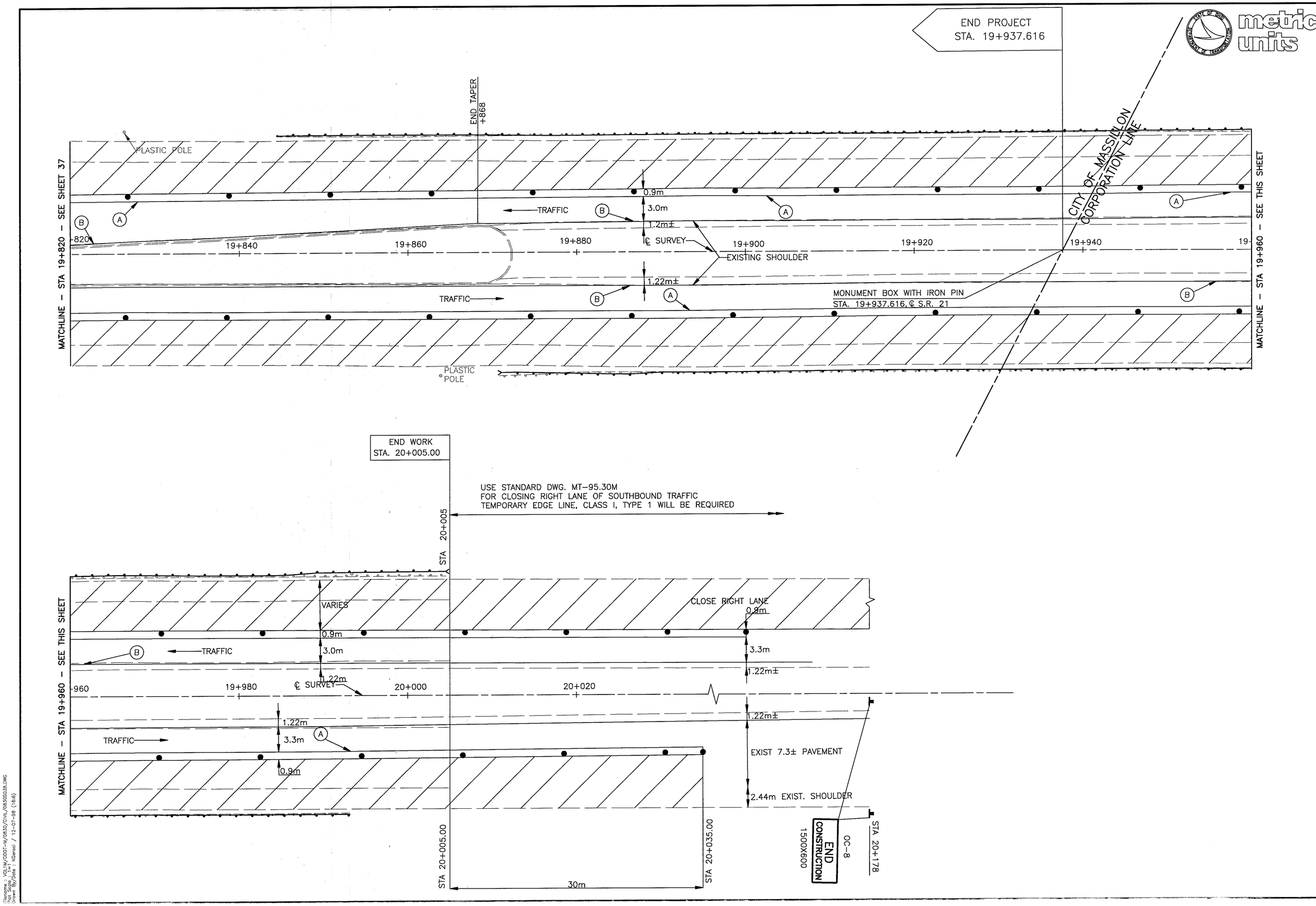
36 / 120	STA-21-16.574	MAINTENANCE OF TRAFFIC – STAGE II STA 19+500 TO STA 19+680	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S037.DWG
Plot Scale : 1=1
Drawn By/Date : KGeracl / 12-07-98 (16:6)



metric units

37 / 120	STA-21-16.574	MAINTENANCE OF TRAFFIC – STAGE II STA 19+680 TO STA 19+820	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS



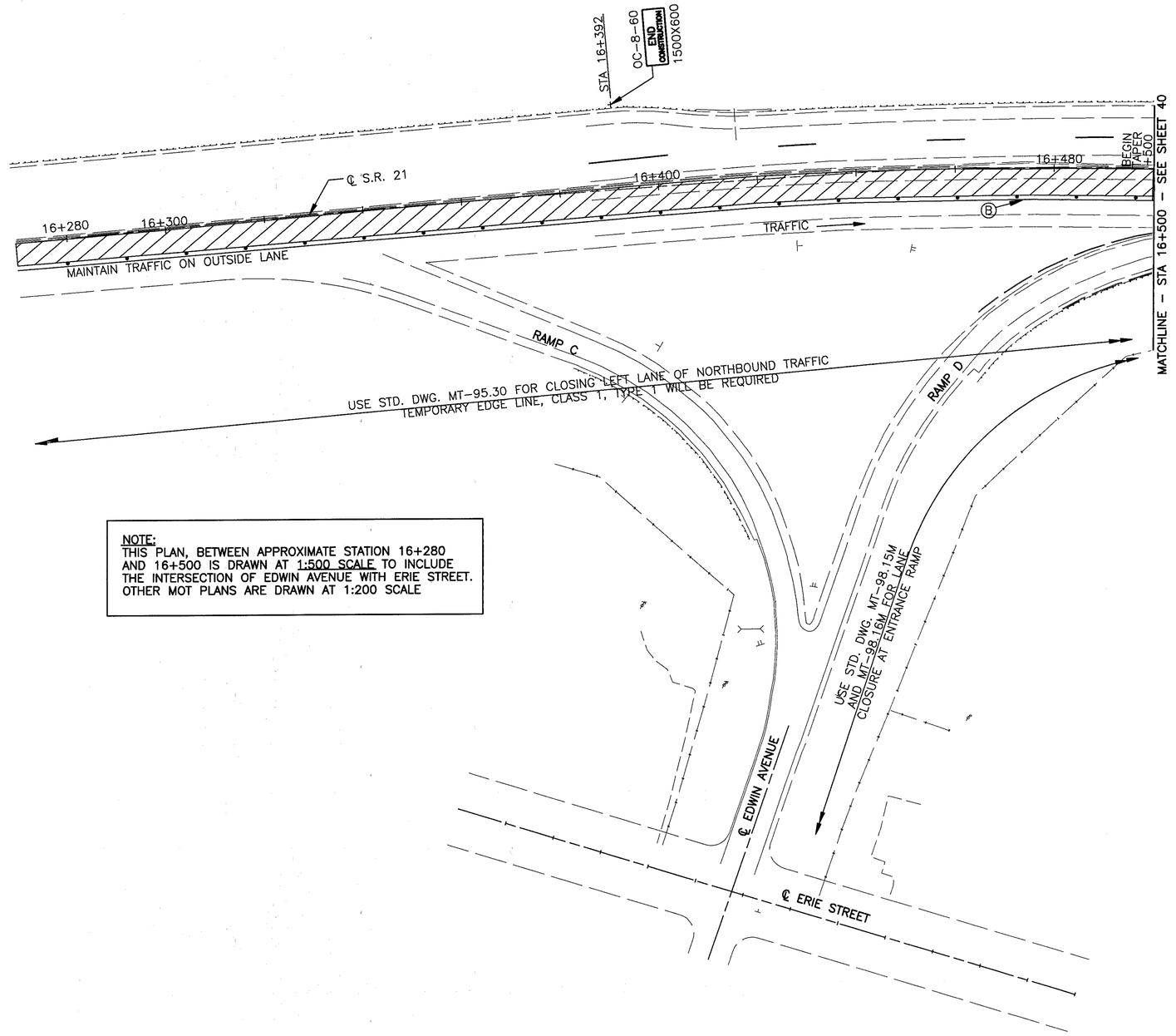
HORIZONTAL SCALE IN METERS

CALCULATED KNG
CHECKED GTA

MAINTENANCE OF TRAFFIC - STAGE II
STA 19+820 TO STA 20+200±

STA-21-16.574

metric units



NOTE:
THIS PLAN, BETWEEN APPROXIMATE STATION 16+280 AND 16+500 IS DRAWN AT 1:500 SCALE TO INCLUDE THE INTERSECTION OF EDWIN AVENUE WITH ERIE STREET. OTHER MOT PLANS ARE DRAWN AT 1:200 SCALE

LEGEND

- WORK ZONE
- TEMPORARY DRUM
- Ⓐ TEMPORARY EDGE LINE (WHITE)
- Ⓑ TEMPORARY EDGE LINE (YELLOW)
- Ⓒ TEMPORARY LANE LINE
- Ⓓ TEMPORARY CENTERLINE
- Ⓔ TEMPORARY CHANNELIZING LINE
- Ⓕ TEMPORARY STOP LINE
- Ⓖ TEMPORARY TRANSVERSE LINE
- Ⓗ TEMPORARY LANE ARROW
- Ⓘ TEMPORARY WORD "ONLY" ON PAVEMENT, 2500mm
- Ⓙ TEMPORARY CROSSWALK LINE

NOTES:

1. UNLESS OTHERWISE NOTED ON PLANS, THE MAXIMUM SPACING OF DRUMS SHALL BE 3.0m AT THE INTERSECTIONS AND 12.0m ELSEWHERE.

HORIZONTAL SCALE IN METERS
5 0 5 15

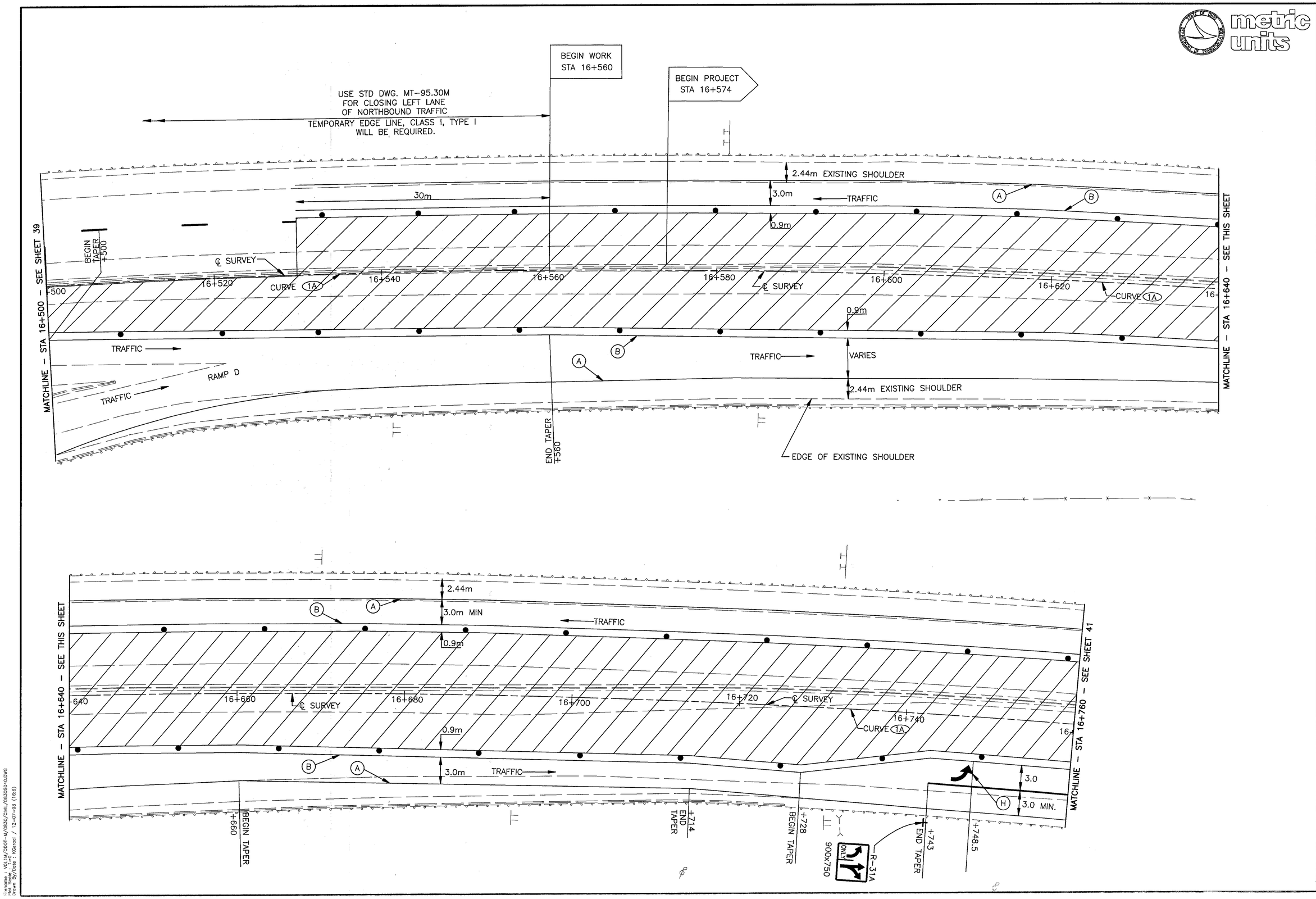
CALCULATED KNG
CHECKED GTA

MAINTENANCE OF TRAFFIC – STAGE III
STA 16+280± TO STA 16+500

STA-21-16.574

39
120

filename : V:\pw\dot\d0839\civil\0839s039.dwg
plotted : 12-07-98 (16:6)
drawn By/Date : KGerosa / 12-07-98 (16:6)



metric units

HORIZONTAL SCALE IN METERS

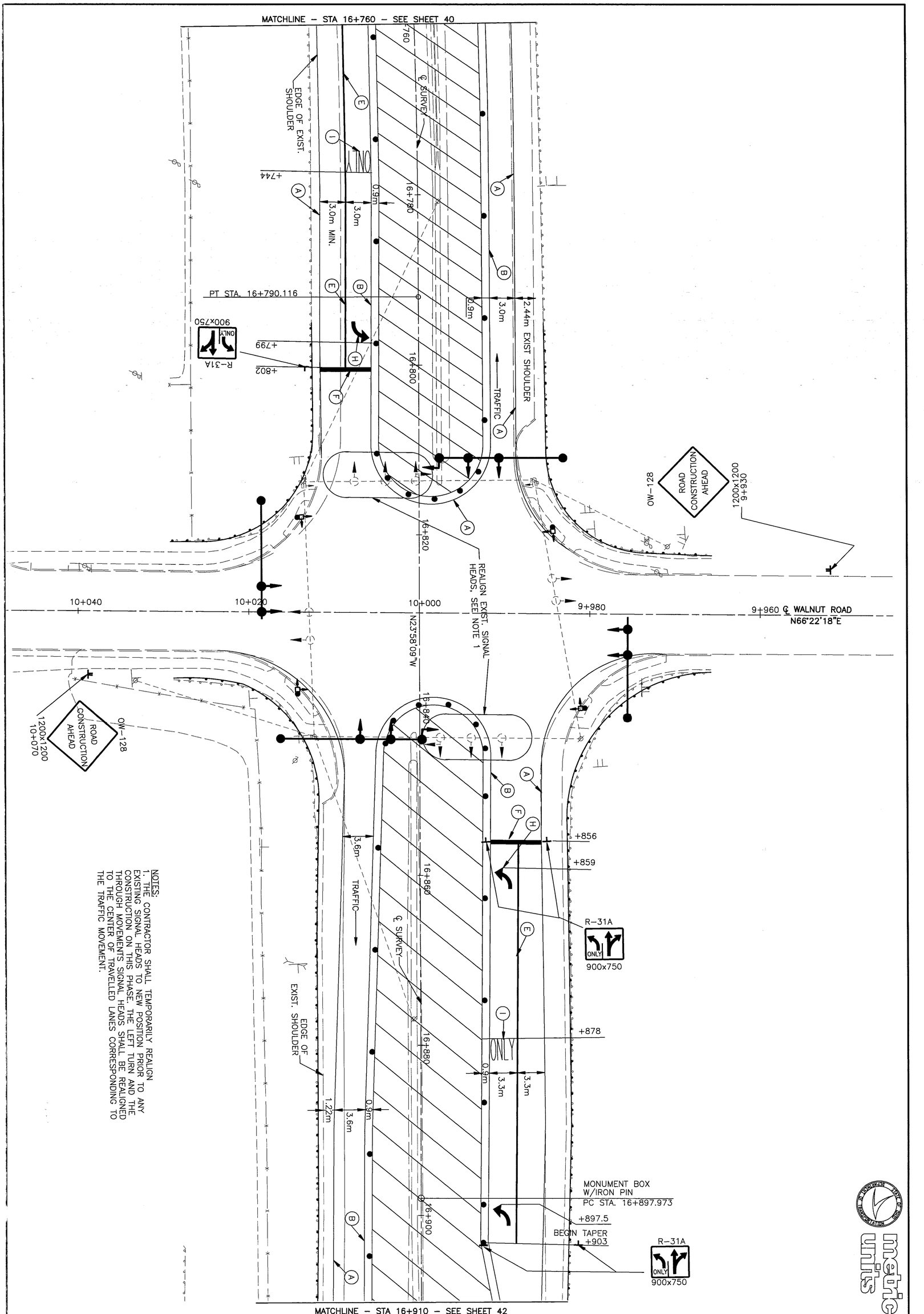
CALCULATED KNG

CHECKED GTA

MAINTENANCE OF TRAFFIC - STAGE III
STA 16+500 TO STA 16+760

STA-21-16.574

Filename : VOL1M/CDOT-M/0830/CIVIL/0830S041.DWG
Plot Scale : 1=0
Drawn By/Date : KGerasi / 12-07-98 (17:0)



NOTES:
1. THE CONTRACTOR SHALL TEMPORARILY REALIGN EXISTING SIGNAL HEADS TO NEW POSITION PRIOR TO ANY CONSTRUCTION ON THIS PHASE. THE LEFT TURN AND THE THROUGH MOVEMENTS SIGNAL HEADS SHALL BE REALIGNED TO THE CENTER OF TRAVELLED LANES CORRESPONDING TO THE TRAFFIC MOVEMENT.

metric units

41
120

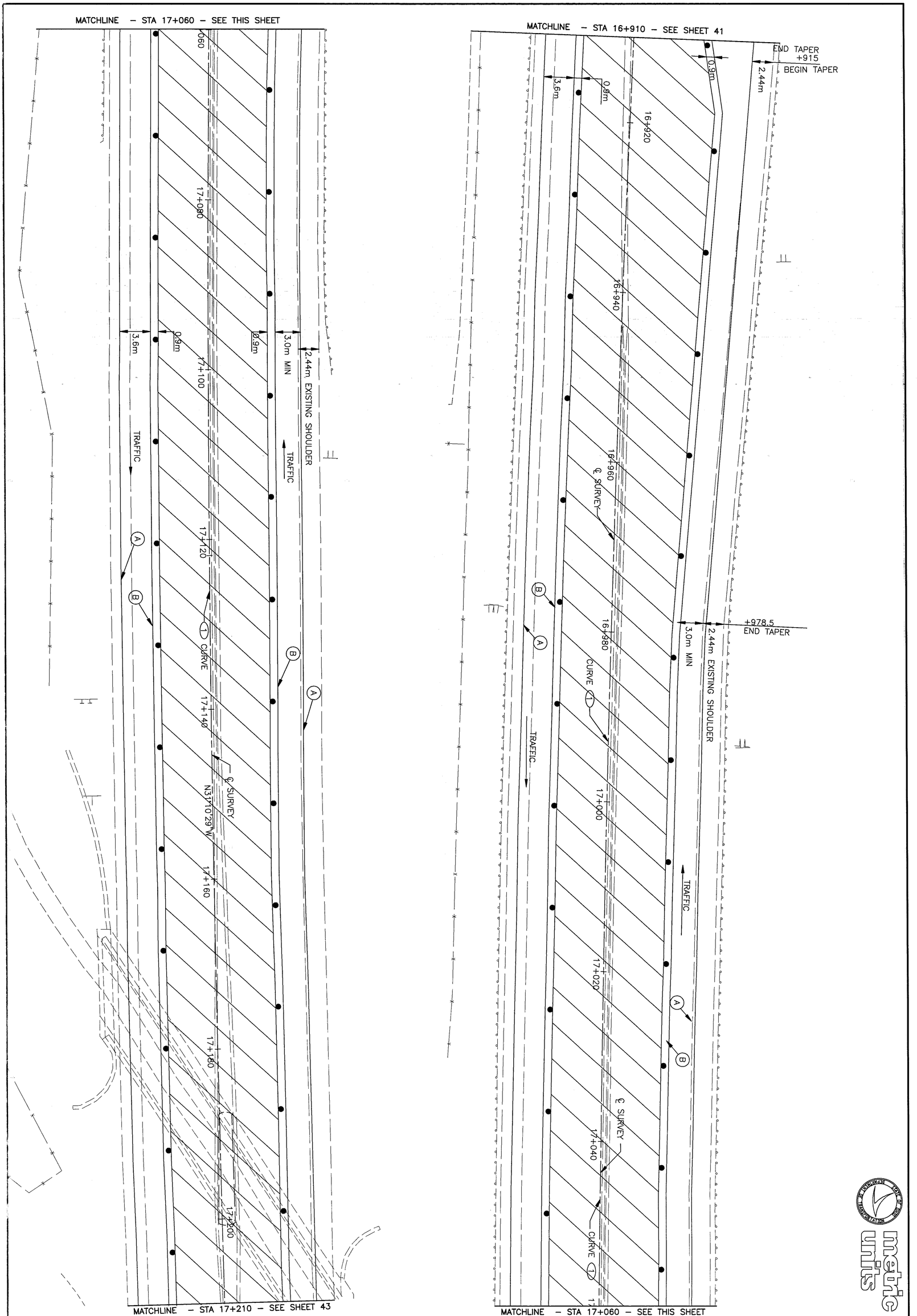
STA-21-16.574

MAINTENANCE OF TRAFFIC – STAGE III
STA 16+760 TO STA 16+910

CALCULATED KNG
CHECKED GTA

2 0 2 6
HORIZONTAL SCALE IN METERS

Filename : VOL1M/000T-M/0830/CIVIL/0830S042.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (17:0)



42
120

STA-21-16.574

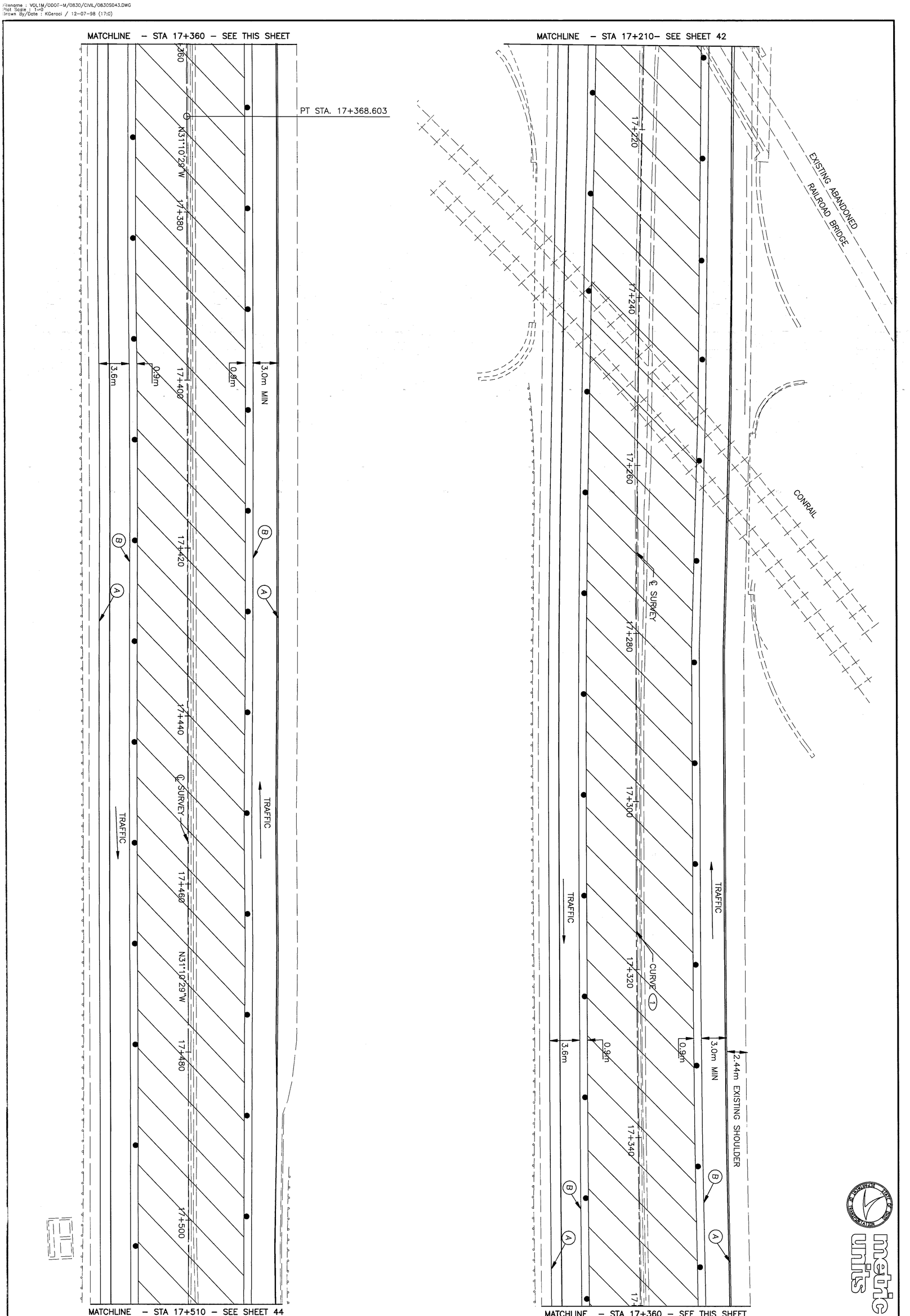
MAINTENANCE OF TRAFFIC – STAGE III
STA 16+910 TO STA 17+210

CALCULATED KNG
CHECKED GTA

2 0 2 6
HORIZONTAL SCALE IN METERS

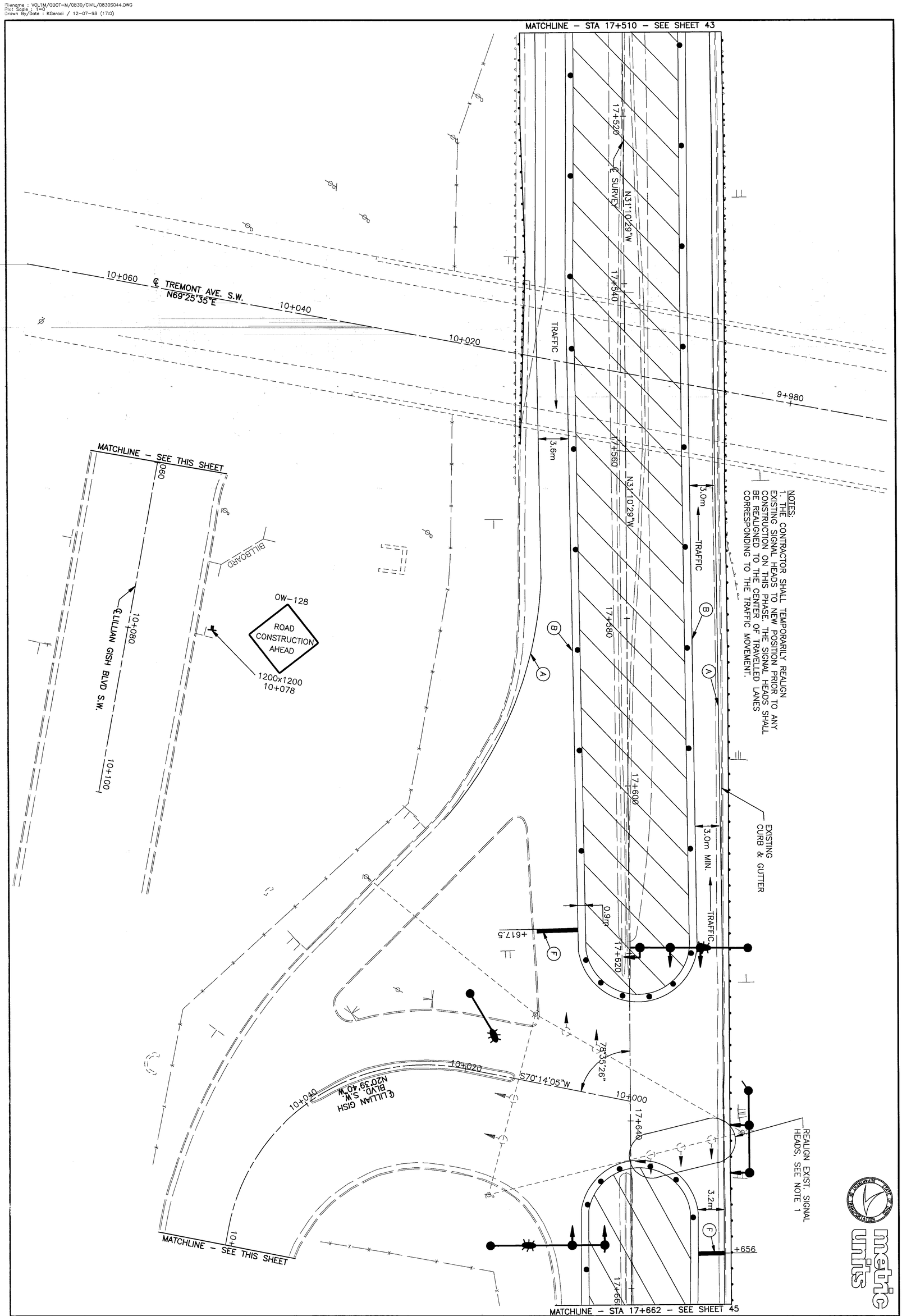
metric units

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S043.DWG
Plot Scale : 1=0
Drawn By/Date : KGeroci / 12-07-98 (17:0)



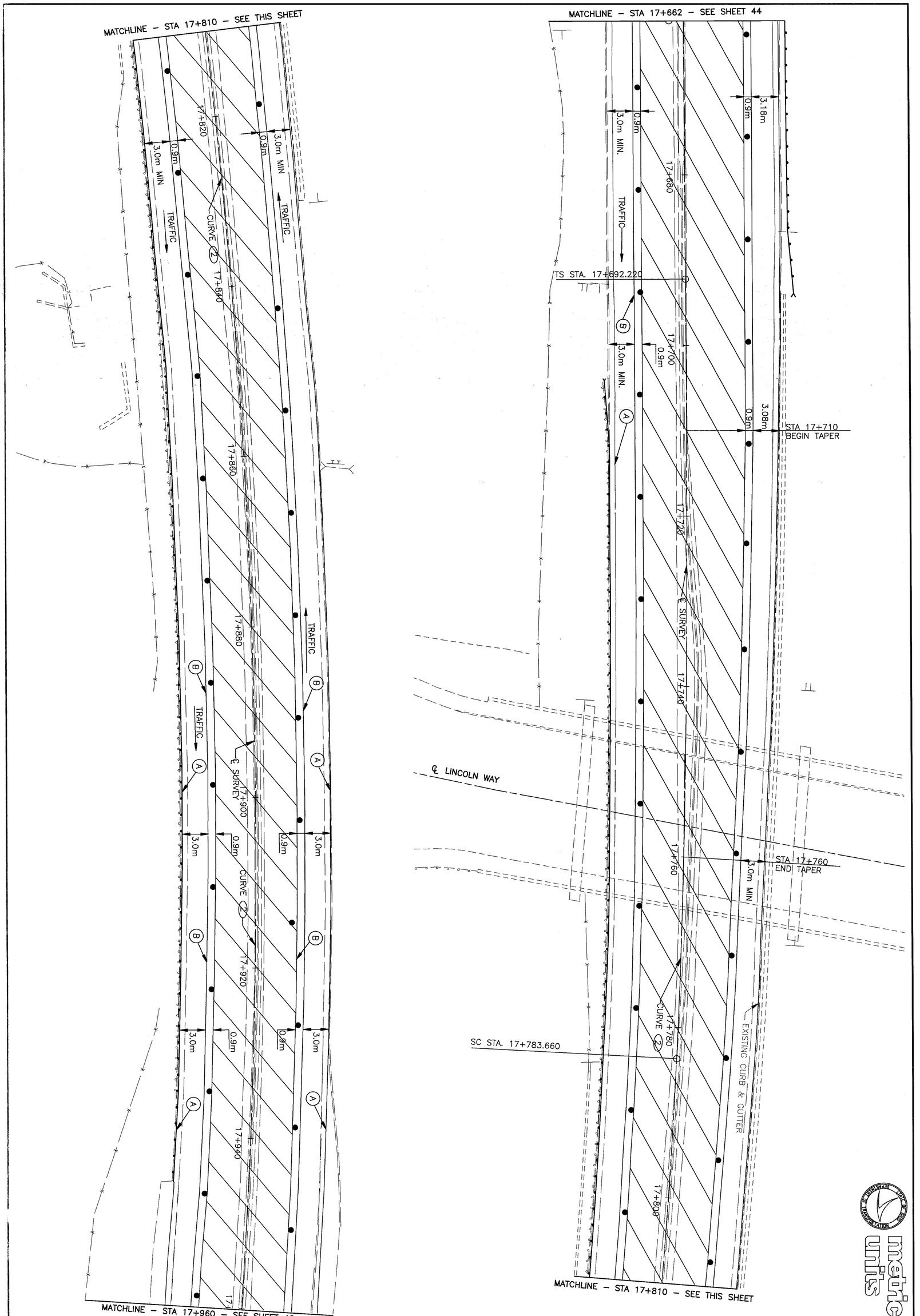
43 / 120	STA-21-16.574	MAINTENANCE OF TRAFFIC - STAGE III STA 17+210 TO STA 17+510	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS

Filename : VOL1M/ODOT-M/0830/CIVIL/08305044.DWG
Plot Scale : 1=0
Drawn By/Date : KGeraci / 12-07-98 (17:0)



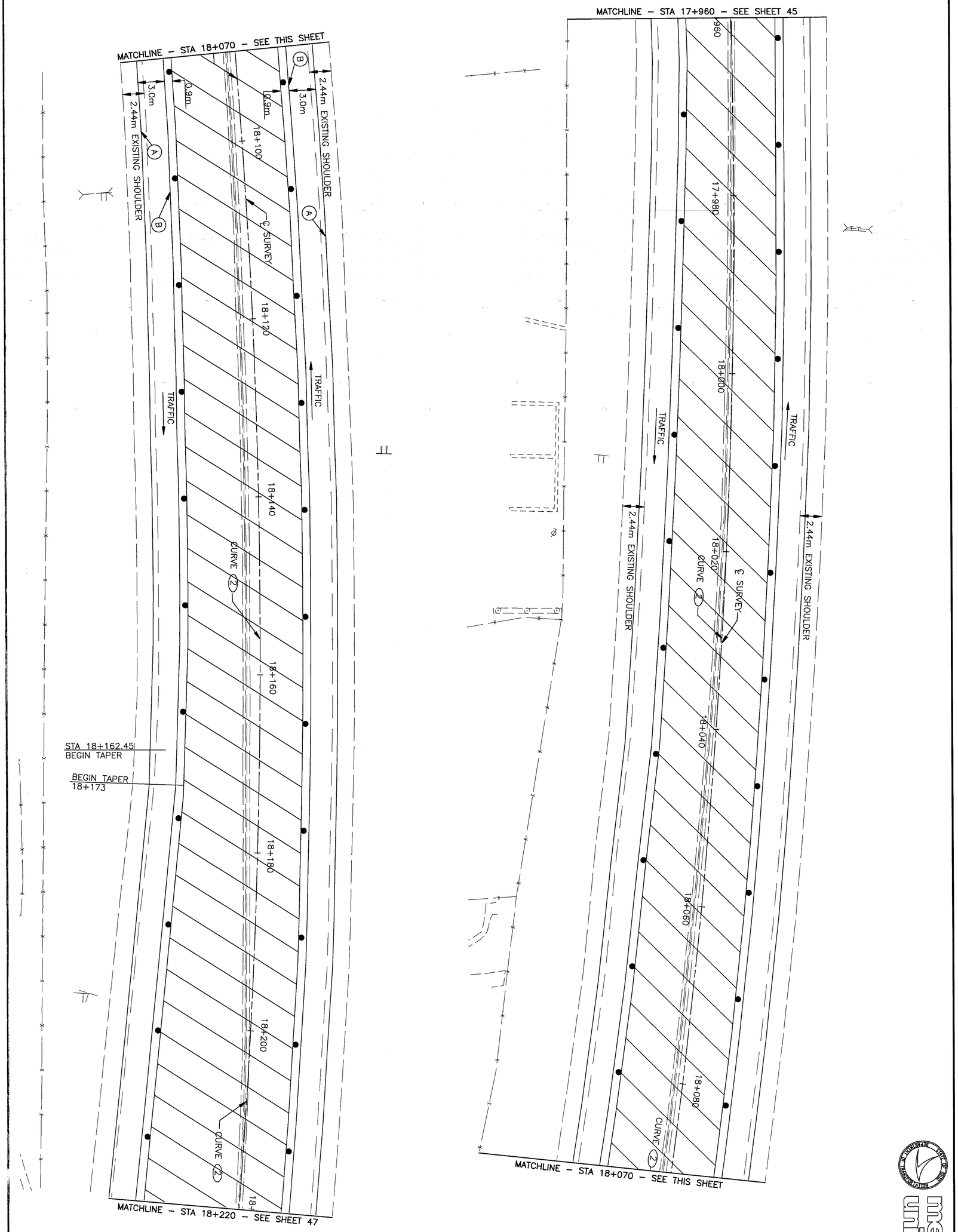
44 / 120	STA-21-16.574	MAINTENANCE OF TRAFFIC – STAGE III STA 17+510 TO STA 17+662	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S045.DWG
Plot Scale : 1=0
Drawn By/Date : KGeraci / 12-07-98 (17:0)



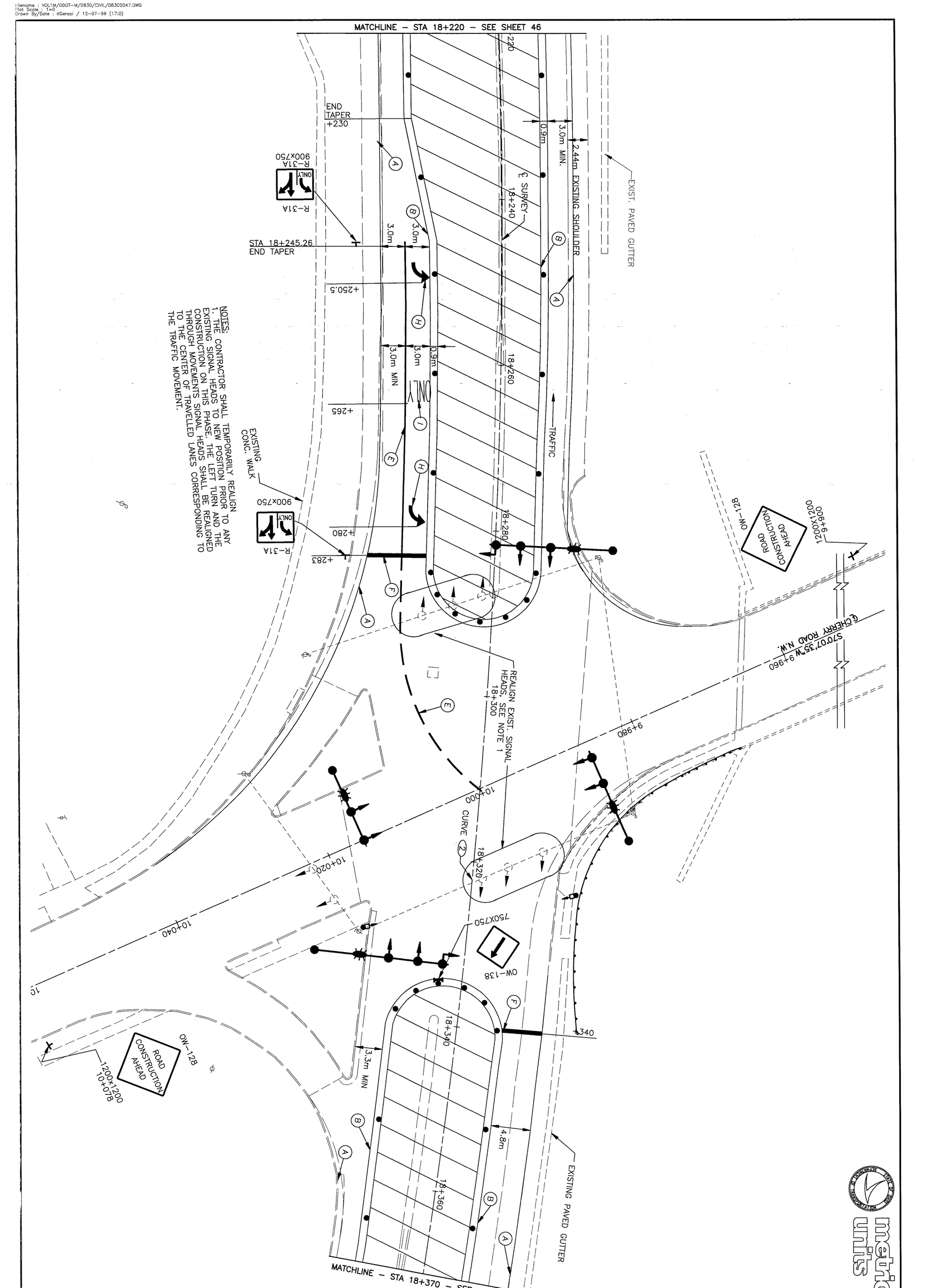
45/120	STA-21-16.574	MAINTENANCE OF TRAFFIC – STAGE III STA 17+662 TO STA 17+960	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S046.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (17:0)



46 / 120	STA-21-16.574	MAINTENANCE OF TRAFFIC – STAGE III STA 17+960 TO STA 18+220	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS

Filename : VOL1M/0DOT-M/0830/CIVIL/0830S047.DWG
Plot Scale : 1=0
Drawn By/Date : KGeraci / 12-07-98 (17:0)

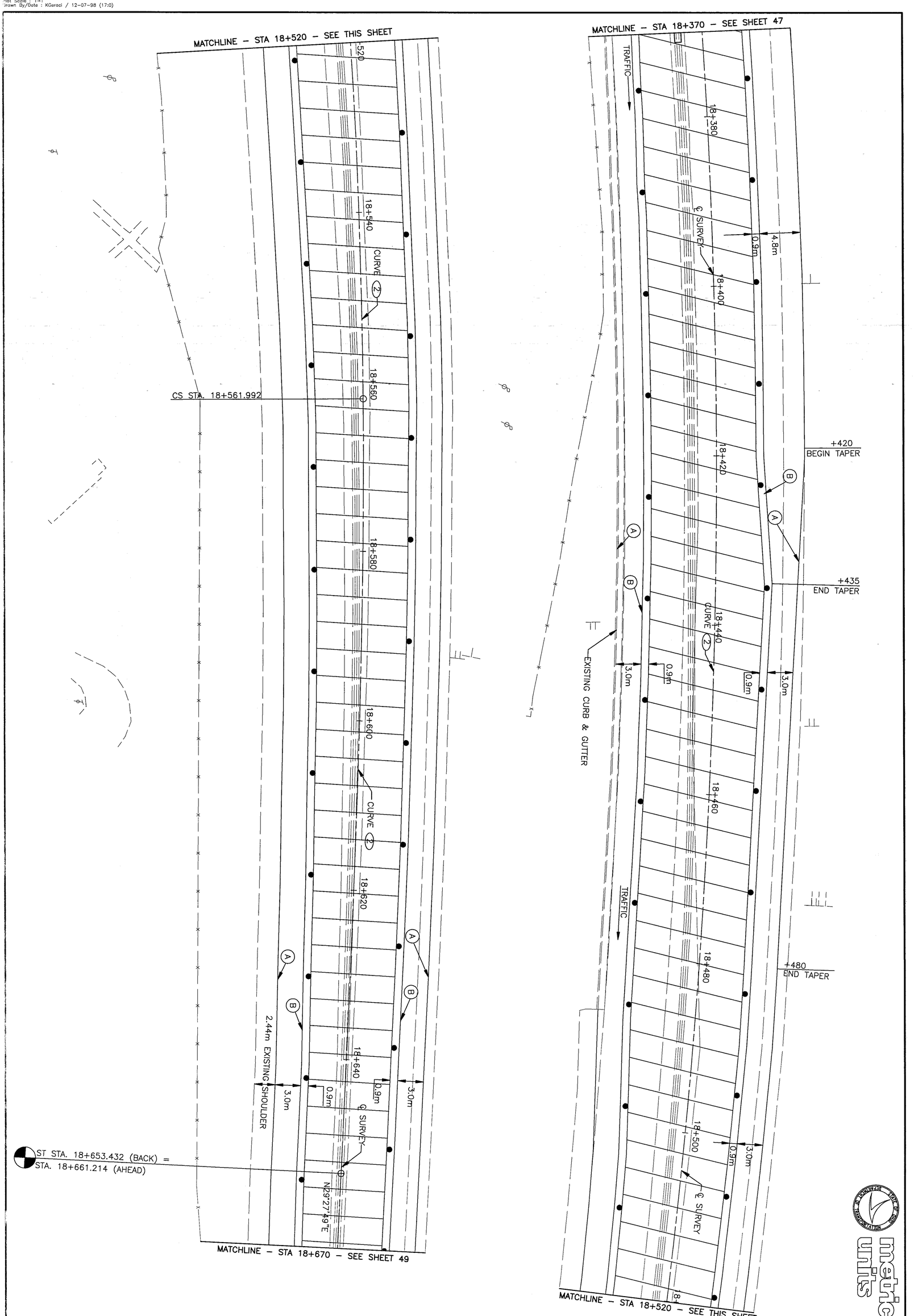


NOTES:
1. THE CONTRACTOR SHALL TEMPORARILY REALIGN EXISTING SIGNAL HEADS TO NEW POSITION PRIOR TO ANY CONSTRUCTION ON THIS PHASE. THE LEFT TURN AND THE THROUGH MOVEMENTS SIGNAL HEADS SHALL BE REALIGNED TO THE CENTER OF TRAVELLED LANES CORRESPONDING TO THE TRAFFIC MOVEMENT.

metric units

47/120	STA-21-16.574	MAINTENANCE OF TRAFFIC – STAGE III STA 18+220 TO STA 18+370	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS

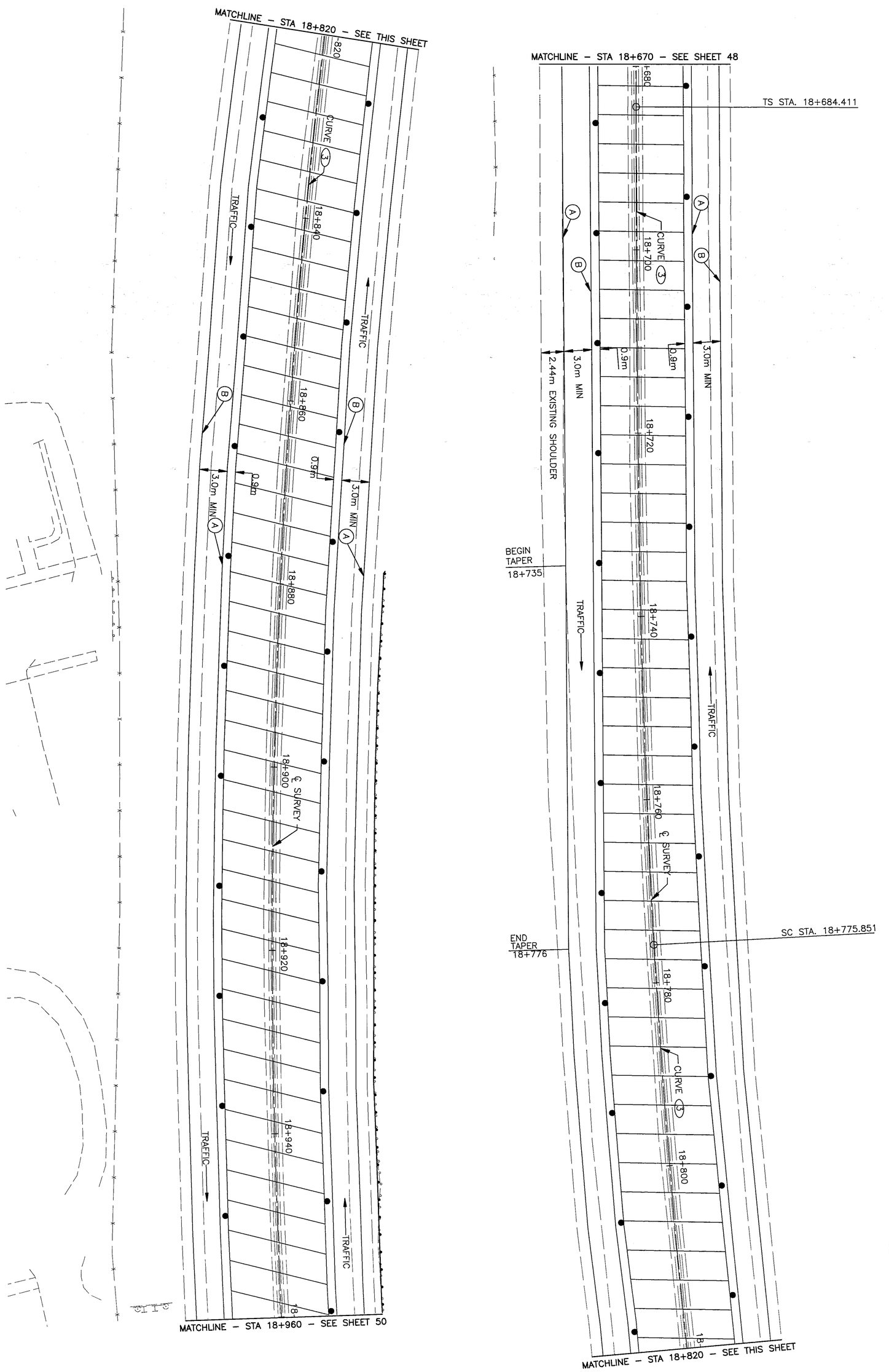
Filename : VOL1M/CDOT-M/0830/CIVIL/0830S048.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (17:0)



48/120	STA-21-16.574	MAINTENANCE OF TRAFFIC – STAGE III STA 18+370 TO STA 18+670	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS

metric units

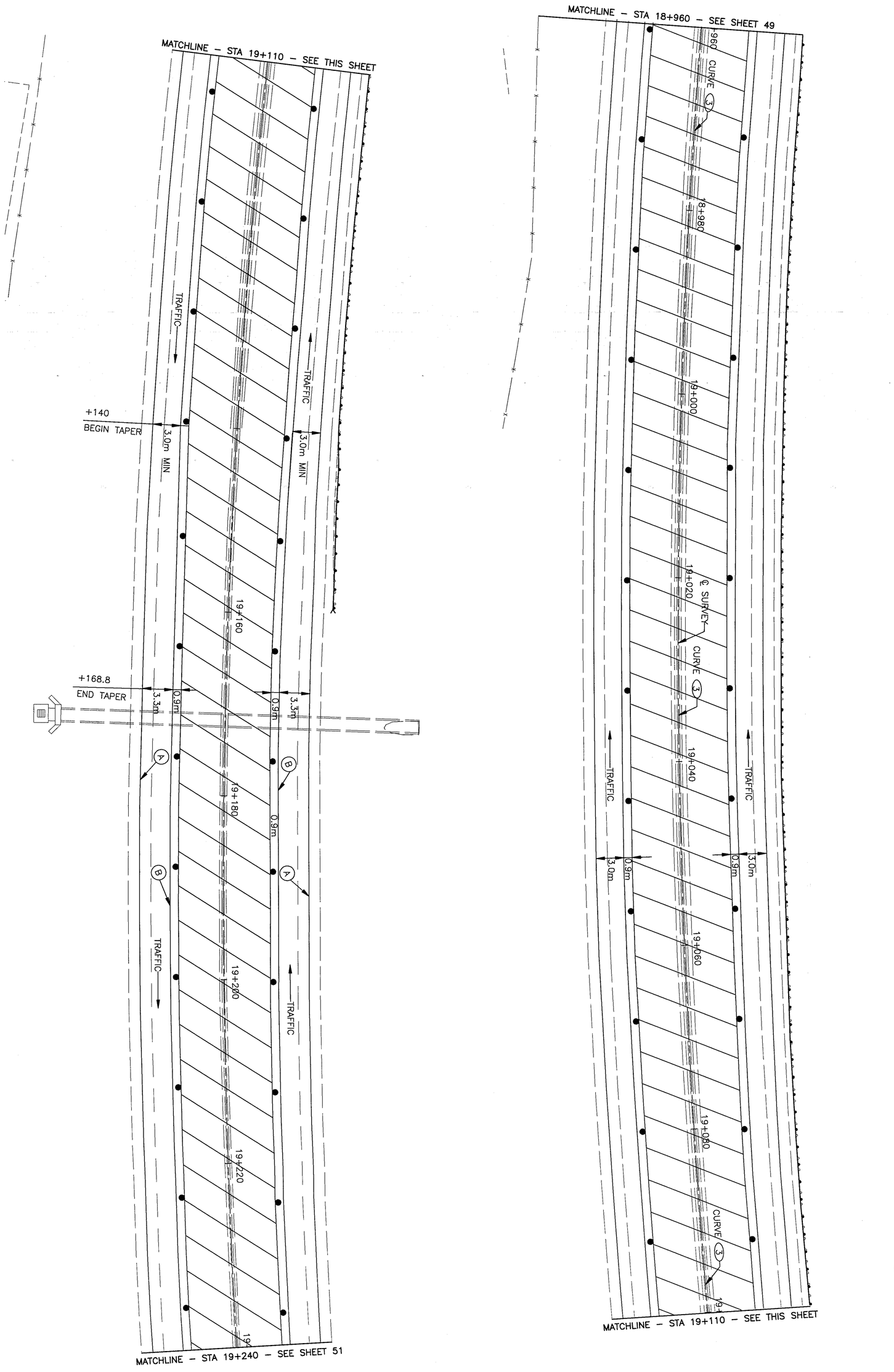
Filename : VOL1M/ODOT-M/0830/CIVIL/0830S049.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (17:1)



