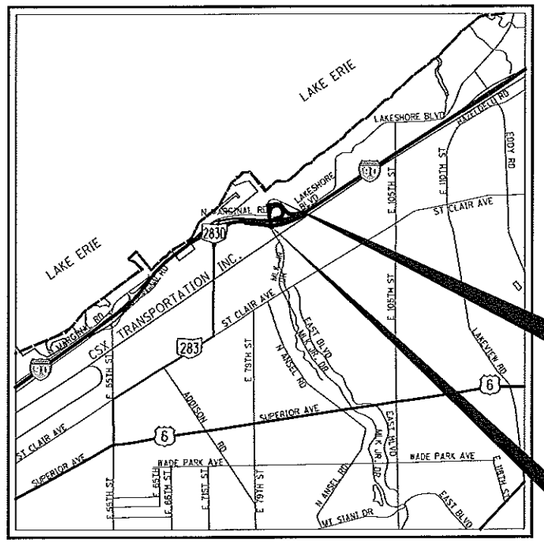
CUY - IR 90-21.02
PID - 103821
Dist 12 3/21/2019

Contract Proposal Available @
www.contracts.dot.state.oh.us/home

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUY-90-21.02

CITY OF CLEVELAND
CUYAHOGA COUNTY



LOCATION MAP

LATITUDE: 41° 32' 21" LONGITUDE: 81° 37' 53"

SCALE IN MILES
0 1 2 3 4

N

PORTION TO BE IMPROVED
INTERSTATE HIGHWAY
FEDERAL ROUTES
STATE ROUTES
COUNTY & TOWNSHIP ROADS
OTHER ROADS

DESIGN DESIGNATION

	I.R. 90	MLK JR. DRIVE
CURRENT ADT (2016)	115,442	21,937
DESIGN YEAR ADT (2034)	118,430	30,310
DESIGN HOURLY VOLUME (2035)	10,155	2,850
DIRECTIONAL DISTRIBUTION	51%	63%
TRUCKS (24 HOUR B&C)	4%	2%
DESIGN SPEED	65 MPH	35 MPH
LEGAL SPEED	60 MPH	35 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	INTERSTATE (URBAN)	MINOR ARTERIAL (URBAN)
NHS PROJECT	YES	

DESIGN EXCEPTIONS

NONE

INDEX OF SHEETS:

PROJECT DESCRIPTION

THIS PROJECT INVOLVES EXTENDING TWO SOUTHBOUND LANES ON MLK DRIVE TO EAST BOULEVARD, SIGNALIZING THE EASTBOUND & WESTBOUND I.R. 90 RAMP TERMINAL INTERSECTIONS, REVISING THE EASTBOUND I.R. 90 EXIT RAMP APPROACH, WIDENING THE WESTBOUND I.R. 90 EXIT RAMP, PROVIDING A DEDICATED LEFT TURN LANE ON MLK DRIVE AT THE EB RAMPS AND AT THE N. MARGINAL ROAD INTERSECTION, AND CHANNELIZING THE NORTHBOUND RIGHT LANE TO EASTBOUND I.R. 90.

PROJECT EARTH DISTURBED AREA: 1.53 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.25 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: 4.90 ACRES

2016 SPECIFICATIONS

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT FOR THE WEEKEND CLOSURE OF THE ENTRANCE AND EXIT RAMPS AS DESCRIBED ON SHEETS 13 TO 24 AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

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

ENGINEERS SEAL:	ENGINEERS SEAL:	ARCHITECTS SEAL:
STATE OF OHIO JAMES THOMAS SHEA E-76165 REGISTERED PROFESSIONAL ENGINEER	STATE OF OHIO JOY M. LANHAM E-75259 REGISTERED PROFESSIONAL ENGINEER	STATE OF OHIO ALEX PESTA 38002776 REGISTERED ARCHITECTS
SIGNED: James T Shea	SIGNED: Joy M Lanham	SIGNED: Alex Pesta
DATE: 9/7/2018	DATE: 9-5-18	DATE: 9/7/18
SHEETS: 1 - 97, 126 - 145	SHEETS: 98 - 125	SHEETS: 146 - 153

TRC
1382 West Ninth Street
Suite 400
Cleveland, OH 44113
216-344-3072

103821_GT001.dgn Sheet 9/6/2018 4:38:05 PM

STANDARD CONSTRUCTION DRAWINGS

BP-2.1	07/17/15	LA-1.1	10/15/10	MT-98.28	01/20/17	TC-22.20	01/17/14	TC-83.20	07/21/17		
BP-2.2	07/18/08	LA-1.2	01/16/09	MT-98.29	01/20/17	TC-41.15	10/18/13	TC-85.10	07/21/17		
BP-2.5	07/19/13			MT-98.30	07/21/17	TC-41.20	10/18/13	TC-85.20	07/20/18		
BP-2.6	07/15/16	CB-4.2	01/18/13	MT-99.20	07/20/18	TC-41.30	10/18/13	TC-85.22	01/19/18		
BP-3.1	07/18/14			MT-101.70	07/20/18	TC-41.40	10/18/13				
BP-5.1	07/20/18	I-1.2	01/15/16	MT-101.75	07/15/16	TC-41.41	10/18/13	HL-10.11	07/20/18		
BP-7.1	07/20/18			MT-101.90	07/21/17	TC-41.50	10/18/13	HL-10.12	01/20/17		
		DM-1.1	07/21/17	MT-105.10	07/19/13	TC-42.20	10/18/13	HL-10.13	07/20/18		
MGS-1.1	01/19/18	DM-1.2	01/18/13	MT-110.10	07/19/13	TC-51.11	01/15/16	HL-20.11	04/21/17		
MGS-2.1	01/19/18	DM-4.4	01/15/16	MT-120.00	01/19/18	TC-51.12	01/15/16	HL-30.11	07/20/18		
MGS-4.3	01/18/13					TC-52.10	10/18/13	HL-30.22	01/17/14		
MGS-5.3	07/15/16	MT-95.31	07/21/17	TC-9.30	01/19/18	TC-52.20	07/20/18	HL-50.11	01/16/15		
		MT-95.32	07/21/17	TC-12.30	01/19/18	TC-61.30	01/20/17	HL-60.11	07/21/17		
RM-3.1	07/20/18	MT-95.40	01/20/17	TC-15.115	07/20/18	TC-65.11	07/21/17	HL-60.12	07/15/16		
RM-4.2	04/18/14	MT-95.41	07/21/17	TC-16.21	07/20/18	TC-71.10	01/19/18				
RM-4.5	07/21/17	MT-95.50	07/21/17	TC-18.24	01/17/14	TC-81.21	07/20/18				
RM-4.6	07/19/13	MT-95.60	07/19/13	TC-21.10	01/21/17	TC-83.10	01/19/18				

SUPPLEMENTAL SPECIFICATIONS

800	01/18/19
805	07/16/10
813	07/20/18
821	4/20/12
832	01/17/14
861	01/16/15
895	04/18/14
902	12/31/12
903	07/20/12
913	04/21/17
921	04/20/12

SPECIAL PROVISIONS

APPROVED
DATE 12-10-18 DISTRICT DEPUTY DIRECTOR

APPROVED
DATE 1/3/19 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. E160 (880)
PID NO. 103821
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
CUY-90-21.02
1 / 153

CURVE 1
P.I. STA. 2+88.51
Δ = 22° 41′ 08″ (RT)
Dc = 7° 30′ 02″
R = 763.90′
T = 153.24′
L = 302.46′
E = 15.22′
C = 300.48′
C.B. = N 23° 01′ 23″ W

CURVE 2
P.I. STA. 4+49.85
Δ = 1° 49′ 08″ (RT)
Dc = 7° 30′ 02″
R = 763.90′
T = 12.13′
L = 24.25′
E = 0.10′
C = 24.25′
C.B. = N 10° 46′ 15″ W

CURVE 3
P.I. STA. 12+72.20
Δ = 53° 38′ 13″ (RT)
Dc = 35° 55′ 20″
R = 159.50′
T = 80.63′
L = 149.31′
E = 19.22′
C = 143.92′
C.B. = N 16° 57′ 25″ E

CURVE 4
P.I. STA. 15+12.85
Δ = 72° 51′ 24″ (RT)
Dc = 24° 35′ 26″
R = 233.00′
T = 171.96′
L = 296.28′
E = 56.58′
C = 276.72′
C.B. = N 80° 12′ 14″ E

CURVE 5
P.I. STA. 2+05.97
Δ = 276° 47′ 56″ (RT)
Dc = 24° 41′ 52″
R = 231.99′
T = 205.97′
L = 1,120.75′
E = 542.22′
C = 308.05′
C.B. = S 51° 27′ 42″ E

CURVE 6
P.I. STA. 104+23.49
Δ = 61° 01′ 57″ (RT)
Dc = 20° 19′ 04″
R = 282.00′
T = 166.22′
L = 300.39′
E = 45.34′
C = 286.39′
C.B. = S 69° 20′ 42″ E

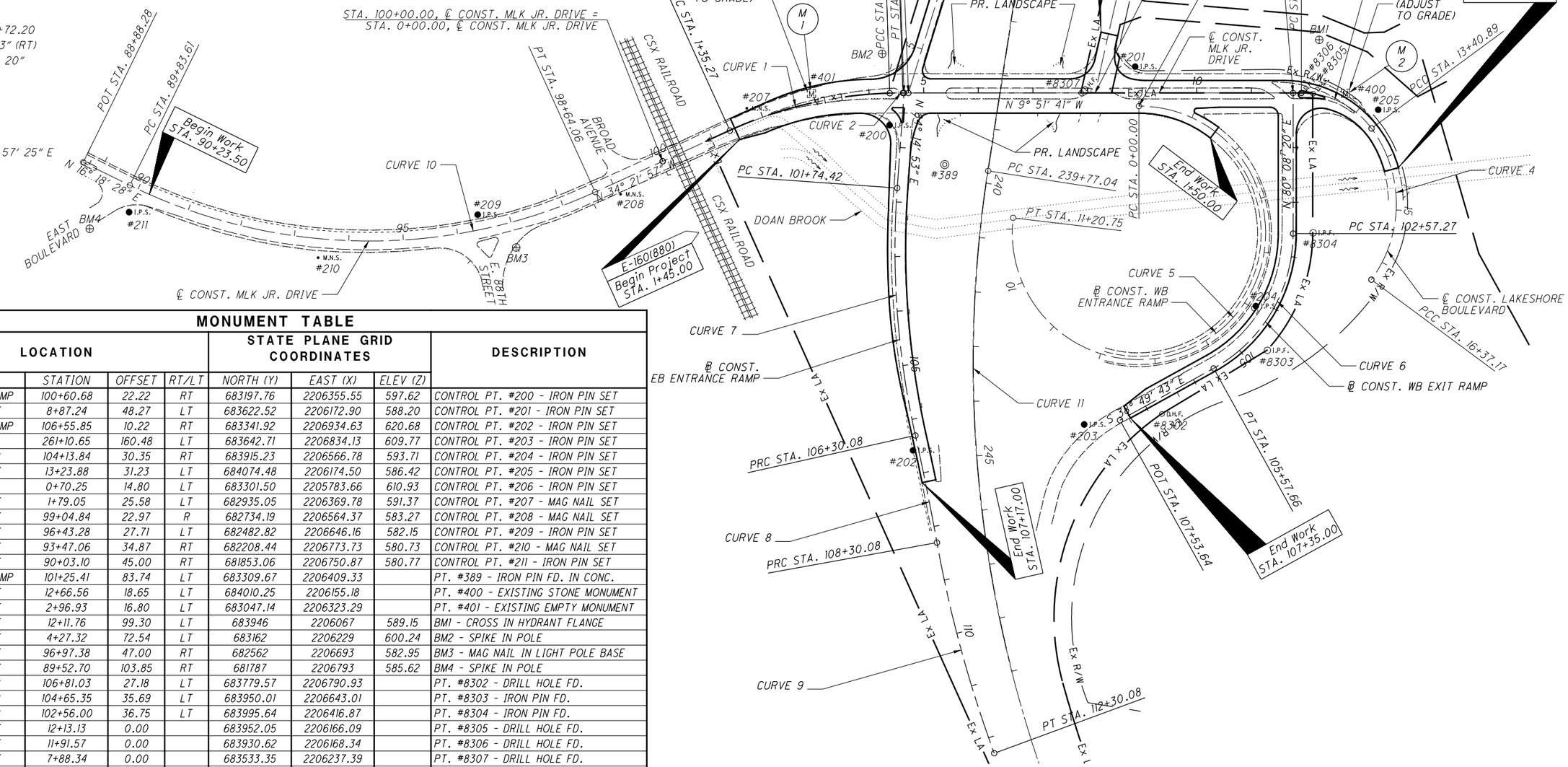
CURVE 7
P.I. STA. 104+03.86
Δ = 16° 38′ 03″ (LT)
Dc = 3° 39′ 02″
R = 1,569.50′
T = 229.44′
L = 455.66′
E = 16.68′
C = 454.06′
C.B. = N 75° 55′ 51″ E

CURVE 8
P.I. STA. 107+30.09
Δ = 2° 17′ 31″ (RT)
Dc = 1° 08′ 45″
R = 5,000.00′
T = 100.01′
L = 200.00′
E = 1.00′
C = 199.99′
C.B. = N 68° 45′ 35″ E

CURVE 9
P.I. STA. 110+30.58
Δ = 9° 57′ 52″ (LT)
Dc = 2° 29′ 28″
R = 2,300.00′
T = 200.51′
L = 400.00′
E = 8.72′
C = 399.50′
C.B. = N 64° 55′ 24″ E

CURVE 10
P.I. STA. 94+54.97
Δ = 50° 40′ 25″ (LT)
Dc = 5° 45′ 20″
R = 995.50′
T = 471.35′
L = 880.44′
E = 105.95′
C = 852.03′
C.B. = N 9° 01′ 45″ W

CURVE 11
P.I. STA. 246+56.84
Δ = 33° 02′ 40″ (LT)
Dc = 2° 30′ 00″
R = 2,291.71′
T = 679.80′
L = 1,321.71′
E = 98.70′
C = 1,303.47′
C.B. = N 72° 24′ 50″ E



MONUMENT TABLE

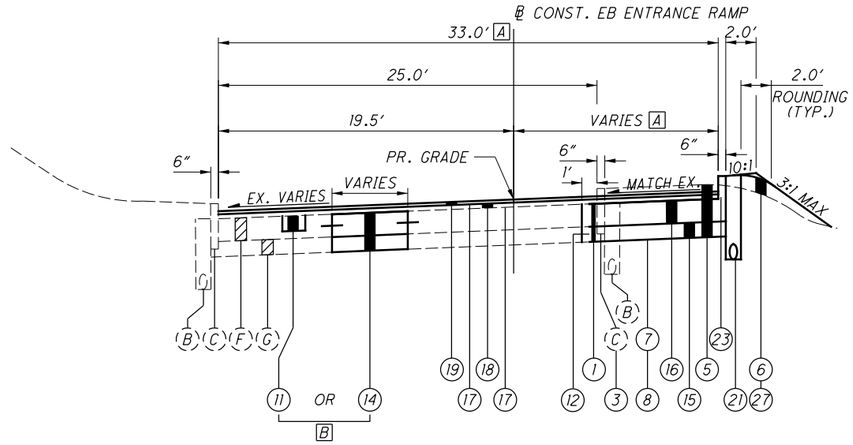
LOCATION				STATE PLANE GRID COORDINATES			DESCRIPTION
ALIGNMENT	STATION	OFFSET	RT/LT	NORTH (Y)	EAST (X)	ELEV (Z)	
EB ENTRANCE RAMP	100+60.68	22.22	RT	683197.76	2206355.55	597.62	CONTROL PT. #200 - IRON PIN SET
MLK JR. DRIVE	8+87.24	48.27	LT	683622.52	2206172.90	588.20	CONTROL PT. #201 - IRON PIN SET
EB ENTRANCE RAMP	106+55.85	10.22	RT	683341.92	2206934.63	620.68	CONTROL PT. #202 - IRON PIN SET
I.R. 90	261+10.65	160.48	LT	683642.71	2206834.13	609.77	CONTROL PT. #203 - IRON PIN SET
WB EXIT RAMP	104+13.84	30.35	RT	683915.23	2206566.78	593.71	CONTROL PT. #204 - IRON PIN SET
MLK JR. DRIVE	13+23.88	31.23	LT	684074.48	2206174.50	586.42	CONTROL PT. #205 - IRON PIN SET
EB EXIT RAMP	0+70.25	14.80	LT	683301.50	2205783.66	610.93	CONTROL PT. #206 - IRON PIN SET
MLK JR. DRIVE	1+79.05	25.58	LT	682935.05	2206369.78	591.37	CONTROL PT. #207 - MAG NAIL SET
MLK JR. DRIVE	99+04.84	22.97	R	682734.19	2206564.37	583.27	CONTROL PT. #208 - MAG NAIL SET
MLK JR. DRIVE	96+43.28	27.71	LT	682482.82	2206646.16	582.15	CONTROL PT. #209 - IRON PIN SET
MLK JR. DRIVE	93+47.06	34.87	RT	682208.44	2206773.73	580.73	CONTROL PT. #210 - MAG NAIL SET
MLK JR. DRIVE	90+03.10	45.00	RT	681853.06	2206750.87	580.77	CONTROL PT. #211 - IRON PIN SET
EB ENTRANCE RAMP	101+25.41	83.74	LT	683309.67	2206409.33		PT. #389 - IRON PIN FD. IN CONC.
MLK JR. DRIVE	12+66.56	18.65	LT	684010.25	2206155.18		PT. #400 - EXISTING STONE MONUMENT
MLK JR. DRIVE	2+96.93	16.80	LT	683047.14	2206323.29		PT. #401 - EXISTING EMPTY MONUMENT
MLK JR. DRIVE	12+11.76	99.30	LT	683946	2206067	589.15	BM1 - CROSS IN HYDRANT FLANGE
MLK JR. DRIVE	4+27.32	72.54	LT	683162	2206229	600.24	BM2 - SPIKE IN POLE
MLK JR. DRIVE	96+97.38	47.00	RT	682562	2206693	582.95	BM3 - MAG NAIL IN LIGHT POLE BASE
MLK JR. DRIVE	89+52.70	103.85	RT	681787	2206793	585.62	BM4 - SPIKE IN POLE
WB EXIT RAMP	106+81.03	27.18	LT	683779.57	2206790.93		PT. #8302 - DRILL HOLE FD.
WB EXIT RAMP	104+65.35	35.69	LT	683950.01	2206643.01		PT. #8303 - IRON PIN FD.
WB EXIT RAMP	102+56.00	36.75	LT	683995.64	2206416.87		PT. #8304 - IRON PIN FD.
MLK JR. DRIVE	12+13.13	0.00		683952.05	2206166.09		PT. #8305 - DRILL HOLE FD.
MLK JR. DRIVE	11+91.57	0.00		683930.62	2206168.34		PT. #8306 - DRILL HOLE FD.
MLK JR. DRIVE	7+88.34	0.00		683533.35	2206237.39		PT. #8307 - DRILL HOLE FD.
NORTH MARGINAL AVE.	8+35.40	25.00	LT	683570.52	2205497.27		PT. #8308 - IRON PIN FD.

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED MKD
CHECKED JTS

SCHEMATIC PLAN

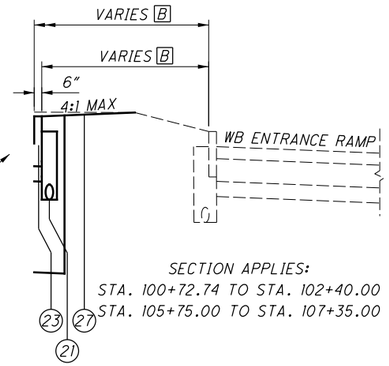
CUY-90-21.02



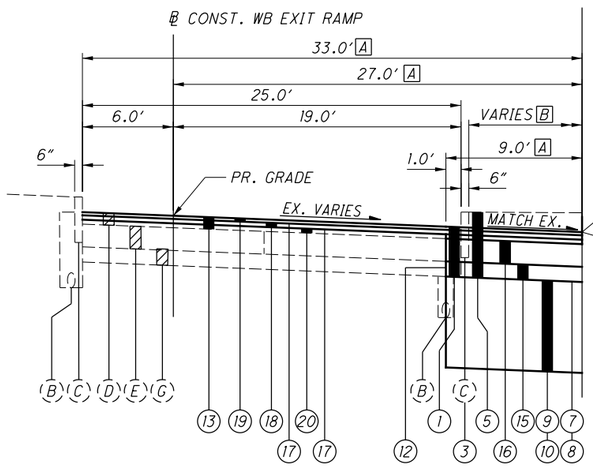
EB ENTRANCE RAMP WIDENING, RESURFACING & PAVEMENT REPAIR
SECTION APPLIES:
STA. 101+07.96 TO STA. 107+17.00

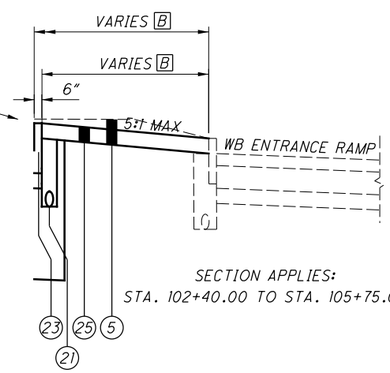
A VARIES FROM 36.55'/17.05' TO 33.00'/13.50' FROM STA. 101+07.96 TO STA. 102+32.54
33.0'/13.50' FROM STA. 102+32.54 TO STA. 103+75.77
VARIES FROM 33.0'/13.50' TO 25.50'/6.0' FROM STA. 103+75.77 TO STA. 106+30.08
25.5'/6.0' FROM STA. 106+30.08 TO STA. 107+17.00

B FULL DEPTH AND PARTIAL DEPTH PAVEMENT REPAIR AREAS, SEE NOTES ON SHEETS 11 - 12



SECTION APPLIES:
STA. 100+72.74 TO STA. 102+40.00
STA. 105+75.00 TO STA. 107+35.00





SECTION APPLIES:
STA. 102+40.00 TO STA. 105+75.00

WB EXIT RAMP WIDENING & RESURFACING
SECTION APPLIES:
STA. 100+72.74 TO STA. 107+35.00

A 33.00'/27.00'/9.00' FROM STA. 100+72.74 TO STA. 106+85.00
VARIES FROM 33.00'/27.00'/9.00' TO 25.00'/19.00'/1.00' FROM STA. 106+85.00 TO STA. 107+35.00

B VARIES FROM 104'/96' AT STA. 100+72.74 TO 54'/46' AT STA. 106+85.00 (SEE PLAN VIEWS)
VARIES FROM 54'/46' AT STA. 106+85.00 TO 96' AT STA. 107+35.00 (SEE PLAN VIEWS)

EXISTING LEGEND:

(A) EX. CONCRETE WALK

(B) EX. UNDERDRAIN

(C) EX. CONCRETE TYPE 6 CURB

(D) EX. ASPHALT SURFACE AND LEVELING COURSE
(T=VARIES 1" TO 4", 3" TYP.)

(E) EX. CONCRETE BASE
(T=VARIES 8.75" TO 13", 9" TYP.)

(F) EX. CONCRETE PAVEMENT
(T=9" TYP.)

(G) EX. AGGREGATE BASE
(T=6" TYP.)

(H) EX. TRAFFIC ISLAND

(I) EX. ASPHALT TRAIL

PROPOSED LEGEND

(1) ITEM 202 - PAVEMENT REMOVED, AS PER PLAN

(2) ITEM 202 - WALK REMOVED

(3) ITEM 202 - CURB REMOVED

(4) ITEM 202 - TRAFFIC ISLAND REMOVED

(5) ITEM 203 - EXCAVATION

(6) ITEM 203 - EMBANKMENT

(7) ITEM 204 - SUBGRADE COMPACTION, AS PER PLAN

(8) ITEM 204 - PROOF ROLLING

(9) ITEM 204 - EXCAVATION OF SUBGRADE, AS PER PLAN

(10) ITEM 204 - GRANULAR EMBANKMENT

(11) ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR (441), AS PER PLAN

(12) ITEM 252 - FULL DEPTH PAVEMENT SAWING

(13) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN (T = VARIES)

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

(15) ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN

(16) ITEM 305 - 9" CONCRETE BASE, CLASS QC1, AS PER PLAN

(17) ITEM 407 - TACK COAT (APPLIED AT 0.08 GAL/SY)

(18) ITEM 441 - 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)

(19) ITEM 441 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M, AS PER PLAN

(20) ITEM 441 - ASPHALT CONCRETE, MISC.: ASPHALT CONCRETE LEVELING COURSE, TYPE 1, (448)

(21) ITEM 605 - 6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, -OR-
ITEM 605 - 6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC

(22) ITEM 608 - 6" CONCRETE WALK, AS PER PLAN

(23) ITEM 609 - CURB, TYPE 2-A, AS PER PLAN

(24) ITEM 609 - CURB, TYPE 6, AS PER PLAN

(25) ITEM 609 - CONCRETE MEDIAN, AS PER PLAN

(26) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN

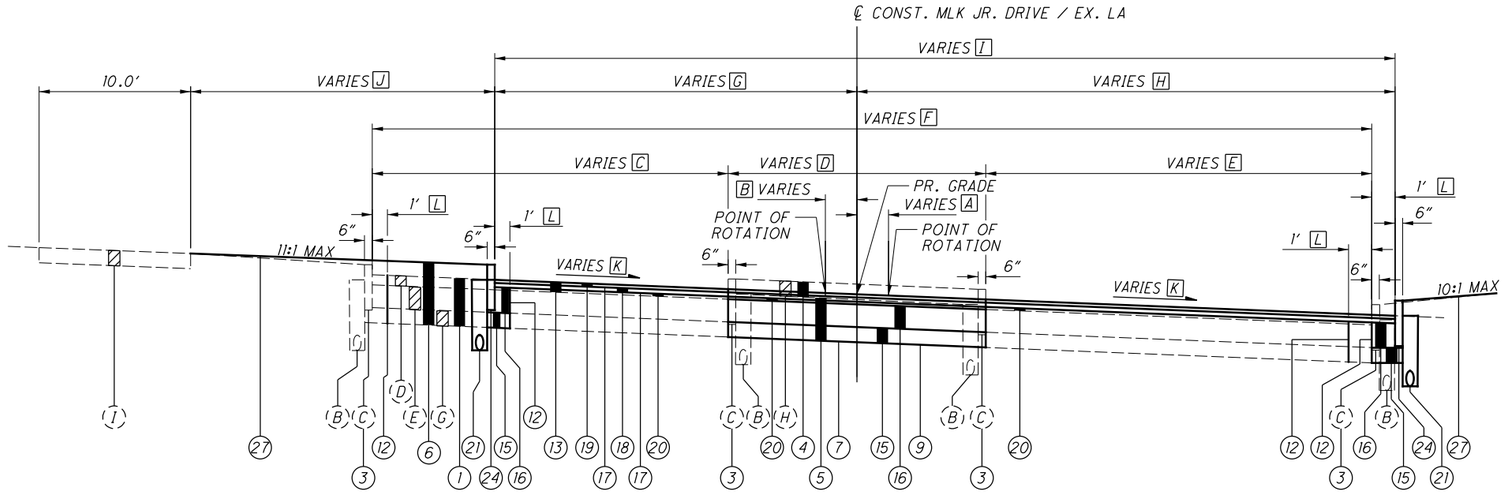
(27) ITEM 659 - SEEDING AND MULCHING, CLASS 1

(28) ACTIVE TRANSPORTATION - SEE PLAN SHEETS 146 - 153

CALCULATED MGW
CHECKED JTS

TYPICAL SECTIONS

CUY-90-21.02



MLK JR. DRIVE
SECTION APPLIES:
STA. 1+45.00 TO STA. 3+81.98
STA. 3+81.98 TO STA. 5+12.65 (EB RAMP INTERSECTION)

A POINT OF ROTATION SHALL FOLLOW SB INSIDE LANE LINE
VARIES FROM 6.44' TO 0' FROM STA. 1+45.00 TO STA. 2+38.89
SEE SHEETS 38 - 39 FOR CURB DATA.

B POINT OF ROTATION SHALL FOLLOW SB INSIDE LANE LINE
VARIES FROM 0' TO 3.95' FROM STA. 2+38.89 TO STA. 3+28.92
VARIES FROM 3.95' TO 2.57' FROM STA. 3+28.92 TO STA. 3+81.98
SEE SHEETS 38 - 39 FOR CURB DATA.

C VARIES FROM 19.5' TO 24' FROM STA. 1+45.00 TO STA. 3+81.98

D VARIES FROM 0' TO 15.0' FROM STA. 2+17.76 TO STA. 3+81.98

E VARIES FROM 22' TO 26' FROM STA. 1+35.27 TO STA. 3+81.98

F VARIES FROM 42' TO 65' FROM STA. 1+45.00 TO STA. 3+81.98

G VARIES FROM 19.5' TO 29.95' FROM STA. 1+45.00 TO STA. 3+28.92
VARIES FROM 29.95' TO 28.61' FROM STA. 3+28.92 TO STA. 3+81.98

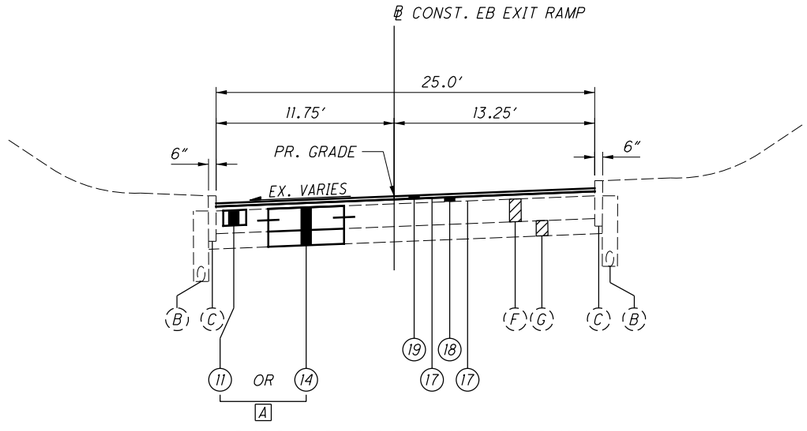
H VARIES FROM 22.0' TO 28.28' FROM STA. 1+45.00 TO STA. 1+95.00
VARIES FROM 28.28' TO 26.09' FROM STA. 1+95.00 TO STA. 2+62.14
VARIES FROM 26.09' TO 33.05' FROM STA. 2+62.14 TO STA. 3+81.98

I VARIES FROM 41.71' TO 50.18' FROM STA. 1+45.00 TO STA. 1+95.00
VARIES FROM 50.18' TO 61.65' FROM STA. 1+95.00 TO STA. 3+81.98

J VARIES FROM 0' TO 15' FROM STA. 1+45.00 TO STA. 3+81.98

K SEE PAVEMENT ELEVATION TABLE ON SHEET 83 FOR CROSS SLOPES

L SAWCUT LOCATION VARIES FROM 1' OFF OF EX. CURB TO 1' OFF OF PR. CURB



EB EXIT RAMP PAVEMENT REPAIR & RESURFACING
SECTION APPLIES:
STA. 0+60.10 TO STA. 5+00.00

A FULL DEPTH AND PARTIAL DEPTH PAVEMENT REPAIR AREAS, SEE NOTES ON SHEETS 11 - 12

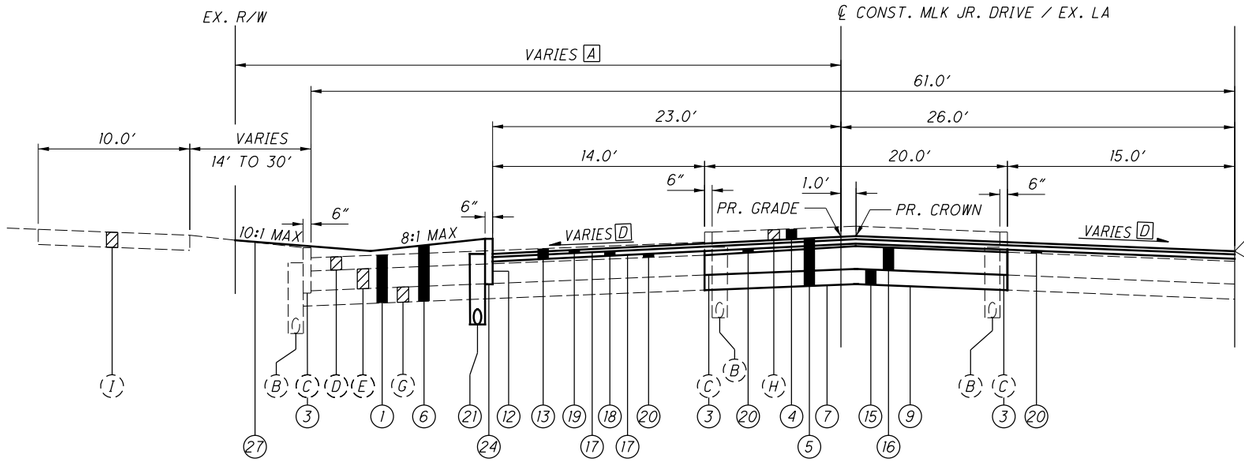
NOTE:

FOR LEGEND, SEE SHEET 3.

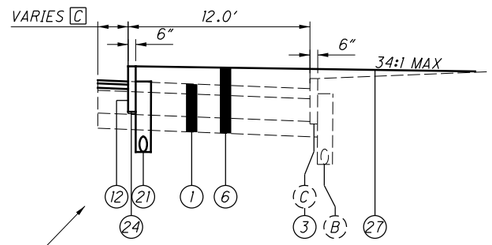
CALCULATED MGW
CHECKED JTS

TYPICAL SECTIONS

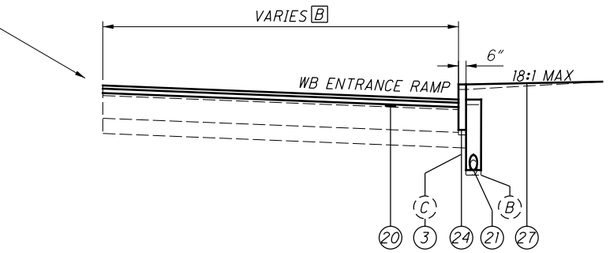
CUY-90-21.02



MLK JR. DRIVE
SECTION APPLIES:
STA. 9+06.14 TO STA. 11+34.32
STA. 11+34.32 TO STA. 14+25.00 (WB EXIT RAMP / LAKESHORE BOULEVARD INTERSECTION)



SECTION APPLIES:
STA. 9+95.29 TO STA. 11+34.32



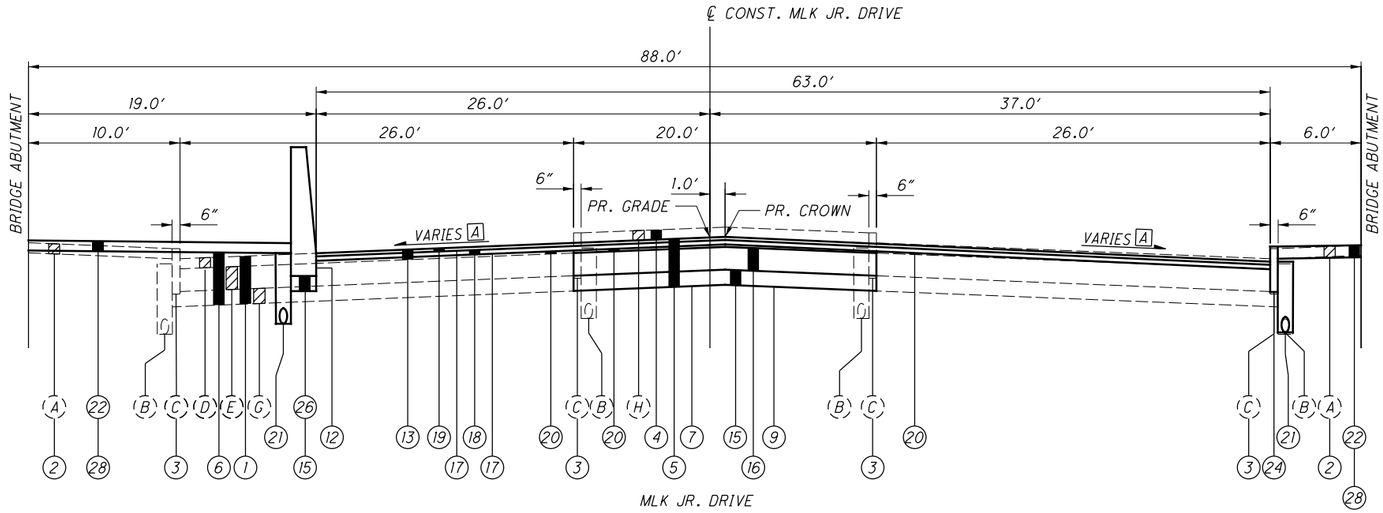
SECTION APPLIES:
STA. 9+06.14 TO STA. 9+95.29

[A] VARIES FROM 40.32' TO 40.25' FROM STA. 9+06.14 TO STA. 9+09.32
VARIES FROM 40.25' TO 42.90' FROM STA. 9+09.32 TO STA. 11+34.32

[B] VARIES FROM 11' TO 37' FROM STA. 9+06.14 TO STA. 9+95.29

[C] VARIES FROM 2' TO 0' FROM STA. 10+00.05 TO STA. 10+41.29

[D] SEE PAVEMENT ELEVATION TABLE ON SHEET 83 FOR CROSS SLOPES



MLK JR. DRIVE
SECTION APPLIES:
STA. 5+12.65 TO STA. 7+69.54
STA. 7+69.54 TO STA. 9+06.14 (N. MARGINAL ROAD INTERSECTION)

[A] SEE PAVEMENT ELEVATION TABLE ON SHEET 83 FOR CROSS SLOPES

NOTE:

FOR LEGEND, SEE SHEET 3.

TYPICAL SECTIONS

CALCULATED MGW
CHECKED JTS

CUY-90-21.02

GENERAL

EXISTING TYPICAL SECTIONS

EXISTING TYPICAL SECTIONS HAVE BEEN DEVELOPED FROM PAVEMENT CORES AND RECORD PLANS AND ARE BELIEVED TO REPRESENT THE WIDTH AND COMPOSITION OF THE EXISTING PAVEMENT, BUT THE CITY OF CLEVELAND DOES NOT GUARANTEE THE ACCURACY OF THE SAME.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED " AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

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:

TELECOMMUNICATION:
AT&T OHIO
JAMES JANIS
13630 LORAIN AVENUE
3RD FLOOR
CLEVELAND, OHIO 44111
PHONE: (216) 476-6142
PJ8191@ATT.COM

SPRINT NEXTEL CORPORATION
STEVE HUGHES
11370 ENTERPRISE PARKWAY
SHARONVILLE, OH 45241
PHONE: (513) 459-5796
STEVEN.HUGHES@SPRINT.COM

CHARTER COMMUNICATIONS
PAT SANTOIEMMO
7 SEVERANCE CIRCLE
CLEVELAND HEIGHTS, OHIO 44118
PHONE: (216) 575-8016
PAT.SANTOIEMMO@CHARTER.COM

ELECTRIC:
CLEVELAND PUBLIC POWER
CHRIS HIRZEL
1300 LAKESIDE AVENUE
CLEVELAND, OHIO 44115
PHONE: (216) 664-3922 EXT 115
CHIRZEL@CPP.ORG

WATER:
CITY OF CLEVELAND
DIVISION OF WATER
FRED ROBERTS
1201 LAKESIDE AVENUE, 6TH FLOOR
CLEVELAND, OHIO 44114
PHONE: (216) 664-2444 EXT 5520
FRED_ROBERTS@CLEVELANDWATER.COM

SEWER:
DIVISION OF WATER
POLLUTION CONTROL
ELIE RAMY
12302 KIRBY AVENUE
CLEVELAND, OHIO 44108
PHONE: (216) 664-2756
ERAMY@CLEVELANDWPC.COM

NORTHEAST OHIO
REGIONAL SEWER DISTRICT
MARY MACIEJOWSKI
3900 EUCLID AVENUE
CLEVELAND, OHIO 44115-2506
PHONE: (216) 881-6600 EXT 6466
MACIEJOWSKIM@NEORSD.ORG

GAS:
DOMINION ENERGY OHIO
KEVIN BIRT
320 SPRINGSIDE DRIVE,
SUITE 320
AKRON, OHIO 44333
PHONE: (330) 664-2781
RELOCATION@DOM.COM

SIGNALS:
CITY OF CLEVELAND
TRAFFIC ENGINEERING
ANDREW CROSS, PE
601 LAKESIDE AVENUE,
ROOM 25
CLEVELAND, OHIO 44114
PHONE: (216) 664-3197
ACROSS@CITY.CLEVELAND.OH.US

CALL OHIO UTILITIES PROTECTION SERVICE TWO (2) WORKING DAYS BEFORE YOU DIG. TOLL FREE NO. 1-800-362-2764 (NON-MEMBERS MUST BE CALLED DIRECTLY).

UNDERGROUND UTILITIES

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

CONSTRUCTION NOISE

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, DO NOT OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVICES BETWEEN THE HOURS OF 7:00 AM AND 7:00 PM. IN ADDITION, DO NOT OPERATE AT ANY TIME ANY DEVICE IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

ELEVATION DATUM

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET 2 OF THE PLANS FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

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

PROJECT CONTROL

POSITIONING METHOD: STATIC GPS/ODOT VRS RTK GPS / CONVENTIONAL
MONUMENT TYPE: MAG NAILS / IRON PINS

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD 88
GEOID: GEOID 12A

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83 (2011)
ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE, NORTH ZONE (3401)
COMBINED SCALE FACTOR: N/A
ORIGIN OF COORDINATE SYSTEM: (0,0)

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT COTNROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

WORK HOURS AND NOISE CONTROL

THE CONTRACTOR SHALL RESTRICT HIS WORKING HOURS TO THOSE PERMITTED BY LOCAL ORDINANCES OR ANY OTHER APPLICABLE ORDINANCES, LAWS OR REGULATIONS EXCEPT AS HE MAY OBTAIN WRITTEN VARIANCES FROM SUCH ORDINANCES, LAWS OR REGULATIONS FROM THE APPROPRIATE GOVERNING AUTHORITIES. THE NOISE LEVEL RESULTING FROM THE CONSTRUCTION SHALL BE WITHIN THE LIMITS SPECIFIED IN OSHA REGULATIONS AND ALL LOCAL ORDINANCES.

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.

DOMINION ENERGY OHIO NOTES

IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE LATERAL AND SUBJACENT SUPPORT OF DOMINIONS ENERGY'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 ENERGY OHIO'S (DEO) EXISTING PIPELINE(S) AND ALL OTHER IMPROVEMENTS. EXTREME CARE SHOULD BE TAKEN NOT TO HARM ANY DEO FACILITY (PIPELINE, 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 ENERGY OHIO'S CORROSION DEPARTMENT: DAVE CUTLIP (330-266-2121), RICK MCDONALD (330-266-2122), OR AL HUMRICHOUSER (330-478-3757).

LOCAL LAWS, ORDINANCES, AND REGULATIONS

IN ACCORDANCE WITH SECTION 107.01 OF THE GENERAL PROVISIONS, THE CONTRACTOR SHALL STAY FULLY INFORMED OF ALL LOCAL LAWS, ORDINANCES, REGULATIONS, ORDERS AND DECREES THAT EFFECT THE WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBSERVE AND COMPLY WITH ALL SUCH LAWS, ORDINANCES, REGULATIONS, ORDERS, AND DECREES AT NO ADDITIONAL COST TO THE PROJECT.

PERMITS

IN THE CITY OF CLEVELAND ALL PERMITS MUST BE OBTAINED FROM THE DIVISION OF ASSESSMENTS AND LICENSES PRIOR TO BEGINNING ANY WORK. THE CONTRACTOR SHALL APPLY FOR ALL REQUIRED PERMITS (STREET OPENING PERMIT, OVERLOAD PERMIT, CONSTRUCTION PERMIT, SIDEWALK PERMIT, ETC., AS DETERMINED BY THE CITY OF CLEVELAND) AT THE FOLLOWING LOCATION:

DIVISION OF ASSESSMENTS AND LICENSES
601 LAKESIDE AVENUE, ROOM 127
CLEVELAND, OHIO 44114
PHONE: 216-664-2174
E-MAIL: DALPERMITS@CITY.CLEVELAND.OH.US

NOTIFICATION

THE CONTRACTOR SHALL NOTIFY THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 12 CONSTRUCTION ADMINISTRATOR, LOU MINCEK (216-584-2221) TWO (2) WEEKS PRIOR TO BEGINNING WORK.

ITEM SPECIAL - PRE-CONSTRUCTION VIDEOGRAPHY

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). THIS RECORD SHALL INCLUDE PRE-CONSTRUCTION AUDIO-VIDEOTAPING FOR THE PURPOSE OF ESTABLISHING THE SURFACE CONDITIONS EXISTING IN ALL AREAS AFFECTED BY THE WORK. 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.

VIDEOTAPING SHALL INCLUDE TWO PASSES IN EACH DIRECTION: ONE FOCUSING ON RIGHT OF WAY AND ONE FOCUSING ON PRIVATE PROPERTY. PRE-CONSTRUCTION VIDEOGRAPHY SHALL BE PERFORMED BY AN INDEPENDENT COMPANY HAVING HAD PREVIOUS EXPERIENCE IN SIMILAR TYPE OF WORK. THE NAME OF THE COMPANY SHALL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO ENGAGING IN THE WORK. THE CONTRACTOR SHALL PROVIDE ONE COPY OF THE PRE-CONSTRUCTION VIDEOGRAPY TO ODOT AND KEEP ONE COPY FOR THEMSELVES.

LIMIT ALL ACTIVITIES, EQUIPMENT STORAGE, AND STAGING TO WITHIN THE CONSTRUCTION LIMITS.

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. USE OF THESE AREAS FOR DISPOSAL OF WASTE MATERIAL AND CONSTRUCTION DEBRIS, EXCAVATION OF BORROW MATERIAL AND PLACEMENT OF PORTABLE PLANTS IS PROHIBITED. 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.

THE FULL COST OF FURNISHING ALL LABOR, MATERIALS, AND EQUIPMENT TO PERFORM THE REQUIRED AUDIO-VIDEO TAPING AS DESCRIBED SHALL BE INCLUDED FOR PAYMENT IN THE LUMP SUM BID FOR ITEM SPECIAL - PRE-CONSTRUCTION VIDEOGRAPHY.

ITEM SPECIAL - PRE-CONSTRUCTION VIDEOGRAPHY 1 LUMP

WATER SUPPLY

WATER WILL BE SUPPLIED TO THE CONTRACTOR AT THE NEAREST HYDRANT. THE COST OF THE WATER SUPPLY SHALL BE BORNE BY THE CONTRACTOR. THE CONTRACTOR SHALL OBTAIN THE NECESSARY PERMIT FROM THE CITY OF CLEVELAND WATER DEPARTMENT.

EXISTING PLANS AND APPLICABLE REPORTS/DOCUMENTS

EXISTING PLANS ENTITLED CUY-90-18.63 (1993), CUY-2-19.51-20.53 (1950) & CUY-283-1.09-1.49 (1950) MAY BE INSPECTED IN THE ODOT DISTRICT 12 OFFICE IN GARFIELD HEIGHTS, OH.

THE GEOTECHNICAL REPORT AND SPECIAL PROVISIONS ARE PART OF THE CONTRACT DOCUMENTS AND ARE AVAILABLE UPON REQUEST.

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 50 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 MEACHAM BLVD.
FORT WORTH, TX 76137-4298

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

ITEM SPECIAL - RECORD DRAWINGS

IN ADDITION TO THE ODOT REQUIREMENTS FOR 'AS-BUILT" OR RECORD DRAWINGS, THE FOLLOWING SHALL APPLY AND BE PAID FOR UNDER THIS PAY ITEM.

CONTRACTOR SHALL MAINTAIN AND PROVIDE ODOT WITH RECORD DRAWINGS AS SPECIFIED HEREIN. RECORD DRAWINGS SHALL INCLUDE COMPLETE DOCUMENTATION OF FIELD REVISIONS TO THE CONTRACT DOCUMENTS.

FILING
A. THE CONTRACTOR SHALL MAINTAIN IN HIS FIELD OFFICE IN A CLEAN, DRY, LEGIBLE CONDITION THE FOLLOWING: CONTRACT DRAWINGS, SPECIFICATIONS, ADDENDA, CONFORMING SHOP DRAWINGS, CHANGE ORDERS, OTHER MODIFICATIONS TO THE CONTRACT, TEST RECORDS, SURVEY DATA AND ALL OTHER DOCUMENTS PERTINENT TO THE CONTRACTOR'S WORK.

B. THE CONTRACTOR SHALL PROVIDE FILES AND RACKS FOR PROPER STORAGE AND EASY ACCESS. FILING SHALL BE ESTABLISHED IN A FORMAT ACCEPTABLE TO ODOT.

C. THE CONTRACTOR SHALL MAKE DOCUMENTS AVAILABLE AT ALL TIMES FOR INSPECTION BY ODOT OR THEIR REPRESENTATIVES.

D. RECORD DRAWINGS SHALL NOT BE USED FOR ANY OTHER PURPOSE AND SHALL NOT BE REMOVED FROM THEIR LOCATIONS WITHOUT ODOT APPROVAL.

RECORDING
A. THE CONTRACTOR SHALL KEEP ALL RECORDS CURRENT.

B. THE CONTRACTOR SHALL NOT PERMANENTLY CONCEAL ANY WORK UNTIL REQUIRED INFORMATION HAS BEEN RECORDED.

C. CONTRACT DRAWINGS SHALL BE LEGIBLY MARKED TO RECORD ACTUAL CONSTRUCTION INCLUDING:
i. DEPTHS OF VARIOUS ELEMENTS OF FOUNDATION IN RELATION TO DATUM.
ii. HORIZONTAL AND VERTICAL LOCATIONS OF UNDERGROUND UTILITIES AND APPURTENANCES REFERENCED TO PERMANENT SURFACE IMPROVEMENTS.
iii. FIELD CHANGES OF DIMENSION AND DETAIL.
iv. CHANGES MADE BY CHANGE ORDER OR FIELD ORDER.
v. DETAILS NOT ON ORIGINAL CONTRACT DRAWINGS.

CALCULATED MKD
CHECKED JTS

GENERAL NOTES

CUY-90-21.02

GENERAL (CONT.)

ITEM SPECIAL - RECORD DRAWINGS (CONT.)

D. SPECIFICATIONS AND ADDENDA: LEGIBLY MARK EACH SECTION TO RECORD:
   i. MANUFACTURER, TRADE NAME, CATALOG NUMBER AND SUPPLIER OF EACH PRODUCT AND ITEM OF EQUIPMENT ACTUALLY INSTALLED.
   ii. CHANGES MADE BY CHANGE ORDER OR FIELD ORDER.
   iii. OTHER MATTERS NOT ORIGINALLY SPECIFIED.
   iv. HIGHLIGHT CHANGES WITH CLOUDS ON THE RECORD PLAN SET IN RED INK.

MAINTENANCE

A. THE CONTRACTOR SHALL MAINTAIN THE PROJECT RECORD DRAWINGS DURING THE COURSE OF CONSTRUCTION AND SHALL NOTIFY THE ENGINEER A MINIMUM OF TWO (2) WEEKS PRIOR TO COMPLETION.

B. THE CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF THE PROJECT RECORD DRAWINGS UNTIL THE FINAL ACCEPTANCE OF THE RECORD DRAWINGS AND A DETERMINATION BY THE ENGINEER THAT NO ERRORS OR OMISSIONS HAVE BEEN MADE BY THE CONTRACTOR DURING THE COURSE OF CONSTRUCTION.

C. THE ENGINEER SHALL NOTIFY THE CONTRACTOR AS TO THE ACCEPTABILITY OR REJECTION OF THE CONSTRUCTION OF THE PROJECT.

D. THE CONTRACTOR SHALL CORRECT ANY ERRORS/OMISSIONS PRIOR TO FINAL ACCEPTANCE OF THE RECORD DRAWINGS OF THE PROJECT.

E. THE CONTRACTOR SHALL MAINTAIN SHOP DRAWINGS AND LEGIBLY ANNOTATE CHANGES MADE AFTER REVIEW.

RECORD RETENTION

AS ODOT MAY LEGITIMATELY REQUEST FROM TIME TO TIME, THE CONTRACTOR AGREES TO MAKE AVAILABLE FOR INSPECTION AND/OR REPRODUCTION BY ODOT, ALL RECORDS, BOOKS, AND DOCUMENTS OF ANY KIND AND DESCRIPTION THAT RELATE TO THIS CONTRACT.

SUBMITTALS

A. AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL DELIVER THE COMPLETE SET OF FIELD MARK-UP DRAWINGS TO THE ENGINEER.

B. PROVIDE TRANSMITTAL LETTER CONTAINING THE FOLLOWING INFORMATION:
   i. DATE
   ii. PROJECT TITLE AND PROJECT NUMBER
   iii. CONTRACTOR'S NAME AND ADDRESS
   iv. CERTIFICATION THAT EACH DOCUMENT AS SUBMITTED IS COMPLETE AND ACCURATE.
   v. SIGNATURE OF CONTRACTOR OR HIS AUTHORIZED REPRESENTATIVE.

PAYMENT

PAYMENT FOR ALL OF THE ABOVE SHALL BE LUMP SUM UPON PROPER EXECUTION OF ALL WORK OF THIS ITEM AS DETERMINED BY THE ENGINEER.

ITEM SPECIAL - RECORD DRAWINGS 1 LUMP

CLEARING AND GRUBBING

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

SIZES	NO. TREES	NO. STUMPS	TOTAL
12"	3	0	3

SPECIFIC TREES HAVE ALSO BEEN MARKED AS "DO NO DISTURB" ON THE PLANS FOR CLARIFICATION. THE ENGINEER SHALL APPROVE ALL TREE REMOVAL PRIOR TO CUTTING.

CLEARING AND GRUBBING SHALL ALSO INCLUDE THE CLEARING OF BRUSH, BUSHES, SMALL TREES, ETC., FROM THE SEEDED AREAS DIRECTLY ABOVE THE EXISTING BRIDGE WING WALLS, AS DIRECTED ON THE ACTIVE TRANSPORTATION PLANS AND BY THE ENGINEER.

TREE CLEARING SHALL ONLY OCCUR BETWEEN OCTOBER 16 THROUGH MARCH 31 TO MINIMIZE THE IMPACTS OF FEDERALLY LISTED OR ENDANGERED SPECIES DESCRIBED IN THE ENVIRONMENTAL SECTION OF THESE GENERAL NOTES.

SUPPLEMENTAL TO CLEARING AND GRUBBING THE CONTRACTOR WILL BE RESPONSIBLE FOR TREE PRUNING AT VARIOUS LOCATIONS ALONG THE CORRIDOR AS DESCRIBED UNDER THE LANDSCAPING SECTION OF THESE GENERAL NOTES.

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. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

ITEM 606 - ANCHOR ASSEMBLY, TYPE E, AS PER PLAN

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

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

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

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

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

PAVING UNDER GUARDRAIL

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

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

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

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

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

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

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

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

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

ITEM 623 - MONUMENT BOX ADJUSTED TO GRADE, AS PER PLAN

WHERE MONUMENT BOXES ARE BOTH SUITABLE FOR RE-USE AND CONFORM TO CITY OF CLEVELAND STANDARD DRAWING NO. A-37, THEY SHALL BE ADJUSTED TO GRADE AS REQUIRED AND SPECIFIED. SUCH ADJUSTMENTS SHALL BE PERFORMED BY THE CONTRACTOR'S USE OF COMPETENT PERSONNEL AND SUITABLE EQUIPMENT WITH SAID WORK DONE UNDER THE SUPERVISION OF A PROFESSIONAL SURVEYOR, LICENSED TO PRACTICE IN THE STATE OF OHIO.

ALL MONUMENTS EXISTING AND PROPOSED MUST BE REFERENCED PRIOR TO CONSTRUCTION. A MINIMUM OF 3 POINTS OF REFERENCE PER MONUMENT MUST BE USED AND MUST BE LOCATED OUTSIDE OF THE CONSTRUCTION ZONE WORK AREA.

ALL MONUMENTS MUST BE REFERENCED PRIOR TO ADJUSTING BOX TO GRADE OR REPLACING CASTING. ALL MONUMENTS ADJUSTED OR REPLACED SHALL BE AS PER THE CLEVELAND MONUMENT BOX AS DETAILED ON CITY OF CLEVELAND STANDARD DRAWINGS MB-1C, SET TO PROPER GRADE.

IN ADDITION TO ADJUSTING THE CASTING VERTICALLY THIS PAY ITEM SHALL INCLUDE CENTERING THE CASTING OVER THE EXISTING IRON PIN OR STONE. THE ENTIRE MONUMENT BOX CASTING SHALL BE ADJUSTED TO GRADE AND NO INSERTS OR ADJUSTING RINGS WILL BE PERMITTED.

CARE AND PROTECTIVE MEASURES SHALL BE EMPLOYED BY THE CONTRACTOR TO AVOID DAMAGE OR DISPLACEMENT OF THE EXISTING MONUMENT DURING THE MONUMENT BOX ADJUSTMENT OR REPLACEMENT OPERATIONS AND ALL OTHER OPERATIONS IN THE PROXIMITY.

PRIOR TO THE BEGINNING OF WORK A COPY OF ALL SURVEY AND REFERENCE NOTES WILL BE SENT TO THE ATTENTION OF THE CHIEF SURVEYOR AT THE CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION, PLATS AND SURVEY, ROOM 518, CLEVELAND CITY HALL.

ITEM 204 - EXCAVATION OF SUBGRADE, AS PER PLAN

WHERE SOFT SUBGRADE IS ENCOUNTERED, THE UNSTABLE MATERIAL SHALL BE EXCAVATED TO THE DEPTH REQUIRED BY THE ENGINEER, AND DISPOSED OF. THE UNDERCUT SUBGRADE SHALL BE REPLACED IN ACCORDANCE WITH ODOT ITEM 304. THE AREA SHALL BE PROOF-ROLLED TO DETERMINE IF ADEQUATE STABILIZATION WAS ACHIEVED.

WHERE SOFT SUBGRADE IS DUE TO THE FAILURE, NEGLECT OR ANY OTHER FAULT OF THE CONTRACTOR, THE UNSTABLE CONDITION SHALL BE CORRECTED AS OUTLINED ABOVE AT NO ADDITIONAL EXPENSE TO THE PROJECT.

PAYMENT FOR THIS ITEM SHALL INCLUDE ALL EXCAVATION, AGGREGATE, 703.16, TYPE E AND ADDITIONAL PROOF-ROLLING, AND SHALL BE PAID FOR AT THE BID UNIT PRICE PER CUBIC YARD, ITEM 204, EXCAVATION OF SUBGRADE, AS PER PLAN. ANY GEOGRID, IF REQUIRED BY THE ENGINEER, SHALL BE PAID AS SEPARATE ITEM.

THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

ITEM 204 - EXCAVATION OF SUBGRADE, AS PER PLAN 75 CY
ITEM 861 - GEOGRID FOR SUBGRADE STABILIZATION 150 SY

ITEM 204 - PROOF ROLLING

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING.

ITEM 204 - PROOF ROLLING 8 HOUR

ITEM 202 - PAVEMENT REMOVED, AS PER PLAN

THIS ITEM SHALL CONSIST OF THE REMOVAL OF EXISTING ASPHALT WEARING COURSE, ASPHALT BASE MATERIAL, BRICK, GROUT, GRANITE OR SANDSTONE BLOCK, CONCRETE, AND OTHER DEBRIS INCLUDING BUT NOT LIMITED TO RAILS, REBAR, AND PIPE FRAGMENTS, TO THE TOP OF THE EXISTING CUSHION/BASE COURSE. THE LIMITS FOR REMOVAL SHALL BE AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

ITEM 204 - SUBGRADE COMPACTION, AS PER PLAN

CONSTRUCT THE SUBGRADE AS FOLLOWS IN THE FOLLOWING SEQUENCE:

1. SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.
2. EXCAVATE AND REPLACE UNSUITABLE SUBGRADE. UNSUITABLE SUBGRADE INCLUDES UNSUITABLE SOIL (A-4B, A-2-5, A-5, A-7-5, AND SOIL WITH A LIQUID LIMIT GREATER THAN 65) AND ANY COAL, SHALE, OR ROCK WHICH NEEDS TO BE REMOVED ACCORDING TO 204.05. THE ENGINEER WILL IDENTIFY THE ACTUAL LIMITS OF EXCAVATION FOR UNSTABLE SUBGRADE BASED ON THE VISUAL OBSERVATIONS.
3. COMPACT THE SUBGRADE ACCORDING TO 204.03.
4. EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH ITEM 203 - GRANULAR MATERIAL, TYPE C, ACCORDING TO 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.
5. FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

THE QUANTITIES FOR EXCAVATING THE UNSUITABLE SUBGRADE AND UNSTABLE SUBGRADE ARE BOTH PAID UNDER ITEM 204 - EXCAVATION OF SUBGRADE, AS PER PLAN.

CALCULATED MKD CHECKED JTS

GENERAL NOTES

CUY-90-21.02

EROSION CONTROL

BEST MANAGEMENT PRACTICES

SOIL EROSION AND SEDIMENTATION CONTROL WATER COLUMN AND SEDIMENTATION IMPACTS SHALL BE KEPT TO A MINIMUM THROUGH THE USE OF BEST MANAGEMENT PRACTICES FOR SOIL EROSION AND SEDIMENTATION CONTROL.

ITEM 895 - MANUFACTURED WATER QUALITY STRUCTURE, TYPE 2, AS PER PLAN

THIS PLAN UTILIZES MANUFACTURED WATER QUALITY STRUCTURES FOR WATER QUALITY TREATMENT. AREAS HAVE BEEN SHOWN IN THE PLANS FOR PLACEMENT OF AN OFF-LINE SYSTEM. PAYMENT FOR THESE DEVICES SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR ITEM 895, MANUFACTURED WATER QUALITY STRUCTURE, TYPE 2, AS PER PLAN.

CONTRACTOR SHALL COORDINATE DESIGN AND LAYOUT OF MANUFACTURED SYSTEMS WITH ODOT DISTRICT 12 AND CLEVELAND WATER POLLUTION CONTROL. MANUFACTURED SYSTEMS SHALL BE PLACED PARALLEL AND AS REASONABLY CLOSE AS POSSIBLE TO PROPOSED MAINLINE CURB LINE FOR CLEVELAND WATER POLLUTION CONTROL MAINTENANCE ACCESS.

SEEDING AND MULCHING

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

ITEM 659 - SOIL ANALYSIS TEST	**2 EACH**
ITEM 659 - TOPSOIL	**350 CY**
ITEM 659 - REPAIR SEEDING AND MULCHING	**158 SY**
ITEM 659 - INTER-SEEDING	**158 SY**
ITEM 659 - COMMERCIAL FERTILIZER	**0.44 TON**
ITEM 659 - LIME	**0.65 ACRE**
ITEM 659 - WATER	**17 MGAL**

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

DRAINAGE

GENERAL DRAINAGE NOTES

THE CONTRACTOR SHOULD NOTIFY THE DIVISION OF WATER POLLUTION CONTROL (WPC) PRIOR TO THE START OF CONSTRUCTION. CALL THE ENGINEERING OFFICE AT (216) 664-2756 OR (216) 664-3638 TO COORDINATE THE SEWER WORK.

THE CONTRACTOR IS REQUIRED TO SUBMIT SEWER SHOP DRAWINGS TO WPC PRIOR TO CITY SEWER INSTALLATION. THE DRAWINGS SHOULD INCLUDE THE SEWER PIPES, MANHOLES, CATCH BASINS AND OTHER SEWER APPURTENANCES.

WPC WILL INSPECT THE SEWER INSTALLATION.

THE PROPOSED CITY SEWERS SHOULD BE CONSTRUCTED IN ACCORDANCE TO THE PLANS AND SPECIFICATIONS APPROVED BY WPC. ANY DEVIATIONS FROM THE APPROVED PLANS OR SPECIFICATIONS REQUIRE A NEW PLAN SUBMITTAL REFLECTING THE CHANGES. UPON REVIEW OF THE REVISED ITEMS, WPC WILL RE-ISSUE A NEW APPROVAL. IT IS STRICTLY PROHIBITED TO CONSTRUCT ANY SEWERS UNLESS THEY ARE APPROVED BY WPC.

UPON COMPLETION OF THE CITY SEWER INSTALLATION, THE CONTRACTOR IS REQUIRED TO SUBMIT A HARD COPY AND AN ELECTRONIC COPY OF AS-BUILT PLANS, AND A CCTV COPY OF THE NEW CITY SEWERS. WPC RESERVES THE RIGHT NOT TO APPROVE ANY SEWER THAT DOES NOT MEET THE CITY REQUIREMENTS.

ITEM 202 - REMOVAL MISC.: FILL AND PLUG EXISTING CONDUIT

THIS ITEM SHALL CONSIST OF THE CONSTRUCTION OF BULK-HEADS IN VARIOUS DIAMETER CONDUIT AND FILLING THE AREA THUS SEALED OFF WITH ITEM 613, SAND OR OTHER MATERIAL APPROVED BY THE ENGINEER.

BULKHEADS SHALL BE LOCATED AT THE LIMITS OF THE AREA TO BE FILLED AS INDICATED ON THE PLANS. THE BULKHEADS SHALL CONSIST OF BRICK OR CONCRETE MASONRY WITH A MINIMUM THICKNESS OF 12 INCHES.

THE FILL MATERIAL SHALL BE PUMPED INTO PLACE, OR PLACED BY OTHER MEANS APPROVED BY THE ENGINEER, SO THAT, AFTER SETTLEMENT, AT LEAST 90 PERCENT OF THE CROSS-SECTIONAL AREA OF THE CONDUIT, FOR ITS ENTIRE LENGTH, SHALL BE FILLED. THE LENGTH OF FILLED AND PLUGGED CONDUIT TO BE PAID FOR SHALL BE THE ACTUAL NUMBER OF FEET (MEASURED ALONG THE CENTERLINE OF EACH CONDUIT FROM OUTER FACE TO OUTER FACE OF BULKHEADS) FILLED AND PLUGGED AS DESCRIBED ABOVE. THE LENGTH, MEASURED AS PROVIDED ABOVE, SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR, ITEM 202 - REMOVAL MISC.: FILL AND PLUG EXISTING CONDUIT.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE WORK NOTED ABOVE. PAYMENT FOR ACTUALLY COMPLETED AND ACCEPTED QUANTITIES SHALL BE MADE AT THE CONTRACT UNIT BID PRICE:

ITEM 202 - REMOVAL MISC.: FILL AND PLUG EXISTING CONDUIT	**500 FT**

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

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

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

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

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

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 CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

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

UNRECORDED STORM WATER DRAINAGE

FURNISH A CONTINUANCE FOR ALL UNRECORDED STORM WATER DRAINAGE, SUCH AS ROOF DRAINS, FOOTER DRAINS, OR YARD DRAINS, DISTURBED BY THE WORK. FURNISH EITHER AN OPEN CONTINUANCE OR AN UNOBSTRUCTED CONTINUANCE BY CONNECTING A CONDUIT THROUGH THE CURB OR INTO A DRAINAGE STRUCTURE. THE LOCATION, TYPE, SIZE AND GRADE OF THE NEEDED CONDUIT TO REPLACE OR EXTEND AN EXISTING DRAIN WILL BE DETERMINED BY THE ENGINEER. ALL SUCH CONTINUANCE REQUIRES A RIGHT OF WAY USE PERMIT.

THE FOLLOWING CONDUIT TYPES MAY BE USED: 707.33, 707.41 NON-PERFORATED, 707.42, 707.43, 707.45, 707.46, 707.47, 707.51, 707.52 SDR35.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE WORK NOTED ABOVE:

ITEM 611 - 12" CONDUIT, TYPE B	**25 FT**
ITEM 611 - 15" CONDUIT, TYPE B	**25 FT**
ITEM 611 - 18" CONDUIT, TYPE B	**25 FT**
ITEM 611 - 12" CONDUIT, TYPE C	**25 FT**
ITEM 611 - 15" CONDUIT, TYPE C	**25 FT**
ITEM 611 - 18" CONDUIT, TYPE C	**25 FT**

MANHOLES, CATCH BASINS AND INLETS REMOVED OR ABANDONED

ALL CASTINGS SHALL BE CAREFULLY REMOVED AND STORED WITHIN THE RIGHT OF WAY FOR SALVAGE BY CITY OF CLEVELAND FORCES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 202 ITEM.

ITEM SPECIAL- MISCELLANEOUS METAL

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

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

ITEM SPECIAL - MISCELLANEOUS METAL	**15000 LB**

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

ITEM SPECIAL - PIPE CLEANOUT, (BY SIZE)

THIS WORK SHALL CONSIST OF REMOVING SEDIMENT AND DEBRIS FROM THE EXISTING DRAINAGE CONDUITS SPECIFIED IN THE PLANS. ALL MATERIAL REMOVED SHALL BE DISPOSED OF AS PER 105.16 AND 105.17. ALL SEWERS SHALL BE CLEANED OUT TO THE SATISFACTION OF THE ENGINEER.

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

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

ITEM SPECIAL - PIPE CLEANOUT, 24" AND UNDER	**500 FT**
ITEM SPECIAL - PIPE CLEANOUT, 27" TO 48"	**250 FT**

SURFACE DRAINAGE CONTINGENCY

EVERY EFFORT HAS BEEN MADE TO PROVIDE ADEQUATE CURB INLETS AND PIPE TO PROPERLY ACCOUNT FOR THE SURFACE DRAINAGE. IN THE EVENT THAT ISOLATED LOW AREAS DEVELOP DURING CONSTRUCTION OF THE PROJECT, AN ESTIMATED QUANTITY OF DRAINAGE APPURTENANCES HAVE BEEN PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 611 - DRAINAGE STRUCTURE, MISC.: CATCH BASIN, CITY OF CLEVELAND, CB-1	**1 EACH**
ITEM 611 - 12" CONDUIT, TYPE B	**50 FT**
ITEM 611 - MANHOLE, MISC.: CITY OF CLEVELAND, MANHOLE NO. 1	**1 EACH**

ITEM 611 - MANHOLE, MISC.: CITY OF CLEVELAND, MANHOLE NO. 1

CITY OF CLEVELAND, MANHOLE NO. 1 SHALL FOLLOW THE CITY OF CLEVELAND STANDARD CONSTRUCTION DRAWING MH-1 WITH THE EXCEPTION THAT THE BEND TO CONNECT TO THE STORM SEWER SHALL BE INCIDENTAL TO THE COST OF THE MANHOLE. ALL OUTLET ELEVATIONS ARE APPROXIMATE AND SHOULD BE VERIFIED BY THE CONTRACTOR BEFORE ORDERING.

ITEM 611 - DRAINAGE STRUCTURE, MISC.: CORING FOR STORM SEWERS

DESCRIPTION

THE CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT, TOOLS, AND MATERIALS REQUIRED TO FURNISH AND INSTALL VIA CORE DRILLING VARIOUS 12-INCH STORM SEWERS ALONG THE CORRIDOR AS INDICATED IN THE PLANS AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES, GRADES, AND DIMENSIONS SHOWN IN THE PLANS OR ESTABLISHED BY THE ENGINEER.

INSTALLATION

THE PROPOSED 12-INCH STORM SEWER FROM D-3 SHALL BE CORE DRILLED INTO THE EXISTING MANHOLE D-4.

THE PROPOSED 12-INCH STORM SEWER FROM D-6 SHALL BE CORE DRILLED INTO THE EXISTING MANHOLE D-7.

THE PROPOSED 12-INCH STORM SEWER FROM D-14 SHALL BE CORE DRILLED INTO THE EXISTING MANHOLE D-11.

THE PROPOSED 12-INCH STORM SEWER FROM D-33 SHALL BE CORE DRILLED INTO THE EXISTING MANHOLE D-32.

FOR ALL CORING ACTIVITIES A MECHANICAL RADIAL CORING SHALL BE PERFORMED TO LEAVE A HOLE NOT TO EXCEED TWO (2) INCHES GREATER IN DIAMETER THAN THE OUTSIDE OF THE PROPOSED STORM SEWER. POWER HAMMERING OR IMPACT CHISELING WILL NOT BE PERMISSIBLE. ALL DRILLING DEBRIS SHALL BE REMOVED FROM THE INSIDE OF THE EXISTING MANHOLE, PIPE OR CULVERT. THE PROPOSED STORM SEWER SHALL NOT PROTRUDE INTO THE EXISITNG MANHOLE, PIPE OR CULVERT MORE THAN THREE (3) INCHES AT ANY POINT. USING INSERTA TEE, KOR-N-TEE OR THROUGH GROUT CONNECT THE PROPOSED STORM SEWER TO THE EXISTING MANHOLE, PIPE OR CULVERT WITH A FLUSH MORTAR JOINT. PAVEMENT FOR THE ABOVE WORK SHALL BE MADE AT THE CONTRACT UNIT BID PRICE FOR ITEM 611 - DRAINAGE STRUCTURE, MISC.: CORING FOR STORM SEWERS.

ITEM 611 - DRAINAGE STRUCTURE, MISC.: CORING FOR STORM SEWERS	**4 EACH**

CALCULATED MKD CHECKED JTS

GENERAL NOTES

CUY-90-21.02

DRAINAGE (CONT.)

MLK JR. DRIVE BACKFILL MATERIAL

THE USE OF CLEVELAND LSM "FLOWABLE FILL" AS SPECIFIED IN PLAN NOTE "CLEVELAND LSM "FLOWABLE FILL" BACK FILL MATERIAL" IS REQUIRED AS BACKFILL MATERIAL FOR USE UNDER ANY PAVEMENT WITHIN THE PUBLIC RIGHT-OF-WAY.

THE USE OF GRANULAR BACKFILL MATERIAL IS PROHIBITED UNLESS GRANTED BY THE ADMINISTRATION BUREAU MANAGER OF THE DIVISION OF ENGINEERING AND CONSTRUCTION UPON REQUEST BY THE CONTRACTOR WITH DOCUMENTATION OF EXISTING PROJECT SITE CONDITIONS.

NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR ANY GRANULAR BACKFILL INSTALLATION COSTS WITHOUT PROPER COMPACTION AND SUPPORTING COMPACTION TESTING DOCUMENTATION.

IN ADDITION, GRANULAR BACKFILL PLACED IN THE PUBLIC RIGHT-OF-WAY WITHOUT APPROVAL BY THE ADMINISTRATION BUREAU MANAGER AND CONFIRMED ACCEPTABLE COMPACTION METHODS SHALL BE REMOVED AND REPLACED WITH CLEVELAND LSM AT THE CONTRACTOR'S EXPENSE.

IF GRANTED, THE GRANULAR BACKFILL MATERIAL USED UNDER ANY PAVEMENT SHALL BE CRUSHED LIMESTONE OR GRAVEL AS PER ODOT ITEM 304 -AGGREGATE BASE. CRUSHED AIR-COOLED SLAG MEETING #304 GRADATIONS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER. THE USE OF SAND OR #57 AGGREGATE AS PREMIUM BACKFILL IS PROHIBITED.

IF GRANTED, THE GRANULAR BACKFILL SHALL BE INSTALLED IN 8 INCH (8") LIFTS AND COMPACTED USING MECHANICAL MEANS ONLY. THE COMPACTION AND TESTING SHALL MEET THE REQUIREMENTS OF ODOT ITEM 304 AND SUPPLEMENT 1015.

THE USE OF WATER TO ACHIEVE COMPACTION IS PROHIBITED (FLOODING, PONDING, ETC.).

SAND USED AS EMBANKMENT CONSTRUCTION AND AS BACKFILL AROUND STRUCTURES SHALL BE AS PER ODOT ITEM 203 - EMBANKMENT OR MEETING THE REQUIREMENTS OF ODOT 703.11 STRUCTURAL BACKFILL. SAND MAY ONLY BE USED AS INDICATED ON THE PLAN DETAILS.

MATERIAL USED FOR BACKFILLING TRENCHES OUTSIDE OF PAVEMENT AREAS AND FOR SUCH SIMILAR PURPOSES, AS MAY BE SPECIFIED, SHALL CONSIST OF HARD, DURABLE PARTICLES OF A NATURAL OR ARTIFICIAL AGGREGATE, SUCH AS GRAVEL, SAND, CRUSHED AIR-COOLED SLAG. AT LEAST EIGHTY-SEVEN PERCENT (87%) BY WEIGHT OF THE GRAINS OR PARTICLES SHALL BE RETAINED ON A NO. 200 SIEVE.

IT SHALL BE SUBSTANTIALLY FREE FROM VEGETABLE OR ORGANIC MATTER AND SHALL NOT CONTAIN MORE THAT TEN PERCENT (10%) OF LOAM OR CLAY AS DETERMINED BY DECANTING OVER NO. 200 SIEVE.

EXCEPT IN THE CASE OF SLAG, BACKFILL MATERIAL SHALL WEIGH NOT LESS THAN NINETY (90) POUNDS PER CUBIC FOOT, DRY COMPACTED WEIGHT.

ITEM 611 - MANHOLE ADJUSTED TO GRADE, AS PER PLAN

ALL CASTINGS SHALL BE BROUGHT TO PROPER GRADE BY THE CONTRACTOR BY ADJUSTING SAID CASTINGS WITH MORTAR, BRICK, OR STONE MASONRY AS MAY BE DIRECTED BY THE ENGINEER. NO ADJUSTING RINGS OR BANDS WILL BE PERMITTED.

THE CONTRACTOR SHALL USE EXTREME CARE IN THE REMOVAL AND ADJUSTMENT OF THE CASTINGS. THE CONTRACTOR SHALL REMOVE EXISTING PAVEMENT AS REQUIRED TO ADJUST THE CASTING AND SHALL REPLACE SAME WITH CLEVELAND MS OR FS CONCRETE AS DIRECTED BY THE ENGINEER.

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, ALL CASTINGS SHALL BE BROUGHT TO GRADE AFTER THE BINDER OR LEVELING COURSE IS PLACED AND BEFORE THE WEARING COURSE IS PLACED.

CASTINGS BELONGING TO PRIVATE UTILITIES SHALL BE ADJUSTED TO GRADE BY UTILITY OWNER AND DO NOT CONSTITUTE A PART OF THE CONTRACTOR'S OBLIGATIONS. HOWEVER, THE CONTRACTOR IS RESPONSIBLE TO COORDINATE THIS WORK.

THE PRICE PAID FOR BRINGING EACH STREET CASTING TO LINE AND GRADE SHALL BE THE CONTRACTOR'S BID UNIT PRICE FOR EACH AND SHALL INCLUDE ALL LABOR AND MATERIAL NECESSARY FOR THIS WORK.

CARE SHALL BE EXERCISED IN MOVING THE CASTINGS SO AS NOT TO DAMAGE THE CASTING OR THE STRUCTURE. DAMAGED CASTINGS OR STRUCTURES SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.

ITEMS OUTLINED SHALL BE PAID FOR UNDER APPROPRIATE ADJUST TO GRADE ITEMS.

CLEVELAND LSM "FLOWABLE FILL" BACK FILL MATERIAL

MATERIAL MUST COME FROM A PLANT WITH A CURRENT CERTIFICATE OF COMPLIANCE DEMONSTRATING THE ABILITY OF THE MIX DESIGN TO MEET THE SPECIFIED REQUIREMENTS. CERTIFICATES IN EXCESS OF ONE YEAR WILL NOT BE ACCEPTED. CERTIFICATES MUST CONTAIN THE NAME OF THE SUPPLIER, DATE, CONTRACT NUMBER AND MIX DESIGN DATA ON EACH DELIVERY TICKET.

ALL MATERIALS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS STATED HEREIN.

1. CEMENT SHALL BE ASTM C-150 TYPE I.
2. THE USE OF FLY ASH IS STRICTLY PROHIBITED.
3. FINE AGGREGATE SHALL CONFORM TO ODOT SPEC 703.03 FINE AGGREGATE FOR MORTAR OR GROUT.
4. THE USE OF SPENT FOUNDRY SAND OR CORE SAND IS STRICTLY PROHIBITED.

AN AIR ENHANCING ADMIXTURE SHALL BE INCORPORATED IN THE MIX THAT WILL HAVE THE EFFECT OF LOWERING THE WATER/CEMENT RATIO BETWEEN 95 AND 105 LBS/CUBIC FOOT. THE AIR ENTRAINED CONTENT OF THE MIX SHALL BE 30% TO ELIMINATE/MINIMIZE THE EXCESSIVE WATER AND SEGREGATION. COMPRESSIVE STRENGTHS WITH A RANGE OF 50 PSI TO 80 PSI AT 28 DAYS WILL BE REQUIRED IF ADDITIONAL EXCAVATION BY MACHINE OR HAND IS REQUIRED.

APPROVED ADMIXTURES:

MANUFACTURER	PRODUCT NAME
MASTER BUILDERS	RHEOFILL
AXIM	FLOW AIR
W.R. GRACE	DARAFILL
OR APPROVED EQUAL	

MIX DESIGN PROPORTIONS

CEMENT (TYPE 1)	50 LB/CY
SAND (SSD)	2475 LB/CY
WATER	25 GAL/CY
ADMIXTURE (AIR)	3 OZ/CY

VARIATIONS OF THE AFOREMENTIONED MIX DESIGN ARE STRICTLY PROHIBITED.

A. FLOWABLE FILL SHALL BEGIN 12 INCHES ABOVE THE TOP OF PIPE AND CONTINUE IN THE TRENCH IN CONFORMANCE WITH THE CITY STANDARD TRENCH REPAIR DETAILS (PR-1).

B. MATERIAL FOR PIPE BEDDING AND PIPE ZONE TO A MAXIMUM DEPTH OF 12 INCHES OVER THE TOP OF PIPE SHALL BE AS SPECIFIED BY THE UTILITY.

C. EXPOSED BOLTS AND VALVES EXPOSED IN THE TRENCH SHOULD BE WRAPPED WITH POLYETHYLENE MATERIAL CONFORMING TO ODOT 748.07 (8 MILL. THICK).

D. COVER ALL JOINTS IN CLAY PIPE IN THE TRENCH AREA WITH POLYETHYLENE MATERIAL BEFORE POURING FLOWABLE FILL.

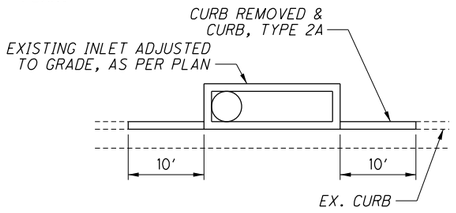
E. REPAIR ALL OBSERVED OPENINGS IN ANY PIPE OR MANHOLE IN THE TRENCH AREA PRIOR TO BACKFILLING WITH FLOWABLE FILL. REPAIR TECHNIQUES SHALL BE IN ACCORDANCE WITH THE UTILITY COMPANY'S STANDARD REPAIR PROCEDURES.

F. CONTACT THE RESPECTIVE UTILITY OWNER FOR REPAIR PROCEDURES.

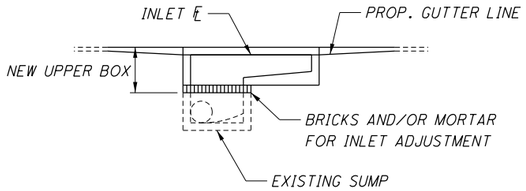
ITEM 611 - INLET ADJUSTED TO GRADE, AS PER PLAN

THIS ITEM SHALL CONSIST OF REMOVING AND DISPOSING OF THE EXISTING INLET UPPER BOX AND PLACING A PROPOSED UPPER BOX OF THE SPECIFIED SIZE. THIS ITEM OF WORK SHALL ALSO INCLUDE ANY ADDITIONAL WORK NECESSARY TO INSTALL THE PROPOSED INLET UPPER BOX TO THE SATISFACTION OF THE ENGINEER INCLUDING SAWCUTTING THE OLD INLET TOP, ADDITIONAL EXCAVATION NEEDED FOR THE PROPOSED UPPER BOX, GROUND PREPARATION UNDER THE UPPER BOX AND ANY MORTAR AND/OR BRICKS AT THE EXISTING SUMP WALLS. THE CONTRACTOR SHALL NOT ORDER ANY ITEMS UNTIL DRAINAGE STRUCTURE SIZES ARE VERIFIED AND DIRECTED BY THE ENGINEER.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 611 - INLET ADJUSTED TO GRADE, AS PER PLAN.



PLAN VIEW



ELEVATION VIEW

ITEM 611 - DRAINAGE STRUCTURE, MISC.: CATCH BASIN, CITY OF CLEVELAND, CB-1

PROPOSED CURB TYPE CATCH BASINS SHOWN ON THE PLANS ALONG MLK JR. DRIVE SHALL BE CITY OF CLEVELAND CB-1 STYLE CATCH BASINS. THE CONTRACTOR SHALL PROVIDE BASINS THAT FOLLOW CITY OF CLEVELAND STANDARD CONSTRUCITON DRAWING CB-1.

IN THE FOLLOWING LOCATIONS THE CONTRACTOR SHALL NOT USE THE CURB TYPE CASTING AS SHOWN ON CITY OF CLEVELAND STANDARD CONSTRUCTION DRAWING CB-1.

D-3 & D-6

AT THESE LOCATIONS THE CONTRACTOR SHALL PROVIDE A FLAT GRATED TOP CASTING, PER EJ V-5665 (OR APPROVED EQUAL).

PAVEMENT

ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN

IN ADDITION TO CMS SPECIFICATIONS, NO SLAG OF ANY KIND IS PERMITTED FOR USE AS 304 AGGREGATE BASE.

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.

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.

PAVEMENT RESTORATION FOR PIPE INSTALLATIONS AND/OR REMOVALS

THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION AND/OR REMOVAL OF PIPES.

ITEM 305 - 9" CONCRETE BASE, CLASS QC1, AS PER PLAN 50 SY

THE ABOVE QUANTITY IS BASED ON A 305 THICKNESS OF 9 INCHES AND A PAVEMENT RESTORATION WIDTH THAT INCLUDES THE TRENCH WIDTH PLUS TWO FEET ON EACH SIDE OF THE TRENCH. PROVIDE ANY MATERIALS USED OUTSIDE THE LIMITS STATED ABOVE AT NO ADDITIONAL COST.

PAVEMENT RESTORATION FOR DRAINAGE STRUCTURE INSTALLATIONS

THE FOLLOWING QUANTITY IS PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION OF ITEM 611, DRAINAGE STRUCTURES.

ITEM 305 - 9" CONCRETE BASE, CLASS QC1, AS PER PLAN 65 SY

THE ABOVE QUANTITY IS BASED ON A 305 THICKNESS OF 9 INCHES AND A WIDTH OF TWO FEET AROUND THE PERIMETER OF THE DRAINAGE STRUCTURE.

PROVIDE ANY MATERIALS USED OUTSIDE THE LIMITS STATED ABOVE AT NO ADDITIONAL COST.

ITEM 608 - CURB RAMP, AS PER PLAN

UNDER THIS PAY ITEM, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYING OUT AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANT CURB RAMPS AND LANDINGS THAT CONFORM TO CITY OF CLEVELAND CURB RAMPS STANDARD DRAWINGS, AND SPECIAL PROVISIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING TYPE OF CURB RAMP PROPOSED IN THE PLANS. IN SITUATIONS WHERE A DIFFERENT TYPE OF CURB RAMP OR A MODIFICATION IS NEEDED, THE CONTRACTOR SHALL INSTALL THAT RAMP, WITH THE APPROVAL OF THE ENGINEER AT NO ADDITIONAL COSTS.

CITY OF CLEVELAND STANDARD DRAWINGS CURB RAMP TYPE 1 THROUGH TYPE 11 SHALL BE USED AS A BASE FOR CONSTRUCTION OF THE CURB RAMP. ANY CURB RAMP NOT MEETING ADA REQUIREMENTS WILL BE REMOVED AND REPLACED BY THE CONTRACTOR, AT HIS/HER COST, TO THE SATISFACTION OF THE CITY.

THE PAY ITEM IS "ITEM 608, CURB RAMP, AS PER PLAN". PAYMENT SHALL BE PER SQUARE FOOT OF RAMP CONSTRUCTED. PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS FOR CONSTRUCTION LAYOUT COSTS, INSTALLATION OF 8" WALK, WITHIN THE RAMP AREAS, CURB, TILE, SAWCUTTING AND WORK AS SPECIFIED ELSEWHERE IN THE PLANS, SPECIFICATIONS, AND CITY OF CLEVELAND STANDARD CURB RAMP DETAILS.

CURB RAMP AND LANDING THICKNESS	
SIDEWALK AREAS	6" THICK
CURB RAMP AREAS	8" THICK

CALCULATED MKD CHECKED JTS

GENERAL NOTES

CUY-90-21.02

PAVEMENT (CONT.)

CLEVELAND CONCRETE DESIGN MIX

ALL APPLICABLE ROADWAY ITEMS SHALL BE BID USING THE CONCRETE MIX DESIGN SPECIFIED IN THIS SECTION. UNDER THIS SECTION OF SPECIFICATION THE CONTRACTOR IS REQUIRED TO SUBMIT A SEPARATE MIX DESIGN FOR EACH COMBINATION OF CEMENT TYPE, AGGREGATE TYPE AND CONCRETE SUPPLIER FOR USE UNDER THIS CONTRACT. EACH MIX SHALL BE DESIGNED IN ACCORDANCE WITH ASTM-C94-04 OPTION C AND AS HEREIN MODIFIED.

1. MINIMUM COMPRESSIVE STRENGTH

4,000 PSI STRENGTH FOR 28-DAY TEST. FOUR CYLINDERS WILL BE TAKEN AND TESTED AS PER ASTM C-39-04. ONE TO BE TESTED AT SEVEN DAYS AND THE REMAINING THREE WILL BE TESTED AT TWENTY-EIGHT DAYS. ACCEPTANCE WILL BE BASED ON THE AVERAGE RESULTS OF THE THREE CYLINDERS.

2. MINIMUM CEMENT CONTENT

650 LBS. PER CUBIC YARD. THE CEMENT SHALL CONFORM TO ASTM C-150-04 OR C-595-04. THE USE OF LIMESTONE MAY BE USED WITH PRIOR WRITTEN APPROVAL OF THE ENGINEER UPON REVIEW OF THE SUBMITTAL.

3. WATER CEMENT RATIO

0.45 MAXIMUM.

4. SLUMP

NOMINAL THREE INCHES (3") AS PER ASTM C-94-04 (2"- 4" ACTUAL). THE USE OF CHEMICAL ADMIXTURES MEETING ASTM C-494, TO INCREASE THE SLUMP TO A MAXIMUM OF 7", MAY BE USED WITH PRIOR WRITTEN APPROVAL OF THE ENGINEER UPON REVIEW OF THE ADMIXTURE AND RESULTANT MAXIMUM SLUMP.

5. AIR CONTENT

FOUR PERCENT (4%) TO SEVEN AND ONE HALF PERCENT (7-1/2%) ASTM C-173-04 OR C-231-04.

6. AGGREGATE

AGGREGATE SIZE NO. 57 FOR COURSE AGGREGATE SHALL BE LIMESTONE, GRAVEL OR CRUSHED AIR-COOLED BLAST FURNACE SLAG. BOTH COARSE & FINE AGGREGATE AS PER ASTM C-33-04.

IF CRUSHED AIR-COOLED BLAST FURNACE SLAG IS USED IT SHALL MEET ALL OF THE REQUIREMENTS OF ODOT 703.01 AND 703.02. COPIES OF ALL TESTS AND CERTIFICATIONS FOR THE CRUSHED AIR-COOLED BLAST FURNACE SLAG, IF USED, SHALL BE SUBMITTED AS A PART OF THE CONCRETE MIX DESIGN.

STEEL SLAG AGGREGATE (703.01E) IS NOT PERMITTED FOR USE IN CLEVELAND 650 CONCRETE MIX.

WHEN HIGH EARLY STRENGTH IS REQUIRED, ASTM C-150-04 TYPE III A CEMENTS OR ADMIXTURES IN ACCORDANCE WITH ASTM C-494-04 SHALL BE USED.

THE CONTRACTOR IS REQUIRED TO FURNISH A SIGNED AFFIDAVIT, IN TRIPLICATE, FROM EACH CONCRETE SUPPLIER TO THE ENGINEER GIVING DRY WEIGHT AND TYPE OF CEMENT, SATURATED SURFACE DRY WEIGHT AND THE TYPE OF FINE AND COURSE AGGREGATE, QUANTITY, TYPE AND NAME OF EACH ADMIXTURE AND WEIGHT OF WATER PER CUBIC YARD OF CONCRETE. THE CONTRACTOR SHALL ALSO FURNISH TWENTY EIGHT (28) DAY CYLINDER TESTS (PER TESTING SECTION) AS VERIFICATION THAT THE MATERIALS USED AND THE PROPORTIONS SELECTED WILL PRODUCE CONCRETE OF THE QUALITY SPECIFIED.

HOT AND COLD WEATHER PROTECTION (BLANKETS, HEATERS, ICE, ETC.) SHALL BE INCLUDED IN THE UNIT BID PRICE.

THE CONTRACTOR IS REQUIRED TO COMPLY WITH ALL THE ABOVE REQUIREMENTS. THE CONTRACTOR SHALL REQUIRE THAT ALL OF THE SUB CONTRACTORS PLACING CONCRETE UNDER THIS CONTRACT ALSO COMPLY WITH ALL OF THE ABOVE REQUIREMENTS.

ITEM 441 - ASPHALT CONCRETE, MISC.: ASPHALT CONCRETE LEVELING COURSE, TYPE 1, (448)

ALONG AREAS OF PAVEMENT PLANING AND RESURFACING, THE USE OF AN ASPHALT CONCRETE LEVELING COURSE MAY BE REQUIRED TO PROVIDE THE DESIGNED PAVEMENT PROFILE AND CROSS-SLOPE. THE LEVELING COURSE SHALL BE APPLIED TO THE PLANED SURFACE TO CREATE A LEVEL SURFACE THAT MATCHES THE PROPOSED DESIGN, PRIOR TO PLACING THE PROPOSED INTERMEDIATE COURSE.

ITEM 305 - 9" CONCRETE BASE, CLASS QC1, AS PER PLAN
ITEM 608 - 6" CONCRETE WALK, AS PER PLAN
ITEM 609 - CURB, TYPE 2-A, AS PER PLAN
ITEM 609 - CURB, TYPE 6, AS PER PLAN
ITEM 609 - CONCRETE MEDIAN, AS PER PLAN
ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN

1. WORK INCLUDED

THE CONTRACTOR UNDER THIS SECTION OF THE SPECIFICATIONS SHALL CONSTRUCT CONCRETE BASE, PAVEMENT, CONCRETE BARRIER, SIDEWALK, DRIVEWAY APRONS, CURB, CONCRETE MEDIAN, CURB AND GUTTER SECTIONS, HANDICAP RAMPS, AND INTEGRAL RADIUS CURB AND WALK. THIS INCLUDES THE RESTORATION OF ALL ADJACENT SURFACES WHICH ARE DISTURBED BY THIS CONSTRUCTION AND NOT SCHEDULED TO BE RESTORED UNDER A SEPARATE ITEM OF PAYMENT.

2. MATERIALS

THE CONCRETE USED SHALL BE THE CONCRETE DESIGN MIX AS PER THE CLEVELAND CONCRETE DESIGN MIX (MLK JR. DRIVE) PLAN NOTE HEREIN.

3. GRADING

GRADING SHALL INCLUDE ALL EXCAVATION, FILL, AND EMBANKMENT REQUIRED TO PERMIT THE CONSTRUCTION OF THE PROPOSED PAVEMENT, SIDEWALK, DRIVEWAY APRONS, AND CURB TO THE DESIGNATED LINES AND GRADES.

A. EXCAVATION

I. THE COST OF ALL EXCAVATION FOR PROPOSED WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS ITEMS OF WORK INCLUDING REMOVAL AND DISPOSAL. EXCAVATION SHALL INCLUDE THE REMOVAL OF ALL CONCRETE, STONE, EARTH, ROOTS, AND OTHER MATERIAL OF EVERY DESCRIPTION WITHIN THE LIMITS OF THE PROPOSED WORK.

II. EXCEPT AS OTHERWISE ORDERED, EXCAVATION AT THE ELEVATION OF THE FINISHED GRADE OF THE CONSTRUCTION SHALL EXTEND ONE (1) FOOT BEYOND EACH EDGE AND THEN ON A SLOPE OF ONE (1) VERTICAL TO ONE AND ONE-HALF (1-1/2) HORIZONTAL AND SHALL BE PAID FOR AS EXCAVATION AT THE PRICE PER CUBIC YARD FOR SUCH WORK AS IT APPEARS ON THE PRICE SHEET OF THE CONTRACT. WHEN SO ORDERED, EXCAVATION SHALL EXTEND TO A SUFFICIENT WIDTH TO PERMIT PROPER DRAINAGE WITH THE COST OF EXCAVATING BEYOND THE LIMIT STATED ABOVE PAID FOR AS EXCAVATION.

III. THE COST OF EXCAVATION FOR A DEPTH IN EXCESS OF THE THICKNESS OF THE CONCRETE BASE/PAVEMENT SLAB SHALL BE PAID FOR AS EXCAVATION AT THE UNIT PRICE BID FOR ITEM 203 - EXCAVATION.

IV. THE CONTRACTOR SHALL USE EXTREME CARE, BY WHATEVER METHODS AND PROCEDURES ARE NECESSARY, IN THE REMOVAL OF PAVEMENT, SIDEWALK, DRIVEWAY APRONS, AND CURB, TO ENSURE THAT NO ADJACENT SLABS BEYOND THOSE MARKED FOR REMOVAL BY ENGINEER WILL BE DISTURBED,REMOVED OR DAMAGED. SHOULD ANY PAVEMENT, WALK, DRIVEWAY APRON OR CURB BE DAMAGED, EITHER IN WHOLE OR IN PART, OTHER THAN THAT WHICH IS MARKED FOR REMOVAL BY THE ENGINEER, THE CONTRACTOR SHALL REMOVE AND REPLACE SAID DAMAGED SLABS, IN WHOLE, WITHOUT COST TO THE PROJECT.

B. FILL OR EMBANKMENT

I. FILL OR EMBANKMENT SHALL BE ODOT ITEM 203-EMBANKMENT AS PER PLAN NOTES AND MEET THE FOLLOWING TWO (2) REQUIREMENTS:

II. IT SHALL BE SUBSTANTIALLY FREE FROM VEGETABLE OR ORGANIC MATTER AND SHALL CONTAIN NOT MORE THAN TEN (10) PERCENT OF LOAM OR CLAY.

III. IT SHALL WEIGH NOT LESS THAN NINETY (90) POUNDS PER CUBIC FOOT, DRY COMPACTED WEIGHT.

IV. THE UPPER SIX (6) INCHES OF EMBANKMENT OUTSIDE OF THE EDGE OF THE SIDEWALK, DRIVEWAY APRON OR CURB SHALL BE TOPSOIL OR EXCAVATED MATERIAL APPROVED BY THE ENGINEER (NO SAND).

V. FILL SHALL EXTEND AT LEAST ONE AND ONE-HALF (1-1/2) FEET BEYOND EACH SIDE OF THE CONSTRUCTION UNLESS OTHERWISE ORDERED OR PERMITTED. SIDE SLOPES SHALL BE TRIMMED TO A SLOPE OF ONE (1) VERTICAL TO ONE AND ONE-HALF (1-1/2) HORIZONTAL, EXCEPT AS OTHERWISE ORDERED BY THE ENGINEER.

VI. FILL SHALL BE IN PLACE IN ADVANCE OF CONSTRUCTION TO ALLOW FOR SETTLEMENT. THE FILL MATERIAL SHALL BE THOROUGHLY COMPACTED BY TAMPING OR ROLLING, OR BOTH, SO AS TO PRODUCE A SOLID DENSE SUBGRADE.

VII. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO RAISE ALL MUNICIPALLY OWNED UTILITY CASTINGS TO FINISHED GRADE OF NEW WORK. ADJUSTING THESE CASTINGS TO NEW GRADE SHALL CONSTITUTE A SEPARATE ITEM OF WORK AND PAYMENT.

ITEM 305 - 9" CONCRETE BASE, CLASS QC1, AS PER PLAN
ITEM 608 - 6" CONCRETE WALK, AS PER PLAN
ITEM 609 - CURB, TYPE 2-A, AS PER PLAN
ITEM 609 - CURB, TYPE 6, AS PER PLAN
ITEM 609 - CONCRETE MEDIAN, AS PER PLAN
ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN
(CONT.)

VIII. NON-MUNICIPALLY OWNED CASTINGS ARE THE RESPONSIBILITY OF THEIR RESPECTIVE OWNERS TO ADJUST TO THE PROPER GRADE, BUT COORDINATING THE WORK IS THE RESPONSIBILITY OF THE CONTRACTOR. ADJUSTING THESE CASTINGS TO THE NEW GRADE SHALL NOT BE PAID FOR UNDER THIS CONTRACT.

4. CONCRETE DELIVERABLES

A. ALL CONCRETE DELIVERED SHALL BE SUBJECTED TO ANY OR ALL TESTS DESCRIBED IN THE "TESTING OF CONSTRUCTION MATERIALS" SECTION OF THESE DETAIL SPECIFICATIONS. ALL CONCRETE FAILING ANY OF THESE TESTS SHALL BE REMOVED AND REPLACED AS MANY TIMES AS NECESSARY, UNTIL IT PASSES ALL REQUIRED TESTS. THE REMOVAL AND REPLACEMENT SHALL BE AT NO COST TO THE CITY.

B. ALL CONCRETE DELIVERED TO THE CONSTRUCTION SITE SHALL BE ACCOMPANIED BY DRAY SLIPS. DRAY SLIPS SHALL CONTAIN ALL OF THE INFORMATION REQUIRED BY ASTM C-94, PARAGRAPH #16, AND BATCH TICKET INFORMATION. ANY CONCRETE TRUCK WITHOUT A DRAY SLIP OR WITH AN INCOMPLETE DRAY SLIP SHALL BE REJECTED.

C. TRUCKS SHALL CONFORM TO AASHTO M 157 - 10.1, 10.2, 11.5, 11.6, 11.7, & 11.8.

D. THE SLUMP AND PERCENT OF AIR ENTRAINMENT SHALL CONFORM TO THE LIMITS SHOWN IN SECTION D-24 (CONCRETE DESIGN MIX) OF THESE SPECIFICATIONS.

E. ALL CONCRETE SHALL BE DISCHARGED FROM THE TRUCK WITHIN NINETY (90) MINUTES OF THE BATCHING TIME AS INDICATED ON THE DRAY SLIP.

F. THE TEMPERATURE OF THE CONCRETE AT THE TIME OF PLACEMENT SHALL BE BETWEEN MINIMUM CONCRETE TEMPERATURES AS PER AASHTO M157-1997 SECTION 11.1.1. MINIMUM CONCRETE TEMPERATURE TABLE AS SHOWN BELOW AND BELOW NINETY (90) DEGREES FAHRENHEIT AS PER THE AMERICAN CONCRETE INSTITUTE (ACI) RECOMMENDATIONS FOR HOT WEATHER CONCRETE.

AIR TEMPERATURE	THIN SECTIONS AND UNIFORMED SLABS	HEAVY SECTIONS AND MASSS CONCRETE
FAHRENHEIT	DEGREES	DEGREES
30 TO 45 DEGREES	60	50
0 TO 30 DEGREES	65	55
BELOW 0 DEGREES	70	60
CENTIGRADE		
-1 TO 7 DEGREES	16	10
-18 TO -1 DEGREES	18	13
BELOW -18 DEGREES	21	16

G. REJECTED TRUCKS AND LOADS - ANY TRUCK AND ITS LOAD OF CONCRETE REJECTED FOR FAILURE TO MEET ALL THE REQUIREMENTS OF PARAGRAPH'S 4C AND 4D AS STATED ABOVE SHALL HAVE THE FOLLOWING CONDITION IMPOSED:

ANY TRUCK REJECTED FROM ANY CONSTRUCTION SITE COVERED BY THIS SECTION OF THE SPECIFICATIONS SHALL ALSO BE BANNED FROM ALL CONSTRUCTION SITES COVERED BY THIS SECTION OF THE SPECIFICATIONS.

H. ANY CONCRETE WHICH FAILS TO MEET ALL OF THE REQUIREMENTS OF PARAGRAPH'S 4E, 4F, AND 4G AS STATED ABOVE, OR THE REQUIREMENTS OF THE JOB MIX, SHALL NOT BE USED ON THIS OR ANY OTHER CONSTRUCTION PROJECT WHERE THE SPECIFICATIONS HAVE BEEN PREPARED BY THE DIVISION OF ENGINEERING & CONSTRUCTION.

5. CONSTRUCTION

ALL OF THE VARIOUS TYPES OF PAVEMENT, SIDEWALK, DRIVEWAY APRONS, BARRIER, CURB OR ANY COMBINATION THEREOF SHALL BE CONSTRUCTED AS PER THESE SPECIFICATIONS, PLANS, DETAILS AND THE RESPECTIVE STANDARD DRAWINGS.

EXCEPT AS OTHERWISE DIRECTED, ALL CONCRETE FOR PAVEMENT, SIDEWALK, DRIVEWAYS APRONS, BARRIER, CURB, HANDICAP RAMPS AND INTEGRAL RADIUS CURB AND WALK SHALL BE OF ONE (1) COURSE. SIDEWALK SHALL BE A MINIMUM OF FOUR INCHES (4") THICK. DRIVEWAY APRONS SHALL BE A MINIMUM OF SIX INCHES (6") THICK FOR RESIDENTIAL AND EIGHT INCHES (8") THICK FOR COMMERCIAL DRIVEWAYS. THE MINIMUM THICKNESS FOR INTEGRAL CONCRETE RADIUS CURB AND WALK SHALL BE EIGHT INCHES (8") AND AS ALSO SHOWN ON CITY OF CLEVELAND STANDARD DRAWING #244ME.

ITEM 305 - 9" CONCRETE BASE, CLASS QC1, AS PER PLAN
ITEM 608 - 6" CONCRETE WALK, AS PER PLAN
ITEM 609 - CURB, TYPE 2-A, AS PER PLAN
ITEM 609 - CURB, TYPE 6, AS PER PLAN
ITEM 609 - CONCRETE MEDIAN, AS PER PLAN
ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN
(CONT.)

THE THICKNESS OF THE PAVEMENT, SIDEWALK AND/OR DRIVEWAY APRONS SHALL BE INCREASED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SIDEWALK THROUGH THE DRIVEWAY AND DRIVEWAY APRONS OF THE SAME THICKNESS MAY BE COMBINED INTO ONE ITEM OF WORK AND PAYMENT.

5.1 FORMS

A. FORMS FOR PAVEMENT, SIDEWALK, BARRIER AND INTEGRAL CONCRETE RADIUS CURB AND WALK, AND DRIVEWAY APRON CONSTRUCTION SHALL BE MADE OF STEEL.

B. WHERE STANDARD LENGTHS OF STEEL FORMS CANNOT PROPERLY BE USED, A WOODEN FORM WILL BE PERMITTED FOR CLOSURE. SAID WOODEN FORM SHALL NOT BE LESS THAN ONE AND FIVE-EIGHTHS INCHES (1-5/8") IN THICKNESS. THE MINIMUM DEPTH SHALL BE AS SHOWN BELOW:

SIDEWALK	4", 6" OR 8"
DRIVEWAY APRON	6" OR 8"
INTEGRAL CONCRETE RADIUS	8"
CURB AND WALK	8"
BASE, PLAIN AND REINFORCED PAVEMENT	9", 10" OR 12"

5.2 SAW CUTTING AND CONCRETE REMOVAL WHEN EXISTING CONCRETE PAVEMENT, DRIVE APRONS, CURB OR SIDEWALK NECESSITATES CUTTING INTO THE EXISTING SLAB FOR REMOVAL, THE CUTTING SHALL BE ACCOMPLISHED BY USING A SUITABLE CONCRETE POWER SAW WHICH WILL PRODUCE A STRAIGHT AND SMOOTH FINISH ALONG THE SAWED EDGE. THE DEPTH OF CUTTING OR SCORING SHALL BE SUCH THAT NO DAMAGE WILL RESULT TO THE REMAINING SLAB AFTER REMOVAL OF THE DESIGNATED SECTION.

THE LOCATION OF ALL SAW CUTS SHALL BE DETERMINED BY THE ENGINEER. ANY DAMAGE TO THE SLAB NOT DESIGNATED FOR REMOVAL SHALL BE REPLACED AT NO EXPENSE TO THE PROJECT.

5.3 AFFIDAVIT

AN AFFIDAVIT SHALL BE SECURED FROM EACH COMPANY SUPPLYING THE CONCRETE STATING THAT ONLY THE CONCRETE DESIGN MIX AS PER CITY OF CLEVELAND SPECIFICATIONS WILL BE SUPPLIED. THIS AFFIDAVIT SHALL ALSO STATE THAT THE MATERIAL SUPPLIER HAS READ THE SPECIFICATIONS RELATIVE TO THE CONCRETE BEING SUPPLIED. IT SHALL BE SIGNED BY AN OFFICER OF THE SUPPLYING COMPANY AND NOTARIZED.

5.4 PLACING CONCRETE

A. NO CONCRETE SHALL BE POURED UNTIL THE INSPECTOR HAS APPROVED THE PREPARATION OF THE FOUNDATION BED.

B. NO CONCRETE SHALL BE POURED UNLESS THE INSPECTOR IS ON THE JOBSITE OBSERVING THE WORK.

C. IF ANY CONCRETE IS POURED WITHOUT THE OBSERVATION BY THE INSPECTOR OR WITHOUT THE PRIOR APPROVAL OF THE FOUNDATION BED, THE CONCRETE POURED SHALL NOT BE ACCEPTED FOR PAYMENT.

D. FOUNDATION BEDS SHALL BE SPRINKLED IMMEDIATELY PRIOR TO DEPOSITING OF CONCRETE DURING HOT OR DRY WEATHER CONDITIONS.

E. ALL WELDED STEEL WIRE FABRIC FOR CONCRETE REINFORCEMENT, AS PER CONSTRUCTION PLANS, SHALL MEET THE REQUIREMENTS OF SECTION 709.10 OF ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS.

F. CONCRETE SHALL BE CONTINUOUSLY DEPOSITED BETWEEN BULKHEADS TO A UNIFORM THICKNESS AND TO THE FULL DEPTH AND WIDTH. THE CONCRETE, AFTER BEING PLACED, SHALL BE THOROUGHLY COMPACTED AND BROUGHT TO THE PROPER PITCH AND GRADE WITH A TEMPLATE OR STRAIGHTEDGE.

G. NO CONCRETE SHOWING SEGREGATION OR CLUMPS OF MATERIAL SHALL BE DEPOSITED IN THE WORK.

H. IMMEDIATELY PRIOR TO THE FINISHING OF THE SURFACE, THE CONCRETE SHALL BE CUT INTO SLABS NOT LONGER THAN SIX FEET (6') ON ANY ONE SIDE FOR WALKS AND DRIVEWAYS. PAVEMENTS SHALL BE CUT AS PER PLAN DETAILS AND STANDARD CONSTRUCTION DRAWINGS. THE JOINTS SHALL BE FORMED BY A CUTTING TOOL OR SOME OTHER MEANS SATISFACTORY TO THE CITY AND SHALL NOT BE LESS THAN ONE-QUARTER (1/4) OF THE DEPTH OF THE SLAB. ALL EDGES SHALL BE ROUNDED, WITH AN APPROVED EDGING TOOL, TO A RADIUS OF ONE-QUARTER INCH (1/4").

CALCULATED MKD | CHECKED JTS

GENERAL NOTES

CUY-90-21.02

PAVEMENT (CONT.)

ITEM 305 - 9" CONCRETE BASE, CLASS QC1, AS PER PLAN
ITEM 608 - 6" CONCRETE WALK, AS PER PLAN
ITEM 609 - CURB, TYPE 2-A, AS PER PLAN
ITEM 609 - CURB, TYPE 6, AS PER PLAN
ITEM 609 - CONCRETE MEDIAN, AS PER PLAN
ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN (CONT.)

5.5 SURFACE FINISH

A. THE FINISHING OF THE CONCRETE SHALL IMMEDIATELY FOLLOW THE PLACING AND COMPACTING OF THE CONCRETE. UNLESS OTHERWISE ORDERED, A BROOM FINISH SHALL BE REQUIRED. RUBBING WITH FLOATS OR OTHER ACCEPTABLE METHOD SHALL BE DONE ONLY AT THE DIRECTION OF THE ENGINEER. ALL CONCRETE SLABS SHALL BE EDGED AROUND THE ENTIRE PERIMETER UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE SURFACE SHALL BE FREE FROM DEPRESSIONS AND INEQUALITIES.

B. THE APPLICATION OF DRY CEMENT TO HASTEN DRYING OF THE SURFACE IS PROHIBITED.

5.6 WHITE LIQUID FILM METHOD

A. ALL CONCRETE PAVEMENT, SIDEWALK, DRIVEWAY APRONS, CURB, CURB AND GUTTER SECTIONS, HANDICAP RAMPS, AND INTEGRAL RADIUS CURB AND WALK SHALL BE CURED BY THE USE OF WHITE LIQUID FILM. THIS WHITE LIQUID FILM SHALL HAVE TWENTY-FIVE (25%) TO THIRTY PERCENT (30%) EFFECTIVE SOLIDS AND MEET THE REQUIREMENTS OF ODOT CONSTRUCTION MATERIALS SPECIFICATIONS ITEM 705.07 TYPE 2.

B. THE WHITE LIQUID FILM MAY BE USED FOR CURING ALL CONCRETE PLACED EXCEPT FOR CONCRETE WHICH IS TO BE BONDED TO FUTURE CONCRETE PLACEMENT.

C. THE CURING MATERIALS SHALL BE APPLIED UNIFORMLY BY MEANS OF AN APPROVED PRESSURE SPRAY DISTRIBUTOR AT THE RATE OF ONE (1) GALLON TO EACH TWO HUNDRED 200 SQUARE FEET OF SURFACE, AND IT SHALL BE SO APPLIED THAT THE CONCRETE SURFACE IS COMPLETELY COATED AND SEALED IN ONE (1) APPLICATION. THE CURING MATERIAL SHALL BE APPLIED IMMEDIATELY AFTER THE CONCRETE SURFACE TO BE CURED HAS BEEN FINISHED AND BEFORE ANY MARKED DEHYDRATION HAS OCCURRED. AFTER THE SURFACE HAS BEEN COATED, IT SHALL BE PROTECTED FROM ALL TRAFFIC OR ABRASIVE ACTION FROM ANY SOURCE.

D. WHEN THIS METHOD OF CURING IS USED, A COMPLETE DUPLICATE SPRAYING SYSTEM SHALL BE ON THE SITE BEFORE STARTING THE PLACEMENT OF THE CONCRETE.

E. FINAL CURING BY THE WHITE LIQUID FILM METHOD SHALL BE CONSIDERED TO EXTEND FOR TWO (2) COMPLETE DAYS FROM THE TIME THE MATERIAL IS PLACED. DURING THIS PERIOD, THE SURFACE OF THE CONCRETE SHALL BE PROTECTED BY BARRICADES FROM ALL TRAFFIC OR WORK OPERATIONS.

F. A TRANSPARENT LIQUID FILM MAY BE SUBSTITUTED WITH THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

5.7 EXPANSION JOINTS

A. PREPARED STRIPS OF PREFORMED EXPANSION JOINT MATERIAL MEETING THE REQUIREMENTS OF 705.03 OF THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL BE ONE-HALF INCH (1/2") IN THICKNESS AND OF SUFFICIENT WIDTH TO EXTEND THE ENTIRE DEPTH OF THE CONCRETE. THEY SHALL BE PLACED IN SUCH A MANNER THAT THE JOINT WILL BE FILLED TO WITHIN ONE-HALF INCH (1/2") OF THE FINISHED SURFACE OF THE WALK. JOINTS SHALL BE CONSTRUCTED AT INTERVALS NO GREATER THAN FIFTY FEET (50') IN ALL SIDEWALKS, DRIVEWAY APRONS, CURB AND GUTTER SECTION, CAST-IN-PLACE CURB AND INTEGRAL CURB AND WALK UNLESS OTHERWISE ORDERED. PAVEMENT EXPANSION JOINTS SHALL BE PLACED AS PER PLAN DETAILS.

B. JOINTS SHALL BE PLACED WHERE THE WALK ABUTS CURBING OR OTHER LATERAL WALKS AND ALONG THE BUILDING LINE WHERE THE WALK IS PLACED FULL WIDTH FROM THE CURB TO THE BUILDING OR OTHER STRUCTURES OR AS OTHERWISE DIRECTED BY THE INSPECTOR IN THE FIELD. THE EDGES OF ALL JOINTS SO PLACED SHALL BE ROUNDED AS HEREIN BEFORE SPECIFIED. THE COST FOR EXPANSION JOINTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE RESPECTIVE ITEMS OF WORK.

C. WHERE NEW CONCRETE CURB OR THE CURB PORTION OF INTEGRAL CONCRETE RADIUS CURB AND WALK ABUTS EXISTING PAVEMENT, A THREE-QUARTER INCH (3/4") THICK PREFORMED EXPANSION STRIP AS CALLED FOR IN 705.03 OF THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL BE PLACED TO SEPARATE THE PAVEMENT AND CURB. THE UPPER ONE-HALF INCH (1/2") OF THE JOINT SHALL BE HOT SEALED.

5.8 CONTRACTION JOINTS

ALL CONCRETE FOR ADA RAMPS, SIDEWALKS, AND DRIVEWAYS SHALL HAVE RETRACED PICTURE FRAME TOOLED EDGE JOINTS.

ITEM 305 - 9" CONCRETE BASE, CLASS QC1, AS PER PLAN
ITEM 608 - 6" CONCRETE WALK, AS PER PLAN
ITEM 609 - CURB, TYPE 2-A, AS PER PLAN
ITEM 609 - CURB, TYPE 6, AS PER PLAN
ITEM 609 - CONCRETE MEDIAN, AS PER PLAN
ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN (CONT.)

5.9 ODOT ITEM 305-PORTLAND CEMENT CONCRETE BASE

ODOT ITEM 305 - PORTLAND CEMENT CONCRETE BASE SHALL MEET ALL REQUIREMENTS FOR ITEM 452 - NON-REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT. ALL JOINTING AND TRANSFER DEVICES ARE TO BE INSTALLED. THE CONCRETE SHALL HAVE A BROOM FINISH.

5.10 PAYMENT

THE QUANTITY AS PROVIDED SHALL BE PAID FOR AT THE APPLICABLE CONTRACT PRICE PER UNIT OF MEASUREMENT, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK REQUIRED BY THIS SECTION OF THE SPECIFICATIONS.

ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY), AS PER PLAN

THIS NOTE IS BASED ON CITY OF CLEVELAND NOTE D-28 PORTLAND CEMENT CONCRETE SEALING.

1. SUBMITTALS

A. THE CONTRACTOR SHALL SUBMIT TECHNICAL INFORMATION AND A CERTIFIED STATEMENT STATING THAT THE MATERIAL TO BE FURNISHED CONFORMS TO THE MATERIAL REQUIREMENTS OF THIS SECTION OF THE SPECIFICATIONS.

B. COPIES OF WAYBILLS AND DELIVERY TICKETS SHALL BE SUBMITTED TO THE CONTRACTING OFFICER DURING THE PROGRESS OF THE WORK. BEFORE FINAL PAYMENT IS ALLOWED, THE CONTRACTOR SHALL FILE WITH THE CONTRACTING OFFICER CERTIFIED WAYBILLS AND DELIVERY TICKETS FOR ALL CONCRETE SEALER USED IN THE WORK.

2. PORTLAND CEMENT CONCRETE SEALING TREATMENT

A. THE CONCRETE SEALER SHALL BE AN APPROVED NON-EPOXY, NON-SILICONE, NONTOXIC, NON-HYDROPHOBIC, NON-SOLVENT MATERIAL, AND SHALL MEET THE FOLLOWING QUALIFICATIONS AND AASHTO AND ASTM TEST PERFORMANCE CRITERIA, BASED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED RATE OF COVERAGE.

B. THE PENETRATING CONCRETE SEALER, AFTER FINISHED APPLICATION, SHALL NOT DARKEN, STAIN OR DISCOLOR THE TREATED CONCRETE.

C. APPLICATION OF THE SEALER SHALL NOT ALTER THE SURFACE TEXTURE OR FORM A FILM OR COATING ON THE SURFACE, AND SHALL BE COMPATIBLE WITH THE CONCRETE PAVEMENT JOINT MATERIALS.

