

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

CUY-480/ TRANSPORTATION BLVD.

CITY OF GARFIELD HEIGHTS
CUYAHOGA COUNTY

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF URBAN WIDENING OF TRANSPORTATION BOULEVARD, AND THE I-480 WB RAMP, INCLUDING WIDENING THE STRUCTURE OVER I-480. ADDITIONALLY, THE PROJECT INCLUDES CONSTRUCTION OF ODOT D12 ENTRANCE DRIVE, DRAINAGE, TRAFFIC SIGNING, PAVEMENT MARKINGS AND SIGNAL IMPROVEMENTS.

PROJECT EARTH DISTURBED AREA: 5.95 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.25 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: 6.20 ACRES

2016 SPECIFICATIONS

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT AS NOTED ON SHEET 15, AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED: *[Signature]*
DATE: 5-26-17 MAYOR, CITY OF GARFIELD HEIGHTS

APPROVED: *[Signature]*
DATE: 05/26/2017 ENGINEER, CITY OF GARFIELD HEIGHTS

APPROVED: *[Signature]*
DATE: 05-25-17 DISTRICT DEPUTY DIRECTOR

APPROVED: *[Signature]*
DATE: 6-5-17 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO.
E060 (401)

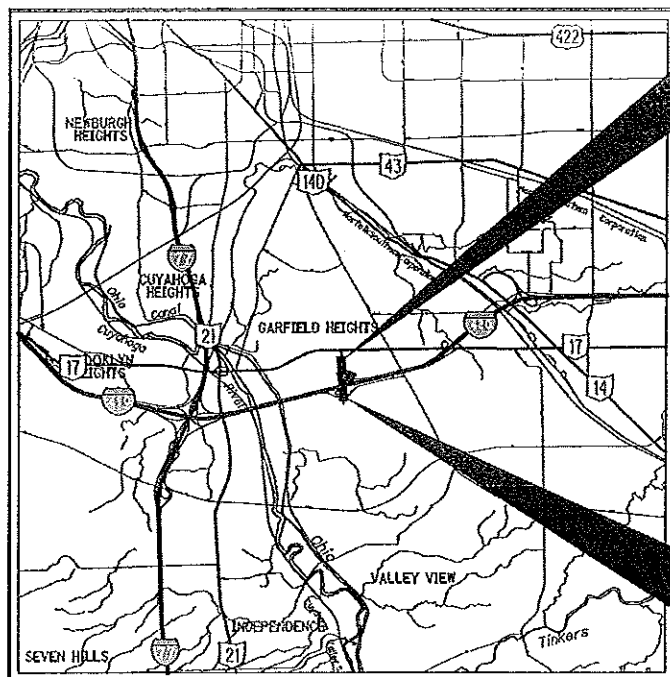
PID NO.
80974

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT
N/A

CUY-480/
TRANSPORTATION BLVD.

1
225



LOCATION MAP

LATITUDE: N 41°24' 47" LONGITUDE: W 81°36' 57"



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

DESIGN DESIGNATIONS

SEE SHEET 2

DESIGN EXCEPTIONS

NONE

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:

GPD GROUP
520 South Main Street, Suite 2531
Akron, Ohio 44311
330-572-2100 Fax 330-572-2101

TITLE	1	PLAN AND PROFILE PUBLIC RD #2	68
PLAN LEGEND & DESIGN DESIGNATION	2	PROFILE ODOT DRIVE	69-70
SCHEMATIC PLAN	3	CROSS SECTIONS TRANSPORTATION BLVD	71-81
REFERENCE POINTS	4	CROSS SECTIONS GRANGER RD	82-88
CURVE & INTERSECTION DATA	5	CROSS SECTIONS I-480 WB EXIT RAMP	89-92
TYPICAL SECTIONS	6-10	CROSS SECTIONS PUBLIC RD #2	93
GENERAL NOTES	11-13	CROSS SECTIONS ODOT DRIVE	94-99
MAINTENANCE OF TRAFFIC	14-42	INTERSECTION DETAILS	100-105
GENERAL SUMMARY	43-47	PAVEMENT ELEVATION TABLE	106
SUB-SUMMARY	48-50	DRIVE DETAILS	107
ESTIMATED QUANTITIES	51-53, 52A-52C	DRAINAGE DETAILS	107A-107C
PAVEMENT CALCULATIONS	54-56	UNDERDRAIN DETAILS	108-109
PROJECT SITE PLAN	57	WATER MAIN NOTES	110-124
PLAN AND PROFILES TRANSPORTATION BLVD	58-62	PLAN INSERT SHEET	125
PLAN AND PROFILES GRANGER RD	63-64	TRAFFIC CONTROL	126-157
PLAN AND PROFILES PUBLIC RD #1 & I-480 WB EXIT RAMP	65-66	TRAFFIC SIGNAL PLANS	158-174
PLAN ODOT DRIVE	67	LIGHTING	175-186
		STRUCTURES	187-225

INDEX OF SHEETS:

ENGINEERS SEAL:

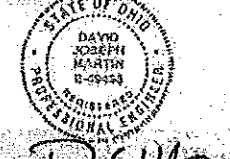
SHEETS: 107A, 107B, 107C



SIGNED: *[Signature]*
DATE: 5-25-17

ENGINEERS SEAL:

ALL SHEETS EXCEPT 107A, 107B, 107C



SIGNED: *[Signature]*
DATE: 05-25-17

STANDARD CONSTRUCTION DRAWINGS

STANDARD CONSTRUCTION DRAWINGS											SUPPLEMENTAL SPECIFICATIONS		
BP-2.1	7-17-15	CB-1.1	1-15-16	MT-95.30	7-15-16	TC-12.30	1-20-17	TC-61.10	1-17-14	HL-10.11	7-15-16	800	10-20-17
BP-2.2	7-18-08	CB-2.1	1-15-16	MT-95.31	1-20-17	TC-16.21	10-18-13	TC-65.10	1-17-14	HL-10.12	1-15-16	805	7-18-10
BP-3.1	7-18-14	CB-2.2	1-15-16	MT-95.32	1-20-17	TC-21.20	7-15-16	TC-65.11	7-15-16	HL-10.13	7-15-16	809	4-15-16
BP-4.1	7-19-13			MT-95.45	1-20-17	TC-22.20	1-17-14	TC-71.10	1-20-17	HL-20.11	1-16-15	821	4-20-12
BP-5.1	7-19-13	HW-2.1	1-15-16	MT-97.10	7-18-14	TC-41.10	7-19-13	TC-81.21	7-15-16	HL-20.14	1-16-15	832	1-17-14
BP-7.1	7-18-14	HW-2.2	1-15-16	MT-97.12	1-20-17	TC-41.20	10-18-13	TC-83.10	7-15-16	HL-30.11	1-20-17	861	1-16-15
MGS-1.1	7-19-13	F-1.1	7-19-13	MT-99.60	7-15-16	TC-41.40	10-18-13	TC-85.10	7-15-16	HL-30.22	1-17-14	902	12-31-12
MGS-2.1	7-19-13			MT-101.70	1-17-14	TC-41.41	10-18-13	TC-85.20	1-15-16	HL-30.31	1-17-14	903	7-20-12
MGS-3.1	7-18-14	AS-1-69	7-19-02	MT-101.75	7-15-16	TC-41.50	10-18-13			HL-30.32	1-17-14	921	4-20-12
MGS-3.2	1-18-13	AS-1-15	7-17-15	MT-101.90	7-17-15	TC-42.10	10-18-13	DM-1.1	1-15-16	HL-30.33	1-17-14		
MGS-4.2	7-19-13	BR-2-15	7-17-15	MT-103.10	1-20-17	TC-42.20	10-18-13	DM-1.2	1-18-13	HL-30.41	7-18-14		
MGS-6.1	7-19-13	GSD-1-96	7-19-02	MT-105.10	7-19-13	TC-51.11	1-15-16	DM-4.1	1-15-16	HL-50.21	7-15-16		
MH-1.2	1-15-16	PCB-91	1-18-13	MT-110.10	7-19-13	TC-51.12	1-15-16	DM-4.3	1-15-16	HL-60.11	1-15-16		
		RB-1-55	7-19-13	MT-120.00	1-20-17	TC-62.10	10-18-13	DM-4.4	1-15-16	HL-60.12	7-15-16		
		WPF-1-90	7-17-15			TC-62.20	7-15-16						

CUY - IR 480/Transportation Blvd
180049 PID - 80974
Dist 12 1/25/2018
Contract Proposal Available @
www.contracts.dot.state.oh.us/home

4/18/2017 3:31:22 PM
C:\Users\ADMINISTRATOR\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\...
C:\Users\ADMINISTRATOR\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\...

DESIGN DESIGNATIONS

	TRANSPORTATION BLVD.	I-480 WB EXIT RAMP	GRANGER RD.
CURRENT YEAR ADT (2018)	25,190	7,740	13,470
DESIGN YEAR ADT (2038)	25,220	7,770	13,510
DESIGN HOURLY VOLUME (2038)	2,320	810	1,410
TRUCK %	4%	3%	5%
DIRECTIONAL DISTRIBUTION	60%	100%	57%
LEGAL SPEED	40 MPH	VARIES	35 MPH
DESIGN SPEED	35 MPH	VARIES	35 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	05 MAJOR COLLECTOR (URBAN)	01 INTERSTATE (URBAN)	05 MINOR ARTERIAL (URBAN)
NHS PROJECT	NO	YES	NO

ROADWAY BALLOON LEGEND

- | | |
|--|---|
| (AB-#) ABANDON | (HW-#) HEADWALL |
| (B-#) CONCRETE BARRIER | (P-#) DRAINAGE PIPES |
| (BL-#) BOLLARD | (PR-#) PIPES REMOVED |
| (CR-#) CURB RAMPS | (R-#) MISCELLANEOUS REMOVALS |
| (D-#) CATCH BASINS, MANHOLES AND INLETS | (SA-#) SANITARY MANHOLE |
| (DJ-#) CATCH BASINS, MANHOLES AND INLETS ADJUSTED/RECONSTRUCTED TO GRADE | (SJ-#) SANITARY STRUCTURE ADJUSTED/RECONSTRUCTED TO GRADE |
| (DR-#) CATCH BASINS, MANHOLES AND INLETS REMOVED | (SW-#) SIDEWALK |
| (EX-#) EXISTING DRAINAGE STRUCTURE | (U-#) UNDERDRAINS |
| (F-#) FENCE | (W-#) WATER WORK |
| (FR-#) FENCE REMOVED | (WJ-#) WATER WORK ADJUSTED TO GRADE |
| (FP-#) FILL & PLUG | (WR-#) WATER WORK REMOVALS |
| (G-#) GUARDRAIL | |
| (GR-#) GUARDRAIL REMOVED | |

UTILITY LINE LEGEND

- | | |
|----------------------------|-----------------------------|
| —W— = Water Line | —P— = Propane Line |
| —G— = Gas Line | —T— = Underground Telephone |
| —SAN— = Sanitary Line | —D— = Diesel |
| —E— = Underground Electric | —CATV— = Cable TV. |
| | —TR— = Signal Wiring |

EXISTING UTILITY SYMBOL LEGEND

- | | |
|-----------------------------|-------------------------------------|
| ⋈ = Guy Pole | ⊕ = Water Valve |
| ⚑ = Flag Pole | ⊕(W) = Water Manhole |
| ⊕ = Utility Pole | ⊕(W) = Water Well |
| ⊕(P) = Power Pole | ⊕(W) = Water Meter |
| ⚡ = Yard Light | ⊕(W) = Water Spigot / Tap |
| ⊕(P) = Parking Meters | ⊕(W) = Cistern |
| ⊕(P) = Parking Meter | ⊕(W) = Sprinkler |
| ⊕(P) = Air Condition Unit | ⊕(W) = Sprinkler Control Box |
| ⊕(P) = Guy Wire w/Anchor | ⊕(W) = Monitoring Well |
| ⊕(P) = Light Pole | ⊕(W) = Cable TV Pole |
| ⊕(P) = Light Pedestal | ⊕(W) = Cable TV Marker Post |
| ⊕(P) = Electric Marker Post | ⊕(W) = Cable TV Pedestal |
| ⊕(P) = Electric Meter | ⊕(W) = Telephone Pole |
| ⊕(P) = Electric Transformer | ⊕(W) = Telephone Marker Post |
| ⊕(P) = Electric Pedestal | ⊕(W) = Telephone Pedestal |
| ⊕(P) = Electric Tower | ⊕(W) = Telephone Booth/or Drive-Up |
| ⊕(P) = Electric Outlet | ⊕(W) = Traffic Lighting Control Box |
| ⊕(P) = Electric Pull Box | ⊕(W) = Traffic Lighting Pull Box |
| ⊕(P) = Electric Manhole | ⊕(W) = Sign |
| ⊕(P) = Gas Valve | ⊕(W) = Curb Inlet |
| ⊕(P) = Gas Service | ⊕(W) = Catch Basin |
| ⊕(P) = Gas Marker Post | ⊕(W) = Cleanout |
| ⊕(P) = Gas Meter/Regulator | ⊕(W) = Sanitary Manhole |
| ⊕(P) = Tank (Gas, Propane) | ⊕(W) = Storm Manhole |
| ⊕(P) = Fire Hydrant | ⊕(W) = Telephone Manhole |

PROPOSED UTILITY SYMBOL LEGEND

- | |
|---|
| ⊕(P) = Proposed Catch Basins |
| ⊕(P) = Proposed Manhole |
| ⊕(P) = Manhole Adjusted To Grade |
| ⊕(P) = Proposed Water Valve |
| ⊕(P) = Proposed Fire Hydrant |
| ⊕(P) = Sanitary Manhole Adjusted To Grade |
| ⊕(P) = Proposed Traffic Pullbox |
| ⊕(P) = Proposed Conventional Luminaire |
| ⊕(P) = Proposed Lighting Pullbox |
| ⊕(P) = Proposed Decorative Luminaire |
| ⊕(P) = Proposed Signal Pole Pedestal |
| ⊕(P) = Proposed Signal Pole |
| ⊕(P) = Test Hole location |

FOR REFERENCE AND BENCHMARK POINTS, SEE SHEET 4
FOR CURVE AND INTERSECTION DATA TABLES, SEE SHEET 5

CL R/W & CONST. GRANGER RD.



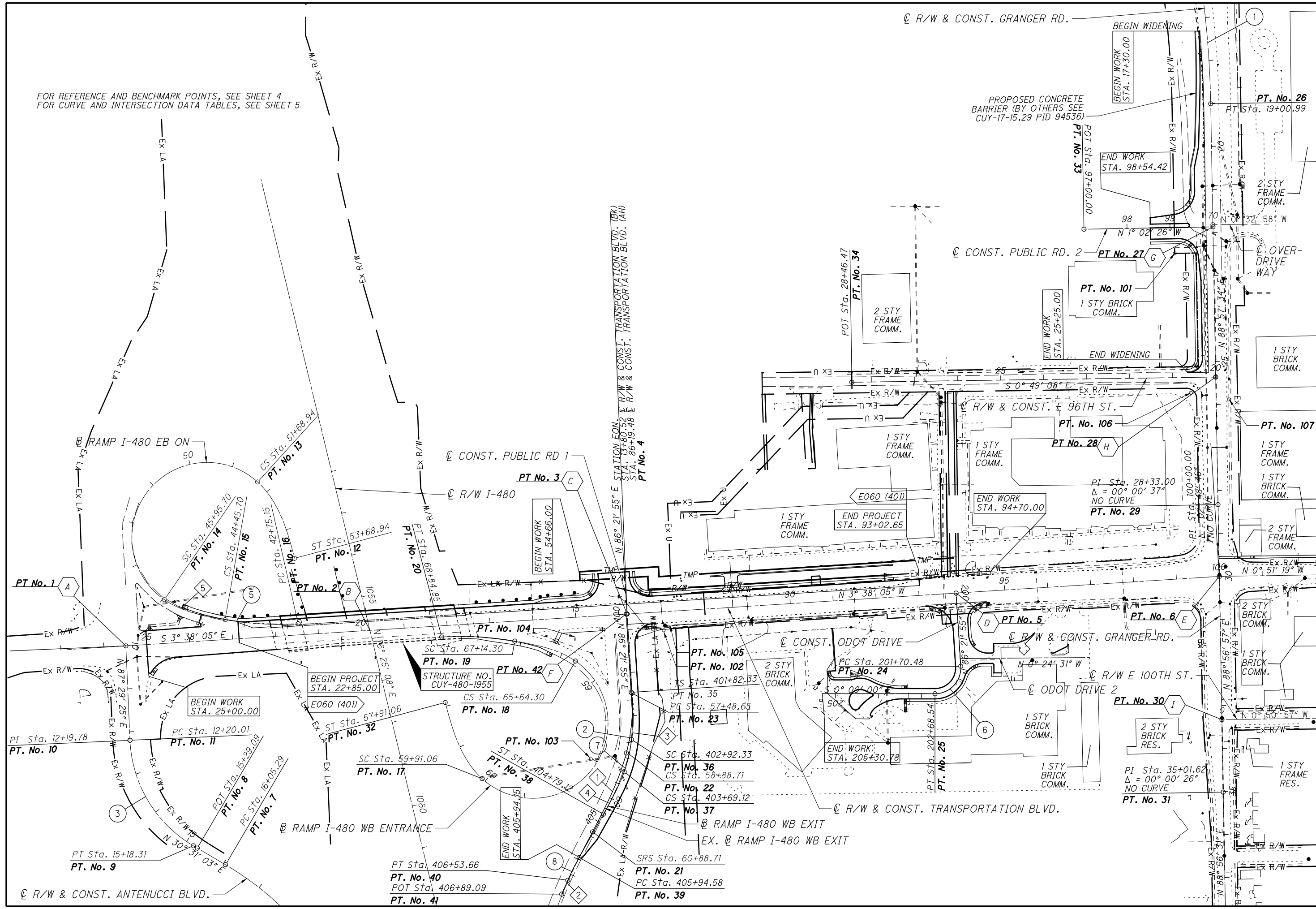
CALCULATED
JMB
CHECKED
JJS

0 50 100 200
HORIZONTAL
SCALE IN FEET

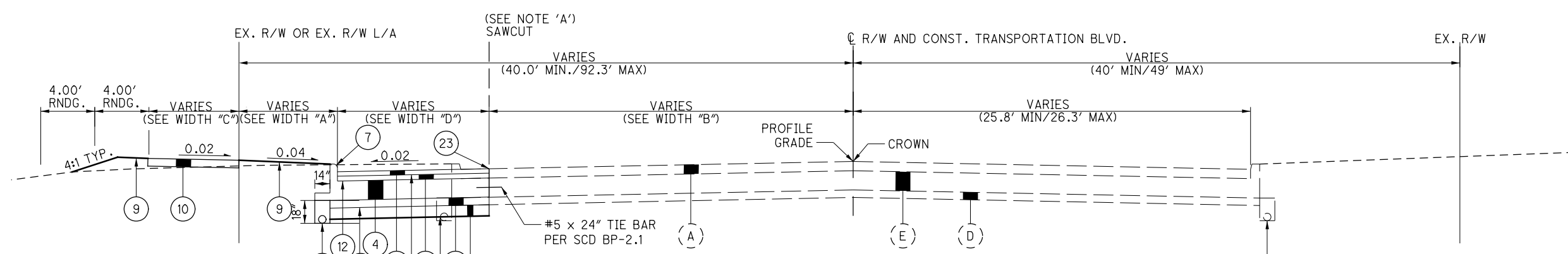
SCHEMATIC PLAN
BEGIN TO END

CUY-480/
TRANSPORTATION BLVD.

3
225



\AKRNGA\DATA\2016\2016051\CUYA\B0974\ROADWAY\ SHEETS\B0974GB001.DGN
 4/19/2017 11:47:21 AM
 G007V8181D_USER

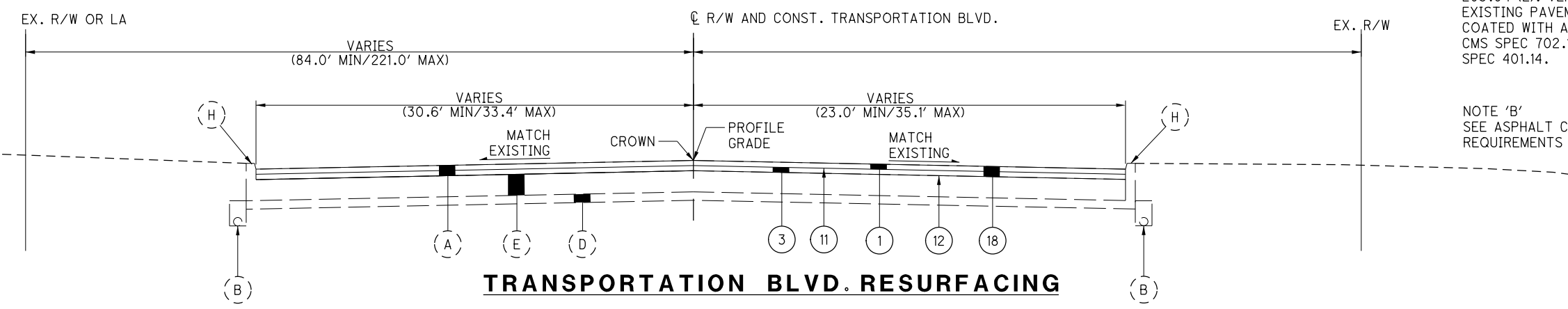


TRANSPORTATION BLVD. WIDENING

STA. 22+85.00 TO STA. 22+05.12
 STA. 17+51.78 TO STA. 13+80.52 (STATION EQUATION: 13+80.52BK = 86+19.48AH)**
 STA. 86+19.48 TO STA. 93+02.65

NOTE 'A'
 THE EXISTING PAVEMENT EDGE SHALL BE CUT TO LOCATE A SOUND EDGE AS PER CMS SPEC 203.04 (E). VERTICAL FACE OF EXISTING PAVEMENT TO BE COATED WITH ASPHALT BINDER, CMS SPEC 702.1, AS PER CMS SPEC 401.14.

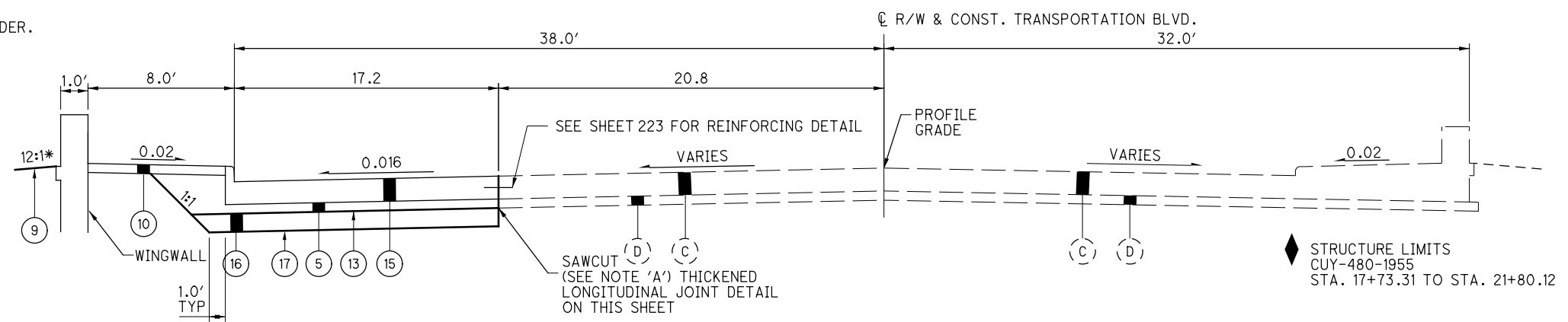
NOTE 'B'
 SEE ASPHALT CONCRETE SURFACE COURSE SEALING REQUIREMENTS ON SHEET 12



TRANSPORTATION BLVD. RESURFACING

STA. 25+00.00 TO STA. 22+85.00**

* - SEE CROSS SECTIONS
 ** - SECTION IS SHOWN IN THE DIRECTION OF ASCENDING ORDER.
 FOR WIDTH TABLE, SEE SHEET 7



TRANSPORTATION BLVD. APPROACH SLAB

STA. 21+80.12 TO STA. 22+05.12
 STA. 17+51.78 TO STA. 17+73.31

STRUCTURE LIMITS
 CUY-480-1955
 STA. 17+73.31 TO STA. 21+80.12

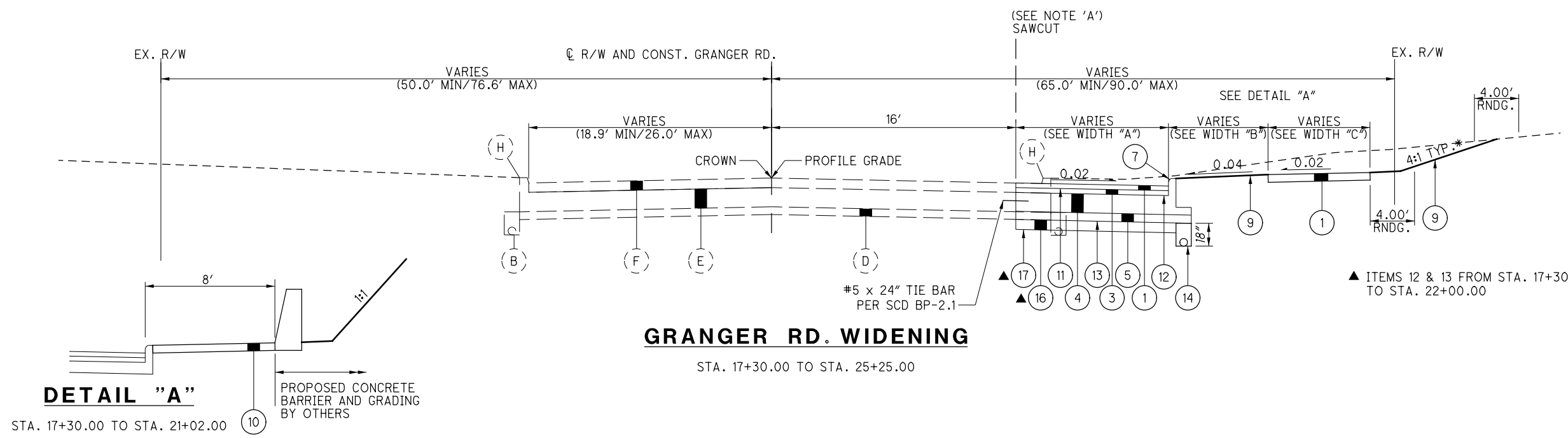
PROPOSED LEGEND

- | | |
|---|--|
| ① ITEM 441 - 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M, AS PER PLAN | ⑨ ITEM 659 - SEEDING AND MULCHING, CLASS 1 |
| ② ITEM SPECIAL - BOLLARD | ⑩ ITEM 608 - 4" CONCRETE WALK |
| ③ ITEM 441 - 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446) | ⑪ ITEM 407 - NON-TRACKING TACK COAT (0.1 GAL/SQ. YD.) |
| ④ ITEM 305 - 9" CONCRETE BASE, CLASS QC1 | ⑫ ITEM 407 - TACK COAT, 702.13 (0.1 GAL/SQ. YD.) |
| ⑤ ITEM 304 - 6" AGGREGATE BASE | ⑬ ITEM 204 - SUBGRADE COMPACTION/PROOF ROLLING |
| ⑥ ITEM 301 - 6" ASPHALT CONCRETE BASE, PG64-22 | ⑭ ITEM 605 - 6" BASE PIPE UNDERDRAINS, 707.31 OR 707.41 |
| ⑦ ITEM 609 - CURB, TYPE 2-B | ⑮ ITEM 526 - REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN |
| ⑧ ITEM 609 - CURB, TYPE 6 | ⑯ ITEM 204 - EXCAVATION OF SUBGRADE (T=12") GRANULAR MATERIAL, TYPE B, AS PER PLAN (T=12") |

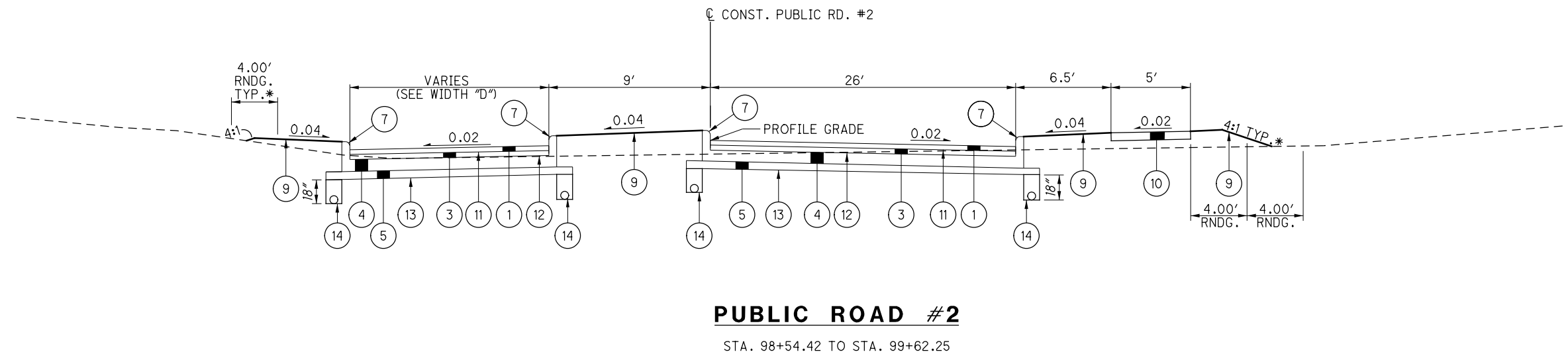
EXISTING LEGEND

- | | |
|---|----------------------------|
| ⑰ ITEM 861 - GEOGRID FOR SUBGRADE STABILIZATION | (A) 3"± ASPHALT |
| ⑱ ITEM 442 - 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A, (448) PG70-22M, AS PER PLAN (SEE NOTE B) | (B) UNDERDRAINS |
| ⑲ ITEM 442 - 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A, (448) PG70-22M, AS PER PLAN (SEE NOTE B) | (C) CONCRETE APPROACH SLAB |
| ⑳ ITEM 442 - 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A, (448) | (D) AGGREGATE |
| ㉑ ITEM 609 - MEDIAN, MISC.: GRASS PAVER | (E) 8"± CONCRETE |
| ㉒ ITEM 609 - CURB, TYPE 3 | (F) 6"± ASPHALT |
| ㉓ ITEM 875 - LONGITUDINAL JOINT ADHESIVE | (G) 10"± CONCRETE |
| | (H) CONCRETE CURB |

\\AKR\DATA\2016\2016051\CUY\480\74\ROADWAY\SHETS\80974G\001.DGN
 2/1/2017 11:52:32 AM
 G007V815TDLUSER



DETAIL "A"
STA. 17+30.00 TO STA. 21+02.00



NOTE A
THE EXISTING PAVEMENT EDGE SHALL BE CUT TO LOCATE A SOUND EDGE AS PER CMS SPEC 203.04 (E). VERTICAL FACE OF EXISTING PAVEMENT TO BE COATED WITH ASPHALT BINDER, CMS SPEC 702.1, AS PER CMS SPEC 401.14.

* - SEE CROSS SECTIONS

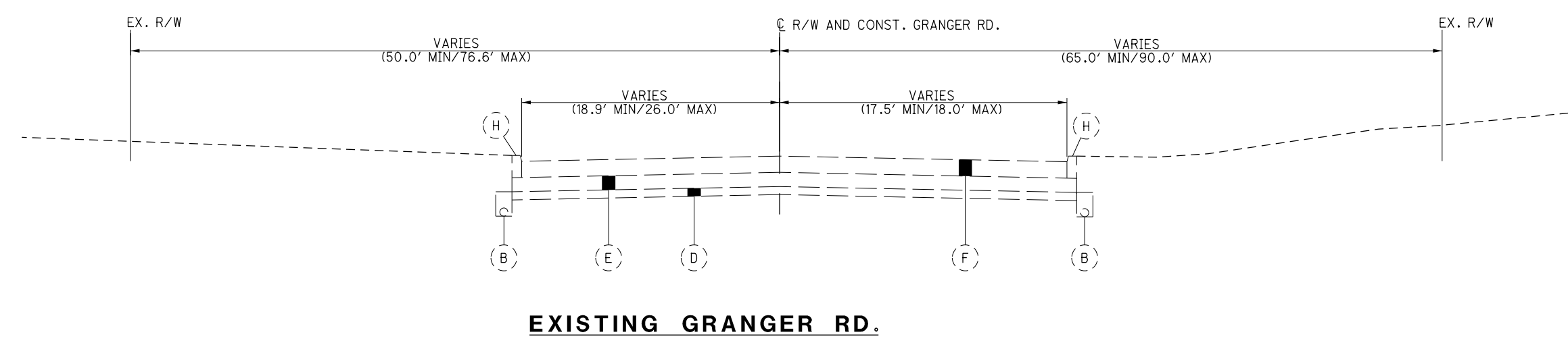
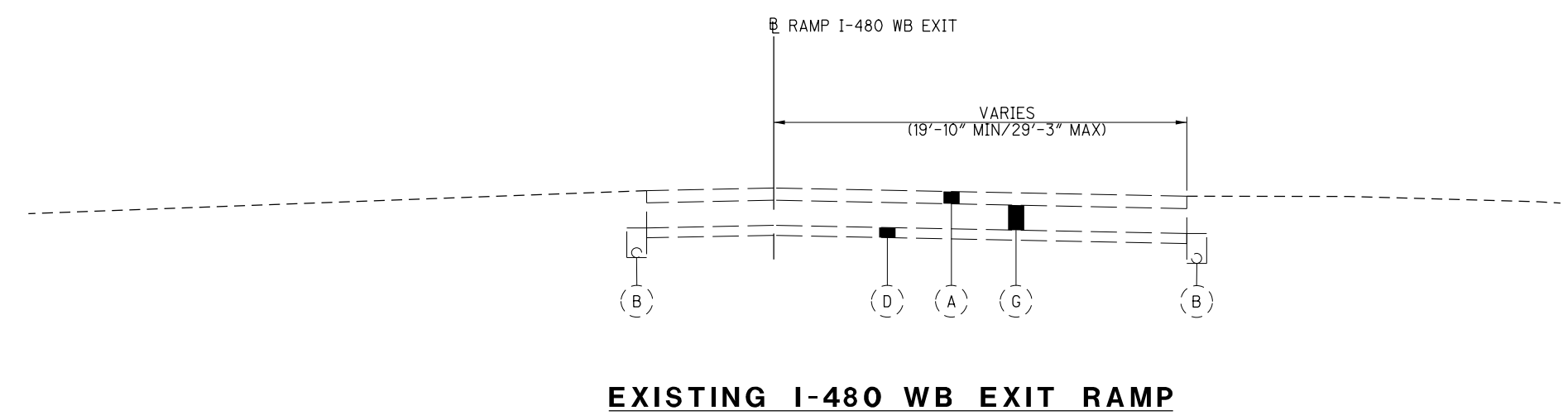
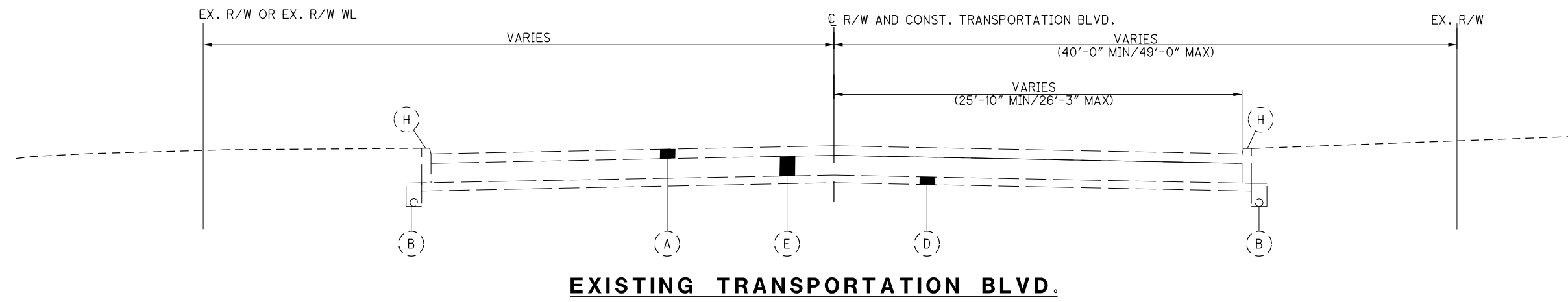
WIDTH TABLE												
ROAD	WIDTH "A"				WIDTH "B"				WIDTH "C"			
	STATION		WIDTH (FT.)		STATION		WIDTH (FT.)		STATION		WIDTH (FT.)	
	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO
GRANGER	17+30.00	20+00.00	1.9'	14.0'	17+30.00	22+54.05	0.5'	0.5'	17+30.00	22+54.05	7.5'	7.5'
	20+00.00	20+50.00	14.0'	25.0'	22+54.05	23+11.09	6.2'	11.0'	22+54.05	24+93.75	5.0'	5.0'
	20+50.00	22+54.05	25.0'	19.2'	23+11.09	24+93.75	11.0'	11.0'				
	22+54.05	23+11.09	19.2'	14.0'								
	23+11.09	25+25.00	14.0'	14.0'								
PUBLIC RD #2	WIDTH "D"											
	STATION		WIDTH (FT.)									
	FROM	TO	FROM	TO								
	98+54.42	98+59.42	15.0'	15.0'								
	98+59.42	99+10.82	15.0'	21.4'								

FOR LEGEND, SEE SHEET 6

TYPICAL SECTIONS

CUY-480/
TRANSPORTATION BLVD.

\\AKR\BGA\DATA\2016\2016051\CUY\88974\ROADWAY\SHETS\88974\004.DGN
 2/1/2017 11:54:37 AM G00TV815TD\USER



FOR LEGEND, SEE SHEET 6

\\AKR\DATA\2016\2016051\CUY\80974\ROADWAY\SHEETS\80974\005.DGN
 2/1/2017 11:59:17 AM
 G00TV8181D.LUSER

GENERAL

UTILITIES

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

DOMINION EAST OHIO GAS
ATTN: BRYAN D. DAYTON
320 SPRINGSIDE DRIVE
FAIRLAWN, OHIO 44333
330-664-2409

CITY OF CLEVELAND DIVISION OF WATER
ATTN: FRED ROBERTS
1201 LAKESIDE AVENUE
CLEVELAND, OHIO 44114
PHONE: (216) 644-2444, EXT. 5547
FAX: (216) 644-2387

AT&T
ATTN: TOM FOGARTY
13630 LORAIN AVENUE, 2ND FLOOR
CLEVELAND, OHIO 44111
PHONE: (216) 476-6142
FAX: (216) 476-6013

THE ILLUMINATING COMPANY
ATTN: TED RADER
6896 MILLER ROAD
BRECKSVILLE, OHIO 44141
440-546-8738

TIME WARNER CABLE
ATTN: LOUIE RUBERTINO
7 SEVERANCE CIRCLE
CLEVELAND HEIGHTS, OHIO 44118
216-575-8016

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY
ATTN: MIKE SCHIPPER
1240 WEST 6TH STREET
CLEVELAND, OHIO 44113
216-566-5084

CUYAHOGA CO. DEPT. OF PUBLIC WORKS - SEWER MAINTENANCE
ATTN: HUGH BLOCKSIDE
2079 EAST 9TH STREET
CLEVELAND, OHIO 44115
216-443-8205

ODOT DISTRICT 12
HIGHWAY LIGHTING, CABLING, AND CONDUIT
ATTN: BRYAN KRALL
5500 TRANSPORTATION BLVD.
GARFIELD HEIGHTS, OH 44125
216-581-2100

ROUNDING

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

CLEARING AND GRUBBING

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

SIZES	NO. TREES	NO. STUMPS	TOTAL
18"	15	0	15
30"	1	0	1
48"	1	0	1
60"	0	0	0

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET 4 FOR A TABLE CONTAINING PRIMARY PROJECT CONTROL INFORMATION.

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

PRIMARY CONTROL

POSITIONING METHOD: GPS
MONUMENT TYPE: B

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD 88
GEOID: GEOID12A

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83 (2011)
ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE - NORTH ZONE
COMBINED SCALE FACTOR: 1.0001021776
BASE POINT FOR SCALING: NORTHING 0
EASTING 0

USE THE POSITIONING METHOD AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623 - CONSTRUCTION LAYOUT STAKES AND SURVEY MONUMENTS.

UNITS ARE IN U.S. SURVEY FEET.
USE THE FOLLOWING CONVERSION FACTOR:
1 METER = 3.280833333 U.S. SURVEY FEET

WORK LIMITS

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

ROADWAY

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL ENDTERMINALS 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.

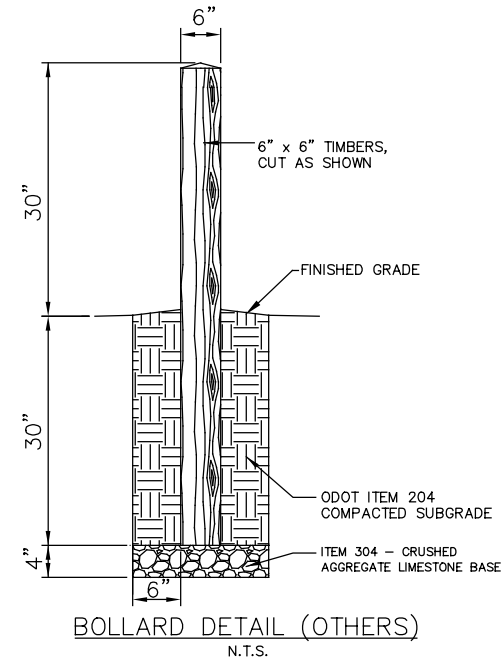
REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE 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.

ITEM SPECIAL - BOLLARD

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A BOLLARD AS SHOWN IN THE BELOW DETAIL. PAYMENT FOR THE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM SPECIAL, BOLLARD, EACH AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT BOLLARD.



ITEM 609 - TRAFFIC ISLAND, MISC.: GRASS PAVERS

THIS ITEM WILL CONSIST OF FURNISHING AND INSTALLING GRASS PAVERS AS DETAILED IN THE PLAN. PERMEABLE PAVERS SHALL BE MANUFACTURED BY NDS, INC., MODEL NDS EZROLLGRASS OR MANUFACTURED BY GEOSYSTEMS, INC, MODEL GEOBLOCK VEGETATED POROUS PAVEMENT OR AN APPROVED EQUIVALENT.

ITEM 608 TRAFFIC ISLAND, MISC.: GRASS PAVERS SHALL BE BID TO INCLUDE LABOR, TOOLS, EQUIPMENT, AND HARDWARE NECESSARY TO FURNISH AND INSTALL A COMPLETE GRASS PAVER ISLAND AS DETAILED IN THE PLAN.

PAYMENT FOR THIS WORK WILL BE MADE AT THE UNIT BID PRICE FOR THE AREA (SQ YD) PLACED.

ITME 202 - REMOVAL, MISC.: BOLLARD

THIS ITEM SHALL CONSIST OF REMOVING THE EXISTING BOLLARDS AS IDENTIFIED IN PLANS AND BY ENGINEER. PAYMENT FOR THIS WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 202, REMOVAL, MISC: BOLLARD AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT, AND MATERIALS NECESSARY TO REMOVE BOLLARD.

ITEM 622 - BARRIER, MISC.: CONCRETE BARRIER, TYPE B

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING CONCRETE BARRIER, TYPE B AS SHOWN ON THE PLAN INSERT SHEET ON SHEET 125 . 4" RACEWAY AS SHOWN ON SCD RM - 4.3 ALSO REQUIRED.

ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THE ABOVE DESCRIBED WORK INCLUDING BUT NOT LIMITED TO CONCRETE AND STEEL, SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR:

ITEM 622 - BARRIER, MISC: CONCRETE BARRIER, TYPE B (FT)

CALCULATED
JMB
CHECKED
JJS

GENERAL NOTES

CUY-480/
TRANSPORTATION BLVD.

\\AKR\BGA\DATA\2016\2016051\CUY-480\ROADWAY\SHETS\80974GN001.DGN
 2/1/2017 11:50:59 AM
 G00T\B151D\USER

DRAINAGE

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

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

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

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

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

REVIEW OF DRAINAGE FACILITIES

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

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

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

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

UNRECORDED STORM WATER DRAINAGE

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

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

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

611, 6" CONDUIT, TYPE B, FOR DRAINAGE CONNECTION 50 FT.

611, 6" CONDUIT, TYPE C, FOR DRAINAGE CONNECTION 50 FT.

611, 8" CONDUIT, TYPE B, FOR DRAINAGE CONNECTION 50 FT.

611, 8" CONDUIT, TYPE C, FOR DRAINAGE CONNECTION 50 FT.

EXISTING SUBSURFACE DRAINAGE

PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS OR AGGREGATE DRAINS ENCOUNTERED DURING CONSTRUCTION.

PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE. UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

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

601, TIED CONCRETE BLOCK MAT, TYPE 1 4 SY

605, AGGREGATE DRAINS 20 FT

611, 6" CONDUIT, TYPE F 50 FT

611, PRECAST REINFORCED CONCRETE OUTLET 2 EA

605, 6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 707.31 50 FT

ITEM 611 - CATCH BASIN, NO. 2-5, AS PER PLAN

ALL APPLICABLE PROVISIONS OF ITEM 611 - CATCH BASIN, NO. 2-5, AS PER PLAN SHALL APPLY EXCEPT AS MODIFIED HEREIN.

COST OF ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO INSTALL THE 6' - 18" PIPE, 18" END CAP AND 12" WQV STANDPIPE WITH TYPE B FILTER FABRIC AS SHOWN ON PAGE 107B AND 107C OF THESE PLANS SHALL BE INCLUDED IN THE COST FOR ITEM 611 - CATCH BASIN, NO. 2-5.

SANITARY

ITEM 611 - MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN

THE CONTRACTOR SHALL INSTALL A FRAME SEAL AND EXTENSIONS IF NEEDED. THE FRAME SEAL AND EXTENSION SHALL SPAN THE ENTIRE ADJUSTMENT AREA OF THE MANHOLE BY CONNECTING TO THE BOTTOM OF THE CASTING FRAME. THE SEALING SYSTEM SHALL PREVENT LEAKAGE OF WATER INTO THE MANHOLE THROUGH THE CASTING FRAME JOINT AND ADJUSTMENT GRADE RING AREA.

ALL MATERIALS REQUIRED FOR THE INTERNAL SEAL SHALL BE FURNISHED BY THE CONTRACTOR AND SHALL BE NEW, OF FIRST GRADE, AND SHALL BE OF REPUTABLE MANUFACTURERS KNOWN TO THE TRADE. THE SEAL SHALL BE EQUAL TO OR GREATER THAN THE RESULTS OF THE FOLLOWING ASTM TEST METHODS:

TENSILE STRENGTH (ASTM-D412) = 1500 PSI MINIMUM

HARDNESS (ASTM-D2240) = 45

ELONGATION (ASTM-D412) = 350%

THE MANHOLE SEALING SYSTEM SHALL BE INSTALLED ACCORDING TO MANUFACTURERS RECOMMENDATIONS AND INSTRUCTIONS.

ALL COSTS FOR FURNISHING AND INSTALLING AN INTERNAL FRAME SEAL AND WHERE NECESSARY, AN EXTENSION OR EXTENSIONS, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 611, MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN.

PAVEMENT

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 MAXIMUM SPACING.

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

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

ITEM 442 ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (448), PG 70-22M, AS PER PLAN

THE COARSE VIRGIN AGGREGATE FOR THIS ITEM SHALL BE LIMITED TO A BLEND OF AIR COOLED BLAST FURNACE SLAG (ACBFS) OR TRAP ROCK FROM ONTARIO AND LIMESTONE. THE CONTRACTOR SHALL USE A MINIMUM 60% OF ACBFS OR TRAP ROCK FROM ONTARIO WITH LIMESTONE COMPRISING THE REMAINING PERCENTAGE. AT LEAST 50% OF FINE VIRGIN AGGREGATE FOR THIS ITEM SHALL BE LIMITED TO ACBFS OR TRAP ROCK FROM ONTARIO.

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

WHEN ACBFS IS USED FOR A FRACTION OF THE COARSE AGGREGATE, PROVIDE A TOTAL ASPHALT BINDER CONTENT GREATER THAN OR EQUAL TO 6.2 PERCENT. IF ACBFS MAKES UP 100% OF THE COARSE AGGREGATE, APPLY THE BINDER CONTENT REQUIREMENTS OF C&MS 442.

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.

EROSION CONTROL

SEEDING AND MULCHING

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

QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDING AREAS ON SHEET 45.

WATER WORKS

UNMARKED RESIDENTIAL AND COMMERCIAL WATER CONNECTIONS

ANY UNMARKED ACTIVE WATER SERVICE CONNECTIONS ENCOUNTERED DURING CONSTRUCTION SHALL BE RECONNECTED TO THE EXISTING WATERMAIN TO THE SATISFACTION OF THE ENGINEER AND THE CLEVELAND WATER DEPARTMENT INSPECTOR. SEE THE CLEVELAND WATER DEPARTMENT STANDARD DRAWINGS ON SHEETS 110 - 122 FOR ADDITIONAL INFORMATION. ALL MATERIAL SHALL MEET ITEM 638 OF THE SPECIFICATIONS AND SHALL HAVE PRIOR APPROVAL OF THE ENGINEER.

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

638, 1" COPPER SERVICE BRANCH 50 FT
638, 1 - 1/2" COPPER SERVICE BRANCH 50 FT
638, 2" COPPER SERVICE BRANCH 50 FT

638, WATER WORKS, MISC.: RETAP AND RECONNECT 1" WATER SERVICE CONNECTION, LONG SIDE COMPLETE 1 EACH

638, WATER WORKS, MISC.: RETAP AND RECONNECT 1 - 1/2" WATER SERVICE CONNECTION, LONG SIDE COMPLETE 1 EACH

638, WATER WORKS, MISC.: RETAP AND RECONNECT 2" WATER SERVICE CONNECTION, LONG SIDE COMPLETE 1 EACH

638, WATER WORKS, MISC.: 6" WATER MAIN DUCTILE IRON PIPE WITH PUSH-ON JOINTS AND RETAINED MECHANICAL JOINT FITTINGS, ANSI CLASS 52 50 FT

638, WATER WORKS, MISC.: 8" WATER MAIN DUCTILE IRON PIPE WITH PUSH-ON JOINTS AND RETAINED MECHANICAL JOINT FITTINGS, ANSI CLASS 52 50 FT

638, WATER WORKS, MISC.: TEMPORARY SERVICE CONNECTION 4 EACH

ITEM 638 - WATER WORK, MISC.: CITY OF CLEVELAND WATER DEPARTMENT CHARGES

1. PERMITS, INSPECTIONS, AND FEES REQUIRED BY THE CITY OF CLEVELAND WATER DEPARTMENT (CWD) SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN AND MEET COMPLIANCE INCLUDING WATERMAIN LOWERING FEES AND INSPECTION FEES. THE COST OF THESE FEES WILL BE APPROXIMATELY \$20,000.00. THE CONTRACTOR SHALL VERIFY ALL COSTS. ALL INVOICES FROM THE CLEVELAND WATER DEPARTMENT SHALL BE SUBMITTED TO THE OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 WITHOUT ANY MARK-UP. THIS WILL BE A DIRECT REIMBURSEMENT ONLY AND ANY BALANCE DUE OR BALANCE REMAINING SHALL BE ADJUSTED BY CHANGE ORDER.
2. ALL TESTING AND CHLORINATION REQUIRED BY ODOT CMS AND CWD FOR THE APPLICATION ITEMS UNDER THIS CONTRACT SHALL BE ENFORCED, AND ALL COSTS SHALL BE INCLUDED IN THE PRICE BID FOR THE ITEM TO WHICH IT RELATES.

MAINTENANCE OF SERVICE

THE CONTRACTOR SHALL MAINTAIN WATER SERVICE TO ALL PROPERTIES AT ALL TIMES DURING CONSTRUCTION. DURING CONSTRUCTION, THE CONTRACTOR MAY BE REQUIRED TO LOWER, AND/OR DEFLECT, THE PROPOSED WATER LINE AND/OR CONNECTIONS TO AVOID CONFLICTS WITH EXISTING CONNECTIONS. THE WATER LINE, INCLUDING CONNECTIONS, MUST MAINTAIN A MINIMUM SIX (6) FOOT OF COVER.

IF WATER SERVICE CAN NOT BE MAINTAINED THROUGHOUT TRANSFER OF EXISTING WATER LINES TO PROPOSED WATER LINES, THE CONTRACTOR SHALL COORDINATE WITH PROPERTY OWNERS TO SCHEDULE THE SERVICE TRANSFER. THE CONTRACTOR SHALL NOTIFY PROPERTY OWNERS TWICE (7 DAYS PRIOR AND 48 HOURS PRIOR) IN ADVANCE OF INTERRUPTION OF SERVICE. THE CONTRACTOR IS TO COMPLETE THE TRANSFER DURING THE PROPERTY OWNERS' OFF HOURS, UNLESS APPROVED BY THE ENGINEER. ANY WATER OUTAGE SHALL NOT EXCEED FOUR (4) HOURS.

PAYMENT FOR ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO COMPLETE THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 638 WATER MAIN DUCTILE IRON PIPE ITEM.

ITEM 638 - WATER WORKS, MISC.: AS-BUILT WATERLINE DRAWINGS

THIS ITEM SHALL INCLUDE ALL COSTS ASSOCIATED WITH THE GENERATION, DELIVERY AND ACCEPTANCE OF AS-BUILT DRAWINGS FOR THE WATER WORK COMPLETED WITH THIS PROJECT. PRIOR TO PRESSURE TESTING AND CHLORINATION OF THE MAIN THE CONTRACTOR SHALL SUBMIT TWO (2) COPIES OF THE RECORD (AS-BUILT) PRINTS TO THE CITY OF CLEVELAND DIVISION OF WATER FOR ACCEPTANCE.

CALCULATED
JMB
CHECKED
JJS

GENERAL NOTES

CUY-480/
TRANSPORTATION BLVD

12
225

SUBGRADE STABILIZATION

ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

- SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.
- EXCAVATE AND REPLACE UNSUITABLE SUBGRADE BEFORE PROOF ROLLING. THE EXCAVATION LIMITS ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNDERCUTS. UNSUITABLE SUBGRADE INCLUDES UNSUITABLE SOIL (A-4B, A-2-5, A-5, A-7-5, AND SOIL WITH A LIQUID LIMIT GREATER THAN 65) AND ANY COAL, SHALE, OR ROCK WHICH NEEDS TO BE REMOVED ACCORDING TO 204.05.

IF THERE IS UNSUITABLE SUBGRADE IN A SHALLOW FILL LOCATION, EXCAVATE AND REPLACE THE UNSUITABLE SUBGRADE BEFORE CONSTRUCTING THE SHALLOW FILL AND SHAPING THE SUBGRADE.
- COMPACT THE SUBGRADE ACCORDING TO 204.03.
- PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO 204.06.

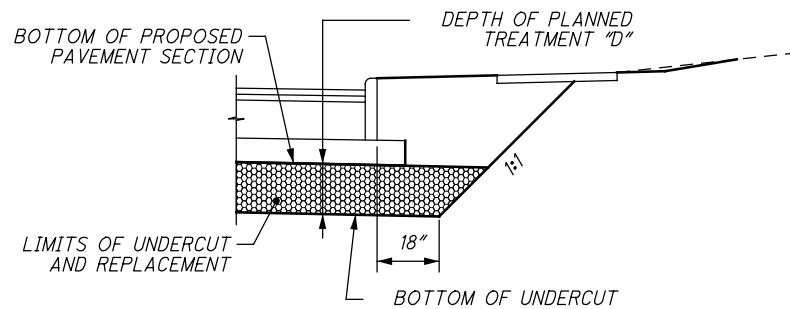
THE ENGINEER WILL IDENTIFY THE ADDITIONAL AREAS OF EXCAVATION FOR UNSTABLE SUBGRADE BASED ON THE PROOF ROLLING RESULTS AND VISUAL OBSERVATIONS.
- EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.
- PROOF ROLL THE STABILIZED AREAS ACCORDING TO 204.06 TO VERIFY STABILITY.
- FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

THE QUANTITIES FOR EXCAVATING THE UNSUITABLE SUBGRADE AND UNSTABLE SUBGRADE ARE BOTH PAID UNDER ITEM 204 EXCAVATION OF SUBGRADE.

PAVEMENT SUBGRADE IMPROVEMENT SCHEDULE			
ALIGNMENT	BEGIN STATION	END STATION	DEPTH OF TREATMENT 'D'
TRANSPORTATION	25+00.00	21+80.12	12"
TRANSPORTATION	17+73.31	93+02.65	12"
GRANGER	17+30.00	22+00.00	12"

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE WORK NOTED ABOVE ON PUBLIC ROAD #1, ODOT DRIVE, ODOT DRIVE #2 AND I-480 WB EXIT RAMP.

ITEM 204 - PROOF ROLLING	4 HR
ITEM 204 EXCAVATION OF SUBGRADE	115 CY
ITEM 204 - GRANULAR MATERIAL, TYPE B, AS PER PLAN	115 CY

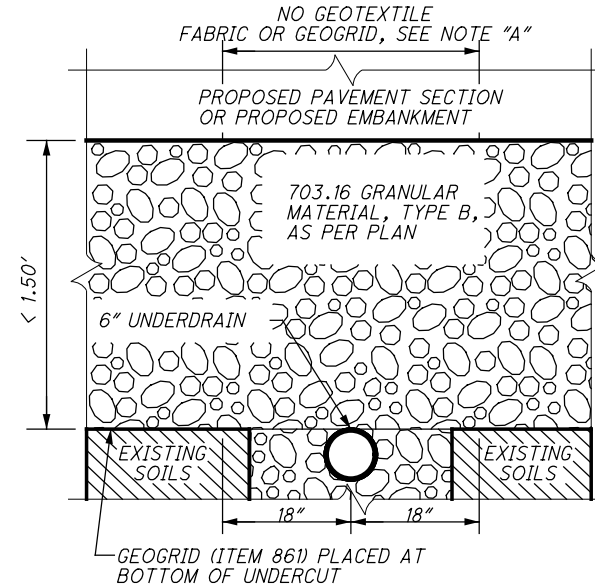
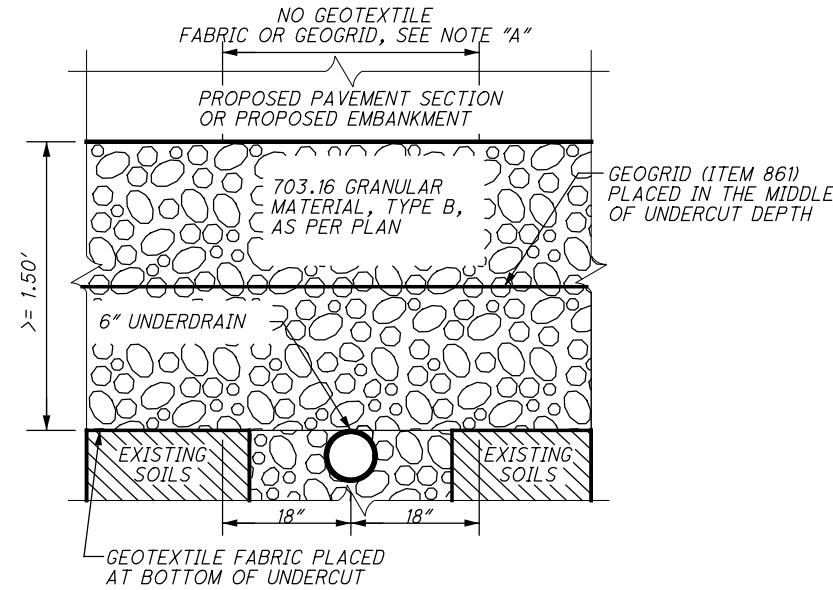


PAVEMENT SUBGRADE DETAIL

PAVEMENT SUBGRADE IMPROVEMENT DETAILS

ITEM 204 - GRANULAR MATERIAL, TYPE B, AS PER PLAN

THIS INVOLVES THE PLACEMENT OF GRANULAR MATERIAL, TYPE B, AS PER PLAN FOR THE LOCATIONS OF UNSUITABLE AND UNSTABLE MATERIALS AS VERIFIED AND DELINEATED BY THE ENGINEER. GRANULATED SLAG (GS) SHALL NOT BE PERMITTED FOR THIS ITEM. ALL OTHER REQUIREMENTS OF SECTIONS 204 AND 703.16.C OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL BE APPLICABLE FOR GRANULAR MATERIAL, TYPE B, AS PER PLAN.



NOTE "A":
THE CONTRACTOR SHALL SUSPEND THE USE OF GEOTEXTILE FABRIC AND GEOGRID WITHIN 18" OF EITHER SIDE OF A CONFLICTING UNDERDRAIN.

DETAIL - UNDERCUT/ REPLACEMENT TREATMENT METHOD

NOT TO SCALE

ENVIRONMENTAL

ENDANGERED BAT HABITAT REMOVAL

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

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. A MINIMUM OF ONE TEN FOOT LANE IN EACH DIRECTION SHALL BE MAINTAINED ON THE EXISTING PAVEMENT OR COMPLETED PAVEMENT DURING CONSTRUCTION OF THE WORK.
2. ALL FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT OPERATIONS SHALL BE COMPLETED THE SAME DAY THE EXCAVATION IS MADE. IF THE CONTRACTOR CANNOT COMPLETE THE WORK, THE EXCAVATION SHALL BE BACKFILLED OR PROTECTED AS PER STANDARD CONSTRUCTION DRAWING MT-101.90.
3. TRUCK MOUNTED ATTENUATORS [TMA'S] SHALL BE USED AS SHOWN IN THE STANDARD CONSTRUCTION DRAWINGS.
4. ONLY DURING OFF-PEAK PERIODS (ie ANY PERIOD OTHER THAN 6-9AM AND 3-6PM, MONDAY-FRIDAY) SHALL THE CONTRACTOR INSTALL AND SUBSEQUENTLY RESET ALL TRAFFIC CONTROL NECESSARY FOR THE WORK ZONE FOR EACH CONSTRUCTION PHASE.
5. PRIOR TO OPENING TO TRAFFIC EACH LANE SHALL BE IN A SAFE, PASSABLE CONDITION. ALL TRANSVERSE JOINTS SHALL EXTEND ACROSS THE FULL LANE AND SHOULDER WIDTH AND EACH LANE SHALL BE FREE FROM UNEVEN LONGITUDINAL JOINTS. THE CONTRACTOR SHALL PROVIDE ASPHALT WEDGES FOR TRANSVERSE JOINTS WHEREVER THERE ARE PAVEMENT ELEVATION DIFFERENCES.

THE FOLLOWING QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR ASPHALT WEDGING AS DIRECTED BY THE ENGINEER.

ITEM 614, ASPHALT CONCRETE FOR MAINTAINING TRAFFIC 15 CY

6. 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.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT SIGN, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF DAMAGED SIGNS, HARDWARE AND SUPPORTS, AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC. THE ESTIMATED QUANTITY BELOW HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, REPLACEMENT SIGN 12 EACH

ITEM 614 - MAINTAINING TRAFFIC (CONTINUED)

7. LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.
8. IF THE I-480 SHOULDERS OR GORES ARE USED TO MAINTAIN TRAFFIC, THE RUMBLE STRIPS SHALL BE PAVED OVER WITH ASPHALT CONCRETE FOR A SMOOTH SURFACE AND SUBSEQUENTLY REGRINDED TO ORIGINAL CONDITION.
9. NO FULL DEPTH BRIDGE REPAIR OR REMOVAL WORK SHALL BE PERFORMED OVER AN OPEN LANE. A SAFETY NET OR PLATFORM SHALL BE REQUIRED TO PROTECT THE ROADWAY DURING THE REMOVAL OF THE EXISTING CONCRETE PARAPET AND DECK. THE CONTRACTOR SHALL PROVIDE A SAFETY NET OR PLATFORM OF SUITABLE STRENGTH ON THE UNDERSIDE OF THE DECK. THE DESIGN OF THE NET OR PLATFORM SHALL CONFORM WITH OSHA REQUIREMENTS AND THE APPROVAL OF THE ENGINEER AND SHALL REMAIN IN PLACE UNTIL THE WORK HAS BEEN COMPLETED AND ACCEPTED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL SUBMIT A DEMOLITION PLAN AND SAFETY NET OR PLATFORM DESIGN TEN (10) DAYS PRIOR TO COMMENCING ANY DEMOLITION FOR APPROVAL BY THE ENGINEER. THE SUBMITTAL SHALL BE IN WRITING TO THE DISTRICT CONSTRUCTION ENGINEER WITH A COPY TO THE PROJECT ENGINEER.

10. ALL LANES OF I-480 SHALL BE OPEN AT ALL TIMES WITH THE FOLLOWING EXCEPTIONS:

(A) I-480 SHORT TERM CLOSURES

THE FOLLOWING NOTES SHALL APPLY FOR THE WORK ON I-480:

- (1) SHORT TERM CLOSURES WILL ONLY BE PERMITTED FOR THE ERECTION OF BEAMS.
- (2) SHORT TERM CLOSURES SHALL ONLY BE PERMITTED MONDAY THROUGH THURSDAY BETWEEN 11:30PM - 5:00AM.
- (3) SHORT TERM CLOSURES SHALL BE AS PER MT-99.60, EXCEPT THAT THE DURATION OF CLOSURE SHALL NOT EXCEED TEN (10) MINUTES.
- (4) "BE PREPARED TO STOP" (W3-4-48) SIGNS SHALL BE USED DURING SHORT TERM CLOSURES AND SHALL BE DUAL MOUNTED AND BE PLACED APPROXIMATELY 1300 FEET AFTER THE "ROAD WORK AHEAD" SIGN OR AS DIRECTED BY THE ENGINEER. THE SIGNS SHALL HAVE 8 LED AMBER FLASHING LIGHTS THAT BLINK ON AND OFF DURING THE TIME THE SIGN IS IN OPERATION. THE FLASHING LIGHTS SHALL BE OPERATING WHEN THE FREEWAY IS BEING PREPARED FOR CLOSURE AND FOR THE ENTIRE DURATION OF THE CLOSURE. THE SIGN SHALL BE COVERED AND FLASHING LIGHTS TURNED OFF WHEN NOT IN USE.

THE CONTRACTOR SHALL CONTACT TAPCO (TRAFFIC AND PARKING CONTROL CO., INC.) TO HAVE THE "BE PREPARED TO STOP" (W3-4-48) SIGNS MADE. THE SIGN IS CALLED BLINKERSIGN. THE WEBSITE IS:

<https://www.tapconet.com/store/products/blinkersign-led-enhanced-traffic-signs/c/Ydab?page=1>

AN APPROVED EQUAL CAN BE SUBSTITUTED.

ITEM 614 - MAINTAINING TRAFFIC (CONTINUED)

(B). PIER CONSTRUCTION, PARAPET AND DECK REMOVAL, AND FALSEWORK ERECTION AND REMOVAL OPERATIONS

- (1) DURING CONSTRUCTION OF THE PIERS AND OVERHEAD WORK OUTSIDE OF THE EXISTING MAINTAINED LANES, THE SHOULDERS SHALL BE CLOSED WITH PORTABLE BARRIER IN ACCORDANCE WITH MT-95.45. LINEAR DELINEATION SHALL BE INSTALLED ON THE PORTABLE BARRIER. THE WORK ZONE CAN BE LEFT IN PLACE OVERNIGHT.
- (2) DURING OVERHEAD WORK WHICH REQUIRES LANE CLOSURES, LANES SHALL BE CLOSED WITH CONSTRUCTION DRUMS IN ACCORDANCE WITH MT-95.30.
- (3) VEHICLES AND EQUIPMENT SHALL ALWAYS MOVE WITH, AND NOT ACROSS OR AGAINST TRAFFIC. VEHICLES AND EQUIPMENT SHALL NOT PARK OR STOP EXCEPT WITHIN THE DESIGNATED WORK AREAS, AND SHALL ENTER AND LEAVE WORK AREAS IN A MANNER WHICH WILL NOT BE HAZARDOUS TO, OR INTERFERE WITH THE NORMAL TRAFFIC FLOW. PERSONAL VEHICLES WILL NOT BE PERMITTED TO PARK WITHIN THE RIGHT OF WAY EXCEPT IN SPECIFIC AREAS DESIGNATED BY THE ENGINEER.

11. I-480 LANE CLOSURE RESTRICTIONS

(A) DURING THE CONSTRUCTION ACTIVITIES 10(A) AND 10(B) PREVIOUSLY LISTED, LANE CLOSURES MAY ONLY BE IMPLEMENTED AT THE TIMES PERMITTED BY THE "DISTRICT 12 PERMITTED LANES CLOSURE TIMES" LIST WHICH IS LOCATED ON THE ODOT WEB SITE:

<http://www.dot.state.oh.us/districts/D12/construction/Pages/Permitted-Lane-Closures.aspx>

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

- (B) ANY ROADWAY NOT LISTED IN THE DISTRICT 12 "PERMITTED LANE CLOSURES" LIST SHALL NOT HAVE ANY WEEKDAY CLOSURES FROM 6:00AM-9:00AM OR 3:00PM-6:00PM, UNLESS NOTED OTHERWISE.
- (C) NO LANE OR SHOULDER CLOSURES SHALL BE IN PLACE WHEN NO WORK IS BEING PERFORMED.
- (D) MAINTENANCE OF TRAFFIC SHALL FOLLOW THE INSTRUCTION OF THE STANDARD CONSTRUCTION DRAWINGS LISTED ON THE TITLE SHEET AND THE LATEST REVISION OF THE ODOTCD.

12. SINCE FUNCTIONAL TRAFFIC CONTROL IS A MAJOR CONCERN ON THIS PROJECT, IT IS ESSENTIAL THAT THE MOTORING PUBLIC BE ADEQUATELY FOREWARNED OF FUTURE LANE CLOSURES AND TRAFFIC CONSTRUCTIONS. THEREFORE, THE CONTRACTOR MUST SUBMIT A WRITTEN SCHEDULE TO THE ODOT DISTRICT 12 PUBLIC INFORMATION OFFICE INDICATING THE LOCATIONS AND DATES OF THE LANE CLOSURES AT LEAST THREE (3) DAYS PRIOR TO THE IMPLEMENTATION OF ANY SUCH CLOSURES. ALSO, THE CONTRACTOR SHALL NOTIFY THE ENGINEER, RESPONSIBLE LAW ENFORCEMENT AGENCIES, EMERGENCY SERVICES, AND THE CITY OF GARFIELD HEIGHTS OF LANE CLOSURES OR OTHER RESTRICTIONS AT LEAST TWO (2) WEEKS PRIOR TO IMPLEMENTATION. FOR I-480 TRAFFIC, THE CONTRACTOR SHALL USE PORTABLE CHANGEABLE MESSAGE SIGNS TO ALERT MOTORISTS THREE (3) DAYS PRIOR TO THE IMPLEMENTATION OF ANY CHANGES SUCH AS LANE CLOSURES OR OTHER RESTRICTIONS.

ITEM 614 - MAINTAINING TRAFFIC (CONTINUED)

13. THE CONTRACTOR SHALL USE SCD MT-103.10 "CONSTRUCTION ACCESS POINTS" FOR TRUCKS ENTERING AND EXITING THE PROJECT. IF THE ENTRY OR EXIT POINTS ARE BEFORE OR AFTER THE PORTABLE BARRIER, THE CONTRACTOR SHALL USE ACCEPTABLE TAPER RATES AND ACCELERATION /DECELERATION LENGTHS.
14. THE CONTRACTOR SHALL NOTIFY THE STATEWIDE TRAFFIC MANAGEMENT CENTER (TMC) 24 HOURS BEFORE LANE CLOSURES (TELEPHONE: 800-884-4030).

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

MAINTAINING TRAFFIC (LANES OPEN DURING HOLIDAYS OR SPECIAL EVENTS)

- (1) LANE CLOSURE TIMES SHALL BE ADJUSTED FOR SPECIAL EVENTS THAT HAVE A SEATING CAPACITY OF 10,000 IN THE DOWNTOWN CLEVELAND AREA. THE CONTRACTOR SHALL NOT CLOSE A LANE(S) IN THE INBOUND DIRECTION 2 HOURS BEFORE THE START OF AN EVENT. THE CONTRACTOR SHALL NOT CLOSE A LANE(S) IN THE OUTBOUND DIRECTION 2 HOURS AFTER AN EVENT ENDS.
- (2) THERE SHALL BE NO LANE CLOSURES ON HOLIDAYS OR HOLIDAY WEEKENDS. THE FOLLOWING ARE CONSIDERED HOLIDAYS: MEMORIAL DAY, FOURTH OF JULY, LABOR DAY, THANKSGIVING, CHRISTMAS, NEW YEAR'S AND EASTER.

NO LANE CLOSURES ARE ALLOWED AFTER 12 NOON ON THE DAY PRECEDING A HOLIDAY. FOR HOLIDAY WEEKENDS, NO LANE CLOSURES ARE ALLOWED AFTER 12 NOON ON THE DAY PRECEDING THE HOLIDAY WEEKEND UNTIL 12 AM THE DAY AFTER THE HOLIDAY WEEKEND.

DAY AFTER THANKSGIVING: NO TWO (2) LANE CLOSURES SHALL BE PERMITTED FROM 6AM TO 6PM. THIS NOTE OVERRIDES THE PERMITTED LANE CLOSURE SCHEDULE CLOSURE TIMES.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF \$50 FOR EACH MINUTE THE ABOVE DESCRIBED LANE CLOSURE RESTRICTIONS ARE VIOLATED.

DUST CONTROL

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

ITEM 616, WATER 120 MGAL

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

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE OFFICE OF MATERIALS MANAGEMENT WEB PAGE. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 800 FEET AND 650 FEET, RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. THE PCMS SHALL BE DELINEATED IN ACCORDANCE WITH C&MS 614.03.

PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED AWAY FROM ALL TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY.

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

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

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF C&MS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC.

**ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN,
AS PER PLAN (CONTINUED)**

THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN 8 SNMT

(ASSUMING 2 PCMS FOR 4 MONTHS)

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 ODOT INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE ODOT, 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).

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 LEO'S 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.

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

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

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 300 HOUR

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

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

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.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

TRENCH FOR WIDENING

TRENCH EXCAVATION FOR BASE WIDENING SHALL BE ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES. PLACEMENT OF PROPOSED SUBBASE AND BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND EXCAVATION OPERATIONS. THE LENGTH OF WIDENING TRENCH WHICH IS OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO APPROVAL OF THE ENGINEER.

OVERNIGHT TRENCH CLOSING

THE BASE WIDENING SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 3 INCHES BELOW THE EXISTING PAVEMENT BY THE END OF EACH WORK DAY. NO TRENCH SHALL BE LEFT OPEN OVERNIGHT EXCEPT FOR A SHORT LENGTH (25 FEET OR LESS) OF A WORK SECTION AT THE END OF THE TRENCH. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED BASE WIDENING SHALL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER.

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION

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

1. EXISTING SIGNAL/FLASHER INSTALLATIONS WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE, OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES OR OTHERWISE DISTURBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION (AT AN INTERSECTION) FROM THE TIME HIS OPERATIONS FIRST DISTURB THE INSTALLATION UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK IS ACCEPTED.
2. NEW OR REUSED SIGNAL/FLASHER INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION.

IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

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

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

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION (CONTINUED)

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

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM. WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 4 HOURS AND SHALL NOT INCLUDE THE HOURS OF 6:00AM TO 7:00PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE INSTALLATION OF TEMPORARY "STOP" SIGNS, EXCEPT FOR THE FOLLOWING INTERSECTIONS WHICH SHALL BE PROTECTED BY OFF-DUTY CITY OF GARFIELD HEIGHTS POLICE, HIRED BY THE CONTRACTOR:

1. TRANSPORTATION BLVD./I-480 EASTBOUND EXIT RAMP/ ANTENUCCI BLVD.
2. TRANSPORTATION BLVD./I-480 WESTBOUND EXIT RAMP.

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.25.

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

1. TIME OF NOTIFICATION OF MALFUNCTION;
2. TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION;
3. ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED;
4. A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;
5. TIME OF COMPLETION OF THE REPAIR AND SYSTEM RESTORED TO FULL SERVICE.

A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

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

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.

PAYMENT FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING WORK ZONE BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH ITEM.

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 THE OFFICE OF ROADWAY ENGINEERING'S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS APPROVED PRODUCTS WEB PAGE.

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.

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

ALTERNATE MAINTENANCE OF TRAFFIC PLANS

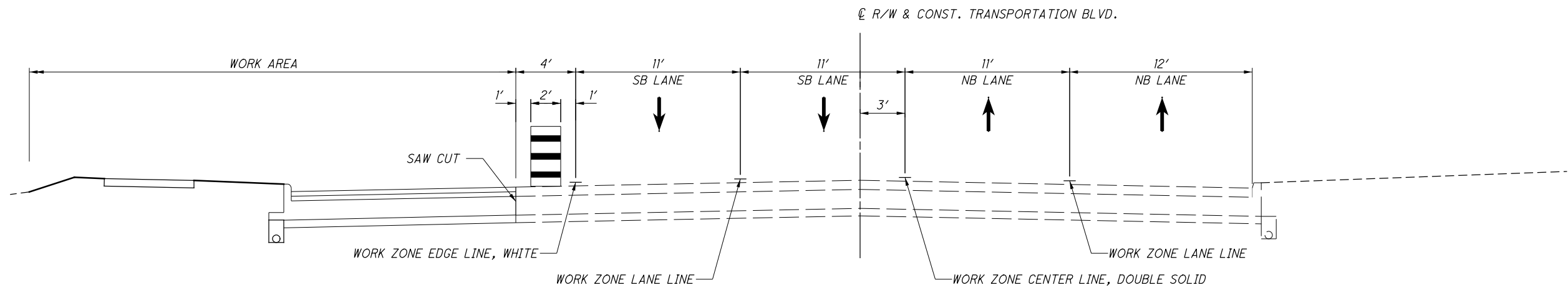
IF THE CONTRACTOR SO ELECTS, HE MAY SUBMIT ALTERNATE METHODS FOR MAINTENANCE OF TRAFFIC, PROVIDED THE INTENT OF THE ABOVE PROVISIONS ARE FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATE PLAN SHALL BE PLACED IN EFFECT UNTIL APPROVAL HAS BEEN GRANTED IN WRITING BY THE ODOT DISTRICT CONSTRUCTION ENGINEER.

\\AKR\BNA\DATA\2016\201605\CUY\8974\WOT\SHEETS\8974HS001.DGN
3/6/2017 12:48:29 PM
000TV81STD\USER

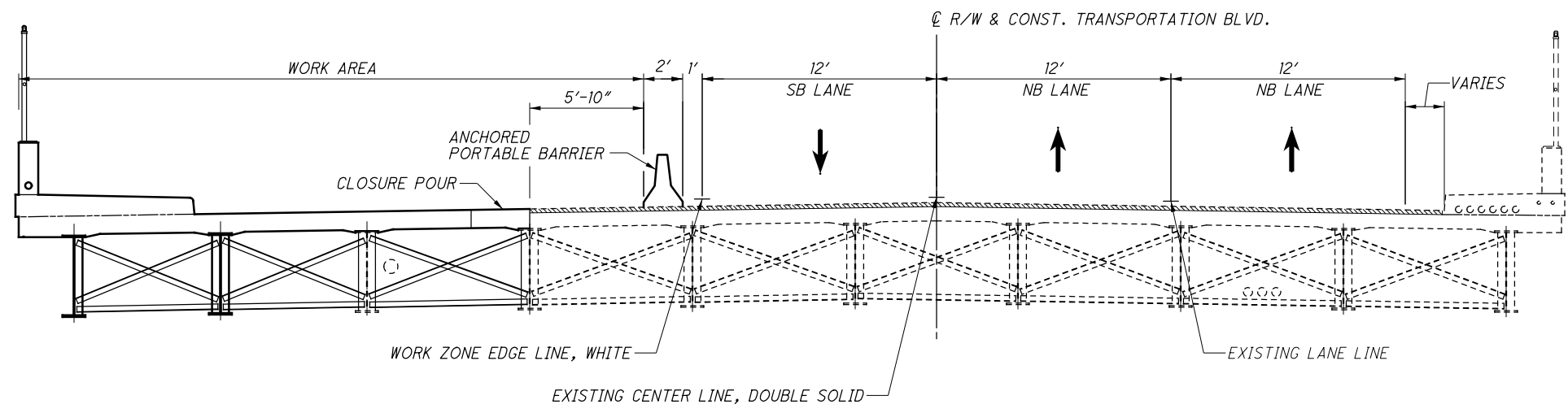
SHEET NO.	REF. NO.	LOCATION	STATION		SIDE	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	622	622
			INCREASED BARRIER DELINEATION	WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL) 24"		BARRIER REFLECTOR, TYPE 1, ONE-WAY	BARRIER REFLECTOR, TYPE 1, ONE-WAY	BARRIER REFLECTOR, TYPE 1, BI-DIRECTIONAL	OBJECT MARKER, ONE WAY	OBJECT MARKER, TWO WAY	WORK ZONE LANE LINE, CLASS I	WORK ZONE CENTER LINE, CLASS I	WORK ZONE EDGE LINE, CLASS I	WORK ZONE CHANNELIZING LINE, CLASS I	WORK ZONE DOTTED LINE, CLASS I	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I	WORK ZONE STOP LINE, CLASS I	WORK ZONE ARROW, CLASS I	WORK ZONE ISLAND MARKING, CLASS I	PORTABLE BARRIER, 32"	PORTABLE BARRIER, 32", BRIDGE MOUNTED			
			FROM	TO		FT	EACH	WHITE EACH	YELLOW EACH	EACH	EACH	EACH	MILE	MILE	MILE	FT	FT	FT	FT	EACH	SF	FT	FT	
PHASE 1																								
24	PB-1	I-480 WESTBOUND	1054+60	1058+40	LT	60	1	9															380	
24	PB-2	I-480 WESTBOUND	1054+50	1058+90	LT	75	1		10														440	
24	PB-3	I-480 EASTBOUND	1052+40	1056+20	RT	60	1	9															380	
24	PB-4	I-480 EASTBOUND	1051+90	1056+30	RT	75	1		10														440	
26	EW-1	EB RAMP / TRANSPORTATION	44+00	22+00	RT											0.014								
26	PB-5	TRANSPORTATION BLVD.	22+30	22+00	RT					1		1											30	
27	EW-2	TRANSPORTATION BLVD.	22+00	17+00	RT											0.095								
27	PB-6	TRANSPORTATION BLVD.	22+00	17+00	RT					11		11											70	430
28	CDS-1	TRANSPORTATION BLVD.	16+50	14+59	RT									0.036										
28	CDS-2	TRANSPORTATION BLVD.	86+82	88+00	RT									0.022										
28	CH-1	TRANSPORTATION BLVD.	86+82	87+82	LT											100								
28	EW-3	TRANSPORTATION BLVD.	17+00	88+00	RT/LT											0.095								
28	IY-1	TRANSPORTATION BLVD.	14+55		RT																	25		
28	LA-1	TRANSPORTATION BLVD.	86+90		LT															1				
28	LA-2	TRANSPORTATION BLVD.	87+56		LT															1				
28	LL-1	TRANSPORTATION BLVD.	86+82	88+00	RT								0.022											
28	PB-7	TRANSPORTATION BLVD.	17+00	16+60	RT		1			1		1											40	
28	SL-1	TRANSPORTATION BLVD.	86+80		LT																	22		
28	TY-1	TRANSPORTATION BLVD.	16+50	14+59	RT																	64		
29	CDS-3	TRANSPORTATION BLVD.	88+00	93+00	RT									0.095										
29	EW-4	TRANSPORTATION BLVD.	88+00	93+00	LT											0.095								
29	LL-2	TRANSPORTATION BLVD.	88+00	93+00	RT								0.095											
29	LL-3	TRANSPORTATION BLVD.	88+00	93+00	LT								0.095											
30	CDS-4	TRANSPORTATION BLVD.	93+00	95+60	RT/LT									0.049										
30	CH-2	TRANSPORTATION BLVD.	93+40	95+60	LT																	220		
30	EW-5	TRANSPORTATION BLVD.	93+00	95+60	LT											0.049								
30	LL-4	TRANSPORTATION BLVD.	93+00	93+40	LT								0.008											
30	LL-5	TRANSPORTATION BLVD.	93+00	94+00	RT								0.019											
PHASE 1B																								
33	CH-3	I-480 EB EXIT RAMP	45+08	44+79	RT																			
33	EW-6	EB RAMP / TRANSPORTATION	45+80	22+00	RT											0.049								
33	PB-8	EB RAMP / TRANSPORTATION	45+80	22+00	RT			3		3		3											260	
SUBTOTALS						270	5	21	20	16	41	16	0.24	0.20	0.40	349		64	22	2	25	2040	430	
TOTALS CARRIED TO GENERAL SUMMARY						270	5	41		16	41	16	0.24	0.20	0.40	349		64	22	2	25	2040	430	

CALCULATED KRM CHECKED RAK
MAINTENANCE OF TRAFFIC SUBSUMMARY
CUY-480/TRANSPORTATION BLVD.
 19
 225

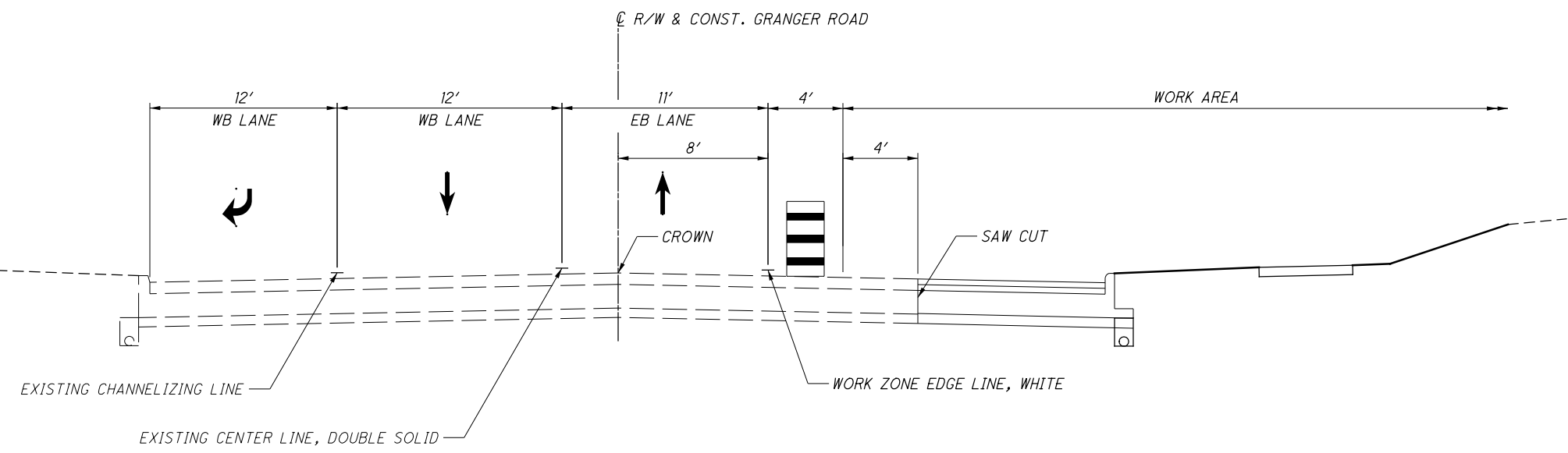
SHEET NO.	REF. NO.	LOCATION	STATION		SIDE	614		614		614		614		614		614		614		614		622		622		
			FROM	TO		INCREASED BARRIER DELINEATION	WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL) 24"	BARRIER REFLECTOR, TYPE 1, ONE-WAY	BARRIER REFLECTOR, TYPE 1, ONE-WAY	BARRIER REFLECTOR, TYPE 1, BI-DIRECTIONAL	OBJECT MARKER, ONE WAY	OBJECT MARKER, TWO WAY	WORK ZONE LANE LINE, CLASS I	WORK ZONE CENTER LINE, CLASS I	WORK ZONE EDGE LINE, CLASS I	WORK ZONE CHANNELIZING LINE, CLASS I	WORK ZONE DOTTED LINE, CLASS I	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I	WORK ZONE STOP LINE, CLASS I	WORK ZONE ARROW, CLASS I	WORK ZONE ISLAND MARKING, CLASS I	PORTABLE BARRIER, 32"	PORTABLE BARRIER, 32", BRIDGE MOUNTED	FT	FT	FT
PHASE 2																										
34	CDS-5	TRANSPORTATION BLVD.	86+82	88+00	RT								0.022													
34	CH-4	TRANSPORTATION BLVD.	86+82	88+00	LT																					
34	CH-5	TRANSPORTATION BLVD.	86+82	88+00	RT																					
34	CH-6	WB RAMP	56+16	57+40	RT																					
34	EW-7	TRANSPORTATION BLVD.	14+50	88+00	RT/LT																					
34	EW-8	TRANSPORTATION BLVD.	16+15	14+34	LT																					
34	EW-9	WB RAMP / TRANSPORTATION	57+50	88+00	RT																					
34	LA-3	TRANSPORTATION BLVD.	86+90		LT																					
34	LA-4	TRANSPORTATION BLVD.	87+56		LT																					
34	LA-5	WB RAMP	56+24		RT																					
34	LA-6	WB RAMP	56+24		RT																					
34	LA-7	WB RAMP	56+90		RT																					
34	LA-8	WB RAMP	56+90		RT																					
34	SL-2	TRANSPORTATION BLVD.	86+80		LT																					
35	CDS-6	TRANSPORTATION BLVD.	91+20	93+00	RT/LT								0.034													
35	CH-7	TRANSPORTATION BLVD.	91+20	92+20	LT																					
35	CH-8	TRANSPORTATION BLVD.	91+20	92+20	RT																					
35	EW-10	TRANSPORTATION BLVD.	91+20	93+00	LT																					
35	EW-11	TRANSPORTATION BLVD.	91+20	93+00	RT																					
35	LL-6	TRANSPORTATION BLVD.	92+20	93+00	LT								0.015													
35	LL-7	TRANSPORTATION BLVD.	92+20	93+00	RT								0.015													
36	CDS-7	TRANSPORTATION BLVD.	93+00	95+13	LT								0.040													
36	EW-12	TRANSPORTATION BLVD.	93+00	94+01	LT																					
36	EW-13	TRANSPORTATION BLVD.	93+00	95+50	RT																					
36	LL-8	TRANSPORTATION BLVD.	93+00	94+09	LT								0.021													
36	LL-9	TRANSPORTATION BLVD.	93+00	95+00	RT								0.038													
37	EW-14	I-480 WB EXIT RAMP	57+50	62+50	RT																					
37	EW-15	I-480 WB EXIT RAMP	62+50	64+00	RT																					
PHASE 3																										
40	DW-1	GRANGER ROAD	14+20	16+50	RT																					
40	EW-16	GRANGER ROAD	14+20	18+00	RT																					
41	EW-17	GRANGER ROAD	18+00	23+00	RT																					
42	CDS-8	E. 96TH ST.	20+32	21+00	LT																					
42	EW-18	GRANGER ROAD/E. 96TH ST.	23+00	21+00	RT/RT																					
42	EW-19	E. 96TH ST./GRANGER ROAD	20+49	26+50	LT/RT																					
42	SL-3	E. 96TH ST.	20+30		LT																					
				</																						



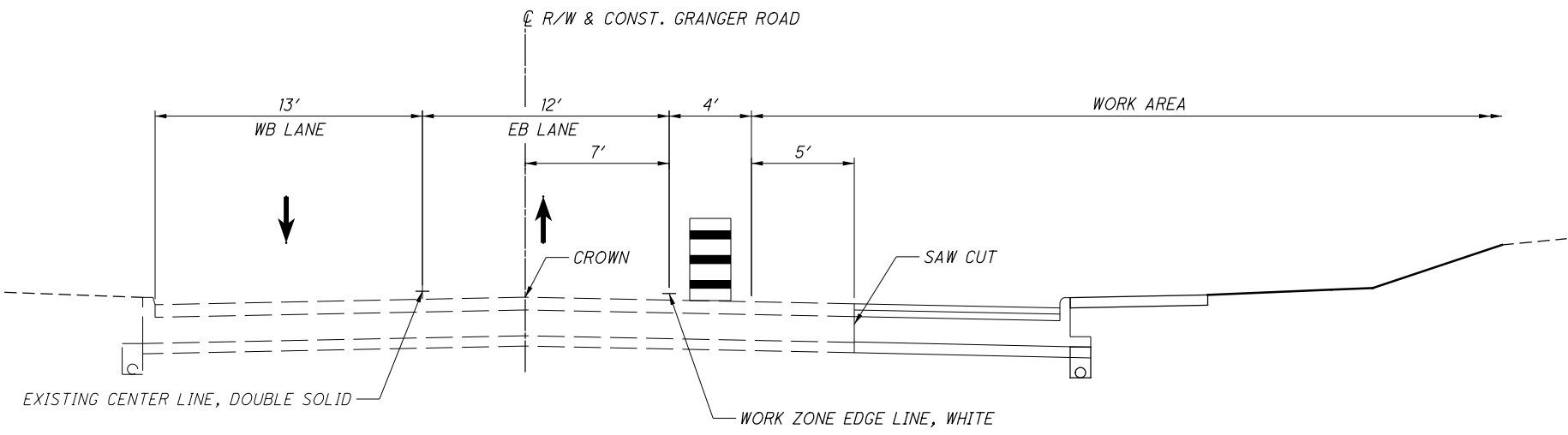
PHASE 1 - MAINTENANCE OF TRAFFIC TYPICAL SECTION
TRANSPORTATION BLVD.
STA. 86+84 TO STA. 93+40



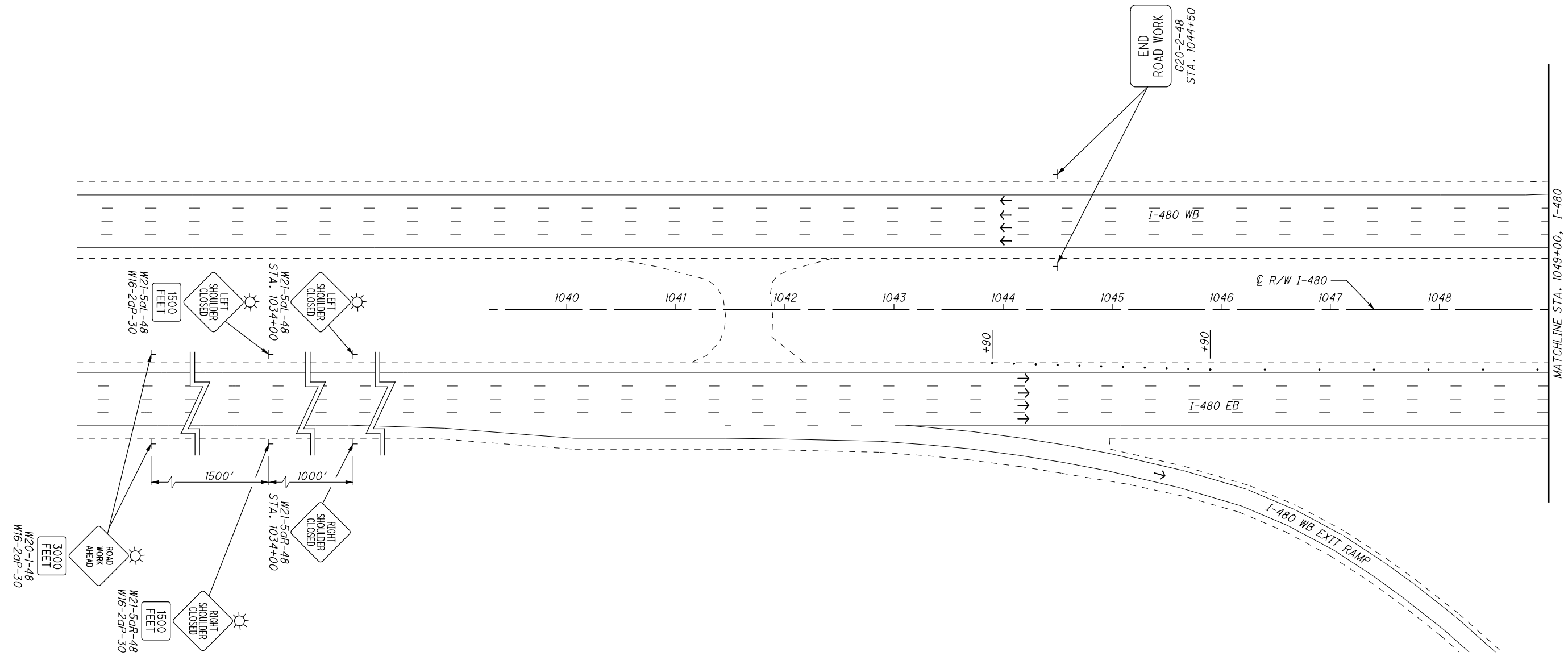
PHASE 1 - MAINTENANCE OF TRAFFIC TRANSVERSE SECTION
TRANSPORTATION BLVD. (LOOKING NORTH)
TRANSPORTATION BLVD. OVER I-480



PHASE 3 - MAINTENANCE OF TRAFFIC TYPICAL SECTION
GRANGER ROAD
EAST OF OVERDRIVE WAY



PHASE 3 - MAINTENANCE OF TRAFFIC TYPICAL SECTION
GRANGER ROAD
WEST OF OVERDRIVE WAY



MAINTENANCE OF TRAFFIC LEGEND

	WORK AREA		CH-# WORK ZONE CHANNELIZING LINE
	TRAFFIC FLOW		DW-# WORK ZONE DOTTED LINE, WHITE
	CONSTRUCTION DRUMS SPACED AT 35' C/C (10' C/C FOR TAPERS & INTERSECTIONS)		EW-# WORK ZONE EDGE LINE, WHITE
	CANTILEVER SIGN SUPPORT		IY-# WORK ZONE ISLAND MARKING, YELLOW
	EXISTING OR PROPOSED SIGN TO REMAIN		LA-# WORK ZONE ARROW
	MAINTENANCE OF TRAFFIC SIGN		LL-# WORK ZONE LANE LINE
	WORK ZONE IMPACT ATTENUATOR		PB-# PORTABLE BARRIER
	ARROW BOARD		SL-# WORK ZONE STOP LINE
	CDS-# WORK ZONE CENTER LINE, DOUBLE SOLID		TY-# WORK ZONE TRANSVERSE/DIAGONAL LINE, YELLOW

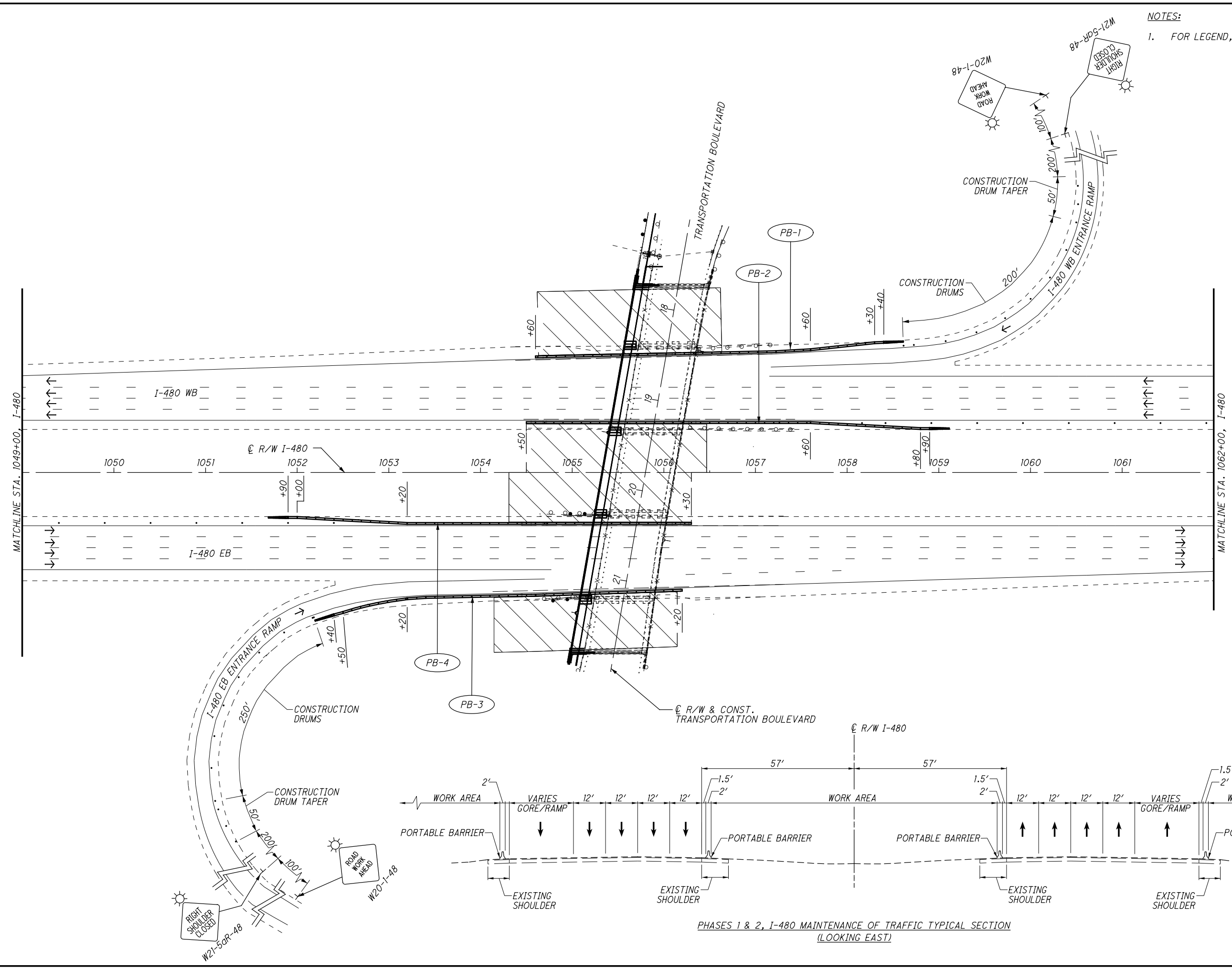
CALCULATED
KRM
CHECKED
RAK

0 50 100
25
HORIZONTAL
SCALE IN FEET

MAINTENANCE OF TRAFFIC PLAN - PHASES 1 & 2
 I-480 SHOULDER CLOSURE, BEGIN TO STA. 1049+00

CUY-480/
 TRANSPORTATION BLVD.

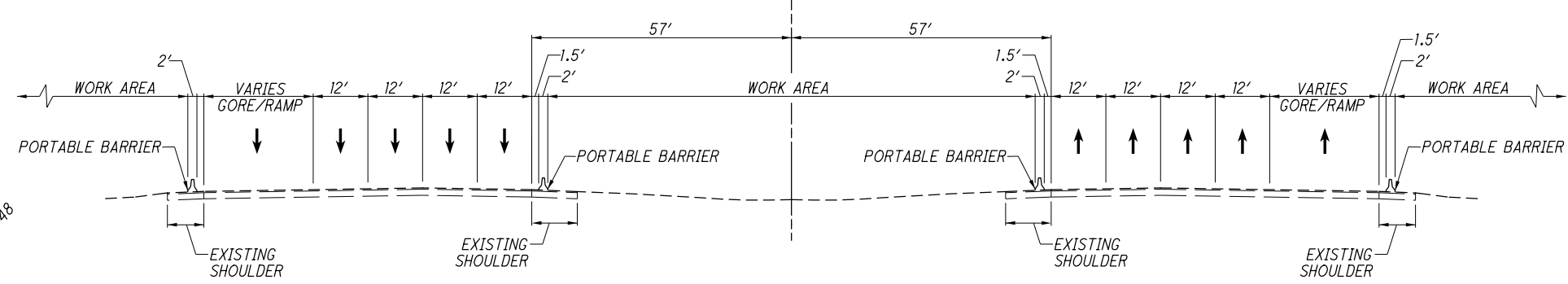
\\AKRNGA\DATA\2016\2016051\CUY\8974\NOT\SHETS\8974\PH051.DGN
 2/1/2017
 2:07:43 PM
 GDDTV81STD_USER



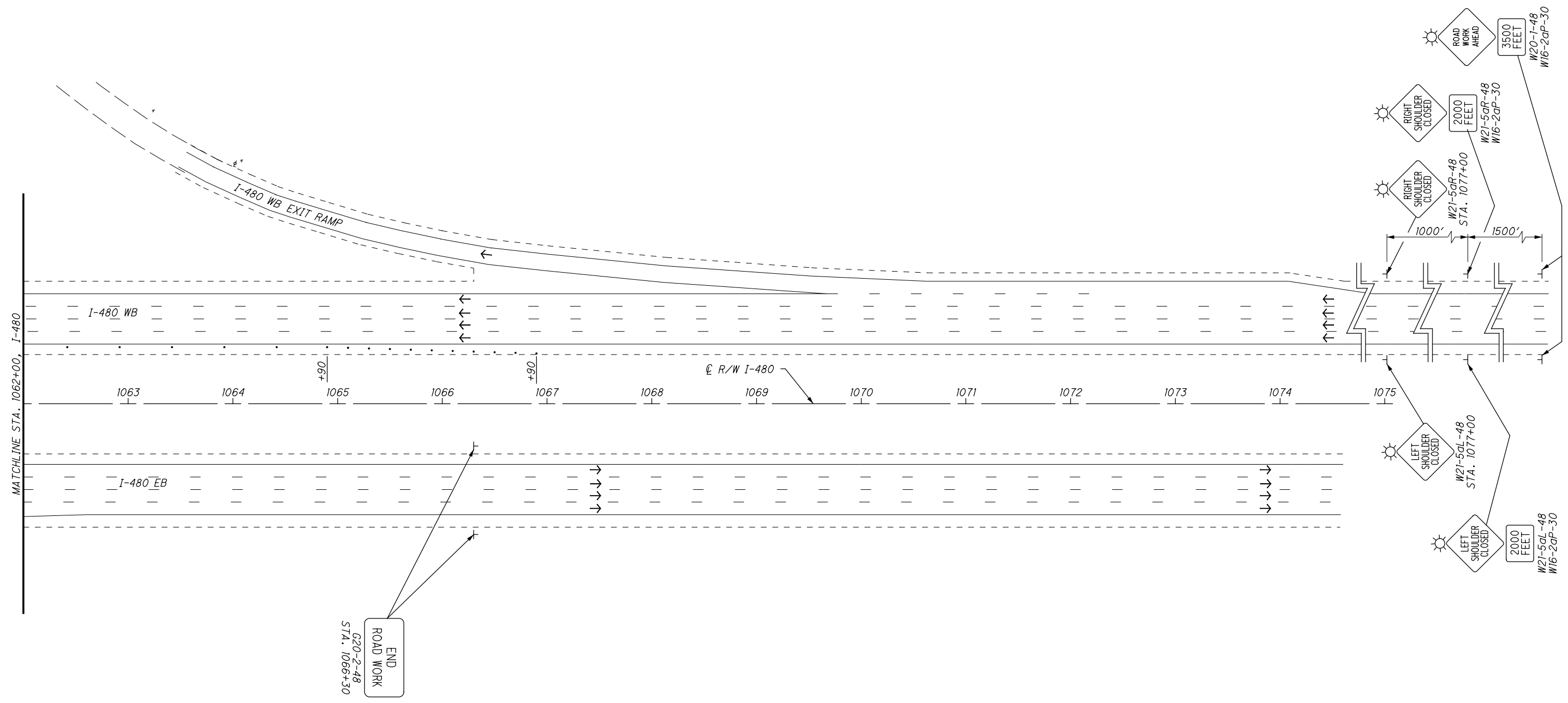
NOTES:
 1. FOR LEGEND, SEE SHEET 23.

CALCULATED
 KRM
 CHECKED
 RAK

MAINTENANCE OF TRAFFIC PLAN - PHASES 1 & 2
 CUY-480/
 TRANSPORTATION BLVD, I-480 SHOULDER CLOSURE, STA. 1049+00 TO STA. 1062+00



PHASES 1 & 2, I-480 MAINTENANCE OF TRAFFIC TYPICAL SECTION
 (LOOKING EAST)



NOTES:
 1. FOR LEGEND, SEE SHEET 23.

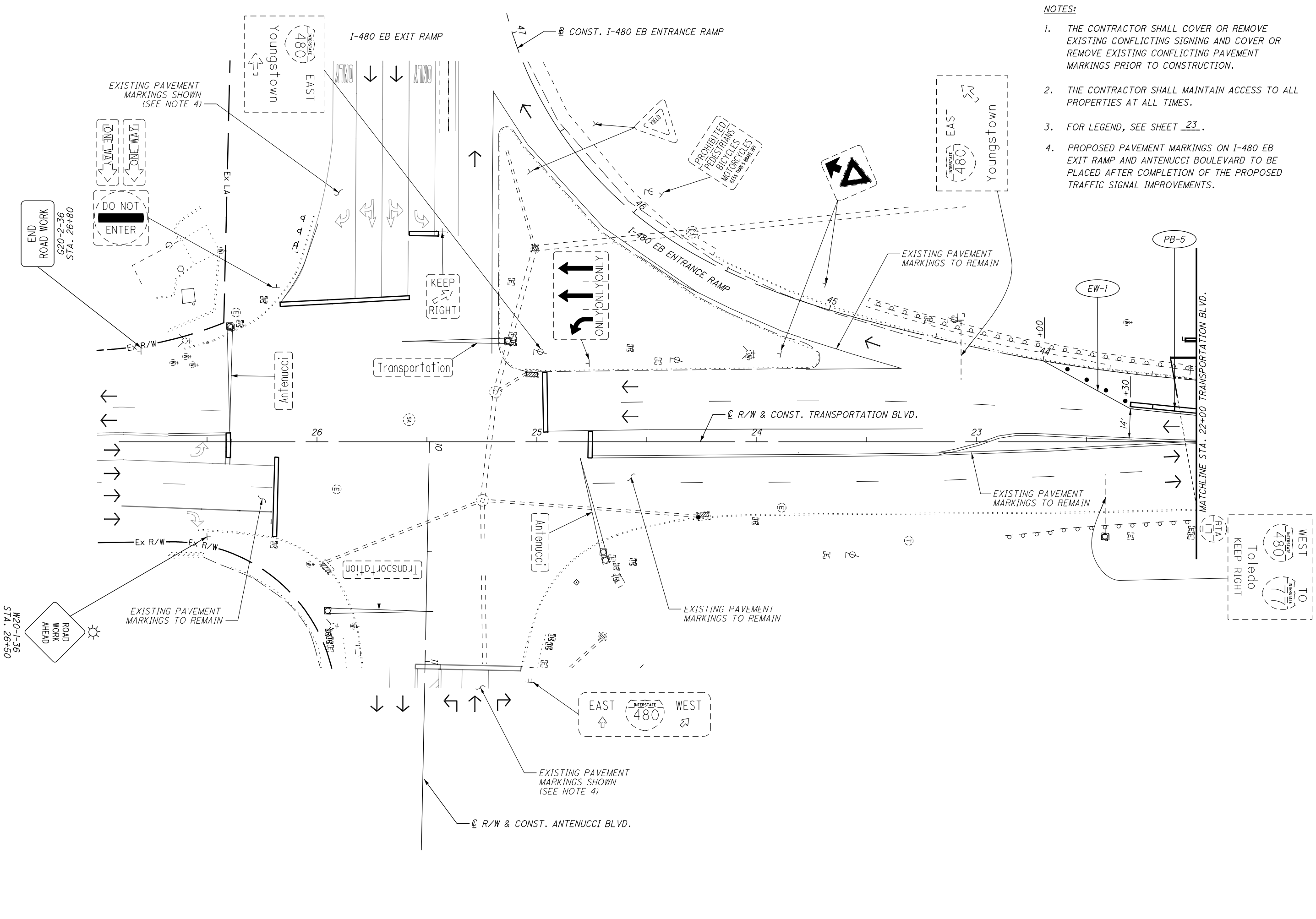
CALCULATED
 KRM
 CHECKED
 RAK

0 50 100
 HORIZONTAL
 SCALE IN FEET

**CUY-480/
 TRANSPORTATION BLVD.**

MAINTENANCE OF TRAFFIC PLAN - PHASES 1 & 2

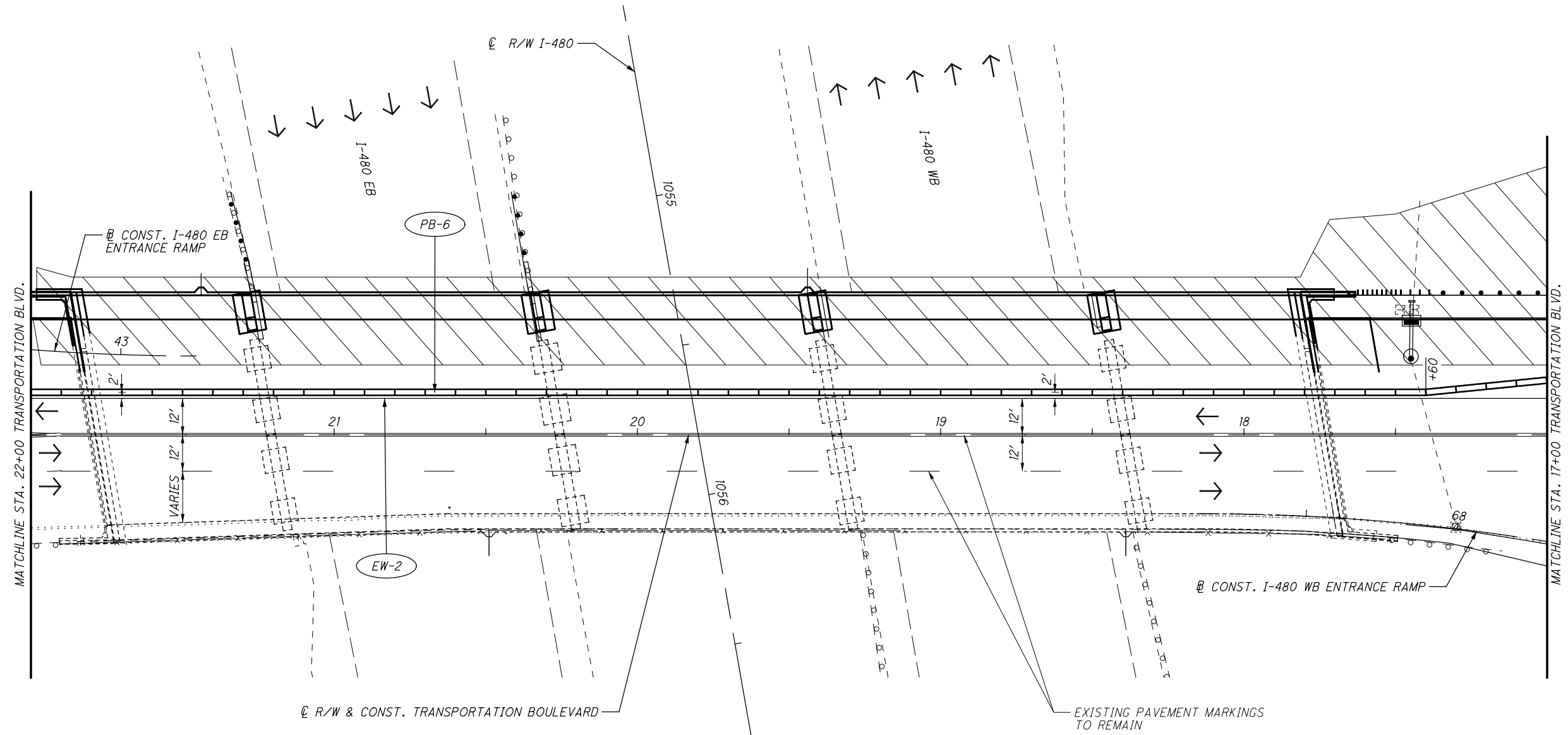
I-480 SHOULDER CLOSURE, STA. 1062+00 TO END



- NOTES:**
1. THE CONTRACTOR SHALL COVER OR REMOVE EXISTING CONFLICTING SIGNING AND COVER OR REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS PRIOR TO CONSTRUCTION.
 2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
 3. FOR LEGEND, SEE SHEET 23.
 4. PROPOSED PAVEMENT MARKINGS ON I-480 EB EXIT RAMP AND ANTENUCCI BOULEVARD TO BE PLACED AFTER COMPLETION OF THE PROPOSED TRAFFIC SIGNAL IMPROVEMENTS.

CALCULATED
KRM
CHECKED
RAK

**CUY-480/
TRANSPORTATION BLVD. - PHASE 1
TRANSPORTATION BLVD. - BEGIN TO STA. 22+00**



- NOTES:**
1. THE CONTRACTOR SHALL COVER OR REMOVE EXISTING CONFLICTING SIGNING AND COVER OR REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS PRIOR TO CONSTRUCTION.
 2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
 3. FOR LEGEND, SEE SHEET 23.

CALCULATED
KRM

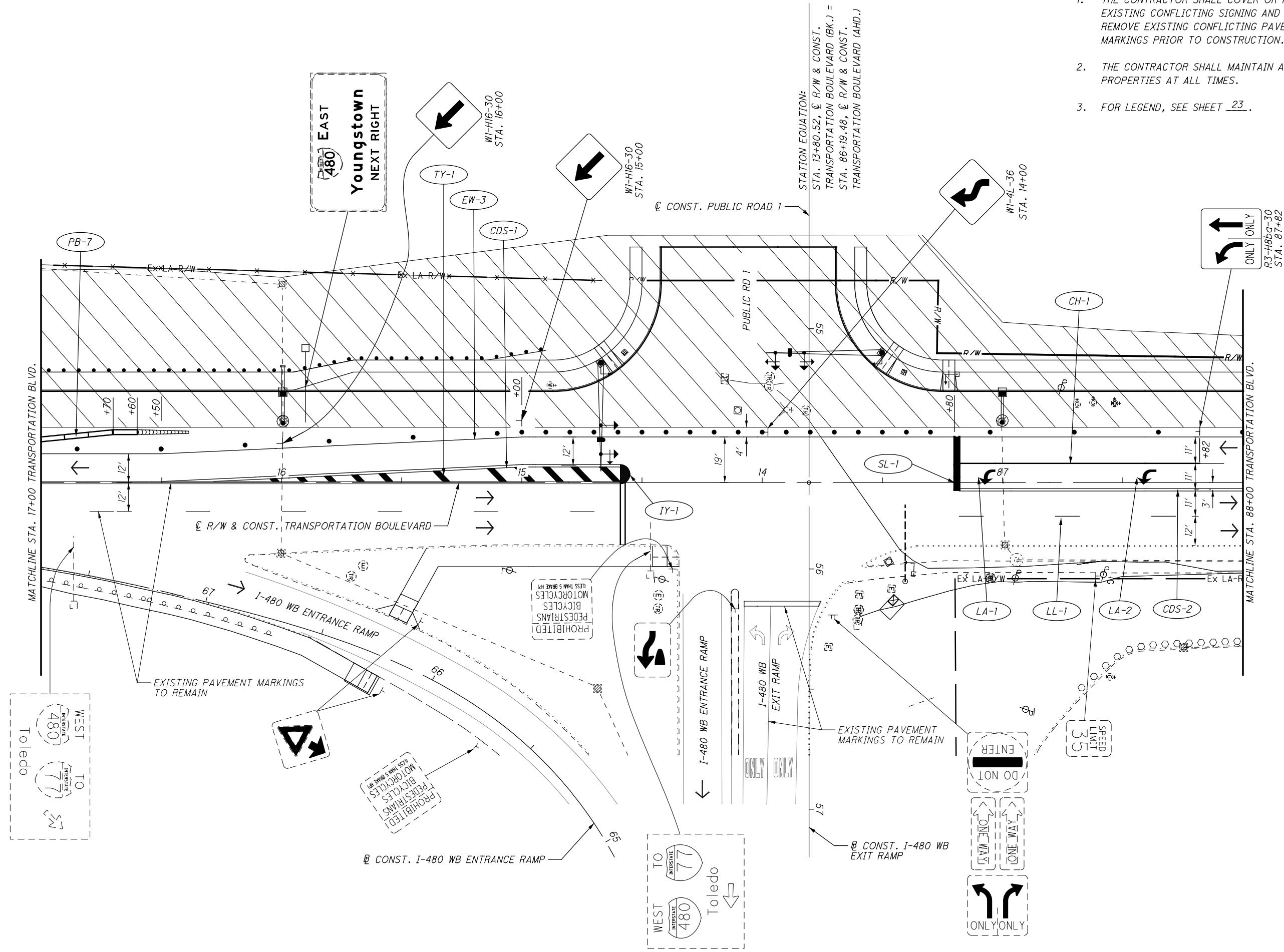
CHECKED
RAK

0 10 20 40
HORIZONTAL
SCALE IN FEET

**CUY-480/
TRANSPORTATION BLVD.**

MAINTENANCE OF TRAFFIC PLAN - PHASE 1

TRANSPORTATION BLVD. - STA. 22+00 TO STA. 17+00



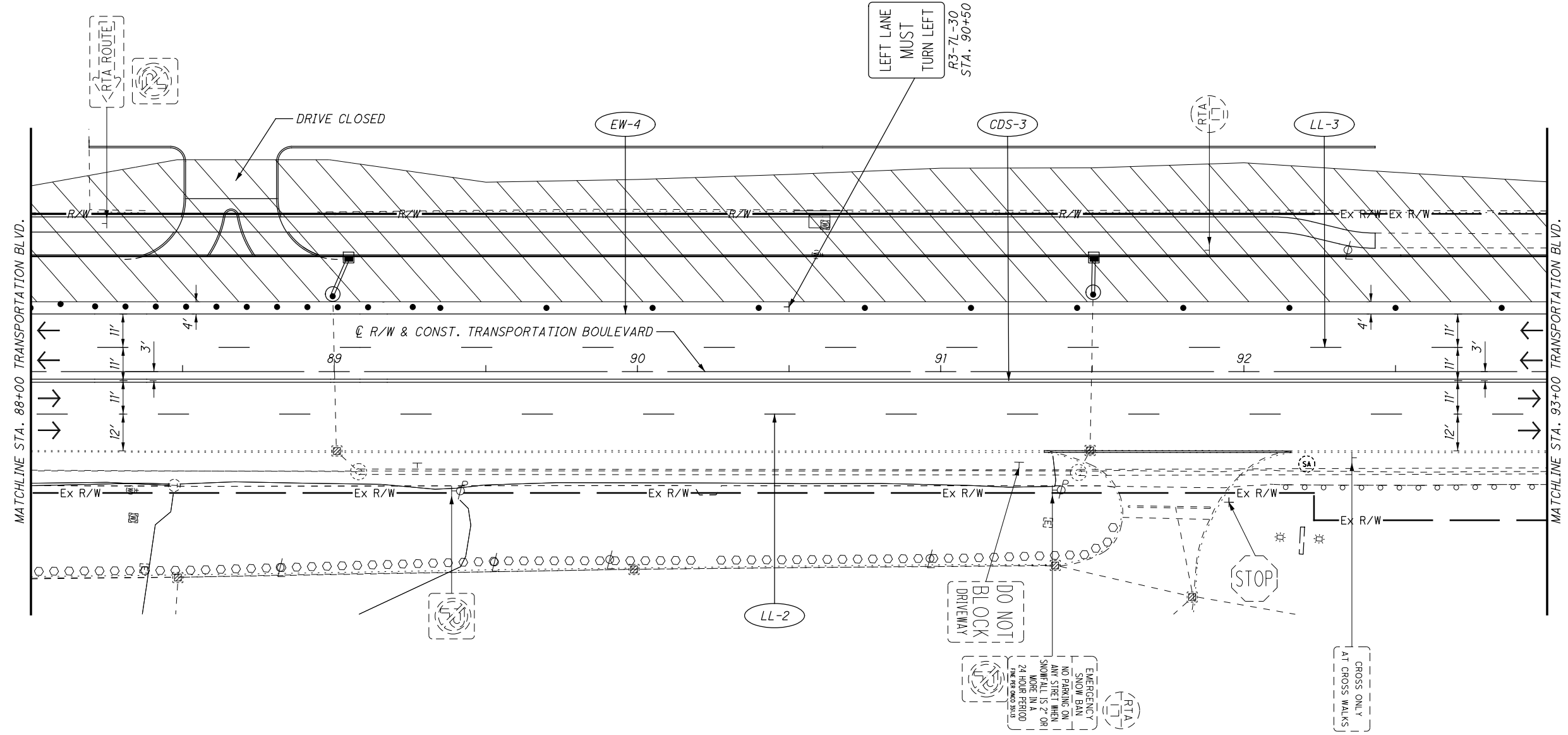
- NOTES:**
1. THE CONTRACTOR SHALL COVER OR REMOVE EXISTING CONFLICTING SIGNING AND COVER OR REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS PRIOR TO CONSTRUCTION.
 2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
 3. FOR LEGEND, SEE SHEET 23.

CALCULATED
KRM

CHECKED
RAK

0 20 40
10
HORIZONTAL
SCALE IN FEET

**CUY-480/
TRANSPORTATION BLVD.
MAINTENANCE OF TRAFFIC PLAN - PHASE 1
TRANSPORTATION BLVD. - STA. 17+00 TO STA. 88+00**



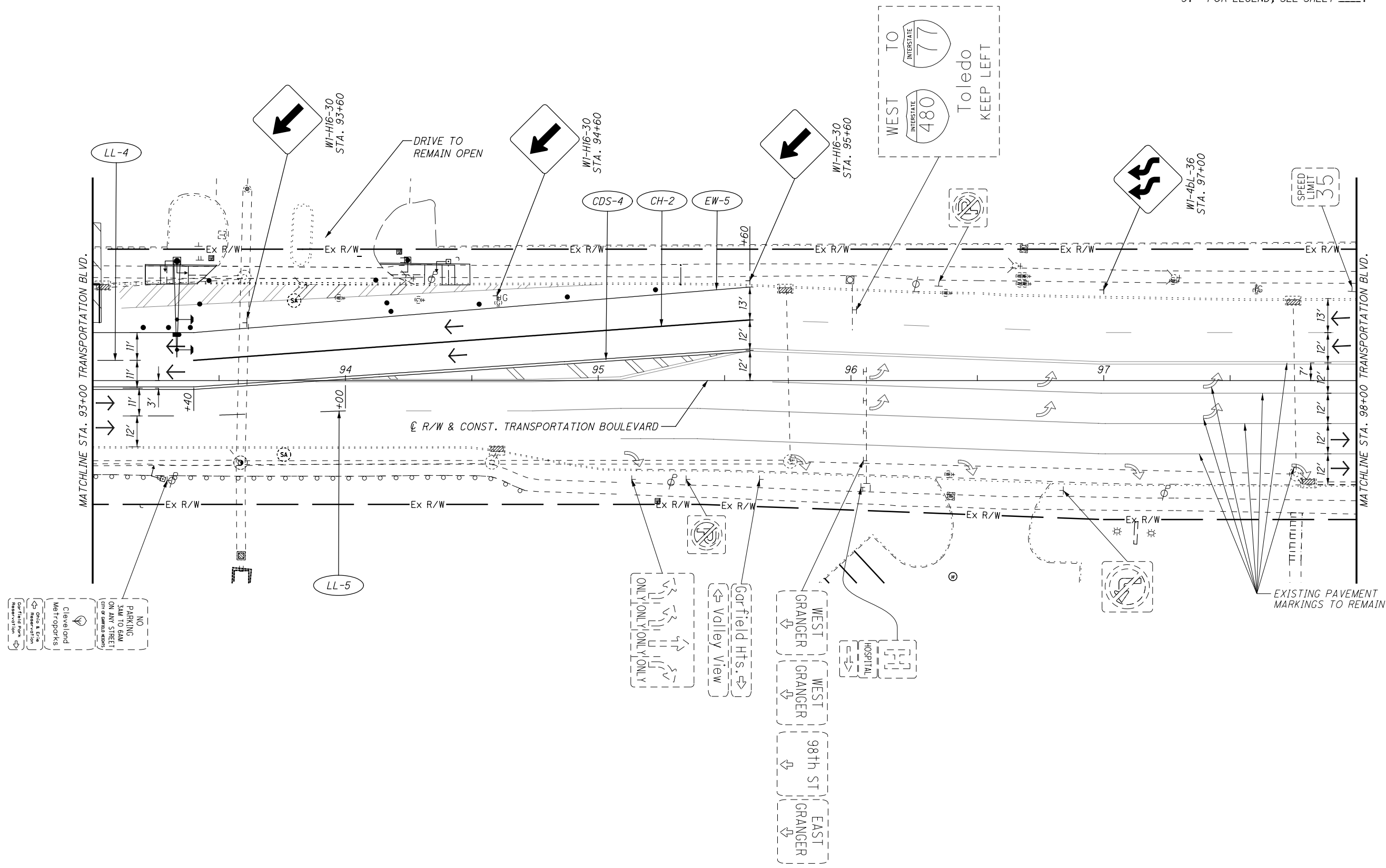
NOTES:

1. THE CONTRACTOR SHALL COVER OR REMOVE EXISTING CONFLICTING SIGNING AND COVER OR REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
3. FOR LEGEND, SEE SHEET 23.



CALCULATED
KRM
CHECKED
RAK

**CUY-480/
TRANSPORTATION BLVD.
MAINTENANCE OF TRAFFIC PLAN - PHASE 1
TRANSPORTATION BLVD. - STA. 88+00 TO STA. 93+00**



- NOTES:**
1. THE CONTRACTOR SHALL COVER OR REMOVE EXISTING CONFLICTING SIGNING AND COVER OR REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS PRIOR TO CONSTRUCTION.
 2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
 3. FOR LEGEND, SEE SHEET 23.

CALCULATED
KRM

CHECKED
RAK

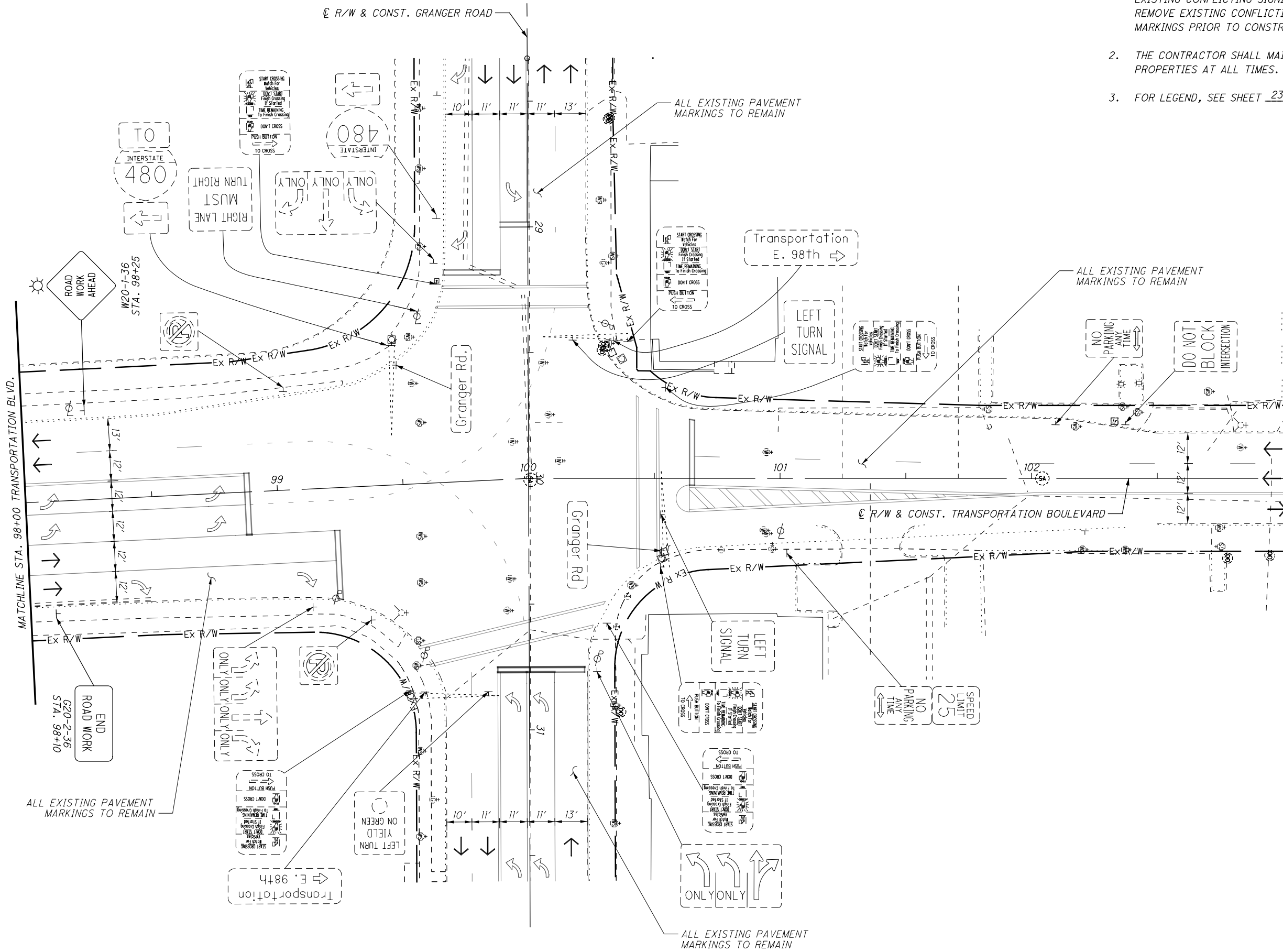
0 10 20 30
HORIZONTAL SCALE IN FEET

N

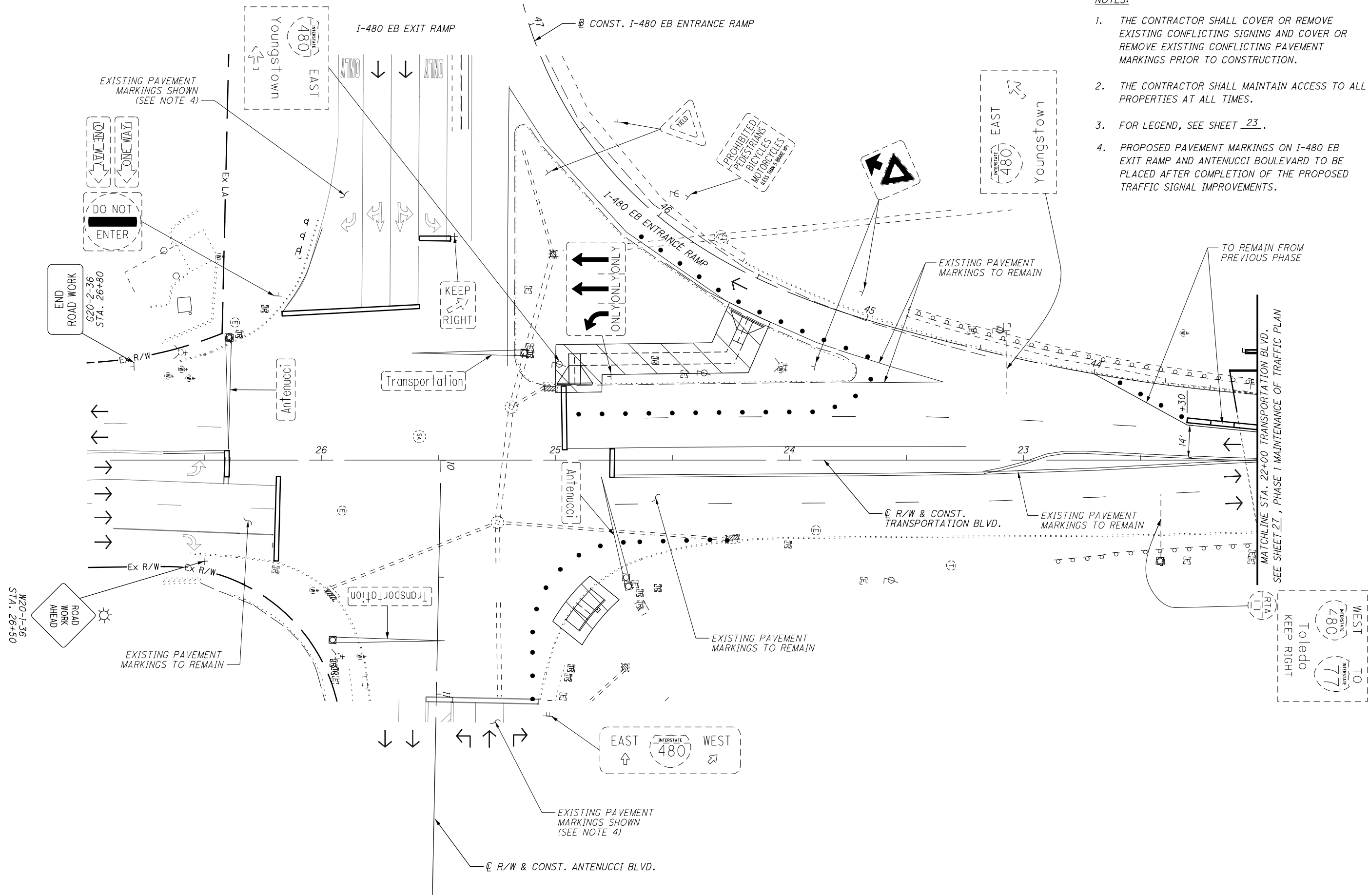
**CUY-480/
TRANSPORTATION BLVD.**

MAINTENANCE OF TRAFFIC PLAN - PHASE 1

TRANSPORTATION BLVD. - STA. 93+00 TO STA. 98+00



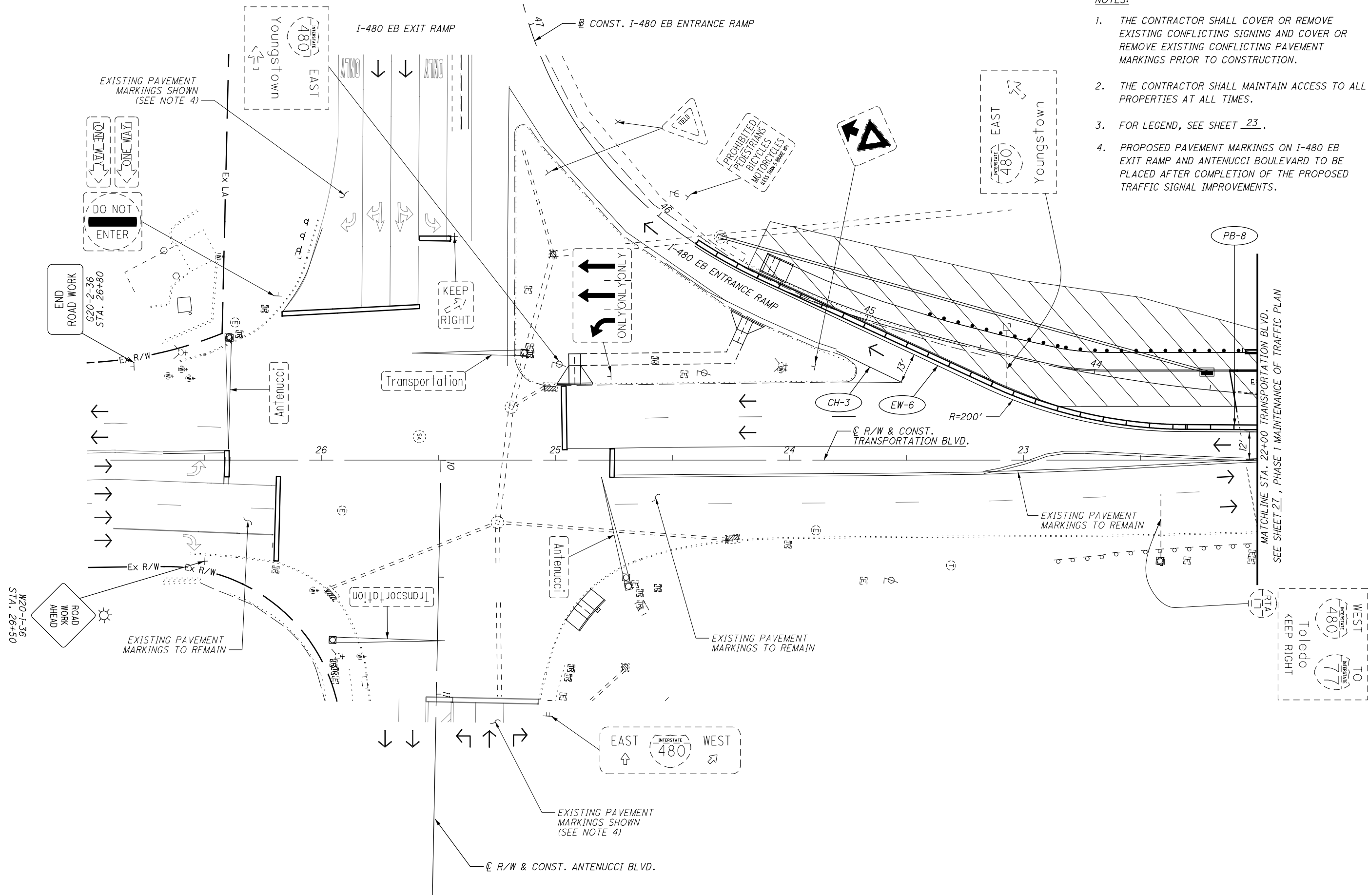
- NOTES:**
1. THE CONTRACTOR SHALL COVER OR REMOVE EXISTING CONFLICTING SIGNING AND COVER OR REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS PRIOR TO CONSTRUCTION.
 2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
 3. FOR LEGEND, SEE SHEET 23.



- NOTES:**
1. THE CONTRACTOR SHALL COVER OR REMOVE EXISTING CONFLICTING SIGNING AND COVER OR REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS PRIOR TO CONSTRUCTION.
 2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
 3. FOR LEGEND, SEE SHEET 23.
 4. PROPOSED PAVEMENT MARKINGS ON I-480 EB EXIT RAMP AND ANTENUCCI BOULEVARD TO BE PLACED AFTER COMPLETION OF THE PROPOSED TRAFFIC SIGNAL IMPROVEMENTS.

CALCULATED KRM
 CHECKED RAK

CUY-480/ TRANSPORTATION BLVD. - PHASE 1A MAINTENANCE OF TRAFFIC PLAN - PHASE 1A TRANSPORTATION BLVD. - BEGIN TO STA. 22+00



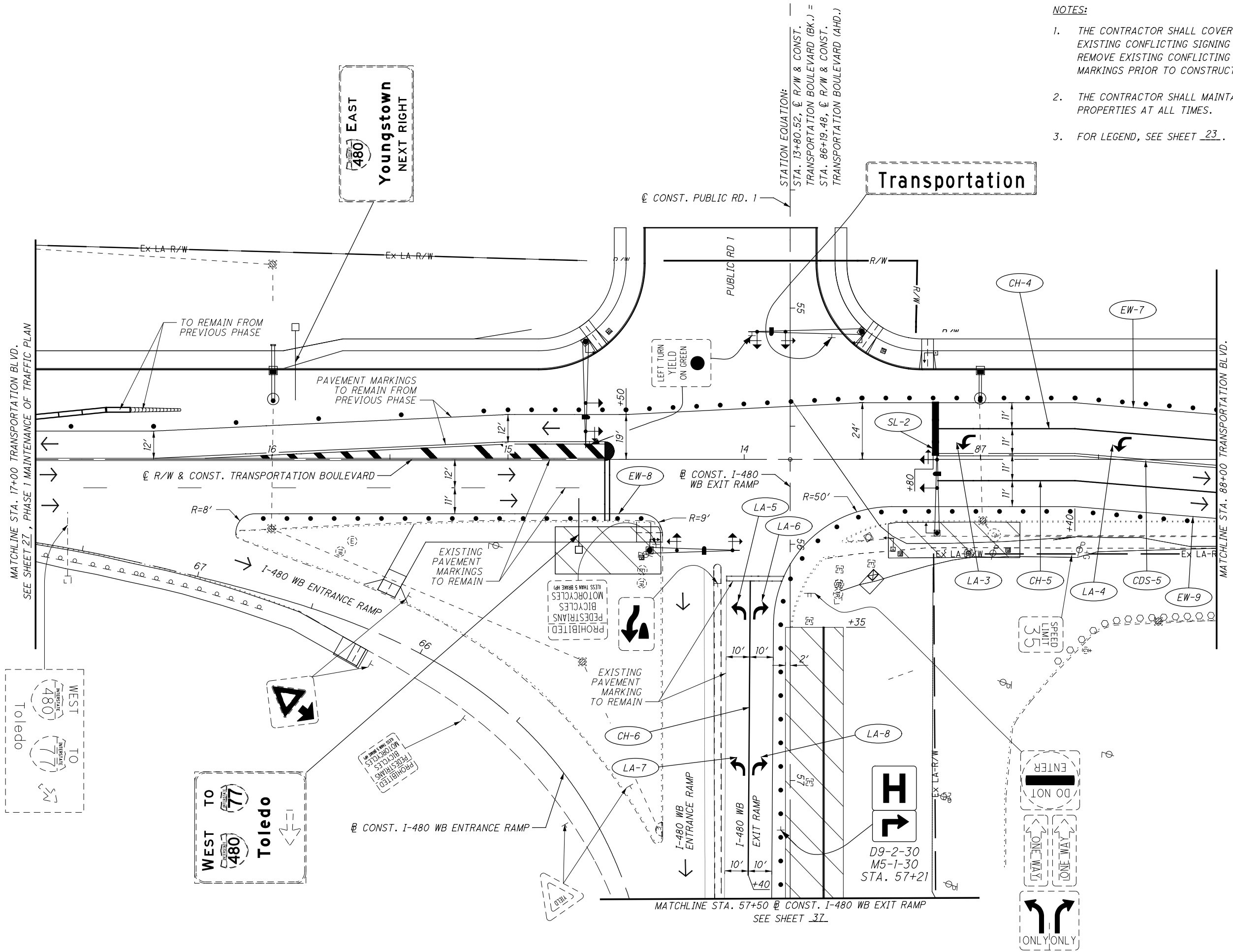
- NOTES:**
1. THE CONTRACTOR SHALL COVER OR REMOVE EXISTING CONFLICTING SIGNING AND COVER OR REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS PRIOR TO CONSTRUCTION.
 2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
 3. FOR LEGEND, SEE SHEET 23.
 4. PROPOSED PAVEMENT MARKINGS ON I-480 EB EXIT RAMP AND ANTENUCCI BOULEVARD TO BE PLACED AFTER COMPLETION OF THE PROPOSED TRAFFIC SIGNAL IMPROVEMENTS.

CALCULATED KRM
 CHECKED RAK

0 20 40
 10 HORIZONTAL SCALE IN FEET

WEST
 Interstate 480
 Toledo
 KEEP RIGHT
 TO
 Interstate 77

CUY-480/ TRANSPORTATION BLVD. - PHASE 1B
MAINTENANCE OF TRAFFIC PLAN - PHASE 1B
TRANSPORTATION BLVD. - BEGIN TO STA. 22+00

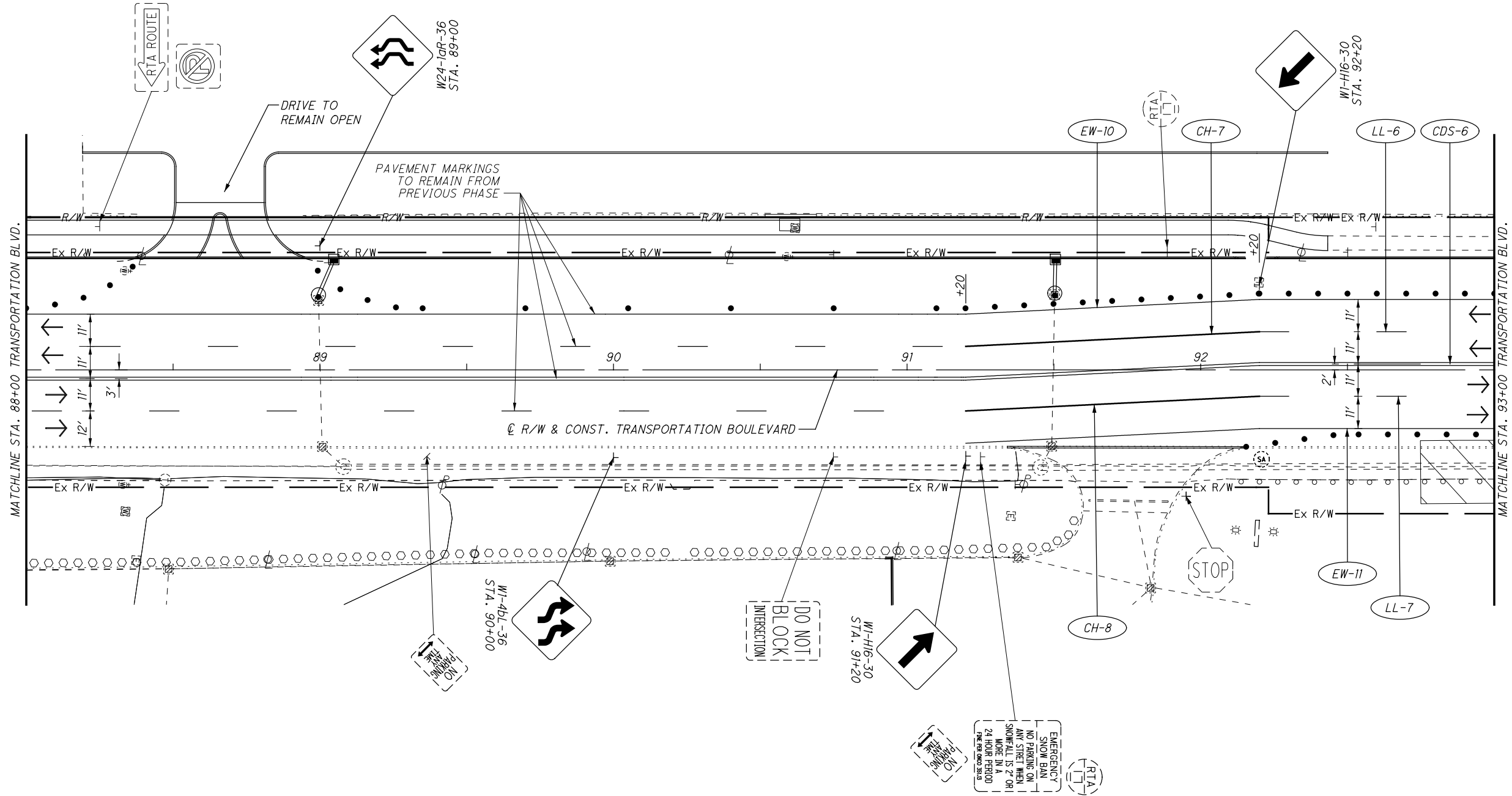


- NOTES:**
1. THE CONTRACTOR SHALL COVER OR REMOVE EXISTING CONFLICTING SIGNING AND COVER OR REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS PRIOR TO CONSTRUCTION.
 2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
 3. FOR LEGEND, SEE SHEET 23.

CALCULATED
KRM
CHECKED
RAK

0 20 40
10
HORIZONTAL
SCALE IN FEET

**CUY-480/
TRANSPORTATION BLVD.
MAINTENANCE OF TRAFFIC PLAN - PHASE 2
TRANSPORTATION BLVD. - STA. 17+00 TO STA. 88+00**



- NOTES:**
1. THE CONTRACTOR SHALL COVER OR REMOVE EXISTING CONFLICTING SIGNING AND COVER OR REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS PRIOR TO CONSTRUCTION.
 2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
 3. FOR LEGEND, SEE SHEET 23.