49 / 120	STA-21-16.574	MAINTENANCE OF TRAFFIC – STAGE III STA 18+670 TO STA 18+960	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS

metric units

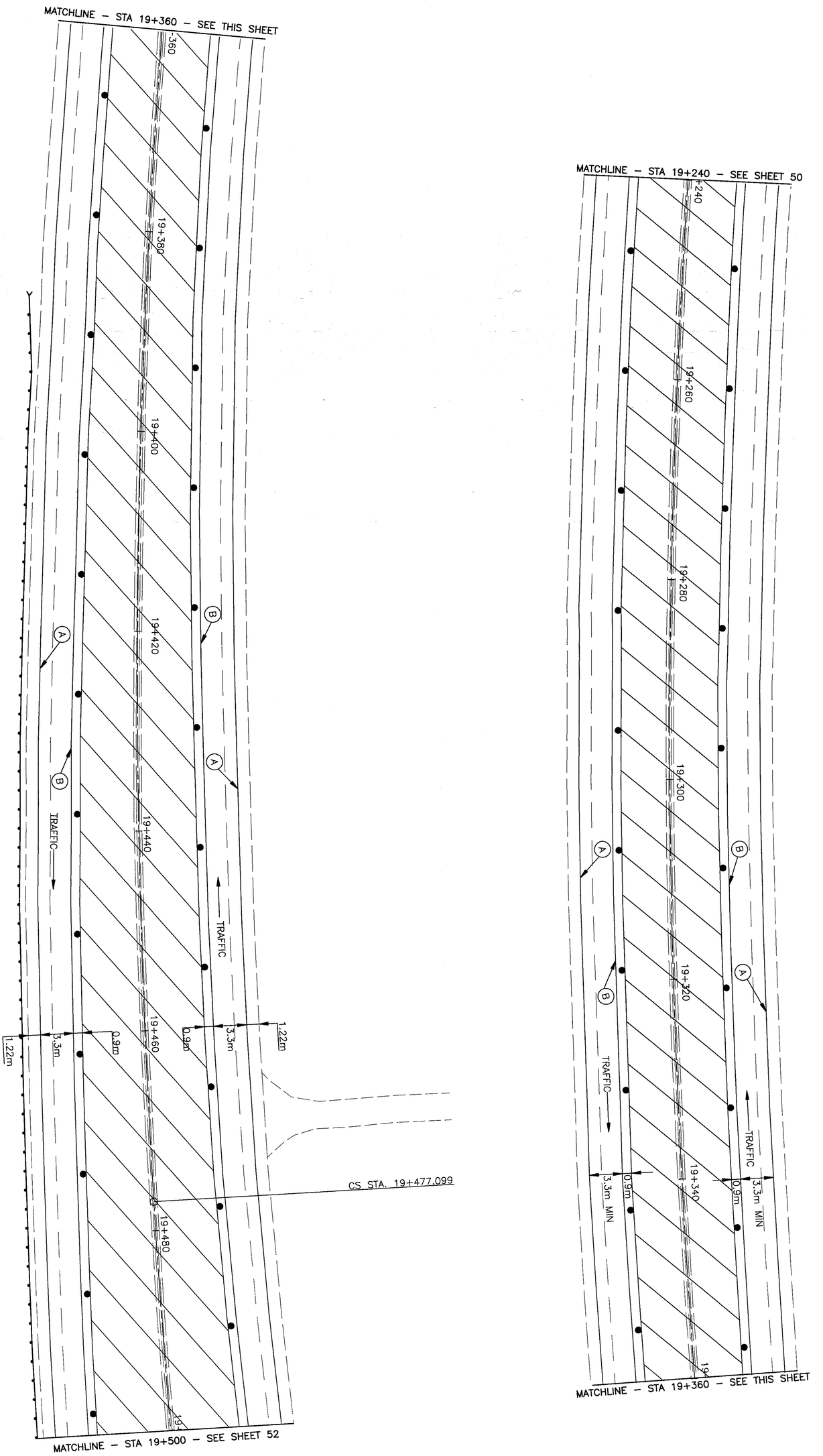
Filename : VOL1M/ODOT-M/0830/CIVIL/0830S050.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (17:1)



metric units

50 / 120	STA–21–16.574	MAINTENANCE OF TRAFFIC – STAGE III STA 18+960 TO STA 19+240	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS

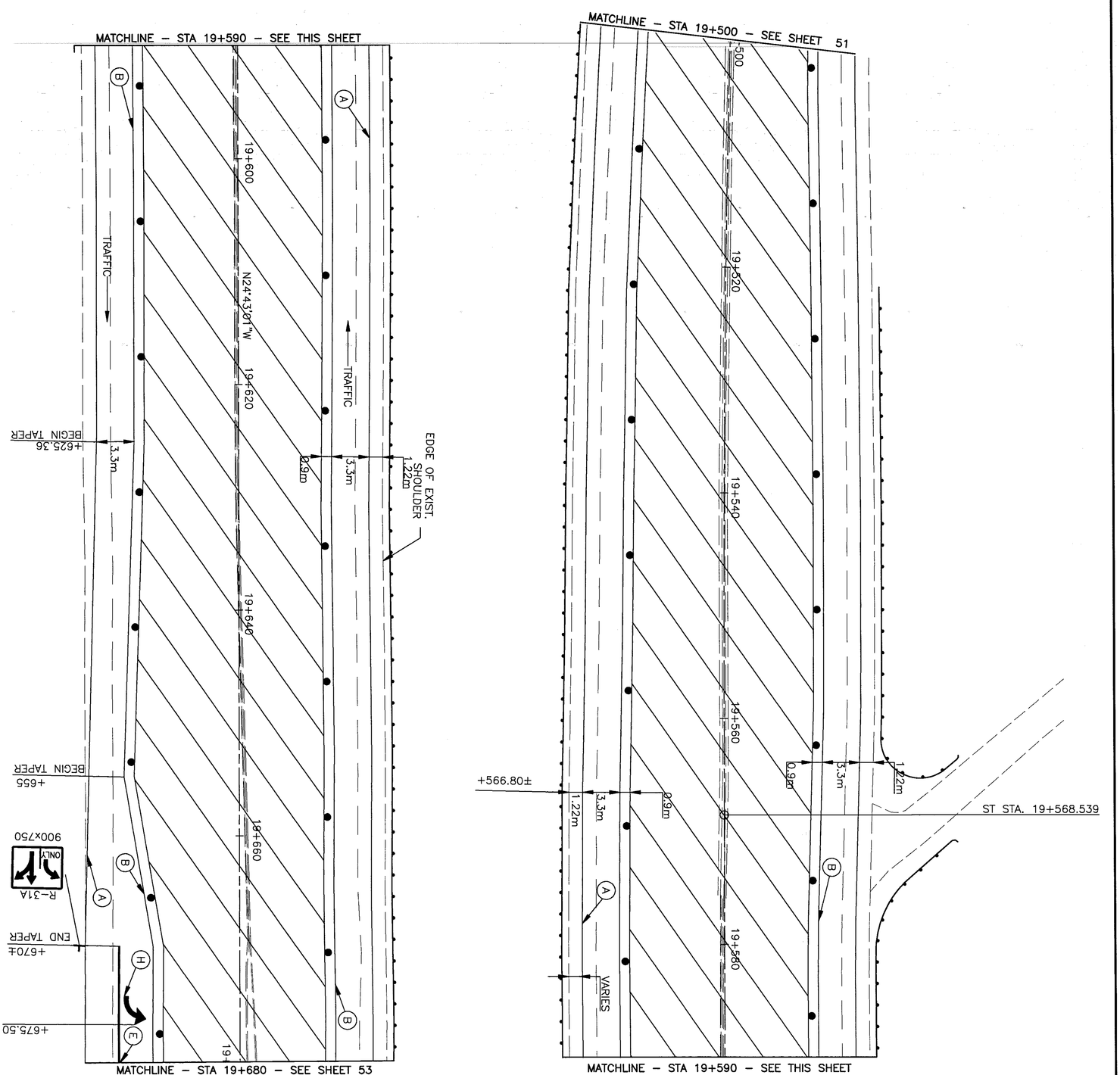
Filename : VOL1M/000T-M/0830/CIVIL/08305051.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (17:1)



metric units

51 / 120	STA-21-16.574	MAINTENANCE OF TRAFFIC – STAGE III STA 19+240 TO STA 19+500	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS	

Filename : VOL1M/DDOT-M/083J0/CIVIL/083J0S052.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (17:1)



STA-21-16.574

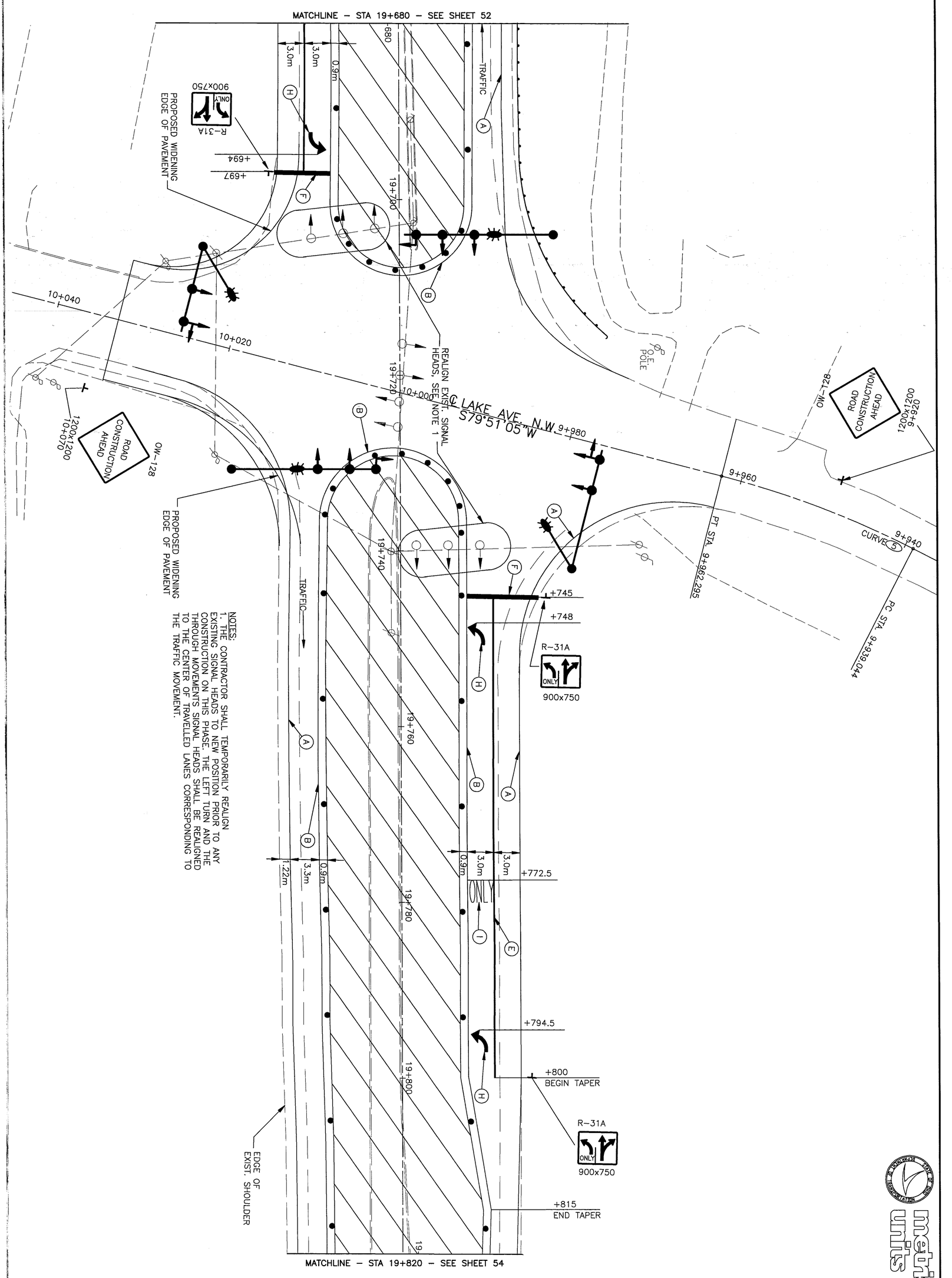
MAINTENANCE OF TRAFFIC – STAGE III
STA 19+500 TO STA 19+680

CALCULATED KNG
CHECKED GTA

2 0 2 6
HORIZONTAL SCALE IN METERS

metric units

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S053.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (17:1)



NOTES:
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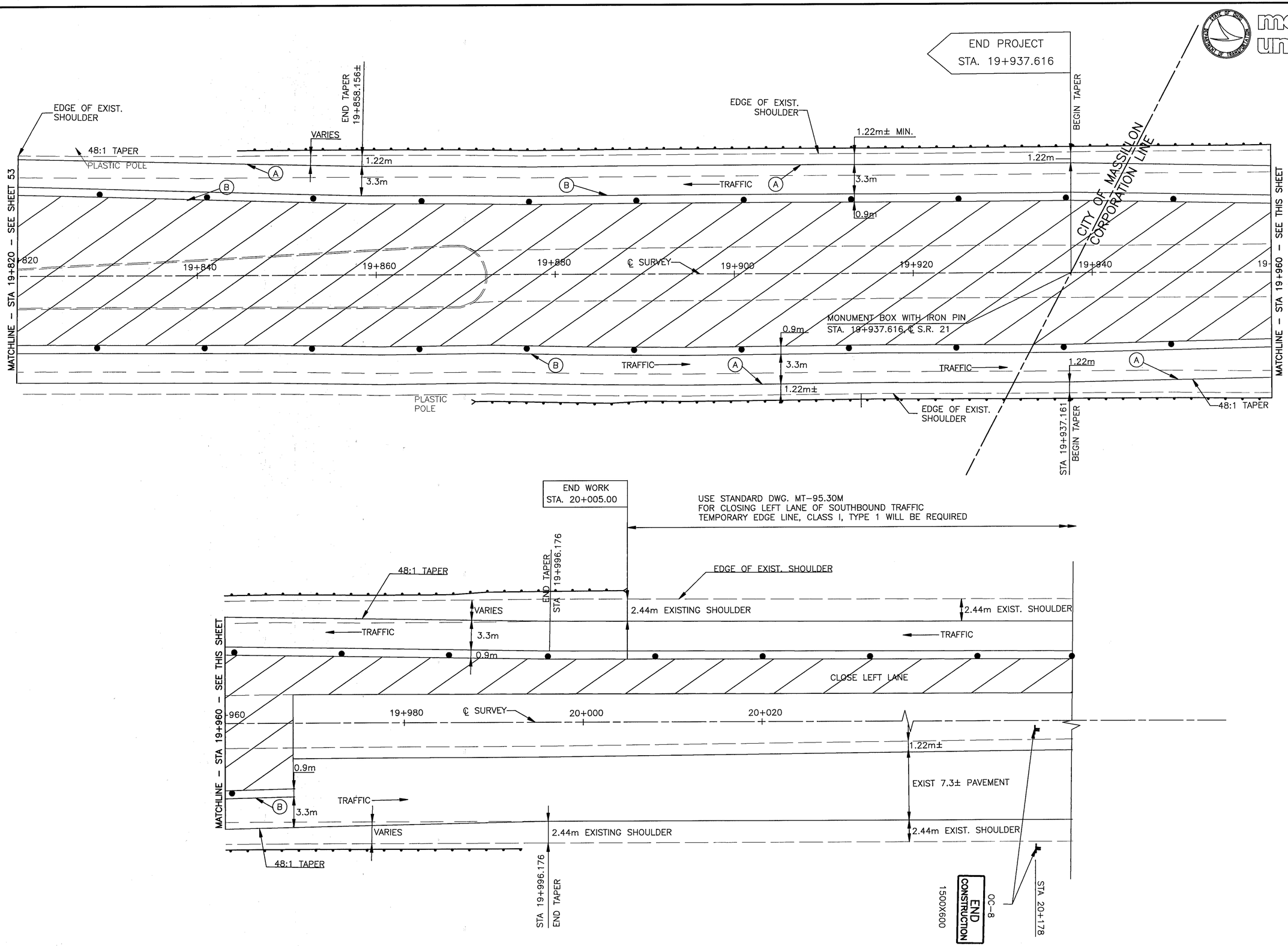
metric units

53 / 120	STA-21-16.574	MAINTENANCE OF TRAFFIC – STAGE III STA 19+680 TO STA 19+820	CALCULATED KNG CHECKED GTA	2 0 2 6 HORIZONTAL SCALE IN METERS



metric units

HORIZONTAL SCALE IN METERS

CALCULATED KNG
CHECKED GTA

MAINTENANCE OF TRAFFIC – STAGE III
STA 19+820 TO STA 20+200±

STA-21-16.574

ITEM	SHEET NUMBER 11	12		14	15		57	58	59	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
														ROADWAY	
201										201	11000	LUMP		CLEARING AND GRUBBING	
202									3	202	23000	3	SQ METER	PAVEMENT REMOVED	
202							251			202	30500	251	METER	CONCRETE MEDIAN REMOVED	
202							79.5			202	30700	79.5	METER	CONCRETE BARRIER REMOVED	
202							2167.16			202	38000	2167.16	METER	GUARDRAIL REMOVED	
203				1200					867	203	12000	2067	CU METER	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
203	165	305	–	–						203	20001	470	CU METER	EMBANKMENT, AS PER PLAN	11
203							3.733			203	60200	3.733	KILOMETER	LINEAR GRADING, METHOD A	
203							2.518			203	60300	2.518	KILOMETER	LINEAR GRADING, METHOD C	
203							3.042			203	60400	3.042	KILOMETER	LINEAR GRADING, METHOD D	
604								3		604	38501	3	EACH	MONUMENT ASSEMBLY, AS PER PLAN	15
606							2370.28			606	13000	2370.28	METER	GUARDRAIL, TYPE 5	
606							2			606	22000	2	EACH	ANCHOR ASSEMBLY, TYPE B–98	16
606							8			606	22010	8	EACH	ANCHOR ASSEMBLY, TYPE E–98	16
606							2			606	25000	2	EACH	ANCHOR ASSEMBLY, TYPE A	
606							10			606	26500	10	EACH	ANCHOR ASSEMBLY, TYPE T	
606							6			606	35000	6	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
606							4			606	35100	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
606							7			606	60024	7	EACH	IMPACT ATTENUATOR, TYPE 2–98, BIDIRECTIONAL, (MODEL # QS2406Y)	16
620							81			620	10300	81	EACH	DELINEATOR, TYPE C, POST MOUNTED	
622							36.0			622	23301	36.0	METER	CONCRETE BARRIER, TYPE A, AS PER PLAN	10,16
626							126			626	00100	126	EACH	BARRIER REFLECTOR, TYPE A	
626							12			626	00200	12	EACH	BARRIER REFLECTOR, TYPE B	
														DRAINAGE	
202								6		202	32600	6	METER	GUTTER REMOVED	
202								5		202	58100	5	EACH	CATCH BASIN REMOVED	
202								5		202	58201	5	EACH	INLET REMOVED, AS PER PLAN	15
SPECIAL								1300		SPECIAL	20270100	1300	METER	PIPE CLEANOUT	
601								6		601	38400	6	METER	PAVED GUTTER, TYPE 2	
601								1058		601	40000	1058	METER	PAVED GUTTER, MISC.: GUTTER CLEANOUT	
603								205		603	00406	205	METER	100 MM CONDUIT, TYPE F	
603								63		603	04400	63	METER	300 MM CONDUIT, TYPE B	
604								1		604	01601	1	EACH	CATCH BASIN, NO. 5, AS PER PLAN	15
604								2		604	02001	2	EACH	CATCH BASIN, NO. 6, AS PER PLAN	15
604								4		604	04500	4	EACH	CATCH BASIN, NO. 2–2B	
604								2		604	09000	2	EACH	CATCH BASIN ADJUSTED TO GRADE	
604								2		604	15001	2	EACH	INLET, NO. 3C, TYPE A, AS PER PLAN	15
604								3		604	17501	3	EACH	INLET, PAVEMENT, 1.8M, AS PER PLAN	15
604								14		604	34501	14	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	15
604								1		604	35501	1	EACH	MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN	15
604								27		604	36600	27	EACH	PRECAST REINFORCED CONCRETE OUTLET	
605								7259		605	30000	7259	METER	SHALLOW UNDERDRAIN	
605								3144		605	30001	3144	METER	SHALLOW UNDERDRAIN, AS PER PLAN	15
605				600						605	31100	600	METER	AGGREGATE DRAIN	
														EROSION CONTROL	
207					1000					207	10000	1000	SQ METER	TEMPORARY SEEDING AND MULCHING	
207					100					207	70000	100	EACH	STRAW OR HAY BALES	
659					50					659	14000	50	SQ METER	REPAIR SEEDING AND MULCHING	

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

metric units

CALCULATED GTA CHECKED KNG

GENERAL SUMMARY

STA–21–16.574

Filename = V:\LW\0007-W\0830\CIVIL\0830S055.DWG
Plot Scale = 1.50 '/ In.
Drawn By/Date = Kuenzel / 12-07-98 (16:55)

ITEM	SHEET NUMBER 11	12		14	15	16	57	58	59	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
														PAVEMENT	
251					7200					251	01000	7200	SQ METER	PARTIAL DEPTH PAVEMENT REPAIR	
253					7310					253	01000	7310	SQ METER	PAVEMENT REPAIR (FULL DEPTH)	
254						500			42605.5	254	01000	43106	SQ METER	PAVEMENT PLANING, BITUMINOUS (AVG. THICKNESS 45MM)	
254									19877.2	254	01000	19877	SQ METER	PAVEMENT PLANING, BITUMINOUS (AVG. THICKNESS 90MM)	
301									601.33	301	46000	602	CU METER	BITUMINOUS AGGREGATE BASE, PG64-22	
304				1200					30	304	20000	1230	CU METER	AGGREGATE BASE	
305									228	305	13000	228	METER	230 MM CONCRETE BASE	
407									26189	407	10000	26189	LITER	TACK COAT	
407									22957	407	14000	22957	LITER	TACK COAT FOR INTERMEDIATE COURSE	
448						23			3494.82	448	46040	3517.82	CU METER	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-28	
448									117.01	448	46061	117.01	CU METER	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, UNDER GUARDRAIL, PG64-22, AS PER PLAN	16
448									2928.96	448	50000	2928.96	CU METER	ASPHALT CONCRETE SURFACE COURSE, TYPE 1H	
														FOR TRAFFIC CONTROL GENERAL SUMMARY, SEE SHEET 87	
														FOR SIGNALIZATION AND LIGHTING GENERAL SUMMARY, SEE SHEET 104	
														FOR MAINTENANCE OF TRAFFIC GENERAL SUMMARY, SEE SHEET NO. 21	
														FOR STRUCTURAL GENERAL SUMMARY, SEE SHEET NO. 115	
614										614	11000	LUMP		MAINTAINING TRAFFIC	
623										623	10001	LUMP		CONSTRUCTION LAYOUT STAKES, AS PER PLAN	16
624										624	10000	LUMP		MOBILIZATION	
806										806	16010	12	MONTH	FIELD OFFICE, TYPE B	

metric units

CALCULATED GTA
CHECKED KNG

GENERAL SUMMARY

STA-21-16.574

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S056.DWG
Plot Scale : 1=50
Drawn By/Date : KGeraci / 12-07-98 (17:35)

LINEAR GRADING

	STATION			203			
				LINEAR GRADING, METHOD A	LINEAR GRADING, METHOD C	LINEAR GRADING, METHOD D	
	FROM	TO		METER	METER	METER	
	16+574	16+795	NB	221		221	
	16+795	16+820	NB		25	15	
	16+837	16+850	NB		13	1	
	16+850	17+161.6	NB		311.6	311.6	
	17+182.1	17+220.4	NB		38.3		
	17+245.2	17+490	NB		244.8	244.8	
	17+490	17+540	NB		50		
	17+540	17+559	NB		19		
	17+704.1	17+940.5	NB		236.4		
	17+940.5	18+275	NB	334.5		334.5	
	18+486	19+387	NB	901		684	
	19+387	19+590.6	NB		203.6		
	19+590.6	19+694	NB	103.4		103.4	
	19+740	19+871	NB	131		131	
	19+871	19+993.2	NB		122.1	122.1	
	19+881	19+996.2	NB MED.	115.2		115.2	
	16+574	16+795	SB	221		221	
	16+795	16+820	SB		25	15	
	16+837	16+850	SB		13		
	16+850	17+100.9	SB		251		
	17+100.9	17+205	SB	104.1			
	17+223.5	17+255.9	SB		32.4		
	17+275.3	17+328.8	SB		53.5	53.5	
	17+328.8	17+487	SB	158.2		148	
	17+487	17+694	SB		207	207	
	17+950	18+273	SB	323			
	18+305	18+339.6	SB		34.6		
	18+339.6	18+878.3	SB	538.7			
	18+878.3	19+159.3	SB		281		
	19+159.3	19+521.5	SB	362.2			
	19+521.5	19+718	SB		196.5		
	19+740	19+844.5	SB	104.5			
	19+844.5	20+004.5	SB		160		
	19+881	19+996.2	SB MED	115.2		115.2	
SUB TOTAL				3733	2517.8	3042.3	

GUARDRAIL, DELINEATOR & BARRIER REFLECTOR

	REFERENCE NO.	LOCATION	STATION			202	606							620	626			
						GUARDRAIL REMOVED	GUARDRAIL, TYPE 5	ANCHOR ASSEMBLY, TYPE A	ANCHOR ASSEMBLY, TYPE B-98	ANCHOR ASSEMBLY, TYPE E-98	ANCHOR ASSEMBLY, TYPE T	BRIDGE TERMINAL ASSEMBLY, TYPE 1	BRIDGE TERMINAL ASSEMBLY, TYPE 2	DELINEATOR, TYPE C, POST MOUNTED	BARRIER REFLECTOR TYPE A			
															EACH			
			FROM	TO		METER	METER	EACH	EACH	EACH	EACH	EACH	EACH	EACH	W	Y		
	G1	LT.	16+795±	16+823±		41.91	41.91						1		4			
	G2	RT.	16+795±	16+821±		36.2	28.58	1							3			
	G3	LT.	16+836.3±	17+100.87		274.3	259.08			1		1		1	12			
	G4	RT.	16+837.3±	17+161.6±		248.3	329.57	1				1			14			
	G5	LT.	17+223.46±	17+255.85±		248.3	32.39					1	1		3			
	G6	RT.	17+182.1±	17+224.0±			41.91					1	1		3			
	G7	LT.	17+275.26±	17+328.8±			38.12			1		1		1	4			
	G8	RT.	17+245.23±	17+559.11±		314.0	310.52				1		1		14			
	G9	LT.	17+488.17±	17+693.95±		84.3	186.69			1	1				9			
	G10	RT.	17+704.12±	17+940.53±		229.4	217.17			1	1			1	10			
	G11	LT.	18+304.00±	18+339.6±		19.43	36.20		1			1			4			
	G12	LT.	18+878.28±	19+159.3±		277.89	259.49			1	1			1	12			
	G13	RT.	19+387.0±	19+590.60		202.41	186.69			1	1			1	9			
	G14	LT.	19+521.54±	19+554.7±		46.28	41.91				2				5			
	G15	LT.	19+571.12±	19+715.8±		110.34	116.21		1		1				7			
	G16	LT.	19+844.49±	20+004.51±		160.0	140.97			1	1			1	7			
	G17	RT.	19+871.07±	19+993.15±		122.4	102.87			1	1			1	6			
		LT.& RT.	16+574	19+996										74				
SUB TOTAL						2167.16	2370.28	2	2	8	10	6	4	81	126			

BARRIER REFLECTOR, TYPE A SHALL BE SPACED IN ACCORDANCE WITH 626.03

BARRIER & ATTENUATOR

	REFERENCE NO.	LOCATION	STATION			202	202	606	622		626				
						CONCRETE MEDIAN REMOVED	CONCRETE BARRIER REMOVED	IMPACT ATTENUATOR, TYPE 2-98, BIDIRECTIONAL (MODEL # QS2406Y),	CONCRETE BARRIER, TYPE A, AS PER PLAN		BARRIER REFLECTOR TYPE B				
											EACH				
			FROM	TO		METER	METER	EACH	METER		W	Y			
	R1	M	16+771	16+777			6.0								
	R2	M	16+777	16+814.15		37.5									
	B1	M	16+771	16+777					6.0			2			
	I1	M	16+777	16+784.16				1							
	R3	M	16+843	16+943		100									
	R4	M	16+943	16+949			6.0								
	I2	M	16+935.84	16+943				1							
	B2	M	16+943	16+949					6.0			2			
	R5	M	17+601.4±	17+623		—	21.6								
	I3	M	17+601.4±	17+608.56				1							
	B3	NOT	USED						—						
	R6	M	17+646	17+676.4		30.4									
	R7	M	17+676.4	17+682.4			6.0								
	I4	M	17+669.24	17+676.4				1							
	B4	M	17+676.4	17+682.4					6.0			2			
	R8	M	18+248.0	18+260.0			12.0								
	R9	M	18+260.0	18+288.0		25.6*									
	B5	M	18+254.0	18+260.0					6.0			2			
	I5	M	18+260.0	18+267.16				1							
	R10	M	18+339.0	18+365.0		23.0*									
	R11	M	18+365.0	18+377.0			12.0								
	I6	M	18+357.84	18+365.0				1							
	B6	M	18+365.0	18+371.0					6.0			2			
	R12	M	19+655.4	19+671.3			15.9								
	R13	M	19+671.3	19+705.8		34.5									
	B7	M	19+655.4	19+661.4					6.0			2			
	I7	M	19+661.4	19+668.56				1							
SUB TOTAL						251.0	79.5	7	36.0		—	12			

* DEDUCTION FOR INLET REMOVAL APPLIED IN QUANTITY TAKE

CALCULATED KNG CHECKED GTA

metric units

SUB-SUMMARIES

STA-21-16.574

Filename : VOL1M/DDOT-M/0835/CIVIL/0835257.DWG
Plot Scale = 1
Plotted By/Date : KGerost / 12-07-98 (17:35)

metric units

CALCULATED GTA
CHECKED KNG

UNDERDRAIN

REFERENCE NO.	LOCATION	STATION FROM	STATION TO	603 100mm CONDUIT, TYPE F	605 SHALLOW UNDERDRAIN	605 SHALLOW UNDERDRAIN, AS PER PLAN	G38 PRECAST REINFORCED CONCRETE OUTLET
				METER	METER	METER	EACH
U1	LT.	16+575	16+805	11	232		2
U2	RT.	16+575	16+673	11	98		2
U3	M	16+578	16+728	4	150		--
U4	M	16+578	16+728	4	150		--
U5	LT.	16+837	17+694	20	857		1
U6	RT.	16+855	17+593	16	766		3
U7	M	17+130	17+330	--	200		--
U8	RT.	17+659	17+940	5	278		--
U9	LT.	17+831	18+177	--	348		--
U10	RT.	17+941	18+302	6	361		1
U11	M	18+034	18+198	2	164		--
U12	M	18+034	18+198	2	164		--
U13	LT.	18+179	18+246	8	67		1
U14	RT.	18+368	19+568	40	1200		7
U15	M	18+458	18+585	2	127		--
U16	M	18+458	18+585	2	127		--
U17	LT.	18+501	19+700	37	1199		7
U18		NOT USED		--	--		--
U19		NOT USED		--	--		--
U20	M	19+431	19+610	2	179		--
U21	M	19+431	19+610	2	179		--
U22	RT.	19+739	19+937.6	6	199		1
U23	LT.	19+860	19+937.6	--	78		--
U24	M	19+870	19+937.6	4	68		--
U25	M	19+870	19+937.6	4	68		--
UA	RT.	16+673	16+805	--		132	--
UB	M	16+728	16+810	--		83	--
UC	M	17+748	18+034	2		287	--
UD	M	17+748	18+034	3		287	--
UE	M	18+198	18+286	--		88	--
UF	M	18+198	18+286	--		88	--
UG	LT.	18+337	18+501	--		166	--
UH	M	18+346	18+458	--		112	--
UI	M	18+587	19+431	--		844	--
UJ	M	18+587	19+431	--		844	--
UK	RT.	19+568	19+675	6		107	1
UL	LT.	19+754	19+860	6		106	1
SUB TOTAL				205	7259	3144	27

DRAINAGE

REFERENCE NO.	LOCATION	STATION FROM	STATION TO	202 GUTTER REMOVED	202 CATCH BASIN REMOVED	202 INLET REMOVED, AS PER PLAN	SPECIAL PIPE CLEANOUT	601 PAVED GUTTER, TYPE 2	603 300 MM CONDUIT, TYPE B	604 CATCH BASIN, NO. 5, AS PER PLAN	604 CATCH BASIN, NO. 6, AS PER PLAN	604 CATCH BASIN, NO. 2-2B	604 INLET, NO. 3C, TYPE A, AS PER PLAN	604 INLET, PAVEMENT, 1.8M, AS PER PLAN
				EACH	EACH	EACH	METER	METER	METER	EACH	EACH	EACH	EACH	EACH
D1	M	18+251	18+286			1			35		1			
D1A	M	18+251	–										1	
D2	M	18+346	18+374			1			28		1			
D2A	M	18+374	–										1	
D3	LT.	18+331	–		1							1		
D4	LT.	17+190	–		1					1				
D5	RT.	17+139	17+268				130							
D6	LT.& RT.	17+190	17+268				83							
D7	LT.	17+230.5	17+237.5				16							
D8	LT.& RT.	16+675.5	17+689				25							
D8A	RT.	17+682.5	–			1								1
D9	RT.	17+689	17+721				32							
D10	LT.& RT.	17+709	17+721				25							
D11	RT.	17+721	17+838				123							
D12	LT.& RT.	17+824	17+831				21							
D13	RT.	17+854	17+950				99							
D14	LT.& RT.	17+940	–				24							
D15	LT.& RT.	18+238	18+337				63							
D16	LT.& RT.	18+286	18+339				115							
D17	LT.& RT.	18+331	18+368				45							
D18	LT.& RT.	18+594	–				27							
D19	LT.& CL.	18+684	17+758				76							
D19A	LT.	18+684	–		1							1		
D20	LT.& RT.	18+817	18+898				106							
D21	LT.& RT.	18+883	18+910				32							
D22	LT.	18+899	–				16							
D23	RT.	19+882					22							
D24	LT.	17+234.5	17+240.5	6	1			6				1		
D25	LT.	17+571.3	–			1							1	
D26	LT.	17+624.1	–			1							1	
D27		18+180.5±	–		1							1		
CONTINGENT							220							
SUB TOTAL				6	5	5	1300	6	63	1	2	4	2	3

ADJUSTMENT/RECONSTRUCTION TO GRADE

REFERENCE NO.	LOCATION	STATION	604 CATCH BASIN ADJUSTED TO GRADE	604 MANHOLE ADJUSTED TO GRADE, AS PER PLAN	604 MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN	604 MONUMENT ASSEMBLY, AS PER PLAN
			EACH	EACH	EACH	EACH
M1	CL.	16+829.17				1
M2	CL.	16+897.97				1
M3	CL.	17+636.53				1
A1	LT.	18+178.8		1		
A2	RT.	18+278		1		
A3	RT.	18+297.5		1		
A4	RT.	18+313		1		
A5	LT.	18+336.8		1		
A6	CL.	18+395		1		
A7	LT.	18+431		1		
A8	LT.	18+564.7		1		
A9	LT.	18+645		1		
A9A	RT.	18+684		1		
A10	RT.	18+947		1		
A11	RT.	19+038.5			1	
A12	RT.	17+230.7		1		
A13		NOT USED				
A14	LT.	19+728.1		1		
A15	LT.	17+708.5	1			
A16	RT.	17+715.5	1			
A17	CL.	17+751.5		1		
SUB TOTAL			2	14	1	3

PAVED GUTTER CLEANOUT

STATION FROM	STATION TO		601 PAVED GUTTER, MISC: GUTTER CLEANOUT
			METER
17+091	17+191	SB	100
17+830	18+247	SB	417
19+331	18+872	SB	541
SUB TOTAL			1058

SUB-SUMMARIES

STA-21-16.574

Filename : VOL11/CDOT-W/0830/CIVIL/0830058.DWG
Design By : KGarrecl
Drawn By/Date : KGarrecl / 12-07-98 (17:35)

CALCULATION SHEET

metric units

CALCULATED KNG CHECKED GTA

CALCULATION SHEET

SEE SHEETS 7 & 57

ITEM 203 – EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION

AT OUTSIDE SHOULDER TREATMENT FOR M.O.T.
NB (40X2.44 + 2126.98X1.22) X 0.17 = 458 CU. METER
SB 1736.18X1.22 X 0.17 = 360 CU. METER

AT EXISTING CONC. MEDIAN REMOVAL
251.00 X 0.91 X 0.167 = 38 CU. METER

AT BARRIER REMOVAL FOR NEW ATTENUATOR PADS
(7X6.25) X 1.22 X 0.153 = 8 CU. METER
AT REMAINING BARRIER REMOVAL(EXCEPT AT MEDIAN INLETS)
(79.5–55.75) X 0.91 X 0.153 = 3 CU. METER

TOTAL CARRIED TO SHEET 56 867 CU. METER

ITEM 202 – PAVEMENT REMOVAL

AT BARRIER & BARRIER TRANSITION REMOVAL(EXCEPT AT MEDIAN INLETS)
(55.75–12.0)X (2X0.155) X 0.230 = 3 CU. METER

TOTAL CARRIED TO SHEET 55 3 CU. METER

ITEM 254 – PAVEMENT PLANING, BITUMINOUS, (AVG. THICKNESS 45MM)

NB AREA A1+A2+A3 = 19576.6+721.9+913.3 = 21211.8 SQ.M.
SB AREA A4+A5+A6 = 19735.3+759.0+899.4 = 21393.7 SQ.M.

TOTAL CARRIED TO SHEET 56 42,605.5 SQ. METER

ITEM 254 – PAVEMENT PLANING, BITUMINOUS, (AVG. THICKNESS 90MM)

INTERSECTION AREAS A7+A9+A10
= 3863.7+3091.6+3672.0 = 10627.3 SQ.M.

OVERHEAD STRUCTURE AREAS A11+A12
= 2768.3+6481.6 = 9249.9 SQ.M.

TOTAL CARRIED TO SHEET 56 19,877.2 SQ. METER

ITEM 301 – BITUMINOUS AGGREGATE BASE, PG64–22

AT OUTSIDE SHOULDER TREATMENT FOR M.O.T.
NB ((40X2.44 + 2126.98X1.22)= 2692.5 SQ. M) X 0.125 = 336.56 CU. METER
SB (1736.18X1.22)= 2118.1 SQ. M) X 0.125 = 264.77CU. METER

TOTAL CARRIED TO SHEET 56 601.33 CU. METER

ITEM 407 – TACK COAT FOR INTERMEDIATE COURSE

AREA FROM ITEM 448 SURFACE COURSE, TYPE 1H
77020.2 @ 0.34L/SQ.M. = 26,189 LITER

TOTAL CARRIED TO SHEET 56 26,189 LITER

ITEM 407 – TACK COAT

AREAS FROM ITEM 254 ABOVE
(42605.5+19877.2) @ 0.34L/SQ.M. = 21,244 LITER

AT OUTSIDE SHOULDER TREATMENT FOR M.O.T.
NB 2692.5 SQ. METER @ 0.34 L/SQ. M = 915 LITER
SB 2118.1 SQ. METER @ 0.34 L/SQ. M = 720 LITER

AT PAVEMENT REPLACEMENT NEAR EXISTING CONC. MEDIAN REMOVAL
251.00 X 0.91 = 228.41 SQ. METER @ 0.34 L/SQ. M = 78 LITER

TOTAL CARRIED TO SHEET 56 22,957 LITER

SEE SHEETS 7 & 57

ITEM 304 – AGGREGATE BASE

AT PAVEMENT REPLACEMENT NEAR EXISTING CONC. MEDIAN REMOVAL
251.00 X 0.91 X 0.076 = 18 CU. METER
UNDER BARRIER TRANSITIONS
36.00 X 0.91 X 0.153 = 5 CU. METER
UNDER IMPACT ATTENUATOR PADS
(7X5.64) X 1.22 X 0.153 = 7 CU. METER

TOTAL CARRIED TO SHEET 56 30 CU. METER

ITEM 305 – 230MM CONCRETE BASE

AT PAVEMENT REPLACEMENT NEAR EXISTING CONC. MEDIAN REMOVAL

251.00 X 0.91 = 228.41 SQ. METER

TOTAL CARRIED TO SHEET 56 228 SQ. METER

ITEM 448 – ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, UNDER GUARDRAIL, PG64–22, AS PER PLAN

	LENGTH	WIDTH	AREA
G1	41.91	1.61	67.5
G2	36.2	1.61	58.3
G3	274.32	1.22	334.7
G4	337.19	1.22	411.4
G5	32.39	0.91	29.5
G6	41.91	1.81	75.9
G7	38.12	1.36	51.8
G8	314.33	1.22	383.5
G9	205.74	1.22	251.0
G10	236.22	0.61	144.1
G11	51.44	1.22	62.8
G12	278.54	1.31	364.9
G13	205.74	1.22	251.0
G14	49.53	1.22	60.4
G15	128.35	1.22	156.6
G16	160.02	1.22	195.2
G17	121.92	1.22	148.7
SUBTOTAL			3047.2
WIDENING AT TYPE E–98 ANCHOR ASSEMBLIES			32.0
TOTAL CARRIED TO GENERAL SUMMARY			3079.2 SQ METER

3079.2 SQ.M. x 0.038 = 117.01 CU.M.
TOTAL CARRIED TO SHEET 56 117.01 CU. METER

ITEM 448 – ASPHALT CONCRETE SURFACE COURSE, TYPE 1H

NB AREAS A1+A15+A16 = 19576.6+5775.0+3021.4 = 28373.0 SQ.M.
SB AREAS A4+A17+A18 = 19735.3+6053.4+2931.2 = 28719.9 SQ.M.

INTERSECTIONS, & OVERHEAD STRUCTURE AREAS
(A7+A9+A10)+(A11+A12) = (3863.7+3091.6+3672.0)+(2768.3+6481.6) = 19877.3 SQ.M.
MEDIAN APRON (AREA A13) = 50.0 SQ.M.

SUBTOTAL 77020.2 SQ.M.

77020.2 SQ.M. x 0.038 = 2926.76 CU. METER

FOR M.O.T STA. 16+500 TO 16+520
20x2.44 x 0.045 = 2.20 CU. METER

TOTAL CARRIED TO SHEET 56 2928.74 CU. METER

ITEM 448 – ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64–28

AREA FROM ITEM 254 (AVG. THICKNESS 45mm)
42605.5 SQ.M. x 0.045 = 1917.25 CU.M.

AREA AT OVERHEAD STRUCTURES, LILLIAN GISH BLVD., & LINCLON WAY BRIDGE
AREAS A11+A12(2768.3+6481.6) = 9249.9 SQ.M. x 0.052 = 480.99 CU.M.

AREAS AT WALNUT RD., CHERRY AVE. & LAKE AVE. INTERSECTIONS
AREAS A7+A9+A10(3863.7+3091.6+3672.0) =10627.3 SQ.M. x 0.090 = 956.46 CU.M.

DEDUCTIONS DUE TO FEATHERED AREAS:
AT PROJECT LIMITS:
((19.12X14.00)+(15.62X14.00))X(0.0+0.038)/2 = –9.24 CU.M.
AT OVERHEAD STRUCTURE FEATHERS:
17+189 TO 17+214 – 544.0 SQ.M.
17+286 TO 17+311 – 582.8 SQ.M.
17+487 TO 17+512 – 538.5 SQ.M.
17+795 TO 17+820 – 410.5 SQ.M.
2075.8 SQ.M. X (0.0+0.045)/2 = –46.71 CU.M
AT INTERSECTION FEATHERS:
WALNUT RD. 324.4 SQ.M
LILLIAN GISH BLVD. 590.4 SQ.M.
CHERRY AVE. 604.8 SQ.M.
LAKE AVE. 521.0 SQ.M.
2040.6 SQ.M X (0.0+0.038)/2 = –38.77 CU.M
TOTAL DEDUCTIONS –94.72 CU.M.

SEE SHEETS 7 & 57

AT OUTSIDE SHOULDER TREATMENT FOR M.O.T.
NB (20X2.44 + 2126.98X1.22) X 0.045 = 118.96 CU. METER
SB 1736.18X1.22 X 0.045 = 95.32 CU. METER

AT PAVEMENT REPLACEMENT NEAR EXISTING
CONC. MEDIAN REMOVAL
251.00 X 0.91 X 0.090 = 20.56 CU. METER

TOTAL CARRIED TO SHEET 56 3494.82 CU. METER

FOR AREA CALCULATIONS, SEE SHEET 59A.

STA–21–16.574

Drawing : V:\L1M\0001-M\0830\CIVIL\08305003.DWG
Plotted By/Date : KGerrol / 12-07-98 (17:35)

CALCULATION SHEET

metric units

CALCULATED KNG CHECKED GTA

NORTHBOUND MAINLINE PAVEMENT

STA.	STA	LENGTH	AVG. WIDTH	AREA
16560	16574	14.0	10.3	144.2
16574	16599	25.0	10.1	252.5
16599	16693	94.0	8.8	827.2
16693	16742.5	49.5	9	445.5
16742.5	16765	22.5	11	247.5
		0.0		–
16890	17189	299.0	7.6	2,272.4
17311	17487	176.0	7.6	1,337.6
17820	17945	125.0	7.6	950.0
17945	18179	234.0	7.2	1,684.8
18179	18225	46.0	10.5	483.0
18225	18255	30.0	13.8	414.0
		0.0		–
18380	18486.3	106.3	7.8	829.1
18486.3	18653.43	167.1	7.2	1,203.3
18661.21	19627.5	966.3	7.2	6,957.3
19627.5	19640	12.5	9	112.5
19640	19660	20.0	10.8	216.0
		0.0		–
19785	19951.62	166.6	7.2	1,199.7
		0.0		–
		0.0		–

SUBTOTAL AREA A1 19,576.6 SQ METER

NORTHBOUND OUTSIDE SHOULDER FOR PAVEMENT PLANING

16560	16574	14.0	0.305	4.3
16574	16765	191.0	0.305	58.3
16890	17189	299.0	0.305	91.2
17311	17487	176.0	0.305	53.7
17820	17945.3	125.3	0	–
17945.3	18255	309.7	0.305	94.5
18380	18486.3	106.3	0	–
18486.3	18653.43	167.1	0.305	51.0
18661.21	19660	998.8	0.305	304.6
19785	19996.18	211.2	0.305	64.4

SUBTOTAL AREA A2 721.9 SQ METER

NORTHBOUND INSIDE SHOULDER FOR PAVEMENT PLANING

16560	16574	14.0	0.305	4.3
16574	16693	119.0	0.305	36.3
16693	16742.5	49.5	0.46	22.8
16742.5	16765	22.5	0.61	13.7
16890	16920	30.0	0.61	18.3
16920	16949	29.0	0.46	13.3
16949	17189	240.0	0.305	73.2
17311	17487	176.0	0.305	53.7
17820	18040	220.0	0.61	134.2
18040	18179	139.0	0.305	42.4
18179	18225	46.0	0.46	21.2
18225	18255	30.0	0.2	6.0
		0.0		–
18380	18460	80.0	0.54	43.2
18460	18653.4	193.4	0.305	59.0
18661.2	19400	738.8	0.305	225.3
19400	19627.5	227.5	0.305	69.4
19627.5	19640	12.5	0.46	5.8
19640	19660	20.0	0.61	12.2
19785	19872.35	87.3	0.4	34.9
19872.35	19951.62	79.3	0.305	24.2
		0.0		–

SUBTOTAL AREA A3 913.3 SQ METER

SOUTHBOUND MAINLINE PAVEMENT

STA.	STA.	LENGTH	AVG. WIDTH	AREA
16560	16574	14.0	7.6	106.4
16574	16599	25.0	7.6	190.0
16599	16765	166.0	8.7	1,444.2
		0.0		–
		0.0		–
		0.0		–
16890	16910	20.0	7.6	152.0
16910	16935.8	25.8	14.4	371.5
16935.8	16978	42.2	12	506.4
16978	17189	211.0	7.2	1,519.2
		0.0	7.2	–
17311	17487	176.0	7.6	1,337.6
17820	18255	435.0	7.6	3,306.0
18380	18452	72.0	10.5	756.0
18452	18490	38.0	7.2	273.6
18490	18653.43	163.4	7.2	1,176.7
18661.21	19660	998.8	7.2	7,191.3
		0.0		–
19785	19800	15.0	11.2	168.0
19800	19872.35	72.3	9.2	665.6
19872.35	19951.62	79.3	7.2	570.7
		0.0		–

SUBTOTAL AREA A4 19,735.3 SQ METER

SOUTHBOUND OUTSIDE SHOULDER FOR PAVEMENT PLANING

16560	16574	14.0	0.305	4.3
16574	16765	191.0	0.305	58.3
16890	17189	299.0	0.305	91.2
17311	17487	176.0	0.305	53.7
17820	17930	110.0	0	–
17930	18255	325.0	0.305	99.1
18380	18653.43	273.4	0.305	83.4
18661.21	19660	998.8	0.305	304.6
		0.0		–
19785	19996.18	211.2	0.305	64.4

SUBTOTAL AREA A5 759.0 SQ METER

SOUTHBOUND INSIDE SHOULDER FOR PAVEMENT PLANING

16560	16574	14.0	0.305	4.3
16574	16693	119.0	0.305	36.3
16693	16720	27.0	0.305	8.2
16720	16765	45.0	0.61	27.5
16890	16910	20.0	0.61	12.2
16910	16935.8	25.8	0.46	11.9
16935.8	16949	13.2	0.305	4.0
16949	17189	240.0	0.305	73.2
17311	17487	176.0	0.305	53.7
17820	18040	220.0	0.61	134.2
18040	18225	185.0	0.305	56.4
		0.0		–
18225	18255	30.0	0.4	12.0
		0.0		–
18380	18452	72.0	0.4	28.8
18452	18490	38.0	0.61	23.2
18490	18653.43	163.4	0.305	49.8
18661.21	19400	738.8	0.305	225.3
19400	19660	260.0	0.305	79.3
		0.0		–
19785	19872.35	87.3	0.4	34.9
19872.35	19951.62	79.3	0.305	24.2
		0.0		–

SUBTOTAL AREA A6 899.4 SQ METER

WALNUT ROAD INTERSECTION AREA STA. 16+765 TO STA. 16 + 890

NB/SB/INTERSECTION PAVEMENT	3131.6
OUTSIDE SHOULDERS	407.7
FEATHEARED AREAS	324.4

SUBTOTAL AREA A7 3863.7 SQ METER

AREA A8 NOT USED

CHERRY ROAD INTERSECTION AREA STA. 18+255 TO STA. 18+380

NB/SB/INTERSECTION PAVEMENT	2825.8
OUTSIDE SHOULDERS	265.8

SUBTOTAL AREA A9 3091.6 SQ METER

LAKE AVENUE INTERSECTION AREA STA. 19+660 TO STA. 19+785

NB/SB/INTERSECTION PAVEMENT	2690.5
OUTSIDE SHOULDER	460.5
FEATHERED AREA	521.0

SUBTOTAL AREA A10 3672.0 SQ METER

NORTHBOUND OUTSIDE SHOULDER FOR RESURFACING

STA.	STA	LENGTH	AVG. WIDTH	AREA
16560	16574	14.0	2.44	34.2
16574	16765	191.0	2.44	466.0
16890	17189	299.0	2.44	729.6
17311	17487	176.0	2.44	429.4
17820	17945.3	125.3	0	–
17945.3	18255	309.7	2.44	755.7
18380	18486.3	106.3	0	–
18486.3	18653.43	167.1	2.44	407.8
18661.21	19660	998.8	2.44	2,437.0
19785	19996.18	211.2	2.44	515.3

SUBTOTAL AREA A15 5,775.0 SQ METER

NORTHBOUND INSIDE SHOULDER FOR RESURFACING

16560	16574	14.0	2.8	39.2
16574	16693	119.0	2.9	345.1
16693	16742.5	49.5	1.7	84.2
16742.5	16765	22.5	0.5	11.3
16890	16920	30.0	0.4	12.0
16920	16949	29.0	1.1	31.9
16949	17189	240.0	1.8	432.0
17311	17487	176.0	1.8	316.8
17820	18040	220.0	0.85	187.0
18040	18179	139.0	2	278.0
18179	18225	46.0	1.6	73.6
18225	18255	30.0	0.2	6.0
		0.0		–
18380	18460	80.0	0.85	68.0
18460	18653.4	193.4	0.9	174.1
18661.2	19400	738.8	0.5	369.4
19400	19627.5	227.5	2	455.0
19627.5	19640	12.5	1.1	13.8
19640	19660	20.0	0.5	10.0
19785	19872.35	87.3	0.4	34.9
19872.35	19951.62	79.3	1	79.3
		0.0		–

SUBTOTAL AREA A16 3,021.4 SQ METER

OVERHEAD STRUCTURE AREAS

CONRAIL BRIDGE AREA STA. 17+189 TO STA. 17+311

FEATHERED AREA	STA 17+189 TO STA. 17+214	544.0
PAVED AREA	STA.17+214 TO STA. 17+286	1641.5
FEATHERED AREA	STA 17+600 TO STA. 17+700	582.8

SUBTOTAL AREA A11 2768.3SQ METER

TREMONT BRIDGE, LILLIAN GISH BLVD. & LINCLON WAY BRIDGE AREA STA. 17+487 TO STA. 17+820

FEATHERED AREA	STA 17+487 TO STA. 17+512	538.5
PAVED AREA	STA.17+512 TO STA. 17+600	1823.0
L.GISH INTERSECTION	STA 17+600 TO STA. 17+700	2014.0
PAVED AREA	STA.17+700 TO STA. 17+795	1695.7
FEATHERED AREA	STA 17+795 TO STA. 17+820	410.5

SUBTOTAL AREA A12 6481.6 SQ METER

RESURFACING IN MEDIAN AREA

STA. 19+872.5 TO STA. 19+883 7.0 X 7.1 = 50.0

SUBTOTAL AREA A13 50.0 SQ METER

AREA A14 NOT USED

SOUTHBOUND OUTSIDE SHOULDER FOR RESURFACING

STA.	STA.	LENGTH	AVG. WIDTH	AREA
16560	16574	14.0	2.44	34.2
16574	16765	191.0	2.44	466.0
16890	17189	299.0	2.44	729.6
17311	17487	176.0	2.44	429.4
17820	17925	105.0	0	–
17930	17950	25.0	1.22	30.5
17950	18255	305.0	2.44	744.2
18380	18653.43	273.4	2.44	667.2
18661.21	19660	998.8	2.44	2,437.0
19785	19996.18	211.2	2.44	515.3

SUBTOTAL AREA A17 6,053.4 SQ METER

SOUTHBOUND INSIDE SHOULDER FOR RESURFACING

16560	16574	14.0	2.25	31.5
16574	16693	119.0	2.25	267.8
16693	16720	27.0	1.7	45.9
16720	16765	45.0	1	45.0
16890	16910	20.0	0.61	12.2
16910	16935.8	25.8	2.26	58.3
16935.8	16949	13.2	2.7	35.6
16949	17189	240.0	2.35	564.0
17311	17487	176.0	2	352.0
17820	18040	220.0	0.61	134.2
18040	18225	185.0	1.3	240.5
		0.0		–
18225	18255	30.0	0.4	12.0
		0.0		–
18380	18452	72.0	0.4	28.8
18452	18490	38.0	1.3	49.4
18490	18653.43	163.4	1.2	196.1
18661.21	19400	738.8	0.4	295.5
19400	19660	260.0	1.8	468.0
		0.0		–
19785	19872.35	87.3	0.4	34.9
19872.35	19951.62	79.3	0.75	59.5
		0.0		–

