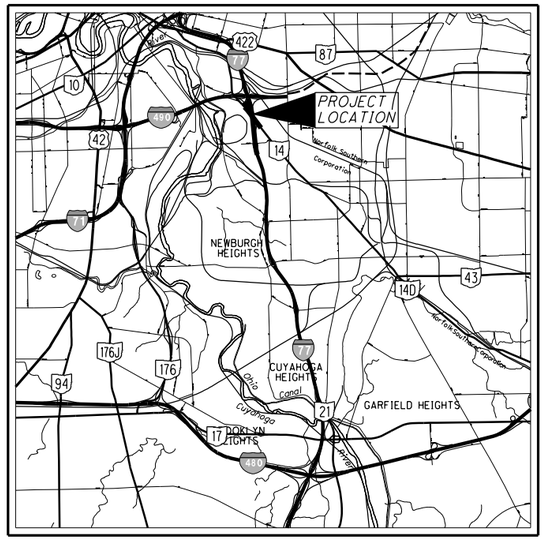


LOCATION MAP

LATITUDE: 41°28'27" LONGITUDE: 81°39'35"

SCALE IN MILES

0 1 2 3 4

N

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

CUY-77-13.80 (CCG6B)
BUILDABLE UNIT 3

CITY OF CLEVELAND

CUYAHOGA COUNTY

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

PROJECT DESCRIPTION

RECONSTRUCTING THE EXISTING RAMP FROM BROADWAY AVENUE TO I.R.-77 SOUTHBOUND INTO A FRONTAGE ROAD TO PERSHING AVENUE. A MULTI-USE PATH SHALL BE CONSTRUCTED ALONG FRONTAGE ROAD, BETWEEN BROADWAY AND PERSHING AVENUES. CONSTRUCT WALL 2B AND WALL 3 BETWEEN FRONTAGE ROAD AND CUY-77.

PROJECT EARTH DISTURBED AREA: N/A ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: N/A ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: N/A ACRES
(SEE BU-6 FOR PROJECT EARTH DISTURBED AREA)

LIMITED ACCESS

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

2016 SPECIFICATIONS

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEET 19

DESIGN DESIGNATION

	I.R. 77 NORTH OF BROADWAY	FRONTAGE ROAD	BROADWAY AVENUE
CURRENT ADT (2017)	32,770	2,340	18,170
DESIGN YEAR ADT (2037)	41,220	2,300	18,410
DESIGN HOURLY VOLUME AM/PM (2037)	2,340/4,970	110/310	1,580/1,160
DIRECTIONAL DISTRIBUTION AM/PM	55%/61%	N/A	62%/65%
TRUCKS (24 HOUR B&C)	8%	37%	6%
DESIGN SPEED	60	40	35
LEGAL SPEED	50	35	35
DESIGN FUNCTIONAL CLASSIFICATION:	URBAN INTERSTATE	DIRECTIONAL RAMP	URBAN PRINCIPAL ARTERIAL
NHS PROJECT	YES	YES	YES
	I.R. 77 SOUTH OF BROADWAY		RAMP J5 & J6
	54,050		21,280
	63,300		22,080
	4,900/6,470		2,560/1,500
	57%/60%		N/A
	8%		7%
	60		50 (490E), 35 (490W)
	60		N/A
	URBAN INTERSTATE		DIRECTIONAL RAMP
	YES		YES

DESIGN EXCEPTIONS

NONE

INDEX OF SHEETS:

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES TWO WORKING DAYS **BEFORE YOU DIG.**

OHIO Utilities Protection SERVICE — *Call Before You Dig* **1-800-362-2764**

(Non-members must be called directly)

OIL & GAS PRODUCERS UNDERGROUND PROTECTION SERVICE **1-800-925-0988**

PLAN PREPARED BY:

E.L. ROBINSON ENGINEERING
1468 West 9th Street • Cleveland, Ohio 44113
www.elrobinsonengineering.com

kokosing CONSTRUCTION COMPANY INC.

ENGINEERS SEAL:
FOR ENTIRE PLAN SET EXCEPT RETAINING WALLS & SIGNALS
STATE OF OHIO JASON THOMAS WISE E-72224 REGISTERED PROFESSIONAL ENGINEER
SIGNED:
DATE: 11/22/2017

ENGINEERS SEAL:
FOR SIGNALS
STATE OF OHIO MARK J. HUNTER E-56376 REGISTERED PROFESSIONAL ENGINEER
SIGNED: Mark J Hunter
DATE: 8/15/2017

ENGINEERS SEAL:
FOR RETAINING WALLS
STATE OF OHIO PETER ALAN NARSAVAGE E-62277 REGISTERED PROFESSIONAL ENGINEER
SIGNED:
DATE: 8/15/2017

STANDARD CONSTRUCTION DRAWINGS

BP-2.1	7/17/15	RM-4.5	7/21/17	MT-101.80	1/16/15	TC-61.30	1/20/17				
BP-2.2	7/18/08	RM-4.6	7/19/13	MT-101.90	7/21/17	TC-65.10	1/17/14				
BP-2.3	7/18/14	RM-5.1	7/18/14	MT-102.10	1/20/17	TC-65.11	7/21/17				
BP-5.1	7/19/13	RM-5.2	1/17/14	MT-102.20	7/18/14	TC-81.10	7/15/16				
BP-7.1	7/18/14			MT-103.10	1/20/17	TC-83.20	7/21/17				
		VPF-1-90	7/17/15	MT-105.10	7/19/13	TC-84.20	10/18/13				
DM-1.2	1/18/13			MT-110.10	7/19/13	TC-84.21	10/18/13				
		HL-50.11	1/16/15	MT-120.00	1/20/17						
F-1.1	7/19/13										
		MT-95.31	7/21/17	TC-41.20	10/18/13						
MGS-1.1	7/21/17	MT-95.32	7/21/17	TC-41.30	10/18/13						
MGS-2.1	7/19/13	MT-95.41	7/21/17	TC-41.40	10/18/13						
MGS-3.1	7/21/17	MT-99.30	7/21/17	TC-41.50	10/18/13						
MGS-3.2	1/18/13	MT-101.60	1/20/17	TC-42.20	10/18/13						
		MT-101.70	1/17/14	TC-52.10	10/18/13						
RM-4.2	4/18/14	MT-101.75	7/15/16	TC-52.20	7/21/17						

SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
800	7/15/16	CELLULAR CONCRETE 6/17
832	1/17/14	
840	4/15/16	

RELEASED FOR CONSTRUCTION
BU03_2017.11.22_CCG6B.BU3.RFC Plans_FC18.p
03/01/2017 Brian.Link

APPROVED _____
DATE _____ DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
1	9/22/17	SEE SHEET: 22
2	11/13/17	SEE SHEET: 19
3	11/22/17	SEE SHEET: 34
NO.	DATE	DESCRIPTION
		ISSUE RECORD

FEDERAL PROJECT NO. E131(492)
PID NO. 82388
CONSTRUCTION PROJECT NO. 173001
RAILROAD INVOLVEMENT NONE
CUY-77-13.80
1 95

P:\82388_CCG6B\Design\Roadway\Sheets\82388_GT3001_FC.dgn Sheet 11/22/2017 2:40:10 PM mlutes

*THERE ARE NO EXISTING LANDSCAPED AREAS WITHIN THE WORK LIMITS

BEGIN WORK FRONTAGE ROAD STA. 30+15.00

BEGIN WORK MULTI-USE PATH STA. 70+00.00

BEGIN PROJECT STA. 976+25.00 SLM 13.80 E131(492)

BEGIN WORK RAMP J5 STA. 200+00.00

℄ CONST. FRONTAGE RD.

℄ CONST. MULTI-USE PATH

℄ CONST. I.R. 77

℄ CONST. RAMP J5

℄ CONST. DILLE AVE.

BEGIN WORK DILLE AVE. STA. 63+65.00

BEGIN FULL DEPTH PAVEMENT BROADWAY AVE. STA. 110+75.00

BEGIN WORK ROSEVILLE AVE. STA. 50+95.00

℄ CONST. ROSEVILLE CT.

BEGIN WORK BROADWAY AVE. STA. 106+23.50

MATCH LINE: RAMP J5 STA. 220+00.00 SEE NEXT SHEET

MATCH LINE: I-77 STA. 999+00.00 SEE NEXT SHEET

MATCH LINE: I-77 STA. 974+00 SEE BELOW

STRUCTURE NO. CUY-77-1375

STRUCTURE NO. CUY-77-1409

GAS PIPELINE (DOMINION EAST OHIO)

OVERHEAD ELECTRIC (CLEVELAND PUBLIC POWER)

CONST. LIMITS

℄ CONST. GALLUP AVE.

℄ CONST. BROADWAY AVE.

℄ PERSHING AVE.

END WORK BROADWAY AVE. STA. 122+36.00

END FULL DEPTH PAVEMENT BROADWAY AVE. STA. 120+75.00

END WORK GALLUP AVE. STA. 41+75.00

END PROJECT STA. 997+97.60 SLM 14.21 E131(492)

BEGIN WORK I.R. 77 STA. 964+15.00

MATCH LINE: I-77 STA. 974+00 SEE ABOVE

RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf

09/07/2017 | Brian.Link

FOR GEOMETRIC PLAN, SEE SHEETS 4 & 5.

HORIZONTAL SCALE IN FEET 0 50 100 200

CALCULATED MLL CHECKED SWC

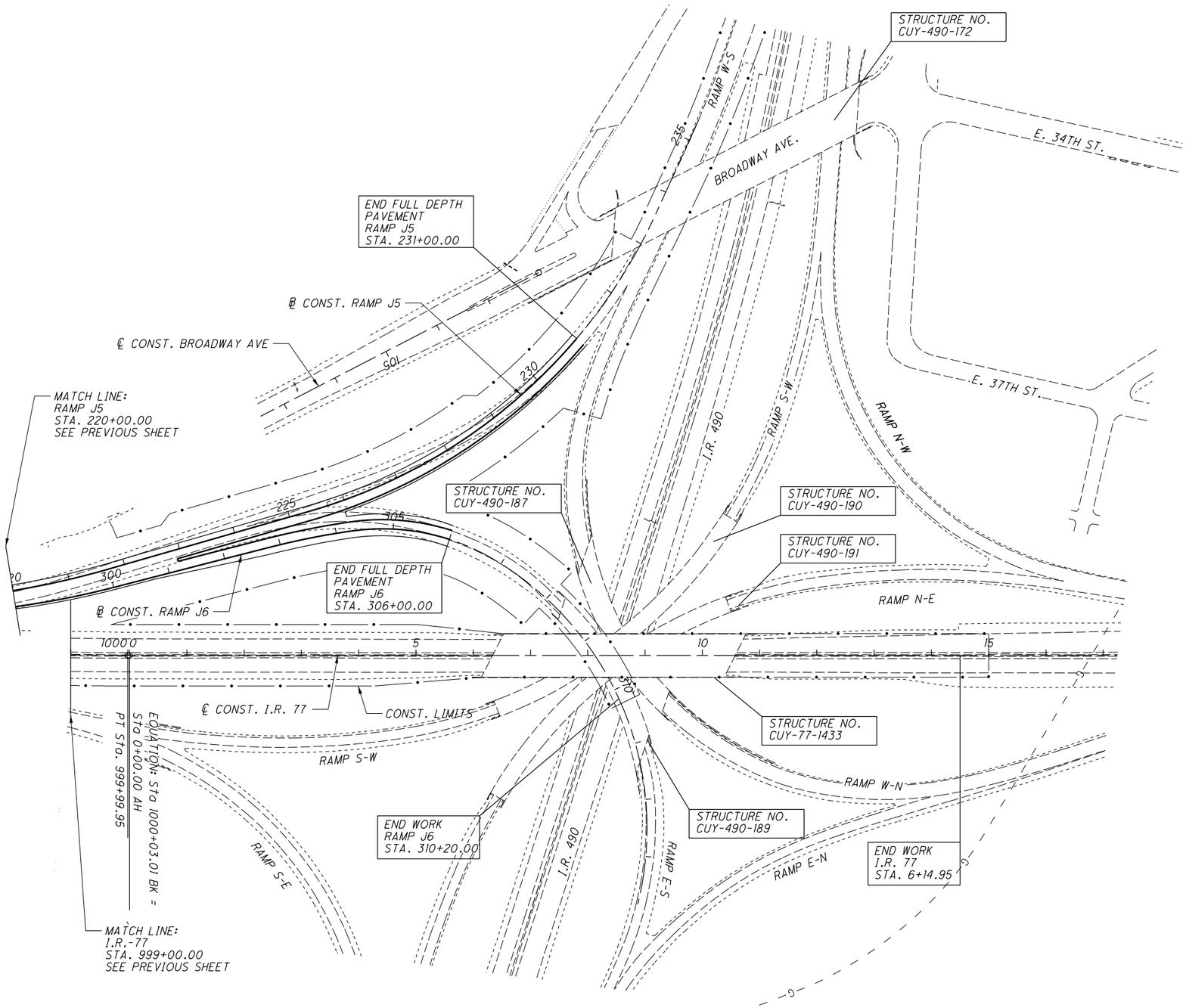
SCHEMATIC PLAN

CUY-77-13.80

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

NO.	DATE	DESCRIPTION
		ISSUE RECORD

*THERE ARE NO EXISTING LANDSCAPED AREAS WITHIN THE WORK LIMITS



RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf

09/07/2017 | Brian.Link

FOR GEOMETRIC PLAN, SEE SHEETS 4 & 5.

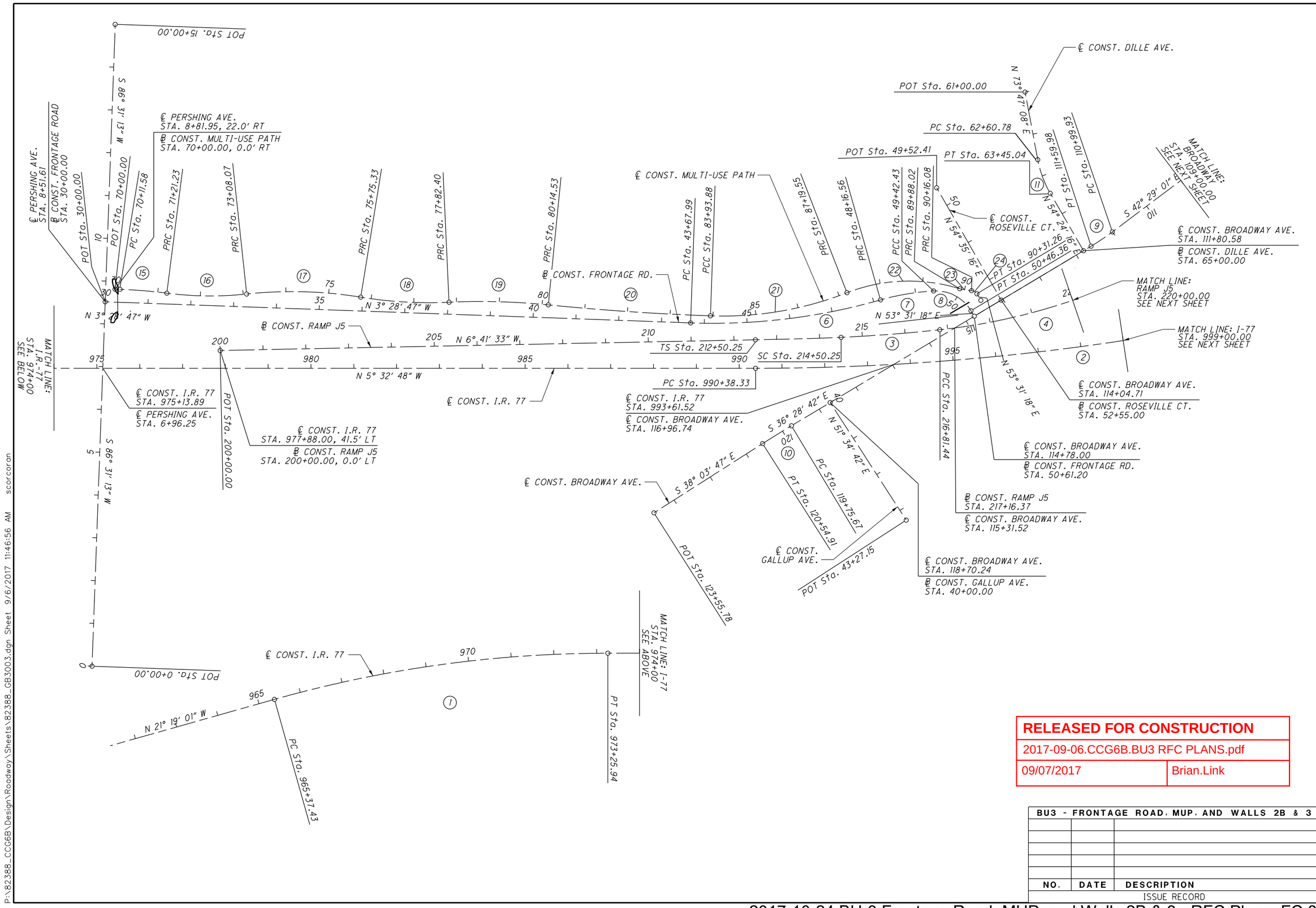
BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED MLL
CHECKED SWC

SCHEMATIC PLAN

CUY-77-13.80



RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf	
09/07/2017	Brian.Link

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

NO.	DATE	DESCRIPTION
		ISSUE RECORD

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED SWC
CHECKED MLL

GEOMETRIC PLAN

CUY-77-13.80

4
95

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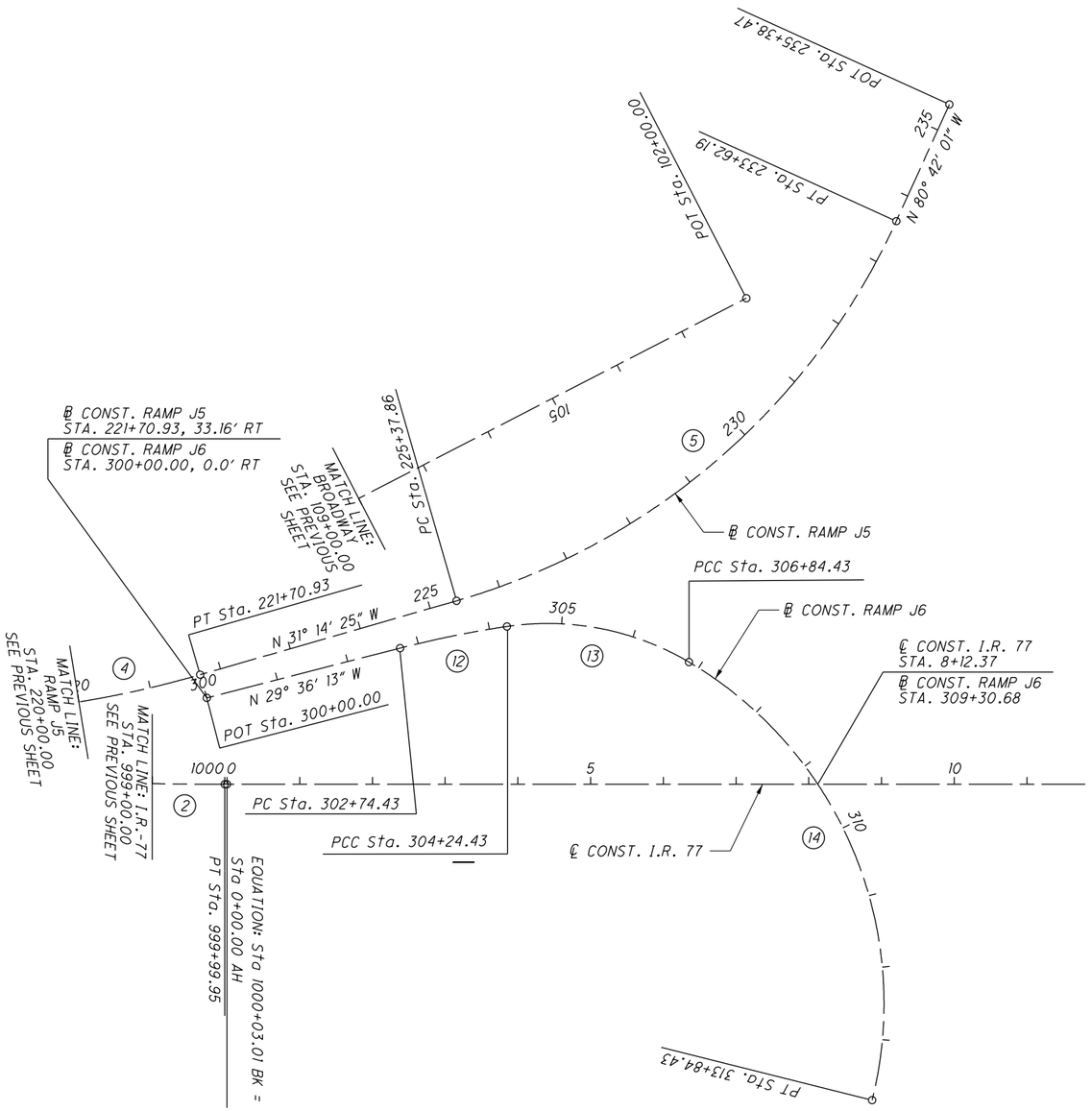
2017-10-24.BU-3 Frontage Road, MUP, and Walls 2B & 3 - RFC Plans_FC 8

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

* RATE WAS BASED ON ORIGINAL CONSTRUCTION PLANS



RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf	
09/07/2017	Brian.Link

① I.R. 77
P.I.Sta. 969+34.19
Δ = 15° 46' 13" (RT)
Dc = 2° 00' 00"
R = 2,864.79'
T = 396.76'
L = 788.51'
E = 27.34'
C = 786.02'
C.B. = N 13° 25' 55" W
emax = 0.065*

② I.R. 77
P.I.Sta. 995+20.27
Δ = 9° 36' 59" (LT)
Dc = 1° 00' 00"
R = 5,729.58'
T = 481.94'
L = 961.63'
E = 20.23'
C = 960.50'
C.B. = N 10° 21' 18" W
emax = 0.027

③ RAMP J5
P.I.Sta. 215+65.88
T.S. 212+50.25
S.C. 214+50.25
P.C.C 216+81.44
Δ = 3° 28' 04" (LT)
Dc = 1° 30' 00"
R = 3,819.72'
Ls = 200.00'
fs = 1° 30' 00"
LT = 133.34'
ST = 66.67'
L = 231.19'
E = 1.75'
C = 231.15'
C.B. = N 9° 55' 35" W
emax = 0.028

④ RAMP J5
P.I.Sta. 219+28.60
Δ = 19° 34' 48" (LT)
Dc = 4° 00' 00"
R = 1,432.39'
T = 247.16'
L = 489.50'
E = 21.17'
C = 487.12'
C.B. = N 21° 27' 01" W
emax = 0.052

⑤ RAMP J5
P.I.Sta. 229+77.68
Δ = 49° 27' 36" (LT)
Dc = 6° 00' 00"
R = 954.93'
T = 439.83'
L = 824.33'
E = 96.42'
C = 798.98'
C.B. = N 55° 58' 13" W
emax = 0.059

⑥ FRONTAGE RD.
P.I.Sta. 45+94.13
Δ = 17° 56' 34" (LT)
Dc = 4° 00' 00"
R = 1,432.39'
T = 226.13'
L = 448.57'
E = 17.74'
C = 446.74'
C.B. = N 12° 27' 04" W
emax = NC

⑦ FRONTAGE RD.
P.I.Sta. 48+79.75
Δ = 12° 35' 12" (RT)
Dc = 10° 00' 00"
R = 572.96'
T = 63.19'
L = 125.87'
E = 3.47'
C = 125.61'
C.B. = N 15° 07' 45" W
emax = 0.027

⑧ FRONTAGE RD.
P.I.Sta. 50+00.21
Δ = 62° 21' 27" (RT)
Dc = 59° 59' 44"
R = 95.50'
T = 57.79'
L = 103.94'
E = 16.12'
C = 98.88'
C.B. = N 22° 20' 35" E
emax = NC

⑨ BROADWAY AVE.
P.I.Sta. 111+29.98
Δ = 6° 00' 19" (RT)
Dc = 10° 00' 00"
R = 572.96'
T = 30.05'
L = 60.05'
E = 0.79'
C = 60.02'
C.B. = S 39° 28' 51" E
emax = NC

⑩ BROADWAY AVE.
P.I.Sta. 120+15.29
Δ = 1° 35' 06" (LT)
Dc = 2° 00' 00"
R = 2,864.79'
T = 39.63'
L = 79.25'
E = 0.27'
C = 79.24'
C.B. = S 37° 16' 15" E
emax = NC

⑪ DILLE AVE.
P.I.Sta. 63+03.32
Δ = 19° 22' 52" (LT)
Dc = 23° 00' 00"
R = 249.11'
T = 42.54'
L = 84.27'
E = 3.61'
C = 83.86'
C.B. = N 64° 05' 42" E
emax = NC

⑫ RAMP J6
P.I.Sta. 303+49.50
Δ = 6° 00' 00" (RT)
Dc = 4° 00' 00"
R = 1,432.39'
T = 75.07'
L = 150.00'
E = 1.97'
C = 149.93'
C.B. = N 26° 36' 13" W
emax = 0.034

⑬ RAMP J6
P.I.Sta. 305+59.69
Δ = 39° 00' 00" (RT)
Dc = 15° 00' 00"
R = 381.97'
T = 135.26'
L = 260.00'
E = 23.24'
C = 255.01'
C.B. = N 4° 06' 13" W
emax = 0.060

⑭ RAMP J6
P.I.Sta. 310+91.90
Δ = 73° 30' 00" (RT)
Dc = 10° 30' 00"
R = 545.67'
T = 407.47'
L = 700.00'
E = 135.35'
C = 652.98'
C.B. = N 52° 08' 47" E
emax = 0.054

⑮ MULTI-USE PATH
P.I.Sta. 70+66.44
Δ = 5° 14' 08" (RT)
Dc = 4° 46' 29"
R = 1,200.00'
T = 54.86'
L = 109.65'
E = 1.25'
C = 109.61'
C.B. = N 0° 51' 43" W
emax = NC

⑯ MULTI-USE PATH
P.I.Sta. 72+15.08
Δ = 13° 22' 55" (LT)
Dc = 7° 09' 43"
R = 800.00'
T = 93.85'
L = 186.85'
E = 5.49'
C = 186.42'
C.B. = N 4° 56' 07" W
emax = NC

⑰ MULTI-USE PATH
P.I.Sta. 74+42.50
Δ = 15° 18' 46" (RT)
Dc = 5° 43' 46"
R = 1,000.00'
T = 134.43'
L = 267.26'
E = 9.00'
C = 266.46'
C.B. = N 3° 58' 12" W
emax = NC

⑱ MULTI-USE PATH
P.I.Sta. 76+79.24
Δ = 11° 51' 52" (LT)
Dc = 5° 43' 46"
R = 1,000.00'
T = 103.91'
L = 207.07'
E = 5.38'
C = 206.70'
C.B. = N 2° 14' 45" W
emax = NC

⑲ MULTI-USE PATH
P.I.Sta. 78+98.67
Δ = 8° 18' 45" (RT)
Dc = 3° 34' 52"
R = 1,600.00'
T = 116.27'
L = 232.13'
E = 4.22'
C = 231.92'
C.B. = N 4° 01' 18" W
emax = NC

⑳ MULTI-USE PATH
P.I.Sta. 82+04.27
Δ = 3° 37' 21" (LT)
Dc = 0° 57' 18"
R = 6,000.00'
T = 189.74'
L = 379.35'
E = 3.00'
C = 379.29'
C.B. = N 1° 40' 37" W
emax = NC

㉑ MULTI-USE PATH
P.I.Sta. 85+59.00
Δ = 23° 19' 26" (LT)
Dc = 7° 09' 43"
R = 800.00'
T = 165.12'
L = 325.66'
E = 16.86'
C = 323.42'
C.B. = N 15° 09' 00" W
emax = NC

㉒ MULTI-USE PATH
P.I.Sta. 88+59.06
Δ = 38° 27' 22" (RT)
Dc = 14° 19' 26"
R = 400.00'
T = 139.51'
L = 268.47'
E = 23.63'
C = 263.46'
C.B. = N 7° 35' 02" W
emax = NC

㉓ MULTI-USE PATH
P.I.Sta. 90+21.12
Δ = 16° 04' 46" (LT)
Dc = 57° 17' 45"
R = 100.00'
T = 14.12'
L = 28.06'
E = 0.99'
C = 27.97'
C.B. = N 3° 36' 16" E
emax = NC

㉔ MULTI-USE PATH
P.I.Sta. 90+24.39
Δ = 57° 57' 25" (RT)
Dc = 381° 58' 19"
R = 15.00'
T = 8.31'
L = 15.17'
E = 2.15'
C = 14.53'
C.B. = N 24° 32' 36" E
emax = NC

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED SWC
CHECKED MLL

GEOMETRIC PLAN

CUY-77-13.80

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PROPOSED LEGEND:

MAINLINE COMPOSITE FULL-DEPTH (I.R.-77)

(1)
ITEM 442 - 1.5" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), PG76-22M, AS PER PLAN
ITEM 407 - NON-TRACKING TACK COAT
ITEM 442 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)
ITEM 407 - TACK COAT, 702.13
ITEM 452 - 12" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1
ITEM 304 - 6" AGGREGATE BASE

MAINLINE RESURFACING (I.R.-77)

(2)
ITEM 442 - 1.5" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), PG76-22M, AS PER PLAN
ITEM 407 - NON-TRACKING TACK COAT
ITEM 442 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)
ITEM 407 - NON-TRACKING TACK (OR ITEM 407 - TACK COAT, 702.13, IF BRICK OR CONCRETE)
ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=3.25")

RAMPS (J5 & J6)

(3)
ITEM 442 - 1.5" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), PG76-22M, AS PER PLAN
ITEM 407 - NON-TRACKING TACK COAT
ITEM 442 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)
ITEM 407 - ITEM 407 - TACK COAT, 702.13
ITEM 452 - 10" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1
ITEM 304 - 6" AGGREGATE BASE

FRONTAGE RD.

(4)
ITEM 452 - 11" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1
ITEM 304 - 6" AGGREGATE BASE

CITY STREETS (BROADWAY AVE., GALLUP AVE., ROSEVILLE CT., DILLE AVE.)

(5)
ITEM 441 - 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE 1 (448), PG70-22M, AS PER PLAN A
ITEM 407 - TACK COAT
ITEM 441 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2 (448)
ITEM 407 - TACK COAT, 702.13
ITEM 305 - 9" CONCRETE BASE, AS PER PLAN
ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN

MULTI-USE PATH (MUP)

(6)
ITEM 441 - 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE 1 (448), PG64-22, AS PER PLAN B
ITEM 407 - TACK COAT
ITEM 441 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2 (448)
ITEM 407 - TACK COAT (SEE NOTE 1)
ITEM 301 - 3" ASPHALT CONCRETE BASE, PG64-22 (SEE NOTE 1)
ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN

(7) ITEM 609 - CURB, TYPE 6

(8) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D

(9) ITEM 252 - FULL DEPTH PAVEMENT SAWING

(10) ITEM 608 - 6" CONCRETE WALK

(11A) ITEM 659 - SEEDING AND MULCHING, CLASS 1

(11B) ITEM 659 - SEEDING AND MULCHING, CLASS 2

(11C) ITEM 659 - SEEDING AND MULCHING, CLASS 3C

(12) ITEM 607 - FENCE, TYPE CLT

(13A) ITEM 605 - 6" SHALLOW PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 19" DEEP

(13B) ITEM 605 - 6" DEEP PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, AS PER PLAN

(13C) ITEM 605 - 6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 18" DEEP

(14) ITEM 606 - GUARDRAIL, TYPE MGS

(15) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, 50" HEIGHT, WITH MOMENT SLAB, AS PER PLAN

(16) ITEM 304 - 2.5" AGGREGATE BASE, AS PER PLAN

(17) ITEM 609 - CURB, TYPE 2A

(18) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN (50" HEIGHT)

(19) ITEM 204 - SUBGRADE COMPACTION

(20) ITEM 206 - CEMENT STABILIZED SUBGRADE, 14 INCHES DEEP

(21) ITEM 204 - EXCAVATION OF SUBGRADE, 30"
ITEM 304 - AGGREGATE BASE, 30"

(22) ITEM 204 - PROOF ROLLING

FULL DEPTH SHOULDER REPLACEMENT

(23)
ITEM 442 - 1.5" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), PG76-22M
ITEM 407 - NON-TRACKING TACK COAT
ITEM 442 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)
ITEM 407 - NON-TRACKING TACK COAT
ITEM 301 - 9" ASPHALT CONCRETE BASE, PG64-22
ITEM 304 - 6" AGGREGATE BASE

BROADWAY AVE. APPROACH SLABS

(24)
ITEM 526 - REINFORCED CONCRETE APPROACH SLABS WITH OA/OC (T=17"), AS PER PLAN
ITEM 304 - 6" AGGREGATE BASE

(25) ITEM 607 - FENCE, TYPE CLT, AS PER PLAN

(26) ITEM 659 - TOPSOIL (T=4")

(27) ITEM 609 - CURB, TYPE 4-C

(28) ITEM 607 - FENCE. MISC.: WOOD FENCE

(29)
ITEM 203 - EMBANKMENT, 30"
ITEM 204 - EXCAVATION OF SUBGRADE, 30"

(30) ITEM 607 - VANDAL PROTECTION FENCE, 8' STRAIGHT, COATED FABRIC

NOTES:

1. ADDITIONAL 3" PAVEMENT LAYER OF ITEM 301 - ASPHALT CONCRETE BASE, PG64-22 SHALL BE INSTALLED ON THE MULTI-USE PATH FROM STA. 84+16 TO STA. 90+16, TO ACCOMMODATE CPP MAINTENANCE VEHICLES.

TYPICAL SECTIONS

RELEASED FOR CONSTRUCTION
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BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

CUY-77-13.80

RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf

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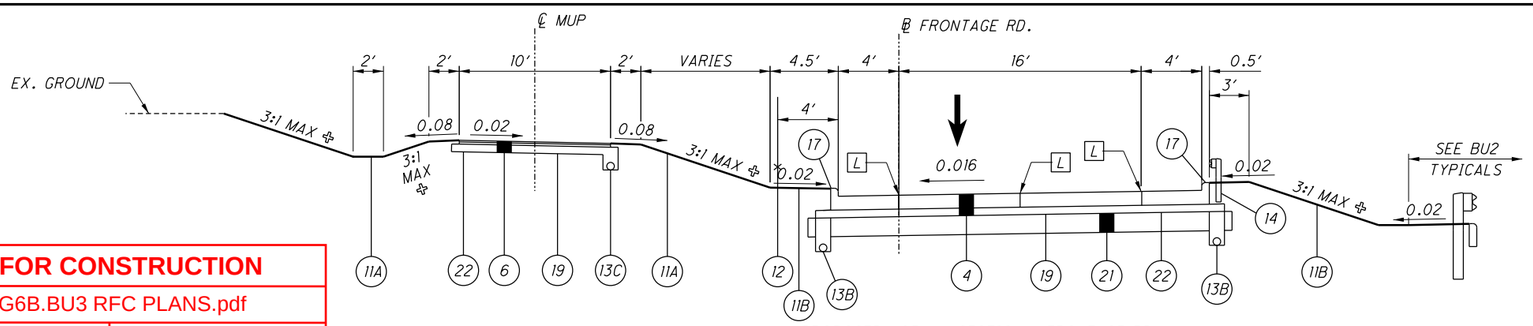
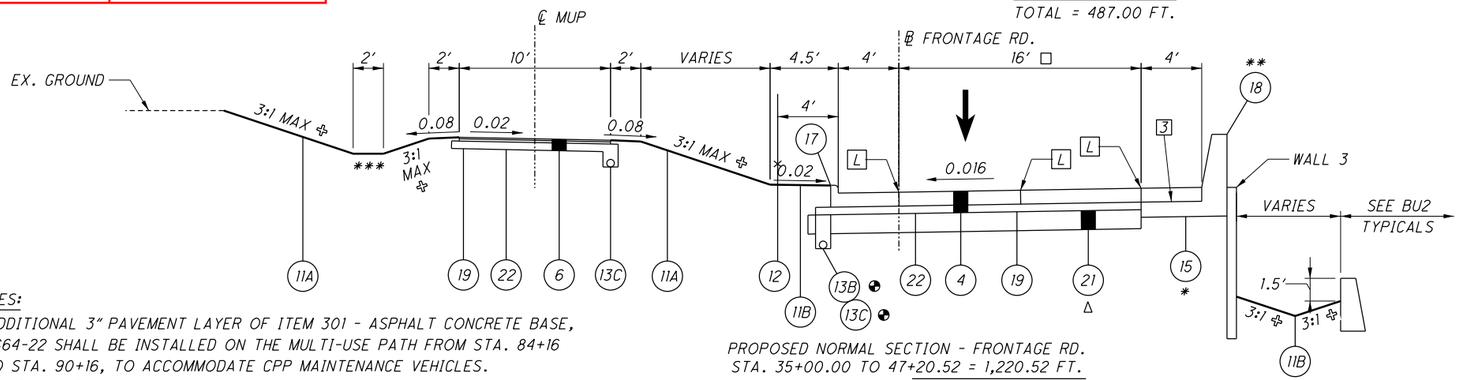


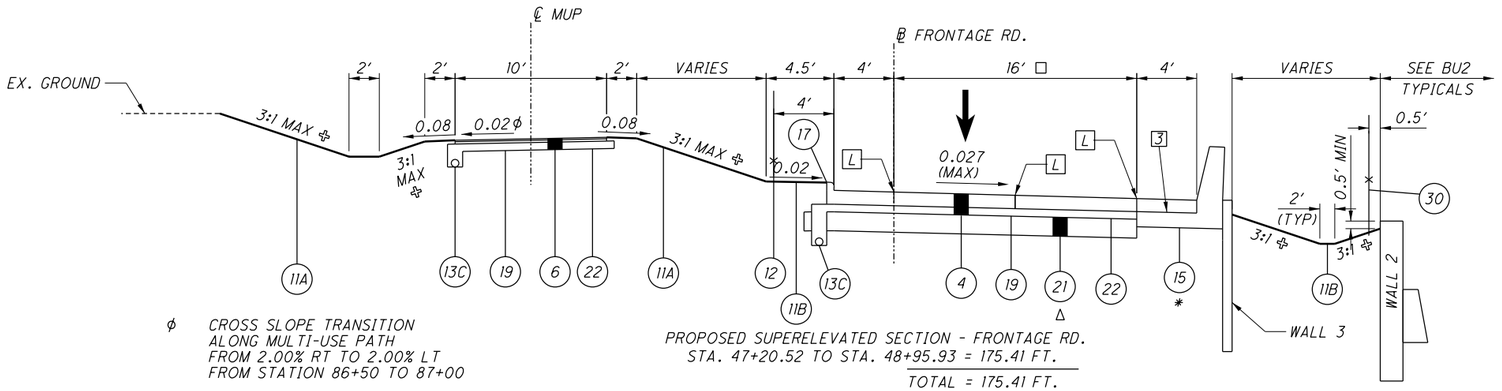
PROPOSED NORMAL SECTION - FRONTAGE RD.
STA. 30+13.00 TO STA. 35+00.00 = 487.00 FT.
TOTAL = 487.00 FT.



NOTES:

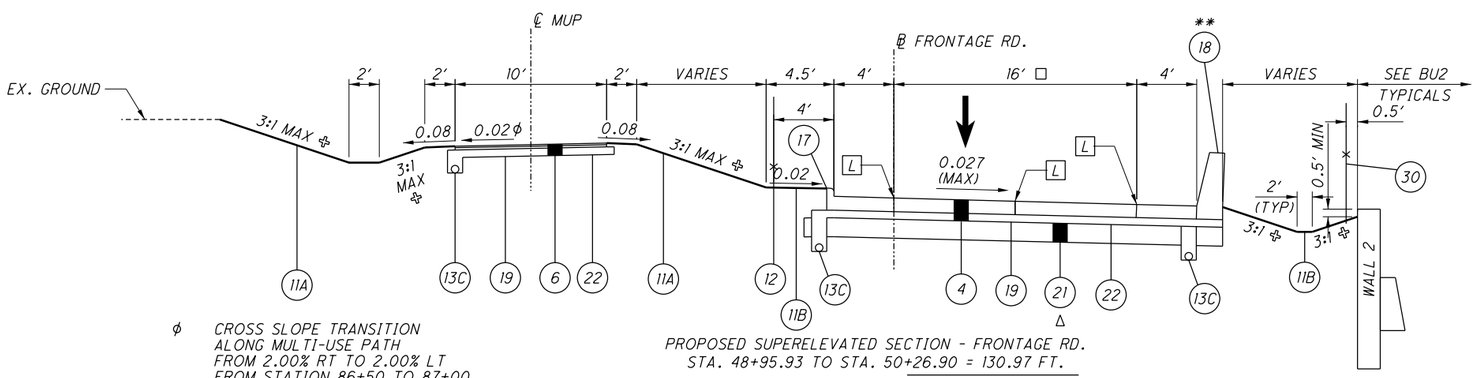
1. ADDITIONAL 3" PAVEMENT LAYER OF ITEM 301 - ASPHALT CONCRETE BASE, PG64-22 SHALL BE INSTALLED ON THE MULTI-USE PATH FROM STA. 84+16 TO STA. 90+16, TO ACCOMMODATE CPP MAINTENANCE VEHICLES. SEE SHEET 6

PROPOSED NORMAL SECTION - FRONTAGE RD.
STA. 35+00.00 TO 47+20.52 = 1,220.52 FT.
TOTAL = 1,220.52 FT.



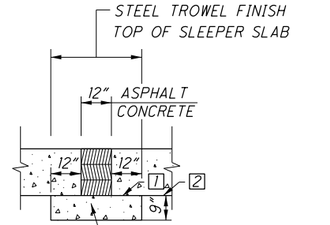
ϕ CROSS SLOPE TRANSITION
ALONG MULTI-USE PATH
FROM 2.00% RT TO 2.00% LT
FROM STATION 86+50 TO 87+00

PROPOSED SUPERELEVATED SECTION - FRONTAGE RD.
STA. 47+20.52 TO STA. 48+95.93 = 175.41 FT.
TOTAL = 175.41 FT.



ϕ CROSS SLOPE TRANSITION
ALONG MULTI-USE PATH
FROM 2.00% RT TO 2.00% LT
FROM STATION 86+50 TO 87+00

PROPOSED SUPERELEVATED SECTION - FRONTAGE RD.
STA. 48+95.93 TO STA. 50+26.90 = 130.97 FT.
TOTAL = 130.97 FT.



CLASS QCI CONCRETE,
HIGH-EARLY ITEM 701.05

[1] A BOND BREAKER, CONSISTING OF TWO 2' WIDE SHEETS OF CLEAR OR OPAQUE POLYETHYLENE FILM, ITEM 705.06, SHALL BE CENTERED ON TOP OF THE JOINT BETWEEN THE SUBBASE AND THE SLEEPER SLAB. THE FILM SHALL HAVE A NOMINAL THICKNESS OF 4 MILS.

[2] CARE SHALL BE TAKEN TO ENSURE THE SUBBASE OR SUBGRADE SURFACE IS SMOOTH AND CONSTRUCTED AS HIGH AS OR SLIGHTLY HIGHER THAN THE TOP OF THE SLEEPER SLAB.

PRESSURE RELIEF JOINT DETAIL

* STA. 36+00.00 TO 49+11.52
FOR MOMENT SLAB DETAILS, SEE SHEET 82 TO 83

** STA. 35+00.00 TO 36+00.00
STA. 49+11.52 TO STA. 50+04.80

*** DITCH SHALL NOT BE INSTALLED FROM STA. 79+89.00 (MUP) TO STA. 84+79.00 (MUP)

Δ SEE CROSS-SECTIONS FOR LOCATION

□ VARIES 16'-0" TO 26'-2" - STA. 46+78.77 TO STA. 49+49.89

□ FOR PAVEMENT WIDTHS AND ELEVATIONS FROM STA. 49+49.89 TO STA. 50+26.90, SEE SHEETS 60 & 62

[L] LONGITUDINAL JOINT
(SEE SHEETS 84 AND 85 FOR JOINT LAYOUT AND INTERSECTIONS)

✣ OR AS SHOWN IN THE CROSS SECTIONS

◕ ITEM 13B - ENDS AT STA. 42+83.00
ITEM 13C - BEGINS ST STA. 42+88.00

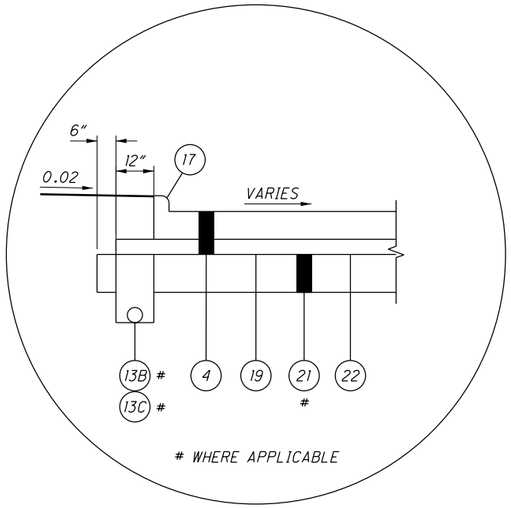
[3] A BOND BREAKER, CONSISTING OF TWO SHEETS OF CLEAR OR OPAQUE POLYETHYLENE FILM, ITEM 705.06, SHALL BE PLACED BETWEEN THE MOMENT SLAB AND THE SHOULDER PAVEMENT. THE FILM SHALL HAVE A NOMINAL THICKNESS OF 4 MILS.

FOR LEGEND, SEE SHEET SHEET 6

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

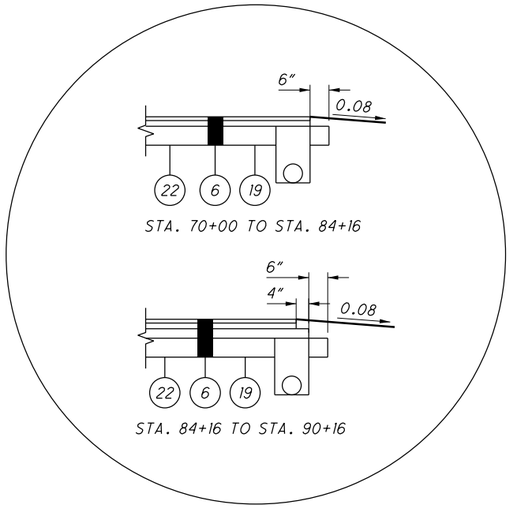
TYPICAL SECTIONS

CUY-77-13.80



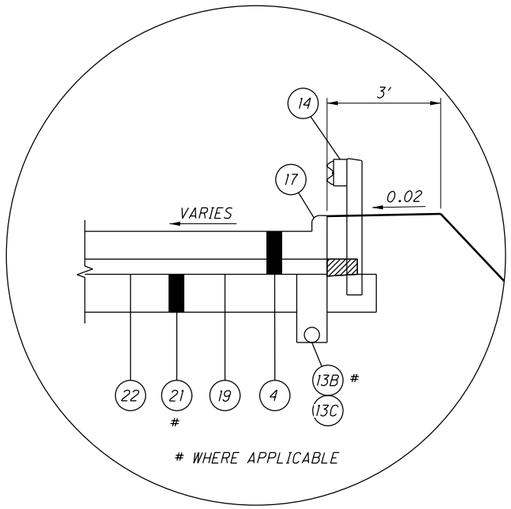
CURBED SHOULDER DETAIL

FRONTAGE RD.



EDGE COURSE DETAIL

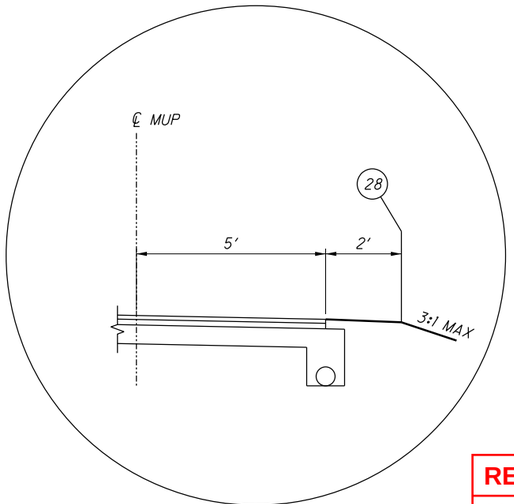
MULTI-USE PATH



CURBED SHOULDER WITH GUADRAIL DETAIL

FRONTAGE RD.

ADDITIONAL DEPTH ON 304; SLOPE TO UNDERDRAIN



BIKE SAFETY RAIL DETAIL

MULTI-USE PATH
LIMITING STATIONS:

STA. 76+00 TO STA. 81+50 (RT)
STA. 84+50 TO STA. 90+00 (LT)

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2017-09-06.CCG6B.BU3 RFC PLANS.pdf

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FOR LEGEND, SEE SHEET SHEET 6

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

TYPICAL SECTIONS

CUY-77-13.80

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:

DOMINION EAST OHIO GAS
ATTN: AARON CONANT
320 SPRINGSIDE DRIVE
SUITE 320
AKRON, OH 44333
PHONE: (330) 664-2641
EMAIL: DANIEL.A.EVANS@DOM.COM

CLEVELAND PUBLIC POWER (CPP)
ATTN: CHRIS HIRZEL
1300 LAKESIDE AVENUE, ROOM 152
CLEVELAND, OH 44114
PHONE: (216) 664-3922
EMAIL: CHIRZEL@CPP.ORG

CEI THE ILLUMINATING COMPANY
(OVERHEAD FACILITIES)
ATTN: TED RADER
6896 MILLER ROAD
BRECKSVILLE, OH 44141
PHONE: (440) 546-8738
FAX: (440) 546-8773
EMAIL: RADERT@FIRSTENERGYCORP.COM

CEI THE ILLUMINATING COMPANY
(UNDERGROUND FACILITIES)
ATTN: DEAN CHATFIELD
6896 MILLER ROAD
BRECKSVILLE, OH44141
PHONE: (440) 717-6846
EMAIL: DMCHATFIELD@FIRSTENERGYCORP.COM

VERIZON
ATTN: AL GUEST
120 RAVINE STREET
AKRON, OH 44303
PHONE: (330) 253-8267
EMAIL: ALLAN.GUEST@VERIZON.COM

AT&T
ATTN: JAMES JANIS
13630 LORAIN AVE, 2ND FLOOR
CLEVELAND, OH 44111
PHONE: (216) 476-6142
EMAIL: PJ8191@ATT.COM

WINDSTREAM
ATTN: CHERYL SCOTT
205 S. HAMBDEN ST.
CHARDON, OH 44024
PHONE: (440) 285-5528
EMAIL: CHERYL.SCOTT@WINDSTREAM.COM

TIME WARNER CABLE/CHARTER COMMUNICATIONS
ATTN: PAUL SILVESTRO
8179 DOW CIRCLE
STRONGSVILLE, OH 44136
PHONE: (216) 575-8016
EMAIL: PAUL.SILVESTRO@TWCABLE.COM

NORTHEAST OHIO REGIONAL SEWER DISTRICT (NEORSD)
ATTN: MARY MACIEJOWSKI
3900 EUCLID AVENUE
CLEVELAND, OH 44115
PHONE: (330) 926-2407
PHONE: (216) 881-6600 EX. 6466
EMAIL: MACIEJOWSKIM@NEORSD.ORG

CITY OF CLEVELAND, DIVISION OF WATER
POLLUTION CONTROL (WPC)
ATTN: ELIE RAMY
12302 KIRBY AVENUE
CLEVELAND, OH 44108
PHONE: (216) 664-2756
EMAIL: ERAMY@CLEVELANDWPC.COM

CITY OF CLEVELAND, DIVISION OF WATER (CWD)
ATTN: FRED ROBERTS
1201 LAKESIDE AVENUE
CLEVELAND, OH 44113
PHONE: (216) 664-2444 EX. 5440
EMAIL: FRED_ROBERTS@CLEVELANDWATER.COM

CITY OF CLEVELAND, DIVISION OF TRAFFIC
ENGINEERING
ATTN: RICH TUTIE
4150 E. 49TH STREET, BUILDING #4
CLEVELAND, OH 44105
PHONE: (216) 857-7032
EMAIL: RTUTIE@CITY.CLEVELAND.OH.US

ODOT DISTRICT 12
ATTN: ANTHONY TOTH
5500 TRANSPORTATION BLVD.
GARFIELD HEIGHTS, OH 44125
PHONE: (216) 584-2220
EMAIL: ANTHONY.TOTH@DOT.OHIO.GOV

LIGHTOWER
ATTN: EDWARD DALY
15565 NEO PARKWAY
GARFIELD HEIGHTS, OH 44128
PHONE: (585) 397-5988
EMAIL: EDALY@LIGHTOWER.COM

LEVEL 3
ATTN: DOUG HOLLOWAY
4000 CHESTER AVE.
CLEVELAND, OH 44103
PHONE: (440) 906-6284
EMAIL: DOUG.HOLLOWAY@LEVEL3.COM

ZAYO
ATTN: SCOTT HEINLEN
4199 KINROSS LAKES PARKWAY, SUITE 10
RICHFIELD, OH 44286
PHONE: (740) 501-6921
EMAIL: SCOTT.HEINLEN@ZAYO.COM

CITY OF CLEVELAND COUNCILMAN, WARD 12
ATTN: ANTHONY BRANCATELLI
601 LAKESIDE AVENUE, ROOM 220
CLEVELAND, OH 44114
PHONE: (216) 664-4233
EMAIL: ABRANCATELLI@CLEVELANDCITYCOUNCIL.ORG

ASBESTOS ON BRIDGE

AN ASBESTOS SURVEY OF THE BROADWAY AVENUE BRIDGE (SFN 1806661) WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THE BRIDGE STRUCTURES.

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

CLEVELAND DEPARTMENT OF PUBLIC HEALTH,
DIVISION OF AIR QUALITY
75 ERIEVIEW PLAZA, 2ND FLOOR
CLEVELAND, OH 44114
ATTN: GEORGE BAKER
EMAIL: GBAKER@CITY.CLEVELAND.OH.US
PHONE: (216) 664-4010
FAX: (216) 420-8047

AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION AND/OR REHABILITATION, THE DBT SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER.

INFORMATION REQUIRED ON THE FORM WILL INCLUDE:

1) THE CONTRACTOR'S NAME AND ADDRESS
2) THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL
3) A DESCRIPTION OF THE PLANNED DEMOLITION WORK AND THE METHOD(S) TO BE USED.

A COPY OF THE OEPA FORM IS AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 12 OFFICE, 5500 TRANSPORTATION BLVD., GARFIELD HEIGHTS, OH 44125.

THE DBT SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM.

ASBESTOS IN BUILDINGS

AN ASBESTOS SURVEY OF THE BUILDINGS WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT ASBESTOS IS PRESENT IN THE BUILDINGS.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORMS, PARTIALLY COMPLETED AND SIGNED BY THE BRIDGE OWNER, WILL BE PROVIDED TO THE SUCCESSFUL BIDDER (AVAILABLE IN EV-05). THE DBT SHALL COMPLETE THE FORM AND SUBMIT IT TO:

CLEVELAND DEPARTMENT OF PUBLIC HEALTH,
DIVISION OF AIR QUALITY
75 ERIEVIEW PLAZA, 2ND FLOOR
CLEVELAND, OH 44114
ATTN: GEORGE BAKER
EMAIL: GBAKER@CITY.CLEVELAND.OH.US
PHONE: (216) 664-4010
FAX: (216) 420-8047

AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION AND/OR REHABILITATION, THE DBT SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER.

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3) A DESCRIPTION OF THE PLANNED DEMOLITION WORK AND THE METHOD(S) TO BE USED.

A COPY OF THE OEPA FORM IS AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 12 OFFICE, 5500 TRANSPORTATION BLVD., GARFIELD HEIGHTS, OH 44125.

THE DBT SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM.

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, ONLY OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVICES BETWEEN THE HOURS LISTED BELOW:

DAYS	HOURS
MONDAY - FRIDAY	7:00 A.M. TO 9:00 P.M.
SATURDAY	7:00 A.M. TO 11:00 P.M.
SUNDAY	7:00 A.M. TO 9:00 P.M.

THE FOLLOWING CONDITIONS SHALL APPLY TO THE APPROVED CITY OF CLEVELAND NOISE ORDINANCE (CCO 605.10):

1. THE CITY OF CLEVELAND AND RESPECTIVE COUNCIL PERSON(S) SHALL BE NOTIFIED AT THE MINIMUM TWO WEEKS IN ADVANCE OF ACTUAL START DATE AND COMPLETION OF PROJECT.

2. THE CITY OF CLEVELAND AND RESPECTIVE COUNCIL PERSON(S) SHALL BE NOTIFIED 72 HOURS IN ADVANCE OF ANY WORK SCHEDULE CHANGES RELATIVE TO THE HOURS/DAYS OF OPERATION.

3. THE CITY OF CLEVELAND AND RESPECTIVE COUNCIL PERSON(S) SHALL BE NOTIFIED 72 HOURS IN ADVANCE IF ANY OTHER HEAVY EQUIPMENT IS UTILIZED OTHER THAN THOSE LISTED IN THE ORIGINAL REQUEST DATED 09/02/15.

PUBLIC NOTIFICATION

TO ENSURE THE PUBLIC IS NOTIFIED OF CONSTRUCTION ACTIVITIES, THE DBT WILL ADVISE THE PROJECT ENGINEER A MINIMUM OF FOURTEEN (14) DAYS PRIOR TO THE START OF PROJECT CONSTRUCTION ACTIVITIES. THE PROJECT ENGINEER WILL FORWARD THIS INFORMATION TO THE ODOT DISTRICT 12 PUBLIC INFORMATION OFFICER (PIO). THE PIO WILL, IN TURN, NOTIFY THE PUBLIC, THE LOCAL EMERGENCY SERVICES, AFFECTED SCHOOLS AND BUSINESSES AND OTHER IMPACTED LOCAL PUBLIC AGENCIES A MINIMUM OF FOURTEEN (14) DAYS PRIOR TO THE START OF PROJECT CONSTRUCTION ACTIVITIES VIA MEDIA SOURCES.

RELEASED FOR CONSTRUCTION

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BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

CALCULATED MLL
CHECKED SWC

GENERAL NOTES

CUY-77-13.80

ENVIRONMENTAL WORK

PREVIOUS ENVIRONMENTAL STUDIES COMPLETED FOR THE CUY-77-13.80 PROJECT (PID 82388) HAVE SHOWN THAT THERE IS A POTENTIAL OF ENCOUNTERING PETROLEUM CONTAMINATED MATERIALS DURING EXCAVATION FOR THE PROJECT AT THE FOLLOWING LOCATIONS:

1. 4427/4579 BROADWAY AVENUE, CLEVELAND, OHIO 44127
2. 3950/4020 BROADWAY AVENUE, CLEVELAND, OHIO 44115
3. 4100 BROADWAY/4098 AVENUE, CLEVELAND, OHIO 44115
4. 4108/4120/4130 BROADWAY AVENUE, CLEVELAND, OHIO 44115

THE ENGINEER WILL INITIALLY DETERMINE IF THE EXCAVATED MATERIAL APPEARS TO BE PETROLEUM CONTAMINATED SOIL BASED ON THE MATERIAL'S APPEARANCE, ODOR, AND THE ENGINEER'S PAST EXPERIENCE. THE DBT SHALL BE RESPONSIBLE FOR ANY TESTING NECESSARY TO DETERMINE IF THE MATERIAL IS IN FACT PETROLEUM CONTAMINATED. ANY POTENTIAL PETROLEUM CONTAMINATED MATERIALS SHALL BE TESTED FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENE (BTEX) USING USEPA SW-846, METHOD 8060 AND TOTAL PETROLEUM HYDROCARBONS (TPH) USING USEPA SW-846, METHOD 8015, PER BUSTR GUIDELINES. ONCE LAB ANALYSIS RESULTS ARE RECEIVED FOR THE MATERIAL(S), THE CONCENTRATIONS OF THE CHEMICALS OF CONCERN SHALL BE COMPARED TO BUSTR'S RE-USE ACTION LEVELS IN TABLE 1 UNDER PARAGRAPH (D)(1) OF OAC 1301:7-9-16 TO DETERMINE IF THE MATERIAL IS INDEED PETROLEUM CONTAMINATED SOIL. THIS FINAL DETERMINATION SHALL BE MADE BY THE ENGINEER.

IN THE EVENT PETROLEUM-CONTAMINATED MATERIALS ARE ENCOUNTERED, THE DBT SHALL MANAGE THIS MATERIAL ACCORDING TO THE FOLLOWING GUIDELINES. THE ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE PROPOSAL FOR THIS WORK. ALL EXCAVATIONS WITHIN THE AFOREMENTIONED LIMITS SHALL BE PAID FOR UNDER THE ORIGINAL PLAN BID ITEMS. ALL MATERIAL EXCAVATED BY THE DBT AT THIS LOCATION SHALL BE SUBJECT TO TESTING BY AN INSPECTOR PROVIDED BY THE PROJECT SPONSOR.

ALL POTENTIAL PETROLEUM CONTAMINATED SOIL, WITHIN THE AFOREMENTIONED LIMITS, EXCAVATED BY THE DBT WITHIN THE PROJECT LIMITS MAY BE STOCKPILED IN AN AREA PROVIDED BY THE DBT AND APPROVED BY THE ENGINEER. THE ENGINEER MAY PERMIT TEMPORARY STORAGE OF THE EXCAVATED MATERIAL IN A LINED AND COVERED ROLL-OFF BOX.THE ENGINEER MAY PERMIT TEMPORARY STORAGE OF THE EXCAVATED MATERIAL ON AN IMPERMEABLE MEMBRANE. THE MEMBRANE SHALL BE SURROUNDED BY BALES OF STRAW TO PREVENT THE SUSPECTED SOILS FROM COMING IN CONTACT WITH THE ORIGINAL SOILS. AN IMPERMEABLE MEMBRANE SHALL BE PLACED OVER THE STOCKPILE TO PREVENT CONTACT WITH PRECIPITATION AND/OR SURFACE RUN-OFF. THE ENGINEER MAY PERMIT THE DBT TO DIRECT LOAD THE EXCAVATED CONTAMINATED MATERIAL INTO TRUCKS.

THIS MATERIAL SHALL BE PROPERLY TESTED, TRANSPORTED, AND DISPOSED OF IN A LICENSED (BY THE LOCAL HEALTH DEPARTMENT) AND PERMITTED (BY THE OHIO ENVIRONMENTAL PROTECTION AGENCY) SOLID WASTE FACILITY. THE DBT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS AND TO TRANSPORT THE MATERIAL TO A LICENSED AND PERMITTED SOLID WASTE DISPOSAL FACILITY. THE DBT SHALL CONTACT THE FACILITY TO DETERMINE IF ANY ADDITIONAL TESTING IS REQUIRED FOR DISPOSAL. THE DBT SHALL BE RESPONSIBLE FOR CONDUCTING ANY ADDITIONAL SAMPLING AND ANALYSIS OF THIS MATERIAL.

THE DBT SHALL FURNISH ALL THE LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PROPERLY HANDLE, STORE, TEST (FOR DISPOSAL), TRANSPORT, AND DISPOSE OF REGULATED MATERIALS, INCLUDING ANY REQUIRED PERMITS, APPROVALS, OR FEES WITHIN THE LIMITS IDENTIFIED ABOVE. PAYMENT FOR THE WORK WILL BE MADE ON A UNIT COST BASIS AND AN ESTIMATED QUANTITY HAS BEEN PROVIDED IN THE PROPOSAL. THE BASIS FOR CONVERSION FROM TONS TO CUBIC YARDS IS 1.5 TON/CUBIC YARD.

MATERIALS MANAGEMENT

BEFORE BUILDING DEMOLITION OPERATIONS BEGIN, THE DEPARTMENT WILL CONDUCT REGULATED MATERIALS INSPECTIONS OF ALL BUILDINGS SUBJECT TO RENOVATION OR DEMOLITION.

REGULATED MATERIALS CAN INCLUDE BUT ARE NOT LIMITED TO: ASBESTOS, MERCURY SWITCHES, FLUORESCENT LIGHT BULBS, UNDERGROUND STORAGE TANKS (UST), AND OIL PITS.

THE DBT IS RESPONSIBLE FOR ABATEMENT ACTIVITIES REQUIRED FOR THE BUILDINGS DETERMINED TO CONTAIN REGULATED MATERIALS FROM THE DEPARTMENT'S INSPECTIONS. ALL BUILDINGS, WHERE THE DBT IS GRANTED ACCESS TO AND IS IN RECEIPT THE DEPARTMENT'S REGULATED MATERIALS INSPECTION FINDINGS PRIOR TO THE BID SUBMISSION ARE CONSIDERED KNOWN ABATEMENTS. THE COST FOR THESE KNOWN ABATEMENTS SHALL BE INCLUDED IN THE OVERALL LUMP SUM PRICE.

AT LEAST 10 BUSINESS DAYS BEFORE OPERATIONS BEGIN, THE DBT SHALL COMPLETE AN OEPA NOTIFICATION OF DEMOLITION AND RENOVATION FORM AND SUBMIT THIS TO THE LOCAL AIR POLLUTION CONTROL DIVISION, IF DELEGATED, OR OEPA.

THE DBT SHALL ENSURE THAT ALL SUSPECT MATERIALS ARE REMOVED AND PROPERLY DISPOSED OF BY A CERTIFIED ASBESTOS REMOVAL PROFESSIONAL IN ACCORDANCE WITH OAC 3745-20. AN INDIVIDUAL TRAINED IN THE PROVISIONS OF NESHAPS (40 CFR PART 61, SUBPART M) WILL BE ON SITE DURING THE DEMOLITION OR RENOVATION OF ANY STRUCTURE WITH ACM AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE DURING NORMAL BUSINESS HOURS.

IF THE DBT ENCOUNTERS AN UNKNOWN OR KNOWN UST WITHIN THE RIGHT-OF-WAY, THE DBT SHALL DECOMMISSION AND REMOVE THE UST. THIS EFFORT WILL BE PAID UNDER C&MS 109.05 - FORCE ACCOUNT AND IS CONSIDERED AN EXCUSABLE, NON-COMPENSABLE DELAY AS PER ITEM 108.06.B.7. IF A UST IS ENCOUNTERED, ODOT AND THE DBT SHALL FOLLOW ALL APPLICABLE RULES AND REGULATIONS ASSOCIATED WITH UST REMOVAL ACTIVITIES.

THE DBT SHALL MEET ALL REGULATORY CONDITIONS IMPOSED AT PROPERTIES WITH REGULATED MATERIALS ASSOCIATED WITH CONSTRUCTION. THESE CONDITIONS COULD INCLUDE ENSURING THAT THE SURROUNDING PROPERTIES AND POPULATIONS ARE NOT EXPOSED TO THE REGULATED MATERIALS ON THE SITE. THE DBT SHALL ENSURE THAT THE SITE IS PROPERLY CONTAINED DURING CONSTRUCTION SO THAT REGULATED MATERIALS DO NOT MIGRATE OFF SITE; AND SO THAT THE HEALTH AND SAFETY OF ALL ON-SITE PERSONNEL ARE PROTECTED DURING WORK AT THE SITE, THE DBT SHALL PREPARE AN SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN THAT PROVIDES SPECIFIC GUIDANCE FOR MANAGING REGULATED MATERIALS THAT MAY BE ENCOUNTERED WITHIN THE RIGHT-OF-WAY.

IF UNKNOWN REGULATED MATERIALS ARE DISCOVERED DURING CONSTRUCTION, THE DBT SHALL NOTIFY ODOT IMMEDIATELY AND SHALL FOLLOW THE SPCC PLAN AND ALL APPROPRIATE REGULATIONS.

THE DBT SHALL DISPOSE OF CONSTRUCTION WASTE MATERIAL SUCH AS CONCRETE OR OTHER HARMFUL MATERIALS AT APPROVED SITES IN ACCORDANCE WITH ALL APPROPRIATE REGULATIONS.

THE DBTS SHALL REVIEW THE ENVIRONMENTAL DOCUMENTATION FOR THE PROJECT, INCLUDING THE ENVIRONMENTAL SITE ASSESSMENTS COMPLETED BY THE DEPARTMENT. DBTS SHALL UTILIZE THIS INFORMATION IN ITS MANAGEMENT OF EXCAVATED MATERIALS ON THE PROJECT. DBTS SHALL USE INNOVATIVE AND SUSTAINABLE METHODS TO REUSE AS MUCH OF THE EXCAVATED MATERIALS AS ALLOWED BY APPLICABLE REGULATIONS. EXCESS EXCAVATED MATERIALS THAT ARE REGULATED SHALL BE APPROPRIATELY MANAGED BY THE DBT.

ENDANGERED SPECIES HABITAT-INDIANA BAT AND NORTHERN LONG-EARED BAT

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 1ST THROUGH SEPTEMBER 30TH. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1ST THROUGH MARCH 31ST. 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 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.