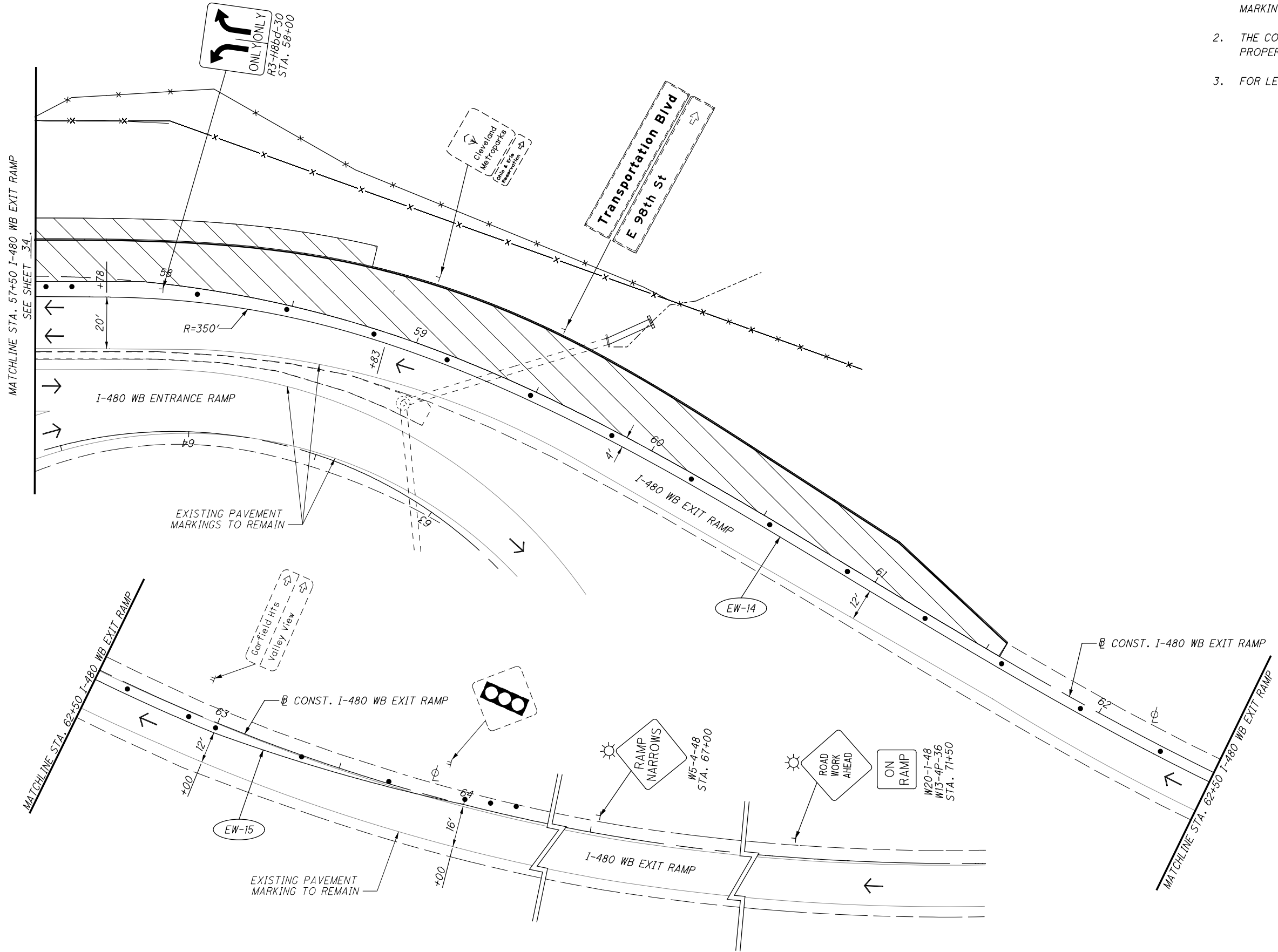
CALCULATED
KRM

CHECKED
RAK

0 10 20 40
HORIZONTAL
SCALE IN FEET

**CUY-480/
TRANSPORTATION BLVD.
MAINTENANCE OF TRAFFIC PLAN - PHASE 2
TRANSPORTATION BLVD. - STA. 88+00 TO STA. 93+00**

\\AKRINDA\DATA\2016\2016051\CUY\B0974\NOT\SHEETS\B0974\HP030.DGN
 2/1/2017
 11:51:43 PM
 G00TV81STD_USER



- NOTES:**
1. THE CONTRACTOR SHALL COVER OR REMOVE EXISTING CONFLICTING SIGNING AND COVER OR REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS PRIOR TO CONSTRUCTION.
 2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
 3. FOR LEGEND, SEE SHEET 23.

CALCULATED
KRM

CHECKED
RAK

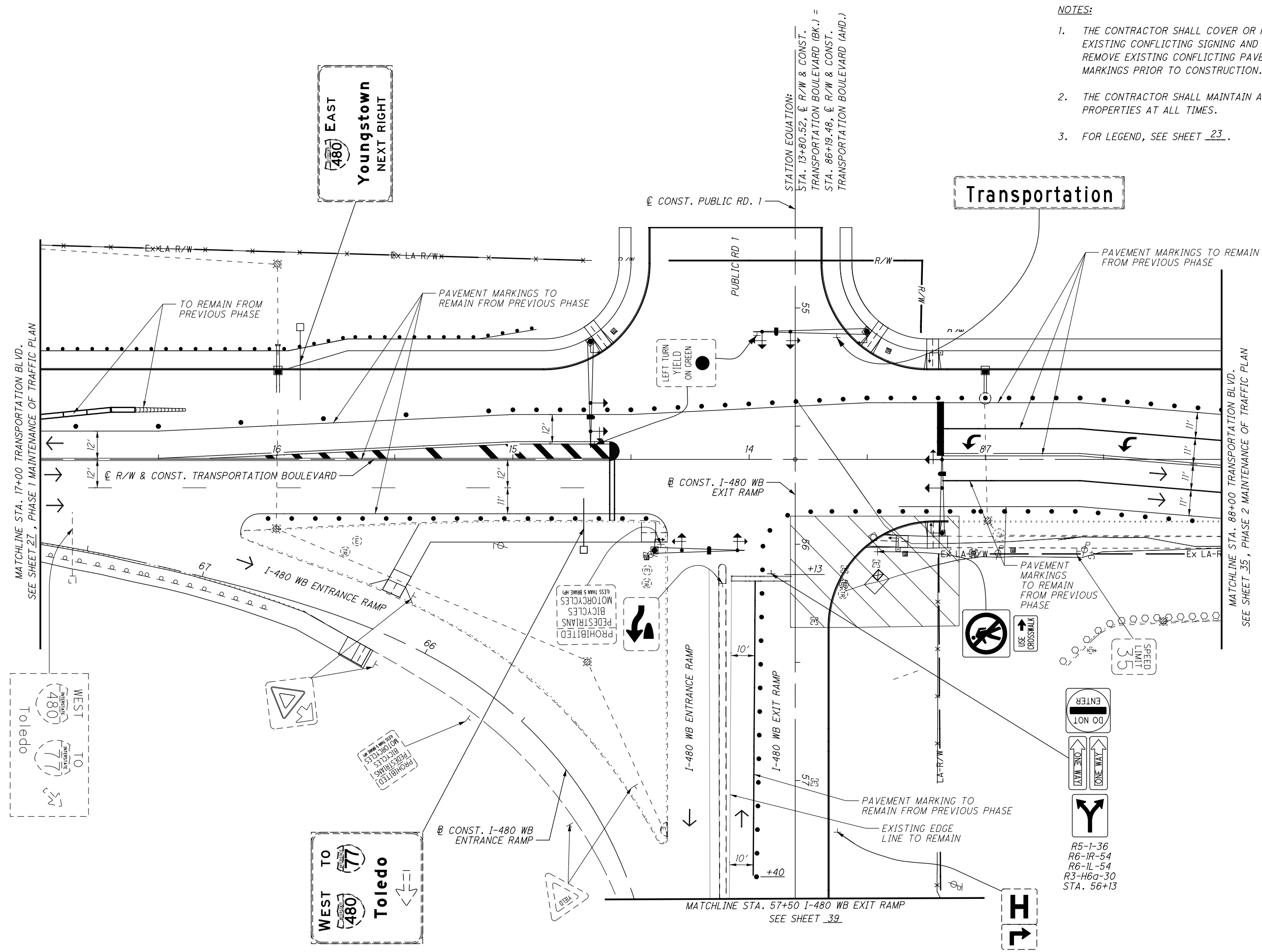
0 10 20 40
HORIZONTAL
SCALE IN FEET

**CUY-480/
TRANSPORTATION BLVD.**

MAINTENANCE OF TRAFFIC PLAN - PHASE 2

I-480 WB EXIT RAMP - STA. 57+50 TO END

\\AKRNGA\DATA\2016\2016051\CUVA\B0974\NOTV\SHEETS\B0974HP040.DGN
 2/1/2017 11:56:13 AM
 G00TV81STD_USER

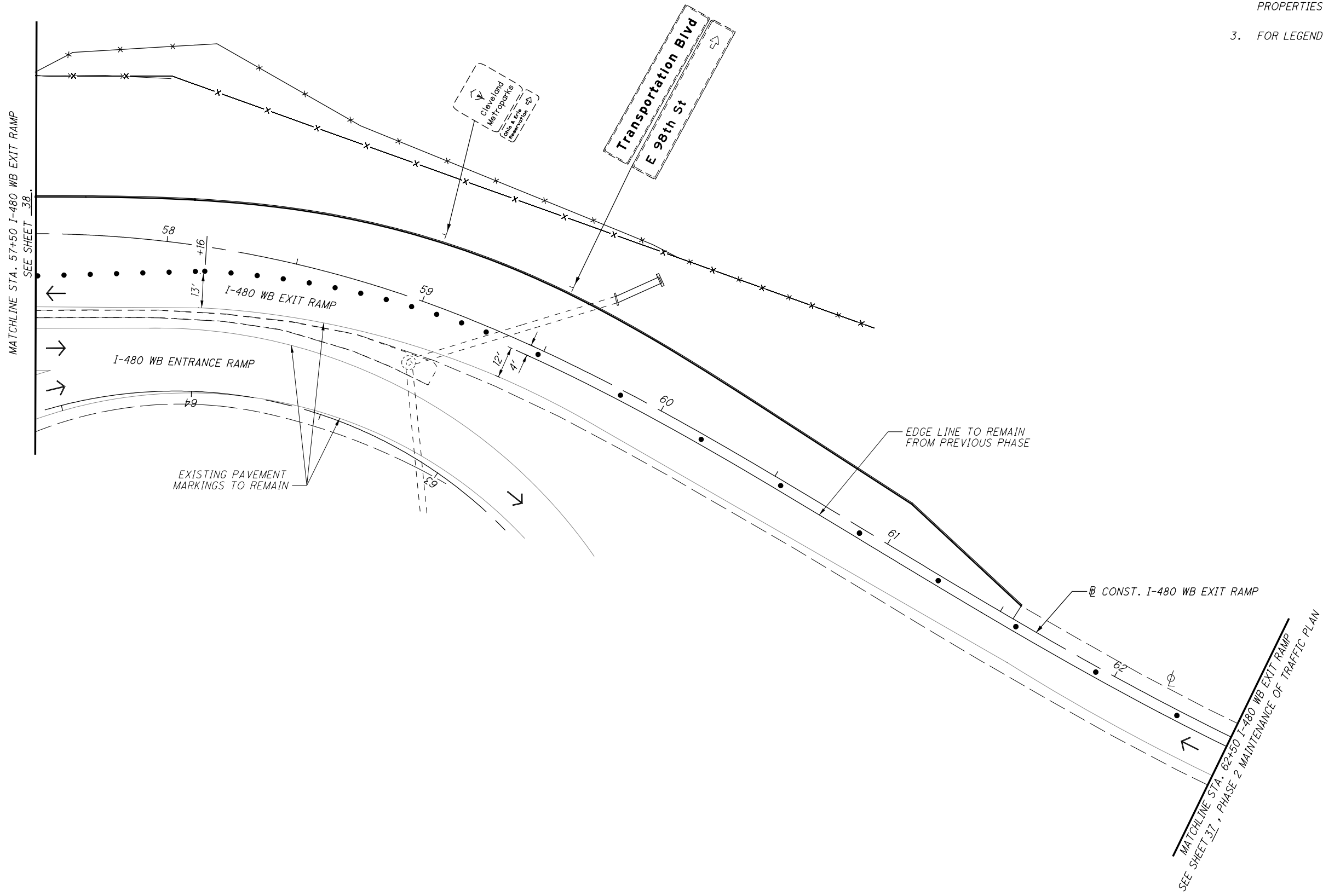


- NOTES:**
1. THE CONTRACTOR SHALL COVER OR REMOVE EXISTING CONFLICTING SIGNING AND COVER OR REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS PRIOR TO CONSTRUCTION.
 2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
 3. FOR LEGEND, SEE SHEET 23.

CALCULATED
KRM
CHECKED
RAK

0 10 20 40
HORIZONTAL
SCALE IN FEET

**CUY-480/
TRANSPORTATION BLVD.
MAINTENANCE OF TRAFFIC PLAN - PHASE 2A
TRANSPORTATION BLVD. - STA. 17+00 TO STA. 88+00**



- NOTES:**
1. THE CONTRACTOR SHALL COVER OR REMOVE EXISTING CONFLICTING SIGNING AND COVER OR REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS PRIOR TO CONSTRUCTION.
 2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
 3. FOR LEGEND, SEE SHEET 23.

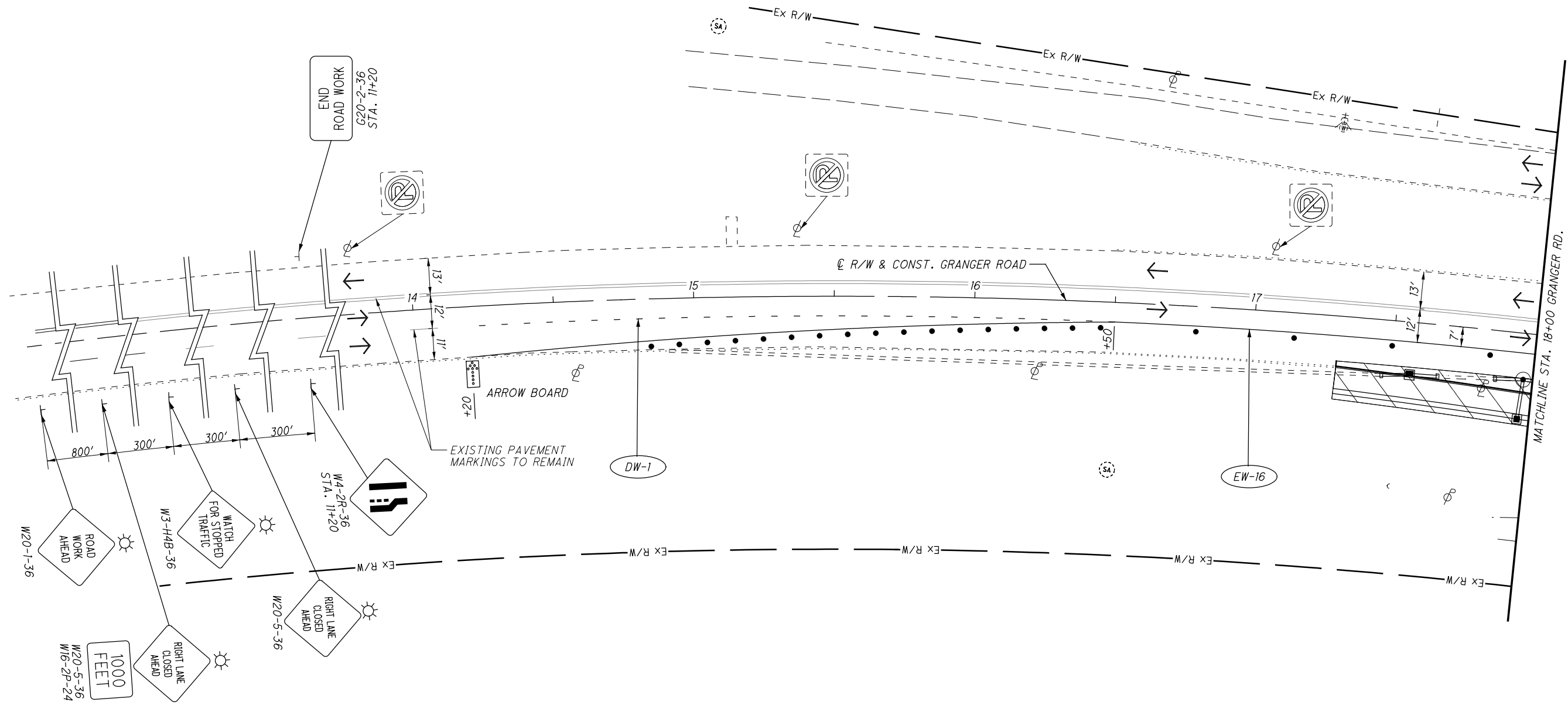
CALCULATED
KRM

CHECKED
RAK

0 20 40
HORIZONTAL
SCALE IN FEET

**CUY-480/
TRANSPORTATION BLVD.**

**MAINTENANCE OF TRAFFIC PLAN - PHASE 2A
I-480 WB EXIT RAMP - STA. 57+50 TO END**



- NOTES:**
1. THE CONTRACTOR SHALL COVER OR REMOVE EXISTING CONFLICTING SIGNING AND COVER OR REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS PRIOR TO CONSTRUCTION.
 2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
 3. FOR LEGEND, SEE SHEET 23.

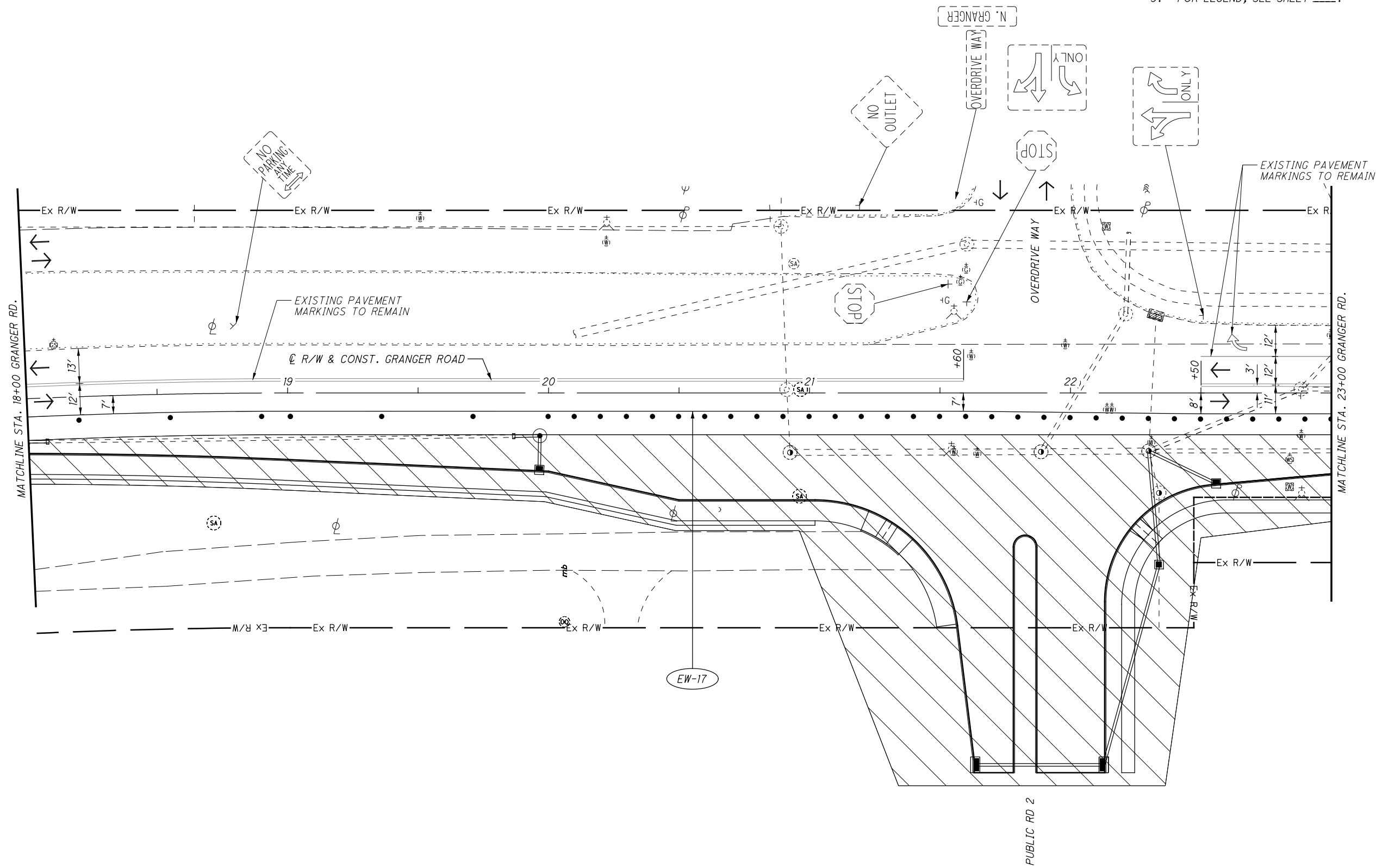
CALCULATED
KRM

CHECKED
RAK

0 10 20 40
HORIZONTAL
SCALE IN FEET

**CUY-480/
TRANSPORTATION BLVD.**

**MAINTENANCE OF TRAFFIC PLAN - PHASE 3
GRANGER RD. - BEGIN TO STA. 18+00**



NOTES:

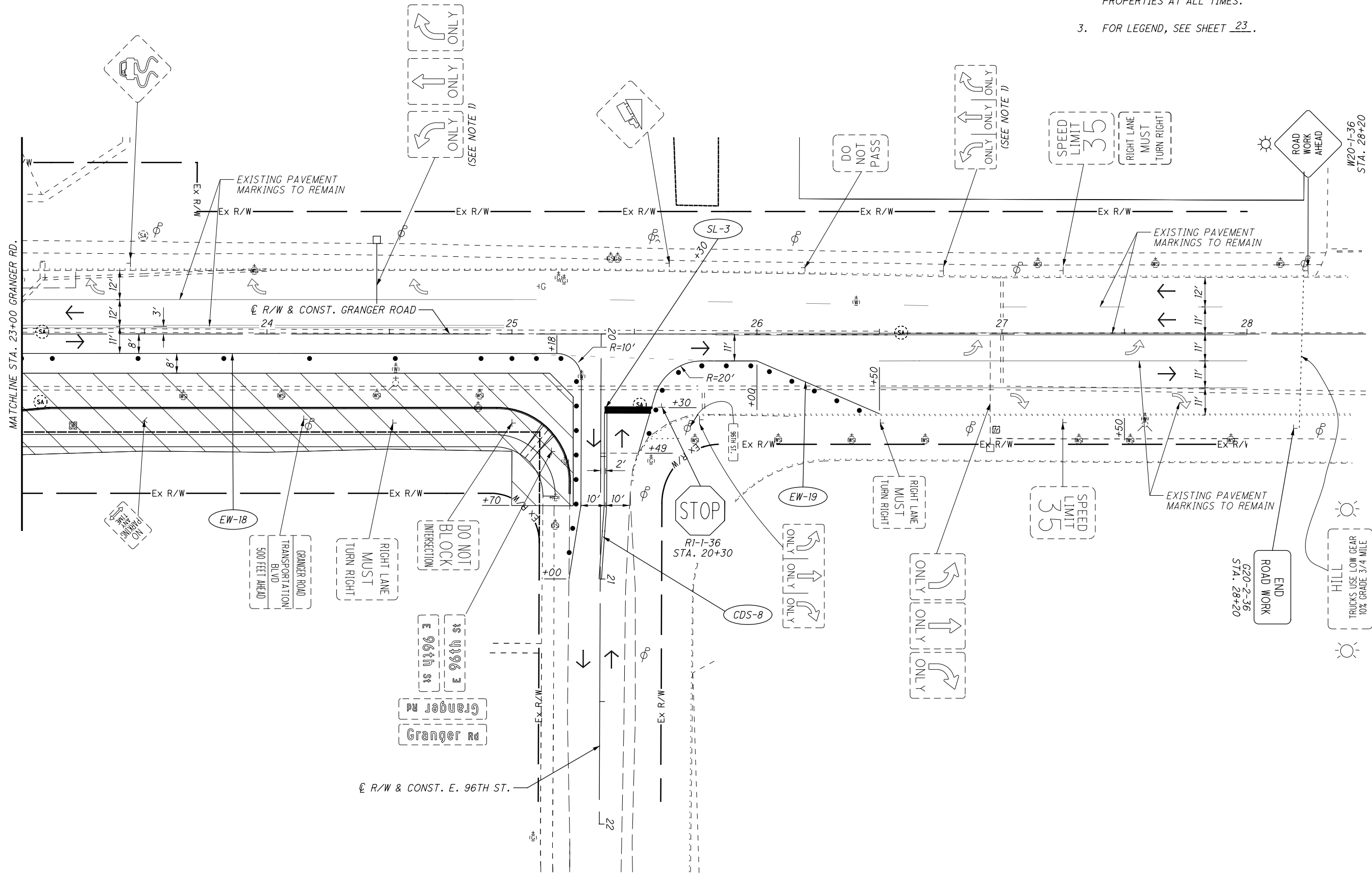
1. THE CONTRACTOR SHALL COVER OR REMOVE EXISTING CONFLICTING SIGNING AND COVER OR REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
3. FOR LEGEND, SEE SHEET 23.

CALCULATED	KRM
CHECKED	RAK

0 10 20 40
 HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC PLAN - PHASE 3
GRANGER RD. - STA. 18+00 TO STA. 23+00

CUY-480/
TRANSPORTATION BLVD.



NOTES:

1. THE CONTRACTOR SHALL COVER OR REMOVE EXISTING CONFLICTING SIGNING AND COVER OR REMOVE EXISTING CONFLICTING PAVEMENT MARKINGS PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.
3. FOR LEGEND, SEE SHEET 23.



CALCULATED	KRM
CHECKED	RAK

MAINTENANCE OF TRAFFIC PLAN - PHASE 3
GRANGER RD. - STA. 23+00 TO END

CUY-480/
TRANSPORTATION BLVD.

SHEET NUMBER											PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
11	12	13	48	50	54	55	56	57	01/IMS/BR	02/IMS/PV	03/S>2/PV								
ROADWAY																			
LS											LS	201	11000	LS			CLEARING AND GRUBBING		
			2							1	1	202	20010	2	EACH		HEADWALL REMOVED		
			1745				393				2138	202	23000	2138	SY		PAVEMENT REMOVED		
					2337						2337	202	23500	2337	SY		WEARING COURSE REMOVED		
			3043								3043	202	30000	3043	SF		WALK REMOVED		
							791				791	202	32000	791	FT		CURB REMOVED		
			164								164	202	35100	164	FT		PIPE REMOVED, 24" AND UNDER		
			8								8	202	35200	8	FT		PIPE REMOVED, OVER 24"		
			747								747	202	38000	747	FT		GUARDRAIL REMOVED		
			1								1	202	58000	1	EACH		MANHOLE REMOVED		
											12	202	58100	12	EACH		CATCH BASIN REMOVED		
			1103							480	623	202	75000	1103	FT		FENCE REMOVED		
			14								14	202	98100	14	EACH		REMOVAL, MISC: BOLLARD	11	
				14805							14805	203	10000	14805	CY		EXCAVATION		
				11627							11627	203	20000	11627	CY		EMBANKMENT		
					4169	3220	2220				1356	8253	204	10000	9609	SY	SUBGRADE COMPACTION		
		115		1252								1367	204	13000	1367	CY	EXCAVATION OF SUBGRADE		
		115		1252								1367	204	30011	1367	CY	GRANULAR MATERIAL, TYPE B, AS PER PLAN	13	
		4			3	2	2			1	10	204	45000	11	hour		PROOF ROLLING		
			488								488	606	15050	488	FT		GUARDRAIL, TYPE MGS		
			3								3	606	26150	3	EACH		ANCHOR ASSEMBLY, MGS TYPE E	11	
			1								1	606	26550	1	EACH		ANCHOR ASSEMBLY, MGS TYPE T		
			3								3	606	35002	3	EACH		MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1		
			1								1	606	35102	1	EACH		MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2		
											489	303	607	20000	792	FT	FENCE, TYPE CL		
			18402								18402	608	10000	18402	SF		4" CONCRETE WALK		
			2636								2636	608	52000	2636	SF		CURB RAMP		
					1818		1120				594	2344	609	16000	2938	FT	CURB, TYPE 2-B		
						159						159	609	22000	159	FT	CURB, TYPE 3-B		
						1883						1883	609	26000	1883	FT	CURB, TYPE 6		
						165						165	609	96000	165	SY	MEDIAN, MISC.: GRASS PAVERS	11	
			2								2	622	24840	2	EACH		CONCRETE BARRIER END SECTION, TYPE B		
			52								52	622	90000	52	FT		BARRIER, MISC.: CONCRETE BARRIER, TYPE B	11	
			68								68	SPECIAL	69050600	68	EACH		BOLLARD	11	
				3601							3601	861	10000	3601	SY		GEOGRID FOR SUBGRADE STABILIZATION		
EROSION CONTROL																			
	4		2								6	601	21050	6	SY		TIED CONCRETE BLOCK MAT, TYPE 1		
			22								22	601	32200	22	CY		ROCK CHANNEL PROTECTION, TYPE C WITH FILTER		
				2							2	659	00100	2	EACH		SOIL ANALYSIS TEST		
				1753							1753	659	00300	1753	CY		TOPSOIL		
				15797							15797	659	10000	15797	SY		SEEDING AND MULCHING		
				790							790	659	14000	790	SY		REPAIR SEEDING AND MULCHING		
				790							790	659	15000	790	SY		INTER-SEEDING		
				2.20							2.2	659	20000	2.2	TON		COMMERCIAL FERTILIZER		
				3.26							3.26	659	31000	3.26	ACRE		LIME		
				88							88	659	35000	88	MGAL		WATER		
								LS			LS	832	15000	LS			STORM WATER POLLUTION PREVENTION PLAN		
								30000			30000	832	30000	30000	EACH		EROSION CONTROL		
DRAINAGE																			
			2							0.6	1.4	602	20000	2	CY		CONCRETE MASONRY		
	50		696								746	605	13410	746	FT		6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 707.31		
			3173								3173	605	14020	3173	FT		6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 707.31		
	20										20	605	31100	20	FT		AGGREGATE DRAINS		
			275								275	611	00510	275	FT		6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS		
	50		20								70	611	00900	70	FT		6" CONDUIT, TYPE B		
	50		92								142	611	01100	142	FT		6" CONDUIT, TYPE C		
	50										50	611	01500	50	FT		6" CONDUIT, TYPE F		
	50										50	611	01800	50	FT		8" CONDUIT, TYPE B		
	50										50	611	02000	50	FT		8" CONDUIT, TYPE C		

GENERAL SUMMARY

CUY-480/
TRANSPORTATION BLVD.

\\AKRNGA\DATA\2016\2016051\CUY-480\ROADWAY\ROADWAY\SHEETS\9897465801.DGN
 5/24/2017 7:07:31 AM
 GDDTV81STD_USER

SHEET+A1:Q56 NUMBER							PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
128	159	160	161			01/IMS/BR	02/IMS/PV	03/S>2/PV							
													TRAFFIC CONTROL CONTINUED		
									17	646	50000	17	EACH	REMOVAL OF PAVEMENT MARKING	
									1551	646	50100	1551	FT	REMOVAL OF PAVEMENT MARKING	
									22	646	50200	22	SF	REMOVAL OF PAVEMENT MARKING	
									0.28	646	50300	0.28	MILE	REMOVAL OF PAVEMENT MARKING	
													TRAFFIC SIGNALS		
									335	625	25400	335	FT	CONDUIT, 2", 725.04	
									78	625	25500	78	FT	CONDUIT, 3", 725.04	
									56	625	25600	56	FT	CONDUIT, 4", 725.04	
									661	625	25902	661	FT	CONDUIT, JACKED OR DRILLED, 725.04, 4"	
									484	625	25910	484	FT	CONDUIT CLEANED AND CABLES REMOVED	
									349	625	29000	349	FT	TRENCH	
									39	625	29500	39	FT	TRENCH IN PAVED AREA, TYPE A	
									7	625	30700	7	EACH	PULL BOX, 725.08, 18"	
									2	625	30706	2	EACH	PULL BOX, 725.08, 24"	
									15	625	32000	15	EACH	GROUND ROD	
									388	625	36000	388	FT	PLASTIC CAUTION TAPE	
									7	632	04000	7	EACH	VEHICULAR SIGNAL HEAD, MISC.: VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE	160
									5	632	04000	5	EACH	VEHICULAR SIGNAL HEAD, MISC.: VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE	160
									10	632	05007	10	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	160
									6	632	05087	6	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	160
									16	632	20731	16	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	160
									28	632	25000	28	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
									16	632	25010	16	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD	
									16	632	26001	16	EACH	PEDESTRIAN PUSHBUTTON, AS PER PLAN	160
									3420	632	40700	3420	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
									1923	632	40900	1923	FT	SIGNAL CABLE, 9 CONDUCTOR, NO. 14 AWG	
									8	632	64010	8	EACH	SIGNAL SUPPORT FOUNDATION	
									7	632	64020	7	EACH	PEDESTAL FOUNDATION	
									105	632	68200	105	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG	
									407	632	69800	407	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG	
									2	632	70001	2	EACH	POWER SERVICE, AS PER PLAN	158
									2	632	70400	2	EACH	CONDUIT RISER, 2" DIAMETER	
									2	632	80203	2	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 2, AS PER PLAN	160
									2	632	80403	2	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 4, AS PER PLAN	160
									2	632	80503	2	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 11, AS PER PLAN	160
									2	632	80603	2	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 12, AS PER PLAN	160
									7	632	89900	7	EACH	PEDESTAL, 8', TRANSFORMER BASE	
									2	632	90101	2	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	158
		8							8	632	90400	8	EACH	SIGNALIZATION, MISC.: TEST HOLE PERFORMED	159
									2	633	01605	2	EACH	CONTROLLER UNIT, TYPE 2070E WITH 2070-1C CPU, AS PER PLAN	159
			2						3	633	45000	5	EACH	GPS (GLOBAL POSITIONING SYSTEM) CLOCK ASSEMBLY	
									2	633	65520	2	EACH	CABINET, TYPE 332	
									2	633	67100	2	EACH	CABINET FOUNDATION	
									2	633	67200	2	EACH	CONTROLLER WORK PAD	
									2	633	67301	2	EACH	PREEMPTION, AS PER PLAN	159
									8	633	67310	8	EACH	PREEMPTION RECEIVING UNIT	
									1539	633	67320	1539	FT	PREEMPTION DETECTOR CABLE	
									2	633	67350	2	EACH	PREEMPTION PHASE SELECTOR	
									8	633	67401	8	EACH	PREEMPTION CONFIRMATION LIGHT, AS PER PLAN	159
									1	809	69001	1	EACH	ADVANCE RADAR DETECTION, AS PER PLAN	160
									10	809	69101	10	EACH	STOP-BAR RADAR DETECTION, AS PER PLAN	160
													ALTERNATE BID		
									2	633	01605	2	EACH	CONTROLLER UNIT, TYPE 2070E WITH 2070-1C CPU, AS PER PLAN - ALTERNATE BID	159

GENERAL SUMMARY

**CUY-480/
TRANSPORTATION BLVD.**

\AKRNDIA\DATA\2016\201609\1\CUY\89974\ROADWAY\SHEETS\89974\058205.DGN
5/24/2017 7:57:32 AM
D:\DVT\81\STD_USER

SHEET NUMBER									PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
15	16	17	19	20	190	01/IMS/BR	02/IMS/PV	03/S>2/PV									
	300							300	614	11110	300	HR	MAINTENANCE OF TRAFFIC				
		4						4	614	11500	4	MNTH	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE				
			270					270	614	11630	270	FT	WORKSITE TRAFFIC SUPERVISOR				
			5					5	614	12348	5	EACH	INCREASED BARRIER DELINEATION				
12								12	614	12500	12	EACH	WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL) 24"				
													REPLACEMENT SIGN				
15								15	614	13000	15	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC				
			41					41	614	13310	41	EACH	BARRIER REFLECTOR, TYPE 1, ONE-WAY				
			16					16	614	13310	16	EACH	BARRIER REFLECTOR, TYPE 1, BI-DIRECTIONAL				
			41					41	614	13350	41	EACH	OBJECT MARKER, ONE WAY				
			16					16	614	13360	16	EACH	OBJECT MARKER, TWO WAY				
	8							8	614	18601	8	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN				
			0.24	0.09				0.33	614	20000	0.33	MILE	WORK ZONE LANE LINE, CLASS I				
			0.20	0.11				0.31	614	21000	0.31	MILE	WORK ZONE CENTER LINE, CLASS I				
			0.40	0.65			0.12	0.93	614	22000	1.05	MILE	WORK ZONE EDGE LINE, CLASS I				
			349	560			124	785	614	23000	909	FT	WORK ZONE CHANNELIZING LINE, CLASS I				
													WORK ZONE DOTTED LINE, CLASS I				
					230				230	614	24000	230	FT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I			
			64					64	614	25000	64	FT	WORK ZONE STOP LINE, CLASS I				
			22	41				63	614	26000	63	FT	WORK ZONE ARROW, CLASS I				
			2	6			4	4	614	30000	8	EACH	WORK ZONE ISLAND MARKING, CLASS I				
			25					25	614	32700	25	SF	WORK ZONE ISLAND MARKING, CLASS I				
120								120	616	10000	120	MGAL	WATER				
													STRUCTURES				
						LS	LS	202	622	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				
						34	34	202	622	22901	34	SY	APPROACH SLAB REMOVED, AS PER PLAN				
						LS	LS	503	622	11100	LS		COFFERDAMS AND EXCAVATION BRACING				
						LS	LS	503	622	21301	LS		UNCLASSIFIED EXCAVATION, AS PER PLAN				
						127	127	503	622	31120	127	CY	SHALE EXCAVATION				
						155,832	155832	509	622	10000	155832	LB	EPOXY COATED REINFORCING STEEL				
						100	100	509	622	20001	100	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				
						1,502	1502	510	622	10000	1502	EA	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT				
						506	506	511	622	34446	506	CY	CLASS QC2 CONCRETE WITH QC/QC, BRIDGE DECK				
						41	41	511	622	34450	41	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)				
						61	61	511	622	42010	61	CY	CLASS QC1 CONCRETE, PIER ABOVE FOOTINGS				
						76	76	511	622	43510	76	CY	CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING				
						52	52	511	622	46510	52	CY	CLASS QC1 CONCRETE, FOOTING				
						400	400	512	622	10050	400	SY	SEARLING OF CONCRETE SURFACES (NON-EPOXY)				
						620	620	512	622	10100	620	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)				
						10	10	512	622	10300	10	SY	SEALING CONCRETE BRIDGE DECKS WITH HMMW RESIN				
						22	22	512	622	33000	22	SY	TYPE 2 WATERPROOFING				
						190,100	190100	513	622	10280	190100	LB	STRUCTURAL STEEL MEMBERS, LEVEL 4				
						1,000	1000	514	622	00051	1000	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN				
						9,750	9750	514	622	00060	9750	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT				
						9,750	9750	514	622	00066	9750	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT				
						9	9	514	622	10000	9	EA	FINAL INSPECTION REPAIR				
						54	54	516	622	12201	54	FT	STRUCTURAL STEEL EXPANSION JOINT, AS PER PLAN (SLIDING PLATE EXTENSION)				
						2	2	516	622	46000	2	EA	BEARING DEVICE, BOLSTER (B-275)				
						4	4	516	622	46200	4	EA	BEARING DEVICE, ROCKER (R-100)				
						6	6	516	622	46200	6	EA	BEARING DEVICE, ROCKER (R-250)				
						4	4	518	622	12201	4	EA	SCUPPER, INCLUDING SUPPORTS, AS PER PLAN				
						60	60	518	622	21200	60	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC				
						35	35	518	622	40001	35	FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN				
						50	50	518	622	40010	50	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS				
						40	40	526	622	15011	40	SY	REINFORCED CONCRETE APPROACH SLAB WITH QC/QA (T=13"), AS PER PLAN				
						50	50	526	622	25011	50	SY	REINFORCED CONCRETE APPROACH SLAB WITH QC/QA (T=15"), AS PER PLAN				
						436	436	607	622	39901	436	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN				
													INCIDENTALS				
								LS	624	10000	LS		CPM PROGRESS SCHEDULE				
								LS	624	11000	LS		MAINTAINING TRAFFIC				
								14	624	16020	14	MNTH	FIELD OFFICE, TYPE C				
								LS	624	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING				
								LS	624	10000	LS		MOBILIZATION				

GENERAL SUMMARY

CUY-480/
TRANSPORTATION BLVD

47
225

\\KARINBA\DATA\2816\281685\CUY\480\TRANSPORTATION BLVD\GENERAL SUMMARY\SHEET 15\SHEET 15.DWG 5/24/2017 7:57:33 AM 000TV81STD_USER

SHEET NO.	202	202	202	202	202	202	202	202	202	202	601	601	602	605	605	606	606	606	606	606	607	608	
	HEADWALL REMOVED EA	PAVEMENT REMOVED SY	WALK REMOVED SF	PIPE REMOVED, 24" AND UNDER FT	PIPE REMOVED, OVER 24" FT	GUARDRAIL REMOVED FT	MANHOLE REMOVED EA	CATCH BASIN REMOVED EA	FENCE REMOVED FT	REMOVAL, MISC: BOLLARD EA	TIED CONCRETE BLOCK MAT, TYPE 1 SY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER CY	CONCRETE MASONRY CY	6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 707.31 FT	6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 707.31 FT	GUARDRAIL, TYPE MGS FT	ANCHOR ASSEMBLY, MGS TYPE E EA	ANCHOR ASSEMBLY, MGS TYPE T EA	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1 EA	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2 EA	FENCE, TYPE CL FT	4" CONCRETE WALK SF	
51	2					747	1	12	1103	14						488	3	1	3	1	792		
52		1745	3043																				
52A																						18402	
52B											2	22											
52C				164	8								2										
53														696	3173								
TOTALS CARRIED TO GENERAL SUMMARY	2	1745	3043	164	8	747	1	12	1103	14	2	22	2	696	3173	488	3	1	3	1	792	18402	
SHEET NO.	608	611	611	611	611	611	611	611	611	611	611	611	611	611	611	611	611	611	611	611	622	622	SPECIAL
	CURB RAMP SF	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT	6" CONDUIT, TYPE B FT	6" CONDUIT, TYPE C FT	12" CONDUIT, TYPE B FT	12" CONDUIT, TYPE C FT	15" CONDUIT, TYPE B FT	15" CONDUIT, TYPE C FT	30" CONDUIT, TYPE C FT	48" CONDUIT, TYPE B FT	CATCH BASIN, NO. 3 EA	CATCH BASIN, NO. 3A EA	CATCH BASIN, NO. 6 EA	CATCH BASIN, NO. 2-2B EA	CATCH BASIN, NO. 2-5, AS PER PLAN EA	MANHOLE, NO. 3 EA	MANHOLE ADJUSTED TO GRADE EA	MANHOLE RECONSTRUCTED TO GRADE EA	MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN (SANITARY) EA	PRECAST REINFORCED CONCRETE OUTLET EA	CONCRETE BARRIER END SECTION, TYPE B EA	BARRIER, MISC.: CONCRETE BARRIER, TYPE B FT	BOLLARD EA
51																					2	52	68
52	2636																						
52A																							
52B																							
52C			20	92	506	383	27	48	95	8	9	7	1	4	1	11	1	4	3	1			
53		275																			2		
TOTALS CARRIED TO GENERAL SUMMARY	2636	275	20	92	506	383	27	48	95	8	9	7	1	4	1	11	1	4	3	3	2	52	68

SUBSUMMARY

**CUY-480/
TRANSPORTATION BLVD.**

48
225

CALCULATED
JMB
CHECKED

\\AKRINDA\DATA\2016\2016051\CUY\8974\6040\WATERWORKS\SHEETS\8974\6040\3.DGN
 5/24/2017 8:00:36 AM
 000TV81STD_USER

REF. NO.	SHEET NO.	STATION		SIDE	638	638	638	638	638	638	638	638	638	638	638	638	638	638	638		
		FROM	TO		16" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, PUSH-ON JOINTS AND FITTINGS	6" GATE VALVE	WATER WORK, MISC.: 16" PCCP TO DIP ADAPTOR/ CLOSURE PIECE	6" FIRE HYDRANT	FIRE HYDRANT REMOVED	VALVE BOX ADJUSTED TO GRADE	WATER WORK, MISC.: WATER METER ADJUSTED TO GRADE	WATER WORK MISC.: WATER MAIN REMOVED	WATER WORK, MISC.: EXTEND WATER SERVICE CONNECTION	FIRE HYDRANT EXTENDED AND ADJUSTED TO GRADE							
					FT	EA	EA	EA	EA	EA	EA	FT	EA	EA							
W-1	64		22+11.78	RT		1		1						1							
W-2	64		22+83.98	RT										1							
W-3	64		22+88.44	RT							1										
W-4	64		23+65.85	RT										1							
W-5	64		24+05.85	RT										1							
W-6	64		24+44.85	RT										1							
W-7	64		24+52.50	RT																	
W-8	64		24+86.85	RT										1							
W-9	59		17+88.08	RT			1							1							
W-9	59		15+82.00	RT			1														
W-9	59	18+10.00	15+82.00	RT	231																
W-10	60		16+07.98	RT		1		1													
W-11	60		86+90.05	LT		1		1													
W-12	61		89+98.19	LT		1		1													
W-13	61		90+58.96	LT										1							
W-13	61		90+59.38	LT										1							
WR-1	64		21+54.39	RT					1												
WR-2	59	17+88.08	15+82.00	RT								210									
WR-3	C		16+72.03	RT					1												
WR-4	60		13+89.94	RT					1												
WR-5	61		89+98.00	LT					1												
WJ-1	64		21+64.29	RT						1											
WJ-2	60		14+88.35	RT						1											
WJ-3	61		88+33.49	LT						1											
WJ-4	61		90+61.88	LT							1										
WJ-5	58		22+31.70	RT						1											
TOTALS CARRIED TO GENERAL SUMMARY					231	4	2	4	4	5	1	210	8	1							

CALCULATED	JAW
	CHECKED
JJS	
WATER WORKS SUBSUMMARY	
CUY-480/TRANSPORTATION BLVD.	
49	
225	

SHEET NO.	STATION TO STATION		203	203	204	204	659	659	659	659	659	659	659	659	659	861
			EXCAVATION CY	EMBANKMENT CY	EXCAVATION OF SUBGRADE CY	GRANULAR MATERIAL, TYPE B, AS PER PLAN CY	SEEDING AND MULCHING SY	SOIL ANALYSIS TEST EACH	TOPSOIL (111*SM/1000) CY	REPAIR SEEDING AND MULCHING (0.05*SM) SY	INTER-SEEDING (0.05*SM) SY	COMM. FERTILIZER [(30*SM)+(20*.05*SM)]*9 /1000*2000 TON	LIME (SM)/(4840) ACRE	WATER [(2*300*SM) +(300*0.05*SM)]*9 /1000*1000 MGAL	GEOGRID FOR SUBGRADE STABILIZATION SY	
	TRANSPORTATION BLVD.															
72	24+00.00	22+50.00	44	49	42	42	234									126
73	22+05.12	17+73.31	56	79	0	0	117									0
74	17+51.78	16+50.00	213	490	97	97	762									282
75	16+00.00	14+50.00	361	418	174	174	541									516
76	14+00.00	86+50.00	437	15	123	123	195									367
77	87+00.00	88+00.00	308	94	96	96	314									282
78	88+50.00	89+50.00	161	325	95	95	422									282
79	90+00.00	91+00.00	180	400	96	96	516									282
80	91+50.00	93+02.65	259	289	132	132	419									392
81	93+50.00	94+55.25	108	31	68	68	112									203
	I-480 WB EXIT RAMP															
89	400+50.00	401+50.00	499	0	0	0	405									0
90	402+00.00	403+00.00	1325	0	0	0	981									0
91	403+50.00	404+50.00	283	133	0	0	469									0
92	405+00.00	405+94.15	413	36	0	0	689									0
	ODOT DRIVE															
94	200+50.00	201+00.00	8	1007			294									
95	201+50.00	202+50.00	14	3313			759									
96	203+00.00	204+50.00	580	863			942									
97	205+00.00	205+30.78	631				228									
	ODOT DRIVE #2															
98	30+29.00	31+00.00	242	440			419									
99	31+50.00	32+50.00	208	28			178									
	GRANGER ROAD															
83	17+30.00	18+00.00	499	8	14	14	242									36
84	18+50.00	19+00.00	743	12	34	34	291									98
85	19+00.99	20+00.00	570	12	51	51	205									142
86	20+50.00	21+50.00	971	18	157	157	224									376
87	22+00.00	23+50.00	136	33	73	73	219									217
88	24+00.00	25+25.36	252	32			182									
	PUBLIC ROAD #2															
93	98+54.42	99+50.00	1004	2			466									
107A	DETENTION BASIN		4300	3500			4972									
TOTALS CARRIED TO THE GENERAL SUMMARY			14805	11627	1252	1252	15797	2	1753	790	790	2.20	3.26	88		3601

CALCULATED	JAW
CHECKED	JJS
EARTHWORK SUBSUMMARY	
CUY-480/ TRANSPORTATION BLVD.	
50	225

0:\2016\2016051\CUY\9074\ROADWAY SHEETS\90740004.DGN
 4/19/2017
 11:57:49 AM
 000TY81STD_USER

\\AKRINDA\DATA\2016\201605\CUY\B074\ROADWAY\SHETS\B074\G0201.DGN
 5/24/2017 8:00:31 AM
 G00TV81STD_USER

REF. NO.	SHEET NO.	STATION		SIDE	202		202		202		202		202		606		606		606		606		606		607		622		622		SPECIAL		
		FROM	TO		EA	FT	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
B-1	59	18+51.71	18+40.60	RT																													
B-2	59	19+46.88	19+35.80	RT																													
B-3	59	20+38.28	20+27.17	RT																													
B-4	59	21+33.48	21+22.37	RT																													
BL-1	67	200+60.57	204+11.96	RT																												68	
DR-1	61	91+50.30		LT																													
DR-2	61	88+99.52		LT																													
DR-3	60	86+99.91		LT																													
DR-4	60	15+99.41		RT																													
DR-5	59	17+44.91		RT																													
DR-6	60	15+99.68		RT																													
DR-7	61	91+37.78		RT																													
DR-8	61	91+82.92		RT																													
DR-10	67	200+69.53		RT																													
DR-11	63	17+97.26		RT																													
DR-12	63	19+96.66		RT																													
DR-13	64	22+22.44		RT																													
DR-17	64	22+33.95		RT																													
F-1	65	401+41.73	404+89.72	LT																													
F-2	59	17+68.64	14+66.64	RT																													
FR-2	60	17+72.35	87+03.04	RT																													
FR-3	65	401+41.73	404+89.72	LT																													
FR-4	64	21+62.84		RT																													
G-1	58	23+41.80	22+01.23	LT																													
G-2	59	17+65.78	14+89.13	LT																													
G-3	59	1054+96.13	1055+08.63	RT																													
G-4	59	1054+13.57	1055+25.07	RT																													
GR-1	58	23+47.42	22+02.43	LT																													
GR-2	60	17+64.54	14+30.33	LT																													
GR-3	61	92+08.57	94+71.02	RT																													
R-1	67	204+45.40	205+03.84	RT																													
R-2	66	404+03.11		LT																													
R-3	67	200+75.16		RT																													
SUBTOTALS CARRIED TO SHEET 48																																	
					2	747	1	12	1103		14	488	3	1	3		1	792	2	52													

CALCULATED JAW CHECKED JJS
ROADWAY ESTIMATED QUANTITIES
CUY-480/TRANSPORTATION BLVD.
 51
 225

REF. NO.	SHEET NO.	STATION		SIDE	DISTANCE (D)	AVERAGE WIDTH (W)	SURFACE AREA (A)	202		608												
		FROM	TO					WALK REMOVED	PAVEMENT REMOVED		SF	SY	SF									
					FT	FT	SQ FT															
	60	86+84.00	86+39.41	RT	CADD		229		229													
	62	93+20.84	93+48.72	LT	CADD		171		171													
	62	93+00.00	94+55.25	RT	CADD		695		695													
	62	94+14.73	94+49.27	LT	CADD		293		293													
	64	22+02.68	25+22.49	RT	CADD		1655		1655													
	58	22+75.24	21+96.66	RT	CADD		738				82											
	59	17+63.32	93+02.65	RT/LT	CADD		3328				370											
	61	91+36.07	92+11.86	RT	CADD		401				45											
	62	93+11.73	94+56.96	RT	CADD		330				37											
	62	94+46.31	95+53.41	RT	CADD		1383				154											
	62	95+91.08	96+39.47	RT	CADD		193				21											
	65	55+88.08	61+58.00	RT/LT	CADD		3048				339											
	67	205+21.88	204+08.10	RT/LT	CADD		6273				697											
CR-1	58	24+91.61		LT	CADD		108				108											
CR-2	58	24+90.78		RT	CADD		138				138											
CR-3	58	24+17.61		LT	CADD		108				108											
CR-4	58	24+09.47		LT	CADD		101				101											
CR-5	60	14+59.93		RT	CADD		73				73											
CR-6	60	86+49.30		LT	CADD		73				73											
CR-7	60	86+52.59		RT	CADD		78				78											
CR-8	60	86+77.64		LT	CADD		73				73											
CR-9	60	86+77.99		RT	CADD		63				63											
CR-10	62	94+40.77		LT	CADD		141				141											
CR-11	67	200+27.48		LT	CADD		79				79											
CR-12	67	200+35.13		RT	CADD		98				98											
CR-13	67	200+28.09		LT	CADD		79				79											
CR-14	67	201+23.92		LT	CADD		62				62											
CR-15	67	201+72.50		LT	CADD		104				104											
CR-16	67	203+35.05		LT	CADD		114				114											
CR-17	67	203+35.05		LT	CADD		65				65											
CR-18	67	203+38.00		LT	CADD		78				78											
CR-19	67	205+14.11		RT	CADD		134				134											
CR-20	64	21+31.78		RT	CADD		160				160											
CR-21	64	22+24.74		RT	CADD		66				66											
CR-22	64	25+15.01		RT	CADD		86				86											
CR-23	60	15+62.35		LT	CADD		102				102											
CR-24	60	15+51.58		LT	CADD		112				112											
CR-25	60	13+34.58		LT	CADD		92				92											
CR-26	67	200+28.09		RT	CADD		77				77											
CR-27	62	93+20.84	93+37.84	LT	CADD		121				121											
CR-28	62	93+37.84	93+48.72	LT	CADD		50				50											
SUBTOTALS CARRIED TO SHEET 48								3043	1745	2636												

ROADWAY ESTIMATED QUANTITIES

CUY-480/
TRANSPORTATION BLVD.

REF. NO.	SHEET NO.	STATION		SIDE	DISTANCE (D)		SURFACE AREA (A)	4" CONCRETE WALK	608													
		FROM	TO		FT	FT															SQ FT	SF
SW-1	60	17+67.60	15+60.17	LT	CADD		1534	1534														
SW-2	58	24+12.66	21+85.26	RT	CADD		1660	1660														
SW-3	60	17+81.37	14+50.02	RT	CADD		2284	2284														
SW-4	60	86+38.48	92+43.21	LT	CADD		2992	2992														
SW-5	60	86+49.98	86+84.00	RT	CADD		58	58														
SW-6	60	15+55.22	14+34.58	LT	CADD		1093	1093														
SW-20	67	200+69.69	200+37.22	RT	CADD		289	289														
SW-21	67	200+27.44	200+37.86	LT	CADD		629	629														
SW-22	67	201+72.06	203+46.55	LT	CADD		1490	1490														
SW-23	67	203+31.55	205+13.90	RT	CADD		904	904														
SW-24	63	17+30.00	21+56.21	RT	CADD		3412	3412														
SW-25	64	22+19.63	25+17.66	RT	CADD		1910	1910														
SW-26	62	94+49.27	94+70.00	LT	CADD		147	147														
SUBTOTALS CARRIED TO SHEET 48									18402													

ROADWAY ESTIMATED QUANTITIES

CUY-480/
TRANSPORTATION BLVD.

\\AKRNGA\DATA\2016\2016051\CUY\80974\ROADWAY\SHETS\80974G0005.DGN
 4/18/2017 3:25:37 PM
 G00T\B15TD_USER

REF. NO.	SHEET NO.	STATION		SIDE	601		611		611		611		611		611		611		
		FROM	TO		SY	CY	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
D-1	61	91+50.50		LT					1										
D-2	61	89+04.77		LT					1										
D-3	60	87+00.00		LT					1										
D-6	60	15+99.40		RT					1										
D-7	59	17+44.72		RT				1											
D-8	58	22+21.54		RT				1											
D-11	64	22+55.80		RT					1										
D-12	68	98+57.47		RT				1											
D-13	68	98+57.47		LT				1											
D-14	63	19+96.43		RT					1										
D-15	63	19+96.66		RT									1						
D-16	63	17+97.25		RT									1						
D-17	63	17+56.52		RT					1										
D-18	67	200+50.00		LT					1										
D-19	67	200+57.94		LT				1											
D-20	67	200+68.17		RT				1											
D-21	67	202+00.00		LT					1										
D-22	67	201+75.65		LT				1											
D-23	67	202+96.87		RT				1											
D-24	67	204+18.24		LT							1								
D-25	67	205+06.32		RT				1											
D-26	68	22+33.93		RT					1										
D-30	60	16+00.00		RT					1										
D-31	61	91+50.30		LT									1						
D-32	61	88+99.52		LT									1						
D-33	60	86+99.91		LT									1						
D-34	60	15+99.41		RT									1						
D-35	59	17+44.91		RT									1						
D-102	67	200+82.89		RT							1								
D-103	67	203+69.53		RT									1						
D-104	67	201+57.68		LT									1						
D-106	67	203+01.00		RT												1			
D-107	67	203+32.37		RT									1						
D-111	67	204+63.70		RT									1						
DJ-2	64	20+92.57		RT									1						
DJ-3	64	21+88.72		RT										1					
DJ-4	64	22+29.99		RT										1					
DJ-5	62	93+58.51		RT										1					
DJ-114	67	203+80.84		RT										1					
E-1	67	HW-112	OUTLET	RT			6												
E-2	67	HW-110	OUTLET	RT			9												
E-3	67	HW-109	OUTLET	RT			3												
E-4	67	HW-108	OUTLET	RT			2												
E-5	67	D-106	OUTLET	RT		2													
E-6	67	HW-105	OUTLET	RT			2												
SUBTOTALS CARRIED TO SHEET 48							2	22	9	7	4	1	1	11	1	4	1		

CALCULATED JMB CHECKED
DRAINAGE ESTIMATED QUANTITIES
CUY-480/TRANSPORTATION BLVD
 52B
 225

\\AKRINDA\DATA\2016\2016051\CUY\80974\ROADWAY\SHEETS\80974G0206.DGN
 4/19/2017 3:25:24 PM
 G001V81STD_USER

REF. NO.	SHEET NO.	STATION		SIDE	202		602		611		611		611		611		611		611	
		FROM	TO		PIPE REMOVED, 24" AND UNDER	PIPE REMOVED, OVER 24"	CONCRETE MASONRY	6" CONDUIT, TYPE B	6" CONDUIT, TYPE C	12" CONDUIT, TYPE B	12" CONDUIT, TYPE C	15" CONDUIT, TYPE B	15" CONDUIT, TYPE C	30" CONDUIT, TYPE C	48" CONDUIT, TYPE B	MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN (SANITARY)				
					FT	FT	CY	FT	FT	FT	FT	FT	FT	FT	FT	FT	EA			
HW-1	66	404+17.06		LT			0.56													
HW-105	67	201+53.57		RT			0.21													
HW-108	67	203+30.64		RT			0.21													
HW-109	67	203+37.54		RT			0.60													
HW-110	67	204+60.28		RT			0.21													
HW-112	67	204+41.81		RT			0.21													
P-1	61	D-1	D-31	LT						11										
P-2	61	D-2	D-32	LT						13										
P-3	60	D-3	D-33	LT						12										
P-6	60	D-34	D-6	RT	12															
P-7	60	D-6	D-30	RT	46												48			
P-8	59	17+44.72	D-7	RT	7						6									
P-9	59	D-7	D-35	RT	12						12									
P-11	64	D-11	DJ-4	RT							29									
P-12	68	D-13	D-12	LT/RT							49									
P-13	68	D-12	D-26	RT							80									
P-14	63	D-14	D-15	RT							13									
P-16	67	D-18	D-19	LT																
P-17	67	D-19	D-20	LT/RT							39									
P-18	67	D-20	D-103	RT																
P-19	67	D-21	D-22	LT																
P-20	67	D-22	D-104	LT							22									
P-21	67	D-23	202+96.87	RT																
P-22	67	D-24	DJ-114	LT/RT							37									
P-23	67	205+11.34	D-25	RT	6									6						
P-24	67	D-25	204+99.36	RT	6									9						
P-26	68	D-26	DJ-4	RT							44									
P-27	63	18+07.82	D-16	RT	10						10									
P-28	63	D-16	17+86.70	RT	10						10									
P-50	58	D-8	EX-2	RT																
P-60	66	404+03.11	404+17.06	LT																21
P-100	63	D-15	19+86.17	RT	10						10									
P-101	63	17+67.11	D-17	RT	10						10									
P-102	63	D-17	17+45.99	RT	10						10									
P-103	67	D-102	D-103	RT																39
P-103W	67	D-103	COLLAR	RT		8														8
P-104	67	D-104	HW-105	LT/RT							90									
P-104N	67	EXISTING	D-104	LT	5						5									
P-107	67	D-107	HW-108	RT																
P-111	67	D-111	HW-112	RT																
P-114	67	EXISTING	HW-109	RT																
P-115	67	EXISTING	WYE CONNECTION	RT	10				10											
P-116	67	EXISTING	WYE CONNECTION	RT	10				10											
P-117	67	WYE CONNECTION	D-106	RT						92										
SJ-1	62	93+75.66		RT																1
SJ-2	64	20+96.19		RT																1
SJ-3	64	23+07.57		RT																1

CALCULATED
 JMB
 CHECKED
DRAINAGE ESTIMATED QUANTITIES
CUY-480/TRANSPORTATION BLVD
 52C
 225

SUBTOTALS CARRIED TO SHEET 48

164 8 2 20 92 506 383 27 48 95 8 3

REF. NO.	SHEET NO.	STATION		SIDE	605		605		611		611		BENDS & BRANCHES - FOR INFORMATION ONLY				
		FROM	TO		6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 707.31	6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 707.31	6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 707.31	6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 707.31	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	PRECAST REINFORCED CONCRETE OUTLET	PRECAST REINFORCED CONCRETE OUTLET	6" PLUG	6" PLUG	90° BEND	90° BEND	
					FT	FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	
U-1	108	22+84.83 (TRANS.)	D-8	LT	54				10							1	
U-2	108	21+85.26 (TRANS.)	D-8	LT		26			10							1	
U-3	108	17+80.06 (TRANS.)	D-7	LT	25				10							1	
U-4	108	16+02.15 (TRANS.)	D-7	LT		133			10							1	
U-5	108	54+66.00 (PR #1)	D-6	LT	186				10							1	
U-6	108	404+50.00 (I-480)		LT					15		1					1	
U-7	108	54+66.00 (PR#1)	D-3	LT	98				10							1	
U-8	108	89+02.02 (TRANS.)	D-3	LT	192				10							1	
U-9	108	91+47.75 (TRANS.)	D-2	LT		233			10							1	
U-10	108	93+00.96 (TRANS.)	D-1	LT	141				10							1	
U-11	108	86+84.00 (TRANS.)	404+50.00 (I-480)	LT		424										1	
U-12	108	205+17.67 (ODOT DR.)	D-25	RT		102			10						1		
U-13	108	205+17.67 (ODOT DR.)	D-23	RT		224			10							1	
U-14	108	202+93.00 (ODOT DR.)	D-20	RT		192			10							1	
U-15	108	93+14.47 (TRANS.)	D-20	RT		64			10							1	
U-16	108	204+66.22 (ODOT DR.)	D-24	RT		72			10							1	
U-17	108	204+66.22 (ODOT DR.)	D-24	LT		55			10							1	
U-18	108	204+14.24 (ODOT DR.)	D-22	LT		269			10							1	
U-19	108	30+95.00 (ODOT DR. 2)	D-22	RT		87			10						1	1	
U-20	108	31+70.61 (ODOT DR. 2)	D-19	LT		229			10						1	1	
U-21	108	94+55.25 (TRANS.)	D-19	RT		48			10							1	
U-22	108	404+50.00 (I-480)	405+50.00 (I-480)	LT		107										1	
U-23	109	2065.17 (E. 96TH ST.)	D-11	RT		281			10							1	
U-24	109	22+51.04	D-12	RT		116			10							1	
U-25	109	99+07.66	D-13	RT		43			10							1	
U-26	109	21+54.74	D-14	RT		176			10							1	
U-27	109	D-14	D-17	RT		227			10							1	
U-28	109	17+29.93	D-17	RT		20			10							1	
U-29	108	405+50.00 (I-480)		LT					10		1				1		
U-30	108	405+50.00 (I-480)	405+94.15 (I-480)	LT		45										1	
SUBTOTALS CARRIED TO SHEET 48						696		3173		275		2					

CALCULATED CJC	CHECKED JJS
UNDERDRAIN ESTIMATED QUANTITIES	
CUY-480/ TRANSPORTATION BLVD.	
53 225	

STATION TO STATION		SIDE	LENGTH (L) FT	AVERAGE WIDTH (W) FT	SURFACE AREA (A=LxW) SF	SURFACE AREA (CADD) SF	AREA FOR 6" BASE EXTENSION SF	AREA FOR 20" BASE EXTENSION SF	AREA FOR 24" BASE EXTENSION SF	202	204	204	304	305	407	407	441	441	442	442	526	609	875
										WEARING COURSE REMOVED SY	SUBGRADE COMPACTION SY	PROOF ROLLING (1 HOUR/2000 SY) HOUR	6" AGGREGATE BASE CY	9" CONCRETE BASE, CLASS GC1 SY	TACK COAT, 702.13 (0.1 GAL/SY) GAL	NON-TRACKING TACK COAT (0.1 GAL/SY) GAL	1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446) CY	1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M, AS PER PLAN CY	1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448), PG70-22M, AS PER PLAN CY	1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (448) CY	REINFORCED CONCRETE APPROACH SLABS (T=15'), AS PER PLAN SY	CURB, TYPE 2-B FT	LONGITUDINAL JOINT ADHESIVE (1 LB/ 4 FT) LB
FROM	TO																						
TRANSPORTATION BLVD.																							
RESURFACING																							
22+05.12	25+00.00	LT	294.88	CADD		10448.23				1160.91					116.09	116.09	56.43	48.37					
22+05.12	25+00.00	RT	294.88	CADD		10578.58				1175.40					117.54	117.54	57.14	48.97					
FULL DEPTH PAVEMENT RECONSTRUCTION																							
22+09.16	22+85.00	RT	73.31	CADD		878.14	36.66	122.18	146.62		113.86	0.06	18.52	101.64	9.76	9.76	4.74	4.07				73.31	18.33
14+87.02	17+57.14	RT	270.12	15.00	4051.80		135.06	450.20	540.24		510.23	0.26	83.37	465.21	45.02	45.02	21.88	18.76				270.12	67.53
13+80.52	14+87.02	RT	106.50	15.00	1597.50						177.50	0.09	29.58	177.50	17.75	17.75	8.63	7.40					26.63
86+19.48	86+75.48	LT	56.00	15.00	840.00						93.33	0.05	15.56	93.33	9.33	9.33	4.54	3.89					14.00
86+75.48	93+02.65	LT	627.17	15.00	9407.55			313.59	1045.28	1254.34	1184.65	0.59	193.57	1080.13	104.53	104.53	50.81	43.55				627.17	156.79
91+34.18	92+15.51	RT	81.33	0.00	0.00			40.67	135.55	162.66			18.07	0.01	2.51	4.52						81.33	20.33
21+83.78	22+08.78	RT	25.00	CADD		429.14	12.50	41.67	50.00		53.24	0.03	8.72							49.07			6.25
17+55.44	17+75.44	RT	20.00	CADD		343.33	10.00	33.33	40.00		42.59	0.02	6.98							39.26			5.00
PUBLIC ROAD #1																							
54+66.00	54+81.08	LT	15.08	11.00	165.88			7.54	25.13	30.16	21.78	0.01	3.54	19.27	1.84	1.84	0.90	0.77				15.08	
54+81.08	55+26.12	LT	45.04	11.00	495.44						55.05	0.03	9.17	55.05	5.50	5.50	2.68	2.29					
54+81.08	55+26.12	LT	70.69	CADD		435.56	35.34	117.81	141.37		64.10	0.03	10.25	52.32	4.84	4.84	2.35	2.02				70.69	
54+66.00	54+81.08	RT	15.08	61.50	927.42			7.54	25.13	30.16	106.40	0.05	17.64	103.88	10.30	10.30	5.01	4.29				15.08	
54+81.08	55+26.08	RT	45.00	61.50	2767.50						307.50	0.15	51.25	307.50	30.75	30.75	14.95	12.81					
54+81.08	55+26.08	RT	70.69	CADD		434.56	35.34	117.81	141.37		63.99	0.03	10.23	52.21	4.83	4.83	2.35	2.01				70.69	
I-480 WB EXIT RAMP																							
400+24.00	400+71.10	LT	47.10	16.00	753.60						83.73	0.04	13.96	83.73	8.37	8.37			3.49	4.07			11.77
400+24.00	400+71.10	LT	70.52	CADD		540.59	35.26	117.53	141.03		75.74	0.04	12.19	63.98	6.01	6.01			2.50	2.92		70.52	
400+71.10	405+38.09	LT	466.99	CADD		7539.83	233.49	778.32	933.98		941.53	0.47	154.04	863.70	83.78	83.78			34.91	40.72		466.99	116.75
405+38.09	405+87.36	LT	49.27	11.65	574.15			24.64	82.12	98.54	74.74	0.04	12.15	66.53	6.38	6.38			2.66	3.10		49.27	
405+87.36	405+94.15	LT	6.79	6.55	44.50			3.40	11.32	13.58	6.45	0.00	1.03	5.32	0.49	0.49			0.21	0.24		6.79	1.70
402+32.17	405+27.35	RT	295.18	CADD		1497.95					166.44	0.08	27.74	166.44	16.64	16.64			6.93	8.09			73.80
405+27.35	405+87.36	RT	60.01	1.12	67.33						7.48	0.00	1.25	7.48	0.75	0.75			0.31	0.36			15.00
TOTALS CARRIED TO GENERAL SUMMARY										2337	4169	3	684	3770	601	601	233	200	52	60	89	1818	534

STATION TO STATION		SIDE	LENGTH (L) FT	AVERAGE WIDTH (W) FT	SURFACE AREA (A=LxW) SF	SURFACE AREA (CADD) SF	AREA FOR 6" BASE EXTENSION SF	AREA FOR 20" BASE EXTENSION SF	AREA FOR 24" BASE EXTENSION SF	204	204	301	304	304	304	407	407	441	441	441	441	452	609	609	609
FROM	TO									SY	HOURL	CY	CY	CY	CY	CY	CY	CY	CY	CY	GAL	GAL	CY	CY	CY
ODOT DRIVE																									
200+24.00	200+66.51	LT	42.51	23.00	977.73				108.64	0.05	18.11		18.11			21.73	5.28	4.53							
200+24.00	200+66.51	LT	68.63	CADD		459.24	34.31	114.38	137.26	66.28	0.03	8.50		10.62		10.21	2.48	2.13						68.63	
200+66.51	200+99.04	LT	32.53	23.00	748.19		16.27	54.22	65.06	90.36	0.05	13.86		14.86		16.63	4.04	3.46						32.53	
200+99.04	201+65.62	LT	66.58	23.00	1531.34				170.15	0.09	28.36		28.36		34.03	8.27	7.09								
201+65.62	201+92.34	LT	26.72	12.00	320.64				35.63	0.02	5.94		5.94		7.13	1.73	1.48								
201+92.34	203+46.55	LT	154.21	12.00	1850.52		77.10	257.02	308.42	239.88	0.12	34.27		39.03		41.12	10.00	8.57						154.21	
CUL-DE-SAC		LT	92.74	CADD		4138.01	46.37	154.57	185.48	480.39	0.24	76.63		79.49		91.96	22.35	19.16					104.78	92.74	136.44
200+24.00	200+86.22	RT	62.22	12.00	746.64				82.96	0.04	13.83		13.83			16.59	4.03	3.46							
200+24.00	200+86.22	RT	94.12	CADD		905.61			100.62	0.05	16.77		16.77			20.12	4.89	4.19						94.12	
200+86.22	203+46.98	RT	260.76	12.00	3129.12		130.38	434.60	521.52	405.63	0.20	57.95		65.99		69.54	16.90	14.49						260.76	
CUL-DE-SAC		RT	306.58	CADD		4822.57	153.29	510.97	613.16	603.97	0.30	89.31		98.77		107.17	26.05	22.33					53.91	306.58	28.49
ODOT DRIVE #2																									
30+22.36	30+64.90	LT	42.54	12.00	510.48				56.72	0.03	9.45		9.45			11.34	2.76	2.36							
30+22.36	30+64.90	LT	68.15	CADD		380.65	34.08	113.58	136.30	57.44	0.03	7.05		9.15		8.46	2.06	1.76						68.15	
30+64.90	30+74.22	LT	9.32	12.00	111.84		4.66	15.53	18.64	14.50	0.01	2.07		2.36		2.49	0.60	0.52						9.32	
30+74.22	30+95.00	LT	20.78	12.00	249.36				27.71	0.01	4.62		4.62		5.54	1.35	1.15								
PARKING LOT		LT	124.11	CADD		1368.68	62.06	206.85	248.22	179.66	0.09	25.35		29.18		30.42	7.39	6.34						124.11	
30+12.73	30+52.61	RT	56.83	CADD		275.01	28.41	94.71	113.65	43.18	0.02	5.09		6.85		6.11	1.49	1.27						56.83	
30+23.71	30+52.61	RT	28.90	12.00	346.80				38.53	0.02	6.42		6.42			7.71	1.87	1.61							
30+52.61	30+74.22	RT	21.61	12.00	259.32		10.80	36.02	43.22	33.62	0.02	4.80		5.47		5.76	1.40	1.20						21.61	
30+74.22	30+95.00	RT	20.78	12.00	249.36				27.71	0.01	4.62		4.62		5.54	1.35	1.15								
PARKING LOT		RT	41.06	CADD		372.58	20.53	68.43	82.12	50.52	0.03	6.90		8.17		8.28	2.01	1.72						41.06	
PARKING LOT		RT	45.38	CADD		455.41	22.69	75.63	90.76	60.69	0.03	8.43		9.83		10.12	2.46	2.11						45.38	
DV-1 (AREA 1)		LT				735.84				81.76			9.08												506.60
DV-1 (AREA 2)		LT				1463.96				162.66	0.08				36.15	6.51			5.65	7.91		81.76			

TOTALS CARRIED TO GENERAL SUMMARY

3220 2 449 10 488 37 7 538 131 113 6 8 82 159 1883 165

CALCULATED
JJS
CHECKED
MVJ
PAVEMENT CALCULATIONS
CUY-480/
TRANSPORTATION BLVD
55
225

\\AKRINDA\DATA\2016\201605\CUY\B0974\ROADWAY\SHETS\B0974GC001.DGN
 5/24/2017 9:00:32 AM GDDTV81STD_USER

STATION TO STATION		SIDE	LENGTH (L) FT	AVERAGE WIDTH (W) FT	SURFACE AREA (A=LxW) SF	SURFACE AREA (CADD) SF	AREA FOR 6" BASE EXTENSION SF	AREA FOR 20" BASE EXTENSION SF	202	202	204	204	304	305	407	407	441	441	609
FROM	TO								PAVEMENT REMOVED SY	CURB REMOVED FT	SUBGRADE COMPACTION SY	PROOF ROLLING HOUR	6" AGGREGATE BASE CY	9" CONCRETE BASE, CLASS OCl SY	TACK COAT, 702.13 (0.1 GAL/SY) GAL	NON-TRACKING TACK COAT (0.1 GAL/SY) GAL	1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446) CY	1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M, AS PER PLAN CY	CURB, TYPE 2-B FT
GRANGER ROAD																			
17+30.00	25+25.00	RT	CADD	CADD		3530.94			392.33										
17+30.00	20+00.00	RT	270.00	7.95	2146.50		135.00	450.00		270.00	288.50	0.14	48.08	253.50	23.85	23.85	11.59	9.94	270.00
20+00.00	20+50.00	RT	50.00	19.50	975.00		25.00	83.33		50.00	117.59	0.06	19.60	111.11	10.83	10.83	5.27	4.51	50.00
20+50.00	21+02.13	RT	52.13	25.00	1303.25		26.07	86.88		52.13	154.46	0.08	25.74	147.70	14.48	14.48	7.04	6.03	52.13
21+02.13	22+00.00	RT	97.87	23.13	2263.73					63.42	251.53	0.13	41.92	251.53	25.15	25.15	12.23	10.48	
22+00.00	22+54.05	RT	54.05	20.23	1093.43					46.29	121.49	0.06	20.25	121.49	12.15	12.15	5.91	5.06	
22+54.05	23+11.09	RT	57.04	16.59	946.29		28.52	95.07		57.04	115.71	0.06	19.28	108.31	10.51	10.51	5.11	4.38	57.04
23+11.09	24+93.75	RT	182.66	14.00	2557.24		91.33	304.43		182.66	317.96	0.16	52.99	294.29	28.41	28.41	13.81	11.84	182.66
24+93.75	25+25.00	RT	31.25	14.00	437.50					69.37	48.61	0.02	8.10	48.61	4.86	4.86	2.36	2.03	
24+93.75	25+25.00	RT	52.24	CADD		236.95	26.12	87.07			36.00	0.02	6.00	29.23	2.63	2.63	1.28	1.10	52.24
PUBLIC ROAD #2																			
98+54.42	98+59.42	LT	5.00	15.00	75.00		2.50	8.33			10.19	0.01	1.70	8.89	0.83	0.83	0.41	0.35	10.00
98+59.42	99+10.82	LT	51.40	18.21	935.99		25.70	85.67			123.04	0.06	20.51	109.71	10.40	10.40	5.06	4.33	102.80
99+10.82	99+41.00	LT	30.18	21.42	646.46		15.09	50.30			77.42	0.04	12.90	73.51	7.18	7.18	3.49	2.99	30.18
99+10.82	99+60.04	LT	79.55	CADD		684.74	39.78	132.58			90.81	0.05	15.14	80.50	7.61	7.61	3.70	3.17	79.55
99+41.00	99+61.50	LT	20.50	21.42	439.11						48.79	0.02	8.13	48.79	4.88	4.88	2.37	2.03	
99+41.00	99+62.08	LT	14.14	CADD		157.92	7.07	23.57			20.17	0.01	3.36	18.33	1.75	1.75	0.85	0.73	14.14
98+54.42	99+20.00	RT	65.58	26.00	1705.08		32.79	109.30			213.74	0.11	35.62	196.74	18.95	18.95	9.21	7.89	131.16
99+20.00	99+41.00	RT	21.00	26.00	546.00		10.50	35.00			64.56	0.03	10.76	61.83	6.07	6.07	2.95	2.53	21.00
99+20.00	99+64.82	RT	66.61	CADD		394.70	33.31	111.02			56.19	0.03	9.37	47.56	4.39	4.39	2.13	1.83	66.61
99+41.00	99+62.75	RT	21.75	26.00	565.50						62.83	0.03	10.47	62.83	6.28	6.28	3.05	2.62	
TOTALS CARRIED TO GENERAL SUMMARY									393	791	2220	2	370	2075	202	202	98	84	1120

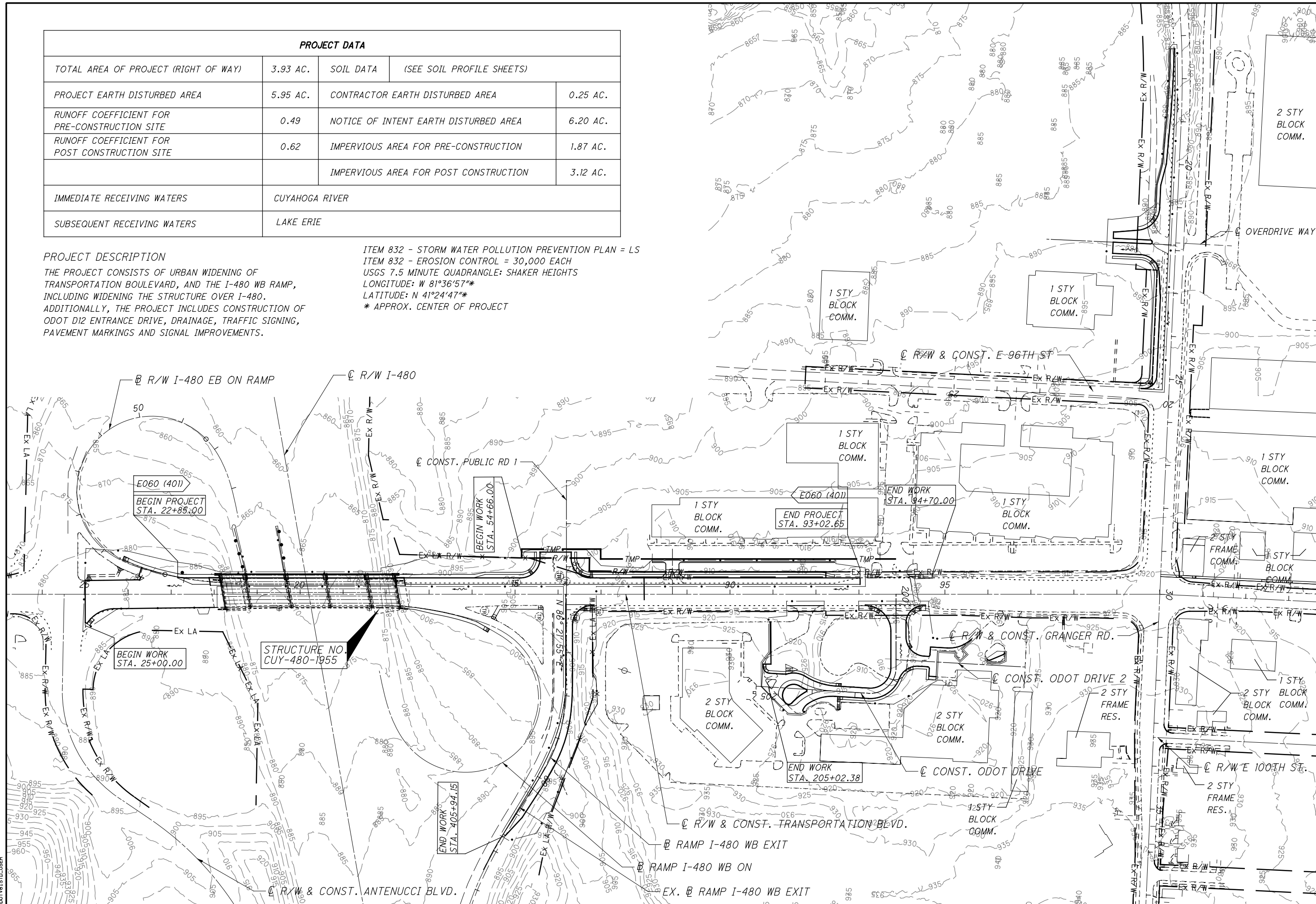
CALCULATED
 JAW
 CHECKED
PAVEMENT CALCULATIONS
CUY-480/TRANSPORTATION BLVD
 56
 225

PROJECT DATA			
TOTAL AREA OF PROJECT (RIGHT OF WAY)	3.93 AC.	SOIL DATA	(SEE SOIL PROFILE SHEETS)
PROJECT EARTH DISTURBED AREA	5.95 AC.	CONTRACTOR EARTH DISTURBED AREA	0.25 AC.
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.49	NOTICE OF INTENT EARTH DISTURBED AREA	6.20 AC.
RUNOFF COEFFICIENT FOR POST CONSTRUCTION SITE	0.62	IMPERVIOUS AREA FOR PRE-CONSTRUCTION	1.87 AC.
		IMPERVIOUS AREA FOR POST CONSTRUCTION	3.12 AC.
IMMEDIATE RECEIVING WATERS	CUYAHOGA RIVER		
SUBSEQUENT RECEIVING WATERS	LAKE ERIE		

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF URBAN WIDENING OF TRANSPORTATION BOULEVARD, AND THE I-480 WB RAMP, INCLUDING WIDENING THE STRUCTURE OVER I-480. ADDITIONALLY, THE PROJECT INCLUDES CONSTRUCTION OF ODOT D12 ENTRANCE DRIVE, DRAINAGE, TRAFFIC SIGNING, PAVEMENT MARKINGS AND SIGNAL IMPROVEMENTS.

ITEM 832 - STORM WATER POLLUTION PREVENTION PLAN = LS
 ITEM 832 - EROSION CONTROL = 30,000 EACH
 USGS 7.5 MINUTE QUADRANGLE: SHAKER HEIGHTS
 LONGITUDE: W 81°36'57"*
 LATITUDE: N 41°24'47"*
 * APPROX. CENTER OF PROJECT



SITE PLAN

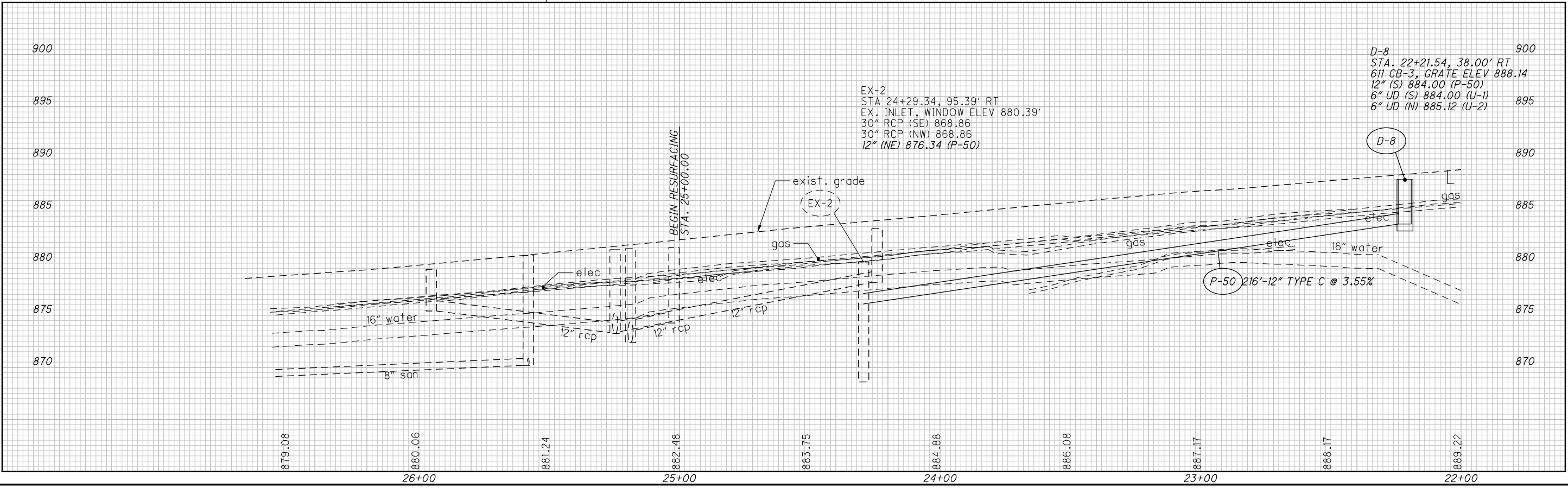
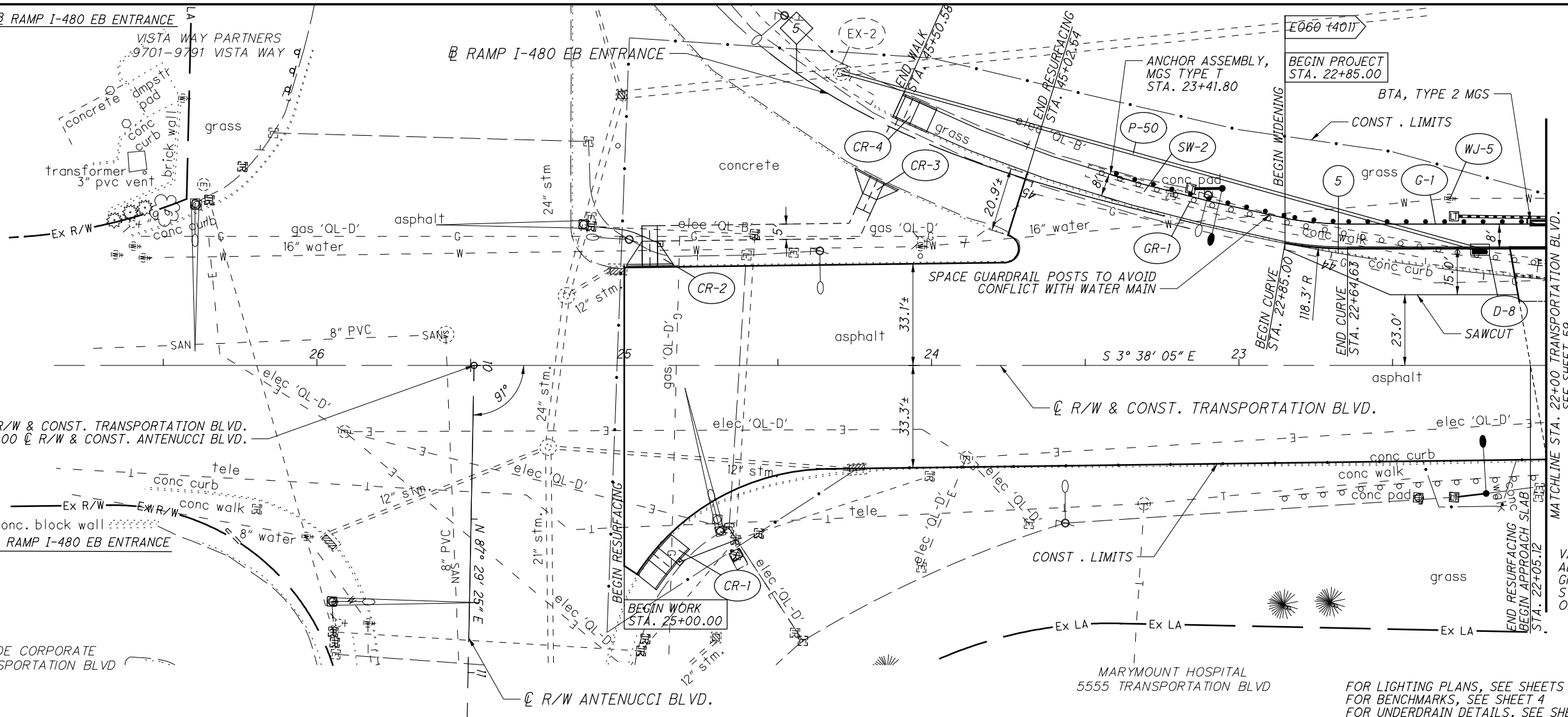
CUY-480/
TRANSPORTATION BLVD.

57
225

\\NARNDATA\DATA\2016\20160951\CUY\B0974\UPR1\INRGE\SHETS\B0974DE001.DGN
 4/18/2017 11:49:41 AM
 DDDTY81STD.LJSEB

5 P.I. Sta. 43+60.83, @ RAMP I-480 EB ENTRANCE
 $\Delta = 13^\circ 38' 39''$ (RT)
 $D_c = 8^\circ 00' 00''$
 $R = 716.20'$
 $T = 85.68'$
 $L = 170.55'$
 $E = 5.11'$
 $C = 170.15'$
 $C.B. = S 3^\circ 11' 15'' W$
 $PC = Sta. 42+75.15$
 $PT = Sta. 44+45.70$

5 P.I. STA. 45+46.68, @ RAMP I-480 EB ENTRANCE
 $L_s = 150.00'$
 $f_s = 24^\circ 33' 20''$
 $LT = 100.98'$
 $ST = 50.89'$
 $x = 147.27'$
 $y = 21.15'$
 SOUTHSIDE CORPORATE
 $k = 74.54'5595$ TRANSPORTATION BLVD
 $p = 5.32'$
 $SC = Sta. 44+45.70$
 $CS = Sta. 45+95.70$



PLAN AND PROFILE - TRANSPORTATION BLVD.
 TRANSPORTATION BLVD.
 BEGIN TO STA. 22+00.00

58
 225

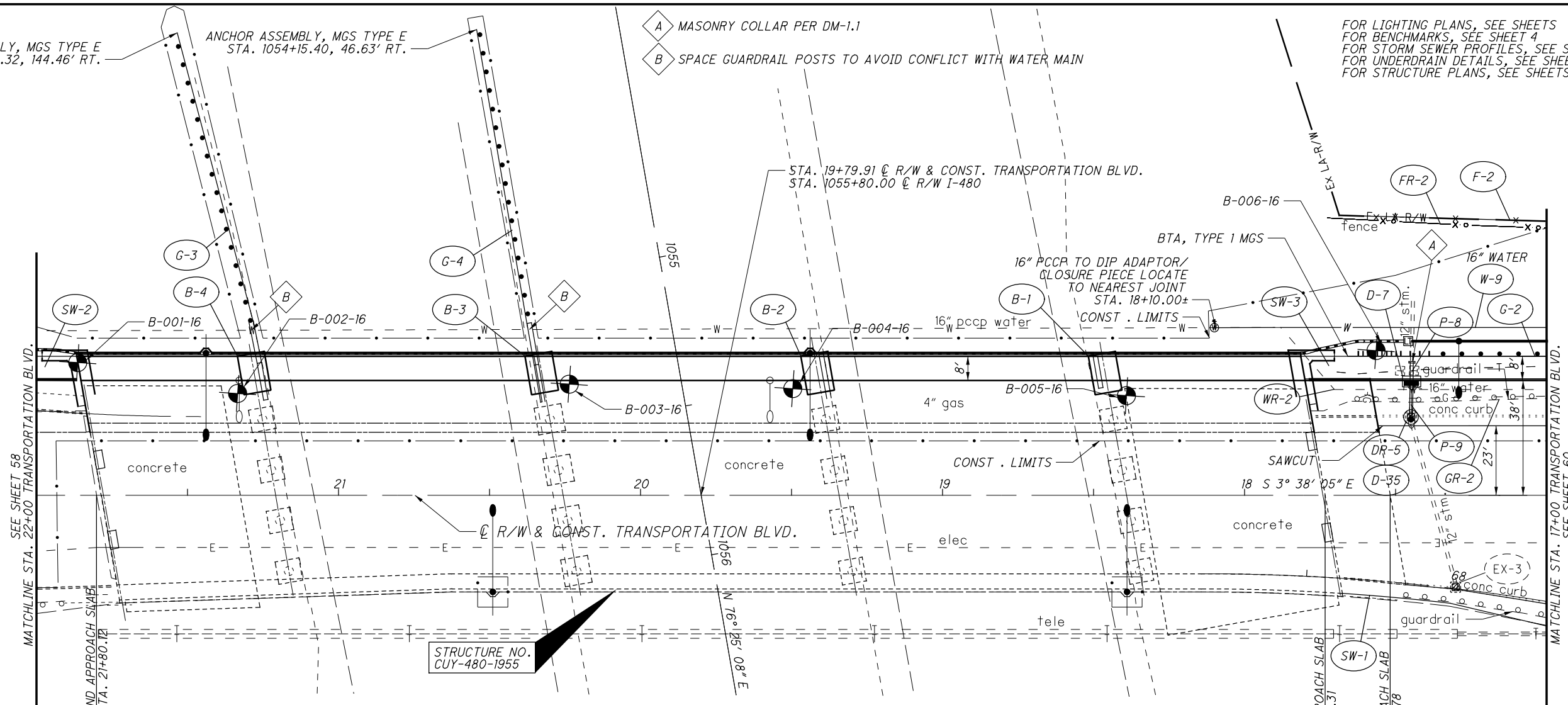
ANCHOR ASSEMBLY, MGS TYPE E
STA. 1053+99.32, 144.46' RT.

ANCHOR ASSEMBLY, MGS TYPE E
STA. 1054+15.40, 46.63' RT.

A MASONRY COLLAR PER DM-1.1

B SPACE GUARDRAIL POSTS TO AVOID CONFLICT WITH WATER MAIN

FOR LIGHTING PLANS, SEE SHEETS 181-186
FOR BENCHMARKS, SEE SHEET 4
FOR STORM SEWER PROFILES, SEE SHEETS 72-74
FOR UNDERDRAIN DETAILS, SEE SHEET 108
FOR STRUCTURE PLANS, SEE SHEETS 187-225



SEE SHEET 58
MATCHLINE STA. 22+00 TRANSPORTATION BLVD.

END APPROACH SLAB
STA. 21+80.12

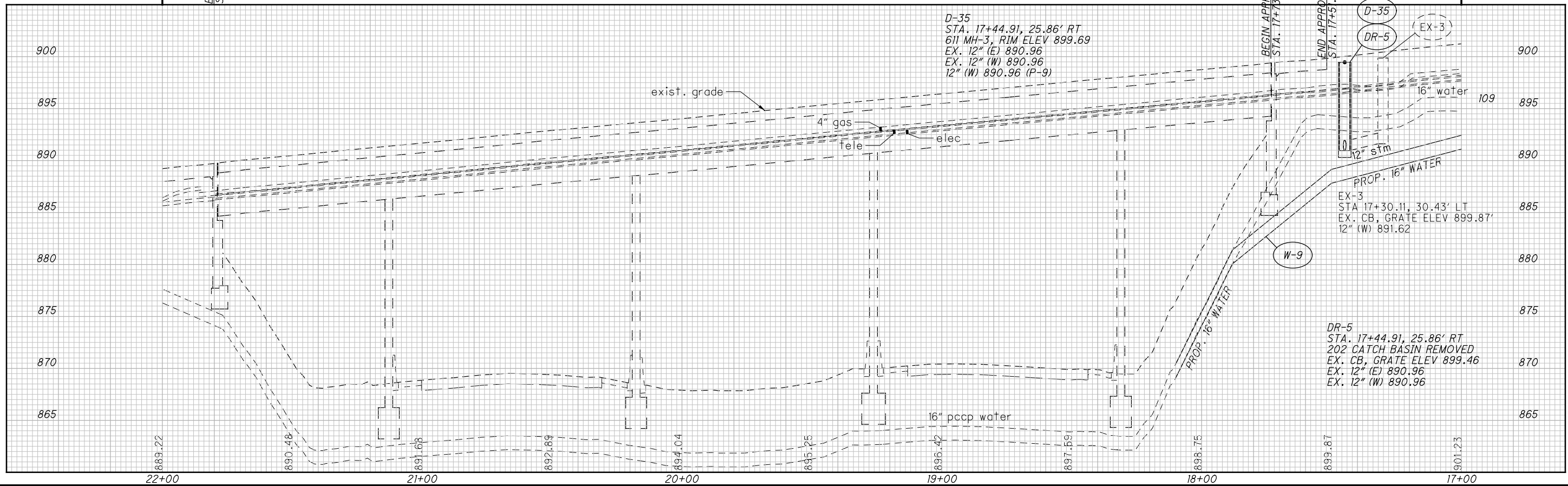
STRUCTURE NO.
CUY-480-1955

N 16° 15' 08" E

BEGIN APPROACH SLAB
STA. 17+13.31

END APPROACH SLAB
STA. 17+51.78

MATCHLINE STA. 17+00 TRANSPORTATION BLVD.
SEE SHEET 60



D-35
STA. 17+44.91, 25.86' RT
611 MH-3, RIM ELEV 899.69
EX. 12" (E) 890.96
EX. 12" (W) 890.96
EX. 12" (W) 890.96 (P-9)

EX-3
STA 17+30.11, 30.43' LT
EX. CB, GRATE ELEV 899.87'
EX. 12" (W) 891.62

DR-5
STA. 17+44.91, 25.86' RT
202 CATCH BASIN REMOVED
EX. CB, GRATE ELEV 899.46
EX. 12" (E) 890.96
EX. 12" (W) 890.96

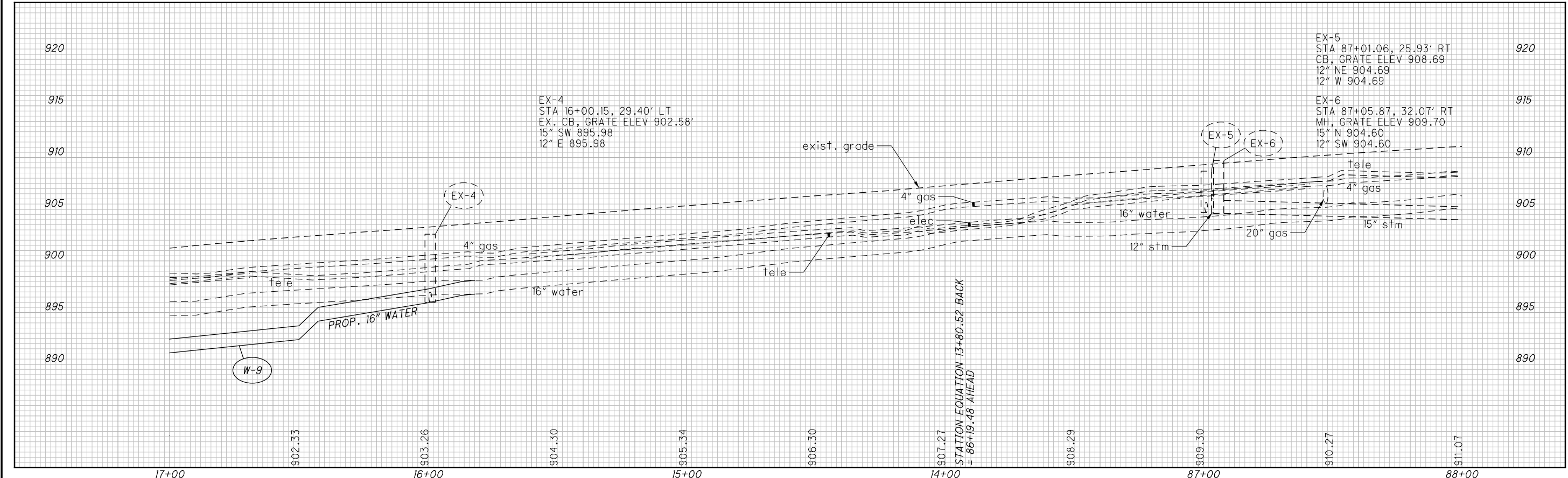
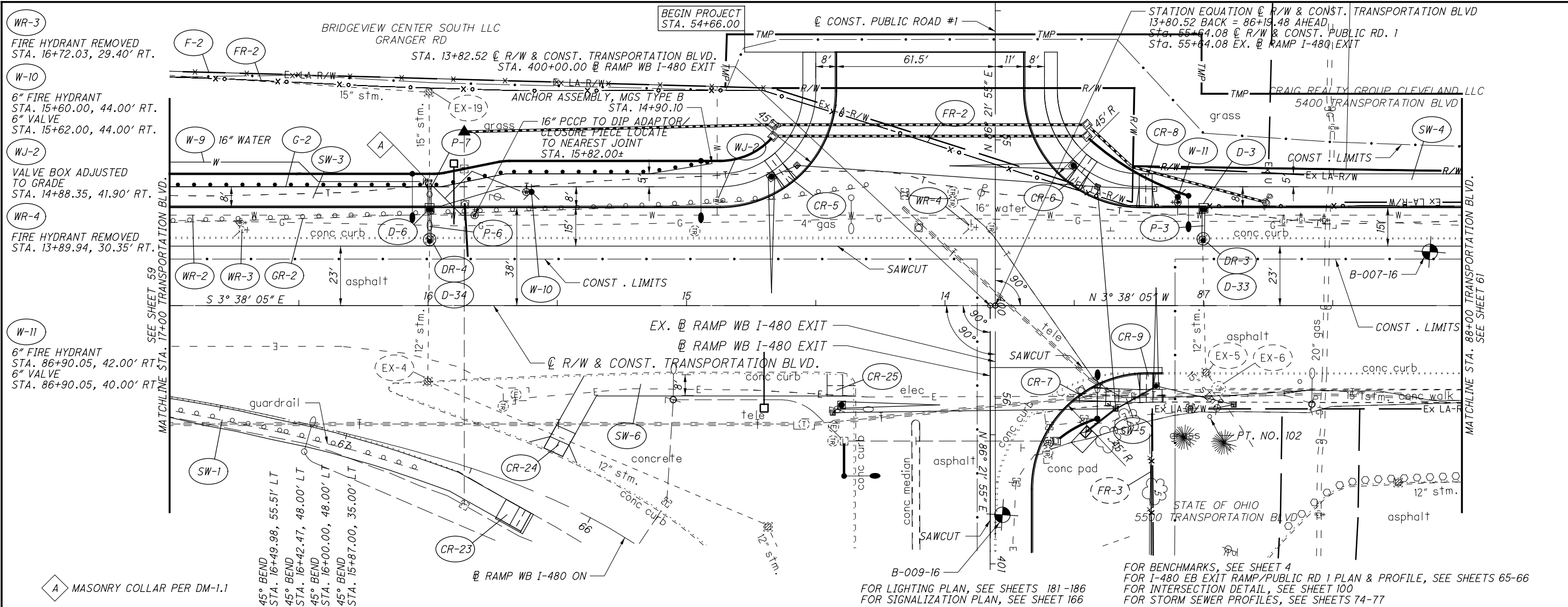


CALCULATED JMB
CHECKED JJS

PLAN AND PROFILE - TRANSPORTATION BLVD.
STA. 22+00.00 TO STA. 17+00.00

CUY-480/
TRANSPORTATION BLVD.

59
225



- WR-3
FIRE HYDRANT REMOVED
STA. 16+72.03, 29.40' RT.
- W-10
6" FIRE HYDRANT
STA. 15+60.00, 44.00' RT.
6" VALVE
STA. 15+62.00, 44.00' RT.
- WJ-2
VALVE BOX ADJUSTED
TO GRADE
STA. 14+88.35, 41.90' RT.
- WR-4
FIRE HYDRANT REMOVED
STA. 13+89.94, 30.35' RT.
- W-11
6" FIRE HYDRANT
STA. 86+90.05, 42.00' RT
6" VALVE
STA. 86+90.05, 40.00' RT

A MASONRY COLLAR PER DM-1.1

FOR BENCHMARKS, SEE SHEET 4
 FOR LIGHTING PLAN, SEE SHEETS 181-186
 FOR I-480 EB EXIT RAMP/PUBLIC RD 1 PLAN & PROFILE, SEE SHEETS 65-66
 FOR INTERSECTION DETAIL, SEE SHEET 100
 FOR STORM SEWER PROFILES, SEE SHEETS 74-77

PLAN AND PROFILE - TRANSPORTATION BLVD.

**CUY-480/
TRANSPORTATION BLVD.**

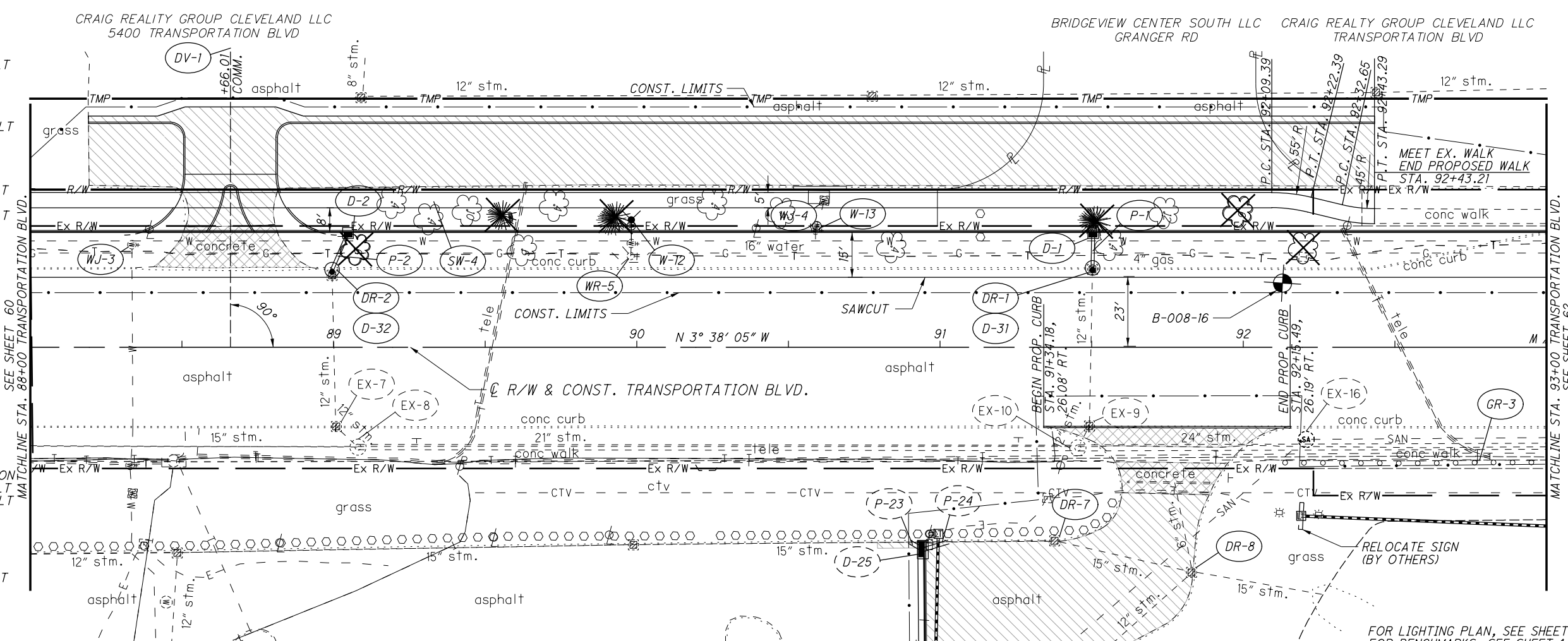
STA. 17+00.00 TO STA. 88+00.00

CALCULATED
JMB

CHECKED
JUS

60
225

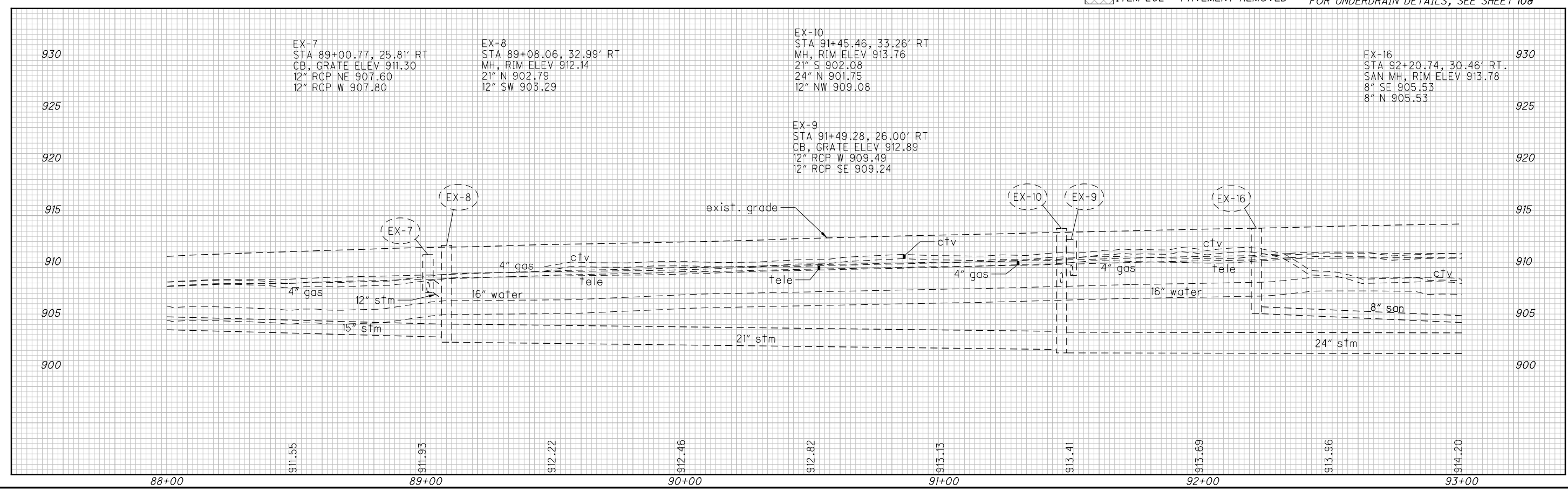
- WJ-3**
WATER METER ADJUSTED TO GRADE
STA. 88+33.49, 33.78' LT
- WR-5**
FIRE HYDRANT REMOVED
STA. 89+98.00, 30.04' LT
- W-12**
6" FIRE HYDRANT
STA. 89+98.19, 42.00' LT
6" VALVE
STA. 89+98.19, 40.00' LT
- W-13**
WATER SERVICE EXTENSION
STA. 90+58.96, 38.59' LT
STA. 90+59.38, 40.00' LT
- WJ-4**
WATER METER ADJUSTED TO GRADE
STA. 90+61.88, 48.33' LT



STATE OF OHIO
5500 TRANSPORTATION BLVD

- ASPHALT PAVEMENT REMOVED (ITEM 203 - EXCAVATION)
- ITEM 202 - PAVEMENT REMOVED

FOR LIGHTING PLAN, SEE SHEETS 181-186
FOR BENCHMARKS, SEE SHEET 4
FOR ODOT DRIVE PLAN, SEE SHEET 67
FOR STORM SEWER PROFILES, SEE SHEETS 77-80
FOR DRIVE DETAILS, SEE SHEET 107
FOR UNDERDRAIN DETAILS, SEE SHEET 108



PLAN AND PROFILE - TRANSPORTATION BLVD.

CUY-480/ TRANSPORTATION BLVD. STA. 88+00 TO STA. 93+00

61
225

CALCULATED JMB
CHECKED JJS

END PROJECT
STA. 93+02.65

CRAIG REALTY GROUP CLEVELAND LLC
TRANSPORTATION BLVD

END WORK
STA. 94+70.00

WINBURY II LIMITED PARTN
5350 TRANSPORTATION BLVD

E060 (401)

END WIDENING
STA. 93+00.00

SEE SHEET 61
MATCHLINE STA. 93+00.00 TRANSPORTATION BLVD.

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

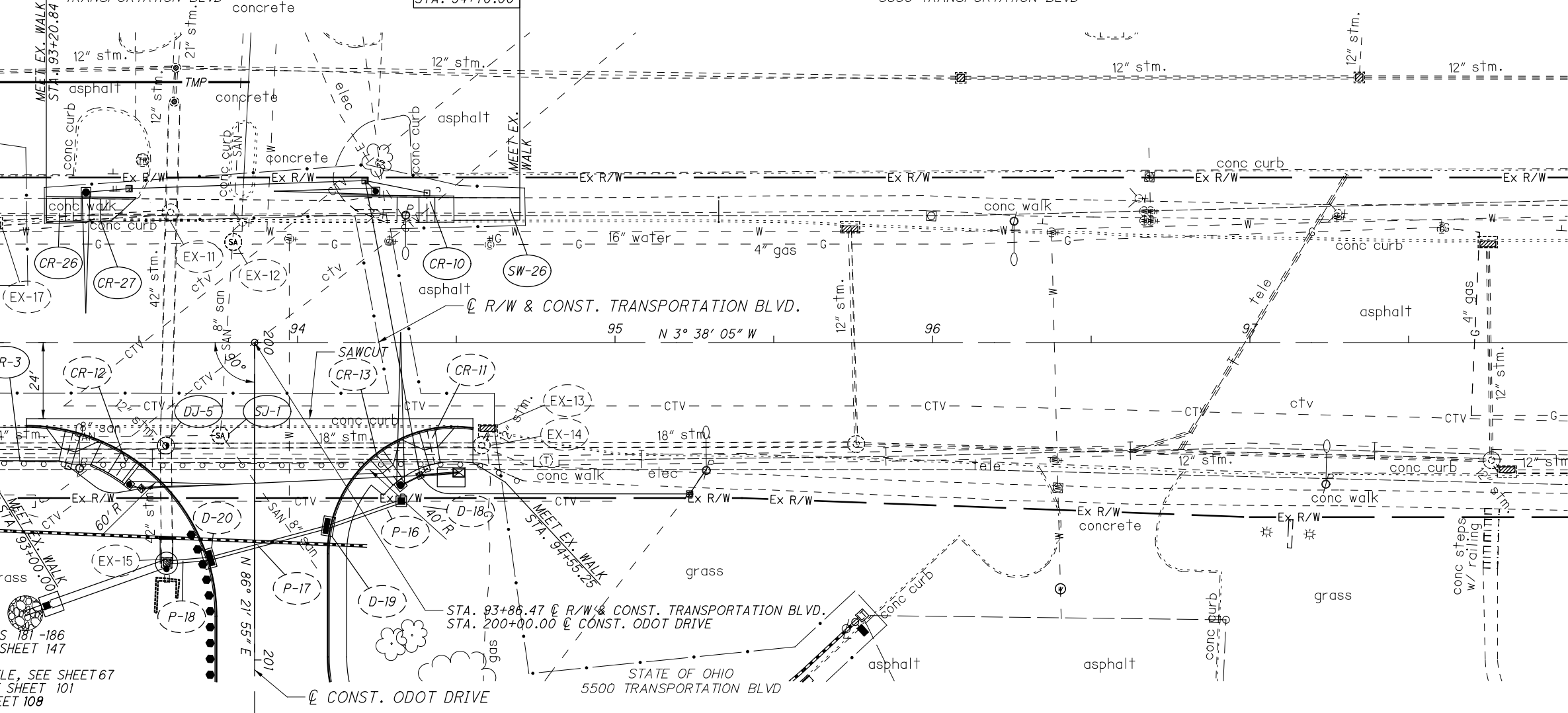
MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00

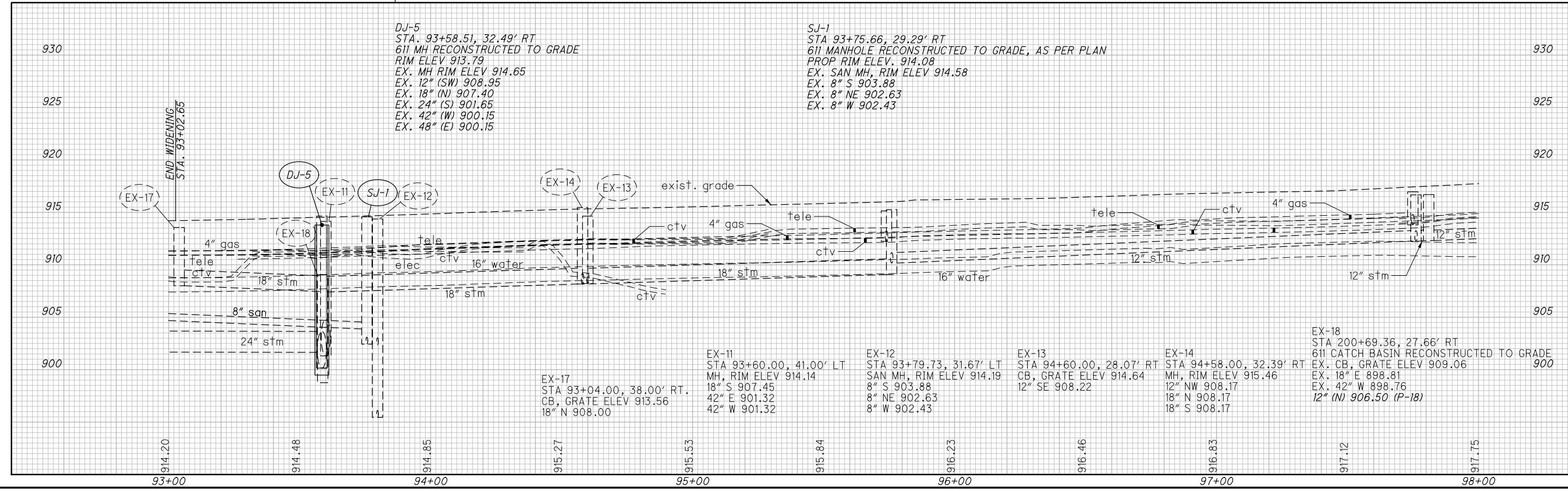
MEET EX. WALK
STA. 93+00.00

MEET EX. WALK
STA. 93+00.00



FOR LIGHTING PLAN, SEE SHEETS 181-186
FOR SIGNALIZATION PLAN, SEE SHEET 147
FOR BENCHMARKS, SEE SHEET 4
FOR ODOT DRIVE PLAN & PROFILE, SEE SHEET 67
FOR INTERSECTION DETAIL, SEE SHEET 101
FOR UNDERDRAIN PLAN, SEE SHEET 108

STATE OF OHIO
5500 TRANSPORTATION BLVD



DJ-5
STA. 93+58.51, 32.49' RT
611 MH RECONSTRUCTED TO GRADE
RIM ELEV. 913.79
EX. MH RIM ELEV. 914.65
EX. 12" (SW) 908.95
EX. 18" (N) 907.40
EX. 24" (S) 901.65
EX. 42" (W) 900.15
EX. 48" (E) 900.15

SJ-1
STA. 93+75.66, 29.29' RT
611 MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN
PROP. RIM ELEV. 914.08
EX. SAN MH, RIM ELEV. 914.58
EX. 8" S 903.88
EX. 8" NE 902.63
EX. 8" W 902.43

EX-17
STA. 93+04.00, 38.00' RT.
CB, GRATE ELEV. 913.56
18" N 908.00

EX-11
STA. 93+60.00, 41.00' LT
MH, RIM ELEV. 914.14
18" S 907.45
42" E 901.32
42" W 901.32

EX-12
STA. 93+79.73, 31.67' LT
SAN MH, RIM ELEV. 914.19
8" S 903.88
8" NE 902.63
8" W 902.43

EX-13
STA. 94+60.00, 28.07' RT
CB, GRATE ELEV. 914.64
12" SE 908.22

EX-14
STA. 94+58.00, 32.39' RT
MH, RIM ELEV. 915.46
12" NW 908.17
18" N 908.17
18" S 908.17

EX-18
STA. 200+69.36, 27.66' RT
611 CATCH BASIN RECONSTRUCTED TO GRADE
EX. CB, GRATE ELEV. 909.06
EX. 18" E 898.81
EX. 42" W 898.76
12" (N) 906.50 (P-18)



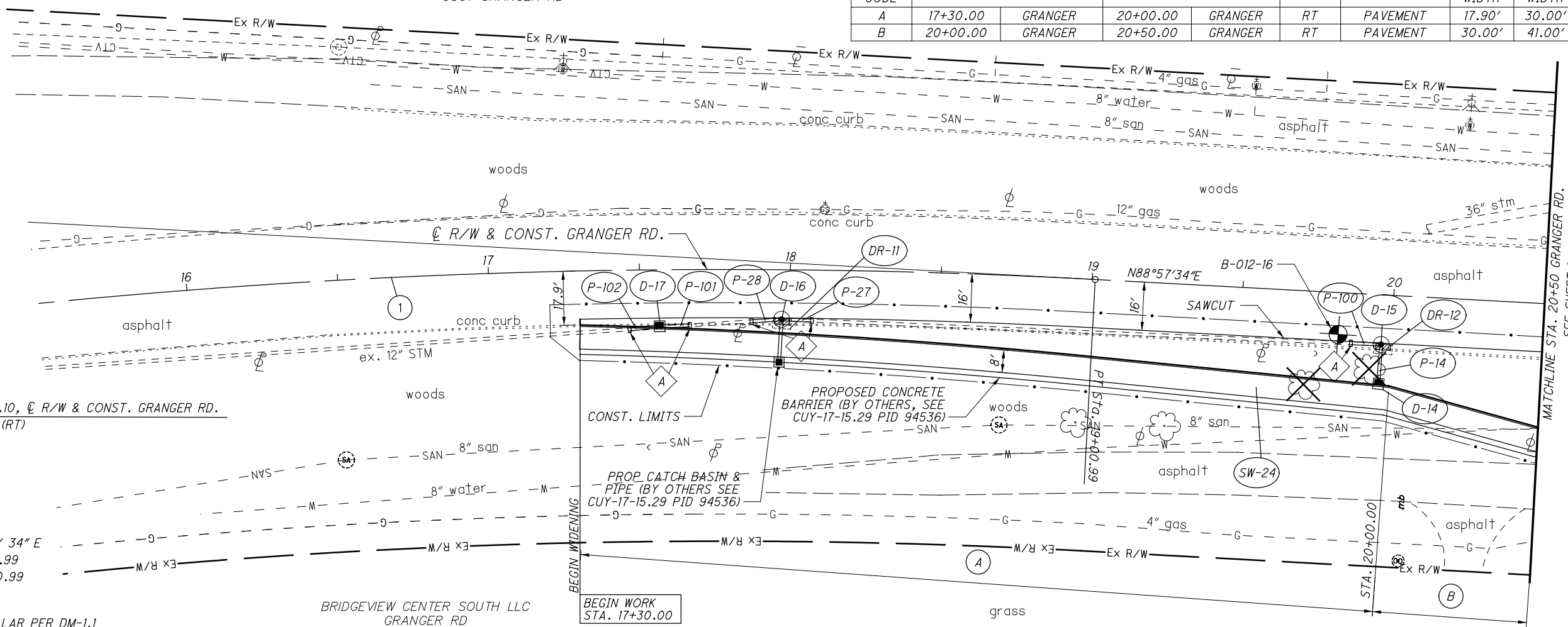
PLAN AND PROFILE - TRANSPORTATION BLVD.
STA. 93+00 TO END

CUY-480/
TRANSPORTATION BLVD.

\\AKR\DATA\2016\2016051\CUY\88974\ROADWAY\PROJECTS\88974\88974.dgn
4/18/2017
2:57:37 PM
G00TV81STD_USER

BLUE SKY CAMPUS
9501 GRANGER RD

TAPER TABLE								
TAPER CODE	BEGINNING STATION	ENDING STATION	SIDE	DESCRIPTION	BEGIN WIDTH	END WIDTH	TAPER RATE	
A	17+30.00	GRANGER	20+00.00	GRANGER RT	PAVEMENT	17.90'	30.00'	22:1
B	20+00.00	GRANGER	20+50.00	GRANGER RT	PAVEMENT	30.00'	41.00'	5:1



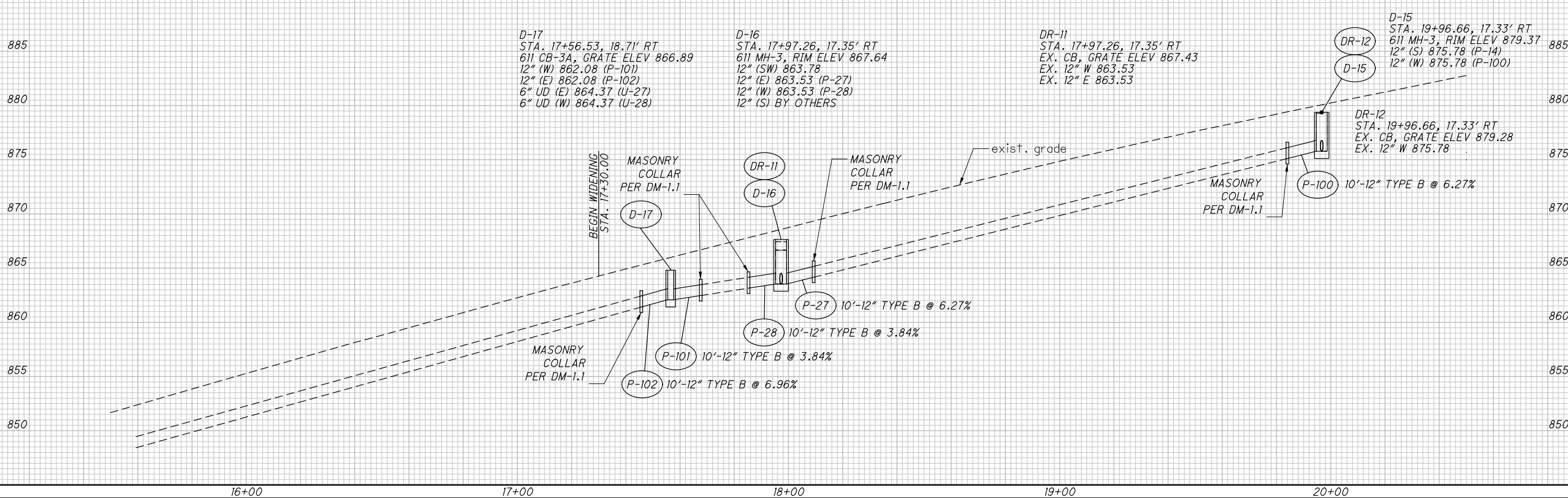
1 P.I. Sta. 13+90.10, $\Delta = 26^\circ 00' 00''$ (RT)
 $D_c = 2^\circ 30' 00''$
 $R = 2,291.83'$
 $T = 529.11'$
 $L = 1,040.00'$
 $E = 60.28'$
 $C = 1,031.10'$
 $C.B. = N 75^\circ 57' 34'' E$
 $PC = Sta. 8+60.99$
 $PT = Sta. 19+00.99$

A MASONRY COLLAR PER DM-1.1

BRIDGEVIEW CENTER SOUTH LLC
GRANGER RD

BEGIN WORK
STA. 17+30.00

FOR UNDERDRAIN DETAILS, SEE SHEET 108-109
 FOR STORM SEWER PROFILES, SEE SHEETS 85



PLAN AND PROFILE - GRANGER RD. BEGIN TO STA. 20+50
 TRANSPORTATION BLVD.
 63
 225

\\AKRNGA\DATA\2016\2016051\CUYA\80974\ROADWAY\SHETS\80974GP011.DGN
 4/19/2017 12:08:06 PM G00TV8151D_USER



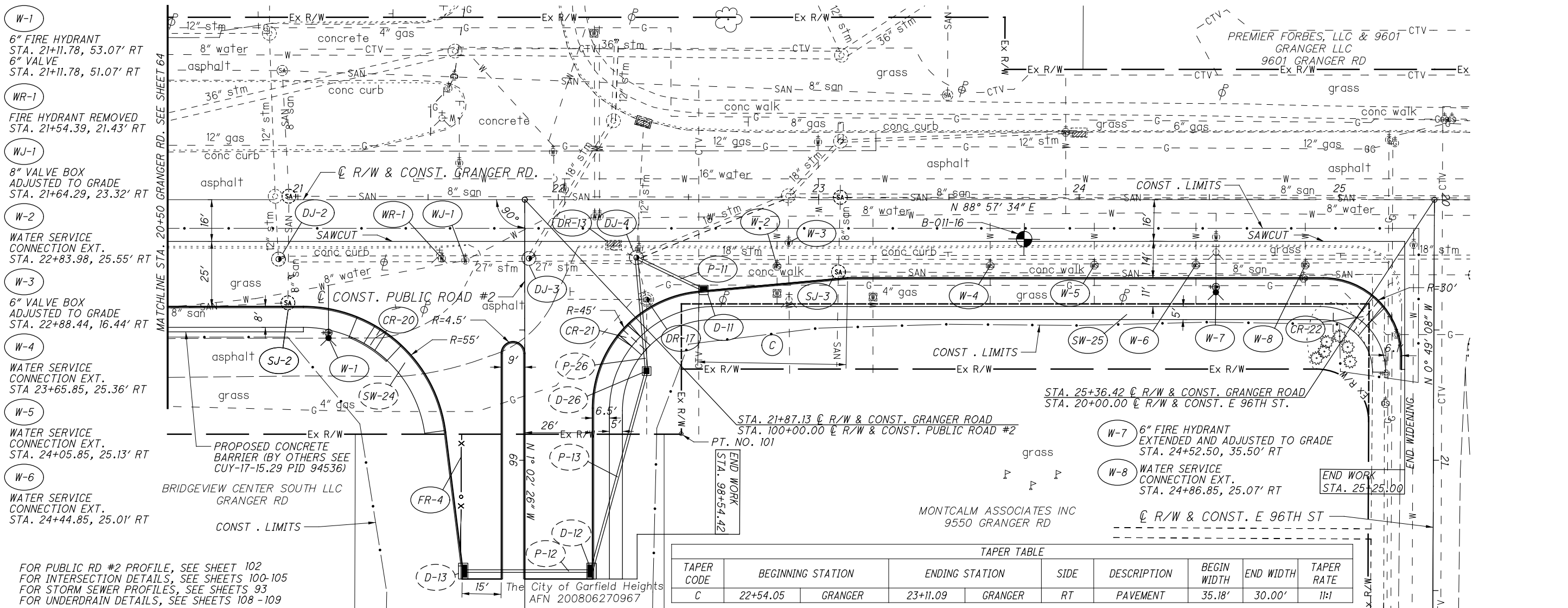
0 20 40
HORIZONTAL SCALE IN FEET

CALCULATED
JMB
CHECKED
JJS

PLAN AND PROFILE - GRANGER RD
STA. 20+50 TO STA. 25+50

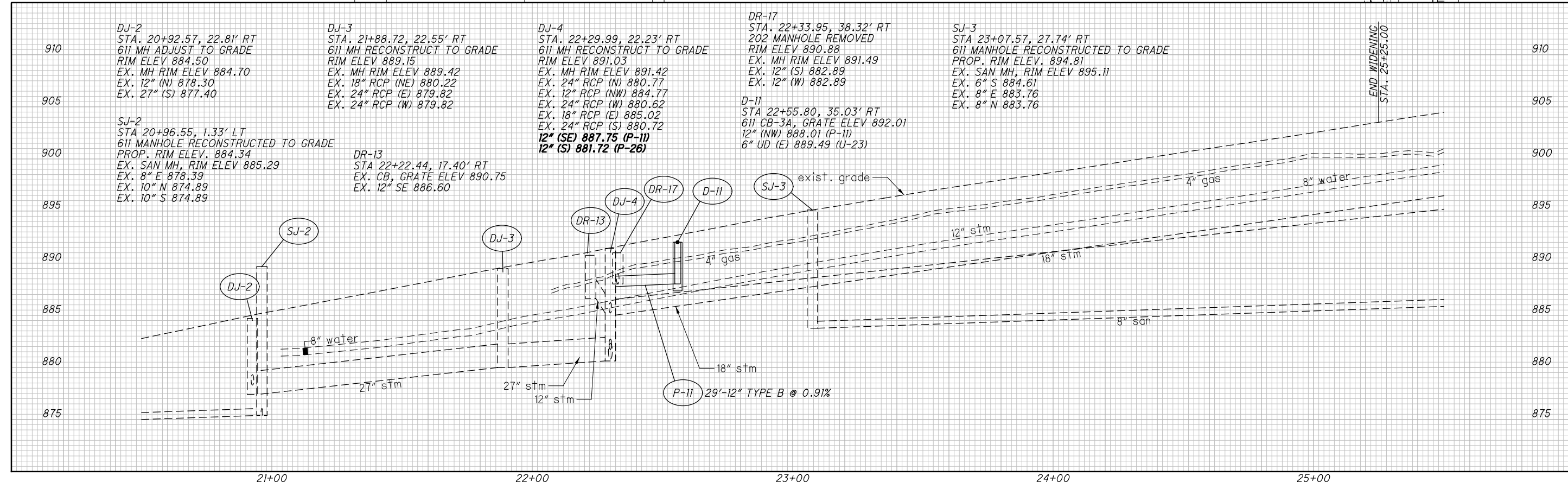
CUY-480/
TRANSPORTATION BLVD.

64
225



FOR PUBLIC RD #2 PROFILE, SEE SHEET 102
FOR INTERSECTION DETAILS, SEE SHEETS 100-105
FOR STORM SEWER PROFILES, SEE SHEETS 93
FOR UNDERDRAIN DETAILS, SEE SHEETS 108-109

TAPER TABLE							
TAPER CODE	BEGINNING STATION	ENDING STATION	SIDE	DESCRIPTION	BEGIN WIDTH	END WIDTH	TAPER RATE
C	22+54.05	GRANGER	23+11.09	GRANGER	RT	PAVEMENT	35.18' 30.00' 11:1



- (W-1) 6" FIRE HYDRANT
STA. 21+11.78, 53.07' RT
6" VALVE
STA. 21+11.78, 51.07' RT
- (WR-1) FIRE HYDRANT REMOVED
STA. 21+54.39, 21.43' RT
- (WJ-1) 8" VALVE BOX
ADJUSTED TO GRADE
STA. 21+64.29, 23.32' RT
- (W-2) WATER SERVICE CONNECTION EXT.
STA. 22+83.98, 25.55' RT
- (W-3) 6" VALVE BOX
ADJUSTED TO GRADE
STA. 22+88.44, 16.44' RT
- (W-4) WATER SERVICE CONNECTION EXT.
STA. 23+65.85, 25.36' RT
- (W-5) WATER SERVICE CONNECTION EXT.
STA. 24+05.85, 25.13' RT
- (W-6) WATER SERVICE CONNECTION EXT.
STA. 24+44.85, 25.01' RT

- DJ-2 STA. 20+92.57, 22.81' RT
611 MH ADJUST TO GRADE
RIM ELEV 884.50
EX. MH RIM ELEV 884.70
EX. 12" (N) 878.30
EX. 27" (S) 877.40
- DJ-3 STA. 21+88.72, 22.55' RT
611 MH RECONSTRUCT TO GRADE
RIM ELEV 889.15
EX. MH RIM ELEV 889.42
EX. 18" RCP (NE) 880.22
EX. 24" RCP (E) 879.82
EX. 24" RCP (W) 879.82
- DJ-4 STA. 22+29.99, 22.23' RT
611 MH RECONSTRUCT TO GRADE
RIM ELEV 891.03
EX. MH RIM ELEV 891.42
EX. 24" RCP (N) 880.77
EX. 12" RCP (NW) 884.77
EX. 24" RCP (W) 880.62
EX. 18" RCP (E) 885.02
EX. 24" RCP (S) 880.72
12" (SE) 887.75 (P-11)
12" (S) 881.72 (P-26)
- DR-17 STA. 22+33.95, 38.32' RT
202 MANHOLE REMOVED
RIM ELEV 890.88
EX. MH RIM ELEV 891.49
EX. 12" (S) 882.89
EX. 12" (W) 882.89
- D-11 STA. 22+55.80, 35.03' RT
611 CB-3A, GRATE ELEV 892.01
12" (NW) 888.01 (P-11)
6" UD (E) 889.49 (U-23)
- SJ-3 STA. 23+07.57, 27.74' RT
611 MANHOLE RECONSTRUCTED TO GRADE
PROP. RIM ELEV. 894.81
EX. SAN MH, RIM ELEV 895.11
EX. 6" S 884.61
EX. 8" E 883.76
EX. 8" N 883.76

\\AKRNGA\DATA\2016\2016051\CUY\80974\ROADWAY\SHETS\80974GP012.DGN
4/19/2017 11:44:22 AM
G001V81STD_USER



CALCULATED JMB
 CHECKED JJS
PLAN AND PROFILE - PUBLIC RD. #1/I 480 WB EXIT RAMP
BEGIN TO STA. 402+50.00

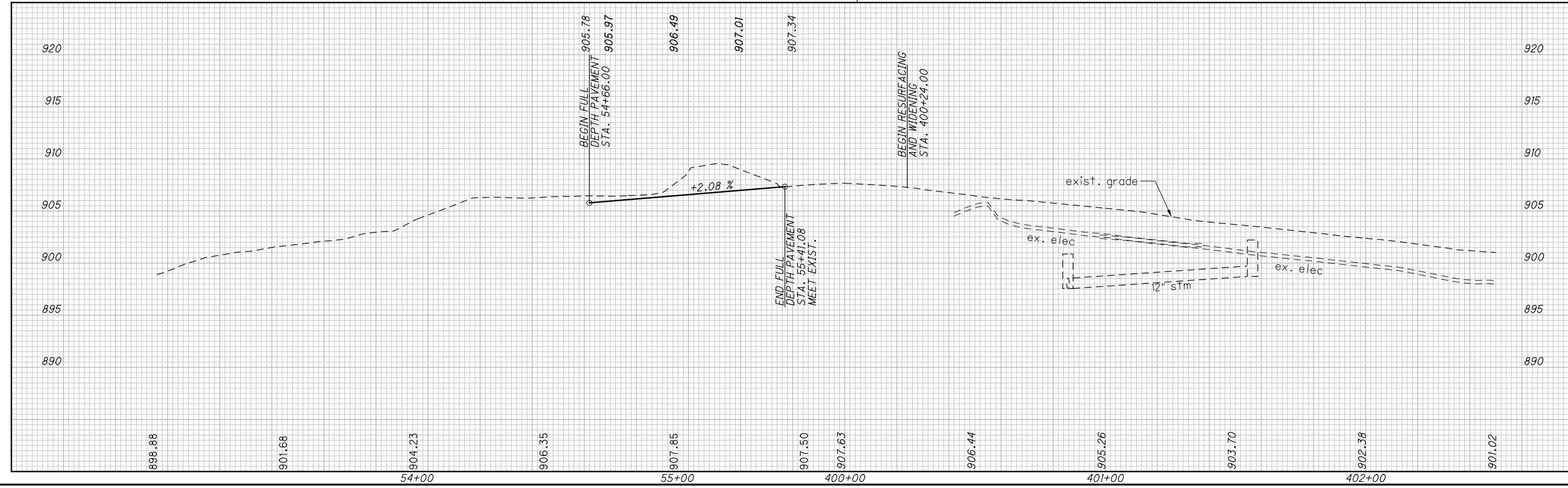
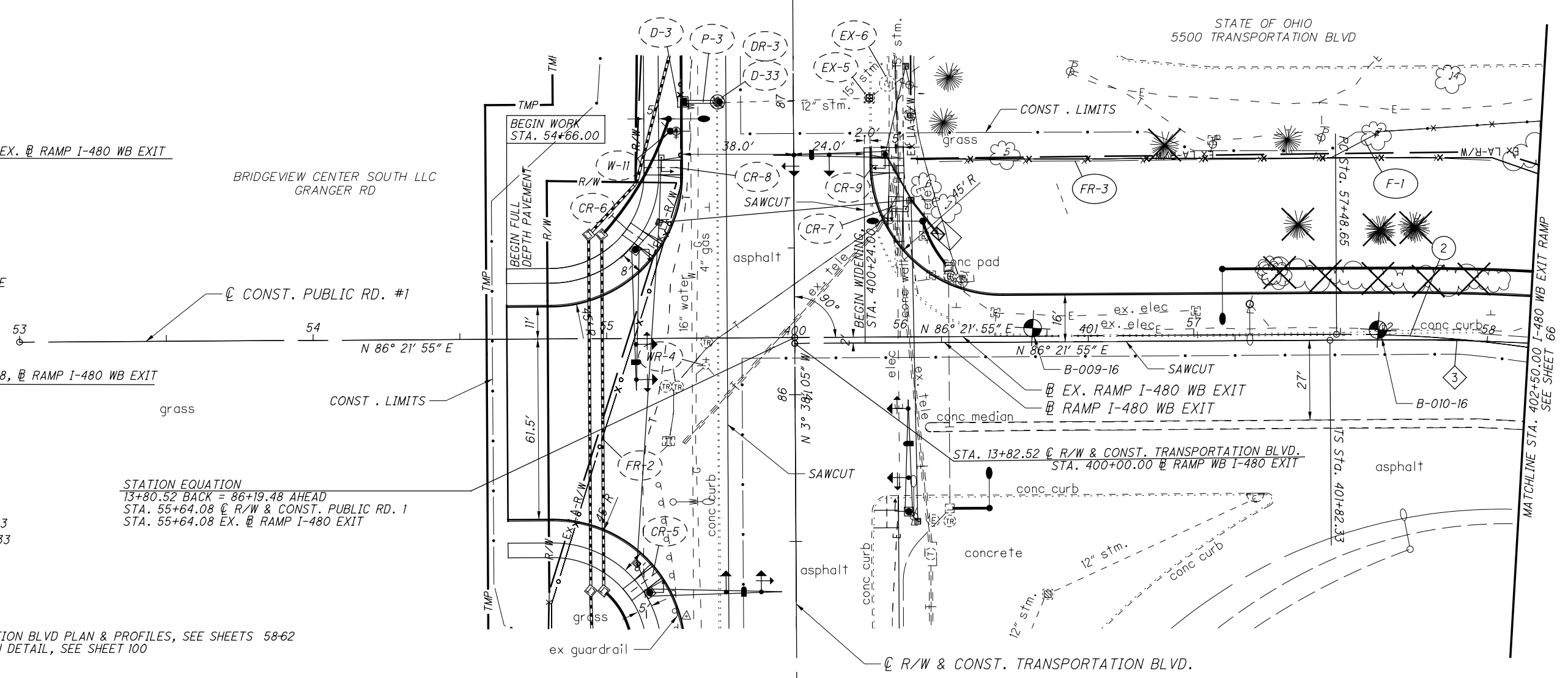
CUY-480/
TRANSPORTATION BLVD.

2 P.I. Sta. 58+19.28, EX. @ RAMP I-480 WB EXIT
 $\Delta = 18^\circ 12' 28''$ (RT)
 $D_c = 13^\circ 00' 00''$
 $R = 440.74'$
 $T = 70.63'$
 $L = 140.06'$
 $E = 5.62'$
 $C = 139.47'$
 $C.B. = S 84^\circ 31' 51'' E$
 $PC = 57+48.65$
 $CS = 58+88.71$

3 P.I. STA. 402+55.78, @ RAMP I-480 WB EXIT
 $L_s = 110.00'$
 $f_s = 9^\circ 41' 46''$
 $LT = 73.44'$
 $ST = 36.77'$
 $x = 109.69'$
 $y = 6.19'$
 $k = 54.95'$
 $p = 1.55'$
 $TS = Sta. 401+82.33$
 $SC = Sta. 402+92.33$

STATION EQUATION
 $13+80.52$ BACK = $86+19.48$ AHEAD
 $STA. 55+64.08$ @ R/W & CONST. PUBLIC RD. 1
 $STA. 55+64.08$ EX. @ RAMP I-480 EXIT

FOR TRANSPORTATION BLVD PLAN & PROFILES, SEE SHEETS 58-62
 FOR INTERSECTION DETAIL, SEE SHEET 100



\\AKR\BGA\DATA\2016\2016051\CUY\480\ROADWAY\SHEETS\8974\GP821.DGN
 2/1/2017 2:58:56 PM
 GDDTV81STD_USER

TAPER CODE	BEGINNING STATION	ENDING STATION	SIDE	DESCRIPTION	BEGIN WIDTH	END WIDTH	TAPER RATE
I	405+38.09	I-480 WB EXIT	LT	PAVEMENT	16.00'	6.11'	6:1

SISTERS OF THE HOLY SPIRIT
E 105 ST

STATE OF OHIO
5500 TRANSPORTATION BLVD
woods

7 P.I. Sta. 403+33.79, @ RAMP I-480 WB EXIT
 $\Delta = 32^\circ 55' 47''$ (RT)
 $Dc = 17^\circ 37' 46''$
 $R = 325.00'$
 $\Delta c = 13^\circ 32' 14''$ (RT)
 $Lc = 76.79'$
 $Ts = 151.46'$
 $E = 15.51'$
 $C = 76.61'$
 $C1 = C2 = 109.86'$
 $C.B.1 = N 89^\circ 35' 48'' E$
 $C.B.2 = S 77^\circ 10' 11'' E$
 $SC = Sta. 402+92.33$
 $CS = Sta. 403+69.12$

1 P.I. STA. 59+55.71, @ RAMP I-480 WB EXIT
 $Ls = 200.00'$
 $s = 13^\circ 00' 00''$
 $LT = 133.69'$
 $ST = 67.00'$
 $x = 198.97'$
 $y = 15.07'$
 $k = 99.83'$
 $p = 3.77'$
 $SC = 58+88.71$
 $SRS = 60+88.71$

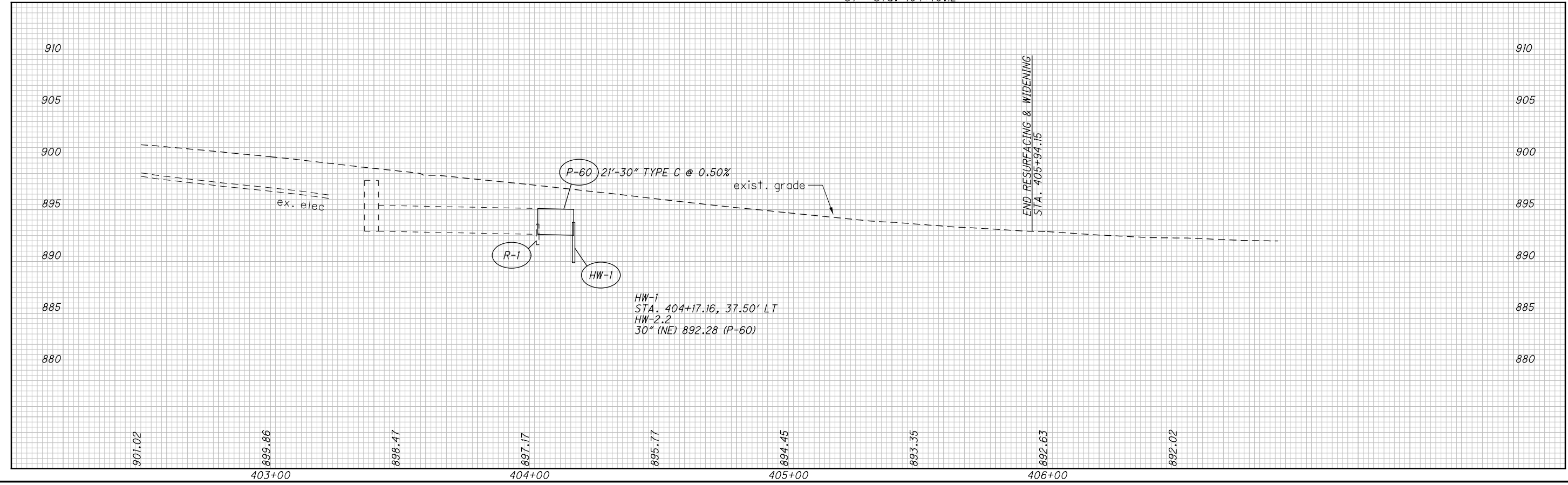
2 P.I. STA. 62+22.18, @ RAMP I-480 WB EXIT
 $Ls = 200.00'$
 $f s = 8^\circ 00' 00''$
 $LT = 133.47'$
 $ST = 66.79'$
 $x = 199.61'$
 $y = 9.30'$
 $k = 99.94'$
 $p = 2.33'$
 $SRS = 60+88.71$
 $TS = 62+88.71$

3 P.I. STA. 402+55.78, @ RAMP I-480 WB EXIT
 $Ls = 110.00'$
 $f s = 9^\circ 41' 46''$
 $LT = 73.44'$
 $ST = 36.77'$
 $x = 109.69'$
 $y = 6.19'$
 $k = 54.95'$
 $p = 1.55'$
 $TS = Sta. 401+82.33$
 $SC = Sta. 402+92.33$

4 P.I. STA. 404+05.89, @ RAMP I-480 WB EXIT
 $Ls = 110.00'$
 $f s = 9^\circ 41' 46''$
 $LT = 73.44'$
 $ST = 36.77'$
 $x = 109.69'$
 $y = 6.19'$
 $k = 54.95'$
 $p = 1.55'$
 $CS = Sta. 403+69.12$
 $ST = Sta. 404+79.12$

2 P.I. Sta. 58+19.28, EX. @ RAMP I-480 WB EXIT
 $\Delta = 18^\circ 12' 28''$ (RT)
 $Dc = 13^\circ 00' 00''$
 $R = 440.74'$
 $T = 70.63'$
 $L = 140.06'$
 $E = 5.62'$
 $C = 139.47'$
 $C.B. = S 84^\circ 31' 51'' E$
 $PC = 57+48.65$
 $CS = 58+88.71$

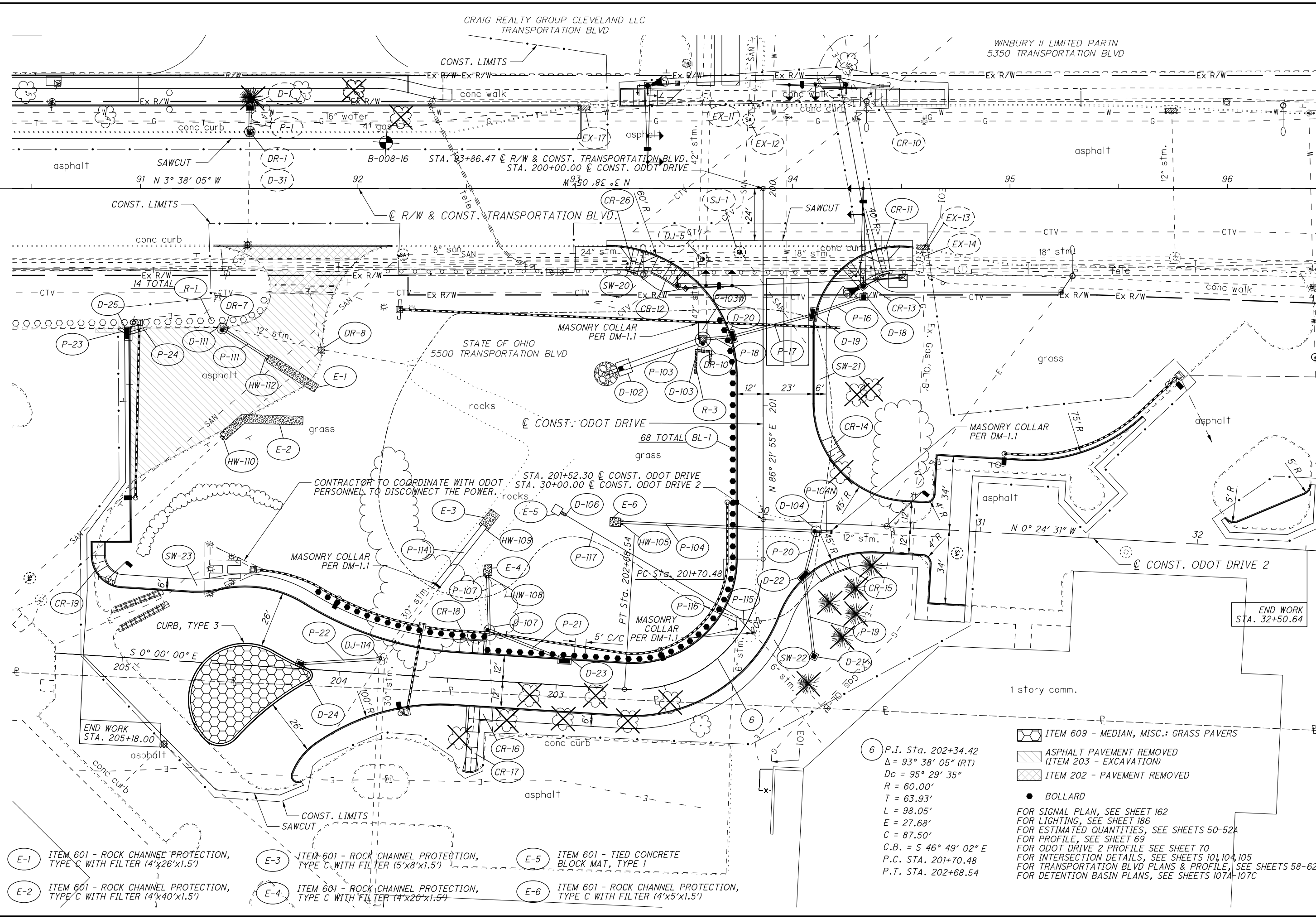
8 P.I. Sta. 406+24.15, @ RAMP I-480 WB EXIT
 $\Delta = 5^\circ 38' 30''$ (LT)
 $Dc = 9^\circ 32' 57''$
 $R = 600.00'$
 $T = 29.56'$
 $L = 59.08'$
 $E = 0.73'$
 $C = 59.05'$
 $C.B. = S 63^\circ 31' 33'' E$
 $PC = Sta. 405+94.58$
 $PT = Sta. 406+53.66$



PLAN AND PROFILE - I-480 WB EXIT RAMP
STA. 402+50.00 TO END

CUY-480/
TRANSPORTATION BLVD.

