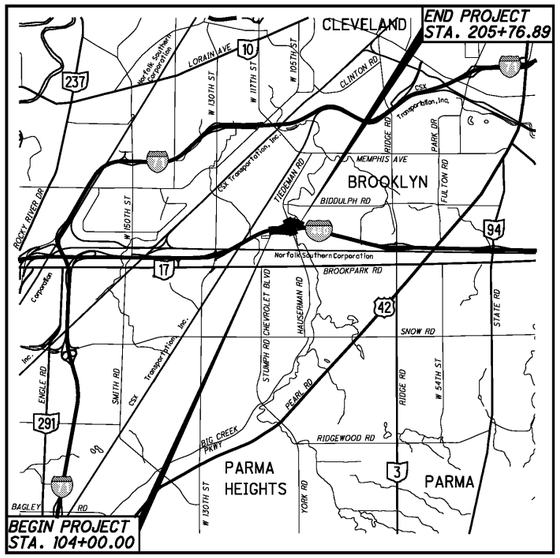


LOCATION MAP

LATITUDE: N40°20'10" LONGITUDE: W82°52'55"

SCALE IN MILES

0 1 2 3 4

N

PORTION TO BE IMPROVED

INTERSTATE HIGHWAY

STATE & FEDERAL ROUTES

COUNTY & TOWNSHIP ROADS

OTHER ROADS

DESIGN DESIGNATION

	TIEDEMAN ROAD	I-480	TIEDEMAN ROAD TO I-480 WB (RAMP T-1)	I-480 EB TO TIEDEMAN ROAD (RAMP T-2)	I-480 WB TO TIEDEMAN ROAD (RAMP T-3)	TIEDEMAN ROAD TO I-480 EB (RAMP T-4)
CURRENT ADT (2013)	24,000	120,500	6,610	6,420	7,600	8,730
DESIGN YEAR ADT (2033)	24,000	120,500	6,610	6,420	7,600	8,730
DESIGN HOURLY VOLUME (2033)	2,300	11,900	710	990	940	900
DIRECTIONAL DISTRIBUTION	53%	51%				
TRUCKS (24 HOUR B&C)	4%	8%	3%	2%	6%	4%
DESIGN SPEED	40 MPH	65 MPH	35 MPH	45 MPH/35 MPH	35 MPH	35 MPH
LEGAL SPEED	35 MPH	60 MPH				
DESIGN FUNCTIONAL CLASSIFICATION:	URBAN MINOR ARTERIAL	URBAN INTERSTATE	URBAN INTERSTATE RAMP	URBAN INTERSTATE RAMP	URBAN INTERSTATE RAMP	URBAN INTERSTATE RAMP
NHS PROJECT	NO	YES	YES	YES	YES	YES

DESIGN EXCEPTIONS - NONE

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL
1-800-362-2764
(TOLL FREE)

OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

OIL & GAS PRODUCERS PROTECTIVE SERVICE CALL: 1-800-925-0988

PLAN PREPARED BY:

URS

564 WHITE POND DRIVE
AKRON, OHIO 44320-1100
(330) 836-9111

ENGINEERS SEAL:

STATE OF OHIO
MATTHEW EDWIN PHILIPS
E-76821
REGISTERED PROFESSIONAL ENGINEER

SIGNED:

DATE: March 17, 2014

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

CUY-480-11.60

CITY OF BROOKLYN

CUYAHOGA COUNTY

INDEX OF SHEETS:

PROJECT DESCRIPTION

IMPROVEMENTS WILL INCLUDE THE RECONSTRUCTION OF 0.21 MILES OF THE I-480 EASTBOUND EXIT RAMP TO TIEDEMAN ROAD; THE RECONSTRUCTION OF 0.10 MILES OF THE I-480 WESTBOUND EXIT RAMP TO TIEDEMAN ROAD; MINOR WIDENING OF THE ENTRANCE RAMPS; THE UPGRADED SIGNALIZATION OF THE EXIT/ENTRANCE RAMP INTERSECTIONS WITH TIEDEMAN ROAD; SIGNAL RETIMING AND COORDINATION ALONG TIEDEMAN ROAD BETWEEN BROOKPARK ROAD AND BIDDULPH ROAD INCLUDING NEW CURBS, RAISED CONCRETE MEDIANS, CURB RAMPS, DRAINAGE, NEW SIGNING AND PAVEMENT MARKINGS.

PROJECT EARTH DISTURBED AREA:	3.78 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.30 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	4.90 ACRES

LIMITED ACCESS

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

2013 SPECIFICATIONS

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

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

APPROVED FOR CONSTRUCTION PLANS MARCH 17, 2014

AS-BUILT DRAWINGS

STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS	
BP-2.1	7/19/13	DM-1.1	1/18/13	HL-20.11	1/17/14	MT-110.10	7/19/13	TC-51.12	1/17/14	800-2013	10/18/13
BP-2.2	7/18/08	DM-1.2	1/18/13	HL-30.11	1/17/14			TC-52.10	10/18/13	805	7/16/10
BP-2.3	7/19/13	DM-1.4	1/18/13	HL-30.21	1/17/14	TC-9.10	1/17/14	TC-52.20	1/17/14	821	4/20/12
BP-2.5	7/19/13	DM-4.2	7/20/12	HL-30.22	1/17/14	TC-16.21	10/18/13	TC-61.30	1/17/14	832	10/18/13
BP-3.1	4/20/12	DM-4.3	7/19/13			TC-21.10	10/18/13	TC-65.10	1/17/14	902	12/31/12
BP-5.1	7/19/13	DM-4.4	7/20/12	MT-95.31	7/19/13	TC-21.20	10/18/13	TC-65.11	1/17/14	903	7/20/12
BP-6.1	7/19/13			MT-95.32	7/19/13	TC-22.10	10/18/13	TC-71.10	1/17/14	921	4/20/12
BP-7.1	10/15/10	MGS-1.1	7/19/13	MT-95.41	7/19/13	TC-22.20	1/17/14	TC-81.10	10/18/13		
		MGS-2.1	7/19/13	MT-97.11	7/19/13	TC-41.10	7/19/13	TC-81.21	1/17/14		
CB-2.2	1/17/14	MGS-4.2	7/19/13	MT-98.20	7/19/13	TC-41.20	10/18/13	TC-82.10	10/18/13		
		MGS-4.3	1/18/13	MT-98.21	7/19/13	TC-41.30	10/18/13	TC-83.20	10/18/13	SPECIAL PROVISIONS	
MH-1.1	1/18/13	MGS-5.2	7/19/13	MT-98.28	7/19/13	TC-41.40	10/18/13	TC-85.20	10/18/13		
MH-1.2	1/18/13	MGS-5.3	7/19/13	MT-99.20	7/19/13	TC-41.41	10/18/13				
MH-3.1	1/18/13			MT-101.70	1/17/14	TC-41.50	10/18/13				
		RM-1.1	1/18/13	MT-101.90	7/19/13	TC-42.20	10/18/13				
		RM-3.1	7/19/13	MT-105.10	7/19/13	TC-51.11	1/17/14				

FEDERAL PROJECT NO. E130 (241)

PID NO. 94723

CONSTRUCTION PROJECT NO. CUY-480-11.60

RAILROAD INVOLVEMENT NONE

1
84

T-1A ℄ EX. RAMP T-1
CURVE DATA
P.I.Sta. 1632+58.80
Δ = 12° 39′ 07″ (LT)
Dc = 4° 00′ 00″
R = 1,432.40′
T = 158.80′
L = 316.30′
E = 8.78′
eMAX = 0.0419

I-480 ℄ EX. I-480
CURVE DATA
P.I.Sta. 634+64.69
Δ = 44° 06′ 29″ (RT)
Dc = 1° 00′ 00″
R = 5,729.58′
T = 2,321.19′
L = 4,410.81′
E = 452.33′
eMAX = 0.024
P.C.Sta. 611+43.51
P.T.Sta. 655+54.32

T-3A ℄ CONSTR. RAMP T-3
CURVE DATA
P.I.Sta. 203+42.04
Δ = 21° 30′ 23″ (RT)
Dc = 4° 45′ 00″
R = 1,206.23′
T = 229.08′
L = 452.77′
E = 21.56′
eMAX = 0.038
DESIGN SPEED = 35 MPH

TIEDEMAN ROAD
Ex R/W
S 19° 45′ 42″ E
50
BEGIN WORK STA. 51+50.00
TBM1
BIG CREEK
E130 (241)
END PROJECT STA. 205+76.89
END WORK STA. 205+76.89
PC Sta. 201+12.96
PT Sta. 205+65.73
STA. 1639+01.99 ℄ EX RAMP T-1 = STA. 55+00.00 ℄ EX. TIEDEMAN ROAD
STA. 200+00.00 ℄ CONSTR. RAMP T-3 = STA. 55+25.26 ℄ EX. TIEDEMAN ROAD
CNPT2
Ex LA
℄ CONSTR. RAMP T-3
℄ EX. RAMP T-1
RAMP T-1
RAMP T-3
S 89° 45′ 44″ E
T-3A
PC Sta. 1631+00.00
PT Sta. 1634+16.30
T-1A
N 63° 56′ 17″ E
CNPT3
℄ EX. TIEDEMAN ROAD
BEGIN WORK STA. 1637+75.00
℄ EX. I-480
STA. 639+36.59 ℄ EX. I-480 = STA. 58+48.32 ℄ EX. TIEDEMAN ROAD
STRUCTURE FILE No. 81453358
NO WORK
S 68° 15′ 21″ E
N 76° 35′ 25″ E
I-480
STRUCTURE FILE No. 1812939
NO WORK
PI Sta. 60+25.00
NO CURVE
Δ = 0°12′15″ RT
END WORK STA. 4641+85.66
PI Sta. 61+75.00
NO CURVE
Δ = 0°03′53″ LT
BEGIN WORK STA. 103+90.00
N 88° 30′ 38″ E
℄ CONSTR. RAMP T-2
CNPT1
S 88° 20′ 13″ E
RAMP T-2
S 19° 33′ 27″ E
CNPT5
N 77° 52′ 48″ E
RAMP T-4
℄ EX. RAMP T-4
T-4A
STRUCTURE FILE No. 1812947
NO WORK
T-2A
T-2B
T-2C
PC Sta. 100+00.00
BEGIN PROJECT STA. 104+00.00
E130 (241)
PT Sta. 105+00.00
PC Sta. 106+35.94
PT Sta. 108+37.19
PC Sta. 110+98.48
PT Sta. 114+43.99
I.P.F.
EX. MON BOX ADJ. TO GRADE
TBM2
PC Sta. 4646+40.41
PT Sta. 4651+00.00
STA. 115+65.97 ℄ CONSTR. RAMP T-2 = STA. 4640+50.74 ℄ EX. RAMP T-4 = STA. 61+75.00 ℄ EX. TIEDEMAN ROAD
Ex R/W
S 19° 37′ 20″ E
END WORK STA. 64+00.00
BIG CREEK

T-2A ℄ CONSTR. RAMP T-2
CURVE DATA
P.I.Sta. 102+51.44
Δ = 15° 00′ 00″ (RT)
Dc = 3° 00′ 00″
R = 1,909.86′
T = 251.44′
L = 500.00′
E = 16.48′
eMAX = 0.039
DESIGN SPEED = 45 MPH

T-2B ℄ CONSTR. RAMP T-2
CURVE DATA
P.I.Sta. 107+36.82
Δ = 10° 03′ 46″ (RT)
Dc = 5° 00′ 00″
R = 1,145.92′
T = 100.89′
L = 201.26′
E = 4.43′
eMAX = 0.051
DESIGN SPEED = 35 MPH

T-2C ℄ CONSTR. RAMP T-2
CURVE DATA
P.I.Sta. 112+71.45
Δ = 6° 54′ 37″ (LT)
Dc = 2° 00′ 00″
R = 2,864.79′
T = 172.97′
L = 345.52′
E = 5.22′
eMAX = 0.021
DESIGN SPEED = 35 MPH

T-4A ℄ EX. RAMP T-4
CURVE DATA
P.I.Sta. 4648+72.73
Δ = 20° 40′ 54″ (RT)
Dc = 4° 30′ 00″
R = 1,273.24′
T = 232.32′
L = 459.59′
E = 21.02′
eMAX = 0.0469

HORIZONTAL SCALE IN FEET
0 50 100 200
CALCULATED AMP
CHECKED MEP

SCHEMATIC PLAN

CUY-480-11.60

POINT	POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION	STATION	OFFSET	REFERENCE ALIGNMENT
CNPT1	1	641605.950	2171304.133	779.38	CAPPED "URS CORP CONTROL POINT" REBAR SET ON NW CORNER OF I-480 EB OFF RAMP AND TIEDEMAN. 3.5' N OF N EDGE OF PAVEMENT FOR OFF RAMP & 3.2' W OF W EDGE OF PAVEMENT OF TIEDEMAN.	115+15.48	24.21' LT.	℄ CONSTR. RAMP T-2
CNPT2	2	642228.349	2171121.768	778.14	MAGS IN CONC. ISLAND IN ℄ OF TIEDEMAN & ON N SIDE OF INTERSECTION OF I-480 WB ON AND OFF RAMPS & TIEDEMAN. MAG SET IN CENTER OF ABOVE MENTIONED CONC. ISLAND AND 20.5' N OF S END OF CONC. ISLAND.	54+86.61	0.13' LT.	℄ EX. TIEDEMAN
CNPT3	3	642030.209	2170728.679	768.41	CAPPED "URS CORP CONTROL POINT" REBAR SET 3.0' N OF N EDGE OF BERM OF ON RAMP FROM TIEDEMAN TO I-480 WB AT APPROX. LONGITUDINAL CENTER OF RAMP.	1634+63.42	8.00' LT.	℄ EX. RAMP T-1
CNPT5	5	641665.826	2171378.284	780.01	CAPPED "URS CORP CONTROL POINT" REBAR ON E SIDE OF TIEDEMAN 60' FROM N CURB LINE OF I-480 EB ON RAMP AND 6.5' FROM BACK OF WALK.	61+02.55	51.62' LT.	℄ EX. TIEDEMAN
TBM1	260	642581.1	2170949.3	770.35	CHS "+" SE ANCHOR BOLT ON LIGHT POLE 42.1' W ℄ TIEDEMAN AND 221.3' S OF ℄ DRIVE TO PLAIN DEALER.	50+96.37	42.94' RT.	℄ EX. TIEDEMAN
TBM2	843	641458.6	2171351.5	777.25	CHS "+" NE ANCHOR BOLT ON OVERHEAD SIGN FOUNDATION, 43.5' W ℄ TIEDEMAN AND 133.7' S ℄ I-480 EB OFF RAMP.	62+88.80	43.15' RT.	℄ EX. TIEDEMAN

CALCULATED MEP
CHECKED FR

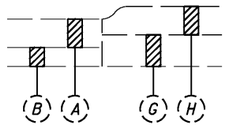
PROJECT CONTROL INFORMATION

PRIMARY PROJECT

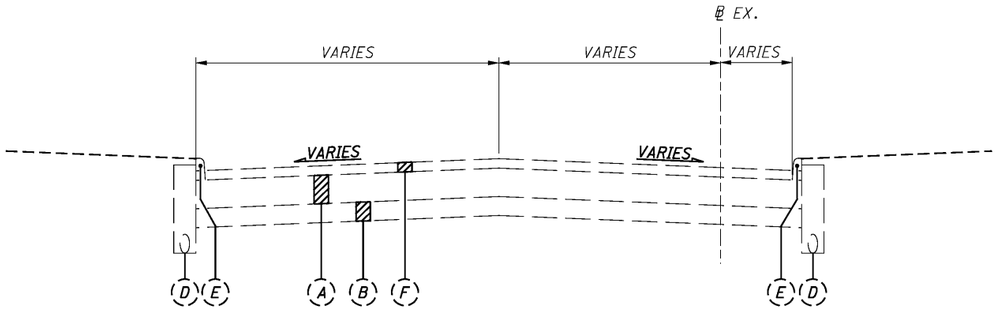
CUY-480-11.60

EXISTING LEGEND

- (A) 9"± REINFORCED CONCRETE PAVEMENT
- (B) 6"± SUBBASE
- (C) 6"± BITUMINOUS AGGREGATE BASE
- (D) 6" UNDERDRAIN
- (E) 6"x7" INTEGRAL CONCRETE CURB
- (F) 3"± ASPHALT CONCRETE
- (G) 10"± SUBBASE
- (H) 9"± CONCRETE MEDIAN

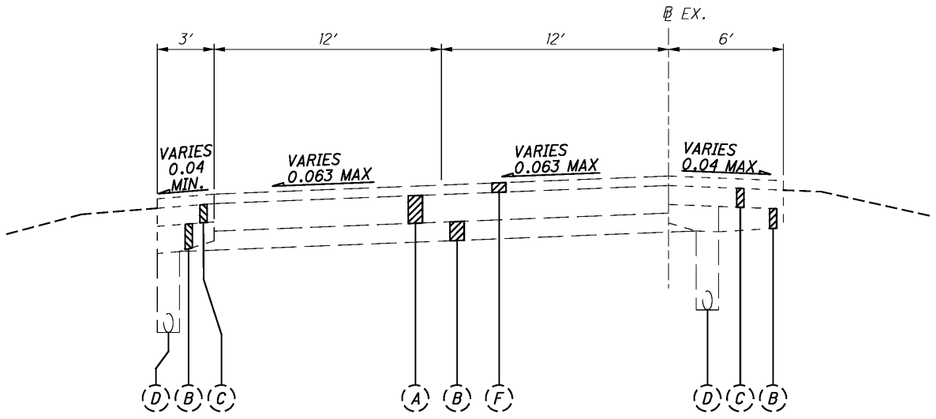


TIEDEMAN ROAD CONCRETE MEDIAN DETAIL

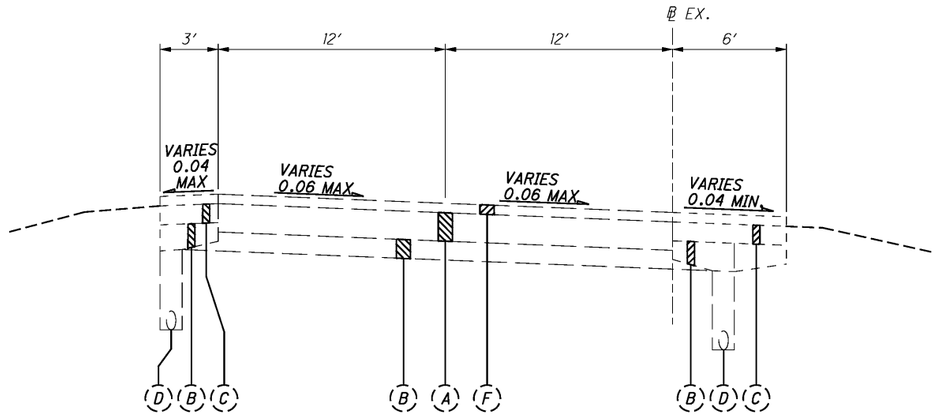


RAMP INTERSECTION SECTION
RAMP T-1 - STA. 1637+77 TO STA. 1638+66
RAMP T-2 - STA. 2639+06 TO STA. 2639+79
RAMP T-3 - STA. 3637+93 TO STA. 3638+70
RAMP T-4 - STA. 4640+85 TO STA. 4641+81

NOTE: RAMP T-4 DOES NOT HAVE A 3" ASPHALT CONCRETE OVERLAY (LAYER (F))

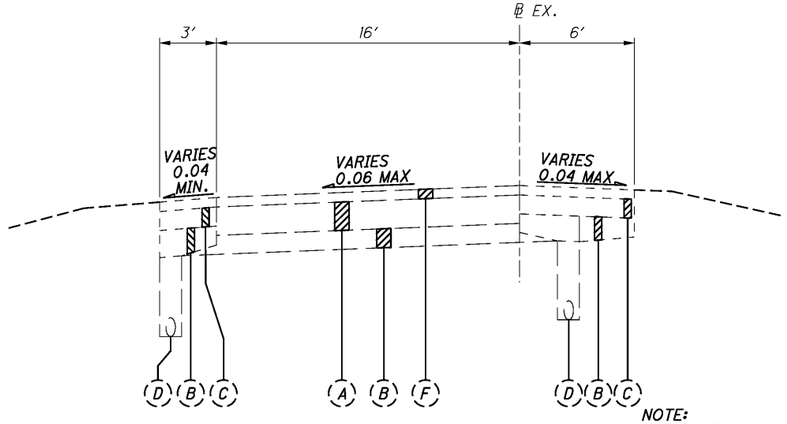


TWO LANE SUPERELEVATED SECTION (LT)
RAMP T-2 - STA. 2636+66 TO STA. 2638+39



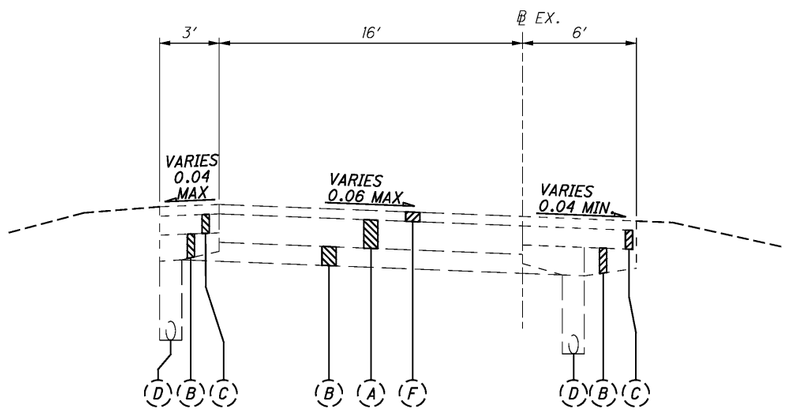
TWO LANE SUPERELEVATED SECTION (RT)
RAMP T-2 - STA. 2638+39 TO STA. 2639+06
RAMP T-3 - STA. 3638+70 TO STA. 3642+63

NOTE:
FOR RAMP T-3 REVERSE LOCATION OF 6' AND 3' SHOULDERS



ONE LANE SUPERELEVATED SECTION (LT)
RAMP T-1 - STA. 1637+75 TO STA. 1637+77
RAMP T-2 - STA. 2635+00 TO STA. 2636+66
RAMP T-3 - STA. 3642+95 TO STA. 3645+20

NOTE:
FOR RAMPS T-1 AND T-3 REVERSE LOCATION OF 6' AND 3' SHOULDERS



ONE LANE SUPERELEVATED SECTION (RT)
RAMP T-2 - STA. 2628+43 TO STA. 2635+00
RAMP T-3 - STA. 3642+63 TO STA. 3642+95

NOTE:
FOR RAMP T-3 REVERSE LOCATION OF 6' AND 3' SHOULDERS

EXISTING TYPICAL SECTIONS

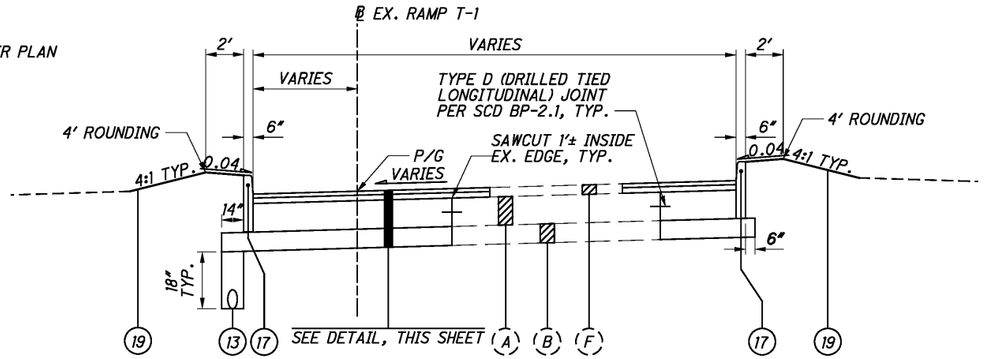
CUY-480-11.60

PROPOSED LEGEND

(1) ITEM 204 - SUBGRADE COMPACTION
(2) ITEM 254 - 3" PAVEMENT PLANING, ASPHALT CONCRETE
(3) ITEM 304 - 5" AGGREGATE BASE
(4) ITEM 304 - 6" AGGREGATE BASE
(5) NOT USED
(6) ITEM 304 - AGGREGATE BASE (THICKNESS VARIES 10" TO 12")
(7) ITEM 407 - TACK COAT (APPLIED AT 0.075 GALLON/SQ YD)
(8) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (APPLIED AT 0.04 GALLON/SQ YD)
(9) ITEM 448 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22
(10) ITEM 448 - 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22, AS PER PLAN
(11) ITEM 452 - 9" NON-REINFORCED CONCRETE PAVEMENT
(12) ITEM 452 - 10" NON-REINFORCED CONCRETE PAVEMENT
(13) ITEM 605 - 6" BASE PIPE UNDERDRAINS WITH FABRIC WRAP
(14) ITEM 606 - GUARDRAIL, TYPE MGS
(15) ITEM 608 - 4" CONCRETE WALK
(16) ITEM 609 - CURB, TYPE 2-A
(17) ITEM 609 - CURB, TYPE 6
(18) ITEM 609 - 6" CONCRETE TRAFFIC ISLAND PER SCD RM-3.1
(19) ITEM 659 - SEEDING AND MULCHING, CLASS 1
(L) LONGITUDINAL JOINT

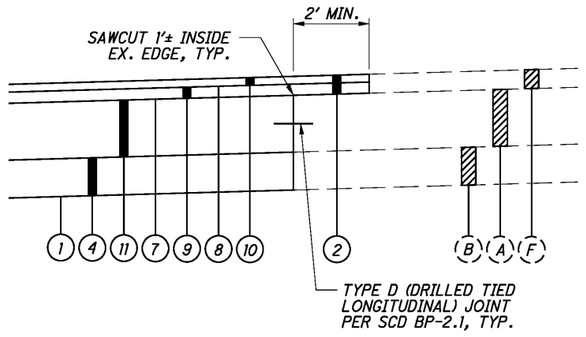
NOTE:
FOR EXISTING LEGEND SEE SHEET 4

FOR SHOULDER CROSS SLOPE DETAILS SEE SHEET 8



SUPERELEVATED SECTION - RAMP T-1 (LT)
STA. 1637+75.00 TO STA. 1638+70.00

SEE INTERSECTION DETAIL FOR MORE INFORMATION



RAMP T-1 - PAVEMENT BUILD-UP DETAIL

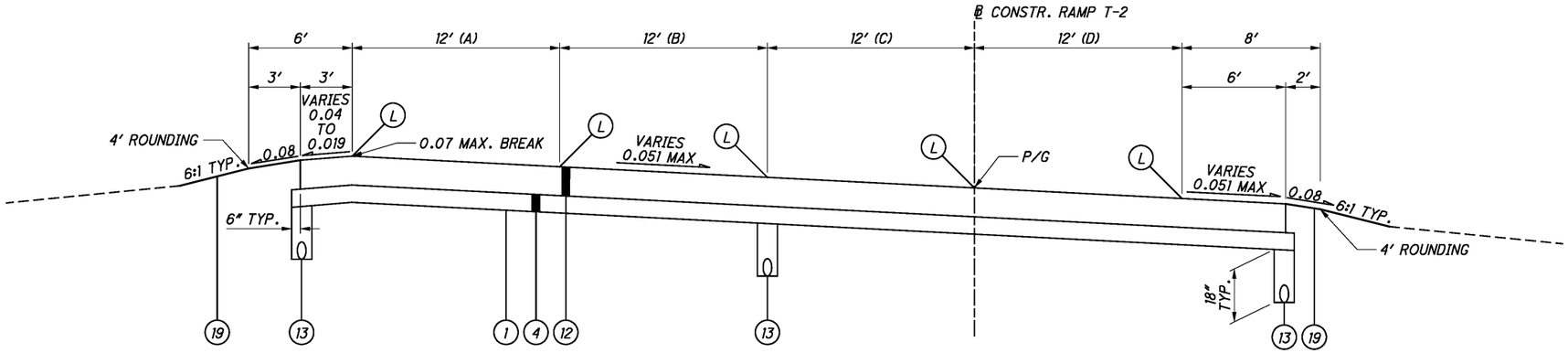
PROPOSED TYPICAL SECTIONS - RAMP T-1

CUY-480-11.60

NOTE:
FOR EXISTING LEGEND SEE SHEET 4

FOR PROPOSED LEGEND SEE SHEET 5

FOR SHOULDER CROSS SLOPE DETAILS SEE SHEET 8



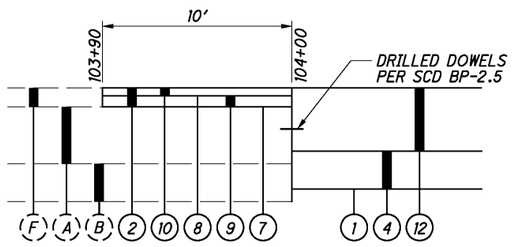
SUPERELEVATED SECTION - RAMP T-2 (RT)
STA. 104+00.00 TO STA. 110+21.00

(A)
0′ STA. 104+00 TO STA. 107+00
VARIES 0′ TO 12′ STA. 107+00 TO STA. 107+50
12′ STA. 107+50 TO STA. 110+21

(B)
0′ STA. 104+00 TO STA. 105+50
12′ STA. 105+50 TO STA. 110+21

(C)
16′ STA. 104+00 TO STA. 105+00
VARIES 16′ TO 24′ STA. 105+00 TO STA. 105+50
12′ STA. 105+50 TO STA. 110+21

(D)
0′ STA. 104+00 TO STA. 107+00
VARIES 0′ TO 12′ STA. 107+00 TO STA. 107+50
12′ STA. 107+50 TO STA. 110+21



RAMP T-2 - BUTT JOINT DETAIL
STA. 104+00.00

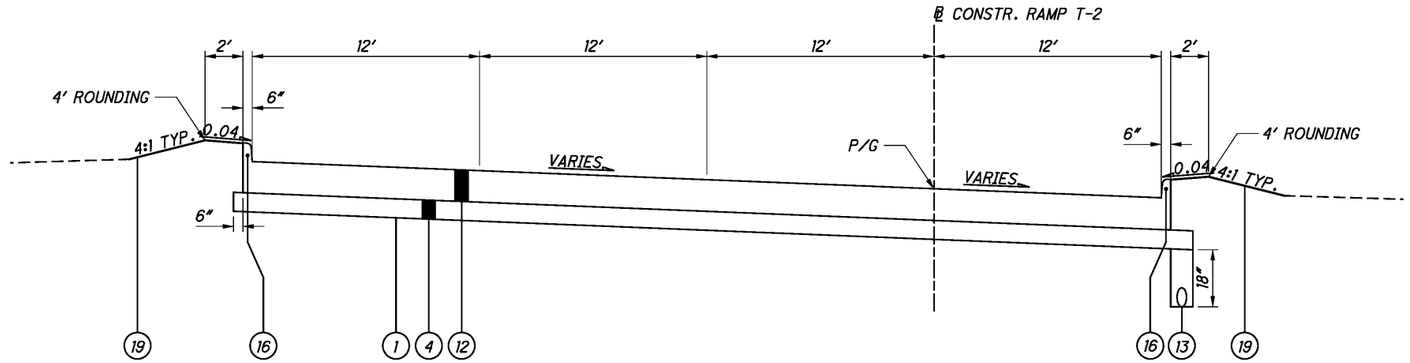
BUTT JOINT BETWEEN EXISTING PAVEMENT AND PROPOSED PAVEMENT, A DOWELED TYPE Y JOINT AS PER BP-2.5 SHALL BE PROVIDED. GROUTING AND DRILLING REQUIREMENTS SHALL BE PER SPECIFICATION 255 AND BP-2.5 EXCEPT THE REQUIREMENT THAT THE DRILLING DEVICE SHALL BE CAPABLE OF DRILLING THREE HOLES AT ONE TIME SHALL BE WAIVED.

PROPOSED TYPICAL SECTIONS - RAMP T-2

CUY-480-11.60

NOTE:
FOR PROPOSED LEGEND SEE SHEET 5

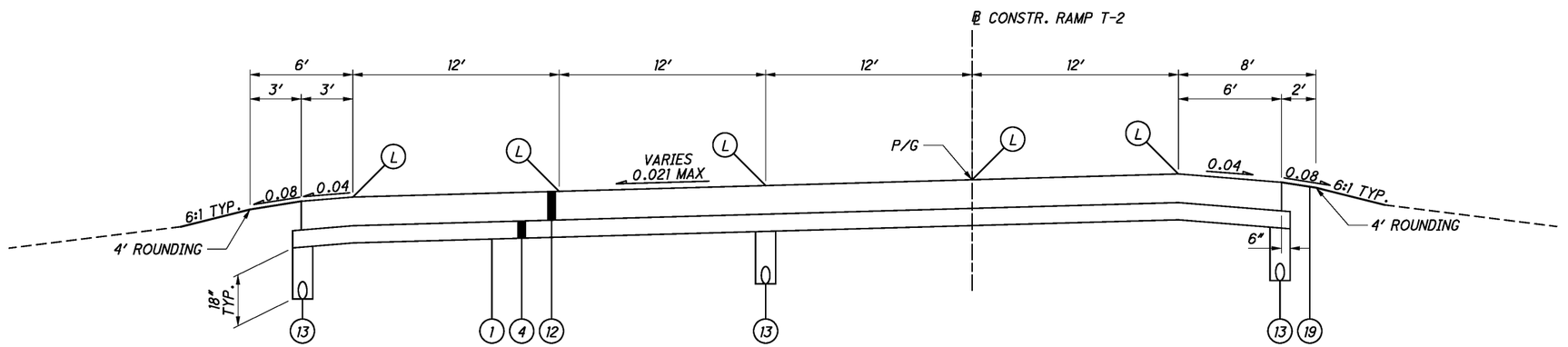
FOR SHOULDER CROSS SLOPE DETAILS SEE SHEET 8



CURBED SECTION - RAMP T-2
STA. 114+43.99 TO STA. 115+65.97

STA. 114+45, LT. & RT. - END SHOULDER, BEGIN CURB

SEE PAVEMENT DETAILS FOR JOINT LAYOUT
SEE INTERSECTION DETAIL FOR MORE INFORMATION

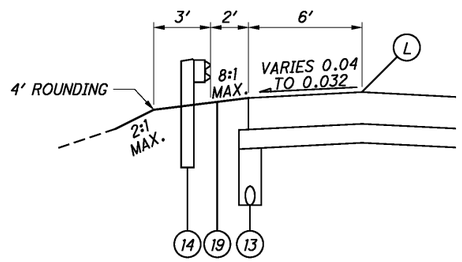


SUPERELEVATED SECTION - RAMP T-2 (LT)
STA. 110+21 TO STA. 114+43.99

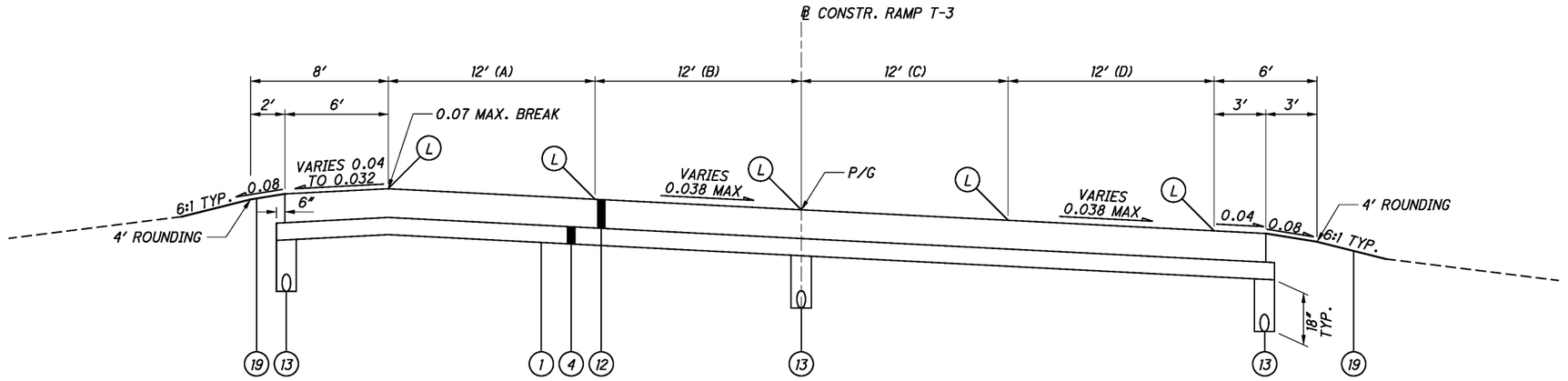
PROPOSED TYPICAL SECTIONS - RAMP T-2

CUY-480-11.60

NOTE:
FOR PROPOSED LEGEND SEE SHEET 5



GUARDRAIL SECTION - RAMP T-3
STA. 203+00.00 TO STA. 205+00.00



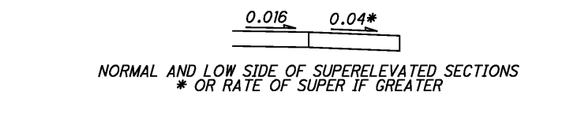
SUPERELEVATED SECTION - RAMP T-3 (RT)
STA. 201+00.00 TO STA. 205+74.45

(A)
12' STA. 201+00 TO STA. 204+50
0' STA. 204+50 TO STA. 205+74.45

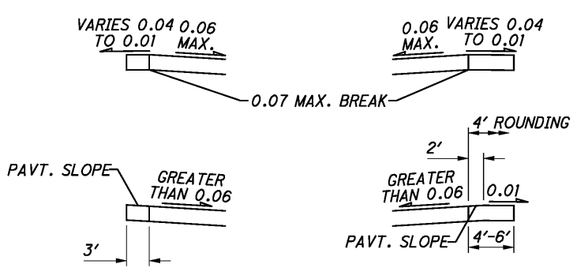
(B)
12' STA. 201+00 TO STA. 204+50
VARIES 24' TO 16' STA. 204+50 TO STA. 205+00
16' STA. 205+00 TO STA. 205+74.45

(C)
12' STA. 201+00 TO STA. 205+00
VARIES 12' TO 0' STA. 205+00 TO STA. 205+50
0' STA. 205+50 TO STA. 205+74.45

(D)
12' STA. 201+00 TO STA. 204+50
VARIES 12' TO 0' STA. 204+50 TO STA. 205+00
0' STA. 205+00 TO STA. 205+74.45

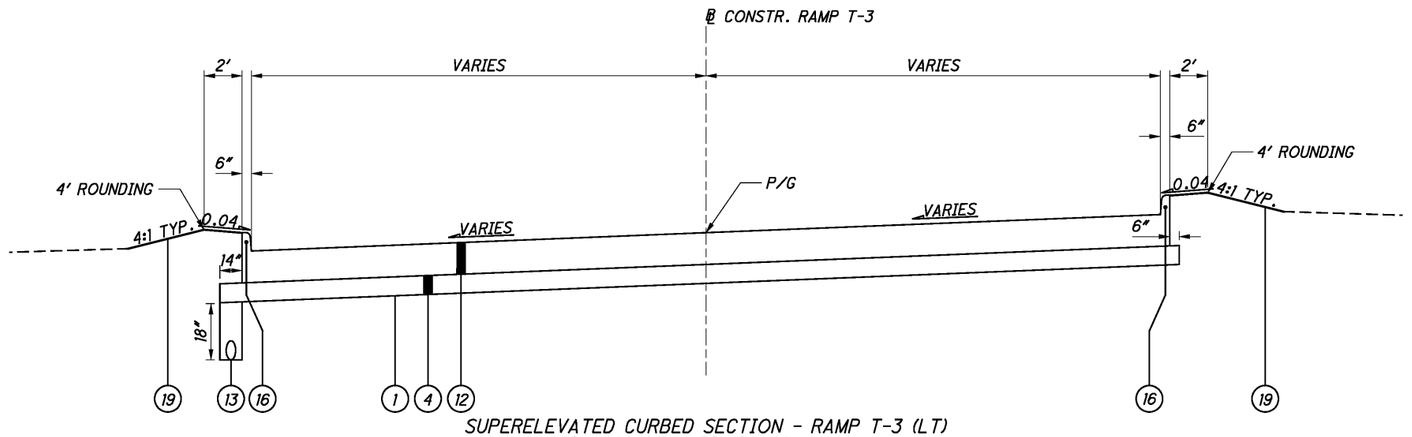


NORMAL AND LOW SIDE OF SUPERELEVATED SECTIONS
* OR RATE OF SUPER IF GREATER



HIGH SIDE OF SUPERELEVATED SECTIONS

SHOULDER CROSS SLOPE DETAIL



SUPERELEVATED CURBED SECTION - RAMP T-3 (LT)
STA. 200+00.00 TO STA. 201+00.00

SEE PAVEMENT DETAILS FOR JOINT LAYOUT
SEE INTERSECTION DETAIL FOR MORE INFORMATION

PROPOSED TYPICAL SECTIONS - RAMP T-3

CUY-480-11.60

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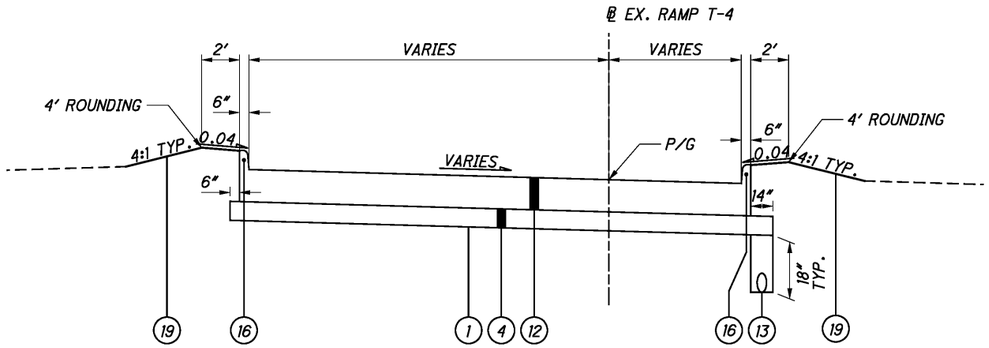
NOTE:
FOR EXISTING LEGEND SEE SHEET 4

FOR PROPOSED LEGEND SEE SHEET 5

FOR SHOULDER CROSS SLOPE DETAILS SEE SHEET 8



SUPERELEVATED SECTION - RAMP T-4 (RT)
STA. 4640+83.90 TO STA. 4641+80.87

SEE PAVEMENT DETAILS FOR JOINT LAYOUT
SEE INTERSECTION DETAIL FOR MORE INFORMATION

TYPICAL SECTIONS - RAMP T-4

PROPOSED TY

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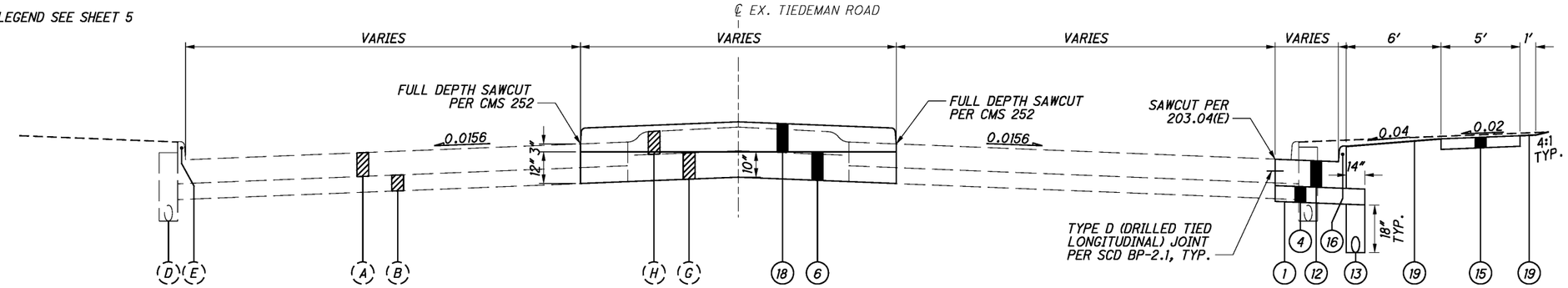
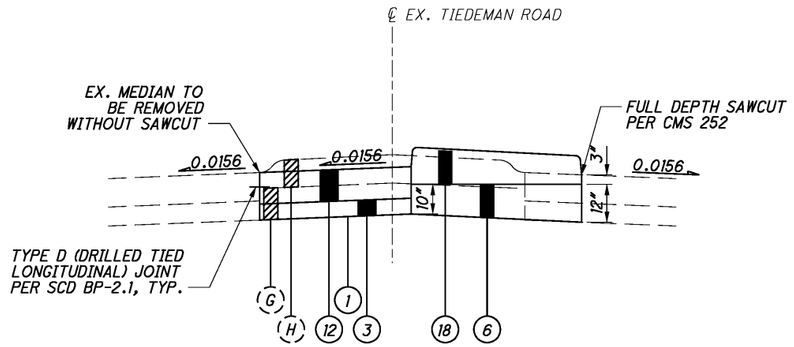
NOTE:
FOR EXISTING LEGEND SEE SHEET 4

FOR PROPOSED LEGEND SEE SHEET 5

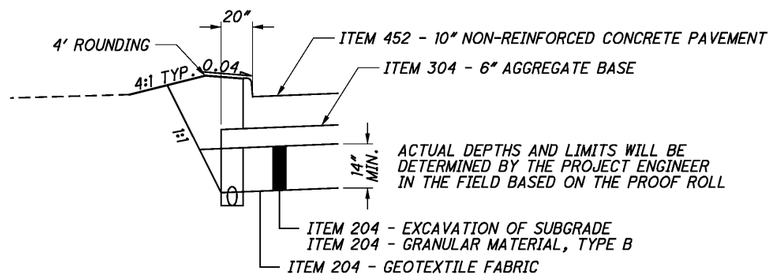


TIEDEMAN ROAD - CONCRETE MEDIAN AND WIDENING SECTION
SEE PLANS AND INTERSECTION DETAILS FOR LIMITS AND DIMENSIONS
REVERSE AS NECESSARY

NOTES:
TRANSITION MEDIAN NOSE HEIGHT FROM 2" TO 6" OVER 10'
FOR PAVEMENT REPLACEMENT OUTSIDE OF PROPOSED MEDIAN LIMITS, SEE BELOW DETAIL
ANY DAMAGE TO EX. ASPHALT DURING SAWCUT OPERATION SHALL BE REPAIRED TO THE APPROVAL OF THE ENGINEER



TIEDEMAN ROAD - OFFSET CONCRETE MEDIAN DETAIL
SEE PLANS AND INTERSECTION DETAILS FOR LIMITS AND DIMENSIONS



EXCAVATE AND REPLACE DETAIL
AS DIRECTED BY THE PROJECT ENGINEER FOLLOWING PROOF ROLL
SEE GENERAL NOTES FOR MORE INFORMATION

PROPOSED TYPICAL SECTIONS - TIEDEMAN ROAD

CUY-480-11.60

GENERAL

ROUNDING

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

UTILITIES

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

AT&T
ATTN.: HAROLD MAYNARD
13630 LORAIN ROAD
CLEVELAND, OH 44111
PHONE: (216) 476-6138
FAX: (216) 476-6013
EMAIL: HM2147@ATT.COM

AT&T CORP.
ATTN.: TONY LYLE
5980-G WILCOX PLACE
DUBLIN, OH 43016
PHONE: (614) 760-8320
FAX: (614) 760-8323
EMAIL: TLYLE@HLGENGINEERING.COM

CEI ILLUMINATING CO.
ATTN.: MARK ROBINSON
6896 MILLER ROAD
BRECKSVILLE, OH 44141
PHONE: (440) 717-6845

CITY OF BROOKLYN
ATTN.: DOUGLAS COURTNEY
7619 MEMPHIS AVENUE
BROOKLYN, OH 44144
PHONE: (440) 683-5745
EMAIL: DCOURTNEY@CWCOURTNEY.COM

CUYAHOGA COUNTY PUBLIC WORKS DEPT. SANITARY ENGINEERING DIVISION
ATTN.: MARK ELSESSER
2100 SUPERIOR VIADUCT
CLEVELAND, OH 44113
PHONE: (216) 348-380
EMAIL: MELSESSER@CUYAHOGACOUNTY.US

CLEVELAND WATER ENGINEERING
ATTN.: TINA GOSHA
1201 LAKESIDE AVENUE, 2ND FLOOR
CLEVELAND, OH 44114
PHONE: (216) 664-2444 X5526
EMAIL: TINA_GOSHA@CLEVELANDWATER.COM

DOMINION EAST OHIO
ATTN.: MARY J. LONG
320 SPRINGSIDE DRIVE, SUITE 320
AKRON, OH 44333
PHONE: (330) 664-2409
FAX: (888) 504-0126
EMAIL: RELOCATION@DOM.COM

NEORSD
ATTN.: ERIC PARHAM
4747 EAST 49TH STREET
CUYAHOGA HEIGHTS, OH 44125
PHONE: (216) 641-9010 X2441

TIME WARNER CABLE
ATTN.: PAUL SILVESTRO
8150 EAST DOW CIRCLE
STRONGSVILLE, OH 44136
PHONE: (216) 575-8016 X5034
EMAIL: PAUL.SILVESTRO@TWCABLE.COM

ODOT DISTRICT 12
ATTN.: JEFF HEBEBRAND
5500 TRANSPORTATION BOULEVARD
GARFIELD HEIGHTS, OH 44125
PHONE: (216) 584-2155
EMAIL: JEFFERY.HEBEBRAND@DOT.STATE.OH.US

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

EXISTING PLANS

EXISTING PLANS ENTITLED CUY-480-10.39 (1983) MAY BE INSPECTED IN THE ODOT DISTRICT 12 OFFICE IN GARFIELD HEIGHTS, OH.