D. AASHTO T 259 RESISTANCE OF CONCRETE TO CHLORIDE ION PENETRATION

SEALER-TREATED TEST SPECIMENS SHALL EXHIBIT THE ALLOWING AVERAGE VALUES WHEN AN AVERAGE OF 0.125 INCHES OF THE TREATED CONCRETE SPECIMEN HAS BEEN ABRADED FROM THE SURFACE TO SIMULATE 10-12 YEARS OF TRAFFIC WEAR. ABRASION WILL BE PERFORMED AFTER TREATMENT WITH SEALER AND BEFORE PONDING WITH CHLORIDE SOLUTION.

SALT WATER TEST (90 DAY DURATION)

AVERAGE ABSORBED CL = 2.50 LBS PER CUBIC YARD
DEPTH OF MEASUREMENT = 1/16" TO 1/2"*
TESTING METHOD: AASHTO T 259

*BASED ON ABRADED CONCRETE SPECIMENS

PONDING TEST (2160 HOUR DURATION)

AVERAGE ABSORBED CL = 0.04 LBS PER CUBIC YARD
DEPTH OF MEASUREMENT = 1/2" TO 1"
TESTING METHOD: AASHTO T 260

E. ASTM C 672 SCALING RESISTANCE OF CONCRETE SURFACES

SEALER-TREATED TEST SPECIMENS SHALL EXHIBIT A 0 (ZERO) SCALE READING, AND AN IMPROVEMENT OVER UNTREATED SPECIMENS AFTER COMPLETION OF A MINIMUM OF 50 FREEZE-THAW CYCLES; OR UNTIL A DIFFERENCE BETWEEN TREATED AND UNTREATED SPECIMENS DEVELOPS. EXAMPLE AFTER 50 CYCLES:

SPECIMEN	SCALE RATING
UNTREATED	2+ (LIGHT TO MODERATE SCALING)
TREATED	0 (NO SCALING)

ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY), AS PER PLAN (CONT.)

F. AASHTO T 161/ASTM C 666 RESISTANCE OF CONCRETE TO RAPID FREEZING AND THAWING TREATED SPECIMENS SHALL DEMONSTRATE EQUAL OR BETTER DURABILITY TO SURFACE SCALING THAN THE FROST RESISTANT CONCRETE USED AS A CONTROL UPON COMPLETION OF THE TEST AFTER A MINIMUM OF 300 FREEZE-THAW CYCLES.

EXAMPLE:

CYCLES	CONTROL	TREATED
146	SLIGHT	NONE
237	SLIGHT	SLIGHT
480	SLIGHT	SLIGHT

G. ASTM C 501 RELATIVE RESISTANCE TO WEAR

TREATED TEST SPECIMENS SHALL MEET OR EXCEED THE IMPROVEMENT PERCENTAGES AS SPECIFIED BELOW ON NOMINAL 3,000 PSI CONCRETE AFTER 1,000 REVOLUTIONS:

SPECIMEN	AVG. ABRASIVE WEAR INDEX	AVG. DEPTH OF WEAR	AVG. ABSOLUTE WEIGHT LOSS
TREATED	27.4	.026 IN	3.227 GM
UNTREATED	19.9	.033 IN	4.525 GM
IMPROVEMENT	37.7%	21.2%	28.7%

H. ASTM C 882 BOND STRENGTH OF EPOXY-RESIN SYSTEMS USED WITH CONCRETE TEST RESULTS SHALL DEMONSTRATE BOND STRENGTH OF TREATED SAMPLES EQUAL TO UNTREATED SAMPLES USED AS A CONTROL.

I. DEPTH OF PENETRATION SHALL BE A MINIMUM OF 1/8 IN. AS DEMONSTRATED BY SUCCESSFUL TESTING IN ACCORDANCE WITH AASHTO T 2590 (BASED ON ABROAD SPECIMENS).

3. SURFACE PREPARATION - THE CONTRACTOR SHALL PREPARE SURFACES TO BE SEALED BY THOROUGHLY CLEANING THE SURFACE WITH MECHANICAL SWEEPERS OF AN APPROVED TYPE AND WITH WIRE BROOMS WHERE NECESSARY. TO BE CLEAN, THE SURFACES SHALL BE FREE OF SAND, CLAY, DUST, SALT, GREASE, OIL AND OTHER FOREIGN MATTER THAT MIGHT ADVERSELY AFFECT THE PENETRATING CAPABILITY OF THE SEALER.

4. APPLICATION OF CONCRETE SEALER

A. EQUIPMENT TO BE USED SHALL BE AS RECOMMENDED BY THE MANUFACTURER AND SHALL INCLUDE A LOW PRESSURE AIRLESS OR GRAVITY TYPE SPRAYER WITH AN APPLICATION PRESSURE OF APPROXIMATELY 40 PSI, USING A SPRAY TIP LARGE ENOUGH TO DELIVER AN EVEN FAN SPRAY WITHOUT MISTING.

B. APPLICATION OF THE CONCRETE SEALER SHALL BE RECOMMENDED BY THE MANUFACTURER AND IN ACCORDANCE WITH THE FOLLOWING:

I. THE APPLICATION SHALL CONSIST OF TWO COATS MINIMUM.

II. EACH COAT SHALL BE IN A LIGHT, EVEN COAT THAT SHALL BE ALLOWED TO DRY COMPLETELY BEFORE CONTINUING APPLICATION.

III. IF A LIGHT SHEEN IS VISIBLE WHEN THE SECOND COAT IS DRY, STOP SEALER APPLICATION, AND PROCEED TO THE WATER SPRAY APPLICATION.

IV. IF NO SHEEN IS VISIBLE WHEN THE SECOND COAT IS DRY, REPEAT COATS UNTIL A LIGHT SHEEN IS APPARENT. IMMEDIATELY AFTER THE FINAL SEAL COAT HAS BEEN APPLIED AND ALLOWED TO DRY, A LIGHT, EVEN WATER-SPRAY SHALL BE APPLIED TO ALL TREATED SURFACES TO ENSURE COMPLETE PENETRATION OF THE SEALER.

V. IF A SHEEN IS STILL VISIBLE AFTER THE WATER COAT HAS DRIED, ADDITIONAL WATER COATS SHALL BE APPLIED UNTIL THE SHEEN IS NO LONGER EVIDENT AND THE CONCRETE FINISH APPEARS DULL.

5. WEATHER LIMITATIONS

SEALER SHOULD NOT BE APPLIED WHEN TEMPERATURES ARE BELOW 40 DEGREES F OR ARE EXPECTED TO FALL BELOW 32 DEGREES F WITHIN 24 HOURS OR WHEN RAIN IS FORECASTED WITHIN 24 HOURS.

6. METHOD OF MEASUREMENT

THE QUANTITY TO BE PAID FOR WILL BE MEASURED BY THE ACTUAL NUMBER OF SQUARE YARDS OF ACCEPTED PAVEMENT SEALED WITH CONCRETE SEALER IN ACCORDANCE WITH THIS SECTION OF THE SPECIFICATIONS.

ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY), AS PER PLAN (CONT.)

7. PAYMENT

THE QUANTITY AS PROVIDED SHALL BE PAID FOR AT THE APPLICABLE CONTRACT PRICE PER UNIT OF MEASUREMENT, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK REQUIRED BY THIS SECTION OF THE SPECIFICATIONS.

ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY), AS PER PLAN 1750 SY

ASPHALT CONCRETE (ODOT ITEM 441)

ASPHALT CONCRETE SHALL COMPLY WITH ODOT ITEM 301, 446, AND 448, PG64-22 AND PG70-22, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT.

RECYCLED MATERIAL SHALL BE LIMITED TO WEARING COURSE MAXIMUM OF 10%, INTERMEDIATE MAXIMUM OF 20% AND BITUMINOUS BASE COURSE MAXIMUM OF 30% UNLESS OTHERWISE SPECIFIED IN THE CONTRACT.

GUTTERS SHALL BE SEALED WITH ASPHALT CONCRETE FOR A DISTANCE OF 4 INCHES FROM THE CURB. THE GUTTER SEAL SHALL BE APPLIED AT A UNIFORM RATE, WIDTH, AND WITHOUT EXCESS MATERIAL LEFT ON THE SURFACE. THE GUTTER SEAL SHALL BE APPLIED AT A TEMPERATURE BETWEEN 300-350 DEGREES FAHRENHEIT IMMEDIATELY UPON COMPLETION OF THE SURFACE COURSE. THE COST OF THE GUTTER SEAL SHALL BE INCLUDED IN THE UNIT BID PRICE PER SQUARE YARD FOR THE ASPHALT SURFACE COURSE.

ITEM 441 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG 70-22M, AS PER PLAN

THE COARSE VIRGIN AGGREGATE FOR THE ITEM SHALL CONSIST OF A BLEND OF 60% MIN. AIR COOLED BLAST FURNACE SLAG (ACBFS) OR TRAP ROCK FROM ONTARIO WITH LIMESTONE COMPRISING THE REMAINING PERCENTAGE.

IN ADDITION TO THE GUTTER SEALING REQUIREMENTS SPECIFIED ON SCD BP-3.1 AND IN 401.15, AFTER COMPLETION OF THE SURFACE COURSE, THE CONTRACTOR SHALL SEAL, WITH CERTIFIED PG BINDER, THE FOLLOWING LOCATIONS:

1. ALL CASTINGS INCLUDING BUT NOT LIMITED TO MONUMENTS, MANHOLES, WATER VALVES, CATCH BASINS.
2. BUTT JOINTS AND FEATHER JOINTS INCLUDING BRIDGE APPROACHES.
3. FORWARD JOINT FOR DRIVEWAY ASPHALT AND TRAILING JOINT WHEN BUTTING TO EXISTING ASPHALT DRIVE.
4. PERIMETER OF ALL PAVEMENT REPAIRS WHEN PAVEMENT REPAIRS ARE NOT OVERLAID WITH ASPHALT CONCRETE.
5. ALL LONGITUDINAL AND TRANSVERSE COLD JOINTS (SEALING SHALL OCCUR PRIOR TO THE PLACEMENT OF PERMANENT PAVEMENT MARKINGS).

THE MATERIAL USED SHALL BE HOT APPLIED CERTIFIED 702.01 PG BINDER. THE WIDTH OF THE SEALER SHALL BE 2 INCHES AS PER 401.15.

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR (441), AS PER PLAN

THE ENGINEER SHALL IDENTIFY AREAS REQUIRING PARTIAL DEPTH REPAIR PRIOR TO RESURFACING ON CONCRETE PAVEMENT AND AFTER INITIAL PAVEMENT PLANING IS COMPLETE ON COMPOSITE PAVEMENT. ALL APPLICABLE PROVISIONS OF ITEM 251, AS SET FORTH IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SHALL APPLY EXCEPT AS MODIFIED HEREIN.

251.02 REMOVAL OF EXISTING PAVEMENT: APPROVED REMOVAL METHODS SHALL SATISFACTORILY ESTABLISH A NEAT VERTICAL FACE ALONG THE ENTIRE PERIMETER OF THE REPAIR AREA IN ORDER TO SUBSEQUENTLY PERMIT THE PROPER PLACEMENT AND COMPACTION OF THE ASPHALT CONCRETE PATCHING MATERIAL. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, REMOVAL DEPTHS SHALL VARY FROM A ONE AND A HALF (1-1/2) INCH MINIMUM TO A THREE (3) INCH MAXIMUM.

PARTIALLY EMBEDDED STEEL MESH EXPOSED SHALL BE WIRE-BRUSHED OR OTHERWISE CLEANED TO REMOVE ALL LOOSE RUST. LOOSENED OR TOTALLY EXPOSED WIRE MESH REINFORCING SHALL BE CUT AND REMOVED AS REQUIRED WITHOUT DISPLACEMENT OR DISRUPTION TO THE REINFORCEMENT AND/OR PAVEMENT TO REMAIN.

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

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR (441), AS PER PLAN 100 SY

CALCULATED MKD CHECKED JTS

GENERAL NOTES

CUY-90-21.02

PAVEMENT (CONT.)

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

COMPOSITE PAVEMENT: AFTER THE EXISTING ASPHALT SURFACE HAS BEEN REMOVED BY THE PLANING OPERATION, THE ENGINEER WILL INSPECT THE CONDITION OF THE EXISTING BASE. ANY DEFECTIVE AREAS SHALL BE REMOVED AND REPLACED PER THE TYPICAL SECTIONS, AT THE DIRECTION OF THE ENGINEER, AFTER HIS/HER APPROVAL. ALL APPLICABLE PROVISIONS OF ITEM 255 AS SET FORTH IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL APPLY EXCEPT WHERE MODIFIED IN THESE GENERAL NOTES.

CONCRETE PAVEMENT: THE ENGINEER WILL INSPECT THE SURFACE OF ALL EXISTING CONCRETE PAVEMENT AND MARK AREAS FOR REPAIR. ANY DEFECTIVE AREAS SHALL BE REMOVED AND REPLACED PER THE TYPICAL SECTIONS, AT THE DIRECTION OF THE ENGINEER, AFTER HIS/HER APPROVAL. ALL APPLICABLE PROVISIONS OF ITEM 255 AS SET FORTH IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL APPLY EXCEPT WHERE MODIFIED IN THESE GENERAL NOTES.

255.02 - MATERIALS:
THE CONCRETE USED FOR THE RIGID REPLACEMENT ALONG MLK JR. DRIVE SHALL BE AS PER THE SPECIFICATIONS FOUND IN THESE PLANS. AGGREGATE BASE PAID FOR UNDER ITEM 255 SHALL MEET THE REQUIREMENTS SET FORTH IN CMS 304 AND NOTES FOUND IN THESE PLANS.

255.04 - CORRECTION OF DISTURBED SUBBASE AND SUBGRADE:
SUITABLE SUBBASE DISTURBED IN AREAS WHERE CONCRETE PAVEMENT IS REMOVED SHALL BE SHAPED AND RECOMPACTED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST. UNSUITABLE SUBBASE, AS DETERMINED BY THE ENGINEER, SHALL BE REMOVED AND REPLACED WITH ITEM 304 AGGREGATE BASE, AS PER PLAN TO THE DEPTH OF ADJACENT SUBBASE SIX (6) INCHES MINIMUM. WHERE UNSUITABLE SUBGRADE MATERIAL IS ENCOUNTERED, IT SHALL BE REMOVED TO THE DEPTH DETERMINED BY THE ENGINEER, AND REPLACED IN THE FOUR (4) INCH LIFTS (LOOSE DEPTH). NO ADDITIONAL PAYMENT WILL BE MADE FOR ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN.

MECHANICALLY COMPACTED LAYERS:
SUITABLE EMBANKMENT MATERIAL (204.02) REQUIRED TO REPLACE THE UNDERCUT SUBGRADE SHALL, TO THE EXTENT POSSIBLE, EXHIBIT THE SAME PHYSICAL PROPERTIES AS THE ADJACENT SOUND SUBGRADE MATERIALS. HOWEVER, USE OF GRANULATED SLAG, IN ANY FORM, IS NOT PERMITTED. GRANULAR EMBANKMENT MATERIAL SHALL BE LIMITED TO CRUSHED CARBONATE STONE. ALL EXPOSED OR RECONSTRUCTED SUBGRADE SOILS SHALL BE COMPACTED TO THE SATISFACTION OF THE ENGINEER. REMOVAL AND DISPOSAL OF THE UNSUITABLE SUBBASE OR SUBGRADE MATERIAL SHALL BE CONSIDERED INCIDENTAL TO ITEM 255 AND NO SEPARATE PAYMENT WILL BE MADE.

255.09 - METHOD OF MEASUREMENT:
UNSUITABLE SUBGRADE SHALL BE REMOVED AND REPLACED IN ACCORDANCE WITH ITEM 204 - EXCAVATION OF SUBGRADE, AS PER PLAN. THE REPLACEMENT MATERIAL FOR UNSUITABLE SUBBASE SHALL BE FURNISHED, IN ACCORDANCE WITH ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN. NO ADDITIONAL PAYMENT WILL BE MADE FOR ITEM 304 OR ITEM 204 AND WILL BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR ITEM 255.

255.10 - BASIS OF PAYMENT:
PAYMENT FOR ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, AS PER PLAN IS FULL COMPENSATION FOR FURNISHING ALL MATERIALS AND LABOR PER 255.10 AND SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO FULL DEPTH PAVEMENT SAWING, PAVEMENT REMOVAL INCLUDING CONCRETE AND BRICK BASE, SUBBASE/SUBGRADE CORRECTION AND/OR REMOVAL, AS NECESSARY, PLACEMENT OF NEW 304 AGGREGATE BASE, AS NECESSARY, FURNISHING AND PLACING DOWELS, TIE BARS, MESH AND CONCRETE FOR BOTH ITEM 255 AND ITEM 305 CONCRETE BASE TO REPLACE BRICK BASE AS REQUIRED.

THE FOLLOWING CONTINGENCY ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER. PAYMENT FOR ACTUALLY COMPLETED AND ACCEPTED QUANTITIES SHALL BE MADE AT THE CONTRACT UNIT BID PRICE FOR:

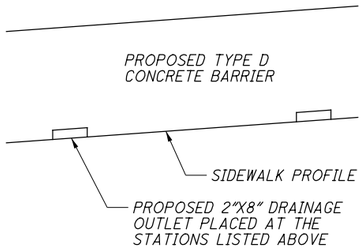
ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC1, AS PER PLAN 500 SY

ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS SET FORTH IN THE OHIO DEPARTMENT OF TRANSPORTATION'S CONSTRUCTION AND MATERIALS SPECIFICATIONS MANUAL FOR ITEM 622 AND STANDARD CONSTRUCTION DRAWING RM-4.5, ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN SHALL BE MODIFIED IN HEIGHT AND TO PROVIDE SIDEWALK DRAINAGE. THE TYPE D CONCRETE BARRIER WILL BE BUILT TO A FULL HEIGHT OF 32" FROM THE PROPOSED ROADWAY SURFACE AND WILL BE ADJACENT TO THE PROPOSED ROADWAY ON THE WEST SIDE OF MLK JR. DRIVE FROM STATION 5+13 TO STATION 7+70. TO ACCOMMODATE SIDEWALK DRAINAGE, 2"X8" OUTLET HOLES WILL BE PLACED IN THE CONCRETE BARRIER WHICH WILL ALLOW STORM WATER RUNOFF TO EXIT THE SIDEWALK AND ENTER THE ROADWAY WHERE IT WILL DRAIN TO THE NEAREST CATCH BASIN.

ON THE WEST SIDE OF MLK JR. DRIVE, 2"X8" DRAINAGE OUTLETS WILL BE PLACED AT THE FOLLOWING STATIONS:
5+33, 5+50, 5+70, 5+90, 6+10, 6+30, 6+50, 6+70, 6+90, 7+10, 7+30 AND 7+50.

BARRIER HEIGHT SHALL TRANSITION FROM FLUSH WITH THE CURB TO FULL HEIGHT FROM STA. 5+13 TO STA. 5+28. BARRIER SHALL BE FULL HEIGHT FROM STA. 5+28 TO STA. 7+55. BARRIER HEIGHT SHALL TRANSITION FROM FULL HEIGHT TO FLUSH WITH CURB FROM STA. 7+55 TO STA. 7+70.



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

IN ADDITION TO THE REQUIREMENTS SET FORTH IN 254.05 THE FOLLOWING REQUIREMENTS SHALL BE MET WHILE PERFORMING PAVEMENT PLANING AND PREPARING THE EXISTING ROADWAY BASE FOR THE INSTALLATION OF ASPHALT WEARING COURSES.

ALONG MLK JR. DRIVE IT IS EXPECTED THAT THE THICKNESS OF THE PAVEMENT PLANING WILL VARY ALONG THE CORRIDOR TO ESTABLISH THE PROPOSED LONGITUDINAL PROFILE AND PROPOSED CROSS-SLOPES SHOWN ON THE PLAN AND PROFILE SHEETS AND PAVEMENT ELEVATION TABLE. IT IS EXPECTED THAT IN SOME AREAS PAVEMENT PLANING WILL INCLUDE AREAS OF CONCRETE BASE TO ESTABLISH THE PROPOSED DESIGN. TO PROVIDE FLEXIBILITY WITH THE PAVEMENT PLANING OPERATIONS QUANTITIES FOR AN ASPHALT LEVELING COURSE, ITEM 441 - ASPHALT CONCRETE, MISC.: ASPHALT LEVELING COURSE, TYPE 1, (448) HAVE BEEN INCLUDED WITH THE PAVEMENT CALCULATIONS TO ASSIST IN MEETING THE PROPOSED DESIGN.

ALONG THE WB EXIT RAMP, THE CONTRACTOR SHALL REMOVE THE ENTIRE EXISTING WEARING COURSE AND EXPOSE THE CONCRETE BASE. THE PROPOSED ASPHALT WEARING COURSE WILL FOLLOW THE EXISTING LONGITUDINAL PROFILE AND CROSS-SLOPE OF THE EXISTING CONCRETE BASE.

ITEM 441 - ASPHALT CONCRETE, MISC.: ASPHALT TRAIL

THE CONTRACTOR UNDER THIS SECTION OF THE SPECIFICATIONS SHALL CONSTRUCT ASPHALT TRAIL RESTORATION OR EXTENSION AT THE LOCATIONS SPECIFIED IN THE PLANS. THIS INCLUDES THE RESTORATION OF ALL ADJACENT SURFACES WHICH ARE DISTURBED BY THIS CONSTRUCTION AND NOT SCHEDULED TO BE RESTORED UNDER A SEPARATE ITEM OF PAYMENT.

THE ASPHALT USED SHALL MEET THE REQUIREMENTS OF ITEM 441 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG 70-22M, AS PER PLAN. THE NEW TRAIL PAVEMENT SECTION SHALL BE THE SAME THICKNESS AS THE EXISTING TRAIL SECTION WITH A MINIMUM THICKNESS OF 6". ALL ASPHALT FOR ITEM 441 - ASPHALT CONCRETE MISC.: ASPHALT TRAIL WILL HAVE A MINIMUM 2" COMPACTED LIMESTONE SCREENINGS INSTALLED AS PART OF THE SUBBASE BELOW THE ASPHALT. NO ADDITIONAL PAYMENT SHALL BE MADE FOR THIS SUBBASE SPECIFICATION.

AT LOCATIONS OF EXISTING TRAIL TO REMAIN, SAW CUTTING SHALL BE ACCOMPLISHED BY USING A SUITABLE CONCRETE POWER SAW WHICH WILL PRODUCE A STRAIGHT AND SMOOTH FINISH ALONG THE SAWED EDGE. THE DEPTH OF CUTTING OR SCORING SHALL BE SUCH THAT NO DAMAGE WILL RESULT TO THE REMAINING PORTION OF THE TRAIL AFTER REMOVAL OF THE DESIGNATED SECTION.

THE LOCATION OF ALL SAW CUTS SHALL BE DETERMINED BY THE ENGINEER. ANY DAMAGE TO THE PORTION OF THE TRAIL NOT DESIGNATED FOR REMOVAL SHALL BE REPLACED AT NO EXPENSE TO THE PROJECT.

LANDSCAPING

ITEM 666 - PRUNING EXISTING TREE, 8 TO 16-INCH DIAMETER, AS PER PLAN
ITEM 666 - PRUNING EXISTING TREE, 16 TO 24-INCH DIAMETER, AS PER PLAN
ITEM 666 - PRUNING EXISTING TREE, 24 TO 36-INCH DIAMETER, AS PER PLAN

AT VARIOUS LOCATIONS WITHIN THE PROJECT AREA EXISTING TREE LIMBS ARE ENCROACHING INTO THE EXISTING ROADWAY CLEARANCE ENVELOPE AND SHALL BE PRUNED TO INCREASE VISIBILITY. TREES ARE NOT SPECIFICALLY MARKED ON THE PLANS FOR PRUNING AND LOCATIONS SHALL BE DETERMINED BY THE ENGINEER.

CARE SHALL BE TAKEN WHILE PRUNING AND CUTS SHALL BE MADE SO THAT ONLY BRANCH WOOD IS REMOVED AND THE TRUNK OR SUPPORTING STEM IS NOT INJURED.

ALL PRUNING SHALL BE COMPLETED IN CONJUNCTION WITH ALL ENVIRONMENTAL COMMITMENTS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 666 - PRUNING EXISTING TREE, 8 TO 16-INCH DIAMETER, AS PER PLAN 8 EACH
ITEM 666 - PRUNING EXISTING TREE, 16 TO 24-INCH DIAMETER, AS PER PLAN 6 EACH
ITEM 666 - PRUNING EXISTING TREE, 24 TO 36-INCH DIAMETER, AS PER PLAN 4 EACH

ENVIRONMENTAL

ENVIRONMENTAL COMMITMENTS

WITH REGARDS TO SECTION 4(F) COMMITMENTS, THE FOLLOWING WILL BE IMPLEMENTED AS PART OF THE THIS PROJECT:

1. THE PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NORTHERN LONG-EARED BAT. NO TREES SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THESE SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT. FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK THREE INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

2. THIS PROJECT IS LOCATED WITHIN THE MIGRATION RANGE OF THE FEDERALLY ENDANGERED KIRTLAND'S WARBLER. NO TREES AND WOODY VEGETATION GREATER THAN 3 FEET IN HEIGHT SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 22 THROUGH JUNE 1 AND FROM AUGUST 15 THROUGH OCTOBER 15. ALL NECESSARY VEGETATION REMOVAL SHALL OCCUR FROM OCTOBER 16 THROUGH APRIL 21 AND FROM JUNE 2 THROUGH AUGUST 14. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THE KIRTLAND'S WARBLER AS REQUIRED BY THE ENDANGERED SPECIES ACT.

ENVIRONMENTAL COMMITMENTS (CONT.)

IF THE SPECIES IS ENCOUNTERED WITHIN THE CONSTRUCTION LIMITS DURING CONSTRUCTION OPERATIONS, ALL CONSTRUCTION OPERATIONS WILL CEASE IMMEDIATELY, AND THE PROJECT ENGINEER SHALL IMMEDIATELY CONTACT THE ODOT-OES AT 614-466-7100, WHO WILL IMMEDIATELY CONTACT THE USFWS COLUMBUS FIELD OFFICE. CONSTRUCTION ACTIVITIES SHALL NOT RESUME UNTIL THIS ADDITIONAL COORDINATION/CONSULTATION WITH USFWS IS CONCLUDED.

3. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ROCKEFELLER PARK, GORDON PARK, AND LAKEFRONT RESERVATION AT ALL TIMES DURING CONSTRUCTION ACTIVITIES.

4. THE CONTRACTOR SHALL MAINTAIN PUBLIC BICYCLE AND PEDESTRIAN ACCESS TO THE HARRISON DILLARD BIKEWAY AND LAKEFRONT BIKEWAY AT ALL TIMES DURING CONSTRUCTION ACTIVITIES.

5. THE CONTRACTOR SHALL NOT STAGE OR STORE ANY CONSTRUCTION EQUIPMENT WITHIN THE ROCKEFELLER PARK, GORDON PARK, OR LAKEFRONT RESERVATION BOUNDARIES OUTSIDE OF THE PROPOSED CONSTRUCTION LIMITS.

6. THE CONTRACTOR SHALL INSTALL TEMPORARY CONSTRUCTION FENCING ALONG THE CONSTRUCTION LIMITS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES TO PROTECT ROCKEFELLER PARK, GORDON PARK, LAKEFRONT RESERVATION, AND THE PUBLIC.

7. THE CONTRACTOR SHALL INSTALL APPROPRIATE SIGNAGE TO ALERT ROCKEFELLER PARK, GORDON PARK, AND LAKEFRONT RESERVATION USERS TO THE CONSTRUCTION ACTIVITIES.

8. THE CONTRACTOR SHALL INSTALL APPROPRIATE SIGNAGE TO ALERT USERS OF THE TEMPORARY CLOSURE OF THE HARRISON DILLARD BIKEWAY, IN ORDER TO DIRECT USERS TO THE BIKEWAY DETOUR.

9. THE CONTRACTOR SHALL COORDINATE THE PROJECT SCHEDULE WITH THE CITY OF CLEVELAND DEPARTMENT OF PUBLIC WORKS AND CLEVELAND METROPARKS.

10. THE CONTRACTOR SHALL FULLY RESTORE ANY LAND DISTURBED AT ROCKEFELLER PARK, GORDON PARK, AND HARRISON DILLARD BIKEWAY TO A CONDITION, WHICH IS AT LEAST AS GOOD AS THAT WHICH EXISTED PRIOR TO THE PROJECT.

11. THE CONTRACTOR SHALL MODIFY ALL PHASES/ASPECTS OF THE PROJECT (E.G., TEMPORARY WORK AREAS, ALIGNMENTS) TO AVOID TREE REMOVAL IN EXCESS OF WHAT IS REQUIRED TO IMPLEMENT THE PROJECT SAFELY.

12. THE CONTRACTOR SHALL LIMIT TREE REMOVAL TO THAT SPECIFIED IN PROJECT PLANS BY CLEARLY MARKING CLEARING LIMITS. CLEARING LIMITS SHALL BE APPROVED BY THE ENGINEER PRIOR TO WORK BEGINNING.

CALCULATED MKD CHECKED JTS

GENERAL NOTES

CUY-90-21.02

ITEM 614 - MAINTAINING TRAFFIC

THE CONTRACTOR SHALL MAINTAIN SAFE AND SATISFACTORY ACCESS TO ABUTTING PROPERTY. THE CONTRACTOR SHALL MAINTAIN ADEQUATE PEDESTRIAN WALKS AT ALL INTERSECTIONS, INCLUDING ASPHALT CONCRETE WALKS, WHERE DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL DIVERT TRAFFIC FROM NORMAL CHANNELS BY PLASTIC DRUMS, (FLASHING ARROW BOARDS COMPLYING WITH SS821,) AND TRAFFIC SIGNS AND WORK ZONE PAVEMENT MARKINGS, AS SHOWN ON SHEETS 18 - 24.

ALL CONSTRUCTION TRAFFIC CONTROL DEVICES USED FOR THIS PROJECT SHALL CONFORM TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, AND SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR, EXCEPT AS NOTED BELOW.

THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY SAFEGUARDS, SUCH AS TYPE III BARRICADES, LIGHTING, FLAGGERS, AND SUCH OTHER TRAFFIC CONTROL DEVICES AS PROVIDED IN ITEM 614, MAINTAINING TRAFFIC, SO AS TO AVOID DAMAGE AND/OR INJURY TO VEHICLES AND PERSONS USING THE ROADWAY DURING CONSTRUCTION.

EXISTING TRAFFIC CONTROL DEVICES (SIGNS AND/OR TRAFFIC SIGNALS), LOCATED WITHIN THE WORK AREA, WHICH ARE REQUIRED FOR INTERIM OR PERMANENT TRAFFIC CONTROL, SHALL BE RELOCATED TO POINTS APPROVED BY THE ENGINEER. APPROPRIATE TRAFFIC CONTROL DEVICES SHALL BE MAINTAINED, IN COMPLIANCE WITH THE MANUAL, AT ALL TIMES WHILE TRAFFIC IS MAINTAINED. THE COST OF RELOCATION, IF REQUIRED, SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC.

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

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR 614 - MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

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

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

WINTER TRAFFIC LIMITATION

ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC BETWEEN NOVEMBER 15 AND APRIL 15. NOVEMBER 15 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND LIQUIDATED DAMAGES SHALL BE ASSESSED FOR EACH CALENDAR DAY BEYOND NOVEMBER 15 OR PRIOR TO APRIL 15 THAT ALL LANES ARE NOT OPEN AND AVAILABLE TO TRAFFIC.

NOTIFICATION

THE CONTRACTOR SHALL NOTIFY IN WRITING THE FOLLOWING AGENCIES AT LEAST TWO (2) WEEKS PRIOR TO THE START OF CONSTRUCTION, AND AT LEAST 72 HOURS BEFORE IMPLEMENTING ANY SUBSTANTIAL CHANGE IN TRAFFIC PATTERN OR CLOSING ANY STREET TO TRAFFIC:

THE OHIO DEPARTMENT OF TRANSPORTATION - DISTRICT 12 - PUBLIC INFORMATION OFFICE (216) 581-2100

THE GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY
DEPARTMENT OF SERVICE QUALITY (216) 566-5135
DIVISION OF SERVICE MANAGEMENT (216) 356-3018
DIVISION OF ENGINEERING (216) 356-3270

THE CITY OF CLEVELAND: DIVISION OF ENGINEERING AND CONSTRUCTION
DIVISION OF STREETS (216) 664-2510
DIVISION OF TRAFFIC ENGINEERING (216) 664-3195

THE CITY OF CLEVELAND: DIVISION OF PUBLIC SAFETY
DIVISION OF EMERGENCY MEDICAL SERVICE (EMS) (216) 664-2555
DIVISION OF FIRE (216) 664-6800
DIVISION OF POLICE (216) 623-5000

CLEVELAND METROPOLITAN SCHOOL DISTRICT (216) 838-0000

CLEVELAND METROPARKS
JOHN KILGORE (216) 635-3251

CONSTRUCTION TRAFFIC

ALL CONSTRUCTION TRAFFIC SHALL USE ACCEPTABLE TRUCK ROUTES TO ACCESS THE CONSTRUCTION AREA. USE OF LOCAL RESIDENTIAL STREETS IS STRICTLY PROHIBITED UNLESS ALLOWED IN WRITING BY THE LOCAL ENFORCEMENT AUTHORITY.

CONSTRUCTION WARNING SIGNS

IMMEDIATELY PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL INSTALL THE CONSTRUCTION WARNING SIGNS.

AS A MINIMUM, G20-1 SIGNS FACING TRAFFIC ENTERING THE PROJECT, AND G20-2 SIGNS FACING TRAFFIC LEAVING THE PROJECT, SHALL BE PLACED AS SHOWN IN THE MANUAL. ADDITIONAL G20-1 SIGNS SHALL BE PLACED AFTER EACH MAJOR INTERSECTION, IN BOTH DIRECTIONS, AND AFTER EACH SUSPENSION AND RESUMPTION OF WORK.

ADDITIONALLY, A W20-1 SIGN SHALL BE PLACED ON EACH INTERSECTING STREET A MINIMUM OF 200 FEET IN ADVANCE OF THE PROJECT, AND ON THE APPROACHES TO THE PROJECT A MINIMUM OF 500 FEET IN ADVANCE OF THE WORK LIMITS. G20-2 SIGNS SHALL ALSO BE INSTALLED ON EACH MAJOR INTERSECTING STREET, FACING TRAFFIC LEAVING THE PROJECT, A MINIMUM OF 200 FEET FROM THE PROJECT.

THE TRAFFIC CONTROL DEVICES SHOWN ON MT-97.10 AND MT-97.11 (MT-95.31 AND MT-95.32) SHALL BE IN ADDITION TO THOSE INDICATED ABOVE. IF DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL ALSO INSTALL W8-11 "UNEVEN LANES", W8-7 "LOOSE GRAVEL," AND/OR W21-2 "FRESH OIL/TAR" SIGNS.

FLUORESCENT ORANGE TYPE G SIGN SHEETING SHALL BE USED FOR ALL DETOUR AND CONSTRUCTION WARNING SIGNS.

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE

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

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

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

DURING A TRAFFIC SIGNAL INSTALLATION 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).

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

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP). IN GENERAL, LEOS SHOULD BE POSITIONED AT THE POINT OF LANE RESTRICTION OR ROAD CLOSURE AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH INTERSECTIONS IN WORK ZONES.

WHEN CONSTRUCTION VEHICLES ARE ENTERING/EXITING THE ZONE DIRECTLY FROM/INTO AN OPEN LANE OF TRAFFIC. IF A LANE HAS BEEN CLOSED TO PROVIDE AN ACCELERATION/DECELERATION LANE FOR THE VEHICLE, THE LEO WILL NOT BE REQUIRED.

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

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

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

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

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 120 HOUR

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

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

TEMPORARY RAMPING OF VERTICAL SURFACES

IN ORDER TO PROVIDE FOR LOCAL ACCESS, LONGITUDINAL VERTICAL FACES ABUTTING DRIVES SHALL BE TEMPORARILY RAMPED. TRANSVERSE VERTICAL FACES SHALL BE TEMPORARILY RAMPED A MINIMUM OF TEN (10) FEET IN LENGTH AND TRAFFIC SHALL BE WARNED WITH W8-1 "BUMP" SIGNS IN ADVANCE OF THE RAMPED AREAS. ALL CASTINGS ENCOUNTERED SHALL BE SET TO GRADE AND PAID FOR UNDER VARIOUS ITEMS DESCRIBED ELSEWHERE IN THE GENERAL NOTES OR SPECIFICATIONS. THE CASTING ELEVATION DIFFERENTIAL SHALL NOT BE GREATER THAN ONE (1) INCH WHEN EXPOSED TO TRAFFIC.

ALL TEMPORARY RAMPING SHALL BE INSTALLED, AT THE DIRECTION OF THE ENGINEER, USING ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC.

OVERNIGHT TRENCH CLOSING

THE BASE WIDENING SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 12 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.

CALCULATED KJM
CHECKED JTS

MAINTENANCE OF TRAFFIC NOTES

CUY-90-21.02

CONSTRUCTION SEQUENCE

WORK SHALL BE PERFORMED IN 4 PHASES

TRAFFIC SIGNAL CONSTRUCTION:

TRAFFIC SIGNAL CONSTRUCTION MAY BEGIN IN PHASE 1, 2 OR 3 AS DETERMINED APPROPRIATE BY THE CONTRACTOR.

PHASE 1

MLK JR. DRIVE:

WORK TO BE PERFORMED:

1. REMOVAL OF EXISTING TRAFFIC ISLANDS ALONG MLK JR. DRIVE.
2. NEW CONCRETE BASE AND TEMPORARY WEARING COURSE SHALL BE INSTALLED IN PLACE OF THE EXISTING ISLANDS.
3. PROPOSED TRAFFIC ISLAND AT THE MLK JR. DRIVE/ WESTBOUND EXIT RAMP INTERSECTION SHALL BE CONSTRUCTED.

TRAFFIC MAINTENANCE:

EXISTING TRAFFIC FLOW PATTERNS SHALL BE MAINTAINED THROUGHOUT THIS PHASE OF CONSTRUCTION THROUGH THE REDUCTION OF TRAVEL LANE WIDTH.

PHASE 2

WORK TO BE PERFORMED:

MLK JR. DRIVE:

1. WESTERLY CURB SHALL BE RELOCATED AND CONSTRUCTED ALONG THE MLK JR. DRIVE FOR THE ENTIRETY OF THE PROJECT.

2. RECONSTRUCT THE EASTERLY CURB LINE FROM THE EASTBOUND ENTRANCE RAMP TO THE WESTBOUND ENTRANCE RAMP.

3. MAINTAIN PEDESTRIAN ACCESS ALONG MLK JR. DRIVE THROUGHOUT THIS PHASE WITH THE USE OF PORTABLE CONCRETE BARRIERS AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS.

TRAFFIC MAINTENANCE:

EXISTING TRAFFIC FLOW PATTERNS SHALL BE MAINTAINED THROUGHOUT THIS PHASE OF CONSTRUCTION THROUGH THE REDUCTION OF TRAVEL LANE WIDTH AND BY SHIFTING THE TRAVEL LANES TO THE EAST. THIS WILL ACCOMMODATE THE RELOCATION AND CONSTRUCTION OF THE WESTERLY CURB LINE.

PHASE 3

WORK TO BE PERFORMED:

MLK JR. DRIVE:

1. CONSTRUCT THE EASTERLY CURB LINE FROM THE BEGINNING OF THE PROJECT TO THE EASTBOUND ENTRANCE RAMP.

2. CONSTRUCT THE PROPOSED TRAFFIC ISLAND AT THE EASTBOUND ENTRANCE RAMP INTERSECTION.

EASTBOUND ENTRANCE RAMP:

1. THE ENTRANCE RAMP WILL BE WIDENED APPROXIMATELY 8' TO ACCOMMODATE TWO RECEIVING LANES FROM MLK JR. DRIVE. PAVEMENT REPAIRS WILL BE MADE TO THE SOUTH SIDE OF THE EXISTING CONCRETE PAVEMENT.

WESTBOUND EXIT RAMP:

1. THE WESTBOUND EXIT RAMP WILL BE WIDENED APPROXIMATELY 8' TO ACCOMMODATE AN ADDITIONAL TURN LANE.

TRAFFIC MAINTENANCE:

MLK JR. DRIVE:

ONE THROUGH LANE TRAVELING NORTH AT THE BEGINNING OF THE PROJECT TO THE EASTBOUND ENTRANCE RAMP SHALL REMAIN OPEN. EXISTING TRAVEL PATTERNS SHALL REMAIN TO THE NORTH.

EASTBOUND ENTRANCE RAMP:

THE EASTBOUND ENTRANCE RAMP SHALL BE ACCESSIBLE AT ALL TIMES. THE TRAFFIC ISLAND SHALL BE CONSTRUCTED IN TWO PHASES AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS FOR TRAFFIC ACCESSIBILITY FROM THE NORTH AND SOUTH.

WESTBOUND ENTRANCE RAMP:

THE WESTBOUND EXIT RAMP SHALL BE ACCESSIBLE AT ALL TIMES ALLOWING FOR ONE LANE OF TRAFFIC EXITING I-90.

PHASE 4

ALL ENTRANCE AND EXIT RAMPS SHALL BE CLOSED TO ALLOW FOR RESURFACING AND/OR PAVEMENT REPAIRS. ALL TRAFFIC SHALL FOLLOW THE DETOURS AS OUTLINED IN THE NOTES. A FINAL ASPHALT SURFACE COURSE SHALL BE PLACED ON MLK JR. DRIVE ALONG WITH ALL TRAFFIC CONTROL ITEMS. THE TRAFFIC SIGNALS SHALL BE ACTIVATED. ALL DETOUR SIGNAGE MUST BE POSTED CONFORMING TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS. DETOUR SIGNAGE IS TO BE PAID UNDER ITEM 614 - MAINTAINING TRAFFIC.

DETOUR ROUTES:

EASTBOUND EXIT RAMP:

EXISTING EASTBOUND TRAFFIC EXITING AT MLK JR. DRIVE SHALL EXIT AT THE E. 72ND STREET RAMP AND HEAD SOUTH TO ST. CLAIR AVENUE. MLK JR. DRIVE IS ACCESSIBLE BY HEADING EAST ON ST. CLAIR AVENUE.

EASTBOUND ENTRANCE RAMP:

TRAFFIC ENTERING I-90 HEADING EAST SHALL TAKE MLK JR. DRIVE TO THE SOUTH AND TURN WEST ON ST. CLAIR AVENUE AND THEN NORTH ON E. 72ND STREET WHERE THERE IS AN ALTERNATIVE RAMP.

WESTBOUND EXIT RAMP

EXISTING WESTBOUND TRAFFIC EXITING AT MLK JR. DRIVE SHALL EXIT AT E. 72ND STREET AND HEAD NORTH TO N. MARGINAL ROAD. MLK JR. DRIVE IS ACCESSIBLE BY HEADING EAST ON N. MARGINAL ROAD.

WESTBOUND ENTRANCE RAMP

TRAFFIC SHALL TURN ONTO N. MARGINAL ROAD HEADING WEST FROM MLK JR. DRIVE AND PROCEED TO E. 72ND STREET WHERE THERE IS AN ALTERNATIVE RAMP.

NOTICE OF CLOSURE SIGN

NOTICE OF CLOSURE SIGNS (W20-H13) SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD OR RAMP CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW. [AT THE APPROVAL OF THE ENGINEER, PORTABLE CHANGEABLE MESSAGE SIGNS MAY BE USED IN LIEU OF THE STANDARD FLATSHEET SIGN FOR CLOSURE DURATIONS OF LESS THAN 1 WEEK.]

THE SIGNS SHALL BE ERECTED ON THE RIGHT- HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE. THE SIGNS MAY BE ERECTED ANYWHERE ON RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

ITEM	DURATION OF CLOSURE	SIGN DISPLAYED PRIOR TO CLOSURE
RAMP &	>= 2 WEEKS	14 CALENDAR DAYS
ROAD	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAYS
CLOSURES	< 12 HOURS	2 BUSINESS DAYS

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-H13 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION. THIS IS TO BE A SPECIFIC OFFICE WITHIN THE DISTRICT RATHER THAN THE GENERAL SWITCHBOARD NUMBER.

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER 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 TO INFORM THE SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD 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, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
RAMP &	>= 2 WEEKS	21 CALENDAR DAYS
ROAD	> 12 HOURS & < 2 WEEKS	14 CALENDAR DAYS
CLOSURES	< 12 HOURS	4 BUSINESS DAYS

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN, ON SITE, FOR THE DURATION OF THE PROJECT. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR (OFFICE OF MATERIALS MANAGEMENT). THE APPROVED LIST OF PORTABLE CHANGEABLE MESSAGE SIGNS CAN BE FOUND ON THE ODOT WEBSITE BY CLICKING ON THE SERVICES MENU, THEN CLICKING ON MATERIALS MANAGEMENT. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 650 FT. AND 475 FT., 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.

THE PROBABLE PCMS LOCATIONS AND WORK LIMITS FOR THOSE LOCATIONS ARE GIVEN BELOW. 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.

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. THE PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

CALCULATED KJM CHECKED JTS

MAINTENANCE OF TRAFFIC NOTES

CUY-90-21.02

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN (CONT.)

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

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF CMS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE FROM 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. FOR THE PURPOSE OF THIS NOTE, WEEKEND SHALL BE DEFINED AS 7PM FRIDAY TO 5AM MONDAY.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK. THE CONTRACTOR SHALL ONLY BE PAID FOR PCMS UNITS WHEN THEY ARE IN OPERATION ON THE PROJECT AS SPECIFIED IN THE PLANS OR BY THE ENGINEER.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN **6 SNMT**

CLOSURE	PCMS LOCATION	DURATION
EB ENTRANCE	MLK NB AT SOUTHERN PROJECT LIMITS	WEEKENDS ONLY
	MLK SB AT NORTHERN PROJECT LIMITS	WEEKENDS ONLY
EB EXIT	I-90 EB PRIOR TO E. 72ND EXIT	WEEKENDS ONLY
WB ENTRANCE	MLK NB SOUTH OF I-90 EB RAMPS	WEEKENDS ONLY
WB EXIT	I-90 WB PRIOR TO EDDY EXIT	WEEKENDS ONLY

ITEM 614 - LED LIGHTS ON ADVANCED WARNING SIGNS

WATCH FOR STOPPED TRAFFIC SIGNS (48" DIAMOND), WITH AN "EXIT" PLAQUE MOUNTED BELOW, SHALL BE PLACED BEFORE LANE CLOSURES BEGIN AT THE LOCATIONS LISTED BELOW. THESE SIGNS SHALL HAVE 8 BLINKING LED LIGHTS IN THE BORDER OF EACH SIGN. THEY SHALL CONFORM TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) SECTION 2A.07. THE LED LIGHTS SHALL BE WHITE, YELLOW OR ORANGE, BUT MUST ALL BE THE SAME ON ALL SIGNS.

THE LED SHALL BE SOLAR POWERED WITH A BATTERY. THE SIGNS SHALL BE MOUNTED PER THE MANUFACTURER'S RECOMMENDATIONS AND THE OMUTCD. THE FLASHING LED LIGHTS WILL RUN CONTINUOUSLY WHEN THE SIGNS ARE POSTED.

APPROXIMATE LOCATIONS TO BE FINALIZED BY THE PROJECT ENGINEER.

1. I-90 WEST APPROXIMATELY 1500' EAST OF THE MLK EXIT RAMP.

2. I-90 EAST APPROXIMATELY 1500' WEST OF THE MLK EXIT RAMP.

ALL COSTS ASSOCIATED WITH THE 2 (TWO) LED WATCH FOR STOPPED TRAFFIC SIGNS AND "EXIT" PLAQUES SHALL BE INCLUDED IN THE LUMP SUM PAYMENT FOR ITEM 614 MAINTAINING TRAFFIC.

PHASED CONSTRUCTION

ALL WORK IN A GIVEN PHASE, INCLUDING SUCH ITEMS AS BASE REPAIR, ASPHALT CONCRETE COURSES, ADJUSTMENT OF CASTINGS, SIDEWALKS, DRIVEWAY REPAIRS, GUARDRAIL, AND TRAFFIC SIGNS AND SIGNALS SHALL BE COMPLETED PRIOR TO BEGINNING THE NEXT PHASE, WITH THE EXCEPTION OF THE ITEM 448 SURFACE COURSE, FINAL PAVEMENT MARKINGS, AND ANY SIGNS OR SIGNALS WHICH CONFLICT WITH THE MAINTENANCE OF TRAFFIC PLANS.

AT THE END OF THE LAST PHASE (IN ANY CONSTRUCTION SECTION), THE 407 TACK COAT FOR INTERMEDIATE COURSE AND THE 448 SURFACE COURSE SHALL BE INSTALLED ACROSS THE ENTIRE PAVEMENT WIDTH, AND LANDSCAPING, FINAL PAVEMENT MARKINGS, AND THE BALANCE OF THE SIGNS AND SIGNALS SHALL BE INSTALLED. DURING THIS PHASE, TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING MT-95.31, MT-95.32, MT-97.10, OR MT- 97.11, AS APPROPRIATE.

COOPERATION BETWEEN CONTRACTORS

THE CONTRACTOR SHOULD BE AWARE THAT ANOTHER CONTRACTOR MAY BE WORKING WITHIN THE PROJECT LIMITS OR WORK LIMITS OF THIS PROJECT, OR ON AN ADJACENT SECTION. THE PROVISIONS OF 105.08 WILL APPLY TO THIS CONTRACT.

LANE CLOSURE AND LANE REDUCTION

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

CLOSURE	MAXIMUM PERMITTED TOTAL CLOSURE DURATION
EB ENTRANCE	PERMITTED FROM 8 PM TO 5 AM FOR A MAXIMUM OF 4 SEPARATE TIMES USING AN APPROVED DETOUR
EB EXIT	PERMITTED FROM 8 PM TO 5 AM FOR A MAXIMUM OF 4 SEPARATE TIMES USING AN APPROVED DETOUR
WB ENTRANCE	PERMITTED FROM 8 PM TO 5 AM FOR A MAXIMUM OF 4 SEPARATE TIMES USING AN APPROVED DETOUR
WB EXIT	PERMITTED FROM 8 PM TO 5 AM FOR A MAXIMUM OF 4 SEPARATE TIMES USING AN APPROVED DETOUR
MLK JR. DRIVE	PER DETAILED PLANS ONLY

PERMITTED LANE CLOSURES FOR MAINLINE LANES (I-90)

ALL LANE CLOSURES MAY ONLY BE IMPLEMENTED AT THE TIMES PERMITTED BY THE "DISTRICT 12 PERMITTED LANE CLOSURE TIMES" LIST, WHICH IS LOCATED ON THE ODOT WEBSITE:

HTTP://WWW.DOT.STATE.OH.US/DISTRICTS/D12/HIGHWAYMANAGEMENT/PAGES/PERMITTEDLANECLOSURES.ASPX

THE LATEST REVISION, AT 14 DAYS PRIOR TO THE BID DATE, SHALL BE IN EFFECT FOR THIS PROJECT.

NO LANE OR SHOULDER CLOSURES SHALL BE IN PLACE WHEN NO WORK IS BEING PERFORMED, UNLESS DIRECTED BY THE ENGINEER. SHOULD CLOSURES SHALL ONLY BE ALLOWED AT THE TIMES SPECIFIED FOR LANE CLOSURES.

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.

DRUM REQUIREMENTS

IN ADDITION TO THE REQUIREMENTS OF THE PLANS, SPECIFICATION AND PROPOSAL, DRUMS FURNISHED BY THE CONTRACTOR SHALL BE NEW AND UNUSED AT THE TIME OF ARRIVAL ON THE PROJECT. ANY DRUMS BROUGHT ON THE PROJECT, WHICH HAVE PREVIOUSLY BEEN USED ELSEWHERE, WILL NOT BE ACCEPTED. PAYMENT FOR DRUMS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED.

DUST CONTROL

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

ITEM 616 - WATER **10 MGAL**
ITEM 616 - CALCIUM CHLORIDE **1 TON**

CALCULATED KJM CHECKED JTS

MAINTENANCE OF TRAFFIC NOTES

CUY-90-21.02

SHEET NO.	PHASE	ROAD	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 WORK ZONE LANE LINE, CLASS 1, 4", 642 PAINT MILE	614 WORK ZONE CENTER LINE, CLASS 1, 642 PAINT MILE	614 WORK ZONE EDGE LINE, CLASS 1, 4", 642 PAINT MILE	614 WORK ZONE CHANNELIZING LINE, CLASS 1, 8", 642 PAINT FT	614 WORK ZONE DOTTED LINE, CLASS 1, 642 PAINT FT	614 WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS 1, 642 PAINT FT	614 WORK ZONE STOP LINE, CLASS 1, 642 PAINT FT	614 WORK ZONE CROSSWALK LINE, CLASS 1, 642 PAINT FT
18	1	MLK JR. DRIVE	1+35	4+59	LT/RT				0.13					
18	1	MLK JR. DRIVE	3+08	4+45	LT		0.03							
18	1	MLK JR. DRIVE	3+08	4+44	RT		0.03							
18	1	MLK JR. DRIVE	5+37	8+13	LT/RT				0.11					
18	1	MLK JR. DRIVE	5+51	9+66	RT		0.08							
18	1	MLK JR. DRIVE	5+52	10+83	LT		0.10							
18	1	MLK JR. DRIVE	8+37	11+50	LT/RT				0.12					
18	1	MLK JR. DRIVE	9+66	11+35	RT				0.04					
18	1	MLK JR. DRIVE	10+83	11+33	LT					50				
18	1	MLK JR. DRIVE	11+29	13+30	LT/RT				0.08					
18	1	MLK JR. DRIVE	11+33	-	LT								12	
18	1	MLK JR. DRIVE	11+35	-	RT								23	
19	2	MLK JR. DRIVE	0+85	4+57	LT				0.07					
19	2	MLK JR. DRIVE	1+00	2+90	LT			0.04						
19	2	MLK JR. DRIVE	1+00	2+90	RT			0.04						
19	2	MLK JR. DRIVE	2+90	3+91	CL			0.02						
19	2	MLK JR. DRIVE	3+36	3+91	RT		0.01							
19	2	MLK JR. DRIVE	3+36	3+91	LT		0.01							
19	2	MLK JR. DRIVE	4+77	8+94	RT				0.08					
19	2	MLK JR. DRIVE	4+87	7+97	RT		0.06							
19	2	MLK JR. DRIVE	4+87	7+97	CL			0.06						
19	2	MLK JR. DRIVE	4+87	7+97	LT		0.06							
19	2	MLK JR. DRIVE	4+90	8+11	LT				0.06					
19	2	MLK JR. DRIVE	8+39	14+25	LT				0.12					
19	2	MLK JR. DRIVE	8+64	9+83	RT		0.02							
19	2	MLK JR. DRIVE	8+64	11+35	CL			0.05						
19	2	MLK JR. DRIVE	8+64	10+21	LT		0.03							
19	2	MLK JR. DRIVE	9+81	11+35	RT				0.03					
19	2	MLK JR. DRIVE	10+12	11+35	LT				0.02					
19	2	MLK JR. DRIVE	10+12	11+35	CL							116		
19	2	MLK JR. DRIVE	10+21	11+57	LT					136				
19	2	MLK JR. DRIVE	11+57	11+76	LT/RT				0.01					
19	2	MLK JR. DRIVE	11+57	13+24	LT				0.03					
19	2	MLK JR. DRIVE	11+75	-	LT								12	
19	2	MLK JR. DRIVE	11+76	13+24	RT				0.03					
19	2	MLK JR. DRIVE	11+80	14+25	RT				0.05					
19	2	WB ENTRANCE	0+87	1+50	LT				0.01					
19	2	WB ENTRANCE	0+00	1+50	RT				0.03					
19	2	EB ENTRANCE	100+42	101+08	LT				0.01					
20	2A	EB EXIT	3+07	5+53	RT				0.05					
20	2A	EB EXIT	3+07	5+53	LT				0.05					
20	2A	EB EXIT	3+58	5+29	CL					171				
20	2A	EB EXIT	5+29	-	LT/RT								25	
20	2A	EB EXIT	5+33	-	LT/RT									41
20	2A	EB EXIT	5+41	-	LT/RT									41
20	2B	EB EXIT	3+58	5+40	CL					183				
20	2B	EB EXIT	5+40	-	LT/RT								29	
20	2B	EB EXIT	5+42	-	LT/RT									48
20	2B	EB EXIT	5+50	-	LT/RT									66
20	2A	N. MARGINAL	1+20	-	CL			0.01						
SUBTOTALS CARRIED TO SHEET 17						0	0.42	0.21	1.13	540	0	116	101	196

CALCULATED KJM
CHECKED JTS

SUMMARY OF TRAFFIC MAINTENANCE

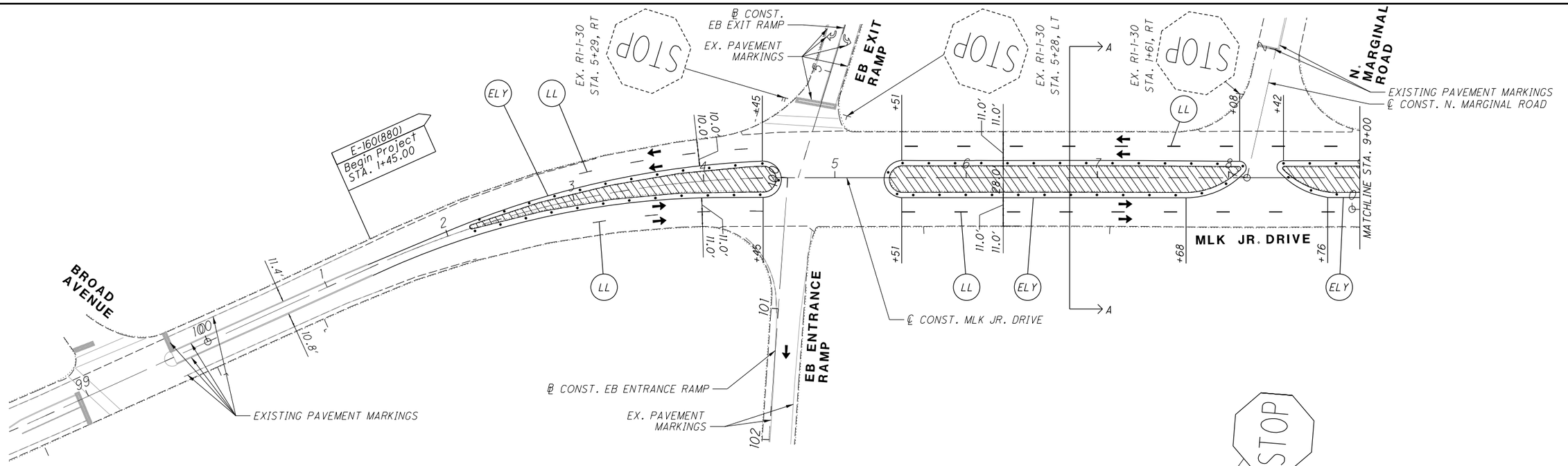
CUY-90-21.02

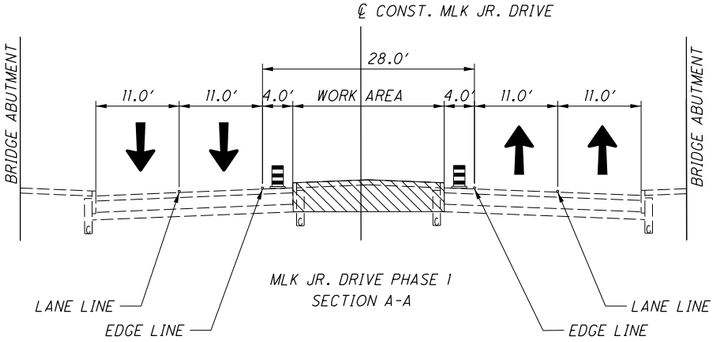
SHEET NO.	PHASE	ROAD	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL) EACH	614 WORK ZONE LANE LINE, CLASS 1, 4", 642 PAINT MILE	614 WORK ZONE CENTER LINE, CLASS 1, 642 PAINT MILE	614 WORK ZONE EDGE LINE, CLASS 1, 4", 642 PAINT MILE	614 WORK ZONE CHANNELIZING LINE, CLASS 1, 8", 642 PAINT FT	614 WORK ZONE DOTTED LINE, CLASS 1, 642 PAINT FT	614 WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS 1, 642 PAINT FT	614 WORK ZONE STOP LINE, CLASS 1, 642 PAINT FT	614 WORK ZONE CROSSWALK LINE, CLASS 1, 642 PAINT FT
	2A	N. MARGINAL	1+20	1+84	LT								10	
20	2A	N. MARGINAL	1+84	-	LT/RT									39
20	2A	N. MARGINAL	1+92	-	LT/RT									36
20	2A	N. MARGINAL	1+92	2+10	CL			0.00						
20	2B	N. MARGINAL	1+23	-	LT/RT									70
20	2B	N. MARGINAL	1+31	-	LT/RT									51
20	2B	N. MARGINAL	1+35	-	LT/RT								26	
20	2B	N. MARGINAL	1+35	2+10	CL			0.01						
21	3	MLK JR. DRIVE	0+85	4+71	RT				0.07					
21	3	MLK JR. DRIVE	1+00	4+18	LT			0.06						
21	3	MLK JR. DRIVE	1+00	4+18	RT			0.06						
21	3	MLK JR. DRIVE	2+50	4+13	RT		0.03							
21	3	MLK JR. DRIVE	5+06	8+06	LT/RT			0.12						
21	3	MLK JR. DRIVE	5+12	8+00	LT		0.05							
21	3	MLK JR. DRIVE	5+12	8+00	RT		0.05							
21	3	MLK JR. DRIVE	8+75	11+42	LT/RT			0.10						
21	3	MLK JR. DRIVE	8+81	11+23	LT		0.05							
21	3	MLK JR. DRIVE	8+81	9+84	RT		0.02							
21	3	MLK JR. DRIVE	11+23	11+71	LT/RT						73			
21	3	MLK JR. DRIVE	11+34	11+71	RT				0.01					
21	3	MLK JR. DRIVE	11+82	12+47	RT				0.01					
21	3	EB ENTRANCE	100+24	107+67	RT				0.14					
21	3	EB ENTRANCE	100+50	108+42	LT				0.15					
21	3	WB EXIT	100+57	-	RT	1								
21	3	EB EXIT	5+29	-	LT/RT								31	
21	3	EB EXIT	5+38	-	LT/RT									38
21	3	EB EXIT	5+46	-	LT/RT									47
21	3	N. MARGINAL	1+37	-	LT/RT									70
21	3	N. MARGINAL	1+46	-	LT/RT									50
21	3	N. MARGINAL	1+50	2+10	CL			0.01						
23	3	WB EXIT	100+34	-	RT				0.18				17	
23	3	WB EXIT	100+50	-	LT				0.16					
23	3	WB EXIT	106+45		RT	1								
SUBTOTALS THIS SHEET						2	0.21	0.37	0.73	0	73	0	84	401
SUBTOTALS CARRIED FROM SHEET 16						0	0.42	0.21	1.13	540	0	116	101	196
TOTALS CARRIED TO GENERAL SUMMARY						2	0.63	0.58	1.86	540	73	116	185	597

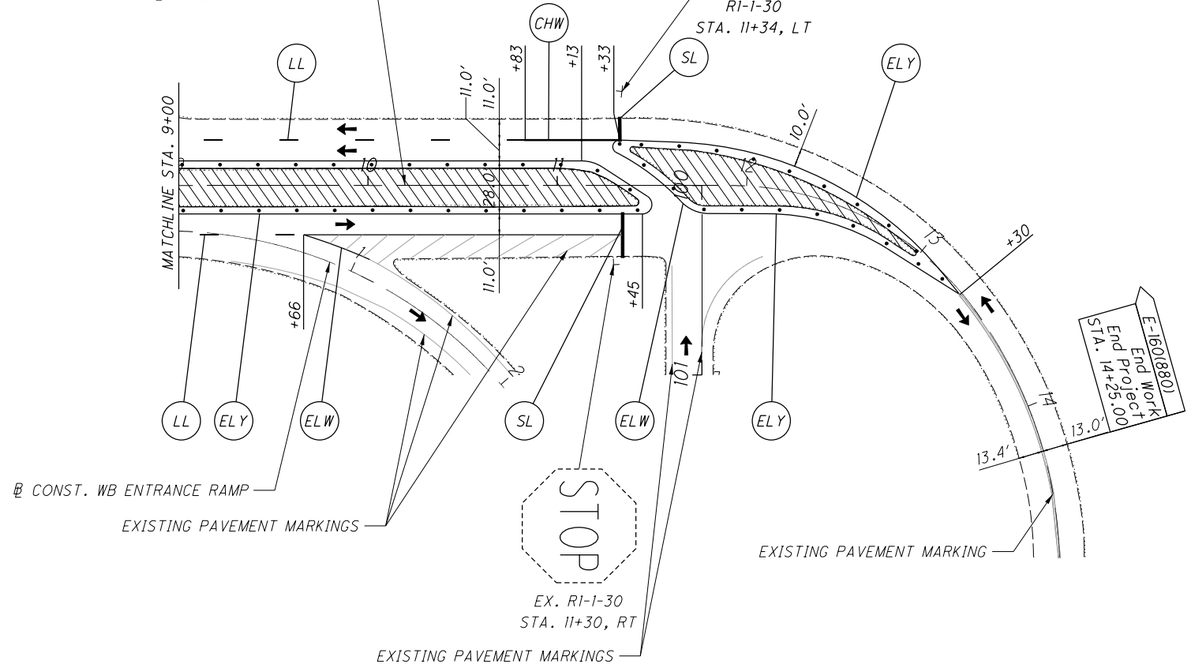
CALCULATED KJM
CHECKED JTS

MAINTENANCE OF TRAFFIC SUBSUMMARY

CUY-90-21.02







LEGEND

- DRUMS (20′ SPACING TYP.)
- AREA TO BE CONSTRUCTED
- DIRECTION OF TRAVEL
- (ELW) WORK ZONE EDGE LINE (WHITE), CLASS I
- (ELY) WORK ZONE EDGE LINE (YELLOW), CLASS I
- (CHW) WORK ZONE CHANNELIZING LINE (WHITE), CLASS I
- (CL) WORK ZONE CENTER LINE (DOUBLE SOLID), CLASS I
- (LL) WORK ZONE LANE LINE, CLASS I
- (TLW) WORK ZONE TRANSVERSE LINE (WHITE), CLASS I
- (TLY) WORK ZONE TRANSVERSE LINE (YELLOW), CLASS I
- (SL) WORK ZONE STOP LINE, CLASS I
- (DL) WORK ZONE DOTTED LINE, CLASS I

NOTES:

1. EXISTING PAVEMENT MARKINGS OR SIGNS IN CONFLICT WITH THE PROPOSED MAINTENANCE OF TRAFFIC PHASE SHALL BE REMOVED OR COVERED.

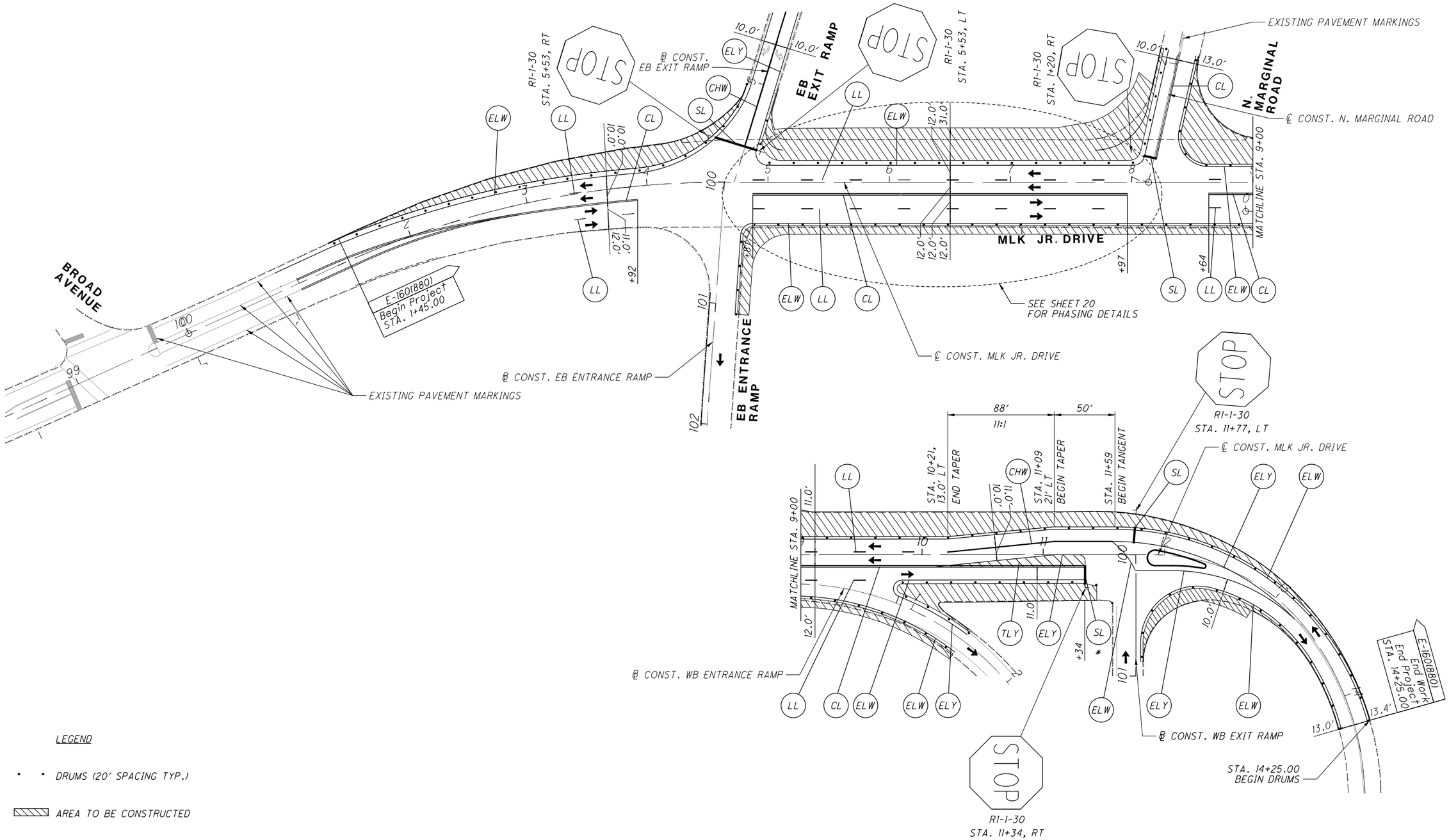
HORIZONTAL SCALE IN FEET
0 20 40 80
CALCULATED K.JM
CHECKED JTS

MAINTENANCE OF TRAFFIC PHASE 1
MLK JR. DRIVE

CUY-90-21.02

18
153

10382_MT110.dgn Sheet 9/6/2018 4:39:26 PM MDohlen



LEGEND

- DRUMS (20' SPACING TYP.)
- AREA TO BE CONSTRUCTED
- DIRECTION OF TRAVEL
- (ELW) WORK ZONE EDGE LINE (WHITE), CLASS I
- (ELY) WORK ZONE EDGE LINE (YELLOW), CLASS I
- (CHW) WORK ZONE CHANNELIZING LINE (WHITE), CLASS I
- (CL) WORK ZONE CENTER LINE (DOUBLE SOLID), CLASS I
- (LL) WORK ZONE LANE LINE, CLASS I
- (TLW) WORK ZONE TRANSVERSE LINE (WHITE), CLASS I
- (TLY) WORK ZONE TRANSVERSE LINE (YELLOW), CLASS I
- (SL) WORK ZONE STOP LINE, CLASS I
- (DL) WORK ZONE DOTTED LINE, CLASS I

NOTES:

1. ROAD WORK AHEAD AND END WORK SIGNS SHALL REMAIN IN PLACE FROM PHASE 1.
2. PAVEMENT MARKINGS DESIGNATED BY * SHALL BE REUSED FROM PREVIOUS PHASES.
3. EXISTING PAVEMENT MARKINGS OR SIGNS IN CONFLICT WITH THE PROPOSED MAINTENANCE OF TRAFFIC PHASE SHALL BE REMOVED OR COVERED.

HORIZONTAL SCALE IN FEET
0 20 40 80

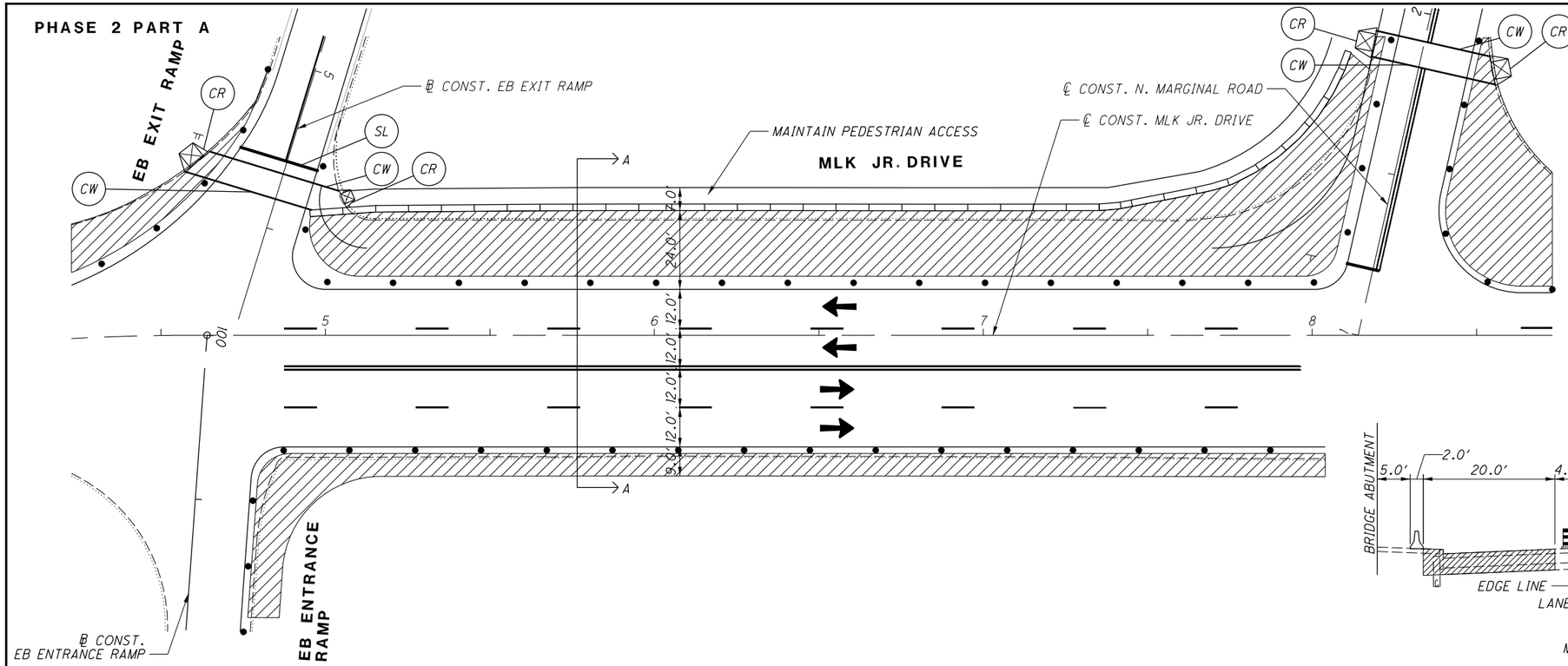
CALCULATED K.JM
CHECKED JTS

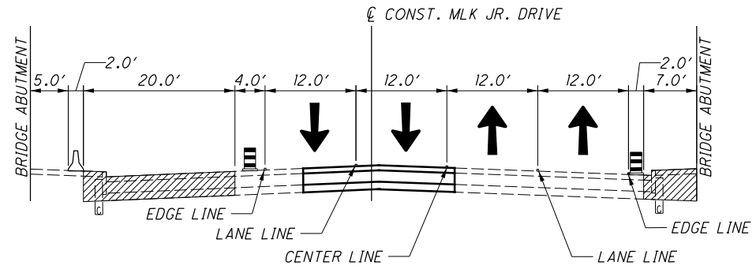
MAINTENANCE OF TRAFFIC PHASE 2
MLK JR. DRIVE

CUY-90-21.02

10382I_MT120.dgn Sheet 9/6/2018 4:39:36 PM MDohlen

PHASE 2 PART A



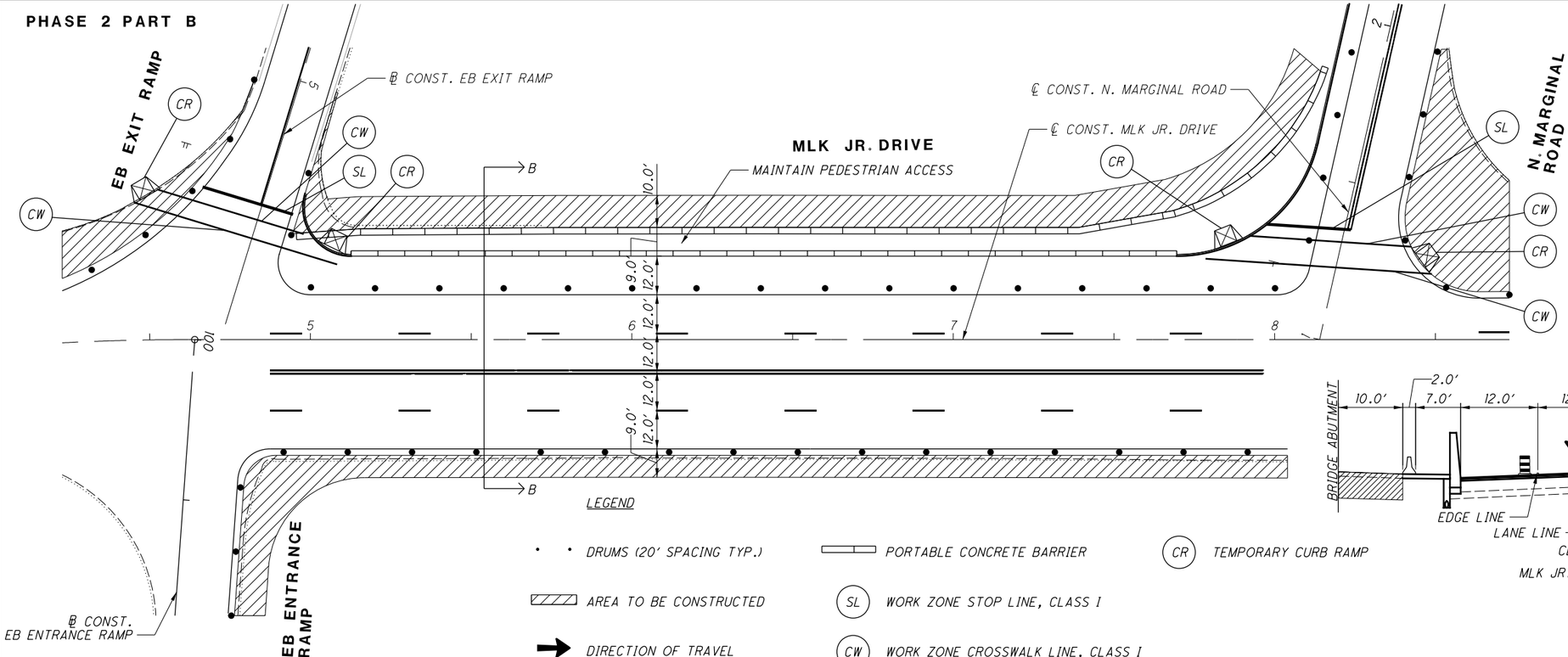


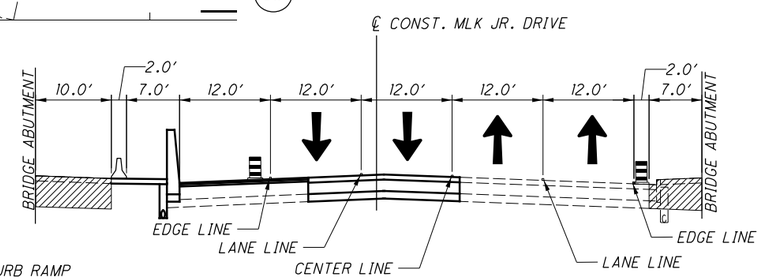
MLK JR. DRIVE PHASE 2, PART A
SECTION A-A

NOTES:

1. THE CONTRACTOR SHALL PROVIDE TEMPORARY CURB RAMPS AND PROVIDE ADA PEDESTRIAN ACCESS AT ALL TIMES AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

PHASE 2 PART B





MLK JR. DRIVE PHASE 2, PART B
SECTION B-B

LEGEND

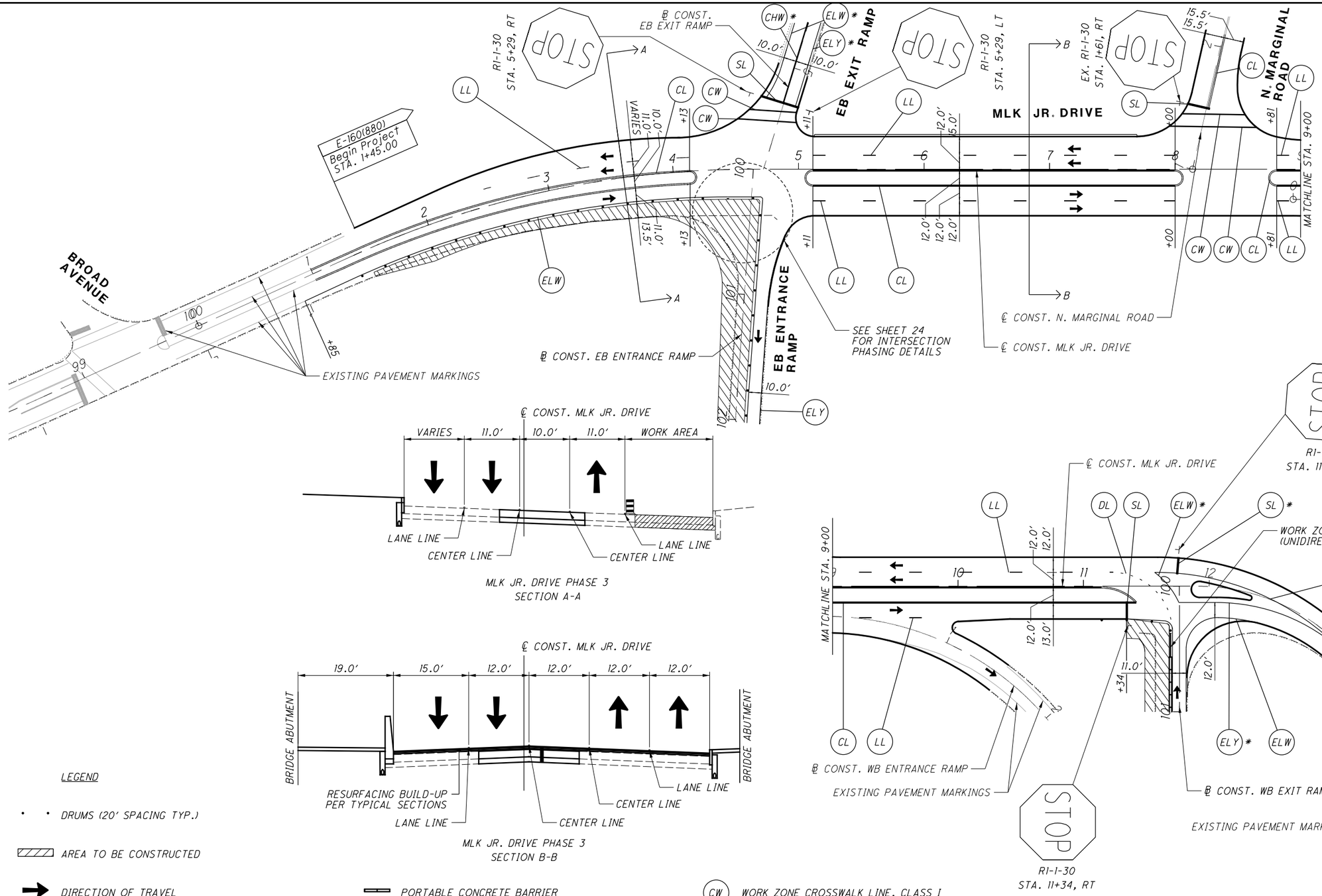
- DRUMS (20' SPACING TYP.)
- PORTABLE CONCRETE BARRIER
- CR TEMPORARY CURB RAMP
- AREA TO BE CONSTRUCTED
- SL WORK ZONE STOP LINE, CLASS I
- DIRECTION OF TRAVEL
- CW WORK ZONE CROSSWALK LINE, CLASS I

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED K.JM
CHECKED JTS

MAINTENANCE OF TRAFFIC PHASE 2 DETAIL MLK JR. DRIVE

CUY-90-21.02



LEGEND

- DRUMS (20′ SPACING TYP.)
- AREA TO BE CONSTRUCTED
- DIRECTION OF TRAVEL
- (ELW) WORK ZONE EDGE LINE (WHITE), CLASS I
- (ELY) WORK ZONE EDGE LINE (YELLOW), CLASS I
- (CHW) WORK ZONE CHANNELIZING LINE (WHITE), CLASS I
- PORTABLE CONCRETE BARRIER
- (CL) WORK ZONE CENTER LINE (DOUBLE SOLID), CLASS I
- (LL) WORK ZONE LANE LINE, CLASS I
- (TLW) WORK ZONE TRANSVERSE LINE (WHITE), CLASS I
- (CW) WORK ZONE CROSSWALK LINE, CLASS I
- (TLY) WORK ZONE TRANSVERSE LINE (YELLOW), CLASS I
- (SL) WORK ZONE STOP LINE, CLASS I
- (DL) WORK ZONE DOTTED LINE, CLASS I

NOTES:

1. ROAD WORK AHEAD AND END WORK SIGNS SHALL REMAIN IN PLACE FROM PHASES 1 & 2.
2. PAVEMENT MARKINGS DESIGNATED BY * SHALL BE REUSED FROM PREVIOUS PHASES.
3. EXISTING PAVEMENT MARKINGS OR SIGNS IN CONFLICT WITH THE PROPOSED MAINTENANCE OF TRAFFIC PHASE SHALL BE REMOVED OR COVERED.

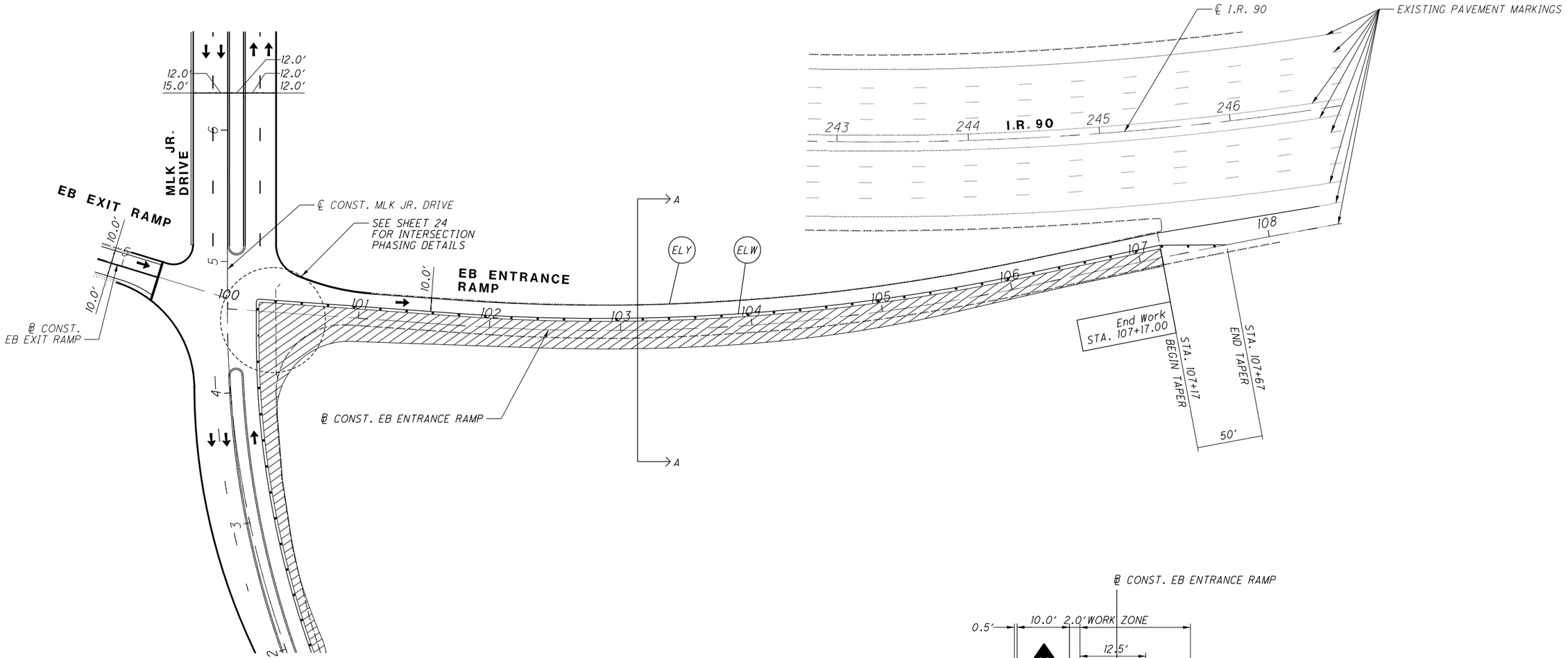
N

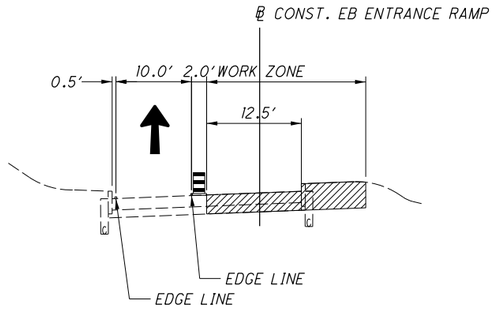
0 20 40 80 HORIZONTAL SCALE IN FEET

CALCULATED K.JM CHECKED JTS

MAINTENANCE OF TRAFFIC PHASE 3 MLK JR. DRIVE

CUY-90-21.02





EB ENTRANCE RAMP PHASE 3
SECTION A-A

LEGEND

- DRUMS
- AREA TO BE CONSTRUCTED
- DIRECTION OF TRAVEL
- (ELW) WORK ZONE EDGE LINE (WHITE), CLASS I
- (ELY) WORK ZONE EDGE LINE (YELLOW), CLASS I
- (CHW) WORK ZONE CHANNELIZING LINE (WHITE), CLASS I
- (CL) WORK ZONE CENTER LINE (DOUBLE SOLID), CLASS I
- (LL) WORK ZONE LANE LINE, CLASS I
- (TLW) WORK ZONE TRANSVERSE LINE (WHITE), CLASS I
- (TLY) WORK ZONE TRANSVERSE LINE (YELLOW), CLASS I
- (SL) WORK ZONE STOP LINE, CLASS I
- (DL) WORK ZONE DOTTED LINE, CLASS I

NOTES:

1. EXISTING PAVEMENT MARKINGS OR SIGNS IN CONFLICT WITH THE PROPOSED MAINTENANCE OF TRAFFIC PHASE SHALL BE REMOVED OR COVERED.

HORIZONTAL SCALE IN FEET
0 20 40 80

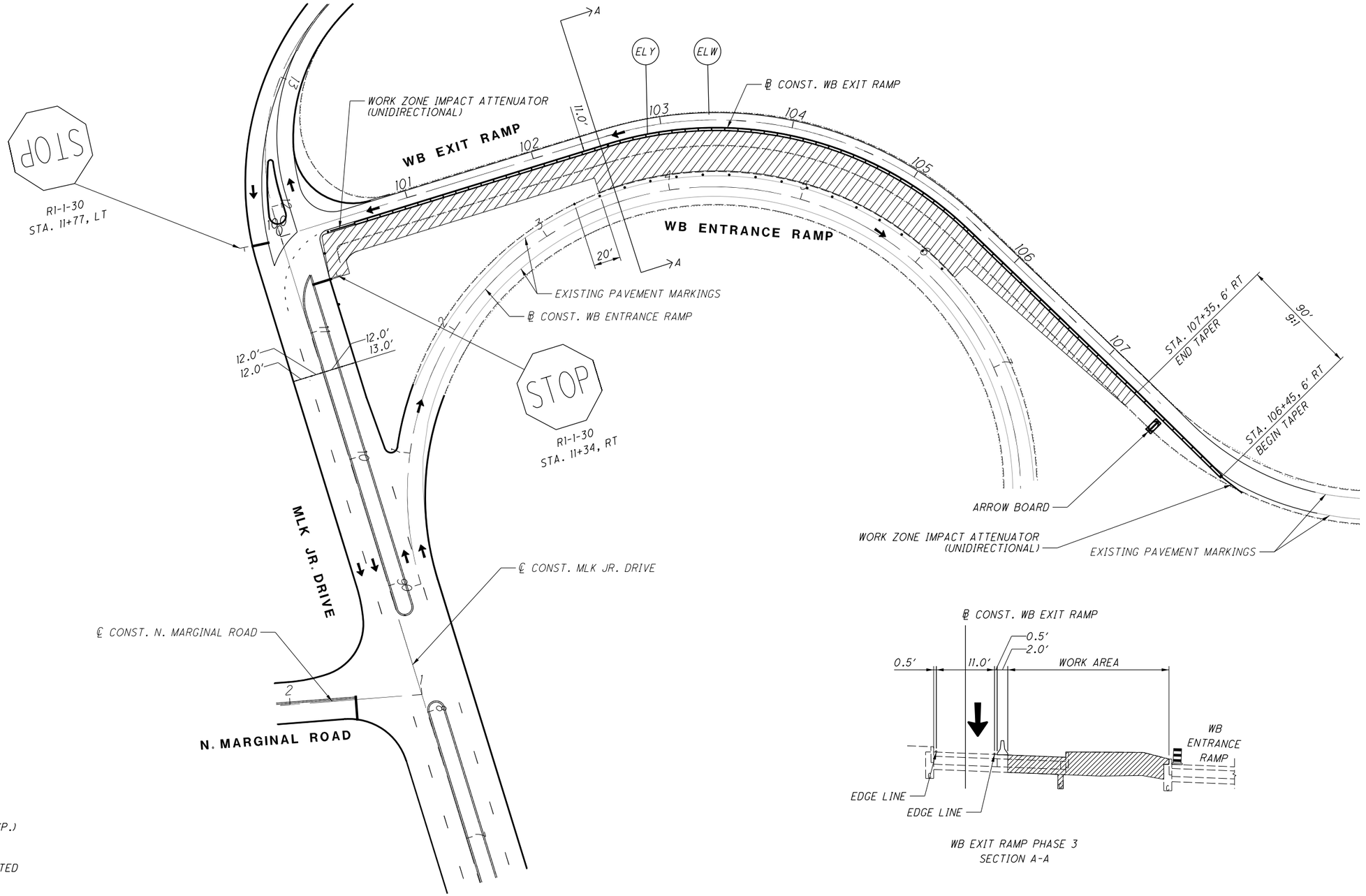
CALCULATED K.JM
CHECKED JTS

MAINTENANCE OF TRAFFIC PHASE 3
EB ENTRANCE RAMP

CUY-90-21.02

22
153

10382I_MT330.dgn Sheet+ 9/6/2018 4:40:08 PM MDohlen



WB EXIT RAMP PHASE 3
SECTION A-A

LEGEND

- DRUMS (20' SPACING TYP.)
- AREA TO BE CONSTRUCTED
- DIRECTION OF TRAVEL
- PORTABLE CONCRETE BARRIER
- (ELW) WORK ZONE EDGE LINE (WHITE), CLASS I
- (CL) WORK ZONE CENTER LINE (DOUBLE SOLID), CLASS I
- (TLY) WORK ZONE TRANSVERSE LINE (YELLOW), CLASS I
- (ELY) WORK ZONE EDGE LINE (YELLOW), CLASS I
- (LL) WORK ZONE LANE LINE, CLASS I
- (SL) WORK ZONE STOP LINE, CLASS I
- (CHW) WORK ZONE CHANNELIZING LINE (WHITE), CLASS I
- (TLW) WORK ZONE TRANSVERSE LINE (WHITE), CLASS I
- (DL) WORK ZONE DOTTED LINE, CLASS I

NOTES:

1. EXISTING PAVEMENT MARKINGS OR SIGNS IN CONFLICT WITH THE PROPOSED MAINTENANCE OF TRAFFIC PHASE SHALL BE REMOVED OR COVERED.

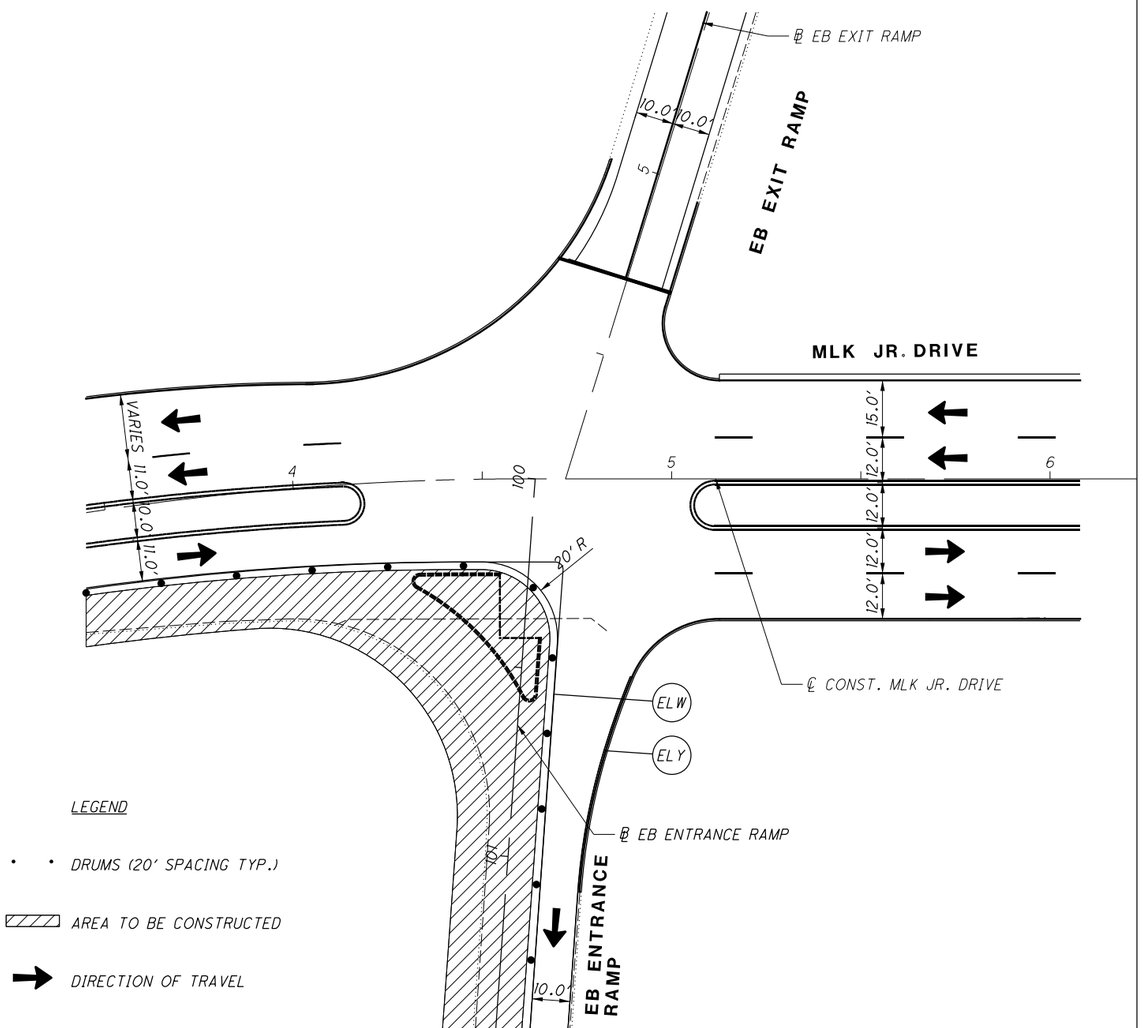
HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED K.JM
CHECKED JTS

MAINTENANCE OF TRAFFIC PHASE 3
WB EXIT RAMP

CUY-90-21.02

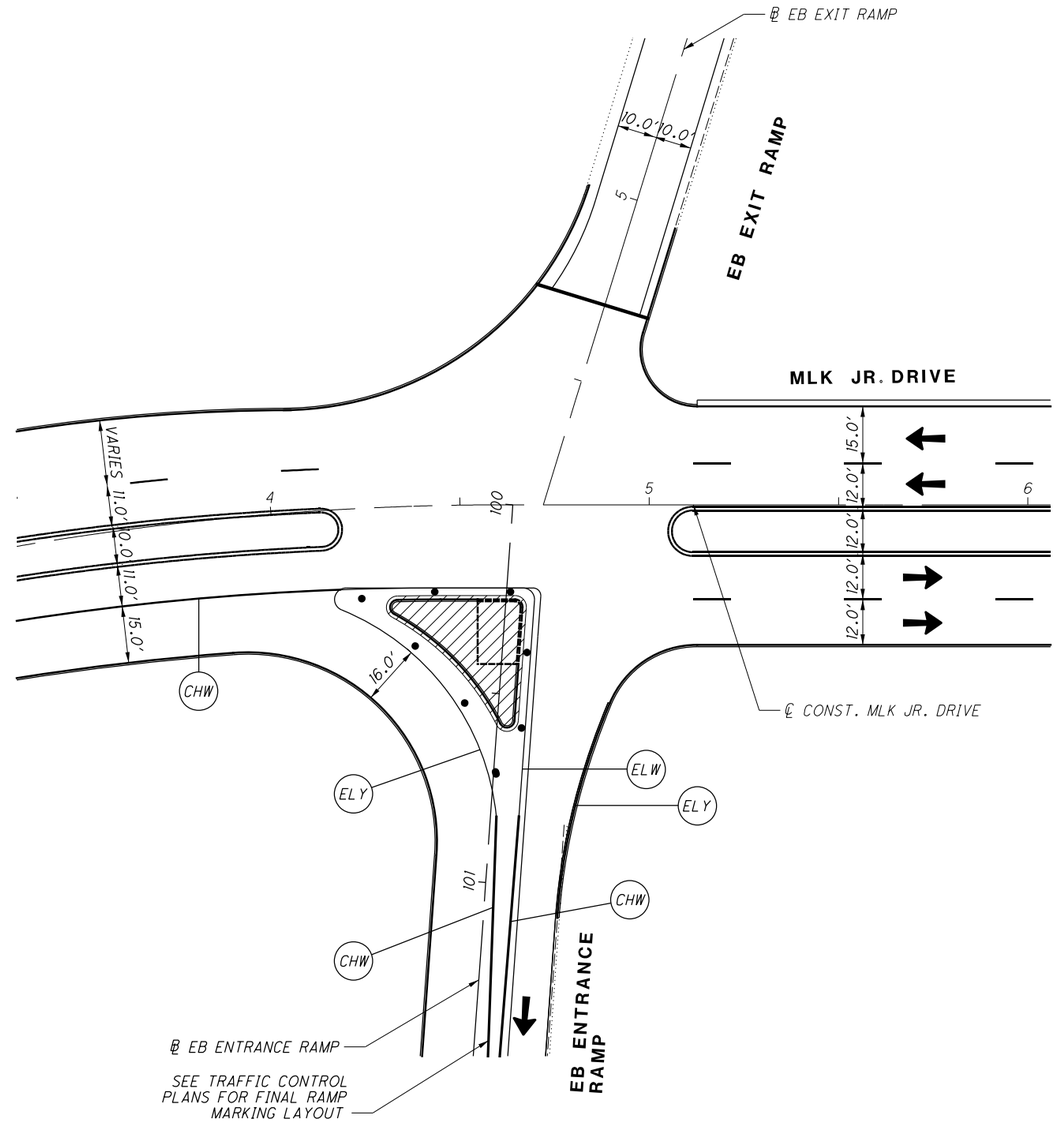
PHASE 3 PART A



LEGEND

- DRUMS (20' SPACING TYP.)
- AREA TO BE CONSTRUCTED
- DIRECTION OF TRAVEL
- PORTION OF ISLAND TO BE CONSTRUCTED
- (ELW) WORK ZONE EDGE LINE (WHITE), CLASS I
- (ELY) WORK ZONE EDGE LINE (YELLOW), CLASS I
- (CHW) WORK ZONE CHANNELIZING LINE (WHITE), CLASS I
- (LL) WORK ZONE LANE LINE, CLASS I

PHASE 3 PART B



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED K.JM
CHECKED JTS

MAINTENANCE OF TRAFFIC PHASE 3 DETAIL MLK JR. DRIVE

CUY-90-21.02

SHEET NUMBER																		PLAN SPLITS		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
GEN. NOTES	MOT NOTES	17	30	32	33	35	36	37	102	103	108	109	129	131	135	143	149	PROJECT	AT						
																								ROADWAY	
LS																		LS		201	11000	LS	-	CLEARING AND GRUBBING	
			1886															1886		202	23001	1886	SY	PAVEMENT REMOVED, AS PER PLAN	7
			4784															4784		202	30000	4784	SF	WALK REMOVED	
			1747															1747		202	30800	1747	SY	TRAFFIC ISLAND REMOVED	
			6122															6122		202	32000	6122	FT	CURB REMOVED	
						175												175		202	35100	175	FT	PIPE REMOVED, 24" AND UNDER	
						60												60		202	35200	60	FT	PIPE REMOVED, OVER 24"	
					110													110		202	38000	110	FT	GUARDRAIL REMOVED	
					1													1		202	42010	1	EACH	ANCHOR ASSEMBLY REMOVED, TYPE E	
						5												5		202	58100	5	EACH	CATCH BASIN REMOVED	
						4												4		202	58200	4	EACH	INLET REMOVED	
500																		500		SPECIAL	202E70110	500	FT	PIPE CLEANOUT, 24" AND UNDER	8
250																		250		SPECIAL	202E70120	250	FT	PIPE CLEANOUT, 27" TO 48"	8
500																		500		202	98200	500	FT	REMOVAL MISC.: FILL AND PLUG EXISTING CONDUIT	8
							1898											1898		203	10000	1898	CY	EXCAVATION	
							715											715		203	20000	715	CY	EMBANKMENT	
				3312														3312		204	10001	3312	SY	SUBGRADE COMPACTION, AS PER PLAN	7
75							821											896		204	13001	896	CY	EXCAVATION OF SUBGRADE, AS PER PLAN	7
							821											821		204	21000	821	CY	GRANULAR EMBANKMENT	
8																		8		204	45000	8	HOUR	PROOF ROLLING	
					62.5													62.5		606	15050	62.5	FT	GUARDRAIL, TYPE MGS	
					1													1		606	26101	1	EACH	ANCHOR ASSEMBLY, TYPE E, AS PER PLAN	7
					8238													8238		608	13001	8238	SF	6" CONCRETE WALK, AS PER PLAN	10, 150
					746													746		608	52001	746	SF	CURB RAMP, AS PER PLAN	9, 90-92
					2													2		623	39501	2	EACH	MONUMENT BOX ADJUSTED TO GRADE, AS PER PLAN	7, 97
LS																		LS		SPECIAL	690E98400	LS	-	PRE-CONSTRUCTION VIDEOGRAPHY	6
LS																		LS		SPECIAL	690E98400	LS	-	RECORD DRAWINGS	6
150																		150		861	10000	150	SY	GEOGRID FOR SUBGRADE STABILIZATION	
																								EROSION CONTROL	
2																		2		659	00100	2	EACH	SOIL ANALYSIS TEST	
350																		350		659	00300	350	CY	TOPSOIL	
							3149											3149		659	00500	3149	SY	SEEDING AND MULCHING, CLASS 1	
158																		158		659	14000	158	SY	REPAIR SEEDING AND MULCHING	
158																		158		659	15000	158	SY	INTER-SEEDING	
0.44																		0.44		659	20000	0.44	TON	COMMERCIAL FERTILIZER	
0.65																		0.65		659	31000	0.65	ACRE	LIME	
17																		17		659	35000	17	MGAL	WATER	
								LS										LS		832	15000	LS	-	STORM WATER POLLUTION PREVENTION PLAN	
								41034										41034		832	30000	41034	EACH	EROSION CONTROL	
																								DRAINAGE	
						980												980		605	13410	980	FT	6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	
						2913												2913		605	14020	2913	FT	6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	
						220												220		611	00510	220	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
75						397												472		611	04400	472	FT	12" CONDUIT, TYPE B	
25						167												192		611	04600	192	FT	12" CONDUIT, TYPE C	
25						30												55		611	05900	55	FT	15" CONDUIT, TYPE B	
25																		25		611	06100	25	FT	15" CONDUIT, TYPE C	
25																		25		611	07400	25	FT	18" CONDUIT, TYPE B	
25																		25		611	07600	25	FT	18" CONDUIT, TYPE C	
						60												60		611	13600	60	FT	30" CONDUIT, TYPE C	
						3												3		611	98630	3	EACH	CATCH BASIN ADJUSTED TO GRADE	95
						1												1		611	98700	1	EACH	INLET, SIDE DITCH	

I:\ProjectData\CUY\103821\ProjAdmin\PlanReviews\2018-11-23 Final Tracings Update\11_Electronic Deliverables\103821 CAD Files\Roadway\sheets\103821_GG001.dgn Sheet 1/24/2019 10:55:31 AM dbrauer

CALCULATED MKD CHECKED JTS

GENERAL SUMMARY

CUY-90-21.02

SHEET NUMBER																		PLAN SPLITS		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
GEN. NOTES	MOT NOTES	17	30	32	33	35	36	37	102	103	108	109	129	131	135	143	149	PROJECT	AT						
																								DRAINAGE (CONTINUED)	
						4												4		611	98850	4	EACH	INLET, NO. 2-A-8	
						1												1		611	98890	1	EACH	INLET, NO. 2-A-16	
						7												7		611	99151	7	EACH	INLET ADJUSTED TO GRADE, AS PER PLAN	9
						1												1		611	99582	1	EACH	MANHOLE, NO. 3 WITH 90" BASE I.D. AND 8" WEIR	
						8												8		611	99655	8	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	9
1						1												2		611	99690	2	EACH	MANHOLE, MISC.: CITY OF CLEVELAND, MANHOLE NO. 1	8, 93
15000																		15000		SPECIAL	611E99820	15000	LB	MISCELLANEOUS METAL	8, 96
1						9												10		611	99900	10	EACH	DRAINAGE STRUCTURE, MISC.: CATCH BASIN, CITY OF CLEVELAND, CB-1	9, 94
4																		4		611	99900	4	EACH	DRAINAGE STRUCTURE, MISC.: CORING FOR STORM SEWERS	8
						1												1		895	10021	1	EACH	MANUFACTURED WATER QUALITY STRUCTURE, TYPE 2, AS PER PLAN	8
																								PAVEMENT	
100																		100		251	01001	100	SY	PARTIAL DEPTH PAVEMENT REPAIR (441), AS PER PLAN	11
				5936														5936		252	01500	5936	FT	FULL DEPTH PAVEMENT SAWING	
				8305														8305		254	01001	8305	SY	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN	12
500																		500		255	10011	500	SY	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC1, AS PER PLAN	12
				576														576		304	20001	576	CY	6" AGGREGATE BASE, AS PER PLAN	9
115				3312														3427		305	13011	3427	SY	9" CONCRETE BASE, CLASS QC1, AS PER PLAN	10, 89
				2343														2343		407	10000	2343	GAL	TACK COAT	
				610														610		441	50101	610	CY	1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M, AS PER PLAN	11, 89
				712														712		441	50300	712	CY	1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)	89
					8													8		441	50700	8	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), (UNDER GUARDRAIL)	
				124														124		441	90000	124	CY	ASPHALT CONCRETE, MISC.: ASPHALT CONCRETE LEVELING COURSE, TYPE 1, (448)	10, 89
					9													9		441	90000	9	CY	ASPHALT CONCRETE, MISC.: ASPHALT TRAIL	12
1750																		1750		512	10051	1750	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY), AS PER PLAN	11
				1377														1377		609	14001	1377	FT	CURB, TYPE 2-A, AS PER PLAN	10
				2706														2706		609	26001	2706	FT	CURB, TYPE 6, AS PER PLAN	10
					3269													3269		609	71001	3269	SF	CONCRETE MEDIAN, AS PER PLAN	10
																								SANITARY SEWER	
					1													1		611	99655	1	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	9
																								TRAFFIC CONTROL	
										28								28		621	00100	28	EACH	RPM	
										15								15		621	54000	15	EACH	RAISED PAVEMENT MARKER REMOVED	
									10									10		625	32000	10	EACH	GROUND ROD	
									336.0									336.0		630	02100	336.0	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
									356.0									356.0		630	03100	356.0	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
									15.0									15.0		630	04100	15.0	FT	GROUND MOUNTED SUPPORT, NO. 4 POST	
									58.0									58.0		630	08004	58.0	FT	ONE WAY SUPPORT, NO. 3 POST	
									37.0									37.0		630	08210	37.0	FT	GROUND MOUNTED SUPPORT, PIPE	
									2									2		630	09050	2	EACH	TRIANGULAR SLIP BASE CONNECTION	
									2									2		630	10602	2	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-16.21, DESIGN 6	
									1									1		630	35500	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 6	
									1									1		630	45500	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 8	
									3									3		630	77000	3	EACH	OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE TC-18.24	

CALCULATED MKD
CHECKED JTS

GENERAL SUMMARY

CUY-90-21.02

SHEET NUMBER																		PLAN SPLITS		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
GEN. NOTES	MOT NOTES	17	30	32	33	35	36	37	102	103	108	109	129	131	135	143	149	PROJECT	AT						
																								TRAFFIC CONTROL (CONTINUED)	
									425.9									425.9		630	80100	425.9	SF	SIGN, FLAT SHEET	
									738.0									738.0		630	80224	738.0	SF	SIGN, OVERHEAD EXTRUSHEET	
									10									10		630	84510	10	EACH	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	
									2									2		630	84600	2	EACH	GROUND MOUNTED PIPE SUPPORT FOUNDATION	
										44								44		630	84900	44	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
										16								16		630	85100	16	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
										43								43		630	86002	43	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
										4								4		630	86102	4	EACH	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL	
										3								3		630	86310	3	EACH	REMOVAL OF STRUCTURE MOUNTED SIGN AND DISPOSAL	
										6								6		630	87400	6	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	
										3								3		630	87500	3	EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	
										2								2		630	89706	2	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-12.30	
										1								1		630	89802	1	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-7.65	
											0.70							0.70		644	00100	0.70	MILE	EDGE LINE, 4"	
											0.80							0.80		644	00104	0.80	MILE	EDGE LINE, 6"	
											0.26							0.26		644	00200	0.26	MILE	LANE LINE, 4"	
											0.04							0.04		644	00204	0.04	MILE	LANE LINE, 6"	
											0.57							0.57		644	00300	0.57	MILE	CENTER LINE, 4", SOLID DOUBLE YELLOW	
											887							887		644	00400	887	FT	CHANNELIZING LINE, 8"	
											1019							1019		644	00404	1019	FT	CHANNELIZING LINE, 12"	
											266							266		644	00500	266	FT	STOP LINE, 24"	
											617							617		644	00600	617	FT	CROSSWALK LINE	
											946							946		644	00700	946	FT	TRANSVERSE/DIAGONAL LINE	
												464						464		644	00900	464	SF	ISLAND MARKING	
												35						35		644	01300	35	EACH	LANE ARROW	
												145						145		644	01500	145	FT	DOTTED LINE, 4"	
												262						262		645	01510	262	FT	DOTTED LINE, 6"	
												616						616		644	01514	616	FT	DOTTED LINE, 8"	
												7						7		644	30020	7	EACH	REMOVAL OF PAVEMENT MARKING	
												0.98						0.98		644	30030	0.98	MILE	REMOVAL OF PAVEMENT MARKING	
																								TRAFFIC SIGNALS	
														29	424			453		625	25504	453	FT	CONDUIT, 3", 725.051	
														21	9			30		625	25604	30	FT	CONDUIT, 4", 725.051	
														169	135			304		625	25906	304	FT	CONDUIT, JACKED OR DRILLED, 725.051, 4"	
														50	433			483		625	29000	483	FT	TRENCH	
														3	6			9		625	30510	9	EACH	PULL BOX, 725.06, SIZE 4, AS PER PLAN	126-127
														1	1			2		625	30520	2	EACH	PULL BOX, 725.06, SIZE 7, AS PER PLAN	126-127
														4	4			8		625	32000	8	EACH	GROUND ROD	
														1	1			2		625	34001	2	EACH	POWER SERVICE, AS PER PLAN	126
														50	433			483		625	36000	483	FT	PLASTIC CAUTION TAPE	
														5	3			8		630	79101	8	EACH	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN	126
														52.3	37.6			89.9		630	80100	89.9	SF	SIGN, FLAT SHEET	
													3					3		632	04910	3	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, ALUMINUM	
														6	7			13		632	05007	13	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	126
														1				1		632	05087	1	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	126
														2	2			4		632	20731	4	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	126
														7	7			14		632	25001	14	EACH	COVERING OF VEHICULAR SIGNAL HEAD, AS PER PLAN	126
														2	2			4		632	25010	4	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD	
															2			2		632	26001	2	EACH	PEDESTRIAN PUSHBUTTON, AS PER PLAN	127
															292			292		632	40300	292	FT	SIGNAL CABLE, 3 CONDUCTOR, NO. 14 AWG	
														180	302			482		632	40500	482	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
														721	548			1269		632	40700	1269	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	

CALCULATED MKD
CHECKED JTS

GENERAL SUMMARY

CUY-90-21.02

SHEET NUMBER																		PLAN SPLITS		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
GEN. NOTES	MOT NOTES	17	30	32	33	35	36	37	102	103	108	109	129	131	135	143	149	PROJECT	AT						
																								TRAFFIC SIGNALS (CONTINUED)	
														2	2			4		632	64011	4	EACH	SIGNAL SUPPORT FOUNDATION, AS PER PLAN	127
														1	1			2		632	64020	2	EACH	PEDESTAL FOUNDATION	
														20	20			40		632	67300	40	FT	POWER CABLE, 3 CONDUCTOR, NO. 8 AWG	
														43	156			199		632	69700	199	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 8 AWG	
														1	1			2		632	70600	2	EACH	CONDUIT RISER, 3" DIAMETER	
															1			1		632	75093	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21 DESIGN 12 POLE, WITH MAST ARMS TC-81.21 DESIGN 11 AND DESIGN 1, AS PER PLAN	127
														1				1		632	75451	1	EACH	SIGNAL SUPPORT, TYPE TC-12.30 DESIGN 9 POLE, WITH MAST ARMS TC-81.21 DESIGN 13 AND DESIGN 12, AS PER PLAN	127
															1			1		632	80203	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 2, AS PER PLAN	127
														1				1		632	80503	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 11, AS PER PLAN	127
														1				1		632	89901	1	EACH	PEDESTAL, 8', TRANSFORMER BASE, AS PER PLAN	127
															1			1		632	90010	1	EACH	PEDESTAL, MISC.: 15', TRANSFORMER BASE	127
													1					1		632	90020	1	EACH	REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM - VEHICULAR SIGNAL HEAD	
													2					2		632	90200	2	EACH	REUSE OF VEHICULAR SIGNAL HEAD	
														4	4			8		632	90400	8	EACH	SIGNALIZATION, MISC.: FOUNDATION TEST HOLE	127
														1	1			2		633	01683	2	EACH	CONTROLLER UNIT, TYPE 2070E WITH SEPAC SOFTWARE, WITH CABINET, TYPE 332L, AS PER PLAN	127
														1	1			2		633	67100	2	EACH	CABINET FOUNDATION	
														1	1			2		633	67200	2	EACH	CONTROLLER WORK PAD	
														1	1			2		633	75001	2	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	128
														1	1			2		809	69001	2	EACH	ADVANCE RADAR DETECTION, AS PER PLAN	128
														2	4			6		809	69101	6	EACH	STOP LINE RADAR DETECTION, AS PER PLAN	128
																								LIGHTING	
																2		2		625	00450	2	EACH	CONNECTION, FUSED PULL APART	
																1		1		625	14001	1	EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP, AS PER PLAN	141
																1		1		625	17950	1	EACH	BRACKET ARM, 6'	
																337		337		625	24400	337	FT	DUCT CABLE, MISC.: WITH DISTRIBUTION CABLES	140
																13		13		625	27501	13	EACH	LUMINAIRE, UNDERPASS, AS PER PLAN	141
																1		1		625	27600	1	EACH	LUMINAIRE, MISC.: CPP STANDARD LED ROADWAY LUMINAIRE	140
																2		2		625	31510	2	EACH	PULL BOX REMOVED	
																3		3		625	31600	3	EACH	PULL BOX, MISC.: 17" X 30" ANSI TIER 22	141
																1		1		625	32000	1	EACH	GROUND ROD	
																1		1		625	37101	1	EACH	SERVICE TO UNDERPASS LIGHTING, AS PER PLAN	141
																2		2		625	75401	2	EACH	LIGHT POLE REMOVED, AS PER PLAN	141
																2		2		625	75501	2	EACH	LIGHT POLE FOUNDATION REMOVED, AS PER PLAN	141
																3		3		625	75507	3	EACH	LUMINAIRE REMOVED, AS PER PLAN	141
																1		1		625	98000	1	EACH	LIGHTING, MISC.: REMOVAL OF UNDERPASS LIGHTING	141
																1		1		625	98000	1	EACH	LIGHTING, MISC.: ROUND TAPERED FIBERGLASS STREETLIGHT POLE	140
																1		1.00		625	98000	1.00	EACH	LIGHTING, MISC.: FOUNDATION TEST HOLE	141
																								LANDSCAPING	
8																		8		666	10001	8	EACH	PRUNING EXISTING TREE, 8 TO 16-INCH DIAMETER, AS PER PLAN	12
6																		6		666	10011	6	EACH	PRUNING EXISTING TREE, 16 TO 24-INCH DIAMETER, AS PER PLAN	12
4																		4		666	10021	4	EACH	PRUNING EXISTING TREE, 24 TO 36-INCH DIAMETER, AS PER PLAN	12
																								ACTIVE TRANSPORTATION	
																	1122		1122	512	10051	1122	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY), AS PER PLAN	11
																	257		257	622	10161	257	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN	10,12
																	35		35	653	10000	35	CY	TOPSOIL FURNISHED AND PLACED	
																	24		24	661	00500	24	CY	MULCH	
																	40		40	661	14001	40	EACH	PERENNIALS, AS PER PLAN (RUDBECKIA FULGIDA 'GOLDSTRUM' - BLACK-EYED SUSAN)	152