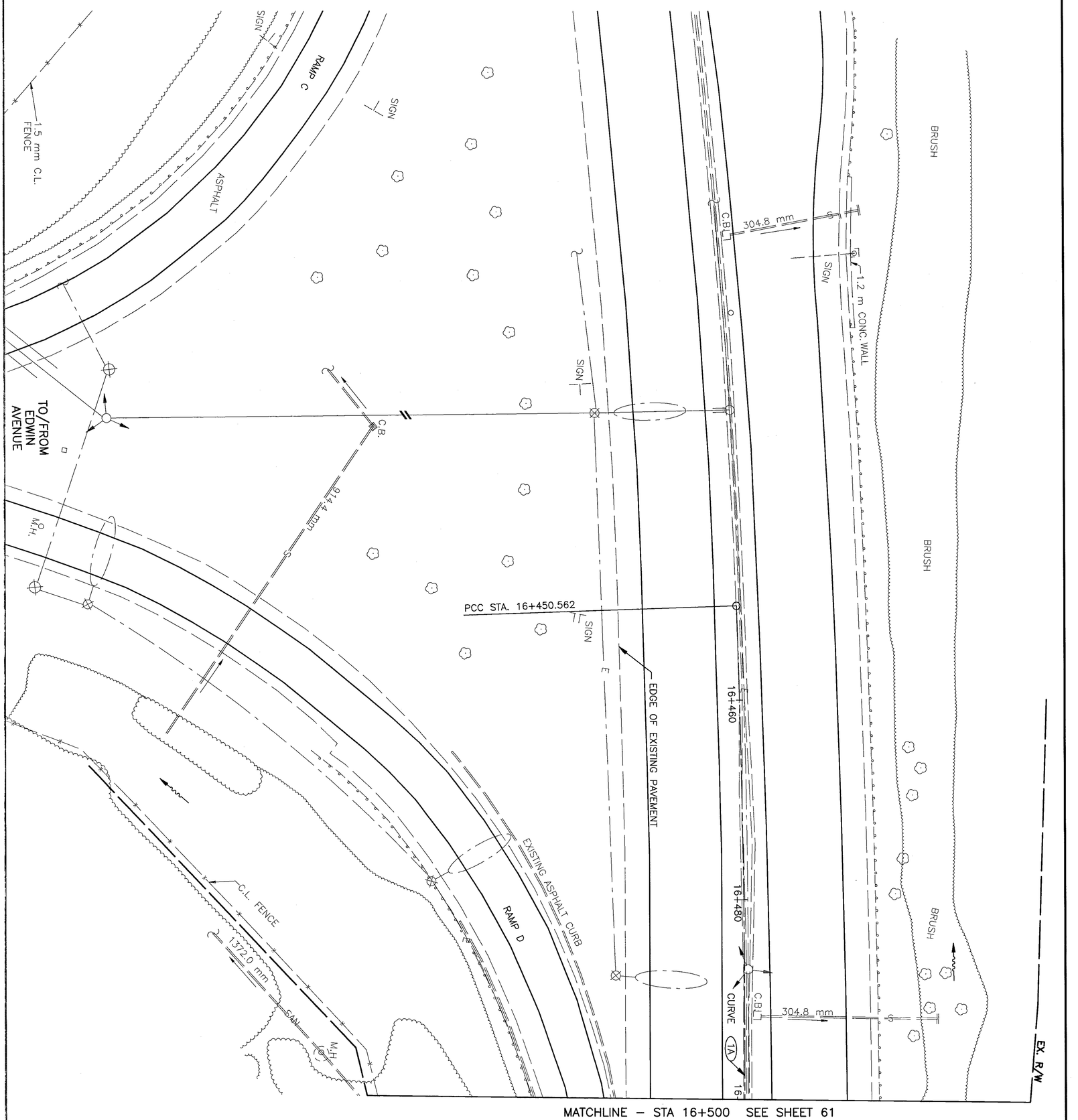
SUBTOTAL AREA A18 2,931.2 SQ METER

CALCULATION SHEET

STA-21-16.574

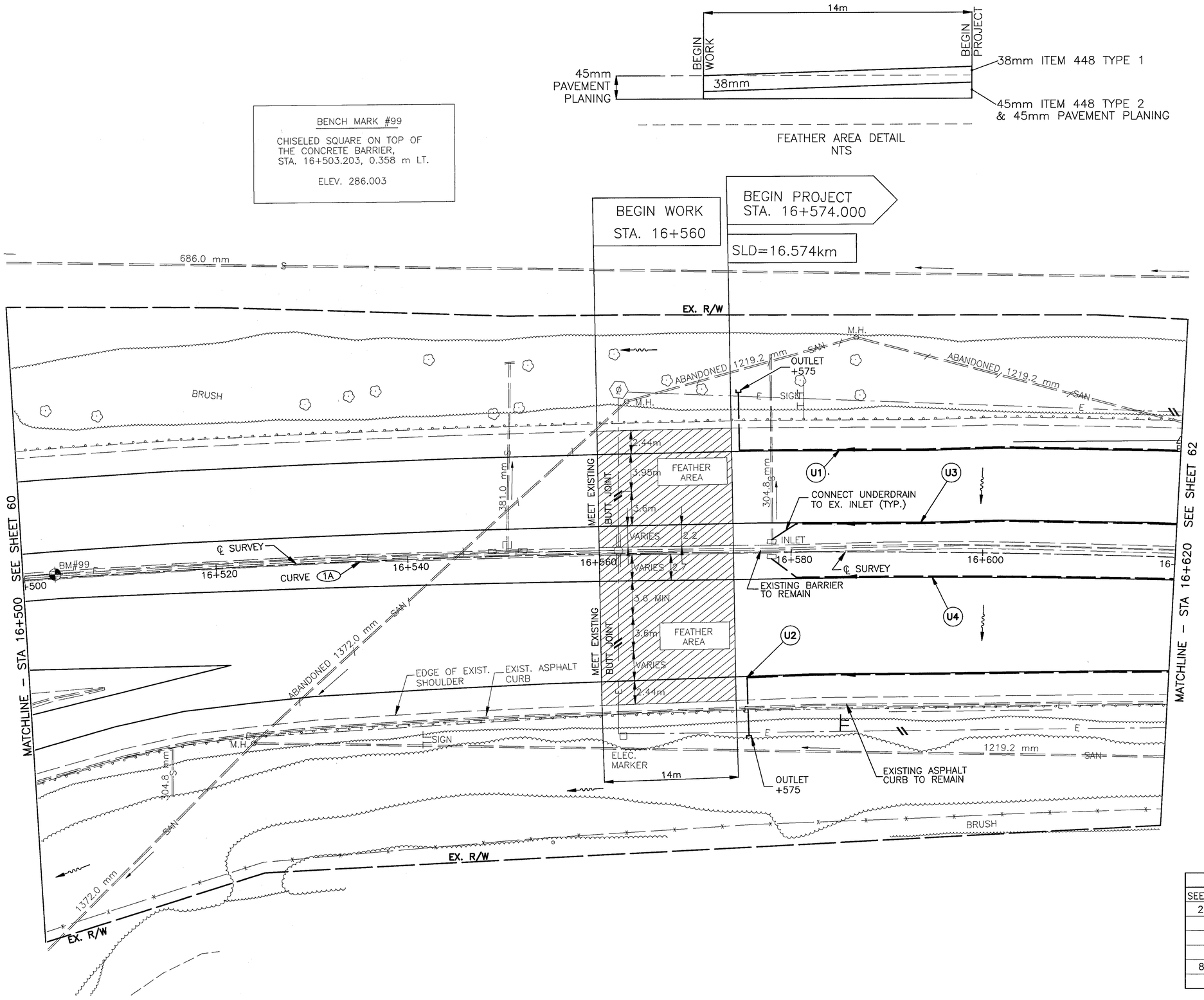
Pilename : VOL19/0007-W/08330/CIVIL/08330S05A.DWG
Plotted By : KGerrol
Drawn By/Date : KGerrol / 12-07-98 (17:35)

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S060.DWG
Plot Scale : 1=0
Drawn By/Date : KGeraci / 12-07-98 (17:35)



metric units

60 / 120	STA-21-16.574	PLAN STA 16+390± TO STA 16+500	CALCULATED KNG CHECKED GTA	−2 0 2 6 HORIZONTAL SCALE IN METERS



CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES

metric units

HORIZONTAL SCALE IN METERS

CALCULATED KNG
CHECKED GTA

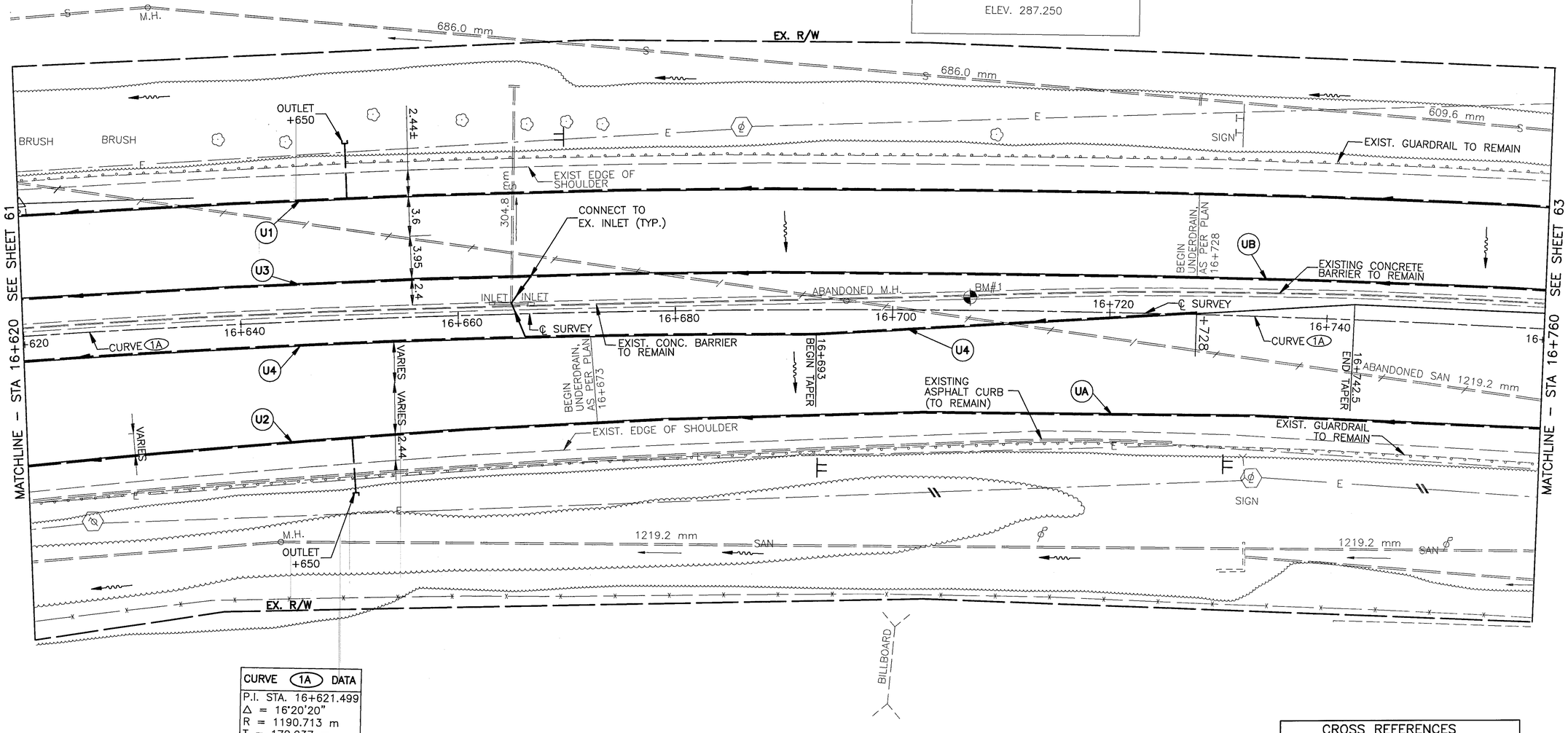
PLAN
STA 16+500 TO STA 16+620

STA–21–16.574

BENCH MARK #1

CHISELED SQUARE ON TOP OF THE CONCRETE BARRIER, STA. 16+707.142, 1.191 m LT.

ELEV. 287.250



CURVE 1A DATA
P.I. STA. 16+621.499
Δ = 16°20'20"
R = 1190.713 m
T = 170.937 m
L = 339.554 m
E = 12.207 m
e_{max} = 0.027

CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES

metric units

HORIZONTAL SCALE IN METERS

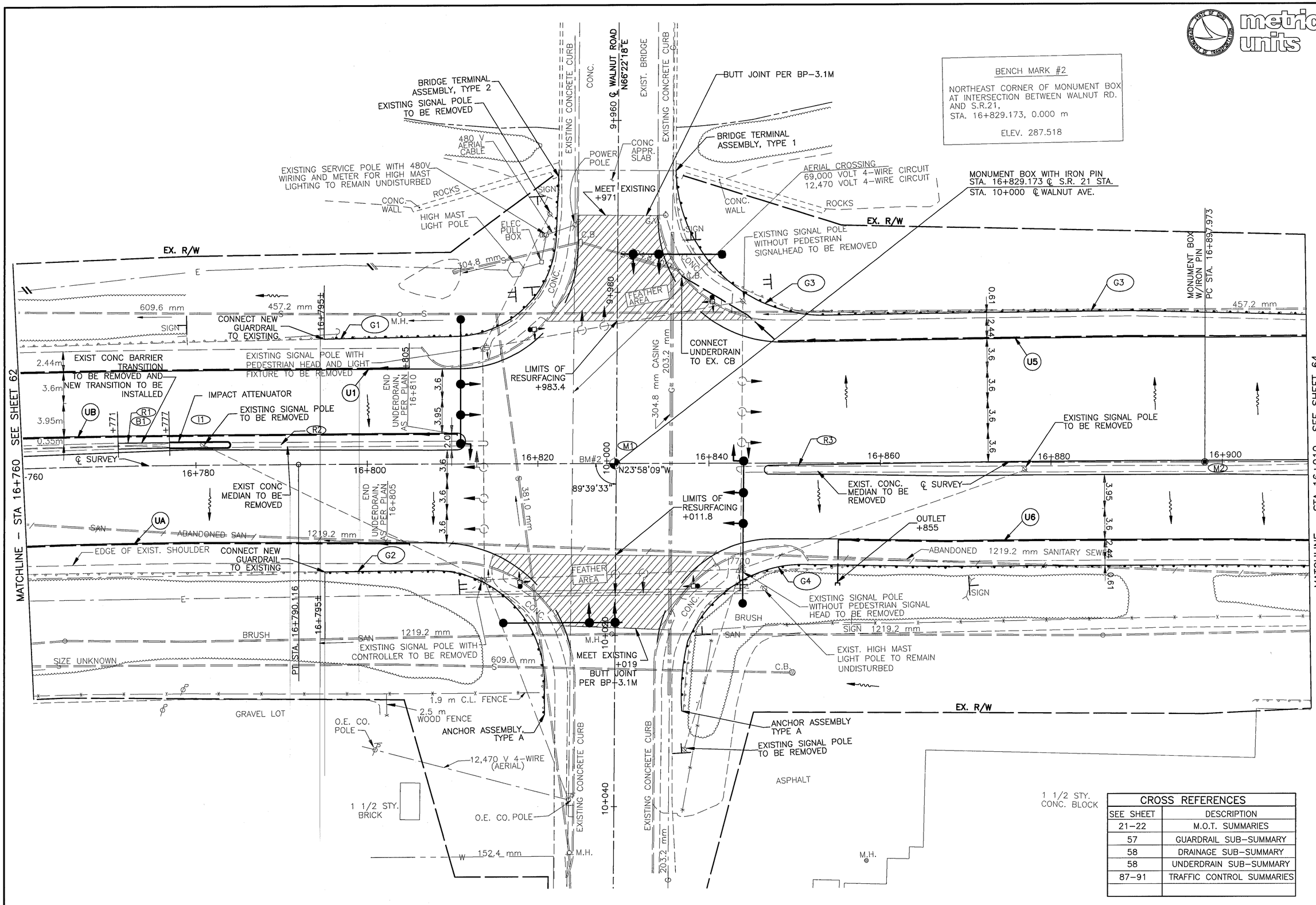
CALCULATED KNG

CHECKED GTA

PLAN

STA 16+620 TO STA 16+760

STA–21–16.574



CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21-22	M.O.T. SUMMARIES
57	GUARDRAIL SUB-SUMMARY
58	DRAINAGE SUB-SUMMARY
58	UNDERDRAIN SUB-SUMMARY
87-91	TRAFFIC CONTROL SUMMARIES

metric units

HORIZONTAL SCALE IN METERS

CALCULATED KNG
CHECKED GTA

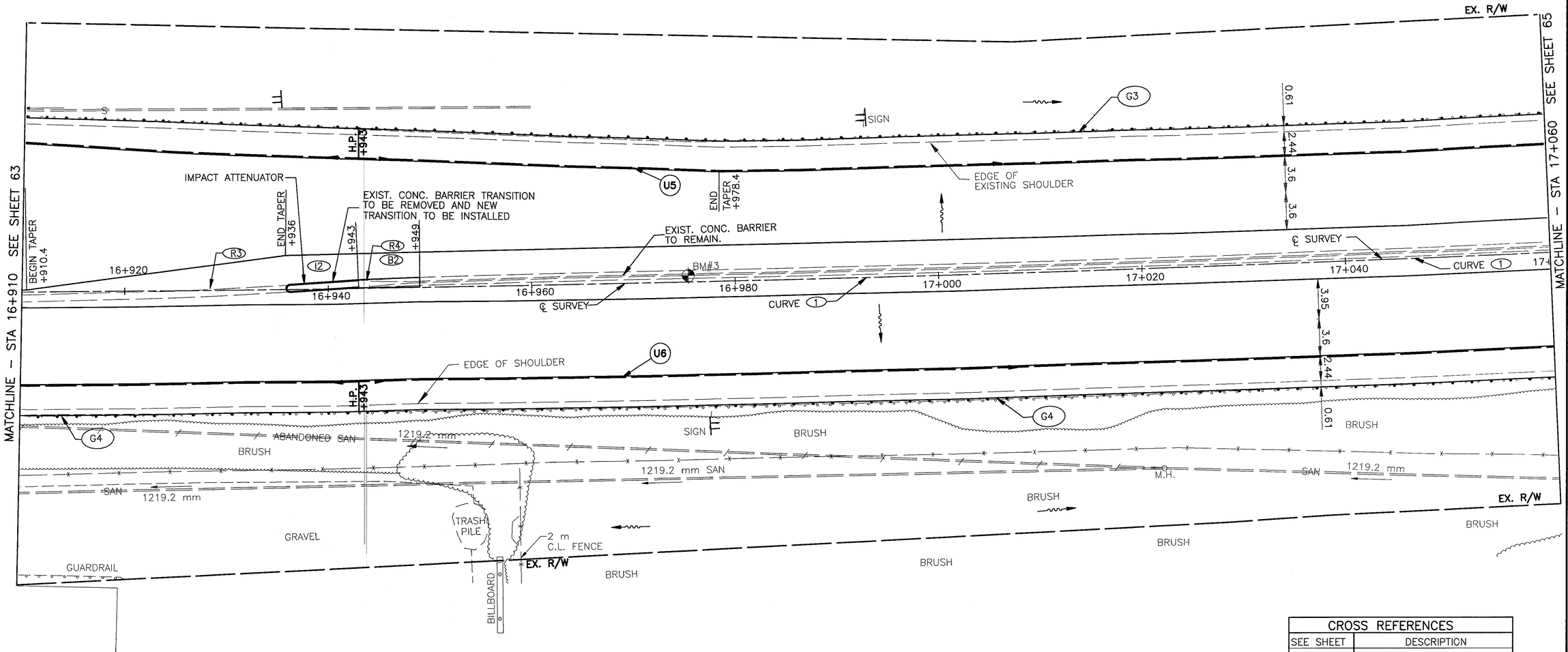
PLAN
STA 16+760 TO STA 16+910

STA-21-16.574

BENCH MARK #3

CHISELED SQUARE ON TOP OF THE CONCRETE BARRIER, STA. 16+975.416, 0.635 m LT.

ELEV. 289.172



CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES

metric units

HORIZONTAL SCALE IN METERS

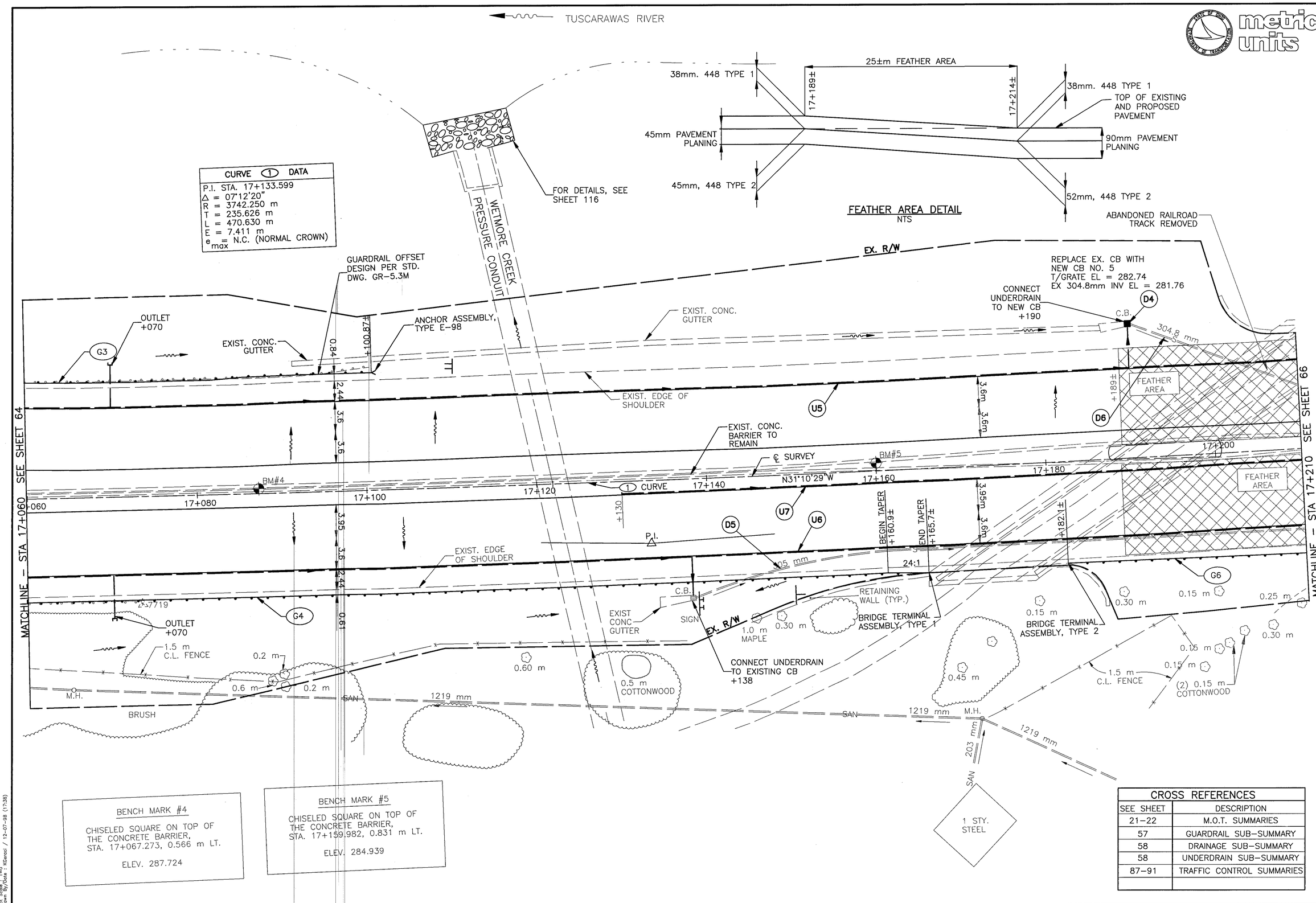
CALCULATED KNG

CHECKED GTA

PLAN

STA 16+910 TO STA 17+060

STA–21–16.574



CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21-22	M.O.T. SUMMARIES
57	GUARDRAIL SUB-SUMMARY
58	DRAINAGE SUB-SUMMARY
58	UNDERDRAIN SUB-SUMMARY
87-91	TRAFFIC CONTROL SUMMARIES

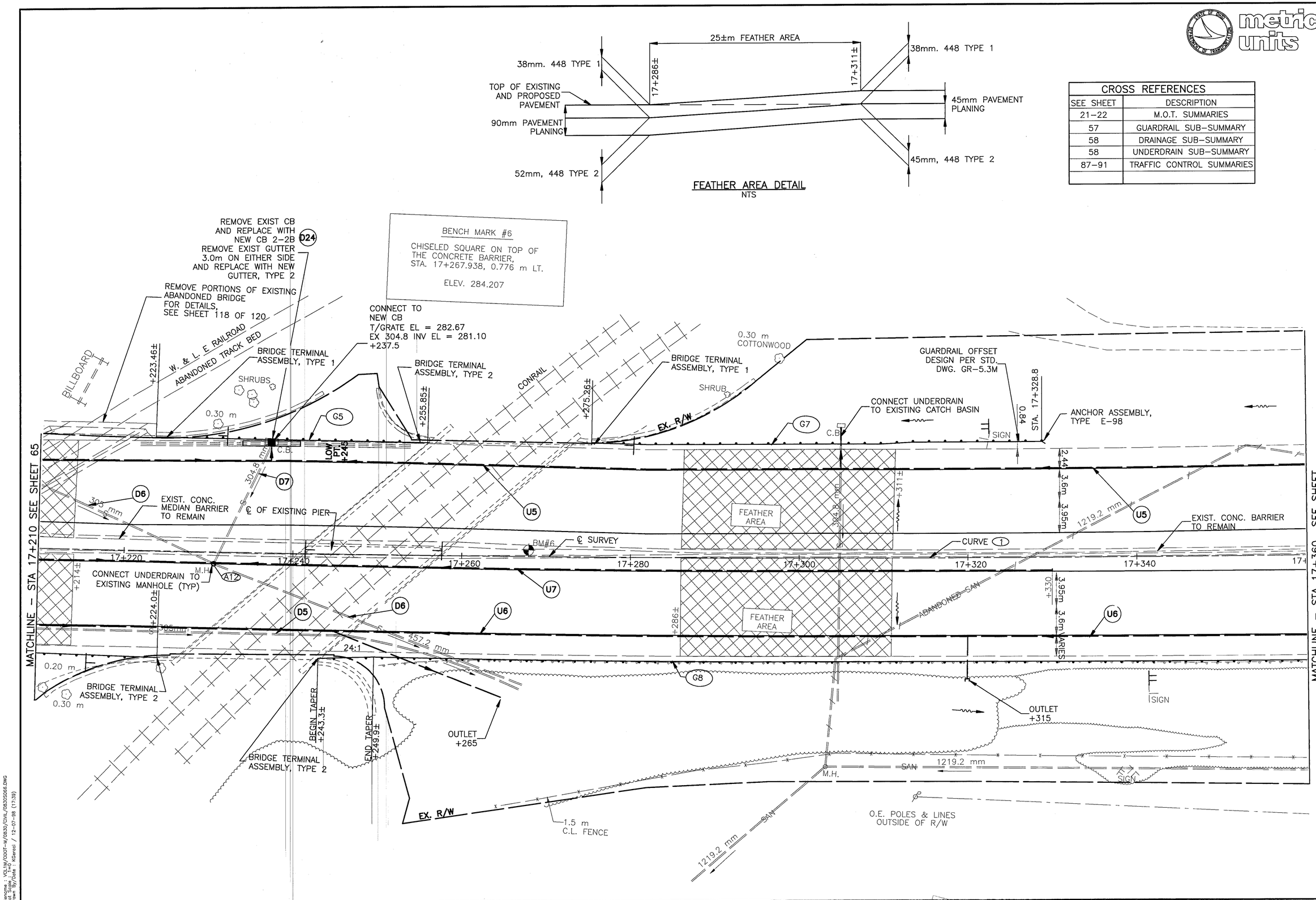
HORIZONTAL SCALE IN METERS
-2 0 2 6

CALCULATED KNG
CHECKED GTA

PLAN
STA 17+060 TO STA 17+210

STA-21-16.574

Filename : VOL1M/0007-M/0830/CIVIL/0830S065.DWG
Plot Scale : 1=0
Drawn By/Date : KGeraci / 12-07-98 (17:38)



CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21-22	M.O.T. SUMMARIES
57	GUARDRAIL SUB-SUMMARY
58	DRAINAGE SUB-SUMMARY
58	UNDERDRAIN SUB-SUMMARY
87-91	TRAFFIC CONTROL SUMMARIES

metric units

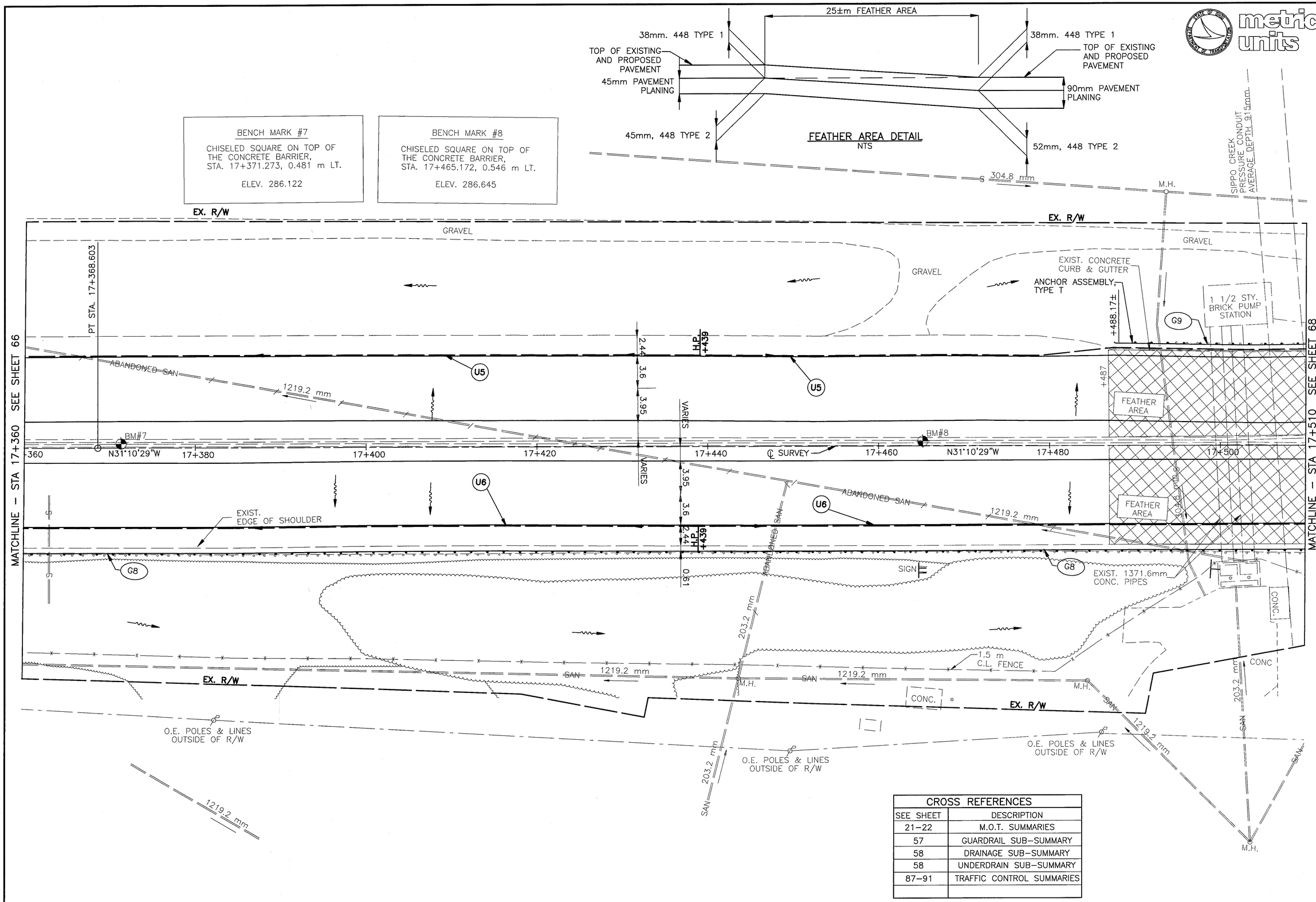
HORIZONTAL SCALE IN METERS
-2 0 2 6

CALCULATED KNG
CHECKED GTA

PLAN
STA 17+210 TO STA 17+360

STA-21-16.574

Filename : VOL1M/ODOT-M/0830/CIVIL/08305066.DWG
Plot Scale : 1=0
Drawn By/Date : KGeraci / 12-07-98 (17:39)



CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES

metric units

HORIZONTAL SCALE IN METERS

CALCULATED KNG

CHECKED GTA

PLAN
STA 17+360 TO STA 17+510

STA–21–16.574

NOTE 2:
THE LOCATION SHOWN IS APPROXIMATE. THE LOCATION SHALL BE WHERE THE TOP OF THE EXISTING BARRIER DIMENSION IS 0.610m WIDE.

CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES

metric units

HORIZONTAL SCALE IN METERS

CALCULATED KNG CHECKED GTA

PLAN
STA 17+510 TO STA 17+660

STA–21–16.574

68
120

MATCHLINE – STA 17+510 SEE SHEET 67

MATCHLINE – STA 17+660 SEE SHEET 69

BENCH MARK #9
CHISELED SQUARE ON TOP OF THE CONCRETE BARRIER, STA. 17+556.572, 0.417 m RT.
ELEV. 285.201

CENTERLINE REFERENCE
PK SET
1.140 m MON.
12.040 m POWER LIGHT POLE
℄ S.R. 21
19.400 m LIGHT/TRAFFIC CONTROL BOX POLE
℄ LILLIAN GISH BLVD., S.W.
STA. 10+000.000
℄ LILLIAN GISH BLVD., S.W.

CENTERLINE REFERENCE
LIGHT/TRAFFIC CONTROL BOX POLE
17.568 m
D.H. SET
P.C. ℄ LILLIAN GISH BLVD., S.W.
10.400 m POWER LIGHT POLE
12.290 m
P.C. STA. 10+020.111
℄ LILLIAN GISH BLVD., S.W.

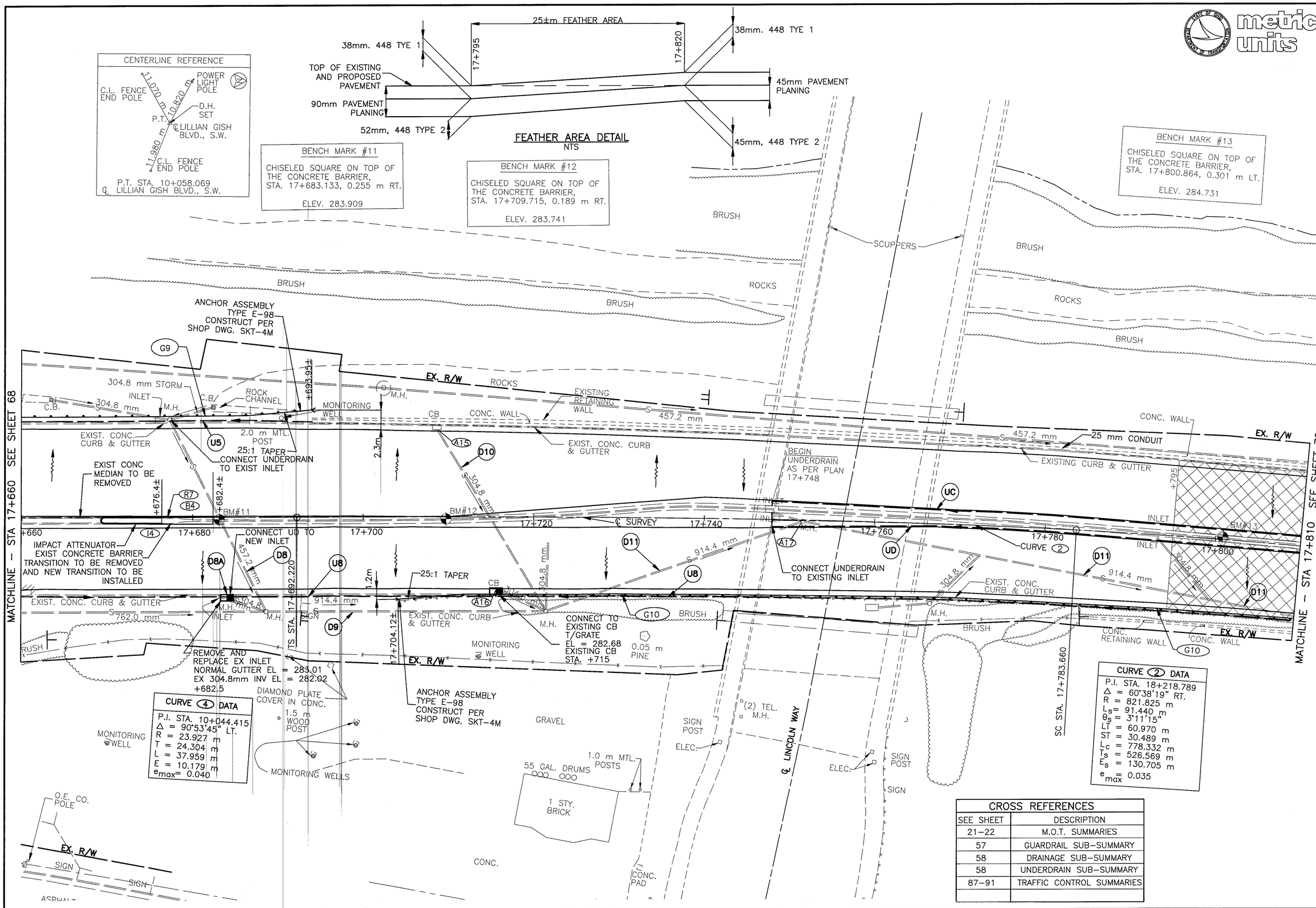
MONUMENT BOX W/IRON PIN
STA. 17+636.528, ℄ S.R. 21
STA. 17+637.668 ℄ S.R. 21 STA.
STA. 10+000 ℄ LILLIAN GISH BLVD. S.W.

480V CABLE (AERIAL)
GRAVEL ACCESS DRIVE
GUY
DOWNED GUY
O.E. CO. POLE
304.8 mm
9+960
9+980
BRUSH
ROCKS
SAN
EX. R/W
D25 NORMAL GUTTER EL = 283.89 EX 304.8mm INV EL = 282.88
REMOVE & REPLACE EXIST INLET
CONNECT TO NEW INLET +570
NORMAL GUTTER EL = 283.34 EX 304.5mm INV EL = 282.00 D26
REMOVE & REPLACE EXIST INLET
EXIST SIGNAL POLE TO BE REMOVED
SIGN
G9
101.6 mm
M.H.
U5
+512
+565.4
+570.4
+572.2
+577.2
+618.2
+623.2
+625
+630
3.6m
3.9m
10.3m
12,470 V 4–WIRE (AERIAL)
EXIST. CONC. BARRIER TO REMAIN
CONC. WALK
EXIST CONCRETE BARRIER TO BE REMOVED AND IMPACT ATTENUATOR INSTALLED
304.8 mm
N31°10'29"W
17+520
℄ SURVEY
17+540
17+560
BM#9
17+580
17+600
17+620
17+640
I3
R5
M3
R6
SAW CUT EXIST. BARRIER
+01.14± SEE NOTE 2
ASPHALT
BUTT JOINT AS PER BP–3.1M
LIMITS OF RESURFACING
78°35'26"
BEGIN TAPER +521±
END TAPER BEGIN GUARD-RAIL TYPE 5A +521±
U6
24:1
3.95m
3.6m
3.3m
304.8 mm
G8 STA. 17+550.697 ℄ S.R. 21 STA. STA. 10+000 ℄ TREMONT AVE. S.W.
ANCHOR ASSEMBLY, TYPE T
EXISTING CONCRETE CURB & GUTTER
+559.11±
381.0 mm
10+020
10+040
M.H.
MH UNDER BRIDGE
1219.2 mm
ABANDONED SAN
SIPPO CREEK PRESSURE CONDUIT
O.E. CO. POLE
M.H. ABANDONED POLE OWNED BY THE CITY OF MASSILLON
TEL. M.H.
12,470 V 4–WIRE (AERIAL)
CONC. PARKING LOT
CONC. WALK
℄ TREMONT AVE. S.W. N69°25'35"E
1.0 m BUSHES
1.27 m STEEL POST
ELEC. BOX
PHONE BOX
12,470 V UNDERGROUND CABLE OUTSIDE PROJECT AREA
1.62 m C.L. FENCE
CONNECT TO EXISTING INLET +593
CONCRETE CURB & GUTTER
LIMITS OF RESURFACING
EXIST. CONC. CURB & GUTTER
EX. CONC. CURB
EXISTING SIGNAL POLE WITH LIGHT TO BE REMOVED SEE NOTE 1 ON SHEET 109
EXISTING SIGNAL POLE WITH LIGHT & CONTROLLER TO BE REMOVED
LANDSCAPED MOUND WITH STONE & SMALL PLANTINGS NOT TO BE DISTURBED
EX. SIGNAL POLE TO BE REMOVED
FOR CURVE DATA, SEE SHEET 69
CURVE 4
℄ LILLIAN GISH BLVD. S.W. N20°59'40"W
PC STA. 10+020.111
STA. 10+029
PT STA. 10+058.069
10+060
1.9 m REFLECTOR POSTS
1.65 m C.L. FENCE
12,470 V 4–WIRE (AERIAL)
R/W FENCE UNDER TREMONT AVENUE TO BE REPAIRED BY THE CITY OF MASSILLON
BRICK WALL
(9) 0.15 m PINES
SHRUB
BUSHES
0.05 m
EXISTING O.E. CO. LIGHT POLE TO REMAIN UNDISTURBED
CONC.
C.B.
M.H.
HYD
381.0 mm
457.2 mm
609.6 mm
914.4 mm
1067 mm
762 mm
SAN
GUY

CENTERLINE REFERENCE
POLE #2521C44–1
11.346 m PK SET
30.286 m
16.084 m
CHURCH
WEST SIDE DOOR
S.W. ℄ TREMONT AVE.
POLE NUMBER
STA. 10+100.000
℄ TREMONT AVE., S.W.

BENCH MARK #10
NORTHEAST CORNER OF MONUMENT BOX AT INTERSECTION BETWEEN LILLIAN GISH BLVD. AND S.R.21,
STA. 17+636.544, 0.086 m LT.
ELEV. 283.418

Filename = VOL1W/0001-W/0830/CIVIL/08305668.DWG
Plot Scale = 1=0 '
Plotted By/Date = KGeraci / 12-07-18 (17:49)

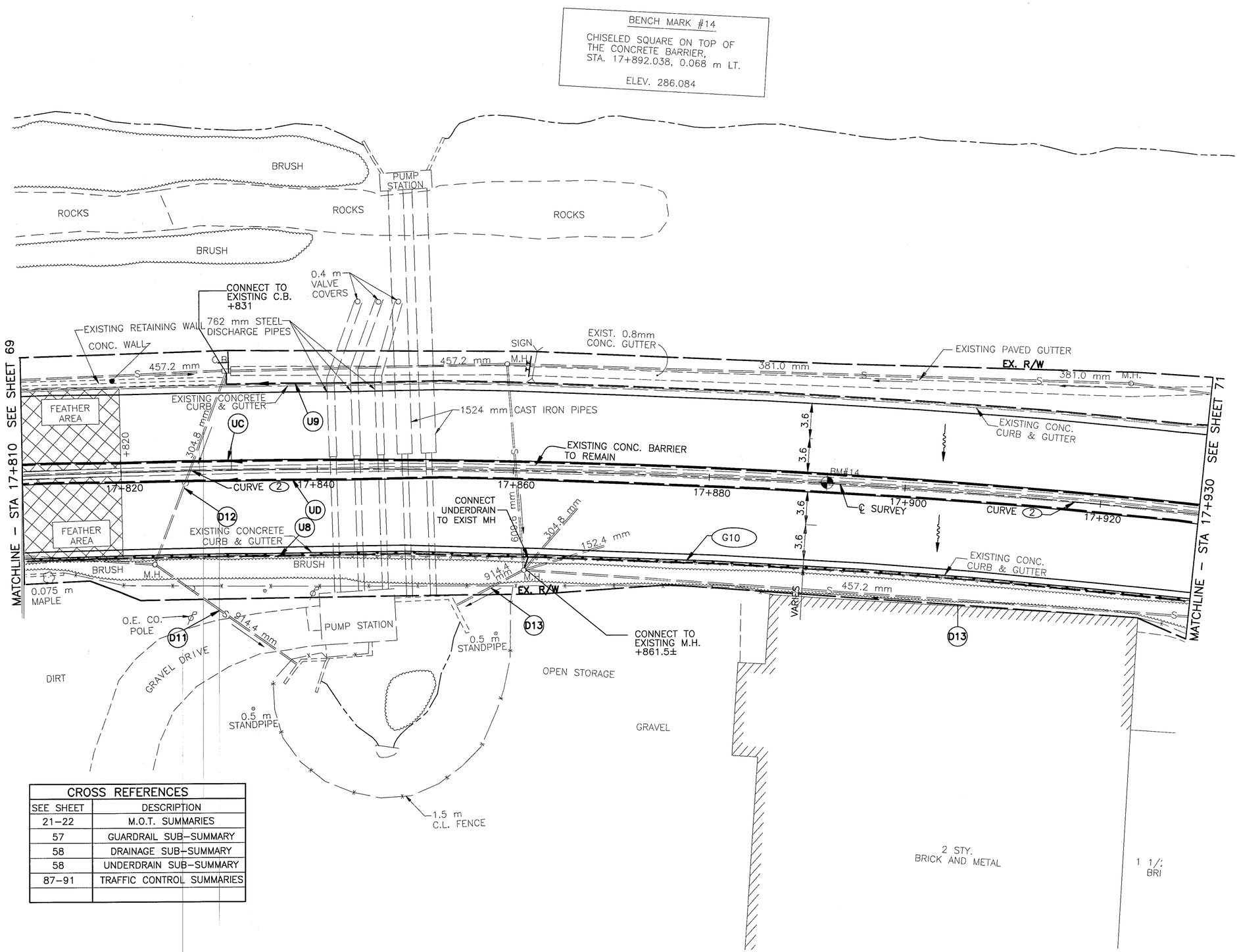


CURVE 4 DATA
P.I. STA. 10+044.415
Δ = 90°53'45" LT.
R = 23.927 m
T = 24.304 m
L = 37.959 m
E = 10.179 m
e_{max} = 0.040

CURVE 2 DATA
P.I. STA. 18+218.789
Δ = 60°38'19" RT.
R = 821.825 m
L_s = 91.440 m
θ_s = 3°11'15"
LT = 60.970 m
ST = 30.489 m
L_c = 778.332 m
T_s = 526.569 m
E_s = 130.705 m
e_{max} = 0.035

CROSS REFERENCES

SEE SHEET	DESCRIPTION
21-22	M.O.T. SUMMARIES
57	GUARDRAIL SUB-SUMMARY
58	DRAINAGE SUB-SUMMARY
58	UNDERDRAIN SUB-SUMMARY
87-91	TRAFFIC CONTROL SUMMARIES



CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES

metric units

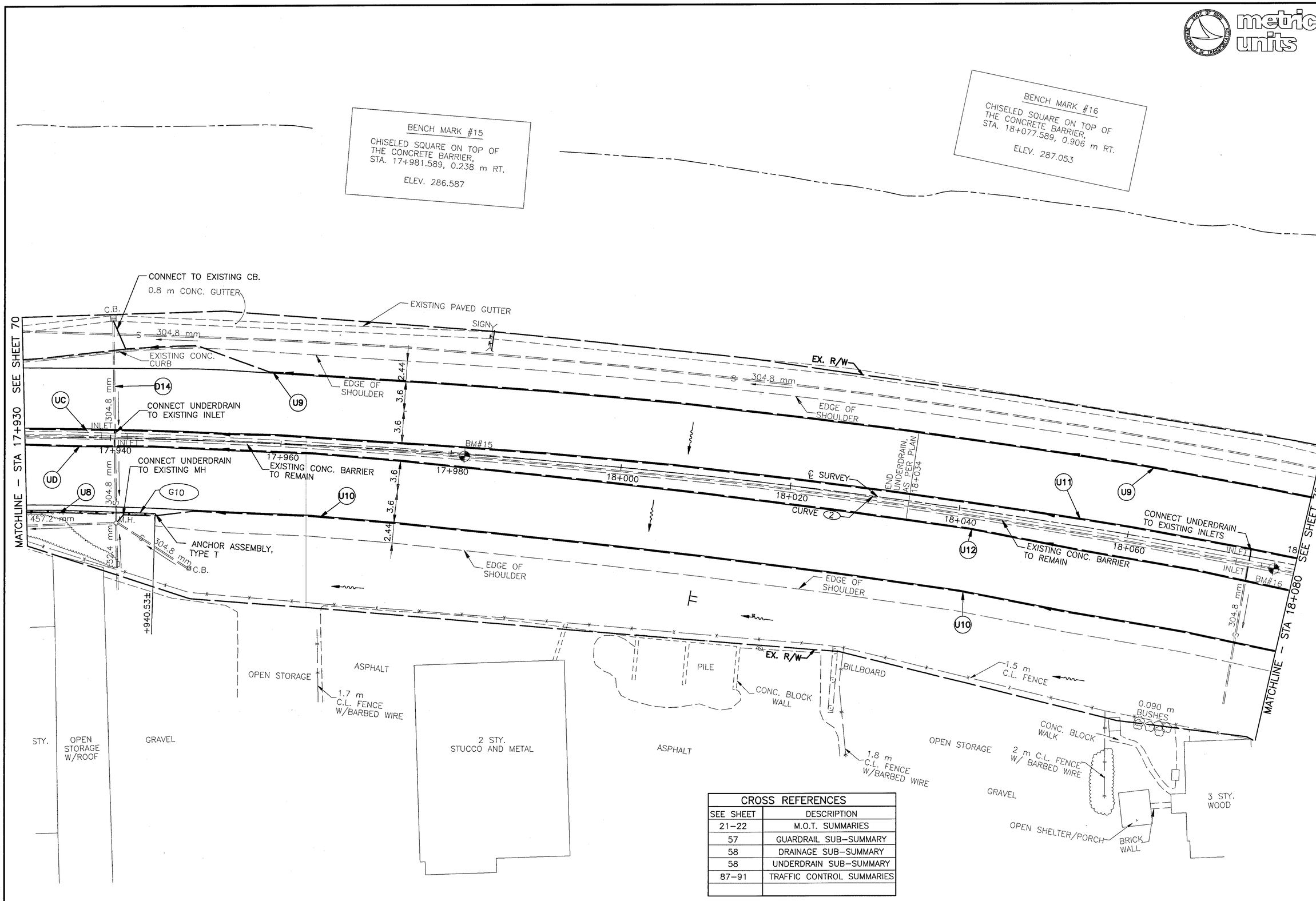
HORIZONTAL SCALE IN METERS

CALCULATED KNG
CHECKED GTA

PLAN
STA 17+810 TO STA 17+930

STA–21–16.574

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S070.DWG
Plot Scale : 1=0
Drawn By/Date : KGeraci / 12-07-98 (17:41)



CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES

metric units

HORIZONTAL SCALE IN METERS

CALCULATED KNG
CHECKED GTA

PLAN
STA 17+930 TO STA 18+080

STA–21–16.574

metric units

CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES

CURVE (2) DATA
P.I. STA. 18+218.789
Δ = 60°38'19" RT.
R = 821.825 m
L_s = 91.440 m
θ_s = 3°11'15"
LT = 60.970 m
ST = 30.489 m
Lc = 778.332 m
I_s = 526.569 m
E_s = 130.705 m
e_{max} = 0.035

BENCH MARK #17
CHISELED SQUARE ON TOP OF THE CONCRETE BARRIER, STA. 18+168.326, 1.380 m RT.
ELEV. 287.553

CENTERLINE REFERENCE
17.290 m
POWER LIGHT POLE
P.I. 8.410 m
D.H. SET
℄ CHERRY RD., N.W.
GUY WIRE POLE
11.270 m
℄ STA. 10+080.000 CHERRY RD., N.W.

CENTERLINE REFERENCE
M.H. 23.970 m
I.P. SET
4.170 m
29.150 m
P.I. #2 M.H.
M.H.
P.I. #2
STA. 18+218.789, S.R. 21

MATCHLINE – STA 18+080 SEE SHEET 71

0.8 m CONC. GUTTER
EXISTING PAVED GUTTER
EX. R/W
SIGN
S 304.8 mm
EDGE OF SHOULDER
38.1.0 mm
324.0 mm
457.2 mm
0.8 m CONC. GUTTER
D27
REPLACE EXIST CB WITH CB 2–2B
C.B.
M.H. A1
S 609.6 mm
EDGE OF SHOULDER
0.8 m CONC. GUTTER
EX. R/W
H.P. +217
+080
18+100
℄ SURVEY
18+120
18+140
18+160
18+180
18+200
18+220
U11
U9
2.44
3.6
3.6
CONNECT UNDERDRAIN TO EXISTING MH
U13
CURVE (2)
EXISTING CONC. BARRIER TO REMAIN
SAN.
SAN.
SAN.
CURVE (2)
BM#17
U12
U10
3.6
3.6
2.44
457.2 mm
UE
EXISTING CONCRETE BARRIER TO REMAIN
CURVE (2)
UF
BEGIN UNDERDRAIN, AS PER PLAN 18+198
EDGE OF SHOULDER
SIGN
0.075 m HAWTHORNE
762.0 mm ABANDONED SAN.
BRUSH
EDGE OF EXIST. SHOULDER
H.P. +217
EX. R/W
M.H.
M.H.
SAN.
M.H.
M.H.
304.8 mm
BEGIN TAPER + 179
SIGN
CONC. WALK
ASPHALT
2 STY. BRICK
457.2 mm
1.5 m C.L. FENCE
ASPHALT
OUTLET +179
CONC. WALK
MATCHLINE – STA 18+230 SEE SHEET 73

PLAN
STA 18+080 TO STA 18+230

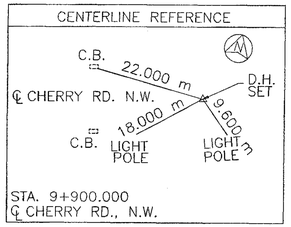
HORIZONTAL SCALE IN METERS
−2 0 2 6

CALCULATED KNG
CHECKED GTA

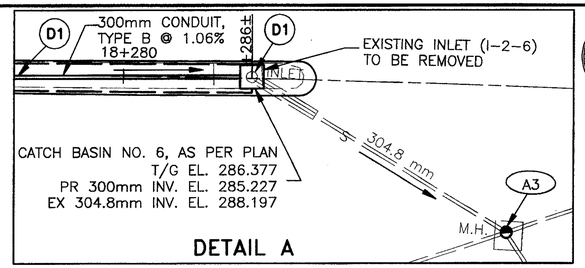
STA–21–16.574

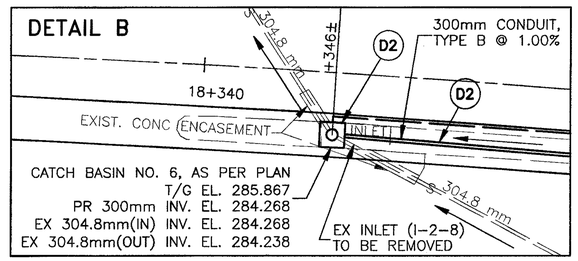
72
120

Filename = \KLM\C000f-M\0830\Civil\083050T2.DWG
Plot Scale = 1:1.0
Drawn By/Date = KDeree / 12-07-98 (17:42)



CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES
85	SEWER PROFILES





metric units

HORIZONTAL SCALE IN METERS

CALCULATED KNG
CHECKED GTA

PLAN
STA 18+230 TO STA 18+380

STA–21–16.574

73
120

NOTES:
1. THE RESURFACING SHALL TERMINATE USING TAPER EDGE TYPE FEATHER DETAIL–1 SHOWN ON THE STANDARD CONSTRUCTION DRAWING BP–3.1M.
2. PRIOR TO INSTALLATION OF THE PROPOSED SEWER THE CONTRACTOR SHALL FIELD DETERMINE THE EXACT LOCATION OF THE EXISTING WATER MAIN. REFER TO GENERAL NOTE ON SHEET 15.
3. EXISTING WATER MAIN TO BE LOWERED BY THE WATER DEPARTMENT. THE EXTENT AND EXACT LOCATION OF THE RELOCATION TO BE DETERMINED BY OTHERS.

BENCH MARK #18

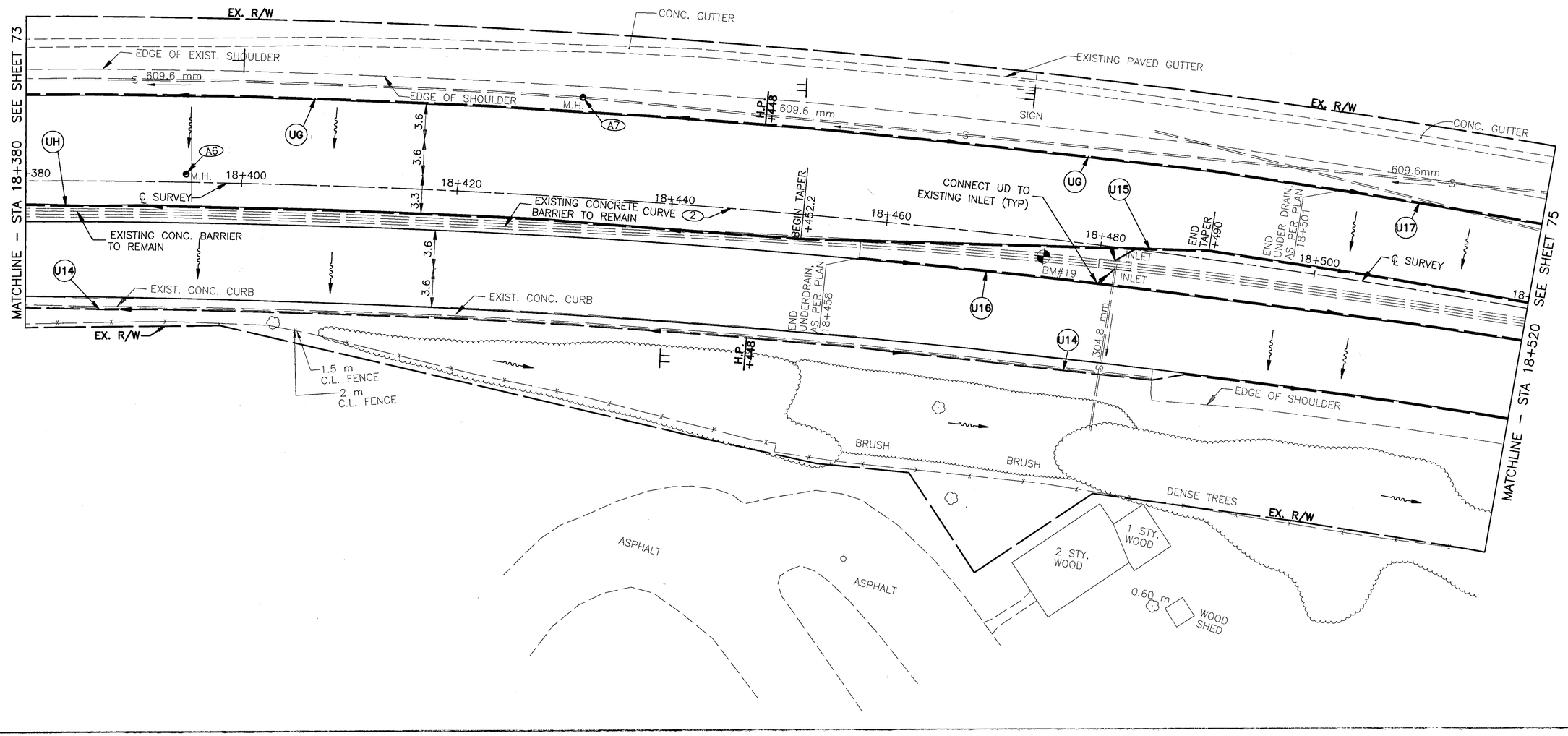
CHISELED SQUARE ON TOP OF THE CONCRETE BARRIER, STA. 18+376.002, 2.908 m RT.