SURVEYING PARAMETERS

USE THE FOLLOWING VERTICAL POSITIONING AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM:	NAVD 88
GEOID:	12A

HORIZONTAL POSITIONING

REFERENCE FRAME:	NAD 83 (CORS2011)
ELLIPSOID:	GRS80
MAP PROJECTION:	LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM:	OHIO NORTH ZONE (3401)
COMBINED SCALE FACTOR:	0.99992693

ORIGIN OF SCALE (X,Y) - EASTING (X): 0 NORTHING (Y): 0

FURNISH UNITS IN U.S. SURVEY FEET. USE THE FOLLOWING CONVERSION FACTOR:
1 METER = 3.28083333333 U.S. SURVEY FEET.

WORK LIMITS

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

PROTECTION OF RIGHT-OF-WAY LANDSCAPING

PRIOR TO BEGINNING WORK, THE CONTRACTOR, THE PROJECT ENGINEER, AND A REPRESENTATIVE OF THE MAINTAINING AGENCY WILL REVIEW AND RECORD ALL LANDSCAPING ITEMS WITHIN THE RIGHT-OF-WAY (BOTH WITHIN AND OUTSIDE THE CONSTRUCTION LIMITS) A RECORD OF THIS REVIEW WILL BE KEPT IN THE PROJECT ENGINEER'S FILES. PRIOR TO FINAL ACCEPTANCE, A FINAL REVIEW OF LANDSCAPING ITEMS WILL BE MADE.

CONSTRUCT ALL ACTIVITIES, EQUIPMENT STORAGE, AND STAGING TO WITHIN THE CONSTRUCTION LIMITS. UNLESS OTHERWISE IDENTIFIED IN THE PLANS OR PROPOSAL, THE CONSTRUCTION LIMITS ARE IDENTIFIED AS 30 FEET FROM THE EDGE OF PAVEMENT.

SUBMIT A WRITTEN REQUEST TO THE PROJECT ENGINEER TO USE ANY AREA OUTSIDE THESE LIMITS. THE DOCUMENT SUBMITTED MUST CLEARLY IDENTIFY THE AREA AND EXPLAIN THE PROPOSED USE AND RESTORATION OF THE AREA. THE REQUEST MUST BE APPROVED, IN WRITING, BEFORE THE CONTRACTOR HAS PERMISSION TO USE THE AREA.

ANY ITEMS DAMAGED BEYOND THE CONSTRUCTION LIMITS, AS DEFINED ABOVE, WILL BE REPLACED IN KIND OR AS APPROVED BY THE PROJECT ENGINEER.

MONUMENT ASSEMBLIES

CONSTRUCT MONUMENT ASSEMBLIES IN ACCORDANCE WITH THE DETAILS SHOWN ON THE STANDARD CONSTRUCTION DRAWINGS AND AT THE LOCATIONS SHOWN ON SHEET NO. 2.

AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS

THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PUBLIC USE AIRPORT OR HELIPORT. NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT AT MAXIMUM OPERATING HEIGHT SHALL EXCEED A HEIGHT OF 150 FT. IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THIS HEIGHT, FURTHER COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION (FAA), AND ODOT OFFICE OF AVIATION, WILL BE NECESSARY PRIOR TO ERECTING SUCH TEMPORARY STRUCTURES OR OPERATING SUCH EQUIPMENT ON THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT FORM 7460-1 TO THE FAA. NOTIFY THE ODOT OFFICE OF AVIATION WHEN SUBMITTING FAA FORM 7460-1.

NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT SHALL EXCEED THE PERMISSIBLE HEIGHT, UNTIL A COPY OF THE FAA APPROVAL AND THE ODOT OFFICE OF AVIATION PERMIT HAS BEEN FURNISHED TO THE PROJECT ENGINEER.

EXPRESS PROCESSING CENTER
THE FEDERAL AVIATION ADMINISTRATION
SOUTHWEST REGIONAL OFFICE
AIR TRAFFIC AIRSPACE BRANCH ASW-520
2601 MEACHAN BLVD.
FORT WORTH, TX 76137-4298

OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF AVIATION
2829 WEST DUBLIN-GRANVILLE ROAD
COLUMBUS, OHIO 43235
614-387-2346

WORK ADJACENT TO DOMINION EAST OHIO GAS LINES

IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE LATERAL AND SUBJACENT SUPPORT OF DOMINION'S PIPELINE(S), IN COMPLIANCE TO 29 CFR, PART 1926, SUBPART P, (SAFE EXCAVATION & SHORING). ONE-FOOT MINIMUM VERTICAL AND HORIZONTAL CLEARANCE MUST BE MAINTAINED BETWEEN DOMINION EAST OHIO'S (DEO) EXISTING PIPELINE(S) AND ALL OTHER IMPROVEMENTS. EXTREME CARE SHOULD BE TAKEN NOT TO HARM ANY DEO FACILITY (PIPELINES, ETC.) OR APPURTENANCE (PIPE COATING, TRACER WIRE, CATHODIC PROTECTION TEST STATION WIRES & DEVICES, VALVE BOXES, ETC.). DEO FACILITIES MUST BE PROTECTED WITH A TARP DURING BRIDGE CONSTRUCTION. THE CONTRACTOR WILL BE RESPONSIBLE AND LIABLE FOR ENSURING THAT ALL DEO EXISTING FACILITIES, ABOVE AND BELOW GROUND, REMAIN UNDAMAGED, ACCESSIBLE AND IN WORKING ORDER. THE CROSSING OF DEO'S PIPELINE WITH ANOTHER STEEL FACILITY MAY CREATE A POTENTIAL CORROSION ISSUE FOR THE PROPOSED FACILITY AND THE EXISTING DEO FACILITY. PLEASE CONTACT DOMINION'S CORROSION DEPARTMENT: DAVE CUTLIP (330-266-2121), RICK MCDONALD (330-266-2122), OR AL HUMRICHOUSER (330-478-3757).

ROADWAY

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A "W-BEAM RAIL SPLICE" AS SHOWN IN AASHTO M 180.

ITEM 606 - ANCHOR ASSEMBLY, TYPE B

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

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

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

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

PAVEMENT

CONTRACTION AND/OR EXPANSION JOINTS

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

CONTRACTION JOINTS IN CONCRETE PAVEMENT WIDENING

WHERE NEW CONCRETE IS PLACED ADJACENT TO AND TIED TO EXISTING CONCRETE, THE CONTRACTION JOINT SPACING REQUIRED IN STANDARD CONSTRUCTION DRAWING BP-2.2 WILL BE WAIVED. CONSTRUCT CONTRACTION JOINTS IN THE NEW CONCRETE PAVEMENT TO FORM A CONTINUOUS LINE WITH ALL CONTRACTION JOINTS IN THE EXISTING CONCRETE PAVEMENT. INSTALL EXPANSION JOINTS IN THE NEW CONCRETE PAVEMENT TO FORM A CONTINUOUS LINE WITH ALL EXPANSION JOINTS IN THE EXISTING CONCRETE PAVEMENT.

ITEM 448 - 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22, AS PER PLAN

ONLY LIMESTONE OR GRANULATED SLAG (GS) SHALL BE PERMITTED FOR THIS ITEM. GRAVEL SHALL NOT BE PERMITTED. ALL OTHER REQUIREMENTS OF SECTIONS 448 AND 703.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL STILL BE APPLICABLE.

CALCULATED MEP CHECKED FR

GENERAL NOTES

CUY-480-11.60

DRAINAGE

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.

REVIEW OF DRAINAGE FACILITIES

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

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

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

EXISTING UNDERDRAINS

PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS ENCOUNTERED DURING CONSTRUCTION.

PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE.

UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

EROSION CONTROL

SEEDING AND MULCHING

THE FOLLOWING ITEMS SHALL BE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

ITEM 659 - SOIL ANALYSIS TEST
ITEM 659 - TOPSOIL
ITEM 659 - SEEDING AND MULCHING
ITEM 659 - REPAIR SEEDING AND MULCHING
ITEM 659 - INTER-SEEDING
ITEM 659 - COMMERCIAL FERTILIZER
ITEM 659 - LIME
ITEM 659 - WATER

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

POST CONSTRUCTION STORM WATER TREATMENT

THIS PLAN UTILIZES VEGETATED FILTER STRIP BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT.

TRAFFIC CONTROL

ITEM 632 - SIGNAL SUPPORT, MECHANICAL DAMPER FOR TC-81.21 MAST ARM (GREATER THAN 59' IN LENGTH), AS PER PLAN

THIS ITEM SHALL CONSIST OF THE CONTRACTOR INSTALLING A TUNED MECHANICAL STOCKBRIDGE OR MASS-SPRING TYPE DAMPER ON A TC-81.21 MAST ARM SIGNAL SUPPORT TO REDUCE THE POSSIBILITY OF HARMONIC VIBRATIONS CAUSED BY WIND LOADS. A MECHANICAL DAMPER SHALL BE APPLIED TO ALL MAST ARMS OVER 59 FEET IN LENGTH. THE INSTALLED DAMPER SHALL BE CAPABLE OF REDUCING THE LOADED MAXIMUM VERTICAL MOVEMENT AT THE TIP OF THE ARM TO 8 INCHES MEASURED FROM THE HIGHEST TO THE LOWEST POINT OF DEFLECTION AT WIND SPEEDS OF 5-20 MPH.

ALL ATTACHMENT HARDWARE CONNECTIONS SHALL BE STAINLESS STEEL. STOCKBRIDGE-TYPE DAMPERS SHALL HAVE A STAINLESS STEEL SAFETY CHAIN ANCHORED TO THE MAST ARM TO PREVENT WEIGHTS FROM FALLING SHOULD THEY BECOME SEPARATED FROM THE REST OF THE ASSEMBLY. THE DAMPER SHALL BE ATTACHED TO THE ARM WITHIN 8 FEET OF MAST ARM TIP. INSTALLATION SHALL BE PER THE MANUFACTURER'S GUIDELINES. STATIC DAMPERS SUCH AS HORIZONTAL FLAT SIGN MOUNTINGS SHALL NOT BE USED. ACCEPTABLE DEVICES INCLUDE THE FOLLOWING OR APPROVED EQUAL:

1. UNION METAL ALCOA DAMPER DEVICE - DWG. NO. 2G-1817-C1
2. VALMONT STRUCTURES ALCOA DEVICE - DWG. NO. OH104242P1
3. FLORIDA DOT SPRING-MASS DAMPER - DRAWING INDEX NO. 17749

GEOTECHNICAL

SUBGRADE PREPARATIONS

ALL EXPOSED SUBGRADES SHALL BE PROOF ROLLED IN ACCORDANCE WITH ODOT ITEM 204. AREAS THAT FAIL A PROOF ROLL SHALL BE IMPROVED BY UNDERCUT AND REPLACEMENT STABILIZATION METHODS. MINIMUM UNDERCUT DEPTH SHALL BE 14-INCHES. AN 8 OZ. NON-WOVEN GEOTEXTILE SHALL BE PLACED IN THE BOTTOM OF THE EXCAVATION PRIOR TO PLACEMENT OF REPLACEMENT MATERIALS. ALL REPLACEMENT MATERIALS SHALL MEET ODOT 703.16 SUBSECTION C, TYPE B GRANULAR MATERIALS. PLACEMENT OF GRANULAR MATERIALS SHALL BE IN ACCORDANCE WITH ODOT ITEM 203. UPON COMPLETION OF BACKFILLING, THE STABILIZED SUBGRADE SHALL BE PROOF ROLLED AGAIN, TO VERIFY THAT THE REPAIR WAS SUCCESSFUL.

CALCULATED MEP
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GENERAL NOTES

CUY-480-11.60

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ITEM 614 MAINTENANCE OF TRAFFIC

SEQUENCE OF OPERATIONS

PHASE 1: SHIFT TRAFFIC TO THE OUTSIDE SHOULDERS AND LANES ON ALL RAMPS.

1. CONSTRUCT TEMPORARY PAVEMENT TO BE USED DURING PHASE 1.
2. CONSTRUCT THE LEFT LANES AND LEFT SHOULDERS OF RAMPS T-2 AND T-3.
3. CONSTRUCT THE LEFT LANE, SHOULDER AND RADIUS RETURN OF RAMP T-1.
4. REMOVE EX. CURB AND GUARDRAIL AND CONSTRUCT TEMPORARY PAVEMENT ALONG NORTH SIDE OF RAMP T-4.
5. MAINTAIN SIGNAL DETECTION BY THE USE OF TEMPORARY RADAR DETECTORS.
6. INSTALL THE GROUND MOUNTED "RAMP NARROWS" SIGNS WITH "11'0" PLAQUES AND PCMS BOARDS IN ADVANCE OF RAMP T-3 PRIOR TO NARROWING THE ROADWAY WIDTH BETWEEN BARRIERS AT STA. 204+50 AND 206+00.
7. CONSTRUCT PROPOSED SIGNALS TO BE USED THROUGHOUT CONSTRUCTION.

PHASE 2: SHIFT TRAFFIC ONTO THE NEW PAVEMENT ON RAMPS T-1, T-2 AND T-3. SHIFT TRAFFIC TO NORTH SIDE OF RAMP T-4.

1. CONSTRUCT THE RIGHT LANES AND RIGHT SHOULDERS OF RAMPS T-2 AND T-3.
2. CONSTRUCT THE RIGHT LANE, SHOULDER AND RADIUS RETURN OF RAMP T-1.
3. CONSTRUCT THE SOUTH SIDE OF RAMP T-4.
4. MAINTAIN SIGNAL DETECTION BY THE USE OF TEMPORARY RADAR DETECTORS.
5. MAINTAIN THE GROUND MOUNTED "RAMP NARROWS" SIGNS WITH "11'0" PLAQUES AND PCMS BOARDS IN ADVANCE OF RAMP T-3 PRIOR TO NARROWING THE ROADWAY WIDTH BETWEEN BARRIERS AT STA. 204+50 AND 206+00.

PHASE 3: SHIFT TRAFFIC TO THE INSIDE LANES OF TIEDEMAN ROAD. SHIFT TRAFFIC ONTO THE NEW PAVEMENT ON RAMP T-4.

1. CONSTRUCT THE FINAL TIE-IN PAVEMENT NEAR RAMPS T-2 AND T-3.
2. CONSTRUCT THE NORTH SIDE OF RAMP T-4.

TIEDEMAN MEDIAN

1. REMOVE AND REPLACE THE MEDIAN ON TIEDEMAN RD, AS PER PLAN. ALL EXCAVATED AREAS SHALL BE BACKFILLED OR PROTECTED AS PER MT-101.90.

SEEDING, STRIPING, TRAFFIC SIGNAL DETECTION, FINAL CLEAN UP

1. ANY WORK REQUIRING LANE CLOSURES SHALL TAKE PLACE DURING OFF PEAK PERIODS.

PERMITTED LANE CLOSURES

LANE CLOSURES ARE PERMITTED ONLY DURING THE TIME PERIODS SHOWN BELOW:

I-480 EASTBOUND

WEEKDAYS		WEEKENDS	
1 LANE CLOSED	2 LANES CLOSED	1 LANE CLOSED	2 LANES CLOSED
9AM-2PM	7:30PM-6AM	8PM FRI - 6AM MON	9PM FRI - 11AM SAT
7PM-6AM			8PM SAT - 12PM SUN
			8PM SUN - 6AM MON

I-480 WESTBOUND

WEEKDAYS		WEEKENDS	
1 LANE CLOSED	2 LANES CLOSED	1 LANE CLOSED	2 LANES CLOSED
9AM-3PM	7:30PM-6AM	8PM FRI - 6AM MON	9PM FRI - 11:30AM SAT
8PM-6AM			8PM SAT - 1PM SUN
			7PM SUN - 6AM MON

RAMP T-2:

ONE LANE OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES

ONE LANE MAY BE CLOSED BETWEEN STA 112+50 AND STA. 115+00 NEAR TIEDEMAN RD BETWEEN:
8 PM TO 5 AM WEEK NIGHTS
8 PM FRIDAY TO 5 AM MONDAY

RAMP T-3:

ONE LANE OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES

ONE RAMP LANE MAY BE CLOSED AT TIEDEMAN RD STA. 200+50 TO STA 203+50 BETWEEN:
8 PM TO 5 AM WEEK NIGHTS
8 PM FRIDAY TO 5 AM MONDAY

RAMP T-1 AND RAMP T-4:

ONE LANE OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES

TIEDEMAN RD:

BOTH THRU LANES SHALL BE OPEN TO TRAFFIC BETWEEN THE HOURS OF 5 AM AND 9 AM AND BETWEEN THE HOURS OF 3 PM AND 7 PM WEEKDAYS. ONE THRU LANE MAY BE CLOSED TO TRAFFIC AT OTHER TIMES.

ALL TURN LANES ON TIEDEMAN RD SHALL BE MAINTAINED.

PAVEMENT MARKINGS AND DELINEATION

EXISTING PAVEMENT MARKINGS IN CONFLICT WITH THE IMPLEMENTATION OF THE MOTP SHALL BE REMOVED IN ACCORDANCE WITH CMS 614.11G. TEMPORARY WORK ZONE STRIPING SHALL BE CLASS I PAINT EXCEPT ON NEW PERMANENT SURFACES. REMOVABLE TAPE SHALL BE USED ON NEW PERMANENT SURFACES.

MAINTAINING TRAFFIC

ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED AND REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (CURRENT EDITION). COPIES ARE AVAILABLE FROM THE OHIO DEPARTMENT OF TRANSPORTATION, OFFICE OF CONTRACTS, 1980 WEST BROAD STREET, COLUMBUS, OHIO 43216. NOTE: ALL DEVICES SHALL COMPLY, FOR CONDITION AND LOCATION, WITH THE CURRENT EDITION OF THE NCHRP 350 CRASH TESTING GUIDELINES AND WITH THE CRITERIA PUBLISHED IN QUALITY STANDARDS FOR TEMPORARY TRAFFIC CONTROL DEVICES AND ACCEPTABLE DELINEATION METHODS FOR VEHICLES, AVAILABLE ONLINE AT http://www.dot.state.oh.us/Divisions/Engineering/Roadway/DesignStandards/traffic/qualityguidelines/Documents/QualityStandards_October2010_101410.PDF.

CONSTRUCTION OPERATIONS SHALL NOT BEGIN UNTIL ALL TRAFFIC CONTROL IS IN PLACE AND APPROVED BY ODOT OR MODIFIED AS DIRECTED BY THE TEMPORARY TRAFFIC CONTROL COORDINATOR OR THE PROJECT ENGINEER.

ITEM 614, MAINTAINING TRAFFIC (AT ALL TIMES)

THE MINIMUM NUMBER OF LANES OF TRAFFIC IN EACH DIRECTION, AS DESCRIBED ABOVE, SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT, THE COMPLETED PAVEMENT, ITEM 502 STRUCTURE FOR MAINTAINING TRAFFIC, ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, ITEM 615 ROADS FOR MAINTAINING TRAFFIC, AND TEMPORARY SURFACES USING ITEMS 410 AND 614.

TRENCH FOR WIDENING

TRENCH EXCAVATION FOR BASE WIDENING 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.

OVERNIGHT TRENCH CLOSING

THE BASE WIDENING SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 3 INCHES BELOW THE EXISTING PAVEMENT BY THE END OF EACH WORK DAY. NO TRENCH SHALL BE LEFT OPEN OVERNIGHT EXCEPT FOR A SHORT LENGTH (25 FEET 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.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.

EARTHWORK FOR MAINTAINING TRAFFIC

WHEN UNDERCUTS ARE NECESSARY FOR MAINLINE PAVEMENT OR EMBANKMENT CONSTRUCTION, EVALUATE THE NEED FOR TEMPORARY ROAD UNDERCUTS IF WITHIN A CLOSE PROXIMITY TO THE MAINLINE UNDERCUTS. A GEOTECHNICAL EVALUATION SHOULD BE CONSIDERED TO DETERMINE IF THE EXISTING SOIL CONDITIONS ARE ADEQUATE TO SUPPORT THE TEMPORARY ROAD. ADDITIONAL SOIL BORINGS ALONG THE TEMPORARY ROAD ARE NOT NORMALLY REQUIRED.

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHTTIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE 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.

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

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

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT. WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS. WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

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

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

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR HAZARDS OVER 24" AND LESS THAN 36" WIDE (UNIDIRECTIONAL)

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

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

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

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

ITEM 614 - WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN

WORK ZONE RAISED PAVEMENT MARKERS, AS PER PLAN, AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614 OR C&MS 621 AS SPECIFIED HEREIN.

RAISED PAVEMENT MARKERS IN USE DURING THE SNOW-PLOWING SEASON SHALL CONFORM TO 621.

RAISED PAVEMENT MARKERS IN USE DURING THE NON-SNOW-PLOW SEASON SHALL CONFORM TO EITHER 614 OR TO 621.

THE SNOW-PLOWING SEASON SHALL RUN FROM OCTOBER 15 THROUGH APRIL 1.

IF PROJECT DELAYS, NOT THE FAULT OF ODOT, CAUSE THE WORK TO EXTEND INTO THE SNOW-PLOWING SEASON, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WORK ZONE RAISED PAVEMENT MARKERS (WZRPMS) CONFORMING TO C&MS 614, WITH RAISED PAVEMENT MARKERS CONFORMING TO 621, AS DETERMINED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

THIS ITEM SHALL INCLUDE PURCHASE, INSTALLATION AND REMOVAL OF ITEM 614 WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN, INCLUDING FILLING OF ANY DEPRESSIONS CREATED IN THE PAVEMENT AS PER C&MS 621.08.

RESURFACING OF THE TRANSITION AREAS SHALL BE PERFORMED AT THE TIME THAT THE SURFACE COURSE IS BEING APPLIED TO THE ENTIRE PROJECT. PRIOR TO APPLICATION OF THE SURFACE COURSE ON THE PROJECT, THE EXISTING PAVEMENT WITHIN THE TRANSITION AREA SHALL BE REMOVED TO A DEPTH NECESSARY TO REACH THE LEVEL OF THE INTERMEDIATE COURSE OF THE PAVEMENT, AS DETERMINED BY THE ENGINEER.

ITEM 614 - WORK ZONE RAISED PAVEMENT MARKERS ON CONCRETE SURFACES

RAISED PAVEMENT MARKERS IN WORK ZONES, INSTALLED ON TO CONCRETE SURFACES, SHALL BE ITEM 614 WORK ZONE RAISED PAVEMENT MARKERS. WZRPMS ARE INTENDED FOR USE ONLY DURING THE NONSNOW-PLOWING SEASON. WZRPMS SHALL NOT BE PROVIDED DURING THE SNOW-PLOWING SEASON.

THE SNOW-PLOWING SEASON SHALL RUN FROM OCTOBER 15 THROUGH APRIL 1.

WHERE A TEMPORARY ALIGNMENT WILL REMAIN IN USE THROUGH THE WINTER, THE WZRPMS SHALL BE REMOVED PRIOR TO THE BEGINNING OF THE SNOW-PLOWING SEASON AND REPLACED APPROXIMATELY APRIL 1, OR AS OTHERWISE DETERMINED BY THE ENGINEER.

THIS ITEM SHALL INCLUDE PURCHASE, INSTALLATION AND REMOVAL OF ITEM 614 WORK ZONE RAISED PAVEMENT MARKERS

DELINEATION OF PORTABLE AND PERMANENT BARRIER

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

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

DELINEATION OF TEMPORARY AND PERMANENT GUARDRAIL

BARRIER REFLECTORS SHALL BE INSTALLED ON ALL TEMPORARY GUARDRAIL USED FOR TRAFFIC CONTROL AND ON ALL PERMANENT GUARDRAIL LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE. BARRIER REFLECTORS SHALL CONFORM TO C&MS 626.

OBJECT MARKERS SHALL BE INSTALLED ON ALL TEMPORARY AND PERMANENT GUARDRAIL LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE. GUARDRAIL-MOUNTING OF OBJECT MARKERS SHALL BE MADE BY INSTALLING THE OBJECT MARKERS ON THE EXTENSION BLOCKS RATHER THAN DIRECTLY ONTO THE GUARDRAIL ITSELF. OBJECT MARKERS SHALL CONFORM TO C&MS 614.03 AND THE SPACING SHALL BE APPROXIMATELY 50 FEET.

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE OFFICE OF MATERIALS MANAGEMENT WEB PAGE. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 650 FEET AND 475 FEET, RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. PCMS TRAILERS SHALL BE DELINEATED ON A PERMANENT BASIS BY AFFIXING CONSPICUITY TAPE CONFORMING TO CMS 614.03, IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER AS SEEN BY ONCOMING ROAD USERS.

PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED, FACING AWAY FROM ALL TRAFFIC, AND SHALL DISPLAY ONE OR MORE TYPE G YELLOW RETROREFLECTIVE SHEETING SURFACES OF 9-INCH BY 15-INCH MINIMUM SIZE FACING TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY. THE CONTRACTOR SHALL IMPLEMENT A SYSTEM WHEREBY CHANGEABLE MESSAGES WILL BE IMPLEMENTED WITHIN ONE HOUR FOLLOWING TELEPHONE NOTIFICATION FROM THE PROJECT ENGINEER TO A DESIGNATED PHONE.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN CONT'D

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

ALL PCMS UNITS SHALL BE EQUIPPED WITH A RADAR EMULATOR OR A RADAR DEVICE. A RADAR EMULATOR SENDS OUT A SIGNAL THAT ACTIVATES RADAR DETECTORS. THE DEVICE MUST BE APPROVED BY THE F.C.C. THE RADAR EMULATOR SHALL USE THE SAME POWER SUPPLY AS THE PCMS. THE RADAR SHALL BE ABLE TO BE ACTIVATED REGARDLESS OF WHETHER THE PCMS IS RUNNING OR NOT. THE DEVICE SHALL HAVE AN EFFECTIVE RANGE NOT TO EXCEED ONE HALF MILE.

THE RADAR EMULATOR MAY BE PURCHASED FROM ONE OF THE FOLLOWING COMPANIES:

Triplex Group
http://www.triplexgroup.com/safety%20beam.htm

Speed Measurement Laboratories, Inc.
http://www.speedlabs.com/radar_drones.html

Traffic Safety Technologies
http://www.traffic-safety-technologies.com/drones.htm

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF CMS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS OR HER CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE. PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK. THERE SHALL BE A TOTAL OF 4 PCMS TO BE USED TO INFORM MOTORISTS OF WORK ON RAMP.

ITEM 614, MAINTAINING TRAFFIC

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

CALCULATED BLW CHECKED RAM

MAINTENANCE OF TRAFFIC GENERAL NOTES

CUY-480-11.60

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

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

NEW YEARS	EASTER
MEMORIAL DAY	FOURTH OF JULY
LABOR DAY	THANKSGIVING
CHRISTMAS	

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

DAY OF HOLIDAY/EVENT	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	6:00 AM FRI - 7:00 PM MON
MONDAY	6:00 AM FRI - 7:00 PM TUE
TUESDAY	6:00 AM MON - 7:00 PM WED
WEDNESDAY	6:00 AM TUE - 7:00 PM THU
THURSDAY	6:00 AM WED - 7:00 PM FRI
THURSDAY (THANKSGIVING)	6:00 AM TUE - 7:00 PM MON
FRIDAY	6:00 AM THU - 7:00 PM MON
SATURDAY	6:00 AM FRI - 7:00 PM MON

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ENFORCEMENT IN WORK ZONES

WHEN LAW ENFORCEMENT OFFICERS (LEOS) ARE USED AS A SPEED CONTROL MEASURE IN STATIONARY WORK ZONES, THEY SHALL BE USED AS SHOWN IN THESE PLANS. LEOS CAN BE USED IN THE FORM OF:

STATIONARY PATROL CAR, CIRCULATING PATROL CAR, AND/OR AIR ENFORCEMENT IN COMBINATION WITH GROUND PATROL CAR.

THE LEO WORKS AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING THE SERVICES OF THE LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY). THE CONTRACTOR SHOULD SCHEDULE THE LEO A MINIMUM OF ONE WEEK IN ADVANCE AND SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED. THE ENGINEER SHALL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ENFORCEMENT IN WORK ZONES CONT'D

THE LEO SHALL REPORT TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS AS SHOWN IN THE PLANS. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END IF HIS/HER SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATIONS DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. A MEETING WITH DISTRICT PERSONNEL, CENTRAL OFFICE PERSONNEL, WORK ZONE TRAFFIC SUPERVISOR (IF APPLICABLE) AND APPROPRIATE LAW ENFORCEMENT AGENCIES SHALL TAKE PLACE PRIOR TO THE BEGINNING OF THE PROJECT. WORK ZONE SAFETY AND MOBILITY TRAINING SPECIFIC TO THE PROJECT WILL TAKE PLACE AT THIS TIME ALONG WITH DISTRIBUTION OF PRE-WORK ZONE CRASH ANALYSES. DURING THIS MEETING, DUTIES AND RESPONSIBILITIES OF THE LEO WILL BE DISCUSSED.

LAW ENFORCEMENT OFFICERS (LEOS) FOR ASSISTANCE

LEOS WITHOUT PATROL CARS SHALL BE REQUIRED FOR THE FOLLOWING SITUATIONS:

LEOS SHALL BE PROVIDED AT A TRAFFIC SIGNAL WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G. DIRECTING MOTORISTS THROUGH A RED LIGHT). LEOS SHALL NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

LEOS SHALL BE USED DURING CONSTRUCTION OPERATIONS AT AND WITHIN 150 FEET OF SIGNALIZED INTERSECTIONS.

TRAFFIC CONTROL DEVICES QUALITY

THE DBT SHALL PROVIDE, ERECT, AND MAINTAIN DRUMS, SIGNS, BARRIERS, AND OTHER TRAFFIC CONTROL DEVICES USED FOR MAINTENANCE OF TRAFFIC IN ACCEPTABLE CONDITION, IN ACCORDANCE WITH ODOT'S QUALITY GUIDELINES FOR TEMPORARY TRAFFIC CONTROL DEVICES.

CONSTRUCTION EQUIPMENT & MATERIALS

CONSTRUCTION VEHICLES USED BY THE DBT AND TRUCK TRAFFIC REQUIRED BY THE DBT SHALL COMPLY WITH ANY AND ALL LOAD RESTRICTIONS AND VEHICLE DELINEATION REQUIREMENTS. AS PER CMS 614.03, CONTRACTOR EQUIPMENT AND MATERIALS SHALL ALWAYS BE STORED IN LOCATIONS THAT DO NOT POSE A SAFETY RISK TO THE TRAVELING PUBLIC.

NOTIFICATION AND COORDINATION

MOT PHASE CHANGES: NOTIFICATION & COORDINATION REQUIREMENTS AT LEAST FOURTEEN (14) DAYS PRIOR TO ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL ADVISE THE DISTRICT OFFICE OF COMMUNICATIONS VIA EMAIL AT AMANDA.LEE@DOT.STATE.OH.US AND THE DISTRICT WORK ZONE TRAFFIC MANAGER VIA EMAIL AT DENNIS.ONEIL@DOT.STATE.OH.US AND THE CITY OF BROOKLYN'S EMERGENCY SERVICES, SCHOOL DISTRICT AND ADJACENT RESIDENTS AND BUSINESSES ON TIEDEMAN RD. OF THE ANTICIPATED START DATE OF ANY CONSTRUCTION ACTIVITIES, INCLUDING BUT NOT LIMITED TO THE PLACING OF WORK ZONE SIGNS. THE NOTIFICATION SHALL ALSO INCLUDE THE PROJECT NUMBER, PID, NAME AND PHONE NUMBER OF THE CONTRACTOR, A POINT OF CONTACT AND THE ANTICIPATED IMPACT ON TRAFFIC. THE CONTRACTOR SHALL IMMEDIATELY INFORM THE DISTRICT OFFICE OF COMMUNICATIONS AND THE DISTRICT WORK ZONE TRAFFIC MANAGER OF ANY AND ALL DELAYS AND/OR CHANGES REGARDING THE CONSTRUCTION INITIATION DATE.

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND THE OTHERS LISTED IN THIS SECTION IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW. THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHALL INCLUDE BUT IS NOT LIMITED TO ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, DETOUR ROUTES IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER AND THE DISTRICT 12 COMMUNICATIONS OFFICE. A SUMMARY OF THE NOTIFICATION TIME FRAME REQUIREMENTS FOR CLOSURES AND RESTRICTIONS IS PROVIDED IN THE NOTIFICATION TIME FRAME TABLE BELOW.

NOTIFICATION TIME FRAME TABLE

ITEM	DURATION OF CLOSURE	NOTIFICATION TIME FRAME
LANE CLOSURES/RESTRICTIONS	GREATER THAN 2 WEEKS	7 BUSINESS DAYS PRIOR TO CLOSURE
	2 WEEKS OR LESS	2 BUSINESS DAYS PRIOR TO CLOSURE

NOTIFICATION AND COORDINATION CONT'D

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER, THE DISTRICT 12 COMMUNICATIONS OFFICE, AND THE DISTRICT WORK ZONE TRAFFIC MANAGER USING THE NOTIFICATION TIME FRAME TABLE.

POINTS OF CONTACT:

ODOT DISTRICT 12 COMMUNICATIONS OFFICE
AMANDA MCFARLAND
(216) 584-2005
Amanda.McFarland@dot.state.oh.us

ODOT DISTRICT 12, DISTRICT 12 WORK ZONE TRAFFIC MANAGER
DENNIS O'NEIL
(216) 584-2204
Dennis.ONeil@dot.state.oh.us

CITY OF BROOKLYN
DIRECTOR OF PUBLIC SERVICE
JOHN VERBA, JR.
(216) 635-4219

CITY OF BROOKLYN
CITY ENGINEER
DOUGLAS COURTNEY, P.E.
(440) 449-4005 EXT. 5745

CITY OF BROOKLYN
CHIEF OF POLICE
SCOTT MIELKE
(216) 749-1234

CITY OF BROOKLYN
FIRE CHIEF
JOE ZEMEK
(216) 635-4226

CALCULATED BLW CHECKED RAM

MAINTENANCE OF TRAFFIC GENERAL NOTES

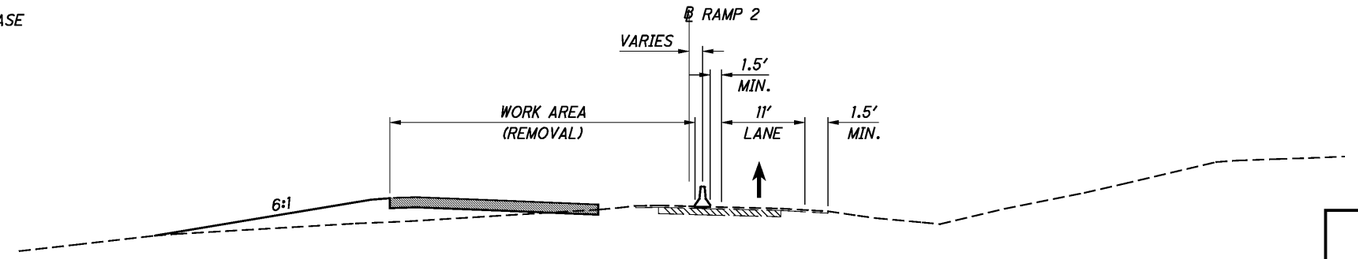
CUY-480-11.60

PAVEMENT LEGEND

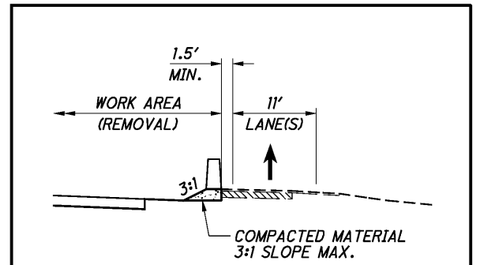
EXISTING PAVEMENT

PAVEMENT CONSTRUCTED IN THIS PHASE

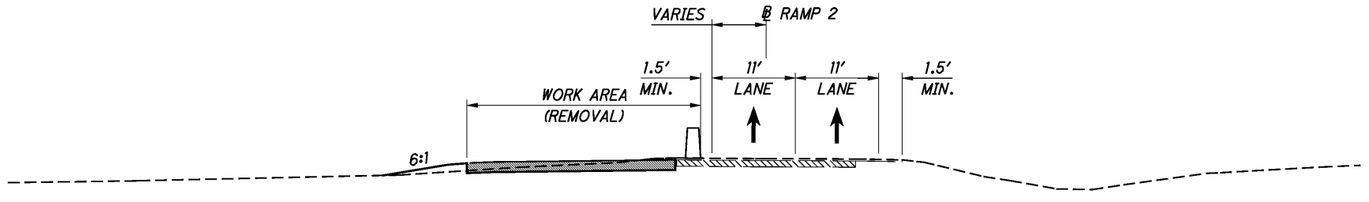
COMPLETED PAVEMENT



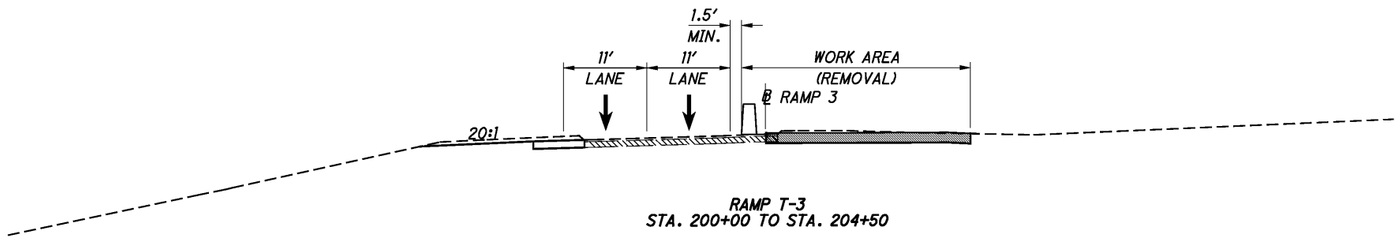
RAMP T-2
STA. 100+00 TO STA. 105+50 (PCB)
STA. 105+50 TO STA. 113+67 (DRUM)



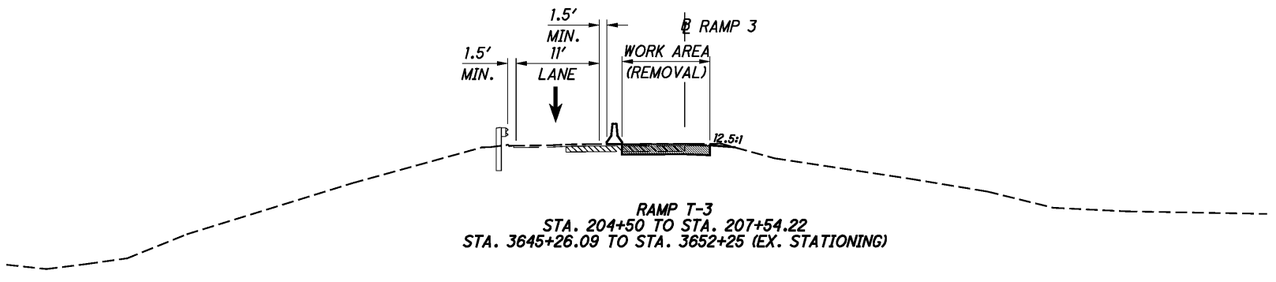
TYPICAL WEDGE DETAIL
FOR DRUM USE WHERE DROPOFF
IS GREATER THAN 2" PER SCD MT-101.90



RAMP T-2
STA. 113+67 TO STA. 115+65.97



RAMP T-3
STA. 200+00 TO STA. 204+50



RAMP T-3
STA. 204+50 TO STA. 207+54.22
STA. 3645+26.09 TO STA. 3652+25 (EX. STATIONING)

CALCULATED BLW
CHECKED RAM

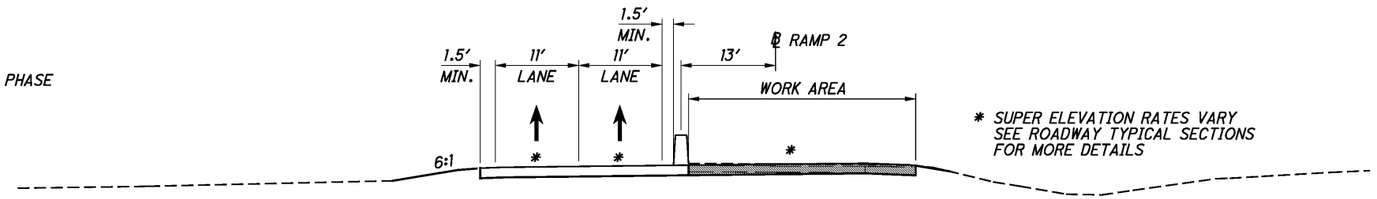
MAINTENANCE OF TRAFFIC - PHASE 1
TYPICAL SECTIONS

CUY-480-11.60

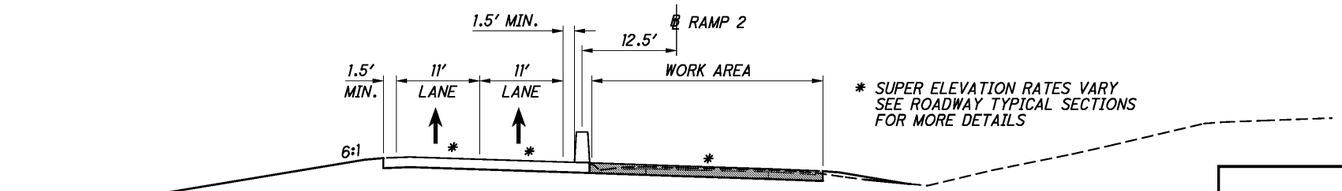
16
84

PAVEMENT LEGEND

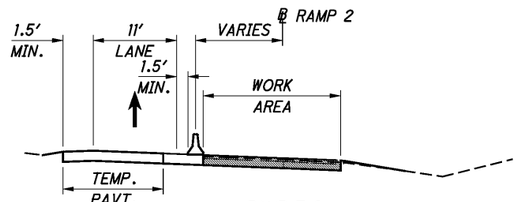
- EXISTING PAVEMENT
- PAVEMENT CONSTRUCTED IN THIS PHASE
- COMPLETED PAVEMENT



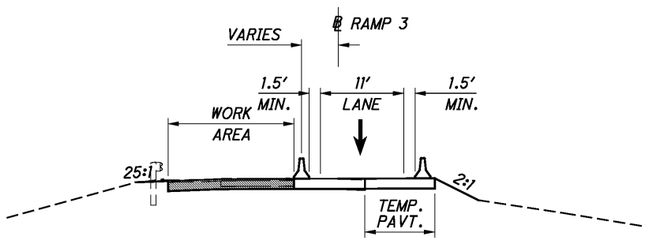
RAMP T-2
STA. 114+43.99 TO STA. 115+65.97



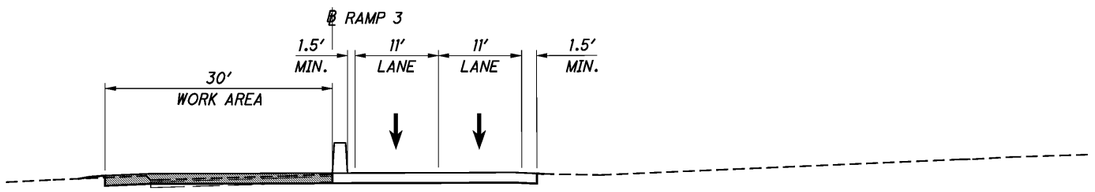
RAMP T-2
STA. 112+00 STA. 114+43.99



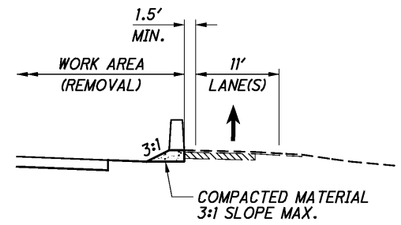
RAMP T-2
STA. 104+00 TO STA. 107+00 (PCB)
STA. 107+00 TO STA. 112+00 (DRUM)



RAMP T-3
STA. 204+50 TO STA. 206+00



RAMP T-3
STA. 200+00.00 TO STA. 204+50



TYPICAL WEDGE DETAIL
FOR DRUM USE WHERE DROPOFF
IS GREATER THAN 2" PER SCD MT-101.90

CALCULATED BLW
CHECKED RAM

MAINTENANCE OF TRAFFIC - PHASE 2
TYPICAL SECTIONS

CUY-480-11.60

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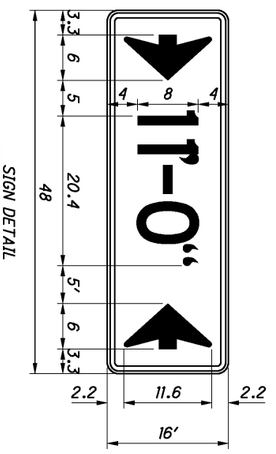
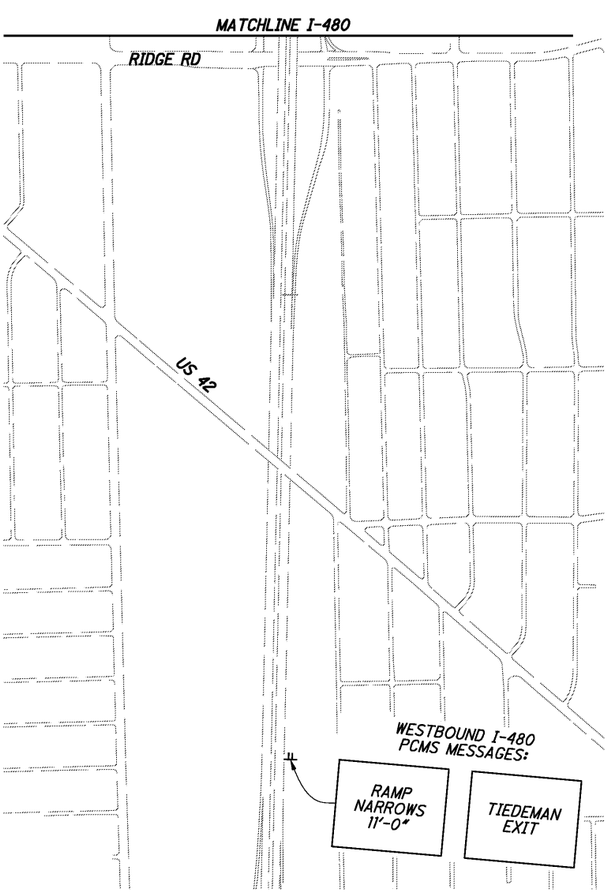
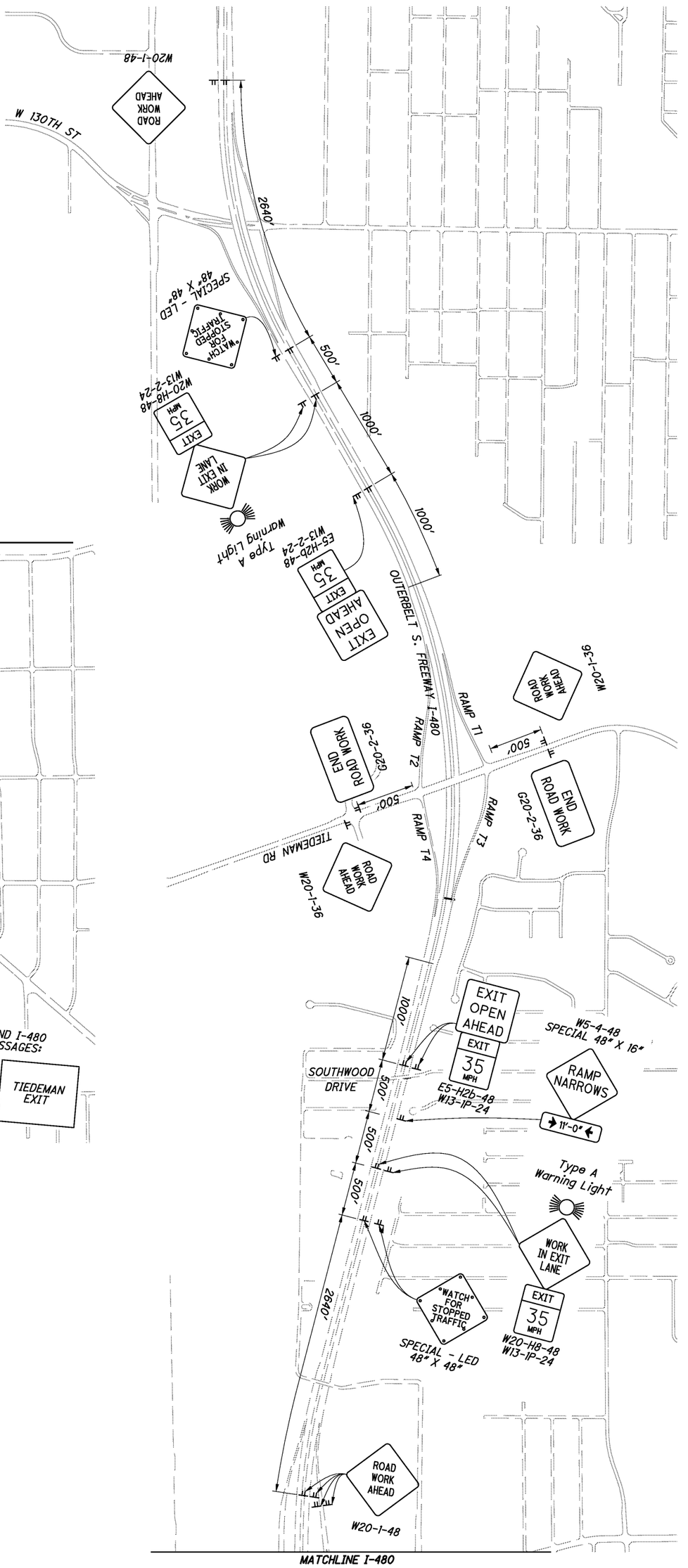
84



SIGN DETAIL
SPECIAL - 48" X 16"

NARROW WIDTH PLAQUE: 1.5" RADIUS, 0.6" BORDER, 0.4" INDENT, BLACK ON ORANGE
STANDARD ARROW CUSTOM 6.0" X 1.0" 0°, "11'-0"" D, STANDARD ARROW CUSTOM 6.0" X 1.0" 0°,





SPECIAL - "WATCH FOR STOPPED TRAFFIC" WITH LED SIGNS

BEFORE WORK STARTS ON THE RAMPS OR ANY TIME WORK IS PERFORMED ON THE PROJECT AND IS CAUSING RAMP TRAFFIC TO SLOW OR STOP TRAFFIC ON THE FREEWAY, THE "WATCH FOR STOPPED TRAFFIC" SIGNS WITH LED LIGHTS SHALL BE UP AND THE LIGHTS SHALL BE FLASHING.