\\AKR\DATA\2016\2016051\CUY-480\ROADWAY\SHETS\8974\GP822.DGN
 2/1/2017 2:58:06 PM G00TV81STD_USER






PLAN - ODOT DRIVE

 BEGIN TO END

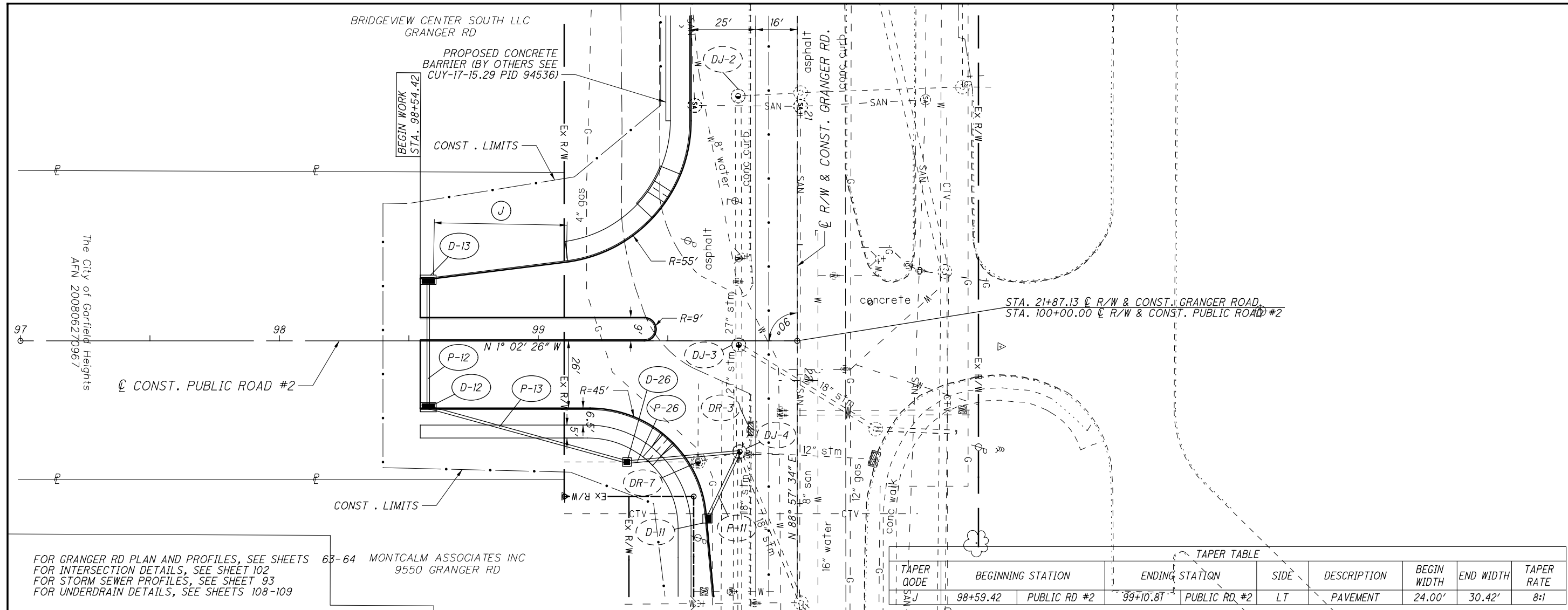
CUY-480/

 TRANSPORTATION BLVD.

- (E-1) ITEM 601 - ROCK CHANNEL PROTECTION, TYPE C WITH FILTER (4'x26'x1.5')
- (E-2) ITEM 601 - ROCK CHANNEL PROTECTION, TYPE C WITH FILTER (4'x40'x1.5')
- (E-3) ITEM 601 - ROCK CHANNEL PROTECTION, TYPE C WITH FILTER (5'x8'x1.5')
- (E-4) ITEM 601 - ROCK CHANNEL PROTECTION, TYPE C WITH FILTER (4'x20'x1.5')
- (E-5) ITEM 601 - TIED CONCRETE BLOCK MAT, TYPE 1
- (E-6) ITEM 601 - ROCK CHANNEL PROTECTION, TYPE C WITH FILTER (4'x5'x1.5')

- (6) P.I. Sta. 202+34.42
 - $\Delta = 93^\circ 38' 05''$ (RT)
 - $D_c = 95^\circ 29' 35''$
 - $R = 60.00'$
 - $T = 63.93'$
 - $L = 98.05'$
 - $E = 27.68'$
 - $C = 87.50'$
 - C.B. = $S 46^\circ 49' 02'' E$
 - P.C. STA. 201+70.48
 - P.T. STA. 202+68.54
 -  ITEM 609 - MEDIAN, MISC.: GRASS PAVERS
 -  ASPHALT PAVEMENT REMOVED (ITEM 203 - EXCAVATION)
 -  ITEM 202 - PAVEMENT REMOVED
 - BOLLARD
- FOR SIGNAL PLAN, SEE SHEET 162
 FOR LIGHTING, SEE SHEET 186
 FOR ESTIMATED QUANTITIES, SEE SHEETS 50-52A
 FOR PROFILE, SEE SHEET 69
 FOR ODOT DRIVE 2 PROFILE SEE SHEET 70
 FOR INTERSECTION DETAILS, SEE SHEETS 101, 104, 105
 FOR TRANSPORTATION BLVD PLANS & PROFILE, SEE SHEETS 58-62
 FOR DETENTION BASIN PLANS, SEE SHEETS 107A-107C

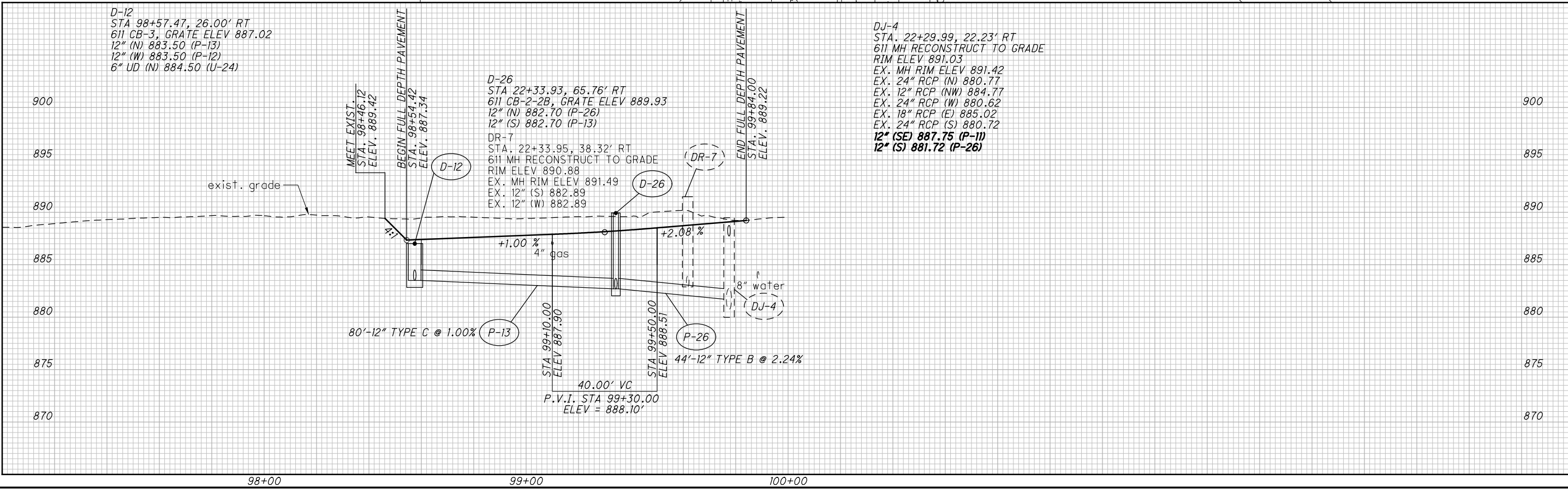
D:\2016\2016051\CUY-480\ROADWAY\ROADWAY\ROADWAY\SHEETS\8097\GP031.DGN
 5/24/2017 9:02:57 AM GDDTV81STD_USER



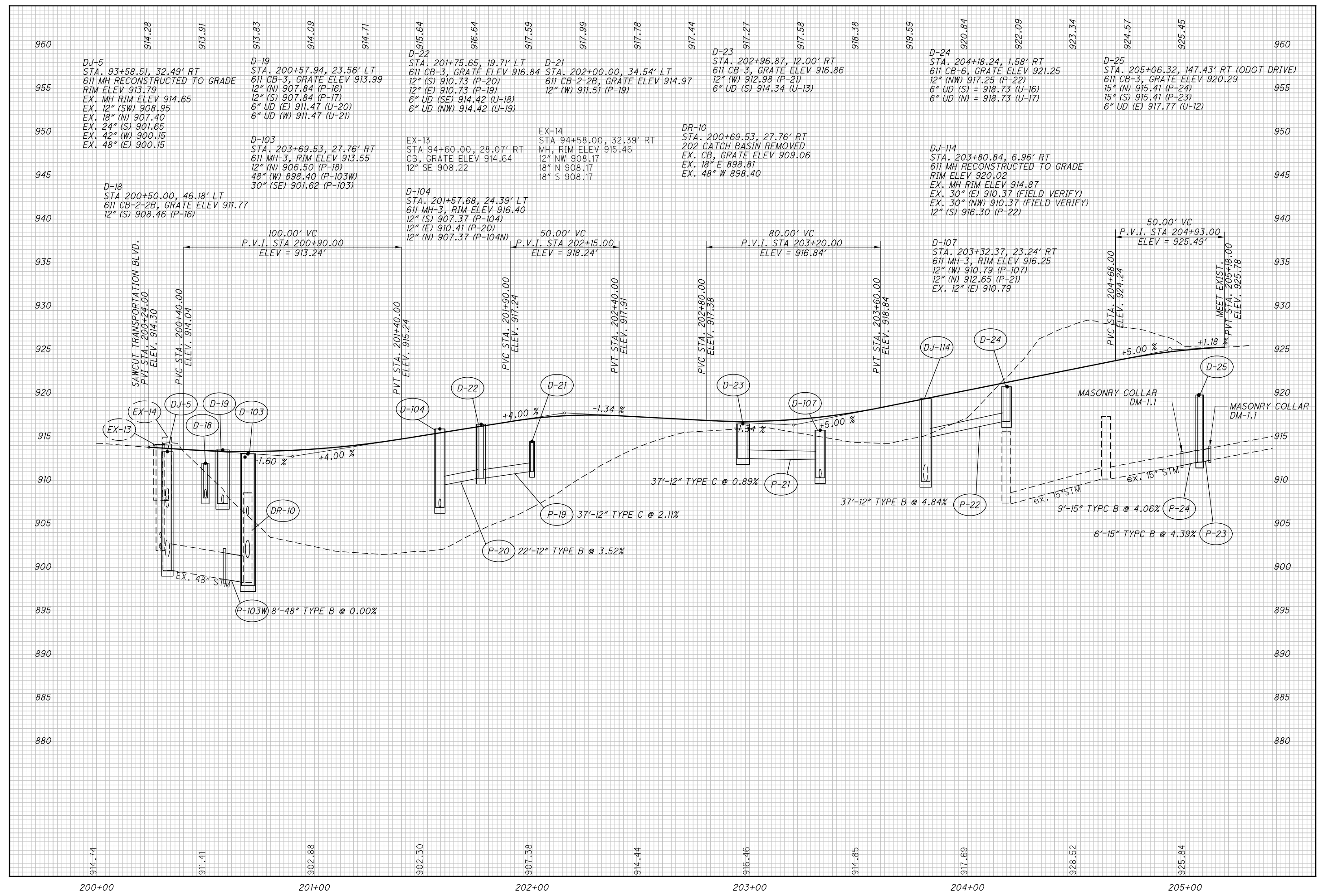
FOR GRANGER RD PLAN AND PROFILES, SEE SHEETS 63-64
FOR INTERSECTION DETAILS, SEE SHEET 102
FOR STORM SEWER PROFILES, SEE SHEET 93
FOR UNDERDRAIN DETAILS, SEE SHEETS 108-109

MONTCALM ASSOCIATES INC
9550 GRANGER RD

TAPER CODE	BEGINNING STATION	ENDING STATION	SIDE	DESCRIPTION	BEGIN WIDTH	END WIDTH	TAPER RATE
N/S	98+59.42	99+10.81	LT	PAVEMENT	24.00'	30.42'	8:1

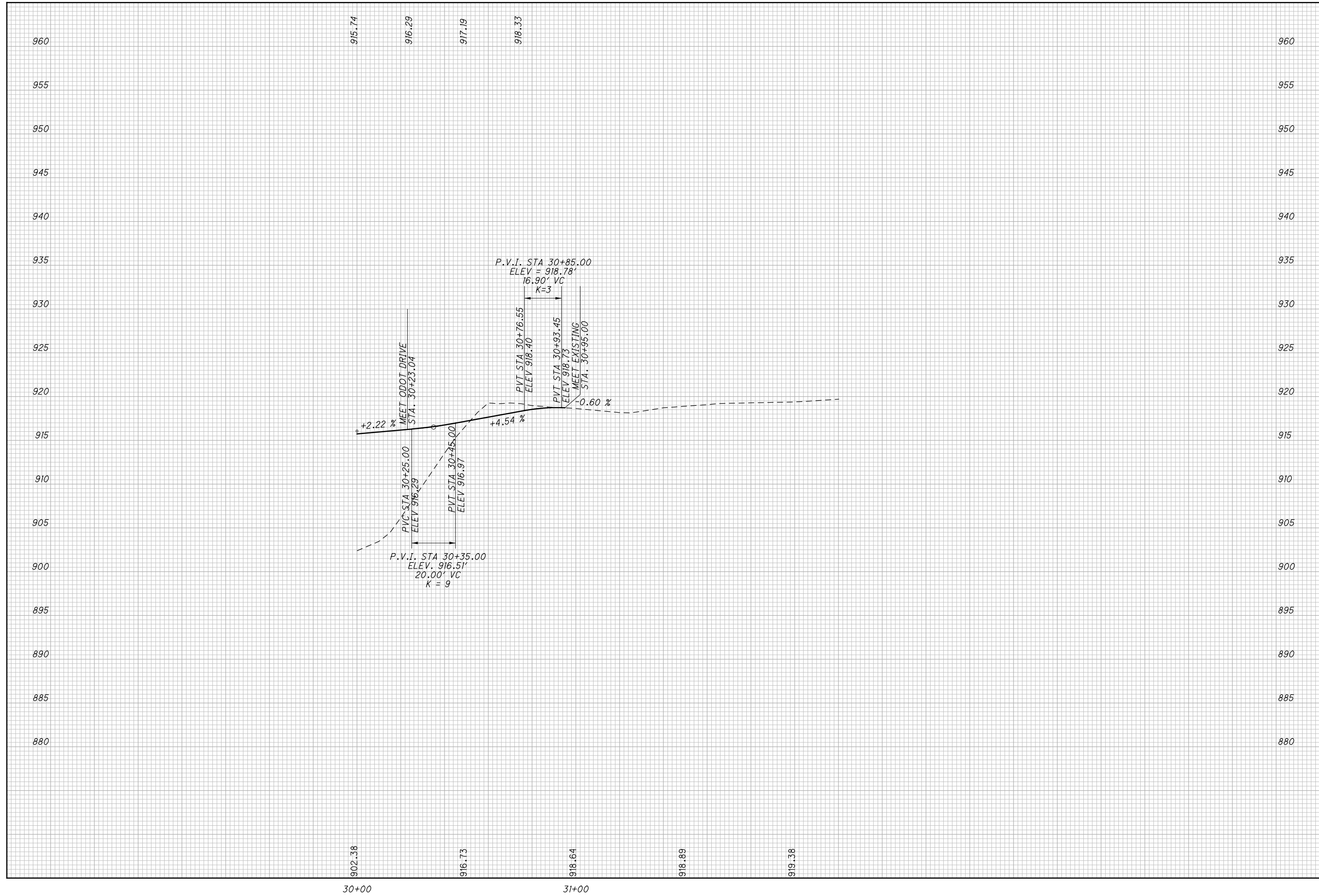


\\AKRNGA\DATA\2016\2016051\CUY-480\ROADWAY\PROJECTS\98974\GP041.DGN
 2/1/2017 2:48:13 PM
 G007V81STD_USER



<p>914.28 DJ-5 STA. 93+58.51, 32.49' RT 611 MH RECONSTRUCTED TO GRADE RIM ELEV 913.79 EX. MH RIM ELEV 914.65 EX. 12" (SW) 908.95 EX. 18" (N) 907.40 EX. 24" (S) 901.65 EX. 42" (W) 900.15 EX. 48" (E) 900.15</p>	<p>913.91 D-19 STA. 200+57.94, 23.56' LT 611 CB-3, GRATE ELEV 913.99 12" (N) 907.84 (P-16) 12" (S) 907.84 (P-17) 6" UD (E) 911.47 (U-20) 6" UD (W) 911.47 (U-21)</p>	<p>913.83 D-103 STA. 203+69.53, 27.76' RT 611 MH-3, RIM ELEV 913.55 12" (N) 906.50 (P-18) 48" (W) 898.40 (P-103W) 30" (SE) 901.62 (P-103)</p>	<p>914.09 D-18 STA 200+50.00, 46.18' LT 611 CB-2-2B, GRATE ELEV 911.77 12" (S) 908.46 (P-16)</p>	<p>914.71 D-104 STA. 201+57.68, 24.39' LT 611 MH-3, RIM ELEV 916.40 12" (S) 907.37 (P-104) 12" (E) 910.41 (P-20) 12" (N) 907.37 (P-104N)</p>	<p>915.64 D-22 STA. 201+75.65, 19.71' LT 611 CB-3, GRATE ELEV 916.84 12" (S) 910.73 (P-20) 12" (E) 910.73 (P-19) 6" UD (SE) 914.42 (U-18) 6" UD (NW) 914.42 (U-19)</p>	<p>916.64 EX-13 STA 94+60.00, 28.07' RT CB, GRATE ELEV 914.64 12" SE 908.22</p>	<p>917.59 D-21 STA. 202+00.00, 34.54' LT 611 CB-2-2B, GRATE ELEV 914.97 12" (W) 911.51 (P-19)</p>	<p>917.99 EX-14 STA 94+58.00, 32.39' RT MH, RIM ELEV 915.46 12" NW 908.17 18" N 908.17 18" S 908.17</p>	<p>917.78 D-23 STA. 202+96.87, 12.00' RT 611 CB-3, GRATE ELEV 916.86 12" (W) 912.98 (P-21) 6" UD (S) 914.34 (U-13)</p>	<p>917.44 DR-10 STA. 200+69.53, 27.76' RT 202 CATCH BASIN REMOVED EX. CB, GRATE ELEV 909.06 EX. 18" E 898.81 EX. 48" W 898.40</p>	<p>917.27 D-24 STA. 204+18.24, 1.58' RT 611 CB-6, GRATE ELEV 921.25 12" (NW) 917.25 (P-22) 6" UD (S) = 918.73 (U-16) 6" UD (N) = 918.73 (U-17)</p>	<p>917.58 D-25 STA. 205+06.32, 147.43' RT (ODOT DRIVE) 611 CB-3, GRATE ELEV 920.29 15" (N) 915.41 (P-24) 15" (S) 915.41 (P-23) 6" UD (E) 917.77 (U-12)</p>	<p>918.38 D-24 STA. 204+18.24, 1.58' RT 611 CB-6, GRATE ELEV 921.25 12" (NW) 917.25 (P-22) 6" UD (S) = 918.73 (U-16) 6" UD (N) = 918.73 (U-17)</p>	<p>919.59 D-24 STA. 203+80.84, 6.96' RT 611 MH RECONSTRUCTED TO GRADE RIM ELEV 920.02 EX. MH RIM ELEV 914.87 EX. 30" (E) 910.37 (FIELD VERIFY) EX. 30" (NW) 910.37 (FIELD VERIFY) 12" (S) 916.30 (P-22)</p>	<p>920.84 D-107 STA. 203+32.37, 23.24' RT 611 MH-3, RIM ELEV 916.25 12" (W) 910.79 (P-107) 12" (N) 912.65 (P-21) EX. 12" (E) 910.79</p>	<p>922.09 D-25 STA. 205+06.32, 147.43' RT (ODOT DRIVE) 611 CB-3, GRATE ELEV 920.29 15" (N) 915.41 (P-24) 15" (S) 915.41 (P-23) 6" UD (E) 917.77 (U-12)</p>	<p>923.34 D-25 STA. 205+06.32, 147.43' RT (ODOT DRIVE) 611 CB-3, GRATE ELEV 920.29 15" (N) 915.41 (P-24) 15" (S) 915.41 (P-23) 6" UD (E) 917.77 (U-12)</p>	<p>924.57 D-25 STA. 205+06.32, 147.43' RT (ODOT DRIVE) 611 CB-3, GRATE ELEV 920.29 15" (N) 915.41 (P-24) 15" (S) 915.41 (P-23) 6" UD (E) 917.77 (U-12)</p>	<p>925.45 D-25 STA. 205+06.32, 147.43' RT (ODOT DRIVE) 611 CB-3, GRATE ELEV 920.29 15" (N) 915.41 (P-24) 15" (S) 915.41 (P-23) 6" UD (E) 917.77 (U-12)</p>
--	--	---	--	--	--	---	---	---	--	---	--	--	--	---	---	--	--	--	--

\\AKRINDA\DATA\2016\2016051\CUY\8974\ROADWAY\SHS\8974GF031.DGN
4/18/2017
2:25:42 PM
G001V81STD_USER



CALCULATED
JMB
CHECKED
JJS

**PROFILE - ODOT DRIVE 2
 BEGIN TO END**

**CUY-480/
 TRANSPORTATION BLVD.**

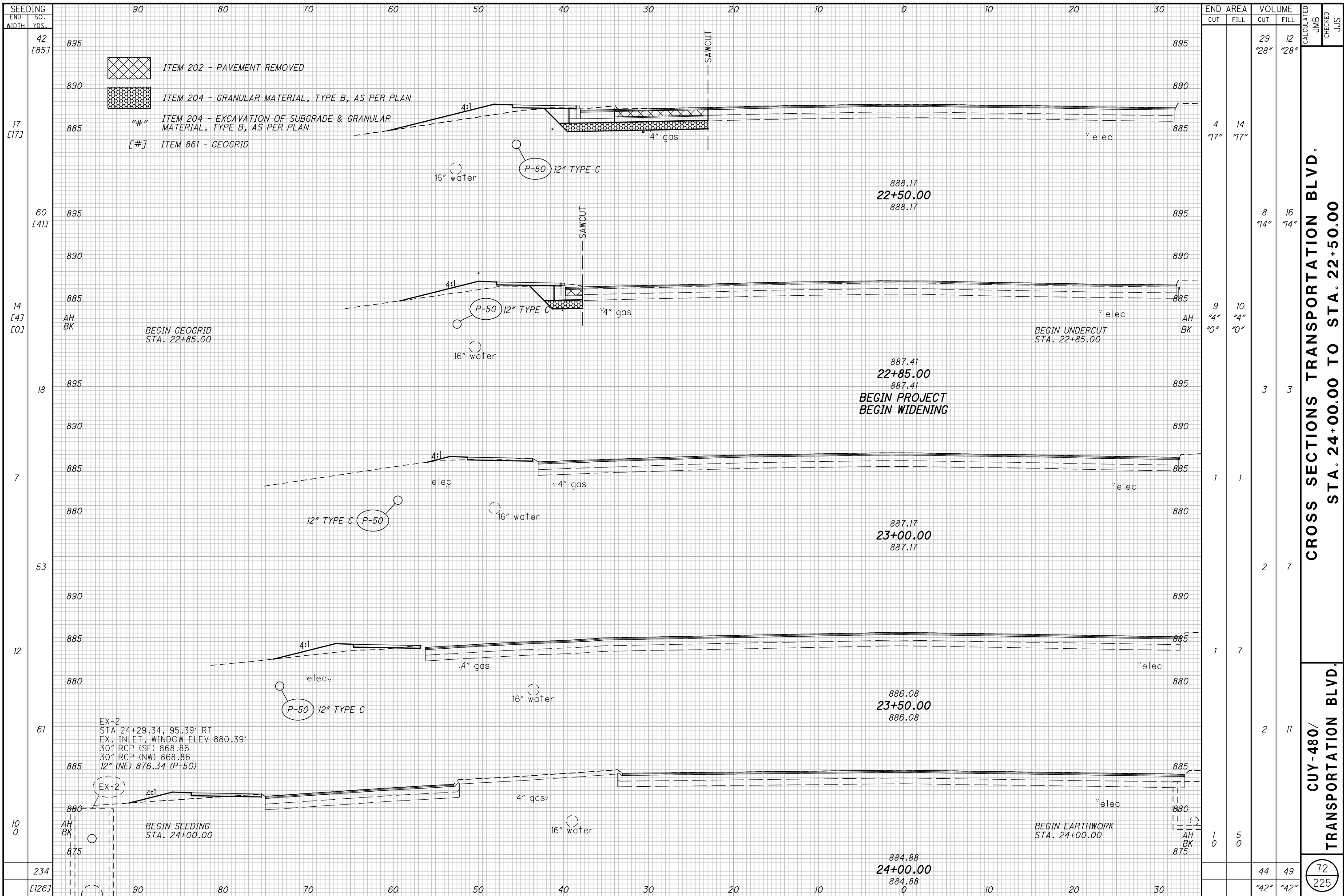


END	AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		

CROSS SECTIONS TRANSPORTATION BLVD.
STA. 26+50.00 TO STA. 24+50.00

CUY-480/TRANSPORTATION BLVD.

71
 225



- ITEM 202 - PAVEMENT REMOVED
- ITEM 204 - GRANULAR MATERIAL, TYPE B, AS PER PLAN
- "#" ITEM 204 - EXCAVATION OF SUBGRADE & GRANULAR MATERIAL, TYPE B, AS PER PLAN
- ["#"] ITEM 861 - GEOGRID

BEGIN GEOGRID
STA. 22+85.00

BEGIN UNDERCUT
STA. 22+85.00

887.41
22+85.00
887.41
BEGIN PROJECT
BEGIN WIDENING

887.17
23+00.00
887.17

886.08
23+50.00
886.08

884.88
24+00.00
884.88

EX-2
STA 24+29.34, 95.39' RT
EX. INLET, WINDOW ELEV 880.39'
30" RCP (SE) 868.86
30" RCP (NW) 868.86
12" (NE) 876.34 (P-50)

BEGIN SEEDING
STA. 24+00.00

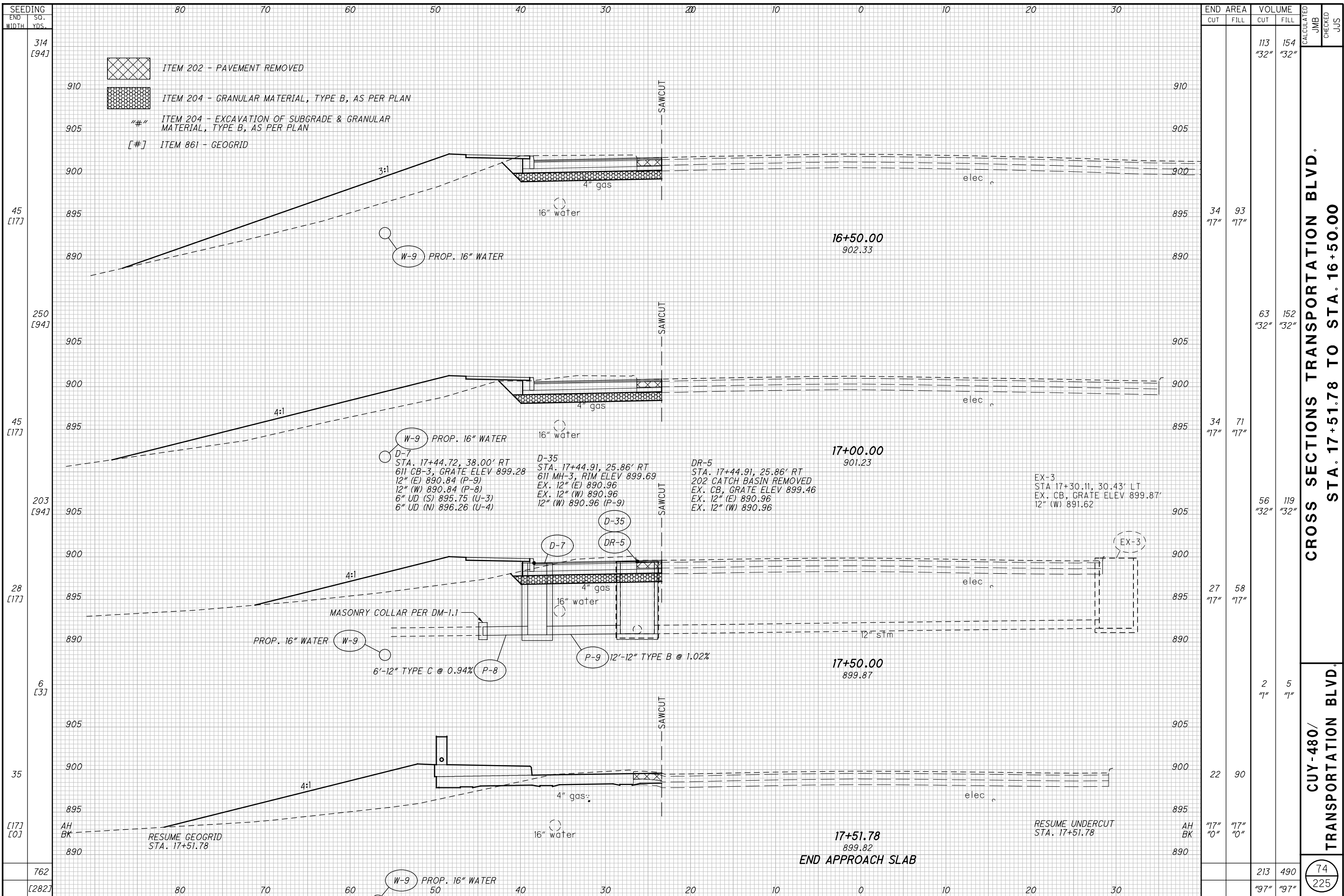
BEGIN EARTHWORK
STA. 24+00.00

SEEDING END SO. WIDTH YDS.	90	80	70	60	50	40	30	20	10	0	10	20	30	END AREA		VOLUME		CALCULATED JMB	CHECKED JUS	
														CUT	FILL	CUT	FILL			
42 [85]																	29 "28"	12 "28"		
17 [17]															4 "17"	14 "17"				
60 [41]																	8 "14"	16 "14"		
14 [4] [0]															9 "4"	10 "4"				
18																	3	3		
7																	1	1		
53																	2	7		
12																	1	7		
61																	2	11		
10 0																	1 0	5 0		
234 [126]																	44	49		

CROSS SECTIONS TRANSPORTATION BLVD.
STA. 24+00.00 TO STA. 22+50.00

CUY-480/
TRANSPORTATION BLVD.

72
225

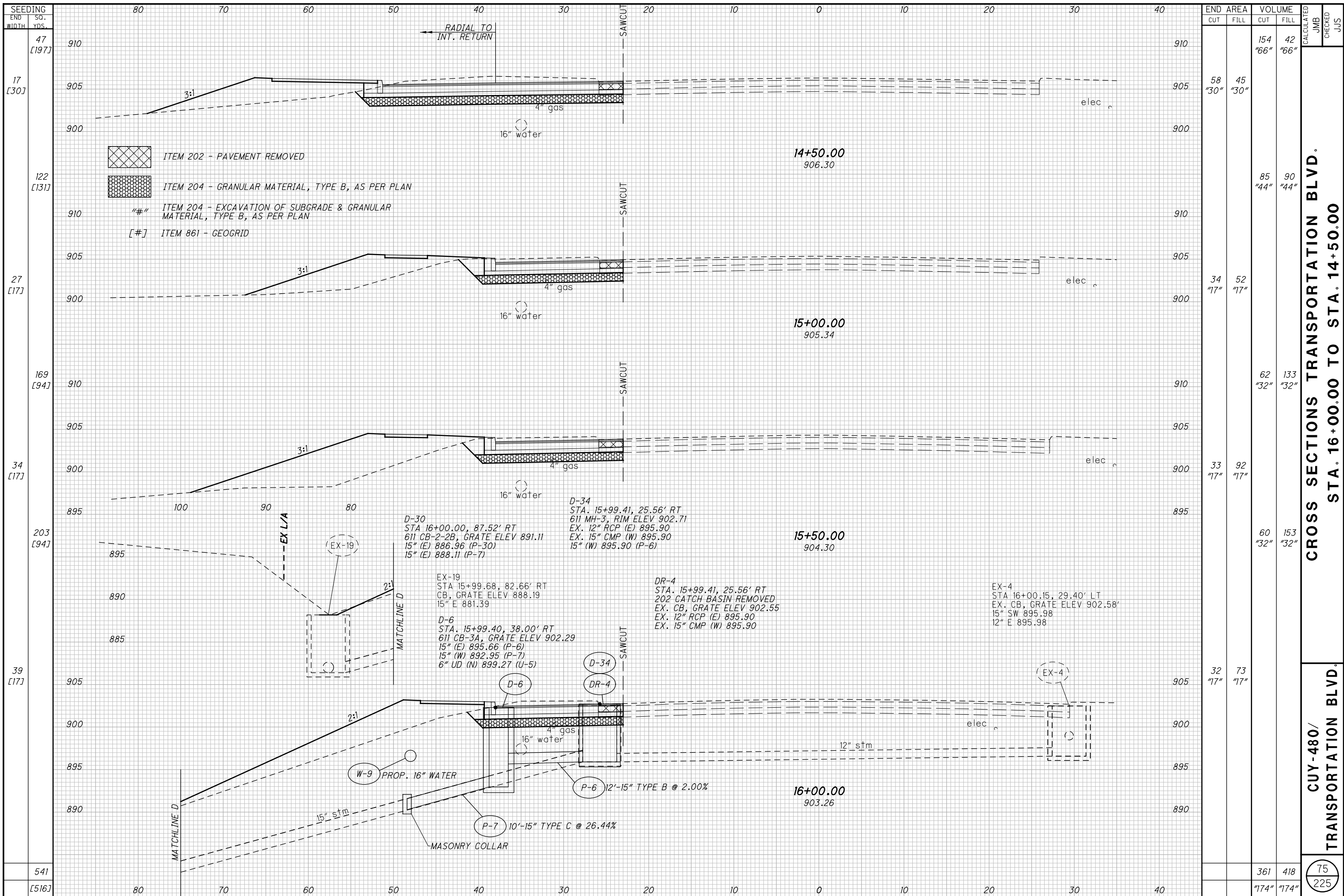


- ITEM 202 - PAVEMENT REMOVED
- ITEM 204 - GRANULAR MATERIAL, TYPE B, AS PER PLAN
- "#" ITEM 204 - EXCAVATION OF SUBGRADE & GRANULAR MATERIAL, TYPE B, AS PER PLAN
- ["#"] ITEM 861 - GEOGRID

SEEDING END SO. WIDTH YDS.	END AREA		VOLUME		CALCULATED JMB	CHECKED JUS
	CUT	FILL	CUT	FILL		
314 [94]			113 "32"	154 "32"		
45 [17]	34 "17"	93 "17"				
250 [94]			63 "32"	152 "32"		
45 [17]	34 "17"	71 "17"				
203 [94]			56 "32"	119 "32"		
28 [17]	27 "17"	58 "17"				
6 [3]			2 "1"	5 "1"		
35 [17]	22	90				
[17] [0]	AH BK "17" "0"	AH BK "17" "0"				
762 [282]			213 "97"	490 "97"	74 225	

CROSS SECTIONS TRANSPORTATION BLVD.
STA. 17+51.78 TO STA. 16+50.00
CUY-480/
TRANSPORTATION BLVD.

END APPROACH SLAB

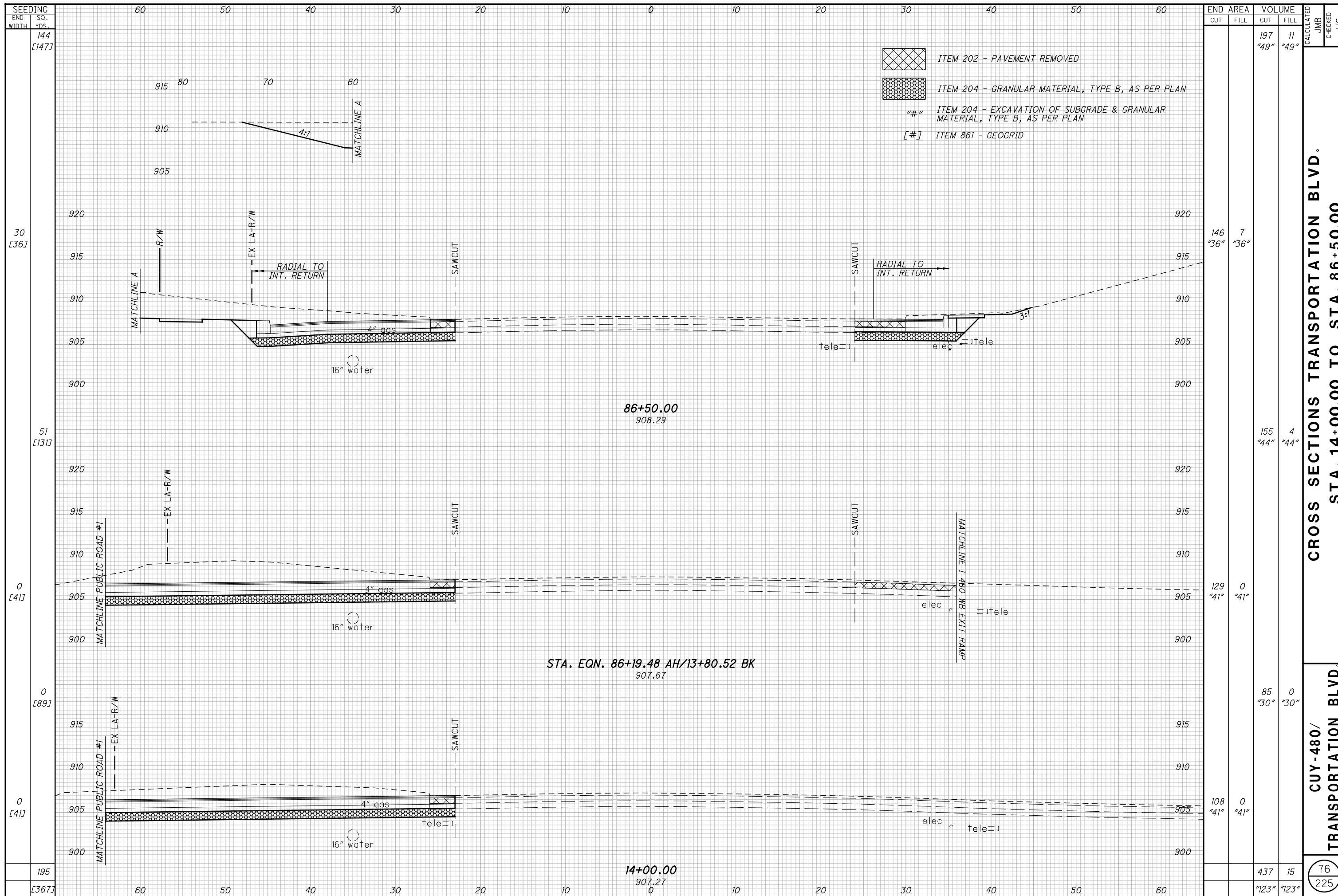



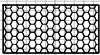
SEEDING	SO.	END	SO.
WIDTH	YDS.	WIDTH	YDS.
47	[197]	17	[30]
122	[131]	27	[17]
169	[94]	34	[17]
203	[94]	39	[17]
541	[516]		

END	AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
910			154	42	JMB	JUS
905	58	45	"66"	"66"		
900						
910			85	90		
905			"44"	"44"		
900						
910			62	133		
905			"32"	"32"		
900						
895			60	153		
890			"32"	"32"		
905			32	73		
900			"17"	"17"		
895						
890			361	418		
			"174"	"174"		

CROSS SECTIONS TRANSPORTATION BLVD.
 STA. 16+00.00 TO STA. 14+50.00
 CUY-480/
 TRANSPORTATION BLVD.

75
 225



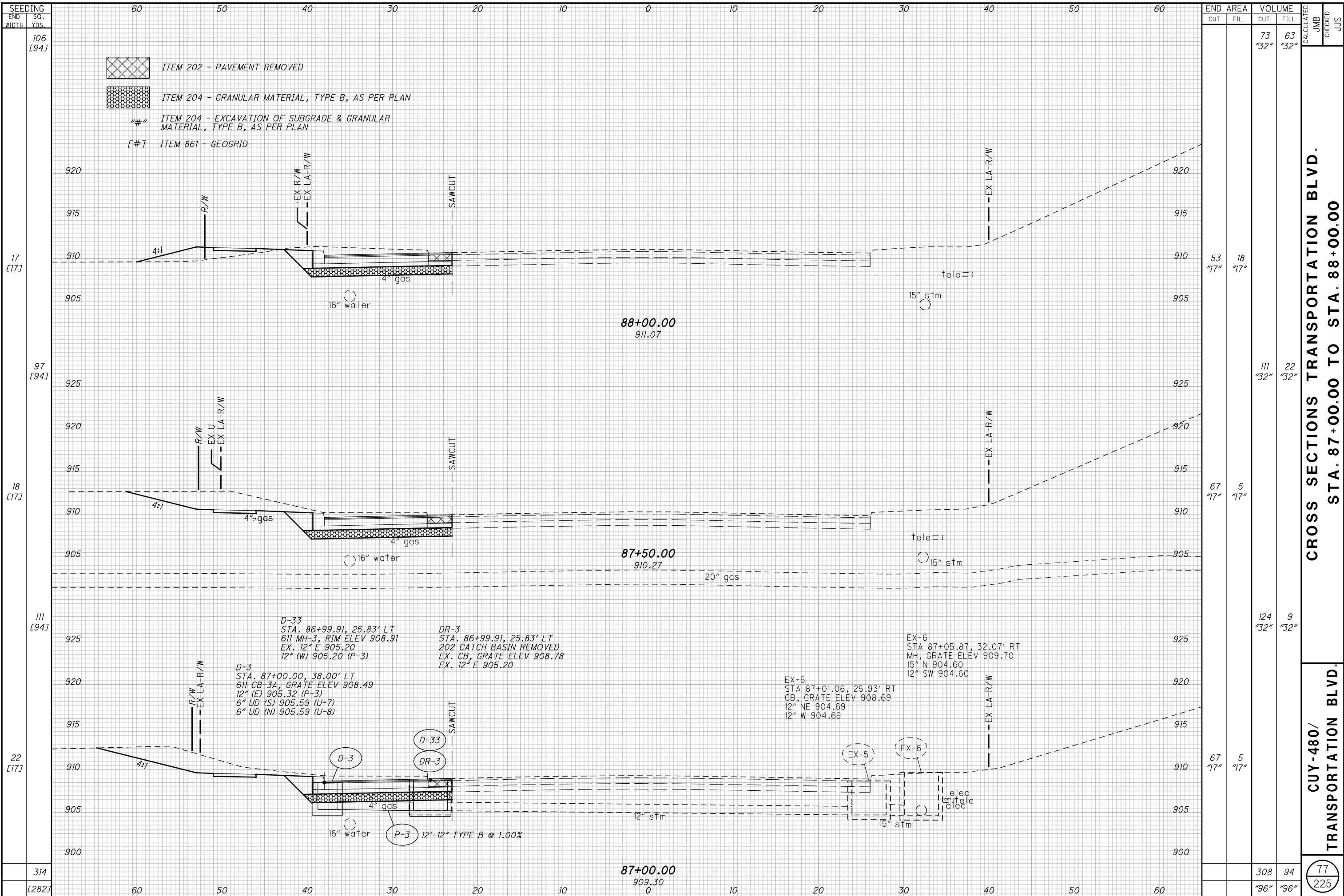
-  ITEM 202 - PAVEMENT REMOVED
-  ITEM 204 - GRANULAR MATERIAL, TYPE B, AS PER PLAN
- ##" ITEM 204 - EXCAVATION OF SUBGRADE & GRANULAR MATERIAL, TYPE B, AS PER PLAN
- [#] ITEM 861 - GEOGRID

SEEDING END SO. WIDTH YDS.	END AREA		VOLUME		CALCULATED JMB	CHECKED JUS
	CUT	FILL	CUT	FILL		
144 [147]			197 "49"	11 "49"		
30 [36]	146 "36"	7 "36"				
51 [13]			155 "44"	4 "44"		
0 [41]	129 "41"	0 "41"				
0 [89]			85 "30"	0 "30"		
0 [41]	108 "41"	0 "41"				
195 [367]			437 "123"	15 "123"		

**CROSS SECTIONS TRANSPORTATION BLVD.
 STA. 14+00.00 TO STA. 86+50.00**

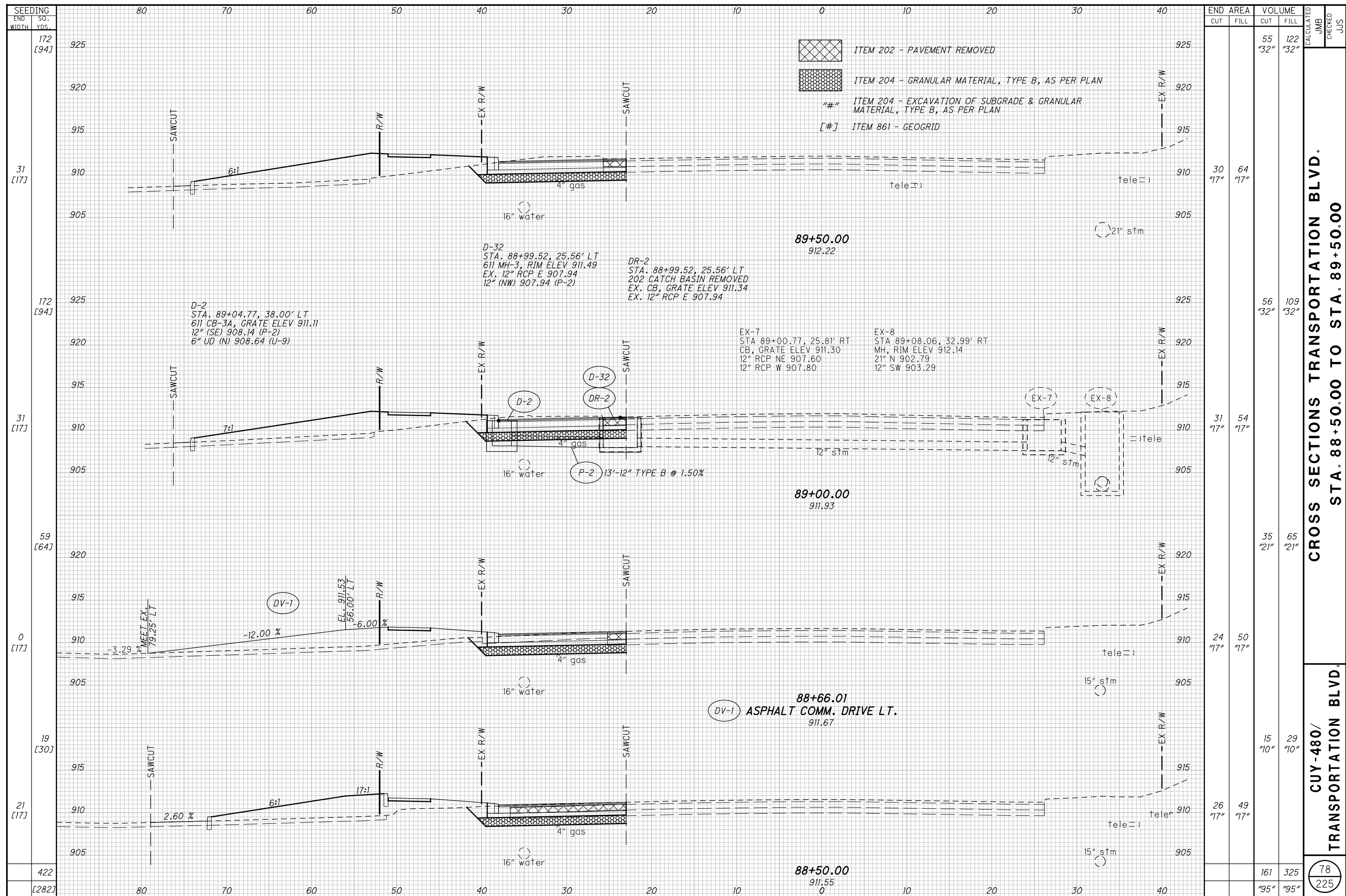
**CUY-480/
 TRANSPORTATION BLVD.**



76
225



SEEDING END WIDTH	SO. YDS.	END AREA		VOLUME		CALCULATED JMB	CHECKED JJS
		CUT	FILL	CUT	FILL		
17 [177]	106 [94]	53 "17"	18 "17"	73 "32"	63 "32"		
97 [94]				111 "32"	22 "32"		
18 [177]		67 "17"	5 "17"				
111 [94]				124 "32"	9 "32"		
22 [177]		67 "17"	5 "17"				
314 [282]				308 "96"	94 "96"	77 225	

CROSS SECTIONS TRANSPORTATION BLVD.
 STA. 87+00.00 TO STA. 88+00.00
 CUY-480/
 TRANSPORTATION BLVD.



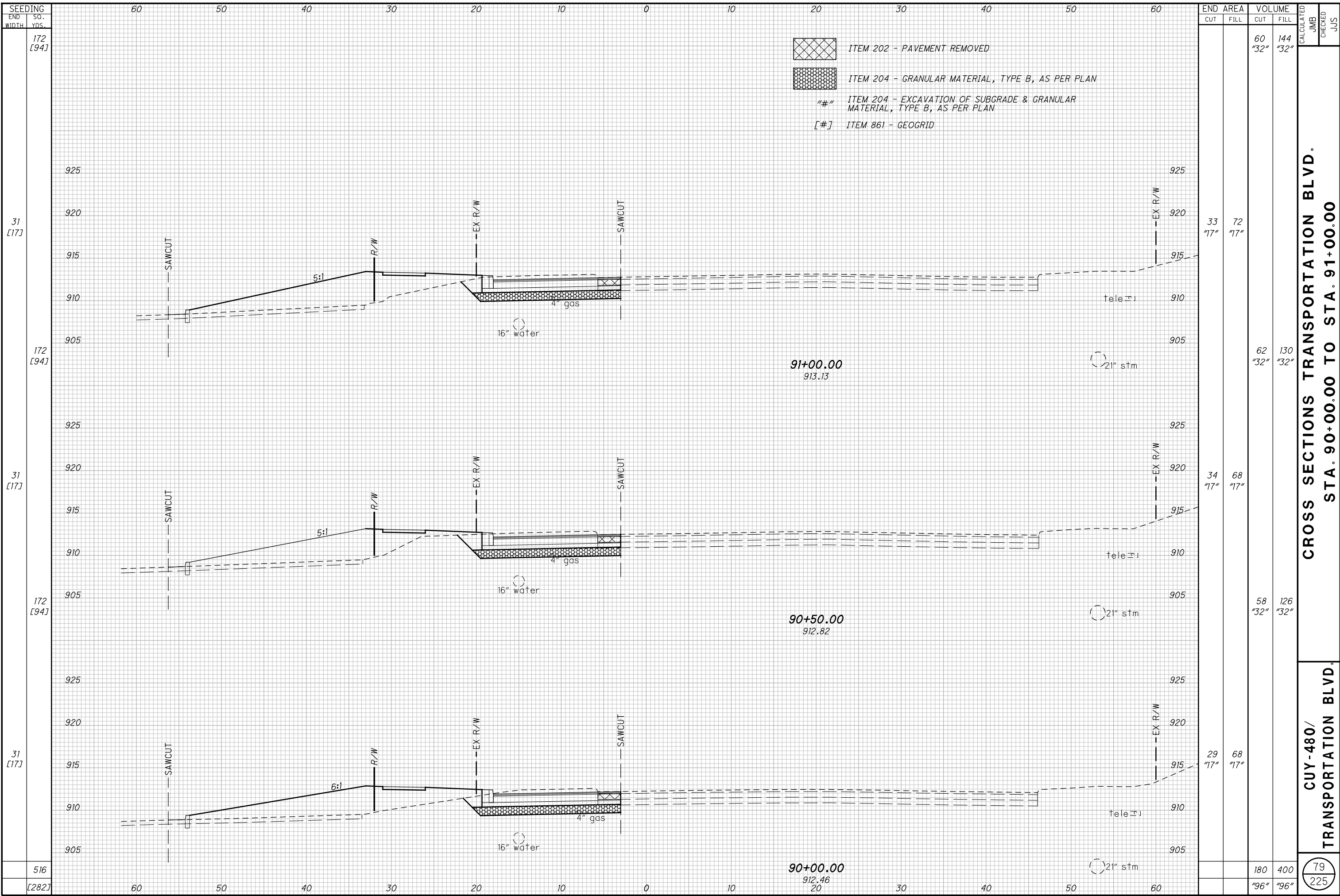
-  ITEM 202 - PAVEMENT REMOVED
-  ITEM 204 - GRANULAR MATERIAL, TYPE B, AS PER PLAN
- "#" ITEM 204 - EXCAVATION OF SUBGRADE & GRANULAR MATERIAL, TYPE B, AS PER PLAN
- [#] ITEM 861 - GEOGRID

SEEDING END WIDTH	SO. YDS.	ELEVATION	END AREA		VOLUME		CALCULATED JMB	CHECKED JUS
			CUT	FILL	CUT	FILL		
172 [94]	31 [177]	925	30 "17"	64 "17"	55 "32"	122 "32"		
172 [94]	31 [177]	925	31 "17"	54 "17"	56 "32"	109 "32"		
59 [64]	0 [177]	920	24 "17"	50 "17"	35 "21"	65 "21"		
19 [30]	21 [177]	915	26 "17"	49 "17"	15 "10"	29 "10"		
422 [282]		905			161 "95"	325 "95"		

**CROSS SECTIONS TRANSPORTATION BLVD.
 STA. 88+50.00 TO STA. 89+50.00**

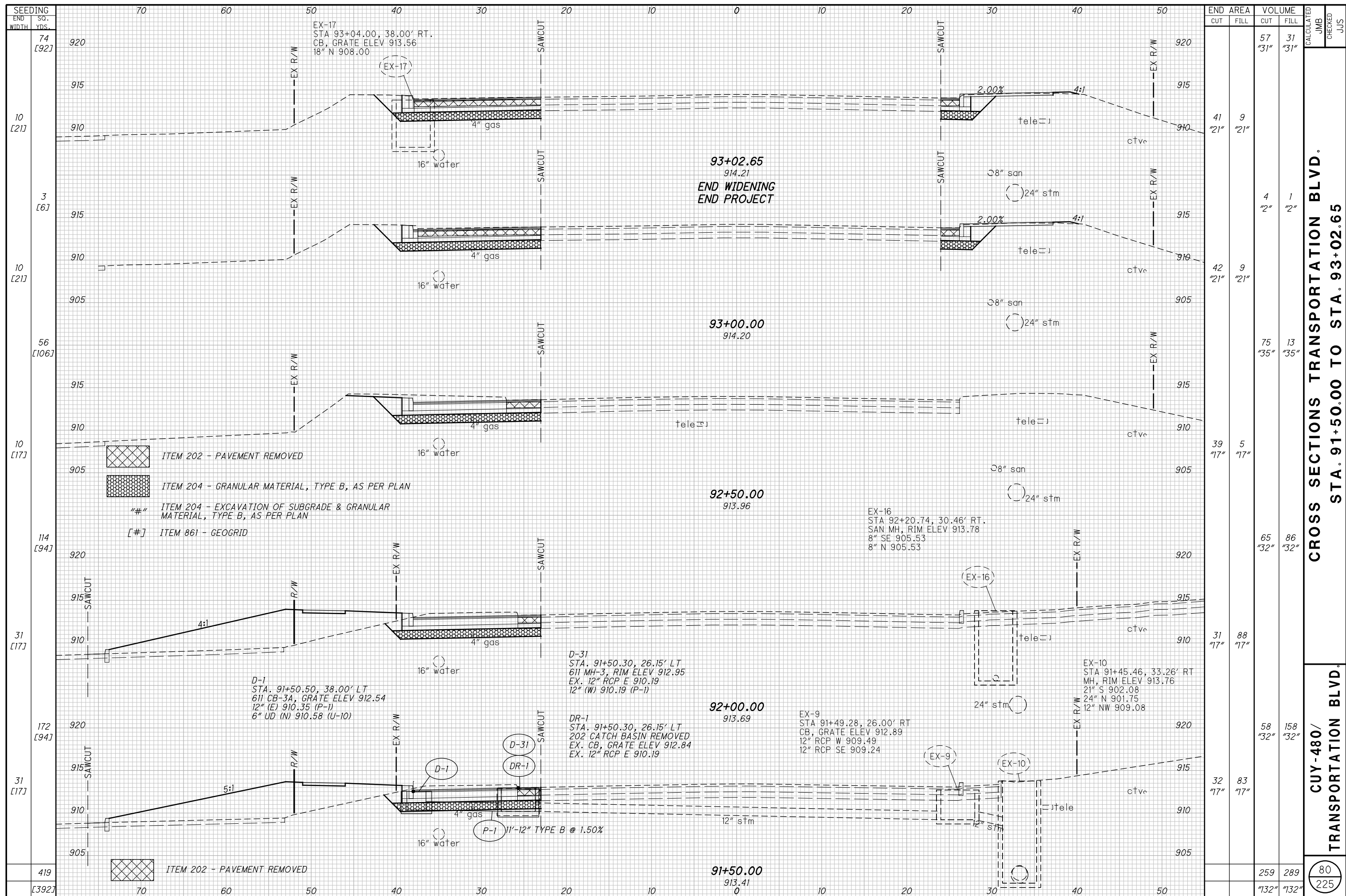
**CUY-480/
 TRANSPORTATION BLVD.**



78
 225



CROSS SECTIONS TRANSPORTATION BLVD.
 STA. 90+00.00 TO STA. 91+00.00
 CUY-480/
 TRANSPORTATION BLVD.

\\AKRNGA\DATA\2016\2016051\CUY-480\ROADWAY\DRY\91+50 TO STA. 93+02.65.DGN
 4/18/2017 11:57:01 AM G0071815.D.LUSER



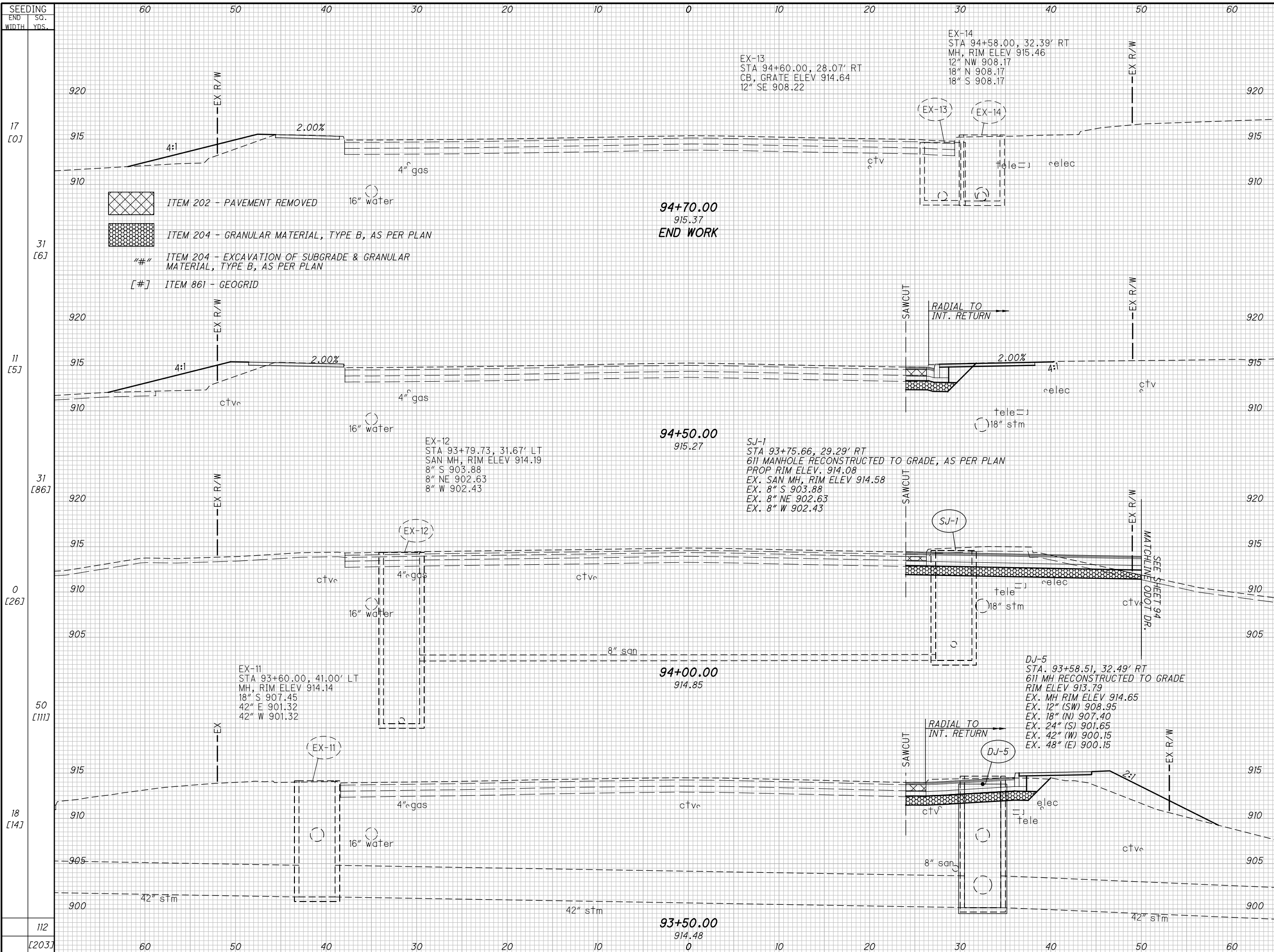
-  ITEM 202 - PAVEMENT REMOVED
-  ITEM 204 - GRANULAR MATERIAL, TYPE B, AS PER PLAN
- "#" ITEM 204 - EXCAVATION OF SUBGRADE & GRANULAR MATERIAL, TYPE B, AS PER PLAN
- [#] ITEM 861 - GEOGRID

SEEDING END WIDTH	SO. YDS. []	END AREA		VOLUME		CALCULATED JMB	CHECKED JJS
		CUT	FILL	CUT	FILL		
74	[92]	920	915	57	31		
10	[21]	910	910	41	9		
3	[6]	915	915	4	1		
10	[21]	910	910	42	9		
56	[106]	915	915	75	13		
10	[17]	910	910	39	5		
114	[94]	920	920	65	86		
31	[17]	910	910	31	88		
172	[94]	920	920	58	158		
31	[17]	910	910	32	83		
419	[392]	905	905	259	289		

CROSS SECTIONS TRANSPORTATION BLVD.
 STA. 91+50.00 TO STA. 93+02.65

CUY-480/
 TRANSPORTATION BLVD.

(80)
 225



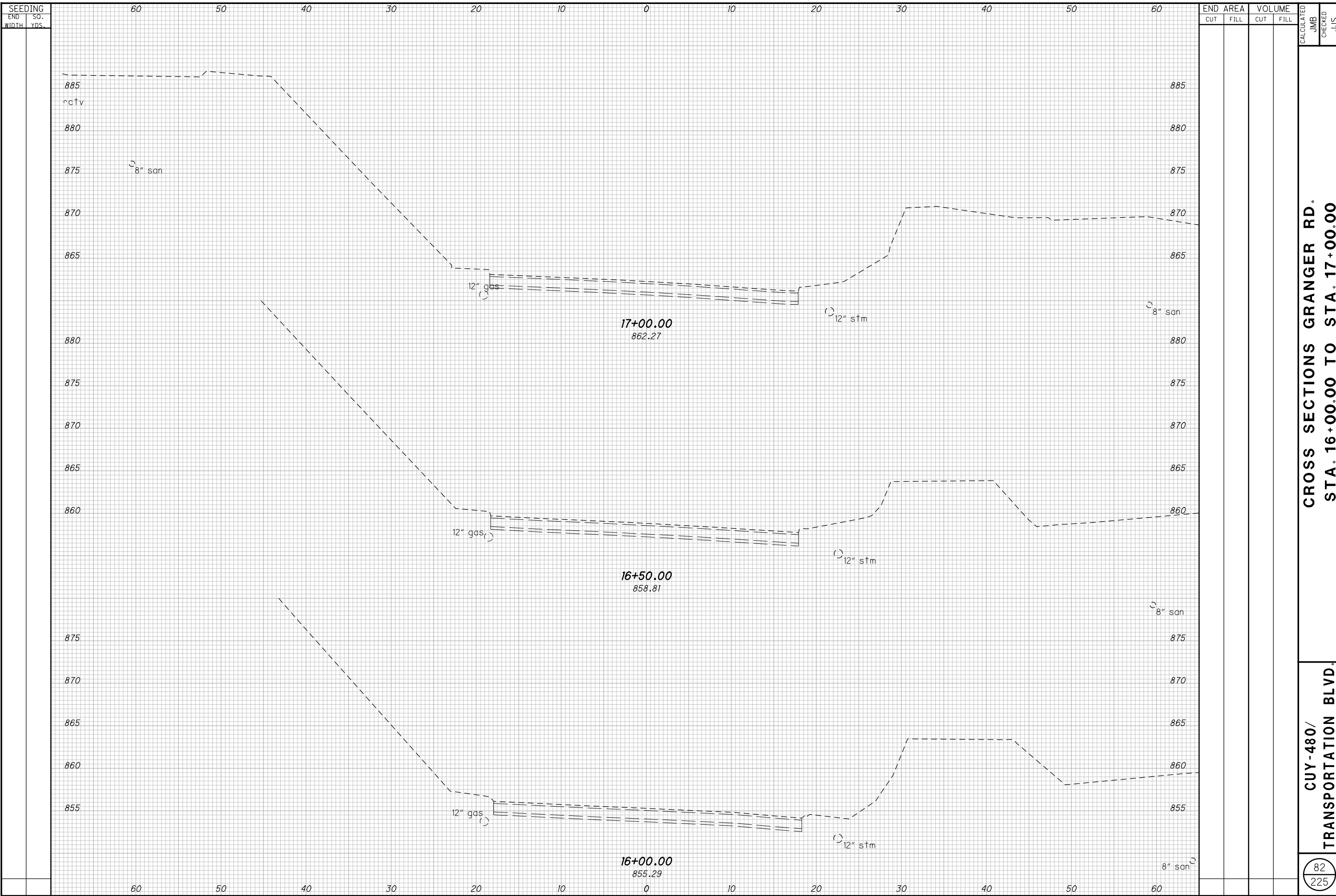
SEEDING END WIDTH YDS.	SO. YDS.	END AREA		VOLUME		CALCULATED JMB CHECKED JJS
		CUT	FILL	CUT	FILL	
17 [0]		0 "0"	0 "0"			
31 [6]				5 "2"	2 "2"	
11 [5]		14 "5"	5 "5"			
31 [86]				47 "29"	5 "29"	
0 [26]		37 "26"	0 "26"			
50 [11]				56 "37"	24 "37"	
18 [14]		24 "14"	26 "14"			
112 [203]				108 "68"	31 "68"	

CROSS SECTIONS TRANSPORTATION BLVD.
 STA. 93+50.00 TO STA. 94+55.25

CUY-480/
 TRANSPORTATION BLVD.

81
 225

0:\2816\2816051\CUY\ROADWAY\SHETS\807\1S02.DGN
 4/19/2017
 12:05:24 PM
 G00TV815TD_USER



END SO. WIDTH	AREA CUT	AREA FILL	VOLUME		CALCULATED JMB	CHECKED JJS
			CUT	FILL		
60						
50						
40						
30						
20						
10						
0						
10						
20						
30						
40						
50						
60						

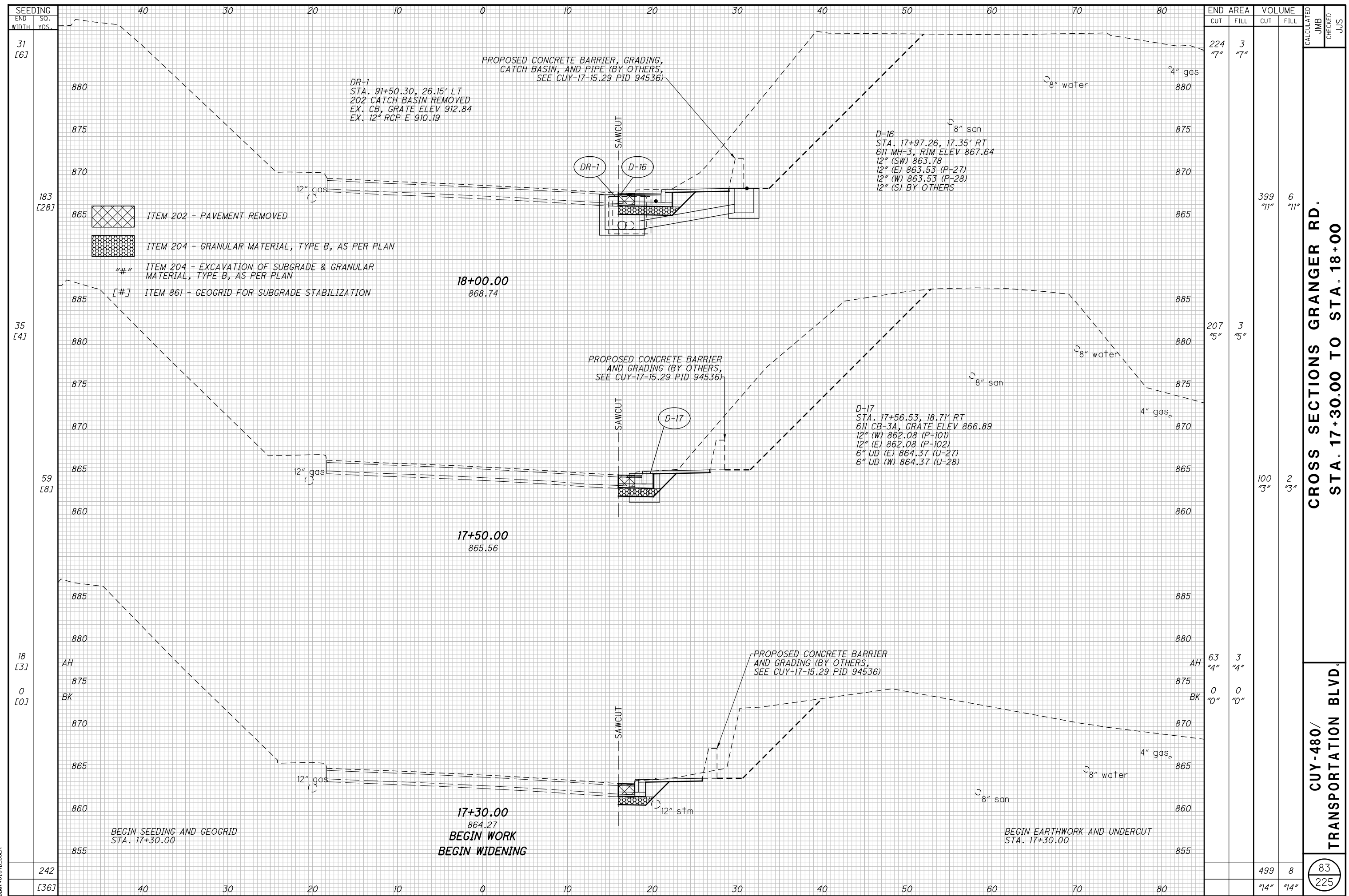
CROSS SECTIONS GRANGER RD.
 STA. 16+00.00 TO STA. 17+00.00

CUY-480/
 TRANSPORTATION BLVD.

82
 225

\\AKRIN\DATA\2016\2016051\CUY-480\74\ROADWAY\SHEET'S\80974\3001.DGN
 3/1/2017 2:30:49 PM
 0007181STD_USER

\\AKRIN64\DATA\2016\2016051\CUY\8974\ROADWAY\SHRETS\8974\3601.DGN
 3/17/2017 2:27:06 PM
 000761STD_USER

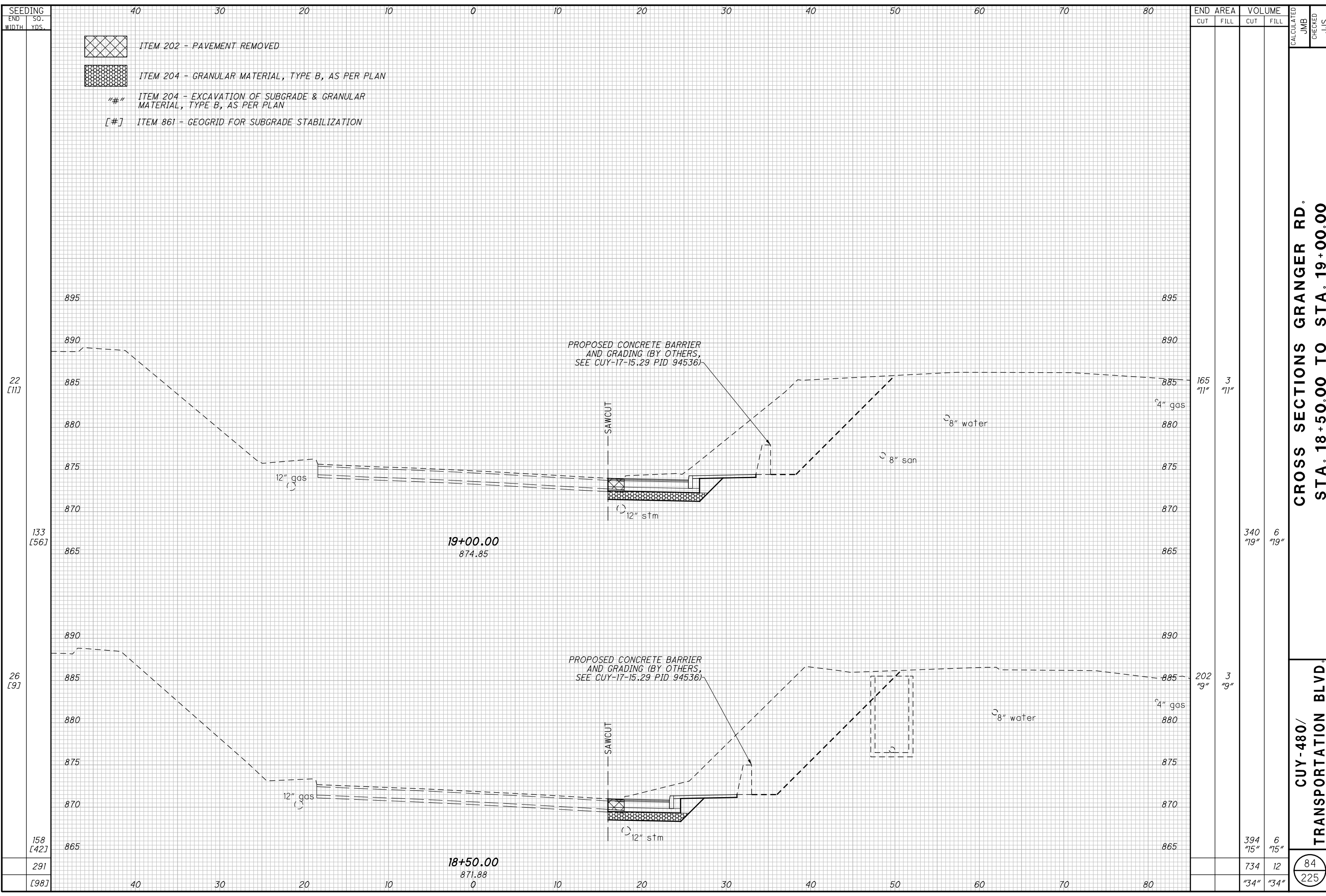


**CROSS SECTIONS GRANGER RD.
 STA. 17+30.00 TO STA. 18+00**



**CUY-480/
 TRANSPORTATION BLVD.**

END STA.	AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
18+00	224	3	399	6		
	"7"	"7"	"11"	"11"		
17+50	207	3	100	2		
	"5"	"5"	"3"	"3"		
17+30	63	3	0	0		
	"4"	"4"	"0"	"0"		
TOTAL	499	8	499	8	83	225
	"14"	"14"	"14"	"14"		

\\AKRON4\DATA\2016\20160511\CUY\80974\ROADWAY SHEETS\80974XS001.DGN
 3/17/2017 2:27:42 PM
 000TV81STD_USER



SEEDING END WIDTH	SO. YDS.	STATIONING								END AREA		VOLUME		CALCULATED JMB	CHECKED JJS	
		40	30	20	10	0	10	20	30	40	50	60	70			80

-  ITEM 202 - PAVEMENT REMOVED
-  ITEM 204 - GRANULAR MATERIAL, TYPE B, AS PER PLAN
- "#" ITEM 204 - EXCAVATION OF SUBGRADE & GRANULAR MATERIAL, TYPE B, AS PER PLAN
- ["#"] ITEM 861 - GEOGRID FOR SUBGRADE STABILIZATION

22
[11]

133
[56]

26
[9]

158
[42]

291
[98]

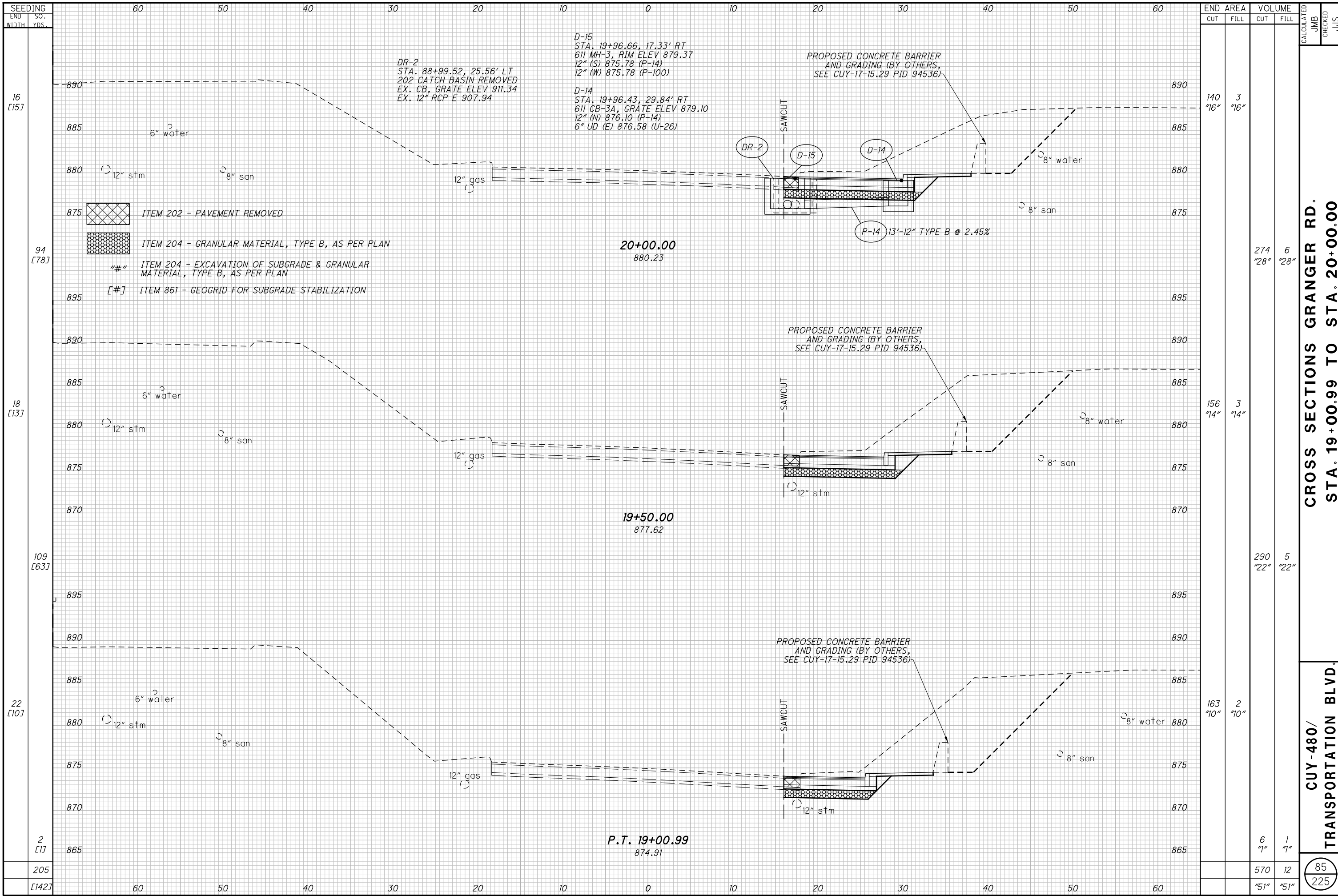
19+00.00
874.85

18+50.00
871.88

END AREA	VOLUME	CALCULATED JMB	CHECKED JJS
165 "11"	3 "11"		
340 "19"	6 "19"		
202 "9"	3 "9"		
394 "15"	6 "15"		
734 "34"	12 "34"	84 225	

CROSS SECTIONS GRANGER RD.
 STA. 18+50.00 TO STA. 19+00.00

CUY-480/
 TRANSPORTATION BLVD.

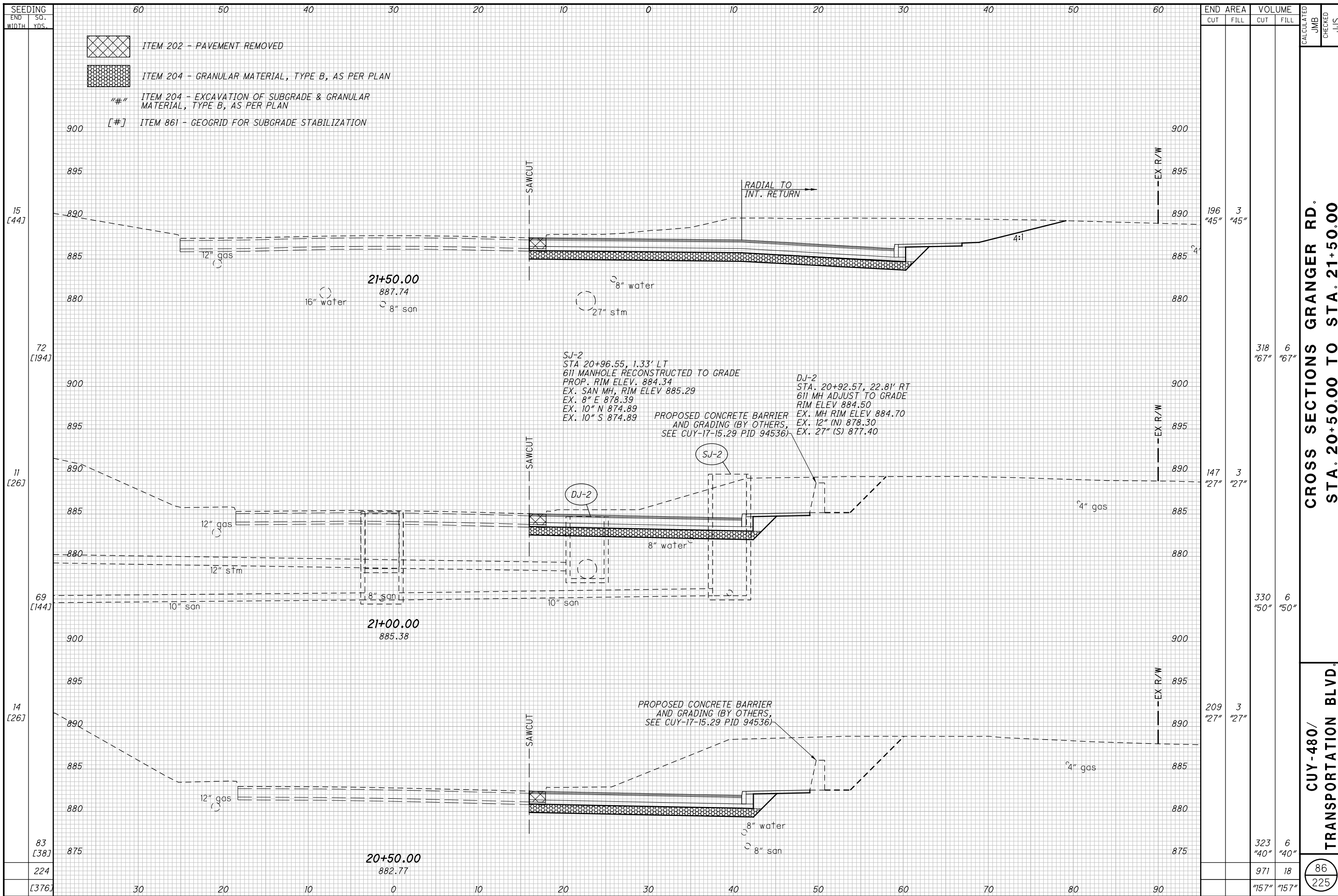


END STA.	END AREA		VOLUME		CALCULATED JMB	CHECKED JJS
	CUT	FILL	CUT	FILL		
16 [15]	140 "16"	3 "16"				
94 [78]	274 "28"	6 "28"				
18 [13]	156 "14"	3 "14"				
109 [63]	290 "22"	5 "22"				
22 [10]	163 "10"	2 "10"				
2 [1]			6 "1"	1 "1"		
205 [142]			570 "51"	12 "51"		

CROSS SECTIONS GRANGER RD.
STA. 19+00.99 TO STA. 20+00.00
CUY-480/
TRANSPORTATION BLVD.

85
 225

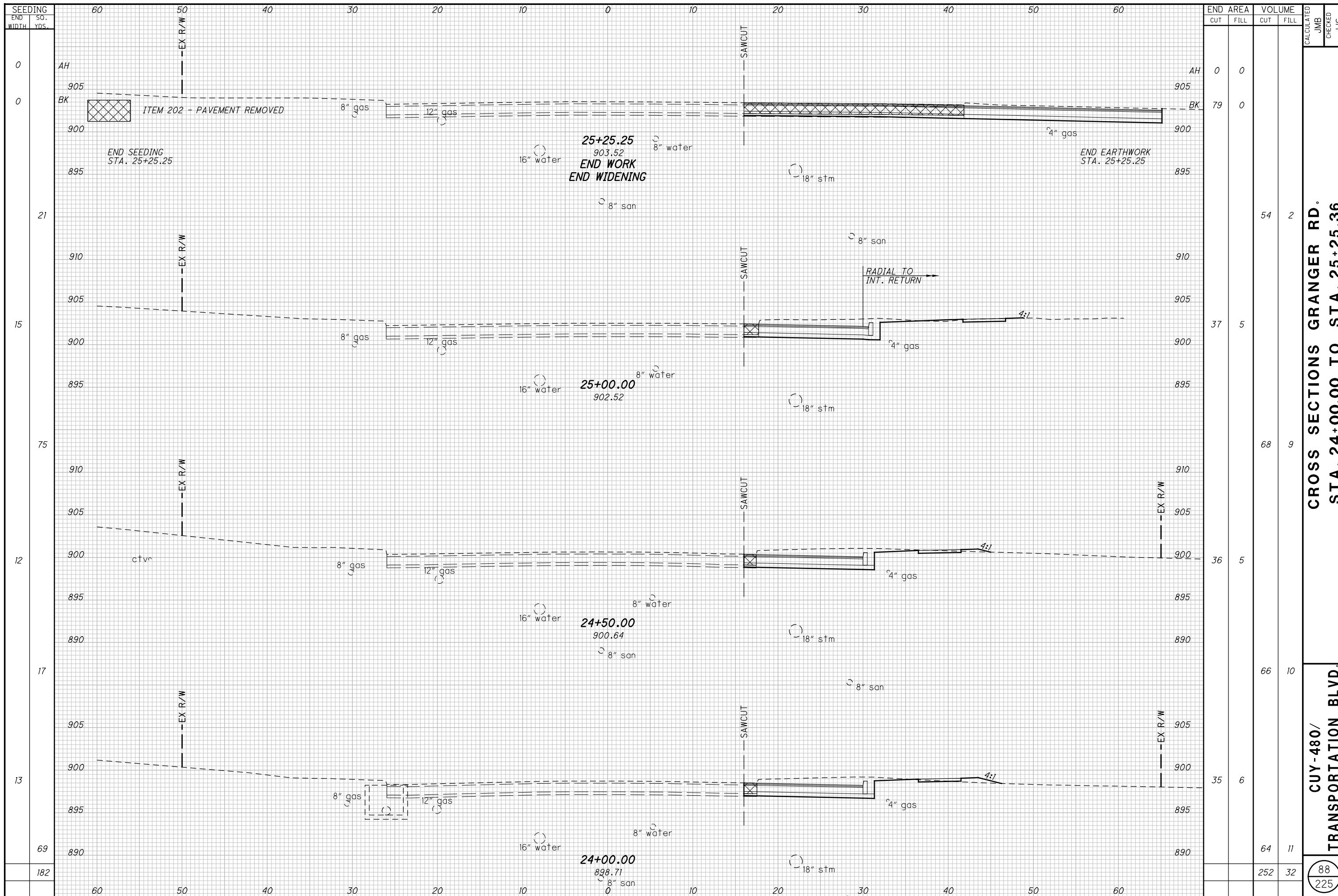
\\KRWINGA\DATA\2016\12\2016051\CUY\8097A\ROADWAY\SHEETS\8097A\XS001.DGN
 3/1/2017 2:26:02 PM
 000TV81STD_USER



**CROSS SECTIONS GRANGER RD.
STA. 20+50.00 TO STA. 21+50.00**

**CUY-480/
TRANSPORTATION BLVD.**

\\KPNRBA\DATA\2016\2016051\CUY\8074\ROADWAY\SHRETS\8074\XIS001.DGN
3/17/2017 2:25:24 PM
000781STD_USER

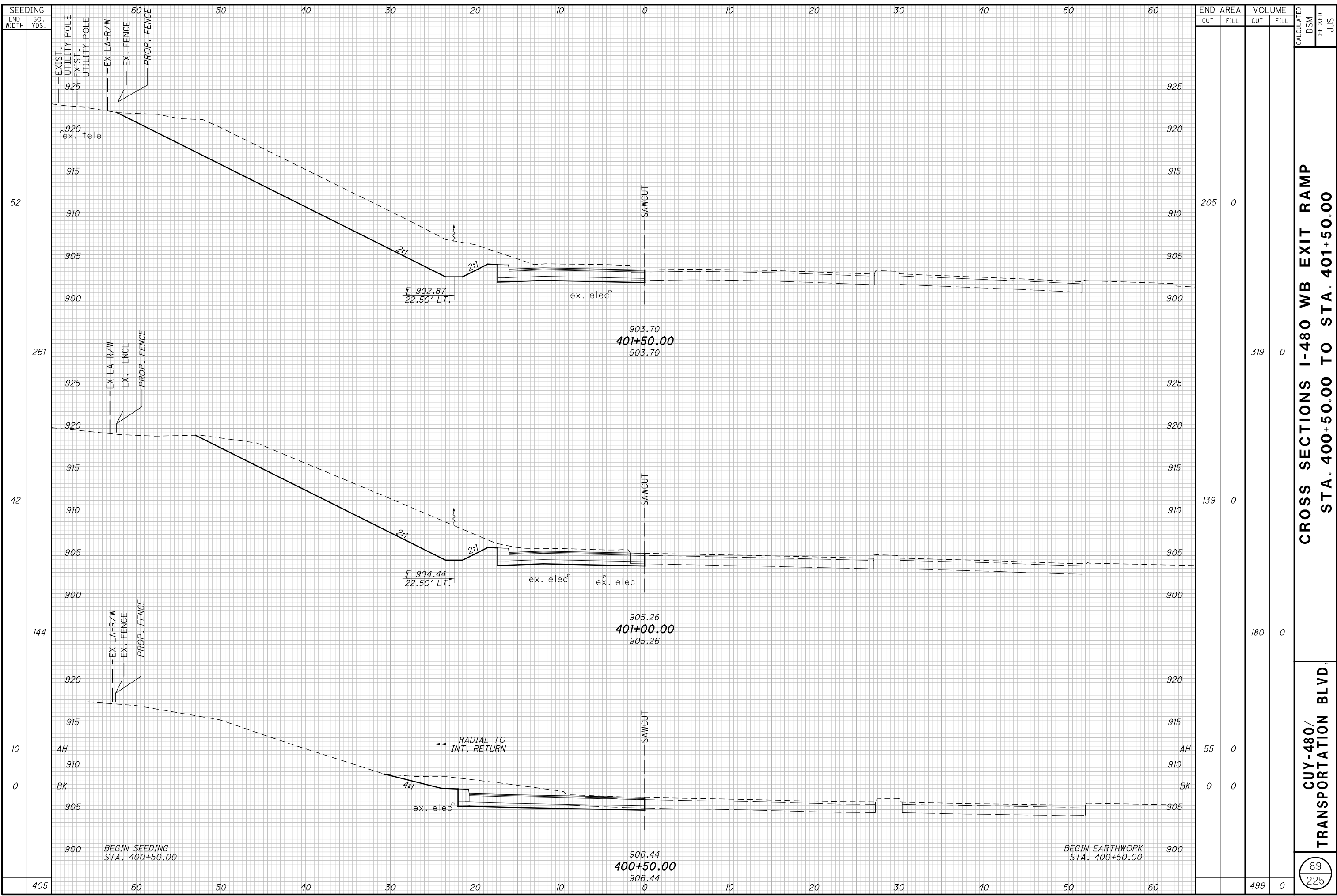


CROSS SECTIONS GRANGER RD.
 STA. 24+00.00 TO STA. 25+25.36

CUY-480/
 TRANSPORTATION BLVD.

CALCULATED JMB
 CHECKED JJS
 88
 225

\\KAPINGA\DATA\2616\26160651\CIV\80974\ROADWAY\DRY\80974\ASB06A.DGN
 3/1/2017
 2:28:43 PM
 000TV81STD_USER

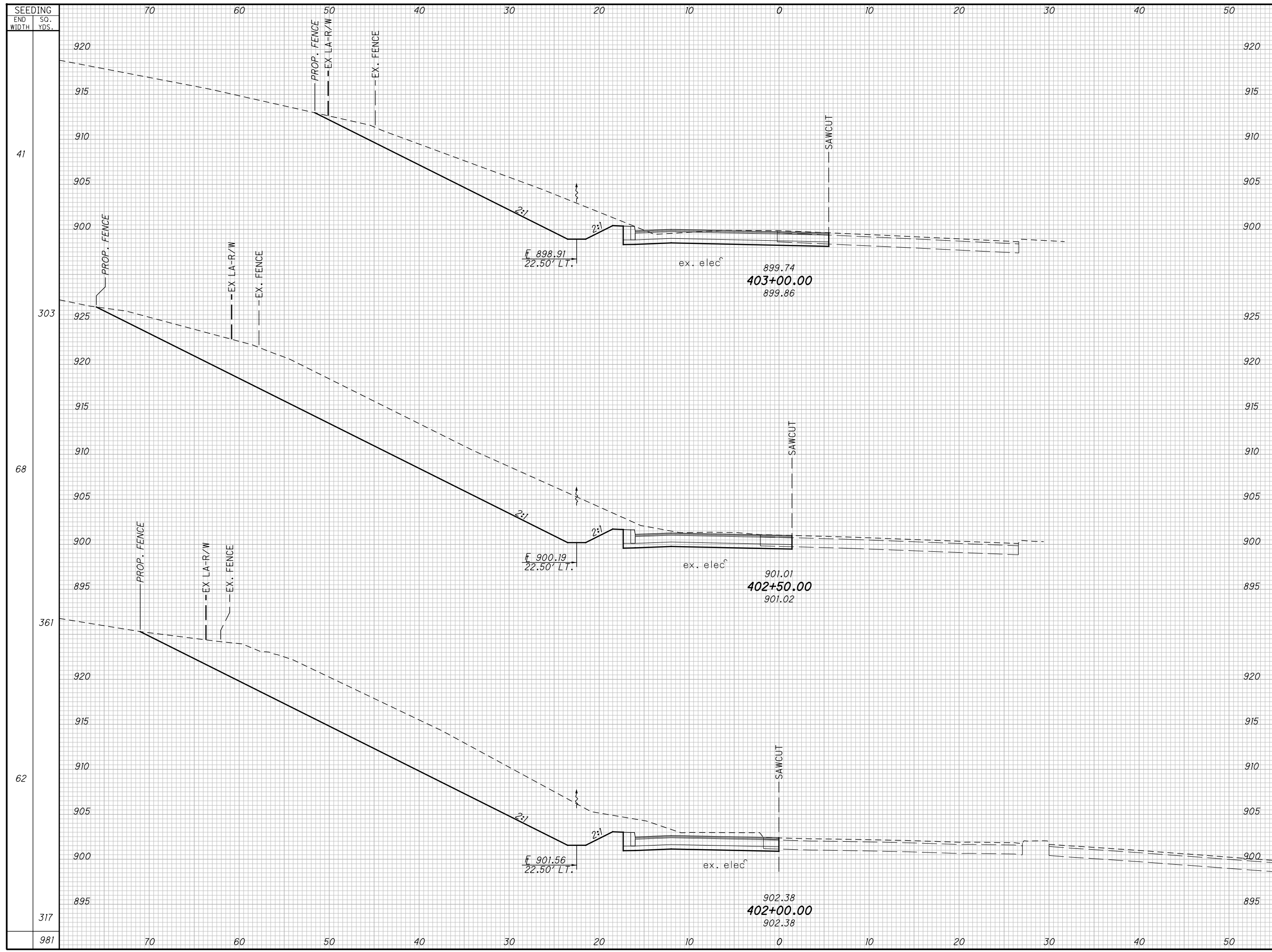


**CROSS SECTIONS I-480 WB EXIT RAMP
 STA. 400+50.00 TO STA. 401+50.00**

**CUY-480/
 TRANSPORTATION BLVD.**

89
 225

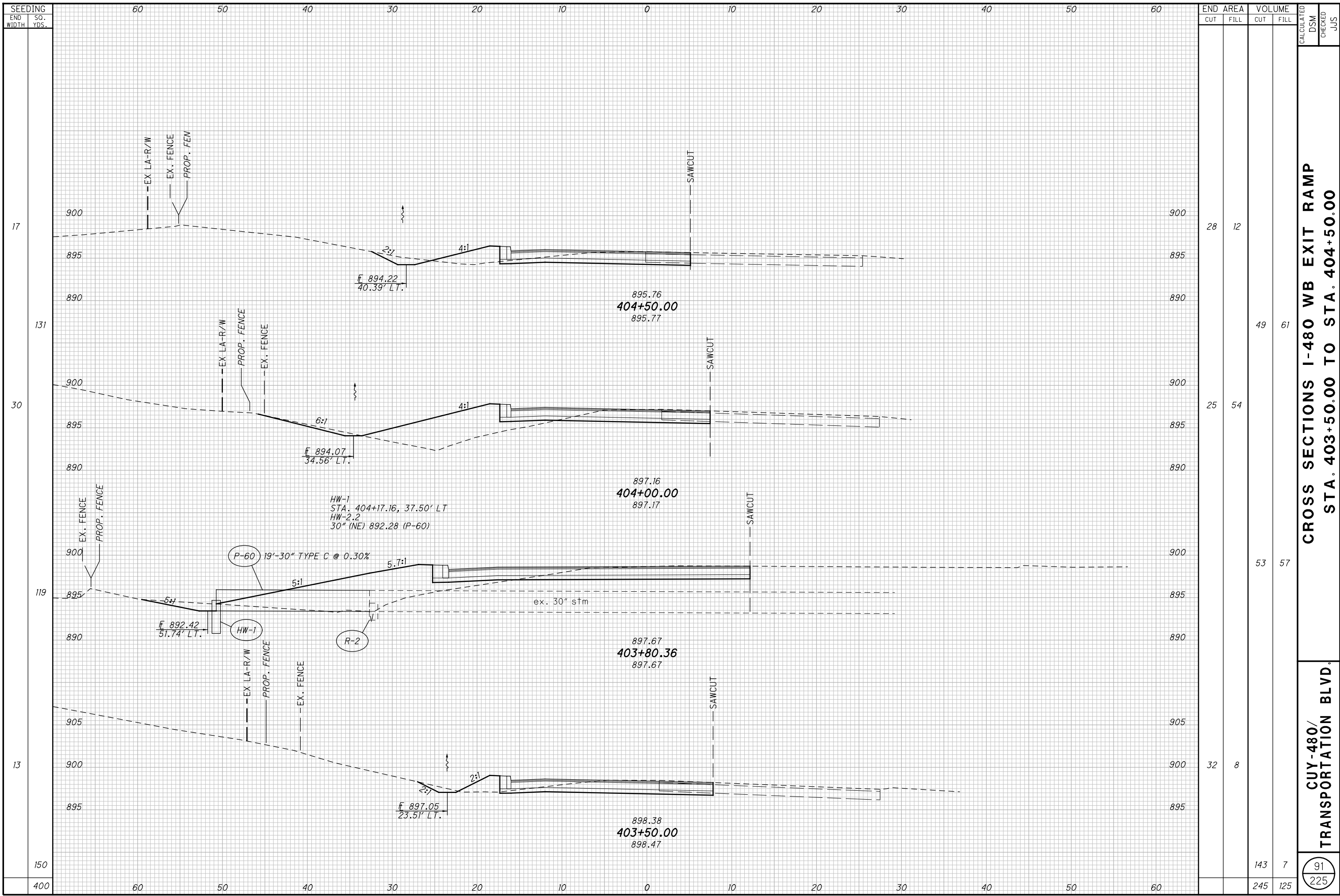
\\AKR\BPA\DATA\2016\2016051\CUY\8074\ROADWAY\PROJECTS\8074\5806A.DGN
 3/1/2017
 2:28:15 PM
 QDOT\B1STD_USER



SEEDING END WIDTH	SO. YDS.	END AREA		VOLUME	
		CUT	FILL	CUT	FILL
41		122	0		
303				367	0
68		274	0		
361				511	0
62		278	0		
317				447	0
981				1325	0

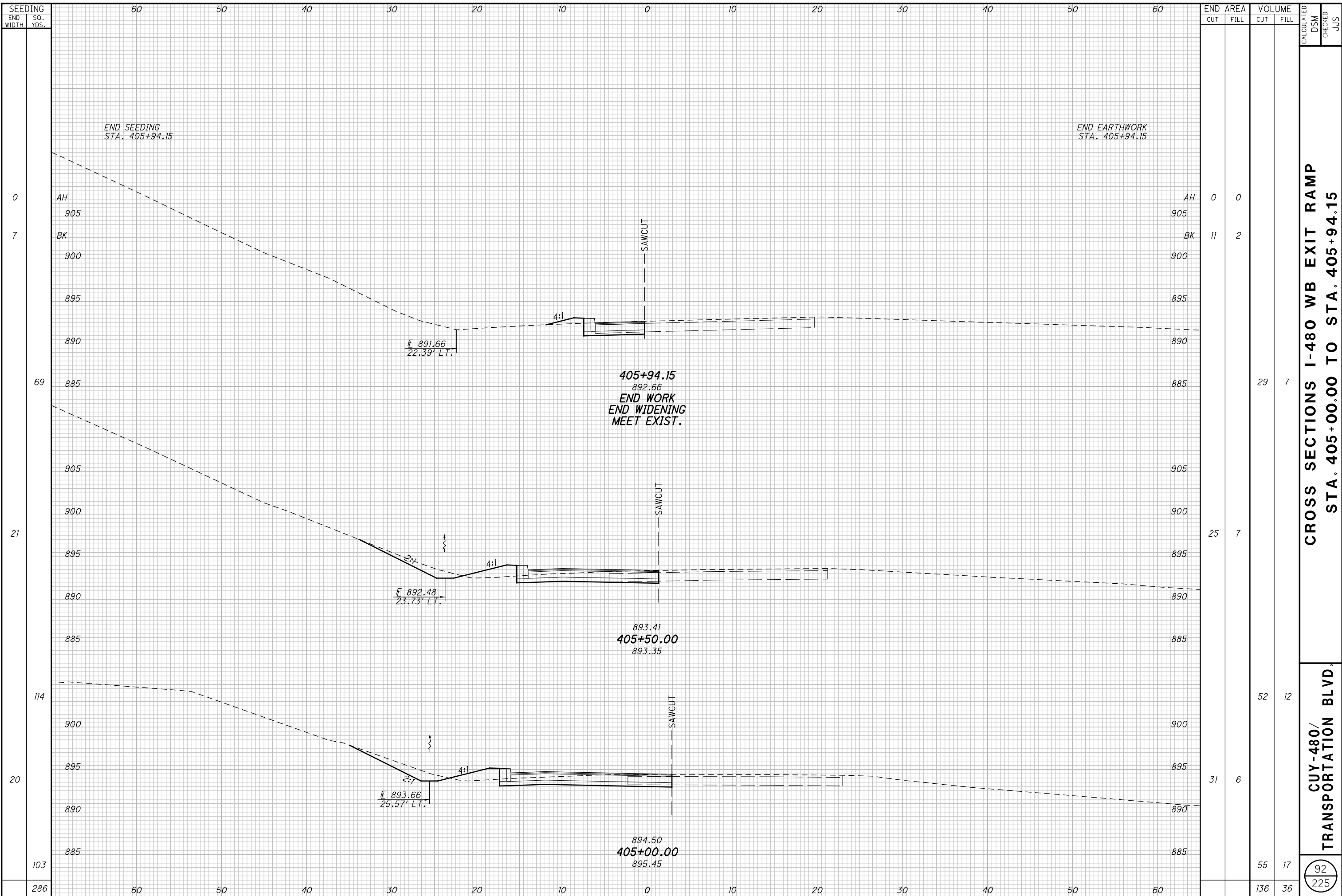
CROSS SECTIONS I-480 WB EXIT RAMP
 STA. 402+00.00 TO STA. 403+00.00
 TRANSPORTATION BLVD.
 CALCULATED
 DSM
 CHECKED
 JJS
 90
 225

\\KPN04\DATA\2016\201606\1\CUVA\80974\ROADWAY\SHETS\80974\8096A.DGN
 3/1/2017
 2:19:27 PM
 000TV81STD_USER



CROSS SECTIONS I-480 WB EXIT RAMP
 STA. 403+50.00 TO STA. 404+50.00
 CUY-480/
 TRANSPORTATION BLVD.

CALCULATED
 DSM
 CHECKED
 JJS
 91
 225



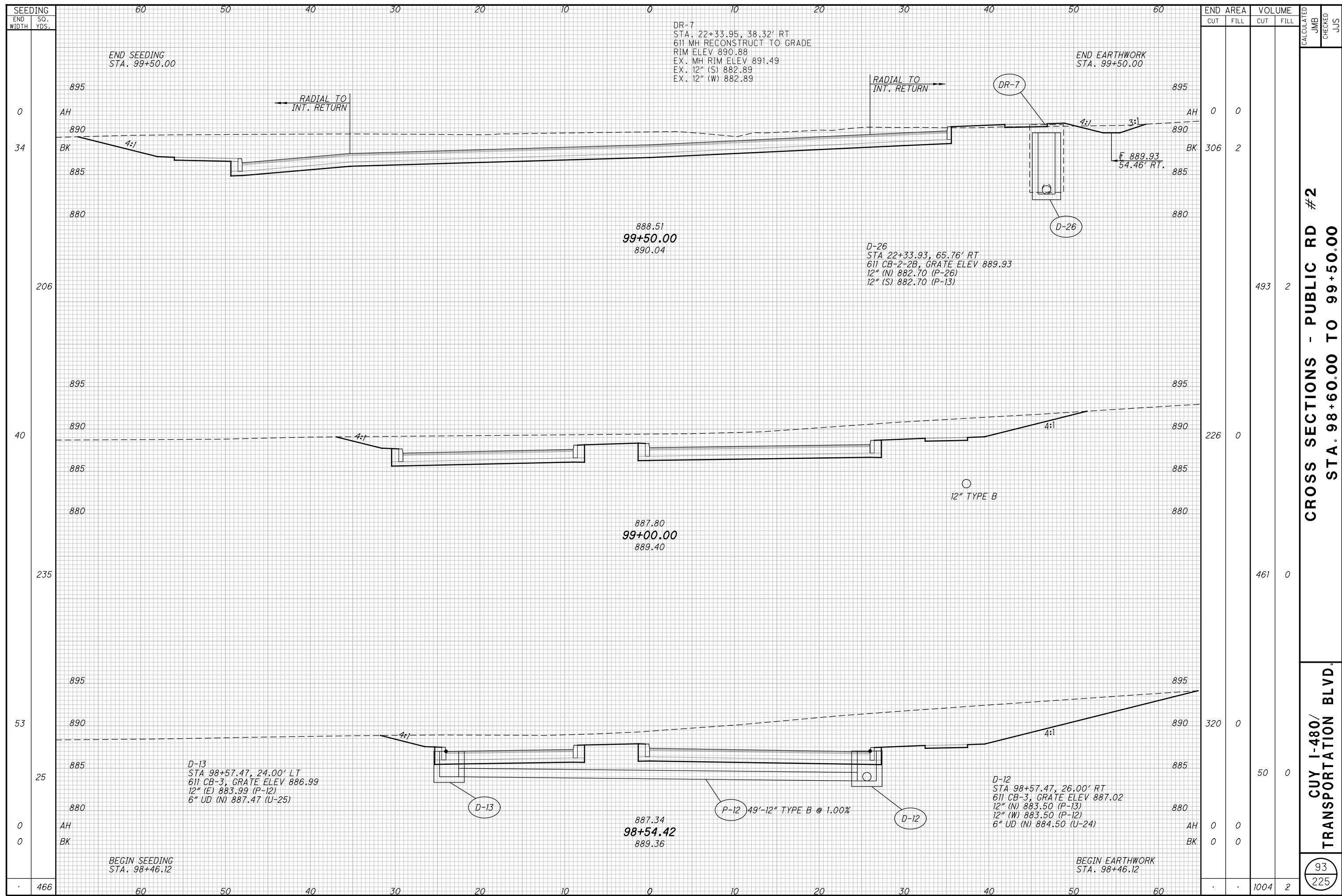
END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	DSM	JJS
0	0	0	0		
11	2	29	7		
25	7	52	12		
31	6	55	17		
		136	36		

CROSS SECTIONS I-480 WB EXIT RAMP
STA. 405+00.00 TO STA. 405+94.15

CUY-480/
TRANSPORTATION BLVD.

92
225

\\MAPING4\DATA\2016\2016061\CUY\8974\ROADWAY\SHETS\8974\806A.DGN
 3/1/2017
 2:18:42 PM
 000TV61STL_USER

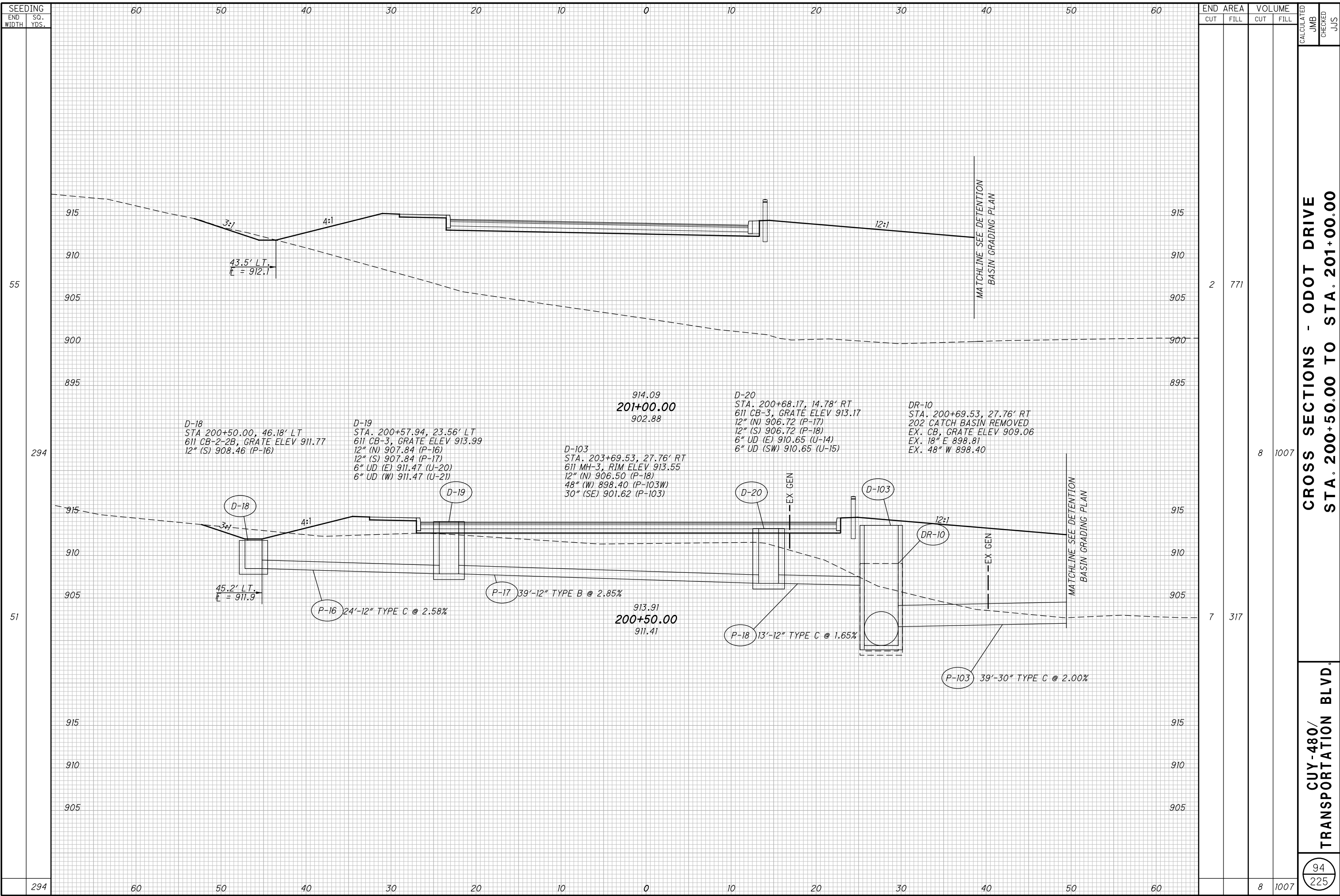


CROSS SECTIONS - PUBLIC RD #2
STA. 98+60.00 TO 99+50.00

CUY I-480/
TRANSPORTATION BLVD.

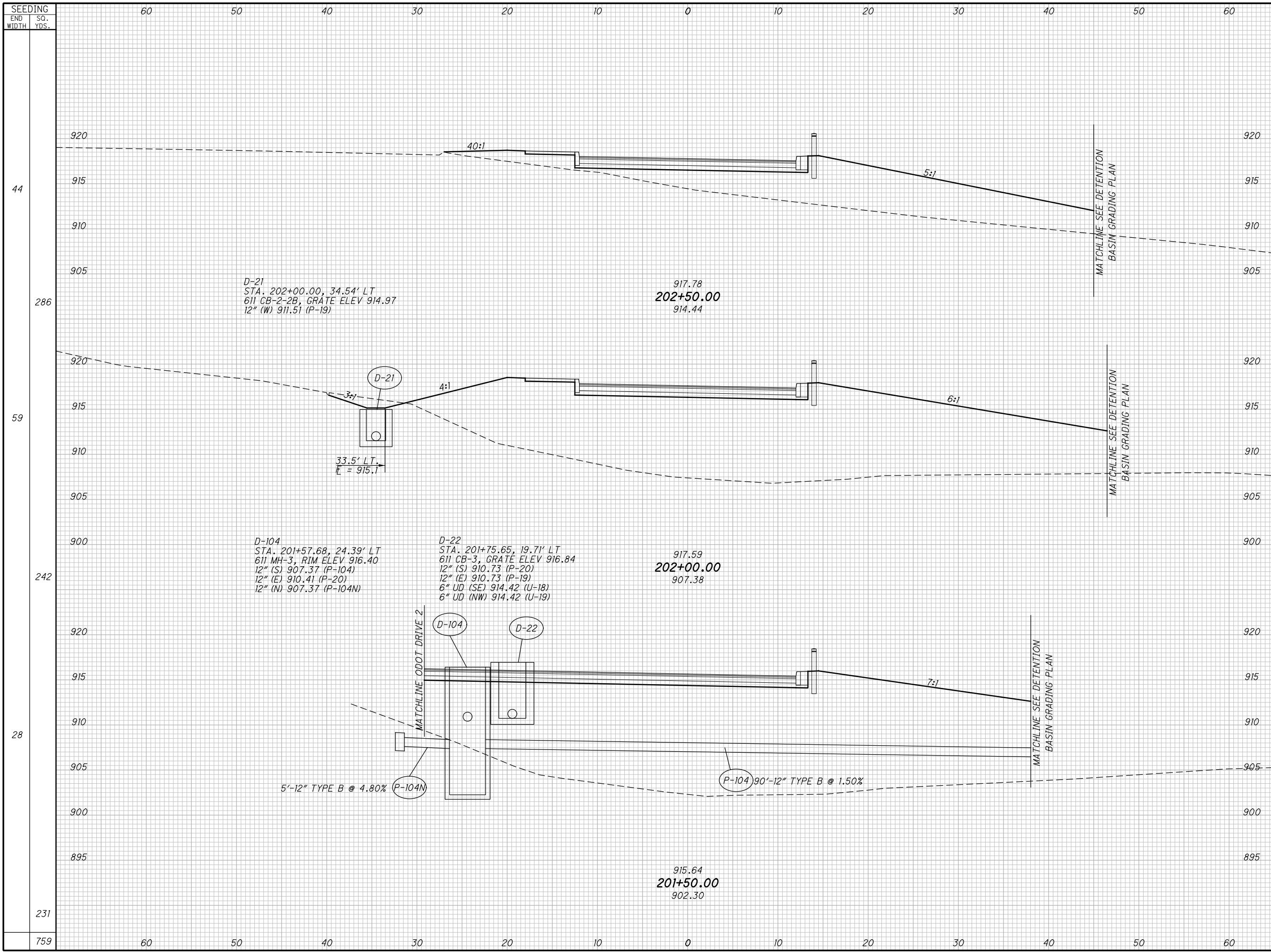
93
225

\\AKRINDA\DATA\2016\2016051\CUY\8874\ROADWAY\8874\SHEETS\8874\X5005.DGN
3/2/2017
3:51:05 PM
GDDTV81STD.LUSER



\\AKRNGA\DATA\2016\2016051\CUY\8974\ROADWAY\SHETS\8974XS003.DGN
4/18/2017 2:05:03 PM
GDDTV81STD_USER

\\AKR\BNA\DATA\2016\2016051\CUY\80974\ROADWAY\80974\S003.DGN
 4/18/2017
 2:06:25 PM
 GDDTV81STD_USER



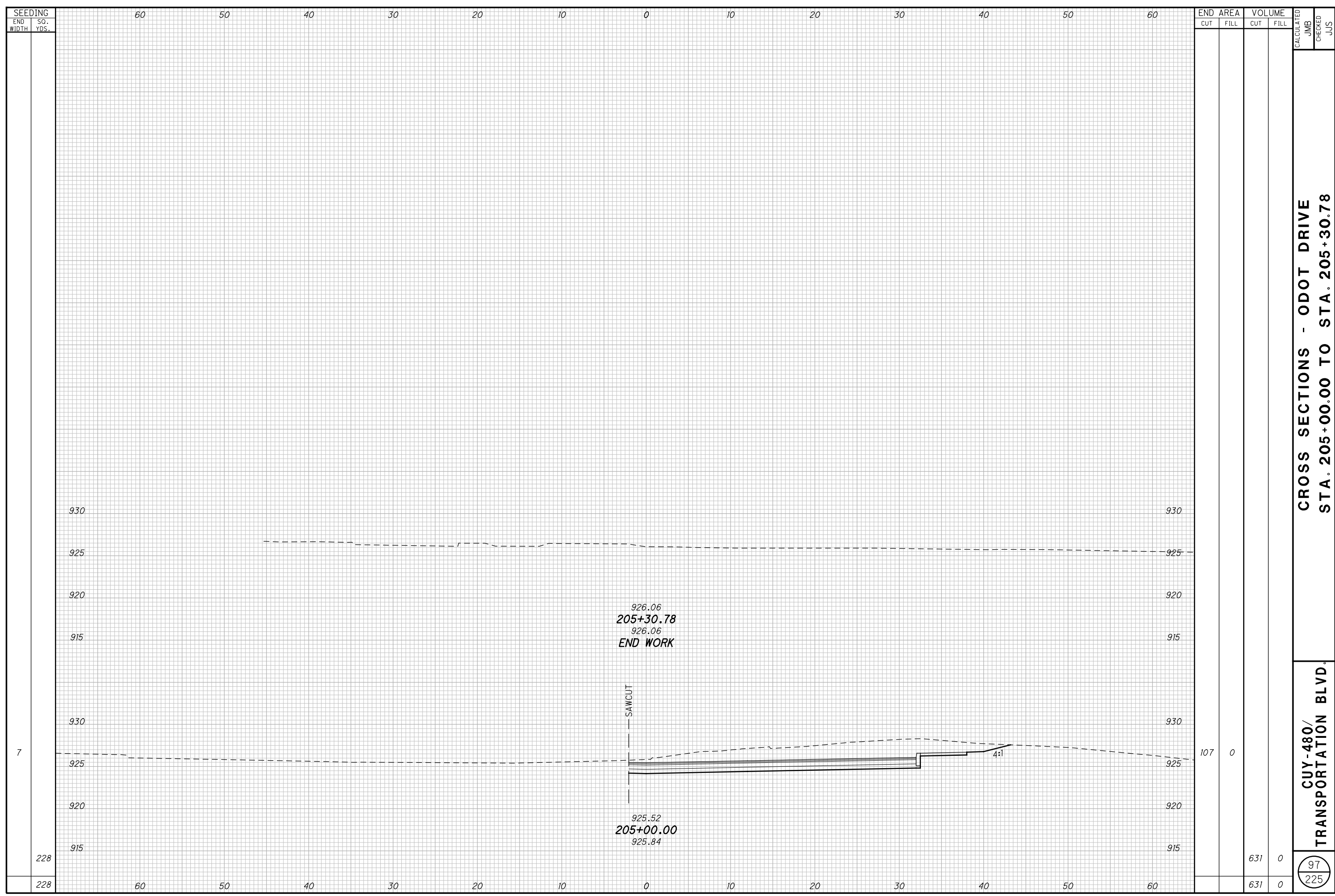
SEEDING END WIDTH	SO. YDS.	END AREA		VOLUME		CALCULATED JMB	CHECKED JJS
		CUT	FILL	CUT	FILL		
44		0	196				
286		6	583	6	721		
59		6	583				
242		6	1209				
28		0	723				
231		2	1383				
759		14	3313				

CROSS SECTIONS - ODOT DRIVE
 STA. 201+50.00 TO STA. 202+50.00

CUY-480/
 TRANSPORTATION BLVD.

95
 225

\\KARANDA\DATA\2016\2016051\CUY\80974\ROADWAY\80974\SHEETS\80974\S203.DGN
 2/1/2017
 2:10:34 PM
 CDDTV81STD_USER



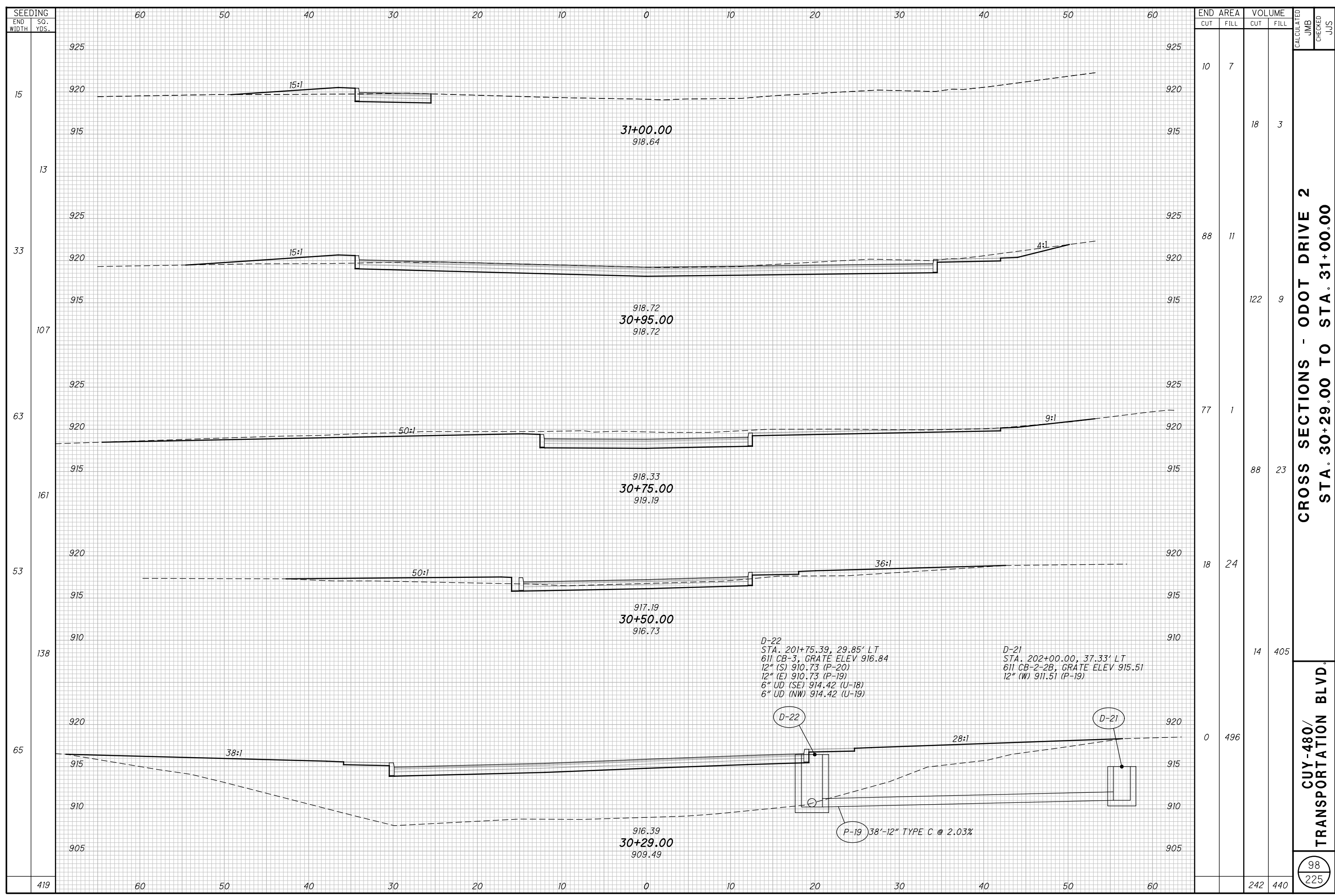
SEEDING														END AREA		VOLUME		CALCULATED				
END WIDTH	SO. YDS.	60	50	40	30	20	10	0	10	20	30	40	50	60	CUT	FILL	CUT	FILL	JMB	CHECKED	JUS	
228																						
228															107	0	631	0				
228																	631	0				

**CROSS SECTIONS - ODOT DRIVE
 STA. 205+00.00 TO STA. 205+30.78**

**CUY-480/
 TRANSPORTATION BLVD.**

97
 225

\\AKRINDA\DATA\2016\2016051\CUY\8874\ROADWAY\8874\8874\S07.DGN
 3/2/2017
 3:52:00 PM
 GDDTV81STD.LUSER



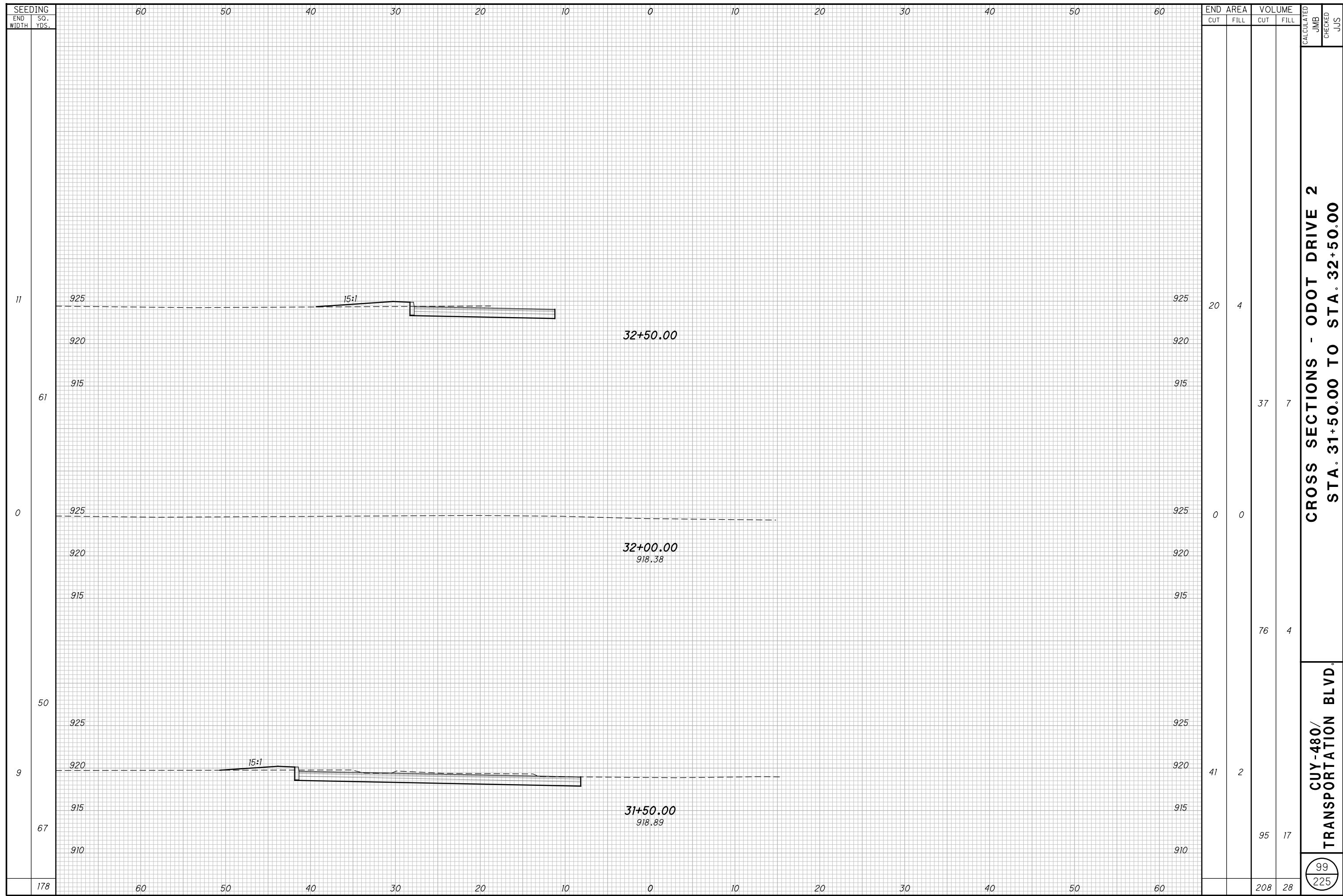
D-22
 STA. 201+75.39, 29.85' LT
 611 CB-3, GRATE ELEV 916.84
 12" (S) 910.73 (P-20)
 12" (E) 910.73 (P-19)
 6" UD (SE) 914.42 (U-18)
 6" UD (NW) 914.42 (U-19)

D-21
 STA. 202+00.00, 37.33' LT
 611 CB-2-2B, GRATE ELEV 915.51
 12" (W) 911.51 (P-19)

P-19 38"-12" TYPE C @ 2.03%

SEEDING END WIDTH	SO. YDS.	END AREA		VOLUME		CALCULATED JMB	CHECKED JJS
		CUT	FILL	CUT	FILL		
15		10	7				
13				18	3		
33		88	11	122	9		
107							
63		77	1				
161				88	23		
53		18	24				
138						14	405
65		0	496				
419				242	440		

CROSS SECTIONS - ODOT DRIVE 2
 STA. 30+29.00 TO STA. 31+00.00
 CUY-480/
 TRANSPORTATION BLVD.



CROSS SECTIONS - ODOT DRIVE 2
STA. 31+50.00 TO STA. 32+50.00

CUY-480/
TRANSPORTATION BLVD.

CALCULATED
 JMB
 CHECKED
 JJS

99
 225



CALCULATED
JAW
CHECKED
JUS

INTERSECTION DETAILS
TRANS. BLVD. / PUBLIC ROAD 1 / I-480 WB EXIT RAMP

CUY-480/
TRANSPORTATION BLVD.

☐ R/W & CONST. TRANSPORTATION BLVD.
STA. 86+75.48, 83.00' LT.
☐ CONST. PUBLIC ROAD 1
STA. 54+81.08, 56.00' LT.

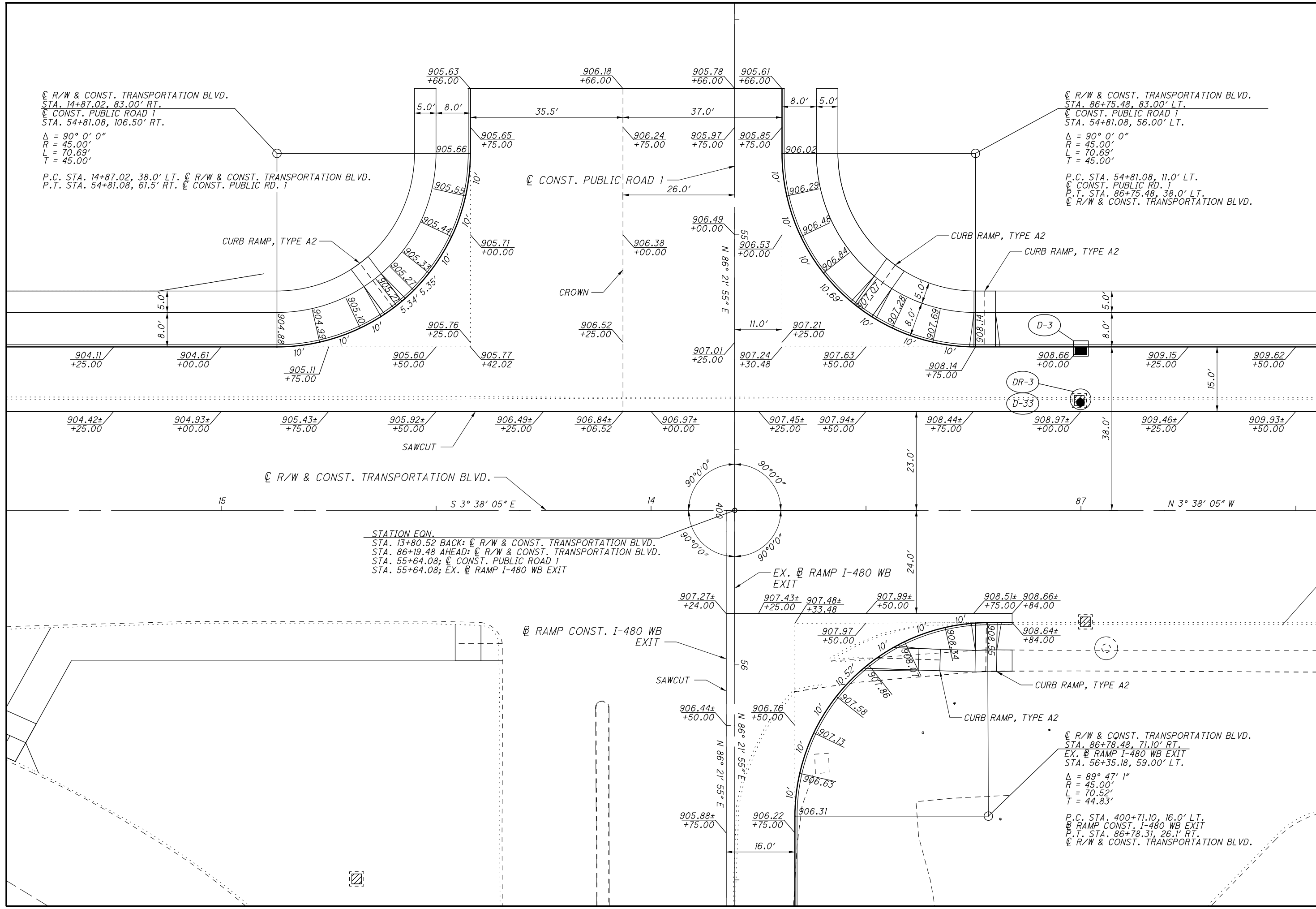
$\Delta = 90^\circ 0' 0''$
 $R = 45.00'$
 $L = 70.69'$
 $T = 45.00'$

P.C. STA. 54+81.08, 11.0' LT.
☐ CONST. PUBLIC RD. 1
P.T. STA. 86+75.48, 38.0' LT.
☐ R/W & CONST. TRANSPORTATION BLVD.

☐ R/W & CONST. TRANSPORTATION BLVD.
STA. 14+87.02, 83.00' RT.
☐ CONST. PUBLIC ROAD 1
STA. 54+81.08, 106.50' RT.

$\Delta = 90^\circ 0' 0''$
 $R = 45.00'$
 $L = 70.69'$
 $T = 45.00'$

P.C. STA. 14+87.02, 38.0' LT. ☐ R/W & CONST. TRANSPORTATION BLVD.
P.T. STA. 54+81.08, 61.5' RT. ☐ CONST. PUBLIC RD. 1



STATION EQN.
STA. 13+80.52 BACK: ☐ R/W & CONST. TRANSPORTATION BLVD.
STA. 86+19.48 AHEAD: ☐ R/W & CONST. TRANSPORTATION BLVD.
STA. 55+64.08; ☐ CONST. PUBLIC ROAD 1
STA. 55+64.08; EX. ☐ RAMP I-480 WB EXIT

☐ R/W & CONST. TRANSPORTATION BLVD.
STA. 86+78.48, 71.10' RT.
EX. ☐ RAMP I-480 WB EXIT
STA. 56+35.18, 59.00' LT.

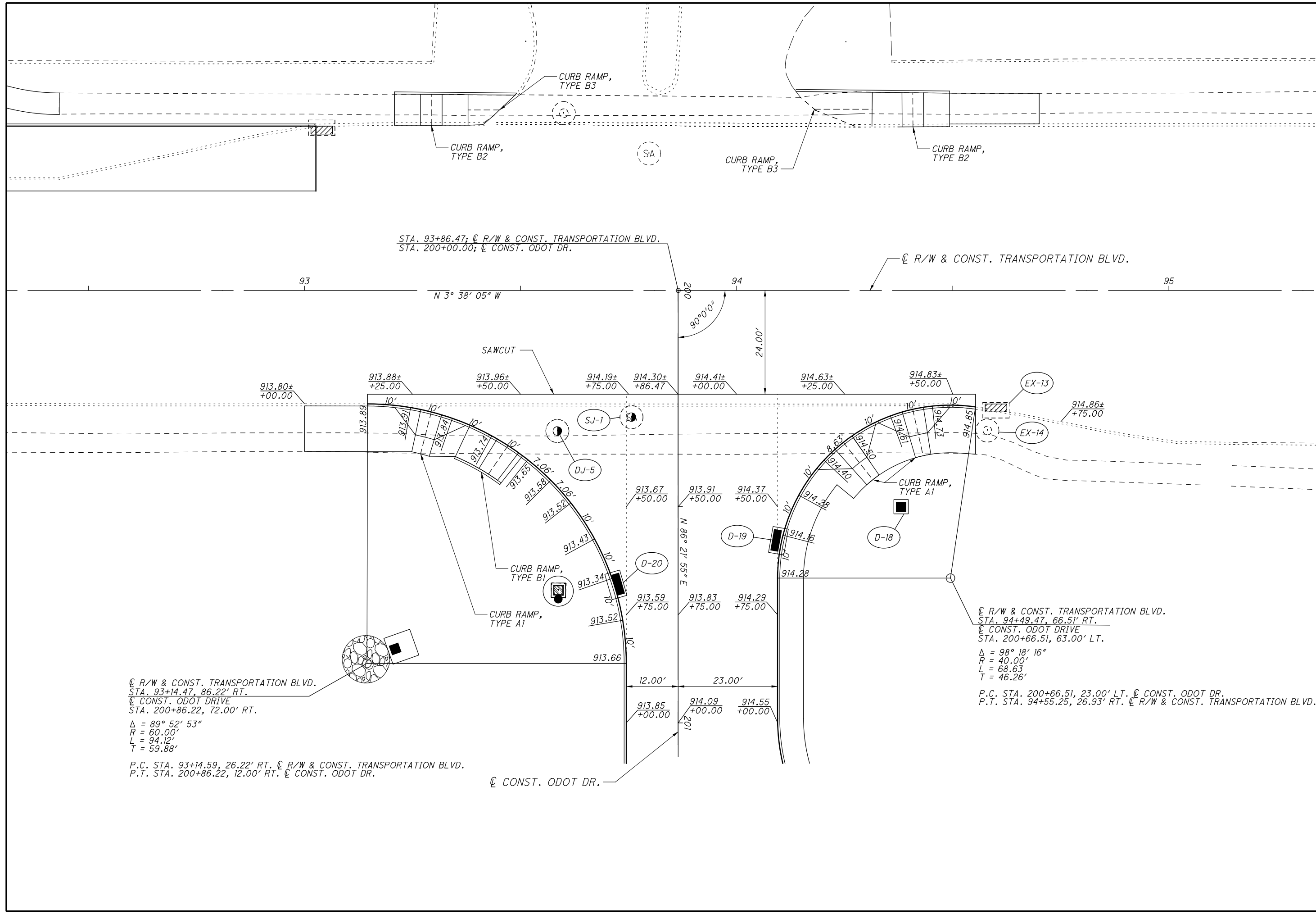
$\Delta = 89^\circ 47' 1''$
 $R = 45.00'$
 $L = 70.52'$
 $T = 44.83'$

P.C. STA. 400+71.10, 16.0' LT.
☐ RAMP CONST. I-480 WB EXIT
P.T. STA. 86+78.31, 26.1' RT.
☐ R/W & CONST. TRANSPORTATION BLVD.

\\AKRINBA\DATA\2016\2016051\CUY-480\ROADWAY\SHEETS\8974G1\801.DGN
2/1/2017 11:57:43 PM
GDDTVB15TDLUSER

INTERSECTION DETAILS
TRANS. BLVD. / ODOT DRIVE

CUY-480/
TRANSPORTATION BLVD.



C R/W & CONST. TRANSPORTATION BLVD.
 STA. 93+14.47, 86.22' RT.
 C CONST. ODOT DRIVE
 STA. 200+86.22, 72.00' RT.
 $\Delta = 89^\circ 52' 53''$
 $R = 60.00'$
 $L = 94.12'$
 $T = 59.88'$

P.C. STA. 93+14.59, 26.22' RT. C R/W & CONST. TRANSPORTATION BLVD.
 P.T. STA. 200+86.22, 12.00' RT. C CONST. ODOT DR.

C R/W & CONST. TRANSPORTATION BLVD.
 STA. 94+49.47, 66.51' RT.
 C CONST. ODOT DRIVE
 STA. 200+66.51, 63.00' LT.
 $\Delta = 98^\circ 18' 16''$
 $R = 40.00'$
 $L = 68.63'$
 $T = 46.26'$

P.C. STA. 200+66.51, 23.00' LT. C CONST. ODOT DR.
 P.T. STA. 94+55.25, 26.93' RT. C R/W & CONST. TRANSPORTATION BLVD.

\\AKRNGA\DATA\2016\2016051\CUY\B0974\ROADWAY\SHETS\B0974G1B002.DGN
 4/19/2017 11:50:34 AM
 G00TV818TD\USER

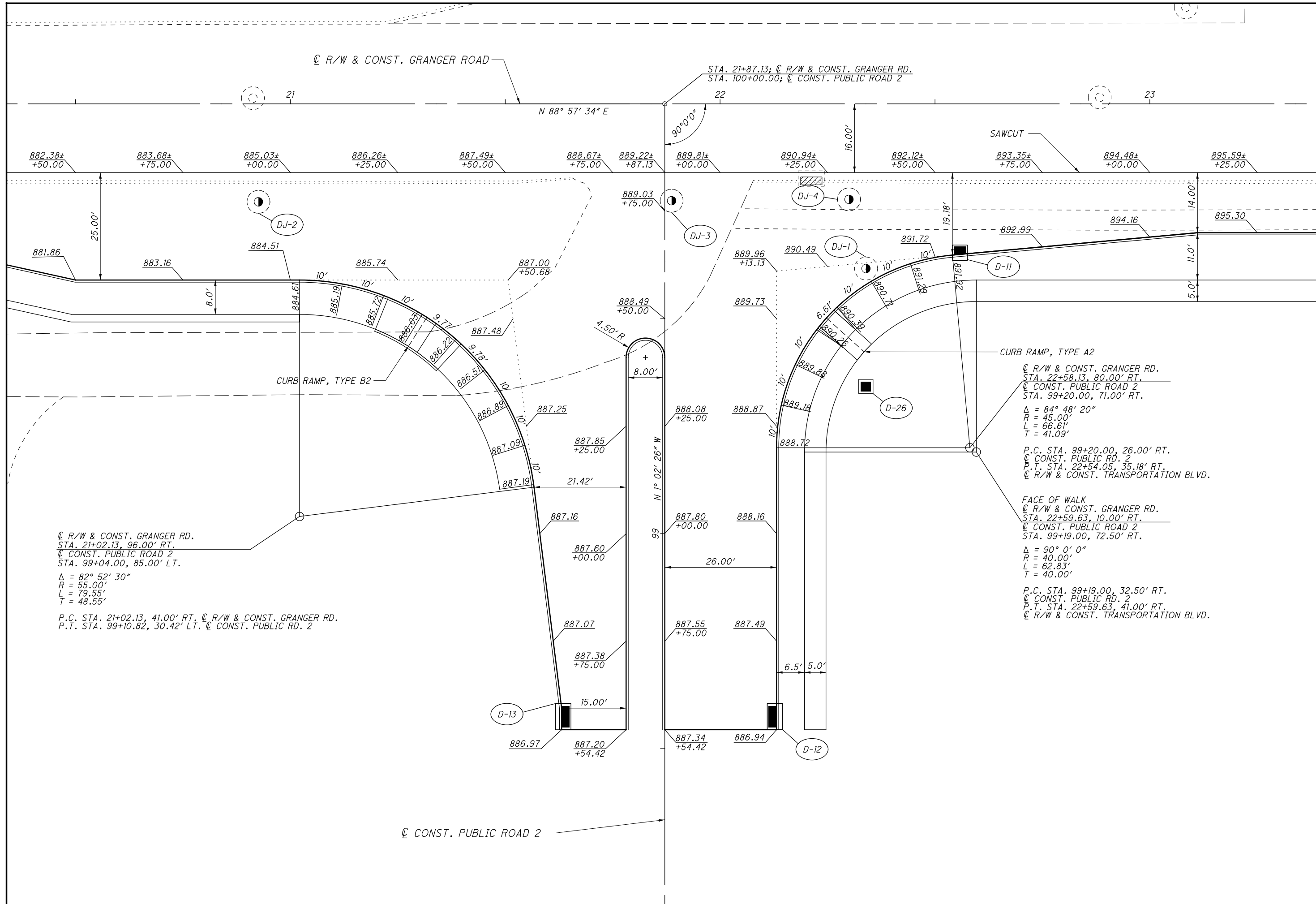


0 5 10 20
HORIZONTAL
SCALE IN FEET

CALCULATED
JAW
CHECKED
JUS

INTERSECTION DETAILS
GRANGER ROAD / PUBLIC ROAD 2

CUY-480/
TRANSPORTATION BLVD.