ELEV. 286.990

Filename = VOLUM/0007-M/08350/DWG/08350573.DWG
Plot Scale = 1=40
Plot By/Date : KGenest / 12-07-18 (18:54)

CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES

BENCH MARK #19
CHISELED SQUARE ON TOP OF THE CONCRETE BARRIER, STA. 18+474.837, 1.668 m RT.
ELEV. 287.391



metric units

HORIZONTAL SCALE IN METERS
-2 0 2 6

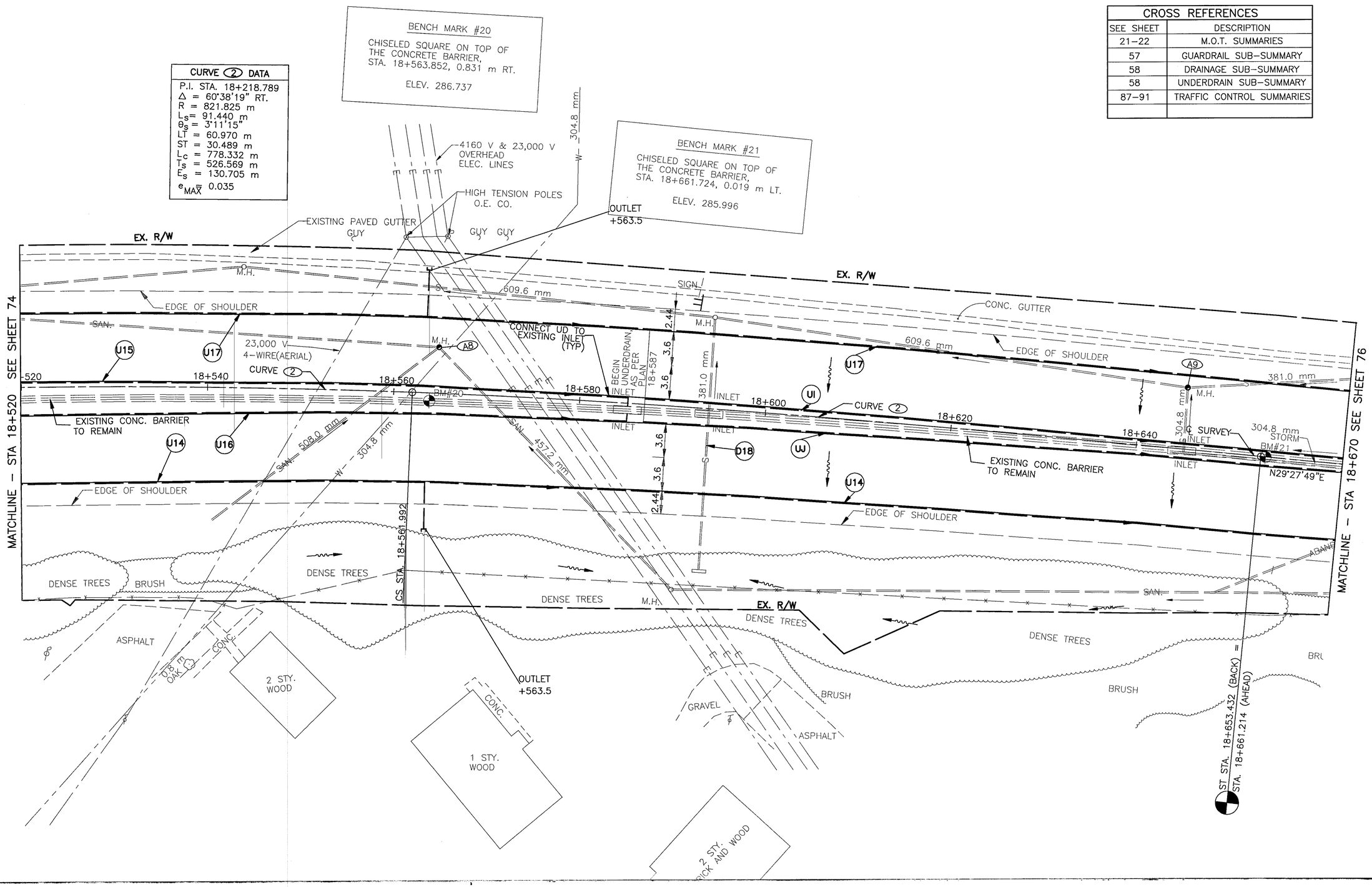
CALCULATED KNG
CHECKED GTA

PLAN
STA 18+380 TO STA 18+520

STA–21–16.574

CURVE ② DATA
P.I. STA. 18+218.789
Δ = 60°38'19" RT.
R = 821.825 m
L_s = 91.440 m
θ_s = 3°11'15"
LT = 60.970 m
ST = 30.489 m
L_c = 778.332 m
T_s = 526.569 m
E_s = 130.705 m
e_{MAX} = 0.035

CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES



metric units

HORIZONTAL SCALE IN METERS

CALCULATED KNG

CHECKED GTA

PLAN
STA 18+520 TO STA 18+670

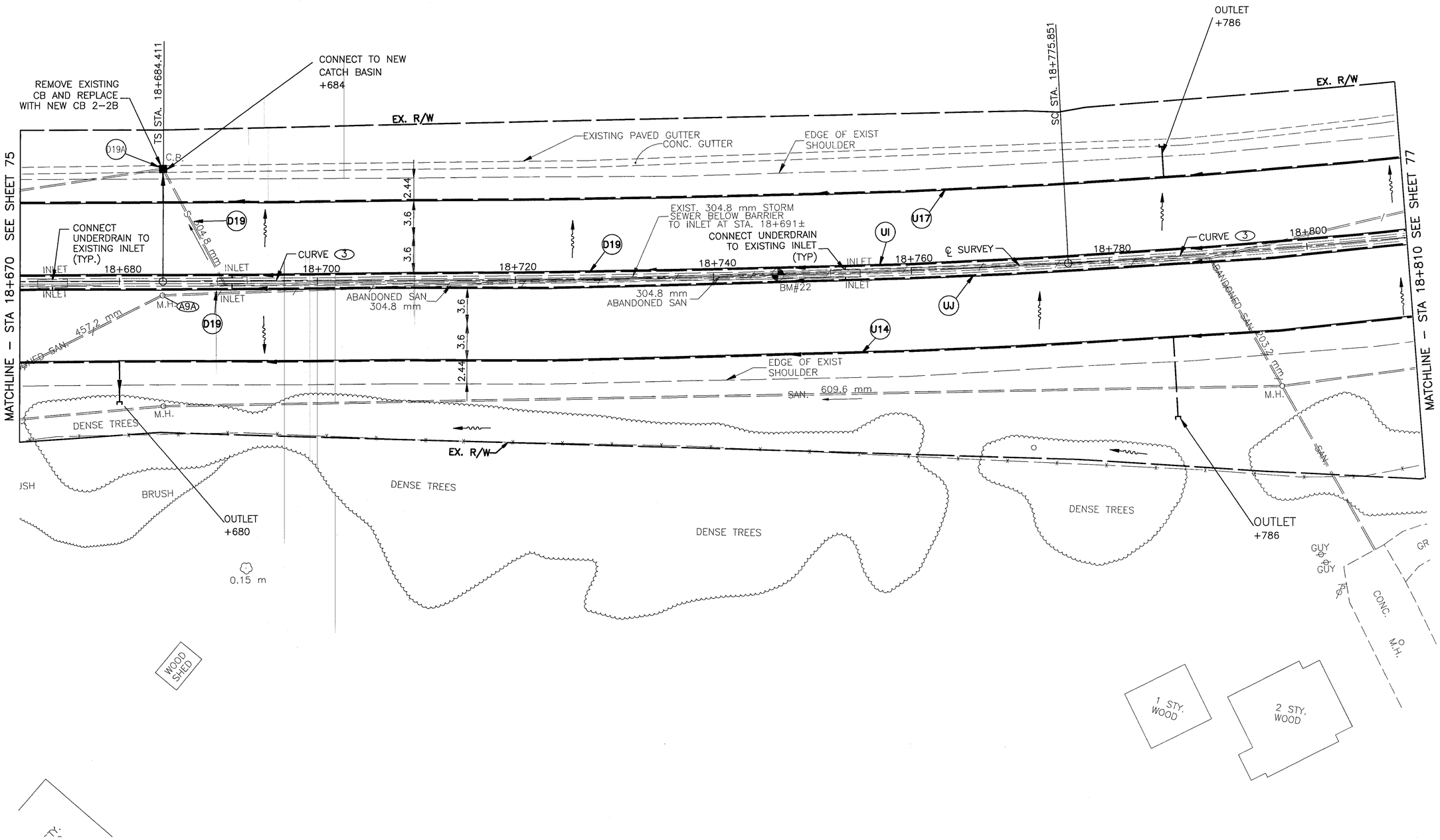
STA–21–16.574

BENCH MARK #22

CHISELED SQUARE ON TOP OF THE CONCRETE BARRIER, STA. 18+746.522, 0.072 m LT.

ELEV. 286.465

CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES



metric units

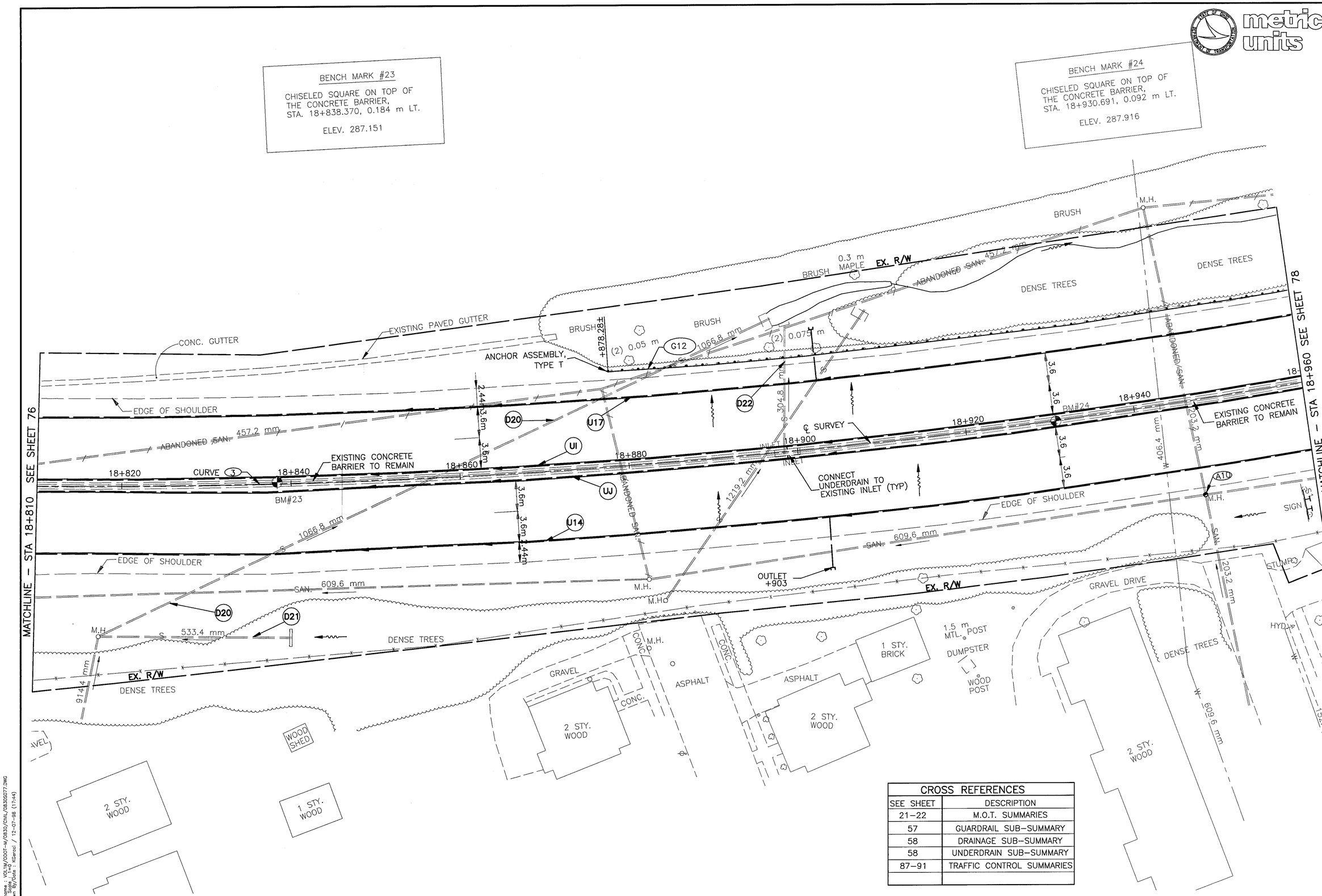
HORIZONTAL SCALE IN METERS

CALCULATED KNG

CHECKED GTA

PLAN
STA 18+670 TO STA 18+810

STA–21–16.574



CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES

metric units

HORIZONTAL SCALE IN METERS

CALCULATED KNG
CHECKED GTA

PLAN
STA 18+810 TO STA 18+960

STA–21–16.574

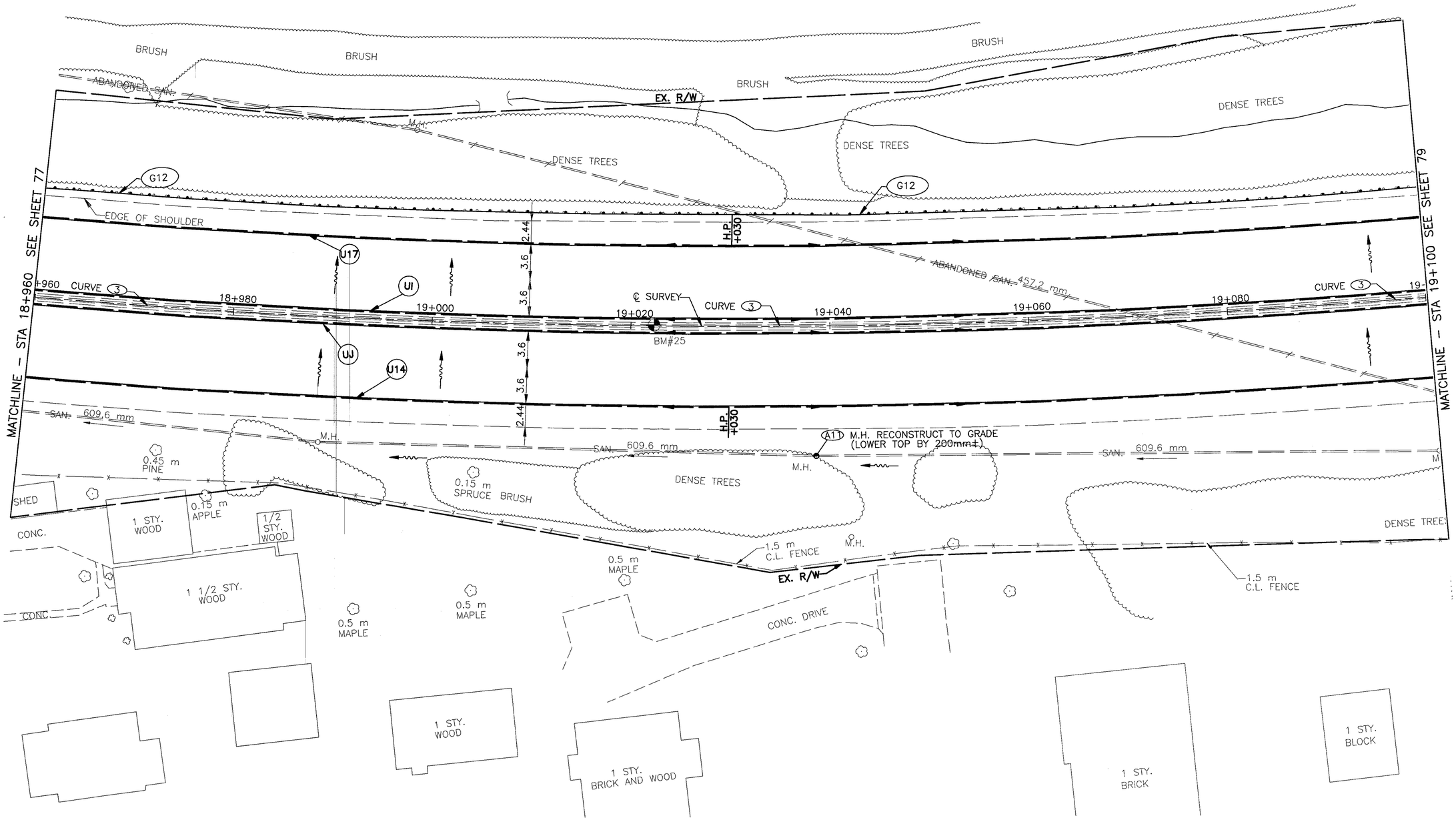
CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES

BENCH MARK #25

CHISELED SQUARE ON TOP OF THE CONCRETE BARRIER, STA. 19+022.435, 0.066 m LT.

ELEV. 288.573

CURVE (3) DATA
P.I. STA. 19+159.122
Δ = 54°10'51" LT.
R = 838.263 m
L_s = 91.440 m
θ_s = 3°07'30"
LT = 60.970 m
ST = 30.489 m
L_c = 701.248 m
T_s = 474.711 m
F_s = 103.766 m
e_{max} = 0.035m



metric units

HORIZONTAL SCALE IN METERS

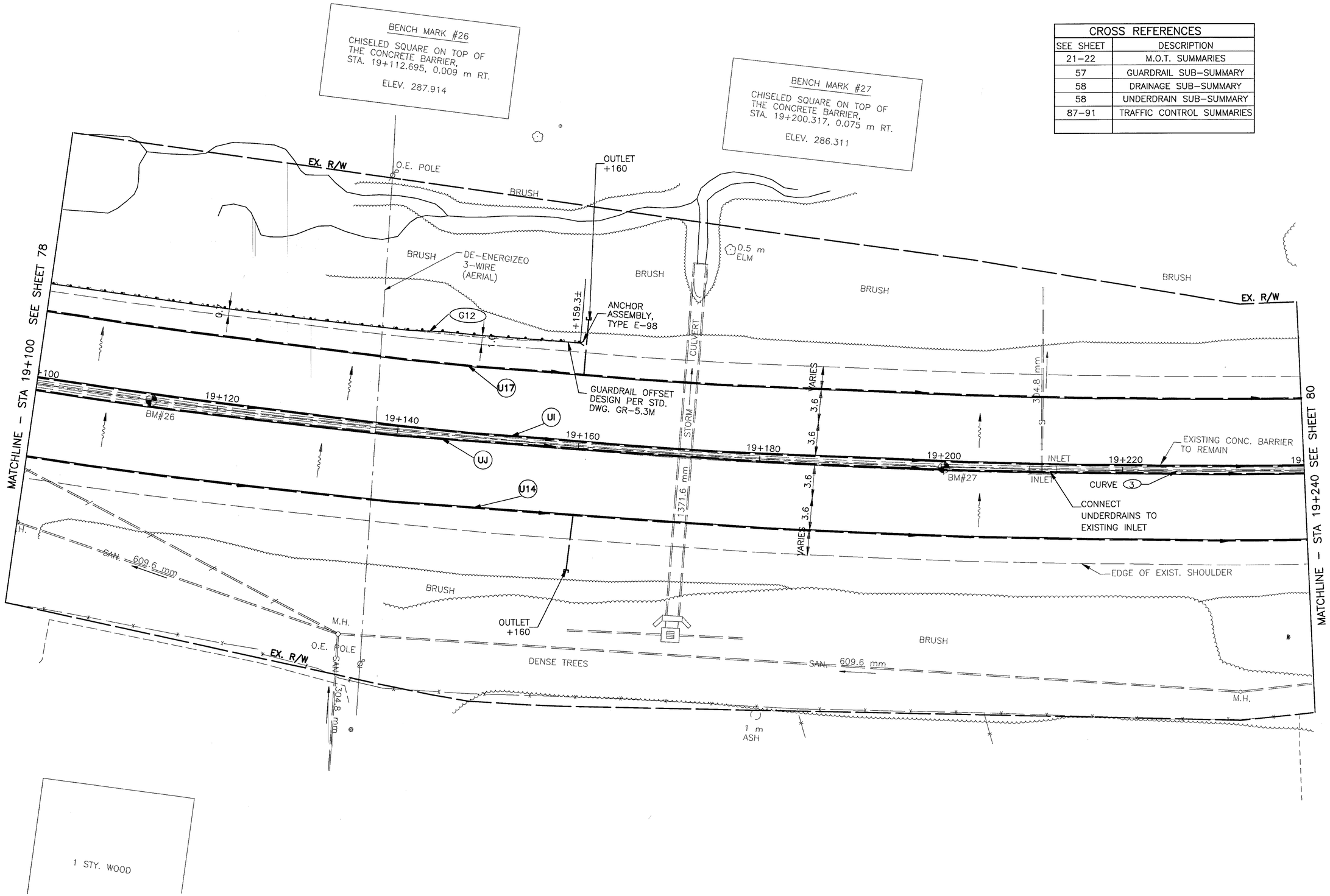
CALCULATED KNG
CHECKED GTA

PLAN
STA 18+960 TO STA 19+100

STA–21–16.574

78
120

Filename : V:\PLN\ROOT-HW\0830\CIVIL\08305078.DWG
Plot Scale : 1:1.0000
Drawn By/Date : KGrecol / 12-07-98 (11:45)



CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21-22	M.O.T. SUMMARIES
57	GUARDRAIL SUB-SUMMARY
58	DRAINAGE SUB-SUMMARY
58	UNDERDRAIN SUB-SUMMARY
87-91	TRAFFIC CONTROL SUMMARIES

metric units

HORIZONTAL SCALE IN METERS

CALCULATED KNG
CHECKED GTA

PLAN
STA 19+100 TO STA 19+240

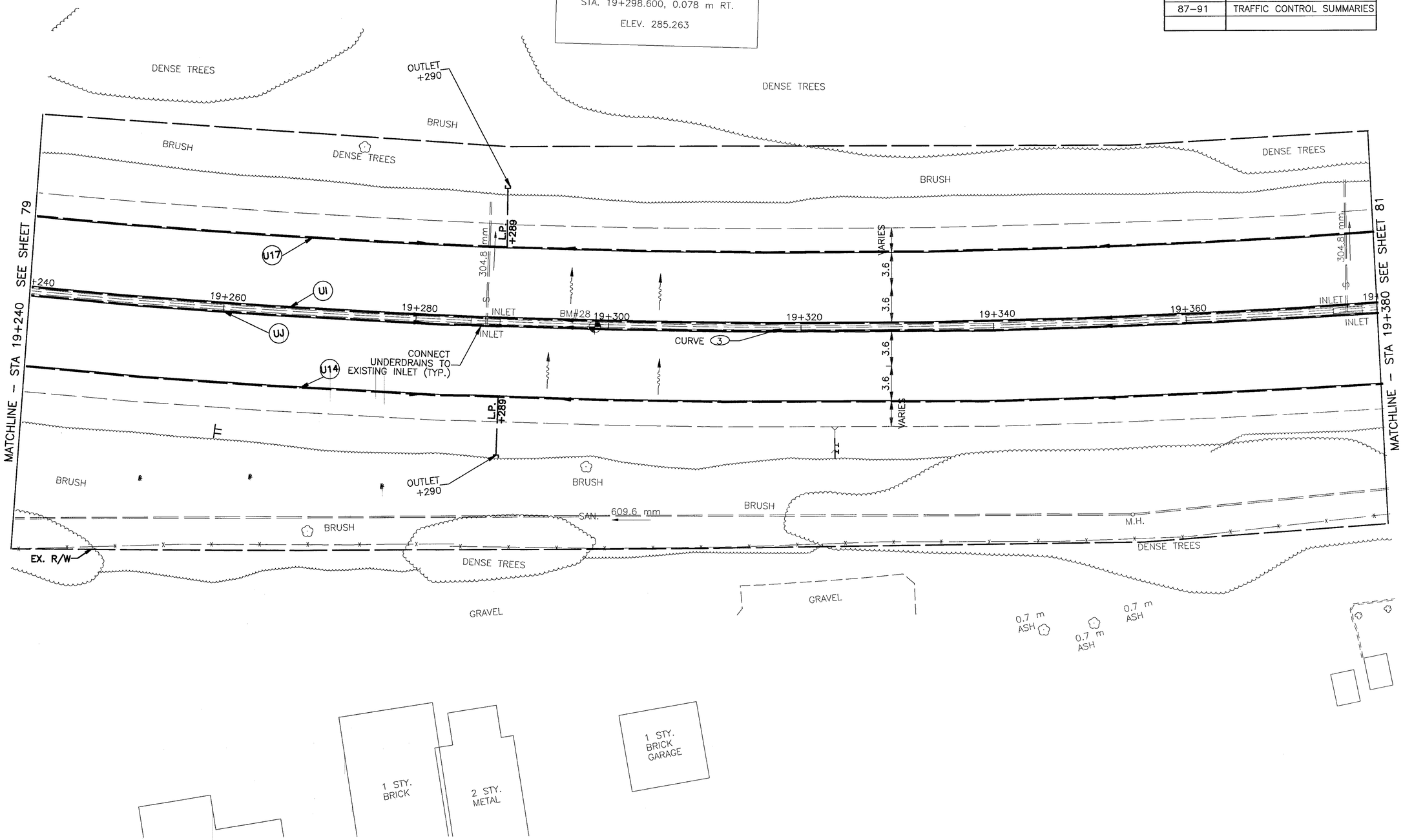
STA-21-16.574

CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES

BENCH MARK #28

CHISELED SQUARE ON TOP OF THE CONCRETE BARRIER, STA. 19+298.600, 0.078 m RT.

ELEV. 285.263



metric units

HORIZONTAL SCALE IN METERS

CALCULATED KNG

CHECKED GTA

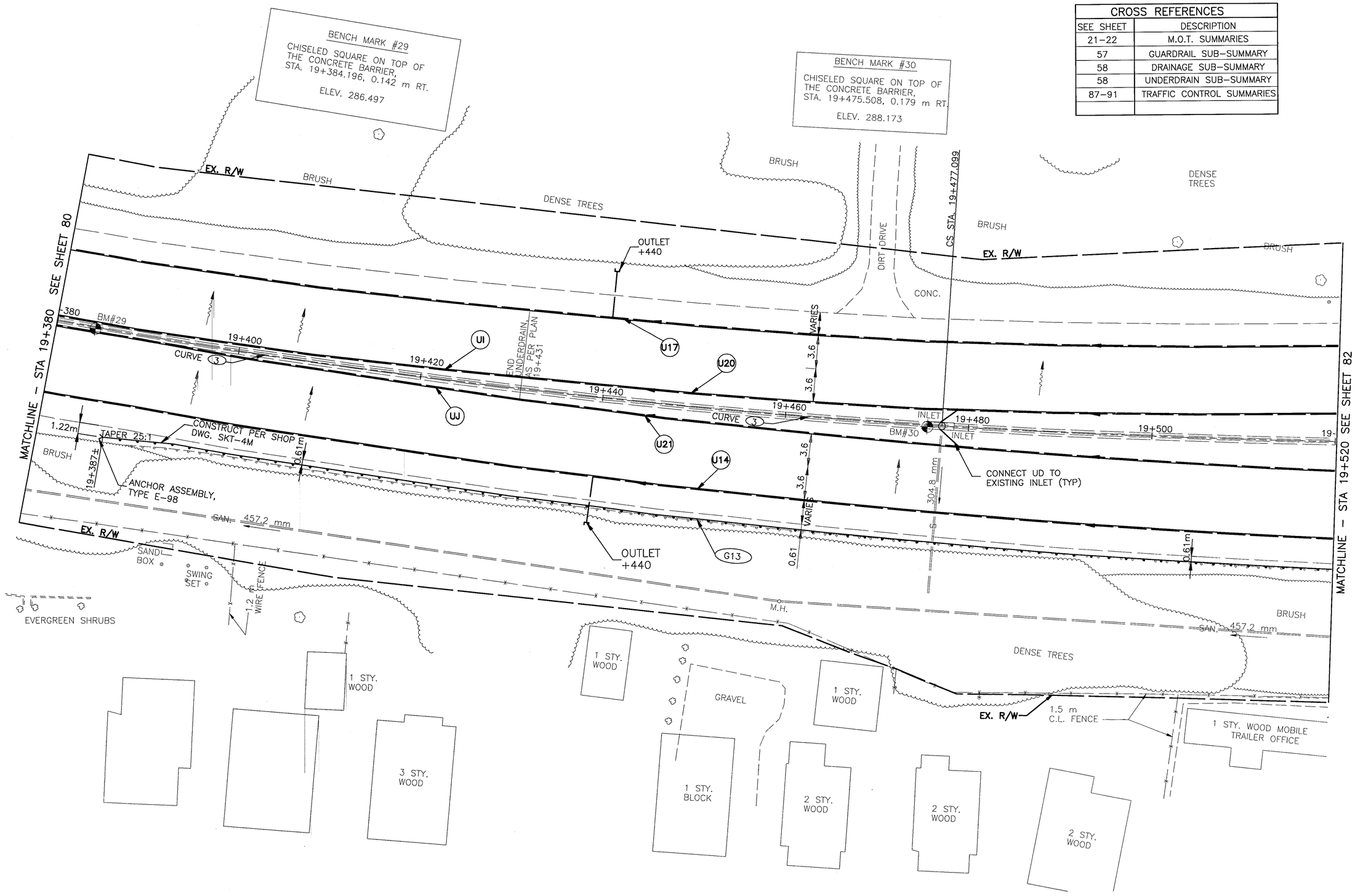
PLAN
STA 19+240 TO STA 19+380

STA–21–16.574

Filename : VOLIM/ODOT-M/0830/CIVIL/0830S080.DWG
Plot Scale : 1=0
Drawn By/Date : KGeraci / 12-07-98 (17:46)

metric units

CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES



HORIZONTAL SCALE IN METERS

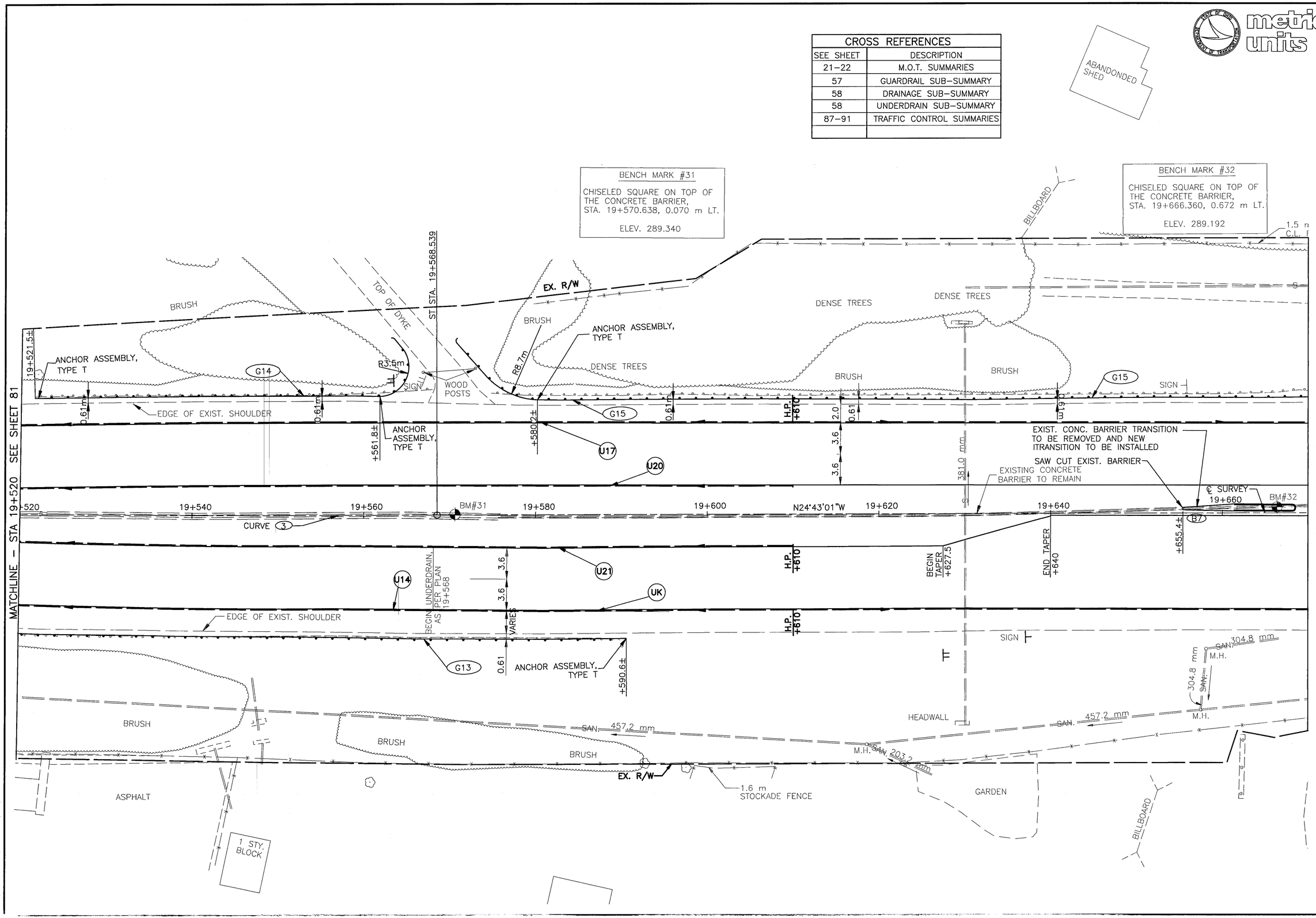
CALCULATED KNG

CHECKED GTA

PLAN
STA 19+380 TO STA 19+520

STA–21–16.574

CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES



metric units

HORIZONTAL SCALE IN METERS

CALCULATED KNG

CHECKED GTA

PLAN
STA 19+520 TO STA 19+670

STA–21–16.574

CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES

metric units

HORIZONTAL SCALE IN METERS

CALCULATED KNG

CHECKED GTA

PLAN

STA 19+670 TO STA 19+820

STA–21–16.574

CENTERLINE REFERENCE

℄ POWER LIGHT POLE
I.P. SET
10.400 m
P.C.
℄ LAKE AVE. N.W.
19.500
16.560 m
POWER POLE
STEEL POLE
P.C. STA. 9+939.044
℄ LAKE AVE., N.W.

CENTERLINE REFERENCE

GUY WIRE POLE #15983
POWER POLE
12.430
19.950 m
P.K. SET
℄ LAKE AVE. N.W.
11.925 m
TRAFFIC SIGNAL POLE
STA. 10+020.000
℄ LAKE AVE., N.W.

MATCHLINE – STA 19+670 SEE SHEET 82

MATCHLINE – STA 19+820 SEE SHEET 84

1 STY. BLOCK

STY. WOOD WITH BASEMENT

120V CABLE & 120/240V CABLE (AERIAL)

ANCHOR ASSEMBLY, TYPE B–98

EX. R/W

GUY

R27.8m

O.E. POLE

LIMITS OF RESURFACING

PT STA. 9+962.295

EXISTING O.E. POLE WITHOUT LIGHT

SIGN

BRUSH

EXISTING CITY OF MASSILLON SIGNAL POLE TO BE REMOVED

DENSE TREES

914.2 mm

3.01m

9+978.9

OULET +700

G15

0.61m

U17

EXIST. SIGNAL POLE TO BE REMOVED

EXISTING SIGNAL POLE (VEHICAL DETECTION) TO BE REMOVED

4,160V 3–WIRE 120/240V 3–WIRE (AERIAL)

152.4 mm

9+960

9+980

10+000

℄ LAKE AVE. N.W.

S79°51'05"W

A14

UL

2.44

3.6

BEGIN UNDERDRAIN AS PER PLAN 19+754

19+680

19+700

19+720

19+740

19+760

19+780

19+800

120V CABLE (AERIAL)

END UNDERDRAIN AS PER PLAN 19+675

LIMITS OF RESURFACING 10+01/1.7±

EXISTING CONCRETE CURB

EXISTING SIGNAL POLE WITH LIGHT TO BE REMOVED

EXISTING SIGNAL POLE (VEHICAL DETECTION) TO BE REMOVED

U22

M.H.

SAN.

304.8 mm

10+020

(3) 0.25 m TREES

EXISTING SIGNAL POLE WITH TRAFFIC CONTROLLER TO BE REMOVED

(8) 0.20 m TREES

0.15 m

0.20 m

1 m TUBE

0.9 m C.L. FENCE

EXISTING POLE TO BE RELOCATED BY O.E. CO POLE NO. 2522 C1/2

2 STY. WOOD WITH BASEMENT

BARN

1 STY. GARAGE

2 STY. WOOD

PAVEMENT REPLACEMENT BY THE CITY OF MASSILLON

10+040

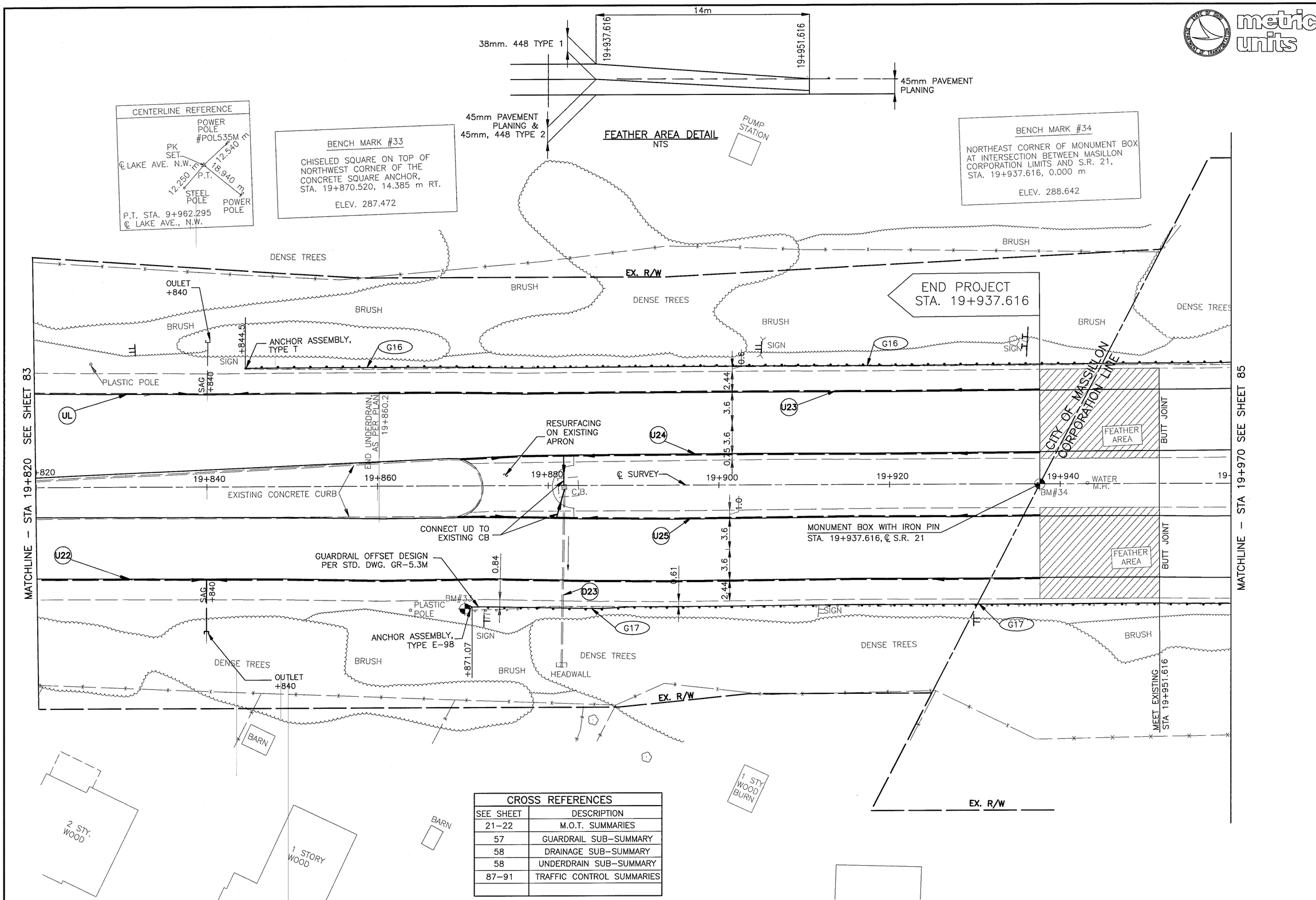
101.6 mm

0.90 m TREE

C.B.

NG CONCRETE CURB

Plotscale = 1.0 / 1
Plot Date/Time = 12/07/98 08:30:58
Drawn By/Date : KGeraci / 12-07-98 (17:)
Filename = VOL1W/0001-M/0830/CIVIL/08305083.DWG



CROSS REFERENCES	
SEE SHEET	DESCRIPTION
21–22	M.O.T. SUMMARIES
57	GUARDRAIL SUB–SUMMARY
58	DRAINAGE SUB–SUMMARY
58	UNDERDRAIN SUB–SUMMARY
87–91	TRAFFIC CONTROL SUMMARIES

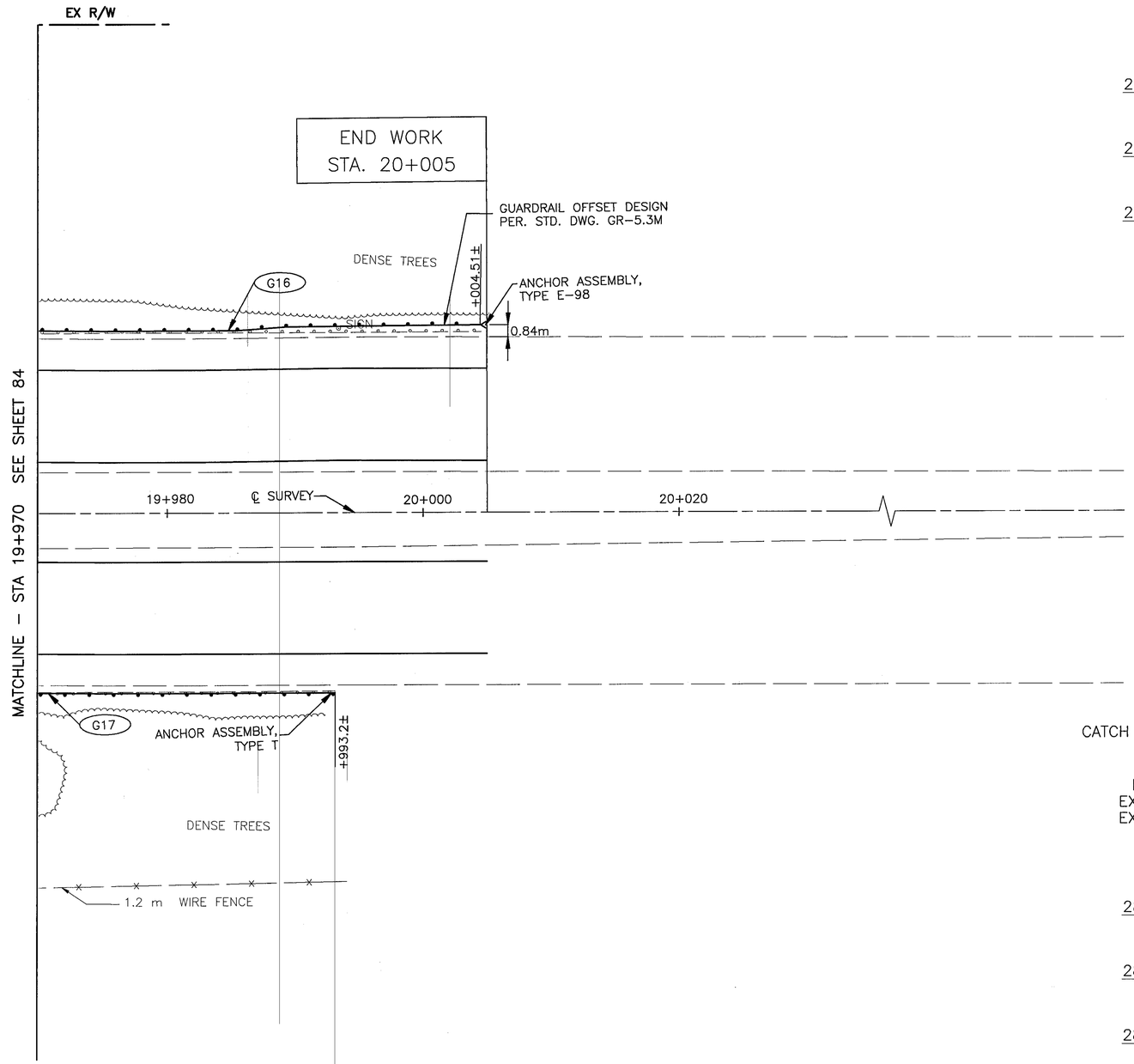
metric units

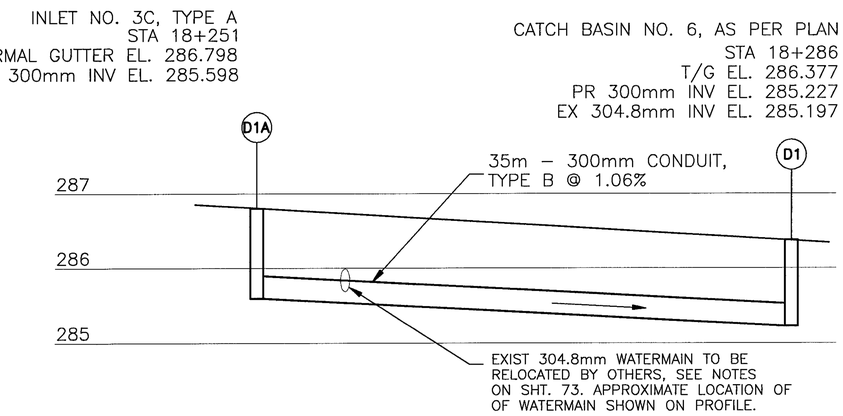
HORIZONTAL SCALE IN METERS

CALCULATED KNG
CHECKED GTA

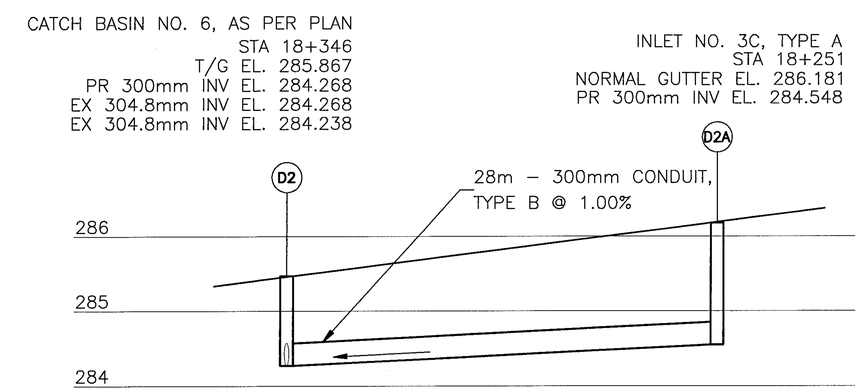
PLAN
STA 19+820 TO STA 19+970

STA–21–16.574





STORM SEWER PROFILE
FOR PLAN DETAIL A, SEE SHEET 73



STORM SEWER PROFILE
FOR PLAN DETAIL B, SEE SHEET 73

metric units

HORIZONTAL SCALE IN METERS
-2 0 2 6

CALCULATED KNG
CHECKED GTA

PLAN
STA 19+970 TO END WORK

STA-21-16.574

TRAFFIC CONTROL NOTES

MILE MARKER LOCATION

THE LOCATION OF THE MILE MARKERS ON THE PLANS ARE APPROXIMATE AND A MORE PRECISE LOCATION WILL BE PROVIDED BY THE DEPARTMENT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 30 DAYS IN ADVANCE OF THE PLANNED DATE OF MARKER INSTALLATION. THE ENGINEER WILL CONTACT THE BUREAU OF TECHNICAL SERVICES WHICH WILL LOCATE THE LONGITUDINAL POSITION OF MILE MARKERS BY MEANS OF A PAINT MARK ON THE PAVEMENT EDGE. ALTERNATE MARKS WILL NOT BE PROVIDED ON DIVIDED HIGHWAYS AND THE CONTRACTOR SHALL SET MARKERS FOR THE OPPOSITE ROADWAY ACROSS FROM THE PROVIDED MARK. DELINEATORS WHOSE NORMAL POSITION FALLS WITHIN 15 METERS OF A MILE MARKER SHALL BE OMITTED.

ITEM 626 – BARRIER REFLECTORS

THESE REFLECTORS AND THEIR MOUNTING SHALL CONFORM TO ITEM 626. THE SPACING SHALL BE AS SHOWN IN THE BARRIER SUBSUMMARY TABLE ON SHEET 57.

SIGN PLACEMENT

THE EXACT LOCATION OF SIGNS ARE TO BE STAKED AND 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 FOR THIS IS TO BE INCIDENTAL TO ALL 630 ITEMS.