CONTACT PERSON IN OFFICE OF ENVIRONMENTAL SERVICES IS:

MIKE PETTEGREW
(614) 466-7102

ENDANGERED SPECIES COMMITMENT - KIRTLAND WARBLER

THE PROJECT IS WITHIN THE MIGRATION RANGE OF THE FEDERALLY ENDANGERED KIRTLAND'S WARBLER. IN ORDER TO AVOID IMPACTS TO ANY VEGETATION THAT THE KIRTLAND'S WARBLER WOULD USE AS HABITAT DURING MIGRATION, TREES AND WOODY VEGETATION THAT IS GREATER THAN 3-FEET TALL CANNOT BE REMOVED BETWEEN APRIL 22ND AND JUNE 1ST OR BETWEEN AUGUST 15TH AND OCTOBER 15TH.

STRUCTURE CONCRETE SEALING OPERATIONS

THE DBT SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT EPOXY-URETHANE SEALER, PAINT, OR OTHER MATERIALS USED TO REPAIR, CLEAN, SEAL, OR TREAT ANY STRUCTURE FROM ENTERING ANY STREAMS, WETLANDS OR OTHER WATERS OF THE UNITED STATES AND TAKE THE APPROPRIATE ACTIONS IN THE EVENT OF A RELEASE.

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

AIR QUALITY MONITORING STATION

DBT SHALL NOT HAVE STAGING AREAS WITHIN 500 FEET OF THE EXISTING PM2.5 AIR MONITOR LOCATED ON BROADWAY AVENUE.

AIR QUALITY - NO-IDLE POLICY

DBT SHALL MAINTAIN A NO-IDLE POLICY FOR UNUSED EQUIPMENT. MAXIMUM TIME FOR IDLING EQUIPMENT SHALL BE NO LONGER THAN 10 MINUTES AS PART OF THE NO-IDLING POLICY.

AREAS DISTURBED BY EQUIPMENT ACTIVITIES

ANY AREAS DISTURBED BY EQUIPMENT ACTIVITIES MUST BE SEEDED WITH NATIVE PLANT SPECIES AND MULCHED TO PREVENT EROSION OF SEDIMENTS INTO WATERS OF THE UNITED STATES.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

THE PROJECT WILL DISTURB GREATER THAN 1 ACRE OF EARTHEN AREA. THEREFORE A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION STORM WATER PERMIT FROM THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OHIO EPA) IS REQUIRED FOR THE PROJECT. A STORM WATER POLLUTION PREVENTION PLAN FOR THE PROJECT SHALL BE DEVELOPED AND IMPLEMENTED PRIOR TO PROJECT CONSTRUCTION IN ACCORDANCE WITH ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS.

AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS

FOR THIS PROJECT AN AERONAUTICAL STUDY WAS CONDUCTED WITH THE FOLLOWING PARAMETERS LISTED BELOW:

1. 675 FT SITE ELEVATION (SE)
2. 125 FT ABOVE GROUND LEVEL (AGL)
3. 800 FEET ABOVE MEAN SEA LEVEL (AMSL)

IT WAS DETERMINED THAT A TEMPORARY STRUCTURE OR CONSTRUCTION EQUIPMENT OF THE PARAMETERS ABOVE DOES NOT EXCEED OBSTRUCTION STANDARDS AND WOULD NOT BE A HAZARD TO AIR NAVIGATION.

IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THE HEIGHTS LISTED ABOVE, 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

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

CALCULATED MLL CHECKED SWC

GENERAL NOTES

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PAVING UNDER GUARDRAIL

THIS OPERATION SHALL INCLUDE PREPARATION OF THE GRADED SHOULDER USING ITEM 209 - RESHAPING UNDER GUARDRAIL, AS PER PLAN AND PAVING UNDER THE GUARDRAIL USING ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), (UNDER GUARDRAIL), AS PER PLAN.
ITEM 209 - RESHAPING UNDER GUARDRAIL, AS PER PLAN SHALL CONSIST OF EXCAVATING TOPSOIL OR OLD ASPHALT CONCRETE, COMPACTION AND APPLYING HERBICIDE AS SPECIFIED IN THE PLANS AND IN ACCORDANCE WITH THE FOLLOWING:

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

THE REMOVED MATERIAL SHALL BE REPLACED WITH MATERIAL AS DETAILED ON THE TYPICAL SECTIONS OR AS APPROVED BY THE ENGINEER.

HERBICIDE SHALL BE EPA APPROVED FOR PAVING UNDER GUARDRAIL. IT SHALL BE APPLIED TO THE PREPARED AREA AFTER FINAL LEVELING AND GRADING HAS BEEN COMPLETED. THE APPLICATION SHALL BE JUST PRIOR TO PAVING AND SHALL STRICTLY ADHERE TO THE MANUFACTURER'S INSTRUCTIONS. DO NOT SPRAY WITHIN 1000 FT. OF A STATE SCENIC RIVER.

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

THE DBT SHALL SUBMIT TO ODOT THE INFORMATION REQUIRED FOR PROPOSAL NOTE 651 - HERBICIDAL PRODUCT DATA. HERBICIDE LABEL, MATERIAL SAFETY DATA SHEET AND COPY OF APPLICATORS LICENSES SHALL BE SUBMITTED TO THE ENGINEER FOR VERIFICATION PRIOR TO COMMENCING WORK.

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

PAVING UNDER GUARDRAIL SHALL CONSIST OF PLACING ITEM 441 - ASPHALT CONCRETE TO A DEPTH OF 3" AND A MAXIMUM WIDTH OF 4' 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

PLANED SURFACES

THE DURATION OF TIME BETWEEN MILLING AND PLACEMENT OF THE INTERMEDIATE COURSE SHALL BE NO LONGER THAN FOURTEEN (14) DAYS, UNLESS MOT NOTES STATE OTHERWISE. THE TIME LIMIT SHALL BEGIN ON THE FIRST DAY OF PLANING AND SHALL CONTINUE BASED ON CALENDAR DAYS, MINUS ANY BAD WEATHER DAYS, UNTIL COMPLETION OF THE ASPHALT CONCRETE INTERMEDIATE COURSE.

ITEM 618 - RUMBLE STRIPS, ASPHALT CONCRETE, AS PER PLAN

FOR ALL FREEWAYS, THE LATERAL POSITION OF EDGE LINE RUMBLE STRIPS SHOWN IN SCD BP-9.1 IS REVISED AS FOLLOWS:

1. MEDIAN AND OUTSIDE SHOULDER OFFSET FOR SHOULDERS LESS THAN 6': DIMENSIONS "A" AND "B" ARE EQUAL TO 6".
2. MEDIAN AND OUTSIDE SHOULDER OFFSETS FOR SHOULDERS 6' TO 12': DIMENSION "A" AND "B" ARE EQUAL TO HALF THE SHOULDER WIDTH MINUS 12".
3. MEDIAN AND OUTSIDE SHOULDER OFFSET FOR SHOULDERS GREATER THAN 12': DIMENSION "A" AND "B" ARE EQUAL TO 5'.

MAINTAIN EXISTING LIGHTING

EXISTING ROADWAYS WHICH ARE TO REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION OF THIS PROJECT AND WHICH ARE LIGHTED SHALL HAVE THE LIGHTING MAINTAINED AS DESCRIBED HEREIN:

BEFORE ANY WORK IS STARTED IN THE IMMEDIATE VICINITY OF THE EXISTING LIGHTING CIRCUITS, REPRESENTATIVES OF ODOT, THE CITY OF CLEVELAND, THE MAINTAINING AGENCY AND THE DBT SHALL MAKE A VISUAL INSPECTION OF THE EXISTING ROADWAY LIGHTING CIRCUITS TO BE MAINTAINED. DURING THIS INSPECTION, A WRITTEN RECORD OF THE CONDITION OF EXISTING LIGHTING SHALL BE MADE BY ODOT'S REPRESENTATIVE. THIS WRITTEN REPORT SHALL NOTE INDIVIDUAL LUMINAIRES WHICH ARE NOT IN WORKING ORDER, INDIVIDUAL POLES WHICH ARE STANDING, AND INDIVIDUAL CIRCUITS WHICH ARE NOT IN WORKING ORDER. THE COMPLETED REPORT SHALL BE SIGNED BY THE REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY AND THE DBT.

IF, AS A RESULT OF THIS INSPECTION, IT IS DETERMINED THAT THE CONDITION OF THE EXISTING SYSTEM IS BELOW THAT REQUIRED FOR THE SAFETY OF THE TRAVELING PUBLIC, THEN THE MAINTAINING AGENCY SHALL MAKE THE REPAIRS NECESSARY TO RETURN THE SYSTEM TO AN ACCEPTABLE CONDITION. FOLLOWING THESE REPAIRS, THE SYSTEM SHALL AGAIN BE INSPECTED AND A REPORT SHALL BE MADE AND SIGNED AS OUTLINED HEREIN.

WHEN THE EXISTING SYSTEM IS IN AN ACCEPTABLE CONDITION, IT SHALL BE TURNED OVER TO THE DBT WHO SHALL THEN BE REQUIRED TO MAINTAIN THE EXISTING LIGHTING TO THE CONDITION OUTLINED IN THIS REPORT WITH THE EXCEPTION OF KNOCKDOWNS DUE TO TRAFFIC ACCIDENTS.

REPLACEMENT OF KNOCKED DOWNED UNITS SHALL BE DONE ONLY WHEN THE ENGINEER HAS DETERMINED THAT THE REPLACEMENT OF THE KNOCKED DOWN UNIT IS NECESSARY AND SHALL BE PAID SEPARATELY THROUGH FORCE ACCOUNT.

WHEN THE SEQUENCE OF CONSTRUCTION ACTIVITIES REQUIRES OR SHOULD THE DBT DESIRE, THE REMOVAL OF THE EXISTING LIGHTING BEFORE THE NEW LIGHTING IS OPERATIONAL, THE DBT SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY LIGHTING OF THIS PORTION OF THE ROADWAY.

A MAXIMUM TIME PERIOD OF TWO NIGHTS WILL BE ALLOWED FOR LIGHTING SYSTEM OUTAGE OF LOCAL STREET LIGHTING BETWEEN TRANSFERS OF THE EXISTING LIGHTING SYSTEM TO THE NEW MODIFIED LIGHTING SYSTEM. THE CITY OF CLEVELAND LIGHTING ENGINEER SHALL BE NOTIFIED A MINIMUM OF 72 HOURS BEFORE, OF THE SPECIFIED AREA TO BE SCHEDULED FOR THE 2 NIGHT OUTAGE.

PRIOR TO INSTALLING SUCH LIGHTING, THE DBT SHALL PREPARE AND SUBMIT FOUR SETS OF THE TEMPORARY LIGHTING PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL.

THIS PLAN SHALL SHOW LOCATIONS OF POLES, LENGTHS OF BRACKET ARMS, STYLES OF LUMINAIRES, MOUNTING HEIGHTS, WIRING METHODS AND OTHER PERTINENT INFORMATION. THE TEMPORARY LIGHTING SHALL PROVIDE AN AVERAGE INITIAL INTENSITY OF 1.2 FOOT CANDLES WITH AN AVERAGE TO MINIMUM UNIFORMITY NOT TO EXCEED 3:1. MOUNTING HEIGHT OF TEMPORARY LUMINAIRES SHALL NOT BE LESS THAN 30 FEET, AND THE MINIMUM OVERHEAD CONDUCTOR CLEARANCE SHALL BE 20 FEET. TEMPORARY OVERHEAD CONSTRUCTION SHALL NOT BE LESS THAN GRADE "A" FOR STRENGTH REQUIREMENTS AS DEFINED BY THE NATIONAL ELECTRIC SAFETY CODE. WOOD POLES WITH OVERHEAD WIRING MAY BE USED. HOWEVER, TEMPORARY LIGHTING SHALL MEET FEDERAL AND STATE SAFETY CRITERIA IF BREAKAWAY POLES ARE USED TO MEET THESE CRITERIA, THEN UNDERGROUND WIRING SHALL BE USED. RECONDITIONED OR USED MATERIALS MAY BE FURNISHED FOR TEMPORARY LIGHTING.

ALL MATERIALS NECESSARY TO COMPLETE THE TEMPORARY LIGHTING SHALL BE FURNISHED AND INSTALLED BY THE DBT. WHEN NO LONGER NEEDED, THE TEMPORARY LIGHTING INSTALLATION SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE DBT.

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

ITEM 304 - AGGREGATE BASE, AS PER PLAN

SLAG SHALL NOT BE USED IN THE AGGREGATE BASE.

ITEM 305 - CONCRETE BASE, AS PER PLAN

THE MINIMUM CEMENT CONTENT SHALL BE 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 APPROVAL OF THE ENGINEER UPON REVIEW OF THE SUBMITTAL.

ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, 448, PG70-22M, AS PER PLAN A

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

USE A PG70-22M BINDER.

ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, 448, PG64-22, AS PER PLAN B

THE USE OF GRAVEL FOR COARSE VIRGIN AGGREGATE IS PROHIBITED. LIMIT RAP BY DRY WEIGHT OF MIX TO A MAX. 10%.

USE A PG64-22 BINDER.

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A 446, PG 76-22M, AS PER PLAN

THE COARSE VIRGIN AGGREGATE AND AT LEAST 50% OF FINE VIRGIN AGGREGATE FOR THIS ITEM SHALL BE LIMITED TO AIR COOLED BLAST FURNACE SLAG (ACBFS) OR TRAP ROCK FROM ONTARIO.

TABLE 442.02-2 APPLIES EXCEPT NO. 4 SIEVE REQUIREMENTS ARE 52 TO 62 TOTAL PERCENT PASSING.

USE PG76-22M BINDER.

ASPHALT CONCRETE SURFACE COURSE SEALING REQUIREMENTS

IN ADDITION TO THE GUTTER SEALING REQUIREMENTS SPECIFIED ON SCD BP-3.1 AND IN 401.15, THE CONTRACTOR SHALL SEAL THE FOLLOWING LOCATIONS:

ALL CASTINGS INCLUDING BUT NOT LIMITED TO MONUMENTS, MANHOLES, WATER VALVES, CATCH BASINS, CURB INLETS. BUTT JOINTS AND FEATHER JOINTS INCLUDING BRIDGE APPROACHES. BUTT JOINT BETWEEN PAVED SHOULDER AND DRIVEWAY ASPHALT AND TAPERED EDGE WHEN FEATHERING TO AN EXISTING ASPHALT DRIVEWAY. PERIMETER OF ALL PAVEMENT REPAIRS OR OTHER ASPHALT INLAYS WHEN PAVEMENT REPAIRS/INLAYS ARE NOT OVERLAID WITH AN ASPHALT CONCRETE SURFACE COURSE. ALL COLD LONGITUDINAL JOINTS BETWEEN PAVED SHOULDERS AND GUARDRAIL ASPHALT.

THE MATERIAL USED SHALL BE A CERTIFIED 702.01 PG BINDER. THE WIDTH OF THE SEALER SHALL BE 2-3 INCHES.

ANY ADDITIONAL COSTS ASSOCIATED WITH THE WORK IDENTIFIED IN THIS NOTE SHALL BE INCLUDED IN THE APPROPRIATE ASPHALT CONCRETE SURFACE COURSE ITEM OF WORK.

CONCRETE SEALING ON CITY OF CLEVELAND FACILITIES

THIS NOTE APPLIES TO THE FOLLOWING FACILITIES: BROADWAY AVENUE, GALLUP AVENUE, ROSEVILLE COURT, DILLE AVENUE, E 45TH STREET, JEWETT AVENUE, CZAR AVENUE, FINN AVENUE, AND THE APPROACH SLABS ON BROADWAY.

1. ALL EXPOSED CONCRETE SURFACES (INCLUDING BUT NOT LIMITED TO PAVEMENT, CURB, SIDEWALK,DRIVE APRONS, CONCRETE BARRIER) ON CITY OF CLEVELAND-MAINTAINED FACILITIES SHALL BE SEALED PER CITY OF CLEVELAND SEALANT REQUIREMENTS. CITY OF CLEVELAND MAINTAINED FACILITIES ARE DEFINED IN SECTION 1.1.

2. THE APPROACH SLABS FOR THE BROADWAY BRIDGE OVER IR-77 SHALL BE DESIGNED TO ODOT STANDARDS EXCEPT FOR CONCRETE MIX AND CONCRETE SEALANT WHICH SHALL BE PER CITY OF CLEVELAND STANDARDS.

3. SEE SECTION 8.1, GOVERNING REGULATIONS, AND APPENDIX GN-01 FOR ADDITIONAL REQUIREMENTS.

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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.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, ANY TREE OR STUMP REMOVAL REQUIRED TO PERFORM ANY OF THE PROPOSED WORK AS SHOWN IN THE PLANS SHALL BE REMOVED AS PER ITEM 201 IN THE ODOT CMS.

FENCE LENGTHS

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

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, BEAM SPLICE AS SHOWN IN AASHTO M 180-12, EXCEPT THE BEAM WASHERS ARE NOT TO BE USED. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E

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, MGS TYPE E, 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.

CONTRACTION JOINTS IN CONCRETE PAVEMENT OR BASE WIDENING

WHERE NEW CONCRETE IS PLACED ADJACENT TO EXISTING CONCRETE, PROVIDE CONTRACTION JOINTS IN THE NEW CONCRETE TO FORM CONTINUOUS JOINTS WITH THOSE IN THE EXISTING CONCRETE.

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

BENCHING OF FOUNDATION SLOPES

ALTHOUGH CROSS-SECTIONS INDICATE SPECIFIC DIMENSIONS FOR PROPOSED BENCHING OF THE EMBANKMENT FOUNDATIONS IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. BENCH ALL OTHER SLOPED EMBANKMENT AREAS AS SET FORTH IN 203.05. NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED UNDER THE PROVISIONS OF 203.05.

PARKING LOT REMOVAL

THE DBT SHALL REMOVE THE PAVEMENT ON THE PARKING LOTS ON PARCELS 17 AND 19 AND THE ODOT-OWNED PAVED LAND ABUTTING PARCEL 41.

DEMOLITION OF 1748 EAST 27TH STREET, CLEVELAND, OHIO

THE BUILDING AT E. 27TH ST., CLEVELAND, OH (PARCEL 102-34-039) SHALL BE DEMOLISHED BY OCTOBER 1, 2017 AND THE PARCEL RESTORED AS DESCRIBED BELOW BY DECEMBER 31, 2017. THE PARCEL INFORMATION, ENVIRONMENTAL INFORMATION IS CONTAINED IN APPENDIX EV-06. THE DBT SHALL REMOVE AND DISPOSE OF THE BUILDING, VEGETATION, PAVEMENTS, SIDEWALKS, DRIVEWAYS, MINOR STRUCTURES AND OBSTRUCTIONS, FENCING, PIPES, CULVERTS AND UNDERGROUND TANKS. THE USE OF EXPLOSIVES IS FORBIDDEN. SITE RESTORATION SHALL INCLUDE ADDITION OF 6 INCHES OF COMPACTED AGGREGATE TO SITE SURFACE PER CMS 203, WITH MATERIALS MEETING REQUIREMENTS OF 703.16C, TYPE B. FINAL SURFACE SHALL BE GRADED TO DRAIN. PROVIDE PERMANENT FENCING TO SECURE PARCEL ON ALL SIDES, WITH A VEHICULAR GATE, ALL PER CMS 607. THE DBT SHALL BE RESPONSIBLE FOR COORDINATING AND PAYING FOR ALL UTILITY DISCONNECTS.

SEEDING AND MULCHING

ALL AREAS WITHIN THE WORK LIMITS, INCLUDING CONSTRUCTION LIMITS AS DEFINED IN SECTION 12 OF THE SCOPE, AND OUTSIDE OF PROPOSED PAVEMENT SHALL BE RESTORED WITH 659 TOPSOIL (4") AND 659 SEEDING AND MULCHING.

AREAS ADJACENT TO CITY STREETS AND MUP SHALL BE SEEDED WITH 659 SEEDING AND MULCHING CLASS 1; AREAS ADJACENT TO INTERSTATE RAMPS, FRONTAGE ROAD, OR MAINLINE WITHIN THE L/A FENCE SHALL USE 659 SEEDING AND MULCHING CLASS 2; AREAS WITH A SLOPE STEEPER THAN 3:1 SHALL USE 659 SEEDING AND MULCHING CLASS 3C. USE OF APPROPRIATE COMMERCIAL FERTILIZER AND/OR LIME FOR ESTABLISHMENT OF VEGETATION SHALL ALSO BE UTILIZED.

ALL IMPERVIOUS OR HARDSCAPE AREAS WITHIN THE RESTORATION AREA SHALL BE REMOVED TO SUBGRADE. THE DBT IS RESPONSIBLE FOR MOWING WITHIN THE WORK LIMITS. ANY VEGETATION EXCEEDING 3 INCHES SHALL REQUIRE MOWING UNTIL SUBSTANTIAL COMPLETION UNLESS DIRECTED OTHERWISE BY THE ODOT PROJECT ENGINEER.

RIGHT OF WAY MONUMENATION

NEW RIGHT OF WAY MONUMENTATION IS REQUIRED AS PART OF THIS PLAN SET. CONTRACTOR SHALL INSTALL THE NEW MONUMENTATION IN THE LOCATIONS LISTED IN THE RIGHT OF WAY PLANS

MONUMENTATION ON ODOT FACILITIES

WITHIN THE WORK LIMITS, THE DBT SHALL CONSTRUCT ITEMS ASSOCIATED WITH MONUMENT ASSEMBLIES, REFERENCE MONUMENTS, RIGHT-OF-WAY MONUMENTS, AND ANY OTHER ITEMS ASSOCIATED WITH MONUMENTS ACCORDING TO C&MS 623 AND PER THE ODOT RIGHT-OF-WAY MANUAL. MONUMENTS ON ODOT-MAINTAINED FACILITIES SHALL BE IN ACCORDANCE WITH ODOT STANDARDS.

CITY OF CLEVELAND MONUMENTS

THIS WORK SHALL CONSIST OF THE CONSTRUCTION OR RECONSTRUCTION OF MONUMENTS OF THE TYPES AND SIZES SPECIFIED, ADJUSTING THE EXISTING CASTINGS TO GRADE. THE CONTRACTOR SHALL PERFORM THE REQUIRED EXCAVATION AND BACKFILL, FURNISH ALL MATERIALS, AND LABOR NECESSARY.

MATERIALS AND METHODS OF CONSTRUCTION

THE CONSTRUCTION OF STRUCTURES SPECIFIED SHALL CONFORM TO THE REQUIREMENTS OF ITEM 623 OF ODOT SPECIFICATIONS OF THE CITY SPECIFICATIONS SUPPLEMENT THERETO. EXCAVATION FOR STRUCTURES SHALL CONFORM TO THE LATEST SAFETY REQUIREMENTS SET FORTH IN SECTION 604.04 OF CITY OF CLEVELAND SUPPLEMENTAL SPECIFICATIONS TO ODOT. CASTING REUSED MONUMENT BOXES REMOVED MAY BE REUSED TO REPLACE BROKEN CASTINGS OR PARTS OF CASTINGS ON EXISTING STRUCTURES WITHIN THE LIMITS OF THIS CONTRACT WHICH ARE DESIGNATED TO REMAIN.

MONUMENT ASSEMBLIES

THE CONTRACTOR'S SURVEYOR SHALL MARK THE LOCATION WHERE NEW MONUMENT ASSEMBLIES ARE TO BE CONSTRUCTED. THE CONTRACTOR SHALL NOTIFY THE CHIEF SURVEYOR AT (216) 664-2461, AT LEAST THREE (3) WEEKS PRIOR TO BEGINNING THEIR MONUMENT ASSEMBLY OPERATION IN ORDER TO HAVE THE LOCATIONS CHECKED IN THE FIELD. THE CONTRACTOR SHALL FURNISH THE FOLLOWING FOR EACH ASSEMBLY: ONE (1) CLEVELAND MONUMENT BOX AS DIRECTED ON CITY OF CLEVELAND STANDARD DRAWINGS NO. A-37 AND MB-1C AND ONE (1) ONE INCH DIAMETER EPOXY STEEL DEFORMED REINFORCING BAR THIRTY-SIX INCHES (36") LONG, FLAT ON TOP WITH A ROUND POINTED END. THE CONTRACTOR'S SURVEYOR SHALL INSTALL THE PIN (REBAR) PRIOR TO SETTING THE BOX.

ANY PERSON, CONTRACTOR, UTILITY, OR GOVERNMENTAL AGENCY, HEREIN REFERRED TO AS THE CONTRACTOR, DISTURBING, REMOVING AND/OR REPLACING PAVEMENT IN THE CITY OF CLEVELAND'S PUBLIC RIGHT-OF-WAY SHALL PROVIDE INFORMATION AS TO THE TYPE OF WORK AND THE LIMITS OF THE WORK TO THE CITY OF CLEVELAND CHIEF SURVEYOR PRIOR TO PERFORMING SUCH WORK. THE CHIEF SURVEYOR WILL DETERMINE WHICH MONUMENTS, IF ANY WILL BE AFFECTED BY SUCH WORK.

FOR MONUMENTS LOCATED INSIDE THE CONTRACTOR'S "WORK AREA" THE CONTRACTOR'S SURVEYOR MUST REFERENCE THESE MONUMENTS PRIOR TO ANY OF THE WORK BEING PERFORMED. THE CONTRACTOR SHALL NOTIFY THE CITY OF CLEVELAND CHIEF SURVEYOR AT (216) 664-2461, AT LEAST TEN (10) WORKING DAYS PRIOR TO THE REPLACEMENT OR RELOCATION OF MONUMENTS TO ALLOW THE CHIEF SURVEYOR TO CHECK LOCATIONS IN THE FIELD.

THE CONTRACTOR SHALL PERFORM ALL OTHER OPERATIONS NECESSARY TO COMPLETE THIS WORK ITEM, SUCH AS PAVEMENT REMOVAL, EXCAVATION, SETTING THE BOX TO GRADE, AND PAVEMENT REPLACEMENT.

FOR MONUMENTS OUTSIDE THE CONTRACTOR'S "WORK AREA", BUT NEAR ENOUGH TO THE "WORK AREA" THAT MAY BE DISTURBED FOR ANY REASON, THE CONTRACTOR'S SURVEYOR MUST REFERENCE THESE MONUMENTS PRIOR TO ANY WORK BEING PERFORMED BY THE CONTRACTOR. THE CONTRACTOR, AFTER HAVING COMPLETED THE FINAL PAVEMENT REPLACEMENT, SHALL NOTIFY THE CITY CHIEF SURVEYOR AT (216) 664-2461, TO HAVE THE MONUMENTS INSPECTED FOR DISPLACEMENT. SHOULD THE MONUMENT BE DISTURBED FOR ANY REASON, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT AS IF THE MONUMENT WERE ORIGINALLY INSIDE THE "WORK AREA" AS HEREIN SPECIFIED.

STAGING AREA ON/WITHIN STATE RIGHT OF WAY

SPECIFIC AREAS ARE DESCRIBED IN THE SCOPE FOR THE CONTRACTOR TO USE AS STAGING AREAS. NO D-12 PERMIT WILL BE REQUIRED FOR THE CONTRACTOR TO UTILIZE THESE LOCATIONS. THE CONTRACTOR SHALL SUBMIT A WRITTEN DESCRIPTION OF THEIR PLANNED USE TO THE PROJECT ENGINEER FOR CONCURRENCE. ALL USES OF THE R/W SHALL BE COORDINATED BY THE PROJECT ENGINEER. NO CONCRETE OR ASPHALT PLANTS ARE ALLOWED. NO CRUSHING OPERATIONS ARE ALLOWED. THE CONTRACTOR SHALL NOT UTILIZE THIS PROJECT'S STAGING AREA FOR OTHER PROJECTS. THE CONTRACTOR SHALL NOT STOCKPILE MATERIAL ON TOP OF EXISTING DRAINAGE PIPES OR UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE REGULATORY REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATION OF THE STAGING AREA(S). IN ADDITION TO SECTION 104.04 OF THE CMS, RESTORATION WORK SHALL INCLUDE, AT NO ADDITIONAL COST TO THE STATE:

1. REMOVAL OF AT LEAST 4 INCHES OF MATERIAL AND REPLACEMENT WITH TOPSOIL PER ITEM 659.

2. SEED AND MULCH THE AREA PER ITEM 659

3. REPLACEMENT OF ALL TREES REMOVED/DAMAGED BY CONTRACTOR ON CALIPER-INCH BASIS WITH ONE (1) YEAR WARRANTY THE PERFORMANCE REQUIREMENTS OF ITEM 659, SPECIFICALLY IN REGARD TO MINIMUM 70% GRASS COVER, WILL APPLY TO ALL STAGING AREAS. IF THE PROJECT ENGINEER DEEMS THAT ALL THE CONDITIONS OF R/W USE ARE NOT MET, THEN 10% OF THE CONTRACT BID AMOUNT FOR MOBILIZATION SHALL BE WITHHELD UNTIL ALL THE CONDITIONS OF THE R/W USE ARE SATISFIED.

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PROJECT COORDINATION

THROUGHOUT THE CUY-77-13.80 (CCG6B) PROJECT THE DBT SHALL COORDINATE WORK WITH THE OTHER PROJECTS LISTED BELOW:

1. CUY-77-14.35, PID 13567, CCG6A.
2. CUY-490/10-2.09/19.28, PID 96833, OC SECTION 3, DESIGN BUILD PROJECT.

DESIGN SPECIFICATIONS - CITY OF CLEVELAND

FOR PORTIONS OF WORK TO BE MAINTAINED BY THE CITY OF CLEVELAND, ALL WORK SHALL BE IN COMPLIANCE WITH ALL APPLICABLE CITY OF CLEVELAND MANUALS AND GUIDELINES, INCLUDING BUT NOT LIMITED TO APPENDIX GN-01 (CITY OF CLEVELAND DESIGN SPECIFICATIONS), APPENDIX GN-02 (CITY OF CLEVELAND STANDARD DRAWINGS), APPENDIX DR-01 (CITY OF CLEVELAND DRAINAGE PROVISIONS), AND APPENDIX TC-03 (CITY STREET LIGHTING SPECIFICATIONS) AS SHOWN IN THE PROJECT CONTRACT DOCUMENTS.

FENCE REMOVAL AND TEMPORARY FENCING

THE CONTRACTOR SHALL REMOVE THE EXISTING FENCE IMPACTED BY CONSTRUCTION ACTIVITIES. WHERE EXISTING FENCE IS REMOVED FROM PARCEL 31 AND 42, THE CONTRACTOR SHALL ERECT TEMPORARY FENCE TO SECURE THE LOTS. THE EXISTING FENCE SHALL MATCH THE HEIGHT OF THE EXISTING FENCE, INCLUDING GATES, IF ANY, TO SECURE THE PROPERTY UNTIL SUBSTANTIAL COMPLETION OR UNTIL THE PROPERTY OWNER REPLACES THE TEMPORARY FENCE WITH PERMANENT FENCING. IF TEMPORARY FENCING IS REMOVED PRIOR TO SUBSTANTIAL COMPLETION, THE CONTRACTOR SHALL PROVIDE ODOT A WRITTEN NOTICE FROM THE PROPERTY OWNER GRANTING PERMISSION TO REMOVE THE FENCE.

FENCE, TYPE CLT, AS PER PLAN

THE DBT SHALL FURNISH AND INSTALL TYPE CLT FENCE AS PER C&MS 607 AND ODOT SCD F-1.1 WITH THE FOLLOWING REVISIONS:

1. FABRIC SHALL CONSIST OF A 2-INCH DIAMOND MESH USING 0.148-INCH DIAMETER (9 GAUGE) WIRE CONFORMING TO ASTM F668 CLASS 2A OR 2B EXCEPT AS NOTED. THE PVC COATING SHALL BE BLACK IN COLOR CLOSELY APPROACHING FEDERAL STANDARD COLOR NO. 595B-27038. SELVAGES SHALL BE KNUCKLED AT BOTH ENDS. HANDLE ALL PVC COATED FABRIC WITH CARE. IF THE PVC COATING IS DAMAGED, REPLACE THE DAMAGED PORTION AT NO COST TO THE DEPARTMENT.

2. FABRIC TIES AND HOG RINGS SHALL BE 0.148-INCH CORE DIAMETER GALVANIZED PVC COATED STEEL WIRE CONFORMING TO ASTM A478. TO CONNECT THE FABRIC TO THE LINE POSTS, SUPPLY ONE FABRIC TIE FOR EACH ONE FOOT OF FABRIC HEIGHT. CONNECT THE FABRIC TO THE TENSION WIRE USING HOG RINGS 2-3 INCHES ON EACH SIDE OF THE POSTS AND AT SPACING NOT TO EXCEED 12 INCHES BETWEEN POSTS. THE PVC COATING SHALL BE THE SAME AS THAT FOR THE STEEL FABRIC.

3. ALL POSTS, RAILS, RODS, CAPS, AND ANY OTHER VISIBLE HARDWARE SHALL BE GALVANIZED AND COATED BLACK TO MATCH THE FABRIC.

STREET NAME SIGNS

REMOVE EXISTING AND CONSTRUCT NEW STREET NAME SIGNS FOR ALL INTERSECTIONS PER CITY OF CLEVELAND STREET NAME SIGN STANDARDS (APPENDIX TC-05).

6" DEEP PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, AS PER PLAN

IN AREAS OF UNDERCUT, UNDERDRAINS WILL BE PLACED AT A DEPTH OF 6" BELOW THE BOTTOM OF THE UNDERCUT. SEE TYPICAL SECTIONS FOR UNDERCUT DEPTH.

RIGHT-OF-WAY FENCE GROUNDING

THE RIGHT-OF-WAY FENCE UNDER THE PROPOSED CLEVELAND PUBLIC POWER (CPP) TRANSMISSION LINE SHALL BE GROUNDED, AS SHOWN IN SCD HL-50.11.

FOR DETAILS ON THE CPP TRANSMISSION LINE RELOCATION, SEE BU-8.

BROADWAY CURB RAMPS

ALL CURB RAMPS AT THE FOLLOWING INTERSECTIONS SHALL COMPLY WITH THE APPLICABLE STANDARD CONSTRUCTION DRAWINGS EXCEPT THAT THE THICKNESS OF THE CONCRETE SHALL BE INCREASED TO 8".

LOCATIONS:
BROADWAY AVE/DILLE AVE
BROADWAY AVE/ROSEVILLE CT
BROADWAY AVE/FRONTAGE RD

CALCULATED MLL
CHECKED SWC

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ITEM 614, MAINTAINING TRAFFIC

THIS ITEM SHALL CONSIST OF MAINTENANCE OF TRAFFIC ON EXISTING ROADWAYS AND RAMPS IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, LATEST REVISION, THE SPECIFICATIONS, AND THE FOLLOWING:

1. BROADWAY AVENUE RAMP TO IR-77SB
A. RAMP MAY BE CLOSED ONCE WORK ON FRONTAGE ROAD CONSTRUCTION COMMENCES.
B. DETOUR SHALL BE BROADWAY AVENUE TO PERSHING AVENUE TO IR-77 AS SHOWN IN BU 1.

2. IR-77NB RAMP TO BROADWAY AVENUE
A. RAMP SHALL REMAIN OPEN FOR THE PROJECT DURATION.
B. DURING THE CLOSURE OF BROADWAY AVENUE, ERECT DETOUR SIGNAGE AS SHOWN IN BU 4.

3. BROADWAY AVENUE
A. 4-LANES OF BROADWAY AVENUE (2-LANES IN EACH DIRECTION) SHALL BE MAINTAINED PRIOR TO IMPLEMENTATION OF THE TWO-WAY FRONTAGE ROAD DETOUR AS SHOWN IN THESE PLANS, EXCEPT FOR A MAXIMUM PERIOD OF NINETY (90) CONSECUTIVE DAYS IMMEDIATELY PRIOR TO THE IMPLEMENTATION OF THE FRONTAGE ROAD DETOUR WHEN BROADWAY AVENUE MAY BE REDUCED TO TWO (2) LANES, ONE (1) IN EACH DIRECTION.
B. BROADWAY AVENUE SHALL HAVE ONE (1) FULL CLOSURE OF NO MORE THAN 270 DAYS, DURING WHICH THE TWO-WAY FRONTAGE ROAD DETOUR AS SHOWN IN THESE PLANS MUST BE IN PLACE.
C. AFTER THE BROADWAY CLOSURE PERIOD A MINIMUM OF 2-LANES (1 LANE IN EACH DIRECTION) SHALL BE MAINTAINED ON BROADWAY AVENUE UNTIL SUBSTANTIAL COMPLETION, AT WHICH TIME 4 LANES OF BROADWAY SHALL BE OPEN.
D. AFTER THE BROADWAY CLOSURE PERIOD, THE FRONTAGE ROAD SHALL BE OPEN TO ONE LANE OF ONE-WAY SOUTHBOUND TRAFFIC EXCEPT FOR A PERIOD OF NINETY (90) CONSECUTIVE DAYS IMMEDIATELY FOLLOWING THE BROADWAY CLOSURE PERIOD TO COMPLETE THE BROADWAY AVE/FRONTAGE RD INTERSECTION CONSTRUCTION.

4. PERSHING AVENUE
A. NO LANE RESTRICTIONS PERMITTED.

5. ROSEVILLE COURT
A. MAY HAVE ONE (1) FULL CLOSURE OF NO MORE THAN 60 DAYS. ERECT DETOUR AS SHOWN IN BU-4.
B. SHALL REMAIN OPEN DURING FRONTAGE ROAD DETOUR OF BROADWAY AVENUE WITH STOP CONTROL AS SHOWN IN THESE PLANS.
C. TWO-WAY ACCESS TO THE BUSINESSES SERVED BY ROSEVILLE COURT/E. 45TH ST. FOR THE DURATION OF THE CLOSURE.

6. DILLE AVENUE
A. MAY HAVE ONE (1) FULL CLOSURE OF NO MORE THAN 14 DAYS. ERECT DETOUR AS SHOWN IN BU 4.

7. GALLUP AVENUE
A. MAY HAVE ONE (1) FULL CLOSURE OF 270 DAYS BETWEEN LESTER AVENUE AND BROADWAY AVENUE, BUT ACCESS TO ALL DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES. THIS 270 DAY CLOSURE SHALL COINCIDE WITH THE BROADWAY AVENUE CLOSURE. ERECT DETOUR AS SHOWN IN BU 4.

8. I-77
FOR I-77 AND RAMP RESTRICTIONS, SEE BU 2.

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

CHRISTMAS	FOURTH OF JULY
NEW YEARS	LABOR DAY
MEMORIAL DAY	THANKSGIVING

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

DAY OF HOLIDAY OR EVENT	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00 AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00 AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00 AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00 AM FRIDAY
THURSDAY (THANKSGIVING ONLY)	6:00 AM WEDNESDAY THROUGH 6:00 AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF $42 FOR EACH MINUTE THE ABOVE DESCRIBED LANE CLOSURE RESTRICTIONS ARE VIOLATED.

10. 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.

NOTICE OF CLOSURE

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.

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.

NOTICE OF CLOSURE SIGN TIME TABLE:

DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
>= 2 WEEKS	14 CALENDER DAYS PRIOR TO CLOSURE
> 12 HOURS & < 2 WEEKS	7 CALENDER DAYS PRIOR TO CLOSURE
< 12 HOURS	2 CALENDER DAYS PRIOR TO CLOSURE

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.

OVERNIGHT TRENCH CLOSING

THE BASE WIDENING SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 1.5 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 BACK-FILLED AT THE DIRECTION OF THE ENGINEER.

DUST CONTROL

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

EARTHWORK FOR MAINTAINING TRAFFIC

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

FLOODLIGHTING

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

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

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NON-GATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM ODOT'S HOME PAGE ON THE INTERNET UNDER DIVISIONS/ENGINEERING/ROADWAY ENGINEERING/ROADWAY APPROVED PRODUCTS LIST/IMPACT ATTENUATORS.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

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

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

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

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

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NON-GATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM ODOT'S HOME PAGE ON THE INTERNET UNDER DIVISIONS/ENGINEERING/ROADWAY ENGINEERING/ROADWAY APPROVED PRODUCTS LIST/IMPACT ATTENUATORS.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

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

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MAINTENANCE OF TRAFFIC - GENERAL NOTES

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WORK-SITE TRAFFIC SUPERVISOR

SUBJECT TO APPROVAL OF THE ENGINEER, THE CONTRACTOR SHALL EMPLOY AND IDENTIFY (SOMEONE OTHER THAN THE SUPERINTENDENT) A CERTIFIED WORK-SITE TRAFFIC SUPERVISOR (WTS) BEFORE STARTING WORK IN THE FIELD. THE WTS SHALL BE CERTIFIED FROM ONE OF THE FOLLOWING ORGANIZATIONS:

1. AMERICAN TRAFFIC SAFETY SERVICE ASSOCIATION (ATSSA), PHONE NUMBER 1-800-272-8772, CERTIFIED TRAFFIC CONTROL SUPERVISOR (TCS).

2. NATIONAL HIGHWAY INSTITUTE, DESIGN AND OPERATION OF WORK ZONE TRAFFIC CONTROL, PHONE NUMBER 1-703-235-0500.

3. THE OHIO CONTRACTORS ASSOCIATION, TRAFFIC CONTROL SUPERVISOR (OCA/TCS) WORK ZONE CLASS, ONLY IF TAKEN AFTER MAY 5, 2004, PHONE NUMBER 1-800-229-1388.

4. OHIO LABORERS TRAINING, TRAFFIC CONTROL SUPERVISORS CLASS, PHONE NUMBER 1-740-599-7915.

A COPY OF EACH WTSS CERTIFICATION AND 24-HOUR CONTACT INFORMATION SHALL BE PROVIDED TO THE ENGINEER AT THE PRE-CONSTRUCTION CONFERENCE. IF THE DESIGNATED WTS WILL NOT BE AVAILABLE FULL TIME (24/7), THE CONTRACTOR MAY DESIGNATE AN ALTERNATE WTS TO BE AVAILABLE WHEN THE PRIMARY IS OFF DUTY. EACH WTS SHALL HAVE A WTS CERTIFICATION CONTAINING THE DATE OF ISSUE AND SHALL BE FROM ANY OF THE APPROVED ORGANIZATIONS. AT THE TIME OF THE PRE-CONSTRUCTION, THE WTS CERTIFICATION DATE OF ISSUE SHALL BE WITHIN 5 YEARS PRIOR TO THE ORIGINAL COMPLETION DATE OF THE PROJECT.

THE WTS POSITION HAS THE RESPONSIBILITY OF MONITORING TRAFFIC CONTROL DEFICIENCIES FOR THE ENTIRE WORK ZONE. THE DUTIES OF THE WTS ARE AS FOLLOWS:

1. BE AVAILABLE ON A 24-HOUR PER DAY BASIS, AND BE ABLE TO BE ON SITE FOR ALL EMERGENCY TRAFFIC CONTROL NEEDS WITHIN ONE HOUR OF NOTIFICATION BY POLICE OR PROJECT STAFF AND BE PREPARED TO EFFECT CORRECTIVE MEASURES IMMEDIATELY ON EXISTING WORK ZONE TRAFFIC CONTROL DEVICES.

2. ATTEND PRE-CONSTRUCTION MEETING AND ALL PROJECT MEETINGS WHERE TRAFFIC CONTROL MANAGEMENT IS DISCUSSED.

3. BE AVAILABLE FOR MEETINGS OR DISCUSSIONS WITH THE ENGINEER UPON REQUEST OR WITHIN 36 HOURS.

4. COORDINATE A TRAFFIC INCIDENT MANAGEMENT MEETING EACH YEAR BEFORE CONSTRUCTION WORK BEGINS WITH ODOT AND THE SAFETY FORCES THAT WILL RESPOND TO INCIDENTS ON THE PROJECT. ITEMS TO BE DISCUSSED WILL BE THE:

   A. TRAFFIC INCIDENT MANAGEMENT PLAN (TIMP);

   B. EMERGENCY RESPONSE AND NOTIFICATION;

   C. PROJECT WORK/PHASING CONCERNS (E.G., RAMP CLOSURES); AND

   D. RESPONDERS CONCERNS.

5. BE AWARE OF, AND COORDINATE IF NECESSARY, ALL TRAFFIC CONTROL OPERATIONS, INCLUDING THOSE OF SUBCONTRACTORS AND SUPPLIERS.

6. COORDINATE PROJECT ACTIVITIES WITH ALL LAW ENFORCEMENT OFFICERS (LEOS). A WTS SHALL ALSO BE THE MAIN CONTACT PERSON WITH THE LEOS WHILE THEY ARE ON THE PROJECT.

7. COORDINATE MEETINGS WITH ODOT PERSONNEL, LEOS AND OTHER APPLICABLE ENTITIES BEFORE EACH PLAN PHASE SWITCH TO DISCUSS WORK ZONE TRAFFIC CONTROL.

8. ENSURE COMPLIANCE WITH THE CONTRACT DOCUMENTS FOR SIGNS, BARRICADES, TEMPORARY CONCRETE BARRIER, PAVEMENT MARKINGS, PORTABLE MESSAGE SIGNS, AND OTHER TRAFFIC CONTROL DEVICES ON A DAILY BASIS; AND FACILITATE ANY CORRECTIVE ACTION NECESSARY.

9. NOTIFY THE CONTRACTOR OF THE NEED FOR CLEANING AND MAINTENANCE OF ALL TRAFFIC CONTROL DEVICES, INCLUDING THE COVERING AND REMOVAL OF INAPPLICABLE SIGNS.

10. INSPECT, EVALUATE, PROPOSE NECESSARY MODIFICATIONS TO, AND DOCUMENT THE EFFECTIVENESS OF, THE TRAFFIC CONTROL DEVICES AND/OR TRAFFIC OPERATIONS ON A DAILY BASIS (7 DAYS A WEEK). IN ADDITION, A WEEKLY NIGHT INSPECTION OF THE WORK ZONE SETUP FOR DAYTIME WORK OPERATIONS; AND ONE DAYTIME INSPECTION PER WEEK FOR NIGHTTIME PROJECTS. THIS SHALL INCLUDE (BUT NOT BE LIMITED TO) DOCUMENTATION ON THE FOLLOWING PROJECT EVENTS:

    A. INITIAL TRAFFIC CONTROL SETUP (DAY AND NIGHT REVIEW).

    B. DAILY TRAFFIC CONTROL SETUP AND REMOVAL.

    C. WHEN CONSTRUCTION STAGING CAUSES A CHANGE IN THE TRAFFIC CONTROL SETUP.

    D. CRASH OCCURRENCES WITHIN THE CONSTRUCTION AREA.

    E. REMOVAL OF TRAFFIC CONTROL DEVICES AT THE END OF A PHASE OR PROJECT.

    F. ALL OTHER EMERGENCY TRAFFIC CONTROL NEEDS.

11. COMPLETE THE DEPARTMENT APPROVED LONG TERM INSPECTION FORM (CA-D-8) AFTER EACH INSPECTION AS REQUIRED IN #10 AND SUBMIT IT TO THE ENGINEER THE FOLLOWING WORK DAY. THESE REPORTS SHALL INCLUDE A CHECKLIST OF ALL TRAFFIC CONTROL MAINTENANCE ITEMS TO BE REVIEWED. A COPY OF THE FORM WILL BE PROVIDED AT THE PRE-CONSTRUCTION MEETING. ANY DEFICIENCIES OBSERVED SHALL BE NOTED, ALONG WITH RECOMMENDED CORRECTIVE ACTIONS AND THE DATES BY WHICH SUCH CORRECTIONS WERE, OR WILL BE, COMPLETED. A COPY OF THIS DOCUMENT CAN BE FOUND IN THE CURRENT REVISION OF THE DEPARTMENT OF TRANSPORTATION CONSTRUCTION INSPECTION FORMS MANUAL.

12. VERIFY THAT ALL FLAGGING OPERATIONS ARE BEING CONDUCTED PER THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

13. HAVE COPIES OF THE ODOT TEMPORARY TRAFFIC CONTROL MANUAL AND APPLICABLE STANDARDS AND SPECIFICATIONS INCLUDED IN THE CONTRACT DOCUMENTS AVAILABLE AT ALL TIMES ON THE PROJECT.

14. IDENTIFY AND CONTACT ALL POSSIBLE RESPONSE PERSONNEL; PRE-PLAN AND KEEP AN UPDATED ROSTER WITH PHONE NUMBERS:

    A. FEDERAL, STATE, AND LOCAL TRANSPORTATION AGENCIES (TRAFFIC MANAGEMENT CENTER);

    B. REGIONAL, COUNTY OR LOCAL 911 DISPATCH; AND

    C. TOWING AND RECOVERY PROVIDERS.

15. COMPLY WITH THE PROVISIONS OF OMUTCD CHAPTER 6I, CONTROL OF TRAFFIC THROUGH TRAFFIC INCIDENT MANAGEMENT AREAS.

16. PROPOSE A RESPONSE/ACTION PLAN TO:

    A. ESTABLISH ALTERNATE ROUTE PLANS PER THE PROVIDED ODOT PLAYBOOK;

    B. REMOVE TRAFFIC DEMAND FROM IMPACTED ROADWAY(S);

    C. DIVERT TRAFFIC TO ROUTES THAT CAN ACCOMMODATE DEMANDS;

    D. DETOUR TRAFFIC AWAY FROM SENSITIVE AREAS (SUCH AS SCHOOLS, HOSPITALS, ETC.);

    E. DISCUSS METHODS OF DETERMINING A STAGING AREA FOR RESPONDERS WITHIN OR NEAR THE CONSTRUCTION ZONE; AND

    F. DISCUSS METHODS OF DEVELOPING INGRESS AND EGRESS SITES WITHIN THE CONSTRUCTION ZONE.

THE RESPONSE/ACTION PLAN SHALL BE SUBMITTED TO ODOT.

17. PERFORM, AT A MINIMUM, THE FOLLOWING FUNCTIONS IN INCIDENT DETECTION AND VERIFICATION:

    A. CALL 911/ NOTIFY TRAFFIC MANAGEMENT CENTER AND PROVIDE THE FOLLOWING:

    I. DIRECTION OF TRAVEL.
    II. NUMBER AND TYPE OF VEHICLES INVOLVED.
    III. ESTIMATED EXTENT OF DAMAGE OR INJURY.
    IV. ESTIMATED NUMBER OF PATIENTS INVOLVED.
    V. ANY POTENTIAL HAZARDOUS CONDITIONS.
    VI. THE PLACARD NUMBER ON ANY HAZARDOUS MATERIALS PLACARD FROM A SAFE DISTANCE.

    B. INITIATE TRAFFIC MANAGEMENT / PROVIDE TRAFFIC CONTROL.

    C. ASSIST MOTORIST WITH DISABLED VEHICLES.

    D. RECOMMEND ROADWAY REPAIR NEEDS.

    E. PROVIDE REPAIR RESOURCES.

18. ATTEND POST-INCIDENT DEBRIEFINGS IF REQUIRED.

IF THREE OR MORE FAILURES TO PERFORM THE DUTIES SET FORTH ABOVE OCCUR, THE WTS SHALL BE IMMEDIATELY REMOVED FROM THE WORK IN ACCORDANCE WITH C&MS 108.05.

PAVEMENT REPAIRS AS DIRECTED

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIRS (T=3) HAS BEEN PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER TO MAINTAIN PAVEMENT DURING CONSTRUCTION. PAYMENT FOR THIS WORK WILL BE ON A UNIT COST BASIS AND AN ESTIMATED QUANTITY HAS BEEN PROVIDED IN THE PROPOSAL.

ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT HAS BEEN PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER TO MAINTAIN PAVEMENT DURING CONSTRUCTION. PAYMENT FOR THIS WORK WILL BE ON A UNIT COST BASIS AND AN ESTIMATED QUANTITY HAS BEEN PROVIDED IN THE PROPOSAL. PAVEMENT BUILDUP SHALL MATCH PROPOSED COMPOSITE FULL-DEPTH BUILDUP. SURFACE AND INTERMEDIATE COURSE FOR MOT AS-DIRECTED FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT ARE PAID UNDER ITEM 251 ABOVE.

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MAINTENANCE OF TRAFFIC - GENERAL NOTES

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DELINEATION OF PORTABLE AND PERMANENT BARRIER

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

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

INCREASED BARRIER DELINEATION, AS SPECIFIED HEREIN, SHALL BE INSTALLED ON ALL PB AND CONCRETE PERMANENT BARRIER LOCATED WITHIN 5 FEET OF THE EDGE OF THE TRAVELED LANE ALONG TAPERS AND TRANSITION AREAS AND ALONG CURVES (OUTSIDE ONLY) WITH DEGREE OF CURVATURE GREATER THAN OR EQUAL TO 3 DEGREES.

THE INCREASED BARRIER DELINEATION SHALL CONSIST OF EITHER DELINEATION PANELS OR THE TRIPLE STACKING OF WORK ZONE BARRIER REFLECTORS.

DELINEATION PANELS SHALL CONSIST OF PANELS OF DELINEATION, APPROXIMATELY 34 INCHES LONG AND 6 INCHES WIDE AND SHALL BE "CRIMPED." PANELS SHALL BE INSTALLED AND SPACED PER TRAFFIC SCD MT-101.70.

TRIPLE-STACKED BARRIER REFLECTORS SHALL CONSIST OF ALIGNING THREE BARRIER REFLECTORS VERTICALLY, AT LOCATIONS WHERE A SINGLE BARRIER REFLECTOR WOULD BE OTHERWISE ATTACHED. THERE SHALL BE NO OPEN SPACE BETWEEN THE ADJACENT BARRIER REFLECTORS. THE TRIPLE-STACKED BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THEY SHALL BE SPACED AND ALIGNED PER TRAFFIC SCD MT-101.70.

ALONG RUNS OF INCREASED BARRIER DELINEATION WHERE THIS ITEM IS PROVIDED, THE QUANTITY SHALL BE MEASURED AS THE ENTIRE LENGTH OF THE RUN OF INCREASED BARRIER DELINEATION, INCLUDING THE SPACES BETWEEN THE INDIVIDUAL DELINEATION PANELS OR STACKS OF BARRIER REFLECTORS.

DELINEATION OF TEMPORARY AND PERMANENT GUARDRAIL

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

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

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

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 C&MS 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 REQUIREMENT OF C&MS 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 AS APPROVED BY THE ENGINEER:

- 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 IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION OR AT THE POINT OF ROAD CLOSURE, AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

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.

MOT PHASE CHANGES: NOTIFICATION & COORDINATION REQUIREMENTS

AT LEAST FOURTEEN (14) DAYS PRIOR TO ANY CONSTRUCTION ACTIVITIES, THE DBT WILL ADVISE THE DISTRICT PI OFFICER AND THE PROJECT ENGINEER OF THE ANTICIPATED START DATE OF ANY CONSTRUCTION ACTIVITIES, INCLUDING BUT NOT LIMITED TO THE PLACING OF WORK ZONE SIGNS. THE NOTIFICATION WILL ALSO INCLUDE THE PROJECT NUMBER, PID, NAME AND PHONE NUMBER OF THE DBT POINT OF CONTACT AS WELL AS THE ANTICIPATED IMPACT ON TRAFFIC. THE DBT WILL IMMEDIATELY INFORM THE PI OFFICER AND THE PROJECT ENGINEER OF ANY AND ALL DELAYS AND/OR CHANGES REGARDING THE CONSTRUCTION INITIATION DATE.

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

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

ITEM	DURATION OF CLOSURE	NOTIFICATION TIME FRAME
RAMP & ROAD CLOSURE	>= 2 WEEKS	14 BUSINESS DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	7 BUSINESS DAYS PRIOR TO CLOSURE
	< 12 HOURS	2 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURE/ RESTRICTION	>= 2 WEEKS	7 BUSINESS DAYS PRIOR TO CLOSURE
	< 2 WEEKS	2 BUSINESS DAYS PRIOR TO CLOSURE

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

THE DBT WILL BE RESPONSIBLE FOR NOTIFYING ALL LOCAL, COUNTY, STATE AND FEDERAL EMERGENCY SERVICES, SCHOOL DISTRICTS, GCRTA AND ADJACENT RESIDENTS AND BUSINESSES OF UPCOMING ROAD AND RAMP CLOSURES. ADVANCE NOTIFICATION WILL OCCUR NO LATER THAN FOURTEEN (14) DAYS PRIOR TO CLOSING THE ROAD. IF, SUBSEQUENT TO THE ADVANCE NOTIFICATION, THE START DATE IS CHANGED, THEN A NEW SEVEN (7) DAY NOTIFICATION WILL BE REQUIRED. THE ROAD/RAMP CANNOT BE CLOSED UNLESS PRIOR NOTIFICATION HAS BEEN ACCOMPLISHED. THE SAME PARTIES WILL BE NOTIFIED WHEN THE CLOSURE HAS CONCLUDED AND THE ROAD IS BACK OPEN TO TRAFFIC. NOTIFICATION OF CLOSURES SHALL BE COORDINATED WITH THE PUBLIC INFORMATION OFFICERS, AMANDA MCFARLAND, PI OFFICER, (216) 584-2005, D12.PUBLIC.INFORMATION@DOT.OHIO.GOV

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ITEM 614, REPLACEMENT DRUM

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

ITEM 614, REPLACEMENT SIGN

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

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

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

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

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

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

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

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

ITEM 614 - WORK ZONE RAISED PAVEMENT MARKERS ON CONCRETE SURFACES

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

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

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

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

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MAINTENANCE OF TRAFFIC - GENERAL NOTES

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STAGE 2 - FRONTAGE RD. - PRE-PHASE

CONSTRUCTION OF FRONTAGE ROAD SHALL BE IN CONCURRENCE WITH PHASES 1 AND 2 OF BU-2 (I.R.-77 AND RAMPS) AND MUST BE OPENED TO TRAFFIC PRIOR TO THE 270 DAY CLOSURE OF BROADWAY BY MEANS OF PERMANENT AND TEMPORARY FRONTAGE, AS SHOWN IN THESE PLANS.

THE CONTRACTOR SHALL CLOSE THE BROADWAY AVE. RAMP AND SHALL DETOUR TRAFFIC FROM BROADWAY AVENUE S.B., TO PERSHING AVENUE, TO I.R.-77, AS SHOWN IN BU-1 (BROADWAY RAMP MOT). ROSEVILLE CT. SHALL REMAIN OPEN FOR THE DURATION OF PHASES 1 AND 2.

THE CONTRACTOR SHALL CONSTRUCT FRONTAGE RD., THE MULTI-USE PATH (MUP), UP TO STATION 47+41.32 ON FRONTAGE RD., AND THE ENTIRETY OF WALL 3.

STAGE 2 - BROADWAY AVE. & FRONTAGE RD. - PHASE 1

PRIOR TO THE START OF FRONTAGE ROAD PHASE 1 CONSTRUCTION, PLACE ALL TEMPORARY TRAFFIC CONTROL DEVICE, TEMPORARY PAVEMENT, AND TEMPORARY PAVEMENT MARKINGS REQUIRED FOR PHASE 1 OPERATIONS.

THE CONTRACTOR SHALL DETOUR PEDESTRIANS AS SHOWN ON SHEET 20.

SHIFT EASTBOUND AND WESTBOUND TRAFFIC FROM BROADWAY AVE. WEST, ONTO THE TEMPORARY PAVEMENT. THE SHIFTING OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE STANDARD CONSTRUCTION DRAWINGS AND AS SHOWN IN THE PLANS.

THE CONTRACTOR SHALL CONSTRUCT ALL OF THE BROADWAY AVE. STRUCTURE (CUY-77-1409), WALL 2A, WALL 2B, PORTIONS OF BROADWAY AVE., THE TEMPORARY PAVEMENT, CURB, SIDEWALK, GUARDRAIL REQUIRED FOR FRONTAGE ROAD PHASE 2, AS SHOWN IN THE PLANS.

STAGE 2 - BROADWAY AVE. & FRONTAGE RD. - PHASE 2

PRIOR TO THE START OF FRONTAGE ROAD PHASE 2 CONSTRUCTION, PLACE ALL TEMPORARY TRAFFIC CONTROL DEVICE, TEMPORARY PAVEMENT, AND TEMPORARY PAVEMENT MARKINGS REQUIRED FOR PHASE 2 OPERATIONS.

THE CONTRACTOR SHALL CLOSE DILLE AVE. FOR A MAXIMUM OF 14 DAYS, AFTER WHICH ACCESS TO BROADWAY AVE. SHALL BE RESTORED. AS SHOWN ON SHEET 31.

THE CONTRACTOR SHALL CLOSE ROSEVILLE CT. FOR A MAXIMUM OF 60 DAYS, AFTER WHICH ACCESS TO BROADWAY AVE. SHALL BE RESTORED.

THE CONTRACTOR SHALL CLOSE FRONTAGE RD. FOR A MAXIMUM OF 90 DAYS, AFTER WHICH ACCESS TO BROADWAY AVE. SHALL BE RESTORED.

THE CONTRACTOR SHALL DETOUR PEDESTRIANS AS SHOWN ON SHEET 21.

SHIFT EASTBOUND AND WESTBOUND TRAFFIC FROM BROADWAY AVE. EAST, ONTO THE TEMPORARY PAVEMENT. THE SHIFTING OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE STANDARD CONSTRUCTION DRAWINGS AND AS SHOWN IN THE PLANS.

THE CONTRACTOR SHALL CONSTRUCT THE REMAINING PORTIONS OF BROADWAY AVE., ALL OF DILLE AVE., ALL OF ROSEVILLE CT., AND THE REMAINING PORTIONS OF FRONTAGE RD AND THE MULTI-USE PATH.

THE CONTRACTOR SHALL UTILIZE THE SCD MT-95.31 AND MT-95.32 TO CLOSE ONE (1) LANE ON BROADWAY AVE., IN ORDER TO REMOVE THE TEMPORARY PAVEMENT, CURB, SIDEWALK, AND GUARDRAIL REQUIRED FOR PHASE 2 OPERATIONS AND INSTALL THE PERMANENT CURB, SIDEWALK, AND GRADING.

DRIVEWAY ACCESS

THE CONTRACTOR SHALL KEEP ACCESS TO ALL DRIVEWAYS ALONG BROADWAY AVENUE, WITHIN THE PROJECT LIMITS, THROUGHOUT THE DURATION OF THE PROJECT, AS SHOWN IN THE PLANS.

LEGEND:

PB	ITEM 622 - PORTABLE BARRIER
IA	ITEM 614 - WORK ZONE IMPACT ATTENUATOR
	DRUMS - SPACED PER STANDARD CONSTRUCTION DRAWING
	TRAFFIC FLOW DIRECTION
	WORK ZONE
	ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, PLACED THIS PHASE
	TEMPORARY PAVEMENT COMPLETED IN PRIOR PHASE
	PROPOSED PAVEMENT COMPLETED IN PRIOR PHASE
CL	ITEM 614 - WORK ZONE CENTER LINE, YELLOW, CLASS I, 642 PAINT
W	ITEM 614 - WORK ZONE EDGE LINE, WHITE, CLASS I, 642 PAINT
Y	ITEM 614 - WORK ZONE EDGE LINE, YELLOW, CLASS I, 642 PAINT
D	ITEM 614 - WORK ZONE DOTTED LINE, CLASS I, 642 PAINT
SL	ITEM 614 - WORK ZONE STOP LINE, CLASS I, 642 PAINT
XW	ITEM 614 - WORK ZONE CROSSWALK LINE, CLASS I, 642 PAINT
PB	PORTABLE BARRIER
TSW	ITEM 614 - MAINTAINING TRAFFIC, MISC: TEMPORARY SIDEWALK
TC	ITEM 614 - MAINTAINING TRAFFIC, MISC: TEMPORARY CURB
GR	ITEM 606 - GUARDRAIL, TYPE MGS
LGR	ITEM 606 - GUARDRAIL, TYPE MGS WITH LONG POSTS
TP	ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A
TD	ITEM 611 - CATCH BASIN, NO. 3 & 12" CONDUIT, TYPE B

NOTES:

1. FOR MOT TYPICAL SECTIONS, SEE SHEET 22

2. THE CONTRACTOR SHALL COVER OR REMOVE ANY EXISTING SIGNAGE OR PAVEMENT MARKINGS IN CONFLICT WITH THE PROPOSED MOT LANE CONFIGURATION.

3. FOR LANE SHIFT SIGNING, SEE STANDING CONSTRUCTION DRAWING MT-102.10 OR MT-102.20.

4. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF MT-99.30 FOR WORK ZONE DELINEATION FOR LANE SHIFTS AND CROSSOVERS.

5. CONTRACTOR ACCESS POINTS SHALL BE PER STANDARD CONSTRUCTION DRAWING MT-103.10. LOCATION SHALL BE DETERMINED BY THE DBT IN THE FIELD.

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MAINTENANCE OF TRAFFIC - SEQUENCE OF CONSTRUCTION

CUY-77-13.80

1

BROADWAY AVE

D3-1-48 B/O

ROAD CLOSED AHEAD

W20-3-36

2

BROADWAY AVE

D3-1-48 B/O

DETOUR AHEAD

W20-2-36

3

BRIDGE OUT
0.4 MILES AHEAD
LOCAL TRAFFIC ONLY

R11-3B-60

4

BROADWAY AVE

D3-1 -48 B/O

DETOUR

M4-9L-30

5

BROADWAY AVE

D3-1 -48 B/O

DETOUR

M4-9R-30

6

WILL BE
CLOSED
FOR DAYS
INFO:

W20-H13-60

8

BROADWAY AVE

D3-1 -48 B/O

DETOUR

M4-9-30

9

BROADWAY AVE

D3-1 -48 B/O

DETOUR

M4-9-30

10

SOUTH

M3-3-24

INTERSTATE 77

M1-1-24-2

M6-3-21

7

R11-2-48

ROAD CLOSED

R5-1-48

DO NOT ENTER

R11-2-48

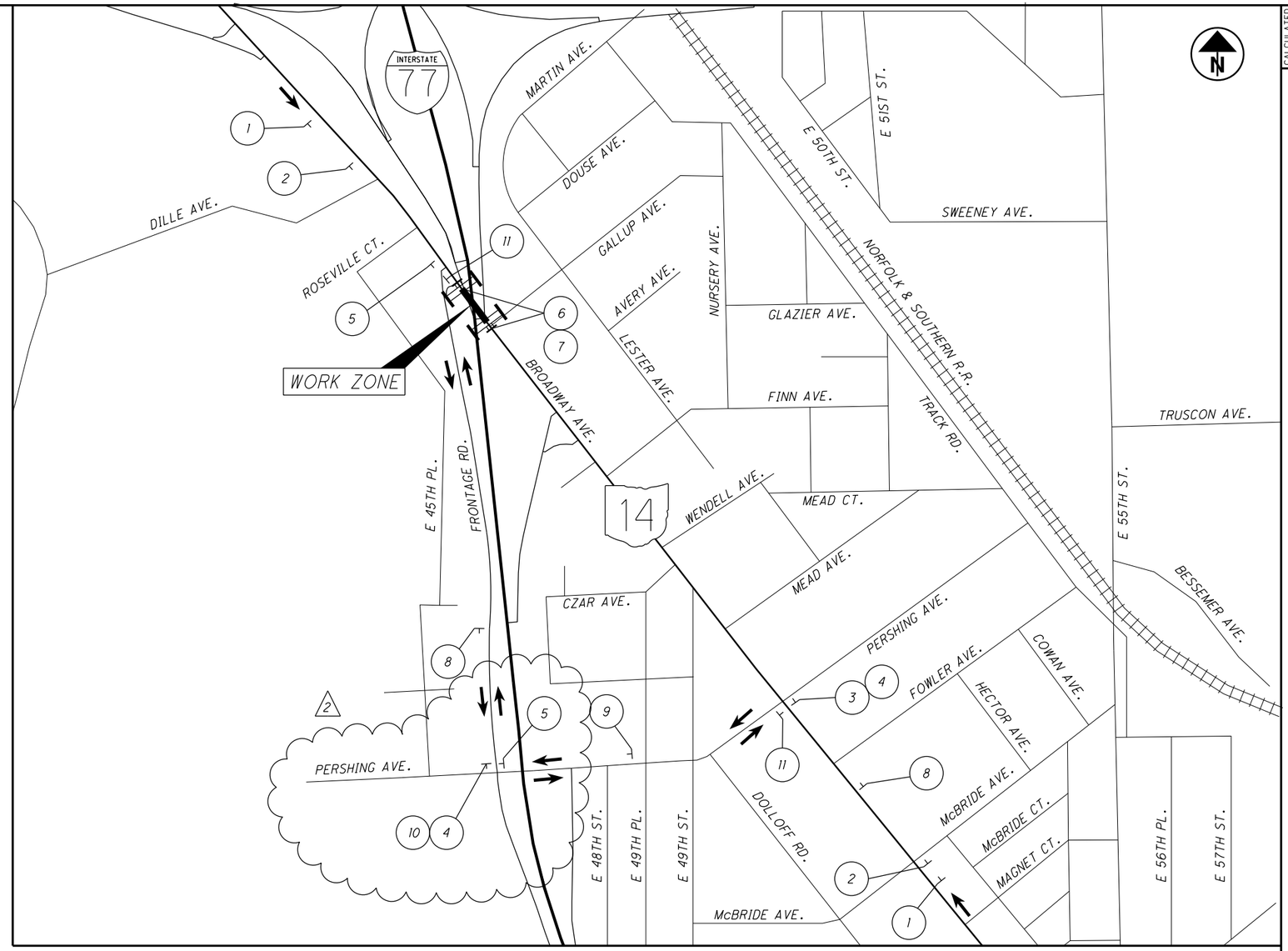
ROAD CLOSED

10' TYPE III BARRICADES
(SOLID ACROSS STREET)

11

END DETOUR

M4-8A-24



NOTES:

1. DETOUR SIGNING LOCATIONS SHALL BE PER OMUTCD AND ROAD CLOSURES SHALL BE PER MT-101.60.
2. DETOUR SIGNS SHALL BE UNCOVERED AND VISIBLE TO TRAFFIC ONLY WHEN THE ROAD CLOSURE IN IS EFFECT.
3. COVER ALL CONFLICTING SIGNING PRIOR TO THE CLOSURE.