CALCULATED MKD
CHECKED JTS

GENERAL SUMMARY

CUY-90-21.02

SHEET NUMBER																		PLAN SPLITS		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
GEN. NOTES	MOT NOTES	17	30	32	33	35	36	37	102	103	108	109	129	131	135	143	149	PROJECT	AT						
																								ACTIVE TRANSPORTATION (CONTINUED)	
																	200		200	661	14001	200	EACH	PERENNIALS, AS PER PLAN (ECHINACEA PURPUREA - PURPLE CONEFLOWER)	152
																	15		15	661	30041	15	EACH	EVERGREEN SHRUB, 18" HEIGHT, AS PER PLAN (ROSA RUGOSA - RUGOSE ROSE)	152
																	24		24	661	99900	24	EACH	PLANTING, MISC.: PANICUM VIRGATUM 'ROTSTRAHL BUSH' - RED RAYS SWITCHGRASS	152
																	116		116	661	99900	116	EACH	PLANTING, MISC.: BOUTELOUA CURTIPENDULA - SIDE OATS GRAMA	152
																	22		22	SPECIAL	690E98000	22	EACH	DECORATIVE BOULDERS	152
																	305		305	SPECIAL	690E98100	305	FT	STAINLESS STEEL PIPING	146-153
																	149		149	SPECIAL	690E98100	149	FT	PIPING MOUNTING HARDWARE	146-153
																	17		17	SPECIAL	690E98200	17	SF	DECORATIVE METAL SIGN COLOR A	146-153
																	31		31	SPECIAL	690E98200	31	SF	DECORATIVE METAL SIGN COLOR B	146-153
																	2025		2025	SPECIAL	690E98200	2025	SF	PAINT COLOR 1	146-153
																	1550		1550	SPECIAL	690E98200	1550	SF	PAINT COLOR 2	146-153
																	1550		1550	SPECIAL	690E98200	1550	SF	PAINT COLOR 3	146-153
																	3000		3000	SPECIAL	690E98200	3000	SF	PAINT COLOR 4	146-153
																	175		175	SPECIAL	690E98200	175	SF	PAINT COLOR 5	146-153
																								MAINTENANCE OF TRAFFIC	
	120																	120		614	11110	120	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
		2																2		614	12336	2	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	
	6																	6		614	18601	6	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	14
		0.63																0.63		614	20100	0.63	MILE	WORK ZONE LANE LINE, CLASS I, 4", 642 PAINT	
		0.58																0.58		614	21100	0.58	MILE	WORK ZONE CENTER LINE, CLASS I, 642 PAINT	
		1.86																1.86		614	22100	1.86	MILE	WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT	
		540																540		614	23200	540	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 8", 642 PAINT	
		73																73		614	24200	73	FT	WORK ZONE DOTTED LINE, CLASS I, 642 PAINT	
		116																116		614	25200	116	FT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I, 642 PAINT	
		185																185		614	26200	185	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	
		597																597		614	27200	597	FT	WORK ZONE CROSSWALK LINE, CLASS I, 642 PAINT	
	10																	10		616	10000	10	MGAL	WATER	
	1																	1		616	20000	1	TON	CALCIUM CHLORIDE	
																								INCIDENTALS	
	LS																	LS		614	11000	LS	-	MAINTAINING TRAFFIC	
																		12		619	16010	12	MNTH	FIELD OFFICE, TYPE B	
																		LS		623	10000	LS	-	CONSTRUCTION LAYOUT STAKES AND SURVEYING	
																		LS		624	10000	LS	-	MOBILIZATION	

CALCULATED MKD
CHECKED JTS

GENERAL SUMMARY

CUY-90-21.02

REMOVAL SUBSUMMARY

CALCULATED K.JM
CHECKED JTS

SHEET NO.	STATION TO STATION		SIDE	TOTAL SURFACE AREA (A) =(CADD)	TOTAL CURB LENGTH (CADD)	WALK AREA (CADD)	202 PAVEMENT REMOVED, AS PER PLAN	202 WALK REMOVED	202 TRAFFIC ISLAND REMOVED	202 CURB REMOVED
	FROM	TO		SF	FT	SF	SY	SF	SY	FT
	WB EXIT RAMP									
	100+72.74	106+85.00	RT	591.06	592		65.67			592
	100+72.74	100+85.24	LT	27.81	13		3.09			13
	106+85.00	107+35.00	RT	50.00	50		5.56			50
	EB ENTRANCE RAMP									
	101+07.96	102+32.54	RT	124.99	125		13.89			125
	102+32.54	103+75.77	RT	143.71	144		15.97			144
	103+75.77	106+30.08	RT	255.10	256		28.34			256
	106+30.08	107+17.00	RT	86.84	87		9.65			87
	MLK JR. DRIVE									
	1+45.00	1+95.00	LT	62.18	52		6.91			52
	1+45.00	1+95.00	RT	48.59	49		5.40			49
	1+45.00	2+08.78	LT			193.44		193.44		
	1+95.00	3+81.98	LT	226.92	194		25.21			194
	1+95.00	3+81.98	RT	409.16	181		45.46			181
	2+17.76	3+81.98	MEDIAN	1456.08	331				161.79	331
	5+02.95	8+15.16	LT			3203.48		3203.48		
	5+67.76	7+09.47	RT			789.52		789.52		
	5+12.65	7+69.54	LT	2572.95	257		285.88			257
	5+12.65	7+69.54	RT	249.15	257		27.68			257
	5+41.47	7+69.54	MEDIAN	4561.94	468				506.88	468
	8+54.15	8+81.33	LT			364.31		364.31		
	9+06.14	11+34.32	LT	2983.31	229		331.48			229
	10+41.29	11+34.32	RT	1205.16	93		133.91			93
	9+06.14	11+34.32	MEDIAN	4505.82	491				500.65	491
	EB RAMP INTERSECTION									
	3+81.98	5+12.65	LT	889.65	174		98.85			174
	3+81.98	5+12.65	RT	217.91	213		24.21			213
	3+81.98	5+12.65	MEDIAN	1264.97	158				140.55	158
	3+83.15	4+64.40	RT	321.45			35.72			
	4+29.46	4+54.63	LT			232.46		232.46		
	NORTH MARGINAL INTERSECTION									
	7+69.54	9+06.14	LT	1867.66	199		207.52			199
	7+69.54	9+06.14	RT	200.34	136		22.26			136
	7+69.54	9+06.14	N MEDIAN	1070.89	137				118.99	137
	7+69.54	9+06.14	S MEDIAN	559.71	86				62.19	86
	WB EXIT RAMP INTERSECTION									
	11+34.32	14+25.00	LT	2203.73	315		244.86			315
	11+34.32	14+25.00	RT	1337.67	285		148.63			285
	11+34.32	14+25.00	N MEDIAN	2245.52	336				249.50	336
	11+34.32	14+25.00	S MEDIAN	53.41	22				5.93	22
	WB ENTRANCE RAMP INTERSECTION									
	9+06.14	10+41.29	RT	889.73	191		98.86			191
	TOTALS CARRIED TO GENERAL SUMMARY						1886	4784	1747	6122

CUY-90-21.02

STATION TO STATION		SIDE	TOTAL LENGTH	AVERAGE PVMT WIDTH	TOTAL SURFACE AREA	WIDENING LENGTH	AVERAGE WIDENING WIDTH	WIDENING AREA	INTERSECTION CADD AREA	WIDENING CADD AREA	WIDENING AREA PERIMETER	INTERSECTION ASPHALT PLANING AREA CADD AREA	TOTAL CURB TYPE 2-A LENGTH	TOTAL CURB TYPE 6 LENGTH	204	252	254	304	305	407	441	441	441	609	609
			L	PW	A1	WL	WW	A2	A3	A4	P1	A5	C1	C2	SUBGRADE COMPACTION, AS PER PLAN	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN	6" AGGREGATE BASE, AS PER PLAN	9" CONCRETE BASE, CLASS OC1, AS PER PLAN	TACK COAT	1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M, AS PER PLAN	1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)	ASPHALT CONCRETE, MISC.: ASPHALT CONCRETE LEVELING COURSE, TYPE 1, (448)	CURB, TYPE 2-A, AS PER PLAN	CURB, TYPE 6, AS PER PLAN
FROM	TO		FT	FT	SF	FT	FT	SF	SF	SF	FT	SF	FT	FT	SY	FT	SY	CY	SY	GAL	CY	CY	CY	FT	FT
					LxPW			WLxWW							(A2+(P1x1))/9 OR A2/9 (MEDIAN)	C1+C2 OR P1 (MEDIAN)	(A1-A2)/9	((A2+(P1x0.5)) x(6/12))/27 OR (A2x(6/12))/27 (MEDIAN)	A2/9	0.08x(A1/9)x2	(A1x(1.5/12)) /27	(A1x(1.75/12)) /27	(A1x(0.5/12)) /27	C1	C2
WB EXIT RAMP																									
100+72.74	106+85.00	LT/RT	612.26	33.00	20204.58								583.29	15.26		598.55	1598.68			359.19	93.54	109.13		583.29	15.26
100+72.74	106+85.00	RT				612.26	9.50	5816.47			583.29				711.08			113.11	646.27						
106+85.00	107+35.00	LT/RT	50.00	29.00	1450.00								50.00			50.00	130.56			25.78	6.71	7.83		50.00	
106+85.00	107+35.00	RT				50.00	5.50	275.00			50.00				36.11			6.02	30.56						
EB ENTRANCE RAMP																									
101+07.96	102+32.54	LT/RT	124.58	34.78	4332.27								125.17			125.17				77.02	20.06	23.40		125.17	
101+07.96	102+32.54	RT				124.58	11.28	1404.64			125.17				169.98			28.33	156.07						
102+32.54	103+75.77	LT/RT	143.23	33.00	4726.59								144.51			144.51				84.03	21.88	25.53		144.51	
102+32.54	103+75.77	RT				143.23	9.50	1360.69			144.51				167.24			26.54	151.19						
103+75.77	106+30.08	LT/RT	254.31	29.25	7438.57								256.20			256.20				132.24	34.44	40.18		256.20	
103+75.77	106+30.08	RT				254.31	6.50	1653.02			256.20				212.14			35.36	183.67						
106+30.08	107+17.00	LT/RT	86.92	25.50	2216.46								86.81			86.81				39.40	10.26	11.97		86.81	
106+30.08	107+17.00	RT				86.92	2.00	173.84			86.81				28.96			4.02	19.32						
EB EXIT RAMP																									
0+60.10	5+00.00	LT/RT	439.90	25.00	10997.50															195.51	50.91	59.40			
MLK JR. DRIVE																									
1+45.00	1+95.00	LT/RT	50.00	45.95	2297.25									100.13		100.13	231.78			40.84	10.64	12.41	3.55		100.13
1+45.00	1+95.00	LT				50.00	1.15	57.50			51.44				12.10			2.02	6.39						
1+45.00	1+95.00	RT				50.00	3.08	153.75			48.69				22.49			3.30	17.08						
1+95.00	3+81.98	LT/RT	186.98	55.87	10445.64									374.55		374.55	1089.78			185.70	48.36	56.42	16.12		374.55
1+95.00	3+81.98	LT				186.98	2.41	450.62			194.23				71.65			11.94	50.07						
1+95.00	3+81.98	RT				186.98	1.00	186.98			180.32				40.81			5.13	20.78						
2+17.76	3+81.98	MEDIAN				164.22	9.15	1502.61			330.68				166.96	330.68		27.83	166.96						
5+12.65	7+69.54	LT/RT	256.89	63.00	16184.07									256.89		256.89	1266.07			287.72	74.93	87.41	24.98		256.89
5+41.47	7+69.54	MEDIAN				228.07	21.00	4789.47			467.74				532.16	467.74		88.69	532.16						
9+06.14	11+34.32	LT/RT	228.18	49.00	11180.82									321.22		321.22	709.89			198.77	51.76	60.39	17.25		321.22
9+06.14	11+34.32	MEDIAN				228.18	21.00	4791.78			488.69				532.42	488.69		88.74	532.42						
					LxPW			WLxWW							(A4+(P1x1))/9 OR A4/9 (MEDIAN)	C1+C2 OR P1 (MEDIAN)	(A5)/9	((A4+(P1x0.5))*(6/12))/27 OR (A4*(6/12))/27 (MEDIAN)	A4/9	0.08*(A3/9)*2	(A3x(1.5/12))/27	(A3x(1.75/12))/2 7	(A3x(0.5/12))/2 7	C1	C2
EB RAMP INTERSECTION																									
3+81.98	5+12.65	LT/RT							13876.32			7317.19	99.13	358.42		457.55	813.02			246.69	64.24	74.95	21.41	99.13	358.42
		SE CORNER								1093.05	99.13				11.01	99.13		21.16	121.45						
		NE CORNER								514.91	87.26				9.70	87.26		10.34	57.21						
		MEDIAN								1264.98	157.54				140.55	157.54		23.43	140.55						
NORTH MARGINAL INTERSECTION																									
7+69.54	9+06.14	LT/RT							12053.82			10427.28		367.05		367.05	1158.59			214.29	55.80	65.11	18.60		367.05
		N MEDIAN								1070.93	136.34				118.99	136.34		19.83	118.99						
		S MEDIAN								559.32	85.78				62.15	85.78		10.36	62.15						
SUBTOTALS CARRIED TO SHEET 32															3047	4992	6998	526	3013	2087	544	634	102	1345	1794

CALCULATED KJM
CHECKED JTS

PAVEMENT SUBSUMMARY

CUY-90-21.02

PAVEMENT SUBSUMMARY

CALCULATED KJM
CHECKED JTS

STATION TO STATION		SIDE	TOTAL LENGTH	AVERAGE PVMT WIDTH	TOTAL SURFACE AREA	WIDENING LENGTH	AVERAGE WIDENING WIDTH	WIDENING AREA	INTERSECTION CADD AREA	WIDENING CADD AREA	WIDENING AREA PERIMETER	INTERSECTION ASPHALT PLANING AREA CADD AREA	TOTAL CURB TYPE 2-A LENGTH	TOTAL CURB TYPE 6 LENGTH	204	252	254	304	305	407	441	441	441	609	609
			L	PW	A1	WL	WW	A2	A3	A4	P1	A5	C1	C2	SUBGRADE COMPACTION, AS PER PLAN	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN	6" AGGREGATE BASE, AS PER PLAN	9" CONCRETE BASE, CLASS OC1, AS PER PLAN	TACK COAT	1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M, AS PER PLAN	1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)	ASPHALT CONCRETE, MISC.: ASPHALT CONCRETE LEVELING COURSE, TYPE 1, (448)	CURB, TYPE 2-A, AS PER PLAN	CURB, TYPE 6, AS PER PLAN
FROM	TO		FT	FT	SF	FT	FT	SF	SF	SF	FT	SF	FT	FT	SY	FT	SY	CY	SY	GAL	CY	CY	CY	FT	FT
					LxPW			WLxWW							(A4+(P1x1))/9 OR A4/9 (MEDIAN)	C1+C2 OR P1 (MEDIAN)	(A5)/9	((A4+(P1x0.5))*(6/12))/27 OR (A4*(6/12))/27 (MEDIAN)	A4/9	0.08*(A3/9)*2	(A3x(1.5/12))/27	(A3x(1.75/12))/27	(A3x(0.5/12))/27	C1	C2
WB ENTRANCE RAMP INTERSECTION																									
9+06.14	10+41.29	RT							2950.87			2950.91		231.12		231.12	327.88			52.46	13.66	15.94	4.55		231.12
WB EXIT RAMP INTERSECTION																									
11+34.32	14+25.00	LT/RT							11425.33			8816.16	31.74	681.05		712.79	979.57			203.12	52.90	61.71	17.63	31.74	681.05
		SE CORNER								338.15	31.74				3.53			6.56	37.57						
		N MEDIAN								2296.95	254.51				255.22			42.54	255.22						
		S MEDIAN								53.42	21.47				5.94			0.99	5.94						
SUBTOTALS THIS SHEET															265	944	1307	50	299	256	66	78	22	32	912
SUBTOTALS CARRIED FROM SHEET 31															3047	4992	6998	526	3013	2087	544	634	102	1345	1794
TOTALS CARRIED TO GENERAL SUMMARY															3312	5936	8305	576	3312	2343	610	712	124	1377	2706

CUY-90-21.02

10382L_GS001.dgn Sheet 9/6/2018 4:40:50 PM MDohlen

REF. NO.	SHEET NO.	STATION TO STATION				SIDE	202 GUARDRAIL REMOVED	202 ANCHOR ASSEMBLY REMOVED, TYPE E	441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), (UNDER GUARDRAIL)	441 ASPHALT CONCRETE, MISC.: ASPHALT TRAIL	606 GUARDRAIL, TYPE MGS	606 ANCHOR ASSEMBLY, TYPE E, AS PER PLAN	608 6" CONCRETE WALK, AS PER PLAN	608 CURB RAMP, AS PER PLAN	609 CONCRETE MEDIAN, AS PER PLAN	611 MANHOLE ADJUSTED TO GRADE, AS PER PLAN	623 MONUMENT BOX ADJUSTED TO GRADE, AS PER PLAN			
		FROM	OFFSET	TO	OFFSET		FT	EACH	CY	CY	FT	EACH	SF	SF	SF	EACH	EACH			
		MLK JR. DRIVE																		
38	SW-1	1+45.00		2+08.78		LT				2.43										
39	SW-2	4+29.46		4+43.14		LT				1.85										
39	SW-3	4+41.70		4+63.90		RT							280.60							
39	SW-4	5+02.95		8+15.16		LT							5574.47							
39	SW-5	5+59.58		7+25.00		RT							895.32							
39	SW-6	8+62.46		8+96.31		LT				4.76										
41	SW-7	11+85.65		12+46.50		LT							645.33							
41	SW-8	11+86.26		12+35.78		LT/RT							269.34							
41	SW-9	12+14.43		12+89.01		RT							572.68							
39	CR-1	4+48				LT								191.09						
39	CR-2	5+03				LT								109.10						
39	CR-3	7+98				LT								136.87						
39	CR-4	8+62				LT								101.86						
41	CR-5	11+97				LT								52.23						
41	CR-6	11+97				LT/RT								99.36						
41	CR-7	12+15				RT								55.19						
38	M-1	2+96.93	16.80			LT												1		
41	M-2	12+66.55	18.65			LT												1		
		EB ENTRANCE RAMP																		
59	S-1	100+94.05	5.5			LT											1			
60	GR-1	106+04.50	6.5	107+17.00	6.5	RT	110	1	8.33		62.5	1								
		WB EXIT RAMP																		
70-71	CM-1	102+40.00		105+75.00		RT									3269.14					
TOTALS CARRIED TO GENERAL SUMMARY							110	1	8	9	62.5	1	8238	746	3269	1	2			

CALCULATED KJM
CHECKED JTS

ROADWAY SUBSUMMARY

CUY-90-21.02

REF. NO.	SHEET NO.	STATION TO STATION		SIDE	202	202	202	202	605	605	611	611	611	611	611	611	611	611	611	611	611	611	611	895
					PIPE REMOVED, 24" AND UNDER	PIPE REMOVED, OVER 24"	CATCH BASIN REMOVED	INLET REMOVED	6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	12" CONDUIT, TYPE B	12" CONDUIT, TYPE C	15" CONDUIT, TYPE B	30" CONDUIT, TYPE C	CATCH BASIN ADJUSTED TO GRADE	INLET, SIDE DITCH	INLET, NO. 2-A-8	INLET, NO. 2-A-16	INLET ADJUSTED TO GRADE, AS PER PLAN	MANHOLE, NO. 3 WITH 90° BASE I.D. AND 8" WEIR	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	MANHOLE, MISC.: CITY OF CLEVELAND, MANHOLE NO. 1	DRAINAGE STRUCTURE, MISC.: CATCH BASIN, CITY OF CLEVELAND, CB-1	MANUFACTURED WATER QUALITY STRUCTURE, TYPE 2, AS PER PLAN
		FROM	TO		FT	FT	EACH	EACH	FT	FT	FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
		MLK JR. DRIVE																							
D-1	39	5+11.41		LT																			1		
D-2	39	5+99.82		RT												1									
D-3	39	6+00.00		LT	13		1					29												1	
D-4	39	6+07.37		RT																			1		
D-5	39	7+30.00		RT	13							6												1	
D-6	39	7+55.00		LT	36		1					28												1	
D-7	39	7+61.80		LT																			1		
D-8	39	8+91.89		RT												1									
D-9	39	8+92.16		LT																			1		
D-10	41	9+10.00		LT									121				1								
D-11	41	10+29.16		RT																			1		
D-12	41	10+30.00		LT	17		1					6												1	
D-13	41	11+00.00		LT								24												1	
D-14	41	11+00.00		RT								71													
D-15	41	11+46.75		RT	6		1						11											1	
D-16	41	11+50.00		LT								56												1	
D-17	41	12+25.00		RT								125												1	
D-18	41	13+02.00		RT	32		1						6											1	
D-19	41	13+90.14		RT												1									
		EB ENTRANCE RAMP																							
D-20	59	100+64.77		LT																			1		
D-21	59	100+78.00		LT	12			1					11					1							
D-22	59	101+65.19		RT																			1		
D-23	59	102+28.76		LT																1					
D-24	59	104+02.44		LT																1					
D-25	60	105+78.79		LT																1					
		WB EXIT RAMP																							
D-26	70	101+01.91		LT																1					
D-27	70	101+10.00		RT	16			1				11	6					1							
D-28	70	102+49.50		RT	14			1					6					1							
D-29	71	104+60.50		RT	16			1					6					1							
D-30	71	106+90.13		LT																1					
D-31	82	3+15.76		LT																1					
D-32	82	4+33.84		RT																			1		
D-33	82	4+50.00		LT								41							1						
D-34	82	5+14.64		LT																1					
		MANUFACTURED SYSTEM																							
D-35	41	10+69.25		RT		60								30	60						1				1
U-1	38	1+45.00	101+63.19 (EB ENTRANCE)	RT						382															
U-2	38	1+45.00	5+00.00 (EB EXIT)	LT./RT.						376															
U-3	39	5+99.82	100+73.31 (EB ENTRANCE)	LT./RT.						129	10														
U-4	39	5+00.00 (EB EXIT)	5+14.64 (EB EXIT)	LT						5	10														
U-5	39	6+00.00	5+19.59 (EB EXIT)	LT						117	10														
U-6	39	6+01.82	7+30.00	RT						119	10														
U-7	39	6+02.00	7+55.00	LT						144	10														
U-8	39	7+32.00	8+91.89	RT						150	10														
U-9	39	7+55.00	2+11.00 (N. MARGINAL)	LT						115	10														
U-10	39	10+30.00	2+11.00 (N. MARGINAL)	LT./RT.					231		10														
SUBTOTALS CARRIED TO SHEET 35					175	60	5	4	231	1537	80	397	167	30	60	3	1	4	1	7	1	8	1	9	1

CALCULATED KJM
CHECKED JTS

DRAINAGE SUBSUMMARY

CUY-90-21.02

34
153

10382L_GS001.dgn Sheet 9/6/2018 4:40:51 PM MDohlen

REF. NO.	SHEET NO.	STATION TO STATION		SIDE	202 PIPE REMOVED, 24" AND UNDER	202 PIPE REMOVED, OVER 24"	202 CATCH BASIN REMOVED	202 INLET REMOVED	605 6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	605 6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	611 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	611 12" CONDUIT, TYPE B	611 12" CONDUIT, TYPE C	611 15" CONDUIT, TYPE B	611 30" CONDUIT, TYPE C	611 CATCH BASIN ADJUSTED TO GRADE	611 INLET, SIDE DITCH	611 INLET, NO. 2-A-8	611 INLET, NO. 2-A-16	611 INLET ADJUSTED TO GRADE, AS PER PLAN	611 MANHOLE, NO. 3 WITH 90° BASE I.D. AND 8" WEIR	611 MANHOLE ADJUSTED TO GRADE, AS PER PLAN	611 MANHOLE, MISC.: CITY OF CLEVELAND, MANHOLE NO. 1	611 DRAINAGE STRUCTURE, MISC.: CATCH BASIN, CITY OF CLEVELAND, CB-1	895 MANUFACTURED WATER QUALITY STRUCTURE, TYPE 2, AS PER PLAN
		FROM	TO		FT	FT	EACH	EACH	FT	FT	FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
U-11	39	8+91.89	1+50.00 (WB ENTRANCE)	RT					133		10														
U-12	41	11+46.75	1+50.00 (WB ENTRANCE)	LT./RT.					197		10														
U-13	41	10+32.00	11+00.00	LT						58	10														
U-14	41	11+02.00	11+50.00	LT						38	10														
U-15	41	0+14.25	11+50.00	LT					285		10														
U-16	41	13+02.00	100+88.00 (WB EXIT)	LT./RT.					134		10														
U-17	41	13+04.38	13+90.14	RT						69	10														
U-18	41	13+90.14	14+25.00	RT						23	10														
U-19	59	100+78.00 (EB ENTRANCE)	101+07.96 (EB ENTRANCE)	LT						20	10														
U-20	59	101+65.19 (EB ENTRANCE)	107+17.00 (EB ENTRANCE)	RT						546	10														
U-21	70	100+35.20 (WB EXIT)	101+10.00 (WB EXIT)	RT						65	10														
U-22	70	101+10.00 (WB EXIT)	102+44.50 (WB EXIT)	RT						125	10														
U-23	70	102+49.50 (WB EXIT)	104+54.95 (WB EXIT)	RT						176	10														
U-24	71	104+60.50 (WB EXIT)	107+35.00 (WB EXIT RAMP	RT						256	10														
SUBTOTALS THIS SHEET					0	0	0	0	749	1376	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTALS CARRIED FROM SHEET 34					175	60	5	4	231	1537	80	397	167	30	60	3	1	4	1	7	1	8	1	9	1
TOTALS CARRIED TO GENERAL SUMMARY					175	60	5	4	980	2913	220	397	167	30	60	3	1	4	1	7	1	8	1	9	1

CALCULATED KJM
CHECKED JTS

DRAINAGE SUBSUMMARY

CUY-90-21.02

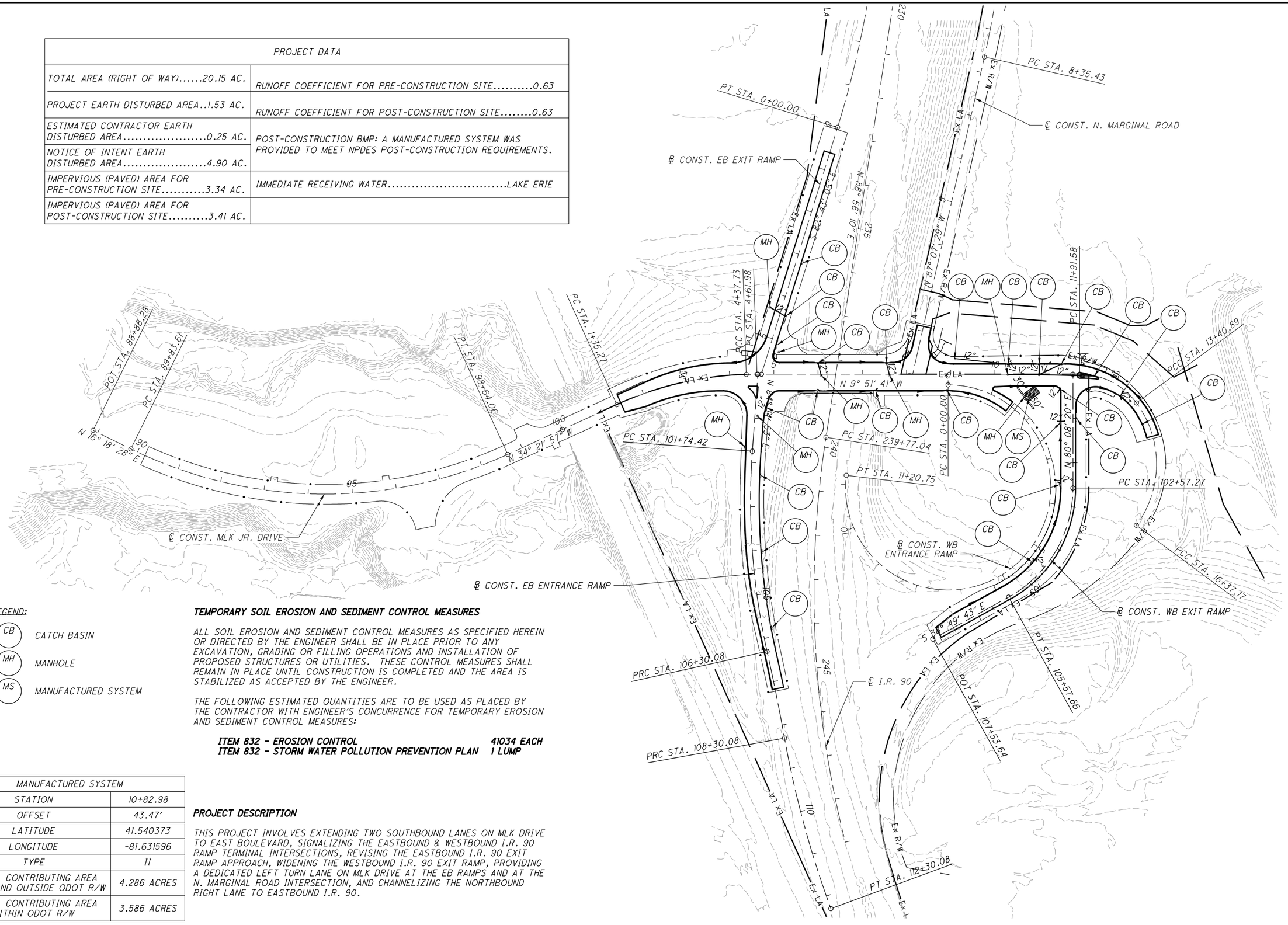
SHEET NO.	STATION FROM	STATION TO	PROPOSED UNDERCUT LENGTH	PROPOSED UNDERCUT WIDTH	PROPOSED UNDERCUT DEPTH	203 EXCAVATION	203 EMBANKMENT	204 EXCAVATION OF SUBGRADE, AS PER PLAN	204 GRANULAR EMBANKMENT	659 SEEDING AND MULCHING, CLASS 1
	FROM	TO	FT	FT	FT	CY	CY	CY	CY	SY
	MLK JR. DRIVE									
42	1+45.00	2+00.00				39	3			38
43	2+25.00	2+75.00				52	3			66
44	3+00.00	3+50.00				64	10			182
45	3+75.00	4+25.00				78	10			101
46	4+50.00	5+25.00				30	9			41
47	5+50.00	6+00.00				90	21			20
48	6+25.00	6+75.00				96	23			
49	7+00.00	7+25.00				63	17			
50	7+50.00	8+00.00				57	48			142
51	8+25.00	8+75.00				52	14			89
52	9+00.00	9+50.00				66	50			186
53	9+75.00	10+25.00				58	103			291
54	10+50.00	11+00.00				68	127			404
55	11+25.00	11+75.00				65	68			196
56	12+00.00	12+50.00				40	34			124
57	12+75.00	13+25.00				13	20			222
58	13+50.00	14+25.00				14	10			224
	EB ENTRANCE RAMP									
61	100+50.00	101+00.00				96	11			64
62	101+25.00	101+75.00				56	18			96
63	102+00.00	102+50.00				44	18			94
64	102+75.00	103+25.00				45	23			92
65	103+50.00	104+00.00				45	24			104
66	104+25.00	104+75.00				41	12			59
67	105+00.00	105+50.00				30	14			83
68	105+75.00	106+25.00				16	8			76
69	106+50.00	107+17.00				14	3			31
	WB EXIT RAMP									
72	100+50.00	101+00.00	75	11	3	63	9	92	92	43
73	101+25.00	101+75.00	75	11	3	62		92	92	18
74	102+00.00	102+50.00	75	11	3	73		92	92	9
75	102+75.00	103+25.00	75	11	3	83		92	92	
76	103+50.00	104+00.00	75	11	3	75		92	92	
77	104+25.00	104+75.00	75	11	3	73		92	92	
78	105+00.00	105+50.00	75	11	3	49		92	92	
79	105+75.00	106+25.00	75	11	3	47	3	92	92	30
80	106+50.00	107+25.00	85	9	3	41	2	85	85	24
81	107+35.00	107+35.00								
TOTALS CARRIED TO GENERAL SUMMARY						1898	715	821	821	3149

CALCULATED KJM
CHECKED JTS

EARTHWORK SUBSUMMARY

CUY-90-21.02

PROJECT DATA	
TOTAL AREA (RIGHT OF WAY).....20.15 AC.	RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE.....0.63
PROJECT EARTH DISTURBED AREA..1.53 AC.	RUNOFF COEFFICIENT FOR POST-CONSTRUCTION SITE.....0.63
ESTIMATED CONTRACTOR EARTH DISTURBED AREA.....0.25 AC.	POST-CONSTRUCTION BMP: A MANUFACTURED SYSTEM WAS PROVIDED TO MEET NPDES POST-CONSTRUCTION REQUIREMENTS.
NOTICE OF INTENT EARTH DISTURBED AREA.....4.90 AC.	
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION SITE.....3.34 AC.	IMMEDIATE RECEIVING WATER.....LAKE ERIE
IMPERVIOUS (PAVED) AREA FOR POST-CONSTRUCTION SITE.....3.41 AC.	



LEGEND:

- CB — CATCH BASIN
- MH — MANHOLE
- MS — MANUFACTURED SYSTEM

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL MEASURES

ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SPECIFIED HEREIN OR DIRECTED BY THE ENGINEER SHALL BE IN PLACE PRIOR TO ANY EXCAVATION, GRADING OR FILLING OPERATIONS AND INSTALLATION OF PROPOSED STRUCTURES OR UTILITIES. THESE CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED AND THE AREA IS STABILIZED AS ACCEPTED BY THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS PLACED BY THE CONTRACTOR WITH ENGINEER'S CONCURRENCE FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES:

ITEM 832 - EROSION CONTROL	**41034 EACH**
ITEM 832 - STORM WATER POLLUTION PREVENTION PLAN	**1 LUMP**

MANUFACTURED SYSTEM	
STATION	10+82.98
OFFSET	43.47'
LATITUDE	41.540373
LONGITUDE	-81.631596
TYPE	II
TOTAL CONTRIBUTING AREA INSIDE AND OUTSIDE ODOT R/W	4.286 ACRES
TOTAL CONTRIBUTING AREA WITHIN ODOT R/W	3.586 ACRES

PROJECT DESCRIPTION

THIS PROJECT INVOLVES EXTENDING TWO SOUTHBOUND LANES ON MLK DRIVE TO EAST BOULEVARD, SIGNALIZING THE EASTBOUND & WESTBOUND I.R. 90 RAMP TERMINAL INTERSECTIONS, REVISING THE EASTBOUND I.R. 90 EXIT RAMP APPROACH, WIDENING THE WESTBOUND I.R. 90 EXIT RAMP, PROVIDING A DEDICATED LEFT TURN LANE ON MLK DRIVE AT THE EB RAMPS AND AT THE N. MARGINAL ROAD INTERSECTION, AND CHANNELIZING THE NORTHBOUND RIGHT LANE TO EASTBOUND I.R. 90.

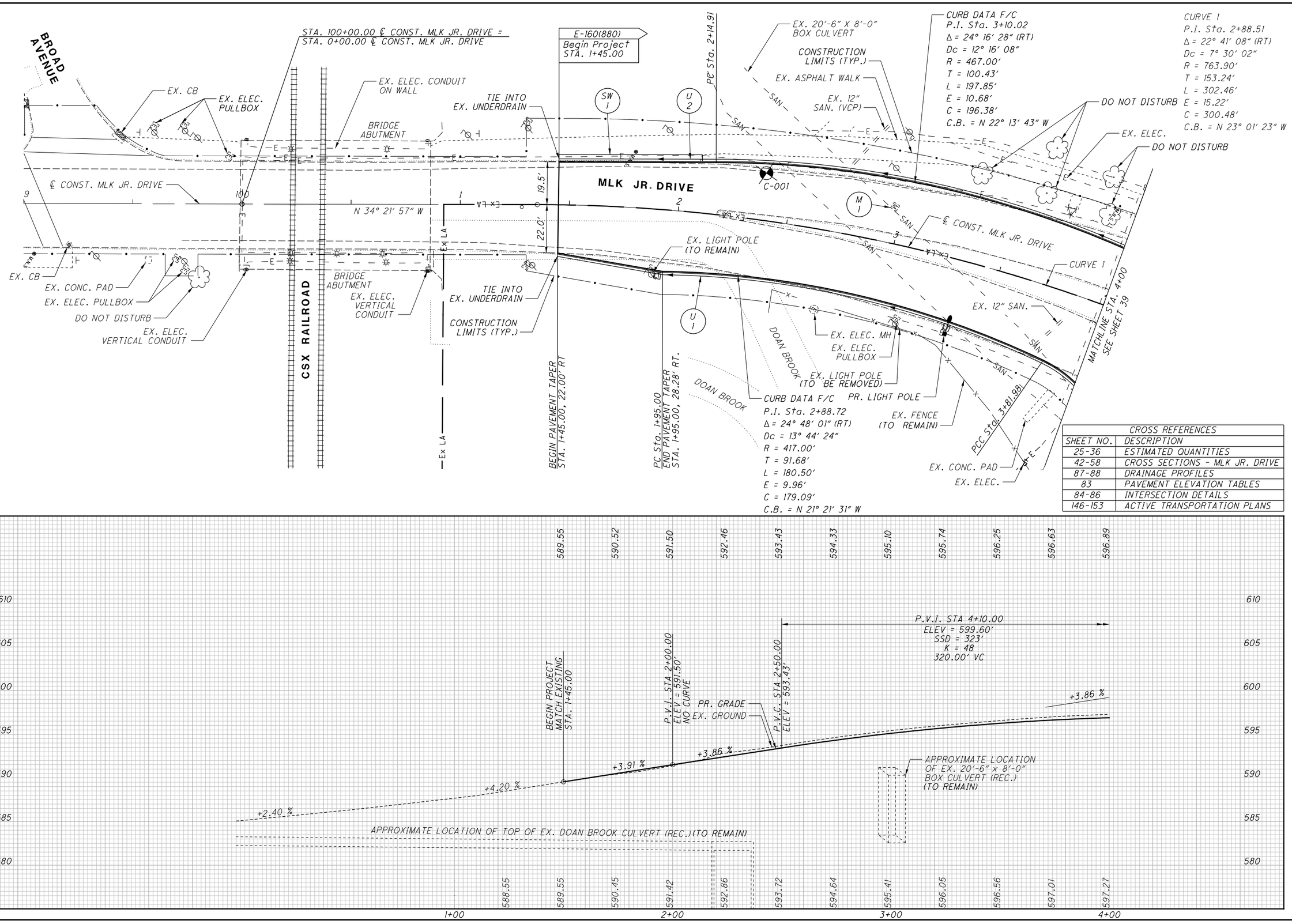
HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED K.JM
CHECKED JTS

PROJECT SITE PLAN

CUY-90-21.02

10382I_DE001.dgn Sheet 9/6/2018 4:41:48 PM MDohlen



CROSS REFERENCES	
SHEET NO.	DESCRIPTION
25-36	ESTIMATED QUANTITIES
42-58	CROSS SECTIONS - MLK JR. DRIVE
87-88	DRAINAGE PROFILES
83	PAVEMENT ELEVATION TABLES
84-86	INTERSECTION DETAILS
146-153	ACTIVE TRANSPORTATION PLANS

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MKD
CHECKED JTS

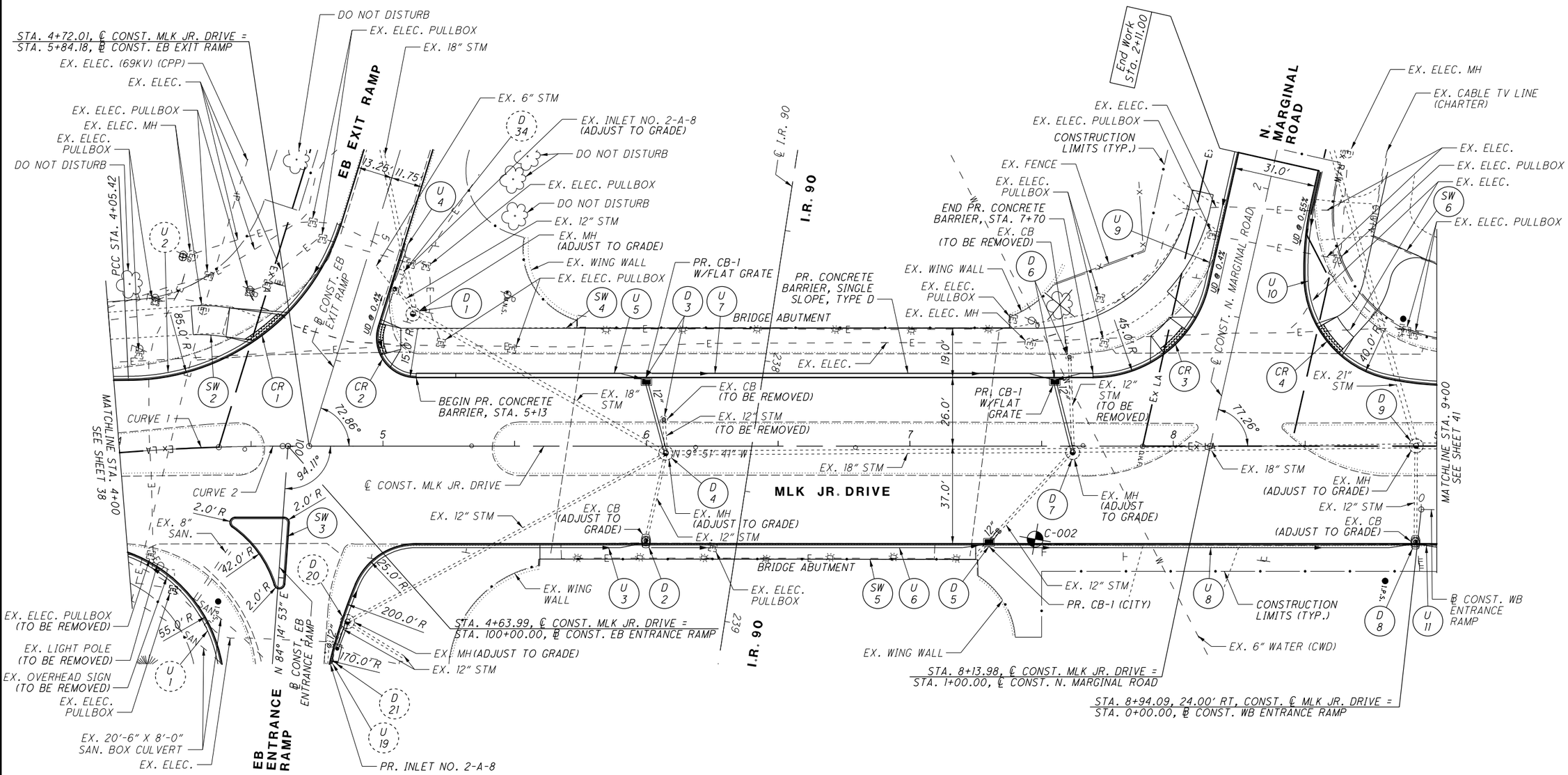
PLAN AND PROFILE
MLK JR. DRIVE BEGIN TO STA. 4+00

CUY-90-21.02

38
153

10382L_GP01.dgn Sheet 9/6/2018 4:42:02 PM MDohlen

CURVE 1	CURVE 2
P.I. Sta. 2+88.51	P.I. Sta. 4+49.85
Δ = 22° 41′ 08″ (RT)	Δ = 1° 49′ 08″ (RT)
Dc = 7° 30′ 02″	Dc = 7° 30′ 02″
R = 763.90′	R = 763.90′
T = 153.24′	T = 12.13′
L = 302.46′	L = 24.25′
E = 15.22′	E = 0.10′
C = 300.48′	C = 24.25′
C.B. = N 23° 01′ 23″ W	C.B. = N 10° 46′ 15″ W



CROSS REFERENCES	
SHEET NO.	DESCRIPTION
25-36	ESTIMATED QUANTITIES
42-58	CROSS SECTIONS - MLK JR. DRIVE
87-88	DRAINAGE PROFILES
83	PAVEMENT ELEVATION TABLES
84-86	INTERSECTION DETAILS
146-153	ACTIVE TRANSPORTATION PLANS

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MKD CHECKED JTS

PLAN
MLK JR. DRIVE STA. 4+00 TO STA 9+00

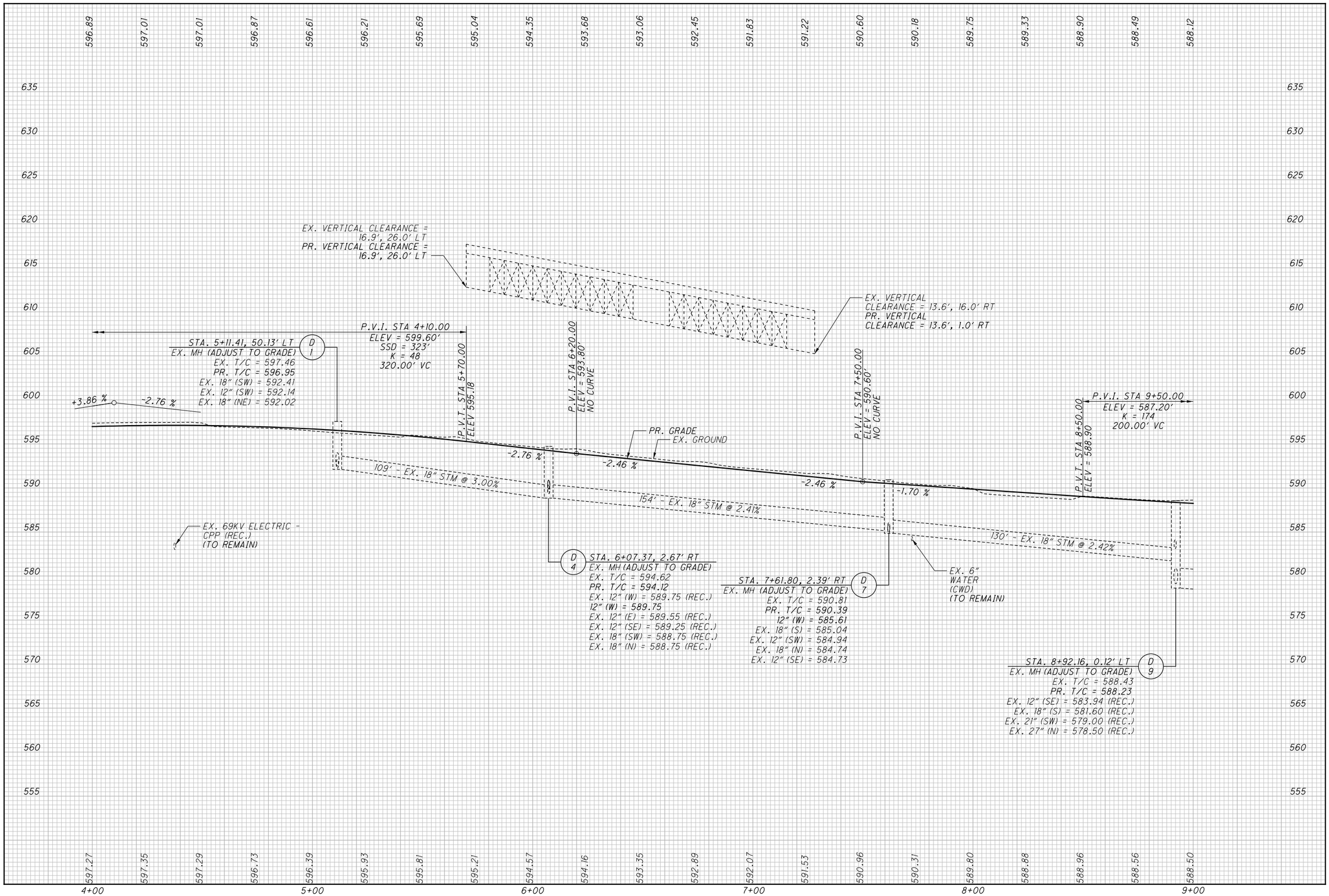
CUY-90-21.02

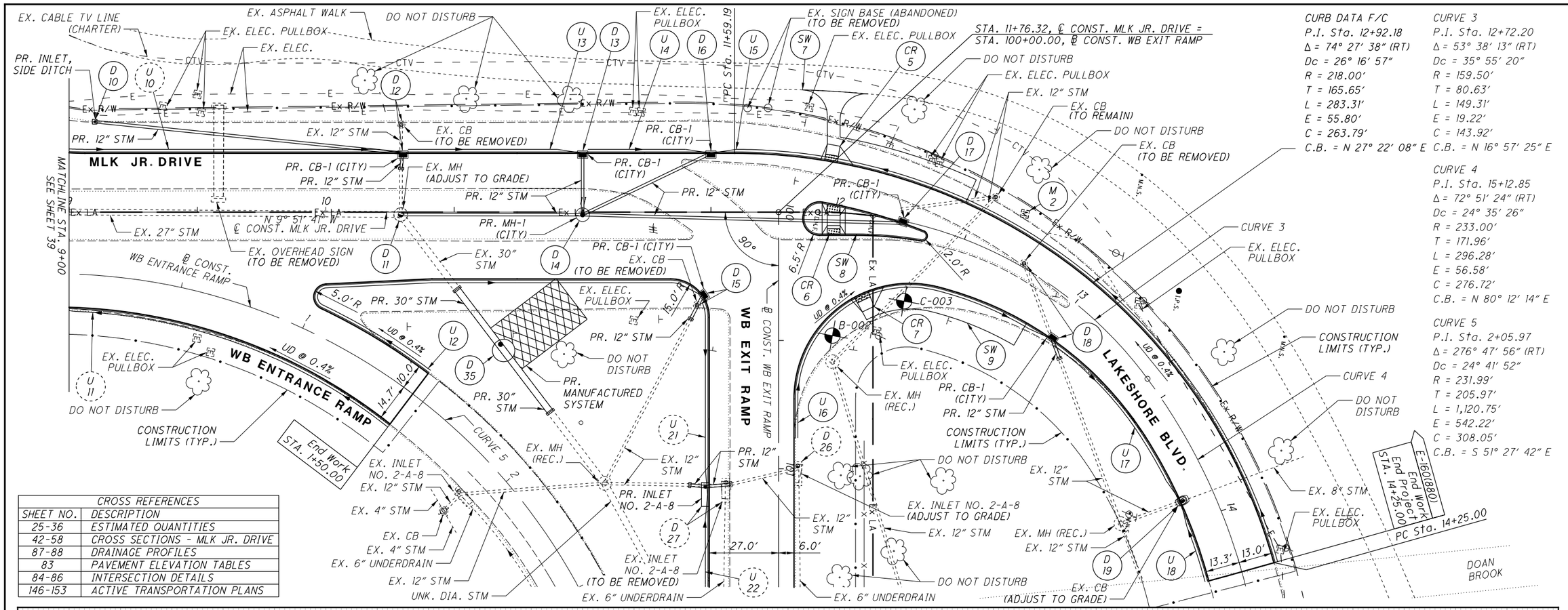
39
153

PROFILE
MLK JR. DRIVE STA. 4+00 TO STA. 9+00

CALCULATED MKD
CHECKED JTS

CUY-90-21.02





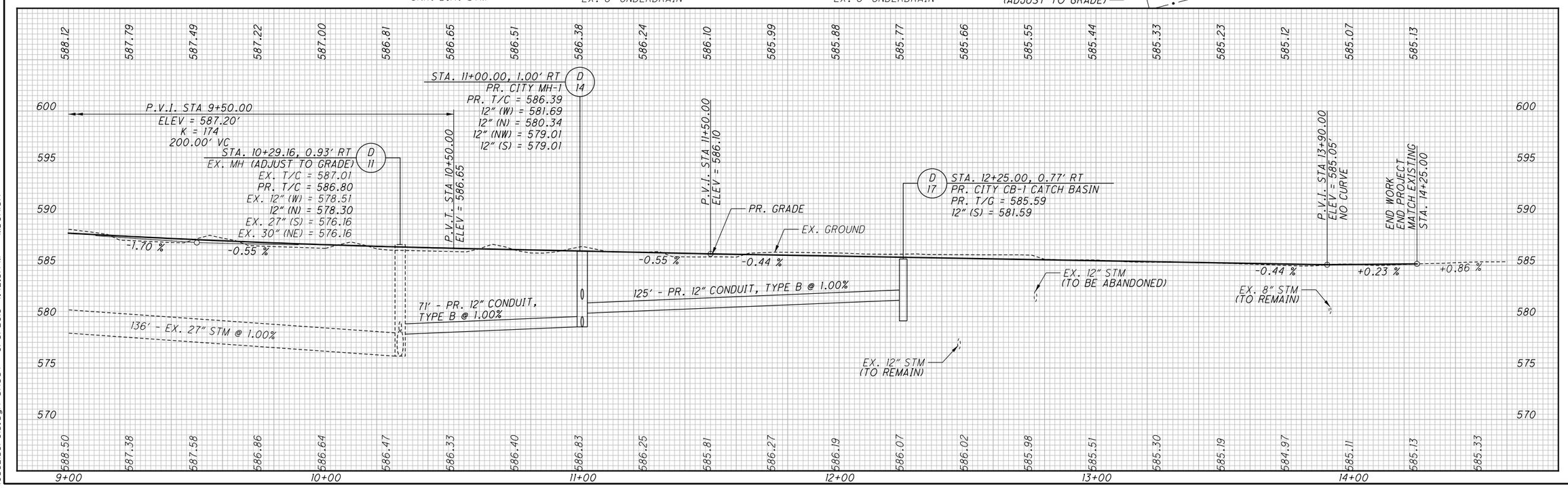
CROSS REFERENCES	
SHEET NO.	DESCRIPTION
25-36	ESTIMATED QUANTITIES
42-58	CROSS SECTIONS - MLK JR. DRIVE
87-88	DRAINAGE PROFILES
83	PAVEMENT ELEVATION TABLES
84-86	INTERSECTION DETAILS
146-153	ACTIVE TRANSPORTATION PLANS

CURB DATA F/C
P.I. Sta. 12+92.18
Δ = 74° 27' 38" (RT)
Dc = 26° 16' 57"
R = 218.00'
T = 165.65'
L = 283.31'
E = 55.80'
C = 263.79'
C.B. = N 27° 22' 08" E

CURVE 3
P.I. Sta. 12+72.20
Δ = 53° 38' 13" (RT)
Dc = 35° 55' 20"
R = 159.50'
T = 80.63'
L = 149.31'
E = 19.22'
C = 143.92'
C.B. = N 16° 57' 25" E

CURVE 4
P.I. Sta. 15+12.85
Δ = 72° 51' 24" (RT)
Dc = 24° 35' 26"
R = 233.00'
T = 171.96'
L = 296.28'
E = 56.58'
C = 276.72'
C.B. = N 80° 12' 14" E

CURVE 5
P.I. Sta. 2+05.97
Δ = 276° 47' 56" (RT)
Dc = 24° 41' 52"
R = 231.99'
T = 205.97'
L = 1,120.75'
E = 542.22'
C = 308.05'
C.B. = S 51° 27' 42" E



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MKD
CHECKED JTS

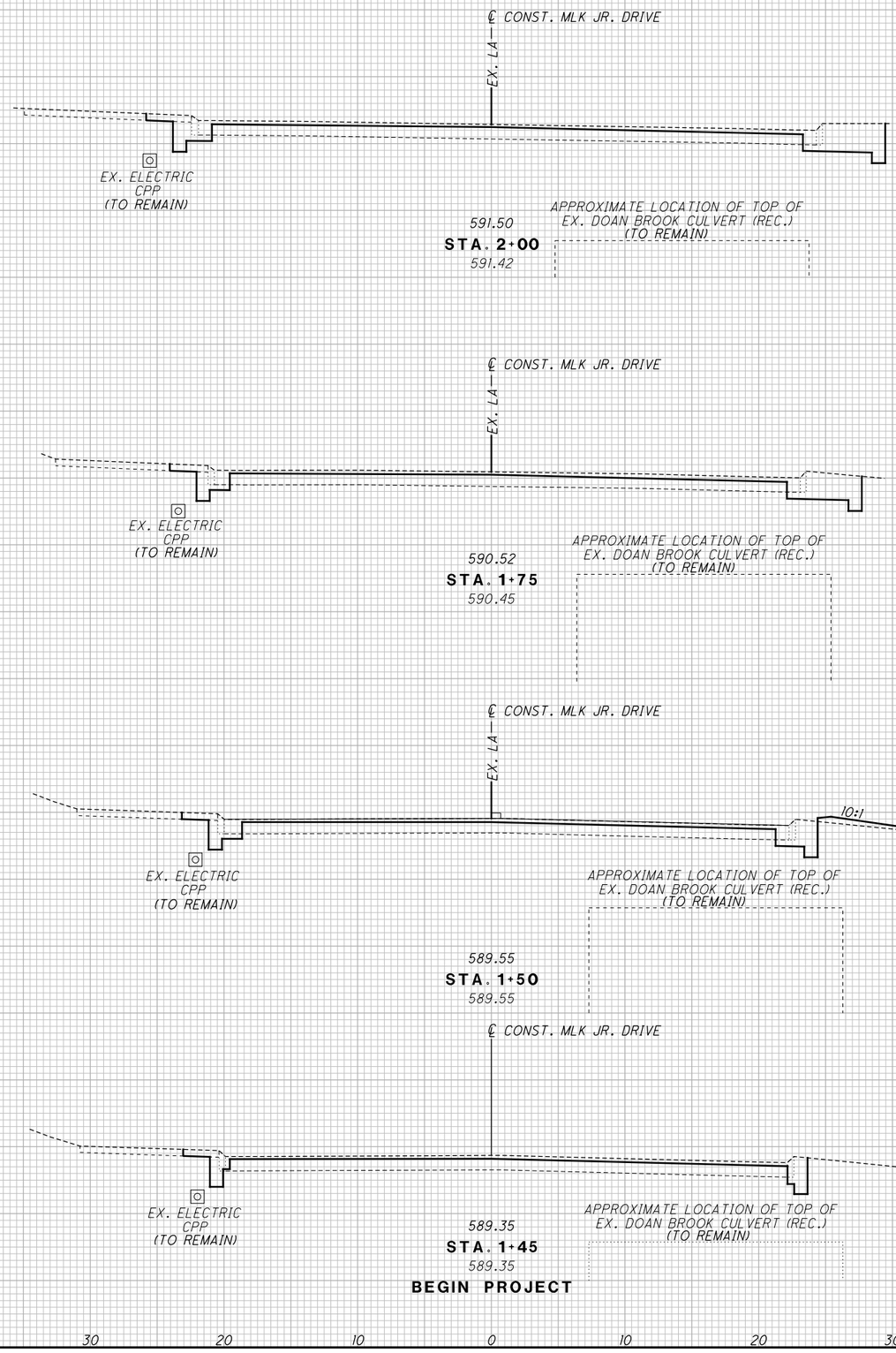
PLAN AND PROFILE
MLK JR. DRIVE EX. STA. 9+00 TO END

CUY-90-21.02

41
153

10382_GP013.dgn Sheet 9/6/2018 4:42:31 PM MDohlen

SEEDING	
END WIDTH	SQ. YDS.
	9
1	
	5
2	
12	20
	4
1	
	38



END AREA	
CUT	FILL
15	0
13	0
12	0
7	3
5	0

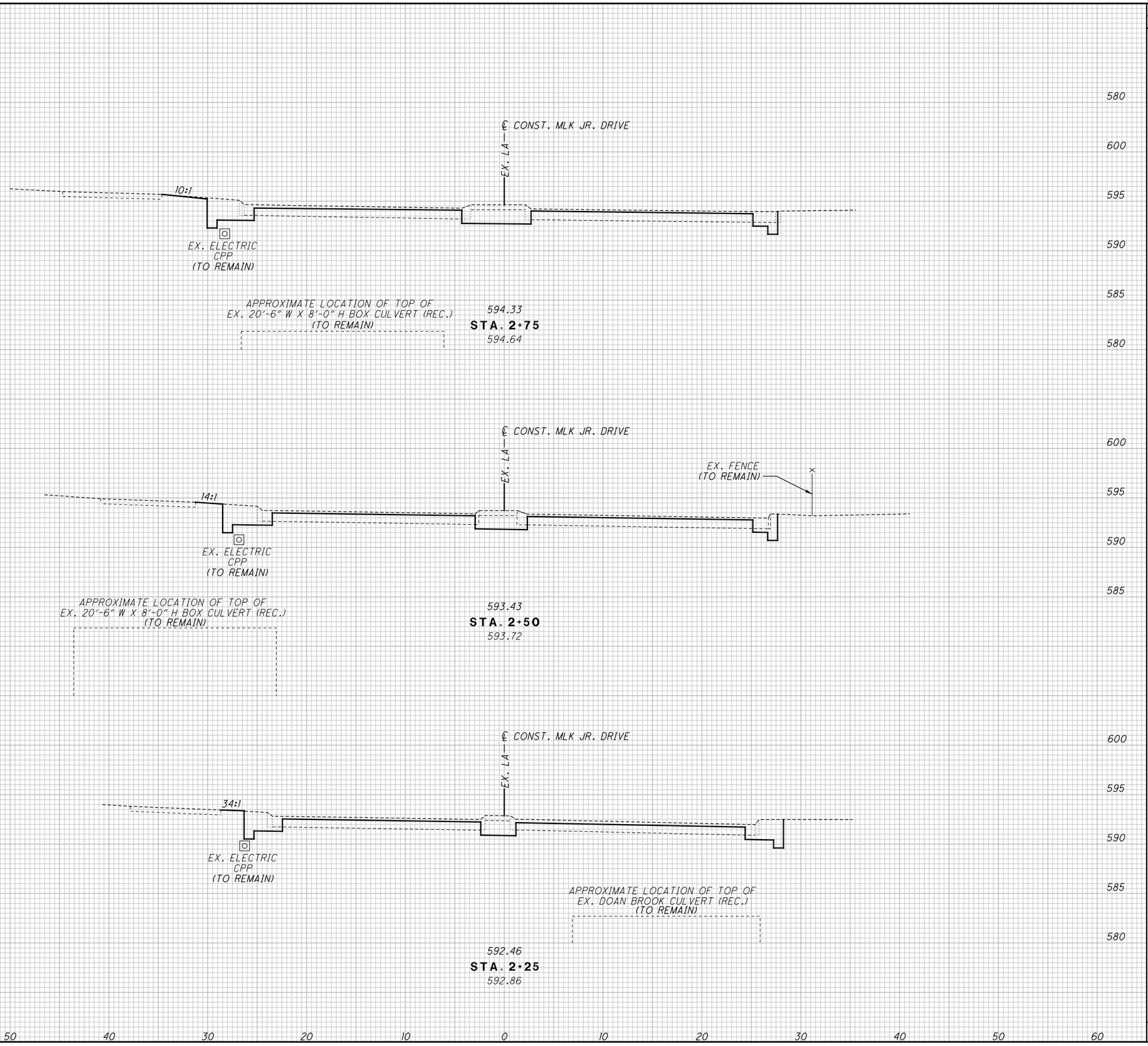
VOLUME	
CUT	FILL
15	0
13	0
9	2
2	1
39	3

CALCULATED MGW
CHECKED JTS

CROSS SECTIONS
MLK JR. DRIVE STA. 1+45 TO STA. 2+00

CUY-90-21.02

SEEDING	
END WIDTH	SQ. YDS.
	35
7	
	17
5	
	14
5	
	66



END AREA	
CUT	FILL
19	1
17	0
17	0

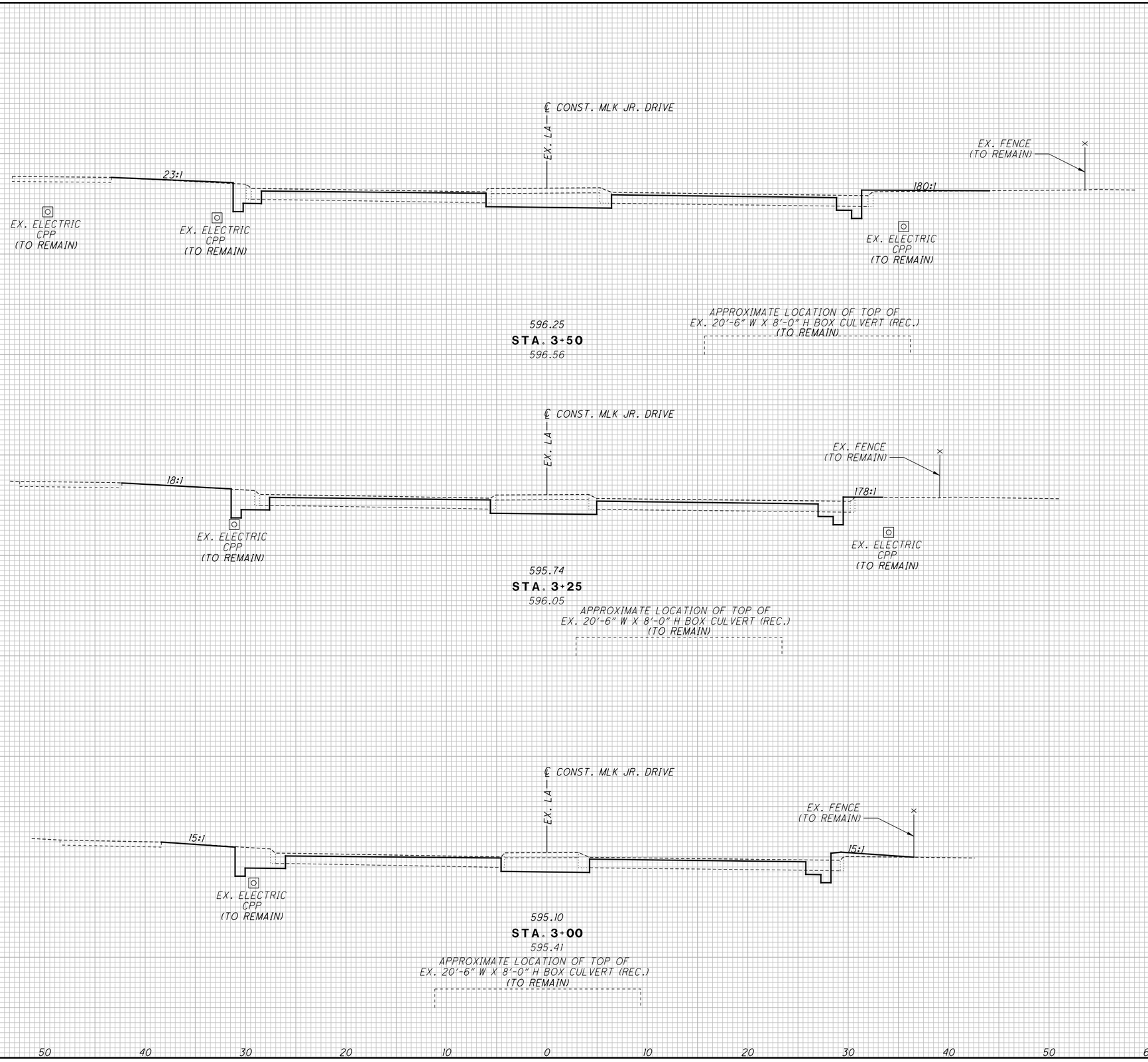
VOLUME	
CUT	FILL
19	2
17	1
16	0
52	3

CALCULATED MGW
CHECKED JTS

CROSS SECTIONS
MLK JR. DRIVE STA. 2+25 TO STA. 2+75

CUY-90-21.02

SEEDING END WIDTH	SEEDING SQ. YDS.
	71
27	
	62
17	
	49
18	
	182



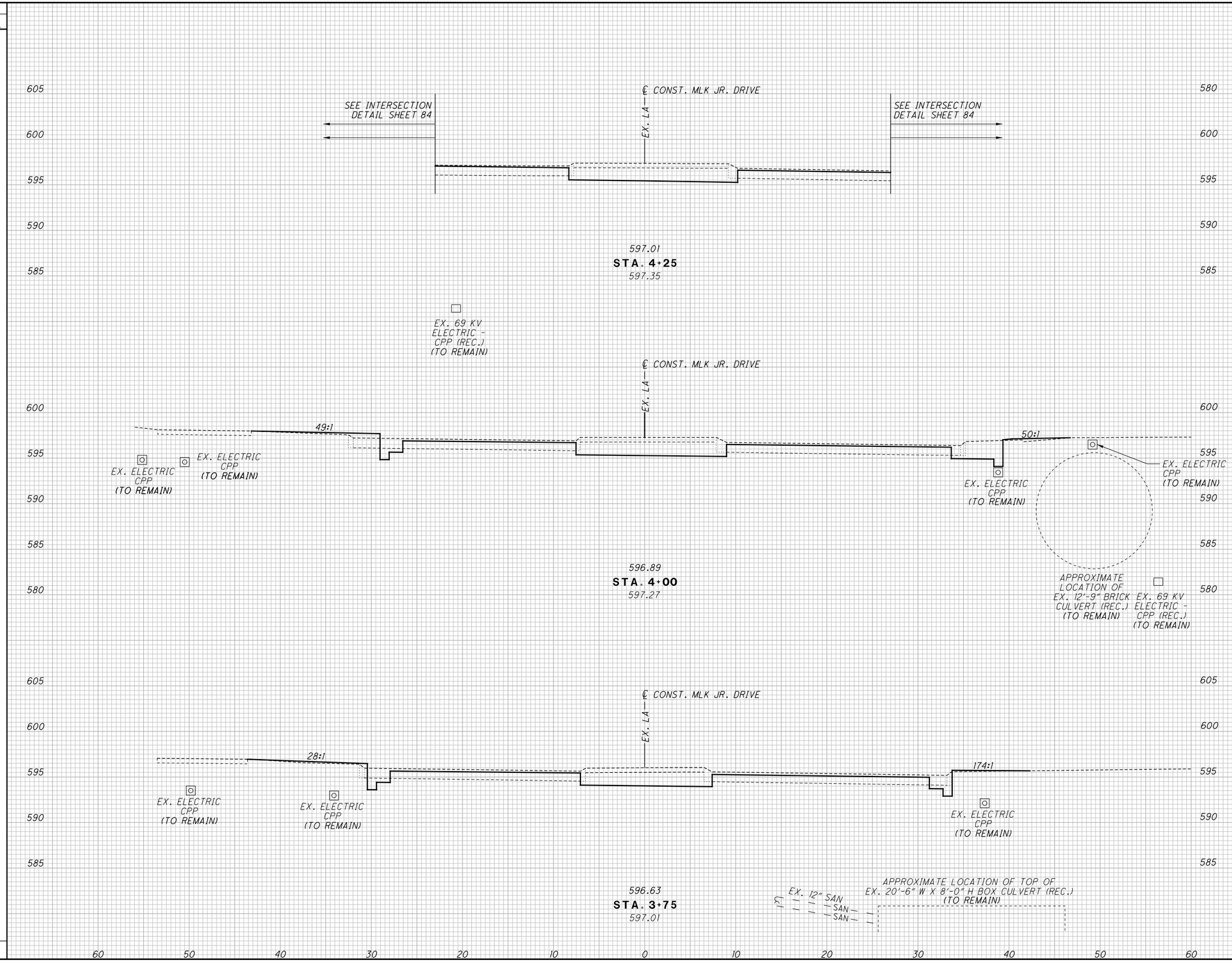
END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		22	4
22	3		
		21	3
22	2		
		21	3
22	4		
		64	10

CALCULATED MGW
CHECKED JTS

CROSS SECTIONS
MLK JR. DRIVE STA. 3+00 TO STA. 3+50

CUY-90-21.02

SEEDING END WIDTH	SEEDING SQ. YDS.
	0
0	
	34
24	
	67
24	
	101



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		22	0
25	0		
		28	4
34	8		
		28	6
24	3		
		78	10

CALCULATED MGW
CHECKED JTS

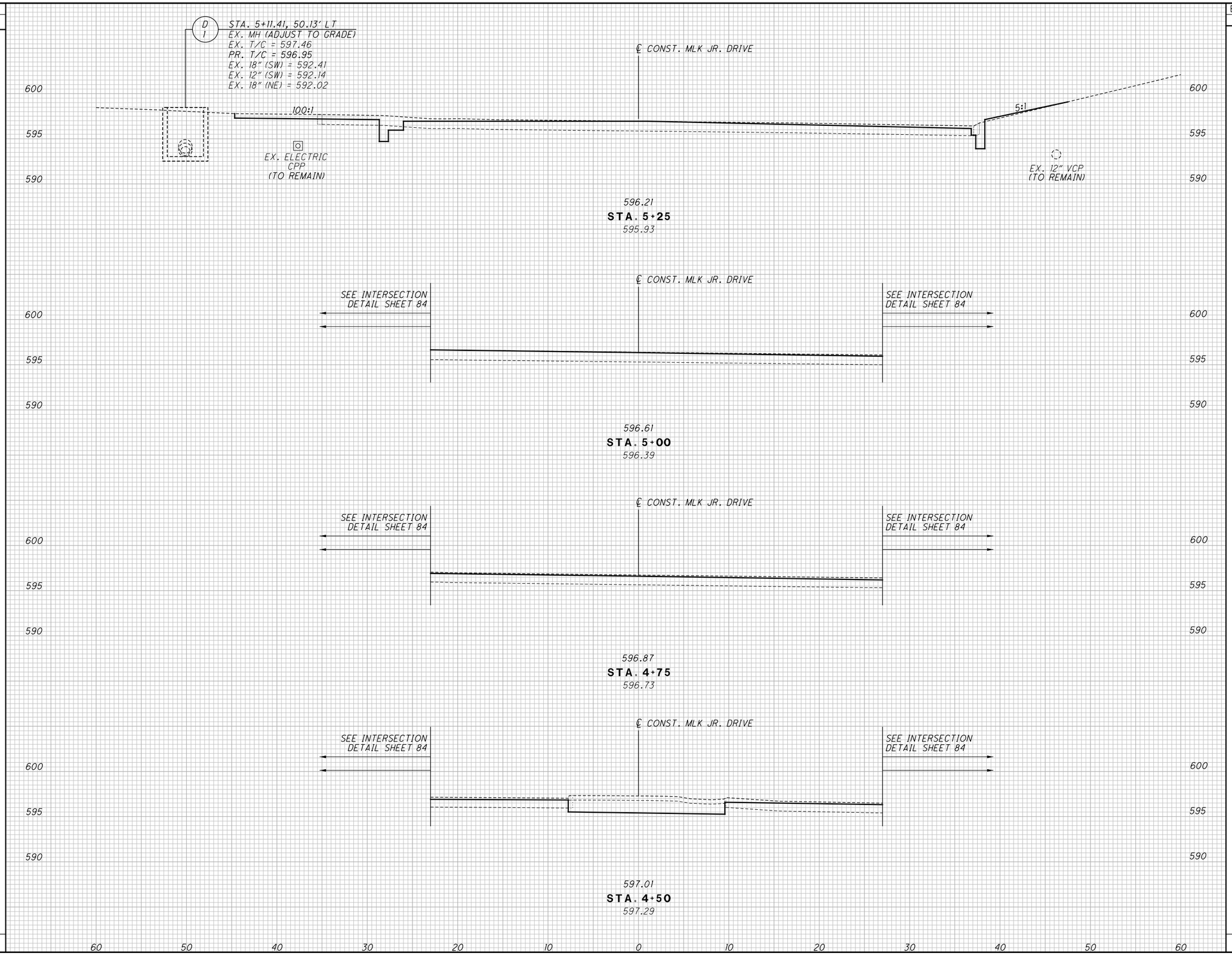
CROSS SECTIONS
JR. DRIVE STA. 3+75 TO STA. 4+25

MLK JR.

CUY-90-21.02

45
153

SEEDING END WIDTH	SEEDING SQ. YDS.
	25
11	
	16
0	
	0
0	
	0
0	
	0
41	



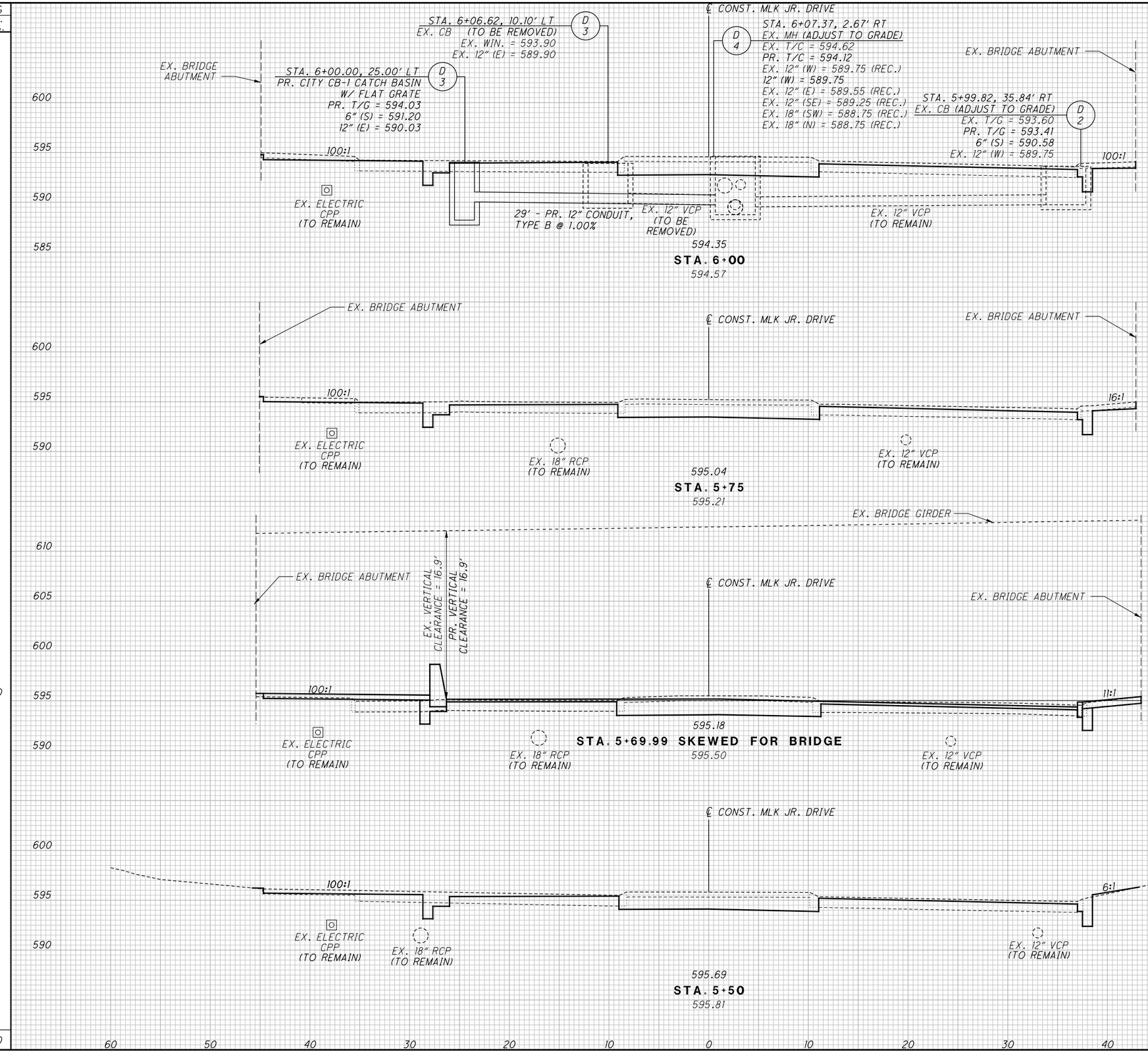
END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		16	6
5	5		
		3	3
0	0		
		0	0
0	0		
		11	0
22	0		
		30	9

CALCULATED MGW
CHECKED JTS

CROSS SECTIONS
MLK JR. DRIVE STA. 4+50 TO STA. 5+25

CUY-90-21.02

SEEDING END WIDTH	SEEDING SQ. YDS.
	0
0	
	0
0	
	20
7	
	20



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		32	7
31	7		
		30	7
32	8		
28	7		
29	7		
		90	21

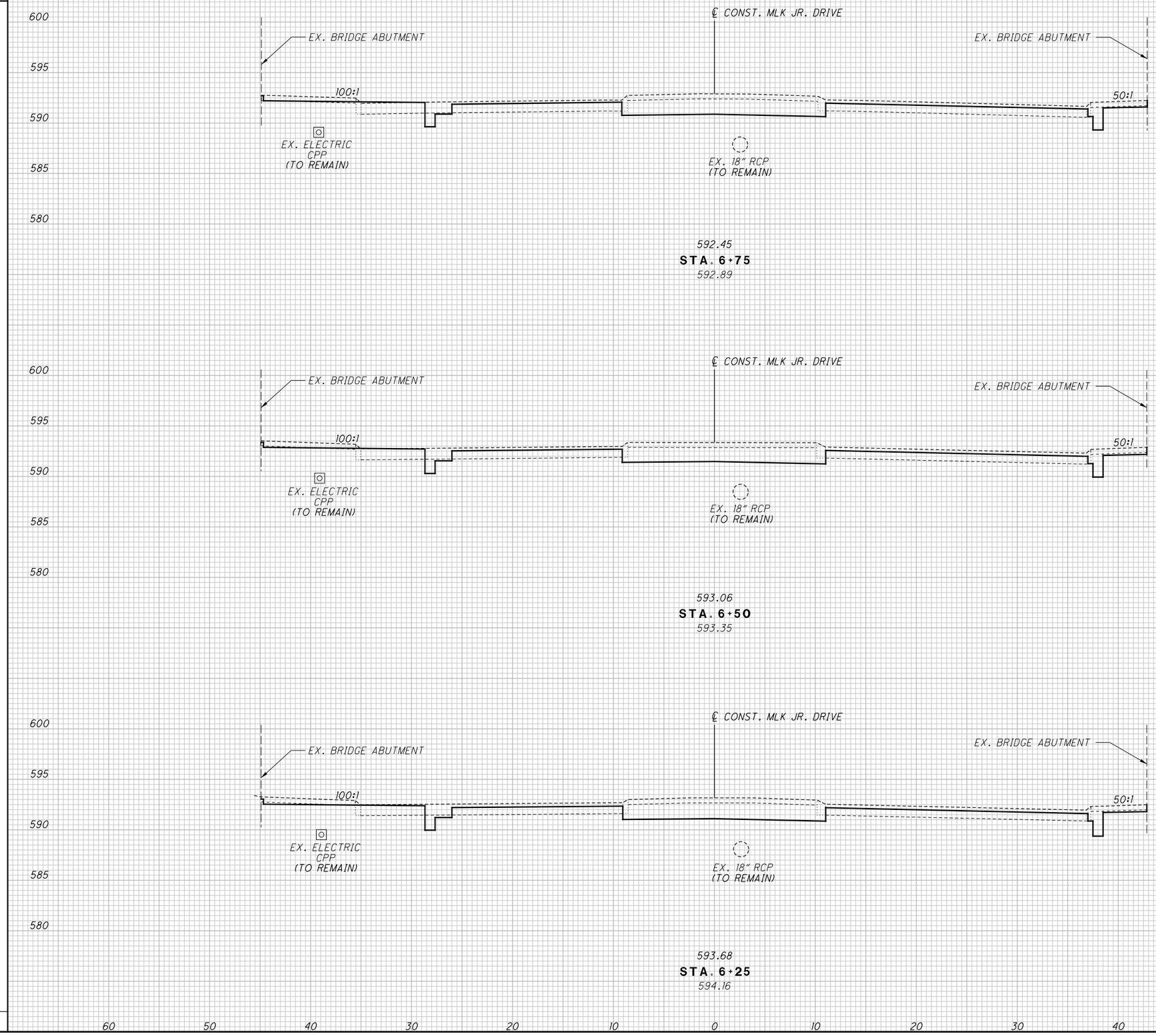
CALCULATED MGW
CHECKED JTS

CROSS SECTIONS
MLK JR. DRIVE STA. 5+50 TO STA. 6+00

CUY-90-21.02

10382L_XS105.dgn Sheet 9/6/2018 4:43:48 PM MDohlen

SEEDING END WIDTH	SEEDING SQ. YDS.
	0
0	
	0
0	
	0
0	
	0



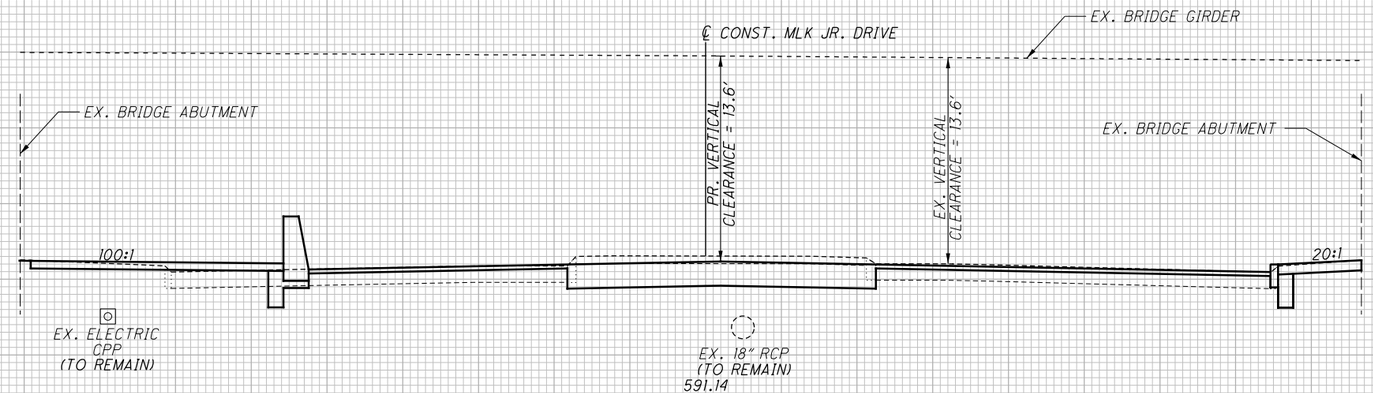
END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		31	8
34	8		
		32	8
33	8		
		33	7
36	7		
		96	23

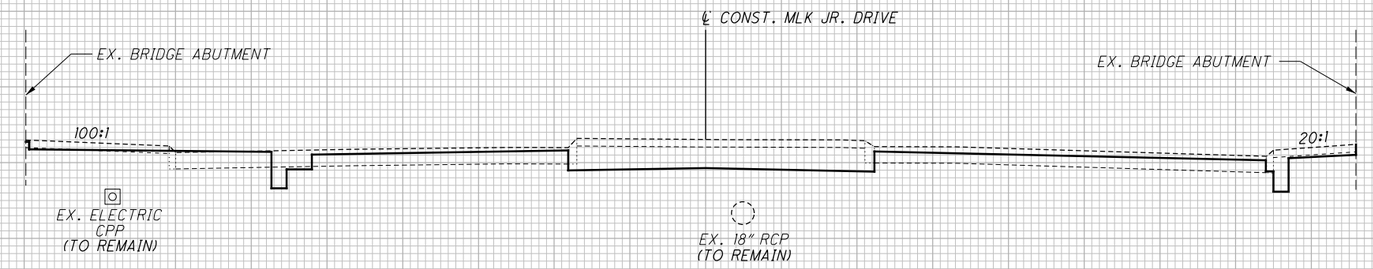
CALCULATED MGW
CHECKED JTS

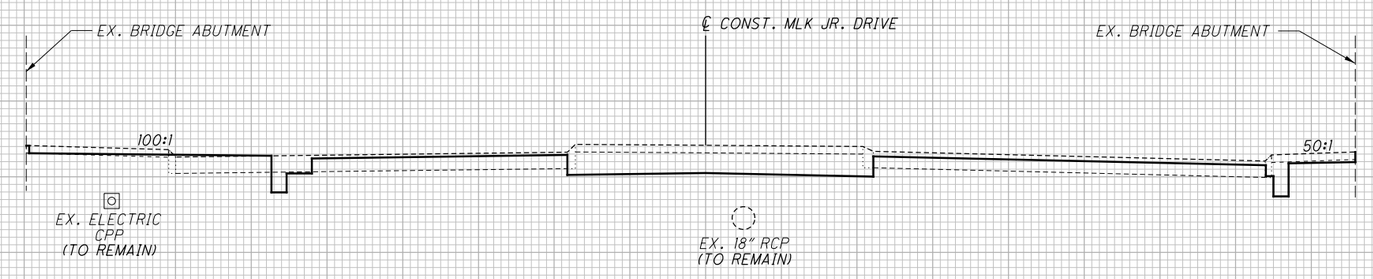
CROSS SECTIONS
MLK JR. DRIVE STA. 6+25 TO STA. 6+75

CUY-90-21.02

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	0			32	9
0		34	8		
	0			31	8
0		32	9		
	0			63	17







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

CALCULATED MGW
CHECKED JTS

CROSS SECTIONS
MLK JR. DRIVE STA. 7+00 TO STA. 7+28.20

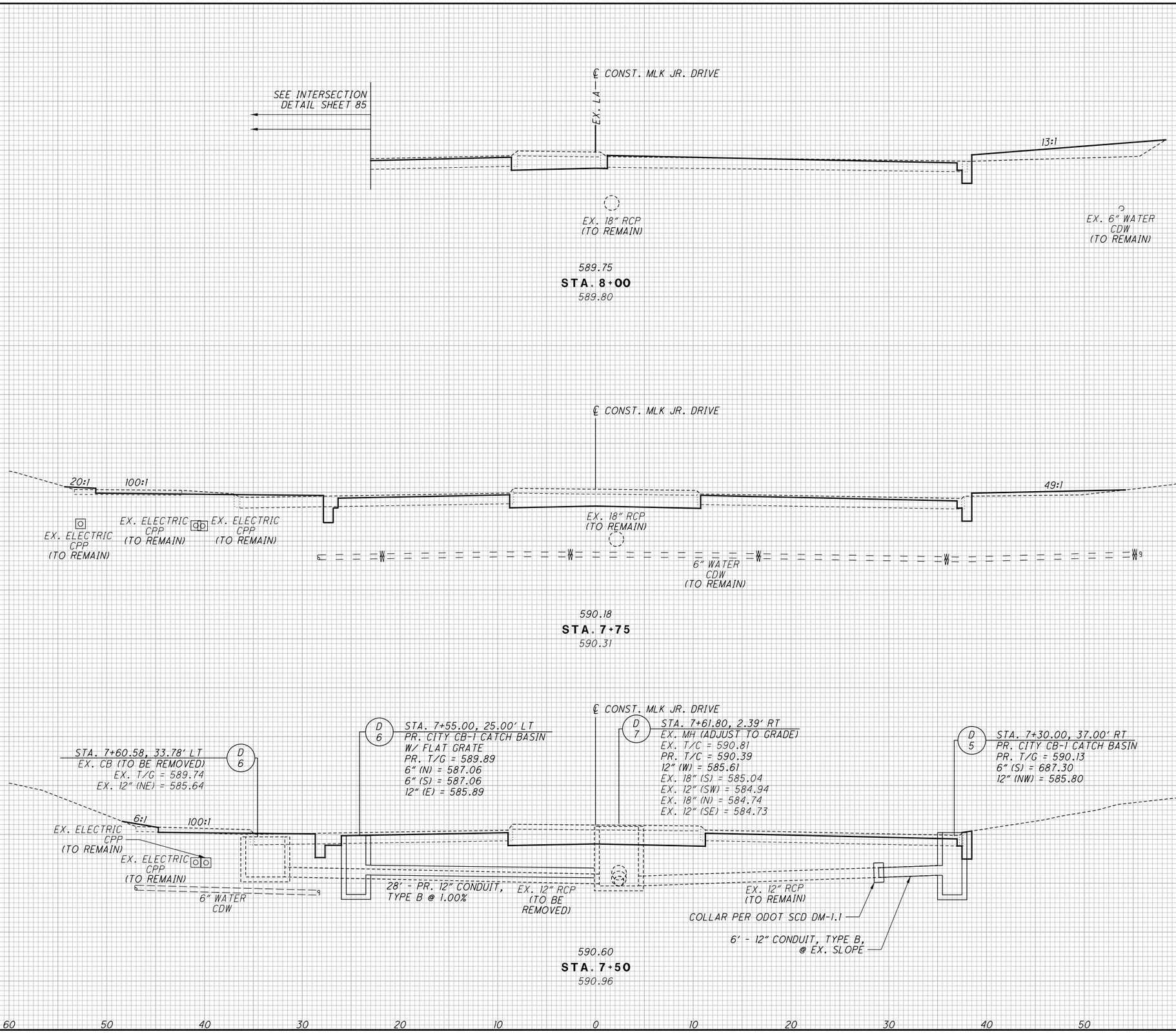
CUY-90-21.02

49
153

SEEDING END WIDTH	SEEDING SQ. YDS.
	50
21	
	57
20	
	35
5	
	142

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		7	14
13	21		
		20	20
30	20		
		30	14
34	9		
		57	48

CALCULATED MGW
CHECKED JTS

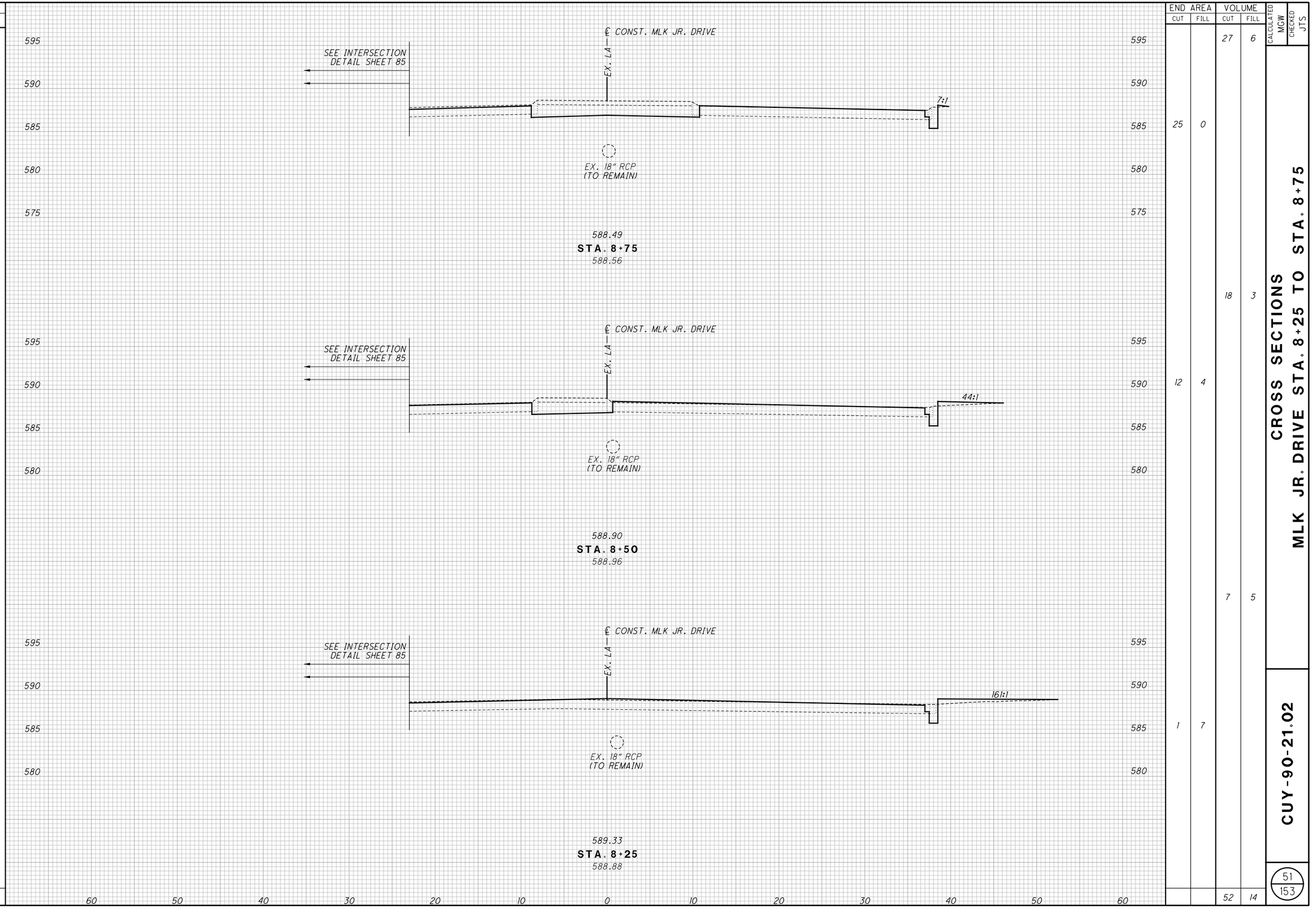


CROSS SECTIONS
MLK JR. DRIVE STA. 7+50 TO STA. 8+00

CUY-90-21.02

50
153

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	38			27	6
3		25	0		
	17			18	3
9		12	4		
	34			7	5
15		1	7		
	89			52	14



CALCULATED MGW
CHECKED JTS

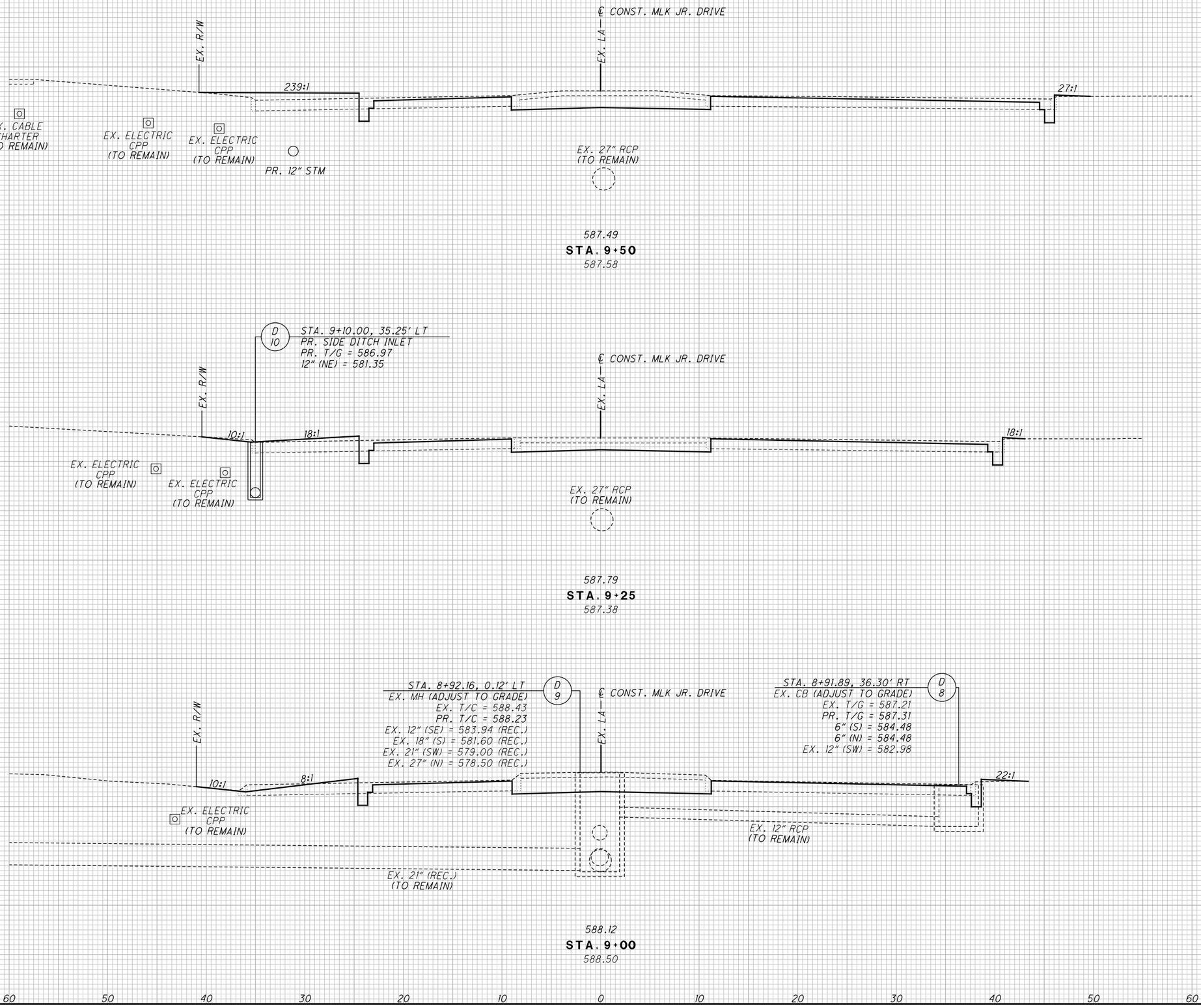
CROSS SECTIONS
MLK JR. DRIVE STA. 8+25 TO STA. 8+75

CUY-90-21.02

51
153

10382L_XS09.dgn Sheet 9/6/2018 4:44:31 PM MDohlen

SEEDING	
END WIDTH	SQ. YDS.
	63
22	
	60
21	
	63
24	
	186



END AREA	
CUT	FILL
25	21
19	15
31	12

VOLUME	
CUT	FILL
21	20
21	17
24	13
66	50

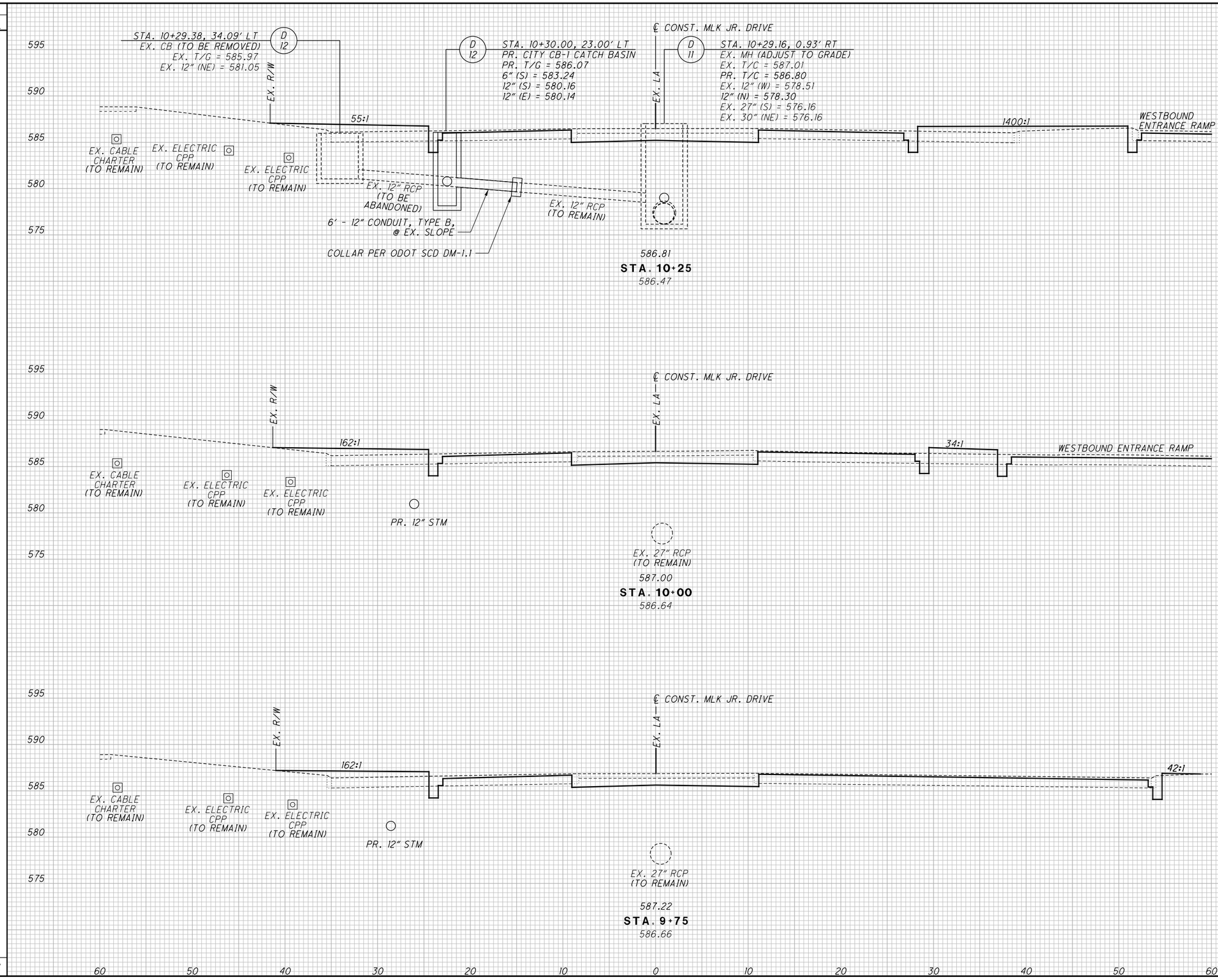
CALCULATED MGW
CHECKED JTS

CROSS SECTIONS
JR. DRIVE STA. 9+00 TO STA. 9+50

MLK JR.

CUY-90-21.02

SEEDING END WIDTH	SEEDING SQ. YDS.
	121
43	
	99
28	
	71
23	
	291



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		19	42
21	44		
		20	36
20	33		
		19	25
20	21		
		58	103

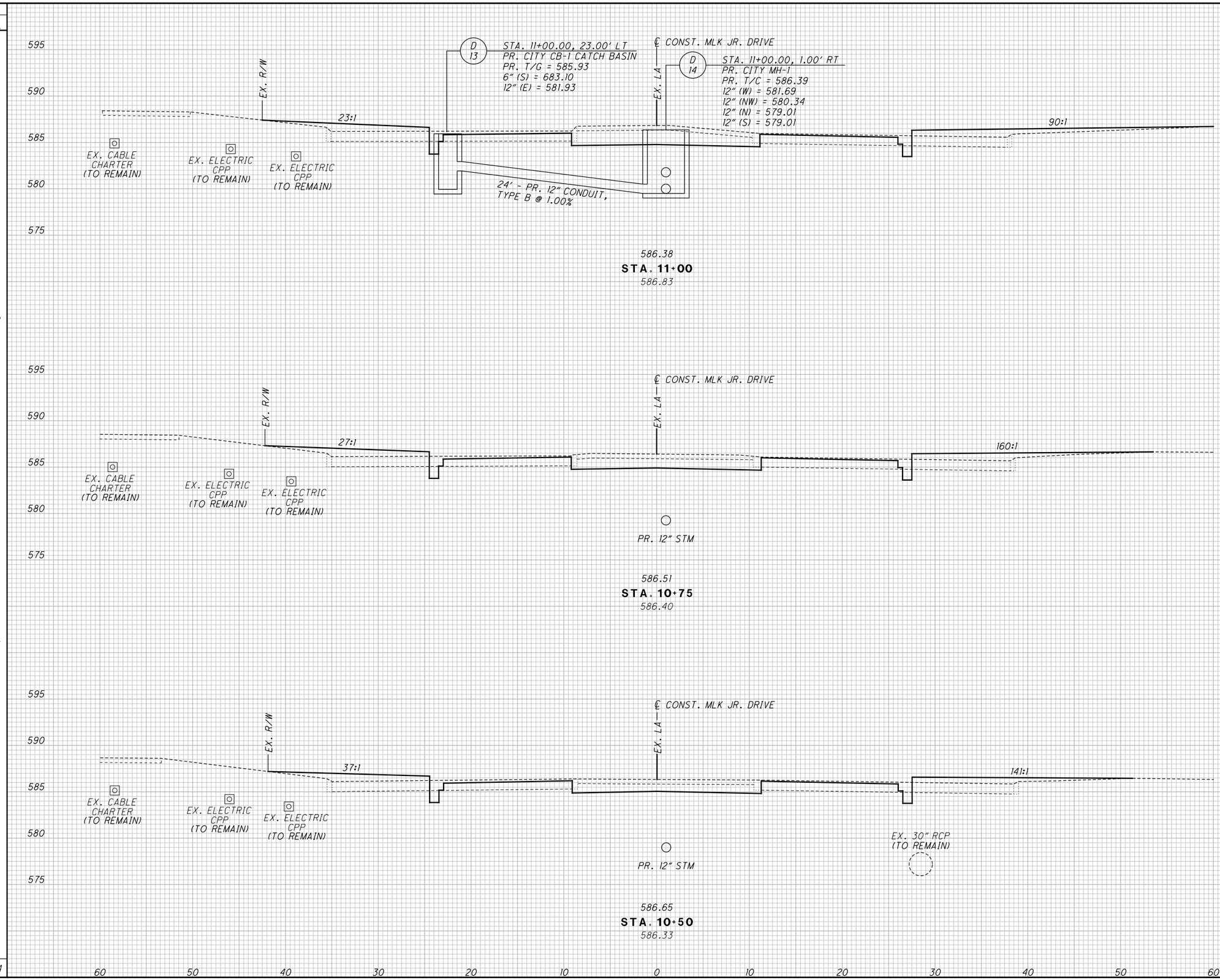
CALCULATED MGW
CHECKED JTS

CROSS SECTIONS
MLK JR. DRIVE STA. 9+75 TO STA. 10+25

CUY-90-21.02

53
153

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	141			23	42
53		30	47		
	138			25	43
46		23	45		
	125			20	42
44		20	44		
	404			68	127



CALCULATED MGW
CHECKED JTS

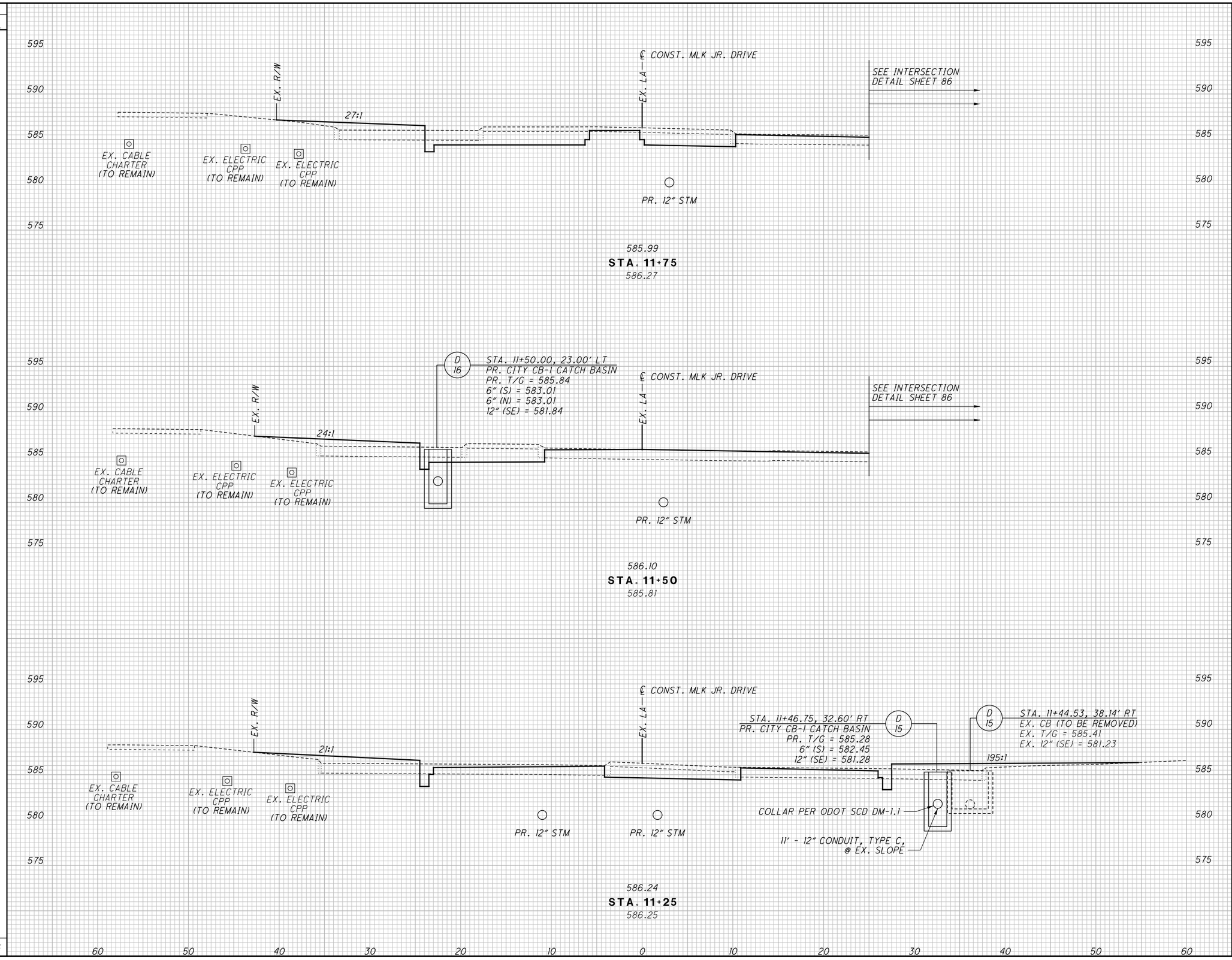
CROSS SECTIONS
MLK JR. DRIVE STA. 10+50 TO STA. 11+00

CUY-90-21.02

54
153

10382I_XSI2.dgn Sheet 9/6/2018 4:45:00 PM MDohlen

SEEDING END WIDTH	SEEDING SQ. YDS.
	48
18	
	53
20	
	95
	196



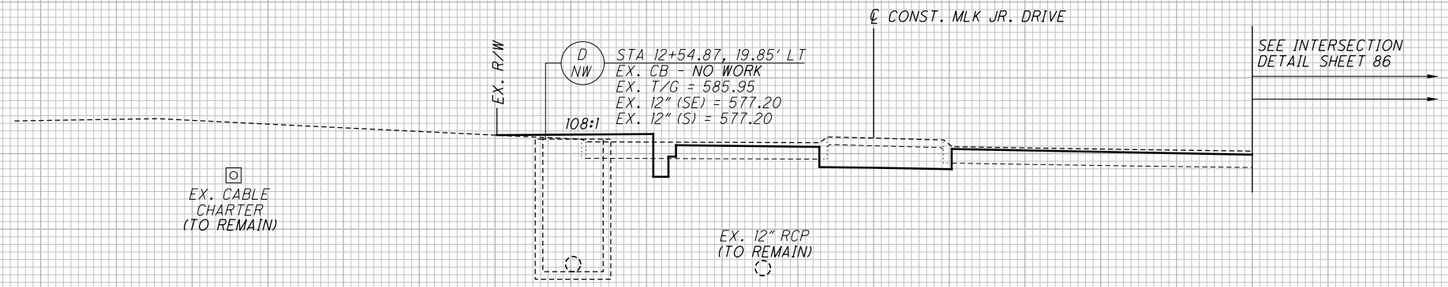
END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		25	18
35	20		
		24	20
16	21		
		16	30
18	43		
		65	68

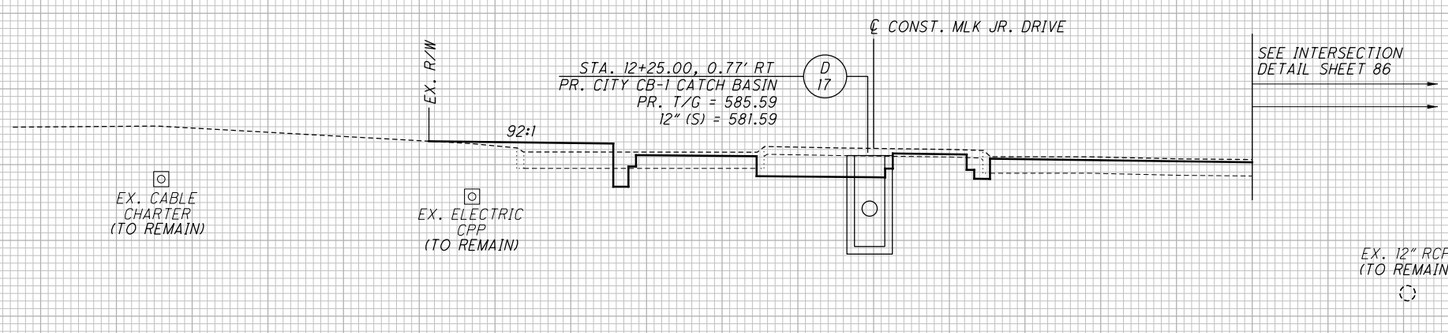
CALCULATED MGW
CHECKED JTS

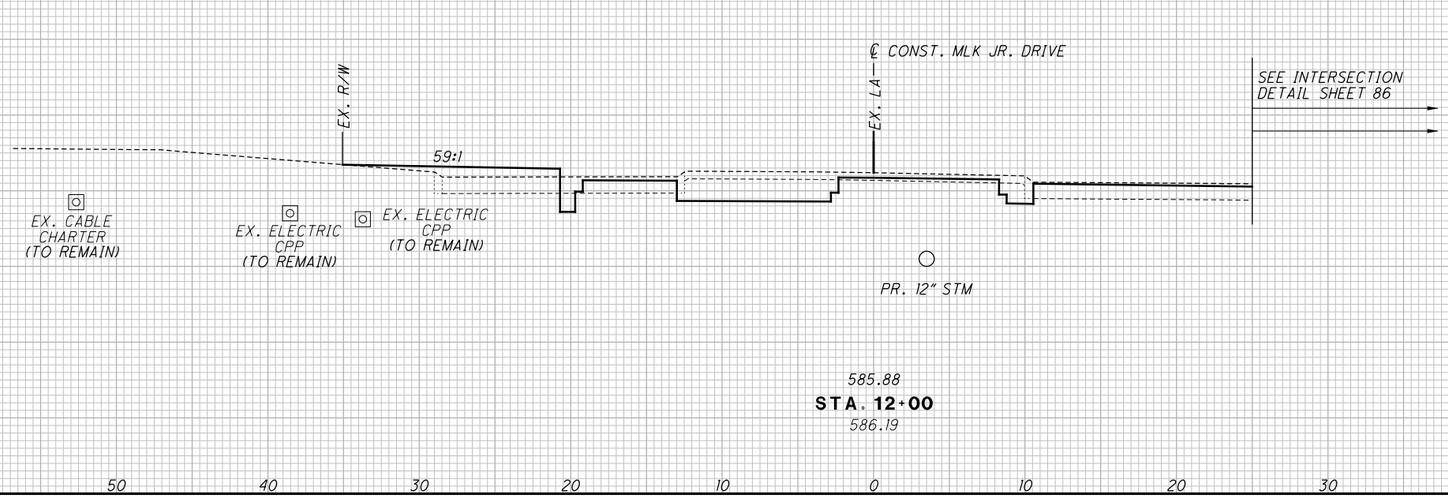
CROSS SECTIONS
MLK JR. DRIVE STA. 11+25 TO STA. 11+75

CUY-90-21.02

SEEDING END WIDTH	SEEDING SQ. YDS.
	45
12	
	37
14	
	42
16	
	124







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

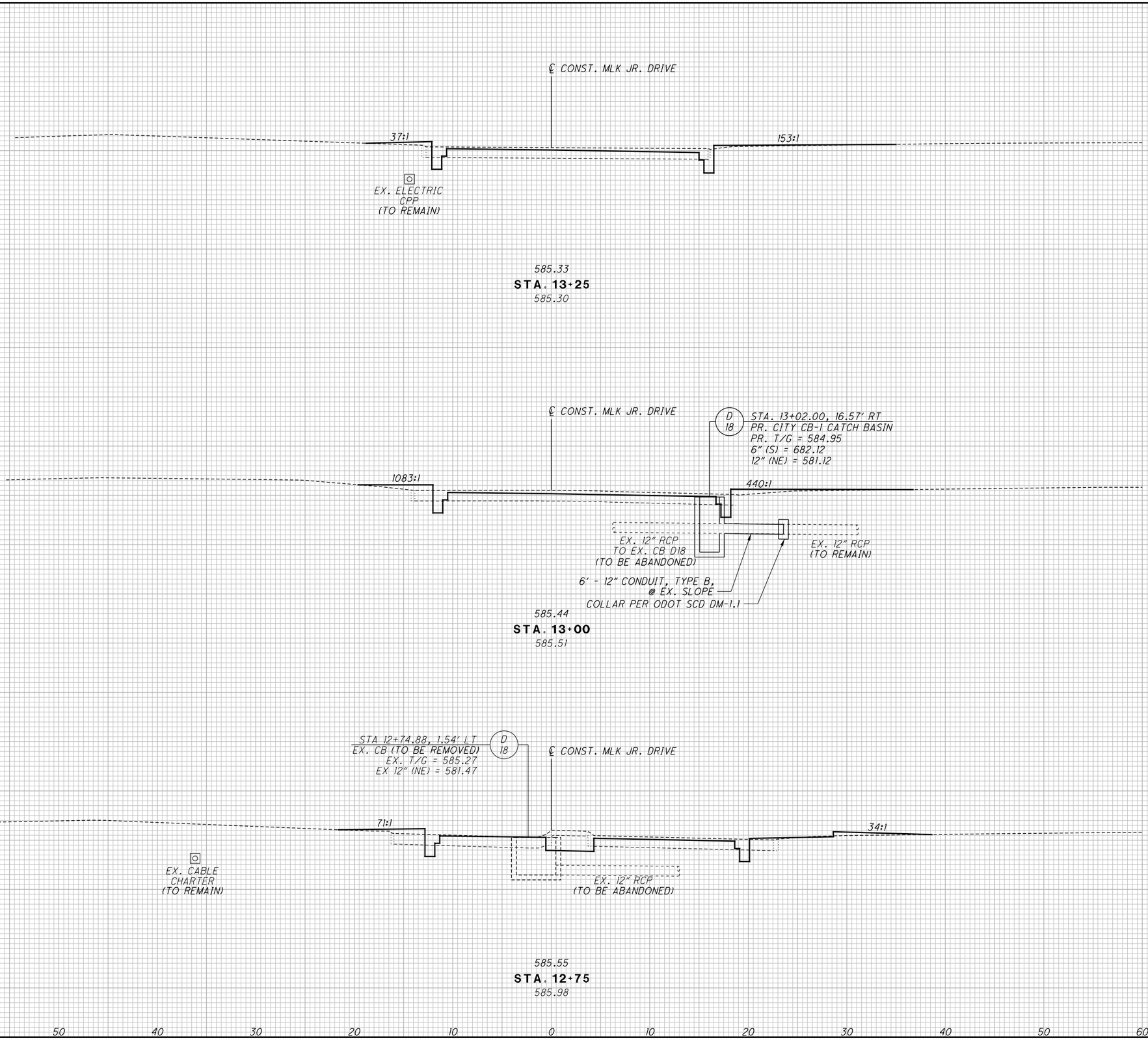
END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		11	10
13	8		
		13	10
15	12		
		16	14
18	17		
		40	34

CALCULATED MGW
CHECKED JTS

CROSS SECTIONS
MLK JR. DRIVE STA. 12+00 TO STA. 12+50

CUY-90-21.02

SEEDING END WIDTH	SEEDING SQ. YDS.
	77
28	
	78
28	
	67
20	
	222



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		4	4
3	4		
		3	6
3	9		
6	10		
9	12		
		13	20

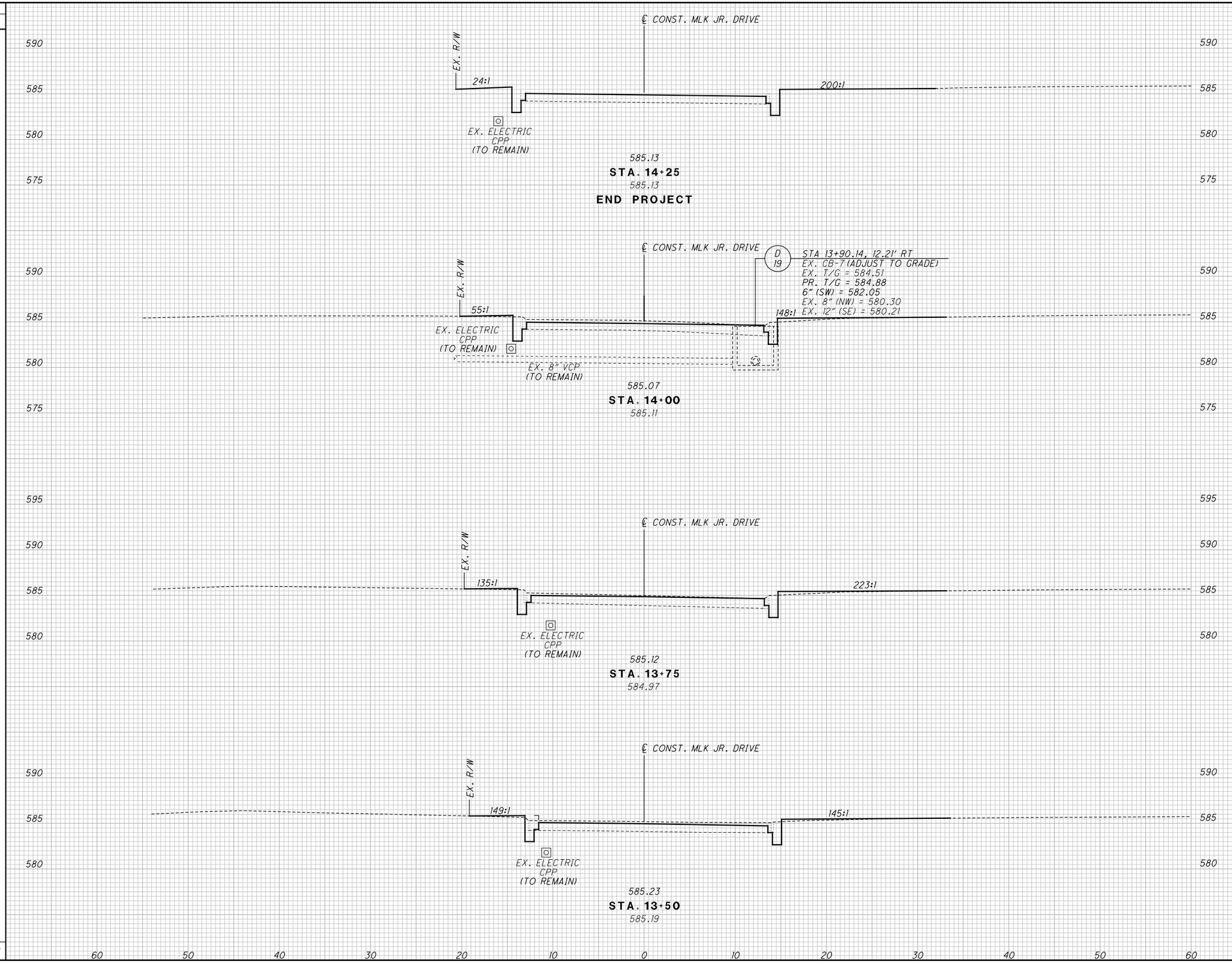
CALCULATED MGW
CHECKED JTS

CROSS SECTIONS
MLK JR. DRIVE STA. 12+75 TO STA. 13+25

CUY-90-21.02

57
153

SEEDING END WIDTH	SEEDING SQ. YDS.
26	74
27	75
27	75
27	75
	224



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
5	4	5	4
5	3	5	3
4	2	4	3
		14	10

CALCULATED MGW
CHECKED JTS

CROSS SECTIONS
MLK JR. DRIVE STA. 13+50 TO STA. 14+25

CUY-90-21.02

STA. 100+00.00, ℄ CONST. EB ENTRANCE RAMP = STA. 4+63.99, ℄ CONST. MLK JR. DRIVE

℄ CONST. MLK JR. DRIVE

MLK JR. DRIVE

EB ENTRANCE RAMP

℄ CONST. EB ENTRANCE RAMP

EX. WING WALL
EX. MH (ADJUST TO GRADE)
EX. ELEC.
EX. 12" STM
PR. 12" STM
EX. INLET NO. 2-A-8 (TO BE REMOVED)
PR. INLET NO. 2-A-8
EX. 12" STM
EX. 12" SAN
EX. ELEC.
EX. SAN MH (ADJUST TO GRADE)
EX. 6" UNDERDRAIN
EX. 8" SAN
EX. ELEC. PULLBOX
EX. OVERHEAD SIGN
EX. POLE (TO BE RELOCATED)
EX. ELEC. PULLBOX (TO BE RELOCATED)
EX. 20'-6" X 8'-0" BOX. CULVERT SAN
EX. INLET NO. 2-A-8 (ADJUST TO GRADE)
EX. 12" STM
EX. MH
EX. 12" STM
EX. 12' 9" BRICK SAN
EX. 12" SAN
EX. 12" STM
EX. MH (ADJUST TO GRADE)
EX. INLET NO. 2-A-8 (ADJUST TO GRADE)
EX. 12" STM
EX. FENCE
EX. 69 KV ELEC. (CPP)
DO NOT DISTURB
CONSTRUCTION LIMITS (TYP.)
MATCHLINE STA. 105+00 SEE SHEET 60
B-001
DOAN BROOK
PC Sta. 101+74.42
PCC Sta. 100+95.45, 17.5' RT BEGIN PAVEMENT TAPER
PCC Sta. 102+32.54, 13.5' RT END PAVEMENT TAPER
PCC Sta. 103+75.77, 13.5' RT BEGIN PAVEMENT TAPER
19.5'
13.5'
94.1°
25.0' R
200.0' R
170.0' R
2.0' R
42.0' R
55.0' R
CURVE 1
CURVE 2
CURVE 7
100
101
102
103
104

CURVE 1
P.I. Sta. 2+88.51
Δ = 22° 41' 08" (RT)
Dc = 7° 30' 02"
R = 763.90'
T = 153.24'
L = 302.46'
E = 15.22'
C = 300.48'
C.B. = N 23° 01' 23" W

CURVE 2
P.I. Sta. 4+49.85
Δ = 1° 49' 08" (RT)
Dc = 7° 30' 02"
R = 763.90'
T = 12.13'
L = 24.25'
E = 0.10'
C = 24.25'
C.B. = N 10° 46' 15" W

CURVE 7
P.I. Sta. 104+03.86
Δ = 16° 38' 03" (LT)
Dc = 3° 39' 02"
R = 1,569.50'
T = 229.44'
L = 455.66'
E = 16.68'
C = 454.06'
C.B. = N 75° 55' 51" E

CURB DATA F/C
P.I. Sta. 104+68.08
Δ = 10° 05' 19" (LT)
Dc = 5° 25' 33"
R = 1,056.00'
T = 93.21'
L = 185.94'
E = 4.11'
C = 185.70'
C.B. = N 71° 51' 11" E

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
25-36	ESTIMATED QUANTITIES
61-69	CROSS SECTIONS - EB ENTRANCE RAMP
87-88	DRAINAGE PROFILES
83	PAVEMENT ELEVATION TABLES
84-86	INTERSECTION DETAILS
146-153	ACTIVE TRANSPORTATION PLANS

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MKD
CHECKED JTS

STA. 100+94.05, 5.50' LT
EX. MH (ADJUST TO GRADE)
EX. T/C = 598.45
PR. T/C = 598.30
EX. 12"-9" (SW) = 582.85 (REC.)
EX. 12"-9" (NE) = 582.85 (REC.)