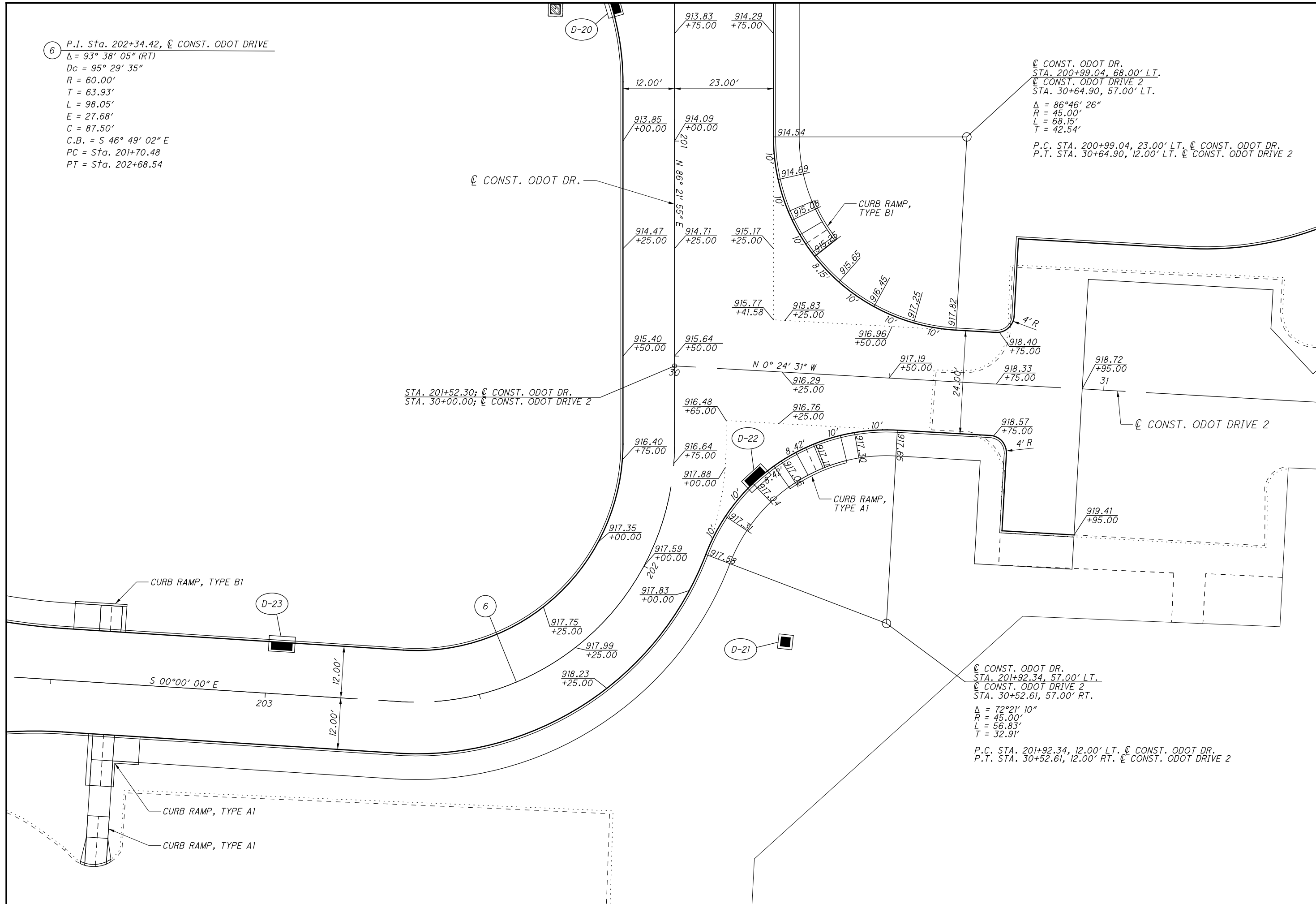
\\AKRINDA\DATA\2016\2016051\CUY\8874\ROADWAY\SHETS\8874\G1\803.DGN
3/2/2017
3:43:26 PM
GDDTV81STD_USER

6 P.I. Sta. 202+34.42, \varnothing CONST. ODOT DRIVE
 $\Delta = 93^\circ 38' 05''$ (RT)
 $D_c = 95^\circ 29' 35''$
 $R = 60.00'$
 $T = 63.93'$
 $L = 98.05'$
 $E = 27.68'$
 $C = 87.50'$
 $C.B. = S 46^\circ 49' 02'' E$
 $PC = Sta. 201+70.48$
 $PT = Sta. 202+68.54$

\varnothing CONST. ODOT DR.
 STA. 200+99.04, 68.00' LT.
 \varnothing CONST. ODOT DRIVE 2
 STA. 30+64.90, 57.00' LT.
 $\Delta = 86^\circ 46' 26''$
 $R = 45.00'$
 $L = 68.15'$
 $T = 42.54'$
 P.C. STA. 200+99.04, 23.00' LT. \varnothing CONST. ODOT DR.
 P.T. STA. 30+64.90, 12.00' LT. \varnothing CONST. ODOT DRIVE 2

STA. 201+52.30; \varnothing CONST. ODOT DR.
 STA. 30+00.00; \varnothing CONST. ODOT DRIVE 2

\varnothing CONST. ODOT DR.
 STA. 201+92.34, 57.00' LT.
 \varnothing CONST. ODOT DRIVE 2
 STA. 30+52.61, 57.00' RT.
 $\Delta = 72^\circ 21' 10''$
 $R = 45.00'$
 $L = 56.83'$
 $T = 32.91'$
 P.C. STA. 201+92.34, 12.00' LT. \varnothing CONST. ODOT DR.
 P.T. STA. 30+52.61, 12.00' RT. \varnothing CONST. ODOT DRIVE 2



CALCULATED
 JAW
 CHECKED
 JJS

INTERSECTION DETAILS
 ODOT DRIVE / ODOT DRIVE 2

\\AKR\DATA\2016\2016051\CUY-480\ROADWAY\PROJECTS\9897401\005.DGN
 2/1/2017 11:55:15 AM
 000TV818TDLUSER

20 CURVE DATA

Δ = 127° 27' 28"
R = 3.00'
L = 6.67'
T = 6.08'
PCC = 204+14.19, 0.01' RT
CEN = 204+15.23, 2.80' LT
PCC = 204+13.63, 5.34' LT

21 CURVE DATA

Δ = 19° 32' 14"
R = 126.00'
L = 42.96'
T = 21.69'
PCC = 204+13.63, 5.34' LT
CEN = 203+46.55, 112.00' LT
PCC = 204+45.45, 33.93' LT

22 CURVE DATA

Δ = 94° 18' 47"
R = 10.00'
L = 16.46'
T = 10.78'
PCC = 204+45.45, 33.93' LT
CEN = 204+53.30, 27.73' LT
PCC = 204+60.07, 35.09' LT

23 CURVE DATA

Δ = 164° 14' 38"
R = 26.00'
L = 74.53'
T = 187.90'
PT = 204+60.07, 35.09' LT
CEN = 204+42.47, 15.96' LT
PCC = 204+30.73, 7.24' RT

24 CURVE DATA

Δ = 6° 28' 08"
R = 160.00'
L = 18.06'
T = 9.04'
PCC = 204+30.73, 7.24' RT
CEN = 200+74.96, 144.06' RT
PT = 204+14.19, 0.01' RT

25 CURVE DATA

Δ = 142° 22' 54"
R = 3.00'
L = 7.46'
T = 8.81'
PC = 204+18.84, 48.46' LT
CEN = 204+15.97, 49.34' LT
PT = 204+14.24, 51.79' LT

26 CURVE DATA

Δ = 16° 11' 20"
R = 50.00'
L = 14.13'
T = 7.11'
PC = 204+56.97, 33.98' RT
CEN = 204+70.91, 82.00' RT
PT = 204+70.91, 32.00' RT

27 CURVE DATA

Δ = 85° 58' 40"
R = 15.00'
L = 22.51'
T = 13.98'
PC = 205+02.27, 32.00' RT
CEN = 205+02.27, 47.00' RT
PT = 205+17.23, 45.95' RT

28 CURVE DATA

Δ = 28° 14' 26"
R = 150.00'
L = 73.97'
T = 37.73'
PC = 203+46.89, 12.00' RT
CEN = 200+63.72, 131.73' RT
PT = 204+17.87, 29.85' RT

29 CURVE DATA

Δ = 38° 31' 29"
R = 100.00'
L = 67.24'
T = 34.95'
PC = 204+08.84, 33.76' LT
CEN = 203+46.55, 112.00' LT
PT = 203+46.55, 12.00' LT

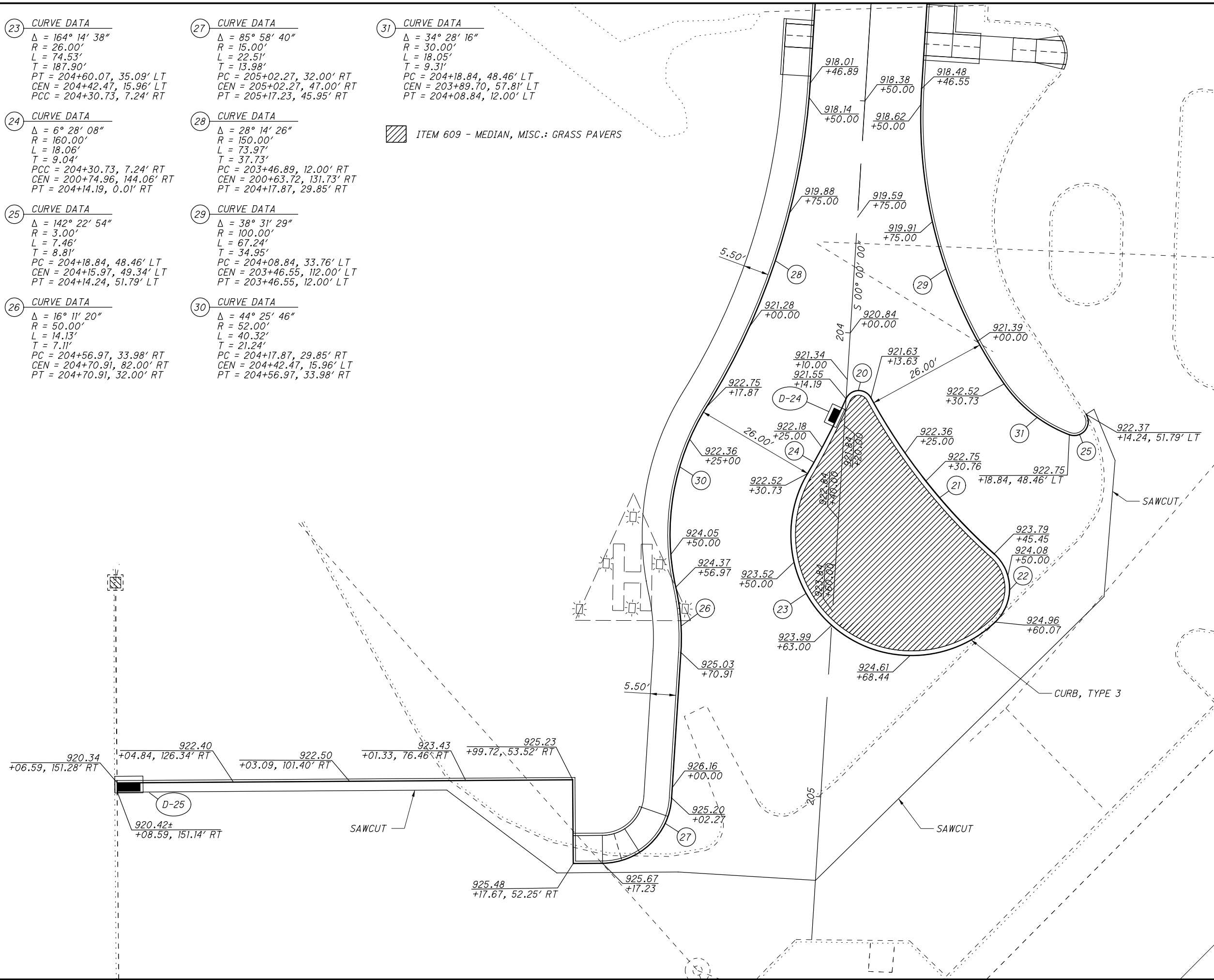
30 CURVE DATA

Δ = 44° 25' 46"
R = 52.00'
L = 40.32'
T = 21.24'
PC = 204+17.87, 29.85' RT
CEN = 204+42.47, 15.96' LT
PT = 204+56.97, 33.98' RT

31 CURVE DATA

Δ = 34° 28' 16"
R = 30.00'
L = 18.05'
T = 9.31'
PC = 204+18.84, 48.46' LT
CEN = 203+89.70, 57.81' LT
PT = 204+08.84, 12.00' LT

ITEM 609 - MEDIAN, MISC.: GRASS PAVERS



CALCULATED
JAW
CHECKED
JUS

0 10 20
5
HORIZONTAL
SCALE IN FEET

INTERSECTION DETAILS
ODOT DRIVE

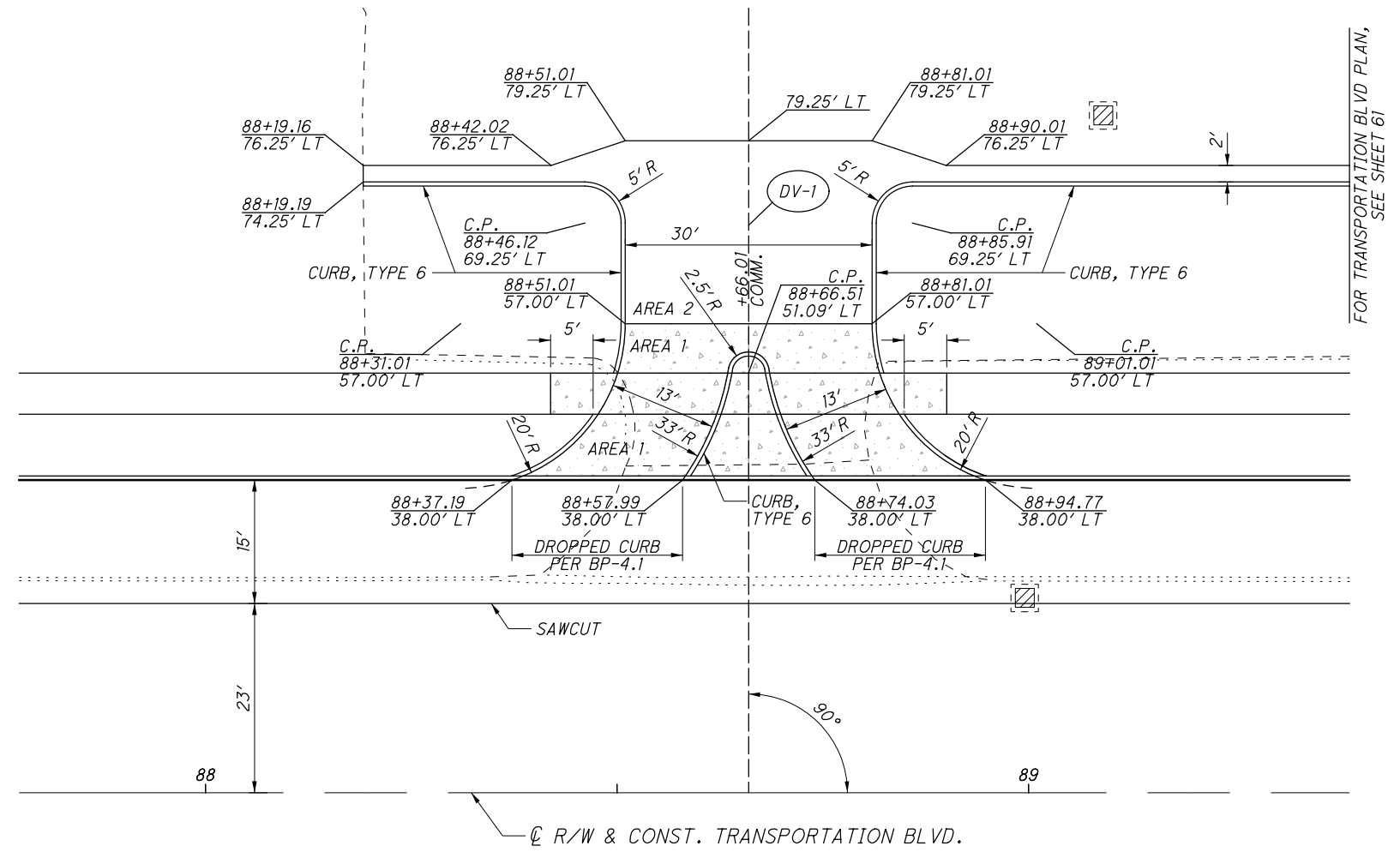
CUY-480/
TRANSPORTATION BLVD.

\\AKRINQA\DATA\2016\2016051\CUYA\88974\ROADWAY\SHETS\88974G1\806.DGN
2/1/2017 11:41:28 PM
G00TV815TD\USER



0 10 20
HORIZONTAL SCALE IN FEET
CALCULATED JMB
CHECKED JJS

USAGE	INSIDE LIMITS OF APRON (AREA 1)	OUTSIDE LIMITS OF APRON (AREA 2)
COMMERCIAL	8" ITEM 452 NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS 4" ITEM 304 AGGREGATE BASE	1 1/4" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), (DRIVEWAYS) ITEM 407 TACK COAT, TRACKLESS TACK FOR INTERMEDIATE COURSE (0.04 GAL./S.Y.) 1 3/4" ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448), (DRIVEWAYS) 8" ITEM 304 AGGREGATE BASE



CONCRETE APRON/
ITEM 608-8" CONCRETE
WALK, AS PER PLAN (CLASS
QC MS CONCRETE)

FOR DRIVE PROFILE, SEE SHEET 78

REF. NO.	SHEET NO.	STATION	AREA	ALIGNMENT	SIDE	USAGE	TYPE	EXISTING MATERIAL	SURFACE AREA (CADD AREA)
									SQ FT
DV-1	105	88+67.01	AREA 1	TRANS.	LT.	COMM.	1	ASPHALT	735.84
DV-1	105	88+67.01	AREA 2	TRANS.	LT.	COMM.	1	ASPHALT	1463.96

DRIVE DETAILS

CUY-480/
TRANSPORTATION BLVD.

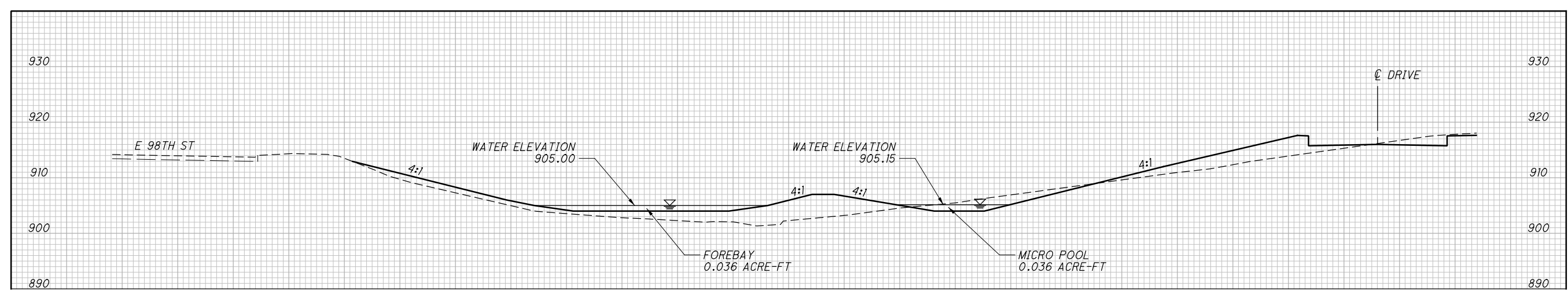
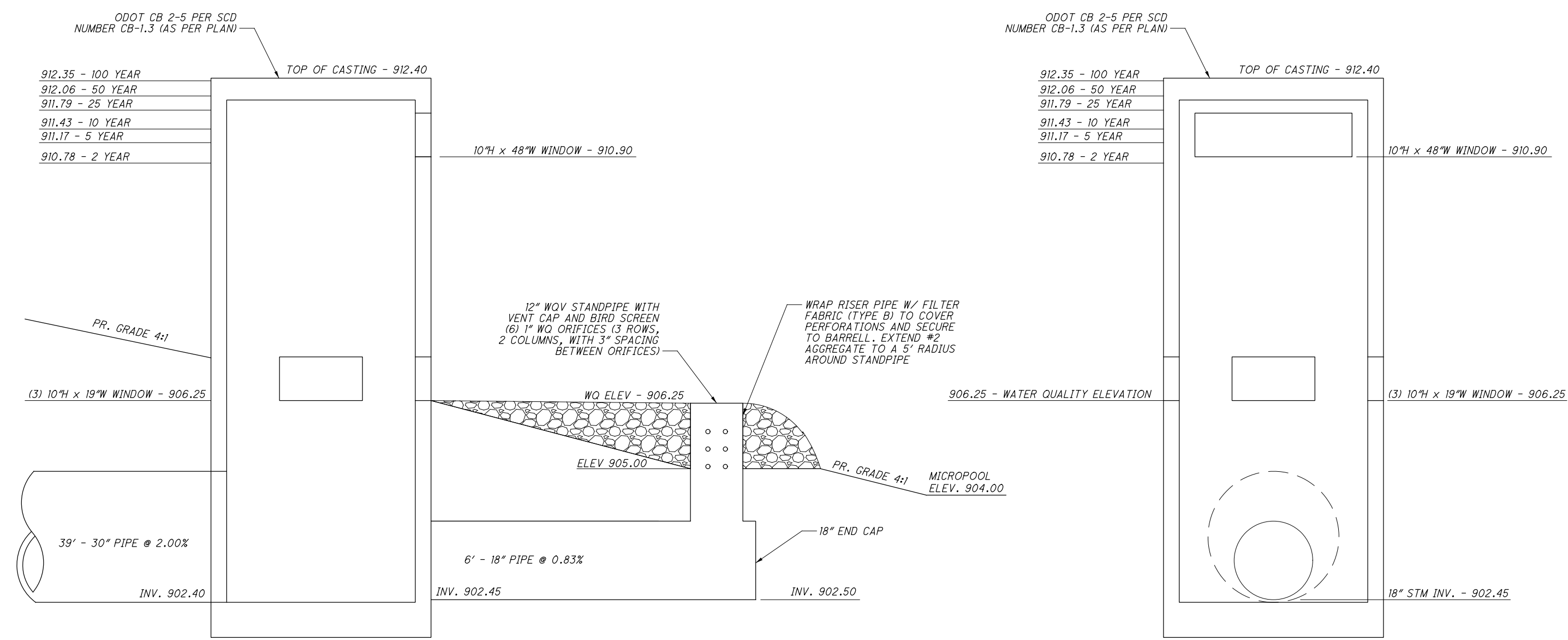
\\AKRINGA\DATA\2016\2016051\CUY-480\ROADWAY\DRIVEWAYS\88974\DRIVE.DWG
 2/1/2017 11:52:46 PM GDDTV81STD.LUSER

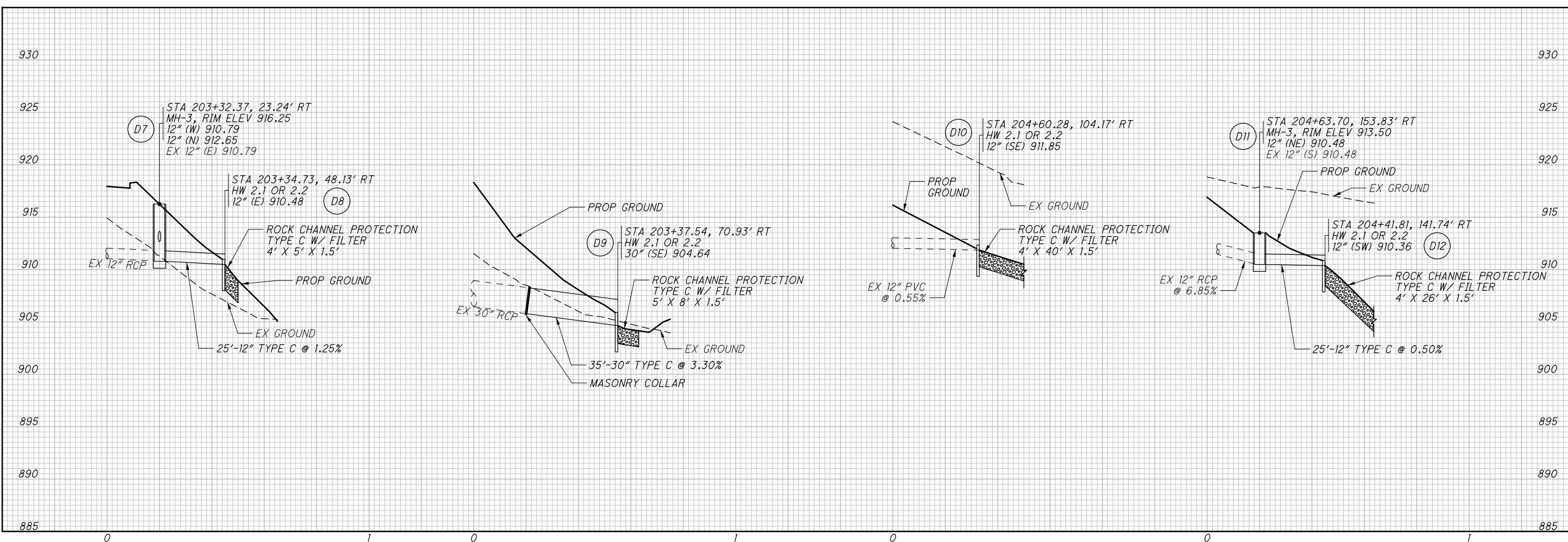
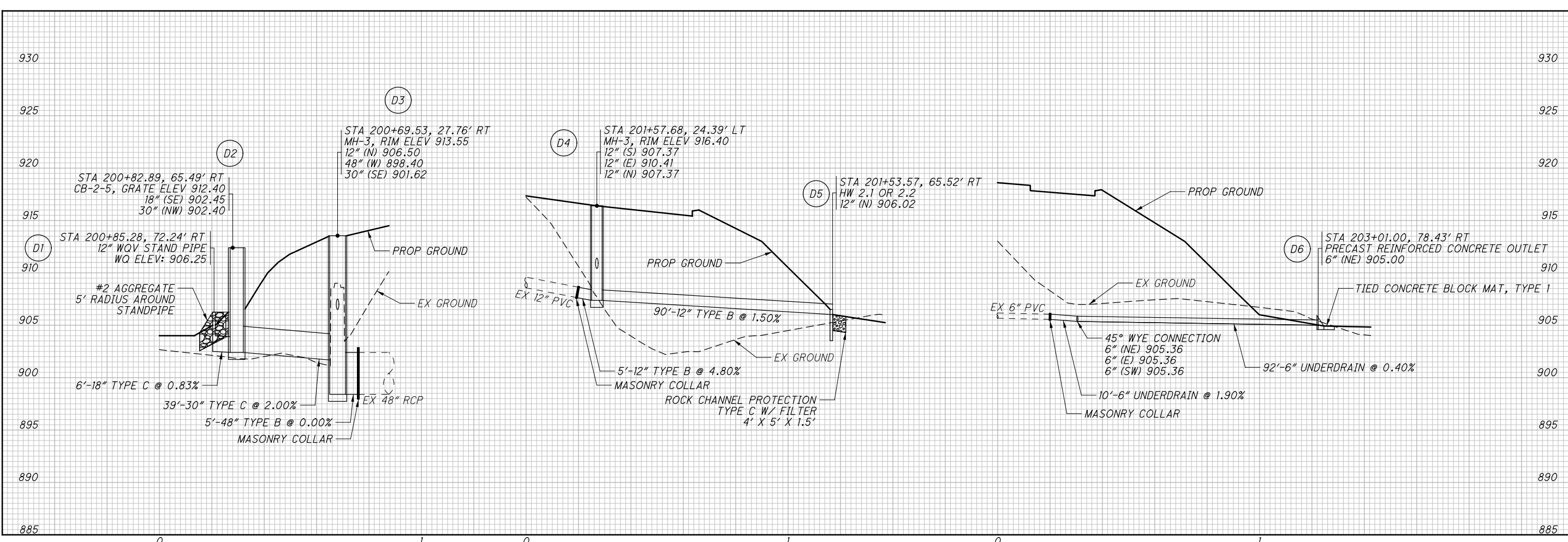
CALCULATED
JPL
CHECKED
BJM

DETENTION BASIN GRADING AND STRUCTURE DETAILS

CUY-480/
TRANSPORTATION BLVD.

10.7B
225





USER STAMPS
FILE #

UNCLASSIFIED UNDERDRAIN TABLE								
UD CODE	STREET	BEGIN			LENGTH	OUTLET		SLOPE
		STA.	OFFSET	ELEV.		STRUCT. NO.	ELEV.	
U-1	TRANS. BLVD.	22+84.83	41.25' LT.	884.05	63.53	D-8	884.00	0.08%
U-3	TRANS. BLVD.	17+80.06	39.50' LT.	896.17	35.48	D-7	895.75	1.18%
U-5	PUBLIC RD #1	54+66.00	63.00' LT.	903.11	195.95	D-6	899.27	1.96%
U-7	PUBLIC RD #1	54+66.00	12.50' RT.	905.72	108.09	D-3	905.59	0.12%
U-8	TRANS. BLVD.	88+99.25	39.50' LT.	911.11	200.18	D-3	908.49	1.31%
U-10	TRANS. BLVD.	93+00.96	39.50' LT.	910.68	150.58	D-1	910.58	0.07%

FOR REFERENCE AND BENCHMARK POINTS, SEE SHEET
FOR CURVE AND INTERSECTION DATA TABLES, SEE SHEET 5

*U-# UNCLASSIFIED UNDERDRAIN

D-1
STA. 91+50.50, 38.00' LT
611 CB-3A, GRATE ELEV 912.54
12" (E) 910.35 (P-1)
6" UD (N) 910.58 (U-10)

D-2
STA. 89+04.77, 38.00' LT
611 CB-3A, GRATE ELEV 911.11
12" (SE) 908.14 (P-2)
6" UD (N) 908.64 (U-9)

D-3
STA. 87+00.00, 38.00' LT
611 CB-3A, GRATE ELEV 908.49
12" (E) 905.32 (P-3)
6" UD (S) 905.59 (U-7)
6" UD (N) 905.59 (U-8)

D-6
STA. 15+99.40, 38.00' RT
611 CB-3A, GRATE ELEV 902.29
15" (E) 895.66 (P-6)
15" (W) 892.95 (P-7)
6" UD (N) 899.27 (U-5)

D-7
STA. 17+44.72, 38.00' RT
611 CB-3, GRATE ELEV 899.28
12" (E) 890.84 (P-9)
12" (W) 890.84 (P-8)
6" UD (S) 895.75 (U-3)
6" UD (N) 896.26 (U-4)

D-8
STA. 22+21.54, 38.00' RT
611 CB-3, GRATE ELEV 888.14
12" (S) 884.00 (P-50)
6" UD (S) 884.00 (U-1)
6" UD (N) 885.12 (U-2)

D-19
STA. 200+57.16, 27.24' LT
611 CB-3, GRATE ELEV 913.99
12" (N) 907.84 (P-16)
12" (S) 907.84 (P-17)
6" UD (E) 911.47 (U-20)
6" UD (W) 911.47 (U-21)

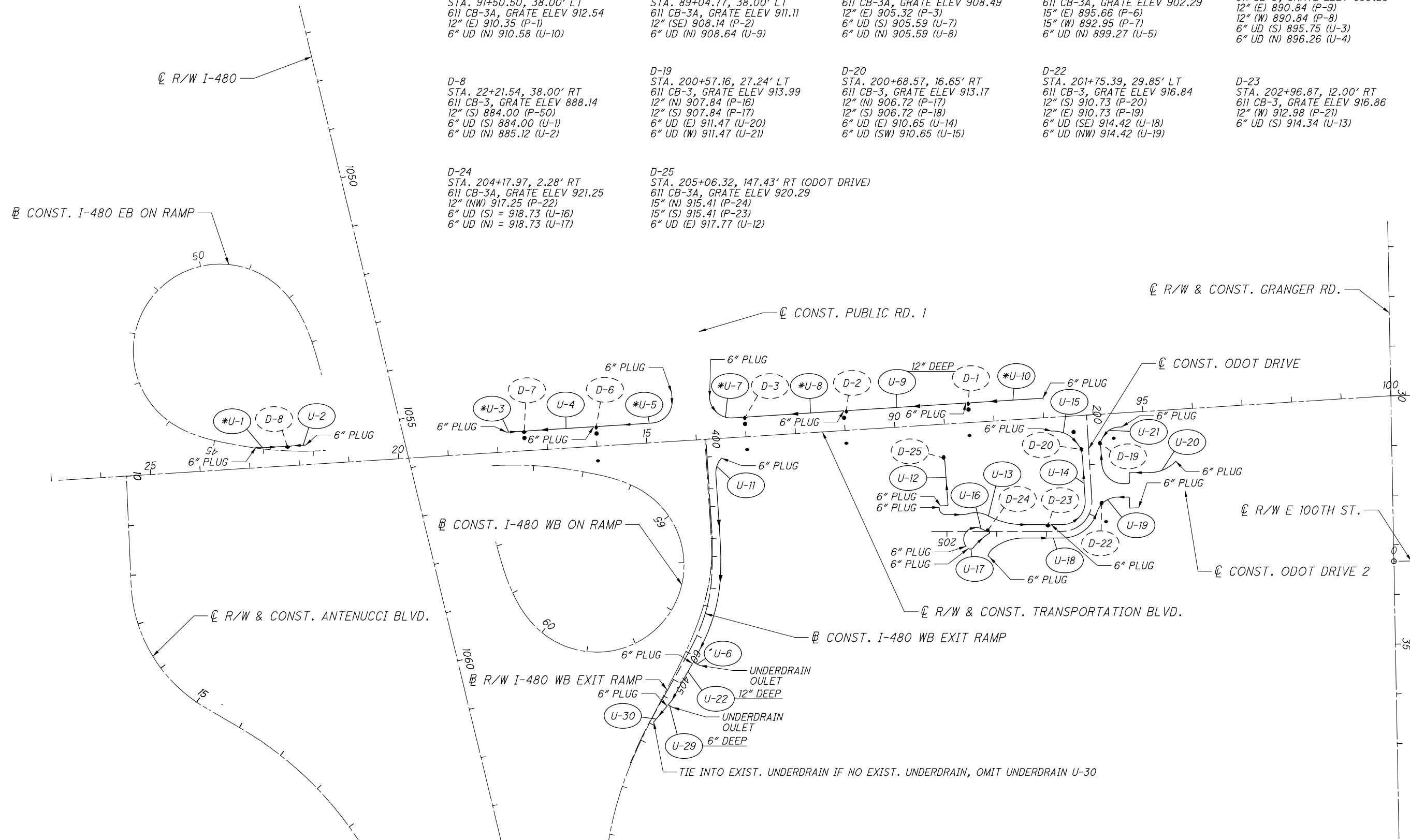
D-20
STA. 200+68.57, 16.65' RT
611 CB-3, GRATE ELEV 913.17
12" (N) 906.72 (P-17)
12" (S) 906.72 (P-18)
6" UD (E) 910.65 (U-14)
6" UD (SW) 910.65 (U-15)

D-22
STA. 201+75.39, 29.85' LT
611 CB-3, GRATE ELEV 916.84
12" (S) 910.73 (P-20)
12" (E) 910.73 (P-19)
6" UD (SE) 914.42 (U-18)
6" UD (NW) 914.42 (U-19)

D-23
STA. 202+96.87, 12.00' RT
611 CB-3, GRATE ELEV 916.86
12" (W) 912.98 (P-21)
6" UD (S) 914.34 (U-13)

D-24
STA. 204+17.97, 2.28' RT
611 CB-3A, GRATE ELEV 921.25
12" (NW) 917.25 (P-22)
6" UD (S) = 918.73 (U-16)
6" UD (N) = 918.73 (U-17)

D-25
STA. 205+06.32, 147.43' RT (ODOT DRIVE)
611 CB-3A, GRATE ELEV 920.29
15" (N) 915.41 (P-24)
15" (S) 915.41 (P-23)
6" UD (E) 917.77 (U-12)



CALCULATED JMB CHECKED JJS

0 100 200
HORIZONTAL SCALE IN FEET

UNDERDRAIN DETAILS

CUY-480/
TRANSPORTATION BLVD.

108
225

\\AKR004\DATA\2016\20160813\CUY-480\DRAWINGS\SHEETS\80974\DP201.DGN
3/1/2017 1:51:31 PM
000TVBIS1D_USER

FOR ESTIMATED QUANTITIES, SEE SHEET 53
 Δ UNDERDRAIN 12" DEEP

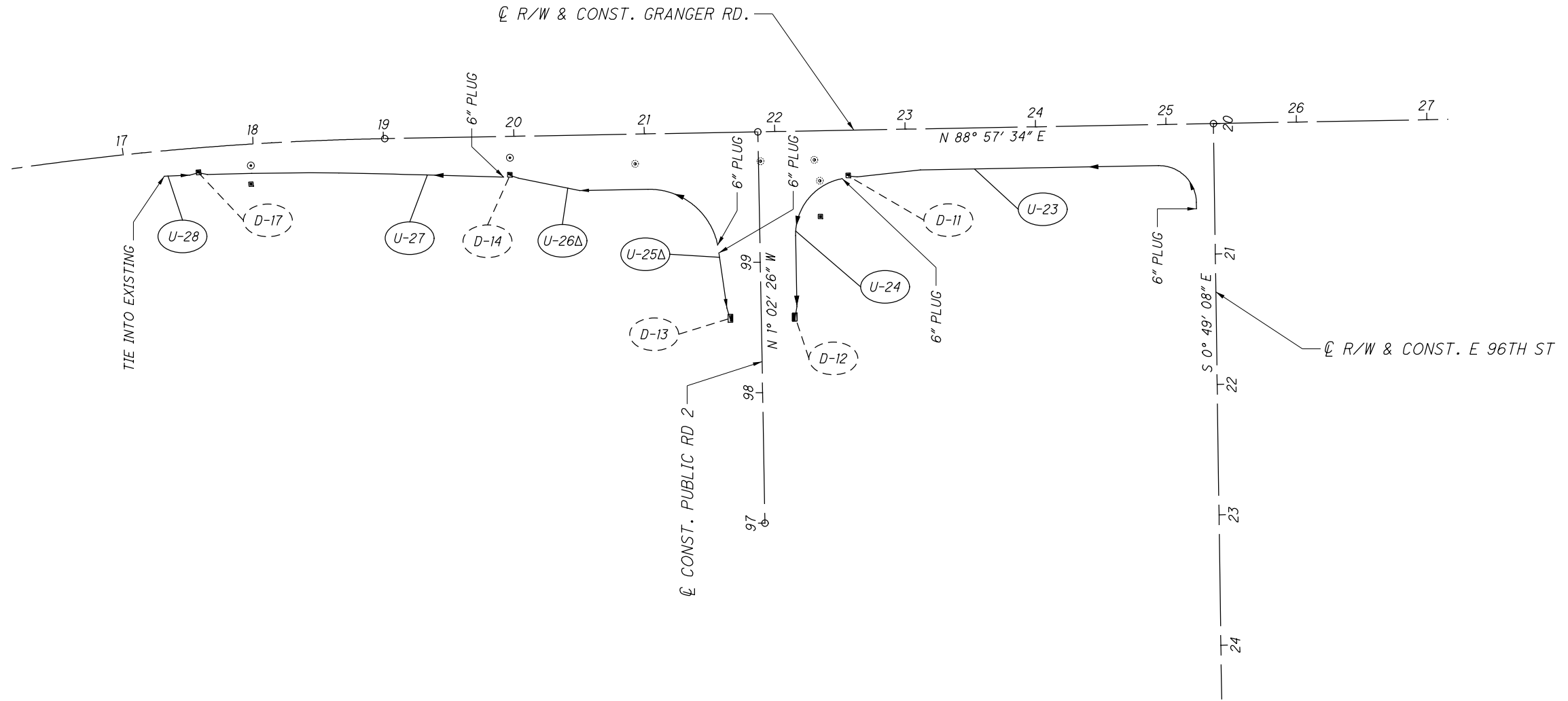
D-11
 STA 22+55.80, 35.03' RT
 611 CB-3A, GRATE ELEV 892.01
 12" (NW) 888.01 (P-11)
 6" UD (E) 889.49 (U-23)

D-13
 STA 98+57.47, 24.00' LT
 611 CB-3, GRATE ELEV 886.99
 12" (E) 883.99 (P-12)
 6" UD (N) 887.47 (U-25)

D-17
 STA. 17+56.53, 18.71' RT
 611 CB-3A, GRATE ELEV 866.89
 12" (W) 862.08 (P-101)
 12" (E) 862.08 (P-102)
 6" UD (E) 864.37 (U-27)
 6" UD (W) 864.37 (U-28)

D-12
 STA 98+57.47, 26.00' RT
 611 CB-3, GRATE ELEV 887.02
 12" (N) 883.50 (P-13)
 12" (W) 883.50 (P-12)
 6" UD (N) 884.50 (U-24)

D-14
 STA. 19+96.43, 29.84' RT
 611 CB-3A, GRATE ELEV 879.10
 12" (N) 876.10 (P-14)
 6" UD (E) 876.58 (U-26)



CALCULATED
 JMB
 CHECKED
 JJS

UNDERDRAIN DETAILS

CUY-480/
 TRANSPORTATION BLVD.

CLEVELAND WATER NOTES FOR WATER MAIN INSTALLATION AND/OR REPLACEMENT

DEVELOPERS, ENGINEERS, AND CONTRACTORS ARE TO ABIDE BY THE MOST CURRENT VERSION OF THE CLEVELAND WATER NOTES AND DETAILS. THE MOST UP-TO-DATE VERSION CAN BE FOUND AT WWW.CLEVELANDWATER.COM/CONSTRUCTION/

GENERAL:

1. ALL WATER WORK REQUIRED, WHETHER SHOWN ON THE PLANS OR AS DIRECTED BY CLEVELAND WATER, SHALL BE AT THE EXPENSE OF THE PROJECT UNLESS OTHERWISE AGREED TO BY THE COMMISSIONER OF THE CLEVELAND DIVISION OF WATER.
2. THE INFORMATION SHOWN ON THE CLEVELAND DIVISION OF WATER'S SUMMARY OF WORK/CHARGE LETTER, STRIP MAPS, AS BUILT DRAWINGS, AND GIS ARE TAKEN FROM EXISTING AVAILABLE RECORDS, AND THEIR ACCURACY IS NOT GUARANTEED.
3. CALL THE INSPECTION AND ENFORCEMENT UNIT AT 216-664-2342 TO SCHEDULE A PRECONSTRUCTION MEETING AT LEAST 1 WEEK PRIOR TO STARTING CONSTRUCTION. THE OPERATION OF ANY VALVE OR ALTERATION OF ANY PART OF THE WATER SYSTEM BY CONTRACTORS OR THEIR EMPLOYEES IS PROHIBITED WITHOUT THE SUPERVISION OF THE CLEVELAND DIVISION OF WATER INSPECTOR.
4. THE PROJECT'S PROFESSIONAL ENGINEER OR A DESIGNATED PROFESSIONAL SURVEYOR SHALL OBTAIN ACTUAL FIELD MEASUREMENTS OF THE MAIN DURING INSTALLATION AND SHALL FURNISH THE CLEVELAND WATER INSPECTOR WITH RECORD PRINTS IN A FORM ACCEPTABLE TO CLEVELAND WATER. CLEVELAND WATER WILL REQUIRE THE DELIVERY AND ACCEPTANCE OF THREE COPIES OF RECORD (AS BUILT) PRINTS BEFORE THE PRESSURE TEST AND CHLORINATION/DISINFECTION OF THE MAIN WILL BE PERMITTED.
5. FOR THE PURPOSES OF CHLORINATION AND BACTERIOLOGICAL TESTING OF THE WATER MAINS THE CONTRACTOR SHALL PROVIDE AND INSTALL, AT EACH OF THE CHLORINATION PIT LOCATIONS SHOWN AND AT OTHER LOCATIONS DETERMINED BY CLEVELAND WATER. FLUSHING / SAMPLING TAP SIZES ARE TO BE DETERMINED CLEVELAND WATER. CHLORINATION PITS SHALL BE SIX (6) FOOT SQUARE AND ARE TO MEET OSHA STANDARDS.
6. A TWO YEAR WARRANTY, COMMENCING FROM THE DATE OF ACCEPTANCE OF THE FINAL CHLORINATION OF THE WATER MAIN INSTALLATION SHALL BE PROVIDED BY THE BUILDER/DEVELOPER AND/OR CONTRACTOR FOR ALL WATER MAINS AND SERVICE CONNECTION WORK PERFORMED BY THE CONTRACTOR, INCLUDING TAPS IF PERFORMED. SHOULD ANY LEAKS OCCUR AND REPAIRS BE REQUIRED DUE TO DEFECTIVE MATERIAL OR POOR WORKMANSHIP.
7. USE BACKFILL MATERIAL AS SPECIFIED AND COMPACT SUFFICIENTLY IN THOSE AREAS WHERE EXISTING MAINS AND WATER SERVICE CONNECTIONS ARE EXPOSED. (SEE CLEVELAND WATER STANDARD DETAIL STD-001)
8. ALL MATERIALS, INCLUDING BUT NOT LIMITED TO WATER MAINS, FIRE HYDRANTS, VALVES, CONNECTION MATERIALS AND OTHER WATER APPURTENANCES, SHALL BE NEW AND UNUSED AND SHALL CONFORM TO THE MOST CURRENT CLEVELAND WATER SPECIFICATIONS. ALL MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH CLEVELAND WATER'S STANDARDS.

INACTIVE HYDRANT ASSEMBLIES

DURING INSTALLATION OF THE PROPOSED WATERMAIN, ALL EXISTING HYDRANT SERVICES WILL BE MAINTAINED UNTIL SERVICE HAS BEEN TRANSFERRED FROM THE EXISTING WATERMAIN TO THE PROPOSED WATERMAIN.

DURING THIS TIME, INSTALLATION OF PROPOSED HYDRANT ASSEMBLIES WILL BE PERMITTED. HYDRANT ASSEMBLIES THAT ARE NOT ACTIVE SHALL BE MARKED AND COVERED AS INACTIVE. IF THE PROPOSED WATERMAIN AND HYDRANTS ARE ACTIVE, EXISTING HYDRANTS WILL BE MARKED AND COVERED AS INACTIVE.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING WATER MAINS AND APPURTENANCES THEREOF WHEN CONSTRUCTING OR CONNECTING THE NEW WATER MAIN. THIS SHALL INCLUDE LEADED JOINTS IN EXISTING FITTINGS WHICH MAY REQUIRE REPLACEMENT FITTINGS AT THE DISCRETION OF THE INSPECTOR IF IT IS DETERMINED THEY WERE DISTURBED. ALL REPAIRS TO DAMAGED EXISTING FACILITIES SHALL BE MADE BY THE CONTRACTOR, AT THE PROJECT' EXPENSE, TO THE SATISFACTION OF CLEVELAND WATER.

10. ALL HYDROSTATIC PRESSURE TESTING SHALL BE DONE BY THE CONTRACTOR IN THE PRESENCE OF THE CLEVELAND WATER INSPECTOR. THE HYDROSTATIC TEST PRESSURE SHALL BE 75 PSI ABOVE THE STATIC PRESSURE PREVAILING AT THE SITE, BUT IN NO CASE LESS THAN 150 PSI. THE PRESSURE TEST SHALL BE FOR A DURATION OF TWO (2) HOURS WITH THE PRESSURE BEING MAINTAINED WITHIN 5 PSI OF THE REQUIRED TEST PRESSURE. SHOULD THE PRESSURE TEST FAIL THE CONTRACTOR SHALL FIND AND CORRECT THE DEFICIENCY(IES) TO THE SATISFACTION OF CLEVELAND WATER AND REPEAT THE TWO (2) HOUR PRESSURE TEST.

11. ALL BURIED WATER MAINS, FITTINGS, VALVES, FIRE HYDRANT BRANCH PIPING AND APPURTENANCES SHALL BE ENCASED WITH POLYETHYLENE WRAPPING IN ACCORDANCE WITH THE MOST CURRENT REVISION OF ANSI/AWWA C-105/A21.5 INSTALLATION METHOD "A". ALTERNATE INSTALLATION METHOD A FOR WET TRENCH CONDITIONS SHALL BE USED WHEN WATER MAINS ARE INSTALLED IN UNPAVED LOCATIONS SUCH AS TREE LAWNS AND EASEMENTS TRAVERSING PRIVATE PROPERTY.

WATER MAINS:

12. ALL PIPE, UNLESS OTHERWISE CALLED FOR, SHALL BE DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED HAVING PUSH-ON JOINTS WITH RADIALLY COMPRESSED RUBBER RING GASKET AND INSTALLED AS PER THE MOST CURRENT REVISION OF AWWA C600.

13. ALL FITTINGS, UNLESS OTHERWISE CALLED FOR, SHALL BE APPROVED DUCTILE IRON, CLASS 350, CEMENT LINED OR FUSION BONDED EPOXY COATED. ALL FITTINGS AND PIPE CONNECTED TO FITTINGS SHALL BE RESTRAINED USING A "RETAINED" MECHANICAL JOINT CONFORMING TO THE MATERIAL AND PERFORMANCE REQUIREMENTS OF ANSI/AWWA C-110/A21.10 AND ANSI/AWWA C-111/A21.11, OR "COMPACT" FITTINGS IN ACCORDANCE WITH ANSI/AWWA C-153/A21.53. EXCEPT FOR ANCHOR TEES, REDUCERS OR OTHER SPECIAL CIRCUMSTANCES WHEN BY CLEVELAND WATER, ALL FITTINGS ARE TO HAVE BELL ENDS.

14. ALL BOLTS AND NUTS ON ALL "RETAINED" MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING.

15. WHERE SHOWN ON THE PLANS, OR WHEN OTHERWISE CALLED FOR, PIPE AND FITTINGS SHALL HAVE AN APPROVED "TYPE I" OR "TYPE II" BOLTLESS RESTRAINED PUSH-ON JOINTS TO THE LIMITS SHOWN ON THE DRAWINGS.

16. AT THE END OF EACH WORKDAY, THE CONTRACTOR SHALL PLUG ALL OPEN PIPE ENDS WITH WATER TIGHT PLUGS AS PER THE "PREVENTITIVE AND CORRECTIVE MEASURES DURING CONSTRUCTION" SECTION OF THE MOST CURRENT REVISION OF AWWA C-651 AS TO PREVENT THE INFILTRATION OR INTRUSION OF ANY FOREIGN OBJECTS OR MATERIALS. DATE STAMPED DIGITAL PHOTOS SHALL BE PROVIDED FOR EACH WORKDAY DEMONSTRATING THAT PROPER AWWA C-651 METHODS

WERE USED TO PLUG ALL OPEN WATER MAIN ENDS. EACH PHOTO SHALL CLEARLY IDENTIFY THE STATION AT WHICH THE PIPE IS PLUGGED. THE STATIONING SHALL BE SHOWN BY THE USE OF A STATION MARKER PLACED AT THE PLUGGED PIPE END.

PHOTOS SHALL BE SUBMITTED ON A DAILY BASIS UNLESS OTHERWISE DEFINED BY THE CLEVELAND WATER INSPECTOR OR ENGINEER. ALL PHOTOS TAKEN OVER THE COURSE OF THE PROJECT SHALL BE SUBMITTED BY THE CONTRACTOR AS PART OF THE AS-BUILT SUBMITTAL. PHOTOS ARE TO INCLUDE STATIONING MARKERS. AS-BUILTS SHALL BE DEEMED INCOMPLETE WITHOUT SAID COLLECTION OF DIGITAL PHOTOS.

HYDRANTS:

17. IN ALL HYDRANT INSTALLATIONS THE CONTRACTOR SHALL FACE ALL HYDRANT'S 4" (STEAMER) NOZZLE TOWARD THE PAVEMENT PRIOR TO TESTING AND CHLORINATION OF WATER MAINS. CONTRACTOR SHALL CONSULT WITH THE LOCAL MUNICIPALITY'S ENGINEERING OR SERVICE DEPARTMENT TO OBTAIN HYDRANT MODEL AND NOZZLE THREAD REQUIREMENTS IF NOT INDICATED ON THE APPROVED PLANS.

VALVES:

18. ALL VALVES SHALL BE AN APPROVED MODEL RESILIENT SEATED GATE VALVES AS PER THE MOST CURRENT VERSION OF AWWA C509 OR C515. VALVE OPERATING NUTS SHALL BE TAPERED (1 7/8" TO 2" FROM TOP TO BOTTOM) AND 2" DEEP. VALVES MORE THAN 10 YEARS OLD AT TIE IN POINTS TO EXISTING MAINS SHALL BE REPLACED AT THE PROJECT'S EXPENSE UNLESS OTHERWISE DIRECTED.

SERVICE CONNECTIONS:

19. ANY CITYSIDE LEAD SERVICE CONNECTION ENCOUNTERED SHALL BE REPLACED WITH TYPE K COPPER OR OTHER APPROVED MATERIAL. IF OWNERSIDE LEAD WILL REMAIN, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY CWD BY CALLING 216-664-2882 AND LEAVING A CLEVELAND WATER SUPPLIED CUSTOMER NOTIFICATION DOORHANGER ON ALL ACCESSIBLE POINTS OF ENTRY TO THE HOME.

20. AS PART OF THE AS BUILT SUBMISSION IN NOTE 4, THE CONTRACTOR SHALL PROVIDE A TABLE SHOWING ALL EXISTING CONNECTIONS, IDENTIFIED BY CLEVELAND WATER CONNECTION NUMBER, SHOWING THE FOUND CONNECTION MATERIAL FOR BOTH THE CITYSIDE AND OWNERSIDE CONNECTION, AS WELL AS THE NEW CONNECTION MATERIAL FOR ALL CONNECTIONS REPLACED. THE TABLE SHALL ALSO NOTE ANY REVISED CONNECTION MEASUREMENTS AND SIZES. A SAMPLE TABLE WILL BE PROVIDED. THE SUBMISSION SHALL BE IN MICROSOFT EXCEL FORMAT. CLEVELAND WATER SHALL REQUIRE THE DELIVERY AND ACCEPTANCE OF THIS TABLE BEFORE THE PRESSURE TEST AND CHLORINATION/DISINFECTION OF THE MAIN WILL BE PERMITTED.

21. NEW WATER SERVICE CONNECTIONS LOCATIONS SHOWN ON THESE DRAWINGS ARE FOR REFERENCE ONLY AND ARE NOT PART OF THE WATER MAIN APPROVAL. THE SPECIFIC LOCATION FOR EACH CONNECTION WILL BE DETERMINED BY CLEVELAND WATER PRIOR TO THE TAPS BEING INSTALLED. ALL PERMITS FOR TAPS AND METERS FOR PARCELS ASSOCIATED WITH THE WATER MAINS INSTALLED ON THIS PROJECT ARE TO BE OBTAINED BY THE LAND OWNER OF SAID IMPROVEMENT PLANS. IT IS THE LAND OWNERS RESPONSIBILITY TO ARRANGE FOR OBTAINING PERMITS FOR ALL WATER SERVICE CONNECTIONS BEFORE ANY SERVICE

CONNECTION WORK MAY PROCEED. ALL FEES CAN BE OBTAINED FROM THE CLEVELAND WATER PERMITS AND SALES SECTION AT 216-664-3130 PROMPT #7 OR 216-664-2444 X75209.

ACCOUNTS SHALL BE INITIATED IN THE LAND OWNER'S NAME AS PART OF THE PERMITTING PROCESS. ALL RESPONSIBILITIES ASSOCIATED WITH EACH WATER SERVICE, INCLUDING, THE OWNER SIDE INSPECTIONS, METER SET/METER PIPING INSPECTION AND THE METER INSTALLATION SHALL BE THE RESPONSIBILITY OF SAID OWNER.

METERS INSTALLATIONS WILL NOT BE AUTHORIZED TO BE INSTALLED UNTIL ALL INSPECTIONS HAVE BEEN COMPLETED. ESTIMATED BILLS MAY ENSUE IF A HOME IS IDENTIFIED AS HAVING WATER SERVICE BUT NO METER HAS BEEN INSTALLED. IF NEW OWNERS, ONCE PARCELS ARE SOLD OFF AND TRANSFER TITLE, DO NOT CONTACT CLEVELAND WATER TO ESTABLISH ACCOUNTS IN THEIR NAME, ACCOUNTS AND THEIR ASSOCIATED BILLS WILL REMAIN IN THE NAME OF OUR LAST OWNER OF RECORD WHICH MAY BE THE DEVELOPER OR BUILDER. IT IS THE RESPONSIBILITY OF THE NEW OWNER TO TRANSFER ACCOUNTS INTO THEIR NAME WHEN THE PROPERTIES LEGALLY TRANSFER. UPON TRANSFER OF PROPERTY, SELLER OF PROPERTY MUST COMMUNICATE ALL UNCOMPLETED PORTIONS OF THE REFERENCED RESPONSIBILITIES TO THE NEW OWNER.

22. ONE INCH SERVICE CONNECTIONS SHALL BE PERMITTED TO SERVICE NEW HOMES BASED ON THE FOLLOWING CRITERIA:

- PEAK FLOW DEMANDS DO NOT EXCEED 25 GPM FOR AN INDIVIDUAL HOME/UNIT. INCLUSIVE OF ALL USAGE (DOMESTIC AND/OR IRRIGATION),
- LENGTH OF ONE INCH CONNECTION DOES NOT EXCEED 75 FEET AS MEASURED FROM THE MAIN TO THE POINT OF ENTRY INTO THE PROPOSED HOME/UNIT.
- THE CONNECTIONS DO NOT INCLUDE LIMITED AREA OR NFPA 13D SPRINKLER SYSTEMS

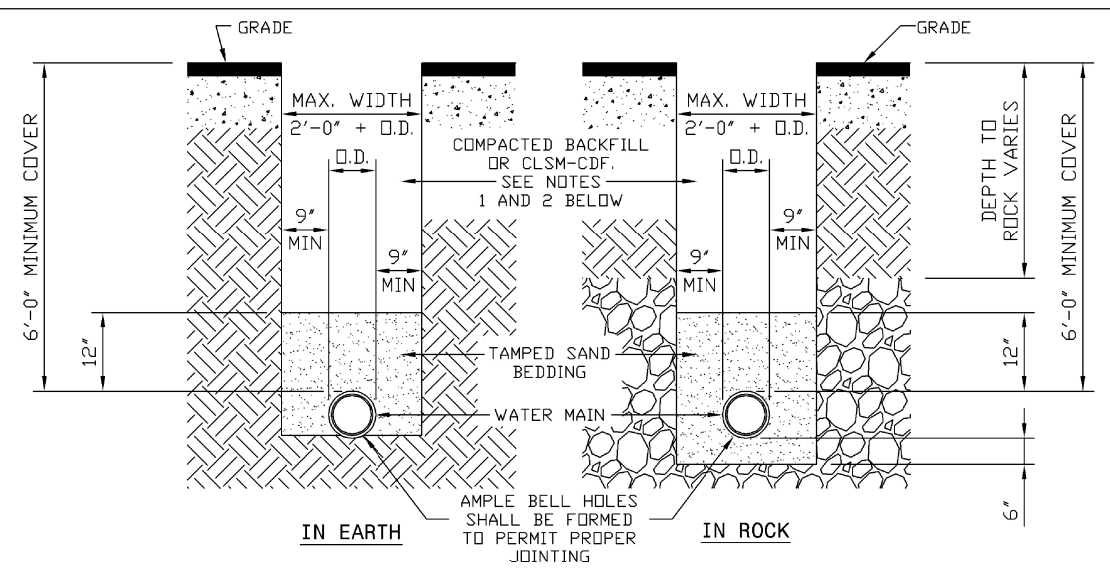
ANY SERVICE REQUESTS DIFFERING FROM THE STATED CRITERIA SHALL REQUIRE THE SUBMITTAL OF A COMPLETE WATER SERVICE APPLICATION FOR EACH WATER SERVICE REQUESTED.

23. ALL CURB VALVE BOXES & METER VAULTS WILL BE INSTALLED IN GRASS AREAS WHEN POSSIBLE. IF VALVE BOXES OR METER VAULTS ARE INSTALLED OUTSIDE OF A DEDICATED RIGHT OF WAY OR EASEMENT FOR THE PURPOSES OF WATER SUPPLY, A STANDARD CLEVELAND EASEMENT FOR A VAULT SHALL BE PROVIDED.

EMERGENCIES:

24. IF A WATER MAIN OR SERVICE CONNECTION BREAK OCCURS DURING CONSTRUCTION AND EMERGENCY ASSISTANCE IS REQUIRED, PLEASE NOTIFY CLEVELAND WATER AT 216-664-3060.

DATE: 12-05-2016 BY: FSR STD-11



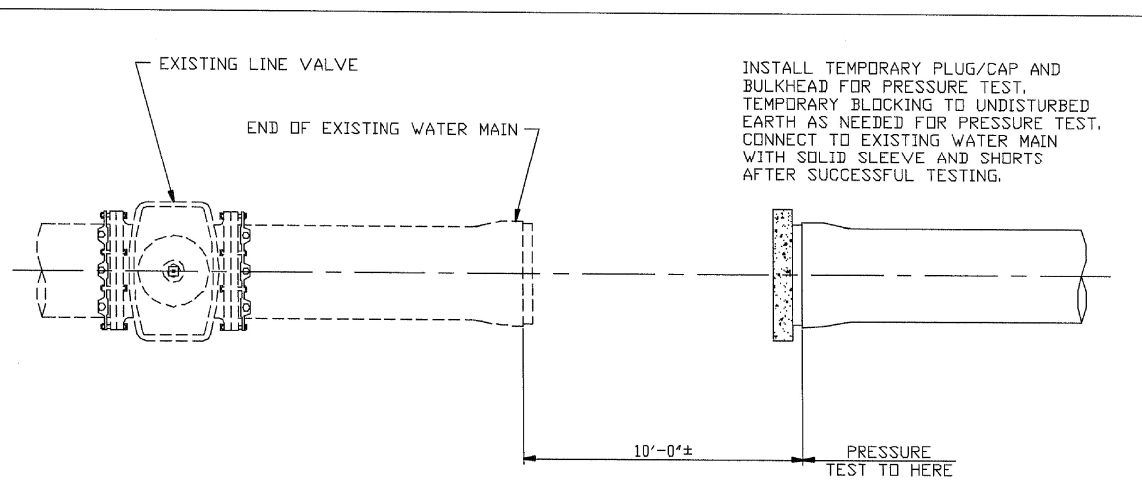
WATER MAIN TRENCH DETAILS

- NOT TO SCALE -

- NOTES:
- 1) PREMIUM BACKFILL CONSISTING OF CONTROLLED LOW STRENGTH MATERIAL - CONTROLLED DENSITY FILL (CLSM-CDF) 'FLOWABLE FILL' IS REQUIRED.
 - 2) UNDER ALL EXISTING OR FUTURE PAVEMENTS, SIDEWALKS AND DRIVES WITHIN THE CITY OF CLEVELAND CORPORATION LIMITS, AS SPECIFIED IN LOCAL MUNICIPALITIES SERVED BY CWD (SEE LOCAL REQUIREMENTS).
 - 3) WHEN PREMIUM BACKFILL IS REQUIRED BY THE LOCAL MUNICIPALITY FOR CASES OTHER THAN THOSE LISTED IN NOTE 1 ABOVE, IT SHALL BE LIMESTONE GRADED PER ODOT 304.02 OR ODOT 411. NO SLAG IS PERMITTED.
 - 4) CONTRACTOR SHALL USE SPECIAL CARE IN PLACING THE SAND BEDDING, SO AS TO AVOID SCRAPING OF THE EXTERIOR COATING, INJURING THE PIPE, DISTORTING OR MOVING THE PIPE WHEN COMPACTING THE SAME. THE SAND BEDDING SHALL BE TAMPED IN SIX (6) INCH LAYERS, SIMULTANEOUSLY ON EACH SIDE OF THE PIPE, AND THOROUGHLY COMPACTED SO AS TO PROVIDE A SOLID BACKING AGAINST THE EXTERNAL SURFACE OF THE PIPE.
 - 5) MINIMUM COMPACTION FOR ALL SAND BEDDING, BACKFILL AND PREMIUM BACKFILL SHALL BE 95% STANDARD PROCTOR.
 - 6) PAVEMENT, SIDEWALK OR DRIVES TO BE INSTALLED IN ACCORDANCE WITH LOCAL MUNICIPALITY'S SPECIFICATIONS.

STD-001

DATE: 2-2-2012



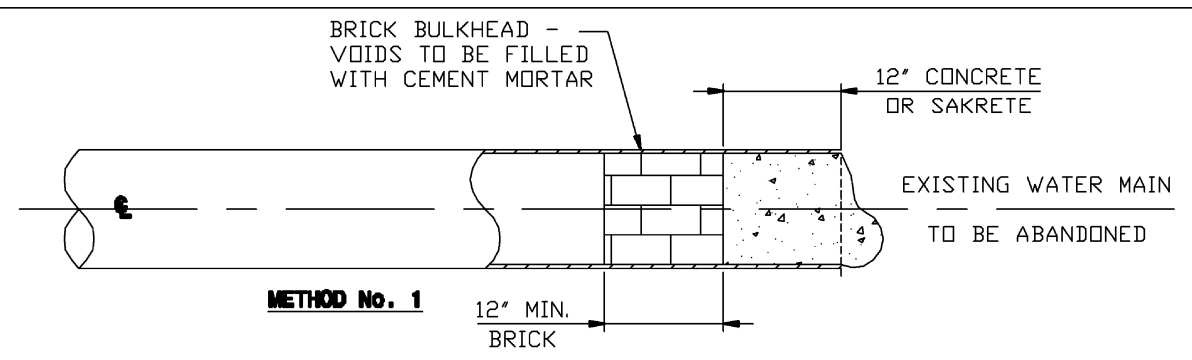
NOTE:
PRESSURE TESTING OF WATER MAINS:
WHERE NEW/EXTENDED WATER MAINS ARE CONNECTED TO AN EXISTING WATER MAIN FOR PRESSURE TEST, RESULTING IN FAILURE OF THE PRESSURE TEST OR ANY DAMAGE TO THE EXISTING WATER MAIN, OR ITS APPURTENANCES, THE REPAIR THEREOF SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ALL REPAIRS SHALL BE DONE TO THE SATISFACTION OF THE DIVISION OF WATER.

ALTERNATE PRESSURE TESTING DETAIL

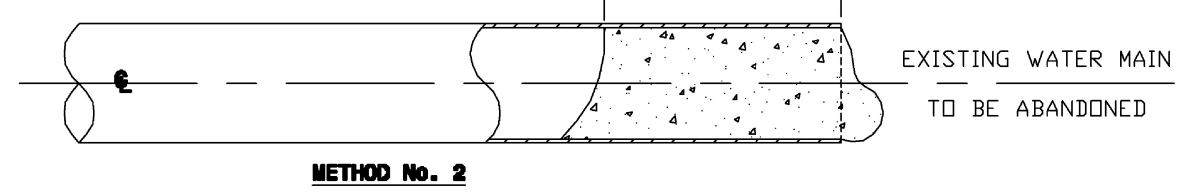
- NOT TO SCALE -

STD-002

DATE: 10-1-97 BY: RSK



NOTE:
PROPERLY DRAIN MAIN PRIOR TO ABANDONMENT



PLUGGING ABANDONED WATER MAIN ENDS

- NOT TO SCALE -

STD-004

DATE: 10-1-97 BY: RSK

*CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.

COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.

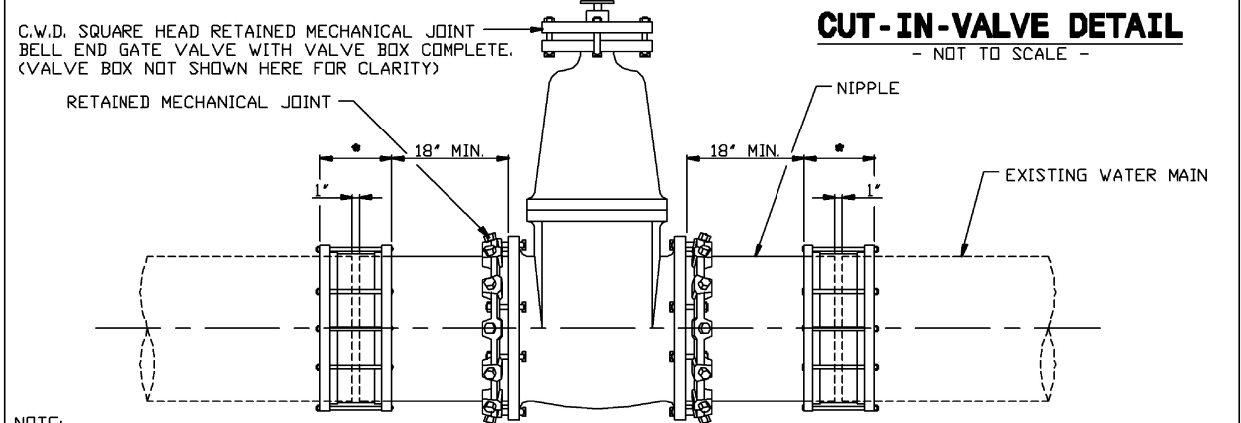
MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).

THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 OR 162 (TRANSITION TYPE), OR SMITH-BLAIR 441 STRAIGHT AND TRANSITION COUPLINGS.

ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE 'RETAINED' TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AVMA C-105/A21.5-88, CLASS 'C', METHOD 'B'.

THE DIVISION OF WATER WILL DETERMINE THE FIELD LOCATION OF THE CUT-IN-VALVE ASSEMBLY. THE DIVISION OF WATER WILL ALSO SET THE TIME OF INSTALLATION OF THE CUT-IN-VALVE ASSEMBLY.

THE CONTRACTOR SHALL DO ALL PIPE CUTTING AND INSTALLATION. HOWEVER, THE INSTALLATION OF THE CUT-IN-VALVE ASSEMBLY SHALL BE DONE UNDER THE SUPERVISION OF THE DIVISION OF WATER.

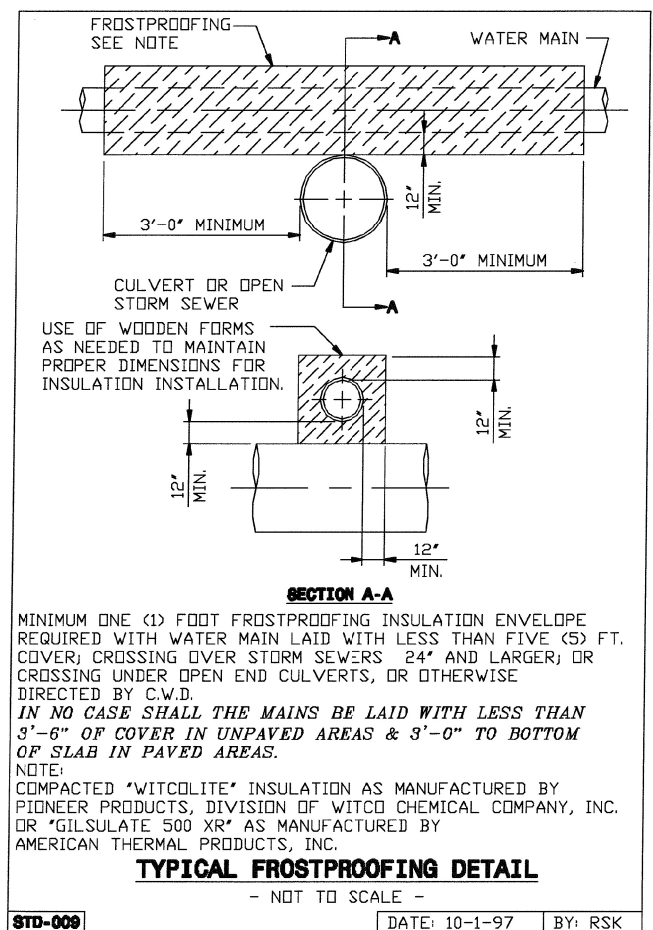
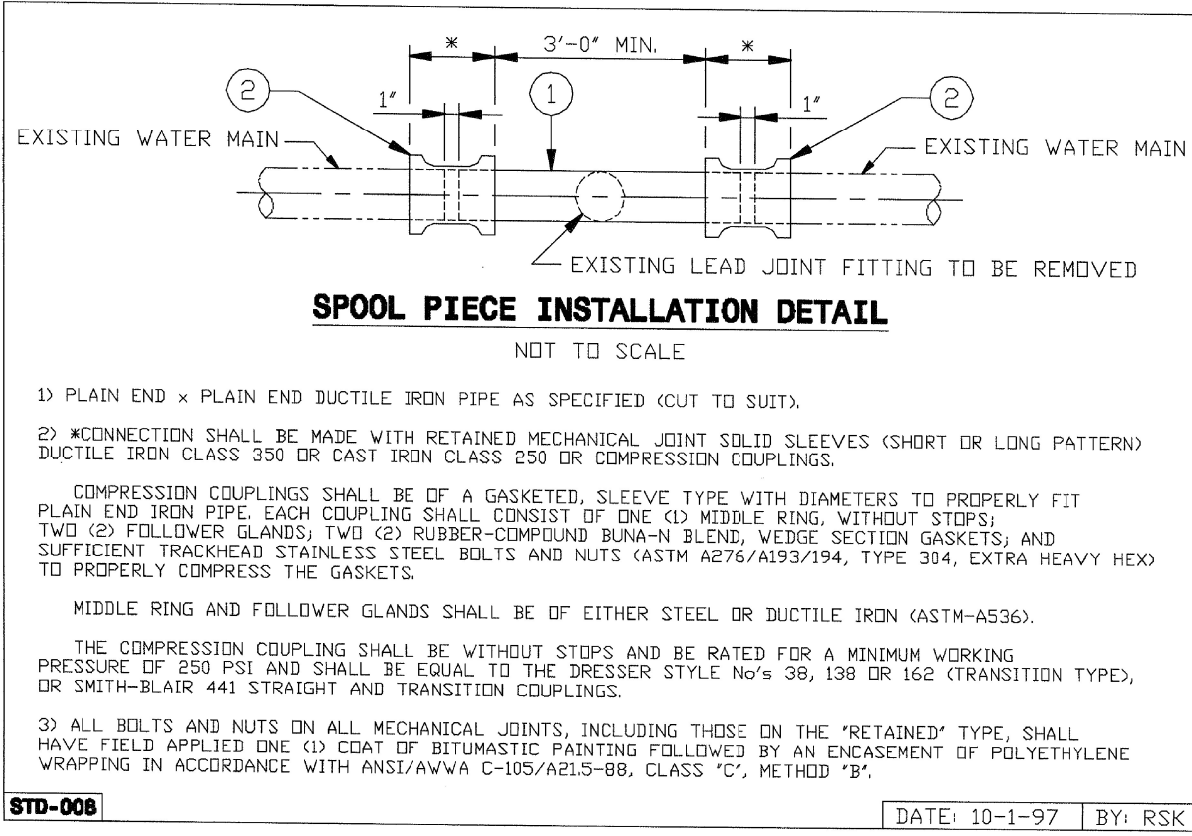
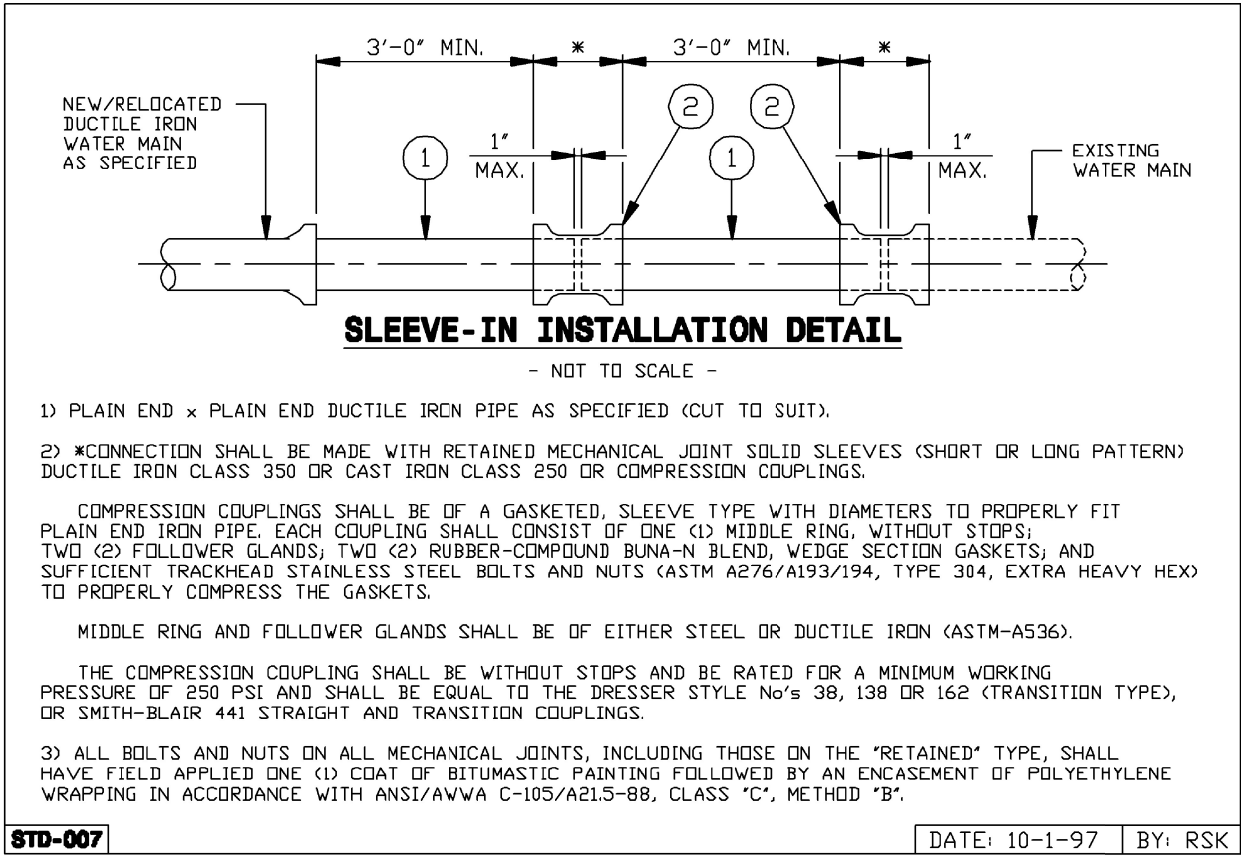
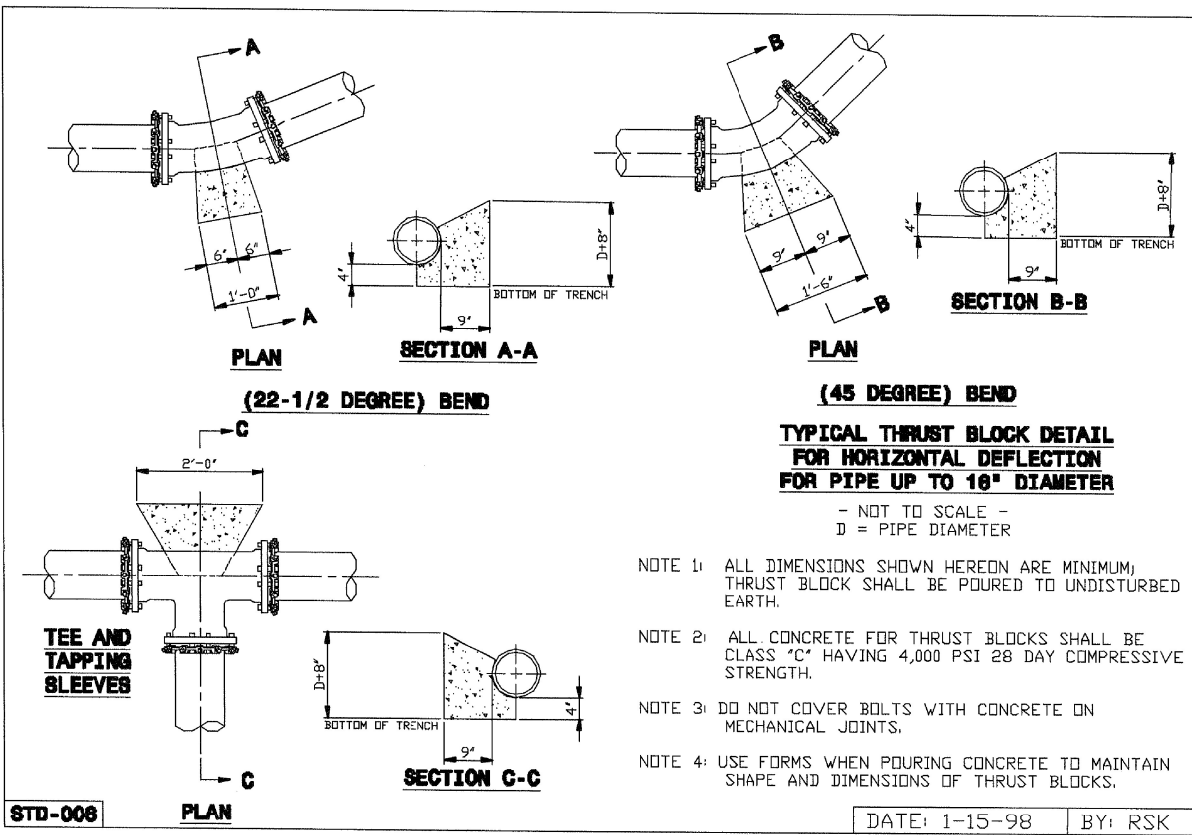


NOTE:
BEFORE CUTTING EXISTING WATER MAIN, THE NIPPLES SHALL BE CONNECTED TO THE MECHANICAL JOINT BELL END GATE VALVE. AFTER CUTTING PIPE, FINAL CONNECTIONS SHALL BE MADE WITH COUPLINGS/SOLID SLEEVES AS SPECIFIED.

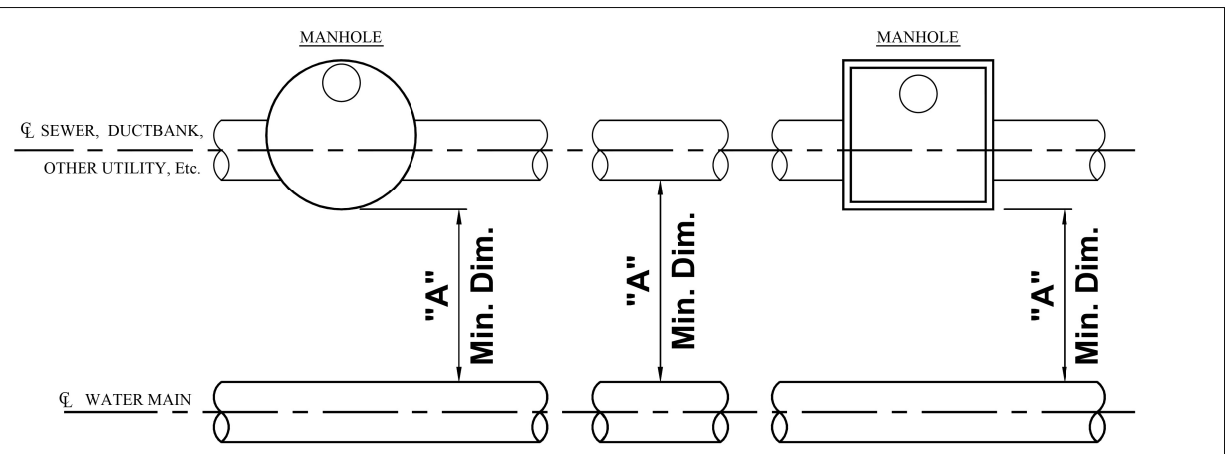
STD-005

DATE: 10-1-97 BY: RSK

\NARINDA.DATA\2016\2016051\CUY\80974\UTILITIES\SHEETS\2016087\001.DGN
 3/1/2017
 1:49:52 PM
 000TY81STD.LUSER



\SARIN\DATA\2016\20160951\CUY\80974\UTILITIES\SHEETS\20160907\0002.DGN
 3/1/2017
 1:49:26 PM
 DDDTY81STD.LUSER



PLAN VIEW
- SEE STD-018 FOR PROFILE VIEW -

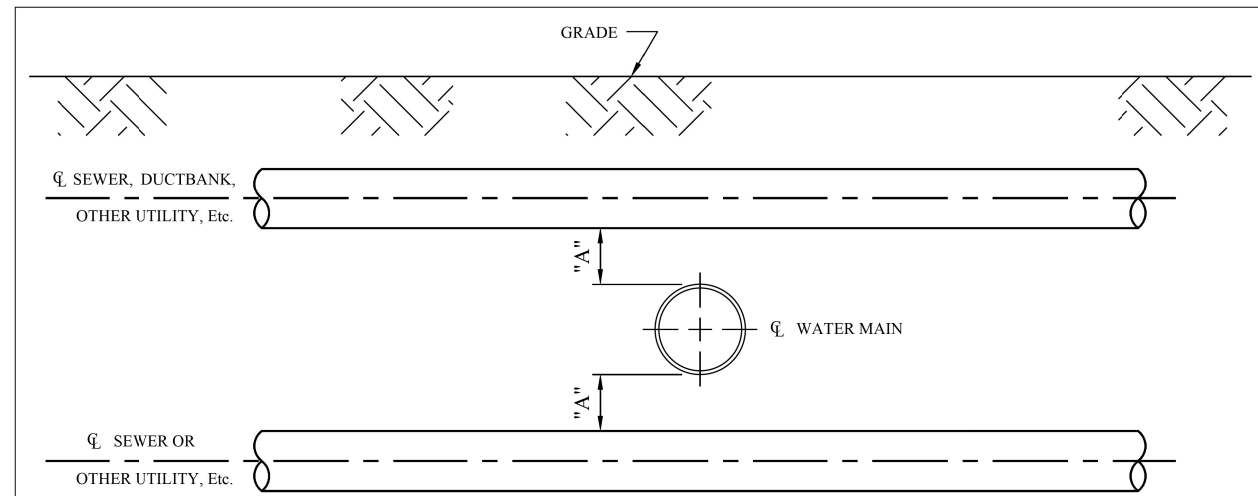
HORIZONTAL CLEARANCE	STORM SEWER	SANITARY SEWER	GAS, DUCTBANK, OTHER UTILITY, Etc.
"A"	10'-0" MIN.	10'-0" MIN.	5'-0" MIN.

HORIZONTAL CLEARANCE FOR UTILITIES
NOT TO SCALE

STD-017

DATE: 7-02-2014

BY: MTA



PROFILE VIEW
- SEE STD-017 FOR PLAN VIEW -

VERTICAL CLEARANCE	SANITARY SEWER LESS THAN 24"	SANITARY SEWER 24" & LARGER	STORM SEWER, DUCTBANK, GAS, OTHER UTILITY LESS THAN 24"	STORM SEWER, DUCTBANK, GAS, OTHER UTILITY 24" & LARGER	REMARKS
"A"	18" Min.	18" Min.	18" Min.	18" Min.	IF CANNOT ACHIEVE MIN. CLEARANCE WATER MAIN TO BE LOWERED

VERTICAL CLEARANCE FOR UTILITIES
NOT TO SCALE

STD-018

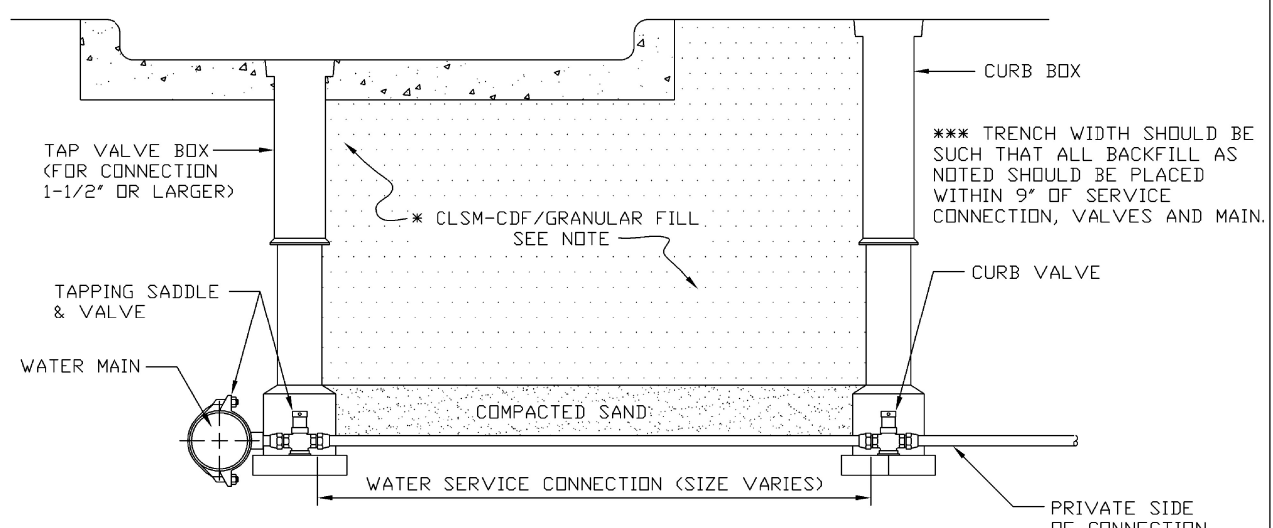
DATE: 7-02-2014

BY: MTA

WATER MAIN DETAILS

** CLEVELAND REQUIRED MIX DESIGN -
CEMENT - 50 LBS. PER CUBIC YARD
SAND - 2850 LBS. PER CUBIC YARD
WATER - 50 GALLONS PER CUBIC YARD
RHEOCCELL 30MB - 3 OZ. PER CUBIC YARD

* CONTROLLED LOW STRENGTH MATERIAL-
CONTROLLED DENSITY FILL (CLSM-CDF)
"FLOWABLE FILL" IS REQUIRED WITHIN THE
CITY OF CLEVELAND CORPORATION LIMITS
AND PERMITTED IN ALL COMMUNITIES
SERVICED BY CWD. CHECK LOCAL REQUIREMENTS.



SERVICE CONNECTION BACKFILL DETAIL
- NOT TO SCALE -

NOTES:
1) CONTRACTOR SHALL USE SPECIAL CARE IN PLACING THE SAND BEDDING BACKFILL, SO AS TO AVOID SCRAPING OF THE EXTERIOR COATING, INJURING THE PIPE, DISTORTING OR MOVING THE PIPE WHEN COMPACTING THE SAME. THE SAND BEDDING BACKFILL SHALL BE TAMPED IN SIX (6) INCH LAYERS, SIMULTANEOUSLY ON EACH SIDE OF THE PIPE, AND THOROUGHLY COMPACTED SO AS TO PROVIDE A SOLID BACKING AGAINST THE EXTERNAL SURFACE OF THE PIPE.
2) MINIMUM COMPACTION FOR ALL SAND BEDDING BACKFILL, BACKFILL AND PREMIUM BACKFILL SHALL BE 95% STANDARD PROCTOR.

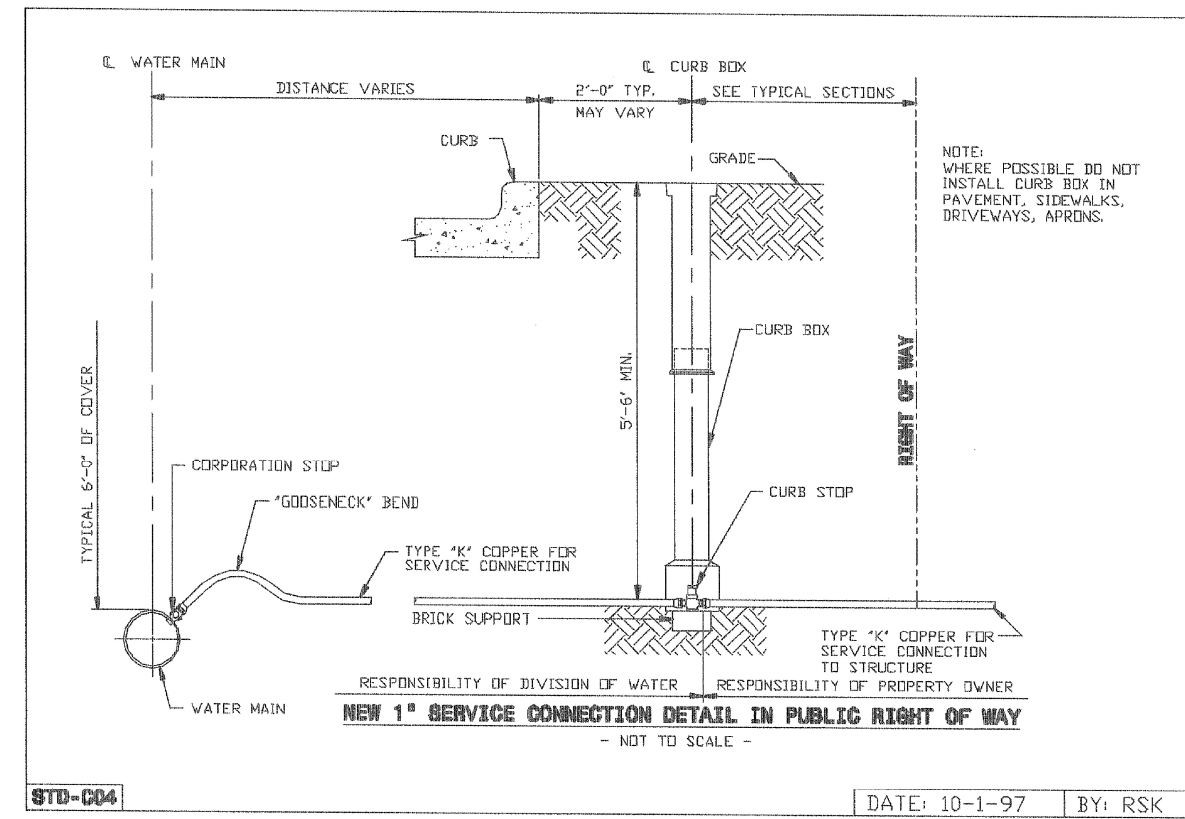
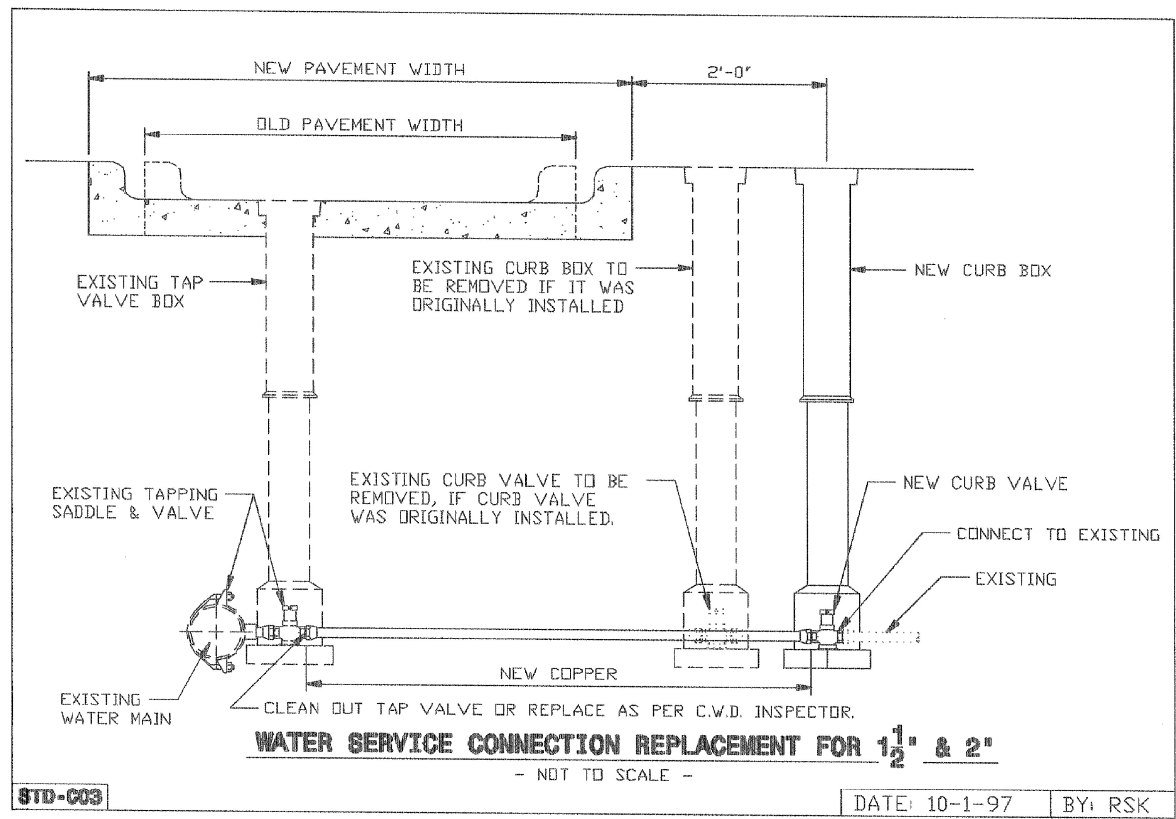
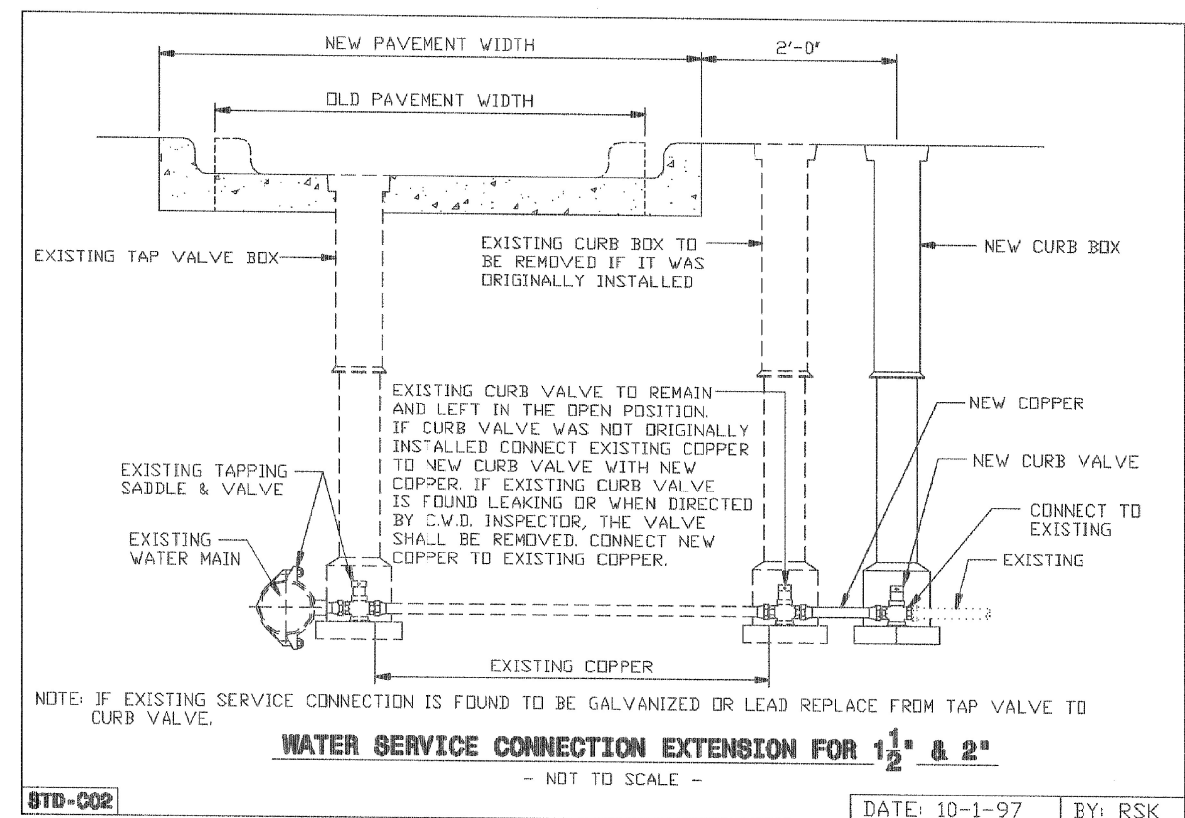
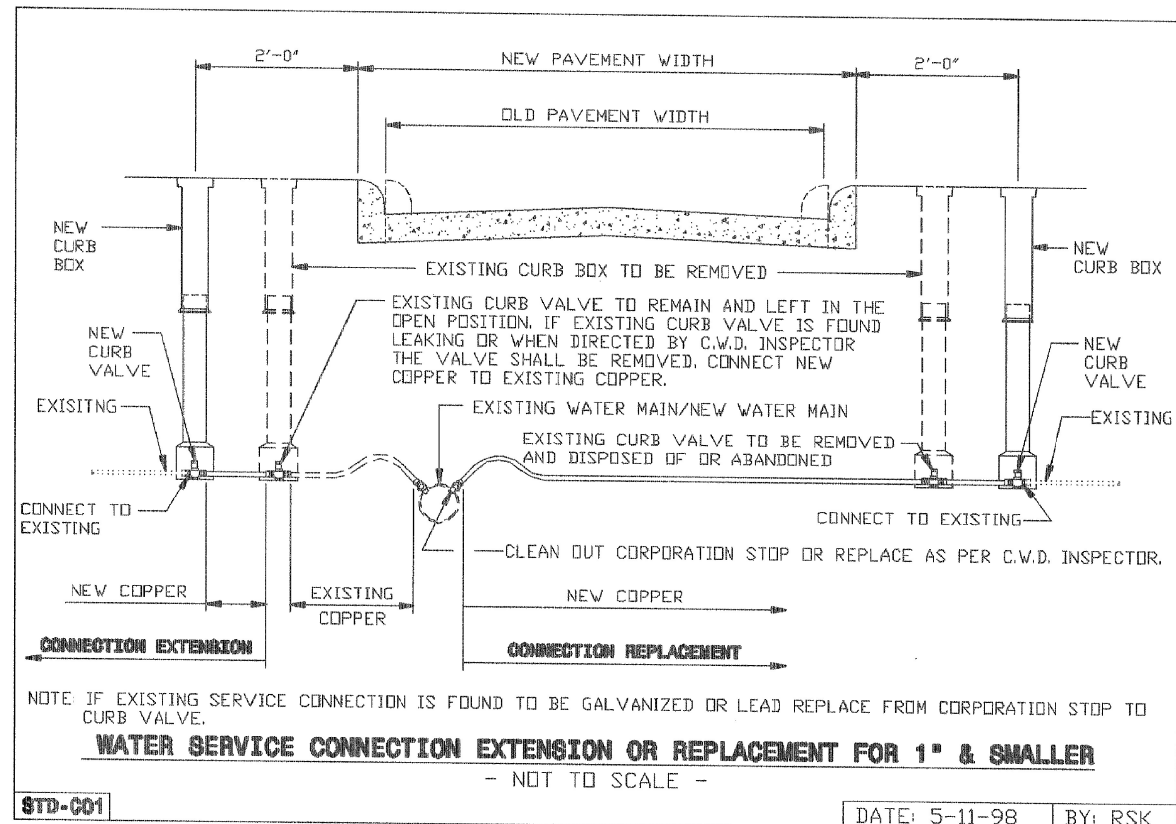
STD-023

DATE: 10-7-2008

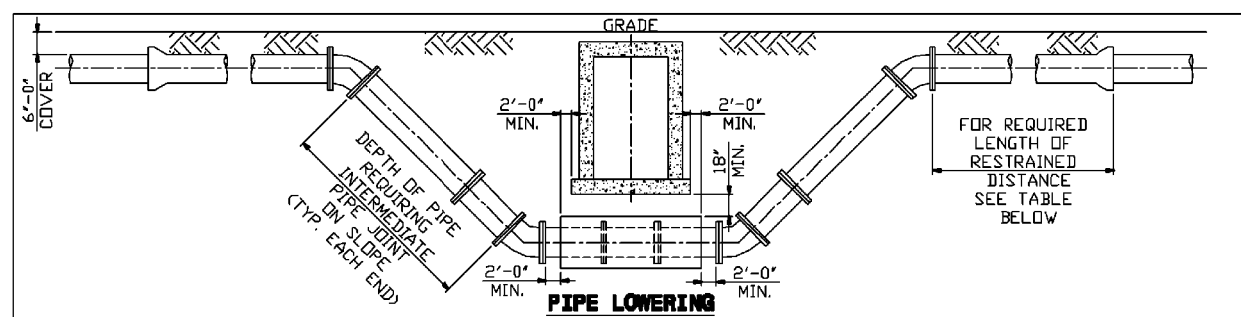
BY: RSK

\\SARINQA.DATA\2016\20160951\CUV\80974\UTILITIES\SHEETS\2013087J0003.DGN
3/1/2017
1:48:50 PM
DDOT\Y81STD_USER

**CUY-480/
TRANSPORTATION BLVD.**



\SARINDA.DAT\2016-201605\CUY-480\UTILITIES\SHEETS\2016070004.DGN
 3/1/2017
 11:48:18 AM
 DDDTY81STD_USER

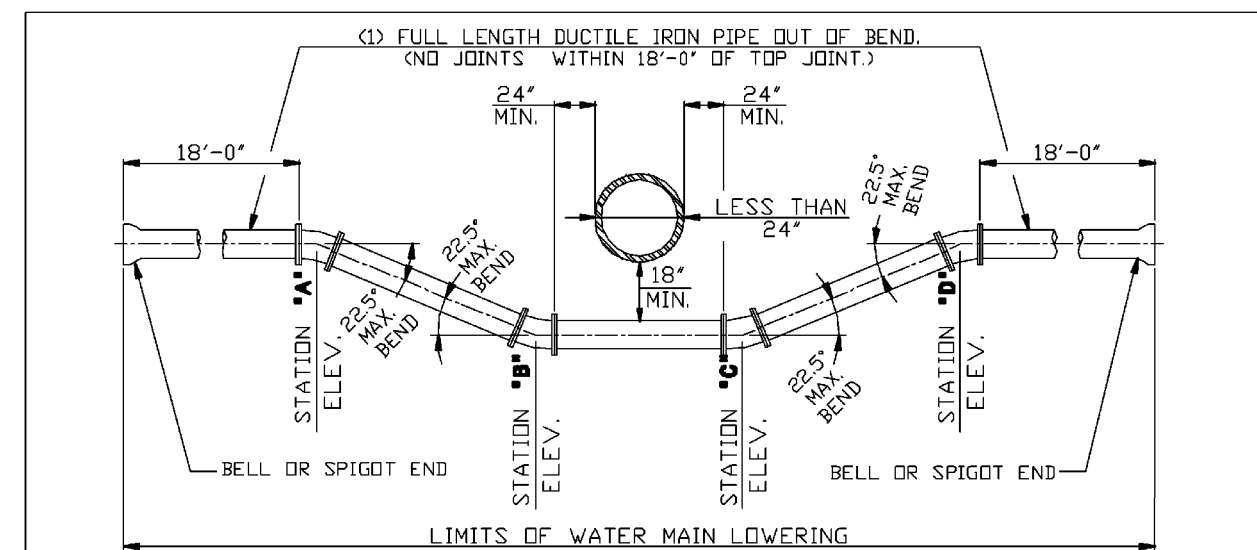


TO LOWER WATER MAIN TO CLEAR OBSTACLE WHERE DEPTH OF PIPE LOWERING REQUIRES AN INTERMEDIATE JOINT ON SLOPE THE ENTIRE OFFSET SHALL HAVE BOLTLESS RESTRAINED PUSH-ON JOINT PIPE AND FITTINGS AS SPECIFIED. JOINT RESTRAINT SHALL EXTEND BEYOND TOP VERTICAL BEND TO THE LIMITS SHOWN IN TABLE.

① CALCULATIONS FOR RESTRAINED LENGTHS INCLUDE 75 PSI FOR TESTING.

DIAMETER	BEND	STATIC PRESSURE ①	* RESTRAINED LENGTHS
8"	11'15"	0 to 275 PSI	ONE (1)
	22°30'	0 to 250 PSI	ONE (1)
		251 to 275 PSI	TWO (2)
45°	0 to 125 PSI	ONE (1)	
	126 to 275 PSI	TWO (2)	
12"	11'15"	0 to 275 PSI	ONE (1)
	22°30'	0 to 165 PSI	ONE (1)
		166 to 275 PSI	TWO (2)
45°	0 to 65 PSI	ONE (1)	
	66 to 215 PSI	TWO (2)	
16"	11'15"	0 to 275 PSI	THREE (3)
	22°30'	0 to 115 PSI	ONE (1)
		116 to 275 PSI	TWO (2)
45°	0 to 45 PSI	ONE (1)	
	46 to 165 PSI	TWO (2)	
		166 to 275 PSI	THREE (3)

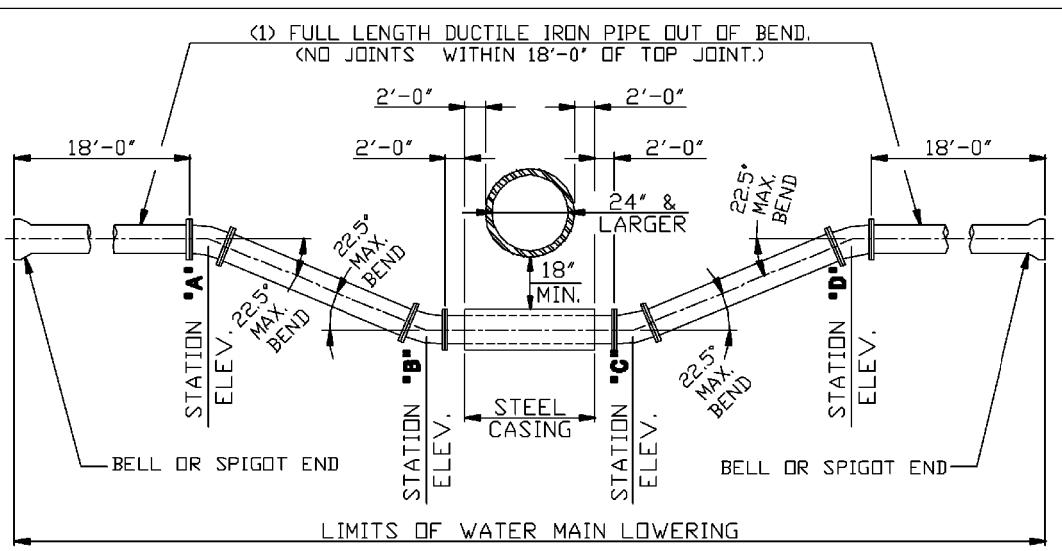
STD-L01 DATE: 11-24-2003 BY: RSK



NOTE:
 1) WATER MAIN SHALL BE DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PUSH-ON JOINT PIPE WITH RETAINED MECHANICAL JOINT DUCTILE IRON CLASS 350, CEMENT LINED RETAINED MECHANICAL JOINT FITTINGS.
 2) WHERE DEPTH OF LOWERING REQUIRES AN INTERMEDIATE JOINT BETWEEN STATIONS "A" & "B" AND/OR "C" & "D" THE ENTIRE LOWERING SHALL BE MADE WITH DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PIPE AND DUCTILE IRON CLASS 350, CEMENT LINED FITTINGS ALL HAVING BOLTLESS RESTRAINED PUSH-ON JOINTS, TYPE I.
 3) WHERE LENGTH OF LOWERING UNDER OBSTRUCTIONS REQUIRES AN INTERMEDIATE JOINT ONLY BETWEEN STATIONS "B" & "C", AND PIPE JOINTS ARE AS INDICATED IN NOTE "1" ABOVE, THAT INTERMEDIATE JOINT(S) SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE II.
 4) WHERE LENGTH OF LOWERING UNDER OBSTRUCTIONS REQUIRES AN INTERMEDIATE JOINT ONLY BETWEEN "C" AND "D" AND PIPE JOINTS ARE AS INDICATED IN NOTE "2" ABOVE, THAT INTERMEDIATE JOINT(S) SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE I.

**DETAIL FOR WATER MAIN LOWERING UNDER OBSTRUCTIONS
 LESS THAN 24" IN DIAMETER OR WIDTH FOR "NEW CONSTRUCTION"**

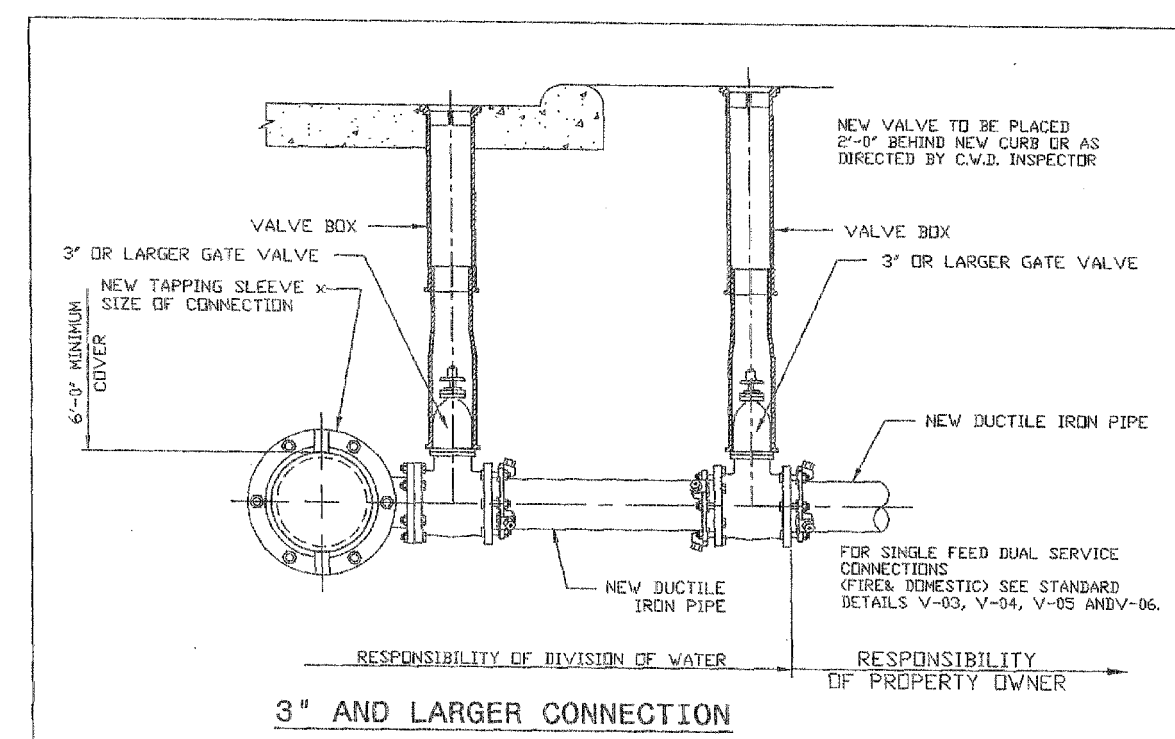
STD-L04 - NOT TO SCALE - DATE: 10-1-97 BY: RSK



NOTE:
 1) WATER MAIN SHALL BE DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PUSH-ON JOINT PIPE WITH RETAINED MECHANICAL JOINT DUCTILE IRON CLASS 350, CEMENT LINED RETAINED MECHANICAL JOINT FITTINGS.
 2) WHERE DEPTH OF LOWERING REQUIRES AN INTERMEDIATE JOINT BETWEEN STATIONS "A" & "B" AND/OR "C" & "D" THE ENTIRE LOWERING SHALL BE MADE WITH DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PIPE AND DUCTILE IRON CLASS 350, CEMENT LINED FITTINGS ALL HAVING BOLTLESS RESTRAINED PUSH-ON JOINTS, TYPE I.
 3) WHERE LENGTH OF LOWERING UNDER OBSTRUCTIONS REQUIRES AN INTERMEDIATE JOINT ONLY BETWEEN STATIONS "B" & "C", AND PIPE JOINTS ARE AS INDICATED IN NOTE "1" ABOVE, THAT INTERMEDIATE JOINT(S) SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE II.
 4) WHERE LENGTH OF LOWERING UNDER OBSTRUCTIONS REQUIRES AN INTERMEDIATE JOINT ONLY BETWEEN "C" AND "D" AND PIPE JOINTS ARE AS INDICATED IN NOTE "2" ABOVE, THAT INTERMEDIATE JOINT(S) SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE I.

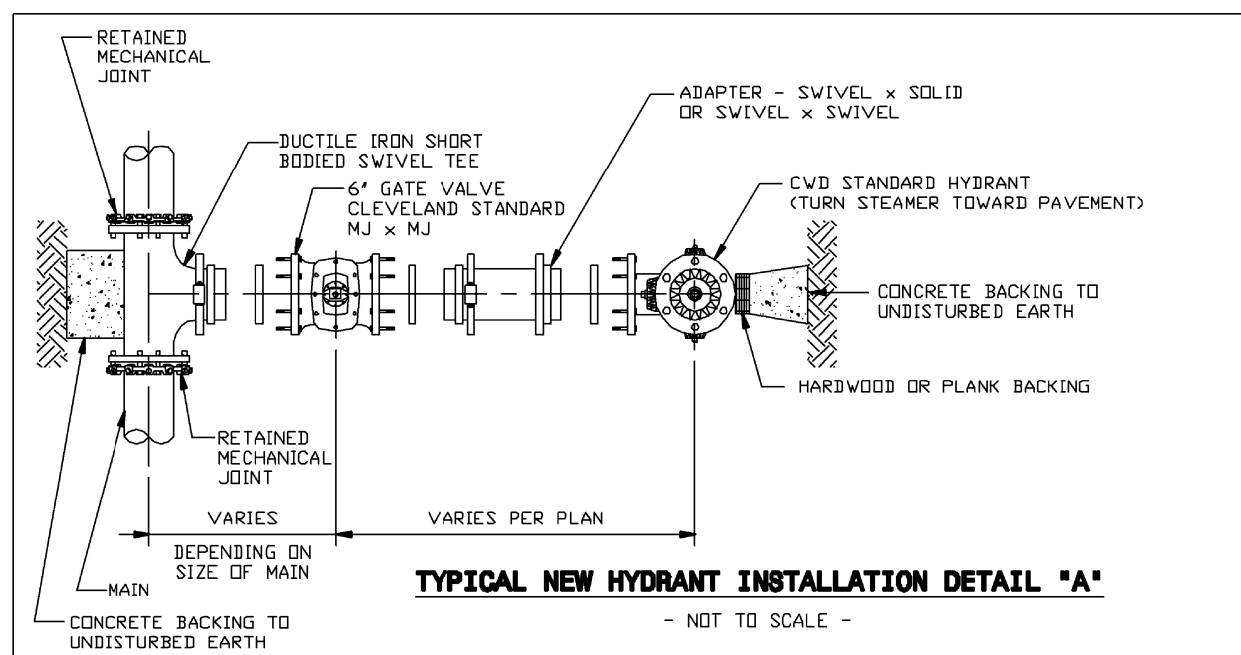
**DETAIL FOR WATER MAIN LOWERING UNDER OBSTRUCTIONS
 24" & LARGER IN DIAMETER OR WIDTH FOR "NEW CONSTRUCTION"**

STD-L06 - NOT TO SCALE - DATE: 10-1-97 BY: RSK



3" AND LARGER CONNECTION
 - NOT TO SCALE -
 DATE: 9-23-2008 BY: RSK

\NARINDA\DATA\2016\20160951\CUY480\74 UTILITIES SHEETS\20160905.DGN
 3/2/2017
 3:42:00 PM
 DDDTY81STD_USER



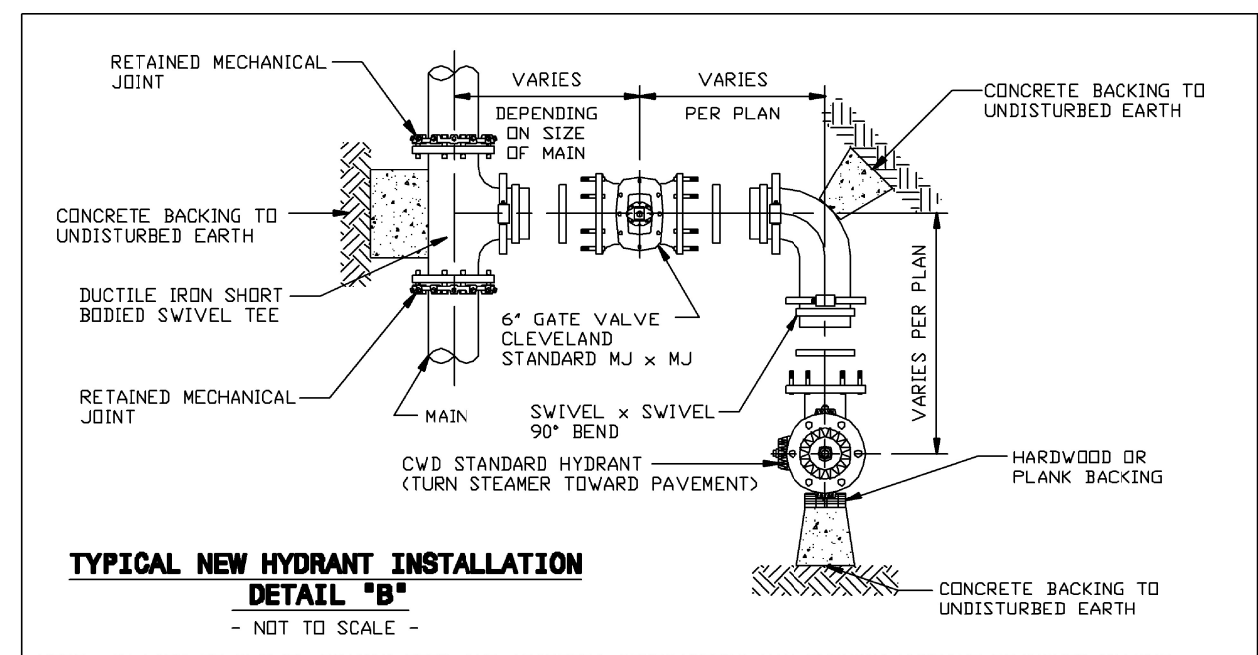
TYPICAL NEW HYDRANT INSTALLATION DETAIL "A"

- NOT TO SCALE -

NOTE: IN LIEU OF SWIVEL BRANCH TEES AND ADAPTERS CONTRACTORS MAY FURNISH HYDRANT BRANCHES HAVING RETAINED MECHANICAL JOINTS INCLUDING HYDRANT SHOE. ALL MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINT. ALL MECHANICAL JOINTS SHALL BE POLYETHYLENE WRAPPED IN ACCORDANCE WITH AWWA C-1-5/A21.5-88 CLASS "C" METHOD "B".

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

STD-H09 DATE: 3-4-2002 BY: RSK



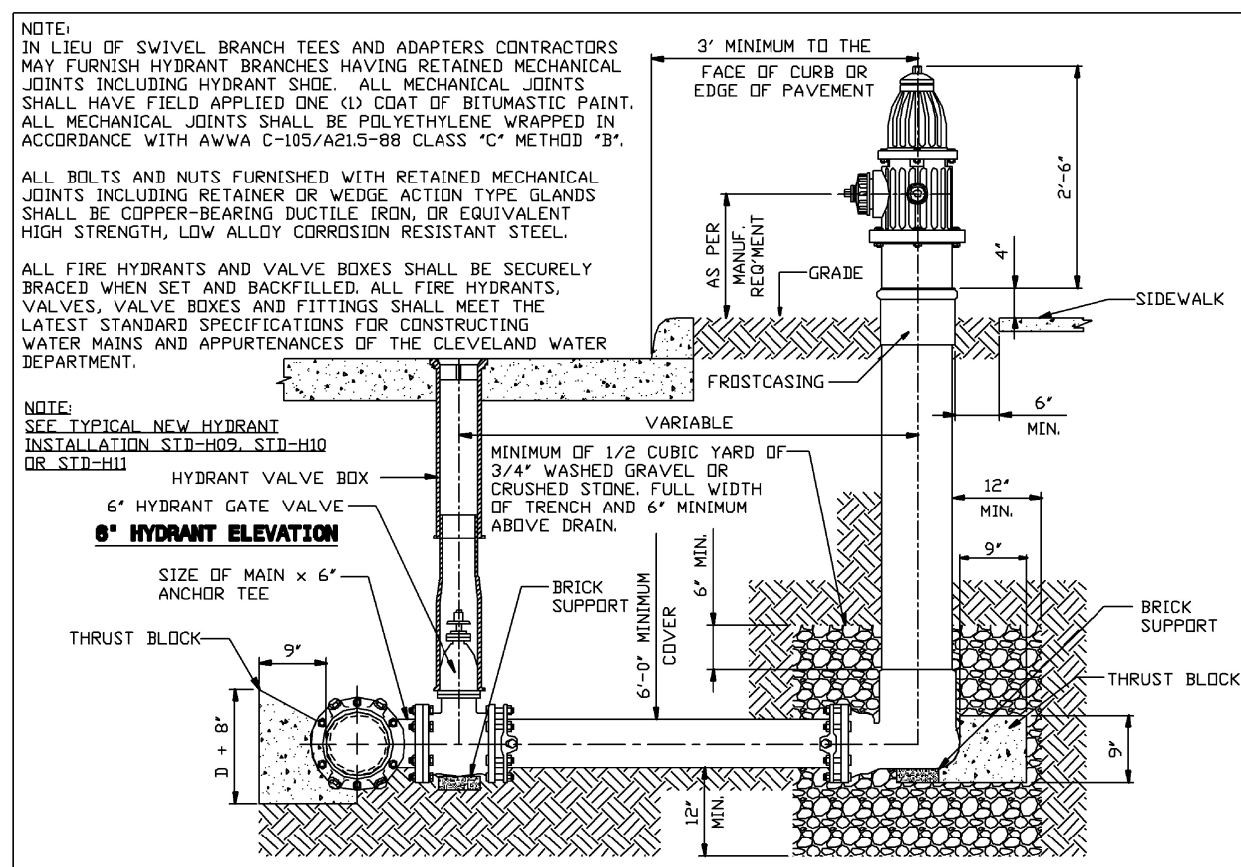
TYPICAL NEW HYDRANT INSTALLATION DETAIL "B"

- NOT TO SCALE -

NOTE: IN LIEU OF SWIVEL BRANCH TEES AND ADAPTERS CONTRACTORS MAY FURNISH HYDRANT BRANCHES HAVING RETAINED MECHANICAL JOINTS INCLUDING HYDRANT SHOE. ALL MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINT. ALL MECHANICAL JOINTS SHALL BE POLYETHYLENE WRAPPED IN ACCORDANCE WITH AWWA C-1-5/A21.5-88 CLASS "C" METHOD "B".

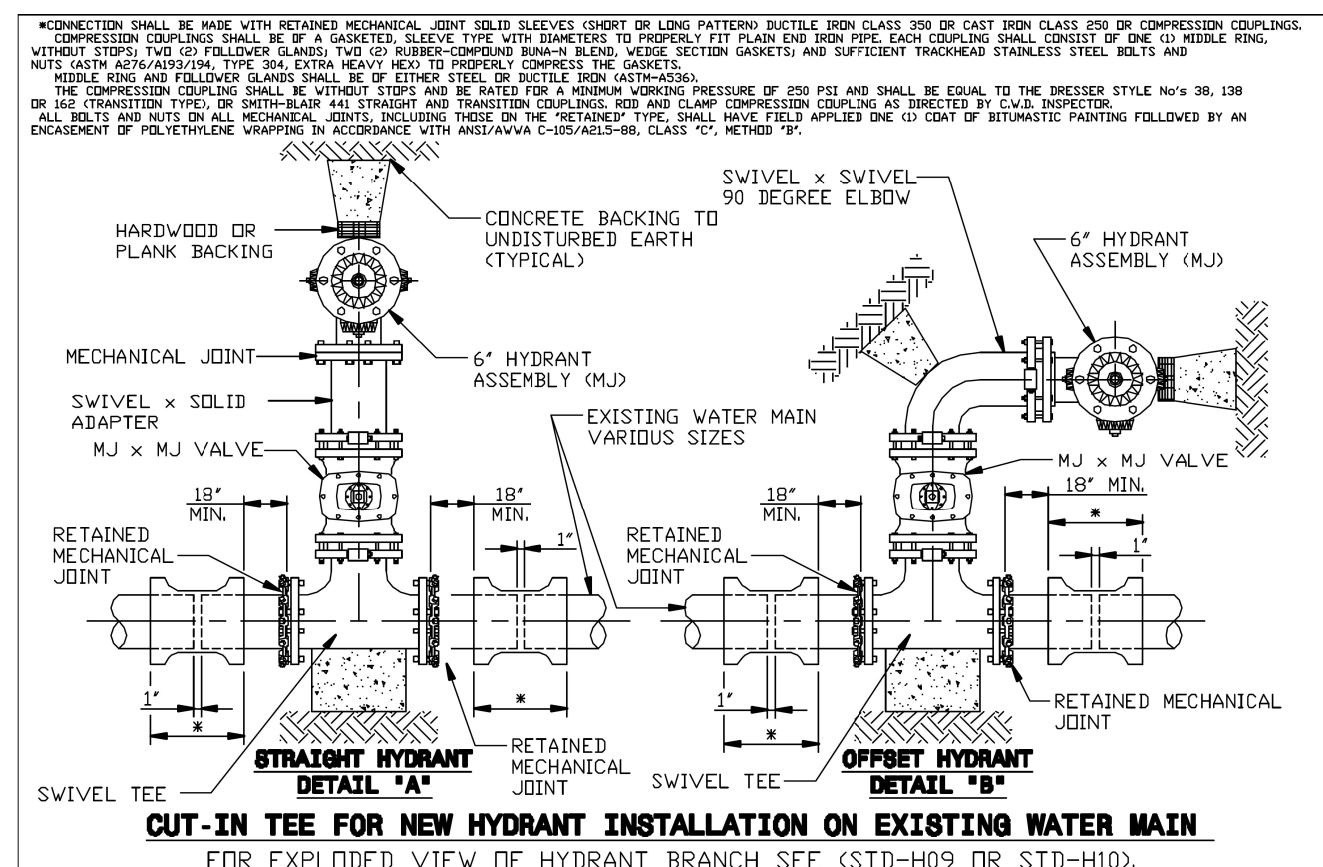
ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

STD-H10 DATE: 10-1-97 BY: RSK



6" HYDRANT ELEVATION

STD-H13 DATE: 2-23-2005 BY: RSK

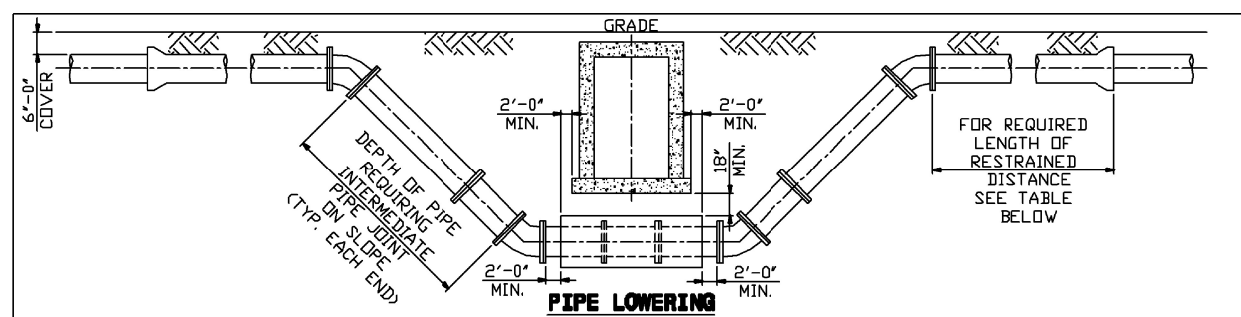


CUT-IN TEE FOR NEW HYDRANT INSTALLATION ON EXISTING WATER MAIN

FOR EXPLODED VIEW OF HYDRANT BRANCH SEE (STD-H09 OR STD-H10).

STD-H08 - NOT TO SCALE - DATE: 10-1-97 BY: RSK

\VARANDA.DATA\2016\20160951\CUY\80974\UTILITIES\SHEETS\2013087\0008.DGN
 3/1/2017
 1:46:50 PM
 DDDTY81STD_USER

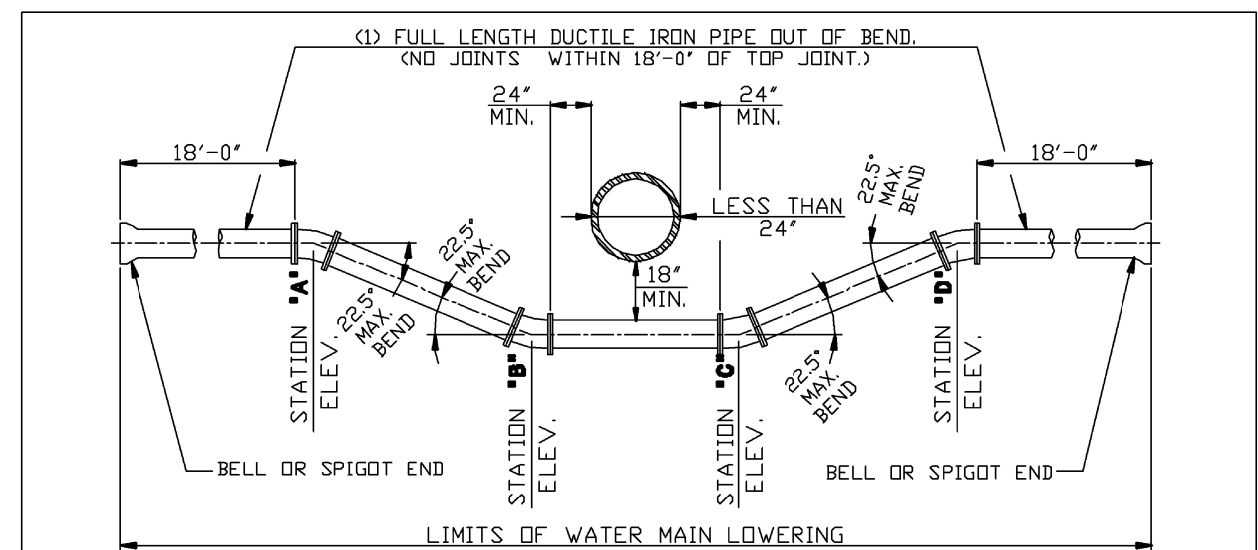


TO LOWER WATER MAIN TO CLEAR OBSTACLE WHERE DEPTH OF PIPE LOWERING REQUIRES AN INTERMEDIATE JOINT ON SLOPE THE ENTIRE OFFSET SHALL HAVE BOLTLESS RESTRAINED PUSH-ON JOINT PIPE AND FITTINGS AS SPECIFIED. JOINT RESTRAINT SHALL EXTEND BEYOND TOP VERTICAL BEND TO THE LIMITS SHOWN IN TABLE.

① CALCULATIONS FOR RESTRAINED LENGTHS INCLUDE 75 PSI FOR TESTING.

DIAMETER	BEND	STATIC PRESSURE ①	* RESTRAINED LENGTHS
8"	11'15"	0 to 275 PSI	ONE (1)
	22'30"	0 to 250 PSI	ONE (1)
		251 to 275 PSI	TWO (2)
12"	11'15"	0 to 275 PSI	ONE (1)
	22'30"	0 to 165 PSI	ONE (1)
		166 to 275 PSI	TWO (2)
16"	45°	0 to 65 PSI	ONE (1)
		66 to 215 PSI	TWO (2)
	22'30"	166 to 275 PSI	THREE (3)
		0 to 275 PSI	ONE (1)
		0 to 115 PSI	ONE (1)
45°	116 to 275 PSI	TWO (2)	
	0 to 45 PSI	ONE (1)	
	46 to 165 PSI	TWO (2)	
		166 to 275 PSI	THREE (3)

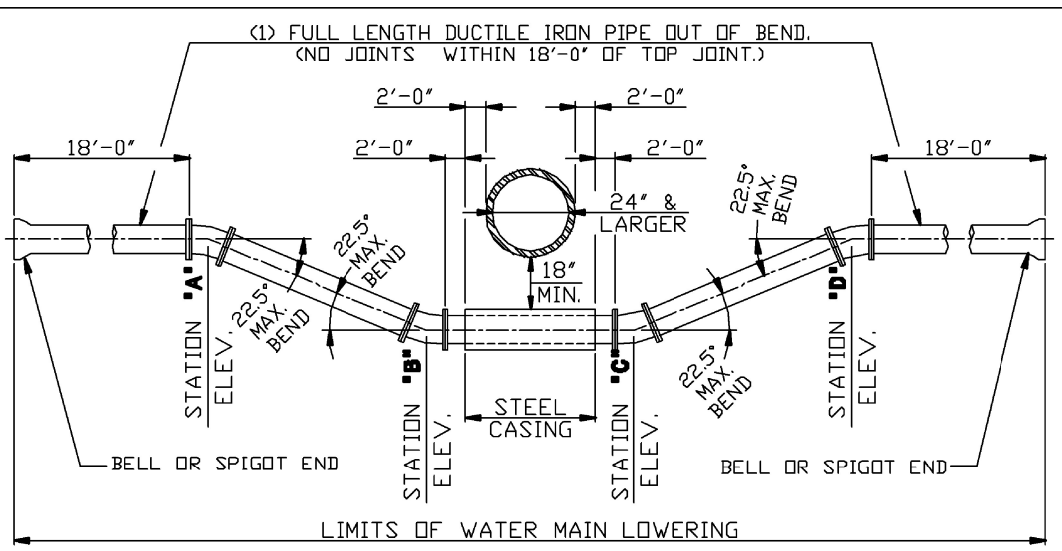
STD-L01 DATE: 11-24-2003 BY: RSK



- NOTE:
- 1) WATER MAIN SHALL BE DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PUSH-ON JOINT PIPE WITH RETAINED MECHANICAL JOINT DUCTILE IRON CLASS 350, CEMENT LINED RETAINED MECHANICAL JOINT FITTINGS.
 - 2) WHERE DEPTH OF LOWERING REQUIRES AN INTERMEDIATE JOINT BETWEEN STATIONS 'A' & 'B' AND/OR 'C' & 'D' THE ENTIRE LOWERING SHALL BE MADE WITH DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PIPE AND DUCTILE IRON CLASS 350, CEMENT LINED FITTINGS ALL HAVING BOLTLESS RESTRAINED PUSH-ON JOINTS, TYPE I.
 - 3) WHERE LENGTH OF LOWERING UNDER OBSTRUCTIONS REQUIRES AN INTERMEDIATE JOINT ONLY BETWEEN STATIONS 'B' & 'C', AND PIPE JOINTS ARE AS INDICATED IN NOTE '1' ABOVE, THAT INTERMEDIATE JOINT(S) SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE II.
 - 4) WHERE LENGTH OF LOWERING UNDER OBSTRUCTIONS REQUIRES AN INTERMEDIATE JOINT ONLY BETWEEN 'B' AND 'C' AND PIPE JOINTS ARE AS INDICATED IN NOTE '2' ABOVE, THAT INTERMEDIATE JOINT(S) SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE I.

**DETAIL FOR WATER MAIN LOWERING UNDER OBSTRUCTIONS
LESS THAN 24" IN DIAMETER OR WIDTH FOR 'NEW CONSTRUCTION'**

STD-L04 - NOT TO SCALE - DATE: 10-1-97 BY: RSK

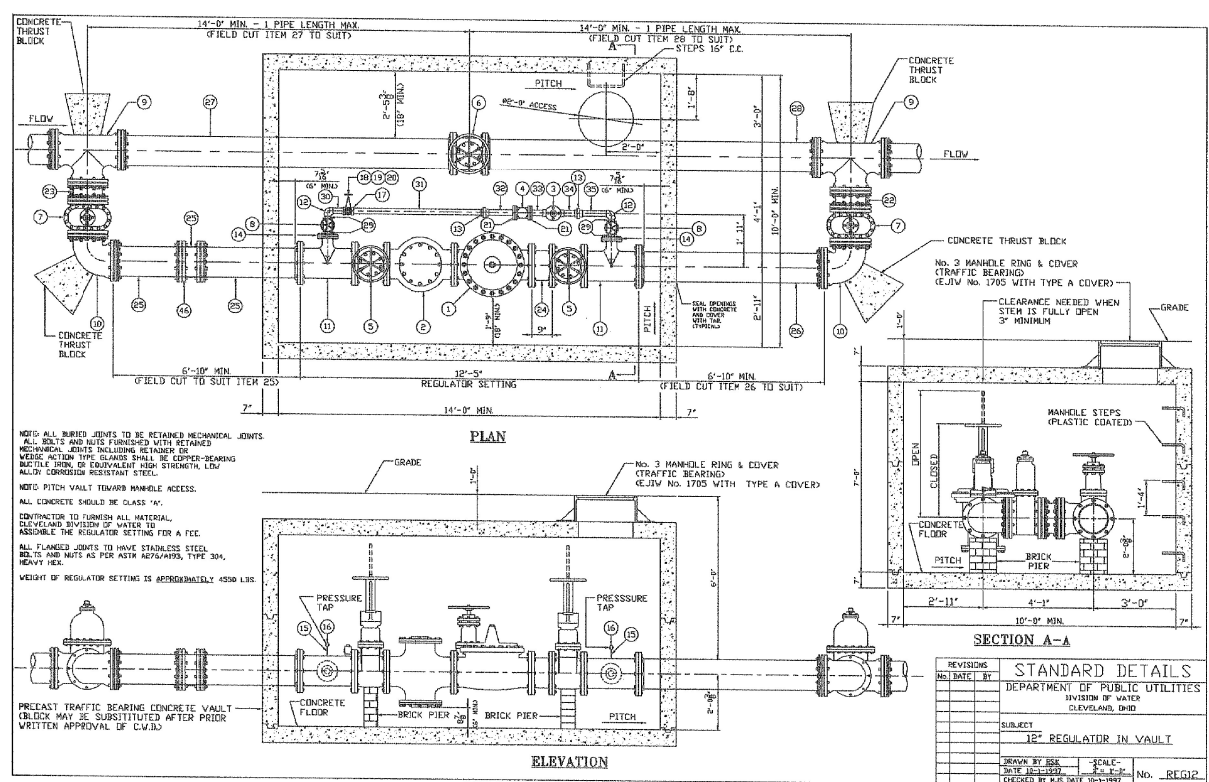


- NOTE:
- 1) WATER MAIN SHALL BE DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PUSH-ON JOINT PIPE WITH RETAINED MECHANICAL JOINT DUCTILE IRON CLASS 350, CEMENT LINED RETAINED MECHANICAL JOINT FITTINGS.
 - 2) WHERE DEPTH OF LOWERING REQUIRES AN INTERMEDIATE JOINT BETWEEN STATIONS 'A' & 'B' AND/OR 'C' & 'D' THE ENTIRE LOWERING SHALL BE MADE WITH DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PIPE AND DUCTILE IRON CLASS 350, CEMENT LINED FITTINGS ALL HAVING BOLTLESS RESTRAINED PUSH-ON JOINTS, TYPE I.
 - 3) WHERE LENGTH OF LOWERING UNDER OBSTRUCTIONS REQUIRES AN INTERMEDIATE JOINT ONLY BETWEEN STATIONS 'B' & 'C', AND PIPE JOINTS ARE AS INDICATED IN NOTE '1' ABOVE, THAT INTERMEDIATE JOINT(S) SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE II.
 - 4) WHERE LENGTH OF LOWERING UNDER OBSTRUCTIONS REQUIRES AN INTERMEDIATE JOINT ONLY BETWEEN 'B' AND 'C' AND PIPE JOINTS ARE AS INDICATED IN NOTE '2' ABOVE, THAT INTERMEDIATE JOINT(S) SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE I.

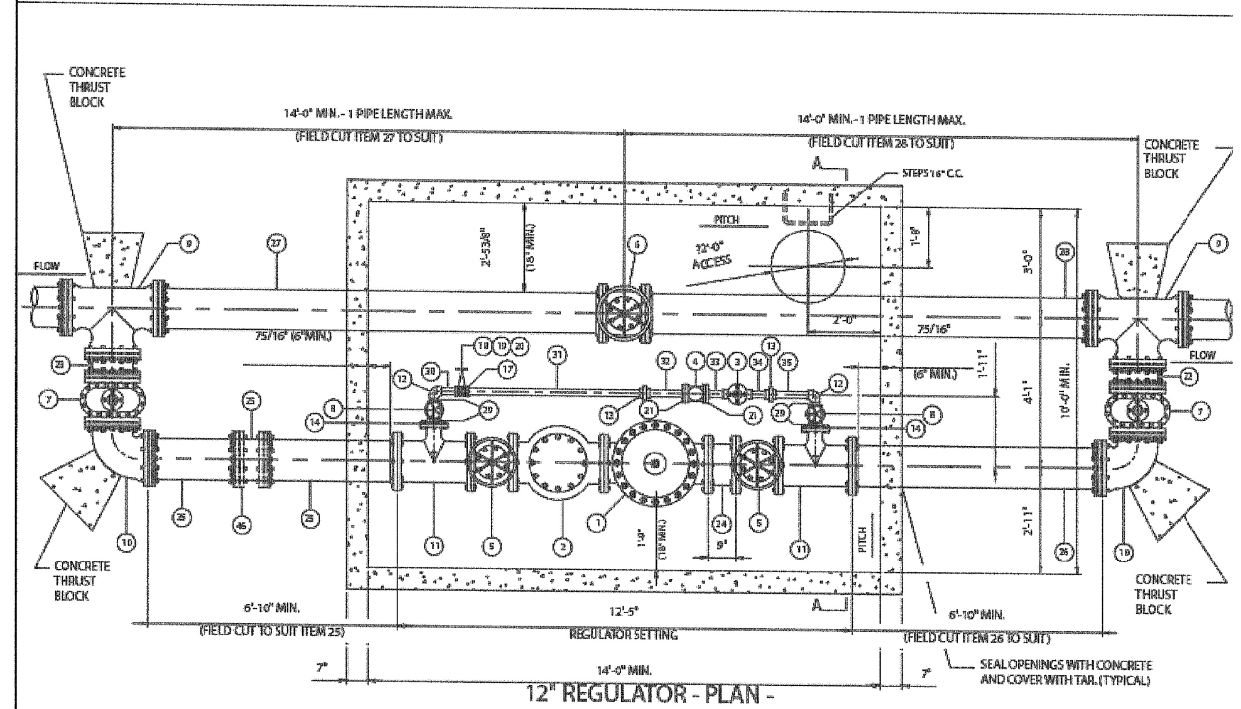
**DETAIL FOR WATER MAIN LOWERING UNDER OBSTRUCTIONS
24" & LARGER IN DIAMETER OR WIDTH FOR 'NEW CONSTRUCTION'**

STD-L06 - NOT TO SCALE - DATE: 10-1-97 BY: RSK

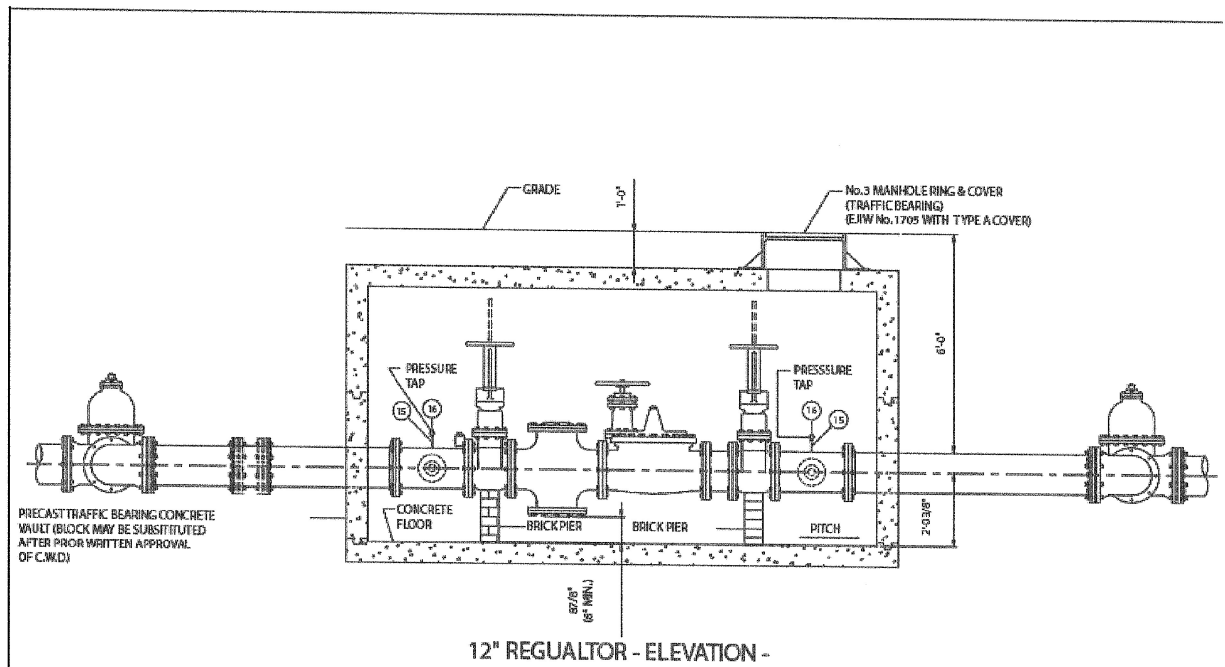
\NARINDA.DATA\2016\20160951\CUY-480\UTILITIES\SHEETS\20160907\0014.DGN
 3/1/2017
 1:40:32 PM
 000Y81STD_USER



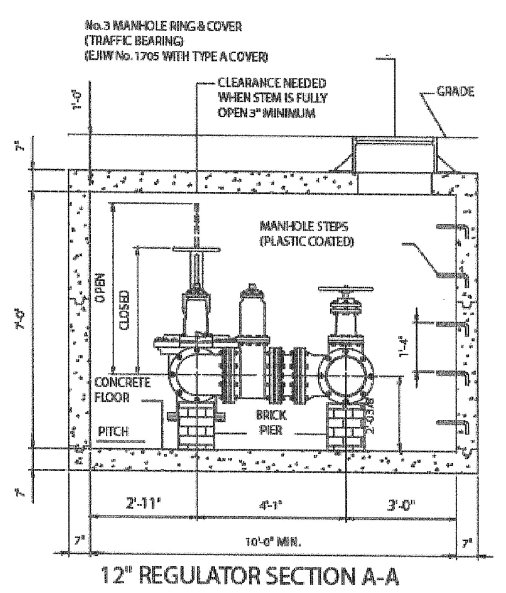
NOTE: ALL BURIED JOINTS TO BE RETAINED MECHANICAL JOINTS.
ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.
NOTE: PITCH VAULT TOWARD MANHOLE ACCESS.
ALL CONCRETE SHOULD BE CLASS "A".
CONTRACTOR TO FURNISH ALL MATERIAL, CLEVELAND DIVISION OF WATER TO ASSEMBLE THE REGULATOR SETTING FOR A FEE.
ALL FLANGED JOINTS TO HAVE STAINLESS STEEL BOLTS AND NUTS AS PER ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX. WEIGHT OF REGULATOR SETTING IS APPROXIMATELY 4550 LBS.