THE "WATCH FOR STOPPED TRAFFIC" SIGNS SHALL HAVE 8 LED AMBER FLASHING LIGHTS THAT BLINK ON AND OFF DURING THE TIME THE SIGN IS UP. THESE ARE TO BE DUAL MOUNTED ON I-480, APPROXIMATELY 2000 FEET FROM THE RAMPS OR AS DIRECTED BY THE ENGINEER.

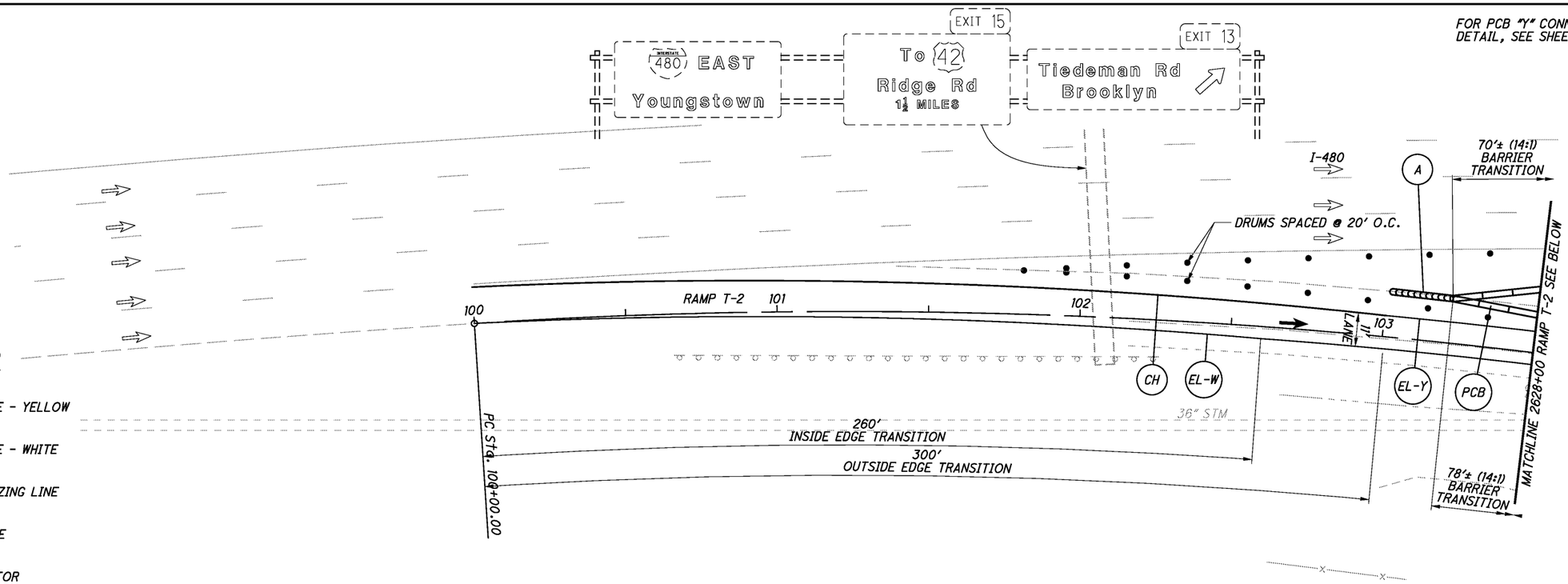
THE LED AMBER FLASHING LIGHT SIGNS CAN BE PURCHASED AT TAPCO, TRAFFIC AND PARKING CONTROL CO. THE SIGN IS CALLED "BlinkerSigns".

THE WEBSITE IS: http://www.tapconet.com/store/category/2e75b275-a044-4b1f-9f4b-b86e3c6b192/BlinkerSigns.aspx

AN APPROVED EQUAL SIGN CAN BE SUBSTITUTED.

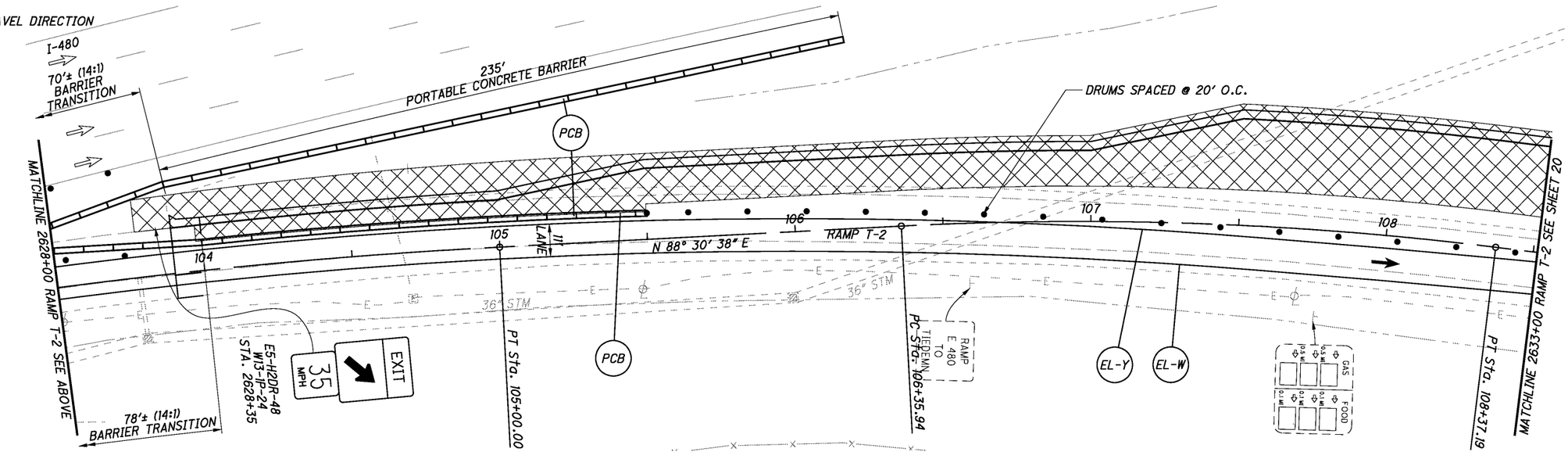
18 / 84	CUY-480-11.69	MAINTENANCE OF TRAFFIC - PHASES 1 & 2 LEAD-IN SIGNAGE	CALCULATED BLW CHECKED RAM	0 500 250 1000 HORIZONTAL SCALE IN FEET

FOR PCB "Y" CONNECTOR SEGMENT DETAIL, SEE SHEET 30



LEGEND

- EL-Y — EDGE LINE - YELLOW
- EL-W — EDGE LINE - WHITE
- CH — CHANNELIZING LINE
- S — STOP LINE
- A — ATTENUATOR
- PCB — PORTABLE CONCRETE BARRIER
- TEMPORARY PAVEMENT AREA
- CONSTRUCTION AREA
- TRAVEL DIRECTION



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED BLW
CHECKED RAM

TRAFFIC PLAN - PHASE 1

MAINTENANCE OF TRAFFIC ON I-480 EB STA. 2633+00 RAMP T-2 TO STA. 2624+50 TO I-480 EB

CUY-480-11.60

19
84

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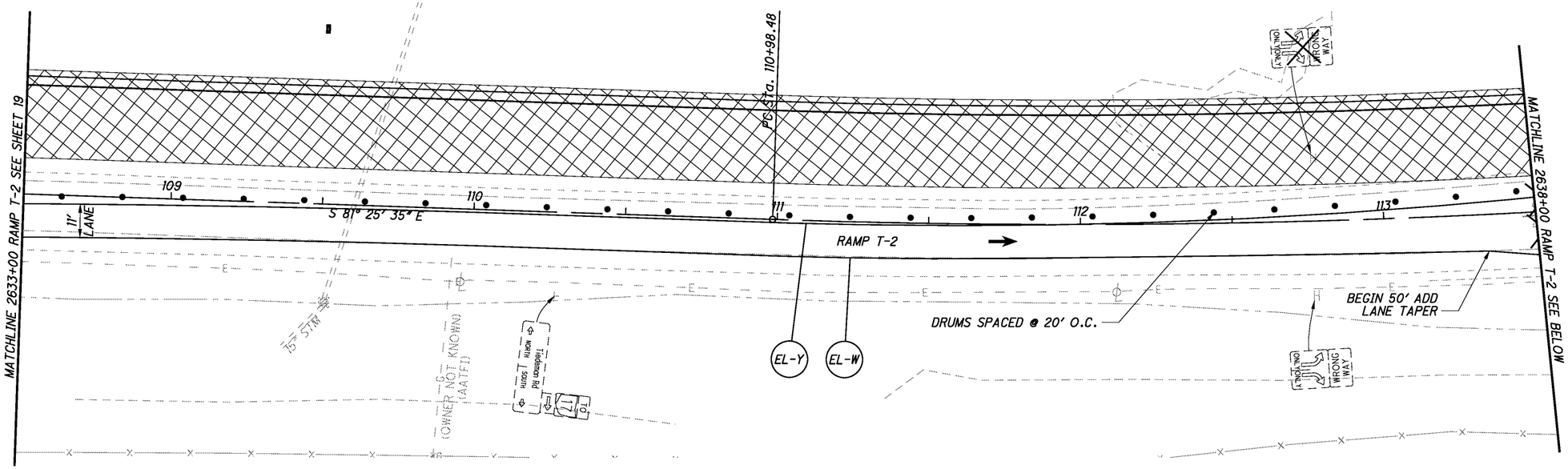
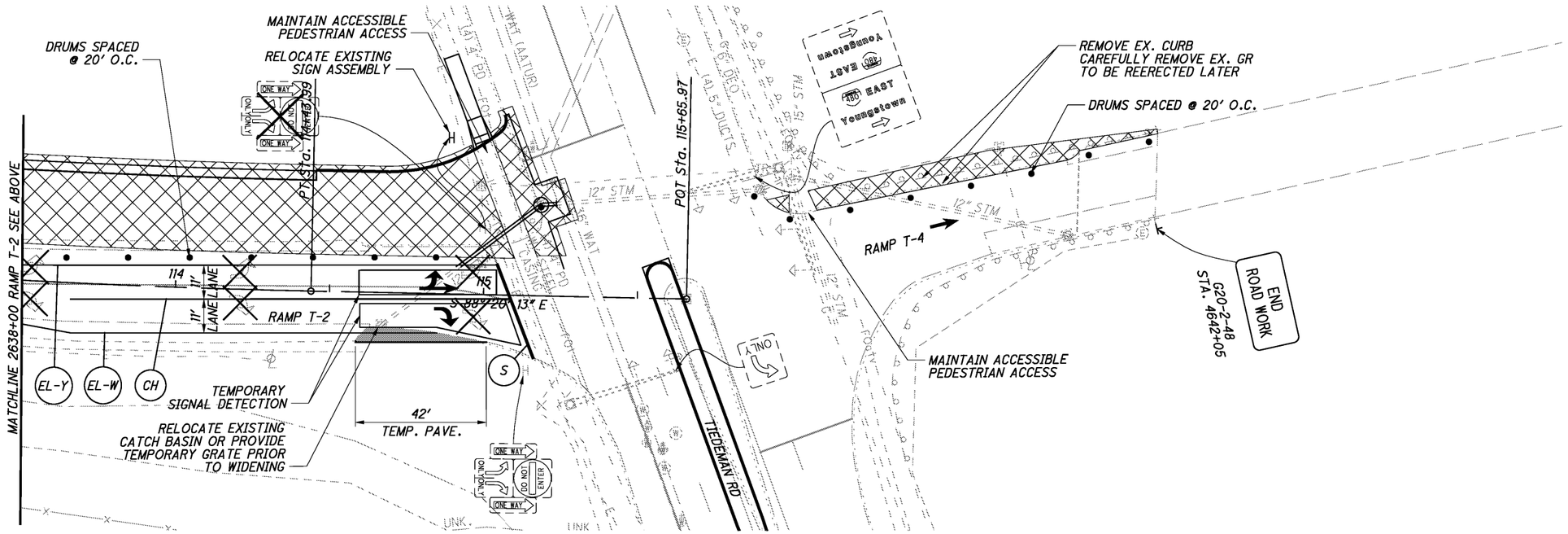




NOTE:
FOR MAINTENANCE OF TRAFFIC LEAD IN SIGNAGE ON TIEDEMAN ROAD SEE SHEET 18

FOR LEGEND, SEE SHEET 19

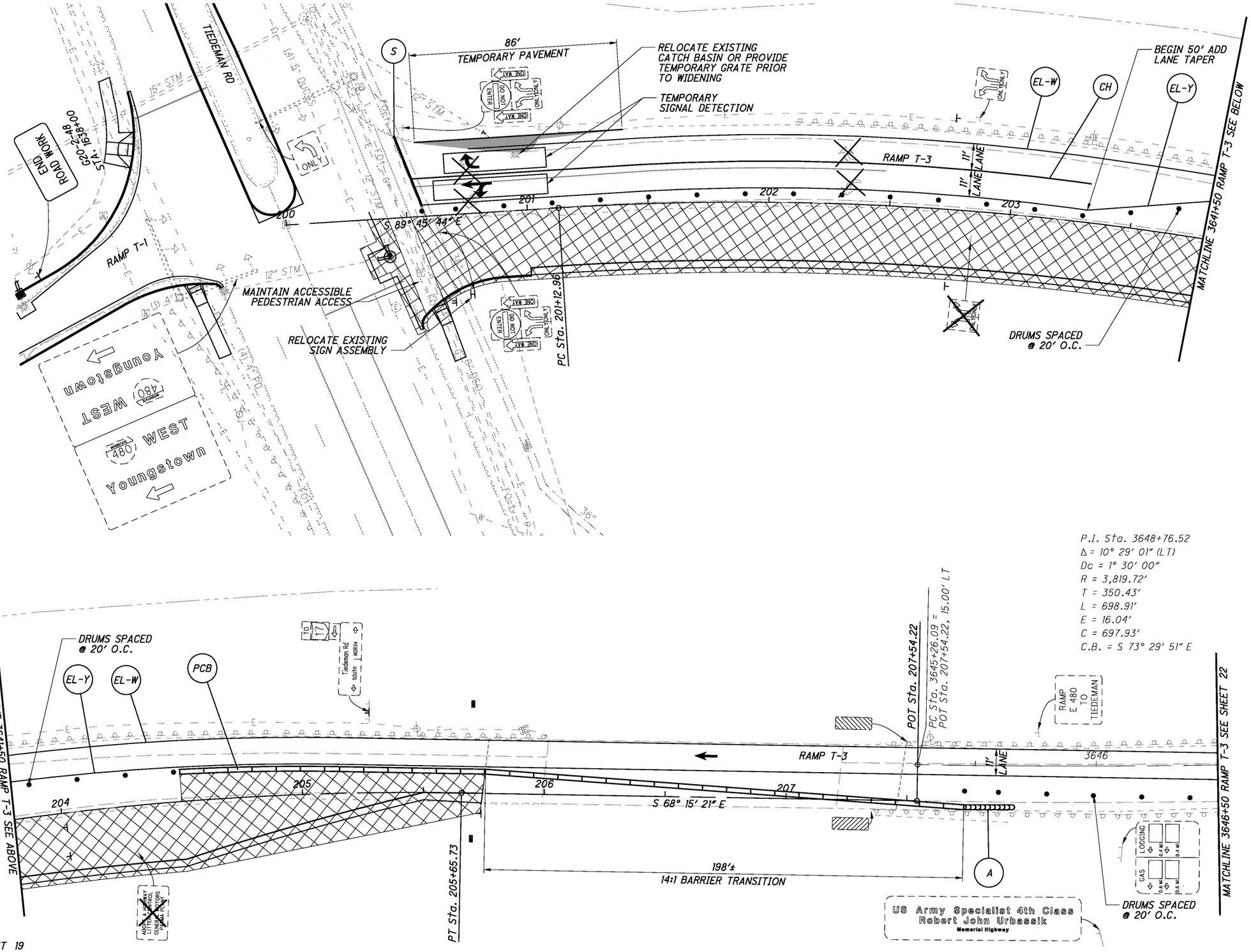
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED BLW
CHECKED RAM

MAINTENANCE OF TRAFFIC PLAN - PHASE 1
STA. 2633+00 TO STA. 2640+15.76 RAMP T-2

CUY-480-11.60

NOTE:
FOR MAINTENANCE OF TRAFFIC LEAD IN SIGNAGE ON TIEDEMAN ROAD SEE SHEET 18



FOR LEGEND, SEE SHEET 19

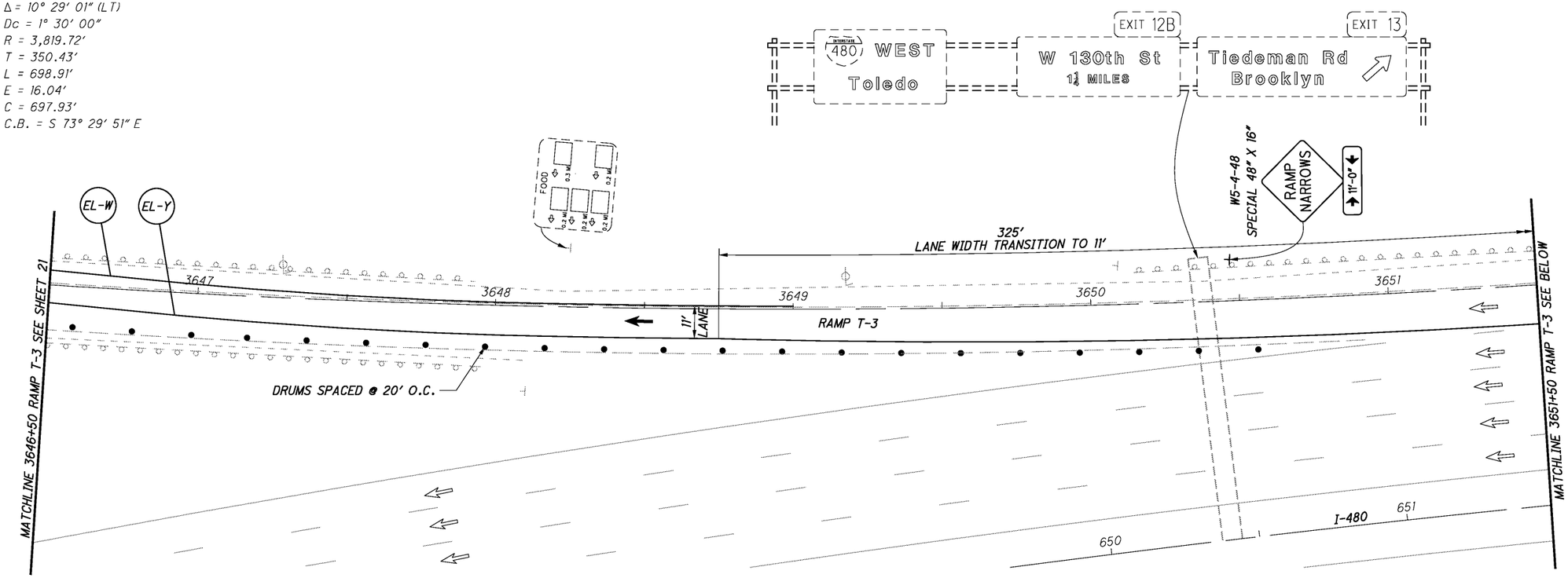
HORIZONTAL SCALE IN FEET
0 10 20 40

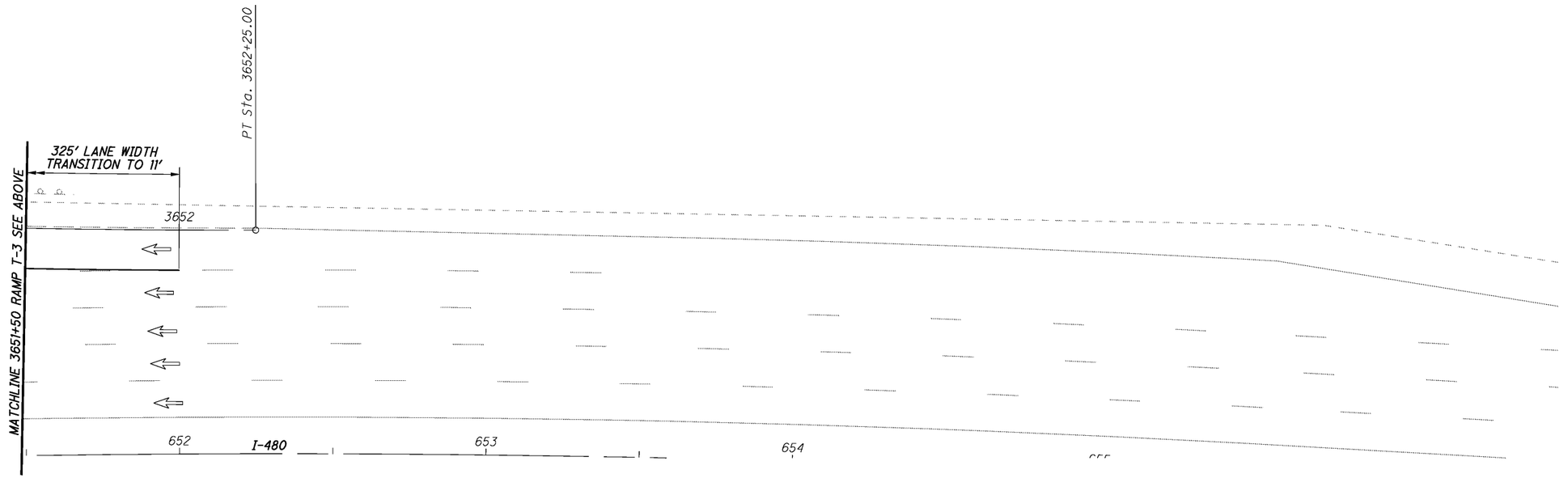
CALCULATED BLW
CHECKED RAM

MAINTENANCE OF TRAFFIC PLAN - PHASE 1
STA. 3637+54.75 TO STA. 3646+50 RAMP T-3

CUY-480-11.60

P.I. Sta. 3648+76.52
Δ = 10° 29′ 01″ (LT)
Dc = 1° 30′ 00″
R = 3,819.72′
T = 350.43′
L = 698.91′
E = 16.04′
C = 697.93′
C.B. = S 73° 29′ 51″ E





FOR LEGEND, SEE SHEET 19

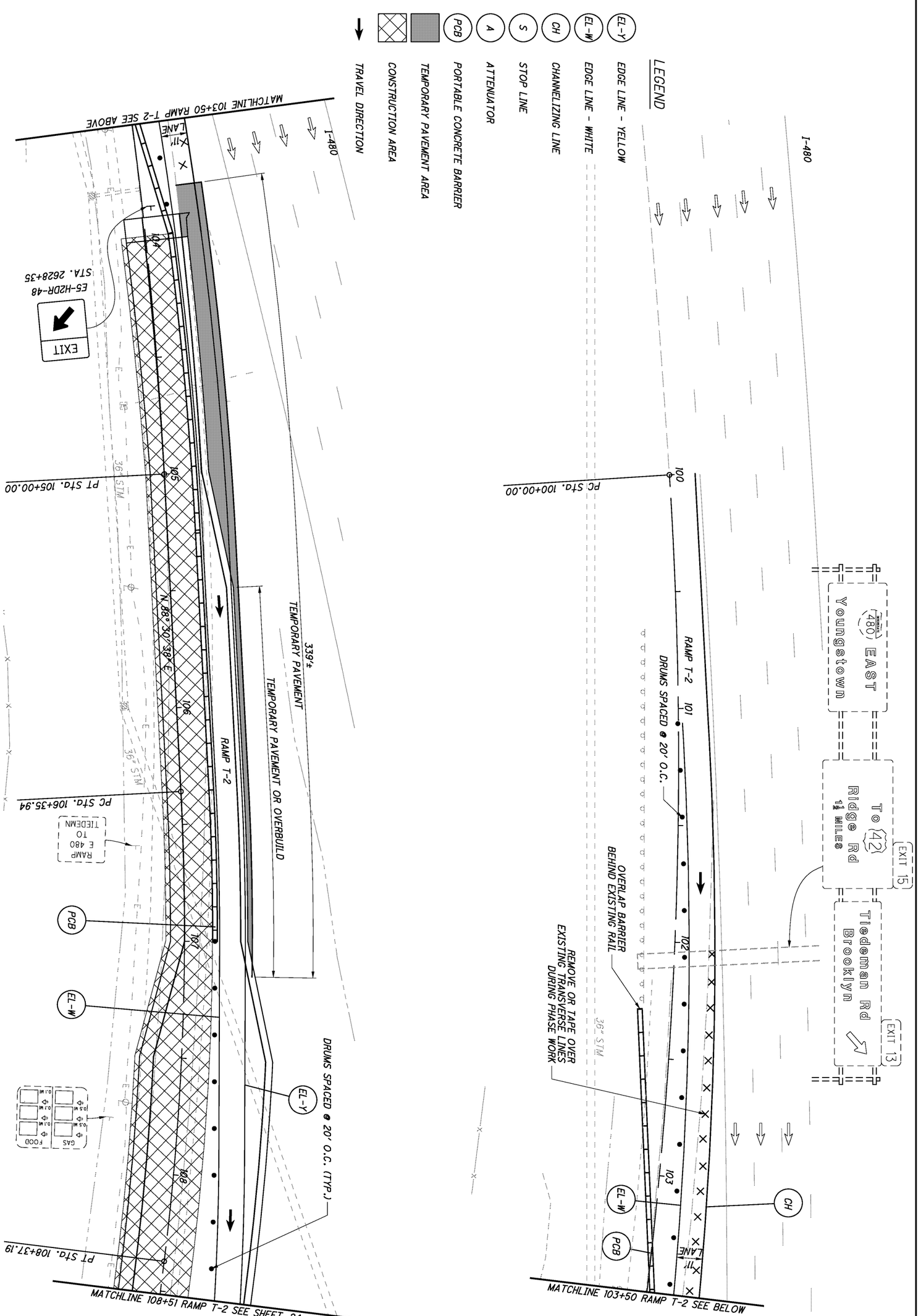
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED BLW
CHECKED RAM

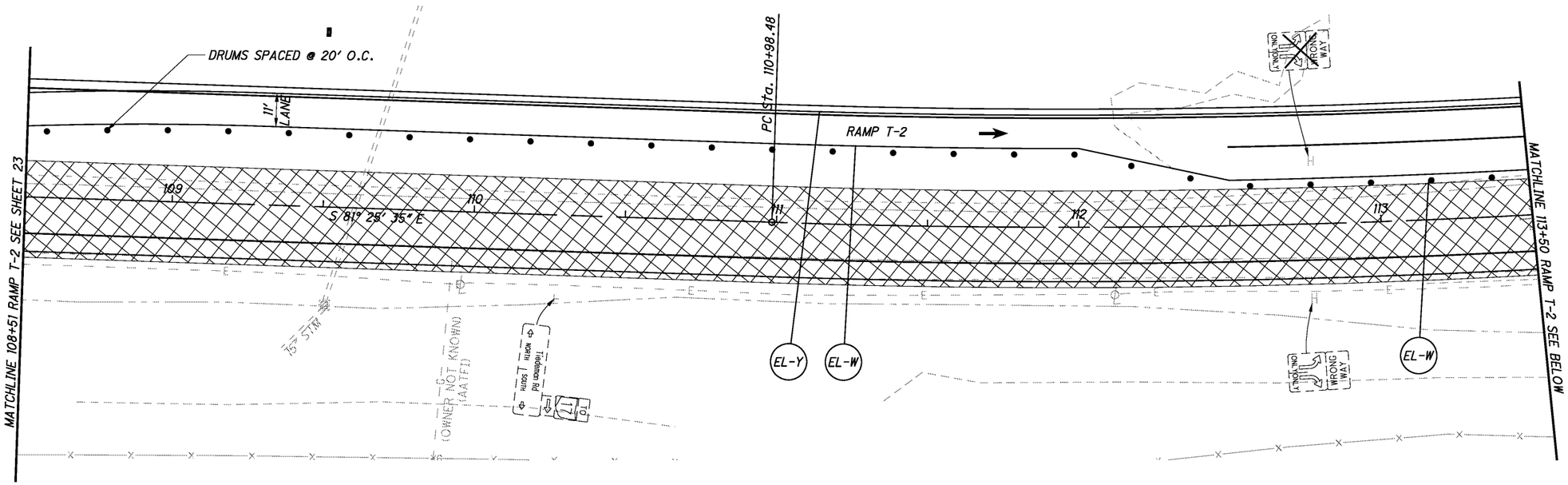
MAINTENANCE OF TRAFFIC PLAN - PHASE 1
STA. 3646+50 TO STA. 3652+25 RAMP T-3

CUY-480-11.60

22
84



23 84	CUY-480-11.60	MAINTENANCE OF TRAFFIC PLAN - PHASE 2 STA. 100+00 TO STA. 108+51 RAMP T-2	CALCULATED BLW CHECKED RAM	0 20 10 40 HORIZONTAL SCALE IN FEET	N



NOTE:
FOR MAINTENANCE OF TRAFFIC LEAD IN SIGNAGE ON TIEDEMAN ROAD SEE SHEET 18

FOR LEGEND, SEE SHEET 23

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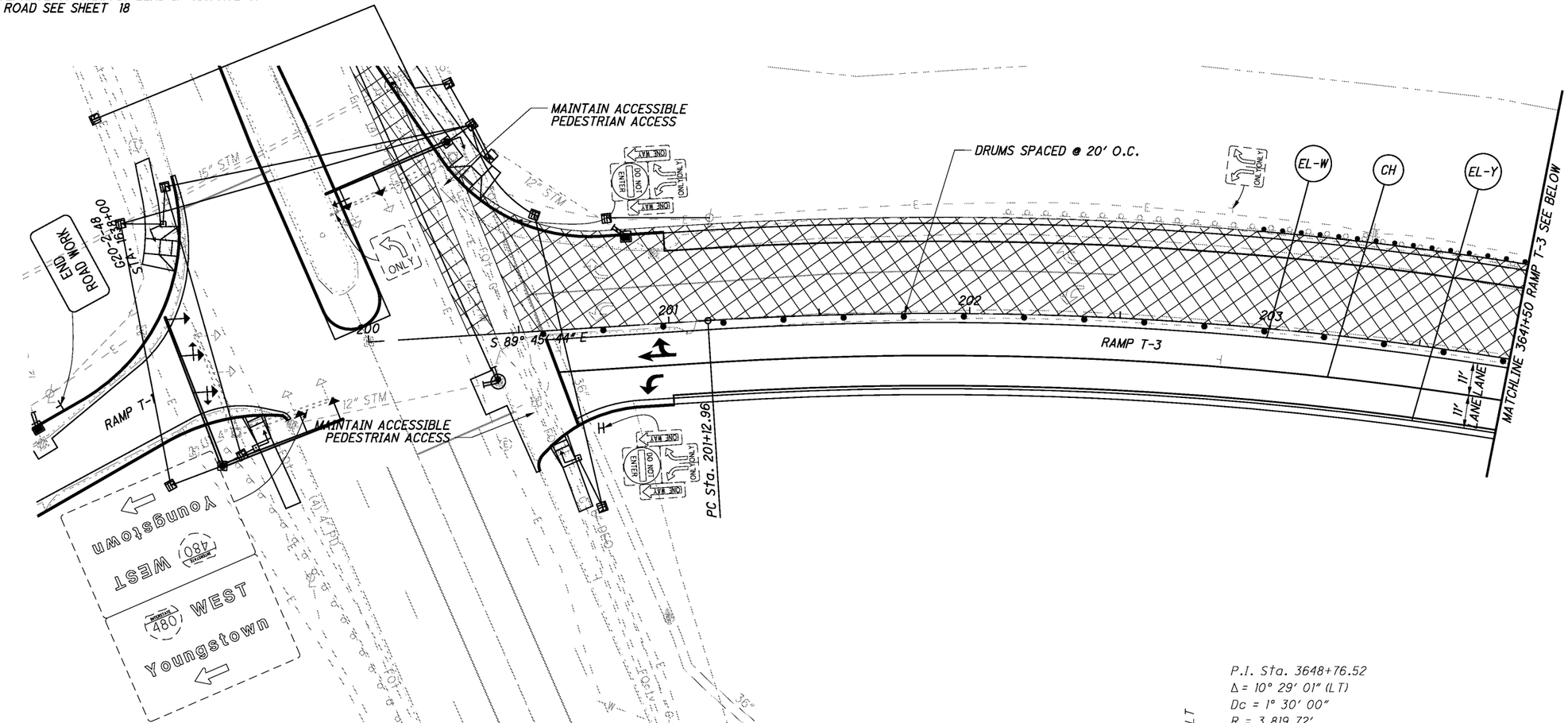
HORIZONTAL SCALE IN FEET
0 10 20 40

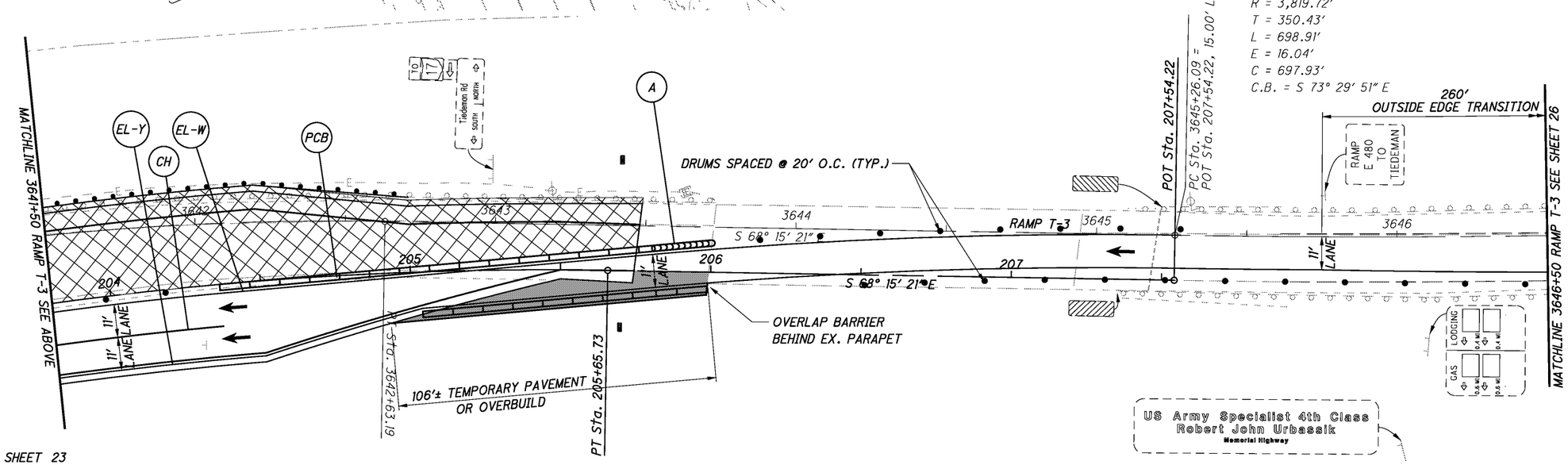
CALCULATED BLW
CHECKED RAM

MAINTENANCE OF TRAFFIC PLAN - PHASE 2
STA. 108+51 TO STA. 115+65.97 RAMP T-2

CUY-480-11.60

NOTE:
FOR MAINTENANCE OF TRAFFIC LEAD IN SIGNAGE ON TIEDEMAN ROAD SEE SHEET 18





FOR LEGEND, SEE SHEET 23

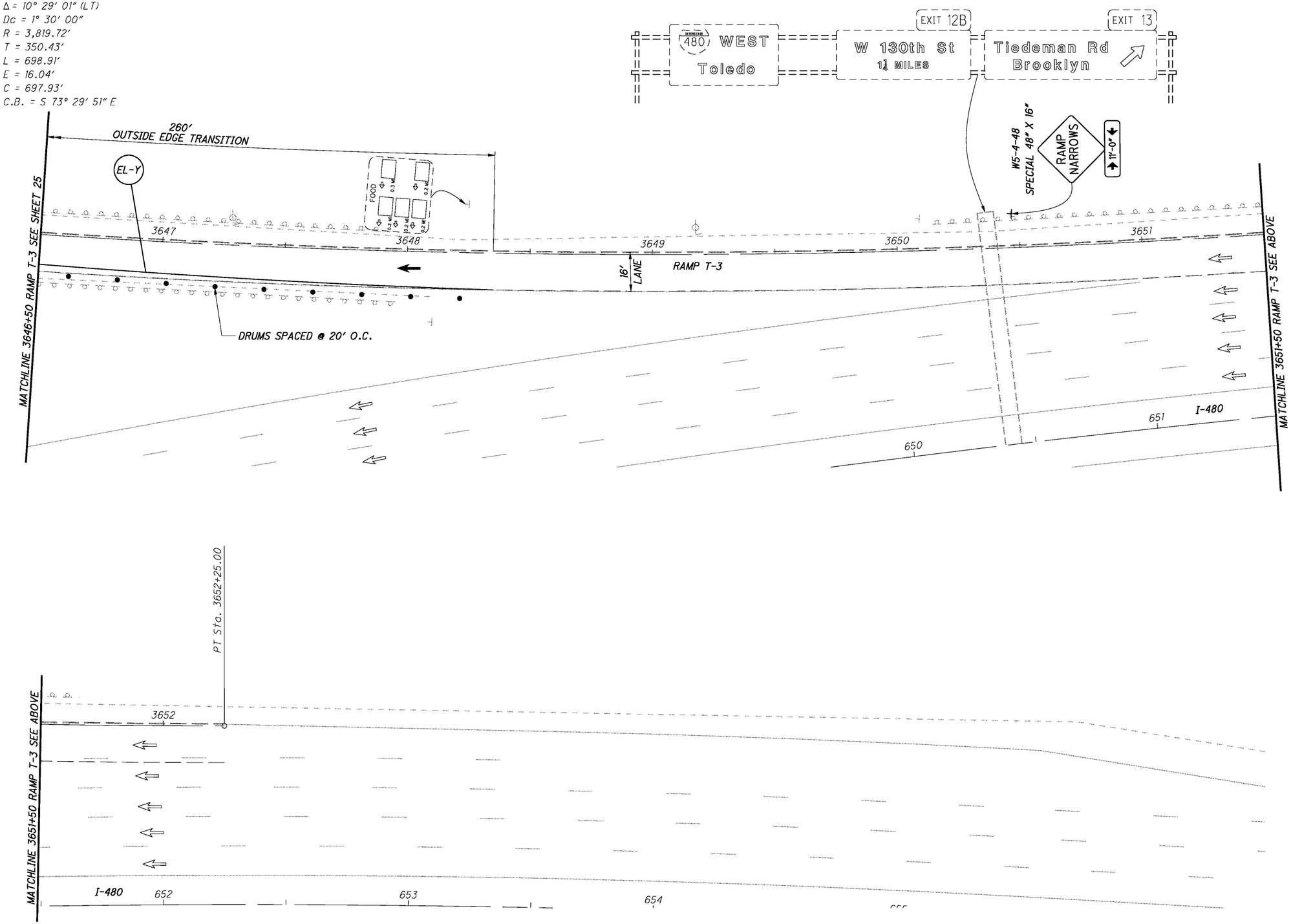
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED BLW
CHECKED RAM

MAINTENANCE OF TRAFFIC PLAN - PHASE 2
STA. 200+00 TO STA. 3646+50 RAMP T-3

CUY-480-11.60

P.I. Sta. 3648+76.52
Δ = 10° 29′ 01″ (LT)
Dc = 1° 30′ 00″
R = 3,819.72′
T = 350.43′
L = 698.91′
E = 16.04′
C = 697.93′
C.B. = S 73° 29′ 51″ E



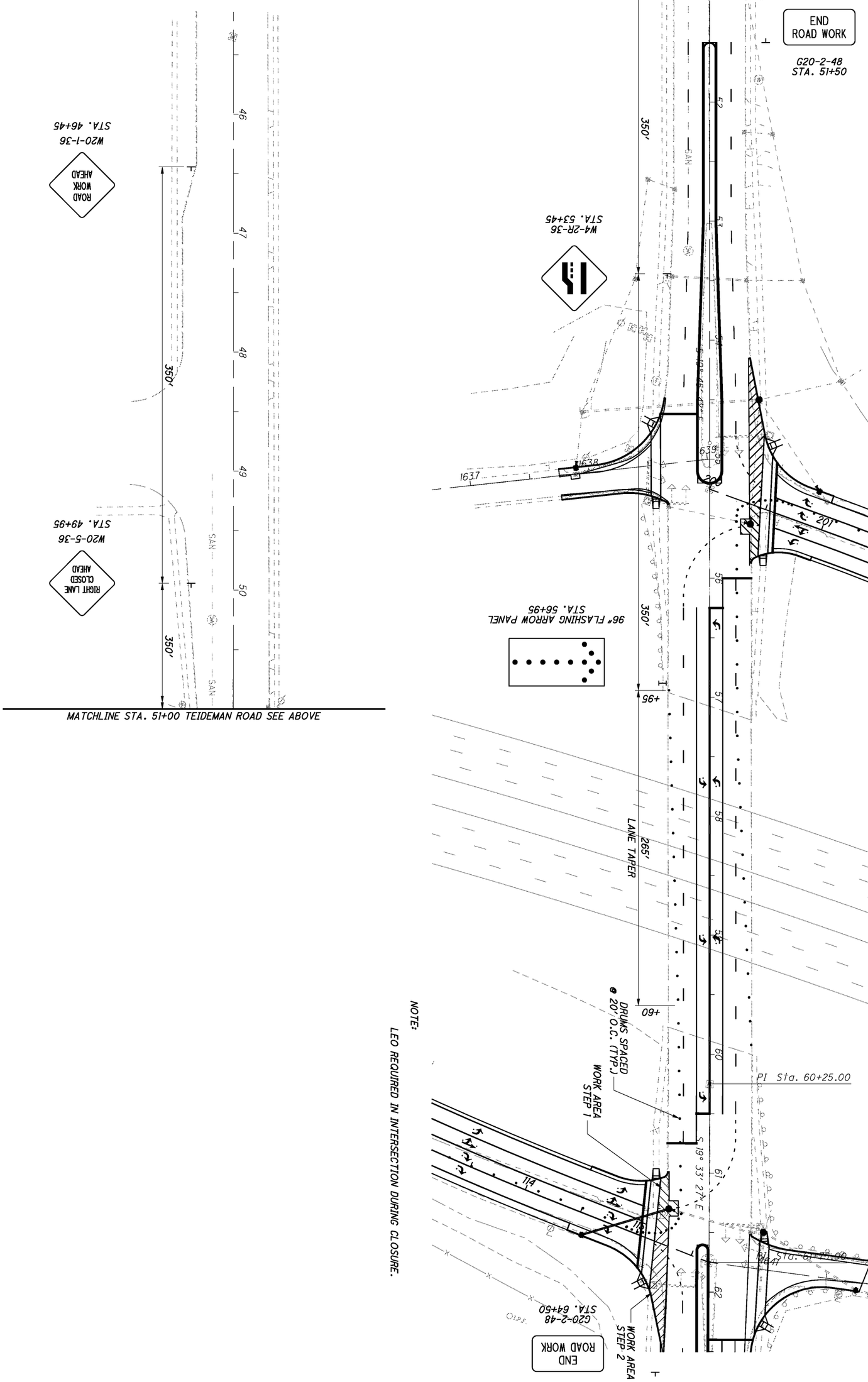
FOR LEGEND, SEE SHEET 23

HORIZONTAL SCALE IN FEET
0 10 20 40

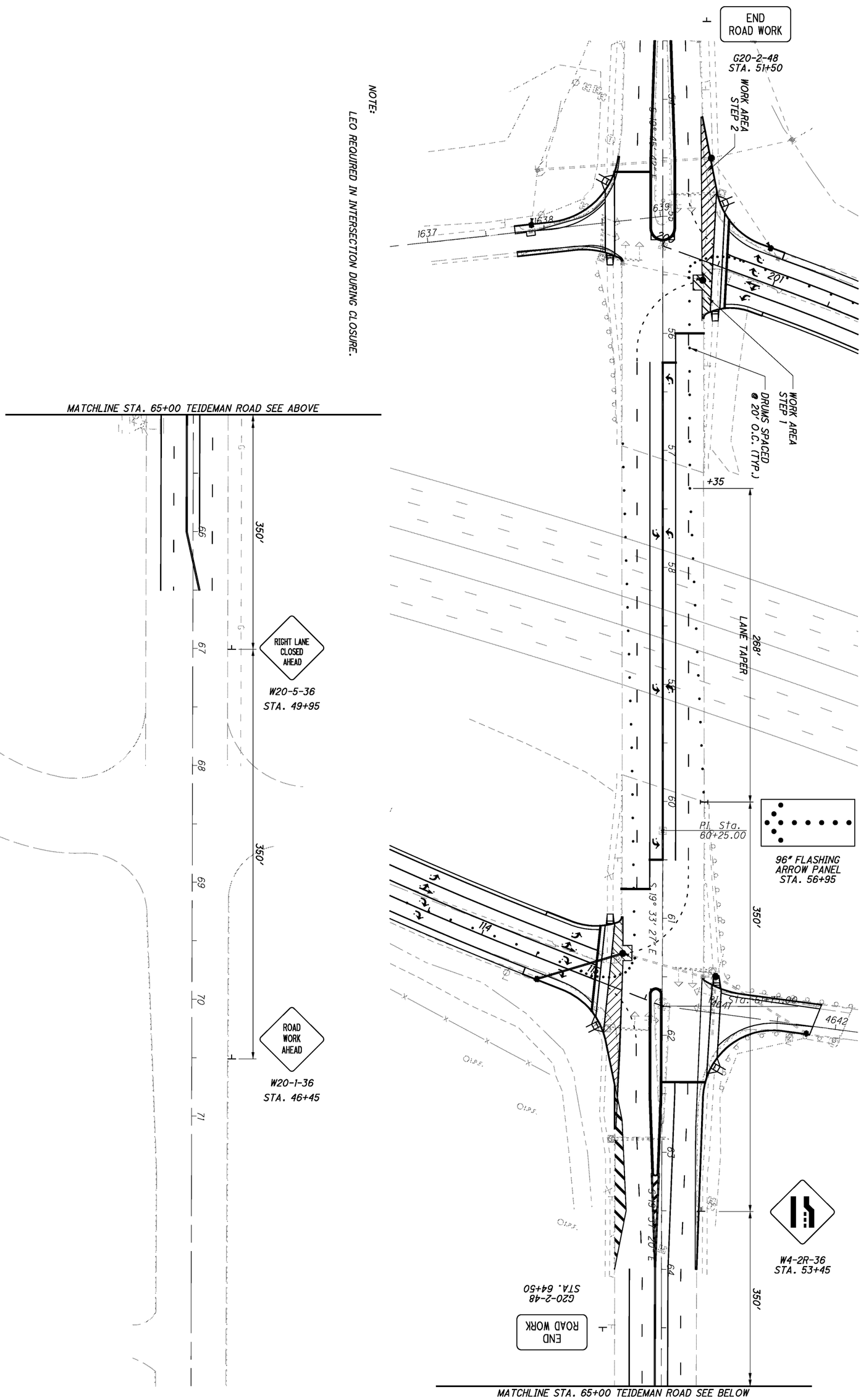
CALCULATED BLW
CHECKED RAM

MAINTENANCE OF TRAFFIC PLAN - PHASE 2
STA. 3646+50 TO STA. 3652+25 RAMP T-3

CUY-480-11.60



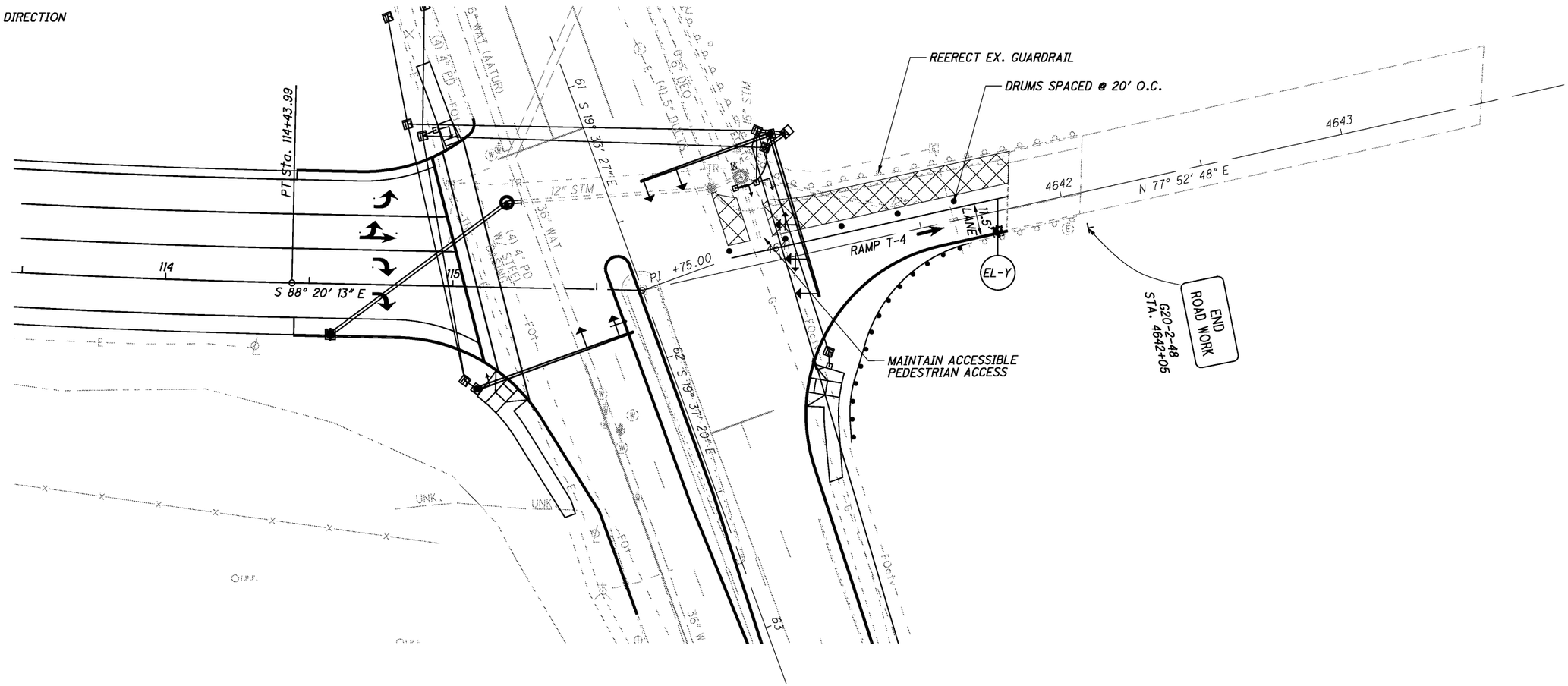
27/84	CUY-480-11.69	MAINTENANCE OF TRAFFIC - PHASE 3 SOUTHBOUND TIEDEMAN RD AT RAMP T-2	CALCULATED BLW CHECKED RAM	0 40 20 80 HORIZONTAL SCALE IN FEET