LEGEND:

- DIRECTION OF TRAVEL
- SINGLE POST SIGN
- TYPE III BARRICADE WITH SIGN

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BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
2	11/13/17	ADDED ADDITIONAL SIGNING
NO.	DATE	DESCRIPTION
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FRONTAGE RD. - PHASE 1 DETOUR PLAN

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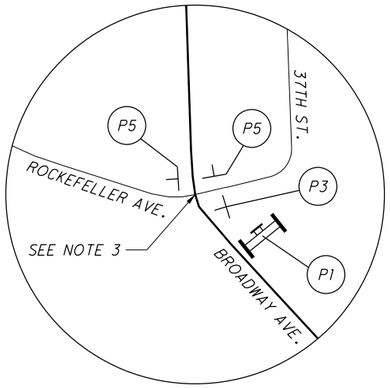
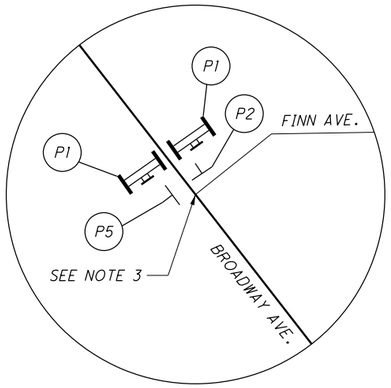
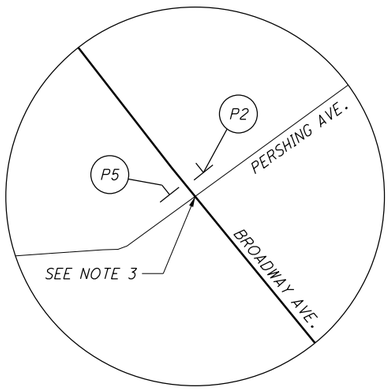


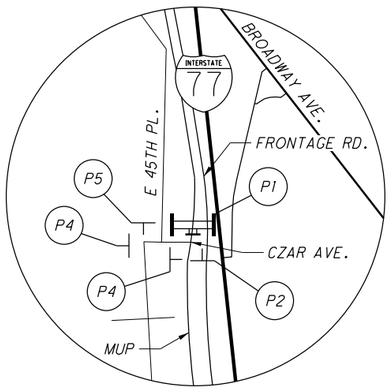
DETAIL A



DETAIL C

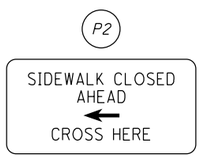


DETAIL B

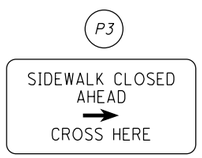


DETAIL D

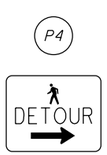
R9-9-24



R9-11-24

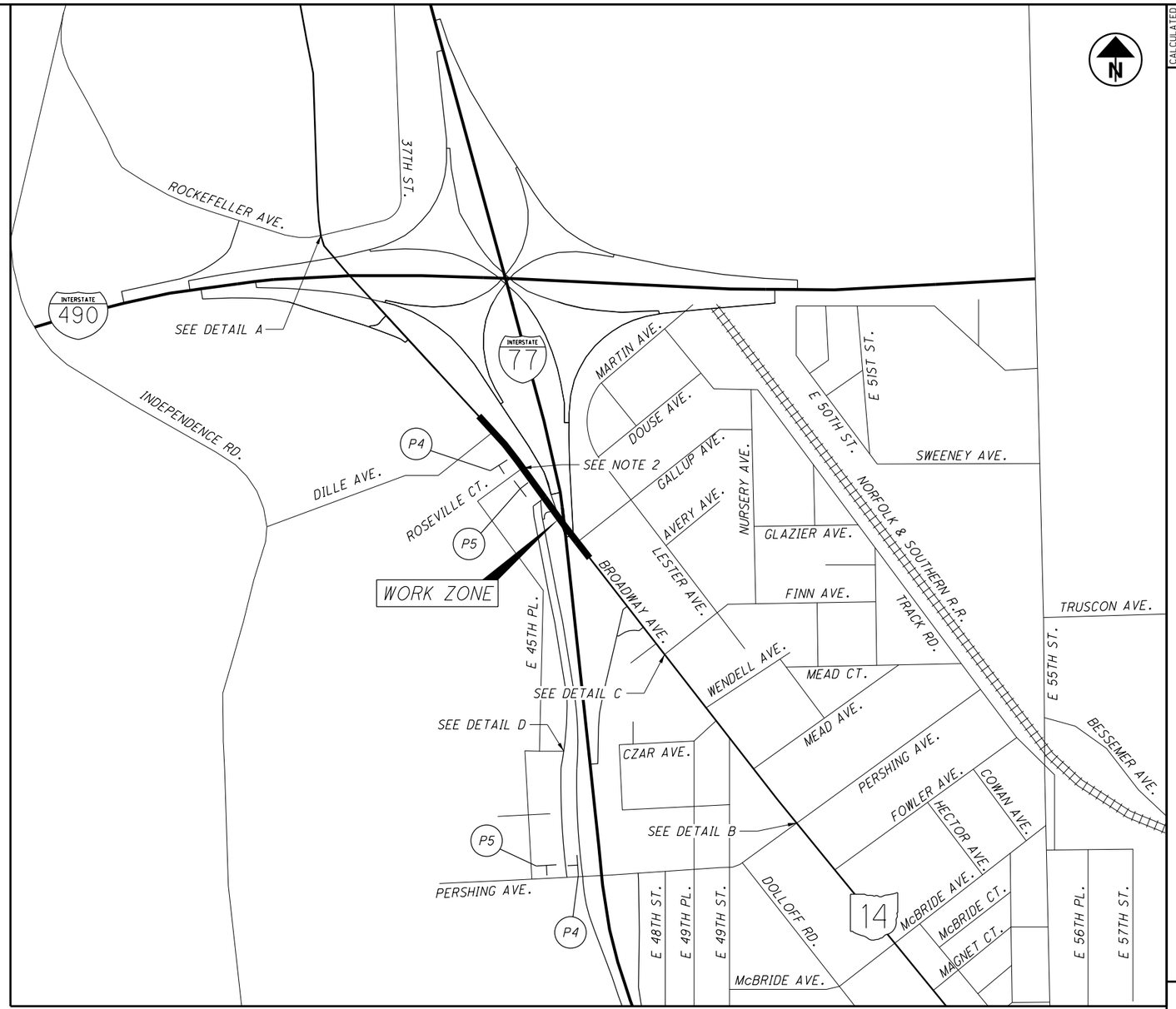


R9-11-24



M4-9BR-30

M4-9b-30



NOTES:

1. THIS DETOUR SHALL BE IN EFFECT FOR THE DURATION OF PHASE 1, SHOWN ON SHEETS 24 TO 26
2. THE CONTRACTOR SHALL INSTALL TEMPORARY SIDEWALK AS SHOWN ON SHEETS 24 TO 26
3. THE CONTRACTOR SHALL USE THE EXISTING CROSSWALKS WHEN DETOURING PEDESTRIANS
4. FOR PEDESTRIAN TRAFFIC CONTROL & WORK AREA BARRIERS, SEE STANDAD CONSTRUCTION DRAWING MT-110.10

LEGEND:

SINGLE POST SIGN

TYPE III BARRICADE WITH SIGN

RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf

09/07/2017 Brian.Link

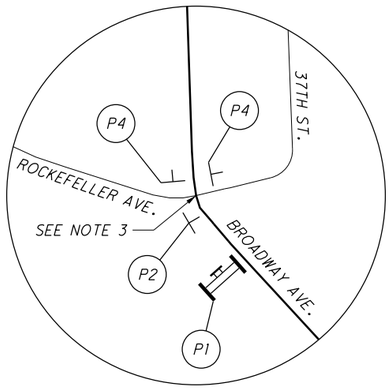
BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

CALCULATED MLL
CHECKED SWC

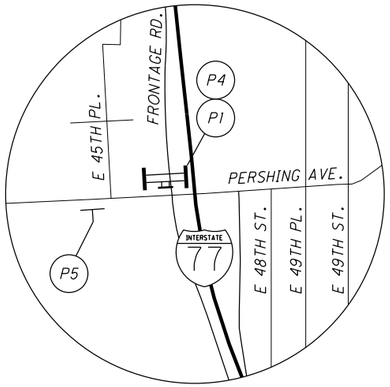
BROADWAY AVE. - PHASE 1 PEDESTRIAN DETOUR PLAN

CUY-77-13.80

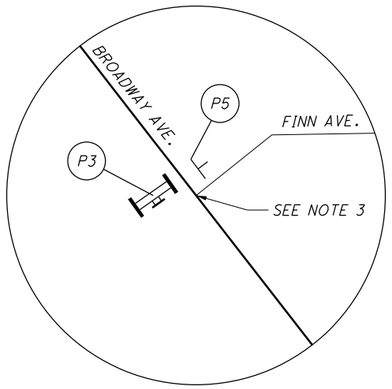
20
95



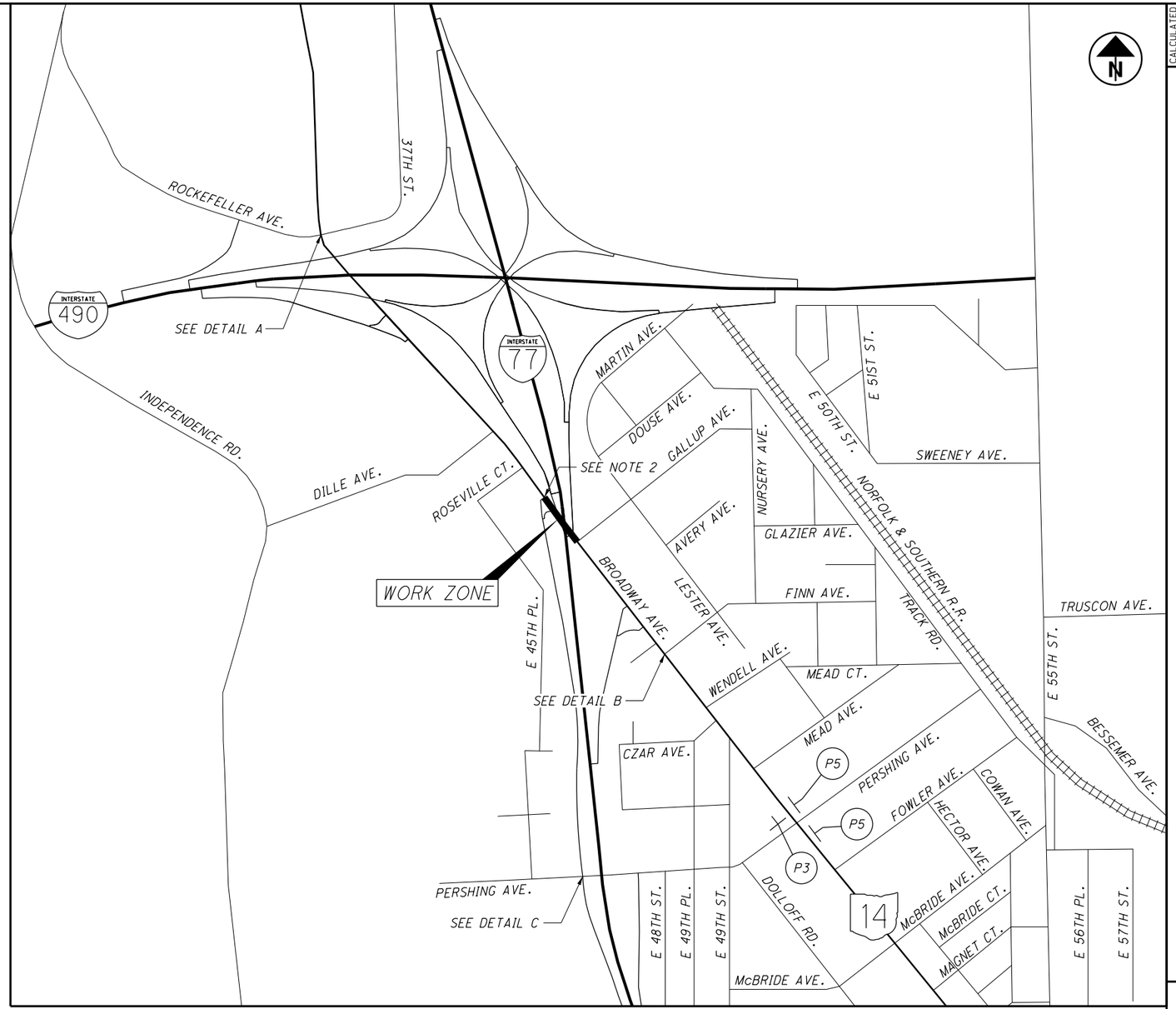
DETAIL A



DETAIL C



DETAIL B



P1

SIDEWALK CLOSED

R9-9-24

P2

SIDEWALK CLOSED AHEAD
← CROSS HERE

R9-11-24

P3

SIDEWALK CLOSED AHEAD
→ CROSS HERE

R9-11-24

P4

DETOUR →

M4-9BR-30

P5

DETOUR ←

M4-9b-30

RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf	
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NOTES:

1. THIS DETOUR SHALL BE IN EFFECT FOR THE DURATION OF PHASE 2, SHOWN ON SHEETS 27 TO 30.
2. THE CONTRACTOR SHALL INSTALL TEMPORARY SIDEWALK AS SHOWN ON SHEETS 27 TO 30.
3. THE CONTRACTOR SHALL USE THE EXISTING CROSSWALKS WHEN DETOURING PEDESTRIANS
4. FOR PEDESTRIAN TRAFFIC CONTROL & WORK AREA BARRIERS, SEE STANDAD CONSTRUCTION DRAWING MT-110.10

LEGEND:

SINGLE POST SIGN

TYPE III BARRICADE WITH SIGN

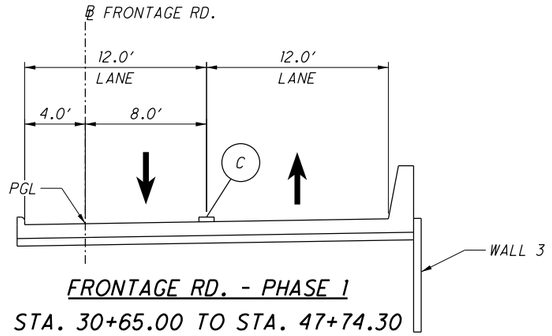
BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

NO.	DATE	DESCRIPTION
		ISSUE RECORD

CALCULATED MLL
CHECKED SWC

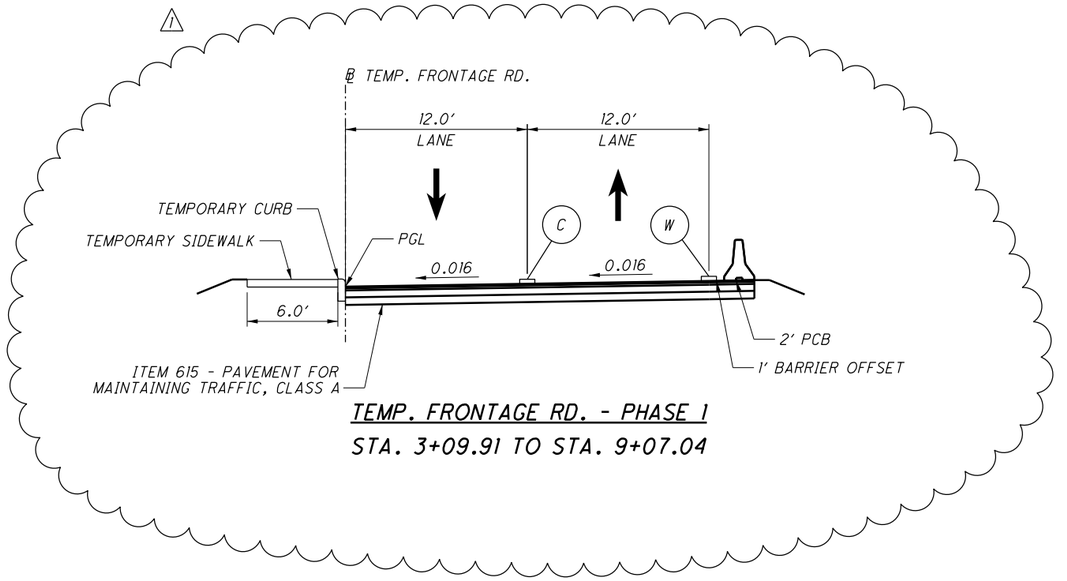
BROADWAY AVE. - PHASE 2 PEDESTRIAN DETOUR PLAN

CUY-77-13.80



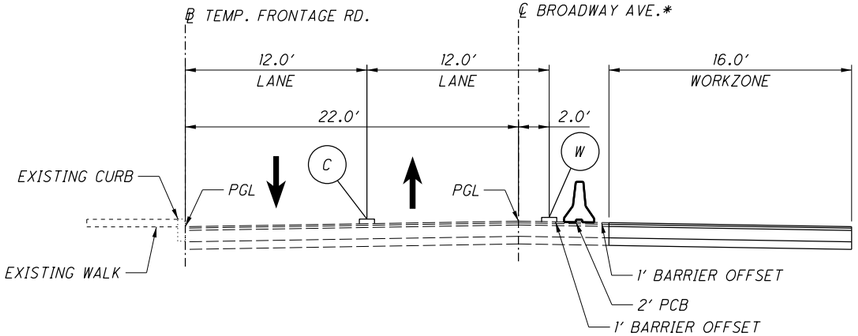
FRONTAGE RD. - PHASE 1

STA. 30+65.00 TO STA. 47+74.30



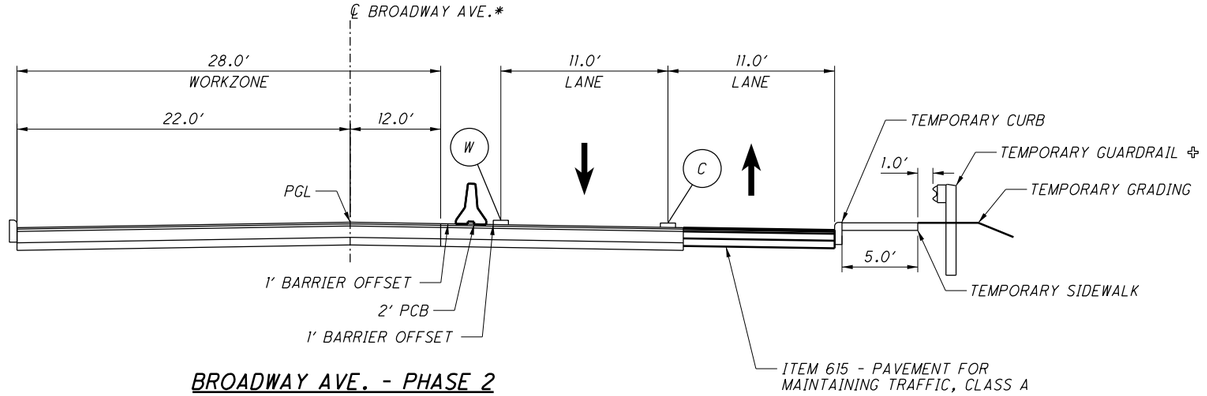
TEMP. FRONTAGE RD. - PHASE 1

STA. 3+09.91 TO STA. 9+07.04



TEMP. FRONTAGE RD. - PHASE 1

STA. 9+07.04 TO STA. 10+35.19



BROADWAY AVE. - PHASE 2

STA. 111+00.00

✣ GUARDRAIL SHALL BE ITEM 606 - GUARDRAIL, TYPE MGS WITH LONG POSTS, AND SHALL BE PLACED FROM STA. 111+87.37 TO STA. 133+87.37. OTHER TEMPORARY GUARDRAIL SHALL BE ITEM 606 - GUARDRAIL, TYPE MGS.

* BROADWAY AVENUE IS SHOWN DOWN STATION

LEGEND:

(W) ITEM 614 - WORK ZONE EDGE LINE, WHITE, CLASS I, 642 PAINT

(C) ITEM 614 - WORK ZONE CENTER LINE, YELLOW, CLASS I, 642 PAINT

RELEASED FOR CONSTRUCTION

BU03_2017.10.27_CCG6B.BU3.RFC Plans_FC8.pd

10/27/2017 | Brian.Link

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
1	9/22/17	ADDED CROSS-SLOPE TO TYPICAL SECTION
NO.	DATE	DESCRIPTION
ISSUE RECORD		

MAINTENANCE OF TRAFFIC - TYPICAL SECTIONS

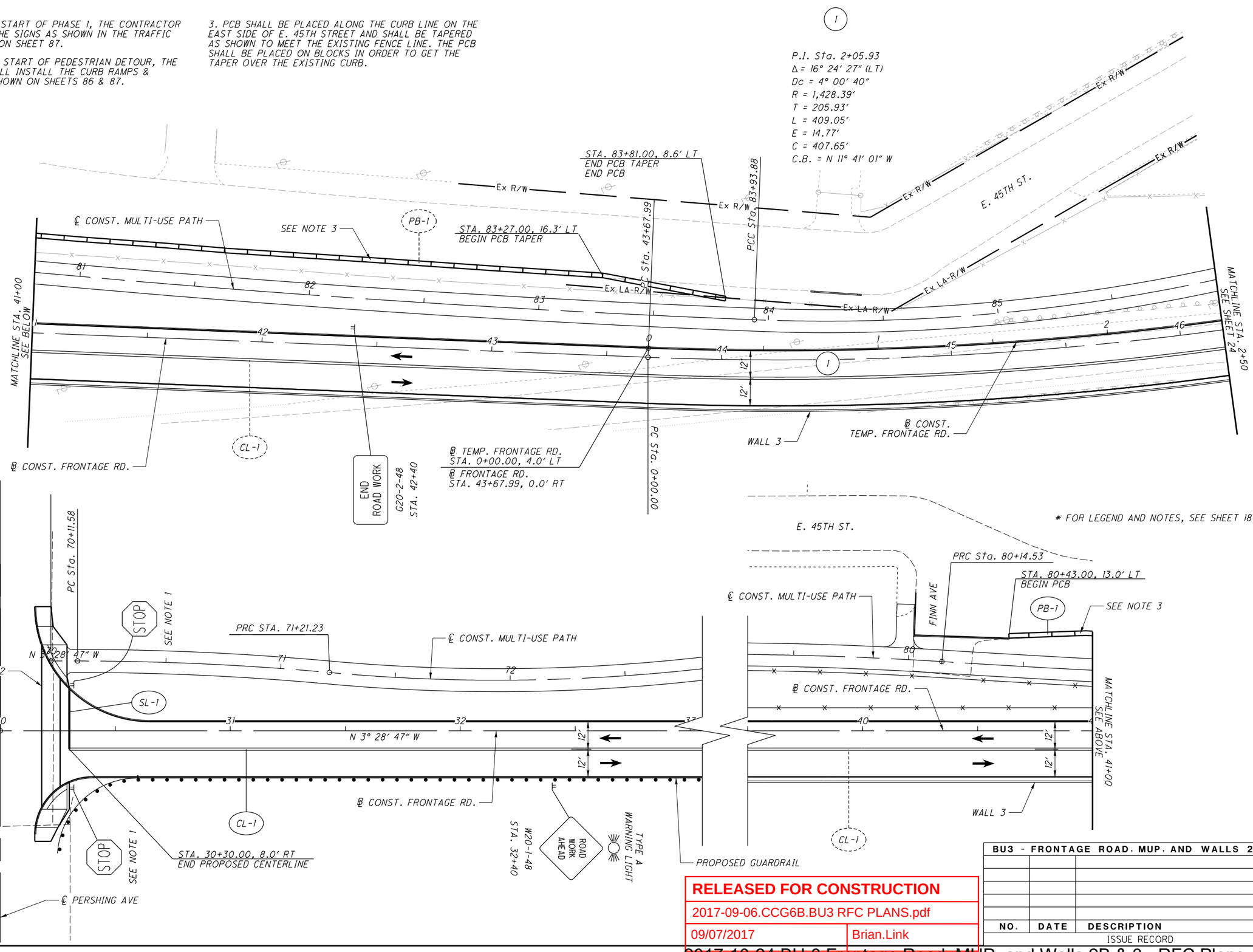
CUY-77-13.80

NOTES:

1. PRIOR TO THE START OF PHASE 1, THE CONTRACTOR SHALL INSTALL THE SIGNS AS SHOWN IN THE TRAFFIC CONTROL PLANS ON SHEET 87.

2. PRIOR TO THE START OF PEDESTRIAN DETOUR, THE CONTRACTOR SHALL INSTALL THE CURB RAMPS & CROSSWALK AS SHOWN ON SHEETS 86 & 87.

3. PCB SHALL BE PLACED ALONG THE CURB LINE ON THE EAST SIDE OF E. 45TH STREET AND SHALL BE TAPERED AS SHOWN TO MEET THE EXISTING FENCE LINE. THE PCB SHALL BE PLACED ON BLOCKS IN ORDER TO GET THE TAPER OVER THE EXISTING CURB.



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2017-09-06.CCG6B.BU3 RFC PLANS.pdf	
09/07/2017	Brian.Link

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

HORIZONTAL SCALE IN FEET

CALCULATED MLL | CHECKED SWC

MAINTENANCE OF TRAFFIC - PHASE 1
FRONTAGE RD. - BEGIN WORK TO STA. 2+50

CUY-77-13.80

23
95

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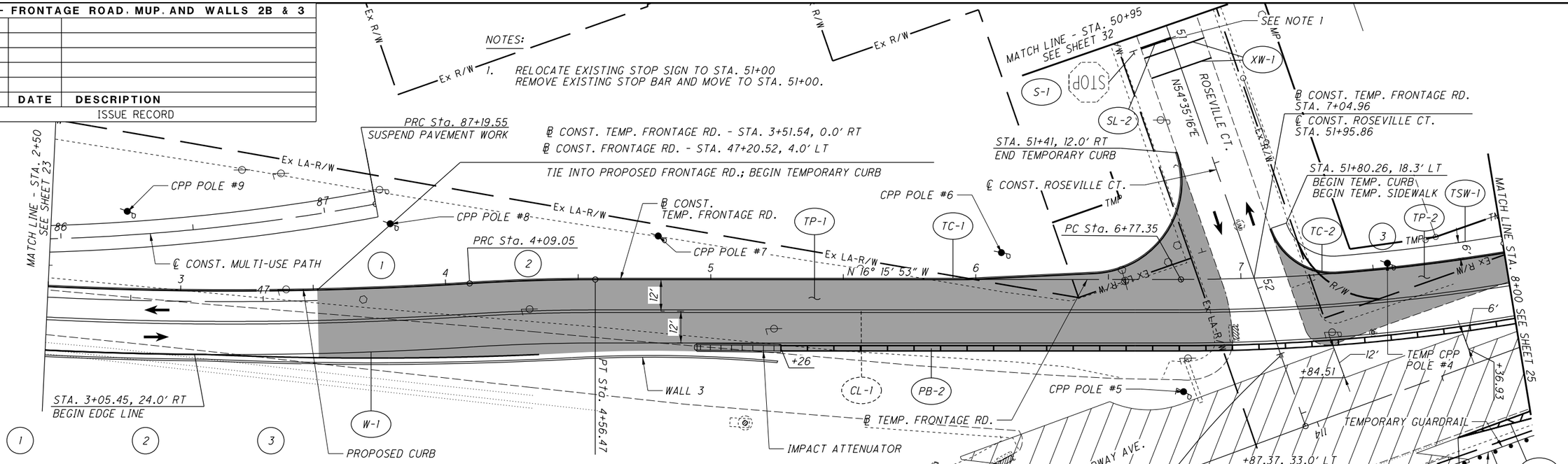
BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

NOTES:

1. RELOCATE EXISTING STOP SIGN TO STA. 51+00
REMOVE EXISTING STOP BAR AND MOVE TO STA. 51+00.



P.I. Sta. 2+05.93
Δ = 16° 24' 27" (LT)
Dc = 4° 00' 40"
R = 1,428.39'
T = 205.93'
L = 409.05'
E = 14.77'
C = 407.65'
C.B. = N 11° 41' 01" W

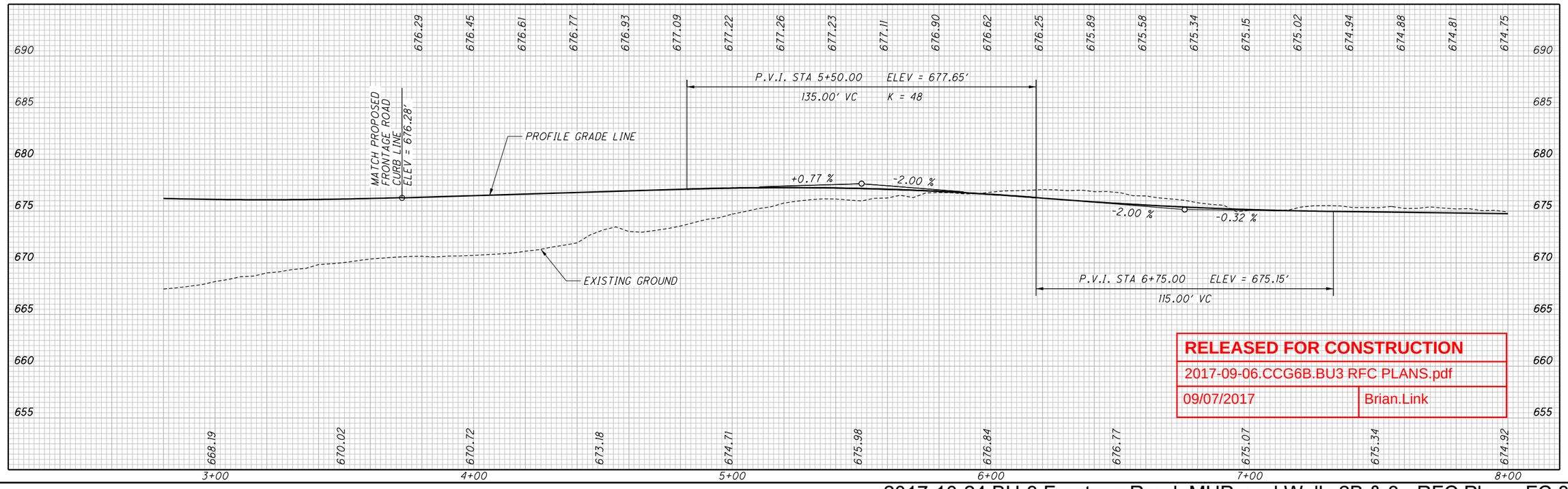
P.I. Sta. 4+32.76
Δ = 3° 37' 22" (RT)
Dc = 7° 38' 22"
R = 750.00'
T = 23.72'
L = 47.42'
E = 0.37'
C = 47.41'
C.B. = N 18° 04' 34" W

P.I. Sta. 8+59.72
Δ = 27° 14' 54" (LT)
Dc = 7° 36' 53"
R = 752.43'
T = 182.37'
L = 357.83'
E = 21.79'
C = 354.47'
C.B. = N 29° 54' 36" W

2 MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2

E ANCHOR ASSEMBLY, MGS TYPE E

* FOR LEGEND AND NOTES, SEE SHEET 18



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2017-09-06.CCG6B.BU3 RFC PLANS.pdf
09/07/2017 Brian.Link

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED SWC CHECKED MLL

MAINTENANCE OF TRAFFIC - PHASE 1
FRONTAGE RD. - STA. 2+50 TO STA. 8+00

CUY-77-13.80

24
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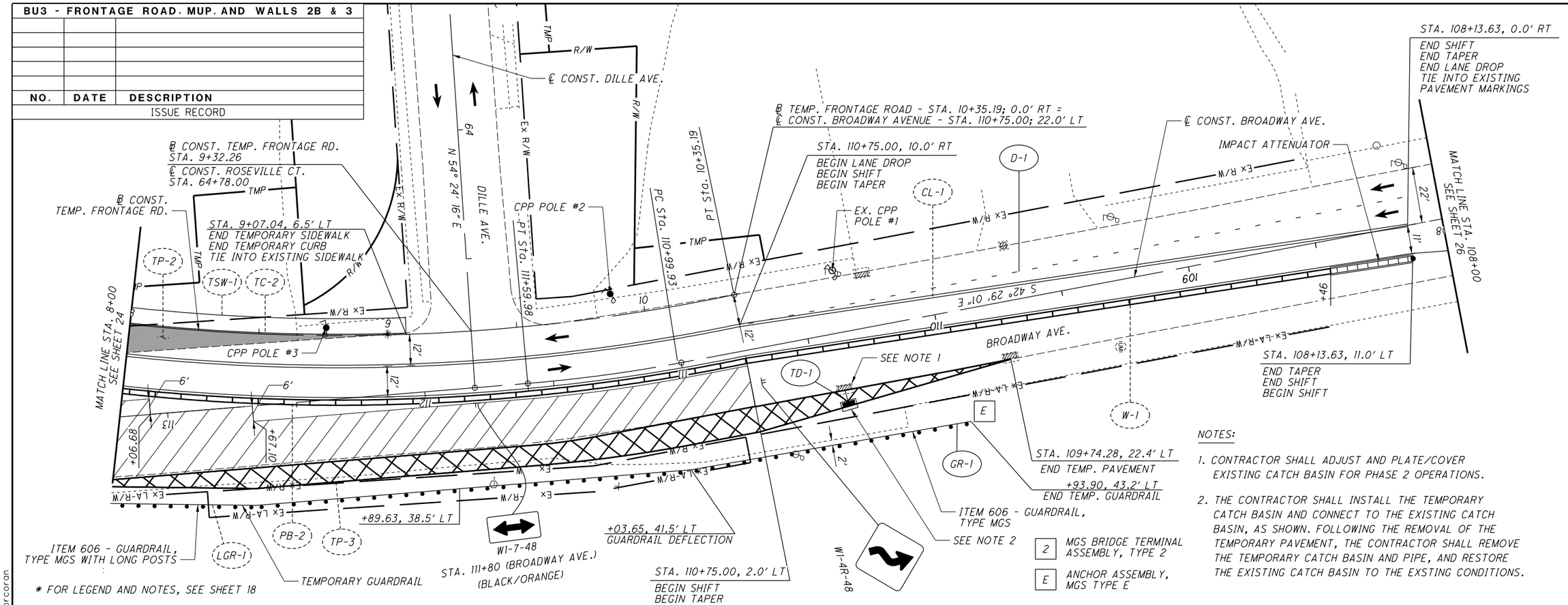
2017-10-24.BU-3 Frontage Road, MUP, and Walls 2B & 3 - RFC Plans_FC 8

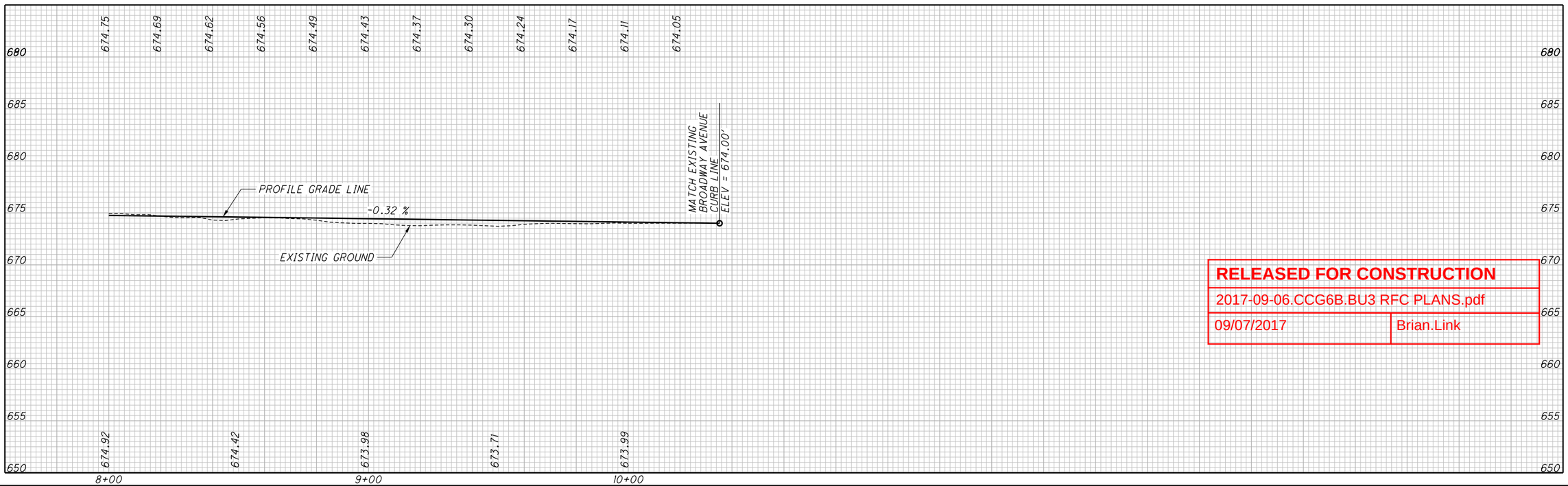
BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		



NOTES:

1. CONTRACTOR SHALL ADJUST AND PLATE/COVER EXISTING CATCH BASIN FOR PHASE 2 OPERATIONS.
2. THE CONTRACTOR SHALL INSTALL THE TEMPORARY CATCH BASIN AND CONNECT TO THE EXISTING CATCH BASIN, AS SHOWN. FOLLOWING THE REMOVAL OF THE TEMPORARY PAVEMENT, THE CONTRACTOR SHALL REMOVE THE TEMPORARY CATCH BASIN AND PIPE, AND RESTORE THE EXISTING CATCH BASIN TO THE EXSTING CONDITIONS.

2	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2
E	ANCHOR ASSEMBLY, MGS TYPE E



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2017-09-06.CCG6B.BU3 RFC PLANS.pdf
09/07/2017 | Brian.Link

HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED MLL | CHECKED SWC

MAINTENANCE OF TRAFFIC - PHASE 1
FRONTAGE RD. - STA. 8+00 TO STA. 108+00

CUY-77-13.80

25
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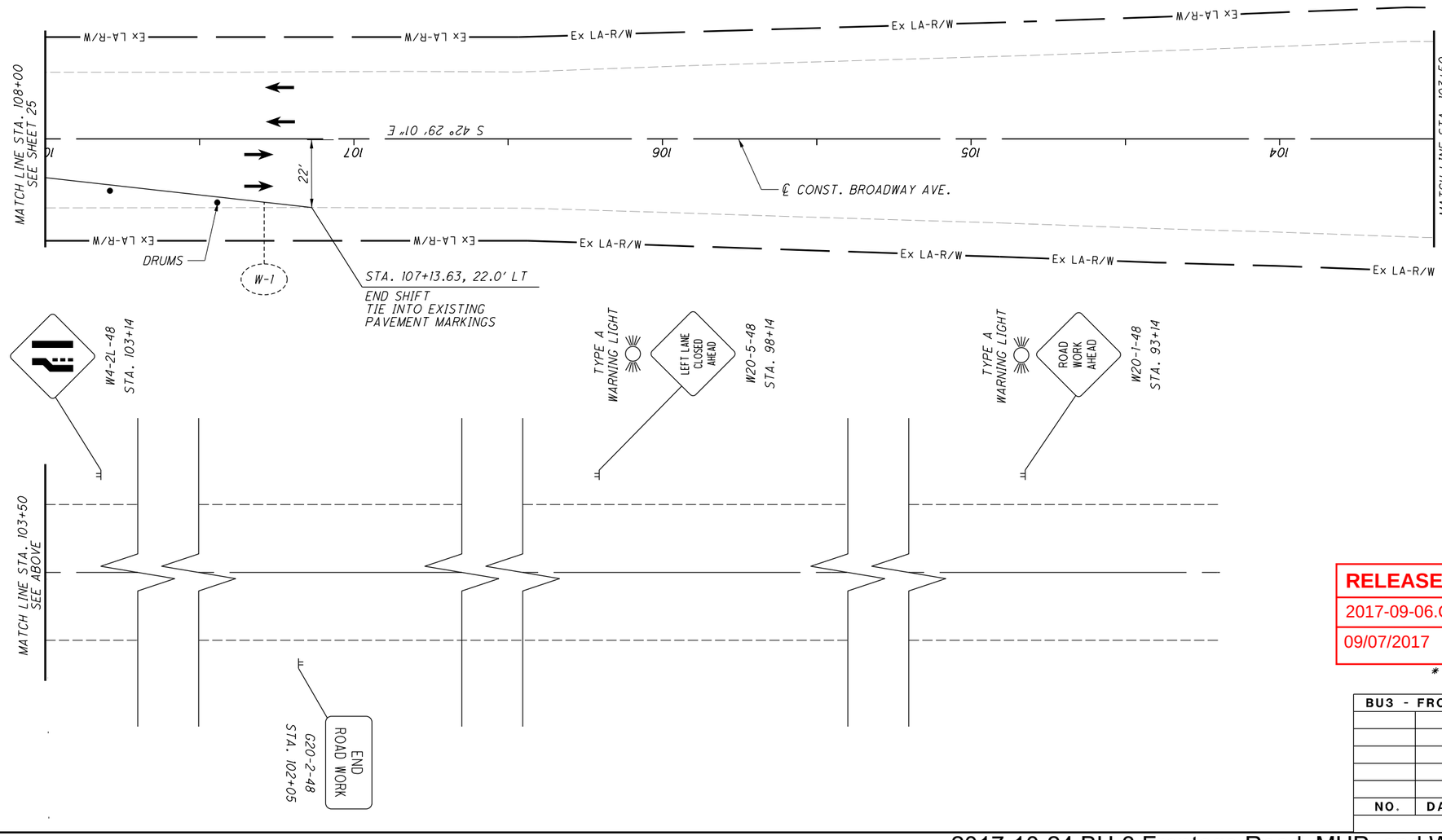

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2017-09-06.CCG6B.BU3 RFC PLANS.pdf

09/07/2017 | Brian.Link

* FOR LEGEND AND NOTES, SEE SHEET 18

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

HORIZONTAL SCALE IN FEET

CALCULATED MLL | CHECKED SWC

MAINTENANCE OF TRAFFIC - PHASE 1
FRONTAGE RD. - STA. 108+00 TO END WORK

CUY-77-13.80

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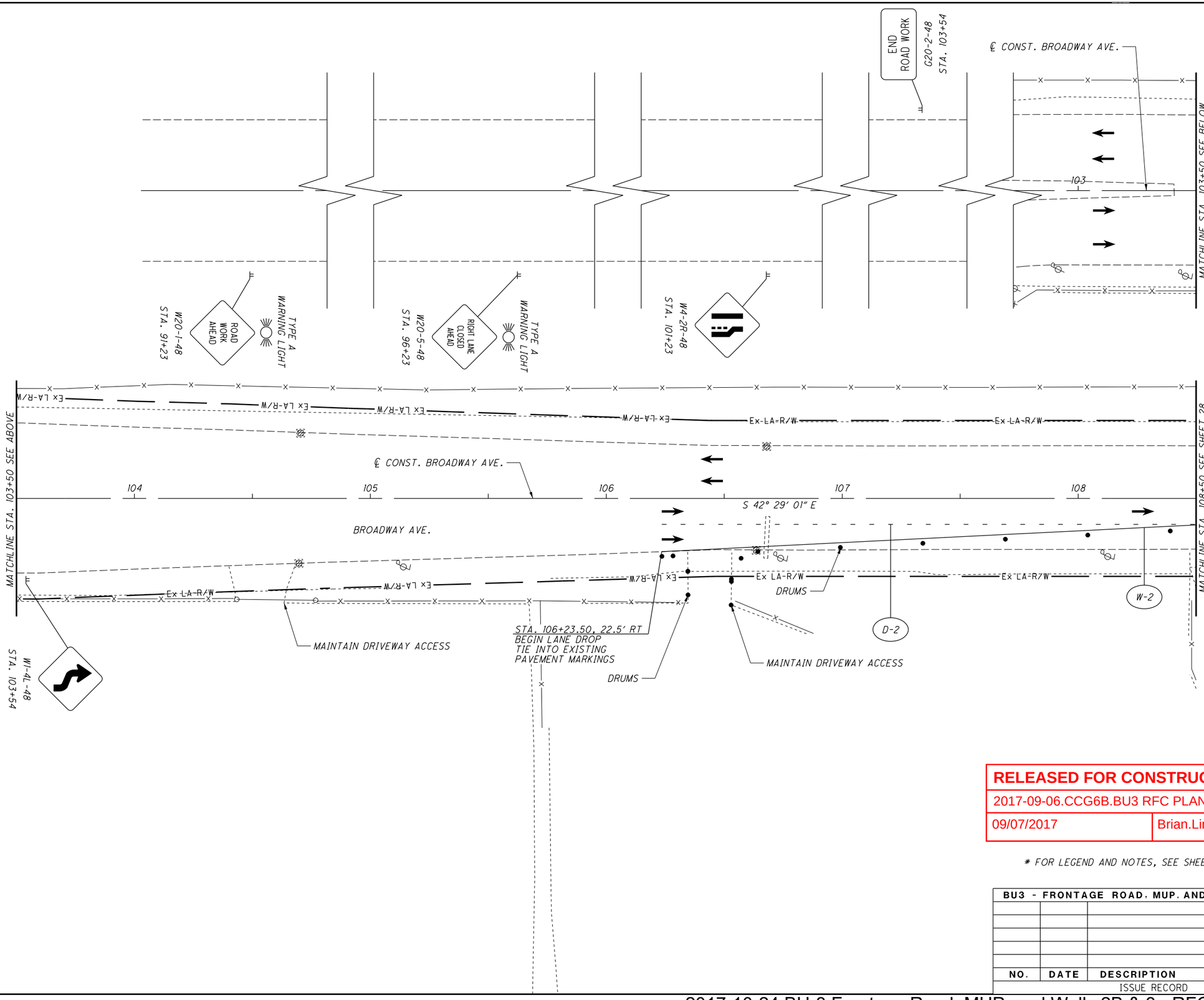
MAINTENANCE OF TRAFFIC - PHASE 2
BROADWAY AVE. - BEGIN WORK TO STA. 108+00

CALCULATED MLL | CHECKED SWC

HORIZONTAL SCALE IN FEET
0 10 20 40

CUY-77-13.80



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2017-09-06.CCG6B.BU3 RFC PLANS.pdf	
09/07/2017	Brian.Link

* FOR LEGEND AND NOTES, SEE SHEET 18

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

NO.	DATE	DESCRIPTION
		ISSUE RECORD

NOTES:

1. FOR DILLE AVE. INTERSECTION MOT, SEE SHEET 31.
2. FOR TEMPORARY GUARDRAIL INFORMATION, SEE PHASE 1 SHEETS 24 TO 25.

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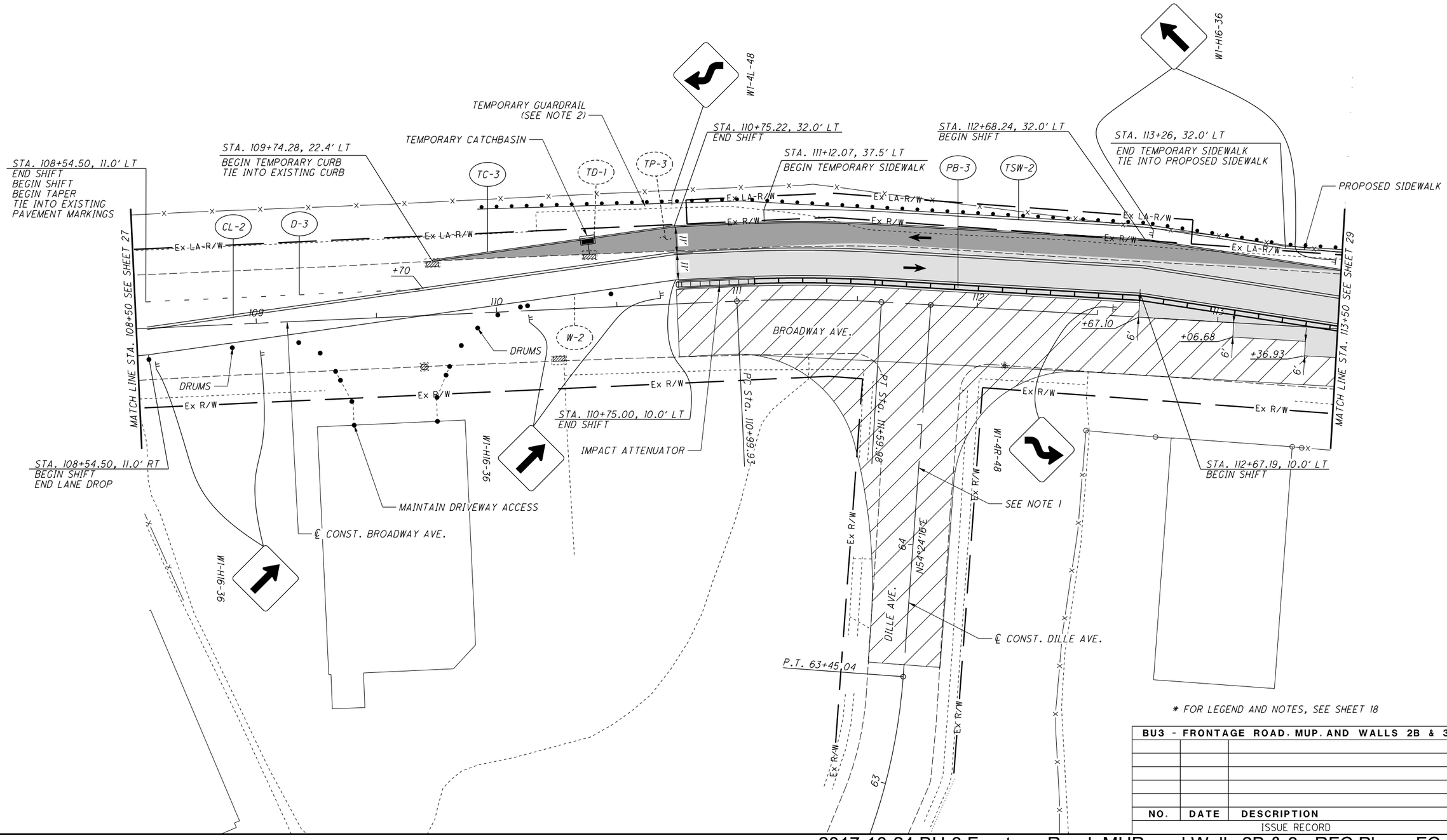
2017-09-06.CCG6B.BU3 RFC PLANS.pdf	
09/07/2017	Brian.Link



* FOR LEGEND AND NOTES, SEE SHEET 18

BU3 - FRONTAGE ROAD. MUP. AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLL
CHECKED SWC

MAINTENANCE OF TRAFFIC - PHASE 2
BROADWAY AVE. - STA. 108+50 TO STA. 113+50

CUY-77-13.80

28
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09/07/2017 Brian.Link

NOTES:

1. FOR TEMPORARY GUARDRAIL INFORMATION, SEE PHASE 1 SHEETS 24 TO 25.

* FOR LEGEND AND NOTES, SEE SHEET 18

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLL
CHECKED SWC

MAINTENANCE OF TRAFFIC - PHASE 2
BROADWAY AVE. - STA. 113+50 TO STA. 118+50

CUY-77-13.80

29
95

STA. 113+52.26, 24.0' LT
END SHIFT
END TEMPORARY CURB
TIE INTO PROPOSED CURB

TEMPORARY GUARDRAIL (SEE NOTE 1)

PROPOSED CURB

PROPOSED SIDEWALK

℄ CONST. BROADWAY AVE.

MATCH LINE STA. 113+50 SEE SHEET 28

MATCH LINE STA. 118+50 SEE SHEET 30

Ex LA-R/W

Ex R/W

11'

12'

+84.51

114 115 116 117 118

S 36° 28' 42" E

BROADWAY AVE.

PB-3 W-2 CL-2

℄ CONST. ROSEVILLE CT.

ROSEVILLE CT.

N54°35'16"E

52 51

TMP

℄ CONST. FRONTAGE RD. - STA. 47+20.52, 0.0' RT

CONSTRUCT REMAINDER OF FRONTAGE ROAD DURING 90 DAY CLOSURE

℄ CONST. FRONTAGE RD.

FRONTAGE RD.

℄ CONST. MULTI-USE PATH

PRC Sta. 87+19.55
BUILD REMAINDER OF MULTI-USE PATH

87

P:\82388_CCG6B\Design\MOT\Sheets\82388_MF3203.dgn Sheet 9/6/2017 11:47:43 AM scorcoran

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

* FOR LEGEND AND NOTES, SEE SHEET 18

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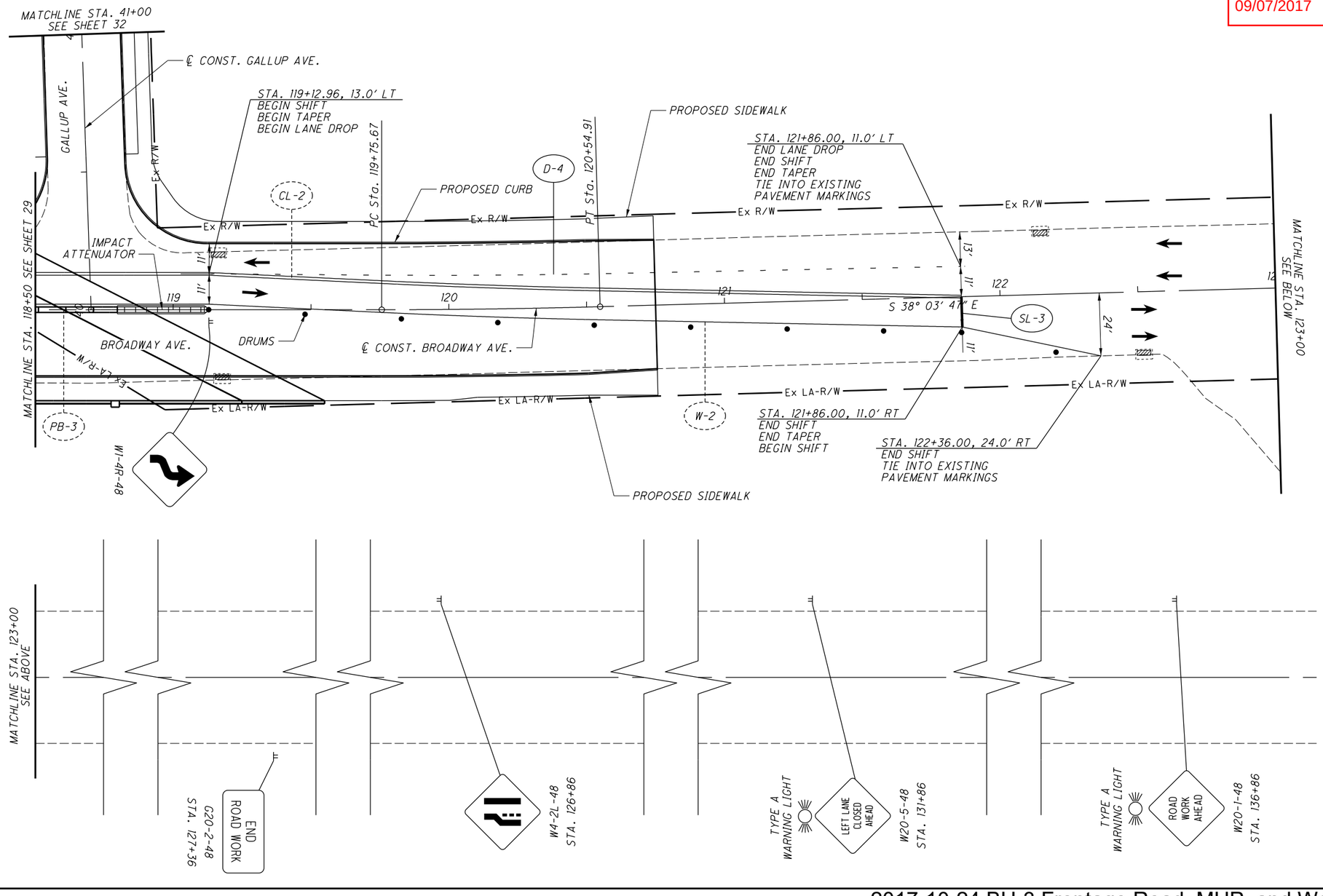
2017-09-06.CCG6B.BU3 RFC PLANS.pdf	
09/07/2017	Brian.Link



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLL
CHECKED SWC

MAINTENANCE OF TRAFFIC - PHASE 2
BROADWAY AVE. - STA. 118+50 TO END WORK

CUY-77-13.80

30
95

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NOTES:

1. FOR DILLE AVE. CLOSURE, SEE SHEET 28
2. FOR TEMPORARY GUARDRAIL INFORMATION, SEE PHASE 1 SHEETS 24 TO 25.

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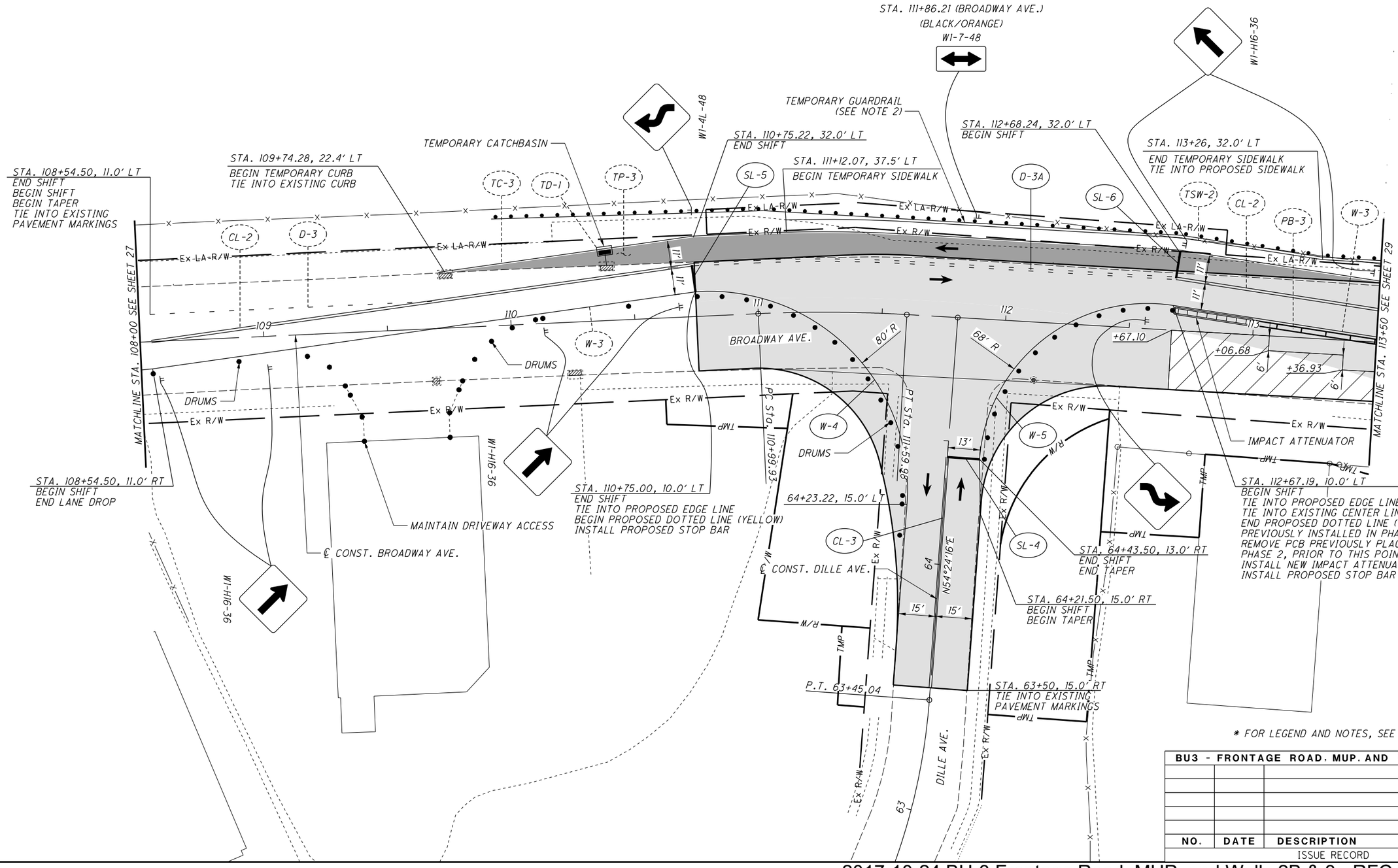
2017-09-06.CCG6B.BU3 RFC PLANS.pdf	
09/07/2017	Brian.Link



* FOR LEGEND AND NOTES, SEE SHEET 18

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLL
CHECKED SWC

MAINTENANCE OF TRAFFIC - PHASE 2
DILLE AVE. - INTERSECTION DETAIL

CUY-77-13.80

31
95

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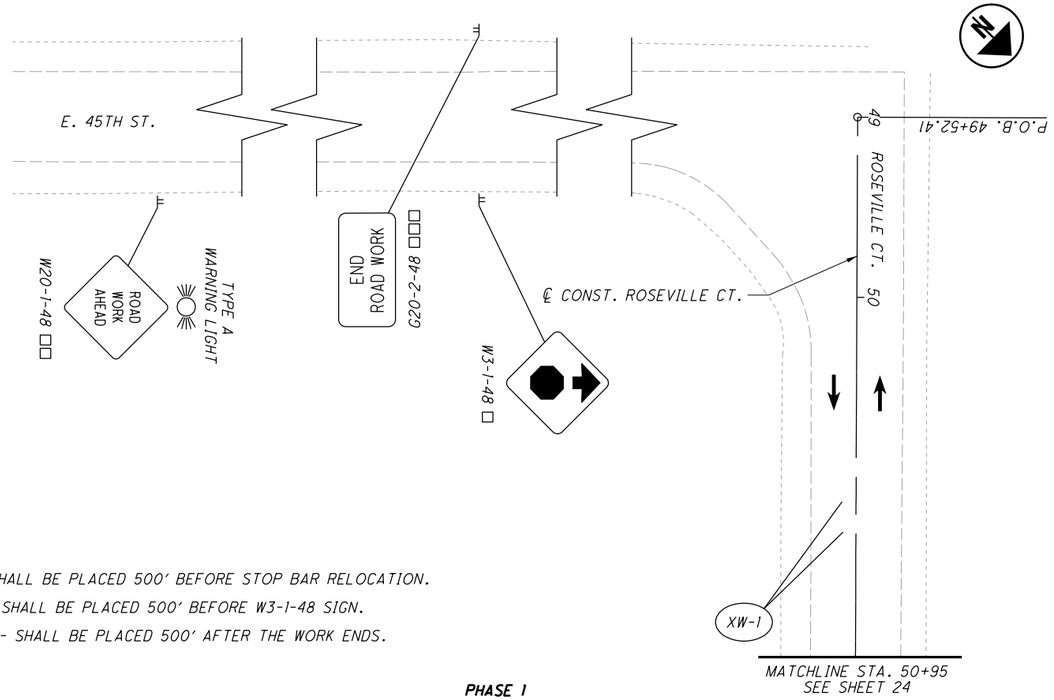
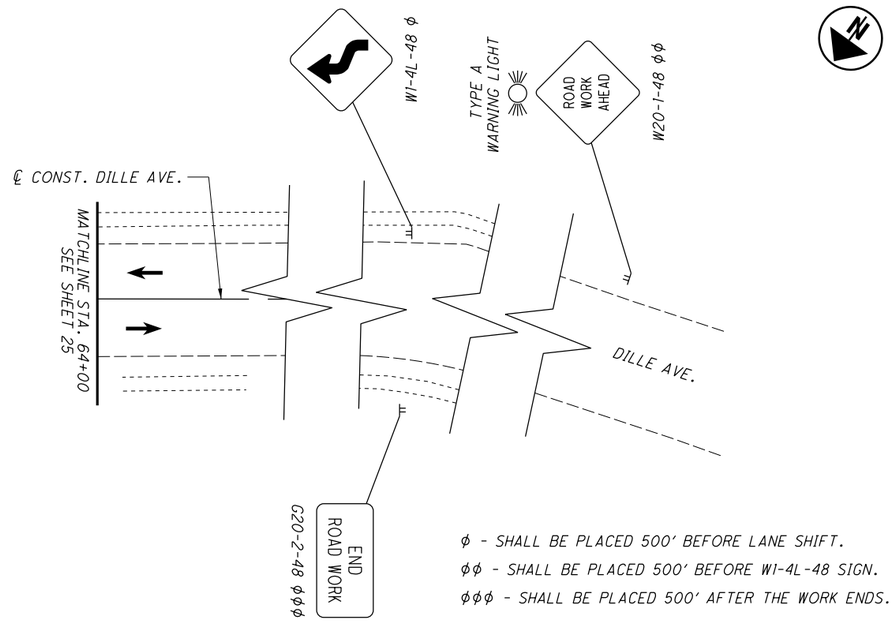


□ - SHALL BE PLACED 500' BEFORE STOP BAR RELOCATION.
□□ - SHALL BE PLACED 500' BEFORE W3-1-48 SIGN.
□□□ - SHALL BE PLACED 500' AFTER THE WORK ENDS.

PHASE 1

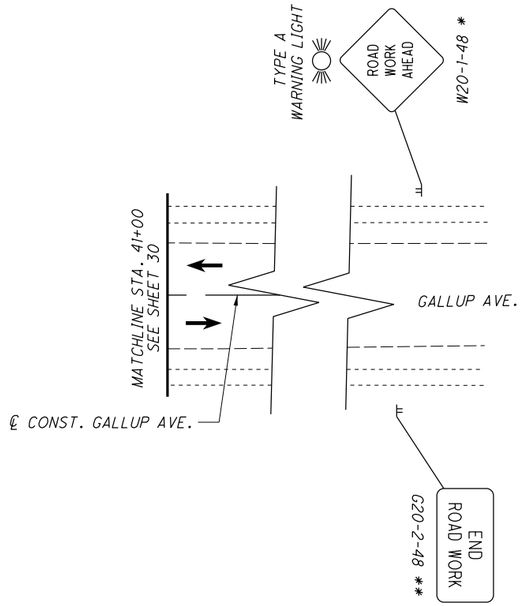
ROSEVILLE CT.



ϕ - SHALL BE PLACED 500' BEFORE LANE SHIFT.
ϕϕ - SHALL BE PLACED 500' BEFORE W1-4L-48 SIGN.
ϕϕϕ - SHALL BE PLACED 500' AFTER THE WORK ENDS.

PHASE 1 & 2

DILLE AVE.



** - SHALL BE PLACED 500' BEFORE THE WORK BEGINS.
** - SHALL BE PLACED 500' AFTER WORK ENDS.

PHASE 2

GALLUP AVE.