DATE: 10-1-97 BY: RSK



DATE: 10-1-97 BY: RSK



DATE: 10-1-97 BY: RSK

\sawanda_data\2016\2016051\CUY480\74 UTILITIES SHEETS\201607\1006.dgn
 3/1/2017 1:59:43 PM
 DDDTY81STD.LUSER

MATERIALS REQUIRED FOR INSTALLATION OF 12" REGULATOR

ITEM	REQ'D	SIZE	DESCRIPTION	ITEM	REQ'D	SIZE	DESCRIPTION
1	1	12"	CLAYTON REGULATOR OR OCV REGULATOR OR EQUAL, FLANGED	21	2	2"	COMPANION FLANGE
2	1	12"	ROSS STRAINER, FLANGED	NOTE: (4) 2" COMPANION FLANGES REQ'D IF FLANGED 2" REGULATOR IS USED			
3	1	2"	CLAYTON REGULATOR OR OCV REGULATOR OR EQUAL, SCREWED OR FLANGED	22	13-1/2"	12"	NOTE: PIPE LENGTHS ARE APPROXIMATE. CUT TO SUIT CLASS 52 DUCTILE IRON PIPE PLAIN END x PLAIN END
4	1	2"	ROSS STRAINER, FLANGED	23	13-1/2"	12"	CLASS 52 DUCTILE IRON PIPE PLAIN END x PLAIN END
5	2	12"	O.S. & Y. GATE VALVE, FLANGED	24	9"	12"	CLASS 52 DUCTILE IRON PIPE FLANGED SPACER
6	1	12"	GATE VALVE, FLANGED OR RETAINED MECHANICAL JOINT WITH HAND WHEEL	25	84-1/2"	12"	CLASS 52 DUCTILE IRON PIPE FLANGED x PLAIN END
7	2	2"	GATE VALVE, RETAINED MECHANICAL JOINT	26	84-1/2"	12"	CLASS 52 DUCTILE IRON PIPE FLANGED x PLAIN END
8	2	2"	O.S. & Y. BRASS GATE VALVE, SCREWED	27	149"	12"	CLASS 52 DUCTILE IRON PIPE FLANGED x PLAIN END OR PLAIN END x PLAIN END TO MATCH ITEM 6
9	2	12" x 12" x 12"	TEE, RETAINED MECHANICAL JOINT	28	149"	12"	CLASS 52 DUCTILE IRON PIPE FLANGED x PLAIN END OR PLAIN END x PLAIN END TO MATCH ITEM 6
10	2	12"	90 DEGREE COMPACT ELBOW, RETAINED MECHANICAL JOINT x PLAIN END	29	(4) 2-5/16"	2"	BRASS CLOSE NIPPLE
11	2	12" x 12" x 4"	TEE, FLANGED	30	6"	2"	BRASS PIPE
12	2	2"	90 DEGREE BRASS ELBOW, SCREWED	31	54-3/4"	2"	BRASS PIPE
13	2	2"	UNIONS BRASS, SCREWED	32	12"	2"	BRASS PIPE
14	2	2" x 9"	REDUCING FLANGE, SCREWED	33	6"	2"	BRASS PIPE
15	2	1/4" x 4"	BRASS NIPPLE, SCREWED	34	6"	2"	BRASS PIPE
16	2	1/4"	BALL VALVE BRASS, SCREWED	35	12"	2"	BRASS PIPE
17	1	2" x 2" x 2"	BRASS TEE, SCREWED	36	120	7/8" x 3-3/4"	MACHINE BOLTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304
18	1	2" x 6"	BRASS NIPPLE, SCREWED	37	120	7/8"	HEX NUTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304
19	1	2"	BRASS GATE VALVE, SCREWED				
20	1	2"	BRASS PLUG, SCREWED				

ITEM	REQ'D	SIZE	DESCRIPTION
38	10	12"	RING GASKETS
39	16	5/8" x 3-1/4"	MACHINE BOLTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304
40	2	4"	RING GASKETS
41	8	5/8" x 2-3/4"	MACHINE BOLTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304
42	2	2"	RING GASKETS
NOTE: (4) 2" RING GASKETS REQ'D IF FLANGED 2" REGULATOR IS USED			
43	24	5/8"	HEX NUTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304
44	12	12"	RETAINED MECHANICAL JOINTS WITH ACCESSORIES
	14	12"	RETAINED MECHANICAL JOINTS WITH ACCESSORIES IF OPTIONAL SOLID SLEEVE USED
45	2	#2	VALVEBOXES SET TO GRADE FOR ITEM #7 (NOT SHOWN ON DRAWING FOR CLARITY)
46	1	12"	**OPTIONAL** RETAINED MECHANICAL JOINT SOLID SLEEVE (SHORT PATTERN)

Regulator Specifications

The regulator valve shall be a pressure reducing/pressure sustaining surge control valve of the globe type manufactured by Cla-Val Company (Series 94, CWD Reg.) or OVC Control Valves (Model No. 127-25). The strainers shall be of the type manufactured by Ross Valve (Model No. 10B/10C). The pressure reducing valve body and strainer body shall be either cast iron or ductile iron having a working pressure of minimum 250 psi. All components of the pressure reducing valve assembly shall also have a minimum 250 psi working pressure rating. The flanges of the pressure reducing valve, strainer, valves and connecting pieces shall have a working pressure of 250 psi with dimensions and drilling of all end flanges conforming to the American 125 lb. Cast Iron Flange Standard. Flanges shall be plain face with a smooth finish.

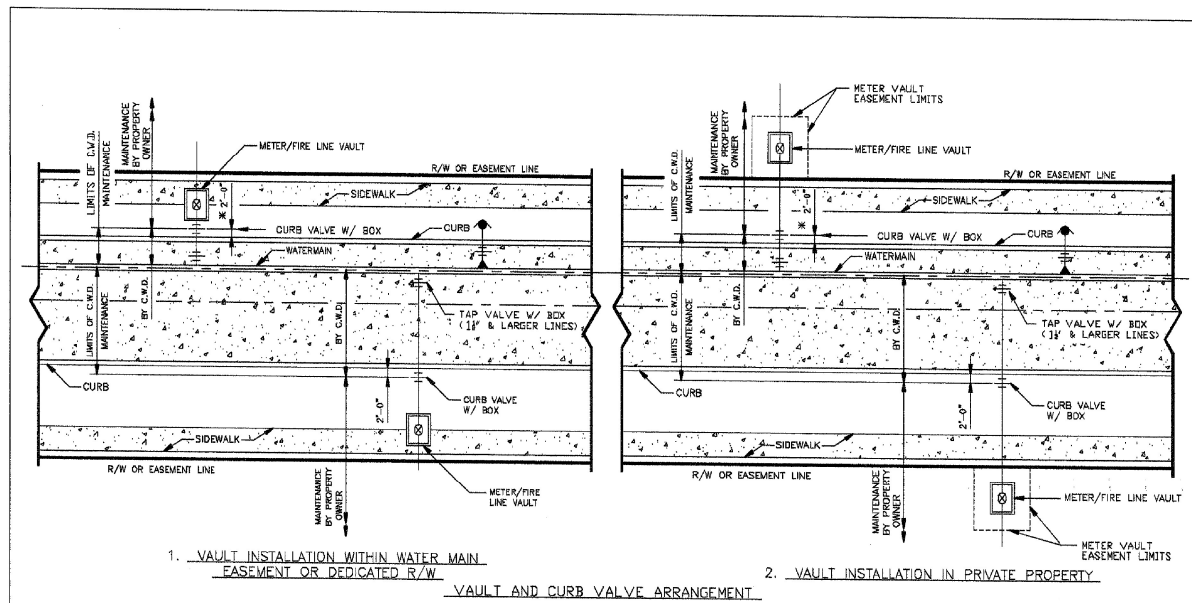
(SEE DRAWING No. 12REG)

8-4-2008

1

2

3



1. VAULT INSTALLATION WITHIN WATER MAIN EASEMENT OR DEDICATED R/W
2. VAULT INSTALLATION IN PRIVATE PROPERTY

- VAULT AND CURB VALVE ARRANGEMENT**
- ALL DOMESTIC SERVICE CONNECTIONS (THAT IS ALL CONNECTIONS USED FOR DRINKING, SANITATION OR IRRIGATION PURPOSES) UTILIZING A VAULT FOR THE PLACEMENT OF THE METER SHALL MATCH ONE OF THE TWO STANDARD DRAWINGS ABOVE.
 - IF ONLY THE BACKFLOW PREVENTION DEVICE FOR THE FIRE SERVICE CONNECTION IS TO BE PLACED IN A VAULT (THAT IS THE DOMESTIC SERVICE CONNECTION WILL BE METERED INSIDE THE BUILDING WITH A REMOTE REGISTER), THEN THAT VAULT MAY BE PLACED AS SHOWN IN DRAWING NO. 2 ABOVE AND A METER VAULT EASEMENT WILL NOT BE REQUIRED.
 - SINGLE FAMILY RESIDENTIAL DOMESTIC SERVICE CONNECTIONS IN EASEMENTS, WITHOUT METER VAULTS, SHALL HAVE THE CURB VALVE PLACED NO MORE THAN FIVE (5) FEET FROM THE MAIN. THE CURB VALVE WILL STILL MARK THE CHANGE IN RESPONSIBILITY FOR MAINTENANCE.
 - VAULTS AND VAULT COVERS SHALL BE PLACED OUTSIDE OF SIDEWALKS AND DRIVEWAYS WHEN POSSIBLE. VAULT COVERS IN PAVEMENT SHALL BE FLUSH TO THE SURFACE.
 - IN THE CASE WHEN THE WATERMAIN IS IN THE TREE LAWN IN A DEDICATED RIGHT OF WAY, NOT UNDER THE PAVEMENT, THE SHORT SIDE SHALL HAVE THE CURB VALVE 3'-0" FROM THE WATERMAIN.

REVISIONS	DATE	BY	SCALE

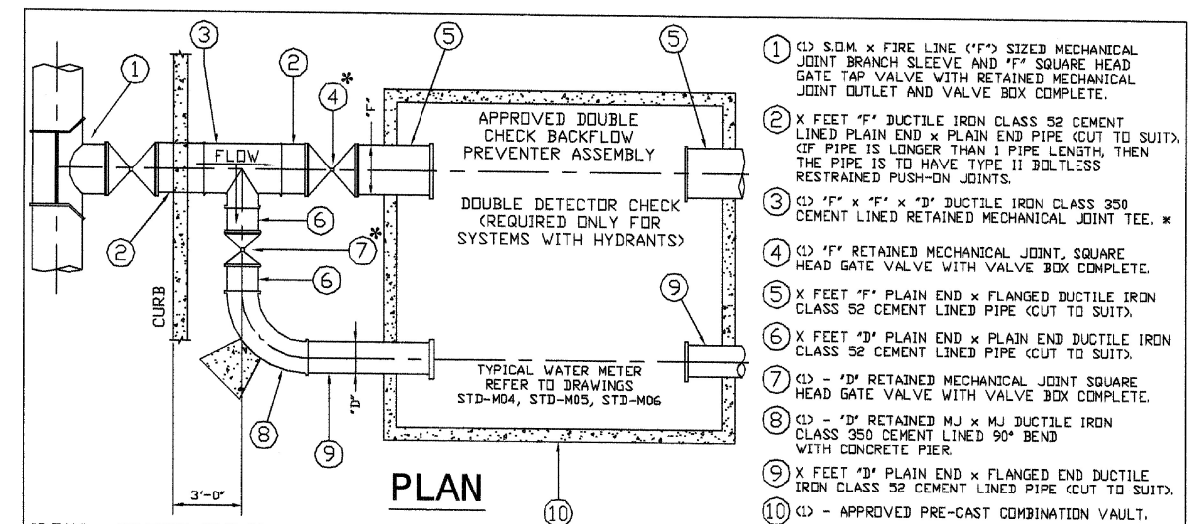
STANDARD DETAILS

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER
CLEVELAND, OHIO

SUBJECT: VAULT AND VALVE ARRANGEMENT

DRAWN BY: BSK
DATE: 12-10-2004
CHECKED BY: T.M. BOYD

STD-V01



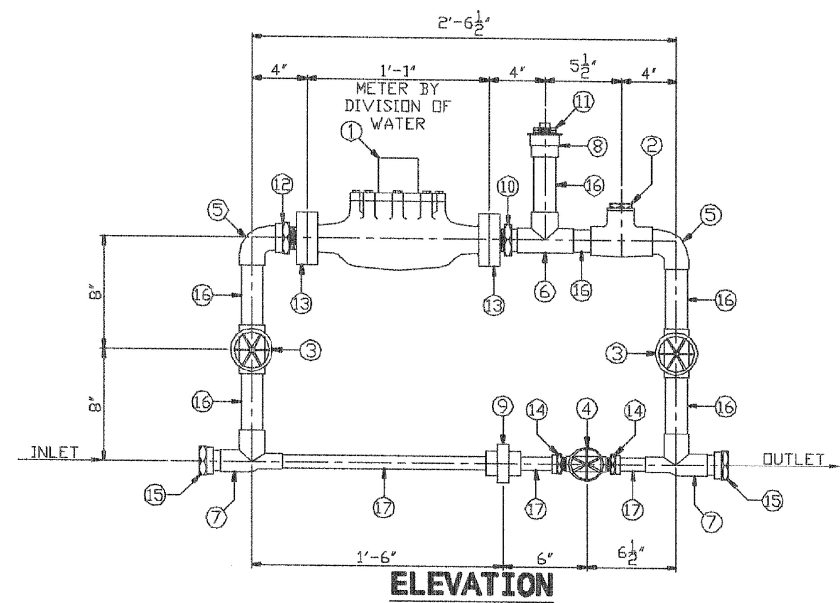
"S.O.M." - DENOTES SIZE OF MAIN.
"F" - DENOTES NOMINAL PIPE DIAMETER OF FIRE LINE.
"D" - DENOTES NOMINAL PIPE DIAMETER OF DOMESTIC LINE.
* MAY SUBSTITUTE "F" x "F" x "F" DUCTILE IRON CLASS 350 CEMENT LINED RETAINED MECHANICAL JOINT TEE AND "F" x "D" DUCTILE IRON CLASS 350 CEMENT LINED RETAINED MECHANICAL JOINT PLAIN END x PLAIN END REDUCER FOR ITEM ③.

** METERS IN VAULTS MUST BE ABLE TO BE READ FROM ABOVE WITHOUT ENTRY. IF NO CLEAR LINE OF SITE TO THE METER CAN BE ACHIEVED BY PLACEMENT OF THE ACCESS MANHOLE, AS DETERMINED BY THE DIVISION OF WATER, A 12" DIAMETER VIEWING PORT MUST BE PROVIDED THAT IS CENTERED OVER THE METER FOR READING PURPOSES IN ADDITION TO THE MANHOLE NEEDED FOR ACCESS. CONTRACTOR MAY ORDER PRECAST MANHOLE WITH VIEWING PORT OPENING OR CORE OPENING ON SITE. ALL TRAFFIC BEARING AND NON-TRAFFIC BEARING VAULTS MUST MAINTAIN THEIR DESIGNED STRUCTURAL INTEGRITY AND CASTING SHALL BE SECURE FOR ROAD TRAFFIC. CONTRACTOR IS REQUIRED TO CALL THE PERMITS AND SALES UNIT OF THE DIVISION OF WATER AT 216-664-2444 EXT. 5206 FOR INSPECTION OF ANY VAULT SET.

- ① (C) S.O.M. x FIRE LINE ("F") SIZED MECHANICAL JOINT BRANCH SLEEVE AND "F" SQUARE HEAD GATE TAP VALVE WITH RETAINED MECHANICAL JOINT OUTLET AND VALVE BOX COMPLETE.
- ② X FEET "F" DUCTILE IRON CLASS 52 CEMENT LINED PLAIN END x PLAIN END PIPE (CUT TO SUIT). IF PIPE IS LONGER THAN 1 PIPE LENGTH, THEN THE PIPE IS TO HAVE TYPE II BOLTLESS RESTRAINED PUSH-ON JOINTS.
- ③ (C) "F" x "F" x "D" DUCTILE IRON CLASS 350 CEMENT LINED RETAINED MECHANICAL JOINT TEE. *
- ④ (C) "F" RETAINED MECHANICAL JOINT, SQUARE HEAD GATE VALVE WITH VALVE BOX COMPLETE.
- ⑤ X FEET "F" PLAIN END x FLANGED DUCTILE IRON CLASS 52 CEMENT LINED PIPE (CUT TO SUIT).
- ⑥ X FEET "D" PLAIN END x PLAIN END DUCTILE IRON CLASS 52 CEMENT LINED PIPE (CUT TO SUIT).
- ⑦ (C) - "D" RETAINED MECHANICAL JOINT SQUARE HEAD GATE VALVE WITH VALVE BOX COMPLETE.
- ⑧ (C) - "D" RETAINED MJ x MJ DUCTILE IRON CLASS 350 CEMENT LINED 90° BEND WITH CONCRETE PIER.
- ⑨ X FEET "D" PLAIN END x FLANGED END DUCTILE IRON CLASS 52 CEMENT LINED PIPE (CUT TO SUIT).
- ⑩ (C) - APPROVED PRE-CAST COMBINATION VAULT.

* CURB VALVES MUST BE LOCATED IN THE RIGHT OF WAY

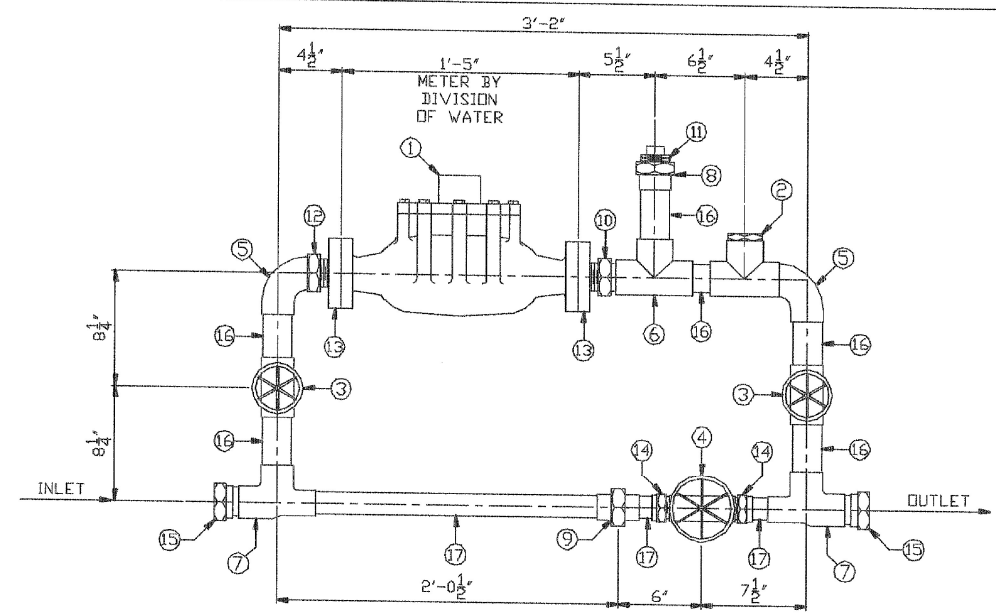
STANDARD DETAILS	
DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER CLEVELAND, OHIO	
SUBJECT: SINGLE FEED/COMBINATION VAULT DOMESTIC - FIRELINE CONNECTION	
3' DOMESTIC/4'-8" FIRELINE	
DRAWN BY: BSK	SCALE: NONE
DATE: 12-10-2004	STD-V03
CHECKED BY: DATE	



ELEVATION

ITEM ④ TO BE SET AN AN ANGLE WITH LOCK AND CABLE.
NOTE:
MINOR VARIATIONS IN THE OVERALL LENGTH ARE TO BE EXPECTED DEPENDING ON THE TEE'S, VALVES, AND CHECK VALVES SUPPLIED.
ADJUSTMENTS TO THE BYPASS (ITEM 17) WILL BE MADE BY THE DIVISION OF WATER AS NEEDED.
ALL BOLTS AND GASKETS BY SUPPLIER.

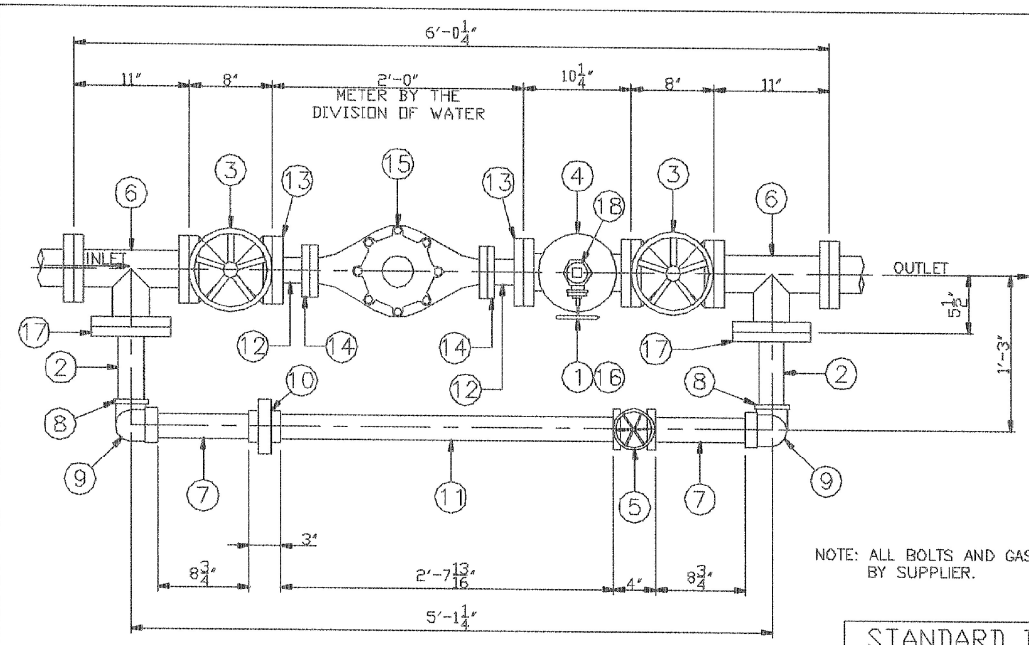
STANDARD DETAILS	
DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER CLEVELAND, OHIO	
SUBJECT STANDARD 1 1/2" METER SETTING WITH 1 1/2" METER FOR VAULTS	
DRAWN BY RSK DATE 10-1-1997 CHECKED BY HLR DATE 10-1-97	-SCALE- 3" = 1'-0" STD-M01



ELEVATION

ITEM ④ TO BE AT AN ANGLE WITH LOCK AND CABLE.
NOTE:
MINOR VARIATIONS IN THE OVERALL LENGTH ARE TO BE EXPECTED DEPENDING ON THE TEE'S, VALVES, AND CHECK VALVES SUPPLIED.
ADJUSTMENTS TO THE BYPASS (ITEM 17) WILL BE MADE BY THE DIVISION OF WATER AS NEEDED.
ALL BOLTS AND GASKETS BY SUPPLIER.

STANDARD DETAILS	
DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER CLEVELAND, OHIO	
SUBJECT STANDARD 2" METER SETTING WITH 2" METER FOR VAULTS	
DRAWN BY RSK DATE 10-1-1997 CHECKED BY HLR DATE 10-1-97	-SCALE- 3" = 1'-0" STD-M02

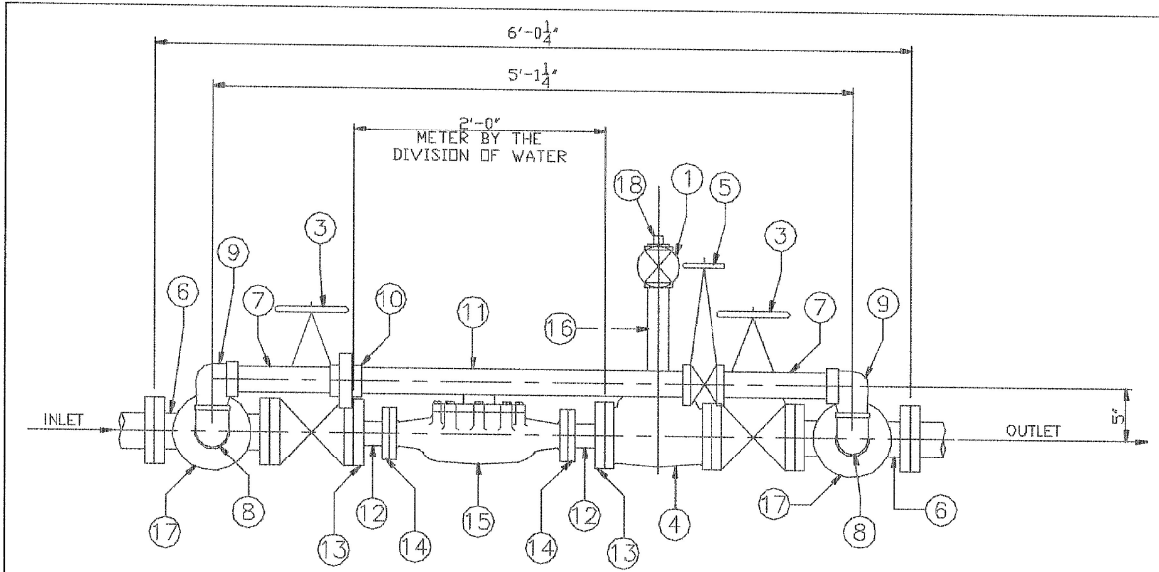


PLAN

NOTE:
MINOR VARIATIONS IN THE OVERALL LENGTH ARE TO BE EXPECTED DEPENDING ON THE TEE'S, VALVES, AND CHECK VALVES SUPPLIED.
ADJUSTMENTS TO THE BYPASS (ITEM No. 11) WILL BE MADE BY THE DIVISION OF WATER AS NEEDED.

NOTE: ALL BOLTS AND GASKETS BY SUPPLIER.

STANDARD DETAILS	
DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER CLEVELAND, OHIO	
SUBJECT STANDARD 3" METER SETTING WITH 2" METER FOR VAULTS	
DRAWN BY RSK DATE 10-1-1997 CHECKED BY HLR DATE 10-1-97	-SCALE- 3/16" = 1" STD-M04

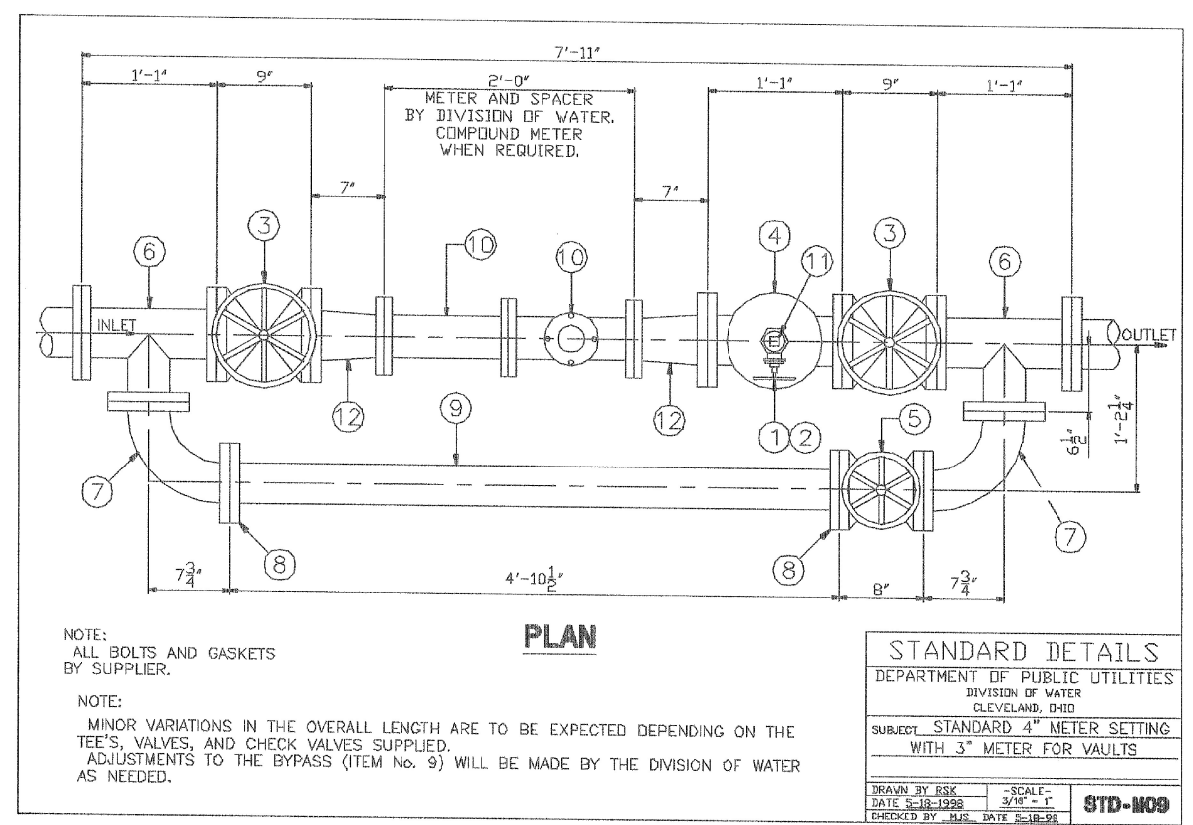
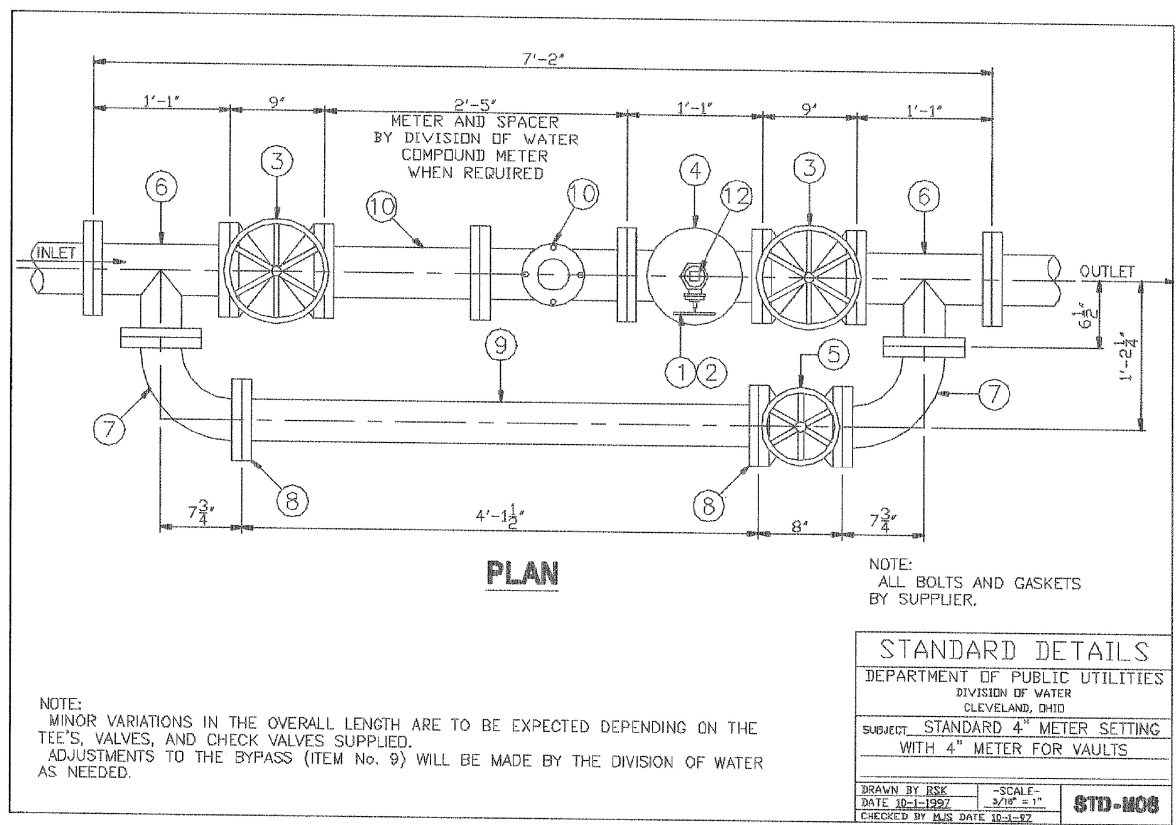
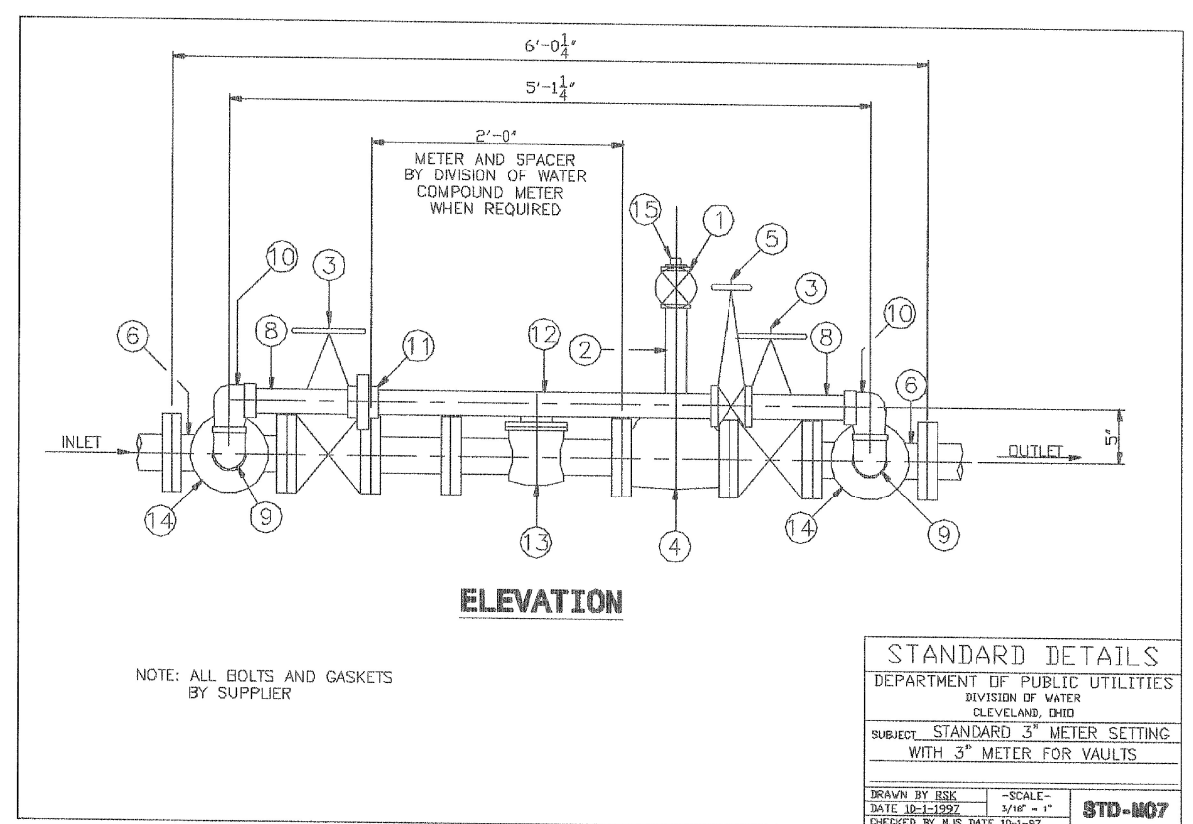
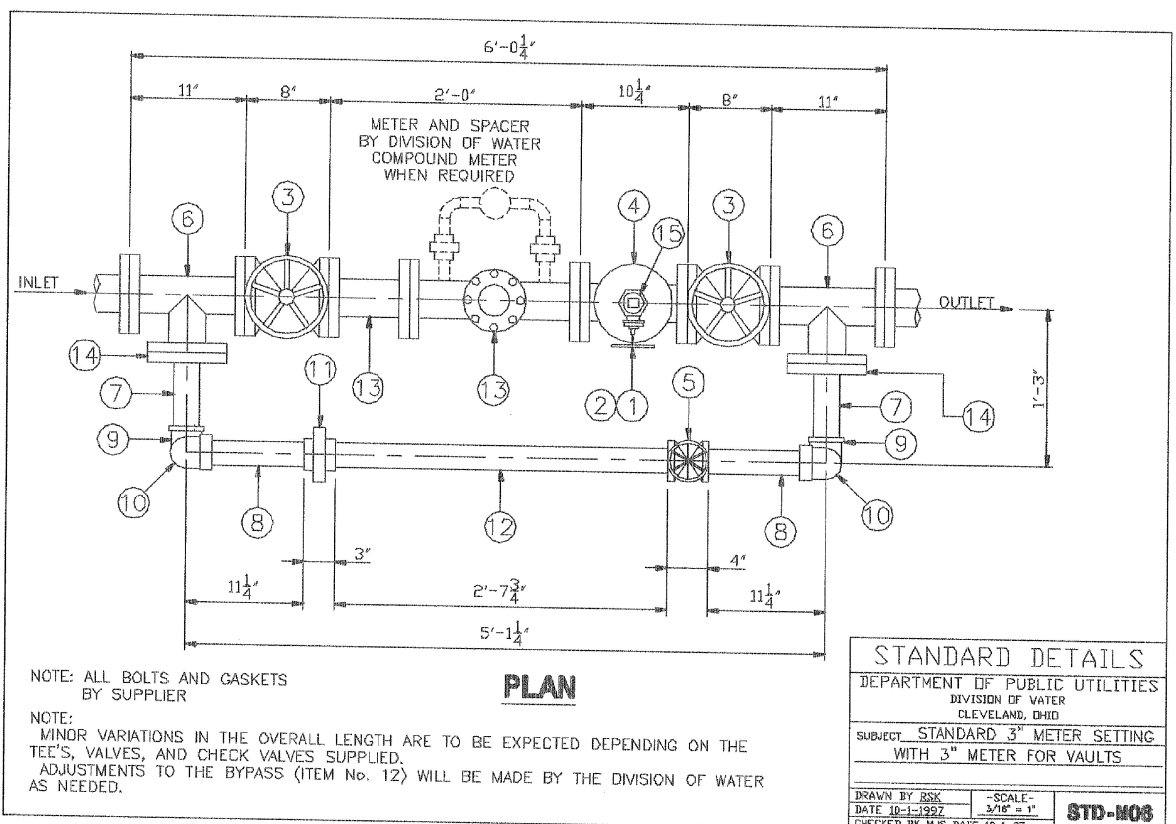


ELEVATION

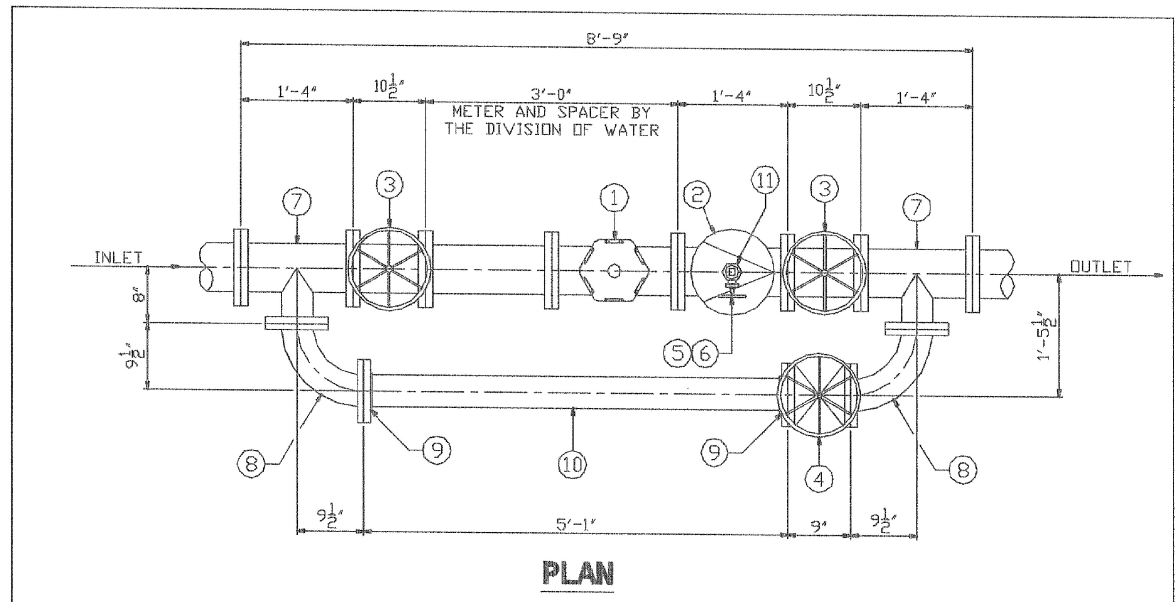
NOTE: ALL BOLTS AND GASKETS BY SUPPLIER.

STANDARD DETAILS	
DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER CLEVELAND, OHIO	
SUBJECT STANDARD 3" METER SETTING WITH 2" METER FOR VAULTS	
DRAWN BY RSK DATE 10-1-1997 CHECKED BY HLR DATE 10-1-97	-SCALE- 3/16" = 1" STD-M05

\MAPRINDA.DAT\2016\20160951\CUY\480\74\UTILITIES\SHEETS\2013087J00095.DGN
 3/1/2017
 1:37:06 PM
 000181STD_USER



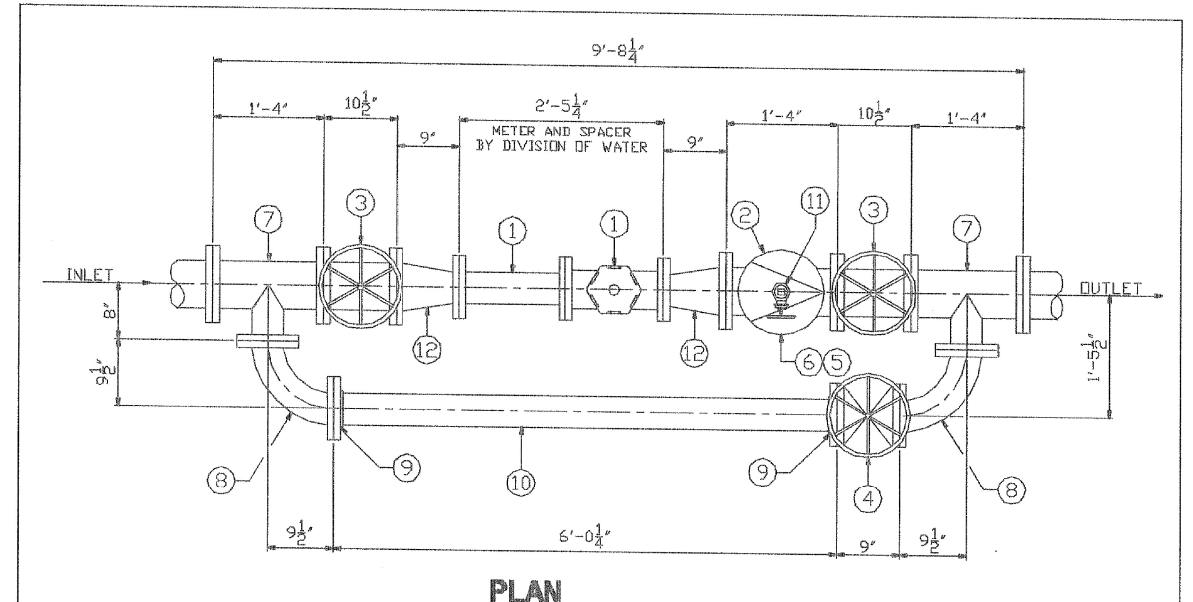
\MAPRINDA.DWG 2016.08.16.0951 \CUY\80974\UTILITIES\SHEETS\2013087\001.dwg
 3/1/2017 1:36:26 PM
 0001Y81STD_USER



PLAN

NOTE:
ALL BOLTS AND GASKETS BY SUPPLIER.
MINOR VARIATIONS IN THE OVERALL LENGTH ARE TO BE EXPECTED DEPENDING ON THE TEE'S, VALVES, AND CHECK VALVES SUPPLIED.
ADJUSTMENTS TO THE BYPASS (ITEM No. 10) WILL BE MADE BY THE DIVISION OF WATER AS NEEDED.

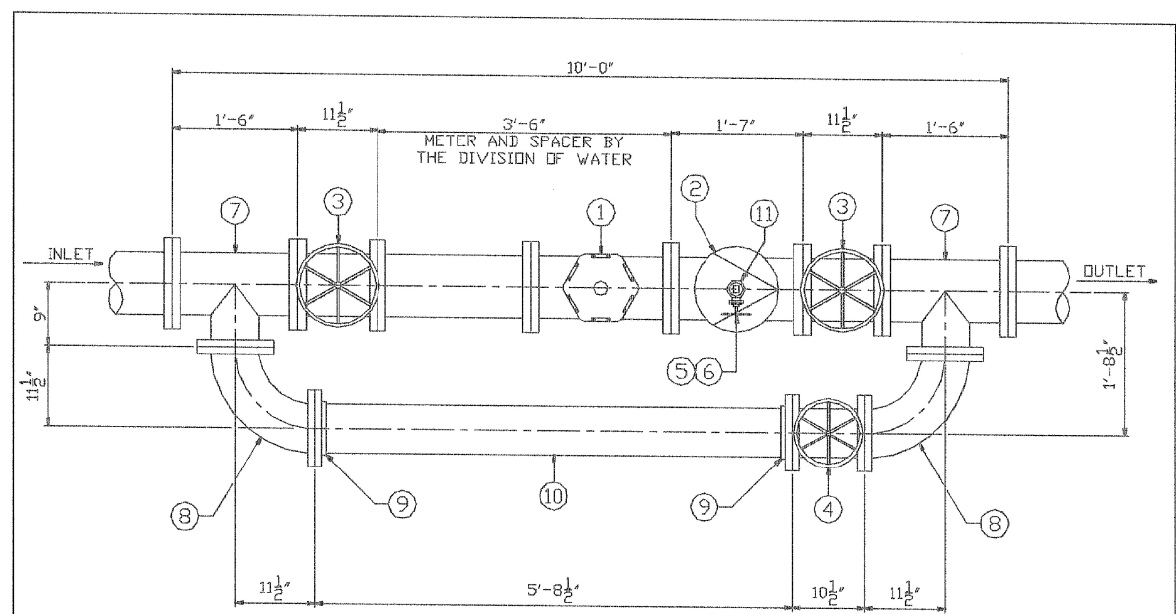
STANDARD DETAILS	
DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER CLEVELAND, OHIO	
SUBJECT: STANDARD 6" METER SETTING WITH 6" METER FOR VAULTS	
DRAWN BY BSK DATE 4-26-2005 CHECKED BY MJS DATE 5-18-99	-SCALE- 1/4" = 1'-0" STD-M10



PLAN

NOTE:
ALL BOLTS AND GASKETS BY SUPPLIER.
MINOR VARIATIONS IN THE OVERALL LENGTH ARE TO BE EXPECTED DEPENDING ON THE TEE'S, VALVES, AND CHECK VALVES SUPPLIED.
ADJUSTMENTS TO THE BYPASS (ITEM No. 10) WILL BE MADE BY THE DIVISION OF WATER AS NEEDED.

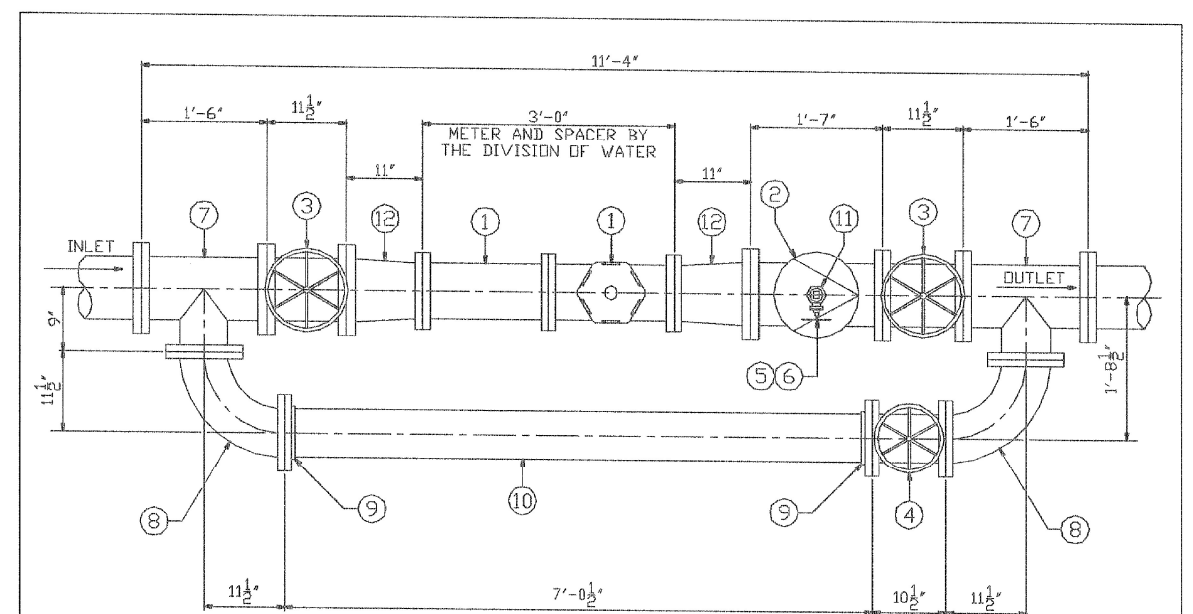
STANDARD DETAILS	
DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER CLEVELAND, OHIO	
SUBJECT: STANDARD 6" METER SETTING WITH 4" METER FOR VAULTS	
DRAWN BY BSK DATE 5-18-1998 CHECKED BY MJS DATE 5-18-99	-SCALE- 1/4" = 1'-0" STD-M11



PLAN

NOTE: ALL BOLTS AND GASKETS BY SUPPLIER.
MINOR VARIATIONS IN THE OVERALL LENGTH ARE TO BE EXPECTED DEPENDING ON THE TEE'S, VALVES, AND CHECK VALVES SUPPLIED.
ADJUSTMENTS TO THE BYPASS (ITEM No. 10) WILL BE MADE BY THE DIVISION OF WATER AS NEEDED.

STANDARD DETAILS	
DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER CLEVELAND, OHIO	
SUBJECT: STANDARD 8" METER SETTING WITH 8" METER FOR VAULTS	
DRAWN BY BSK DATE 10-1-1997 CHECKED BY MJS DATE 10-1-97	-SCALE- 1/4" = 1'-0" STD-M12



PLAN

NOTE: ALL BOLTS AND GASKETS BY SUPPLIER.
MINOR VARIATIONS IN THE OVERALL LENGTH ARE TO BE EXPECTED DEPENDING ON THE TEE'S, VALVES, AND CHECK VALVES SUPPLIED.
ADJUSTMENTS TO THE BYPASS (ITEM No. 10) WILL BE MADE BY THE DIVISION OF WATER AS NEEDED.

STANDARD DETAILS	
DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER CLEVELAND, OHIO	
SUBJECT: STANDARD 8" METER SETTING WITH 6" METER FOR VAULTS	
DRAWN BY BSK DATE 4-26-2005 CHECKED BY MJS DATE 5-18-99	-SCALE- 1/4" = 1'-0" STD-M13

\SARINDA.DATA\2016\20160951\CUY\80974\UTILITIES\SHEETS\2013087J0011.DGN
 3/1/2017
 1:35:44 PM
 000TY81STD_USER

MATERIALS REQUIRED FOR INSTALLATION
STANDARD 1-1/2" METER SETTING WITH 1-1/2" METER

ITEM	REQ'D	SIZE	DESCRIPTION
1	1	1-1/2"	METER BY C.W.D.
2	1	1-1/2"	STREAMLINE SWING CHECK VALVE, COPPER TO COPPER
3	2	1-1/2"	STREAMLINE HAND WHEEL GATE VALVES
4	1	1"	STREAMLINE O.S. & Y. GATE VALVE
5	2	1-1/2"	STREAMLINE STREET ELBOW, COPPER TO COPPER
6	1	1-1/2"	STREAMLINE TEE, COPPER TO COPPER
7	2	1-1/2" x 1" x 1-1/2"	STREAMLINE TEE, COPPER TO IRON, FEMALE
8	1	1-1/2"	STREAMLINE COUPLING, COPPER TO IRON, FEMALE
9	1	1"	STREAMLINE UNION, COPPER TO COPPER
10	1	1-1/2"	STREAMLINE COUPLING, COPPER TO IRON, MALE
11	1	1-1/2"	BRASS SCREW PLUG
12	1	1-1/2"	STREAMLINE COUPLING, COPPER TO IRON, FEMALE
13	2	1-1/2"	OVAL FLANGES, FEMALE
14	2	1"	STREAMLINE COUPLING, COPPER TO IRON, FEMALE
15	2	1-1/2"	STREAMLINE COUPLING, COPPER TO IRON, FEMALE
16	37"	1-1/2"	COPPER TUBING - HARD
17	30"	1"	COPPER TUBING - HARD
18	1lb.		SPECIAL SOLDER

(SEE DRAWING No. STD-M01 and STD-V01).
12-10-98

MATERIALS REQUIRED FOR INSTALLATION
STANDARD 2" METER SETTING WITH 2" METER

ITEM	REQ'D	SIZE	DESCRIPTION
1	1	2"	METER BY C.W.D.
2	1	2"	STREAMLINE SWING CHECK VALVE, COPPER TO COPPER
3	2	2"	STREAMLINE HAND WHEEL GATE VALVES
4	1	1-1/2"	STREAMLINE O.S. & Y. GATE VALVE
5	2	2"	STREAMLINE STREET ELBOW, COPPER TO COPPER
6	1	2"	STREAMLINE TEE, COPPER TO COPPER
7	2	2" x 1-1/2" x 2"	STREAMLINE TEE, COPPER TO IRON, FEMALE
8	1	2"	STREAMLINE COUPLING, COPPER TO IRON, FEMALE
9	1	1-1/2"	STREAMLINE UNION, COPPER TO COPPER
10	1	2"	STREAMLINE COUPLING, COPPER TO IRON, MALE
11	1	2"	BRASS SCREW PLUG
12	1	2"	STREAMLINE COUPLING, COPPER TO IRON, FEMALE
13	2	2"	OVAL FLANGES, FEMALE
14	2	1-1/2"	STREAMLINE COUPLING, COPPER TO IRON, FEMALE
15	2	2"	STREAMLINE COUPLING, COPPER TO IRON, FEMALE
16	37"	2"	COPPER TUBING - HARD
17	30"	1-1/2"	COPPER TUBING - HARD
18	1lb.		SPECIAL SOLDER

(SEE DRAWING No. STD-M02 and STD-V01).
12-10-98

MATERIAL REQUIRED FOR INSTALLATION
STANDARD 3" METER SETTING - 2" METER

ITEM	REQ'D	SIZE	DESCRIPTION
1	1	2"	HAND WHEEL GATE VALVE, SCREWED
2	2	2" x 6"	GALVANIZED NIPPLES
3	2	3"	HAND WHEEL GATE VALVE NRS, FLANGED
4	1	3"	SWING GATE CHECK VALVE, FLANGED
5	1	2"	O.S.Y. VALVE, SCREWED
6	2	3" x 3" x 3"	TEE, FLANGED
7	2	2" x 10"	GALVANIZED NIPPLE
8	2	2"	GALVANIZED ELBOWS - 90 DEGREES
9	2	2"	GALVANIZED STREET ELBOWS
10	1	2"	GALVANIZED UNION, MALE TO FEMALE
11	36"	2"	GALVANIZED PIPE, EXTRA HEAVY
12	2	2" x 2-1/2"	BRASS NIPPLES
13	2	3" x 7-1/2" DIA.	FLANGES (4 HOLE) WITH 2" TAP
14	2	2"	ELLIPTICAL FLANGES (2 HOLE) (BY C.W.D.)
15	1	2"	DISPLACEMENT METER (METER BY C.W.D.)
16	1	2" x 10"	BRASS NIPPLE
17	2	3"	BLIND FLANGES, DRILLED & TAPPED FOR 2" x 6" NIPPLES FOR ITEM No. 2
18	1	2"	BRASS PLUG
19	9	3"	RING GASKETS
20	2	2"	ELLIPTICAL GASKETS
21	36	5/8" x 2-1/2"	MACHINE BOLTS
22	2	5/8" x 3"	STUD BOLTS
23	38	5/8"	HEX BOLTS

(SEE DWG. STD-M04 & STD-M05 & STD-V01).
11-19-98

MATERIAL REQUIRED FOR INSTALLATION
STANDARD 3" METER SETTING WITH 3" METER - FLANGED

ITEM	REQ'D	SIZE	DESCRIPTION
1	1	2"	HAND WHEEL GATE VALVE, SCREWED
2	1	2" x 10"	BRASS NIPPLE
3	2	3"	HAND WHEEL GATE VALVES, FLANGED
4	1	3"	SWING GATE CHECK VALVE, FLANGED
5	1	2"	O.S.Y. VALVE, SCREWED
6	2	3" x 3" x 3"	TEE, FLANGED
7	2	2" x 6"	GALVANIZED NIPPLES
8	2	2" x 10"	GALVANIZED NIPPLE
9	2	2"	GALVANIZED ELBOWS-90 DEG.
10	2	2"	GALVANIZED STREET ELBOWS
11	1	2"	GALVANIZED UNION, MALE TO FEMALE
12	36"	2"	GALVANIZED PIPE, EXTRA HEAVY
13	1	3"	TURBINE METER OR COMPOUND METER METER & SPACER PROVIDED BY C.W.D.)
14	2	3"	BLIND FLANGES, DRILLED & TAPPED FOR 2" x 6" NIPPLES
15	1	2"	BRASS PLUG
16	10	3"	RING GASKETS
17	40	5/8" x 2-1/2"	MACHINE BOLTS
18	2	5/8" x 3"	STUD BOLTS
19	42	5/8"	HEX BOLTS

(SEE DRAWING STD-M06 & STD-M07 & STD-V01).
11-19-98

MATERIALS REQUIRED FOR INSTALLATION
STANDARD 4" METER SETTING WITH 4" METER

ITEM	REQ'D	SIZE	DESCRIPTION
1	1	2"	HAND WHEEL GATE VALVE, SCREWED
2	1	2" x 10"	BRASS NIPPLE
3	2	4"	HAND WHEEL GATE VALVES, FLANGED
4	1	4"	SWING CHECK VALVE, FLANGED
5	1	3"	O.S.Y. VALVE, FLANGED
6	2	4" x 3"	CAST IRON TEES, FLANGED
7	2	3"	CAST IRON ELBOWS, FLANGED LONG RADIUS
8	2	3" x 7-1/2"	CAST IRON FLANGE, 4 HOLE
9	5 FT.	3"	GALVANIZED PIPE, EXTRA HEAVY
10	1	4"	TURBINE METER OR COMPOUND METER (METER & SPACER PROVIDED BY C.W.D.)
11	1	2"	BRASS PLUG
12	8	4"	FLANGE GASKETS
13	5	3"	FLANGE GASKETS
14	64	5/8" x 3"	MACHINE BOLTS
15	20	5/8" x 2-1/2"	MACHINE BOLTS
16	6	5/8" x 3-1/2"	STUD BOLTS
17	90	5/8"	HEX NUTS

(SEE DRAWING No. STD-M08 & STD-V01).
11-19-98

MATERIALS REQUIRED FOR INSTALLATION
STANDARD 4" METER SETTING WITH 3" METER

ITEM	REQ'D	SIZE	DESCRIPTION
1	1	2"	HAND WHEEL GATE VALVE, SCREWED
2	1	2" x 10"	BRASS NIPPLE
3	2	4"	HAND WHEEL GATE VALVES, FLANGED
4	1	4"	SWING CHECK VALVE, FLANGED
5	1	3"	O.S.Y. VALVE, FLANGED
6	2	4" x 3"	CAST IRON TEES, FLANGED
7	2	3"	CAST IRON ELBOWS, FLANGED LONG RADIUS
8	2	3" x 7-1/2"	CAST IRON FLANGE, 4 HOLE
9	58-1/2"	3"	GALVANIZED PIPE, EXTRA HEAVY
10	1	3"	TURBINE METER OR COMPOUND METER METER & SPACER PROVIDED BY C.W.D.)
11	1	2"	BRASS PLUG
12	2	4" x 3"	CAST IRON CONCENTRIC REDUCER, FLANGED
13	7	4"	FLANGE GASKETS
14	7	3"	FLANGE GASKETS
15	56	5/8" x 3"	MACHINE BOLTS
16	24	5/8" x 2-1/2"	MACHINE BOLTS
17	8	5/8" x 3-1/2"	STUD BOLTS
18	88	5/8"	HEX NUTS

(SEE DRAWING No. STD-M09 & STD-V01).
11-19-98

CALCULATED
JJS
CHECKED
DJM

WATER MAIN DETAILS

CUY-480/
TRANSPORTATION BLVD.

MATERIALS REQUIRED FOR INSTALLATION

STANDARD 6" METER SETTING WITH 6" METER

ITEM	REQ'D	SIZE	DESCRIPTION
1	1	6"	TURBINE OR COMPOUND METER (BY C.W.D.)
2	1	6"	SWING CHECK VALVE, FLANGED
3	2	6"	HAND WHEEL GATE VALVES, FLANGED
4	1	4"	O.S.Y. VALVE, FLANGED
5	1	2"	HAND WHEEL GATE VALVE, SCREWED
6	1	2"	BRASS PLUG
7	2	6" x 4"	CAST IRON TEES, FLANGED
8	2	4"	CAST IRON ELBOWS, FLANGED LR
9	2	4" x 9"	CAST IRON FLANGE, 8 HOLE
10	70"	4"	GALVANIZED PIPE, EXTRA HEAVY
11	1	2" x 10"	BRASS NIPPLE
12	8	6"	FLANGE GASKETS
13	5	4"	FLANGE GASKETS
14	64	3/4" x 3-1/2"	MACHINE BOLTS
15	40	5/8" X 3"	MACHINE BOLTS
16	8	3/4" x 4"	STUD BOLTS
17	72	3/4"	HEX NUTS
18	40	5/8"	HEX NUTS

(SEE DRAWING No. STD-M10 & STD-V01).

4-26-2005

MATERIALS REQUIRED FOR INSTALLATION

STANDARD 6" METER SETTING WITH 4" METER

ITEM	REQ'D	SIZE	DESCRIPTION
1	1	4"	TURBINE OR COMPOUND METER (METER AND SPACER BY C.W.D.)
2	1	6"	SWING CHECK VALVE, FLANGED
3	2	6"	HAND WHEEL GATE VALVES, FLANGED
4	1	4"	O.S.Y. VALVE, FLANGED
5	1	2"	HAND WHEEL GATE VALVE, SCREWED
6	1	2"	BRASS PLUG
7	2	6" x 4"	CAST IRON TEES, FLANGED
8	2	4"	CAST IRON ELBOWS, FLANGED LR
9	2	4" x 9"	CAST IRON FLANGE, 8 HOLE
10	72-1/4"	4"	GALVANIZED PIPE, EXTRA HEAVY
11	1	2" x 10"	BRASS NIPPLE
12	2	6" x 4"	CAST IRON CONCENTRIC REDUCER, FLANGED
13	8	6"	FLANGE GASKETS
14	7	4"	FLANGE GASKETS
15	56	3/4" x 3-1/2"	MACHINE BOLTS
16	56	5/8" X 3"	MACHINE BOLTS
17	8	3/4" x 4"	STUD BOLTS
18	64	3/4"	HEX NUTS
19	56	5/8"	HEX NUTS

(SEE DRAWING No. STD-M11 & STD-V01).

11-19-98

MATERIALS REQUIRED FOR INSTALLATION

STANDARD 8" METER SETTING WITH 8" METER

ITEM	REQ'D	SIZE	DESCRIPTION
1	1	8"	TURBINE OR COMPOUND METER (BY C.W.D.)
2	1	8"	SWING CHECK VALVE, FLANGED
3	2	8"	HAND WHEEL GATE VALVES, FLANGED
4	1	6"	O.S.Y. VALVE, FLANGED
5	1	2"	HAND WHEEL GATE VALVE, SCREWED
6	1	2"	BRASS PLUG
7	2	8" x 6"	CAST IRON TEES, FLANGED
8	2	6"	CAST IRON ELBOWS, FLANGED LR
9	2	6" x 11"	CAST IRON FLANGE, 8 HOLE
10	72"	6"	GALVANIZED PIPE, EXTRA HEAVY
11	1	2" x 10"	BRASS NIPPLE
12	5	8"	FLANGE GASKETS
13	5	6"	FLANGE GASKETS
14	104	3/4" x 3-1/2"	MACHINE BOLTS
15	8	3/4" x 4-1/4"	STUD BOLTS
16	112	3/4"	HEX NUTS

(SEE DRAWING No. STD-M12 & STD-V01).

11-19-98

MATERIALS REQUIRED FOR INSTALLATION

STANDARD 8" METER SETTING WITH 6" METER

ITEM	REQ'D	SIZE	DESCRIPTION
1	1	6"	TURBINE OR COMPOUND METER (METER AND SPACER BY C.W.D.)
2	1	8"	SWING CHECK VALVE, FLANGED
3	2	8"	HAND WHEEL GATE VALVES, FLANGED
4	1	6"	O.S.Y. VALVE, FLANGED
5	1	2"	HAND WHEEL GATE VALVE, SCREWED
6	1	2"	BRASS PLUG
7	2	8" x 6"	CAST IRON TEES, FLANGED
8	2	6"	CAST IRON ELBOWS, FLANGED LR
9	2	6" x 11" DIA.	CAST IRON FLANGE, 8 HOLE
10	90"	6"	GALVANIZED PIPE, EXTRA HEAVY
11	1	2" x 10"	BRASS NIPPLE
12	2	8" x 6"	CAST IRON CONCENTRIC REDUCER, FLANGED
13	7	8"	FLANGE GASKETS
14	7	6"	FLANGE GASKETS
15	120	3/4" x 3-1/2"	MACHINE BOLTS
16	8	3/4" x 4-1/4"	STUD BOLTS
17	128	3/4"	HEX NUTS

(SEE DRAWING No. STD-M13 & STD-V01).

4-26-2005

\WORKING DATA\2016\20160951\CUV\80974\UTILITIES\SHEETS\20160907\0013.DGN
 3/1/2017
 1:32:46 PM
 DDDTY81STD.LUSER

CALCULATED
 ERS
 CHECKED
 DEN

WATER MAIN DETAILS

CUY-480/
 TRANSPORTATION BLVD.

124
 225

NOTES

JOINTS: Unsealed contraction joints spaced at 20' max. shall be constructed throughout the run of Concrete Barrier except that expansion joints shall be used at the center line of and around each bridge pier column and on either side of overhead sign supports, inlets and light pole foundations. If inlet top is slip formed, the expansion joints adjacent to it may be omitted.

Contraction joints may be constructed with metal inserts inside the forms, preformed full width joint filler, a grooving tool or by sawing. Inserts, tooled or sawed joints shall have a 3" minimum depth. All joints shall be constructed for the full height of the barrier including the base. Sawing shall be done as soon as curing will allow, to prevent spalling.

BASE JOINTS: The vertical walls between the barrier base and a concrete pavement or concrete base shall be provided with a sealed, grooved joint as shown on Std. Const. Dwg. BP-2.1. Sealing material shall conform with CMS 705.04.

P.C.J. = Permissible Construction Joint

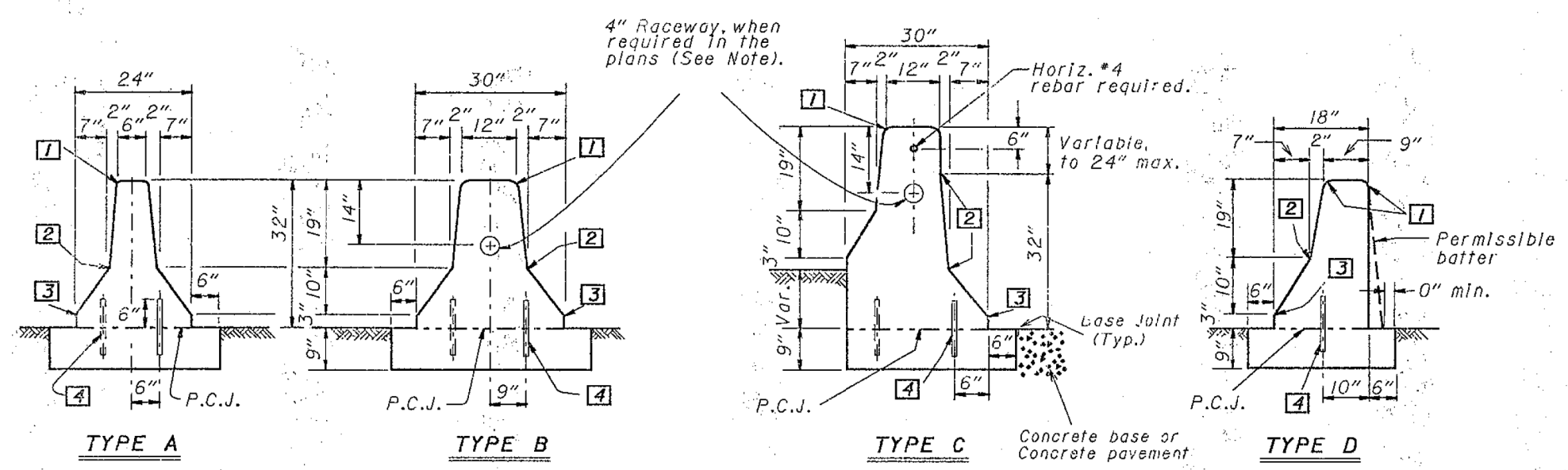
MEASUREMENT: 622 Concrete Barrier, including transitions and pier sections as per Standard Const. Drawing, MC-9.4, is paid for in linear feet as one of the four types (A, B, C or D) or as Type A50 and B50, (for 50" high barrier), with appropriate deductions for other items such as:

604 1-3 Median Inlet	20 Lin. Ft.
625 Light pole foundation or pullbox	2.5 Lin. Ft.
630 Overhead sign support foundation	10 Lin. Ft.
630 Barrier wall assembly	10 Lin. Ft.

50 INCH HIGH BARRIER shall be built in locations specified in the plans. Construct the lower 32" of the barrier and the barrier base using the same dimensions as shown in the corresponding Normal Section. The upper 18" may be constructed integral with the bottom, or separately with No. 4 rebar dowels at 4' maximum spacing. Start and end dowels 6" from barrier contraction joints.

RACEWAY: The contractor shall insure that the electrical raceway is clear of internal obstructions. Cost of the 4 inch polyvinyl chloride raceway and No. 10 AWG copper-clad or aluminum-clad wire if needed for future installation of circuits shall be included in the unit cost per linear foot for Item 622, Concrete Barrier.

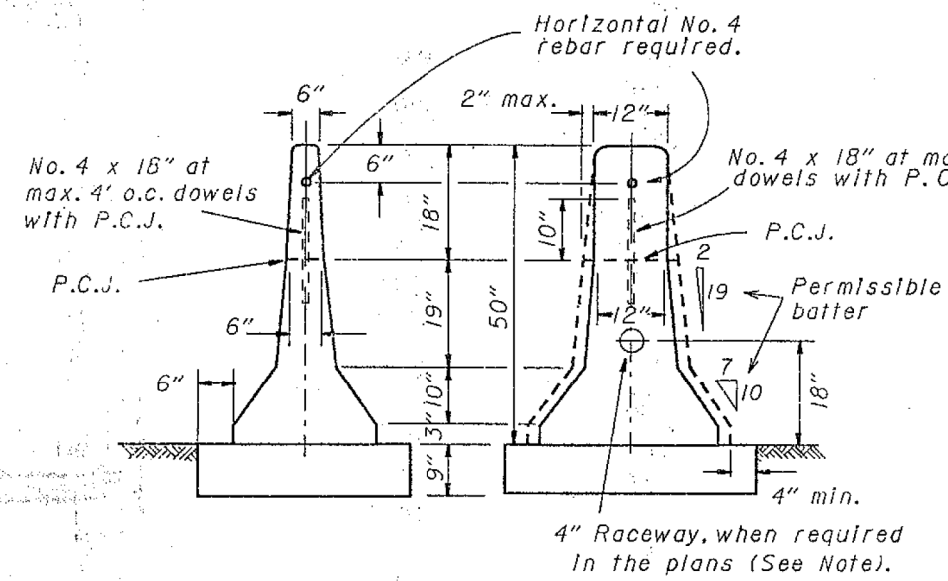
STATION MARKING shall be impressed in the "green" concrete on both sides at the top of the barrier if specified in the plans, which cost shall be incidental to the unit cost per linear foot bid for Item 622, Concrete Barrier.



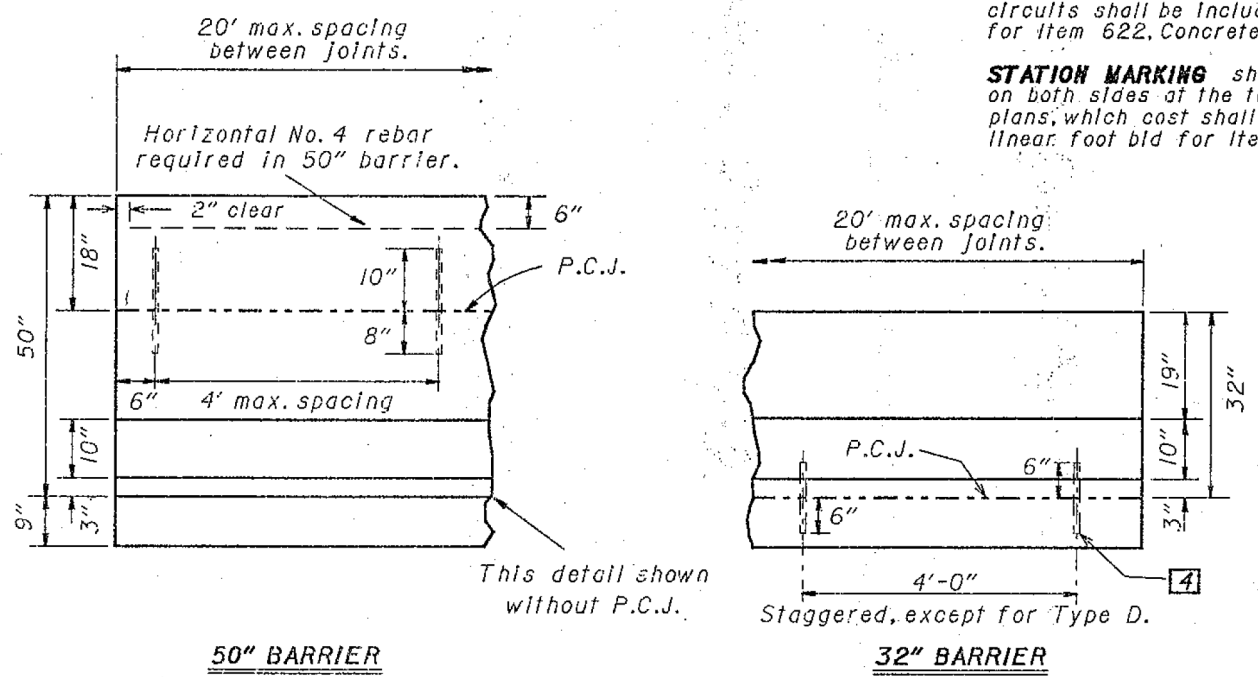
NORMAL SECTIONS

LEGEND

- 1 1" Radius or 3/4" chamfer.
- 2 Permissible 10" radius.
- 3 Permissible 1" radius.
- 4 No. 8 epoxy coated deformed steel bars, 12" long, spaced 4' between successive bars on a staggered (except Type D) pattern. Omit dowels when top is constructed integral with the base.



50" BARRIERS - TYPICAL SECTIONS



BARRIER ELEVATIONS

BUREAU OF LOCATION AND DESIGN OHIO DEPARTMENT OF TRANSPORTATION	
CONCRETE BARRIER	DATE 10-30-92
STANDARD CONSTRUCTION DRAWING	MC-9.3
APPROVED: <i>R.K. Williams</i> ENGR., L & D	

GROUND MOUNTED SUPPORT, NO. 2 POST, AS PER PLAN
GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN
ONE WAY SUPPORT, NO. 3 POST, AS PER PLAN

THE CONTRACTOR SHALL UTILIZE TYPE S SQUARE POSTS PER STANDARD CONSTRUCTION DRAWING TC-41.20 FOR ANY SIGN INSTALLED IN CONCRETE.

GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN

ALL GROUND MOUNTED SUPPORT, NO. 4 POSTS SHALL BE THE SQUARE POSTS. NO U-CHANNEL NO. 4 POSTS SHALL BE INSTALLED.

RTA SIGNAGE

THE CONTRACTOR SHALL CONTACT THE GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY (RTA) SERVICE MANAGEMENT DEPARTMENT (JEFFREY MACKO 216-356-3048) TO COORDINATE THE REMOVAL AND INSTALLATION OF BUS STOP SIGNAGE.

OVERHEAD SIGN CLEARANCE

OVERHEAD SIGNS OSS-3, OSS-4 AND OSS-5 SHALL MAINTAIN A MINIMUM VERTICAL CLEARANCE OF 17' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY.

SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN

MAST ARM SIGN SHALL BE RIGID MOUNTED PER SCD TC-16.21. THE PLACEMENT OF SIGN SHALL BE AS LISTED IN THE SIGNAL PLAN DETAILS. ON MAST ARMS WHERE THE SIGN LENGTH EXCEEDS THE DISTANCE BETWEEN THE SIGNAL SUPPORT AND FIRST SIGNAL HEAD THE CONTRACTOR SHALL MODIFY THE SIGN HANGER ASSEMBLY AND/OR SHIFT THE SIGN ON THE ASSEMBLY AS NECESSARY TO ENSURE THE SIGN SHALL BE IN FRONT OF THE SIGNAL SUPPORT POLE.

ALL LABOR, MATERIALS, EQUIPMENT AND ANY INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH FOR ITEM 630 - SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN.

CALCULATED
AKF
CHECKED
TJR

TRAFFIC CONTROL GENERAL NOTES

CUY-480/
TRANSPORTATION BLVD.

126
225

\\AKRINDA\DATA\2016\2016051\CUY\B0974\TRAFFIC\SHEETS\B0974TS001.DGN
 3/1/2017 9:28:43 AM
 CDDTV81STD_USER

SHEET NO.	REF. NO.	LOCATION	STATION		SIDE	620	620	646	646	646	646	646	646	646	646	646	646	646	646	646	646	646						
						DELINATOR, POST GROUND MOUNTED	REMOVAL OF DELINEATOR	EDGE LINE, 4" (WHITE)	EDGE LINE, 4" (YELLOW)	LANE LINE, 4"	CENTER LINE, DOUBLE SOLID	CHANNELIZING LINE, 8"	STOP LINE	CROSSWALK LINE	TRANSVERSE/DIAGONAL LINE (WHITE)	TRANSVERSE/DIAGONAL LINE (YELLOW)	ISLAND MARKING (YELLOW)	LANE ARROW	DOTTED LINE	REMOVAL OF PAVEMENT MARKING	REMOVAL OF PAVEMENT MARKING	REMOVAL OF PAVEMENT MARKING	REMOVAL OF PAVEMENT MARKING					
			EACH	EACH		FT	FT	FT	FT	FT	FT	FT	FT	FT	SF	EACH	FT	EACH	FT	SF	FT							
142	EW	TRANSPORTATION BLVD.	23+45	24+81	RT			136																				
142	EW	TRANSPORTATION BLVD.	25+92	26+12	RT			90																				
142	EY	TRANSPORTATION BLVD.	25+47	25+47	RT				57																			
142	LL	TRANSPORTATION BLVD.	22+00	24+81	LT					281																		
142	LL	TRANSPORTATION BLVD.	22+00	24+81	RT					281																		
142	CDS	TRANSPORTATION BLVD.	22+00	24+81	LT						281																	
142	CH	TRANSPORTATION BLVD.	22+23	24+81	RT							258																
142	CH	TRANSPORTATION BLVD.	25+58	25+58	RT							85																
142	CH	TRANSPORTATION BLVD.	25+70	25+70	RT							85																
142	CH	TRANSPORTATION BLVD.	25+82	25+82	RT							85																
142	SL	TRANSPORTATION BLVD.	24+83		LT/RT								40															
142	SL	TRANSPORTATION BLVD.	25+47		RT								11															
142	SL	TRANSPORTATION BLVD.	25+70		RT								56															
142	CW	TRANSPORTATION BLVD.	24+96		LT/RT									188														
142	LA	TRANSPORTATION BLVD.	22+75		CEN																							
142	LA	TRANSPORTATION BLVD.	23+41		CEN																							
142	LA	TRANSPORTATION BLVD.	24+07		CEN																							
142	LA	TRANSPORTATION BLVD.	24+73		CEN																							
142	LA	TRANSPORTATION BLVD.	25+52		RT																							
142	LA	TRANSPORTATION BLVD.	25+52		RT																							
142	LA	TRANSPORTATION BLVD.	25+64		RT																							
142	LA	TRANSPORTATION BLVD.	25+64		RT																							
142	LA	TRANSPORTATION BLVD.	25+76		RT																							
142	LA	TRANSPORTATION BLVD.	25+76		RT																							
142	LA	TRANSPORTATION BLVD.	25+87		RT																							
142	LA	TRANSPORTATION BLVD.	25+87		RT																							
142	DW	TRANSPORTATION BLVD.	24+96	25+58	LT/RT																							
142	DW	TRANSPORTATION BLVD.	25+67	25+70	LT/RT																							
142	EW	I-480 EB ENTRANCE RAMP	44+06	45+98	LT/RT			192																				
142	EY	I-480 EB ENTRANCE RAMP	44+72	45+98	LT				126																			
142	CW	I-480 EB ENTRANCE RAMP	45+42		LT/RT									40														
142	CDS	ANTENUCCI BLVD.	11+07	12+00	RT						93																	
142	CDS	ANTENUCCI BLVD.	11+56	12+00	RT						44																	
142	CH	ANTENUCCI BLVD.	11+07	12+00	LT							93																
142	CH	ANTENUCCI BLVD.	11+07	12+00	LT							93																
142	CH	ANTENUCCI BLVD.	11+07	12+00	RT/LT							93																
142	SL	ANTENUCCI BLVD.	11+05		LT/RT									59														
142	CW	ANTENUCCI BLVD.	10+91		LT/RT										149													
142	TW	ANTENUCCI BLVD.	11+07	12+00	LT/RT											38												
142	TY	ANTENUCCI BLVD.	11+56	12+00	RT												9											
142	LA	ANTENUCCI BLVD.	11+15		LT																							
142	LA	ANTENUCCI BLVD.	11+15		LT																							
142	LA	ANTENUCCI BLVD.	11+15		RT																							
142	LA	ANTENUCCI BLVD.	11+81		LT																							
142	LA	ANTENUCCI BLVD.	11+81		LT																							
142	LA	ANTENUCCI BLVD.	11+81		RT																							
TOTAL FEET								601	562	418	792	166	377	47			18	279										
TOTAL MILES								0.12	0.11	0.08																		
TOTALS CARRIED TO GENERAL SUMMARY								0.12	0.11	0.08	792	166	377	47			18	279										

CALCULATED SLB CHECKED TJR
 PAVEMENT MARKING SUBSUMMARY - 2 OF 7
 CUY-480/TRANSPORTATION BLVD.
 129
 225

\\AKR\DATA\2016\2016051\CUY\B0974\TRAFFIC\SHEETS\B0974TS002.DGN
 2/1/2017 9:21:07 AM
 CDDTV81STD_USER

SHEET NO.	REF. NO.	LOCATION	STATION		SIDE	620	620	646	646	646	646	646	646	646	646	646	646	646	646	646	646	646									
			DELINATOR, POST GROUND MOUNTED	REMOVAL OF DELINEATOR		EDGE LINE, 4" (WHITE)	EDGE LINE, 4" (YELLOW)	LANE LINE, 4"	CENTER LINE, DOUBLE SOLID	CHANNELIZING LINE, 8"	STOP LINE	CROSSWALK LINE	TRANSVERSE/DIAGONAL LINE (WHITE)	TRANSVERSE/DIAGONAL LINE (YELLOW)	ISLAND MARKING (YELLOW)	LANE ARROW	DOTTED LINE	REMOVAL OF PAVEMENT MARKING	REMOVAL OF PAVEMENT MARKING	REMOVAL OF PAVEMENT MARKING	REMOVAL OF PAVEMENT MARKING										
			EACH	EACH		FT	FT	FT	FT	FT	FT	FT	FT	FT	SF	EACH	FT	EACH	FT	SF	FT										
144	EW	TRANSPORTATION BLVD.	17+00	18+14	LT			114																							
144	LL	TRANSPORTATION BLVD.	17+00	22+00	LT					500																					
144	LL	TRANSPORTATION BLVD.	17+00	22+00	RT					500																					
144	CDS	TRANSPORTATION BLVD.	17+00	22+00	LT/RT						500																				
144	CH	TRANSPORTATION BLVD.	17+00	21+53	CEN/LT							453																			
144	LA	TRANSPORTATION BLVD.	17+60		RT																										
144	LA	TRANSPORTATION BLVD.	18+26		RT																										
144	LA	TRANSPORTATION BLVD.	18+92		RT																										
144	LA	TRANSPORTATION BLVD.	19+58		RT																										
144	LA	TRANSPORTATION BLVD.	20+24		RT																										
144	LA	TRANSPORTATION BLVD.	20+90		RT																										
145	EW	TRANSPORTATION BLVD.	15+25	16+44	LT			119																							
145	LL	TRANSPORTATION BLVD.	17+00	88+00	LT/RT					500																					
145	LL	TRANSPORTATION BLVD.	17+00	88+00	RT/LT					500																					
145	CDS	TRANSPORTATION BLVD.	17+00	88+00	RT/CEN						500																				
145	CH	TRANSPORTATION BLVD.	14+88	17+00	CEN							212																			
145	CH	TRANSPORTATION BLVD.	86+88	88+00	LT							112																			
145	SL	TRANSPORTATION BLVD.	14+86		LT/RT																										
145	SL	TRANSPORTATION BLVD.	86+86		LT/RT																										
145	CW	TRANSPORTATION BLVD.	86+73		LT/RT																										
145	LA	TRANSPORTATION BLVD.	14+96		RT																										
145	LA	TRANSPORTATION BLVD.	15+62		RT																										
145	LA	TRANSPORTATION BLVD.	16+28		RT																										
145	LA	TRANSPORTATION BLVD.	16+94		RT																										
145	LA	TRANSPORTATION BLVD.	86+96		LT																										
145	LA	TRANSPORTATION BLVD.	87+62		LT																										
145	EW	I-480 WB ENTRANCE RAMP	66+28	17+00	LT			144																							
145	EY	I-480 WB ENTRANCE RAMP	66+28	67+18	RT					90																					
145	CW	I-480 WB ENTRANCE RAMP	66+20		LT/RT																										
145	EW	I-480 WB EXIT RAMP	56+12	57+50	LT			138																							
145	EY	I-480 WB EXIT RAMP	56+12	57+50	RT																										
145	CH	I-480 WB EXIT RAMP	56+12	57+50	RT																										
145	CH	I-480 WB EXIT RAMP	56+12	57+50	RT																										
145	SL	I-480 WB EXIT RAMP	56+10		LT/RT																										
145	CW	I-480 WB EXIT RAMP	55+54		LT/RT																										
145	LA	I-480 WB EXIT RAMP	56+20		LT																										
145	LA	I-480 WB EXIT RAMP	56+20		RT																										
145	LA	I-480 WB EXIT RAMP	56+20		RT																										
145	LA	I-480 WB EXIT RAMP	56+86		LT																										
145	LA	I-480 WB EXIT RAMP	56+86		RT																										
145	LA	I-480 WB EXIT RAMP	56+86		RT																										
145	LL	PUBLIC ROAD 1	54+66	55+07	RT					41																					
145	CDS	PUBLIC ROAD 1	54+66	55+07	RT						41																				
145	CH	PUBLIC ROAD 1	54+66	55+07	RT																										
145	CH	PUBLIC ROAD 1	54+66	55+07	RT																										
145	CH	PUBLIC ROAD 1	54+66	55+07	RT																										
145	SL	PUBLIC ROAD 1	55+09		LT/RT																										
145	CW	PUBLIC ROAD 1	55+22		LT/RT																										
145	TW	PUBLIC ROAD 1	54+66	55+07	RT																										
145	LA	PUBLIC ROAD 1	54+99		RT																										
145	LA	PUBLIC ROAD 1	54+99		RT																										
145	LA	PUBLIC ROAD 1	54+99		RT																										
TOTAL FEET								743	2041	1041	1176	180	582	51		21															
TOTAL MILES								0.15	0.39	0.20																					
TOTALS CARRIED TO GENERAL SUMMARY								0.15	0.39	0.20	1176	180	582	51		21															

CALCULATED SLB CHECKED TJR
 PAVEMENT MARKING SUBSUMMARY - 3 OF 7
 CUY-480/TRANSPORTATION BLVD.
 130
 225

\\AKR\DATA\2016\2016051\CUY\B0974\TRAFFIC\SHEETS\B0974TS003.DGN
 2/1/2017 9:21:22 AM
 CDDTV81STD_USER

SHEET NO.	REF. NO.	LOCATION	STATION		SIDE	620	620	646	646	646	646	646	646	646	646	646	646	646	646	646	646	646									
			DELINATOR, POST GROUND MOUNTED	REMOVAL OF DELINEATOR		EDGE LINE, 4" (WHITE)	EDGE LINE, 4" (YELLOW)	LANE LINE, 4"	CENTER LINE, DOUBLE SOLID	CHANNELIZING LINE, 8"	STOP LINE	CROSSWALK LINE	TRANSVERSE/DIAGONAL LINE (WHITE)	TRANSVERSE/DIAGONAL LINE (YELLOW)	ISLAND MARKING (YELLOW)	LANE ARROW	DOTTED LINE	REMOVAL OF PAVEMENT MARKING	REMOVAL OF PAVEMENT MARKING	REMOVAL OF PAVEMENT MARKING	REMOVAL OF PAVEMENT MARKING	REMOVAL OF PAVEMENT MARKING									
			EACH	EACH		FT	FT	FT	FT	FT	FT	FT	FT	FT	SF	EACH	FT	EACH	FT	SF	FT										
146	LL	TRANSPORTATION BLVD.	88+00	93+00	LT					500																					
146	LL	TRANSPORTATION BLVD.	88+00	93+00	RT					500																					
146	CDS	TRANSPORTATION BLVD.	88+00	93+00	CEN/LT						500																				
146	CH	TRANSPORTATION BLVD.	88+00	92+00	LT						400																				
146	CH	TRANSPORTATION BLVD.	92+70	93+00	CEN						30																				
146	LA	TRANSPORTATION BLVD.	88+28		LT																										
146	LA	TRANSPORTATION BLVD.	88+94		LT																										
146	LA	TRANSPORTATION BLVD.	89+60		LT																										
146	LA	TRANSPORTATION BLVD.	90+26		LT																										
146	LA	TRANSPORTATION BLVD.	90+92		LT																										
146	LA	TRANSPORTATION BLVD.	91+58		LT																										
147	LL	TRANSPORTATION BLVD.	93+00	98+00	LT					500																					
147	LL	TRANSPORTATION BLVD.	93+00	93+19	RT					19																					
147	CDS	TRANSPORTATION BLVD.	93+00	98+00	LT/CEN						500																				
147	CH	TRANSPORTATION BLVD.	94+51	94+91	LT							40																			
147	CH	TRANSPORTATION BLVD.	93+00	93+19	CEN							19																			
147	CH	TRANSPORTATION BLVD.	95+61	98+00	RT							239																			
147	CH	TRANSPORTATION BLVD.	94+51	98+00	RT							349																			
147	CH	TRANSPORTATION BLVD.	95+12	98+00	RT							288																			
147	SL	TRANSPORTATION BLVD.	93+21		LT/RT								40																		
147	SL	TRANSPORTATION BLVD.	93+78		LT								26																		
147	SL	TRANSPORTATION BLVD.	94+49		LT/CEN								39																		
147	CW	TRANSPORTATION BLVD.	93+78		LT									154																	
147	CW	TRANSPORTATION BLVD.	93+34		LT/RT									136																	
147	CW	TRANSPORTATION BLVD.	94+36		LT/RT									132																	
147	LA	TRANSPORTATION BLVD.	93+11		LT																										
147	LA	TRANSPORTATION BLVD.	94+59		LT																										
147	LA	TRANSPORTATION BLVD.	94+84		RT																										
147	LA	TRANSPORTATION BLVD.	95+19		RT																										
147	LA	TRANSPORTATION BLVD.	95+19		RT																										
147	LA	TRANSPORTATION BLVD.	95+50		RT																										
147	LA	TRANSPORTATION BLVD.	95+85		RT																										
147	LA	TRANSPORTATION BLVD.	95+85		RT																										
147	LA	TRANSPORTATION BLVD.	96+16		LT																										
147	LA	TRANSPORTATION BLVD.	96+16		RT																										
147	LA	TRANSPORTATION BLVD.	96+51		RT																										
147	LA	TRANSPORTATION BLVD.	96+51		RT																										
147	LA	TRANSPORTATION BLVD.	96+82		LT																										
147	LA	TRANSPORTATION BLVD.	96+82		RT																										
147	LA	TRANSPORTATION BLVD.	97+17		RT																										
147	LA	TRANSPORTATION BLVD.	97+17		RT																										
147	LA	TRANSPORTATION BLVD.	97+48		LT																										
147	LA	TRANSPORTATION BLVD.	97+48		RT																										
147	LA	TRANSPORTATION BLVD.	97+83		RT																										
147	LA	TRANSPORTATION BLVD.	97+83		RT																										
147	CDS	ODOT DRIVE	200+47	201+50	CEN						103																				
147	CH	ODOT DRIVE	200+47	200+94	LT							47																			
147	SL	ODOT DRIVE	200+45		LT/CEN								30																		
147	CW	ODOT DRIVE	200+32		LT/RT									159																	
147	LA	ODOT DRIVE	200+55		LT																										
147	LA	ODOT DRIVE	200+55		LT																										
TOTAL FEET										1519	1103	1412	135	581				28													
TOTAL MILES										0.29	0.21																				
TOTALS CARRIED TO GENERAL SUMMARY										0.29	0.21	1412	135	581				28													

CALCULATED SLB CHECKED TJR
 PAVEMENT MARKING SUBSUMMARY - 4 OF 7
 CUY-480/TRANSPORTATION BLVD.
 131
 225

\\AKR\DATA\2016\2016051\CUY\B0974\TRAFFIC\SHEETS\B0974TS004.DGN
 2/1/2017 9:21:35 AM
 CDDTV81STD_USER

SHEET NO.	REF. NO.	LOCATION	STATION		SIDE	620	620	646	646	646	646	646	646	646	646	646	646	646	646	646	646	646					
						DELINEATOR, POST GROUND MOUNTED	REMOVAL OF DELINEATOR	EDGE LINE, 4" (WHITE)	EDGE LINE, 4" (YELLOW)	LANE LINE, 4"	CENTER LINE, DOUBLE SOLID	CHANNELIZING LINE, 8"	STOP LINE	CROSSWALK LINE	TRANSVERSE/DIAGONAL LINE (WHITE)	TRANSVERSE/DIAGONAL LINE (YELLOW)	ISLAND MARKING (YELLOW)	LANE ARROW	DOTTED LINE	REMOVAL OF PAVEMENT MARKING	REMOVAL OF PAVEMENT MARKING	REMOVAL OF PAVEMENT MARKING	REMOVAL OF PAVEMENT MARKING				
			EACH	EACH		FT	FT	FT	FT	FT	FT	FT	FT	FT	SF	EACH	FT	EACH	FT	SF	FT						
148	LL	TRANSPORTATION BLVD.	98+00	98+88	LT					88																	
148	CDS	TRANSPORTATION BLVD.	98+00	98+88	LT					88																	
148	CH	TRANSPORTATION BLVD.	98+00	98+88	RT						88																
148	CH	TRANSPORTATION BLVD.	98+00	99+23	RT						123																
148	CH	TRANSPORTATION BLVD.	98+00	99+23	RT						123																
148	SL	TRANSPORTATION BLVD.	98+90		LT/RT									25													
148	SL	TRANSPORTATION BLVD.	99+25		RT									28													
148	LA	TRANSPORTATION BLVD.	98+14		LT																						
148	LA	TRANSPORTATION BLVD.	98+14		RT																						
148	LA	TRANSPORTATION BLVD.	98+49		RT																						
148	LA	TRANSPORTATION BLVD.	98+49		RT																						
148	LA	TRANSPORTATION BLVD.	98+80		LT																						
148	LA	TRANSPORTATION BLVD.	98+80		RT																						
148	LA	TRANSPORTATION BLVD.	99+15		RT																						
148	LA	TRANSPORTATION BLVD.	99+15		RT																						
148	DW	TRANSPORTATION BLVD.	98+88		LT/RT																						
148	DW	TRANSPORTATION BLVD.	98+90		LT/RT																						
149	LL	GRANGER RD.	14+20	21+00	RT					680																	
149	CDS	GRANGER RD.	14+20	21+00	LT						680																
149	CDS	GRANGER RD.	17+32	20+51	RT/LT						319																
149	CH	GRANGER RD.	20+61	21+00	RT							39															
149	CH	GRANGER RD.	20+61	21+00	RT							39															
149	TY	GRANGER RD.	17+32	20+51	RT																						
150	LL	GRANGER RD.	21+00	24+95	RT					395																	
150	LL	GRANGER RD.	24+35	26+00	LT					165																	
150	CDS	GRANGER RD.	21+00	26+00	LT/RT						500																
150	CDS	GRANGER RD.	24+45	24+95	RT/LT						50																
150	CH	GRANGER RD.	21+00	21+23	RT							23															
150	CH	GRANGER RD.	21+00	21+23	RT							23															
150	CH	GRANGER RD.	22+40	24+35	LT							195															
150	CH	GRANGER RD.	22+40	24+35	LT							195															
150	CH	GRANGER RD.	25+77	26+00	LT							23															
150	CH	GRANGER RD.	25+77	26+00	RT							23															
150	TY	GRANGER RD.	24+45	24+95	RT/LT																						
150	IY	GRANGER RD.	25+00		LT/RT																						
150	LA	GRANGER RD.	21+13		CEN																						
150	LA	GRANGER RD.	21+13		RT																						
150	LA	GRANGER RD.	22+50		RT																						
150	LA	GRANGER RD.	22+50		LT																						
150	LA	GRANGER RD.	23+16		RT																						
150	LA	GRANGER RD.	23+16		LT																						
150	LA	GRANGER RD.	23+82		RT																						
150	LA	GRANGER RD.	23+82		LT																						
150	LA	GRANGER RD.	25+87		RT																						
150	CH	PUBLIC RD. #2	98+54	99+40	RT							86															
150	SL	PUBLIC RD. #2	99+42		RT																						
150	CW	PUBLIC RD. #2	99+54		LT/RT																						
150	LA	PUBLIC RD. #2	99+32		RT																						
150	LA	PUBLIC RD. #2	99+32		RT																						
TOTAL FEET										1328	1637	980	84	188	114	57	19	979									
TOTAL MILES										0.26	0.32																
TOTALS CARRIED TO GENERAL SUMMARY										0.26	0.32	980	84	188	114	57	19	979									

CALCULATED SLB CHECKED TJR
 PAVEMENT MARKING SUBSUMMARY - 5 OF 7
 CUY-480/TRANSPORTATION BLVD.
 132
 225

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630	630	630	630	630	630	630	630	630	630	630	630	630	630	CALCULATED SLB	CHECKED TJR
							GROUND MOUNTED SUPPORT, NO. 2 POST, AS PER PLAN FT	GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN FT	GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN FT	ONE WAY SUPPORT, NO. 3 POST, AS PER PLAN FT	SIGN POST REFLECTOR EACH	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN EACH	SIGN, FLAT SHEET SF	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND REERECTION EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL EACH	REMOVAL OF POLE MOUNTED SIGN AND REERECTION EACH		
143	S-1	TRANSPORTATION BLVD.	22+19	LT	R3-H8ca-48	48" X 30"	13.0/13.0															
143	S-2	I-480 EB ENTRANCE RAMP	44+32	RT	W3-2-36	36" X 36"	14.8															
143	S-3	I-480 EB ENTRANCE RAMP	45+37	RT	W11-2-36	36" X 36"																
					W16-7PL-24	24" X 12"																
143	S-4	I-480 EB ENTRANCE RAMP	45+37	LT	W11-2-36	36" X 36"																
					W16-7PR-24	24" X 12"																
143	S-28	SP-1			D3-1																	
143	S-29	SP-4			D3-1																	
143	R-1	TRANSPORTATION BLVD.		LT	W9-1																	
143	R-2	TRANSPORTATION BLVD.		LT	D3-1																	
143	R-3	I-480 EB ENTRANCE RAMP		LT	W3-2																	
143	R-4	I-480 EB ENTRANCE RAMP		RT	W3-2																	
143	R-5	TRANSPORTATION BLVD.		RT	D3-1																	
143	R-6	TRANSPORTATION BLVD.		RT	SPECIAL																	
145	S-5	I-480 WB EXIT RAMP	56+10	RT	R5-10e-30	30" X 30"	13.0															
145	S-5A	I-480 WB ENTRANCE RAMP	66+35	RT	W11-2-36	36" X 36"																
					W16-7PR-24	24" X 12"																
145	S-5B	I-480 WB ENTRANCE RAMP	66+35	LT	W11-2-36	36" X 36"																
					W16-7PL-24	24" X 12"																
145	S-5C	I-480 WB ENTRANCE RAMP	67+35	LT	W3-2-36	36" X 36"	14.8															
145	S-6	TRANSPORTATION BLVD.	14+50	LT	R9-3-18	18" X 18"	13.1															
					R9-3bPR-18	18" X 12"																
145	S-7	I-480 WB EXIT RAMP	56+10	LT	R5-1-36	36" X 36"																
					R6-1R-54	54" X 18"																
					R6-1L-54	54" X 18"																
145	S-8	I-480 WB EXIT RAMP	57+21	LT	D9-2-30	30" X 30"	14.9/14.9															
					M5-1R-30	30" X 21"																
145	S-9	TRANSPORTATION BLVD.	87+37	RT	R2-1-30	30" X 36"																
145	S-10	TRANSPORTATION BLVD.	15+40	RT	R7-1-12	12" X 18"	12.0															
145	S-10A	TRANSPORTATION BLVD.	14+75	RT	R9-3-18	18" X 18"	13.1															
					R9-3bPL-18	18" X 12"																
145	S-30	SP-1			D3-1-126	126" X 24"																
145	S-31	SP-4			D3-1-126	126" X 24"																
145	R-8	I-480 WB EXIT RAMP		RT	R5-10e																	
145	R-9	TRANSPORTATION BLVD.		LT	R5-1																	
					R6-1R																	
					R6-1L																	
					R3-H8bd																	
145	R-10	TRANSPORTATION BLVD.		LT	D9-2																	
					M5-1R																	
145	R-11	TRANSPORTATION BLVD.		RT	R2-1																	
145	R-12	TRANSPORTATION BLVD.		RT	D3-1																	
145	R-13	TRANSPORTATION BLVD.		RT	R8-3																	
145	R-13A	I-480 WB ENTRANCE RAMP		RT	W3-2																	
145	R-13B	I-480 WB ENTRANCE RAMP		LT	W3-2																	
TOTALS CARRIED TO GENERAL SUMMARY							136.6	131.9	28.1	2	4	170.2	14		16	2	1	1				

\\AKR\DATA\DATA\2016\2016051\CUY\B0974\TRAFFIC\SHEETS\B0974TSR20.DGN
 2/1/2017 9:23:31 AM
 G00TV81STD_USER

\\AKRNGA\DATA\2016\2016051\CUY\B0974\TRAFFIC\SHEETS\B0974TS221.DGN
 2/28/2017 11:18:31 AM
 G00TV815TD_USER

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630	630	630	630	630	630	630	630	630	630	630	630	630	630		
							GROUND MOUNTED SUPPORT, NO. 2 POST, AS PER PLAN FT	GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN FT	GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN FT	ONE WAY SUPPORT, NO. 3 POST, AS PER PLAN FT	SIGN POST REFLECTOR EACH	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN EACH	SIGN, FLAT SHEET SF	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND REERECTION EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL EACH	REMOVAL OF POLE MOUNTED SIGN AND REERECTION EACH		
146	S-11	TRANSPORTATION BLVD.	89+36	RT	R7-1-12	12" X 18"	12.0															
146	S-12	TRANSPORTATION BLVD.	91+25	RT	R7-1-12	12" X 18"		14.6														
					SPECIAL																	
146	S-13	TRANSPORTATION BLVD.	92+10	RT	R3-H8cg-48	48" X 30"	13.0/13.0															
146	S-14	TRANSPORTATION BLVD.	92+60	LT	R3-H8cg-48	48" X 30"	13.0/13.0															
146	S-16	TRANSPORTATION BLVD.	90+75	LT	R7-1-12	12" X 18"	12.0															
146	S-17	TRANSPORTATION BLVD.	89+00	LT	R10-H7a-24	24" X 30"	13.0															
146	S-18	TRANSPORTATION BLVD.	88+25	LT	R7-1-12	12" X 18"	12.0															
146	R-15	TRANSPORTATION BLVD.		RT	R8-3																	
146	R-16	TRANSPORTATION BLVD.		RT	R10-H7a																	
146	R-17	TRANSPORTATION BLVD.		RT	R8-3																	
					SPECIAL																	
146	R-18	TRANSPORTATION BLVD.		RT	R1-1																	
146	R-19	TRANSPORTATION BLVD.		RT	SPECIAL																	
146	R-20	TRANSPORTATION BLVD.		LT	R8-3																	
146	R-21	TRANSPORTATION BLVD.		LT	R8-3																	
146	R-22	TRANSPORTATION BLVD.		LT	R10-H7a																	
146	R-23	TRANSPORTATION BLVD.		LT	R8-3																	
147	S-20	ODOT DRIVE	200+94	LT	R3-H8bj-36	36" X 30"		13.0														
147	S-21	TRANSPORTATION BLVD.	95+51	LT	R3-H8cg-48	48" X 30"	13.0/13.0															
147	S-32	SP-1			D3-1-126	126" X 24"																
147	S-33	SP-4			D3-1-126	126" X 24"																
149	S-34	GRANGER RD.	18+80	LT	R7-1-12	12" X 18"	12.0															
149	S-35	GRANGER RD.	17+50	RT	R7-1-12	12" X 18"	12.0															
149	S-36	GRANGER RD.	19+00	RT	R7-1-12	12" X 18"	12.0															
149	S-37	GRANGER RD.	20+01	RT	R3-H8da-54	54" X 30"	13.0 / 13.0															
149	R-30	GRANGER RD.		LT	R8-3																	
149	R-31	GRANGER RD.		RT	R8-3																	
149	R-32	GRANGER RD.		RT	R8-3																	
TOTALS CARRIED TO GENERAL SUMMARY							189.0	27.6					2	106.3	4		4			8	1	

CALCULATED SLB CHECKED TJR
SIGNING SUBSUMMARY - 2 OF 3
CUY-480/TRANSPORTATION BLVD.
 136
 225

\\AKRINDA\DATA\2016\2016051\CUY\B0974\TRAFFIC\SHEETS\B0974TSB22.DGN
 2/1/2017 9:24:04 AM
 GDDTV81STD_USER

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630	630	630	630	630	630	630	630	630	630	630	630	630	630	
							GROUND MOUNTED SUPPORT, NO. 2 POST, AS PER PLAN FT	GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN FT	GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN FT	ONE WAY SUPPORT, NO. 3 POST, AS PER PLAN FT	SIGN POST REFLECTOR EACH	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN EACH	SIGN, FLAT SHEET SF	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND REERECTION EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL EACH	REMOVAL OF POLE MOUNTED SIGN AND REERECTION EACH	
150	S-38	PUBLIC RD. #2	98+54	RT	R3-H8bj-36	36" X 30"		13.0						7.5							
150	S-39	PUBLIC RD. #2	99+42	RT	R1-1-30	30" X 30"	13.0				1		6.3								
150	S-40	GRANGER RD.	23+50	RT	R7-1-12	12" X 18"	12.0						1.5								
150	S-41	GRANGER RD.	24+15	RT	SPECIAL			13.5													
150	S-42	GRANGER RD.	24+65	RT	R3-7R-30	30" X 30"		14.1					6.3								
					W16-2aP-24	24" X 12"							2.0								
150	S-43	GRANGER RD.	25+00	RT	R10-7-24	24" X 30"	13.0						5.0								
150	S-44	GRANGER RD.	20+48	RT	D3-1-42	42" X 12"		12.6					3.5								
					D3-1-42	42" X 12"							3.5								
					D3-1-48	48" X 12"							4.0								
					D3-1-48	48" X 12"							4.0								
150	R-33	GRANGER RD.		LT	R3-H8bj								1		1						
150	R-34	GRANGER RD.		LT											1						
150	R-35	GRANGER RD.		RT	R10-7															1	
					R8-3															1	
150	R-36	PUBLIC RD. #2		RT	R1-1								1		1						
150	R-37	GRANGER RD.		RT	R8-3								1		1						
150	R-38	GRANGER RD.		RT	SPECIAL									1	1						
150	R-39	GRANGER RD.		RT	R3-7L								1		1						
150	R-40	GRANGER RD.		RT	R10-7								1		1						
150	R-41	GRANGER RD.		RT	D3-1								1		1						
					D3-1								1								
150	R-42	GRANGER RD.		RT	D3-1															1	
150	R-43	GRANGER RD.		RT	R3-8b								1		2						
151	S-45	GRANGER RD.	26+76	LT	R3-H8ca-48	48" X 30"	13.0 / 13.0						10.0								
151	S-46	GRANGER RD.	27+25	LT	R2-1-30	30" X 36"			16.1				7.5								
					R3-7R-30	30" X 30"							6.3								
151	R-44	GRANGER RD.		LT	R2-1								1		1						
					W4-2R								1								
153	R-26	ANTENUCCI BLVD.		RT	W9-1															1	
154	S-23	I-480 WB EXIT RAMP	59+87	LT	R3-H8b-48	48" X 30"	13.0/13.0						10.0								
154	S-25	I-480 WB EXIT RAMP	58+87	LT	SPECIAL			13.6													
					SPECIAL																
154	R-28	I-480 WB EXIT RAMP		LT	SPECIAL																1
					SPECIAL																1
154	R-29	I-480 WB EXIT RAMP		LT	R3-H8bd								1		1						
155	S-26	ODOT DRIVE	204+95	RT	R1-1-30	30" X 30"	13.0				1		6.3								
155	S-27	ODOT DRIVE	205+03	RT	R1-1-30	30" X 30"	13.0				1		6.3								
TOTALS CARRIED TO GENERAL SUMMARY							115.0	66.8	16.1		3		90.0	11	1	12				4	2

CALCULATED SLB CHECKED TJR
SIGNING SUBSUMMARY - 3 OF 3
CUY-480/TRANSPORTATION BLVD.
 137
 225

\\AKRINDA\DATA\2016\2016051\CUY\B0974\TRAFFIC\SHEETS\B0974TS030.DGN
 3/1/2017 9:26:26 PM
 GDDTV81STD_USER

SHEET NO.	REFERENCE NO.	LOCATION	SIDE	DETAIL PAGE	STATION	625	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	
						GROUND ROD	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W6X9	BREAKAWAY STRUCTURAL BEAM CONNECTION	OVERHEAD SIGN SUPPORT, TYPE TC-16.21, DESIGN II	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 4	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 5	SIGN HANGER ASSEMBLY, SPAN WIRE	SIGN ATTACHMENT ASSEMBLY, MAST ARM	SIGN, FLAT SHEET	SIGN, GROUND MOUNTED EXTRUSHEET	SIGN, OVERHEAD EXTRUSHEET	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL
						EACH	FT	EACH	EACH	EACH	EACH	EACH	SF	SF	SF	EACH	EACH	EACH	EACH	EACH	EACH	
145	OSS-1	TRANSPORTATION BLVD.	LT	156	14+70	1				1						64.0		1				
145	OSS-2	TRANSPORTATION BLVD.	RT	156	15+90	1					1					66.0		1				
145	R-7	TRANSPORTATION BLVD.	LT																		1	1
145	R-14	TRANSPORTATION BLVD.	RT																		1	1
150	OSS-5	GRANGER RD.	LT	157	24+45	1			1				1	7.5				1				
													1	7.5								
152	OSS-3	I-480 EB EXIT RAMP	RT										1	7.5								
													1	7.5								
													1	7.5								
													1	7.5								
152	R-24	I-480 EB EXIT RAMP	RT																		1	1
																					1	1
																					1	1
153	OSS-4	ANTENUCCI BLVD.	LT/RT		13+45							1		7.5								
153	R-25	ANTENUCCI BLVD.	LT/RT																			1
154	S-24	I-480 WB EXIT RAMP	LT	157	59+37		16.1/18.1	2							24.0		2					
															24.0							
154	R-27	I-480 WB EXIT RAMP	LT															1	2			
TOTALS CARRIED TO GENERAL SUMMARY						3	34.2	2	1	1	1	1	7	60.0	48.0	130.0	2	3	1	2	7	2

CALCULATED	SLB	CHECKED	TJR
OVERHEAD AND BEAM SUBSUMMARY			
CUY-480/TRANSPORTATION BLVD.			
(138/225)			



CALCULATED
BEB
CHECKED
AKF

**PAVEMENT MARKING REMOVAL PLAN
ANTENUCCI BLVD. / I-480 WB RAMP**

**CUY-480/
TRANSPORTATION BLVD.**

139
225

MATCHLINE A, 150' RT. OF C R/W & CONST. TRANSPORTATION BLVD., SEE SHEET 140

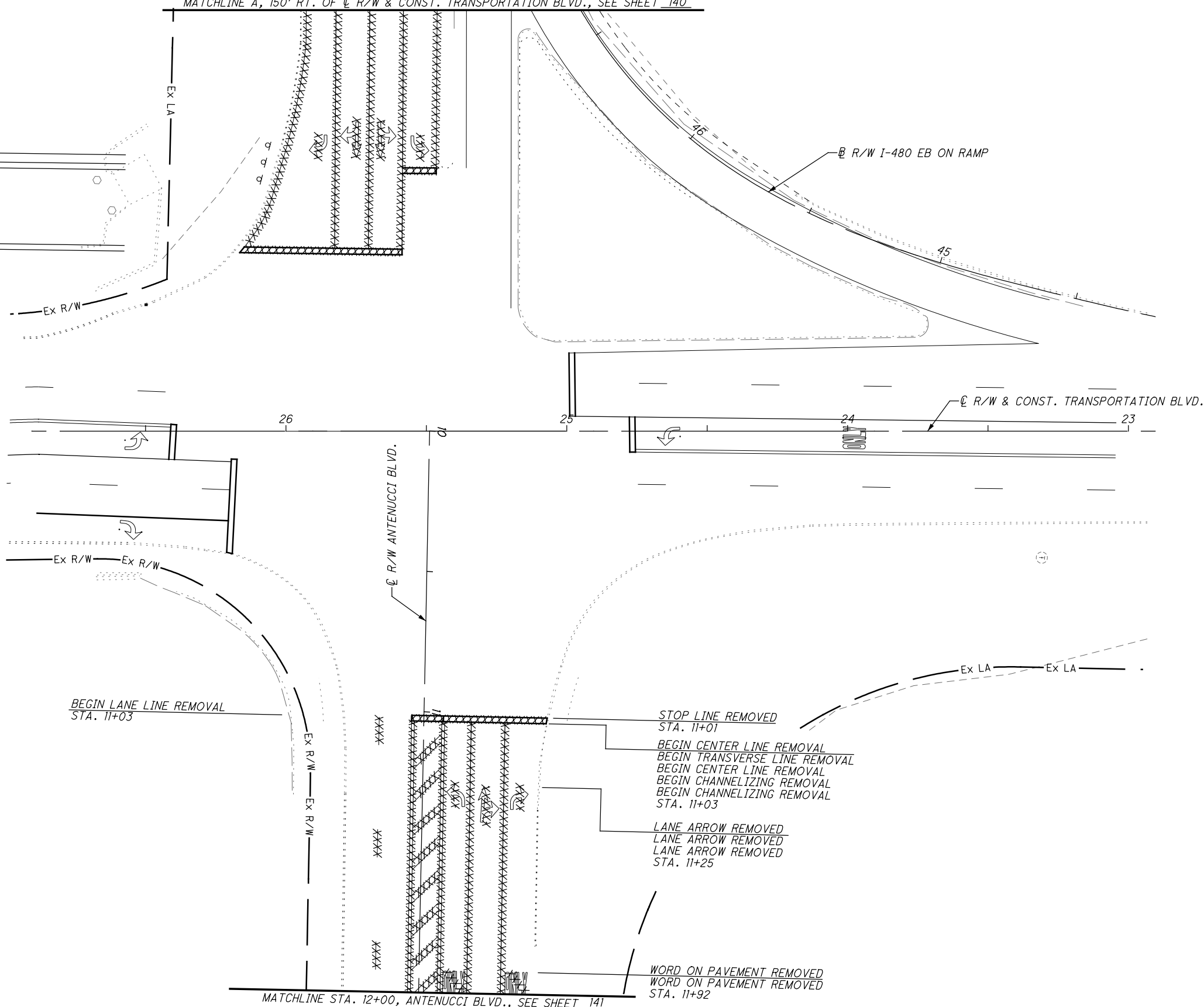
LANE ARROW REMOVED
LANE ARROW REMOVED
LANE ARROW REMOVED
LANE ARROW REMOVED
97' RT.

BEGIN EDGE LINE REMOVAL
94' RT.

STOP LINE REMOVED
91' RT.

BEGIN CHANNELIZING LINE REMOVAL
BEGIN CHANNELIZING LINE REMOVAL
BEGIN CHANNELIZING LINE REMOVAL
BEGIN EDGE LINE REMOVAL
65' RT.

STOP LINE REMOVED
63' RT.



BEGIN LANE LINE REMOVAL
STA. 11+03

STOP LINE REMOVED
STA. 11+01
BEGIN CENTER LINE REMOVAL
BEGIN TRANSVERSE LINE REMOVAL
BEGIN CENTER LINE REMOVAL
BEGIN CHANNELIZING REMOVAL
BEGIN CHANNELIZING REMOVAL
STA. 11+03

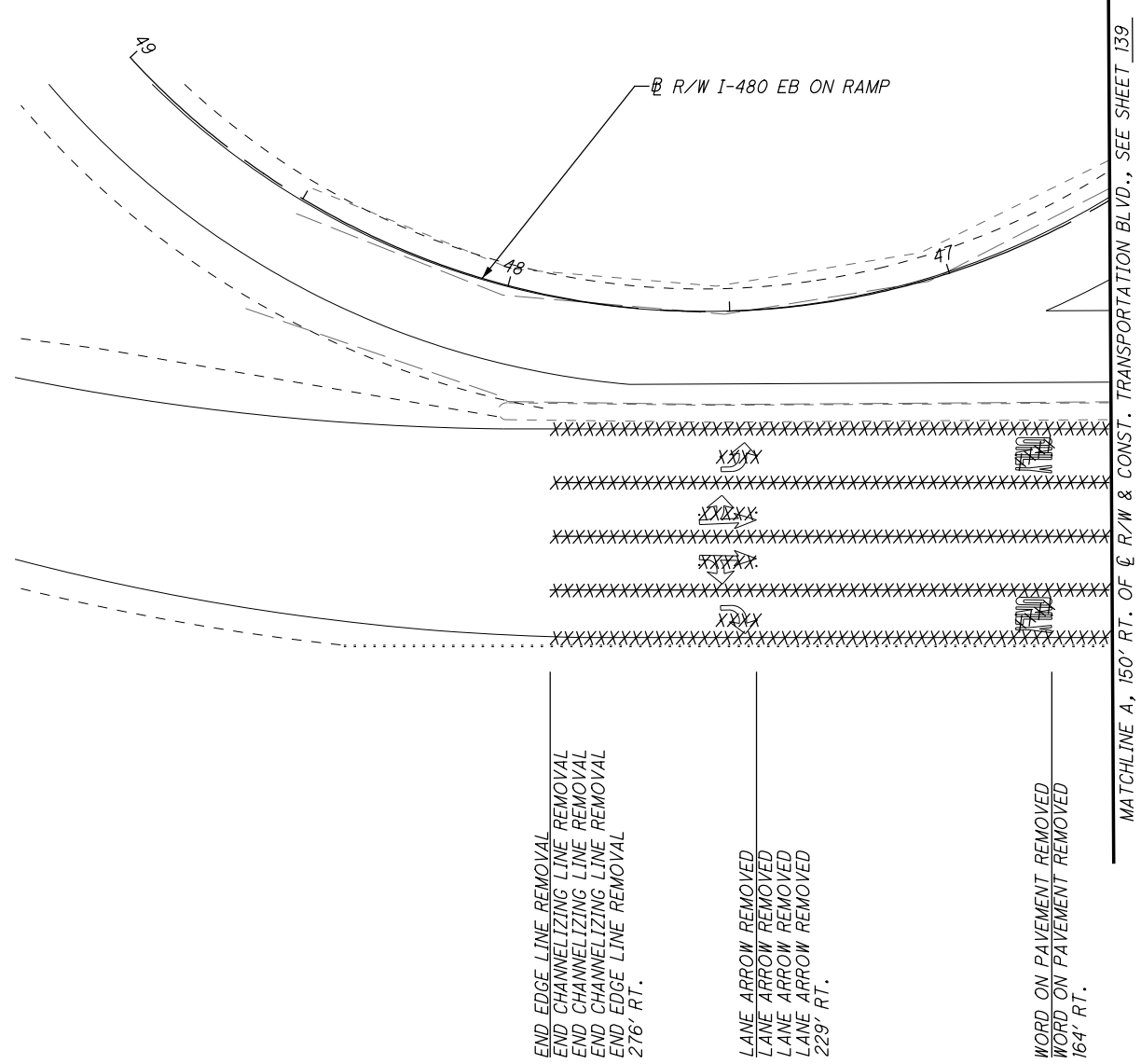
LANE ARROW REMOVED
LANE ARROW REMOVED
LANE ARROW REMOVED
STA. 11+25

WORD ON PAVEMENT REMOVED
WORD ON PAVEMENT REMOVED
STA. 11+92

MATCHLINE STA. 12+00, ANTENUCCI BLVD., SEE SHEET 141

LEGEND	
XXX	EXISTING PAVEMENT MARKINGS TO BE REMOVED

\\AKRNB\DATA\2016\2016051\CUY\B0974\TRAFFIC\SHEETS\B0974TP-106.DGN
3/1/2017 9:15:04 AM
D00TY81STD.USER



END EDGE LINE REMOVAL
 END CHANNELIZING LINE REMOVAL
 END CHANNELIZING LINE REMOVAL
 END CHANNELIZING LINE REMOVAL
 END EDGE LINE REMOVAL
 276' RT.

LANE ARROW REMOVED
 LANE ARROW REMOVED
 LANE ARROW REMOVED
 LANE ARROW REMOVED
 229' RT.

WORD ON PAVEMENT REMOVED
 WORD ON PAVEMENT REMOVED
 164' RT.

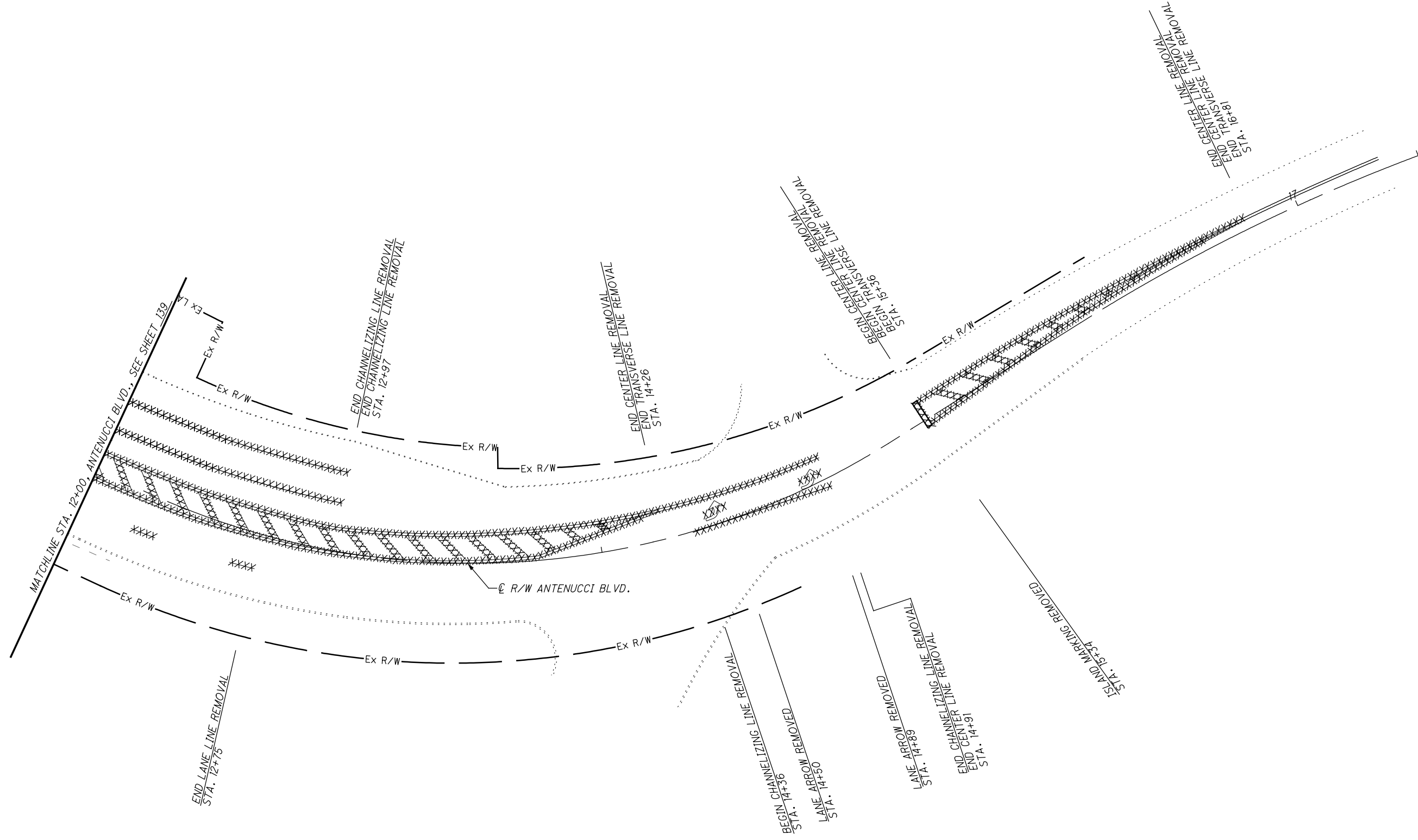
LEGEND

XXX EXISTING PAVEMENT
 MARKINGS TO BE REMOVED

CALCULATED BEB	CHECKED AKF
-------------------	----------------

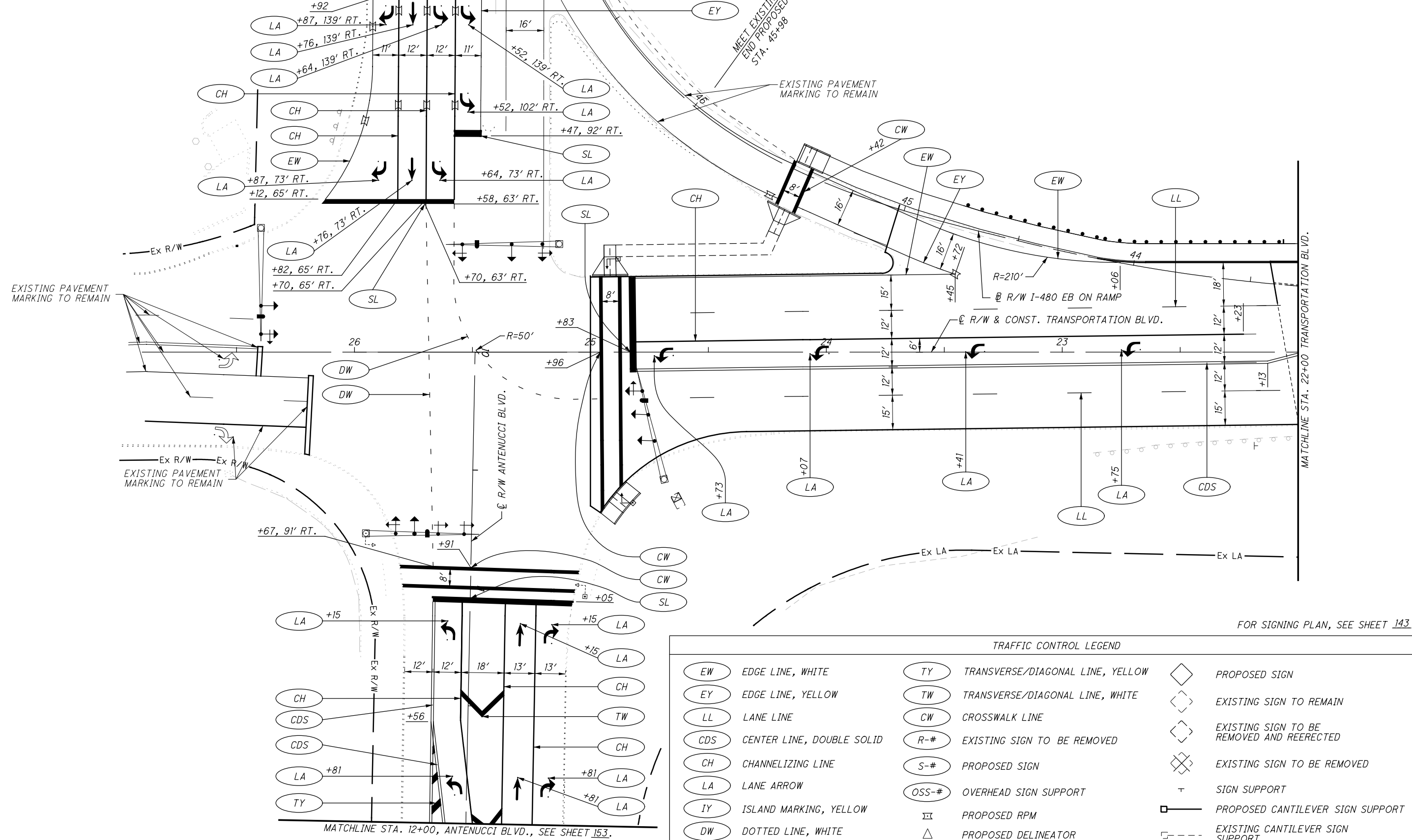
0 10 20 40
 HORIZONTAL
 SCALE IN FEET

**CUY-480/
 TRANSPORTATION BLVD. BEGIN TO 150' RT. OF TRANSPORTATION BLVD.**



LEGEND	
XXX	EXISTING PAVEMENT MARKINGS TO BE REMOVED

MATCHLINE A, 150' RT. OF C R/W & CONST. TRANSPORTATION BLVD., SEE SHEET 152.



EXISTING PAVEMENT MARKING TO REMAIN

EXISTING PAVEMENT MARKING TO REMAIN

MEET EXISTING PAVEMENT MARKINGS
END PROPOSED PAVEMENT MARKINGS
STA. 45+98

EXISTING PAVEMENT MARKING TO REMAIN

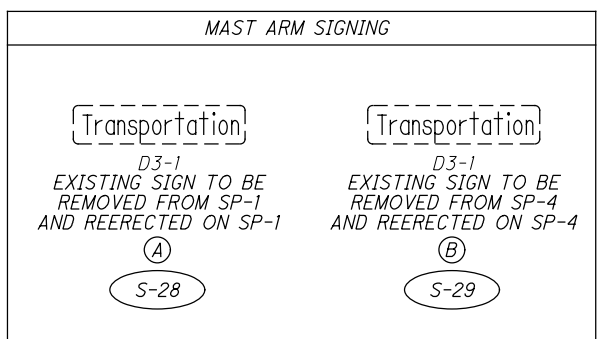
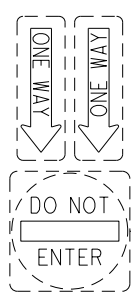
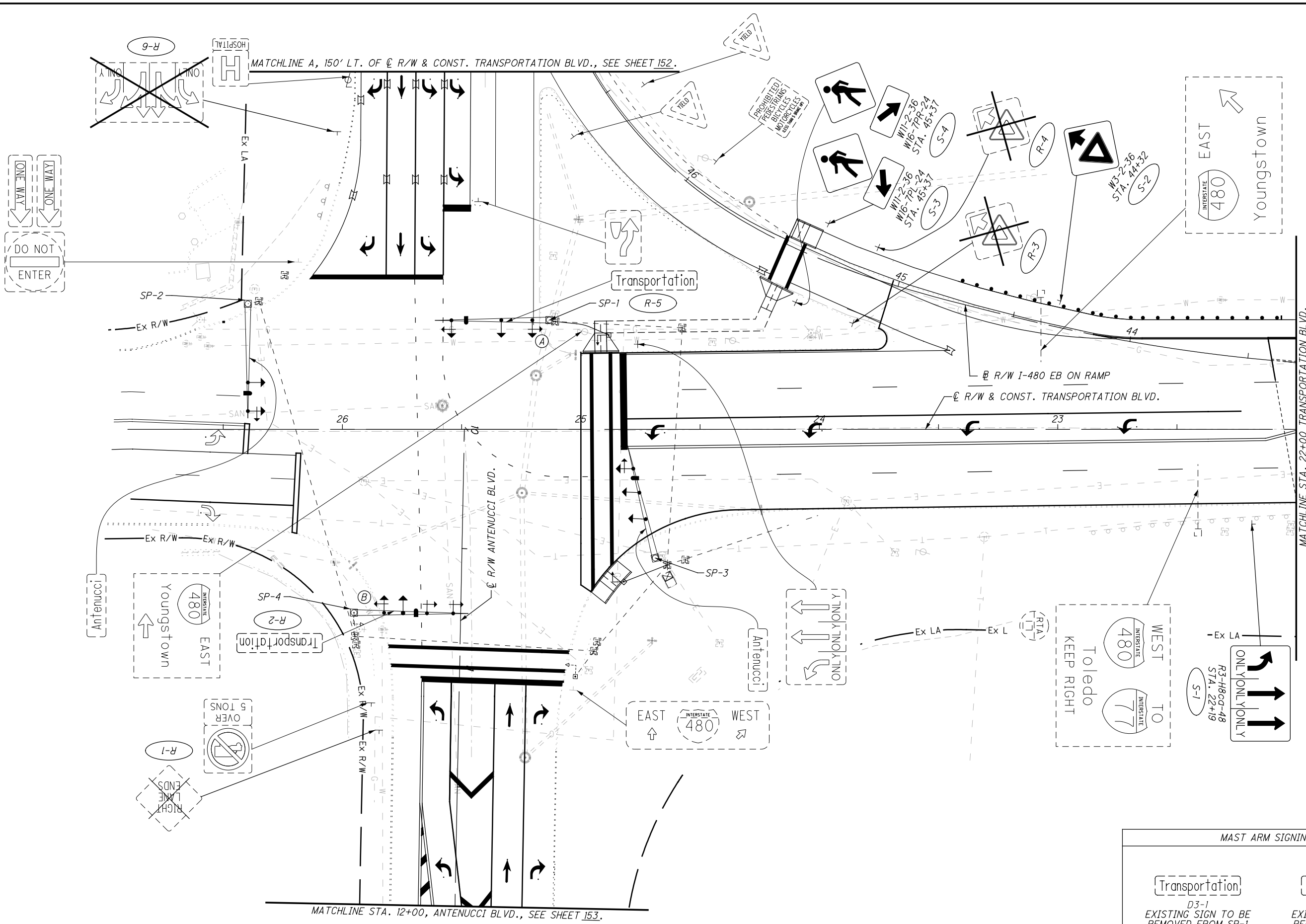
MATCHLINE STA. 22+00 TRANSPORTATION BLVD.

FOR SIGNING PLAN, SEE SHEET 143.

MATCHLINE STA. 12+00, ANTENUCCI BLVD., SEE SHEET 153.

TRAFFIC CONTROL LEGEND				
EW	EDGE LINE, WHITE	TY	TRANSVERSE/DIAGONAL LINE, YELLOW	PROPOSED SIGN
EY	EDGE LINE, YELLOW	TW	TRANSVERSE/DIAGONAL LINE, WHITE	EXISTING SIGN TO REMAIN
LL	LANE LINE	CW	CROSSWALK LINE	EXISTING SIGN TO BE REMOVED AND REERECTED
CDS	CENTER LINE, DOUBLE SOLID	R-#	EXISTING SIGN TO BE REMOVED	EXISTING SIGN TO BE REMOVED
CH	CHANNELIZING LINE	S-#	PROPOSED SIGN	SIGN SUPPORT
LA	LANE ARROW	OSS-#	OVERHEAD SIGN SUPPORT	PROPOSED CANTILEVER SIGN SUPPORT
IY	ISLAND MARKING, YELLOW	PROPOSED RPM		EXISTING CANTILEVER SIGN SUPPORT
DW	DOTTED LINE, WHITE	PROPOSED DELINEATOR		TRAFFIC FLOW
SL	STOP LINE			

\\AKRNBK\DATA\2016\2016051\CUY\B0974\TRAFFIC\SHEETS\B0974\TPR001.DGN
 3/1/2017 8:55:40 AM
 QDOTV81STD_USER



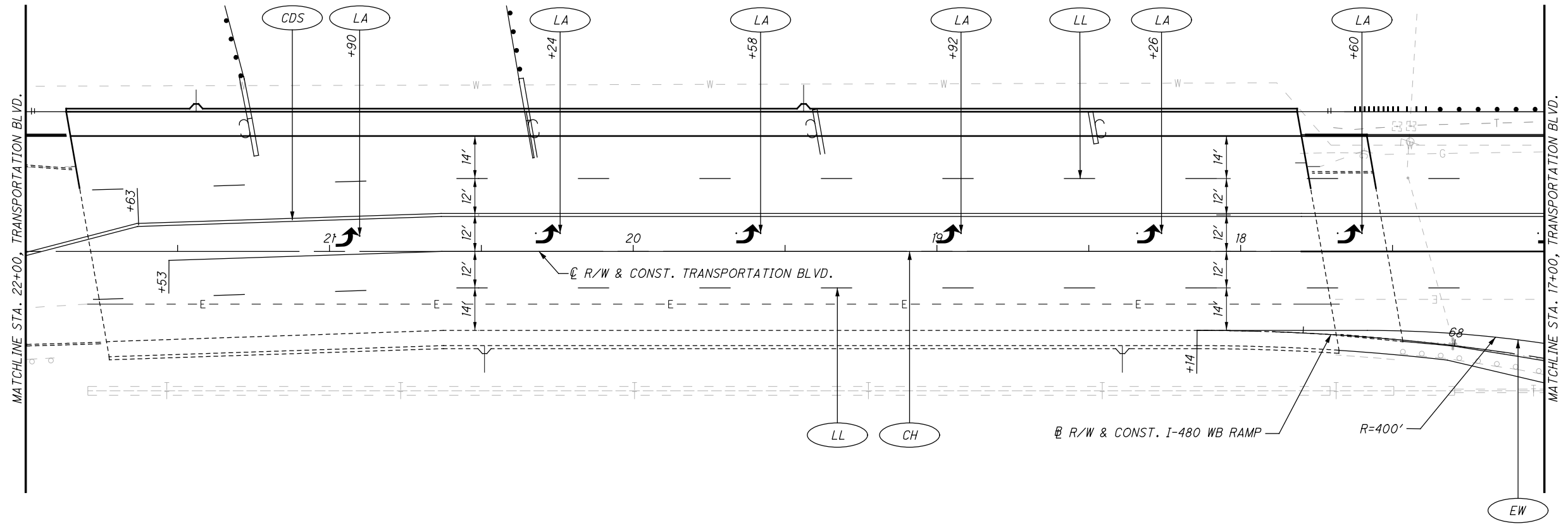
FOR PAVEMENT MARKING PLAN, SEE SHEET 142.
 FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.



SIGNING PLAN
BEGIN TO STA. 22+00

CUY-480/
TRANSPORTATION BLVD.

143
 225



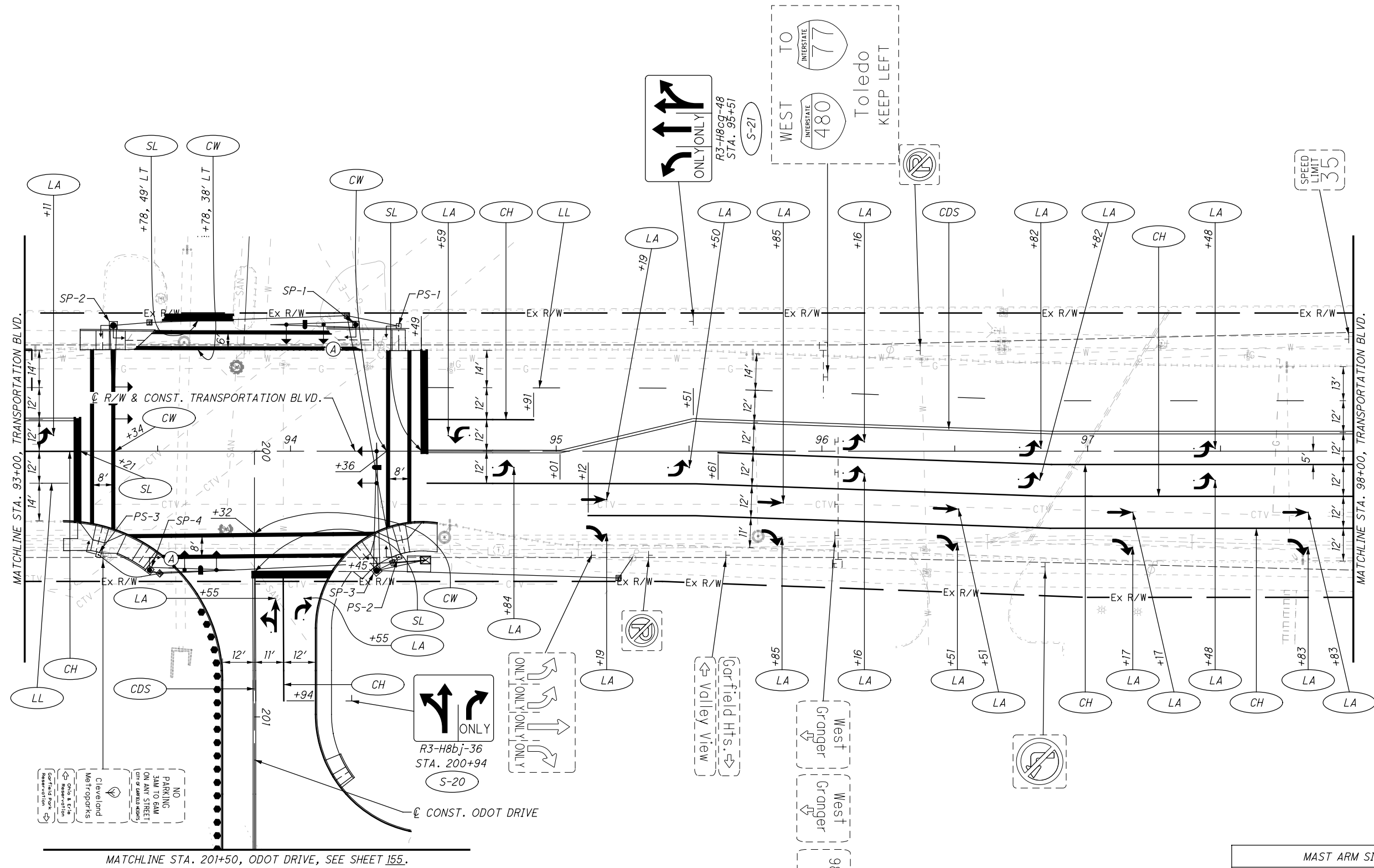
CALCULATED
 BEB
 CHECKED
 AKF

0 10 20 40
 HORIZONTAL
 SCALE IN FEET

TRAFFIC CONTROL PLAN
STA. 22+00 TO STA. 17+00

**CUY-480/
 TRANSPORTATION BLVD.**

FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.



MATCHLINE STA. 93+00, TRANSPORTATION BLVD.

MATCHLINE STA. 98+00, TRANSPORTATION BLVD.

MATCHLINE STA. 201+50, ODOT DRIVE, SEE SHEET 155.

MAST ARM SIGNING

Transportation

D3-1-126

(A)

S-32 S-33

FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.

CALCULATED
BEB
CHECKED
AKF

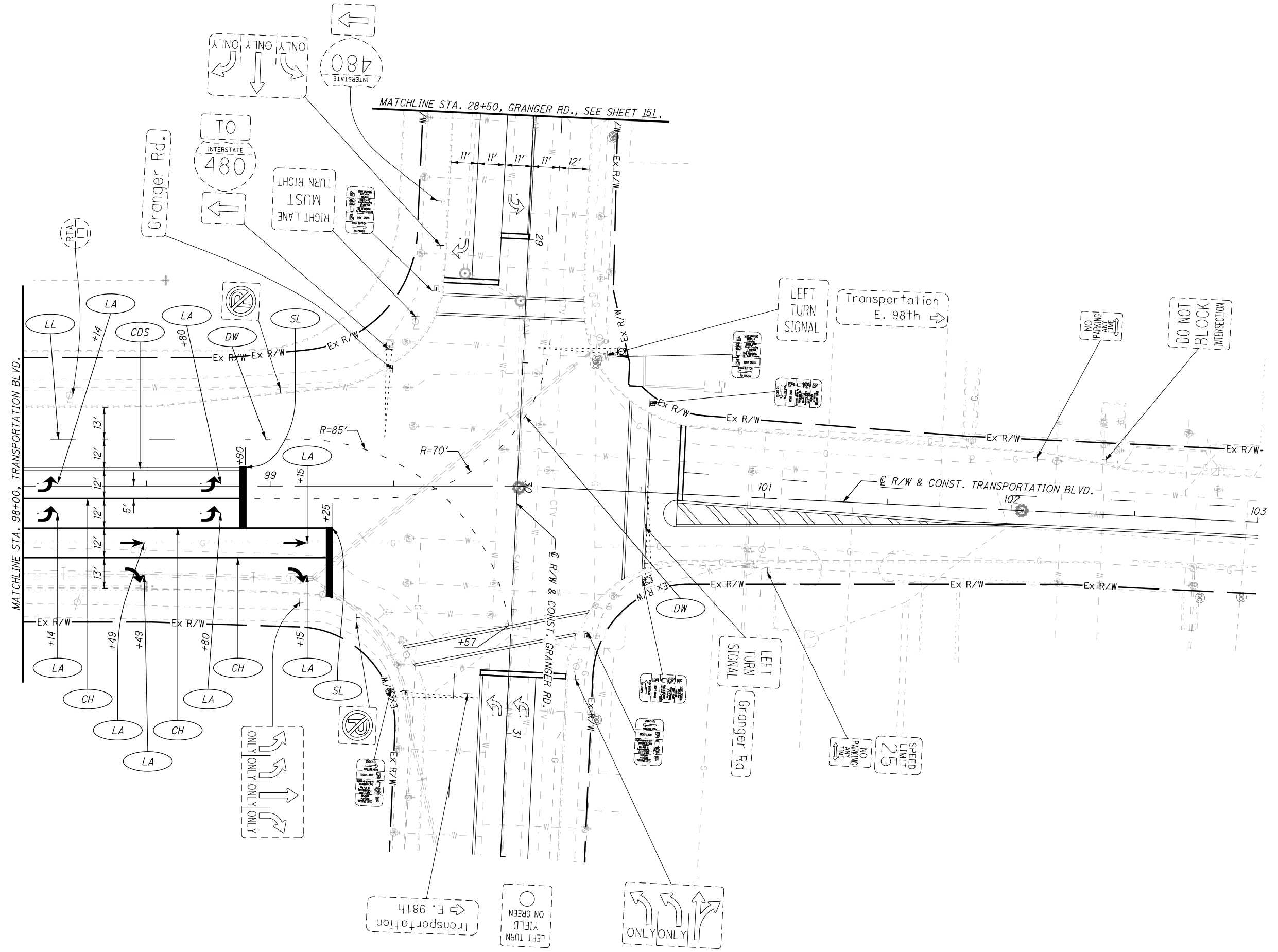
TRAFFIC CONTROL PLAN
STA. 93+00 TO STA. 98+00

CUY-480/
TRANSPORTATION BLVD.