STA. 100+64.77, 27.27' LT
EX. MH (ADJUST TO GRADE)
EX. T/C = 597.88
PR. T/C = 597.50
EX. 12" (NE) = 594.35
12" (SE) = 592.73
EX. 12" (SE) = 592.73 (TBR)
EX. 12" (NW) = 592.58

SEE INTERSECTION DETAILS (SEE SHEET 84)
BUTT JOINT LIMIT
STA 100+37.06
STA 100+85.81
+3.00 %
+4.45 %
+4.26 %
+4.26 %
+3.79 %
EX. 12" CMP
TO D 4
135' - EX. 12" STM @ 1.90%
P.V.C. STA 100+57.50 ELEV 596.98
P.V.I. STA 100+75.00 ELEV = 597.50' K = 24 35.00' VC
P.V.T. STA 100+92.50 ELEV 598.28
12' 9" CIRCULAR SAN. SEWER REC. (TO REMAIN)
P.V.I. STA 101+50.00 ELEV = 600.84' NO CURVE
67' - EX. 12" VCP STM @ 30.21%
EX. GROUND
P.V.I. STA 103+00.00 ELEV = 607.23' NO CURVE
171' - EX. 12" VCP STM @ 3.03%
STA. 102+15.39, 27.11' LT
EX. MH - NO WORK
EX. T/C = 604.34
EX. 12" (SE) = 599.61
EX. 12" (NE) = 599.24
EX. 12" (SW) = 599.15
STA. 101+65.19, 18.33' RT
EX. MH (ADJUST TO GRADE)
EX. T/C = 601.51
PR. T/C = 602.09
6" (E) = 598.72
EX. 6" (N) = 596.51
EX. 12" (E) = 592.31
EX. 12" (NE) = 592.31
STA. 103+90.33, 26.46' LT
EX. MH - NO WORK
EX. T/C = 610.78
EX. 12" (SE) = 605.86
EX. 12" (W) = 605.79
EX. DOAN BROOK CULVERT (REC.) (TO REMAIN)
12' 9" CIRCULAR SAN SEWER REC. (TO REMAIN)
PR. GRADE

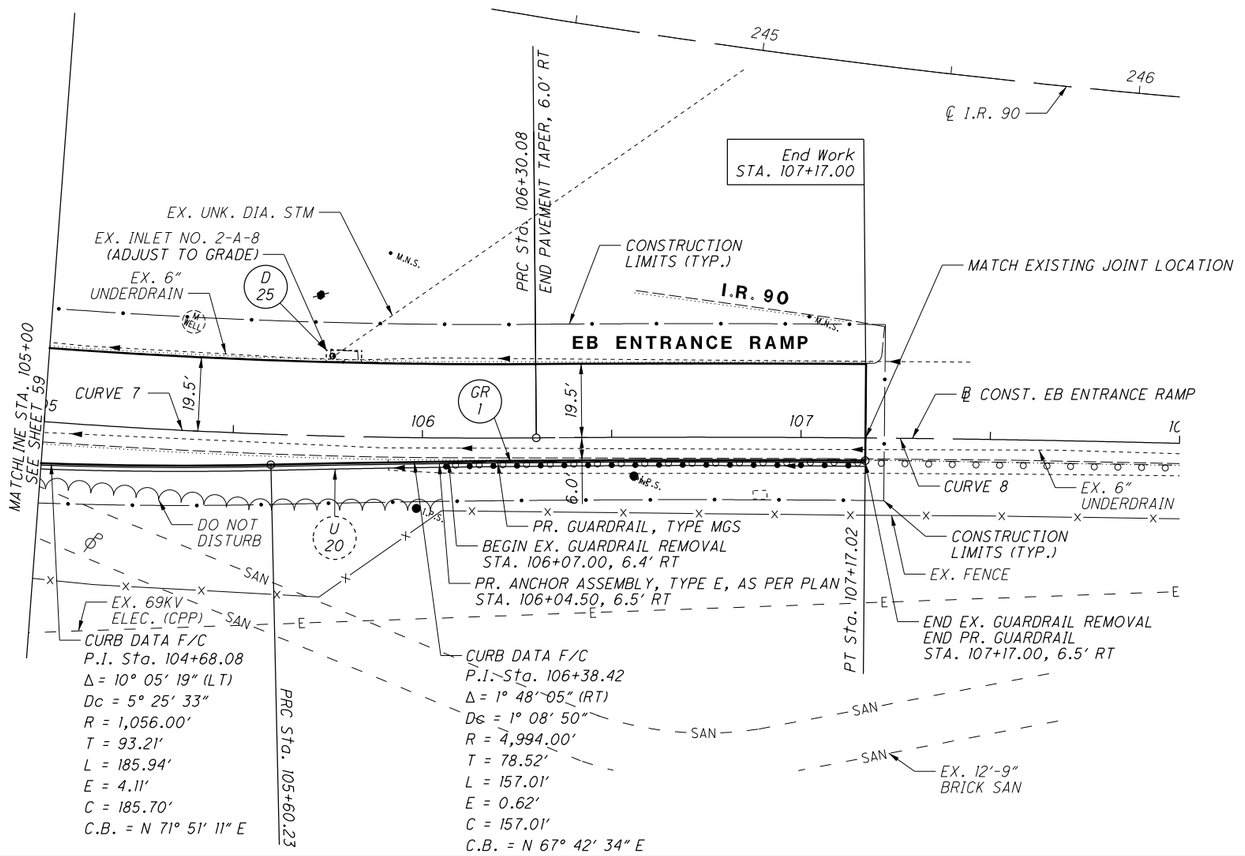
596.75 597.56 598.61 599.73 600.84 601.90 602.97 604.04 605.10 606.17 607.23 608.18 609.12 610.07 611.02 611.96 612.91 613.86 614.81
596.82 596.62 596.69 597.50 598.45 599.51 600.61 601.66 602.72 603.73 604.82 605.86 606.88 607.86 608.83 609.76 610.74 611.68 612.65 613.61 614.59
615 610 605 600 595 590 585
100+00 101+00 102+00 103+00 104+00 105+00

PLAN AND PROFILE
EB ENTRANCE RAMP BEGIN TO STA. 105+00

CUY-90-21.02

59
153

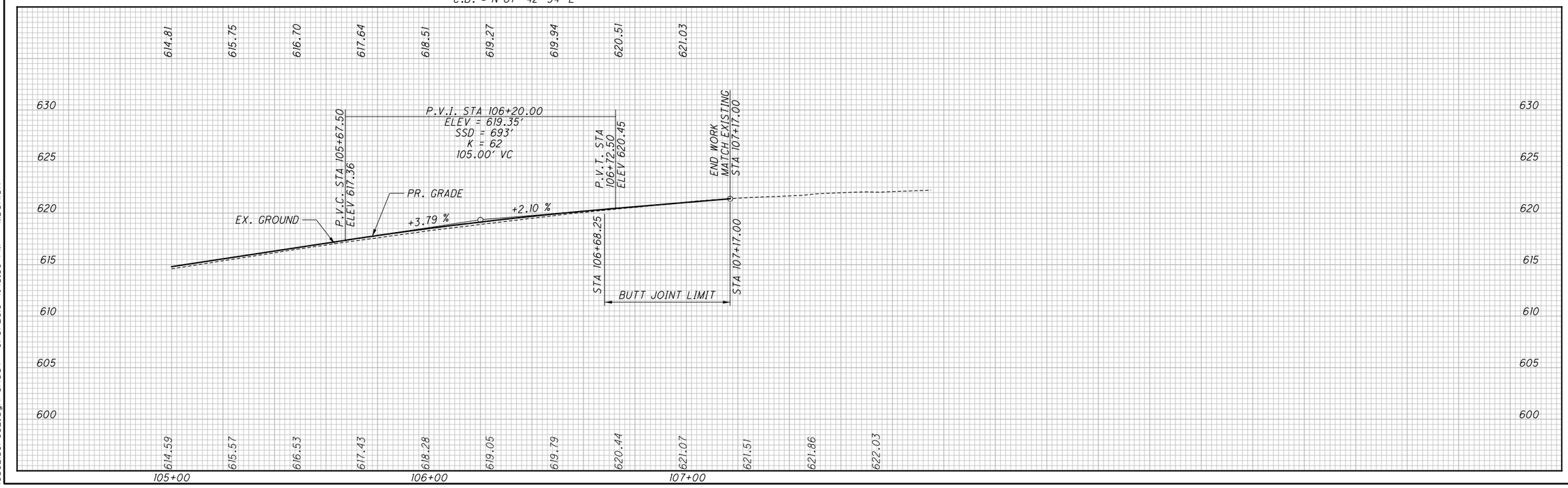
10382L GP03L.dgn Sheet 9/6/2018 4:45:49 PM MDohlen



CURVE 7
P.I. Sta. 104+03.86
Δ = 16° 38' 03" (LT)
Dc = 3° 39' 02"
R = 1,569.50'
T = 229.44'
L = 455.66'
E = 16.68'
C = 454.06'
C.B. = N 75° 55' 51" E

CURVE 8
P.I. Sta. 107+30.09
Δ = 2° 17' 31" (RT)
Dc = 1° 08' 45"
R = 5,000.00'
T = 100.01'
L = 200.00'
E = 1.00'
C = 199.99'
C.B. = N 68° 45' 35" E

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
25-36	ESTIMATED QUANTITIES
61-69	CROSS SECTIONS - EB ENTRANCE RAMP
87-88	DRAINAGE PROFILES
83	PAVEMENT ELEVATION TABLES
84-86	INTERSECTION DETAILS
146-153	ACTIVE TRANSPORTATION PLANS



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MKD
CHECKED JTS

PLAN AND PROFILE
EB ENTRANCE RAMP STA. 105+00 TO END

CUY-90-21.02

60
153

10382L_GP032.dgn Sheet 9/6/2018 4:45:59 PM MDohlen

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	23			24	4
7		28	2		
	21			30	3
8		36	3		
	20			42	4
6		54	4		
	64			96	11

CALCULATED KJM
CHECKED JTS

STA. 100+94.05, 5.50' LT
EX. MH (ADJUST TO GRADE)
EX. T/C = 598.45
PR. T/C = 598.30
EX. 12'-9" (SW) = 582.85 (REC.)
EX. 12'-9" (NE) = 582.85 (REC.)
S 1

℄ CONST. EB ENTRANCE RAMP

10:1 4:1

598.61
STA. 101+00
598.45

STA. 100+64.77, 27.27' LT
(ADJUST TO GRADE)
EX. T/C = 597.88
PR. T/C = 597.50
EX. 12" (NE) = 594.35
12" (SE) = 592.73
EX. 12" (SE) = 592.73 (TBR)
EX. 12" (NW) = 592.58
D 20

D 21 STA. 100+78.00, 22.16' LT
PR. INLET NO. 2-A-8
PR. WIN. = 597.26
12" (NW) = 594.09

D 21 STA. 100+77.38, 19.56' LT
EX. INLET NO. 2-A-8
(TO BE REMOVED)
EX. WIN. = 597.69
EX. 12" (NW) = 593.54

℄ CONST. EB ENTRANCE RAMP

10:1 4:1

APPROXIMATE LOCATION OF TOP OF EX. 12'-9" BRICK CULVERT (REC.) (TO REMAIN)

597.56
STA. 100+75
597.50

EX. 69 KV ELECTRIC CPP (REC.) (TO REMAIN)

℄ CONST. EB ENTRANCE RAMP

10:1 4:1

EX. ELECTRIC CPP (TO REMAIN)

APPROXIMATE LOCATION OF TOP OF EX. 20'-6" W X 8'-0" BOX CULVERT (REC.) (TO REMAIN)

596.75
STA. 100+50
596.69

605 600 595 590 585 610

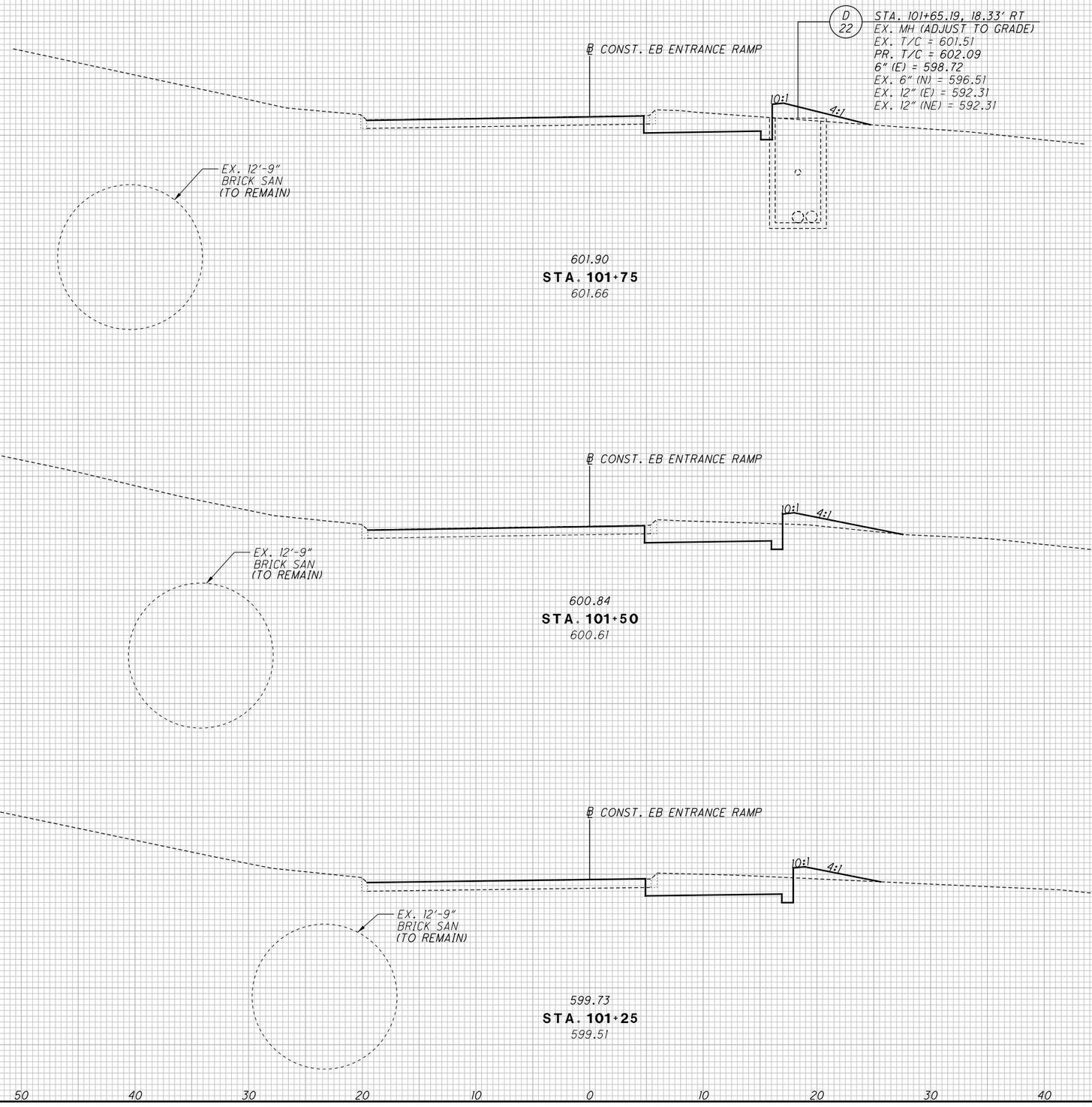
60 50 40 30 20 10 0 10 20 30 40 50 60

CROSS SECTIONS
EB ENTRANCE RAMP STA. 100+50 TO STA. 101+00

CUY-90-21.02

61
153

SEEDING	
END WIDTH	SQ. YDS.
	35
10	
	31
12	
	30
9	
	96



END AREA	
CUT	FILL
18	6
21	5
22	5

VOLUME	
CUT	FILL
17	7
19	6
20	5
56	18

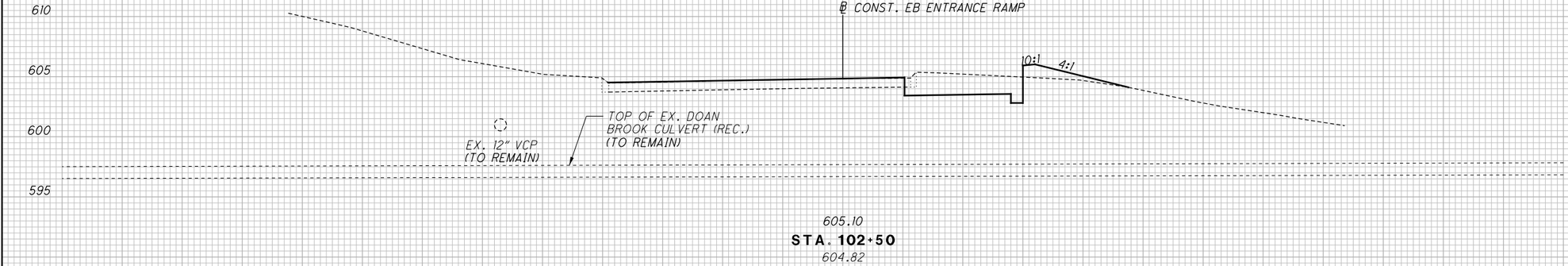
CALCULATED K.J.M
CHECKED J.T.S

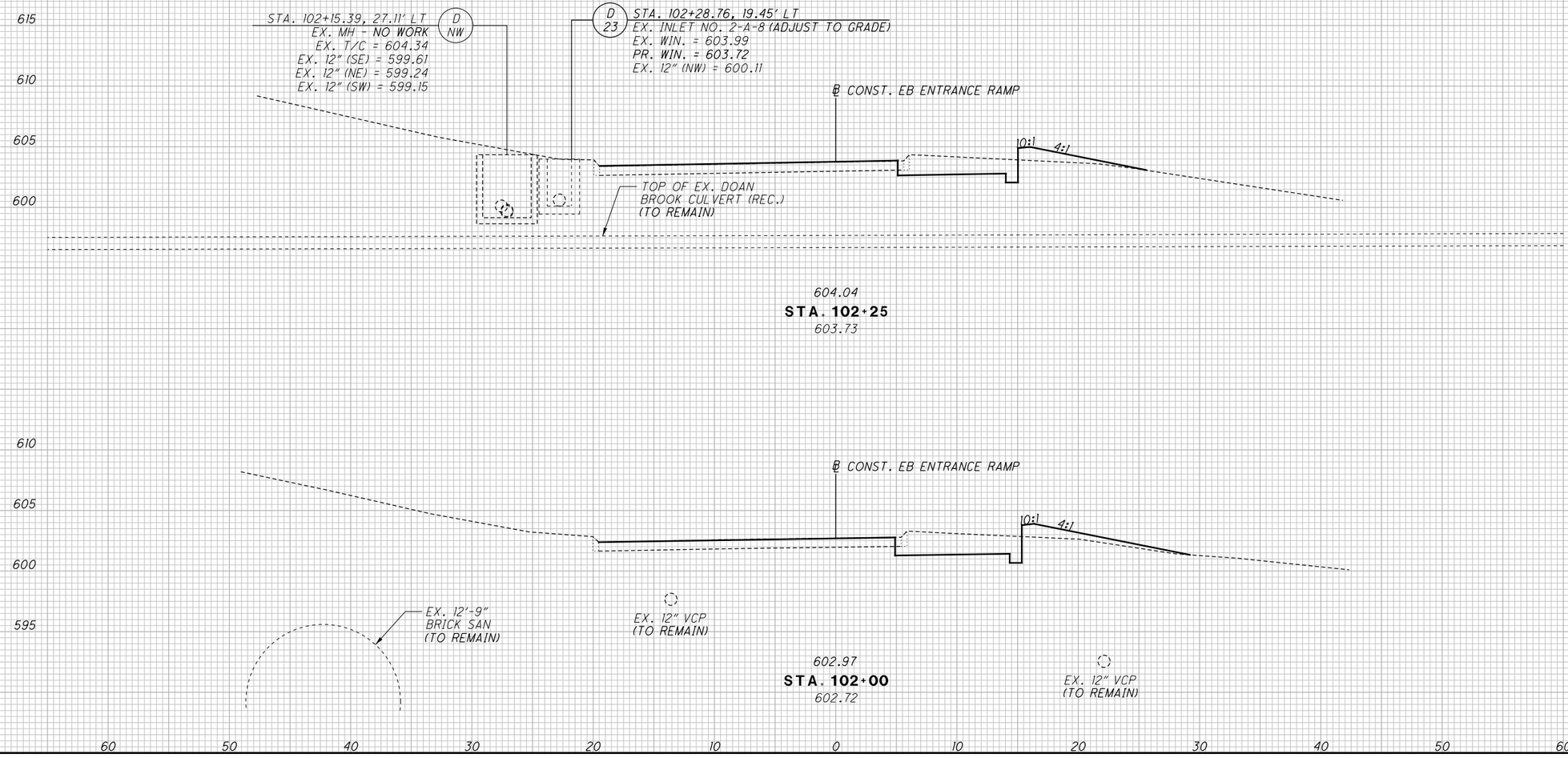
CROSS SECTIONS
EB ENTRANCE RAMP STA. 101+25 TO STA. 101+75

CUY-90-21.02

62
153

SEEDING END WIDTH	SEEDING SQ. YDS.
	25
10	
	31
12	
	38
15	
	94





END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		15	5
16	5		
		14	6
14	6		
		15	7
18	7		
		44	18

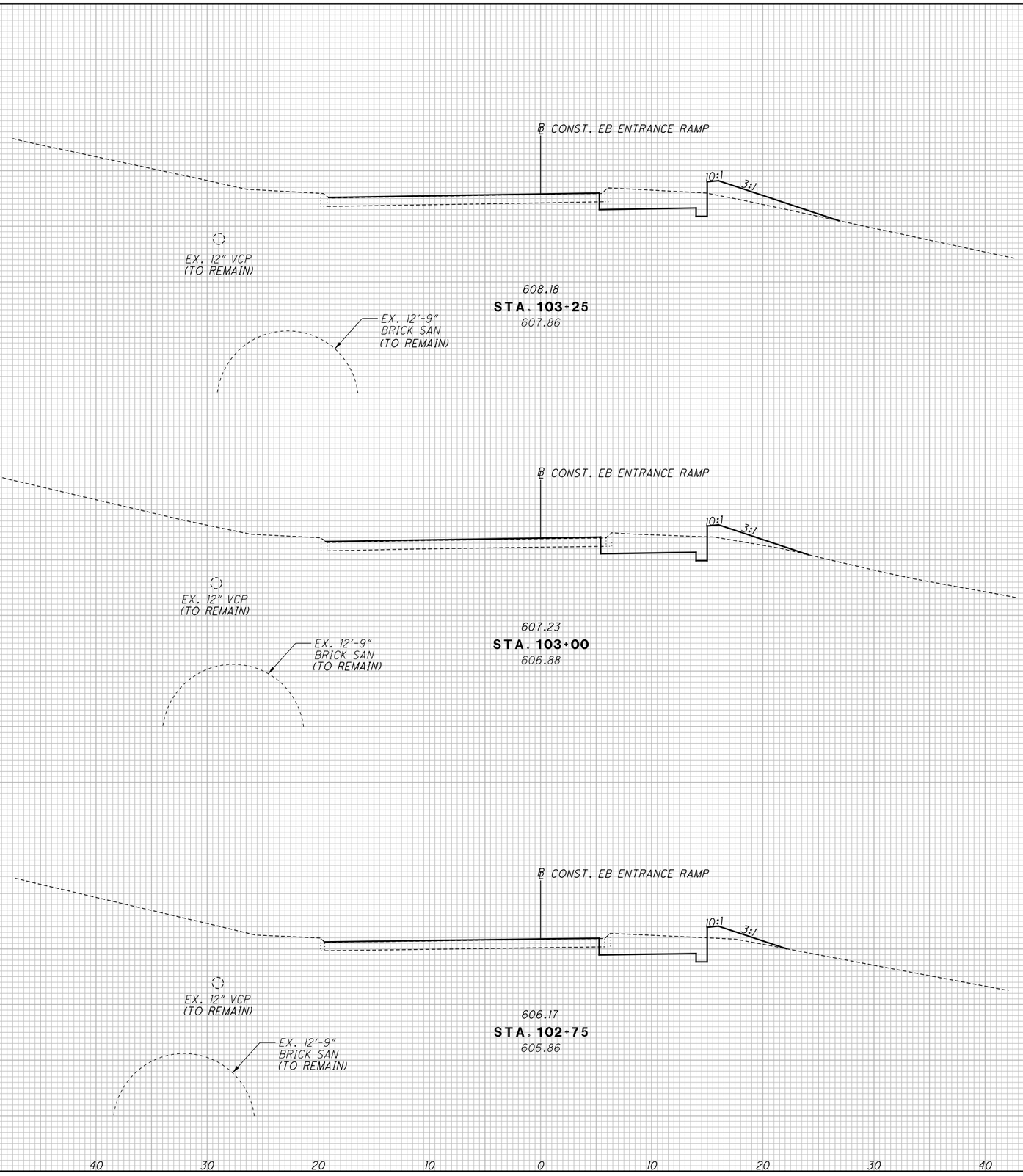
CALCULATED K.JM
CHECKED JTS

CROSS SECTIONS
EB ENTRANCE RAMP STA. 102+00 TO STA. 102+50

CUY-90-21.02

63
153

SEEDING END WIDTH	SEEDING SQ. YDS.
	35
13	
	32
10	
	25
8	
	92



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		15	9
16	9		
		15	8
15	7		
		15	6
16	5		
		45	23

CALCULATED KJM
CHECKED JTS

CROSS SECTIONS
EB ENTRANCE RAMP STA. 102+75 TO STA. 103+25

CUY-90-21.02

64
153

SEEDING END WIDTH	SEEDING SQ. YDS.
	27
13	
	39
15	
	38
12	
104	

STA. 103+90.33, 26.46' LT
EX. MH - NO WORK
EX. T/C = 610.78
EX. 12" (SE) = 605.86
EX. 12" (SW) = 605.79
D NW

D 24
STA. 104+02.44, 19.55' LT
EX. INLET NO. 2-A-8 (ADJUST TO GRADE)
EX. WIN. = 610.25
PR. WIN. = 610.57
EX. 12" (NW) = 606.48

℄ CONST. EB ENTRANCE RAMP

10:1 3:1

620 615 610 605 600

611.02
STA. 104+00
610.74

EX. 12'-9" BRICK SAN (TO REMAIN)

℄ CONST. EB ENTRANCE RAMP

10:1 3:1

EX. 12" VCP (TO REMAIN)

610.07
STA. 103+75
609.76

EX. 12'-9" BRICK SAN (TO REMAIN)

℄ CONST. EB ENTRANCE RAMP

10:1 3:1

EX. 12" VCP (TO REMAIN)

609.12
STA. 103+50
608.83

EX. 12'-9" BRICK SAN (TO REMAIN)

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

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		15	6
15	7		
		15	9
15	11		
		15	9
16	8		
		45	24

CALCULATED KJM
CHECKED JTS

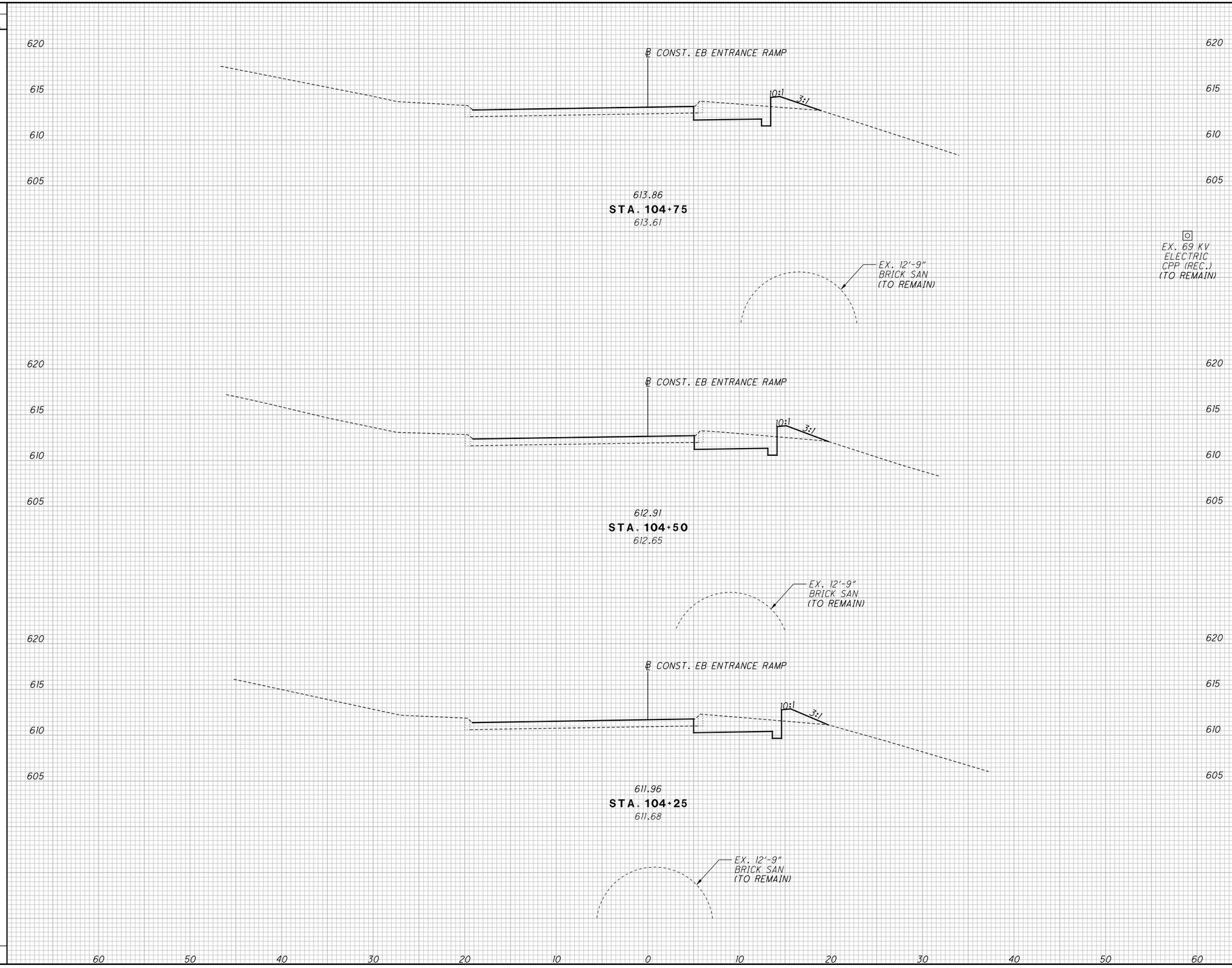
CROSS SECTIONS
EB ENTRANCE RAMP STA. 103+50 TO STA. 104+00

CUY-90-21.02

65
153

10382I_XSI34.dgn Sheet 9/6/2018 4:46:50 PM MDohlen

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	20			13	4
7		14	4		
	20			14	4
7		15	4		
	19			14	4
6		15	4		
	59			41	12



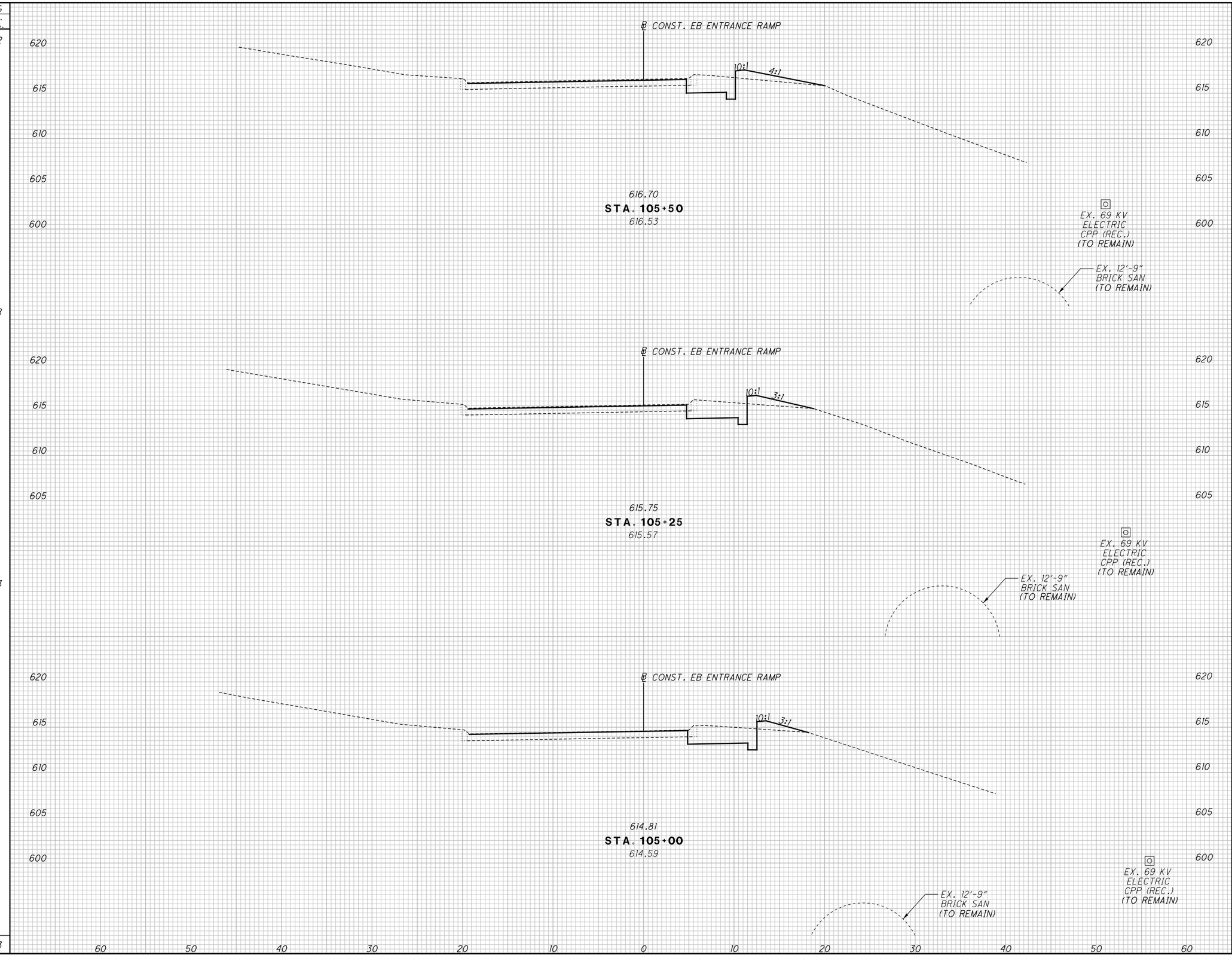
CALCULATED KJM
CHECKED JTS

CROSS SECTIONS
EB ENTRANCE RAMP STA. 104+25 TO STA. 104+75

CUY-90-21.02

66
153

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	32			8	5
11		10	5		
	28			10	5
9		12	4		
	23			12	4
7		14	3		
	83			30	14



CALCULATED KJM
CHECKED JTS

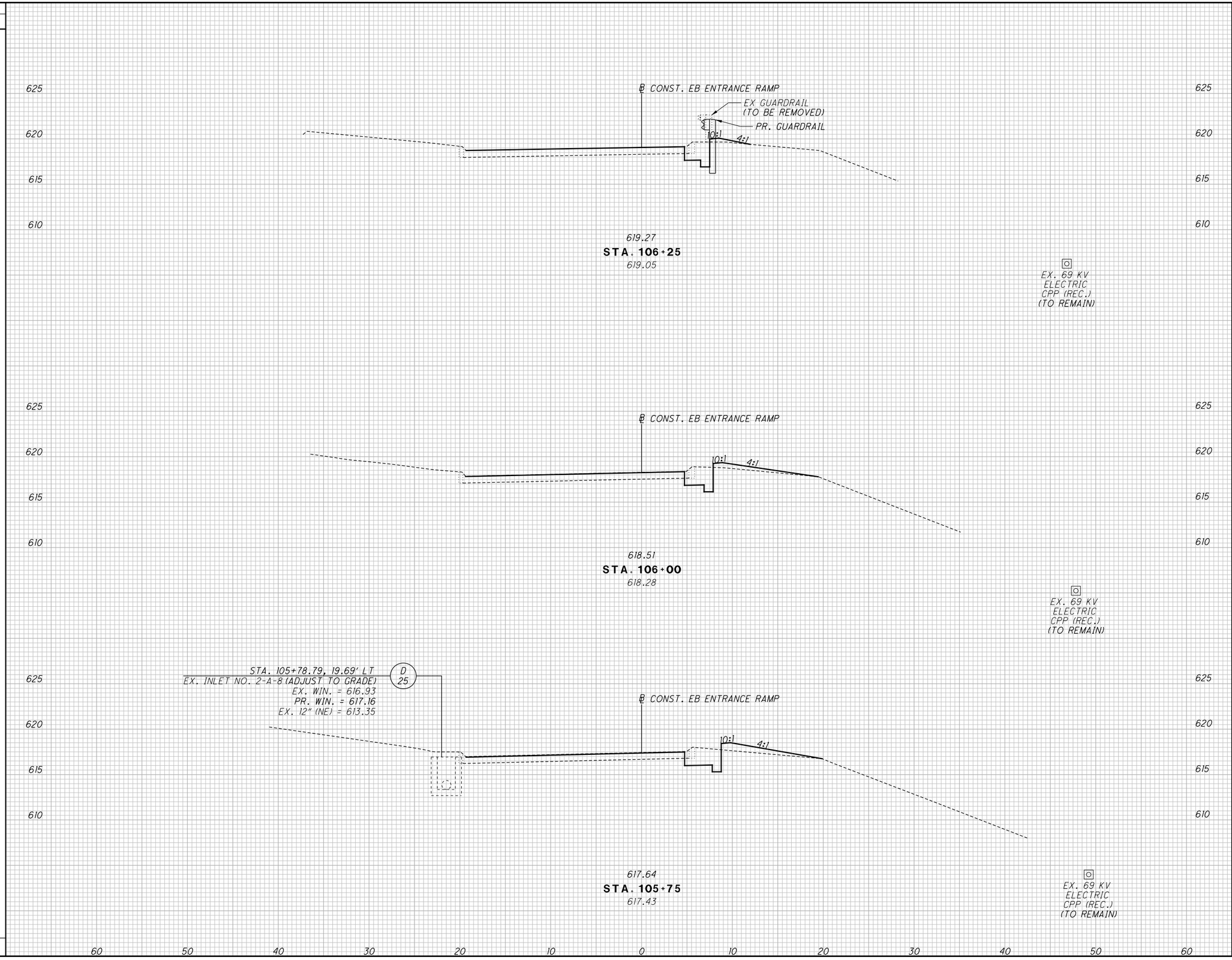
CROSS SECTIONS
EB ENTRANCE RAMP STA. 105+00 TO STA. 105+50

CUY-90-21.02

67
153

10382I_XS136.dgn Sheet 9/6/2018 4:47:0 PM MDohlen

SEEDING END WIDTH	SEEDING SQ. YDS.
	14
6	
	27
13	
	35
12	
	76



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		5	1
5	1		
		5	3
6	3		
		6	4
7	5		
		16	8

CALCULATED KJM
CHECKED JTS

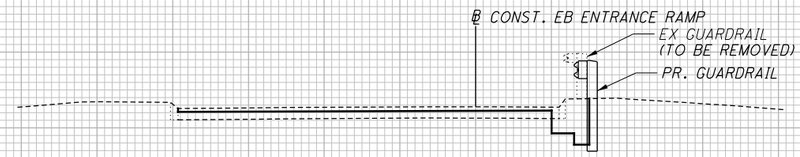
CROSS SECTIONS
EB ENTRANCE RAMP STA. 105+75 TO STA. 106+25

CUY-90-21.02

68
153

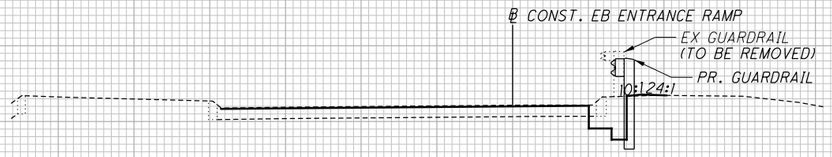
10382L_XS137.dgn Sheet 9/6/2018 4:47:19 PM MDohlen

SEEDING	
END WIDTH	SQ. YDS.
1	5
4	13
5	13
4	31



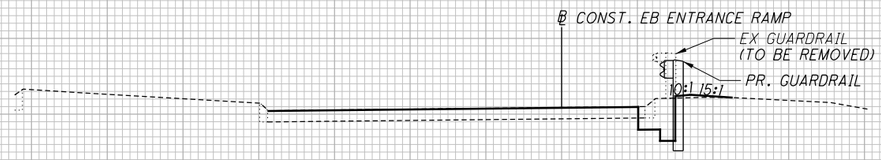
621.39
STA. 107+17
621.39
END WORK

EX. 69 KV ELECTRIC CPP (REC.) (TO REMAIN)



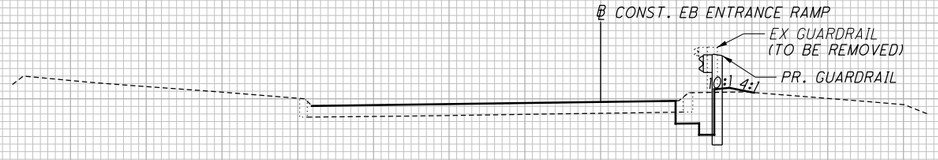
621.03
STA. 107+00
621.07

EX. 69 KV ELECTRIC CPP (REC.) (TO REMAIN)



620.51
STA. 106+75
620.44

EX. 69 KV ELECTRIC CPP (REC.) (TO REMAIN)



619.94
STA. 106+50
619.79

EX. 69 KV ELECTRIC CPP (REC.) (TO REMAIN)

END AREA	
CUT	FILL
5	0
5	0
4	0
5	0

VOLUME	
CUT	FILL
4	1
5	1
5	1
14	3

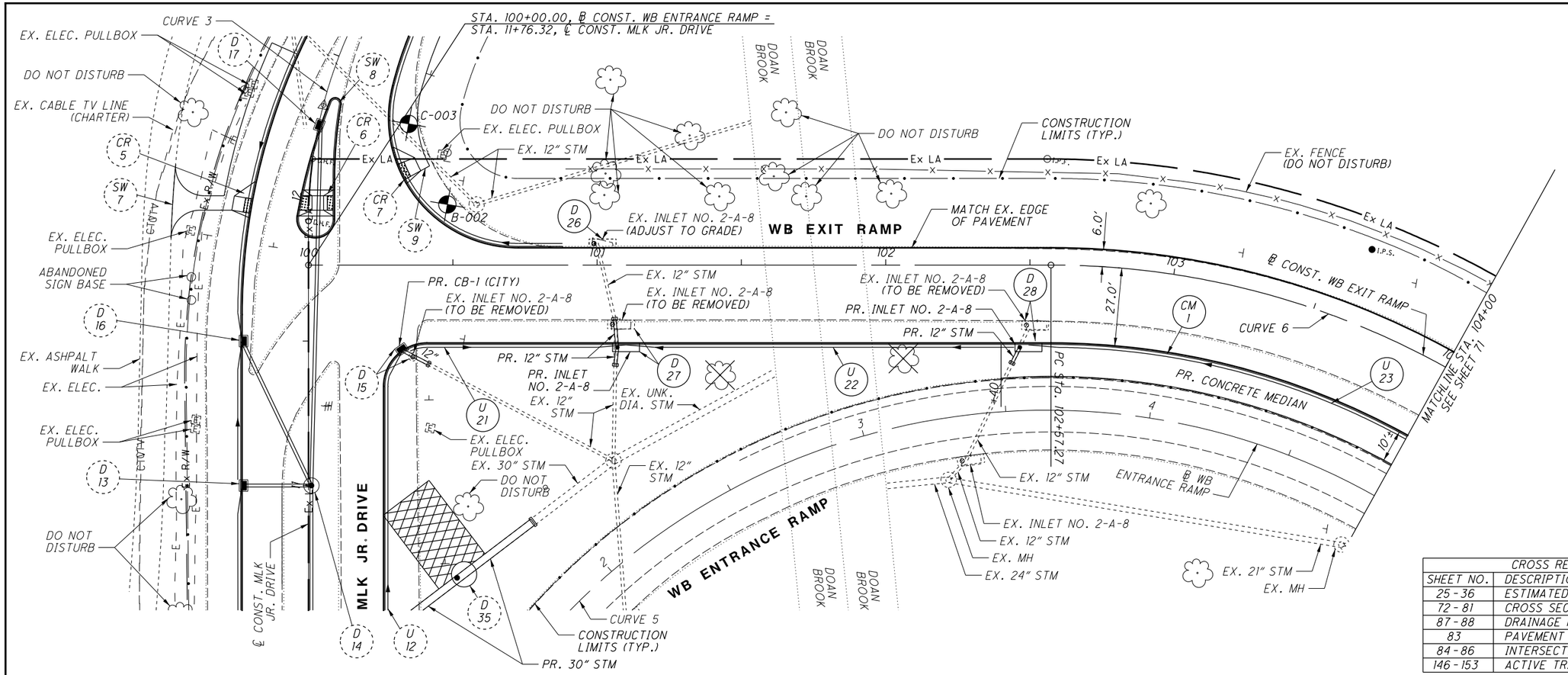
CALCULATED KJM
CHECKED JTS

CROSS SECTIONS
EB ENTRANCE RAMP STA. 106+50 TO STA. 107+17

CUY-90-21.02

69
153

10382L_XSI38.dgn Sheet 9/6/2018 4:47:30 PM MDohlen

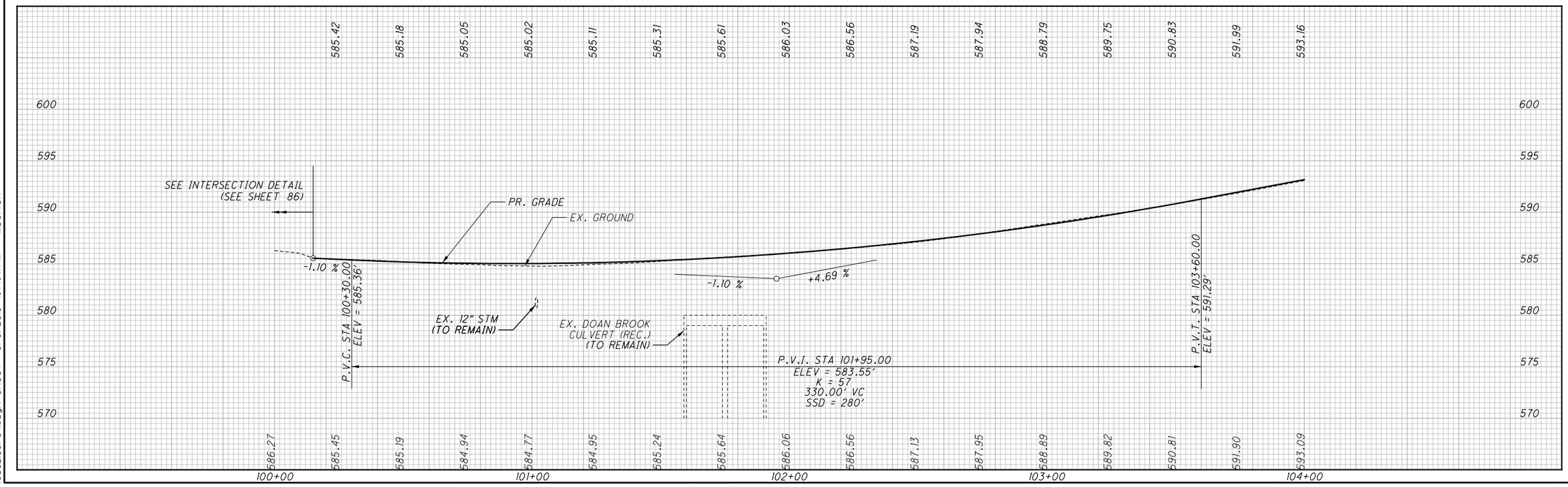


CURVE 3
P.I. Sta. 12+72.20
Δ = 53° 38' 13" (RT)
Dc = 35° 55' 20"
R = 159.50'
T = 80.63'
L = 149.31'
E = 19.22'
C = 143.92'
C.B. = N 16° 57' 25" E

CURVE 5
P.I. Sta. 2+05.97
Δ = 276° 47' 56" (RT)
Dc = 24° 41' 52"
R = 231.99'
T = 205.97'
L = 1,120.75'
E = 542.22'
C = 308.05'
C.B. = S 51° 27' 42" E

CURVE 6
P.I. Sta. 104+23.49
Δ = 61° 01' 57" (RT)
Dc = 20° 19' 04"
R = 282.00'
T = 166.22'
L = 300.39'
E = 45.34'
C = 286.39'
C.B. = S 69° 20' 42" E

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
25 - 36	ESTIMATED QUANTITIES
72 - 81	CROSS SECTIONS - WB EXIT RAMP
87 - 88	DRAINAGE PROFILES
83	PAVEMENT ELEVATION TABLES
84 - 86	INTERSECTION DETAILS
146 - 153	ACTIVE TRANSPORTATION PLANS



HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED MKD
CHECKED JTS

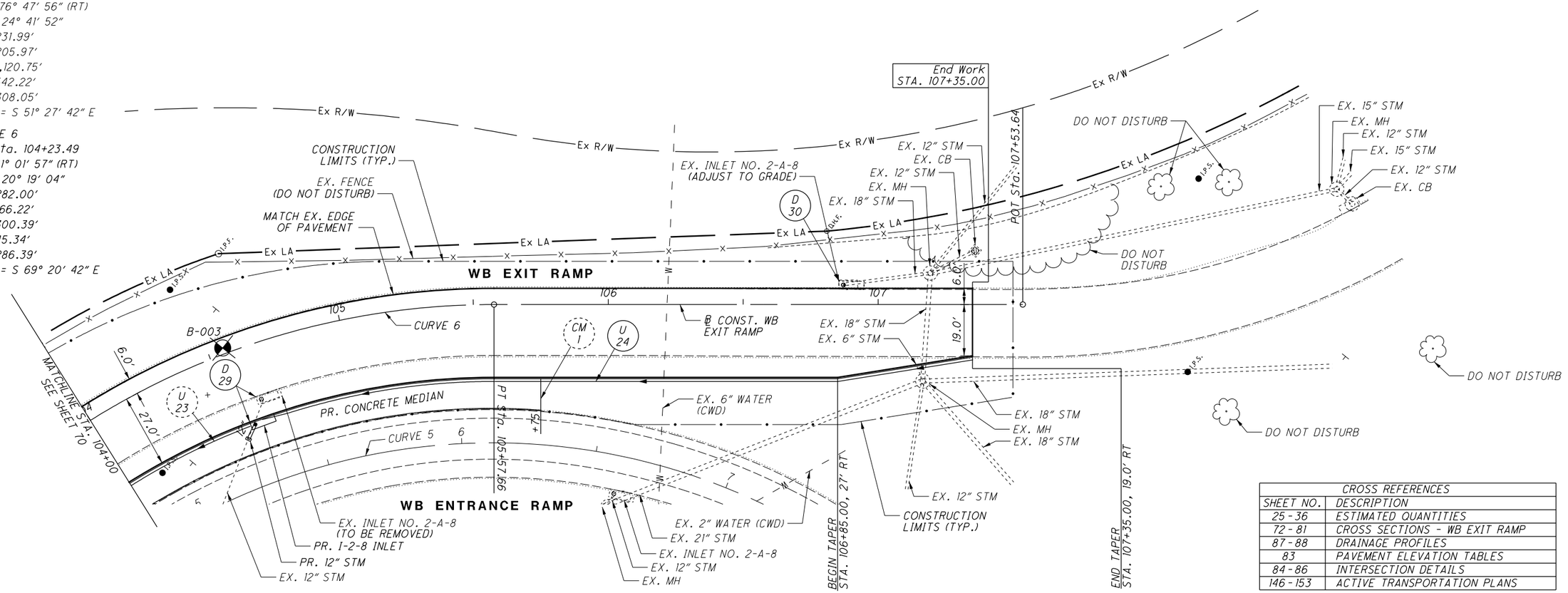
PLAN AND PROFILE
WB EXIT RAMP BEGIN TO STA. 104+00

CUY-90-21.02

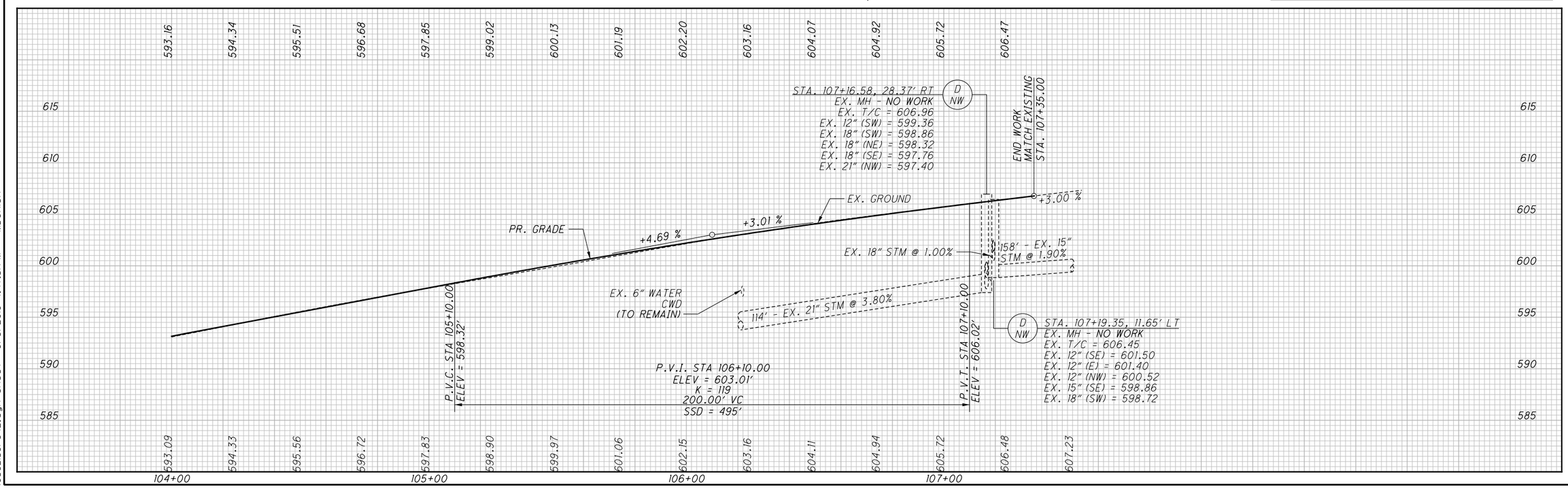
70
153

CURVE 5
P.I. Sta. 2+05.97
Δ = 276° 47′ 56″ (RT)
Dc = 24° 41′ 52″
R = 231.99′
T = 205.97′
L = 1,120.75′
E = 542.22′
C = 308.05′
C.B. = S 51° 27′ 42″ E

CURVE 6
P.I.Sta. 104+23.49
Δ = 61° 01′ 57″ (RT)
Dc = 20° 19′ 04″
R = 282.00′
T = 166.22′
L = 300.39′
E = 45.34′
C = 286.39′
C.B. = S 69° 20′ 42″ E



CROSS REFERENCES	
SHEET NO.	DESCRIPTION
25 - 36	ESTIMATED QUANTITIES
72 - 81	CROSS SECTIONS - WB EXIT RAMP
87 - 88	DRAINAGE PROFILES
83	PAVEMENT ELEVATION TABLES
84 - 86	INTERSECTION DETAILS
146 - 153	ACTIVE TRANSPORTATION PLANS



CALCULATED MKD
CHECKED JTS

HORIZONTAL SCALE IN FEET
0 10 20 40

PLAN AND PROFILE
WB EXIT RAMP STA. 104+00 TO END

CUY-90-21.02

10382L_GP042.dgn Sheet 9/6/2018 4:47:51 PM MDohlen

SEEDING END WIDTH	SEEDING SQ. YDS.
	6
2	
	10
5	
	27
14	
	43

STA. 101+01.91, 6.00' LT (D 26)
EX. INLET NO. 2-A-8 (ADJUST TO GRADE)
EX. WIN. = 584.70
PR. WIN. = 584.89
EX. 12" (SE) = 581.03

STA. 101+08.32, 19.05' RT (D 27)
EX. INLET NO. 2-A-8 (TO BE REMOVED)
EX. WIN. = 585.02
EX. 12" (NW) = 579.92
EX. 12" (SE) = 579.92

STA. 101+10.00, 27.00' RT (D 27)
PR. INLET NO. 2-A-8
PR. WIN. = 584.65
6" (W) = 581.82
6" (E) = 581.82
12" (NW) = 579.78
12" (SE) = 579.62

EX. LA
EX. FENCE (TO REMAIN)
℄ CONST. WB EXIT RAMP
EX. 12" HDPE (TO REMAIN)
EX. 12" RCP (TO REMAIN)
EX. 12" RCP (TO REMAIN)
COLLAR PER ODOT SCD DM-1.1
11' - 12" CONDUIT, TYPE B, @ EX. SLOPE
COLLAR PER ODOT SCD DM-1.1
6' - 12" CONDUIT, TYPE C, @ EX. SLOPE

585.02
STA. 101+00
584.77

EX. LA
℄ CONST. WB EXIT RAMP
28:1
EX. 12" RCP (TO REMAIN)

585.05
STA. 100+75
584.94

STA. 100+58.26, 21.02' LT (D NW)
EX. MH (REC.) - NO WORK
EX. T/C = 585.52
EX. 12" (NW) = 575.50
EX. 12" (NE) = 575.50

EX. LA
℄ CONST. WB EXIT RAMP
70:1

585.18
STA. 100+50
585.19

590 585 580 575 570

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

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
20	0	20	0
20	0		
		21	1
24	1		
		22	8
23	15		
		63	9

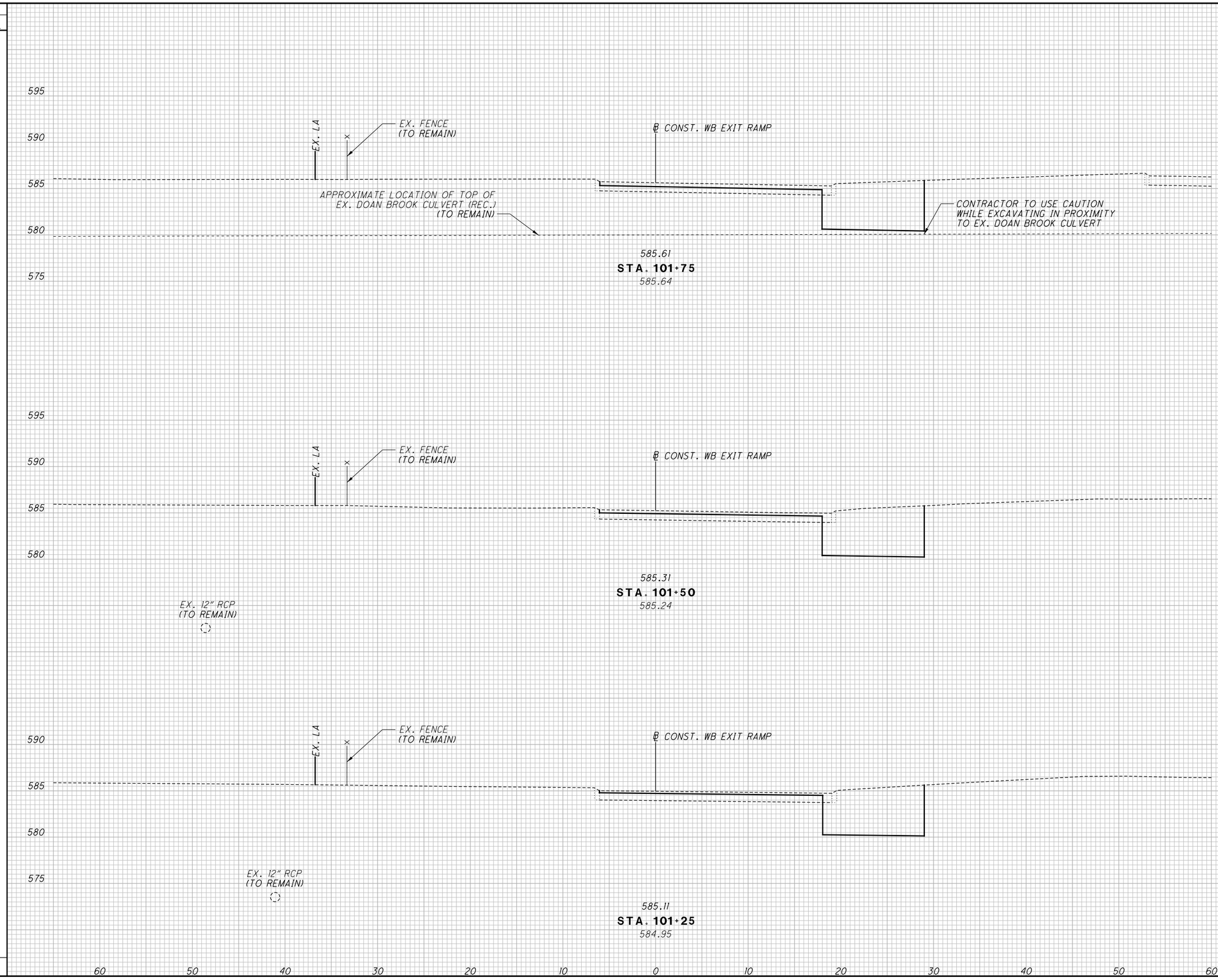
CALCULATED KJM
CHECKED JTS

CROSS SECTIONS
WB EXIT RAMP STA. 100+50 TO STA. 101+00

CUY-90-21.02

72
153

SEEDING END WIDTH	SEEDING SQ. YDS.
	6
	2
	6
	2
	6
	2
	18



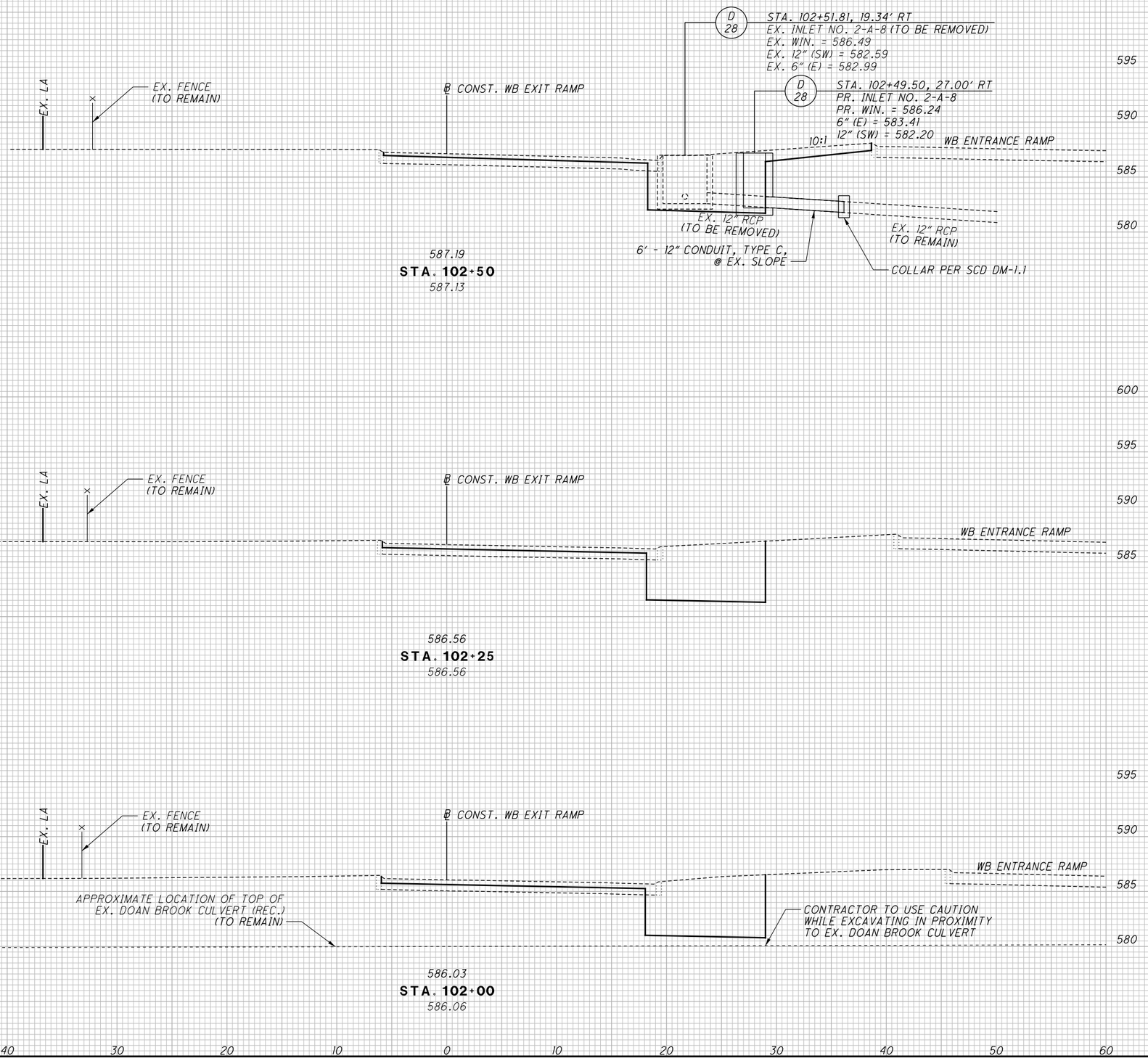
END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		21	0
22	0		
		21	0
22	0		
		20	0
21	0		
		62	0

CALCULATED KJM
CHECKED JTS

CROSS SECTIONS
WB EXIT RAMP STA. 101+25 TO STA. 101+75

CUY-90-21.02

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	0			28	0
0		30	0		
	3			24	0
	6			21	0
2		22	0		
	2	23	0		
	9			73	0



CALCULATED KJM
CHECKED JTS

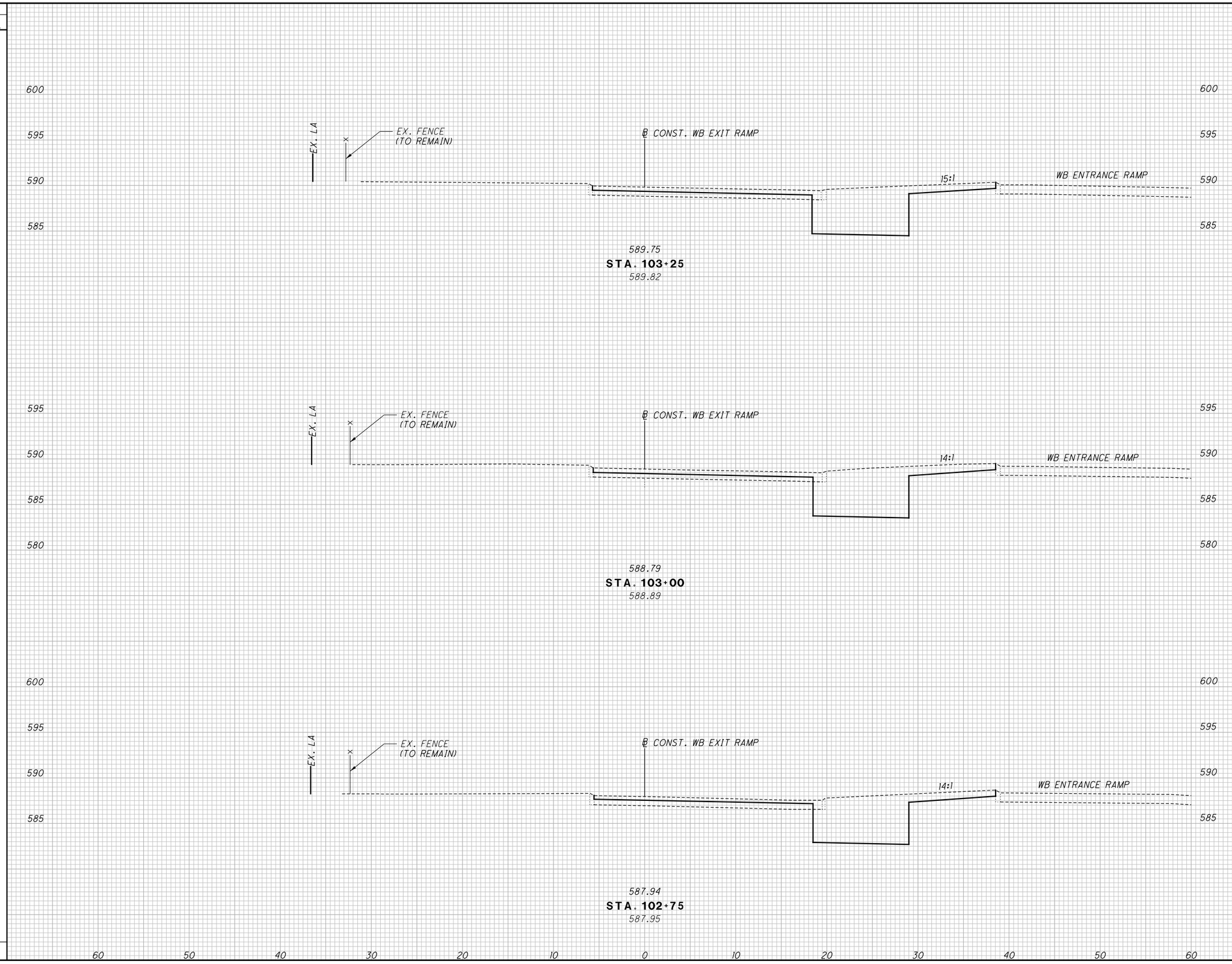
CROSS SECTIONS
WB EXIT RAMP STA. 102+00 TO STA. 102+50

CUY-90-21.02

74
153

10382L_XS142.dgn Sheet 9/6/2018 4:48:22 PM MDohlen

SEEDING	
END WIDTH	SQ. YDS.
	0
	0
	0
	0
	0
	0



END AREA	
CUT	FILL
28	0
30	0
29	0

VOLUME	
CUT	FILL
27	0
28	0
28	0
28	0
83	0

CALCULATED KJM
CHECKED JTS

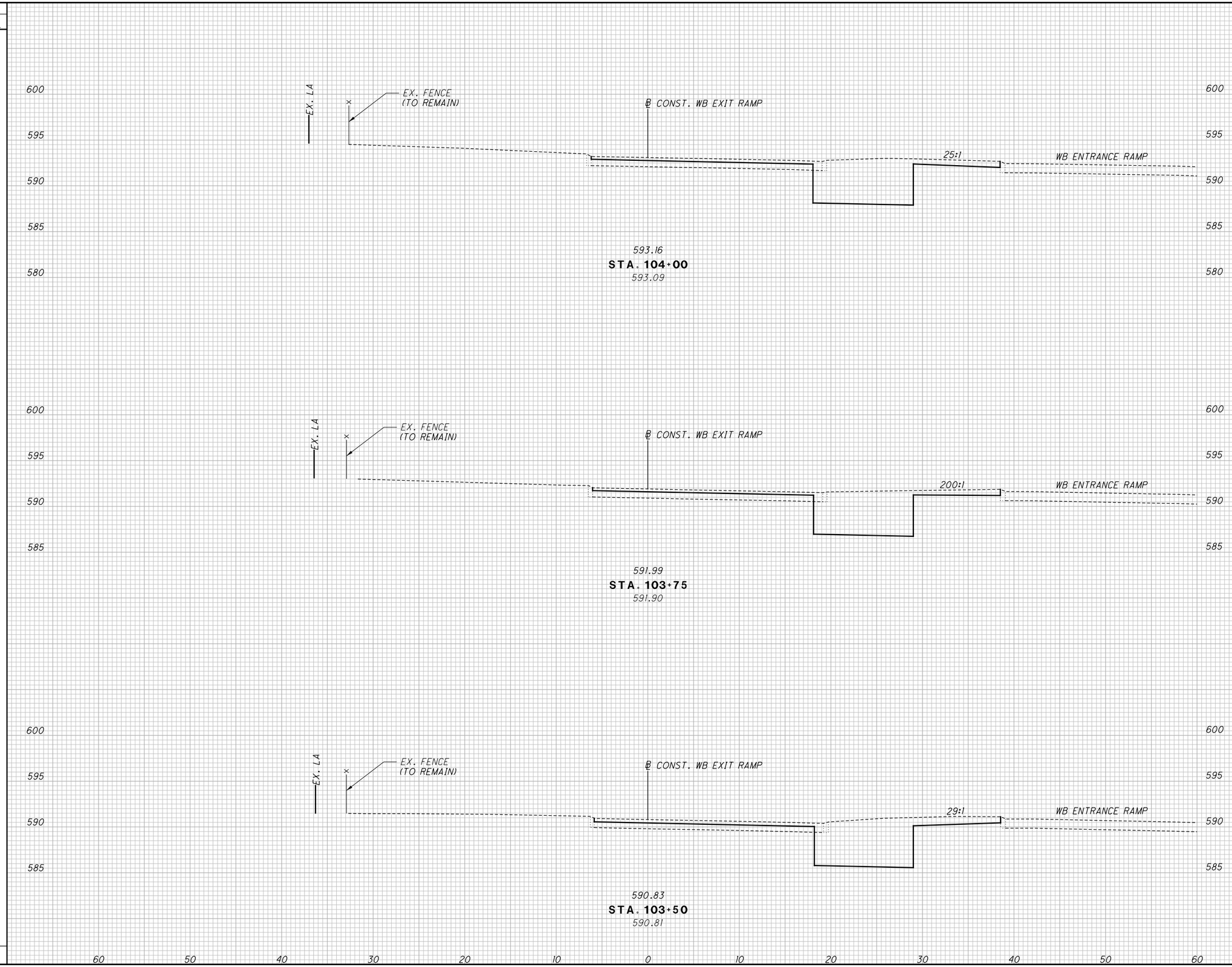
CROSS SECTIONS
WB EXIT RAMP STA. 102+75 TO STA. 103+25

CUY-90-21.02

75
153

10382L_XS143.dgn Sheet 9/6/2018 4:48:32 PM MDohlen

SEEDING END WIDTH	SEEDING SQ. YDS.
	0
0	
	0
0	
	0



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		27	0
25	0		
		23	0
23	0		
		25	0
29	0		
		75	0

CALCULATED KJM
CHECKED JTS

CROSS SECTIONS
WB EXIT RAMP STA. 103+50 TO STA. 104+00

CUY-90-21.02

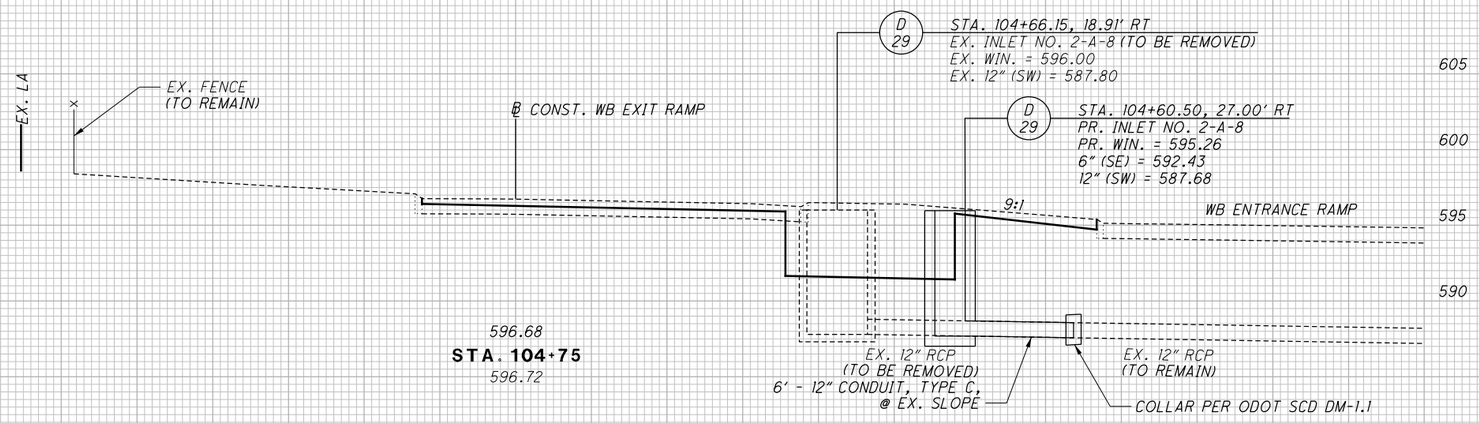
76
153

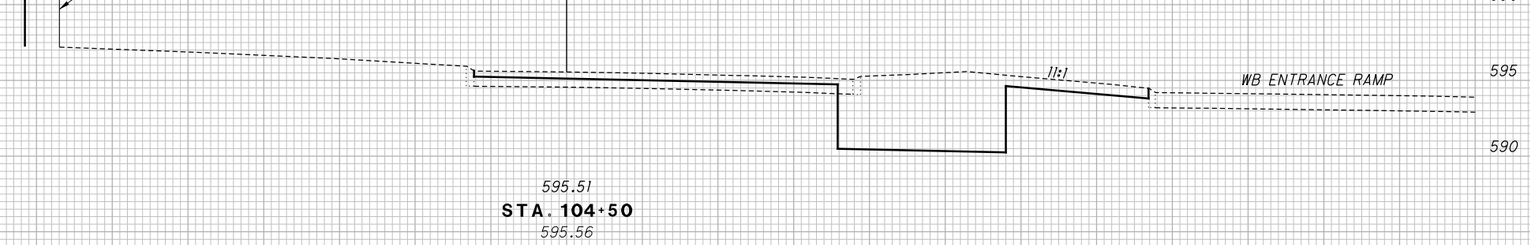
10382L_XSI44.dgn Sheet 9/6/2018 4:48:44 PM MDohlen

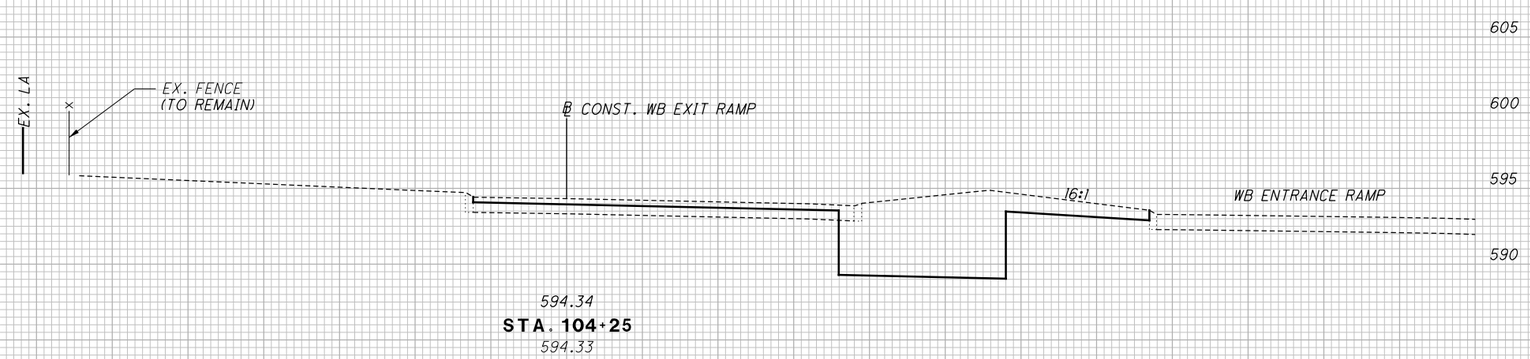
SEEDING END WIDTH	SEEDING SQ. YDS.
	0
	0
	0
	0

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		21	0
24	0		
		24	0
28	0		
		28	0
32	0		
		73	0

CALCULATED KJM
CHECKED JTS







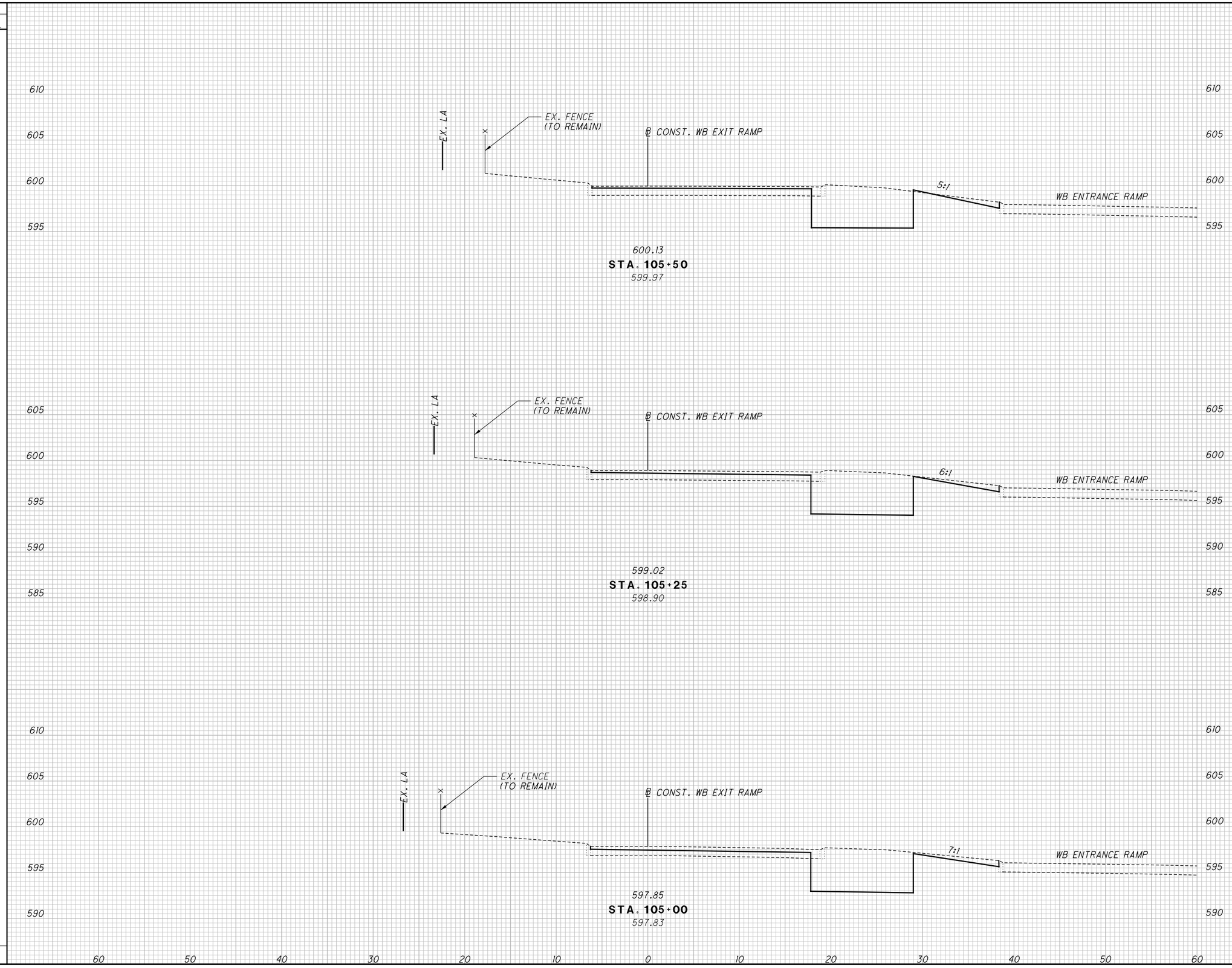
60 50 40 30 20 10 0 10 20 30 40 50 60

CROSS SECTIONS
WB EXIT RAMP STA. 104+25 TO STA. 104+75

CUY-90-21.02

77
153

SEEDING	
END WIDTH	SQ. YDS.
	0
0	
	0
0	
	0
0	
	0
0	



END AREA	
CUT	FILL
14	0
16	0
20	0
21	0

VOLUME	
CUT	FILL
14	0
16	0
19	0
49	0

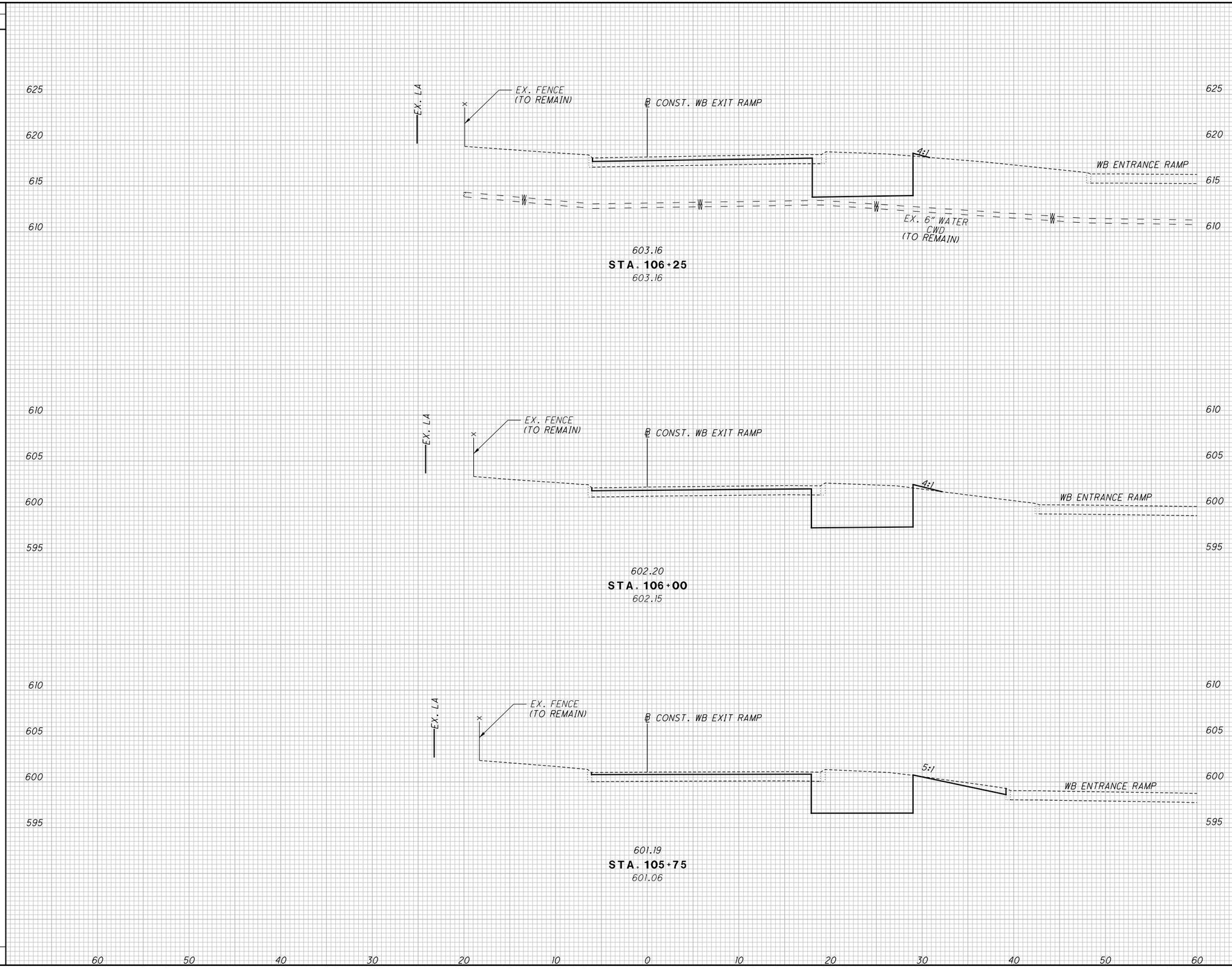
CALCULATED KJM
CHECKED JTS

CROSS SECTIONS
WB EXIT RAMP STA. 105+00 TO STA. 105+50

CUY-90-21.02

78
153

SEEDING END WIDTH	SEEDING SQ. YDS.
	10
4	
	13
5	
	7
0	
	30



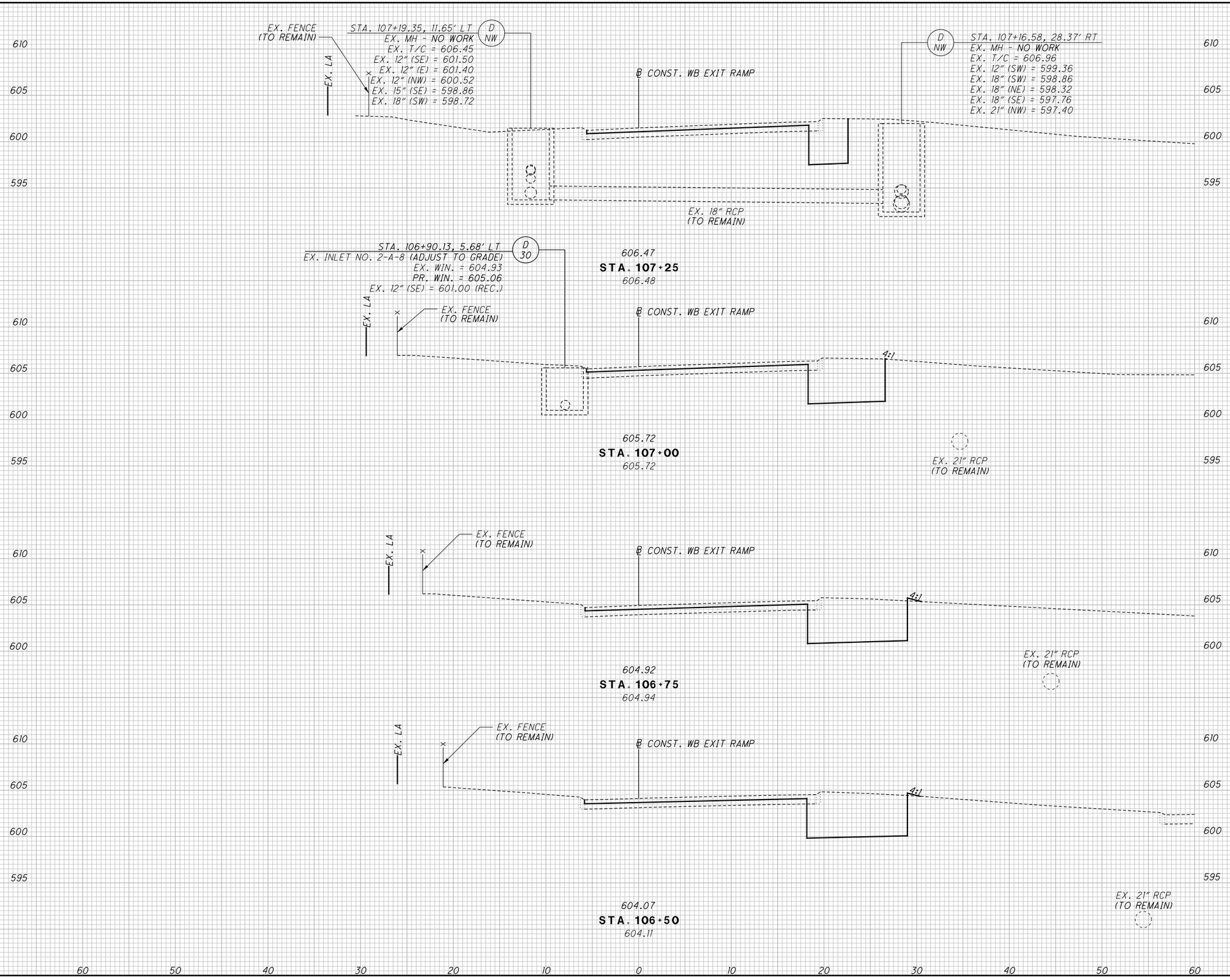
END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		16	1
17	0		
		16	1
16	1		
		15	1
15	0		
		47	3

CALCULATED KJM
CHECKED JTS

CROSS SECTIONS
WB EXIT RAMP STA. 105+75 TO STA. 106+25

CUY-90-21.02

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	2			2	0
2		6	0		
	6			9	0
2		13	0		
	7			14	1
3		16	0		
	9			16	1
3		17	0		
	24			41	2



CALCULATED KJM
CHECKED JTS

CROSS SECTIONS
WB EXIT RAMP STA. 106+50 TO STA. 107+25

CUY-90-21.02

80
153

10382I_XS148.dgn Sheet 9/6/2018 4:49:29 PM MDohlen

SEEDING	
END WIDTH	SQ. YDS.
1	0

END AREA	
CUT	FILL
3	0

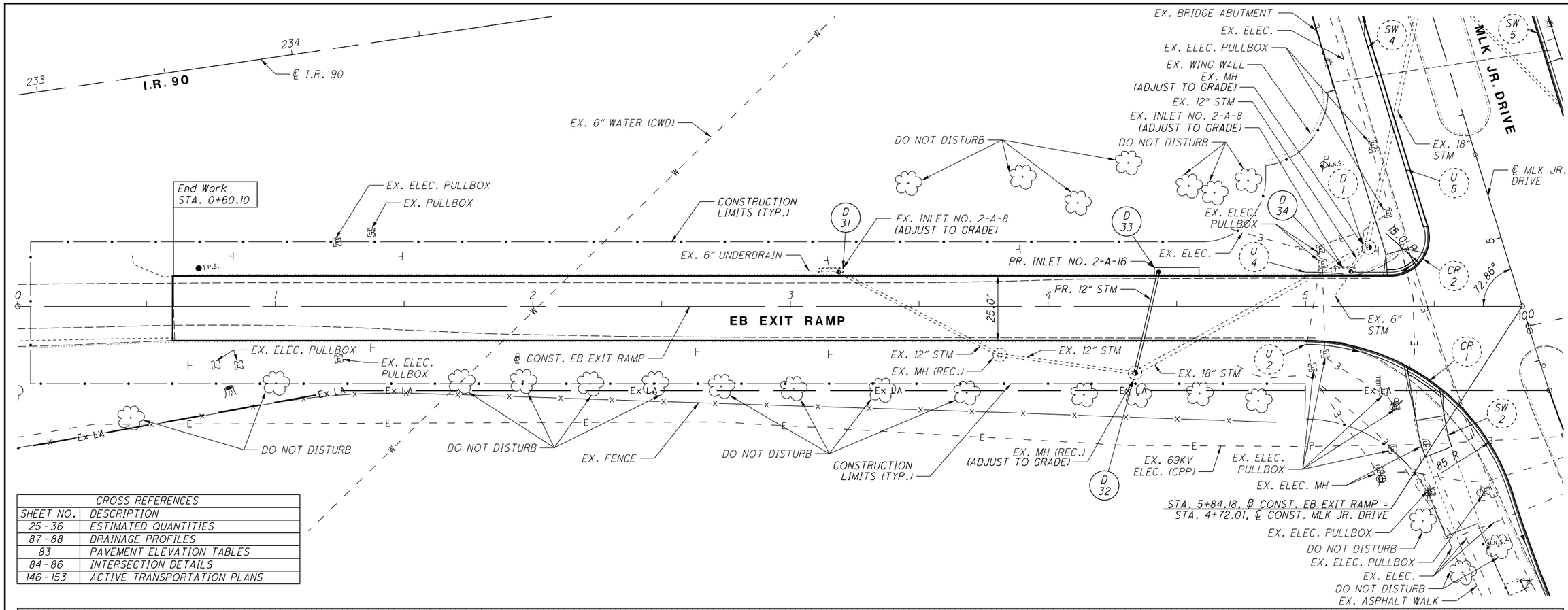
VOLUME	
CUT	FILL
0	0

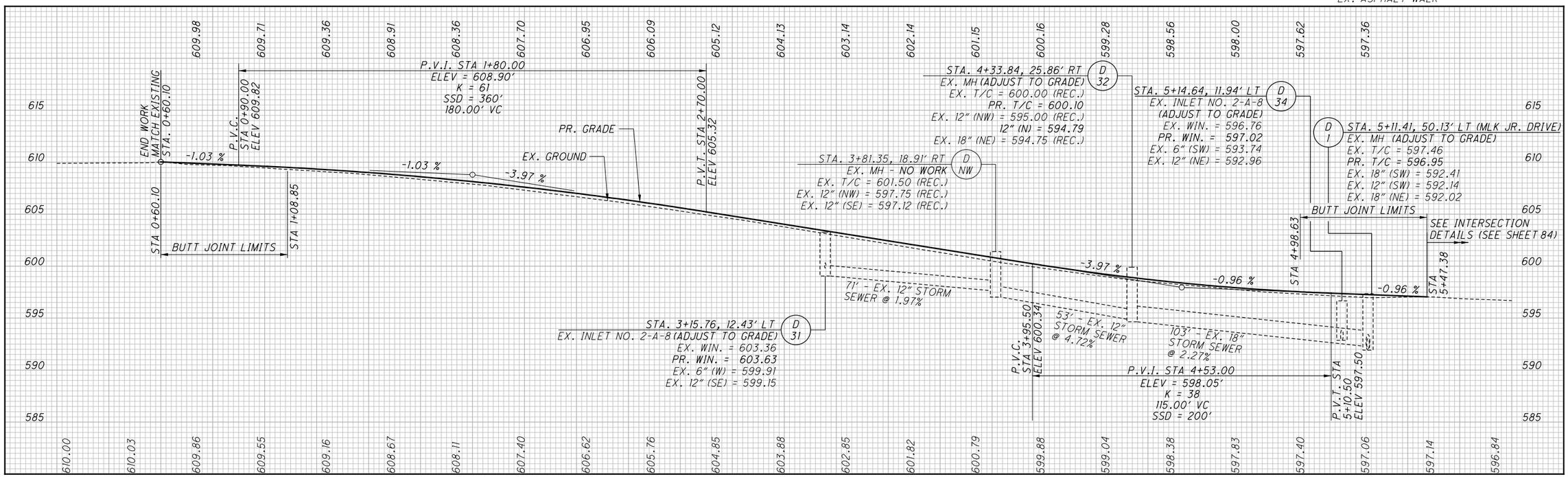
CALCULATED KJM
CHECKED JTS

CROSS SECTIONS
WB EXIT RAMP STA. 107+35

CUY-90-21.02

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
25 - 36	ESTIMATED QUANTITIES
87 - 88	DRAINAGE PROFILES
83	PAVEMENT ELEVATION TABLES
84 - 86	INTERSECTION DETAILS
146 - 153	ACTIVE TRANSPORTATION PLANS





10382LGP021.dgn Sheet 9/6/2018 4:49:49 PM MDohlen

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MKD CHECKED JTS

PLAN AND PROFILE
EB EXIT RAMP END TO STA. 5+84.18

CUY-90-21.02

LEFT SIDE							MLK JR. DRIVE		RIGHT SIDE					
				POINT OF ROTATION LEFT OF PROFILE GRADE LOCATION			PROFILE GRADE		POINT OF ROTATION RIGHT OF PROFILE GRADE LOCATION					
LEFT REMARKS	PROPOSED GUTTER ELEVATION	PROPOSED PAVEMENT WIDTH (FEET)	PROPOSED PAVEMENT CROSS-SLOPE	ELEVATION AT ROTATION POINT	PROPOSED PAVEMENT WIDTH TO POINT OF ROTATION (FEET)	PROPOSED PAVEMENT RT CROSS-SLOPE	CENTERLINE STATION	PROFILE GRADE	PROPOSED PAVEMENT LT CROSS-SLOPE	PROPOSED PAVEMENT WIDTH TO POINT OF ROTATION (FEET)	ELEVATION AT ROTATION POINT	PROPOSED PAVEMENT CROSS-SLOPE	PROPOSED PAVEMENT WIDTH (FEET)	PROPOSED GUTTER ELEVATION	RIGHT REMARKS
	589.27	19.56	-0.40%				1+45.00	589.35	-2.26%	6.44	589.20	-2.51%	15.71	588.81	
	589.49	19.65	-0.27%				1+50.00	589.55	-2.15%	6.36	589.41	-2.45%	16.55	589.00	
	590.60	20.56	0.37%				1+75.00	590.52	-1.57%	5.48	590.44	-2.23%	20.74	589.97	
	591.72	22.32	1.00%				2+00.00	591.50	-1.00%	3.77	591.46	-2.00%	24.19	590.98	
	592.71	24.82	1.00%				2+25.00	592.46	-1.00%	1.31	592.45	-1.75%	25.45	592.01	
	593.70	26.07	1.00%	593.44	0.91	1.50%	2+50.00	593.43				-1.50%	26.16	593.04	
	594.62	26.03	1.00%	594.36	2.53	1.25%	2+75.00	594.33				-1.25%	26.17	594.00	
	595.40	26.01	1.00%	595.14	3.54	1.25%	3+00.00	595.10				-1.25%	26.78	594.76	
	596.05	26.00	1.00%	595.79	3.94	1.25%	3+25.00	595.74				-1.25%	28.01	595.39	
	596.56	26.01	1.00%	596.30	3.73	1.25%	3+50.00	596.25				-1.25%	29.83	595.88	
	596.93	26.03	1.00%	596.67	2.91	1.25%	3+75.00	596.63				-1.25%	32.26	596.23	
	597.17	26.06	1.00%	596.91	1.49	1.25%	4+00.00	596.89				-1.25%	37.83	596.41	
EB EXIT RAMP							4+25.00	597.01							EB ENTRANCE RAMP
EB EXIT RAMP							4+50.00	597.01							EB ENTRANCE RAMP
EB EXIT RAMP							4+75.00	596.87							EB ENTRANCE RAMP
EB EXIT RAMP							5+00.00	596.61							EB ENTRANCE RAMP
	596.21	26.00	0.00%				5+25.00	596.21	0.00%	1.00	596.21	-2.25%	36.00	595.40	
	595.64	26.00	-0.20%				5+50.00	595.69	0.20%	1.00	595.69	-2.25%	36.00	594.88	
	594.94	26.00	-0.40%				5+75.00	595.04	0.40%	1.00	595.05	-2.25%	36.00	594.24	
	594.20	26.00	-0.60%				6+00.00	594.35	0.60%	1.00	594.36	-2.25%	36.00	593.55	
	593.47	26.00	-0.80%				6+25.00	593.68	0.80%	1.00	593.68	-2.25%	36.00	592.87	
	592.80	26.00	-1.00%				6+50.00	593.06	1.00%	1.00	593.07	-2.25%	36.00	592.26	
	592.13	26.00	-1.20%				6+75.00	592.45	1.20%	1.00	592.46	-2.25%	36.00	591.65	
	591.47	26.00	-1.40%				7+00.00	591.83	1.40%	1.00	591.84	-2.25%	36.00	591.03	
	590.80	26.00	-1.60%				7+25.00	591.22	1.60%	1.00	591.23	-2.25%	36.00	590.42	
	590.13	26.00	-1.80%				7+50.00	590.60	1.80%	1.00	590.62	-2.25%	36.00	589.81	
	589.66	26.00	-2.00%				7+75.00	590.18	2.00%	1.00	590.20	-2.25%	36.00	589.39	
N MARGINAL ROAD							8+00.00	589.75	2.20%	1.00	589.77	-2.25%	36.00	588.96	
N MARGINAL ROAD							8+25.00	589.33	2.40%	1.00	589.35	-2.25%	36.00	588.54	
N MARGINAL ROAD							8+50.00	588.90	2.60%	1.00	588.93	-2.25%	36.00	588.12	
N MARGINAL ROAD							8+75.00	588.49	2.80%	1.00	588.52	-2.25%	36.00	587.71	
	587.48	23.00	-2.80%				9+00.00	588.12	2.80%	1.00	588.15	-2.25%	36.00	587.34	
	587.14	23.00	-2.80%				9+25.00	587.79	2.80%	1.00	587.81	-2.25%	36.00	587.00	
	586.84	23.00	-2.80%				9+50.00	587.49	2.80%	1.00	587.52	-2.25%	36.00	586.71	
	586.58	23.00	-2.80%				9+75.00	587.22	2.80%	1.00	587.25	-2.25%	36.00	586.44	
	586.35	23.00	-2.80%				10+00.00	587.00	2.80%	1.00	587.02	-2.25%	27.00	586.42	
	586.25	23.00	-2.40%				10+25.00	586.81	2.40%	1.00	586.83	-2.25%	25.79	586.25	
	586.19	23.00	-2.00%				10+50.00	586.65	2.00%	1.00	586.67	-2.25%	25.00	586.11	
	586.14	23.00	-1.60%				10+75.00	586.51	1.60%	1.00	586.53	-2.25%	25.00	585.97	
	586.10	23.00	-1.20%				11+00.00	586.38	1.20%	1.00	586.39	-2.25%	25.00	585.82	
	586.05	23.00	-0.80%				11+25.00	586.24	0.80%	1.00	586.25	-2.25%	25.00	585.68	
	586.01	23.00	-0.40%				11+50.00	586.10							WB EXIT RAMP
	585.99	22.43	0.00%				11+75.00	585.99							WB EXIT RAMP
	585.96	19.20	0.40%				12+00.00	585.88							WB EXIT RAMP
	585.90	12.20	0.80%	585.80	3.48	0.80%	12+25.00	585.77							WB EXIT RAMP
	585.82	12.21	1.20%	585.67	0.85	1.20%	12+50.00	585.66							WB EXIT RAMP
	585.69	11.33	1.20%				12+75.00	585.55							WB EXIT RAMP
	585.57	10.52	1.20%				13+00.00	585.44							WB EXIT RAMP
	585.46	10.63	1.20%				13+25.00	585.33							WB EXIT RAMP
	585.36	11.57	1.20%				13+50.00	585.23	-1.20%	0.42	585.22	-1.65%	13.46	585.00	
	585.26	12.40	1.20%				13+75.00	585.12	-1.20%	0.10	585.11	-1.50%	13.22	584.92	
	585.23	12.88	1.20%				14+00.00	585.07	-1.20%	0.25	585.07	-1.35%	13.03	584.89	
	585.29	12.98	1.20%				14+25.00	585.13	-1.20%	0.41	585.13	-1.20%	12.96	584.97	

CALCULATED MKD
CHECKED JTS

MLK JR. DRIVE - PAVEMENT ELEVATION TABLE

CUY-90-21.02

PT STA. 5+00.00, 13.25' RT (EB EXIT RAMP)

CURVE DATA
CURVE 1
P.I. STA. 4+65.45, 25.24' LT
(MLK JR. DRIVE)
Δ = 72° 12' 28" (LT)
R = 85.00'
L = 107.12'

CURVE C1

PC STA. 4+05.42, 27.16' LT (MLK JR. DRIVE)

EX LA

℄ CONST. EB EXIT RAMP

EB EXIT RAMP

PT STA. 5+33.02, 11.75' LT (EB EXIT RAMP)

CURVE DATA
CURVE 2
P.I. STA. 4+92.32, 26.00' LT
(MLK JR. DRIVE)
Δ = 107° 08' 36" (RT)
R = 15.00'
L = 28.05'

D 34 — STA. 5+14.64, 11.94' LT
EX. INLET NO. 2-A-8
(ADJUST TO GRADE)
PR. WIN. = 597.02

D 1 — STA. 5+11.41, 50.13' LT
EX. MH (ADJUST TO GRADE)
PR. T/C = 596.95

107.14°
72.86°
85.89°
94.11°
℄ CONST. EB EXIT RAMP
℄ CONST. MLK JR. DRIVE
℄ CONST. EB ENTRANCE RAMP

CURVE C2

PC STA. 5+12.65, 26.00' LT (MLK JR. DRIVE)

PT Sta. 4+61.98

S 82° 43' 05" E

STA. 4+72.01, ℄ CONST. MLK JR. DRIVE = STA. 5+84.18, ℄ CONST. EB EXIT RAMP

N 9° 51' 41" W

STA. 4+63.99, ℄ CONST. MLK JR. DRIVE = STA. 100+00.00, ℄ CONST. EB ENTRANCE RAMP

N 84° 14' 53" E

26.0'

37.0'

MLK JR. DRIVE

℄ CONST. MLK JR. DRIVE

PCC STA. 4+37.73

℄ CONST. EB ENTRANCE RAMP

EB ENTRANCE RAMP

PCC STA. 3+81.98, 33.05' RT (MLK JR. DRIVE)

CURVE C3

CURVE DATA
CURVE 3
P.I. STA. 4+40.57, 37.65' RT
(MLK JR. DRIVE)
Δ = 91° 05' 05" (RT)
R = 55.00'
L = 87.44'

PT STA. 100+95.45, 17.51' RT (EB EXIT RAMP)

PCC STA. 100+50.39, 29.28' LT (EB ENTRANCE RAMP)

CURVE C4

PC STA. 5+12.65, 37.00' RT (MLK JR. DRIVE)

CURVE C5

D 20 — STA. 100+64.77, 27.27' LT
EX. MH (ADJUST TO GRADE)
T/C = 597.50

PCC STA. 100+73.20, 23.09' LT (EB ENTRANCE RAMP)

D 21 — STA. 100+78.00, 22.16' LT
PR. INLET NO. 2-A-8
PR. WIN. = 597.26

CURVE C6

S 1 — STA. 100+94.05, 5.50' LT
EX. MH (ADJUST TO GRADE)
PR. T/C = 598.30

PT STA. 101+07.96, 19.50' LT (EB ENTRANCE RAMP)

CURVE DATA
CURVE 4
P.I. STA. 4+96.00, 37.00' RT
(MLK JR. DRIVE)
Δ = 67° 19' 09" (RT)
R = 25.00'
L = 29.37'

CURVE 5
P.I. STA. 100+61.61, 25.51' LT
(EB ENTRANCE RAMP)
Δ = 6° 46' 30" (RT)
R = 200.00'
L = 23.65'

CURVE 6
P.I. STA. 100+90.39, 19.50' LT
(EB ENTRANCE RAMP)
Δ = 11° 47' 46" (RT)
R = 170.00'
L = 35.00'

NOTES:

1. ALL DISTANCES AND ELEVATIONS ARE MEASURED TO THE FACE OF THE CURB.
2. ADD 500 TO THE ELEVATION SHOWN FOR THE ACTUAL ELEVATION.