28 / 84	CUY-480-11.69	MAINTENANCE OF TRAFFIC - PHASE 3 NORTHBOUND TIEDEMAN RD AT RAMP T-3	CALCULATED BLW CHECKED RAM	0 40 20 80 HORIZONTAL SCALE IN FEET

LEGEND

- (EL-Y) EDGE LINE - YELLOW
- (EL-W) EDGE LINE - WHITE
- (CH) CHANNELIZING LINE
- (S) STOP LINE
- (A) ATTENUATOR
- (PCB) PORTABLE CONCRETE BARRIER
- TEMPORARY PAVEMENT AREA
- CONSTRUCTION AREA
- TRAVEL DIRECTION



NOTE:
FOR MAINTENANCE OF TRAFFIC LEAD IN SIGNAGE ON TIEDEMAN ROAD SEE SHEET 18

FOR LEGEND, SEE SHEET 23

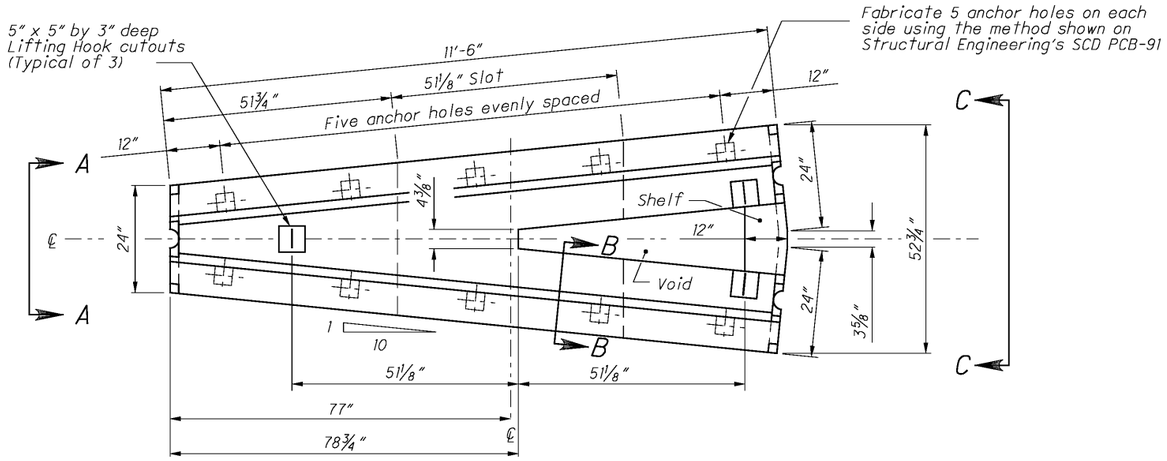
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED BLW
CHECKED RAM

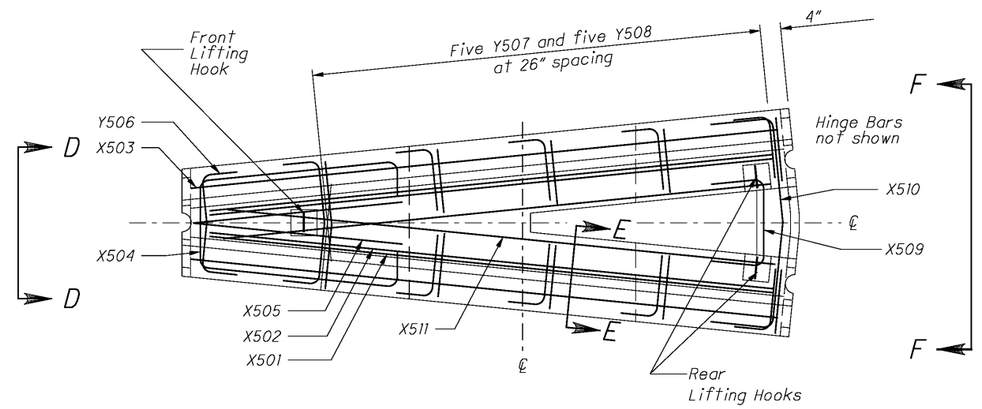
MAINTENANCE OF TRAFFIC PLAN - PHASE 3
RAMP T-4

CUY-480-11.60

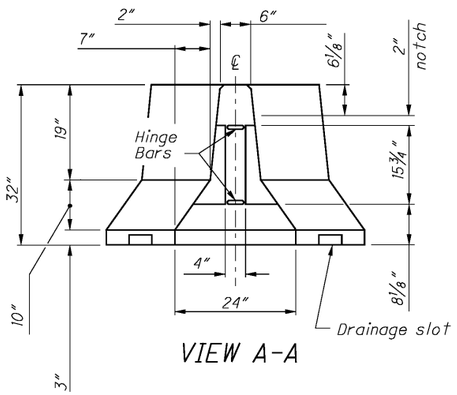
29
84



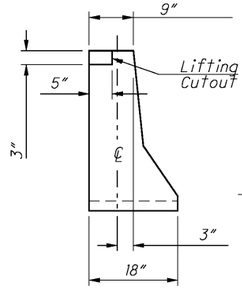
PLAN



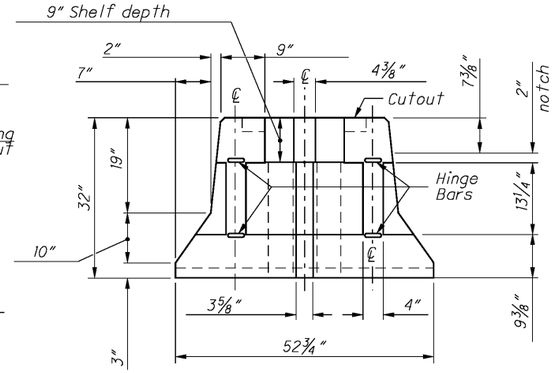
REINFORCING PLAN VIEW



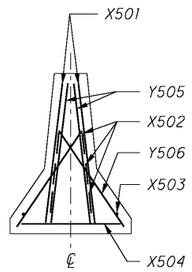
VIEW A-A



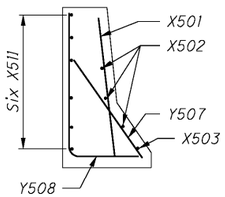
SECTION B-B



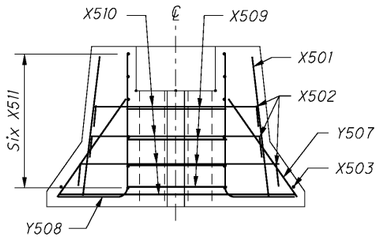
VIEW C-C



VIEW D-D



SECTION E-E



VIEW F-F

REINFORCING DETAILS

NOTES

GENERAL: *This barrier segment is used to split one run of portable concrete barrier into dual runs. Attach directly to ODOT's 32" PCB; however, other approved barrier shapes may be connected to this segment by the use of an appropriate transition unit. Attach at least one standard PCB segment in between this "Y" and an Impact Attenuator. Its field application is shown in MOT plans and on MT standard drawings. Do not use this barrier in an unanchored configuration next to bridge deck edges or similiar dropoffs, anchor according to method shown on PCBDD or other approved method.*

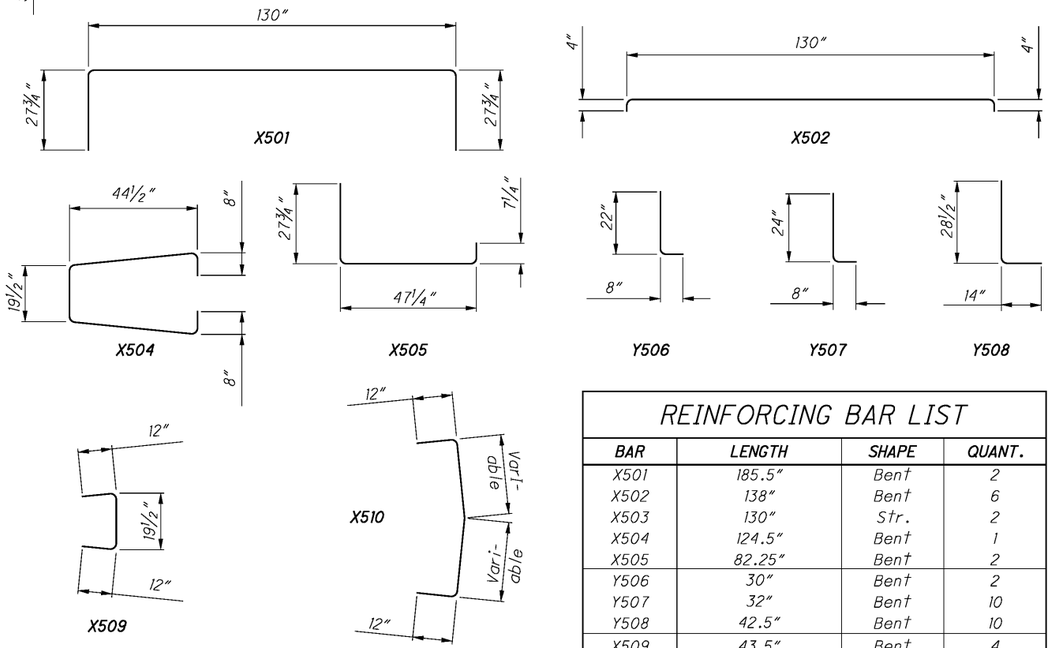
BARRIER DETAILS: *Use* ***SCD RM-4.2*** *for details not shown here, including the geometry of this pin and loop segment matches in every way the design of the end connections shown on the HINGED CONNECTION and JOINT CONNECTION Details (the alternate J-J Hooks connection design is permitted). Additionally, barrier edges may be radiused or chamfered as per the LEGEND Note, barrier is to be permanently marked as mentioned in the MARKINGS Note, and delineate as per the REFLECTORIZATION Note.*

MATERIAL SPECIFICATIONS: *The minimum design strength of the concrete is 4,000 psi and meets the requirements of CMS 499. For reinforcing steel, use ASTM A615 Grade 60 black steel and provide 2" min. rebar cover. Material specifications for the Hinge and Reinforcing Bars, as well as the Connecting Hardware may be found on* ***SCD RM-4.2.*** *For additional material specifications not shown here, see* ***SCD RM-4.2*** *and CMS 622.*

HANDLING: *The fabricator is responsible for the design of a lifting system for handling segments. As a minimum, use three lifting points at the locations suggested in the Plan views, and design with a lifting factor of safety of 4. Any protrusions from the lifting hook design is not to affect the crash worthiness of the barrier. The calculations shall be signed, sealed and dated by a Registered Engineer and include these calculations with the Manufacturing Drawings required by Supplement 1073.12. Refer to Part 5 of the PCI Handbook. Approximate segment weight is 8,500 lbs [3850 kg].*

PAYMENT: *Payment will be made under* ***Item 622 - Portable Barrier, "Y" Connector, Each,*** *and will include all forms, materials and labor to cast this segment.*

ALTERNATE METHOD: *Contractors may choose to use a wide Impact Attenuator in lieu of the concrete "Y" alternate. The chosen unit will be a Type 2 or 3 Impact Attenuator matching the product previously called for on the project plans at the expected installation location.*



BENDING DIAGRAMS

REINFORCING BAR LIST

BAR	LENGTH	SHAPE	QUANT.
X501	185.5"	Bent	2
X502	138"	Bent	6
X503	130"	Str.	2
X504	124.5"	Bent	1
X505	82.25"	Bent	2
Y506	30"	Bent	2
Y507	32"	Bent	10
Y508	42.5"	Bent	10
X509	43.5"	Bent	4
X510	Varies	Bent	4
X511	124"	Str.	12

THIS DRAWING REPLACES Y BARRIER PLAN INSERT SHEET DATED 11-30-07

OFFICE OF ROADWAY ENGINEERING

DESIGNED | REVIEWED

REVISION DATE 4-16-10 | CHECKED

PLAN INSERT SHEET

PCB "Y" CONNECTOR SEGMENT

CUY-480-11.60

1 / 1

30 / 84

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START STATION (RAMP T-2)	END STATION (RAMP T-2)	SIDE	FILTER STRIP WIDTH (FT)	PAVEMENT WIDTH TREATED (FT)	AREA CREDITED FOR TREATMENT (ACRES)
104+00.00	110+21.00	LEFT	15	3	0.26
104+00.00	105+00.00	RIGHT	15	22	0.09
105+00.00	107+08.00	RIGHT	25	29 (AVERAGE)	0.26
110+21.00	114+44.00	RIGHT	15	6	0.22
				TOTAL TREATMENT AREA:	0.83

THE TOTAL TREATMENT AREA EXCEEDS THE REQUIRED 0.76-ACRES.

ESTIMATED QUANTITIES CARRIED TO GENERAL SUMMARY			
ITEM	DESCRIPTION	ESTIMATED QUANTITY	UNIT
670	SLOPE EROSION PROTECTION MAT, TYPE A	2602	SY
832	PERIMETER FILTER FABRIC FENCE	1415	FT
832	FILTER FABRIC DITCH CHECK	125	FT
832	INLET PROTECTION	208	FT

PROJECT DESCRIPTION

IMPROVEMENTS WILL INCLUDE THE RECONSTRUCTION OF 0.21 MILES OF THE I-480 EASTBOUND EXIT RAMP TO TIEDEMAN ROAD; THE RECONSTRUCTION OF 0.10 MILES OF THE I-480 WESTBOUND EXIT RAMP TO TIEDEMAN ROAD; MINOR WIDENING OF THE ENTRANCE RAMPS; THE UPGRADED SIGNALIZATION OF THE EXIT/ENTRANCE RAMP INTERSECTIONS WITH TIEDEMAN ROAD; SIGNAL RETIMING AND COORDINATION ALONG TIEDEMAN ROAD BETWEEN BROOKPARK ROAD AND BIDDULPH ROAD INCLUDING NEW CURBS, RAISED CONCRETE MEDIANS, CURB RAMPS, DRAINAGE, NEW SIGNING AND PAVEMENT MARKINGS.

BEGIN WORK STA. 51+50.00

END PROJECT STA. 205+76.89
END WORK STA. 205+76.89

BEGIN WORK STA. 1637+75.00

BEGIN PROJECT STA. 104+00.00

STRUCTURE FILE No. 81453358 NO WORK

STRUCTURE FILE No. 1812939 NO WORK

END WORK STA. 4641+85.66

STRUCTURE FILE No. 1812947 NO WORK

BEGIN WORK STA. 103+90.00

END WORK STA. 64+00.00

TIEDEMAN ROAD
Ex R/W
BIG CREEK
℄ CONSTR. RAMP T-3
RAMP T-3
℄ EX. I-480
I-480
℄ EX. TIEDEMAN ROAD
℄ CONSTR. RAMP T-2
RAMP T-2
RAMP T-1
℄ EX. RAMP T-1
RAMP T-4
℄ EX. RAMP T-4
Ex LA
Ex R/W

STA. 104+00, LT & RT BEGIN 15' WIDE
STA. 105+00, RT END 15' WIDE, BEGIN 25' WIDE
STA. 107+08, RT END 25' WIDE
STA. 110+21, LT END 15' WIDE
STA. 110+21, RT BEGIN 15' WIDE
STA. 114+44, RT END 15' WIDE

PROJECT DATA			
PROJECT EARTH DISTURBED AREA	3.78 ACRES	RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.5 - 0.9
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	0.30 ACRES	RUNOFF COEFFICIENT FOR POST-CONSTRUCTION SITE	0.8
NOTICE OF INTENT EARTH DISTURBED AREA	4.90 ACRES	POST CONSTRUCTION BMP: VEGETATED FILTER STRIPS PROVIDED TO MEET NPDES POST-CONSTRUCTION REQUIREMENTS.	
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION SITE	1.36 ACRES	IMMEDIATE RECEIVING WATERS	BIG CREEK
IMPERVIOUS (PAVED) AREA FOR POST-CONSTRUCTION SITE	2.26 ACRES	SUBSEQUENT RECEIVING WATERS	CUYAHOGA RIVER

LEGEND

- ITEM 670, SLOPE EROSION PROTECTION MAT, TYPE A PER 712.11
- (IP) INLET PROTECTION PER SCD DM-4.4
- (DC) DITCH CHECK PER SCD DM-4.4
- (FF) PERIMETER FILTER FABRIC FENCE PER SCD DM-4.4

USGS QUADRANT NO. 41081-D7
WEST VIEW OHIO
LONGITUDE: W82°52'55"*
LATITUDE: N40°20'10"*

* LONGITUDE AND LATITUDE TO APPROX. CENTER OF PROJECT.

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED MEP
CHECKED MAW

STORM WATER POLLUTION PREVENTION PLAN

CUY-480-11.60

FOR CROSS SECTIONS, SEE SHEET 33

FOR INTERSECTION DETAIL, SEE SHEET 67

DEO = THE EAST OHIO GAS COMPANY,
DBA DOMINION EAST OHIO, 1-800-362-7557

Ex LA

STA. 1637+75.00
BEGIN PAVEMENT WIDENING
BEGIN CURB
TAPER CURB HEIGHT
FROM 0" TO 6" OVER 10'
MATCH EXISTING

STA. 54+40.00
BEGIN CONC. WALK
MATCH EXISTING

STA. 54+48.61
TIE INTO EX. UD OVER 10'
MATCH EXISTING

(4) 4" PD W/
STEEL CASING

BEGIN WORK
STA. 1637+75.00

DO NOT
DISTURB

65' R

12" STM

5.42'

6.41'

15.17'

20.18'

4.02'

SAWCUT

TO BE
REMOVED

CONSTR. LIMITS

3' R

TO
REMAIN

12" STM

DO NOT
DISTURB

67.5'

STA. 55+65.00
END CONC. WALK
MATCH EXISTING

℄ EX. RAMP T-1

1636

1637

1638

1639

N 63° 56' 17" E

S 19° 45' 42" E

36" W

36" STM

18" STM

15" STM

12" STM

STA. 55+00.00 ℄ EX. TIEDEMAN ROAD =
STA. 1639+01.99 ℄ EX. RAMP T-1

℄ CONSTR.
RAMP T-3

S 89° 45' 44" E 201

PC +12.96

℄ EX. TIEDEMAN ROAD

56

202

795
790
785
780
775
770
765
760

STA 1638+63.36, 36.06' RT
EX. CB, GRATE ELEV 778.23
EX. 12" RCP SE 774.66
TO REMAIN

EXISTING GROUND

EX. ELEC

EX. ELEC

4-EX. 4" FO

6" UNCLASIFIED UD

STA 1637+89.54, 5.42' LT
CB-3A, GRATE ELEV 776.12
6" UD 773.00
12" (N) 770.79

STA 1637+88.24, 0.36' RT
EX. CB, GRATE ELEV 776.23
EX. 12" RCP NW 771.52
TO BE REMOVED

775.85

776.54

777.41

778.40

1636+00

1637+00

1638+00

1639+00

HORIZONTAL
SCALE IN FEET
0 10 20 40

CALCULATED MEP
CHECKED FR

PLAN AND PROFILE
RAMP T-1

CUY-480-11.60

32
84

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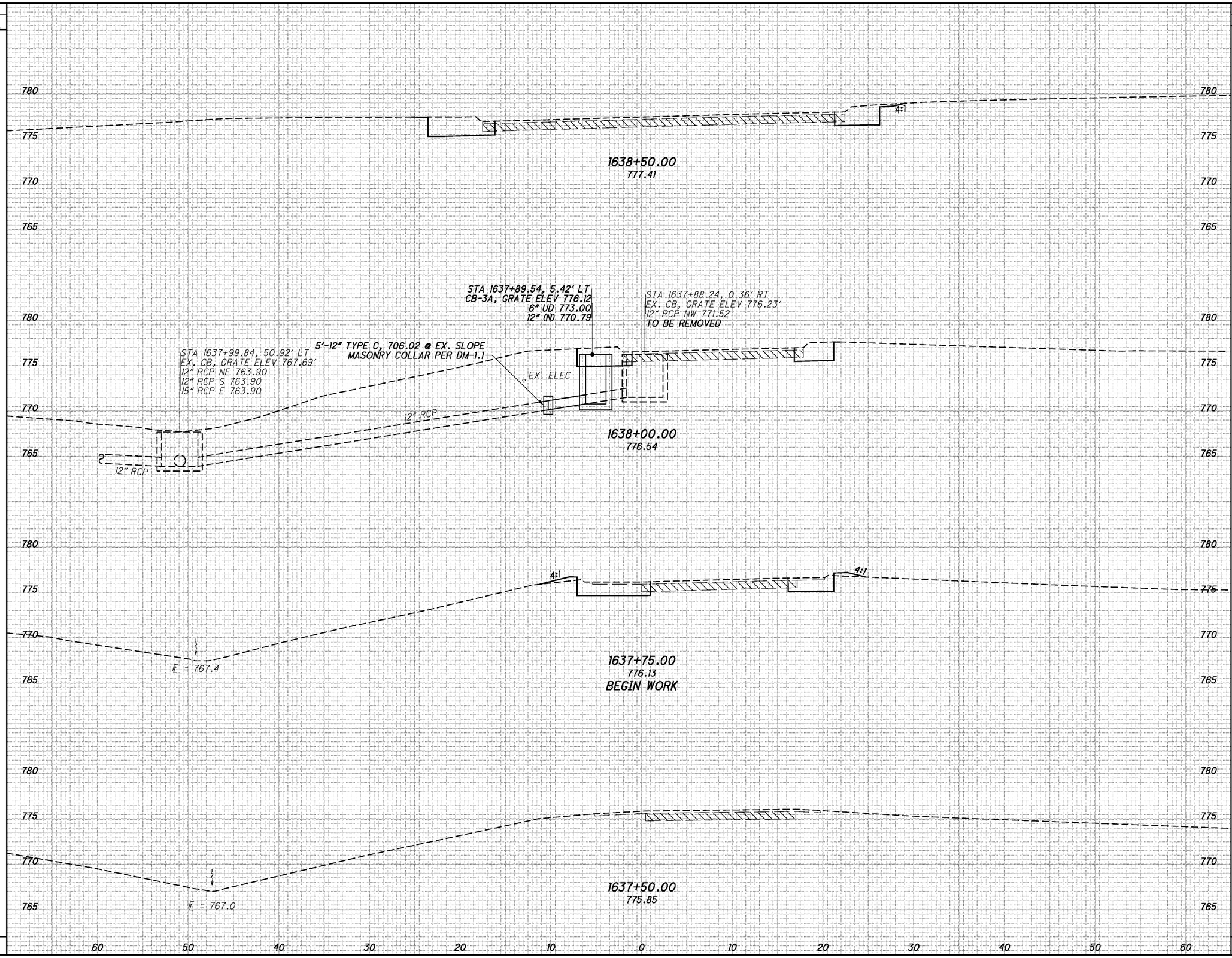
SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED JEM
CHECKED MEP



CROSS SECTIONS RAMP T-1
STA. 1637+50.00 TO STA. 1638+50

CUY-480-11.60

33
84

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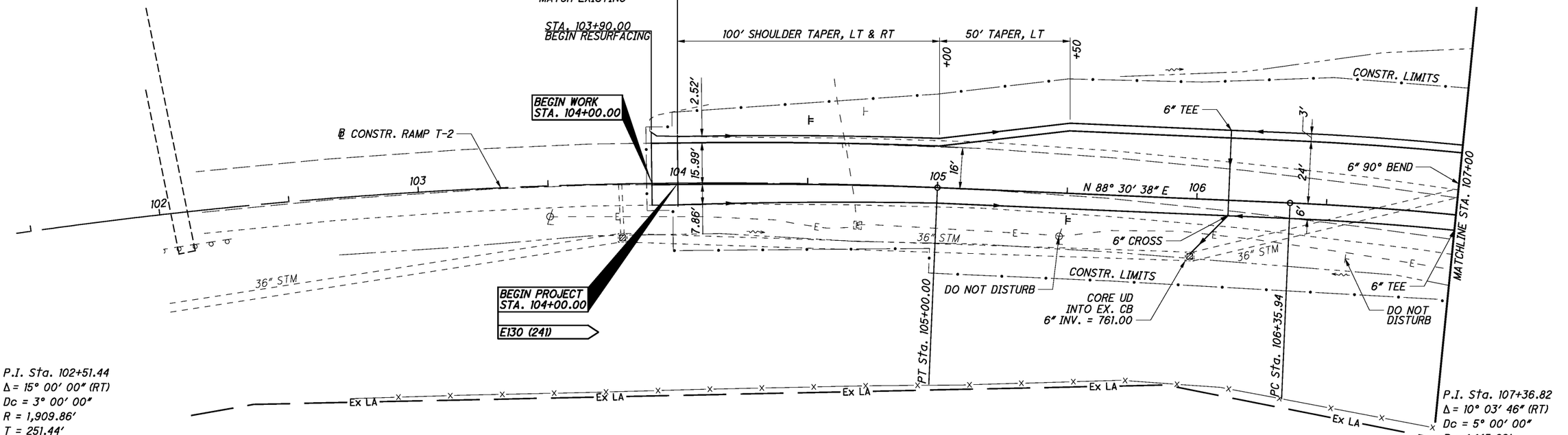
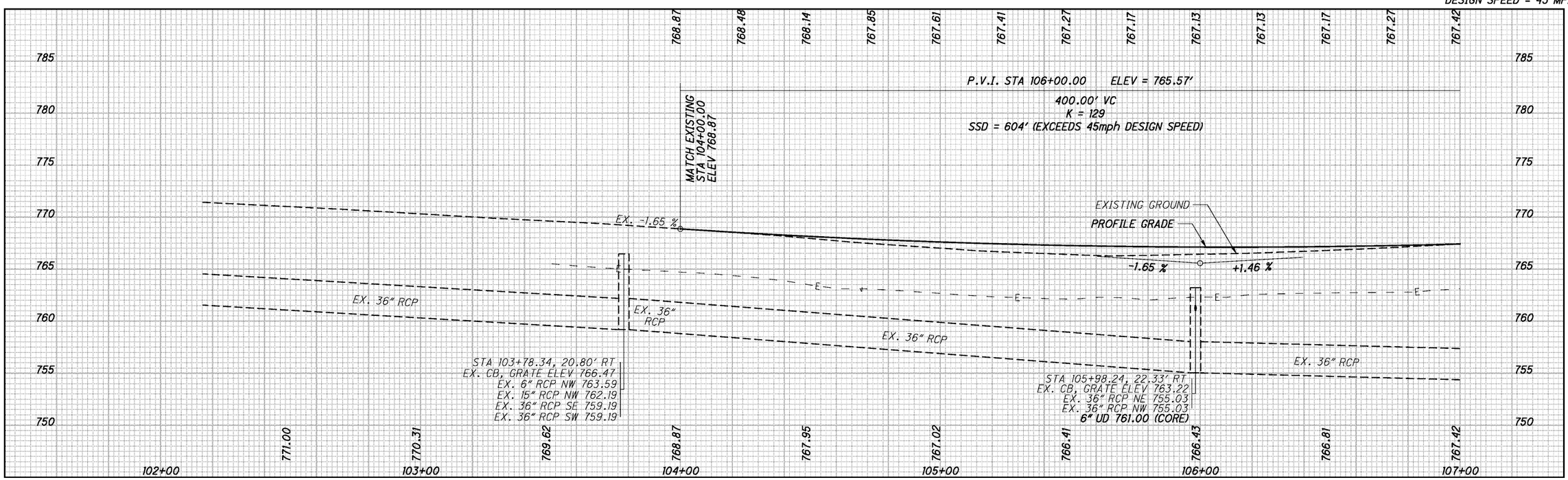
FOR CROSS SECTIONS, SEE SHEETS 37 - 44

FOR SUPERELEVATION TABLE, SEE SHEET 61 - 62



P.I. Sta. 102+51.44
Δ = 15° 00' 00" (RT)
Dc = 3° 00' 00"
R = 1,909.86'
T = 251.44'
L = 500.00'
E = 16.48'
eMAX = 0.039
DESIGN SPEED = 45 MPH
P.C. Sta. 100+00.00

P.I. Sta. 107+36.82
Δ = 10° 03' 46" (RT)
Dc = 5° 00' 00"
R = 1,145.92'
T = 100.89'
L = 201.26'
E = 4.43'
eMAX = 0.051
DESIGN SPEED = 45 MPH



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MEP
CHECKED FR

PLAN AND PROFILE - RAMP T-2
BEGINNING TO STA. 107+00

CUY-480-11.60

34
84

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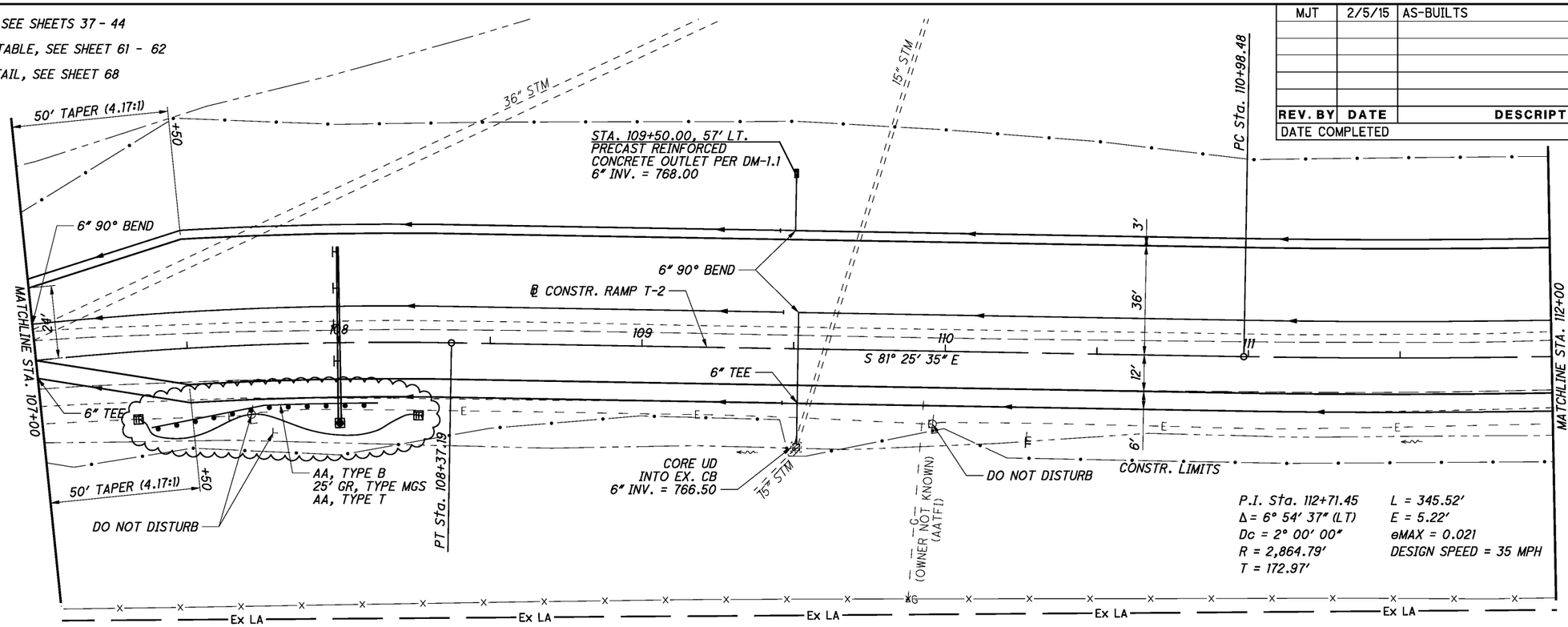
FOR CROSS SECTIONS, SEE SHEETS 37 - 44

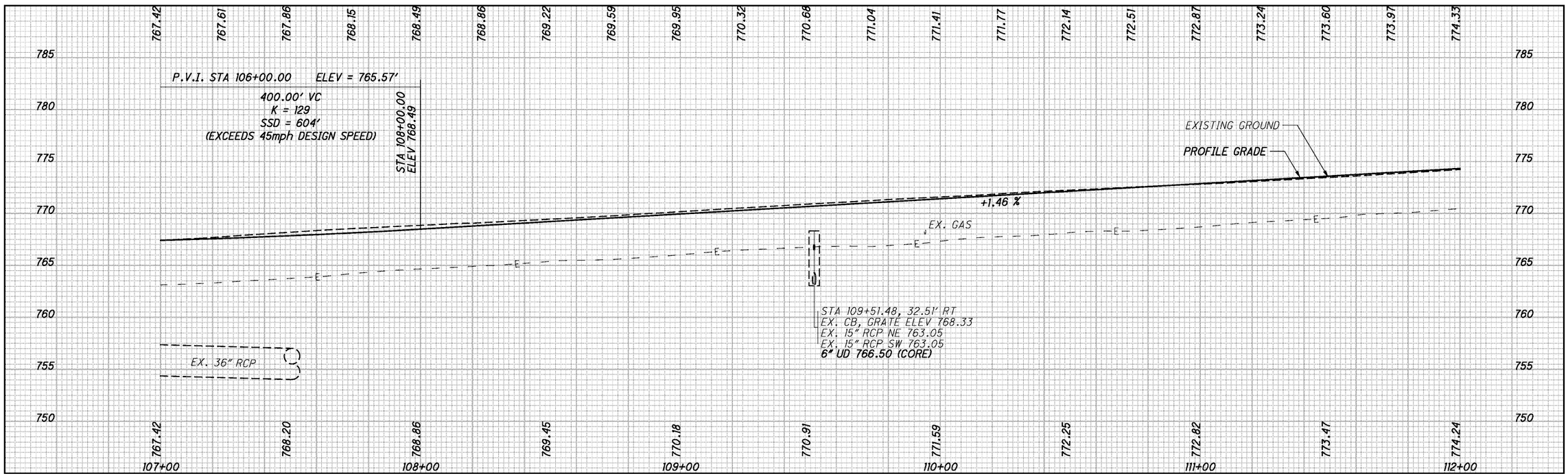
FOR SUPERELEVATION TABLE, SEE SHEET 61 - 62

FOR INTERSECTION DETAIL, SEE SHEET 68

REV. BY	DATE	DESCRIPTION
MJT	2/5/15	AS-BUILTS
DATE COMPLETED		



P.I. Sta. 107+36.82
Δ = 10° 03' 46" (RT)
Dc = 5° 00' 00"
R = 1,145.92'
T = 100.89'
L = 201.26'
E = 4.43'
eMAX = 0.051
DESIGN SPEED = 45 MPH



PLAN AND PROFILE - RAMP T-2
STA. 107+00 TO STA. 112+00

CUY-480-11.60

35
84

CALCULATED MEP
CHECKED FR

HORIZONTAL SCALE IN FEET
0 10 20 40

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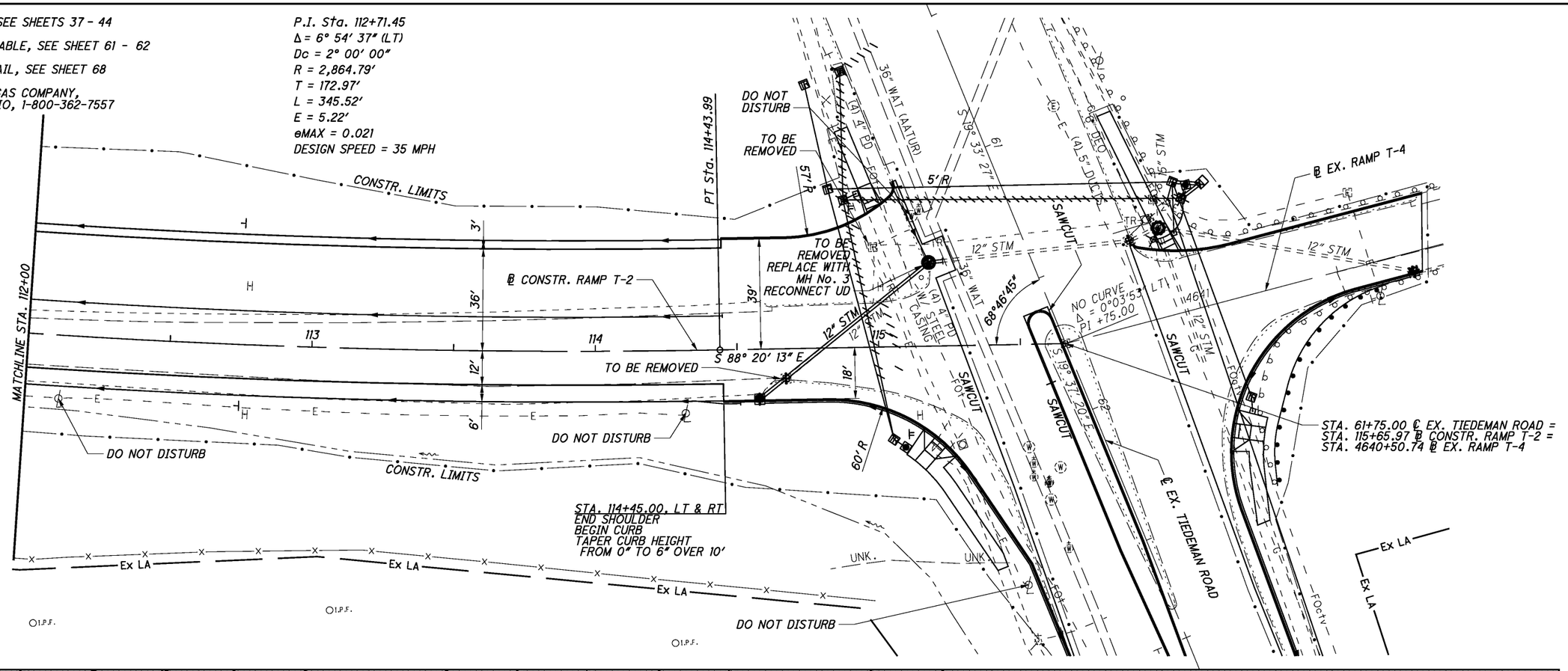
FOR CROSS SECTIONS, SEE SHEETS 37 - 44

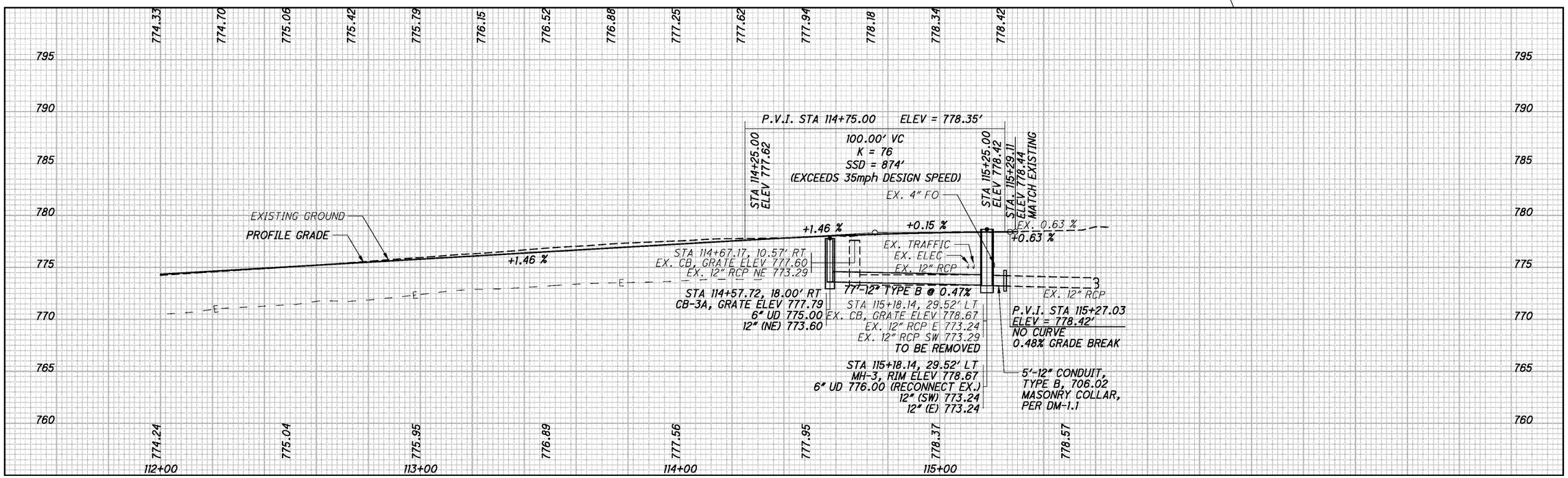
FOR SUPERELEVATION TABLE, SEE SHEET 61 - 62

FOR INTERSECTION DETAIL, SEE SHEET 68

DEO = THE EAST OHIO GAS COMPANY,
DBA DOMINION EAST OHIO, 1-800-362-7557

P.I. Sta. 112+71.45
Δ = 6° 54' 37" (LT)
Dc = 2° 00' 00"
R = 2,864.79'
T = 172.97'
L = 345.52'
E = 5.22'
eMAX = 0.021
DESIGN SPEED = 35 MPH





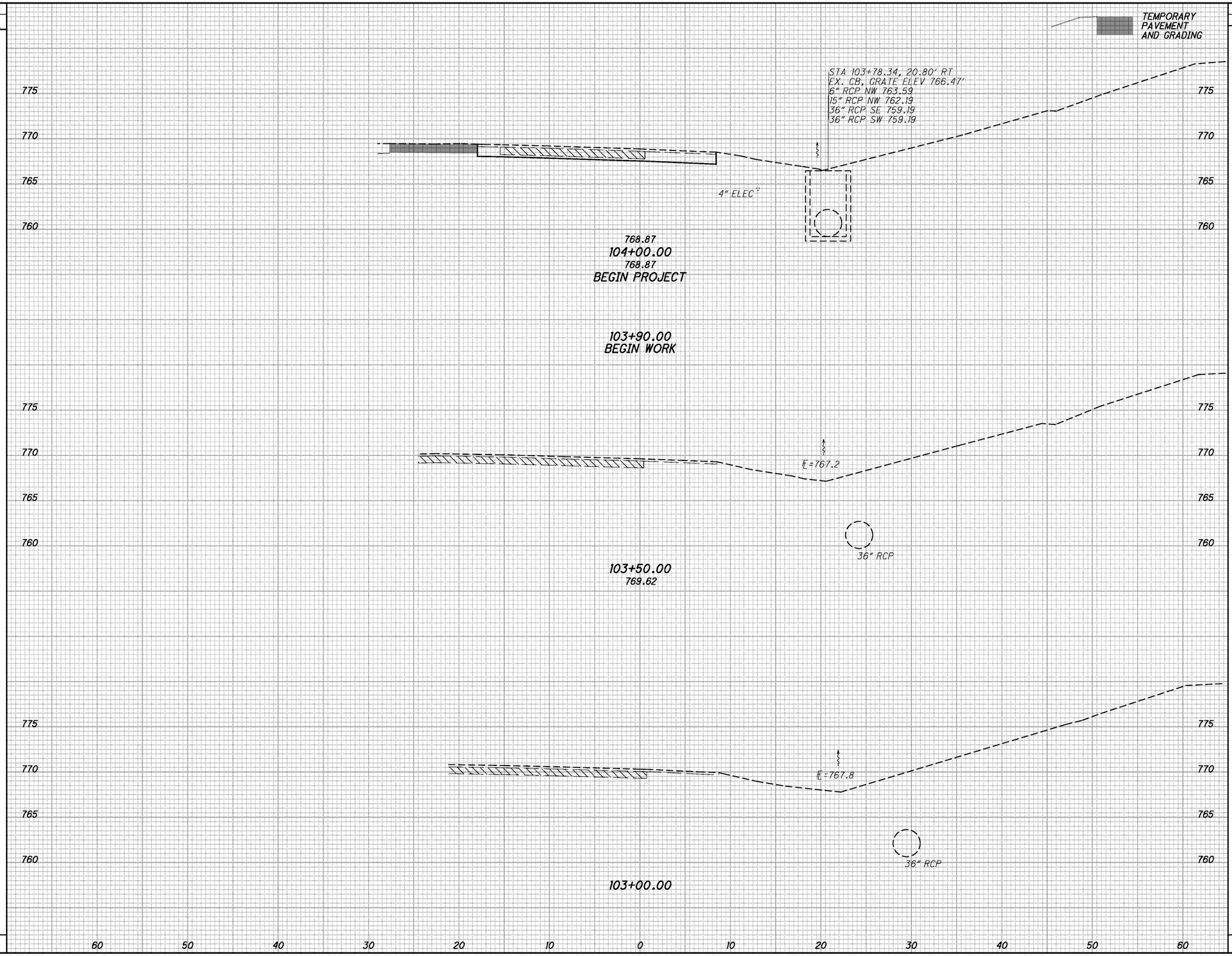
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MEP
CHECKED FR