147
225

N

0 10 20 40
HORIZONTAL
SCALE IN FEET



CALCULATED
BEB
CHECKED
AKF

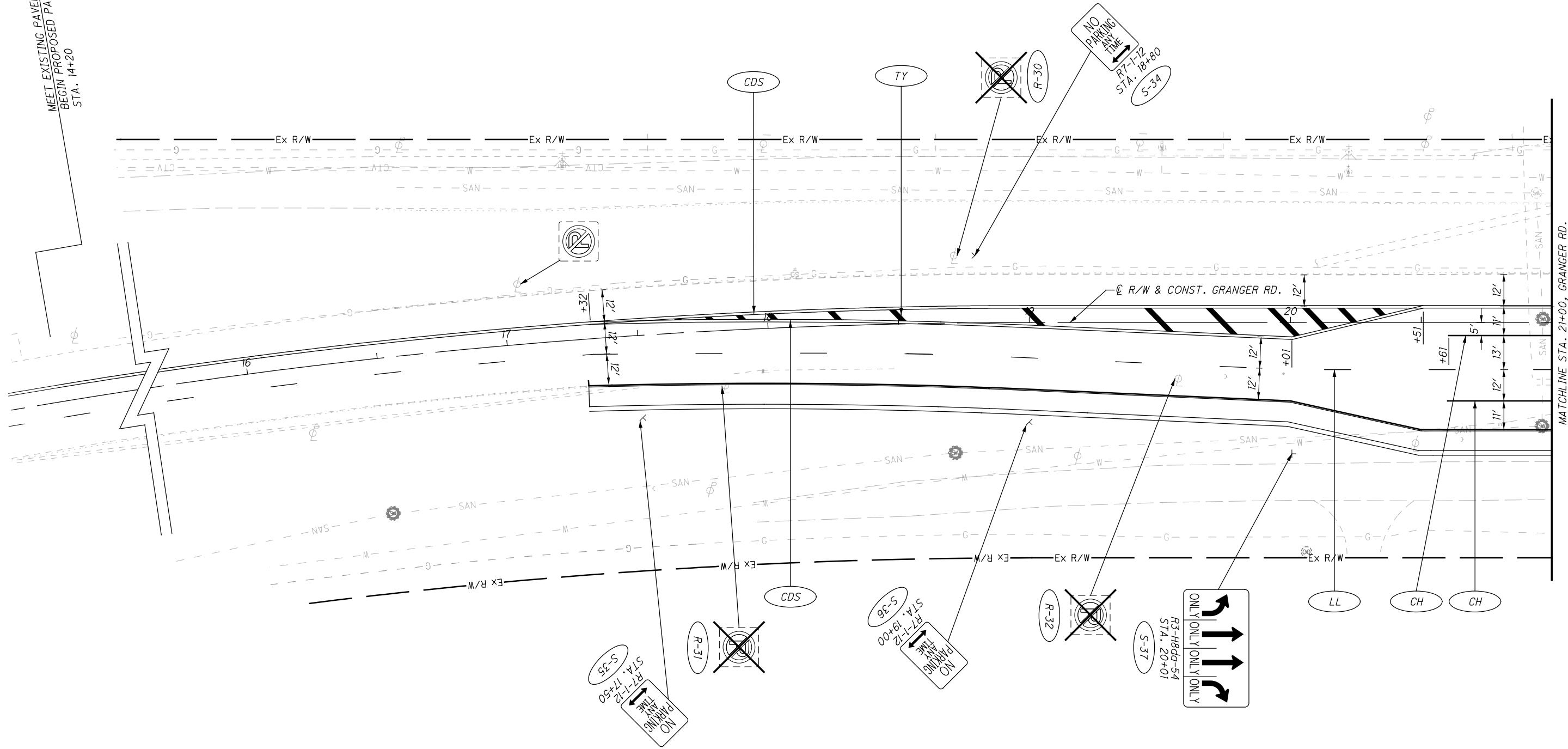
0 10 20 40
HORIZONTAL
SCALE IN FEET

TRAFFIC CONTROL PLAN
STA. 98+00 TO END

CUY-480/
TRANSPORTATION BLVD.

FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.

MEET EXISTING PAVEMENT MARKINGS
 BEGIN PROPOSED PAVEMENT MARKINGS
 STA. 14+20



TRAFFIC CONTROL PLAN
 BEGIN TO STA. 21+00

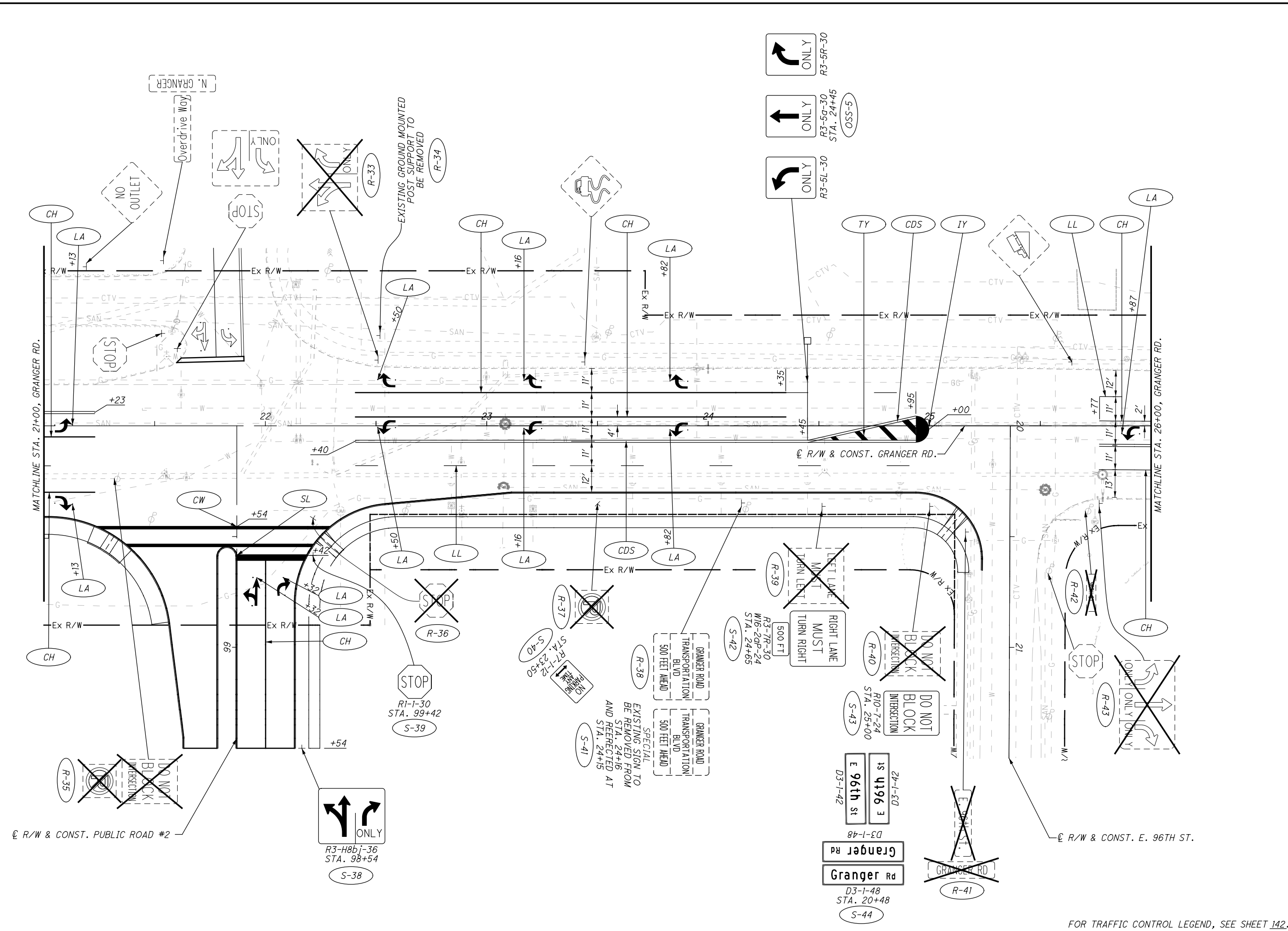
CUY-480/
 TRANSPORTATION BLVD.

CALCULATED
 SLB
 CHECKED
 TJR

0 10 20 40
 HORIZONTAL
 SCALE IN FEET

↑
 N

FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.



CALCULATED
 SLB
 CHECKED
 TJR

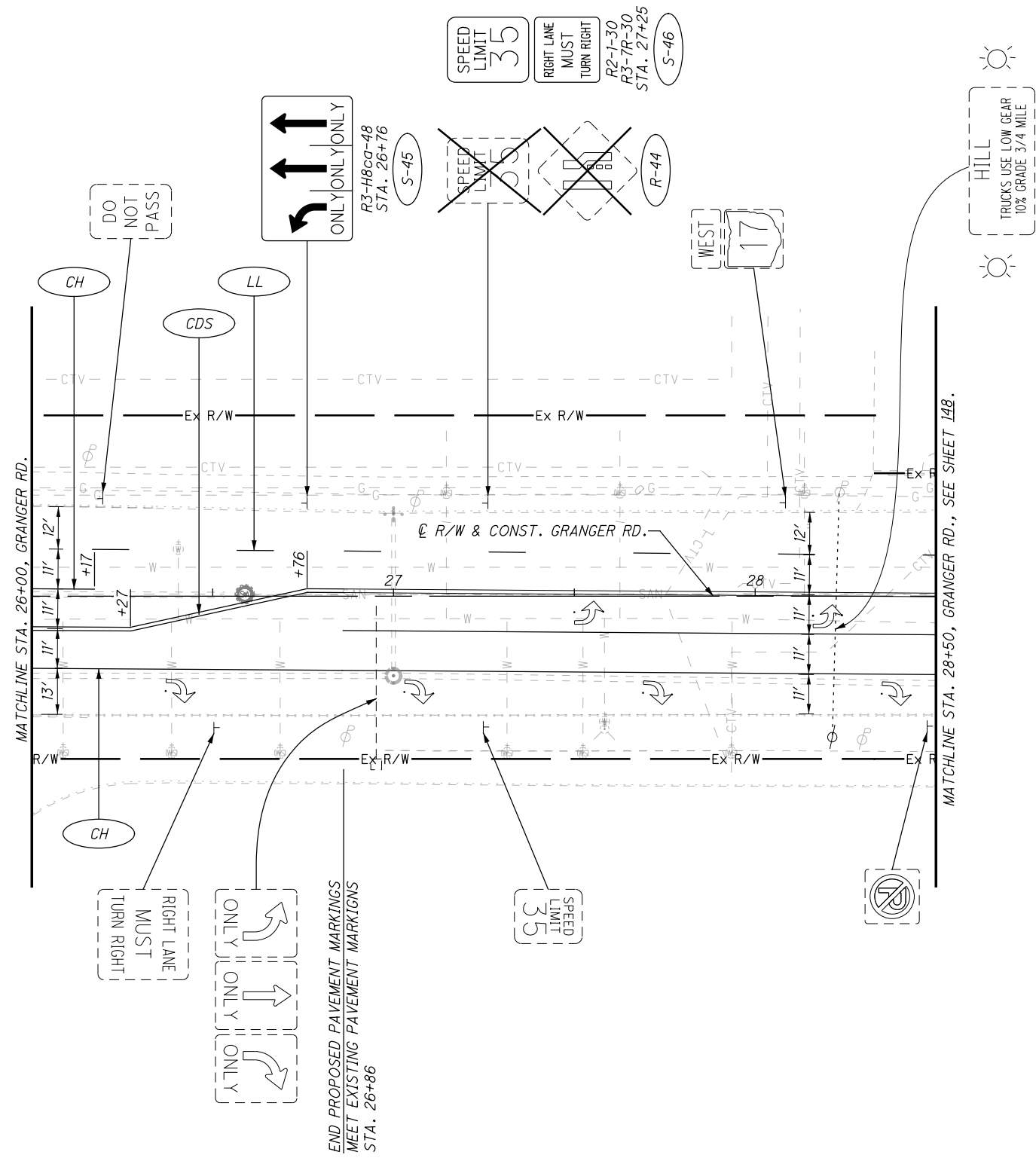
0 10 20
 HORIZONTAL
 SCALE IN FEET

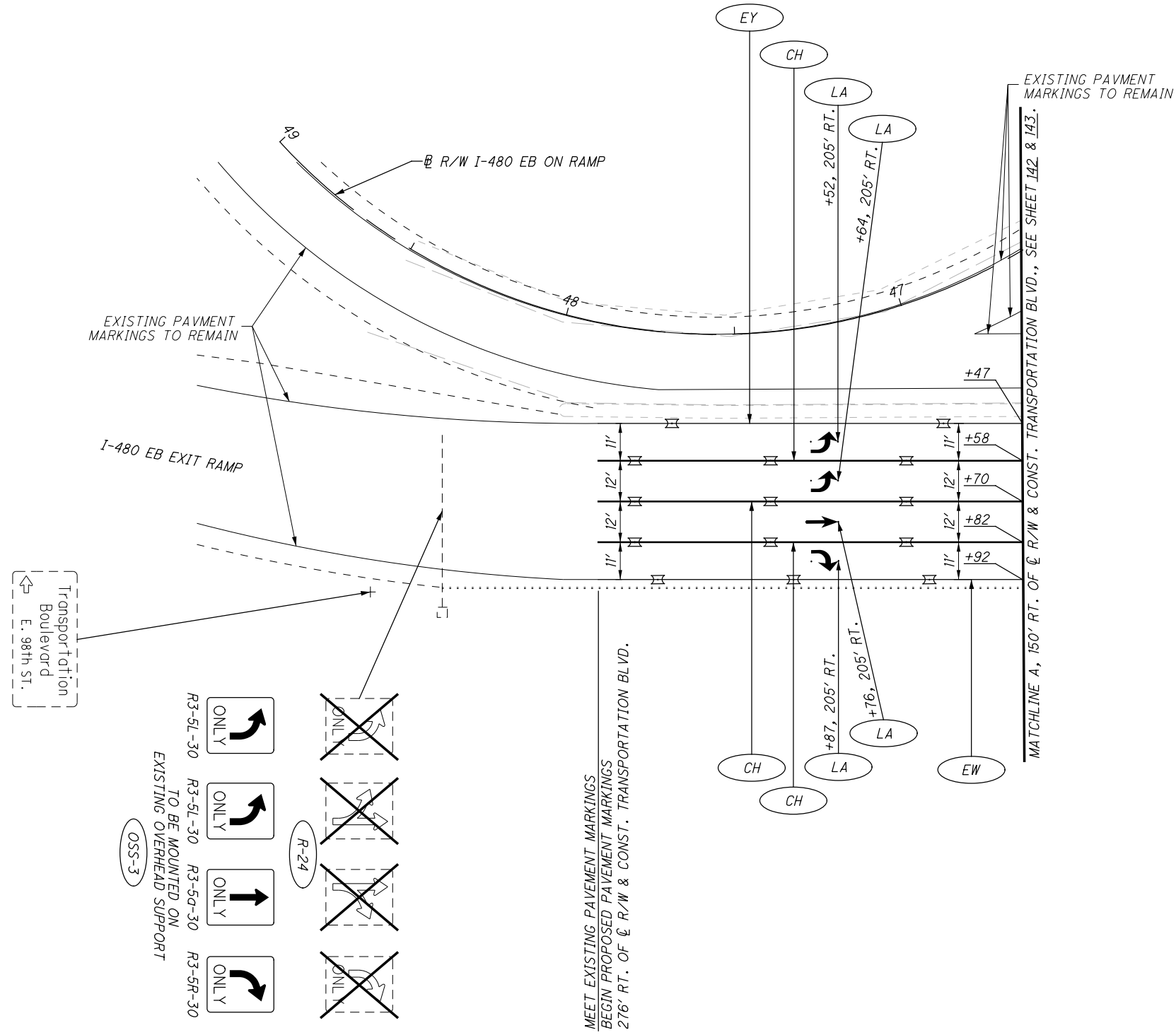
↑
 N

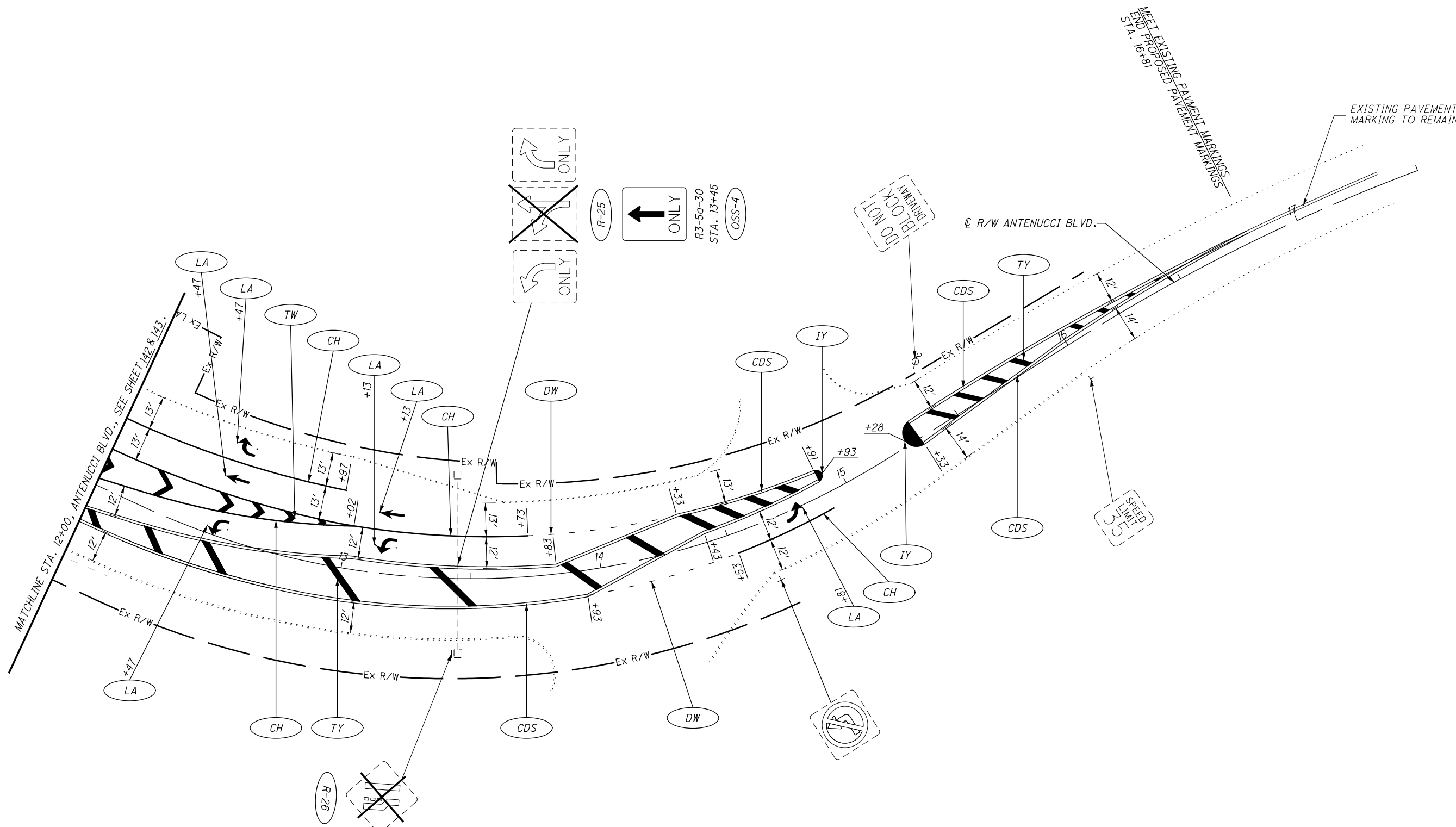
TRAFFIC CONTROL PLAN
STA. 21+00 TO STA. 26+00

CUY-480 /
TRANSPORTATION BLVD.

FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.







CALCULATED
 BEB
 CHECKED
 AKF

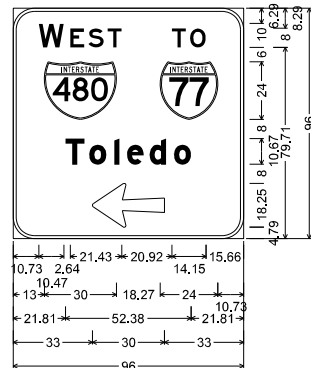
0 10 20 40
 HORIZONTAL
 SCALE IN FEET

TRAFFIC CONTROL PLAN
STA. 12+00 TO END

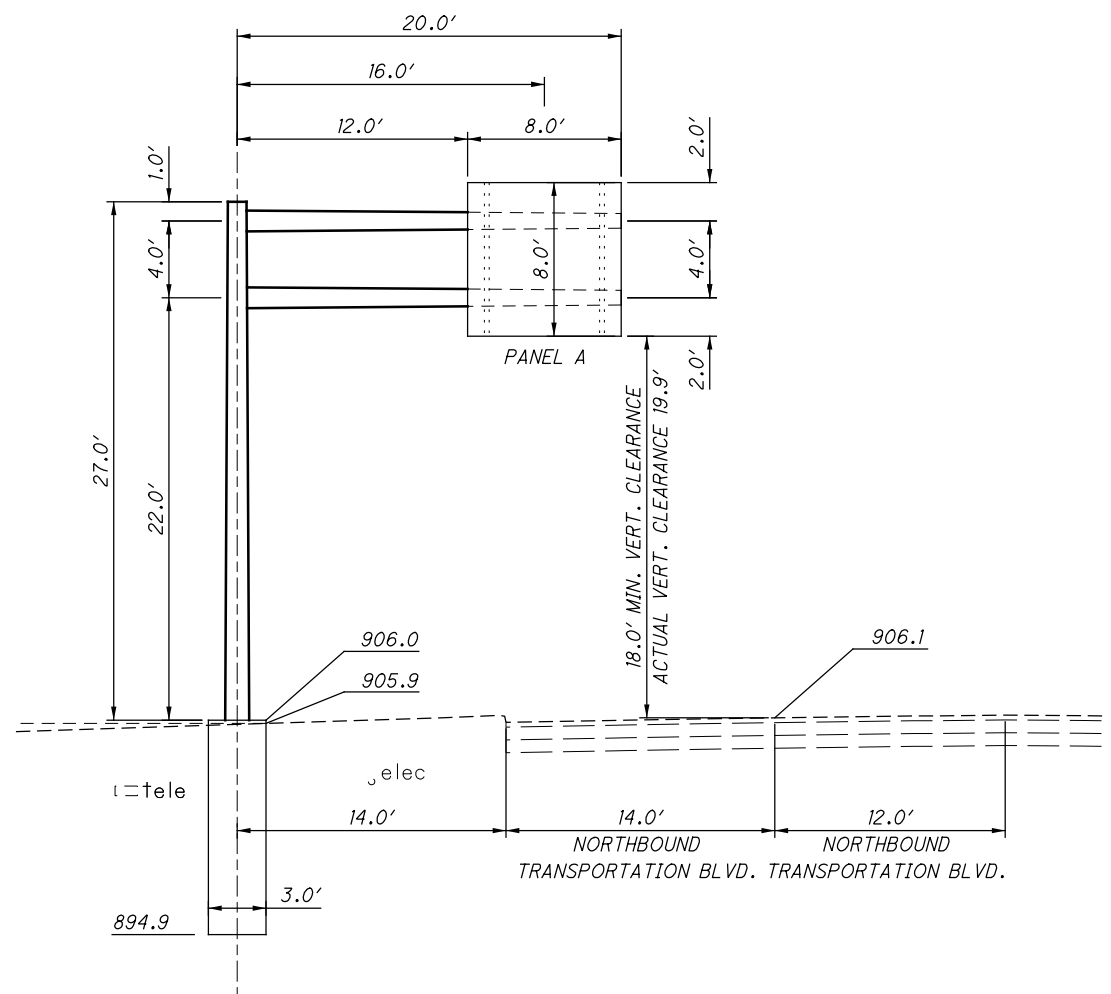
**CUY-480/
 TRANSPORTATION BLVD.**

FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.

SIGN INFORMATION			
PANEL A			
DESIGN LEVEL:	3		
TEXT FONT:	E		
PANEL SIZE:	8' X 8'		
BACKGROUND:	GREEN		
FILL COLOR:	WHITE		
NUMBER OF BRACKETS:	2		
SIGN SUPPORT INFORMATION			
TOTAL SIGN AREA:	64 SQ. FT.		
TOTAL C TO C LENGTH:	16 FT.		
DESIGN TYPE:	TC-12.30, DESIGN 4		
SUPPORT FOUNDATION INFORMATION			
SUPPORT TYPE	DESIGN NUMBER	FOUNDATION DEPTH	FOUNDATION DIAMETER
TC-12.30	4	11.0'	36"



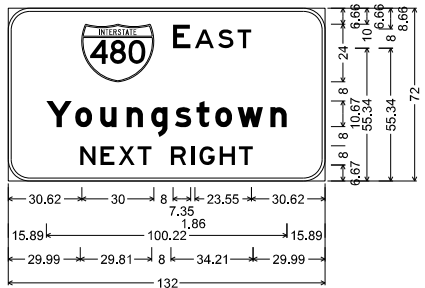
- NOTES:**
1. ALL SIGNS ARE VIEWED IN THE DIRECTION OF TRAVEL.
 2. CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN FIELD PRIOR TO ANY EXCAVATION.
 3. THE CONTRACTOR SHALL FIELD VERIFY EXISTING ELEVATIONS PRIOR TO THE ORDERING OF ANY MATERIALS.



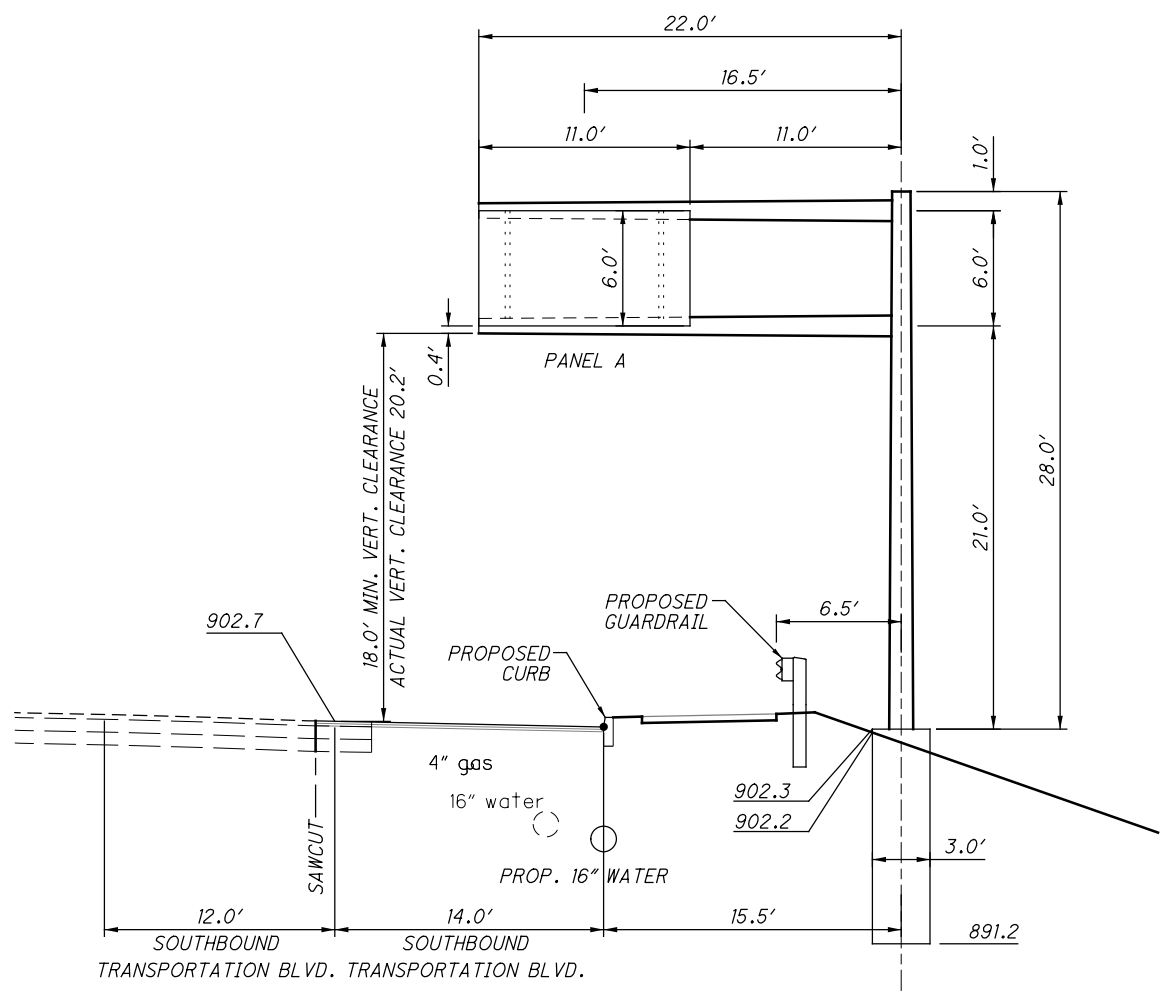
OSS-1 OVERHEAD SIGN SUPPORT TYPE TC-12.30, DESIGN 4
STA. 14+70, LT., TRANSPORTATION BLVD. SOUTHBOUND

SEE SHEET 145 FOR PLAN VIEW.

SIGN INFORMATION			
PANEL A			
DESIGN LEVEL:	3		
TEXT FONT:	E		
PANEL SIZE:	11' X 6'		
BACKGROUND:	GREEN		
FILL COLOR:	WHITE		
NUMBER OF BRACKETS:	3		
SIGN SUPPORT INFORMATION			
TOTAL SIGN AREA:	66 SQ. FT.		
TOTAL C TO C LENGTH:	16.5 FT.		
DESIGN TYPE:	TC-12.30, DESIGN 5		
SUPPORT FOUNDATION INFORMATION			
SUPPORT TYPE	DESIGN NUMBER	FOUNDATION DEPTH	FOUNDATION DIAMETER
TC-12.30	5	11.0'	36"



- NOTES:**
1. ALL SIGNS ARE VIEWED IN THE DIRECTION OF TRAVEL.
 2. CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN FIELD PRIOR TO ANY EXCAVATION.



OSS-2 OVERHEAD SIGN SUPPORT TYPE TC-12.30, DESIGN 5
STA. 15+90, RT., TRANSPORTATION BLVD. SOUTHBOUND

SEE SHEET 145 FOR PLAN VIEW.

\NARINDA\DATA\2016\20160951\CUY\80974\TRAFFIC\SHEETS\80974TEB01.DGN
 3/1/2017 8:54:00 AM
 DDDTY81STD_USER

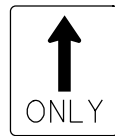
CUY-480/
 TRANSPORTATION BLVD.
 SIGN SUPPORT DETAILS
 TRANSPORTATION BLVD.



SIGN INFORMATION	
PANEL A:	R3-5L-30
PANEL B:	R3-5a-30
PANEL C:	R3-5R-30
NUMBER OF BRACKETS:	6
SIGN SUPPORT INFORMATION	
SUPPORT TYPE	DESIGN NUMBER
TC-16.21	11
FOUNDATION DEPTH	FOUNDATION DIAMETER
10.0'	36"



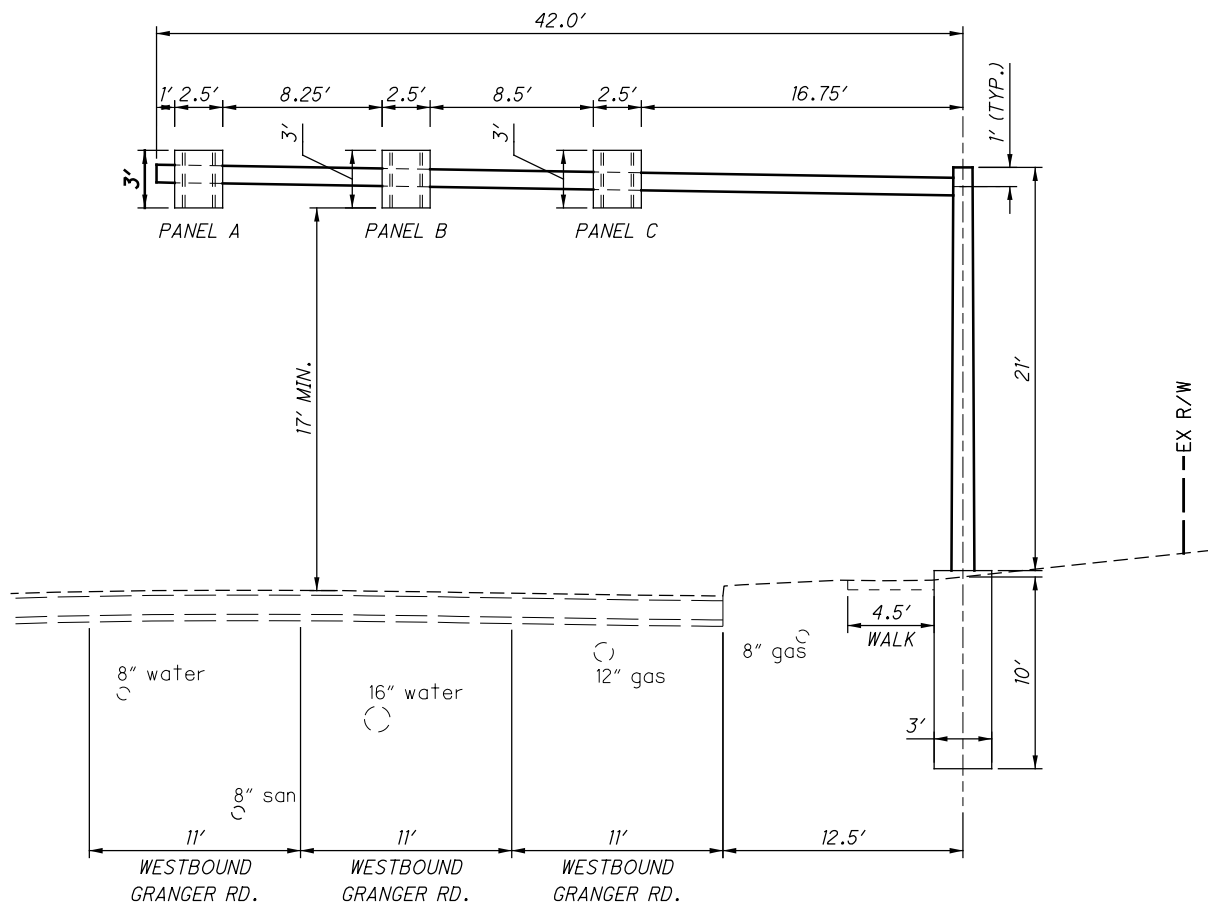
PANEL A
N.T.S.



PANEL B
N.T.S.



PANEL C
N.T.S.

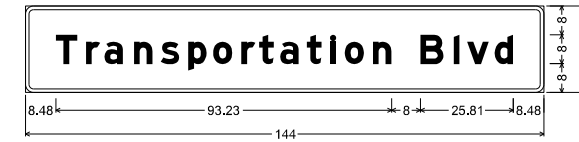


OSS-5 OVERHEAD SIGN SUPPORT TYPE TC-16.21, DESIGN 11
STA. 24+45, GRANGER RD.

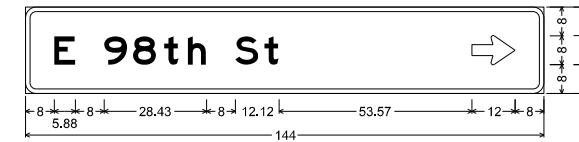
- NOTES:
- ALL SIGNS ARE VIEWED IN THE DIRECTION OF TRAVEL.
 - THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN FIELD PRIOR TO ANY EXCAVATION.

SEE SHEET ____ FOR PLAN VIEW.

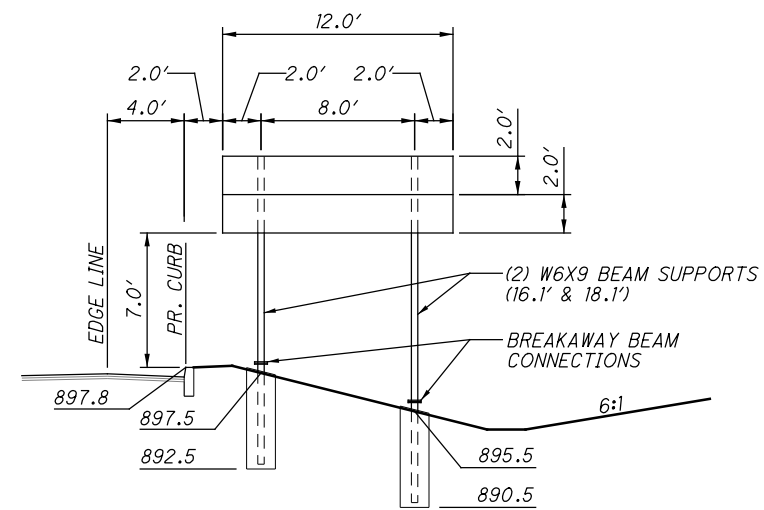
SIGN INFORMATION	
PANEL A	
SIGN DESIGNATION:	D3-H3-144
TEXT FONT:	E
PANEL SIZE:	12' X 2'
BACKGROUND:	GREEN
FILL COLOR:	WHITE
PANEL B	
SIGN DESIGNATION:	D1-H15-144
TEXT FONT:	E
PANEL SIZE:	12' X 2'
BACKGROUND:	GREEN
FILL COLOR:	WHITE
PROPOSED BEAM INFORMATION	
TOTAL SIGN AREA:	48 SQ. FT.
DESIGN TYPE:	W6X9
SIZE:	5-7/8" X 4"
BEAM FOUNDATION INFORMATION	
DIAMETER:	18"
DEPTH:	5'



PANEL A
N.T.S.



PANEL B
N.T.S.



S-24 BEAM SUPPORT TYPE W6X9
STA. 59+37, I-480 WB EXIT RAMP

- NOTES:
- ALL SIGNS ARE VIEWED IN THE DIRECTION OF TRAVEL.
 - CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN FIELD PRIOR TO ANY EXCAVATION.

SEE SHEET 154 FOR PLAN VIEW.

NOTIFICATION

THE CONTRACTOR SHALL NOTIFY THE ODOT DISTRICT TRAFFIC OFFICE, (216) 584-2005, AND ANTHONY TOTH, (216) 584-2220, 10 WORKING DAYS PRIOR TO THE NEW SIGNALS BEING PLACED INTO OPERATION.

THE SIGNAL INSTALLATIONS SHALL BE INSPECTED BY ODOT TRAFFIC PERSONNEL. ALL DEFICIENCIES SHALL BE CORRECTED BY THE CONTRACTOR AND APPROVED BY THE DISTRICT TRAFFIC OFFICE BEFORE PLACING THE SIGNAL IN THE "STOP-AND-GO" MODE.

WORK INSPECTION

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER WITH 72 HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE(S) SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

GUARANTEE

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

EQUIPMENT, MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

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

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

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

DETECTION MAINTENANCE

IF VEHICLE DETECTION BECOMES UNEXPECTEDLY DISABLED, REQUIRES MODIFICATION, OR IS SCHEDULED TO BE TEMPORARILY REMOVED DURING THE CONSTRUCTION PROJECT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER.

IF THE LOSS OF VEHICLE DETECTION IS KNOWN PRIOR TO THE START OF CONSTRUCTION, IT SHALL BE DISCUSSED AT THE PRECONSTRUCTION MEETING. AT SUCH TIME, THE DISTRICT TRAFFIC ENGINEER SHALL ADVISE THE PROJECT ENGINEER AND CONTRACTOR ON THE APPROPRIATE ACTION TO RECTIFY ANY LOSS OF VEHICLE DETECTION. THIS MAY INCLUDE PLACING THE TRAFFIC SIGNAL ON MINIMUM OR MAXIMUM RECALL, MODIFYING THE MINIMUM GREEN TIMES, AND REMOVING THE MALFUNCTIONING DETECTION FROM SERVICE. WHERE NONINTRUSIVE DETECTION (I.E. VIDEO, RADAR) ALREADY EXISTS, THE CONTRACTOR SHALL ENSURE THAT DETECTION IS OPERATING AND MAINTAINED BY RECONFIGURING THE DETECTION UNITS ACCORDINGLY DURING ALL CONSTRUCTION PHASES. THIS IS TO AVOID THE SIGNAL FROM MAXING OUT THE EFFECTED SIGNAL PHASE AND CREATING UNNECESSARY DELAYS.

LOCATIONS WHERE NON-INTRUSIVE DETECTION IS PROPOSED AND THE EXISTING VEHICLE DETECTION IS TO BE ABANDONED, THE NON-INTRUSIVE VEHICLE DETECTION SHALL BE INSTALLED, CONFIGURED AND MADE FULLY FUNCTIONAL PRIOR TO THE EXISTING DETECTION BEING DISABLED. THE CONTRACTOR SHALL CONTINUE TO MAINTAIN AND MODIFY THE DETECTION UNTIL FINAL ACCEPTANCE OF THE TRAFFIC SIGNAL. THIS IS TO ENSURE VEHICLE DETECTION REMAINS FULLY FUNCTIONAL THROUGHOUT CONSTRUCTION.

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS) AND THE TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

- 1. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.
A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.
B. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.
C. METALLIC CONDUIT CARRYING THE LOOP WIRES FROM IN THE PAVEMENT TO THE PULL BOX SPLICE LOCATION WILL ONLY BE BONDED AT THE PULL BOX END, AND WILL NOT CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR.
D. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.
E. IF AN EQUIPMENT GROUNDING CONDUCTOR IS NEEDED IN CONDUIT BETWEEN SIGNALIZED INTERSECTIONS FOR UNDERGROUND INTERCONNECT CABLE, THE GROUNDING SYSTEM FOR EACH SIGNALIZED INTERSECTION WILL BE SEPARATED ABOUT MIDWAY BETWEEN THE INTERSECTIONS.
F. THE MESSENGER WIRE AT SIGNALIZED INTERSECTIONS WILL BE USED AS THE CONDUCTIVE PATH FROM CORNER TO CORNER IF CONDUIT IS NOT PROVIDED UNDER THE ROADWAY. WHEN CONDUIT CONNECTS THE CORNERS OF AN INTERSECTION, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE USED IN THE CONDUIT.

2. CONDUITS

- A. THE 725.04 CONDUIT SHALL HAVE GROUNDING BUSHINGS INSTALLED AT ALL TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR USE WITH COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.
B. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.
C. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
D. METALLIC CONDUIT MAY BE BONDED TO METALLIC BOXES THROUGH THE USE OF CONDUIT FITTINGS UL APPROVED FOR THIS TYPE OF CONNECTION, WITH THE BOX BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.

3. WIRE FOR GROUNDING AND BONDING.

- A. USE INSULATED, COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SIZE SHALL BE AS FOLLOWS:

GROUNDING AND BONDING (CONTINUED)

- I. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.
II. USE A MINIMUM 8 AWG BETWEEN LOOP DETECTOR PULL BOXES AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.
III. USE A MINIMUM 8 AWG BETWEEN THE "PREPARE TO STOP WHEN FLASHING" INSTALLATION (INCLUDING SUPPORT) AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.
IV. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S). FOR 4 AWG OR LARGER, INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/LABELS INSTALLED AT ALL ACCESS POINTS.
B. IN A HIGHWAY LIGHTING SYSTEM, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE THE SAME WIRE SIZE AS THE DUCT CABLE OR DISTRIBUTION CABLE CIRCUIT CONDUCTORS, WITH THE MINIMUM CONDUCTOR SIZE OF 4 AWG. BONDING JUMPERS WILL BE MINIMUM SIZE 4 AWG.
4. GROUND ROD
A. A 3/4 INCH SCHEDULE 40 PVC CONDUIT WILL BE USED IN FOUNDATIONS AND CONCRETE WALLS FOR THE GROUNDING CONDUCTOR (GROUND WIRE) RACEWAY TO THE GROUND ROD. SHOULD METALLIC CONDUIT BE USED, BOTH ENDS OF THE CONDUIT SHALL BE BONDED TO THE GROUNDING CONDUCTOR.
B. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.
5. THE GREEN CONDUCTOR IN SIGNAL CABLES (CONDUCTOR #4) SHALL NOT BE USED TO SUPPLY POWER TO A SIGNAL INDICATION. IT WILL BE CONNECTED TO THE SIGNAL BODY AS AN EQUIPMENT GROUND IN ALUMINUM HEADS AND IT WILL BE UNUSED IN PLASTIC HEADS. UNUSED CONDUCTORS SHALL BE GROUNDED IN THE CABINET. TYPICAL USE OF CONDUCTORS IS AS FOLLOWS:

Table with 4 columns: COND. NO., COLOR, VEHICLE SIGNAL, PEDESTRIAN SIGNAL. Rows include colors like BLACK, WHITE, RED, GREEN, ORANGE, BLUE, WHITE/BLACK STRIPE and their corresponding signal uses like GREEN BALL, AC NEUTRAL, RED BALL, EQUIPMENT GROUND, YELLOW BALL, GREEN ARROW, YELLOW ARROW.

- 6. POWER SERVICE AND DISCONNECT SWITCH.
A. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.
B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.
I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.
II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.
7. PAYMENT - ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

ITEM 632 - POWER SERVICE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 632.24, THE CONTRACTOR SHALL PROVIDE THE METER, DISCONNECT SWITCH, POWER SERVICE CABLE #6 AWG, CONDUIT, CONDUIT RISER, WEATHERHEAD AND PULL BOXES AS NECESSARY TO PROVIDE POWER TO THE PROPOSED INSTALLATION. THE POWER SOURCE LOCATION SHALL BE AS INDICATED IN THE PLANS. THE CONTRACTOR SHALL COORDINATE RELATED WORK WITH THE ILLUMINATING COMPANY WHO WILL MAKE THE ELECTRICAL SERVICE CONNECTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE THE POWER CABLE INTO THE ILLUMINATING COMPANY'S CIRCUITRY. ANY FEES ASSOCIATED WITH OBTAINING POWER SHALL BE RESPONSIBILITY OF THE CONTRACTOR. POWER SUPPLIED SHALL BE 120 VOLTS.

THE COST FOR ALL NECESSARY ITEMS AND ASSOCIATED LABOR SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR "ITEM 632 - POWER SERVICE, AS PER PLAN."

ITEM 632 - REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, MESSENGER WIRE, STRAIN POLES, CABINET, CONTROLLER, ETC., SHALL BE REMOVED IN ACCORDANCE WITH C&MS 632.26 AND AS INDICATED ON THE PLANS. THE EXISTING UTILITY POLE AT STA. 13+90.8, 41.5' RT. SHALL ALSO BE REMOVED. REMOVED ITEMS SHALL BE REUSED AS PART OF A NEW INSTALLATION ON THE PROJECT OR STORED ON THE PROJECT FOR SALVAGE BY ODOT, (216) 584-2005, IN ACCORDANCE WITH THE LISTING GIVEN HERIN.

ITEMS TO BE STORED:

TRANSPORTATION BLVD / I-480 EB RAMPS

- (10) - VEHICULAR SIGNAL HEADS

TRANSPORTATION BLVD / I-480 WB RAMPS

- (6) - VEHICULAR SIGNAL HEADS
(1) - PREEMPTION (INCLUDING RECEIVING UNITS, PHASE SELECTOR, AND CONFIRMATION LIGHTS)
(1) - CONTROLLER AND CABINET

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

ITEM 632 - SIGNAL SUPPORT FOUNDATION

PRIOR TO ORDERING THE SIGNAL SUPPORTS, THE CONTRACTOR SHALL CONTACT OUPS TO HAVE ALL THE UTILITIES LOCATED IN THE FIELD THEN MEET WITH THE PROJECT ENGINEER TO LOCATE THE PROPOSED SUPPORT LOCATIONS TO INSURE THERE ARE NO CONFLICTS WITH UTILITIES. IF THERE ARE ISSUES, THE PROJECT ENGINEER SHALL PROVIDE GUIDANCE AS TO THE RELOCATION OF THE SUPPORT POLES.

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

ITEM 633 - CONTROLLER UNIT, TYPE 2070E WITH 2070-1C CPU, AS PER PLAN

THE CONTROLLER UNIT SHALL BE EQUIPMENT MANUFACTURED IN CONFORMANCE TO THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) SPECIFICATIONS TITLES "TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATIONS (TEES)." THE CONTROLLER UNIT AND SOFTWARE VERSIONS SHALL BE COMPLIANT WITH THE TRAFFIC AUTHORIZED PRODUCTS (TAP) LIST.

THE CONTROLLER UNIT SHALL INCLUDE THE FOLLOWING:

1. UNIT CHASSIS
2. 2070-1C CPU MODULE (LINUX)
3. 2070-2A FIELD I/O MODULE
4. 2070-3B FRONT PANEL
5. 2070-4A POWER SUPPLY
6. 2070-7A SERIAL COMMUNICATION MODULE

AFTER BID SUBMITTAL, THE CONTRACTOR SHALL DISCLOSE THE CONTROLLER BRAND AND TYPE USED IN THE GENERAL BID ITEM.

THE CONTRACTOR SHALL NOT REASSIGN THE CABINET DETECTOR INPUTS IN ORDER TO REDUCE THE NUMBER OF 2-CHANNEL DETECTOR UNITS SUPPLIED, BUT SHALL USE THE STANDARD CALTRANS INPUT FILE DESIGNATIONS.

ITEM 633 - CONTROLLER UNIT, TYPE 2070E WITH 2070-1C CPU, AS PER PLAN - ALTERNATE BID

THE CONTROLLER UNIT SHALL BE AN ECONOLITE ATC 2070C CONTROLLER WITH THE LATEST MANUFACTURER FIRMWARE VERSION.

ITEM 633 - PREEMPTION, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPTION EQUIPMENT IN THE LOCATIONS AND LOCAL CONTROLLERS AS SHOWN IN THE PLANS. THE PREEMPTION SHALL CONFORM TO ODOT SPECIFICATION 633 AND SHALL UTILIZE COMMUNICATIONS TO IDENTIFY THE PRESENCE OF AN EMERGENCY PRIORITY VEHICLE. IT SHALL CAUSE THE TRAFFIC SIGNAL CONTROLLER TO SELECT A PRE-PROGRAMMED PREEMPTION PLAN THAT WILL DISPLAY AND HOLD THE DESIRED SIGNAL PHASE FOR THE DIRECTION OF THE EMERGENCY VEHICLE.

THE COMMUNICATIONS MEDIUM SHALL EMPLOY SOUND DETECTION TECHNIQUES TO DETERMINE AND LOG THE PRESENCE OF THE EMERGENCY VEHICLE. THE SYSTEM SHALL DETECT THE PRESENCE OF THE VEHICLE THROUGH AN EMITTING DEVICE LOCATED ON THE EMERGENCY VEHICLE. THE SYSTEM SHALL ACTIVATE THE PREEMPTION SEQUENCE BY APPLYING A SIGNAL TO ONE OF THE CONTROLLER'S PREEMPT DISCRETE INPUTS. THE SYSTEM SHALL BE COMPLETELY COMPATIBLE WITH THE CONTROLLER.

THE EQUIPMENT SHALL BE SHELF OR RACK MOUNTED AND EASILY REMOVABLE AND REPLACEABLE WITHIN THE CABINET. THE EQUIPMENT SHALL BE SUPPLIED COMPLETELY WIRED IN THE CONTROLLER CABINET AND TESTED. THE SYSTEM SHALL BE CAPABLE OF PREEMPTING AND RECEIVING PRIORITY FOR EACH APPROACH TO THE INTERSECTION. IT SHALL BE POSSIBLE TO DETECT THE EMERGENCY VEHICLE UP TO 1200 FEET FROM THE INTERSECTION.

EACH INTERSECTION SHOWN IN THE PLANS SHALL BE SUPPLIED WITH THE FOLLOWING COMPONENTS, EACH BID SEPARATELY:

1. PREEMPT RECEIVING UNIT.
2. PREEMPT DETECTOR CABLE.
3. PREEMPT PHASE SELECTOR ASSEMBLY AND INTERFACE WIRING PANEL.
4. CONFIRMATION LIGHT.

THE CONTRACTOR SHALL INVENTORY THE CITY OF GARFIELD HEIGHTS' EMERGENCY VEHICLES TO DETERMINE COMPATIBILITY OF THE SIRENS WITH THE SYSTEM. EACH VEHICLE THAT IS DETERMINED TO BE NOT COMPATIBLE SHALL BE SUPPLIED WITH NEW SIRENS AT COST INCIDENTAL TO THE SYSTEM. THE MODEL SUPPLIED SHALL BE SONEM 2000 MANUFACTURED BY TRAFFIC SYSTEMS LLC, RIGHT-O-WAY MANUFACTURED BY WAPITI MICROSYSTEMS, OR APPROVED EQUAL.

THE CITY SHALL BE SUPPLIED WITH SOFTWARE REQUIRED TO CALIBRATE, LOG, AND OPERATE THE SYSTEM. THE SOFTWARE SHALL BE CAPABLE OF OPERATING UNDER WINDOWS 7, 32-BIT OPERATING SYSTEM. TWO (2) OPERATING AND INSTRUCTION MANUALS SHALL BE SUPPLIED WITH THE SOFTWARE.

THE CONTRACTOR SHALL THOROUGHLY TEST THE INSTALLED SYSTEM. AS A MINIMUM, THE CONTRACTOR SHALL VERIFY THAT ALL CONNECTIONS ARE PROPERLY MADE TO THE CONTROLLER CABINETS. THE CONTRACTOR SHALL CHECK THAT THE RANGE SETTING IS PROPER FOR EACH INTERSECTION. THE CONTRACTOR SHALL DETERMINE THAT ALL PHASE SELECTORS ARE SELECTING THE PROPER PHASE AND TIMING ACCURATELY. THE CONTRACTOR SHALL VERIFY THAT ALL VEHICLE EMITTERS ARE BEING PROPERLY DETECTED.

THE CONTRACTOR SHALL PROVIDE TRAINING FOR UP TO FIFTEEN (15) PERSONS IN THE OPERATION OF THE SYSTEM. IT SHALL BE PROVIDED WITHIN 48 HOURS OF THE INSTALLATION OF THE SYSTEM. IT SHALL CONSIST OF HANDS-ON INSTRUCTION FOR A MINIMUM OF SIXTEEN (16) HOURS. THE CONTRACTOR SHALL PROVIDE TRAINING FOR UP TO FOUR (4) PERSONS IN THE INSTALLATION AND MAINTENANCE OF THE SYSTEM. IT SHALL CONSIST OF A MINIMUM OF EIGHT (8) HOURS OF INSTRUCTION. TRAINING SHALL BE SUPPLIED WITHIN SEVEN (7) DAYS OF THE INSTALLATION OF THE SYSTEM. ALL TRAINING SHALL BE HELD IN A CITY SUPPLIED LOCATION. TRAINING SHALL BE CONDUCTED BY SOMEONE WHO HAS PERFORMED THIS WITHIN THE LAST YEAR AND DOES IT ON A REGULAR BASIS. THE COST OF TRAINING, INCLUDING COURSE MATERIAL, TRAVEL SUBSISTENCE AND RELATED COSTS, SHALL BE ENTIRELY BORNE BY THE CONTRACTOR AND SHALL BE INCIDENTAL TO THE PREEMPTION EQUIPMENT.

PAYMENT FOR "ITEM 633 - PREEMPTION, AS PER PLAN" SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH PREEMPTION IN PLACE AND FULLY OPERATIONAL AS SHOWN IN THE PLANS, EXCEPT FOR THOSE ITEMS BID SEPARATELY.

ITEM 633 - PREEMPTION RECEIVING UNIT

RECEIVING UNITS SHALL CONSIST OF A LIGHTWEIGHT, WEATHERPROOF AND DIRECTIONAL ASSEMBLY. EACH RECEIVING UNIT SHALL BE 360 DEGREE ADJUSTABLE. THE RECEIVING UNIT SHALL BE CAPABLE OF SENDING THE PROPER ELECTRICAL SIGNAL TO THE TRAFFIC SIGNAL CONTROLLER VIA THE PREEMPTION DETECTOR CABLE. RECEIVING UNITS SHALL BE SUPPLIED WITH MAST ARM MOUNTING HARDWARE AS SHOWN IN THE PLANS.

FURNISH PREEMPTION RECEIVING UNITS WITH 60-MONTH WARRANTIES OR FOR THE MANUFACTURER'S STANDARD WARRANTY WHICHEVER IS GREATER. ENSURE THAT THE WARRANTY PERIOD BEGINS ON THE DATE OF SHIPMENT TO THE PROJECT. ENSURE THAT EACH UNIT HAS A PERMANENT LABEL OR STAMP INDICATING THE DATE OF SHIPMENT.

PAYMENT FOR "ITEM 633 - PREEMPTION RECEIVING UNIT" SHALL BE AT THE CONTRACT UNIT PRICE FOR EACH RECEIVING UNIT IN PLACE, COMPLETELY INSTALLED AT THE LOCATION SHOWN IN THE PLANS, WIRED, TESTED AND ACCEPTED.

ITEM 633 - PREEMPTION DETECTOR CABLE

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPTION DETECTOR HOME RUN CABLE IN THE LOCATIONS SHOWN IN THE PLANS. IT SHALL CONNECT THE PREEMPT RECEIVING UNITS TO THE PHASE SELECTORS IN THE LOCAL CONTROLLER CABINET.

PREEMPTION DETECTOR CABLE SHALL CONFORM TO ODOT SPECIFICATION 632. ONLY ONE EXTERNAL SPLICE SHALL BE PERMITTED BETWEEN PREEMPTION RECEIVER UNIT AND CONTROLLER CABINET. THIS SPLICE SHALL MEET THE REQUIREMENTS OF C&MS 632.23 USING A WATERPROOF EPOXY SPLICE KIT. THE CABLE SHALL BE APPROVED FOR BOTH OVERHEAD AND UNDERGROUND USE. THE JACKET SHALL WITHSTAND EXPOSURE TO SUNLIGHT AND ATMOSPHERIC TEMPERATURES AND STRESSES REASONABLY EXPECTED IN NORMAL INSTALLATIONS.

PAYMENT FOR "ITEM 633 - PREEMPTION DETECTOR CABLE" SHALL BE MADE AT THE CONTRACT UNIT PRICE PER FOOT FOR THE CABLE FURNISHED, IN PLACE, ALL CONNECTIONS MADE AND WIRING COMPLETED, TESTED AND ACCEPTED.

ITEM 633 - PREEMPTION PHASE SELECTOR

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPT PHASE SELECTORS INCLUDING WIRING INTERFACE PANELS IN THE LOCAL CONTROLLER CABINET AND ALL OTHER ACCESSORIES THAT ARE NECESSARY TO MAKE THE PREEMPT PHASE SELECTORS COMPLETELY FUNCTIONAL AND OPERATIONAL AS SHOWN IN THE PLANS. THIS ITEM SHALL INCLUDE THE EXTRA CABINET SPACE NECESSARY TO BE LOCATED IN THE LOCAL CONTROLLER CABINETS WHERE INDICATED IN THE PLANS.

THE PHASE SELECTORS SHALL CONSIST OF A MODULE OR MODULES THAT WILL PROVIDE THE NECESSARY INPUTS TO THE CONTROLLER. PHASE SELECTORS SHALL BE SUPPLIED WITH SUFFICIENT QUANTITIES OF CHANNELS TO PROVIDE PREEMPTION FOR ALL APPROACHES TO THE INTERSECTION SEPARATELY. POWER SHALL BE OBTAINED FROM THE PHASE SELECTOR OR PHASE SELECTOR POWER SUPPLY AND NOT FROM THE LOCAL CONTROLLER TIMER.

THE PHASE SELECTORS SHALL HAVE FRONT PANEL INDICATORS FOR ACTIVE PREEMPT CHANNEL STATUS. IT SHALL HAVE TEST SWITCHES TO ACTIVATE ALL PREEMPT CHANNELS.

FURNISH PREEMPT PHASE SELECTORS WITH 60-MONTH WARRANTIES OR FOR THE MANUFACTURER'S STANDARD WARRANTY WHICHEVER IS GREATER. ENSURE THAT THE WARRANTY PERIOD BEGINS ON THE DATE OF SHIPMENT TO THE PROJECT. ENSURE THAT EACH UNIT HAS A PERMANENT LABEL OR STAMP INDICATING THE DATE OF SHIPMENT.

PAYMENT FOR "ITEM 633 - PREEMPTION PHASE SELECTOR" SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH PHASE SELECTOR IN PLACE, COMPLETELY INSTALLED IN THE LOCAL CONTROLLER SHOWN IN THE PLANS, WIRED, TESTED AND ACCEPTED.

ITEM 633 - PREEMPTION CONFIRMATION LIGHT, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPT CONFIRMATION LIGHTS INCLUDING HARDWARE AND ALL OTHER ACCESSORIES THAT ARE NECESSARY TO MAKE THE PREEMPT CONFIRMATION LIGHT COMPLETELY FUNCTIONAL AND OPERATIONAL AS SHOWN IN THE PLANS.

A CONFIRMATION LIGHT SHALL BE SUPPLIED FOR EACH INTERSECTION TO INDICATE THAT THE EMERGENCY VEHICLE HAS ACHIEVED CONTROL OF THE TRAFFIC SIGNAL.

THE CONFIRMATION LIGHT SHALL BE A VAPOR TIGHT ALUMINUM LIGHTING FIXTURE. IT SHALL BE SUPPLIED WITH A BLUE GLOBE, LED LAMP AND MOUNTING HARDWARE TO ATTACH TO THE TRAFFIC SIGNAL MAST ARM. THE CONFIRMATION LIGHT SHALL BE POWERED BY A LOAD SWITCH IN THE TRAFFIC SIGNAL CONTROLLER. SIGNAL CABLE CONFORMING TO 732.19 SHALL BE USED FOR CONFIRMATION LIGHTS. A MINIMUM OF 4-CONDUCTOR CABLE SHALL BE USED WITH THE GREEN WIRE SERVING AS THE SAFETY GROUND CONDUCTOR.

PAYMENT FOR "ITEM 633 - PREEMPTION CONFIRMATION LIGHT, AS PER PLAN" SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH LIGHT IN PLACE, COMPLETELY INSTALLED IN THE LOCATION SHOWN IN THE PLANS, WIRED, TESTED AND ACCEPTED.

ITEM 632 - COVERING OF VEHICULAR SIGNAL HEAD

COVER VEHICULAR SIGNAL HEADS IF ERECTED AT INTERSECTIONS WHERE TRAFFIC IS MAINTAINED BEFORE ENERGIZING THE SIGNALS. USE A STURDY OPAQUE COVERING MATERIAL SPECIFICALLY MADE FOR USE WITH TRAFFIC SIGNALS, AND ENSURE THAT THE COLOR OF THE COVER IS DIFFERENT THAN THE SIGNAL HEAD, TAN OR BEIGE, SO THAT IT IS CLEAR TO DRIVERS THE HEADS ARE COVERED, NOT DARK. USE A METHOD OF COVERING TO COVER ATTACHMENT AND MATERIALS, INCLUDING BACKPLATES, AS APPROVED BY THE ENGINEER. COVERS ARE TO BE FREE OF TEXT, PICTURES, OR ANY TYPE OF ADVERTISING. MAINTAIN COVERS, AND REMOVE THEM WHEN DIRECTED BY THE ENGINEER.

ITEM 632 - SIGNALIZATION, MISC.: TEST HOLE PERFORMED

IT IS ANTICIPATED THAT THE CONTRACTOR WILL ENCOUNTER UNDERGROUND UTILITIES WHILE EXCAVATING FOR SIGNAL SUPPORT FOUNDATIONS. IF, AFTER ACCURATELY IDENTIFYING THE PROPOSED LOCATION OF THE FOUNDATION, AS SHOWN IN THE PLAN, AND AFTER MODIFYING THAT LOCATION, IF NECESSARY, BASED ON THE FIELD MARKING OF UNDERGROUND UTILITY LOCATION, THE CONTRACTOR DISCOVERS A UTILITY CONFLICT DURING HIS EXCAVATION OPERATION, HE WILL BE COMPENSATED FOR THE LABOR AND EQUIPMENT COST ASSOCIATED FOR EACH PARTIAL FOUNDATION EXCAVATION ACCORDING TO HIS BID PRICE.

BEFORE THE CONTRACTOR BEGINS THE EXCAVATION AT THE MODIFIED LOCATION, HE SHALL VERIFY THAT THERE WILL BE NO OVERHEAD UTILITY CONFLICTS RESULTING FROM THE NEW SIGNAL SUPPORT LOCATION. NEW SUPPORT LOCATIONS ARE TO BE APPROVED BY THE ENGINEER.

THE CONTRACTOR'S WORK UNDER THIS BID ITEM SHALL INCLUDE BACKFILLING, COMPACTING, AND RESTORATION OF THE EXCAVATION TO ITS ORIGINAL CONDITION.

EXCAVATIONS SHALL NOT BE LEFT OPEN OVERNIGHT.

PAYMENT FOR THIS ITEM SHALL BE AT THE UNIT PRICE BID PER EACH ITEM 632 - SIGNALIZATION - MISC.: TEST HOLE PERFORMED. A QUANTITY OF 8 HAS BEEN CARRIED TO THE SIGNALIZATION GENERAL SUMMARY. TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 632 - VEHICULAR SIGNAL HEAD, (LED), (BY TYPE), 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS ITEM 632 AND C&MS 732, THE FOLLOWING REQUIREMENTS SHALL APPLY:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC WITH VISORS AS SPECIFIED AND MEET ITE SPECIFICATIONS.
2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.
3. ALL UPPER SIGNAL SUPPORT HARDWARE AND PIPING UP TO AND INCLUDING THE WIRE INLET FITTING SHALL BE FERROUS METAL.
4. THE ENTRANCE FITTING SHALL BE OF THE TRI-STUD DESIGN WITH SERRATED RINGS IN ORDER TO ACHIEVE POSITIVE LOCKING.
5. ALL SIGNAL HEADS SHALL BE RIGIDLY MOUNTED TO THE MAST ARM WITH THE (YELLOW) MODULE LOCATED IN FRONT OF THE MAST ARM.
6. ALUMINUM BACKPLATES SHALL BE IN ACCORDANCE WITH THE C&MS AND INCLUDE A FLUORESCENT YELLOW REFLECTIVE BORDER.
7. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04-C. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.
8. SIGNAL HEADS SHALL HAVE A MINIMUM WALL THICKNESS OF 0.117 INCHES.
9. SIGNAL HEADS SHALL INCLUDE CUTAWAY TYPE VISORS UNLESS OTHERWISE SPECIFIED IN THE PLANS.
10. APPLY A BEAD OF SILICONE TO THE SIGNAL HEAD, WASHER, AND ENTRANCE ADAPTER SERRATIONS TO PREVENT WATER INTRUSION. ALSO, FILL THE SPACE BETWEEN CONCENTRIC SERRATION RINGS ON THE TOP OF THE SIGNAL HEAD TO COMPLETELY EXCLUDE WATER FROM THE SPACE BETWEEN THE CONCENTRIC RINGS.
11. BALANCE ADJUSTERS SHALL NOT BE USED ON ONE-WAY HEADS OR TETHERED HEADS.

PAYMENT FOR "ITEM 632 - VEHICULAR SIGNAL HEAD (LED), (BY TYPE), 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN" SHALL BE MADE FOR COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS, AND NEW ATTACHMENT HARDWARE.

ITEM 632 - PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 632 AND 732 THE FOLLOWING SHALL APPLY:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC AND MEET ITE SPECIFICATIONS.
2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.
3. PIPE, SPACERS AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OR ALUMINUM.
4. THE PEDESTRIAN SIGNAL HEAD SHALL BE OF THE LED COUNTDOWN TYPE.
5. NEW ATTACHMENT HARDWARE AND FITTINGS SHALL BE USED.
6. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04-C. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.

PAYMENT FOR "ITEM 632 - PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN" SHALL BE MADE FOR THE NUMBER OF COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS AND NEW ATTACHMENT HARDWARE.

ITEM 632 - PEDESTRIAN PUSHBUTTON, AS PER PLAN

IN ORDER TO CONFORM TO THE AMERICANS WITH DISABILITIES ACT (ADA), THE REQUIREMENTS OF CMS ITEMS 632.09 AND 732.06 ARE MODIFIED AS FOLLOWS:

1. THE MAXIMUM FORCE REQUIRED TO OPERATE THE PUSHBUTTON SHALL BE 5 POUNDS PER FOOT (22.2 NEWTONS).
2. THE PUSHBUTTON SHALL BE RAISED AND SHALL BE A MINIMUM OF 2 INCHES (50 MILLIMETERS) AT ITS SMALLEST DIMENSION.
3. THE PUSHBUTTON SHALL BE EQUIPPED TO EMIT AN AUDIBLE CHIRP AS THE BUTTON IS PUSHED TO CONFIRM THAT THE PEDESTRIAN CALL HAS BEEN PLACED.
4. THE PUSHBUTTON SHALL BE EQUIPPED WITH A RED INDICATOR LIGHT WHICH STAYS ILLUMINATED UNTIL THE PEDESTRIAN PHASE IS INITIATED.

THIS ITEM SHALL INCLUDE ALL LABOR AND MATERIAL COSTS ASSOCIATED WITH THE PROVISION AND INSTALLATION OF THE PUSHBUTTON AS OUTLINED ABOVE. PAYMENT FOR THIS WORK SHALL BE AT THE CONTRACT UNIT PRICE FOR ITEM 632 - PEDESTRIAN PUSHBUTTON, AS PER PLAN AND WILL BE MEASURED BY THE NUMBER OF COMPLETE UNITS FURNISHED, INSTALLED AND ACCEPTED BY THE DEPARTMENT.

SIGNAL ACTIVATION

PRIOR TO ACTIVATING THE NEW TRAFFIC SIGNAL TO STOP-AND-GO MODE AND/OR REMOVING THE EXISTING TRAFFIC SIGNAL FROM SERVICE, ALL ITEMS IN THE PROPOSED SIGNAL PLAN SHALL BE FULLY COMPLETED, (I.E., VEHICLE DETECTION, PEDESTRIAN SIGNAL HEADS, ETC.) IF THERE ARE CONSTRUCTABILITY ISSUES (I.E., ROADWAY WIDENING, ETC.) THAT PREVENT THE SIGNAL FROM BEING COMPLETED PRIOR TO ACTIVATION, IT SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER AND THE DISTRICT TRAFFIC ENGINEER. THE DISTRICT TRAFFIC ENGINEER WILL THEN REVIEW, APPROVE OR REJECT PROPOSALS TO ACTIVATE THE TRAFFIC SIGNAL PRIOR TO COMPLETION.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND THE DISTRICT TRAFFIC ENGINEER AT LEAST 10 WORKING DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL INSTALLATION. FINAL INSPECTION IS NOT CONSIDERED COMPLETE UNTIL DESIGNATED PERSONNEL INSPECT THE TRAFFIC SIGNAL AND ISSUE WRITTEN APPROVAL. IF ISSUES ARE FOUND DURING THE FINAL INSPECTION THAT EFFECT THE SAFETY OF THE TRAVELING PUBLIC AND/OR THE EFFICIENCY OF THE INTERSECTION, THE SIGNAL SHALL NOT BE ACTIVATED ON THE PROPOSED DATE. ANY PUNCH LIST ITEMS THAT ARE FOUND SHALL BE CORRECTED AND REINSPECTED BY DESIGNATED PERSONNEL PRIOR TO FINAL ACCEPTANCE. ODOT FORCES SHALL ONLY ASSUME DAY TO DAY MAINTENANCE OF THE TRAFFIC SIGNAL AFTER FINAL WRITTEN ACCEPTANCE HAS BEEN ISSUED.

ITEM 809 - STOP-BAR RADAR DETECTION, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT SUPPLEMENTAL SPECIFICATION 809, THE FOLLOWING SHALL APPLY:

1. THE UNIT SHALL BE A WAVETRONIX SMARTSENSOR MATRIX DETECTION UNIT.

PAYMENT FOR ITEM 809 - STOP-BAR RADAR DETECTION, AS PER PLAN SHALL BE MADE AT THE CONTRACT UNIT PRICE PER EACH, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT AND CONNECTIONS TESTED AND ACCEPTED.

ITEM 809 - ADVANCE RADAR DETECTION, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT SUPPLEMENTAL SPECIFICATION 809, THE FOLLOWING SHALL APPLY:

1. THE UNIT SHALL BE A WAVETRONIX SMARTSENSOR MATRIX DETECTION UNIT.

PAYMENT FOR ITEM 809 - ADVANCE RADAR DETECTION, AS PER PLAN SHALL BE MADE AT THE CONTRACT UNIT PRICE PER EACH, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT AND CONNECTIONS TESTED AND ACCEPTED.

ITEM 633 - GPS (GLOBAL POSITIONING SYSTEM) CLOCK ASSEMBLY

IN ADDITION TO THE REQUIREMENTS OF ODOT SUPPLEMENTAL SPECIFICATIONS 805 AND 903, THE FOLLOWING SHALL ALSO APPLY:

AS PART OF THIS PROJECT, THE EXISTING COPPER INTERCONNECT BETWEEN THE INTERSECTIONS OF TRANSPORTATION BOULEVARD / VISTA WAY AND TRANSPORTATION BOULEVARD / GRANGER ROAD SHALL BE ABANDONDED IN PLACE. IN ADDITION TO THE DETAILED PLANS, THE CONTRACTOR SHALL PROVIDE GPS CLOCK ASSEMBLIES FOR THESE INTERSECTIONS.

PAYMENT FOR THIS ITEM SHALL BE AT THE UNIT BID PRICE PER EACH ITEM 633 - GPS (GLOBAL POSITIONING SYSTEM) CLOCK ASSEMBLY FURNISHED, INSTALLED AND ACCEPTED BY THE DEPARTMENT. A QUANTITY OF 2 HAS BEEN CARRIED TO THE SIGNALIZATION GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 632 - SIGNAL SUPPORT, TYPE TC-81.21, DESIGN (), AS PER PLAN

THIS ITEM SHALL CONFORM TO ITEM 632.15 AND 732.11, EXCEPT THAT POLES SHALL BE TAPERED TUBES OF CONTINUOUS TAPER. POLES CONSISTING OF STRAIGHT SECTIONS WITH A TAPERED EFFECT ACCOMPLISHED BY THE USE OF REDUCERS SHALL NOT BE PERMITTED. POLES SHALL BE ROUND IN SHAPE. OCTAGON SHAPED POLES ARE NOT PERMITTED.

ITEM 632 - VEHICULAR SIGNAL HEAD, MISC.: VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE

ITEM 632 - VEHICULAR SIGNAL HEAD, MISC.: VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE

IN ADDITION TO THE REQUIREMENTS OF C&MS ITEM 632 AND C&MS 732, THE FOLLOWING REQUIREMENTS SHALL APPLY:

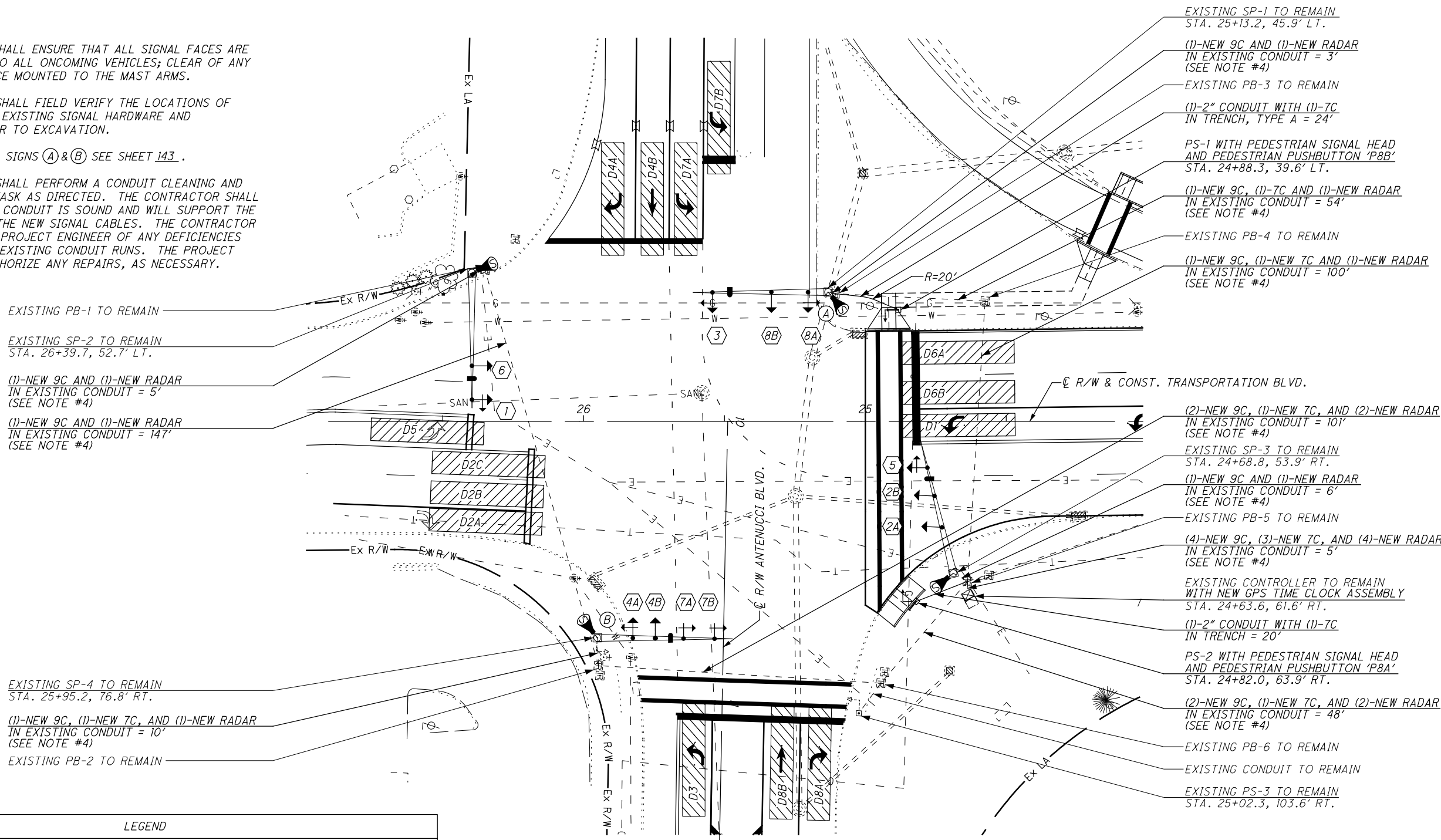
1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC WITH VISORS AS SPECIFIED AND MEET ITE SPECIFICATIONS.
2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.
3. ALL UPPER SIGNAL SUPPORT HARDWARE AND PIPING UP TO AND INCLUDING THE WIRE INLET FITTING SHALL BE FERROUS METAL.
4. THE ENTRANCE FITTING SHALL BE OF THE TRI-STUD DESIGN WITH SERRATED RINGS IN ORDER TO ACHIEVE POSITIVE LOCKING.
5. ALL SIGNAL HEADS SHALL BE RIGIDLY MOUNTED TO THE MAST ARM WITH THE (YELLOW) MODULE LOCATED IN FRONT OF THE MAST ARM.
6. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04-C. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.
7. SIGNAL HEADS SHALL HAVE A MINIMUM WALL THICKNESS OF 0.117 INCHES.
8. SIGNAL HEADS SHALL INCLUDE CUTAWAY TYPE VISORS UNLESS OTHERWISE SPECIFIED IN THE PLANS.
9. APPLY A BEAD OF SILICONE TO THE SIGNAL HEAD, WASHER, AND ENTRANCE ADAPTER SERRATIONS TO PREVENT WATER INTRUSION. ALSO, FILL THE SPACE BETWEEN CONCENTRIC SERRATION RINGS ON THE TOP OF THE SIGNAL HEAD TO COMPLETELY EXCLUDE WATER FROM THE SPACE BETWEEN THE CONCENTRIC RINGS.
10. BALANCE ADJUSTERS SHALL NOT BE USED ON ONE-WAY HEADS OR TETHERED HEADS.

PAYMENT FOR "ITEM 632 - VEHICULAR SIGNAL HEAD, MISC.: VEHICULAR SIGNAL HEAD, (LED), (BY TYPE), 12" LENS, 1-WAY, POLYCARBONATE" SHALL BE MADE FOR COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS, AND NEW ATTACHMENT HARDWARE.

SHEET	LOCATION	625	625	625	625	625	625	625	625	625	625	625	632	632	632	632	632	632	632	632	632	632	632	632	632
		CONDUIT, 2", 725.04	CONDUIT, 3", 725.04	CONDUIT, 4", 725.04	CONDUIT, JACKED OR DRILLED, 725.04, 4"	CONDUIT CLEANED AND CABLES REMOVED	TRENCH	TRENCH IN PAVED AREA, TYPE A	PULL BOX, 725.08, 18"	PULL BOX, 725.08, 24"	GROUND ROD	PLASTIC CAUTION TAPE	VEHICULAR SIGNAL HEAD, MISC.: VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE	VEHICULAR SIGNAL HEAD, MISC.: VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	COVERING OF VEHICULAR SIGNAL HEAD	COVERING OF PEDESTRIAN SIGNAL HEAD	PEDESTRIAN PUSHBUTTON, AS PER PLAN	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	SIGNAL CABLE, 9 CONDUCTOR, NO. 14 AWG	SIGNAL SUPPORT FOUNDATION	PEDESTAL FOUNDATION	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG
		FT	FT	FT	FT	FT	FT	EACH	EACH	EACH	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	FT	EACH	EACH	FT
162	TRANSPORTATION BLVD / I-480 EB RAMPS / ANTENUCCI BLVD	44				484	20	24			44	7	5		2	12	2	2	2	548	1037		2		
166	TRANSPORTATION BLVD / I-480 WB RAMPS / PUBLIC RD #1	125	47	30	403		149	5	3	1	7	154		2	6	6	8	6	6	876	886	4	2	59	
170	TRANSPORTATION BLVD / ODOT DRIVE / CENTER SOUTH DRIVEWAY	166	31	26	258		180	10	4	1	8	190		8	8	8	8	8	8	1996		4	3	46	
TOTALS CARRIED TO GENERAL SUMMARY		335	78	56	661	484	349	39	7	2	15	388	7	5	10	6	16	28	16	16	3420	1923	8	7	105
SHEET	LOCATION	632	632	632	632	632	632	632	632	632	633	633	633	633	633	633	633	633	633	633	809	809			
		SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG	POWER SERVICE, AS PER PLAN	CONDUIT RISER, 2" DIAMETER	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 2, AS PER PLAN	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 4, AS PER PLAN	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN II, AS PER PLAN	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 12, AS PER PLAN	PEDESTAL, 8', TRANSFORMER BASE	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	CONTROLLER UNIT, TYPE 2070E WITH 2070-IC CPU, AS PER PLAN	GPS (GLOBAL POSITIONING SYSTEM) CLOCK ASSEMBLY	CABINET, TYPE 332	CABINET FOUNDATION	CONTROLLER WORK PAD	PREEMPTION, AS PER PLAN	PREEMPTION RECEIVING UNIT	PREEMPTION DETECTOR CABLE	PREEMPTION PHASE SELECTOR	PREEMPTION CONFIRMATION LIGHT, AS PER PLAN	ADVANCE RADAR DETECTION, AS PER PLAN	STOP-BAR RADAR DETECTION, AS PER PLAN			
		FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	EACH	EACH	EACH	EACH			
162	TRANSPORTATION BLVD / I-480 EB RAMPS / ANTENUCCI BLVD							2	1		1											4			
166	TRANSPORTATION BLVD / I-480 WB RAMPS / PUBLIC RD #1	237	1	1		1	2	1	2	1	1	1	1	1	1	4	816	1	4	1	4				
170	TRANSPORTATION BLVD / ODOT DRIVE / CENTER SOUTH DRIVEWAY	170	1	1	2	1		1	3		1	1	1	1	1	4	723	1	4		2				
TOTALS CARRIED TO GENERAL SUMMARY		407	2	2	2	2	2	7	2	2	3	2	2	2	8	1539	2	8	1	10					

NOTES:

1. THE CONTRACTOR SHALL ENSURE THAT ALL SIGNAL FACES ARE CLEARLY VISIBLE TO ALL ONCOMING VEHICLES; CLEAR OF ANY OBSTRUCTIONS ONCE MOUNTED TO THE MAST ARMS.
2. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL UTILITIES AND EXISTING SIGNAL HARDWARE AND APPARATUSES PRIOR TO EXCAVATION.
3. FOR REFERENCE TO SIGNS (A) & (B) SEE SHEET 143.
4. THE CONTRACTOR SHALL PERFORM A CONDUIT CLEANING AND CABLES REMOVED TASK AS DIRECTED. THE CONTRACTOR SHALL CONFIRM THAT THE CONDUIT IS SOUND AND WILL SUPPORT THE INSTALLATION OF THE NEW SIGNAL CABLES. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER OF ANY DEFICIENCIES FOUND WITHIN THE EXISTING CONDUIT RUNS. THE PROJECT ENGINEER WILL AUTHORIZE ANY REPAIRS, AS NECESSARY.



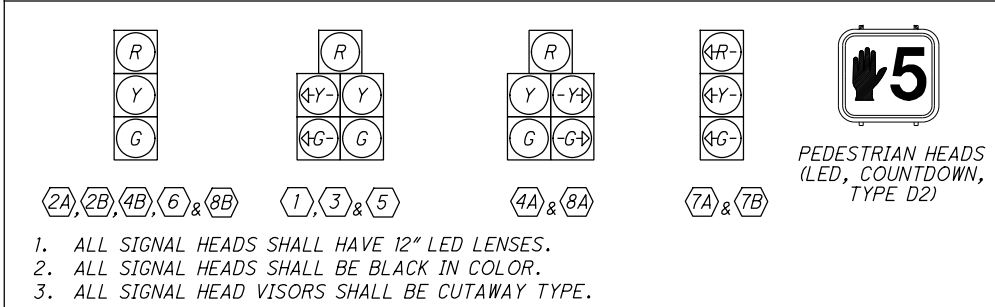
- EXISTING SP-1 TO REMAIN
STA. 25+13.2, 45.9' LT.
- (1)-NEW 9C AND (1)-NEW RADAR
IN EXISTING CONDUIT = 3'
(SEE NOTE #4)
- EXISTING PB-3 TO REMAIN
- (1)-2" CONDUIT WITH (1)-7C
IN TRENCH, TYPE A = 24'
- PS-1 WITH PEDESTRIAN SIGNAL HEAD
AND PEDESTRIAN PUSHBUTTON 'P8B'
STA. 24+88.3, 39.6' LT.
- (1)-NEW 9C, (1)-7C AND (1)-NEW RADAR
IN EXISTING CONDUIT = 54'
(SEE NOTE #4)
- EXISTING PB-4 TO REMAIN
- (1)-NEW 9C, (1)-NEW 7C AND (1)-NEW RADAR
IN EXISTING CONDUIT = 100'
(SEE NOTE #4)
- EXISTING SP-2 TO REMAIN
STA. 26+39.7, 52.7' LT.
- (1)-NEW 9C AND (1)-NEW RADAR
IN EXISTING CONDUIT = 5'
(SEE NOTE #4)
- (1)-NEW 9C AND (1)-NEW RADAR
IN EXISTING CONDUIT = 147'
(SEE NOTE #4)
- (2)-NEW 9C, (1)-NEW 7C, AND (2)-NEW RADAR
IN EXISTING CONDUIT = 101'
(SEE NOTE #4)
- EXISTING SP-3 TO REMAIN
STA. 24+68.8, 53.9' RT.
- (1)-NEW 9C AND (1)-NEW RADAR
IN EXISTING CONDUIT = 6'
(SEE NOTE #4)
- EXISTING PB-5 TO REMAIN
- (4)-NEW 9C, (3)-NEW 7C, AND (4)-NEW RADAR
IN EXISTING CONDUIT = 5'
(SEE NOTE #4)
- EXISTING CONTROLLER TO REMAIN
WITH NEW GPS TIME CLOCK ASSEMBLY
STA. 24+63.6, 61.6' RT.
- (1)-2" CONDUIT WITH (1)-7C
IN TRENCH = 20'
- PS-2 WITH PEDESTRIAN SIGNAL HEAD
AND PEDESTRIAN PUSHBUTTON 'P8A'
STA. 24+82.0, 63.9' RT.
- (2)-NEW 9C, (1)-NEW 7C, AND (2)-NEW RADAR
IN EXISTING CONDUIT = 48'
(SEE NOTE #4)
- EXISTING PB-6 TO REMAIN
- EXISTING CONDUIT TO REMAIN
- EXISTING PS-3 TO REMAIN
STA. 25+02.3, 103.6' RT.

- EXISTING PB-1 TO REMAIN
- EXISTING SP-2 TO REMAIN
STA. 26+39.7, 52.7' LT.
- (1)-NEW 9C AND (1)-NEW RADAR
IN EXISTING CONDUIT = 5'
(SEE NOTE #4)
- (1)-NEW 9C AND (1)-NEW RADAR
IN EXISTING CONDUIT = 147'
(SEE NOTE #4)
- EXISTING SP-4 TO REMAIN
STA. 25+95.2, 76.8' RT.
- (1)-NEW 9C, (1)-NEW 7C, AND (1)-NEW RADAR
IN EXISTING CONDUIT = 10'
(SEE NOTE #4)
- EXISTING PB-2 TO REMAIN

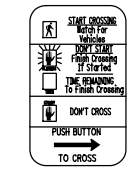
LEGEND

	EXISTING	PROPOSED
TRAFFIC SIGNAL, 3 UNIT HEAD, 12" WITH ARROWS		
TRAFFIC SIGNAL, 3 UNIT HEAD, 12"		
TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"		
SIGNAL SUPPORT POLE		
PEDESTRIAN SIGNAL		
PEDESTRIAN PUSH BUTTON		
PEDESTAL SUPPORT		
CONDUIT		
CONTROLLER CABINET AND WORK PAD		
EXISTING TRAFFIC PULL BOX		
PREEMPTION RECEIVING UNIT AND CONFIRMATION LIGHT		
STOP BAR RADAR DETECTION UNIT		

SIGNAL TYPES



PEDESTRIAN SIGNS



PULL BOX TABLE

PULL BOX #	STATION	SIDE	OFFSET
EX. PB-1	26+35.0	LT	53.8'
EX. PB-2	25+94.7	RT	86.7'
EX. PB-3	25+10.7	LT	45.2'
EX. PB-4	24+57.5	LT	42.6'
EX. PB-5	24+63.7	RT	56.8'
EX. PB-6	24+94.5	RT	92.9'

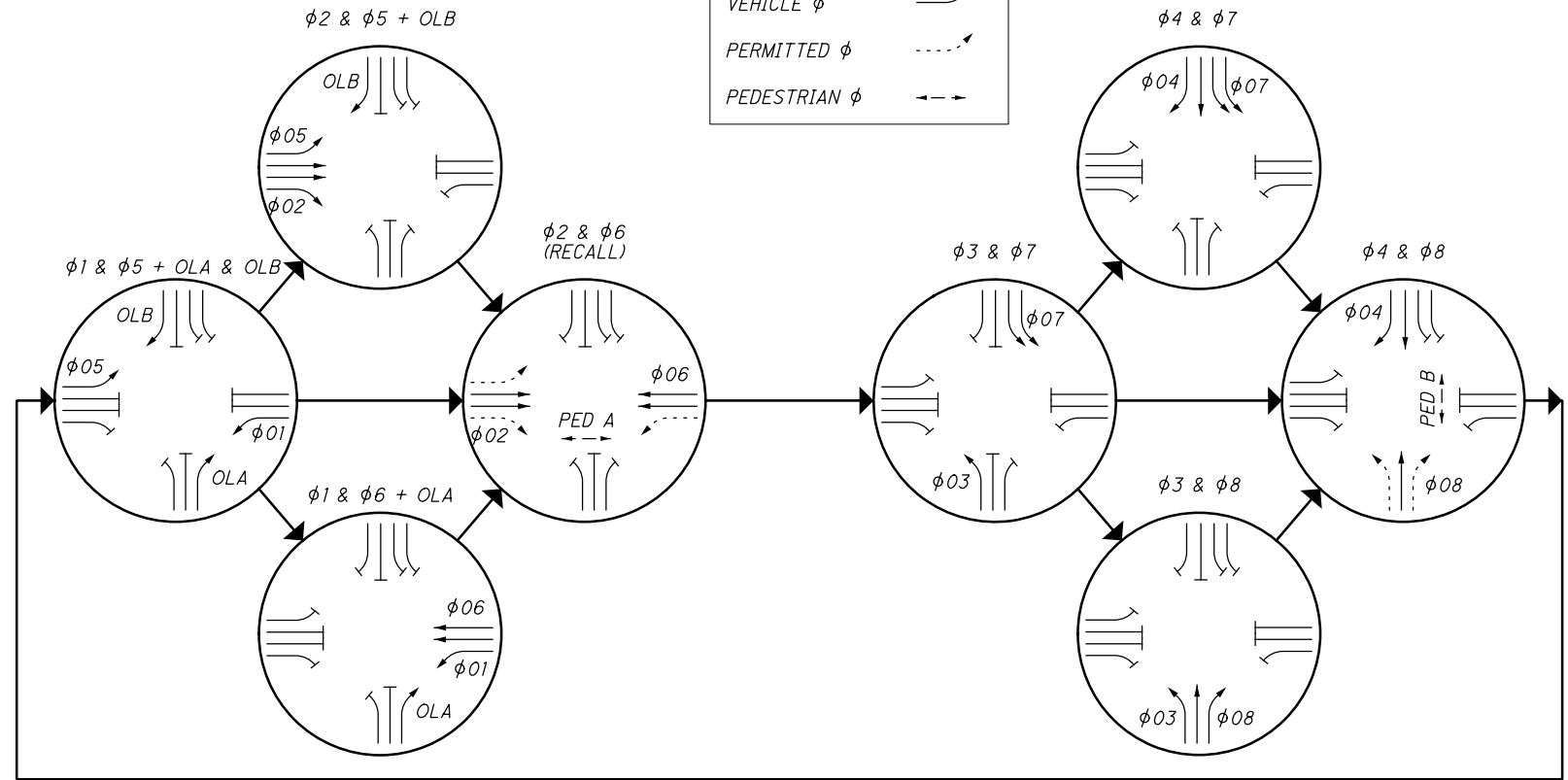
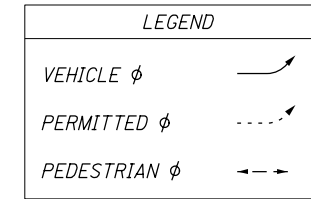
\\AKR\DATA\2016\2016051\CUY\B0974\1\SIGNALS\SHEETS\B0974\CP001.DGN
 3/22/2017 3:12:24 PM G00TV81STD_USER

SIGNAL TIMING CHART

INTERSECTION: TRANSPORTATION BLVD / I-480 EB RAMPS / ANTENUCCI BLVD								
MAINTAINING AGENCY: ODOT								
START UP		DUAL ENTRY: YES	PHASES: 2, 4, 6, 8					
START IN: ALL RED		REST IN RED:	RING 1		RING 2			
TIME FOR FLASH OR ALL RED: (2+6) 5		OVERLAP	A	B	C	D		
FIRST PHASE(S): (2+6)		PHASES	1	3	5	-		
COLOR DISPLAYED: GREEN								
INTERVAL OR FEATURE	CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)	1	2	3	4	5	6	7	8
DIRECTION	SB LT	NB	WB LT	EB	NB LT	SB	EB LT	WB
MINIMUM GREEN (INITIAL) (SEC.)	7	20	7	10	7	20	7	10
ADDED INITIAL *(SEC./ACTUATION)	-	-	-	-	-	-	-	-
MAXIMUM INITIAL (SEC.)	-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP) (SEC.)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
TIME BEFORE REDUCTION *(SEC.)	-	-	-	-	-	-	-	-
MINIMUM GAP *(SEC.)	-	-	-	-	-	-	-	-
TIME TO REDUCE *(SEC.)	-	-	-	-	-	-	-	-
MAXIMUM GREEN I (SEC.)	20	60	20	35	20	60	20	35
MAXIMUM GREEN II (SEC.)	-	-	-	-	-	-	-	-
YELLOW CHANGE (SEC.)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
ALL RED CLEARANCE (SEC.)	2.5	2.5	3.0	3.0	2.5	2.5	3.0	3.0
WALK (SEC.)	-	9	-	-	-	-	-	11
PEDESTRIAN CLEARANCE (SEC.)	-	19	-	-	-	-	-	24
RECALL	MAXIMUM (ON/OFF)	-	-	-	-	-	-	-
	MINIMUM (ON/OFF)	-	ON	-	-	-	ON	-
	PEDESTRIAN (ON/OFF)	-	ON	-	-	-	-	-
MEMORY (ON/OFF)	-	-	-	-	-	-	-	-

*VOLUME DENSITY CONTROLS

PHASING DIAGRAM



NOTES:

- ALL MOVEMENTS SHALL BE ACTUATED. THE PRIMARY THRU MOVEMENT SHOULD HAVE MIN RECALL ACTIVE TO REST IN GREEN.
- COUNTDOWN PEDESTRIAN SIGNALS SHALL GO TO ZERO ON YELLOW PER ODOTCD FIGURE 4E-2.
- ALL DETECTOR DELAYS SHALL BE PLACED IN THE CONTROLLER.
- ENABLE $\phi 3$ AND $\phi 7$ DETECTOR SWITCHING TO ALLOW $\phi 3$ AND $\phi 7$ TO EXTEND $\phi 4$ AND $\phi 8$ WHEN ALLOCATED GREEN TIME FOR LEFT TURN PHASES ARE EXHAUSTED.
- PHASE 2 AND PHASE 6 PEDESTRIAN CLEARANCE INTERVALS SHALL NOT BE SERVICED WHEN SIGNAL IS OPERATING IN COORDINATION UNLESS PEDESTRIAN CALL IS RECEIVED VIA PUSHBUTTON.

RADAR DETECTION CHART

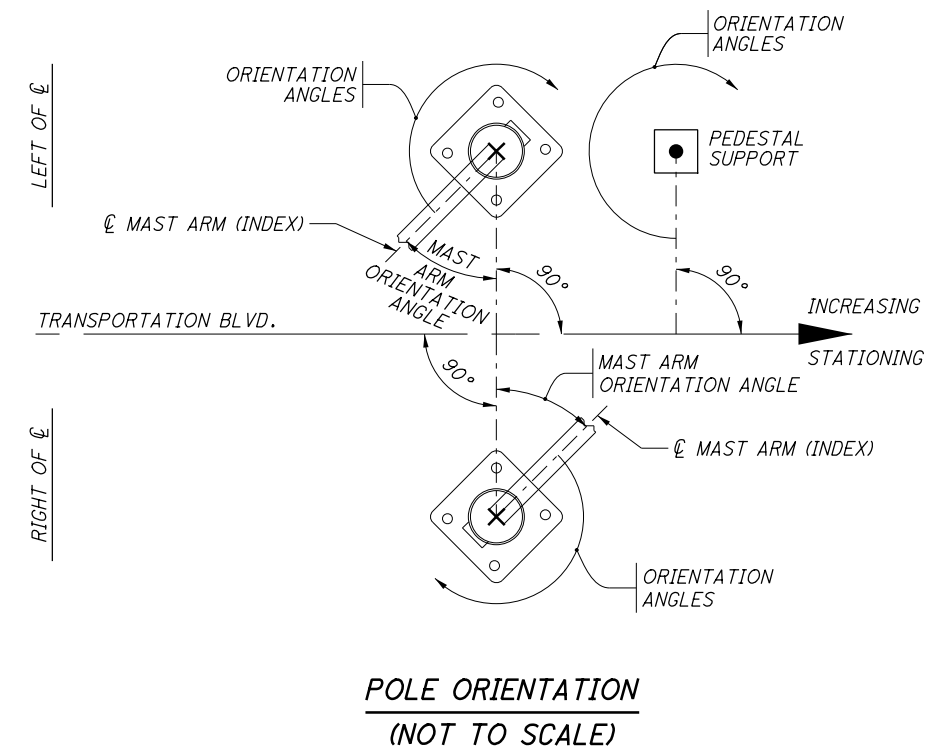
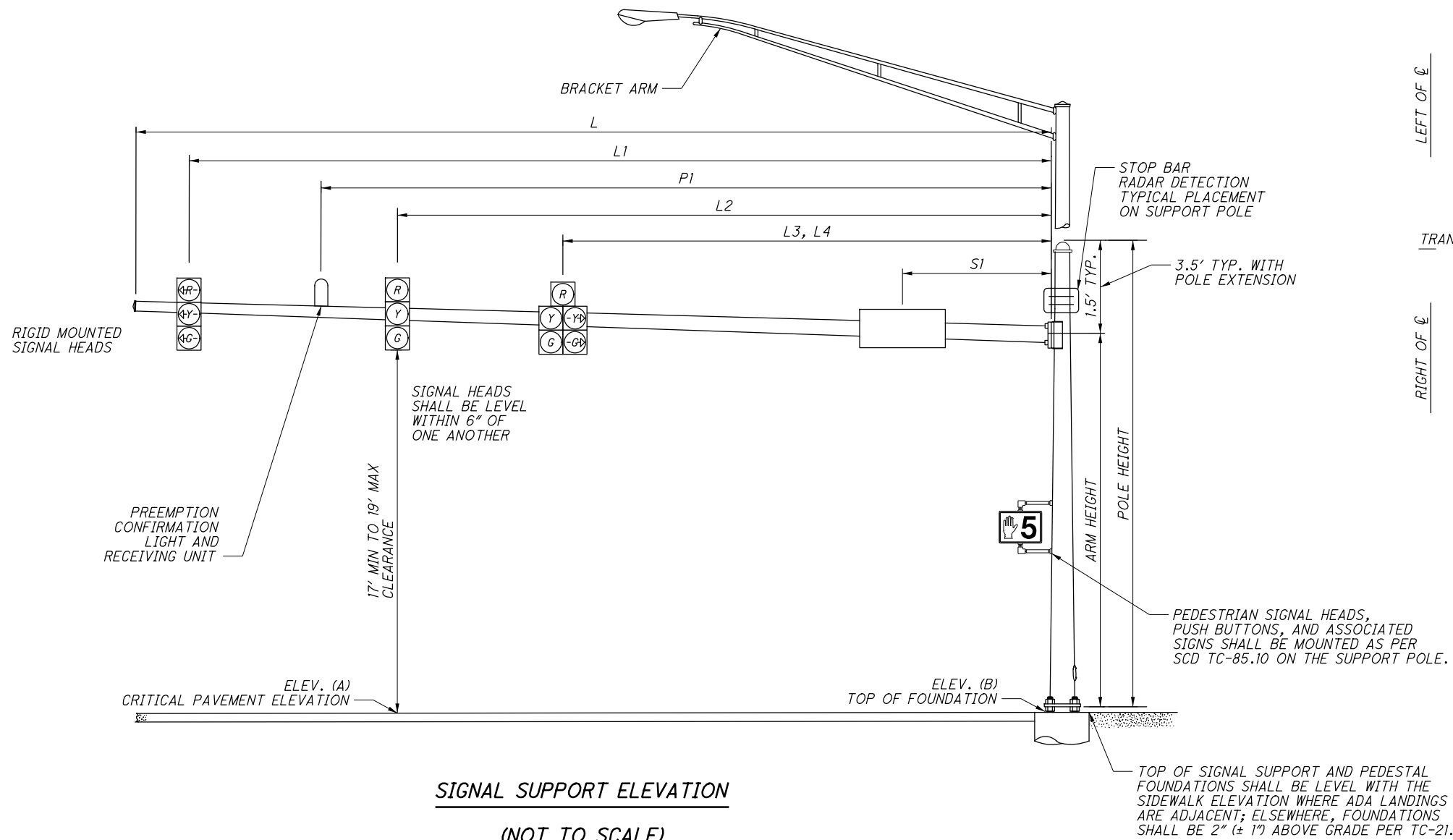
DETECTION ZONE	MOVEMENT	PULSE OR PRESENCE	ASSOCIATED PHASE	DELAY IN CONTROLLER (SEC)	DELAY INHIBIT PHASE	PURPOSE	DETECTION ZONE LENGTH (FT)
D1	SBLT	PRESENCE	$\phi 1$	5	$\phi 1$	STOP BAR	40
D2A	NBRT	PRESENCE	$\phi 2$	10	-	STOP BAR	40
D2B	NB	PRESENCE	$\phi 2$	0	-	STOP BAR	40
D2C	NB	PRESENCE	$\phi 2$	0	-	STOP BAR	40
D3	WBLT	PRESENCE	$\phi 3$	5	$\phi 3$	STOP BAR	40
D4A	EBRT	PRESENCE	$\phi 4$	10	$\phi 4$	STOP BAR	40
D4B	EB	PRESENCE	$\phi 4$	0	-	STOP BAR	40
D5	NBLT	PRESENCE	$\phi 5$	5	$\phi 5$	STOP BAR	40
D6A	SB	PRESENCE	$\phi 6$	0	-	STOP BAR	40
D6B	SB	PRESENCE	$\phi 6$	0	-	STOP BAR	40
D7A	EBLT	PRESENCE	$\phi 7$	5	$\phi 7$	STOP BAR	40
D7B	EBLT	PRESENCE	$\phi 7$	5	$\phi 7$	STOP BAR	40
D8A	WBRT	PRESENCE	$\phi 8$	10	$\phi 8$	STOP BAR	40
D8B	WB	PRESENCE	$\phi 8$	0	-	STOP BAR	40

PREEMPT CHANNELS

- CHANNEL 1 = $\phi(2+5)$ (NORTHBOUND ONLY)
- CHANNEL 2 = $\phi(1+6)$ (SOUTHBOUND ONLY)
- CHANNEL 3 = $\phi(4+7)$ (EASTBOUND ONLY)
- CHANNEL 4 = $\phi(3+8)$ (WESTBOUND ONLY)

PREEMPT NOTES:

1. ACTIVE WALK INDICATIONS SHALL IMMEDIATELY GO TO "DONT WALK" UPON RECEIVING PREEMPTION SIGNAL.
2. IF PHASE ACTIVE CONFLICTS WITH PREEMPT PHASE CALLED, IT SHALL IMMEDIATELY TIME ITS YELLOW AND ALL RED CLEARANCES.
3. IF ACTIVE PHASE = THE PREEMPT PHASE, THEN THE PHASE SHALL HOLD FOR DURATION OF THE PREEMPT SIGNAL.
4. AFTER RELEASE FROM PREEMPT, YELLOW AND ALL RED CLEARANCE SHALL BE DISPLAYED AND RETURN PHASE SHALL BE $\phi(2+6)$.
5. IF PREEMPT PHASE = RETURN PHASE $\phi(2+6)$ THEN YELLOW AND ALL RED CLEARANCE AFTER PREEMPT SHALL NOT BE DISPLAYED.



SIGNAL SUPPORT ELEVATION
(NOT TO SCALE)

MAST ARM TABLE

SUPPORT NO.	STATION	OFFSET	ELEVATION		SIGNAL SUPPORT DETAILS												MAST ARM 'A' ORIENTATION ANGLE DEG	ORIENTATION ANGLES FROM MAST ARM 'A' / INDEX LINE		
			A	B	DESIGN TYPE	DESIGN NO.	POLE HEIGHT	ARM HEIGHT	L	L1	L2	L3	L4	P1	SI	PEDESTRIAN SIGNAL		PEDESTRIAN BUTTON	HANDHOLE	
			FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT		DEG	DEG	DEG
EX. SP-1	25+13.2	45.9' LT	881.04	X	X	X	X	X	X	41	20	7	-	X	1	X	-	-	X	
EX. SP-2	26+39.7	52.7' LT	879.16	X	X	X	X	X	X	45	33	X	X	X	X	X	-	-	X	
EX. SP-3	24+68.8	53.9' RT	882.76	X	X	X	X	X	X	38.5	27.5	16.5	-	X	X	X	-	-	X	
EX. SP-4	25+95.2	76.8' RT	881.21	X	X	X	X	X	X	41.5	30.5	20.5	12.5	X	6	X	X	X	X	
PS-1	24+88.3	39.6' LT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90	90	180	
PS-2	24+82.0	63.9' RT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	270	220	130	
EX. PS-3	25+02.3	103.6' RT	-	-	-	-	X	-	-	-	-	-	-	-	-	-	X	X	X	

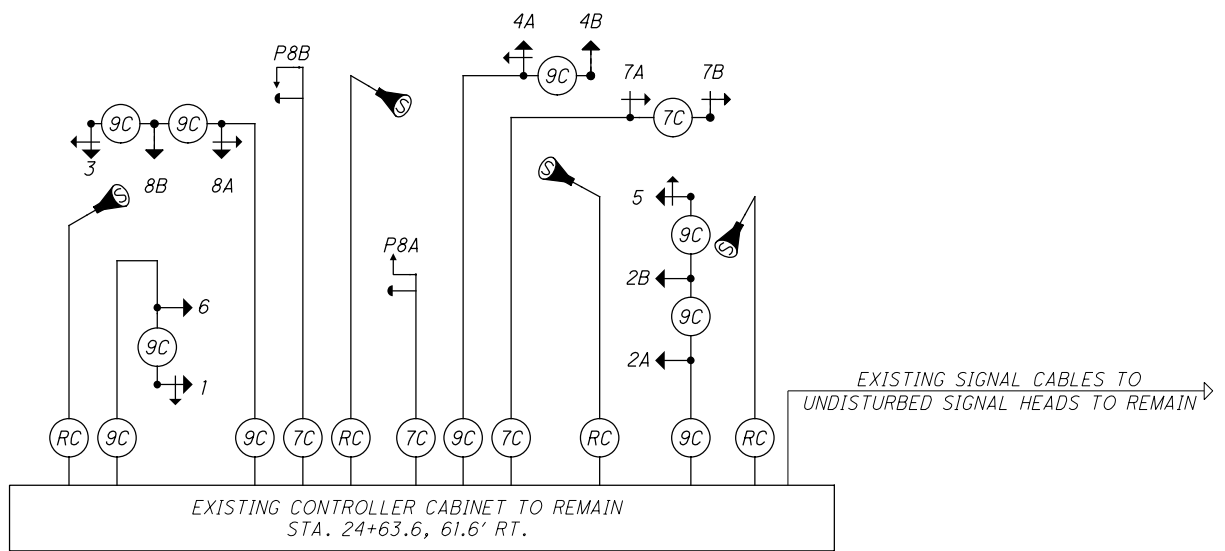
NOTES:

1. AN "X" DENOTES VALUES OF EXISTING SIGNAL EQUIPMENT THAT SHALL REMAIN UNDISTURBED THROUGHOUT THE DURATION OF CONSTRUCTION.

\MAPRINDA.DAT 2016.05.11 10:16:05 AM C:\V\80974\NSIGNAL\5\SHEETS\80974CD012.DGN
 3/22/2017 3:12:25 PM
 DDDTY81STD_USER

FIELD WIRING HOOK-UP CHART

WIRING DIAGRAM



NOTE: EXISTING SIGNAL CABLE INFORMATION FOR THIS INTERSECTION HAS NOT BEEN VERIFIED. ONLY PROPOSED SIGNAL CABLE INFORMATION IS DEPICTED ON THIS DIAGRAM. EXISTING SIGNAL CABLES NO LONGER USED SHALL BE REMOVED.

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH	SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1 (SB LT)	R	φ6 R	Y	6 (SB)	R	φ6 R	Y
	Y	φ6 Y			Y	φ6 Y	
	G	φ6 G			G	φ6 G	
	<--Y---	φ1 Y			<--R---	φ7 R	
2A, 2B (NB)	R	φ2 R	Y	7A, 7B (EB LT)	<--Y---	φ7 Y	R
	Y	φ2 Y			<--G---	φ7 G	
	G	φ2 G			R	φ8 R	
	R	φ8 R			Y	φ8 Y	
3 (WB LT)	Y	φ8 Y	R	8A (WB RT)	G	φ8 G	R
	G	φ8 G			---	φ8 Y	
	<--Y---	φ3 Y			---	OLA Y	
	<--G---	φ3 G			---	OLA G	
4A (EB RT)	R	φ4 R	R	8B (WB)	R	φ8 R	R
	Y	φ4 Y			Y	φ8 Y	
	G	φ4 G			G	φ8 G	
	---	OLA Y			G	φ8 G	
4B (EB)	R	φ4 R	R	PEDESTRIAN MOVEMENTS			
	Y	φ4 Y		P2A-P2B EAST	W	PEDA φ2 G	OUT
	G	φ4 G		P8A-P8B NORTH	DW	PEDA φ2 R	OUT
	---	OLB G					
5 (NB LT)	R	φ2 R	Y	OVERLAPS			
	Y	φ2 Y			PEDA=LS9		
	G	φ2 G			PEDB=LS10		
	<--Y---	φ5 Y			OLA=LS13		
	<--G---	φ5 G		OLB=LS14			

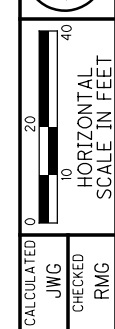
LS = LOAD SWITCH

LEGEND

	4 OR 5 SECTION VEHICULAR SIGNAL HEAD, 1-WAY		SIGNAL CABLE, 9 CONDUCTOR, NO. 14 AWG
	3 SECTION VEHICULAR SIGNAL HEAD, TURN ARROWS, 1-WAY		SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
	3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY		RADAR DETECTION CABLE
	PEDESTRIAN SIGNAL HEAD		STOP BAR RADAR DETECTION UNIT
	PEDESTRIAN PUSHBUTTON		

CALCULATED
JWG
CHECKED
RMG

TRAFFIC SIGNAL PLAN DETAILS
TRANSPORTATION BLVD. / I-480 EB RAMPS / ANTENUCCI BLVD.



PB-1
 (1)-3" CONDUIT WITH (1)-9C, (1)-7C, (1)-2C LEAD-IN, (1)-RADAR AND (1)-PREEMPT IN TRENCH = 11'

SP-2, TYPE TC-81.21, DESIGN 11 WITH A 45' MAST ARM, PEDESTRIAN SIGNAL HEAD AND PEDESTRIAN PUSHBUTTON 'P6B'
 STA. 14+67.1, 49.9' RT.

SP-1, TYPE TC-81.21, DESIGN 12 WITH A 48' MAST ARM, PEDESTRIAN SIGNAL HEAD AND PEDESTRIAN PUSHBUTTON 'P6A'
 STA. 86+49.8, 54.1' LT.

(1)-3" CONDUIT WITH (1)-9C, (1)-7C, (1)-2C LEAD-IN, (1)-RADAR AND (1)-PREEMPT IN TRENCH = 13'

(1)-4" CONDUIT WITH (1)-9C, (1)-7C, (1)-2C LEAD-IN, (1)-RADAR AND (1)-PREEMPT (JACKED OR DRILLED) = 117'

PB-3
 (1)-2" CONDUIT WITH (1)-7C IN TRENCH = 22'

PS-1 WITH PEDESTRIAN SIGNAL HEAD AND PEDESTRIAN PUSHBUTTON 'P8B'
 STA. 86+81.0, 45.1' LT.

(1)-2" CONDUIT WITH (1)-SERVICE CABLE IN TRENCH = 66'

PROPOSED POWER SOURCE LOCATION
 35' CONDUIT RISER (2" DIAMETER)
 STA. 87+24.0, 40.0' LT.
 (SEE NOTE #4)

(1)-4" CONDUIT WITH (2)-9C, (3)-7C, (2)-2C LEAD-IN, (2)-RADAR AND (2)-PREEMPT
 (1)-4" CONDUIT WITH (1)-SERVICE CABLE (JACKED OR DRILLED) = 87'

SP-3, TYPE TC-81.21, DESIGN 4 WITH A 38' MAST ARM, PEDESTRIAN SIGNAL HEAD AND PEDESTRIAN PUSHBUTTON 'P8A'
 STA. 86+81.7, 31.2' RT.

PS-2 WITH PEDESTRIAN SIGNAL HEAD AND PUSHBUTTON 'P2B'
 STA. 86+63.0, 38.0' RT.

(1)-3" CONDUIT WITH (1)-9C, (1)-7C, (1)-2C LEAD-IN, (1)-RADAR AND (1)-PREEMPT
 (1)-2" CONDUIT WITH (1)-POWER CABLE AND (1)-SERVICE CABLE IN TRENCH = 18'

(1)-2" CONDUIT WITH (1)-7C IN TRENCH = 4'

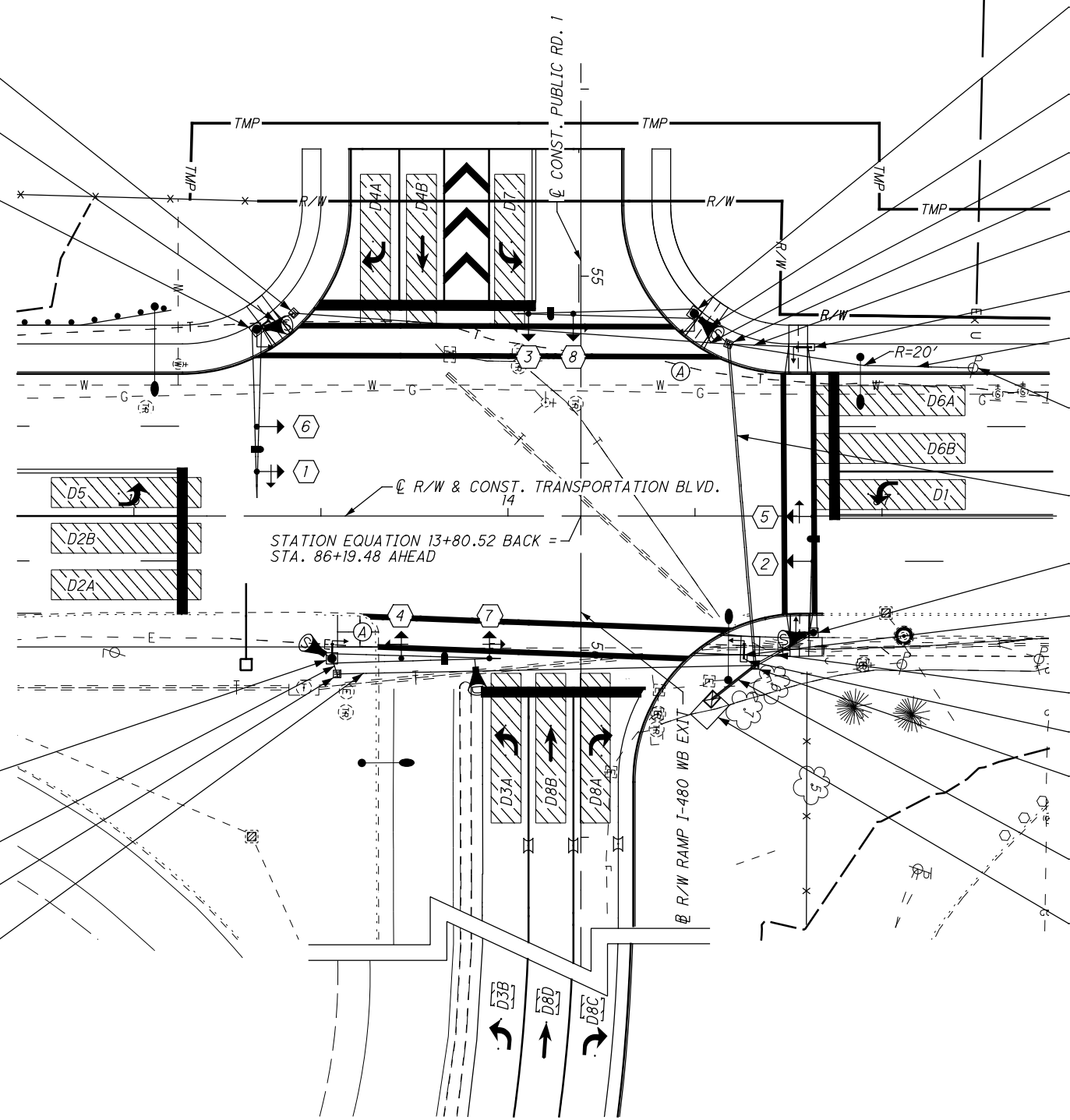
PB-4
 (1)-4" CONDUIT WITH (4)-9C AND (6)-7C
 (1)-4" CONDUIT WITH (4)-2C LEAD-IN, (5)-RADAR AND (4)-PREEMPT
 (1)-2" CONDUIT WITH (1)-POWER CABLE IN TRENCH = 15'

PROPOSED GROUND MOUNTED CONTROLLER AND WORK PAD
 STA. 86+56.6, 50.9' RT.

SP-4, TYPE TC-81.21, DESIGN 11 WITH A 45' MAST ARM, PEDESTRIAN SIGNAL HEAD AND PUSHBUTTON 'P2A'
 STA. 14+47.1, 38.1' LT.

(1)-3" CONDUIT WITH (1)-9C, (1)-7C, (1)-2C LEAD-IN, (2)-RADAR AND (1)-PREEMPT IN TRENCH, TYPE A = 5'

PB-2
 (1)-4" CONDUIT WITH (1)-9C, (1)-7C, (1)-2C LEAD-IN, (2)-RADAR AND (1)-PREEMPT (JACKED OR DRILLED) = 112'



NOTES:

1. THE CONTRACTOR SHALL ENSURE THAT ALL SIGNAL FACES ARE CLEARLY VISIBLE TO ALL ONCOMING VEHICLES; CLEAR OF ANY OBSTRUCTION ONCE MOUNTED TO THE MAST ARMS.
2. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL UTILITIES AND EXISTING SIGNAL HARDWARE AND APPARATUSES PRIOR TO EXCAVATION.
3. FOR REFERENCE TO SIGN (A) SEE SHEET 145.
4. UTILITY POLE RELOCATIONS WILL BE REQUIRED FOR THIS PROJECT. THE PROPOSED POWER SERVICE LOCATION SHALL BE VERIFIED IN THE FIELD AND APPROVED BY THE ENGINEER.

LEGEND	
TRAFFIC SIGNAL, 3 UNIT HEAD, 12"	
TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"	
SIGNAL SUPPORT POLE	
PEDESTRIAN SIGNAL	
PEDESTRIAN PUSH BUTTON	
PEDESTAL SUPPORT	
	CONTROLLER CABINET AND WORK PAD (TS-2)
	TRAFFIC PULL BOX
	STOP BAR RADAR DETECTION UNIT
	DILEMMA ZONE RADAR DETECTION UNIT
	DETECTION ZONE
	PROPOSED CONDUIT
	PREEMPTION RECEIVING UNIT AND CONFIRMATION LIGHT

SIGNAL TYPES

2 & 6

1, 3, 5 & 7

4 & 8

PEDESTRIAN HEADS (LED, COUNTDOWN, TYPE D2)

1. ALL SIGNAL HEADS SHALL HAVE 12" LED LENSES.
2. ALL SIGNAL HEADS SHALL BE BLACK IN COLOR AND HAVE BACKPLATES.
3. ALL SIGNAL HEAD VISORS SHALL BE CUTAWAY TYPE.

PEDESTRIAN SIGNS

R10-3e-9
 2 - RIGHT ARROW (PS-1, PS-2)
 4 - LEFT ARROW (SP-1, SP-2, SP-3, SP-4)

PULL BOX TABLE				
PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB-1	14+57.3	RT	54.2'	18
PB-2	14+45.6	LT	42.2'	18
PB-3	86+59.0	LT	45.9'	18
PB-4	86+66.1	RT	40.0'	24

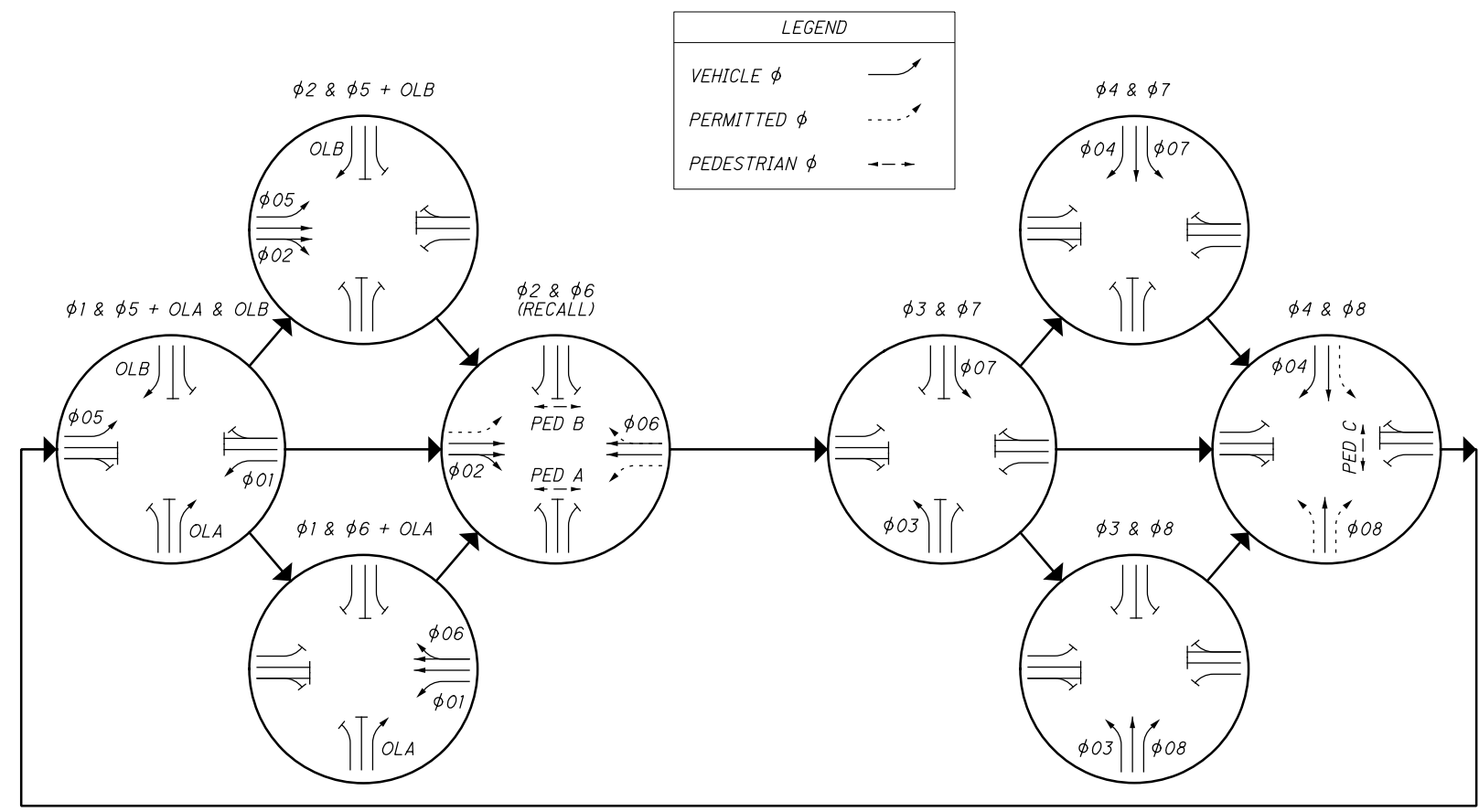
SIGNAL TIMING CHART

INTERSECTION: TRANSPORTATION BLVD / I-480 WB RAMPS / PUBLIC RD 1
 MAINTAINING AGENCY: OHIO DEPARTMENT OF TRANSPORTATION

START UP		DUAL ENTRY: YES	PHASES: 2, 4, 6, 8						
START IN: ALL RED		REST IN RED: RING 1	RING 2						
TIME FOR FLASH OR ALL RED: 5		OVERLAP	A	B	C	D			
FIRST PHASE(S): (2+6)		PHASES	1	5	-	-			
COLOR DISPLAYED: GREEN									
INTERVAL OR FEATURE		CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)		1	2	3	4	5	6	7	8
DIRECTION		SB LT	NB	WB LT	EB	NB LT	SB	EB LT	WB
MINIMUM GREEN (INITIAL) (SEC.)		7	20	7	10	7	20	7	10
ADDED INITIAL *(SEC./ACTUATION)		-	-	-	-	-	-	-	-
MAXIMUM INITIAL (SEC.)		-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP) (SEC.)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
TIME BEFORE REDUCTION *(SEC.)		-	-	-	-	-	-	-	-
MINIMUM GAP *(SEC.)		-	-	-	-	-	-	-	-
TIME TO REDUCE *(SEC.)		-	-	-	-	-	-	-	-
MAXIMUM GREEN I (SEC.)		20	60	20	30	20	60	20	30
MAXIMUM GREEN II (SEC.)		-	-	-	-	-	-	-	-
YELLOW CHANGE (SEC.)		3.0	3.5	3.0	3.0	3.0	3.5	3.0	3.0
ALL RED CLEARANCE (SEC.)		4.0	3.0	3.0	3.0	4.0	3.0	3.0	3.0
WALK (SEC.)		-	11	-	-	-	11	-	9
PEDESTRIAN CLEARANCE (SEC.)		-	23	-	-	-	28	-	16
RECALL	MAXIMUM (ON/OFF)	-	-	-	-	-	-	-	-
	MINIMUM (ON/OFF)	-	ON	-	-	-	ON	-	-
	PEDESTRIAN (ON/OFF)	-	-	-	-	-	-	-	-
MEMORY (ON/OFF)		-	-	-	-	-	-	-	-

*VOLUME DENSITY CONTROLS

PHASING DIAGRAM



NOTES:

- ALL MOVEMENTS SHALL BE ACTUATED. THE PRIMARY THRU MOVEMENT SHOULD HAVE MIN RECALL ACTIVE TO REST IN GREEN.
- COUNTDOWN PEDESTRIAN SIGNALS SHALL GO TO ZERO ON YELLOW PER OMTCD FIGURE 4E-2.
- ALL DETECTOR DELAYS SHALL BE PLACED IN THE CONTROLLER.
- ENABLE $\phi 3$ AND $\phi 7$ DETECTOR SWITCHING TO ALLOW $\phi 3$ AND $\phi 7$ TO EXTEND $\phi 4$ AND $\phi 8$ WHEN ALLOCATED GREEN TIME FOR LEFT TURN PHASES ARE EXHAUSTED.
- RADAR DETECTION UNITS FOR DILEMMA ZONE DETECTION SHALL PLACE A CONSTANT CALL TO THE CONTROLLER WHEN NEW VEHICLES TRAVEL TIMES TO THE STOP BAR ARE BETWEEN 2.5 AND 6 SECONDS. SPEED TRIGGER SHALL BE SET FOR VEHICLES TRAVELING 35 MPH AND GREATER.
- RADAR SHALL HAVE QUEUE DETECTION CONFIGURED AND A ZONE PLACED AT 100-200 FEET FROM STOP BAR FOR SLOW MOVING VEHICLE EXTENSIONS. SPEED TRIGGER SHALL BE SET AT 1-35 MPH.
- PHASE 2 AND PHASE 6 PEDESTRIAN CLEARANCE INTERVALS SHALL NOT BE SERVICED WHEN SIGNAL IS OPERATING IN COORDINATION UNLESS PEDESTRIAN CALL IS RECEIVED VIA PUSHBUTTON.

RADAR DETECTION CHART

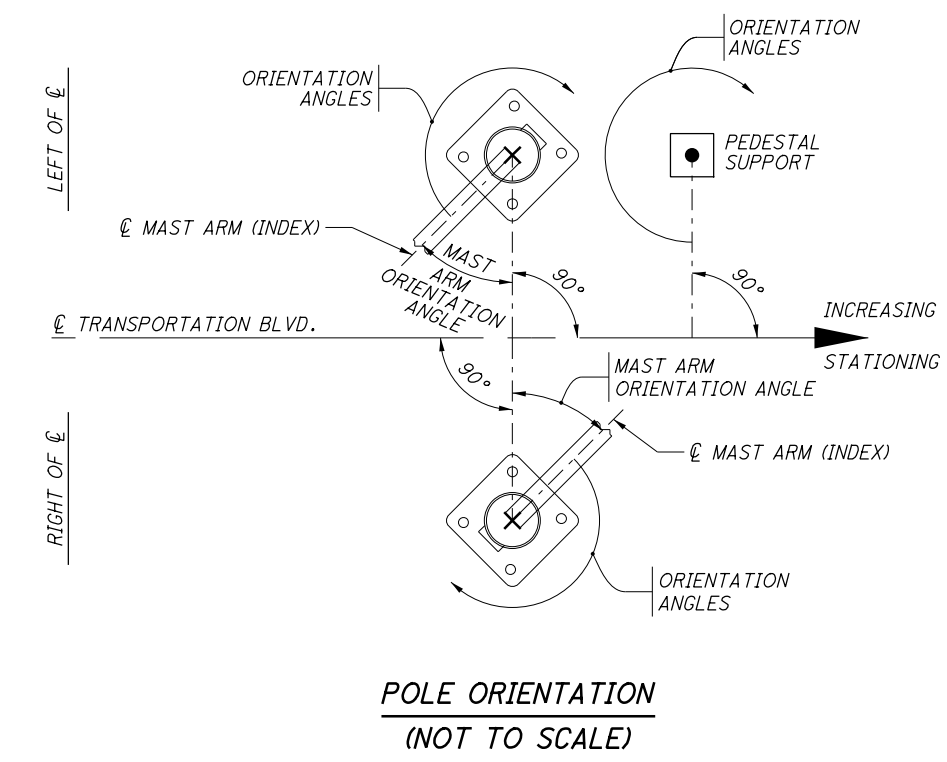
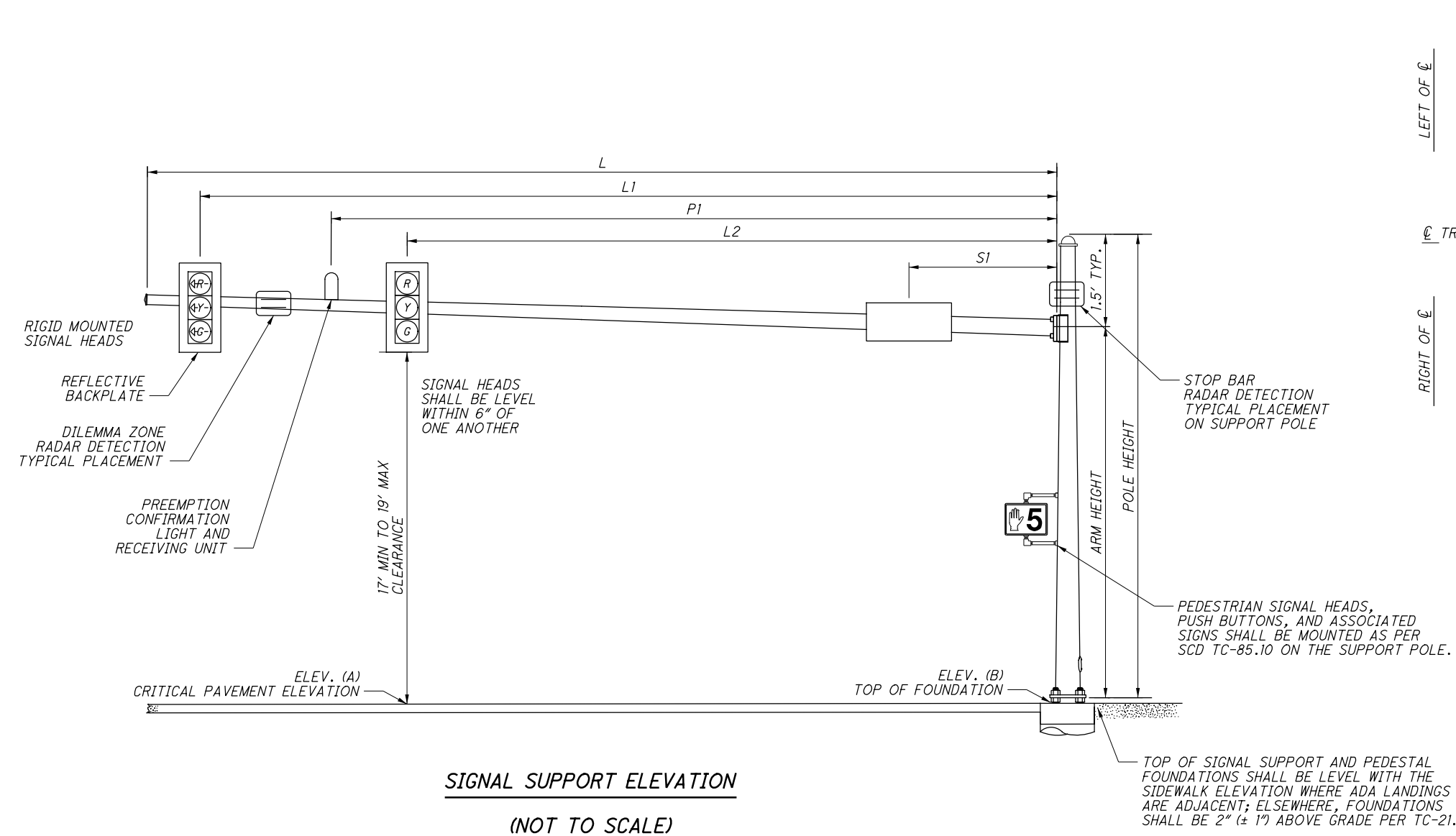
DETECTION ZONE	MOVEMENT	PULSE OR PRESENCE	ASSOCIATED PHASE	DELAY IN CONTROLLER (SEC)	DELAY INHIBIT PHASE	PURPOSE	DETECTION ZONE LENGTH (FT)	LOCATION FROM STOP BAR (FT)
D1	SBLT	PRESENCE	$\phi 1$	5	$\phi 1$	STOP BAR	40	4
D2A	NB	PRESENCE	$\phi 2$	0	-	STOP BAR	40	4
D2B	NB	PRESENCE	$\phi 2$	0	-	STOP BAR	40	4
D3A	WBLT	PRESENCE	$\phi 3$	5	$\phi 3$	STOP BAR	40	4
D3B	WBLT	PULSE	$\phi 3$	0	$\phi 3$	CALL/EXTEND PHASE 3	6	200
D4A	EB	PRESENCE	$\phi 4$	10	$\phi 4$	STOP BAR	40	4
D4B	EB	PRESENCE	$\phi 4$	0	-	STOP BAR	40	4
D5	NBLT	PRESENCE	$\phi 5$	5	$\phi 5$	STOP BAR	40	4
D6A	SB	PRESENCE	$\phi 6$	0	-	STOP BAR	40	4
D6B	SB	PRESENCE	$\phi 6$	0	-	STOP BAR	40	4
D7	EBLT	PRESENCE	$\phi 7$	5	$\phi 7$	STOP BAR	40	4
D8A	WB	PRESENCE	$\phi 8$	10	$\phi 8$	STOP BAR	40	4
D8B	WB	PRESENCE	$\phi 8$	0	-	STOP BAR	40	4
D8C	WB	PULSE	$\phi 8$	0	$\phi 8$	CALL/EXTEND PHASE 8	6	200
D8D	WB	PULSE	$\phi 8$	0	$\phi 8$	CALL/EXTEND PHASE 8	6	200

PREEMPT CHANNELS

- CHANNEL 1 = $\phi(2+5)$ (NORTHBOUND ONLY)
- CHANNEL 2 = $\phi(1+6)$ (SOUTHBOUND ONLY)
- CHANNEL 3 = $\phi(4+7)$ (EASTBOUND ONLY)
- CHANNEL 4 = $\phi(3+8)$ (WESTBOUND ONLY)

PREEMPT NOTES:

1. ACTIVE WALK INDICATIONS SHALL IMMEDIATELY GO TO "DONT WALK" UPON RECEIVING PREEMPTION SIGNAL.
2. IF PHASE ACTIVE CONFLICTS WITH PREEMPT PHASE CALLED, IT SHALL IMMEDIATELY TIME ITS YELLOW AND ALL RED CLEARANCES.
3. IF ACTIVE PHASE = THE PREEMPT PHASE, THEN THE PHASE SHALL HOLD FOR DURATION OF THE PREEMPT SIGNAL.
4. AFTER RELEASE FROM PREEMPT, YELLOW AND ALL RED CLEARANCE SHALL BE DISPLAYED AND RETURN PHASE SHALL BE $\phi(2+6)$.
5. IF PREEMPT PHASE = RETURN PHASE $\phi(2+6)$ THEN YELLOW AND ALL RED CLEARANCE AFTER PREEMPT SHALL NOT BE DISPLAYED.



SIGNAL SUPPORT ELEVATION
(NOT TO SCALE)

MAST ARM TABLE

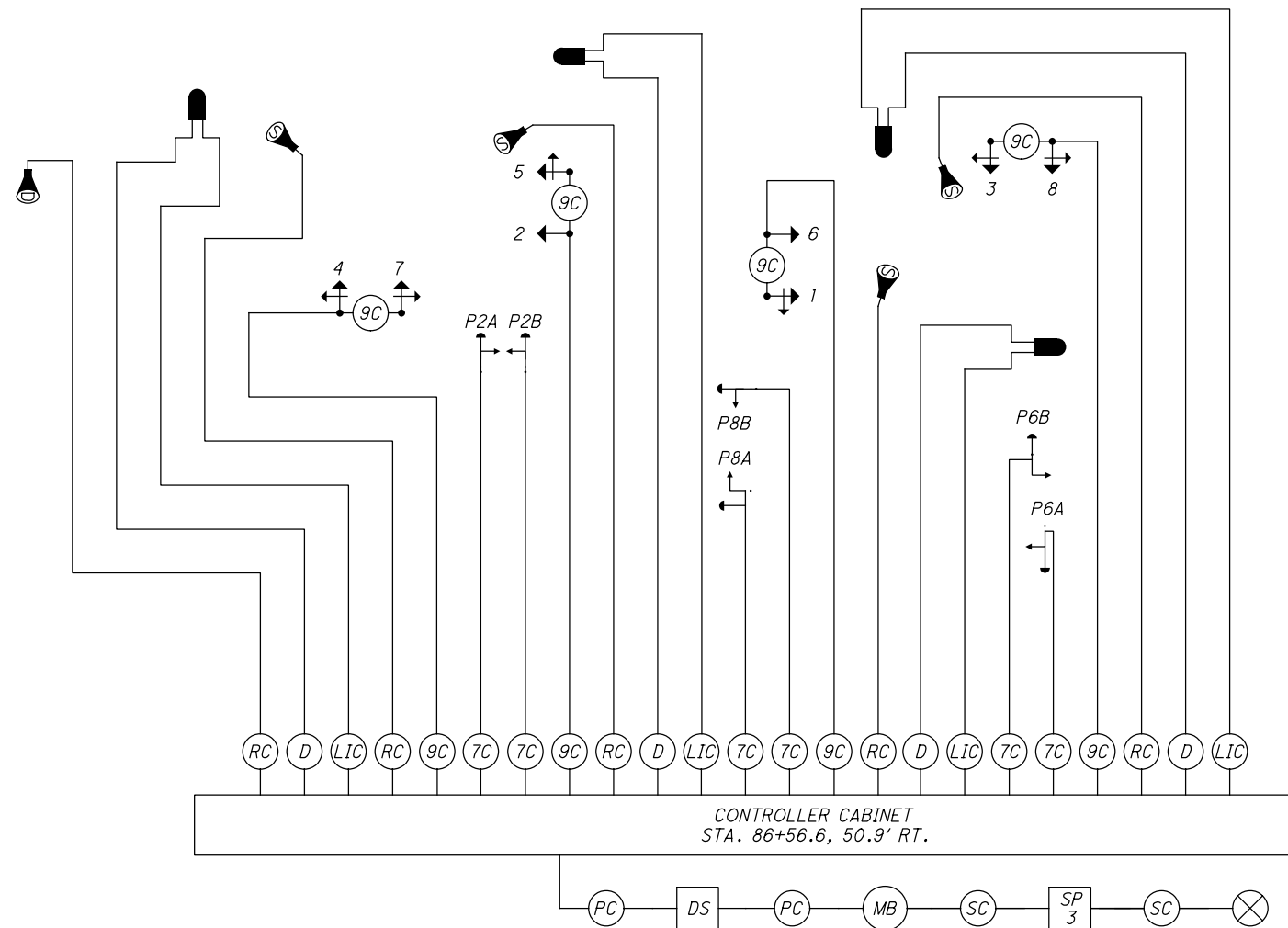
SUPPORT NO.	STATION	OFFSET	ELEVATION		SIGNAL SUPPORT DETAILS										MAST ARM 'A' ORIENTATION ANGLE DEG	ORIENTATION ANGLES FROM MAST ARM 'A' / INDEX LINE			
			A	B	DESIGN TYPE	DESIGN NO.	POLE HEIGHT FT	ARM HEIGHT FT	L FT	L1 FT	L2 FT	P1 FT	S1 FT	PEDESTRIAN SIGNAL DEG		PEDESTRIAN BUTTON DEG	POWER SERVICE DEG	HANDHOLE DEG	
SP-1	86+49.8	54.1' LT	906.48	907.80	TC-81.21	12	21	19.5	48	44	32	38	10	90	270	210	-	180	
SP-2	14+67.1	49.9' RT	905.83	906.09	TC-81.21	11	22	20.5	45	38	26	32	-	0	0	240	-	180	
SP-3	86+81.7	31.2' RT	908.92	909.13	TC-81.21	4	22	20.5	38	31	19	25	-	0	270	270	90	180	
SP-4	14+47.1	38.1' LT	906.31	905.93	TC-81.21	11	22	20.5	45	42	18	30	6	90	270	270	-	180	
PS-1	86+81.0	45.1' LT	-	-	-	-	8	-	-	-	-	-	-	-	90	90	-	180	
PS-2	86+63.0	38.0' RT	-	-	-	-	8	-	-	-	-	-	-	-	0	0	-	90	

\MAPRINDA.DWG 2016.02.16.09:51 CUY\B0974\NSIGNAL\5\SHEETS\B0974CD022.DWG
 3/22/2017 3:12:28 PM
 BDDTY81STD_USER

FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH	SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1 (SB LT)	R	φ6 R	Y	6 (SB)	R	φ6 R	Y
	Y	φ6 Y			Y	φ6 Y	
	G	φ6 G			G	φ6 G	
	<--Y---	φ1 Y			R	φ4 R	
2 (NB)	R	φ2 R	Y	7 (EB LT)	Y	φ4 Y	R
	Y	φ2 Y			G	φ4 G	
	G	φ2 G			<--Y---	φ7 Y	
	<--G---	φ1 G			<--G---	φ7 G	
3 (WB LT)	R	φ8 R	R	8 (WB RT)	R	φ8 R	R
	Y	φ8 Y			Y	φ8 Y	
	G	φ8 G			G	φ8 G	
	<--Y---	φ3 Y			<--Y-->	OLA Y	
4 (EB RT)	R	φ4 R	R	PEDESTRIAN MOVEMENTS			
	Y	φ4 Y		P2A-P2B EAST	W	PEDA G (φ2)	OUT
	G	φ4 G		P6A-P6B WEST	W	PEDB G (φ6)	OUT
	<--Y---	φ3 Y		P8A-P8B NORTH	W	PEDC R (φ8)	OUT
5 (NB LT)	R	φ2 R	Y	OVERLAPS			
	Y	φ2 Y		-	PEDA = LS9	PEDC = LS11	-
	G	φ2 G		-	PEDB = LS10	-	-
	<--Y---	φ5 Y		-	OLA = LS13	-	-
LS = LOAD SWITCH				-	-	-	-

WIRING DIAGRAM



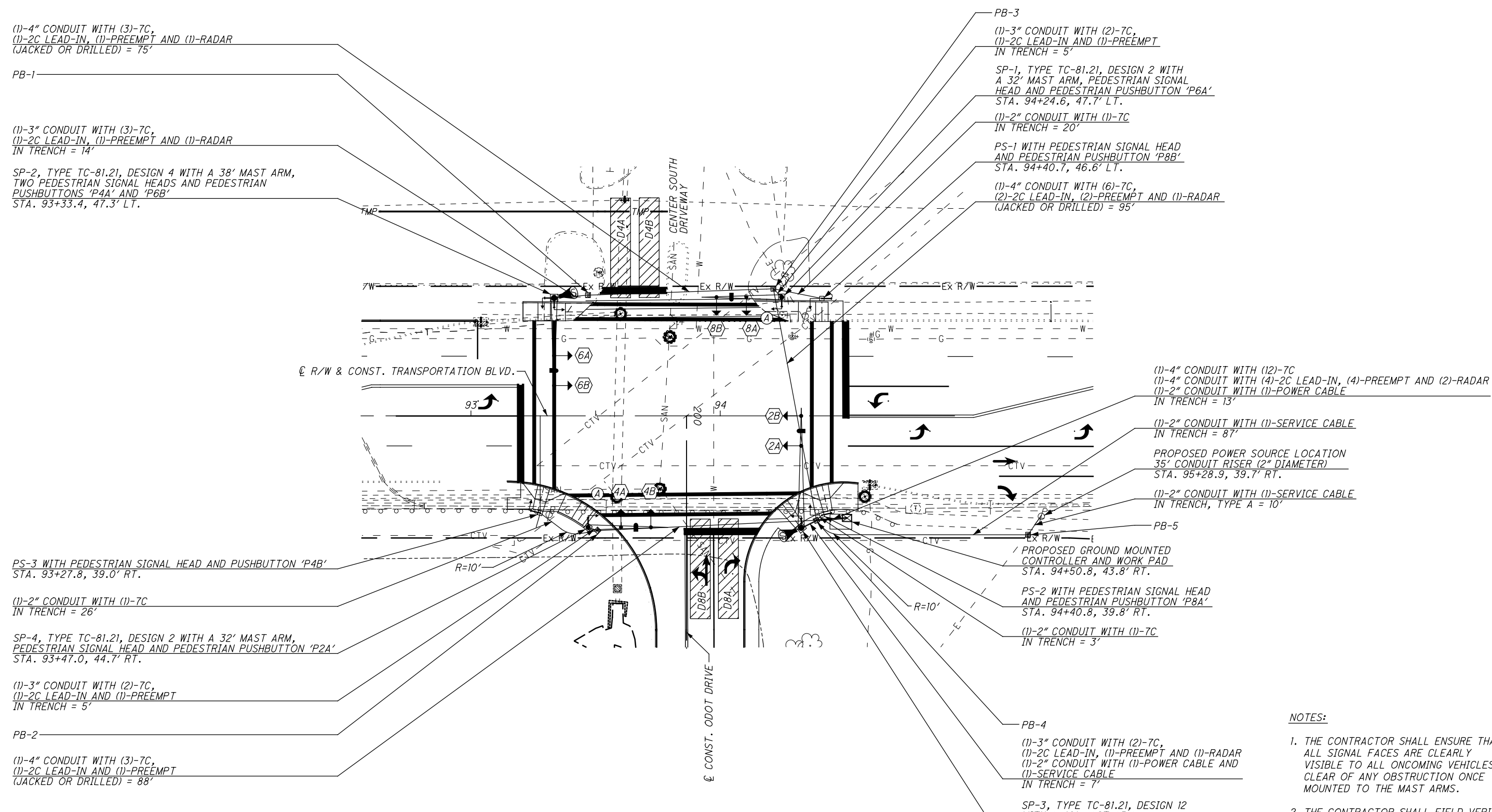
LEGEND

	4 OR 5 SECTION VEHICULAR SIGNAL HEAD, 1-WAY		SIGNAL CABLE, 9 CONDUCTOR, NO. 14 AWG
	3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY		RADAR DETECTION CABLE
	PEDESTRIAN SIGNAL HEAD		PREEMPTION DETECTOR CABLE
	PEDESTRIAN PUSHBUTTON		POWER SOURCE
	STOP BAR RADAR DETECTION UNIT		SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG
	DILEMMA ZONE RADAR DETECTION UNIT		POWER CABLE, 2 CONDUCTOR, NO. 6 AWG
	PREEMPTION CONFIRMATION LIGHT AND RECEIVING UNIT		METER BASE
	2/C NO. 14 AWG (LEAD-IN CABLE)		SIGNAL DISCONNECT SWITCH
	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		

CALCULATED
JWG
CHECKED
RMG

TRAFFIC SIGNAL PLAN DETAILS
TRANSPORTATION BLVD. / I-480 WB RAMPS / PUBLIC RD. 1

CUY-480/
TRANSPORTATION BLVD.