HORIZONTAL SCALE IN FEET
0 5 10 20

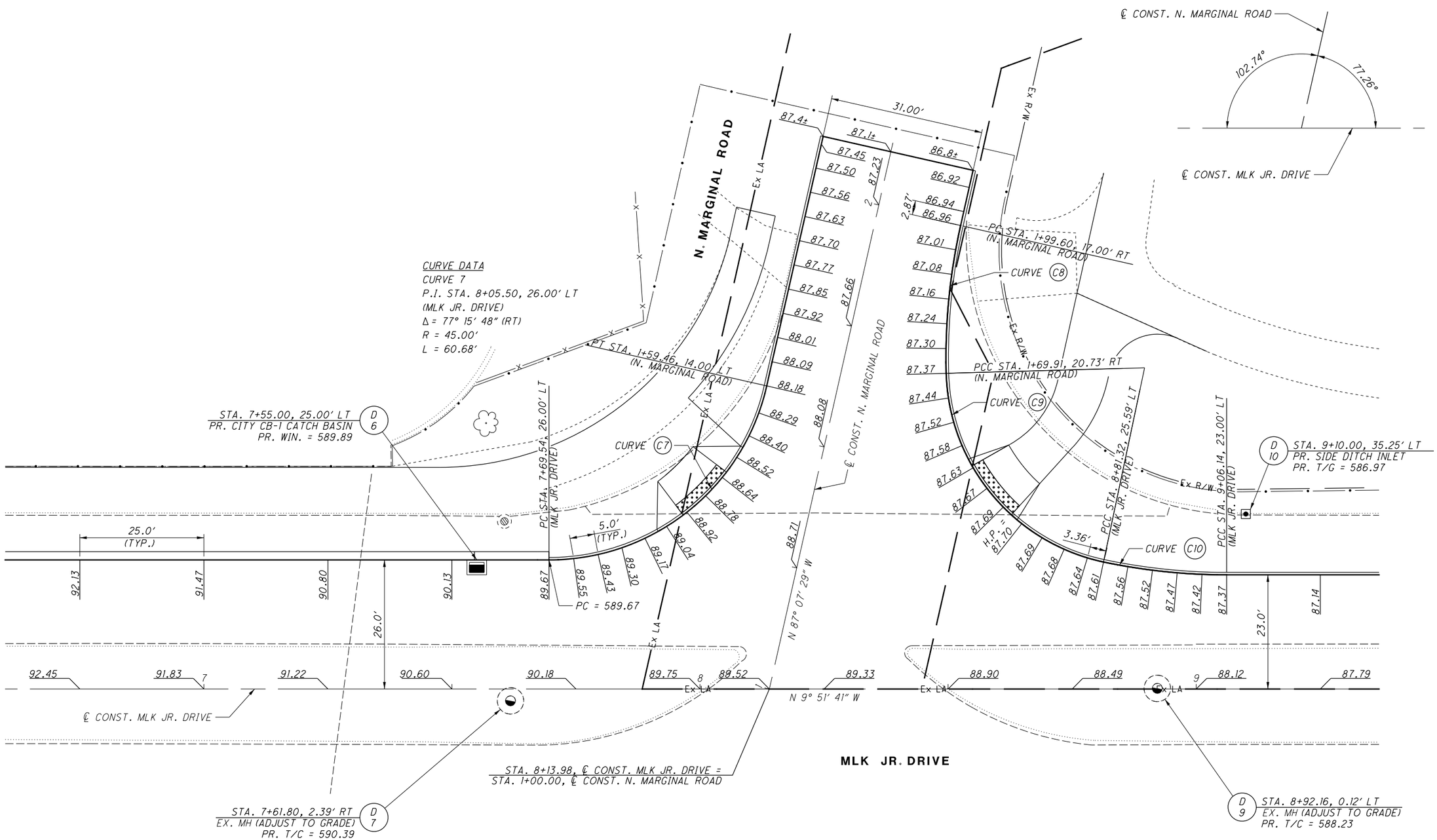
CALCULATED KJM
CHECKED JTS

INTERSECTION DETAILS
MLK JR. DRIVE & EB ENTRANCE/EXIT RAMP

CUY-90-21.02

84
153

103821_GI001.dgn EB RAMPS INTERSECTION 9/6/2018 4:50:27 PM MDohlen



CURVE DATA
CURVE 8
P.I. STA. 1+84.52, 17.00' RT
(N. MARGINAL ROAD)
Δ = 14° 19' 26" (LT)
R = 120.00'
L = 30.00'

CURVE DATA
CURVE 9
P.I. STA. 8+50.48, 32.11' LT
(MLK JR. DRIVE)
Δ = 76° 28' 34" (LT)
R = 40.00'
L = 53.39'

CURVE DATA
CURVE 10
P.I. STA. 8+93.60, 23.00' LT
(MLK JR. DRIVE)
Δ = 11° 56' 12" (LT)
R = 120.00'
L = 25.00'

NOTES:

1. ALL DISTANCES AND ELEVATIONS ARE MEASURED TO THE FACE OF THE CURB.
2. ADD 500 TO THE ELEVATION SHOWN FOR THE ACTUAL ELEVATION.

CALCULATED K.JM
CHECKED JTS

INTERSECTION DETAILS
MLK JR. DRIVE & N. MARGINAL ROAD

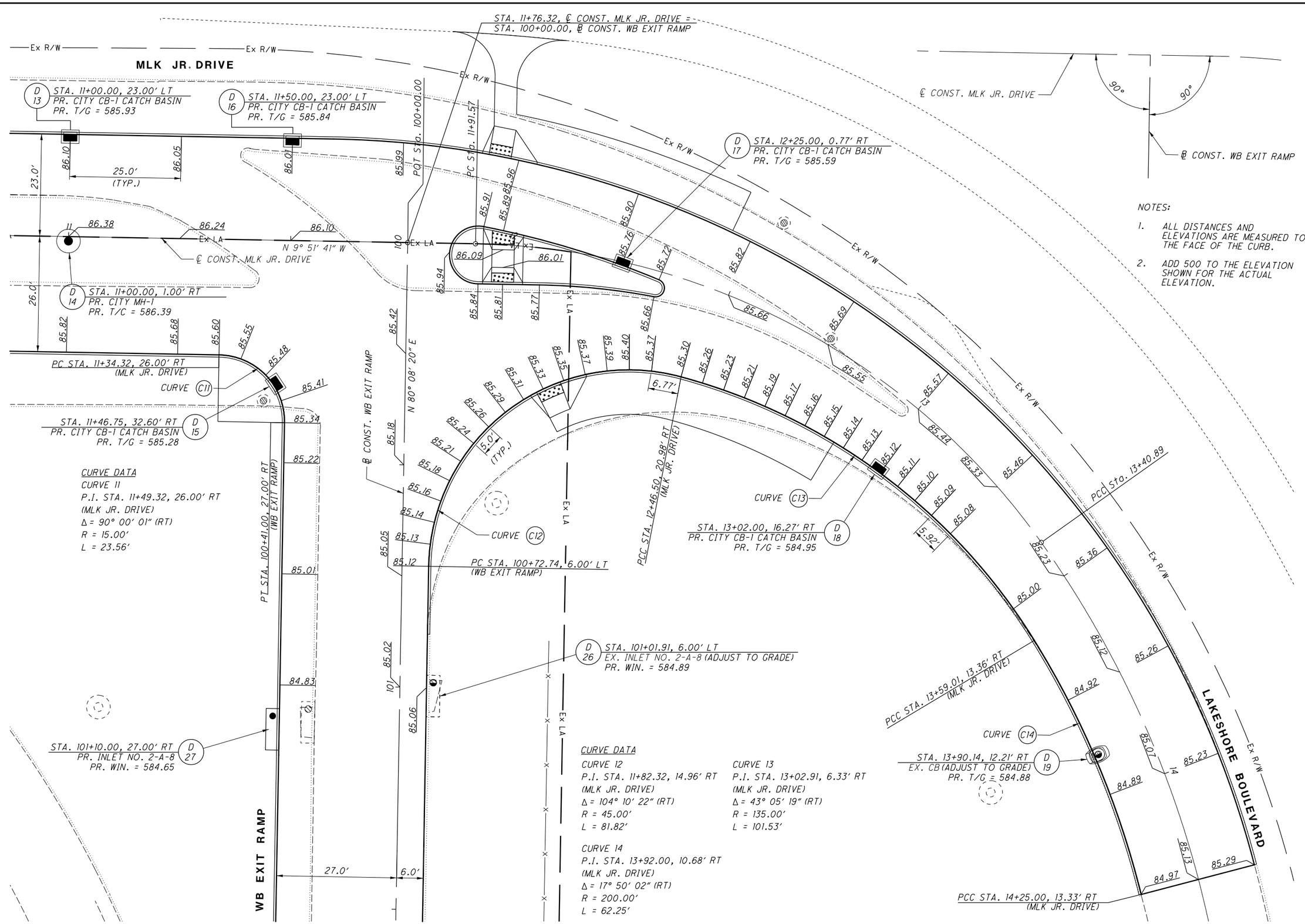
CUY-90-21.02

INTERSECTION DETAILS
MLK JR. DRIVE & WB EXIT RAMP

CUY-90-21.02

CALCULATED K.JM CHECKED JTS

HORIZONTAL SCALE IN FEET
0 5 10 20



CURVE DATA

CURVE 11
P.I. STA. 11+49.32, 26.00' RT
(MLK JR. DRIVE)
Δ = 90° 00' 01" (RT)
R = 15.00'
L = 23.56'

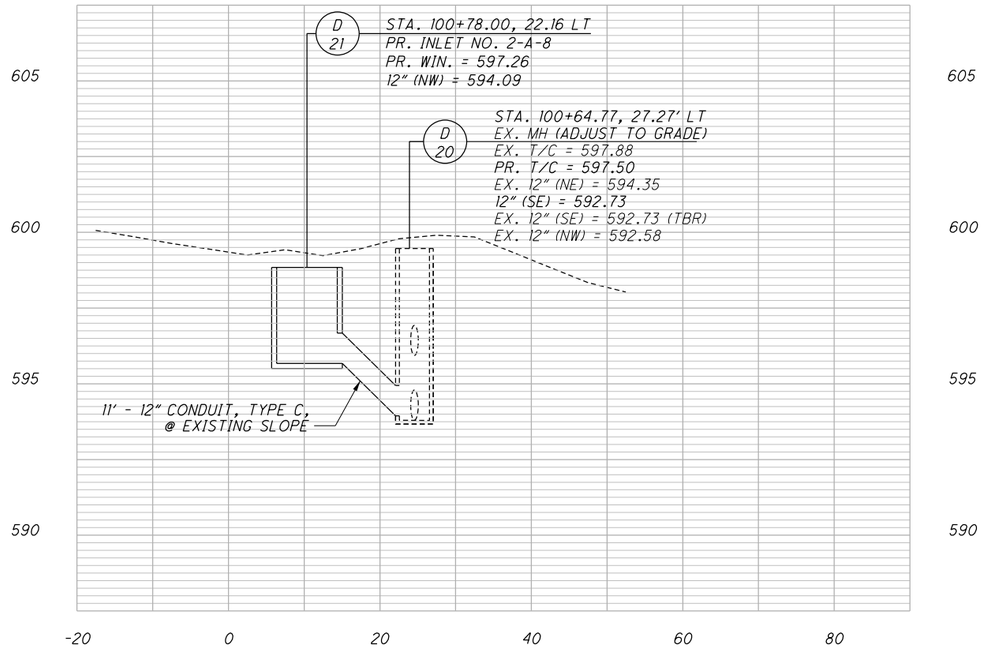
CURVE 12
P.I. STA. 11+82.32, 14.96' RT
(MLK JR. DRIVE)
Δ = 104° 10' 22" (RT)
R = 45.00'
L = 81.82'

CURVE 13
P.I. STA. 13+02.91, 6.33' RT
(MLK JR. DRIVE)
Δ = 43° 05' 19" (RT)
R = 135.00'
L = 101.53'

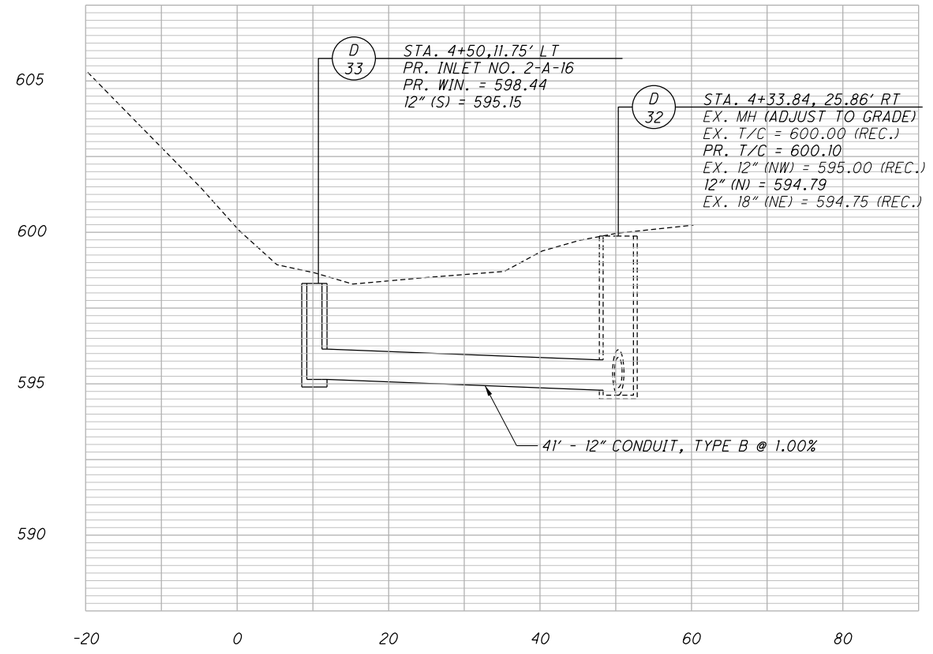
CURVE 14
P.I. STA. 13+92.00, 10.68' RT
(MLK JR. DRIVE)
Δ = 17° 50' 02" (RT)
R = 200.00'
L = 62.25'

10382LG100i.dgn WB RAMP INTERSECTION 9/6/2018 4:50:42 PM MDohlen

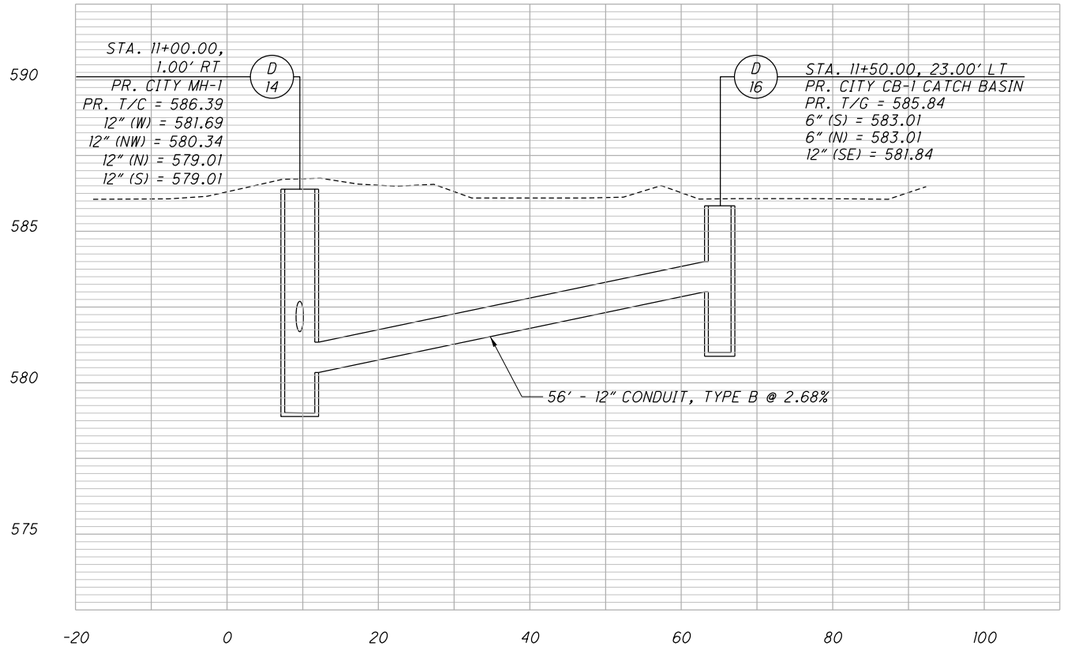
PROFILE D-20/D-21 (EB ENTRANCE RAMP)



PROFILE D-32/D-33 (EB EXIT RAMP)

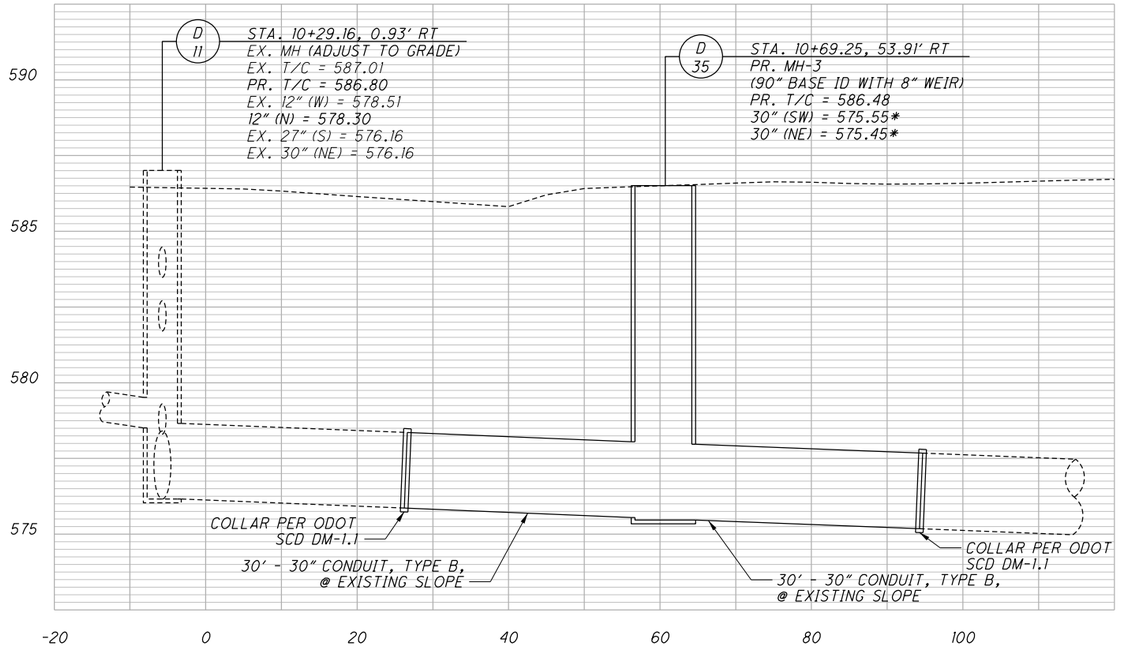


PROFILE D-14/D-16 (MLK JR. DRIVE)



*CONTRACTOR TO VERIFY 30" PIPE LOCATION AND PROPOSED INVERT ELEVATIONS AND HAVE APPROVAL BY THE ENGINEER PRIOR TO ORDERING THE MANUFACTURED SYSTEM.

PROFILE D-11/D-35 (MLK JR. DRIVE)



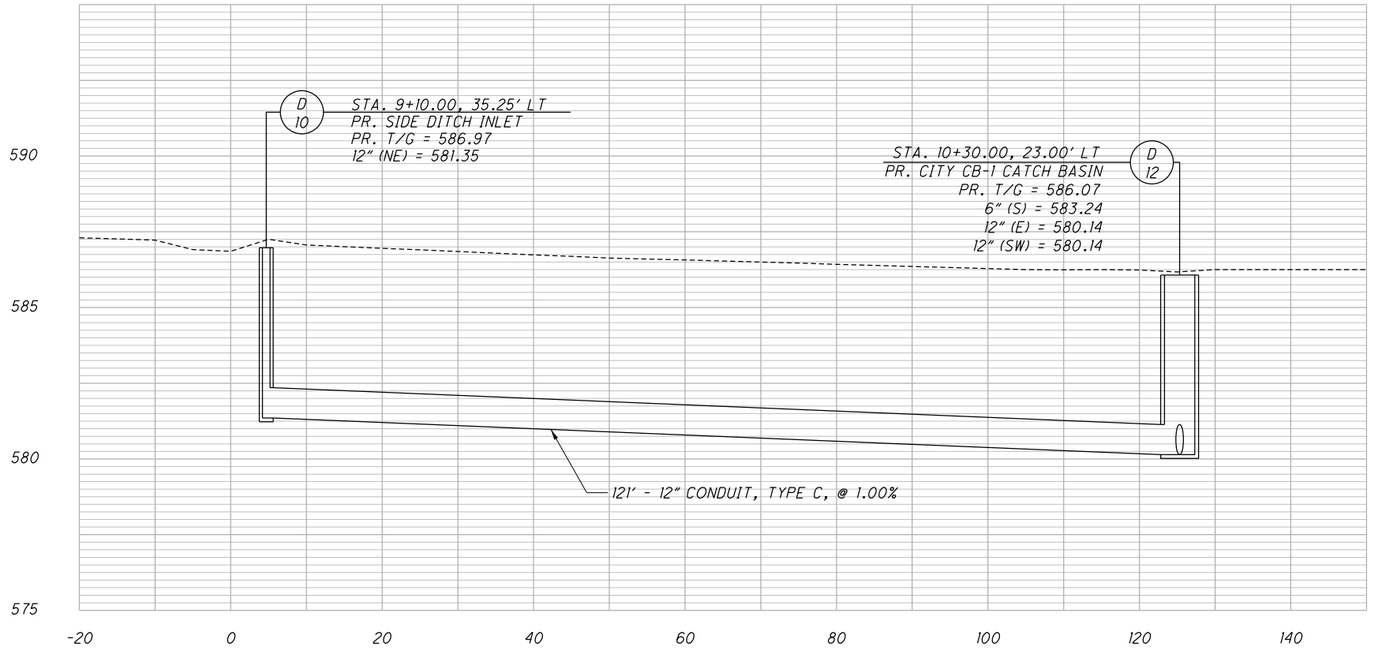
HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED K.JM
CHECKED JTS

STORM SEWER PROFILES

CUY-90-21.02

PROFILE D-10/D-12 (MLK JR. DRIVE)



HORIZONTAL SCALE IN FEET
0 5 10 20

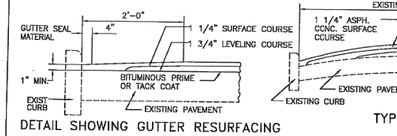
CALCULATED K.JM
CHECKED JTS

STORM SEWER PROFILES

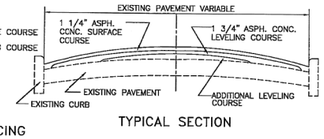
CUY-90-21.02

88
153

MISCELLANEOUS DETAILS



DETAIL SHOWING GUTTER RESURFACING

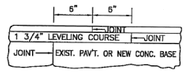


TYPICAL SECTION

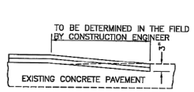
NOTES

SURFACE COURSE AS PER 448 TYPE I HEAVY TRAFFIC
LEVELING COURSE AS PER 448 TYPE II HEAVY TRAFFIC
ADDITIONAL LEVELING COURSE AS PER 448 TYPE II HEAVY TRAFFIC
BITUMINOUS TACK COAT AS PER 407 & SPECIAL
9" CONCRETE BASE AND INTEGRAL CONCRETE CURB & BASE AS PER 305 & SPECIAL AND 609.04
IF REQUIRED 12 INCH (W4) X 8 INCH (W8.5) EPOXY COATED REINFORCING MESH MEETING ODOT 709.14
AGGREGATE BASE AS PER 304 & SPECIAL
JOINT FILLER AS PER 705.04 (HOT APPLIED)

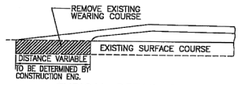
GUTTER SEAL MATERIAL SAME TYPE OF ASPHALT CEMENT USED IN THE ASPHALT CONCRETE
PREMOLDED EXPANSION JOINT MATERIAL AS PER 705.03
NO. 8 TAMPED POROUS FILTER MATERIAL, LIMESTONE OR GRAVEL.
UNDERDRAIN AS PER 605 & SPECIAL
INTEGRAL CONCRETE CURB AND BASE JOINT DETAIL SHALL BE AS SHOWN ON DRAWING 644 M SHEETS 4 & 5 (LONGITUDINAL) AND 175 ME SHEET 6 (TRANSVERSE).



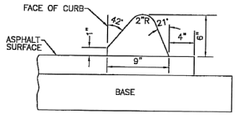
DETAIL FOR LAPPING JOINTS



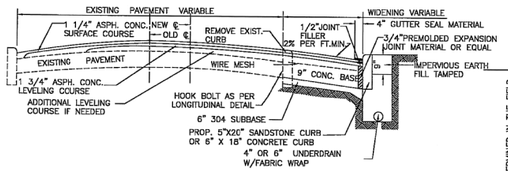
DETAIL FOR MILLING EXISTING CONCRETE PAVEMENT



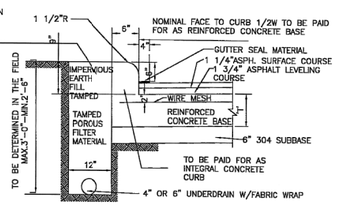
TYPICAL DETAIL OF PAVEMENT MERGER



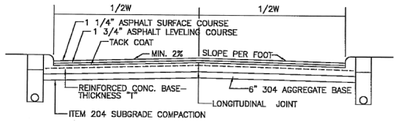
DETAIL OF ASPHALT CONCRETE CURB



PAVEMENT SECTION WIDENING

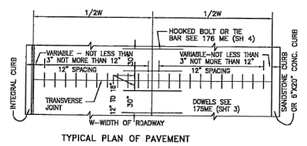


DETAIL OF INTEGRAL CONCRETE CURB & BASE (ASPHALT SURFACE)

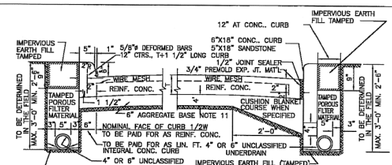


TYPICAL SECTION ASPHALT SURFACE WITH INTEGRAL CONCRETE CURB AND BASE

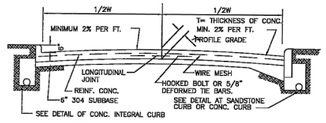
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
ASPHALT RESURFACING AND ASPHALT SURFACE ON REINFORCED CONCRETE BASE
NOT TO SCALE
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION
FILE NO ASPH 1 | SHEET 1/1 | ②



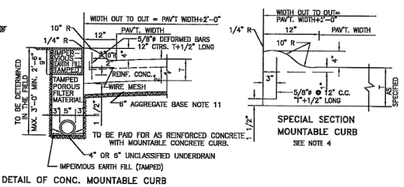
TYPICAL PLAN OF PAVEMENT



DETAIL OF CONC. INTEGRAL CURB DETAIL OF SANDSTONE CURB



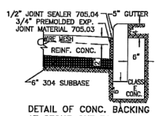
TYPICAL SECTION OF PAVEMENT



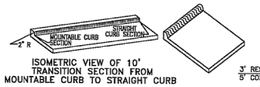
DETAIL OF CONC. MOUNTABLE CURB

SPECIAL SECTION MOUNTABLE CURB
SEE NOTE 4

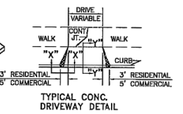
DETAIL OF EXP. JT. AT INTEGRAL CURB



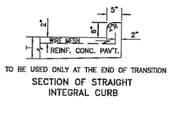
DETAIL OF CONC. BACKING AT STONE CUT TO RADIUS CURB (25' RADIUS & UNDER)



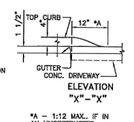
ISOMETRIC VIEW OF 10' TRANSITION SECTION FROM MOUNTABLE CURB TO STRAIGHT CURB



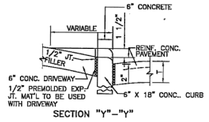
TYPICAL CONC. DRIVEWAY DETAIL



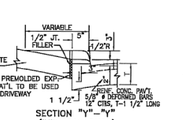
TO BE USED ONLY AT THE END OF TRANSITION
SECTION OF STRAIGHT INTEGRAL CURB



ELEVATION "X"–"X"
*A – 1:12 MAX., IF IN AN UNOBSTRUCTED SIDEWALK AREA



SECTION "Y"–"Y"

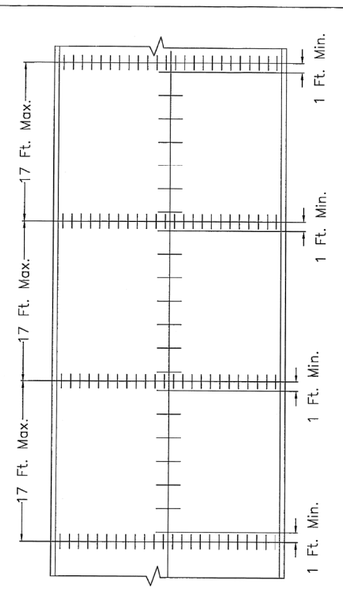


SECTION "Y"–"Y" (INTEGRAL CURB)

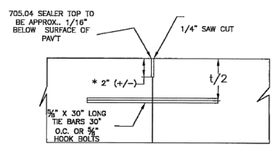
NOTES:

1. REINFORCED CONCRETE PAVEMENT SHALL MEET THE REQUIREMENTS OF 451 AND SPECIAL. CONCRETE SHALL MEET THE REQUIREMENTS OF CITY OF CLEVELAND 850 MIX.
2. IF THE CURB IS PLACED AFTER THE PAVEMENT, OMIT THE ASPHALT EXPANSION JOINT AND PAVE FULL WIDTH. FILL THE VOID BETWEEN THE CURB & EXP. JOINT WITH DRY SAND TO 1/2" FROM THE CONCRETE SURFACE. THE REMAINING 1/2" SHALL BE FILLED WITH JOINT FILLER AS PER 705.04 (HOT APPLIED JOINT FILLER).
3. TRANSITION FROM STANDARD CURB SECTION TO DROP CURB SECTION TO BE MADE IN 12".
4. CONCRETE FOR CURB WHICH IS TO BE INTEGRAL WITH THE CONCRETE BASE OR PAVEMENT SHALL BE PLACED WHILE THE CONCRETE IS PLASTIC.
5. TRANSVERSE JOINT IN THE PAVEMENT SHALL EXTEND THROUGH CURBS.
6. CONTRACTION JOINT (IMPRESSED OR SAWED) SHALL BE PLACED AT MAXIMUM OF 17' CENTERS.
7. PAVEMENT JOINT ASSEMBLES SHALL BE AS PER 451.02 (709.13).
8. LONGITUDINAL JOINT SHALL BE 5/8" X 30" DEFORMED EPOXY BAR AS PER 451.02 & 709.00 OR 3- 7/8" X 8" EPOXY HOOK BOLTS PLACED AT 30" CENTERS. TRANSVERSE JOINT SHALL BE AS SHOWN ON DRAWING 175 ME (SHEET 6).
9. STEEL FOR TIE BARS, HOOK BOLTS AND DOWEL BARS SHALL MEET THE REQUIREMENTS OF 451.02.
10. 12 INCH (W4) X 8 INCH (W8.5) EPOXY COATED REINFORCING MESH MEETING ODOT 709.14
11. AGGREGATE BASE AS PER 304 & SPECIAL.
12. HOT APPLIED JOINT SEALER AS PER 705.04.
13. PREFORMED EXPANSION JOINT MATERIAL AS PER 705.03.
14. TAMPED POROUS FILTER MATERIAL AS PER 605.
15. UNCLASSIFIED PIPE UNDERDRAIN AS PER 707.31 OR 707.41.

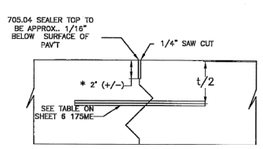
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
CONSTRUCTION DETAILS OF REINFORCED CONCRETE PAVEMENT
NOT TO SCALE
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION
FILE NO.: CONC 1 | SHEET 1/4 | ③



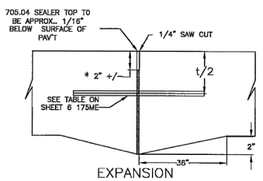
SPACING DIAGRAM FOR JOINTS AND TIE BARS
NOT TO SCALE



LONGITUDINAL

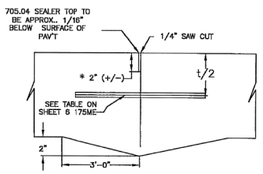


CONTRACTION



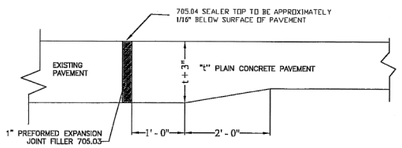
EXPANSION (THICKENED)

DOWELS – ALL DOWELS, HOOK BOLTS AND TIE BARES SHALL BE EPOXY COATED (709.00), AS PER PLAN OR DIRECTION OF THE ENGINEER



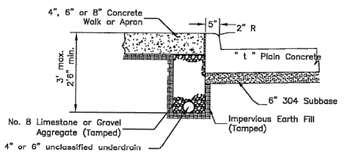
CONSTRUCTION (THICKENED)

* IF CONCRETE IS THICKER THAN 8" USET/4 FOR THE JOINT DEPTH

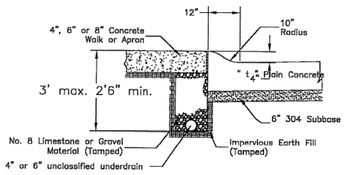


BUTT JOINT (THICKENED)

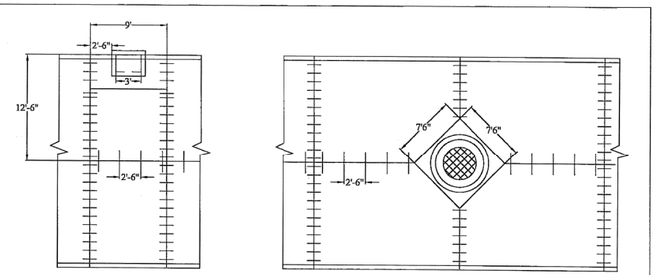
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWINGS
TYPICAL CONSTRUCTION
DETAILS FOR PLAIN CONCRETE PAVEMENT
NOT TO SCALE
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION
FILE NO. : CONC 1 | SHEET 2/4 | ④



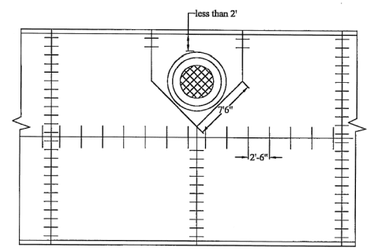
DETAIL OF CONCRETE INTEGRAL CURB
NOT TO SCALE



DETAIL OF CONCRETE MOUNTABLE CURB
(NOT TO SCALE)



TYPICAL BOXOUTS FOR MANHOLES AND CATCH BASINS

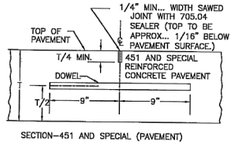


CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
TYPICAL CONSTRUCTION
DETAILS FOR PLAIN CONCRETE PAVEMENT
NOT TO SCALE
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION
FILE NO. : CONC 1 | SHEET 3/4 | ⑤

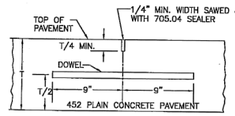
CUY-90-21.02

TRANSVERSE JOINTS

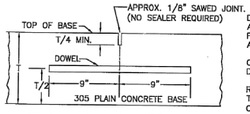
CONTRACTION JOINTS



SECTION–451 AND SPECIAL (PAVEMENT)

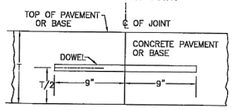


SECTION–452 PLAIN CONCRETE (PAVEMENT)



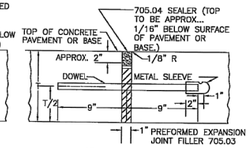
SECTION–305 AND SPECIAL (BASE)

CONSTRUCTION JOINT

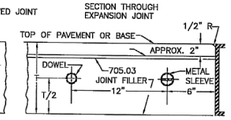


SECTION THROUGH CONSTRUCTION JOINT

EXPANSION JOINT



SECTION THROUGH EXPANSION JOINT



SIDE ELEVATION OF EXPANSION JOINT

ASSEMBLY: NOTES AND DETAILS SHOWN ON THIS DRAWING SHALL BE CONSIDERED IN CONJUNCTION WITH AND SUPPLEMENTAL TO THE PERTINENT SPECIFICATIONS FOR PORTLAND CEMENT CONCRETE PAVEMENTS AND BASES, AND INCIDENTALS RELATED THERETO.

ALL JOINTS SHALL BE CONSTRUCTED NORMAL TO THE CENTERLINE OF THE PAVEMENT LANE UNLESS OTHERWISE DIRECTED.

WHERE DOWELS ARE SPECIFIED THEY SHALL BE ROUND, STRAIGHT STEEL BARS OF THE SIZE INDICATED IN THE FOLLOWING TABLE, AND SHALL BE EPOXY COATED ODOT 709.13. DOWELS SHALL BE SPACED AT 12" CENTERS, BEGINNING 6" FROM THE LONGITUDINAL JOINT.

BASKET SUPPORTS SHALL BE USED FOR POSITIONING OF THE DOWEL BARS AS SPECIFIED IN THE FOLLOWING TABLE. PROVIDE A FUSION–BONDED EPOXY COATED BASKET DOWEL ASSEMBLY. REPAIR UNCOATED AREAS WITH SURFACE PREPARATION AND PATCHING MATERIAL EQUIVALENT TO THE ORIGINAL EPOXY COATING.

DOWEL SIZE	
THICKNESS OF PAVEMENT	DIAMETER OF DOWEL
8" OR LESS	1"
9"	1 1/8"
10"	1 1/4"
OVER 10"	AS SHOWN ON PLANS

ASSEMBLY: EACH JOINT ASSEMBLY USED TO HOLD DOWELS IN POSITION SHALL BE CONTINUOUS BETWEEN LONGITUDINAL JOINTS OR BETWEEN LONGITUDINAL JOINT AND PAVEMENT EDGE.

THE ASSEMBLY SHALL BE FIRMLY HELD IN PROPER POSITION BY AT LEAST EIGHT 1/2" STEEL PINS DRIVEN AT AN ANGLE TO BRACE THE ASSEMBLY FROM LATERAL AND VERTICAL DISPLACEMENT DURING THE PLACING OF THE CONCRETE. THESE PINS SHALL BE AT LEAST 18" IN LENGTH. TWO OF THESE PINS SHALL BE DRIVEN OPPOSITE EACH OTHER AT EACH END OF THE ASSEMBLY AND THE REMAINING PINS SHALL BE DRIVEN IN STAGGERED POSITIONS ON EACH SIDE OF THE ASSEMBLY. IN EXCEPTIONAL CASES WHERE IT IS IMPRACTICAL TO USE THE 18" LENGTH PINS, SUCH AS WHERE HARDPAN OR ROCK IS ENCOUNTERED, THE ENGINEER MAY AUTHORIZE USE OF SHORTER PINS PROVIDED THE ASSEMBLY IS HELD FIRMLY. WHERE THE ASSEMBLY IS PLACED ON GRANULAR MATERIAL WHICH MAY ALLOW SETTLEMENT OR DISTORTION OF THE ASSEMBLY, A MINIMUM OF 6 STEEL PLATES, EACH HAVING A BEARING AREA OF APPROXIMATELY 25 SQUARE INCHES AND A CROSS–SECTION WHICH WILL NOT BEND UNDER THE IMPOSED LOAD, SHALL BE PLACED UNDER THE ASSEMBLY. ONE PLATE SHALL BE USED AT EACH OF THE FOUR END PINS. THE REMAINING PLATES SHALL BE SPACED UNIFORMLY ON EACH SIDE OF THE ASSEMBLY. THE METHOD OF STAKING AND PLACING BEARING PLATES SHALL BE APPROVED BY THE ENGINEER.

DOWEL SPACING IS SHOWN FOR PAVEMENT LANES OF EVEN FOOT WIDTHS. WHERE OTHER WIDTHS ARE SPECIFIED, STANDARD CAGES MAY BE USED WITH DOWEL SPACINGS ADJUSTED AS FOLLOWS:

THE 6" DOWEL SPACING SHALL BE MAINTAINED AT THE LONGITUDINAL JOINT. THE SPACING AT THE OUTER EDGE OF THE LANE MAY BE INCREASED UP TO 12". WHERE AN ODD WIDTH OF LANE OCCURS, A DOWEL SHALL BE PLACED 6" FROM THE OUTER EDGE OF THE LANE IF THE STANDARD CAGE WOULD PROVIDE TO A SPACE EXCEEDING 12". SUCH A DOWEL SHALL BE HELD RIGIDLY IN PROPER POSITION BY A METHOD SATISFACTORY TO THE ENGINEER, OR A DOWEL CAGE OF GREATER LENGTH THAN REQUIRED MAY BE USED BY CUTTING THE ASSEMBLY AND SPLICING TO ATTAIN THE REQUIRED LENGTH.

THIS DRAWING IS INTENDED FOR USE WITH A UNIFORM DEPTH PAVEMENT. WHEN THE PROJECT INVOLVES THE PLACING OF VARIABLE DEPTH PAVEMENT, THE JOINT COMPONENTS SHALL BE HELD IN PLACE IN ACCORDANCE WITH THE METHOD SHOWN IN THE PLAN OR AS APPROVED BY THE ENGINEER.

EXPANSION JOINTS: EXPANSION JOINT FILLER SHALL BE PLACED AT 90° TO THE DOWELS, BOTH HORIZONTALLY AND VERTICALLY, SHALL BE HELD RIGIDLY IN POSITION BY THE USE OF A METAL CAP WHICH SHALL BE REMOVED AT SUCH A TIME IN THE FINISHING OPERATION THAT WILL ENABLE THE BEST WORKMANSHIP IN FINISHING THE JOINT TO THE DIMENSIONS SPECIFIED. JOINT FILLER SHALL BE CONTINUOUS FOR THE FULL WIDTH OF EACH LANE.

SMOOTH DOWELS SHALL BE USED, AND FREE MOVEMENT SHALL BE PROVIDED BY APPLYING A COATING OF AN OIL SUCH AS S.A.E. 140 OR OTHER APPROVED "BOND BREAKING" MATERIAL JUST PRIOR TO PLACING THE CONCRETE, ONE FREE END OF EACH DOWEL SHALL BE EQUIPPED, AFTER COATING, WITH A METAL SLEEVE APPROXIMATELY 3" LONG, DESIGNED WITH CRIMPED END AND OVERLAPPING SEAMS, FITTING CLOSELY AROUND THE DOWEL. EACH SLEEVE SHALL BE PROVIDED WITH A DEPRESSION OR INTERIOR PROJECTION TO ACT AS A STOP FOR THE DOWEL, SUFFICIENTLY DISTANT FROM THE CRIMPED END TO ALLOW 1" FOR LONGITUDINAL DOWEL MOVEMENT WITH PAVEMENT EXPANSION. IN LIEU OF THIS REQUIREMENT, ANY OTHER MEAN MAY BE USED IF APPROVED BY THE ENGINEER.

CONTRACTION JOINTS: DOWELS SHALL BE USED IN CONTRACTION JOINTS IN 451 AND SPECIAL REINFORCED CONCRETE PAVEMENT. THEY SHALL BE SMOOTH BARS, AND FREE MOVEMENT SHALL BE PROVIDED BY APPLYING A COATING OF AN OIL SUCH AS S.A.E. 140 OR OTHER "BOND–BREAKING" MATERIAL JUST PRIOR TO PLACING THE CONCRETE.

CONTRACTION JOINTS OF THE TYPE SPECIFIED SHALL BE SPACED IN ACCORDANCE WITH THE FOLLOWING TABLE:

CONTRACTION JOINT SPACING	
TYPES OF PAVEMENT OR BASE	MAXIMUM SPACING BETWEEN JOINTS
451 AND SPECIAL REINFORCED CONCRETE PAVEMENT	17'–0"
305 AND SPECIAL CONCRETE BASE	17'–0"
452 PLAIN CONCRETE PAVEMENT	17'–0"

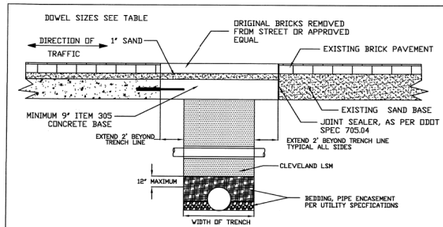
CONSTRUCTION JOINTS: EITHER SMOOTH OR DEFORMED DOWELS SHALL BE USED IN CONSTRUCTION JOINTS IN ALL PORTLAND CEMENT CONCRETE PAVEMENT AND BASE. DOWELS SHALL BE THOROUGHLY CLEANED OF ALL OIL OR OTHER SUBSTANCE THAT WOULD BREAK THE BOND BETWEEN THE STEEL AND CONCRETE. THE JOINT SHALL BE FORMED BY USING A 2" MINIMUM THICKNESS WOOD BULKHEAD OR EQUAL, WITH OPENINGS PROVIDED FOR DOWEL BARS SPACED AT INTERVALS NOT TO EXCEED 12" AS DIRECTED. THE BULKHEAD SHALL BE SHAPED TO FIT THE TYPICAL SECTION OF THE PAVEMENT OR BASE, AND DOWELS SHALL BE HELD RIGIDLY IN POSITION DURING THE PLACING OF THE CONCRETE. THE CONCRETE SHALL BE CAREFULLY FINISHED SO AS TO PROVIDE A NEAT, TIGHT FITTING JOINT THAT WILL NOT REQUIRE SEALING.

CONSTRUCTION JOINTS IN REINFORCED CONCRETE PAVEMENT SHALL NOT BE LOCATED AT A CONTRACTION JOINT, NOR SHALL THEY BE LOCATED CLOSER THAN 10' TO ANY OTHER PARALLEL JOINT. IN PLAIN CONCRETE PAVEMENT OR BASE, THEY SHALL NOT BE LOCATED CLOSER THAN 5' TO ANOTHER PARALLEL JOINT.

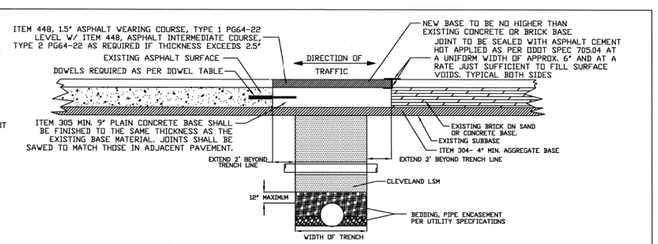
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
PAVEMENT JOINTS
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: [signature] DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO.: CONC 1 | SHEET 4/4 | (6)

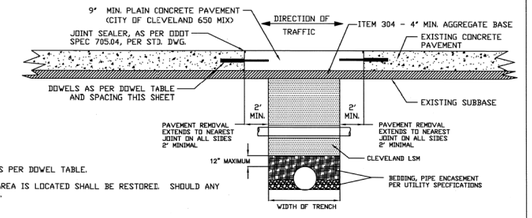


PAVEMENT REPAIR IN BRICK PAVEMENT



ASPHALT ON CONCRETE OR BRICK BASE

DOWEL TABLE	
PAVEMENT THICKNESS	DIAMETER OF DOWELS
8" OR LESS	1"
9"	1 1/8"
10"	1 1/4"
OVER 10"	AS DIRECTED
DOWELS SHALL BE SPACED EVERY 30"	



CONCRETE PAVEMENT

NOTES:

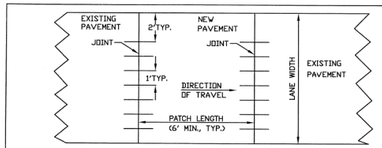
1. ALL PAVEMENT OPENINGS SHALL BE SAWED FULL DEPTH AND HAVE SMOOTH VERTICAL FACES. DOWELS SHALL BE REQUIRED, AS PER DOWEL TABLE.
2. CONCRETE REPAVING SHALL BE PERFORMED IN SUCH A MANNER THAT THE ENTIRE LANE AND/OR SLAB IN WHICH THE REPAIR AREA IS LOCATED SHALL BE RESTORED. SHOULD ANY PORTION OF THE REPAIR AREA EXTEND INTO AN ADJACENT LANE AND/OR SLAB, THAT LANE OR SLAB SHALL ALSO BE REPAVED.
3. EXTEND OVERCUT IN LONGITUDINAL DIRECTION TWO FEET (2') ONTO UNDISTURBED SUBGRADE.
4. ASPHALT RESURFACING SHALL BE PERFORMED IN SUCH A MANNER THAT THE ENTIRE LANE IN WHICH THE REPAIR AREA IS LOCATED SHALL BE RESTORED. SHOULD ANY PORTION OF THE REPAIR AREA EXTEND INTO AN ADJACENT LANE, THAT LANE SHALL ALSO BE RESURFACED. THE RESURFACING SHALL TAKE PLACE FROM BEGINNING PROJECT TO END PROJECT (I.E. WORK LIMITS). FOR PAVEMENTS WITH A WIDTH OF 40' OR LESS A LANE SHALL BE CONSIDERED 1/2 THE PAVEMENT WIDTH.
5. BRICKS REMOVED FROM A REPAIR SHALL BE STORED IN A SAFE PLACE BY THE CONTRACTOR FOR REUSE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPLACING ANY BRICKS THAT ARE STOLEN OR DAMAGED AT NO COST TO THE CITY.
6. ALL NEW BRICKS SUPPLIED BY THE CONTRACTOR MUST FIRST BE APPROVED BY THE CITY BEFORE THEY ARE USED.
7. SAWCUTTING ALL PARTIAL BRICKS SHALL BE SAWCUT. FURTHER, NO BRICK WILL BE PERMITTED TO BE CUT, FOR REPLACEMENT, TO A LENGTH LESS THAN ONE–HALF ITS ORIGINAL LENGTH. THIS MAY REQUIRE SAWCUTTING OF ADJACENT UNDISTURBED BRICK(S).
8. THE PERIMETER FACES OF THE EXISTING BASE MATERIAL SHALL BE CUT BACK TO AS NEARLY VERTICAL ORIENTATION AS POSSIBLE. IF SHEARING OF THE ADJACENT BASE RESULTS, THE CONTRACTOR SHALL REMOVE ADDITIONAL BRICK AND BASE AS SHOWN IN THE DETAIL.
9. THE MAXIMUM WIDTH OF A BRICK MORTAR JOINT SHALL BE 1/2" THIS RESTRICTION WILL ALSO APPLY TO THE PERIMETER OF A REPAIR AREA, WHERE THE ROWS MAY NOT BE PARALLEL TO ONE ANOTHER.
10. MORTARING OF JOINTS: ALL JOINTS SHALL BE MORTARED WITH A 50/50 MIXTURE BY VOLUME OF SAND /CEMENT, TO PROVIDE FOR A FLUSH FINISH. THIS MAY REQUIRE MORE THAN ONE APPLICATION; FURTHER MECHANICAL VIBRATION WILL BE REQUIRED FOR COMPACTION.
11. ALL BACKFILL MATERIALS USED UNDER ANY PAVEMENTS SHALL BE CLEVELAND LSM PLACED FROM THE INITIAL ONE FOOT OVER THE TOP OF UTILITIES, TO THE SUBGRADE.
12. TO PREVENT FLOTATION AND ENTRY OF FLOWABLE FILL INTO ANY OTHER AREASCOVER ALL JOINTS IN CLAY PIPE IN THE TRENCH AREA WITH POLYETHYLENE MATERIAL BEFORE PDURING FLOWABLE FILL. REPAIR TECHNIQUES SHALL BE IN ACCORDANCE WITH THE UTILITY COMPANY'S STANDARD REPAIR PROCEDURES.

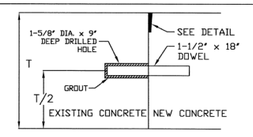
REVISED 8/3/09

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STREET OPENING REPAIR–SUPPLEMENTAL
NOT TO SCALE

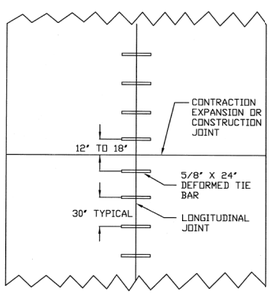
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: [signature] DATE: 4/9/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO. : PR 1 | SHEET 1/2 | (8)

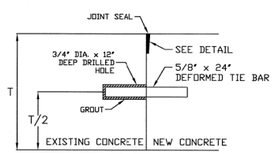




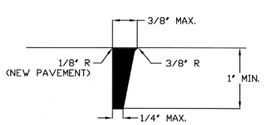
SECTION THROUGH TRANSVERSE JOINT



TIE BAR SPACING



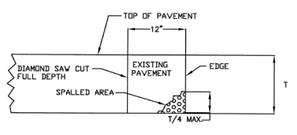
TYPE D (DRILLED TIED LONGITUDINAL) JOINT



GROOVE & SEAL DETAIL

NOTES:

1. ALL JOINTS SHALL BE CONSTRUCTED NORMAL TO THE CENTERLINE OF THE PAVEMENT LANE.
2. ALL DOWEL HOLES SHALL BE DRILLED BY A MECHANICAL DEVICE THAT WILL ALLOW INDEPENDENT ADJUSTMENT OF ALL DRILL SHAFTS IN THE HORIZONTAL AND VERTICAL DIRECTION. THE DEVICE SHALL BE CAPABLE OF DRILLING A MINIMUM OF THREE HOLES AT ONE TIME.
3. ALL SMOOTH DOWELS SHALL BE COATED WITH A THIN LAYER OF OIL OR OTHER "BOND–BREAKING" MATERIAL AFTER THEY HAVE BEEN INSTALLED IN THE EXISTING PAVEMENT AND JUST PRIOR TO PLACING THE PATCH. ALL DOWELS SHALL BE PLACED PARALLEL TO THE PAVEMENT SURFACE AND THE CENTERLINE OF THE PAVEMENT LANE.
4. ADDITIONAL PAVEMENT REMOVAL: IF AFTER THE REMOVAL OF THE PAVEMENT FROM THE AREA TO BE REPAIRED, THE FACE OF THE REMAINING PAVEMENT IS SPALLED OF DETERIORATED FOR A HEIGHT GREATER THAN ONE–FOURTH (1/4) THE THICKNESS OF THE RIGID PAVEMENT, ADDITIONAL REMOVAL SHALL BE MADE AS SHOWN.
5. LONGITUDINAL JOINT: FOR PATCHES 10 FEET OR GREATER IN LENGTH THE LONGITUDINAL JOINT SHALL BE CONSTRUCTED AS PER STANDARD DRAWING. SPACING OF THE TIE BARS SHALL BE NO MORE THAN 30" NOR LESS THAN 24".
6. TYPE D (DRILLED TIED LONGITUDINAL)JOINT:
   TYPE D JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ODOT SPEC. 250.03. GROUT SHALL MEET THE REQUIREMENTS OF ODOT SPEC. 255.02. THE USE OF 5/8" EXPANSION ANCHORS, FF–S–325, GROUP VIII, TYPE I OF GROUP II, TYPE 4, CLASS 1 MAY BE USED IN LIEU OF THE 5/8" x 24" DEFORMED TIE BAR AND SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. THE USE OF SELF DRILLING EXPANSION SHIELD ANCHORS, FF–S–325, GROUP III, TYPE I (A) AND (C) SHALL NOT BE PERMITTED.
7. SEALING JOINTS:
   SAWED OR HAND FORMED JOINTS SHALL BE SEALED WITH ODOT 705.04 JOINT SEALER.



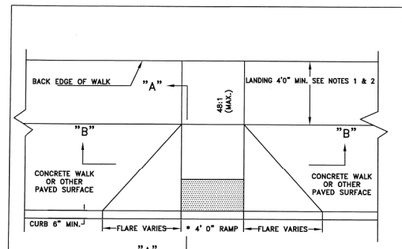
ADDITIONAL PAVEMENT REMOVAL

REVISED 8/3/09

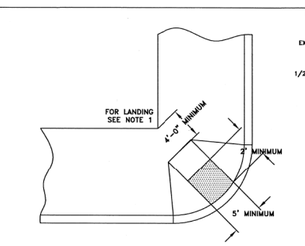
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STREET OPENING REPAIR
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: [signature] DATE: 4/9/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

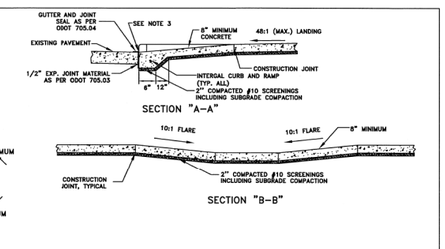
FILE NO.: PR 1 | SHEET 2/2 | (9)



* 3'–0" RAMP WIDTH MAY BE ACCEPTED WITH THE APPROVAL OF ENGINEER

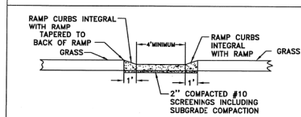


SINGLE RAMP

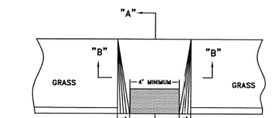


CR–1

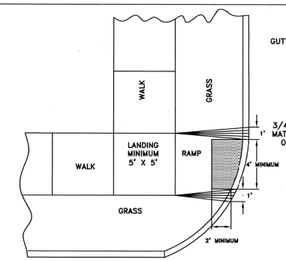
NOTES:
1) MAY BE REDUCED TO 3'–0" IN EXISTING SIDEWALK IF THE LANDING IS CONSTRAINED ALONG THE BACK EDGE.
2) WHERE THE LANDING IS LESS THAN 4'–0", THE RAMP FLARE SHALL BE INCREASED TO 12:1.
3) GUTTER SEAL, 705.04, 4" WIDE THE BOTTOM EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
4) SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.



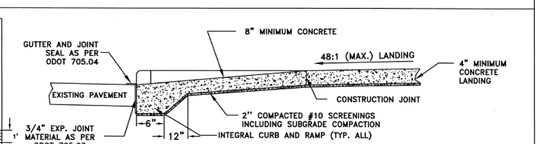
SECTION "B–B"



* 3"–0" RAMP WIDTH MAY BE ACCEPTED WITH THE APPROVAL OF ENGINEER



CR–2



SECTION "A–A"

NOTES:
1–THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
2–SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
3–GUTTER SEAL, 705.04, 4" WIDE THE BOTTOM EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.

REVISED 12/8/09

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
TYPICAL CONSTRUCTION
CURB RAMPS
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: [signature] DATE: 4/9/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR–1 | SHEET 1/6 | (11)

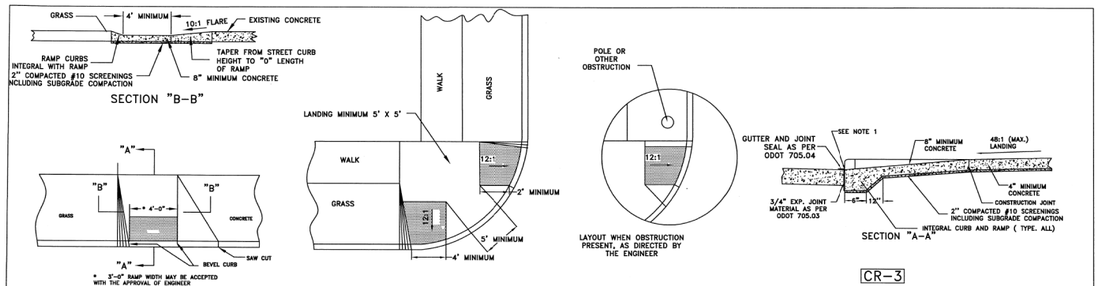
CALCULATED MKD
CHECKED JTS

MISCELLANEOUS DETAILS

CUY–90–21.02

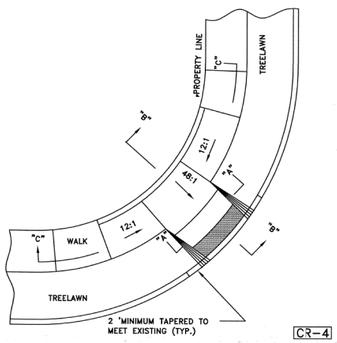
90
153

10382I_GM001.dgn Sheet 9/6/2018 4:51:39 PM MDohlen

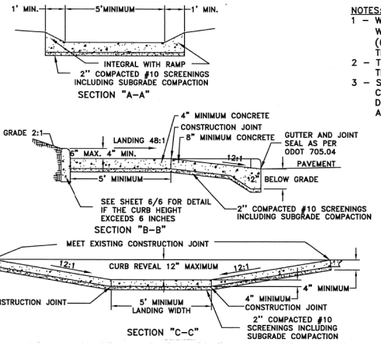


CR-3

NOTES:
1-THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
2-SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
3-BARRIER CURB INSTALLATION ONLY WHEN ADJACENT OBSTACLE PRESENT AND AS DIRECTED BY THE ENGINEER



CR-4



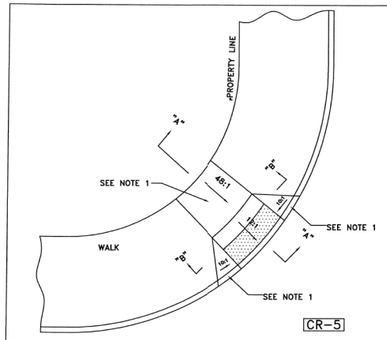
NOTES:
1 – WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
2 – THE BOTTOM EDGE OF THE CURB SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
3 – SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

REVISED 12/8/09

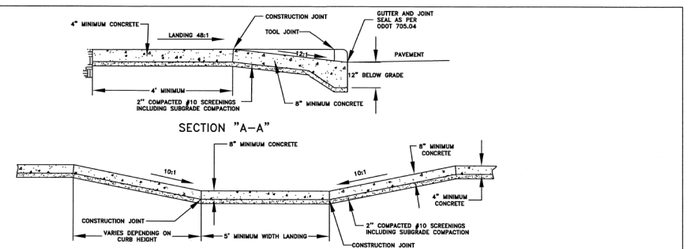
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
TYPICAL CONSTRUCTION
CURB RAMPS
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 4/9/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

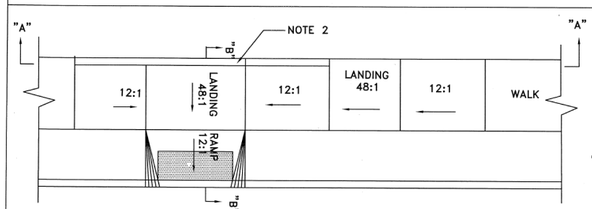
FILE NO.: CR 1 | SHEET 2/6 | 12



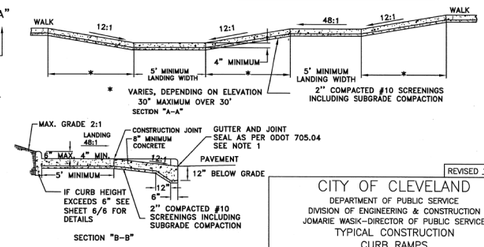
CR-5



NOTES:
1 – WHERE THE LANDING IS LESS THAN 4'-0" THE RAMP FLARE SHALL BE INCREASED TO 12:1.
2 – SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
3 – THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
4 – GUTTER SEAL, 705.04, 6" WIDE THE BOTTOM EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.



CR-6



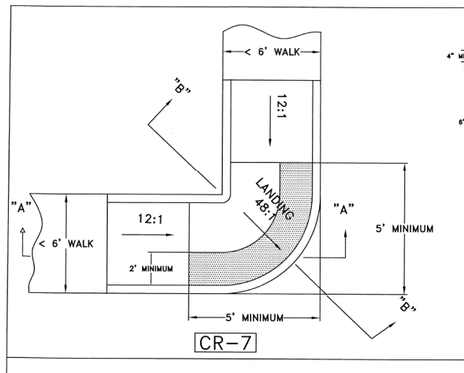
NOTES:
1 – THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
2 – WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
3 – SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

REVISED 12/8/09

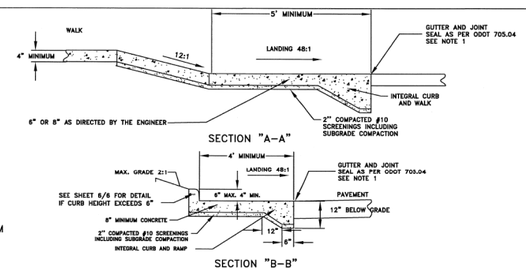
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
TYPICAL CONSTRUCTION
CURB RAMPS
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 4/9/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

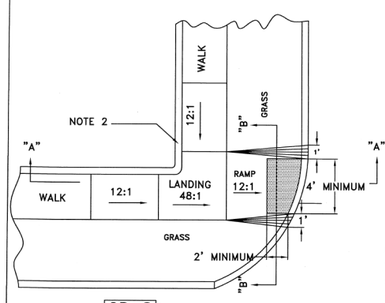
FILE NO.: CR 1 | SHEET 3/6 | 13



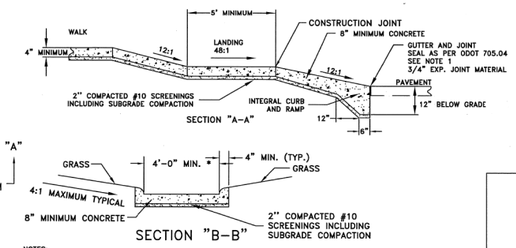
CR-7



NOTES:
1 – THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
2 – WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
3 – SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.



CR-8



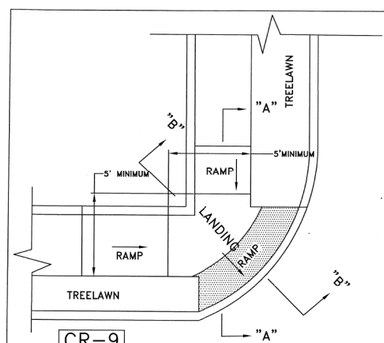
NOTES:
1 – THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
2 – WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
3 – SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

REVISED 12/8/09

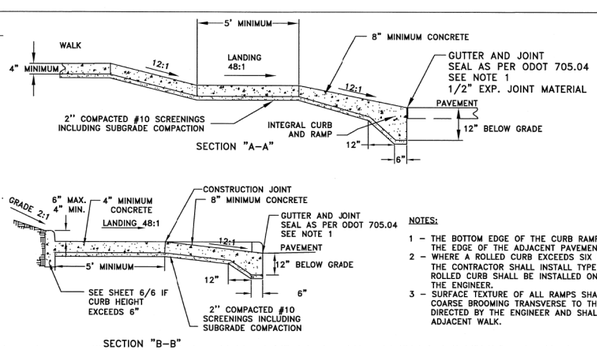
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
TYPICAL CONSTRUCTION
CURB RAMPS
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 4/9/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

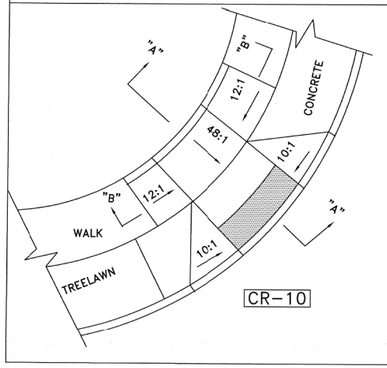
FILE NO.: CR 1 | SHEET 4/6 | 14



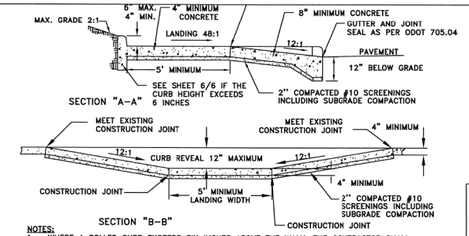
CR-9



NOTES:
1 – THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
2 – WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
3 – SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.



CR-10



NOTES:
1 – WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
2 – THE BOTTOM EDGE OF THE CURB SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
3 – SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

REVISED 12/8/09

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
TYPICAL CONSTRUCTION
CURB RAMPS
NOT TO SCALE

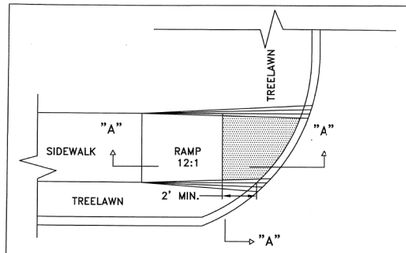
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 4/9/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1 | SHEET 5/6 | 15

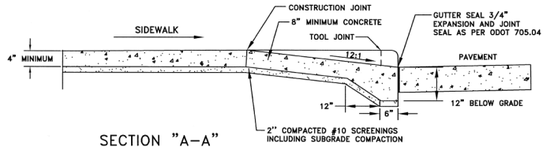
CALCULATED MKD
CHECKED JTS

MISCELLANEOUS DETAILS

CUY-90-21.02

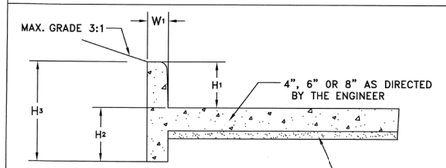


CR-11



SECTION "A–A"

NOTES:
1 – WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
2 – THE BOTTOM EDGE OF THE CURB SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
3 – SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
4 – THIS DETAIL SHALL ONLY BE USED TO RETROFIT EXISTING CURB RAMPS AND SHALL NOT BE USED FOR NEW CURB RAMP CONSTRUCTION.



H_1	W_1	H_2	H_3
6"	6"	6"	12"
8"	6"	10"	18"
10"	8"	12"	22"
12"	10"	12"	24"

ROLLED CURB
INSTALL ONLY AT THE DIRECTION OF THE ENGINEER

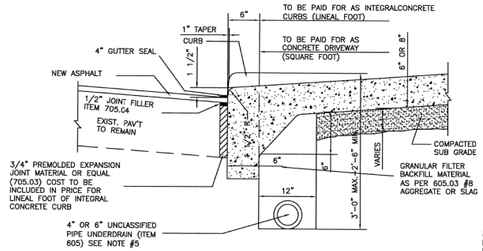
NOTES:
1 – WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL CURB PER THIS DETAIL. ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.

REVISED 12/8/09

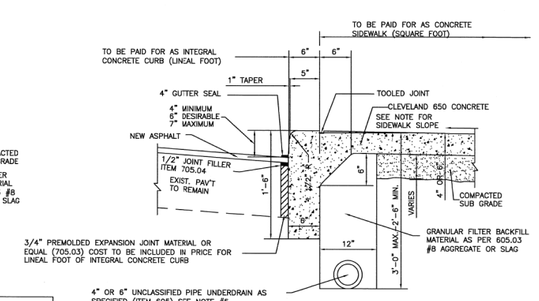
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
TYPICAL CONSTRUCTION
CURB RAMPS & ROLLED CURB DETAIL
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
DATE: 4/9/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1 | SHEET 6/6 | 16

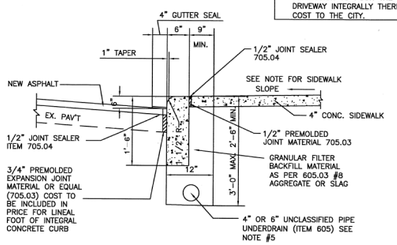


INTEGRAL CONCRETE DRIVEWAY
NO SCALE



INTEGRAL CONCRETE CURB & WALK
NO SCALE

OPTIONAL DETAIL
THE CONTRACTOR MAY USE THIS DETAIL IF GRANTED PERMISSION TO POUR THE CURB AND SIDEWALK OR DRIVEWAY INTEGRALLY THERE SHALL BE NO ADDITIONAL COST TO THE CITY.



CAST–IN–PLACE CONCRETE CURB
NO SCALE

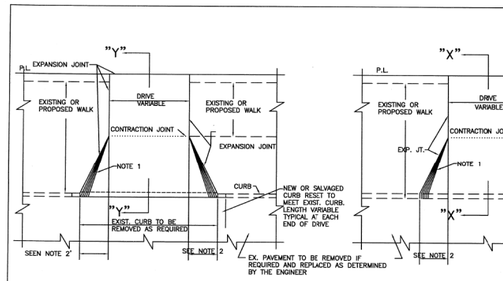
NOTES:
1. SAND BACKFILL AS REQUIRED TO ACHIEVE PROPOSED SUB GRADE. COST TO BE INCLUDED IN UNIT PRICE BID PER SQUARE FOOT OF SIDEWALK OR CONCRETE DRIVEWAY.
2. TRANSVERSE CONTRACTION JOINTS (5'CTRS) AND EXPANSION JOINTS TO BE CONSTRUCTED AS DIRECTED BY THE ENGINEER. JOINTS SHALL BE TOOLED 5 " FROM THE STREET FACE OF THE CURB. 1/4" DEEP WITH EDGES ROUNDED TO A 1/4" RADIUS. COST TO BE INCLUDED IN PRICE PER SQUARE FOOT OF SIDEWALK OR CONCRETE DRIVEWAY.
3. TRANSITION FROM STANDARD CURB SECTION TO DROP CURB SECTION TO BE MADE IN 18" DISTANCE FROM DRIVEWAY.
4. SLOPE SHALL BE PROVIDED AS NEEDED TO DRAIN SIDEWALK AND TREELAWN AREA. 1/8"/ FT. MIN. (1/4"/ FT. DESIRABLE AND 5/8"/ FT. MAX.) IF THE EXISTING CONDITIONS RESULT IN A UNIFORM SLOPE GREATER THAN 1/4"/ FT. THEN THE SLOPE IN THE TREELAWN AREA MAY EXCEED THE MAX. AS NEEDED TO PROVIDE A SIDEWALK SLOPE OF 1/4"/ FT.
THE SLOPE IN THE WALK AREA OF DRIVE APRONS MUST NOT EXCEED ADA REQUIREMENTS OF "X"/ FT. CROSS SLOPE.
5. UNDERDRAINS TO BE INSTALLED IN AREAS WHERE CURB IS TO BE REPLACED. THE UNDERDRAIN SHALL BE CONSTRUCTED SO AS TO MATCH THE LOCATION OF ANY EXISTING UNDERDRAIN TO REMAIN. UNDERDRAIN SHALL OUTLET AT CATCH BASIN. UNDERDRAINS SHALL HAVE FILTER FABRIC WRAP OR TRENCH IS WRAPPED WITH FILTER FABRIC AS SPECIFIED.

REVISED 12/3/09

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
CURB DETAILS
NOT TO SCALE

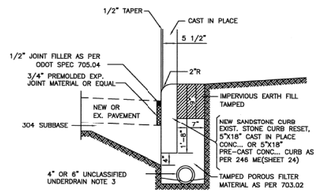
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 4/9/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO. CD 1 | SHEET 1/3 | 17

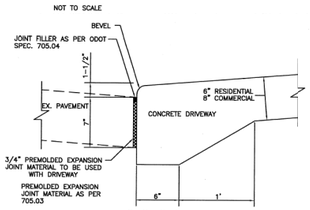


PLAN FOR NEW DRIVE WITH INTEGRAL CONCRETE CURB
NOT TO SCALE

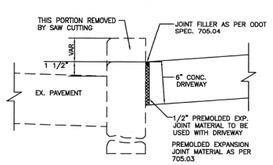
PLAN FOR NEW DRIVE WITH CURB CUT
NOT TO SCALE



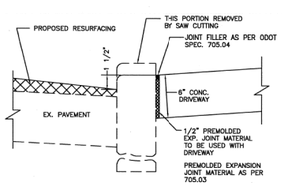
TYPICAL CURB CONSTRUCTION DETAIL
NOT TO SCALE



SECTION "Y"–"Y"
NOT TO SCALE



SECTION "X"–"X"
SHOWING PROPOSED DRIVE GUTTER WITH RESURFACING
NOT TO SCALE



SECTION "X"–"X"
SHOWING PROPOSED DRIVE GUTTER WITH RESURFACING
NOT TO SCALE

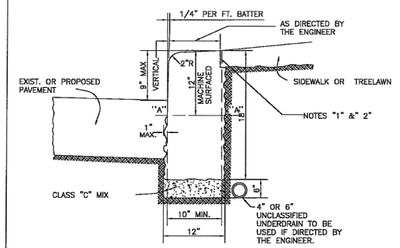
NOTES:
1 – ON STREETS WITH NARROW TREELAWNS AND SIDEWALKS OR WITH APPROVAL OF THE ENGINEER THE FOLLOWING DETAIL MAY BE USED.
2 – APRON FLARES ARE 3' FOR RESIDENTIAL AND 5' COMMERCIAL
3 – UNDERDRAINS SHALL HAVE FILTER FABRIC WRAP OR TRENCH IS WRAPPED WITH FILTER FABRIC AS SPECIFIED.

REVISED 8/3/09

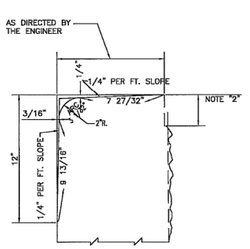
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK – DIRECTOR OF PUBLIC SERVICE
STANDARD PLAN OF
TYPICAL CURB & DETAILS
AT DRIVEWAYS
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 4/9/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

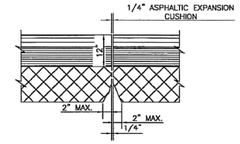
FILE NO. CD 1 | SHEET 2/3 | 18



CURB TO BE USED ON STRAIGHT SECTION
TOP FACE AND ENDS OF CURB ABOVE LINE "A"–"A" ARE TO BE MACHINED. ALSO BACK OF CURB 1" FROM TOP AS SHOWN.



DETAIL OF CURB CUTTING



ELEVATION SHOWING CURB JOINT
SECTION "A" – "A"

NOTES

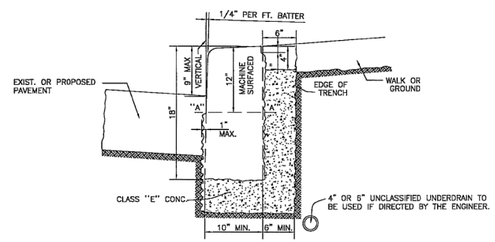
CURB SHALL BE SET IN AND BACKED WITH A MINIMUM OF CLASS "C" CONCRETE AS SHOWN. THE ENTIRE CURB TRENCH IS TO BE COMPLETELY FILLED WITH CONCRETE UP TO THE LEVEL SHOWN ON THE SECTION. SEE STANDARD SPECIFICATIONS.

CURB TO BE LIGHT GRAY GRANITE TO MATCH EXISTING CURBING IN MALL. LENGTH TO BE 4'–6" WITH CLOSURE STONE NOT LESS THAN 3' LONG.

1 – EXPANSION JOINT NOT SHOWN

2 – 6" MINIMUM, INCREASE IF REQUIRED TO MATCH EXISTING WALK OR APRON THICKNESS

3 – FOR 8" OR 12" MALL CURBING DECREASE OR INCREASE THE THICKNESS DIMENSIONS AND TOLERANCES BY 2"



CURB DETAIL TO BE USED ON ALL CURVED SECTIONS

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
STANDARD DETAILS SHOWING GRANITE CURBING
NOT SCALE
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 4/9/08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. CR 1 | SHEET 3/3 | 19

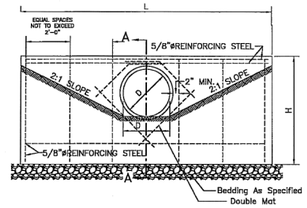
CALCULATED MKD
CHECKED JTS

MISCELLANEOUS DETAILS

CUY-90-21.02

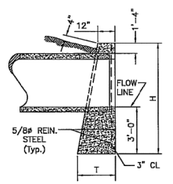
92
153

10382I_GM001.dgn Sheet 9/6/2018 4:52:00 PM MDohlen



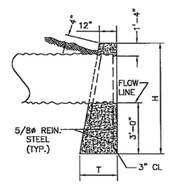
HEADWALL ELEVATION

NOTE: ALL REINFORCEMENT IS TO BE EPOXY COATED



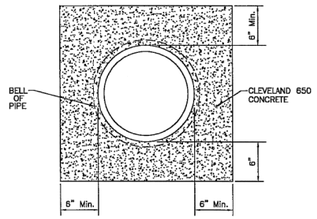
SECTION A–A

RIGID PIPE



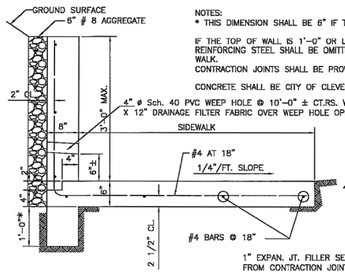
SECTION A–A

CORRUGATED PIPE



STANDARD SECTION OF PIPE SEWER INCASED IN 6" CONCRETE

NOTE: 6" IF FORMED, OTHERWISE EXTEND TO UNDISTURBED EARTH



NOTES:

* THIS DIMENSION SHALL BE 6" IF THE TOP OF WALL IS 1'–0" TO 2'–0" ABOVE TOP OF WALK.

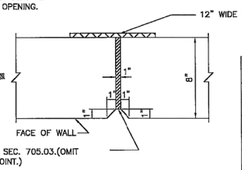
IF THE TOP OF WALL IS 1'–0" OR LESS ABOVE TOP OF WALK, THE FOOTING KEY AND THE REINFORCING STEEL SHALL BE OMITTED, AND THE WALL SHALL BE POURED MONOLITHICALLY WITH THE WALK.

CONTRACTION JOINTS SHALL BE PROVIDED AT 30'–0" MAX. AND EXPANSION JOINTS AT 90'–0" MAX.

CONCRETE SHALL BE CITY OF CLEVELAND 650 MIX

DETAIL FOR CONCRETE WALL & SIDEWALK

NOTE: ALL REINFORCEMENT IS TO BE EPOXY COATED



DETAIL OF EXPANSION JOINT AND CONTRACTION JOINT

HEADWALL DIMENSIONS

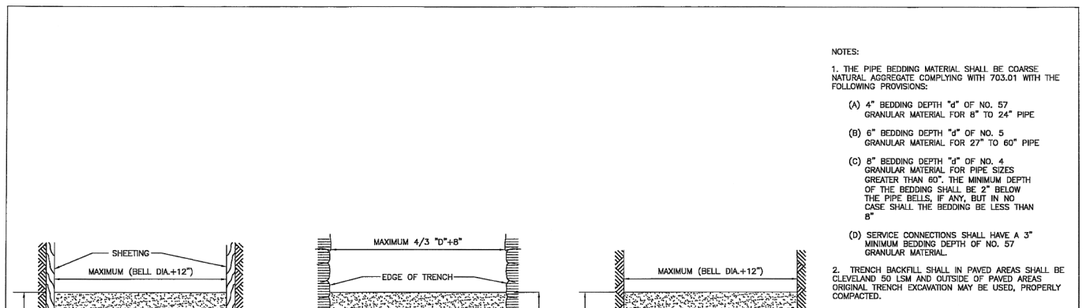
D	H	L	T
12"	5'–5"	5'–6"	1'–9"
15"	5'–8 1/2"	5'–9"	1'–11"
18"	6'–0"	6'–0"	2'–0"
21"	6'–3 1/4"	7'–0"	2'–2"
24"	6'–6 1/2"	8'–0"	2'–5"
27"	6'–10 1/2"	9'–0"	2'–8"
30"	7'–1 1/2"	10'–0"	2'–11"
36"	7'–8"	12'–0"	3'–2"

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK– DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
MISCELLANEOUS CONCRETE CONSTRUCTION DETAILS
NO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

SHEET 1/1 | 20



TYPICAL SECTION

PIPE SEWERS IN ORDINARY EARTH BEDDING

TYPICAL SECTION

PIPE SEWER IN ROCK AND OR SHALE WHERE DIRECTED

TYPICAL SECTION

PIPE SEWER IN CONCRETE CRADLE

NOTES:

1. THE PIPE BEDDING MATERIAL SHALL BE COARSE NATURAL AGGREGATE COMPLYING WITH 703.01 WITH THE FOLLOWING PROVISIONS:

(A) 4" BEDDING DEPTH "d" OF NO. 57 GRANULAR MATERIAL FOR 8" TO 24" PIPE

(B) 6" BEDDING DEPTH "d" OF NO. 5 GRANULAR MATERIAL FOR 27" TO 60" PIPE

(C) 8" BEDDING DEPTH "d" OF NO. 4 GRANULAR MATERIAL FOR PIPE SIZES GREATER THAN 60". THE MINIMUM DEPTH OF THE BEDDING SHALL BE 2" BELOW THE PIPE BELLS, IF ANY, BUT IN NO CASE SHALL THE BEDDING BE LESS THAN 8"

(D) SERVICE CONNECTIONS SHALL HAVE A 3" MINIMUM BEDDING DEPTH OF NO. 57 GRANULAR MATERIAL.

2. TRENCH BACKFILL SHALL IN PAVED AREAS SHALL BE CLEVELAND 50 LSM AND OUTSIDE OF PAVED AREAS ORIGINAL TRENCH EXCAVATION MAY BE USED, PROPERLY COMPACTED.

CITY OF CLEVELAND

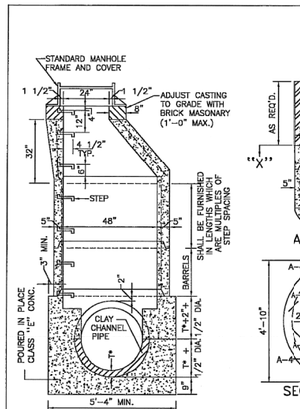
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
STANDARD TRENCH FOR PIPE SEWERS
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 8/28/07
SUBMITTED BY: W. MCLAUGHLIN DATE: 8/28/07
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

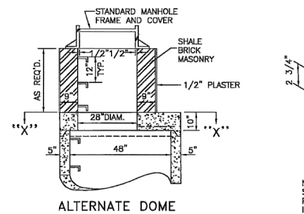
FILE NO. 146–ME | SHEET 22 | 22

CALCULATED MKD
CHECKED JTS

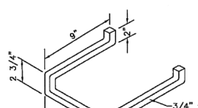
MISCELLANEOUS DETAILS



SEWERS 42" AND UNDER

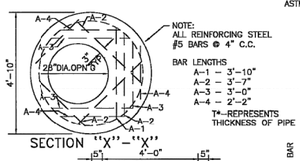


ALTERNATE DOME

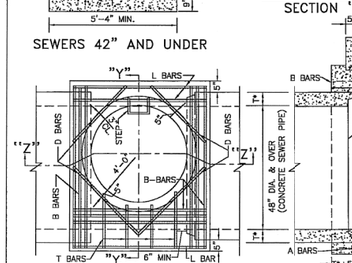


STEP DETAIL

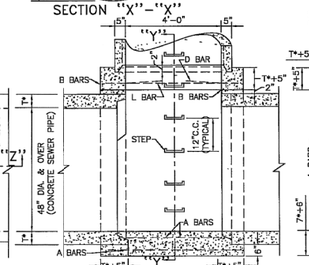
NOTE: STEPS SHALL BE CAST IRON AS PER ASTM A 48 CLASS 30 GRAY IRON OR ALUMINUM AS PER ASTM B 221,6061–T6



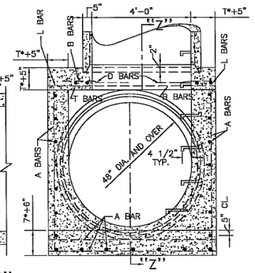
SECTION "X"–"X"



PLAN



SECTION "Z"–"Z"



SECTION "Y"–"Y"

CONNECTION BOX FOR PRECAST MANHOLES ON SEWERS 48" AND OVER

NOTES:

NO HOLES FOR 12" INLET OR CATCH BASIN CONNECTIONS SHALL BE CUT IN ANY SECTION LESS THAN 36"MANHOLE BARREL. NOT MORE THAN 2 INLET CONNECTIONS SPACED 2± FEET APART HORIZONTALLY PERMITTED IN 3 OR 4 FOOT MANHOLE SECTIONS.

ALL JOINTS AND PIPE OPENINGS IN THE MANHOLE SHALL BE THOROUGHLY CAULKED WITH 1:3 CEMENT MORTAR HAVING A 1/2" MINIMUM THICKNESS.

PRECAST REINFORCED CONCRETE MANHOLE SECTIONS SHALL COMPLY WITH THE REQUIREMENTS OF ASTM DESIGNATION C 478–06a: MINIMUM WALL THICKNESS SHALL BE 5 INCHES.

CONNECTION BOXES FOR SEWERS 48" AND OVER IN DIAMETER SHALL BE REINFORCED AS SHOWN AND AS SPECIFIED BELOW:

A) BARS SHALL BE SPACED AT 12" CENTERS IN BOTH DIRECTIONS.

B) BARS SHALL BE SPACED AT 3" CENTERS IN BOTH DIRECTIONS.
A,B & L BARS SIZES:
5/8" DIAM. FOR 48" TO 60" SEWERS.
3/4" DIAM. FOR 66" TO 78" SEWERS.
7/8" DIAM. FOR 84" TO 96" SEWERS.

C) T BARS SHALL BE 5/8" DIAM. SPACED AT 12" CENTERS.

D) BARS SHALL BE 5/8" DIAMETER EPOXY COATED REINFORCING STEEL SHALL HAVE 2" CLEARANCE EXCEPT WHERE OTHERWISE SPECIFIED.

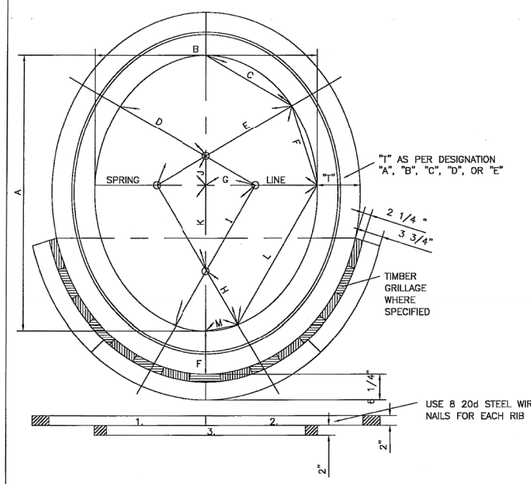
E) STANDARD MANHOLE FRAME AS PER A–503 (SHEET 61) AND COVER AS PER A–605 (SHEET 62) OR A–695 (SHEET 63)

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
DETAIL PLAN OF PRECAST CONCRETE MANHOLE
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 8/28/07
SUBMITTED BY: W. MCLAUGHLIN DATE: 8/28/07
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

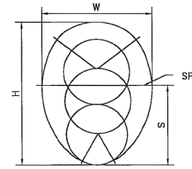
FILE NO. MH 1 | SHEET 1/1 | 23



EGG SHAPED SEWERS NO.	H FEET	W FEET	S FEET	AREA SQ. FT.	NO.	H FEET	W FEET	S FEET	AREA SQ. FT.
2	2.25	1.94	1.28	3.41	8	5.12	4.04	2.71	16.00
3	2.75	2.23	1.64	4.75	9	5.54	4.37	2.93	18.72
4	3.23	2.54	1.70	6.35	10	5.94	4.69	3.14	21.54
5	3.74	2.95	1.98	8.55	11	6.33	4.99	3.35	24.46
6	4.23	3.34	2.23	10.90	12	6.71	5.29	3.55	27.47
7	4.69	3.70	2.48	13.39	13	7.08	5.58	3.74	30.57
					14	7.44	5.87	3.93	33.74
					15	7.79	6.14	4.12	36.99
					16	8.13	6.41	4.30	40.32
					17	8.47	6.68	4.47	43.71
					18	8.79	6.94	4.65	47.17
					19	9.12	7.19	4.82	50.70
					20	9.43	7.44	4.98	54.29

TYPES OF EGG SHAPED SEWERS

"A"–1 RING OF BRICK ALL AROUND.
"B"–1 RING OF BRICK ALL AROUND & 1 RING EXTRA ON ARCH.
"C"–2 RINGS OF BRICK ALL AROUND .
"D"–2 RINGS OF BRICK ALL AROUND & 1 RING EXTRA ON ARCH.
"E"–3 RINGS OF BRICK ALL AROUND.



FOR RECORD ONLY

TABULAR DIMENSIONS FOR EGG SHAPED SEWERS NO.2 TO NO. 8

NO.	A	B	C	D	E	F	G	H	I	J	K	L	M
2	2'–3"	1'–11 1/4"					6 3/8"	9"	1'–6"		6 3/8"		
3	2'–9"	2'–2 3/4"					10 5/8"	9"	2'–0"		10 5/8"		
4	3'–2 3/4"	2'–6 5/8"	1'–2 1/8"	1'–2 1/8"	1'–10 1/2"	11 1/2"	7 3/16"	8 1/8"	1'–10 1/2"	4 1/16"	12 3/16"	1'–10 1/2"	4 1/4"
5	3'–9"	2'–11 3/8"	1'–4 3/8"	1'–4 3/8"	2'–1 7/8"	1'–1 3/8"	8 3/16"	9 1/2"	2'–1 7/8"	4 3/4"	1'–2 1/4"	2'–1 7/8"	4 7/8"
6	4'–2 3/4"	3'–4"	1'–6 1/2"	1'–6 1/2"	2'–5 1/4"	1'–3 1/8"	9 1/4"	10 3/4"	2'–5 1/4"	5 3/8"	1'–4 1/8"	2'–5 1/4"	5 1/2"
7	4'–8 1/4"	3'–8 3/8"	1'–8 1/2"	1'–8 1/2"	2'–8 1/2"	1'–4 3/4"	10 5/16"	11 7/8"	2'–8 1/2"	5 15/16"	1'–5 13/16"	2'–8 1/2"	6 1/8"
8	5'–1 1/2"	4'–0 1/2"	1'–10 1/2"	1'–10 1/2"	2'–11 1/2"	1'–6 1/4"	11 1/4"	1'–1"	2'–11 1/2"	6 1/2"	1'–7 1/2"	2'–11 1/2"	6 3/4"

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
STANDARD PLAN FOR EGG SHAPED SEWERS
DIMENSIONS & AREAS
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. 73M | | 24

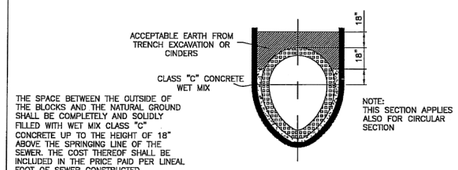
CUY-90-21.02

93
153

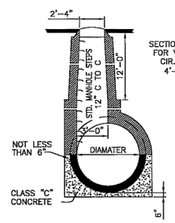
10382I_GM001.dgn Sheet 9/6/2018 4:52:11 PM MDohlen

MISCELLANEOUS DETAILS

TYPICAL SECTION OF TRENCH FOR VITRIFIED BLOCK CONSTRUCTION

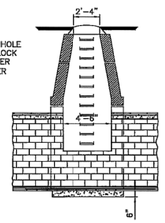


THE SPACE BETWEEN THE OUTSIDE OF THE BLOCKS AND THE NATURAL GROUND SHALL BE COMPLETELY AND SOLIDLY FILLED WITH WET MIX CLASS "C" CONCRETE UP TO THE HEIGHT OF 18" ABOVE THE SPRINGING LINE OF THE SEWER. THE COST THEREOF SHALL BE INCLUDED IN THE PRICE PAID PER LINEAL FOOT OF SEWER CONSTRUCTED.

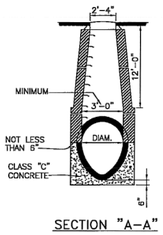


SECTION "A–A"

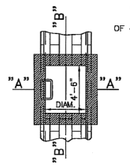
SECTIONS OF MANHOLE FOR VITRIFIED BLOCK CIR. SEWER OVER 4'-6" DIAMETER



SECTION "B–B"

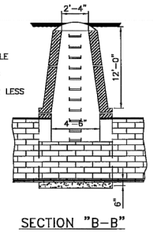


SECTION "A–A"

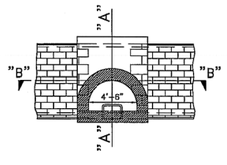


PLAN

SECTIONS OF MANHOLE FOR VITRIFIED BLOCK & CIR. SEWER OF 4'-6" DIAMETER OR LESS



SECTION "B–B"



PLAN

MORTAR SHALL BE COMPOSED OF ONE PORTLAND CEMENT (SEC. 701.04) TO TWO PARTS SAND (SEC. 703.03) BY VOLUME.

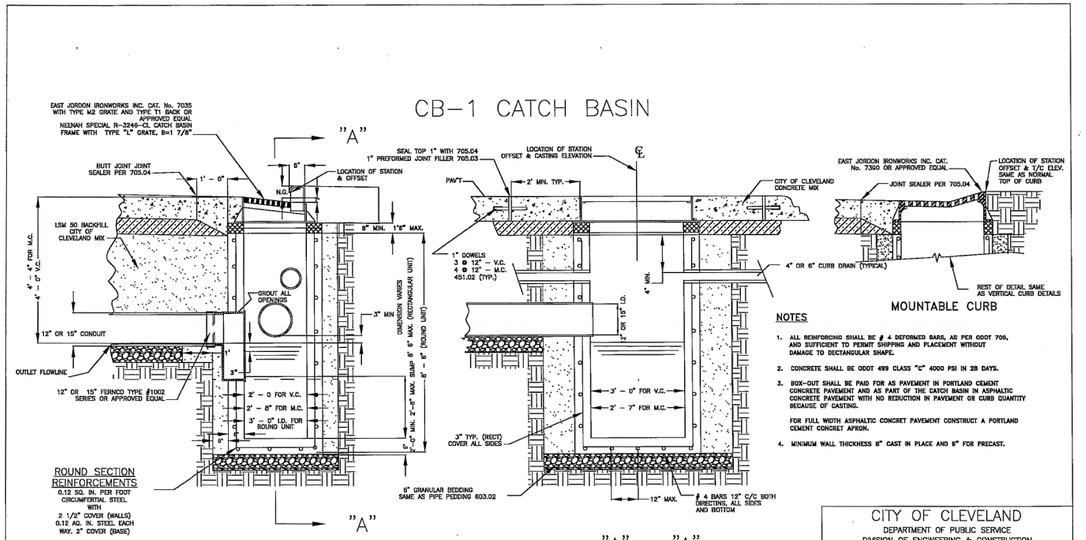
RECORD ONLY

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
VITRIFIED BLOCK SEWER CONSTRUCTION DETAILS
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W.McLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. B-429 | 25

CB–1 CATCH BASIN



VERTICAL CURB

MOUNTABLE CURB

NOTES

1. ALL REINFORCING SHALL BE # 4 DEFORMED BARS, AS PER ODOT 709, AND SUFFICIENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE TO RECTANGULAR SHAPE.
2. CONCRETE SHALL BE ODOT 499 CLASS "C" 4000 PSI IN 28 DAYS.
3. BOX–OUT SHALL BE PAID FOR AS PAVEMENT IN PORTLAND CEMENT CONCRETE PAVEMENT AND AS PART OF THE CATCH BASIN IN ASPHALTIC CONCRETE PAVEMENT WITH NO REDUCTION IN PAVEMENT OR CURB QUANTITY BECAUSE OF CASTING.

   FOR FULL WIDTH ASPHALTIC CONCRETE PAVEMENT CONSTRUCT A PORTLAND CEMENT CONCRETE APRON.
4. MINIMUM WALL THICKNESS 8" CAST IN PLACE AND 6" FOR PRECAST.

ROUND SECTION REINFORCEMENTS

0.12 SQ. IN. PER FOOT CIRCUMFERTIAL STEEL WITH
2 1/2" COVER (WALLS)
0.12 AC. IN. STEEL EACH WAY. 2" COVER (BASE)

ALTERNATE BASIN SHAPE

A ROUND PRECAST CONCRETE UNIT MAY BE USED IN LIEU OF RECTANGULAR UNIT. THE ROUND SECTION SHALL BE 36" I.D. UNIT WITH INTEGRAL BASE AND PRECAST TOP TRANSITION SECTION (ROUND TO RECTANGULAR) TO FIT CASTING BEING USED. THE TRANSITION UNIT REQUIRES A # 5 REBAR AT CORNERS OF THE RECTANGULAR SHAPED SECTION AND 3 X 8 W6 X W5 WELDED WIRE FABRIC IN VERTICAL SECTION. ALSO, IF APPROVED BY THE ENGINEER, 8" THICK MASONRY WALL MAY BE USED IN LIEU OF PRECAST UNITS.

NOTE: IF PRECAST CATCH BASIN IS CONSTRUCTED IN TWO PIECES THE JOINT BETWEEN UNITS MUST BE A PERMIUM JOINT,PER 706.11.

LEGEND

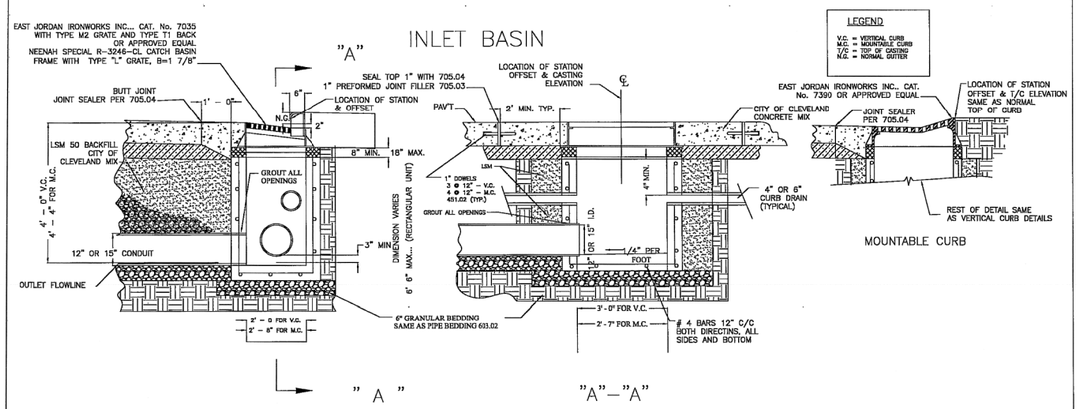
V.C. = VERTICAL CURB
M.C. = MOUNTABLE CURB
T/C = TOP OF CASTING
N.G. = NORMAL GUTTER

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
STANDARD DETAIL FOR
RECTANGULAR CATCH BASIN
NOT TO SCALE

REVISED BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. CB-1 | SHEET 1/7 | 26

INLET BASIN



VERTICAL CURB

MOUNTABLE CURB

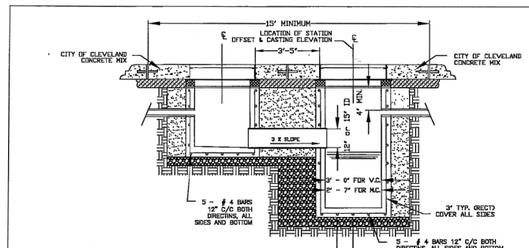
NOTES

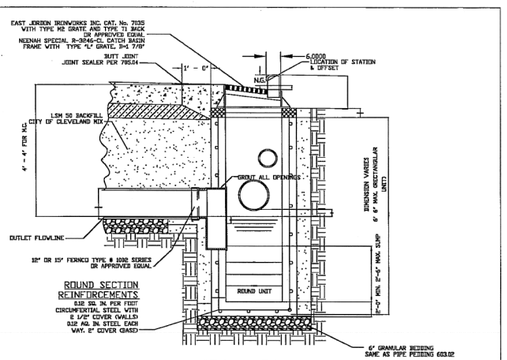
1. ALL REINFORCING SHALL BE # 4 DEFORMED BARS, AS PER ODOT 709, AND SUFFICIENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE TO RECTANGULAR SHAPE.
2. CONCRETE SHALL BE ODOT 499 CLASS "C" 4000 PSI IN 28 DAYS.
3. BOX–OUT SHALL BE PAID FOR AS PAVEMENT IN PORTLAND CEMENT CONCRETE PAVEMENT AND AS PART OF THE CATCH BASIN IN ASPHALTIC CONCRETE PAVEMENT WITH NO REDUCTION IN PAVEMENT OR CURB QUANTITY BECAUSE OF CASTING.
4. FOR FULL WIDTH ASPHALTIC CONCRETE PAVEMENT– CONSTRUCT A PORTLAND CEMENT CONCRETE APRON.
5. MINIMUM WALL THISKNESS 8" FOR CAST IN PLACE AND 6" FOR PRECAST

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
STANDARD RECTANGULAR PRECAST CONCRETE
INLET BASIN
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. CB-1 | SHEET 2/7 | 27

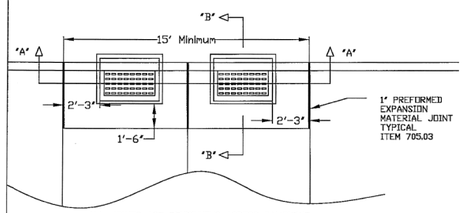




NOTES:

1. THE CATCH BASIN SHALL BE SET AT THE LOV POINT OF A SAG VERTICAL CURVE OR AT THE POINT WHERE THE GRADE OF THE STREET CHANGES FROM NEGATIVE TO POSITIVE OR DOWNSTREAM FROM THE INLET BASIN.
2. THE CONCRETE BETWEEN THE CASTINGS SHALL BE SLOPED TO MATCH THE SLOPE OF THE CASTINGS.
3. REFER TO CB-1 AND IB-1 FOR FULL DETAILS AND DIMENSIONS.
4. PIPE BETWEEN BASINS SHALL BE EXTRA STRENGTH VCP PIPE AND IS INCLUDED IN THE BID TIEM FOR TWIN BASIN CB-3.
5. DOWEL SPACING AND SIZE SHALL BE AS FOLLOWS:

   1" DOWELS–
   3 @ 12" – V.C.
   4 @ 12" – M.C.
   451.02 (TYP.)
6. MINIMUM WALL THICKNESS 8" FOR CAST IN PLACE AND 6" FOR PRECAST



ALL JOINTS ARE CONTINUOUS ACROSS PAVEMENT

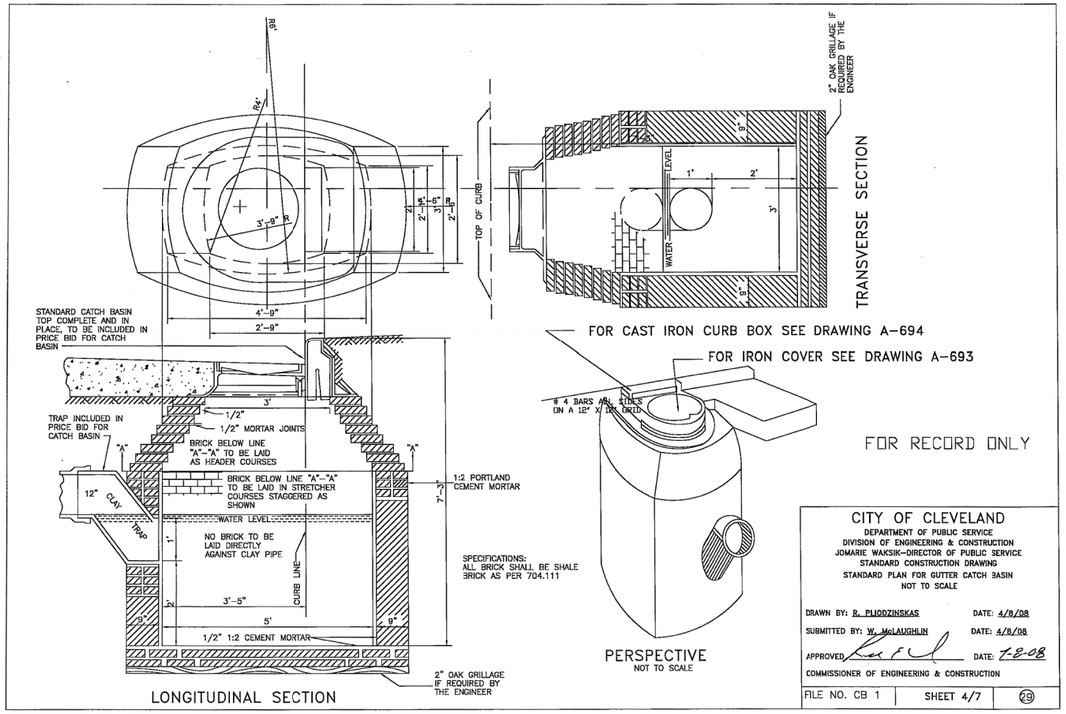
CITY OF CLEVELAND
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCION DRAWING
DETAILS FOR
TWIN BASIN – CB–3
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. CB 1 | SHEET 3/7 | 28

CUY-90-21.02

94
153

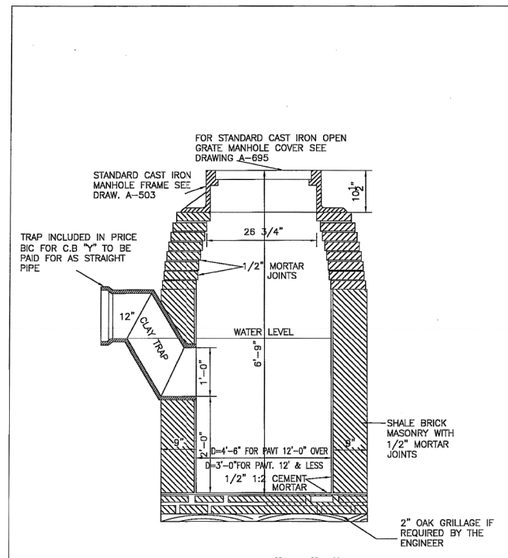


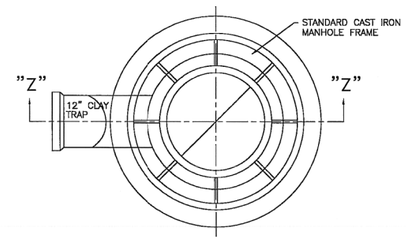
FOR RECORD ONLY

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WAKSIK-DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
STANDARD PLAN FOR GUTTER CATCH BASIN
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. McLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. CB 1 | SHEET 4/7 | 29





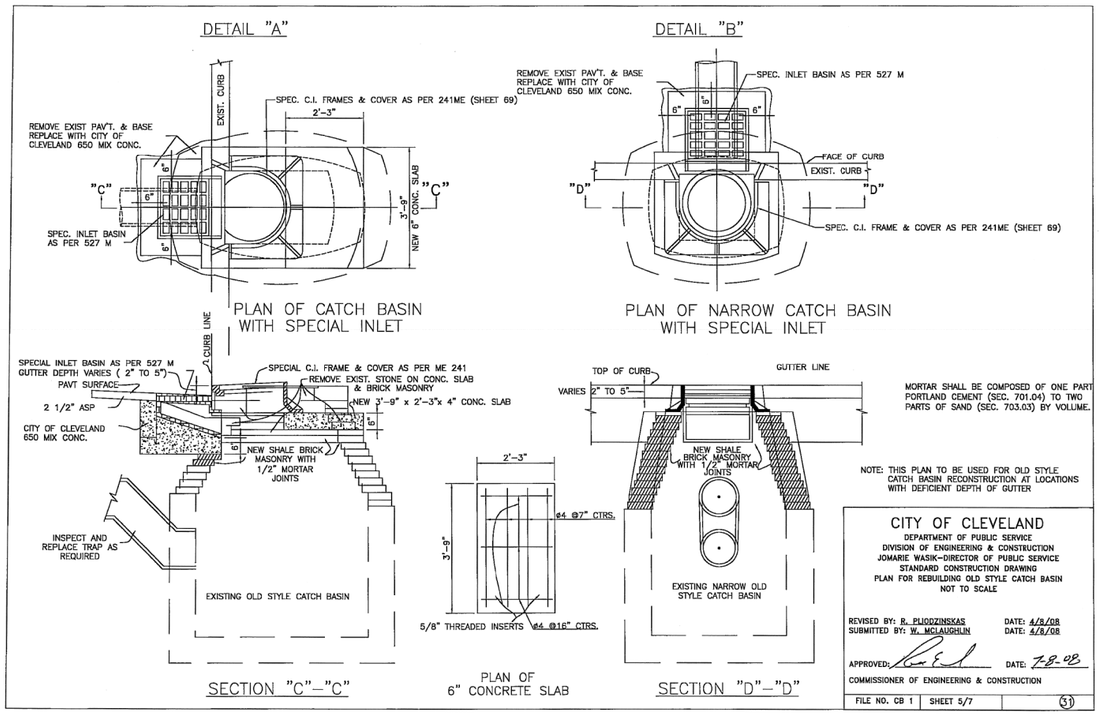
MORTAR SHALL BE COMPOSED OF ONE PART PORTLAND CEMENT (701.04) TO TWO PARTS SAND (SEE 703.03) BY VOLUME.

FOR RECORD ONLY

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
STANDARD PLAN FOR PARK STYLE CATCH BASIN
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 8/28/07
SUBMITTED BY: W. McLAUGHLIN DATE: 8/28/07
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. CB 1 | SHEET 5/7 | 30



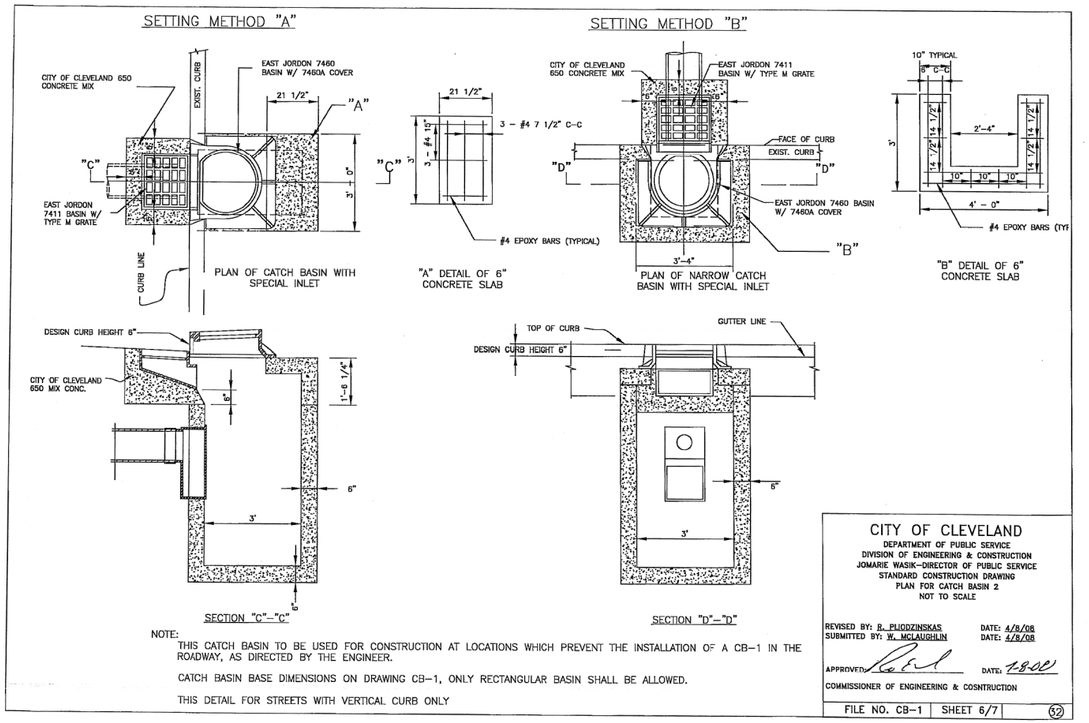
MORTAR SHALL BE COMPOSED OF ONE PART PORTLAND CEMENT (SEC. 701.04) TO TWO PARTS OF SAND (SEC. 703.03) BY VOLUME.

NOTE: THIS PLAN TO BE USED FOR OLD STYLE CATCH BASIN RECONSTRUCTION AT LOCATIONS WITH DEFICIENT DEPTH OF GUTTER

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
PLAN FOR REBUILDING OLD STYLE CATCH BASIN
NOT TO SCALE

REVISED BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. CB 1 | SHEET 5/7 | 31



NOTE:
THIS CATCH BASIN TO BE USED FOR CONSTRUCTION AT LOCATIONS WHICH PREVENT THE INSTALLATION OF A CB-1 IN THE ROADWAY, AS DIRECTED BY THE ENGINEER.

CATCH BASIN BASE DIMENSIONS ON DRAWING CB-1, ONLY RECTANGULAR BASIN SHALL BE ALLOWED.