PLAN AND PROFILE - RAMP T-2
STA. 112+00 TO ENDING

CUY-480-11.60

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

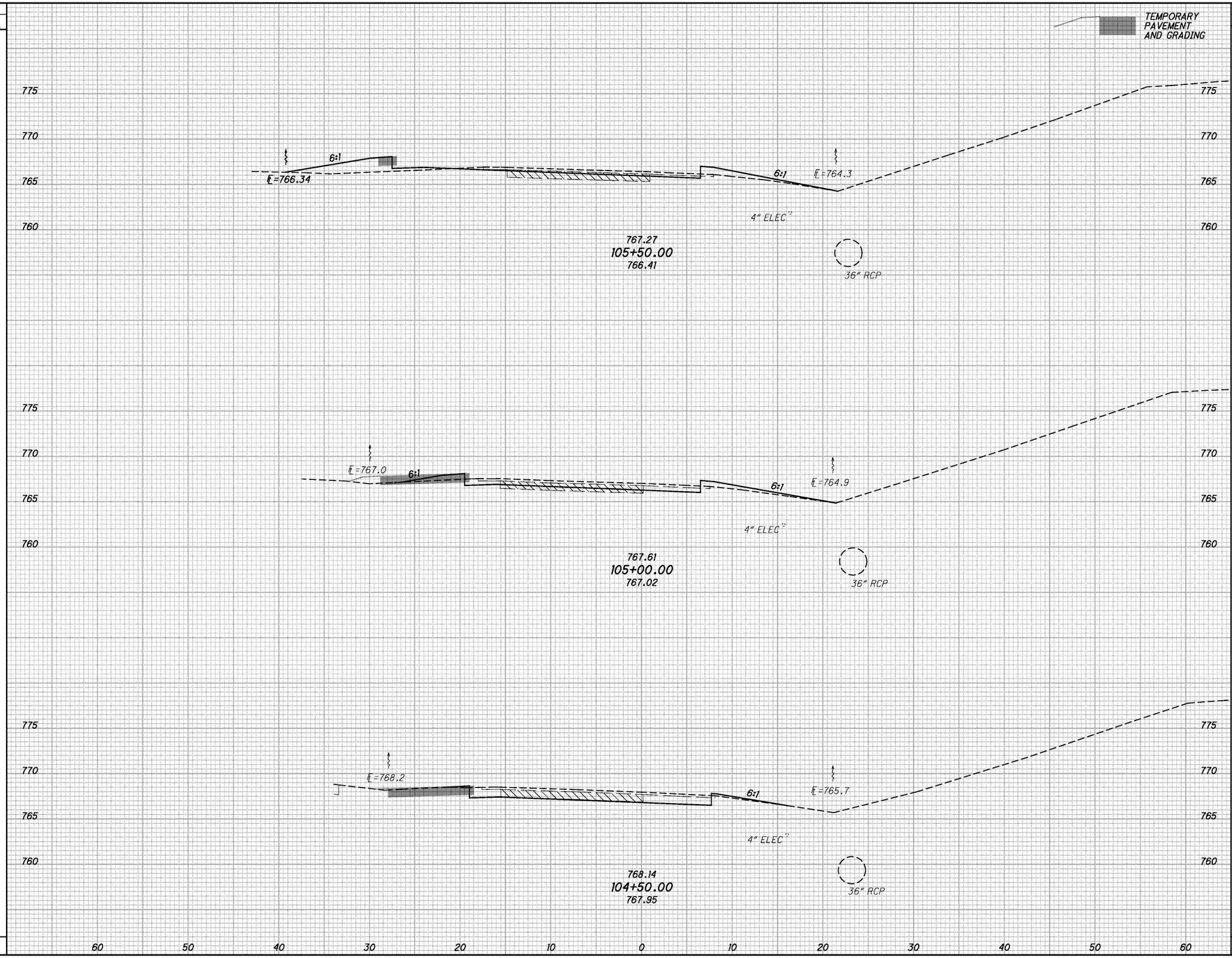
CALCULATED JEM
CHECKED MEP

CROSS SECTIONS RAMP T-2
STA. 103+00.00 TO STA. 104+00.00

CUY-480-11.60

37
84

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

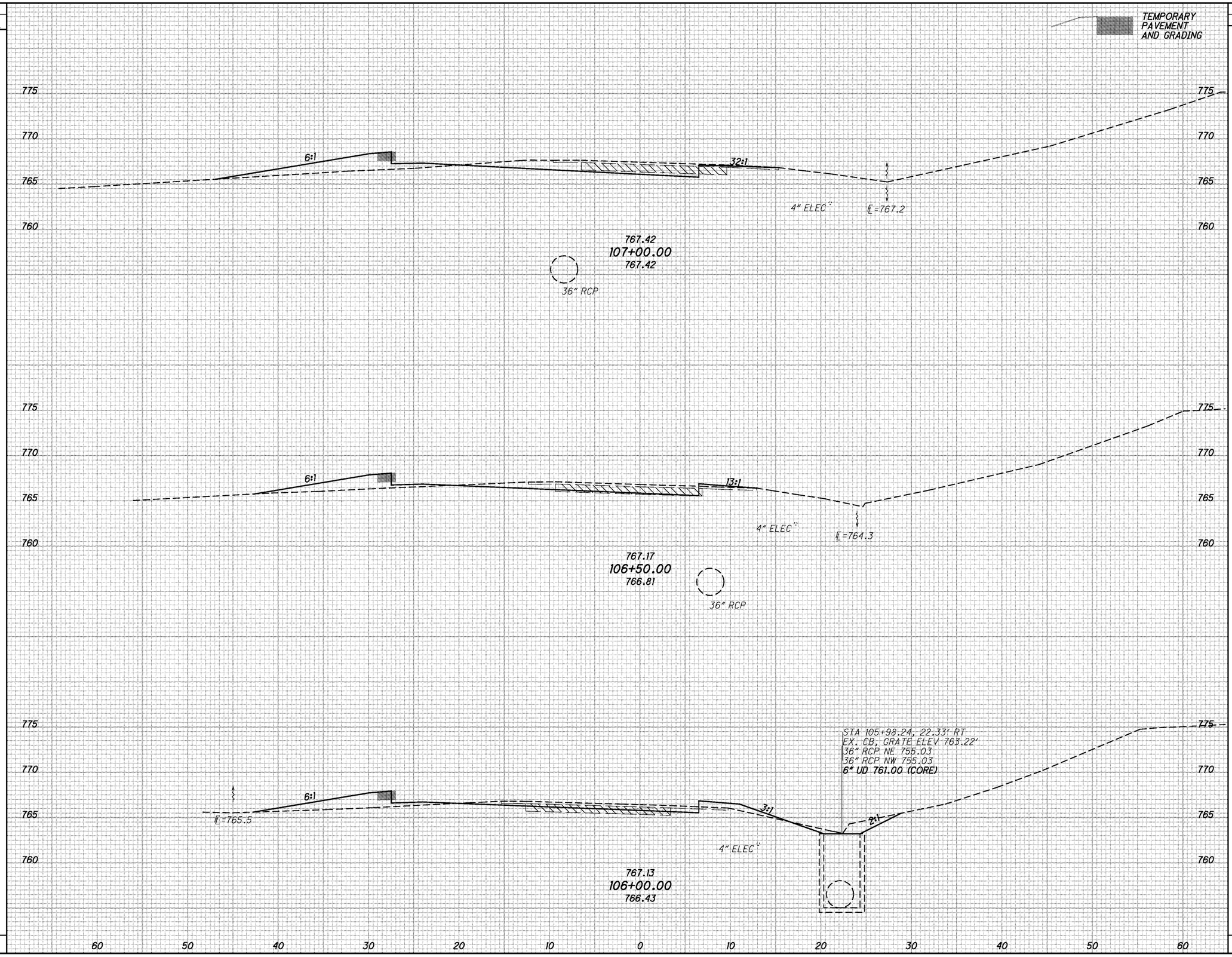
CALCULATED JEM
CHECKED MEP

CROSS SECTIONS RAMP T-2
STA. 104+50.00 TO STA. 105+50.00

CUY-480-11.60

38
84

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED JEM
CHECKED MEP

CROSS SECTIONS RAMP T-2
STA. 106+00.00 TO STA. 107+00.00

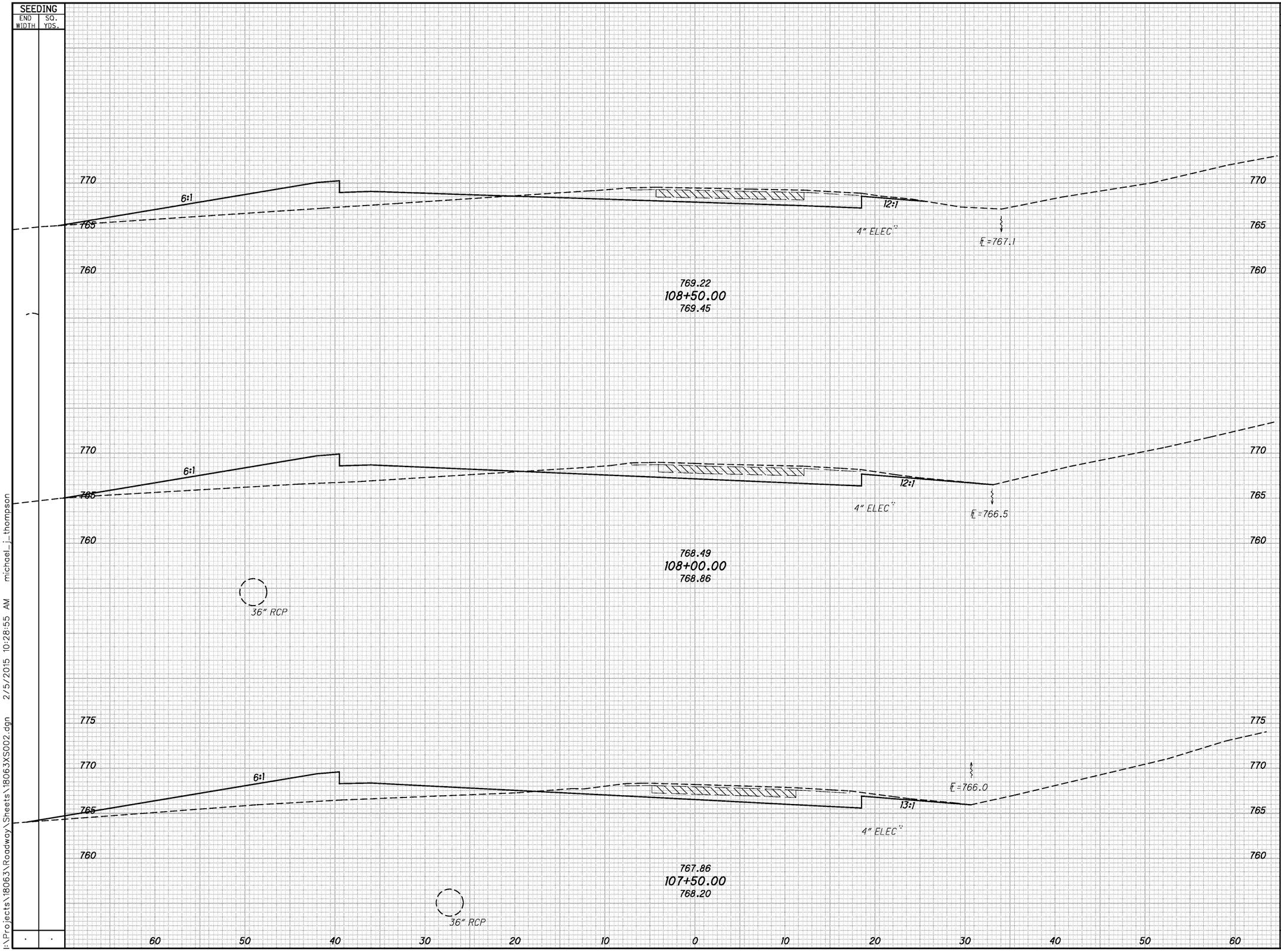
CUY-480-11.60

39
84

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED JEM
CHECKED MEP



CROSS SECTIONS RAMP T-2
STA. 107+50.00 TO STA. 108+50.00

CUY-480-11.60

40
84

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SEEDING	
END WIDTH	SQ. YDS.
.	.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED JEM
CHECKED MEP

CROSS SECTIONS RAMP T-2
STA. 109+00.00 TO STA. 110+50.00

CUY-480-11.60

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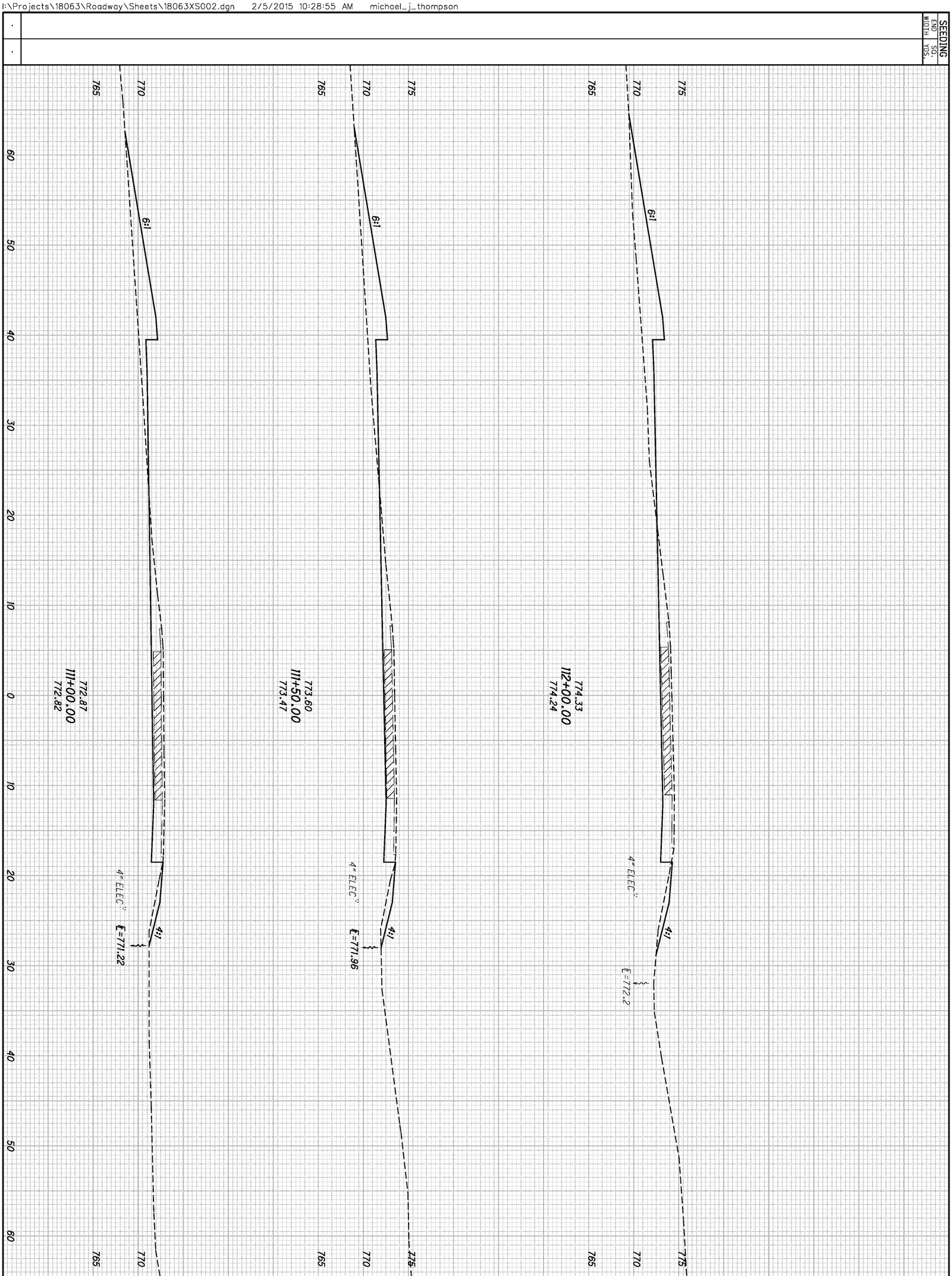


END AREA CUT FILL
VOLUME CUT FILL

42/84

CUY-480-11.60

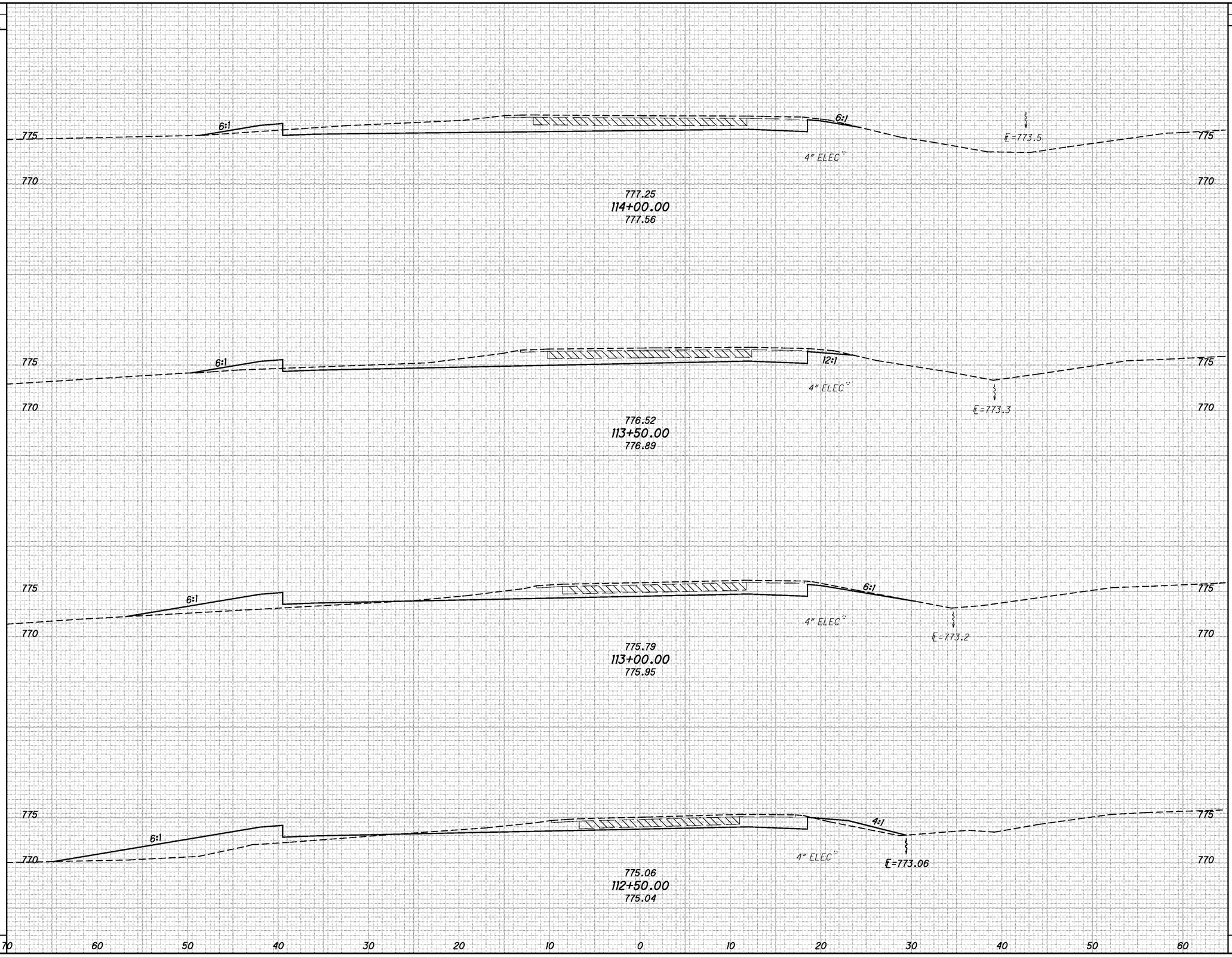
CROSS SECTIONS RAMP T-2
STA. 111+00.00 TO STA. 112+00.00

CALCULATED JEM
CHECKED MEP

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED JEM
CHECKED MEP



CROSS SECTIONS RAMP T-2
STA. 112+50.00 TO STA. 114+00.00

CUY-480-11.60

43
84

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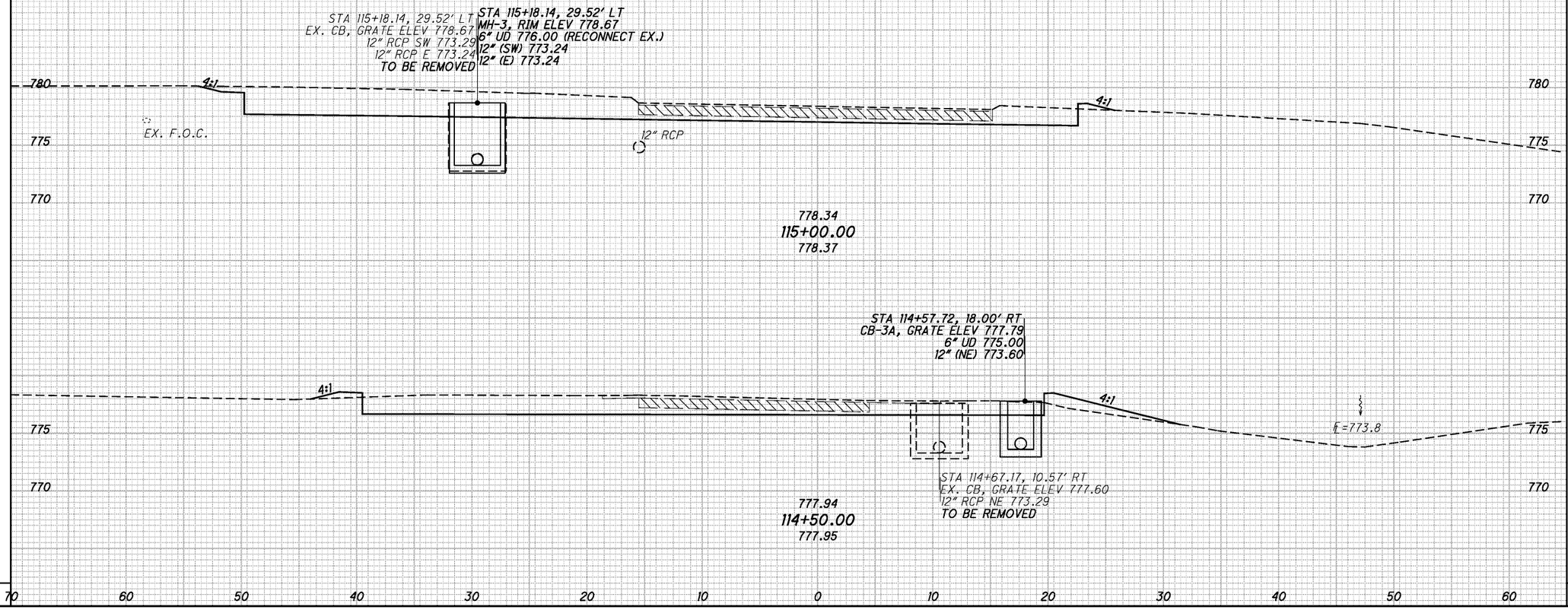
SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED JEM
CHECKED MEP



CROSS SECTIONS RAMP T-2
STA. 114+50.00 TO STA. 115+00.00

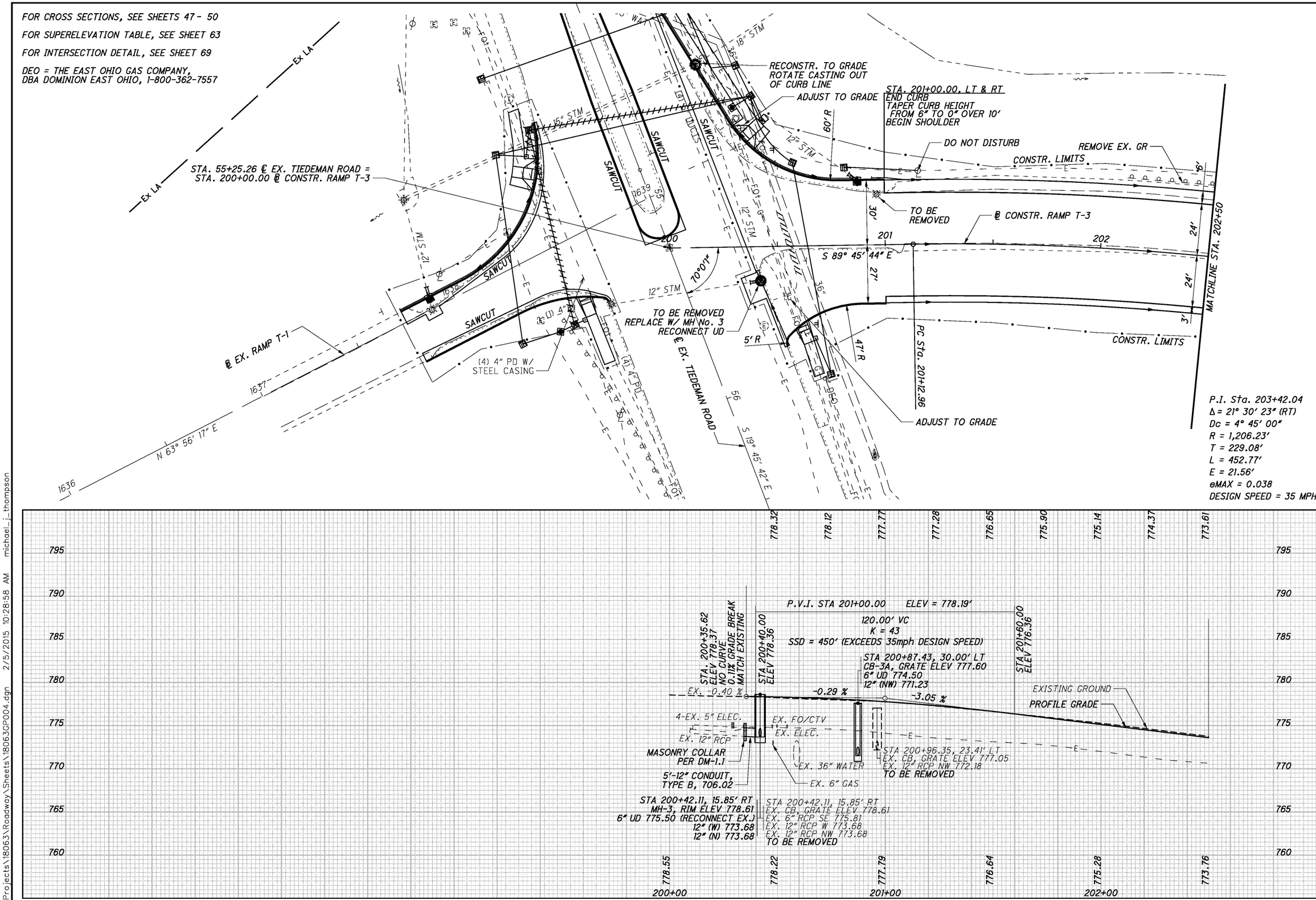
CUY-480-11.60

FOR CROSS SECTIONS, SEE SHEETS 47 - 50

FOR SUPERELEVATION TABLE, SEE SHEET 63

FOR INTERSECTION DETAIL, SEE SHEET 69

DEO = THE EAST OHIO GAS COMPANY,
DBA DOMINION EAST OHIO, 1-800-362-7557



N

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MEP
CHECKED FR

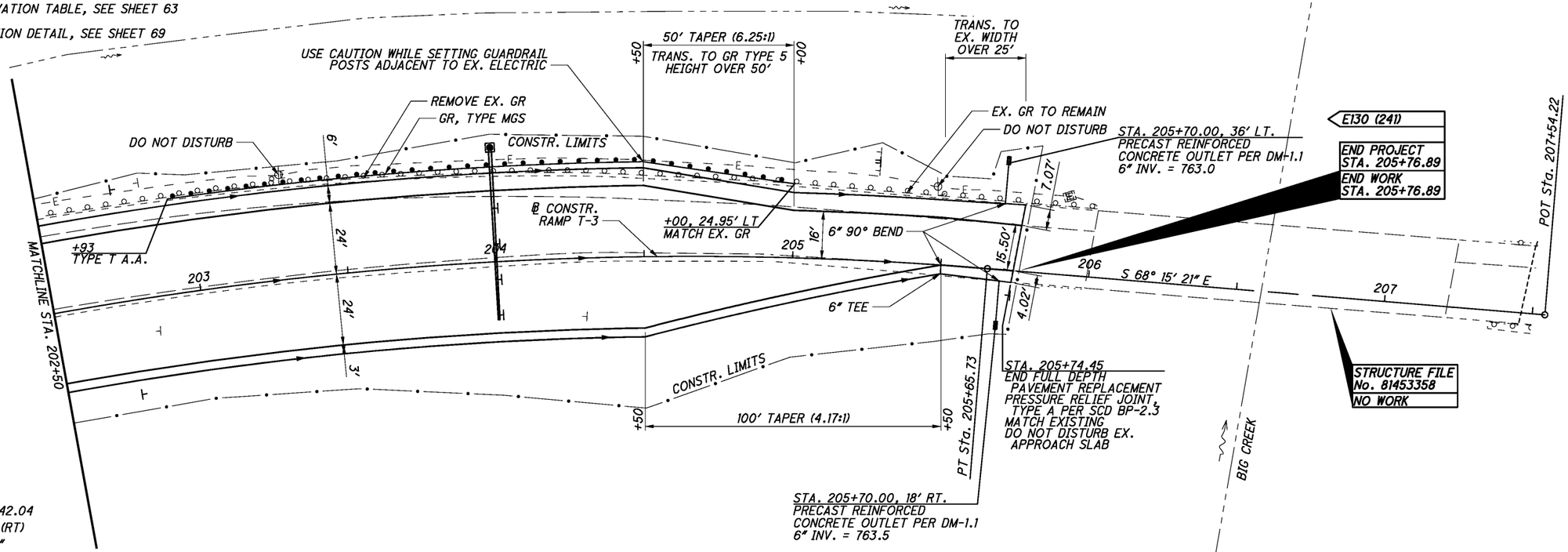
PLAN AND PROFILE - RAMP T-3
BEGINNING TO STA. 202+50

CUY-480-11.60

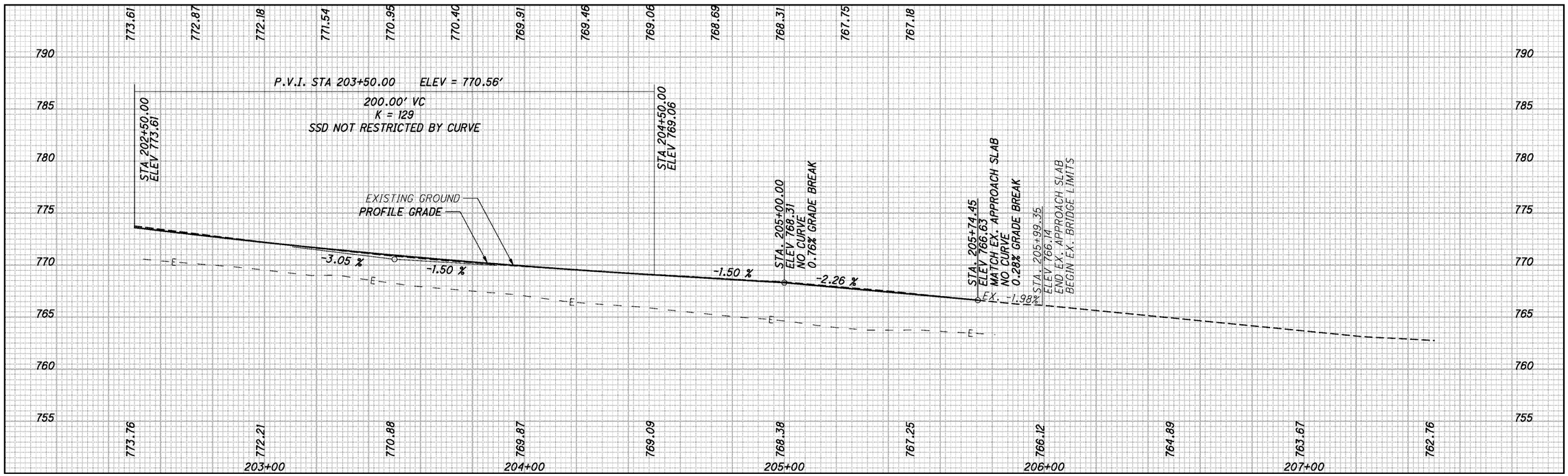
FOR CROSS SECTIONS, SEE SHEETS 47 - 50

FOR SUPERELEVATION TABLE, SEE SHEET 63

FOR INTERSECTION DETAIL, SEE SHEET 69



P.I. Sta. 203+42.04
Δ = 21° 30' 23" (RT)
Dc = 4° 45' 00"
R = 1,206.23'
T = 229.08'
L = 452.77'
E = 21.56'
eMAX = 0.038
DESIGN SPEED = 35 MPH



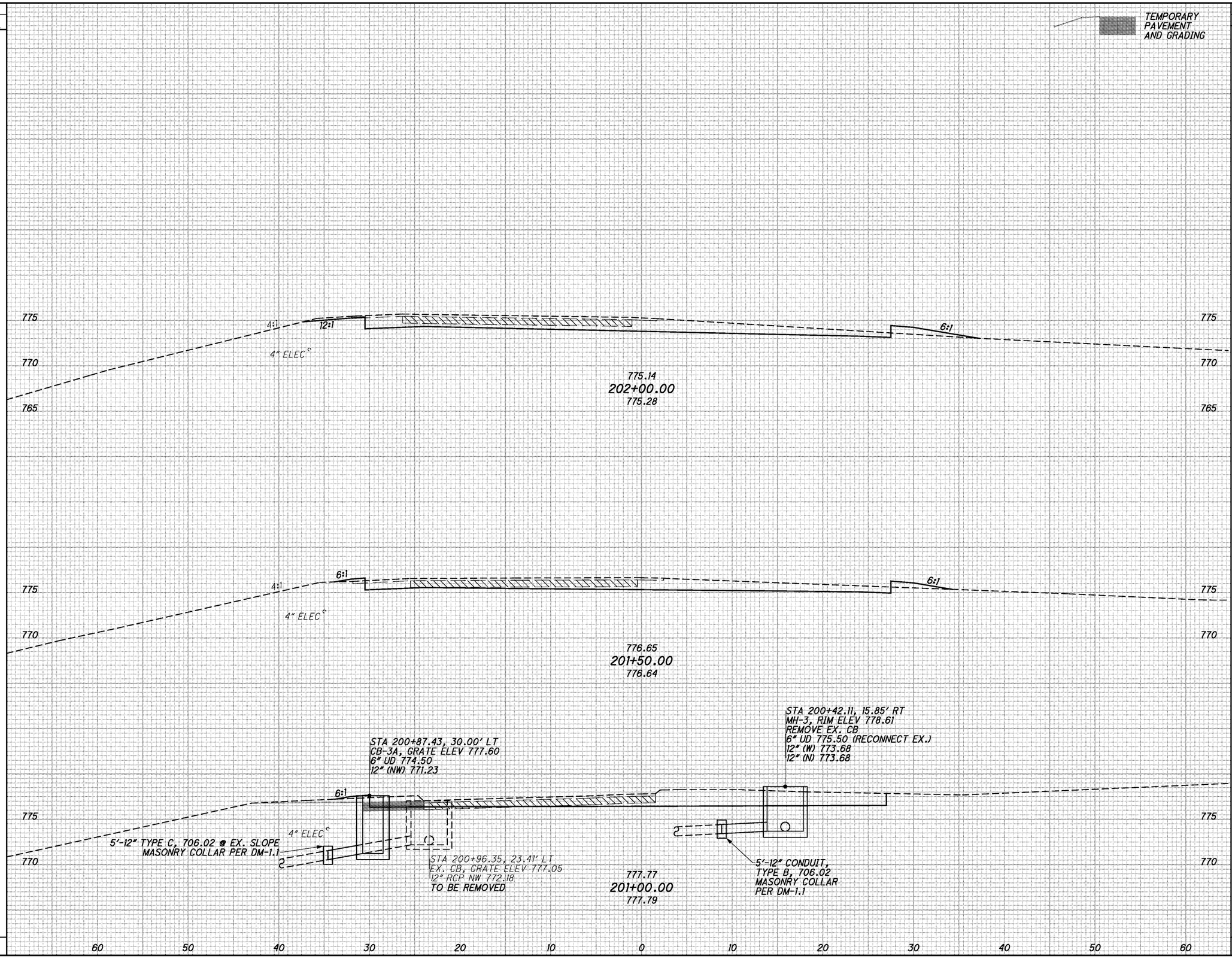
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MEP CHECKED FR

PLAN AND PROFILE - RAMP T-3
STA. 202+50 TO ENDING

CUY-480-11.60

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED JEM
CHECKED MEP

CROSS SECTIONS RAMP T-3
STA. 201+00.00 TO STA. 202+00.00

CUY-480-11.60

47
84

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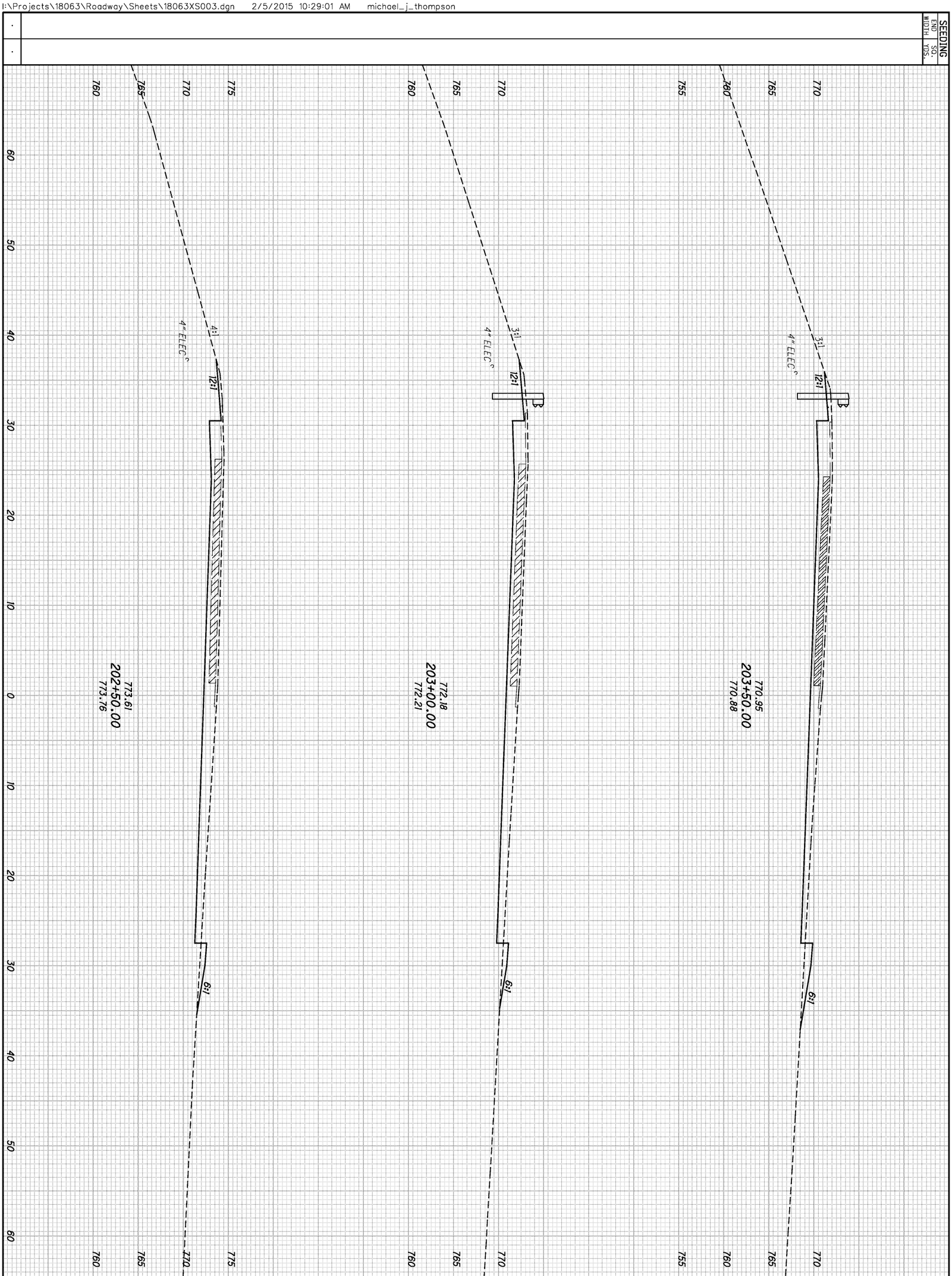

48
84

CUY-480-11.60

CROSS SECTIONS RAMP T-3
STA. 202+50.00 TO STA. 203+50.00

CALCULATED JEM
CHECKED MEP

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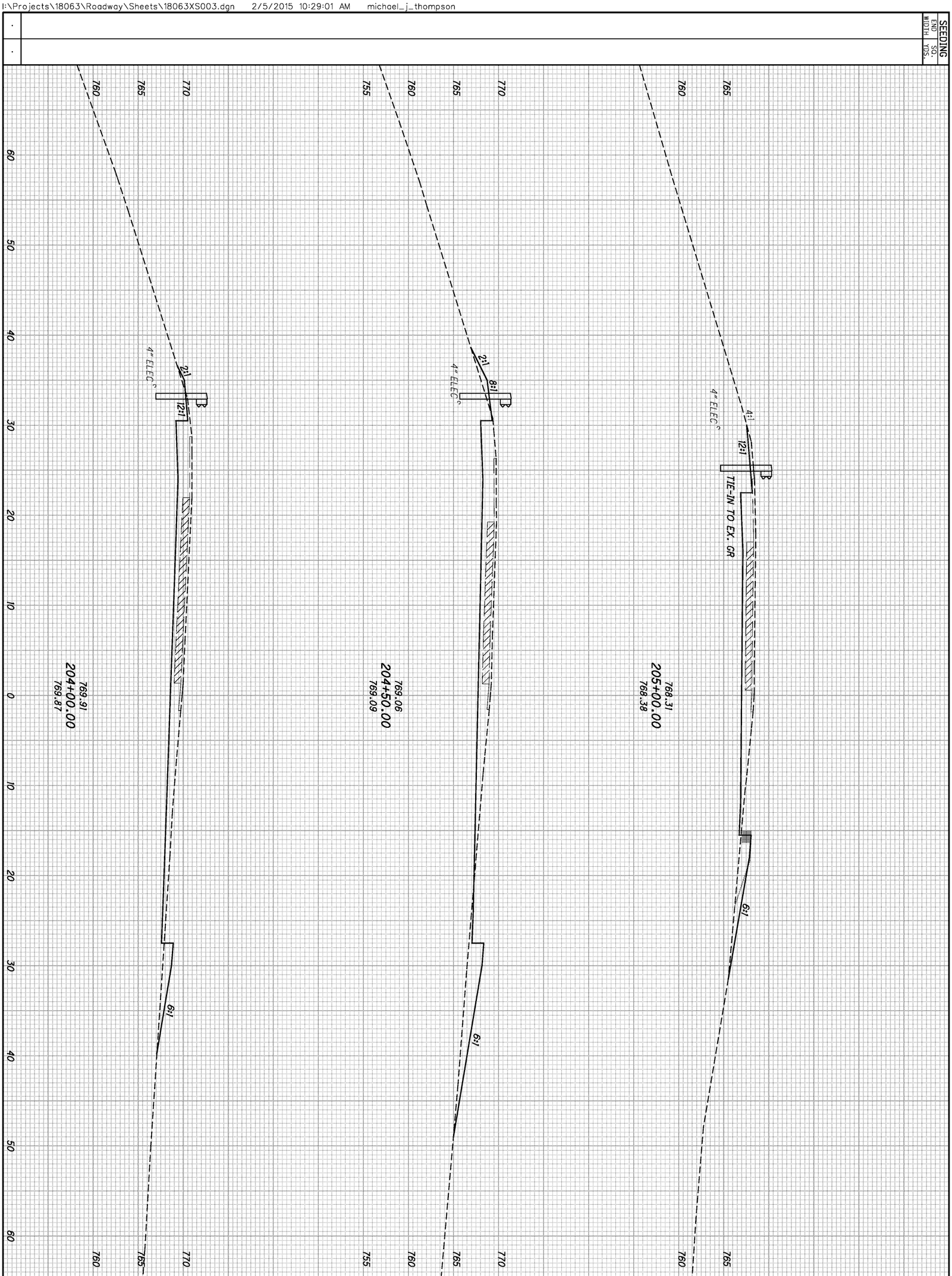

END AREA CUT FILL
VOLUME CUT FILL

49
84

CUY-480-11.60

CROSS SECTIONS RAMP T-3
STA. 204+00.00 TO STA. 205+00.00

CALCULATED JEM
CHECKED MEP

SEEDING	
END WIDTH	SQ. YDS.