(1)-4" CONDUIT WITH (3)-7C,
 (1)-2C LEAD-IN, (1)-PREEMPT AND (1)-RADAR
 (JACKED OR DRILLED) = 75'
 PB-1
 (1)-3" CONDUIT WITH (3)-7C,
 (1)-2C LEAD-IN, (1)-PREEMPT AND (1)-RADAR
 IN TRENCH = 14'
 SP-2, TYPE TC-81.21, DESIGN 4 WITH A 38' MAST ARM,
 TWO PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN
 PUSHBUTTONS 'P4A' AND 'P6B'
 STA. 93+33.4, 47.3' LT.
 PS-3 WITH PEDESTRIAN SIGNAL HEAD AND PUSHBUTTON 'P4B'
 STA. 93+27.8, 39.0' RT.
 (1)-2" CONDUIT WITH (1)-7C
 IN TRENCH = 26'
 SP-4, TYPE TC-81.21, DESIGN 2 WITH A 32' MAST ARM,
 PEDESTRIAN SIGNAL HEAD AND PEDESTRIAN PUSHBUTTON 'P2A'
 STA. 93+47.0, 44.7' RT.
 (1)-3" CONDUIT WITH (2)-7C,
 (1)-2C LEAD-IN AND (1)-PREEMPT
 IN TRENCH = 5'
 PB-2
 (1)-4" CONDUIT WITH (3)-7C,
 (1)-2C LEAD-IN AND (1)-PREEMPT
 (JACKED OR DRILLED) = 88'

PB-3
 (1)-3" CONDUIT WITH (2)-7C,
 (1)-2C LEAD-IN AND (1)-PREEMPT
 IN TRENCH = 5'
 SP-1, TYPE TC-81.21, DESIGN 2 WITH
 A 32' MAST ARM, PEDESTRIAN SIGNAL
 HEAD AND PEDESTRIAN PUSHBUTTON 'P6A'
 STA. 94+24.6, 47.7' LT.
 (1)-2" CONDUIT WITH (1)-7C
 IN TRENCH = 20'
 PS-1 WITH PEDESTRIAN SIGNAL HEAD
 AND PEDESTRIAN PUSHBUTTON 'P8B'
 STA. 94+40.7, 46.6' LT.
 (1)-4" CONDUIT WITH (6)-7C,
 (2)-2C LEAD-IN, (2)-PREEMPT AND (1)-RADAR
 (JACKED OR DRILLED) = 95'

(1)-4" CONDUIT WITH (12)-7C
 (1)-4" CONDUIT WITH (4)-2C LEAD-IN, (4)-PREEMPT AND (2)-RADAR
 (1)-2" CONDUIT WITH (1)-POWER CABLE
 IN TRENCH = 13'
 (1)-2" CONDUIT WITH (1)-SERVICE CABLE
 IN TRENCH = 87'
 PROPOSED POWER SOURCE LOCATION
 35' CONDUIT RISER (2" DIAMETER)
 STA. 95+28.9, 39.7' RT.
 (1)-2" CONDUIT WITH (1)-SERVICE CABLE
 IN TRENCH, TYPE A = 10'
 PB-5
 PROPOSED GROUND MOUNTED
 CONTROLLER AND WORK PAD
 STA. 94+50.8, 43.8' RT.
 PS-2 WITH PEDESTRIAN SIGNAL HEAD
 AND PEDESTRIAN PUSHBUTTON 'P8A'
 STA. 94+40.8, 39.8' RT.
 (1)-2" CONDUIT WITH (1)-7C
 IN TRENCH = 3'
 PB-4
 (1)-3" CONDUIT WITH (2)-7C,
 (1)-2C LEAD-IN, (1)-PREEMPT AND (1)-RADAR
 (1)-2" CONDUIT WITH (1)-POWER CABLE AND
 (1)-SERVICE CABLE
 IN TRENCH = 7'
 SP-3, TYPE TC-81.21, DESIGN 12
 WITH A 48' MAST ARM,
 PEDESTRIAN SIGNAL HEAD, AND
 PEDESTRIAN PUSHBUTTON 'P2B'
 STA. 94+32.4, 44.9' RT.

- NOTES:**
1. THE CONTRACTOR SHALL ENSURE THAT ALL SIGNAL FACES ARE CLEARLY VISIBLE TO ALL ONCOMING VEHICLES; CLEAR OF ANY OBSTRUCTION ONCE MOUNTED TO THE MAST ARMS.
 2. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL UTILITIES AND EXISTING SIGNAL HARDWARE AND APPARATUSES PRIOR TO EXCAVATION.
 3. FOR REFERENCE TO SIGN (A) SEE SHEET 147.

LEGEND

TRAFFIC SIGNAL, 3 UNIT HEAD, 12"		CONTROLLER CABINET AND WORK PAD (TS2)	
TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"		STOP BAR RADAR DETECTION UNIT	
SIGNAL SUPPORT POLE		DETECTION ZONE	
PEDESTRIAN SIGNAL		PROPOSED CONDUIT	
PEDESTRIAN PUSH BUTTON		PREEMPTION RECEIVING UNIT AND CONFIRMATION LIGHT	
PEDESTAL SUPPORT		TRAFFIC PULL BOX	

SIGNAL TYPES

	PEDESTRIAN HEADS (LED, COUNTDOWN, TYPE D2)
2A, 2B, 4A, 4B, 6A, 6B, 8A, 8B	
1. ALL SIGNAL HEADS SHALL HAVE 12" LED LENSES.	
2. ALL SIGNAL HEADS SHALL BE BLACK IN COLOR AND HAVE BACKPLATES.	
3. ALL SIGNAL HEAD VISORS SHALL BE CUTAWAY TYPE.	

PEDESTRIAN SIGNS

	R10-3e-9
3 - RIGHT ARROW (SP-2, SP-2, PS-2)	
5 - LEFT ARROW (SP-1, SP-3, SP-4, PS-1, PS-3)	

PULL BOX TABLE

PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB-1	93+46.9	LT	48.5'	18
PB-2	93+50.8	RT	46.0'	18
PB-3	94+21.3	LT	51.0'	18
PB-4	94+38.6	RT	41.9'	24
PB-5	95+23.5	RT	47.7'	18

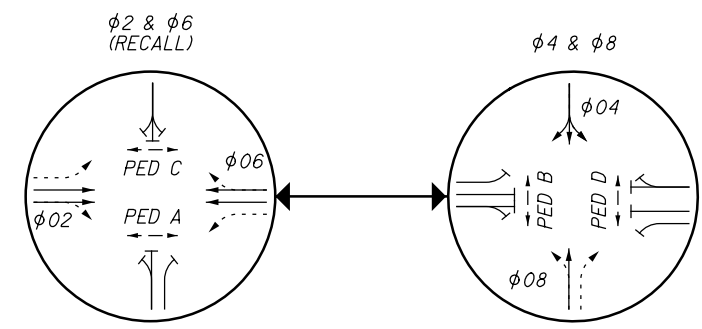
SIGNAL TIMING CHART

INTERSECTION: TRANSPORTATION BLVD / ODOT DR / CENTER SOUTH DRIVEWAY
MAINTAINING AGENCY: OHIO DEPARTMENT OF TRANSPORTATION

START UP		DUAL ENTRY: YES		PHASES: 2, 4, 6, 8					
START IN: ALL RED		REST IN RED: RING 1 - RING 2 -							
TIME FOR FLASH OR ALL RED: 5		OVERLAP		A	B	C	D		
FIRST PHASE(S): (2+6)		PHASES		-	-	-	-		
COLOR DISPLAYED: GREEN									
INTERVAL OR FEATURE		CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)		1	2	3	4	5	6	7	8
DIRECTION		SB LT	NB	WB LT	EB	NB LT	SB	EB LT	WB
MINIMUM GREEN (INITIAL) (SEC.)		-	20	-	10	-	20	-	10
ADDED INITIAL *(SEC./ACTUATION)		-	-	-	-	-	-	-	-
MAXIMUM INITIAL (SEC.)		-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP) (SEC.)		-	3.0	-	3.0	-	3.0	-	3.0
TIME BEFORE REDUCTION *(SEC.)		-	-	-	-	-	-	-	-
MINIMUM GAP *(SEC.)		-	-	-	-	-	-	-	-
TIME TO REDUCE *(SEC.)		-	-	-	-	-	-	-	-
MAXIMUM GREEN I (SEC.)		-	60	-	35	-	60	-	35
MAXIMUM GREEN II (SEC.)		-	-	-	-	-	-	-	-
YELLOW CHANGE (SEC.)		-	3.0	-	3.0	-	3.0	-	3.0
ALL RED CLEARANCE (SEC.)		-	3.0	-	3.0	-	3.0	-	3.0
WALK (SEC.)		-	10	-	11	-	10	-	11
PEDESTRIAN CLEARANCE (SEC.)		-	18	-	21	-	18	-	21
RECALL	MAXIMUM (ON/OFF)	-	-	-	-	-	-	-	-
	MINIMUM (ON/OFF)	-	ON	-	-	-	ON	-	-
	PEDESTRIAN (ON/OFF)	-	-	-	-	-	-	-	-
MEMORY (ON/OFF)		-	-	-	-	-	-	-	-

*VOLUME DENSITY CONTROLS

PHASING DIAGRAM



PREEMPT CHANNELS

CHANNEL 1 = $\phi(2)$ (NORTHBOUND ONLY)
 CHANNEL 2 = $\phi(6)$ (SOUTHBOUND ONLY)
 CHANNEL 3 = $\phi(4)$ (EASTBOUND ONLY)
 CHANNEL 4 = $\phi(8)$ (WESTBOUND ONLY)

PREEMPT NOTES:

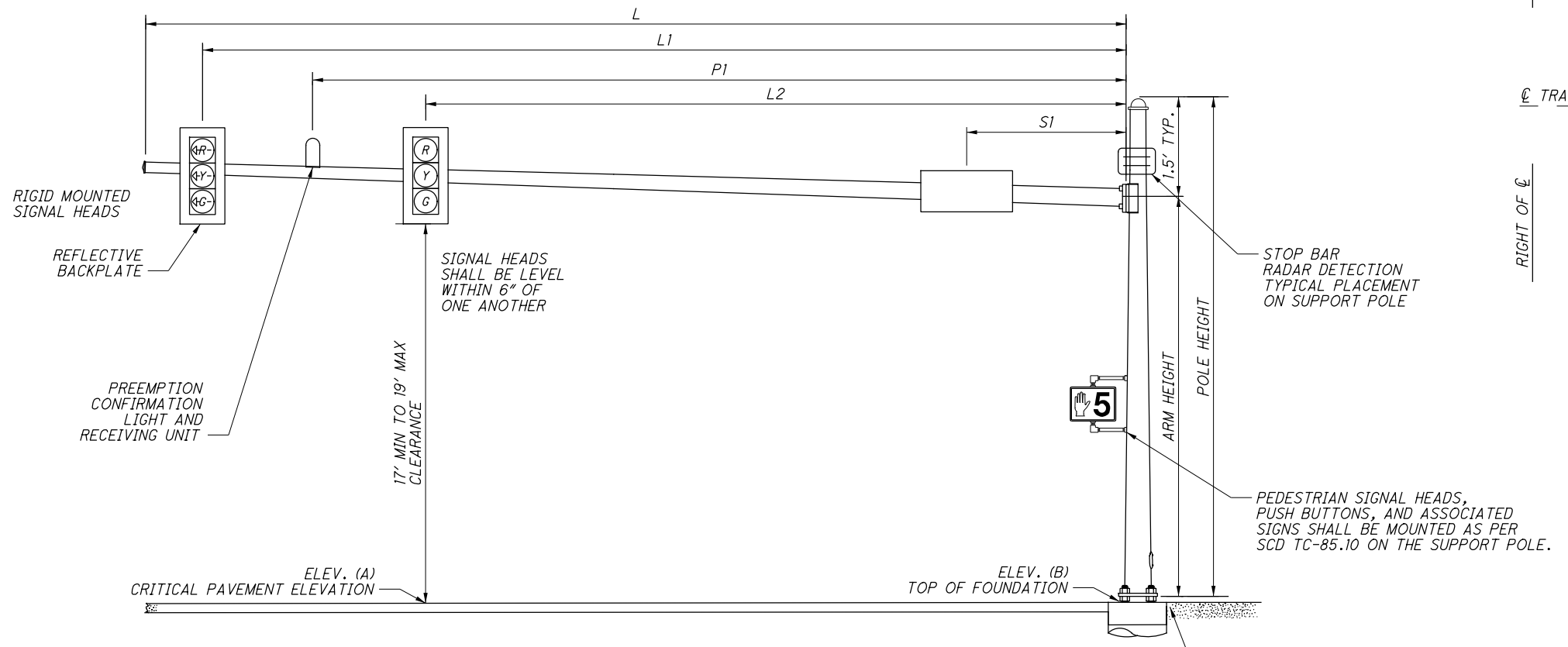
1. ACTIVE WALK INDICATIONS SHALL IMMEDIATELY GO TO "DONT WALK" UPON RECEIVING PREEMPTION SIGNAL.
2. IF PHASE ACTIVE CONFLICTS WITH PREEMPT PHASE CALLED, IT SHALL IMMEDIATELY TIME ITS YELLOW AND ALL RED CLEARANCES.
3. IF ACTIVE PHASE = THE PREEMPT PHASE, THEN THE PHASE SHALL HOLD FOR DURATION OF THE PREEMPT SIGNAL.
4. AFTER RELEASE FROM PREEMPT, YELLOW AND ALL RED CLEARANCE SHALL BE DISPLAYED AND RETURN PHASE SHALL BE $\phi(2+6)$.
5. IF PREEMPT PHASE = RETURN PHASE $\phi(2+6)$ THEN YELLOW AND ALL RED CLEARANCE AFTER PREEMPT SHALL NOT BE DISPLAYED.

NOTES:

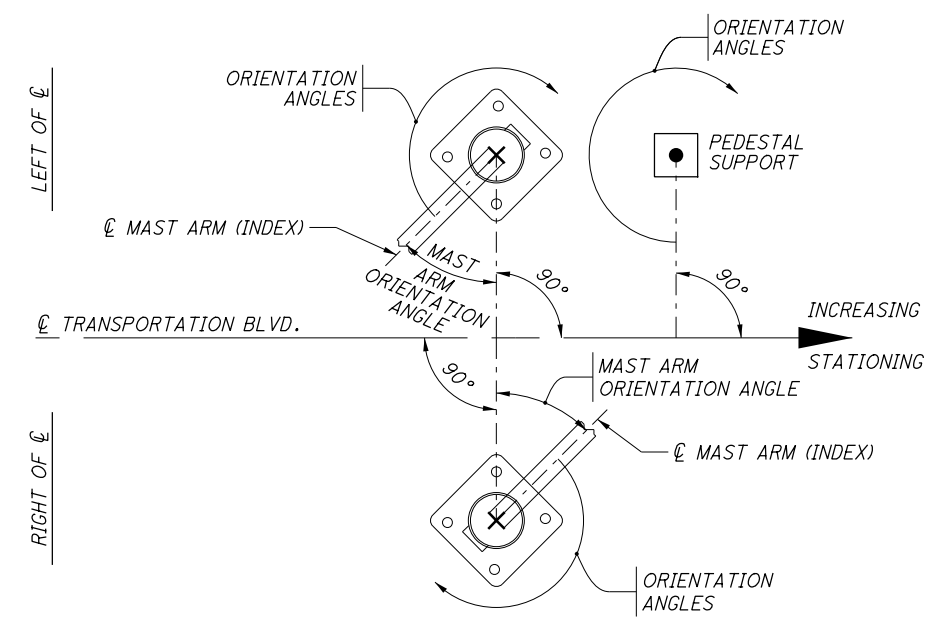
- COUNTDOWN PEDESTRIAN SIGNALS SHALL GO TO ZERO ON YELLOW PER OMUTCD FIGURE 4E-2.
- ALL DETECTOR DELAYS SHALL BE PLACED IN THE CONTROLLER.
- PHASE 2 AND PHASE 6 PEDESTRIAN CLEARANCE INTERVALS SHALL NOT BE SERVICED WHEN SIGNAL IS OPERATING IN COORDINATION UNLESS PEDESTRIAN CALL IS RECIEVED VIA PUSHBUTTON.

RADAR DETECTION CHART

DETECTION ZONE	MOVEMENT	PULSE OR PRESENCE	ASSOCIATED PHASE	DELAY IN CONTROLLER (SEC)	DELAY INHIBIT PHASE	PURPOSE	DETECTION ZONE LENGTH (FT)
D4A	EB	PRESENCE	$\phi 4$	10	$\phi 4$	STOP BAR	40
D4B	EB	PRESENCE	$\phi 4$	0	-	STOP BAR	40
D8A	WB	PRESENCE	$\phi 8$	10	$\phi 8$	STOP BAR	40
D8B	WB	PRESENCE	$\phi 8$	0	-	STOP BAR	40



SIGNAL SUPPORT ELEVATION
(NOT TO SCALE)



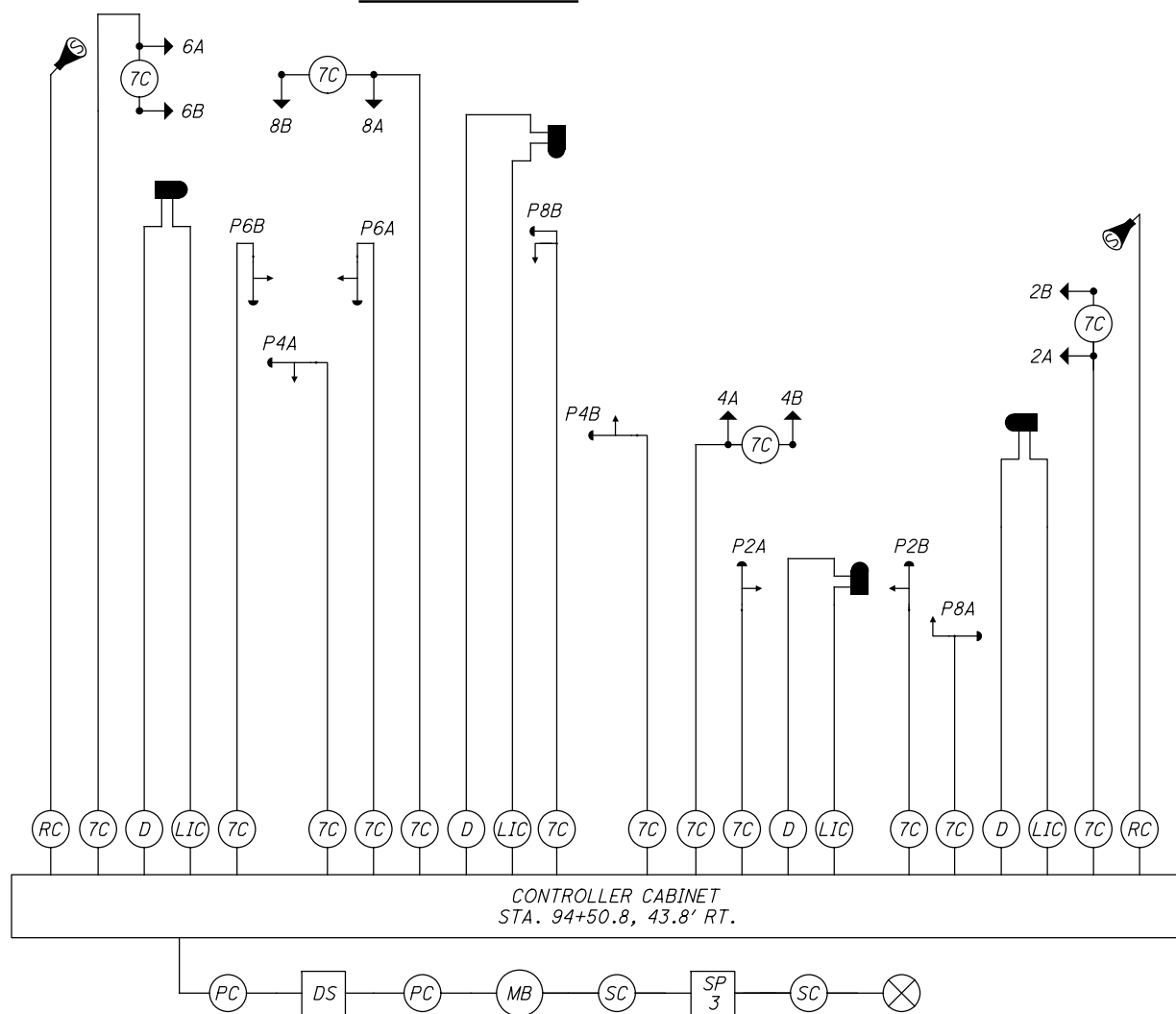
POLE ORIENTATION
(NOT TO SCALE)

MAST ARM TABLE

SUPPORT NO.	STATION	OFFSET	ELEVATION		SIGNAL SUPPORT DETAILS										MAST ARM 'A' ORIENTATION ANGLE DEG	ORIENTATION ANGLES FROM MAST ARM 'A' / INDEX LINE			
			A	B	DESIGN TYPE	DESIGN NO.	POLE HEIGHT FT	ARM HEIGHT FT	L FT	L1 FT	L2 FT	P1 FT	S1 FT	PEDESTRIAN SIGNAL DEG		PEDESTRIAN BUTTON DEG	POWER SERVICE DEG	HANDHOLE DEG	
SP-1	94+24.6	47.7' LT	914.23	914.91	TC-81.21	2	21	19.5	32	26	14	19	6	90	270	270	-	180	
SP-2	93+33.4	47.3' LT	914.29	913.17	TC-81.21	4	23	21.5	38	35	23	29	-	0	0/90	0/90	-	180	
SP-3	94+32.4	44.9' RT	915.14	915.10	TC-81.21	12	22	20.5	48	45	33	39	-	0	0	0	180	180	
SP-4	93+47.0	44.7' RT	913.72	914.32	TC-81.21	2	21	19.5	32	25	13	19	6	90	270	270	-	180	
PS-1	94+40.7	46.6' LT	-	-	-	-	8	-	-	-	-	-	-	-	90	270	-	180	
PS-2	94+40.8	39.8' RT	-	-	-	-	8	-	-	-	-	-	-	-	270	75	-	165	
PS-3	93+27.8	39.0' RT	-	-	-	-	8	-	-	-	-	-	-	-	285	285	-	195	

\\NAKRNDA\DATA\2016\20160511\CUY\80974\NSIGNAL\5\SHEETS\80974CD032.DGN
3/22/2017 3:19:14 PM
D:\TY81STD_USER

WIRING DIAGRAM



FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
2A, 2B (NB)	R	φ2 R	Y
	Y	φ2 Y	
	G	φ2 G	
4A, 4B (EB)	R	φ4 R	R
	Y	φ4 Y	
	G	φ4 G	
6A, 6B (SB)	R	φ6 R	Y
	Y	φ6 Y	
	G	φ6 G	
8A, 8B (WB)	R	φ8 R	R
	Y	φ8 Y	
	G	φ8 G	
PEDESTRIAN MOVEMENTS			
P2A-P2B EAST	W	PEDA G (φ2)	OUT
	DW	PEDA R (φ2)	
P4A-P4B SOUTH	W	PEDB G (φ4)	OUT
	DW	PEDB R (φ4)	
P6A-P6B WEST	W	PEDC G (φ6)	OUT
	DW	PEDC R (φ6)	
P8A-P8B NORTH	W	PEDD G (φ8)	OUT
	DW	PEDD R (φ8)	
OVERLAPS			
-	PEDA = LS9	PEDC = LS11	-
	PEDB = LS10	PEDD = LS12	
LS = LOAD SWITCH			

LEGEND

	5 SECTION VEHICULAR SIGNAL HEAD, 1-WAY		PREEMPTION DETECTOR CABLE
	3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY		RADAR DETECTION CABLE
	PEDESTRIAN SIGNAL HEAD		POWER SOURCE
	PEDESTRIAN PUSHBUTTON		SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG
	PREEMPTION CONFIRMATION LIGHT AND RECEIVING UNIT		POWER CABLE, 2 CONDUCTOR, NO. 6 AWG
	STOP BAR RADAR DETECTION UNIT		METER BASE
	2/C NO. 14 AWG (LEAD-IN CABLE)		SIGNAL DISCONNECT SWITCH
	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		

COORDINATION TIMING CHART

PHASE	SPLITS (G+Y+AR) IN SECONDS								OFFSET 1 (SEC)	OFFSET 2 (SEC)
	1	2	3	4	5	6	7	8		
DIRECTION	WBL	EB	-	NB	EBL	WB	NBL	SB		
PLAN NO.	TRANSPORTATION BOULEVARD / GRANGER ROAD									
1/1/1	18	24	-	58	12	30	26	32	55	-
2/2/2	20	28	-	52	12	36	20	32	60	-
3/3/3	20	28	-	52	12	36	20	32	60	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

PHASE	SPLITS (G+Y+AR) IN SECONDS								OFFSET 1 (SEC)	OFFSET 2 (SEC)
	1	2	3	4	5	6	7	8		
DIRECTION	-	NB	-	EB	-	SB	-	WB		
PLAN NO.	TRANSPORTATION BOULEVARD / ODOT DRIVE / CENTER SOUTH DRIVEWAY									
1/1/1	-	60	-	40	-	60	-	40	15	-
2/2/2	-	60	-	40	-	60	-	40	15	-
3/3/3	-	60	-	40	-	60	-	40	15	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

PHASE	SPLITS (G+Y+AR) IN SECONDS								OFFSET 1 (SEC)	OFFSET 2 (SEC)
	1	2	3	4	5	6	7	8		
DIRECTION	SBL	NB	WBL	EB	NBL	SB	EBL	WB		
PLAN NO.	TRANSPORTATION BOULEVARD / I-480 WB RAMPS / PUBLIC ROAD #1									
1/1/1	30	30	15	25	15	45	15	25	0	-
2/2/2	40	28	14	18	20	48	14	18	0	-
3/3/3	30	30	15	25	30	30	15	25	0	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

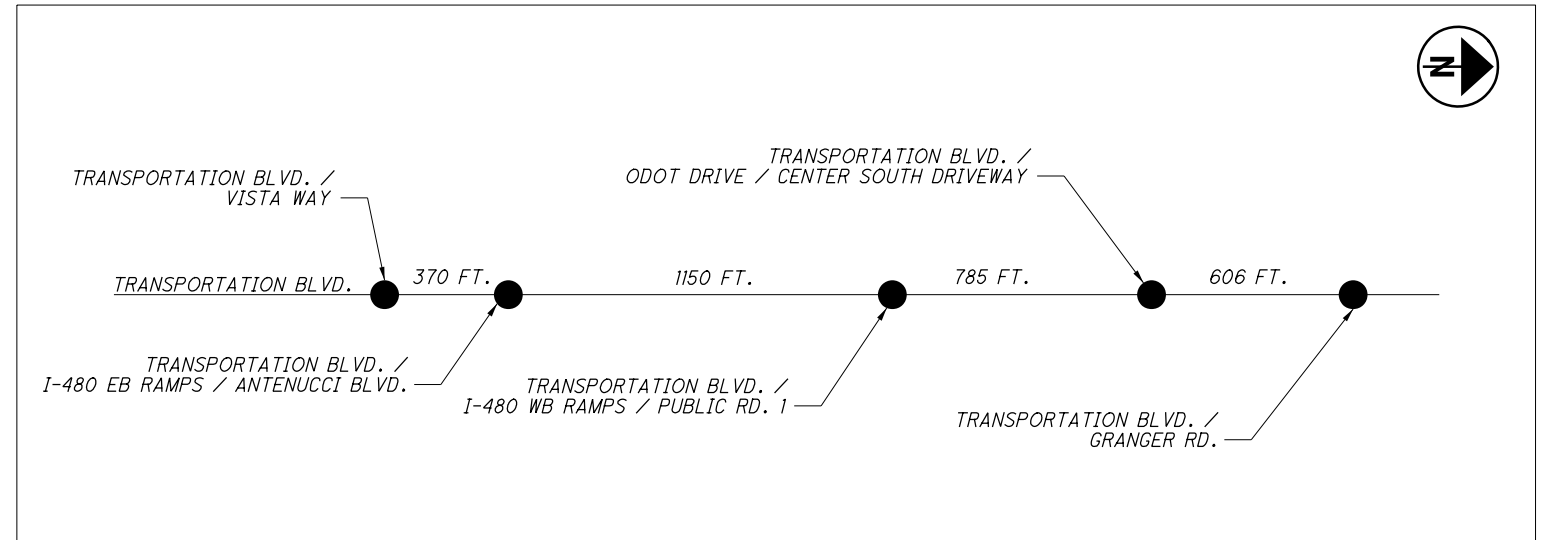
PHASE	SPLITS (G+Y+AR) IN SECONDS								OFFSET 1 (SEC)	OFFSET 2 (SEC)
	1	2	3	4	5	6	7	8		
DIRECTION	SBL	NB	WBL	EB	NBL	SB	EBL	WB		
PLAN NO.	TRANSPORTATION BOULEVARD / I-480 EB RAMPS / ANTENUCCI BOULEVARD									
1/1/1	15	35	15	35	15	35	30	20	45	-
2/2/2	15	35	15	35	15	35	30	20	55	-
3/3/3	15	35	15	35	15	35	30	20	20	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

PHASE	SPLITS (G+Y+AR) IN SECONDS								OFFSET 1 (SEC)	OFFSET 2 (SEC)
	1	2	3	4	5	6	7	8		
DIRECTION	-	NB	-	EB	NBL	SB	-	WB		
PLAN NO.	TRANSPORTATION BOULEVARD / VISTA WAY									
1/1/1	-	65	-	35	15	50	-	35	65	-
2/2/2	-	60	-	40	15	45	-	40	75	-
3/3/3	-	60	-	40	15	45	-	40	40	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

NOTE:

PHASE 2 AND PHASE 6 PEDESTRIAN CLEARANCE INTERVALS SHALL NOT BE SERVICED AT THE TRANSPORTATION BOULEVARD / I-480 WB RAMPS / PUBLIC ROAD #1 INTERSECTION WHEN SIGNAL IS OPERATING IN COORDINATION UNLESS PEDESTRIAN CALL IS RECEIVED VIA PUSHBUTTON.

COORDINATION LAYOUT



COORDINATION TIMING PLANS

DAY(S) OF WEEK	PLAN NAME	HOURS	CYCLE/SPLIT/OFFSET	CYCLE LENGTH (SEC)
MON - FRI	FREE	00:00 - 6:30	-	-
MON - FRI	PATTERN 1	06:30 - 10:30	1/1/1	100
MON - FRI	PATTERN 2	10:30 - 18:30	2/2/2	100
MON - FRI	FREE	18:30 - 24:00	-	-
SAT - SUN	FREE	00:00 - 09:00	-	-

ITEM SPECIAL, 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 MAINTAINING AGENCY AND THE CONTRACTOR 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 NOT 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 CONTRACTOR.

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 CONTRACTOR 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 ON A UNIT BASIS.

BETTERMENTS SHALL BE COVERED IN ITEMS OF WORK PERTAINING TO THE CONSTRUCTION OF PERMANENT IMPROVEMENT.

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

PRIOR TO INSTALLING SUCH LIGHTING, THE CONTRACTOR 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 FOOTCANDLES 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 "B" 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 CONTRACTOR. WHEN NO LONGER NEEDED, THE TEMPORARY LIGHTING INSTALLATION SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.

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 CONTRACTOR WILL PAY FOR ELECTRICAL ENERGY, INSTALLATION, REMOVAL AND MAINTENANCE OF ANY TEMPORARY POWER SERVICES.

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

ITEM SPECIAL, REPLACEMENT OF EXISTING LIGHTING UNIT

THE UNIT PRICE BID FOR ITEM SPECIAL "REPLACEMENT OF EXISTING LIGHTING UNIT" SHALL BE FULL PAYMENT FOR THE REPLACEMENT OF AN EXISTING LIGHTING UNIT WHICH HAS BEEN KNOCKED DOWN AFTER THE AFOREMENTIONED INSPECTION AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO PROVIDE A REPLACEMENT FOR SUCH UNIT.

ITEM SPEC - REPLACEMENT OF EXISTING LIGHTING UNIT 1 EA

ITEM 625, PULL BOX CLEANED

THIS ITEM OF WORK SHALL CONSIST OF CLEANING AN EXISTING PULL BOX BY REMOVING ANY EXISTING CABLES NOT BEING RECONNECTED, AND DEBRIS SO THAT NEW CABLES CAN BE INSTALLED. ANY UNUSED OPENINGS SHALL BE CLOSED. DISTURBED AREAS NEAR THE PULL BOX SHALL BE CLEARED OF WEEDS OR DEBRIS AND SHALL BE FULLY RESTORED. MATERIAL REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF OF THE PROJECT SITE.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER C&MS ITEM 625, "PULL BOX CLEANED" FOR EACH PULL BOX CLEANED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625, LUMINAIRE, CONVENTIONAL, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS SHALL BE AS FOLLOWS:

LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS WITH AN IES II-M-SC DISTRIBUTION AND 200 WATT HIGH PRESSURE SODIUM LAMPS SHALL BE AMERICAN ELECTRIC "SERIES 126" WITH PHOTOMETRIC DISTRIBUTION AE3849I (ADJUST LUMEN VALUE FOR 200W HPS), COOPER "OVX" WITH PHOTOMETRIC DISTRIBUTION OVX25SXX2DF (ADJUST LUMEN VALUE FOR 200W HPS), GENERAL ELECTRIC "M-400" WITH PHOTOMETRIC DISTRIBUTION 1014 (ADJUST LUMEN VALUE FOR 200W HPS), OR EQUAL AS APPROVED BY THE ENGINEER.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH C&MS ITEM 625, "LUMINAIRE, CONVENTIONAL, AS PER PLAN (ADD SUPPLEMENTAL DESCRIPTION)" FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625, LUMINAIRE, UNDERPASS, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, LUMINAIRES FOR UNDERPASS LIGHTING SHALL BE AS FOLLOWS:

LUMINAIRES FOR UNDERPASS LIGHTING UNITS SHALL BE AMERICAN ELECTRIC "SIDELIGHT SERIES 582" WITH PHOTOMETRIC DISTRIBUTION AE208II, COOPER "WALL LIGHT" WITH PHOTOMETRIC DISTRIBUTION WPK15SXX, GENERAL ELECTRIC "VERSAFLOOD II WALLLIGHTER" WITH PHOTOMETRIC DISTRIBUTION 8578, HOLOPHANE "WALLPACK II" TEST WITH PHOTOMETRIC DISTRIBUTION 33263, OR EQUAL AS APPROVED BY THE ENGINEER.

LUMINAIRES FOR UNDERPASS LIGHTING UNIT WHICH ARE WALL MOUNTED SHALL BE FURNISHED WITH AN INTEGRAL FUSE HOLDER AND 10-AMPERE FUSES.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER C&MS ITEM 625, "LUMINAIRE, UNDERPASS, AS PER PLAN (ADD SUPPLEMENTAL DESCRIPTION)" FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

LAMPS

HIGH PRESSURE SODIUM LAMPS SHALL BE GENERAL ELECTRIC "LUCALOX," OSRAM SYLVANIA "LUMALUX," PHILIPS "CERAMALUX," OR EQUAL APPROVED BY THE ENGINEER.

LIGHT POLE ANCHOR BOLTS ON STRUCTURES

WHEN A LIGHT POLE IS MOUNTED ON A PILASTER ON A BRIDGE PARAPET OR ON A RETAINING WALL, THE REQUIRED ANCHOR BOLTS MAY DIFFER IN LENGTH AND/OR SHAPE FROM THOSE REQUIRED WHEN THE POLE IS MOUNTED ON A CAST-IN-PLACE DRILLED SHAFT FOUNDATION. THE COST DIFFERENTIAL FOR FURNISHING SUCH BOLTS IS INCLUDED HEREIN.

IN ADDITION, THERE IS NO FOUNDATION CONSTRUCTION ITEM IN WHICH TO INCLUDE THE SETTING OF THE ANCHOR BOLTS. THUS, THE SETTING OF THE ANCHOR BOLTS INTO THE PILASTER IS ALSO PART OF THIS WORK.

PAYMENT WILL BE MADE AT EACH SUCH POLE LOCATION AT THE UNIT PRICE BID FOR EACH C&MS ITEM 625, "LIGHT POLE ANCHOR BOLTS ON STRUCTURE" AND SHALL BE FULL COMPENSATION FOR FURNISHING AND PLACING THE SET OF ANCHOR BOLTS REQUIRED.

CONDUIT EXPANSION AND DEFLECTION

EXPANSION FITTINGS SHALL BE OZ TYPE AX, CROUSE HINDS TYPE XJG, APPLETON TYPE AX, OR EQUAL APPROVED BY THE ENGINEER. EACH EXPANSION FITTING SHALL PROVIDE EITHER 4 OR 8 INCHES TOTAL MOVEMENT AS SPECIFIED BY THE PLAN DETAILS AND SHALL HAVE AN EXTERNAL COPPER BONDING JUMPER, UNLESS SPECIFIED OTHERWISE BY THE PLAN DETAILS.

DEFLECTION COUPLINGS SHALL BE OZ TYPE DX, CROUSE HINDS TYPE XD, APPLETON TYPE DF, OR EQUAL APPROVED BY THE ENGINEER. EACH DEFLECTION COUPLING SHALL HAVE AN EXTERNAL COPPER BONDING JUMPER, UNLESS SPECIFIED OTHERWISE BY THE PLAN DETAILS.

HIGH VOLTAGE TEST WAIVED

THE HIGH VOLTAGE TEST SHALL NOT BE PERFORMED ON THE CIRCUITS CONSTRUCTED BY THIS PROJECT, SINCE THE TEST COULD DAMAGE THE PORTION OF THE COMPLETED CIRCUIT WHICH HAS BEEN IN SERVICE PRIOR TO THIS PROJECT.

ITEM 625, LIGHTING MISC.: CAMERA RELOCATION

IN ADDITION TO THE REQUIREMENTS OF ODOT CMS 625, THE CONTRACTOR SHALL REMOVE AND RELOCATE THE EXISTING POLE MOUNTED SECURITY CAMERAS AFFECTED BY THE PROPOSED IMPROVEMENTS. REMOVAL AND REPLACEMENT SHALL INCLUDE ALL CONDUIT, PULL BOXES, JUNCTION BOXES, DISTRIBUTION CABLE, LOW VOLTAGE WIRING AND ALL OTHER INCIDENTALS NECESSARY TO PERFORM THE WORK. PRIOR TO REMOVAL OF THE EXISTING CAMERA INSTALLATION, THE CONTRACTOR SHALL DETERMINE THE CIRCUIT SIZE, CONDUIT SIZE, FOUNDATION SIZE, PULL BOX SIZE, ETC. AND REPLACE IN-KIND. ADDITIONALLY, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A PLAN INDICATING THE CIRCUIT TO BE REPLACED IN-KIND AS WELL AS ALL NECESSARY CONDUIT, PULL BOXES, JUNCTION BOXES, ETC. THE CONTRACTOR SHALL NOT DISCONNECT THE EXISTING CIRCUIT WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

PAYMENT FOR THE ABOVE STATED WORK SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE INCLUDED IN THE EACH UNIT PRICE BID FOR "ITEM 625, LIGHTING MISC.: CAMERA RELOCATION".

ITEM 625, POWER SERVICE, AS PER PLAN

PAYMENT FOR THIS ITEM INCLUDES ALL LABOR AND MATERIALS ASSOCIATED WITH INSTALLING A NEW POWER SERVICE AND COMMUNICATION SERVICE TO REPLACE THE EXISTING POWER SERVICE AND COMMUNICATION SERVICE FOR THE EXISTING CAMERA ALONG IR-480 WESTBOUND, INCLUDING NEW PULL BOXES, POLE, METER, CONDUIT, WIRING AND ALL INCIDENTALS. ALL WORK SHALL COMPLY WITH ODOT STANDARD DRAWINGS ITS-13.11, ITS-14.10 AND ITS-15.11. THE CONTRACTOR SHALL FURNISH AND INSTALL NEW PULL BOXES PER ODOT CONSTRUCTION AND MATERIAL SPECIFICATION SECTION 625.11. THE NEW POWER SERVICE SHALL BE 240/120V, 1PH, 100A DISCONNECT FURSED @ 80A. THE NEW METER WILL BE PLACED ON A NEW ODOT POLE, PER STANDARD DRAWINGS ITS-15.11 AND PLACED IN THE NORTHWEST QUADRANT OF TRANSPORTATION BLVD AND PUBLIC ROAD NO. 1. PULL BOXES SHOULD BE PLACED ON EITHER SIDE OF THE NEW PUBLIC ROAD FOR THE PROPOSED POWER SERVICE AND COMMUNICATION SERVICE.

ITEM 625, CONNECTION, UNFUSED PERMANENT, AS PER PLAN

THIS PAY ITEM SHALL INCLUDE A SPLICE OF POWER WIRING WITH APPROVED WATERPROOF SPLICE KITS, TO BE PERFORMED AS CALLED OUT IN THE PLANS IN AN EIGHTEEN-INCH PULL BOX AND USED TO DIRECTLY POWER THE ODOT CAMERA. THE EXISTING POWER SERVICE FOR THE CAMERA SHALL BE MAINTAINED. ANY CAMERA DOWNTIME NEEDED SHALL BE IN ACCORDANCE WITH THE SUPPLEMENTAL SPEC 809. A 1000-VOLT MEGGER TEST SHALL BE PERFORMED TO ASSURE THAT THE SPLICES ARE ACCEPTABLE. IF ANY FAULTS ARE FOUND, THE ENGINEER WILL DECIDE WHETHER TO SPLICE THE CABLE, INSTALL NEW CABLE, OR INSTALL NEW DUCT CABLE BETWEEN TWO TERMINAL POINTS.

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS NECESSARY PER ODOT CONSTRUCTION AND MATERIAL SPECIFICATION SECTION 625.18 AND 725.15.

COORDINATION WITH ODOT

CONTRACTOR SHALL GIVE THE ILLUMINATING COMPANY FOUR WEEKS NOTICE PRIOR TO INSTALLING THE NEW PULL BOX AND SHALL COORDINATE WITH THE ILLUMINATING COMPANY SO THAT POWER TO ODOT'S ITS SYSTEM IS NOT DISRUPTED FOR MORE THAN 48 HOURS AS PER SUPPLEMENTAL SPECIFICATION 809. CONTRACTOR SHALL NOTIFY ODOT OFFICE OF TRAFFIC OPERATIONS 7 DAYS PRIOR TO ITS SYSTEM DOWNTIME AS PER SUPPLEMENTAL SPECIFICATION 809. THE CONTRACTOR SHALL COORDINATE WITH THE ILLUMINATING COMPANY AS NECESSARY TO HAVE THE NEW METER INSPECTED.

ITEM 625, LIGHTING MISC.: AREA LUMINAIRE AND POLE

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, THE AREA LIGHTING INCLUDED IN THIS PROJECT, INCLUDING LUMINAIRES AND ASSOCIATED POLES SHALL BE AS FOLLOWS:

LUMINAIRES AND ASSOCIATED POLES SHALL BE PROVIDED TO MATCH EXISTING PARKING LOT AND DRIVEWAY LIGHTING CURRENTLY INSTALLED IN ADJACENT AREAS TO THE PROJECT AT ODOT DRIVE. LUMINAIRES AND LIGHT POLES SHALL BE DARK BRONZE AND PROVIDED AT A 30 FT. AFG MOUNTING HEIGHT.

LUMINAIRES FOR AREA LIGHTING UNITS WITH A TYPE III ASYMMETRIC DISTRIBUTION AND 250 WATT PULSE START METAL HALIDE LAMPS SHALL BE LITHONIA KSF2-250M-R3-TB-SCWA-SP04-PEX-HS-LPI OR EQUAL AS APPROVED BY ODOT AND ENGINEER TO MATCH EXISTING. COORDINATE TENON MOUNTING WITH POLE.

LIGHT POLES FOR AREA LIGHTING SHALL BE SQUARE STRAIGHT ALUMINUM, DARK BRONZE FINISH, PROVIDED WITH FULL BASE COVER TO ACCOMMODATE 30 FT. MOUNTING HEIGHT AND SHALL BE LITHONIA SSA OR EQUAL AS APPROVED BY ODOT AND ENGINEER TO MATCH EXISTING.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH, "ITEM 625, LIGHTING MISC.: AREA LUMINAIRE AND POLE" FOR EACH LUMINAIRE AND POLE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

\\AKRINDA\DATA\2016\2016051\CUY\88974\LIGHTING\SHEETS\88974\N001.DGN
5/25/2017 10:02:11 AM
000TV815TD.LUSER

SHEET NUMBER

SHEET NUMBER										ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
175	177	178													
	38	12								625	00450	50	EACH	CONNECTION, FUSED PULL-APART	
	42	21								625	00480	63	EACH	CONNECTION, UNFUSED PERMANENT	
	1									625	00481	1	EACH	CONNECTION, UNFUSED PERMANENT, AS PER PLAN	175
	2									625	10490	2	EACH	LIGHT POLE, CONVENTIONAL, AT10, B35	
	8									625	10490	8	EACH	LIGHT POLE, CONVENTIONAL, AT15, B35	
	1									625	10490	1	EACH	LIGHT POLE, CONVENTIONAL, AT20, B35	
	4									625	10490	4	EACH	LIGHT POLE, CONVENTIONAL, A25, B35	
	11	7								625	14500	18	EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP	
	1941	2460								625	23200	4401	FT	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE	
	1400									625	23300	1400	FT	NO. 2 AWG 2400 VOLT DISTRIBUTION CABLE	
	2895	840								625	23400	3735	FT	NO. 10 AWG POLE & BRACKET CABLE	
	993									625	24320	993	FT	1-1/2" DUCT CABLE WITH THREE NO. 4 AWG 2400 VOLT CABLES	
	683	466								625	25408	1149	FT	CONDUIT, 2", 725.051	
	244	244								625	25600	488	FT	CONDUIT, 4", 725.04	
	2									625	26251	2	EACH	LUMINAIRE, TYPE II, 200W, CONVENTIONAL, AS PER PLAN	175
	9									625	26251	9	EACH	LUMINAIRE, TYPE III, 200W, CONVENTIONAL, AS PER PLAN	175
	4									625	26251	4	EACH	LUMINAIRE, TYPE III, 250W, CONVENTIONAL, AS PER PLAN	175
		4								625	27501	4	EACH	LUMINAIRE, UNDERPASS, 100W, HPS, AS PER PLAN	175
	873	710								625	29002	1583	FT	TRENCH, 24" DEEP	
	10	5								625	30700	15	EACH	PULL BOX, 725.08, 18"	
	15	7								625	32000	22	EACH	GROUND ROD	
	1									625	34001	1	EACH	POWER SERVICE, AS PER PLAN	175
	873	710								625	36000	1583	FT	PLASTIC CAUTION TAPE	
LS										SPEC	62540000	LS		MAINTAIN EXISTING LIGHTING	175
1										SPEC	62540010	1	EACH	REPLACEMENT OF EXISTING LIGHTING UNIT	175
		13								625	75400	13	EACH	LIGHT POLE REMOVED	
		11								625	75500	11	EACH	LIGHT POLE FOUNDATION REMOVED	
		13								625	75506	13	EACH	LUMINAIRE REMOVED	
		7								625	98000	7	EACH	LIGHTING MISC,: AREA LUMINAIRE AND POLE	175
		2								625	98000	2	EACH	LIGHTING MISC,: CAMERA RELOCATION	175

LIGHTING GENERAL SUMMARY

CUY-480/ TRANSPORTATION BLVD.

\\AKRNGA\DATA\2016\2016051\CUY\80974\LIGHTING\SHEETS\80974\LE081.DGN
 5/24/2017 8:04:02 AM
 GDDTV81STD_USER

\\AKRINDA\DATA\2016\2016051\CUVA\B974\LIGHTING\SHEETS\B974L5001.DGN
 5/24/2017 9:04:03 AM
 GDDTV81STD_USER

REFERENCE NUMBER	SHEET NUMBER	SIDE	ROADWAY	STATION TO STATION	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625		
					EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
PB-1	181	LT	I-480 EB ON RAMP	44+50																									
	181	LT	I-480 EB ON RAMP	44+50 TO 44+39																									
L-1	181	LT	I-480 EB ON RAMP	44+39		1																							
PB-2	181	LT	I-480 EB ON RAMP	43+62																									
C-1		LT	TRANSPORTATION BLVD.	43+62 TO 21+44																									
L-2	182	LT	TRANSPORTATION BLVD.	21+44				1																					
C-2	182	LT	TRANSPORTATION BLVD.	21+44 TO 19+44																									
L-3	182	LT	TRANSPORTATION BLVD.	19+44				1																					
C-3	182	LT	TRANSPORTATION BLVD.	19+44 TO 17+46																									
PB-3	182	LT	TRANSPORTATION BLVD.	17+46																									
	182	LT	TRANSPORTATION BLVD.	17+46 TO 17+29																									
L-4	182	LT	TRANSPORTATION BLVD.	17+29		1																							
		LT	TRANSPORTATION BLVD.	17+29 TO 16+06																									
L-5	183	LT	TRANSPORTATION BLVD.	16+06		1																							
	183	LT	TRANSPORTATION BLVD.	16+06 TO 14+95																									
L-6	183	LT	TRANSPORTATION BLVD.	14+95				1																					
	183	LT	TRANSPORTATION BLVD.	14+95 TO 14+66																									
PB-4	183	LT	TRANSPORTATION BLVD.	14+66																									
C-4	183	LT	TRANSPORTATION BLVD.	14+66 TO 86+55																									
PB-5	183	LT	TRANSPORTATION BLVD.	86+55																									
	183	LT	TRANSPORTATION BLVD.	86+55 TO 86+94																									
L-7	183	LT	TRANSPORTATION BLVD.	86+94		1																							
PB-6	181	RT	TRANSPORTATION BLVD.	22+30																									
	181	RT	TRANSPORTATION BLVD.	22+30 TO 22+20																									
L-8	181	RT	TRANSPORTATION BLVD.	22+20		1																							
L-9	182	RT	TRANSPORTATION BLVD.	20+25				1																					
L-10	182	RT	TRANSPORTATION BLVD.	18+39				1																					
L-11	183	RT	TRANSPORTATION BLVD.	14+39		1																							
	183	RT	TRANSPORTATION BLVD.	14+39 TO 14+39																									
EX. PB	183	RT	TRANSPORTATION BLVD.	14+39																									
PB-8	183	LT	RAMP I-480 WB EXIT	400+52																									
	183	LT/RT	RAMP I-480 WB EXIT/TRANS. BLVD.	400+52 TO 86+59																									
L-12	183	RT	TRANSPORTATION BLVD.	86+59		1																							
L-13	183	LT	RAMP I-480 WB EXIT	401+46		1																							
		LT	RAMP I-480 WB EXIT	401+46 TO 403+14																									
L-14	184	LT	RAMP I-480 WB EXIT	403+14		1																							
	184	LT	RAMP I-480 WB EXIT	403+14 TO 404+83				1																					
L-15	184	LT	RAMP I-480 WB EXIT	404+83		1																							
	184	LT	RAMP I-480 WB EXIT	404+83 TO 406+07																									
PB-9	184	LT	RAMP I-480 WB EXIT	406+07																									
PS	183	LT	TRANSPORTATION BLVD.	87+24																									
	183	LT	TRANSPORTATION BLVD.	87+24 TO 86+55																									
PB-17	183	LT	TRANSPORTATION BLVD.	86+55																									
	183	LT	TRANSPORTATION BLVD.	86+55 TO 14+66																									
PB-16	183	LT	TRANSPORTATION BLVD.	14+66																									
	183	LT	TRANSPORTATION BLVD.	14+66 TO ITRAN																									
TOTALS CARRIED TO GENERAL SUMMARY					2	8	1	4	2	9	4		11	10		873	683	244		993	1941	2895	38	42	15	873	1	1	1400

LIGHTING SUBSUMMARY

CUY-480/
TRANSPORTATION BLVD.

CALCULATED
WF
CHECKED
MM

177
225

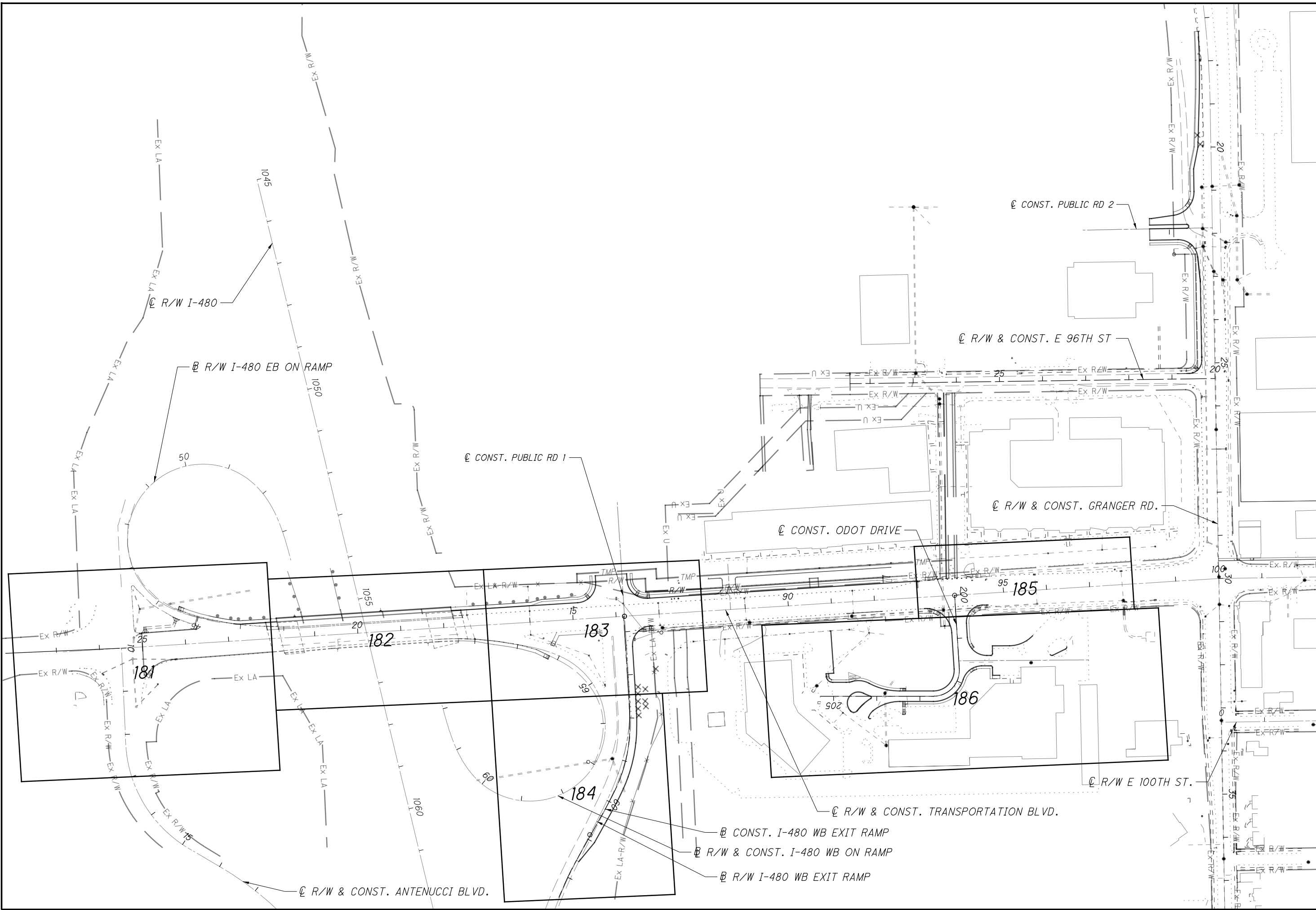
\\AKRNGA\DATA\2016\2016051\CUY\8974\LIGHTING\SHEETS\8974L5002.DGN
 5/24/2017 8:04:03 AM
 GDDTV81STD_USER

REFERENCE NUMBER	SHEET NUMBER	SIDE	ROADWAY	STATION TO STATION	625	625					625	625	625	625	625	625	625	625	625	625		
					LUMINAIRE, UNDERPASS, AS PER PLAN EACH	LIGHTING MISC.; CAMERA RELOCATION EACH					LIGHTING MISC.; AREA LUMINAIRE AND POLE EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP, AS PER PLAN EACH	PULL BOX, 725.08, 18" EACH	TRENCH, 24" DEEP FT	CONDUIT, 2", 725.051 FT	CONDUIT, 4", 725.04 FT	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE FT	NO. 10 AWG POLE & BRACKET CABLE FT	CONNECTION, FUSED PULL-APART EACH	CONNECTION, UNFUSED PERMANENT EACH	GROUND ROD EACH	PLASTIC CAUTION TAPE FT
PB-10	186	RT	ODOT DRIVE	205+02									1									
	186	RT	ODOT DRIVE	205+02 TO 204+99									81	81		273				3		81
L-16	186	RT	ODOT DRIVE	204+99							1	1				120	2	1	1			
PB-11	186	RT	ODOT DRIVE	200+56																		
C-6	186	RT	ODOT DRIVE	200+56 TO									203		203	639						203
PB-12	186	RT	ODOT DRIVE	204+42									1							3		
	186	RT	ODOT DRIVE	204+42 TO 204+02									45	45		165						45
L-17	186	RT	ODOT DRIVE	204+02							1	1					120	2	1	1		
	186	RT	ODOT DRIVE	204+02 TO 203+63									42	42		156						42
PB-13	186	RT	ODOT DRIVE	203+63									1							3		
C-7	186	RT/LT	ODOT DRIVE	203+63 TO 203+68									41		41	153						41
PB-14	186	LT	ODOT DRIVE	203+68									1							3		
	186	LT	ODOT DRIVE	203+68 TO 203+71									3	3		39						3
L-18	186	LT	ODOT DRIVE	203+71							1	1					120	2	1	1		
	186	RT	ODOT DRIVE	203+63 TO 202+47									116	116		378						116
L-19	186	RT	ODOT DRIVE	202+47							1	1					120	2	1	1		
	186	RT	ODOT DRIVE	202+47 TO 201+44									82	82		276						82
L-20	186	RT	ODOT DRIVE	201+44							1	1				30	120	2	1	1		
L-21	186	LT	ODOT DRIVE 2	31+09							1	1					120				1	
	186	LT	ODOT DRIVE 2	31+09 TO 31+85									94	94		312						94
L-22	186	LT	ODOT DRIVE 2	31+85							1	1					120	2	1	1		
	186	LT	ODOT DRIVE 2	31+85 TO 31+87									3	3		39						3
PB-15	186	LT	ODOT DRIVE 2	31+87									1							3		
U-1	182		TRANSPORTATION BLVD.		4																	
S-1	186	RT	ODOT DRIVE	205+01		1																
S-2	186	LT	ODOT DRIVE 2	30+72		1																
TOTALS CARRIED TO GENERAL SUMMARY					4	2	0	0	0	0	7	7	5	710	466	244	2460	840	12	21	7	710

REFERENCE NUMBER	SHEET NUMBER	SIDE	ROADWAY	STATION TO STATION	625	625	625															
					LIGHT POLE REMOVED EACH	LIGHT POLE FOUNDATION REMOVED EACH	LUMINAIRE REMOVED EACH															
R-1	181				1	1	1															
R-2	182				1	1	1															
R-3	182				1	1	1															
R-4	182				1	1	1															
R-5	183				1	1	1															
R-6	183				1	1	1															
R-7	182				1	1	1															
R-8	182				1	1	1															
R-9	183				1	1	1															
R-10	183				1	1	1															
R-11	183				1	1	1															
R-12	184				1	1	1															
R-13	184				1	1	1															
TOTALS CARRIED TO GENERAL SUMMARY					13	11	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CALCULATED WF
 CHECKED MM
LIGHTING SUBSUMMARY
 CUY-480/
 TRANSPORTATION BLVD.
 178
 225

\\AKRNGA\DATA\2016\2016051\CUY\88974\LIGHTING\SHEETS\88974L8081.DGN
5/24/2017
9:04:05 AM
000TV81STD_USER



CALCULATED
WF
CHECKED
MM

0 100 200
50
HORIZONTAL
SCALE IN FEET

LIGHTING SCHEMATIC PLAN
LIGHTING WORK

**CUY-480/
TRANSPORTATION BLVD.**

179
225

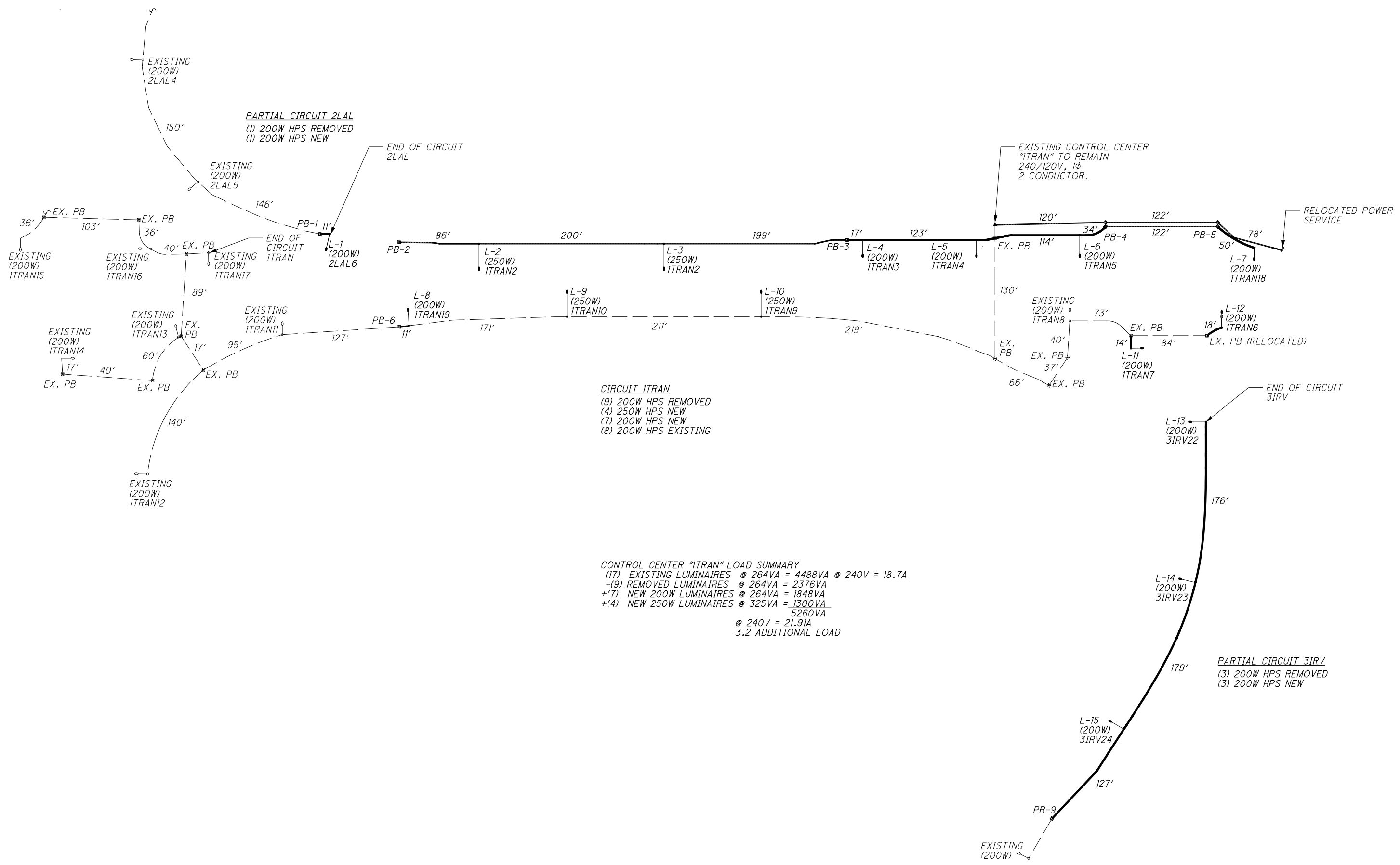


CALCULATED WF CHECKED MM

**LIGHTING CIRCUIT DIAGRAM
BEGIN TO STA. 22+00**

**CUY-480/
TRANSPORTATION BLVD.**

180
225



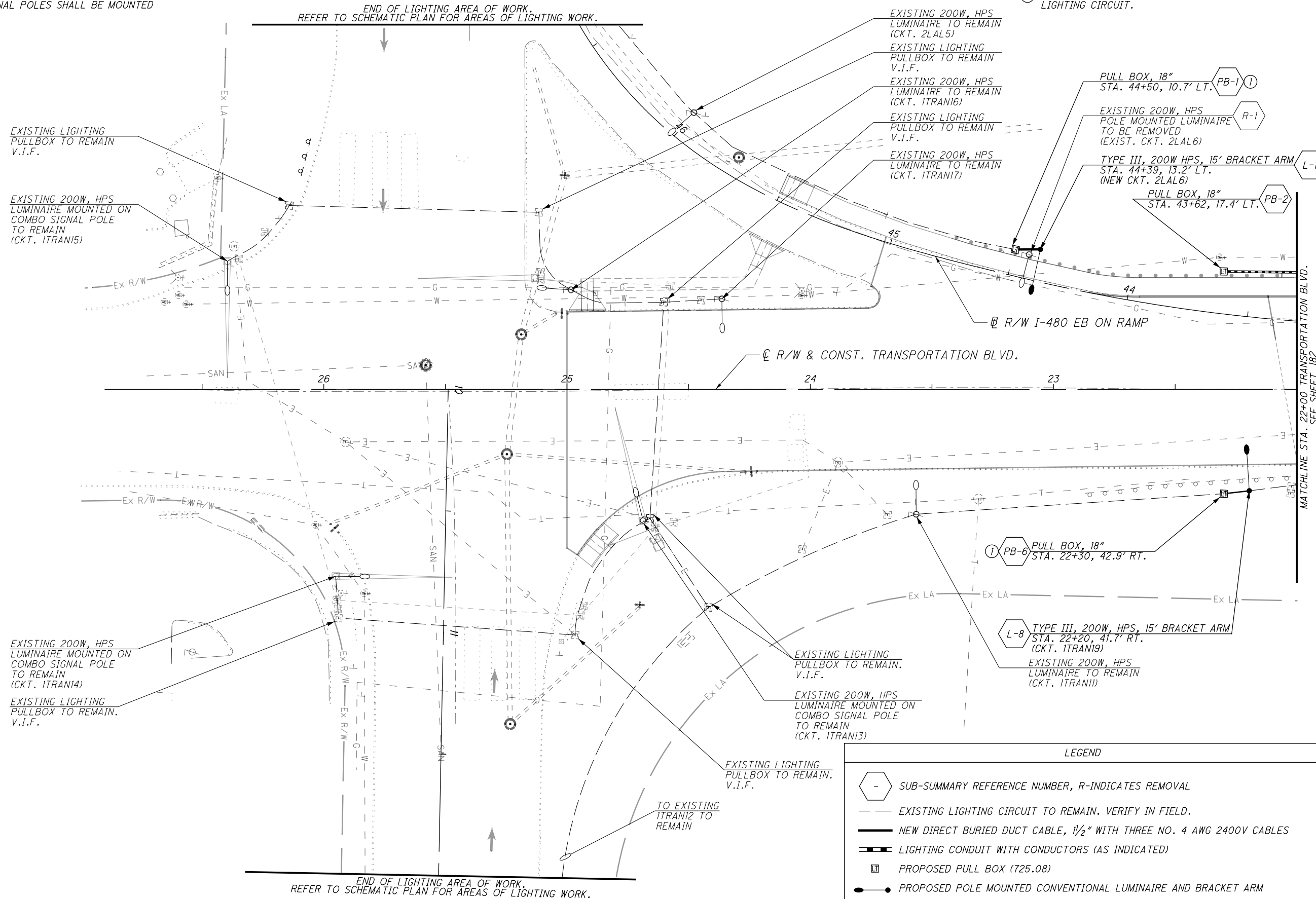
0:\2016\2616051\CUY\80974\LIGHTING\SHEETS\80974L001.DGN
5/24/2017 8:04:06 AM
D:\01\81STD_USER

NOTES

1. LUMINAIRES MOUNTED ON CONVENTIONAL LIGHT POLES AND COMBINATION SIGNAL POLES SHALL BE MOUNTED AT 36.5' AFG.

KEY NOTES

① PROVIDE PULL BOX FOR CONNECTION TO EXISTING LIGHTING CIRCUIT.



CALCULATED WF
CHECKED MM

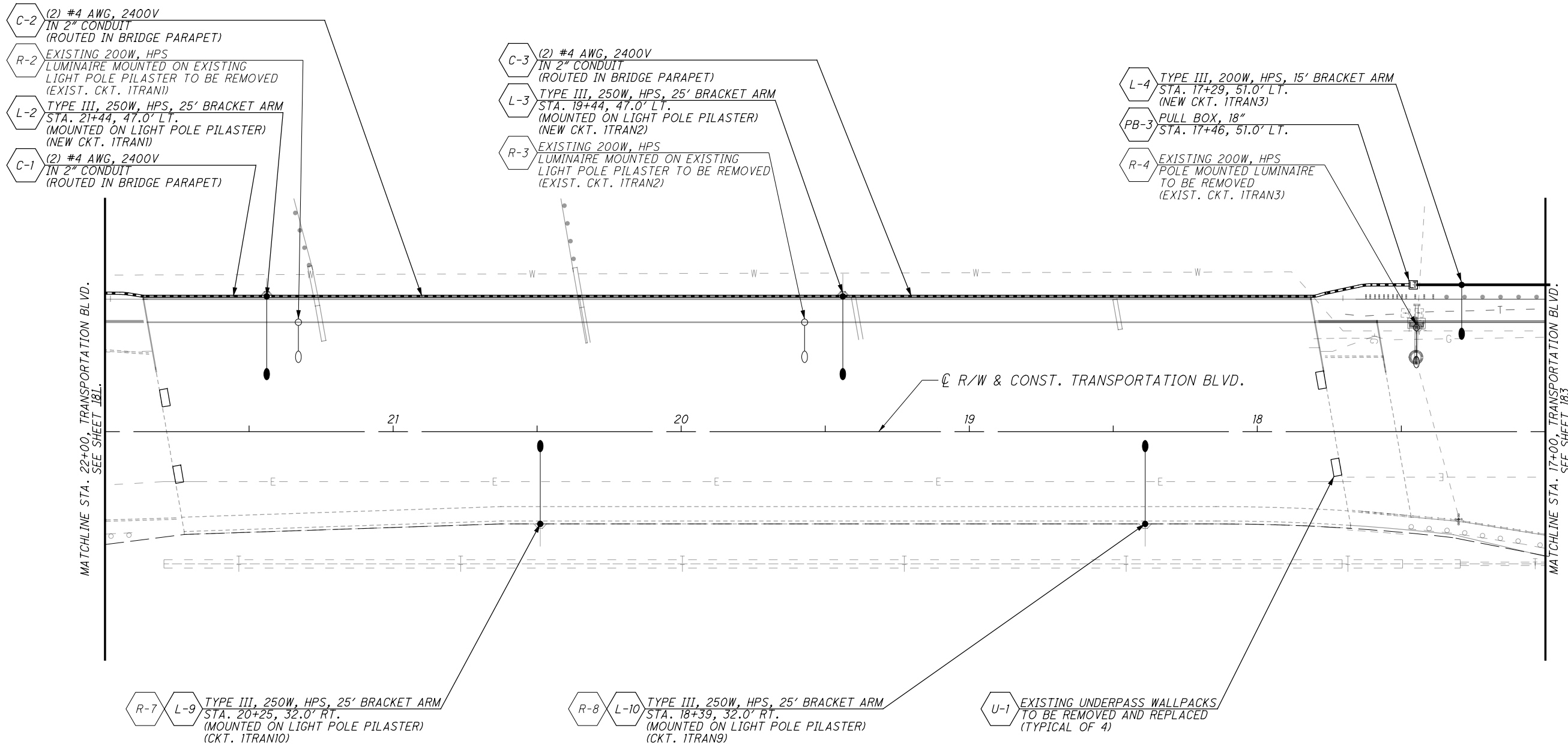
**LIGHTING PLAN
BEGIN TO STA. 22+00**

TRANSPORTATION BLVD.

LEGEND	
	SUB-SUMMARY REFERENCE NUMBER, R-INDICATES REMOVAL
	EXISTING LIGHTING CIRCUIT TO REMAIN. VERIFY IN FIELD.
	NEW DIRECT BURIED DUCT CABLE, 1/2" WITH THREE NO. 4 AWG 2400V CABLES
	LIGHTING CONDUIT WITH CONDUCTORS (AS INDICATED)
	PROPOSED PULL BOX (725.08)
	PROPOSED POLE MOUNTED CONVENTIONAL LUMINAIRE AND BRACKET ARM
	PROPOSED LUMINAIRE, BRACKET ARM ON COMBINATION SIGNAL POLE
	EXISTING POLE MOUNTED CONVENTIONAL LUMINAIRE AND BRACKET ARM TO REMAIN
	EXISTING LUMINAIRE BRACKET ARM ON COMBINATION SIGNAL POLE TO REMAIN

\\AKR\DATA\2016\2016051\CUY\80974\LIGHTING\SHEETS\80974.LP001.DGN
 5/24/2017 8:04:07 AM
 000TV81STD.USER

\\AKRINDA\DATA\2016\20160511\CUY\80974\LIGHTING\80974\LP002.DGN
 5/24/2017 8:04:08 AM
 000TY81STD_USER



CALCULATED 0
 WF
 CHECKED MM

0 20 40
 HORIZONTAL
 SCALE IN FEET

LIGHTING PLAN
STA. 22+00 TO STA. 17+00

**CUY-480/
 TRANSPORTATION BLVD.**

SEE SHEET 181 FOR LIGHTING PLAN LEGEND.

NOTES

1. LUMINAIRES MOUNTED ON CONVENTIONAL LIGHT POLES AND COMBINATION SIGNAL POLES SHALL BE MOUNTED AT 36.5' AFG.

POWER SERVICE, AS PER PLAN EXISTING CONTROL CENTER "ITRAN"

R-5 EXISTING 200W, HPS POLE MOUNTED LUMINAIRE TO BE REMOVED (EXIST. CKT. ITRAN4)

L-5 TYPE III, 200W, HPS, 15' BRACKET ARM STA. 16+06, 51.0' LT. (NEW CKT. ITRAN4)

C-4 (3) #4 AWG, 2400V DISTRIBUTION CABLE INSIDE 4" CONDUIT

R-6 EXISTING 200W, HPS LUMINAIRE MOUNTED ON COMBO SIGNAL POLE TO BE REMOVED (EXIST. CKT. ITRAN5)

PB-10 PULL BOX, 18" STA. 14+66, 70.0' LT'

PB-4 PULL BOX, 18" STA. 14+66, 65.5' LT'

(4) #2 AWG, 2400V, DISTRIBUTION CABLE INSIDE 2" CONDUIT

L-6 TYPE III, 200W, HPS, 20' BRACKET ARM STA. 14+95, 56.0' LT. (NEW CKT. ITRAN5)

KEY NOTES

1. PROVIDE PULL BOX FOR CONNECTION TO EXISTING LIGHTING CIRCUIT.
2. PROVIDE CONNECTION TO EXISTING LIGHTING CIRCUIT THROUGH EXISTING PULL BOX.

PULL BOX, 18" STA. 86+55, 70.0' LT.

PULL BOX, 18" STA. 86+55, 65.6' LT.

(4) #2 AWG, 2400V, DISTRIBUTION CABLE INSIDE 2" CONDUIT

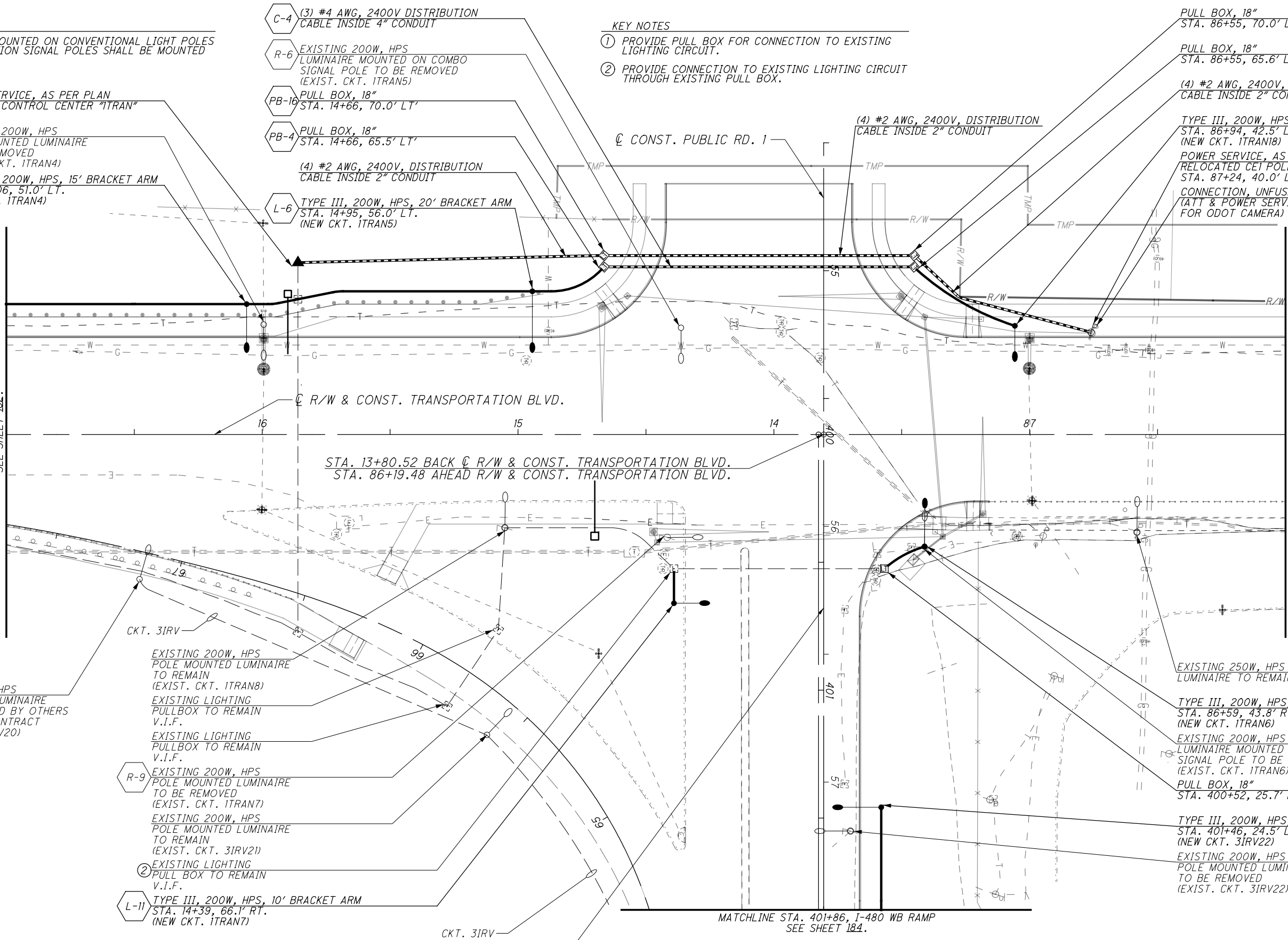
L-7 TYPE III, 200W, HPS, 10' BRACKET ARM STA. 86+94, 42.5' LT. (NEW CKT. ITRAN18)

PS POWER SERVICE, AS PER PLAN RELOCATED CET POLE 73150 STA. 87+24, 40.0' LT.

CONNECTION, UNUSED PERMANENT, AS PER PLAN (ATT & POWER SERVICE FOR ODOT CAMERA)



MATCHLINE STA. 17+00, TRANSPORTATION BLVD. SEE SHEET 182.



STA. 13+80.52 BACK @ R/W & CONST. TRANSPORTATION BLVD.
STA. 86+19.48 AHEAD R/W & CONST. TRANSPORTATION BLVD.

END OF LIGHTING AREA OF WORK. REFER TO SCHEMATIC PLAN FOR AREAS OF LIGHTING WORK.

EXISTING 200W, HPS POLE MOUNTED LUMINAIRE TO BE RELOCATED BY OTHERS V.I.F. NOT IN CONTRACT (EXIST. CKT. 31RV20)

EXISTING 200W, HPS POLE MOUNTED LUMINAIRE TO REMAIN (EXIST. CKT. ITRAN8)
EXISTING LIGHTING PULLBOX TO REMAIN V.I.F.
EXISTING LIGHTING PULLBOX TO REMAIN V.I.F.

R-9 EXISTING 200W, HPS POLE MOUNTED LUMINAIRE TO BE REMOVED (EXIST. CKT. ITRAN7)
EXISTING 200W, HPS POLE MOUNTED LUMINAIRE TO REMAIN (EXIST. CKT. 31RV21)
EXISTING LIGHTING PULL BOX TO REMAIN V.I.F.

L-11 TYPE III, 200W, HPS, 10' BRACKET ARM STA. 14+39, 66.1' RT. (NEW CKT. ITRAN7)

EXISTING 250W, HPS LUMINAIRE TO REMAIN

L-12 TYPE III, 200W, HPS, 15' BRACKET ARM STA. 86+59, 43.8' RT. (NEW CKT. ITRAN6)

R-10 EXISTING 200W, HPS LUMINAIRE MOUNTED ON COMBO SIGNAL POLE TO BE REMOVED (EXIST. CKT. ITRAN6)

PB-8 PULL BOX, 18" STA. 400+52, 25.7' LT.

L-13 TYPE III, 200W, HPS, 15' BRACKET ARM STA. 401+46, 24.5' LT. (NEW CKT. 31RV22)

R-11 EXISTING 200W, HPS POLE MOUNTED LUMINAIRE TO BE REMOVED (EXIST. CKT. 31RV22)

MATCHLINE STA. 401+86, I-480 WB RAMP SEE SHEET 184.

@ CONST. RAMP I-480 WB EXIT

**LIGHTING PLAN
STA. 17+00 TO STA. 88+00**

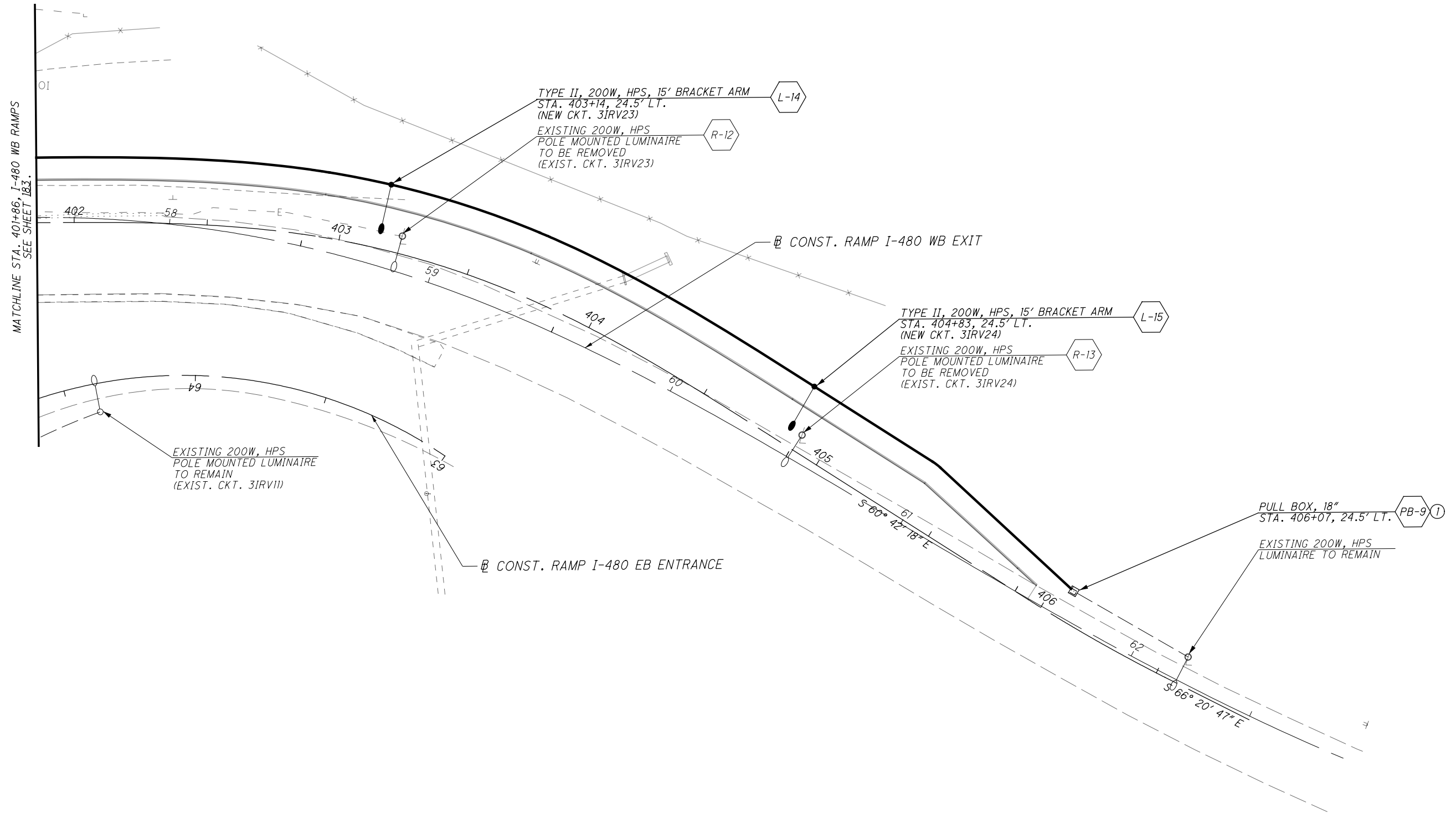
**CUY-480/
TRANSPORTATION BLVD.**

SEE SHEET 181 FOR LIGHTING PLAN LEGEND.

\AKRINDA\DATA\2016\20160511\CUY\80974\LIGHTING\SHEETS\80974\LP003.DGN
 5/24/2017 8:04:09 AM
 000TV81STD_USER

KEY NOTES
 ① PROVIDE PULL BOX FOR CONNECTION TO EXISTING LIGHTING CIRCUIT.

CALCULATED WF CHECKED MM
 0 20 40
 HORIZONTAL SCALE IN FEET

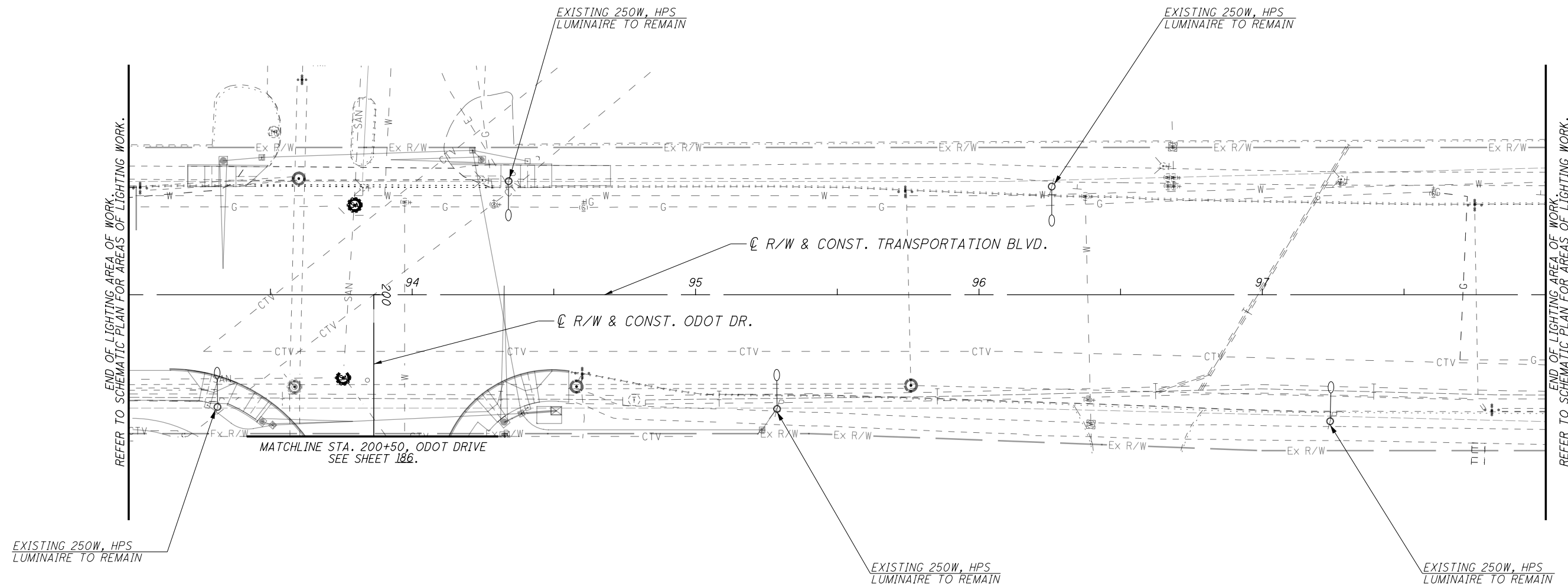


LIGHTING PLAN
 STA. 57+50 TO END

CUY-480/
 TRANSPORTATION BLVD.

SEE SHEET 181 FOR LIGHTING PLAN LEGEND.

\\AKRINDA\DATA\2016\2016051\CUY\B0974\LIGHTING\SHEETS\B0974LP005.DGN
5/24/2017 8:04:10 AM
000191STD.LUSER



END OF LIGHTING AREA OF WORK
REFER TO SCHEMATIC PLAN FOR AREAS OF LIGHTING WORK.

END OF LIGHTING AREA OF WORK
REFER TO SCHEMATIC PLAN FOR AREAS OF LIGHTING WORK.

CALCULATED	WF	CHECKED	MM
0			

0 20 40
HORIZONTAL
SCALE IN FEET

LIGHTING PLAN
STA. 93+00 TO STA. 98+00

**CUY-480/
TRANSPORTATION BLVD.**

SEE SHEET 181 FOR LIGHTING PLAN LEGEND.

NOTES

1. AREA LIGHTS SHALL BE MOUNTED AT 30' AFG ON SQUARE ALUMINUM POLE, DARK BRONZE

③ PB-11 NEW PULL BOX, 18"
STA. 200+56, 167.4' RT.

② PB-12 NEW PULL BOX, 18"
STA. 204+42, 44.1' RT.

① PB-10 NEW PULL BOX, 18"
STA. 205+02, 154.3' RT.

EXISTING 250W METAL HALIDE LUMINAIRE TO REMAIN

L-16 AREA LUMINAIRE AND POLE, 250W METAL HALIDE
STA. 204+99, 73.7' RT.

(3) #4 AWG, 2400V DISTRIBUTION CABLE INSIDE 4" CONDUIT

① PB-15 NEW PULL BOX, 18"
STA. 31+87, 77.0' LT.

L-22 AREA LUMINAIRE AND POLE, 250W METAL HALIDE
STA. 31+85, 74.8' LT.

L-21 AREA LUMINAIRE AND POLE, 250W METAL HALIDE
STA. 31+09, 36.5' LT.

MATCHLINE STA. 200+50, ODOT DRIVE SEE SHEET 185.

④ S-2 NEW LOCATION FOR RELOCATED SECURITY CAMERA AND ASSOCIATED POLE. PROVIDE NEW FOUNDATION.
STA. 30+72, 17.1' LT.

EXISTING POLE MOUNTED SECURITY CAMERA TO BE RELOCATED

L-20 AREA LUMINAIRE AND POLE, 250W METAL HALIDE
STA. 201+44, 16.5' RT.

L-19 AREA LUMINAIRE AND POLE, 250W METAL HALIDE
STA. 202+47, 16.5' RT.

AREA LUMINAIRE AND POLE, 250W METAL HALIDE
STA. 204+02, 33.5' RT.

NEW PULL BOX, 18"
STA. 203+63, 22.9' RT.

L-17

PB-13

EXISTING 250W METAL HALIDE LUMINAIRE TO REMAIN

EXISTING 250W METAL HALIDE LUMINAIRE TO REMAIN

∅ CONST. ODOT DR. 2

∅ CONST. ODOT DR.

(3) #4 AWG, 2400V DISTRIBUTION CABLE INSIDE 4" CONDUIT

NEW PULL BOX, 18"
STA. 203+68, 16.9' LT.

AREA LUMINAIRE AND POLE, 250W METAL HALIDE
STA. 203+71, 17.4' LT.

EXISTING HELIPAD LIGHTING TO BE REMOVED, SALVAGED, AND RETURNED TO ODOT. (TYPICAL 6)

NEW LOCATION FOR RELOCATED SECURITY CAMERA AND ASSOCIATED POLE. PROVIDE NEW FOUNDATION.
STA. 205+01, 43.9' RT.

EXISTING POLE MOUNTED SECURITY CAMERA TO BE RELOCATED

KEY NOTES

- ① PROVIDE PULL BOX FOR CONNECTION TO EXISTING LIGHTING CIRCUIT.
- ② PROVIDE PULL BOX TO INTERCEPT EXISTING LIGHTING CIRCUIT CURRENTLY SERVING HELIPAD LIGHTING. REUSE EXISTING CONDUIT SYSTEM TO PROVIDE NEW 480 V/1Ø LIGHTING CIRCUIT FROM ODOT OFFICE ELECTRICAL PANEL. COORDINATE IN FIELD.
- ③ PROVIDE PULL BOX TO INTERCEPT EXISTING LIGHTING CIRCUIT CURRENTLY SERVING GROUND MOUNTED FLOOD LIGHTS ILLUMINATING MONUMENT SIGN. EXTEND LIGHTING CIRCUIT TO NEW MONUMENT SIGN LOCATION AND RELOCATE EXISTING LIGHT FIXTURES.
- ④ RELOCATED CAMERA SHALL BE MOUNTED AT A HEIGHT AND LOCATION TO MONITOR FRONT ENTERANCE.
- ⑤ RETURN LUMINAIRES BEING REMOVED BY OWNER. DISCONNECT AND REMOVE WIRING BACK TO SOURCE OR NEXT DEVICE TO REMAIN. EXISTING CONDUIT SYSTEM TO BE USED FOR NEW LIGHTING CIRCUIT.



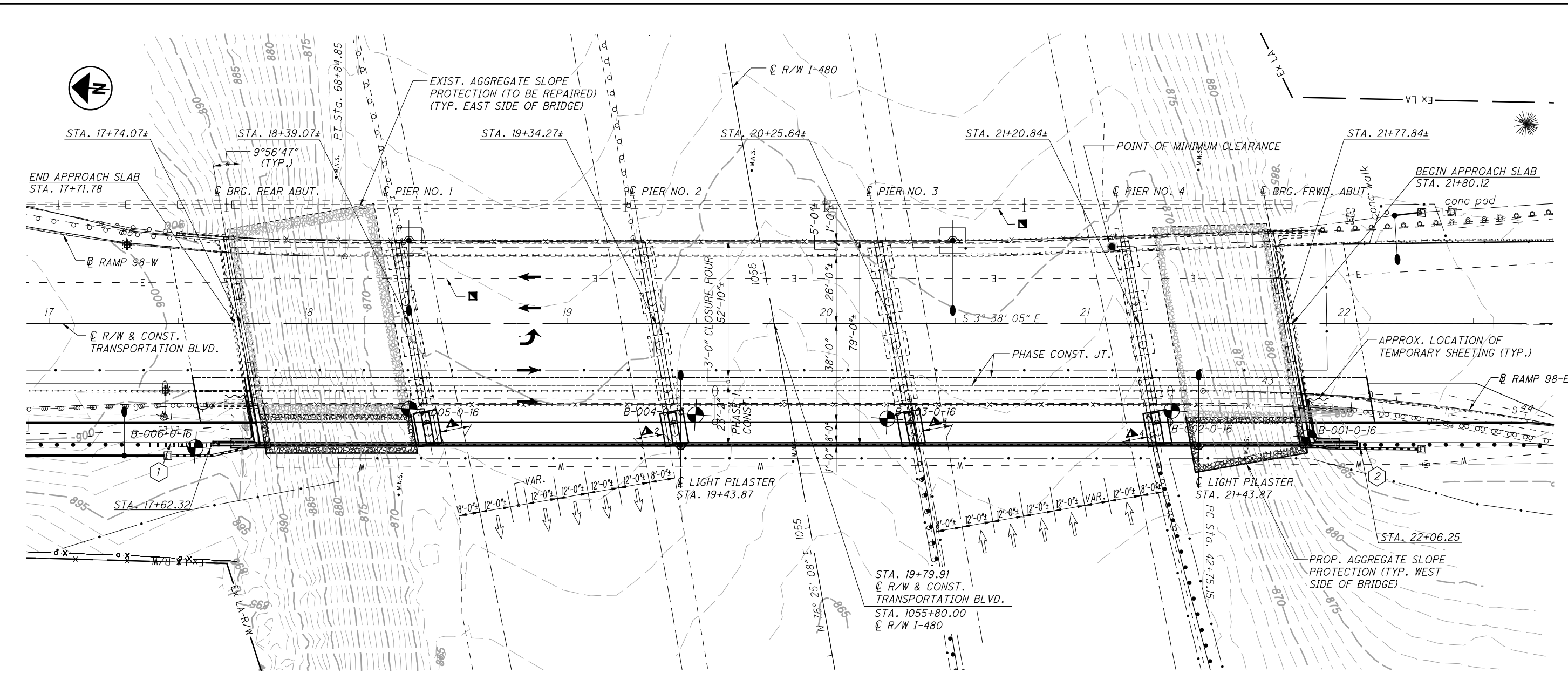
CALCULATED WF CHECKED MM

**LIGHTING PLAN
ODOT DRIVE**

**CUY-480/
TRANSPORTATION BLVD.**

LEGEND

- ① SUB-SUMMARY REFERENCE NUMBER, R-INDICATES REMOVAL
- EXISTING LIGHTING CIRCUIT TO REMAIN. VERIFY IN FIELD.
- LIGHTING CONDUIT WITH CONDUCTORS (AS INDICATED)
- PROPOSED PULL BOX (725.08)
- PROPOSED POLE MOUNTED AREA LUMINAIRE
- EXISTING POLE MOUNTED AREA LUMINAIRE



PLAN

DESIGN TRAFFIC:
 2018 ADT = 25,190 2018 ADTT = 1,511
 2038 ADT = 25,220 2038 ADTT = 1,513

- LEGEND:**
- ① BRIDGE TERMINAL ASSEMBLY, TYPE 1 MGS
 - ② BRIDGE TERMINAL ASSEMBLY, TYPE 2 MGS
 - INDICATES TO REMAIN
 - SOIL BORING LOCATION

BENCHMARK DATA	
POINT NO. 102 STA. 87+02.40 @ R/W & CONST. TRANSPORTATION BLVD. CAPPED IRON PIN EL. 910.59	POINT NO. 103 STA. 62+97.56 @ RAMP I-480 WB CAPPED IRON PIN EL. 892.93

FOR ADDITIONAL BENCHMARK INFORMATION SEE ROADWAY PLAN SHEET 4/225

HORIZONTAL CLEARANCE:

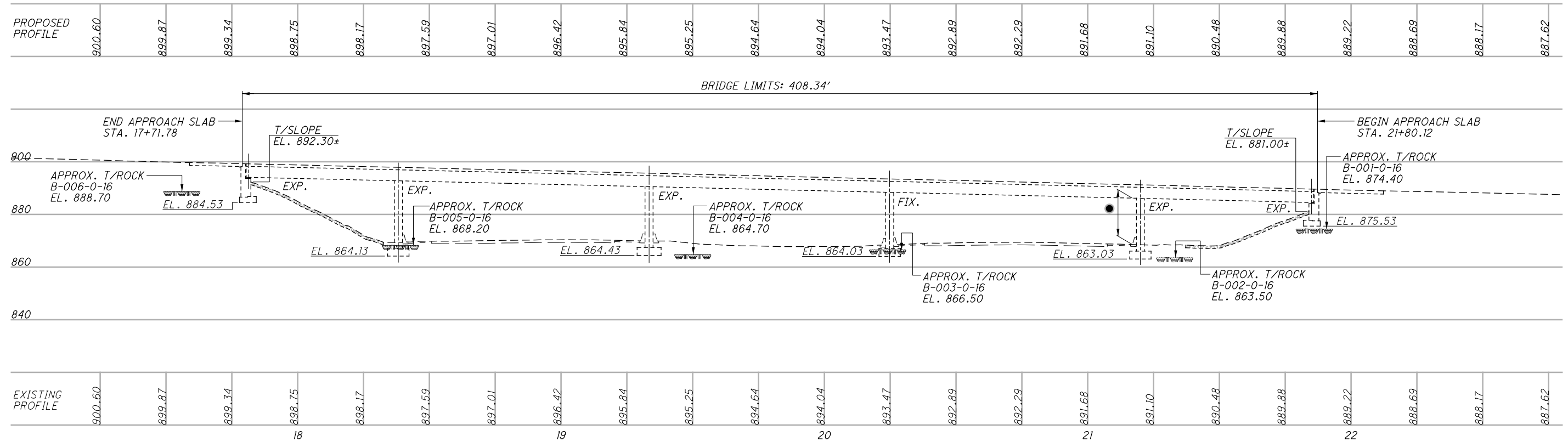
▲1 12.00' PROP. ACTUAL	9.50' REQ'D
▲2 11.54' PROP. ACTUAL	9.50' REQ'D
▲3 11.46' PROP. ACTUAL	9.50' REQ'D
▲4 9.75' PROP. ACTUAL	9.50' REQ'D

MINIMUM VERTICAL CLEARANCE:
 ● 15.89' EXIST. AND PROP.

EXISTING STRUCTURE
TYPE: CONTINUOUS WELDED STEEL GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 65'-0"±, 95'-2 3/8"±, 91'-4 1/2"±, 95'-2 3/8"±, 57'-0"± C/C BRGS.
ROADWAY: 52'-0"± & VARIES F/F RAIL
LOADING: HS 20-44 AND ALTERNATE MILITARY LOADING
SKEW: 9°56'47" RF
APPROACH SLABS: 20'-0"± LONG NORTH AND 25'-0"± LONG SOUTH
WEARING SURFACE: 2 1/2"± SUPERPLASTICIZED DENSE CONCRETE OVERLAY
ALIGNMENT: TANGENT
CROWN: 0.0156± FT/FT
STRUCTURE FILE NUMBER: 1812556
DATE BUILT: 1977
DISPOSITION: TO REMAIN

PROPOSED STRUCTURE
PROPOSED WORK: WIDEN NON-COMPOSITE REINFORCED CONCRETE DECK WITH NEW STEEL GIRDERS ON WIDENED REINFORCED CONCRETE SUBSTRUCTURE
TYPE: CONTINUOUS WELDED STEEL GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 65'-0"±, 95'-2 3/8"±, 91'-4 1/2"±, 95'-2 3/8"±, 57'-0"± C/C BRGS.
ROADWAY: 64'-0"± & VARIES F/F RAIL
LOADING: HS 20-44 (CASE II) AND ALTERNATE MILITARY LOADING 0.060 KSF FUTURE WEARING SURFACE
SKEW: 9°56'47" RF
APPROACH SLABS: AS-1-15 20' LONG (NORTH) 25' LONG (SOUTH)
WEARING SURFACE: 1" MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
CROWN: 0.016 FT/FT
COORDINATES: LATITUDE N 41° 24' 42" LONGITUDE W 81° 36' 57"

\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-195\195\SHEETS\480-195\CSF002.DGN
 3/1/2017 3:58:22 PM GDDTV81STD_USER



MINIMUM VERTICAL CLEARANCE:
 ● 15.89' EXIST. AND PROP.

PROFILE ALONG C CONST. & R/W TRANSPORTATION BLVD.

CUY - TRANSPORTATION BLVD. PID No. 80974	SITE PLAN - PROFILE BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480	CUYAHOGA COUNTY STA. 17+71.78 STA. 21+80.12	DESIGNED DGN CHECKED SAT	DRAWN RFR REVISED	REVIEWED TJW STRUCTURE FILE NUMBER 1812556	DATE 3-1-17	DESIGN AGENCY GPD GROUP <small>Gilman, Pyle, Schinner, Burns & DeHaven, Inc. 9095 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.518.5344 Copyright © Gilman, Pyle, Schinner, Burns & DeHaven, Inc. 2015</small>
		2 / 39	188 / 225				

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

- A-1-69 REVISED 7-19-02
- AS-1-15 REVISED 7-17-15
- BR-2-15 DATED 7-17-15
- GSD-1-96 REVISED 7-19-02
- PCB-91 REVISED 1-18-13
- RB-1-55 REVISED 7-19-13
- VPF-1-90 REVISED 7-17-15

AND THE FOLLOWING SUPPLEMENTAL SPECIFICATION:

SS800-2016 REVISED: 10-21-16

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2004, AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING

DESIGN LOADING: HS20, CASE II AND THE ALTERNATE MILITARY LOADING

FUTURE WEARING SURFACE (FWS) OF 60 POUNDS PER SQUARE FOOT.

DESIGN STRESSES

QC/QA CONCRETE - CLASS QC2 - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

CLASS QC1 - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615 OR A996, GRADE 60, MINIMUM YIELD STRENGTH 60,000 PSI.

NEW STRUCTURAL STEEL - ASTM A709 GRADE 50, YIELD STRENGTH 50,000 PSI

EXISTING STRUCTURAL STEEL - ASTM A570 GRADE 36, YIELD STRENGTH 36,000 PSI

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL
2 1/2" MINIMUM CONCRETE COVER

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

UTILITY LINES

THE UTILITY(IES) SHALL BEAR ALL EXPENSE INVOLVED IN RELOCATING OR REMOVING THE AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

ITEM 514 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN

IN ADDITION TO THE DESCRIPTION OF ITEMS IN THE CMS, THIS ITEM SHALL ALSO COVER ALL LABOR, MATERIALS, AND INCIDENTALS FOR THE REPAIR OF EXISTING STRUCTURAL STEEL COATINGS THAT BECOME DAMAGED FROM CONNECTION OF THE NEW CROSSFRAME MEMBERS. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE REQUIREMENTS OF ITEM 514 AND SHALL NOT BE PAID FOR SEPARATELY.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

DESCRIPTION: THIS ITEM SHALL INCLUDE THE REMOVAL OF THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER, INCLUDING THE ABANDONED GAS LINE PIPES, SLEEVES AND HARDWARE THAT ARE LEFT IN PLACE THROUGH THE EXISTING ABUTMENT BACKWALLS. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF THE DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF THE FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE. REPLACE OR REPAIR STEEL MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

EXISTING WELDED ATTACHMENTS: REMOVE EXISTING WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS, AND SUPPORTS FOR SCUPPERS) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO FLANGES.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST, AND REPAIR THE EXISTING EPOXY COATING. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN (CONTINUED)

SUBSTRUCTURE CONCRETE REMOVAL: REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

REMOVAL METHODS: THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER STRUCTURAL MEMBERS (STEEL GIRDERS), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS. THE LONGITUDINAL DECK SAWCUT OVER EXISTING GIRDER "G" AS SHOWN IN THE PLANS SHALL NOT OCCUR UNTIL THE EXISTING PARAPET HAS BEEN REMOVED AT THE LEVEL OF THE SIDEWALK.

DUE TO THE POSSIBLE PRESENCE OF ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS, ETC.) TO EXISTING STRUCTURAL MEMBERS, PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRUCTURAL MEMBERS THAT ARE TO REMAIN. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

MEASUREMENT & PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH CMS ITEM 503 EXCEPT THAT THE BACKFILL MATERIAL SHALL BE CONFORMING TO CMS 703.17 AND MEET THE COMPACTION REQUIREMENTS OF CMS 304.05. IN ADDITION, THE BACKFILL MATERIAL SHALL BE PLACED AND COMPACTED IN 6" LIFTS. EXCAVATION OF THE EXISTING POROUS BACKFILL SHALL BE INCLUDED IN THIS ITEM.

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN:

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE.

REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

TRANSVERSE DECK AND APPROACH SLAB GROOVES

CONSTRUCT THE NEW WIDENED PORTION OF THE BRIDGE DECK AND APPROACH SLABS WITH TRANSVERSE GROOVES TO MATCH THE EXISTING BRIDGE DECK AND APPROACH SLABS. THE GROOVES SHALL BE PLACED ACCORDING TO THE SAME REQUIREMENTS OF CMS 511.17, EXCEPT THE GROOVES SHALL BE TRANSVERSE TO MATCH THE EXISTING GROOVES, INSTEAD OF LONGITUDINAL AS DESCRIBED IN THE CMS.

EXISTING STRUCTURE VERIFICATION :

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

DECK PLACEMENT DESIGN ASSUMPTIONS:

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.2 KIPS FOR A TOTAL MACHINE LOAD OF 17.6 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA BEAM TO THE FACE OF THE SAFETY HANDRAIL OF 65".

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

THE COLOR OF THE FINISH COAT SHALL BE FEDERAL STANDARD NO. 17778-LIGHT NEUTRAL. THE SEALER SHALL BE APPLIED TO ALL EXPOSED PORTIONS OF THE PROPOSED ABUTMENTS AND PIERS AS WELL AS THE NEW PARAPET AND DECK FASCIA AS SHOWN IN THE PLANS.

FOUNDATION BEARING PRESSURE:

ABUTMENT FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF 1.9 TONS PER SQUARE FOOT. THE ALLOWABLE BEARING PRESSURE IS 2.5 TONS PER SQUARE FOOT AT THE NORTH ABUTMENT AND 4.5 TONS PER SQUARE FOOT AT THE SOUTH ABUTMENT. PIER FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF 6.0 TONS PER SQUARE FOOT. THE ALLOWABLE BEARING PRESSURE AT THE PIERS VARIES FROM 6.25 TO 7.0 TONS PER SQUARE FOOT.

FOOTINGS:

FOOTINGS SHALL EXTEND A MINIMUM OF 3 INCHES INTO BEDROCK OR TO THE ELEVATION SHOWN, WHICHEVER IS LOWER.

\\AKRNGA\DATA\2016\201605\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480L-1955CIN001.DGN
3/1/2017 3:46:23 PM GDDT\B15TD_USER

 DESIGN AGENCY GPD GROUP <small>Class, Pbc, Shomer, Burns & DeHaven, Inc. 3995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.318.3344 Copyright © Class, Pbc, Shomer, Burns & DeHaven, Inc. 2015</small>	DATE	3-1-17		
	REVIEWED	DGN	STRUCTURE FILE NUMBER	1812556
	DRAWN	RFV	REVISED	
	DESIGNED	RFV	CHECKED	DJC
GENERAL NOTES BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480				
CUY - TRANSPORTATION BLVD. PID No. 80974		3 / 39 189 225		

ESTIMATED QUANTITIES

CALCULATED: RFV DATE: 12-14-16
 CHECKED: DJC DATE: 12-16-16

ITEM	EXT.	TOTAL	UNITS	DESCRIPTION	ABUT	PIER	SUPER	GENERAL	A.P.P. REFERENCE SHT. NO.
202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN					3
202	22901	34	SY	APPROACH SLAB REMOVED, AS PER PLAN				34	8-9
503	11100	LS		COFFERDAMS AND EXCAVATION BRACING					
503	21301	LS		UNCLASSIFIED EXCAVATION, AS PER PLAN					3
503	31120	127	CY	SHALE EXCAVATION		127			
509	10000	155832	LB	EPOXY COATED REINFORCING STEEL	7255	19761	128816		
509	20001	100	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				100	3
510	10000	1502	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	98		1404		
511	34446	506	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK			506		
511	34450	41	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)			41		
511	42010	61	CY	CLASS QC1 CONCRETE, PIER ABOVE FOOTINGS		61			
511	43510	76	CY	CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING	76				
511	46510	52	CY	CLASS QC1 CONCRETE, FOOTING		52			
512	10050	400	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)			400		
512	10100	620	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	76	123	421		
512	10300	10	SY	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN				10	
512	33000	22	SY	TYPE 2 WATERPROOFING	22				
513	10280	190100	LB	STRUCTURAL STEEL MEMBERS, LEVEL 4			190100		
514	00051	1000	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN (SLIDING PLATE EXTENSION)			1000		3
514	00060	9750	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			9750		
514	00066	9750	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT			9750		
514	10000	9	EACH	FINAL INSPECTION REPAIR			9		
516	12201	54	FT	STRUCTURAL STEEL EXPANSION JOINT, AS PER PLAN (SLIDING PLATE EXTENSION)			54		16-17
516	46000	2	EACH	BEARING DEVICE, BOLSTER (B-275)			2		
516	46200	4	EACH	BEARING DEVICE, ROCKER (R-100)			4		
516	46200	6	EACH	BEARING DEVICE, ROCKER (R-250)			6		
518	12201	4	EACH	SCUPPER, INCLUDING SUPPORTS, AS PER PLAN			4		31
518	21200	60	CY	POROUS BACKFILL WITH FILTER FABRIC	60				
518	40001	35	FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN		35			10, 13
518	40010	50	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS		50			
526	15011	40	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=13"), AS PER PLAN				40	36-37
526	25011	50	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15"), AS PER PLAN				50	36-37
607	39901	436	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN			436		32

ABBREVIATIONS

- ABUT. ABUTMENT
- BRG. BEARING
- B.S. BOTH SIDES
- N.S. NEAR SIDE
- F.S. FAR SIDE
- SER. SERIES
- TYP. TYPICAL
- EQ. EQUAL
- DIM. DIMENSION
- SPA. SPACES
- EA. EACH
- P.E..J.F. PERFORMED EXPANSION JOINT FILLER
- MIN. MINIMUM
- ADDIT. ADDITIONAL
- SPL. SPLICE
- CLR. CLEAR
- BTWN. BETWEEN
- P.C.P.P. PERFORATED CORRUGATED PLASTIC PIPE
- N.P.C.P.P. NON-PERFORATED CORRUGATED PLASTIC PIPE
- EXIST. EXISTING
- N.A. NORTH ABUTMENT
- S.A. SOUTH ABUTMENT
- EL. ELEVATION
- DIA. DIAMETER
- EXP. EXPANSION
- STA. STATION
- CONST. CONSTRUCTION
- JT. JOINT
- CL. CENTERLINE
- C.I.P. CAST-IN-PLACE
- NO. NUMBER
- LT. LEFT
- RT. RIGHT
- ELEC. ELECTRICAL
- PROP. PROPOSED
- REQ'D. REQUIRED
- P.C.B. PORTABLE CONCRETE BARRIER
- SF. SQUARE FEET
- U.N.O. UNLESS NOTED OTHERWISE
- BM. BEAM
- FTG./FTGS. FOOTING(S)
- MAX. MAXIMUM
- REINF. REINFORCING
- F.S. FIELD SPLICE
- BOT. BOTTOM

\\AKR\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955\ESTIMATED.DGN
 3/1/2017 3:44:52 PM
 GDDTV81STD_USER

DESIGN AGENCY
GPD GROUP
Class, P.C., Scherer, Burns & Dehaven, Inc.
 100 Cleveland Blvd., Suite 100, Cleveland, Ohio 44115 216.318.3344
 Copyright © Class, P.C., Scherer, Burns & Dehaven, Inc. 2015

DATE
 3-1-17

REVIEWED
 DGN

STRUCTURE FILE NUMBER
 1812556

DRAWN
 RFV

REVISIONS
 DJC

DESIGNED
 RFV

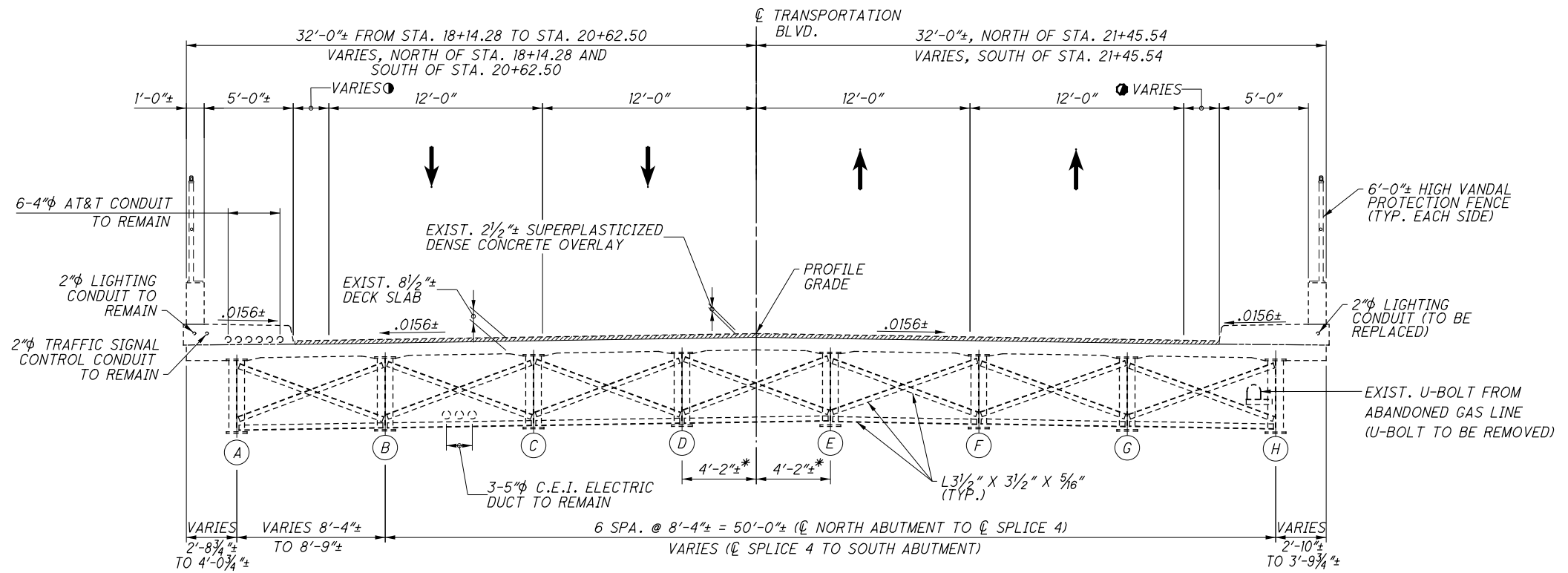
CHECKED
 DJC

ESTIMATED QUANTITIES
 BRIDGE NO. CUY-480-1955
 TRANSPORTATION BOULEVARD OVER I-480

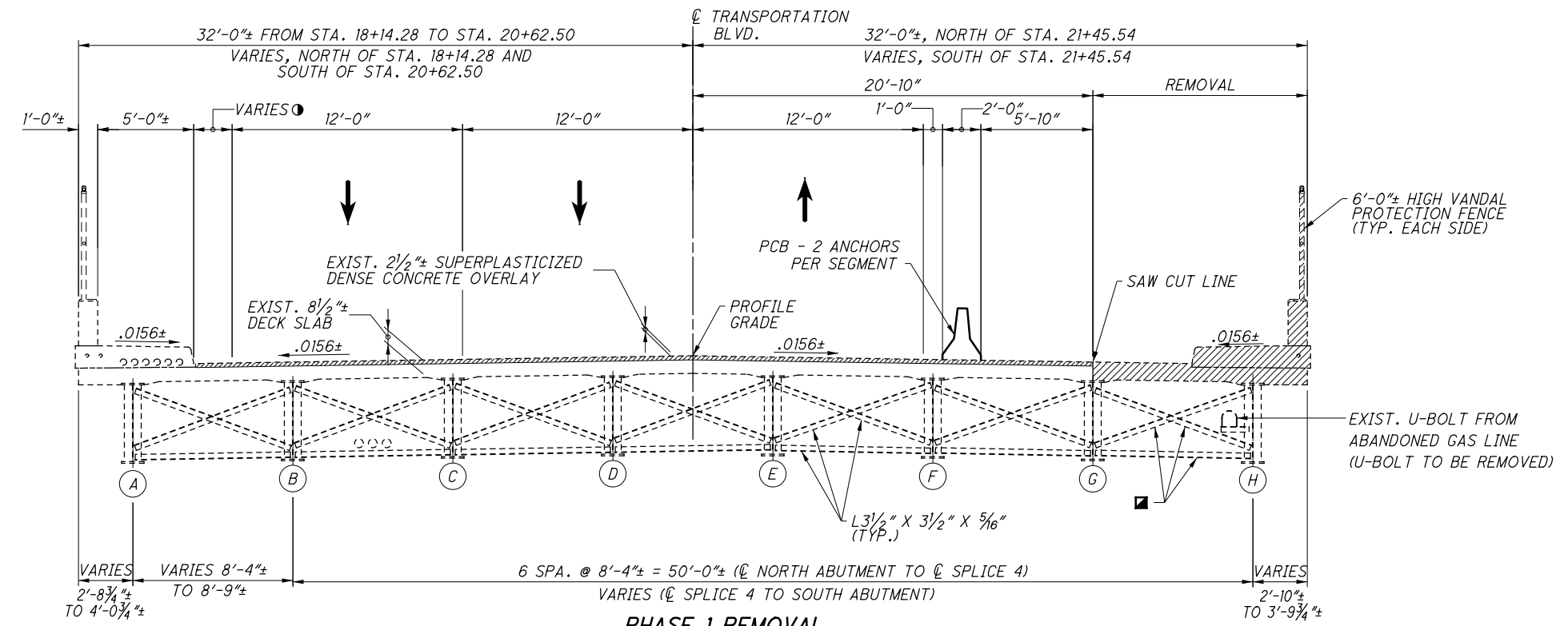
CUY -
TRANSPORTATION
 BLVD.
 PID No. 80974

4 / 39

190
 225



EXISTING TRANSVERSE SECTION
* NORTH OF FIELD SPLICE NO. 4



PHASE 1 REMOVAL
(FOR UTILITY CALLOUTS, SEE EXISTING TRANSVERSE SECTION)

LEGEND:

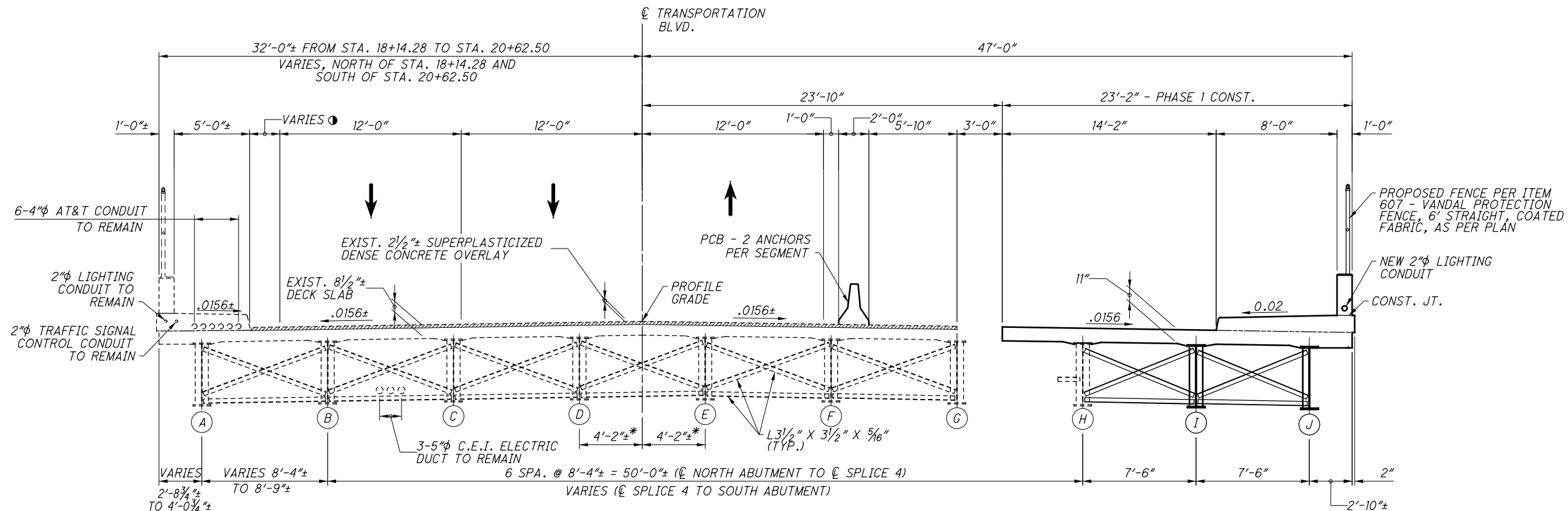
INDICATES PORTIONS OF STRUCTURE REMOVED

EXISTING CROSSFRAMES BETWEEN GIRDERS 'G' & 'H' SHALL BE REMOVED AFTER PHASE 1 DECK REMOVAL BEGINS. DURING ALL PHASES OF WORK, PROVIDE SUFFICIENT BRACING TO MAINTAIN STABILITY OF GIRDER 'H'. THE EXISTING CROSSFRAME STIFFENERS SHALL REMAIN.

- ① SHOULDER VARIES FROM 2'-0" TO 3'-5 1/16" NORTH OF STA. 18+14.28 AND VARIES FROM 2'-0" TO 5'-8" SOUTH OF STA. 20+62.50 (MEASURED FROM GUTTERLINE TO EDGE OF LANE AT CL OF BEARING)
- ② SHOULDER VARIES FROM 2'-0" TO 2'-11 7/16" SOUTH OF STA. 21+45.54 (MEASURED FROM GUTTERLINE TO EDGE OF LANE AT CL OF BEARING)

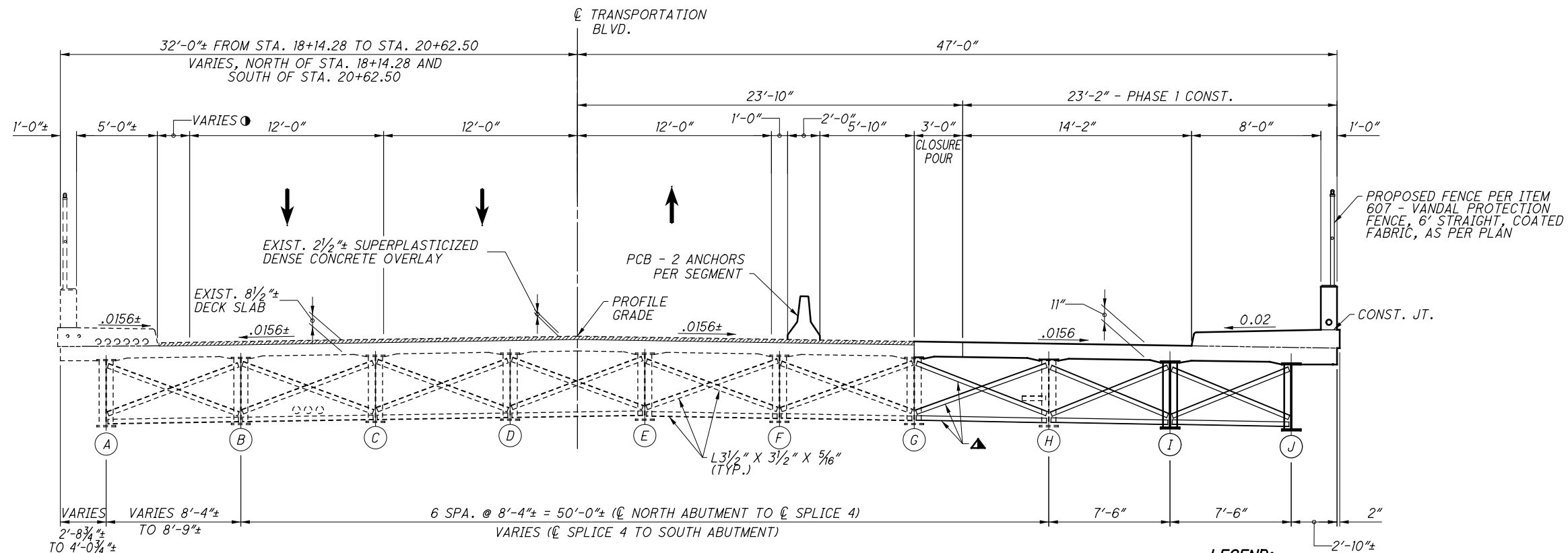
\\AKR\BNA\DATA\2016\2016051\CUY\B0974\STRUCTURES\CUY-480-195\195\SHEETS\480-195\PCP001.DGN
 3/1/2017 3:47:53 PM GDDTV81STD_USER

 <small>Class, P.E., Schaner, Burns & Dehaven, Inc. 216.518.3544 2005 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 Copyright © 2016, P.E. Schaner, Burns & Dehaven, Inc. 2015</small>
DATE: 3-1-17 REVIEWED: DGN STRUCTURE FILE NUMBER: 1812556
DRAWN: SAT CHECKED: DUC
DESIGNED: T.J.W. CHECKED: DUC
PHASE CONSTRUCTION DETAILS BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480
CUY - TRANSPORTATION BLVD. PID No. 80974
5 / 39
191 225



PHASE 1 CONSTRUCTION

* NORTH OF FIELD SPLICE NO. 4



CLOSURE POUR CONSTRUCTION

(FOR UTILITY CALLOUTS, SEE PHASE 1 CONSTRUCTION)

LEGEND:

- ▲ NEW CROSSFRAMES TO BE INSTALLED AFTER PHASE 1 DECK PLACEMENT AND BEFORE THE CLOSURE POUR PLACEMENT.
- SHOULDER VARIES FROM 2'-0" TO 3'-5 1/16" NORTH OF STA. 18+14.28 AND VARIES FROM 2'-0" TO 5'-8" SOUTH OF STA. 20+62.50 (MEASURED FROM GUTTERLINE TO EDGE OF LANE AT ℄ OF BEARING)

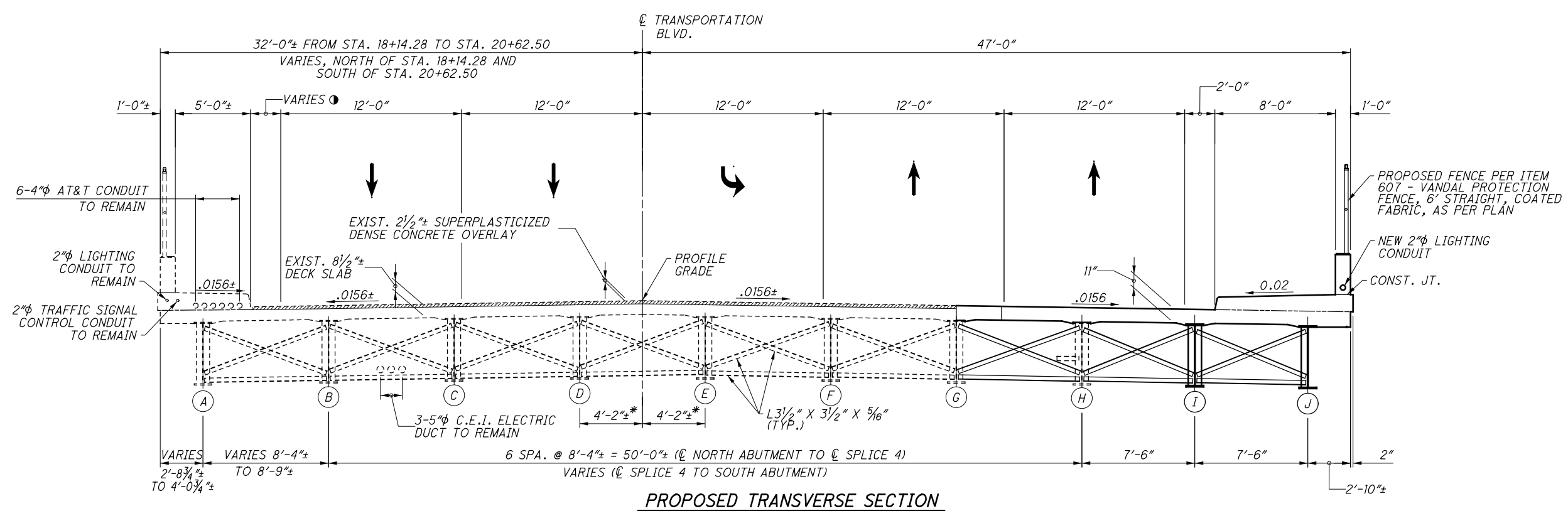
\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955\PC2001.DGN
 3/1/2017 3:48:15 PM GDDTV81STD.USER

DATE	3-1-17
REVIEWED	DGN
DESIGNED	TJW
CHECKED	DUC
DRAWN	SAT
REVISED	
STRUCTURE FILE NUMBER	1812556

PHASE CONSTRUCTION DETAILS
 BRIDGE NO. CUY-480-1955
 TRANSPORTATION BOULEVARD OVER I-480

CUY-TRANSPORTATION BLVD.
 PID No. 80974

\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955PC201.DGN
 3/1/2017 3:48:36 PM
 000TV81STD_USER



PROPOSED TRANSVERSE SECTION

LEGEND:

- SHOULDER VARIES FROM 2'-0" TO 3'-5 1/16" NORTH OF STA. 18+14.28 AND VARIES FROM 2'-0" TO 5'-8" SOUTH OF STA. 20+62.50 (MEASURED FROM GUTTERLINE TO EDGE OF LANE AT \bar{C} OF BEARING)

DESIGN AGENCY GPD GROUP <small>Claire, Pyle, Schomer, Burns & DeLawaie, Inc. 3995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.318.3344 Copyright © 2015, Pyle, Schomer, Burns & DeLawaie, Inc. 2015</small>	DATE 3-1-17
	REVISIONS DGN 3-1-17 STRUCTURE FILE NUMBER 1812556
DRAWN SAT	CHECKED DUC
PHASE CONSTRUCTION DETAILS BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480	
CUY-TRANSPORTATION BLVD. 80974 PID No. 80974	
7 / 39	
193 225	



NORTHWEST
WINGWALL

REMOVE EXIST.
P.C.P.P.
OUTSIDE
OF EXIST.
WINGWALL
LIMIT

CUT
LINE

APPROACH SLAB

17'-10 1/8" ±

20'-10"

12" SLEEVE FROM ABANDONED 8" EAST
OHIO GAS LINE - SLEEVE & REMAINING
HARDWARE TO BE REMOVED THROUGH
THE BACKWALL AND THE HOLE SHALL
BE FILLED WITH GROUT - INCLUDE
WITH ITEM 202

℄ CONST. & R/W
TRANSPORTATION BLVD.

EXIST. 6" P.C.P.P.

STA. 17+74.07

℄ BRG.

6"

3'-8" ±

1'-3" ±

2'-0" ±

1'-0" ±

80° 3' 15" ±

EXP. JOINT ARMOR
(TO BE REMOVED)

EXP. JOINT ARMOR
(TO REMAIN)

3 SPA. @ 8'-5 1/2" ± = 25'-4 5/8" ±

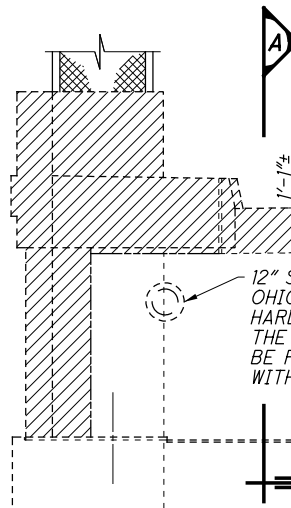
4'-2 3/4" ±

4'-2 3/4" ±

9'-5 5/8" ±

20'-9 1/8" ±

PLAN



12" SLEEVE FROM ABANDONED 8" EAST
OHIO GAS LINE - SLEEVE & REMAINING
HARDWARE TO BE REMOVED THROUGH
THE BACKWALL AND THE HOLE SHALL
BE FILLED WITH GROUT - INCLUDE
WITH ITEM 202

℄ CONST. & R/W TRANSPORTATION BLVD.
@ FACE OF BACKWALL

APPROACH SLAB SEAT

EL. 884.53±

ELEVATION

EXIST. VANDAL
PROTECTION FENCE
(TO BE REMOVED)

17'-10 1/8" ±

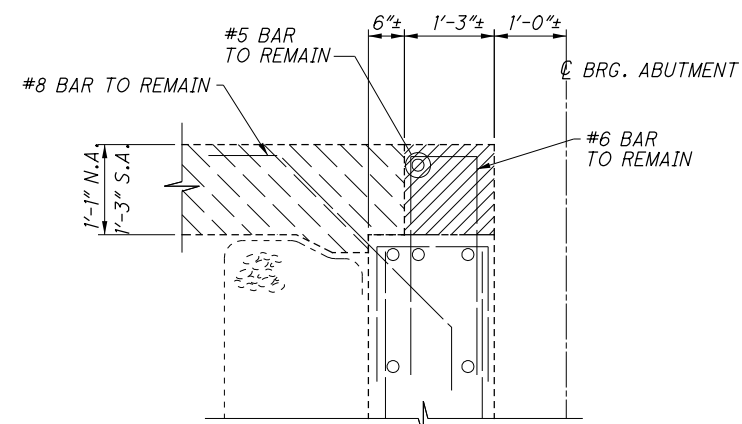
2'-1 1/8" ±

EXIST. WINGWALL
CONST. JT.

6" DRAIN PIPE
THROUGH WINGWALL

EL. 884.53±

NORTHWEST WINGWALL ELEVATION



SECTION A

LEGEND:



- THE EXISTING EXPANSION JOINT ARMOR AT
THE REMOVAL LIMIT SHALL BE CUT BY
METHODS OF SAW CUTTING. NO BURNING
OF THE EXISTING JOINT ARMOR AT THIS
LOCATION SHALL BE PERMITTED. THE
LOCATION OF THE FIELD SPLICE SHALL BE
VERIFIED.



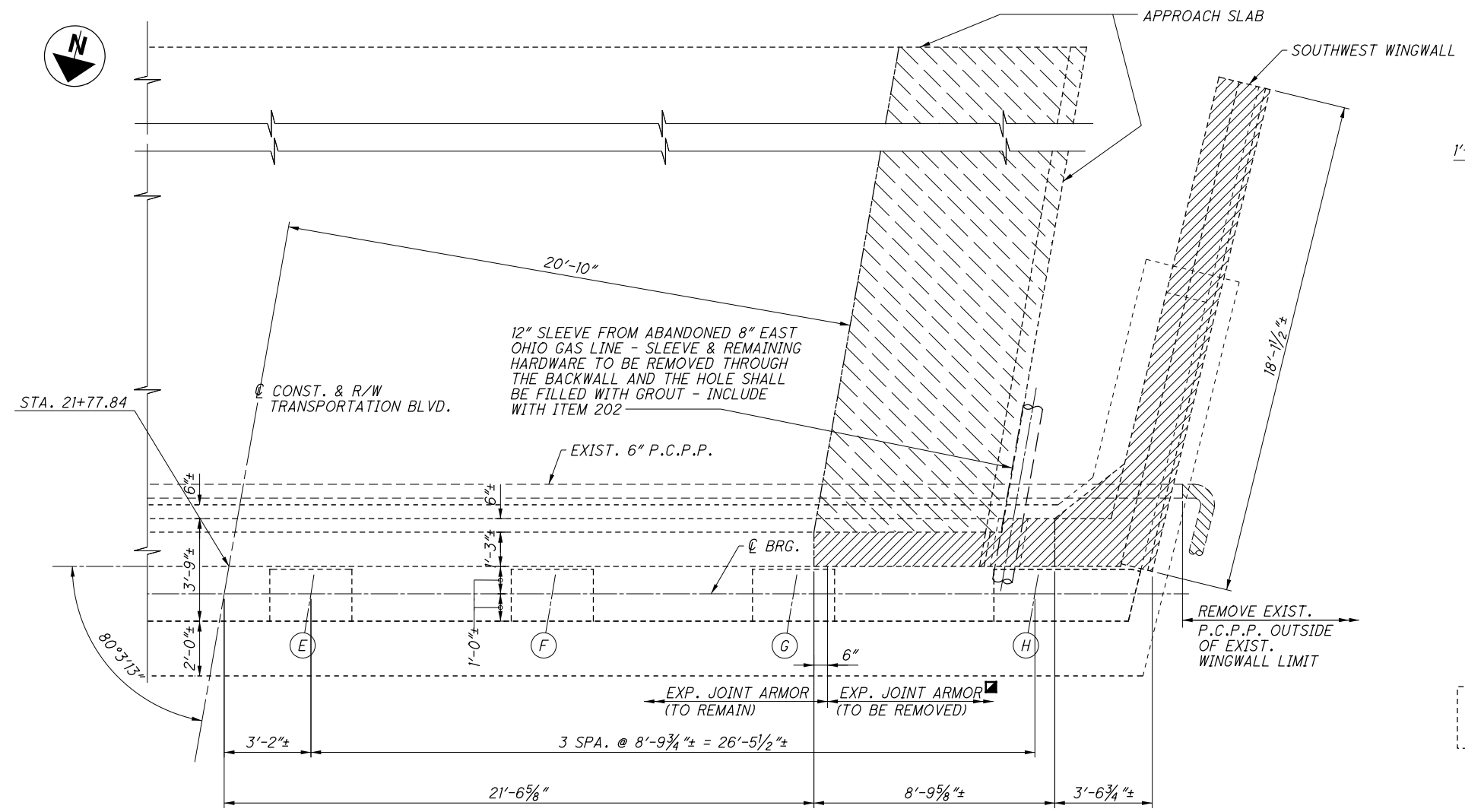
- INDICATES LIMITS OF REMOVAL UNDER
ITEM 202 - PORTIONS OF STRUCTURE
REMOVED, OVER 20 FOOT SPAN,
AS PER PLAN



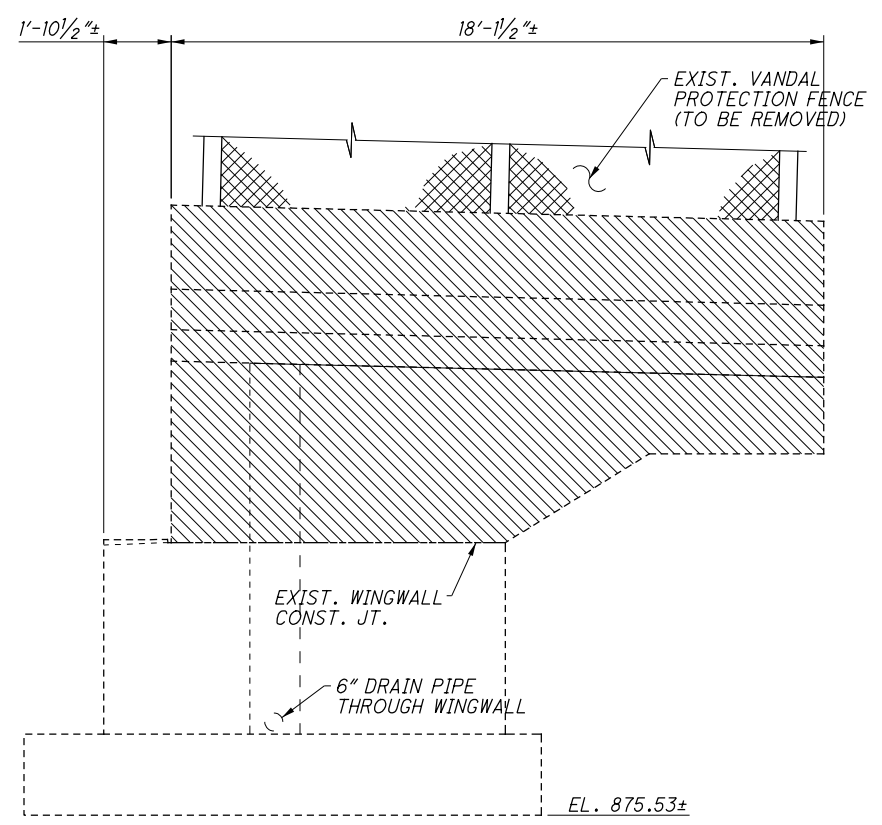
- INDICATES LIMITS OF APPROACH SLAB
REMOVAL UNDER ITEM 202 - APPROACH
SLAB REMOVED, AS PER PLAN

 DESIGN AGENCY GPD GROUP Civil, Pub, Schem, Buss & Detailing, Inc. 216.518.3544 3995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 Copyright © 2015, GPD Group, Inc.	DATE	3-1-17		
	REVIEWED	DGN	STRUCTURE FILE NUMBER	1812556
	DRAWN	SAT	REVISED	
	DESIGNED	SAT	CHECKED	TJW
NORTH ABUTMENT REMOVAL PLAN BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480				
CUY- TRANSPORTATION BLVD. PID No. 80974				
		8 / 39		
		194 225		

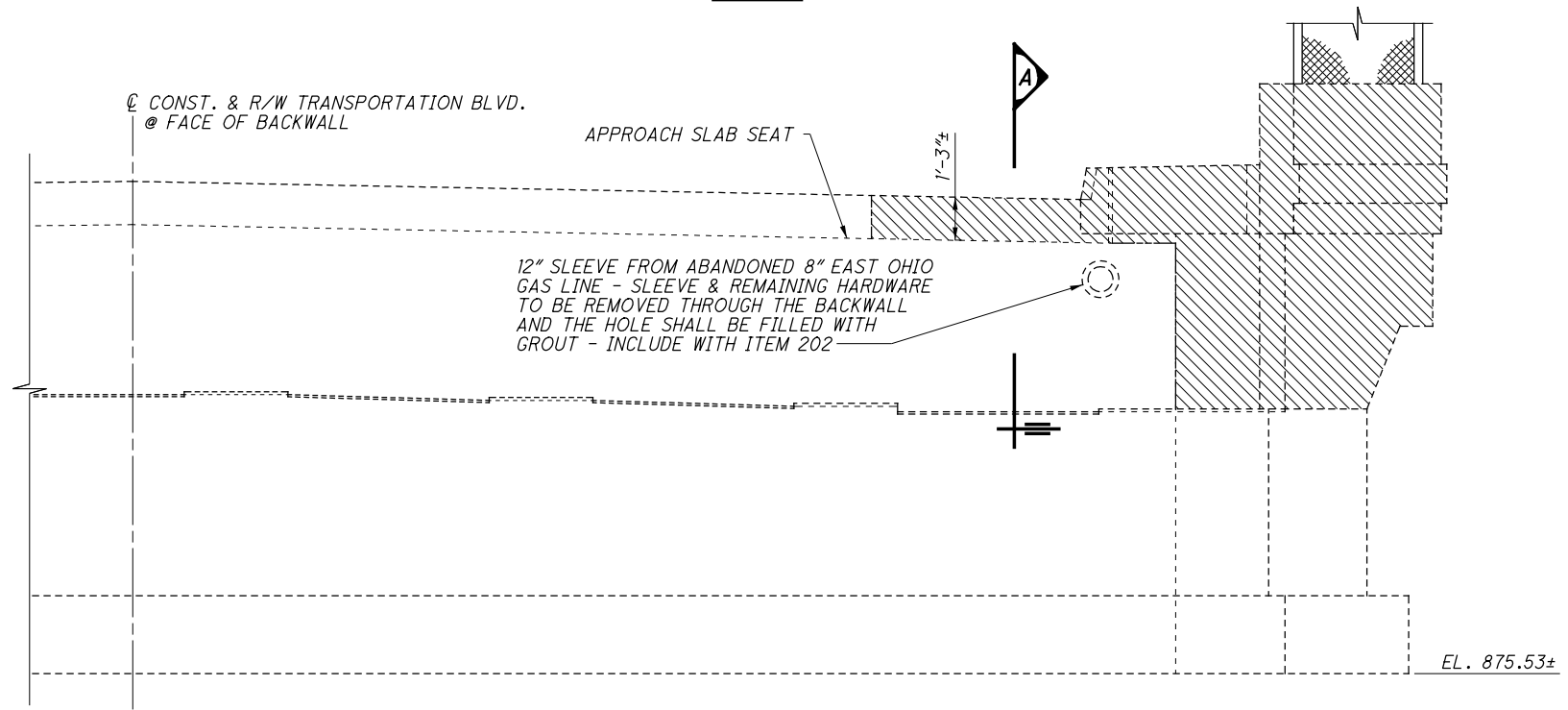
\\AKR\BGA\DATA\2016\2016051\CUY-480-1955\STRUCTURES\CUY-480-1955\SHEETS\480-1955\REC\202.DGN
 3/1/2017 3:11:36 PM GDDTV81STD_USER



PLAN



SOUTHWEST WINGWALL ELEVATION



ELEVATION

LEGEND:

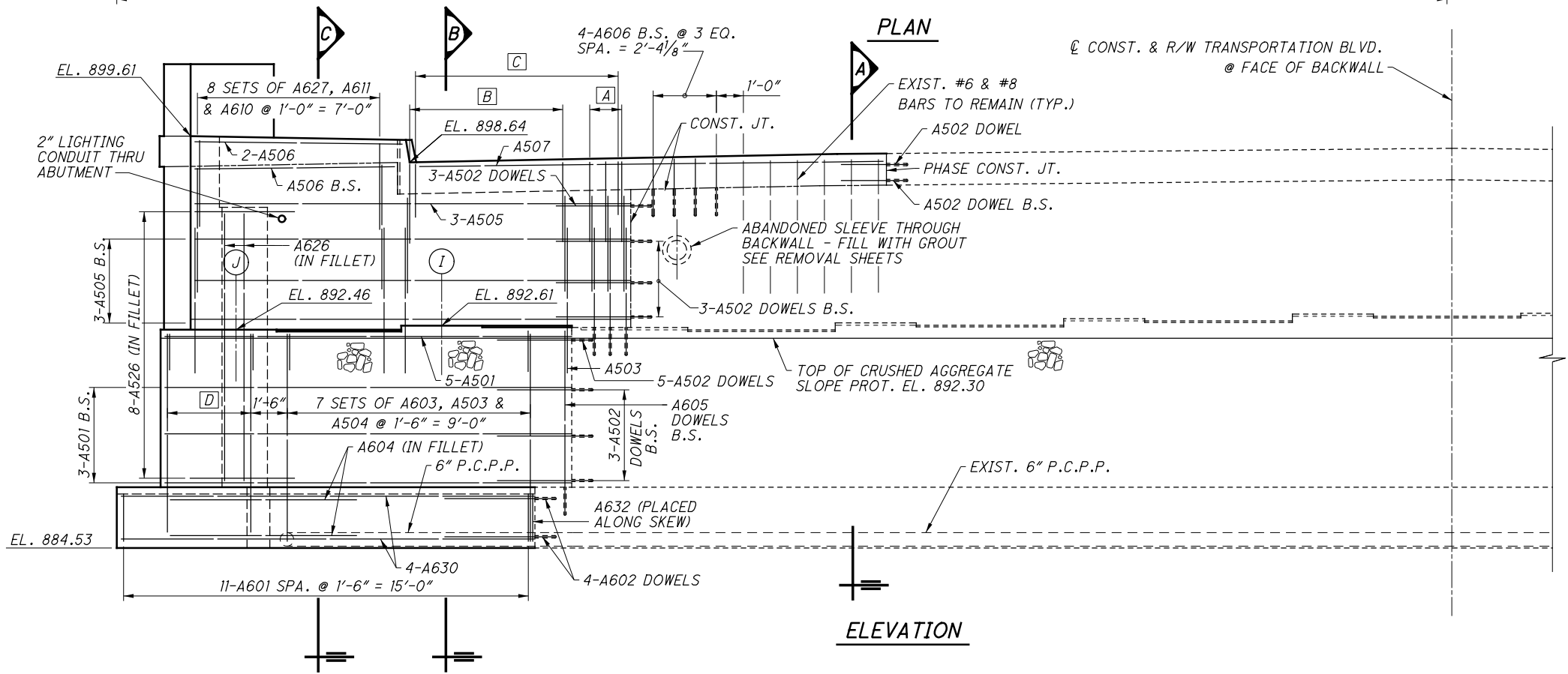
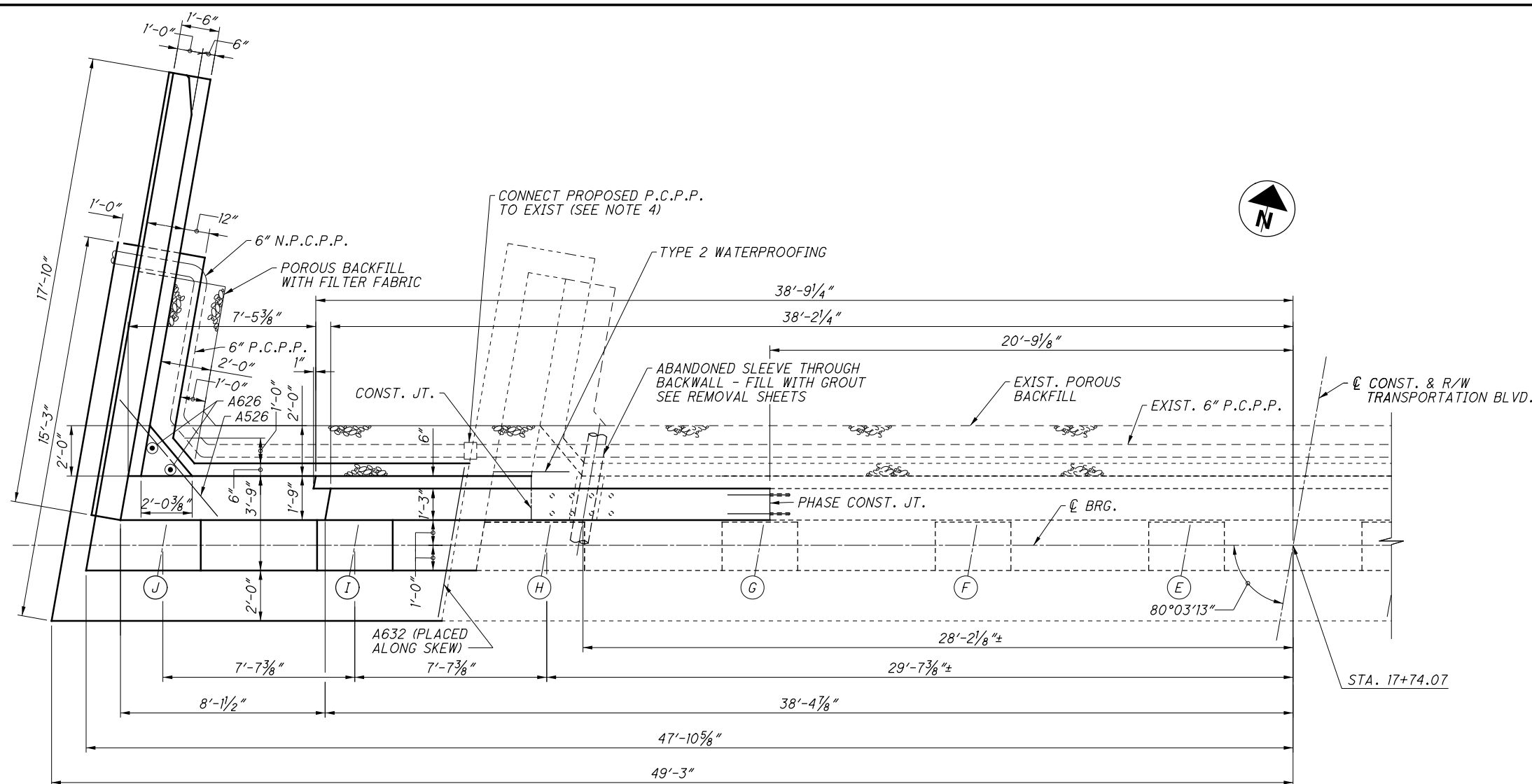
- THE EXISTING EXPANSION JOINT ARMOR AT THE REMOVAL LIMIT SHALL BE CUT BY METHODS OF SAW CUTTING. NO BURNING OF THE EXISTING JOINT ARMOR AT THIS LOCATION SHALL BE PERMITTED. THE LOCATION OF THE FIELD SPLICE SHALL BE VERIFIED.
- INDICATES LIMITS OF REMOVAL UNDER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
- INDICATES LIMITS OF APPROACH SLAB REMOVAL UNDER ITEM 202 - APPROACH SLAB REMOVED, AS PER PLAN

NOTE:
 FOR SECTION A, SEE SHT. NO. 8/39.