THIS DETAIL FOR STREETS WITH VERTICAL CURB ONLY

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
PLAN FOR CATCH BASIN 2
NOT TO SCALE

REVISED BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. CB-1 | SHEET 6/7 | 32

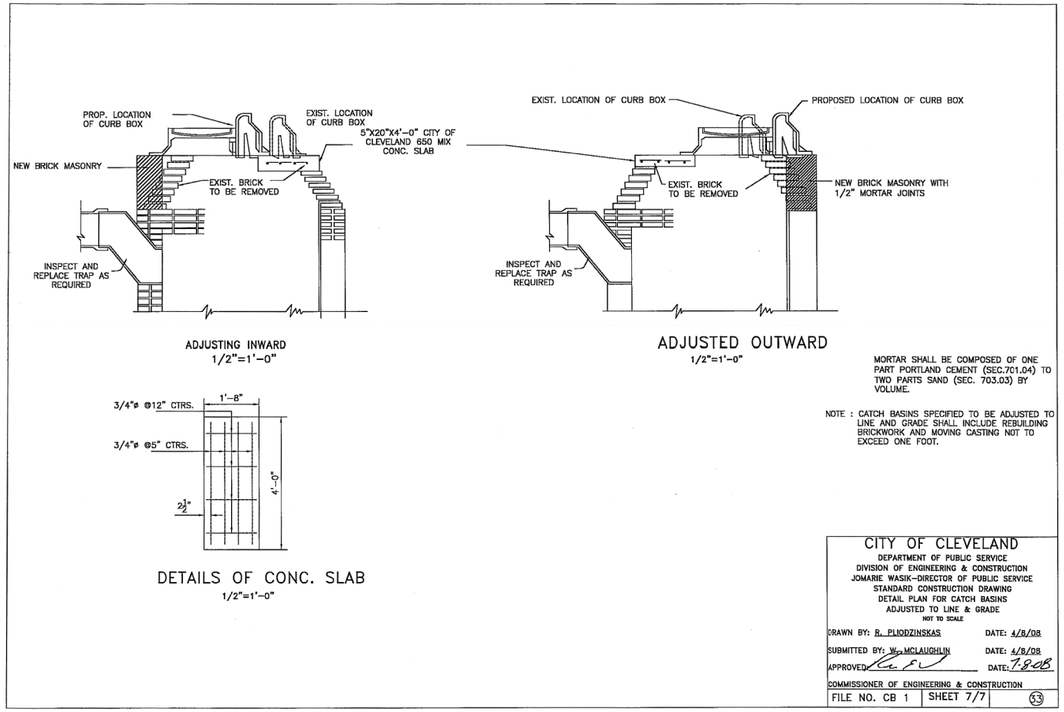
CALCULATED MKD
CHECKED JTS

MISCELLANEOUS DETAILS

CUY-90-21.02

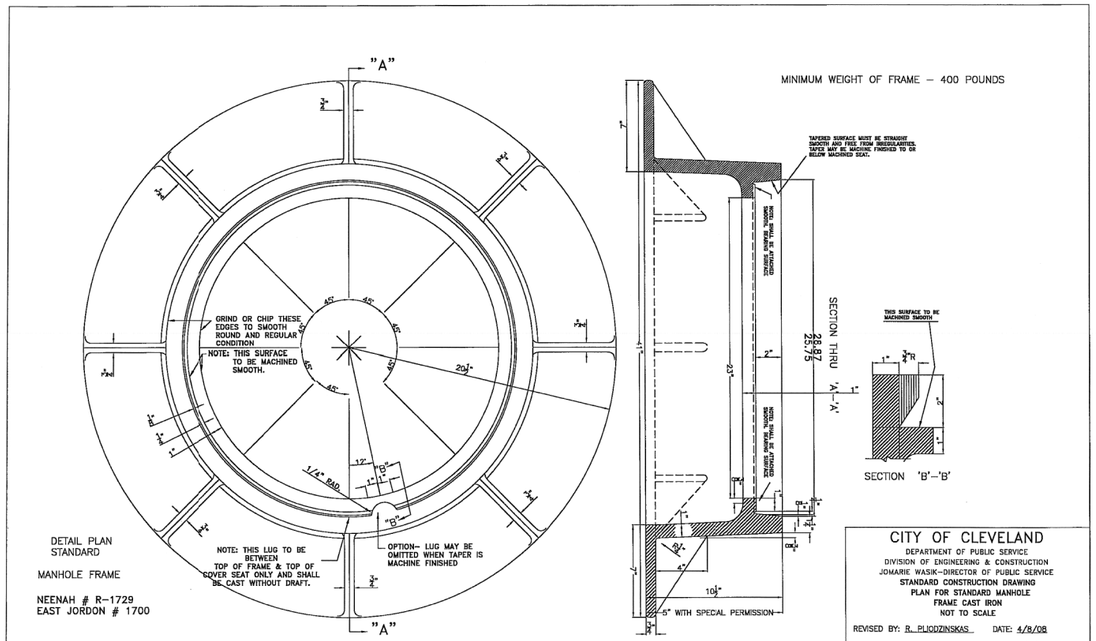
95
153

10382I_GM001.dgn Sheet 9/6/2018 4:52:32 PM MDohlen



CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
DETAIL PLAN FOR CATCH BASINS
ADJUSTED TO LINE & GRADE
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION
FILE NO. CB 1 | SHEET 7/7 | 53



DETAIL PLAN
STANDARD

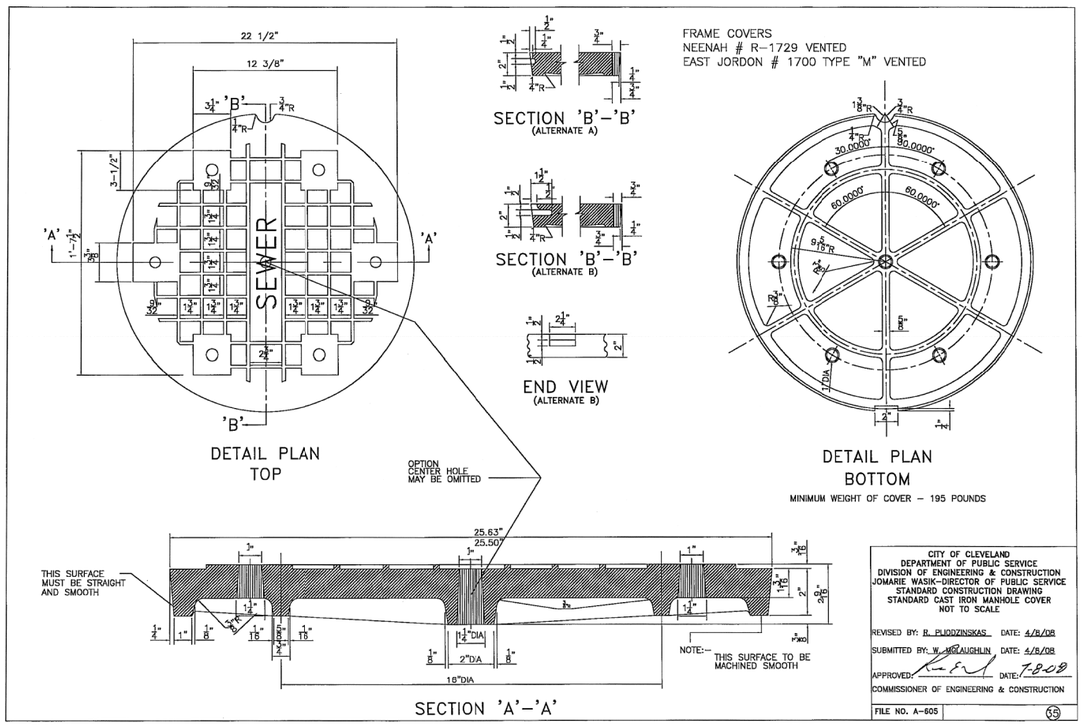
MANHOLE FRAME

NEENAH # R–1729
EAST JORDON # 1700

EXCEPT WHERE LIMITS ARE NOTED – A CASTING VARIATION OF 1/8" PER FOOT PERMITTED

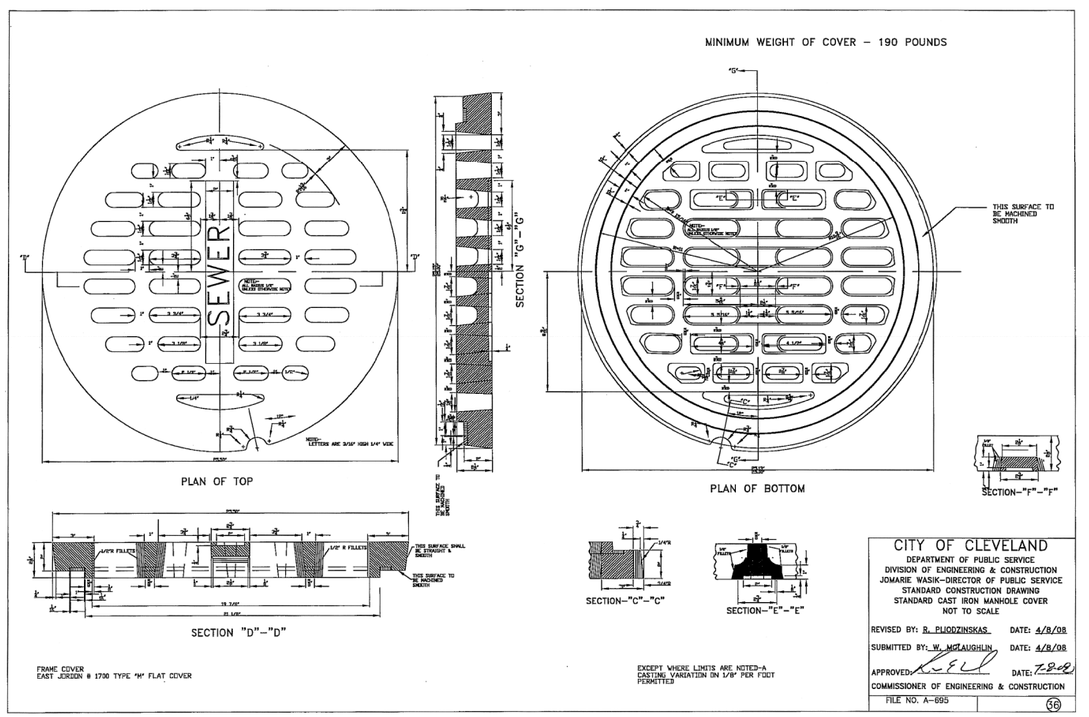
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
PLAN FOR STANDARD MANHOLE
FRAME CAST IRON
NOT TO SCALE

REVISED BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION
FILE NO. A–503 | 54



CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
STANDARD CAST IRON MANHOLE COVER
NOT TO SCALE

REVISED BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION
FILE NO. A–605 | 55



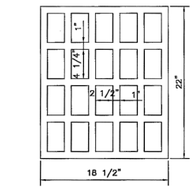
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
STANDARD CAST IRON MANHOLE COVER
NOT TO SCALE

REVISED BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION
FILE NO. A–695 | 56

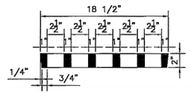
CALCULATED MKD
CHECKED JTS

MISCELLANEOUS DETAILS

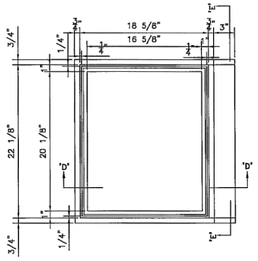
CUY-90-21.02



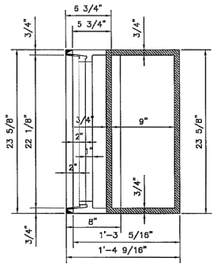
PLAN OF GRATE



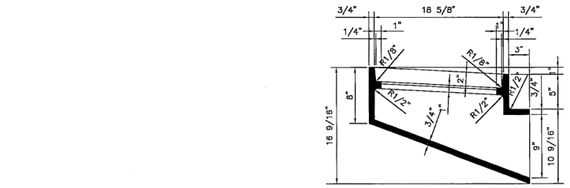
SECTION 'C'–'C'



PLAN OF INLET BASIN



SECTION 'E'–'E'



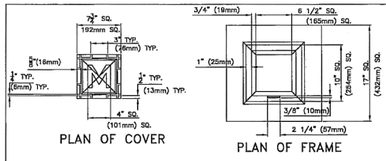
SECTION 'D'–'D'

MINIMUM WEIGHT OF GRATE – 90 POUNDS
MINIMUM WEIGHT OF FRAME – 330 POUNDS

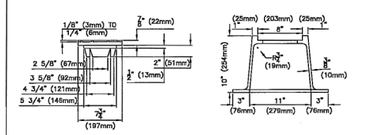
EAST JORDON IRON WORKS
CATCH BASIN CURB INLET # 7411
GRATE # 7411M

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
DETAIL PLAN FOR SPECIAL
CAST IRON INLET BASIN
NOT TO SCALE

REVISED BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION
FILE NO. CB 1 (37)

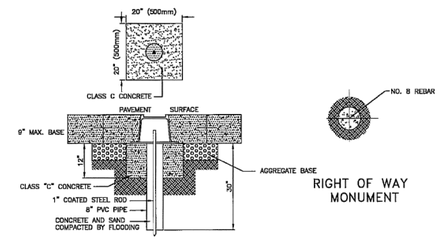


PLAN OF COVER PLAN OF FRAME



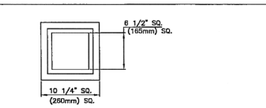
SIDE VIEW OF COVER SECTION OF FRAME

MONUMENT ASSEMBLY SECTION



ROADWAY MONUMENT ASSEMBLY

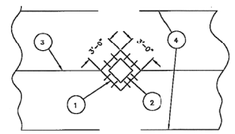
RIGHT OF WAY MONUMENT



ADJUSTING RING

NOTE: ADJUSTING RING IS TO BE TACK WELDED TO THE FRAME BY LEAST TWO (2) POINTS OF AN APPROVED METHOD.

ADJUSTMENT HEIGHT	DIMENSION 52A	MINIMUM WEIGHTS
1–1/8" (29mm)	2" (51mm)	14–LBS. (6.4 kg)
1–1/2" (38mm)	2–3/8" (60mm)	20–LBS. (9.1 kg)
2–1/2" (64mm)	3–3/8" (86mm)	27–LBS. (12.2 kg)
3" (76mm)	3–7/8" (98mm)	30–LBS. (13.6 kg)
3–12" (89mm)	4–3/8" (111mm)	32–LBS. (14.5 kg)



1. MONUMENT ASSEMBLY BLOCK OUT CONSTRUCTION JOINT 1/12" (305mm) LONG 1–1/4" (32mm) DIA. DOWELS. (BY CONTRACTOR)
2. MONUMENT BOX (BY CONTRACTOR)
3. TYPICAL LONGITUDINAL JOINT
4. 451 OR 452 CONC. PAYMENT A.P.P

NOTE: 36" ROUND BOX OUT MAY BE APPROVED UNDER SPECIAL CONDITIONS BY THE ENGINEER. 8–9 EQUALLY SPACED DOWELS SHALL BE INSTALLED.

TYPICAL BLOCK OUT IN RIGID PAVEMENT. (OMIT FOR FULL DEPTH FLEXIBLE PAVEMENT)

NOTES

CASTING SHALL MINIMALLY MEET THE REQUIREMENTS OF 604.02–711.12 A.S.T.M. A 48 CLASS 35 GRAY IRON OR 711.13 DUCTILE IRON.
THE ASSEMBLY SHELL BE ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS THOSE SHOWN HEREON.

MINIMUM WEIGHTS:
FRAME —— 94 LBS. (42.6 kg)
COVER —— 16 LBS. (7.3 kg)
PROVIDED THEY COMPLY WITH THE SPECIFICATIONS. DETAILS. DIMENSIONS AND MINIMUM WEIGHTS.
EAST JORDAN – NO. 8360
OR APPROVED EQUAL CASTINGS ARE ACCEPTABLE.

BEARING AREAS SHELL BE FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT. NO PROJECTION SHALL EXIST ON THE BEARING AREAS AND THE COVER SHELL SEAT IN ITS FRAME WITHOUT ROCKING.

PRIOR TO CONSTRUCTION OF PAVEMENT. THE FRAME SHALL BE SET TO GRADE IN SUCH A MANNER THAT WILL PREVENT ANY PAVEMENT MATERIAL FROM ENTERING THE CASTING.

CONTACT CITY OF CLEVELAND SURVEY DEPT. AT (216) 664–2460 AT LEAST TWO (2) WEEKS PRIOR TO THE DISTURBANCE OF ANY EXISTING MONUMENTS.

ALL MONUMENTS ARE TO BE SET UNDER THE DIRECTION OF A REGISTERED SURVEYOR. (REF. O.A.C. 4733–37–03)

WHERE CLEVELAND REGIONAL GEODETIC SURVEY (C.R.G.S.) MONUMENT ASSEMBLIES ARE MARKED ON THE PLANS TO BE ABANDONED, THE CONTRACTOR SHALL CAREFULLY REMOVE AND STORE THE MONUMENT CASTINGS AND BRONZE C.R.G.S. MARKERS FOR SALVAGE BY THE COUNTY. THE CONTRACTOR SHALL ALSO NOTIFY THE REGIONAL GEODETIC SURVEY OFFICE AT (216) 348–3845, SO THAT THE MONUMENT CASTINGS AND BRONZE C.R.G.S. MARKERS MAY BE PICKED UP. PAYMENT SHELL BE MADE UNDER ITEM 202–MONUMENT ASSEMBLY ABANDONED. C.R.G.S. MONUMENT.

ITEM 202–MONUMENT ASSEMBLY ABANDONED. C.R.G.S. MONUMENT
ITEM 604– CITY OF CLEVELAND MONUMENT BOX
ITEM 604– CITY OF CLEVELAND ROADWAY MONUMENT ASSEMBLY
ITEM 604– CITY OF CLEVELAND RIGHT OF WAY MONUMENT
ITEM 604– MONUMENT BOX ADJUSTED TO GRADE, AS PER PLAN (ONLY WHEN EXISTING MONUMENT BOX CONFORMS TO MB–1C AND IS SUITABLE FOR REUSE)

LEGEND
- CONCRETE CLASS "C"
- SAND (703.02), COMPACTED AS REQUIRED
- SUBBASE/AGGREGATE BASE PER THE PLANS.
- UNDISTURBED EARTH OR SUITABLE BACKFILL AND FIRM FOUNDATION IN ACCORDANCE WITH 604.04 AND TO THE SATISFACTION OF THE ENGINEER.

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK–DIRECTOR OF PUBLIC SERVICE
MONUMENT BOX ASSEMBLIES
NOT TO SCALE

REVISED BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: DATE: 7-8-08
COMMISSIONER OF ENGINEERING & CONSTRUCTION
MB–1C (38)

CALCULATED MKD
CHECKED JTS

MISCELLANEOUS DETAILS

CUY–90–21.02

97
153

103821_GM001.dgn Sheet 9/6/2018 4:52:54 PM MDohlen

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	625	630													
							GROUND ROD	GROUND MOUNTED SUPPORT, NO. 2 POST	GROUND MOUNTED SUPPORT, NO.3 POST	GROUND MOUNTED SUPPORT, NO.4 POST	ONE WAY SUPPORT, NO. 3 POST	GROUND MOUNTED SUPPORT, PIPE	TRIANGULAR SLIP BASE CONNECTION	OVERHEAD SIGN SUPPORT, TYPE TC-16.21, DESIGN 6	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 6	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 8	OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE TC-18.24	SIGN, FLAT SHEET	SIGN, OVERHEAD EXTRUSHEET	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	GROUND MOUNTED PIPE SUPPORT FOUNDATION	
							EACH	FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	SF	SF	EACH	EACH	
110	R-1	MLK JR. DRIVE	90+38	LT	REMOVED																	
110	S-1	MLK JR. DRIVE	90+38	LT	R3-H8BA	30 X 30		13.0										6.3				
110	R-2	MLK JR. DRIVE	92+87	LT	REMOVED																	
110	S-2	MLK JR. DRIVE	93+20	LT	R3-5A	36 X 48	1							1				12.0		1		
110	S-3	MLK JR. DRIVE	93+20	RT	R3-5L	36 X 48												12.0				
111	S-4	MLK JR. DRIVE	94+50	LT	W11-2	36 X 36				15.0								9.0				
					W16-9P	24 X 12												2.0				
111	R-3	MLK JR. DRIVE	95+69	LT	REMOVED																	
111	S-5	MLK JR. DRIVE	95+80	LT	R3-5A	36 X 48	1							1				12.0		1		
111	S-6	MLK JR. DRIVE	95+80	RT	R3-5L	36 X 48												12.0				
111	S-7	E. 88TH ST.	96+64	RT	W23-2	36 X 36			15.0									9.0				
111	S-8	MLK JR. DRIVE	97+34	LT	R4-H11	36 X 48			29.0									12.0				
111	R-4	MLK JR. DRIVE	97+35	LT	REMOVED																	
111	S-9	MLK JR. DRIVE	98+94	LT	W23-2	36 X 36			13.5									9.0				
112	S-10	MLK JR. DRIVE	99+46	LT	R3-2L	36 X 36		27.0										9.0				
112	S-11	MLK JR. DRIVE	99+72	RT	SPECIAL	108 X 96													72.0			
112	R-5	MLK JR. DRIVE	99+72	RT	REMOVED																	
112	R-6	MLK JR. DRIVE	2+22	LT	REMOVED																	
112	S-12	MLK JR. DRIVE	2+79	RT	SPECIAL	144 x 96	4								1				96.0	4		
112	S-13	MLK JR. DRIVE	2+79	RT	SPECIAL	120 x 84													70.0			
113	R-7	MLK JR. DRIVE	4+09	LT	REMOVED																	
113	R-8	MLK JR. DRIVE	4+19	RT	REMOVED																	
113	R-9	MLK JR. DRIVE	4+19	RT	REMOVED																	
113	S-14	MLK JR. DRIVE	4+50	RT	R9-3	18 X 18		12.0										2.3				
113	S-15	MLK JR. DRIVE	4+96	RT	SPECIAL	120 X 84													70.0			
113	S-16	MLK JR. DRIVE	4+96	RT	SPECIAL	120 X 84													70.0			
113	R-10	MLK JR. DRIVE	4+96	RT	REMOVED																	
113	R-11	MLK JR. DRIVE	5+09	LT	REMOVED																	
113	S-17	MLK JR. DRIVE	5+13	RT	R9-3	18 X 18		12.0										2.3				
113	R-12	MLK JR. DRIVE	5+18	LT	REMOVED																	
113	S-18	MLK JR. DRIVE	5+28	LT	OM2-2V	6 X 12		4.0										0.5				
113	R-13	MLK JR. DRIVE	5+31	RT	REMOVED																	
113	S-19	MLK JR. DRIVE	5+54	RT	R4-H12	36 X 48			29.0									12.0				
113	R-14	MLK JR. DRIVE	5+64	RT	REMOVED																	
113	S-20	MLK JR. DRIVE	5+64	RT	SPECIAL	96 X 72											1		48.0			
113	S-21	MLK JR. DRIVE	5+64	RT	W12-2A	72 X 24											1	12.0				
113	R-15	MLK JR. DRIVE	5+64	RT	REMOVED																	
113	S-22	MLK JR. DRIVE	7+29	RT	W12-2A	72 X 24											1	12.0				
113	R-16	MLK JR. DRIVE	7+33	RT	REMOVED																	
113	R-17	MLK JR. DRIVE	7+50	RT	REMOVED																	
113	S-23	MLK JR. DRIVE	7+54	RT	R3-7	30 X 30		13.0										6.3				
113	S-24	MLK JR. DRIVE	7+64	LT	OM2-2V	6 X 12		4.0										0.5				
113	S-25	MLK JR. DRIVE	8+30	RT	M4-5 (2)	24 X 12						18.5	1					4.0			1	
			8+30	RT	M3-4	24 X 12												2.0				
			8+30	RT	M3-2	24 X 12												2.0				
			8+30	RT	M1-1 (2)	24 X 24												8.0				
			8+30	RT	M1-5 (2)	24 X 24												8.0				
			8+30	RT	M6-1L	21 X 15												2.2				
			8+30	RT	M6-1R	21 X 15												2.2				
113	R-18	MLK JR. DRIVE	8+33	RT	REMOVED																	
113	E-1	MLK JR. DRIVE	8+56	LT	RELOCATED				13.0													
113	S-26	MLK JR. DRIVE	8+56	LT	D11-1	24 x 18												3.0				
113	R-19	MLK JR. DRIVE	8+75	LT	REMOVED																	
SUBTOTALS CARRIED TO SHEET 102							6	85.0	99.5	15.0	0.0	18.5	1	2	1	0	3	183.4	426.0	6	1	

CALCULATED JML
CHECKED JTS

SIGNING SUBSUMMARY

CUY-90-21.02

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630														
							REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL	REMOVAL OF STRUCTURE MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-12.30	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-7.65							
							EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH						
110	R-1	MLK JR. DRIVE	90+38	LT	REMOVED		1		1												
110	S-1	MLK JR. DRIVE	90+38	LT	R3-H8BA	30 X 30															
110	R-2	MLK JR. DRIVE	92+87	LT	REMOVED		2		1												
110	S-2	MLK JR. DRIVE	93+20	LT	R3-5A	36 X 48															
110	S-3	MLK JR. DRIVE	93+20	RT	R3-5L	36 X 48															
111	S-4	MLK JR. DRIVE	94+50	LT	W11-2	36 X 36															
					W16-9P	24 X 12															
111	R-3	MLK JR. DRIVE	95+69	LT	REMOVED		1														
111	S-5	MLK JR. DRIVE	95+80	LT	R3-5A	36 X 48															
111	S-6	MLK JR. DRIVE	95+80	RT	R3-5L	36 X 48															
111	S-7	E. 88TH ST.	96+64	RT	W23-2	36 X 36															
111	S-8	MLK JR. DRIVE	97+34	LT	R4-H11	36 X 48															
111	R-4	MLK JR. DRIVE	97+35	LT	REMOVED		1		1												
111	S-9	MLK JR. DRIVE	98+94	LT	W23-2	36 X 36															
112	S-10	MLK JR. DRIVE	99+46	LT	R3-2L	36 X 36															
112	S-11	MLK JR. DRIVE	99+72	RT	SPECIAL	108 X 96															
112	R-5	MLK JR. DRIVE	99+72	RT	REMOVED							1									
112	R-6	MLK JR. DRIVE	2+22	LT	REMOVED		1		1												
112	S-12	MLK JR. DRIVE	2+79	RT	SPECIAL	144 x 96															
112	S-13	MLK JR. DRIVE	2+79	RT	SPECIAL	120 x 84															
113	R-7	MLK JR. DRIVE	4+09	LT	REMOVED								1								
113	R-8	MLK JR. DRIVE	4+19	RT	REMOVED							1		1							
113	R-9	MLK JR. DRIVE	4+19	RT	REMOVED							1									
113	S-14	MLK JR. DRIVE	4+50	RT	R9-3	18 X 18															
113	S-15	MLK JR. DRIVE	4+96	RT	SPECIAL	120 X 84															
113	S-16	MLK JR. DRIVE	4+96	RT	SPECIAL	120 X 84															
113	R-10	MLK JR. DRIVE	4+96	RT	REMOVED		3		1												
113	R-11	MLK JR. DRIVE	5+09	LT	REMOVED		1														
113	S-17	MLK JR. DRIVE	5+12	LT	OM2-2V	6 X 12															
113	S-18	MLK JR. DRIVE	5+13	RT	R9-3	18 X 18															
113	R-12	MLK JR. DRIVE	5+18	LT	REMOVED		1		1												
113	R-13	MLK JR. DRIVE	5+31	RT	REMOVED		1		1												
113	S-19	MLK JR. DRIVE	5+54	RT	R4-H12	36 X 48															
113	R-14	MLK JR. DRIVE	5+64	RT	REMOVED						1										
113	S-20	MLK JR. DRIVE	5+64	RT	SPECIAL	96 X 72															
113	S-21	MLK JR. DRIVE	5+64	RT	W12-2A	72 X 24															
113	R-15	MLK JR. DRIVE	5+64	RT	REMOVED						1										
113	S-22	MLK JR. DRIVE	7+29	RT	W12-2A	72 X 24															
113	R-16	MLK JR. DRIVE	7+33	RT	REMOVED						1										
113	R-17	MLK JR. DRIVE	7+50	RT	REMOVED		1		1												
113	S-23	MLK JR. DRIVE	7+54	RT	R3-7	30 X 30															
113	S-24	MLK JR. DRIVE	7+70	LT	OM2-2V	6 X 12															
113	S-25	MLK JR. DRIVE	8+30	RT	M4-5 (2)	24 X 12															
			8+30	RT	M3-4	24 X 12															
			8+30	RT	M3-2	24 X 12															
			8+30	RT	M1-1 (2)	24 X 24															
			8+30	RT	M1-5 (2)	24 X 24															
			8+30	RT	M6-1L	21 X 15															
			8+30	RT	M6-1R	21 X 15															
113	R-18	MLK JR. DRIVE	8+33	RT	REMOVED		1		2												
113	E-1	MLK JR. DRIVE	8+56	LT	RELOCATED			4	1												
113	S-26	MLK JR. DRIVE	8+56	LT	D11-1	24 x 18															
113	R-19	MLK JR. DRIVE	8+75	LT	REMOVED		2		1												
SUBTOTALS CARRIED TO SHEET 103							16	4	12	0	3	3	1	1	0						

CALCULATED JML
CHECKED JTS

SIGNING SUBSUMMARY

CUY-90-21.02

SIGNING SUBSUMMARY

CALCULATED JML CHECKED JTS

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	625	630														
							GROUND ROD	GROUND MOUNTED SUPPORT, NO. 2 POST	GROUND MOUNTED SUPPORT, NO.3 POST	GROUND MOUNTED SUPPORT, NO.4 POST	ONE WAY SUPPORT, NO. 3 POST	GROUND MOUNTED SUPPORT, PIPE	TRIANGULAR SLIP BASE CONNECTION	OVERHEAD SIGN SUPPORT, TYPE TC-16.21, DESIGN 6	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 6	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 8	OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE TC-18.24	SIGN, FLAT SHEET	SIGN, OVERHEAD EXTRUSHEET	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	GROUND MOUNTED PIPE SUPPORT FOUNDATION	
							EACH	FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	SF	SF	EACH	EACH	
113	S-27	IR-90/SR-2 EB EXIT RAMP	5+14	RT	R3-H8BS	36 X 36		27.0										9.0				
113	S-28	IR-90/SR-2 EB EXIT RAMP	5+23	LT	R3-H8BS	36 X 36		27.0										9.0				
113	R-20	IR-90/SR-2 EB EXIT RAMP	5+25	RT	REMOVED																	
113	E-2	N. MARGINAL ROAD	1+50	LT	RELOCATED				13.0													
113	R-21	N. MARGINAL ROAD	1+61	LT	REMOVED																	
113	R-22	N. MARGINAL ROAD	1+86	LT	REMOVED																	
113	S-29	N. MARGINAL ROAD	3+00	LT	M4-5 (2)	24 X 12						18.5	1					4.0			1	
			3+00	LT	M3-4	24 X 12												2.0				
			3+00	LT	M3-2	24 X 12												2.0				
			3+00	LT	M1-1 (2)	24 X 24												8.0				
			3+00	LT	M1-5 (2)	24 X 24												8.0				
			3+00	LT	M5-1R	24 X 15												2.5				
			3+00	LT	M5-1L	24 X 15												2.5				
114	S-30	IR-90/SR-2 EB EXIT RAMP	0+10	RT	W3-3	48 X 48			33.0									16.0				
114	R-23	IR-90/SR-2 EB EXIT RAMP	0+10	RT	REMOVED																	
114	R-24	IR-90/SR-2 EB EXIT RAMP	1+49	LT	REMOVED																	
114	S-31	IR-90/SR-2 EB EXIT RAMP	2+00	LT	W3-3	48 X 48			33.0									16.0				
114	R-25	IR-90/SR-2 EB EXIT RAMP	2+63	RT	REMOVED																	
114	R-26	IR-90/SR-2 EB EXIT RAMP	3+15	LT	REMOVED																	
114	R-27	IR-90/SR-2 EB EXIT RAMP	3+15	RT	REMOVED																	
114	S-32	IR-90/SR-2 EB EXIT RAMP	3+25	LT	R5-1A	42 X 30			27.0									8.8				
			3+25	LT	R3-H8BS	36 X 36												9.0				
114	S-33	IR-90/SR-2 EB EXIT RAMP	3+25	RT	R5-1A	42 X 30			27.0									8.8				
			3+25	RT	R3-H8BS	36 X 36												9.0				
115	S-34	IR-90/SR-2 EB ENTRANCE RAMP	101+32	RT	R5-10A	30 X 36			13.5									7.5				
115	R-28	IR-90/SR-2 EB ENTRANCE RAMP	101+32	RT	REMOVED																	
115	S-35	IR-90/SR-2 EB ENTRANCE RAMP	102+00	LT	W4-2R	36 X 36			15.0									9.0				
115	S-36	IR-90/SR-2 EB ENTRANCE RAMP	102+00	RT	W4-2R	36 X 36			15.0									9.0				
115	R-29	IR-90/SR-2 EB ENTRANCE RAMP	102+56	RT	REMOVED																	
115	S-37	IR-90/SR-2 EB ENTRANCE RAMP	102+68	RT	D10-H5A	30 X 30		13.0										6.3				
117	S-38	MLK JR. DRIVE	9+05	RT	SPECIAL	132 X 72	4									1			66.0	4.0		
117	S-39	MLK JR. DRIVE	9+05	RT	SPECIAL	144 X 96													96.0			
117	S-40	MLK JR. DRIVE	9+13	LT	SPECIAL	120 X 84													70.0			
117	S-41	MLK JR. DRIVE	9+13	LT	SPECIAL	120 X 96													80.0			
117	R-30	MLK JR. DRIVE	9+44	RT	REMOVED																	
117	R-31	MLK JR. DRIVE	9+61	LT	REMOVED																	
117	R-32	MLK JR. DRIVE	9+61	LT	REMOVED																	
117	E-3	MLK JR. DRIVE	10+08	LT	RELOCATED			13.0														
117	R-33	MLK JR. DRIVE	11+27	LT	REMOVED																	
117	S-42	MLK JR. DRIVE	11+29	RT	R9-3	18 X 18		12.0										2.3				
117	R-34	MLK JR. DRIVE	11+30	RT	REMOVED																	
117	R-35	MLK JR. DRIVE	11+64 AND 11+72	LT	REMOVED																	
117	R-36	LAKESHORE BLVD	11+83	LT	REMOVED																	
117	R-37	LAKESHORE BLVD	11+87	LT	REMOVED																	
117	S-43	LAKESHORE BLVD	12+24	RT	R4-7	24 X 30			13.0									5.0				
117	S-44	LAKESHORE BLVD	12+56	RT	W1-1AR	36 X 36			13.5									9.0				
117	R-38	LAKESHORE BLVD	12+56	RT	REMOVED																	
117	R-39	LAKESHORE BLVD	12+92	LT	REMOVED																	
117	S-45	LAKESHORE BLVD	13+05	LT	W1-6R	48 X 24		26.0										8.0				
117	R-40	LAKESHORE BLVD	13+17	LT	REMOVED																	
117	S-46	LAKESHORE BLVD	13+50	RT	R2-1	24 X 30			13.0									5.0				
117	R-41	LAKESHORE BLVD	14+18	LT	REMOVED																	
117	R-42	LAKESHORE BLVD	16+25	LT	REMOVED																	
117	S-47	LAKESHORE BLVD	16+25	LT	W3-3	36 X 36			13.5									9.0				
SUBTOTALS CARRIED TO SHEET 102							4	118.0	229.5	0.0	0.0	18.5	1	0	0	1	0	184.5	312.0	4	1	

CUY-90-21.02

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630														
							REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL	REMOVAL OF STRUCTURE MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-12.30	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-7.65							
							EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH						
113	S-27	IR-90/SR-2 EB EXIT RAMP	5+14	RT	R3-H8BS	36 X 36															
113	S-28	IR-90/SR-2 EB EXIT RAMP	5+23	LT	R3-H8BS	36 X 36															
113	R-20	IR-90/SR-2 EB EXIT RAMP	5+25	RT	REMOVED		1														
113	E-2	N. MARGINAL ROAD	1+50	LT	RELOCATED			5	1												
113	R-21	N. MARGINAL ROAD	1+61	LT	REMOVED		1														
113	R-22	N. MARGINAL ROAD	1+86	LT	REMOVED		1			2											
113	S-29	N. MARGINAL ROAD	3+00	LT	M4-5 (2)	24 X 12															
			3+00	LT	M3-4	24 X 12															
			3+00	LT	M3-2	24 X 12															
			3+00	LT	M1-1 (2)	24 X 24															
			3+00	LT	M1-5 (2)	24 X 24															
			3+00	LT	M5-1R	24 X 15															
			3+00	LT	M5-1L	24 X 15															
114	S-30	IR-90/SR-2 EB EXIT RAMP	0+10	RT	W3-3	48 X 48															
114	R-23	IR-90/SR-2 EB EXIT RAMP	0+10	RT	REMOVED		1		2												
114	R-24	IR-90/SR-2 EB EXIT RAMP	1+49	LT	REMOVED		2		1												
114	S-31	IR-90/SR-2 EB EXIT RAMP	2+00	LT	W3-3	48 X 48															
114	R-25	IR-90/SR-2 EB EXIT RAMP	2+63	RT	REMOVED		1		1												
114	R-26	IR-90/SR-2 EB EXIT RAMP	3+15	LT	REMOVED		1														
114	R-27	IR-90/SR-2 EB EXIT RAMP	3+15	RT	REMOVED		1														
114	S-32	IR-90/SR-2 EB EXIT RAMP	3+25	LT	R5-1A	42 X 30															
			3+25	LT	R3-H8BS	36 X 36															
114	S-33	IR-90/SR-2 EB EXIT RAMP	3+25	RT	R5-1A	42 X 30															
			3+25	RT	R3-H8BS	36 X 36															
115	S-34	IR-90/SR-2 EB ENTRANCE RAMP	101+32	RT	R5-10A	30 X 36															
115	R-28	IR-90/SR-2 EB ENTRANCE RAMP	101+32	RT	REMOVED		1		1												
115	S-35	IR-90/SR-2 EB ENTRANCE RAMP	102+00	LT	W4-2R	36 X 36															
115	S-36	IR-90/SR-2 EB ENTRANCE RAMP	102+00	RT	W4-2R	36 X 36															
115	R-29	IR-90/SR-2 EB ENTRANCE RAMP	102+56	RT	REMOVED		1		1												
115	S-37	IR-90/SR-2 EB ENTRANCE RAMP	102+68	RT	D10-H5A	30 X 30															
117	S-38	MLK JR. DRIVE	9+05	RT	SPECIAL	132 X 72															
117	S-39	MLK JR. DRIVE	9+05	RT	SPECIAL	144 X 96															
117	S-40	MLK JR. DRIVE	9+13	LT	SPECIAL	120 X 84															
117	S-41	MLK JR. DRIVE	9+13	LT	SPECIAL	120 X 96															
117	R-30	MLK JR. DRIVE	9+44	RT	REMOVED							1		1							
117	R-31	MLK JR. DRIVE	9+61	LT	REMOVED							1			1						
117	R-32	MLK JR. DRIVE	9+61	LT	REMOVED							1									
117	E-3	MLK JR. DRIVE	10+08	LT	RELOCATED																
117	R-33	MLK JR. DRIVE	11+27	LT	REMOVED		3		2												
117	S-42	MLK JR. DRIVE	11+29	RT	R9-3	18 X 18															
117	R-34	MLK JR. DRIVE	11+30	RT	REMOVED		2		2												
117	R-35	MLK JR. DRIVE	11+64 AND 11+72	LT	REMOVED					2											
117	R-36	LAKESHORE BLVD	11+83	LT	REMOVED		2		2												
117	R-37	LAKESHORE BLVD	11+87	LT	REMOVED		2		2												
117	S-43	LAKESHORE BLVD	12+24	RT	R4-7	24 X 30															
117	S-44	LAKESHORE BLVD	12+56	RT	W1-1AR	36 X 36															
117	R-38	LAKESHORE BLVD	12+56	RT	REMOVED		1		1												
117	R-39	LAKESHORE BLVD	12+92	LT	REMOVED		1		1												
117	S-45	LAKESHORE BLVD	13+05	LT	W1-6R	48 X 24															
117	R-40	LAKESHORE BLVD	13+17	LT	REMOVED								2								
117	S-46	LAKESHORE BLVD	13+50	RT	R2-1	24 X 30															
117	R-41	LAKESHORE BLVD	14+18	LT	REMOVED		1		1												
117	R-42	LAKESHORE BLVD	16+25	LT	REMOVED		1		1												
117	S-47	LAKESHORE BLVD	16+25	LT	W3-3	36 X 36															
SUBTOTALS CARRIED TO SHEET 103							24	5	19	4	0	3	2	1	1						

CALCULATED JML CHECKED JTS

SIGNING SUBSUMMARY

CUY-90-21.02

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	625	630														
							GROUND ROD	GROUND MOUNTED SUPPORT, NO. 2 POST	GROUND MOUNTED SUPPORT, NO.3 POST	GROUND MOUNTED SUPPORT, NO.4 POST	ONE WAY SUPPORT, NO. 3 POST	GROUND MOUNTED SUPPORT, PIPE	TRIANGULAR SLIP BASE CONNECTION	OVERHEAD SIGN SUPPORT, TYPE TC-16.21, DESIGN 6	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 6	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 8	OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE TC-18.24	SIGN, FLAT SHEET	SIGN, OVERHEAD EXTRUSHEET	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	GROUND MOUNTED PIPE SUPPORT FOUNDATION	
							EACH	FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	SF	SF	EACH	EACH	
117	E-4	IR-90/SR-2 WB EXIT RAMP	100+45	RT	RELOCATED						29.0											
117	R-43	IR-90/SR-2 WB EXIT RAMP	100+53	LT	REMOVED																	
117	E-5	IR-90/SR-2 WB EXIT RAMP	100+67	LT	RELOCATED						29.0											
117	R-44	IR-90/SR-2 WB EXIT RAMP	101+67	LT	REMOVED																	
117	R-45	IR-90/SR-2 WB EXIT RAMP	101+68	RT	REMOVED																	
118	S-48	IR-90/SR-2 WB EXIT RAMP	102+06	LT	R3-H8BQ	36 X 36		27.0										9.0				
118	S-49	IR-90/SR-2 WB EXIT RAMP	102+14	RT	R3-H8BQ	36 X 36		27.0										9.0				
118	R-46	IR-90/SR-2 WB EXIT RAMP	103+22	LT	REMOVED																	
118	S-50	IR-90/SR-2 WB EXIT RAMP	103+79	LT	D1-H1A	48 X 12		25.0										4.0				
118	S-51	IR-90/SR-2 WB EXIT RAMP	105+50	LT	W3-3	36 X 36			13.5									9.0				
118	S-52	IR-90/SR-2 WB EXIT RAMP	105+50	RT	W3-3	36 X 36			13.5									9.0				
119	S-53	IR-90/SR-2 WB EXIT RAMP	106+65	LT	R3-H8BQ	36 X 36		27.0										9.0				
119	S-54	IR-90/SR-2 WB EXIT RAMP	106+65	RT	R3-H8BQ	36 X 36		27.0										9.0				
SUBTOTALS FROM THIS SHEET							0	133.0	27.0	0.0	58.0	0.0	0	0	0	0	0	58.0	0.0	0	0	
SUBTOTALS FROM SHEET 98							6	85.0	99.5	15.0	0.0	18.5	1	2	1	0	3	183.4	426.0	6	1	
SUBTOTALS FROM SHEET 100							4	118.0	229.5	0.0	0.0	18.5	1	0	0	1	0	184.5	312.0	4	1	
TOTALS CARRIED TO GENERAL SUMMARY							10	336.0	356.0	15.0	58.0	37.0	2	2	1	1	3	425.9	738.0	10	2	

CALCULATED JML
CHECKED JTS

SIGNING SUBSUMMARY

CUY-90-21.02

C:\Dropbox\Project Files\TRC\CUY-90\cadd\sheets\103821_TS001.dgn

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630														
							REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL	REMOVAL OF STRUCTURE MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-12.30	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-7.65							
							EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH						
117	E-4	IR-90/SR-2 WB EXIT RAMP	100+45	RT	RELOCATED			3	2												
117	R-43	IR-90/SR-2 WB EXIT RAMP	100+53	LT	REMOVED		1														
117	E-5	IR-90/SR-2 WB EXIT RAMP	100+67	LT	RELOCATED			3	2												
117	R-44	IR-90/SR-2 WB EXIT RAMP	101+67	LT	REMOVED		1		2												
117	R-45	IR-90/SR-2 WB EXIT RAMP	101+68	RT	REMOVED		1		2												
118	S-48	IR-90/SR-2 WB EXIT RAMP	102+06	LT	R3-H8BQ	36 X 36															
118	S-49	IR-90/SR-2 WB EXIT RAMP	102+14	RT	R3-H8BQ	36 X 36															
118	R-46	IR-90/SR-2 WB EXIT RAMP	103+22	LT	REMOVED		1		2												
118	S-50	IR-90/SR-2 WB EXIT RAMP	103+79	LT	D1-H1A	48 X 12		1	2												
118	S-51	IR-90/SR-2 WB EXIT RAMP	105+50	LT	W3-3	36 X 36															
118	S-52	IR-90/SR-2 WB EXIT RAMP	105+50	RT	W3-3	36 X 36															
119	S-53	IR-90/SR-2 WB EXIT RAMP	106+65	LT	R3-H8BQ	36 X 36															
119	S-54	IR-90/SR-2 WB EXIT RAMP	106+65	RT	R3-H8BQ	36 X 36															
SUBTOTALS FROM THIS SHEET							4	7	12	0	0	0	0	0	0						
SUBTOTALS FROM SHEET 99							16	4	12	0	3	3	1	1	0						
SUBTOTALS FROM SHEET 101							24	5	19	4	0	3	2	1	1						
TOTALS CARRIED TO GENERAL SUMMARY							44	16	43	4	3	6	3	2	1						

CALCULATED JML
CHECKED JTS

SIGNING SUBSUMMARY

CUY-90-21.02

103
153

C:\Dropbox\Project Files\TRC\CUY-90\cadd\sheets\103821_TS001.dgn

SHEET NO.	LOCATION	STATION FROM	STATION TO	SIDE	621 RPM, 1-WAY WHITE EACH	621 RPM, 2-WAY YELLOW/RED EACH	621 RPM, 2-WAY WHITE/RED EACH	621 RPM, 2-WAY YELLOW/YELLOW EACH	621 SPACING	621 RAISED PAVEMENT MARKER REMOVED EACH	644 EDGE LINE, 4", WHITE FT	644 EDGE LINE, 4", YELLOW FT	644 EDGE LINE, 6", WHITE FT	644 EDGE LINE, 6", YELLOW FT	644 LANE LINE, 4" FT	644 LANE LINE, 6" FT	644 CENTER LINE, 4", SOLID DOUBLE YELLOW FT	644 CHANNELIZING LINE, 8" FT	644 CHANNELIZING LINE, 12" FT	644 STOP LINE, 24", WHITE FT	644 CROSSWALK LINE FT	644 TRANSVERSE/DIAGONAL LINE, WHITE FT	644 TRANSVERSE/DIAGONAL LINE, YELLOW FT
110	MLK JR. DRIVE	89+36	94+00	LT/RT																			
110	MLK JR. DRIVE	89+36	94+00	LT							464												
110	MLK JR. DRIVE	90+23.50	94+00	LT														377					
110	MLK JR. DRIVE	90+23.50	94+00	RT													377						
110	MLK JR. DRIVE	90+23.50	94+00	RT							377												
110	MLK JR. DRIVE	90+34		CL																			
110	MLK JR. DRIVE	91+07		CL																			
110	MLK JR. DRIVE	91+73		CL																			
110	MLK JR. DRIVE	92+39		CL																			
110	MLK JR. DRIVE	93+05		CL																			
110	MLK JR. DRIVE	93+92		CL																			
111	MLK JR. DRIVE	94+00	99+25	LT/RT																			
111	MLK JR. DRIVE	94+00	99+25	LT							525												
111	MLK JR. DRIVE	94+00	97+50	LT																			
111	MLK JR. DRIVE	94+00	99+25	RT													525						
111	MLK JR. DRIVE	94+00	99+25	RT							525												
111	MLK JR. DRIVE	97+47	98+90	RT																		41	
111	MLK JR. DRIVE	97+50	99+25	LT											175								
111	MLK JR. DRIVE	97+62	98+89	LT																		33	
111	MLK JR. DRIVE	98+89	99+22	LT/RT																		163	
111	MLK JR. DRIVE	98+90	98+90	RT																11			
111	E. 88TH ST	96+14	96+32	RT																18			
111	E. 88TH ST	96+14	96+31	RT													31						
111	E. 88TH ST	96+17	96+90	RT																	77		
111	E. 88TH ST	96+21	96+83	RT																	66		
111	E. 88TH ST	96+21	96+83	RT																		136	
111	E. 88TH ST	96+71	96+92	RT													33						
111	E. 88TH ST	96+92	97+22	RT																30			
111	BROAD AVE	98+91	99+06	LT/RT																	43		
111	BROAD AVE	99+04	99+22	LT/RT																	47		
111	BROAD AVE	99+04	99+25	LT																	21		
111	BROAD AVE	99+04	99+25	LT																	21		
111	BROAD AVE	99+04	99+25	LT																		35	
111	BROAD AVE	99+04	99+20	LT																16			
112	BROAD AVE	99+25	99+43	LT																	18		
112	BROAD AVE	99+25	99+60	LT																	35		
112	BROAD AVE	99+25	99+47	LT																		42	
112	MLK JR. DRIVE	99+25	1+45	LT/RT																			
112	MLK JR. DRIVE	99+25	4+00	LT							475												
112	MLK JR. DRIVE	99+25	4+00	LT											475								
112	MLK JR. DRIVE	99+25	4+00	RT													475						
112	MLK JR. DRIVE	99+25	1+45	RT							220												
112	MLK JR. DRIVE	99+74	99+74	LT/RT																27			
112	MLK JR. DRIVE	99+74	1+00	LT																		33	
112	MLK JR. DRIVE	1+45	1+95	RT							50												
112	MLK JR. DRIVE	1+89	4+00	RT													211						
112	MLK JR. DRIVE	1+89	4+00	LT/RT																			77
112	MLK JR. DRIVE	2+15	4+00	RT														185					
112	MLK JR. DRIVE	3+82	4+00	RT							18												
112	MLK JR. DRIVE	2+40		RT																			
112	MLK JR. DRIVE	3+08		RT																			
112	MLK JR. DRIVE	3+75		RT																			
113	MLK JR. DRIVE	4+00	9+00	LT							500												
113	MLK JR. DRIVE	4+00	9+00	LT											500								
113	MLK JR. DRIVE	4+00	9+00	CL													500						
113	MLK JR. DRIVE	4+38	5+45R	LT																			
SUBTOTALS THIS SHEET					0	0	0	0		0	3154	0	0	0	1150	0	2152	562	0	102	328	483	77
CARRIED TO SHEET 108					0					0	0.60 MI		0.00 MI		0.22 MI	0.00 MI	0.41 MI	562	0	102	328	560	

CALCULATED JML
CHECKED JTS

PAVEMENT MARKING SUBSUMMARY

CUY-90-21.02

104
153

C:\Dropbox\Project Files\TRC\CUY-90\cadd\sheets\103821_ts100.dgn

SHEET NO.	LOCATION	STATION FROM	STATION TO	SIDE	644 ISLAND MARKING SF	LANE ARROW EACH	DOTTED LINE, 4" FT	DOTTED LINE, 6" FT	DOTTED LINE, 8" FT	REMOVAL OF PAVEMENT MARKING EACH	REMOVAL OF PAVEMENT MARKING MILE
110	MLK JR. DRIVE	89+36	94+00	LT/RT						3	0.30
110	MLK JR. DRIVE	89+36	94+00	LT							
110	MLK JR. DRIVE	90+23.50	94+00	LT							
110	MLK JR. DRIVE	90+23.50	94+00	RT							
110	MLK JR. DRIVE	90+23.50	94+00	RT							
110	MLK JR. DRIVE	90+34		CL		1					
110	MLK JR. DRIVE	91+07		CL		1					
110	MLK JR. DRIVE	91+73		CL		1					
110	MLK JR. DRIVE	92+39		CL		1					
110	MLK JR. DRIVE	93+05		CL		1					
110	MLK JR. DRIVE	93+92		CL		1					
111	MLK JR. DRIVE	94+00	99+25	LT/RT						4	0.50
111	MLK JR. DRIVE	94+00	99+25	LT							
111	MLK JR. DRIVE	94+00	97+50	LT					350		
111	MLK JR. DRIVE	94+00	99+25	RT							
111	MLK JR. DRIVE	94+00	99+25	RT							
111	MLK JR. DRIVE	97+47	98+90	RT							
111	MLK JR. DRIVE	97+50	99+25	LT							
111	MLK JR. DRIVE	97+62	98+91	LT							
111	MLK JR. DRIVE	98+89	99+22	LT/RT							
111	MLK JR. DRIVE	98+90	98+90	RT							
111	E. 88TH ST	96+14	96+32	RT							
111	E. 88TH ST	96+14	96+31	RT							
111	E. 88TH ST	96+17	96+90	RT							
111	E. 88TH ST	96+21	96+83	RT							
111	E. 88TH ST	96+21	96+83	RT							
111	E. 88TH ST	96+71	96+92	RT							
111	E. 88TH ST	96+92	97+22	RT							
111	BROAD AVE	98+91	99+06	LT/RT							
111	BROAD AVE	99+04	99+22	LT/RT							
111	BROAD AVE	99+04	99+25	LT							
111	BROAD AVE	99+04	99+25	LT							
111	BROAD AVE	99+04	99+25	LT							
111	BROAD AVE	99+04	99+20	LT							
112	BROAD AVE	99+25	99+43	LT							
112	BROAD AVE	99+25	99+60	LT							
112	BROAD AVE	99+25	99+47	LT							
112	MLK JR. DRIVE	99+25	1+45	LT/RT							0.18
112	MLK JR. DRIVE	99+25	4+00	LT							
112	MLK JR. DRIVE	99+25	4+00	LT							
112	MLK JR. DRIVE	99+25	4+00	RT							
112	MLK JR. DRIVE	99+25	1+45	RT							
112	MLK JR. DRIVE	99+74	99+74	LT/RT							
112	MLK JR. DRIVE	99+74	1+00	LT							
112	MLK JR. DRIVE	1+45	1+95	RT							
112	MLK JR. DRIVE	1+89	4+00	RT							
112	MLK JR. DRIVE	1+89	4+00	LT/RT							
112	MLK JR. DRIVE	2+15	4+00	RT							
112	MLK JR. DRIVE	3+82	4+00	RT							
112	MLK JR. DRIVE	2+40		RT		1					
112	MLK JR. DRIVE	3+08		RT		1					
112	MLK JR. DRIVE	3+75		RT		1					
113	MLK JR. DRIVE	4+00	9+00	LT							
113	MLK JR. DRIVE	4+00	9+00	LT							
113	MLK JR. DRIVE	4+00	9+00	CL							
113	MLK JR. DRIVE	4+38	5+45R	LT			55				
SUBTOTALS THIS SHEET					0	9	55	0	350	7	0.98
CARRIED TO SHEET 109					0	9	55	0	350	7	0.98

CALCULATED JML
CHECKED JTS

PAVEMENT MARKING SUBSUMMARY

CUY-90-21.02

SHEET NO.	LOCATION	STATION FROM	STATION TO	SIDE	621 RPM, 1-WAY WHITE	621 RPM, 2-WAY YELLOW/RED	621 RPM, 2-WAY WHITE/RED	621 RPM, 2-WAY YELLOW/YELLOW	621 SPACING	621 RAISED PAVEMENT MARKER REMOVED	644 EDGE LINE, 4", WHITE	644 EDGE LINE, 4", YELLOW	644 EDGE LINE, 6", WHITE	644 EDGE LINE, 6", YELLOW	644 LANE LINE, 4"	644 LANE LINE, 6"	644 CENTER LINE, 4", SOLID DOUBLE YELLOW	644 CHANNELIZING LINE, 8"	644 CHANNELIZING LINE, 12"	644 STOP LINE, 24", WHITE	644 CROSSWALK LINE	644 TRANSVERSE/DIAGONAL LINE, WHITE	644 TRANSVERSE/DIAGONAL LINE, YELLOW
					EACH	EACH	EACH	EACH		EACH	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT
113	MLK JR. DRIVE	4+00	4+61	RT																			63
113	MLK JR. DRIVE	4+00	4+67	RT																			
113	MLK JR. DRIVE	4+00	4+61	RT													61						
113	MLK JR. DRIVE	4+00	4+67	RT							67												
113	MLK JR. DRIVE	4+31	4+47	RT																20			
113	MLK JR. DRIVE	4+42	4+42	RT																12			
113	MLK JR. DRIVE	5+34	8+00	RT																			
113	MLK JR. DRIVE	5+25	6+42	CL														117					
113	MLK JR. DRIVE	5+36	5+36	RT																12			
113	MLK JR. DRIVE	5+25	5+25	LT																24			
113	MLK JR. DRIVE	5+54		RT																			
113	MLK JR. DRIVE	6+20		RT																			
113	MLK JR. DRIVE	7+11	8+00	RT														89					
113	MLK JR. DRIVE	7+12		RT																			
113	MLK JR. DRIVE	7+88		RT																			
113	MLK JR. DRIVE	8+75		RT																			
113	MLK JR. DRIVE	8+75	9+00	RT														25					
113	MLK JR. DRIVE	8+81	9+00	RT																			24
113	MLK JR. DRIVE	8+81	9+00	RT													19						
113	MLK JR. DRIVE	8+98	9+00	RT									2										
113	IR-90/SR-2 EB EXIT RAMP	4+50	5+24	LT		2			80					74									
113	IR-90/SR-2 EB EXIT RAMP	4+50	5+29	CL															79				
113	IR-90/SR-2 EB EXIT RAMP	4+50	5+29	RT									79										
113	IR-90/SR-2 EB EXIT RAMP	4+69		LT																			
113	IR-90/SR-2 EB EXIT RAMP	4+69		RT																			
113	IR-90/SR-2 EB EXIT RAMP	5+24	5+24	LT																13			
113	IR-90/SR-2 EB EXIT RAMP	5+29	5+29	RT																17			
113	IR-90/SR-2 EB EXIT RAMP	5+33	5+42	RT/LT																	38		
113	IR-90/SR-2 EB EXIT RAMP	5+41	5+52	RT/LT																	47		
113	IR-90/SR-2 EB ENTRANCE RAMP	4+00	101+00	RT									85										
113	IR-90/SR-2 EB ENTRANCE RAMP	4+18	101+00	CL									98										
113	IR-90/SR-2 EB ENTRANCE RAMP	4+67	101+00	LT									76										
113	IR-90/SR-2 EB ENTRANCE RAMP	5+13	101+00	LT		1			80					90									
113	N. MARGINAL RD	1+30	1+44	LT/RT																	70		
113	N. MARGINAL RD	1+41	1+52	LT/RT																	50		
113	N. MARGINAL RD	1+50	1+50	LT/RT																17			
113	N. MARGINAL RD	1+50	2+10.42	CL													61						
114	IR-90/SR-2 EB EXIT RAMP	0+60.10	4+50	LT		5			80	2				390									
114	IR-90/SR-2 EB EXIT RAMP	0+60.10	4+50	RT									390										
114	IR-90/SR-2 EB EXIT RAMP	1+30	4+50	CL															320				
114	IR-90/SR-2 EB EXIT RAMP	1+38		LT																			
114	IR-90/SR-2 EB EXIT RAMP	1+38		RT																			
114	IR-90/SR-2 EB EXIT RAMP	2+48		LT																			
114	IR-90/SR-2 EB EXIT RAMP	2+48		RT																			
114	IR-90/SR-2 EB EXIT RAMP	3+59		LT																			
114	IR-90/SR-2 EB EXIT RAMP	3+59		RT																			
115	IR-90/SR-2 EB ENTRANCE RAMP	101+00	105+00	LT		5			80					400									
115	IR-90/SR-2 EB ENTRANCE RAMP	101+00	101+49	LT									49										
115	IR-90/SR-2 EB ENTRANCE RAMP	101+00	101+49	LT									49										
115	IR-90/SR-2 EB ENTRANCE RAMP	101+00	105+00	RT									400										
115	IR-90/SR-2 EB ENTRANCE RAMP	101+49	103+68	LT												219							
115	IR-90/SR-2 EB ENTRANCE RAMP	103+68	105+00	LT																			
116	IR-90/SR-2 EB ENTRANCE RAMP	105+00	107+17	LT		3			80	3				217									
116	IR-90/SR-2 EB ENTRANCE RAMP	105+00	106+30	LT																			
116	IR-90/SR-2 EB ENTRANCE RAMP	105+00	107+17	RT									217										
SUBTOTALS THIS SHEET					0	16	0	0		5	67	0	1445	1171	0	219	141	231	399	115	205	0	87
CARRIED TO SHEET 108					16					5	0.01 MI		0.50 MI		0.00 MI	0.04 MI	0.03 MI	231	399	115	205	87	

CALCULATED JML
CHECKED JTS

PAVEMENT MARKING SUBSUMMARY

CUY-90-21.02

SHEET NO.	LOCATION	STATION FROM	STATION TO	SIDE	644 ISLAND MARKING SF	644 LANE ARROW EACH	644 DOTTED LINE, 4" FT	644 DOTTED LINE, 6" FT	644 DOTTED LINE, 8" FT	644 REMOVAL OF PAVEMENT MARKING EACH	644 REMOVAL OF PAVEMENT MARKING MILE
113	MLK JR. DRIVE	4+00	4+61	RT							
113	MLK JR. DRIVE	4+00	4+67	RT	67						
113	MLK JR. DRIVE	4+00	4+61	RT							
113	MLK JR. DRIVE	4+00	4+67	RT							
113	MLK JR. DRIVE	4+31	4+47	RT							
113	MLK JR. DRIVE	4+42	4+42	RT							
113	MLK JR. DRIVE	5+34	8+00	RT					266		
113	MLK JR. DRIVE	5+36	6+42	CL							
113	MLK JR. DRIVE	5+36	5+36	RT							
113	MLK JR. DRIVE	5+41	5+41	LT							
113	MLK JR. DRIVE	5+54		RT		1					
113	MLK JR. DRIVE	6+20		RT		1					
113	MLK JR. DRIVE	7+11	8+00	RT							
113	MLK JR. DRIVE	7+12		RT		1					
113	MLK JR. DRIVE	7+88		RT		1					
113	MLK JR. DRIVE	8+75		RT	67						
113	MLK JR. DRIVE	8+75	9+00	RT							
113	MLK JR. DRIVE	8+81	9+00	RT							
113	MLK JR. DRIVE	8+81	9+00	RT							
113	MLK JR. DRIVE	8+98	9+00	RT							
113	IR-90/SR-2 EB EXIT RAMP	4+50	5+24	LT							
113	IR-90/SR-2 EB EXIT RAMP	4+50	5+29	CL							
113	IR-90/SR-2 EB EXIT RAMP	4+50	5+29	RT							
113	IR-90/SR-2 EB EXIT RAMP	4+69		LT		1					
113	IR-90/SR-2 EB EXIT RAMP	4+69		RT		1					
113	IR-90/SR-2 EB EXIT RAMP	5+24	5+24	LT							
113	IR-90/SR-2 EB EXIT RAMP	5+29	5+29	RT							
113	IR-90/SR-2 EB EXIT RAMP	5+33	5+42	RT/LT							
113	IR-90/SR-2 EB EXIT RAMP	5+41	5+52	RT/LT							
113	IR-90/SR-2 EB ENTRANCE RAMP	4+00	101+00	RT							
113	IR-90/SR-2 EB ENTRANCE RAMP	4+18	101+00	CL							
113	IR-90/SR-2 EB ENTRANCE RAMP	4+67	101+00	LT							
113	IR-90/SR-2 EB ENTRANCE RAMP	5+13	101+00	LT							
113	N. MARGINAL RD	1+30	1+44	LT/RT							
113	N. MARGINAL RD	1+41	1+52	LT/RT							
113	N. MARGINAL RD	1+50	1+50	LT/RT							
113	N. MARGINAL RD	1+50	2+10.42	CL							
114	IR-90/SR-2 EB EXIT RAMP	0+60.10	4+50	LT							
114	IR-90/SR-2 EB EXIT RAMP	0+60.10	4+50	RT							
114	IR-90/SR-2 EB EXIT RAMP	1+30	4+50	CL							
114	IR-90/SR-2 EB EXIT RAMP	1+38		LT		1					
114	IR-90/SR-2 EB EXIT RAMP	1+38		RT		1					
114	IR-90/SR-2 EB EXIT RAMP	2+48		LT		1					
114	IR-90/SR-2 EB EXIT RAMP	2+48		RT		1					
114	IR-90/SR-2 EB EXIT RAMP	3+59		LT		1					
114	IR-90/SR-2 EB EXIT RAMP	3+59		RT		1					
115	IR-90/SR-2 EB ENTRANCE RAMP	101+00	105+00	LT							
115	IR-90/SR-2 EB ENTRANCE RAMP	101+00	101+49	LT							
115	IR-90/SR-2 EB ENTRANCE RAMP	101+00	101+49	LT							
115	IR-90/SR-2 EB ENTRANCE RAMP	101+00	105+00	RT							
115	IR-90/SR-2 EB ENTRANCE RAMP	101+49	103+68	LT							
115	IR-90/SR-2 EB ENTRANCE RAMP	103+68	105+00	LT				132			
116	IR-90/SR-2 EB ENTRANCE RAMP	105+00	107+17	LT							
116	IR-90/SR-2 EB ENTRANCE RAMP	105+00	106+30	LT				130			
116	IR-90/SR-2 EB ENTRANCE RAMP	105+00	107+17	RT							
SUBTOTALS THIS SHEET					134	12	0	262	266	0	0.00
CARRIED TO SHEET 109					134	12	0	262	266	0	0.00

CALCULATED JML
CHECKED JTS

PAVEMENT MARKING SUBSUMMARY

CUY-90-21.02

SHEET NO.	LOCATION	STATION FROM	STATION TO	SIDE	621 RPM, 1-WAY WHITE EACH	621 RPM, 2-WAY YELLOW/RED EACH	621 RPM, 2-WAY WHITE/RED EACH	621 RPM, 2-WAY YELLOW/YELLOW EACH	621 SPACING	621 RAISED PAVEMENT MARKER REMOVED EACH	644 EDGE LINE, 4", WHITE FT	644 EDGE LINE, 4", YELLOW FT	644 EDGE LINE, 6", WHITE FT	644 EDGE LINE, 6", YELLOW FT	644 LANE LINE, 4" FT	644 LANE LINE, 6" FT	644 CENTER LINE, 4", SOLID DOUBLE YELLOW FT	644 CHANNELIZING LINE, 8" FT	644 CHANNELIZING LINE, 12" FT	644 STOP LINE, 24", WHITE FT	644 CROSSWALK LINE FT	644 TRANSVERSE/DIAGONAL LINE, WHITE FT	644 TRANSVERSE/DIAGONAL LINE, YELLOW FT
117	MLK JR. DRIVE	9+00	11+24	LT											224								
117	MLK JR. DRIVE	9+00	10+96	CL													196						
117	MLK JR. DRIVE	9+00	10+96	RT													196						
117	MLK JR. DRIVE	9+00	11+20	RT																			180
117	MLK JR. DRIVE	9+00	11+20	RT																			
117	MLK JR. DRIVE	9+00	9+94	RT														94					
117	MLK JR. DRIVE	9+94	11+20	RT							126												
117	MLK JR. DRIVE	11+04	100+45	LT/RT																			
117	MLK JR. DRIVE	11+20	11+20	RT																12			
117	IR-90/SR-2 WB ENTRANCE RAMP	9+00	1+50	RT									137										
117	IR-90/SR-2 WB ENTRANCE RAMP	0+88	1+50	LT		2			80	2				64									
117	LAKESHORE BLVD	11+73	12+33	LT								60											
117	LAKESHORE BLVD	11+73	11+87	LT/RT								28											
117	LAKESHORE BLVD	11+86	11+93	LT/RT																			
117	LAKESHORE BLVD	11+87	12+36	RT								49											
117	LAKESHORE BLVD	11+76	13+67	RT							186												
117	LAKESHORE BLVD	11+93	11+93	LT																	17		
117	LAKESHORE BLVD	11+93	12+02	RT																	27		
117	LAKESHORE BLVD	12+02	12+03	LT																	17		
117	LAKESHORE BLVD	12+05	12+15	RT																	23		
117	LAKESHORE BLVD	12+07	12+09	LT																12			
117	LAKESHORE BLVD	12+22	12+36	RT																			
117	LAKESHORE BLVD	12+33	14+25	CL													192						
117	LAKESHORE BLVD	12+36	13+24	RT													88						
117	LAKESHORE BLVD	12+33	14+25	RT																			38
117	IR-90/SR-2 WB EXIT RAMP	100+26	100+90	LT																		81	
117	IR-90/SR-2 WB EXIT RAMP	100+45	100+45	LT/RT																25			
117	IR-90/SR-2 WB EXIT RAMP	100+45	102+00	CL									155										
117	IR-90/SR-2 WB EXIT RAMP	100+45	102+00	RT															155				
117	IR-90/SR-2 WB EXIT RAMP	100+45	102+00	RT		3			80	2				155									
117	IR-90/SR-2 WB EXIT RAMP	100+60		RT																			
117	IR-90/SR-2 WB EXIT RAMP	100+60		RT																			
117	IR-90/SR-2 WB EXIT RAMP	101+26		RT																			
117	IR-90/SR-2 WB EXIT RAMP	101+26		RT																			
117	IR-90/SR-2 WB EXIT RAMP	101+92		RT																			
117	IR-90/SR-2 WB EXIT RAMP	101+92		RT																			
118	IR-90/SR-2 WB EXIT RAMP	102+00	106+00	CL									400										
118	IR-90/SR-2 WB EXIT RAMP	102+00	106+00	RT															400				
118	IR-90/SR-2 WB EXIT RAMP	102+00	106+00	RT		5			80	4				400									
118	IR-90/SR-2 WB EXIT RAMP	102+58		RT																			
118	IR-90/SR-2 WB EXIT RAMP	102+58		RT																			
118	IR-90/SR-2 WB EXIT RAMP	103+27		RT																			
118	IR-90/SR-2 WB EXIT RAMP	103+27		RT																			
118	IR-90/SR-2 WB EXIT RAMP	103+96		RT																			
118	IR-90/SR-2 WB EXIT RAMP	103+96		RT																			
119	IR-90/SR-2 WB EXIT RAMP	106+00	107+35	CL									135										
119	IR-90/SR-2 WB EXIT RAMP	106+00	106+65	RT															65				
119	IR-90/SR-2 WB EXIT RAMP	106+00	107+35	RT		2			80	2				135									
119	IR-90/SR-2 WB EXIT RAMP	106+57		RT																			
119	IR-90/SR-2 WB EXIT RAMP	106+57		RT																			
SUBTOTALS THIS SHEET					0	12	0	0		10	312	137	827	754	224	0	672	94	620	49	84	81	218
SUBTOTALS THIS SHEET					12					10	0.09 MI		0.30 MI		0.04 MI	0.00 MI	0.13 MI	94	620	49	84	299	
CARRIED FROM SHEET 104					0					0	0.60 MI		0.00 MI		0.22 MI	0.00 MI	0.41 MI	562	0	102	328	560	
CARRIED FROM SHEET 106					16					5	0.01 MI		0.50 MI		0.00 MI	0.04 MI	0.03 MI	231	399	115	205	87	
TOTALS CARRIED TO GENERAL SUMMARY					28					15	0.70 MI		0.80 MI		0.26 MI	0.04 MI	0.57 MI	887	1019	266	617	946	

CALCULATED JML
CHECKED JTS

PAVEMENT MARKING SUBSUMMARY

CUY-90-21.02

SHEET NO.	LOCATION	STATION FROM	STATION TO	SIDE	644 ISLAND MARKING SF	LANE ARROW EACH	DOTTED LINE, 4" FT	DOTTED LINE, 6" FT	DOTTED LINE, 8" FT	REMOVAL OF PAVEMENT MARKING EACH	REMOVAL OF PAVEMENT MARKING MILE												
117	MLK JR. DRIVE	9+00	11+24	LT																			
117	MLK JR. DRIVE	9+00	10+96	CL																			
117	MLK JR. DRIVE	9+00	10+96	RT																			
117	MLK JR. DRIVE	9+00	11+20	RT																			
117	MLK JR. DRIVE	9+00	11+20	RT	211																		
117	MLK JR. DRIVE	9+00	9+94	RT																			
117	MLK JR. DRIVE	9+94	11+20	RT																			
117	MLK JR. DRIVE	11+04	100+45	LT/RT			90																
117	MLK JR. DRIVE	11+20	11+20	RT																			
117	IR-90/SR-2 WB ENTRANCE RAMP	9+00	1+50	RT																			
117	IR-90/SR-2 WB ENTRANCE RAMP	0+88	1+50	LT																			
117	LAKESHORE BLVD	11+73	12+33	LT																			
117	LAKESHORE BLVD	11+73	11+87	LT/RT																			
117	LAKESHORE BLVD	11+86	11+93	LT/RT	69																		
117	LAKESHORE BLVD	11+87	12+36	RT																			
117	LAKESHORE BLVD	11+76	13+67	RT																			
117	LAKESHORE BLVD	11+93	11+93	LT																			
117	LAKESHORE BLVD	11+93	12+02	RT																			
117	LAKESHORE BLVD	12+02	12+03	LT																			
117	LAKESHORE BLVD	12+05	12+15	RT																			
117	LAKESHORE BLVD	12+07	12+09	LT																			
117	LAKESHORE BLVD	12+22	12+36	RT	50																		
117	LAKESHORE BLVD	12+33	14+25	CL																			
117	LAKESHORE BLVD	12+36	13+24	RT																			
117	LAKESHORE BLVD	12+33	14+25	RT																			
117	IR-90/SR-2 WB EXIT RAMP	100+26	100+90	LT																			
117	IR-90/SR-2 WB EXIT RAMP	100+45	100+45	LT/RT																			
117	IR-90/SR-2 WB EXIT RAMP	100+45	102+00	CL																			
117	IR-90/SR-2 WB EXIT RAMP	100+45	102+00	RT																			
117	IR-90/SR-2 WB EXIT RAMP	100+45	102+00	RT																			
117	IR-90/SR-2 WB EXIT RAMP	100+60		RT		1																	
117	IR-90/SR-2 WB EXIT RAMP	100+60		RT		1																	
117	IR-90/SR-2 WB EXIT RAMP	101+26		RT		1																	
117	IR-90/SR-2 WB EXIT RAMP	101+26		RT		1																	
117	IR-90/SR-2 WB EXIT RAMP	101+92		RT		1																	
117	IR-90/SR-2 WB EXIT RAMP	101+92		RT		1																	
118	IR-90/SR-2 WB EXIT RAMP	102+00	106+00	CL																			
118	IR-90/SR-2 WB EXIT RAMP	102+00	106+00	RT																			
118	IR-90/SR-2 WB EXIT RAMP	102+00	106+00	RT																			
118	IR-90/SR-2 WB EXIT RAMP	102+58		RT		1																	
118	IR-90/SR-2 WB EXIT RAMP	102+58		RT		1																	
118	IR-90/SR-2 WB EXIT RAMP	103+27		RT		1																	
118	IR-90/SR-2 WB EXIT RAMP	103+27		RT		1																	
118	IR-90/SR-2 WB EXIT RAMP	103+96		RT		1																	
118	IR-90/SR-2 WB EXIT RAMP	103+96		RT		1																	
119	IR-90/SR-2 WB EXIT RAMP	106+00	107+35	CL																			
119	IR-90/SR-2 WB EXIT RAMP	106+00	106+65	RT																			
119	IR-90/SR-2 WB EXIT RAMP	106+00	107+35	RT																			
119	IR-90/SR-2 WB EXIT RAMP	106+57		RT		1																	
119	IR-90/SR-2 WB EXIT RAMP	106+57		RT		1																	
SUBTOTALS THIS SHEET					330	14	90	0	0	0	0.00												
CARRIED FROM SHEET 105					0	9	55	0	350	7	0.98												
CARRIED FROM SHEET 107					134	12	0	262	266	0	0.00												
TOTALS CARRIED TO GENERAL SUMMARY					464	35	145	262	616	7	0.98												

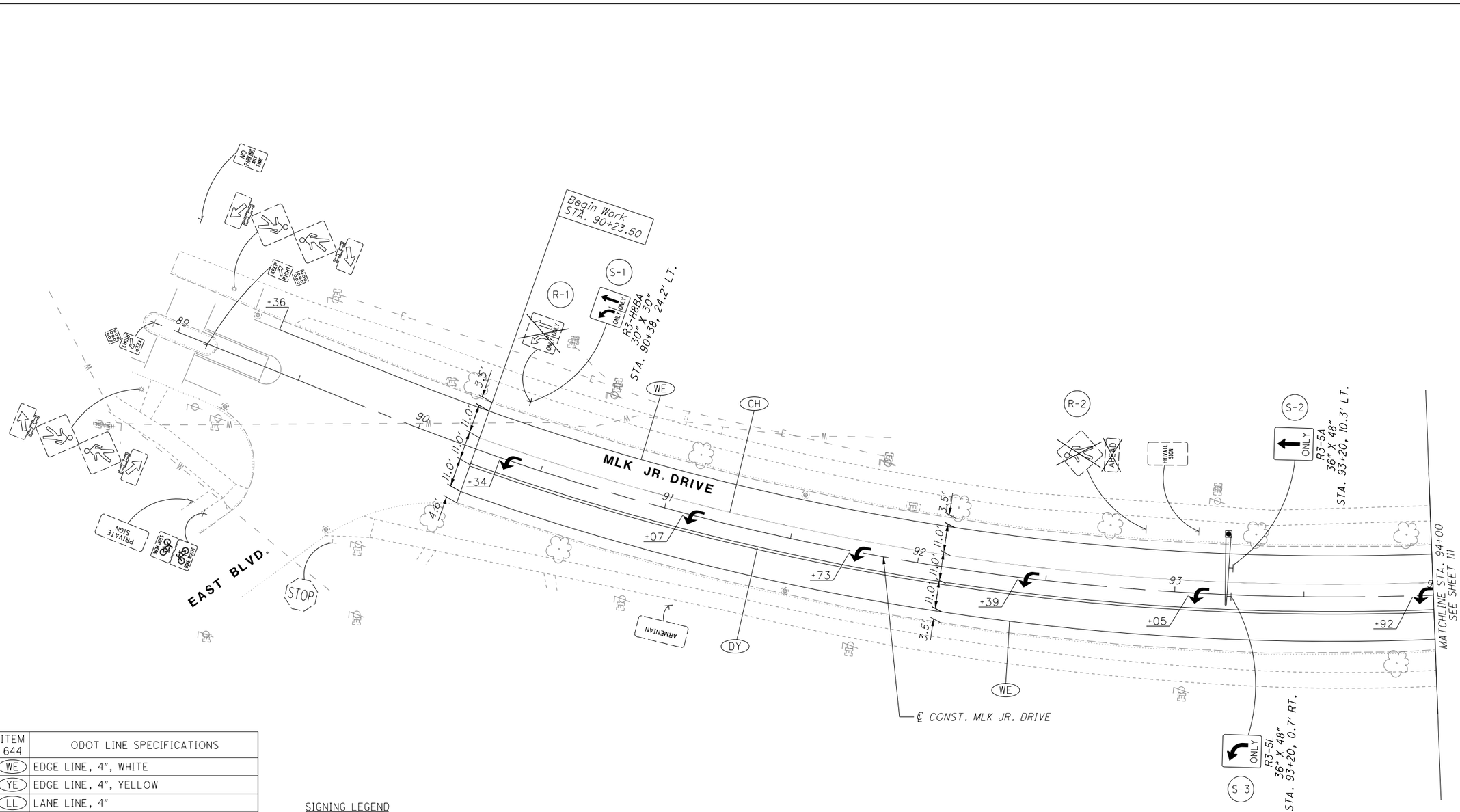
CALCULATED JML
CHECKED JTS

PAVEMENT MARKING SUBSUMMARY

CUY-90-21.02

109
153

C:\Dropbox\Project Files\TRC\CUY-90\cadd\sheets\103821_ts100.dgn



ITEM 644	ODOT LINE SPECIFICATIONS
WE	EDGE LINE, 4", WHITE
YE	EDGE LINE, 4", YELLOW
LL	LANE LINE, 4"
DY	CENTER LINE, 4", SOLID DOUBLE YELLOW
CH	CHANNELIZING LINE, 8"
SL	STOP LINE, 24", WHITE
XW	CROSSWALK LINE
TW	TRANSVERSE/DIAGONAL LINE, WHITE
TY	TRANSVERSE/DIAGONAL LINE, YELLOW
IY	ISLAND MARKING, YELLOW
WD	DOTTED LINE, 4", WHITE
WE	EDGE LINE, 6", WHITE
YE	EDGE LINE, 6", YELLOW
LL	LANE LINE, 6"
CH	CHANNELIZING LINE, 12"
WD6	DOTTED LINE, 6", WHITE
WD8	DOTTED LINE, 8", WHITE

SIGNING LEGEND

- PROPOSED SIGN
- EXISTING SIGN TO REMAIN
- EXISTING SIGN TO BE REMOVED
- EXISTING SIGN TO BE REMOVED AND REERECTED
- (S-#) PROPOSED SIGN
- (R-#) SIGN REMOVAL
- (E-#) SIGN REERECTION

NOTES

1. ALL EXISTING PAVEMENT MARKINGS IN WORK AREA SHALL BE REMOVED.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JML
CHECKED JTS

TRAFFIC CONTROL
MLK JR. DRIVE STA. BEGIN TO STA. 94+00

CUY-90-21.02

NOTES

1. ALL EXISTING PAVEMENT MARKINGS IN WORK AREA SHALL BE REMOVED.
2. SEE SHEET 110 FOR LEGEND.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JML
CHECKED JTS

TRAFFIC CONTROL
MLK JR. DRIVE STA. 94+00 TO STA. 99+25

CUY-90-21.02

111
153

10/1/2018 9:28:33 AM
C:\Dropbox\Project Files\TRC\CUY-90\cadd\sheets\103821_TP002.dgn

NOTES

1. ALL EXISTING PAVEMENT MARKINGS IN WORK AREA SHALL BE REMOVED.
2. SEE SHEET 110 FOR LEGEND.

HORIZONTAL SCALE IN FEET
0 10 20 40

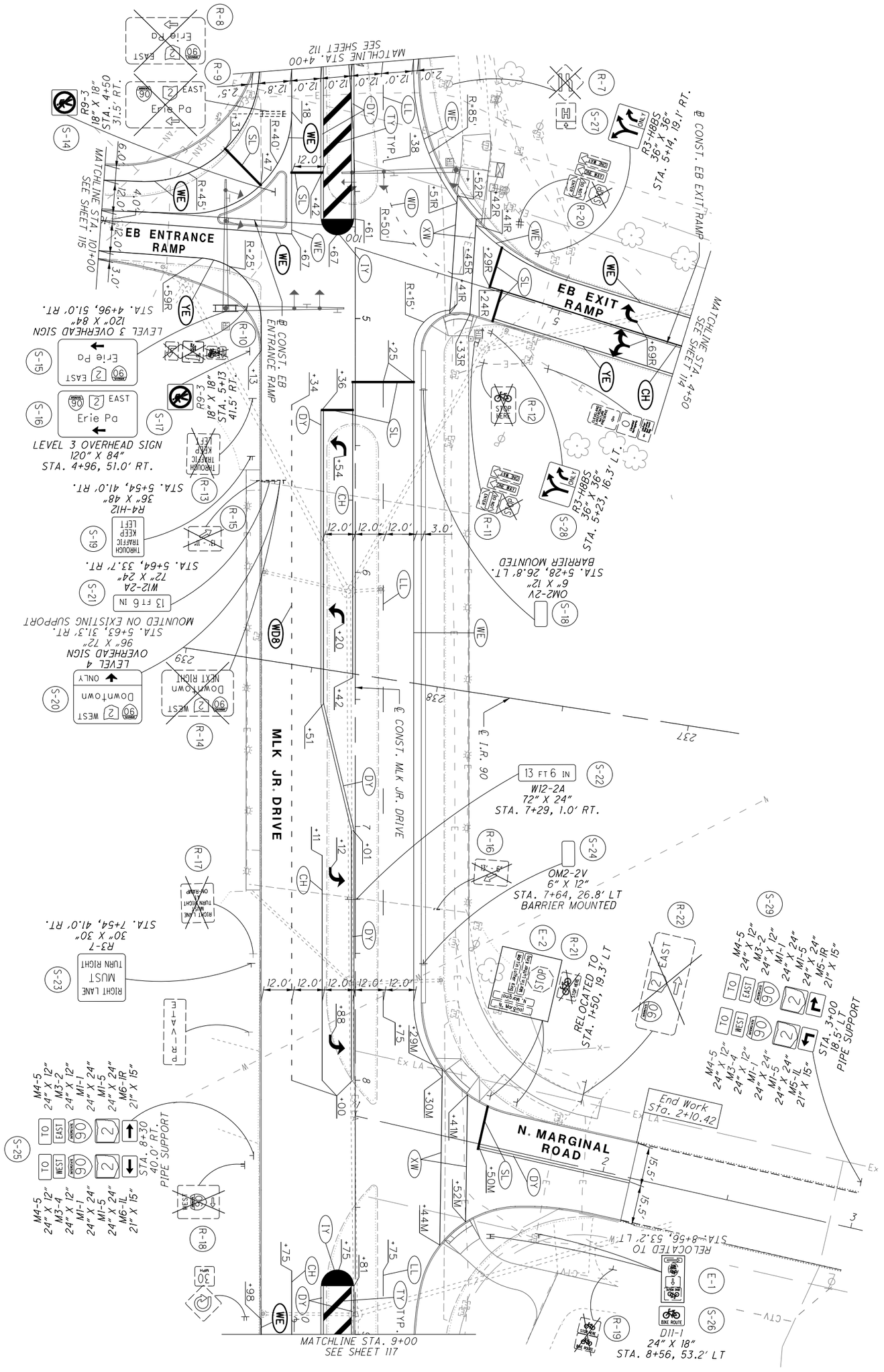
CALCULATED JML
CHECKED JTS

TRAFFIC CONTROL
MLK JR. DRIVE STA. 99+25 TO STA. 4+00

CUY-90-21.02

C:\Dropbox\Project Files\TRC\CUY-90\cadd\sheets\103821_TP003.dgn 9/5/2018 9:09:58 AM

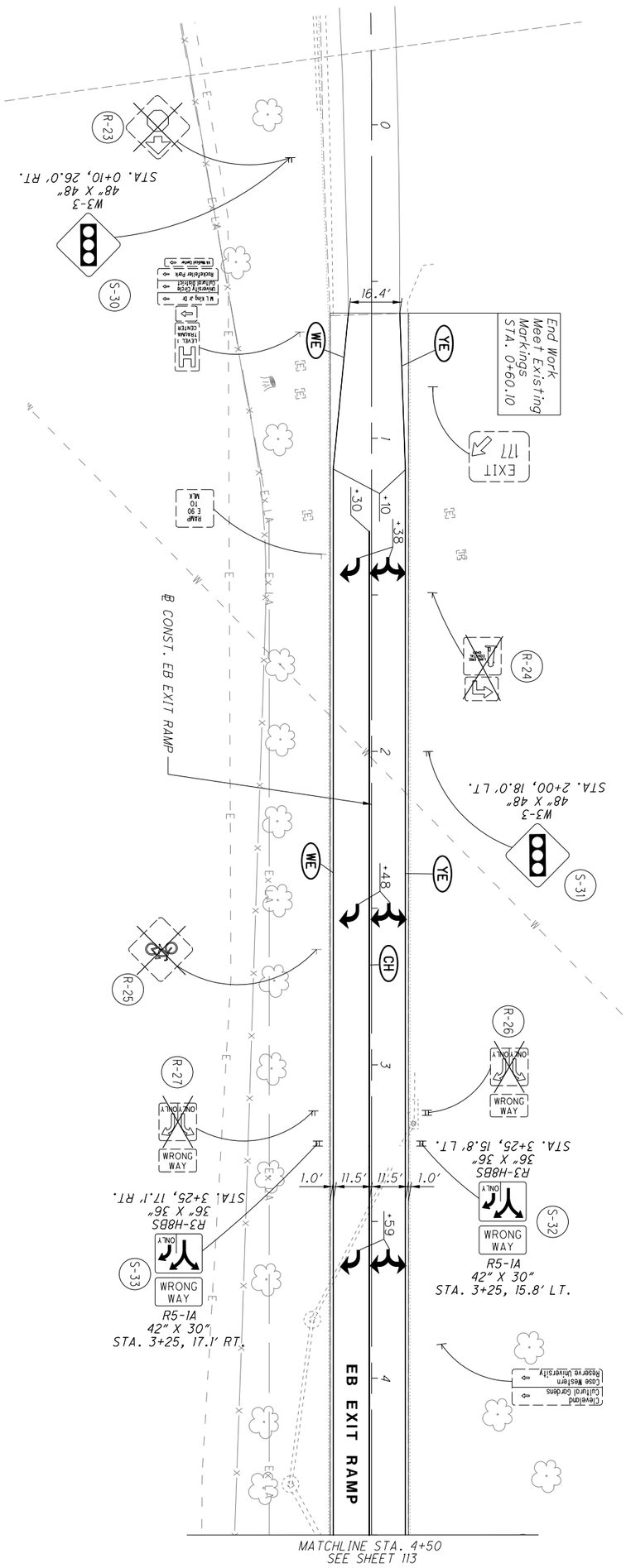
C:\Dropbox\Project Files\TRC\CUY-90\cadd\sheets\103821_TP004.dgn 10/1/2018 9:41:08 AM



NOTES

1. ALL EXISTING PAVEMENT MARKINGS IN WORK AREA SHALL BE REMOVED.
2. SEE SHEET 110 FOR LEGEND.
3. SEE SIGNAL SHEET 132 FOR MAST ARM SIGNS.
4. +XX R = STATIONING MEASURED ALONG RAMP.
5. +XX M = STATIONING MEASURED ALONG MARGINAL.
6. BARRIER MOUNTED SIGNS WILL BE ON TOP OF BARRIER USING SIGN POST.

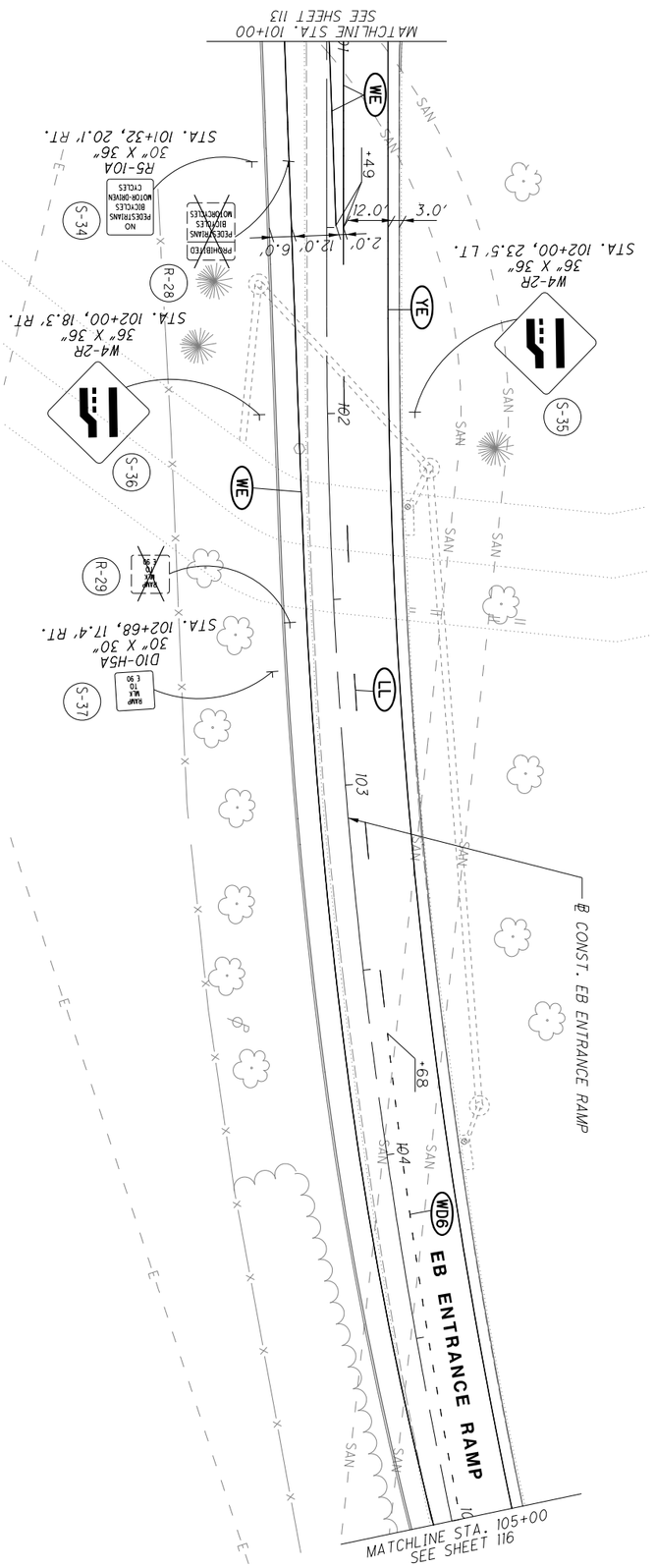
113 / 153	CUY-90-21.02	TRAFFIC CONTROL MLK JR. DRIVE STA. 4+00 TO STA. 9+00	CALCULATED JML CHECKED JTS	0 10 20 40 HORIZONTAL SCALE IN FEET



NOTES

1. ALL EXISTING PAVEMENT MARKINGS IN WORK AREA SHALL BE REMOVED.
2. SEE SHEET 110 FOR LEGEND.

114 / 153	CUY-90-21.02	TRAFFIC CONTROL EB EXIT RAMP BEGIN TO STA. 4+50	CALCULATED JML CHECKED JTS	0 20 10 40 HORIZONTAL SCALE IN FEET



NOTES

1. ALL EXISTING PAVEMENT MARKINGS IN WORK AREA SHALL BE REMOVED.
2. SEE SHEET 110 FOR LEGEND.

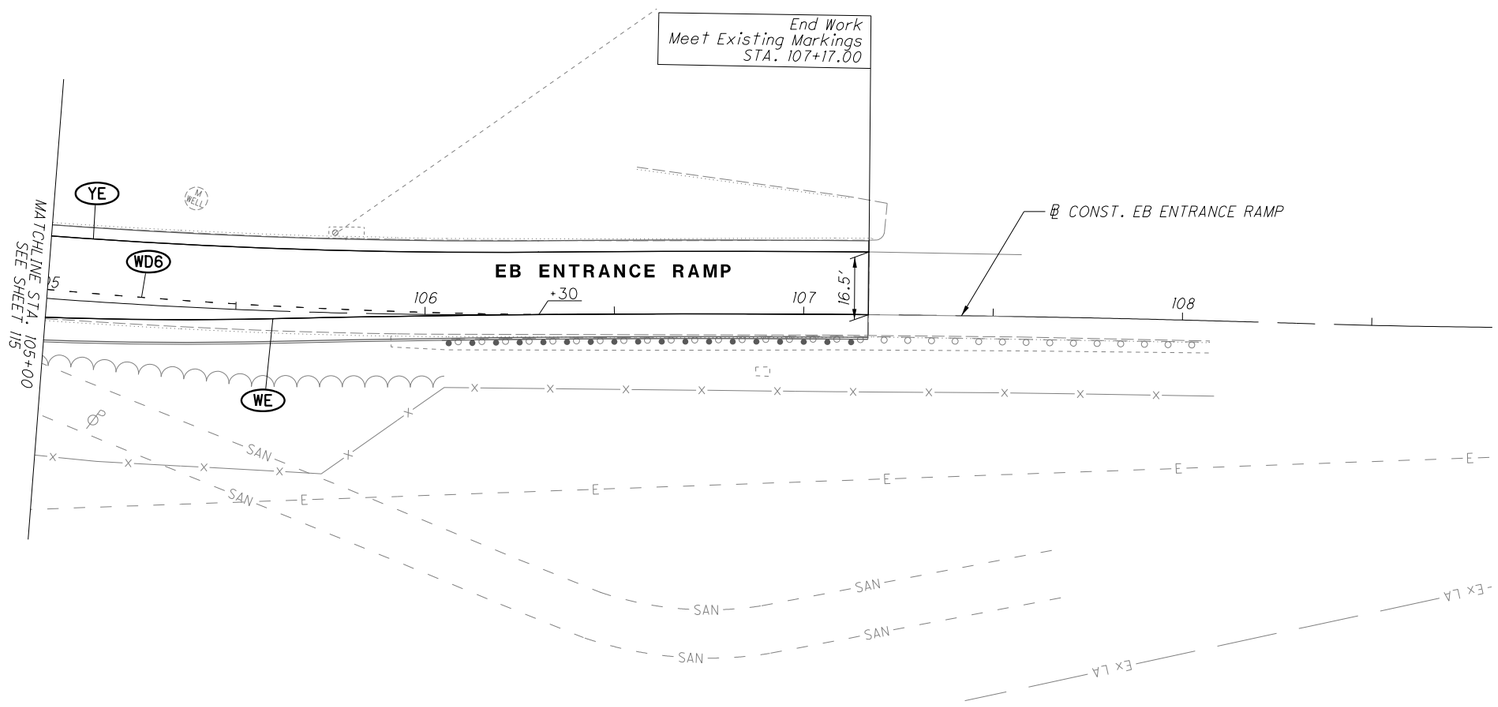
CUY-90-21.02

TRAFFIC CONTROL
EB ENTRANCE RAMP STA. 101+00 TO STA. 105+00

CALCULATED JML
CHECKED JTS

0 10 20 40
HORIZONTAL SCALE IN FEET

N



NOTES

1. ALL EXISTING PAVEMENT MARKINGS IN WORK AREA SHALL BE REMOVED.
2. SEE SHEET 110 FOR LEGEND.

N

0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED JML
CHECKED JTS

TRAFFIC CONTROL
EB ENTRANCE RAMP STA. 105+00 TO END

CUY-90-21.02

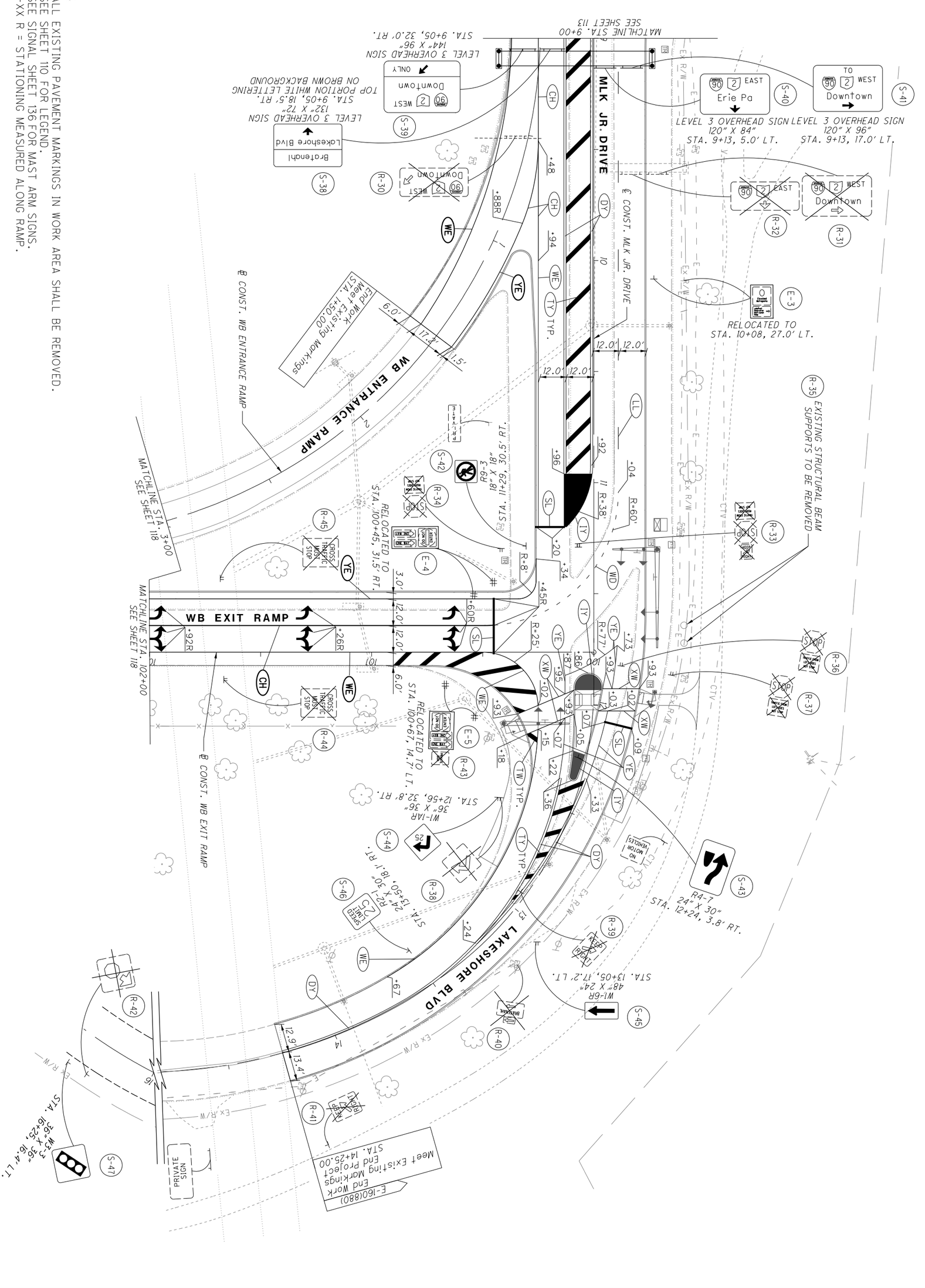
116
153

8/28/2018 3:45:42 PM
C:\Dropbox\Project Files\TRC\CUY-90\cadd\sheets\103821_TP007.dgn

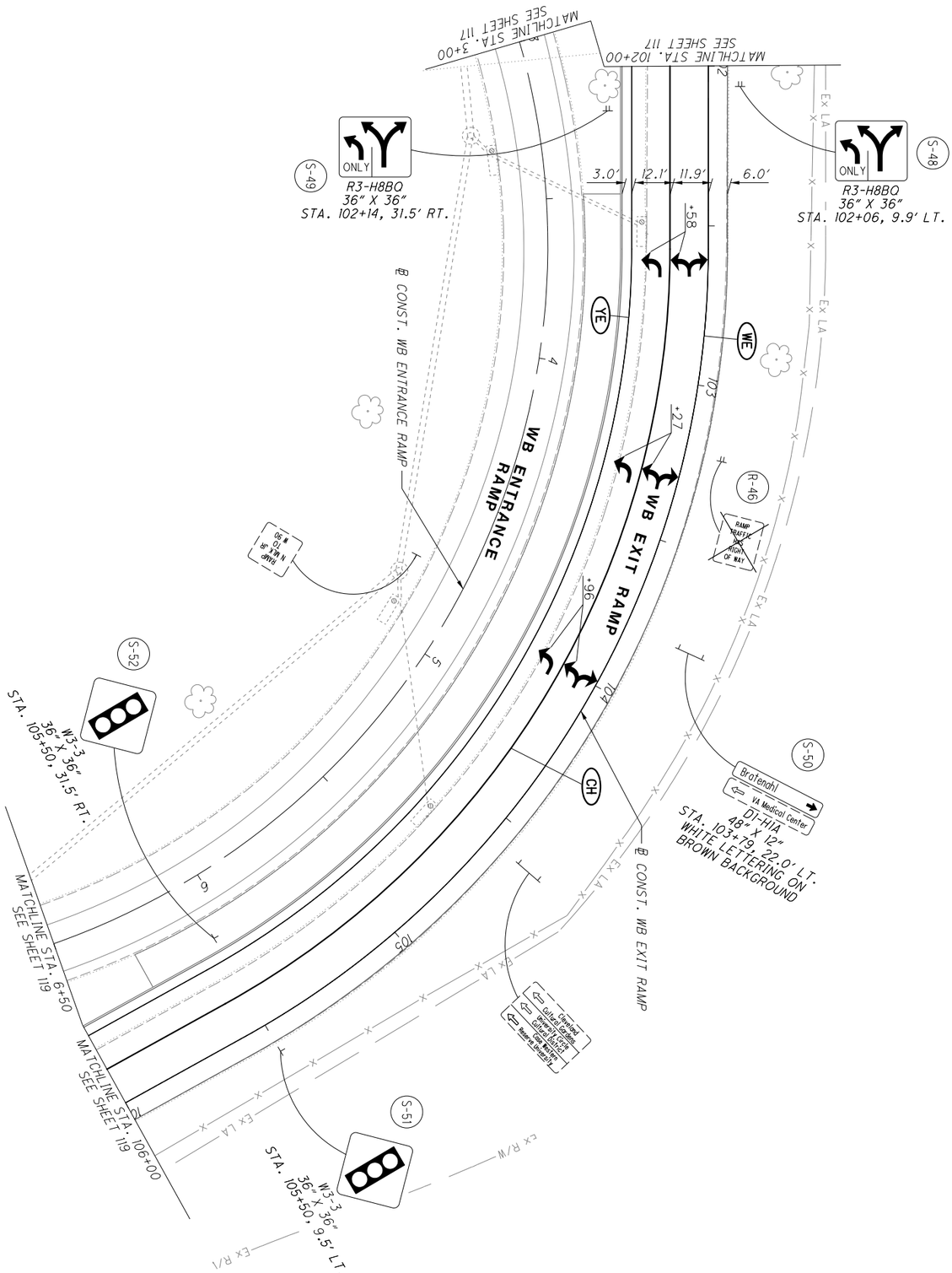
C:\Dropbox\Project Files\TRC\CUY-90\cadd\sheets\103821_TP008.dgn 9/5/2018 10:13:10 AM

NOTES

1. ALL EXISTING PAVEMENT MARKINGS IN WORK AREA SHALL BE REMOVED.
2. SEE SHEET 110 FOR LEGEND.
3. SEE SIGNAL SHEET 136 FOR MAST ARM SIGNS.
4. +XX R = STATIONING MEASURED ALONG RAMP.



117 / 153	CUY-90-21.02	TRAFFIC CONTROL MLK JR. DRIVE STA. 9+00 TO END	CALCULATED JML CHECKED JTS	0 10 20 40 HORIZONTAL SCALE IN FEET



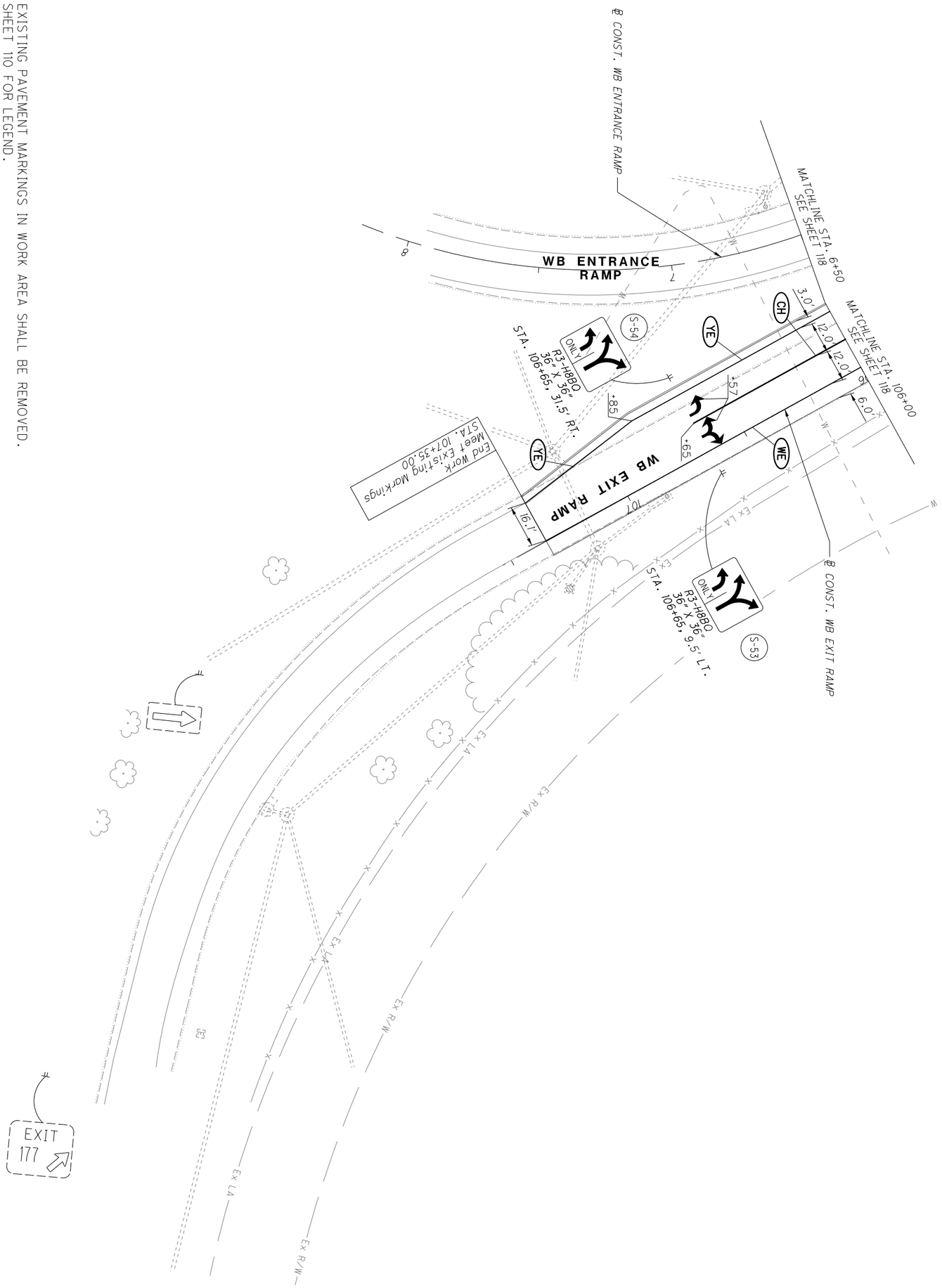
NOTES

1. ALL EXISTING PAVEMENT MARKINGS IN WORK AREA SHALL BE REMOVED.
2. SEE SHEET 110 FOR LEGEND.

118 / 153	CUY-90-21.02	TRAFFIC CONTROL WB EXIT RAMP STA. 102+00 TO 106+00	CALCULATED JML CHECKED JTS	0 10 20 40 HORIZONTAL SCALE IN FEET

NOTES

1. ALL EXISTING PAVEMENT MARKINGS IN WORK AREA SHALL BE REMOVED.
2. SEE SHEET 110 FOR LEGEND.



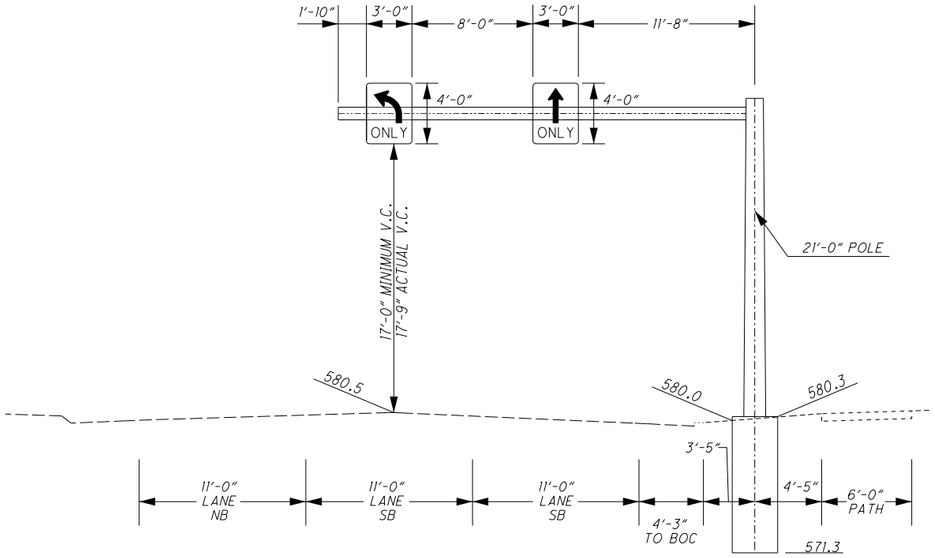
CUY-90-21.02

TRAFFIC CONTROL
WB EXIT RAMP STA. 106+00 TO END

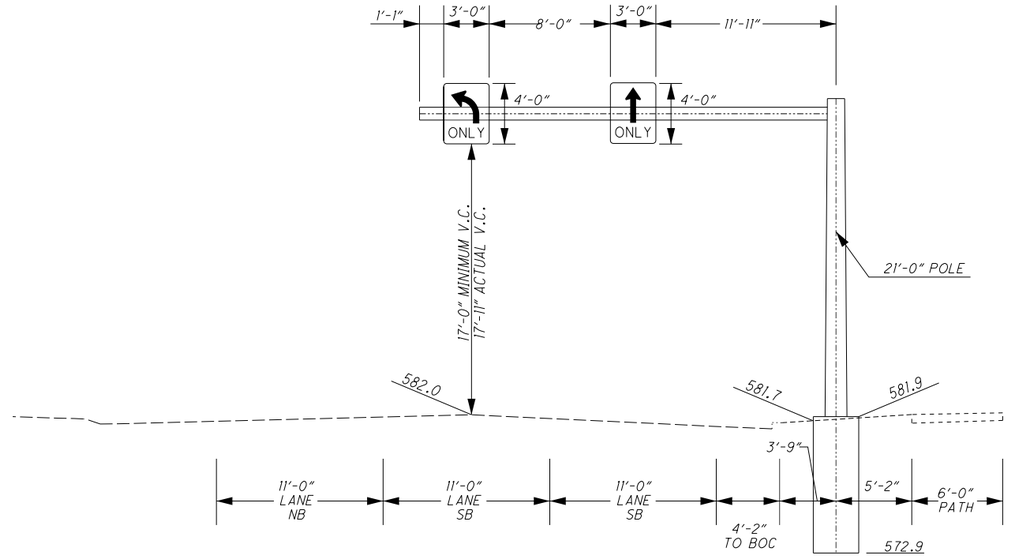
CALCULATED JML
CHECKED JTS

0 10 20 40
HORIZONTAL SCALE IN FEET

N



CANTILEVER NO. 1
STA. 93+20 SOUTHBOUND MLK JR. DRIVE
TYPE TC-16.21, DESIGN NO. 6
27' ARM



CANTILEVER NO. 2
STA. 95+80 SOUTHBOUND MLK JR. DRIVE
TYPE TC-16.21, DESIGN NO. 6
27' ARM

NOTES
1. CONTRACTOR SHALL ENSURE SIGNS ARE PROPER HEIGHT ABOVE PAVEMENT PER TEM 240-4.