TEMPORARY PAVEMENT AND GRADING

765
760
755

206+00.00
766.11

STA. 205+76.89
END PROJECT
END WORK

765
760
755

4:1
4" ELEC°

766.63
205+74.45 (SKEWED)
766.63

765
760
755

4:1
12:1
12:1
4" ELEC°

767.18
205+50.00
767.25

765
760
755

60 50 40 30 20 10 0 10 20 30 40 50 60

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED JEM
CHECKED MEP

CROSS SECTIONS RAMP T-3
STA. 205+50.00 TO STA. 206+00.00

CUY-480-11.60

50
84

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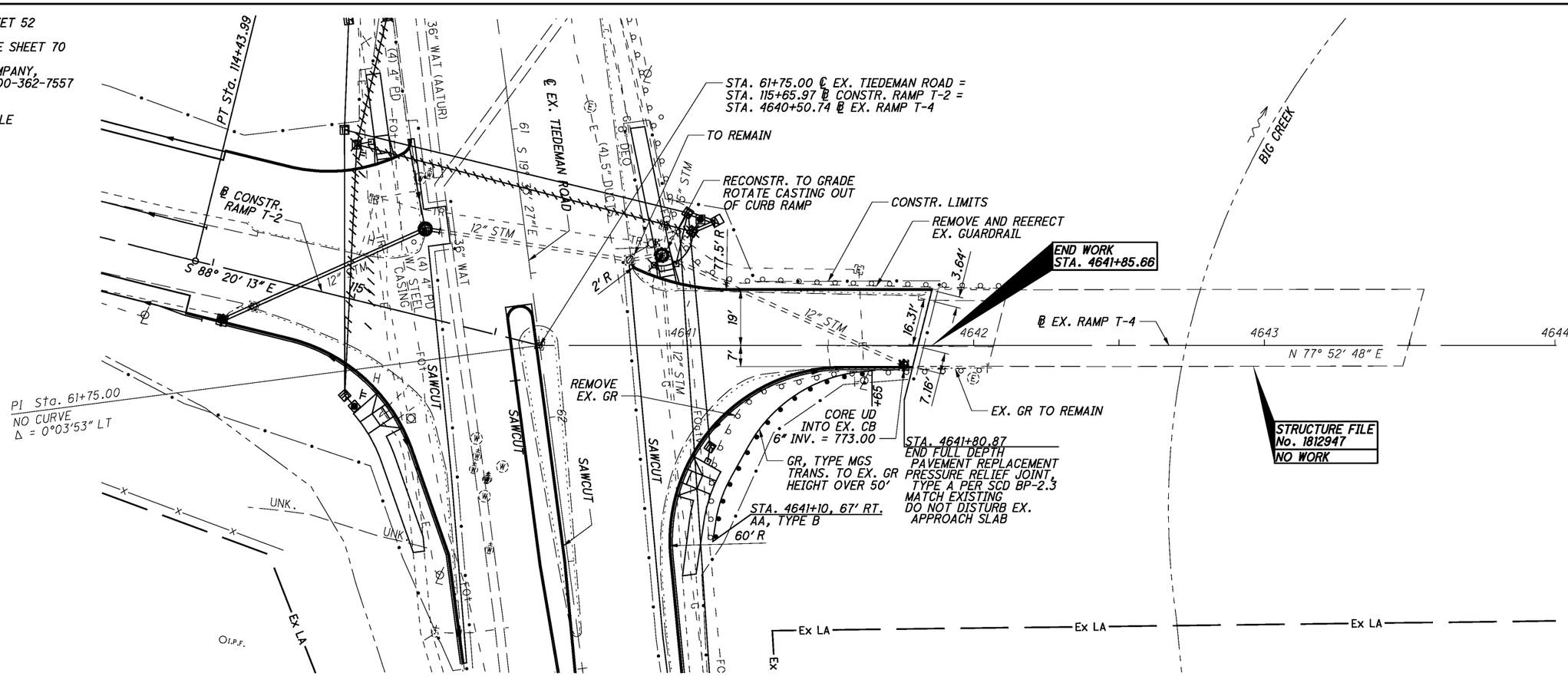
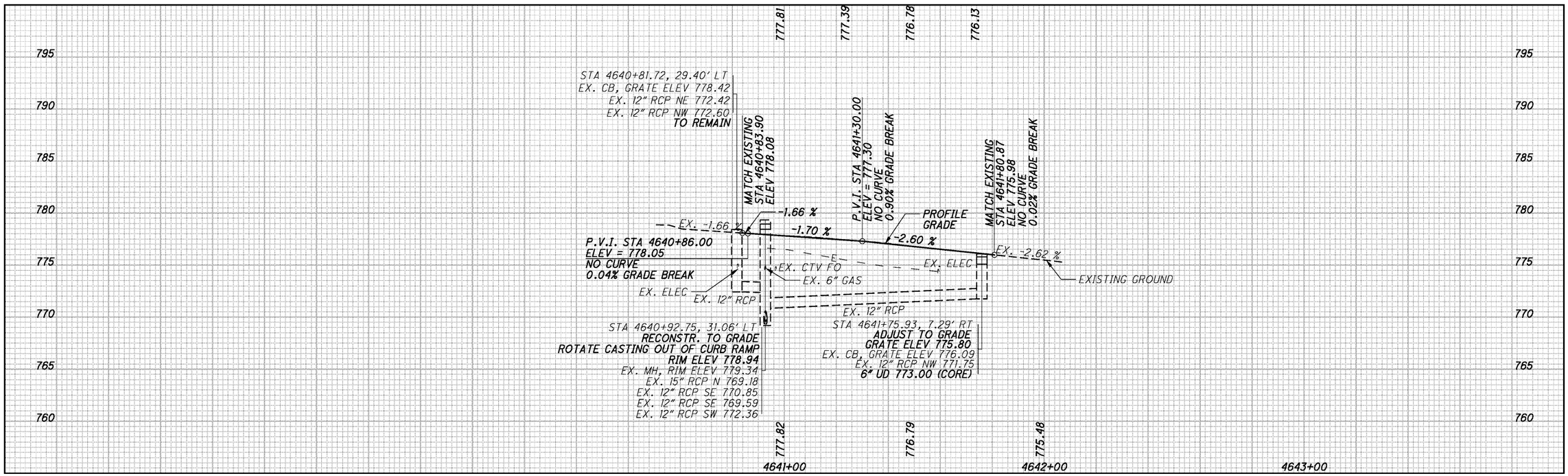
FOR CROSS SECTIONS, SEE SHEET 52

FOR INTERSECTION DETAIL, SEE SHEET 70

DEO = THE EAST OHIO GAS COMPANY,
DBA DOMINION EAST OHIO, 1-800-362-7557

NOTE:
DO NOT DISTURB EX. LIGHT POLE
AT STA. 4641+62±, 12'± RT





CALCULATED MEP
CHECKED FR

HORIZONTAL SCALE IN FEET
0 10 20 40

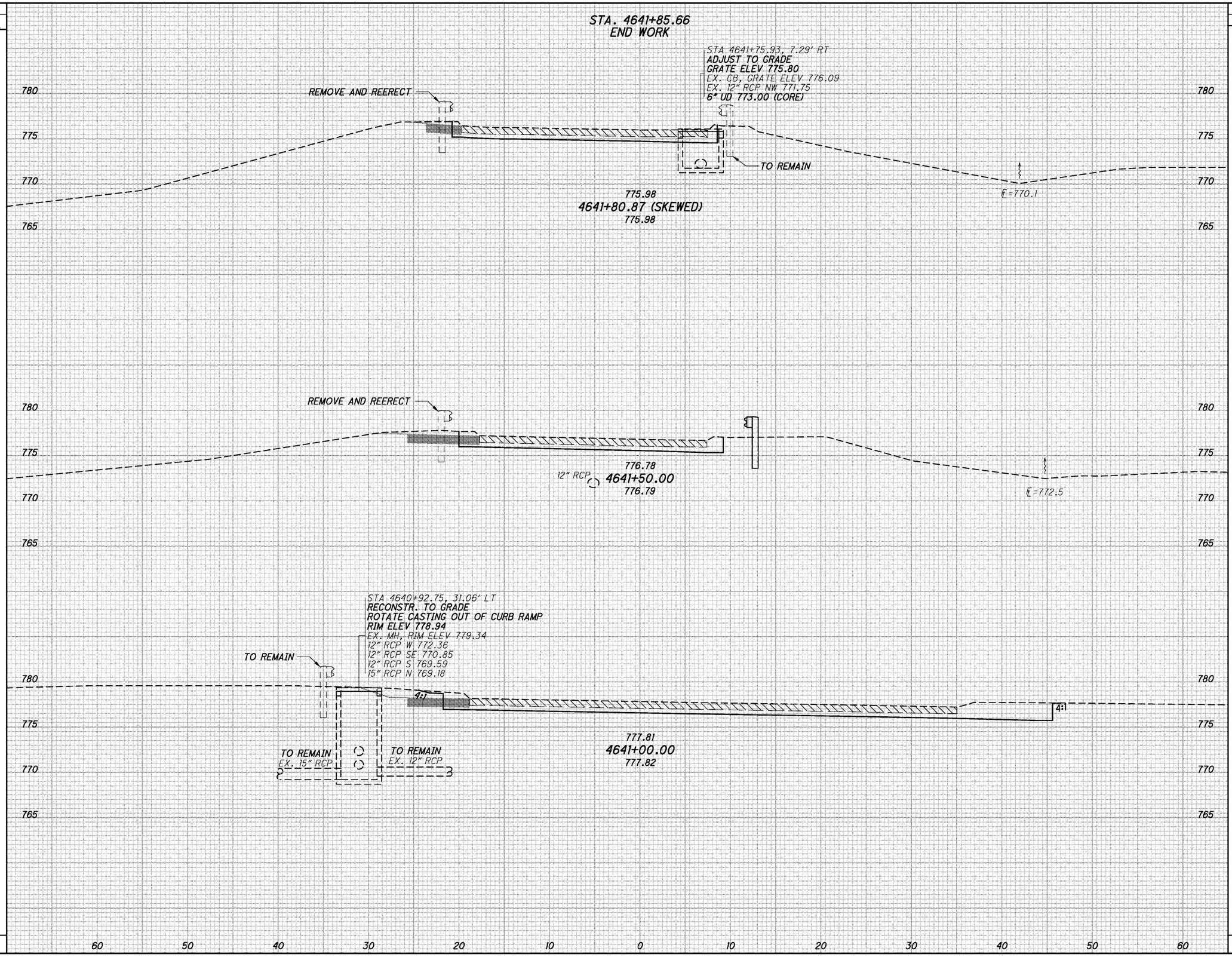
PLAN AND PROFILE
RAMP T-4

CUY-480-11.60

51
84

I:\Projects\18063\Roadway\Sheets\18063GP007.dgn 2/5/2015 10:29:03 AM michael_j_thompson

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED JEM
CHECKED MEP

CROSS SECTIONS RAMP T-4
STA. 1637+50.00 TO STA. 1638+50

CUY-480-11.60

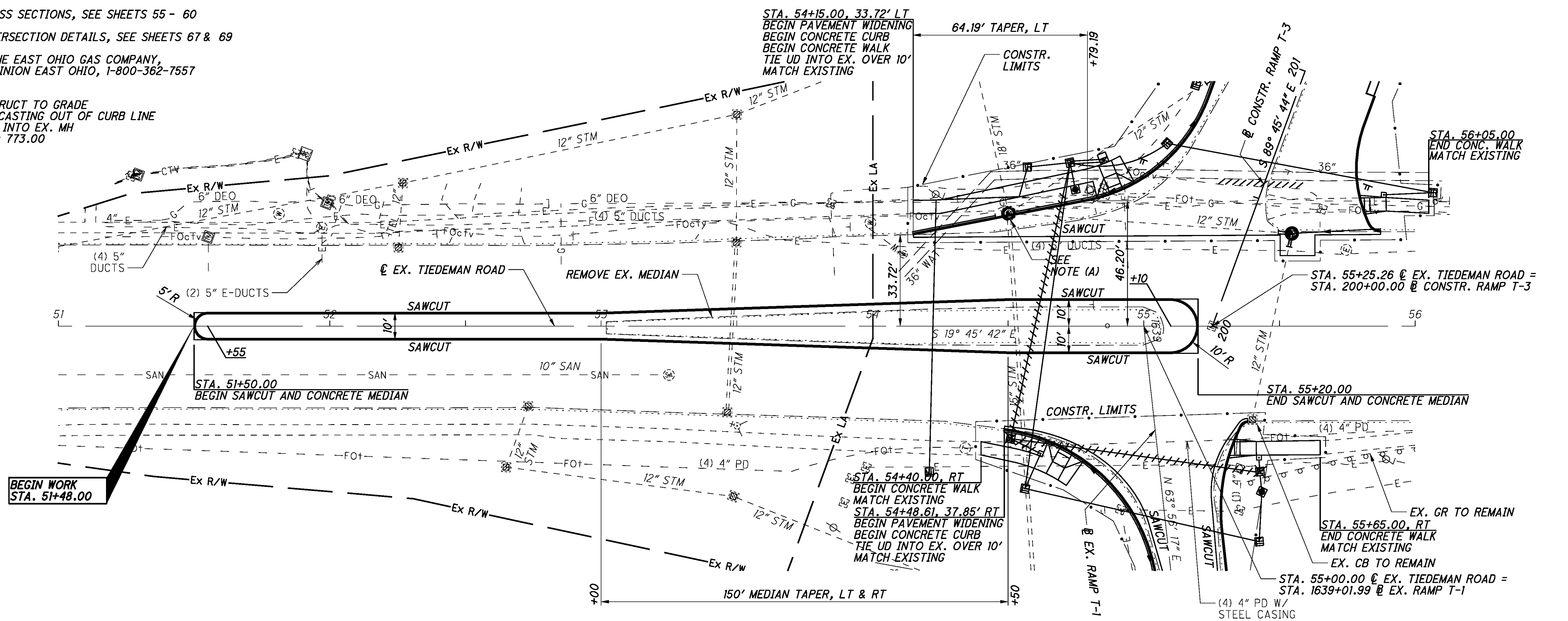
52
84

FOR CROSS SECTIONS, SEE SHEETS 55 - 60

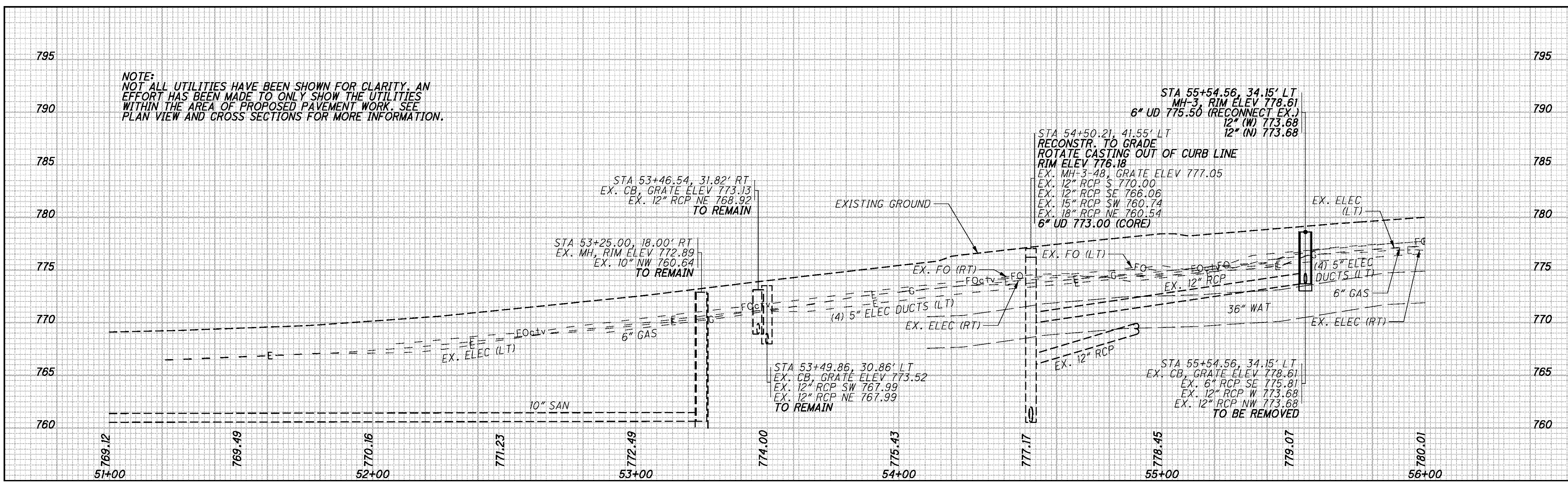
FOR INTERSECTION DETAILS, SEE SHEETS 67 & 69

DEO = THE EAST OHIO GAS COMPANY,
DBA DOMINION EAST OHIO, 1-800-362-7557

NOTE (A)
RECONSTRUCT TO GRADE
ROTATE CASTING OUT OF CURB LINE
CORE UD INTO EX. MH
6" INV. = 773.00



STA. 54+15.00, 33.72' LT
BEGIN PAVEMENT WIDENING
BEGIN CONCRETE CURB
BEGIN CONCRETE WALK
TIE UD INTO EX. OVER 10'
MATCH EXISTING
64.19' TAPER, LT
+79.19
CONSTR. LIMITS
℄ CONSTR. RAMP T-3
S 89° 45' 44" E 201
STA. 56+05.00
END CONC. WALK
MATCH EXISTING
Ex R/W
12" STM
18" STM
36"
6" DEO
4" E
(4) 5" DUCTS
FOcTv
SAWCUT
SEE NOTE (A)
33.72'
46.20'
36" WAT
Ex LA
(4) 5" DUCTS
(2) 5" E-DUCTS
℄ EX. TIEDEMAN ROAD
REMOVE EX. MEDIAN
STA. 55+25.26 ℄ EX. TIEDEMAN ROAD =
STA. 200+00.00 ℄ CONSTR. RAMP T-3
5'R
10'
10'
+10
+55
S 19° 45' 42" E
10' R
200
1639
STA. 51+50.00
BEGIN SAWCUT AND CONCRETE MEDIAN
10" SAN
STA. 55+20.00
END SAWCUT AND CONCRETE MEDIAN
CONSTR. LIMITS
(4) 4" PD
12" STM
BEGIN WORK
STA. 51+48.00
STA. 54+40.00, RT
BEGIN CONCRETE WALK
MATCH EXISTING
STA. 54+48.61, 37.85' RT
BEGIN PAVEMENT WIDENING
BEGIN CONCRETE CURB
TIE UD INTO EX. OVER 10'
MATCH EXISTING
℄ EX. RAMP T-1
N 63° 56' 17" E
EX. GR TO REMAIN
STA. 55+65.00, RT
END CONCRETE WALK
MATCH EXISTING
EX. CB TO REMAIN
STA. 55+00.00 ℄ EX. TIEDEMAN ROAD =
STA. 1639+01.99 ℄ EX. RAMP T-1
+00
150' MEDIAN TAPER, LT & RT
+50
(4) 4" PD W/
STEEL CASING
51
52
53
54
55
56



NOTE:
NOT ALL UTILITIES HAVE BEEN SHOWN FOR CLARITY. AN EFFORT HAS BEEN MADE TO ONLY SHOW THE UTILITIES WITHIN THE AREA OF PROPOSED PAVEMENT WORK. SEE PLAN VIEW AND CROSS SECTIONS FOR MORE INFORMATION.
STA 55+54.56, 34.15' LT
MH-3, RIM ELEV 778.61
6" UD 775.50 (RECONNECT EX.)
12" (W) 773.68
12" (N) 773.68
STA 54+50.21, 41.55' LT
RECONSTR. TO GRADE
ROTATE CASTING OUT OF CURB LINE
RIM ELEV 776.18
EX. MH-3-48, GRATE ELEV 777.05
EX. 12" RCP S 770.00
EX. 12" RCP SE 766.06
EX. 15" RCP SW 760.74
EX. 18" RCP NE 760.54
6" UD 773.00 (CORE)
STA 53+46.54, 31.82' RT
EX. CB, GRATE ELEV 773.13
EX. 12" RCP NE 768.92
TO REMAIN
EXISTING GROUND
STA 53+25.00, 18.00' RT
EX. MH, RIM ELEV 772.89
EX. 10" NW 760.64
TO REMAIN
EX. FO (RT)
EX. FO (LT)
EX. ELEC (LT)
(4) 5" ELEC DUCTS (LT)
EX. 12" RCP
6" GAS
36" WAT
EX. ELEC (RT)
EX. ELEC (RT)
EX. ELEC (LT)
EX. 12" RCP
10" SAN
STA 53+49.86, 30.86' LT
EX. CB, GRATE ELEV 773.52
EX. 12" RCP SW 767.99
EX. 12" RCP NE 767.99
TO REMAIN
STA 55+54.56, 34.15' LT
EX. CB, GRATE ELEV 778.61
EX. 6" RCP SE 775.81
EX. 12" RCP W 773.68
EX. 12" RCP NW 773.68
TO BE REMOVED
795
790
785
780
775
770
765
760
769.12
769.49
770.16
771.23
772.49
774.00
775.43
777.17
778.45
779.07
780.01
51+00
52+00
53+00
54+00
55+00
56+00

HORIZONTAL SCALE IN FEET: 0 10 20 40

CALCULATED MEP | CHECKED FR

PLAN AND PROFILE
TIEDEMAN ROAD - STA. 51+00 TO STA. 56+00

CUY-480-11.60

FOR CROSS SECTIONS, SEE SHEETS 55 - 60

FOR INTERSECTION DETAILS, SEE SHEETS 68 & 70

DEO = THE EAST OHIO GAS COMPANY,
DBA DOMINION EAST OHIO, 1-800-362-7557

(A)
STA. 61+60.50
BEGIN SAWCUT AND CONCRETE MEDIAN

RECONSTR. TO GRADE
ROTATE CASTING OUT
OF CURB RAMP

℄ EX. RAMP T-4

STA. 61+05.00, LT
BEGIN CONCRETE WALK
MATCH EXISTING

FULL DEPTH PAVEMENT REPLACEMENT
WITHIN LIMITS OF EX. CONCRETE MEDIAN
STA. 61+68 TO STA. 62+76, LT

146.71' TAPER, LT

+53.29

+00.00

Ex LA

CONSTR. LIMITS

STA. 64+00.00, 29.82' LT
END PAVEMENT WIDENING
END CONCRETE CURB
TIE UD INTO EX. OVER 10'
MATCH EXISTING

STA. 62+60.00, LT
END CONCRETE WALK
MATCH EXISTING

STA. 63+20.00
END SAWCUT AND CONCRETE MEDIAN

END WORK
STA. 64+00.00

146' 12" STM

6" DEO

(4) 5" DUCTS

SAWCUT

Ex R/W

STA. 61+75.00 ℄ EX. TIEDEMAN ROAD =
STA. 115+65.97 ℄ CONSTR. RAMP T-2 =
STA. 4640+50.74 ℄ EX. RAMP T-4
ADJUST EX. MON. BOX TO GRADE

PI Sta. 61+75.00
NO CURVE
Δ = 0°03'53" LT

34.88'

+50

68' MEDIAN TAPER, LT & RT

+18

29.82'

℄ EX. TIEDEMAN ROAD

61 62 63 64 65

4.5' R

S 19° 33' 27" E

SEE NOTE (A)

+65
5.5' RT

+18
5.5' RT

2' R

9'

REMOVE EX. MEDIAN

(6) 4" PD (FO)

(2) 4" PD (FO)

(2) 5" DUCTS

36" WAT (AATUR)

36" WAT

48.11'

40.28'

(4) 4" PD

(4) 4" PD
W/ STEEL
CASING

(1) 4" PD

(4) 4" PD

(2) 4" E-DUCTS

STA. 60+75.00, RT
BEGIN CONCRETE WALK
MATCH EXISTING

TO BE REMOVED
REPLACE W/ MH No. 3

DO NOT
DISTURB

CONSTR. LIMITS

S 88° 20' 13" E

℄ CONSTR. RAMP T-2

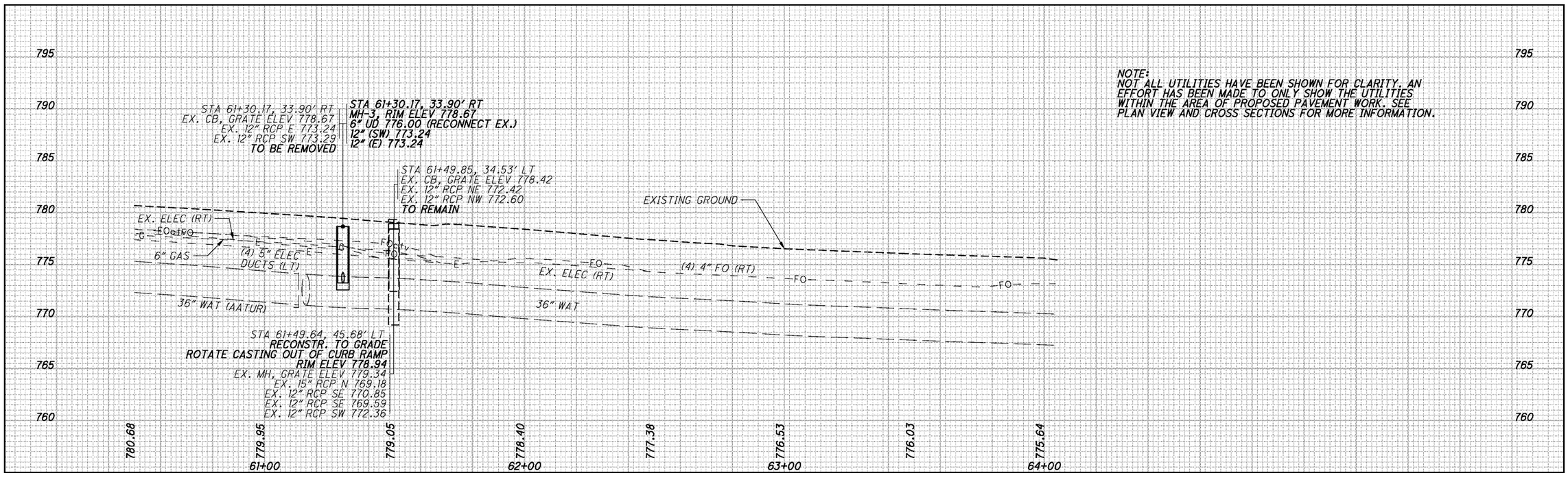
+40.00, RT
END CONC. WALK
MATCH EX.

+04.81

37.47' TAPER, RT

+42.28

STA. 62+80.00, 40.28' RT
END PAVEMENT WIDENING
END CONCRETE CURB
TIE UD INTO EX. OVER 10'
MATCH EXISTING



NOTE:
NOT ALL UTILITIES HAVE BEEN SHOWN FOR CLARITY. AN EFFORT HAS BEEN MADE TO ONLY SHOW THE UTILITIES WITHIN THE AREA OF PROPOSED PAVEMENT WORK. SEE PLAN VIEW AND CROSS SECTIONS FOR MORE INFORMATION.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MEP
CHECKED FR

PLAN AND PROFILE
TIEDEMAN ROAD - STA. 60+50 TO STA. 65+50

CUY-480-11.60

54
84

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SEEDING	
END WIDTH	SQ. YDS.
.	.

END AREA		VOLUME	
CUT	FILL	CUT	FILL
.	.	.	.

CALCULATED MEP
CHECKED MAW

CROSS SECTIONS TIEDEMAN ROAD
STA. 51+00.00 TO STA. 52+50.00

CUY-480-11.60

55
84

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED MEP
CHECKED MAW

EX-LA

780
775
770
765
760

EX. ELEC
EX. ELEC
EX. 6" GAS
EX. FO CTV
EX. ELEC
EX. TELE FO
EX. ELEC

54+00.00
775.43

STA 53+49.86, 30.86' LT
EX. CB, GRATE ELEV 773.52'
12" RCP SW 767.99
12" RCP NE 767.99
TO REMAIN

STA 53+46.54, 31.82' RT
EX. CB, GRATE ELEV 773.13'
12" RCP NE 768.92
TO REMAIN

EX. ELEC
EX. ELEC
EX. 6" GAS
EX. FO CTV
12" RCP
12" RCP
EX. TELE FO

53+50.00
774.00

STA 53+48.75, 62.75' RT
EX. CB, GRATE ELEV 771.90'
12" RCP NW 766.73
12" RCP S 765.22
TO REMAIN

STA 53+25.00, 18.00' RT
EX. MH, RIM ELEV 772.89
EX. 10" NW 760.64
TO REMAIN

E=772.3

EX. ELEC
EX. ELEC
EX. 6" GAS
EX. FO CTV
EX. TELE FO

53+00.00
772.49

60 50 40 30 20 10 0 10 20 30 40 50 60

CROSS SECTIONS TIEDEMAN ROAD STA. 53+00.00 TO STA. 54+00.00

CUY-480-11.60

56
84

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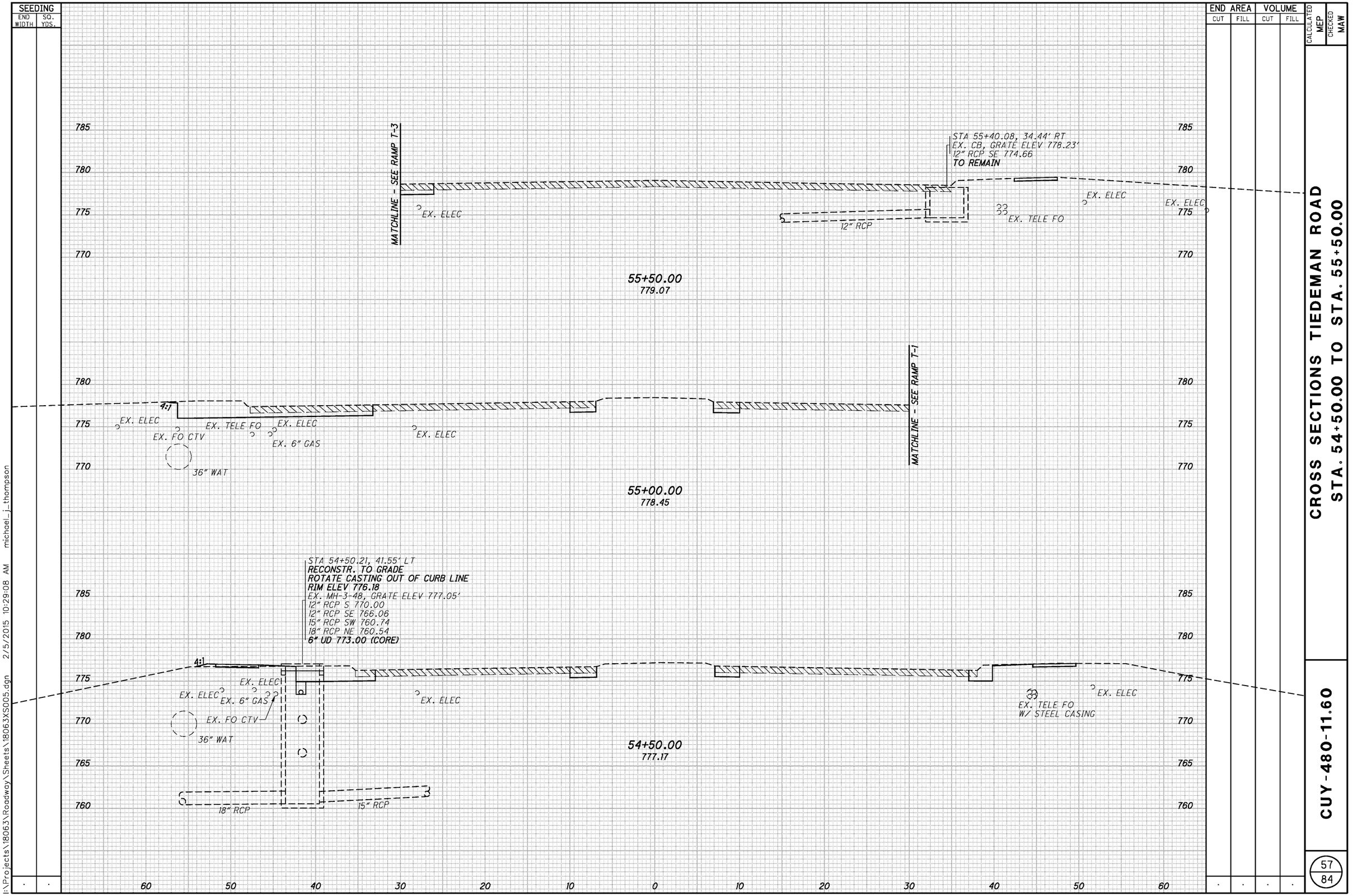
SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED MEP
CHECKED MAW



CROSS SECTIONS TIEDEMAN ROAD
STA. 54+50.00 TO STA. 55+50.00

CUY-480-11.60

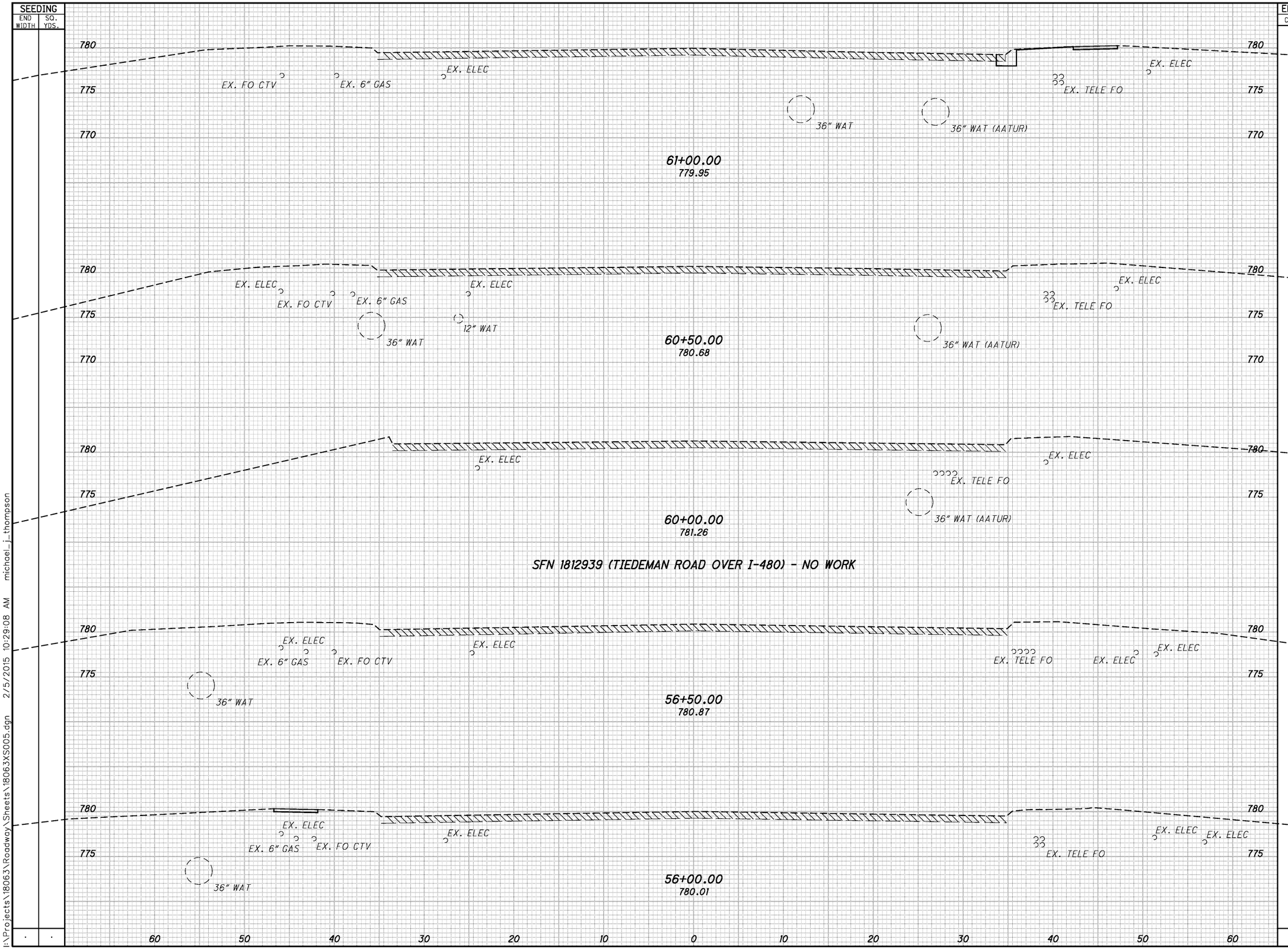
57
84

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED MEP

CHECKED MAW



CROSS SECTIONS TIEDEMAN ROAD STA. 56+00.00 TO STA. 61+00.00

CUY-480-11.60

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED MEP
CHECKED MAW

CROSS SECTIONS TIEDEMAN ROAD
STA. 61+50.00 TO STA. 63+00.00

CUY-480-11.60

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED MEP

CHECKED MAW

CROSS SECTIONS TIEDEMAN ROAD
STA. 63+50.00 TO STA. 64+00.00

CUY-480-11.60

60
84

RAMP T-2 - SUPERELEVATION TABLE

P.I. STA. 102+51.44 Dc = 3° 00′ 00″
P.I. STA. 107+36.82 Dc = 5° 00′ 00″
P.I. STA. 112+71.45 Dc = 2° 00′ 00″

INSIDE SHOULDER			LANE			LANE			LANE			RAMP T-2			LANE			OUTSIDE SHOULDER				
PROPOSED SHOULDER WIDTH	PROPOSED EDGE OF SHOULDER ELEVATION	PROPOSED SHOULDER CROSS-SLOPE	PROPOSED PAVEMENT WIDTH	PROPOSED EDGE OF PAVEMENT ELEVATION	PROPOSED PAVEMENT CROSS-SLOPE	PROPOSED PAVEMENT WIDTH	PROPOSED EDGE OF PAVEMENT ELEVATION	PROPOSED PAVEMENT CROSS-SLOPE	PROPOSED PAVEMENT WIDTH	PROPOSED EDGE OF PAVEMENT ELEVATION	PROPOSED PAVEMENT CROSS-SLOPE	BASELINE STATION	PROFILE GRADE ELEVATION	LONGITUDINAL SLOPE	PROPOSED PAVEMENT WIDTH	PROPOSED EDGE OF PAVEMENT ELEVATION	PROPOSED PAVEMENT CROSS-SLOPE	PROPOSED SHOULDER CROSS-SLOPE	PROPOSED EDGE OF SHOULDER ELEVATION	PROPOSED SHOULDER WIDTH	REMARKS
									15.06	770.72	2.72%	103+00.00	770.31					-4.24%	769.94	8.72		
									15.25	770.39	2.95%	103+25.00	769.94	-1.48%				-4.17%	769.58	8.64		
									15.31	770.07	2.94%	103+50.00	769.62	-1.28%				-3.87%	769.29	8.52		
									15.46	769.73	2.91%	103+75.00	769.28	-1.36%				-3.95%	768.95	8.36		
2.52	769.39	1.59%							15.43	769.35	3.11%	104+00.00	768.87	-1.64%				-4.16%	768.52	8.42	MATCH EXISTING / BEGIN PROPOSED PROFILE	198:1
2.64	769.01	-3.10%							15.57	769.09	3.90%	104+25.00	768.48	-1.55%				-4.00%	768.17	7.82	F.S.	
2.76	768.67	-3.10%							15.72	768.76	3.90%	104+50.00	768.14	-1.36%				-4.00%	767.85	7.21		
2.88	768.38	-3.10%							15.86	768.47	3.90%	104+75.00	767.85	-1.16%				-4.00%	767.59	6.61		
3.00	768.14	-3.10%							16.00	768.23	3.90%	105+00.00	767.61	-0.97%				-4.00%	767.37	6.00	P.T.	
3.00	768.10	-3.10%							20.00	768.19	3.90%	105+25.00	767.41	-0.78%				-4.00%	767.17	6.00		
3.00	768.11	-3.10%				12.00	768.21	3.90%	24.00 12.00	768.21 767.74	3.90%	105+50.00	767.27	-0.58%				-4.00%	767.03	6.00		
3.00	768.02	-3.10%				12.00	768.11	3.90%	12.00	767.64	3.90%	105+75.00	767.17	-0.39%				-4.00%	766.93	6.00		
3.00	767.97	-3.10%				12.00	768.06	3.90%	12.00	767.59	3.90%	106+00.00	767.13	-0.19%				-4.00%	766.89	6.00		
3.00	767.97	-3.10%				12.00	768.06	3.90%	12.00	767.59	3.90%	106+25.00	767.13	0.00%				-4.00%	766.89	6.00		
3.00	767.98	-3.10%				12.00	768.08	3.90%	12.00	767.61	3.90%	106+35.94	767.14	0.14%				-4.00%	766.90	6.00	P.C. / BEGIN SUPERELEVATION TRANSITION	
3.00	768.02	-3.00%				12.00	768.11	4.00%	12.00	767.63	4.00%	106+40.45	767.15	0.20%				-4.00%	766.91	6.00		188:1
3.00	768.10	-2.79%				12.00	768.19	4.21%	12.00	767.68	4.21%	106+50.00	767.17	0.26%				-4.21%	766.92	6.00		
3.00	768.35	-2.23%				12.00	768.42	4.77%	12.00	767.84	4.77%	106+75.00	767.27	0.39%				-4.77%	766.99	6.00		
3.00	768.52	-1.90%				12.00	768.58	5.10%	12.00	767.97	5.10%	106+90.00	767.35	0.55%				-5.10%	767.05	6.00	F.S.	
3.00	768.59	-1.90%	0.00	768.64	5.10%	12.00	768.64	5.10%	12.00	768.03	5.10%	107+00.00	767.42	0.64%	0.00	767.42	-5.10%	-5.10%	767.11	6.00		
3.00	769.09	-1.90%	6.00	769.14	5.10%	12.00	768.84	5.10%	12.00	768.23	5.10%	107+25.00	767.61	0.78%	6.00	767.31	-5.10%	-5.10%	767.00	6.00		
3.00	769.64	-1.90%	12.00	769.69	5.10%	12.00	769.08	5.10%	12.00	768.47	5.10%	107+50.00	767.86	0.97%	12.00	767.25	-5.10%	-5.10%	766.94	6.00		
3.00	769.71	-1.90%	12.00	769.77	5.10%	12.00	769.16	5.10%	12.00	768.55	5.10%	107+57.00	767.93	1.10%	12.00	767.32	-5.10%	-5.10%	767.02	6.00	F.S.	
3.00	769.79	-2.25%	12.00	769.86	4.75%	12.00	769.29	4.75%	12.00	768.72	4.75%	107+75.00	768.15	1.20%	12.00	767.58	-4.75%	-4.75%	767.29	6.00		
3.00	769.95	-2.73%	12.00	770.03	4.27%	12.00	769.51	4.27%	12.00	769.00	4.27%	108+00.00	768.49	1.36%	12.00	767.98	-4.27%	-4.27%	767.72	6.00		
3.00	770.04	-3.00%	12.00	770.13	4.00%	12.00	769.65	4.00%	12.00	769.17	4.00%	108+13.99	768.69	1.46%	12.00	768.21	-4.00%	-4.00%	767.97	6.00		
3.00	770.12	-3.21%	12.00	770.22	3.79%	12.00	769.76	3.79%	12.00	769.31	3.79%	108+25.00	768.86	1.46%	12.00	768.40	-3.79%	-4.00%	768.16	6.00		
3.00	770.21	-3.45%	12.00	770.31	3.55%	12.00	769.89	3.55%	12.00	769.46	3.55%	108+37.19	769.03	1.46%	12.00	768.61	-3.55%	-4.00%	768.37	6.00	P.T.	
3.00	770.30	-3.70%	12.00	770.41	3.30%	12.00	770.01	3.30%	12.00	769.62	3.30%	108+50.00	769.22	1.46%	12.00	768.82	-3.30%	-4.00%	768.58	6.00		
3.00	770.41	-4.00%	12.00	770.53	3.00%	12.00	770.17	3.00%	12.00	769.81	3.00%	108+65.79	769.45	1.46%	12.00	769.09	-3.00%	-4.00%	768.85	6.00		
3.00	770.48	-4.00%	12.00	770.60	2.82%	12.00	770.26	2.82%	12.00	769.92	2.82%	108+75.00	769.59	1.46%	12.00	769.25	-2.82%	-4.00%	769.01	6.00		
3.00	770.67	-4.00%	12.00	770.79	2.34%	12.00	770.51	2.34%	12.00	770.23	2.34%	109+00.00	769.95	1.46%	12.00	769.67	-2.34%	-4.00%	769.43	6.00		
3.00	770.86	-4.00%	12.00	770.98	1.86%	12.00	770.76	1.86%	12.00	770.54	1.86%	109+25.00	770.32	1.46%	12.00	770.09	-1.86%	-4.00%	769.85	6.00		
3.00	770.96	-4.00%	12.00	771.08	1.60%	12.00	770.89	1.60%	12.00	770.70	1.60%	109+38.00	770.50	1.46%	12.00	770.31	-1.60%	-4.00%	770.07	6.00	A.C.	
3.00	771.05	-4.00%	12.00	771.17	1.37%	12.00	771.01	1.37%	12.00	770.84	1.37%	109+50.00	770.68	1.46%	12.00	770.52	-1.37%	-4.00%	770.28	6.00		
3.00	771.25	-4.00%	12.00	771.37	0.89%	12.00	771.26	0.89%	12.00	771.15	0.89%	109+75.00	771.05	1.46%	12.00	770.94	-0.89%	-4.00%	770.70	6.00		
3.00	771.44	-4.00%	12.00	771.56	0.41%	12.00	771.51	0.41%	12.00	771.46	0.41%	110+00.00	771.41	1.46%	12.00	771.36	-0.41%	-4.00%	771.12	6.00		
3.00	771.60	-4.00%	12.00	771.72	0.00%	12.00	771.72	0.00%	12.00	771.72	0.00%	110+21.00	771.72	1.46%	12.00	771.72	0.00%	-4.00%	771.48	6.00	FLAT	216:1

CALCULATED MEP
CHECKED FR

SUPERELEVATION TABLE - RAMP T-2

CUY-480-11.60

61
84

RAMP T-2 - SUPERELEVATION TABLE

P.I. STA. 102+51.44 Dc = 3° 00′ 00″
P.I. STA. 107+36.82 Dc = 5° 00′ 00″
P.I. STA. 112+71.45 Dc = 2° 00′ 00″

INSIDE SHOULDER			LANE			LANE			LANE			RAMP T-2			LANE			OUTSIDE SHOULDER			
PROPOSED SHOULDER WIDTH	PROPOSED EDGE OF SHOULDER ELEVATION	PROPOSED SHOULDER CROSS-SLOPE	PROPOSED PAVEMENT WIDTH	PROPOSED EDGE OF PAVEMENT ELEVATION	PROPOSED PAVEMENT CROSS-SLOPE	PROPOSED PAVEMENT WIDTH	PROPOSED EDGE OF PAVEMENT ELEVATION	PROPOSED PAVEMENT CROSS-SLOPE	PROPOSED PAVEMENT WIDTH	PROPOSED EDGE OF PAVEMENT ELEVATION	PROPOSED PAVEMENT CROSS-SLOPE	BASELINE STATION	PROFILE GRADE ELEVATION	LONGITUDINAL SLOPE	PROPOSED PAVEMENT WIDTH	PROPOSED EDGE OF PAVEMENT ELEVATION	PROPOSED PAVEMENT CROSS-SLOPE	PROPOSED SHOULDER CROSS-SLOPE	PROPOSED EDGE OF SHOULDER ELEVATION	PROPOSED SHOULDER WIDTH	REMARKS
3.00	771.60	-4.00%	12.00	771.72	0.00%	12.00	771.72	0.00%	12.00	771.72	0.00%	110+21.00	771.72	1.46%	12.00	771.72	0.00%	-4.00%	771.48	6.00	FLAT
3.00	771.63	-4.00%	12.00	771.75	-0.07%	12.00	771.76	-0.07%	12.00	771.77	-0.07%	110+25.00	771.78	1.46%	12.00	771.78	0.07%	-4.00%	771.54	6.00	
3.00	771.82	-4.00%	12.00	771.94	-0.56%	12.00	772.01	-0.56%	12.00	772.07	-0.56%	110+50.00	772.14	1.46%	12.00	772.21	0.56%	-4.00%	771.97	6.00	
3.00	772.01	-4.00%	12.00	772.13	-1.04%	12.00	772.26	-1.04%	12.00	772.38	-1.04%	110+75.00	772.51	1.46%	12.00	772.63	1.04%	-4.00%	772.39	6.00	
3.00	772.19	-4.00%	12.00	772.31	-1.49%	12.00	772.49	-1.49%	12.00	772.67	-1.49%	110+98.48	772.85	1.46%	12.00	773.03	1.49%	-4.00%	772.79	6.00	P.C.
3.00	772.20	-4.00%	12.00	772.32	-1.52%	12.00	772.50	-1.52%	12.00	772.69	-1.52%	111+00.00	772.87	1.46%	12.00	773.05	1.52%	-4.00%	772.81	6.00	
3.00	772.23	-4.00%	12.00	772.35	-1.60%	12.00	772.54	-1.60%	12.00	772.74	-1.60%	111+04.00	772.93	1.46%	12.00	773.12	1.60%	-4.00%	772.88	6.00	A.C.
3.00	772.39	-4.00%	12.00	772.51	-2.00%	12.00	772.75	-2.00%	12.00	772.99	-2.00%	111+25.00	773.24	1.46%	12.00	773.48	2.00%	-4.00%	773.24	6.00	
3.00	772.43	-4.00%	12.00	772.55	-2.10%	12.00	772.80	-2.10%	12.00	773.06	-2.10%	111+30.00	773.31	1.46%	12.00	773.56	2.10%	-4.00%	773.32	6.00	F.S.
3.00	772.72	-4.00%	12.00	772.84	-2.10%	12.00	773.10	-2.10%	12.00	773.35	-2.10%	111+50.00	773.60	1.46%	12.00	773.85	2.10%	-4.00%	773.61	6.00	
3.00	773.09	-4.00%	12.00	773.21	-2.10%	12.00	773.46	-2.10%	12.00	773.71	-2.10%	111+75.00	773.97	1.46%	12.00	774.22	2.10%	-4.00%	773.98	6.00	
3.00	773.45	-4.00%	12.00	773.57	-2.10%	12.00	773.83	-2.10%	12.00	774.08	-2.10%	112+00.00	774.33	1.46%	12.00	774.58	2.10%	-4.00%	774.34	6.00	
3.00	773.82	-4.00%	12.00	773.94	-2.10%	12.00	774.19	-2.10%	12.00	774.44	-2.10%	112+25.00	774.70	1.46%	12.00	774.95	2.10%	-4.00%	774.71	6.00	
3.00	774.18	-4.00%	12.00	774.30	-2.10%	12.00	774.56	-2.10%	12.00	774.81	-2.10%	112+50.00	775.06	1.46%	12.00	775.31	2.10%	-4.00%	775.07	6.00	
3.00	774.55	-4.00%	12.00	774.67	-2.10%	12.00	774.92	-2.10%	12.00	775.17	-2.10%	112+75.00	775.43	1.46%	12.00	775.68	2.10%	-4.00%	775.44	6.00	
3.00	774.91	-4.00%	12.00	775.03	-2.10%	12.00	775.29	-2.10%	12.00	775.54	-2.10%	113+00.00	775.79	1.46%	12.00	776.04	2.10%	-4.00%	775.80	6.00	
3.00	775.28	-4.00%	12.00	775.40	-2.10%	12.00	775.65	-2.10%	12.00	775.90	-2.10%	113+25.00	776.16	1.46%	12.00	776.41	2.10%	-4.00%	776.17	6.00	
3.00	775.64	-4.00%	12.00	775.76	-2.10%	12.00	776.02	-2.10%	12.00	776.27	-2.10%	113+50.00	776.52	1.46%	12.00	776.77	2.10%	-4.00%	776.53	6.00	
3.00	775.82	-4.00%	12.00	775.94	-2.10%	12.00	776.19	-2.10%	12.00	776.44	-2.10%	113+62.00	776.70	1.46%	12.00	776.95	2.10%	-4.00%	776.71	6.00	F.S.
3.00	776.13	-4.00%	12.00	776.25	-1.78%	12.00	776.46	-1.78%	12.00	776.67	-1.78%	113+75.00	776.89	1.46%	12.00	777.10	1.78%	-4.00%	776.86	6.00	
3.00	776.29	-4.00%	12.00	776.41	-1.60%	12.00	776.60	-1.60%	12.00	776.80	-1.60%	113+82.00	776.99	1.46%	12.00	777.18	1.60%	-4.00%	776.94	6.00	A.C.
3.00	776.72	-4.00%	12.00	776.84	-1.14%	12.00	776.98	-1.14%	12.00	777.11	-1.14%	114+00.00	777.25	1.46%	12.00	777.39	1.14%	-4.00%	777.15	6.00	
3.00	777.32	-4.00%	12.00	777.44	-0.49%	12.00	777.50	-0.49%	12.00	777.56	-0.49%	114+25.00	777.62	1.46%	12.00	777.67	0.49%	-1.79%	777.57	6.00	
3.00	777.86	-0.18%	12.00	777.87	0.00%	12.00	777.87	0.00%	12.00	777.87	0.00%	114+43.99	777.87	1.34%	12.00	777.87	0.00%	-0.12%	777.86	6.00	P.T. / FLAT
3.00	777.89	0.03%	12.00	777.89	0.03%	12.00	777.89	0.03%	12.00	777.88	0.03%	114+45.00	777.88	1.20%	12.00	777.88	-0.03%	-0.03%	777.88	6.00	END SHOULDER / BEGIN CURB LT. & RT.
3.00	778.00	0.16%	12.00	777.99	0.16%	12.00	777.98	0.16%	12.00	777.96	0.16%	114+50.00	777.94	1.16%	12.00	777.92	-0.16%	-0.16%	777.91	6.00	
3.00	778.35	0.61%	12.00	778.34	0.61%	12.00	778.26	0.61%	12.00	778.19	0.61%	114+67.55	778.12	1.02%	12.00	778.04	-0.61%	-0.61%	778.01	6.00	CURB RETURN P.C. LT.
											0.80%	114+75.00	778.18	0.85%	12.00	778.08	-0.80%	-0.80%	778.04	6.00	
											0.97%	114+81.70	778.23	0.76%	12.00	778.12	-0.97%	-0.97%	778.06	6.00	CURB RETURN P.C. RT.
											1.45%	115+00.00	778.34	0.60%			-1.45%				
SEE INTERSECTION DETAIL											1.60%	115+06.00	778.37	0.44%	SEE INTERSECTION DETAIL		-1.60%	SEE INTERSECTION DETAIL			F.S.
												115+25.00	778.42	0.27%							
												115+27.03	778.42	0.15%							TIEDEMAN ROAD EDGE OF PAVEMENT
												115+29.15	778.44	0.63%							MATCH EXISTING / END PROPOSED PROFILE

2.16:1

1.62:1

CALCULATED MEP CHECKED FR

SUPERELEVATION TABLE - RAMP T-2

CUY-480-11.60

62
84

RAMP T-3 - SUPERELEVATION TABLE
P.I. STA. 203+42.04 Dc = 4° 45' 00"