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2017-09-06.CCG6B.BU3 RFC PLANS.pdf	
09/07/2017	Brian.Link

FOR LEGEND AND NOTES, SEE SHEET 18

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

CALCULATED MLL
CHECKED SWC

MAINTENANCE OF TRAFFIC - SIGNING PLAN

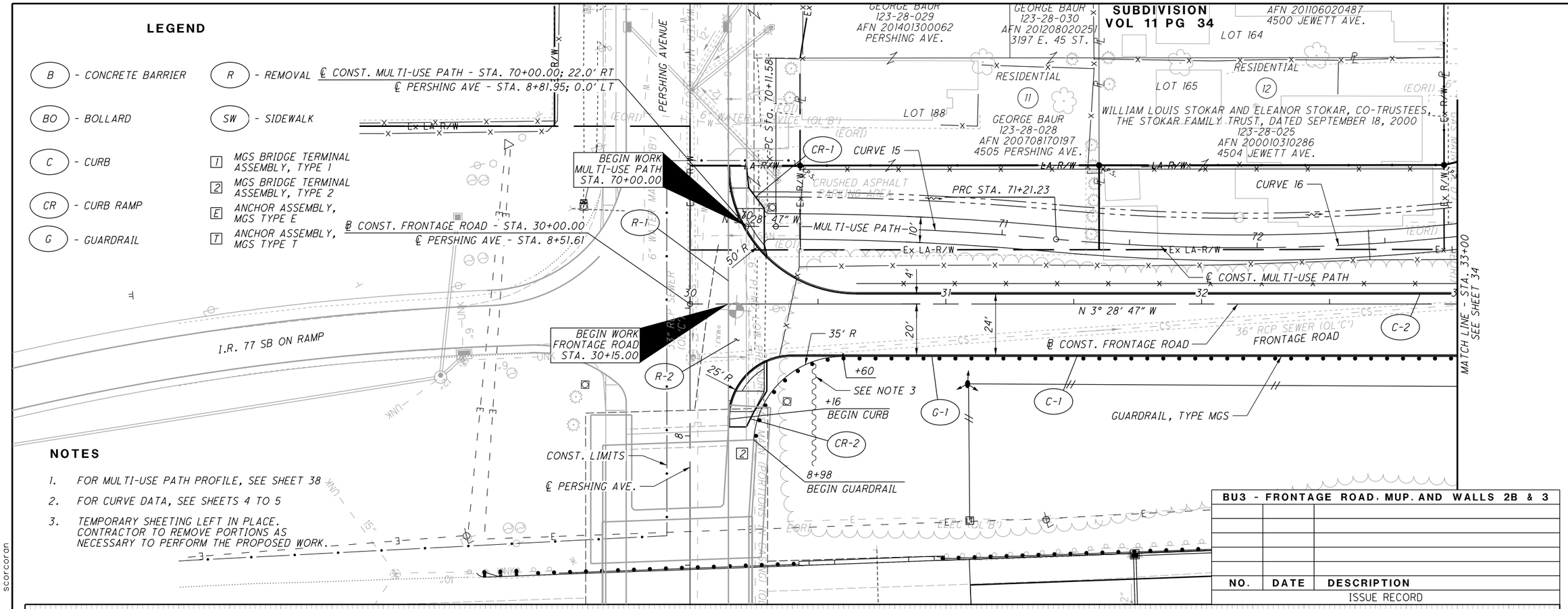
CUY-77-13.80

LEGEND

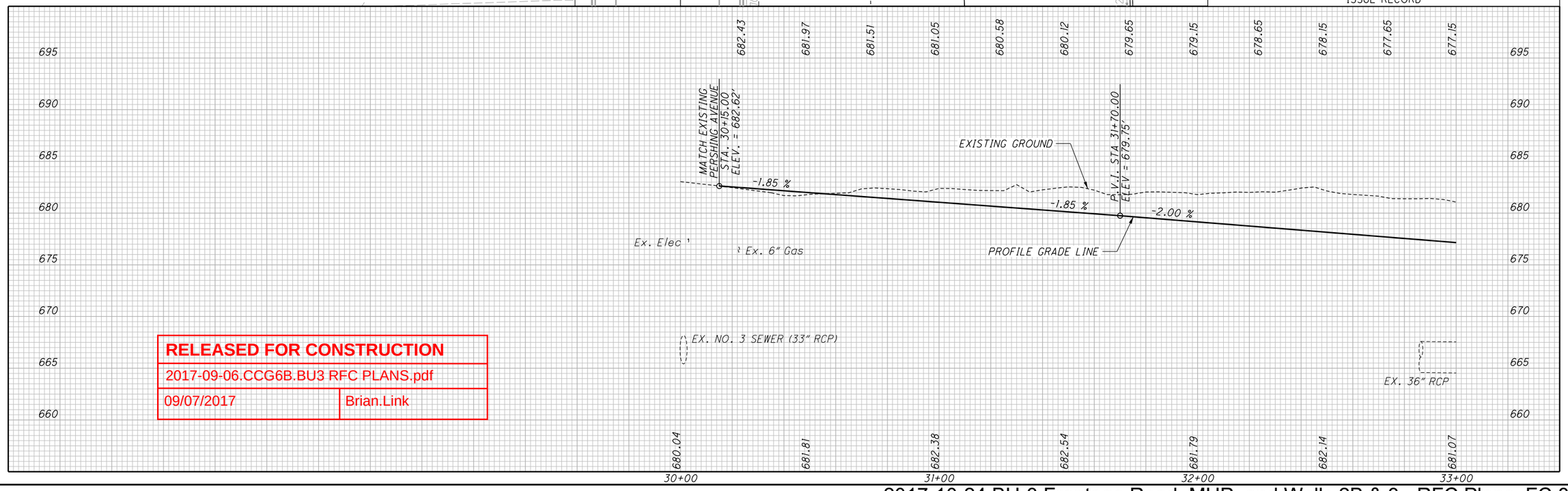
- B - CONCRETE BARRIER
- BO - BOLLARD
- C - CURB
- CR - CURB RAMP
- G - GUARDRAIL
- R - REMOVAL
- SW - SIDEWALK
- 1 MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1
- 2 MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2
- E ANCHOR ASSEMBLY, MGS TYPE E
- T ANCHOR ASSEMBLY, MGS TYPE T

NOTES

1. FOR MULTI-USE PATH PROFILE, SEE SHEET 38
2. FOR CURVE DATA, SEE SHEETS 4 TO 5
3. TEMPORARY SHEETING LEFT IN PLACE. CONTRACTOR TO REMOVE PORTIONS AS NECESSARY TO PERFORM THE PROPOSED WORK.



BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
		ISSUE RECORD



RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf	
09/07/2017	Brian.Link

HORIZONTAL SCALE IN FEET (0, 10, 20, 40)

CALCULATED SWC CHECKED MLL

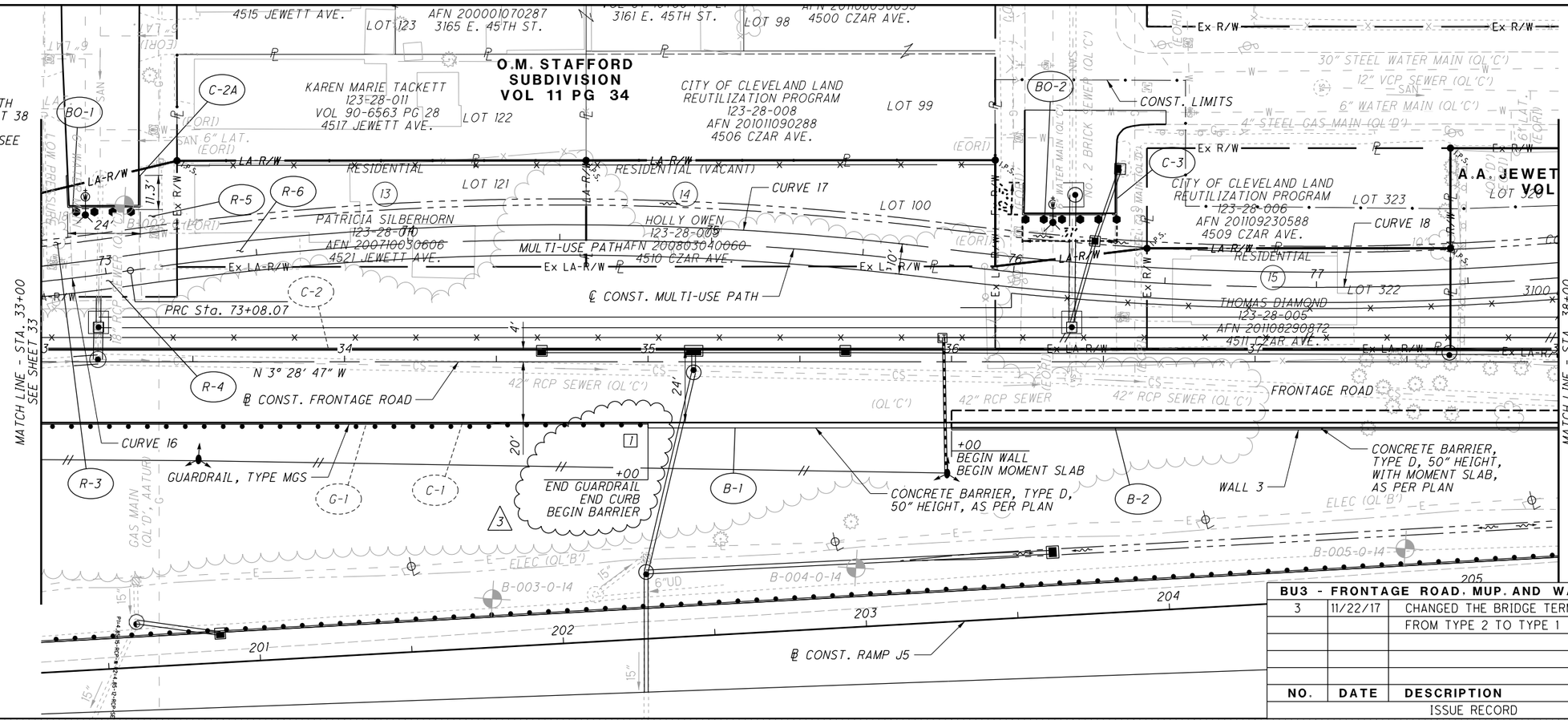
PLAN AND PROFILE - FRONTAGE ROAD BEGIN WORK TO STA. 33+00

CUY-77-13.80

33 95

NOTES

1. FOR LEGEND, SEE SHEET 33
2. FOR MULTI-USE PATH PROFILE, SEE SHEET 38
3. FOR CURVE DATA, SEE SHEETS 4 TO 5
4. FOR SIDE STREET PAVEMENT DETAILS SEE SHEET 63



BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
3	11/22/17	CHANGED THE BRIDGE TERMINAL ASSEMBLY FROM TYPE 2 TO TYPE 1
NO.	DATE	DESCRIPTION
ISSUE RECORD		

RELEASED FOR CONSTRUCTION

BU03_2017.11.22_CCG6B.BU3.RFC Plans_FC18.p

03/01/2017 Brian.Link

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED SWC CHECKED MLL

PLAN AND PROFILE - FRONTAGE ROAD STA. 33+00 TO STA. 38+00

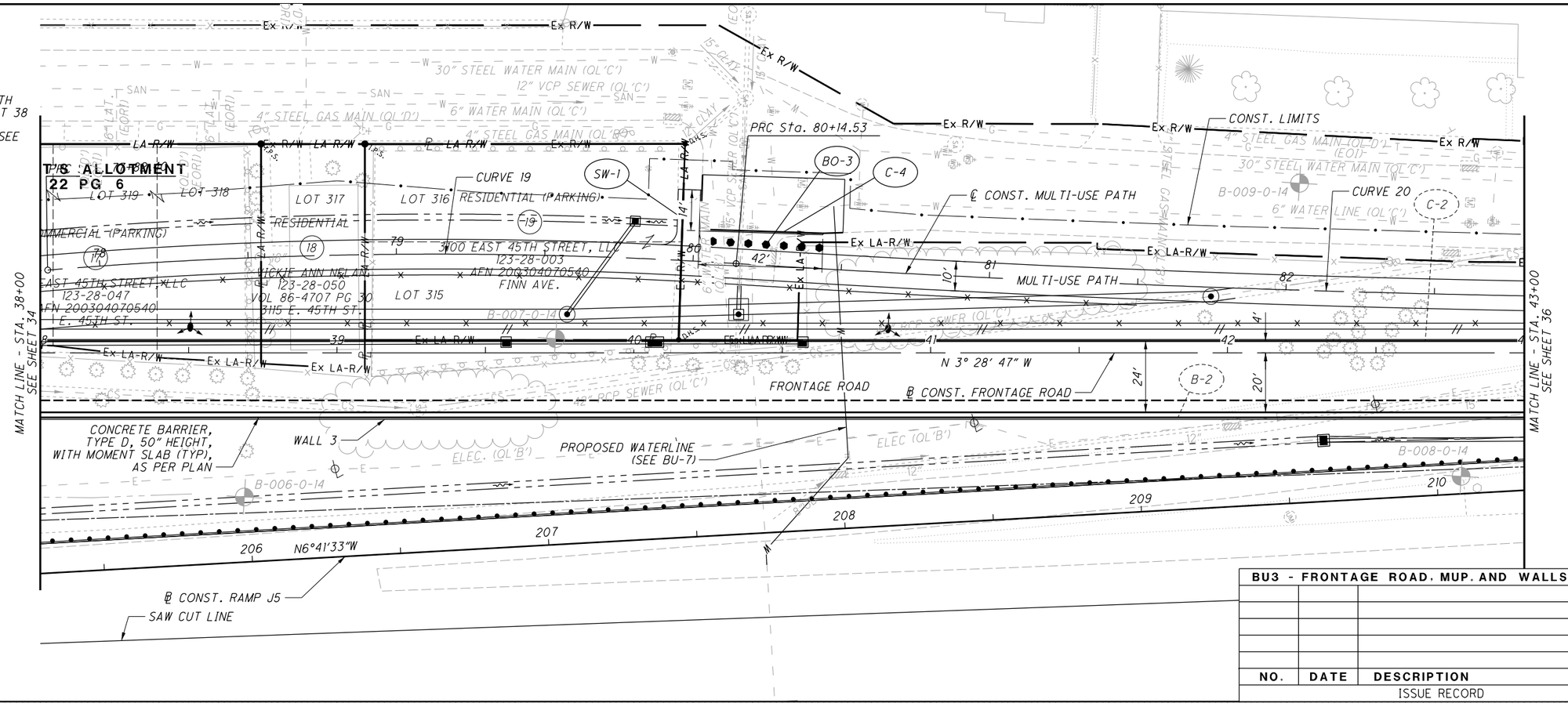
CUY-77-13.80

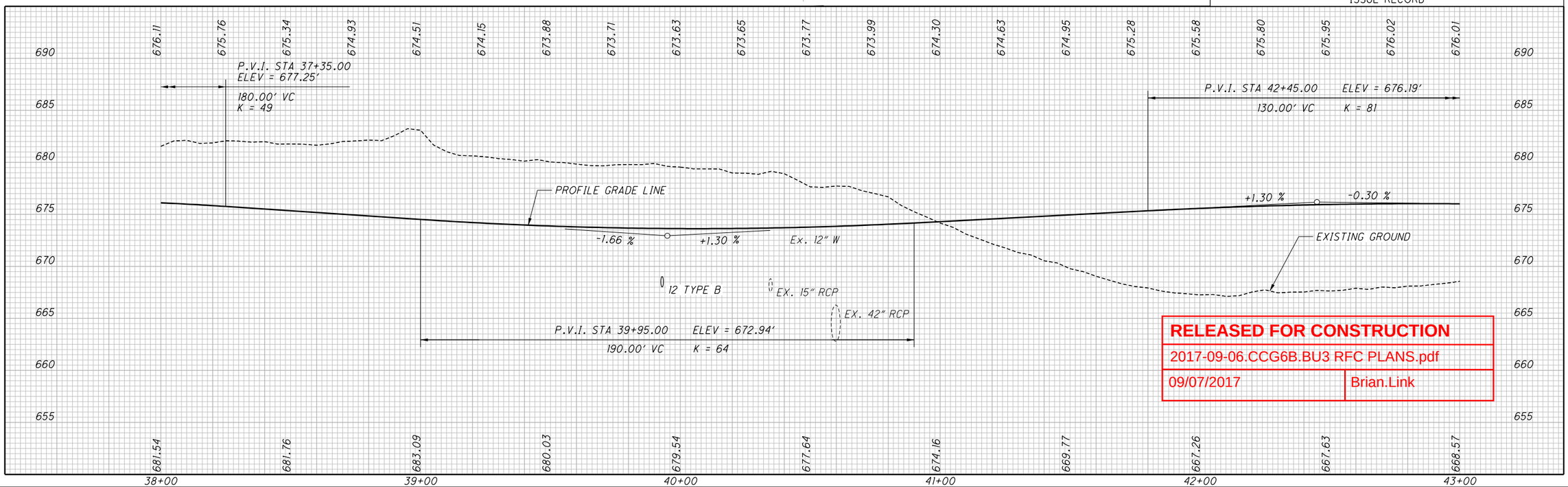
34 95

P:\82388_CCG6B\Design\Roadway\Sheets\82388_GP3302.dgn Sheet 11/22/2017 2:40:33 PM minutes

NOTES

1. FOR LEGEND, SEE SHEET 33
2. FOR MULTI-USE PATH PROFILE, SEE SHEET 38
3. FOR CURVE DATA, SEE SHEETS 4 TO 5
4. FOR SIDE STREET PAVEMENT DETAILS SEE SHEET 63





BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
		ISSUE RECORD

RELEASED FOR CONSTRUCTION
2017-09-06.CCG6B.BU3 RFC PLANS.pdf
09/07/2017 Brian.Link

HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED SWC
CHECKED MLL

PLAN AND PROFILE - FRONTAGE ROAD STA. 38+00 TO STA. 43+00

CUY-77-13.80

35
95

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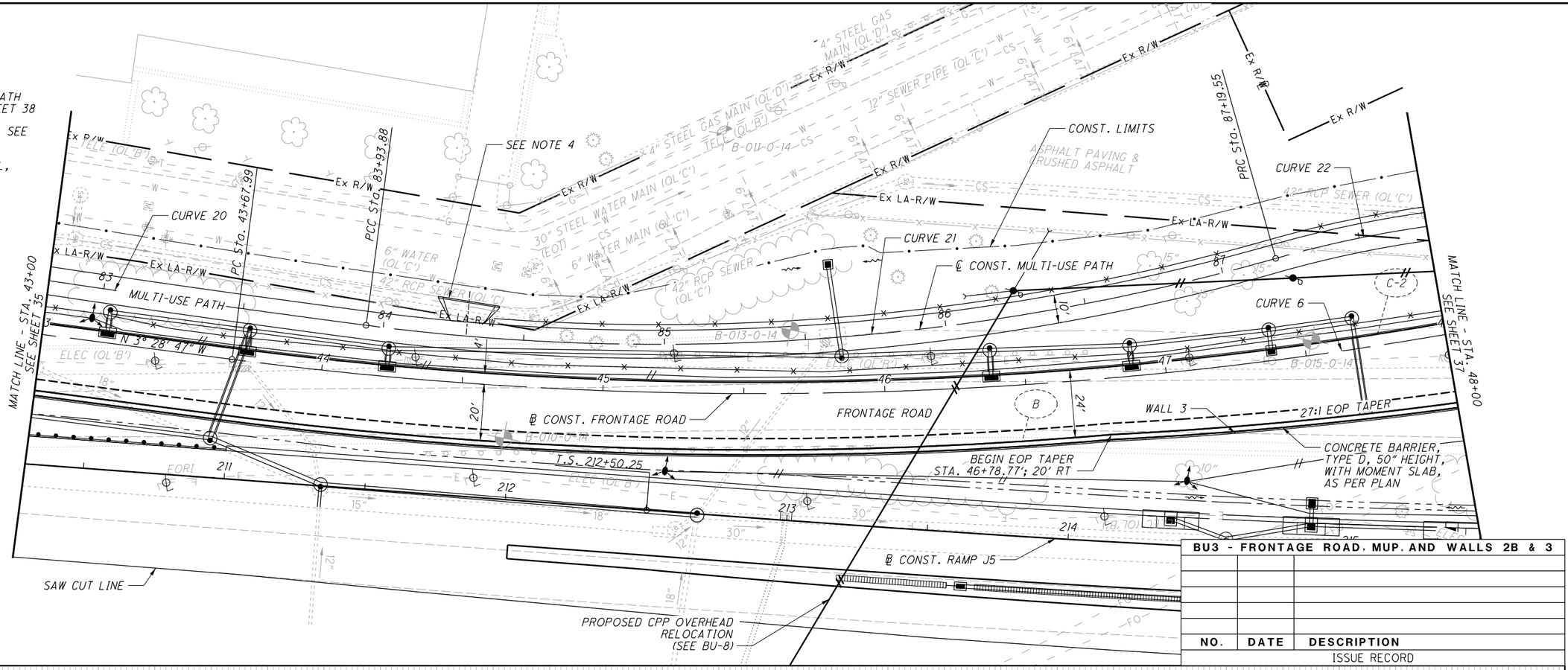
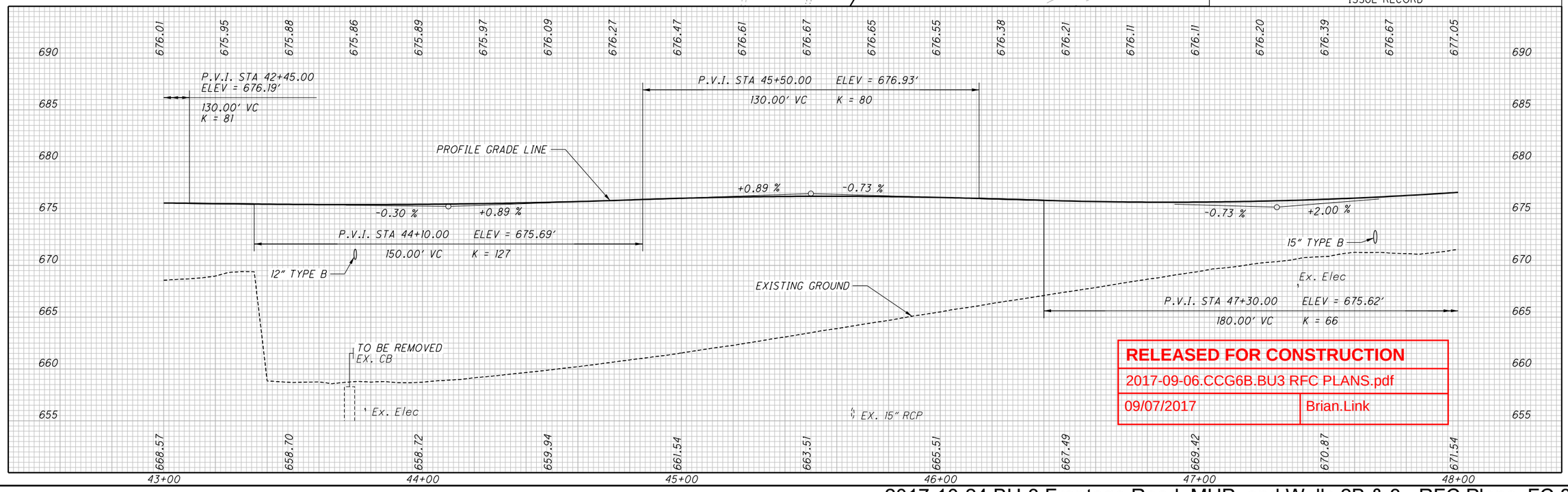
NOTES

1. FOR LEGEND, SEE SHEET 33
2. FOR MULTI-USE PATH PROFILE, SEE SHEET 38
3. FOR CURVE DATA, SEE SHEETS 4 TO 5
4. FOR DRIVE DETAIL, SEE SHEET 64





BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf

09/07/2017 | Brian.Link

HORIZONTAL SCALE IN FEET (0, 10, 20, 40)

CALCULATED SWC | CHECKED MLL

PLAN AND PROFILE - FRONTAGE ROAD STA. 43+00 TO STA. 48+00

CUY-77-13.80

36 / 95

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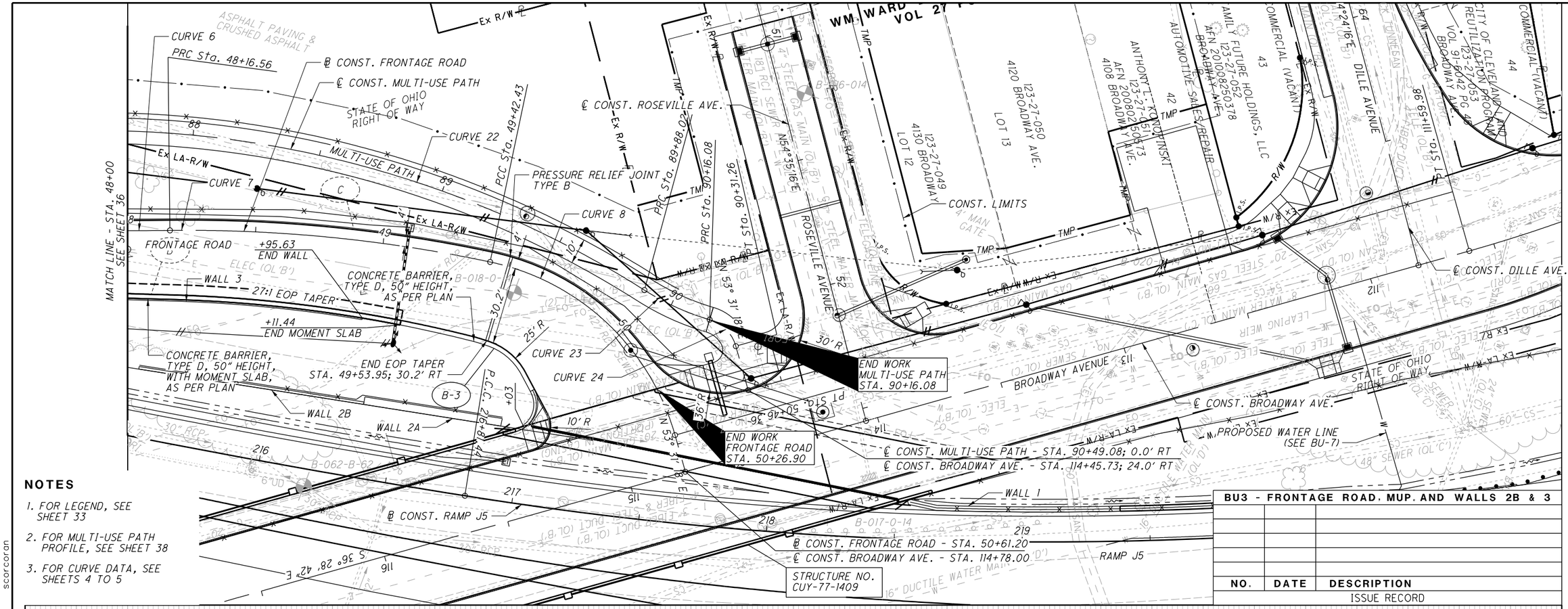
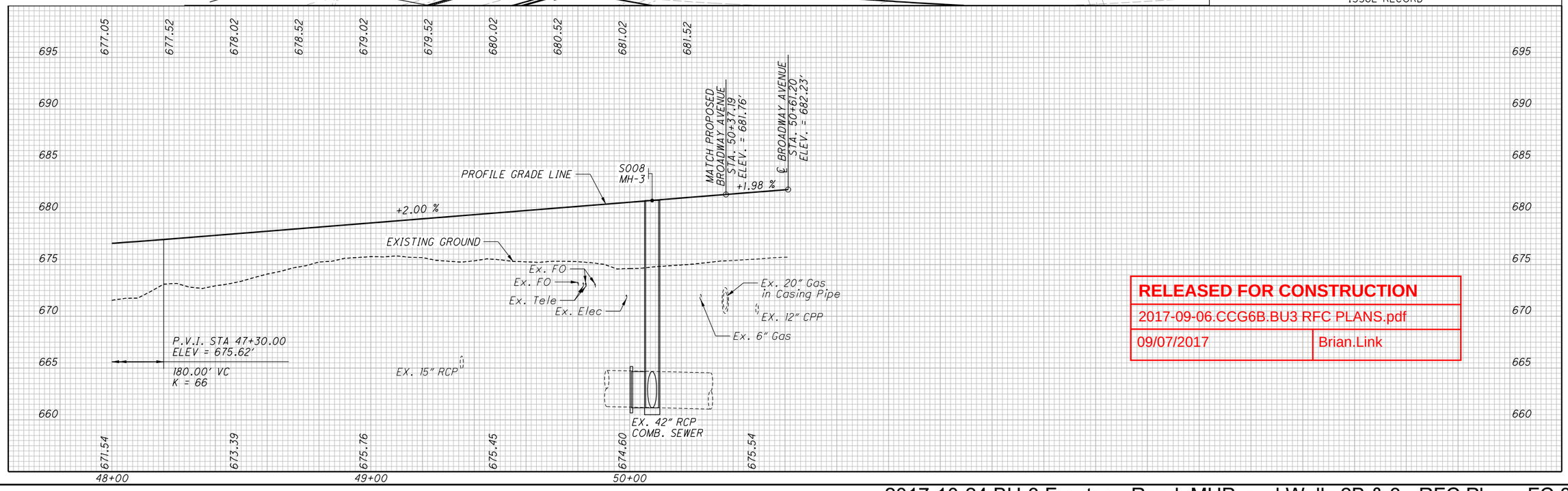


NOTES

1. FOR LEGEND, SEE SHEET 33
2. FOR MULTI-USE PATH PROFILE, SEE SHEET 38
3. FOR CURVE DATA, SEE SHEETS 4 TO 5



BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
		ISSUE RECORD

RELEASED FOR CONSTRUCTION

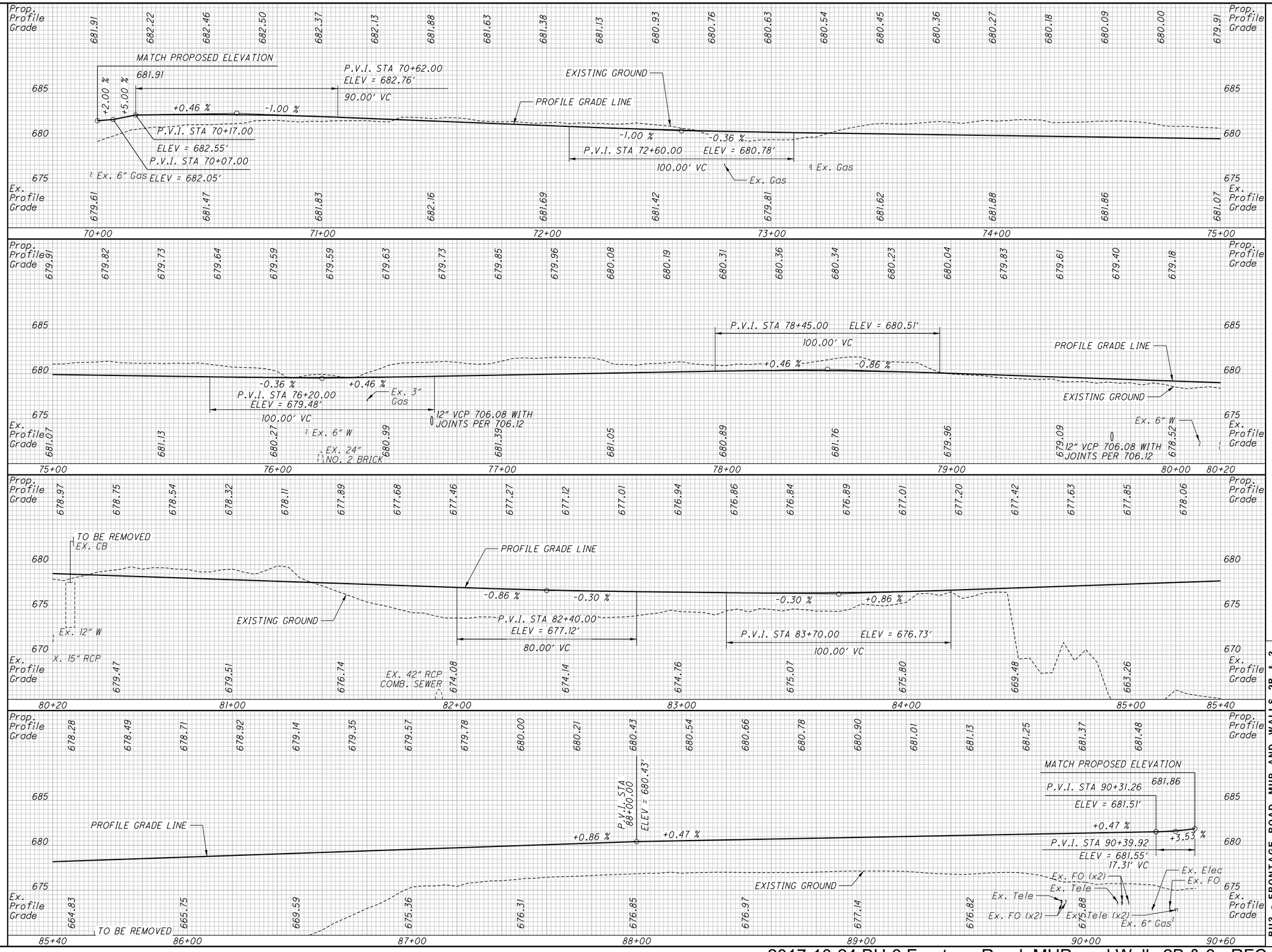
2017-09-06.CCG6B.BU3 RFC PLANS.pdf	
09/07/2017	Brian.Link

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED SWC
CHECKED MLL

PLAN AND PROFILE - FRONTAGE ROAD STA. 48+00 TO END WORK

CUY-77-13.80



CALCULATED SWC
CHECKED MLL

PROFILE - MULTI-USE PATH

RELEASED FOR CONSTRUCTION
2017-09-06.CCG6B.BU3 RFC PLANS.pdf
09/07/2017
Brian.Link

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

NO.	DATE	DESCRIPTION
		ISSUE RECORD

CUY-77-13.80

38
95

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SEEDING	
END WIDTH	SQ. YDS.

RELEASED FOR CONSTRUCTION

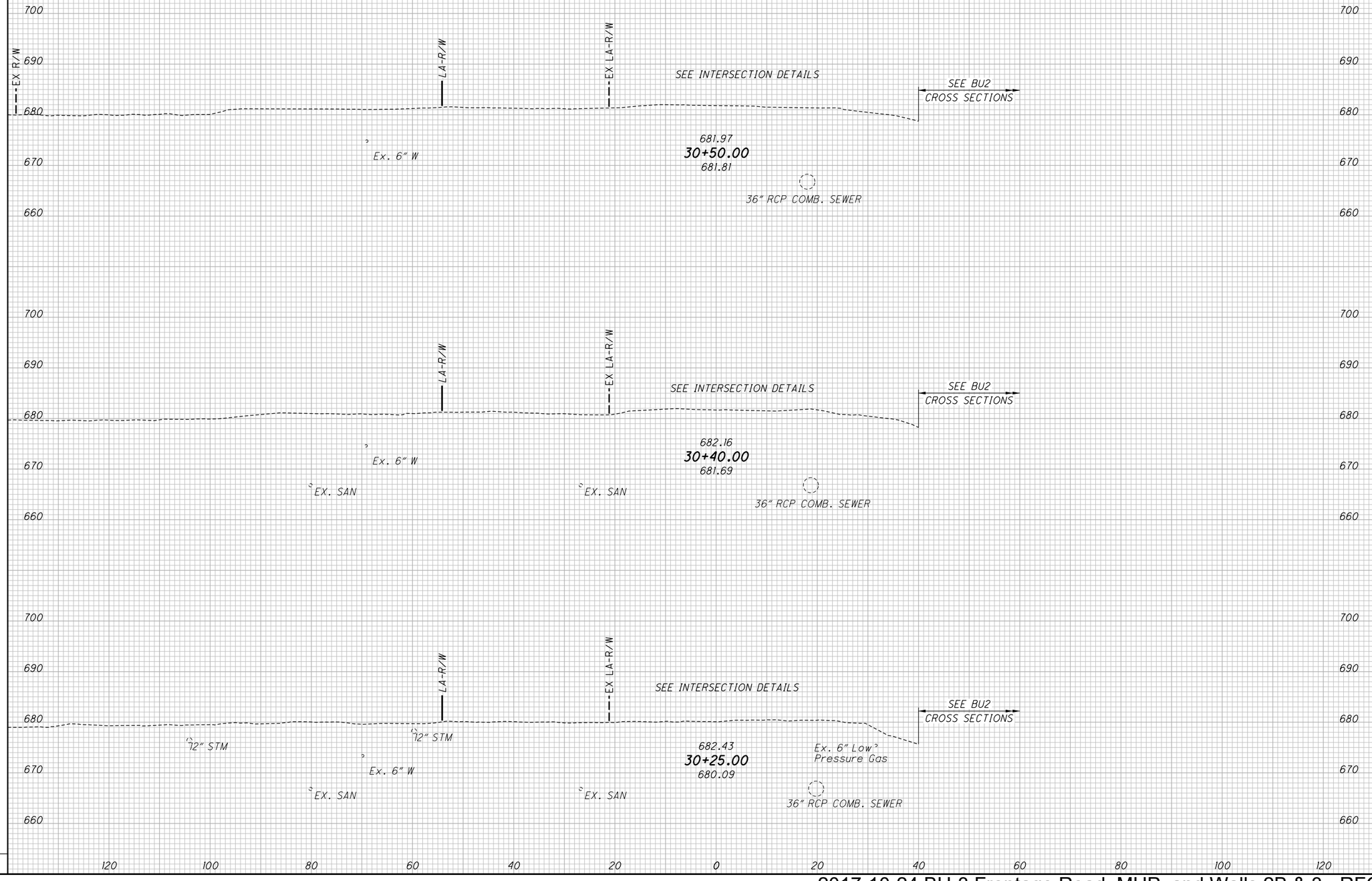
2017-09-06.CCG6B.BU3 RFC PLANS.pdf

09/07/2017 | Brian.Link

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DWB | CHECKED MLL



CROSS SECTIONS - FRONTAGE RD.
STA. 30+25.00 TO STA. 30+50.00

CUY-77-13.80

39
95

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SEEDING	
END WIDTH	SQ. YDS.

RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf

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NO.	DATE	DESCRIPTION

ISSUE RECORD

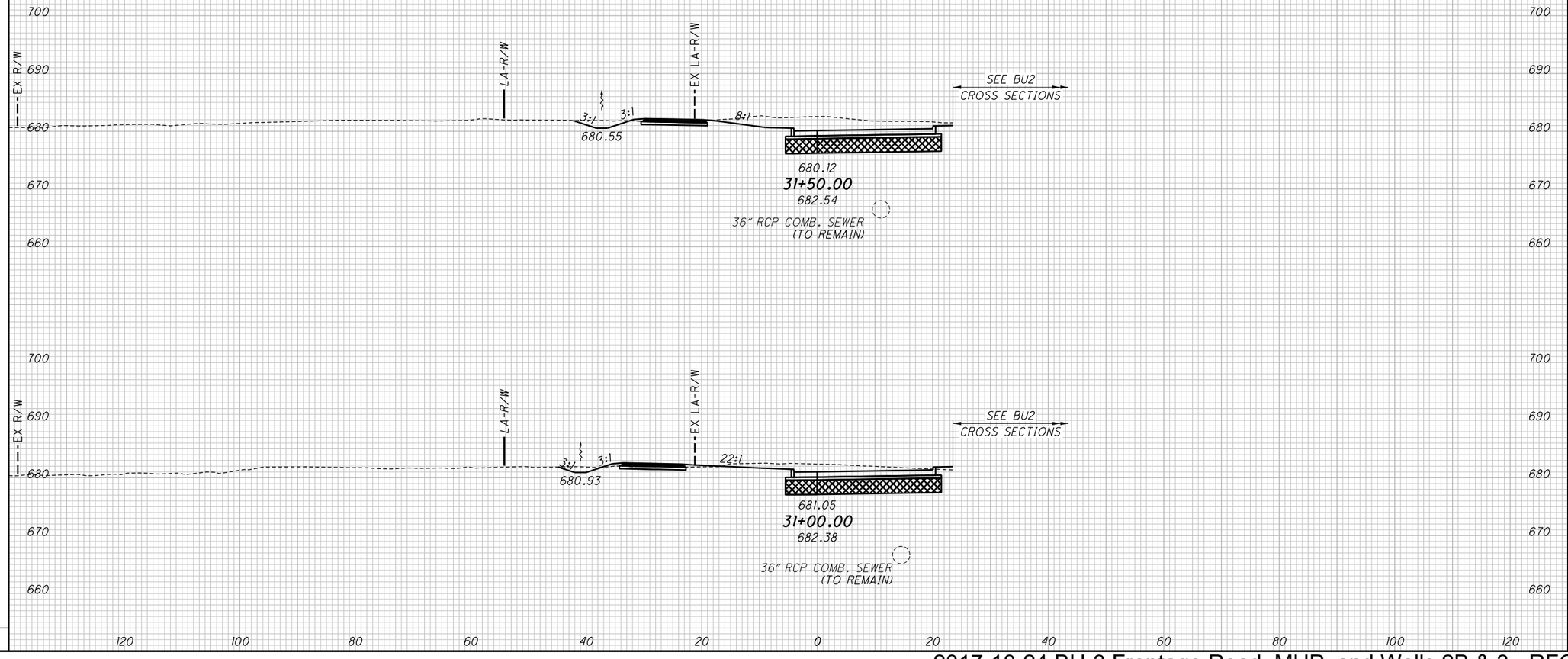
BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DWB | CHECKED MLL

ITEM 204 - EXCAVATION OF SUBGRADE

SELECT GRANULAR MATERIAL LIMITS



CROSS SECTIONS - FRONTAGE RD.
STA. 31+00.00 TO STA. 31+50.00

CUY-77-13.80

40
95

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SEEDING	
END WIDTH	SQ. YDS.

RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf

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BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

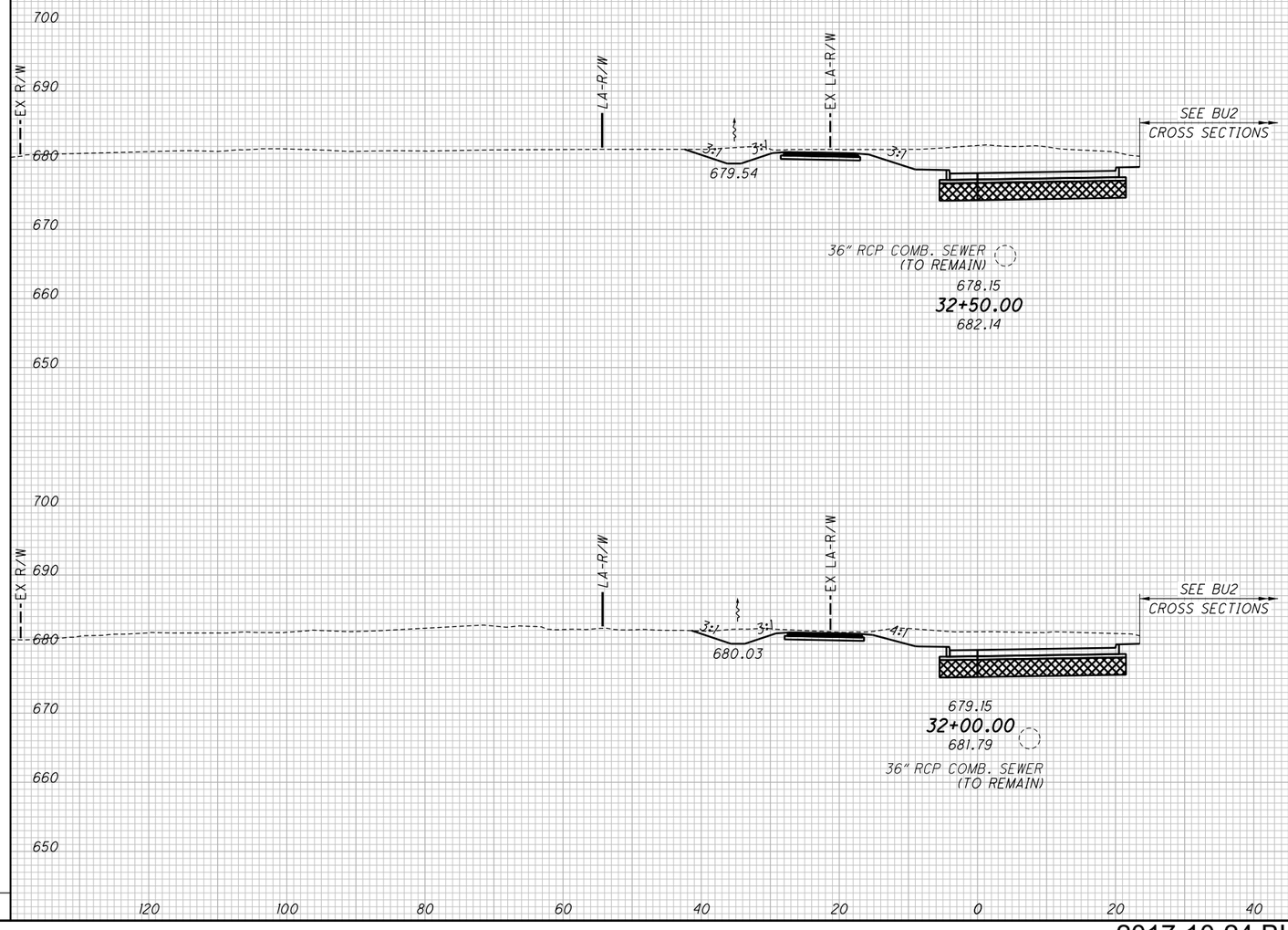
END AREA	
CUT	FILL

VOLUME	
CUT	FILL

CALCULATED DWB | CHECKED MLL

ITEM 204 - EXCAVATION OF SUBGRADE

SELECT GRANULAR MATERIAL LIMITS



CROSS SECTIONS - FRONTAGE RD.
STA. 32+00.00 TO STA. 32+50.00

CUY-77-13.80

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SEEDING	
END WIDTH	SQ. YDS.

RELEASED FOR CONSTRUCTION

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09/07/2017 | Brian.Link

NO.	DATE	DESCRIPTION
		ISSUE RECORD

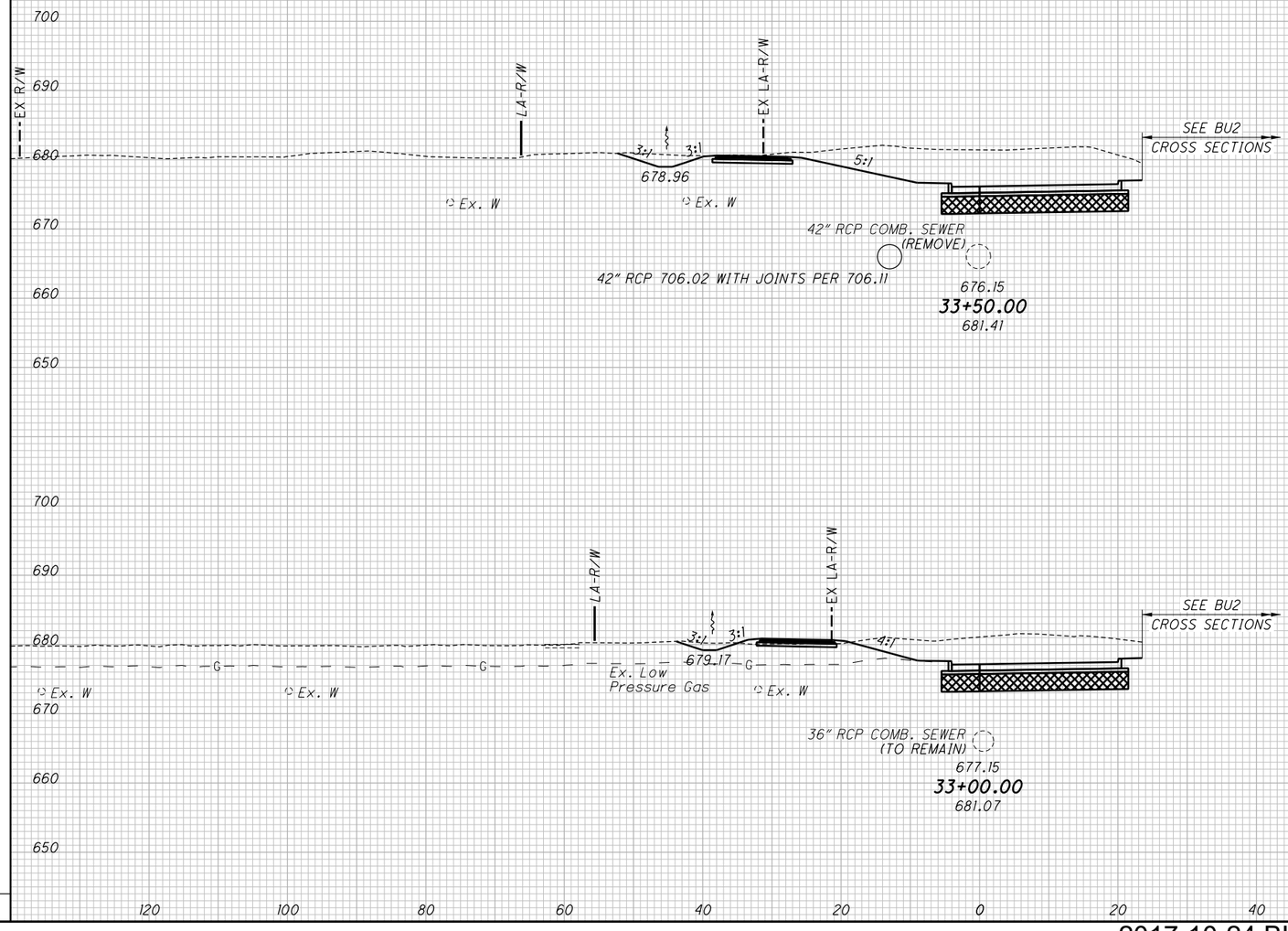
END AREA	
CUT	FILL

VOLUME	
CUT	FILL

CALCULATED DWB | CHECKED MLL

ITEM 204 - EXCAVATION OF SUBGRADE

SELECT GRANULAR MATERIAL LIMITS



CROSS SECTIONS - FRONTAGE RD.
STA. 33+00.00 TO STA. 33+50.00

CUY-77-13.80

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SEEDING	
END WIDTH	SQ. YDS.

RELEASED FOR CONSTRUCTION

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NO.	DATE	DESCRIPTION
		ISSUE RECORD

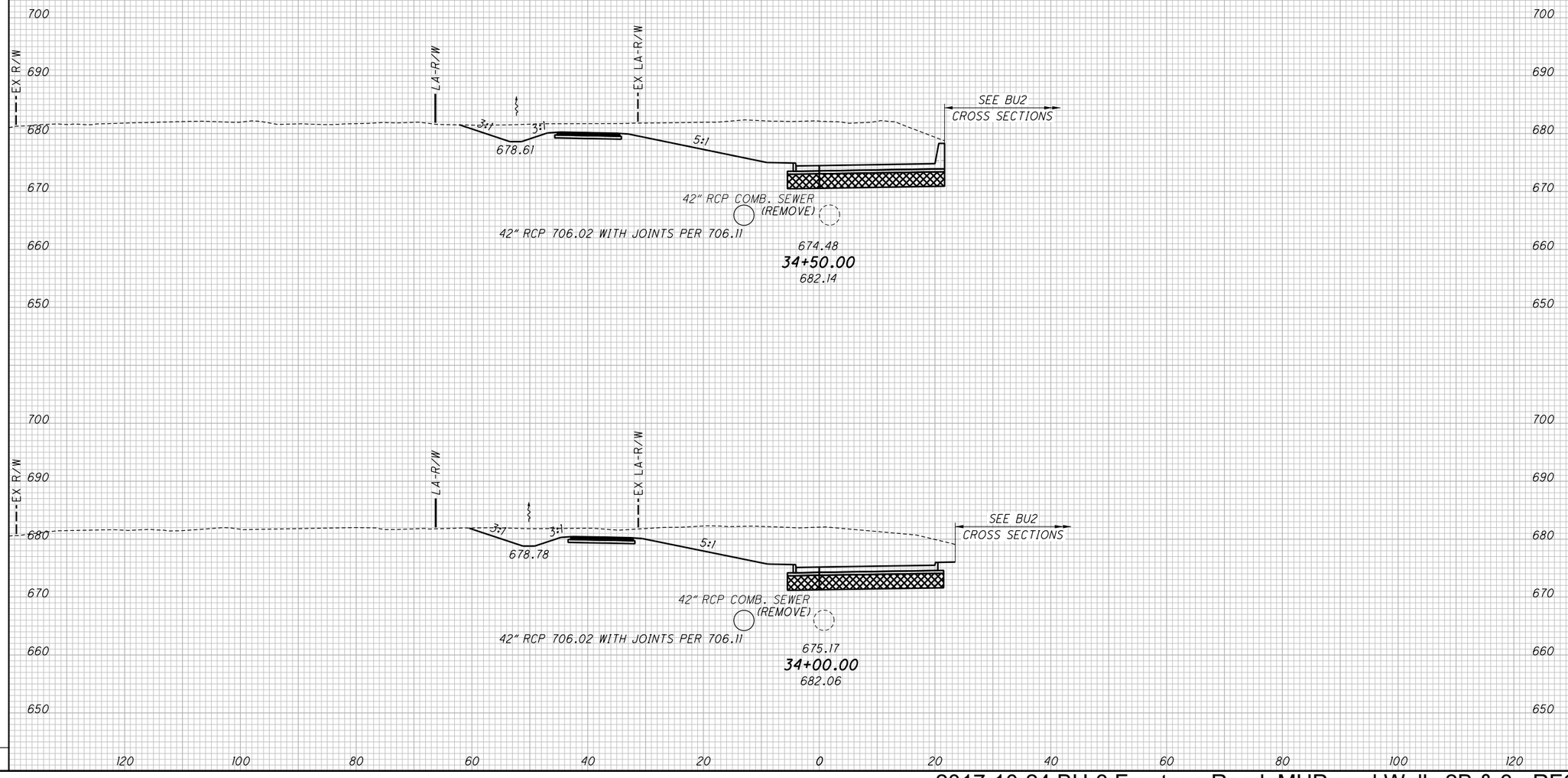
END AREA	
CUT	FILL

VOLUME	
CUT	FILL

CALCULATED DWB | CHECKED MLL

ITEM 204 - EXCAVATION OF SUBGRADE

SELECT GRANULAR MATERIAL LIMITS



CROSS SECTIONS - FRONTAGE RD.
STA. 34+00.00 TO STA. 34+50.00

CUY-77-13.80

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SEEDING	
END WIDTH	SQ. YDS.

RELEASED FOR CONSTRUCTION

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BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

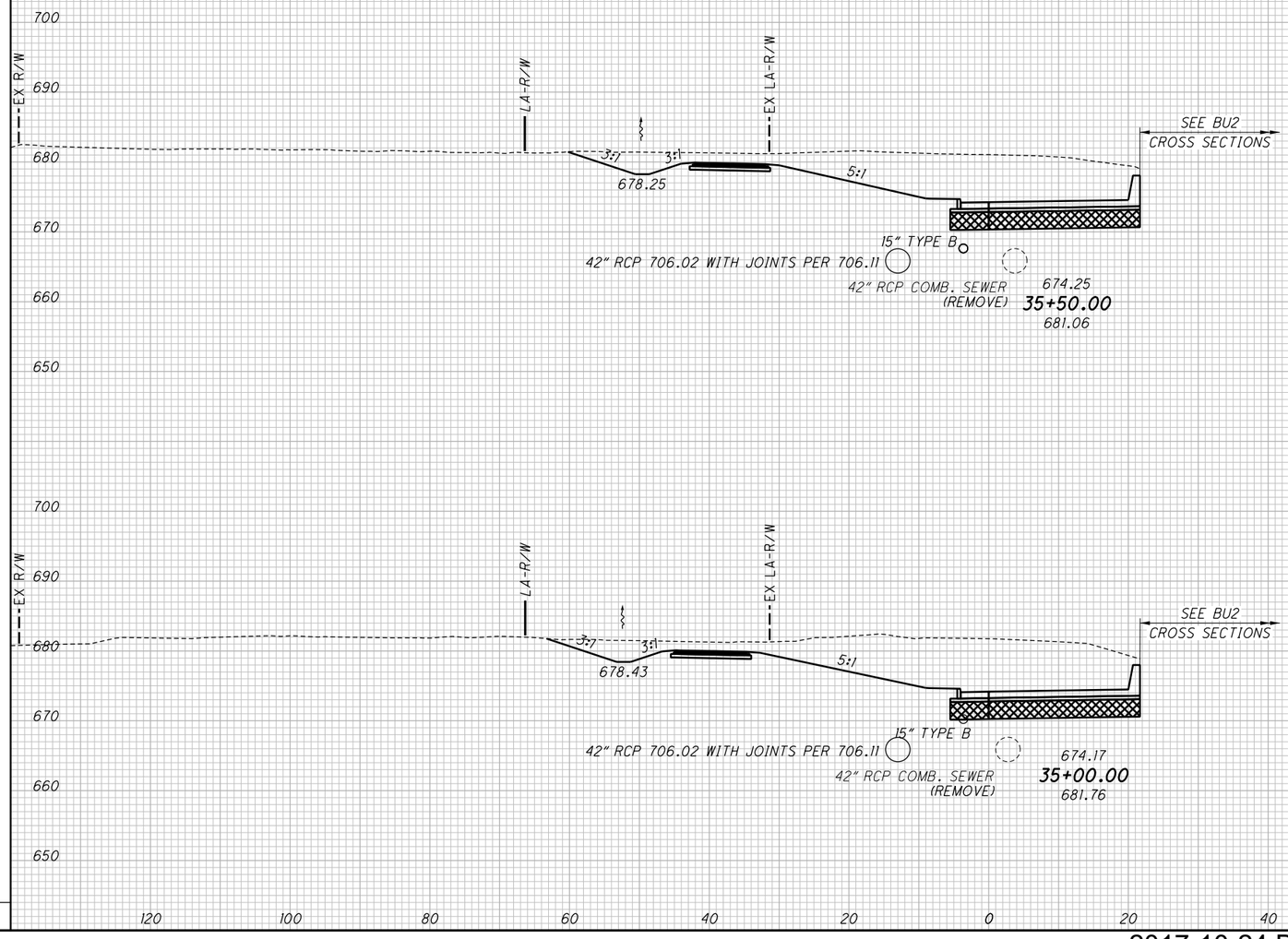
NO.	DATE	DESCRIPTION
		ISSUE RECORD

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DWB | CHECKED MLL

ITEM 204 - EXCAVATION OF SUBGRADE

SELECT GRANULAR MATERIAL LIMITS



CROSS SECTIONS - FRONTAGE RD.
STA. 35+00.00 TO STA. 35+50.00

CUY-77-13.80

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SEEDING	
END WIDTH	SQ. YDS.

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

END AREA	
CUT	FILL

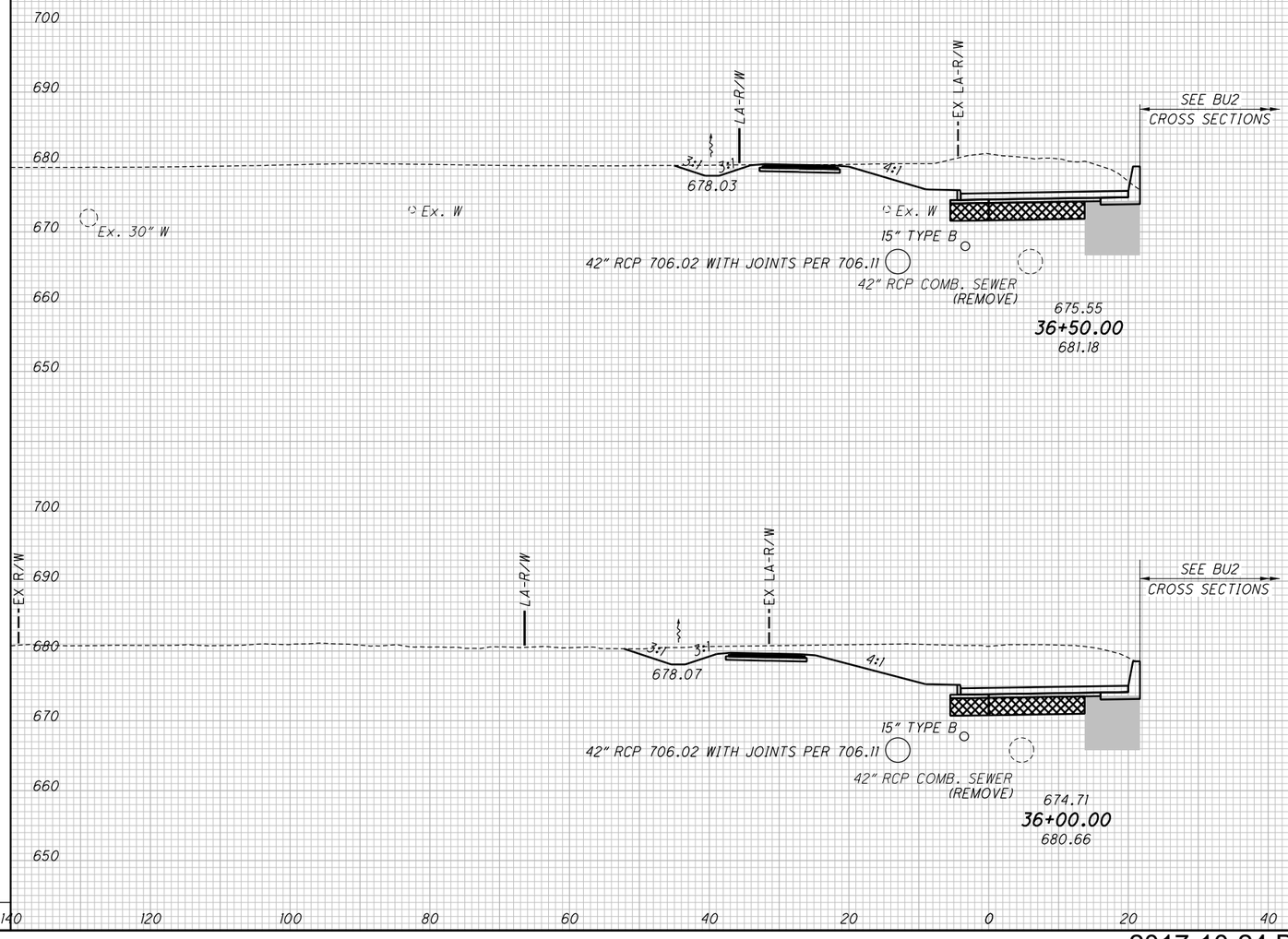
VOLUME	
CUT	FILL

CALCULATED DWB
CHECKED MLL

RELEASED FOR CONSTRUCTION
2017-09-06.CCG6B.BU3 RFC PLANS.pdf
09/07/2017 Brian.Link

ITEM 204 - EXCAVATION OF SUBGRADE

SELECT GRANULAR MATERIAL LIMITS



CROSS SECTIONS - FRONTAGE RD.
STA. 36+00.00 TO STA. 36+50.00

CUY-77-13.80

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SEEDING	
END WIDTH	SQ. YDS.

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BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

NO.	DATE	DESCRIPTION

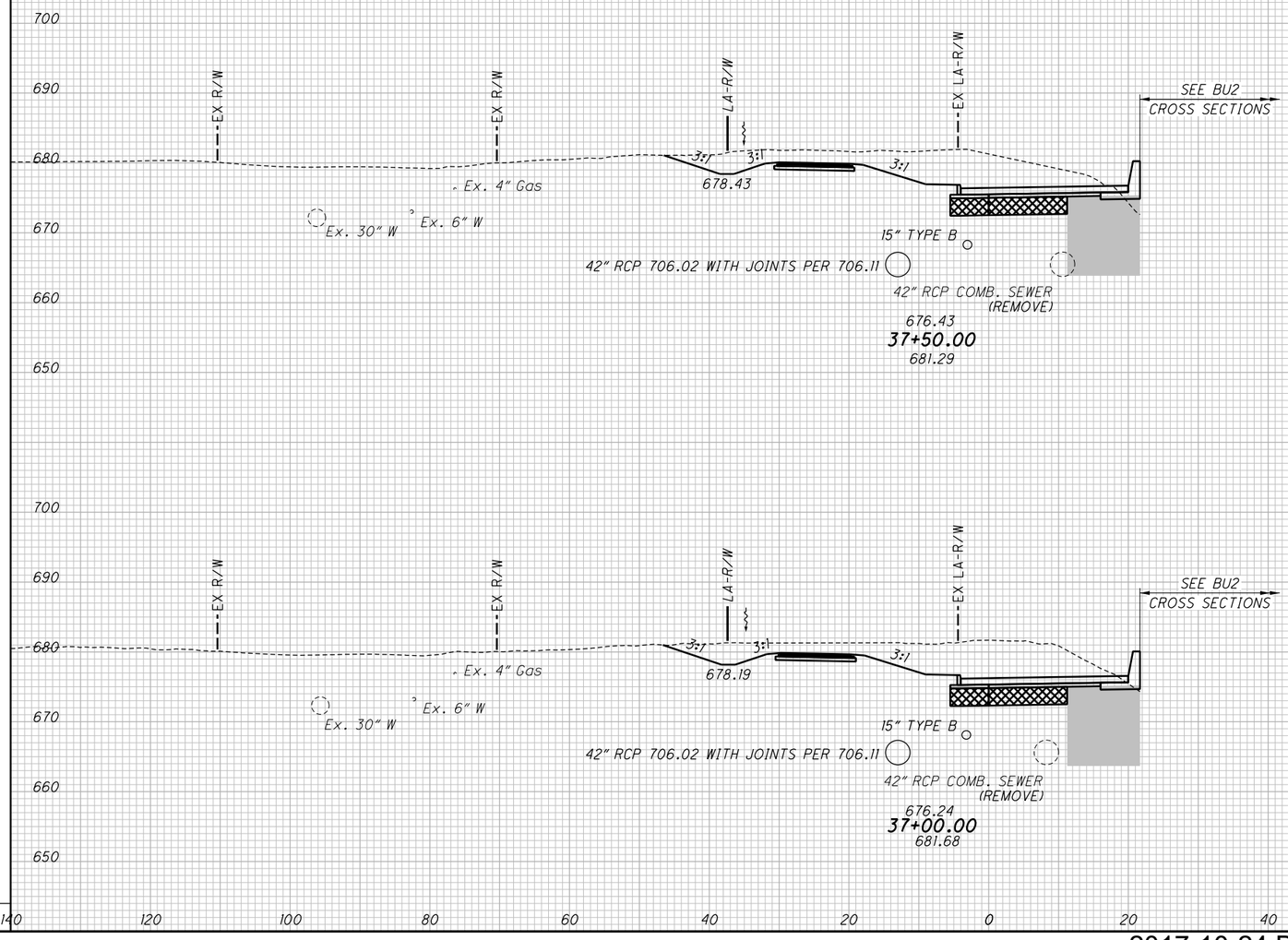
ISSUE RECORD

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DWB | CHECKED MLL

ITEM 204 - EXCAVATION OF SUBGRADE

SELECT GRANULAR MATERIAL LIMITS



CROSS SECTIONS - FRONTAGE RD.
STA. 37+00.00 TO STA. 37+50.00

CUY-77-13.80

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SEEDING	
END WIDTH	SQ. YDS.

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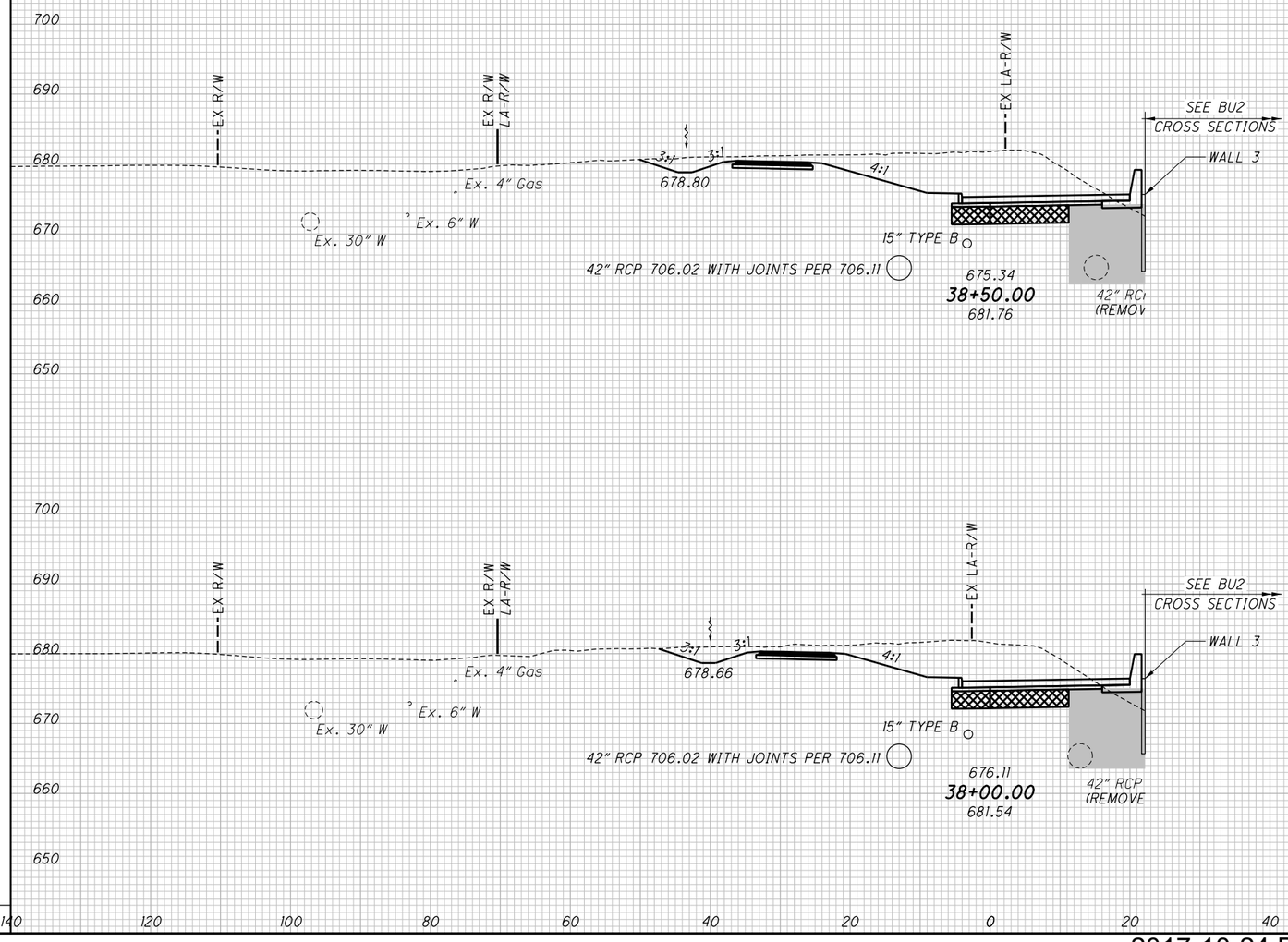
NO.	DATE	DESCRIPTION
		ISSUE RECORD

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DWB | CHECKED MLL

ITEM 204 - EXCAVATION OF SUBGRADE

SELECT GRANULAR MATERIAL LIMITS



CROSS SECTIONS - FRONTAGE RD. STA. 38+00.00 TO STA. 38+50.00

CUY-77-13.80

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SEEDING	
END WIDTH	SQ. YDS.