HORIZONTAL SCALE IN FEET
0 10 20 40

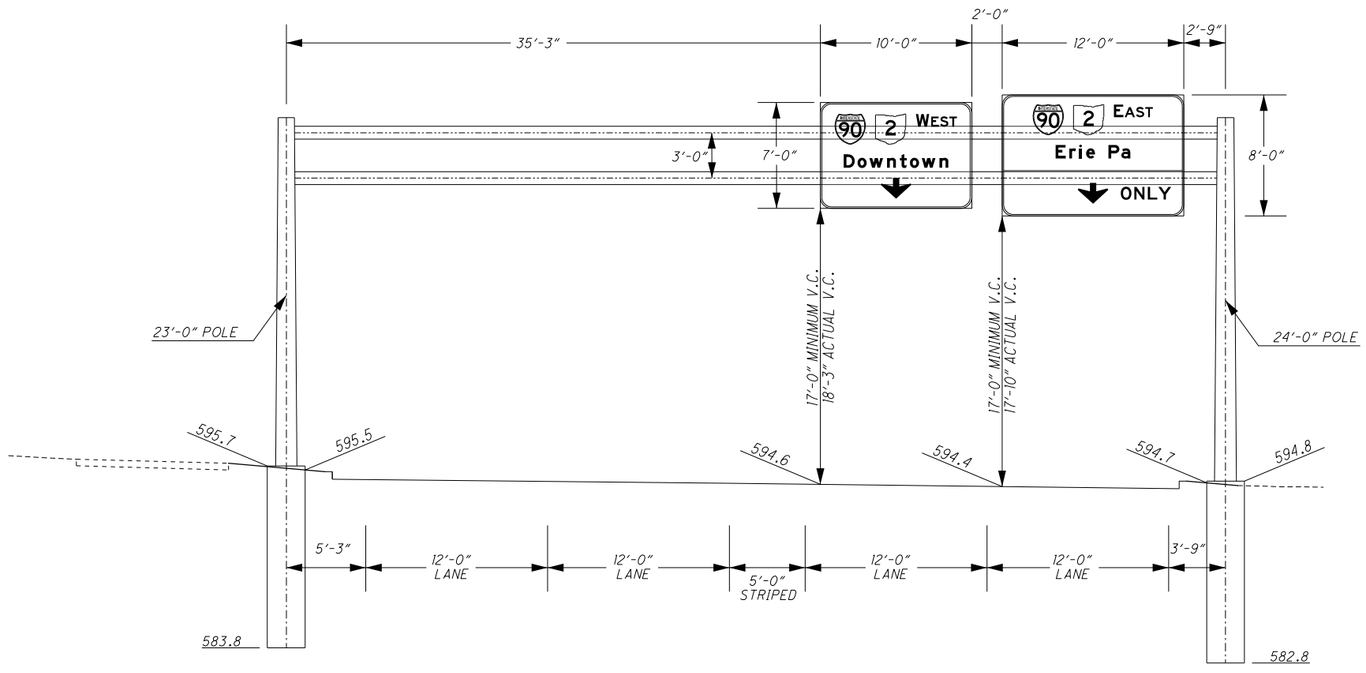
CALCULATED JML
CHECKED JTS

SIGN ELEVATION DETAILS

CUY-90-21.02

NOTES

1. CONTRACTOR SHALL ENSURE SIGNS ARE PROPER HEIGHT ABOVE PAVEMENT PER TEM 240-4.



TRUSS NO. 1
STA. 2+79 NORTHBOUND MLK JR. DRIVE
TYPE TC-7.65, DESIGN NO. 6
62' SPAN

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JML
CHECKED JTS

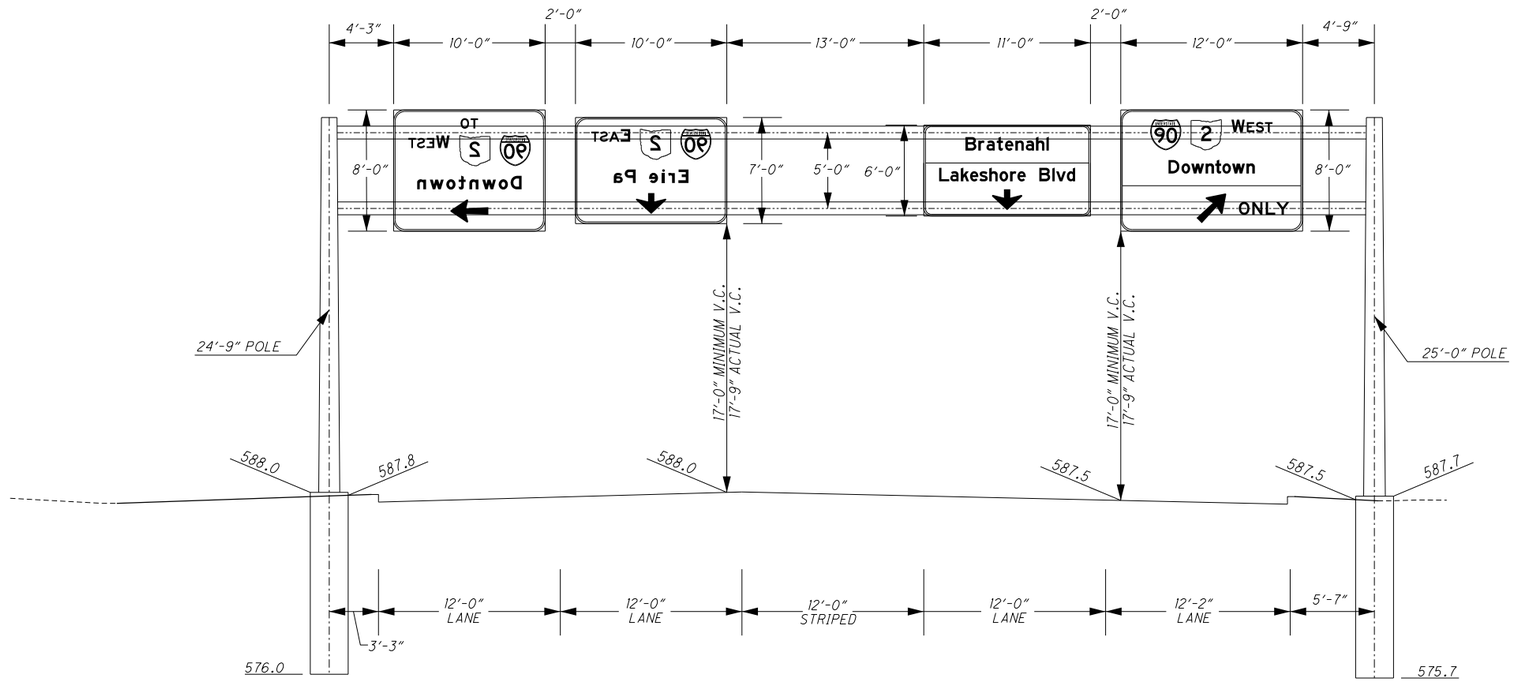
SIGN ELEVATION DETAILS

CUY-90-21.02

NOTES

1. CONTRACTOR SHALL ENSURE SIGNS ARE PROPER HEIGHT ABOVE PAVEMENT PER TEM 240-4.

SIGNS FACING SOUTHBOUND



TRUSS NO. 2
STA. 9+09 NORTHBOUND MLK JR. DRIVE
TYPE TC-7.65, DESIGN NO. 8
69' SPAN

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JML
CHECKED JTS

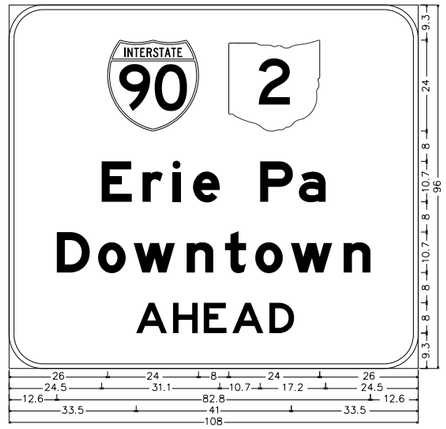
SIGN ELEVATION DETAILS

CUY-90-21.02

122
153

C:\Dropbox\Project Files\TRC\CUY-90\cadd\sheets\103821_TE003.dgn 7/9/2018 9:52:02 AM

SIGN DETAIL
NTS



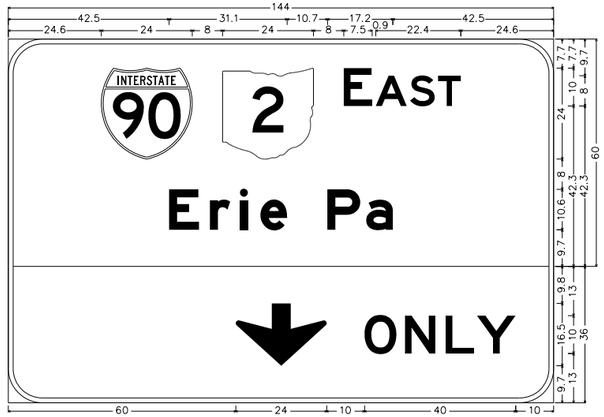
SIGN NUMBER	S-11
WIDTH x HGHT.	9'-0" x 8'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: Prismatic
	COLOR: Green
LEGEND/BORDER	TYPE: Prismatic
	COLOR: White

SYMBOL	ROT	X	Y	WID	HT
M1-1	0	26.0	62.7	24.0	24.0
M1-H5	0	58.0	62.7	24.0	24.0

Dimensions are in inches, letter locations are panel edge to lower left corner

LETTER POSITIONS (X)																			LENGTH	SERIES/SIZE
E	r	i	e	P	a															HIGHWAY E MOD 2K
24.5	35.2	43.1	48.6	66.3	76.5														59.0	10.67
D	o	w	n	t	o	w	n													HIGHWAY E MOD 2K
12.6	23.5	32.9	46.9	57.0	65.0	74.4	88.3												82.8	10.67
A	H	E	A	D																HIGHWAY E 2K
33.5	43.0	51.6	58.5	68.0															41.0	8.0

SIGN DETAIL
NTS



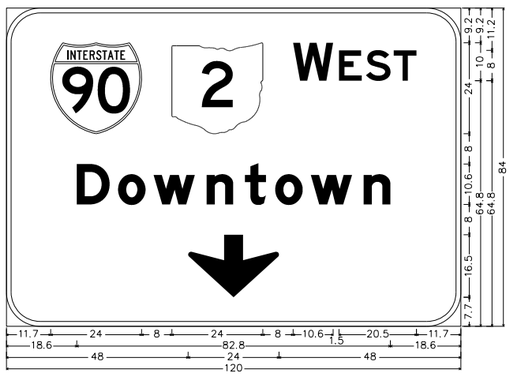
SIGN NUMBER	S-12
WIDTH x HGHT.	12'-0" x 8'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: Prismatic
	COLOR: Green, Yellow
LEGEND/BORDER	TYPE: Prismatic
	COLOR: White, Black

SYMBOL	ROT	X	Y	WID	HT
M1-1	0	24.6	64.3	24.0	24.0
M1-H5	0	56.6	64.3	24.0	24.0
DWN C ARR	270	60.0	9.7	24.0	16.5

Dimensions are in inches, letter locations are panel edge to lower left corner

LETTER POSITIONS (X)																			LENGTH	SERIES/SIZE
E	A	S	T																	HIGHWAY E 2K
88.6	97.0	106.1	113.4																30.8	10.0
E	r	i	e	P	a															HIGHWAY E MOD 2K
42.5	53.2	61.1	66.6	84.3	94.5														59.0	10.6
O	N	L	Y																	HIGHWAY E 2K
94.0	104.7	115.5	123.8																40.0	10.0

SIGN DETAIL
NTS



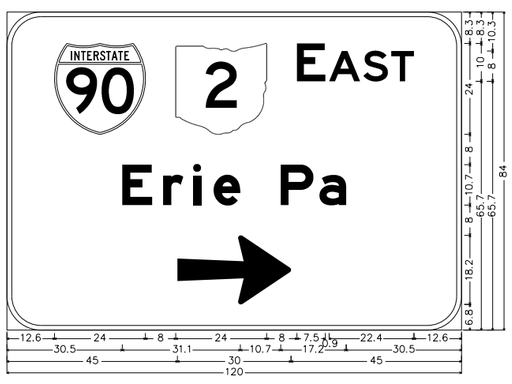
SIGN NUMBER	S-13
WIDTH x HGHT.	10'-0" x 7'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: Prismatic
	COLOR: Green
LEGEND/BORDER	TYPE: Prismatic
	COLOR: White

SYMBOL	ROT	X	Y	WID	HT
M1-1	0	11.7	50.8	24.0	24.0
M1-H5	0	43.7	50.8	24.0	24.0
DWN C ARR	270	48.0	7.7	24.0	16.5

Dimensions are in inches, letter locations are panel edge to lower left corner

LETTER POSITIONS (X)																			LENGTH	SERIES/SIZE
W	E	S	T																	HIGHWAY E 2K
75.7	87.8	94.9	102.3																32.6	10.0
D	o	w	n	t	o	w	n													HIGHWAY E MOD 2K
18.6	29.5	38.9	52.9	63.0	71.0	80.4	94.3												82.8	10.6

SIGN DETAIL
NTS



SIGN NUMBER	S-15
WIDTH x HGHT.	10'-0" x 7'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: Prismatic
	COLOR: Green
LEGEND/BORDER	TYPE: Prismatic
	COLOR: White

SYMBOL	ROT	X	Y	WID	HT
M1-1	0	12.6	51.7	24.0	24.0
M1-H5	0	44.6	51.7	24.0	24.0
RT A ARR	0	45.0	6.8	30.0	18.2

Dimensions are in inches, letter locations are panel edge to lower left corner

LETTER POSITIONS (X)																			LENGTH	SERIES/SIZE
E	A	S	T																	HIGHWAY E 2K
76.6	85.0	94.1	101.4																30.8	10.0
E	r	i	e	P	a															HIGHWAY E MOD 2K
30.5	41.2	49.1	54.6	72.3	82.5														59.0	10.67

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JML
CHECKED JTS

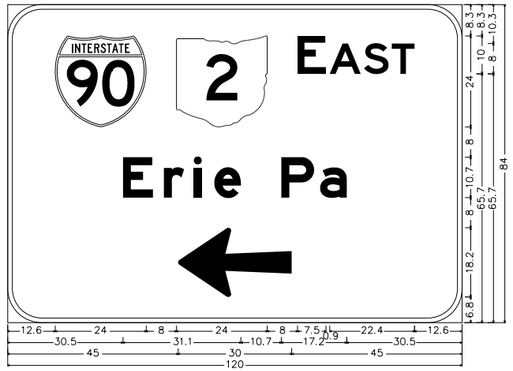
SIGN FABRICATION DETAILS

CUY-90-21.02

123
153

8/29/2018 7:43:37 AM
C:\Dropbox\Project Files\TRC\CUY-90\cadd\sheets\103821_TD001.dgn

SIGN DETAIL
NTS



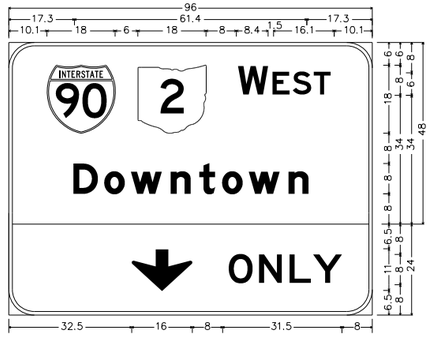
SIGN NUMBER	S-16
WIDTH x HGHT.	10'-0" x 7'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: Prismatic
	COLOR: Green
LEGEND/BORDER	TYPE: Prismatic
	COLOR: White

SYMBOL	ROT	X	Y	WID	HT
M1-1	0	12.6	51.7	24.0	24.0
M1-H5	0	44.6	51.7	24.0	24.0
LT A ARR	180	45.0	6.8	30.0	18.2

Dimensions are in inches, letter locations are panel edge to lower left corner

LETTER POSITIONS (X)																			LENGTH	SERIES/SIZE
E	A	S	T																	HIGHWAY E 2K
76.6	85.0	94.1	101.4																30.8	10.0
E	r	i	e	P	a															HIGHWAY E MOD 2K
30.5	41.2	49.1	54.6	72.3	82.5														59.0	10.67

SIGN DETAIL
NTS



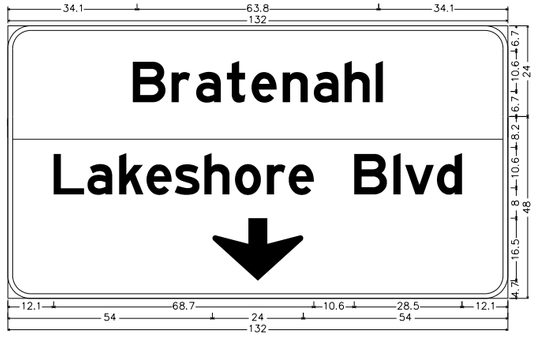
SIGN NUMBER	S-20
WIDTH x HGHT.	8'-0" x 6'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Overhead
BACKGROUND	TYPE: Prismatic
	COLOR: Green, Yellow
LEGEND/BORDER	TYPE: Prismatic
	COLOR: White, Black

SYMBOL	ROT	X	Y	WID	HT
M1-1	0	10.1	48.0	18.0	18.0
M1-H5	0	34.1	48.0	18.0	18.0
DWN C ARR	270	32.5	6.5	16.0	11.0

Dimensions are in inches, letter locations are panel edge to lower left corner

LETTER POSITIONS (X)																			LENGTH	SERIES/SIZE
W	E	S	T																	HIGHWAY E 2K
60.1	69.9	75.5	81.5																25.9	8.0
D	o	w	n	t	o	w	n													HIGHWAY E MOD 2K
17.3	25.8	32.7	43.0	50.4	56.3	63.3	73.5												61.4	8.0
O	N	L	Y																	HIGHWAY E 2K
56.5	65.1	73.6	80.0																31.6	8.0

SIGN DETAIL
NTS



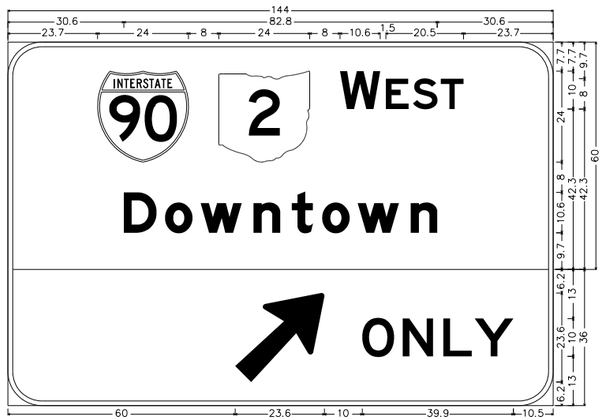
SIGN NUMBER	S-38
WIDTH x HGHT.	11'-0" x 6'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Overhead
BACKGROUND	TYPE: Prismatic
	COLOR: Brown, Green
LEGEND/BORDER	TYPE: Prismatic
	COLOR: White, White

SYMBOL	ROT	X	Y	WID	HT
DWN C ARR	270	54.0	4.7	24.0	16.5

Dimensions are in inches, letter locations are panel edge to lower left corner

LETTER POSITIONS (X)																			LENGTH	SERIES/SIZE
B	r	a	t	e	n	a	h	l												HIGHWAY E 2K
34.1	44.5	50.1	57.6	63.2	71.2	79.2	87.5	96.0											63.8	10.6
L	a	k	e	s	h	o	r	e	B	l	v	d								HIGHWAY E 2K
12.1	21.0	29.4	36.6	44.1	51.9	60.0	68.4	74.2	91.4	101.8	104.9	113.3							107.8	10.6

SIGN DETAIL
NTS



SIGN NUMBER	S-39
WIDTH x HGHT.	12'-0" x 8'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: Prismatic
	COLOR: Green, Yellow
LEGEND/BORDER	TYPE: Prismatic
	COLOR: White, Black

SYMBOL	ROT	X	Y	WID	HT
M1-1	0	23.7	64.3	24.0	24.0
M1-H5	0	55.7	64.3	24.0	24.0
UP/RT A	45	60.0	6.2	23.6	23.6

Dimensions are in inches, letter locations are panel edge to lower left corner

LETTER POSITIONS (X)																			LENGTH	SERIES/SIZE
W	E	S	T																	HIGHWAY E 2K
87.7	99.8	106.9	114.3																32.6	10.0
D	o	w	n	t	o	w	n													HIGHWAY E MOD 2K
30.6	41.5	50.9	64.9	75.0	83.0	92.4	106.3												82.8	10.67
O	N	L	Y																	HIGHWAY E 2K
93.6	104.3	115.0	123.3																39.9	10.0

HORIZONTAL SCALE IN FEET
0 10 20 40

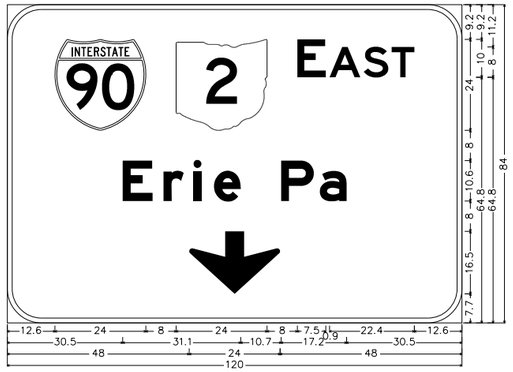
CALCULATED JML
CHECKED JTS

SIGN FABRICATION DETAILS

CUY-90-21.02

8/29/2018 7:46:57 AM
C:\Dropbox\Project Files\TRC\CUY-90\cadd\sheets\103821_TD002.dgn

SIGN DETAIL
NTS



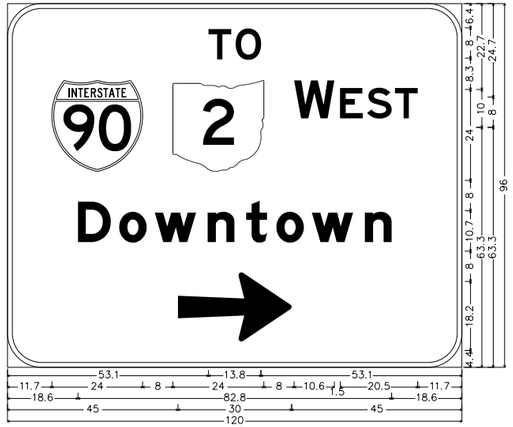
SIGN NUMBER	S-40
WIDTH x HGHT.	10'-0" x 7'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: Prismatic
	COLOR: Green
LEGEND/BORDER	TYPE: Prismatic
	COLOR: White

SYMBOL	ROT	X	Y	WID	HT
M1-1	0	12.6	50.8	24.0	24.0
M1-H5	0	44.6	50.8	24.0	24.0
DWN C ARR	270	48.0	7.7	24.0	16.5

Dimensions are in inches, letter locations are panel edge to lower left corner

LETTER POSITIONS (X)																			LENGTH	SERIES/SIZE
E	A	S	T																	HIGHWAY E 2K
76.6	85.0	94.1	101.4																30.8	10.0
E	r	i	e	P	a															HIGHWAY E MOD 2K
30.5	41.2	49.1	54.6	72.3	82.5														59.0	10.67

SIGN DETAIL
NTS



SIGN NUMBER	S-41
WIDTH x HGHT.	10'-0" x 8'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: Prismatic
	COLOR: Green
LEGEND/BORDER	TYPE: Prismatic
	COLOR: White

SYMBOL	ROT	X	Y	WID	HT
M1-1	0	11.7	49.3	24.0	24.0
M1-H5	0	43.7	49.3	24.0	24.0
RT A ARR	0	45.0	4.4	30.0	18.2

Dimensions are in inches, letter locations are panel edge to lower left corner

LETTER POSITIONS (X)																			LENGTH	SERIES/SIZE
T	O																			HIGHWAY E 2K
53.1	60.2																		13.8	8.0
W	E	S	T																	HIGHWAY E 2K
75.7	87.8	94.9	102.3																32.6	10.0
D	o	w	n	t	o	w	n													HIGHWAY E MOD 2K
18.6	29.5	38.9	52.9	63.0	71.0	80.4	94.3												82.8	10.67

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JML
CHECKED JTS

SIGN FABRICATION DETAILS

CUY-90-21.02

125
153

C:\Dropbox\Project Files\TRC\CUY-90\cadd\sheets\103821_TD003.dgn 8/28/2018 3:16:31 PM

TRAFFIC CONTROL

POWER SUPPLY FOR TRAFFIC SIGNALS

ELECTRIC POWER SHALL BE OBTAINED FROM CLEVELAND PUBLIC POWER AT THE LOCATIONS INDICATED ON THE PLANS. POWER SUPPLIED SHALL BE 120 VOLTS.

CLEVELAND PUBLIC POWER
1300 LAKESIDE AVE. ROOM 152
CLEVELAND, OHIO 44114
ATTN: CHRIS HIRZEL
PHONE: 216-664-3922 X115
CHIRZEL@CPP.ORG

WORK INSPECTION

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER WITH 72 HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE(S) SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

GUARANTEE

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

EQUIPMENT, MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL SYSTEM: CONTROLLER, CABINET, UNINTERRUPTIBLE POWER SUPPLY, VEHICLE DETECTION EQUIPMENT, LED LAMP UNITS, NETWORK AND COMMUNICATION/ INTERCONNECT EQUIPMENT.

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

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

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION

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

1. EXISTING SIGNAL/FLASHER INSTALLATIONS WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE, OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES OR OTHERWISE DISTURBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION (AT AN INTERSECTION) FROM THE TIME HIS OPERATIONS FIRST DISTURB THE INSTALLATION UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK IS ACCEPTED.

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

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS REDILY AVAILABLE CONTINOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION. IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION (CONT.)

TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

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

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

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

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM. WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED __ HOURS AND SHALL NOT INCLUDE THE HOURS OF __ TO __. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE INSTALLATION OF TEMPORARY "STOP" SIGNS, EXCEPT FOR THE FOLLOWING INTERSECTIONS WHICH SHALL BE PROTECTED BY OFF-DUTY CITY OF CLEVELAND POLICE, HIRED BY THE CONTRACTOR:

1. MLK JR. DRIVE & EB ENTRANCE/EXIT RAMP

2. MLK JR. DRIVE & WB EXIT RAMP

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.25.

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

1. TIME OF NOTIFICATION OF MALFUNCTION;

2. TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION;

3. ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED;

4. A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;

5. TIME OF COMPLETION OF REPAIR AND SYSTEM RESTORED TO FULL SERVICE.

A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

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

ITEM 630 - SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 630 AND 730, THE FOLLOWING SHALL ALSO APPLY:

1. THE SIGN SHALL BE RIGIDLY MOUNTED TO THE MAST ARM.

2. THE SIGN SHALL BE ATTACHED IN FRONT OF THE MAST ARM.

3. THE MINIMUM CLEARANCE SHOWN ON THE SIGNAL SUPPORT DETAILS SHALL ALSO APPLY TO THE SIGNS.

ITEM 632 - POWER SERVICE, AS PER PLAN

IN ADDITION OF THE REQUIREMENTS OF 632.24, THE FOLLOWING SHALL ALSO APPLY:

ELECTRIC POWER SHALL BE OBTAINED FROM CPP, AS INDICATED. LOCATION AND USE OF THE POWER SOURCES SHALL BE CONFIRMED WITH THE CPP, AS APPROPRIATE. POWER SHALL BE 120V.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REQUESTING AND SCHEDULING ANY INSPECTIONS THE POWER COMPANY MAY REQUIRE FOR THE POWER SERVICE HOOK UP. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY FOR THE ELECTRICAL SERVICE CONNECTION. UNDER NO CIRCUMSTANCE SHALL THE CONTRACTOR SPLICE POWER CABLE INTO THE POWER COMPANY'S CIRCUITS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND THE PAYING OF ALL FEES. THE CONTRACTOR SHALL PAY ALL POWER CHARGES UNTIL THE SIGNALS ARE ACCEPTED BY ODOT AND THE CITY OF CLEVELAND.

DISCONNECT SWITCHES SHALL NOT BE MOUNTED TO CONTROLLER CABINETS.

AERIAL POWER SERVICE AND/OR SERVICE CABLES SHALL NOT BE ATTACHED TO MAST ARMS.

THE CONTRACTOR SHALL SUPPLY ALL MATERIALS AND LABOR FOR THE POWER SOURCE TIE-INS EXCEPT FOR FINAL SPLICE. THE FINAL SPLICE SHALL BE PERFORMED BY THE POWER COMPANY.

ALL NEW OR RELOCATED ELECTRIC SERVICE ENCLOSURES ARE TO BE INSPECTED BY A LICENSED INSPECTOR PRIOR TO CONNECTION TO A UTILITY DISTRIBUTION LINE. THE CONTRACTOR SHALL APPLY FOR ALL INSPECTIONS, PAY THE APPROPRIATE FEES, AND ADVISE ODOT AND THE CITY OF CLEVELAND OF THE TIME OF INSPECTIONS SO THAT THOSE AGENCIES MAY HAVE A REPRESENTATIVE IN ATTENDANCE. THE INSPECTION IS NOT A SUBSTITUTE FOR FINAL INSPECTION BY ODOT AND THE CITY OF CLEVELAND, NOR DOES IT SUPERSEDE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS.

ITEM 632 - COVERING OF VEHICULAR SIGNAL HEAD, AS PER PLAN

COVER VEHICULAR SIGNAL HEADS IF ERECTED AT INTERSECTIONS WHERE TRAFFIC IS MAINTAINED BEFORE ENERGIZING THE SIGNALS. USE A STURDY OPAQUE COVERING MATERIAL SPECIFICALLY MADE FOR USE WITH TRAFFIC SIGNALS, AND ENSURE THAT THE COLOR OF THE COVER IS DIFFERENT THAN THE SIGNAL HEAD, TAN OR BEIGE, SO THAT IT IS CLEAR TO DRIVERS THE HEADS ARE COVERED, NOT DARK. USE A METHOD OF COVERING TO COVER ATTACHMENT AND MATERIALS, INCLUDING BACKPLATES, AS APPROVED BY THE ENGINEER. COVERS ARE TO BE FREE OF TEXT, PICTURES, OR ANY TYPE OF ADVERTISING. MAINTAIN COVERS, AND REMOVE THEM WHEN DIRECTED BY THE ENGINEER.

ITEM 632 - VEHICULAR SIGNAL HEAD, (LED), (BY TYPE), 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 632 AND 732, THE FOLLOWING REQUIREMENTS SHALL APPLY:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC WITH VISORS AS SPECIFIED AND MEET ITE SPECIFICATIONS.

2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.

3. THE ENTRANCE FITTING SHALL BE OF THE TRI-STUD DESIGN WITH SERRATED RINGS IN ORDER TO ACHIEVE POSITIVE LOCKING.

4. ALL SIGNAL HEADS SHALL BE RIDIDLY MOUNTED TO THE MAST ARM WITH THE (COLOR) MODULE LOCATED IN FRONT OF THE MAST ARM.

5. ALUMINUM BACKPLATES SHALL BE IN ACCORDANCE WITH THE C&MS AND INCLUDE A FLUORESCENT YELLOW REFLECTIVE BORDER.

6. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04-C. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.

7. SIGNAL HEADS SHALL HAVE A MINUMUM WALL THICKNESS OF 0.117 INCHES.

8. SIGNAL HEADS SHALL INCLUDE CUTAWAY TYPE VISORS UNLESS OTHERWISE SPECIFIED IN THE PLANS.

9. APPLY A BEAD OF SILICONE TO THE SIGNAL HEAD, WASHER, AND ENTRANCE ADAPTER SERRATIONS TO PREVENT WATER INTRUSION. ALSO, FILL THE SPACE BETWEEN CONCENTRIC SERRATION RINGS ON THE TOP OF THE SIGNAL HEAD TO COMPLETELY EXCLUDE WATER FROM THE SPACE BETWEEN THE CONCENTRIC RINGS.

ITEM 632 - VEHICULAR SIGNAL HEAD, (LED), (BY TYPE), 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN (CONT.)

10. BALANCE ADJUSTERS SHALL NOT BE USED ON ONE-WAY HEADS OR TETHERED HEADS.

PAYMENT FOR ITEM 632 VEHICULAR SIGNAL HEAD, LED, (BY TYPE), 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN SHALL BE MADE FOR COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS, AND NEW ATTACHMENT HARDWARE.

ITEM 632 - PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 632 AND 732 THE FOLLOWING SHALL APPLY:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC AND MEET ITE SPECIFICATIONS.

2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.

3. PIPE, SPACERS AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OR ALUMINUM.

4. THE PEDESTRIAN SIGNAL HEAD SHALL BE OF THE LED COUNTDOWN TYPE.

5. NEW ATTACHMENT HARDWARE AND FITTINGS SHALL BE USED.

6. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04-C. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.

PAYMENT FOR ITEM 632 PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN SHALL BE MADE FOR THE NUMBER OF COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS AND NEW ATTACHMENT HARDWARE.

ITEM 625 - PULLBOX, 725.06, SIZE 4, AS PER PLAN
ITEM 625 - PULLBOX, 725.06, SIZE 7, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 625.11 AND 725.06, THE FOLLOWING SHALL ALSO APPLY.

LOAD CAPACITY:
THE BOX AND COVER SHALL BE CAPABLE OF SUPPORTING A LOAD OF 20,000 LBS, ON A 10"X10" AREA, TESTED IN ACCORDANCE WITH WESTERN UNDERGROUND COMMITTEE GUIDE 3.6. THE COVER DEFLECTION SHALL NOT EXCEED 1/2" AT DESIGN LOAD. THE COVER AND BOX SHALL SHOW NO SIGNS OF DAMAGE AFTER TEN (10) CYCLES AT DESIGN LOAD.

MATERIAL AND CONSTRUCTION:
THE BOX SHALL BE CONSTRUCTED OF FIBERGLASS REINFORCED POLYMER (FRP) WITH ISOPTHALIT POLYESTER USING THE SPRAY-UP AND ROLL CONSTRUCTION METHOD. THE MATERIAL SHALL HAVE STABILIZERS TO RESIST ULTRAVIOLET (UV) DEGRADATION IN ACCORDANCE WITH ASTM D-790 AND ASTM D-11501-71, SECTION 6, PROCEDURE B. THE TOP RING OF THE BOX SHALL BE MADE OF POLYMER CONCRETE USING A POLYESTER BINDER WITH AGGREGATE FILLERS AND CHOPPED FIBERGLASS WITH A MINIMUM TENSILE STRENGTH OF 1900 PSI. THE RING SHALL HAVE THE SAME UV RESISTANCE AS THE FRP MATERIAL. THE THREADED INSERTS FOR THE COVER BOLTS SHALL BE STAINLESS STEEL.

THE COVER SHALL BE MADE WITH A THICK MOLDING COMPOUND (TMC) USING THE COMPRESSION MOLDING METHOD. THE TMC SHALL CONSIST OF A MINIMUM OF TEN PERCENT (10%) FIBERGLASS IN A CALCIUM CARBONATE AND POLYESTER RESIN MATRIX. THE COVER SHALL BE MARKED WITH "TRAFFIC" OR "ELECTRIC" IN 2" LETTERS, EMBOSSED INTO THE TMC, AND SHALL HAVE A NON-SKID SURFACE AND THE SAME UV RESISTANCE AS THE FRP MATERIAL.

THE COVER SHALL BE SECURED TO THE BOX USING TWO HEX HEAD STAINLESS STEEL BOLTS AND WASHERS WHICH SHALL ATTACH TO THREADED INSERTS IN THE BODY OF THE BOX.

CONDUIT OPENINGS:
OPENINGS IN THE SIDE OF THE PULL BOX, WHICH ARE REQUIRED TO INSERT CONDUIT INTO THE PULL BOX SHALL BE DRILLED OR SAWN IN THE FIELD, ONCE THESE LOCATIONS HAVE BEEN DETERMINED. THE OPENINGS SHALL NOT EXCEED THE OUTSIDE DIAMETER OF THE CONDUIT BY MORE THAN FIVE PERCENT (5%). ALL OPENINGS IN THE SIDE OF THE PULL BOX SHALL BE THOROUGHLY GROUTED WITH CEMENT MORTAR AFTER PLACING THE CONDUIT.

PULL BOX DRAIN:
PULL BOXES ARE TO BE PROVIDED A 4" DRAIN TO THE NEAREST STORM INLET, UNDERDRAIN OR OTHER SUITABLE OUTLET FROM THE PULL BOX. TWENTY (20) FEET OF 4" PVC CONDUIT SHALL BE USED AND SHALL BE INCLUDED.

CALCULATED MGW
CHECKED JTS

TRAFFIC SIGNAL NOTES

CUY-90-21.02

ITEM 625 - PULLBOX, 725.06, SIZE 4, AS PER PLAN
ITEM 625 - PULLBOX, 725.06, SIZE 7, AS PER PLAN (CONT.)

LOCATION:
THE EXACT LOCATIONS OF THE PULL BOXES ARE TO BE STAKED AND CHECKED PRIOR TO PLACEMENT TO VERIFY CLEARANCE OF UNDERGROUND FACILITIES AND ANY ABOVE GROUND OBSTRUCTIONS. IF THERE ARE ANY CONFLICTS, THEY ARE TO BE ADJUSTED AS DIRECTED BY THE ENGINEER.

ITEM 632 - SIGNAL SUPPORT, BY TYPE, AS PER PLAN
ITEM 632 - PEDESTAL, 8', TRANSFORMER BASE, AS PER PLAN
ITEM 632 - PEDESTAL, MISC.: 15' TRANSFORMER BASE

FURNISH POLES AND MAST ARMS WHICH COMPLY WITH 732.11, BUT DO NOT FURNISH POLES OR MAST ARMS THAT CONSIST OF STRAIGHT SECTIONS WITH TAPERED EFFECT ACCOMPLISHED BY THE USE OF REDUCERS. FURNISH POLES THAT ARE CONSTRUCTED OF SINGLE SECTION TRUE CONTINUOUS TAPERED TUBES, AND MAST ARMS THAT ARE CONSTRUCTED OF ONE OR TWO SECTION TRUE CONTINUOUS TAPERED TUBES, AS SHOWN ON STANDARD CONSTRUCTION DRAWING TC-81.21 AND TC-81.10.

SIGNAL SUPPORTS THAT HAVE STREET LIGHTING LUMINAIRES ATTACHED SHALL HAVE A SEPARATE 2" CONDUIT THROUGH THE FOUNDATION AND AN INTERNAL 1" FLEXIBLE PVC CONDUIT RISER FOR STREET LIGHTING POWER CABLES.

SIGNAL SUPPORTS SHALL COMPLY WITH CITY OF CLEVELAND STANDARD SPECIFICATIONS. SIGNAL SUPPORTS SHALL BE PAINTED DARK BRONZE, FEDERAL COLOR NUMBER F-283. ALL SUPPORTS SHALL BE HOT-DIP GALVANIZED PRIOR TO PAINTING.

IN ADDITION TO THE REQUIREMENTS OF SPECIFICATION 632, SIGNAL SUPPORTS AND PEDESTALS SHALL BE PAINTED IN ACCORDANCE WITH THE FOLLOWING:

1. POWDER COATING COLOR: DARK BRONZE

A. SURFACE PREPARATION: THE EXTERIOR STEEL SURFACE SHALL BE BLAST CLEANED TO STEEL STRUCTURES PAINTING COUNCIL SURFACE PREPARATION SPECIFICATION NO. 6 (SSPC-6) REQUIREMENTS UTILIZING CAST STEEL ABRASIVES CONFORMING TO THE SOCIETY OF AUTOMOTIVE ENGINEERS (SAE) RECOMMENDED PRACTICE J827. THE BLAST METHOD USED IS A RECIRCULATING, CLOSED CYCLE CENTRIFUGAL WHEEL SYSTEM WITH ABRASIVE CONFORMING TO SAE SHOT NUMBER S280.

B. INTERIOR COATING: INTERIOR SURFACES (POLE SHAFTS ONLY) AT THE BASE END FOR A LENGTH OF APPROXIMATELY 2.0 FEET SHALL BE MECHANICALLY CLEANED AND COATED WITH A ZINC RICH EPOXY POWDER. THE COATING SHALL BE ELECTROSTATICALLY APPLIED AND CURED IN A GAS FIRED CONVECTION OVEN BY HEATING THE STEEL SUBSTRATE TO A MINIMUM OF 350 DEGREES FAHRENHEIT AND A MAXIMUM OF 400 DEGREES FAHRENHEIT.

C. EXTERIOR COATING: ALL EXTERIOR SURFACES SHALL BE COATED WITH A URETHANE OR TRIGLYCIDYL ISOCYANURATE (TGIC) POLYESTER POWDER TO A MINIMUM FILM THICKNESS OF 2.0 MILS (0.0029"). THE COATING SHALL BE ELECTROSTATICALLY APPLIED AND CURED IN A GAS FIRED CONVECTION OVEN BY HEATING THE STEEL SUBSTRATE TO A MINIMUM OF 350 DEGREES FAHRENHEIT. THE THERMOSETTING POWDER RESIN SHALL PROVIDE BOTH INTERCOAT AS WELL AS SUBSTRATE FUSION ADHESION THAT MEETS 5A OR 5B CLASSIFICATIONS OF ASTM D3359.

2. COMBINATION COATING GALVANIZED-POWDER TOP COAT COLOR : DARK BRONZE

A. SURFACE PREPARATION: PRIOR TO BEING INCORPORATED INTO AN ASSEMBLED PRODUCT, STEEL PLATES 3/4 INCHES OR MORE IN THICKNESS SHALL BE BLAST CLEANED WHEN REQUIRED TO REMOVE ROLLED-IN MILL SCALE, IMPURITIES AND NON-METALLIC FOREIGN MATERIALS. AFTER ASSEMBLY, ALL WELD FLUX SHALL BE MECHANICALLY REMOVED. THE IRON OR STEEL PRODUCT SHALL BE DEGREASED BY IMMERSION IN AN AGITATED 4.5% - 6.0% CONCENTRATED CAUSTIC SOLUTION ELEVATED TO A TEMPERATURE RANGING FROM 150 DEGREES FAHRENHEIT TO 190 DEGREES FAHRENHEIT. IT SHALL NEXT BE RINSED CLEAN FROM ANY RESIDUAL EFFECTS OF THE CAUSTIC OR ACID SOLUTIONS BY IMMERSION IN A CIRCULATING FRESH WATER BATH. FINAL PREPARATION SHALL BE ACCOMPLISHED BY IMMERSION IN CONCENTRATED ZINC AMMONIUM CHLORIDE FLUX SOLUTION HEATED TO 130 DEGREES FAHRENHEIT. THE SOLUTION'S ACIDITY CONTENT SHALL BE MAINTAINED BETWEEN 4.5-5.0 pH. THE ASSEMBLY SHALL BE AIR DRIED TO REMOVE ANY MOISTURE REMAINING IN THE FLUX COAT AND/OR TRAPPED WITHIN THE PRODUCT.

B. ZINC COATING: THE PRODUCT SHALL BE HOT-DIP GALVANIZED TO THE REQUIREMENTS OF EITHER ASTM A123 (FABRICATED PRODUCTS) OR ASTM A153 (HARDWARE ITEMS) BY IMMERSION IN A MOLTEN BATH OF PRIME WESTERN GRADE ZINC MAINTAINED BETWEEN 810 DEGREES FAHRENHEIT AND 850 DEGREES FAHRENHEIT. THE ENTIRE PROJECT SHALL BE TOTALLY IMMERSED WITH NO PART OF IT PROTRUDING OUT OF THE ZINC (NO DOUBLE

ITEM 632 - SIGNAL SUPPORT, BY TYPE, AS PER PLAN (CONTINUED)
ITEM 632 - PEDESTAL, 8', TRANSFORMER BASE, AS PER PLAN (CONTINUED)

DIPPING). THIS IS TO LIMIT RISK OF TRAPPED CONTAMINATES CONTAINING CHLORIDES AND REDUCE THE RISK OF BARE SPOTS (BARE SPOTS CAN OCCUR WHEN FLUX ON THE STEEL SURFACE IS BURNED AWAY BY HEAT OF THE FIRST DIP). MAXIMUM ALUMINUM CONTENT OF THE BATH SHALL BE 0.01%. FLUX ASH SHALL BE SKIMMED FROM THE BATH SURFACE PRIOR TO IMMERSION AND EXTRACTION OF THE PRODUCT TO ASSURE A DEBRIS FREE ZINC COATING.

C. EXTERIOR COATING: ALL GALVANIZED EXTERIOR SURFACES SHALL BE COATED WITH A URETHANE OR TRIGLYCIDYL ISOCYANURATE (TGIC) POLYESTER POWDER TO A MINIMUM FILM THICKNESS OF 2.0 MILS (0.002"). PRIOR TO APPLICATION, THE SURFACES TO BE POWDER COATED SHALL BE MECHANICALLY ETCHED BY BRUSH BLASTING (REF. SSPC-SP7) AND THE ZINC COATED SUBSTRATE PREHEATED TO 450 DEGREES FAHRENHEIT FOR A MINIMUM OF ONE HOUR IN A GAS FIRED CONVECTION OVEN. THE COATING SHALL BE ELECTROSTATICALLY APPLIED AND CURED IN A GAS FIRE CONVECTION OVEN BY HEATING THE ZINC COATED SUBSTRATE TO A MINIMUM OF 350 DEGREE FAHRENHEIT AND A MAXIMUM OF 400 DEGREES FAHRENHEIT. THE THERMOSETTING POWDER RESIN SHALL PROVIDE BOTH INTERCOAT AS WELL AS SUBSTRATE FUSION ADHESION THAT MEETS 5A OR 5B CLASSIFICATION OF ASTM D2559.

MINIMUM CLEARANCE FROM OVERHEAD ELECTRIC WIRES SHALL COMPLY WITH REQUIREMENTS OF THE NATIONAL ELECTRIC SAFETY CODE, RULE 232, AND THE REQUIREMENTS OF THE LOCAL POWER COMPANIES PROVIDING ELECTRICAL SERVICE.

DUE TO THE POSSIBILITY OF CONFLICTING WITH EXISTING OR PROPOSED UNDERGROUND OBSTRUCTIONS (INCLUDING THE POSSIBILITY OF UNRECORDED OBSTRUCTIONS) WHICH COULD AFFECT THE LOCATION OF THE FOUNDATIONS FOR THESE ITEMS, AND CONSEQUENTLY, THE DESIGN OF VARIOUS SUPPORTS, AND/OR ARMS, DO NOT PLACE FINAL ORDERS FOR THESE ITEMS UNTIL THE FOUNDATIONS HAVE BEEN INSTALLED.

ITEM 632 - PEDESTRIAN PUSH BUTTON, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 632.09 AND 732.06, THE FOLLOWING SHALL ALSO APPLY:

SIGNING FOR PEDESTRIAN PUSH BUTTONS SHALL BE R10-4b (R OR L) SIGNS, ONE (1) FOR EACH PEDESTRIAN PUSH BUTTON, WITH TYPE G SHEETING AND ALL MOUNTED HARDWARE INCLUDED.

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS) AND THE TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

1. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.

   A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.
   B. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.
   C. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.

2. CONDUITS

   A. THE 725.04 CONDUIT SHALL HAVE GROUNDING BUSHINGS INSTALLED AT ALL TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR USE WITH COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.
   B. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.
   C. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
   D. METALLIC CONDUIT MAY BE BONDED TO METALLIC BOXES THROUGH THE USE OF CONDUIT FITTINGS UL APPROVED FOR THIS TYPE OF CONNECTION, WITH THE BOX BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.

GROUNDING AND BONDING (CONT.)

3. WIRE FOR GROUNDING AND BONDING

   A. USE INSULATED, COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SIZE SHALL BE AS FOLLOWS:
      I. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.
      II. USE A MINIMUM 8 AWG BETWEEN LOOP DETECTOR PULL BOXES AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.1 ABOVE.
      III. USE A MINIMUM 8 AWG BETWEEN THE "PREPARE TO STOP WHEN FLASHING" INSTALLATION (INCLUDING SUPPORT) AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.1 ABOVE.
      IV. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S). FOR 4 AWG OR LARGER, INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/LABELS INSTALLED AT ALL ACCESS POINTS.

4. GROUND ROD

   A. A 3/4 INCH SCHEDULE 40 PVC CONDUIT WILL BE USED IN FOUNDATIONS AND CONCRETE WALLS FOR THE GROUNDING CONDUCTOR (GROUND WIRE) RACEWAY TO THE GROUND ROD. SHOULD METALLIC CONDUIT BE USED, BOTH ENDS OF THE CONDUIT SHALL BE BONDED TO THE GROUNDING CONDUCTOR.
   B. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.

5. THE GREEN CONDUCTOR IN SIGNAL CABLES (CONDUCTOR #4) SHALL NOT BE USED TO SUPPLY POWER TO A SIGNAL INDICATION. IT WILL BE CONNECTED TO THE SIGNAL BODY AS AN EQUIPMENT GROUND IN ALUMINUM HEADS AND IT WILL BE UNUSED IN PLASTIC HEADS. UNUSED CONDUCTORS SHALL BE GROUNDED IN THE CABINET. TYPICAL USE OF CONDUCTORS IS AS FOLLOWS:

COND. NO AND COLOR	VEHICLE SIGNAL	PEDESTRIAN SIGNAL
1 - BLACK	GREEN BALL	#1 WALK
2 - WHITE	AC NEUTRAL	AC NEUTRAL
3 - RED	RED BALL	#1 CW/FDW
4 - GREEN	EQUIPMENT GROUND	EQUIPMENT GROUND
5 - ORANGE	YELLOW BALL	#2 DW/FDW
6 - BLUE	GREEN ARROW	#2 WALK
7 - WHITE/BLACK STRIPE	YELLOW ARROW	NOT USED

6. POWER SERVICE AND DISCONNECT SWITCH
   A. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.
   B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.
      I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.
      II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.

7. PAYMENT - ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

ITEM 632 - SIGNAL SUPPORT FOUNDATION, AS PER PLAN

PRIOR TO ORDERING THE SIGNAL SUPPORTS, THE CONTRACTOR SHALL CONTACT OUPS TO HAVE ALL THE UTILITIES LOCATED IN THE FIELD THEN MEET WITH THE PROJECT ENGINEER TO LOCATE THE PROPOSED SUPPORT LOCATIONS TO ENSURE THERE ARE NO CONFLICTS WITH UTILITIES. IF THERE ARE ISSUES, THE PROJECT ENGINEER SHALL PROVIDE GUIDANCE AS TO THE RELOCATION OF THE SUPPORT POLES.

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.

SIGNAL ACTIVATION

PRIOR TO ACTIVATING THE NEW TRAFFIC SIGNALS TO STOP-AND-GO MODE, ALL ITEMS IN THE PROPOSED SIGNAL PLAN SHALL BE FULLY COMPLETED, (I.E., VEHICLE DETECTION, PEDESTRIAN SIGNAL HEADS, ETC). IF THERE ARE CONSTRUCTABILITY ISSUES (I.E., ROADWAY WIDENING, ETC.) THAT PREVENT THE SIGNAL FROM BEING COMPLETED PRIOR TO ACTIVATION, IT SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER. THE DISTRICT TRAFFIC ENGINEER WILL THEN REVIEW, APPROVE OR REJECT PROPOSALS TO ACTIVATE THE TRAFFIC SIGNAL PRIOR TO COMPLETION.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER AT LEAST TEN (10) WORKING DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL INSTALLATION. FINAL INSPECTION IS NOT CONSIDERED COMPLETE UNTIL DESIGNATED DISTRICT TRAFFIC PERSONNEL INSPECT THE TRAFFIC SIGNAL AND ISSUE WRITTEN APPROVAL. IF ISSUES ARE FOUND DURING THE FINAL INSPECTION THAT AFFECT THE SAFETY OF THE TRAVELING PUBLIC AND/OR THE EFFICIENCY OF THE INTERSECTION, THE SIGNAL SHALL NOT BE ACTIVATED ON THE PROPOSED DATE. ANY PUNCH LIST ITEMS THAT ARE FOUND SHALL BE CORRECTED AND REINSPECTED BY DISTRICT TRAFFIC PERSONNEL PRIOR TO FINAL ACCEPTANCE. THE CITY OF CLEVELAND SHALL ONLY ASSUME DAY TO DAY MAINTENANCE OF THE TRAFFIC SIGNAL AFTER FINAL WRITTEN ACCEPTANCE HAS BEEN ISSUED.

ITEM 632 - SIGNALIZATION, MISC.: FOUNDATION TEST HOLE

IF UNDERGROUND OBSTRUCTIONS ARE ENCOUNTERED THAT PRECLUDE THE USE OF THE STANDARD OR ALTERNATE FOUNDATION DESIGNS, THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH COMPLETE INFORMATION REGARDING THE OBSTRUCTION, INCLUDING TYPE (I.E. UTILITY), SIZE, DEPTH, AND LATERAL CLEARANCES TO THE SIDES OF THE FOUNDATION EXCAVATION. THE FOUNDATION HOLE SHALL BE COVERED WITH A STEEL PLATE UNTIL THE ENGINEER DETERMINES IF A NEW FOUNDATION LOCATION WILL BE REQUIRED.

IF DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL BACKFILL AND COMPACT THE HOLE AND SHALL RESTORE THE SURFACE TO THE SATISFACTION OF THE ENGINEER.

THE CONTRACTOR SHALL BE COMPENSATED FOR EACH FOUNDATION HOLE THAT MUST BE ABANDONED. PAYMENT FOR ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND OTHER INCIDENTALS, INCLUDING BACKFILL, COMPACTING, AND SURFACE RESTORATION, SHALL BE AT THE CONTRACT UNIT PRICE BID FOR EACH ITEM 632 - SIGNALIZATION, MISC.: FOUNDATION TEST HOLE FOR THE NUMBER EXCAVATED AND BACKFILLED.

ITEM 633 - CONTROLLER UNIT, TYPE 2070E WITH SEPAC SOFTWARE, WITH CABINET, (BY TYPE), AS PER PLAN

THE CONTROLLER UNIT SHALL BE EQUIPMENT MANUFACTURED IN CONFORMANCE TO THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) SPECIFICATIONS TITLES "TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATIONS (TEES)." THE CONTROLLER UNIT, MODEL 2070E, SHALL BE COMPLIANT WITH THE 2070E MANUFACTURER AND BUILD AS PER THE TRAFFIC AUTHRORIZED PRODUCTS (TAP) LIST.

THE 2070E CONTROLLER UNIT SHALL INCLUDE THE FOLLOWING:
1. UNIT CHASSIS
2. 2070-1E CPU MODULE
3. 2070-2A FIELD I/O MODULE
4. 2070-3B FRONT PANEL
5. 2070-4A POWER SUPPLY
6. 2070-7A SERIAL COMMUNICATION MODULE

THE CONTROLLER SHALL BE SUPPLIED WITH THE FOLLOWING TRAFFIC SIGNAL INTERSECTION CONTROL SOFTWARE: SEPAC 3.34G. THE CONTROLLER SHALL BE SUPPLIED WITH MICROWARE EMBEDDED OS-9 RELEASE 1.3 OR LATER WITH KERNEL EDITION #376 OR LATER, AS REQUIRED BY CALTRANS TEES. FOR WARRANTY PURPOSES, A VENDOR-SPECIFIC DECAL AS PER ODOT C&MS 733.02 SHALL BE APPLIED TO EACH CONTROLLER UNIT AT TIME OF DELIVERY TO THE PROJECT.

THE CONTRACTOR SHALL NOT REASSIGN THE CABINET DETECTOR INPUTS IN ORDER TO REDUCE THE NUMBER OF 2-CHANNEL DETECTOR UNITS SUPPLIED, BUT SHALL USE THE STANDARD CALTRANS INPUT FILE DESIGNATIONS.

CALCULATED MGW CHECKED JTS

TRAFFIC SIGNAL NOTES

CUY-90-21.02

ITEM 633 - UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 633 AND 733, POLE ATTACHMENT HARDWARE WILL BE INCLUDED FOR POLE-MOUNTED CABINETS, AND A CABINET RISER (8 INCH MINIMUM) AND ANCHOR BOLTS WILL BE PROVIDED FOR BASE-MOUNTED CABINETS. BEFORE PERFORMING THE WORK, THE CONTRACTOR, THE DISTRICT TRAFFIC ENGINEER AND THE PROJECT ENGINEER WILL PERFORM A SITE INSPECTION TO ESTABLISH THE LOCATION OF THE UPS CABINET AND FOUNDATION.

THE UPS CABINET SHALL INCLUDE A GENERATOR POWER PANEL WITH A HEAVY DUTY POWER RELAY VERSUS THE LINE VOLTAGE GENERATOR SWITCH. THE GENERATOR INLET SHALL BE A RECESSED PANEL WITH A DOOR THAT IS FLUSH WITH THE EXTERNAL SIDE OF THE UPS CABINET. IT SHALL INCLUDE A RECESSED PLUG, AUTOMATIC TRANSFER SWITCH AND A DOOR THAT SECURELY CLOSES OVER THE POWER CORD.

THE UPS OUTPUT NOTIFICATIONS FOR ON BATTERY, BATTERY 2-HOUR TIMER, AND LOW BATTERY SHALL BE WIRED INTO THE TRAFFIC SIGNAL CABINET BACK PANEL TO PROVIDE SPECIAL STATUS ALARMS FOR EACH OUTPUT INTO THE SIGNAL CONTROLLER.

THIS ITEM SHALL INCLUDE A RED LED STATUS INDICATOR LAMP TO ALLOW MAINTENANCE PERSONNEL AND LAW ENFORCEMENT TO QUICKLY ASSESS WHETHER A TRAFFIC SIGNAL CABINET IS BEING POWERED BY A UPS. THE LED HOUSING SHALL BE NEMA 4X, IP65 OR IP66, RATED FOR OUTDOOR USE AND BE TAMPER/SHATTER RESISTANT. IT SHALL BE A DOMED ENCLOSURE CONTAINING A RED LENS WITH LED THAT IS VISIBLE FROM 100 FOOT MINIMUM. THE ENCLOSURE AND LED MODULE SHOULD BE PLACED AND CENTERED ON THE TOP SURFACE OF THE UPS CABINET AND SEALED FROM WATER INTRUSION. IT SHOULD BE WIRED USING MINIMUM 20GA STRANDED, INSULATED HOOKUP WIRE TO THE STATUS RELAY OUTPUTS OF THE UPS. THE WIRES SHALL BE TERMINATED BY LUGS AT THE DISPLAY END AND PERMANENTLY LABELED "BACKUP POWER STATUS DISPLAY," WITH WIRE POLARITY INDICATED. THE RED LED SHALL ONLY ILLUMINATE TO INDICATE THE CABINET IS OPERATING UNDER UPS BACKUP POWER (THE "BACKUP" OPERATING CONDITION). THIS ITEM INCLUDES PROGRAMMING THE UPS STATUS RELAY OUTPUTS TO PRODUCE THE LAMP STATUS DISPLAYS. THESE STATUS DISPLAYS WILL BE SOLID 100% DUTY CYCLE (NOT FLASHING) DISPLAYS. THE OPERATING VOLTAGE OF THE LED LAMP SHALL BE 120V AC UNLESS OTHERWISE INDICATED.

ITEM 809 - ADVANCE RADAR DETECTION, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR ADVANCE DETECTION UNIT (MODEL SS-200E). THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

1. POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.

2. ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.

3. THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.

4. SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.

5. THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.

6. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).

7. THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.

PAYMENT FOR ITEM 809 ADVANCE RADAR DETECTION, AS PER PLAN SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT, CONNECTIONS TESTED AND ACCEPTED, AND ANY OTHER NECESSARY HARDWARE TO ESTABLISH A FULLY FUNCTIONAL DETECTION SYSTEM.

ITEM 809 - STOP LINE RADAR DETECTION, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR MATRIX DETECTION UNIT. THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

1. POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.

2. ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.

3. THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.

4. SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.

5. THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.

6. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).

7. THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.

PAYMENT FOR ITEM 809 STOP LINE RADAR DETECTION, AS PER PLAN SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT AND CONNECTIONS TESTED AND ACCEPTED.

CALCULATED MGW
CHECKED JTS

TRAFFIC SIGNAL NOTES

CUY-90-21.02

REF. NO.	SHEET NO.	STATION TO STATION		SIDE	632	632	632											
					VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, ALUMINUM	REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM - VEHICULAR SIGNAL HEAD	REUSE OF VEHICULAR SIGNAL HEAD											
		FROM	TO		EACH	EACH	EACH											
	130	BROAD AVE			3	1	2											
TOTALS CARRIED TO GENERAL SUMMARY					3	1	2											

CALCULATED GM
CHECKED JTS

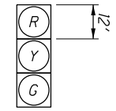
TRAFFIC SIGNAL SUBSUMMARY
MLK JR. DRIVE & BROAD AVENUE

CUY-90-21.02

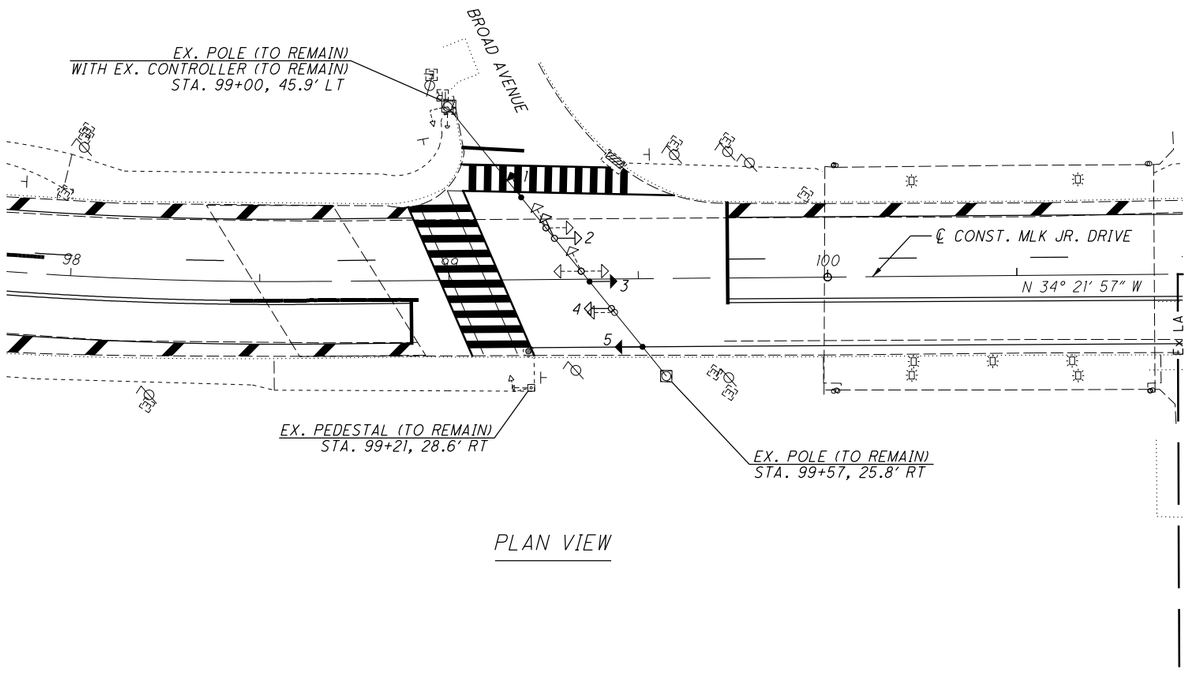
SUMMARY OF WORK

- INSTALL 3 NEW VEHICULAR SIGNALS
- RELOCATE 2 EXISTING VEHICULAR SIGNALS
- REMOVE 1 VEHICULAR SIGNAL

PROPOSED SIGNAL HEADS

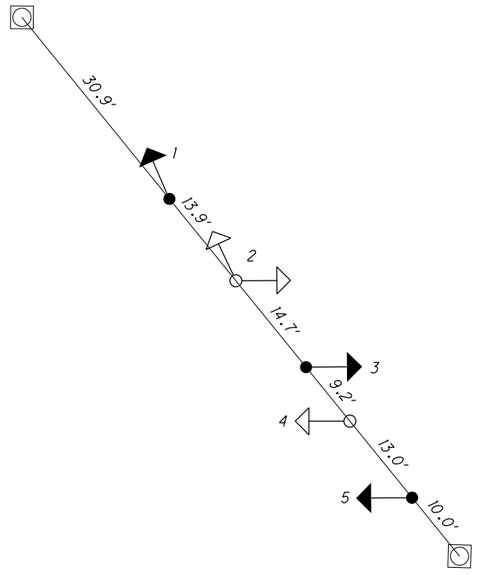


1, 3, 5



PLAN VIEW

PLAN VIEW FOR TYPICAL SPANWIRE DETAIL



LEGEND

PROPOSED TRAFFIC SIGNAL	●⟶
RELOCATED TRAFFIC SIGNAL	○⟶
REMOVED TRAFFIC SIGNAL	○⇢
EXISTING PEDESTRIAN SIGNAL HEAD	⬚
EXISTING PEDESTRIAN PUSH BUTTON	⊸
EXISTING SIGNAL SUPPORT POLE	▣
EXISTING PEDESTAL POLE	▫
EXISTING POLE MOUNTED CONTROLLER	⊠

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED GM
CHECKED JTS

TRAFFIC SIGNAL PLAN
MLK JR. DRIVE & BROAD AVENUE

CUY-90-21.02

130
153

TRAFFIC SIGNAL SUBSUMMARY
MLK JR. DRIVE & EB ENTRANCE/EXIT RAMP

CALCULATED GM
CHECKED JTS

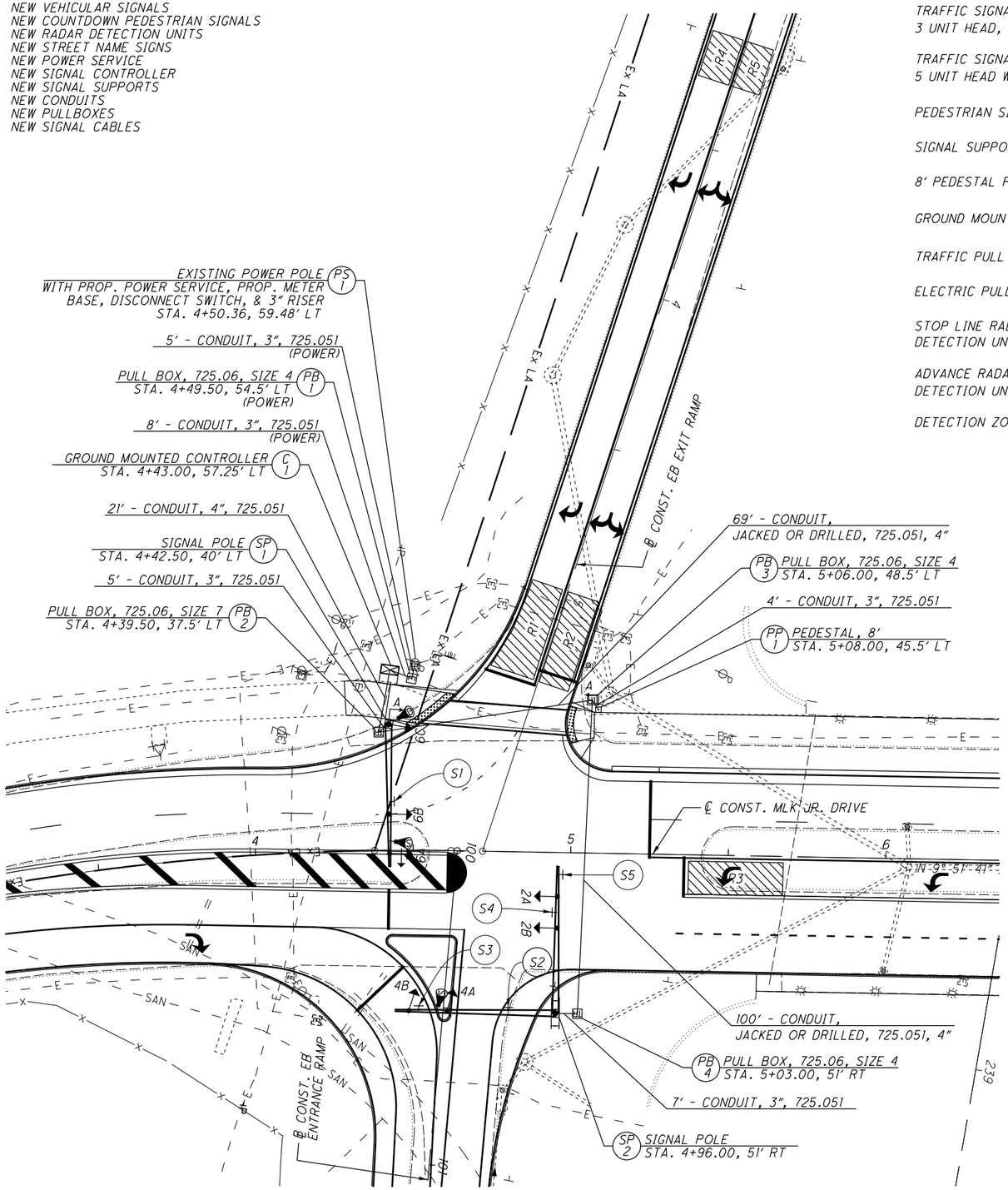
CUY-90-21.02

REF. NO.	SHEET NO.	STATION TO STATION FROM	STATION TO STATION TO	SIDE	625 CONDUIT, 3", 725.051 FT	625 CONDUIT, 4", 725.051 FT	625 CONDUIT, JACKED OR DRILLED, 725.051, 4" FT	625 TRENCH FT	625 PULL BOX, 725.06, SIZE 4, AS PER PLAN EACH	625 PULL BOX, 725.06, SIZE 7, AS PER PLAN EACH	625 GROUND ROD EACH	625 POWER SERVICE, AS PER PLAN EACH	625 PLASTIC CAUTION TAPE FT	630 SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN EACH	630 SIGN, FLAT SHEET SF	632 VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN EACH	632 VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN EACH	632 PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN EACH	632 COVERING OF VEHICULAR SIGNAL HEAD, AS PER PLAN EACH	632 COVERING OF PEDESTRIAN SIGNAL HEAD EACH	632 SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG FT	632 SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG FT	632 SIGNAL SUPPORT FOUNDATION, AS PER PLAN EACH	632 PEDESTAL FOUNDATION EACH	632 POWER CABLE, 3 CONDUCTOR, NO. 8 AWG FT	632 SERVICE CABLE, 3 CONDUCTOR, NO. 8 AWG FT	632 CONDUIT RISER, 3" DIAMETER EACH	632 SIGNAL SUPPORT, TYPE TC-12.30 DESIGN 9 POLE, WITH MAST ARMS TC-81.21 DESIGN 13 AND DESIGN 12, AS PER PLAN EACH	632 SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 11, AS PER PLAN EACH	632 PEDESTAL, 8', TRANSFORMER BASE, AS PER PLAN EACH	632 SIGNALIZATION, MISC.: FOUNDATION TEST HOLE EACH	633 CONTROLLER UNIT, TYPE 2070E WITH SEPAC SOFTWARE, WITH CABINET, TYPE 332L, AS PER PLAN EACH	633 CABINET FOUNDATION EACH	633 CONTROLLER WORK PAD EACH	633 UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN EACH	809 ADVANCE RADAR DETECTION, AS PER PLAN EACH	809 STOP LINE RADAR DETECTION, AS PER PLAN EACH
PS-1	132	4+50.36		LT								1														20		1										
C-1	132	4+43.00		LT							1																												
SP-1	132	4+42.50		LT							1			1	10.5									1							1								
SP-2	132	4+96.00		RT							1			4	40.3									1						1								
PP-1	132	5+08.00		LT							1				1.5										1								1	1				
	132	PS-1	PB-1	LT	5			5	1				5														30										
	132	PB-1	C-1	LT	8			8					8														13										
	132	C-1	PB-2	LT		21		21		1			21																								
	132	PB-2	SP-1	LT	5			5					5																								
	132	PB-2	PB-3	LT			69		1																												
	132	PB-3	PP-1	LT	4			4					4																								
	132	PB-3	PB-4	LT/RT			100		1																												
	132	PB-4	SP-2	RT	7			7					7																								
	132	C-1	SIGNAL 4A													1			1			278															
	132	C-1	SIGNAL 4B													1			1			20															
	132	C-1	SIGNAL 2B													1			1			274															
	132	C-1	SIGNAL 2A													1			1			20															
		C-1	SIGNAL 6C													1			1			57															
	132	C-1	SIGNAL 6B													1			1			49															
	132	C-1	SIGNAL 6A														1		1			23															
	132	C-1	SIGNAL PP-1															1		1	129																
	132	C-1	SIGNAL SP-1															1		1	51																
TOTALS CARRIED TO GENERAL SUMMARY					29	21	169	50	3	1	4	1	50	5	52.3	6	1	2	7	2	180	721	2	1	20	43	1	1	1	1	4	1	1	1	1	1	2

131
153

SUMMARY OF WORK

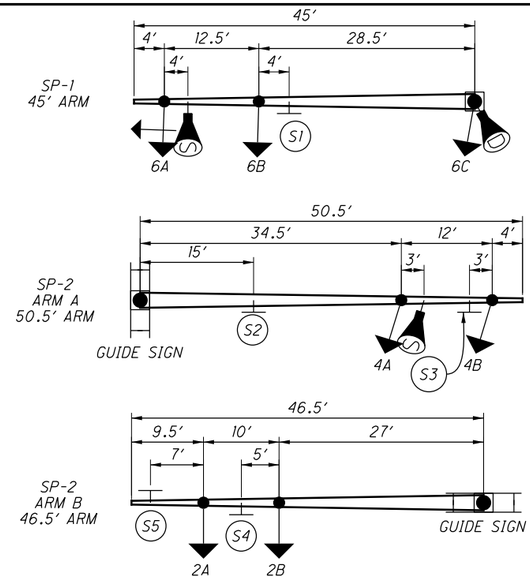
INSTALL THE FOLLOWING:
- NEW VEHICULAR SIGNALS
- NEW COUNTDOWN PEDESTRIAN SIGNALS
- NEW RADAR DETECTION UNITS
- NEW STREET NAME SIGNS
- NEW POWER SERVICE
- NEW SIGNAL CONTROLLER
- NEW SIGNAL SUPPORTS
- NEW CONDUITS
- NEW PULLBOXES
- NEW SIGNAL CABLES



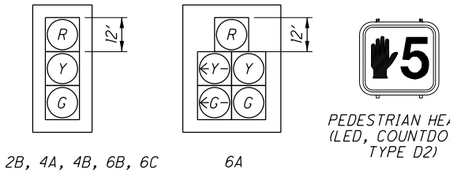
PLAN VIEW

LEGEND

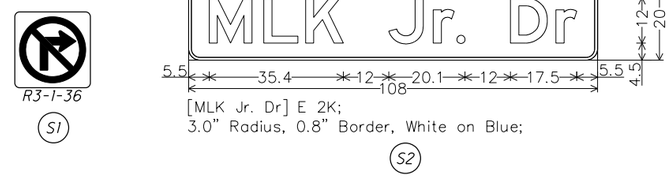
TRAFFIC SIGNAL, 3 UNIT HEAD, 12"	
TRAFFIC SIGNAL, 5 UNIT HEAD W/ ARROW, 12"	
PEDESTRIAN SIGNAL HEAD	
SIGNAL SUPPORT POLE	
8' PEDESTAL POLE	
GROUND MOUNTED CONTROLLER	
TRAFFIC PULL BOX	TR
ELECTRIC PULL BOX	E
STOP LINE RADAR DETECTION UNIT	S
ADVANCE RADAR DETECTION UNIT	D
DETECTION ZONE	



SIGNAL HEADS



SIGNS



PULLBOX TABLE

PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB 1	4+49.50	LT	54.5'	13" X 24"
PB 2	4+39.50	LT	37.5'	17" X 30"
PB 3	5+06.00	LT	48.5'	13" X 24"
PB 4	5+03.00	RT	51'	13" X 24"

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MGW
CHECKED JTS

TRAFFIC SIGNAL PLAN
MLK JR. DRIVE & EB ENTRANCE/EXIT RAMP

CUY-90-21.02

132
153

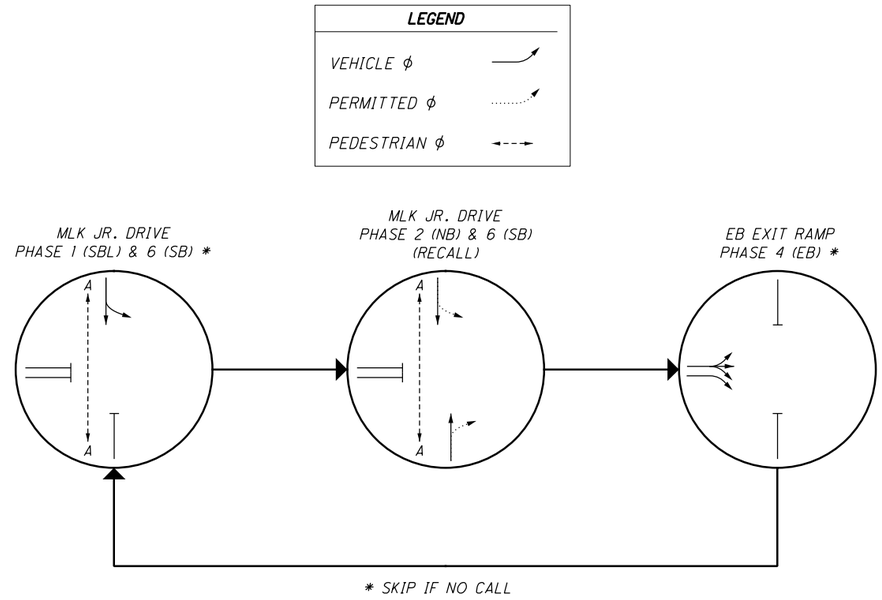
103821_CP001.dgn EB RAMPS INTERSECTION 9/6/2018 4:55:33 PM MDahlen

SIGNAL TIMING CHART

INTERSECTION: MLK JR. DRIVE & I-90 EASTBOUND EXIT MAINTAINING AGENCY: ODOT									
START UP START IN: Y/R FLASH TIME FOR FLASH OR ALL RED: 3 SEC. FIRST PHASE(S): 2 & 6 COLOR DISPLAYED: GREEN			DUAL ENTRY: -		PHASES: -				
			REST IN RED:		RING 1 -			RING 2 -	
			OVERLAP			A	B	C	D
			PHASES			-	-	-	-
INTERVAL OR FEATURE			CONTROLLER MOVEMENT NO.						
INTERSECTION MOVEMENT (PHASE)			1	2	3	4	5	6	7	8
DIRECTION			SBL	NB	-	EB	-	SB	-	-
MINIMUM GREEN (INITIAL)		(SEC.)	7	25	-	10	-	25	-	-
ADDED INITIAL		*(SEC./ACTUATION)	-	-	-	-	-	-	-	-
MAXIMUM INITIAL		(SEC.)	-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP)		(SEC.)	-	-	-	-	-	-	-	-
TIME BEFORE REDUCTION		*(SEC.)	-	-	-	-	-	-	-	-
MINIMUM GAP		*(SEC.)	-	-	-	-	-	-	-	-
TIME TO REDUCE		*(SEC.)	-	-	-	-	-	-	-	-
MAXIMUM GREEN I		(SEC.)	15	60	-	30	-	60	-	-
MAXIMUM GREEN II		(SEC.)	-	-	-	-	-	-	-	-
YELLOW CHANGE		(SEC.)	3.2	4.1	-	4.1	-	4.1	-	-
ALL RED CLEARANCE		(SEC.)	1.7	1.0	-	1.6	-	1.0	-	-
WALK		(SEC.)	-	-	-	-	-	7	-	-
PEDESTRIAN CLEARANCE		(SEC.)	-	-	-	-	-	9	-	-
RECALL	MAXIMUM	(ON/OFF)	OFF	OFF	-	OFF	-	OFF	-	-
	MINIMUM	(ON/OFF)	OFF	OFF	-	OFF	-	OFF	-	-
	PEDESTRIAN	(ON/OFF)	OFF	ON	-	OFF	-	ON	-	-
MEMORY		(ON/OFF)	OFF	OFF	-	OFF	-	OFF	-	-

*VOLUME DENSITY CONTROLS
COUNTDOWN PEDESTRAIN SIGNALS SHALL GO TO ZERO ON YELLOW PER OMUTCD FIGURE 4E-2
PEDESTRIAN PHASE TO REST IN WALK

PHASING DIAGRAM



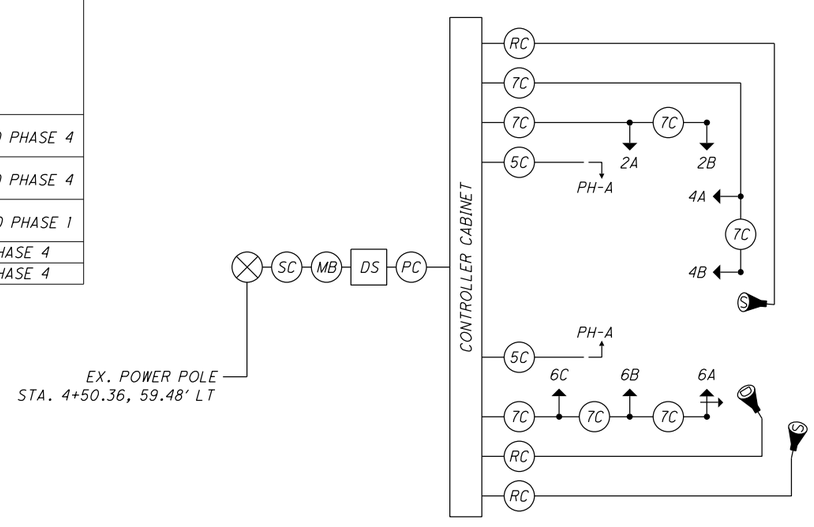
FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
2A (NB)	R	ϕ2R	Y
	Y	ϕ2Y	
	G	ϕ2G	
2B (NB)	R	ϕ2R	Y
	Y	ϕ2Y	
	G	ϕ2G	
4A (EB)	R	ϕ4R	R
	Y	ϕ4Y	
	G	ϕ4G	
4B (EB)	R	ϕ4R	R
	Y	ϕ4Y	
	G	ϕ4G	
6A (SB)	R	ϕ6R	Y
	Y	ϕ6Y	
	G	ϕ6G	
	⇦R-	ϕ1Y	
	⇦Y-	ϕ1G	
6B (SB)	R	ϕ6R	Y
	Y	ϕ6Y	
	G	ϕ6G	
6C (SB)	R	ϕ6R	Y
	Y	ϕ6Y	
	G	ϕ6G	
PEDESTRIAN MOVEMENTS			
PED A (N-S)	W	ϕ6PED/LS10G	OUT
	DW	ϕ6PED/LS10R	
LS = LOADSWITCH			

RADAR DETECTION CHART

DETECTION ZONE	MOVEMENT	PULSE OR PRESENCE	ASSOCIATED PHASE	DELAY IN CONTROLLER (SEC)	EXTENSION IN CONTROLLER (SEC)	DELAY INHIBIT PHASE	PURPOSE
R-1	EB RIGHT	PRESENCE	4	10	-	YES DURING GREEN PHASE	CALL/EXTEND PHASE 4
R-2	EB TR/RT/LT	PRESENCE	4	3	-	YES DURING GREEN PHASE	CALL/EXTEND PHASE 4
R-3	SB LEFT	PRESENCE	1	3	-	YES DURING GREEN PHASE	CALL/EXTEND PHASE 1
R-4	EB RIGHT	PULSE	4	-	2	-	EXTEND PHASE 4
R-5	EB TR/RT/LT	PULSE	4	-	2	-	EXTEND PHASE 4

WIRING DIAGRAM



LEGEND

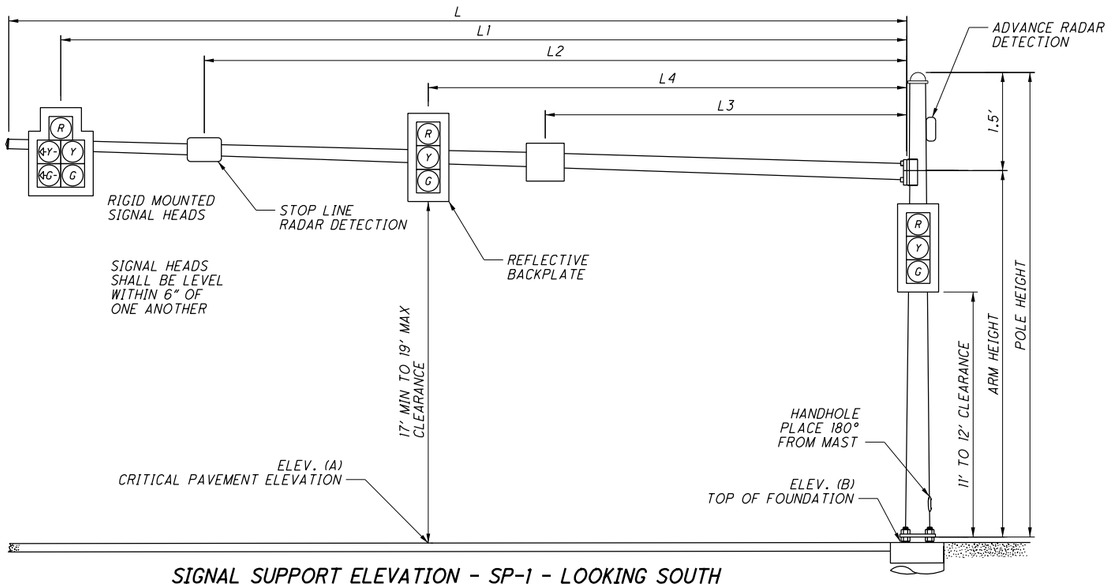
- 3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- 5 SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- PEDESTRIAN SIGNAL HEAD
- STOP LINE RADAR DETECTION UNIT
- ADVANCE RADAR DETECTION UNIT
- 5C — SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG
- 7C — SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
- RC — RADAR DETECTION CABLE
- POWER SOURCE
- PC — POWER CABLE, 3 CONDUCTOR, NO. 8 AWG
- MB — METER BASE
- DS — SIGNAL DISCONNECT SWITCH
- SC — SERVICE CABLE, 3 CONDUCTOR, NO. 8 AWG

CALCULATED GM CHECKED JTS

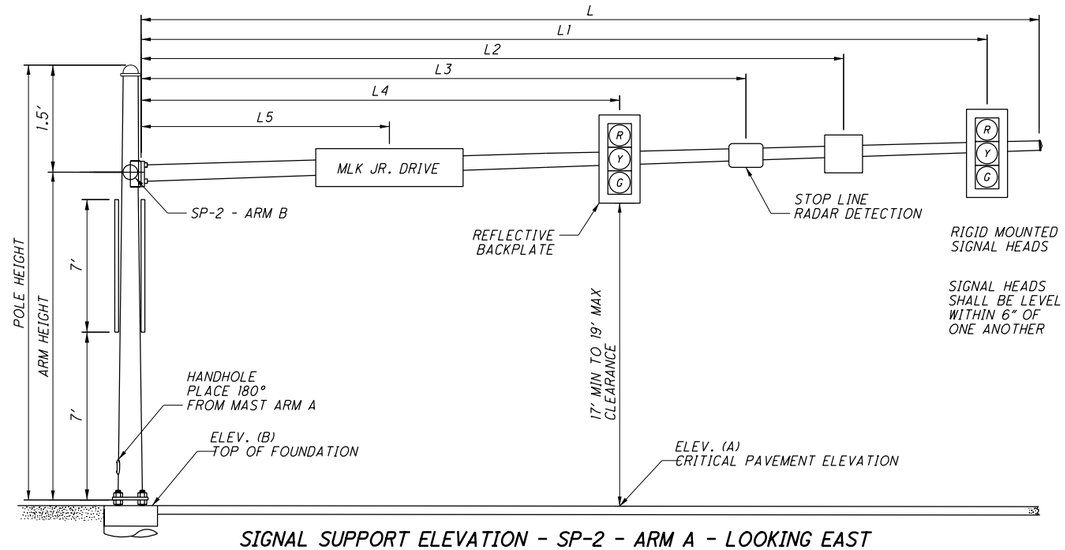
TRAFFIC SIGNAL PLAN DETAILS
MLK JR. DRIVE & EB ENTRANCE/EXIT RAMP

CUY-90-21.02

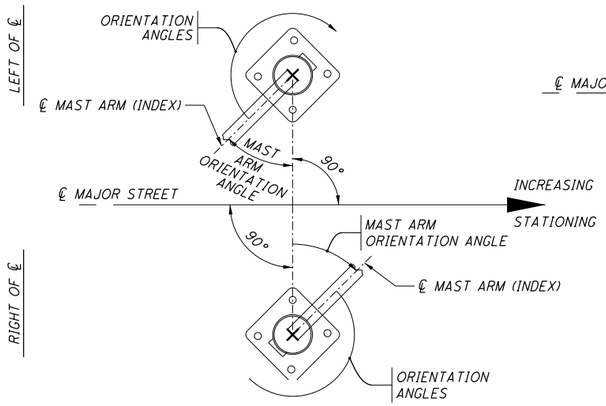
133
153



SIGNAL SUPPORT ELEVATION - SP-1 - LOOKING SOUTH

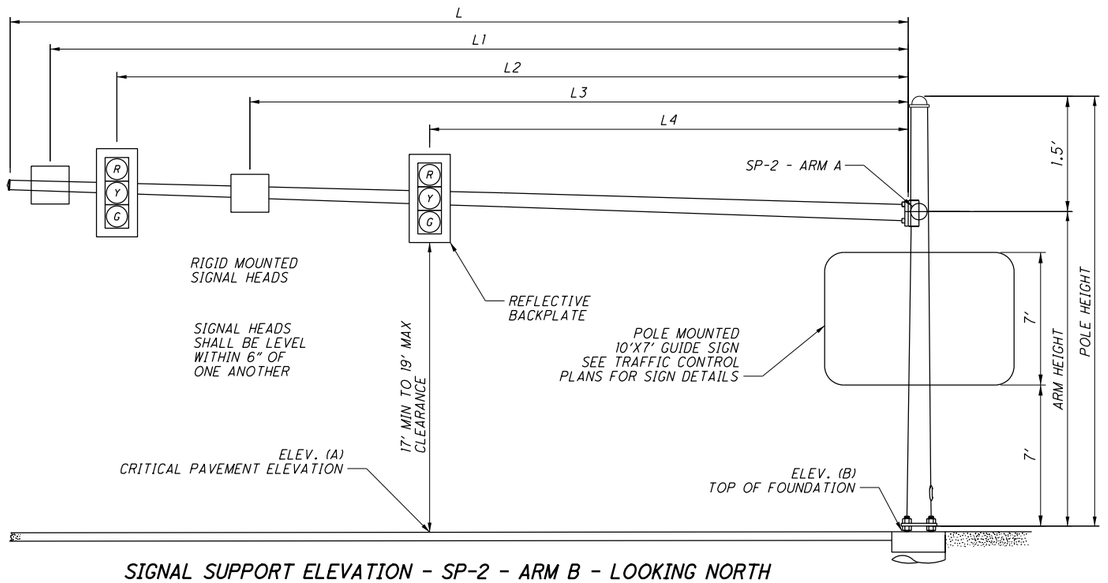


SIGNAL SUPPORT ELEVATION - SP-2 - ARM A - LOOKING EAST



POLE ORIENTATION

PEDESTAL ORIENTATION



SIGNAL SUPPORT ELEVATION - SP-2 - ARM B - LOOKING NORTH

MAST ARM TABLE

SUPPORT NO.	STATION	OFFSET	ELEVATION A	ELEVATION B	SIGNAL SUPPORT DETAILS: DESIGN TYPE	DESIGN NO.	POLE HEIGHT	ARM HEIGHT	L	L1	L2	L3	L4	L5	ORIENTATION ANGLES: MAST ARM A ANGLE	MAST ARM B ANGLE	PEDESTRIAN SIGNAL	PEDESTRIAN BUTTON
							FT	FT	FT	FT	FT	FT	FT	FT	DEG	DEG	DEG	DEG
SP-1	4+42.50	40.0' LT	597.14	597.99	TC-81.21	11	20.5	19.0	45.0	41.0	37.0	28.5	24.5	-	0	-	180	-
SP-2	4+96.00	51.0' RT	-	597.53	TC-12.30	9	20.5	-	-	-	-	-	-	-	-	-	-	-
ARM A	-	-	596.73	-	TC-81.21	13	-	19.0	50.5	46.5	43.5	37.5	34.5	15.0	270	-	-	-
ARM B	-	-	596.28	-	TC-81.21	12	-	19.0	46.5	44.0	37.0	32.0	27.0	-	-	0	-	-
PP-1	5+08.00	45.5' LT	-	-	TC-85.10	-	8.0	-	-	-	-	-	-	-	-	-	TOP	-

CALCULATED GM
CHECKED JTS

TRAFFIC SIGNAL PLAN DETAILS
MLK JR. DRIVE & EB ENTRANCE/EXIT RAMP

CUY-90-21.02

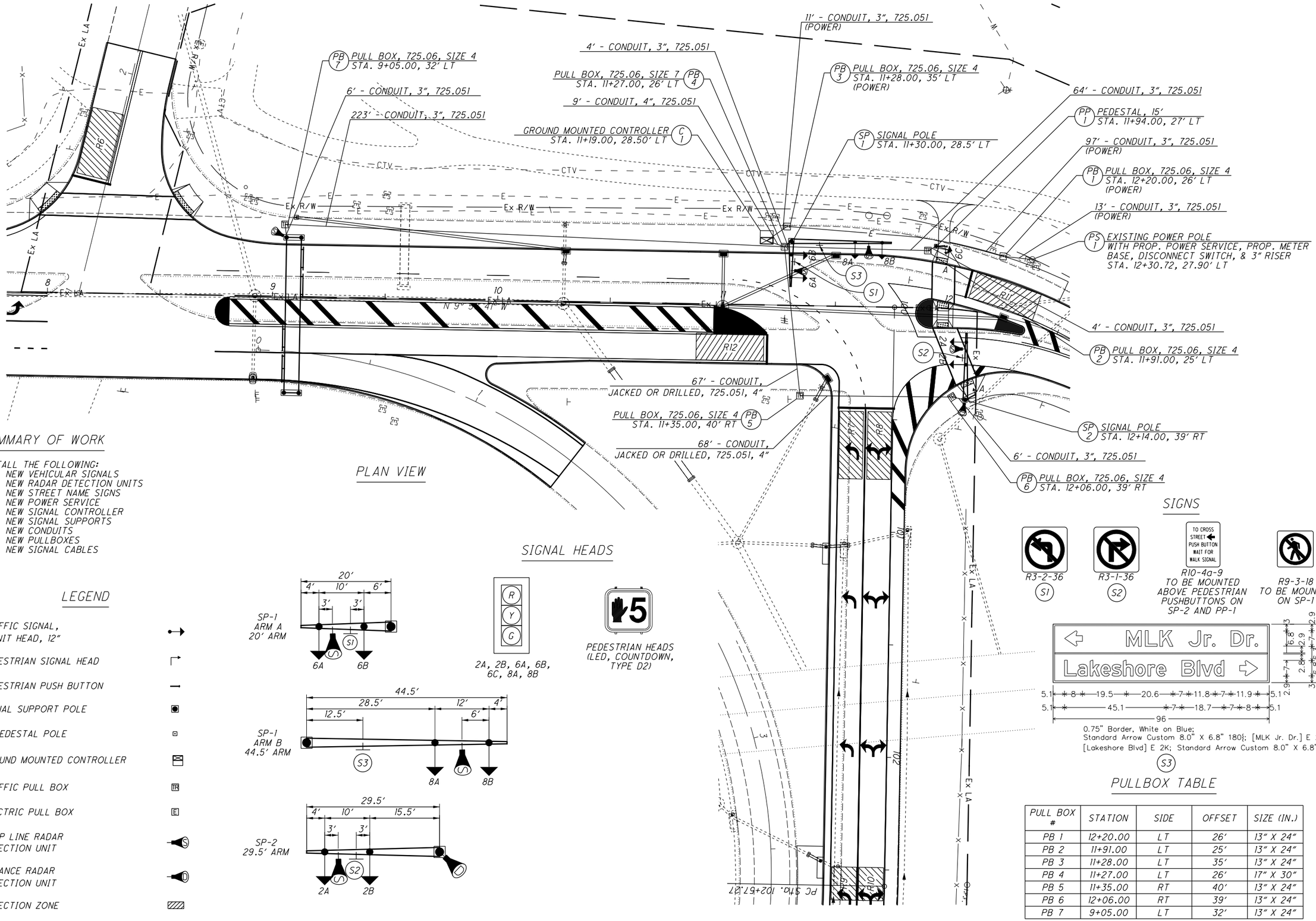
REF. NO.	SHEET NO.	STATION TO STATION		SIDE	625	625	625	625	625	625	625	625	625	630	630	632	632	632	632	632	632	632	632	632	632	632	632	632	632	633	633	633	633	809	809
					CONDUIT, 3", 725.051	CONDUIT, 4", 725.051	CONDUIT, JACKED OR DRILLED, 725.051, 4"	TRENCH	PULL BOX, 725.06, SIZE 4, AS PER PLAN	PULL BOX, 725.06, SIZE 7, AS PER PLAN	GROUND ROD	POWER SERVICE, AS PER PLAN	PLASTIC CAUTION TAPE	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN	SIGN, FLAT SHEET	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	COVERING OF VEHICULAR SIGNAL HEAD, AS PER PLAN	COVERING OF PEDESTRIAN SIGNAL HEAD	PEDESTRIAN PUSHBUTTON, AS PER PLAN	SIGNAL CABLE, 3 CONDUCTOR, NO. 14 AWG	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	SIGNAL SUPPORT FOUNDATION, AS PER PLAN	PEDESTAL FOUNDATION	POWER CABLE, 3 CONDUCTOR, NO. 8 AWG	SERVICE CABLE, 3 CONDUCTOR, NO. 8 AWG	CONDUIT RISER, 3" DIAMETER	SIGNAL SUPPORT, TYPE TC-81.21 DESIGN 12 POLE, WITH MAST ARMS TC-81.21 DESIGN 11 AND DESIGN 1, AS PER PLAN	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 2, AS PER PLAN	PEDESTAL, MISC.: 15', TRANSFORMER BASE	SIGNALIZATION, MISC.: FOUNDATION TEST HOLE	CONTROLLER UNIT, TYPE 2070E WITH SEPAC SOFTWARE, WITH CABINET, TYPE 332L, AS PER PLAN	CABINET FOUNDATION	CONTROLLER WORK PAD	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	ADVANCE RADAR DETECTION, AS PER PLAN	STOP LINE RADAR DETECTION, AS PER PLAN
		FROM	TO		FT	FT	FT	FT	EACH	EACH	EACH	EACH	FT	EACH	SF	EACH	EACH	EACH	EACH	EACH	EACH	FT	FT	FT	EACH	EACH	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
PS-1	136	12+30.72		LT								1															20		1								
C-1	136	11+19.00		LT							1																					1	1	1	1	1	4
SP-1	136	11+30.00		LT							1			2	28.6									1				1			1					
SP-2	136	12+14.00		RT							1			1	9.0									1					1		1					
PP-1	136	11+94.00		LT							1														1					1	1					
	136	PS-1	PB-1	LT	13			13	1				13														38									
	136	PB-1	PB-3	LT	97			97	1				97														102									
	136	PB-3	C-1	LT	11			11					11														16									
	136	C-1	PB-4	LT		9		9		1			9																							
	136	PB-4	PB-7	LT	223			223	1				223																							
	136	PB-7	TRUSS	LT	6			6					6																							
	136	PB-4	PB-2	LT	64			64	1				64																							
	136	PB-2	PP-1	LT	4			4					4																							
	136	PB-4	PB-5	LT/RT			67		1																											
	136	PB-5	PB-6	RT			68		1																											
	136	PB-6	SP-2	RT	6			6					6																							
	136	C-1	SIGNAL 2B													1		1					227													
	136	C-1	SIGNAL 2A													1		1					20													
	136	C-1	SIGNAL 6C													1		1					122													
	136	C-1	SIGNAL 6B													1		1					60													
	136	C-1	SIGNAL 6A													1		1					20													
	136	C-1	SIGNAL 8A													1		1					79													
	136	C-1	SIGNAL 8B													1		1					20													
	136	C-1	SIGNAL PP-1														1		1	1	107	112														
	136	C-1	SIGNAL SP-2														1		1	1	185	190														
TOTALS CARRIED TO GENERAL SUMMARY					424	9	135	433	6	1	4	1	433	3	37.6	7	2	7	2	2	292	302	548	2	1	20	156	1	1	1	1	4	1	1	1	1	1	4

CALCULATED GM
CHECKED JTS

TRAFFIC SIGNAL SUBSUMMARY
MLK JR. DRIVE & WB EXIT RAMP

CUY-90-21.02

135
153



PLAN VIEW

SUMMARY OF WORK

INSTALL THE FOLLOWING:
- NEW VEHICULAR SIGNALS
- NEW RADAR DETECTION UNITS
- NEW STREET NAME SIGNS
- NEW POWER SERVICE
- NEW SIGNAL CONTROLLER
- NEW SIGNAL SUPPORTS
- NEW CONDUITS
- NEW PULLBOXES
- NEW SIGNAL CABLES

LEGEND

- TRAFFIC SIGNAL, 3 UNIT HEAD, 12"
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- SIGNAL SUPPORT POLE
- 8' PEDESTAL POLE
- GROUND MOUNTED CONTROLLER
- TRAFFIC PULL BOX
- ELECTRIC PULL BOX
- STOP LINE RADAR DETECTION UNIT
- ADVANCE RADAR DETECTION UNIT
- DETECTION ZONE

SIGNAL HEADS

2A, 2B, 6A, 6B, 6C, 8A, 8B

PEDESTRIAN HEADS (LED, COUNTDOWN, TYPE D2)

SIGNS

R10-4a-9
TO BE MOUNTED ABOVE PEDESTRIAN PUSHBUTTONS ON SP-2 AND PP-1

R9-3-18
TO BE MOUNTED ON SP-1

0.75" Border, White on Blue;
Standard Arrow Custom 8.0" X 6.8" 180◊; [MLK Jr. Dr.] E 2K;
[Lakeshore Blvd] E 2K; Standard Arrow Custom 8.0" X 6.8" 0◊;

S3

PULLBOX TABLE

PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB 1	12+20.00	LT	26'	13" X 24"
PB 2	11+91.00	LT	25'	13" X 24"
PB 3	11+28.00	LT	35'	13" X 24"
PB 4	11+27.00	LT	26'	17" X 30"
PB 5	11+35.00	RT	40'	13" X 24"
PB 6	12+06.00	RT	39'	13" X 24"
PB 7	9+05.00	LT	32'	13" X 24"

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MGW
CHECKED JTS

TRAFFIC SIGNAL PLAN
MLK JR. DRIVE & WB EXIT RAMP

CUY-90-21.02

136
153

10321_CP002.dgn WB RAMPS INTERSECTION 9/6/2018 4:56:23 PM MDohlen

SIGNAL TIMING CHART

INTERSECTION: MLK JR DRIVE & I-90 WESTBOUND EXIT
MAINTAINING AGENCY: ODOT

START UP
START IN: Y/R FLASH
TIME FOR FLASH OR ALL RED: 3 SEC.
FIRST PHASE(S): 2 & 6
COLOR DISPLAYED: GREEN

DUAL ENTRY: - PHASES: -
REST IN RED: RING 1 - RING 2 -

OVERLAP	A	B	C	D
PHASES	-	-	-	-

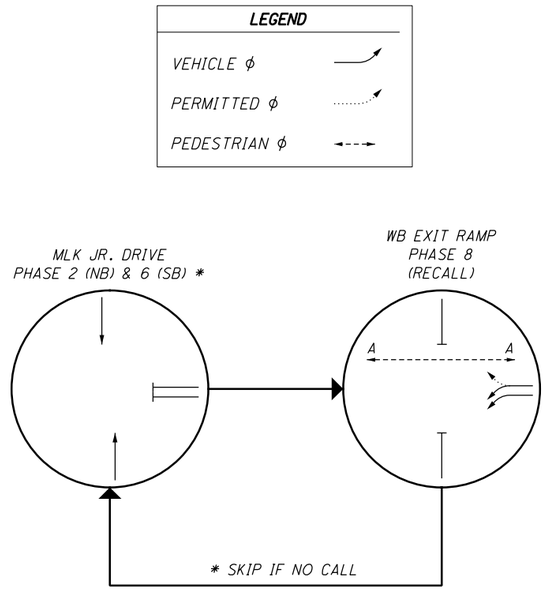
INTERVAL OR FEATURE			CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)			1	2	3	4	5	6	7	8
DIRECTION			-	NB	-	-	-	SB	-	WB
MINIMUM GREEN (INITIAL)		(SEC.)	-	25	-	-	-	25	-	10
ADDED INITIAL		*(SEC./ACTUATION)	-	-	-	-	-	-	-	-
MAXIMUM INITIAL		(SEC.)	-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP)		(SEC.)	-	-	-	-	-	-	-	-
TIME BEFORE REDUCTION		*(SEC.)	-	-	-	-	-	-	-	-
MINIMUM GAP		*(SEC.)	-	-	-	-	-	-	-	-
TIME TO REDUCE		*(SEC.)	-	-	-	-	-	-	-	-
MAXIMUM GREEN I		(SEC.)	-	60	-	-	-	60	-	30
MAXIMUM GREEN II		(SEC.)	-	-	-	-	-	-	-	-
YELLOW CHANGE		(SEC.)	-	4.1	-	-	-	4.1	-	4.1
ALL RED CLEARANCE		(SEC.)	-	1.0	-	-	-	1.0	-	1.6
WALK		(SEC.)	-	-	-	-	-	-	-	9
PEDESTRIAN CLEARANCE		(SEC.)	-	-	-	-	-	-	-	13
RECALL	MAXIMUM	(ON/OFF)	-	OFF	-	-	-	OFF	-	OFF
	MINIMUM	(ON/OFF)	-	OFF	-	-	-	OFF	-	ON
	PEDESTRIAN	(ON/OFF)	-	OFF	-	-	-	OFF	-	OFF
MEMORY		(ON/OFF)	-	OFF	-	-	-	OFF	-	OFF

*VOLUME DENSITY CONTROLS
COUNTDOWN PEDESTRIAN SIGNALS SHALL GO TO ZERO ON YELLOW PER OMUTCD FIGURE 4E-2
PEDESTRIAN PHASE TO REST IN WALK

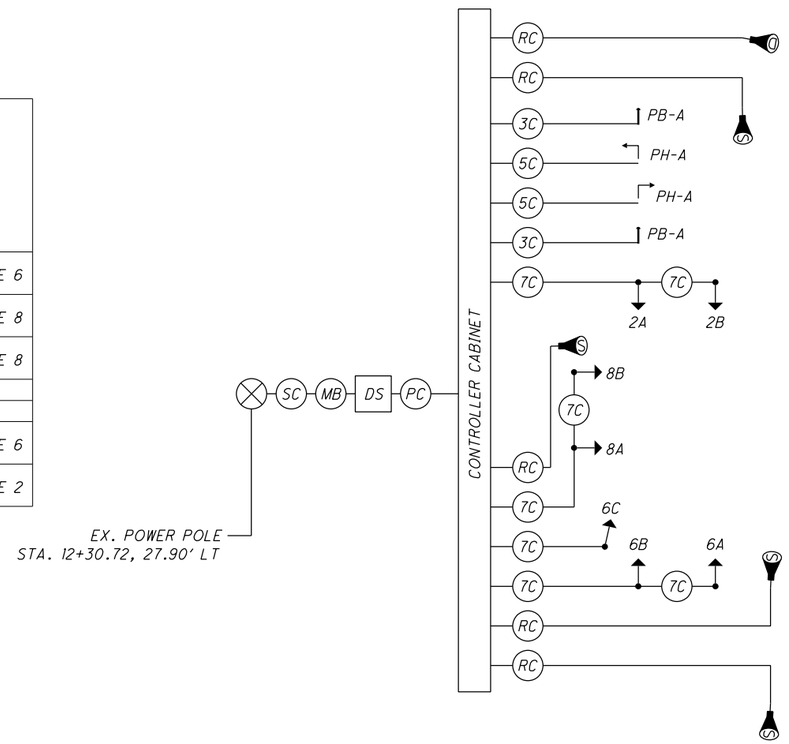
RADAR DETECTION CHART

DETECTION ZONE	MOVEMENT	PULSE OR PRESENCE	ASSOCIATED PHASE	DELAY IN CONTROLLER (SEC)	EXTENSION IN CONTROLLER (SEC)	DELAY INHIBIT PHASE	PURPOSE
R-6	NORTH MARGINAL EB LT/RT	PRESENCE	6	10	-	YES DURING GREEN PHASE	CALL/EXTEND PHASE 6
R-7	WB LEFT	PRESENCE	8	10	-	YES DURING GREEN PHASE	CALL/EXTEND PHASE 8
R-8	WB LT/RT	PRESENCE	8	10	-	YES DURING GREEN PHASE	CALL/EXTEND PHASE 8
R-9	WB LEFT	PULSE	8	-	2	-	EXTEND PHASE 8
R-10	WB LT/RT	PULSE	8	-	2	-	EXTEND PHASE 8
R-11	SB THROUGH	PRESENCE	6	10	-	YES DURING GREEN PHASE	CALL/EXTEND PHASE 6
R-12	NB THROUGH	PRESENCE	2	10	-	YES DURING GREEN PHASE	CALL/EXTEND PHASE 2

PHASING DIAGRAM



WIRING DIAGRAM



FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
2A (NB)	R	ϕ2R	Y
	Y	ϕ2Y	
	G	ϕ2G	
2B (NB)	R	ϕ2R	Y
	Y	ϕ2Y	
	G	ϕ2G	
6A (SB)	R	ϕ6R	Y
	Y	ϕ6Y	
	G	ϕ6G	
6B (SB)	R	ϕ6R	Y
	Y	ϕ6Y	
	G	ϕ6G	
6C (SB)	R	ϕ6R	Y
	Y	ϕ6Y	
	G	ϕ6G	
8A (WB)	R	ϕ8R	R
	Y	ϕ8Y	
	G	ϕ8G	
8B (WB)	R	ϕ8R	R
	Y	ϕ8Y	
	G	ϕ8G	
PEDESTRIAN MOVEMENTS			
PED A (E-W)	W	ϕ8PED/LS10G	OUT
	DW	ϕ8PED/LS10R	
LS = LOADSWITCH			

LEGEND

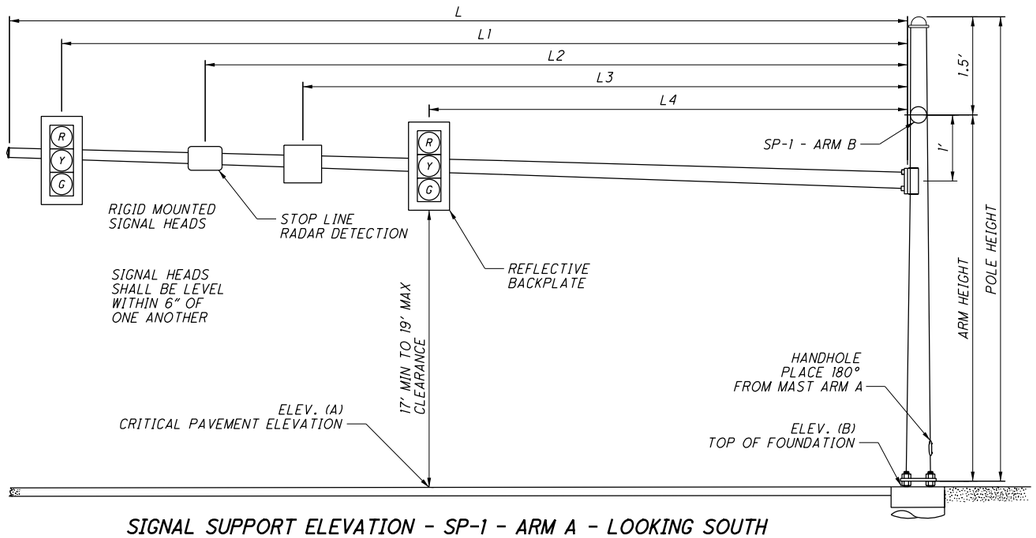
- 3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- (S) STOP LINE RADAR DETECTION UNIT
- (D) ADVANCE RADAR DETECTION UNIT
- (3C) SIGNAL CABLE, 3 CONDUCTOR, NO. 14 AWG
- (5C) SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG
- (7C) SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
- (RC) RADAR DETECTION CABLE
- POWER SOURCE
- (PC) POWER CABLE, 3 CONDUCTOR, NO. 8 AWG
- (MB) METER BASE
- (DS) SIGNAL DISCONNECT SWITCH
- (SC) SERVICE CABLE, 3 CONDUCTOR, NO. 8 AWG

CALCULATED GM CHECKED JTS

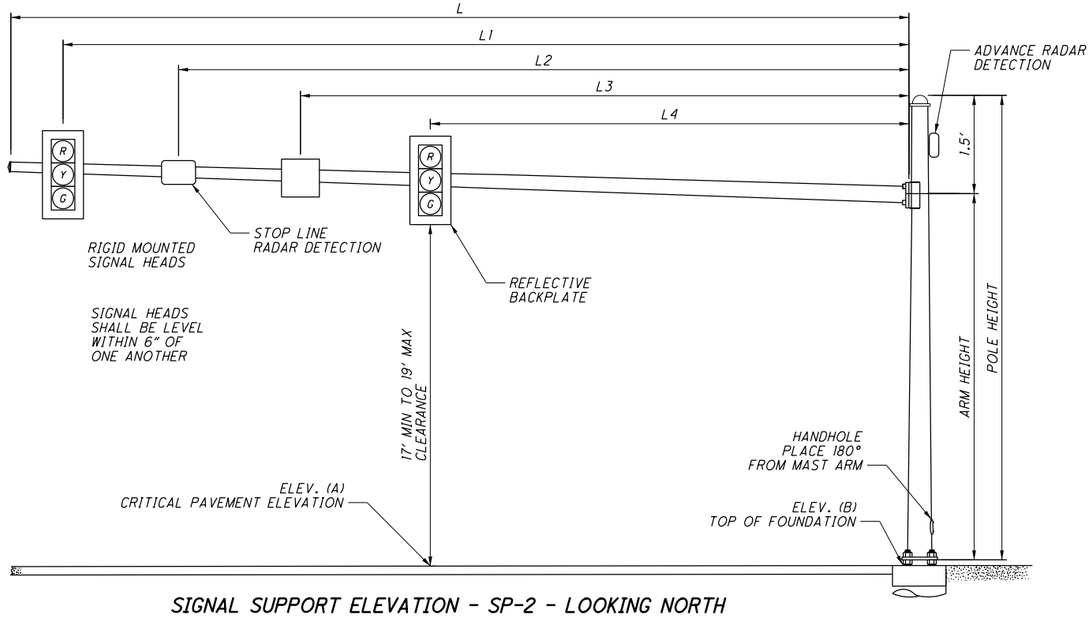
TRAFFIC SIGNAL PLAN DETAILS
MLK JR. DRIVE & WB EXIT RAMP

CUY-90-21.02

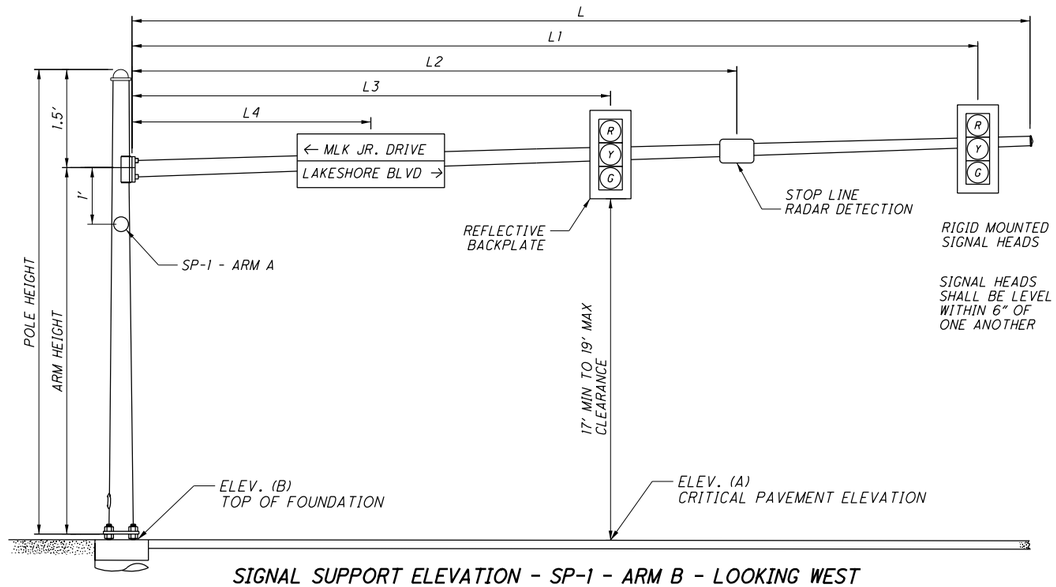
137
153



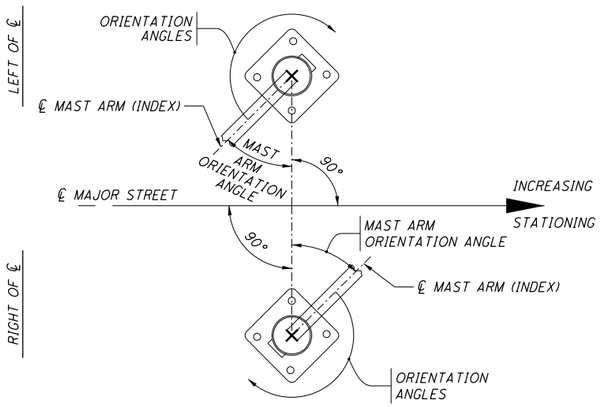
SIGNAL SUPPORT ELEVATION - SP-1 - ARM A - LOOKING SOUTH



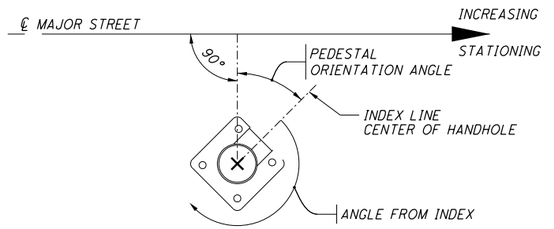
SIGNAL SUPPORT ELEVATION - SP-2 - LOOKING NORTH



SIGNAL SUPPORT ELEVATION - SP-1 - ARM B - LOOKING WEST



POLE ORIENTATION



PEDESTAL ORIENTATION

MAST ARM TABLE

SUPPORT NO.	STATION	OFFSET	ELEVATION A	ELEVATION B	DESIGN TYPE	DESIGN NO.	POLE HEIGHT	ARM HEIGHT	L	L1	L2	L3	L4	L5	MAST ARM A ANGLE	MAST ARM B ANGLE	PEDESTRIAN SIGNAL	PEDESTRIAN BUTTON
							FT	FT	FT	FT	FT	FT	FT	FT	DEG	DEG	DEG	DEG
SP-1	11+30.00	28.5' LT	-	586.79	TC-81.21	12	21.5	-	-	-	-	-	-	-	-	-	-	-
ARM A	-	-	586.04	-	TC-81.21	1	-	19.0	20.0	16.0	13.0	9.0	6.0	-	0	-	-	-
ARM B	-	-	586.71	-	TC-81.21	11	-	20.0	44.5	40.5	34.5	28.5	12.5	-	-	270	-	-
SP-2	12+14.00	39.0' RT	585.65	585.83	TC-81.21	2	21.5	20.0	29.5	25.5	22.5	18.5	15.5	-	0	-	75	75
PP-1	11+94.00	27.0' LT	-	-	TC-85.10	-	15.0	-	-	-	-	-	-	-	-	-	TOP	180

CALCULATED GM
CHECKED JTS

TRAFFIC SIGNAL PLAN DETAILS
MLK JR. DRIVE & WB EXIT RAMP

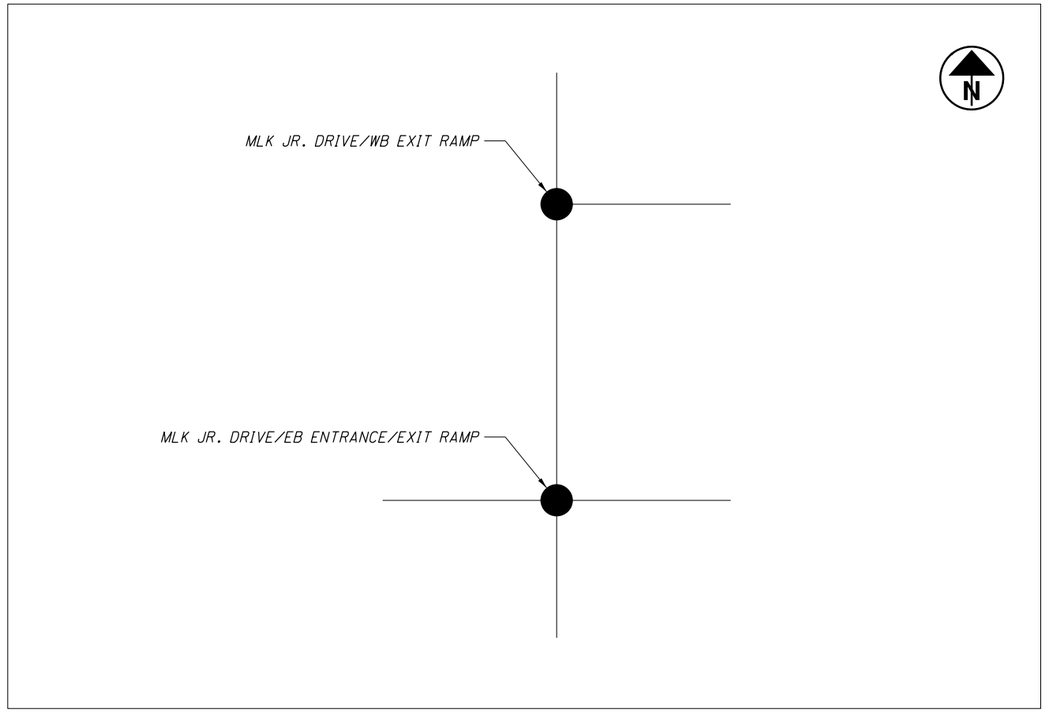
CUY-90-21.02

COORDINATION TIMING CHART (TEM FORM 496-5)

MLK JR. DRIVE/EB ENTRANCE/EXIT RAMP										
PHASE	1	2	3	4	5	6	7	8	OFFSET 1 (SEC)	OFFSET 2 (SEC)
DIRECTION	-	NB	-	EB	-	SB	-	-		
PLAN NO.	SPLITS (G+Y+AR) IN SECONDS									
PATTERN 1 - 1/1/1 (120 SEC)	-	92	-	28	-	92	-	-	0	-
PATTERN 2 - 2/1/1 (100 SEC)	-	64	-	36	-	64	-	-	12	-

MLK JR. DRIVE/WB EXIT RAMP										
PHASE	1	2	3	4	5	6	7	8	OFFSET 1 (SEC)	OFFSET 2 (SEC)
DIRECTION	-	NB	-	-	-	SB	-	WB		
PLAN NO.	SPLITS (G+Y+AR) IN SECONDS									
PATTERN 1 - 1/1/1 (120 SEC)	-	46	-	-	-	46	-	74	0	-
PATTERN 2 - 2/1/1 (100 SEC)	-	20	-	-	-	20	-	80	0	-

CORRIDOR LAYOUT



COORDINATION TIMING PLANS

COORDINATION TIMING PLANS				
DAY(S) OF WEEK	PLAN NAME	HOURS	CYCLE/SPLIT/OFFSET	CYCLE LENGTH (SEC)
MONDAY-SUNDAY	FREE	0000-0630	FREE	-
MONDAY-SUNDAY	AM PEAK	0630-0930	PATTERN 2 (2/1/1)	100
MONDAY-SUNDAY	FREE	0930-1430	FREE	-
MONDAY-SUNDAY	PM PEAK	1430-1900	PATTERN 1 (1/1/1)	120
MONDAY-SUNDAY	FREE	1900-2400	FREE	-

NOTES:

- OFFSETS ARE MEASURED FROM REFERENCE PHASE NUMBERED "END OF GREEN/BEGINNING OF YELLOW."
- MASTER INTERSECTION OFFSET REFERENCE IS ALWAYS EQUAL TO ZERO.
- $\Sigma\phi 1 + \phi 2 = \Sigma\phi 5 + \phi 6$ AND $\Sigma\phi 3 + \phi 4 = \Sigma\phi 7 + \phi 8$

CALCULATED GM
CHECKED JTS

TRAFFIC SIGNAL COORDINATION PLAN

CUY-90-21.02

PROPOSED WORK

THE INTENT OF THESE HIGHWAY LIGHTING PLANS IS AS FOLLOWS:

1. INSTALL UNDERPASS LIGHTING ALONG MLK JR. DRIVE AT I-90 UNDERPASS BRIDGE.
2. REMOVE AND REPLACE THE EXISTING LIGHT POLE AT THE SOUTHEAST CORNER OF THE MLK JR. DRIVE/I-90 EB RAMP INTERSECTION.
3. REMOVE AND REPLACE THE EXISTING PULL BOX NEAR STA. 2+00 (MLK JR. DRIVE).

LIGHTING GENERAL SPECIFICATION

THESE NOTES ARE SUPPLEMENTAL TO ITEMS 625 AND 725 OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.

THE LIGHTING INSTALLATION AND MATERIALS SHALL BE IN ACCORDANCE WITH CLEVELAND PUBLIC POWER (CPP) SPECIFICATIONS.

CONFLICTS WITH EXISTING UTILITIES

PRIOR TO INSTALLING ANY OF THE PROPOSED STREET LIGTHING EQUIPMENT, THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF ALL UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID ANY DAMAGE. ALL REPAIRS TO ANY DAMAGE TO EXISTING UTILITIES CAUSED BY THE FAILURE TO COORDINATE WITH THE RESPECTIVE UTILITY COMPANIES AND DRILL APPROPRIATE UTILITY TEST HOLES, WILL BE PAID FOR BY THE CONTRACTOR.

THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UNDERGROUND PIPE LINES, DRAINAGE, ELECTRICAL CONDUIT AND DUCTBANKS, WATERLINES, COMMUNICATION DUCTS, AND OTHER STRUCTURES BY CONTACTING OWNERS OF UNDERGROUND UTILITIES AND BY DRILLING APPROPRIATE UTILITY TEST HOLES.

COORDINATE THE LIGHTING PLANS WITH THE ROADWAY CONSTRUCTION PLANS AND CROSS-SECTIONS. COORDINATE EQUIPMENT LOCATIONS WITH THE KEYNOTE SHEETS AND VARIOUS NOTES ON EACH LIGHTING PLAN AND DETAIL SHEET.

THE CONTRACTOR SHALL MAINTAIN PROPER CLEARANCE FROM ALL OVERHEAD AND UNDERGROUND UTILITIES AND SHALL CONTACT EACH UTILITY FOR SPECIFIC REQUIREMENTS.

DISCONNECT CIRCUIT

THIS ITEM OF WORK SHALL CONSIST OF THE DISCONNECTION OF AN EXISTING LIGHT CIRCUIT AT A PULL BOX OR A LIGHT POLE. CONTACT CLEVELAND PUBLIC POWER TO DE-ENERGIZE CIRCUITS BEFORE REMOVAL.