ITEM 630 – REMOVAL OF GROUND MOUNTED SIGN AND STORAGE, AS PER PLAN

ALL SIGNS REMOVED UNDER THIS BID ITEM SHALL BE SALVAGED AND DELIVERED TO THE FOLLOWING LOCATION:

CITY OF MASSILLON SERVICE GARAGE
401 WALNUT ROAD S.W.
MASSILLON, OHIO 44647
ATTEN: MR. GEORGE PATTERSON
PHONE NO. (330) 833-5746

ITEM 630 – REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL, AS PER PLAN

ALL SUPPORTS REMOVED UNDER THIS BID ITEM SHALL BE DISPOSED OF EXCEPT THOSE SUPPORTS WITHOUT ANY CONCRETE EMBEDMENT SHALL BE SALVAGED AND DELIVERED TO THE FOLLOWING LOCATION:

CITY OF MASSILLON SERVICE GARAGE
401 WALNUT ROAD S.W.
MASSILLON, OHIO 44647
ATTEN: MR. GEORGE PATTERSON
PHONE NO. (330) 833-5746

metric units
CALCULATED KNG
CHECKED GTA
TRAFFIC CONTROL NOTES
STA-21-16.574

Filename : VOL1M/ODOT-M/0830/CVIL/0830S086.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (2:)

TRAFFIC CONTROL SUMMARY

ITEM	SHEET NUMBER							ITEM	ITEM EXTENSION	QUANTITY	UNIT	DESCRIPTION	SEE SHEET
			86	88	89	90	91						
												TRAFFIC CONTROL	
621							374	621	00100	374	EACH	RAISED PAVEMENT MARKER	
630				2	6	2		630	84500	10	EACH	GROUND MOUNTED BEAM SUPPORT FOUNDATION	
630				261.77	247.62	104.65		630	03100	614.04	METER	GROUND MOUNTED SUPPORT, NO. 3 POST	
630				9.95	6.83	–		630	06400	16.78	METER	GROUND MOUNTED SUPPORT, S100 X 11.5 BEAM	
630				–	20.4	11.52		630	06500	31.92	METER	GROUND MOUNTED SUPPORT, W150 X 13.5 BEAM	
630				2	–	–		630	09000	2	EACH	BREAKAWAY BEAM CONNECTION	
630				4	–	–		630	79600	4	EACH	SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED	
630				32.29	33.35	15.67		630	80102	81.71	SQ METER	SIGN FLAT SHEET, TYPE G	
630				2.02	10.08	2.52		630	80204	14.62	SQ METER	SIGN EXTRUSHEET, TYPE G	
630				32	38	27		630	85001	97	EACH	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE, AS PER PLAN	86
630				–	1	–		630	85100	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
630				22	24	20		630	86003	66	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL, AS PER PLAN	86
630				2	8	4		630	86102	12	EACH	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL	
644							14.43	644	00100	14.43	KILOMETER	EDGE LINE	
644							6.85	644	00200	6.85	KILOMETER	LANE LINE	
644							0.11	644	00300	0.11	KILOMETER	CENTER LINE	
644							864	644	00400	864	METER	CHANNELIZING LINE	
644							166	644	00500	145	METER	STOP LINE	
644							232	644	00600	232	METER	CROSSWALK LINE	
644							250	644	00700	250	METER	TRANSVERSE LINE	
644							55	644	00800	55	METER	CURB MARKING	
644							3	644	00900	3	SQ METER	ISLAND MARKING	
644							77	644	01300	77	EACH	LANE ARROW	
644							29	644	01410	29	EACH	WORLD ON PAVEMENT, 2500MM	

metric units

CALCULATED KNG
CHECKED GTA

TRAFFIC CONTROL SUMMARY

STA-21-16.574

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S087.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (17:12)

metric units

CALCULATED KNG | CHECKED GTA

SIGNING SUB-SUMMARY

SIGN CODE & SIZE

SHEET NUMBER	STATION	SIDE	M-2 600x600	M-2 750x750	M-2-3 800x600	M-2-3 937x750	M-8 600x300	M-8 750x375	M-17 600x300	M-19 525x375	M-21 750x450	M-24 525x375	M-25 525x375	M-37 750x375	M-38 750x375	R-2 900x900x900	R-3L 600x900	R-10 600x750	R-10 900x1200	R-31C 1200x750	R-31E 1200x750	R-31FF 1200x750	R-31T 1350x750	R-32R 750x750	R-37R 600x750	R-41B 900x900	R-52 600x900	R-142 750x750	D-11 2100x450	D-14 1200x250	D-14 1350x250	D-14 2100x250	W-24 1200x1200	W-42 900x900	W-46 600x600	W-47 1200x1200	W-82 750x750	X-1A 450x450	X-6R 300x900	X-6L 300x900	GB 5400x1500	GL-96 5400X1500	GN 2100x450	N-15 600x150	N-29 600x600	N-SPE	
92	16+585	RT																															1														
92	16+670	LT																	1																												
92	16+693	RT																		1																											
92	16+732	RT																											1																		
93	16+779	LT		1											1																																
93	16+811	RT																		1																											
93	16+814	LT																																													
93	16+818	LT																													1																
93	16+844	RT																													1																
93	9+969	RT		1									1																																		
93	9+974	LT																										1						1													
93	9+980	RT															1																														
93	10+020	LT															1																														
93	10+034	LT		1									1																																		
93	16+852	LT																					1																								
93	16+870	RT		1										1																																	
93	16+935.8	LT																					1																								
93	16+977	RT																	1																												
93	16+993	LT																											1																		
94	17+110	LT																															1														
94	17+138	RT				1		1																																	1						
94	17+150	RT																																					1								
94	17+216	RT																																					1								
94	17+232	LT																																					1								
94	17+242	CENTER																																				1		1							
94	17+257	CENTER																																				1		1							
94	17+280	LT																																					1								
94	17+322	LT																																		1											
94	17+341	RT																																		1											
95	17+464	RT				1		1		1																			1																		
95	17+499	RT																																					1								
95	17+525	LT																	1																												
95	17+538	RT																			1																										
95	17+540	CENTER																																				1		1							
95	17+560	CENTER																																				1		1							
95	17+560	LT																																					1								
95	17+568	RT																						1																							
95	17+590	LT		1											1																																
95	10+024	RT																																	1												
95	10+027	RT																1																													
95	10+031	RT																								1																					
95	10+032	RT																1																													
95	10+042	RT														1																															
95	17+620	RT																														1															
95	17+623	LT																														1															
SUBTOTAL THIS SHEET			–	5	–	2	–	2	–	1	–	–	2	1	2	1	2	2	3	2	1	–	2	1	–	1	–	1	3	–	2	2	2	1	1	2	–	4	6	4	1	–	–	–	–	–	–

SIGNING QUANTITIES

630

SHEET NUMBER	STATION	SIDE	GROUND MOUNTED BEAM SUPPORT FOUNDATION (EACH)	GROUND MOUNTED SUPPORTS, NO. 3 POST (meter)	GROUND MOUNTED SUPPORTS, S100 x 11.5 BEAM (meter)	GROUND MOUNTED SUPPORTS, W150 x 13.5 BEAM (meter)	SIGN FLAT SHEET TYPE G (SQ-m)	SIGN EXTRUSHEET TYPE G (SQ-m)	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE, AS PER PLAN (EACH)	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL, AS PER PLAN (EACH)	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL (EACH)				REMOVAL OF GROUND MOUNTED SIGN AND RE-ERECTION (EACH)	BREAKAWAY BEAM CONNECTION (EACH)		SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED (EACH)			REMARKS
92	16+585	RT		4.57/4.57			1.44														
92	16+670	LT		4.80/4.80			1.08														
92	16+693	RT		4.35/4.35			0.90														
92	16+732	RT		4.05/4.05			0.94		1	2											
93	16+779	LT		4.12			0.84		2	1											
93	16+811	RT		4.35/4.35			0.90														
93	16+814	LT							2	1											
93	16+818	LT		3.85/3.85			0.34														
93	16+844	RT		3.85/3.85			0.34														
93	9+969	RT		4.72			0.76		2	1											
93	9+974	LT		5.62/5.62			1.37		2	1											
93	9+980	RT		4.5			0.54														
93	10+020	LT		4.5			0.54														
93	10+034	LT		4.72			0.76		2	1											
93	16+852	LT		4.35/4.35			1.01														
93	16+870	RT		4.72			0.84		2	1											
93	16+935.8	LT		4.35/4.34			1.01														
93	16+977	RT		4.80/4.80			1.08		1	2											
93	16+993	LT		4.05/4.05			0.94		1	2											
94	17+110	LT		4.57/4.57			1.44														
94	17+138	RT	2		9.95		0.84	2.02	4		2					2					
94	17+150	RT		4.50			0.27														
94	17+216	RT		4.50			0.27														
94	17+232	LT		4.50			0.27														
94	17+242	CENTER					0.47											1			
94	17+257	CENTER					0.47											1			
94	17+280	LT		4.50			0.27														
94	17+322	LT		4.57/4.57			1.44		2	1											
94	17+341	RT		4.57/4.57			1.44		1	1											
95	17+464	RT		5.55/4.05			1.98		3	2											
95	17+499	RT		4.50			0.27														
95	17+525	LT		4.80/4.80			1.08														
95	17+538	RT		4.35/4.35			0.90														
95	17+540	CENTER					0.47											1			
95	17+560	CENTER					0.47											1			
95	17+560	LT		4.50			0.27														
95	17+568	RT		4.35			0.56														
95	17+590	LT		4.72			0.84		2	1											
95	10+024	RT		4.45			0.36		1	1											
95	10+027	RT		4.20			0.36		1	1											
95	10+031	RT		4.50			0.81		1	1											
95	10+032	RT		4.20			0.36		1	1											
95	10+042	RT		4.38			0.70		1	1											
95	17+620	RT		3.85/3.85			0.52														
95	17+623	LT		3.85/3.85			0.52														
SUBTOTAL THIS SHEET			2	261.77	9.95	–	33.29	2.02	32	22	2	–	–	–	–	2		4			

STA-21-16.574

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S088.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (17:12)

State of Ohio Department of Transportation — metric units

CALCULATED KNG | CHECKED GTA

SIGNING SUB-SUMMARY

SIGN CODE & SIZE

SHEET NUMBER	STATION	SIDE	M-1 600x600	M-2 600x600	M-2 750x750	M-2-3 800x600	M-2-3 937x750	M-8 600x300	M-8 750x375	M-17 600x300	M-19 525x375	M-21 750x450	M-24 525x375	M-25 525x375	M-25 750x375	M-37 750x375	M-38 750x375	R-2 900x900x900	R-3L 600x900	R-10 900x1200	R-31C 1200x750	R-31E 1200x750	R-31FF 1200x750	R-31T 1350x750	R-32R 750x750	R-37R 600x750	R-41B 900x900	R-52 600x900	R-142 750x750
95	17+639	LT	1	1				1					1	1															
95	17+640	LT				1				1			1																
95	17+646	LT																					1						
95	17+663	RT			1											1													
95	17+687	LT																											
95	17+692	RT																		1									
96	17+740	LT																					1						
96	17+740	RT																											
96	17+769	LT																											
96	17+783	RT																											
96	17+831	LT																											
96	17+861	LT					1		1			1																	
96	17+983	LT																											
96	18+010	RT																											
96	18+104	RT																											
96	18+135	LT																		1									
96	18+228	RT																						1					
96	18+196	RT																											
96	18+245	RT																							1				
97	18+247	LT			1												1												
97	18+270	RT																											
97	18+280	RT																						1					
97	18+285	LT																											
97	9+970	RT																											
97	9+978	LT																											
97	10+009	RT			1									1															
97	10+026	LT																	1										
97	10+020	RT																1									1		
97	10+030	LT																1											
97	10+037	LT																1											
97	10+052	LT			1									1															
97	18+309	RT																											
97	18+332	LT																			1								
97	18+359	RT			1											1													
97	18+400	LT																											
97	18+440	RT																		1									
97	18+452	LT																			1								
97	18+472	LT																											
97	18+592	LT																											
98	18+958	RT																											
99	19+260	RT																											
99	19+322	RT					1				1					1													
100	19+567	LT																		1									
SUBTOTAL THIS SHEET			1	1	5	1	2	1	1	1	1	1	2	3	–	3	1	3	1	4	2	–	2	2	1	–	1	–	–

SHEET NUMBER	STATION	SIDE	D-11 2100x450	D-14 1200x250	D-14 1350x250	D-14 2100x250	W-24 1200x1200	W-42 900x900	W-46 600x600	W-47 1200x1200	W-82 750x750	X-1A 450x450	X-6R 300x900	X-6L 300x900	GB 2700x750	GL-96 2400x2100	GN 2100x450	N-15 600x150	N-29 600x600	N-SPE	Knights of Columbus
95	17+639	LT																			
95	17+640	LT																			
95	17+646	LT																			
95	17+663	RT																			
95	17+687	LT																			
95	17+692	RT																			
96	17+740	LT																			
96	17+740	RT											1								
96	17+769	LT											1								
96	17+783	RT											1								
96	17+831	LT											1								
96	17+861	LT	1																		
96	17+983	LT														1					
96	18+010	RT								1											
96	18+104	RT	1																		
96	18+135	LT																			
96	18+228	RT																			
96	18+196	RT									1										
96	18+245	RT																			
97	18+247	LT																			
97	18+270	RT																1	1	1	
97	18+280	RT																			
97	18+285	LT			1																
97	9+970	RT																			
97	9+978	LT																			
97	10+009	RT																			
97	10+026	LT																			
97	10+020	RT																			
97	10+030	LT																			
97	10+037	LT																			
97	10+052	LT																			
97	18+309	RT			1																
97	18+332	LT																			
97	18+359	RT																			
97	18+400	LT																1	1	1	
97	18+440	RT																			
97	18+452	LT																			
97	18+472	LT	1																		
97	18+592	LT								1											
98	18+958	RT														1					
99	19+260	RT								1											
99	19+322	RT	1																		
100	19+567	LT																			
SUBTOTAL THIS SHEET			4	–	2	–	–	–	–	3	1	–	4	–	–	2	–	2	2	2	–

SIGNING QUANTITIES

630

SHEET NUMBER	STATION	SIDE	GROUND MOUNTED BEAM SUPPORT FOUNDATION (EACH)	GROUND MOUNTED SUPPORTS, NO. 3 POST (meter)	GROUND MOUNTED SUPPORTS, S100 x 11.5 BEAM (meter)	GROUND MOUNTED SUPPORTS, W150 x 13.5 BEAM (meter)	SIGN FLAT SHEET TYPE G (SQ-m)	SIGN EXTRUSHEET TYPE G (SQ-m)	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE, AS PER PLAN (EACH)	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL, AS PER PLAN (EACH)	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL (EACH)				REMOVAL OF GROUND MOUNTED SIGN AND RE-ERECTION (EACH)	BREAKAWAY BEAM CONNECTION (EACH)	REMARKS
95	17+639	LT		4.88/4.58			1.30		5	2							
95	17+640	LT		4.88			0.74		3								
95	17+646	LT		4.35/4.35			0.90										
95	17+663	RT		4.72			0.84										
95	17+687	LT								1							
95	17+692	RT		4.80/4.80			1.08		1	2							
96	17+740	LT		4.35/4.35			0.90										
96	17+740	RT		4.50			0.27										
96	17+769	LT		4.50			0.27										
96	17+783	RT		4.50			0.27										
96	17+831	LT		4.50			0.27										
96	17+861	LT	2		6.83		2.13		3		2						
96	17+983	LT	2			9.60		5.04	1		2						
96	18+010	RT		4.57/4.57			1.44										
96	18+104	RT		4.05/4.05			0.94		1	2							
96	18+135	LT		4.80/4.80			1.08		1	2							
96	18+228	RT		4.35/4.35			1.01										
96	18+196	RT		4.35			0.42		1	1							
96	18+245	RT		4.35			0.42										
97	18+247	LT		4.72			0.84		2	1							
97	18+270	RT		4.95			0.81		3	1							
97	18+280	RT		4.35/4.35			1.01										
97	18+285	LT		3.85			0.34										
97	9+970	RT							1	1							
97	9+978	LT		4.66			–			1					1		
97	10+009	RT		4.72			0.84		2	1							
97	10+026	LT		4.50			0.54		1	1							
97	10+020	RT		4.38			0.70		1	1							
97	10+030	LT		4.38			0.70		1	1							
97	10+037	LT		4.38			0.70										
97	10+052	LT		4.72			0.84		1	1							
97	18+309	RT		3.85			0.34										
97	18+332	LT		4.35/4.35			0.90										
97	18+359	RT		4.72			0.84		2	1							
97	18+400	LT		4.95			0.81										
97	18+440	RT		4.80/4.80			1.08										
97	18+452	LT		4.35/4.35			0.90										
97	18+472	LT		4.05/4.05			0.94		1	2							
97	18+592	LT		4.57/4.57			1.44		1	1							
98	18+958	RT	2			10.80		5.04	1		2						
99	19+260	RT		4.57/4.57			1.44										
99	19+322	RT		5.25/3.75			1.98		4		2						
100	19+567	LT		4.80/4.80			1.08		1	1							
SUBTOTAL THIS SHEET			6	247.62	6.83	20.4	33.35	10.08	38	24	8	–	–	–	1		

STA-21-16.574

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S089.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (17:13)

SIGNING SUB-SUMMARY

CALCULATED KNG · CHECKED GTA

metric units

SIGN CODE & SIZE

SHEET NUMBER	STATION	SIDE	M-2 600x600	M-2 750x750	M-2-3 800x600	M-2-3 937x750	M-8 600x300	M-8 750x375	M-17 600x300	M-19 525x375	M-21 750x450	M-24 525x375	M-25 525x375	M-25 750x375	M-37 750x375	M-38 750x375	R-2 900x900x900	R-3R 600x900	R-10 900x1200	R-31C 1200x750	R-31E 1200x750	R-31FF 1200x750	R-31T 1350x750	R-32R 750x750	R-37R 600x750
100	19+627.5	RT																		1					
100	19+647.5	RT																							
100	19+658	LT		1												1									
100	19+690	RT																		1					
100	19+691	CENTER																							
100	19+697	CENTER																							
100	9+975	LT		1									1												
100	10+024	RT		1									1												
100	19+711	LT				1						1			1										
100	19+732	RT				1						1			1										
100	19+740	CENTER																							1
100	19+745	CENTER																							
100	19+747	LT																		1					
100	19+754	LT																							
100	19+760	CENTER																							
100	19+761	CENTER																							
100	19+762	RT		1											1										
100	19+800	LT																		1					
100	19+806	RT																							
101	19+860±	LT				1						1													
101	19+904	LT																							
101	19+911	RT																	1						
101	19+936	LT																							
SUBTOTAL THIS SHEET			–	4	–	3	–	–	–	–	–	3	2	–	3	1	–	–	1	4	–	–	–	–	1

SHEET NUMBER	STATION	SIDE	R-41B 900x900	R-52 600x900	R-142 750x750	D-11 2100x450	D-14 1200x250	D-14 1350x250	D-14 2100x250	W-24 1200x1200	W-42 900x900	W-46 600x600	W-47 1200x1200	W-82 750x750	X-1A 450x450	X-6R 300x900	X-6L 300x900	GB 2700x750	GL-96	GN 2100x900	N-15 600x150	N-29 600x600	N-SPE	N-89 1200x900
100	19+627.5	RT																						
100	19+647.5	RT		1																				
100	19+658	LT																						
100	19+690	RT																						
100	19+691	CENTER																						
100	19+697	CENTER																						
100	9+975	LT																						
100	10+024	RT																						
100	19+711	LT					1																	
100	19+732	RT					1																	
100	19+740	CENTER																						
100	19+745	CENTER																						
100	19+747	LT																						
100	19+754	LT																			1	1		
100	19+760	CENTER																						
100	19+761	CENTER																						
100	19+762	RT																						
100	19+800	LT																						
100	19+806	RT																						1
101	19+860±	LT																						
101	19+904	LT				1																		
101	19+911	RT																						
101	19+936	LT				1														1				
SUBTOTAL THIS SHEET			–	1	–	2	2	–	–	–	–	–	–	–	–	–	–	–	–	1	1	1	–	1

SIGNING QUANTITIES

630

SHEET NUMBER	STATION	SIDE	GROUND MOUNTED BEAM SUPPORT FOUNDATION (EACH)	GROUND MOUNTED SUPPORTS, NO. 3 POST (meter)	GROUND MOUNTED SUPPORTS, S100 x 11.5 BEAM (meter)	GROUND MOUNTED SUPPORTS, W150 x 13.5 BEAM (meter)	SIGN FLAT SHEET TYPE G (SQ-m)	SIGN EXTRUSHEET TYPE G (SQ-m)	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE, AS PER PLAN (EACH)	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL, AS PER PLAN (EACH)	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL (EACH)	REMOVAL OF GROUND MOUNTED SIGN AND RE-ERECTION (EACH)	BREAKAWAY BEAM CONNECTION (EACH)	REMARKS
100	19+627.5	RT		4.35/4.35			1.01							
100	19+647.5	RT		4.50			0.54		1	1				
100	19+658	LT		4.72			0.84		2	1				
100	19+690	RT		4.35			1.01							
100	19+691	CENTER							1	1				
100	19+697	CENTER		4.35			0.56		2	1				
100	9+975	LT		4.72			0.76		2	1				
100	10+024	RT		4.72			0.76							
100	19+711	LT		5.35			1.34		3	2				
100	19+732	RT		5.35			1.34		1	2				
100	19+740	CENTER		4.35			0.56		2	1				
100	19+745	CENTER							1	1				
100	19+747	LT		4.35/4.35			0.90							
100	19+754	LT		4.35			0.45		1	1				
100	19+760	CENTER							1	1				
100	19+761	CENTER							1	1				
100	19+762	RT		4.72			0.84		2	1				
100	19+800	LT		4.35/4.35			0.90							
100	19+806	RT		4.35/4.35			1.08		1	2				
101	19+860±	LT		4.72			0.76		2	1				
101	19+904	LT		4.05			0.94		1	1				
101	19+911	RT		4.80/4.80			1.08		1	1				
101	19+936	LT	2			11.52		2.52	2		2			
SUBTOTAL THIS SHEET			2	104.65	–	11.52	15.67	2.52	27	20	2			

STA-21-16.574

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S090.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (17:13)

metric units

CALCULATED GTA
CHECKED KNG

LOCATION	STATION		SIDE	644 (A) EDGE LINE WHITE	644 (B) EDGE LINE YELLOW	644 (C) LANE LINE	644 (D) CENTERLINE DOUBLE YELLOW SOLID	644 (E) CHANNELIZING LINE WHITE	644 (F) STOP LINE	644 (J) CROSSWALK LINE	644 (G) TRANSVERSE LINE WHITE	644 (K) TRANSVERSE LINE YELLOW		644 (M) CURB MARKING WHITE	644 (N) ISLAND MARKING YELLOW	644 (H) LANE ARROW	644 (I) WORD ON PAVEMENT, 2500 mm		621	621 RAISED PAVEMENT MARKER WITH TWO WAY Y/R REF.	621 RAISED PAVEMENT MARKER WITH TWO WAY W/R REF.		
	FROM	TO		km	km	km	km	meter	meter	meter	meter	meter		meter	SQ-m	EACH	EACH			EACH	EACH			
SR 21 NB/SB	16+560	19+996	RT/LT	6.85	6.85	6.85																		
SR 21 NB	16+742.5	16+811	RT		0.05			68.5	11			20				6								
INTERSECTION	16+811	16+847	RT/LT							132														
SR 21 SB	16+847	16+935.8	LT/RT		0.18			126	15			75				12	8							
WALNUT ROAD	9+965	10+028	RT/LT	0.04			0.02	13	14	58						1								
SR 21 NB & SB	17+553	17+629	RT/LT		0.02			74	8		35	11		30		8	5							
LILLIAN GISH BLVD	10+000	10+030	RT/LT		0.03			12	13							1								
SR 21 SB	17+646	17+710	LT/RT		0.13			64	10			11				9	6							
SR 21 NB	18+228	18+287	RT		0.04			118	11			11				8	4							
INTERSECTION	18+287	18+331.5	RT/LT					71		42	30													
SR 21 SB	18+331.5	18+452	LT/RT		0.05			120.5	10			16		25		12	4							
CHERRY ROAD	9+960	10+056.5	RT/LT	0.07			0.05	44.5	21							2								
SR 21 NB	19+627.5	19+694	RT		0.05			51.5	11			41				8								
INTERSECTION	19+694	19+739	RT/LT												3.0									
SR 21 SB	19+739	19+800	RT/LT					61	18							8	2							
LAKE AVENUE	9+960	10+033	RT/LT	0.07			0.04	40	24							2								
AT NB LANE LINE	16+560	19+996	RT																		147			
AT NB CHANNELIZING LINE	16+742.5	16+811	RT																		7			
AT NB MEDIAN EDGE LINE	16+784	16+812	M																	3				
AT NB CHANNELIZING LINE	17+553	17+629	RT																		7			
AT NB MEDIAN EDGE LINE	17+608	17+619	M																	3				
AT NB CHANNELIZING LINE	18+228	18+287	RT																		8			
AT NB MEDIAN EDGE LINE	18+267	18+288	M																	3				
AT NB CHANNELIZING LINE	19+642.5	19+694	RT																		3			
AT NB MEDIAN EDGE LINE	19+669	19+696	M																	3				
AT SB LANE LINE	16+560	19+996	LT																		147			
AT SB CHANNELIZING LINE	16+847	16+910	LT																		12			
AT SB MEDIAN EDGE LINE	16+847	16+935.8	M																	5				
AT SB CHANNELIZING LINE	17+646	17+710	LT																		4			
AT SB MEDIAN EDGE LINE	17+646	17+669	M																	3				
AT SB CHANNELIZING LINE	18+331.5	18+452	LT																		6			
AT SB MEDIAN EDGE LINE	18+331.5	18+358	M																	3				
AT SB CHANNELIZING LINE	19+739	19+800	LT																		6			
AT SB MEDIAN EDGE LINE	19+731	19+800	M																	4				
SUB TOTAL				7.03	7.40						65	185								27	347			
TOTAL CARRIED TO TRAFFIC CONTROL GENERAL SUMMARY, SHEET 87				14.43		6.85	0.11	864	166	232	250			55	3.0	77	29			374				

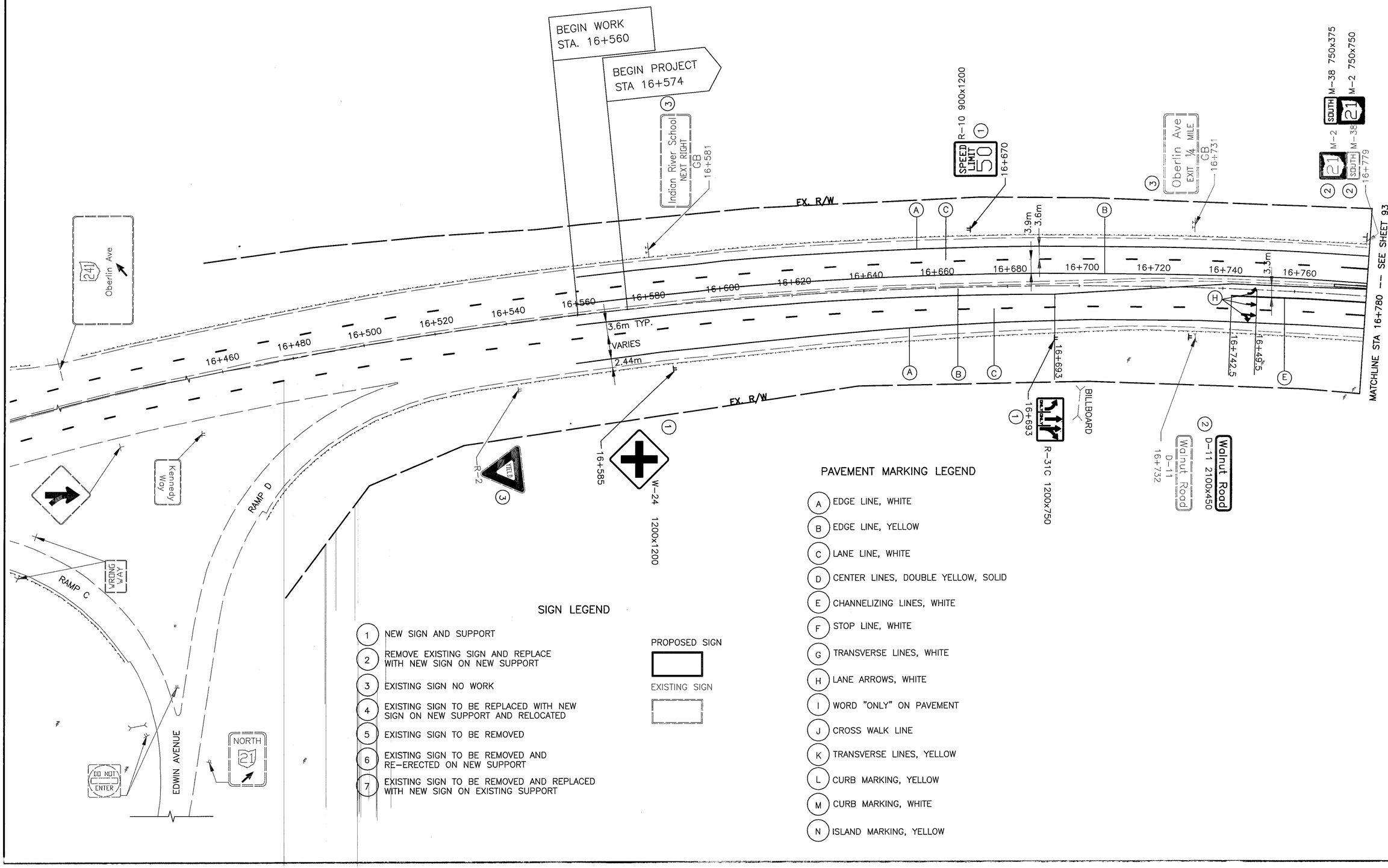
SEE STD. DWGS. TC-65.10M, TC-65.11M & TC-65.12M FOR RAISED PAVEMENT MARKER PLACEMENT DETAILS.

PAVEMENT MARKING & RAISED PAVEMENT MARKER SUB-SUMMARY

STA-21-16.574

Filename : VDL_1W/DDOT-W/0830/CIVIL/0835591.DWG
Active Layout : Model
Drawn By/Date : KGerast / 12-07-98 (17:13)

TRAFFIC CONTROL PLAN



SIGN LEGEND

1. NEW SIGN AND SUPPORT
2. REMOVE EXISTING SIGN AND REPLACE WITH NEW SIGN ON NEW SUPPORT
3. EXISTING SIGN NO WORK
4. EXISTING SIGN TO BE REPLACED WITH NEW SIGN ON NEW SUPPORT AND RELOCATED
5. EXISTING SIGN TO BE REMOVED
6. EXISTING SIGN TO BE REMOVED AND RE-ERECTED ON NEW SUPPORT
7. EXISTING SIGN TO BE REMOVED AND REPLACED WITH NEW SIGN ON EXISTING SUPPORT

PROPOSED SIGN

EXISTING SIGN

PAVEMENT MARKING LEGEND

- A EDGE LINE, WHITE
- B EDGE LINE, YELLOW
- C LANE LINE, WHITE
- D CENTER LINES, DOUBLE YELLOW, SOLID
- E CHANNELIZING LINES, WHITE
- F STOP LINE, WHITE
- G TRANSVERSE LINES, WHITE
- H LANE ARROWS, WHITE
- I WORD "ONLY" ON PAVEMENT
- J CROSS WALK LINE
- K TRANSVERSE LINES, YELLOW
- L CURB MARKING, YELLOW
- M CURB MARKING, WHITE
- N ISLAND MARKING, YELLOW

metric units

HORIZONTAL SCALE IN METERS 0 5 10 20

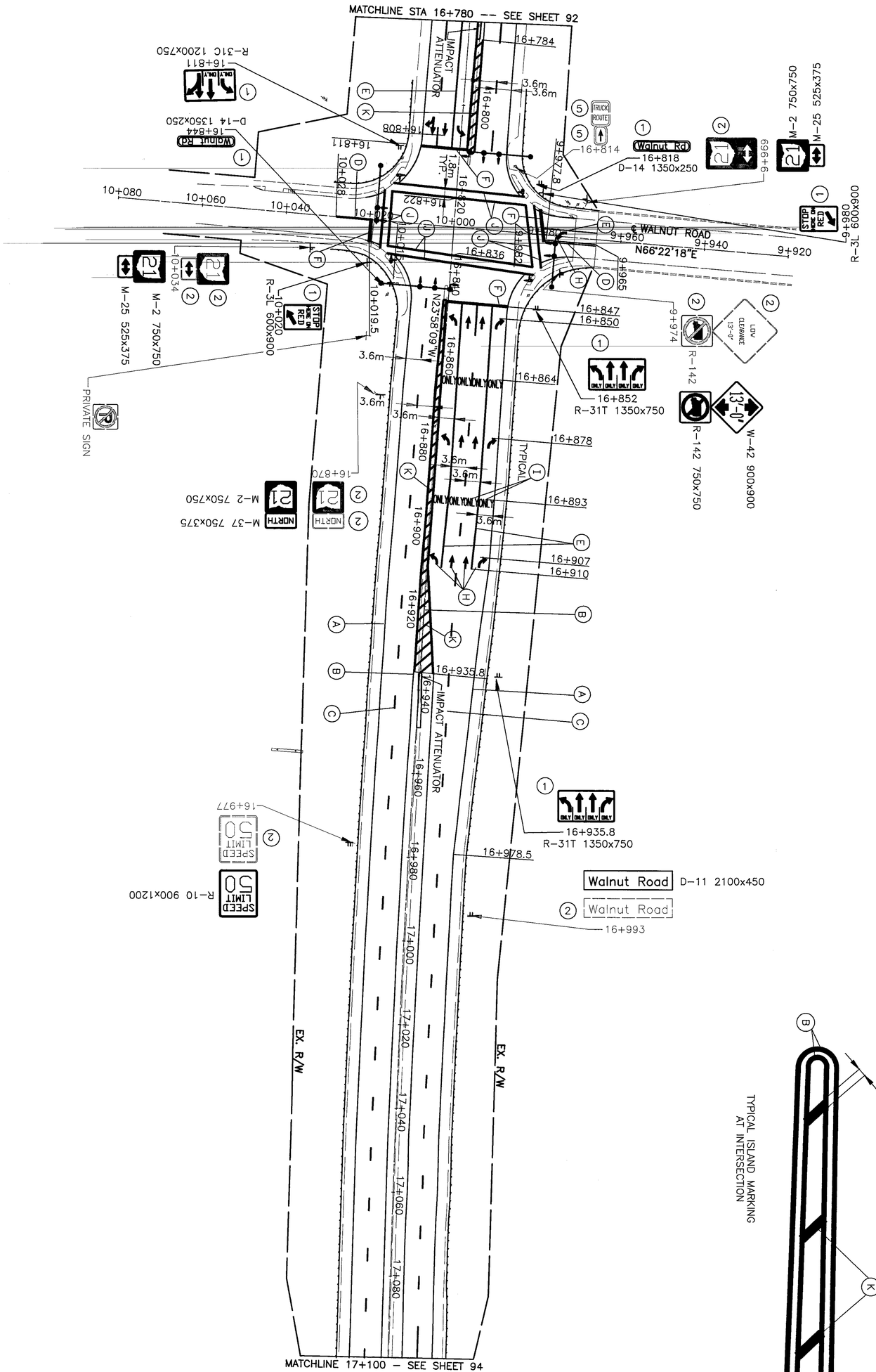
CALCULATED KNG
CHECKED GTA

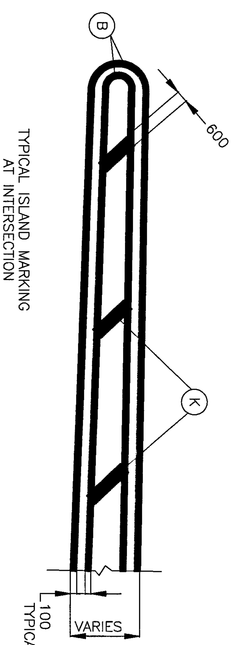
TRAFFIC CONTROL
STA 16+450 TO STA 16+780

STA-21-16.574

filename : VOL1M/ODOT-M/0830/CIVIL/0830S093.DWG
Plot Scale : 1=0
Drawn By/Date : KGeraci / 12-07-98 (2:)

TRAFFIC CONTROL PLAN



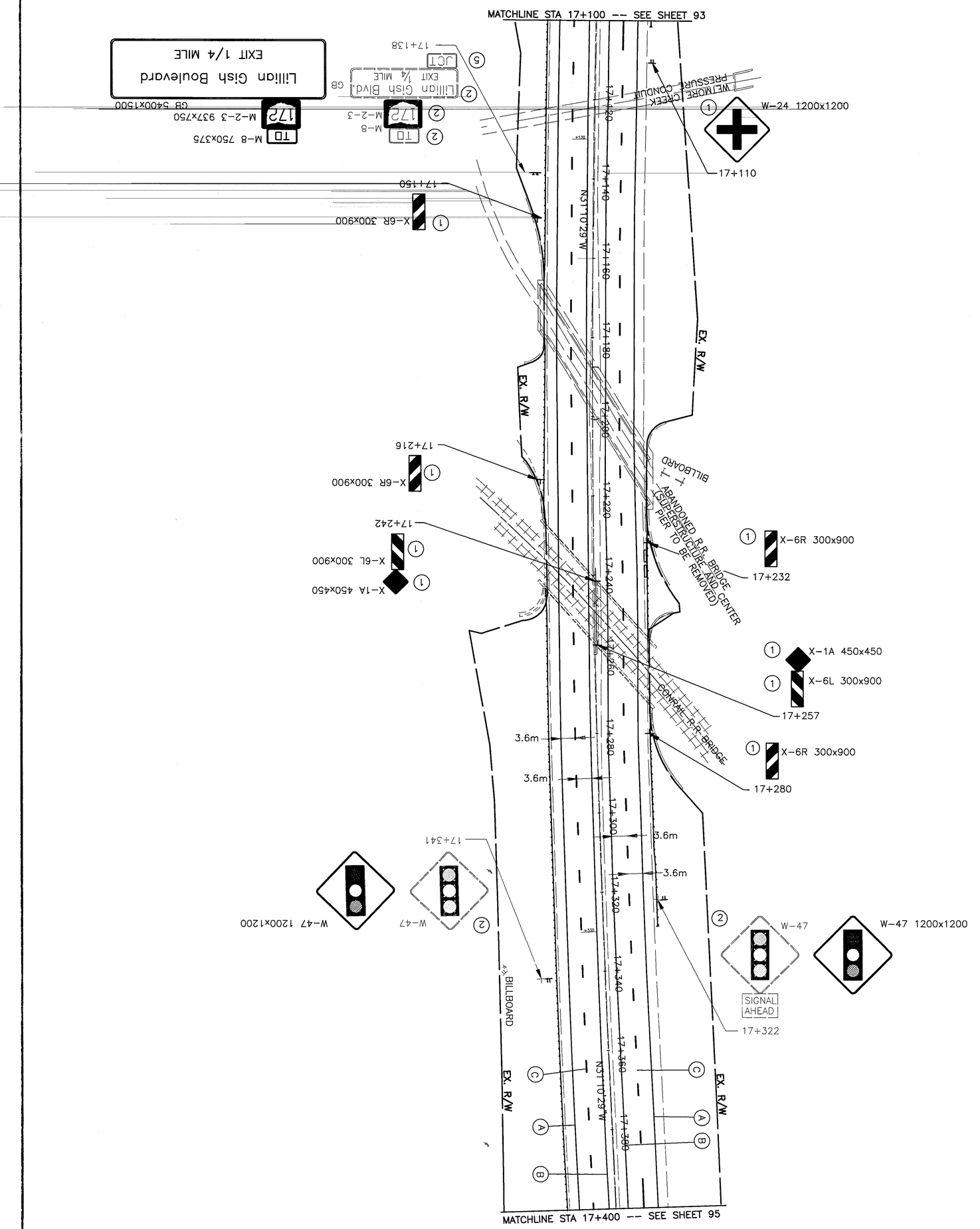


93/120	STA-21-16.574	TRAFFIC CONTROL STA 16+780 TO STA 17+100	CALCULATED KNG CHECKED GTA	0 5 10 20 HORIZONTAL SCALE IN METERS

metric units

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S094.DWG
Plot Scale : 1=0
Drawn By/Date : KGeracl / 12-07-98 (2:)

TRAFFIC CONTROL PLAN



STA-21-16.574

TRAFFIC CONTROL
STA 17+100 TO STA 17+400

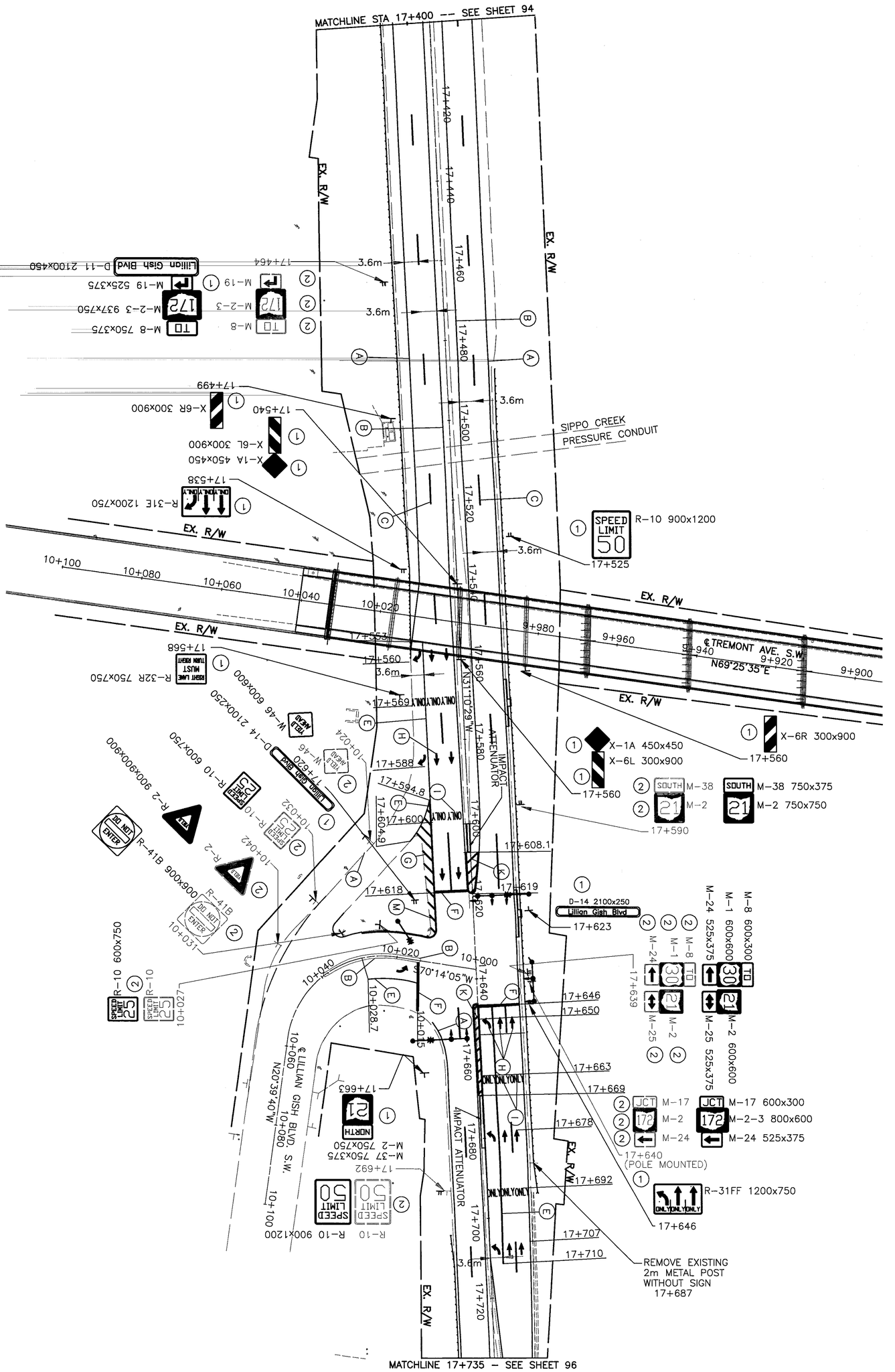
CALCULATED KNG
CHECKED GTA

0 5 10 20
HORIZONTAL SCALE IN METERS

metric units

filename : VOL1M/0007-M/0830/CIVIL/0830S095.DWG
Plot Scale : 1=0
Drawn By/Date : KGeracl / 12-07-98 (2:)

TRAFFIC CONTROL PLAN

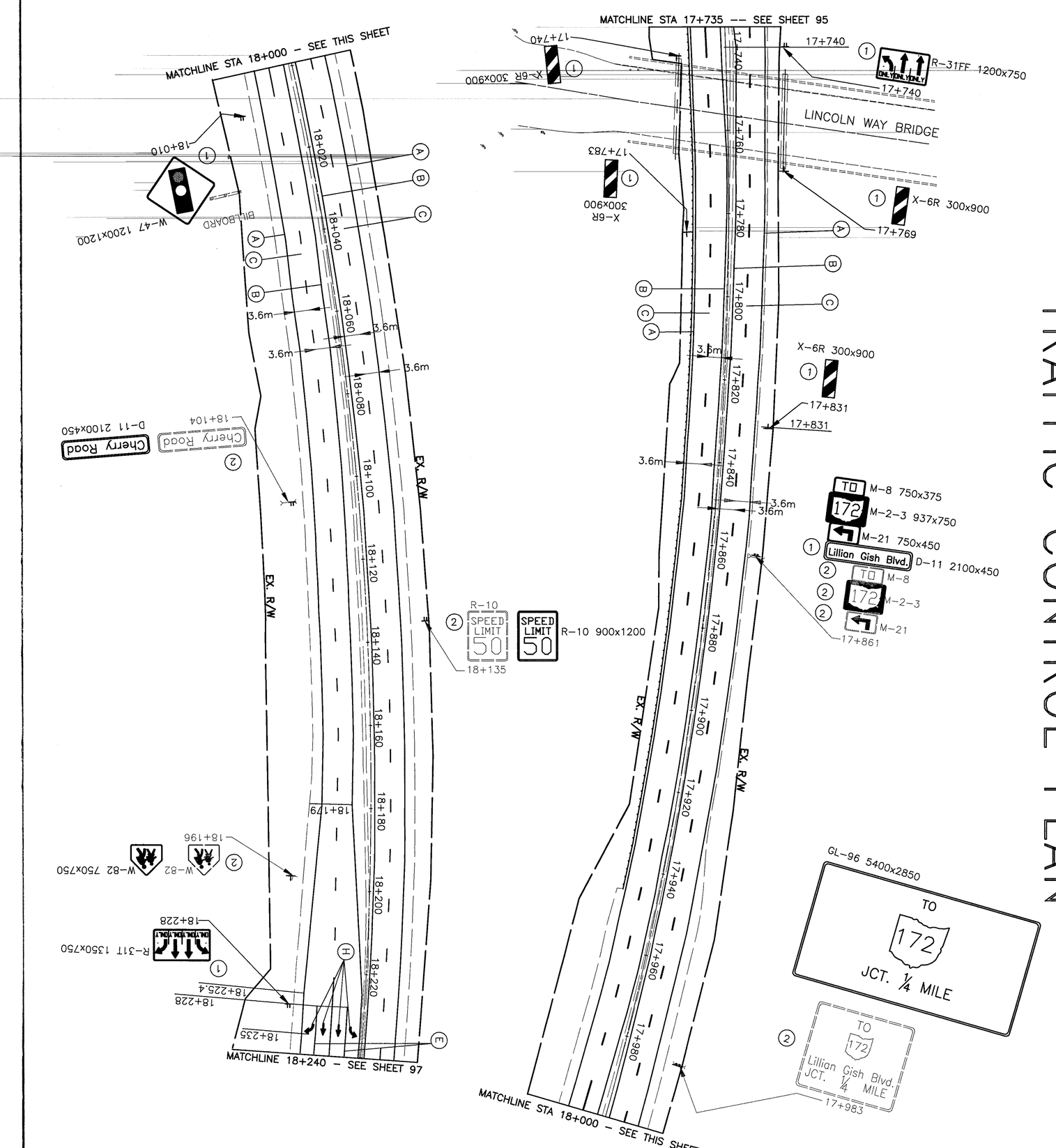


metric units

95/120	STA-21-16.574	TRAFFIC CONTROL STA 17+400 TO STA 17+735	CALCULATED KNG CHECKED GTA	0 5 10 20 HORIZONTAL SCALE IN METERS

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S096.DWG
Plot Scale : 1=0
Drawn By/Date : KGeraci / 12-07-98 (2:)

TRAFFIC CONTROL PLAN



STA-21-16.574

TRAFFIC CONTROL
STA 17+735 TO STA 18+240

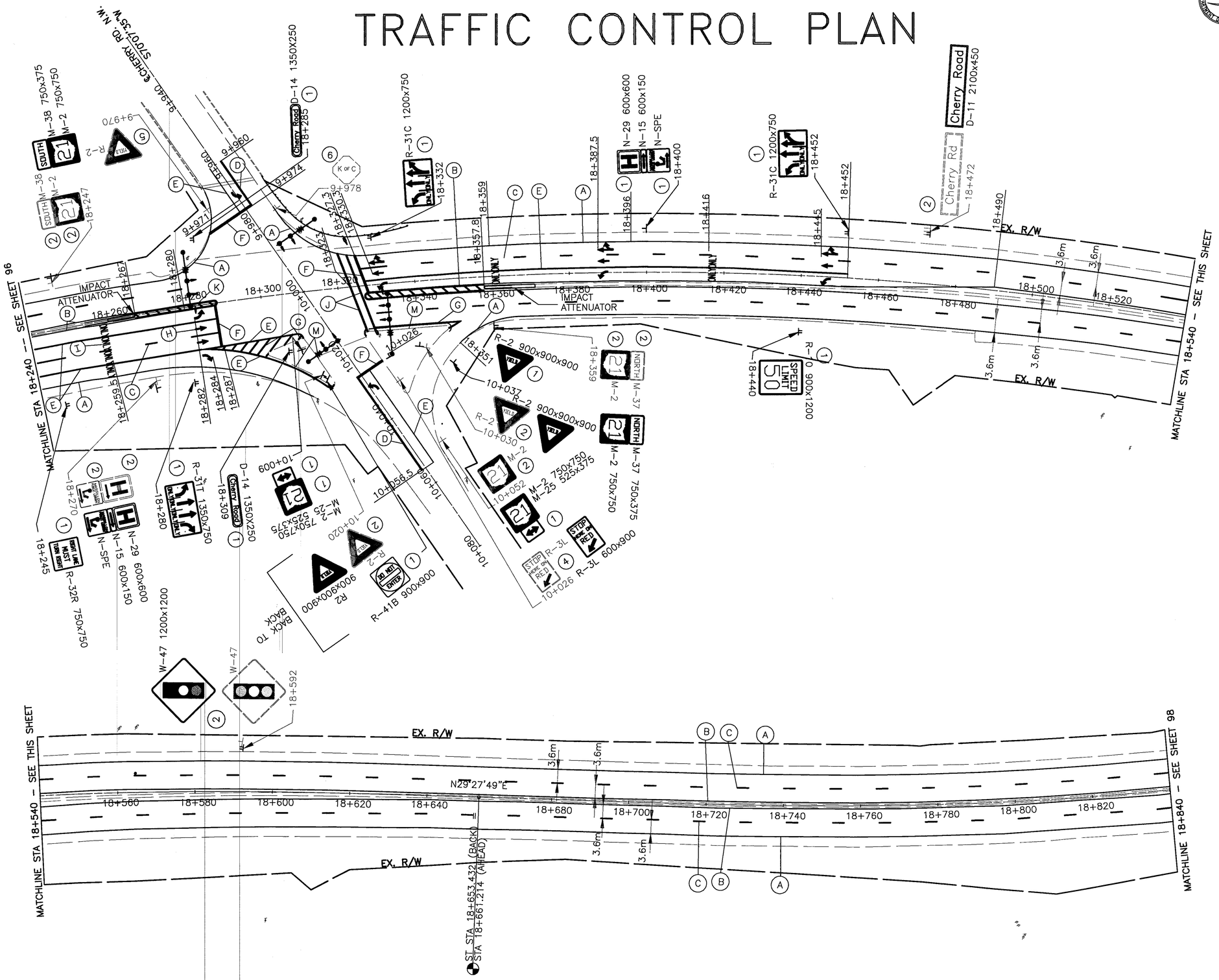
CALCULATED KNG
CHECKED GTA

0 5 10 20
HORIZONTAL SCALE IN METERS

N

metric units

TRAFFIC CONTROL PLAN



metric units

HORIZONTAL SCALE IN METERS

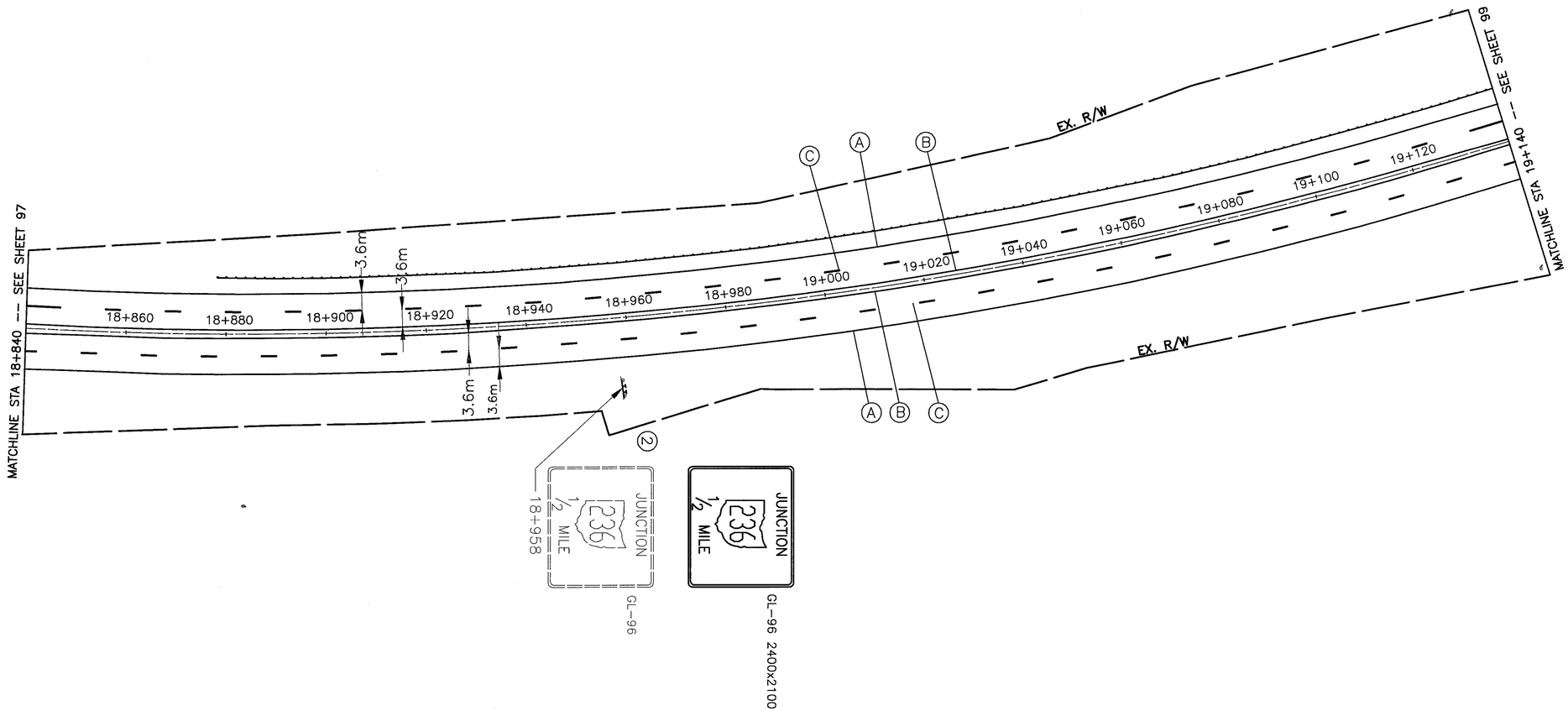
CALCULATED KNG

CHECKED GTA

TRAFFIC CONTROL
STA 18+240 TO STA 18+840

STA-21-16.574

TRAFFIC CONTROL PLAN



metric units

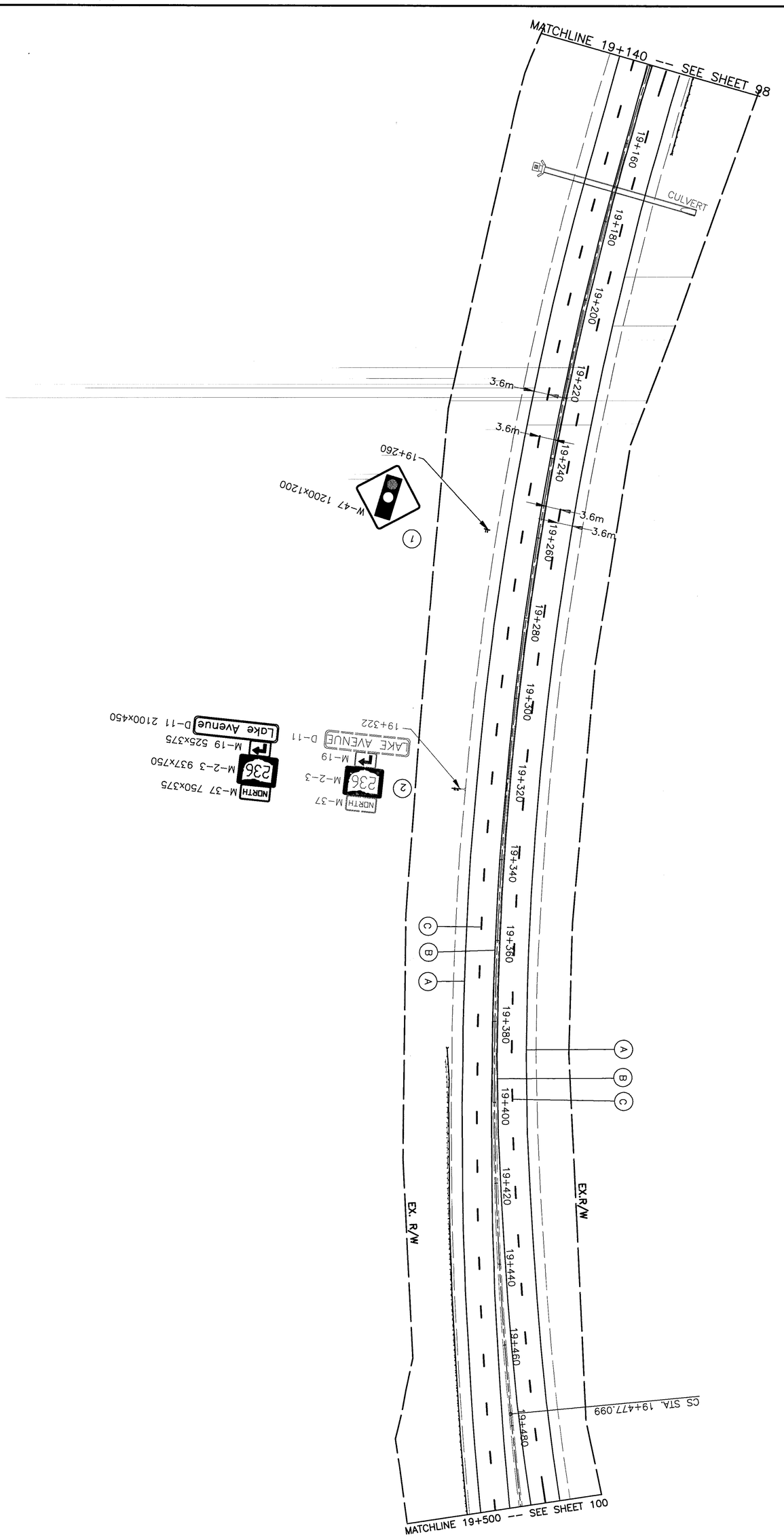
0 5 10 20
HORIZONTAL SCALE IN METERS

CALCULATED KNG
CHECKED GTA

TRAFFIC CONTROL
STA 18+840 TO STA 19+140

STA-21-16.574

Filename : VOL1M/000T-M/0830/CIVIL/0830S099.DWG
Plot Scale : 1=0
Drawn By/Date : KGeraci / 12-07-98 (17:2)



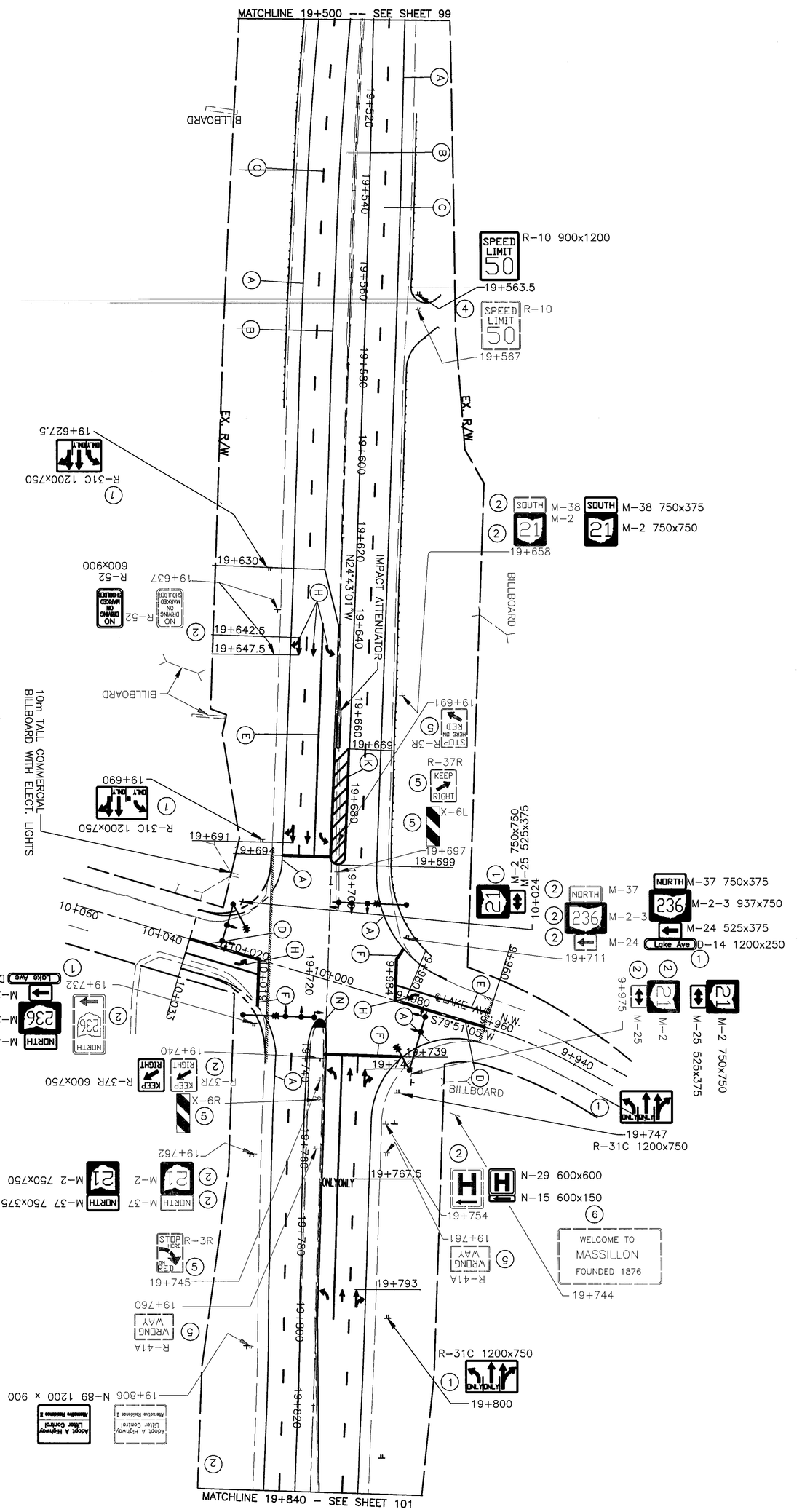
TRAFFIC CONTROL PLAN

99 / 120	STA-21-16.574	TRAFFIC CONTROL STA 19+140 TO STA 19+500	CALCULATED KNG CHECKED GTA	0 5 10 20 HORIZONTAL SCALE IN METERS

metric units

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S100.DWG
Plot Scale : 1=0
Drawn By/Date : KGeracl / 12-07-98 (17:2)

TRAFFIC CONTROL PLAN

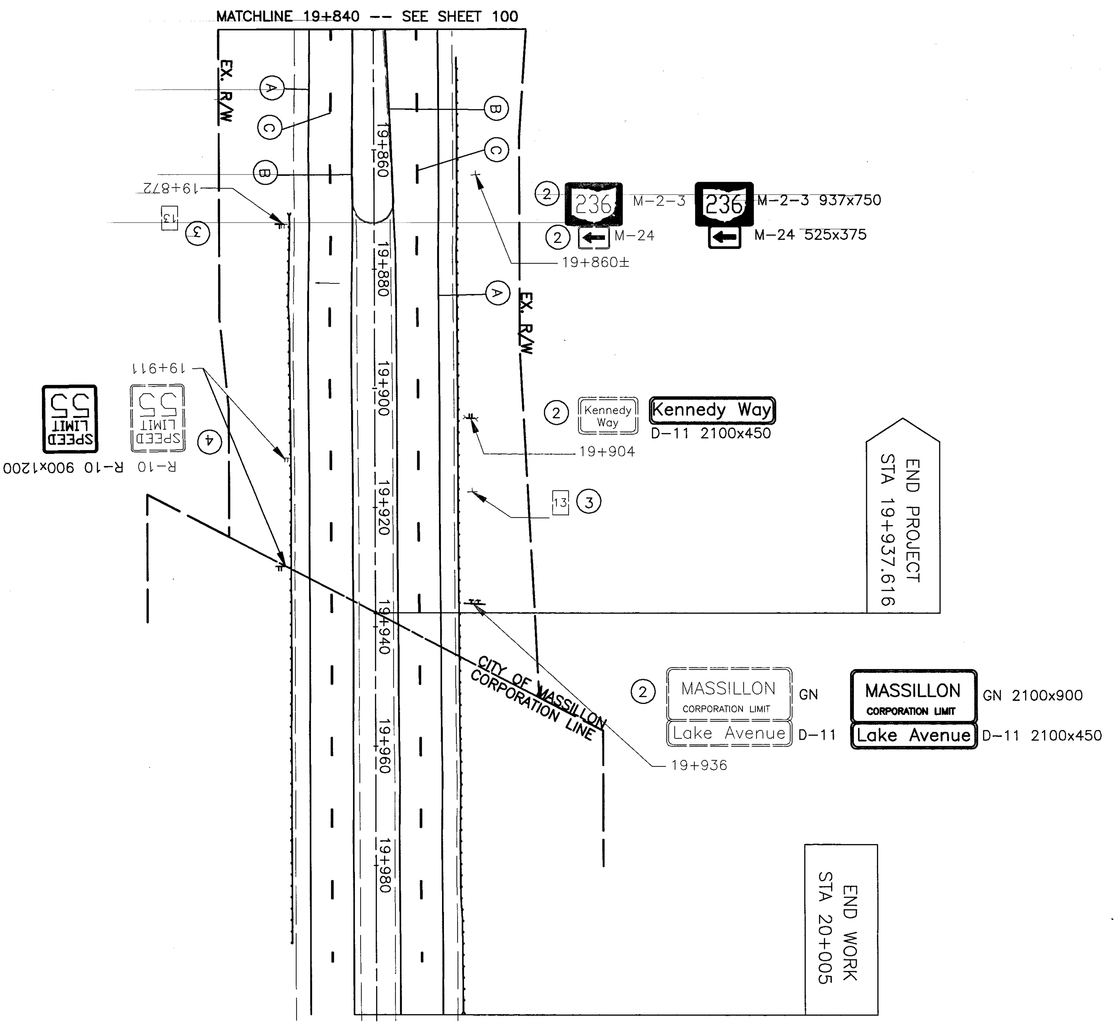


100 / 120	STA-21-16.574	TRAFFIC CONTROL STA 19+500 TO STA 19+840	CALCULATED KNG CHECKED GTA	0 5 10 20 HORIZONTAL SCALE IN METERS

metric units

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S101.DWG
Plot Scale : 1=0
Drawn By/Date : KGeracl / 12-07-98 (17:2)

TRAFFIC CONTROL PLAN



metric units

101/120	STA-21-16.574	TRAFFIC CONTROL STA 19+840 TO STA 20+005	CALCULATED KNG CHECKED GTA	0 5 10 20 HORIZONTAL SCALE IN METERS

TRAFFIC SIGNAL AND LIGHTING NOTES

metric units

CALCULATED KNG CHECKED GTA

TEMPORARY MAINTENANCE OF EXISTING SIGNAL

INCIDENTAL TO THE REQUIREMENTS FOR MAINTAINING TRAFFIC IN ACCORDANCE WITH 614.03, EXISTING TRAFFIC SIGNALS AT THE INTERSECTIONS OF WALNUT ROAD, LILLIAN GISH BOULEVARD, CHERRY, ROAD AND LAKE AVENUE SHALL BE TEMPORARILY MAINTAINED UNTIL THE NEW TRAFFIC SIGNAL INSTALLATION IS IN OPERATION.