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BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

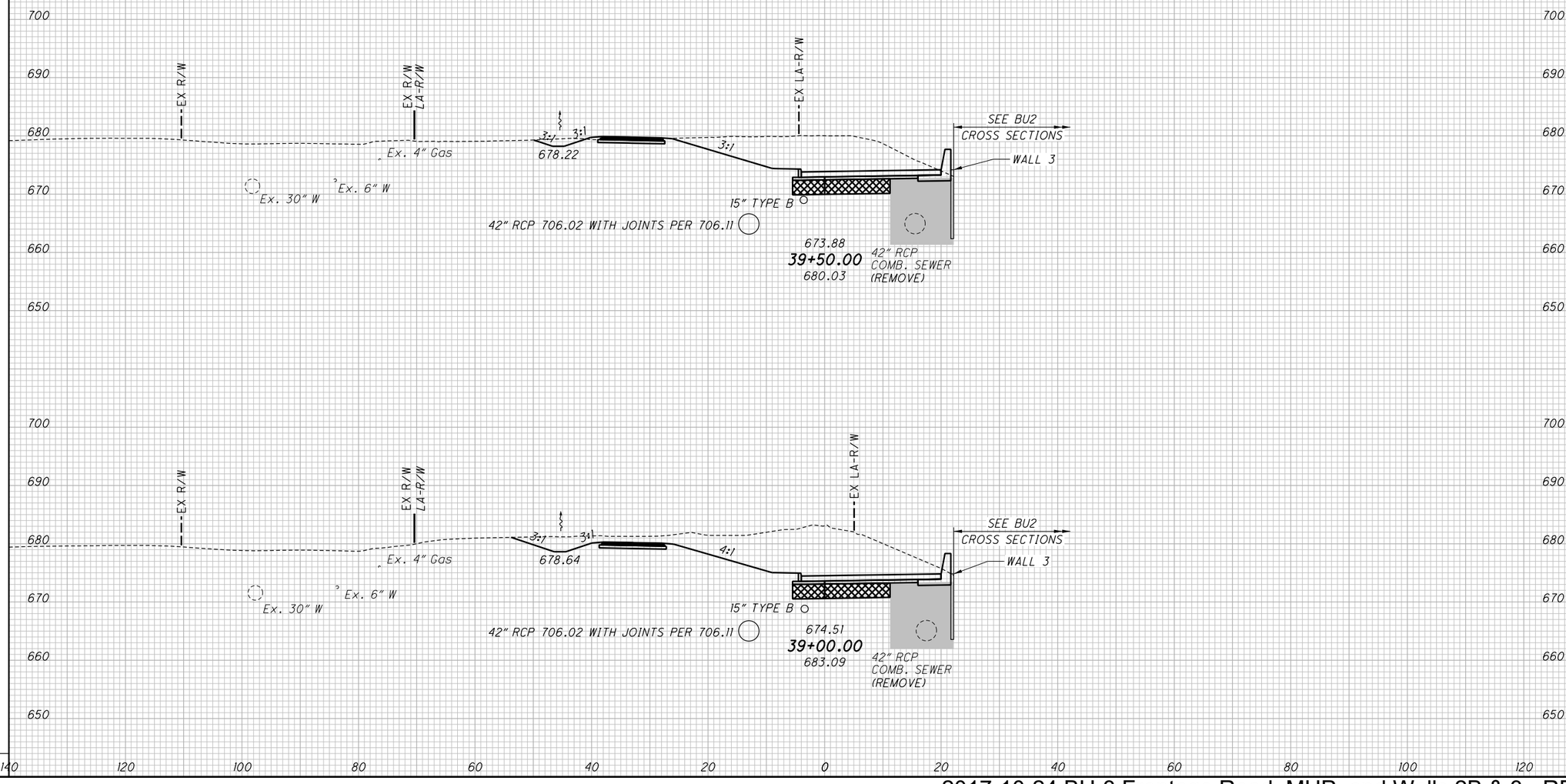
NO.	DATE	DESCRIPTION
		ISSUE RECORD

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DWB | CHECKED MLL

ITEM 204 - EXCAVATION OF SUBGRADE

SELECT GRANULAR MATERIAL LIMITS



CROSS SECTIONS - FRONTAGE RD.
STA. 39+00.00 TO STA. 39+50.00

CUY-77-13.80

48
95

P:\82388_CCG6B\Design\Roadway\Sheets\82388_XS2101.dgn XS_SHEET_temporary_model_name_10 9/6/2017 11:48:12 AM scorcoran

SEEDING	
END WIDTH	SQ. YDS.

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2017-09-06.CCG6B.BU3 RFC PLANS.pdf

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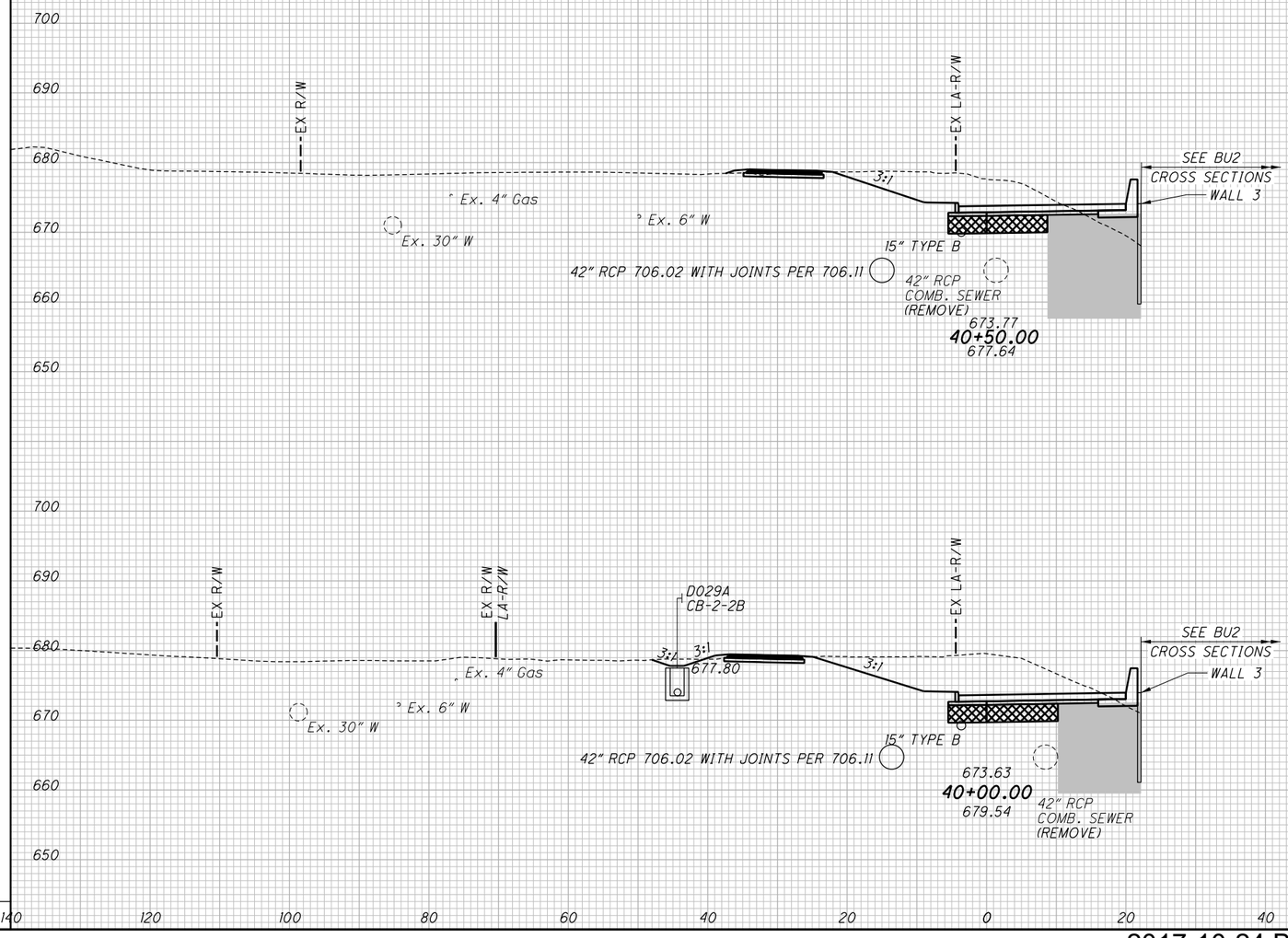
NO.	DATE	DESCRIPTION
		ISSUE RECORD

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DWB | CHECKED MLL

ITEM 204 - EXCAVATION OF SUBGRADE

SELECT GRANULAR MATERIAL LIMITS



CROSS SECTIONS - FRONTAGE RD.
STA. 40+00.00 TO STA. 40+50.00

CUY-77-13.80

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SEEDING	
END WIDTH	SQ. YDS.

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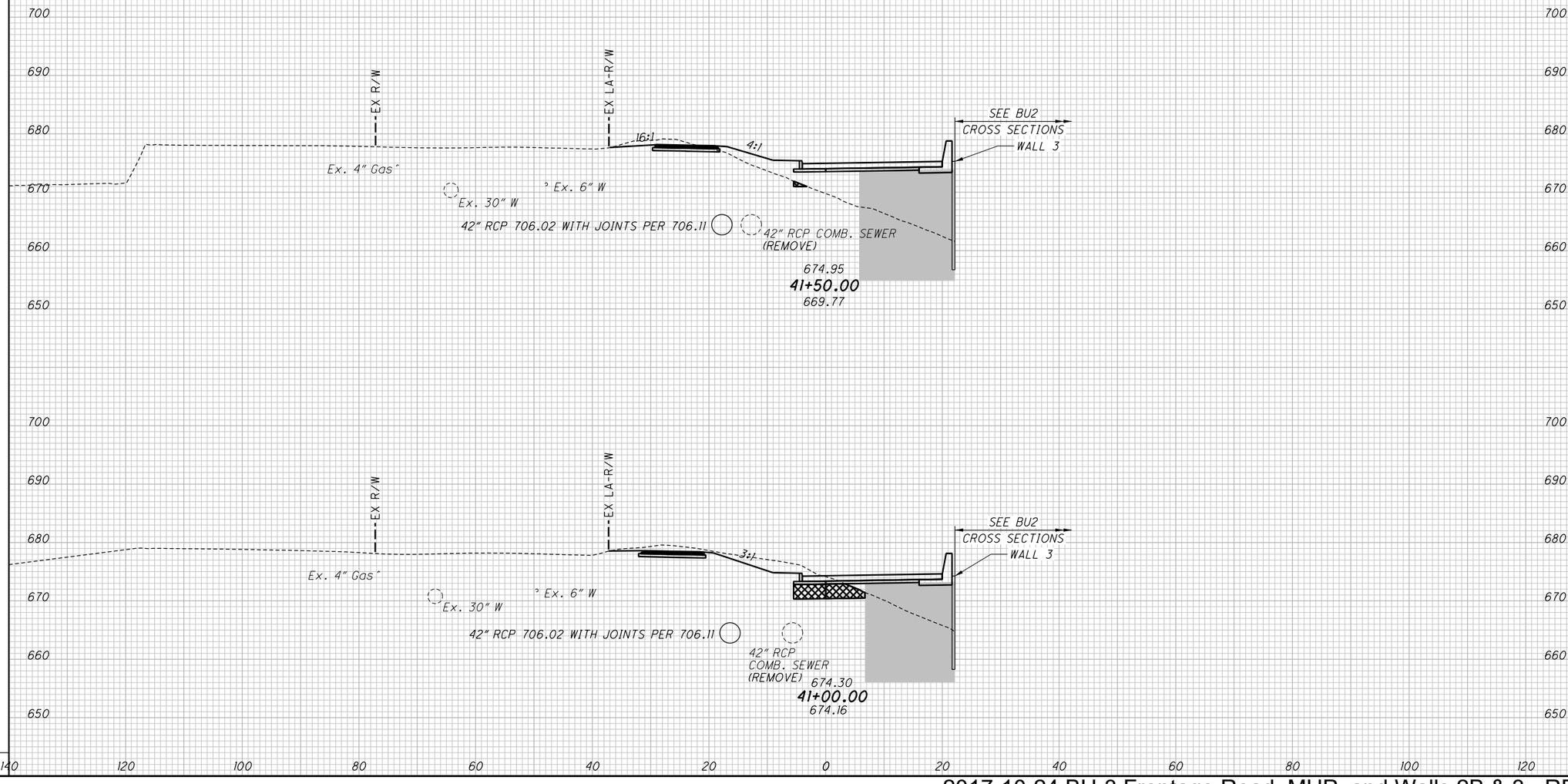
NO.	DATE	DESCRIPTION
		ISSUE RECORD

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DWB | CHECKED MLL

ITEM 204 - EXCAVATION OF SUBGRADE

SELECT GRANULAR MATERIAL LIMITS



CROSS SECTIONS - FRONTAGE RD.
STA. 41+00.00 TO STA. 41+50.00

CUY-77-13.80

50
95

P:\82388_CCG6B\Design\Roadway\Sheets\82388_XS2101.dgn XS_SHEET_temporary_model_name_12 9/6/2017 11:48:12 AM scorcoran

SEEDING	
END WIDTH	SQ. YDS.

RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf

09/07/2017 | Brian.Link

NO.	DATE	DESCRIPTION

ISSUE RECORD

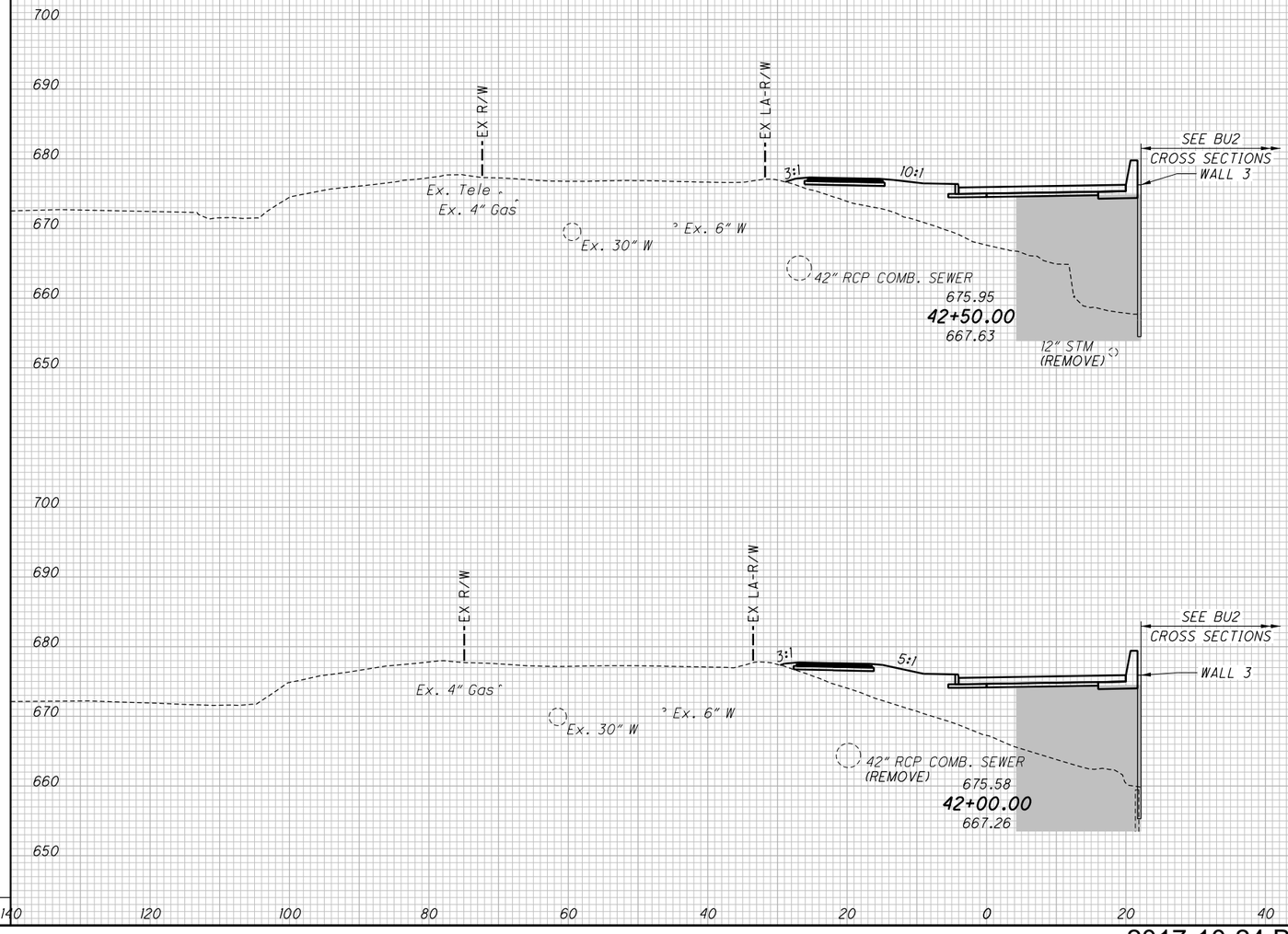
BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DWB | CHECKED MLL

ITEM 204 - EXCAVATION OF SUBGRADE

SELECT GRANULAR MATERIAL LIMITS



CROSS SECTIONS - FRONTAGE RD.
STA. 42+00.00 TO STA. 42+50.00

CUY-77-13.80

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SEEDING	
END WIDTH	SQ. YDS.

RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf	
09/07/2017	Brian.Link

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

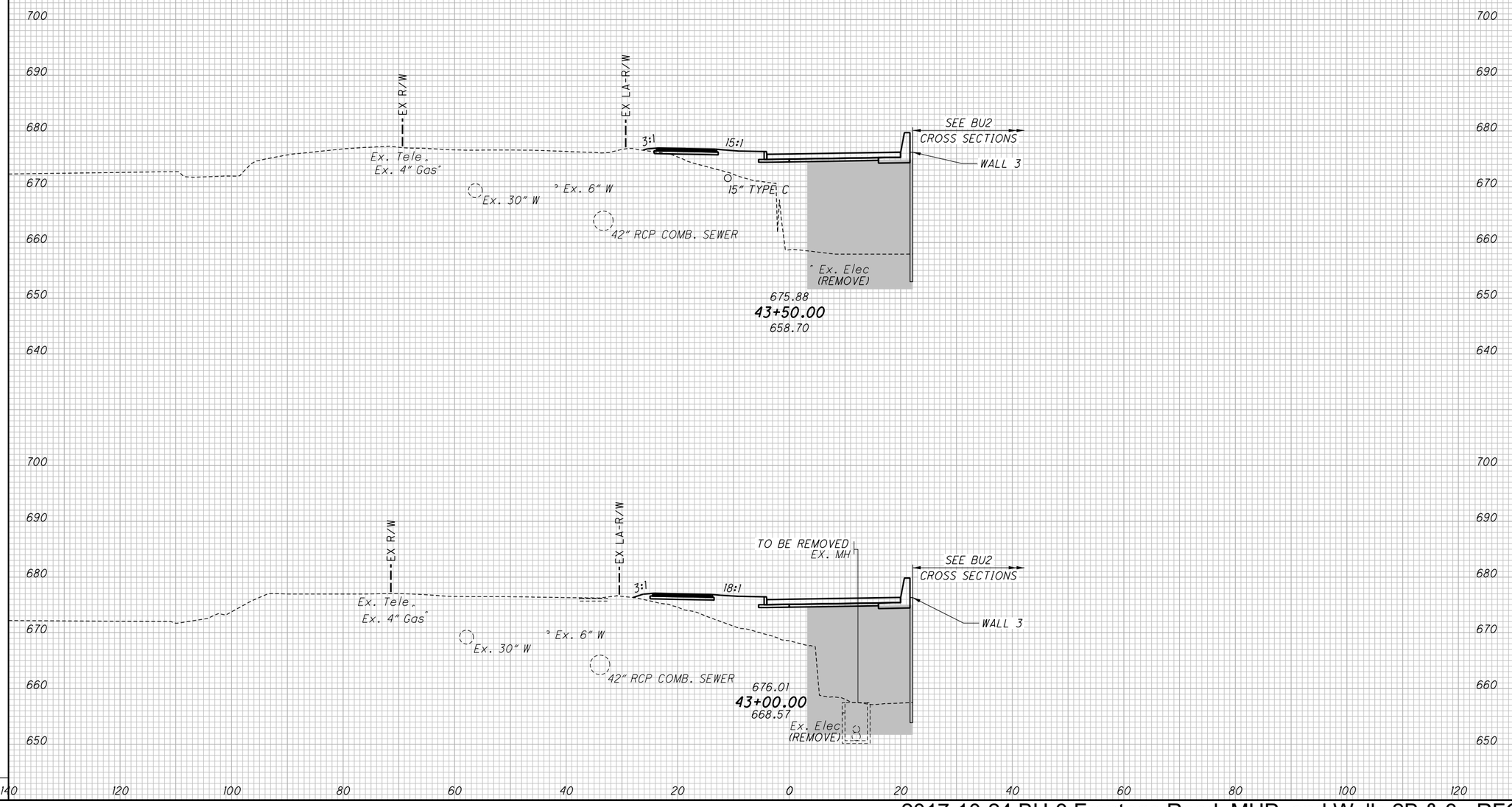
NO.	DATE	DESCRIPTION
		ISSUE RECORD

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DWB
CHECKED MLL

ITEM 204 - EXCAVATION OF SUBGRADE

SELECT GRANULAR MATERIAL LIMITS



CROSS SECTIONS - FRONTAGE RD.
STA. 43+00.00 TO STA. 43+50.00

CUY-77-13.80

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SEEDING	
END WIDTH	SQ. YDS.

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09/07/2017 | Brian.Link

NO.	DATE	DESCRIPTION
		ISSUE RECORD

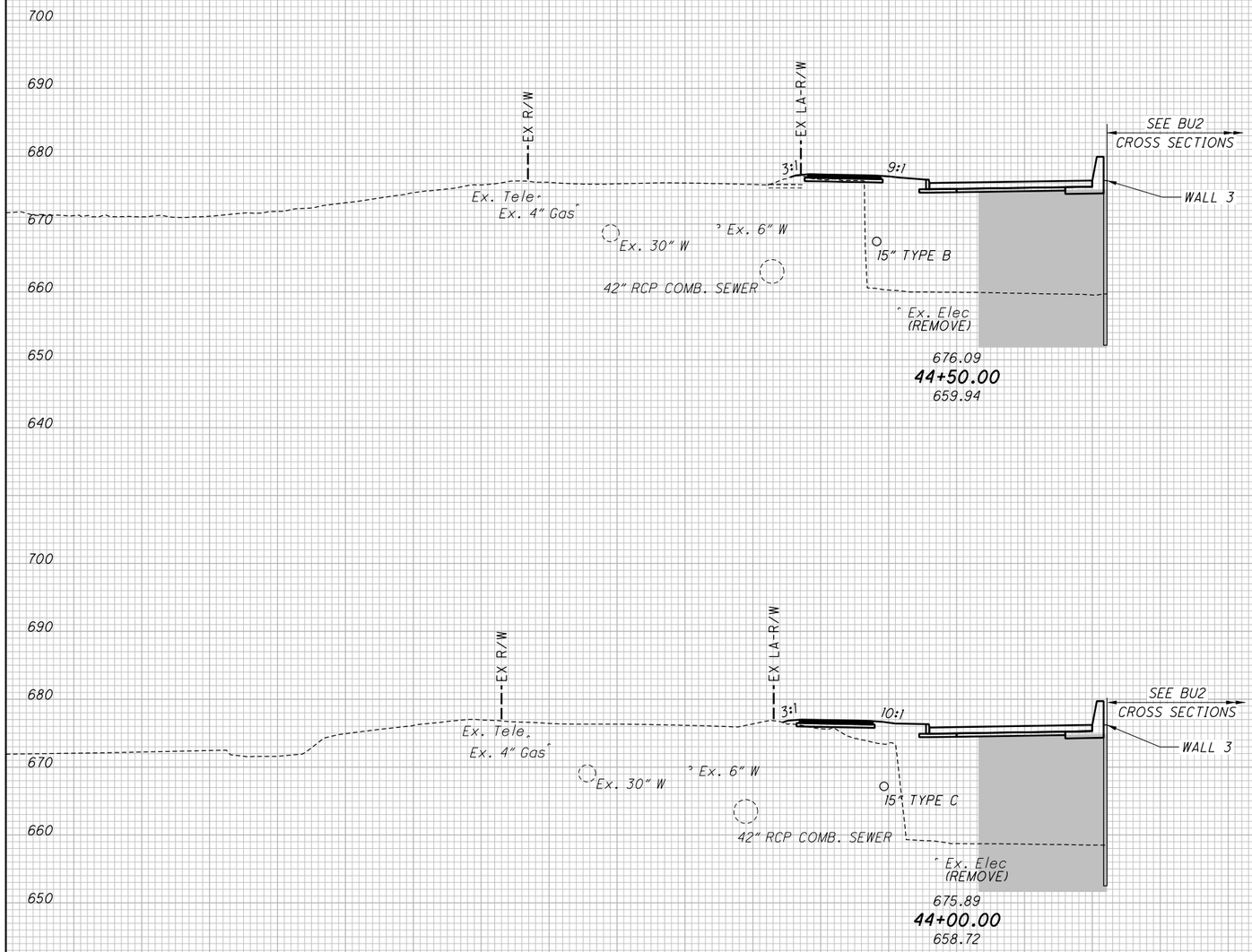
BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DWB | CHECKED MLL

ITEM 204 - EXCAVATION OF SUBGRADE

SELECT GRANULAR MATERIAL LIMITS



CROSS SECTIONS - FRONTAGE RD.
STA. 44+00.00 TO STA. 44+50.00

CUY-77-13.80

53
95

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SEEDING	
END WIDTH	SQ. YDS.

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2017-09-06.CCG6B.BU3 RFC PLANS.pdf

09/07/2017 | Brian.Link

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

NO.	DATE	DESCRIPTION

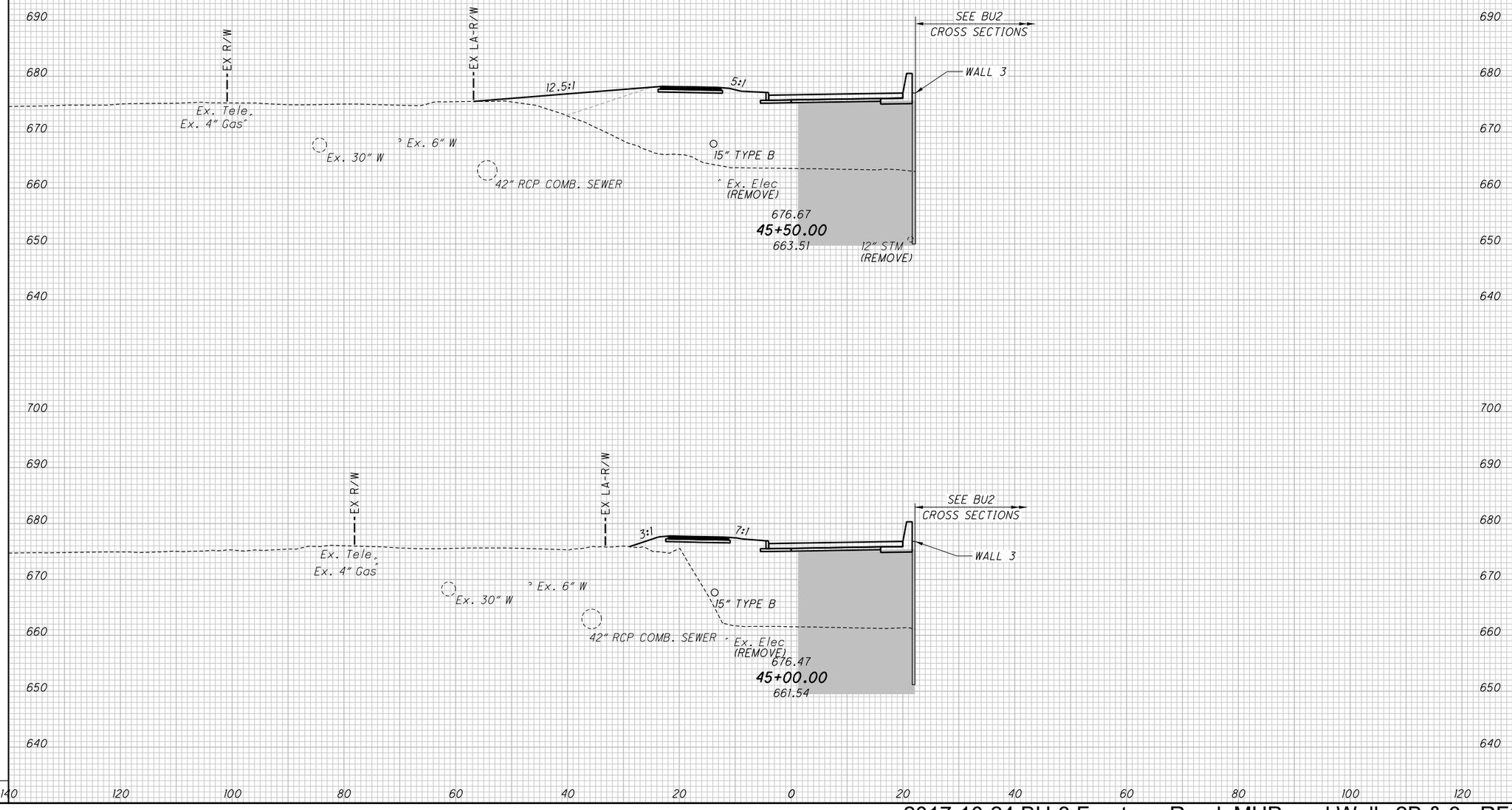
ISSUE RECORD

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DWB | CHECKED MLL

ITEM 204 - EXCAVATION OF SUBGRADE

SELECT GRANULAR MATERIAL LIMITS



CROSS SECTIONS - FRONTAGE RD.
STA. 45+00.00 TO STA. 45+50.00

CUY-77-13.80

P:\82388_CCG6B\Design\Roadway\Sheets\82388_XS2101.dgn XS_SHEET_temporary_model_name_16 9/6/2017 11:48:14 AM scorcoran

SEEDING	
END WIDTH	SQ. YDS.

RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf

09/07/2017 | Brian.Link

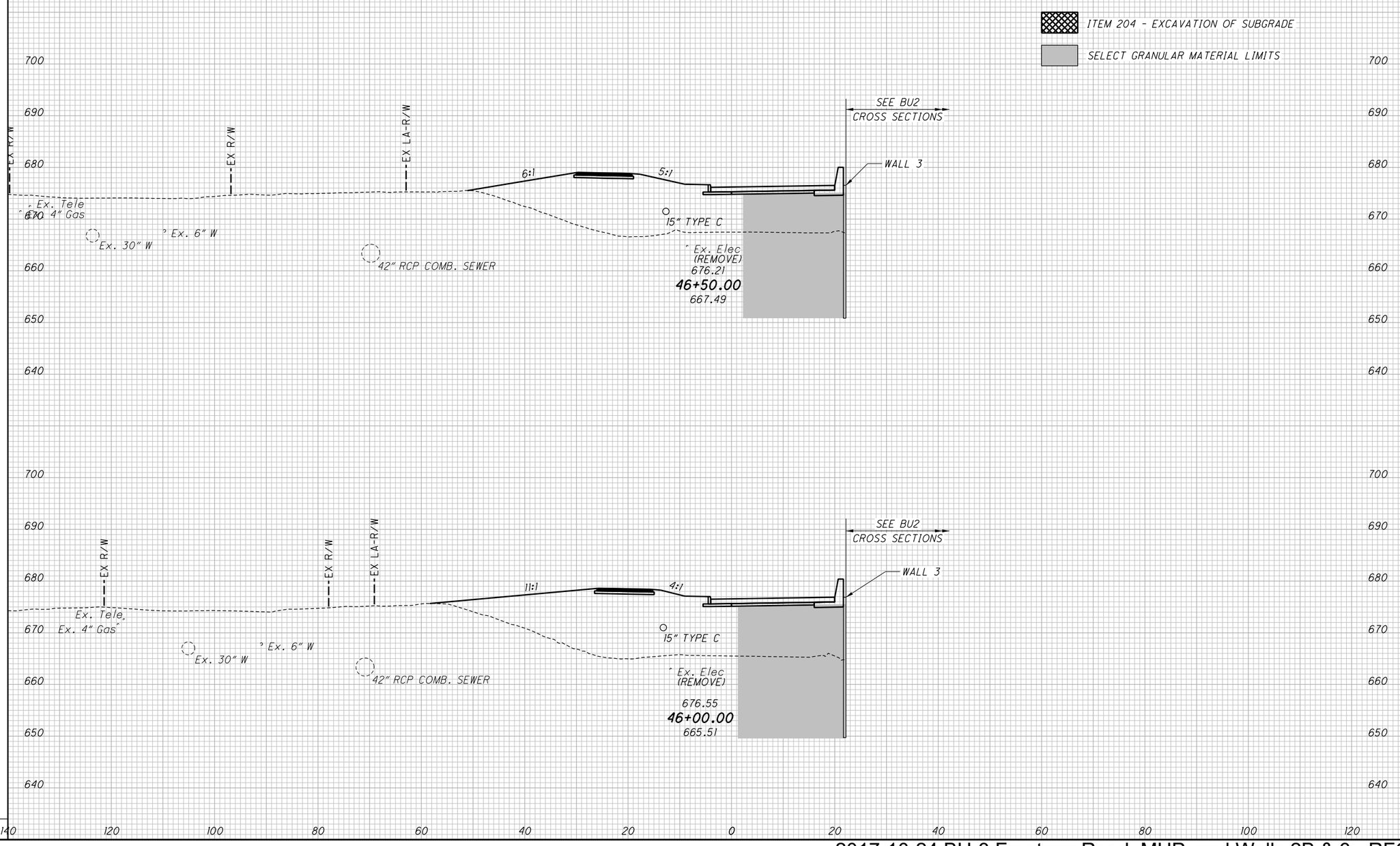
NO.	DATE	DESCRIPTION
		ISSUE RECORD

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DWB | CHECKED MLL

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

CROSS SECTIONS - FRONTAGE RD.
STA. 46+00.00 TO STA. 46+50.00



CUY-77-13.80

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SEEDING	
END WIDTH	SQ. YDS.

RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf

09/07/2017 | Brian.Link

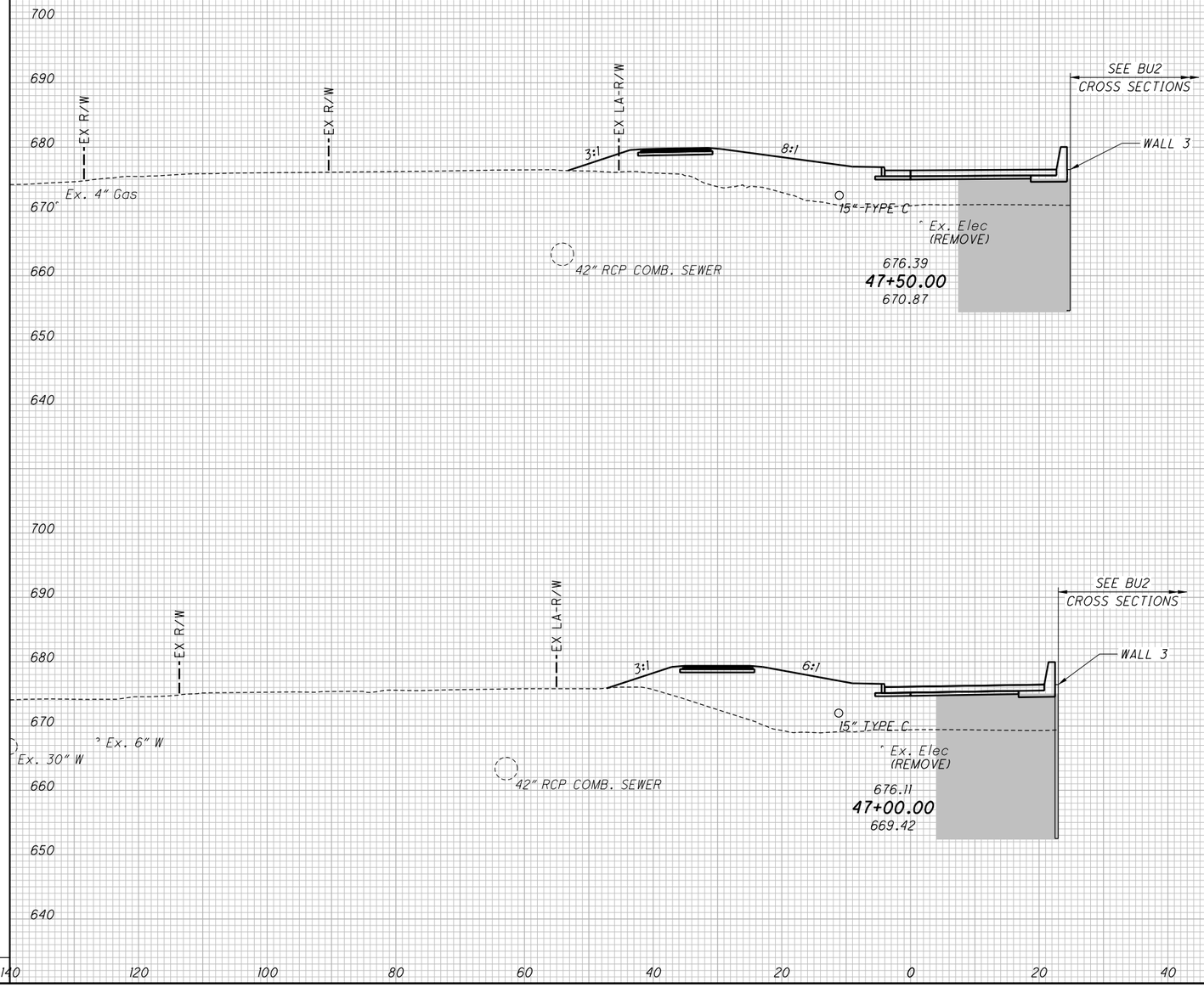
NO.	DATE	DESCRIPTION
		ISSUE RECORD

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DWB | CHECKED MLL

ITEM 204 - EXCAVATION OF SUBGRADE

SELECT GRANULAR MATERIAL LIMITS



CROSS SECTIONS - FRONTAGE RD.
STA. 47+00.00 TO STA. 47+50.00

CUY-77-13.80

56
95

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SEEDING	
END WIDTH	SQ. YDS.

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2017-09-06.CCG6B.BU3 RFC PLANS.pdf

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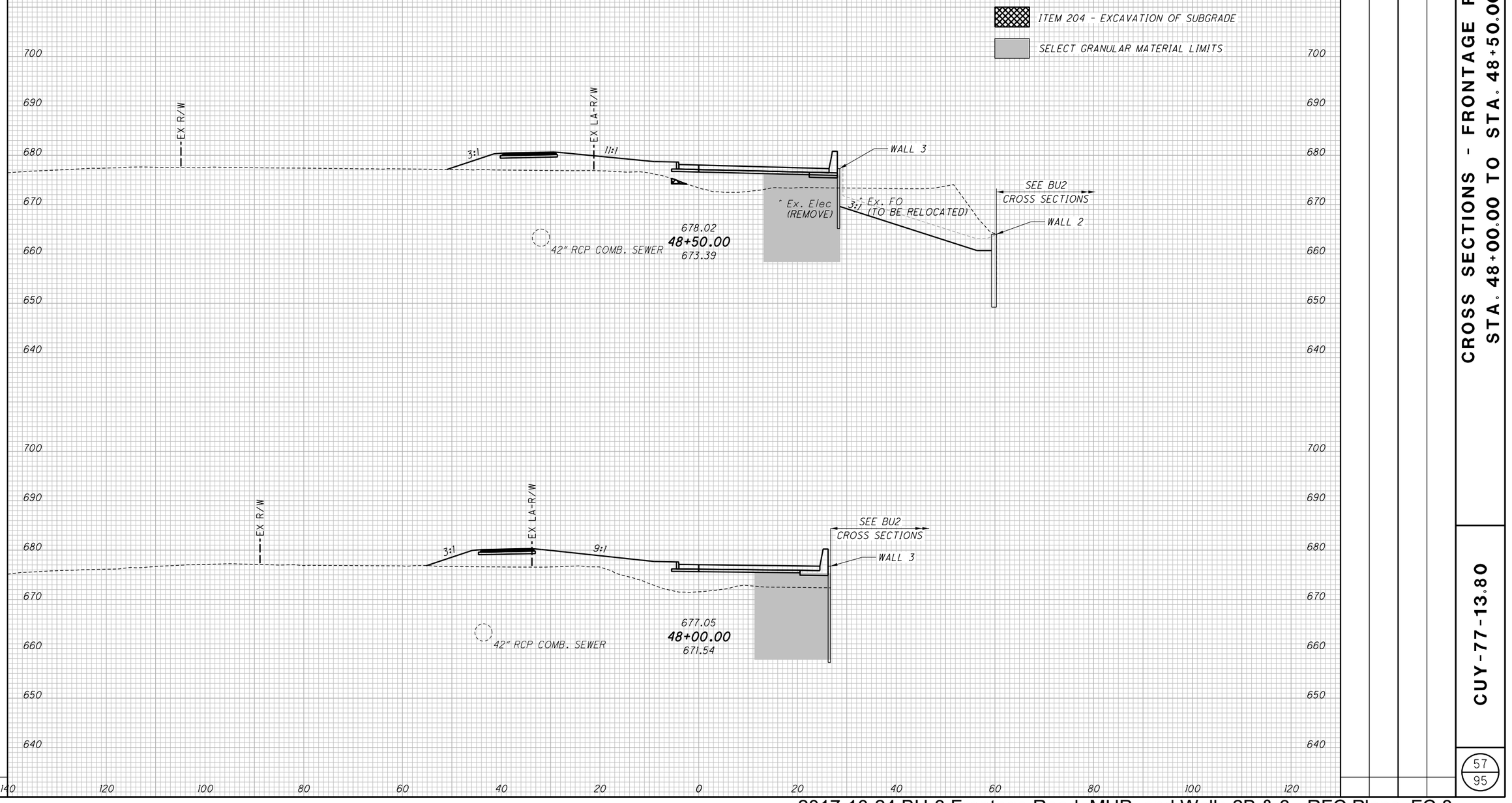
BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

NO.	DATE	DESCRIPTION
		ISSUE RECORD

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DWB | CHECKED MLL



CROSS SECTIONS - FRONTAGE RD.
STA. 48+00.00 TO STA. 48+50.00

CUY-77-13.80

57
95

P:\82388_CCG6B\Design\Roadway\Sheets\82388_XS2101.dgn XS_SHEET_temporary_model_name_19 9/6/2017 11:48:14 AM scorcoran

SEEDING	
END WIDTH	SQ. YDS.

RELEASED FOR CONSTRUCTION

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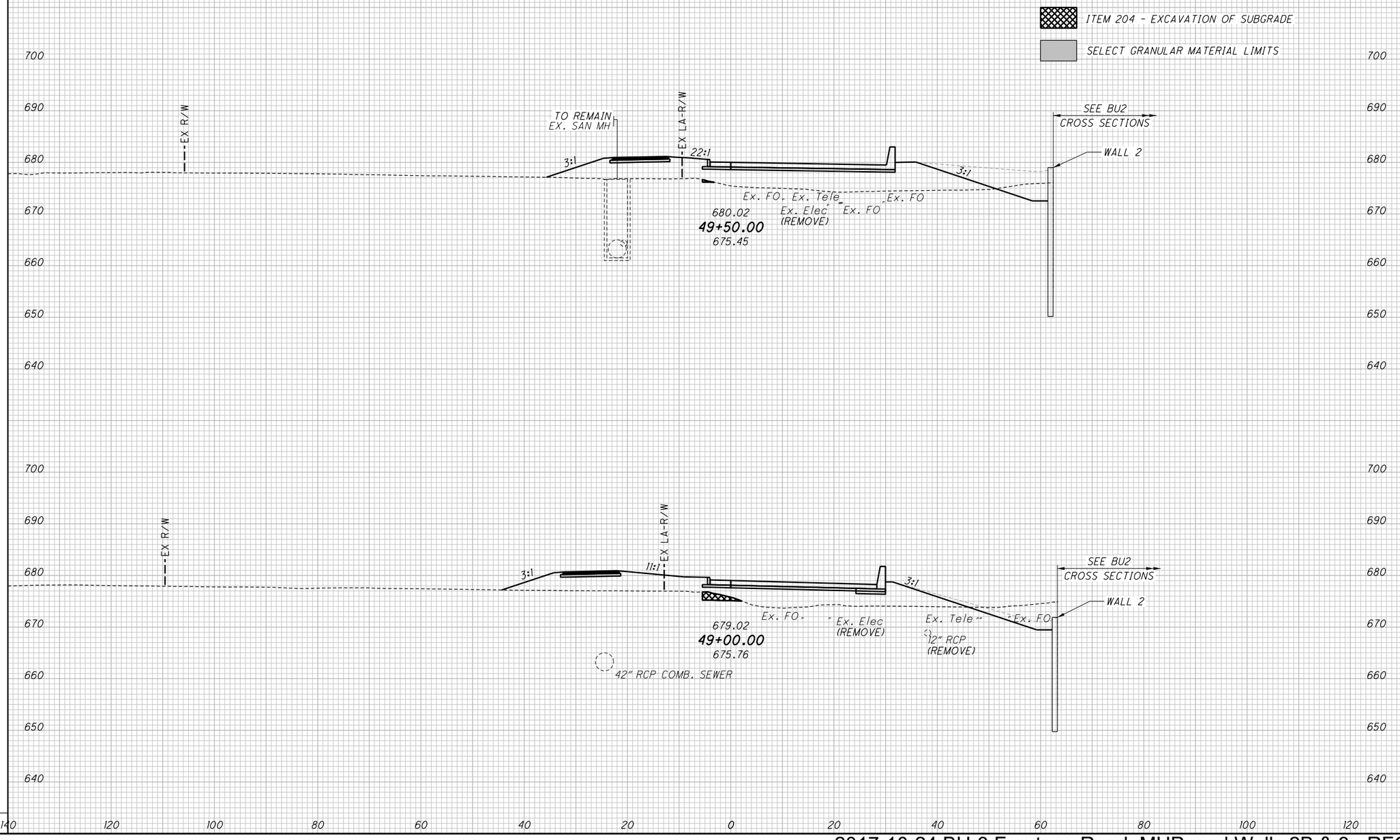
BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

NO.	DATE	DESCRIPTION
		ISSUE RECORD

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DWB | CHECKED MLL



CROSS SECTIONS - FRONTAGE RD.
STA. 49+00.00 TO STA. 49+50.00

CUY-77-13.80

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SEEDING	
END WIDTH	SQ. YDS.

RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf

09/07/2017 | Brian.Link

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

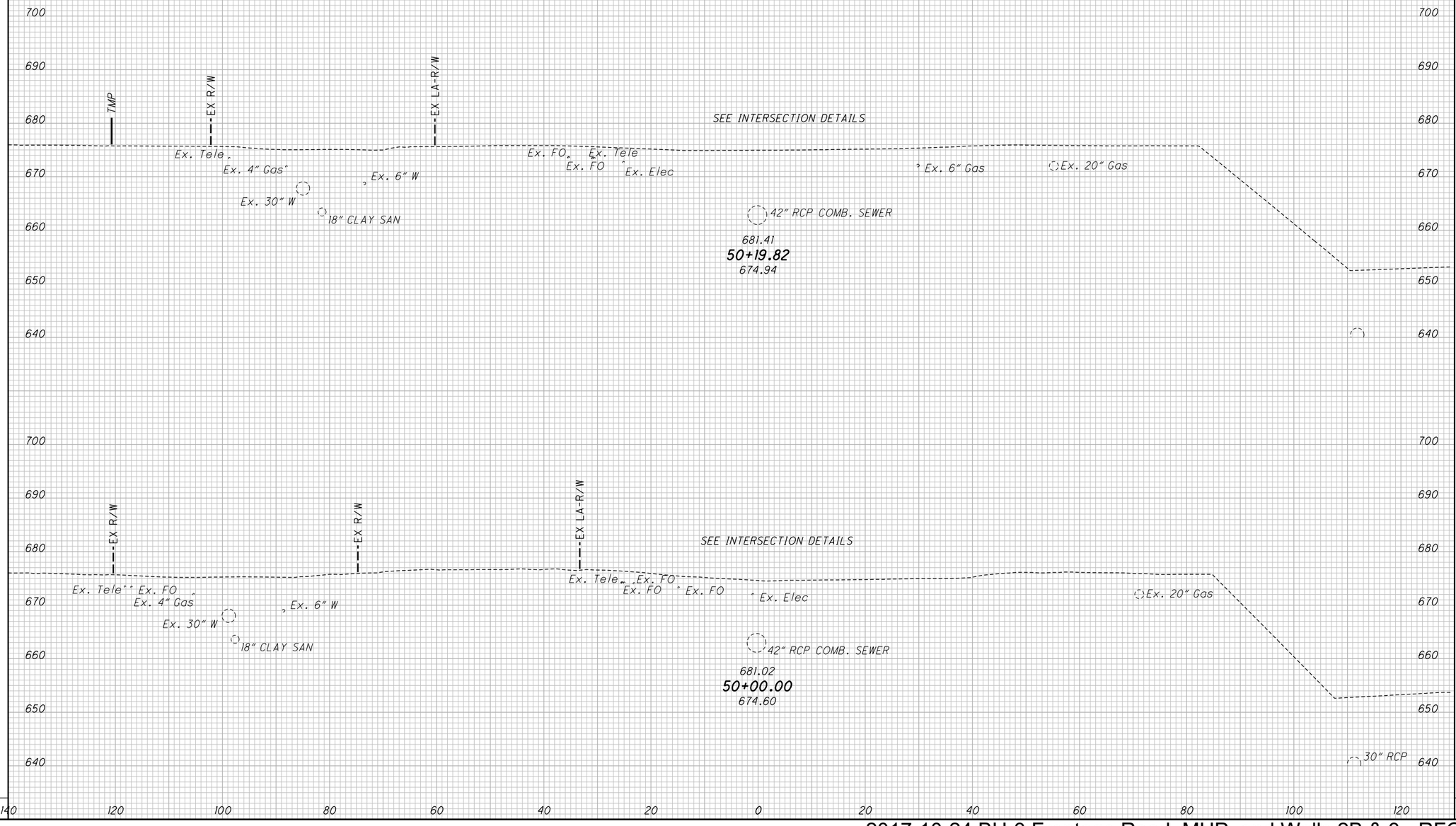
NO.	DATE	DESCRIPTION

ISSUE RECORD

END AREA	
CUT	FILL

VOLUME	
CUT	FILL

CALCULATED DWB | CHECKED MLL



CROSS SECTIONS - FRONTAGE RD.
STA. 50+00.00 TO STA. 50+19.82

CUY-77-13.80

59
95

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SUPERELEVATION TABLE - FRONTAGE RD.

P.I. STA. 48+79.75 (CURVE 7) DC = 10°00'00.00"

REMARKS	LEFT (OUTISDE EDGE)					INSIDE EDGE (PROFILE GRADE)		STATION	RIGHT (OUTSIDE EDGE)						REMARKS
	ELEVATION	ELEVATION CORRECTION	WIDTH	TRANSITION RATE	CROSS SLOPE	OFFSET	ELEVATION		THEORETICAL WIDTH	CROSS SLOPE	TRANSITION RATE	WIDTH	ELEVATION CORRECTION	ELEVATION	
	676.12	-0.06	4.00	172	-0.0160	0.00	676.18	47+20.52	16.00	0.0160	172	21.57	0.35	676.53	
	676.14	-0.06	4.00	172	-0.0144	0.00	676.20	47+25.00	16.00	0.0144	172	21.73	0.31	676.51	
	676.37	-0.02	4.00	172	-0.0053	0.00	676.39	47+50.00	16.00	0.0053	172	22.67	0.12	676.51	
FLAT	676.54	0.00	4.00	172	0.0000	0.00	676.54	47+64.55	16.00	0.0000	172	23.22	0.00	676.54	FLAT
	676.69	0.02	4.00	172	0.0038	0.00	676.67	47+75.00	16.00	-0.0038	172	23.61	-0.09	676.58	
	677.10	0.05	4.00	172	0.0129	0.00	677.05	48+00.00	16.00	-0.0129	172	24.55	-0.32	676.73	
RC	677.26	0.06	4.00	172	0.0160	0.00	677.20	48+08.58	16.00	-0.0160	172	24.87	-0.40	676.80	RC
PC	677.43	0.08	4.00	172	0.0189	0.00	677.35	48+16.56	16.00	-0.0189	172	25.17	-0.48	676.87	PC
	677.60	0.09	4.00	172	0.0220	0.00	677.51	48+25.00	16.00	-0.0220	172	25.48	-0.56	676.95	
	677.90	0.11	4.00	172	0.0270	0.00	677.79	48+38.85	16.00	-0.0270	172	26.00	-0.70	677.09	
FS	678.12	0.11	4.00		0.0270	0.00	678.01	48+50.00	16.00	-0.0270		26.42	-0.71	677.30	FS
FS	678.63	0.11	4.00		0.0270	0.00	678.52	48+75.00	16.00	-0.0270		27.36	-0.74	677.78	FS
FS	679.13	0.11	4.00		0.0270	0.00	679.02	49+00.00	16.00	-0.0270		28.30	-0.76	678.26	FS
FS	679.53	0.11	4.00		0.0270	0.00	679.42	49+20.14	16.00	-0.0270		29.18	-0.79	678.63	FS
	679.62	0.10	4.00	172	0.0252	0.00	679.52	49+25.00	16.00	-0.0252	172	29.23	-0.74	678.78	
PT	679.94	0.08	4.00	172	0.0189	0.00	679.86	49+42.43	16.00	-0.0189	172	29.89	-0.56	679.30	PT
	680.08	0.06	4.00	172	0.0161	0.00	680.02	49+50.00	16.00	-0.0161	172	30.17	-0.49	679.53	
RC	680.08	0.06	4.00	172	0.0160	0.00	680.02	49+50.41	16.00	-0.0160	172	30.17	-0.48	679.54	RC
	680.55	0.03	4.00	172	0.0071	0.00	680.52	49+75.00	16.00	-0.0071	172	33.86	-0.24	680.28	
FLAT	680.90	0.00	4.00	172	0.0000	0.00	680.90	49+94.44	16.00	0.0000	172	39.26	0.00	680.90	FLAT
	681.01	-0.01	4.00	172	-0.0020	0.00	681.02	50+00.00	16.00	0.0020	172	40.26	0.08	681.10	
SEE	681.15	-0.02	4.00	172	-0.0049	0.00	681.17	50+07.81	16.00	0.0049	172	41.32	0.20	681.37	SEE
INT. DETAIL															INT. DETAIL

NOTE: FOR ADDITIONAL ELEVATIONS, SEE INTERSECTION DETAIL ON SHEET 62

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2017-09-06.CCG6B.BU3 RFC PLANS.pdf

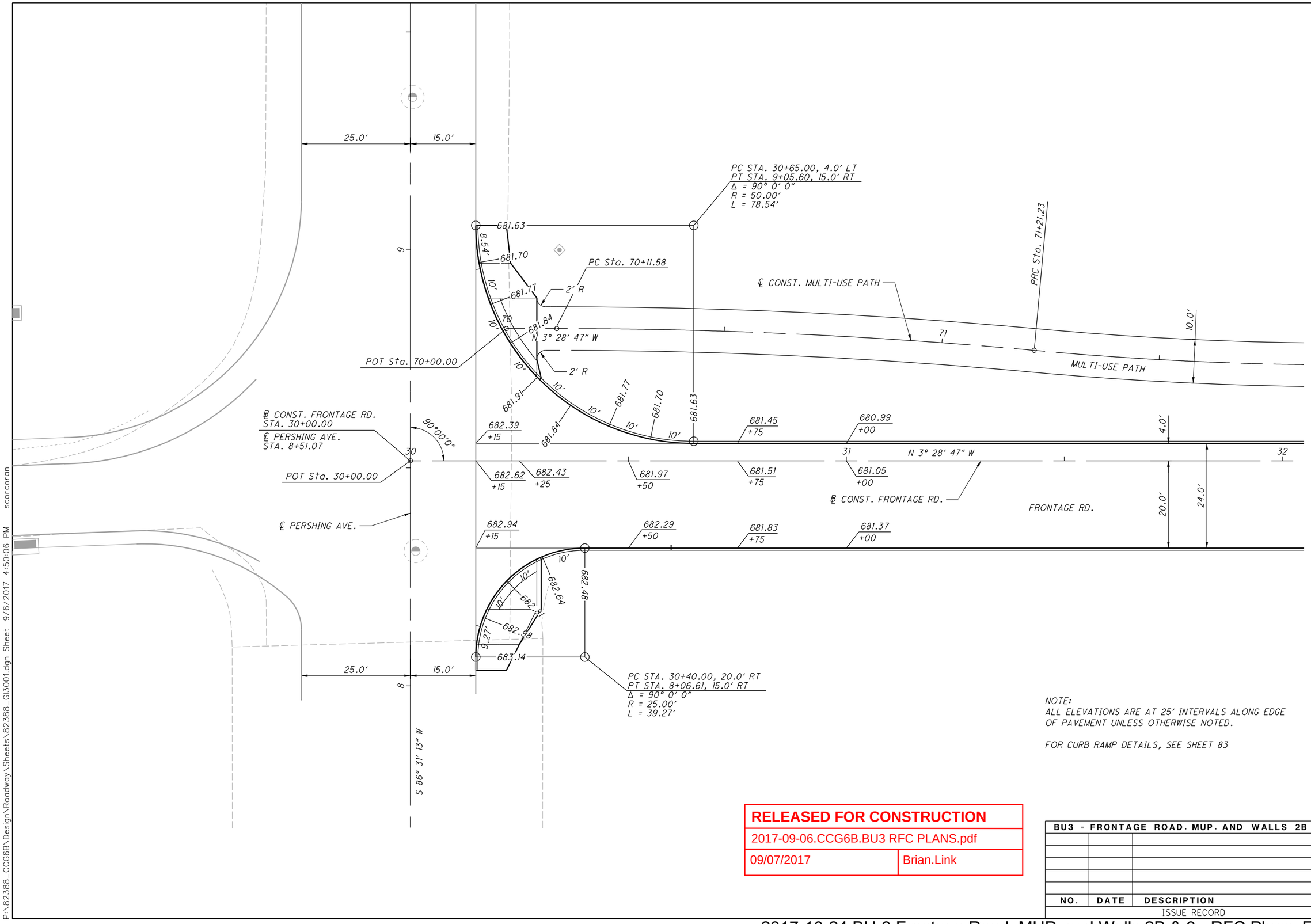
09/07/2017 Brian.Link

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

CALCULATED SWC
CHECKED MLL

SUPERELEVATION TABLE - FRONTAGE RD.

CUY-77-13.80



NOTE:
ALL ELEVATIONS ARE AT 25′ INTERVALS ALONG EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

FOR CURB RAMP DETAILS, SEE SHEET 83

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2017-09-06.CCG6B.BU3 RFC PLANS.pdf	
09/07/2017	Brian.Link

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED MLL
CHECKED SWC

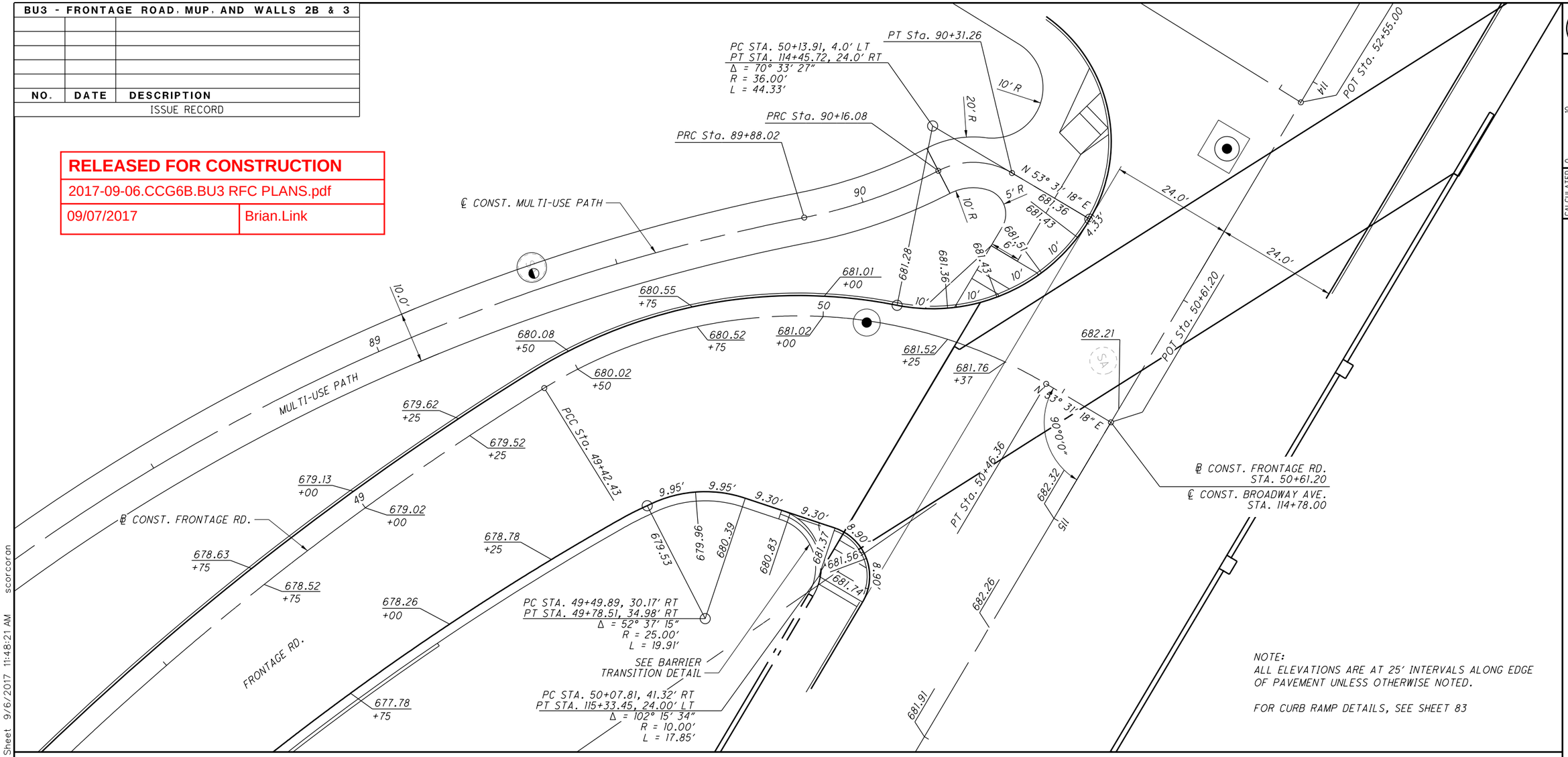
INTERSECTION DETAIL
FRONTAGE ROAD & PERSHING AVENUE

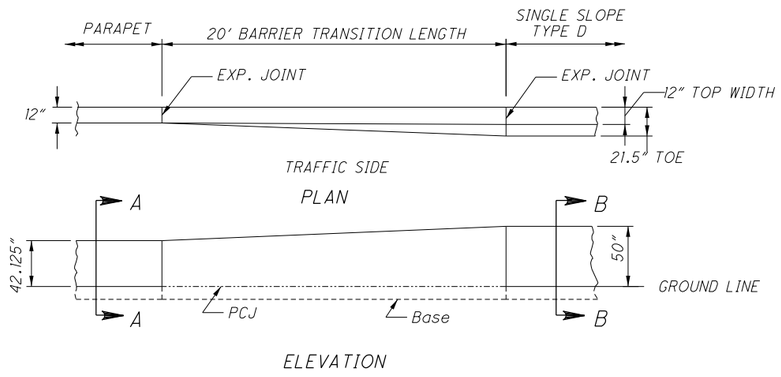
CUY-77-13.80

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

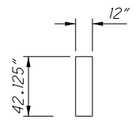
RELEASED FOR CONSTRUCTION

2017-09-06.CCG6B.BU3 RFC PLANS.pdf	
09/07/2017	Brian.Link



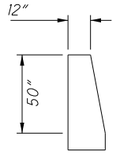


BARRIER TRANSITION DETAIL



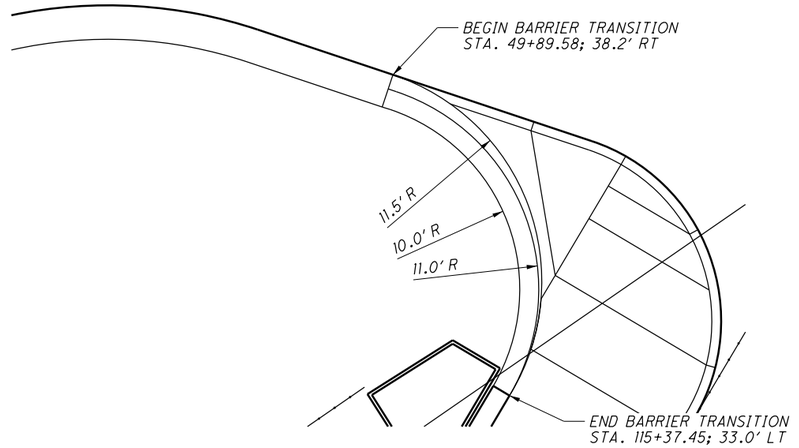
A-A
PARAPET

SEE BU-5 FOR PARAPET DETAILS



B-B
TYPE D

SEE SCD RM-4.3 AND RM-4.5 FOR SPECIFIC SINGLE SLOPE CONCRETE BARRIER DETAILS.



HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED MLL
CHECKED SWC

INTERSECTION DETAIL FRONTAGE ROAD & BROADWAY AVENUE

CUY-77-13.80

62
95

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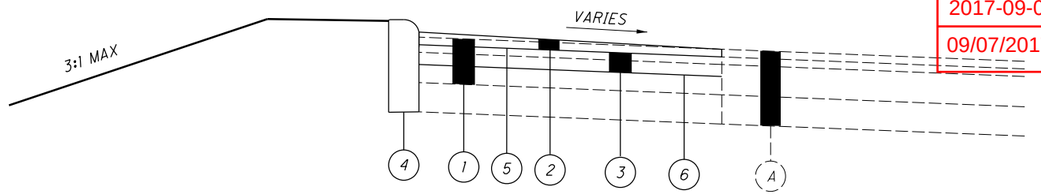
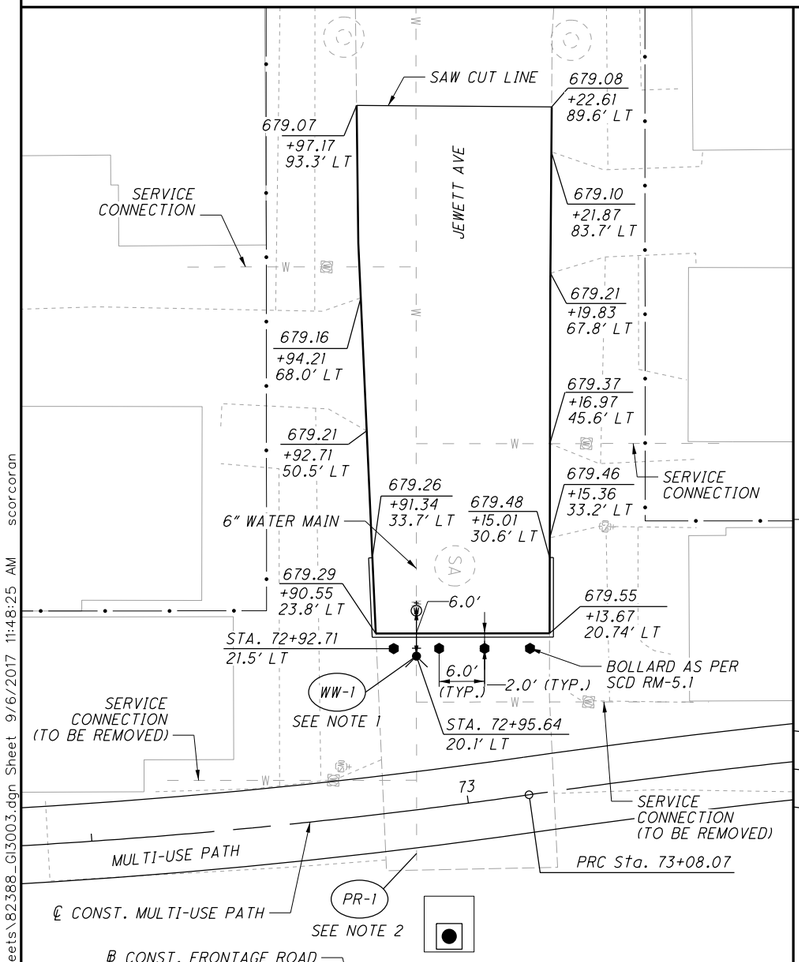
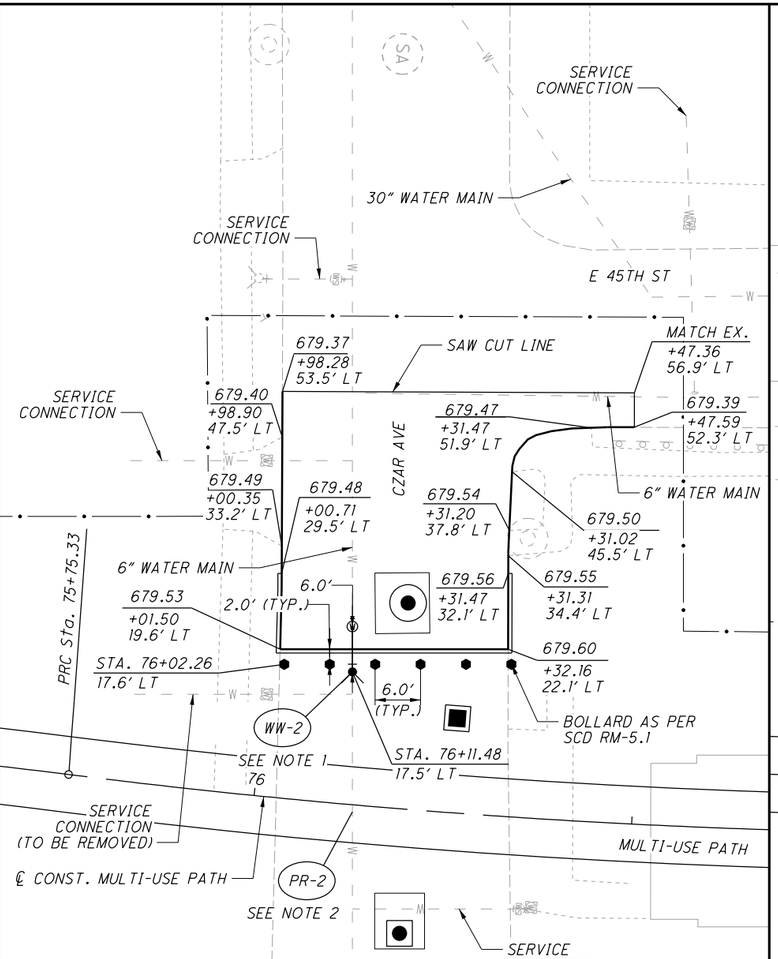
LEGEND

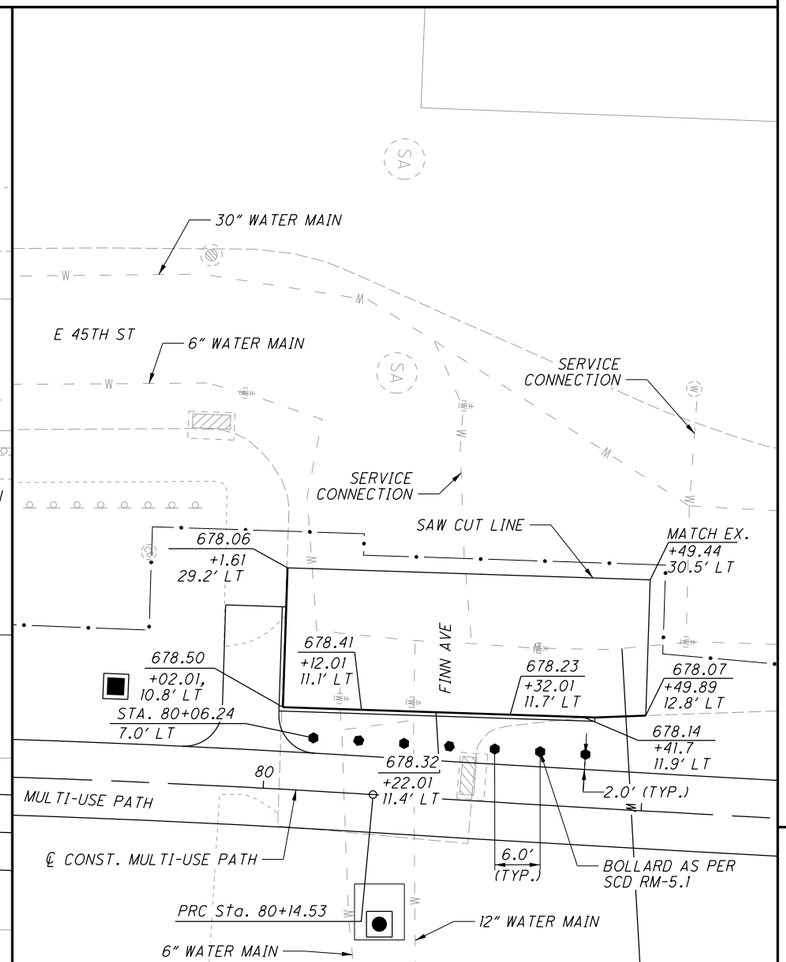
- (A) EXISTING ASPHALT PAVEMENT
- (1) ITEM 254 - PAVEMENT PLANING, ASPHALY CONCRETE (T=2¼")
- (2) ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22, T = 1¼"
- (3) ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448), PG64-22, T = (1" MIN)
- (4) ITEM 609 - CURB, TYPE 6
- (5) ITEM 407 - TACK COAT
- (6) ITEM 407 - TACK COAT, 702.13



SIDE STREET RESURFACING TYPICAL SECTION







NOTES:

1. INSTALLATION PER CWD STD-H06, 6" GATE VALVE ADAPTER SECTION AND HYDRANT TYPE "C" PER CWD STD-H11.
2. REMOVE EXISTING WATER MAIN, VALVES, AND SERVICES EAST OF THE PROPOSED HYDRANT.

NO.	DATE	DESCRIPTION
		ISSUE RECORD

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

CALCULATED SWC | CHECKED JTW

HORIZONTAL SCALE IN FEET 0 5 10 20

PAVEMENT DETAILS
JEWETT AVE., CZAR AVE., & FINN AVE.

CUY-77-13.80

63
95

P:\82388_CCG6B\Design\Roadway\Sheets\82388_GI3003.dgn Sheet 9/6/2017 11:48:25 AM scorcoran

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

HORIZONTAL SCALE IN FEET
0 2.5 5 10

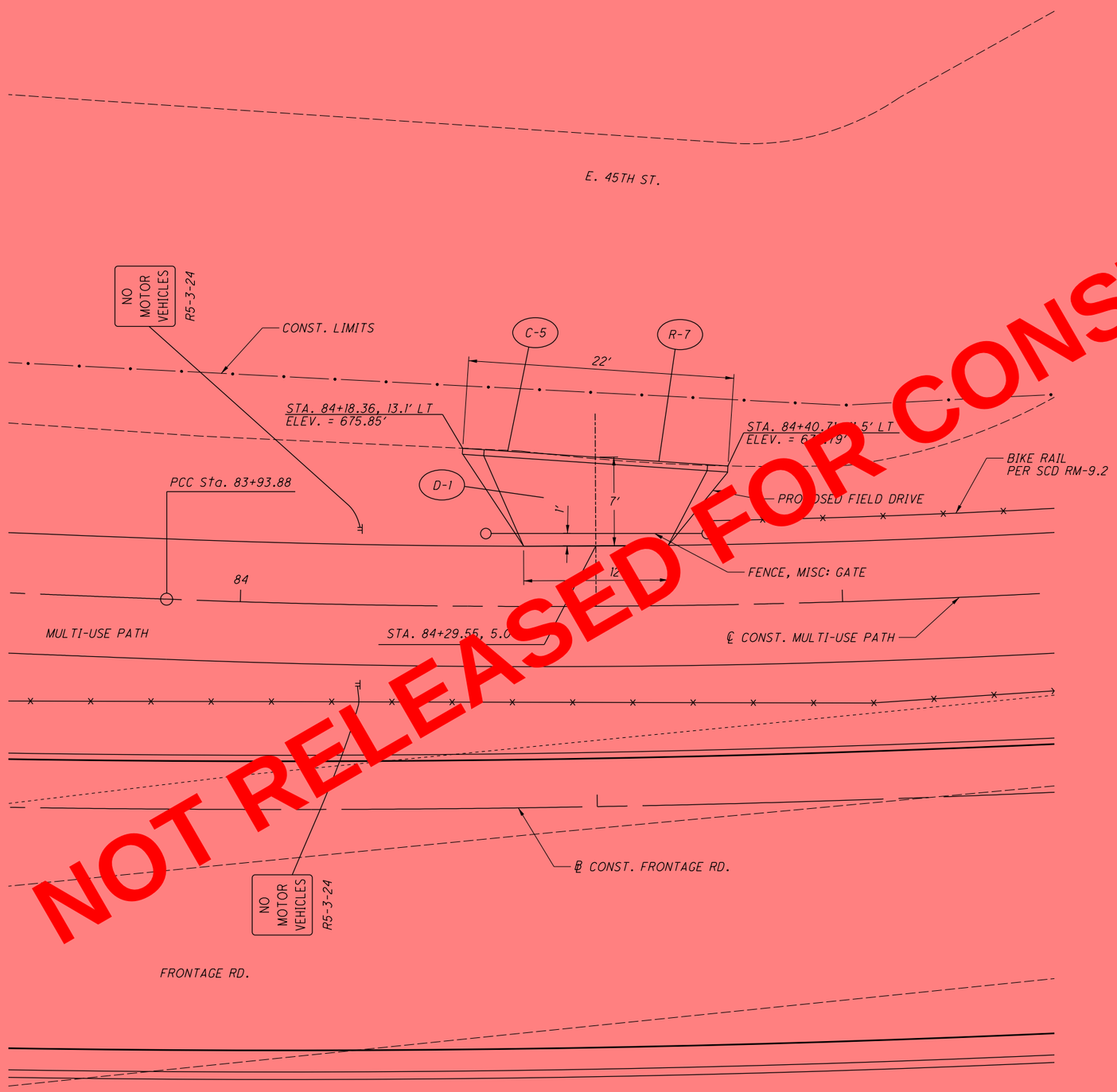
CALCULATED MLL
CHECKED SWC

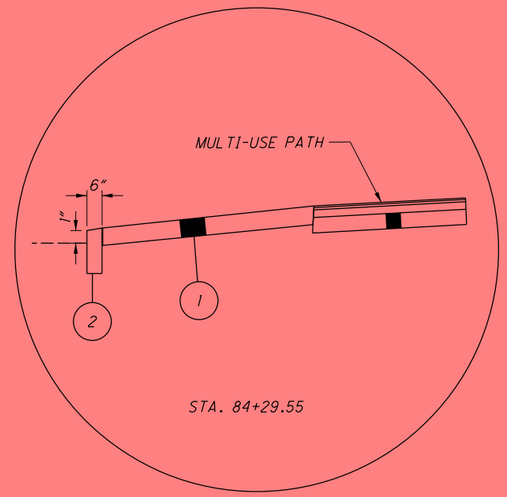
NOTES:

1. THE CONTRACTOR SHALL MATCH THE PROPOSED CURB TO THE EXISTING ELEVATIONS ALONG E. 45TH ST, AS SHOWN ON THIS SHEET.

ITEM 607 - FENCE, MISC.: GATE

THIS ITEM SHALL CONSIST OF A XX' WIDE BARRIER GATE WITH LOCK. KEYS WILL BE PROVIDED TO CPP UPON INSTALLATION





DRIVE PAVEMENT BUILD

LEGEND:

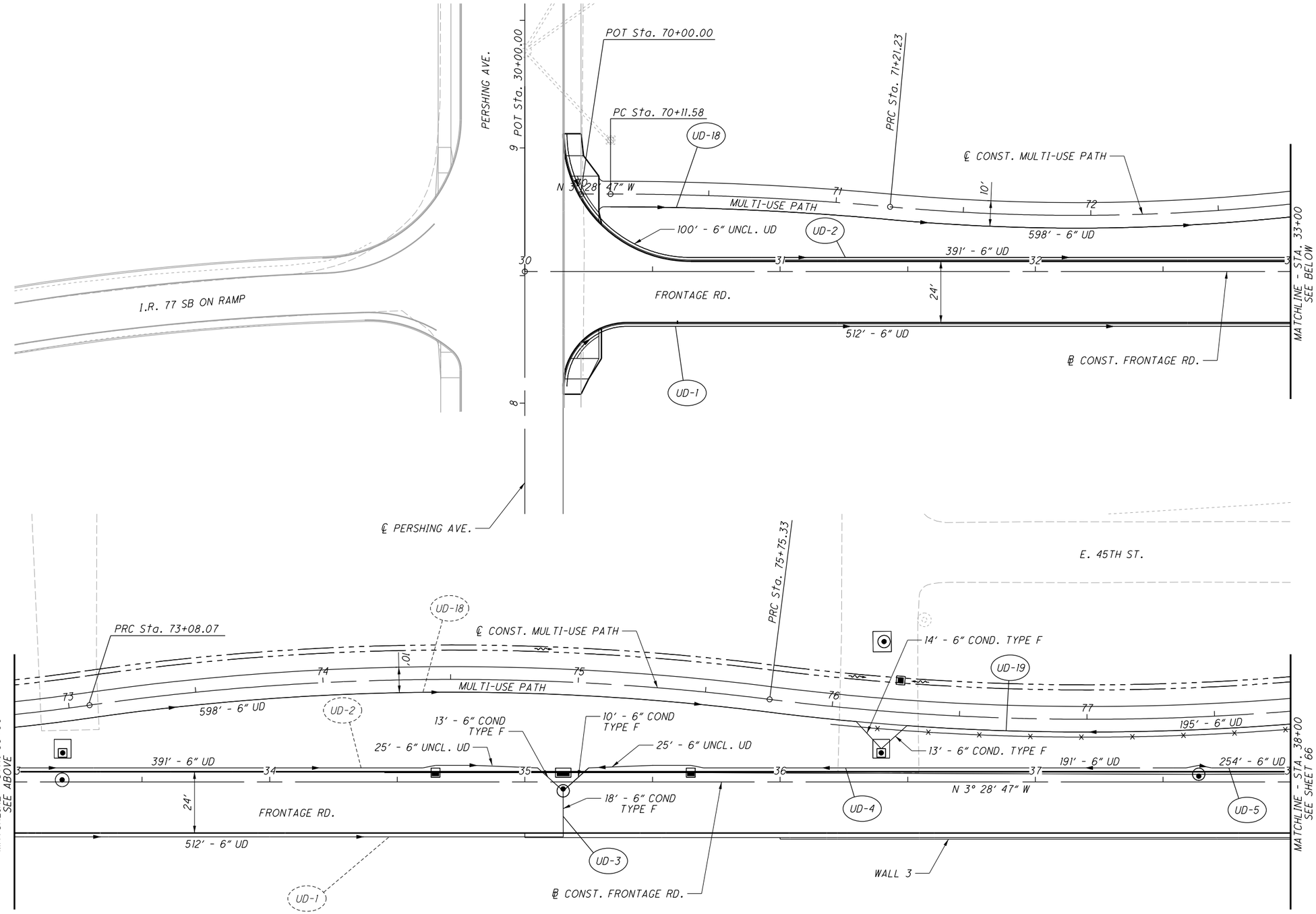
(1) ITEM 304 - AGGREGATE BASE, AS PER PLAN (T=10")

(2) ITEM 609 - CURB, TYPE 6

DRIVE DETAIL

CUY-77-13.80

64
95



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09/07/2017	Brian.Link

NO.	DATE	DESCRIPTION
		BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3
		ISSUE RECORD

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLL
CHECKED SWC

UNDERDRAIN DETAILS
FRONTAGE RD. - BEGIN WORK TO STA. 38+00

CUY-77-13.80

65
95

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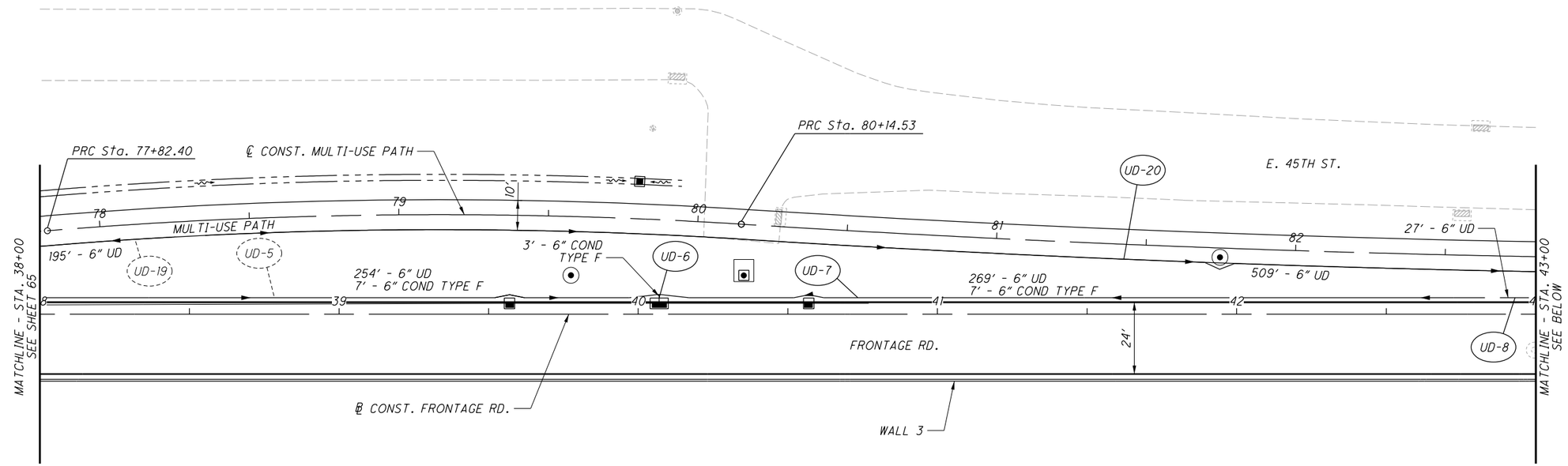

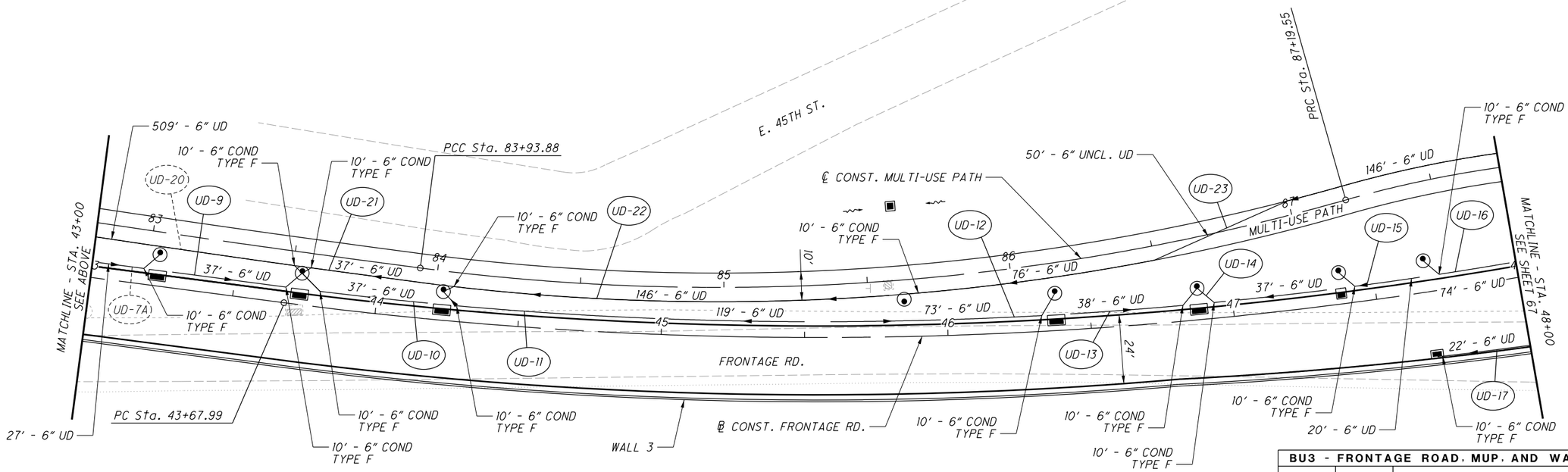

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2017-09-06.CCG6B.BU3 RFC PLANS.pdf

09/07/2017 | Brian.Link

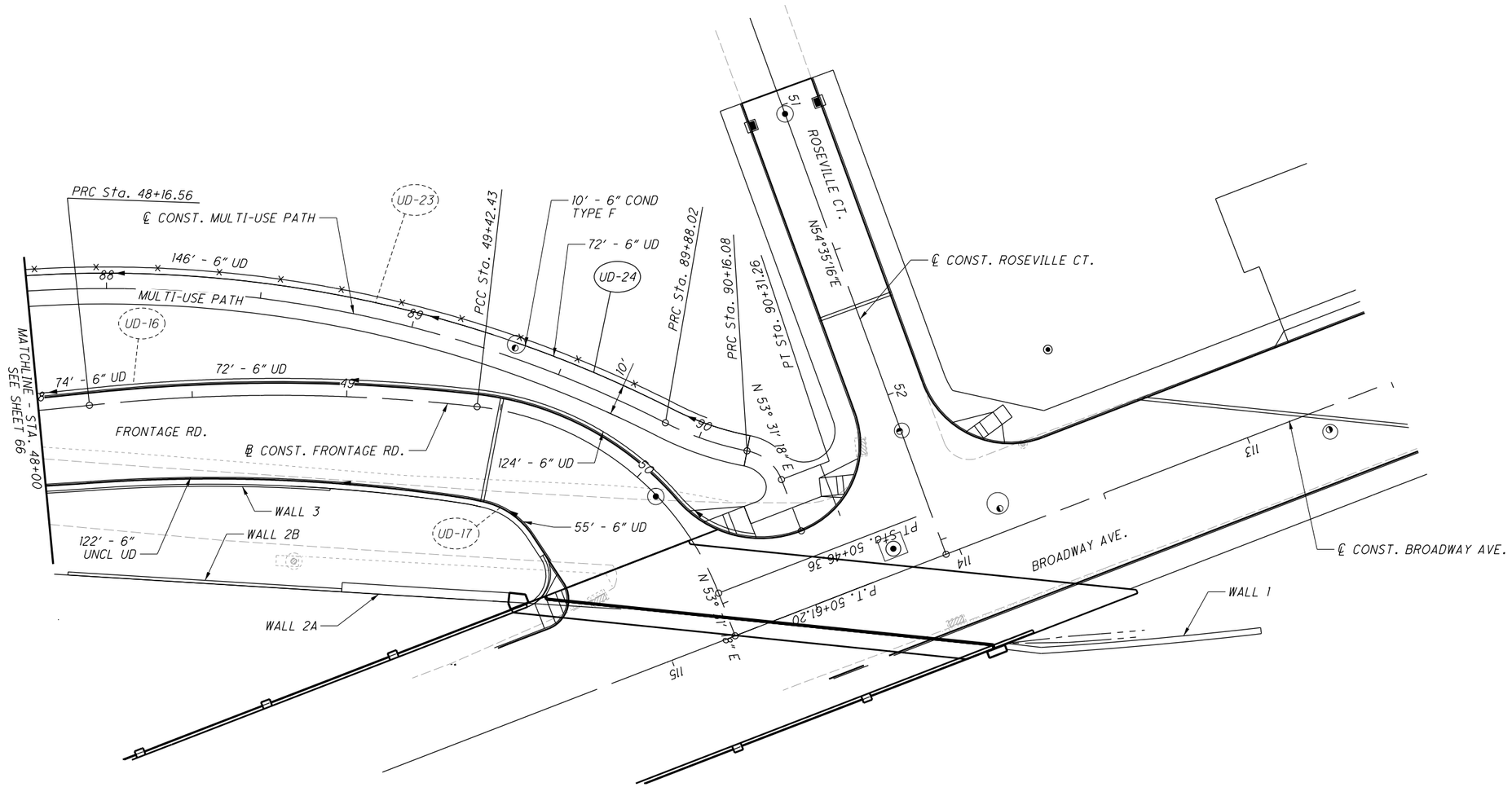
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLL | CHECKED SWC

UNDERDRAIN DETAILS
FRONTAGE RD. - STA. 38+00 TO STA. 48+00

CUY-77-13.80

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
		ISSUE RECORD



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BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLL
CHECKED SWC

UNDERDRAIN DETAILS
FRONTAGE RD. - STA. 48+00 TO END WORK

CUY-77-13.80

67
95

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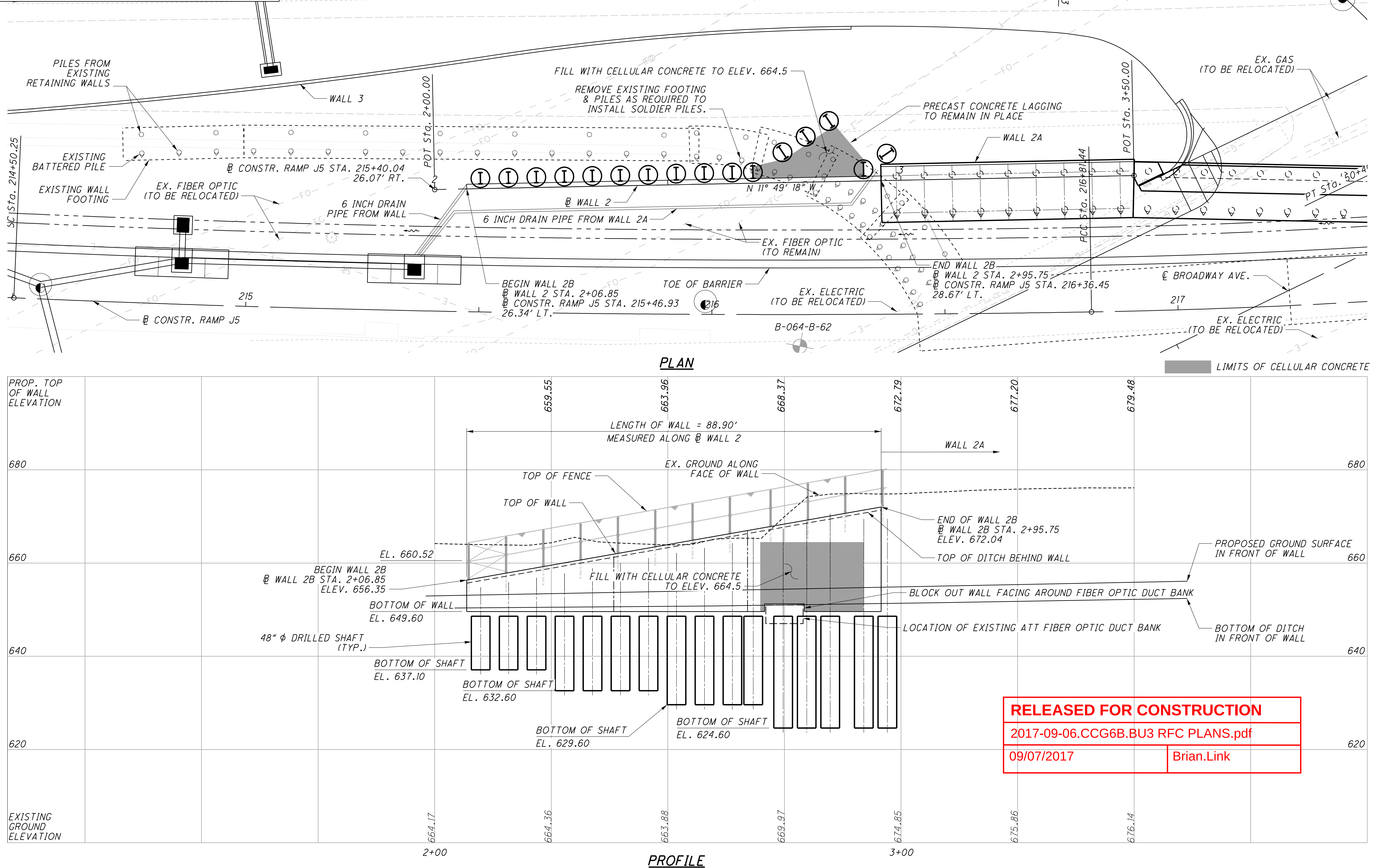
BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B&3		
NO.	DATE	DESCRIPTION

ISSUE RECORD



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2017-09-06.CCG6B.BU3 RFC PLANS.pdf	
09/07/2017	Brian.Link

DESIGN AGENCY: E.L. ROBINSON ENGINEERING, 1468 West 9th Street · Cleveland, Ohio 44113, www.elrobinsonengineering.com

DATE: AUG 2017 | STRUCTURE FILE NUMBER
REVIEWED: DFT | REVISED
DRAWN: DTA
DESIGNED: IA | CHECKED: PAN

PLAN AND PROFILE
RETAINING WALL 2B
ALONG I.R.-77

CUY-77-13.80
PID No. 82388

1/10

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING:
VPF-1-90 REVISED 7/7/2015

REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION:
800 DATED 7/15/16

SPECIAL PROVISION:

ENGINEERED FILL - CELLULAR CONCRETE

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2012, INCLUDING THE 2016 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

DESIGN ASSUMPTIONS:

SOIL UNIT WEIGHT, γ= 120 pcf
ANGLE OF INTERNAL FRICTION, Φ= 30°

DESIGN DATA:

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI
(CONCRETE FACING, PRECAST LAGGING AND DRILLED SHAFTS)
REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI
STEEL SOLDIER PILES & BRACING - ASTM A572 - YIELD STRENGTH 50 KSI
STEEL PLATES FOR BRACING - ASTM A36 - YIELD STRENGTH 36 KSI

ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES, W30x99
ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES, W33x118
ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES, W36x182

THIS WORK CONSISTS OF FURNISHING AND PLACING STEEL SOLDIER PILES INTO DRILLED HOLES. FURNISH SOLDIER PILES CONSISTING OF STRUCTURAL STEEL MEMBERS THAT MEET THE PLAN REQUIREMENTS AND CONFORM TO ASTM A572, GRADE 50. DO NOT SPLICE STEEL SOLDIER PILES.

ITEM 509 - WALL FACING REINFORCEMENT

THE CONTRACTOR MAY REPLACE THE REINFORCING BARS IN THE RETAINING WALL FACING WITH EPOXY COATED WELDED WIRE FABRIC CONFORMING TO C&MS 709.14. THE EPOXY COATED WELDED WIRE FABRIC MUST PROVIDE AN EQUIVALENT AREA OF STEEL IN EACH DIRECTION AS THE REINFORCING BARS SHOWN IN THE PLANS.

ITEM 512 - TYPE 2 WATERPROOFING, AS PER PLAN

PLACE WATERPROOFING MEMBRANE AT THE LOCATIONS OF THE PROPOSED JOINTS IN THE CONCRETE WALL FACING. PLACE THE WATERPROOFING MEMBRANE OVER THE PGD AND SECURELY ATTACH TO THE TIMBER LAGGING WITH SCREWS AND 1-INCH OUTER DIAMETER FENDER WASHERS. PLACE THE MEMBRANE SO THAT THE ADHESIVE SIDE FACES THE CAST-IN-PLACE CONCRETE. THE SURFACE PREPARATION DESCRIBED IN C&MS 512.08 IS NOT REQUIRED.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

SEAL SURFACES OF THE CAST-IN-PLACE CONCRETE WALL FACING AND PARAPET AS DETAILED IN THE PLANS WITH A EPOXY-URETHANE SEALER AS PER C&MS 512.

ITEM 513 - WELDED STUD SHEAR CONNECTORS

SOLDIER PILES WHICH REQUIRE HEADED STUDS ARE SHOWN IN THE TABLE ON SHEET 5/6 . WELD HEADED STEEL STUDS TO THE FLANGES OF THE SOLDIER PILE IN ORDER TO CONNECT THE CONCRETE WALL FACING TO THE SOLDIER PILE. ATTACH HEADED STUDS ACCORDING TO C&MS 513.22 AND AS SHOWN IN THE PLANS. THE CONTRACTOR MAY ATTACH THE STUDS EITHER BEFORE PLACING THE SOLDIER PILE IN THE DRILLED HOLE OR AFTER EXCAVATING IN FRONT OF THE WALL. PROTECT THE HEADED STUDS FROM DAMAGE UNTIL THE CONCRETE WALL FACING IS POURED. REPAIR OR REPLACE DAMAGED HEADED STUDS AT NO EXPENSE TO THE DEPARTMENT.

ITEM 524 - DRILLED SHAFTS, 48" DIAMETER, AS PER PLAN

THIS WORK CONSISTS OF FURNISHING AND INSTALLING DRILLED SHAFTS FOR SOLDIER PILE WALLS. THE DRILLED SHAFTS ARE REINFORCED WITH SOLDIER PILES INSTEAD OF REINFORCING STEEL CAGES. THE SOLDIER PILES EXTEND ABOVE THE TOP OF THE DRILLED SHAFT. FURNISH AND INSTALL THE DRILLED SHAFTS ACCORDING TO C&MS 524 EXCEPT AS MODIFIED AND SUPPLEMENTED BELOW.

EXCAVATE THE HOLE FOR THE DRILLED SHAFT WITHIN 3 INCHES OF THE PLAN LOCATION. PLACE THE SOLDIER PILE WITHIN THE HOLE SO IT IS VERTICAL AND NOT INCLINED MORE THAN 1/4-INCH PER FOOT. PLACE THE SOLDIER PILE SO THAT THE FLANGES ARE PARALLEL TO THE CENTERLINE OF THE ROW OF DRILLED SHAFTS. DO NOT ALLOW THE ORIENTATION OF THE FLANGES TO VARY BY MORE THAN 10 DEGREES. SUPPORT THE SOLDIER PILE SO THAT IT DOES NOT MOVE DURING CONCRETE PLACEMENT.

USE CLASS QC1 CONCRETE ACCORDING TO C&MS 511. PLACE CONCRETE TO THE ELEVATION FOR THE TOP OF THE DRILLED SHAFT. THE CONTRACTOR MAY PLACE CONCRETE USING THE FREE FALL METHOD PROVIDED THE DEPTH OF WATER IS LESS THAN 6 INCHES AND THE CONCRETE FALLS WITHOUT STRIKING THE SIDES OF THE HOLE. POURING CONCRETE ALONG THE WEB OF THE SOLDIER PILE IS ACCEPTABLE.

CHECK THE POSITION, THE VERTICAL ALIGNMENT AND ORIENTATION OF THE SOLDIER PILE IMMEDIATELY AFTER CONCRETE PLACEMENT. MAKE CORRECTIONS AS NECESSARY TO MEET THE ABOVE TOLERANCES.

IF REQUIRED TO MAINTAIN HOLE STABILITY, FILL THE HOLE ABOVE THE CONCRETE TO THE EXISTING GROUND SURFACE WITH ITEM 613 LOW STRENGTH MORTAR BACKFILL (LSM).

REMOVE CONCRETE AND LSM AS NECESSARY FROM AROUND THE SOLDIER PILE IN ORDER TO PLACE THE LAGGING. WAIT AT LEAST 12 HOURS AFTER PLACING CONCRETE BEFORE PLACING LAGGING.

ITEM SPECIAL - RETAINING WALL, MISC.: TIMBER LAGGING

THIS WORK CONSISTS OF FURNISHING AND PLACING TIMBER LAGGING BETWEEN THE SOLDIER PILES WHERE REQUIRED BELOW THE EXISTING GROUND SURFACE. FURNISH TIMBER LAGGING CONSISTING OF CONSTRUCTION GRADE, UNTREATED HARDWOOD WITH A MINIMUM THICKNESS OF 3 INCHES. TO PERMIT DRAINAGE, PROVIDE 1/4 TO 1/2-INCH SPACES BETWEEN LAGGING BOARDS USING 3/8-INCH THICK SPACER BLOCKS OR OTHER MEANS ACCEPTABLE TO THE ENGINEER.

ITEM SPECIAL - RETAINING WALL, MISC. PRECAST LAGGING:

THIS WORK CONSISTS OF FURNISHING AND PLACING PRECAST REINFORCED CONCRETE PANELS BETWEEN THE SOLDIER PILES TO FUNCTION AS LAGGING FOR THE RETAINING WALL. PROVIDE PRECAST CONCRETE LAGGING FROM A PRECAST CONCRETE MANUFACTURER CERTIFIED ACCORDING TO SUPPLEMENT 1073. PROVIDE CONCRETE WITH A 28-DAY DESIGN STRENGTH OF AT LEAST 4 KSI ACCORDING TO C&MS 499. PROVIDE EPOXY COATED REINFORCING STEEL ACCORDING TO C&MS 709.00. IN LIEU OF EPOXY COATING, A CORROSION INHIBITING CONCRETE ADMIXTURE MAY BE USED AT THE SPECIFIED DOSAGE RATE. A QUALIFIED PRODUCT LIST OF CORROSION INHIBITING ADMIXTURES IS ON FILE AT THE LABORATORY. MANUFACTURERS SHOULD RECOGNIZE THAT THE CORROSION INHIBITOR MAY AFFECT THE STRENGTH, ENTRAINED AIR CONTENT, WORKABILITY, ETC. OF THEIR CONCRETE MIXES. THE MANUFACTURER'S CHOICE TO USE ONE OF THESE CORROSION INHIBITORS DOES NOT ALLEVIATE MEETING ALL DESIGN REQUIREMENTS. DO NOT ALLOW THE DIMENSIONS OF THE LAGGING OR LOCATION OF THE REINFORCING STEEL TO VARY BY MORE THAN 1/4-INCH. PERMANENTLY MARK EACH PANEL TO INDICATE THE FACE TO BE PLACED AGAINST THE SOIL. PLACE THE PANEL BETWEEN THE FLANGES OF THE SOLDIER PILES AND BEARING AGAINST THE FLANGES ON THE EXPOSED SIDE OF THE WALL, OR AS SHOWN IN THE PLANS.

ITEM 607 - VANDAL PROTECTION FENCE, 8' STRAIGHT, COATED FABRIC, AS PER PLAN:

INSTALL VANDAL PROTECTION FENCE ACCORDING TO STD. CONSTRUCTION DRAWING VPF-1-90 AND C&MS 607, EXCEPT AS MODIFIED BELOW.

THE COLOR OF THE FENCE FABRIC, RAILS, POSTS, PLATES, TIE WIRES, AND ADDITIONAL VISUAL HARDWARE SHALL BE BLACK. INSTALL FENCE DIRECTLY BEHIND RETAINING WALL STEM OR FACING. SUPPORT LINE POSTS BY EMBEDDING IN CONCRETE ENCASEMENT. CONCRETE ENCASEMENT SHALL BE 4 FT DEEP AND AT LEAST 12 INCHES IN DIAMETER.

ITEM SPECIAL - RETAINING WALL, MISC.: PREFABRICATED GEOCOMPOSITE DRAIN

THIS WORK CONSISTS OF FURNISHING AND PLACING PREFABRICATED GEOCOMPOSITE DRAIN (PGD) AGAINST THE TIMBER LAGGING OR AGAINST THE CONCRETE WALL FACING WHERE THE TIMBER LAGGING IS NOT REQUIRED.

FURNISH PGD CONSISTING OF A POLYMERIC CORE WRAPPED IN A FABRIC CONFORMING TO C&MS 712.09, TYPE A. USE CORE MATERIAL THAT IS RESISTANT TO PETROLEUM-BASED CHEMICALS, NATURALLY OCCURRING SOIL CHEMICALS, AND ROAD DE-ICING AGENTS. THE CORE MATERIAL SHALL HAVE SUFFICIENT FLEXIBILITY TO WITHSTAND BENDING AND HANDLING DURING INSTALLATION WITHOUT DAMAGE. THE REQUIRED MINIMUM COMPRESSIVE STRENGTH OF THE CORE IS 40 POUNDS PER SQUARE INCH ACCORDING TO ASTM D 1621 PROCEDURE A. THE MINIMUM (SINGLE SIDE) CORE FLOW CAPACITY IS 10 GALLONS PER MINUTE PER FOOT OF WIDTH FOR A 0.1 GRADIENT AT 10 POUNDS PER SQUARE INCH BLADDER LOAD ACCORDING TO ASTM D 4716. FURNISH THE MANUFACTURER'S CERTIFIED TEST DATA.

PLACE PGD BETWEEN THE SOLDIER PILES. PLACE THE SIDE FACED WITH GEOTEXTILE AGAINST THE TIMBER LAGGING, FACING TOWARDS THE RETAINED GROUND, AND SECURE THE DRAIN TO THE LAGGING. USE NAILS AND WASHERS AT LEAST 1-INCH DIAMETER IN SIZE TO SECURE THE PGD ALONG THE EDGES OF THE PGD AND AT A MAXIMUM SPACING OF 4 FEET. REPAIR ANY DAMAGE TO THE GEOTEXTILE FABRIC BY COVERING WITH A PATCH WHICH OVERLAPS THE DAMAGED AREA BY AT LEAST 12 INCHES. IF THE CORE OF THE PGD IS DAMAGED, REPLACE IT WITH A NEW SECTION OF PGD AND SPLICE THE NEW SECTION WITH AT LEAST A 12-INCH OVERLAP SUCH THAT THE FLOW OF WATER IS NOT IMPEDED WITHIN THE DRAIN. SEAL ALL EXPOSED EDGES WITH GEOTEXTILE FABRIC THAT IS OVERLAPPED AT LEAST 4 INCHES PAST THE EDGE TO PREVENT CONCRETE INTRUSION DURING PLACEMENT.

IF TIMBER LAGGING IS NOT REQUIRED BECAUSE THE PORTION OF THE WALL IS ABOVE THE EXISTING GROUND, ATTACH PGD TO THE BACK FACE OF CONCRETE WALL FACING UNTIL BACKFILL IS PLACED.

INSTALL POROUS BACKFILL AT THE BASE OF THE SOLDIER PILE WALL AS SHOWN IN THE PLANS. ENSURE THAT AT LEAST 3 FEET OF PGD BETWEEN SOLDIER PILES EXTENDS INTO THE POROUS BACKFILL SO THAT THE WATER FLOW IS NOT INTERRUPTED.

ABBREVIATIONS:

ABUT. - ABUTMENT
APPR. - APPROACH
B - BOTTOM
℄ - BASELINE
B.F. - BACK FACE
BM - BENCHMARK
BOT. OR BTM. - BOTTOM
℄ - CENTERLINE
C/C - CENTER TO CENTER
C.I.P. - CAST-IN-PLACE
C.J. - CONSTRUCTION JOINT
CLR. - CLEAR
CMS - CONSTRUCTION AND MATERIAL SPECIFICATIONS
CONC. - CONCRETE
CONSTR. - CONSTRUCTION
DIA. - DIAMETER
DIM. - DIMENSION
DWG. - DRAWING
E.F. - EACH FACE
EL. OR ELEV. - ELEVATION
EQ. - EQUAL
EST. - ESTIMATED
EX. - EXISTING
F/F - FACE TO FACE
F.F. - FRONT FACE
FT. - FOOT OR FEET
FTG. - FOOTING
FWD. - FORWARD
IN. - INCH
JT. - JOINT
LT. - LEFT
MAX. - MAXIMUM
MIN. - MINIMUM
MISC. - MISCELLANEOUS
MSE - MECHANICALLY STABILIZED EARTH
N - NORTH
NB - NORTHBOUND
NO. - NUMBER
N.P.C.P.P. - NON-PERFORATED CORRUGATED PLASTIC PIPE
OHWM - ORDINARY HIGH WATER MARK
O/O - OUT TO OUT
P.C.P.P. - PERFORATED CORRUGATED PLASTIC PIPE
P.E.J.F. - PREFORMED EXPANSION JOINT FILLER
PROP. - PROPOSED
PSF - POUNDS PER SQUARE FOOT
S - SOUTH
SB - SOUTHBOUND
SER. - SERIES
SHLDR - SHOULDER
SPA. - SPACE OR SPACES
STA. - STATION
STD. - STANDARD
STR - STRAIGHT
T - TOP
T&B - TOP & BOTTOM
TBR - TO BE REMOVED
TEMP. - TEMPORARY
TYP. - TYPICAL
U.N.O. - UNLESS NOTED OTHERWISE
VAR. - VARIES
WWR - WELDED WIRE REINFORCEMENT

NO.	DATE	DESCRIPTION
		BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B&3
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GENERAL NOTES
RETAINING WALL 2B
ALONG I.R.-77

CUY-77-13.80
PID No. 82388

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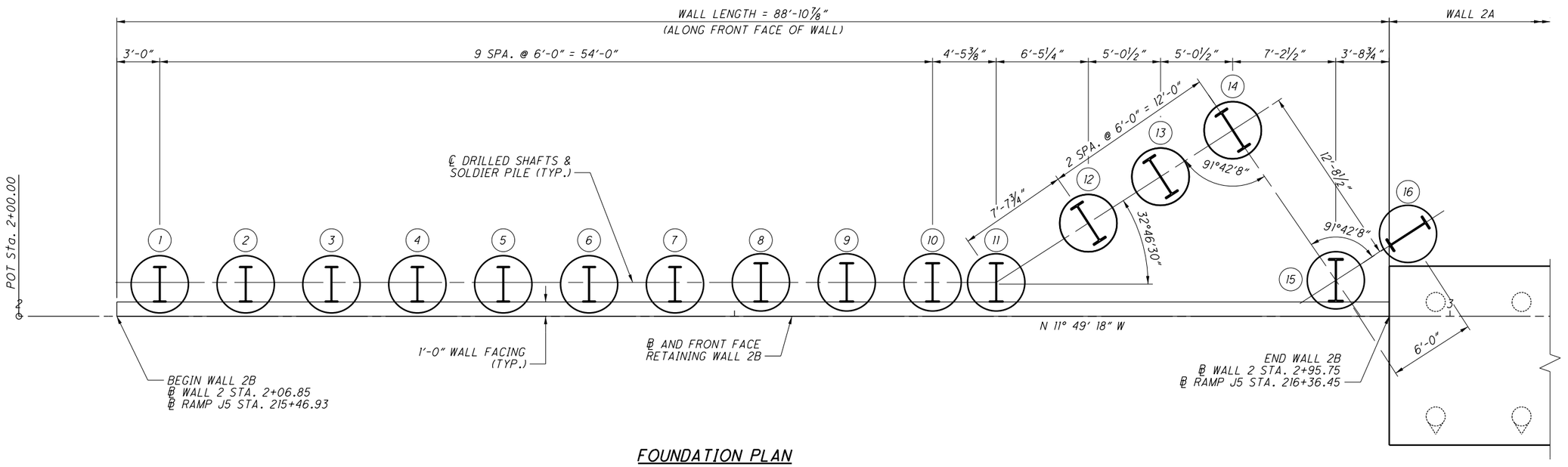
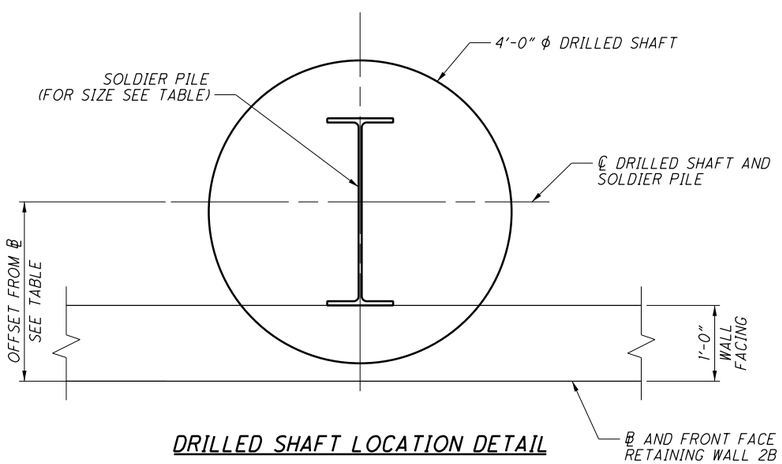


FOUNDATION PLAN



DRILLED SHAFT LOCATION DETAIL

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LEGEND:

(#) - DRILLED SHAFT NUMBER

NOTES:

1. FOR WALL ELEVATION VIEW, SEE SHEET 7/10.
2. FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 9/10.

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FOUNDATION PLAN
RETAINING WALL 2B
ALONG I.R.-77

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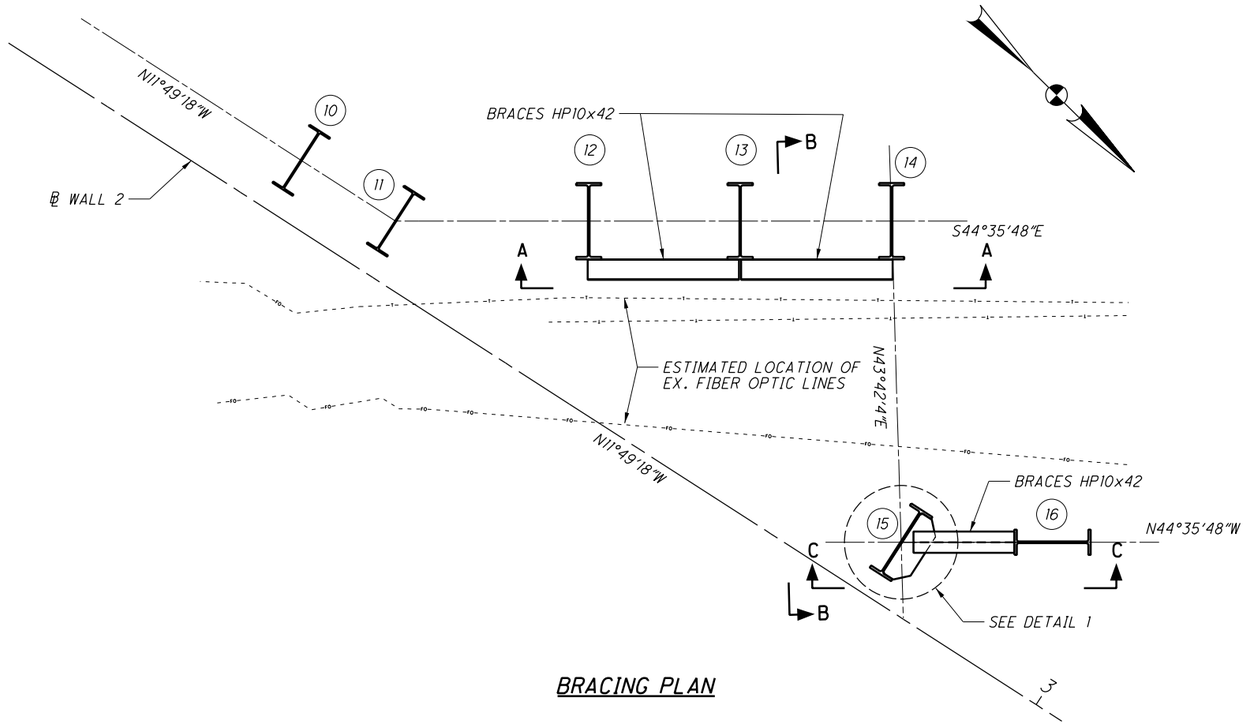

BRACING PLAN

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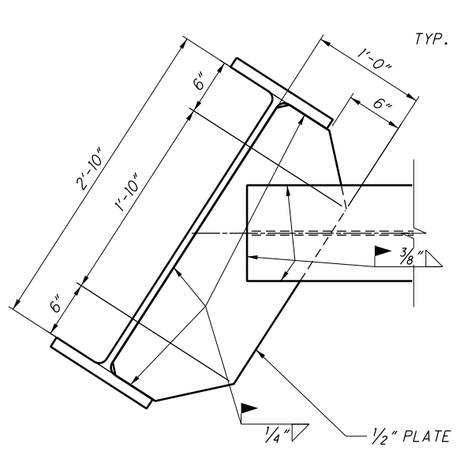
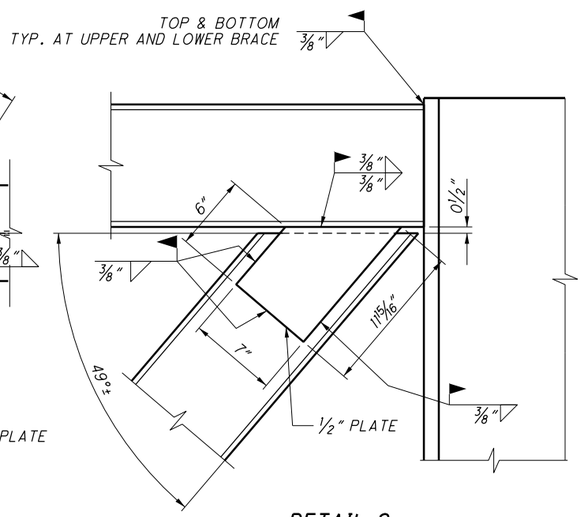


DETAIL 1

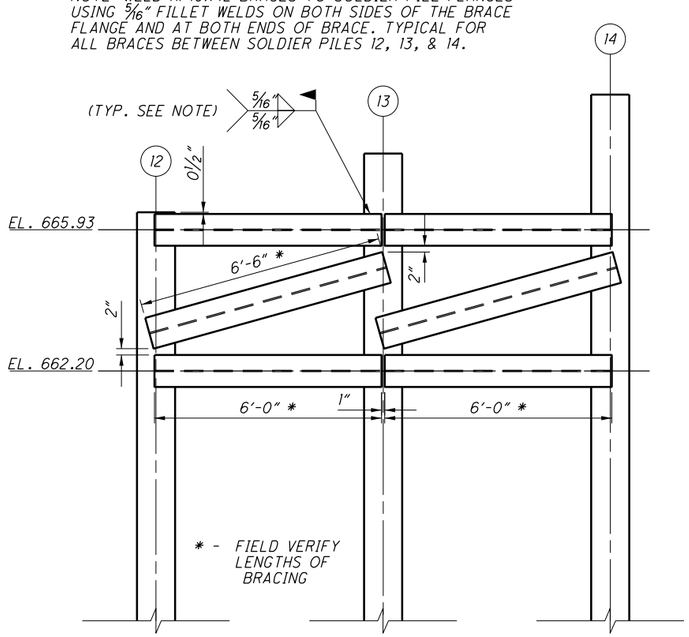
TWO PLATES. ONE EACH FOR UPPER AND BOTTOM BRACE.



DETAIL 2

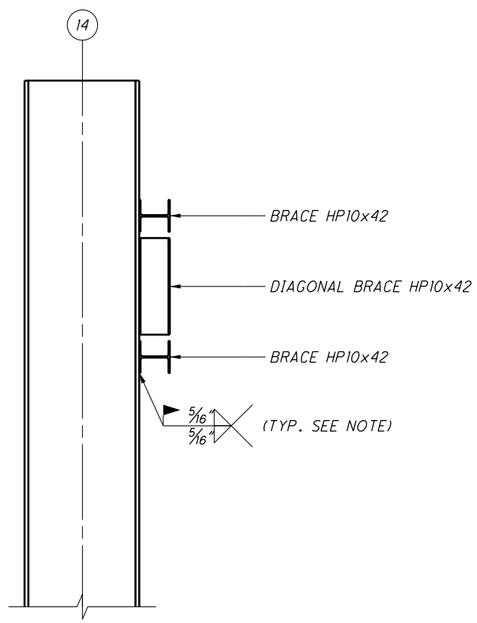
CONNECTION TO LOWER BRACE SIMILAR

NOTE: WELD HP10x42 BRACES TO SOLDIER PILE FLANGES USING 5/16" FILLET WELDS ON BOTH SIDES OF THE BRACE FLANGE AND AT BOTH ENDS OF BRACE. TYPICAL FOR ALL BRACES BETWEEN SOLDIER PILES 12, 13, & 14.

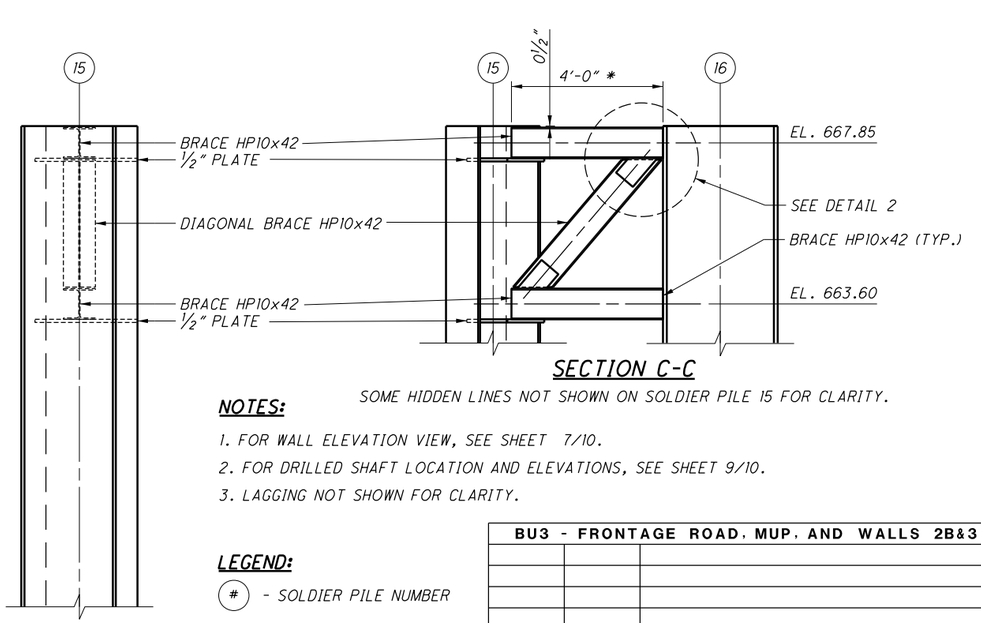


SECTION A-A

HIDDEN LINES NOT SHOWN ON SOLDIER PILES FOR CLARITY.



SECTION B-B



SECTION C-C

SOME HIDDEN LINES NOT SHOWN ON SOLDIER PILE 15 FOR CLARITY.

NOTES:

1. FOR WALL ELEVATION VIEW, SEE SHEET 7/10.
2. FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 9/10.
3. LAGGING NOT SHOWN FOR CLARITY.

LEGEND:

(#) - SOLDIER PILE NUMBER

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BRACING DETAILS
RETAINING WALL 2B
ALONG I.R.-77

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PID No. 82388

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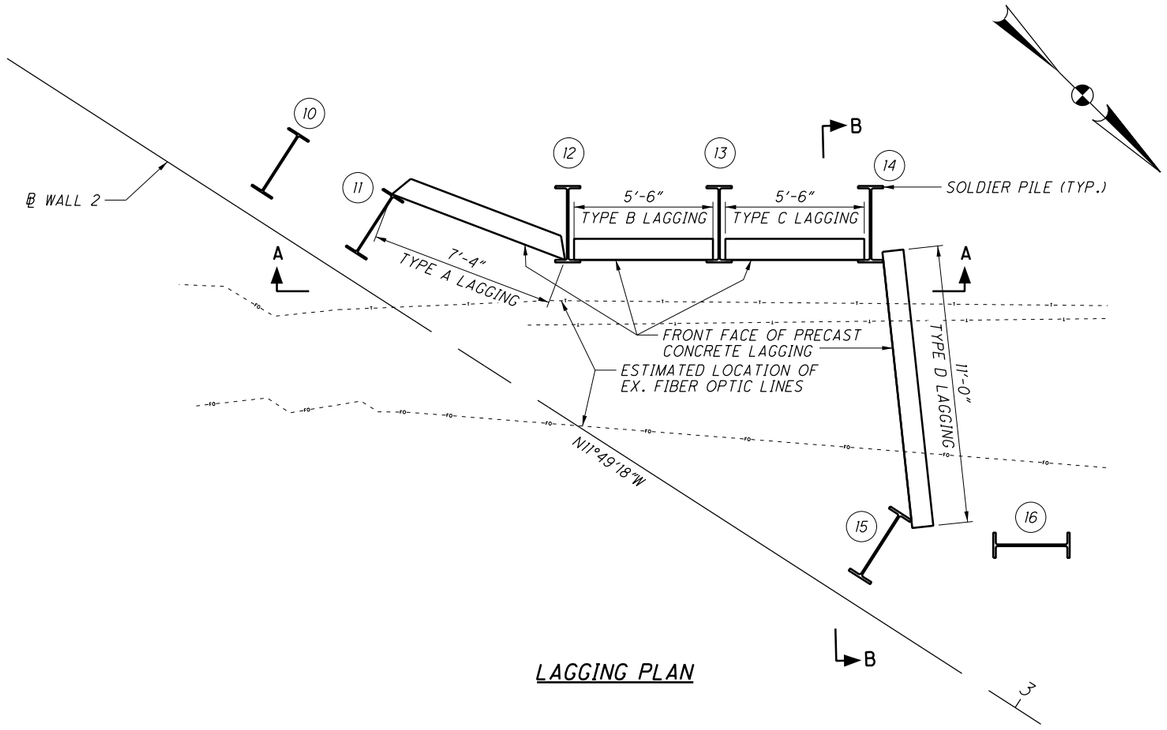
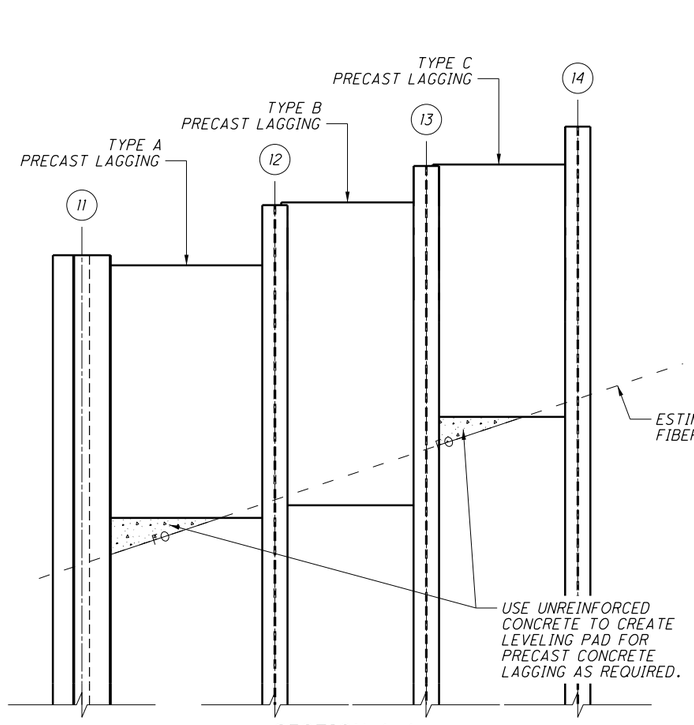
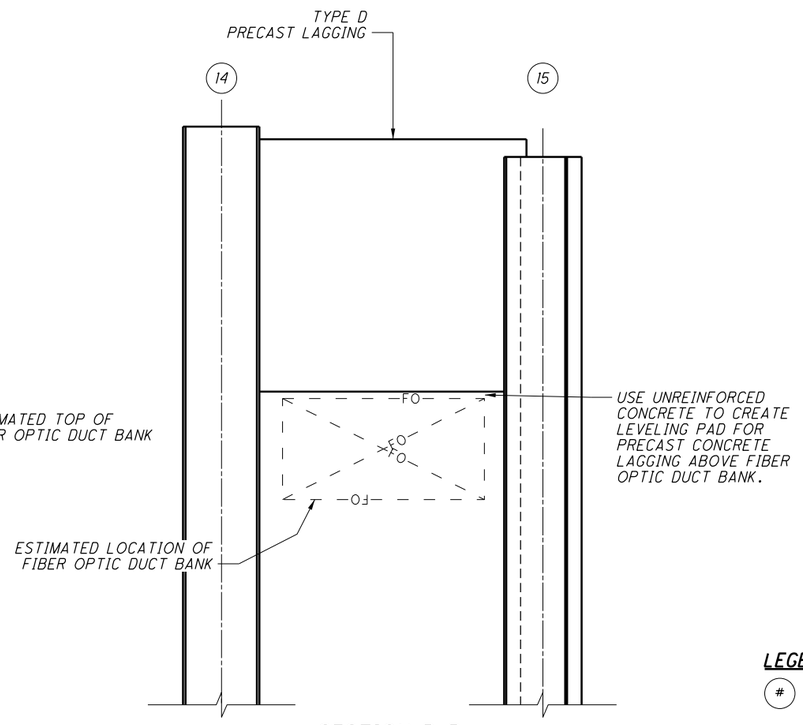


LAGGING PLAN



SECTION A-A



SECTION B-B

NOTES:

1. FOR WALL ELEVATION VIEW, SEE SHEET 7/10.
2. FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 9/10.
3. LOCATION OF FIBER OPTIC DUCT BANK SHOWN IS APPROXIMATE. VERIFY LOCATION IN THE FIELD. EXCAVATE BELOW DUCT BANK ONLY AS REQUIRED TO CAST LEVELING PAD FOR PRECAST LAGGING.
4. VERIFY HEIGHT OF PRECAST CONCRETE LAGGING BETWEEN EACH PAIR OF SOLDIER PILES AND MANUFACTURE SUFFICIENT NUMBER OF EACH TYPE OF PRECAST CONCRETE LAGGING.
5. USE UNREINFORCED CONCRETE TO CREATE LEVELING PAD FOR PRECAST LAGGING BETWEEN SOLDIER PILES AND ABOVE FIBER OPTIC DUCT BANK.
6. CENTER PRECAST CONCRETE LAGGING BETWEEN SOLDIER PILES.
7. HOLD PRECAST LAGGING TIGHT AGAINST SOLDIER PILE FLANGES USING BRIDGE BEAM HANGERS AND ½" COIL ROD OR OTHER SIMILAR SUPPORTS USED FOR SUPPORTING CONCRETE FORMWORK. PLACE STEEL SPACERS BETWEEN LAGGING PANELS SO THAT PANELS DO NOT REST DIRECTLY ON COIL ROD.
8. BRACING DETAILS NOT SHOWN FOR CLARITY.