DISCONNECTION AT A PULL BOX SHALL INVOLVE CUTTING THE EXISTING CIRCUIT AND REMOVING ALL SPLICE KITS. ANY CABLE THAT IS TO BE ABANDONED SHALL BE TERMINATED FROM THE PULL BOX SO THAT NO CABLE IS LEFT IN THE BOX.

DISCONNECTION AT A LIGHT POLE SHALL ALSO INVOLVE DISCONNECTION OF THE CIRCUIT AT THE ADJACENT JUNCTION BOX, PULL BOX, ETC.

A CIRCUIT MAY REQUIRE CUTTING AND/OR DISCONNECTING AT VARIOUS LOCATIONS ALONG THE CIRCUIT WHETHER AT A LIGHT POLE, JUNCTION BOX OR PULL BOX.

DISCONNECT CIRCUIT WILL BE INCIDENTAL TO THE APPROPRIATE REMOVAL ITEM.

GOVERNING AGENCIES

LIGHTING SYSTEM MAINTAINING AGENCY/POWER SUPPLY AGENCY:
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC POWER (CPP)
1300 LAKESIDE AVE
CLEVELAND, OHIO 44114
ATTN: MR. CHRISTOPHER HIRZEL
PHONE: 216-664-3922 EXT. 76115

STREETLIGHTING:
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC POWER (CPP)
743 EAST 140TH ST
CLEVELAND, OHIO 44110
ATTN: MR. BRYAN SHEPHERD
PHONE:
216-664-3922 EXT. 76183 (OFFICE)
216-857-6908 (MOBILE)

ITEM 625 - LUMINAIRE, MISC.: CPP STANDARD LED ROADWAY LUMINAIRE

LUMINAIRE SHALL BE LEOTEK E-COBRA (TM) LED STREET AND AREA LIGHTS WITH CATALOG NUMBER EC9-30M2-HV-NW-3-FDB-700-PCR7CR-WL.

HOUSING
DIE CAST ALUMINUM HOUSING WITH UNIVERSAL TWO-BOLT SLIP FITTER MOUNTS TO 1-1/4" TO 2" (1-5/8" TO 2-3/8" O.D.) DIAMETER MAST ARM. ALUMINUM HOUSING PROVIDES PASSIVE HEAT-SINKING OF THE LEDS AND HAS UPPER SURFACES THAT SHED PRECIPITATION. MOUNTING PROVISIONS MEET 3G VIBRATION PER ANSI C136.31-2001 NORMAL APPLICATION, BRIDGE & OVERPASS. MOUNTING HAS LEVELING ADJUSTMENT FROM +5° TO -5° IN 2.5° INCREMENTS. ELECTRICAL COMPONENTS ARE ACCESSED WITHOUT TOOLS AND ARE MOUNTED ON REMOVABLE POWER DOOR WITH STAINLESS STEEL LATCHES. STANDARD RUBBER WILDLIFE GUARD CONFORMS TO MAST ARM WITH NO GAPS.

LIGHT EMITTING DIODES
HI-FLUX/HI-POWER WHITE LEDS PRODUCE A MINIMUM OF 90% OF INITIAL INTENSITY AT 100,000 HOURS OF LIFE BASED ON IES TM-21. LEDS ARE TESTED IN ACCORDANCE WITH IES LM-80 TESTING PROCEDURES. LEDS HAVE CORRELATED COLOR TEMPERATURE OF 4000K (NW) AND 70 CRI MINIMUM. LEDS ARE 100% MERCURY AND LEAD FREE.

OPTICAL SYSTEMS
MICRO-LENS OPTICAL SYSTEMS PRODUCE IESNA TYPE 2, TYPE 3, TYPE 4 OR TYPE 5 DISTRIBUTIONS AND ARE FULLY SEALED TO MAINTAIN AN IP66 RATING. LUMINAIRE PRODUCES 0% TOTAL LUMENS ABOVE 90°(BUG RATING, U=0).

ELECTRICAL
RATED LIFE OF ELECTRICAL COMPONENTS IS 100,000 HOURS. USES ISOLATED POWER SUPPLY THAT IS 1-10V DIMMABLE. POWER SUPPLY IS WIRED WITH QUICK-DISCONNECT TERMINALS. LED DRIVE CURRENT CAN BE CHANGED IN THE FIELD TO ADJUST LIGHT OUTPUT FOR LOCAL CONDITIONS (NOT AVAILABLE WITH FDC, PCR5-CR OR PCR7-CR OPTIONS). POWER SUPPLY FEATURES A MINIMUM POWER FACTOR OF .90 AND <20% TOTAL HARMONIC DISTORTION (THD). EMC PERFORMANCE MEETS OR EXCEEDS FCC CFR PART 15. TERMINAL BLOCK ACCOMMODATES 6 TO 14 GAUGE WIRE. SURGE PROTECTION COMPLIES WITH IEEE/ANSI C62.41 CATEGORY C HIGH, 25kV/10kA.

CONTROLS
3-WIRE PHOTOCONTROL RECEPTACLE IS STANDARD. ANSI C136.41 5-WIRE (PCR5) OR 7-WIRE (PCR7) PHOTOCONTROL RECEPTACLES ARE AVAILABLE. ALL PHOTOCONTROL RECEPTACLES HAVE TOOL-LESS ROTATABLE BASES. WIRELESS CONTROL MODULE IS PROVIDED BY OTHERS.

FINISH
HOUSING RECEIVES A FADE AND ABRASION RESISTANT POLYESTER POWDER COAT FINISH. FINISH TESTED TO WITHSTAND 5000 HOURS IN SALT SPRAY EXPOSURE PER ASTM B117. FINISH TESTED 500 HOURS IN UV EXPOSURE PER ASTM G154 AND MEETS ASTM D523 GLOSS RETENTION. FINISH SHALL BE FULL BRONZE.

LISTINGS/RATINGS/LABELS
LUMINAIRES ARE UL LISTED FOR USE IN WET LOCATIONS IN THE UNITED STATES AND CANADA. DESIGNLIGHTS CONSORTIUM (TM) QUALIFIED 120-277V PRODUCT. INTERNATIONAL DARK SKY ASSOCIATION LISTED. LUMINAIRE IS QUALIFIED TO OPERATE AT AMBIENT TEMPERATURES OF -40°C TO 40°C. ASSEMBLED IN THE U.S.A.

PHOTOMETRY
LUMINAIRES ARE TESTED BY CERTIFIED INDEPENDENT TESTING LABORATORIES IN ACCORDANCE WITH IES LM-79 TESTING PROCEDURES. IES FILES FOR ALL CCTS ARE AVAILABLE AT LEOTEK.COM.

WARRANTY
10-YEAR LIMITED WARRANTY IS STANDARD ON LUMINAIRE AND COMPONENTS.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH CMS ITEM 625, LUMINAIRE, MISC.: CPP STANDARD LED ROADWAY LUMINAIRE FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMAN LIKE MANNER.

ITEM 625 - LIGHTING MISC.: ROUND TAPERED FIBERGLASS STREETLIGHT POLE

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS 725.01, THE FOLLOWING SHALL APPLY:

ALL POLES SHALL BE A HOLLOW, TRUNCATED CONE OF SUITABLE WALL THICKNESS AND TAPER. THE TAPER SHALL BE UNIFORM FROM TOP TO BOTTOM (ANY SECTION SHALL BE CIRCULAR).

ANY POLE PROVIDED SHALL NOT WEIGH LESS THAN 95% OF THE MANUFACTURER'S ADVERTISED OR SPECIFIED WEIGHTS.

FIBERGLASS POLES FURNISHED AS PART OF THIS SPECIFICATION SHALL BE CONSTRUCTED FOR A ROADWAY LUMINAIRE AND BRACKET ARM AT THE TOP OF POLE FOR A NOMINAL MOUNTING HEIGHT OF 30 FEET ABOVE THE ROADWAY SURFACE.

WIND LOADING
THE POLES FURNISHED AS PART OF THIS SPECIFICATION SHALL BE DESIGNED IN ACCORDANCE WITH 90 MPH (30% GUST FACTOR) AASHTO WIND LOADING. CERTIFIED MATHEMATICAL WIND LOAD CALCULATIONS MUST BE SUBMITTED WITH THE BID.

MATERIAL
THE REINFORCING GLASS SHALL BE A COMMERCIAL GRADE OF "E" GLASS FIBERS IN CONTINUOUS FILAMENT, WOVEN FILAMENTS, CHOPPED STRAND FORMS OR A COMBINATION OF THE SAME. THE GLASS FIBERS SHALL BE TREATED WITH A COUPLING AGENT COMPATIBLE WITH THE RESIN USED. THE POLE SHALL BE NON-CONDUCTIVE AND CHEMICALLY INERT. THE THERMOSETTING RESIN SHALL CONTAIN ULTRAVIOLET INHIBITORS AND PIGMENT THROUGHOUT.

SURFACE
THE POLE EXTERIOR SURFACE SHALL BE SMOOTH AND UNIFORM IN TEXTURE AND COLOR AND SHOULD NOT CONTAIN ANY EXPOSED SURFACE FIBERS.

A NON-WOVEN POLYESTER FABRIC TAPE IS TO BE DOUBLE WRAPPED OVER THE UNCURED FIBERGLASS POLE, THE POLYESTER FABRIC IS TO BE PRE-SATURATED WITH POLYESTER RESIN TO IMPREGNATE THE POLE AND INSURE A POSITIVE BOND. THE POLYESTER FABRIC TAPE IS TO BE APPLIED TO THE POLE TO MAINTAIN SURFACE INTEGRITY WITHOUT SIGNIFICANT NOTICEABLE CHANGE IN APPERANCE DO TO ULTRAVIOLET, CHEMICALS AND EXTREME WEATHER CONDITIONS.

THE FINISH COAT SHALL BE HIGHLY WEATHER RESISTANT, COLOR PIGMENTED POLYURETHANE AND SHALL HAVE A DRY FILM THICKNESS OF 1½ MILS MINIMUM. COLOR INCLUDING ALL STANDARD COLORS, TO BE DETERMINED AT TIME OF ORDER. IF NOT SPECIFIED AT TIME OF ORDER COLOR SHALL BE AS FOLLOWS:

- SHERWIN WILLIAMS CLEVELAND LIGHT POLE BROWN, OR EQUAL

THE SURFACE IS TO BE TESTED FOR A MINIMUM OF 2,500 HOURS OF ACCELRATED TESTING IN ACCORDANCE WITH ASTM G-53, LATEST REVISION. THE RESULTS SHALL INDICATE NO FIBER EXPOSURE, CRAZING, OR CHECKING. THERE MAY BE ONLY SLIGHT CHALKING AND COLOR MAY DULL SLIGHTLY.

REINFORCING POLES SHALL BE REINFORCED IN THE AREA BETWEEN FOURTEEN (14) FEET AND TWENTY-FOUR (24) FEET ABOVE THE GROUND LINE TO ALLOW BAND MOUNTING OF HOLIDAY ORNAMENTS OR BANNERS.

POLE TOP
POLE TOP FOR THE STANDARD STREETLIGHT POLES, 30' IN HEIGHT SHALL BE A 3" O.D. X 3 1/2" LONG TENON. THE TENON SHALL BE ALUMINUM OR STEEL PERMANENTLY ATTACHED TO THE POLE SHAFT. THE TENON SHALL BE STRAIGHT WITH NO TAPER AND COATED WITH MATCHING URETHANE FINISH. STANDARD STREETLIGHT POLES SHALL ALSO BE SUPPLIED WITH A TENON CAP.

PULL WIRES
POLES SHALL HAVE PULL WIRES INSTALLED TO FACILITATE INSTALLATION OF CONDUCTORS.

HAND HOLE
EACH POLE SHALL HAVE A HAND HOLE WITH A NON-METALLIC, REMOVABLE, LOCKABLE COVER AND SEAL. THE COVER SHALL BE THE SAME COLOR AND TEXTURE AS THE POLE. THE HAND HOLE SHALL BE 2-1/2" X 5".

SHIPPING EACH POLE SHALL BE INDIVIDUALLY WRAPPED WITH PLASTIC SHRINK FILM OR POLY-BAGGED FOR PROTECTION DURING SHIPPING AND STROAGE.

ITEM 625 - LIGHTING MISC.: ROUND TAPERED FIBERGLASS STREETLIGHT POLE (CONT.)

BASE PLATE AND COVER FOR ANCHOR BASE POLES
A ONE PIECE, STEEL (HOT DIPPED GALVANIZED) ANCHOR BASE CASTING SHALL BE PROVIDED WHICH IS PERMANENTLY ATTACHED TO THE BOTTOM OF THE POLE. THE BASE SHALL BE ADHESIVELY BONDED TO THE POLE AND SHALL ALSO BE MECHANICALLY LOCKED TO THE POLE IN SUCH A MANNER THAT IT CANNOT COME LOOSE EVEN IF THE ADHESIVE BOND FAILS. THE ANCHOR BASE CASTING SHALL BE CAPABLE OF COVERING A BOLT CIRCLE RANGE OF 11" TO 15".

ANCHOR RODS FOR ANCHOR BASE POLES
ONE SET OF FOUR (4) GALVANIZED 1 INCH ANCHOR BOLTS (36 + 4) INCHES IN LENGTH, EACH WITH TWO NUTS AND TWO WASHERS, SHALL BE FURNISHED WITH EACH POLE ASSEMBLY. ANCHOR BOLTS SHALL CONFORM TO LATEST ASTM SPECIFICATION FOR HIGH STRENGTH, GALVANIZED ANCHOR BOLTS, 50,000 PSI MINIMUM.

LOADING TEST
THE MANUFACTURER SHALL PROVIDE ONE SET OF SHOP DRAWINGS WITH CERTIFIED TEST DATA FOR DEFLECTION AND ULTIMATE STRENGTH. THIS INFORMATION SHALL ALSO BE SUBMITTED WITH THE BID. ALL TESTING IS TO BE PERFORMED ON THE POLE WITH THE APPROPRIATE SIZE HAND HOLE LOCATED ON THE COMPRESSION SIDE.

A HORIZONTAL LOAD IS TO BE APPLIED IN 100 POUND INCREMENTS AT A POINT 12 INCHES FROM THE TOP UNTIL AN ULTIMATE TOP LOAD OF 1400 POUNDS HAS BEEN APPLIED. THE POLE SHALL WITHSTAND A MINIMUM OF 1400 POUNDS OF HORIZONTAL LOAD BEFORE FAILURE.

UNDER THE SAME TEST PROCEDURE, THE MAXIMUM DEFLECTION UNDER 100 POUND LOADING SHALL BE 4% OF THE ABOVE GROUND LENGTH OF THE POLE.

INVENTORY IDENTIFICATION
ALL POLES SHALL BE PERMANENTLY MARKED WITH INVENTORY CODES SUPPLIED AT TIME OF ORDER. MARKING SHALL BE SUCH THAT THEY CANNOT BE REMOVED BY HAND OR FADED OR OTHERWISE MADE ILLEGIBLE BY RAIN, SNOW, WIND, SUN OR OTHER WEATHER CONDITIONS ENCOUNTERED IN OUTDOOR STORAGE.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER THE CMS, ITEM 625, LIGHTING MISC.: ROUND TAPERED FIBERGLASS STREETLIGHT POLE, FOR EACH LIGHT POLE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625 - DUCT CABLE, MISC.: WITH DISTRIBUTION CABLES

THE SIZE OF THE EXISTING DISTRIBUTION CABLE SERVICING THE EXISTING LIGHT POLE THAT WILL BE REMOVED AT STA. 3+09, 36' RT IS UNKNOWN. THE CONTRACTOR SHALL VERIFY THE SIZE OF THE EXISTING CABLE AND PROVIDE A CABLE OF SIMILAR ADEQUATE CAPACITY TO SERVICE THE RELOCATED LIGHT POLE.

CALCULATED GM | CHECKED JTS

LIGHTING NOTES

CUY-90-21.02

103821_LN001.dgn Sheet 9/25/2018 10:22:24 AM MDohlen

ITEM 625 - LIGHT POLE FOUNDATION, 24" X 6' DEEP, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTUCTION AND MATERIAL SPECIFICATIONS, 625.10, FOUNDATIONS SHALL BE AS FOLLOWS:

FOUNDATIONS SHALL MEET THE REQUIREMENTS OF ODOT'S STANDARD DRAWING HL-20.11, EXCEPT CONSTRUCT TO A DEPTH OF 6'.

INSTALL ANCHOR BOLTS PROVIDED WITH POLE.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH CMS, ITEM 625, LIGHT POLE FOUNDATION, 24" X 6' DEEP, AS PER PLAN, FOR EACH FOUNDATION WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625 - PULL BOX MISC.: 17"x30" ANSI TIER 22

IN LIEU OF THE REQUIREMENTS OF ODOT'S CONSTUCTION AND MATERIAL SPECIFICATIONS, 725.08, PULL BOXES SHALL MEET THE CITY OF CLEVELAND REQUIREMENTS AS FOLLOWS:

POLYMER CONCRETE BOXES AND COVERS

SIZE: 17" X 30" X 30" PULL-BOX (BODY)
(QUAZITE PG1730BA30 OR APPROVED EQUIVALENT)

17" X 30" PULL-BOX (COVER)
(QUAZITE PG1730HH00C6 OR APPROVED EQUIVALENT

MATERIALS USED TO MANUFACTURE THE POLYMER CONCRETE BOXES AND COVERS SHALL CONSIST OF AN AGGREGATE MATRIX BOUND TOGETHER WITH POLYMER RESIN. INTERNAL REINFORCEMENT MAY BE PROVIDED BY MEANS OF STEEL, FIBERGLASS, OR A COMBINATION OF THE TWO. MATERIAL SHALL BE CHEMICALLY RESISTANT TO SULFURIC ACID, SODIUM CHLORIDE, MOTOR OILS, GASOLINE AND ROAD SALTS. FINISHED PRODUCTS SHALL HAVE A COMPRESSIVE STRENGTH OF 11,000 PSI MINIMUM. BOXES AND COVERS WHICH DO NOT CONFORM TO THE RESPECTIVE EXAMPLES OR APPROVED EQUIVALENT SHALL BE REJECTED. ALL COVERS MUST LIE TRUE IN THEIR BOXES WITHOUT TIPPING OR ROCKING WHEN PRESSURE IS BROUGHT TO BEAR UPON THEM.

ENCLOSURES, BOXES, COVERS ARE REQUIRED TO BE COMPLIANT WITH ASTM C857 (AASHTO) A-16 (HS20-44)AND ASTM C857 (AASHTO) A-8 (H10-44) AS WELL AS TO CONFORM TO ALL TEST PROVISIONS OF ANSI/SCTE 77 "SPECIFICATIONS FOR UNDERGROUND ENCLOSURE INTEGRITY" FOR TIER 22 APPLICATIONS. IN NO ASSEMBLY CAN THE COVER DESIGN LOAD EXCEED THE DESIGN LOAD OF THE BOX. ALL COMPONENTS IN AN ASSEMBLY (BOX & COVER) ARE MANUFACTURED USING MATCHED SURFACE TOOLING. ALL COVERS ARE REQUIRED TO HAVE A MINIMUM COEFFICIENT OF FRICTION OF 0.05 IN ACCORDANCE WITH ASTM C1028 AND THE CORRESPONDING TIER LEVEL EMBOSSED ON THE TOP SURFACE. INDEPENDENT THIRD PARTY VERIFICATION OR TEST REPORTS STAMPED BY A REGISTERED PROFESSIONAL ENGINEER CERTIFYING THAT ALL TEST PROVISIONS OF THIS SPECIFICATION HAVE BEEN MET ARE REQUIRED WITH EACH SUBMITTAL.

MATERIAL AND CONSTRUCTION
THE BOX SHALL BE CONSTRUCTED OF FIBERGLASS REINFORCED POLYMER (FRP) WITH ISOPTHALIT POLYESTER USING THE SPRAY-UP AND ROLL CONSTRUCTION METHOD. THE MATERIAL SHALL HAVE STABILIZERS TO RESIST ULTRAVIOLET (UV) DEGRADATION IN ACCORDANCE WITH ASTM D-790 AND ASTM D11501-71, SECTION 6, PROCEDURE B. THE TOP RING OF THE BOX SHALL BE MADE OF POLYMER CONCRETE USING A POLYESTER BINDER WITH AGGREGATE FILLERS AND CHOPPED FIBERGLASS WITH A MINIMUM TENSILE STRENGTH OF 1900 PSI. THE RING SHALL HAVE THE SAME UV RESISTANCE AS THE FRP MATERIAL. THE THREADED INSERTS FOR THE COVER BOLTS SHALL BE STAINLESS STEEL. THE COVER SHALL BE MADE WITH A THICK MOLDING COMPOUND (TMC) USING THE COMPRESSION MOLDING METHOD. THE TMC SHALL CONSIST OF A MINIMUM OF THEN PERCENT (10%) FIBERGLASS IN A CALCIUM CARBONATE AND POLYESTER RESIN MATRIX. THE COVER SHALL BE MARKED WITH THE WORD "CPP" IN 2" LETTERS, EMBOSSED INTO THE TMC, AND SHALL HAVE A NON-SKID SURFACE AND THE SAME UV RESISTANCE AS THE FRP MATERIAL.

THE COVER SHALL BE SECURED TO THE BOX USING TWO HEX HEAD STAINLESS STEEL BOLTS AND WASHERS WHICH SHALL ATTACH TO THREADED INSERTS IN THE BODY OF THE BOX.

ITEM 625 - PULL BOX MISC.: 17"x30" ANSI TIER 22 (CONT.)

NOTE
THE EXACT LOCATIONS OF PULL BOXES ARE TO BE STAKED AND CHECKED PRIOR TO PLACEMENT TO VERIFY CLEARANCE OF UNDERGROUND FACILITIES AND ANY ABOVE GROUND OBSTRUCTIONS. IF THERE ARE ANY CONFLICTS, THEY ARE TO BE ADJUSTED AS DIRECTED BY THE ENGINEER. SUBMIT SHOP DRAWINGS (CATALOG CUTS) TO THE ENGINEER/CLEVELAND PUBLIC POWER FOR THEIR APPROVAL.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH CMS, ITEM 625, PULL BOX MISC.: 17"x30", FOR EACH PULL BOX WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625 - LUMINAIRE, UNDERPASS, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, LUMINAIRES FOR UNDERPASS LIGHTING SHALL BE AS FOLLOWS:

LUMINAIRES FOR UNDERPASS LIGHTING UNITS SHALL BE WALPAK STYLE STREETLIGHT, 400W EQUIVALENT UNIT 460W WITH BALLAST, SIMILAR OR EQUAL TO EATON'S STREETWORKS MODEL WKP OR PHILLIPS STONCO WALPAK, PER CITY OF CLEVELAND SPEC D-85.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER C&MS ITEM 625, "LUMINAIRE, UNDERPASS, AS PER PLAN" FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625 - SERVICE TO UNDERPASS LIGHTING, AS PER PLAN

THIS ITEM SHALL CONSIST OF PROVIDING COMPLETE ELECTRICAL SERVICE, EXCEPT FOR LUMINAIRES AND STRUCTURE GROUNDING, FOR THE UNDERPASS LIGHTING SYSTEM. THE INSTALLATION WORK SHALL INCLUDE CONDUITS, CONDUIT GROUNDING, MOUNTINGS, FITTING, JUNCTION BOXES, PHOTOCELLS, CONTROL CIRCUITS AND PROCESSORS, CABLES, AND ALL INCIDENTALS NECESSARY TO COMPLETE THE INSTALLATION AS DETAILED IN THE PLANS.

PAYMENT FOR "ITEM 625, SERVICE TO UNDERPASS LIGHTING, AS PER PLAN" SHALL BE MADE FOR EACH UNDERPASS LIGHTING SYSTEM COMPLETE AND OPERATIONAL, TESTED AND ACCEPTED. COMPONENT PARTS NOT SPECIFICALLY SHOWN IN THE PLAN, BUT NECESSARY FOR SATISFACTORY OPERATION OF THIS ITEM, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACT, AND CONSIDERED PAID FOR AS PART OF THIS ITEM.

ITEM 625 - LIGHTING MISC.: REMOVAL OF UNDERPASS LIGHTING

THIS ITEM SHALL CONSIST OF THE REMOVAL OF THE COMPLETE UNDERPASS LIGHTING SYSTEM. THE REMOVALS SHALL INCLUDE CONDUITS, CONDUIT GROUNDING, MOUNTINGS, FITTINGS, JUNCTION BOXES, LUMINAIRES, DISCONNECT SWITCHES, CABLES, AND ALL INCIDENTALS NECESSARY TO COMPLETELY REMOVE THE EXISTING SYSTEM AS DETAILED IN THE PLANS.

PAYMENT FOR "ITEM 625, LIGHTING MISC.: REMOVAL OF UNDERPASS LIGHTING" SHALL BE MADE FOR EACH EXISTING UNDERPASS LIGHTING STSTEM NOTED AS TO BE REMOVED IN THE PLANS.

ITEM 625 - LIGHT POLE REMOVED, AS PER PLAN

THIS ITEM OF WORK WILL CONSIST OF REMOVING AN EXISTING LIGHT POLE INCLUDING THE BRACKET ARMS, TRANSFORMER BASE (IF ANY), AND PULL BOX AT THE LIGHT POLE LOCATION. LIGHT POLES, BRACKET ARMS, TRANSFORMER BASES, AND ALL PULL BOXES SHALL BECOME THE PROPERTY OF THE CONTRACTOR, AND SHALL BE PROPERLY DISPOSED OF OFF THE PROJECT SITE.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625, "LIGHT POLE REMOVED", FOR EACH POLE REMOVED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625 - LIGHT POLE FOUNDATION REMOVED, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LIGHT POLE FOUNDATION TO A MINIMUM OF 1 FOOT BELOW FINISHED GRADE, OR REMOVING THE FOUNDATION COMPLETELY, BACKFILLING THE RESULTANT DEPRESSION WITH COMPACTED SOIL AND RESTORING THE DISTURBED AREA.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625, "LIGHT POLE FOUNDATION REMOVED", FOR EACH FOUNDATION REMOVED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625 - LUMINAIRE REMOVED, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LUMINAIRE. THE LUMINAIRE SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF THE PROJECT SITE.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625, "LUMINAIRE REMOVED", FOR EACH LUMINAIRE REMOVED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

CPP LIGHTING DETAILS

CPP DETAILS SHOWN ON SHEET 142 SHALL BE USED AS THE BASIS OF DESIGN, INSTALLATION AND MATERIALS. FOR INFORMATION NOT PROVIDED ON THE ENCLOSED CPP DETAILS SEE APPLICABLE ODOT SCD.

ITEM 625 - LIGHTING MISC.: FOUNDATION TEST HOLE

IF UNDERGROUND OBSTRUCTIONS ARE ENCOUNTERED THAT PRECLUDE THE USE OF THE STANDARD OR ALTERNATE FOUNDATION DESIGNS, THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH COMPLETE INFORMATION REGARDING THE OBSTRUCTION, INCLUDING TYPE (I.E. UTILITY), SIZE, DEPTH AND LATERAL CLEARANCES TO THE SIDES OF THE FOUNDATION EXCAVATION. THE FOUNDATION HOLE SHALL BE COVERED WITH A STEEL PLATE UNTIL THE ENGINEER DETERMINES IF A NEW FOUNDATION LOCATION WILL BE REQUIRED.

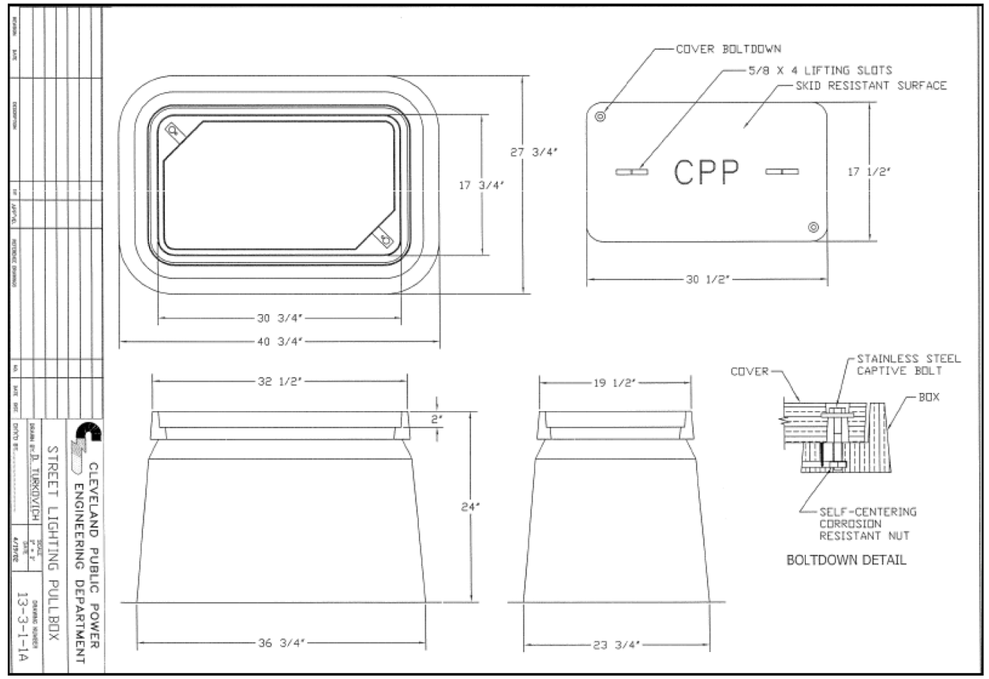
IF DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL BACKFILL AND COMPACT THE HOLE AND SHALL RESTORE THE SURFACE TO THE SATISFACTION OF THE ENGINEER.

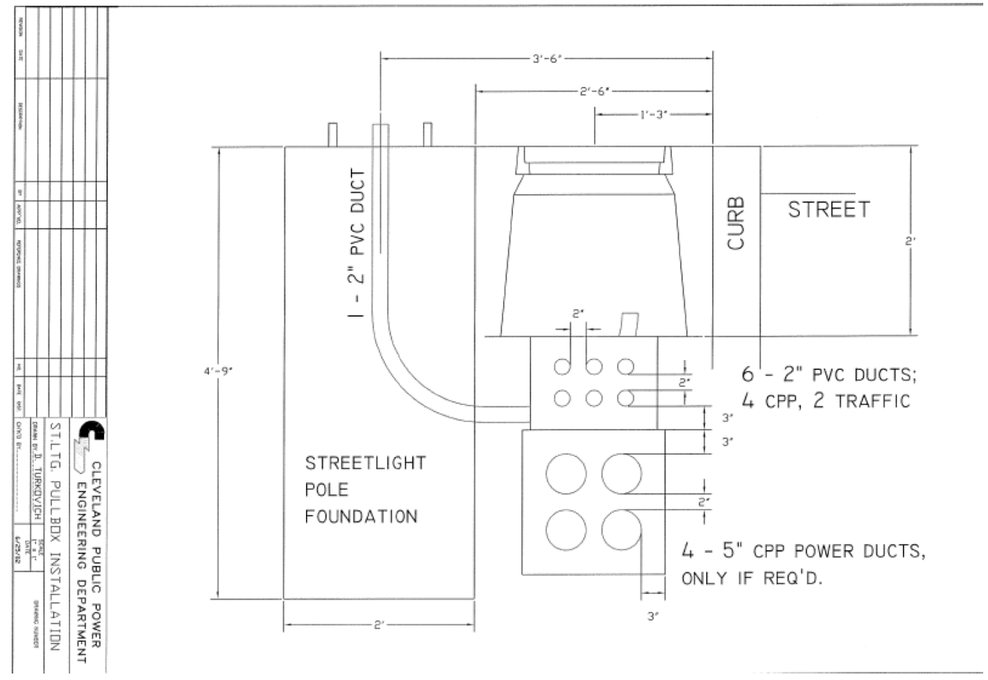
THE CONTRACTOR SHALL BE COMPENSATED FOR EACH FOUNDATION HOLE THAT MUST BE ABANDONED. PAYMENT FOR ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND OTHER INCIDENTALS, INCLUDING BACKFILL, COMPACTING, AND SURFACE RESTORATION, SHALL BE AT THE CONTRACT UNIT PRICE BID FOR EACH ITEM 625 - LIGHTING MISC.: FOUNDATION TEST HOLE FOR THE NUMBER EXCAVATED AND BACKFILLED.

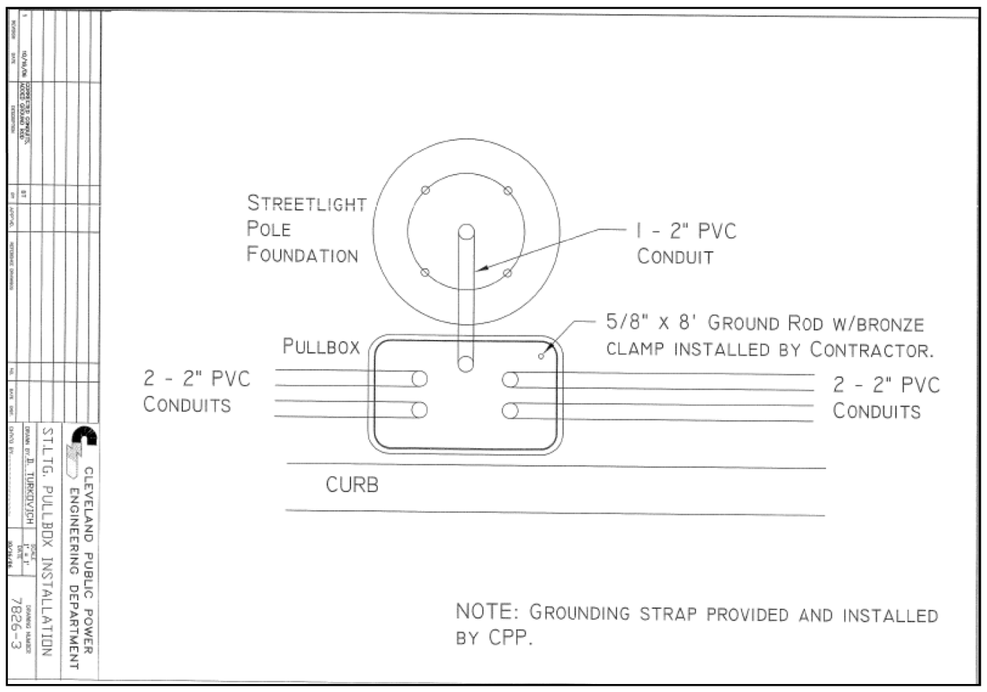
CALCULATED GM | CHECKED JTS

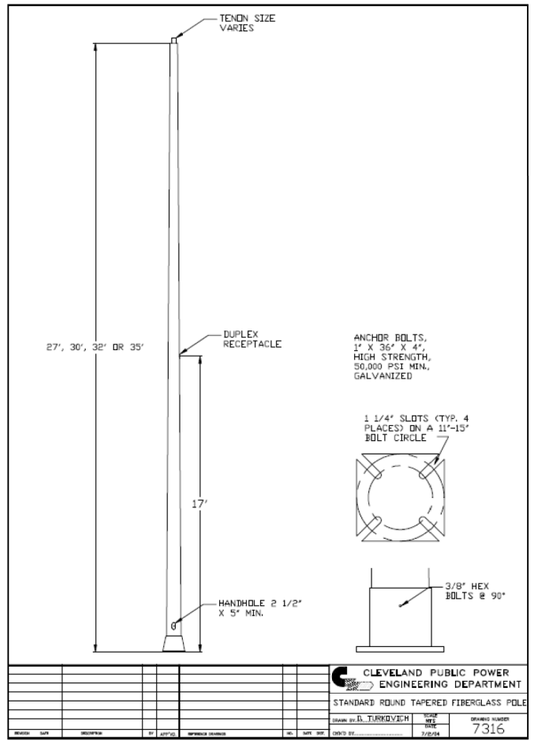
LIGHTING NOTES

CUY-90-21.02









CALCULATED GM
CHECKED JTS

LIGHTING DETAILS

CUY-90-21.02

REF. NO.	SHEET NO.	STATION TO STATION		SIDE	625 CONNECTION, FUSED PULL APART	625 LIGHT POLE FOUNDATION, 24" X 6' DEEP, AS PER PLAN	625 BRACKET ARM, 6'	625 DUCT CABLE, MISC.: WITH DISTRIBUTION CABLES	625 LUMINAIRE, UNDERPASS, AS PER PLAN	625 LUMINAIRE, MISC.: CPP STANDARD LED ROADWAY LUMINAIRE	625 PULL BOX REMOVED	625 PULL BOX, MISC.: 17" X 30" ANSI TIER 22	625 GROUND ROD	625 SERVICE TO UNDERPASS LIGHTING, AS PER PLAN	625 LIGHT POLE REMOVED, AS PER PLAN	625 LIGHT POLE FOUNDATION REMOVED, AS PER PLAN	625 LUMINAIRE REMOVED, AS PER PLAN	625 LIGHTING, MISC.: REMOVAL OF UNDERPASS LIGHTING	625 LIGHTING, MISC.: ROUND TAPERED FIBERGLASS STREETLIGHT POLE	625 LIGHTING, MISC.: FOUNDATION TEST HOLE	
		FROM	TO		EACH	EACH	EACH	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
L-1	144	1+90									1										
L-2	144	1+93						145				1									
L-3	144	3+09.00									1										
L-4	144	3+09.00													1	1	1				
L-5	144	3+33.00						85				1									
L-6	144	3+33.00			2	1	1	15		1			1							1	1
L-7	144	4+10.00						92				1									
L-8	144	4+13.00													1	1	2				
L-9	145	7+39							13					1				1			
TOTALS CARRIED TO GENERAL SUMMARY					2	1	1	337	13	1	2	3	1	1	2	2	3	1	1	1	

CALCULATED GM
CHECKED JTS

LIGHTING SUBSUMMARY

CUY-90-21.02

10382LGS001.dgn Sheet1 9/25/2018 10:22:33 AM MDohlen

EX. PULL BOX (TO BE REMOVED) L 1
STA. 1+90, 27' RT

PULL BOX, MISC.: 17" X 30" L 2
STA. 1+93, 30' RT

EX. PULL BOX (TO BE REMOVED) L 3
STA. 3+09, 33' RT

EX. LIGHT POLE L 4
(TO BE REMOVED)
STA. 3+09, 36' RT

PULL BOX, MISC.: 17" X 30" L 5
STA. 3+33, 32' RT

LIGHT POLE L 6
STA. 3+33, 35' RT

135' - LIGHTING
DUCT CABLE

EX. PULL BOX (TO BE REMOVED) L 5
STA. 4+09, 40' RT

82' - LIGHTING
DUCT CABLE

℄ CONST. MLK JR. DRIVE

75' - LIGHTING
DUCT CABLE

PULL BOX, MISC.: 17" X 30" L 7
STA. 4+10, 46' RT

EX. LIGHT POLE L 8
(TO BE REMOVED)
STA. 4+13, 44' RT

℄ CONST. EB
EXIT RAMP

℄ CONST. EB
ENTRANCE RAMP

PC Sta. 101+74.42

LEGEND

- LIGHT POLE AND LUMINAIRES, LED
- PULL BOX MISC.: 17" X 30" ANSI TIER 22
- EX. PULL BOX

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED GM
CHECKED JTS

LIGHTING PLAN
MLK JR. DRIVE & EB ENTRANCE/EXIT RAMP

CUY-90-21.02

144
153

10382I_LP001.dgn Broad Ave INTERSECTION 9/25/2018 10:22:43 AM MDahlen

STA. 7+28, 43' LT.
UNDERPASS LUMINAIRE

STA. 7+00, 43' LT.
UNDERPASS LUMINAIRE

STA. 6+71, 43' LT.
UNDERPASS LUMINAIRE

STA. 6+42, 43' LT.
UNDERPASS LUMINAIRE

STA. 6+13, 43' LT.
UNDERPASS LUMINAIRE

STA. 5+84, 43' LT.
UNDERPASS LUMINAIRE

(L9) EX. PULLBOX
CONNECT NEW CABLE
FROM UNDERPASS LIGHTS
TO EXISTING CIRCUIT
STA. 7+39, 48' LT

N. MARGINAL ROAD

℄ CONST. N. MARGINAL ROAD

℄ CONST. EB EXIT RAMP

℄ CONST. MLK JR. DRIVE

℄ I.R. 90

N 9° 51' 41" W

CONDUIT CROSSING BRIDGE ON THE GIRDER

BR.NO. CUY-90-21020

I.R. 90

MLK JR. DRIVE

℄ CONST. EB ENTRANCE RAMP

STA. 7+15, 41' RT.
UNDERPASS LUMINAIRE

STA. 6+90, 41' RT.
UNDERPASS LUMINAIRE

STA. 6+66, 41' RT.
UNDERPASS LUMINAIRE

STA. 6+42, 41' RT.
UNDERPASS LUMINAIRE

STA. 6+18, 41' RT.
UNDERPASS LUMINAIRE

STA. 5+94, 41' RT.
UNDERPASS LUMINAIRE

STA. 5+70, 41' RT.
UNDERPASS LUMINAIRE

LEGEND

- LIGHTING CIRCUIT CONDUIT
- LED UNDERPASS LUMINAIRES
- EX. UNDERPASS LUMINAIRES (TO BE REMOVED)
- EX. PULL BOX

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED GM
CHECKED JTS

UNDERPASS LIGHTING PLAN
MLK JR. DRIVE

CUY-90-21.02

145
153

ITEM SPECIAL - PAINT COLOR (BY TYPE)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND GENERAL REQUIREMENT SPECIFICATIONS SECTIONS, APPLY TO THIS SECTION.

1.2 SUMMARY

A. THIS SECTION INCLUDES SURFACE PREPARATION, PAINTING, AND FINISHING OF EXPOSED INTERIOR AND EXTERIOR ITEMS AND SURFACES.
   1. SURFACE PREPARATION, PRIMING, AND FINISH COATS SPECIFIED IN THIS SECTION ARE IN ADDITION TO SHOP-PRIMING AND SURFACE TREATMENT SPECIFIED UNDER OTHER SECTIONS.

B. SURFACES SHALL BE SEALED PER ODOT 512 PRIOR TO ANY PAINTING.

C. PAINT EXPOSED SURFACES WHETHER OR NOT COLORS ARE DESIGNATED IN SCHEDULES, EXCEPT WHERE A SURFACE OR MATERIAL IS SPECIFICALLY INDICATED NOT TO BE PAINTED OR IS TO REMAIN NATURAL. WHERE AN ITEM OR SURFACE IS NOT SPECIFICALLY MENTIONED, PAINT THE SAME AS SIMILAR ADJACENT MATERIALS OR SURFACES. IF COLOR OR FINISH IS NOT DESIGNATED, THE ARCHITECT WILL SELECT FROM STANDARD COLORS OR FINISHES AVAILABLE.
   1. PAINTING INCLUDES FIELD-PAINTING EXPOSED BARE AND COVERED PIPES (INCLUDING COLOR CODING TO MATCH EXISTING COLOR CODING), HANGERS, EXPOSED STEEL AND IRON WORK.
   2. FINISHED METAL SURFACES NOT TO BE PAINTED INCLUDE:
      a. STAINLESS STEEL
      b. BRIDGE GIRDERS

1.3 SUBMITTALS

A. GENERAL: SUBMIT THE FOLLOWING ACCORDING TO CONDITIONS OF THE CONTRACT AND GENERAL REQUIRMENTS SPECIFICATION SECTIONS.

B. PRODUCT DATA FOR EACH PAINT SYSTEM SPECIFIED, INCLUDING PRIMERS.
   1. PROVIDE THE MANUFACTURER'S TECHNICAL INFORMATION INCLUDING LABEL ANALYSIS AND INSTRUCTIONS FOR HANDLING, STORAGE, AND APPLICATION OF EACH MATERIAL PROPOSED FOR USE. LIST EACH MATERIAL AND CROSS-REFERENCE THE SPECIFIC COATING, FINISH SYSTEM, AND APPLICATION. IDENTIFY EACH MATERIAL BY THE MANUFACTURER'S CATALOG NUMBER AND GENERAL CLASSIFICATION.
   2. CERTIFICATION BY THE MANUFACTURER THAT PRODUCTS SUPPLIED COMPLY WITH LOCAL REGULATIONS CONTROLLING USE OF VOLATILE ORGANIC COMPOUNDS (VOCS).

C. SAMPLES FOR VERIFICATION: OF EACH COLOR AND MATERIAL TO BE APPLIED.

D. SUBMIT LIST OF EXTRA MATERIALS LISTED UNDER PARAGRAPH 1.7.

1.4 QUALITY ASSURANCE

A. APPLICATOR QUALIFICATIONS: ENGAGE AN EXPERIENCED APPLICATOR WHO HAS COMPLETED PAINTING SYSTEM APPLICATIONS SIMILAR IN MATERIAL AND EXTENT TO THOSE INDICATED FOR THE PROJECT THAT HAVE RESULTED IN A CONSTRUCTION RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE.

B. SINGLE-SOURCE RESPONSIBILITY: PROVIDE PRIMERS AND UNDERCOAT PAINT PRODUCED BY THE SAME MANUFACTURER AS THE FINISH COATS.

1.5 DELIVERY, STORAGE, AND HANDLING

A. DELIVER MATERIALS TO THE JOB SITE IN THE MANUFACTURER'S ORIGINAL, UNOPENED PACKAGES AND CONTAINERS BEARING MANUFACTURER'S NAME AND LABEL, AND THE FOLLOWING INFORMATION:
   1. PRODUCT NAME OR TITLE OF MATERIAL.
   2. PRODUCT DESCRIPTION (GENERIC CLASSIFICATION OR BINDER TYPE).
   3. MANUFACTURER'S STOCK NUMBER AND DATE OF MANUFACTURE.
   4. CONTENTS BY VOLUME, FOR PIGMENT AND VEHICLE CONSTITUENTS.
   5. THINNING INSTRUCTIONS.
   6. APPLICATION INSTRUCTIONS.
   7. COLOR NAME AND NUMBER.
   8. VOC CONTENT.

B. STORE MATERIALS NOT IN USE IN TIGHTLY COVERED CONTAINERS IN A WELL-VENTILATED AREA AT A MINIMUM AMBIENT TEMPERATURE OF 45 DEG F (7 DEG C). MAINTAIN CONTAINERS USED IN STORAGE IN A CLEAN CONDITION, FREE OF FOREIGN MATERIALS AND RESIDUE.
   1. PROTECT FROM FREEZING. KEEP STORAGE AREA NEAT AND ORDERLY. REMOVE OILY RAGS AND WASTE DAILY. TAKE NECESSARY MEASURES TO ENSURE THAT WORKERS AND WORK AREAS ARE PROTECTED FROM FIRE AND HEALTH HAZARDS RESULTING FROM HANDLING, MIXING, AND APPLICATION.

1.6 JOB CONDITIONS

A. APPLY WATER-BASED PAINTS ONLY WHEN THE TEMPERATURE OF SURFACES TO BE PAINTED AND SURROUNDING AIR TEMPERATURES ARE BETWEEN 50 DEG F (10 DEG C) AND 90 DEG F (32 DEG C).

B. DO NOT APPLY PAINT IN SNOW, RAIN, FOG, OR MIST; OR WHEN THE RELATIVE HUMIDITY EXCEEDS 85 PERCENT; OR AT TEMPERATURES LESS THAN 5 DEG F (3 DEG C) ABOVE THE DEW POINT; OR TO DAMP OR WET SURFACES.
   1. PAINTING MAY CONTINUE DURING INCLEMENT WEATHER IF SURFACES AND AREAS TO BE PAINTED ARE ENCLOSED AND HEATED WITHIN TEMPERATURE LIMITS SPECIFIED BY THE MANUFACTURER DURING APPLICATION AND DRYING PERIODS.

C. PROVIDE VENTILATION IN AREAS TO RECEIVE FIREPROOFING DURING AND 72 HOURS MINIMUM AFTER APPLICATION TO DRY MATERIALS AND DISSIPATE SOLVENT ODORS.

D. MAINTAIN NON-TOXIC, UNPOLLUTED WORKING AREA. PROVIDE TEMPORARY ENCLOSURE TO PREVENT SPRAY FROM CONTAMINATING AIR.

1.7 EXTRA MATERIALS

A. FURNISH EXTRA PAINT MATERIALS FROM THE SAME PRODUCTION RUN AS THE MATERIALS APPLIED IN THE QUANTITIES DESCRIBED BELOW. PACKAGE PAINT MATERIALS IN UNOPENED, FACTORY-SEALED CONTAINERS FOR STORAGE AND IDENTIFY WITH LABELS DESCRIBING CONTENT. DELIVER EXTRA MATERIALS TO THE OWNER.
   1. QUANTITY: FURNISH THE OWNER WITH AN ADDITIONAL 5 PERCENT, BUT NOT LESS THAN 1 GAL. OR 1 CASE, AS APPROPRIATE, OF EACH MATERIAL AND COLOR APPLIED.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS OF ONE OF THE FOLLOWING:
   1. BENJAMIN MOORE AND CO. (MOORE).
   2. ICI DULUX.
   3. THE SHERWIN-WILLIAMS COMPANY (SW).
   4. OR APPROVED EQUAL.

2.2 PAINT MATERIALS, GENERAL

A. MATERIAL COMPATIBILITY: PROVIDE BLOCK FILLERS, PRIMERS, FINISH COAT MATERIALS, AND RELATED MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND THE SUBSTRATES INDICATED UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY THE MANUFACTURER BASED ON TESTING AND FIELD EXPERIENCE.

B. MATERIAL QUALITY: PROVIDE THE MANUFACTURER'S BEST-QUALITY PAINT MATERIAL OF THE VARIOUS COATING TYPES SPECIFIED. PAINT MATERIAL CONTAINERS NOT DISPLAYING MANUFACTURER'S PRODUCT IDENTIFICATION WILL NOT BE ACCEPTABLE.

2.3 PRIMERS

A. PRIMERS: PROVIDE THE MANUFACTURER'S RECOMMENDED FACTORY-FORMULATED PRIMERS THAT ARE COMPATIBLE WITH THE SUBSTRATE AND FINISH COATS INDICATED.

2.4 EXTERIOR FINISH PAINT MATERIAL

A. FINISH PAINT: PROVIDE THE MANUFACTURER'S RECOMMENDED FACTORY-FORMULATED FINISH-COAT MATERIALS THAT ARE COMPATIBLE WITH THE SUBSTRATE AND UNDERCOATS INDICATED.

PART 3 - EXAMINATION

3.1 EXAMINATION

A. EXAMINE SUBSTRATES AND CONDITIONS UNDER WHICH PAINTING WILL BE PERFORMED FOR COMPLIANCE WITH PAINT APPLICATION REQUIREMENTS. SURFACES RECEIVING PAINT MUST BE THOROUGHLY DRY BEFORE PAINT IS APPLIED.
   1. DO NOT BEGIN TO APPLY PAINT UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
   2. START OF PAINTING WILL BE CONSTRUED AS THE APPLICATOR'S ACCEPTANCE OF SURFACES AND CONDITIONS WITHIN A PARTICULAR AREA.

B. COORDINATION OF WORK: REVIEW OTHER SECTIONS IN WHICH PRIMERS ARE PROVIDED TO ENSURE COMPATIBILITY OF THE TOTAL SYSTEM FOR VARIOUS SUBSTRATES. ON REQUEST, FURNISH INFORMATION ON CHARACTERISTICS OF FINISH MATERIALS TO ENSURE USE OF COMPATIBLE PRIMERS.
   1. NOTIFY THE ARCHITECT ABOUT ANTICIPATED PROBLEMS USING THE MATERIALS SPECIFIED OVER SUBSTRATES PRIMED BY OTHERS.

3.2 PREPARATION

A. GENERAL: REMOVE HARDWARE AND HARDWARE ACCESSORIES AND SIMILAR ITEMS ALREADY INSTALLED THAT ARE NOT TO BE PAINTED, OR PROVIDE SURFACE-APPLIED PROTECTION PRIOR TO SURFACE PREPARATION AND PAINTING. REMOVE THESE ITEMS, IF NECESSARY, TO COMPLETELY PAINT THE ITEMS AND ADJACENT SURFACES. FOLLOWING COMPLETION OF PAINTING OPERATIONS IN EACH SPACE OR AREA, HAVE ITEMS REINSTALLED BY WORKERS SKILLED IN THE TRADES INVOLVED.

B. CLEANING: BEFORE APPLYING PAINT OR OTHER SURFACE TREATMENTS, CLEAN THE SUBSTRATES OF SUBSTANCES THAT COULD IMPAIR THE BOND OF THE VARIOUS COATINGS. REMOVE OIL AND GREASE PRIOR TO CLEANING. SCHEDULE CLEANING AND PAINTING SO DUST AND OTHER CONTAMINANTS FROM THE CLEANING PROCESS WILL NOT FALL ON WET, NEWLY PAINTED SURFACES.

3.2 PREPARATION (CONT.)

C. SURFACE PREPARATION: CLEAN AND PREPARE SURFACES TO BE PAINTED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS FOR EACH PARTICULAR SUBSTRATE CONDITION AND AS SPECIFIED.
   1. PROVIDE BARRIER COATS OVER INCOMPATIBLE PRIMERS OR REMOVE AND RE-PRIME. NOTIFY ARCHITECT IN WRITING ABOUT ANTICIPATED PROBLEMS USING THE SPECIFIED FINISH-COAT MATERIAL WITH SUBSTRATES PRIMED BY OTHERS.
   2. GALVANIZED SURFACES: CLEAN GALVANIZED SURFACES WITH NONPETROLEUM-BASED SOLVENTS SO THAT THE SURFACE IS FREE OF OIL AND SURFACE CONTAMINANTS. REMOVE PRETREATMENT FROM GALVANIZED SHEET METAL FABRICATED FROM COIL STOCK BY MECHANICAL METHODS.

D. MATERIALS PREPARATION: CAREFULLY MIX AND PREPARE PAINT MATERIALS ACCORDING TO MANUFACTURER'S DIRECTIONS.
   1. MAINTAIN CONTAINERS USED IN MIXING AND APPLYING PAINT IN A CLEAN CONDITION, FREE OF FOREIGN MATERIALS AND RESIDUE.
   2. STIR MATERIAL BEFORE APPLICATION TO PRODUCE A MIXTURE OF UNIFORM DENSITY; STIR AS REQUIRED DURING APPLICATION. DO NOT STIR SURFACE FILM INTO MATERIAL. REMOVE FILM AND, IF NECESSARY, STRAIN MATERIAL BEFORE USING.
   3. USE ONLY THINNERS APPROVED BY THE PAINT MANUFACTURER AND ONLY WITHIN RECOMMENDED LIMITS.

3.3 PROTECTION

A. PROTECT FLOORS, ADJACENT SURFACES, ETC. FROM DAMAGE BY OVERSPRAY, FALL-OUT OR DUSTING OF PAINT.

3.4 APPLICATION

A. PROTECT FLOORS, ADJACENT SURFACES, ETC. FROM DAMAGE BY OVERSPRAY, FALL-OUT OR DUSTING OF PAINT.

B. DO NOT PAINT OVER DIRT, RUST, SCALE, GREASE, MOISTURE, SCUFFED SURFACES, OR CONDITIONS DETRIMENTAL TO FORMATION OF A DURABLE PAINT FILM.
   1. PAINT COLORS, SURFACE TREATMENTS, AND FINISHES ARE INDICATED IN THE SCHEDULES.
   2. PROVIDE FINISH COATS THAT ARE COMPATIBLE WITH PRIMERS USED.
   3. APPLY ADDITIONAL COATS IF UNDERCOATS, STAINS, OR OTHER CONDITIONS SHOW THROUGH FINAL COAT OF PAINT UNTIL PAINT FILM IS OF UNIFORM FINISH, COLOR, AND APPEARANCE. GIVE SPECIAL ATTENTION TO ENSURE THAT SURFACES, INCLUDING EDGES, CORNERS, CREVICES, WELDS, AND EXPOSED FASTENERS, RECEIVE A DRY FILM THICKNESS EQUIVALENT TO THAT OF FLAT SURFACES.
   4. OMIT PRIMER ON METAL SURFACES THAT HAVE BEEN SHOP-PRIMED AND TOUCH-UP PAINTED.

C. SCHEDULING PAINTING: APPLY FIRST COAT TO SURFACES THAT HAVE BEEN CLEANED, PRETREATED, OR OTHERWISE PREPARED FOR PAINTING AS SOON AS PRACTICABLE AFTER PREPARATION AND BEFORE SUBSEQUENT SURFACE DETERIORATION.
   1. ALLOW SUFFICIENT TIME BETWEEN SUCCESSIVE COATS TO PERMIT PROPER DRYING. DO NOT RE-COAT UNTIL PAINT HAS DRIED TO WHERE IT FEELS FIRM, DOES NOT DEFORM OR FEEL STICKY UNDER MODERATE THUMB PRESSURE, AND WHERE APPLICATION OF ANOTHER COAT OF PAINT DOES NOT CAUSE THE UNDERCOAT TO LIFT OR LOSE ADHESION.

CALCULATED EC CHECKED AP

ACTIVE TRANSPORTATION NOTES

CUY-90-21.02

L1

3.4 APPLICATION (CONT.)

2. THE NUMBER OF COATS AND FILM THICKNESS REQUIRED ARE THE SAME REGARDLESS OF APPLICATION METHOD. DO NOT APPLY SUCCEEDING COATS UNTIL PREVIOUS COAT HAS CURED AS RECOMMENDED BY MANUFACTURER. IF SANDING IS REQUIRED TO PRODUCE A SMOOTH, EVEN SURFACE ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS, SAND BETWEEN APPLICATIONS.
3. IF UNDERCOATS, STAINS, OR OTHER CONDITIONS SHOW THROUGH FINAL COAT OF PAINT, APPLY ADDITIONAL COATS UNTIL PAINT FILM IS OF UNIFORM FINISH, COLOR, AND APPEARANCE. GIVE SPECIAL ATTENTION TO ENSURE THAT EDGES, CORNERS, CREVICES, WELDS, AND EXPOSED FASTENERS RECEIVE A DRY FILM THICKNESS EQUIVALENT TO THAT OF FLAT SURFACES

D. APPLICATION PROCEDURES: APPLY PAINTS AND COATINGS BY SPRAY, OR OTHER APPLICATORS ACCORDING TO THE MANUFACTURER'S DIRECTIONS.
1. SPRAY EQUIPMENT: USE AIRLESS SPRAY EQUIPMENT WITH ORIFICE SIZE AS RECOMMENDED BY THE MANUFACTURER FOR THE MATERIAL AND TEXTURE REQUIRED.

E. MINIMUM COATING THICKNESS: APPLY MATERIALS NO THINNER THAN THE MANUFACTURER'S RECOMMENDED SPREADING RATE. PROVIDE THE TOTAL DRY FILM THICKNESS OF THE ENTIRE SYSTEM AS RECOMMENDED BY THE MANUFACTURER.

F. PRIME COATS: BEFORE APPLYING FINISH COATS, APPLY A PRIME COAT OF MATERIAL, AS RECOMMENDED BY THE MANUFACTURER, TO MATERIAL THAT IS REQUIRED TO BE PAINTED OR FINISHED AND THAT HAS NOT BEEN PRIME-COATED BY OTHERS. RECOAT PRIMED AND SEALED SURFACES WHERE EVIDENCE OF SUCTION SPOTS OR UNSEALED AREAS IN FIRST COAT APPEARS, TO ENSURE A FINISH COAT WITH NO BURN-THROUGH OR OTHER DEFECTS DUE TO INSUFFICIENT SEALING.

G. PIGMENTED (OPAQUE) FINISHES: COMPLETELY COVER TO PROVIDE A SMOOTH, OPAQUE SURFACE OF UNIFORM FINISH, COLOR, APPEARANCE, AND COVERAGE. CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, RUNS, SAGS, ROPINESS, OR OTHER SURFACE IMPERFECTIONS WILL NOT BE ACCEPTABLE.

H. COMPLETED WORK: MATCH APPROVED SAMPLES FOR COLOR, TEXTURE, AND COVERAGE. REMOVE, REFINISH, OR REPAINT WORK NOT COMPLYING WITH SPECIFIED REQUIREMENTS.

3.5 FIELD QUALITY CONTROL

A. THE OWNER RESERVES THE RIGHT TO INVOKE THE FOLLOWING TEST PROCEDURE AT ANY TIME AND AS OFTEN AS THE OWNER DEEMS NECESSARY DURING THE PERIOD WHEN PAINT IS BEING APPLIED:
1. THE OWNER MAY ENGAGE THE SERVICES OF AN INDEPENDENT TESTING AGENCY TO SAMPLE THE PAIN MATERIAL BEING USED. SAMPLES OF MATERIAL DELIVERED TO THE PROJECT WILL BE TAKEN, IDENTIFIED, SEALED, AND CERTIFIED IN THE PRESENCE OF THE CONTRACTOR.
2. THE TESTING AGENCY WILL PERFORM APPROPRIATE TESTS FOR THE FOLLOWING CHARACTERISTICS AS REQUIRED BY THE OWNER:

B. QUANTITATIVE MATERIALS ANALYSIS, ABRASION RESISTANCE, APPARENT REFLECTIVITY, FLEXIBILITY, WASHABILITY, ABSORPTION, ACCELERATED WEATHERING, DRY OPACITY, ACCELERATED YELLOWNESS, RE-COATING, SKINNING, COLOR RETENTION., ALKALI AND MILDEW RESISTANCE.

3.5 FIELD QUALITY CONTROL (CONT.)

1. IF TEST RESULTS SHOW MATERIAL BEING USED DOES NOT COMPLY WITH SPECIFIED REQUIREMENTS, THE CONTRACTOR MAY BE DIRECTED TO STOP PAINTING, REMOVE NONCOMPLYING PAINT, PAY FOR TESTING, REPAINT SURFACES COATED WITH REJECTED PAINT, AND REMOVE REJECTED PAINT FROM PREVIOUSLY PAINTED SURFACES IF, UPON REPAINTING WITH SPECIFIED PAINT, THE TWO COATINGS ARE INCOMPATIBLE.

3.6 CLEANING

A. CLEANUP: AT THE END OF EACH WORK DAY, REMOVE EMPTY CANS, RAGS, RUBBISH, AND OTHER DISCARDED PAINT MATERIALS FROM THE SITE.
1. AFTER COMPLETING PAINTING, CLEAN GLASS AND PAINT-SPATTERED SURFACES. REMOVE SPATTERED PAINT BY WASHING AND SCRAPING. BE CAREFUL NOT TO SCRATCH OR DAMAGE ADJACENT FINISHED SURFACES.

3.7 PROTECTION

A. PROTECT WORK OF OTHER TRADES, WHETHER BEING PAINTED OR NOT, AGAINST DAMAGE BY PAINTING. CORRECT DAMAGE BY CLEANING, REPAIRING OR REPLACING, AND REPAINTING, AS ACCEPTABLE TO ARCHITECT.

B. PROVIDE "WET PAINT" SIGNS TO PROTECT NEWLY PAINTED FINISHES. REMOVE TEMPORARY PROTECTIVE WRAPPINGS PROVIDED BY OTHERS TO PROTECT THEIR WORK AFTER COMPLETING PAINTING OPERATIONS.
1. AT COMPLETION OF CONSTRUCTION ACTIVITIES OF OTHER TRADES, TOUCH UP AND RESTORE DAMAGED OR DEFACED PAINTED SURFACES.

3.8 PAINT SYSTEMS

A. EXTERIOR SUBSTRATES PAINT SCHEDULE
FINISH SYSTEM: CONCRETE SURFACES
1. NEW GALVANIZED METAL: PREP: S-W 10
2. PRIMER: PER MFR FOR FINISH COAT
3. FINISH: 2 COATS DTM ACRYLIC SEMI-GLOSS (B66-200) @ 3 MILS DFT/COAT.

END OF SECTION

ITEM SPECIAL: DECORATIVE BOULDERS

THIS ITEM OF WORK INCLUDES DECORATIVE BOULDERS AS INDICATED ON THE LANDSCAPE PLANS FOR PLACEMENT IN THE LANDSCAPE.

3'X5' TO MAXIMUM 5'X8' ELONGATED DECORATIVE BOULDER, MIN. 1000 LB.

SHALL BE NON-FRACTURED WITH ROUNDED EDGE AND NATURAL WEATHERED SURFACE. INSTALL AS PER PLAN.

SUPPLIERS:
KURTZ BROS., INC.
6415 GRANGER ROAD.
INDEPENDENCE, OHIO 44131
216.986.7011
WWW.KURTZ-BROS.COM

SELECT STONE COMPANY LLC
9645 AIRPORT HIGHWAY
MONCLOVA, OHIO 43542
419.861.9600
WWW.SELECTSTONEOHIO.COM

OR APPROVED EQUAL

END OF SECTION

ITEM SPECIAL: STAINLESS STEEL PIPING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. SHOP FABRICATED STEEL AND STAINLESS STEEL ITEMS.

1.2 REQUIRED DOCUMENTS

A. ITEM 517 - RAILING

1.3 REFERENCE STANDARDS

A. ASTM A36/A36M - STANDARD SPECIFICATION FOR CARBON STRUCTURAL STEEL; 2008.
B. ASTM A123/A123M - STANDARD SPECIFICATION FOR ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS; 2009.
C. ASTM A153/A153M - STANDARD SPECIFICATION FOR ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE; 2009.
D. ASTM A283/A283M - STANDARD SPECIFICATION FOR LOW AND INTERMEDIATE TENSILE STRENGTH CARBON STEEL PLATES; 2003 (REAPPROVED 2007).
E. ASTM A325 - STANDARD SPECIFICATION FOR STRUCTURAL BOLTS, STEEL, HEAT TREATED, 120/105 KSI MINIMUM TENSILE STRENGTH; 2009A.
F. ASTM A325M - STANDARD SPECIFICATION FOR STRUCTURAL BOLTS, STEEL, HEAT TREATED 830 MPA TENSILE STRENGTH (METRIC); 2009.
G. ASTM A500/A500M - STANDARD SPECIFICATION FOR COLD-FORMED WELDED AND SEAMLESS CARBON STEEL STRUCTURAL TUBING IN ROUNDS AND SHAPES; 2010A.
H. ASTM A501 - STANDARD SPECIFICATION FOR HOT-FORMED WELDED AND SEAMLESS CARBON STEEL STRUCTURAL TUBING; 2007.
I. AWS A2.4 - STANDARD SYMBOLS FOR WELDING, BRAZING, AND NONDESTRUCTIVE EXAMINATION; AMERICAN WELDING SOCIETY; 2007.
J. AWS D1.1/D1.1M - STRUCTURAL WELDING CODE - STEEL; AMERICAN WELDING SOCIETY; 2010.
K. AWS D1.2/D1.2M - STRUCTURAL WELDING CODE - ALUMINUM; AMERICAN WELDING SOCIETY; 2003, AND ERRATA 2004.
L. IAS AC172 - ACCREDITATION CRITERIA FOR FABRICATOR INSPECTION PROGRAMS FOR STRUCTURAL STEEL; INTERNATIONAL ACCREDITATION SERVICE, INC.; 2011.
M. SSPC-PAINT 15 - STEEL JOIST SHOP PRIMER; SOCIETY FOR PROTECTIVE COATINGS; 1999 (ED. 2004).
N. SSPC-PAINT 20 - ZINC-RICH PRIMERS (TYPE I, "INORGANIC," AND TYPE II, "ORGANIC"); SOCIETY FOR PROTECTIVE COATINGS; 2002 (ED. 2004).

1.4 SUBMITTALS

A. SHOP DRAWINGS: INDICATE PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS, AND ACCESSORIES. INCLUDE ERECTION DRAWINGS, ELEVATIONS, AND DETAILS WHERE APPLICABLE.
1. INDICATE WELDED CONNECTIONS USING STANDARD AWS A2.4 WELDING SYMBOLS. INDICATE NET WELD LENGTHS.

B. WELDERS' CERTIFICATES: SUBMIT CERTIFICATION FOR WELDERS EMPLOYED ON THE PROJECT, VERIFYING AWS QUALIFICATION WITHIN THE PREVIOUS 12 MONTHS.
C. FABRICATOR'S QUALIFICATION STATEMENT: PROVIDE DOCUMENTATION SHOWING STEEL FABRICATOR IS ACCREDITED UNDER IAS AC172.

1.5 QUALITY ASSURANCE

A. DESIGN UNDER DIRECT SUPERVISION OF A PROFESSIONAL STRUCTURAL ENGINEER EXPERIENCED IN DESIGN OF THIS WORK AND LICENSED IN OHIO.
B. FABRICATOR QUALIFICATIONS: A QUALIFIED STEEL FABRICATOR THAT IS ACCREDITED BY THE INTERNATIONAL ACCREDITATION SERVICE (IAS) FABRICATOR INSPECTION PROGRAM FOR STRUCTURAL STEEL (AC172).

PART 2 - PRODUCTS

2.1 MATERIALS - STEEL

A. STEEL SECTIONS: ASTM A36/A36M.
B. STEEL TUBING: ASTM A500, GRADE B COLD-FORMED STRUCTURAL TUBING.
C. PLATES: ASTM A283.
D. BOLTS, NUTS, AND WASHERS: ASTM A325 (ASTM A325M), TYPE 1, GALVANIZED TO ASTM A153/A153M WHERE CONNECTING GALVANIZED COMPONENTS.
E. WELDING MATERIALS: AWS D1.1/D1.1M; TYPE REQUIRED FOR MATERIALS BEING WELDED.

2.2 FABRICATION

A. FIT AND SHOP ASSEMBLE ITEMS IN LARGEST PRACTICAL SECTIONS, FOR DELIVERY TO SITE.
B. FABRICATE ITEMS WITH JOINTS TIGHTLY FITTED AND SECURED.
C. CONTINUOUSLY SEAL JOINED MEMBERS BY INTERMITTENT WELDS AND PLASTIC FILLER.
D. GRIND EXPOSED JOINTS FLUSH AND SMOOTH WITH ADJACENT FINISH SURFACE. MAKE EXPOSED JOINTS BUTT TIGHT, FLUSH, AND HAIRLINE. EASE EXPOSED EDGES TO SMALL UNIFORM RADIUS.
E. EXPOSED MECHANICAL FASTENINGS: FLUSH COUNTERSUNK SCREWS OR BOLTS; UNOBTRUSIVELY LOCATED; CONSISTENT WITH DESIGN OF COMPONENT, EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.
F. SUPPLY COMPONENTS REQUIRED FOR ANCHORAGE OF FABRICATIONS. FABRICATE ANCHORS AND RELATED COMPONENTS OF SAME MATERIAL AND FINISH AS FABRICATION, EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.

2.3 FABRICATED ITEMS

A. MESH SUPPORTS: STEEL; IN COMPLIANCE WITH ANSI A14.3; WITH MOUNTING BRACKETS AND ATTACHMENTS; PRIME PAINT FINISH.

2.4 FINISHES - STEEL

A. PRIME PAINT ALL STEEL ITEMS.
1. EXCEPTIONS: GALVANIZE ITEMS TO BE EMBEDDED IN CONCRETE, ITEMS TO BE IMBEDDED IN MASONRY.
2. EXCEPTIONS: DO NOT PRIME SURFACES IN DIRECT CONTACT WITH CONCRETE, WHERE FIELD WELDING IS REQUIRED, AND ITEMS TO BE COVERED WITH SPRAYED FIREPROOFING.

B. PREPARE SURFACES TO BE PRIMED IN ACCORDANCE WITH SSPC-SP-6.
C. CLEAN SURFACES OF RUST, SCALE, GREASE, AND FOREIGN MATTER PRIOR TO FINISHING.
D. PRIME PAINTING: ONE COAT.
E. GALVANIZING OF NON-STRUCTURAL ITEMS: GALVANIZE AFTER FABRICATION TO ASTM A123 REQUIREMENTS.

2.5 FABRICATION TOLERANCES

A. SQUARENESS: 1/8 INCH MAXIMUM DIFFERENCE IN DIAGONAL MEASUREMENTS.
B. MAXIMUM OFFSET BETWEEN FACES: 1/16 INCH.
C. MAXIMUM MISALIGNMENT OF ADJACENT MEMBERS: 1/16 INCH.
D. MAXIMUM BOW: 1/8 INCH IN 48 INCHES.
E. MAXIMUM DEVIATION FROM PLANE: 1/16 INCH IN 48 INCHES.

PART 3 - EXECUTION

3.1 EXAMINATION

A. VERIFY THAT FIELD CONDITIONS ARE ACCEPTABLE AND ARE READY TO RECEIVE WORK.

3.2 PREPARATION

A. CLEAN AND STRIP PRIMED STEEL ITEMS TO BARE METAL WHERE SITE WELDING IS REQUIRED.
B. SUPPLY SETTING TEMPLATES TO THE APPROPRIATE ENTITIES FOR STEEL ITEMS REQUIRED TO BE CAST INTO CONCRETE OR EMBEDDED IN MASONRY.

CALCULATED EC CHECKED AP

ACTIVE TRANSPORTATION NOTES

CUY-90-21.02

L2

3.3 INSTALLATION
A. PROVIDE FOR ERECTION LOADS, AND FOR SUFFICIENT TEMPORARY BRACING UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT ATTACHMENTS.
B. FIELD WELD COMPONENTS INDICATED.
C. PERFORM FIELD WELDING IN ACCORDANCE WITH AWS D1.1.
D. OBTAIN APPROVAL PRIOR TO SITE CUTTING OR MAKING ADJUSTMENTS NOT SCHEDULED.

3.4 TOLERANCES
A. MAXIMUM VARIATION FROM PLUMB: 1/4 INCH PER 10 LINEAR FEET, NON-CUMULATIVE.
B. MAXIMUM OFFSET FROM TRUE ALIGNMENT: 1/4 INCH.
C. MAXIMUM OUT-OF-POSITION: 1/4 INCH.

END OF SECTION

ITEM SPECIAL: DECORATIVE SIGN ELEMENT

PART 1 - GENERAL
1.1 SUMMARY
A. PRODUCTS FURNISHED, UNDER THIS SECTION INCLUDE THE FOLLOWING:
   1. STEEL WELD PLATES AND ANGLES, AND ASSOCIATED FASTENERS.

1.2 COORDINATION
A. COORDINATE SELECTION OF SHOP PRIMERS WITH TOPCOATS TO BE APPLIED OVER THEM. COMPLY WITH PAINT AND COATING MANUFACTURERS' WRITTEN INSTRUCTIONS TO ENSURE THAT SHOP PRIMERS AND TOPCOATS ARE COMPATIBLE WITH ONE ANOTHER.
B. COORDINATE INSTALLATION OF METAL FABRICATIONS THAT ARE ANCHORED TO OR THAT RECEIVE OTHER WORK. FURNISH SETTING DRAWINGS, TEMPLATES, AND DIRECTIONS FOR INSTALLING ANCHORAGES, INCLUDING SLEEVES, CONCRETE INSERTS, ANCHOR BOLTS, AND ITEMS WITH INTEGRAL ANCHORS, THAT ARE TO BE EMBEDDED IN CONCRETE OR MASONRY. DELIVER SUCH ITEMS TO PROJECT SITE IN TIME FOR INSTALLATION.

1.3 ACTION SUBMITTALS
A. SHOP DRAWINGS: SHOW FABRICATION AND INSTALLATION DETAILS. SHOW ANCHORAGE AND ACCESSORY ITEMS.
B. SAMPLES FOR VERIFICATION: FOR EACH TYPE AND FINISH.

1.4 FIELD CONDITIONS
A. FIELD MEASUREMENTS: VERIFY ACTUAL LOCATIONS OF WALLS AND OTHER CONSTRUCTION CONTIGUOUS WITH METAL FABRICATIONS BY FIELD MEASUREMENTS BEFORE FABRICATION.

PART 2 - PRODUCTS
2.1 METALS
A. METAL SURFACES, GENERAL: PROVIDE MATERIALS WITH SMOOTH, FLAT SURFACES UNLESS OTHERWISE INDICATED. FOR METAL FABRICATIONS EXPOSED TO VIEW IN THE COMPLETED WORK, PROVIDE MATERIALS WITHOUT SEAM MARKS, ROLLER MARKS, ROLLED TRADE NAMES, OR BLEMISHES.
B. STAINLESS STEEL SHEET, STRIP, AND PLATE: ASTM A240/A240M OR ASTM A666, TYPE 316L.

2.2 FASTENERS
A. GENERAL: UNLESS OTHERWISE INDICATED, PROVIDE TYPE 316 STAINLESS STEEL FASTENERS FOR EXTERIOR USE AND ZINC-PLATED FASTENERS WITH COATING COMPLYING WITH ASTM B633 OR ASTM F1941/F1941M, CLASS FE/ZN 5, AT EXTERIOR WALLS. SELECT FASTENERS FOR TYPE, GRADE, AND CLASS REQUIRED.
   1. PROVIDE STAINLESS STEEL FASTENERS FOR FASTENING STAINLESS STEEL.

2.2 FASTENERS (CONT.)
B. STAINLESS STEEL BOLTS AND NUTS: REGULAR HEXAGON-HEAD ANNEALED STAINLESS STEEL BOLTS, ASTM F593; WITH HEX NUTS, ASTM F594; AND, WHERE INDICATED, FLAT WASHERS; ALLOY GROUP 1.
C. ANCHORS, GENERAL: CAPABLE OF SUSTAINING, WITHOUT FAILURE, A LOAD EQUAL TO SIX TIMES THE LOAD IMPOSED WHEN INSTALLED IN UNIT MASONRY AND FOUR TIMES THE LOAD IMPOSED WHEN INSTALLED IN CONCRETE, AS DETERMINED BY TESTING IN ACCORDANCE WITH ASTM E488/E488M, CONDUCTED BY A QUALIFIED INDEPENDENT TESTING AGENCY.

2.3 FABRICTION, GENERAL
A. SHOP ASSEMBLY: PREASSEMBLE ITEMS IN THE SHOP TO GREATEST EXTENT POSSIBLE. DISASSEMBLE UNITS ONLY AS NECESSARY FOR SHIPPING AND HANDLING LIMITATIONS. USE CONNECTIONS THAT MAINTAIN STRUCTURAL VALUE OF JOINED PIECES. CLEARLY MARK UNITS FOR REASSEMBLY AND COORDINATED INSTALLATION.
B. CUT, DRILL, AND PUNCH METALS CLEANLY AND ACCURATELY. REMOVE BURRS AND EASE EDGES TO A RADIUS OF APPROXIMATELY 1/32 INCH UNLESS OTHERWISE INDICATED. REMOVE SHARP OR ROUGH AREAS ON EXPOSED SURFACES.
C. FORM EXPOSED WORK WITH ACCURATE ANGLES AND SURFACES AND STRAIGHT EDGES.
D. CUT, REINFORCE, DRILL, AND TAP METAL FABRICATIONS AS INDICATED TO RECEIVE FINISH HARDWARE, SCREWS, AND SIMILAR ITEMS.
E. PROVIDE FOR ANCHORAGE OF TYPE INDICATED; COORDINATE WITH SUPPORTING STRUCTURE. SPACE ANCHORING DEVICES TO SECURE METAL FABRICATIONS RIGIDLY IN PLACE AND TO SUPPORT INDICATED LOADS.

PART 3 - EXECUTION
3.1 INSTALLATION, GENERAL
A. CUTTING, FITTING, AND PLACEMENT: PERFORM CUTTING, DRILLING, AND FITTING REQUIRED FOR INSTALLING METAL FABRICATIONS. SET METAL FABRICATIONS ACCURATELY IN LOCATION, ALIGNMENT, AND ELEVATION; WITH EDGES AND SURFACES LEVEL, PLUMB, TRUE, AND FREE OF RACK; AND MEASURED FROM ESTABLISHED LINES AND LEVELS.
B. FASTENING TO IN-PLACE CONSTRUCTION: PROVIDE ANCHORAGE DEVICES AND FASTENERS WHERE METAL FABRICATIONS ARE REQUIRED TO BE FASTENED TO IN-PLACE CONSTRUCTION. PROVIDE THREADED FASTENERS FOR USE WITH CONCRETE AND MASONRY INSERTS, TOGGLE BOLTS, THROUGH BOLTS, LAG SCREWS, WOOD SCREWS, AND OTHER CONNECTORS.
C. CORROSION PROTECTION: COAT CONCEALED SURFACES OF ALUMINUM THAT COME INTO CONTACT WITH GROUT, CONCRETE, MASONRY, WOOD, OR DISSIMILAR METALS WITH THE FOLLOWING:
   1. CAST ALUMINUM: HEAVY COAT OF BITUMINOUS PAINT.
   2. EXTRUDED ALUMINUM: TWO COATS OF CLEAR LACQUER.

3.2 REPAIRS
A. TOUCHUP PAINTING:
   1. IMMEDIATELY AFTER ERECTION, CLEAN FIELD WELDS, BOLTED CONNECTIONS, AND ABRADED AREAS. PAINT UNCOATED AND ABRADED AREAS WITH SAME MATERIAL AS USED FOR SHOP PAINTING TO COMPLY WITH SSPC-PA 1 FOR TOUCHING UP SHOP-PAINTED SURFACES.
      a. APPLY BY BRUSH OR SPRAY TO PROVIDE A MINIMUM 2.0-MIL DRY FILM THICKNESS.

END OF SECTION

CALCULATED EC CHECKED AP

ACTIVE TRANSPORTATION NOTES

CUY-90-21.02

L3

SHEET REFERENCE				ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
L5	L6	L7	L8					
200	922			512	10051	1122	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY), AS PER PLAN
257				622	10161	257	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN
35				653	10000	35	CY	TOPSOIL FURNISHED AND PLACED
24				661	00500	24	CY	MULCH
40				661	14001	40	EACH	PERENNIALS, AS PER PLAN (RUDBECKIA FULGIDA 'GOLDSTRUM' - BLACK-EYED SUSAN)
200				661	14001	200	EACH	PERENNIALS, AS PER PLAN (ECHINACEA PURPUREA - PURPLE CONEFLOWER)
15				661	30041	15	EACH	EVERGREEN SHRUB, 18" HEIGHT, AS PER PLAN (ROSA RUGOSA - RUGOSE ROSE)
24				661	99900	24	EACH	PLANTING, MISC.: PANICUM VIRGATUM 'ROTSTRAHL BUSH' - RED RAYS SWITCHGRASS
116				661	99900	116	EACH	PLANTING, MISC.: BOUTELOUA CURTIPENDULA - SIDE OATS GRAMA
22				SPECIAL	69098000	22	EACH	DECORATIVE BOULDERS
			305	SPECIAL	69098100	305	FT	STAINLESS STEEL PIPING
			149	SPECIAL	69098100	149	FT	PIPING MOUNTING HARDWARE
		17		SPECIAL	69098200	17	SF	DECORATIVE METAL SIGN COLOR A
		31		SPECIAL	69098200	31	SF	DECORATIVE METAL SIGN COLOR B
	2025			SPECIAL	69098200	2025	SF	PAINT COLOR 1
	1550			SPECIAL	69098200	1550	SF	PAINT COLOR 2
	1550			SPECIAL	69098200	1550	SF	PAINT COLOR 3
	3000			SPECIAL	69098200	3000	SF	PAINT COLOR 4
	175			SPECIAL	69098200	175	SF	PAINT COLOR 5

CALCULATED EC
CHECKED AP

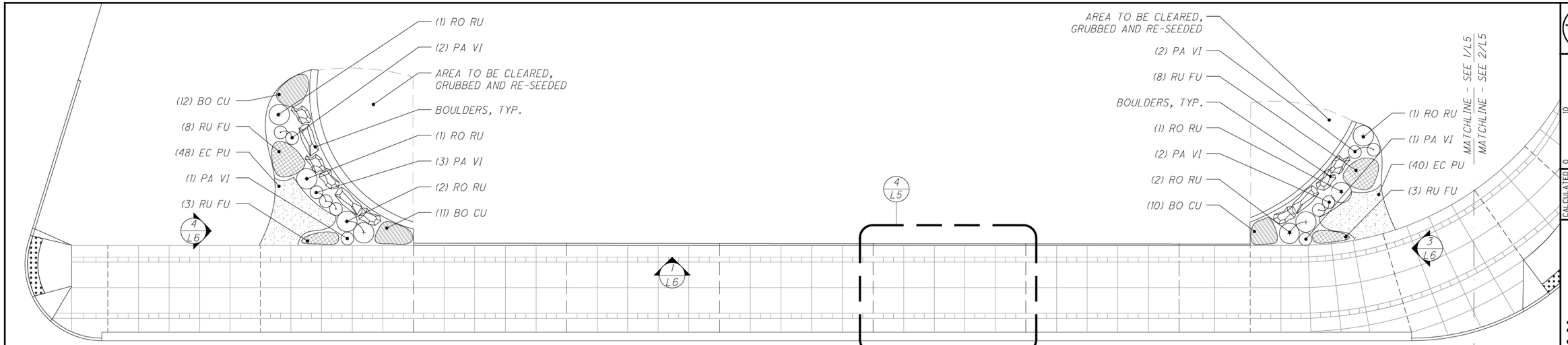
TRANSPORTATION SUBSUMMARY

ACTIVE

CUY-90-21.02

L4

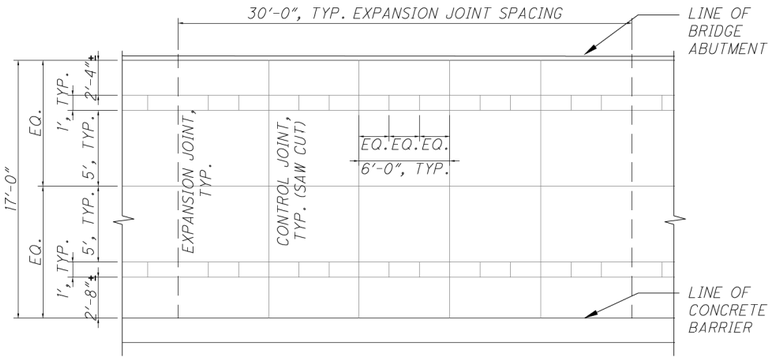
149
153



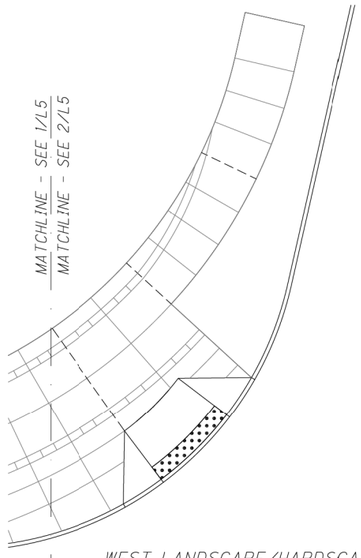
WEST LANDSCAPE/HARDSCAPE PLAN
SCALE: 1:10 — 1 / –

LANDSCAPE QUANTITIES LIST (THIS SHEET ONLY)

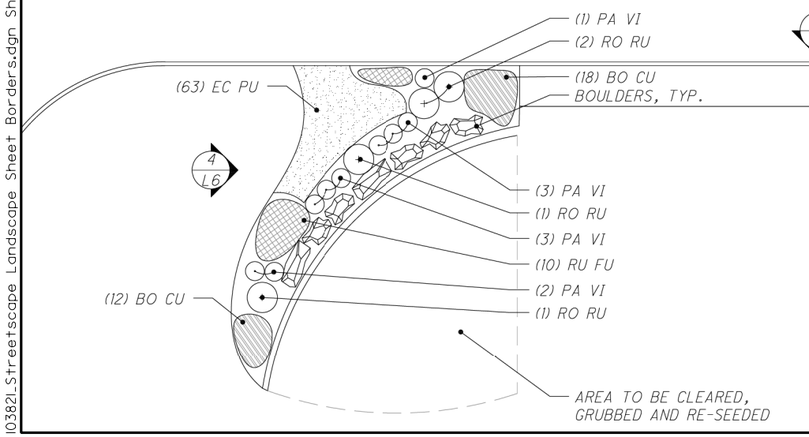
ITEM	KEY	BOTANICAL NAME - COMMON NAME	COMMON NAME	SIZE/UNIT	COND.	QTY.
661	RO RU	EVERGREEN SHRUB, 18" HEIGHT, AS PER PLAN, ROSA RUGOSA	RUGOSE ROSE	18" HT./3 GAL.	CONT.	15
661	PA VI	PLANTING, MISC.: PANICUM VIRGATUM 'ROTSTRAHL BUSCH'	RED RAYS SWITCHGRASS	2 GAL.	CONT.	24
661	BO CU	PLANTING, MISC.: BOUTELOUA CURTIPENDULA	SIDE OATS GRAMA	2 GAL.	CONT.	116
661	RU FU	PERENNIALS, AS PER PLAN, RUDBECKIA FULGIDA 'GOLDSTURM'	BLACK-EYED SUSAN	2 GAL.	CONT.	40
661	EC PU	PERENNIALS, AS PER PLAN, ECHINACEA PURPUREA	PURPLE CONEFLOWER	1 GAL.	CONT.	200

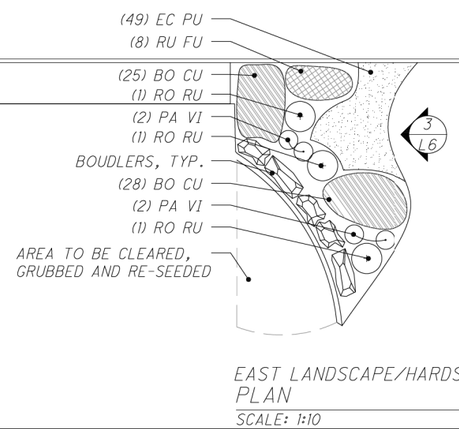


TYPICAL SCORING PATTERN
SCALE: 1:5 — 4 / L5



WEST LANDSCAPE/HARDSCAPE PLAN
SCALE: 1:10 — 2 / L5





EAST LANDSCAPE/HARDSCAPE PLAN
SCALE: 1:10 — 3 / –

HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED EC
CHECKED AP

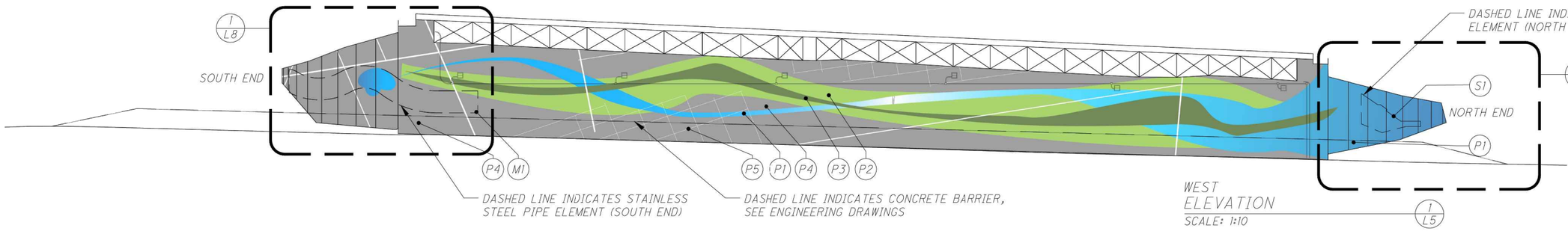
ACTIVE TRANSPORTATION PLAN
MLK JR. DRIVE STA. 4+00 TO STA 9+00

CUY-90-21.02

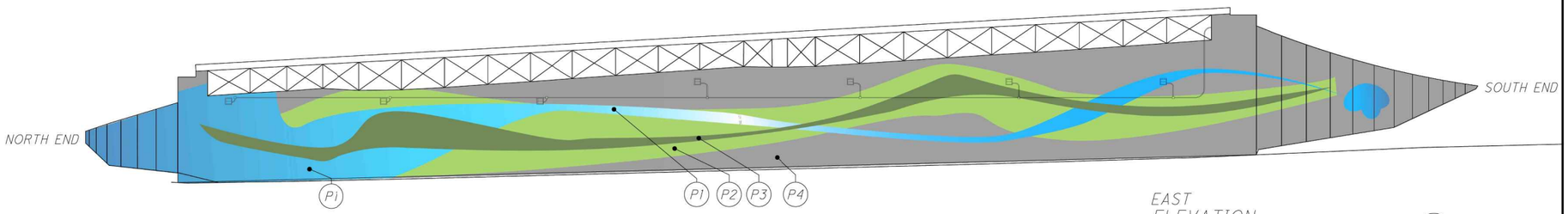
L5

150
153

10382L Streetscape Landscape Sheet Borders.dgn Sheet 11/20/2018 12:06:15 PM MDohlen



WEST ELEVATION
SCALE: 1:10



EAST ELEVATION
SCALE: 1:10

NOTE: EAST ELEVATION DOES NOT INCLUDE DECORATIVE METAL ELEMENTS

GENERAL NOTES

A. CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS AS THEY APPLY TO THE ACCEPTABLE COMPLETION OF THE WORK.

B. DO NOT SCALE DRAWINGS. FOLLOW DIMENSIONS.

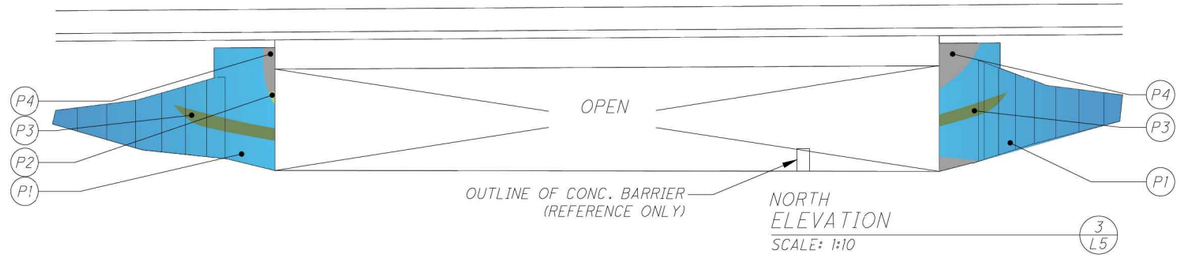
C. ALL MATERIAL INSTALLATION PROCEDURES MUST FOLLOW MANUFACTURER'S REQUIRED/ RECOMMENDED METHODS FOR INSTALLATION INCLUDING ALL NECESSARY AND/OR RECOMMENDED ACCESSORY ELEMENTS, SUCH AS, BUT NOT LIMITED TO FLASHING, SEALANTS, ANCHORING AND FASTENING DEVICES, ETC. PERSONNEL INSTALLING THE MATERIALS SHALL BE PROVIDED WITH WRITTEN INSTALLATION PROCEDURES AND/OR SPECIFIC DIRECTION FROM THE MANUFACTURER, PRIOR TO INSTALLATION. ITEMS REQUIRED FOR INSTALLATION, NOT SPECIFICALLY IDENTIFIED ON THE DRAWINGS, YET NOTED ON THE INSTALLATION INSTRUCTIONS MUST BE ACCOUNTED FOR, PROVIDED, AND INSTALLED BY THE CONTRACTOR. CONTACT ARCHITECT IF THERE ARE ANY GENERAL AND OR SPECIFIC QUESTIONS REGARDING THESE REQUIREMENTS.

D. IN PROJECT REQUIRING INVESTIGATION AND VERIFICATION OF EXISTING CONDITIONS AND INFORMATION PROVIDED BY THE OWNER, THERE MAY BE CONDITIONS CONCEALED FROM REASONABLE INSPECTION THAT DIFFER FROM AVAILABLE DOCUMENTATION OR OTHER INFORMATION. NOTWITHSTANDING ANYTHING TO THE CONTRARY IN THESE DOCUMENTS, SUCH INVESTIGATION AND VERIFICATION IS NOT INTENDED TO BE AN EXHAUSTIVE CHECK OR DETAILED INSPECTION OF THE EXISTING CONDITIONS, BUT RATHER ARE TO ALLOW THE ARCHITECT, AS AN EXPERIENCED PROFESSIONAL, TO BECOME GENERALLY FAMILIAR WITH THE FACILITIES IN ORDER TO RENDER SERVICES. THE ARCHITECT IS NOT RESPONSIBLE FOR COSTS OR DELAYS RESULTING FROM THE LATER DISCOVERY OF ACTUAL CONDITIONS EXCEPT TO THE EXTENT SUCH COSTS OR DELAYS ARE THE RESULT OF THE ARCHITECT'S FAILURE TO MEET ITS PROFESSIONAL STANDARD OF CARE.

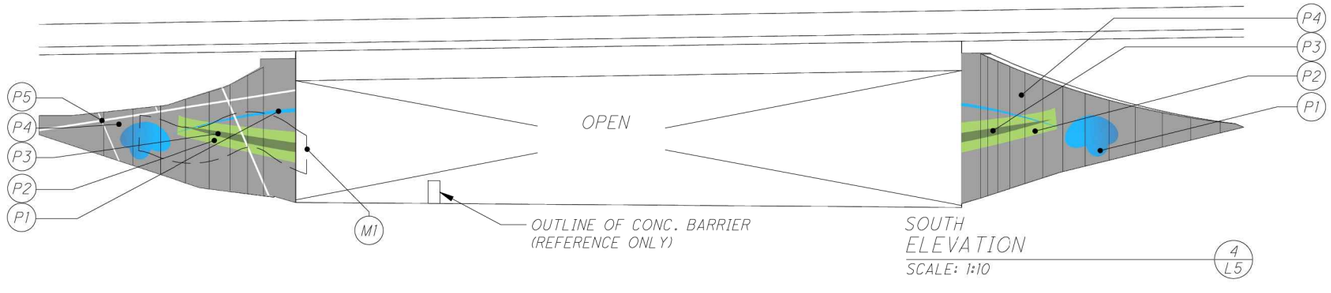
MATERIAL LEGEND	
M1	ITEM SPECIAL: STAINLESS STEEL PIPING (GRADE 316 STAINLESS STEEL 1-7/8" O.D. PIPE RAIL, ALL WELDS GROUND SMOOTH, ENDS CAPPED, TYP.)
L1	½" THICK LASER-CUT STEEL LETTERS, 4" HIGH, WITH 2" SPACERS BEHIND LETTERS, TYP. FONT: TIMES NEW ROMAN
S1	NW WING WALL: 1/4" THICK LASER-CUT STEEL ART PROFILE (CURVED W/ WINGWALL), COLOR A & B, TYP.
P1	ITEM SPECIAL: PAINT COLOR 1 - SHERWIN WILLIAMS "JAMAICA BAY" (REF.)
P2	ITEM SPECIAL: PAINT COLOR 2 - SHERWIN WILLIAMS "LOUNGE GREEN" (REF.)
P3	ITEM SPECIAL: PAINT COLOR 3 - SHERWIN WILLIAMS "GREENFIELD" (REF.)
P4	ITEM SPECIAL: PAINT COLOR 4 - SHERWIN WILLIAMS "AFRICAN GRAY" (REF.)
P5	ITEM SPECIAL: PAINT COLOR 5 - SHERWIN WILLIAMS "EXTRA WHITE" (REF.)
P6	ITEM SPECIAL: DECORATIVE METAL ELEMENT COLOR A - NATURAL STAINLESS STEEL
P7	ITEM SPECIAL: DECORATIVE METAL ELEMENT COLOR B - DARKER COLOR

MATERIAL GENERAL NOTES

1. PAINT CONDUIT AND LIGHT FIXTURE TO MATCH WALL COLOR(S), MASK LENS TO AVOID OVERSPRAY, TYP.
2. PAINT OUTLINES ARE PROVIDED AS REFERENCE, VERIFY IN FIELD, COORDINATE W/ ARCHITECT, TYP.
3. MURALS / WALL TREATMENTS SHOWN ON ELEVATIONS ARE CONVEYED MORE EFFECTIVELY W/ COLOR COPIES OF SHEET L7



NORTH ELEVATION
SCALE: 1:10



SOUTH ELEVATION
SCALE: 1:10

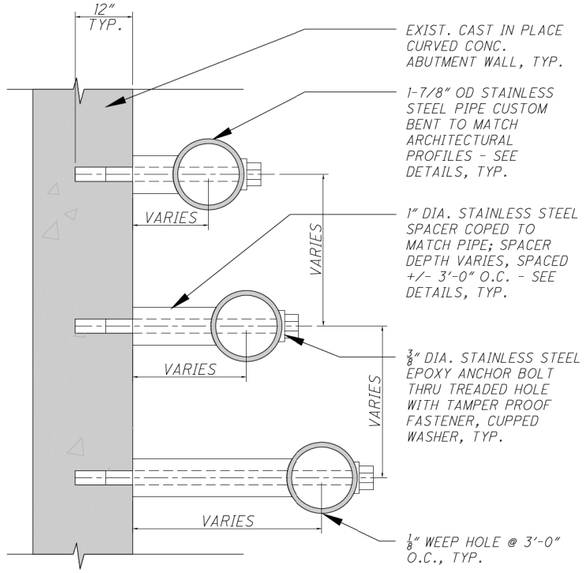
CALCULATED EC
CHECKED AP

ACTIVE TRANSPORTATION ELEVATIONS

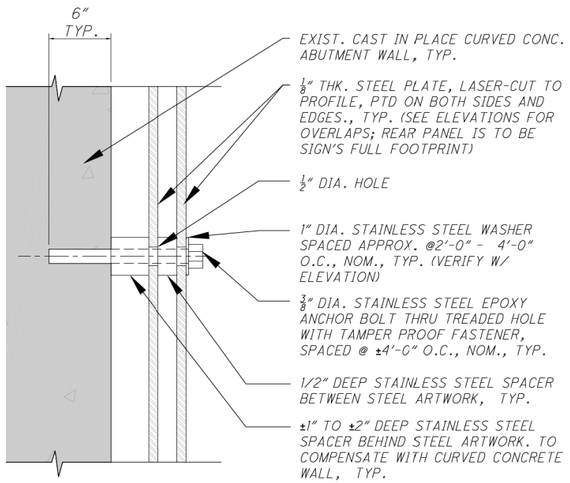
CUY-90-21.02

L6

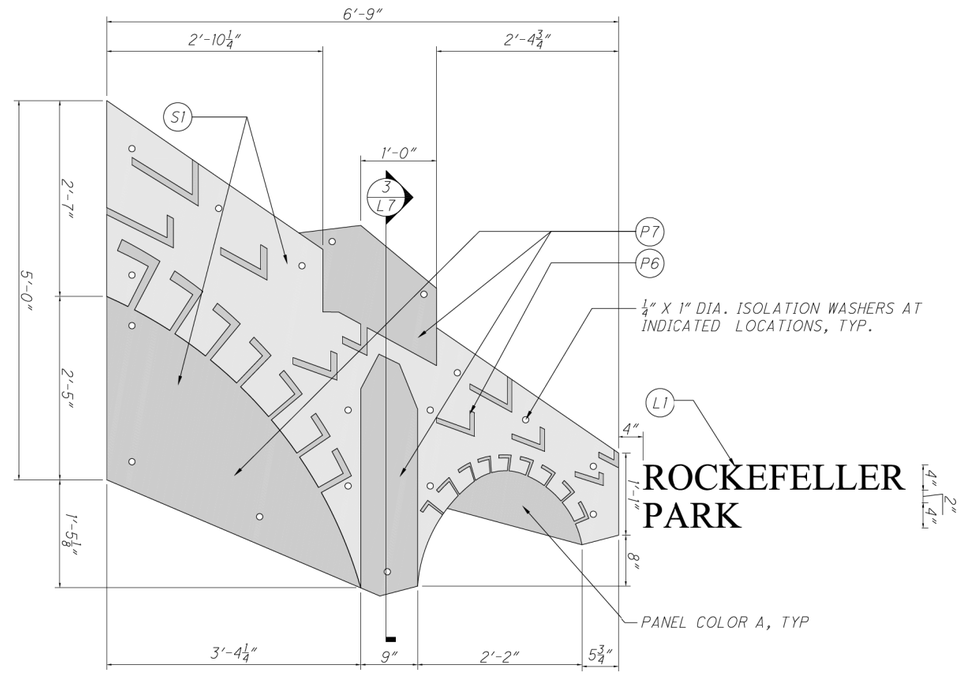
151
153



ITEM SPECIAL:
PIPING MOUNTING HARDWARE (4 / L8)
SCALE: 6" - 1'-0"

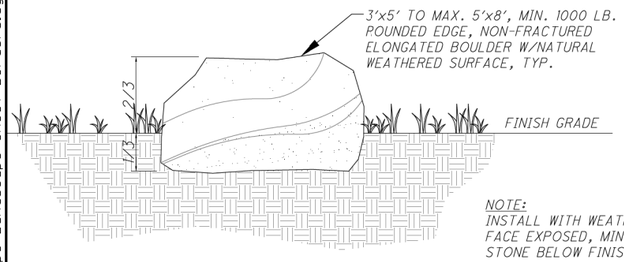


STEEL PLATE ARTWORK MOUNTING DETAIL
DETAIL (3 / L7)
SCALE: 6" - 1'-0"



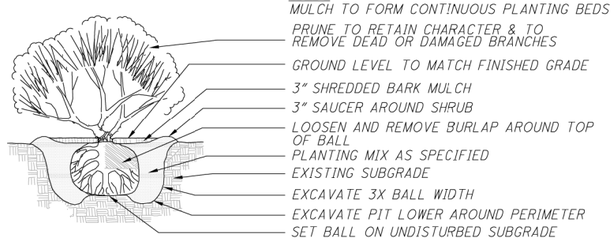
NOTE:
SIGN COMPONENT TO FOLLOW RADIUS OF ABUTMENT WALL. IF RADIUS CANNOT BE ACHIEVED, VERIFY SPACERS, AS NECESSARY TO COMPENSATE FOR CURVED WALL. VERIFY WITH ARCHITECT (PROVIDE MOCK-UP) PRIOR TO FABRICATION / INSTALLATION, TYP.
SIGN CAD FILE IS AVAILABLE TO CONTRACTOR FOR FABRICATION

ROCKEFELLER PARK
WALL SIGN DETAIL (2 / -)
1" = 1'-0"

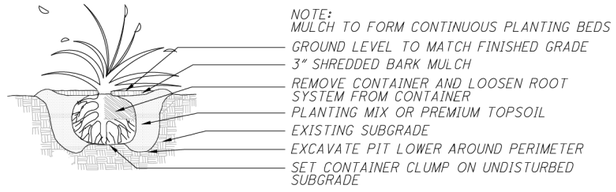


NOTE:
INSTALL WITH WEATHERED FACE EXPOSED, MIN. 1/3 OF STONE BELOW FINISH GRADE

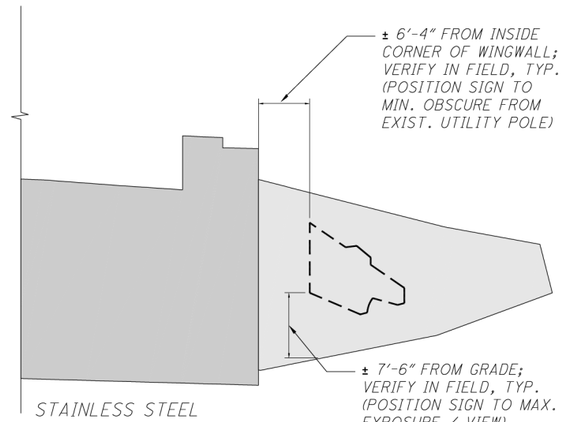
ITEM SPECIAL: DECORATIVE BOULDERS (5 / -)
SCALE: NTS



ITEM 661: EVERGREEN SHRUB, 18" HEIGHT, AS PER PLAN
(ROSA RUGOSA - RUGOSE ROSE) (7 / -)
SCALE: NTS



ITEM 661 - PERENNIALS AS PER PLAN (RUDBECKIA FULGIDA 'GOLDSTRUM' - BLACK-EYED SUSAN)
ITEM 661 - PERENNIALS AS PER PLAN (ECHINACEA PURPUREA - PURPLE CONEFLOWER)
ITEM 661 - PLANTING MISC.: PANICUM VIRGATUM 'ROTSTRAHL BUSH' - RED RAYS SWITCHGRASS
ITEM 661 - PLANTING MISC.: BOUTELOUA CURTIPENDULA - SIDE OATS GRAMA (6 / -)
SCALE: NTS



STAINLESS STEEL
DECORATIVE METAL SIGN
KEY DIAGRAM (1 / L6)
NTS

CALCULATED EC
CHECKED AP

ACTIVE TRANSPORTATION DETAILS

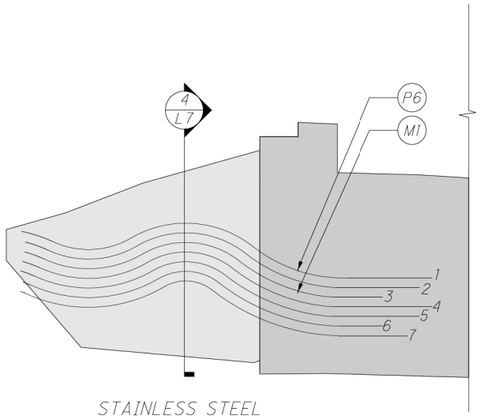
CUY-90-21.02

L7

152
153

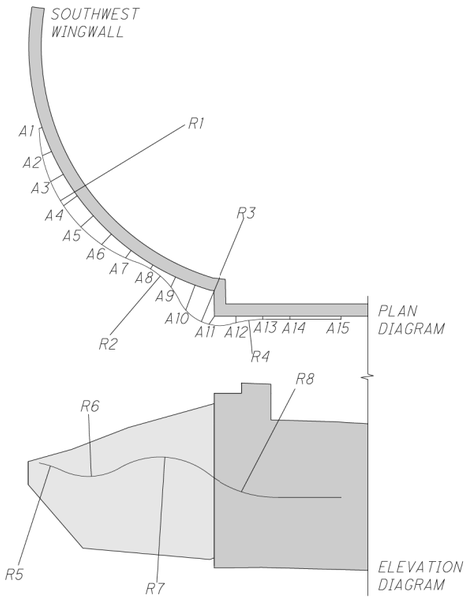
10382L Streetscape Landscape Sheet Borders.dgn Sheet 11/20/2018 12:06:28 PM MDohlen

ITEM SPECIAL:
STAINLESS STEEL PIPING



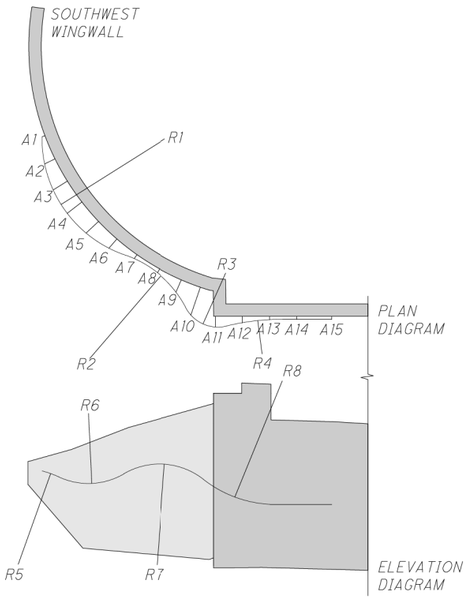
STAINLESS STEEL
PIPE RAIL ELEMENT
KEY DIAGRAM
NTS

1
L6



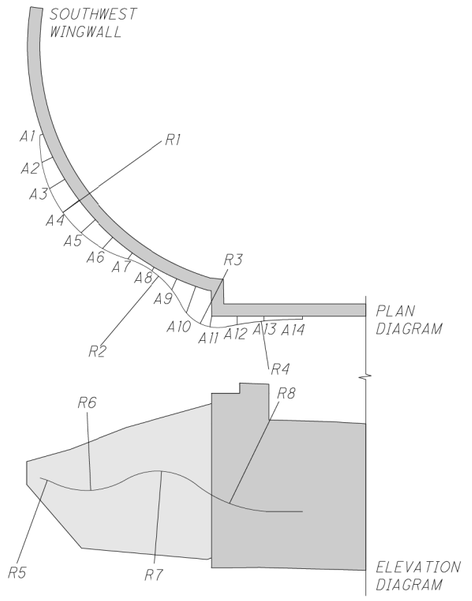
RAIL ELEMENT - SOUTH 1 (OVERALL LENGTH : +/- 44'-8")

RADIUS		ANCHOR DEPTH		
R1: 16'-0"	R6: 6'-8"	A1: 0'-4"	A6: 1'-6"	A11: 1'-0"
R2: 8'-6"	R7: 9'-0"	A2: 1'-1"	A7: 1'-0"	A12: 0'-8"
R3: 5'-0"	R8: 12'-0"	A3: 1'-7"	A8: 0'-6"	A13: 0'-4"
R4: 15'-0"		A4: 1'-10"	A9: 1'-2"	A14: 0'-4"
R5: 11'-6"		A5: 1'-10"	A10: 2'-11"	A15: 0'-4"



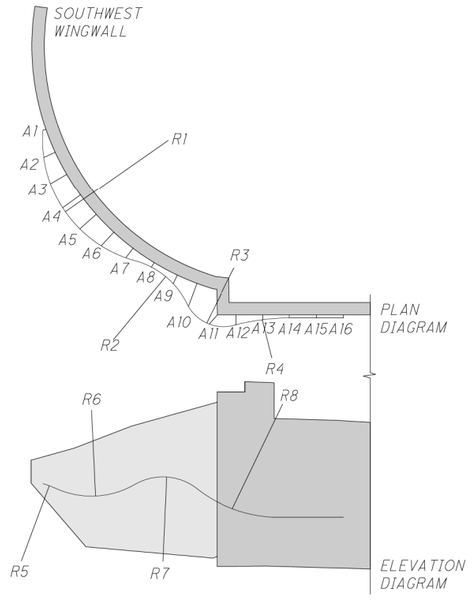
RAIL ELEMENT - SOUTH 2 (OVERALL LENGTH : +/- 43'-0")

RADIUS		ANCHOR DEPTH		
R1: 13'-6"	R6: 7'-8"	A1: 0'-4"	A6: 1'-4"	A11: 1'-2"
R2: 12'-0"	R7: 7'-10"	A2: 1'-3"	A7: 0'-6"	A12: 0'-8"
R3: 4'-0"	R8: 12'-11"	A3: 1'-10"	A8: 0'-6"	A13: 0'-4"
R4: 26'-0"		A4: 2'-0"	A9: 1'-6"	A14: 0'-4"
R5: 10'-6"		A5: 1'-10"	A10: 3'-3"	A15: 0'-4"



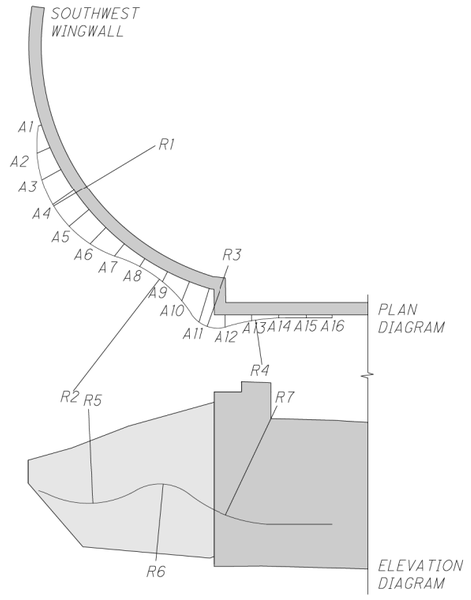
RAIL ELEMENT - SOUTH 3 (OVERALL LENGTH : +/- 40'-5")

RADIUS		ANCHOR DEPTH		
R1: 13'-6"	R6: 8'-7"	A1: 0'-4"	A6: 1'-8"	A11: 1'-2"
R2: 10'-0"	R7: 7'-0"	A2: 1'-4"	A7: 0'-10"	A12: 0'-11"
R3: 4'-6"	R8: 13'-11"	A3: 1'-11"	A8: 0'-6"	A13: 0'-6"
R4: 37'-6"		A4: 2'-3"	A9: 1'-4"	A14: 0'-4"
R5: 9'-8"		A5: 2'-1"	A10: 3'-0"	



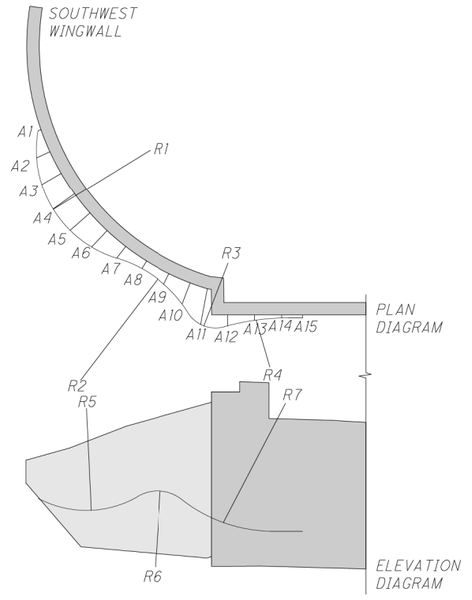
RAIL ELEMENT - SOUTH 4 (OVERALL LENGTH : +/- 45'-2")

RADIUS		ANCHOR DEPTH		
R1: 13'-9"	R6: 9'-5"	A1: 0'-4"	A6: 2'-0"	A11: 1'-4"
R2: 9'-0"	R7: 6'-1"	A2: 1'-4"	A7: 1'-4"	A12: 1'-1"
R3: 4'-6"	R8: 14'-9"	A3: 2'-1"	A8: 0'-7"	A13: 0'-6"
R4: 25'-0"		A4: 2'-5"	A9: 1'-1"	A14: 0'-4"
R5: 8'-10"		A5: 2'-5"	A10: 2'-8"	A15: 0'-4"
				A16: 0'-4"



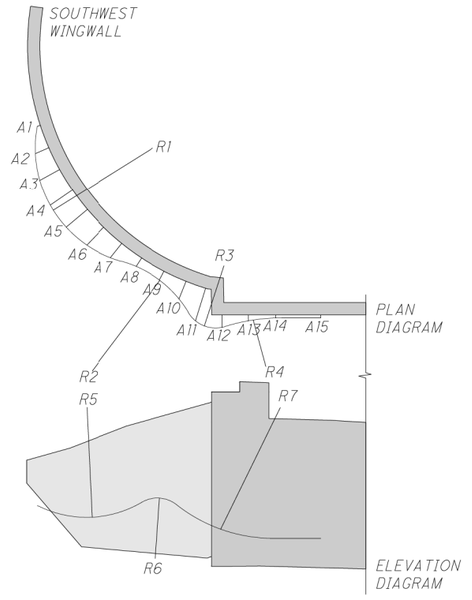
RAIL ELEMENT - SOUTH 5 (OVERALL LENGTH : +/- 45'-0")

RADIUS		ANCHOR DEPTH		
R1: 13'-0"	R6: 5'-3"	A1: 0'-4"	A6: 2'-5"	A11: 3'-10"
R2: 15'-6"	R7: 15'-9"	A2: 1'-6"	A7: 1'-9"	A12: 1'-4"
R3: 3'-6"		A3: 2'-4"	A8: 1'-0"	A13: 0'-8"
R4: 22'-0"		A4: 2'-10"	A9: 1'-3"	A14: 0'-4"
R5: 10'-4"		A5: 2'-10"	A10: 2'-3"	A15: 0'-4"
				A16: 0'-4"



RAIL ELEMENT - SOUTH 6 (OVERALL LENGTH : +/- 41'-6")

RADIUS		ANCHOR DEPTH		
R1: 12'-6"	R6: 4'-4"	A1: 0'-4"	A6: 2'-6"	A11: 4'-0"
R2: 14'-0"	R7: 16'-4"	A2: 1'-8"	A7: 1'-8"	A12: 1'-2"
R3: 3'-7"		A3: 2'-6"	A8: 1'-0"	A13: 0'-7"
R4: 2'-6"		A4: 2'-11"	A9: 1'-3"	A14: 0'-4"
R5: 11'-2"		A5: 2'-11"	A10: 2'-6"	A15: 0'-4"



RAIL ELEMENT - SOUTH 7 (OVERALL LENGTH : +/- 44'-2")

RADIUS		ANCHOR DEPTH		
R1: 13'-0"	R6: 3'-6"	A1: 0'-4"	A6: 2'-9"	A11: 3'-9"
R2: 12'-6"	R7: 17'-2"	A2: 1'-7"	A7: 2'-0"	A12: 1'-4"
R3: 3'-6"		A3: 2'-6"	A8: 1'-1"	A13: 0'-8"
R4: 21'-0"		A4: 3'-0"	A9: 1'-1"	A14: 0'-4"
R5: 12'-1"		A5: 3'-4"	A10: 2'-1"	A15: 0'-4"

CALCULATED EC
CHECKED AP

ACTIVE TRANSPORTATION DETAILS

CUY-90-21.02

L8

153
153

10382L Streetscape Landscape Sheet Borders.dgn Sheet 9/6/2018 4:18:34 PM MDohlen