(ANY REQUIRED CHANGES IN TIMING, SIGNAL CONFIGURATION, SUPPORT AND TOTAL DURATION OR DAILY HOURS OF OPERATIONS.)

ANY COSTS OT THE TEMPORARY MAINTENANCE OF EXISTING SIGNALS SHALL BE INCLUDED IN THE LUMP SUM FOR 614 MAINTAINING TRAFFIC.

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

A) EXISTING SIGNAL/FLASHER INSTALLATIONS WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE, OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES OR OTHERWISE DISTURBS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION AT AN INTERSECTION FROM THE TIME HIS OPERATION FIRST DISTURBS ANY PORTION OF THE SIGNAL, INCLUDING, BUT NOT LIMITED TO, DETECTION AND INTERCONNECT CABLES, UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK IS ACCEPTED.

B) NEW OR REUSED SIGNAL/FLASHER INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. THE CONTRACTOR SHALL PROVIDE THE CITY AND THE PROJECT ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. THE CONTRACTOR SHALL HAVE THE MALFUNCTION CORRECTED AND/OR REPAIRED TO THE SATISFACTION OF THE ENGINEER WITHIN FOUR HOURS OF THE NOTIFICATION OR LIQUIDATED DAMAGES OF $500 PER HOUR SHALL BE ASSESSED THE CONTRACTOR. ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE PROJECT ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGES.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE PROJECT ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFIED OF THE OUTAGE.

IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED EIGHT HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION, THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY DAMAGES FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGES AS PER 107.16.

WHERE THE CONTRACTOR HAS FAILED TO OR CANNOT RESPOND TO AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THESE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE PROJECT ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE STATE OR THE CITY OF ____MASSILLON____ FOR POLICE SERVICES AND MAINTENANCE SERVICES BY THE CITY FORCES SHALL BE DEDUCTED FROM MONEYS DUE TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICES ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A MUTUALLY ACCEPTABLE AGREEMENT WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE PROJECT ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DUE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM.

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING: 1. TIME OF NOTIFICATION OF MALFUNCTION; 2. TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION; 3. ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED; 4. A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE; AND 5. TIME OF COMPLETION OF REPAIR AND SYSTEM RESTORED TO FULL SERVICE. A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 4 HOURS AND SHALL NOT INCLUDE THE HOURS OF 6:00AM TO 8:00AM AND 4:00PM TO 6:00PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE USE OF OFF-DUTY CITY POLICE, HIRED BY THE CONTRACTOR.

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED, AS DESCRIBED IN 632.24.

PRIOR TO ANY WORK BEING PERFORMED ON ANY SIGNALS OR INTERSECTION, THE CONTRACTOR SHALL NOTIFY THE DIRECTOR OF PUBLIC SERVICE AND SAFETY IN THE CITY OF MASSILLON,
MR. ALAN W. CLIMER AT 330-830-1702 AND
MR. JOHN HAUSER AT 330-833-5746
AT LEAST 24 HOURS IN ADVANCE.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

ITEM 632 – POWER SERVICE, AS PER PLAN

ONCE THE CONTRACT HAS BEEN AWARDED AND SIGNED, THE CONTRACTOR SHALL CONTACT THE APPROPRIATE POWER COMPANIES. THIS WILL INSURE ADEQUATE LEAD TIME FOR THE POWER COMPANY TO PROCESS THE SCHEDULE THE WORK NECESSARY TO FURNISH A POWER SOURCE.

POWER SERVICE SHALL BE AS PER SPECIFICATION 632 AND STANDARD CONSTRUCTION DRAWING TC-83.10M.

POWER SERVICE FOR THE LIGHTING CIRCUIT, AS A 120 VOLT SINGLE HOT WIRE, GROUNDED, CIRCUIT; SHALL BE DRAWN FROM THE TRAFFIC SIGNAL POWER SOURCE. THE EQUIPMENT SHALL MEET THE REQUIREMENTS OF 625.18, AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING ITEMS: HARDWARE FOR DEAD-ENDING A POWER FEED LINE, LIGHTING ARRESTOR, FUSED MAIN DISCONNECTOR SWITCH, MAGNETICALLY HELD LIGHTING CONTACTOR, HOA SWITCH FOR CONTROL OF CONTACTOR, OVER-CURRENT PROTECTION DEVICES FOR EACH CIRCUIT FED BY THE CONTROL CENTER, ENCLOSURES, CONDUITS, FITTINGS, CABLES, AND CONNECTORS.

DISCONNECT SWITCH ENCLOSURES FURNISHED IN ACCORDANCE WITH ITEM 632, POWER SERVICE, AS PER PLAN, SHALL INCLUDE A PADLOCK EQUAL TO MASTER NO. 4BKA OR WILSON BOHANNON 660, WITH LOCK BODY OF BRONZE OR BRASS AND KEYING SHALL BE TO THE CITY MASTER. THE POLE MOUNTED DISCONNECT SWITCH SHALL BE RATED FOR 60 AMPS. AND SHALL BE WIRED FOR LUMINAIRE ONLY. THE POWER FEED TO THE SIGNAL CONTROL SYSTEM SHALL BE TERMINATED INSIDE THE TRAFFIC CONTROLLER VIA UNDERGROUND CONDUIT FROM THE OVERHEAD POWER FEED. THE POWER FEED SHALL TERMINATE WITH THIRTY (30) AMPS. CIRCUIT BREAKER INSIDE THE CONTROLLER. THE LOCATION OF THE CIRCUIT BREAKER SHALL BE AS REQUIRED BY THE CONTROLLER MANUFACTURER. THE POWER SERVICE SHALL NOT BE METERED FOR SIGNALS, NOR HIGHWAY LIGHTING.

THE CONTRACTOR WILL BE RESPONSIBLE FOR REQUESTING AND SCHEDULING ANY INSPECTIONS THE POWER COMPANY MAY REQUIRE FOR THE POWER SERVICE HOOK UP. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT THE POWER COMPANY FOR THE ELECTRICAL SERVICE CONNECTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE POWER CABLE INTO THE POWER COMPANY'S CIRCUITS. THE VOLTAGE SUPPLIED SHALL BE NOMINALLY 120 VOLTS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND THE PAYING OF ALL FEES.

PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE BID, PER EACH "POWER SERVICE, AS PER PLAN" COMPLETE AND IN PLACE INCLUDING ALL CONNECTIONS MADE, TESTED AND ACCEPTED.

632 LOOP DETECTOR UNITS, DELAY & EXTENSION TYPE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 632 AND 732.07 OR 732.08, LOOP DETECTOR UNITS SHALL HAVE THE FOLLOWING REQUIREMENTS OR FEATURES:

THE UNIT SHALL BE SELF TUNING.

THE UNIT'S ELECTRICAL CONNECTION PLUGS OR WIRING HARNESS SHALL ALLOW READY REPLACEMENT WITH A SINGLE CHANNEL AMPLIFIER AS DESCRIBED IN THE FINAL PARAGRAPH OF 732.07.

EACH UNIT SHALL BE LABELED TO REFLECT ITS CORRESPONDING TRAFFIC UNIT.

ITEM 632 – DETECTOR LOOP, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 632.10, THE CONTRACTOR SHALL PROVIDE A POSITIVE AND EFFECTIVE MEANS FOR REMOVAL OF SOLID RESIDUE RESULTING FROM THE DRY BLADE CUTTING OF LOOP DETECTOR SLOTS IN THE PAVEMENT. THE RESIDUE SHALL BE REMOVED BY VACUUM OR OTHER EFFECTIVE MEANS, BEFORE IT IS BLOWN BY TRAFFIC ACTION OR WIND. THE LOOP SHALL BE CUT AS SHOWN ON SHEET 106.

POLE FOUNDATION ELEVATIONS

ELEVATIONS SHOWN IN THE PLANS FOR POLE FOUNDATIONS ARE FOR COMPUTATIONAL PURPOSES ONLY. THE ACTUAL ELEVATION OF THE FOUNDATION SHALL BE IN ACCORDANCE WITH TC-21.20M PROVIDED THE EXISTING SLOPE IS LESS THAN 6:1.

AT LOCATIONS WHERE THE EXISTING SLOPE IS 6:1 OR GREATER, THE BURIED DEPTH OF FOUNDATION, AS SHOWN IN STANDARD DRAWING TC-21.20M, SHALL APPLY TO THE LOW SIDE OF THE SLOPE. THE TOP OF THE FOUNDATION SHALL BE SET 50mm ABOVE THE EXISTING SURFACE ON THE HIGH SIDE OF THE SLOPE. THE ADDITIONAL DEPTH OF FOUNDATION NECESSARY TO MEET THESE REQUIREMENTS SHALL BE ADDED TO THE FORMED TOP.

QUANTITY OF ADDITIONAL CONCRETE SHALL BE CONSIDERED INCIDENTAL TO THE UNIT PRICE BID FOR ITEM 632 SIGNAL SUPPORT FOUNDATION AND SHALL NOT BE PAID SEPARATELY.

ITEM 632 – COMBINATION SIGNAL SUPPORT, TYPE TC-81.20M, DESIGN (BY TYPE) WITH LIGHT EXTENSION

THE SUPPORT SHALL CONSIST OF TC-81.20M POLE DESIGN (BY TYPE) WITH WITH POLE EXTENSION FOR LUMINAIRE SUPPORT. ALL SIGNAL SUPPORT ITEMS REQUIRED BY 632 AND ALL LUMINAIRE SUPPORT ITEMS REQUIRED BY 625 SHALL BE INCLUDED AS PART OF THIS SUPPORT.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE AND WILL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY FOR EACH SUPPORT FURNISHED, IN PLACE, COMPLETED AND ACCEPTED.

ITEM 632 – COMBINATION SIGNAL SUPPORT, TYPE TC-81.20M, DESIGN 12, AS PER PLAN

THE SUPPORT SHALL CONSIST OF TC-81.20M POLE DESIGN 12, EXCEPT THAT THE SIGNAL ARM LENGTH SHALL BE 16.7 METERS. THE ARM AND THE ARM ATTACHMENTS SHALL BE CAPABLE OF SUPPORTING REQUIRED SIGNAL HEADS AS SHOWN ON THE PROJECT PLANS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

THE SUPPORT SHALL ALSO CONSIST POLE EXTENSION FOR LUMINARIES SUPPORT. ALL SIGNAL SUPPORT ITEMS REQUIRED BY 632 AND ALL LUMINARIES SUPPORT ITEMS REQUIRED BY 625 SHALL BE INCLUDED AS PART OF THIS SUPPORT.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE AND WILL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY FOR EACH SUPPORT FURNISHED, IN PLACE, COMPLETED AND ACCEPTED.

ITEM 632 – VEHICULAR SIGNAL HEAD, BY TYPE, AS PER PLAN

THIS ITEM SHALL CONSIST OF THE FURNISHING AND PLACING OF A SIGNAL HEAD. THIS ITEM SHALL CONFORM TO 632.05, 732.01 AND 732.04 EXCEPT THE ENTRANCE FITTING SHALL BE OF THE TRI-STUD DESIGN WITH SERRATED RINGS IN ORDER TO ACHIEVE LOCKING. BALANCE ADJUSTERS SHALL ONLY BE USED WHERE NECESSARY. BALANCE ADJUSTERS SHALL NOT BE USED ON ONE-WAY HEADS. ALL VEHICULAR SIGNAL HEADS SHALL INCLUDE VISORS.

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE PER EACH.

POLE MOUNTINGS FOR SIGNAL HEADS

THE SIGNAL HEAD BRACKET ARMS SHALL BE ATTACHED TO STEEL POLES IN ACCORDANCE WITH NOTE 4(b) OF THE STANDARD DRAWING TC-85.10M. THE BRACKET ARM HUB PLATES SHALL BE ATTACHED TO THE POLE AS PER NOTE 7 OF THE ABOVE STATED STANDARD DRAWING.

ITEM 625 – GROUND ROD, AS PER PLAN

IN ADDITION TO ITEM 625.10, THIS ITEM SHALL CONSIST OF FURNISHING AND RUNNING OF A SEVEN (7) STRAND #4 COPPER WIRE FROM THE TOP OF THE GROUND ROD AND ATTACHING IT TO THE NEUTRAL BAR IN THE CABINET.

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE PER EACH.

Filename : VOL1M/ODOT-M/0830/CIVIL/0830S102.DWG
Plot Scale : 1=1
Drawn By/Date : KGeraci / 12-07-98 (2:)

TRAFFIC SIGNAL AND LIGHTING NOTES

metric units

CALCULATED KNG CHECKED GTA

ITEM 633 CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL, MICROPROCESSOR, AS PER PLAN

THE OVERLAP PROGRAMMING SHALL BE BY USE OF AN INTERCHANGEABLE PLUG IN PRINTED CIRCUIT BOARD ASSEMBLY AS DESCRIBED IN PART 14 OF TS-1-1989. ALL CONTROLLER MEMORIES SHALL BE NONVOLATILE AND SHALL NOT REQUIRE BATTERIES OR OTHER SOURCES OF ENERGY TO RETAIN DATA WHILE POWER IS REMOVED FROM THE CONTROLLER.

IN ADDITION TO NEMA REQUIREMENTS, THE CONFLICT MONITOR SHALL ALSO HAVE EXTENDED MONITORING (IN ACCORDANCE WITH 733.04 PART 3B). THE MONITOR SHALL MONITOR EACH LOAD SWITCH SEPARATELY, AS SHOWN IN THE LOAD SWITCH HOOK-UP DIAGRAM. THE DESIGN OF THE MONITOR SHALL USE MICROPROCESSOR ARCHITECTURE AND LIQUID CRYSTAL DISPLAYS. THE MONITOR SHALL INDICATE THE EXACT LOAD SWITCH CHANNEL IN WHICH THE FAILURE OCCURRED. THE CONFLICT MONITOR SHALL HAVE AN EVENT LOGGING MEMORY. A MINIMUM OF NINE (9) EVENTS SHALL BE LOGGED. EXAMPLES OF EVENTS INCLUDE: POWER OUTAGES, CONFLICTS, CONTROLLER VOLTAGE MONITOR, ETC. EVENTS SHALL BE DISPLAYED ON THE CONFLICT MONITOR'S LIQUID CRYSTAL DISPLAY, WHEN INTERROGATED.

IN ADDITION TO THE REQUIREMENTS OF 733.04, THE CABINET SHALL BE WIRED SO THAT CONTROLLER PIN CONNECTIONS ASSOCIATED WITH A GIVEN PHASE NUMBER SHALL MATCH THE PHASE NUMBER ASSIGNED TO THE SPECIFIED TRAFFIC MOVEMENT AS SHOWN ON THE PLANS. ALL SIGNAL CABLE AND LOOP DETECTOR LEAD-IN CABLE TERMINATIONS IN THE CABINET SHALL HAVE NO MORE THAN FOUR (4) INCHES OF THE OUTER INSULATING JACKET REMOVED.

THE CONTROLLER CABINET SHALL BE KEYED TO THE STATE MASTER. THE CONTROLLER CABINET SHALL NOT BE PAINTED. CONTROLLER CABINET SIZE SHALL COMPLY TO THE REQUIREMENTS OF NEMA TS-1 SECTION 14. PRINTED BOARD TYPE BACK PANELS OF THE CONTROLLER CABINET WILL NOT BE ACCEPTABLE. SOLDERED CONNECTIONS WILL BE PERMITTED FOR WIRING ON THE BACK SIDE OF THE BACK PANEL.

THE FOUNDATION SHALL BE ORIENTED WITH RESPECT TO THE INTERSECTION IN A MANNER THAT WILL PROVIDE MAINTENANCE PERSONNEL WITH A VIEW OF THE INTERSECTION WHILE WORKING ON THE CONTROLLER THE CONTROLLER FOUNDATION SHALL EXTEND 0.08 METERS ABOVE GROUND LEVEL RATHER THAN THE 0.3 METERS AS STATED ON STANDARD CONSTRUCTION DRAWING TC-83.20M. THE CONTROLLER SHALL INCLUDE A RISER CONSTRUCTED FROM 5052-H32 SHEET ALUMINUM ALLOY WHICH HAS A THICKNESS OF 3.2 MM. THE OUTSIDE SURFACES OF THE RISER AND CONTROLLER CABINET SHALL MATCH. THE RISER SHALL BE CONSTRUCTED AS PER THE DETAIL SHOWN ON SHEET 105 .

THE CONTROLLER AND CABINET SHALL MEET TS-1 SPECIFICATIONS. THE CONTROLLER AND CABINET SHALL BE HARD WIRE CAPABLE AND SHALL HAVE INTERNAL TIME BASED COORDINATION (TBC).

THE CONTROLLER SHALL BE MODEL EPAC 3008M40 AS MANUFACTURED BY:

EAGLE TRAFFIC CONTROL SYSTEMS
8004 CAMERON ROAD, AUSTIN, TEXAS 78754
PHONE: 512-837-8310.

PAYMENT FOR ITEM 633 CONTROLLER, 8 PHASE, SOLID STATE DIGITAL MICROPROCESSOR, AS PER PLAN WILL BE AT THE CONTRACT BID PRICE PER EACH COMPLETE, AND IN PLACE, INCLUDING ALL CONNECTIONS TESTED AND ACCEPTED.

TRAFFIC SIGNAL CONTROLLER

IN LIEU OF SUBMISSION OF WORKING DRAWINGS REQUIRED BY 633.03, THE CONTRACTOR OR DESIGNATED SUPPLIER SHALL, BY LETTER TO THE DISTRICT CONSTRUCTION ENGINEER, STATE THE MANUFACTURER AND MODEL OF THE PROPOSED CONTROLLER, LOAD SWITCH, FLASHER, CONFLICT MONITOR, AND CABINET. THE CONTROLLER, LOAD SWITCH, FLASHER, AND CONFLICT MONITOR SHALL BE MODELS THAT HAVE FULFILLED THE REQUIREMENT OF 633.05 OR 861.05. (A LIST OF THESE IS MAINTAINED BY THE ENGINEER OF CONSTRUCTION) APPROVAL OF THE ABOVE DESCRIBED EQUIPMENT FOR PURCHASE AND ASSEMBLY SHALL BE BY LETTER FROM THE DISTRICT CONSTRUCTION ENGINEER TO THE CONTRACTOR WITH COPIES TO THE SUPPLIER.

THE SUBMITTAL LETTER SHALL BE ADDRESSED TO:
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 4, CONSTRUCTION, ATTN: DON HANNI
705 OAKWOOD STREET
RAVENNA, OHIO 44266

PROJECT PID NO. 12479

ITEM 633 -CONCRETE FOR CABINET FOUNDATION, AS PER PLAN

THE CONTROLLER FOUNDATION SHALL EXTEND 0.08 METERS ABOVE GROUND LEVEL RATHER THAN THE 0.30 METERS AS SHOWN ON THE STANDARD CONSTRUCTION DRAWING TC.83.20M.

ITEM SPECIAL - PLASTIC CAUTION TAPE

THE LOCATION OF UNDERGROUND DUCT CABLE OR NONMETALLIC CONDUIT SHALL BE MARKED BY THE USE OF A CONTINUOUS IDENTIFYING TAPE BURIED IN THE TRENCH ABOVE THE LINE. THE IDENTIFYING TAPE SHALL BE AN INERT MATERIAL, APPROXIMATELY 150MM WIDE COMPOSED OF POLYETHYLENE PLASTIC, HIGHLY RESISTANT TO ALKALIS, ACIDS, OR OTHER CHEMICAL COMPONENTS LIKELY TO BE ENCOUNTERED IN SOILS. THE TAPE SHALL BE BRIGHT RED WITH IDENTIFYING PRINTING "ELECTRIC" IN BLACK LETTERS, ONE SIDE ONLY. TAPE SHALL BE SUPPLIED IN CONTINUOUS ROLLS WITH THE IDENTIFYING LETTERING REPEATED CONTINUOUSLY THE FULL LENGTH OF THE TAPE. IDENTIFYING TAPE SHALL BE BURIED ON THE ELECTRIC LINE TRENCH WITH ONE STRIP APPROXIMATELY 200MM TO 300MM BELOW THE FINAL FINISHED GRADE. THE TAPE SHALL BE PLACED IN THE TRENCH WITH THE PRINTED SIDE UP AND SHALL BE ESSENTIALLY PARALLEL WITH THE FINISHED SURFACE. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO INSURE THAT THE TAPE IS NOT PULLED, DISTORTED, OR OTHERWISE MISPLACED IN COMPLETING THE TRENCH BACKFILL. TAPE SHALL BE ALLEN SYSTEM'S TERRA TAPE, OR EQUAL AS APPROVED BY THE ENGINEER. THE TAPE SHALL BE PAID FOR PER METER OF ITEM SPECIAL - "PLASTIC CAUTION TAPE" COMPLETE AND IN PLACE.

UNDERDRAINS FOR PULL BOXES

REFERENCE IS MADE TO STANDARD DRAWING HL-30.11M FOR DETAILS OF DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED APPROXIMATELY 12m. AN ESTIMATED QUANTITY OF 200m OF ITEM 603 - 100mm CONDUIT TYPE-E IS INCLUDED IN THE TRAFFIC SIGNAL SUMMARY FOR THIS PURPOSE.

632 REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN

TRAFFIC SIGNAL INSTALLATION SHALL BE REMOVED IN ACCORDANCE WITH 632.25 AND AS INDICATED ON THE PLANS. THE BACKFILLING OF VOIDS CREATED BY SUPPORT FOUNDATIONS REMOVAL IN THE MEDIAN AND PAVED AREAS SHALL BE DONE UTILIZING LOW STRENGTH MORTAR BACKFILL MEETING THE REQUIREMENTS OF 613. REMOVED ITEMS SHALL BE STORED ON THE PROJECT FOR SALVAGE BY THE CITY OF MASSILLON IN ACCORDANCE WITH THE LISTING GIVEN HEREIN.

ALL SIGNAL POLES, MAST ARMS, SIGNAL HEADS, CONTROLLER CABINETS, CONTROLLERS AND ASSOCIATED EQUIPMENT, DETECTOR UNITS AND ANY INTERCONNECTION ITEMS. THE STREET LIGHTS ARE OWNED AND MAINTAINED BY THE OHIO EDISON COMPANY. THE CONTRACTOR SHALL REMOVE THE LIGHTING FIXTURES ATTACHED TO THE SIGNAL POLES THAT ARE TO BE REMOVED, AND STORED WITH THE OTHER SIGNAL ITEMS. THE LIGHTING FIXTURES AND ARMS WILL BE PICKED UP BY THE OHIO EDISON COMPANY.

IN THE EVENT THE ITEMS STORED ON THE PROJECT FOR SALVAGE BY THE LOCAL AGENCY ARE NOT REMOVED; THE CONTRACTOR SHALL, WHEN DIRECTED BY THE ENGINEER IN WRITING, REMOVE AND DISPOSE OF THE ITEMS AT NO ADDITIONAL COST TO THE PROJECT. THE CONTACT PERSONS ARE AS FOLLOWS:

CITY OF MASSILLON

MR. JOHN W. HAUSER
SAFETY DEPARTMENT
CITY OF MASSILLON
401 WALNUT ROAD S.W.
MASSILLON, OHIO 44646
PHONE (330) 833-5746

THE OHIO EDISON

MR. KEN DOWNS
ENGINEERING SERVICES
THE OHIO EDISON COMPANY
FAIRLAWN BUILDING NO. 1
1910 W. MARKET STREET
AKRON, OHIO 44313
PHONE (330) 384-4839

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 90 DAYS FOLLOWING COMPLETION OF THE 10 DAY PERFORMANCE TEST. IN THE EVENT OF AN UNSATISFACTORY OPERATION, THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY. EQUIPMENT, MATERIALS AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL SYSTEM: CONTROLLERS AND ASSOCIATED EQUIPMENT, DETECTOR UNITS AND INTERCONNECTION ITEMS.

CUSTOMARY MANUFACTURERS GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE STATE OR THE MAINTAINING AGENCY FOLLOWING ACCEPTANCE OF THE EQUIPMENT.

THE COST OF GUARANTEEING THE TRAFFIC CONTROL SYSTEM WILL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SYSTEM.

ITEM 625 - LUMINAIRE, MISC., STYLE B, TYPE II, 250 WATT, HIGH PRESSURE SODIUM, 713.11, 120 VOLT, WITH INTEGRAL INTEGRAL FUSING AND PHOTOCELL, AS PER PLAN

STYLE B LUMINAIRES SHALL HAVE SINGLE RATED 120 VOLT, 250 WATT, INTEGRAL REGULATOR BALLASTS FOR USE WITH HIGH PRESSURE SODIUM LAMPS AND SHALL BE GENERAL ELECTRIC M400, COPPER OVD, AMERICAN SERIES 125/126, OR EQUAL APPROVED BY THE ENGINEER, WITH INTEGRAL FUSING AND PHOTOCELL.

SEE SHEET

TRAFFIC SIGNAL AND LIGHTING NOTES

STA-21-16.574

Filename : VOL14/CDOT-W/0830/DWL/0830S103.DWG
Typed By/Date : KGeresd / 12-07-98 (2:)
Drawn By/Date : KGeresd / 12-07-98 (2:)

TRAFFIC SIGNAL AND LIGHTING SUMMARY

metric units

CALCULATED KNG
CHECKED GTA

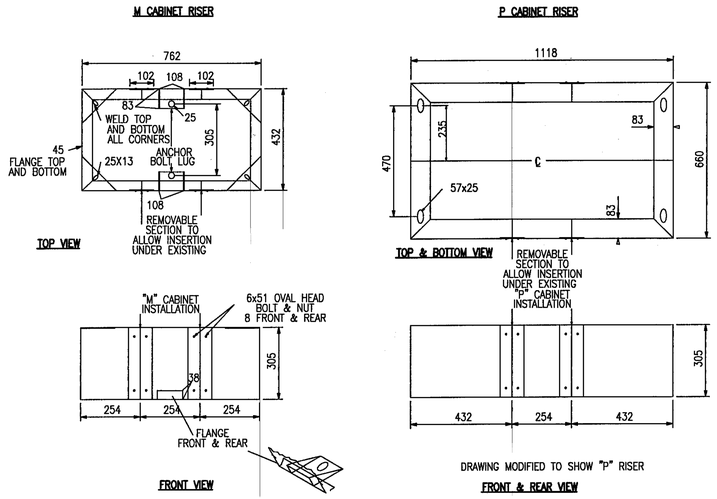
ITEM	SHEET NUMBER 103	108	110	112	114	ITEM	ITEM EXTENSION	GRAND TOTAL	UNIT	DESCRIPTION	REMARKS
603	200					603	00400	200	meter	100mm CONDUIT, TYPE E	
625			6	8	8	625	00500	22	EACH	CONNECTOR KIT, TYPE II	
625		–	1	1	–	625	18300	2	EACH	BRACKET ARM, 5.5m	
625		–	2	3	2	625	18400	7	EACH	BRACKET ARM, 6.1m	
625		–	–	–	2	625	18500	2	EACH	BRACKET ARM, 7.6m	
625		–	400	650	500	625	22990	1550	meter	NO. 6 AWG 600 VOLT DISTRIBUTION CABLE	
625		–	110	150	160	625	23400	420	meter	NO. 10 AWG POLE AND BRACKET CABLE	
625		300	295	310	330	625	25100	1235	meter	CONDUIT, 25mm, 713.04	
625		32	70	65	35	625	25400	202	meter	CONDUIT, 51mm, 713.04	
625		85	65	90	100	625	25900	340	meter	CONDUIT, JACKED OR DRILLED, 76mm, 713.04	
625		–	3	4	4	625	27600	11	EACH	LUMINAIRE, MISC.: STYLE B, TYPE II, 250 WATT HIGH PRESSURE SODIUM, 713.11, 120 VOLT, WITH INTEGRAL FUSING AND PHOTOCELL, AS PER PLAN	SEE SHEET 103
625		340	256	370	365	625	29000	1331	meter	TRENCH	
625		22	109	–	–	625	29500	131	meter	TRENCH IN PAVED AREA, TYPE A	
625		6	6	5	6	625	30500	23	EACH	PULLBOX, 713.09, 450mm	
625		6	5	8	5	625	30600	24	EACH	PULLBOX, 713.09, 600mm	
625		4	4	4	4	625	32000	16	EACH	GROUND ROD	
625		1	1	1	1	625	32001	4	EACH	GROUND ROD, AS PER PLAN	SEE SHEET 102
632		10	7	10	8	632	00301	35	EACH	VEHICULAR SIGNAL HEAD, 3 SECTION, 300mm LENS, 1 WAY, AS PER PLAN	SEE SHEET 102
632		–	–	–	2	632	00501	2	EACH	VEHICULAR SIGNAL HEAD, 5 SECTION, 300mm LENS, 1 WAY, AS PER PLAN	SEE SHEET 102
632		8	–	–	–	632	20100	8	EACH	PEDESTRIAN SIGNAL HEAD, TYPE A2	
632		10	7	10	10	632	25000	37	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
632		2	–	–	–	632	25010	2	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD	
632		4	–	2	–	632	26000	6	EACH	PEDESTRIAN PUSH–BUTTON	
632		8	7	10	10	632	26501	35	EACH	DETECTOR LOOP, AS PER PLAN	SEE SHEET 102
632		8	7	10	10	632	27009	35	EACH	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN	SEE SHEET 102
632		210	–	160	–	632	40500	370	meter	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
632		490	210	640	300	632	40700	1640	meter	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
632		1000	985	1325	1200	632	65300	4510	meter	LOOP DETECTOR LEAD–IN CABLE, 2 CONDUCTOR, NO. 14 AWG	
632		4	4	4	4	632	64010	16	EACH	SIGNAL SUPPORT FOUNDATION	
632		4	–	2	–	632	64020	6	EACH	PEDESTAL FOUNDATION	
632		20	20	18	20	632	68300	78	meter	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG.	
632		1	1	1	1	632	70001	4	EACH	POWER SERVICE, AS PER PLAN	SEE SHEET 102
632			2	1	1	632	81200	4	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 2	
632		1		1		632	81400	2	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 4	
632		1	2		1	632	81500	4	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 11	
632		1		1		632	81600	2	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 12	
632		1		1	2	632	81601	4	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 12, AS PER PLAN	SEE SHEET 102
632		4		2		632	89900	6	EACH	PEDESTAL, 2.4 M, TRANSFORMER BASE	
632		1	1	1	1	632	90101	4	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	SEE SHEET 103
633		1	1	1	1	633	38001	4	EACH	CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL MICROPROCESSOR, AS PER PLAN	SEE SHEET 103
633		1.2	1.2	1.2	1.2	633	70001	4.8	CU–m	CONCRETE FOR CABINET FOUNDATION, AS PER PLAN	SEE SHEET 103
633		1.04	1.04	1.04	1.04	633	70500	4.16	SQ–m	CONTROLLER WORK PAD	
SPECIAL		335	365	370	365	SPECIAL	62536000	1435	meter	PLASTIC CAUTION TAPE	SEE SHEET 103

TRAFFIC SIGNAL AND LIGHTING SUMMARY

STA–21–16.574

104
120

Filename : VDL14/CDOT–M/0830/DWL/0830S104.DWG
Display Scale : 1 = 1
Drawn By/Date : KGerrard / 12–07–98 (18:07)



ALL DIMENSIONS SHOWN ARE IN MILIMETERS
MATERIAL: ALUMINUM ALLOY (SPEC. 5052 H-32) 3 mm
FABRICATION: RISER TO HAVE REMOVEABLE SECTION FRONT AND REAR TO ALLOW INSTALLATION
WHEN REQUIRED: FEDERAL YELLOW OVER A THREE STAGE IRON PHOSPHATE COATING WITH ZINC CHROMATE PRIMER

SIGNAL CONTROLLER CABINET RISER DETAIL

SIGNAL LEGEND	PROPOSED	EXISTING
SPAN WIRE SUPPORT		
CANTILIVER SUPPORT	P1	
SIGN ON CANTILIVER SUPPORT	P2	
SIGNAL HEAD, STD. 1-WAY		
SIGNAL HEAD, STD. 2-WAY		
SIGNAL HEAD WITH ARROW		
PEDESTRIAN SIGNAL		
CONDUIT		
CONDUIT, JACKED OR DRILLED		
PULL BOX		
CONTROLLER CABINET		
SERVICE POLE		
SERVICE POLE WITH LIGHT		
LOOP DETECTORS	L2	

LIGHTING LEGEND

LUMINAIRE ARM

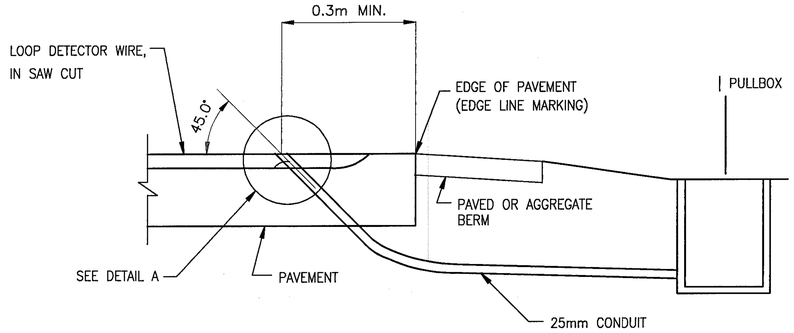
metric units

CALCULATED KNG
CHECKED GTA

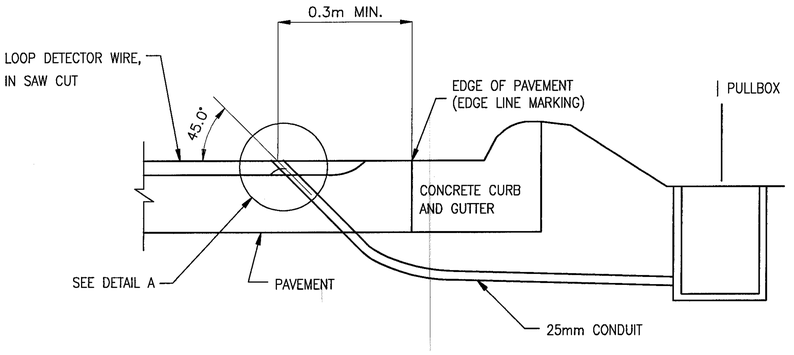
LEGEND AND SIGNAL DETAILS

STA-21-16.574

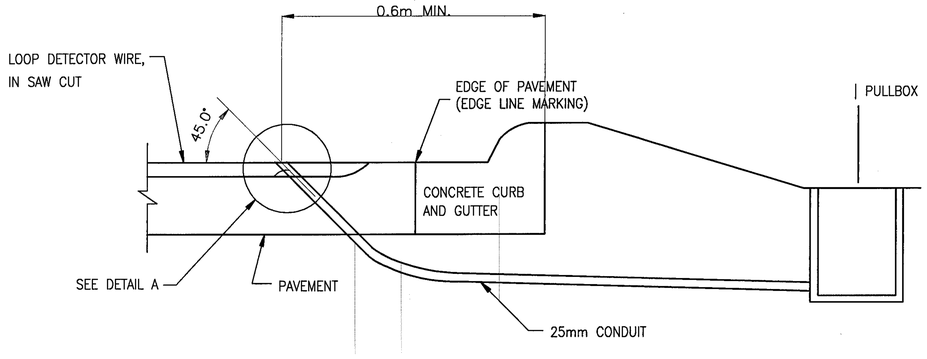
c:\projects\...\0830s105.DWG
Plot Date : 12-07-98
Drawn By/Date : KGerael / 12-07-98 (2:)



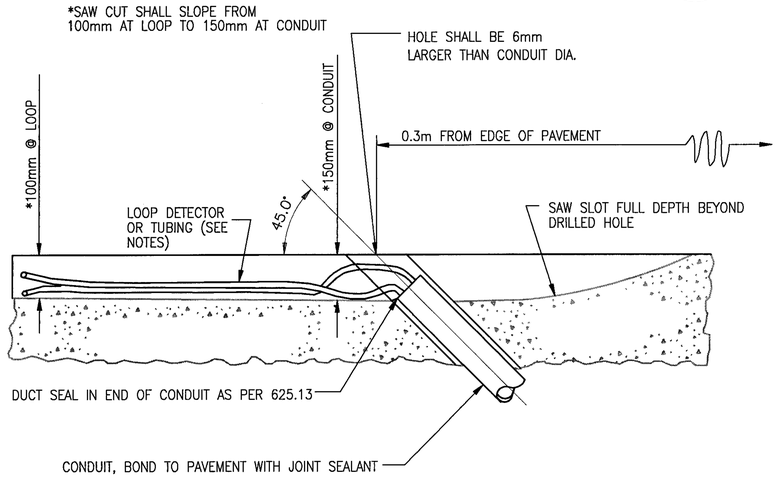
DRILLED HOLE LOCATION DETAIL WITH PAVED OR AGGREGATE BERM



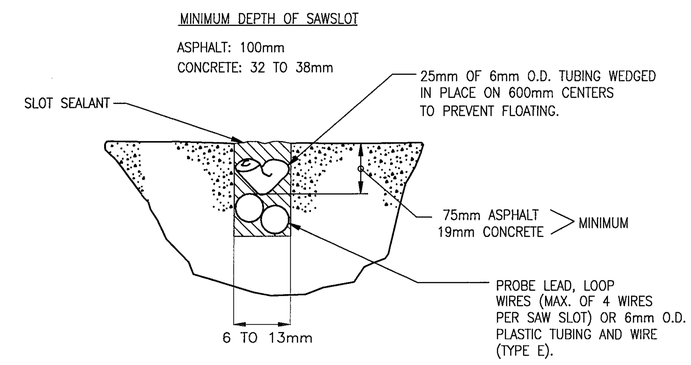
DRILLED HOLE LOCATION DETAIL WITH CONCRETE CURB AND GUTTER



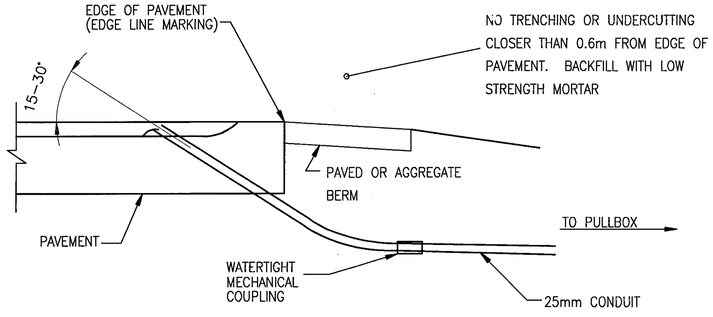
DRILLED HOLE LOCATION DETAIL WITH INTEGRAL CONCRETE CURB



DETAIL A



SLOT DETAIL



ALTERNATE METHOD OF CONDUIT INSTALLATION

metric units

CALCULATED KNG
CHECKED GTA

LOOP DETECTOR INSTALLATION DETAILS

STA-21-16.574

SIGNALIZATION PLAN

WALNUT ROAD

metric units

NOTES
1. ALL UNDERGROUND WIRING FOR THE SIGNAL LOOP DETECTOR LEAD-IN CABLES, POWER AND SERVICE CABLES, AND CONTROL CABLES TO THE SIGNAL CONTROLLER AND THE PEDESTRIAN SIGNALS SHALL BE IN CONDUIT(S), 713.04, AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH ITEM 625. THE SIZE OF THE CONDUIT BETWEEN PULL BOX PB1 AND PB2, PB2 AND PB3, PB11 AND PB12, PB12 AND PB13 SHALL BE 25mm IN DIAMETER ALL OTHER CONDUIT SHALL BE 51mm IN DIAMETER, UNLESS NOTED OTHERWISE.
2. ALL PULL BOXES ARE TO BE CONCRETE. PULL BOX PB1, PB2, PB3, PB11, PB12, PB13 ARE TO BE 460x460. ALL OTHER PULL BOXES TO 610x610. FOR PULL BOX DETAILS, SEE STD. DWG. HL-30.11M.
3. THE NEW 120V AERIAL SERVICE DROP FOR SIGNAL SYSTEM WILL BE BY THE OHIO EDISON COMPANY TO A POINT OF TERMINATION (POT) AT THE TOP OF POLE P1. THE POWER FEED FROM POT TO A DISCONNECT SWITCH IN THE NEW SIGNAL CONTROLLER CABINET SHALL BE BY THE CONTRACTOR. THE SIGNAL POWER SHALL NOT BE METERED. ALL CONDUITS, WEATHER HEAD, FITTINGS, DISCONNECT SWITCH AND RELATED HARDWARE SHALL BE BY THE CONTRACTOR IN ACCORDANCE WITH SECTION 632.23 USING THE STANDARD CONSTRUCTION DWG. TC-83.10M. THE PAYMENT SHALL BE MADE WITH ITEM 632-POWER SERVICE, AS PER PLAN.

EXISTING POWER POLE WITH 480V WIRING AND METER FOR HIGH MAST LIGHTING TO REMAIN UNDISTURBED

TO POLE P1, SEE NOTE 3.

NEW POWER FEED

NEW SIGNAL CONTROLLER

EXIST. VEHICLE DETECTION (SIGNAL) POLE TO BE REMOVED

EXIST. POWER POLE

EXIST. 480V AERIAL FEED FOR HIGH MAST LIGHTING.

ELEC. PULL BOX

EXIST. HIGH MAST POLE

P1

TO CROSS
PUSH BUTTON
WAIT FOR
WALK SIGNAL

R-73A
225x300
QTY = 4
P5,P6,P7,P8

PEDESTRIAN SIGNS

EXISTING SIGNAL POLE TO BE REMOVED

9+960 ℄ WALNUT ROAD N66°22'18"E

480 V AERIAL CABLE

POWER POLE

9+965

AERIAL CROSSING
69,000 VOLT 4-WIRE CIRCUIT
12,470 VOLT 4-WIRE CIRCUIT

EXISTING SERVICE POLE WITH 480V WIRING AND METER FOR HIGH MAST LIGHTING TO REMAIN UNDISTURBED

HIGH MAST LIGHT POLE

ELEC PULL BOX

EX. R/W

DETAIL I
THE OHIO EDISON COMPANY
REFERENCE GRID MAP #2520A3

PB9
+818.4, 20.2m LT

NEW SIGNAL CONTROLLER

PB10
+812.3, 16.8m LT.

EXISTING SIGNAL POLE WITHOUT PEDESTRIAN SIGNALHEAD TO BE REMOVED

PB8
+843.8, 21.6m LT.

PB11
+858, 19.4m LT.

PB12
16+925, 18.2m LT.

PB13
16+992, 15.2m LT.

304.8 mm
609.6 mm
457.2 mm
M.H.
EXISTING SIGNAL POLE WITH PEDESTRIAN HEAD AND LIGHT FIXTURE TO BE REMOVED

EXISTING SIGNAL POLE TO BE REMOVED

16+780
16+800
16+820
16+840
16+860
16+880
16+900
16+920
10+000
N23°58'09"W
M1

EXIST CONC MEDIAN TO BE REMOVED

IMPACT ATTENUATOR

ABANDONED SAN
1219.2 mm
381.0 mm
203.2 mm CASING
304.8 mm CASING

EXIST. CONC. MEDIAN TO BE REMOVED
℄ SURVEY
EXISTING SIGNAL POLE TO BE REMOVED

INLET
INLET

L1 L2 L3 L4 L5 L6 L7
H1 H2 H3 H4 H5 H6 H7 H8 H9 H10
P1 P2 P3 P4 P5 P6 P7 P8

PB1
16+666, 15.2m RT.

PB2
16+730, 14.6m RT.

PB3
16+798, 14.8m RT.

PB4
+812.3, 14.6m RT.

PB5
+816.0, 19.6m RT.

PB6
+840, 19.0m RT.

PT STA. 16+790.116

EXISTING SIGNAL POLE WITH CONTROLLER TO BE REMOVED

EXISTING SIGNAL POLE WITHOUT PEDESTRIAN SIGNAL HEAD TO BE REMOVED

EXIST. HIGH MAST LIGHT POLE TO REMAIN UNDISTURBED

3.67m

SAN
1219.2 mm
609.6 mm
C.B.

10+028
10+040
O.E. CO. POLE
12,470 V 4-WIRE (AERIAL)
EXISTING SIGNAL POLE TO BE REMOVED
EX. R/W

HORIZONTAL SCALE IN METERS
0 2 4 6
CALCULATED KNG
CHECKED GTA

SIGNALIZATION PLAN
WALNUT ROAD AND S.R. 21

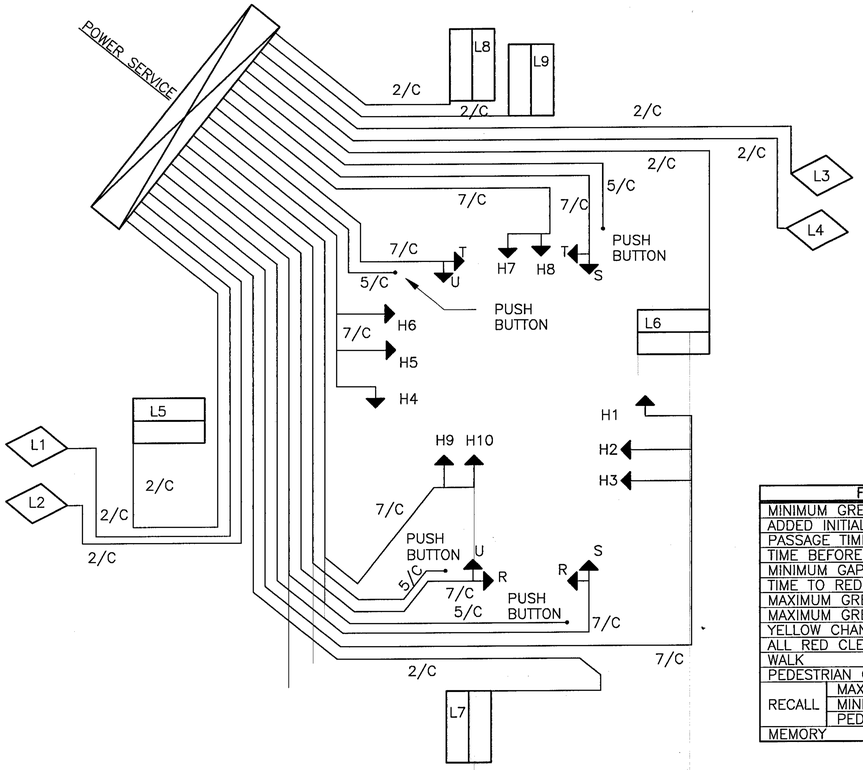
STA-21-16.574

107
120

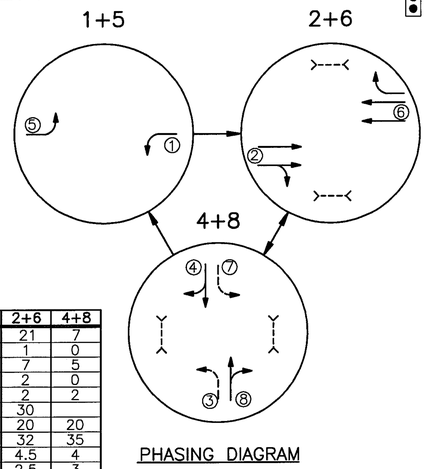
Filename : VOL1W/DOT-W/0830/CIVL/0830S107.DWG
Plotted : 14 Jul 98 - 11:44
Drawn By/Date : KGeresi / 12-07-98 (18:)

SIGNAL DETAILS

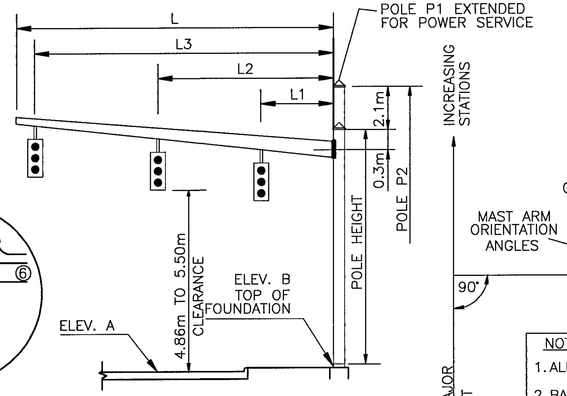
WALNUT ROAD



WIRING DIAGRAM



PHASING DIAGRAM



ORIENTATION ANGLES

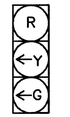
NOTES

1. ALL ANGLES MEASURED CLOCKWISE
2. BASE PLATE IS ORIENTED SQUARE TO MAST ARM A (LARGEST ARM) EVEN IF SUPPORT HAS TWO MAST ARMS.