OUTSIDE SHOULDER			LANE			LANE			RAMP T-3			LANE			LANE			INSIDE SHOULDER			REMARKS
PROPOSED SHOULDER WIDTH	PROPOSED EDGE OF SHOULDER ELEVATION	PROPOSED SHOULDER CROSS-SLOPE	PROPOSED PAVEMENT WIDTH	PROPOSED EDGE OF PAVEMENT ELEVATION	PROPOSED PAVEMENT CROSS-SLOPE	PROPOSED PAVEMENT WIDTH	PROPOSED EDGE OF PAVEMENT ELEVATION	PROPOSED PAVEMENT CROSS-SLOPE	BASELINE STATION	PROFILE GRADE ELEVATION	LONGITUDINAL SLOPE	PROPOSED PAVEMENT WIDTH	PROPOSED EDGE OF PAVEMENT ELEVATION	PROPOSED PAVEMENT CROSS-SLOPE	PROPOSED PAVEMENT WIDTH	PROPOSED EDGE OF PAVEMENT ELEVATION	PROPOSED PAVEMENT CROSS-SLOPE	PROPOSED SHOULDER CROSS-SLOPE	PROPOSED EDGE OF SHOULDER ELEVATION	PROPOSED SHOULDER WIDTH	
SEE INTERSECTION DETAIL								-2.00%	200+35.62	778.37				2.00%	SEE INTERSECTION DETAIL						MATCH EX. / BEGIN PROP. PROFILE / BEGIN TRANS.
								-1.97%	200+36.94	778.37	-0.29%			1.97%							TIEDEMAN ROAD EDGE OF PAVEMENT
								-1.63%	200+50.00	778.32	-0.37%			1.63%							
								-0.98%	200+75.00	778.12	-0.80%			0.98%							
6.00	777.81	-0.88%	12.00	777.86	-0.88%	12.00	777.97	-0.88%	200+79.09	778.07	-1.14%			0.88%							CURB RETURN P.C. LT.
6.00	777.76	-0.63%	12.00	777.80	-0.63%	12.00	777.87	-0.63%	200+88.66	777.95	-1.30%	12.00	778.02	0.63%	12.00	778.10	0.63%	0.63%	778.12	3.00	CURB RETURN P.C. RT.
6.00	777.67	-0.34%	12.00	777.69	-0.34%	12.00	777.73	-0.34%	201+00.00	777.77	-1.54%	12.00	777.81	0.34%	12.00	777.85	0.34%	0.34%	777.86	3.00	END CURB / BEGIN SHOULDER LT. & RT.
6.00	777.46	-1.29%	12.00	777.54	0.00%	12.00	777.54	0.00%	201+12.96	777.54	-1.82%	12.00	777.54	0.00%	12.00	777.54	0.00%	-1.91%	777.48	3.00	P.C. / FLAT
6.00	777.23	-2.17%	12.00	777.36	0.31%	12.00	777.32	0.31%	201+25.00	777.28	-2.11%	12.00	777.25	-0.31%	12.00	777.21	-0.31%	-4.00%	777.09	3.00	
6.00	776.64	-4.00%	12.00	776.88	0.96%	12.00	776.77	0.96%	201+50.00	776.65	-2.53%	12.00	776.54	-0.96%	12.00	776.42	-0.96%	-4.00%	776.30	3.00	
6.00	776.04	-4.00%	12.00	776.28	1.60%	12.00	776.09	1.60%	201+75.00	775.90	-3.00%	12.00	775.71	-1.60%	12.00	775.51	-1.60%	-4.00%	775.39	3.00	
6.00	775.44	-4.00%	12.00	775.68	2.25%	12.00	775.41	2.25%	202+00.00	775.14	-3.05%	12.00	774.87	-2.25%	12.00	774.60	-2.25%	-4.00%	774.48	3.00	
6.00	774.83	-4.00%	12.00	775.07	2.90%	12.00	774.72	2.90%	202+25.00	774.37	-3.05%	12.00	774.03	-2.90%	12.00	773.68	-2.90%	-4.00%	773.56	3.00	
6.00	774.73	-4.00%	12.00	774.97	3.00%	12.00	774.61	3.00%	202+28.97	774.25	-3.05%	12.00	773.89	-3.00%	12.00	773.53	-3.00%	-4.00%	773.41	3.00	
6.00	774.25	-3.46%	12.00	774.46	3.54%	12.00	774.04	3.54%	202+50.00	773.61	-3.05%	12.00	773.19	-3.54%	12.00	772.76	-3.54%	-4.00%	772.64	3.00	
6.00	774.03	-3.20%	12.00	774.22	3.80%	12.00	773.77	3.80%	202+60.00	773.31	-3.01%	12.00	772.85	-3.80%	12.00	772.40	-3.80%	-4.00%	772.28	3.00	F.S.
6.00	773.59	-3.20%	12.00	773.79	3.80%	12.00	773.33	3.80%	202+75.00	772.87	-2.91%	12.00	772.42	-3.80%	12.00	771.96	-3.80%	-4.00%	771.84	3.00	
6.00	772.90	-3.20%	12.00	773.10	3.80%	12.00	772.64	3.80%	203+00.00	772.18	-2.76%	12.00	771.73	-3.80%	12.00	771.27	-3.80%	-4.00%	771.15	3.00	
6.00	772.26	-3.20%	12.00	772.45	3.80%	12.00	772.00	3.80%	203+25.00	771.54	-2.57%	12.00	771.09	-3.80%	12.00	770.63	-3.80%	-4.00%	770.51	3.00	
6.00	771.67	-3.20%	12.00	771.86	3.80%	12.00	771.41	3.80%	203+50.00	770.95	-2.37%	12.00	770.49	-3.80%	12.00	770.04	-3.80%	-4.00%	769.92	3.00	
6.00	771.12	-3.20%	12.00	771.32	3.80%	12.00	770.86	3.80%	203+75.00	770.40	-2.18%	12.00	769.95	-3.80%	12.00	769.49	-3.80%	-4.00%	769.37	3.00	
6.00	770.82	-3.20%	12.00	771.01	3.80%	12.00	770.56	3.80%	203+90.00	770.10	-2.02%	12.00	769.65	-3.80%	12.00	769.19	-3.80%	-4.00%	769.07	3.00	F.S.
6.00	770.55	-3.46%	12.00	770.76	3.54%	12.00	770.33	3.54%	204+00.00	769.91	-1.93%	12.00	769.48	-3.54%	12.00	769.06	-3.54%	-4.00%	768.94	3.00	
6.00	770.01	-4.00%	12.00	770.25	3.00%	12.00	769.89	3.00%	204+20.94	769.53	-1.81%	12.00	769.17	-3.00%	12.00	768.81	-3.00%	-4.00%	768.69	3.00	
6.00	769.92	-4.00%	12.00	770.16	2.90%	12.00	769.81	2.90%	204+25.00	769.46	-1.71%	12.00	769.11	-2.90%	12.00	768.77	-2.90%	-4.00%	768.65	3.00	
6.00	769.36	-4.00%	12.00	769.60	2.25%	12.00	769.33	2.25%	204+50.00	769.06	-1.60%	12.00	768.79	-2.25%	12.00	768.52	-2.25%	-4.00%	768.40	3.00	
						24.00	769.60														
6.00	768.77	-4.00%				20.00	769.01	1.60%	204+75.00	768.69	-1.50%	12.00	768.49	-1.60%	6.00	768.40	-1.60%	-4.00%	768.28	3.00	
6.00	768.22	-4.00%				16.00	768.46	0.96%	205+00.00	768.31	3.75%	12.00	768.20	-0.96%	0.00	768.20	-0.96%	-4.00%	768.08	3.00	
6.00	767.56	-4.00%				16.00	767.80	0.31%	205+25.00	767.75	-1.88%	6.00	767.73	-0.31%				-4.00%	767.61	3.00	
6.00	767.24	-4.00%				16.00	767.48	0.00%	205+37.00	767.48	-2.26%	3.12	767.48	0.00%				-4.00%	767.36	3.00	FLAT
6.00	766.89	-4.00%				16.00	767.13	-0.34%	205+50.00	767.18	-2.26%	0.00	767.18	0.34%				-4.00%	767.06	3.00	
6.63	766.61	-1.46%				15.61	766.71	-0.74%	205+65.73	766.83	-2.26%							-1.41%	766.66	3.64	P.T.
6.98	*766.12*	*-0.05%*				*15.40*	*766.48*	*-0.97%*	*205+74.45*	*766.63*	*-2.26%*							*0.02%*	*766.63*	*4.00*	MATCH EXISTING APPROACH SLAB
7.07	*766.03*	*-0.05%*				*15.50*	*766.43*	*-1.29%*										*0.02%*	*766.63*	*4.02*	SECTION ALONG EXISTING APPROACH SLAB
7.04	*765.68*	*-0.02%*				*15.40*	*765.83*	*-2.08%*	*205+98.02*	*766.15*	*-2.03%*							*0.52%*	*766.17*	*3.86*	

16:1

16:1

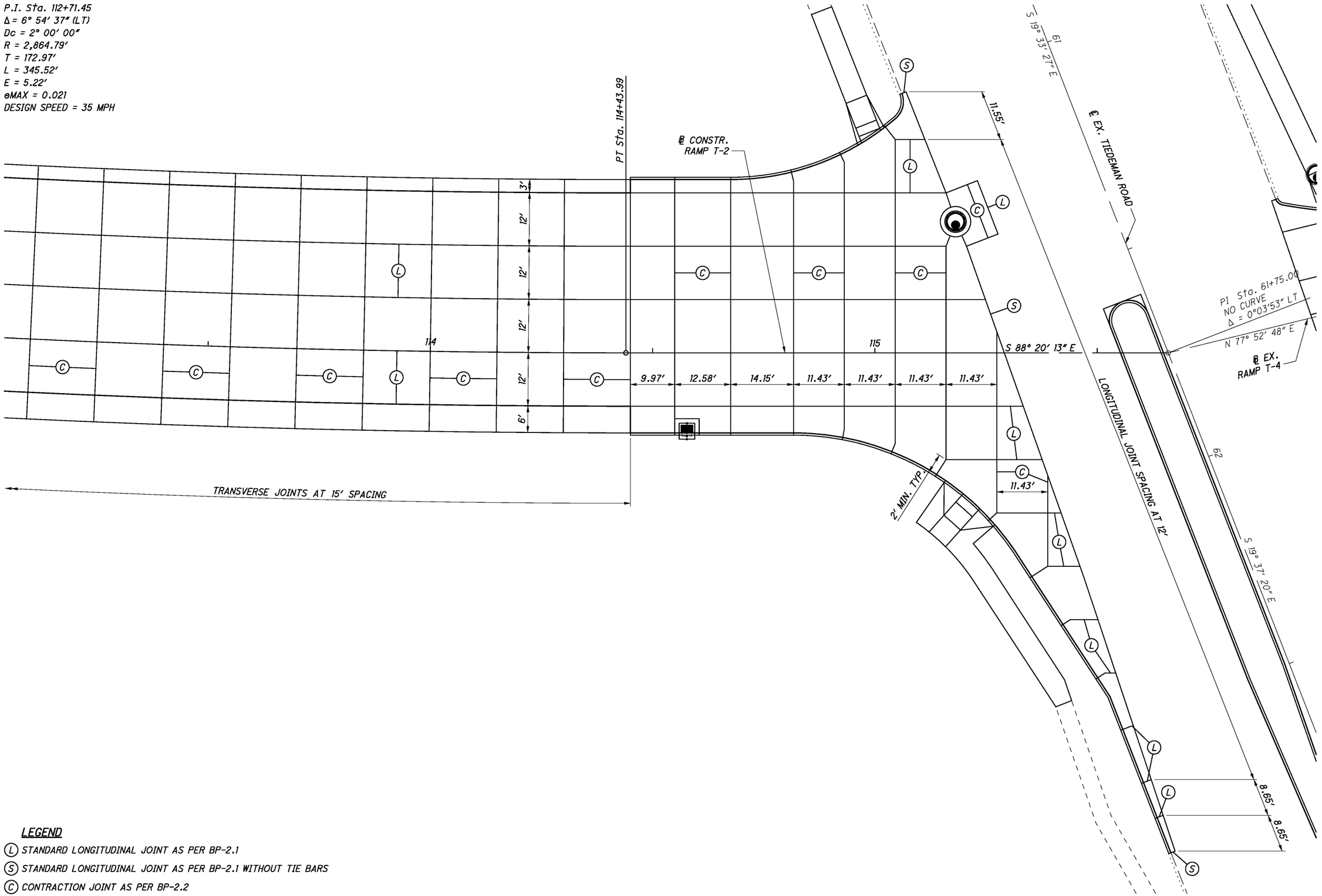
CALCULATED MEP
CHECKED FR

SUPERELEVATION TABLE - RAMP T-3

CUY-480-11.60

63
84

P.I. Sta. 112+71.45
Δ = 6° 54′ 37″ (LT)
Dc = 2° 00′ 00″
R = 2,864.79′
T = 172.97′
L = 345.52′
E = 5.22′
eMAX = 0.021
DESIGN SPEED = 35 MPH



LEGEND

(L) STANDARD LONGITUDINAL JOINT AS PER BP-2.1
(S) STANDARD LONGITUDINAL JOINT AS PER BP-2.1 WITHOUT TIE BARS
(C) CONTRACTION JOINT AS PER BP-2.2

HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED MEP
CHECKED FR

PAVEMENT JOINT DETAIL RAMP T-2

CUY-480-11.60

64
84

LEGEND

- (L) STANDARD LONGITUDINAL JOINT AS PER BP-2.1
- (S) STANDARD LONGITUDINAL JOINT AS PER BP-2.1 WITHOUT TIE BARS
- (C) CONTRACTION JOINT AS PER BP-2.2

P.I. Sta. 203+42.04
Δ = 21° 30' 23" (RT)
Dc = 4° 45' 00"
R = 1,206.23'
T = 229.08'
L = 452.77'
E = 21.56'
eMAX = 0.038
DESIGN SPEED = 35 MPH

HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED MEP
CHECKED FR

PAVEMENT JOINT DETAIL
RAMP T-3

CUY-480-11.60

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LEGEND

(L) STANDARD LONGITUDINAL JOINT AS PER BP-2.1

(S) STANDARD LONGITUDINAL JOINT AS PER BP-2.1 WITHOUT TIE BARS

(C) CONTRACTION JOINT AS PER BP-2.2

61
S 19° 33' 27" E

℄ EX. TIEDEMAN ROAD

PRESSURE RELIEF JOINT,
TYPE A PER SCD BP-2.3

℄ EX. RAMP T-4

4642

4641

PI Sta. 61+75.00
NO CURVE
Δ = 0°03'53" LT

7.40'
11.55'
8.00'
11.70'
8.07'
13.49'
13.49'
13.49'
14.01'
11.94'
11.94'

10.16'
12.39'
12.99'
12.99'
12.99'
8.96'
8.96'

2' MIN. TYP.

115
S 88° 20' 13" E

℄ CONSTR.
RAMP T-2

62

0 5 10 20
HORIZONTAL
SCALE IN FEET

CALCULATED MEP
CHECKED FR

PAVEMENT JOINT DETAIL
RAMP T-4

CUY-480-11.60

66
84

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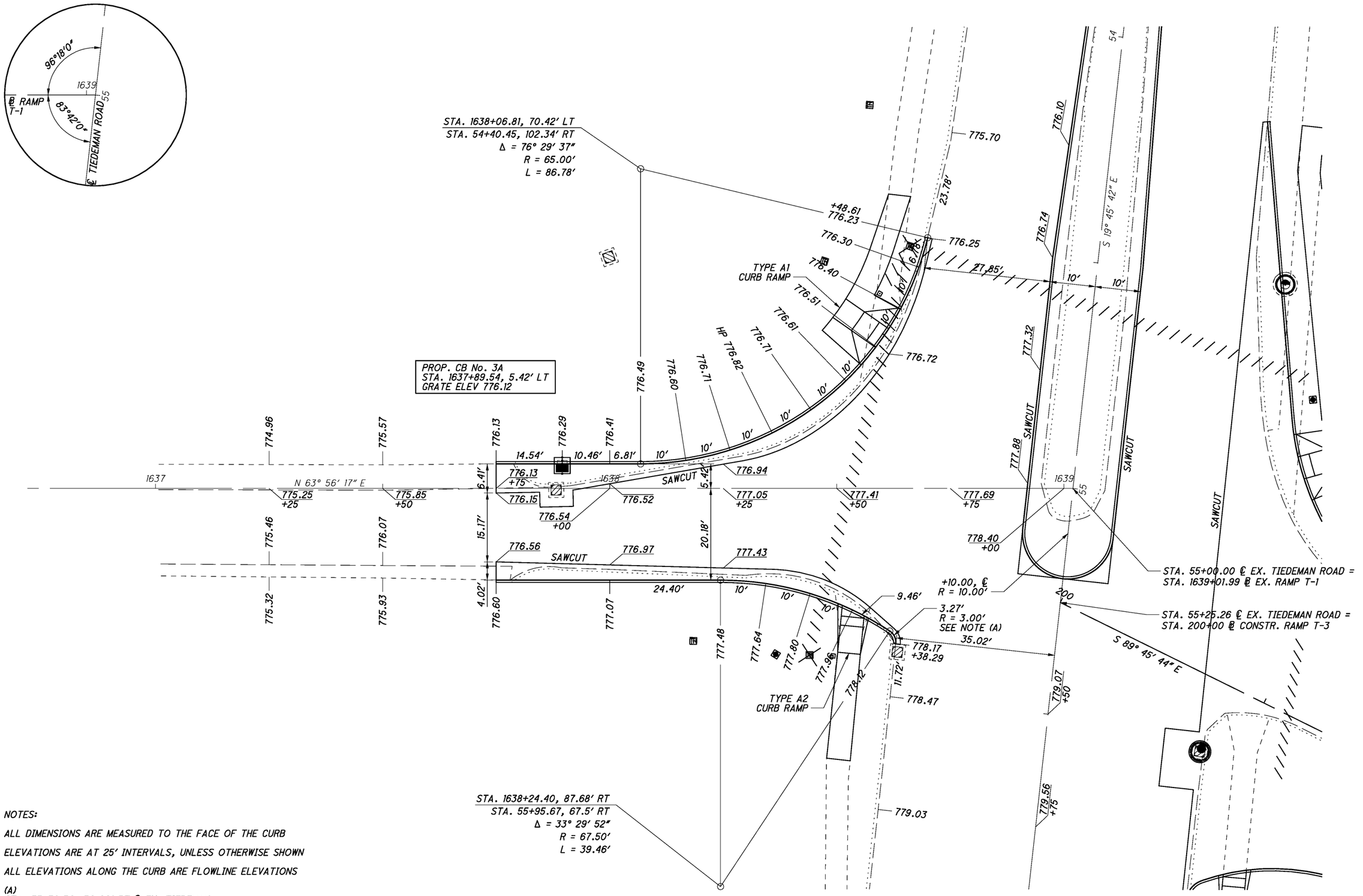

NOTES:

ALL DIMENSIONS ARE MEASURED TO THE FACE OF THE CURB

ELEVATIONS ARE AT 25' INTERVALS, UNLESS OTHERWISE SHOWN

ALL ELEVATIONS ALONG THE CURB ARE FLOWLINE ELEVATIONS

(A)
STA. 55+38.30, 38.02' RT ℄ EX. TIEDEMAN
STA. 1638+60.00, 33.90' RT ℄ EX. RAMP T-1

HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED MEP
CHECKED FR

INTERSECTION DETAILS
RAMP T-1 AND TIEDEMAN ROAD

CUY-480-11.60

67
84

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P.I. STA. 112+71.45
Δ = 6° 54′ 37″ (LT)
Dc = 2° 00′ 00″
R = 2,864.79′
T = 172.97′
L = 345.52′
E = 5.22′
eMAX = 0.021
DESIGN SPEED = 35 MPH

STA. 114+67.55, 96′ LT
STA. 60+49.88, 57′ RT
Δ = 40° 38′ 03″
R = 57.00′
L = 40.42′

TYPE A2 CURB RAMP

PROP. MH No. 3
STA. 115+18.14, 29.52′ LT
STA. 61+30.17, 33.90′ RT
RIM ELEV 778.67

PROP. CB No. 3A
STA. 114+57.72, 18.00′ RT
GRATE ELEV 777.79

TYPE A1 CURB RAMP

STA. 114+81.70, 78′ RT
STA. 62+17.08, 106.84′ RT
Δ = 56° 54′ 50″
R = 60.00′
L = 59.60′

DO NOT DISTURB

6.19′
R = 5.00′
SEE NOTE (A)

+65.00, 5.50′ RT
R = 4.50′

STA. 61+75.00 ℄ EX. TIEDEMAN ROAD =
STA. 115+65.97 ℄ CONSTR. RAMP T-2 =
STA. 4640+50.74 ℄ EX. RAMP T-4

PI STA. 61+75.00
NO CURVE
Δ = 0°03′53″ LT

S 88° 20′ 13″ E
N 77° 52′ 48″ E
S 19° 33′ 27″ E
S 19° 37′ 20″ E

SAWCUT

PT STA. 114+43.99

NOTES:

ALL DIMENSIONS ARE MEASURED TO THE FACE OF THE CURB

ELEVATIONS ARE AT 25′ INTERVALS, UNLESS OTHERWISE SHOWN

ALL ELEVATIONS ALONG THE CURB ARE FLOWLINE ELEVATIONS

(A)
STA. 115+01.41, 56.54′ LT
STA. 60+98.92, 39.72′ RT

HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED MEP
CHECKED FR

INTERSECTION DETAILS
RAMP T-2 AND TIEDEMAN ROAD

CUY-480-11.60

68
84

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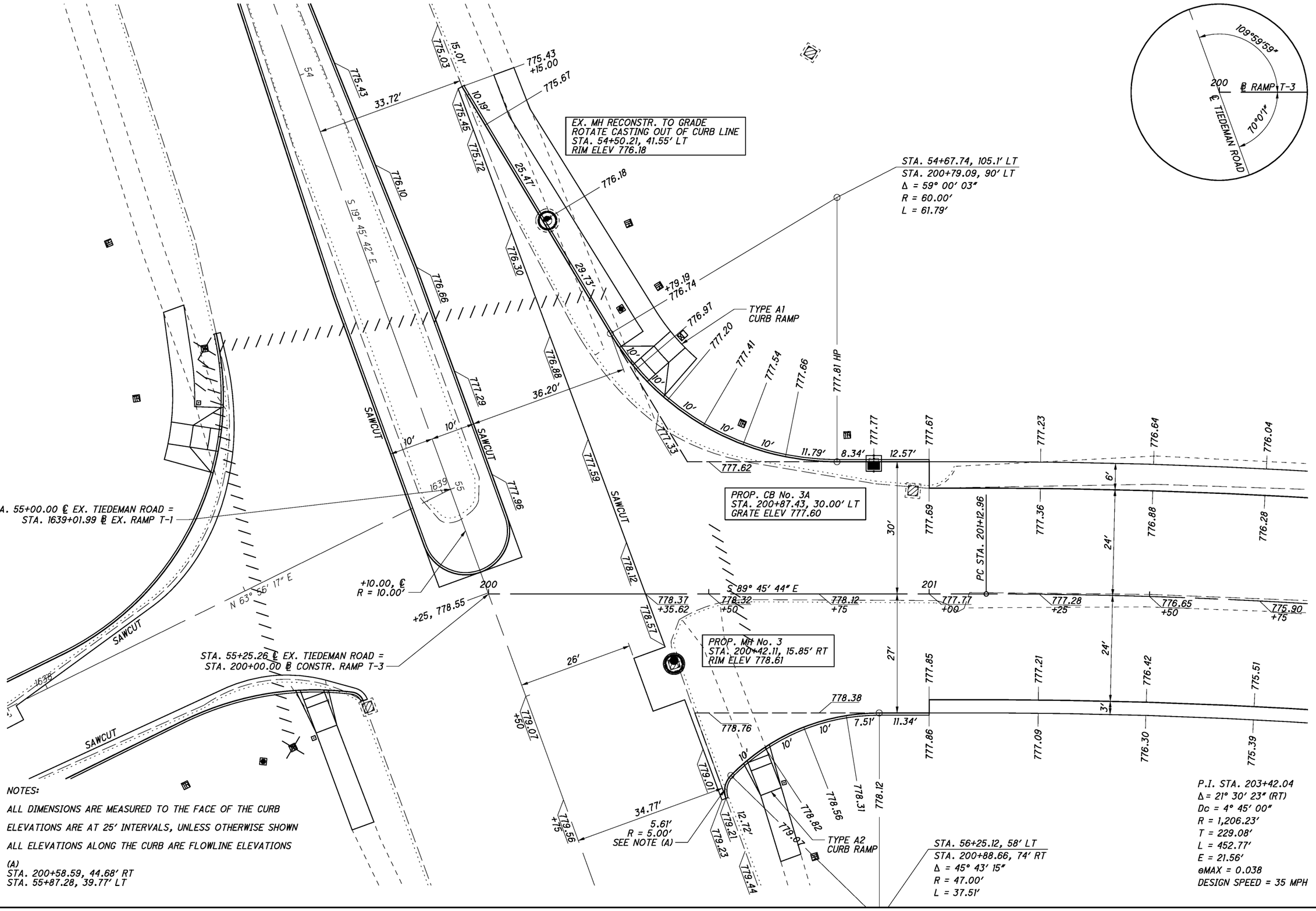

HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED MEP
CHECKED FR

INTERSECTION DETAILS
RAMP T-3 AND TIEDEMAN ROAD

CUY-480-11.60

69
84

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NOTES:

ALL DIMENSIONS ARE MEASURED TO THE FACE OF THE CURB

ELEVATIONS ARE AT 25' INTERVALS, UNLESS OTHERWISE SHOWN

ALL ELEVATIONS ALONG THE CURB ARE FLOWLINE ELEVATIONS

(A)
STA. 4640+84.45, 28.05' LT
STA. 61+51.55, 37.06' LT

STA. 60+87.79, 77.5' LT
STA. 4641+16.30, 96.5' LT
Δ = 24° 56' 54"
R = 77.50'
L = 33.75'

EX. CB ADJUST TO GRADE
STA. 4641+75.93, 7.29' RT
GRATE ELEV 775.80

STA. 62+55.35, 94.84' LT
STA. 4641+55.26, 67.29' RT
Δ = 95° 31' 37"
R = 60.00'
L = 100.04'

TYPE A2 CURB RAMP

TYPE A1 CURB RAMP

2.02'
R = 2.00'
SEE NOTE (A)

PI STA. 61+75.00
NO CURVE
Δ = 0°03'53" LT

STA. 61+75.00 ℄ EX. TIEDEMAN ROAD =
STA. 115+65.97 ℄ CONSTR. RAMP T-2 =
STA. 4640+50.74 ℄ EX. RAMP T-4

SAWCUT

97°26'16"
82°29'51"
68°46'45"
111°17'8"
℄ TIEDEMAN ROAD
℄ RAMP T-4
℄ RAMP T-2

HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED MEP
CHECKED FR

INTERSECTION DETAILS
RAMP T-4 AND TIEDEMAN ROAD

CUY-480-11.60

70
84

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PAVEMENT MARKING LEGEND

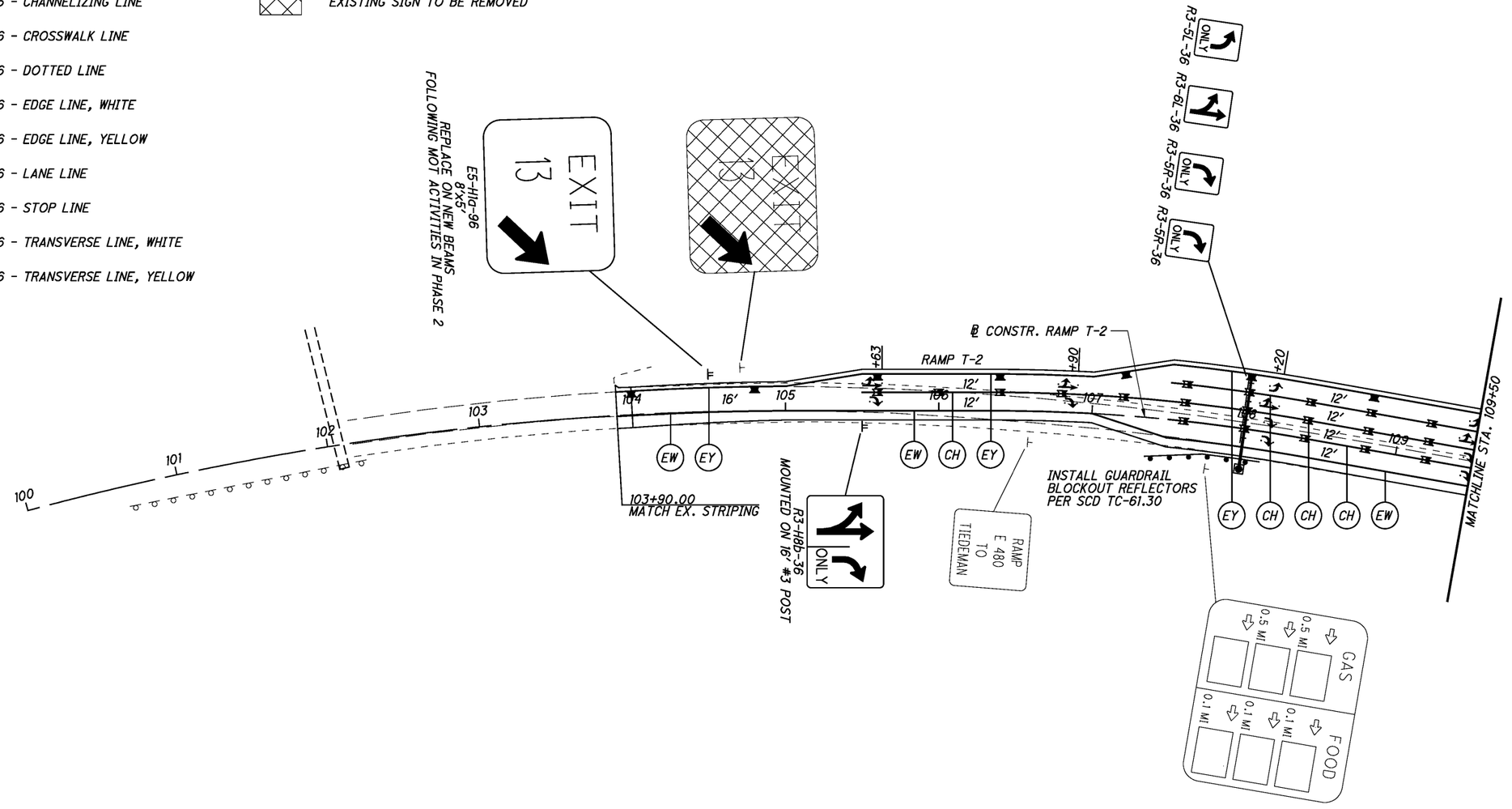
- ITEM 646 - LANE ARROW, 96"
- ITEM 646 - LANE ARROW, 153"
- (C) ITEM 646 - CENTER LINE, DOUBLE YELLOW
- (CH) ITEM 646 - CHANNELIZING LINE
- (CW) ITEM 646 - CROSSWALK LINE
- (D) ITEM 646 - DOTTED LINE
- (EW) ITEM 646 - EDGE LINE, WHITE
- (EY) ITEM 646 - EDGE LINE, YELLOW
- (L) ITEM 646 - LANE LINE
- (S) ITEM 646 - STOP LINE
- (TW) ITEM 646 - TRANSVERSE LINE, WHITE
- (TY) ITEM 646 - TRANSVERSE LINE, YELLOW

SIGNING LEGEND

- EXISTING SIGN, NO WORK
- PROPOSED SIGN
- EXISTING SIGN TO BE REMOVED AND REERECTED
- EXISTING SIGN TO BE REMOVED

RAISED PAVEMENT MARKER (RPM) LEGEND

- 2 WAY (WHITE/RED) @ 40' C/C (ON CHANNELIZING LINE)
- 2 WAY (YELLOW/RED) @ 80' C/C (ON RAMP EDGE LINE, YELLOW)



NOTES:

RAISED PAVEMENT MARKERS SHALL BE PLACED PER SCD TC-65.10, SCD TC-65.11 AND CMS 621.

FOR OVERHEAD SIGN ELEVATION VIEW, SEE SHEET 77

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MEP
CHECKED FR

SIGNING AND PAVEMENT MARKING PLAN
RAMP T-2 - BEGINNING TO STA. 109+50

CUY-480-11.60

71
84

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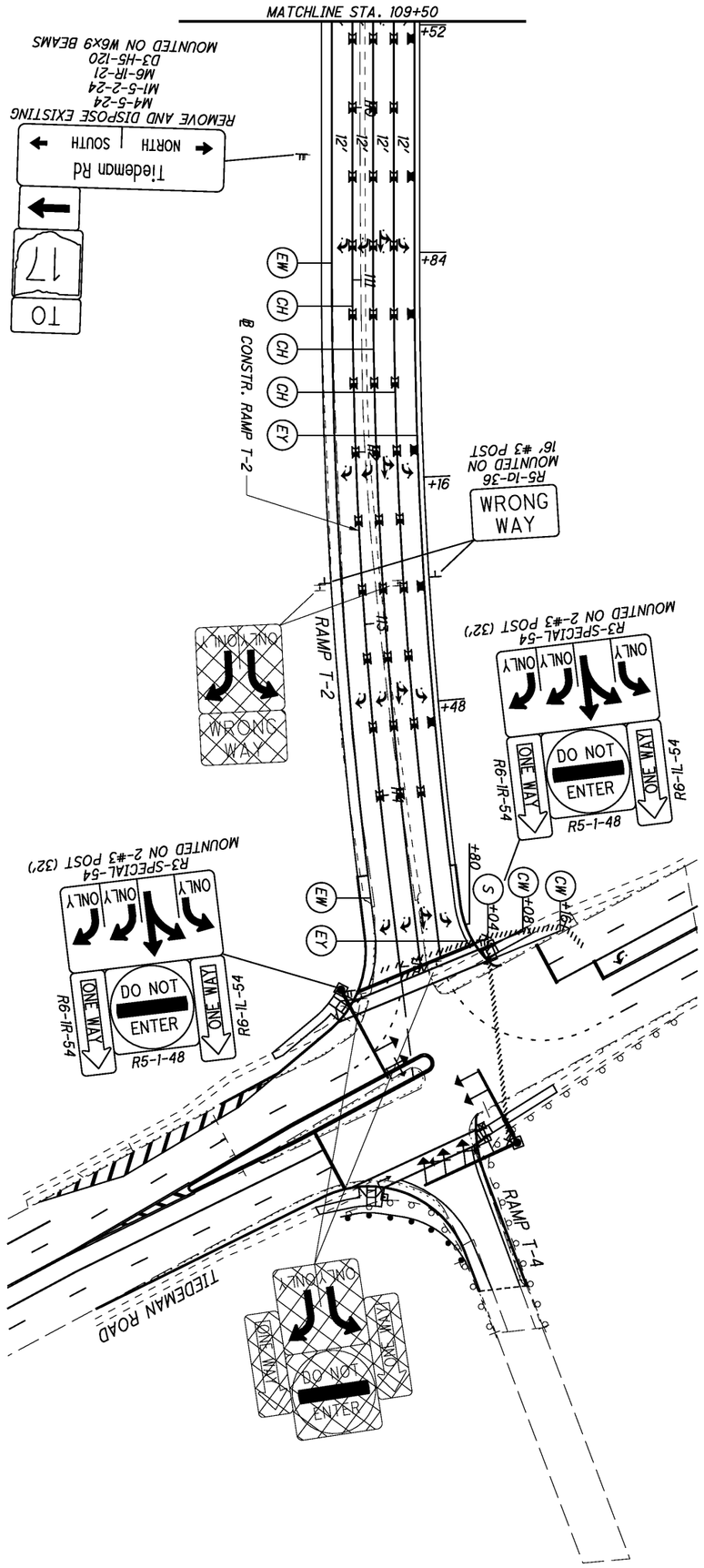
NOTES:

RAISED PAVEMENT MARKERS SHALL BE PLACED PER SCD TC-65.10, SCD TC-65.11 AND CMS 621.

FOR LEGEND, SEE SHEET 71

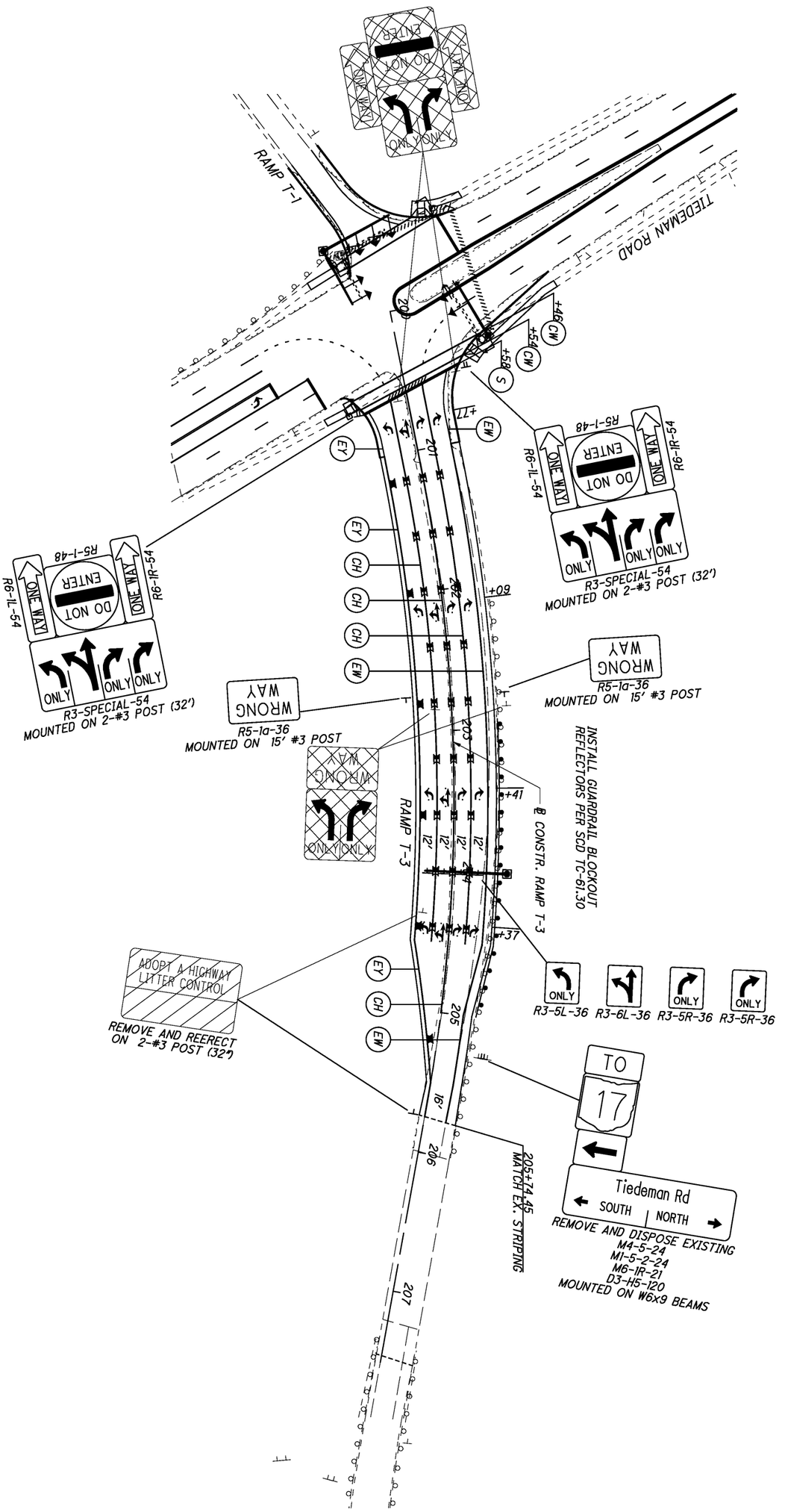


NOTES:

RAISED PAVEMENT MARKERS SHALL BE PLACED PER SCD TC-65.10, SCD TC-65.11 AND CMS 621.

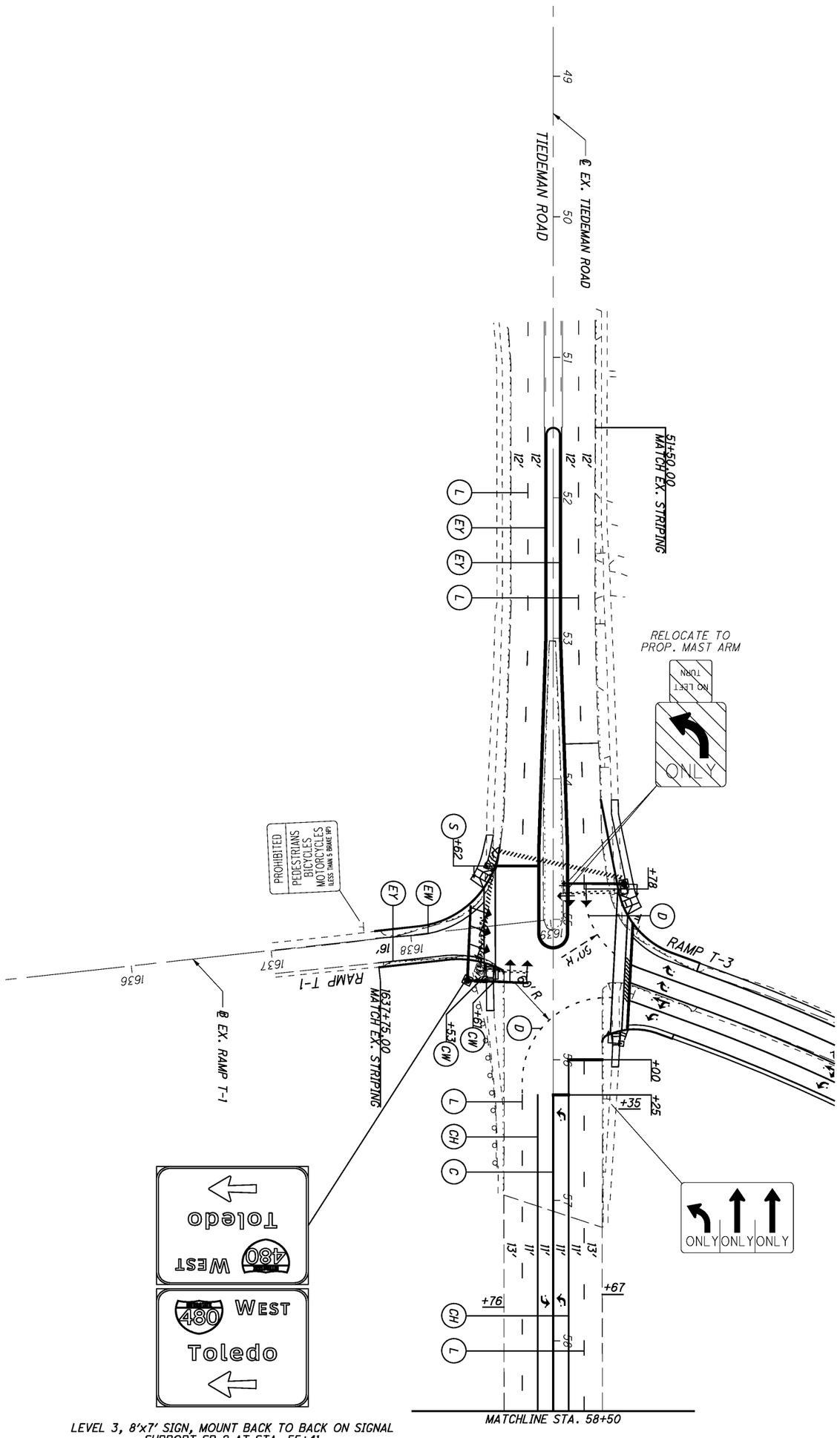
FOR OVERHEAD SIGN ELEVATION VIEW, SEE SHEET 78

FOR LEGEND, SEE SHEET 71



73/84	CUY-480-11.60	SIGNING AND PAVEMENT MARKING PLAN RAMP T-3	CALCULATED MEP CHECKED FR	0 40 20 80 HORIZONTAL SCALE IN FEET

FOR LEGEND, SEE SHEET 71



LEVEL 3, 8'x7' SIGN, MOUNT BACK TO BACK ON SIGNAL SUPPORT SP-2 AT STA. 55+41
SEE SHEETS 76 AND 80
REMOVE AND DISPOSE OF LUMINAIRES, STRUCTURAL STEEL TUBES AND GLARE SHIELDS
REMOVE SIGN WIRING BACK TO DISCONNECT SWITCH

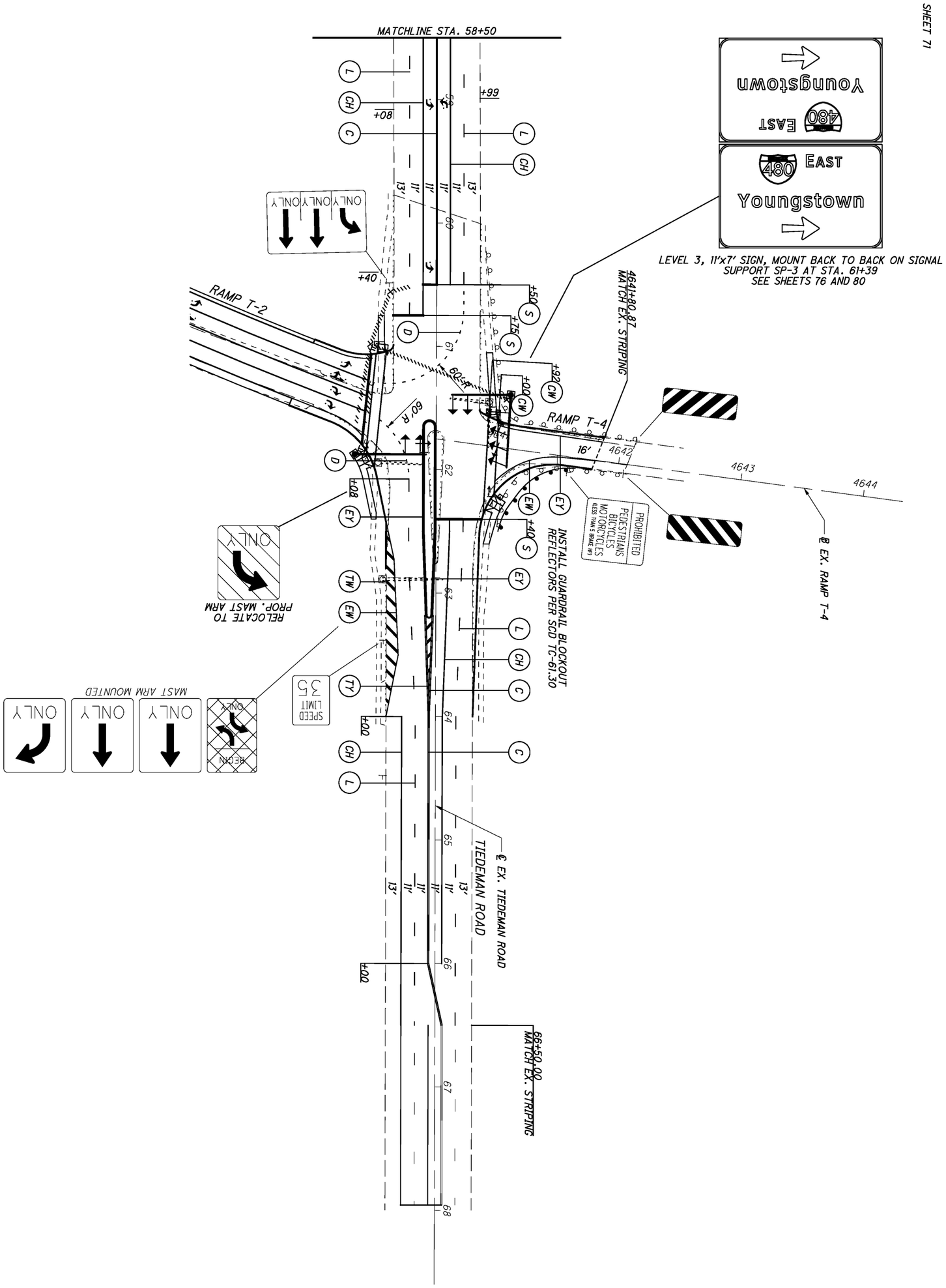
CUY-480-11.60

SIGNING AND PAVEMENT MARKING PLAN
TIEDEMAN ROAD - BEGINNING TO STA. 58+50

CALCULATED MEP
CHECKED FR

0 20 40 80
HORIZONTAL SCALE IN FEET

FOR LEGEND, SEE SHEET 71



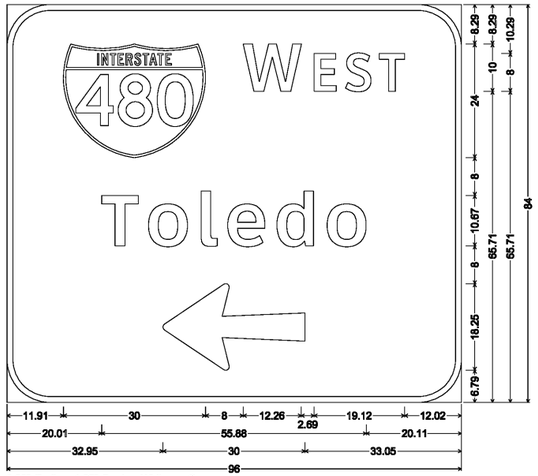
CUY-480-11.60

SIGNING AND PAVEMENT MARKING PLAN
TIEDEMAN ROAD - STA. 58+50 TO ENDING

CALCULATED MEP
CHECKED FR

0 20 40 80
HORIZONTAL SCALE IN FEET

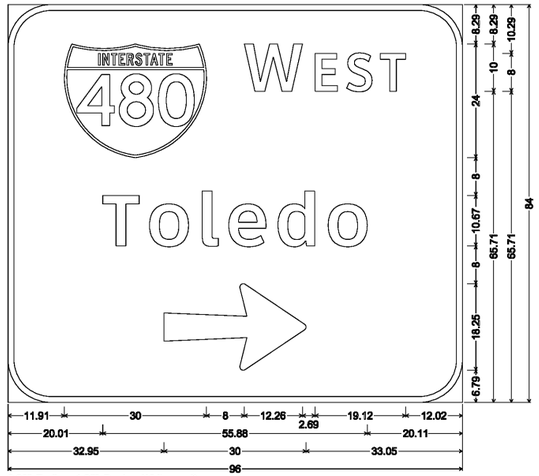
N



9.00" Radius, 1.25" Border, White on Green;
Interstate 480 M1-1; "W" Clearview-Hwy-4-W; "EST" Clearview-Hwy-4-W;
"Toledo" Clearview-Hwy-5-W 80% spacing; Arrow A-3 - 30.00" 180";
Table of letter and object lefts.