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LEGEND:

(#) - SOLDIER PILE NUMBER

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LAGGING DETAILS - 1 OF 2
RETAINING WALL 2B
ALONG I.R.-77

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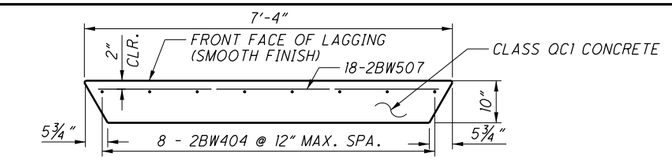
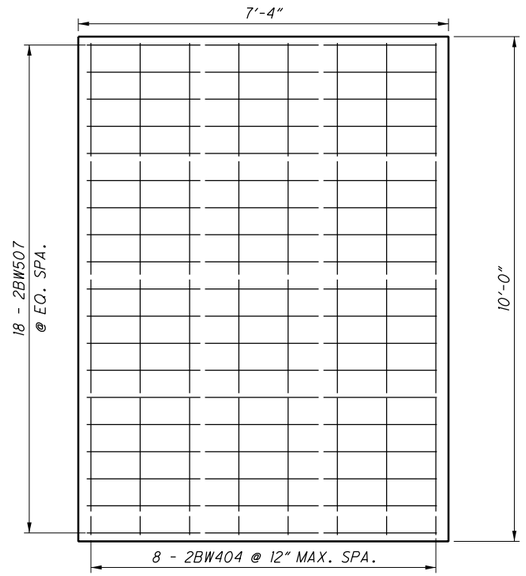
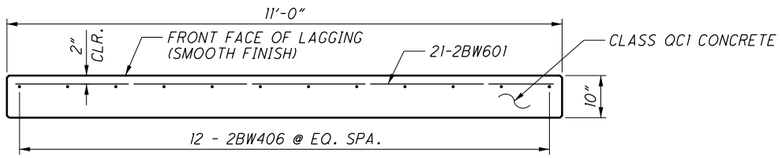
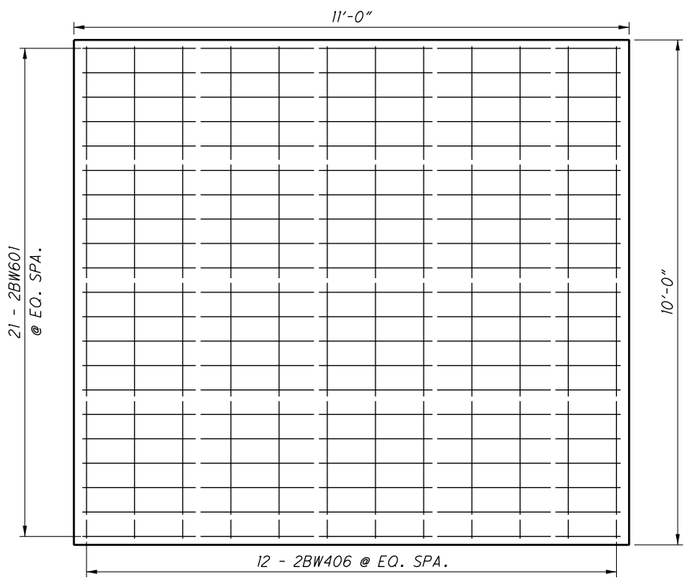


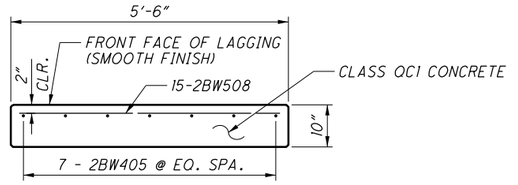


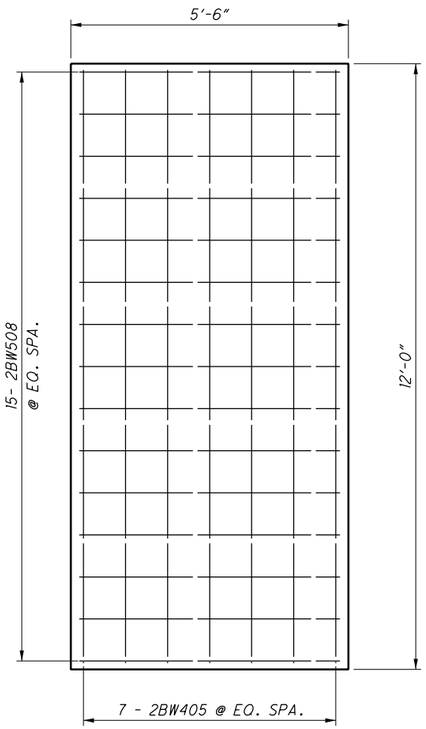
PRECAST CONCRETE LAGGING - TYPE A



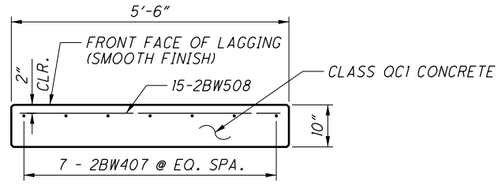


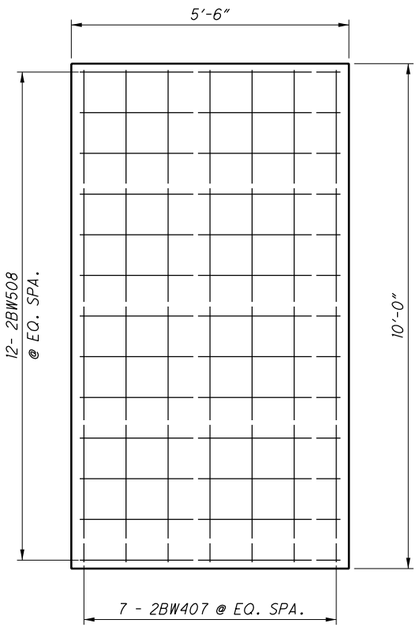
PRECAST CONCRETE LAGGING - TYPE D





PRECAST CONCRETE LAGGING - TYPE B





PRECAST CONCRETE LAGGING - TYPE C

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NOTES:

1. CONTRACTOR MAY INSTALL LIFTING INSERTS AS REQUIRED, PROVIDED THEY DO NOT PROTRUDE.

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B&3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1468 West 9th Street • Cleveland, Ohio 44113
www.elrobinsonengineering.com

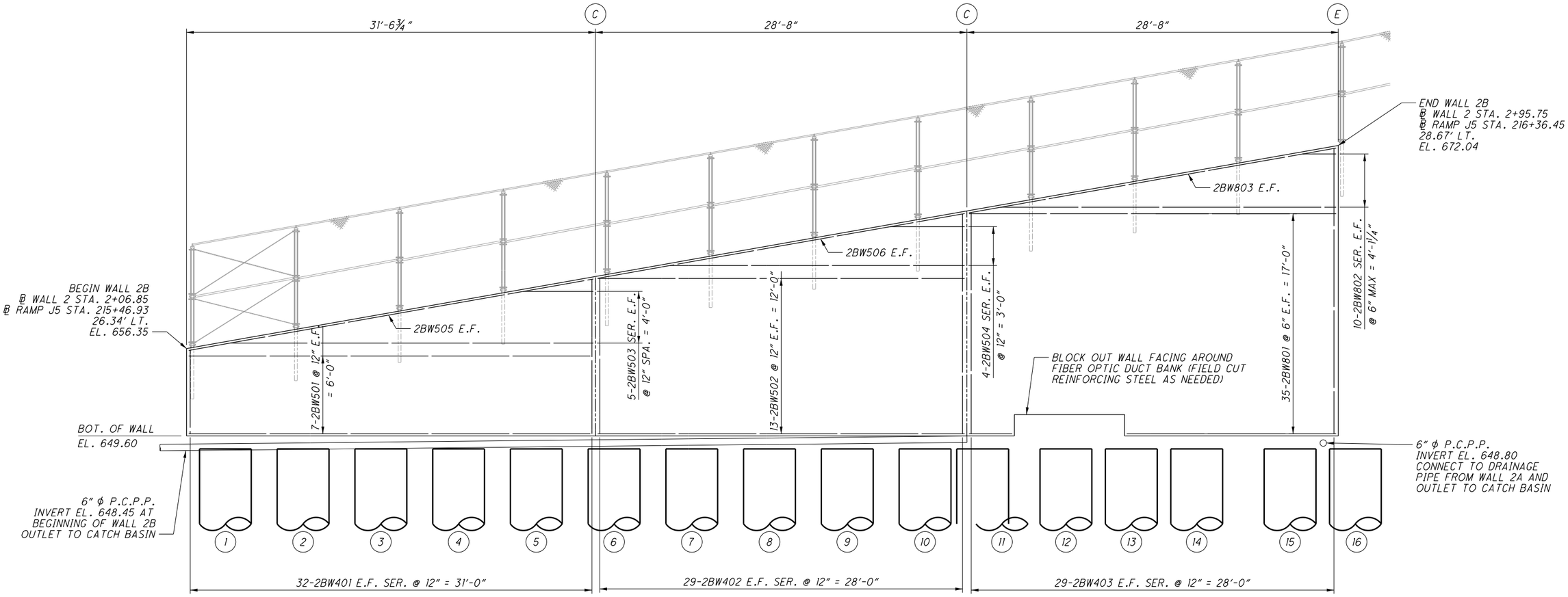
DESIGNED	DRAWN	REVIEWED	DATE
SM	SM	DFT	AUG 2017
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PAN			

LAGGING DETAILS - 2 OF 2
RETAINING WALL 2B
ALONG I.R. - 77

CUY-77-13.80
PID No. 82388

6 / 10

73 / 95



ELEVATION

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LEGEND:

(#) - DRILLED SHAFT NUMBER

(C) - CONTRACTION JOINT LOCATION

(E) - EXPANSION JOINT LOCATION

NOTES:

1. FOR FOUNDATION PLAN, SEE SHEET 3/10.
2. FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 9/10.

NO.	DATE	DESCRIPTION
		BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B&3
		ISSUE RECORD

DESIGN AGENCY
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1468 West 9th Street - Cleveland, Ohio 44113
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DESIGNED	DRAWN	REVIEWED	DATE
SM	DTA	DFT	AUG 2017
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PAN			

WALL ELEVATIONS
RETAINING WALL 2B
ALONG I.R. - 77

CUY-77-13.80
PID No. 82388

7 / 10

74 / 95

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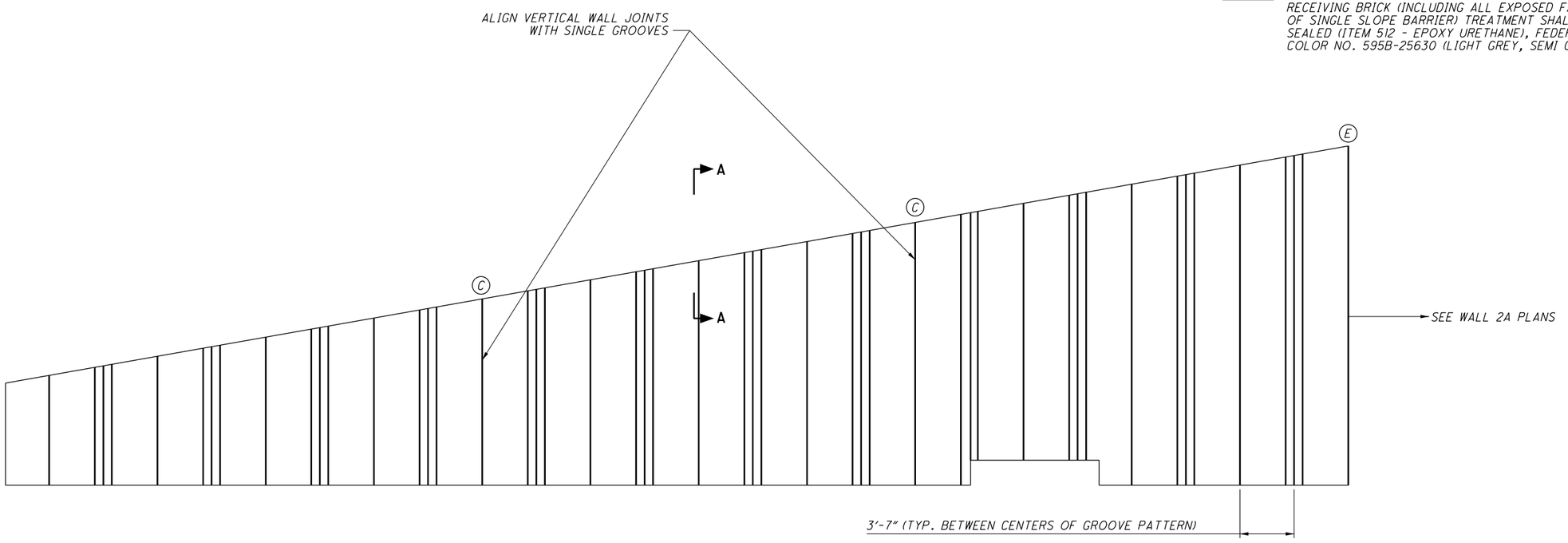
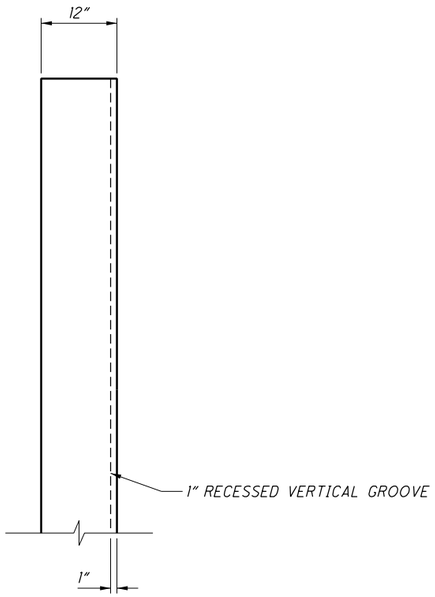
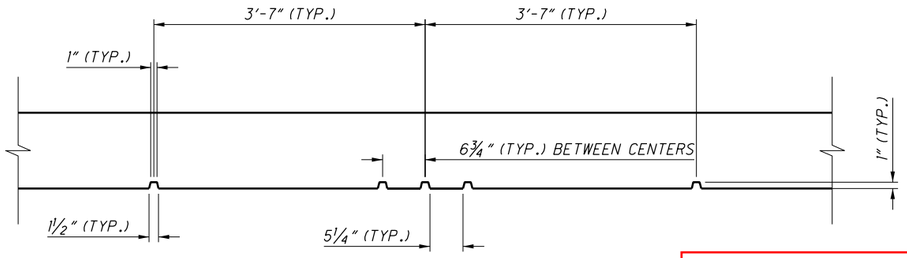
NOTES: ALL EXPOSED CONCRETE SURFACES NOT RECEIVING BRICK (INCLUDING ALL EXPOSED FACES OF SINGLE SLOPE BARRIER) TREATMENT SHALL BE SEALED (ITEM 512 - EPOXY URETHANE), FEDERAL COLOR NO. 595B-25630 (LIGHT GREY, SEMI GLOSS)



AESTHETIC ELEVATION



SECTION A-A



GROOVE DETAIL

LEGEND:

Ⓒ - CONTRACTION JOINT LOCATION

Ⓔ - EXPANSION JOINT LOCATION

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BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B&3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
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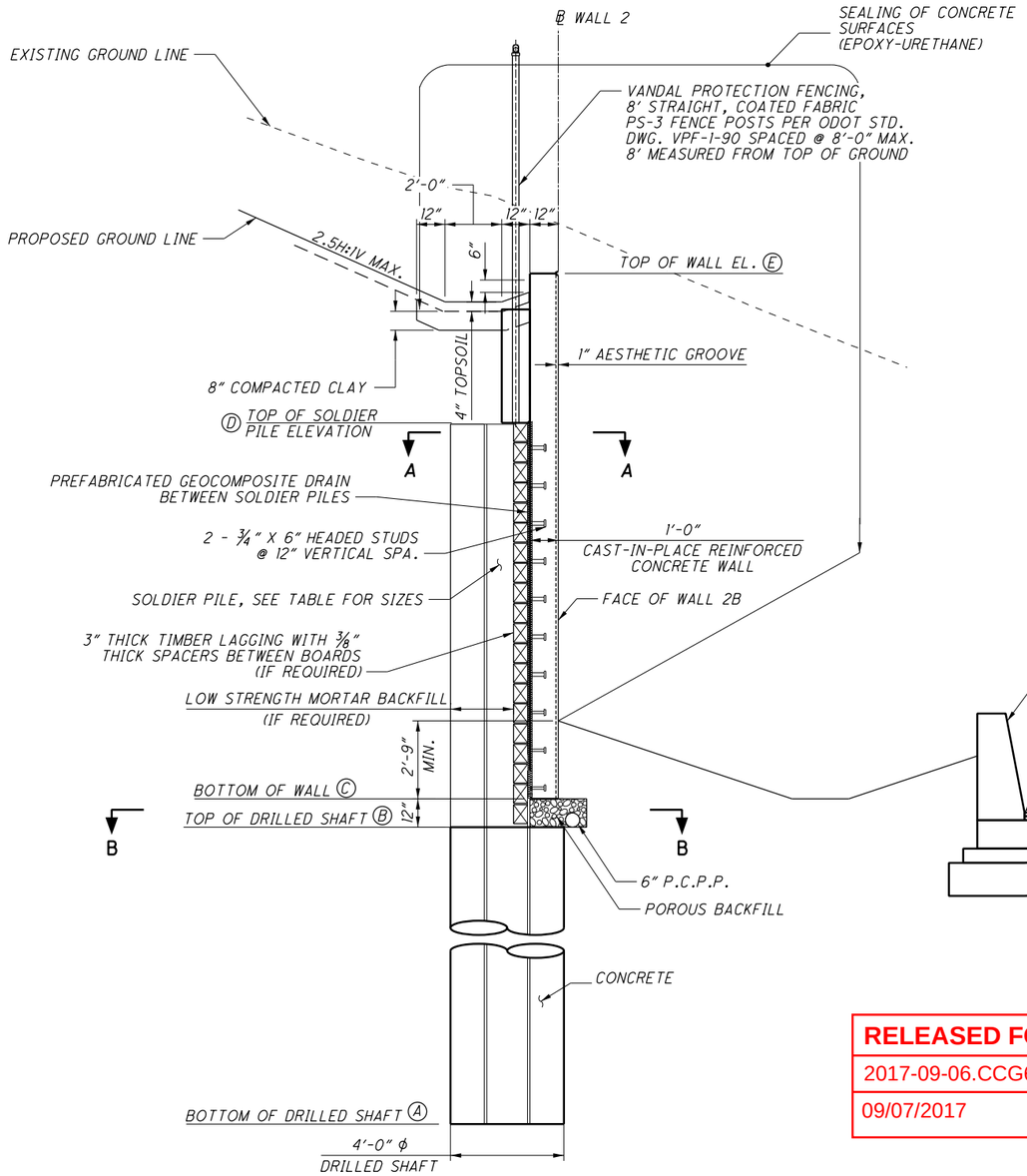
PAN			

AESTHETIC DETAILS
RETAINING WALL 2B
ALONG I.R.-77

CUY-77-13.80
PID No. 82388



SOLDIER PILE RETAINING WALL TYPICAL SECTION

(REINFORCING STEEL NOT SHOWN FOR CLARITY)

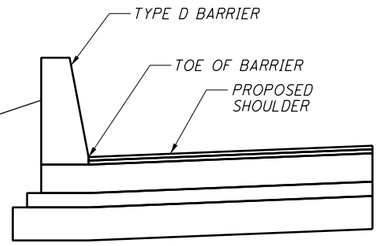
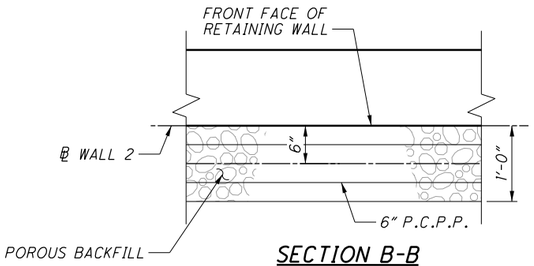
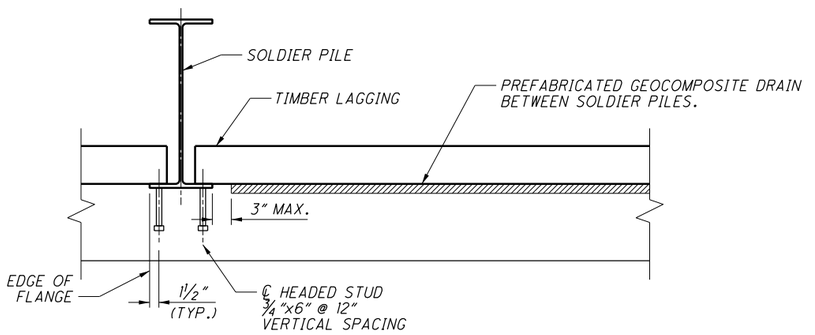


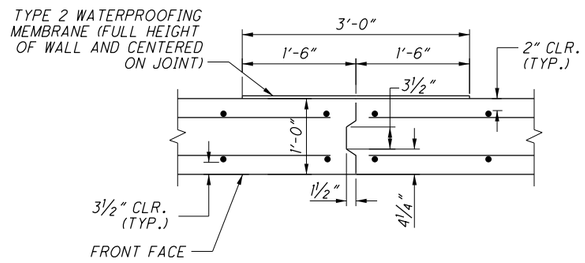
TABLE OF ELEVATIONS - WALL 002B										
DRILLED SHAFT NUMBER	STATION ℄ WALL 002B	OFFSET FROM ℄ WALL 002B (FEET)	SHEAR STUDS (YES/NO)	BOTTOM OF DRILLED SHAFT EL. Ⓐ	TOP OF SHAFT CONCRETE EL. Ⓑ	BOTTOM OF WALL EL. Ⓒ	TOP OF SOLDIER PILE EL. Ⓓ	TOP OF WALL EL. Ⓔ	ESTIMATED LENGTH OF SOLDIER PILE (FEET)	SOLDIER PILE SIZE
1	02+09.85	2.24	Yes	637.10	648.60	649.60	653.80	656.88	16.70	W30x99
2	02+15.85	2.24	Yes	637.10	648.60	649.60	654.90	657.94	17.80	W30x99
3	02+21.85	2.24	Yes	637.10	648.60	649.60	656.00	659.00	18.90	W30x99
4	02+27.85	2.24	Yes	632.60	648.60	649.60	657.00	660.05	24.40	W30x99
5	02+33.85	2.24	Yes	632.60	648.60	649.60	658.10	661.11	25.50	W30x99
6	02+39.85	2.24	Yes	632.60	648.60	649.60	659.10	662.17	26.50	W30x99
7	02+45.85	2.24	Yes	632.60	648.60	649.60	660.20	663.23	27.60	W30x99
8	02+51.85	2.37	Yes	629.60	648.60	649.60	661.20	664.29	31.60	W33x118
9	02+57.85	2.37	Yes	629.60	648.60	649.60	662.30	665.35	32.70	W33x118
10	02+63.85	2.37	Yes	629.60	648.60	649.60	663.40	666.41	33.80	W33x118
11	02+68.30	2.37	Yes	629.60	648.60	649.60	664.40	667.46	34.80	W33x118
12	02+74.73	6.51	NO	624.60	648.60	649.60	666.40	N/A	41.80	W36x182
13	02+79.77	9.76	NO	624.60	648.60	649.60	668.00	N/A	43.40	W36x182
14	02+84.82	13.01	NO	624.60	648.60	649.60	669.50	N/A	44.90	W36x182
15	02+92.02	2.51	YES	624.60	648.60	649.60	668.30	671.38	43.70	W36x182
16	02+97.07	5.76	NO	624.60	648.60	649.60	668.30	N/A	43.70	W36x182



SECTION B-B

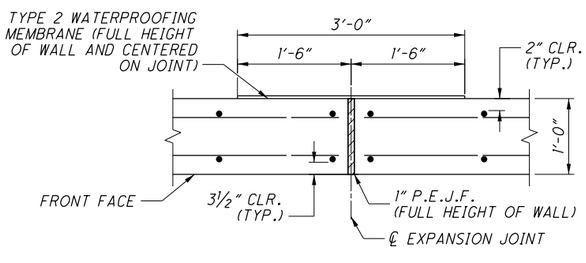


SECTION A-A



CONTRACTION JOINT DETAIL

(TYPICAL @ 2 LOCATIONS)



EXPANSION JOINT DETAIL

(LOCATED BETWEEN WALLS 2A & 2B)

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NOTE:
ALL EXPOSED CONCRETE SURFACES NOT RECEIVING BRICK (INCLUDING ALL EXPOSED FACES OF SINGLE SLOPE BARRIER) TREATMENT SHALL BE SEALED (ITEM 512 - EPOXY URETHANE), FEDERAL COLOR NO. 595B-25630 (LIGHT GREY, SEMI GLOSS)

NO.	DATE	DESCRIPTION
		BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B&3
		ISSUE RECORD

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1468 West 9th Street - Cleveland, Ohio 44113
www.elrobinsonengineering.com

DESIGNED IA | DRAWN FIB | REVIEWED DFT | DATE AUG 2017

CHECKED PAN | REVISED | STRUCTURE FILE NUMBER

TYPICAL SECTION AND WALL DETAILS
RETAINING WALL 2B
ALONG I.R.-77

CUY-77-13.80
PID No. 82388

9 / 10

76
95

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MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC
WALL2B											
2BW401	2 SR OF 32	6'-5" TO 11'-11"	392	STR							2 1/8"
2BW402	2 SR OF 29	12'-0" TO 16'-11"	560	STR							2 1/8"
2BW403	2 SR OF 29	17'-2" TO 22'-0"	759	STR							2 1/8"
2BW404	8	9'-8"	52	STR							
2BW405	7	11'-8"	55	STR							
2BW406	12	9'-8"	78	STR							
2BW407	7	9'-8"	46	STR							
2BW501	14	31'-2"	455	STR							
2BW502	26	28'-4"	768	STR							
2BW503	2 SR OF 5	5'-5" TO 28'-1"	175	STR							5'-8"
2BW504	2 SR OF 4	5'-9" TO 22'-9"	119	STR							5'-8"
2BW505	2	31'-8"	66	STR							
2BW506	2	28'-9"	60	STR							
2BW507	18	7'-0"	132	STR							
2BW508	27	5'-2"	146	STR							
2BW601	21	10'-8"	337	STR							
2BW801	70	28'-4"	5296	STR							
2BW802	2 SR OF 10	2'-7" TO 25'-11"	761	STR							2'-7 1/8"
2BW803	2	28'-9"	154	STR							
SUBTOTAL			10,411								

NOTES:

1. *THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.*

2. *ALL REINFORCING STEEL TO BE EPOXY COATED.*

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2017-09-06.CCG6B.BU3 RFC PLANS.pdf

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NO.	DATE	DESCRIPTION
		ISSUE RECORD

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B&3

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1468 West 9th Street • Cleveland, Ohio 44113
www.elrobinsonengineering.com

DESIGNED	DRAWN	REVIEWED	DATE
SM	SM	DFT	AUG 2017
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PAN			

REINFORCING STEEL LIST
RETAINING WALL 2B
ALONG I.R.-77

CUY-77-13.80
PID No. 82388

10 / 10

77
95

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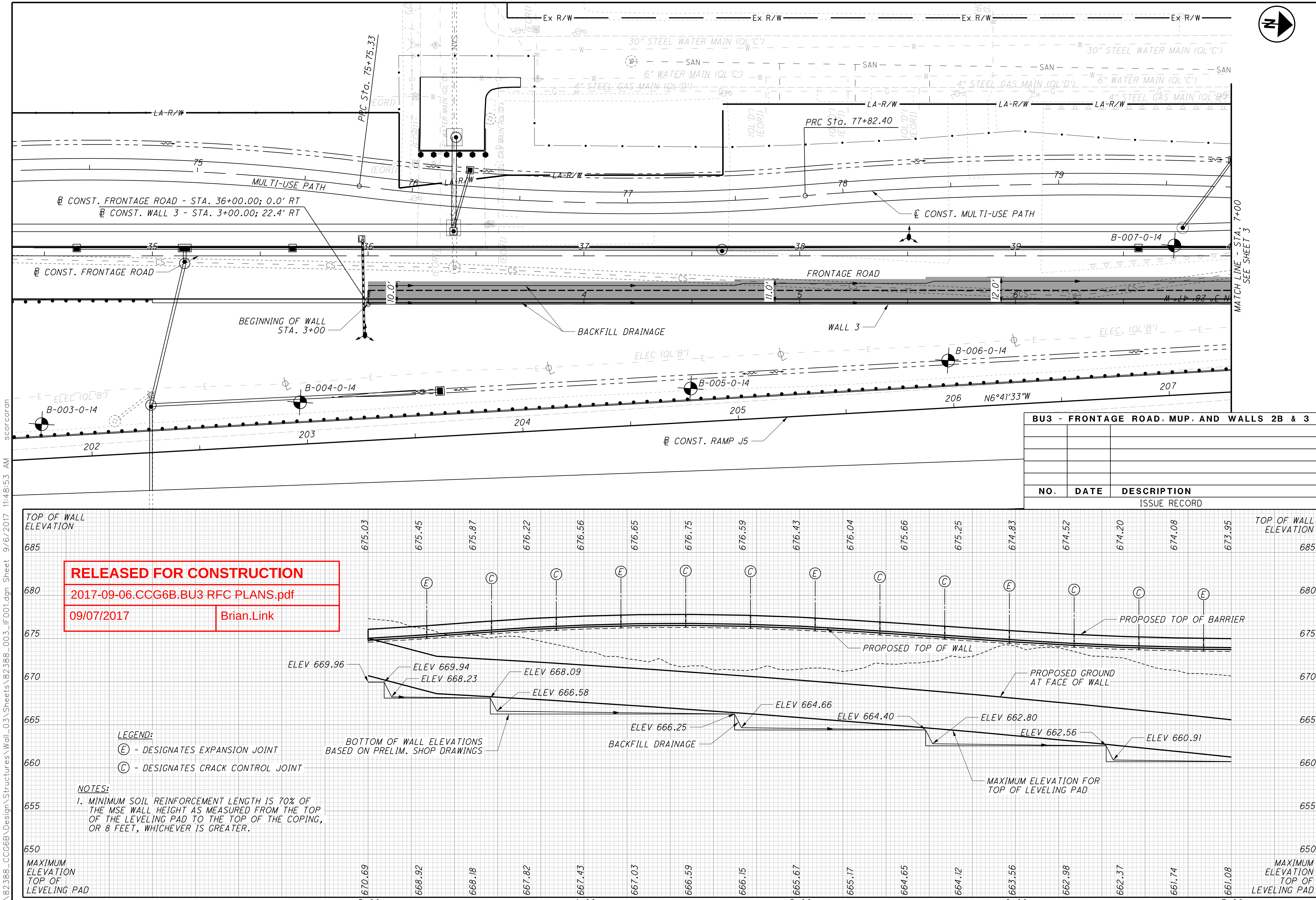
Ex R/W
30" STEEL WATER MAIN (OL'C')
6" WATER MAIN (OL'C')
4" STEEL GAS MAIN (OL'D')
SAN
LA-R/W
PRC Sta. 75+75.33
PRC Sta. 77+82.40
MULTI-USE PATH
℄ CONST. FRONTAGE ROAD - STA. 36+00.00; 0.0' RT
℄ CONST. WALL 3 - STA. 3+00.00; 22.4' RT
℄ CONST. MULTI-USE PATH
℄ CONST. FRONTAGE ROAD
FRONTAGE ROAD
BEGINNING OF WALL
STA. 3+00
BACKFILL DRAINAGE
WALL 3
10.0'
11.0'
12.0'
B-003-0-14
B-004-0-14
B-005-0-14
B-006-0-14
B-007-0-14
ELEC (OL'B')
N6°41'33"W
℄ CONST. RAMP J5
MATCH LINE - STA. 7+00
SEE SHEET 3
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09/07/2017
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TOP OF WALL ELEVATION
675.03
675.45
675.87
676.22
676.56
676.65
676.75
676.59
676.43
676.04
675.66
675.25
674.83
674.52
674.20
674.08
673.95
PROPOSED TOP OF BARRIER
PROPOSED TOP OF WALL
PROPOSED GROUND
AT FACE OF WALL
ELEV 669.96
ELEV 669.94
ELEV 668.23
ELEV 668.09
ELEV 666.58
ELEV 666.25
ELEV 664.66
ELEV 664.40
ELEV 662.80
ELEV 662.56
ELEV 660.91
BOTTOM OF WALL ELEVATIONS
BASED ON PRELIM. SHOP DRAWINGS
BACKFILL DRAINAGE
MAXIMUM ELEVATION FOR
TOP OF LEVELING PAD
LEGEND:
Ⓔ - DESIGNATES EXPANSION JOINT
Ⓒ - DESIGNATES CRACK CONTROL JOINT
NOTES:
1. MINIMUM SOIL REINFORCEMENT LENGTH IS 70% OF THE MSE WALL HEIGHT AS MEASURED FROM THE TOP OF THE LEVELING PAD TO THE TOP OF THE COPING, OR 8 FEET, WHICHEVER IS GREATER.
MAXIMUM ELEVATION TOP OF LEVELING PAD
670.69
668.92
668.18
667.82
667.43
667.03
666.59
666.15
665.67
665.17
664.65
664.12
663.56
662.98
662.37
661.74
661.08
3+00
4+00
5+00
6+00
7+00
BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3
NO. | DATE | DESCRIPTION
ISSUE RECORD

DESIGN AGENCY
E.L. ROBINSON ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
PAN	SWC	DFT	AUG 2017
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JN			

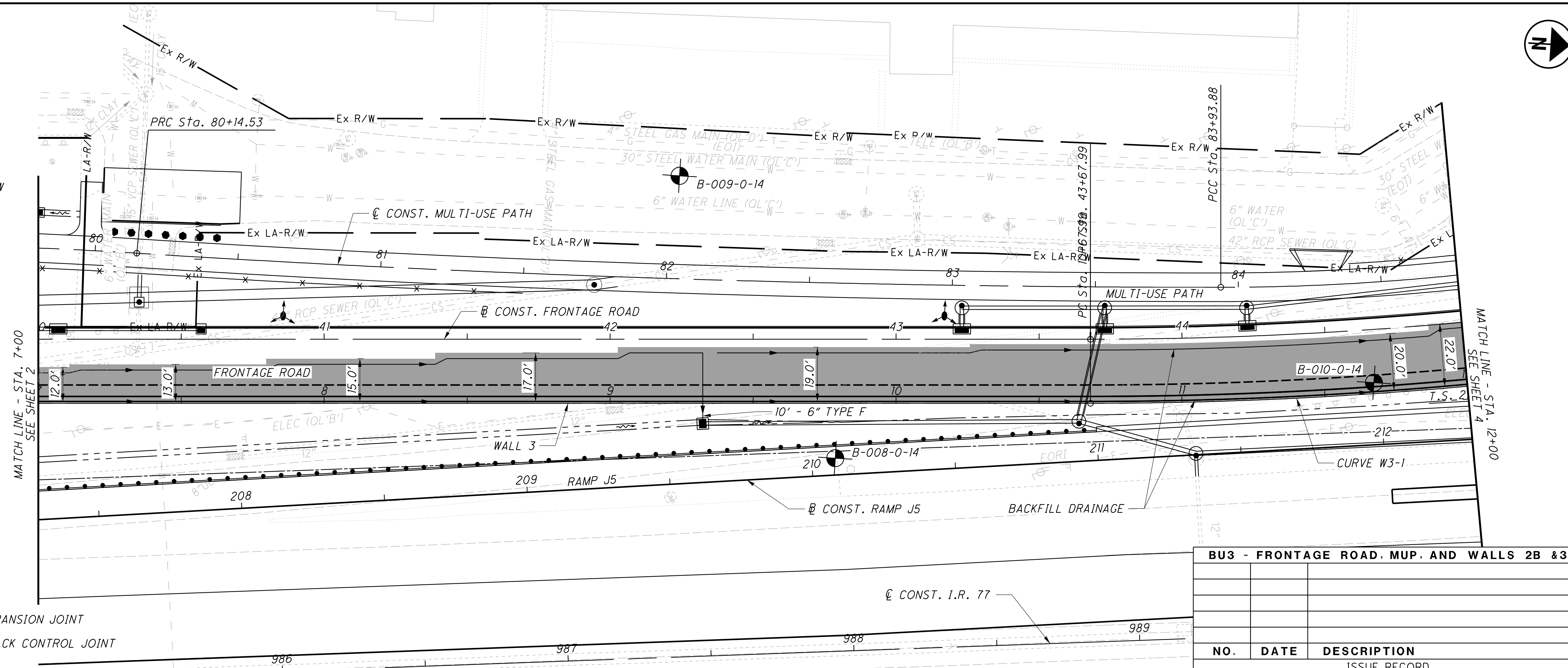
WALL 3
FRONTAGE ROAD
MSE WALL: STA 3+00 TO STA 7+00

CUY-77-13.80
PID No. 82388

1/6

CURVE W3-1

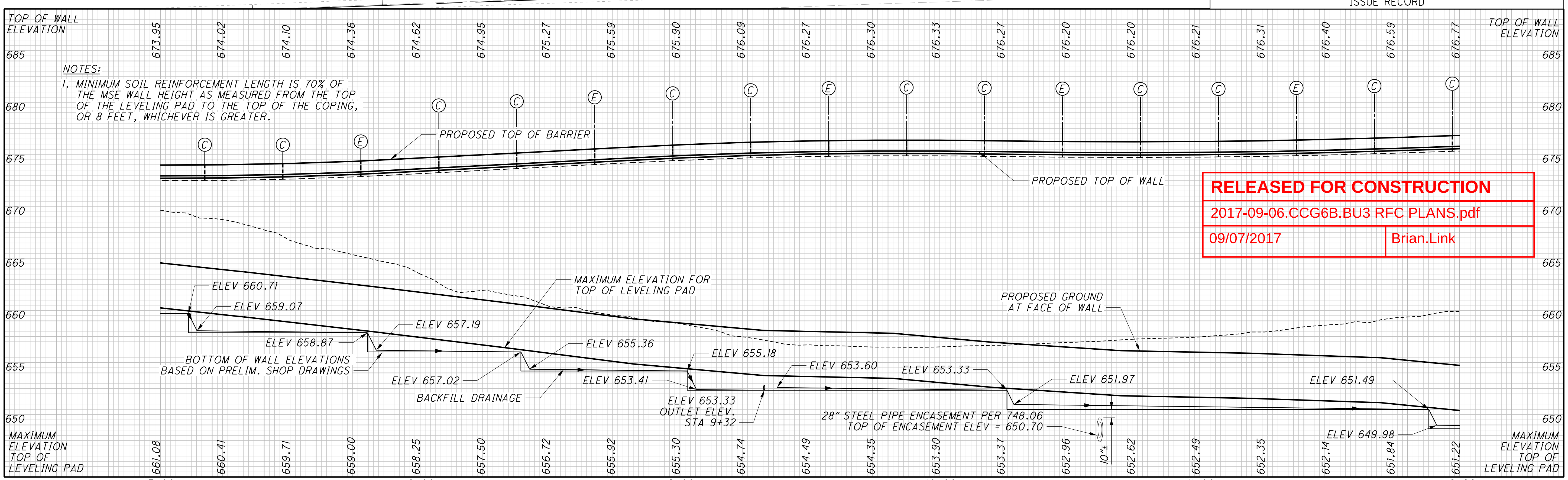
P.I. Sta. 12+26.41
Δ = 12° 25′ 46″ (LT)
Dc = 3° 56′ 18″
R = 1,454.81′
T = 158.42′
L = 315.60′
E = 8.60′
C = 314.98′
C.B. = N 9° 41′ 40″ W



LEGEND:
Ⓔ - DESIGNATES EXPANSION JOINT
Ⓒ - DESIGNATES CRACK CONTROL JOINT

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

NOTES:
1. MINIMUM SOIL REINFORCEMENT LENGTH IS 70% OF THE MSE WALL HEIGHT AS MEASURED FROM THE TOP OF THE LEVELING PAD TO THE TOP OF THE COPING, OR 8 FEET, WHICHEVER IS GREATER.



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DESIGNED	CHECKED	DRAWN	REVIEWED	DATE	STRUCTURE FILE NUMBER
PAN	JN	SWC	DFT	AUG 2017	

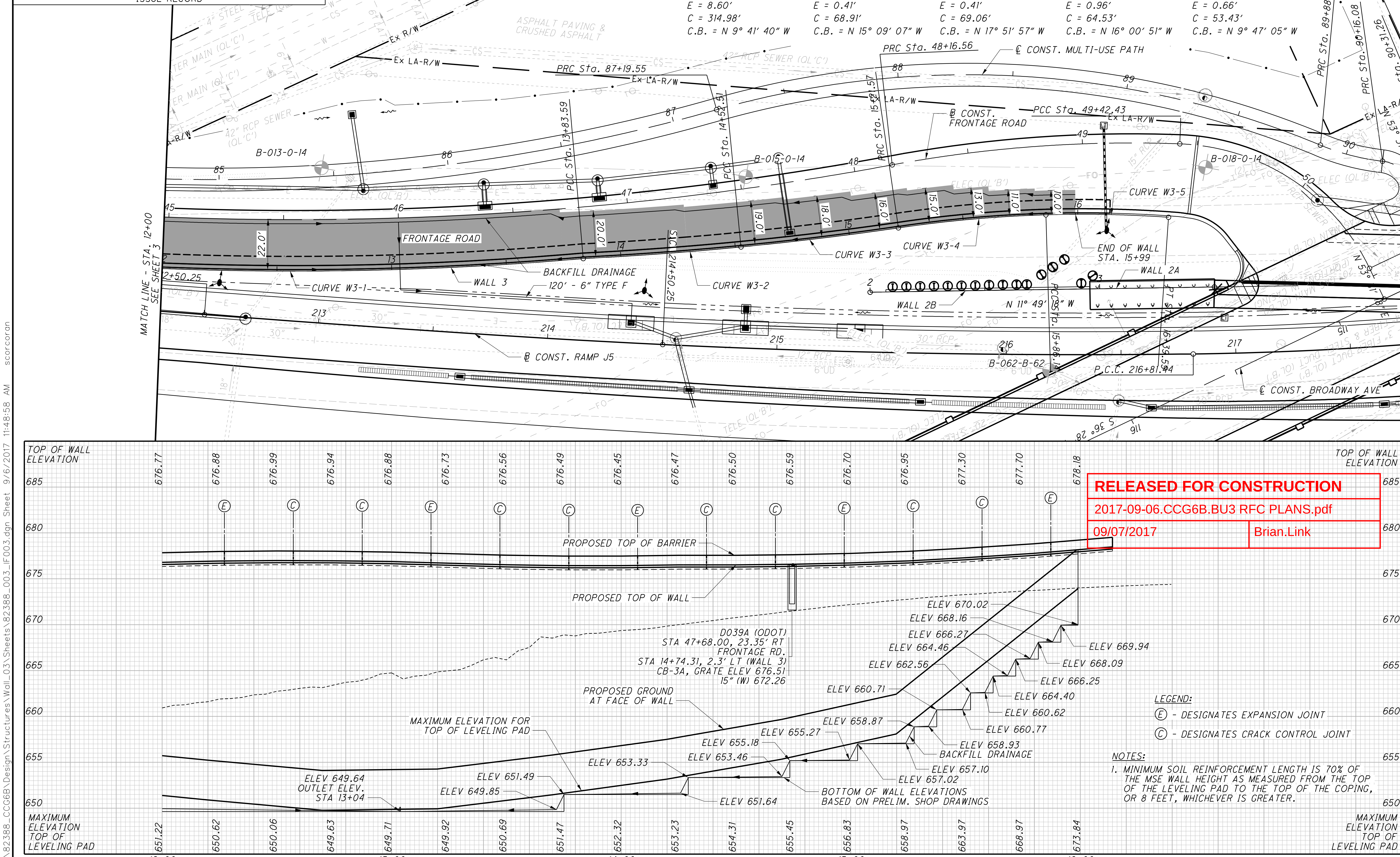
WALL 3
FRONTAGE ROAD
MSE WALL: STA 7+00 TO STA 12+00

CUY-77-13.80
PID No. 82388

2/6

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

CURVE W3-1	CURVE W3-2	CURVE W3-3	CURVE W3-4	CURVE W3-5
P.I. Sta. 12+26.41	P.I. Sta. 14+18.06	P.I. Sta. 14+87.05	P.I. Sta. 15+53.90	P.I. Sta. 16+12.89
Δ = 12° 25′ 46″ (LT)	Δ = 2° 42′ 43″ (LT)	Δ = 2° 42′ 52″ (LT)	Δ = 6° 47′ 57″ (RT)	Δ = 5° 39′ 21″ (RT)
Dc = 3° 56′ 18″	Dc = 3° 56′ 08″	Dc = 3° 55′ 49″	Dc = 10° 31′ 50″	Dc = 10° 34′ 56″
R = 1,454.81′	R = 1,455.87′	R = 1,457.82′	R = 544.09′	R = 541.44′
T = 158.42′	T = 34.46′	T = 34.54′	T = 32.32′	T = 26.75′
L = 315.60′	L = 68.91′	L = 69.06′	L = 64.57′	L = 53.45′
E = 8.60′	E = 0.41′	E = 0.41′	E = 0.96′	E = 0.66′
C = 314.98′	C = 68.91′	C = 69.06′	C = 64.53′	C = 53.43′
C.B. = N 9° 41′ 40″ W	C.B. = N 15° 09′ 07″ W	C.B. = N 17° 51′ 57″ W	C.B. = N 16° 00′ 51″ W	C.B. = N 9° 47′ 05″ W



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LEGEND:
Ⓔ - DESIGNATES EXPANSION JOINT
Ⓒ - DESIGNATES CRACK CONTROL JOINT

NOTES:
1. MINIMUM SOIL REINFORCEMENT LENGTH IS 70% OF THE MSE WALL HEIGHT AS MEASURED FROM THE TOP OF THE LEVELING PAD TO THE TOP OF THE COPING, OR 8 FEET, WHICHEVER IS GREATER.

DESIGN AGENCY: E.L. ROBINSON ENGINEERING

DESIGNED PAN | CHECKED JN | DRAWN SWC | REVISED | REVIEWED DFT | DATE AUG 2017 | STRUCTURE FILE NUMBER

WALL 3
FRONTAGE ROAD
MSE WALL: STA 12+00 TO END OF WALL

CUY-77-13.80
PID No. 82388

3/6

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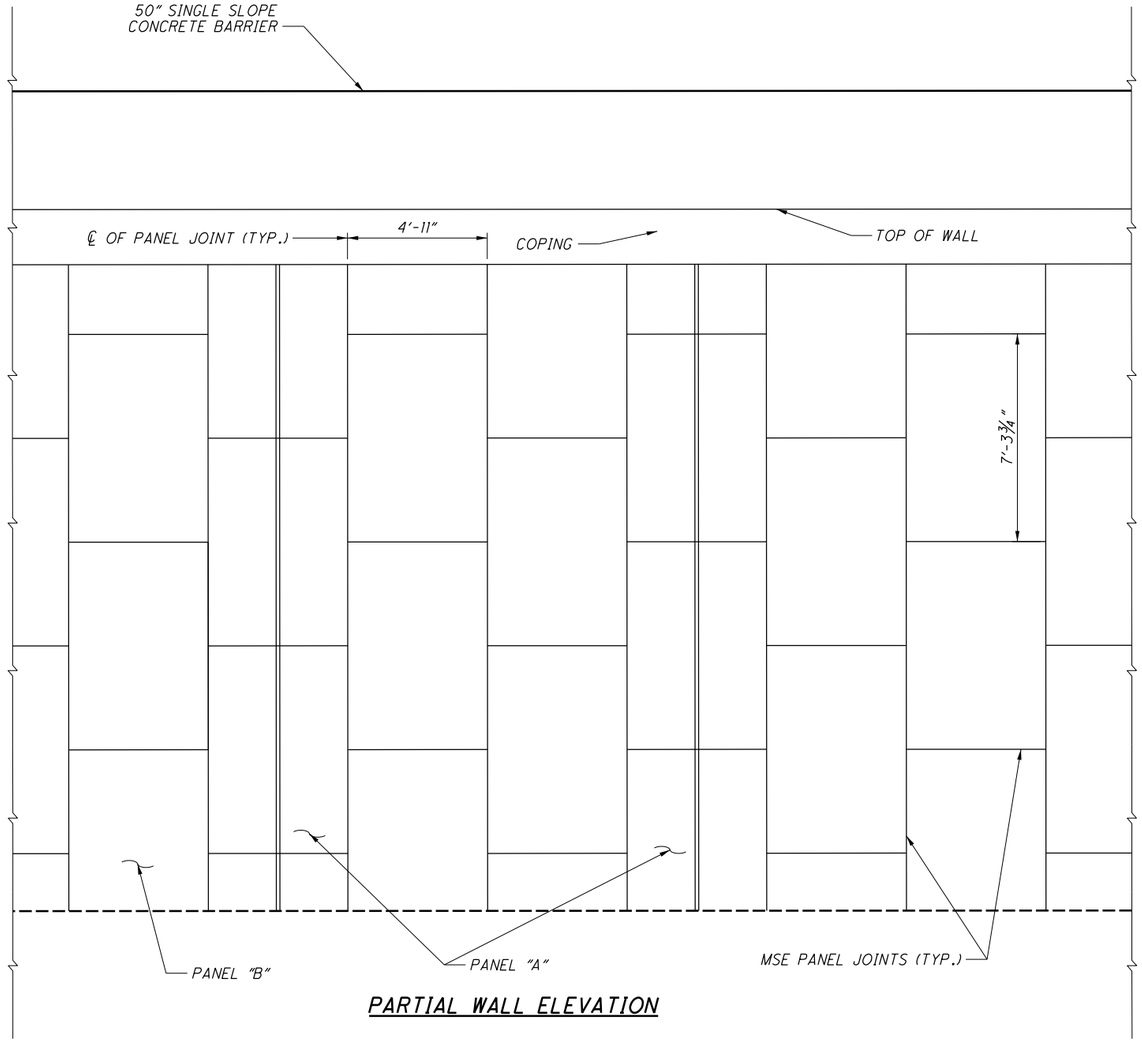
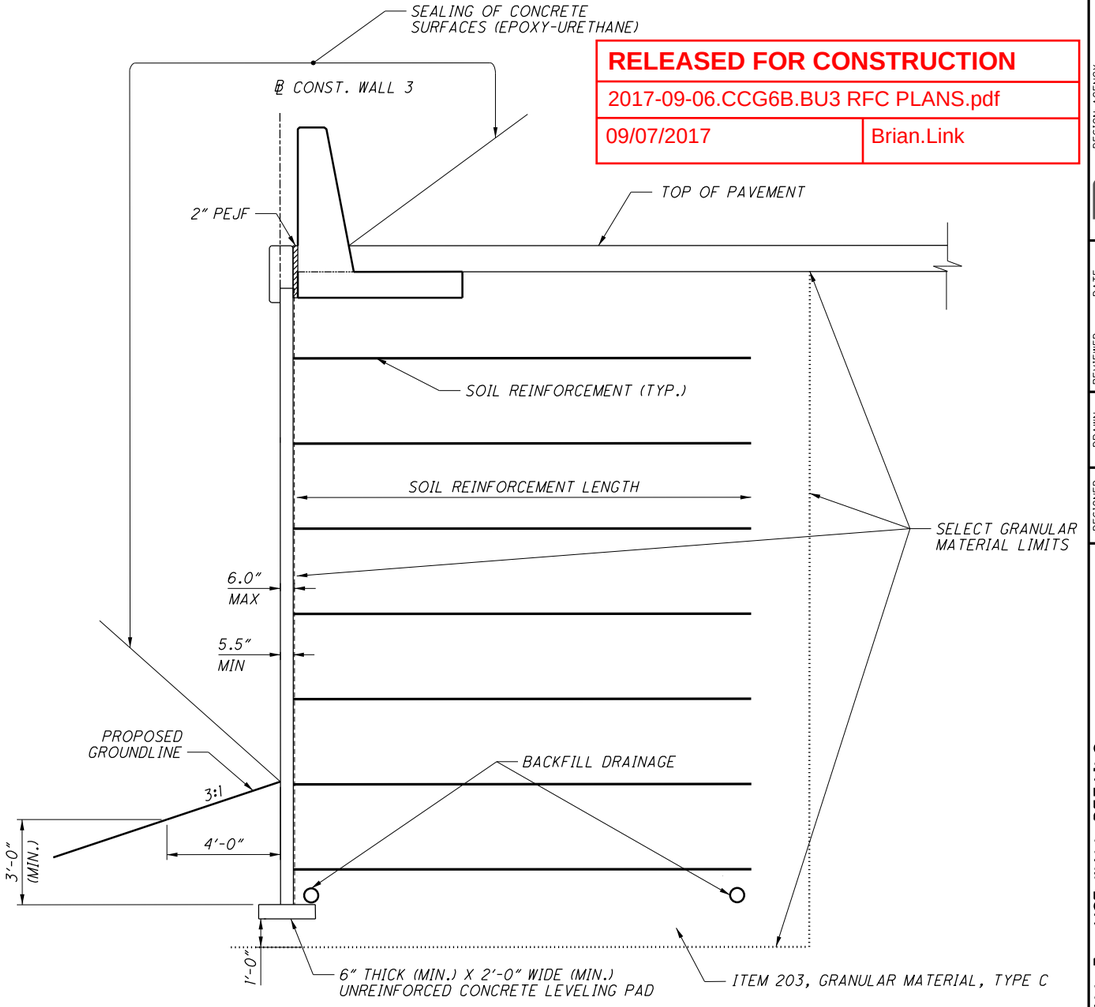
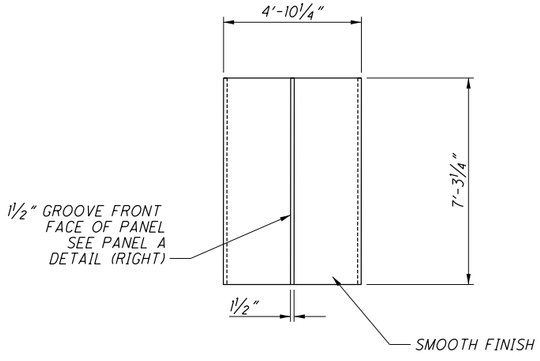


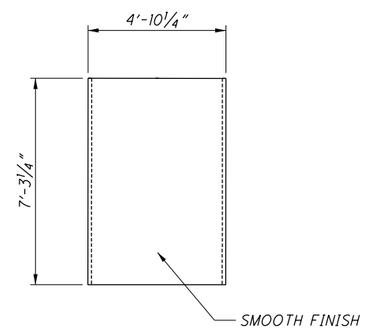
PARTIAL WALL ELEVATION



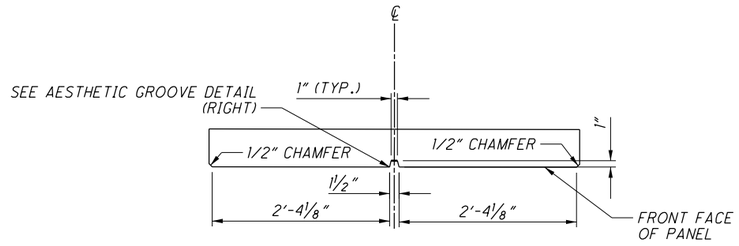
MSE WALL SECTION



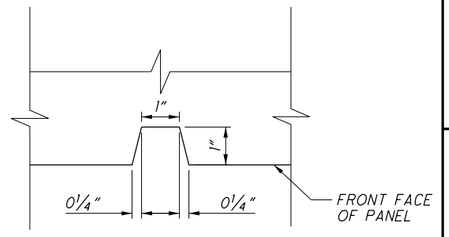
PANEL A - ELEVATION VIEW



PANEL B - ELEVATION VIEW



PANEL A- DETAIL



AESTHETIC GROOVE DETAIL

NOTE: ALL EXPOSED CONCRETE SURFACES NOT RECEIVING BRICK (INCLUDING ALL EXPOSED FACES OF SINGLE SLOPE BARRIER) TREATMENT SHALL BE SEALED (ITEM 512 - EPOXY URETHANE), FEDERAL COLOR NO. 595B-25630 (LIGHT GREY, SEMI GLOSS)

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

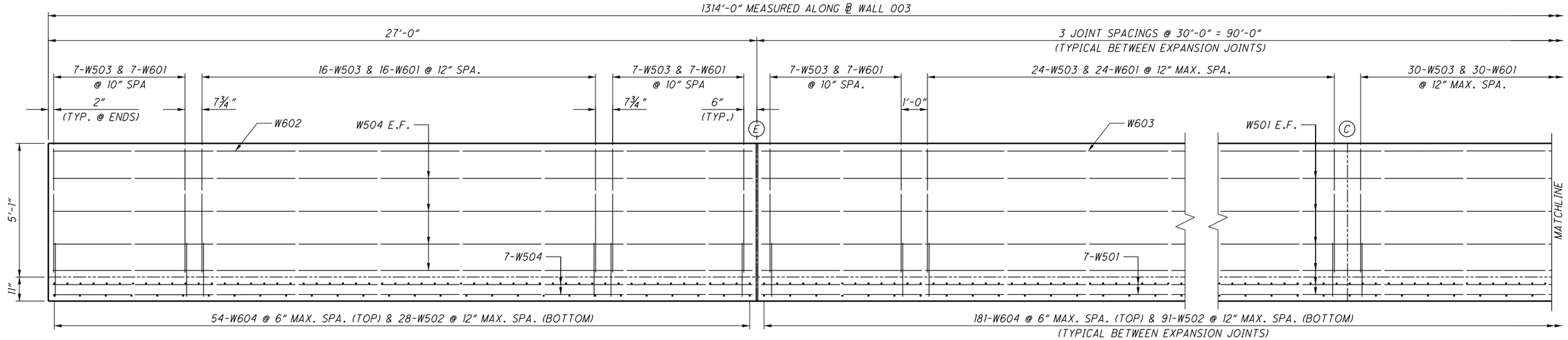
DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1468 West 9th Street • Cleveland, Ohio 44113
www.elrobinsonengineering.com

DESIGNED	DRAWN	REVIEWED	DATE
PAN	SM	DFT	AUG 2017
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JN			

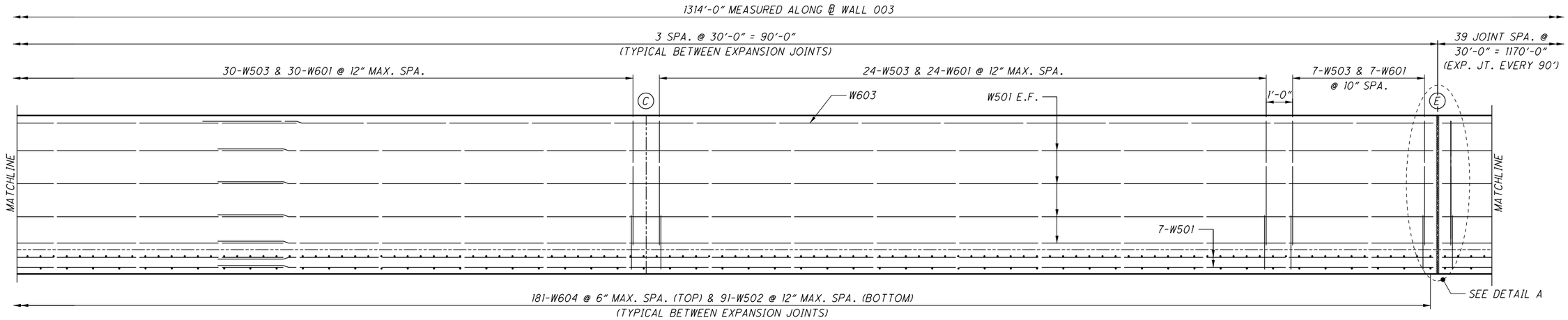
WALL 3 - MSE WALL DETAILS
FRONTAGE ROAD
MSE WALL

CUY-77-13.80
PID No. 82388

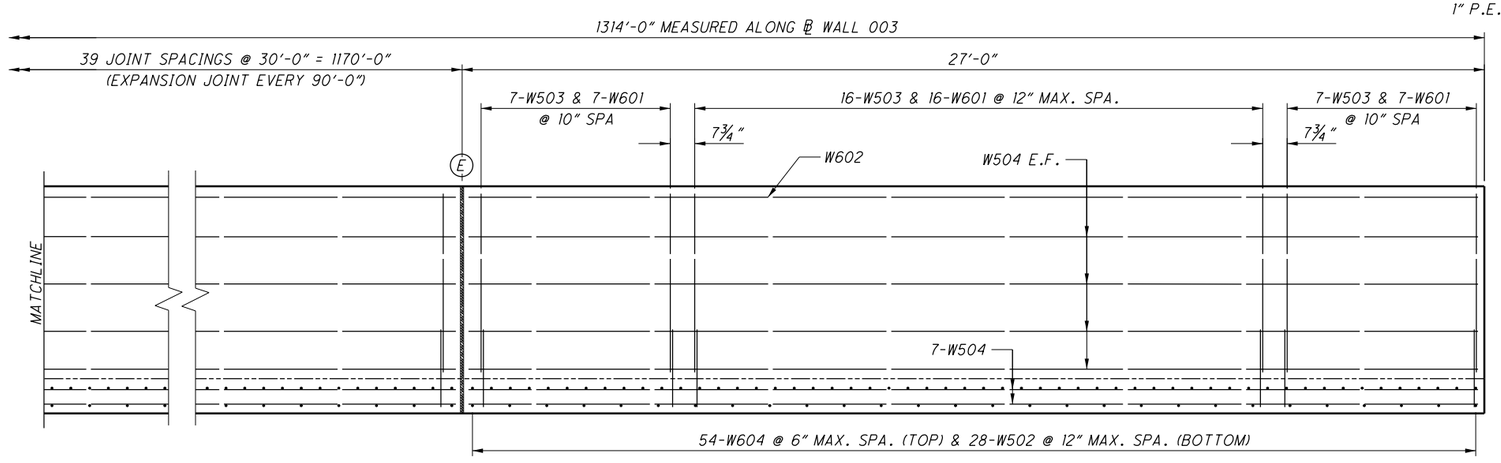
4 / 6
81 / 95



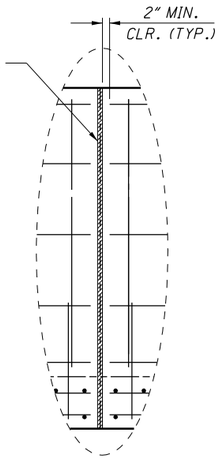
PART ELEVATION



PART ELEVATION



PART ELEVATION



DETAIL A
(TYPICAL @ EXPANSION JOINTS)

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LAP LENGTHS	
NO. 5 BARS	2'-6" MIN.
NO. 6 BARS	3'-6" MIN.

LEGEND

(E) - DESIGNATES EXPANSION JOINT

(C) - DESIGNATES CRACK CONTROL JOINT

NO.	DATE	DESCRIPTION
		BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3
		ISSUE RECORD

DESIGN AGENCY
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www.elrobinsonengineering.com

DESIGNED	DRAWN	REVIEWED	DATE
LJS/MGB	FIB	DFT	AUG 2017
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PAN			

WALL 3 - MOMENT SLAB
FRONTAGE ROAD
MSE WALL

CUY-77-13.80
PID No. 82388

5 / 6

82
95

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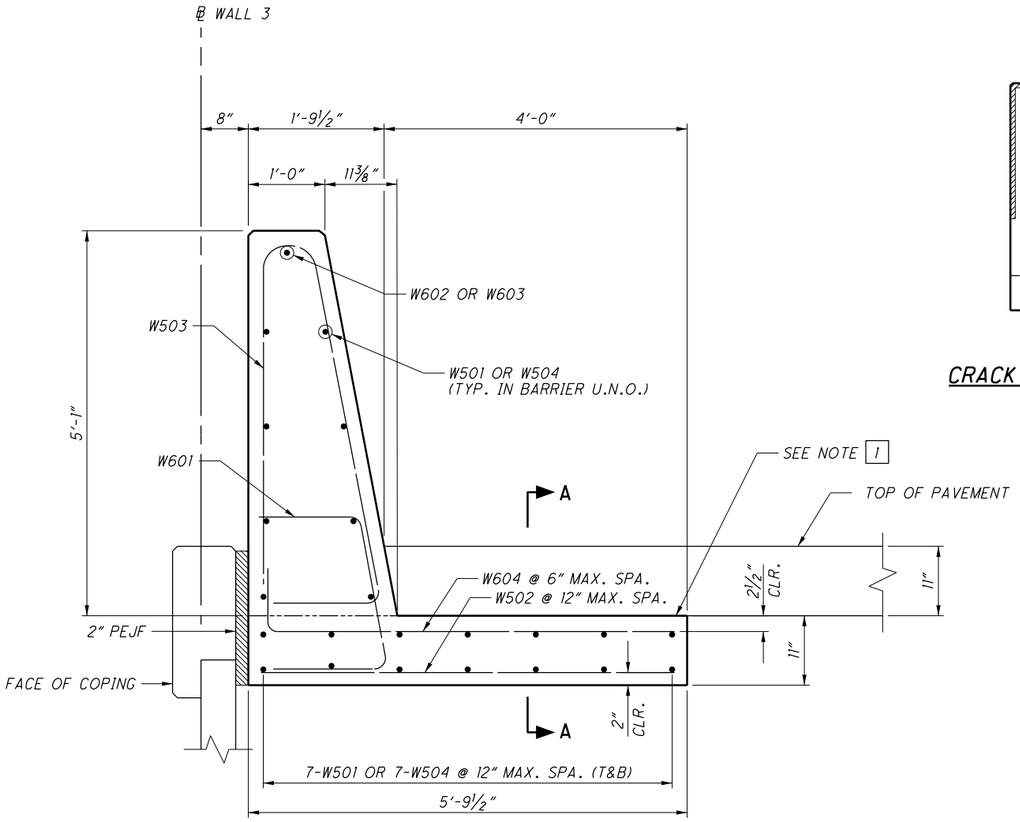
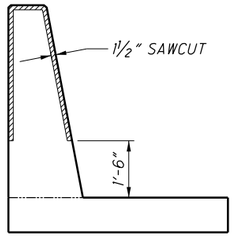
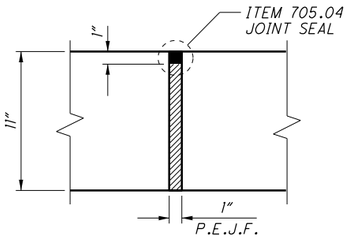


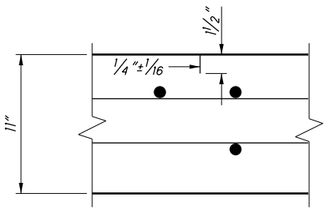
TYPICAL SECTION



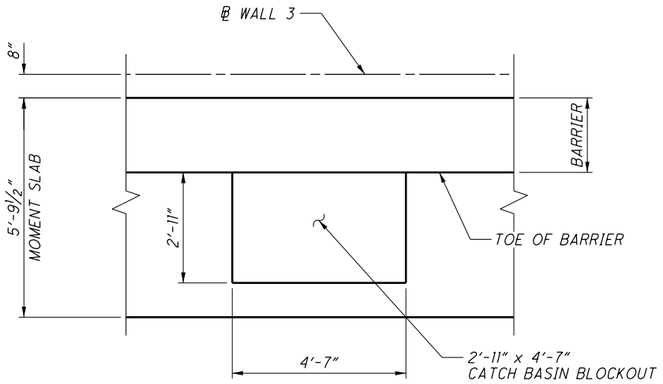
CRACK CONTROL JOINT DETAIL



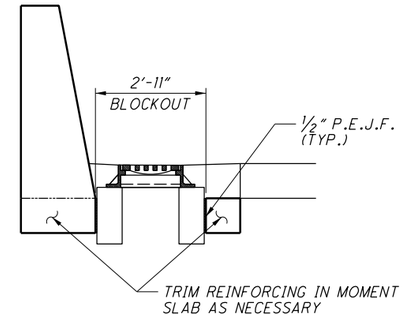
SECTION A-A
(TYPICAL @ ALL EXPANSION JOINTS)



SECTION A-A
(TYPICAL @ ALL CRACK CONTROL JOINTS)



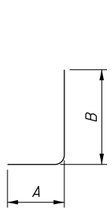
PLAN VIEW AT CATCH BASIN



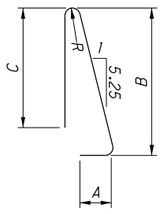
TYPICAL SECTION AT CATCH BASIN

1 A BOND BREAKER, CONSISTING OF TWO SHEETS OF CLEAR OR OPAQUE POLYETHYLENE FILM, ITEM 705.06, SHALL BE PLACED BETWEEN THE MOMENT SLAB AND THE SHOULDER PAVEMENT. THE FILM SHALL HAVE A NOMINAL THICKNESS OF 4 MILS.