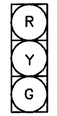
ACTUATED

FUNCTION		1+5	2+6	4+8
MINIMUM GREEN (INITIAL)	(SEC.)	7	21	7
ADDED INITIAL (SEC./ACTUATION)		0	1	0
PASSAGE TIME (PRESET GAP)	(SEC.)	5	7	5
TIME BEFORE REDUCTION	(SEC.)	0	2	0
MINIMUM GAP	(SEC.)	2	2	2
TIME TO REDUCE	(SEC.)		30	
MAXIMUM GREEN I	(SEC.)	10	20	20
MAXIMUM GREEN II	(SEC.)	17	32	35
YELLOW CHANGE	(SEC.)	4.5	4.5	4
ALL RED CLEARANCE	(SEC.)	–	2.5	3
WALK	(SEC.)	–	7	7
PEDESTRIAN CLEARANCE	(SEC.)	–	17	28
RECALL MAXIMUM	(ON/OFF)	OFF	OFF	OFF
RECALL MINIMUM	(ON/OFF)	OFF	ON	OFF
RECALL PEDESTRIAN	(ON/OFF)	OFF	ON	OFF
MEMORY	(ON/OFF)	OFF	OFF	OFF

SIGNAL TIMING CHART



H1,H4
ALL 300mm HEADS



H2,H3,H5,H6, H7,H8,H9,H10

R–R,S–S,T–T,U–U
TYPE A2

NOTES:

1. PHASE (2+6) SHALL DWELL ON WALK.
2. ALL PEDESTAL MOUNTED SIGNAL HEADS FOR PEDESTRIAN CROSSINGS SHALL BE AS SHOWN ON THE STANDARD DRAWING TC–85.10M.

LOOP DETECTOR CHART

LOOP	SIZE	NO. OF TURNS	MODE	DELAY (SEC)	PHASE	DETECTOR UNIT	DELAY INHIBITED DURING PHASE
L1	2.7x5.4	3	PULSE	0	–	1	–
L2	2.4x11	3	PULSE	0	–	2	–
L3	2.7x5.4	3	PULSE	0	–	3	–
L4	2.7x5.4	3	PULSE	0	–	4	–
L5	2.4x17	2–4–2	PRESENCE	8	1+5	5	5
L6	2.4x17	2–4–2	PRESENCE	8	1+5	6	1
L7	3.0x12	2–4–2	PRESENCE	10	4+8	7	–
L8	3.0x12	2–4–2	PRESENCE	10	4+8	8	–
L9	3.0x12	2–4–2	PRESENCE	0	4+8	9	–

SIGNAL DISPLAY CHART

PHASE MOVEMENT	1+5				2+6				4+8				FLASH
SIGNAL HEAD	R/W		CLEAR		R/W		CLEAR		R/W		CLEAR		
H1	←G	←G	←Y	R	R	R	R	R	R	R	R	R	R
H2,H3	R	R	R	R	G	G	Y	R	R	R	R	R	Y
H4	←G	←G	←Y	R	R	R	R	R	R	R	R	R	R
H5,H6	R	R	R	R	G	G	Y	R	R	R	R	R	Y
(NOT USED)	–	–	–	–	–	–	–	–	–	–	–	–	–
H7	R	R	R	R	R	R	R	R	G	G	Y	R	R
H8	R	R	R	R	R	R	R	R	G	G	Y	R	R
H9	R	R	R	R	R	R	R	R	G	G	Y	R	R
H10	R	R	R	R	R	R	R	R	G	G	Y	R	R
PEDESTRIAN SIGNAL DISPLAY DURING NORMAL OPERATION													
R–R	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DARK
S–S	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
T–T	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DARK
U–U	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
PEDESTRIAN SIGNAL DISPLAY DURING PUSHBUTTON ACTIVATED CROSSWALK FOR S.R. 21 CROSSING ONLY													
S–S	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DARK
U–U	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DARK

DW = DON'T WALK
W = WALK
FDW = FLASHING DON'T WALK

TC–83.20M PEDESTRIAN SIGNAL POLE & PEDESTAL

SUPPORT NUMBER		POLE HEIGHT (METERS)	FOUNDATION STATION	FOUNDATION OFFSET		TRANSFORMER TYPE PEDESTAL BASE	PLATE TYPE PEDESTAL BASE		
P5	–	2.4	16+819.1	15.66m LT.		YES	–		
P6	–	2.4	16+817.9	14.31m RT.		YES	–		
P7	–	2.4	16+838.7	14.31m RT.		YES	–		
P8	–	2.4	16+840.4	19.38m LT.		YES	–		

SIGNAL SUPPORT TYPE TC –81.20M

SUPPORT NUMBER	DESIGN NUMBER	POLE HEIGHT (METERS)	LOCATION STATION	LOCATION OFFSET	L (M)	L1 (M)	L2 (M)	L3 (M)	L4 (M)	ELEVATION A	ELEVATION B	MAST ARM A ANGLE (DEG.)	ORIENTATION ANGLES (DEG.) FROM MAST ARM A: MAST ARM B	PEDESTRIAN SIGNALS	PEDESTRIAN PUSH BUTTONS	POWER SERVICE	CONTROLLER	POLE MOUNTED LUMINAIRE BRACKET	HANDHOLE	DISCONNECT SWITCH		CABLE ENTRANCE (0.3m FROM TOP)		
P1	12	9.1	16+810.90	16.89m LT.	14.6	7.3	10.9	14.3	–	287.5±	287.1	0	–	–	–	226	–	–	270	–		226		
P2	11	7.0	16+815.90	18.53m RT.	13.7	9.9	12.7	–	–	287.0±	286.7	90	–	–	–	–	–	–	90	–		–		
P3	12	7.0	16+840.00	16.32m RT.	16.7	9.1	12.7	16.3	–	287.6±	287.1	0	–	–	–	–	–	–	270	–		–		
P4	4	7.0	16+841.50	24.36m LT.	11.6	7.0	10.2	–	–	287.5±	287.5	90	–	–	–	–	–	–	270	–		–		

ITEM	TOT.	UNIT	DESCRIPTION
625	300	meter	CONDUIT, 25mm, 713.04
625	32	meter	CONDUIT, 51mm, 713.04
625	85	meter	CONDUIT, JACKED OR DRILLED, 76mm, 713.04
625	340	meter	TRENCH
625	22	meter	TRENCH IN PAVED AREA, TYPE A
625	6	EACH	PULLBOX, 713.09, 450mm
625	6	EACH	PULLBOX, 713.09, 600mm
625	4	EACH	GROUND ROD
625	1	EACH	GROUND ROD, AS PER PLAN
632	10	EACH	VEHICULAR SIGNAL HEAD, 3 SECTION, 300mm LENS, 1 WAY, AS PER PLAN
632	8	EACH	PEDESTRIAN SIGNAL HEAD, TYPE A2
632	10	EACH	COVERING OF VEHICULAR SIGNAL HEAD
632	2	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD
632	4	EACH	PEDESTRIAN PUSHBUTTON
632	8	EACH	DETECTOR LOOP, AS PER PLAN
632	8	EACH	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	210	meter	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG
632	490	meter	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
632	1000	meter	LOOP DETECTOR LEAD–IN CABLE, 2 CONDUCTOR, NO. 14 AWG
632	4	EACH	SIGNAL SUPPORT FOUNDATION
632	4	EACH	PEDESTAL FOUNDATION
632	20	meter	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG.
632	1	EACH	POWER SERVICE, AS PER PLAN
632	1	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 4
632	1	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 11
632	1	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 12
632	1	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 12, AS PER PLAN
632	4	EACH	PEDESTAL, 2.4 M, TRANSFORMER BASE
632	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN
633	1	EACH	CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL MICROPROCESSOR AS PER PLAN
633	1.2	CU–m	CONCRETE FOR CABINET FOUNDATION, AS PER PLAN
633	1.04	SQ–m	CONTROLLER WORK PAD
SPECIAL	335	meter	PLASTIC CAUTION TAPE

CALCULATED KNG
CHECKED GTA

metric units

SIGNAL DETAILS
WALNUT ROAD

STA–21–16.574

108
120

Filename : VOL1\W\0007-M\0830\CIVIL\0830S106.DWG
Plotted : 14:41 on 12-07-98
By/Date : KCarast / 12-07-98 (1:1)

SIGNALIZATION AND LIGHTING PLAN

LILLIAN GISH BOULEVARD

metric units

NOTES:

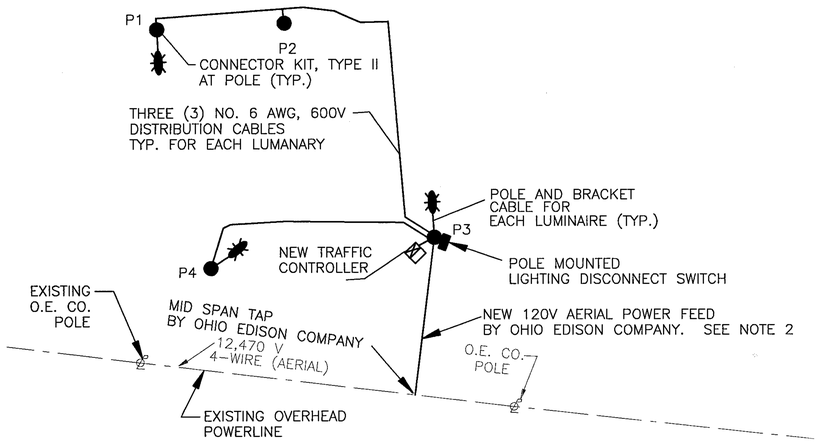
1. EXISTING ELECTRICAL POWER FEED LINES SHALL BE REMOVED BY THE OHIO EDISON COMPANY. (O.E. CO.)

2. THE NEW 120V AERIAL SERVICE DROP FOR LIGHTING AND SIGNAL SYSTEM WILL BE BY THE OHIO EDISON COMPANY TO A POINT OF TERMINATION) AT THE TOP OF POLE P3. THE POWER FEED FROM POT TO A DISCONNECT SWITCH ON POLE P3 FOR LIGHTING AND TO A CIRCUIT BREAKER IN THE NEW CONTROLLER CABINET SHALL BE BY THE THE CONTRACTOR. THE LIGHTING & SIGNALS SHALL NOT BE METERED. ALL CONDUITS, WEATHER HEADS, FITTINGS, DISCONNECT SWITCHES WITH ENCLOSURES, AND RELATED HARDWARE SHALL BE BY THE CONTRACTOR IN ACCORDANCE WITH SECTION 625.18 AND 632.23 USING THE STANDARD CONSTRUCTION DWG. TC-83.10M. THE PAYMENT SHALL BE MADE UNDER ITEM 632-POWER SERVICE, AS PER PLAN.

3. ALL UNDERGROUND WIRING FOR THE SIGNAL WORK INCLUDING LOOP DETECTOR LEAD-IN CABLES AND CONTROL CABLES TO THE SIGNAL CONTROLLER SHALL BE CONSTRUCTED IN ACCORDANCE WITH ITEM 625. THE SIZE OF THE CONDUIT BETWEEN PULL BOX PB1 AND PB2, PB2 AND PB3, PB7 AND PB10, AND PB10 AND PB11 SHALL BE 25mm IN DIAMETER. ALL OTHER CONDUIT SHALL BE 51mm IN DIAMETER, UNLESS NOTED OTHERWISE.

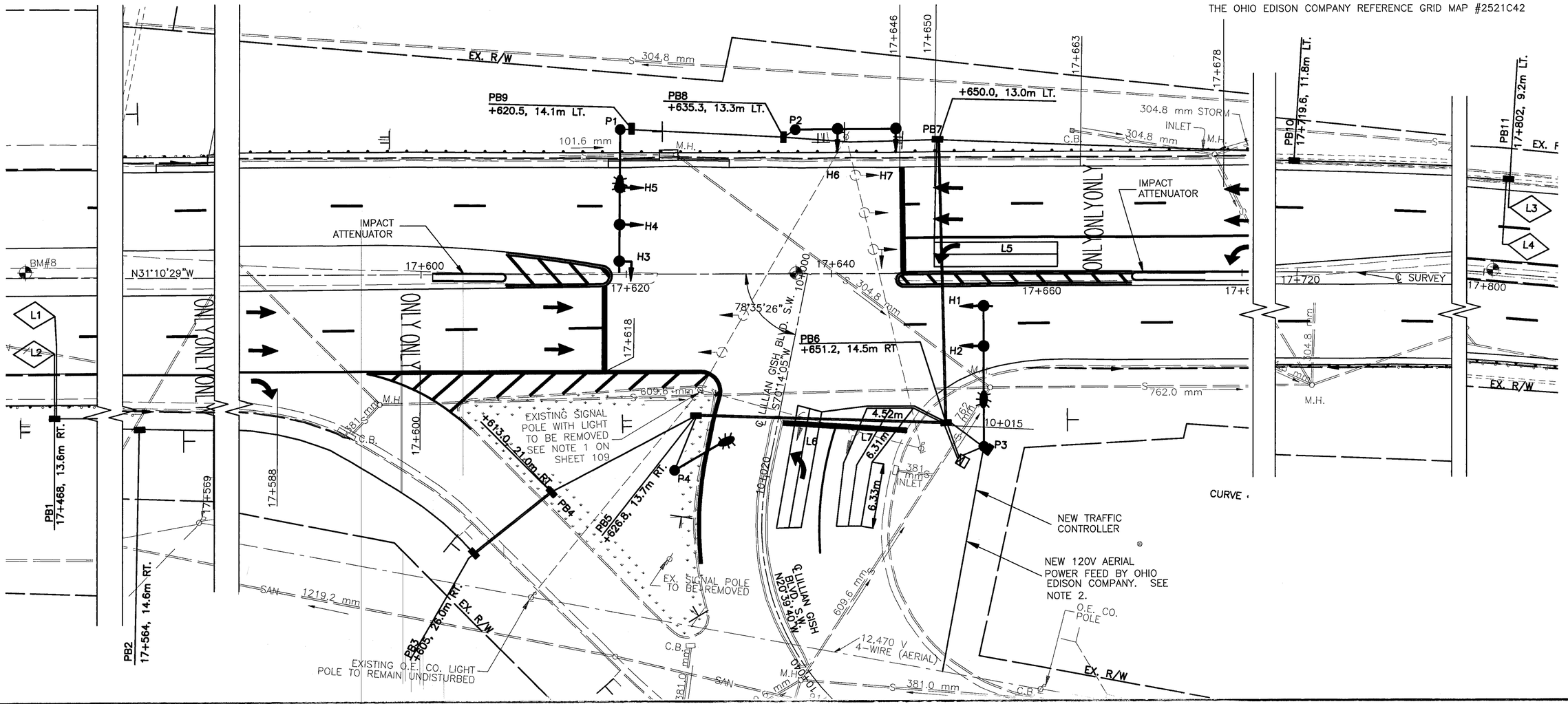
4. ALL PULL BOXES ARE TO BE CONCRETE. PULL BOXES PB1, PB2, PB3, PB4, PB10 & PB11 ARE TO BE 460x460. ALL OTHER PULL BOXES ARE TO BE 610x610. FOR PULL BOX DETAILS, SEE STD DWG. HL-30.11M.

	TYPE HL-10.11M, STYLE II B		
SUPPORT NUMBER	LUMINAIRE ARM LENGTH (m)	NOMINAL MOUNTING HEIGHT (m)	LUMINAIRE
P1,P3	5.5	11.1	250W HPS TYPE II
P4	5.5	11.1	250W HPS TYPE II



LIGHTING SCHEMATIC DIAGRAM

THE OHIO EDISON COMPANY REFERENCE GRID MAP #2521C42



Filename : VOL1W/DOCT-W/0830/CIVIL/0830S109.DWG
Last Saved By : KGerasi
Drawn By/Date : KGerasi / 12-07-98 (19:)

HORIZONTAL SCALE IN METERS

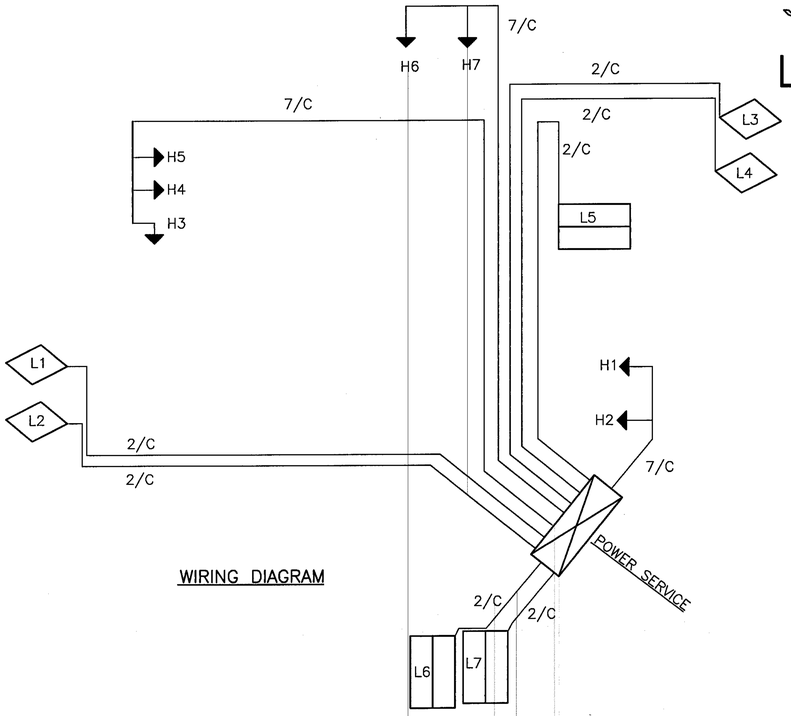
CALCULATED KNG
CHECKED GTA

SIGNALIZATION AND LIGHTING PLAN
LILLIAN GISH BOULEVARD AND S.R. 21

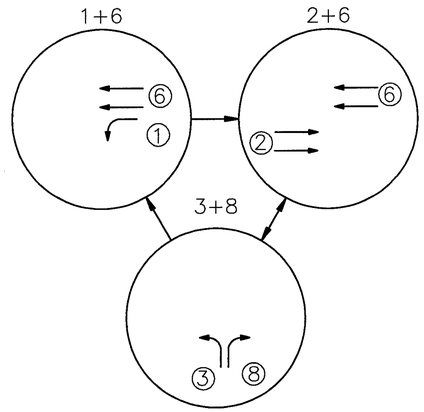
STA-21-16.574

SIGNAL DETAILS

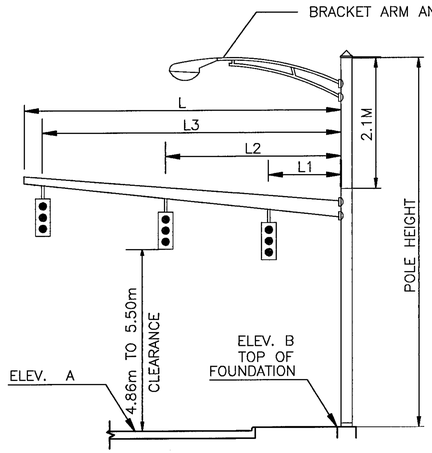
LILLIAN GISH BOULEVARD

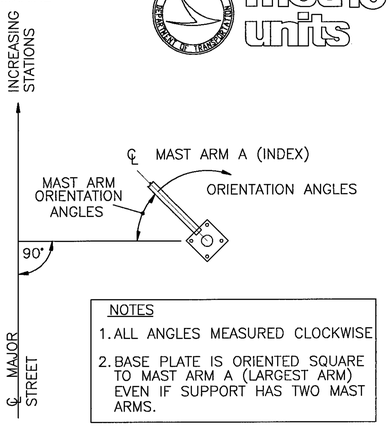


WIRING DIAGRAM



PHASING DIAGRAM

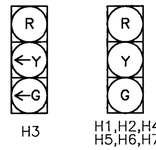




NOTES

1. ALL ANGLES MEASURED CLOCKWISE
2. BASE PLATE IS ORIENTED SQUARE TO MAST ARM A (LARGEST ARM) EVEN IF SUPPORT HAS TWO MAST ARMS.

ORIENTATION ANGLES



ALL 300mm HEADS

ACTUATED

FUNCTION			1+6	2+6	3+8
MINIMUM GREEN (INITIAL)		(SEC.)	7	22	7
ADDED INITIAL (SEC./ACTUATION)			1	1	1
PASSAGE TIME (PRESET GAP)		(SEC.)	5	7	5
TIME BEFORE REDUCTION		(SEC.)	0	2	0
MINIMUM GAP		(SEC.)	5	2	5
TIME TO REDUCE		(SEC.)		30	
MAXIMUM GREEN I		(SEC.)	10	30	20
MAXIMUM GREEN II		(SEC.)	15	45	30
YELLOW CHANGE		(SEC.)	3	4.5	3
ALL RED CLEARANCE		(SEC.)	–	3	3
WALK		(SEC.)	–	–	–
PEDESTRIAN CLEARANCE		(SEC.)	–	–	–
RECALL	MAXIMUM	(ON/OFF)	OFF	OFF	OFF
	MINIMUM	(ON/OFF)	OFF	ON	OFF
	PEDESTRIAN	(ON/OFF)	OFF	OFF	OFF
MEMORY		(ON/OFF)	OFF	OFF	OFF

SIGNAL TIMING CHART

LOOP DETECTOR CHART

LOOP	SIZE	NO. OF TURNS	MODE	DELAY (SEC)	PHASE	DETECTOR UNIT	DELAY INHIBITED DURING PHASE
L1	2.7x5.4	3	PULSE	0	–	1	–
L2	2.4x5.4	3	PULSE	0	–	2	–
L3	2.4x5.4	3	PULSE	0	–	3	–
L4	2.4x5.4	3	PULSE	0	–	4	–
L5	2.4x12	2–4–2	PRESENCE	8	1	5	1
L6	2.4x12	2–4–2	PRESENCE	0	3	6	–
L7	3.0x12	2–4–2	PRESENCE	8	8	7	8

SIGNAL DISPLAY CHART

PHASE MOVEMENT	1+6			2+6			3+8			FLASH
SIGNAL HEAD	R/W	CLEAR		R/W	CLEAR		R/W	CLEAR		
H1	R	R	R	G	Y	R	R	R	R	Y
H2	R	R	R	G	Y	R	R	R	R	Y
H3	←G	←Y	R	R	R	R	R	R	R	R
H4,H5	G	Y	R	G	Y	R	R	R	R	Y
H6	R	R	R	R	R	R	G	Y	R	R
H7	R	R	R	R	R	R	G	Y	R	R

NOTE:

1. ALL POLES USED FOR THE SIGNAL SUPPORT SHALL BE FITTED WITH TWO CONNECTION PLATES FOR MOUNTING LUMINAIRE BRACKETS, AS DETAILED ON STANDARD CONSTRUCTION DRAWING HL–10.12M.
2. SUPPORT NO. P4 HAS NO SIGNAL ARM. IT IS USED ONLY FOR THE SUPPORT OF LUMINAIRES.

SIGNAL SUPPORT TYPE TC–81.20M

SUPPORT NUMBER	DESIGN NUMBER	POLE HEIGHT (METERS)	LOCATION							ELEVATION A	ELEVATION B	MAST ARM A ANGLE (DEG.)	ORIENTATION ANGLES (DEG.) FROM MAST ARM A										
			STATION	OFFSET	L (M)	L1 (M)	L2 (M)	L3 (M)	L4 (M)				MAST ARM B	PEDESTRIAN SIGNALS	PEDESTRIAN PUSH BUTTONS	POWER SERVICE	CONTROLLER	POLE MOUNTED LUMINAIRE BRACKET	HANDHOLE	DISCONNECT SWITCH	CABLE ENTRANCE (0.3m FROM TOP)		
P1	11	9.1	17+619.4	14.06m LT.	13.7	5.4	9.0	12.6	–	283.5±	283.5	0	–	–	–	–	–	0	270	–	–		
P2	2	9.1	17+636.5	13.63m LT.	9.8	3.8	9.5	–	–	283.2±	283.2	270	–	–	–	–	–	–	180	–	–		
P3	11	9.1	17+654.8	16.74m RT.	13.7	9.5	13.4	–	–	283.3±	283.6	0	–	–	–	190	–	0	270	135	190		
P4	2	9.1	17+624.7	19.00m RT.	–	–	–	–	–	–	283.5	–	–	–	–	–	–	60	–	–	–		

ITEM	TOT.	UNIT	DESCRIPTION
625	6	EACH	CONNECTOR KIT, TYPE II
625	1	EACH	BRACKET ARM, 5.5m
625	2	EACH	BRACKET ARM, 6.1m
625	400	meter	NO. 6 AWG 600 VOLT DISTRIBUTION CABLE
625	110	meter	NO. 10 AWG POLE AND BRACKET CABLE
625	295	meter	CONDUIT, 25mm, 713.04
625	70	meter	CONDUIT, 51mm, 713.04
625	65	meter	CONDUIT, JACKED OR DRILLED, 76mm, 713.04
625	3	EACH	LUMINAIRE, MISC.: STYLE B, TYPE II, 250 WATT HIGH PRESSURE SODIUM, 713.11, 120 VOLT, WITH INTEGRAL FUSING AND PHOTOCELL, AS PER PLAN
625	256	meter	TRENCH
625	109	meter	TRENCH IN PAVED AREA, TYPE A
625	6	EACH	PULLBOX, 713.09, 450mm
625	5	EACH	PULLBOX, 713.09, 600mm
625	4	EACH	GROUND ROD
625	1	EACH	GROUND ROD, AS PER PLAN
632	7	EACH	VEHICULAR SIGNAL HEAD, 3 SECTION, 300mm LENS, 1 WAY, AS PER PLAN
632	7	EACH	COVERING OF VEHICULAR SIGNAL HEAD
632	7	EACH	DETECTOR LOOP, AS PER PLAN
632	7	EACH	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	210	meter	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
632	985	meter	LOOP DETECTOR LEAD–IN CABLE, 2 CONDUCTOR, NO. 14 AWG
632	4	EACH	SIGNAL SUPPORT FOUNDATION
632	20	meter	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG.
632	1	EACH	POWER SERVICE, AS PER PLAN
632	2	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 2
632	2	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 11
632	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN
633	1	EACH	CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL MICROPROCESSOR AS PER PLAN
633	1.2	CU–m	CONCRETE FOR CABINET FOUNDATION, AS PER PLAN
633	1.04	SQ–m	CONTROLLER WORK PAD
SPECIAL	365	meter	PLASTIC CAUTION TAPE

CALCULATED KNG
CHECKED GTA

metric units

SIGNAL DETAILS
LILLIAN GISH BOULEVARD

STA–21–16.574

110
120

Filename : VDL14/COOT-W/0830/CIVIL/0830S110.DWG
Design By/Date : KGrenci / 12-07-98 (18:1)
Drawn By/Date : KGrenci / 12-07-98 (18:1)

SIGNALIZATION AND LIGHTING PLAN

CHERRY ROAD

metric units

NOTES:

1. THE EXISTING POWER SOURCE TO THE SIGNAL AND LIGHTING SYSTEM IS FROM AN OVERHEAD LINE ON THE NORTH SIDE OF CHERRY ROAD TO AN EXISTING POLE AT STATION 18+ 330±, 13m± RT. THE EXISTING POWER SOURCE WILL BE DISCONNECTED AND REMOVED BY THE OHIO EDISON COMPANY (O.E. CO.) WHEN NO LONGER REQUIRED.

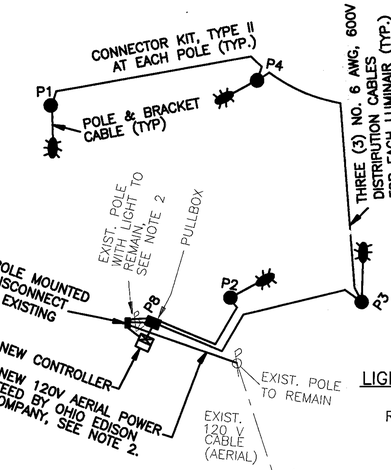
2. THE NEW POWER FEED TO THE LIGHTING AND SIGNAL SYSTEM WILL RUN VIA AN OVERHEAD LINE FROM AN EXISTING POLE ON THE SOUTHEAST SIDE OF CHERRY ROAD AT APPROXIMATE STATION 18+312, 29m± RT, TO AN EXISTING POLE, IDENTIFIED AS POLE P8, NEAR PULL BOX PB4. THE SERVICE DROP SHALL BE 120 VOLT AND SHALL BE BY THE OHIO EDISON COMPANY TO A POINT OF TERMINATION (POT) AT THE TOP OF POLE P8. THE POWER DROP FOR STREET LIGHTING SHALL HAVE A DISCONNECT SWITCH MOUNTED ON POLE P8. THE POWER DROP FOR SIGNALS SHALL TERMINATE WITH A CIRCUIT BREAKER IN THE NEW SIGNAL CONTROLLER CABINET. THE LIGHTING AND SIGNALS SHALL NOT BE METERED. ALL CONDUITS, WEATHER HEADS, FITTINGS, DISCONNECT SWITCHES, WITH ENCLOSURES, AND RELATED HARDWARE SHALL BE BY THE CONTRACTOR IN ACCORDANCE WITH SECTIONS 625.18 AND 632.32 USING THE STANDARD CONSTRUCTION DWG. TC-83.10M. THE PAYMENT SHALL BE MADE UNDER ITEM 632-POWER SERVICE, AS PER PLAN.

	TYPE HL-10.11M, STYLE II B		
SUPPORT NUMBER	LUMINAIRE ARM LENGTH (m)	NOMINAL MOUNTING HEIGHT (m)	LUMINAIRE
P1	6.1	11.1	250W HPS TYPE II
P2	5.5	11.1	250W HPS TYPE II
P3,P4	6.1	11.1	250W HPS TYPE II

TO CROSS
PUSH BUTTON
WAIT FOR
WALK SIGNAL

R-73A
225x300
QTY = 2
P5,P6

PEDESTRIAN SIGNS



LIGHTING SCHEMATIC DIAGRAM
THE OHIO EDISON COMPANY
REFERENCE GRID MAP #2521B3

3. ALL UNDERGROUND WIRING FOR THE SIGNAL WORK INCLUDING LOOP DETECTOR LEAD-IN CABLES, POWER AND SERVICE CABLES, AND CONTROL CABLES TO THE SIGNAL CONTROLLER AND PEDESTRIAN SIGNALS SHALL BE IN CONDUIT(S), 713.04 AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH ITEM 625. THE CONDUIT BETWEEN PUL BOX PB1 AND PB2, PB2 AND PB3, PB8 AND PB12, AND PB12 AND PB13 SHALL BE 25mm IN DIAMETER. ALL OTHER CONDUIT SHALL BE 51mm IN DIAMETER, UNLESS NOTED OTHERWISE.

4. ALL PULL BOXES ARE TO BE CONCRETE. PULL BOX PB1, PB2, PB3, PB12 & PB13 ARE TO BE 460x460. ALL OTHER PULL BOXES ARE TO BE 610x610. FOR PULL BOX DETAILS, SEE STD. DWG. HL-30.11M.

CALCULATED KNG
CHECKED GTA

HORIZONTAL SCALE IN METERS
2 0 2 6

SIGNALIZATION AND LIGHTING PLAN
CHERRY ROAD AND S.R. 21

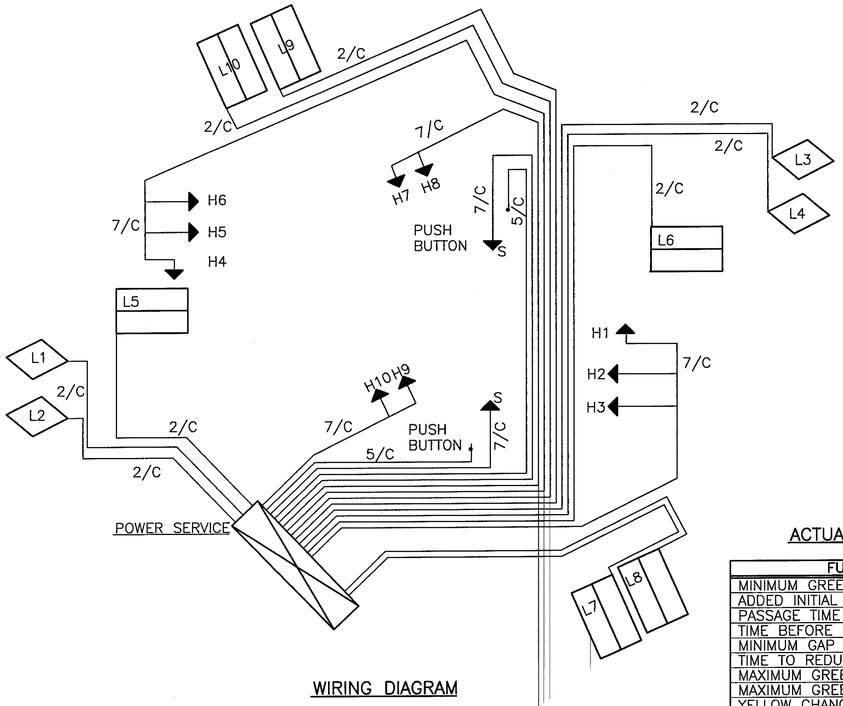
STA-21-16.574

111
120

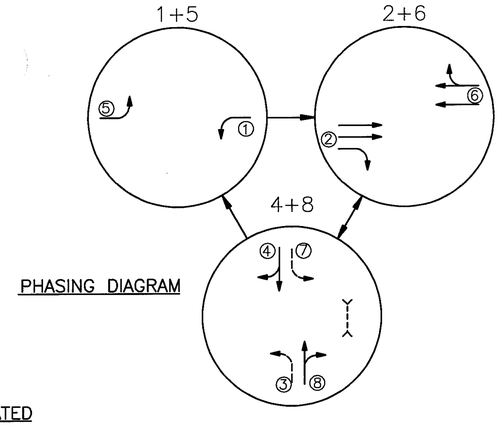
Filename : V01_1W/ODOT_wy/0830/CIVIL/0830S111.DWG
Time Plotted : 14:17
Drawn By/Date : KGerrol / 12-07-98 (18:)

SIGNAL DETAILS

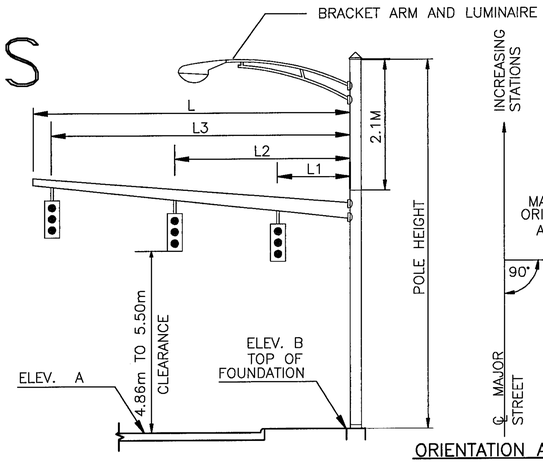
CHERRY ROAD

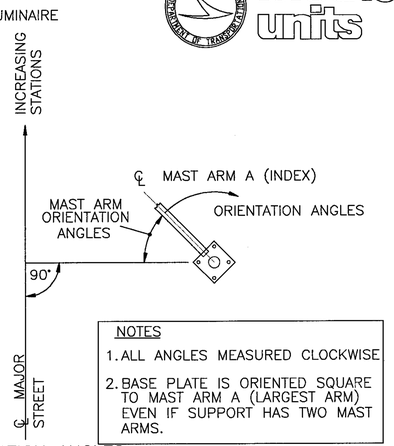


WIRING DIAGRAM



PHASING DIAGRAM

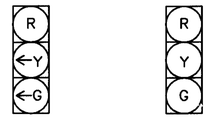




ORIENTATION ANGLES

NOTES

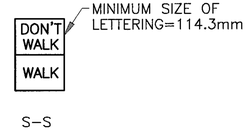
1. ALL ANGLES MEASURED CLOCKWISE
2. BASE PLATE IS ORIENTED SQUARE TO MAST ARM A (LARGEST ARM) EVEN IF SUPPORT HAS TWO MAST ARMS.



H1,H4

H2,H3,H5,H6, H7,H8,H9,H10

ALL 300mm HEADS



S–S

TYPE A2

ACTUATED

FUNCTION		1+5	2+6	4+8
MINIMUM GREEN (INITIAL)	(SEC.)	7	25	7
ADDED INITIAL (SEC./ACTUATION)		1	1	1
PASSAGE TIME (PRESET GAP)	(SEC.)	5	7	5
TIME BEFORE REDUCTION	(SEC.)	0	2	0
MINIMUM GAP	(SEC.)	5	2	5
TIME TO REDUCE	(SEC.)		30	
MAXIMUM GREEN I	(SEC.)	9	30	22
MAXIMUM GREEN II	(SEC.)	15	38	36
YELLOW CHANGE	(SEC.)	4.5	4.5	3
ALL RED CLEARANCE	(SEC.)	–	3	3
WALK	(SEC.)	–	–	7
PEDESTRIAN CLEARANCE	(SEC.)	–	–	26
RECALL MAXIMUM	(ON/OFF)	OFF	OFF	OFF
RECALL MINIMUM	(ON/OFF)	OFF	ON	OFF
RECALL PEDESTRIAN	(ON/OFF)	OFF	OFF	OFF
MEMORY	(ON/OFF)	OFF	OFF	OFF

SIGNAL TIMING CHART

NOTE:

1. ALL POLES USED FOR THE SIGNAL SUPPORT SHALL BE FITTED WITH TWO CONNECTION PLATES FOR MOUNTING LUMINAIRE BRACKETS, AS DETAILED ON STANDARD CONST. DRG. HL–10.12M.
2. ALL PEDESTAL MOUNTED SIGNAL HEADS FOR PEDESTRIAN CROSSINGS SHALL BE AS SHOWN ON THE STANDARD DRAWING TC–85.10M.

LOOP DETECTOR CHART

LOOP	SIZE	NO. OF TURNS	MODE	DELAY (SEC)	PHASE	DETECTOR UNIT	DELAY INHIBITED DURING PHASE
L1	2.7x5.4	3	PULSE	0	–	1	–
L2	2.4x5.4	3	PULSE	0	–	2	–
L3	2.7x5.4	3	PULSE	0	–	3	–
L4	2.7x5.4	3	PULSE	0	–	4	–
L5	2.4x12	2–4–2	PRESENCE	8	1+5	5	5
L6	2.4x15	2–4–2	PRESENCE	8	1+5	6	1
L7	2.4x12	2–4–2	PRESENCE	0	4+8	7	–
L8	2.4x12	2–4–2	PRESENCE	8	4+8	8	8
L9	2.4x9.0	2–4–2	PRESENCE	0	4+8	9	–
L10	4.2x11	2–4–2	PRESENCE	8	4+8	10	4

SIGNAL DISPLAY CHART

PHASE MOVEMENT	1+5				2+6				4+8				FLASH
SIGNAL HEAD	R/W		CLEAR		R/W		CLEAR		R/W		CLEAR		
H1	←G	←G	←Y	R	R	R	R	R	R	R	R	R	R
H2,H3	R	R	R	R	G	G	Y	R	R	R	R	R	Y
H4	←G	←G	←Y	R	R	R	R	R	R	R	R	R	R
H5,H6	R	R	R	R	G	G	Y	R	R	R	R	R	Y
H7	R	R	R	R	R	R	R	R	G	G	Y	R	R
H8	R	R	R	R	R	R	R	R	G	G	Y	R	R
H9	R	R	R	R	R	R	R	R	G	G	Y	R	R
H10	R	R	R	R	R	R	R	R	G	G	Y	R	R
PEDESTRIAN SIGNAL DISPLAY DURING NORMAL OPERATION													
S–S	DW	DW	DW	DW	CW	DW	DW	DW	DW	DW	DW	DW	DARK
PEDESTRIAN SIGNAL DISPLAY DURING PUSHBUTTON ACTIVATEDS CROSSWALK FOR S.R. 21 CROSSING ONLY													
S–S	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DARK

DW = DON'T WALK
W = WALK
FDW = FLASHING DON'T WALK

TC–83.20M PEDESTRIAN SIGNAL POLE & PEDESTAL

SUPPORT NUMBER		POLE HEIGHT (METERS)	FOUNDATION STATION	FOUNDATION OFFSET		TRANSFORMER TYPE PEDESTAL BASE	PLATE TYPE PEDESTAL BASE		
P5	–	2.4	18+329.3	12.57m RT.		YES	–		
P6	–	2.4	18+322.8	12.59m LT.		YES	–		

SIGNAL SUPPORT TYPE TC–81.20M

SUPPORT NUMBER	DESIGN NUMBER	POLE HEIGHT (METERS)	LOCATION STATION	LOCATION OFFSET	L (M)	L1 (M)	L2 (M)	L3 (M)	L4 (M)	ELEVATION A	ELEVATION B	MAST ARM A ANGLE (DEG.)	ORIENTATION ANGLES (DEG.) FROM MAST ARM A: MAST ARM B	PEDESTRIAN SIGNALS	PEDESTRIAN PUSH BUTTONS	POWER SERVICE	CONTROLLER	POLE MOUNTED LUMINAIRE BRACKET	HANDHOLE	DISCONNECT SWITCH		CABLE ENTRANCE (0.3m FROM TOP)		
P1	12	9.1	18+281.7	14.12m LT.	14.6	7.3	10.9	13.9	–	286.7±	287.5±	0	–	–	–	–	–	0	180	–	–	–	–	–
P2	2	9.1	18+310.4	17.95m RT.	9.8	5.3	9.0	–	–	285.5±	285.8±	61	–	–	–	–	–	0	90	–	–	–	–	–
P3	12	9.1	18+332.7	18.12m RT.	16.7	8.7	12.3	15.3	–	285.7±	285.4±	0	–	–	–	–	–	0	315	–	–	–	–	–
P4	4	9.1	18+315.8	18.34m LT.	11.6	7.4	10.8	–	–	286.7±	287.5±	61	–	–	–	–	–	0	90	–	–	–	–	–

ITEM	TOT.	UNIT	DESCRIPTION
625	8	EACH	CONNECTOR KIT, TYPE II
625	1	EACH	BRACKET ARM, 5.5m
625	3	EACH	BRACKET ARM, 6.1m
625	650	meter	NO. 6 AWG 600 VOLT DISTRIBUTION CABLE
625	150	meter	NO. 10 AWG POLE AND BRACKET CABLE
625	310	meter	CONDUIT, 25mm, 713.04
625	65	meter	CONDUIT, 51mm, 713.04
625	90	meter	CONDUIT, JACKED OR DRILLED, 76mm, 713.04
625	4	EACH	LUMINAIRE, MISC.: STYLE B, TYPE II, 250 WATT HIGH PRESSURE SODIUM, 713.11, 120 VOLT, WITH INTEGRAL FUSING AND PHOTOCELL, AS PER PLAN
625	370	meter	TRENCH
625	5	EACH	PULLBOX, 713.09, 450mm
625	8	EACH	PULLBOX, 713.09, 600mm
625	4	EACH	GROUND ROD
625	1	EACH	GROUND ROD, AS PER PLAN
632	10	EACH	VEHICULAR SIGNAL HEAD, 3 SECTION, 300mm LENS, 1 WAY, AS PER PLAN
632	10	EACH	COVERING OF VEHICULAR SIGNAL HEAD
632	2	EACH	PEDESTRIAN PUSHBUTTON
632	10	EACH	DETECTOR LOOP, AS PER PLAN
632	10	EACH	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	160	meter	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG
632	640	meter	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
632	1325	meter	LOOP DETECTOR LEAD–IN CABLE, 2 CONDUCTOR, NO. 14 AWG
632	4	EACH	SIGNAL SUPPORT FOUNDATION
632	2	EACH	PEDESTAL FOUNDATION
632	18	meter	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG.
632	1	EACH	POWER SERVICE, AS PER PLAN
632	1	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 2
632	1	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 4
632	1	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 12
632	1	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 12, AS PER PLAN
632	2	EACH	PEDESTAL, 2.4 M, TRANSFORMER BASE
632	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN
633	1	EACH	CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL MICROPROCESSOR AS PER PLAN
633	1.2	CU–m	CONCRETE FOR CABINET FOUNDATION, AS PER PLAN
633	1.04	SQ–m	CONTROLLER WORK PAD
SPECIAL	370	meter	PLASTIC CAUTION TAPE

metric units

CALCULATED KNG
CHECKED GTA

SIGNAL DETAILS
CHERRY ROAD

STA–21–16.574

112
120

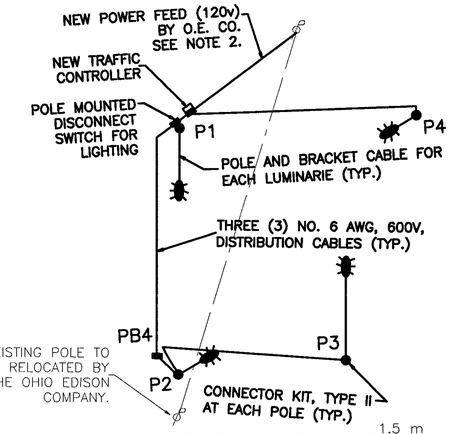
Filename : V:\LIN\0007-M\0830\CIVIL\0830S112.DWG
Date Plotted : 12-07-98
Drawn By/Date : KGerrel / 12-07-98 (1:1)

SIGNALIZATION AND LIGHTING PLAN

LAKE AVENUE

metric units

SUPPORT NUMBER	TYPE HL-10.11M, STYLE II B		
	LUMINAIRE ARM LENGTH (m)	NOMINAL MOUNTING HEIGHT (m)	LUMINAIRE
P1,P3	7.6	11.1	250W HPS TYPE II
P2,P4	6.1	11.1	250W HPS TYPE II



LIGHTING SCHEMATIC DIAGRAM
THE OHIO EDISON COMPANY
REFERENCE GRID MAP #2522C1

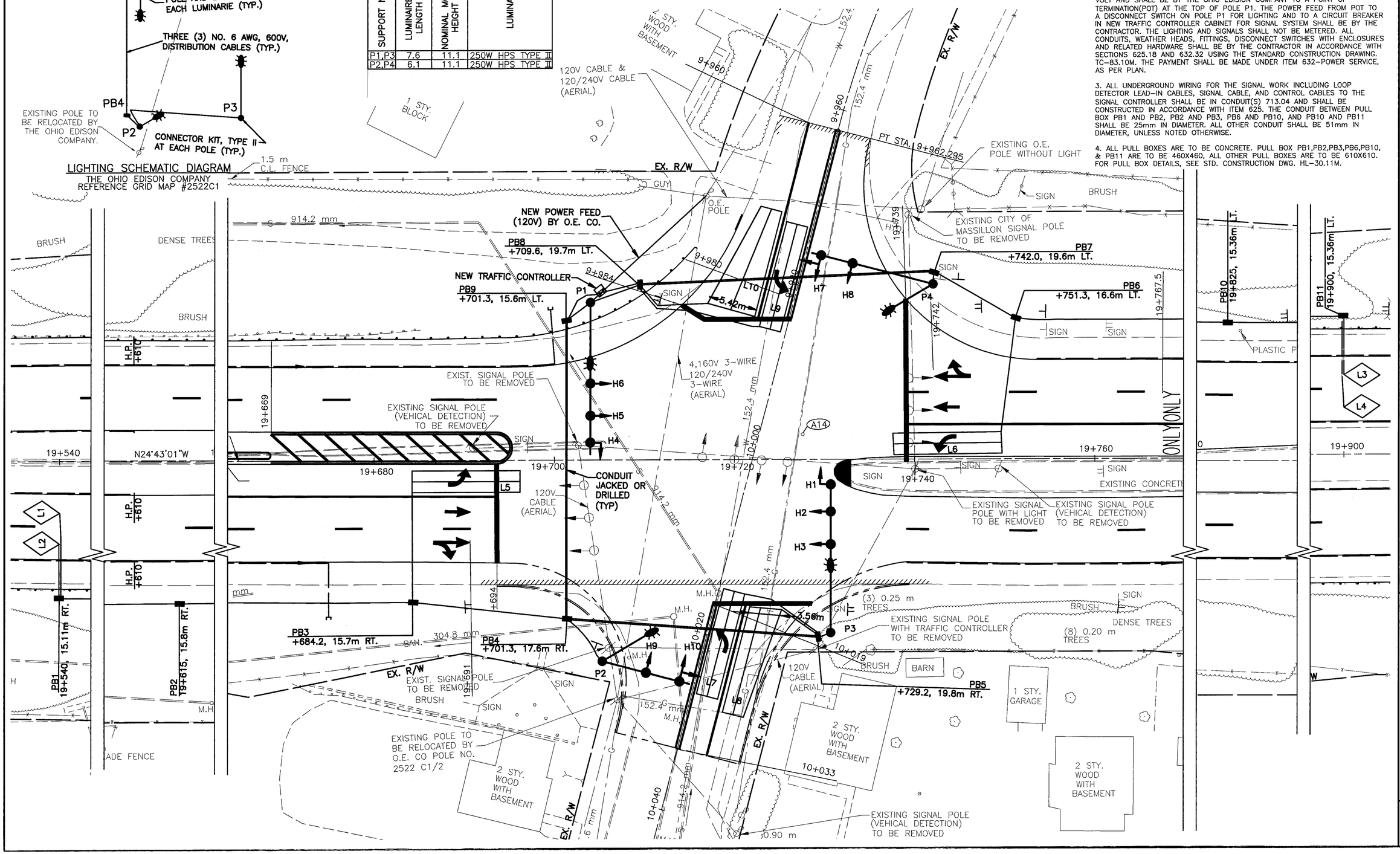
NOTES:

1. THE EXISTING AERIAL POWER SOURCE TO THE SIGNAL AND LIGHTING SYSTEM IS TO BE REMOVED BY THE OHIO EDISON COMPANY.

2. THE NEW SERVICE DROP FOR LIGHTING & SIGNAL SYSTEM SHALL BE 120 VOLT AND SHALL BE BY THE OHIO EDISION COMPANY TO A POINT OF TERMINATION(POT) AT THE TOP OF POLE P1. THE POWER FEED FROM POT TO A DISCONNECT SWITCH ON POLE P1 FOR LIGHTING AND TO A CIRCUIT BREAKER IN NEW TRAFFIC CONTROLLER CABINET FOR SIGNAL SYSTEM SHALL BE BY THE CONTRACTOR. THE LIGHTING AND SIGNALS SHALL NOT BE METERED. ALL CONDUITS, WEATHER HEADS, FITTINGS, DISCONNECT SWITCHES WITH ENCLOSURES AND RELATED HARDWARE SHALL BE BY THE CONTRACTOR IN ACCORDANCE WITH SECTIONS 625.18 AND 632.32 USING THE STANDARD CONSTRUCTION DRAWING. TC-83.10M. THE PAYMENT SHALL BE MADE UNDER ITEM 632-POWER SERVICE, AS PER PLAN.

3. ALL UNDERGROUND WIRING FOR THE SIGNAL WORK INCLUDING LOOP DETECTOR LEAD-IN CABLES, SIGNAL CABLE, AND CONTROL CABLES TO THE SIGNAL CONTROLLER SHALL BE IN CONDUIT(S) 713.04 AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH ITEM 625. THE CONDUIT BETWEEN PULL BOX PB1 AND PB2, PB2 AND PB3, PB6 AND PB10, AND PB10 AND PB11 SHALL BE 25mm IN DIAMETER. ALL OTHER CONDUIT SHALL BE 51mm IN DIAMETER, UNLESS NOTED OTHERWISE.

4. ALL PULL BOXES ARE TO BE CONCRETE. PULL BOX PB1,PB2,PB3,PB6,PB10, & PB11 ARE TO BE 460X460, ALL OTHER PULL BOXES ARE TO BE 610X610. FOR PULL BOX DETAILS, SEE STD. CONSTRUCTION DWG. HL-30.11M.



HORIZONTAL SCALE IN METERS
0 2 4 8

CALCULATED KNG
CHECKED GTA

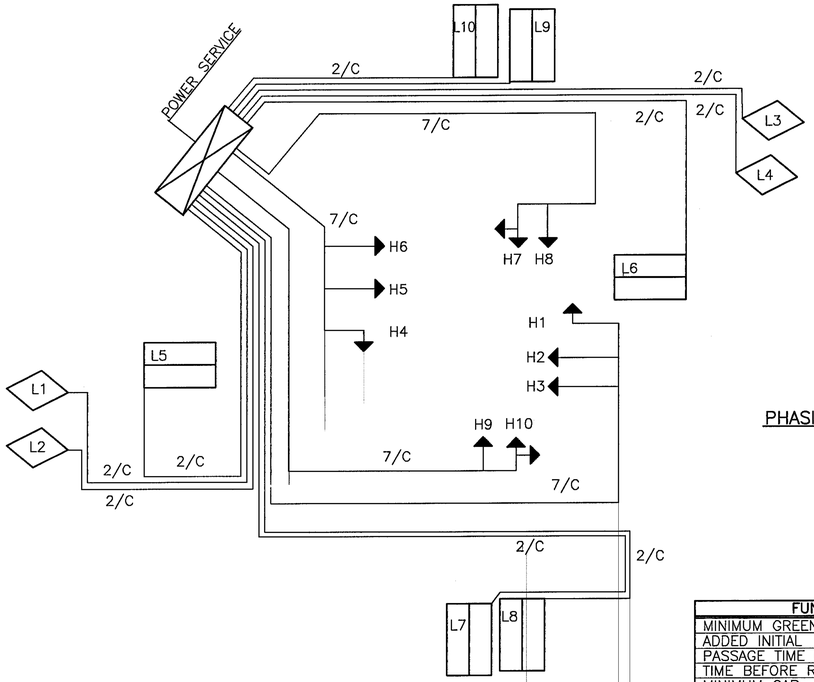
SIGNALIZATION AND LIGHTING PLAN
LAKE AVENUE AND S.R. 21

STA-21-16.574

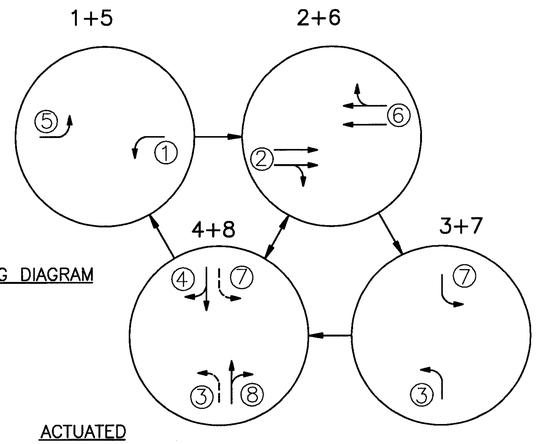
Filename : V01:\W\000T-W\0830\DWG\0830S113.DWG
Plot Scale :
Drawn By/Date : KGarcia / 12-07-98 (18)

SIGNAL DETAILS

LAKE AVENUE



WIRING DIAGRAM

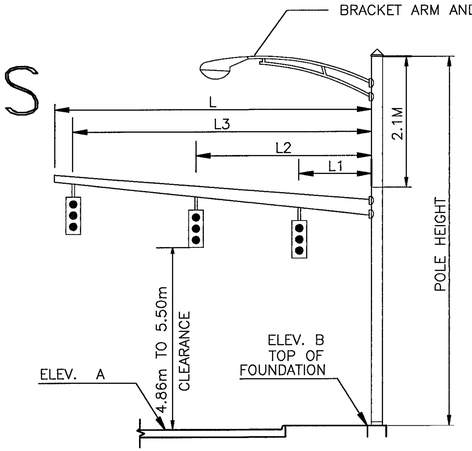


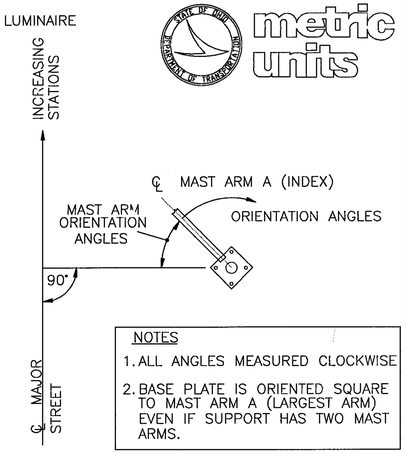
PHASING DIAGRAM

ACTUATED

FUNCTION		1+5	2+6	3+7	4+8
MINIMUM GREEN (INITIAL)	(SEC.)	7	27	7	7
ADDED INITIAL (SEC./ACTUATION)	(SEC.)	1	1	1	1
PASSAGE TIME (PRESET GAP)	(SEC.)	1	7	1	7
TIME BEFORE REDUCTION	(SEC.)	0	2	0	2
MINIMUM GAP	(SEC.)	5	2	5	2
TIME TO REDUCE	(SEC.)		30		
MAXIMUM GREEN I	(SEC.)	9	30	9	25
MAXIMUM GREEN II	(SEC.)	15	40	15	35
YELLOW CHANGE	(SEC.)	4.5	4.5	4.5	4
ALL RED CLEARANCE	(SEC.)	–	3	–	3
WALK	(SEC.)	–	–	–	–
PEDESTRIAN CLEARANCE	(SEC.)	–	–	–	–
RECALL MAXIMUM	(ON/OFF)	OFF	OFF	OFF	OFF
RECALL MINIMUM	(ON/OFF)	OFF	ON	OFF	OFF
RECALL PEDESTRIAN	(ON/OFF)	OFF	OFF	OFF	OFF
MEMORY	(ON/OFF)	OFF	OFF	OFF	OFF

SIGNAL TIMING CHART

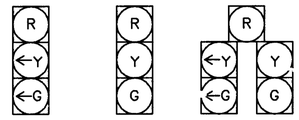




NOTES

1. ALL ANGLES MEASURED CLOCKWISE
2. BASE PLATE IS ORIENTED SQUARE TO MAST ARM A (LARGEST ARM) EVEN IF SUPPORT HAS TWO MAST ARMS.