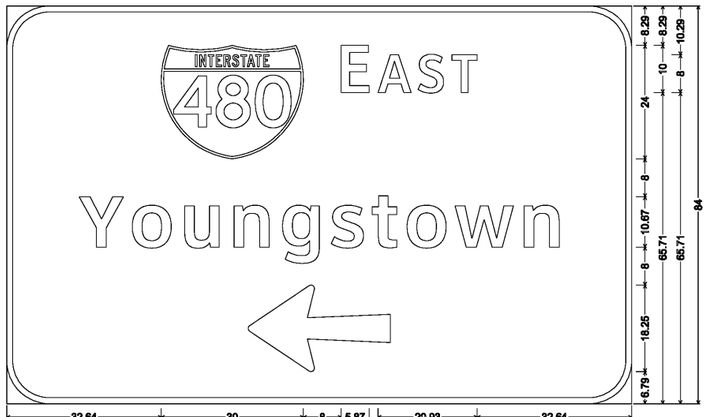
11.91	W 49.91	E 64.86	S 71.51	T 78.65
T 20.01	o 29.89	l 41.04	e 46.63	d 57.02	o 67.63
32.95				

I-480 WEST SIGNS MOUNTED BACK TO BACK ON SIGNAL SUPPORT SP-2 AT RAMP T-3 AT STA. 55+41 AS PER TC-9.10, DESIGN 3.



9.00" Radius, 1.25" Border, White on Green;
Interstate 480 M1-1; "W" Clearview-Hwy-4-W; "EST" Clearview-Hwy-4-W;
"Toledo" Clearview-Hwy-5-W 80% spacing; Arrow A-3 - 30.00" 0";
Table of letter and object lefts.

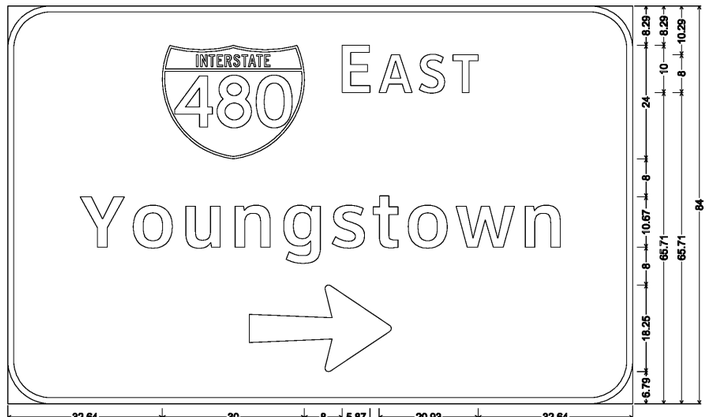
11.91	W 49.91	E 64.86	S 71.51	T 78.65
T 20.01	o 29.89	l 41.04	e 46.63	d 57.02	o 67.63
32.95				



9.00" Radius, 1.25" Border, White on Green;
Interstate 480 M1-1; "E" Clearview-Hwy-4-W; "AST" Clearview-Hwy-4-W; "Youngstown" Clearview-Hwy-5-W 78% spacing;
Arrow A-3 - 30.00" 180";
Table of letter and object lefts.

32.64	E 70.64	A 78.43	S 86.89	T 94.03
Y 15.28	o 26.51	u 37.58	n 48.02	g 58.26	s 68.52	t 77.16	o 84.57	w 94.71	n 109.30
51.00									

I-480 EAST SIGNS MOUNTED BACK TO BACK ON SIGNAL SUPPORT SP-3 AT RAMP T-2 AT STA. 61+39 AS PER TC-9.10, DESIGN 3.



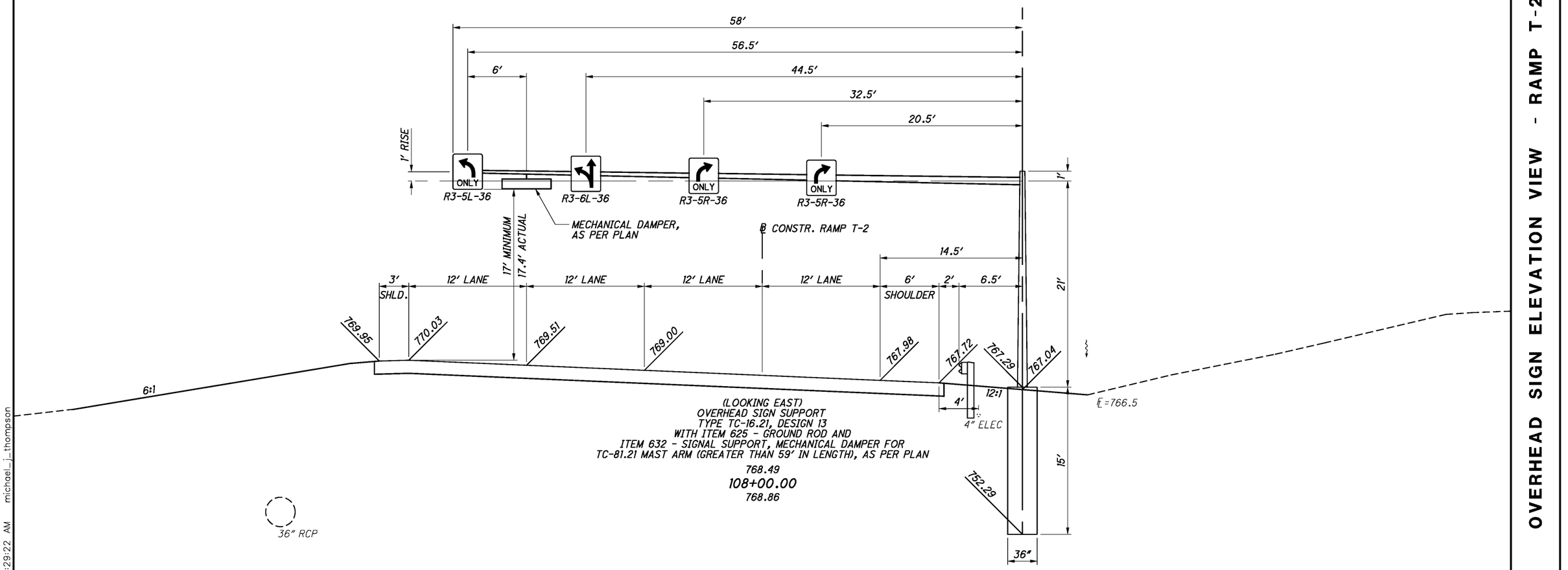
9.00" Radius, 1.25" Border, White on Green;
Interstate 480 M1-1; "E" Clearview-Hwy-4-W; "AST" Clearview-Hwy-4-W; "Youngstown" Clearview-Hwy-5-W 78% spacing;
Arrow A-3 - 30.00" 0";
Table of letter and object lefts.

32.64	E 70.64	A 78.43	S 86.89	T 94.03
Y 15.28	o 26.51	u 37.58	n 48.02	g 58.26	s 68.52	t 77.16	o 84.57	w 94.71	n 109.30
51.00									

CALCULATED TKI
CHECKED KPW

GUIDE SIGN DETAILS

CUY-480-11.60



NOTES:
DESIGN SPEED = 45mph
REQUIRED CLEAR ZONE = 19-FEET

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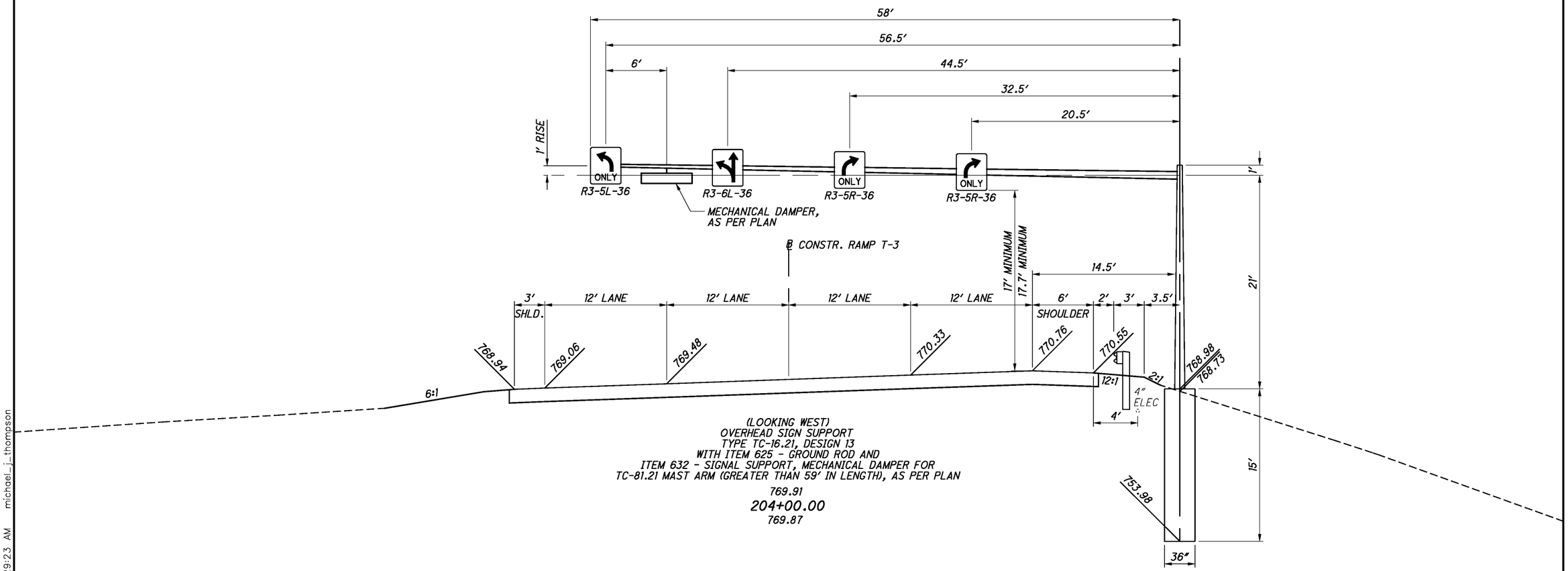
CALCULATED MEP
CHECKED KPW

OVERHEAD SIGN ELEVATION VIEW - RAMP T-2

CUY-480-11.60



(LOOKING WEST)
OVERHEAD SIGN SUPPORT
TYPE TC-16.21, DESIGN 13
WITH ITEM 625 - GROUND ROD AND
ITEM 632 - SIGNAL SUPPORT, MECHANICAL DAMPER FOR
TC-81.21 MAST ARM (GREATER THAN 59' IN LENGTH), AS PER PLAN

769.91
204+00.00
769.87

NOTES:
DESIGN SPEED = 35mph
REQUIRED CLEAR ZONE = 15-FEET

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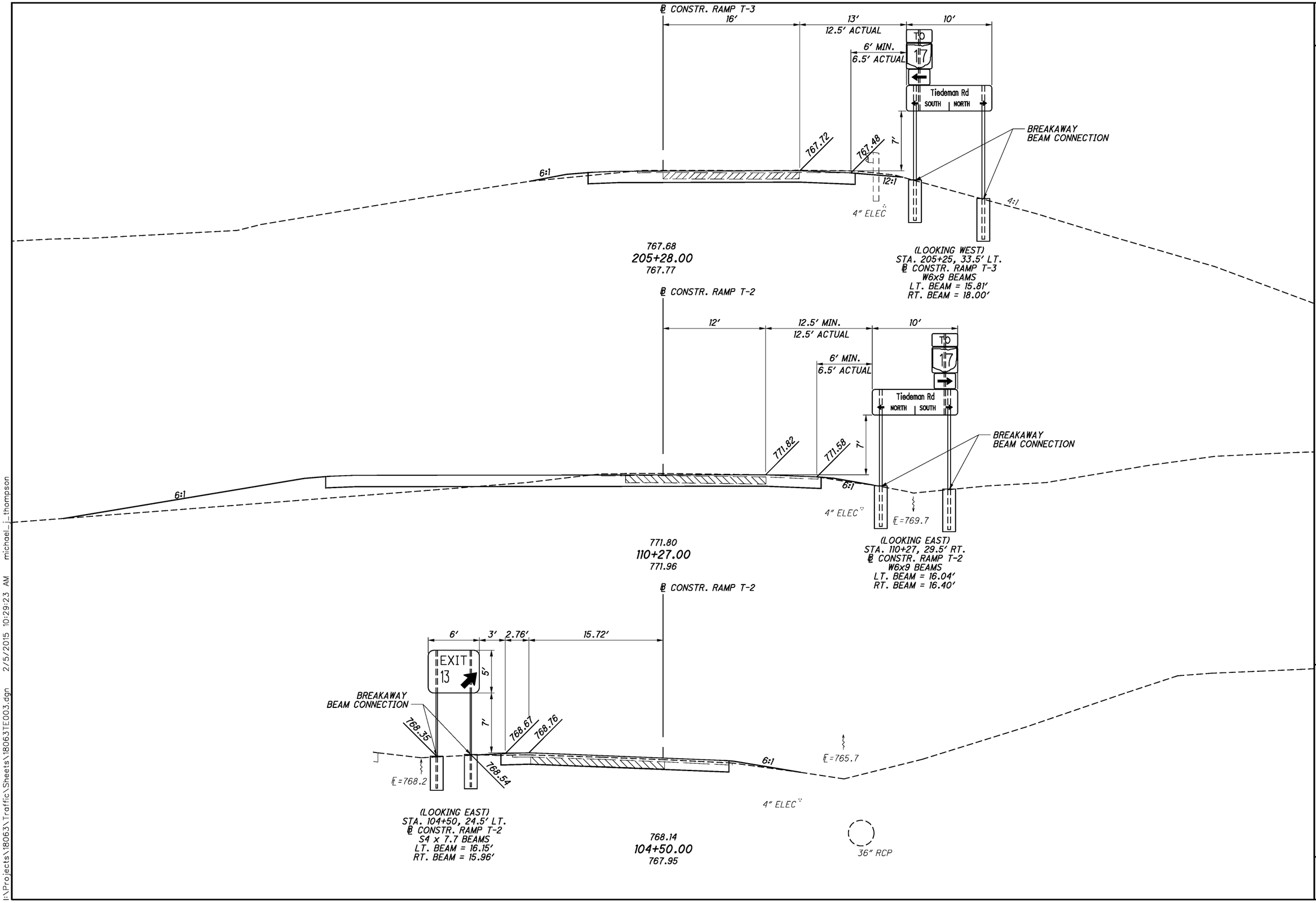
CALCULATED MEP
CHECKED KPW

OVERHEAD SIGN ELEVATION VIEW - RAMP T-3

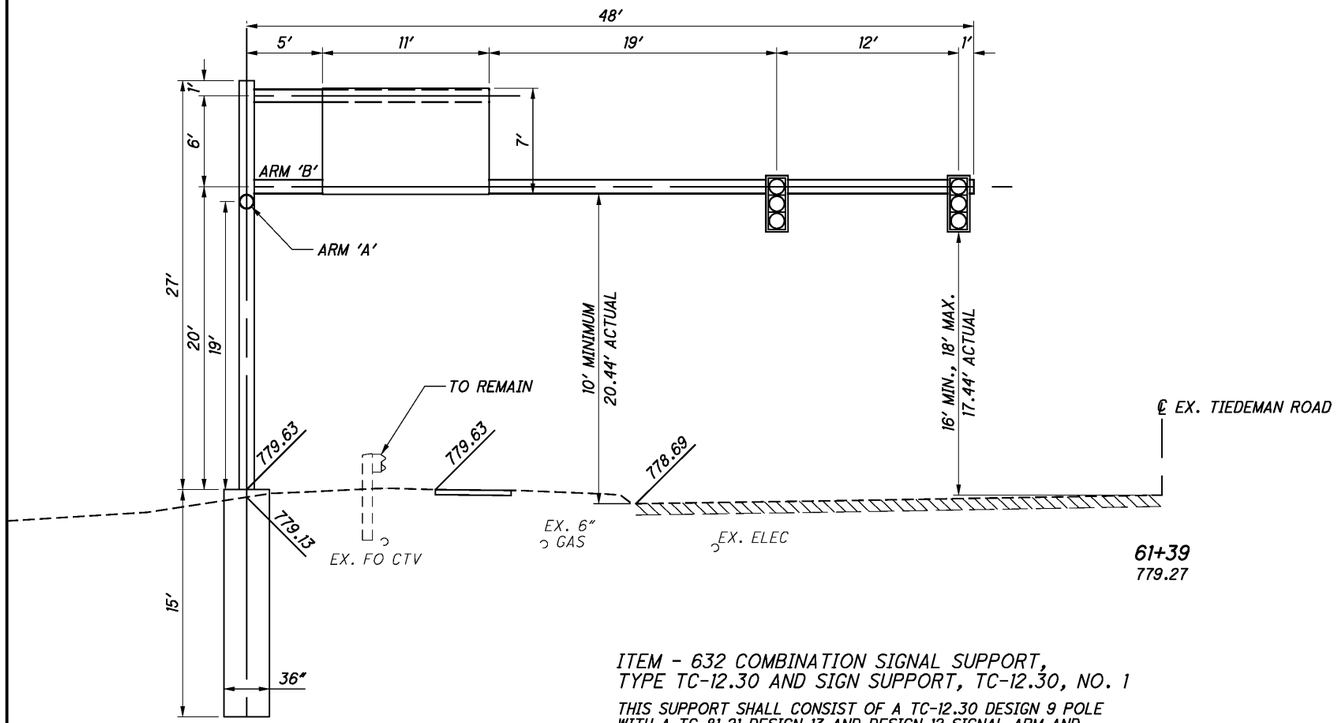
CUY-480-11.60



CALCULATED MEP
CHECKED KPW

SIGN ELEVATION VIEWS - RAMP T-2 AND RAMP T-3

CUY-480-11.60

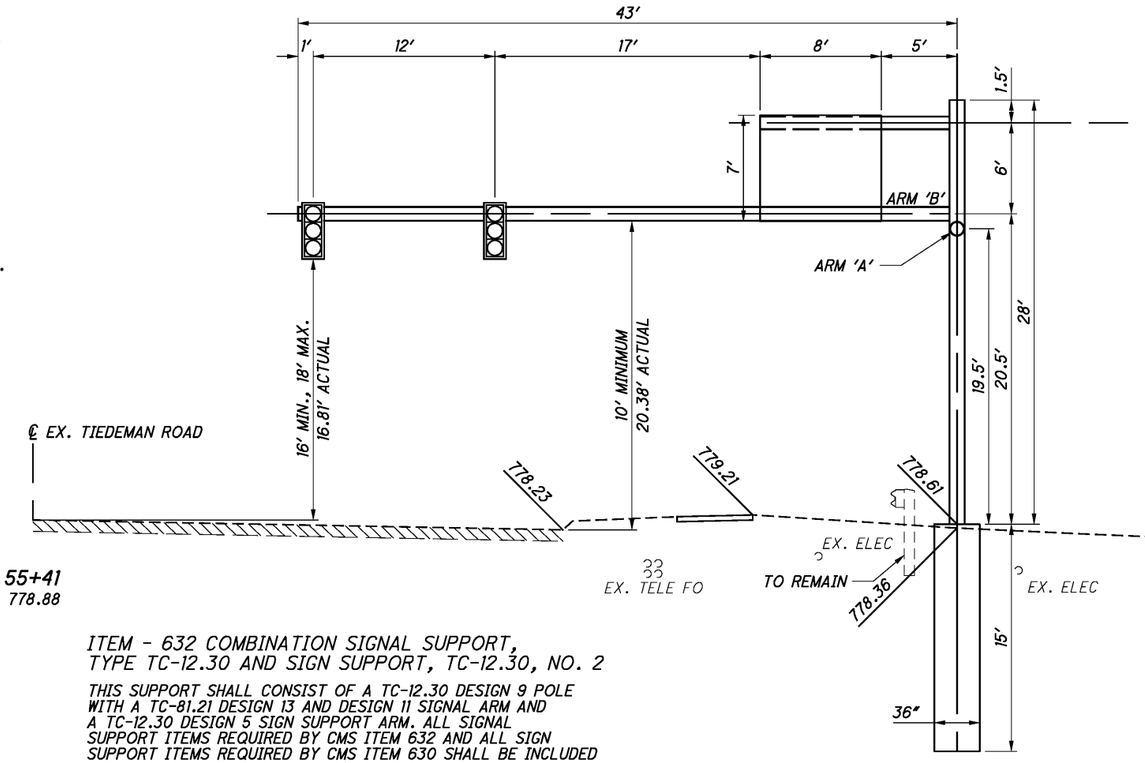


(LOOKING SOUTH)
STA. 61+39, 60' LT.
℄ EX. TIEDEMAN ROAD
COMBINATION SIGNAL AND SIGN SUPPORT
POLE = TC-12.30, DESIGN 9
SIGNAL ARMS = TC-81.21,
DESIGN 13 (59') AND DESIGN 12 (48')
SIGN ATTACHMENT = TC-12.30, DESIGN 5 ARM (16')
(SEE TC-12.30 NOTE 2)
SEE SHEET 76 FOR SIGN DETAILS

ITEM - 632 COMBINATION SIGNAL SUPPORT, TYPE TC-12.30 AND SIGN SUPPORT, TC-12.30, NO. 1

THIS SUPPORT SHALL CONSIST OF A TC-12.30 DESIGN 9 POLE WITH A TC-81.21 DESIGN 13 AND DESIGN 12 SIGNAL ARM AND A TC-12.30 DESIGN 5 SIGN SUPPORT ARM. ALL SIGNAL SUPPORT ITEMS REQUIRED BY CMS ITEM 632 AND ALL SIGN SUPPORT ITEMS REQUIRED BY CMS ITEM 630 SHALL BE INCLUDED AS PART OF THIS SUPPORT. PAYMENT WILL BE 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, COMPLETE AND ACCEPTED.

CONCRETE FOUNDATION SHALL BE PER SCD TC-21.20 EXCEPT THAT THE VERTICAL REINFORCEMENT SHALL USE 6 NO. 8 REBARS.



ITEM - 632 COMBINATION SIGNAL SUPPORT, TYPE TC-12.30 AND SIGN SUPPORT, TC-12.30, NO. 2

THIS SUPPORT SHALL CONSIST OF A TC-12.30 DESIGN 9 POLE WITH A TC-81.21 DESIGN 13 AND DESIGN 11 SIGNAL ARM AND A TC-12.30 DESIGN 5 SIGN SUPPORT ARM. ALL SIGNAL SUPPORT ITEMS REQUIRED BY CMS ITEM 632 AND ALL SIGN SUPPORT ITEMS REQUIRED BY CMS ITEM 630 SHALL BE INCLUDED AS PART OF THIS SUPPORT. PAYMENT WILL BE 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, COMPLETE AND ACCEPTED.

CONCRETE FOUNDATION SHALL BE PER SCD TC-21.20 EXCEPT THAT THE VERTICAL REINFORCEMENT SHALL USE 6 NO. 8 REBARS.

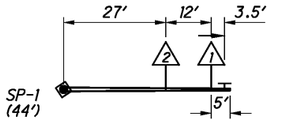
(LOOKING SOUTH)
STA. 55+41, 61' RT.
℄ EX. TIEDEMAN ROAD
COMBINATION SIGNAL AND SIGN SUPPORT
POLE = TC-12.30, DESIGN 9
SIGNAL ARMS = TC-81.21,
DESIGN 13 (53') AND DESIGN 11 (43')
SIGN ATTACHMENT = TC-12.30, DESIGN 5 ARM (13')
(SEE TC-12.30 NOTE 2)
SEE SHEET 76 FOR SIGN DETAILS

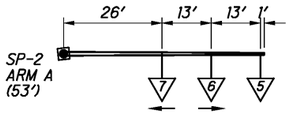
CALCULATED MEP
CHECKED KPW

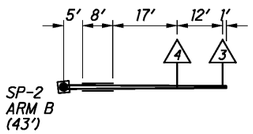
SIGN ELEVATION VIEWS - TIEDEMAN ROAD

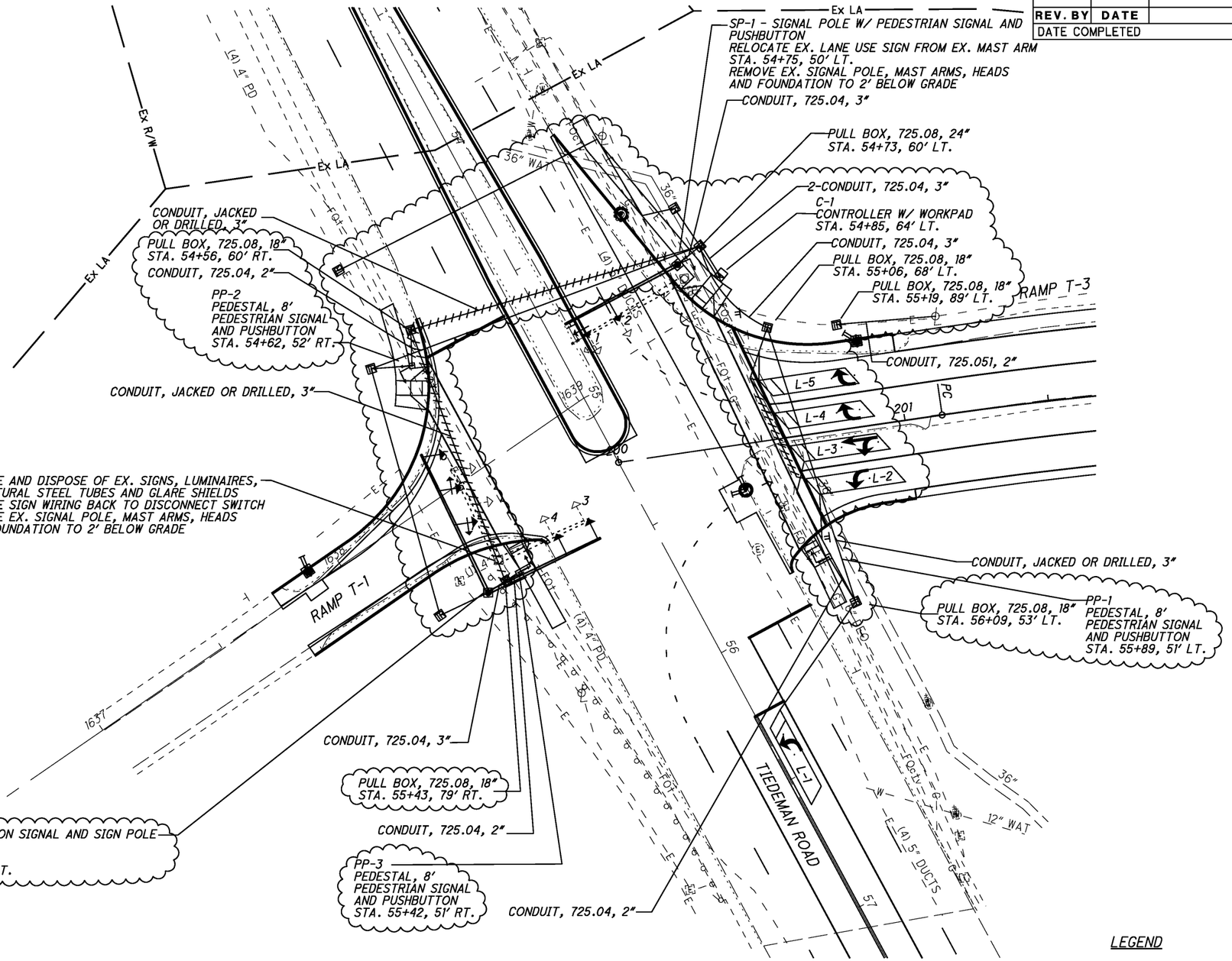
CUY-480-11.60

REV. BY	DATE	DESCRIPTION
MJT	2/5/15	AS-BUILTS
DATE COMPLETED		

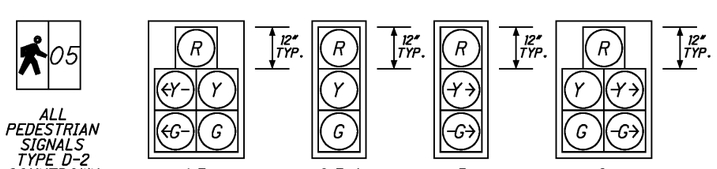








SIGNALS



LEGEND

- SIGNAL POLE
- PEDESTAL
- GROUND MOUNTED CONTROLLER W/WORK PAD
- PULL BOX
- 2 VEHICULAR SIGNAL 3-SECTION
- 2 VEHICULAR SIGNAL 3-SECTION W/ARROW
- 4 VEHICULAR SIGNAL 5-SECTION
- B PEDESTRIAN SIGNAL WITH PUSHBUTTON
- PEDESTRIAN SIGNAL
- LOOP DETECTOR
- CONDUIT

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MEP
CHECKED KPW

TIEDEMAN AND RAMP T-3

SIGNAL PLAN

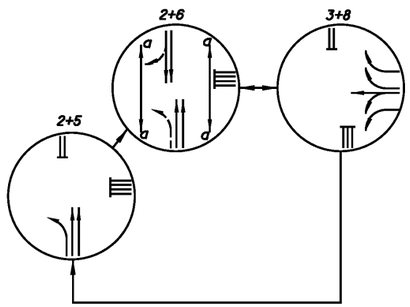
CUY-480-11.60

81
84

TIMING CHART

INTERVAL OR FEATURE			CONTROLLER MOVEMENT NUMBER							
			1	2	3	4	5	6	7	8
INTERSECTION MOVEMENT				NB			NB LT	SB		WB
MINIMUM GREEN (INITIAL)		(SEC.)		28			5	28		7
VEHICLE EXTENSION		(SEC.)		5			4	5		5
MAXIMUM GREEN		(SEC.)		48			30	48		19
YELLOW CHANGE		(SEC.)		3.6			2.9	3.6		3.6
ALL RED CLEARANCE		(SEC.)		2.4			3.2	2.4		2.7
WALK		(SEC.)		4			-	4		-
PEDESTRIAN CLEARANCE		(SEC.)		23			-	23		-
RECALL	MAXIMUM	(ON/OFF)		OFF			OFF	OFF		OFF
	MINIMUM	(ON/OFF)		ON			OFF	ON		OFF
	PEDESTRIAN	(ON/OFF)		OFF			OFF	OFF		OFF

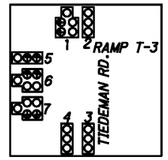
PHASING DIAGRAM



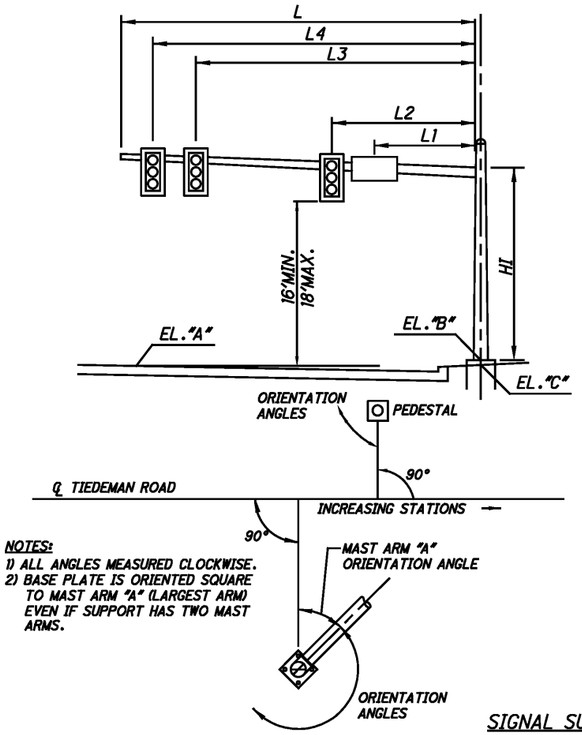
REV. BY	DATE	DESCRIPTION
MJT	2/5/15	AS-BUILTS
DATE COMPLETED		

CALCULATED MEP CHECKED KPW

FIELD WIRING HOOK-UP CHART



SIGNAL HEAD #	INDICATION	FIELD TERMINAL	FLASH
1 (NB LT)	R	ϕ2R	Y
	Y	ϕ2Y	
	G	ϕ2G	
	~~Y~~	ϕ5Y	
	~~G~~	ϕ5G	
2 (NB)	R	ϕ2R	Y
	Y	ϕ2Y	
	G	ϕ2G	
3 (SB)	R	ϕ6R	Y
	Y	ϕ6Y	
	G	ϕ6G	
4 (SB)	R	ϕ6R	Y
	Y	ϕ6Y	
	G	ϕ6G	
5 (WB RT)	R	ϕ8R	R
	~~Y~~	ϕ8Y	
	~~G~~	ϕ8G	
6 (WB)	R	ϕ8R	R
	Y	ϕ8Y	
	G	ϕ8G	
	~~Y~~	ϕ8Y	
	~~G~~	ϕ8G	
7 (WB LT)	R	ϕ8R	R
	Y	ϕ8Y	
	G	ϕ8G	
	~~Y~~	ϕ3Y	
	~~G~~	ϕ3G	
a - a (N-S)	DW	ϕ6R	OFF
	FDW	ϕ6Y	
	W	ϕ6G	



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.

DETECTOR CHART

LOOP DESIGNATION	SIZE (FEET)	PULSE OR PRESENCE	DELAY (SECONDS)	EXTENSION (SECONDS)	ASSOCIATED CONTROLLER PHASE	REMARKS
L-1	6'x30'	PRESENCE	-	-	ϕ5	POWERHEAD
L-2	6'x30'	PRESENCE	-	-	ϕ3	POWERHEAD
L-3	6'x30'	PRESENCE	-	-	ϕ8	POWERHEAD
L-4	6'x30'	PRESENCE	-	-	ϕ8	POWERHEAD
L-5	6'x30'	PRESENCE	-	-	ϕ8	POWERHEAD

TRAFFIC SYSTEM COORDINATION TIMING

	PLAN 1	PLAN 2	PLAN 3	PLAN 4
CYCLE LENGTH	100 SEC	100 SEC	100 SEC	FREE
PHASE 1 SPLIT				
PHASE 2 SPLIT	60	60	67	
PHASE 3 SPLIT				
PHASE 4 SPLIT				
PHASE 5 SPLIT	25	26	33	
PHASE 6 SPLIT	35	34	34	
PHASE 7 SPLIT				
PHASE 8 SPLIT	40	40	33	
OFFSET	0	0	0	
TIME OF DAY SCHEDULE	5:00-10:00 M-F	10:00-14:00 M-F 18:00-22:00 M-F 8:00-20:00 SAT-SUN	14:00-18:00 M-F	ALL OTHER TIMES

SIGNAL SUPPORT TYPE TC-81.21

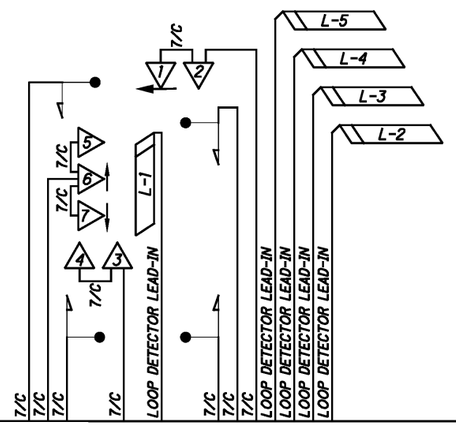
ARM	POLE NO.	POLE DESIGN NO.	ARM DESIGN NO.	POLE HEIGHT (FT.)	HI	L	L1	L2	L3	L4	L5	L6	ELEVATIONS "A"	ELEVATIONS "B"	ELEVATIONS "C"	MAST ARM "A" ORIENTATION ANGLE	ANGLES (DEG.) FROM MAST ARM "A" HANDHOLE	ANGLES (DEG.) FROM MAST ARM "A" MAST ARM "B"	ANGLES (DEG.) FROM MAST ARM "A" PEDESTRIAN SIGNAL HEAD	ANGLES (DEG.) FROM MAST ARM "A" PEDESTRIAN PUSH BUTTON	625 EACH GROUND ROD
	SP1	11	11	23	20'	44'	42.5'	27'	39'	22'			777.28	777.54	777.29	0	180	-	180	170	1
A	SP2	*	13	28	19.5'	53'		26'	39'	52'			777.71	778.61	778.36	270	180	90	-	-	1
B			11		20.5'	43'		30'	42'				778.88	778.61	778.36	-	-	-	-	-	
C			*			13'															
	PP1	-	-	8												-	-	-	0	0	
	PP2	-	-	8												-	-	-	180	190	
	PP3	-	-	8															0	0	

* TC-12.30 POLE, DESIGN 9 WITH TC-81.21 ARMS * TYPE TC-12.30 ARM, DESIGN 5

WIRING DIAGRAM

WIRING LEGEND

- VEHICULAR SIGNAL 5-SECTION
- VEHICULAR SIGNAL 3-SECTION OR 4-SECTION
- PEDESTRIAN PUSHBUTTON
- PEDESTRIAN SIGNAL
- L-2 LOOP DETECTOR
- POWER SERVICE POLE
- METER AND DISCONNECT SWITCH



POWER CABLE
METER AND DISCONNECT SWITCH SHALL BE MOUNTED TO CONTROLLER CABINET

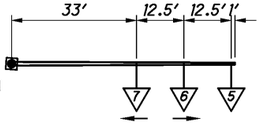
CONTROLLER

TRAFFIC SIGNAL DETAILS
TIEDEMAN ROAD AND RAMP T-3

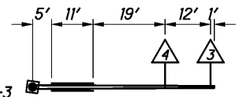
CUY-480-11.60

REV. BY	DATE	DESCRIPTION
MJT	2/5/15	AS-BUILTS
DATE COMPLETED		

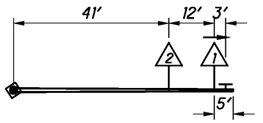
SP-3 ARM A (59')



SP-3 ARM B (48')



SP-4 (58')



REMOVE EXISTING SIGNAL POLE, MAST ARMS, HEADS AND FOUNDATION TO 2' BELOW GRADE

PP-2
PEDESTAL, 8'
PEDESTRIAN SIGNAL
AND PUSHBUTTON
CONDUIT, 725.04, 2"
STA. 61+53, 50' LT.

SP-3 - COMBINATION SIGNAL AND SIGN POLE
SEE SIGNING PLAN
STA. 61+39, 59' LT.
CONDUIT, 725.04, 3"
PULL BOX, 725.08, 24" - STA. 61+36, 56' RT.

C-1
CONTROLLER W/ WORKPAD
STA. 61+43, 68' RT.
2-CONDUIT, 725.04, 3"

PULL BOX, 725.08, 18"
STA. 60+55, 51' RT.

CONDUIT, JACKED OR DRILLED, 3"

CONDUIT, 725.04, 2"

PP-3
PEDESTAL, 8'
PEDESTRIAN SIGNAL
AND PUSHBUTTON
STA. 60+98, 51' RT.

CONDUIT, 725.04, 2"

PULL BOX, 725.08, 18"
STA. 60+93, 57' RT.

CONDUIT, JACKED OR DRILLED, 3"

CONDUIT, JACKED OR DRILLED, 3"

PULL BOX, 725.08, 18"
STA. 62+17, 53' LT.

CONDUIT, 725.04, 2"

PP-1
PEDESTAL, 8'
PEDESTRIAN SIGNAL
AND PUSHBUTTON
STA. 62+21, 51' LT.

PULL BOX, 725.08, 18"
STA. 61+83, 69' RT.

CONDUIT, 725.04, 3"

SP-4
SIGNAL POLE
STA. 61+88, 66' RT.
RELOCATE EX. LANE USE SIGN FROM EX. MAST ARM

REMOVE EXISTING SIGNAL POLE, MAST ARMS, HEADS AND FOUNDATION TO 2' BELOW GRADE

APPROX. LOCATION FOR
POWER CABLE SIGNAL
POWER SERVICE

TIME WARNER CABLE
PULL BOX

TIEDEMAN ROAD

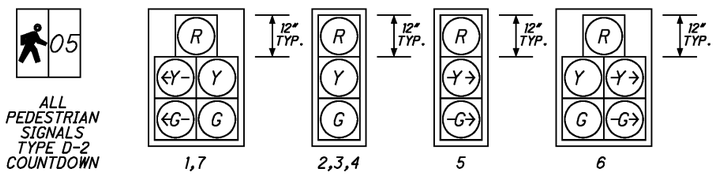
RAMP T-2

RAMP T-4

Ex LA

UNK

SIGNALS



LEGEND

- SIGNAL POLE
- PEDESTAL
- GROUND MOUNTED CONTROLLER W/WORK PAD
- PULL BOX
- 2 VEHICULAR SIGNAL 3-SECTION
- 2 VEHICULAR SIGNAL 3-SECTION W/ARROW
- 4 VEHICULAR SIGNAL 5-SECTION
- B PEDESTRIAN SIGNAL WITH PUSHBUTTON
- PEDESTRIAN SIGNAL
- LOOP DETECTOR
- CONDUIT

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MEP
CHECKED KPW

SIGNAL PLAN TIEDEMAN AND RAMP T-2

CUY-480-11.60

83
84

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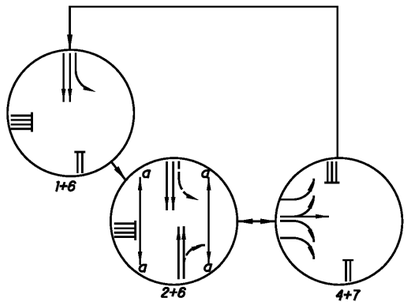
TIMING CHART

INTERVAL OR FEATURE			CONTROLLER MOVEMENT NUMBER							
			1	2	3	4	5	6	7	8
INTERSECTION MOVEMENT			SB LT	NB		EB		SB		
MINIMUM GREEN (INITIAL)		(SEC.)	5	28		7		28		
VEHICLE EXTENSION		(SEC.)	4	5		5		5		
MAXIMUM GREEN		(SEC.)	30	48		19		48		
YELLOW CHANGE		(SEC.)	2.9	3.6		3.6		3.6		
ALL RED CLEARANCE		(SEC.)	3.8	2.7		2.7		2.7		
WALK		(SEC.)	-	4		-		4		
PEDESTRIAN CLEARANCE		(SEC.)	-	22		-		22		
RECALL	MAXIMUM	(ON/OFF)	OFF	OFF		OFF		OFF		
	MINIMUM	(ON/OFF)	OFF	ON		OFF		ON		
	PEDESTRIAN	(ON/OFF)	OFF	OFF		OFF		OFF		

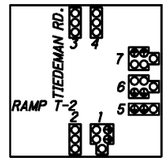
PHASING DIAGRAM



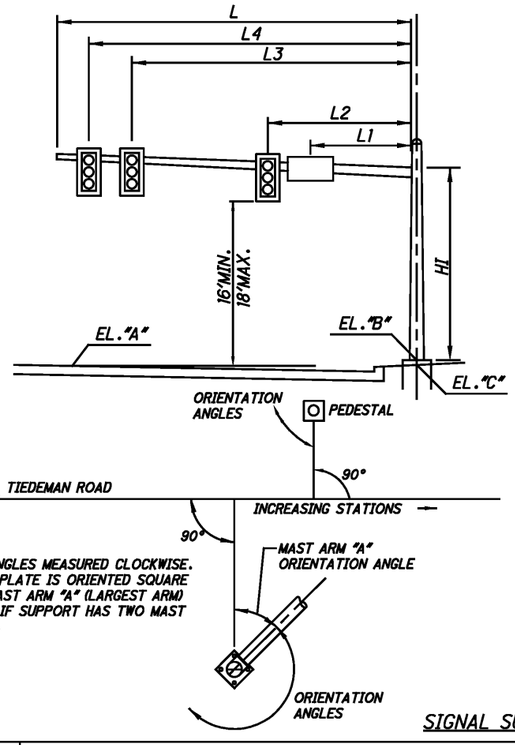
REV. BY	DATE	DESCRIPTION
MJT	2/5/15	AS-BUILTS
DATE COMPLETED		

CALCULATED MEP CHECKED KPW

FIELD WIRING HOOK-UP CHART



SIGNAL HEAD #	INDICATION	FIELD TERMINAL	FLASH
1 (SB LT)	R	ϕ6R	Y
	Y	ϕ6Y	
	G	ϕ6G	
	~~Y~~	ϕ1Y	
	~~G~~	ϕ1G	
2 (SB)	R	ϕ6R	Y
	Y	ϕ6Y	
	G	ϕ6G	
3 (NB)	R	ϕ2R	Y
	Y	ϕ2Y	
	G	ϕ2G	
4 (NB)	R	ϕ2R	Y
	Y	ϕ2Y	
	G	ϕ2G	
5 (EB RT)	R	ϕ4R	R
	~~Y~~	ϕ4Y	
	~~G~~	ϕ4G	
6 (EB)	R	ϕ4R	R
	Y	ϕ4Y	
	G	ϕ4G	
	~~Y~~	ϕ4Y	
	~~G~~	ϕ4G	
7 (EB LT)	R	ϕ4R	R
	Y	ϕ4Y	
	G	ϕ4G	
	~~Y~~	ϕ7Y	
	~~G~~	ϕ7G	
a - a (N-S)	DW	ϕ2R	OFF
	FDW	ϕ2Y	
	W	ϕ2G	



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.

DETECTOR CHART

LOOP DESIGNATION	SIZE (FEET)	PULSE OR PRESENCE	DELAY (SECONDS)	EXTENSION (SECONDS)	ASSOCIATED CONTROLLER PHASE	REMARKS
L-6	6'x30'	PRESENCE	-	-	ϕ1	POWERHEAD
L-7	6'x30'	PRESENCE	-	-	ϕ7	POWERHEAD
L-8	6'x30'	PRESENCE	-	-	ϕ4	POWERHEAD
L-9	6'x30'	PRESENCE	-	-	ϕ4	POWERHEAD
L-10	6'x30'	PRESENCE	-	-	ϕ4	POWERHEAD

TRAFFIC SYSTEM COORDINATION TIMING

	PLAN 1	PLAN 2	PLAN 3	PLAN 4
CYCLE LENGTH	100 SEC	100 SEC	100 SEC	FREE
PHASE 1 SPLIT	28	25	25	
PHASE 2 SPLIT	35	45	45	
PHASE 3 SPLIT				
PHASE 4 SPLIT	37	30	30	
PHASE 5 SPLIT				
PHASE 6 SPLIT	63	70	70	
PHASE 7 SPLIT				
PHASE 8 SPLIT				
OFFSET	47	53	58	
TIME OF DAY SCHEDULE	5:00-10:00 M-F	10:00-14:00 M-F 18:00-22:00 M-F 8:00-20:00 SAT-SUN	14:00-18:00 M-F	ALL OTHER TIMES

SIGNAL SUPPORT TYPE TC-81.21

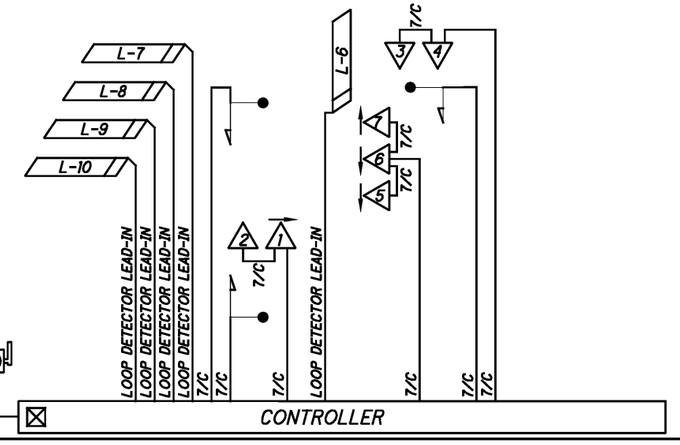
ARM	POLE NO.	POLE DESIGN NO.	ARM DESIGN NO.	POLE HEIGHT (FT.)	HI	L	L1	L2	L3	L4	L5	L6	ELEVATIONS "A"	ELEVATIONS "B"	ELEVATIONS "C"	MAST ARM "A" ORIENTATION ANGLE	ANGLES (DEG.) FROM MAST ARM "A": HANDHOLE	ANGLES (DEG.) FROM MAST ARM "B"	ANGLES (DEG.) FROM MAST ARM "A": PEDESTRIAN SIGNAL HEAD	ANGLES (DEG.) FROM MAST ARM "A": PEDESTRIAN PUSH BUTTON	625 EACH GROUND ROD
A	SP3	*	13	26	19'	59'		33'	45.5'	58'			778.02	779.63	779.13	270	180	90	-	-	1
B			12		20'	48'		35'	47'				779.27	779.63	779.13	-	-	-	-	-	
C			*			16'															
	SP4	13	13	23	19.5'	58'	56'	41'	53'				778.25	779.47	778.97	0	180	-	0	45	1
	PP1	-	-	8												-	-	-	315	315	
	PP2	-	-	8												-	-	-	180	180	
	PP3	-	-	8												-	-	-	0	0	

* TC-12.30 POLE, DESIGN 9 WITH TC-81.21 ARMS * TYPE TC-12.30 ARM, DESIGN 5 PEDESTALS ANGLES ARE MEASURED PERPENDICULAR TO TIEDEMAN ROAD

WIRING DIAGRAM

WIRING LEGEND

- VEHICULAR SIGNAL 5-SECTION
- VEHICULAR SIGNAL 3-SECTION OR 4-SECTION
- PEDESTRIAN PUSHBUTTON
- PEDESTRIAN SIGNAL
- L-2 LOOP DETECTOR
- POWER SERVICE POLE
- METER AND DISCONNECT SWITCH



TRAFFIC SIGNAL DETAILS
TIEDEMAN ROAD AND RAMP T-2

CUY-480-11.60

84
84