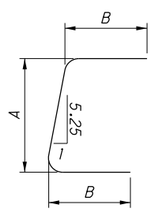
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	R
MOMENT SLAB								
W501	616	46'-1"	29608	STR				
W502	1330	5'-5"	7514	STR				
W503	1348	10'-10"	15231	23	1'-5"	4'-8"	4'-6"	0'-4"
W504	44	26'-8"	1224	STR				
W601	1348	3'-10"	7761	28	1'-10"	1'-2"		
W602	2	26'-8"	80	STR				
W603	28	46'-7"	1959	STR				
W604	2642	6'-7"	26125	1	1'-4"	5'-5"		
SUB-TOTAL			89,502					



TYPE-1



TYPE-23



TYPE-28

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NO.	DATE	DESCRIPTION
		BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3
		ISSUE RECORD

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1468 West 9th Street • Cleveland, Ohio 44113
www.elrobinsonengineering.com

DESIGNED	DRAWN	REVIEWED	DATE
LJS/MGB	FIB	DFT	AUG 2017
CHECKED	REVISED	STRUCTURE FILE NUMBER	
PAN			

WALL 3 - MOMENT SLAB DETAILS
FRONTAGE ROAD
MSE WALL

CUY-77-13.80
PID No. 82388

6 / 6

83
95

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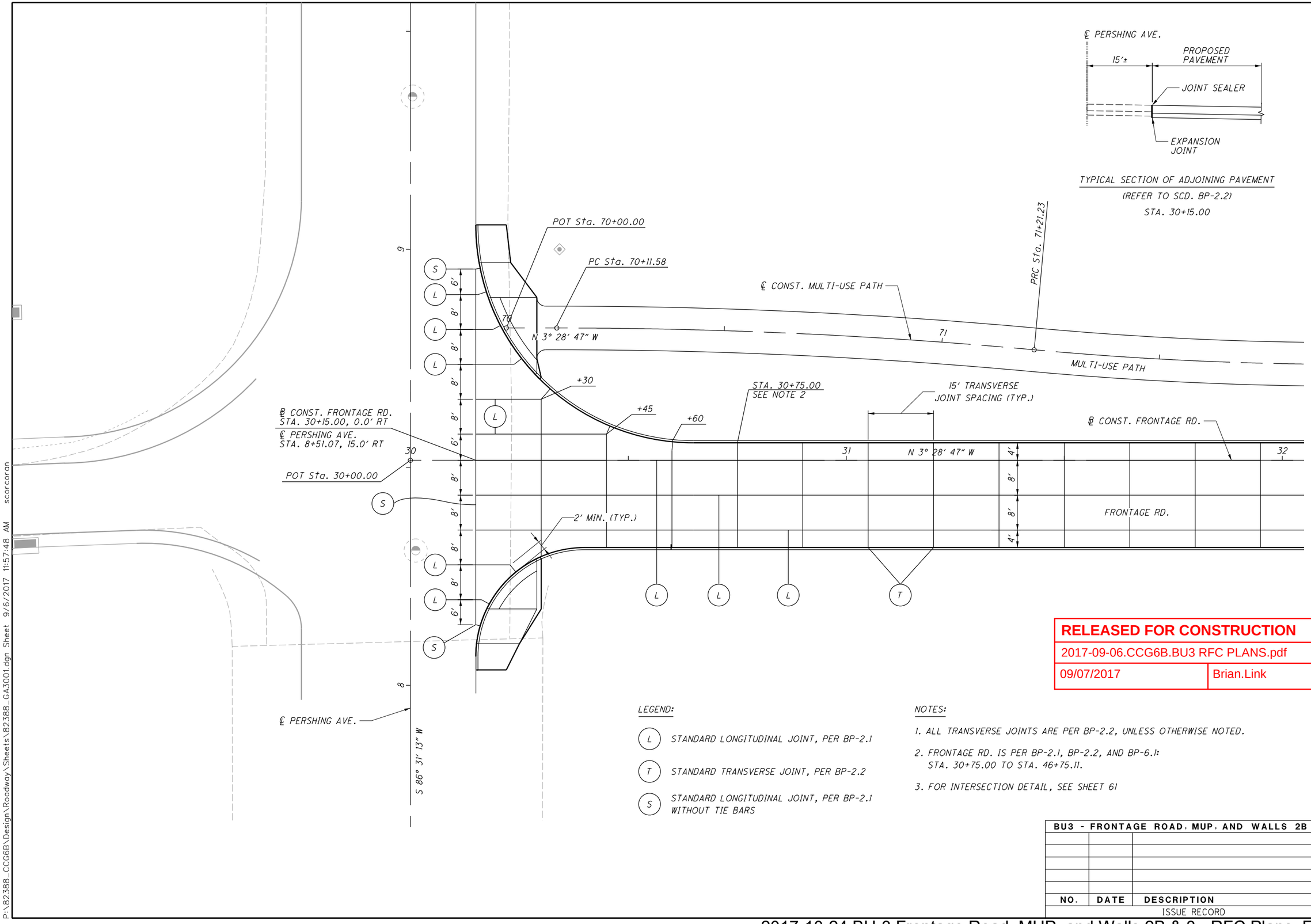

LEGEND:

- (L) STANDARD LONGITUDINAL JOINT, PER BP-2.1
- (T) STANDARD TRANSVERSE JOINT, PER BP-2.2
- (S) STANDARD LONGITUDINAL JOINT, PER BP-2.1 WITHOUT TIE BARS

NOTES:

1. ALL TRANSVERSE JOINTS ARE PER BP-2.2, UNLESS OTHERWISE NOTED.
2. FRONTAGE RD. IS PER BP-2.1, BP-2.2, AND BP-6.1: STA. 30+75.00 TO STA. 46+75.11.
3. FOR INTERSECTION DETAIL, SEE SHEET 61

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09/07/2017	Brian.Link

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED MLL
CHECKED SWC

PAVEMENT JOINT DETAILS
FRONTAGE ROAD & PERSHING AVENUE

CUY-77-13.80

84
95

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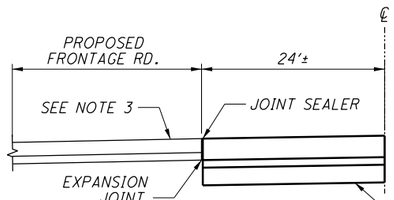
Δ TRANSVERSE JOINTS SPACED PERPENDICULAR TO FACE OF BARRIER

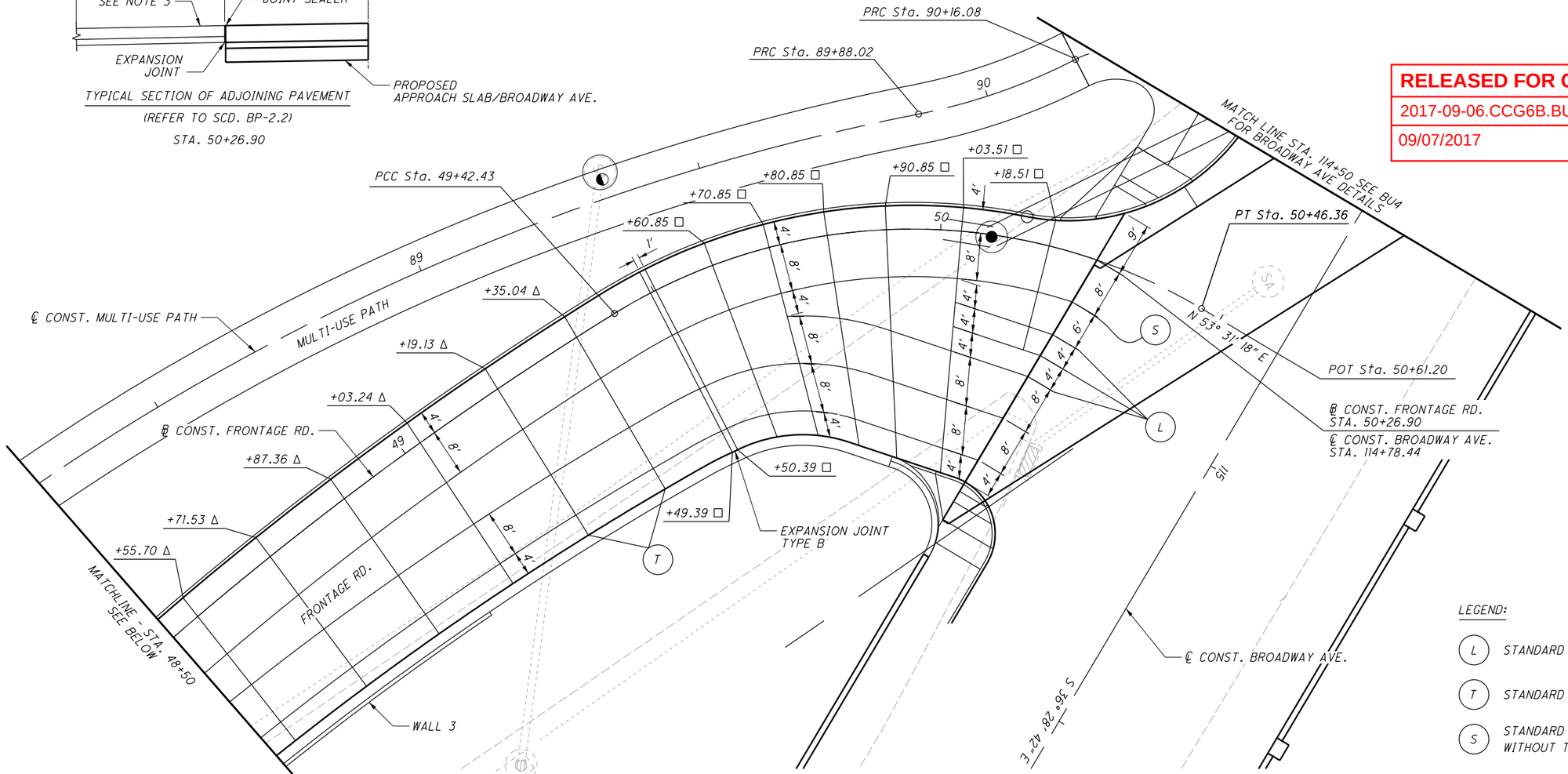
□ TRANSVERSE JOINTS SPACED PERPENDICULAR TO ℄ OF FRONTAGE RD.

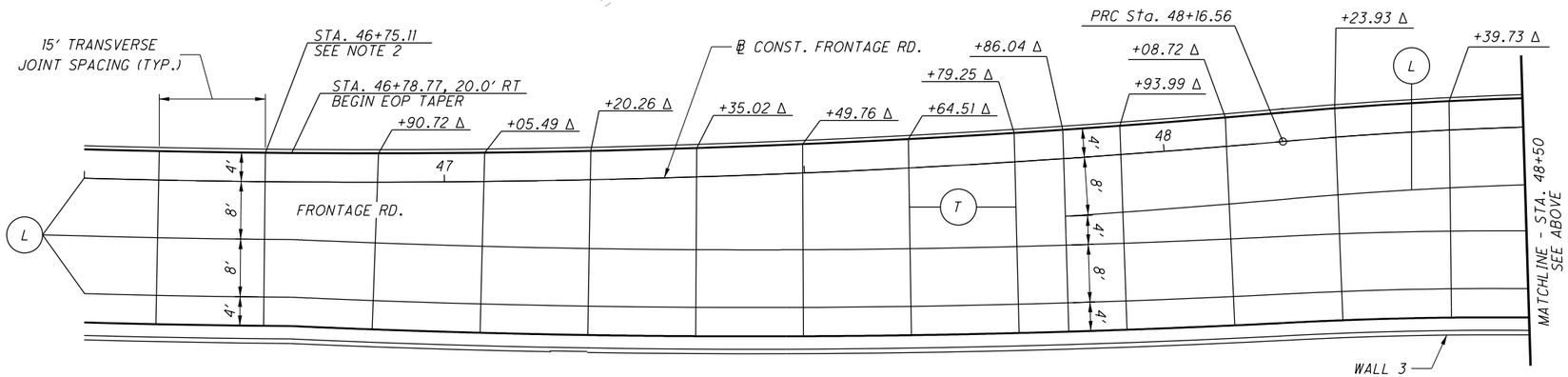


TYPICAL SECTION OF ADJOINING PAVEMENT

(REFER TO SCD. BP-2.2)

STA. 50+26.90





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2017-09-06.CCG6B.BU3 RFC PLANS.pdf

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LEGEND:

(L) STANDARD LONGITUDINAL JOINT, PER BP-2.1

(T) STANDARD TRANSVERSE JOINT, PER BP-2.2

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

NOTES:

1. ALL TRANSVERSE JOINTS ARE PER BP-2.2, UNLESS OTHERWISE NOTED AND ARE MEASURED ALONG THE BASELINE OF FRONTAGE RD.
2. FRONTAGE RD. IS PER BP-2.1, BP-2.2, AND BP-6.1: STA. 30+75.00 TO STA. 46+75.11.
3. FOR INTERSECTION DETAIL, SEE SHEET 62
4. FOR JOINT SPACING ALONG MOMENT SLAB, SEE MOMENT SLAB DETAILS.

NO.	DATE	DESCRIPTION
		ISSUE RECORD

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

HORIZONTAL SCALE IN FEET 0 5 10 20

CALCULATED MLL | CHECKED SWC

PAVEMENT JOINT DETAILS
FRONTAGE ROAD & BROADWAY AVENUE

CUY-77-13.80

85
95

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2017-10-24.BU-3 Frontage Road, MUP, and Walls 2B & 3 - RFC Plans_FC 8

℄ PERSHING AVENUE

8 — 9

PERSHING AVENUE

30+15.67; 42.1' RT
MATCH EX.

30+15.67; 42.1' RT
ELEV. 683.60

30+18.06; 34.1' RT
ELEV. 682.95

CITY OF CLEVELAND
CURB RAMP #11

25'R

30+29.00; 23.1' RT
ELEV. 682.68

30+25.00; 42.1' RT
MATCH EX.

30+25.00; 42.1' RT
ELEV. 683.79

30+30.00; 22.6' RT
ELEV. 683.15

30+29.00; 34.1' RT
ELEV. 682.90

FRONTAGE ROAD

℄ CONST. FRONTAGE ROAD

POT Sta. 70+00.00

30+18.39; 37.3' LT
ELEV. 681.77

30+16.26; 45.3' LT
ELEV. 682.20

30+15.50; 54.0' LT
MATCH EX.

50' R

CITY OF CLEVELAND
CURB RAMP #11

70

N 3° 28' 47" W

30+29.00; 20.0' LT
ELEV. 681.92

30+30.00; 19.0' LT
ELEV. 682.41

30+22.00; 54.0' LT
MATCH EX.

30+23.00; 45.3' LT
ELEV. 682.33

PC Sta. 70+11.58

30+29.00; 37.3' LT
ELEV. 682.09

30+29.00; 23.3' LT
ELEV. 681.99

℄ CONST. MULTI-USE PATH

FOR INTERSECTION DETAILS, SEE SHEET 61

NOTES:
1. APPROACH SLAB WILL BE POURED TO MATCH ELEVATION OF THE WALK AT THE SOUTHEAST CORNER OF THE INTERSECTION.
2. FOR INTERSECTION DETAILS, SEE SHEET 62

50+02.08; 41.1' RT
ELEV. 681.68

115+30.77; 34.2' RT
ELEV. 681.99

115+34.77; 34.2' RT
ELEV. 682.14

50+10.85; 42.3' RT
ELEV. 681.42

50+18.79; 45.2' RT
ELEV. 681.54

CITY OF CLEVELAND
CURB RAMP #11

10' R

115+34.77; 24.5' LT
ELEV. 682.24

115+30.77; 24.9' LT
ELEV. 682.18

FRONTAGE ROAD

50+19.22; 5.1' LT
ELEV. 681.33

50+24.55; 7.0' LT
ELEV. 681.38

PT Sta. 90+31.26

114+60.13; 38.1' LT
ELEV. 681.79

MULTI-USE PATH

℄ CONST. MULTI-USE PATH

CITY OF CLEVELAND
CURB RAMP #11

114+60.13; 32.1' LT
ELEV. 681.91

N 53° 31' 18" E

℄ CONST. FRONTAGE ROAD

114+67.63; 32.1' LT
ELEV. 681.44

114+60.13; 27.5' LT
ELEV. 682.00

36' R

FOR CURB RAMP
INFORMATION
SEE BU4

POT Sta. 90+49.08

PT Sta. 50+46.36

BROADWAY AVENUE

N 53° 31' 18" E

℄ CONST. BROADWAY AVENUE

115

HORIZONTAL SCALE IN FEET
0 2.5 5 10

CALCULATED MLL
CHECKED SWC

CURB RAMP DETAILS

CUY-77-13.80

86
95

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BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

NO.	DATE	DESCRIPTION
		ISSUE RECORD

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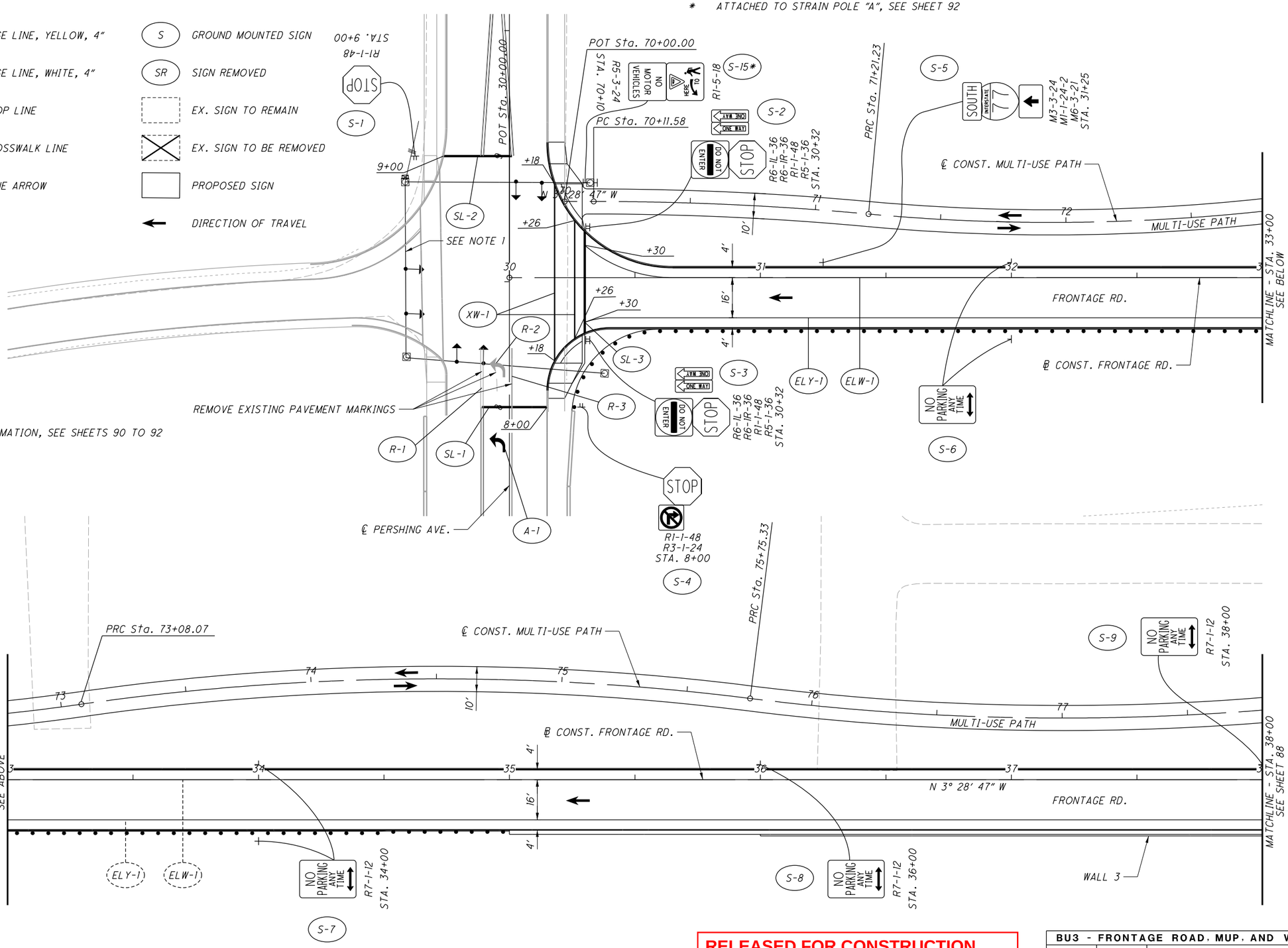
LEGEND:

ELY	ITEM 646 - EDGE LINE, YELLOW, 4"	S	GROUND MOUNTED SIGN
ELW	ITEM 646 - EDGE LINE, WHITE, 4"	SR	SIGN REMOVED
SL	ITEM 646 - STOP LINE		EX. SIGN TO REMAIN
XW	ITEM 646 - CROSSWALK LINE		EX. SIGN TO BE REMOVED
A	ITEM 646 - LANE ARROW		PROPOSED SIGN
R	REMOVAL		DIRECTION OF TRAVEL

* ATTACHED TO STRAIN POLE "A", SEE SHEET 92



LEGEND:

1. FOR SIGNAL INFORMATION, SEE SHEETS 90 TO 92

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2017-09-06.CCG6B.BU3 RFC PLANS.pdf	
09/07/2017	Brian.Link

NO.	DATE	DESCRIPTION
		ISSUE RECORD

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

CALCULATED: MLL | CHECKED: SWC

TRAFFIC CONTROL PLAN
FRONTAGE RD. - BEGIN WORK TO STA. 38+00

CUY-77-13.80

87
95

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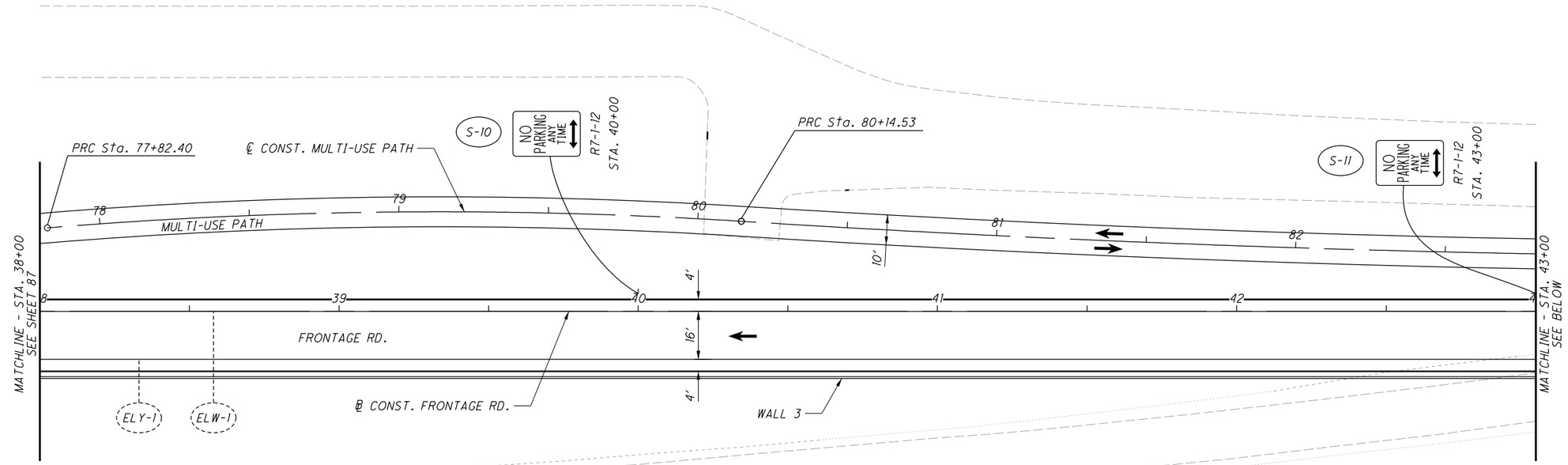
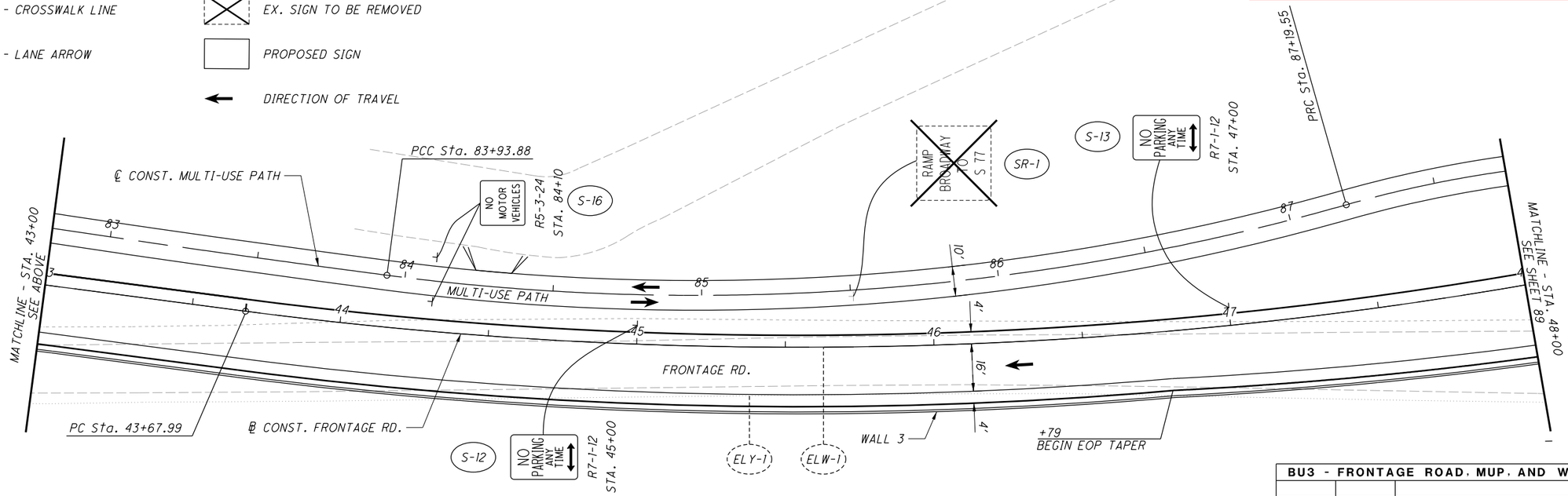


LEGEND:

ELY	ITEM 646 - EDGE LINE, YELLOW, 4"	S	GROUND MOUNTED SIGN
ELW	ITEM 646 - EDGE LINE, WHITE, 4"	SR	SIGN REMOVED
SL	ITEM 646 - STOP LINE		EX. SIGN TO REMAIN
XW	ITEM 646 - CROSSWALK LINE		EX. SIGN TO BE REMOVED
A	ITEM 646 - LANE ARROW		PROPOSED SIGN
R	REMOVAL	←	DIRECTION OF TRAVEL



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2017-09-06.CCG6B.BU3 RFC PLANS.pdf

09/07/2017 | Brian.Link

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MLL | CHECKED SWC

TRAFFIC CONTROL PLAN
FRONTAGE RD. - STA. 38+00 TO STA. 48+00

CUY-77-13.80

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
		ISSUE RECORD

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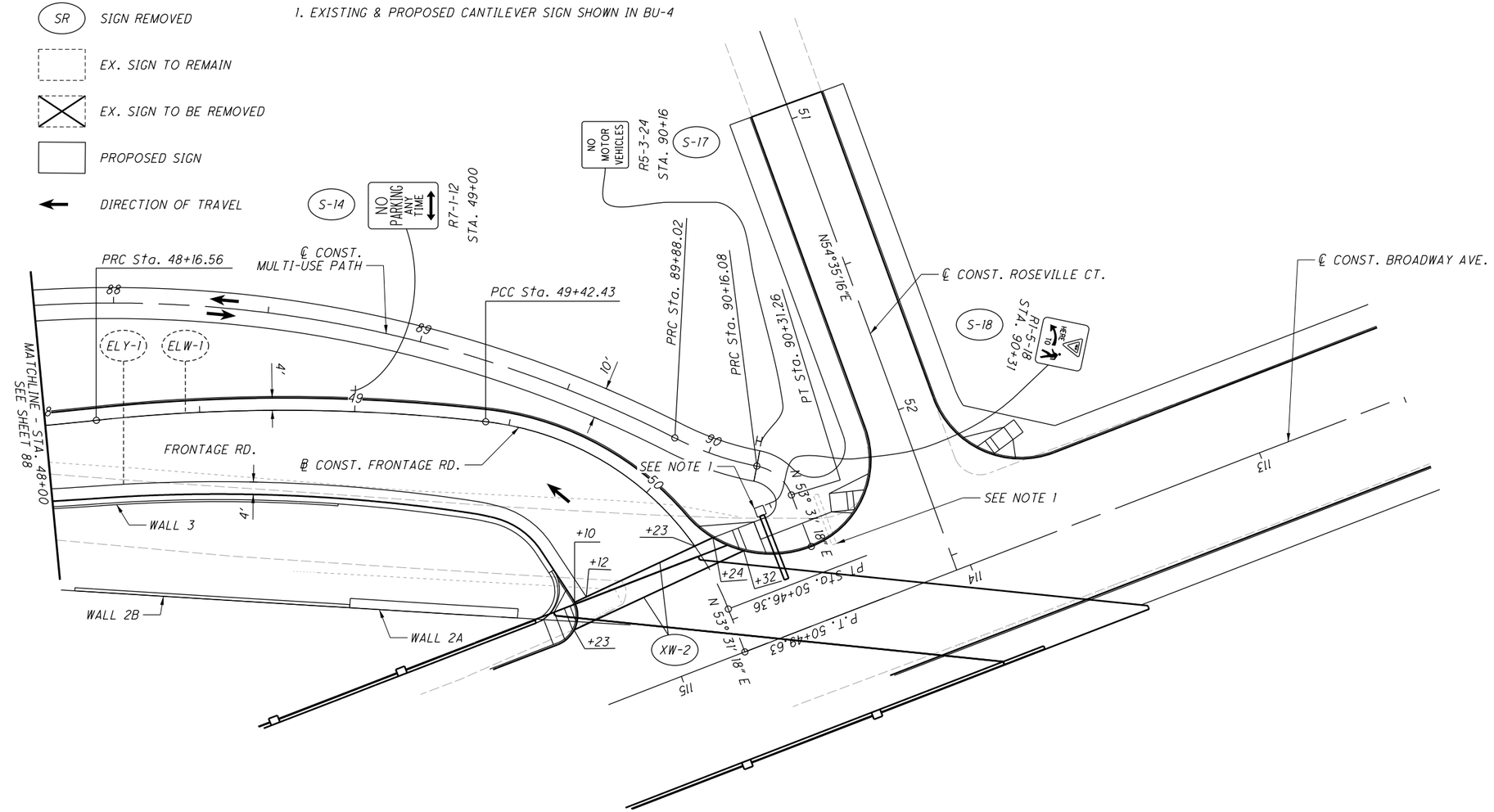
LEGEND:

ELY	ITEM 646 - EDGE LINE, YELLOW, 4"
ELW	ITEM 646 - EDGE LINE, WHITE, 4"
SL	ITEM 646 - STOP LINE
XW	ITEM 646 - CROSSWALK LINE
A	ITEM 646 - LANE ARROW
R	REMOVAL
S	GROUND MOUNTED SIGN
SR	SIGN REMOVED
	EX. SIGN TO REMAIN
	EX. SIGN TO BE REMOVED
	PROPOSED SIGN
	DIRECTION OF TRAVEL

NOTES:

1. EXISTING & PROPOSED CANTILEVER SIGN SHOWN IN BU-4



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2017-09-06.CCG6B.BU3 RFC PLANS.pdf

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NO.	DATE	DESCRIPTION
		ISSUE RECORD

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

CALCULATED MLL | CHECKED SWC

TRAFFIC CONTROL PLAN
FRONTAGE RD. - STA. 48+00 TO END WORK

CUY-77-13.80

89
95

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ITEM 633 CONTROLLER ACTUATED, 8 PHASE SOLID STATE DIGITAL MICROPROCESSOR

THE PURPOSE OF THIS SPECIFICATION IS TO DEFINE THE MINIMUM OPERATING REQUIREMENT AND CHARACTERISTICS FOR A NEMA TS1-1983 STANDARD, AND ALL ADOPTED REVISIONS, MICROPROCESSOR BASED TRAFFIC SIGNAL CONTROLLER AND CABINET.

GENERAL REQUIREMENTS
THE CONTROLLER SHALL MEET OR EXCEED ALL REQUIREMENTS SET FORTH BY THE INSTITUTE OF TRANSPORTATION ENGINEERS, THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND THE NEMA TS1-1983 STANDARDS AND ALL ADOPTED REVISIONS. ALL CONTROLLERS SHALL BE COMPLETELY COMPATIBLE WITH THE LATEST EDITION OF APPROVED CLOSED LOOP SOFTWARE FOR THE EXISTING CITY OF CLEVELAND'S CLOSED LOOP SYSTEM.

ALL CIRCUIT COMPONENTS SUCH AS TRANSISTORS, DIODES, INTEGRATED CIRCUITS, RESISTORS, CAPACITORS, ETC., SHALL BE COMMUTER-GRADE OUALITY. NO VACUUM TUBES, RELAYS OR STEPPING SWITCHES SHALL BE PERMITTED. INTEGRATED CIRCUITS SHALL BE SOCKET MOUNTED. ALL COMPONENTS SHALL BE IDENTIFIED WITH MANUFACTURER'S PART NUMBER FOR AVAILABILITY. NO CUSTOM COMPONENTS, EXCEPT FOR SOFTWARE AND PROGRAMMABLE CHIPS, SHALL BE PERMITTED.

OVERLAPS SHALL BE INTERNALLY GENERATED. OVERLAPS SHALL BE USER SELECTABLE USING A STANDARD NEMA PROGRAM OVERLAP CARD AND WIRE JUMPER STRAPS LOCATED WITHIN THE CONTROLLER UNIT IN ACCORDANCE WITH NEMA TS1-1983, FIGURE 14.3-6 OR THROUGH INTERNAL PROGRAMMING. IF INTERNAL PROGRAMMING IS ANTICIPATED, THE MANUFACTURER SHALL STILL PROVIDE THE NEMA OVERLAP CARD WITH JUMPERS. THERE SHALL BE COMPLETE PHASE SKIP CAPABILITY OF ANY PHASE WITHOUT A VALID DETECTOR CALL.

THE CONTROLLER SHALL BE CAPABLE OF ACCEPTING A CALL FROM ANY STANDARD VEHICLE OR PEDESTRIAN DETECTOR WITHOUT THE USE OF SPECIAL EXTERNAL ISOLATION DEVICES. ALL TIMING SHALL BE BASED ON THE 60 HZ FREQUENCY. ALL COMPONENTS ON PRINTED CIRCUIT BOARDS SHALL HAVE THEIR IDENTIFICATION PERMANENTLY LABELED ON THE CIRCUIT BOARD IN A MANNER SO AS NOT TO BE OBSCURED BY COMPONENT MOUNTING.

ALL REQUIRED PROGRAMMING PARAMETERS REQUIRED BY THIS SPECIFICATION SHALL BE USER ENTERED BY MEANS OF FRONT PANEL KEYBOARD(S).

PROGRAMMING OF THE CONTROLLER SHALL BE ACCORDING TO STANDARD NEMA SEQUENCE CHARTS.

THE CONTROLLER SHALL BE DESIGNED TO OPERATE IN STANDARD TRAFFIC CONTROL CABINET WITHOUT THE NEED FOR ENVIRONMENTAL CONTROL DEVICES OTHER THAN A STANDARD CABINET FAN AND VENTILATION VENTS IN THE CONTROLLER HOUSING CABINET.

ALL USER ENTERED DATA SHALL BE STORED IN EEPROM DEVICES WHICH SHALL PRECLUDE THE NEED FOR ANY BATTERY OR BATTERY OPERATED DEVICES. ONLY THE REAL-TIME CLOCK FOR THE TIME-BASED COORDINATION SHALL UTILIZE A BATTERY. ALL USER-ENTERED DATA STORED IN THE EEPROM SHALL BE PERMANENTLY STORED IN THE DEVICES. LOSS OF CONTROLLER OPERATION POWER SHALL NOT ALTER THE VALUES OF EEPROM.

EEPROM SHALL BE PROVIDED IN ADDITION TO ANY OTHER TYPE OF MEMORY DEVICE OR CHIP.

THE FOLLOWING FRONT PANEL INDICATORS SHALL BE PROVIDED:
1. PHASE IN SERVICE (PER PHASE)
2. PHASE NEXT (PER PHASE)
3. DETECTOR CALL (PER PHASE)
4. PEDESTRIAN CALL (PER PHASE)
5. GAP TERMINATION (PER PHASE)
6. MAX GREEN TERMINATION (PER RING)
7. MAX GREEN TWO IN EFFECT (PER RING)
8. TERMINATION BY FORCE OFF (PER RING)
9. DET LOCK/NON LOCK (PER RING)
10. HOLD (PER RING)

THERE SHALL BE MEANS FOR USER ENTRY OF THE FOLLOWING VIA FRONT PANEL SWITCHES ON THE KEYBOARD PER PHASE SELECTION OF:
1. MINIMUM RECALL
2. MAXIMUM RECALL
3. PEDESTRIAN RECALL
4. PHASE NON-ACTUATED
5. DETECTOR LOCK/NON LOCK

TIMER DISPLAY SHALL BE A OUALITY BACK LIGHT LIQUID CRYSTAL.

COORDINATION
UNLESS OTHERWISE SPECIFIED IN THE PLANS AND/OR BID DOCUMENTS, CONTROLLERS SHALL BE FURNISHED WITH COORDINATION CAPABILITY CONTAINED INTERNALLY WITHIN THE CONTROLLER UNIT.

THE COORDINATION CAPABILITIES SHALL PROVIDE AS A MINIMUM THREE (3) CYCLES, THREE (3) OFFSETS, AND THREE (3) SPLITS. FORCE-OFF AND BEGIN/END YIELD POINTS SHALL BE PROGRAMMABLE BY THE USER WITH RESPECT TO THE LOCAL OR SYSTEM CYCLE AS APPROPRIATE. THERE SHALL BE A MINIMUM OF TWO PERMISSIVE YIELD PERIODS AVAILABLE.

THE PHASES WHICH ARE TO BE THE COORDINATED PHASES SHALL BE PROGRAMMABLE BY THE USER AND ARE TO BE INDEPENDENTLY SELECTABLE IN EACH RING.

THE EXTERNAL COORDINATION INPUTS WHICH SHALL BE ACCEPTED BY THE CONTROLLED UNIT THROUGH THE ADDITION OF A FOURTH OR "D" CONNECTOR SHALL BE AS FOLLOWS:
1. CYCLE 2
2. CYCLE 3
3. OFFSET 1
4. OFFSET 2
5. OFFSET 3
6. SPLIT 2
7. SPLIT 3

THE COORDINATION CABLE FOR THE FOURTH OR "D" CONNECTOR ON THE CONTROLLER UNIT SHALL BE TERMINATED ON A TERMINATION PANEL CONTAINING THE REQUIRED NUMBER OF BARRIER TERMINAL STRIPS. THIS PANEL SHALL BE MOUNTED ON THE RIGHT SIDEWALL OF THE CABINETS. ALL TERMINALS SHALL BE CLEARLY NUMBERED.

COMMUNICATION/COORDINATION HARNESS AND PANEL SHALL BE PROVIDED WITH EACH CABINET AND SHALL BE LOCATED IN THE LOWER SIDEWALL OF CONTROLLER CABINET. SURGE PROTECTION DEVICES SHALL BE PROVIDED.

CABINET
THE CABINET SHALL BE WEATHER-TIGHT CONSTRUCTION FABRICATED FROM SHEET ALUMINUM (0.1259"). ALL WELDS ON FABRICATED CABINETS SHALL BE INTERNAL AND CONTINUOUS; SPOT WELDING IS NOT ACCEPTABLE. THE CABINETS SHALL BE WHITE INSIDE AND BRONZE (BROWN) ON THE OUTSIDE.

THE CABINET SHALL BE EQUIPPED WITH PROPERLY RATED CIRCUIT BREAKER(S) CONFORMING TO THE NATIONAL ELECTRICAL CODE TO ACCEPT NO. 6 AWG WIRE.

THERE SHALL BE TWO PROPERLY RATED CIRCUIT BREAKER(S) CONFORMING TO THE NATIONAL ELECTRICAL CODE TO ACCEPT NO. 6 AWG WIRE.

THERE SHALL BE TWO PROPERLY RATED CIRCUIT BREAKERS FOR THE FOLLOWING:
1. ONE BREAKER SHALL PROVIDE SERVICE FOR THE CONTROLLER, CONFLICT MONITOR, LOAD SWITCHES, FAN AND OTHER CONTROLLER APPURTENANCES.

2. ONE BREAKER SHALL PROVIDE SERVICE FOR THE CABINET LIGHT, CONVENIENCE OUTLET AND FAN.

THE CABINET SHALL BE OF SUITABLE SIZE TO ALLOW ACCESS TO ALL CABINET TERMINALS FOR INSTALLATION AND MAINTENANCE WITH SHELF SPACE FOR ALL PROVIDED EQUIPMENT AND ONE DETECTOR AMPLIFIER PER PHASE.

THE CABINET SHALL HAVE A FIELD TEST PANEL EQUIPPED WITH THE FOLLOWING SWITCHES:
1.PER PHASE DETECTOR SIMULATION FOR MOMENTARY CALL.

2. PER PHASE PEDESTRIAN CALL FOR MOMENTARY CALL.

3. STOP TIMING PER CONTROLLER. WHEN IN STOP TIMING, SHALL APPLY STOP TIMING TO BOTH RINGS OF THE CONTROLLER.

4. CABINET LIGHT ON/OFF.

5. FLASH SWITCH. WHEN IN POSITION, WILL PUT INTERSECTION TO FLASH AND CONTROLLER WILL CONTINUE TO CYCLE.

6. 110 VAC CONVENIENCE OUTLET.

THE CABINET SHALL HAVE A POLICE SUB-PANEL EQUIPPED AS FOLLOWS:
1. AN AUTO/FLASH SWITCH SHALL PROVIDE FOR NORMAL CONTROLLER OPERATION WHEN IN AUTO POSITION. WHEN PLACED IN FLASH POSITION, WILL PLACE INTERSECTION ON FLASH AND APPLY STOP TIMING TO CONTROLLER.
2. A SIGNAL ON/OFF SWITCH.

THE CABINET SHALL BE WIRED FOR VEHICLE AND PEDESTRIAN NEMA LED INDICATION LOAD SWITCHES. EIGHT-PHASE CONTROLLER SHALL BE WIRED FOR EIGHT VEHICLE MOVEMENTS AND FOUR PEDESTRIAN PHASES. TWELVE NEMA LOAD SWITCHES AND POSITIONS SHALL BE PROVIDED, EIGHT FOR VEHICLE PHASES AND FOUR FOR PEDESTRIAN USE. IT SHALL BE POSSIBLE TO CHANGE THE PEDESTRIAN LOAD SWITCH POSITION TO OVERLAP USE BY CHANGING THE APPROPRIATE CABINET WIRING AT THE TERMINAL STRIPS.

THE LOAD SWITCHES SHALL HAVE INPUT INDICATORS MOUNTED ON THE FRONT PANEL OF THE SWITCH. THE LOAD SWITCHES SHALL BE THE REPLACEABLE CUBE TYPE. LOAD SWITCHES MADE FROM DISCRETE COMPONENTS SHALL NOT BE ACCEPTABLE.

THE CABINET SHALL BE PROVIDED WITH A MINIMUM OF TWO 12- POSITION COPPER GROUND STRIPS TO ACCEPT #10 AWG WIRE.

ALL CABINET WIRING SHALL BE NEATLY ROUTED, LACED, AND PERMANENTLY SECURED. ALL INPUTS TO AND OUTPUTS FROM THE CONTROLLER AND CONFLICT MONITOR AND OTHER QUIPMENT, WHETHER USED OR NOT, SHALL BE TERMINATED IN BARRIER TYPE TERMINAL STRIPS.

ALL TERMINAL STRIPS AND WIRES SHALL BE CLEARLY MARKED WITH FADE RESISTANT TERMINALS. LL BARRIER TERMINAL CONNECTIONS SHALL UTILIZE SPADE-TYPE CONNECTORS. NO "FEEDTHROUGH" TERMINAL BLOCKS SHALL BE ACCEPTABLE.

ALSO TO BE PROVIDED WITH EACH CABINET SHALL BE ONE LOT EACH OF 50 CABLE STRAPS (4" X 0.10" TYTON T-18R OR EQUAL), 50 CIRCULAR WATERPROOF CABLE TAGS, AND TWO EACH CAPACITORS, MMWA 6WLK IMFD PLUS 10%, 600 VDC CDET.

THE CABINET SHALL BE EQUIPPED WITH ALL NECESSARY TERMINALS, HARNESSES, AND WIRING TO CONNECT POWER, SIGNALS, DETECTORS, CONTROLLER MONITOR, AND COORDINATION INPUTS.

INTERCONNECT CABLE LIGHTNING PROTECTION DEVICES, SUFFICIENT IN OUANTITY FOR CABLE PROTECTION, SHALL BE PROVIDED WITH EACH CABINET.

THE CABINET SHALL BE WIRED FOR AND INCLUDE A NEMA FLASHER MOUNTED ON THE BACK PANEL. ALL CONTROLLERS SHALL HAVE TWO CIRCUIT FLASHERS. THE FLASHERS SHALL HAVE OUTPUT INDICATORS MOUNTED ON THE FRONT OF THE FLASHER CASE.

THE CABINET FLASH SELECT SEQUENCE SHALL BE ACCOMPLISHED VIA JUMPER STRAPS OR SIRES. IT SHALL BE POSSIBLE TO PROGRAM FLASH SELECT FROM THE FRONT OF THE LOAD BAY AND ANY CHANGES IN THE FLASHING PROGRAM WILL BE DONE WITHOUT HAVING TO REMOVE OR LOWER THE MAIN PANEL ASSEMBLY.

ALL RELAYS EXTERNAL TO THE CONTROLLER OR APPURTENANCES SHALL MEET THE FOLLOWING REQUIREMENTS.
1. FLASH TRANSFER RELAYS SHALL BE AEMCO #136-4962, MIDLAND ROSS # 136-62T3A1 OR APPROVED EQUAL, 10 AMP CONTACTS, 8-PIN CINCH JONES BASE.
2. OTHER CONTROL RELAYS SHALL BE POTTER BRUMFIELD KRP, MIDLAND ROSS 159 SERIES, OR APPROVED EQUAL, 5 AMP CONTACTS, 8-PIN OCTAL BASE.

CABINET SHALL HAVE A DOORSTOP SELF-LATCHING MECHANISM, WHICH WILL PROVIDE A POSITIVE RETENTION OF DOOR WHEN OPEN. THIS WILL BE LOCATED AT THE BOTTOM OF THE CABINET, AND HAVE A MINIMUM OF TWO LOCKED POSITIONS, 90 AND 120 DEGREES.

A THREE-POINT LOCKING MECHANISM SHALL BE PROVIDED TO SECURE THE DOOR AT THREE POINTS: TOP, CENTER AND BOTTOM.

ALL CABINETS SHALL BE PROVIDED WITH A MINIMUM OF TWO SHELVES, FABRICATED WITH THE SAME MATERIAL AS THE CABINET. THEY SHALL BE ADJUSTABLE VERTICALLY, AND BE MOUNTED TO THE CABINET WALL WITH MOUNTING STRIPS WITH SPRING-RETAINED NUTS AND MACHINE SCREWS.

PANELS WILL BE LOCATED IN CABINET AS DESCRIBED BELOW:
1. COMMUNICATIONS/COORDINATION-LOWER LEFT WALL
2. DETECTORS-LOWER LEFT WALL
3. AC POWER-LOWER RIGHT SIDE OF MAIN PANEL
4. POLICE SWITCHES-DOOR
5. LOAD BAY-BACK WALL
6. TEST SWITCHES-REAR OF MAIN DOOR

A WIRING DIAGRAM SHALL BE PROVIDED FOR EACH CABINET SUPPLIED AND SHALL BE APPROVED BY THE ENGINEER BEFORE FINAL ACCEPTANCE OF MATERIAL.

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NO.	DATE	DESCRIPTION
		ISSUE RECORD

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B &3

CALCULATED MJH | CHECKED KAE

TRAFFIC SIGNAL GENERAL NOTES

CUY-77-13.80

90
95

ITEM 633 CONTROLLER ACTUATED, 8 PHASE SOLID STATE DIGITAL MICROPROCESSOR (CONT.)

EXTERIOR CABINET PAINTING
POWDER COATING COLOR: DARK BRONZE
SURFACE PREPARATION THE EXTERIOR STEEL SURFACE SHALL BE BLAS*CLEANED TO STEEL STRUCTURES PAINTING COUNCIL SURFACE PREPARATION SPECIFICATION NO. 6 (SSPC-SP6) 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.

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.

EXTERIOR COATING ALL THE 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.

COMBINATION COATING GALVANIZED-POWDER TOP COAT COLOR: DARK BRONZE
SURFACE PREPARATION PRIOR TO BEING INCORPORATED INTO AN ASSEMBLED PRODUCT, STEEL PLATE 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 TO 5.0PH. THE ASSEMBLY SHALL BE AIR-DRIED TO REMOVE ANY MOISTURE REMAINING IN THE FLUX COAT AND/OR TRAPPED WITHIN THE PRODUCT.

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 PRODUCT SHALL BE TOTALLY IMMERSED WITH NO PART OF IT PROTRUDING OUT OF THE ZINC (NO DOUBLE DIPPING). THIS IS TO LIMIT A 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.

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 (0.0029"). 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 DEGREES 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 D3559.

BASE MOUNTED CABINETS
THE CONTROLLER SHALL BE PROVIDED IN A BASE-MOUNTED CONTROL CABINET. ALL NECESSARY INSTALLATION HARDWARE AND TEMPLATES SHALL BE PROVIDED. MINIMUM OUTSIDE DIMENSIONS OF CABINET SHALL BE 25 INCHES (WIDTH) BY 16 INCHES (DEPTH) BY 48 INCHES (HEIGHT).

A TELEPHONE MODEM SHALL BE COMPLETELY WIRED IN EACH CABINET IN ORDER TO REPORT CABINET FAILURES, DETECTOR FAILURES AND TRAFFIC COUNTS. THE CONTROLLER SHALL BE COMPLETELY COMPATIBLE WITH THE LATEST EDITION OF THE CITY OF CLEVELAND'S CLOSED LOOP SYSTEM SOFTWARE.

THE ITEMS SUPPLIED SHALL BE IN CONFORMANCE WITH THE ABOVE REFERENCE SPECIFICATION AND SHALL BE SUPPLEMENTED WITH THE LATEST EDITION OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIAL SPECIFICATIONS. PAYMENT FOR ACCEPTED MATERIALS WILL BE MADE AT THE UNIT BID PRICE OF EACH ITEM INSTALLED AND ACCEPTED.

SIGNAL SUPPORT (BY TYPE AND DESIGN)

IN ADDITION TO THE REQUIREMENTS OF SPECIFICATION 632, SIGNAL SUPPORTS SHALL BE PAINTED IN ACCORDANCE WITH THE FOLLOWING:
POWDER COATING COLOR: DARK BRONZE
SURFACE PREPARATION THE EXTERIOR STEEL SURFACE SHALL BE BLAS*CLEANED TO STEEL STRUCTURES PAINTING COUNCIL SURFACE PREPARATION SPECIFICATION NO. 6 (SSPC-SP6) 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.

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.

EXTERIOR COATING ALL THE 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.

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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 PRODUCT SHALL BE TOTALLY IMMERSED WITH NO PART OF IT PROTRUDING OUT OF THE ZINC (NO DOUBLE DIPPING). THIS IS TO LIMIT A 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.

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THE CITY OF CLEVELAND, DIVISION OF TRAFFIC ENGINEERING REQUIRES THAT THE CONTRACTOR MEET WITH A TRAFFIC DEPARTMENT REPRESENTATIVE PRIOR TO FOUNDATION INSTALLATIONS TO VERIFY LOCATIONS AND FOR FINAL POLE ORIENTATIONS. CONTACT ANDREW CROSS, TRAFFIC ENGINEER AT (216) 664-3194, 48 HOURS PRIOR TO COMMENCING WORK.

ORDERS FOR SIGNAL POLES AND MAST ARMS SHALL BE PLACED SYSTEMATICALLY AFTER THE RESPECTIVE FOUNDATIONS HAVE BEEN CONSTRUCTED. CHANGES IN POLE AND/OR ARM SIZE, STRENGTH AND/OR LENGTH DUE TO REVISED FOUNDATION LOCATIONS SHALL NOT RECEIVE ADDITIONAL COMPENSATION.

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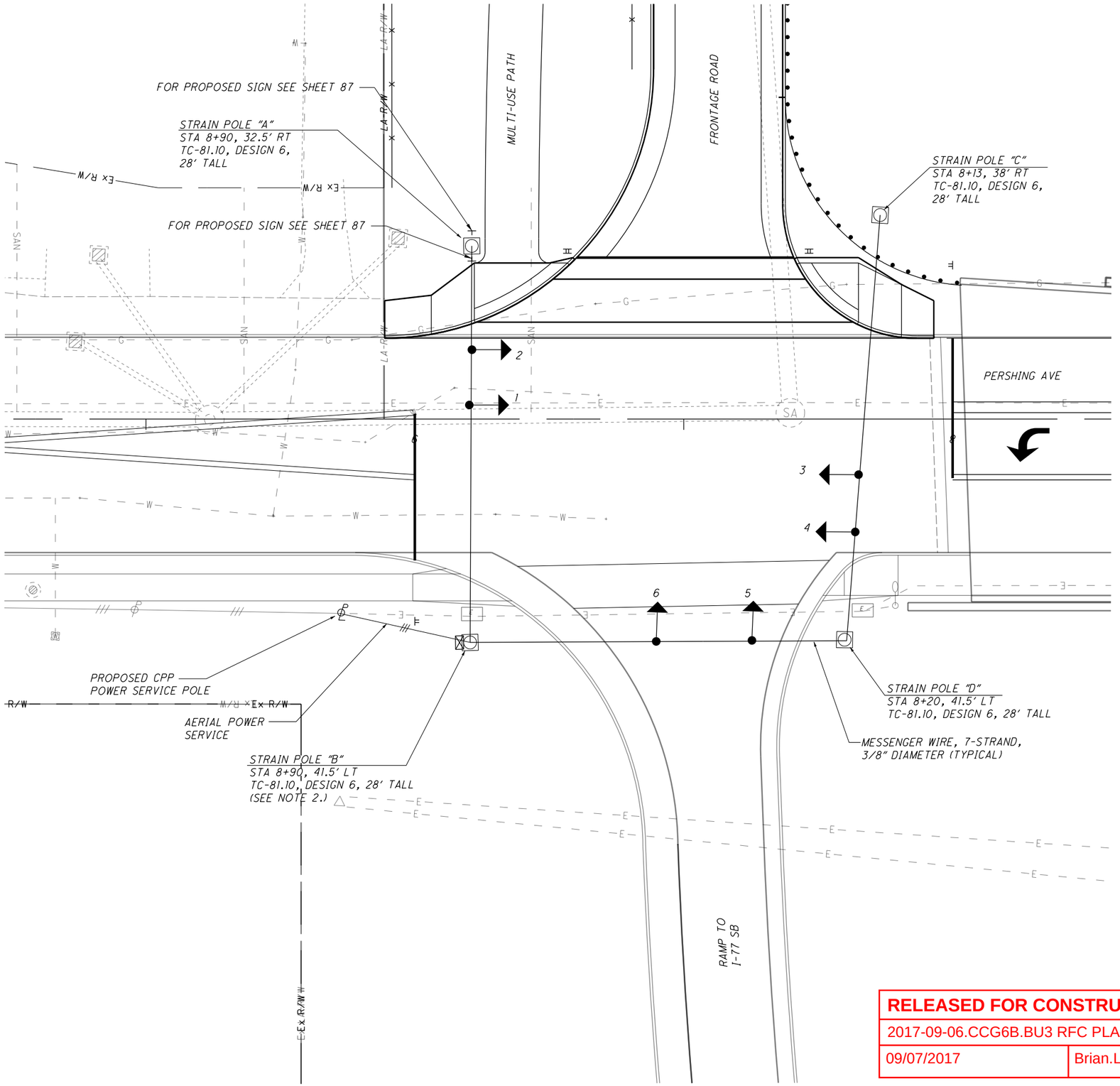
BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B &3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

CALCULATED MJH | CHECKED KAE

TRAFFIC GENERAL NOTES

CUY-77-13.80

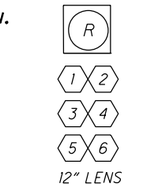
91
95



NOTES:
1) THE CONTRACTOR SHALL INSTALL AND ESTABLISH THE TRAFFIC SIGNAL CABINET FOR FUTURE OPERATION. THE SIGNAL SHALL BE OPERATED ON FLASH, AFTER INSTALLATION OF THE TRAFFIC SIGNAL IS ACCEPTED.

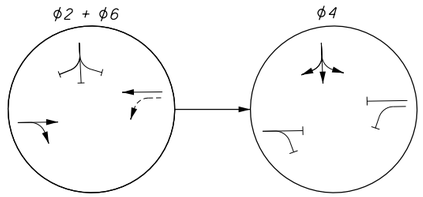
2) MOUNT TRAFFIC SIGNAL CABINET TO STRAIN POLE PER TC-83.10.

SIGNAL INDICATIONS

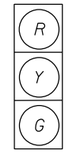


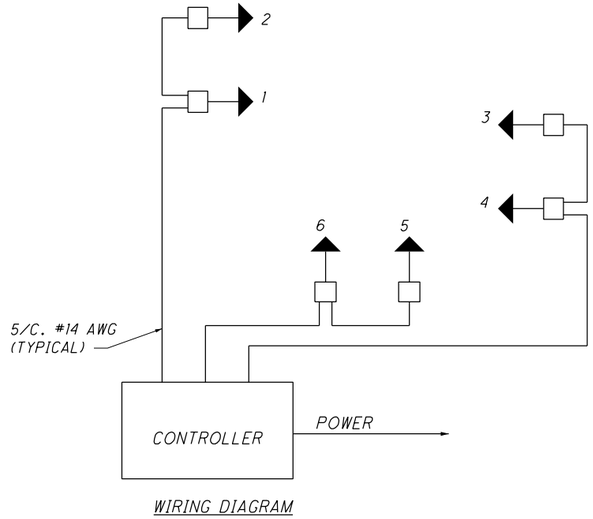
12" LENS

FUTURE PHASING



FUTURE SIGNALS





WIRING DIAGRAM

FIELD WIRING HOOKUP CHART			
SIGNAL HEAD #	INDICATION	FIELD TERMINAL	FLASH
1,2 (WB)	R	ϕ2 R	R
	Y	ϕ2 Y	
	G	ϕ2 G	
3,4 (EB)	R	ϕ6 R	R
	Y	ϕ6 Y	
	G	ϕ6 G	
5,6 (SB)	R	ϕ4 R	R
	Y	ϕ4 Y	
	G	ϕ4 G	

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BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B &3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MJH
CHECKED KAE

CONCEPTUAL TRAFFIC SIGNAL PLAN
PERSHING AVENUE AT FRONTAGE ROAD

CUY-77-13.80

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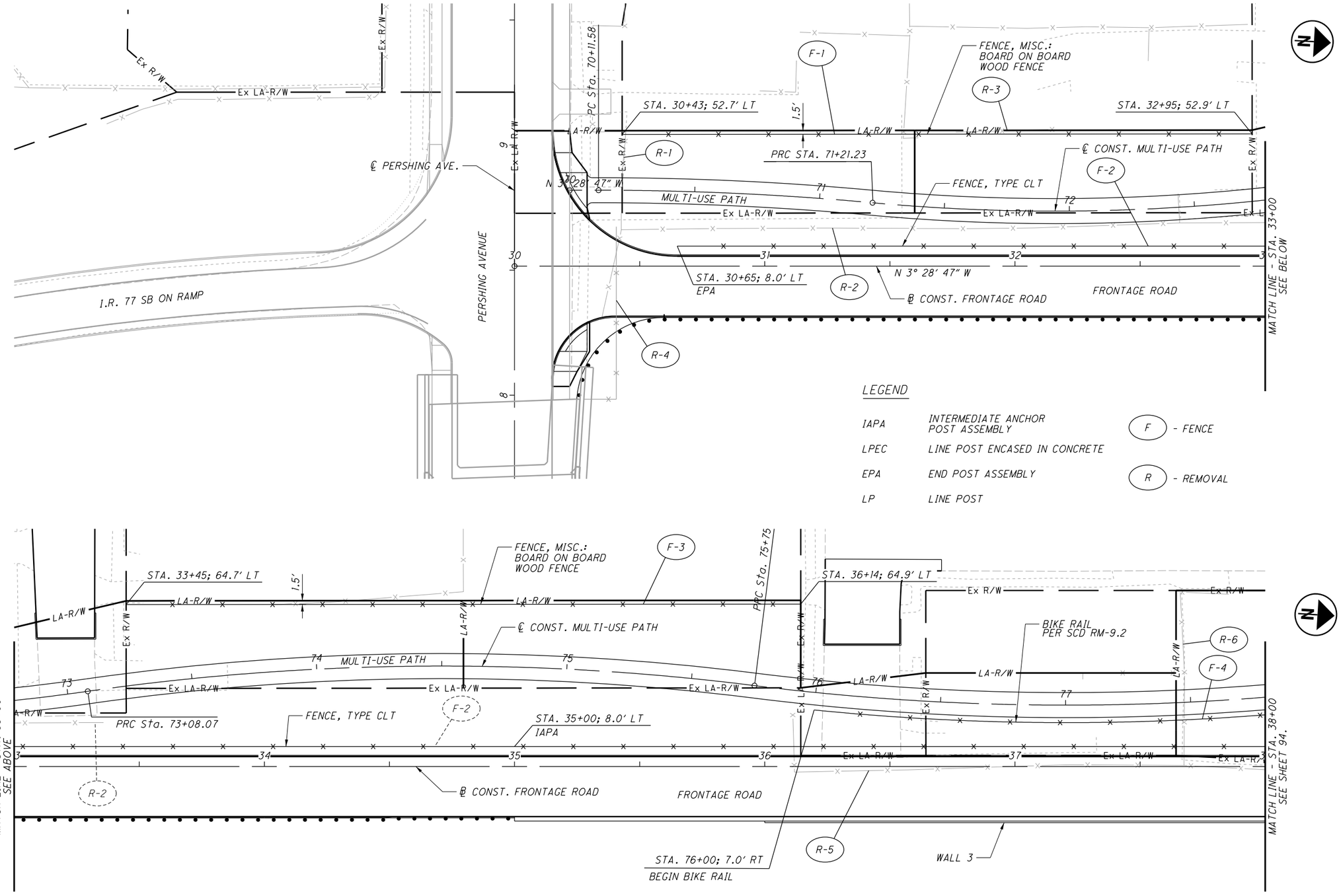

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NO.	DATE	DESCRIPTION
		ISSUE RECORD

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED SWC CHECKED MLL

FENCE PLAN - FRONTAGE ROAD BEGIN WORK TO STA. 38+00

CUY-77-13.80

93 95

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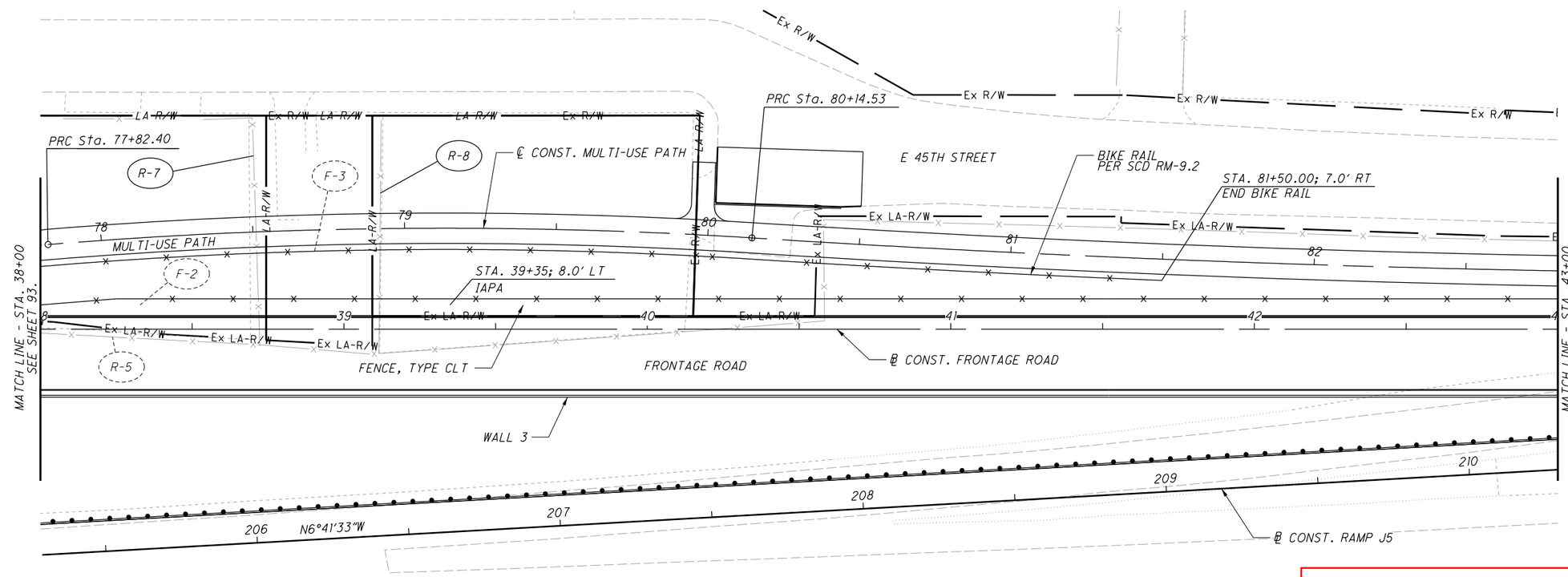

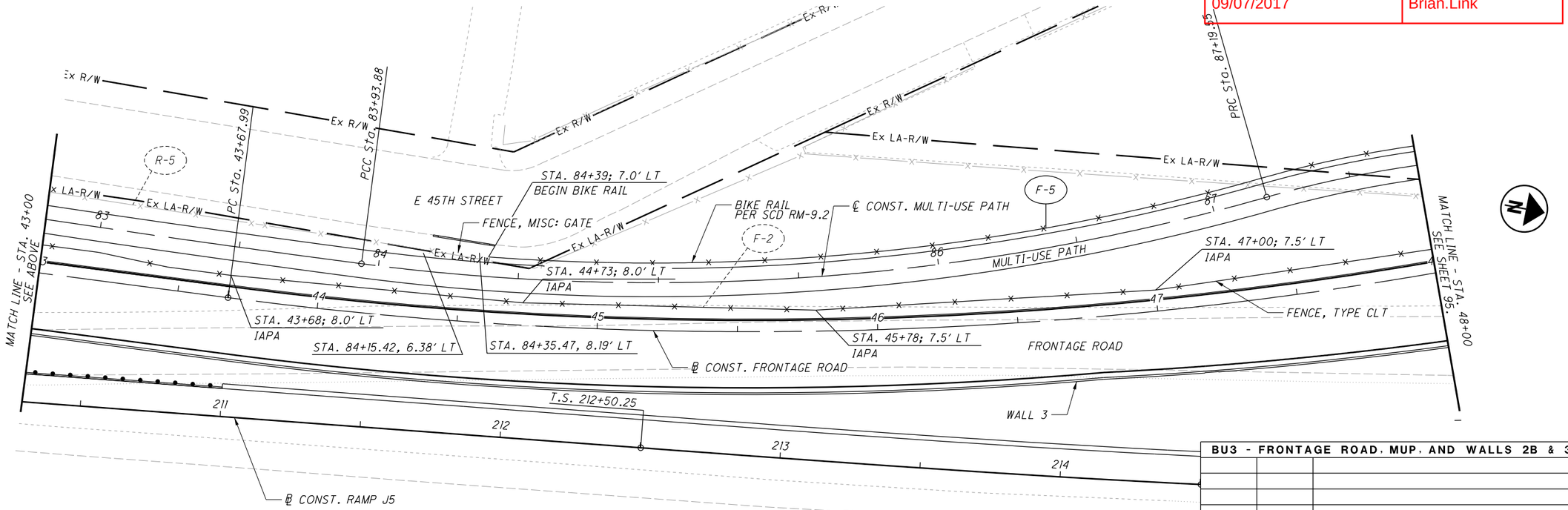

FOR FENCE LEGEND SEE SHEET 93.

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HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED SWC
CHECKED MLL

FENCE PLAN - FRONTAGE ROAD STA. 38+00 TO STA. 48+00

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BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3

NO.	DATE	DESCRIPTION
		ISSUE RECORD

94
95

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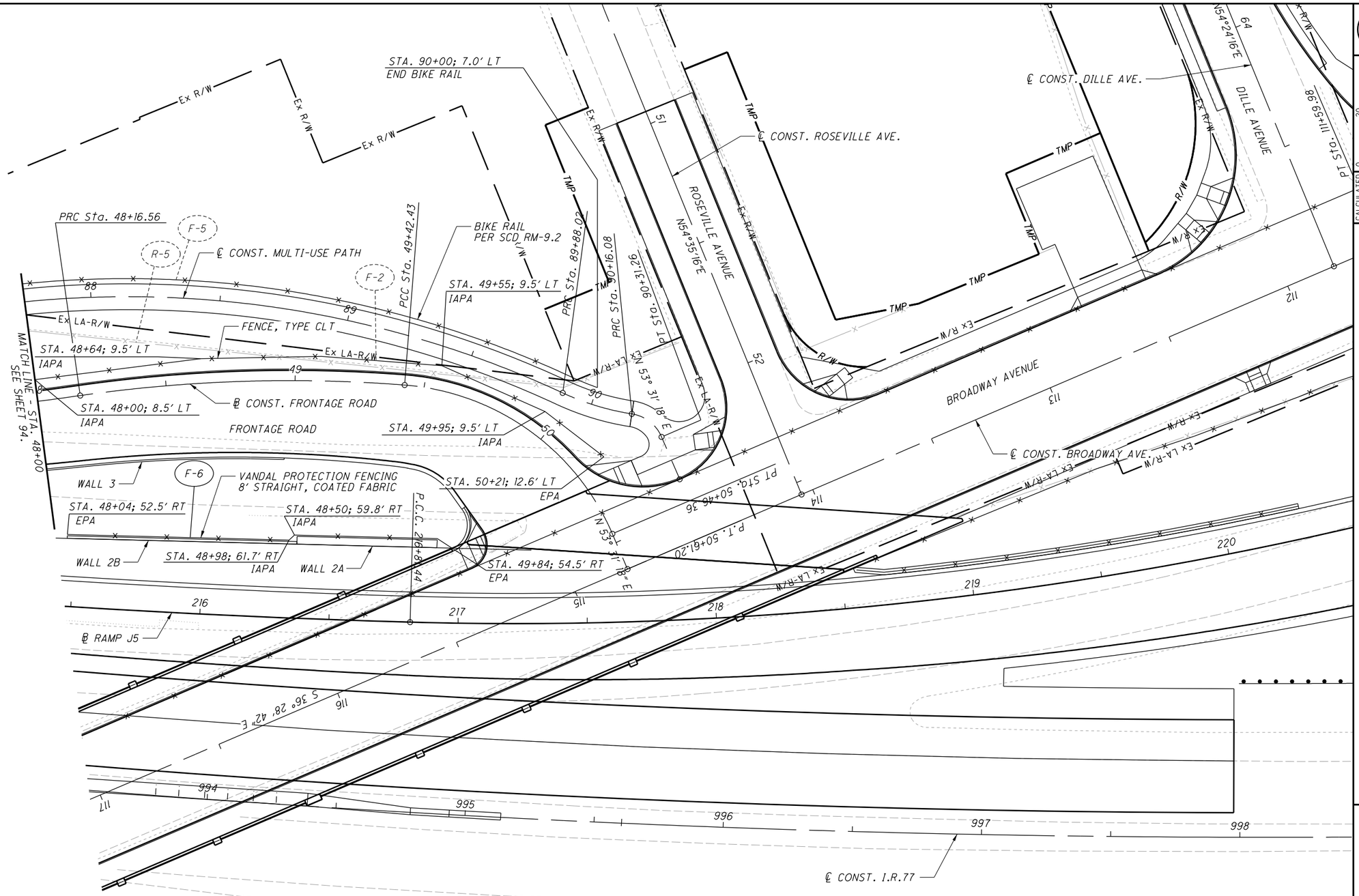

FOR FENCE LEGEND SEE SHEET 93.

BU3 - FRONTAGE ROAD, MUP, AND WALLS 2B & 3		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

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HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED SWC
CHECKED MLL

FENCE PLAN - FRONTAGE ROAD STA. 48+00 TO END WORK

CUY-77-13.80

95
95

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