ORIENTATION ANGLES



ALL 300mm HEADS

NOTE:

1. ALL POLES USED FOR THE SIGNAL SUPPORT SHALL BE FITTED WITH TWO CONNECTION PLATES FOR MOUNTING LUMINAIRE BRACKETS, AS DETAILED ON STANDARD CONSTRUCTION DRAWING HL–10.12M.

LOOP DETECTOR CHART

LOOP	SIZE	NO. OF TURNS	MODE	DELAY (SEC)	PHASE	DETECTOR UNIT	DELAY INHIBITED DURING PHASE
L1	2.7x5.4	3	PULSE	0	–	1	–
L2	2.4x5.4	3	PULSE	0	–	2	–
L3	2.7x5.4	3	PULSE	0	–	3	–
L4	2.7x5.4	3	PULSE	0	–	4	–
L5	2.4x17	2–4–2	PRESENCE	8	1+5	5	5
L6	2.4x17	2–4–2	PRESENCE	8	1+5	6	1
L7	2.4x11	2–4–2	PRESENCE	8	3+7	7	3
L8	2.4x11	2–4–2	PRESENCE	8	4+8	8	8
L9	2.4x11	2–4–2	PRESENCE	8	3+7	9	7
L10	2.4x11	2–4–2	PRESENCE	8	4+8	10	4

SIGNAL DISPLAY CHART

PHASE MOVEMENT	1+5			2+6			3+7			4+8			FLASH
SIGNAL HEAD	R/W	CLEAR		R/W	CLEAR		R/W	CLEAR		R/W	CLEAR		
H1	←G	←Y	R	R	R	R	R	R	R	R	R	R	R
H2,H3	R	R	R	G	Y	R	R	R	R	R	R	R	Y
H4	←G	←Y	R	R	R	R	R	R	R	R	R	R	R
H5,H6	R	R	R	G	Y	R	R	R	R	R	R	R	Y
(NOT USED)	–	–	–	–	–	–	–	–	–	–	–	–	–
H7	R	R	R	R	R	R	←G	←Y	←Y	G	Y	R	R
H8	R	R	R	R	R	R	R	R	R	G	Y	R	R
H9	R	R	R	R	R	R	R	R	R	G	Y	R	R
H10	R	R	R	R	R	R	←G	←Y	←Y	G	Y	R	R

SIGNAL SUPPORT TYPE TC–81.20M

SUPPORT NUMBER	DESIGN NUMBER	POLE HEIGHT (METERS)	LOCATION STATION	LOCATION OFFSET	L (M)	L1 (M)	L2 (M)	L3 (M)	L4 (M)	ELEVATION A	ELEVATION B	MAST ARM A ANGLE (DEG.)	ORIENTATION ANGLES (DEG.) FROM MAST ARM A: MAST ARM B	PEDESTRIAN SIGNALS	PEDESTRIAN PUSH BUTTONS	POWER SERVICE	CONTROLLER	POLE MOUNTED LUMINAIRE BRACKET	HANDHOLE	DISCONNECT SWITCH	CABLE ENTRANCE (0.3m FROM TOP)		
P1	12	9.1	19+704.0	17.49m LT.	16.7	8.8	12.4	15.4	–	288.1±	287.4±	0	–	–	–	230	–	0	230	230	–	230	–	–
P2	2	9.1	19+705.3	22.29m RT.	9.8	4.8	8.6	–	–	288.3±	288.3±	105	–	–	–	–	–	315	230	–	–	–	–	–
P3	12	9.1	19+730.7	19.19m RT.	16.7	9.6	13.2	16.2	–	287.9±	288.1±	0	–	–	–	–	–	0	270	–	–	–	–	–
P4	11	9.1	19+742.0	19.62m LT.	13.7	9.0	12.6	–	–	287.6±	288.0±	105	–	–	–	–	–	315	90	–	–	–	–	–

ITEM	TOT.	UNIT	DESCRIPTION
625	8	EACH	CONNECTOR KIT, TYPE II
625	2	EACH	BRACKET ARM, 6.1m
625	2	EACH	BRACKET ARM, 7.6m
625	500	meter	NO. 6 AWG 600 VOLT DISTRIBUTION CABLE
625	160	meter	NO. 10 AWG POLE AND BRACKET CABLE
625	330	meter	CONDUIT, 25mm, 713.04
625	35	meter	CONDUIT, 51mm, 713.04
625	100	meter	CONDUIT, JACKED OR DRILLED, 76mm, 713.04
625	4	EACH	LUMINAIRE, MISC.: STYLE B, TYPE II, 250 WATT HIGH PRESSURE SODIUM, 713.11, 120 VOLT, WITH INTEGRAL FUSING AND PHOTOCELL, AS PER PLAN
625	365	meter	TRENCH
625	6	EACH	PULLBOX, 713.09, 450mm
625	5	EACH	PULLBOX, 713.09, 600mm
625	4	EACH	GROUND ROD
625	1	EACH	GROUND ROD, AS PER PLAN
632	8	EACH	VEHICULAR SIGNAL HEAD, 3 SECTION, 300mm LENS, 1 WAY, AS PER PLAN
632	2	EACH	VEHICULAR SIGNAL HEAD, 5 SECTION, 300mm LENS, 1 WAY, AS PER PLAN
632	10	EACH	COVERING OF VEHICULAR SIGNAL HEAD
632	10	EACH	DETECTOR LOOP, AS PER PLAN
632	10	EACH	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	300	meter	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
632	1200	meter	LOOP DETECTOR LEAD–IN CABLE, 2 CONDUCTOR, NO. 14 AWG
632	4	EACH	SIGNAL SUPPORT FOUNDATION
632	20	meter	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG.
632	1	EACH	POWER SERVICE, AS PER PLAN
632	1	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 2
632	1	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 11
632	2	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC–81.20M, DESIGN 12, AS PER PLAN
632	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN
633	1	EACH	CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL MICROPROCESSOR AS PER PLAN
633	1.2	CU–m	CONCRETE FOR CABINET FOUNDATION, AS PER PLAN
633	1.04	SQ–m	CONTROLLER WORK PAD
SPECIAL	365	meter	PLASTIC CAUTION TAPE

metric units

CALCULATED KNG
CHECKED GTA

SIGNAL DETAILS
LAKE AVENUE

STA–21–16.574

Filename : VOL-1A/C000T-M/D830/CIVIL/D830S114.DWG
Last Edit : KGerrad / 12-07-98 (18:1)
Drawn By/Date : KGerrad / 12-07-98 (18:1)

STRUCTURAL GENERAL NOTES & ESTIMATED QUANTITIES

metric units

DESIGN SPECIFICATIONS:

THESE STRUCTURES CONFORM TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS 1996, AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

CONCRETE CLASS C – UNIT STRESS 9.2 MPa (SUBSTRUCTURE)
REINFORCING STEEL – ASTM A615M – UNIT STRESS 167 MPa.

REFERENCES:

REFERENCE SHALL BE MADE TO SUPPLEMENTAL SPECIFICATION:

843 DATED 05–05–98

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CONSTRUCTION AND MATERIALS SPECIFICATION (CMS) SECTIONS 102.05, 105.02 AND 513.02.

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

EXISTING PLANS:

PLANS OF EXISTING STRUCTURES ARE AVAILABLE FOR PERUSAL AT ODOT DISTRICT 4 OFFICE.

ADDRESS: OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 4
705 OAKWOOD STREET
RAVENNA, OHIO 44266

PHONE No: (330) 297–0801

UNDERGROUND UTILITIES

FOR UTILITY OWNERSHIP LIST, SEE ROADWAY GENERAL NOTES, SHEET 15.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE ESTIMATED QUANTITIES 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 AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

ITEM 602 – BRICK MASONRY, AS PER PLAN

DESCRIPTION: THIS ITEM SHALL CONSIST OF ALL REQUIREMENTS IN ITEM 602 AND THE FOLLOWING:

1. REMOVAL OF ALL LOOSE BRICK LINING.
2. SURFACE PREPARATIONS: AREAS TO BE REPAIRED MUST BE CLEAN BY WATER BLAST AND FREE OF CONTAMINANTS.
3. INSTALL NEW BRICK LINING AS SHOWN ON THE PLAN. BRICKS SHALL BE THOROUGHLY WETTED BEFORE LAYING IN THE MORTAR. MORTAR SHALL BE AS SPECIFIED IN 602.02 AND 602.03. BRICKS SHALL BE SIMILAR IN SHAPE AND THICKNESS WITH THE EXISTING. BRICK WORK SHALL BE PERFORMED TO PROVIDE A SMOOTH TRANSITION BETWEEN THE NEW AND EXISTING BRICKS.

THE CONTRACTOR SHALL COMPLY WITH ALL OF OSHA'S CONFINED SPACE REGULATIONS DURING THE CONSTRUCTION AND WILL DEMONSTRATE AS SUCH IN THE PRE–CONSTRUCTION MEETING. THE CONSTRUCTION SHALL BE PERFORMED IN THE DRY SEASON AT WHICH TIME THE FLOW IS AT ITS LOWEST LEVEL. DEWATERING WILL BE REQUIRED DURING THE CONSTRUCTION. ACCESS TO THE CULVERT CAN BE OBTAINED THROUGH THE OUTLET AREA. AFTER THE COMPLETION OF THE REPAIR, THE MORTAR SHALL BE CURED FOR 4 HRS. MINIMUM BEFORE PUTTING WATER BACK TO THE REPAIR AREAS.

BASIS OF PAYMENT: THE BRICK MASONRY WORK DESCRIBED ABOVE SHALL BE PAID FOR AT THE CONTRACT SQUARE METER PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 602, AND TO THE SATISFACTION OF THE ENGINEER. DEWATERING WILL NOT BE PAID SEPARATELY, IT SHALL BE CONSIDERED INCIDENTAL TO THE WORK DESCRIBED ABOVE.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 6 M SPAN, AS PER PLAN

DESCRIPTION:

THIS WORK SHALL CONSIST OF:
1) THE REMOVAL OF THE ENTIRE SUPERSTRUCTURE INCLUDING, STRUCTURAL STEEL, BEARINGS, BEARING ANCHORS, DECK PLATE, ASPHALT CONCRETE DECKING, CONCRETE CURBS, BALLAST, DRAINAGE PIPES AND OTHER APPURTENANCES RELATED TO SUPERSTRUCTURE. SUPERSTRUCTURE SHALL BE REMOVED ONE COMPLETE SPAN AT A TIME. THE BALLAST, DRAINAGE PIPES, DECKING AND OTHER MISCELLANEOUS ITEMS SHALL BE REMOVED PRIOR TO REMOVING THE SUPERSTRUCTURE.

2) PIER SHALL BE REMOVED TO THE ELEVATION SHOWN ON PLANS.

PROTECTION OF TRAFFIC:

PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT HIS PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURES TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED IN THESE NOTES OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.
FOR MAINTENANCE OF TRAFFIC REQUIREMENTS DURING THE REMOVAL OPERATION, REFER TO MAINTENANCE OF TRAFFIC NOTES ON SHEET 17 & 18.

SUBSTRUCTURE CONCRETE REMOVAL

SHALL BE BY MEANS OF APPROVED SAW CUT OR PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE–RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 16 KILOGRAMS FOR REMOVAL WITHIN 450 mm OF PORTIONS TO BE PRESERVED. OUTSIDE THE 450 mm LIMIT, A HAMMER HEAVIER THAN 16 KILOGRAMS, BUT NOT TO EXCEED 41 KILOGRAMS, MAY BE USED AT THE APPROVAL OF THE ENGINEER. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

PAYMENT

THE PORTIONS OF STRUCTURE REMOVED WORK DESCRIBED ABOVE SHALL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER. THE TEMPORARY PROTECTION OF TRAFFIC DURING THE REMOVAL AND RECONSTRUCTION WORK SHALL NOT BE PAID SEPARATELY, IT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 614 – MAINTAINING TRAFFIC.

QUANTITIES INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

STRUCTURAL STEEL	257±	METRIC TON
SUBSTRUCTURAL CONCRETE	77±	CU METER

THE ABOVE QUANTITIES ARE GIVEN FOR INFORMATION ONLY. THE CONTRACTOR SHALL OBTAIN HIS OWN QUANTITIES TO BE USED AS A BASIS FOR DETERMINING HIS BID PRICES FOR ITEM 202. (WEIGHTS DO NOT INCLUDE BALLASTS ETC.)

ITEM 601 – ROCK CHANNEL PROTECTION TYPE A, WITH FILTER, AS PER PLAN

DESCRIPTION: THIS ITEM SHALL CONSISTS OF ALL REQUIREMENTS IN ITEM 601 AND THE FOLLOWING:

1. REMOVAL OF THE EXISTING CONCRETE RIPRAP AND STONE CHANNEL PROTECTION PROTECTION IN FRONT OF THE CUTOFF WALL AT THE OUTLET. CARE SHOULD BE EXERCISED NOT TO DAMAGE THE CUTOFF WALL OR ANY PART OF THE STRUCTURE.
2. PLACEMENT OF NO. 4 AGGREGATE FILTER BEDDING FOR A DEPTH OF 305 mm MINIMUM.
3. PLACEMENT OF TYPE A ROCK CHANNEL PROTECTION ON FILTER MATERIAL.
4. GROUTING OF CHANNEL PROTECTION AS FOLLOWS:
GROUT ALL CHANNEL PROTECTION AS PER CMS 601.03. PROVIDE UNIFORM GROUT PENETRATION FROM BOTTOM OF ROCK PROTECTION THROUGH TO THE FINISHED SURFACE, COMPLETELY FILLING THE VOIDS BETWEEN THE STONES. THE FINISHED GROUT SURFACE SHALL LEAVE MOSTLY LARGE FACE STONES EXPOSED FOR 1/4 TO 1/2 THEIR DEPTH.
5. EXCAVATION AND DEWATERING ASSOCIATED WITH THE PLACEMENT OF THE ROCK CHANNEL PROTECTION DESCRIBED ABOVE.

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
	STA–21–17122 – WETMORE CREEK PRESSURE CONDUIT			
SPECIAL	51267510	27	SQ. METER	SEALING OF CONCRETE SURFACES (EPOXY–URETHANE) *
601	32001	20	CU. METER	ROCK CHANNEL PROTECTION, TYPE A WITH FILTER, AS PER PLAN
602	10003	235	SQ. METER	BRICK MASONRY, AS PER PLAN
	STA–21–17193 – ABANDONED RAILROAD STRUCTURE			
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 6 M SPAN, AS PER PLAN
511	51100	3.6	CU METER	CLASS C CONCRETE, MISC.: CAP TOP OF EXISTING PIER
SPECIAL	51267510	72	SQ. METER	SEALING OF CONCRETE SURFACES (EPOXY–URETHANE) *
	STA–21–17509 – SIPPO CREEK PUMPING STATION			
SPECIAL	51267510	143	SQ. METER	SEALING OF CONCRETE SURFACES (EPOXY–URETHANE) *
	STA–21–17756 – LINCOLN WAY BRIDGE			
SPECIAL	51267510	117	SQ. METER	SEALING OF CONCRETE SURFACES (EPOXY–URETHANE) *
	STA–21–17850 – FEDERAL AVENUE PUMPING STATION			
SPECIAL	51267510	103	SQ. METER	SEALING OF CONCRETE SURFACES (EPOXY–URETHANE) *
601	34100	17	CU. METER	ROCK CHANNEL PROTECTION, TYPE B WITHOUT FILTER
843	50000	1.0	SQ. METER	PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR

* SEE PROPOSAL NOTE

PROPOSED WORK:

STA–21–17122: WETMORE CREEK PRESSURE CONDUIT — REMOVE EXISTING LOOSE BRICK LINING AND INSTALL MISSING & NEW BRICK LINING AT THE CULVERT WALL FLOOR, SEAL CONCRETE HEADWALL AND INSTALL ROCK CHANNEL PROTECTION AT THE OUTLET. DEWATERING DURING CONSTRUCTION WILL BE REQUIRED.

STA–21–17193: ABANDONED RAILROAD STRUCTURE — REMOVAL OF ENTIRE SUPERSTRUCTURE, BEARINGS AND PORTION OF PIER. RECAP AND SEAL REMOVAL SURFACE AT PIER. TEMPORARY PROTECTION OF TRAFFIC DURING REMOVAL AND RECONSTRUCTION WILL BE REQUIRED.

STA–21–17509: SIPPO CREEK PUMP STATION — SEAL CONCRETE HEADWALL AT THE OUTLET WITH EPOXY–URETHANE SEALER. SEAL EXPOSED SURFACES OF CONCRETE AT THE INLET AS SHOWN WITH EPOXY–URETHANE SEALER.

STA–21–17756: LINCOLN WAY BRIDGE — SEAL EASTERNMOST PIER (PIER NO. 1) WITH EPOXY–URETHANE SEALER.

STA–21–17850: FEDERAL AVENUE PUMP STATION — SEAL CONCRETE HEADWALL AT THE OUTLET WITH EPOXY–URETHANE SEALER. SEAL ALL EXPOSED SURFACES OF CONCRETE AT THE INLET WITH EPOXY–URETHANE SEALER. DUMP ROCK CHANNEL PROTECTION BEHIND THE WINGWALL AT THE INLET AREA. PATCHING SPALLS AT THE INLET PUMP STATION WITH TROWELABLE MORTAR.

STRUCTURE NUMBERS:

STA–21–17122 IS EQUIVALENT TO ENGLISH SYSTEM STA–21–1065.
STA–21–17193 IS EQUIVALENT TO ENGLISH SYSTEM STA–21–1068.
STA–21–17509 IS EQUIVALENT TO ENGLISH SYSTEM STA–21–1089.
STA–21–17756 IS EQUIVALENT TO ENGLISH SYSTEM STA–21–1105.
STA–21–17850 IS EQUIVALENT TO ENGLISH SYSTEM STA–21–1110.

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
1300 EAST NINTH STREET
CLEVELAND, OHIO 44114

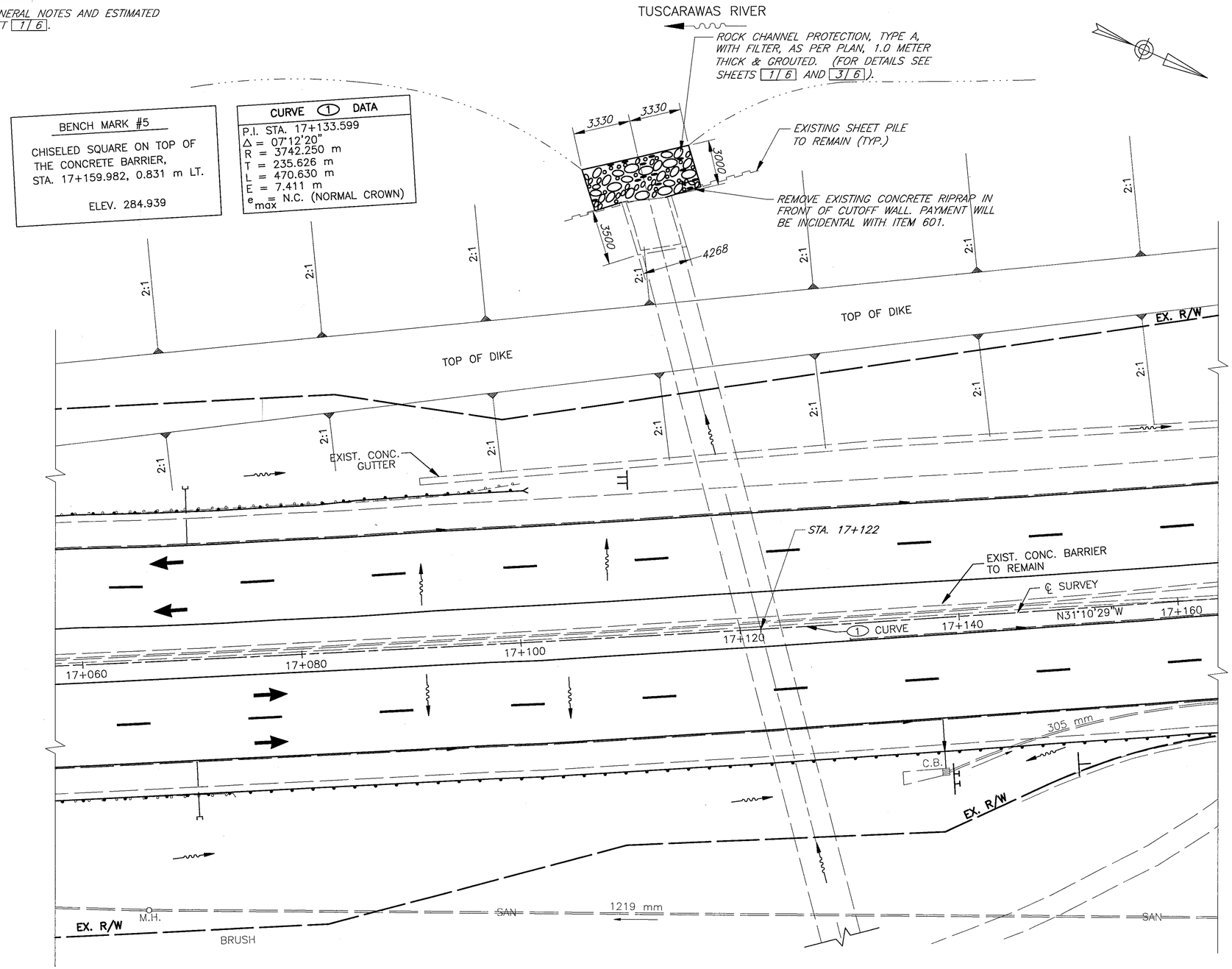
DESIGNED BK | DRAWN FGR | CHECKED JRS | REVIEWED GTA | DATE 12/1/98 | STRUCTURE FILE NUMBER

STRUCTURE GENERAL NOTES AND ESTIMATED QUANTITIES
STA–21–17122, STA–21–17193, STA–21–17509, STA–21–17756, STA–21–17850

STA–21–16.574

NOTE:

1. FOR WETMORE CREEK PRESSURE CONDUIT BRICK FLOOR REPAIR PLAN AND LIMIT OF CONCRETE SEALING SEE SHEET 3/6.
2. FOR STRUCTURAL GENERAL NOTES AND ESTIMATED QUANTITIES SEE SHEET 1/6.



BENCH MARK #5

CHISELED SQUARE ON TOP OF THE CONCRETE BARRIER, STA. 17+159.982, 0.831 m LT.

ELEV. 284.939

CURVE 1 DATA

P.I. STA. 17+133.599
Δ = 07°12'20"
R = 3742.250 m
T = 235.626 m
L = 470.630 m
E = 7.411 m
e_{max} = N.C. (NORMAL CROWN)

PLAN

metric units

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
1300 EAST NINTH STREET
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
BK	SMG	GTA	12/1/98
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JRS		7600240	

GENERAL PLAN
STA-21-17122
WETMORE CREEK PRESSURE CONDUIT

STA-21-16.574

2/6

116/120

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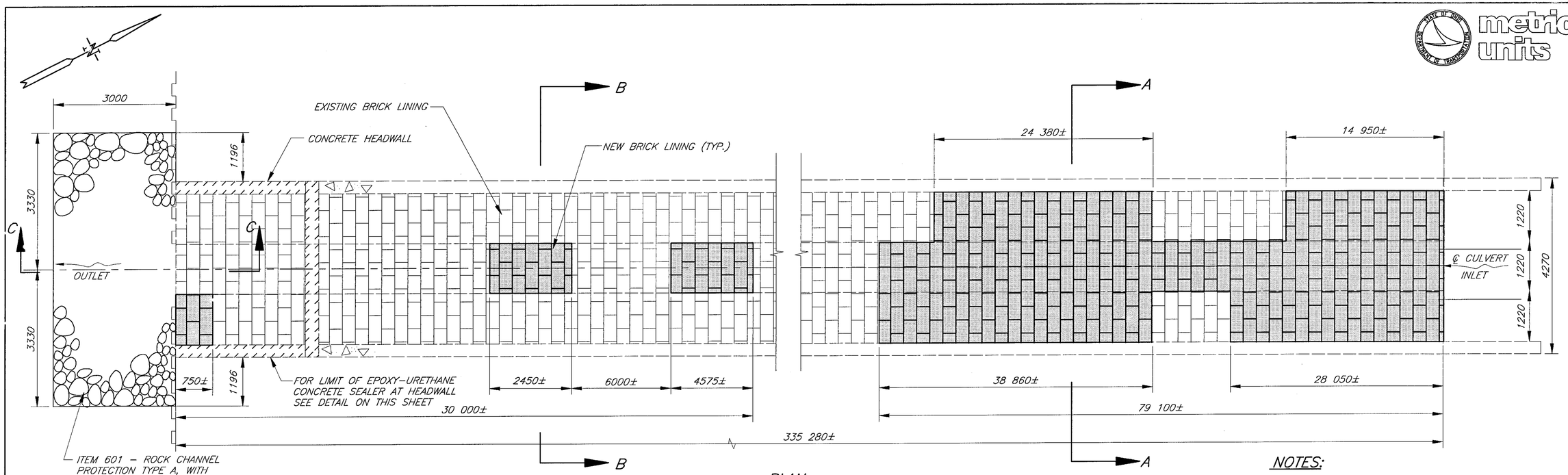


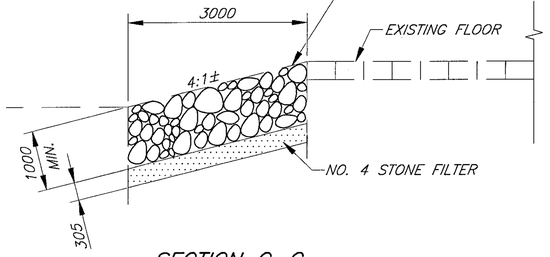
PLAN
(N.T.S.)
WETMORE CREEK PRESSURE CONDUIT
(FLOOR OF CULVERT SHOWN)

NOTES:

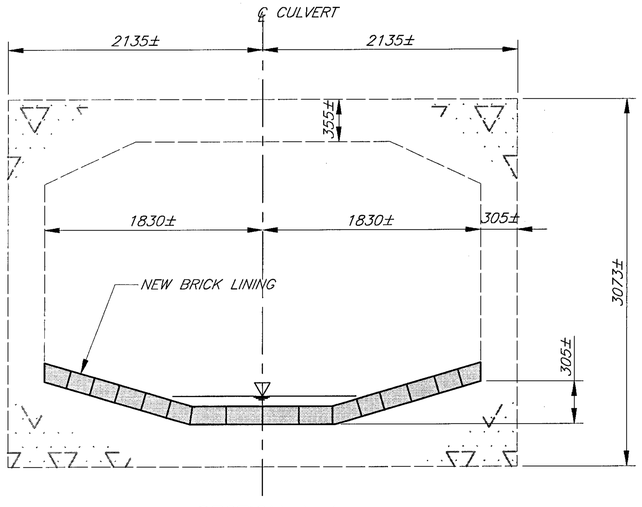
1. FOR WETMORE CREEK CONDUIT PLAN SEE SHEET 2 | 6.
2. OSHA'S CONFINED SPACE CRITERIA
   – CONTRACTOR MUST COMPLY TO CONFINED SPACE CRITERIA
   – CONTRACTOR TO PROVIDE INFORMATION AT PRECONSTRUCTION CONFERENCE

LEGEND

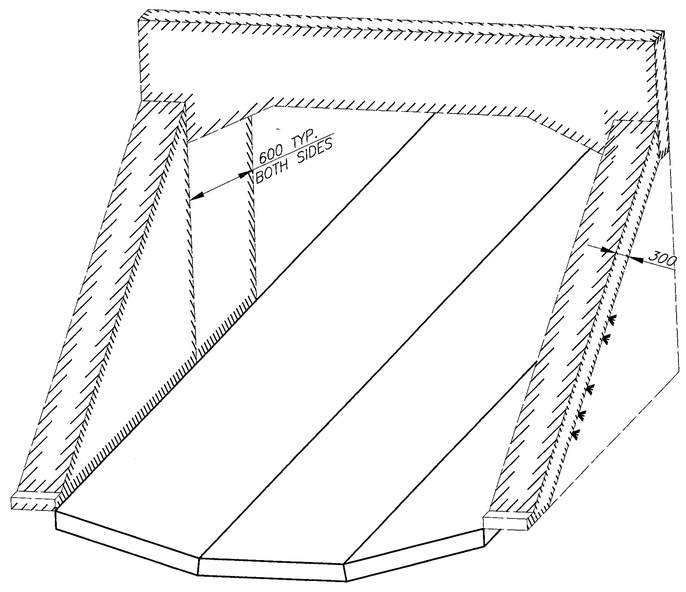
ITEM SPECIAL – SEALING OF CONCRETE SURFACES (EPOXY–URETHANE)



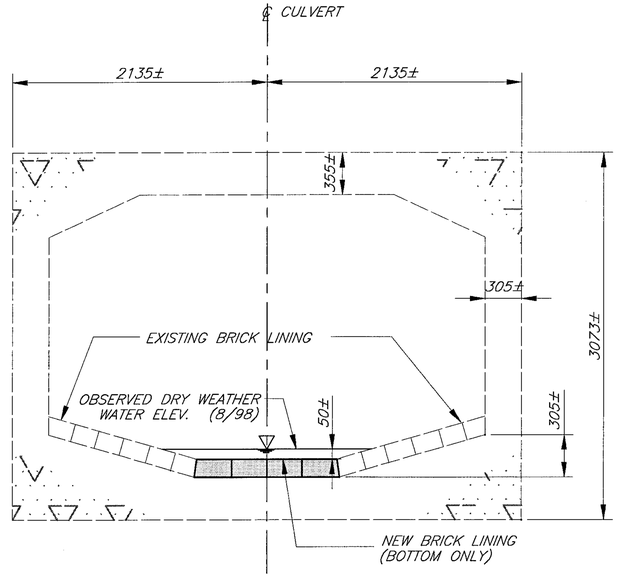
SECTION C–C



SECTION A–A



LIMIT OF EPOXY–URETHANE SEALING OF CONCRETE OUTLET HEADWALL



SECTION B–B

Filename = VOL1M/ODOT-M/DW30/CIVIL/DW30577D.DWG
Plot Scale = 1.000 '/ Inch
Drawn By/Date = Plotter / DN-15-98 (13:04)

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
1300 EAST NINTH STREET
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVISED	DATE
BK	VM	GTA	12/1/98
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JRS		7600240	

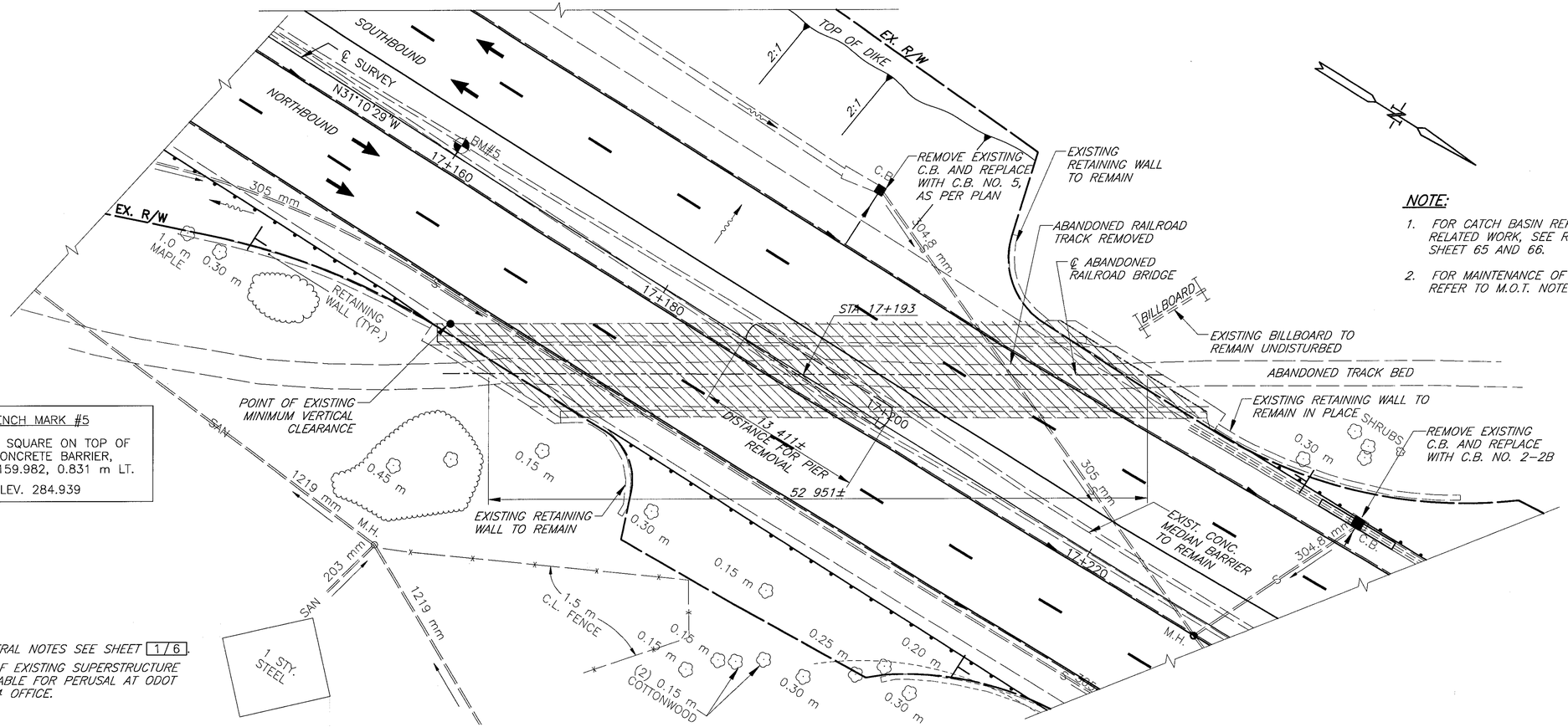
REPAIR PLAN FOR BRICK FLOOR
STA–21–17122
WETMORE CREEK PRESSURE CONDUIT

STA–21–16.574

3 | 6

117
120

metric units



BENCH MARK #5

CHISELED SQUARE ON TOP OF THE CONCRETE BARRIER, STA. 17+159.982, 0.831 m LT.

ELEV. 284.939

NOTE:

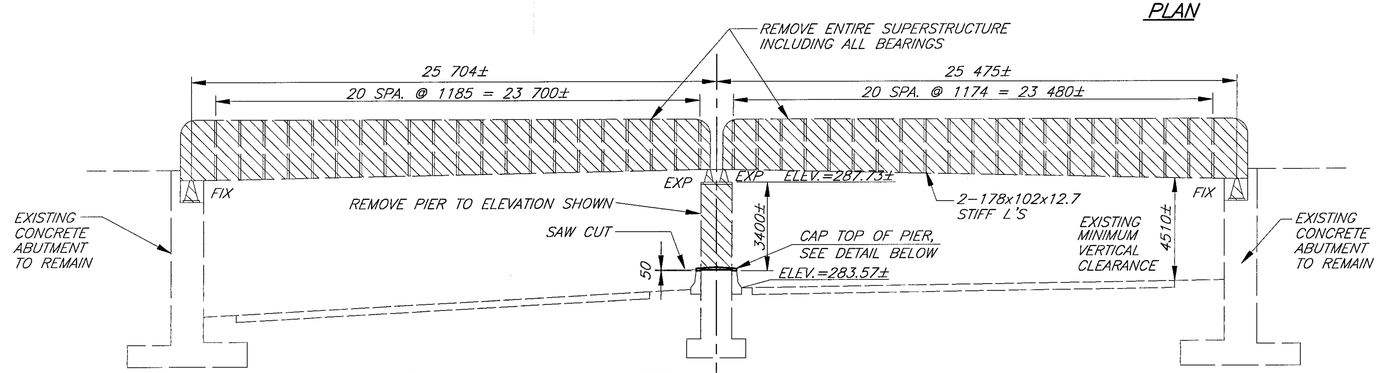
1. FOR CATCH BASIN REPLACEMENT AND RELATED WORK, SEE ROADWAY PLAN SHEET 65 AND 66.
2. FOR MAINTENANCE OF TRAFFIC REQUIREMENTS, REFER TO M.O.T. NOTES ON SHEET 17 & 18.

NOTES:

1.) FOR GENERAL NOTES SEE SHEET 1/6.

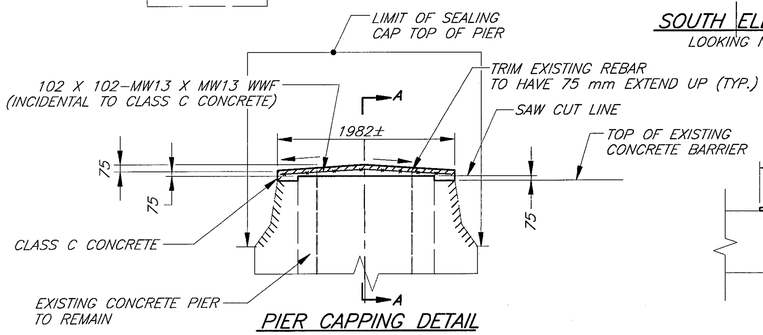
2.) DETAILS OF EXISTING SUPERSTRUCTURE ARE AVAILABLE FOR PERUSAL AT ODOT DISTRICT 4 OFFICE.

PLAN

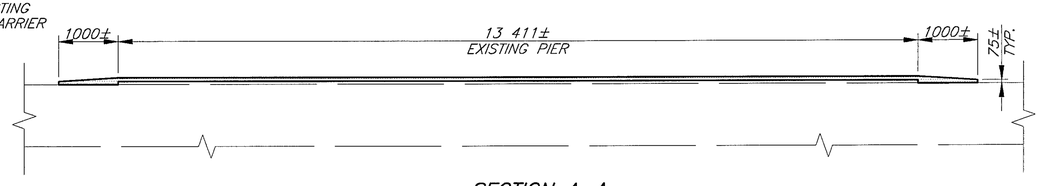


SOUTH ELEVATION

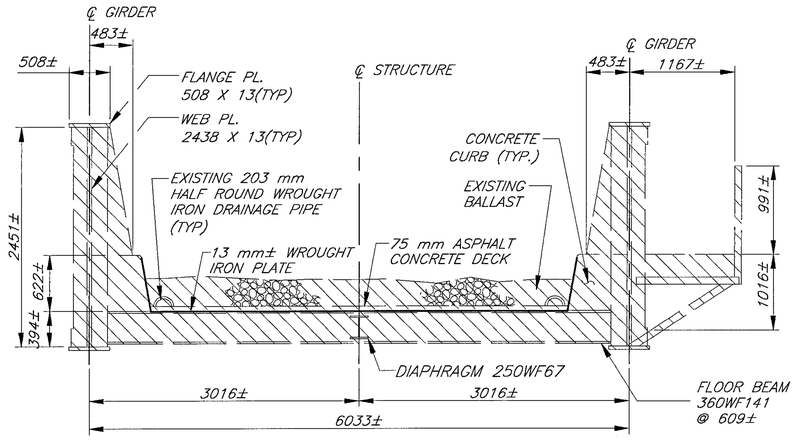
LOOKING NORTH



PIER CAPPING DETAIL



SECTION A-A



TYPICAL SECTION

OF ABANDONED RAILROAD BRIDGE

LEGEND

ITEM 202, PORTION OF STRUCTURE REMOVED, OVER 6 M SPAN, AS PER PLAN.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
1300 EAST NINTH STREET
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
BK	FGR	GTA	12/1/98
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JRS		7600275	

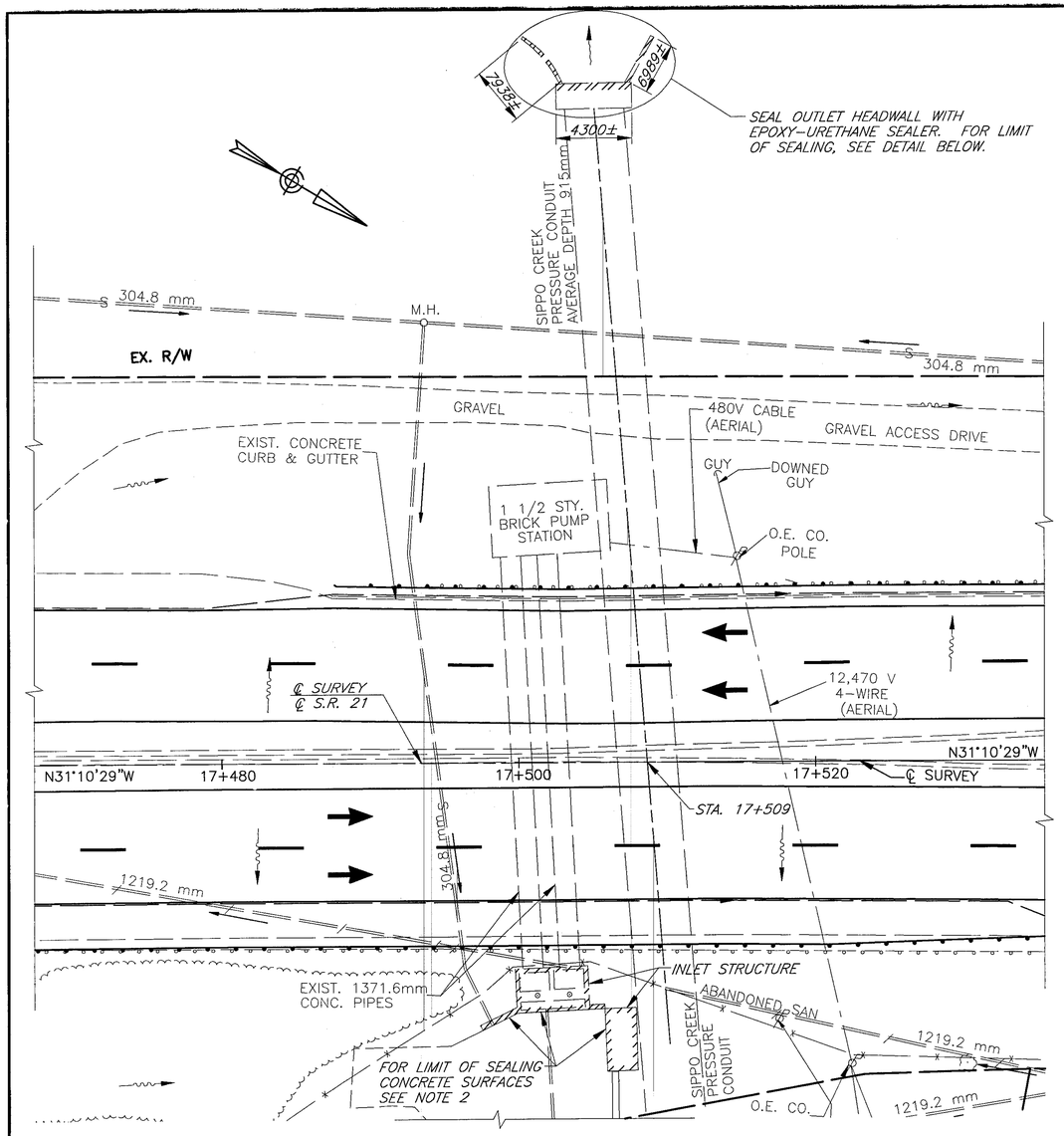
STRUCTURE DEMOLITION

STA-21-17193

ABANDONED RAILROAD BRIDGE

STA-21-16.574

Filename = K:\ADLIN\ODOT-M\0830\STRUCT\0830S771
Plot Scale = 1in1
Drawn By/Date = cgmurphy / 02-24-97 (14:5)



PLAN

STA-21-17509

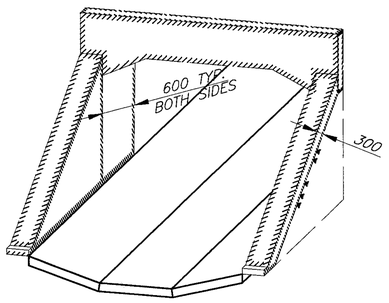
SIPPO CREEK PUMP STATION

NOTES:

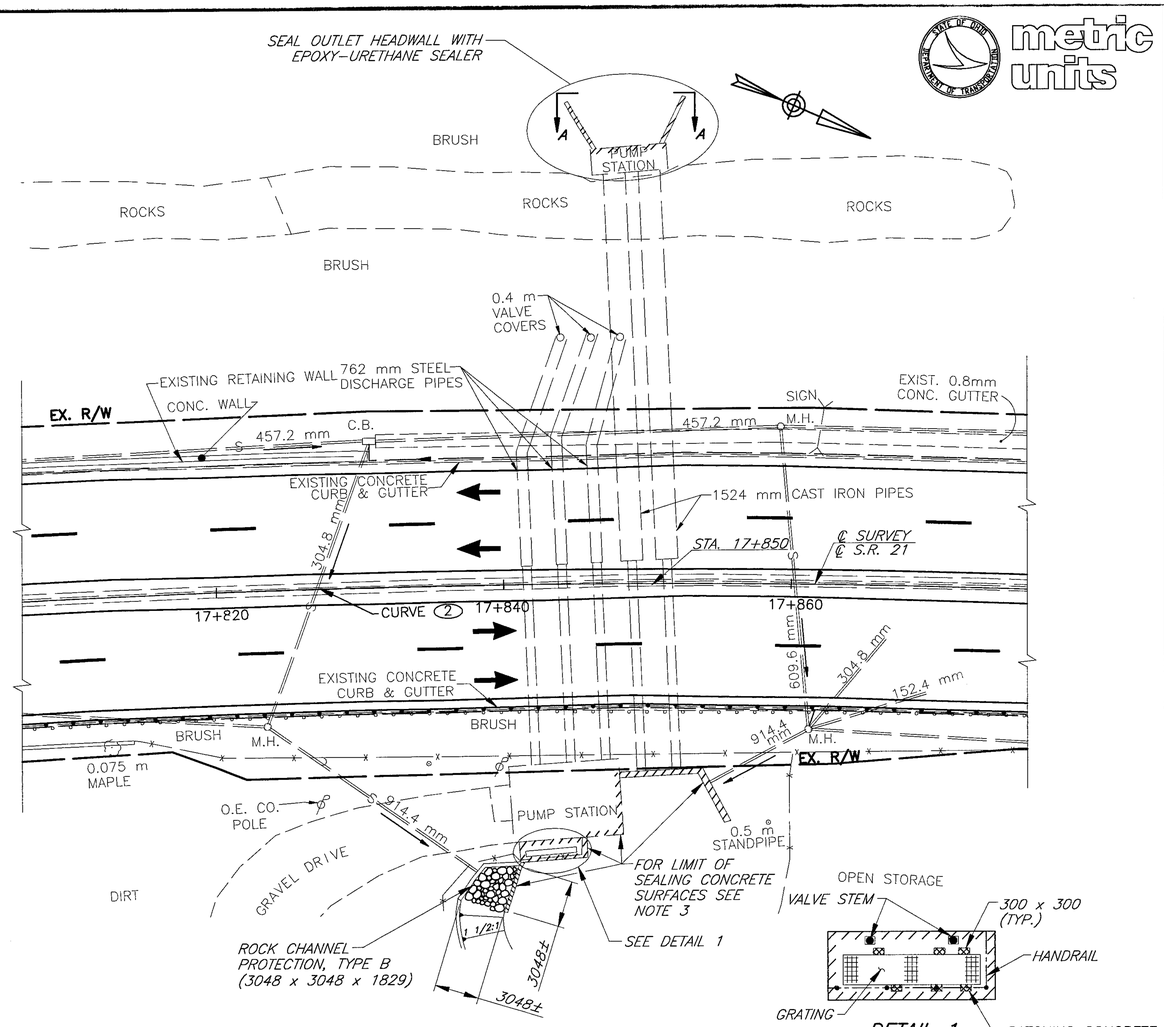
1. FOR STRUCTURAL GENERAL NOTES AND ESTIMATED QUANTITIES SEE SHEET 1/6.
2. SEAL EXPOSED SURFACES OF CONCRETE DOWN TO CONCRETE SLOPE PROTECTION, INCLUDING THE TOP AND ALL SIDES OF INLET STRUCTURES.
3. SEAL EXPOSED SURFACE OF CONCRETE DOWN TO THE SURFACE OF WATER (APPROXIMATELY 2134 mm± FROM THE TOP OF WALL) INCLUDING TOP OF WINGWALL AND TOP OF INLET STRUCTURE.
4. THE CONSTRUCTION SHALL BE PERFORMED IN THE DRY SEASON AT WHICH TIME THE FLOW IS AT ITS LOWEST LEVEL.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

ITEM SPECIAL - PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR



LIMIT OF EPOXY-URETHANE SEALING OF OUTLET HEADWALL



PLAN

STA-21-17850

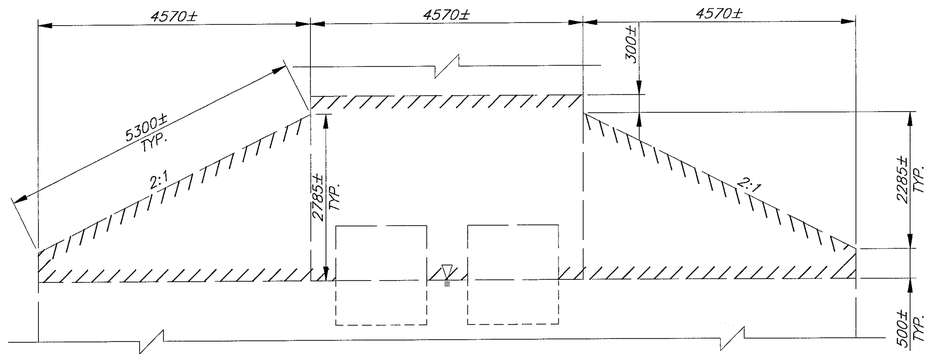
FEDERAL AVENUE PUMP STATION

* TO BE USED AS DIRECTED BY THE ENGINEER

DETAIL 1

(TOP OF INLET STRUCTURE)

ITEM SPECIAL - PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR	
MEASURED QUANTITY	0.54 SQ. METER
* CONTINGENCY QUANTITY	0.46 SQ. METER
ESTIMATED QUANTITY	1.0 SQ. METER



ELEVATION A-A

metric units

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
1300 EAST NINTH STREET
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
BK	SMG	JRS	12/1/98
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JRS		7600364, 7600453	

SEALING LIMIT OF OUTLET HEADWALL

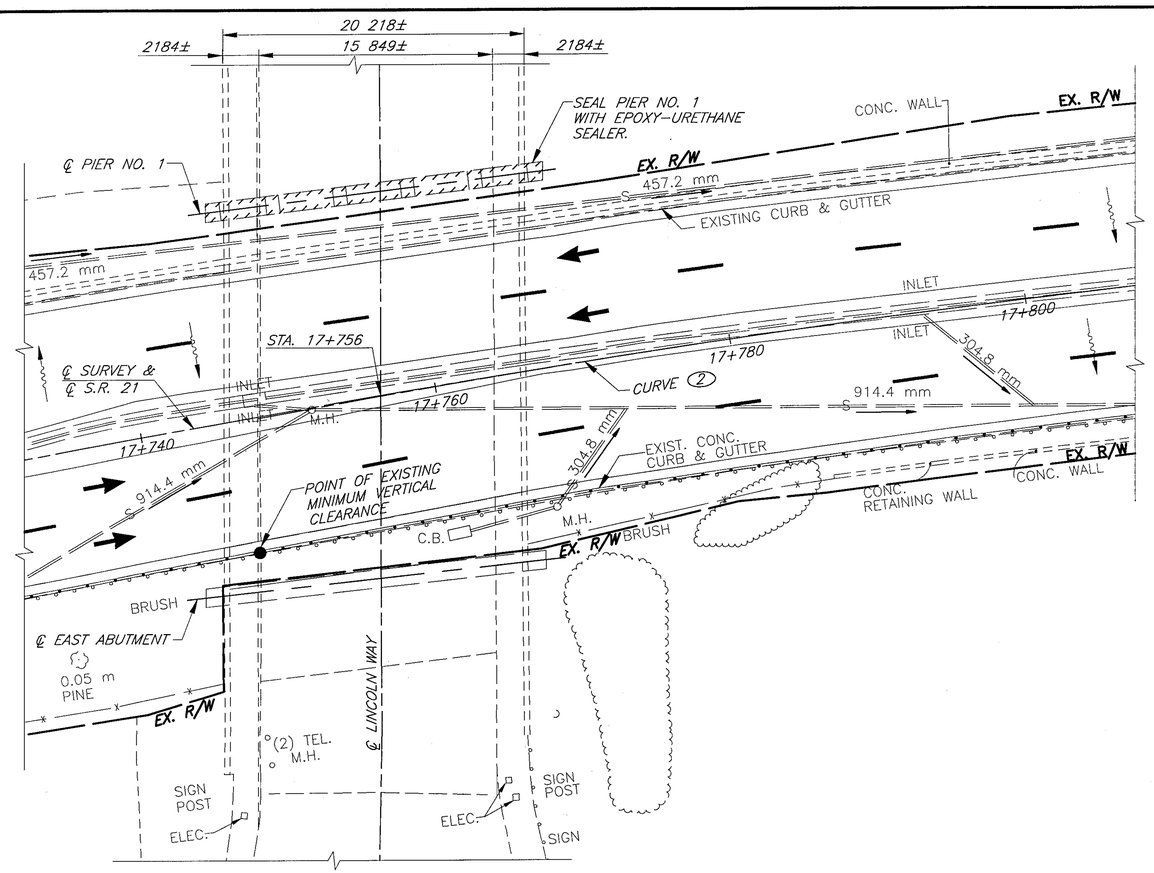
STA-21-17509 - SIPPO CREEK PUMP STATION

STA-21-17850 - FEDERAL AVENUE PUMP STATION

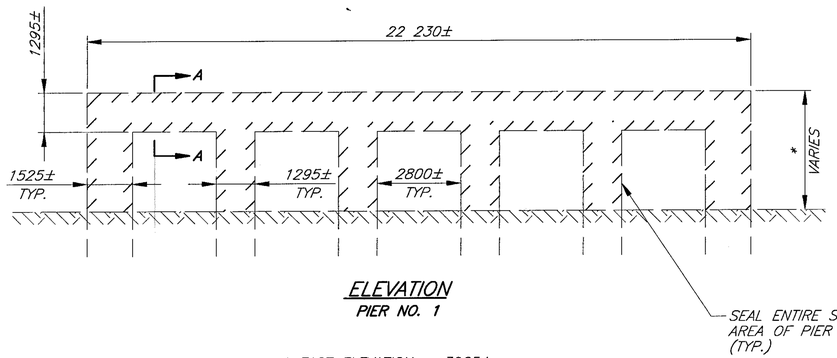
STA-21-16.574

5 / 6

119 / 120

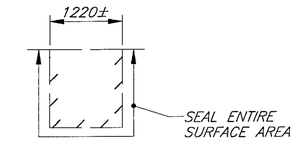


PLAN



ELEVATION
PIER NO. 1

* EAST ELEVATION = 3965±
WEST ELEVATION = 2440±



SECTION A–A

ITEM SPECIAL – SEALING OF CONCRETE SURFACES (EPOXY–URETHANE)

NOTES

1. FOR STRUCTURAL GENERAL NOTES AND ESTIMATED QUANTITIES SEE SHEET 1/6.
2. SEAL ENTIRE SURFACE AREA OF PIER CAP AND COLUMNS EXCEPT TOP OF PIER CAP.

metric units

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
1300 EAST NINTH STREET
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
BK	SMG	GTA	12/1/98
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JRS		7600682	

SEALING LIMITS OF PIER NO. 1

STA–21–17756
LINCOLN WAY BRIDGE

STA–21–16.574

6/6

120/120