\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-195\SHEETS\480-195\REC\80974.DGN
 3/1/2017 3:11:02 PM GDDTV181STD_USER

 GPD GROUP <small>Class, P.E., Schaner, Burns & DeHaven, Inc. 3995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.318.3344 Copyright © 2016, P.E., Schaner, Burns & DeHaven, Inc. 2016</small>	DESIGN AGENCY
	DATE 3-1-17
DRAWN SAT	REVIEWED DGN
DESIGNED SAT	STRUCTURE FILE NUMBER 1812556
CHECKED TJW	REVISED
SOUTH ABUTMENT REMOVAL PLAN BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480	
CUY - TRANSPORTATION BLVD. BLVD. No. 80974 PID No. 80974	
9 / 39 195 225	

\\AKR\BNA\DATA\2016\2016051\CUVA\B0974\STRUCTURES\CUV-480-1955\SHEETS\480-1955\CAF001.DGN
 3/1/2017 3:38:36 PM GDDTV81STD_USER



LEGEND:

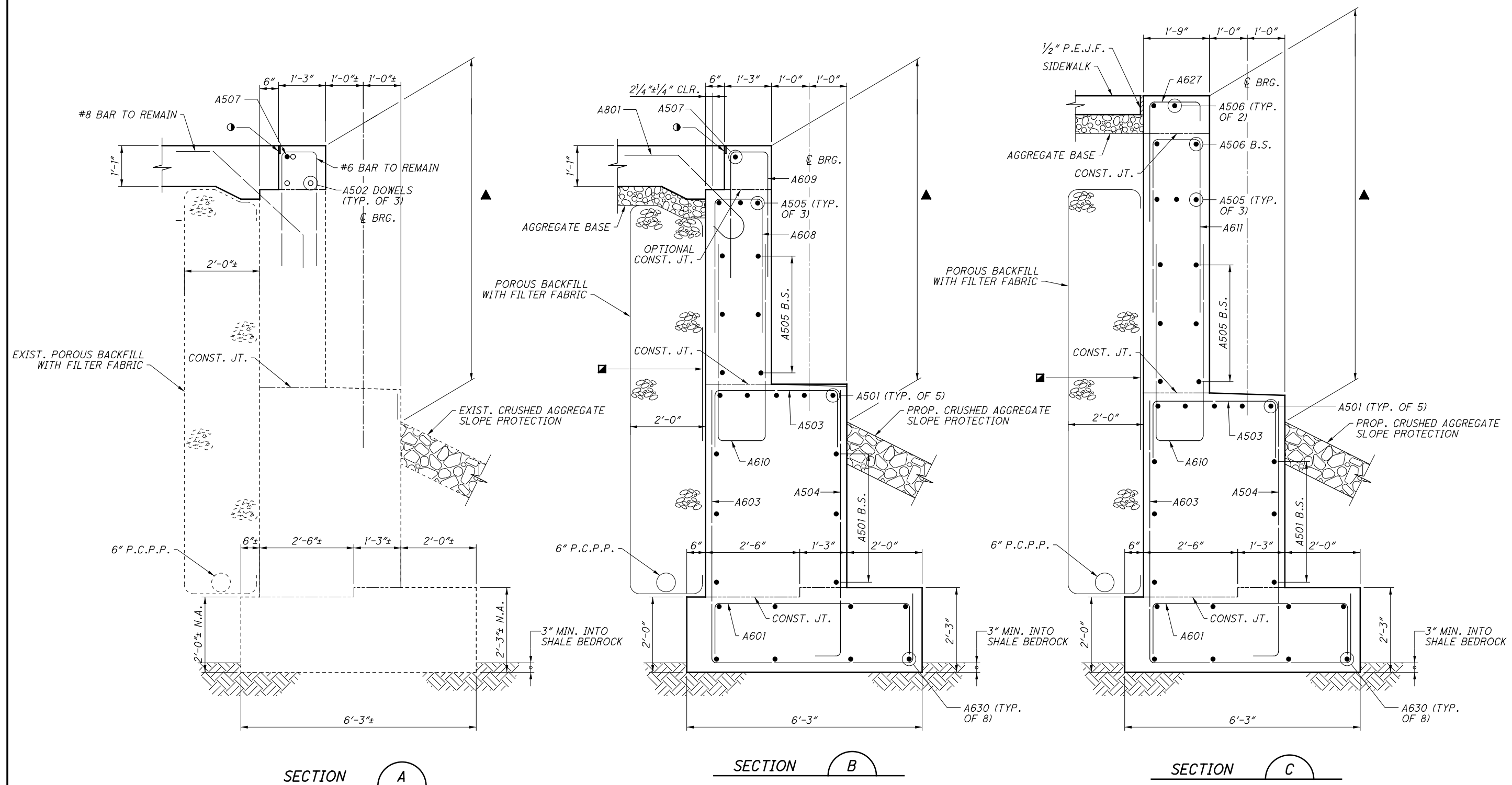
- [A] 3 SETS OF A609, A608 & 2-A607 DOWELS @ EQ. SPA = 1'-8 1/4"
- [B] 7 SETS OF A609, A608 & A610 @ 1'-0" = 6'-0"
- [C] 6-A801 SPA. @ 1'-6" = 7'-6" (PLACED PARALLEL TO CENTERLINE OF ROADWAY)
- [D] 3 SETS OF A503 & A504 @ 1'-6" = 3'-0"

NOTES:

1. DOWEL BAR EMBEDMENT HORIZONTAL = 9" VERTICAL = 1'-0"
2. FOR LIGHTING CONDUIT DETAILS, SEE STD. DWG. HL-30.31.
3. TYPE 2 WATERPROOFING SHALL BE CENTERED ON THE HORIZONTAL JOINT BETWEEN THE BACKWALL AND THE BEAM SEAT AND ON THE VERTICAL JOINT AT ABUTMENT PHASE CONSTRUCTION JOINT. SEE DETAILS A, B & C ON SHT. NO. [11/39] FOR MORE INFORMATION.
4. CONNECTION OF PROPOSED P.C.P.P. TO EXIST. P.C.P.P. TO BE PAID FOR BY ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN.
5. FOR SECTIONS A THRU C, SEE SHT. NO. [11/39].
6. FOR WINGWALL DETAILS, SEE SHT. NO. [12/39].

 GPD GROUP <small>Class, P.E., Schmeer, Burns & Dehaven, Inc. 3995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.338.3544 Copyright © 2015, Schmeer, Burns & Dehaven, Inc.</small>	DATE 3-1-17	REVISIONS DGN STRUCTURE FILE NUMBER 1812556	DRAWN RFV	CHECKED TJW	DESIGNED RFV	REVISIONS REVISED
NORTH ABUTMENT PLAN & ELEVATION BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480						
CUY-TRANSPORTATION BLVD. BLVD. No. 80974 PID No. 80974						
10 / 39						
196 225						

\\AKRNGA\DATA\2016\2016051\CUY\B0974\STRUCTURES\CUY-480-1955\SHEETS\480-1955\CAF002.DGN
 3/1/2017 3:31:24 PM G00TV81STD_USER



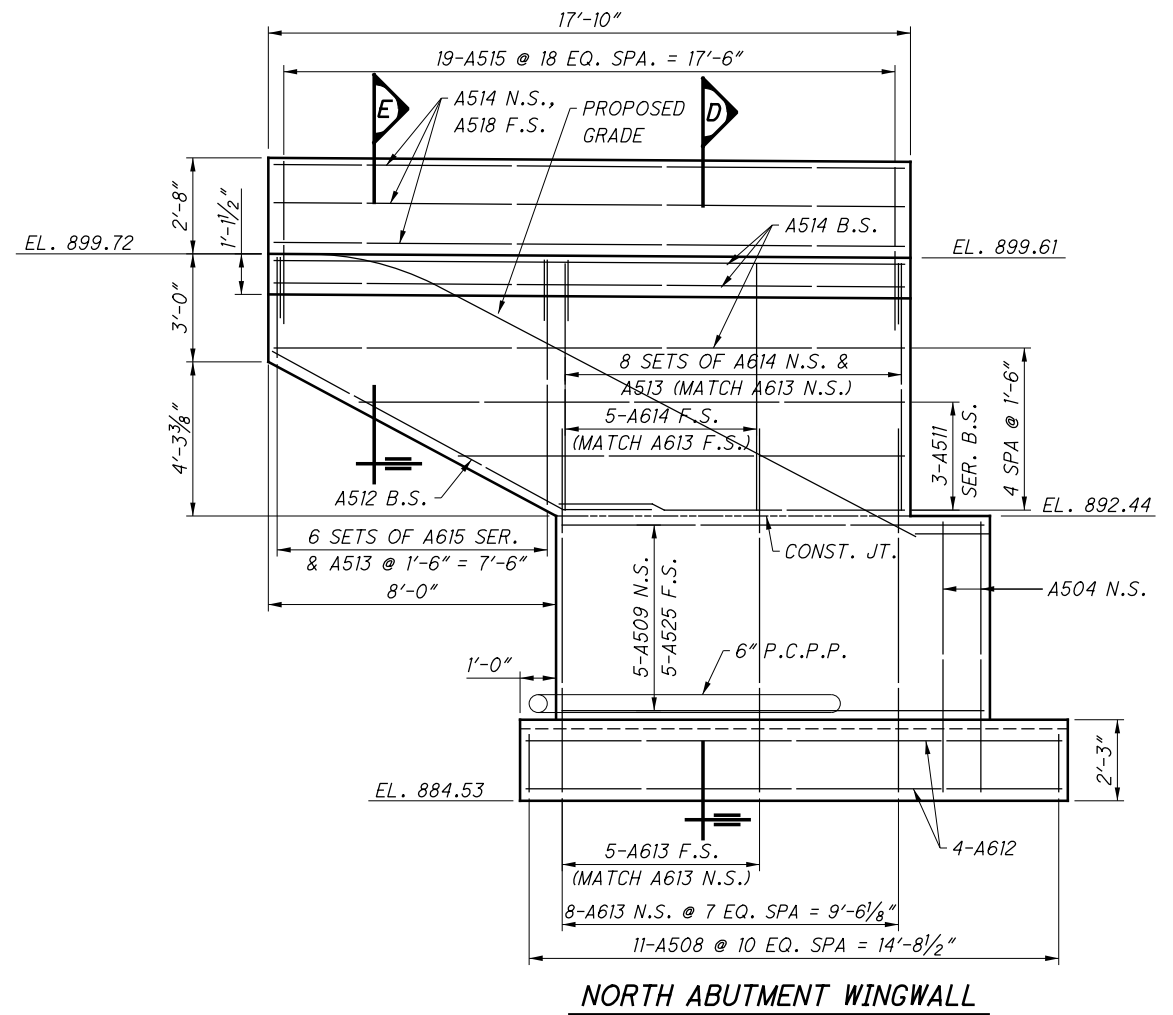
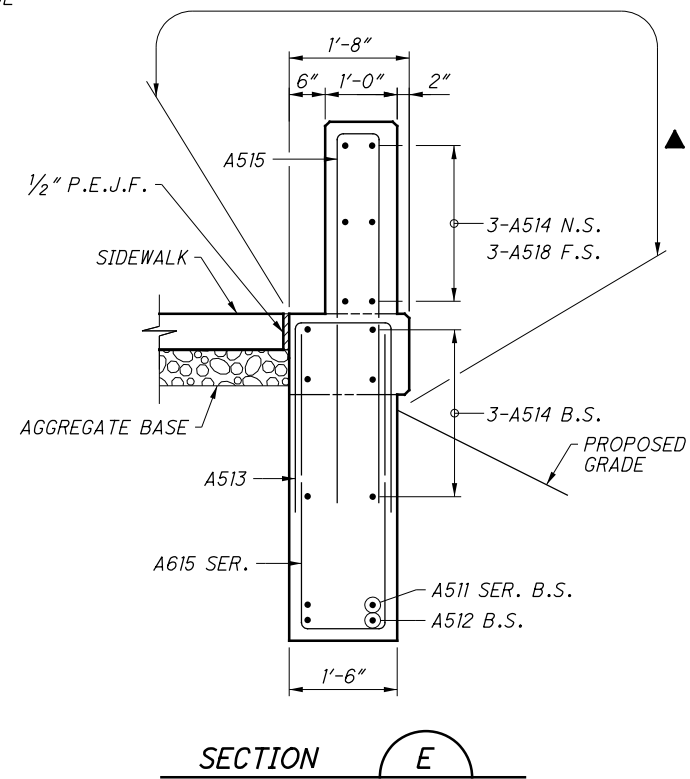
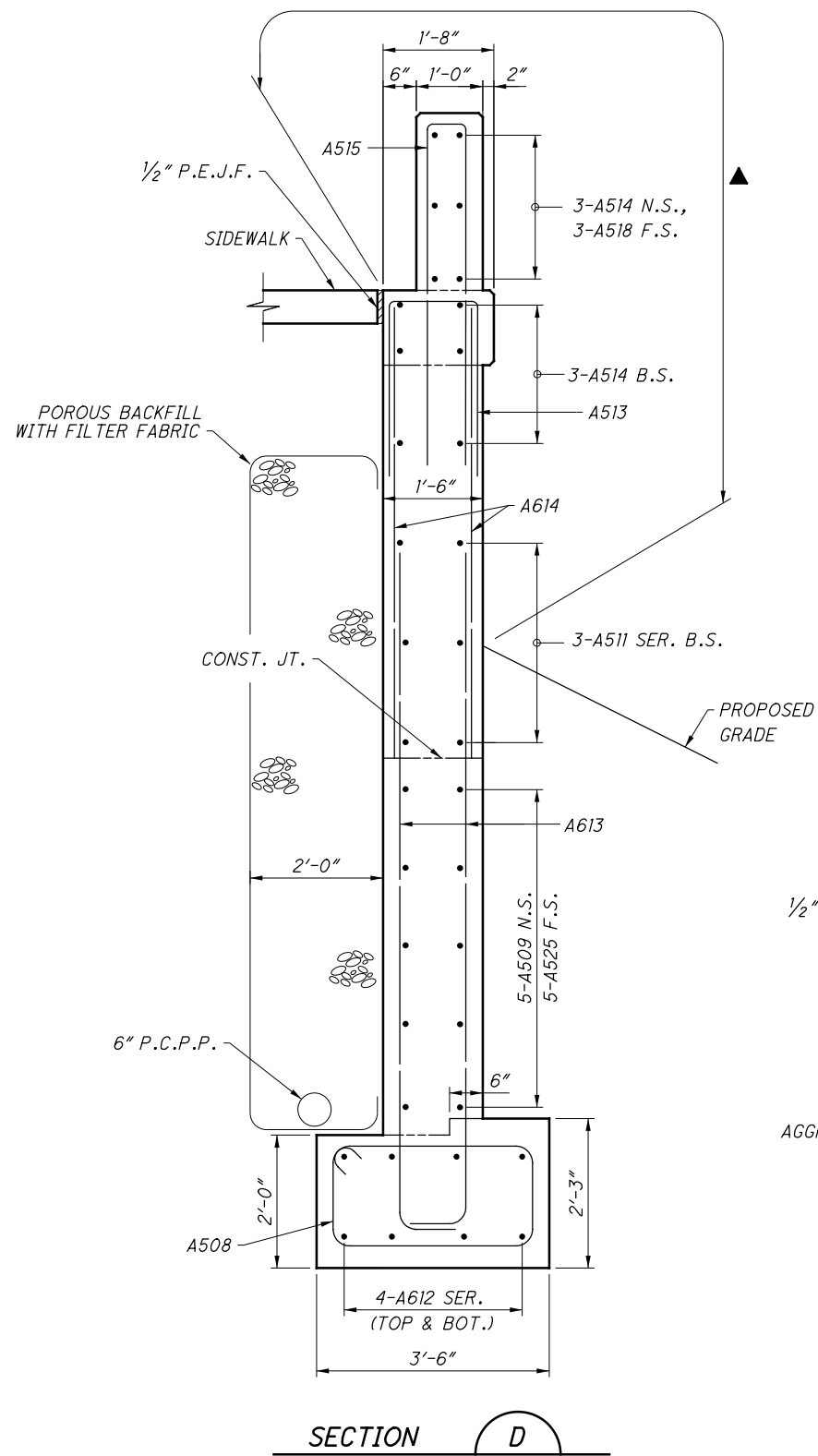
LEGEND:

- ▲ INDICATES LIMITS OF "ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)"
- TYPE 2 WATERPROOFING, CENTERED ON JOINT
- PER DETAIL "B" ON STD. DWG. AS-1-15

NOTES:

1. FOR LOCATION OF SECTION A THROUGH C, SEE SHT. NO. [10/39].
2. FOR EXPANSION JOINT DETAILS, SEE SHT. NOS. [16/39] & [17/39].
3. THE APPROACH SLAB CONCRETE AND BACKWALL CONCRETE SHALL BE PLACED IN SEPARATE POURS.

\\AKRINDA\DATA\2016\2016051\CUY\STRUCTURES\CUY-480-1\955\SHEETS\480-1-955\CAF003.DGN
 3/1/2017 3:29:51 PM GDDTVB1STD_USER



LEGEND:

▲ INDICATES LIMITS OF ITEM 516 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

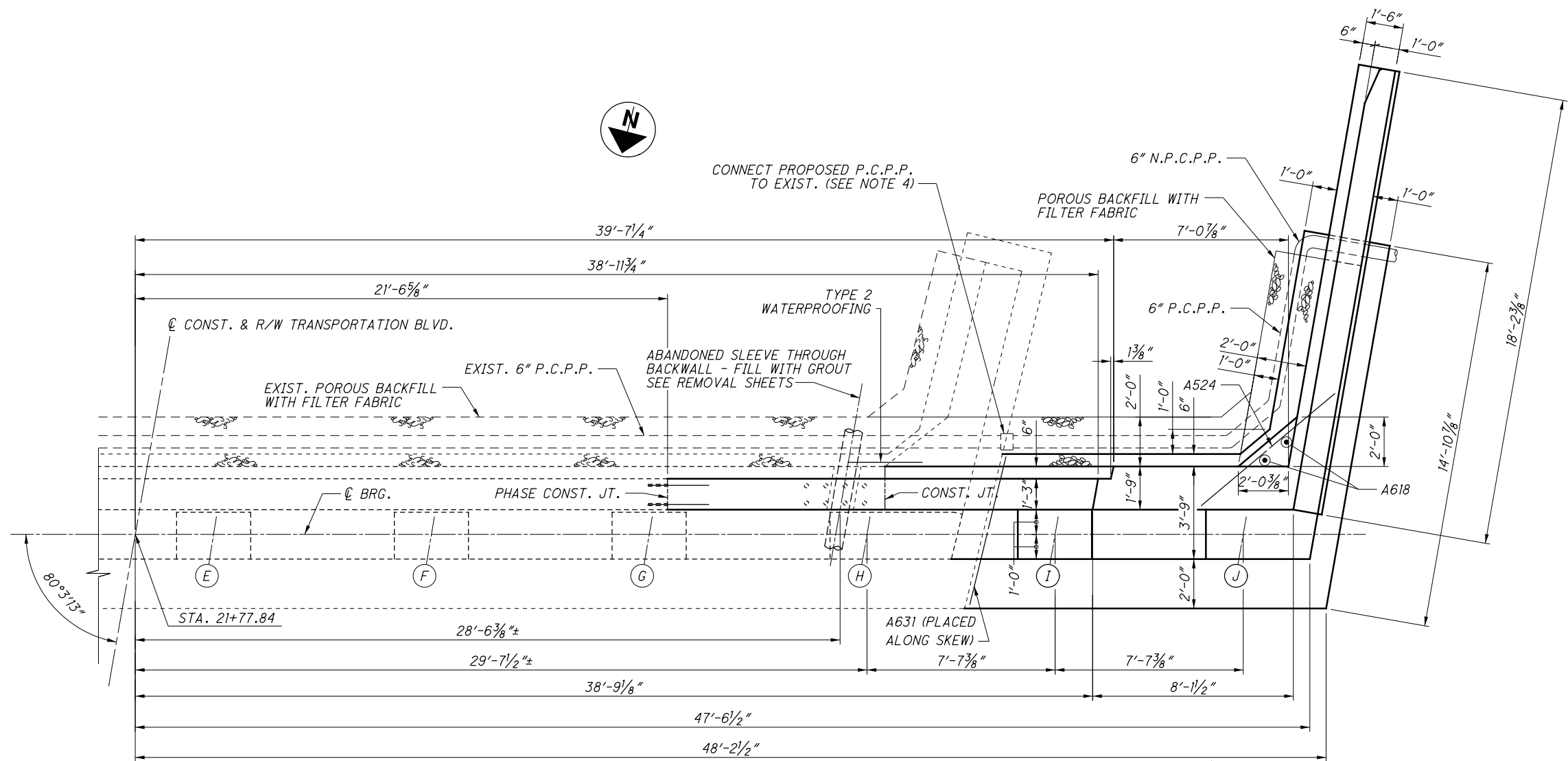
NOTE:

MINIMUM REBAR LAP LENGTHS ARE AS FOLLOWS:
 #5 BARS = 2'-0"
 #6 BARS = 2'-4"

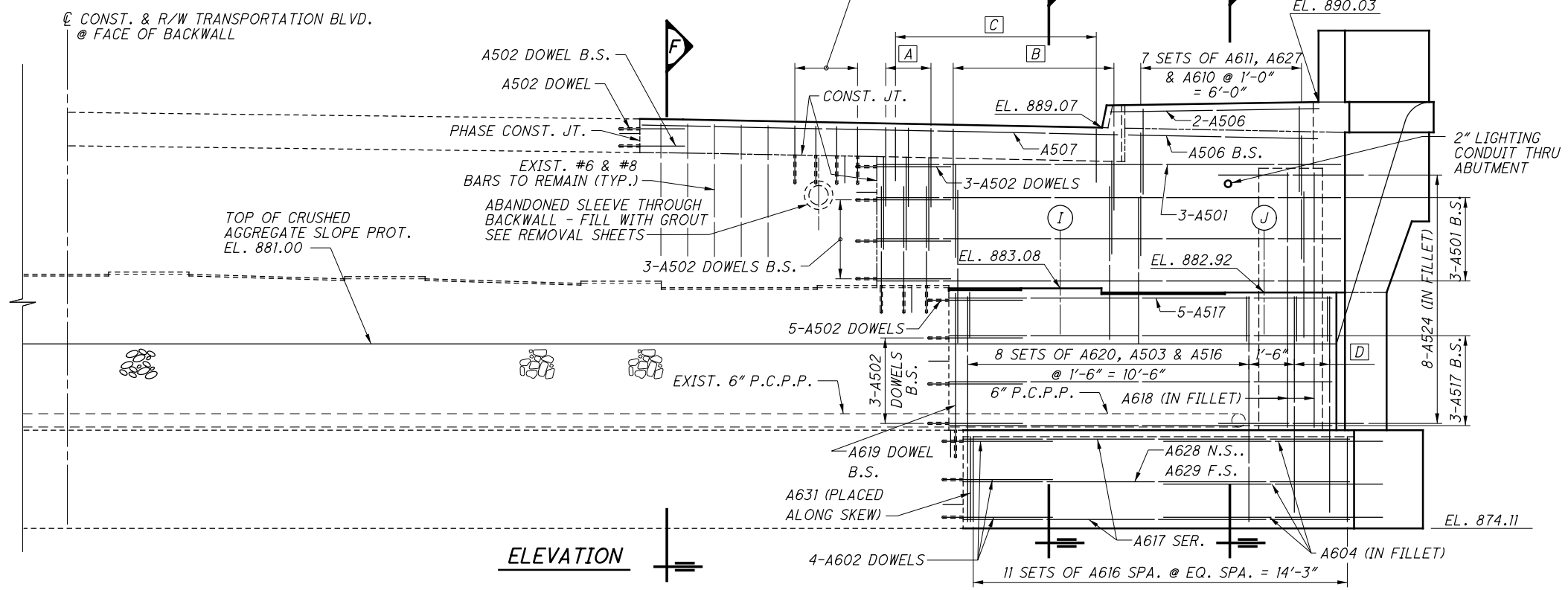
DATE	3-1-17
REVIEWED	DGN
DRAWN	RFV
DESIGNED	DJC
STRUCTURE FILE NUMBER	1812556

NORTH ABUTMENT WINGWALL DETAILS
 BRIDGE NO. CUY-480-1955
 TRANSPORTATION BOULEVARD OVER I-480

CUY - TRANSPORTATION BLVD.
 PID No. 80974



PLAN



ELEVATION

LEGEND:

- [A] 3 SETS OF A609, A608 & 2-A607 DOWELS @ EQ. SPA = 1'-8 1/4"
- [B] 7 SETS OF A609, A608 & A610 @ 1'-0" = 6'-0"
- [C] 6-A801 SPA. @ 1'-6" = 7'-6" (PLACED PARALLEL TO CENTERLINE OF ROADWAY)
- [D] 2-A503 & A516 @ 1'-6"

NOTES:

1. DOWEL BAR EMBEDMENT HORIZONTAL = 9" VERTICAL = 1'-0"
2. FOR LIGHTING CONDUIT DETAILS, SEE STD. DWG. HL-30.31.
3. TYPE 2 WATERPROOFING SHALL BE CENTERED ON THE HORIZONTAL JOINT BETWEEN THE BACKWALL AND THE BEAM SEAT AND ON THE VERTICAL JOINT AT ABUTMENT PHASE CONSTRUCTION JOINT. SEE DETAILS E, F & G ON SHT. NO. 14/39 FOR MORE INFORMATION.
4. CONNECTION OF PROPOSED P.C.P.P. TO EXIST. P.C.P.P. TO BE PAID FOR BY ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN.
5. FOR SECTIONS F THRU H, SEE SHT. NO. 14/39.
6. FOR WINGWALL DETAILS, SEE SHT. NO. 15/39.

\\AKR\BGA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-195\195\SHEETS\480-195\CAR001.DGN
 3/1/2017 3:48:23 PM GDDTV81STD_USER

SOUTH ABUTMENT PLAN & ELEVATION

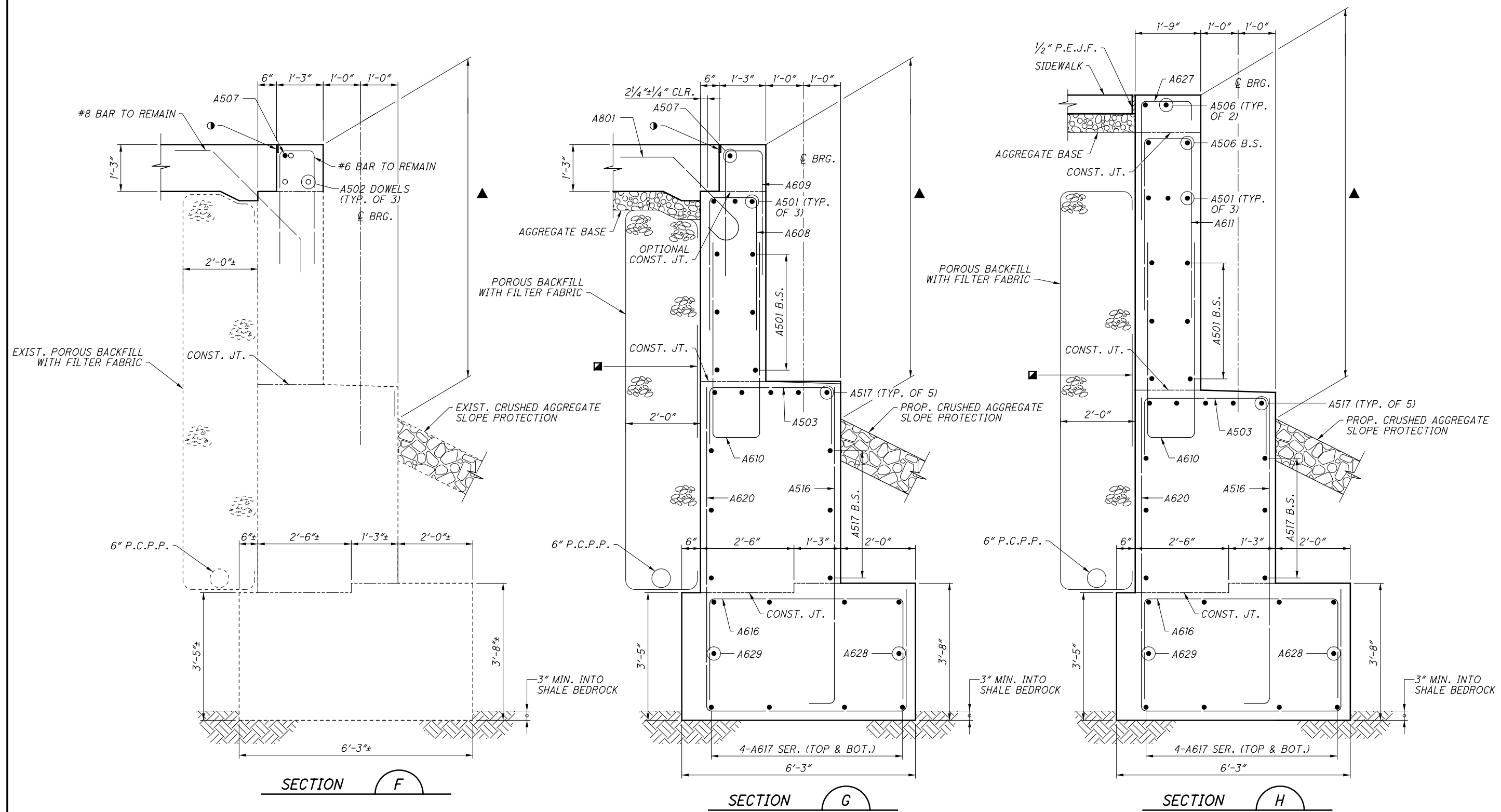
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

DESIGNED	SAT	CHECKED	TJW
DRAWN	SAT	REVISED	
REVIEWED	DGN	STRUCTURE FILE NUMBER	1812556
DATE	3-1-17		

DESIGN AGENCY: **GPD GROUP**
 G.P. Design, Inc.
 216.518.3544
 3995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125
 Copyright © G.P. Design, Inc. & Delavan, Inc. 2015

13 / 39
 199 / 225

\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955CAR002.DGN
 3/1/2017 3:48:51 PM GDDTV81STD_USER



LEGEND:

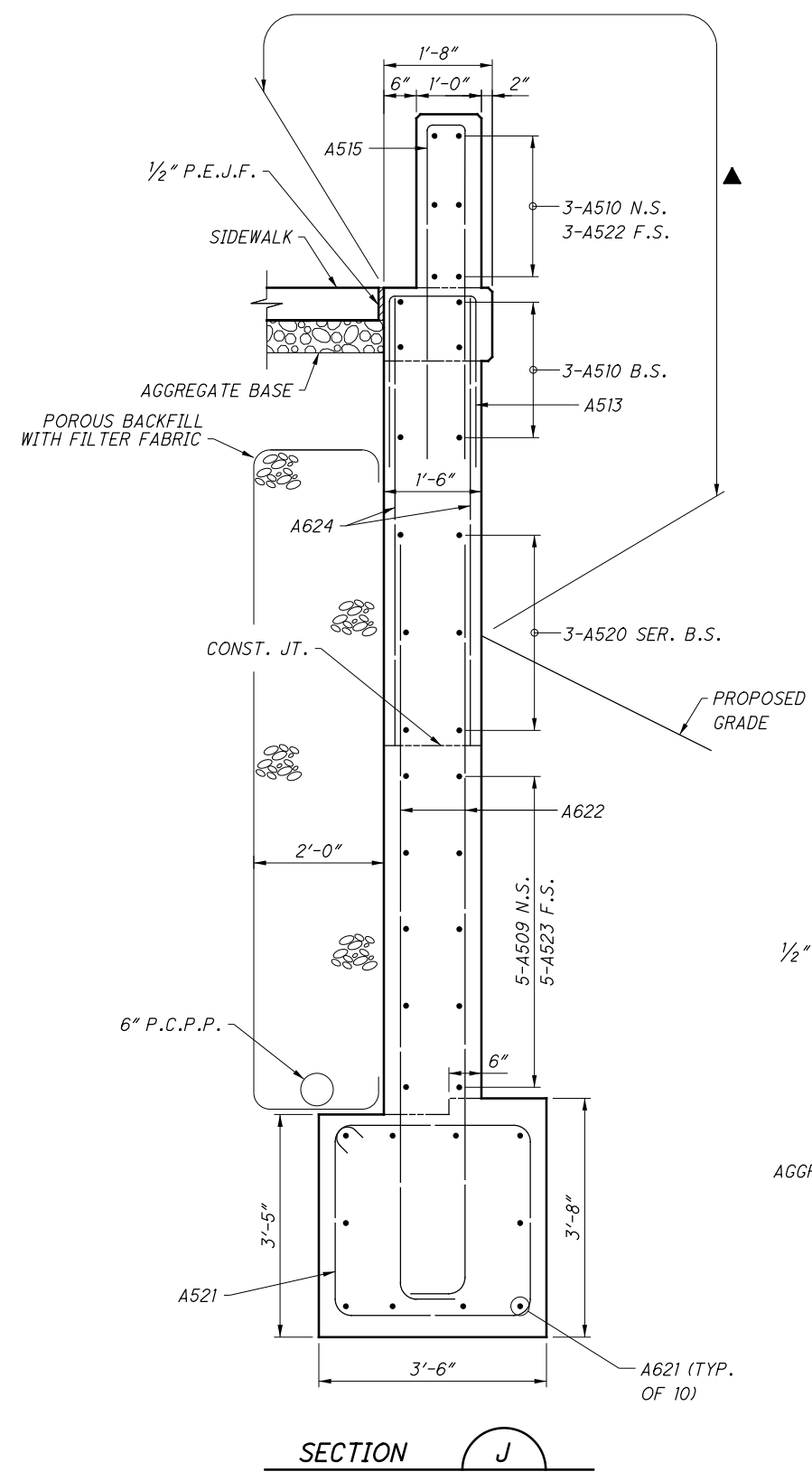
- ▲ INDICATES LIMITS OF "ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)"
- TYPE 2 WATERPROOFING, CENTERED ON JOINT
- PER DETAIL "B" ON STD. DWG. AS-1-15

NOTES:

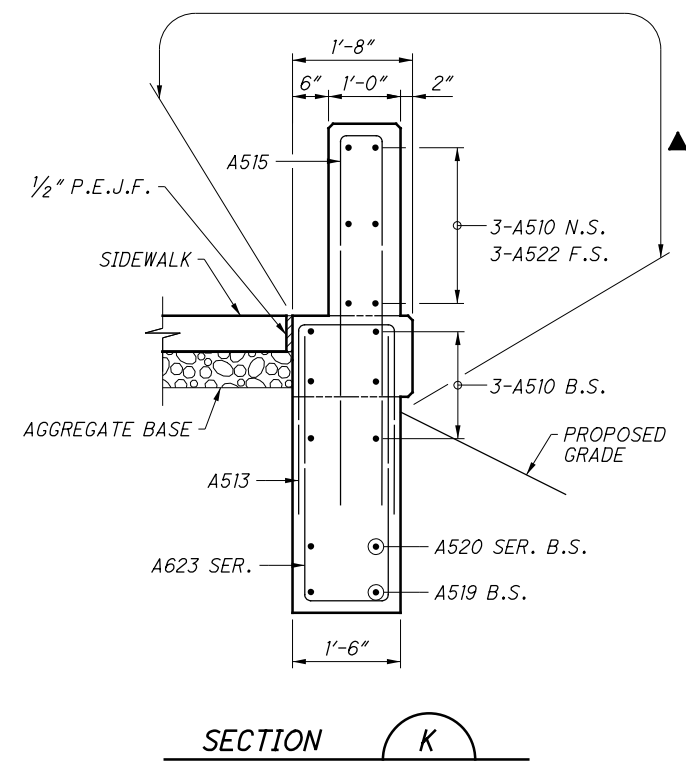
1. FOR LOCATION OF SECTIONS F THROUGH H, SEE SHT. NO. 13/39.
2. FOR EXPANSION JOINT DETAILS, SEE SHT. NO. 16/39 & 17/39.
3. THE APPROACH SLAB CONCRETE AND BACKWALL CONCRETE SHALL BE PLACED IN SEPARATE POURS.

DESIGN AGENCY <small>Gilbane, P.E., Schinner, Burns & DeLaven, Inc. 3995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.538.5544 Copyright © 2015, Gilbane, P.E., Schinner, Burns & DeLaven, Inc. 2015</small>	DATE 3-1-17	REVIEWED DGN	STRUCTURE FILE NUMBER 1812556
DESIGNED SAT CHECKED DJC	DRAWN SAT REVISED	DATE 3-1-17	STRUCTURE FILE NUMBER 1812556
SOUTH ABUTMENT DETAILS BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480			
CUY - TRANSPORTATION BLVD. BLVD. PID No. 80974			
14 / 39			
(200 / 225)			

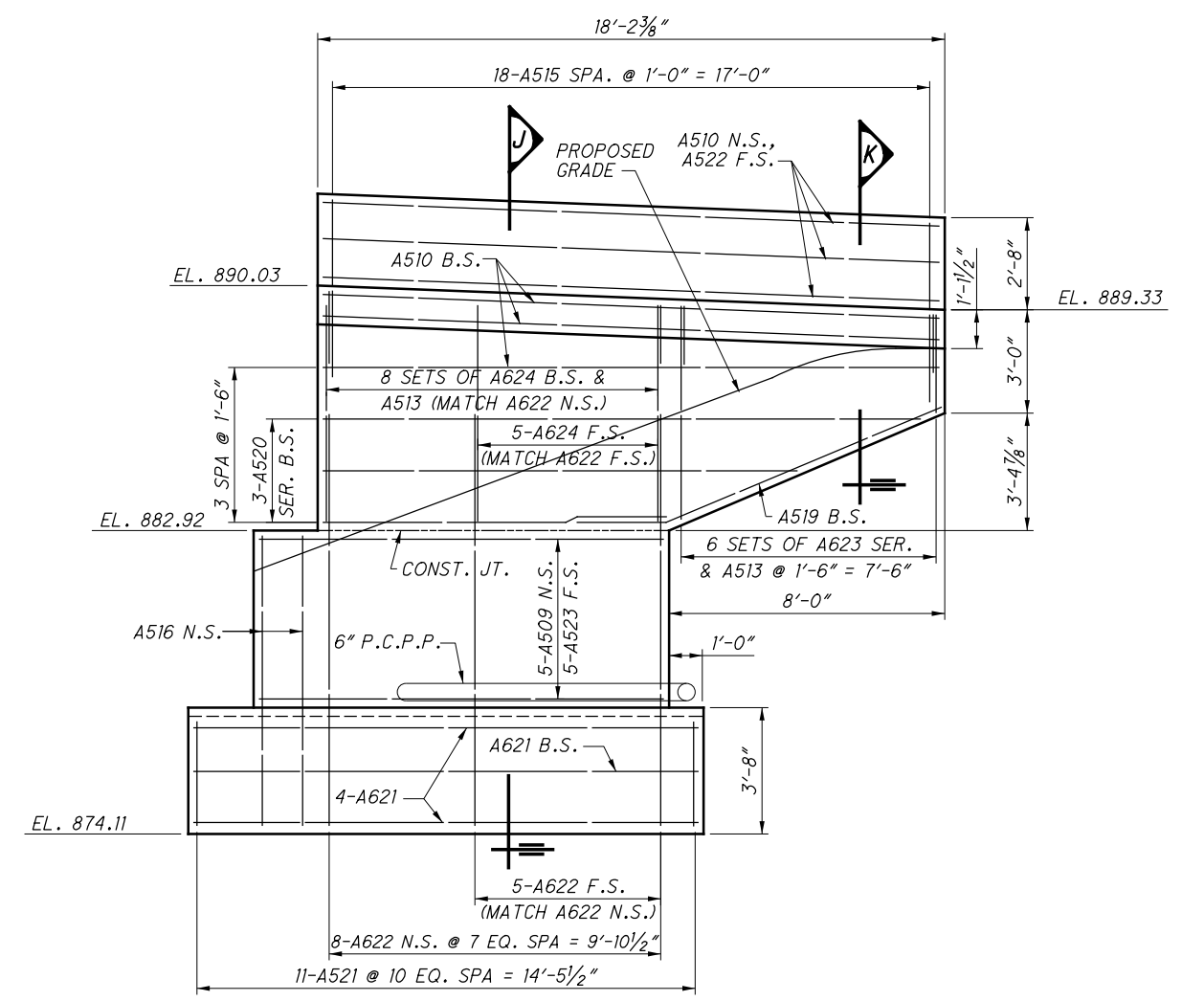
\\AKRNGA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-195\195\SHEETS\480-195\CAR003.DGN
 3/1/2017 3:41:18 PM GDDTV81STD_USER



SECTION J



SECTION K



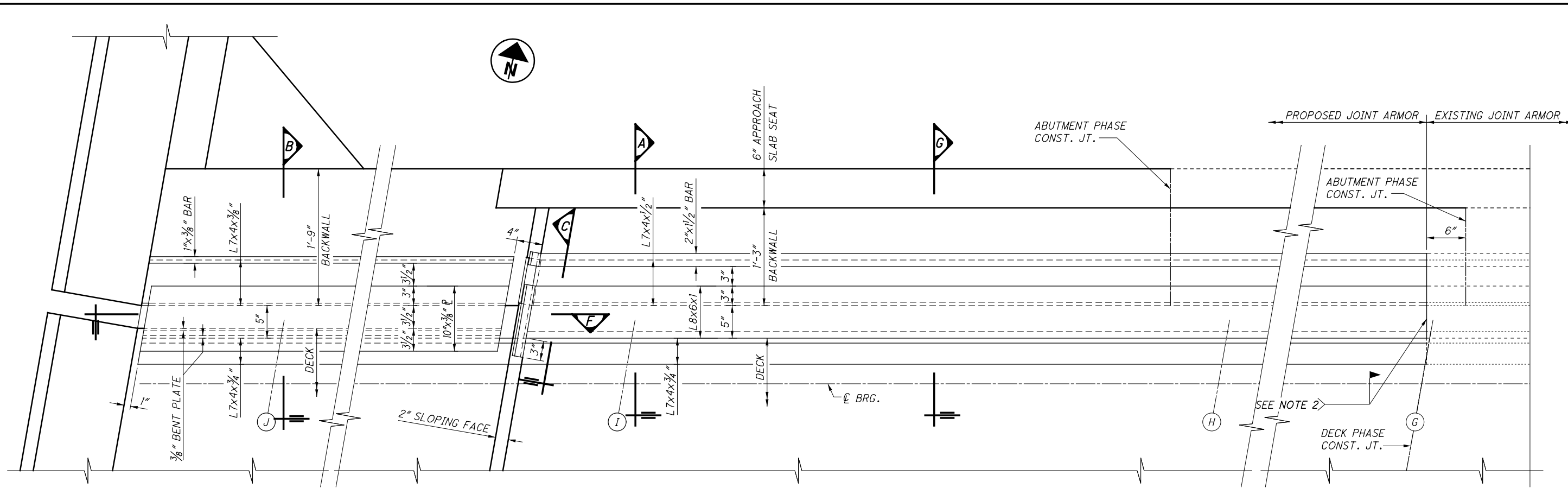
SOUTH ABUTMENT WINGWALL

LEGEND:
 ▲ INDICATES LIMITS OF ITEM 516 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

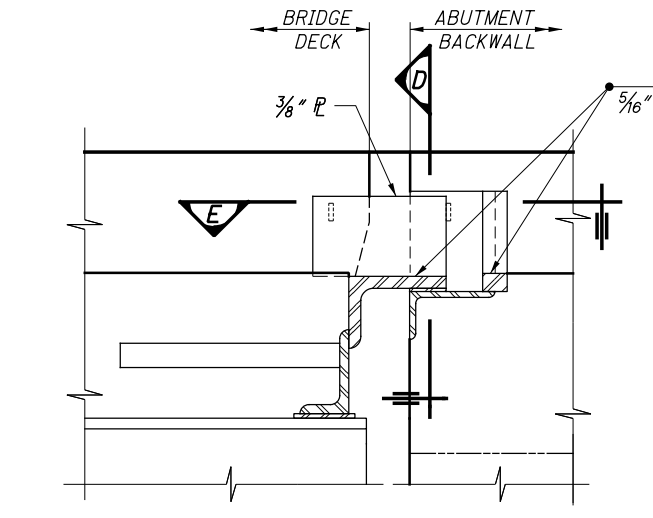
NOTE:
 MINIMUM REBAR LAP LENGTHS ARE AS FOLLOWS:
 #5 BARS = 2'-0"
 #6 BARS = 2'-4"

<p>DESIGN AGENCY GPD GROUP <small>Class, P.E., Schmeer, Burns & Dehaven, Inc. 5995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.338.3344 Copyright © 2015, Schmeer, Burns & Dehaven, Inc.</small></p>	DATE	3-1-17
	REVIEWED	DGN
	DRAWN	RFV
	DESIGNED	CHECKED
STRUCTURE FILE NUMBER	1812556	
<p>SOUTH ABUTMENT WINGWALL DETAILS BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480</p>		
<p>CUY-TRANSPORTATION BLVD. PID No. 80974</p>		
<p>15 / 39</p>		
<p>(201 / 225)</p>		

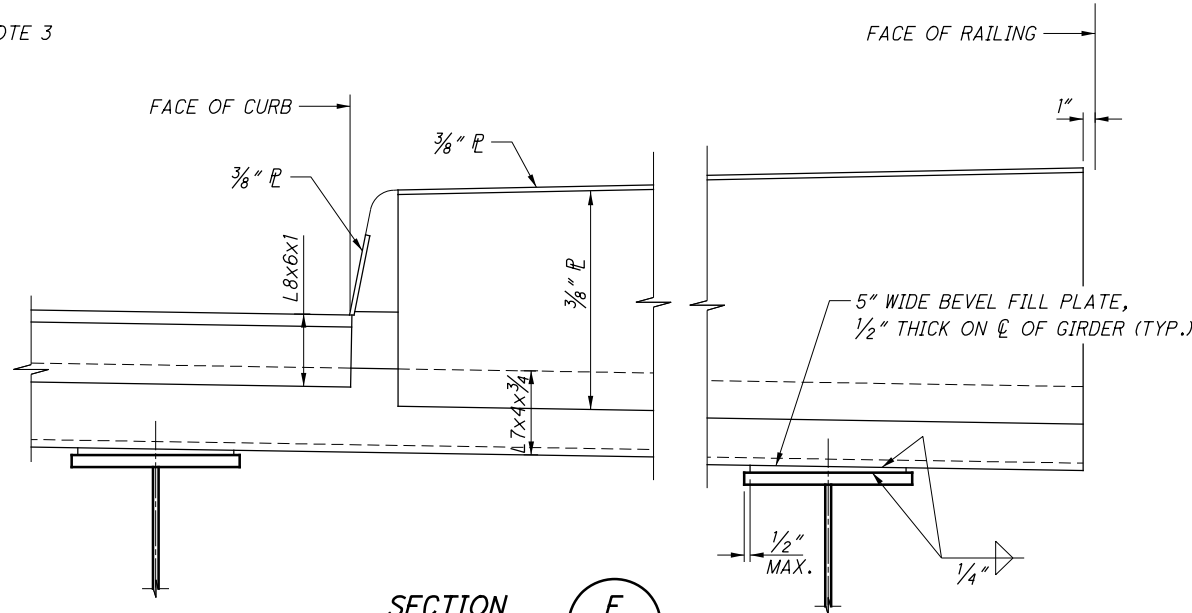
\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-195\SHEETS\480-195CEX\002.DGN
 3/1/2017 3:45:54 PM GDDTV81STD_USER



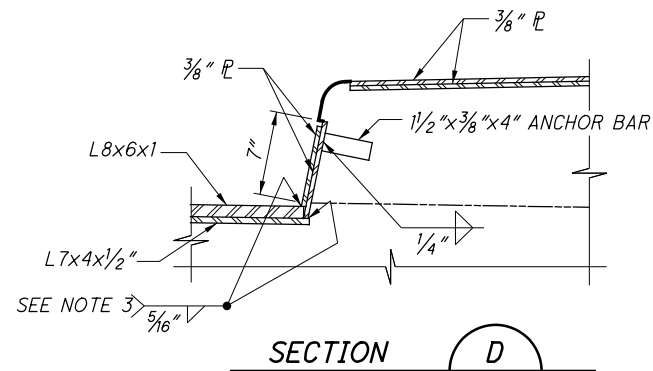
EXPANSION JOINT PLAN
 NORTH ABUTMENT SHOWN
 SOUTH ABUTMENT SIMILAR



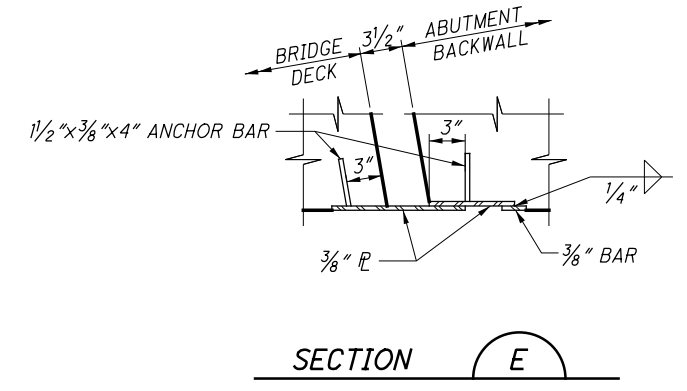
SECTION C



SECTION E



SECTION D

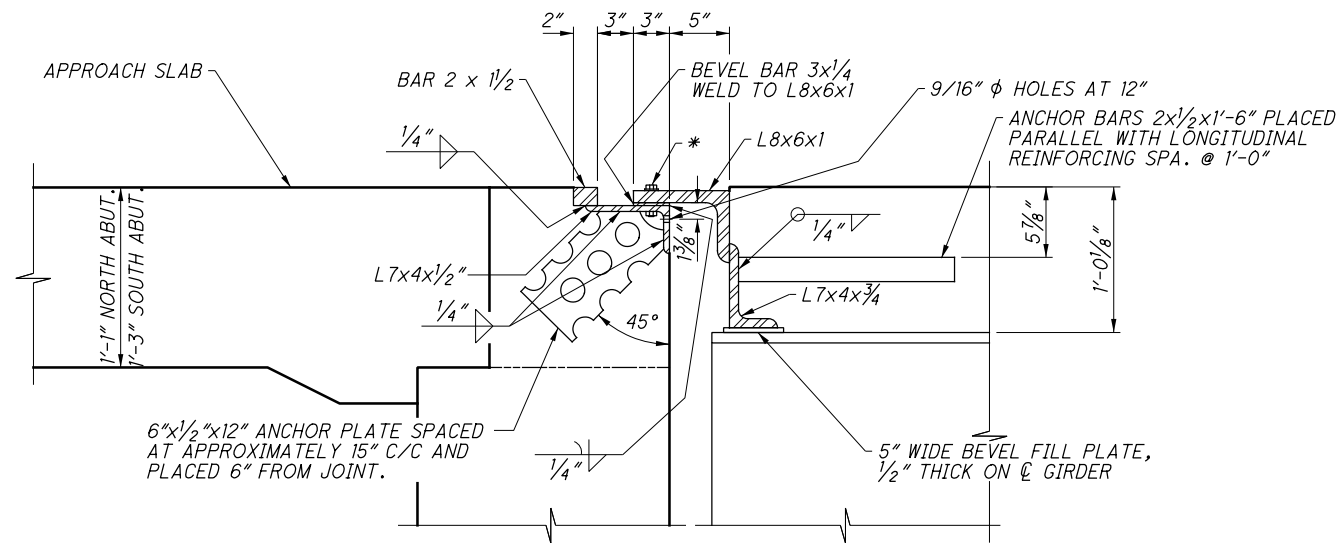


SECTION F

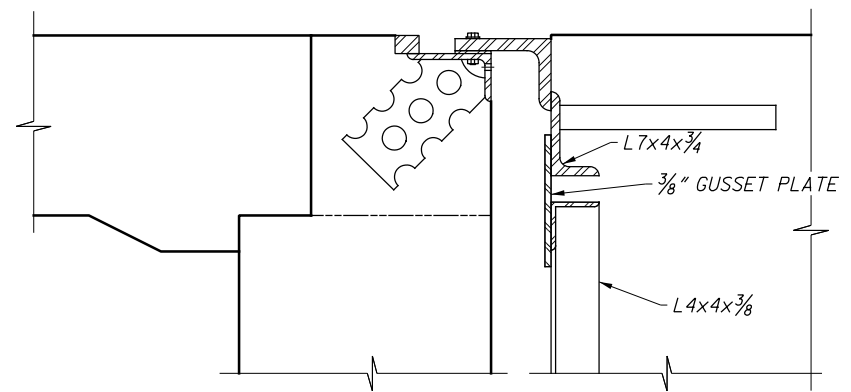
- NOTES:**
- FOR SECTIONS A, B & G, SEE SHT. NO. 17/39.
 - THE JOINTS IN THE ARMOR STEEL SHALL BE COMPLETE PENETRATION WELDS GROUND FLUSH ON SLIDING PLATES.
 - WELDS LOCATED ON NON-STRESS-CARRYING MEMBERS.

 GPD GROUP <small>Class, P.E., Scherer, Burns & Dehaven, Inc. 3995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.318.3544 Copyright © 2015, Scherer, Burns & Dehaven, Inc.</small>	DESIGN AGENCY
	DATE 3-1-17
REVIEWED DGN	STRUCTURE FILE NUMBER 1812556
DRAWN SAT	DESIGNED SAT
CHECKED TJW	REVISED
EXPANSION JOINT PLAN AND DETAILS BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480	
CUY- TRANSPORTATION BLVD. PID No. 80974	
16 / 39	
202 225	

\\AKRINDA\DATA\2016\2016051\CUY\B0974\STRUCTURES\CUY-480-195\SHEETS\480-195\EX-001.DGN
 3/1/2017 3:45:20 PM G00TV81STD_USER

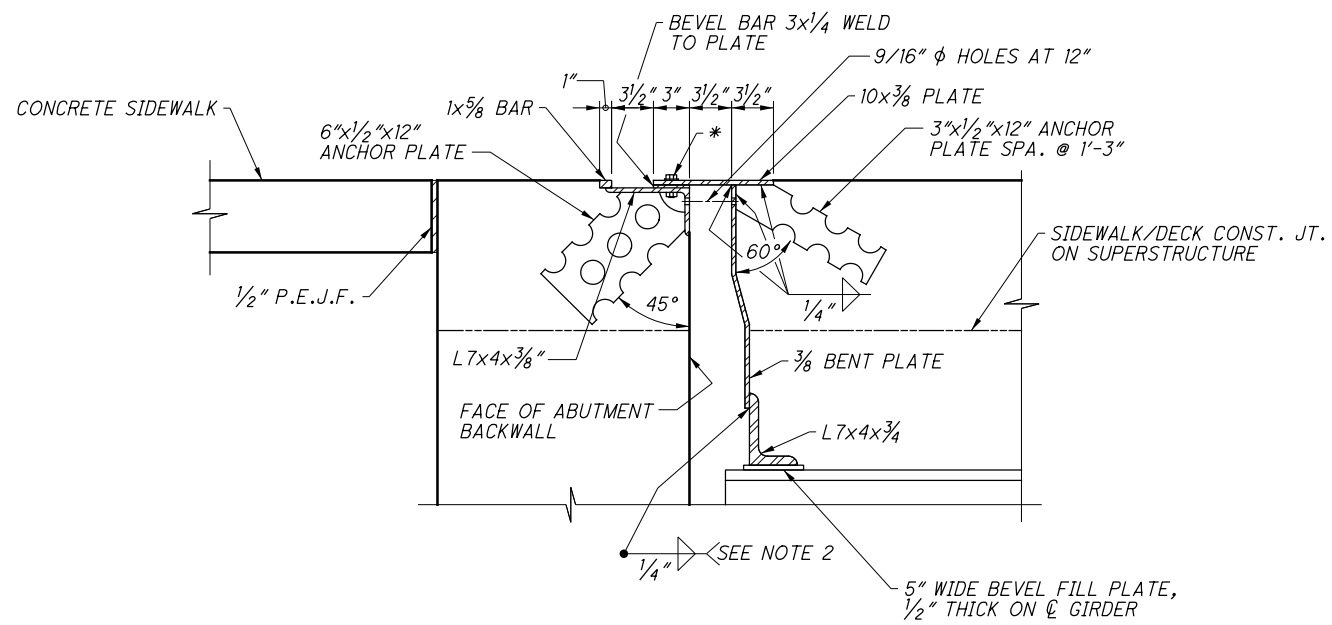


SECTION A



NOTE:
 FOR END CROSSFRAME DETAILS
 SEE ODOT STD. DWG. GSD-1-96

SECTION G
 FOR DETAILS NOT SHOWN
 SEE SECTION A



SECTION B
 FOR DETAILS NOT SHOWN
 SEE SECTION A

LEGEND

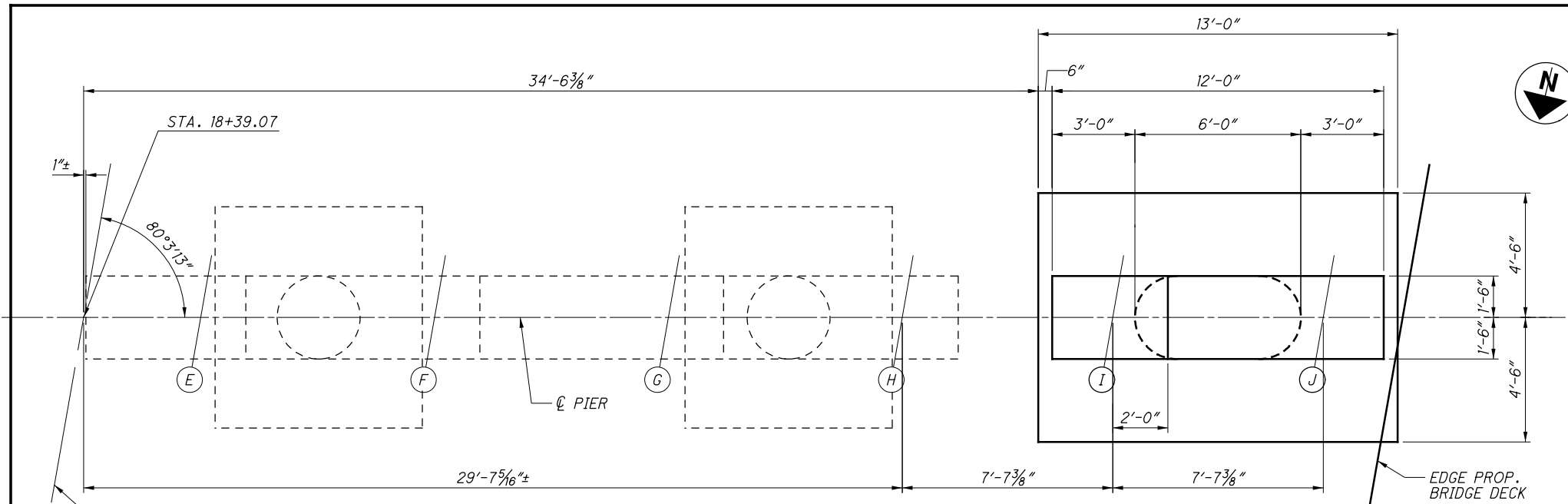
* - TEMPORARY BOLT

NOTE:

- FOR ADDITIONAL NOTES & EXPANSION JOINT DETAILS NOT SHOWN, SEE ODOT ARCHIVED STD. DWG. SD-1-69 DATED 6-12-69.
- WELDS LOCATED ON NON-STRESS-CARRYING MEMBERS.

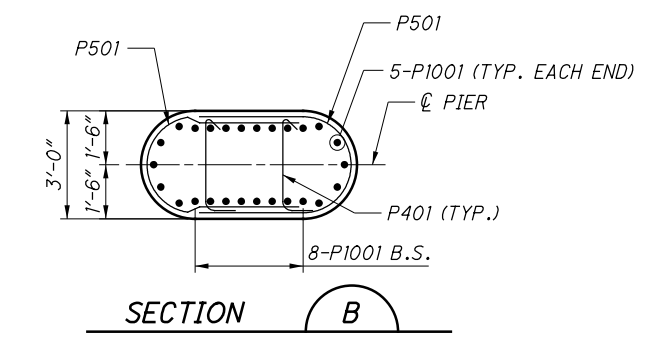
DESIGN AGENCY GPD GROUP <small>Class, P.E., Schaner, Burns & Dehaven, Inc. 3095 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.338.3344 Copyright © 2015, Schaner, Burns & Dehaven, Inc. 2015</small>	
DATE	3-1-17
REVIEWED	DGN
DRAWN	SAT
DESIGNED	TJW
CHECKED	DJC
STRUCTURE FILE NUMBER	1812556
EXPANSION JOINT DETAILS BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480	
CUY - TRANSPORTATION BLVD. PID No. 80974	
17 / 39	
203 225	

\\AKRNGA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-195\SHEETS\480-195CPT1001.DGN
 3/1/2017 3:48:57 PM GDDTV81STD_USER

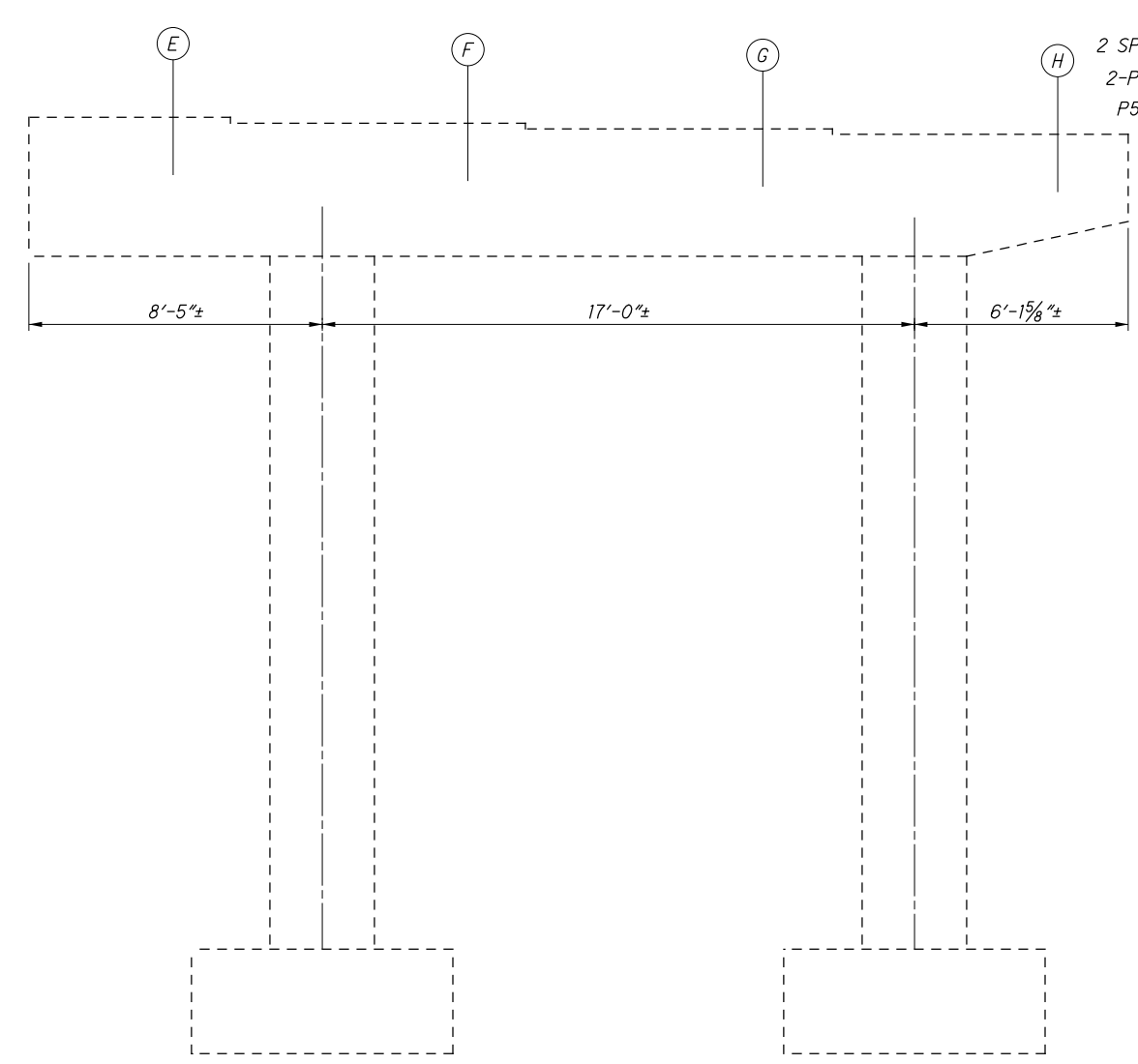


PLAN

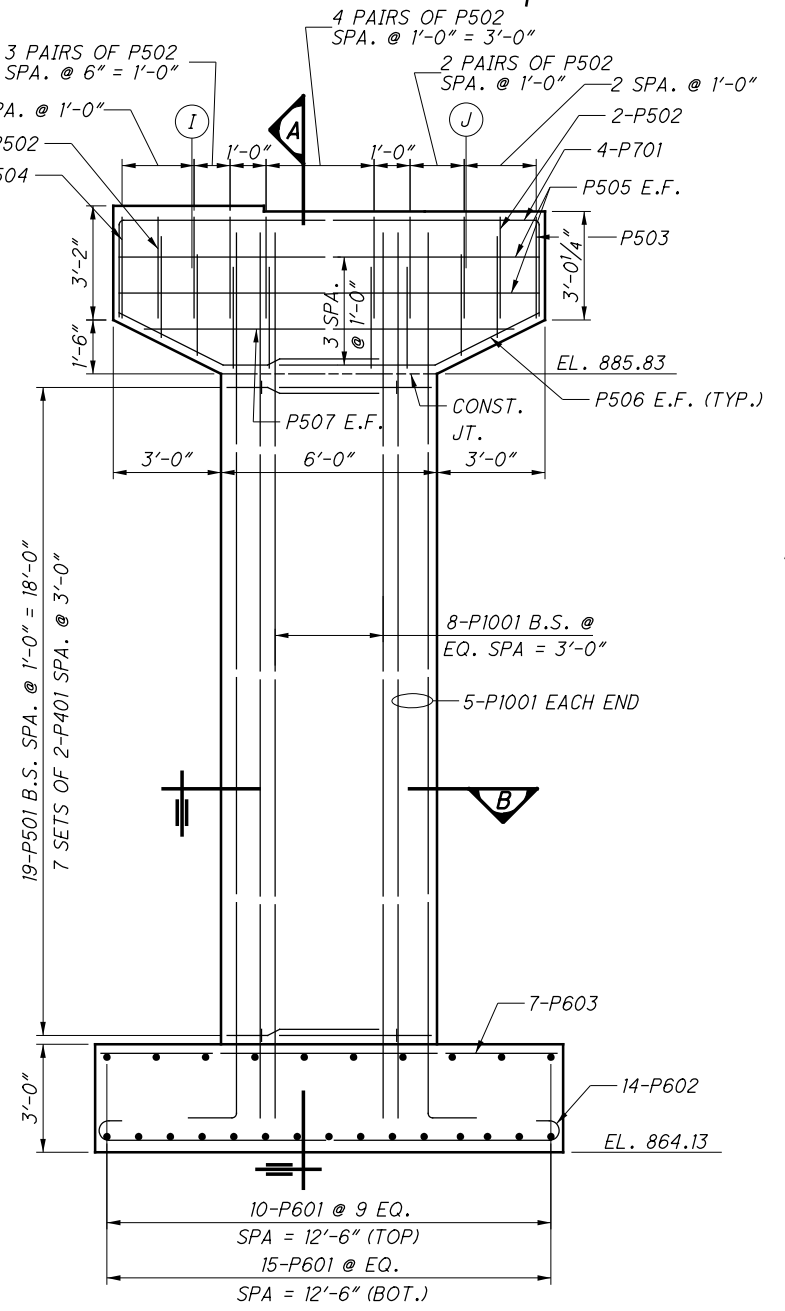
PIER SEAT ELEVATIONS	
ELEVATION	PIER 1
E	891.02±
F	890.85±
G	890.69±
H	890.52±
I	890.50
J	890.35



SECTION B



ELEVATION



SECTION A

NOTES:
 MINIMUM LAP LENGTHS ARE AS FOLLOWS:
 NO. 5 BARS = 1'-9" (VERT.)
 NO. 5 BARS = 2'-9" (HORIZ.)

DESIGN AGENCY: **GPD GROUP**
 G.P. Design, Inc. 216.518.3544
 2095 Transportation Blvd., Suite 100, Cleveland, Ohio 44125
 Copyright © 2016, G.P. Design, Inc. & Delavan, Inc.

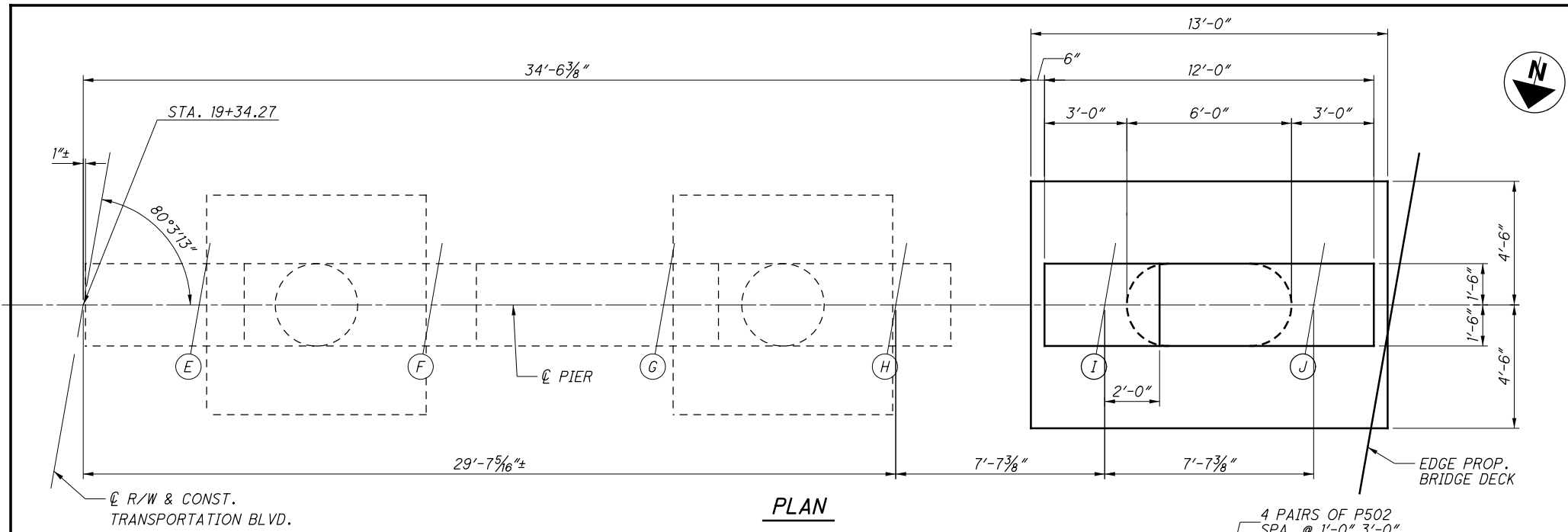
DATE: 3-1-17
 REVISIONS: 3-1-17
 DRAWN: RFV
 CHECKED: DJC
 DESIGNED: DJC

PIER 1 DETAILS
 BRIDGE NO. CUY-480-1955
 TRANSPORTATION BOULEVARD OVER I-480

CUY - TRANSPORTATION BLVD. BLVD. No. 80974
 PID No. 80974

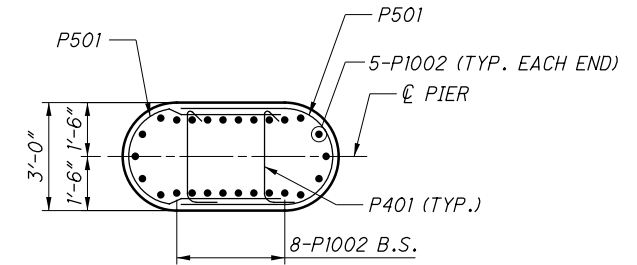
18 / 39
 204 / 225

\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955CPT1002.DGN
 3/1/2017 3:45:27 PM GDDTV81STD_USER

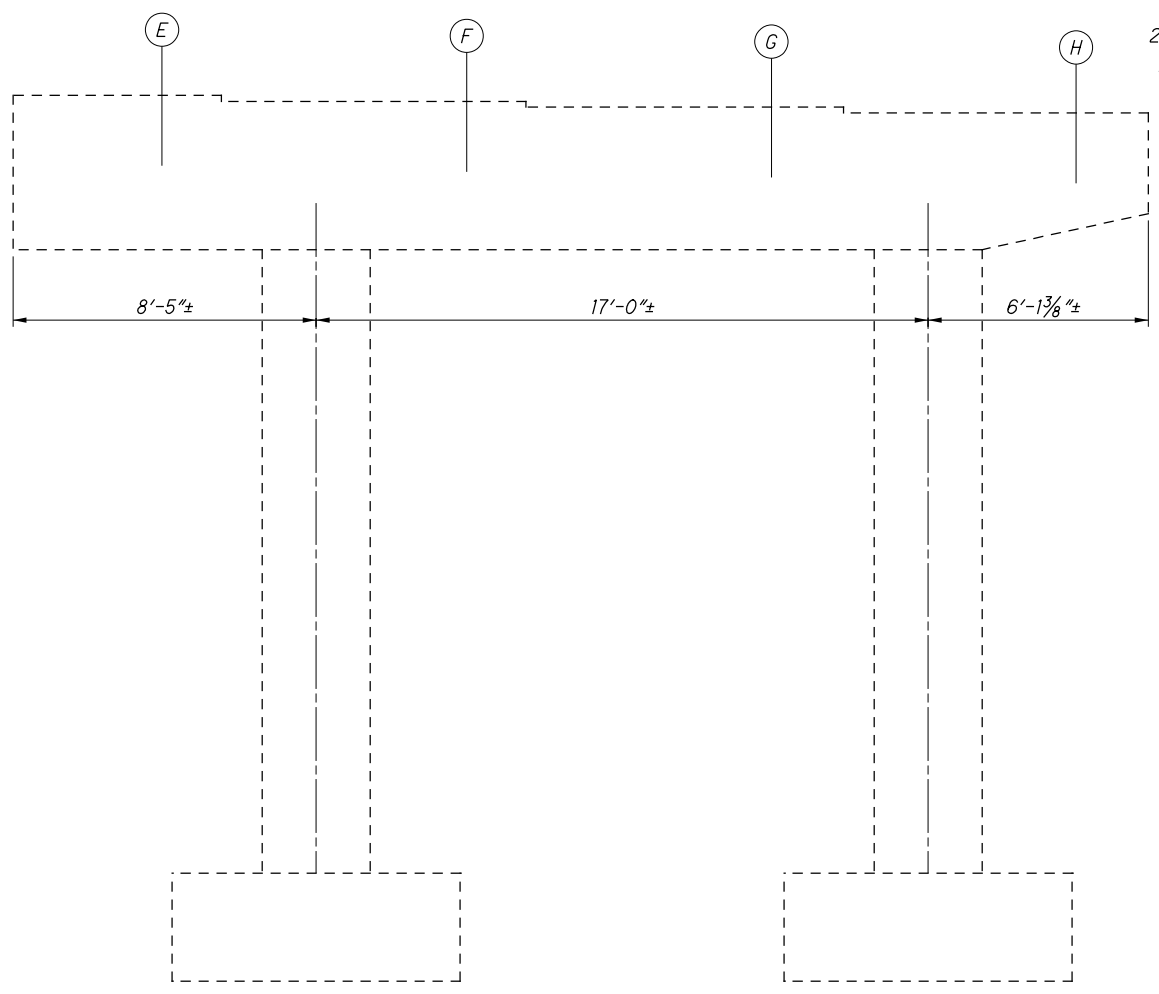


PLAN

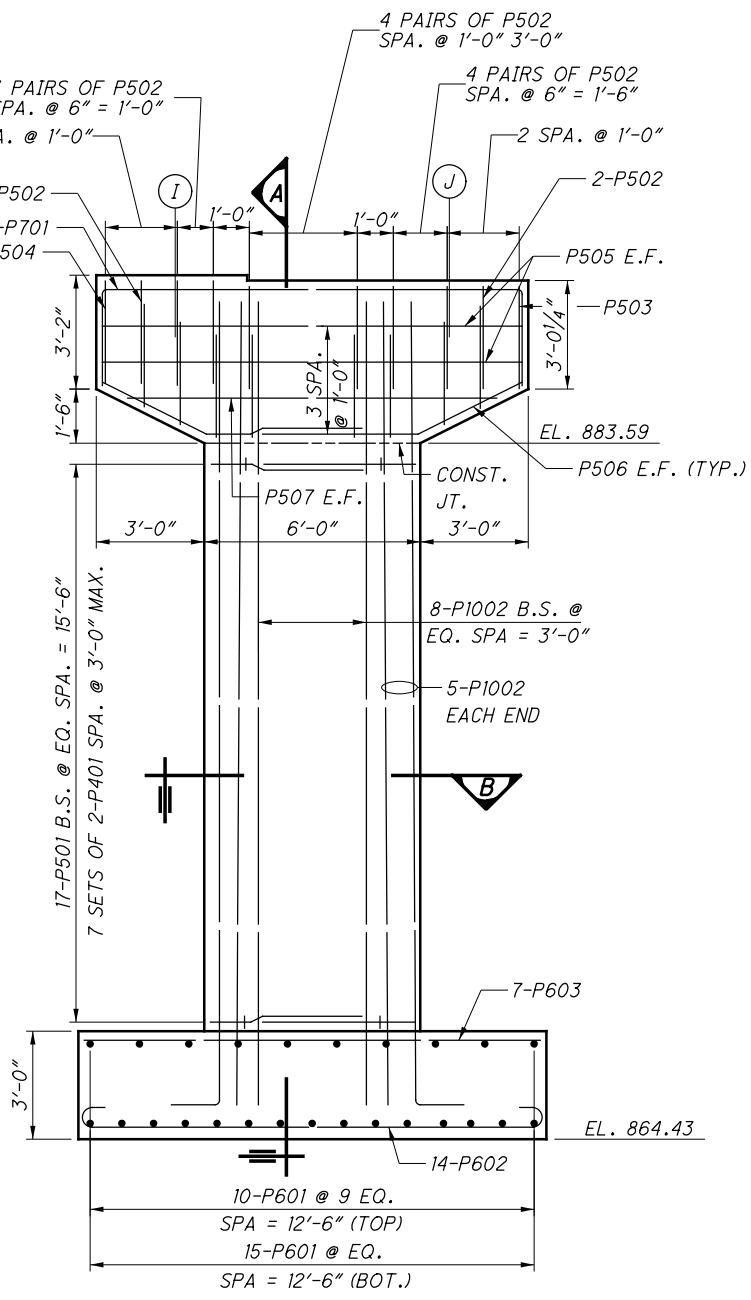
PIER SEAT ELEVATIONS	
ELEVATION	PIER 2
E	888.74±
F	888.57±
G	888.41±
H	888.25±
I	888.26
J	888.11



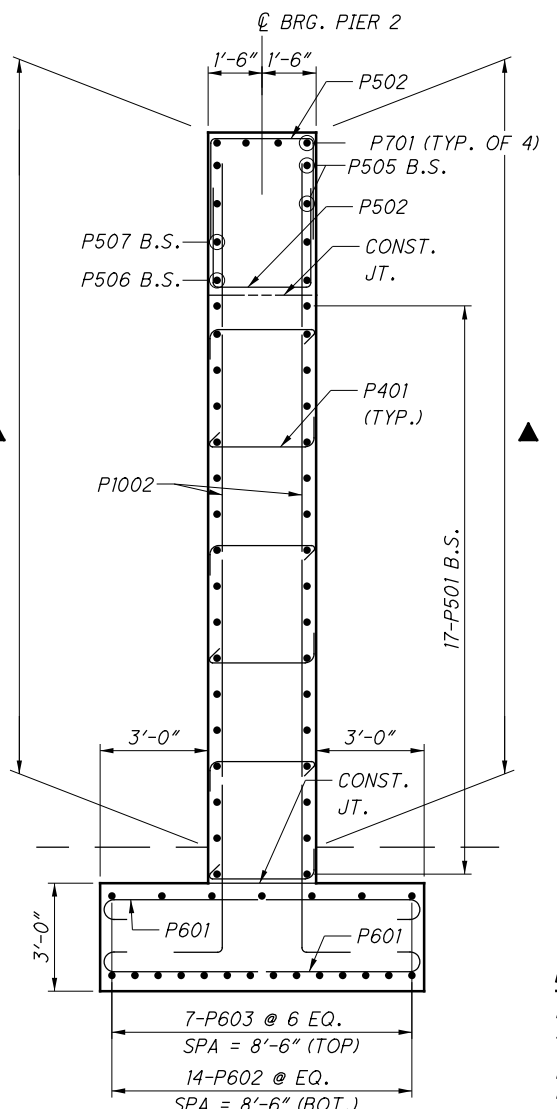
SECTION B



ELEVATION



SECTION A



NOTES:
 MINIMUM LAP LENGTHS ARE AS FOLLOWS:
 NO. 5 BARS = 1'-9" (VERT.)
 NO. 5 BARS = 2'-9" (HORIZ.)

DESIGN AGENCY: **GPD GROUP**
 G.P. Design, Inc.
 3995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.338.3544
 Copyright © 2015, G.P. Design, Inc.

DATE: 3-1-17
 REVISED: 1812556
 DGN: 1812556
 STRUCTURE FILE NUMBER: 1812556

DESIGNED: REV: CHECKED: DUC
 DRAWN: REV: REVISED: DUC

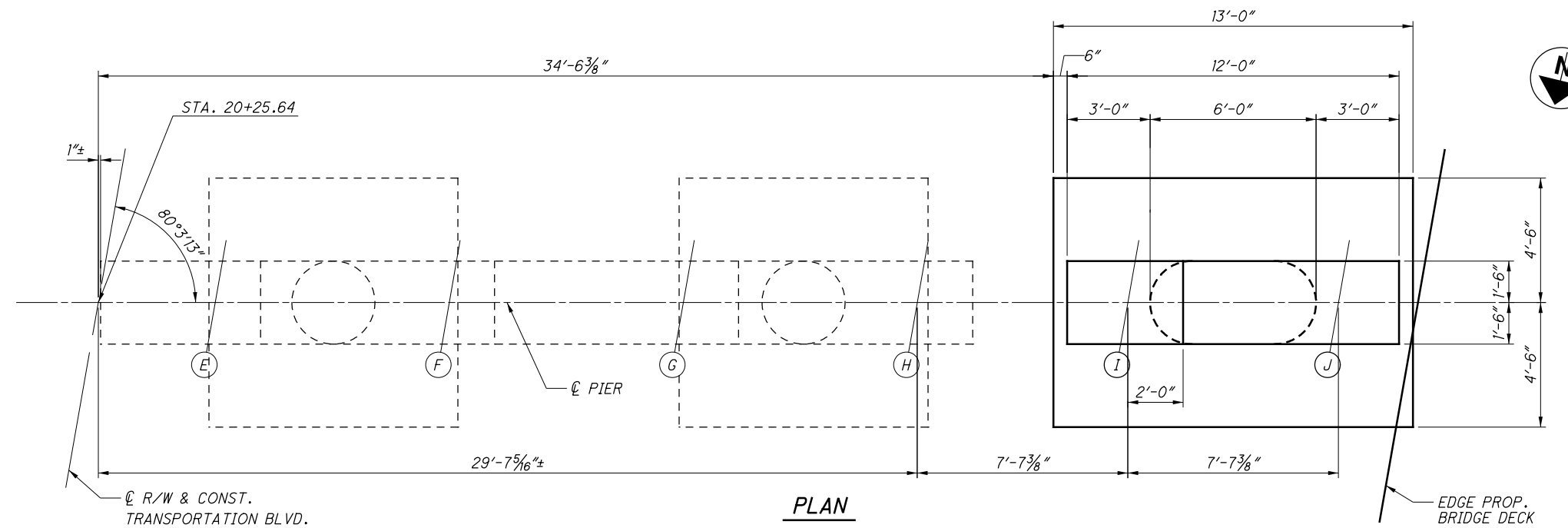
PIER 2 DETAILS
 BRIDGE NO. CUY-480-1955
 TRANSPORTATION BOULEVARD OVER I-480

CUY - TRANSPORTATION BLVD. PID No. 80974

19 / 39

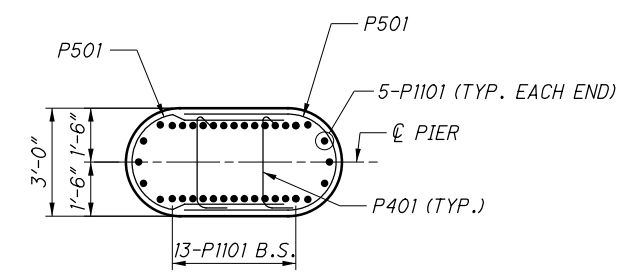
205
225

\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955CPT1003.DGN
 3/1/2017 3:41:56 PM GDDTV81STD_USER

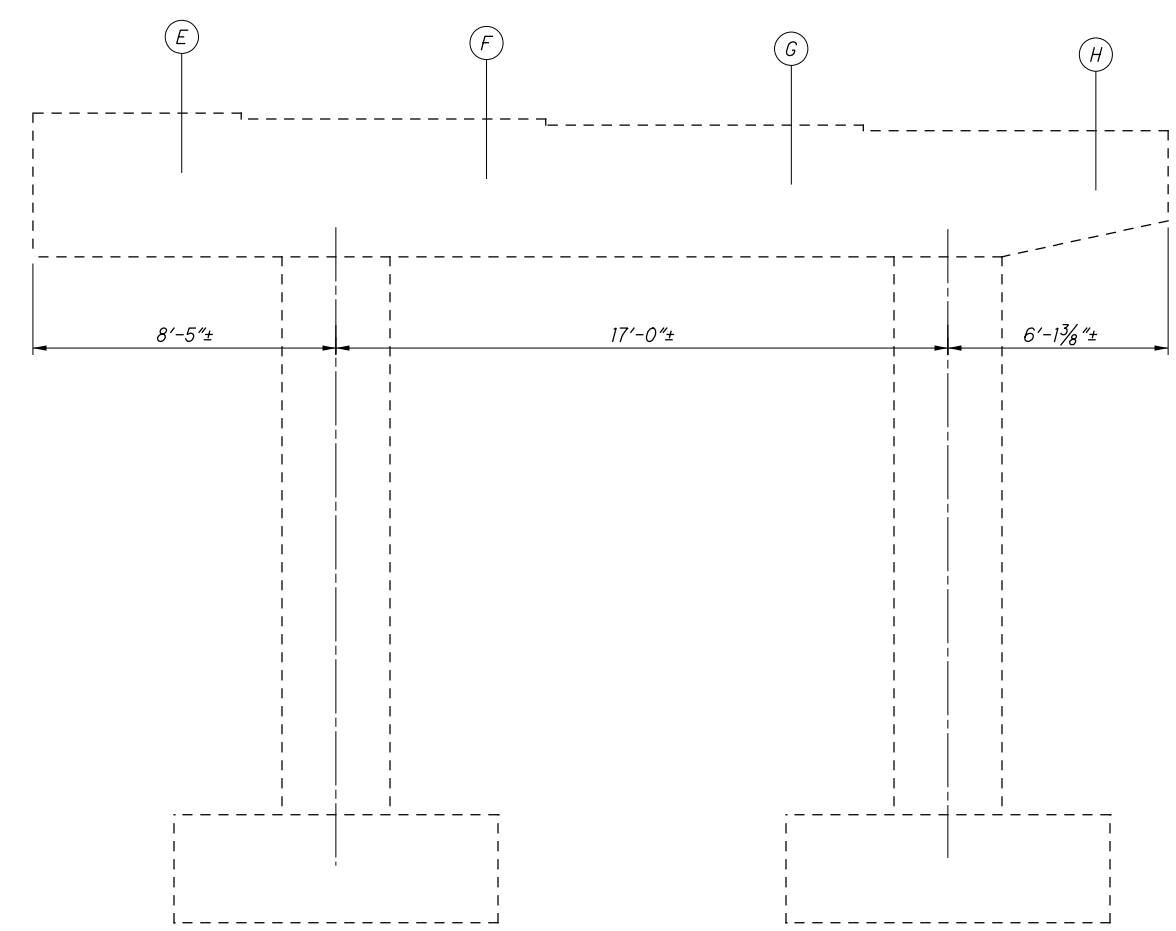


PLAN

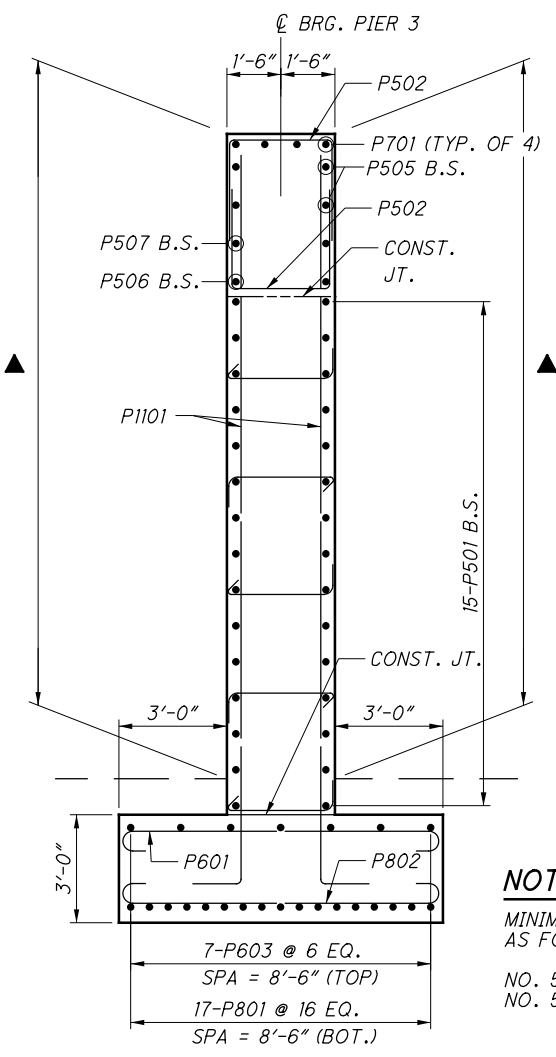
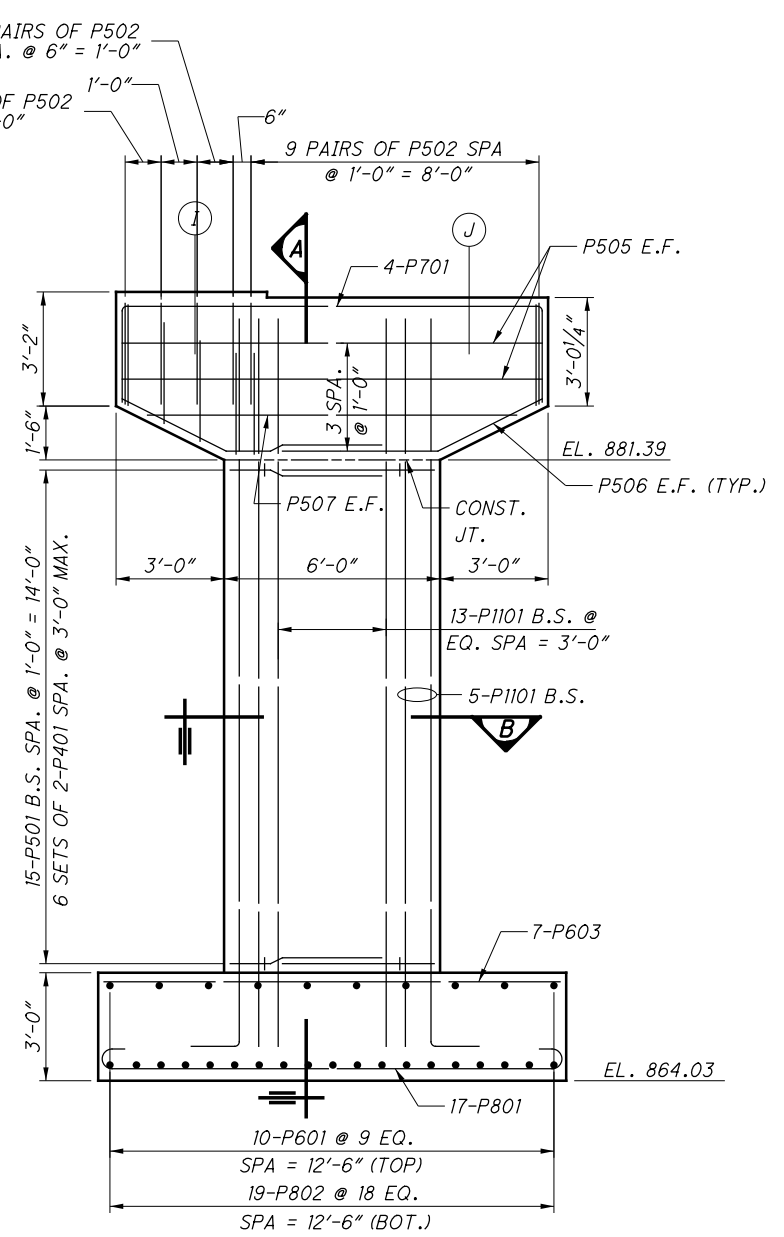
PIER SEAT ELEVATIONS	
ELEVATION	PIER 3
E	886.52±
F	886.36±
G	886.19±
H	886.03±
I	886.06
J	885.91



SECTION B



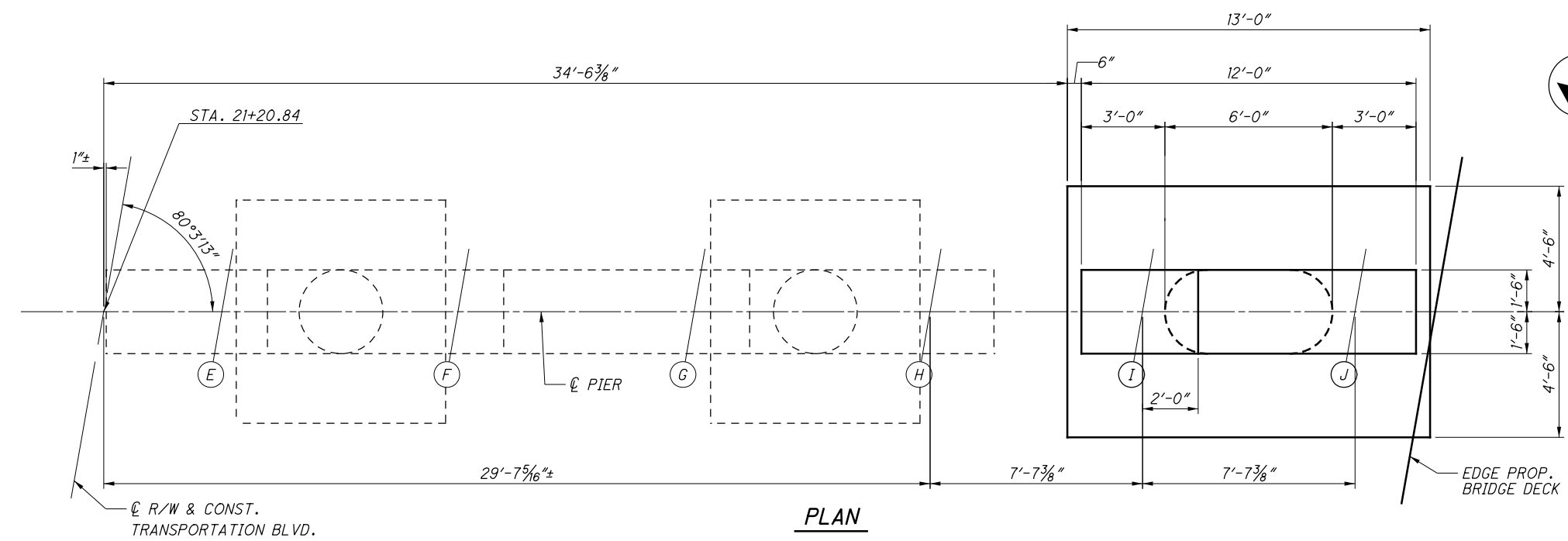
ELEVATION



SECTION A

NOTES:
 MINIMUM LAP LENGTHS ARE AS FOLLOWS:
 NO. 5 BARS = 1'-9" (VERT.)
 NO. 5 BARS = 2'-9" (HORIZ.)

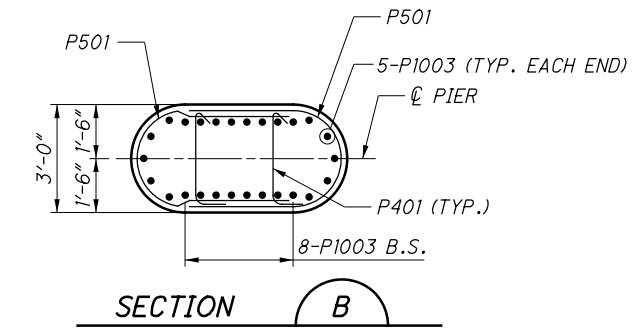
\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-195\195\SHEETS\480-195\PCPT\200.dgn
3/1/2017 3:28:31 PM GDDTV81STD_USER



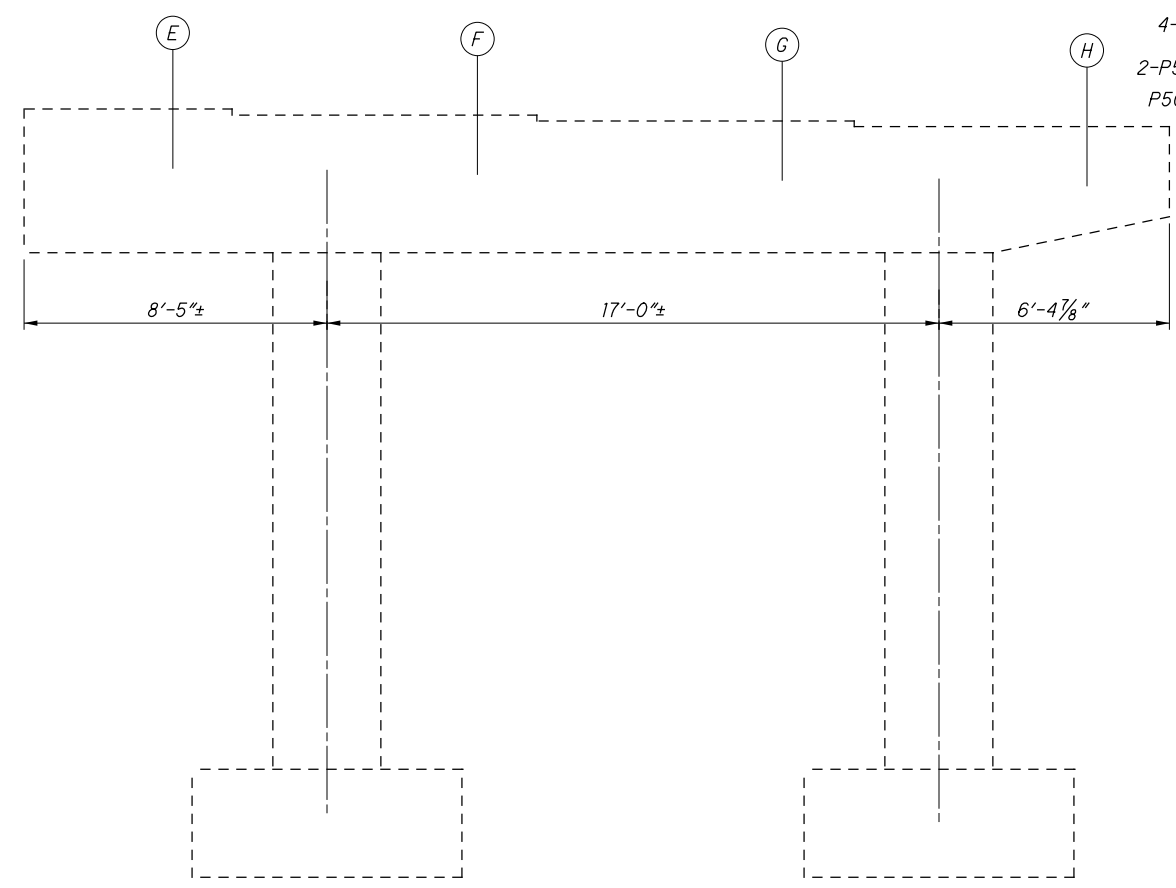
PLAN



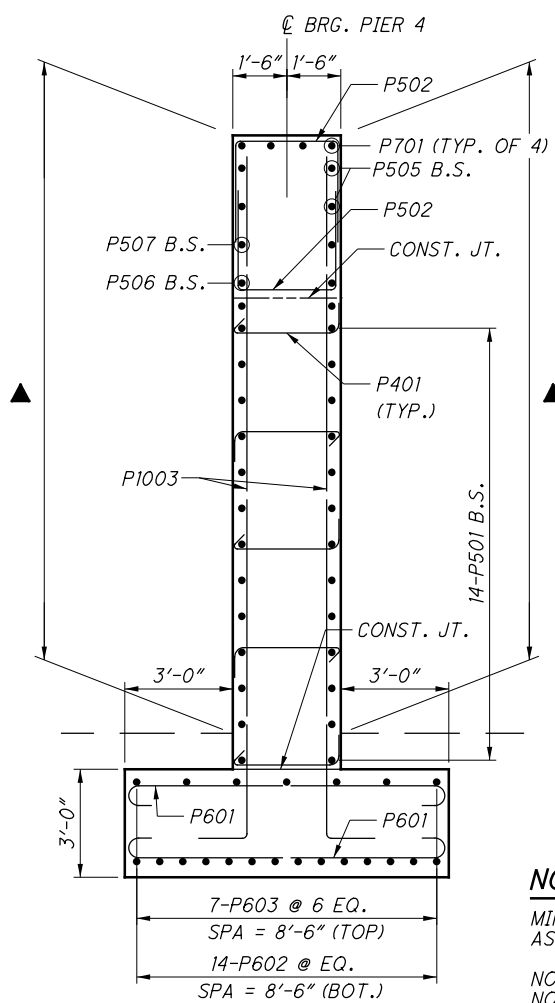
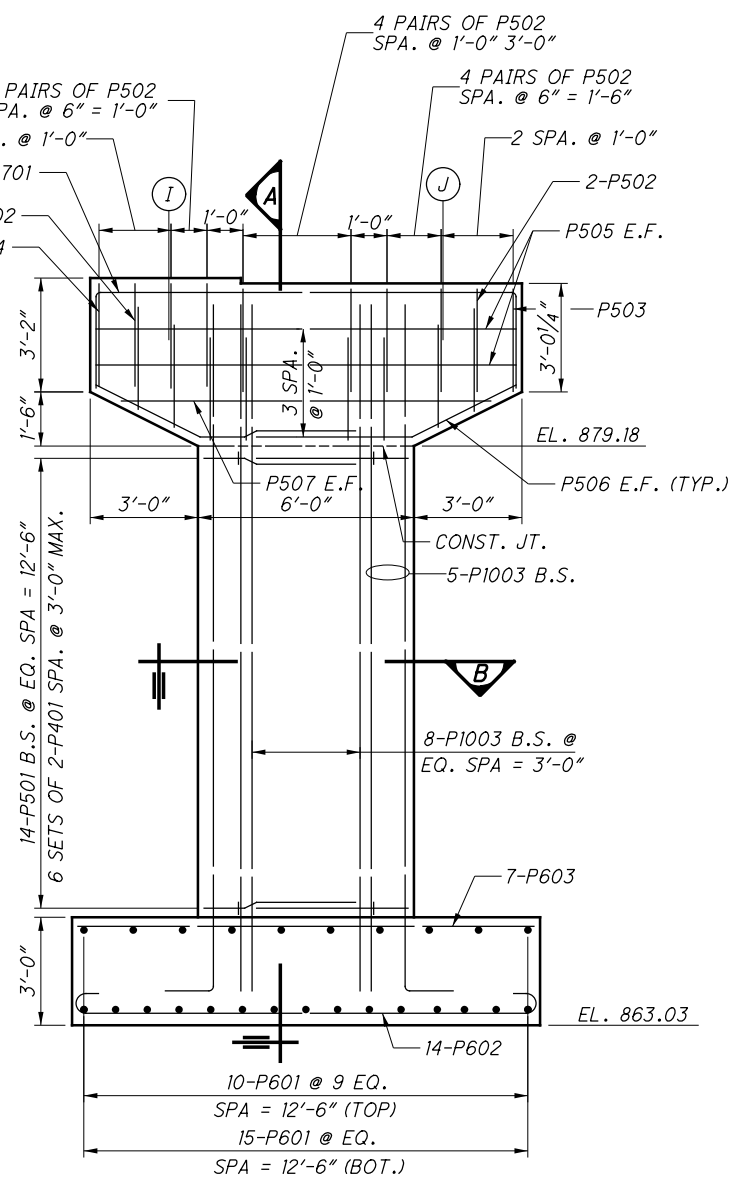
PIER SEAT ELEVATIONS	
ELEVATION	PIER 4
E	884.37±
F	884.21±
G	884.05±
H	883.88±
I	883.85
J	883.70



SECTION B



ELEVATION



SECTION A

NOTES:
MINIMUM LAP LENGTHS ARE AS FOLLOWS:
NO. 5 BARS = 1'-9" (VERT.)
NO. 5 BARS = 2'-9" (HORIZ.)

PIER 4 DETAILS

BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

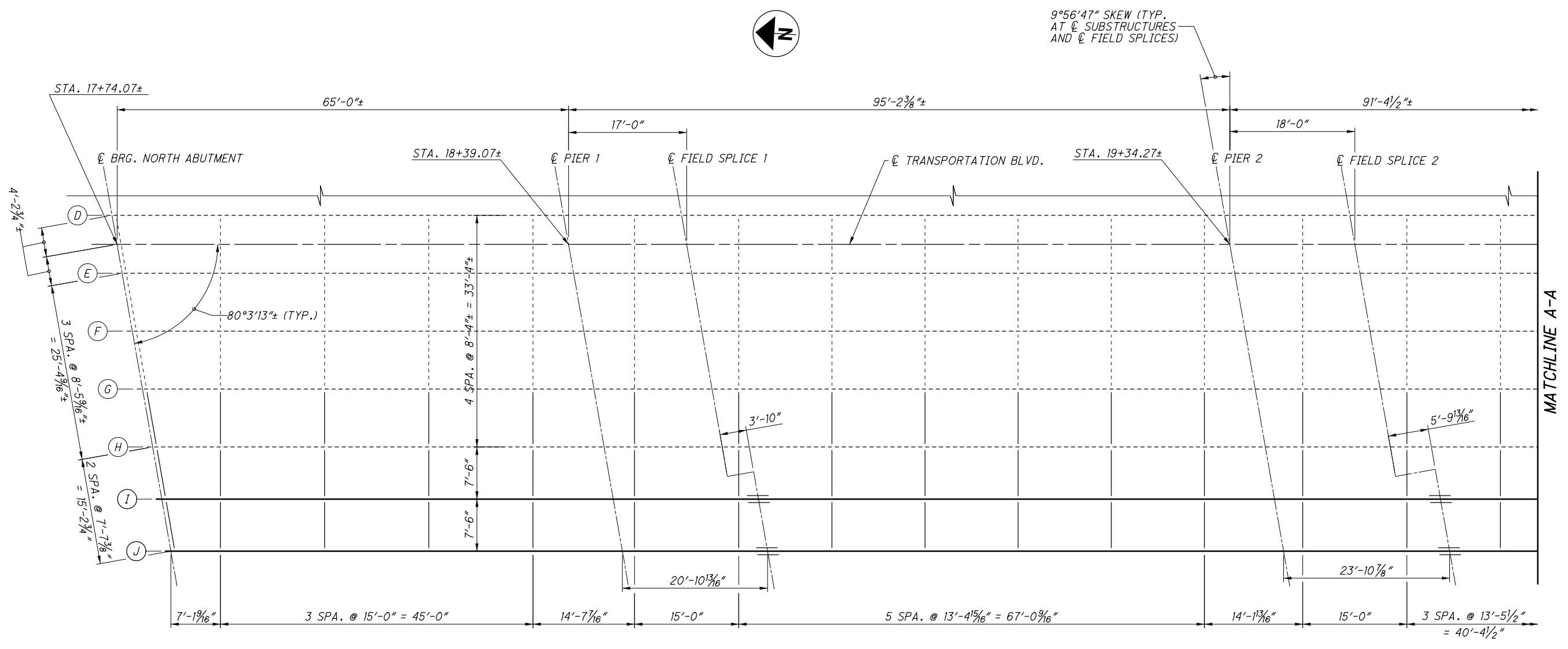
DESIGNED	REV	CHECKED	DUC
DRAWN	RFV	REVISED	
REVIEWED	DGN	STRUCTURE FILE NUMBER	1812556
DATE	3-1-17		

DESIGN AGENCY: GPD GROUP, Inc.
 3095 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.318.3544
 Copyright © 2016, GPD Group, Inc.

21 / 39

207 / 225

\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-195\SHEETS\480-195\CS\DRG01.DGN
 3/1/2017 3:53:45 PM GDDTV81STD_USER

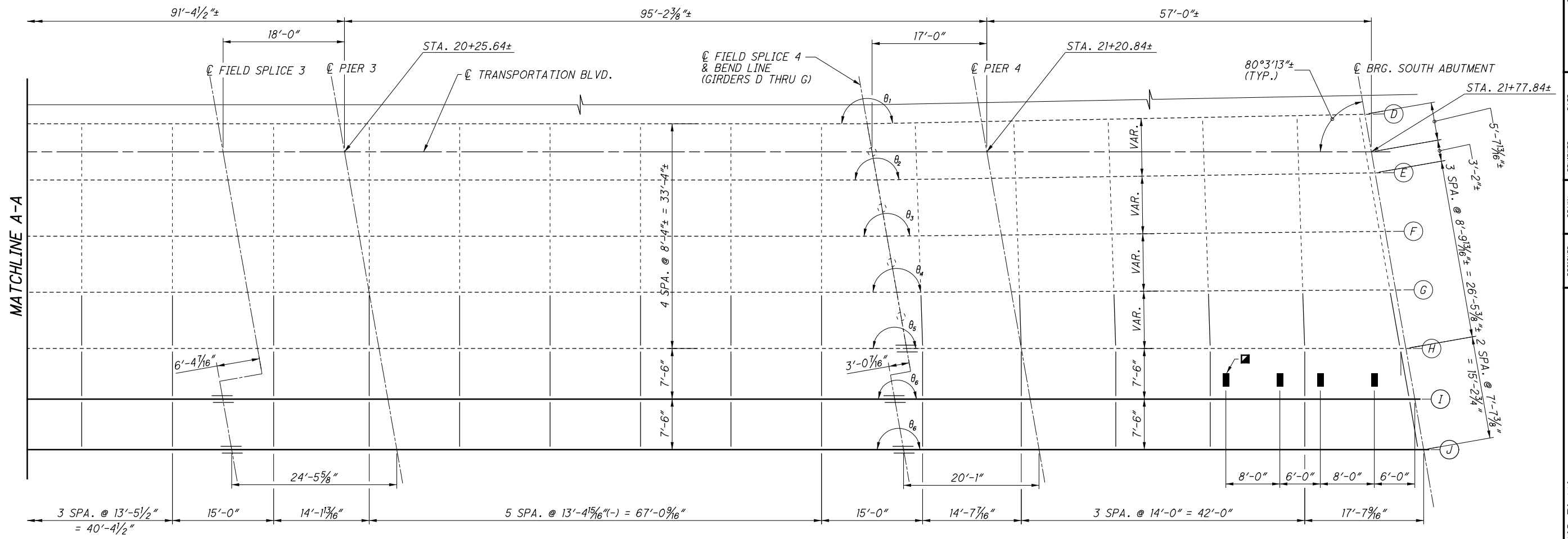


PLAN

- LEGEND:**
- = EXISTING CROSSFRAME
 - = EXISTING TYPE "X" CROSSFRAME WITH TOP HORIZONTAL
 - = PROPOSED CROSSFRAME

- NOTES:**
1. FOR GIRDER ELEVATIONS, SEE SHT. NO. [24/39].
 2. MATCH PROPOSED CROSSFRAME TO EXISTING CROSSFRAME SPACING AS SHOWN IN THE PLANS.
 3. FOR SUPERSTRUCTURE & SPLICE DETAILS, SEE SHT. NO. [25/39].

FRAMING PLAN BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480	DESIGN AGENCY GPD GROUP <small>Clark, P.E., Schaner, Burns & Dehaven, Inc. 3095 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.318.3544 Copyright © Clark, P.E., Schaner, Burns & Dehaven, Inc. 2015</small>	DATE 3-1-17	REVISIONS DGN STRUCTURE FILE NUMBER 1812556	DESIGNED SAT CHECKED T J W	DRAWN SAT REVISED
CUY - TRANSPORTATION BLVD. PID No. 80974	22 / 39 <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> 208 225 </div>				



PLAN

ANGLE TABLE	
θ_1	178°54'42"±
θ_2	179°11'04"±
θ_3	179°27'24"±
θ_4	179°43'43"±
θ_5	180°00'00"±
θ_6	180°00'00"±

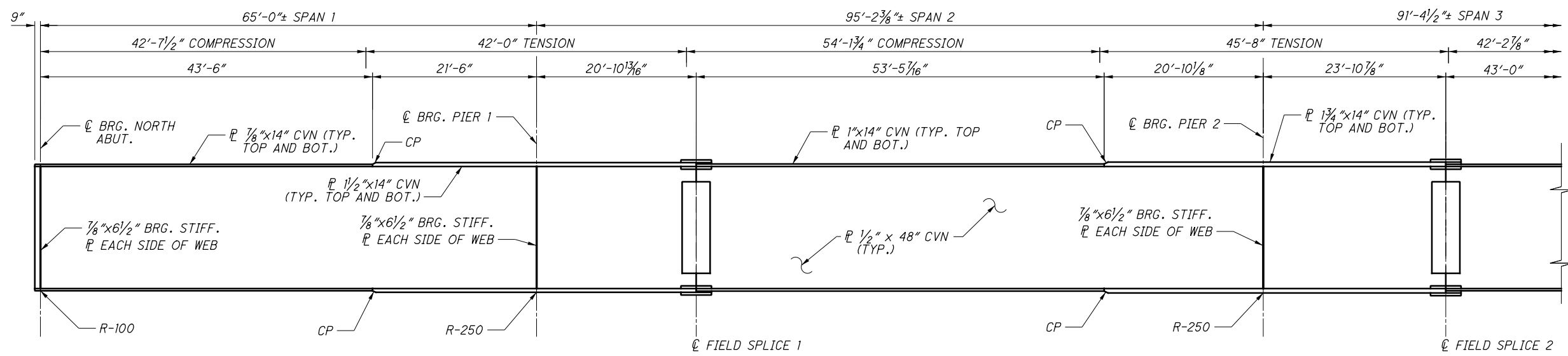
LEGEND:

- = EXISTING CROSSFRAME
- = EXISTING TYPE "X" CROSSFRAME WITH TOP HORIZONTAL
- = PROPOSED CROSSFRAME
- = PROPOSED SCUPPER (TYP. OF 4)

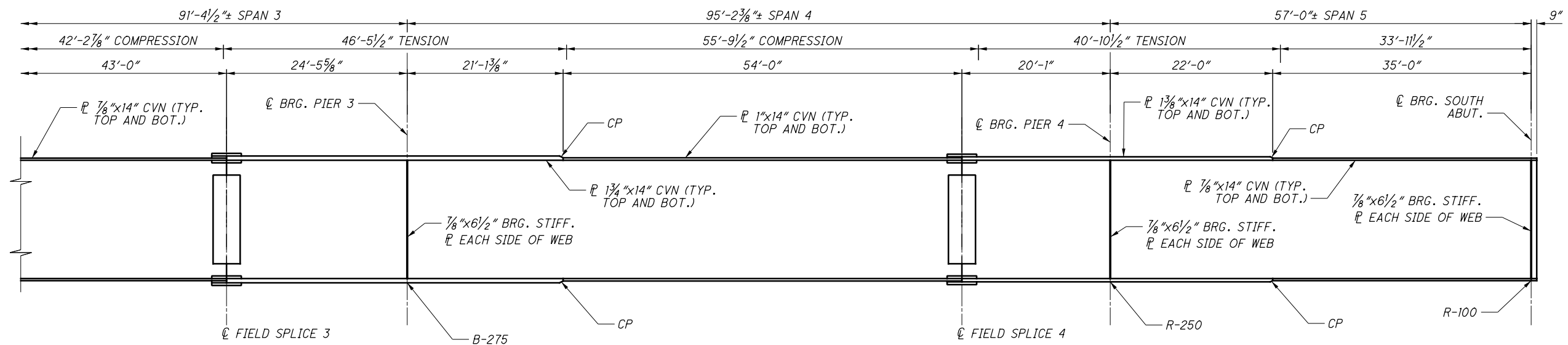
NOTES:
FOR NOTES, SEE SHT. NO. 22/39.

\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955\SD001.DGN
 3/1/2017 3:54:03 PM GDDTV81STD_USER

 GPD GROUP <small>Class, P.E., Schomer, Burns & DeLawa, Inc. 3955 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.318.3344 Copyright © Class, P.E., Schomer, Burns & DeLawa, Inc. 2015</small>	DATE 3-1-17	REVISIONS DGN STRUCTURE FILE NUMBER 1812556	FRAMING PLAN BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480
DESIGNED SAT CHECKED T.J.W.	DRAWN SAT REVISIONS	DATE 3-1-17	BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480
CUY - TRANSPORTATION BLVD. PID No. 80974		23 / 39	209 225



GIRDER ELEVATION - GIRDERS I AND J



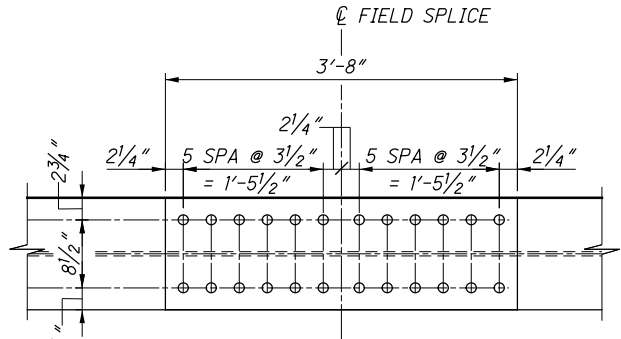
GIRDER ELEVATION - GIRDERS I AND J

NOTES:

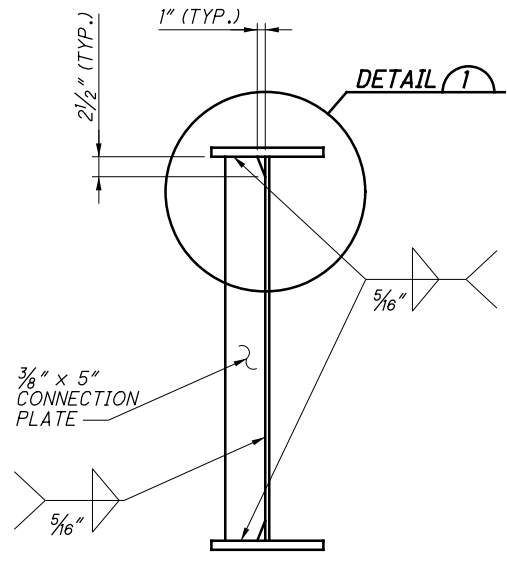
- CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
- FOR MORE INFORMATION ON BEARING STIFFENERS, SEE SHT. NO. 25/39.
- WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA GIRDER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGES, BE NO MORE THAN 2" LONG, AND BE AT LEAST 1/4" THICKNESSES UP TO 3/4" OR 5/8" FOR GREATER THAN 3/4" THICK.

LEGEND:

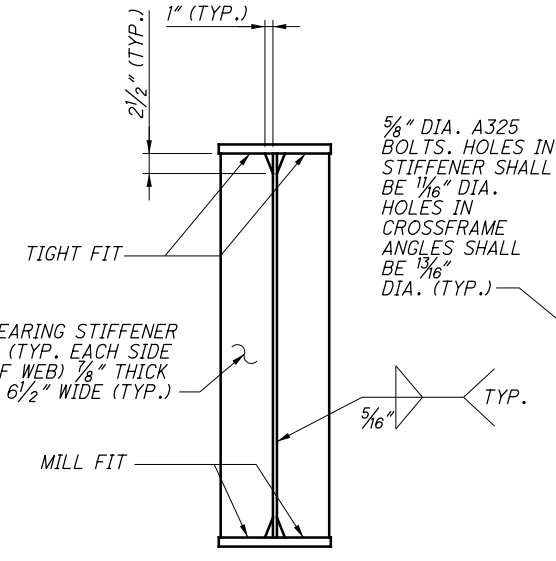
- CP - COMPLETE JOINT PENETRATION GROOVE WELD
- R-100 - ROCKER BEARING PER STD. DWG. RB-1-55
- R-250 - ROCKER BEARING PER STD. DWG. RB-1-55
- B-275 - BOLSTER BEARING PER STD. DWG. RB-1-55



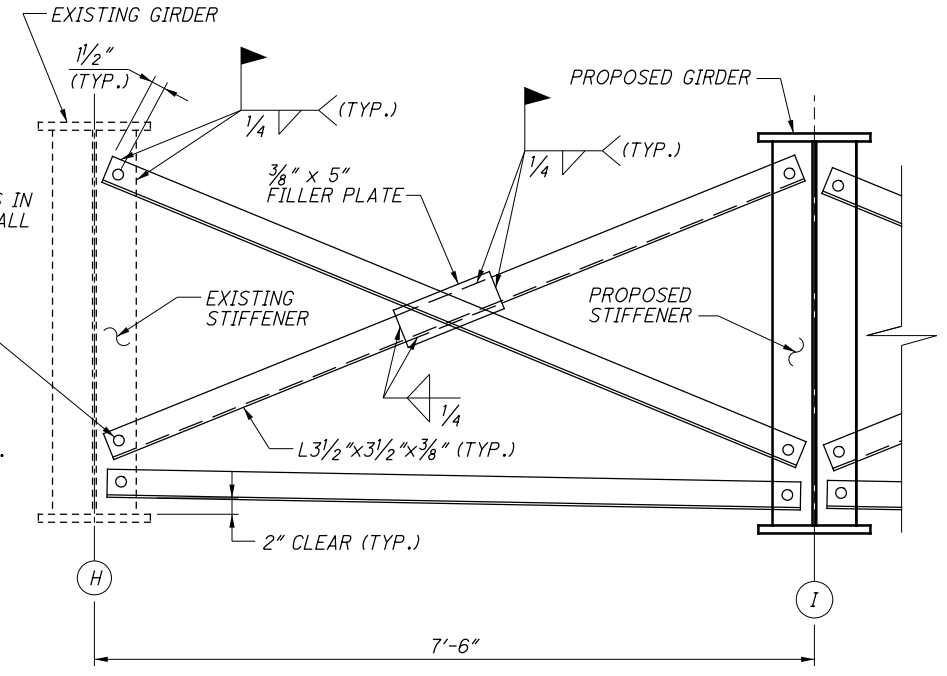
FLANGE SPLICE
TOP SPLICE SHOWN, BOTTOM SIMILAR
(TYP. AT ALL LOCATIONS)



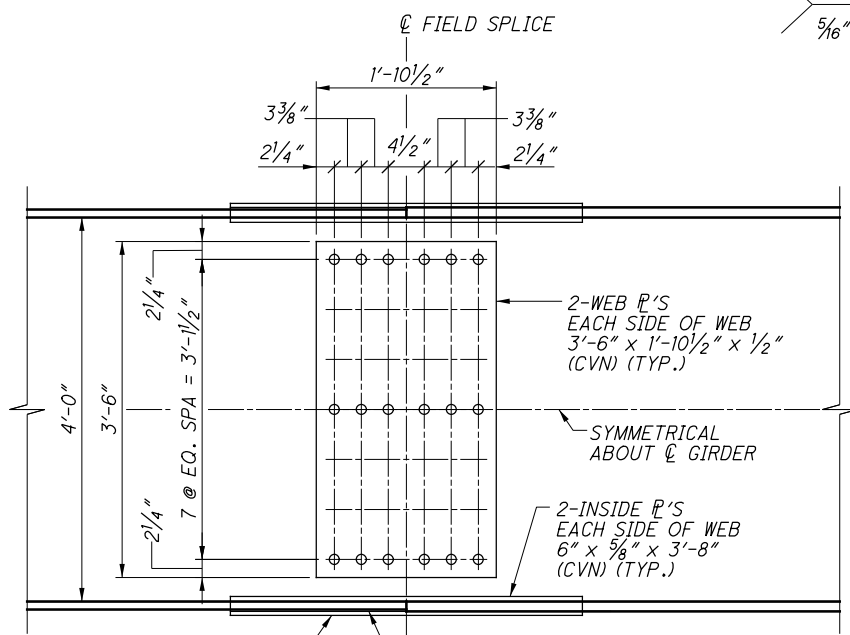
**CROSSFRAME STIFFENER
PLATE DETAIL**



BEARING STIFFENER DETAIL
ALL BEARING STIFFENERS SHALL BE PLACED
PERPENDICULAR TO THE WEB AND BE TRUE
VERTICAL



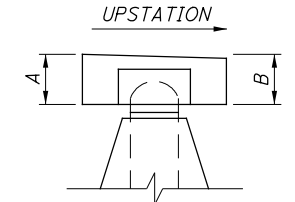
PARTIAL TRANSVERSE SECTION (WEST)



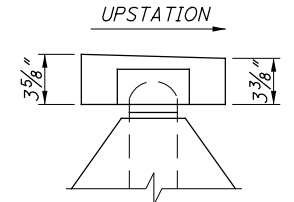
WEB SPLICE
(TYP. AT ALL LOCATIONS)

ROCKER TOP PLATE DIMENSIONS

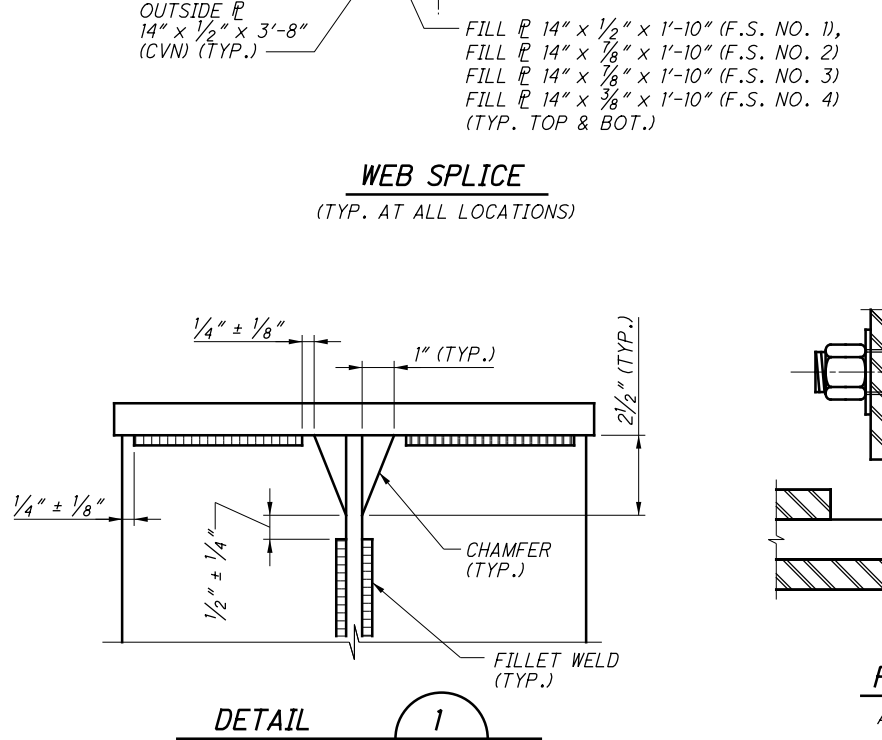
LOCATION	ROCKER TYPE	A	B
ABUTS.	R-100	2 5/8"	2 3/8"
PIERS	R-250	3 5/8"	3 3/8"



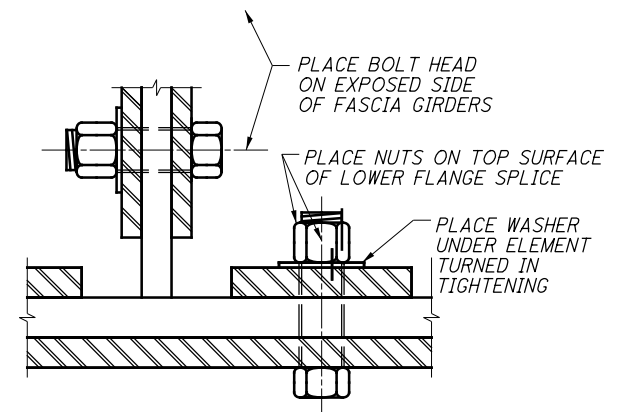
ROCKER TOP PLATE DETAIL



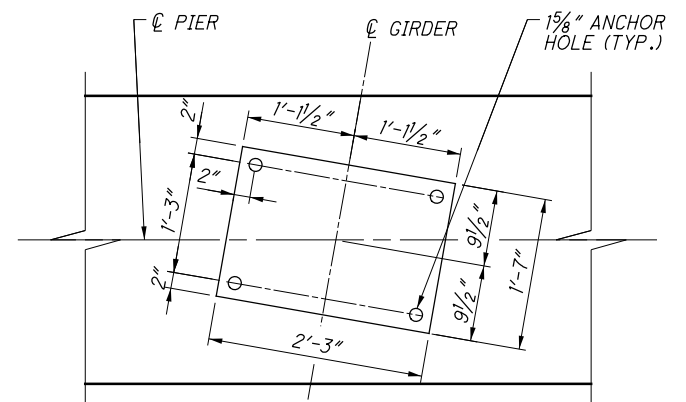
BOLSTER TOP PLATE DETAIL
B-275 @ PIER 3



DETAIL 1



PARTIAL SECTION
AT Q OF GIRDER SPLICE



BOLSTER BASE PLATE

- NOTES:**
- ALL FIELD SPLICE FASTENERS SHALL BE 1/8" DIA., ASTM A325, HIGH STRENGTH BOLTS, TYPE I
 - FOR ADDITIONAL STRUCTURAL STEEL NOTES, SEE SHT. NOS. [22/39] THRU [24/39].

\\AKR\BGA\DATA\2016\2016051\CUY\STRUCTURES\CUY-480-195\5SHEETS\480-195\SCSD006.DGN
 3/1/2017 3:56:30 PM GDDTV81STD_USER

DESIGN AGENCY
GPD GROUP
Class, Pbc, Schme, Burns & Dehaven, Inc.
 3995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.318.3544
 Copyright © Class, Pbc, Schme, Burns & Dehaven, Inc. 2015

DATE	3-1-17
REVIEWED	DGN
DRAWN	RFV
DESIGNED	DUC
CHECKED	DUC
STRUCTURE FILE NUMBER	1812556

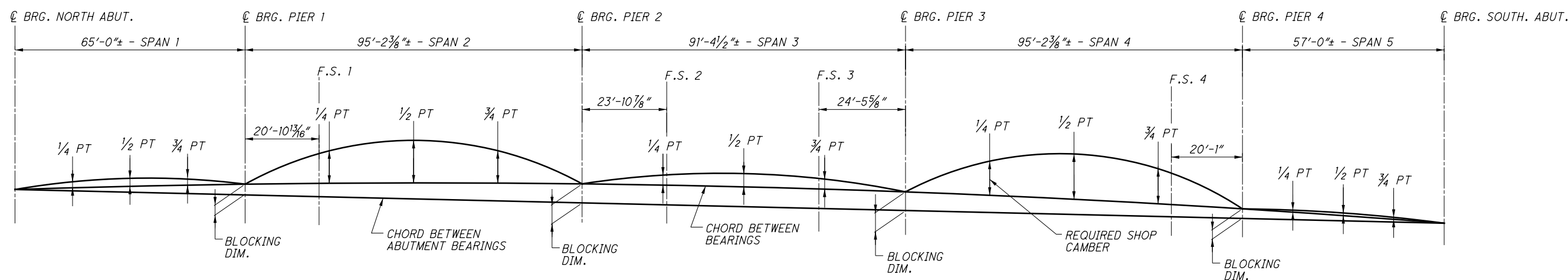
BOLTED SPLICE AND MISCELLANEOUS DETAILS
 BRIDGE NO. CUY-480-1955
 TRANSPORTATION BOULEVARD OVER I-480

CUY-480-1955
TRANSPORTATION
BLVD.
 PID No. 80974

25 / 39
 211
 225

GIRDER	CAMBER DESCRIPTION	SPAN 1					SPAN 2					SPAN 3					SPAN 4					SPAN 5						
		N.A.	1/4	1/2	3/4	PIER 1	F.S. 1	1/4	1/2	3/4	PIER 2	1/4	F.S. 2	1/2	F.S. 3	3/4	PIER 3	1/4	1/2	3/4	F.S. 4	PIER 4	1/4	1/2	3/4	S.A.		
I	DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	0	0	1/16"	1/16"	1/8"	1/16"	0	0	0	0	1/16"	0	0	0	1/16"	1/16"	1/8"	1/16"	0	0	0	0	0	0
	DEFLECTION DUE TO REMAINING DEAD LOAD	0	1/4"	3/16"	1/16"	0	5/16"	1/2"	7/8"	1/2"	0	1/8"	1/16"	1/4"	1/16"	1/8"	0	1/2"	15/16"	9/16"	3/8"	0	1/16"	1/16"	0	0	0	
	TOTAL REQUIRED SHOP CHAMBER	0	1/4"	3/16"	1/16"	0	3/8"	9/16"	1"	9/16"	0	3/16"	1/16"	5/16"	1/16"	1/8"	0	5/16"	1 1/16"	1 1/16"	7/16"	0	1/16"	1/16"	0	0	0	
J	DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	0	0	1/16"	1/16"	1/8"	1/16"	0	0	1/16"	1/16"	0	0	0	1/16"	1/8"	1/16"	1/16"	0	0	0	0	0	0	
	DEFLECTION DUE TO REMAINING DEAD LOAD	0	3/8"	3/16"	1/16"	0	1/2"	1/2"	13/16"	7/16"	0	1/8"	1/8"	5/16"	1/16"	1/8"	0	1/2"	7/8"	9/16"	3/8"	0	1/16"	0	1/16"	0		
	TOTAL REQUIRED SHOP CHAMBER	0	3/8"	3/16"	1/16"	0	9/16"	9/16"	15/16"	1/2"	0	3/16"	3/16"	3/8"	1/16"	1/8"	0	5/16"	1"	5/8"	7/16"	0	1/16"	0	1/16"	0		

BLOCKING TABLE				
LOCATION	PIER 1	PIER 2	PIER 3	PIER 4
BEAM I	1/8"	3/16"	1/16"	3/16"
BEAM J	1/4"	1/4"	1/2"	1/4"



CAMBER & BLOCKING DIAGRAM

\\AKR\BGA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955\SD007.DGN
 3/1/2017 3:57:14 PM GDDTV81STD_USER

DESIGN AGENCY
GPD GROUP
Class, Pkg, Scheme, Burns & McDonnell, Inc.
 3995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.538.5344
 Copyright © 2015, P&S, Scherer, Burns & McDonnell, Inc. 2015

DATE
 3-1-17

REVIEWED
 DGN

STRUCTURE FILE NUMBER
 1812556

DRAWN
 RFV

REVISIONS
 REVISED

DESIGNED
 RFV

CHECKED
 DJC

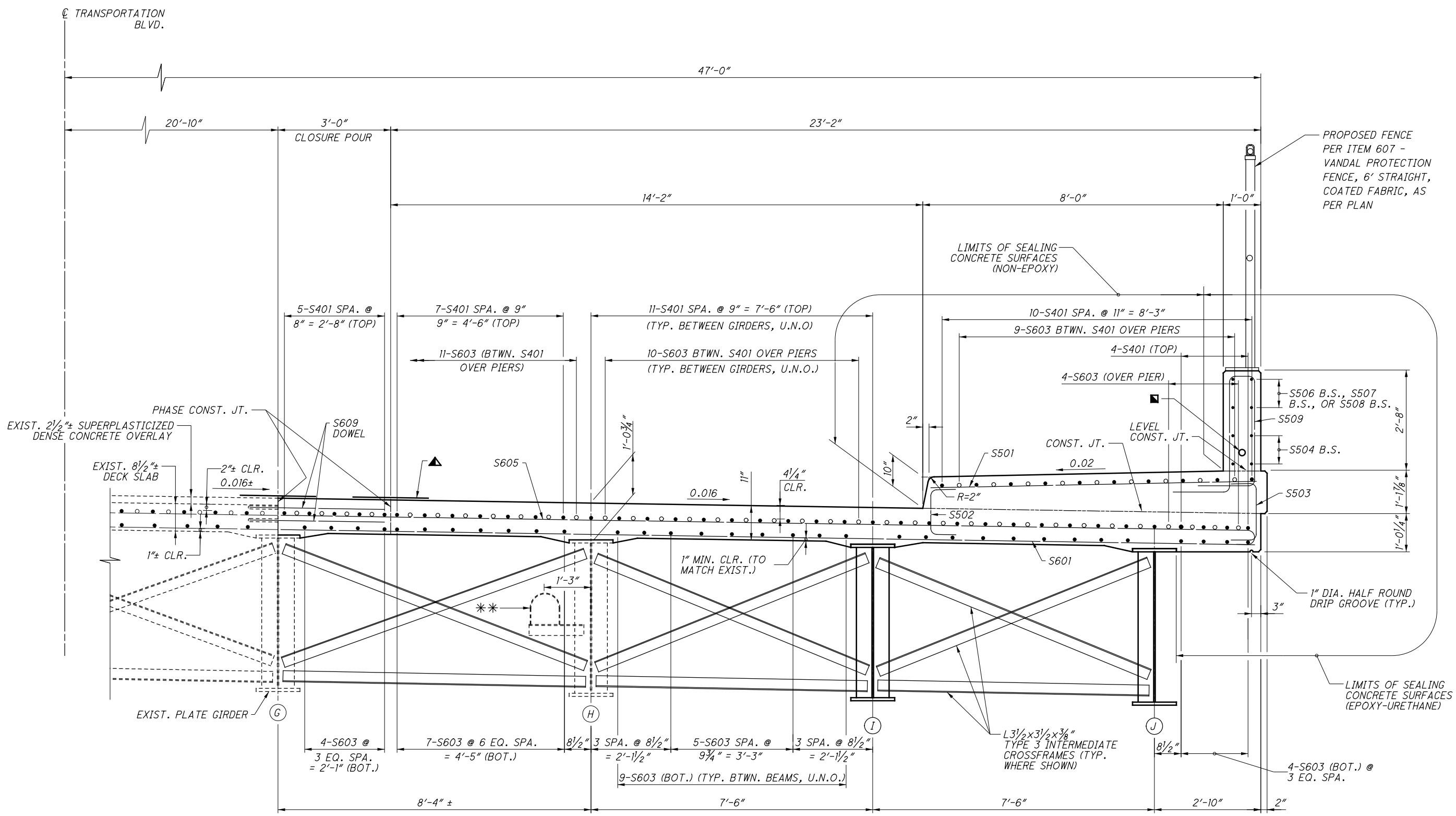
CAMBER AND DEFLECTION TABLE
 BRIDGE NO. CUY-480-1955
 TRANSPORTATION BOULEVARD OVER I-480

CUY -
TRANSPORTATION
BLVD.
 PID No. 80974

26 / 39

212
 225

\\AKRNGA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955\STRUCTS001.DGN
 3/1/2017 3:58:51 PM GDDT\B1STD_USER



PARTIAL TRANSVERSE SECTION (WEST)

- NOTE:**
- SEE PHASE CONSTRUCTION DETAILS FOR EXISTING CROSSFRAME REMOVAL AND REPLACEMENT REQUIREMENTS BETWEEN GIRDERS (G) AND (H).
 - DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 2 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE IS ± 3 INCHES.
 - THE SIDEWALK CONCRETE SHALL BE INCLUDED FOR PAYMENT WITH ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK. THE PARAPET CONCRETE ABOVE THE LEVEL OF THE SIDEWALK SHALL BE INCLUDED FOR PAYMENT WITH ITEM 511 - CLASS QC2 CONCRETE QC/QA, BRIDGE DECK (PARAPET).
 - FOR PARAPET REINFORCING DETAILS, SEE SHT. NO. 32/39.
 - #6 DECK DOWEL BARS SHALL BE EMBEDDED 9" MINIMUM INTO THE EXISTING DECK SLAB.

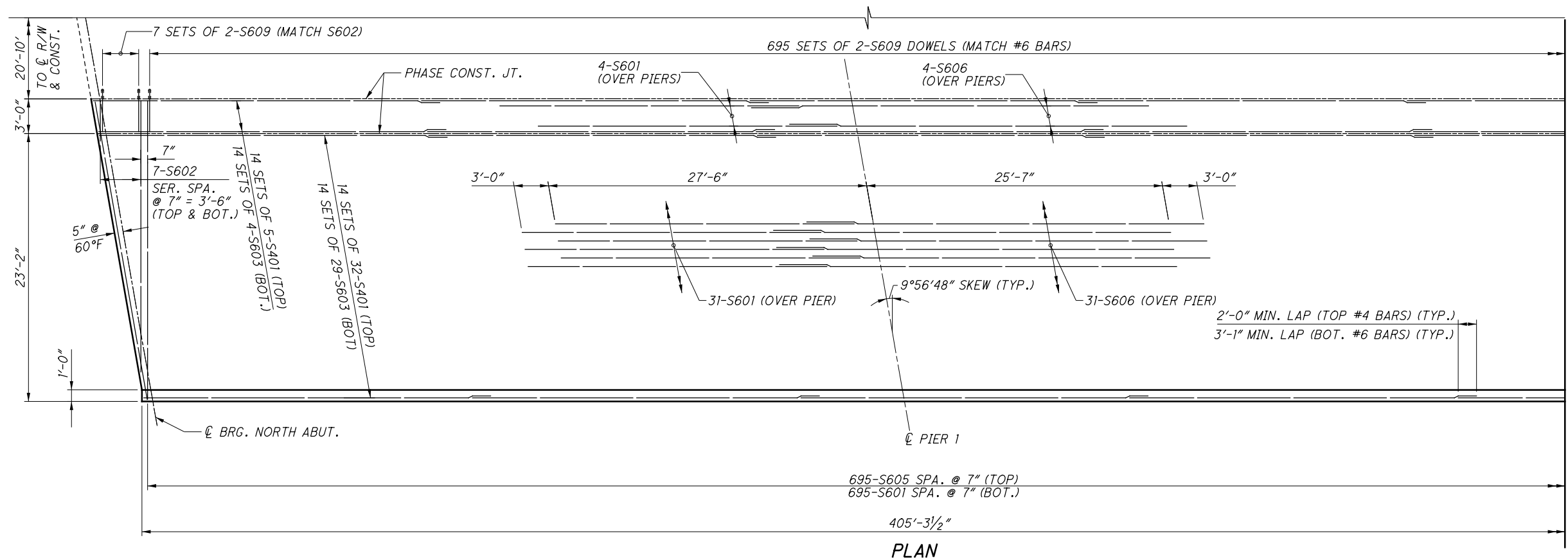
LEGEND

- 2" DIA. LIGHTING CONDUIT
- ▲ 2'-0" WIDE HMWM SEAL AT DECK CONST. JOINTS, PAID FOR WITH ITEM 511 ON THE BRIDGE DECK.
- ** EXIST. U-BOLT FROM ABANDONED GAS LINE TO BE REMOVED

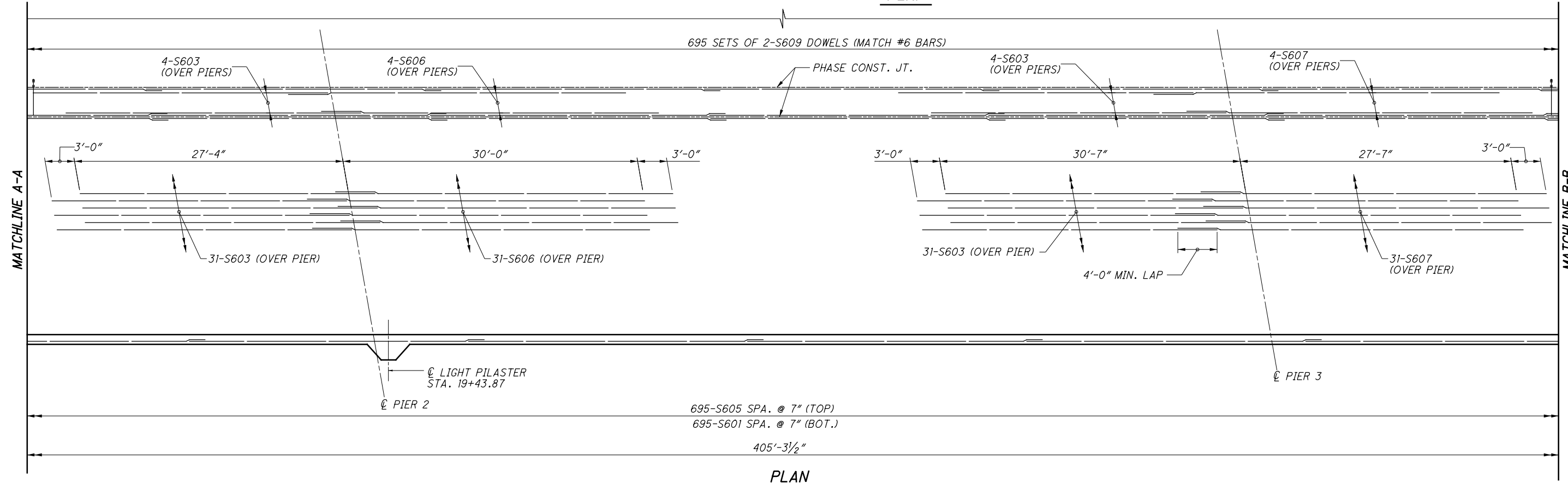
PROPOSED FENCE PER ITEM 607 - VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN

DESIGN AGENCY <small>Gilbane, Pyle, Schinner, Burns & Dehaven, Inc. 3995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.538.5544 Copyright © 2015, Gilbane, Pyle, Schinner, Burns & Dehaven, Inc.</small>	DATE 3-1-17	REVIEWED DGN	DESIGNED SAT	DRAWN SAT	STRUCTURE FILE NUMBER 1812556
TRANSVERSE SECTION DETAILS BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480					
CUY - TRANSPORTATION BLVD. PID No. 80974					
27 / 39					213 225

\\AKRNGA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955\PCP001.DGN
 3/1/2017 3:42:14 PM GDDTV81STD_USER



PLAN



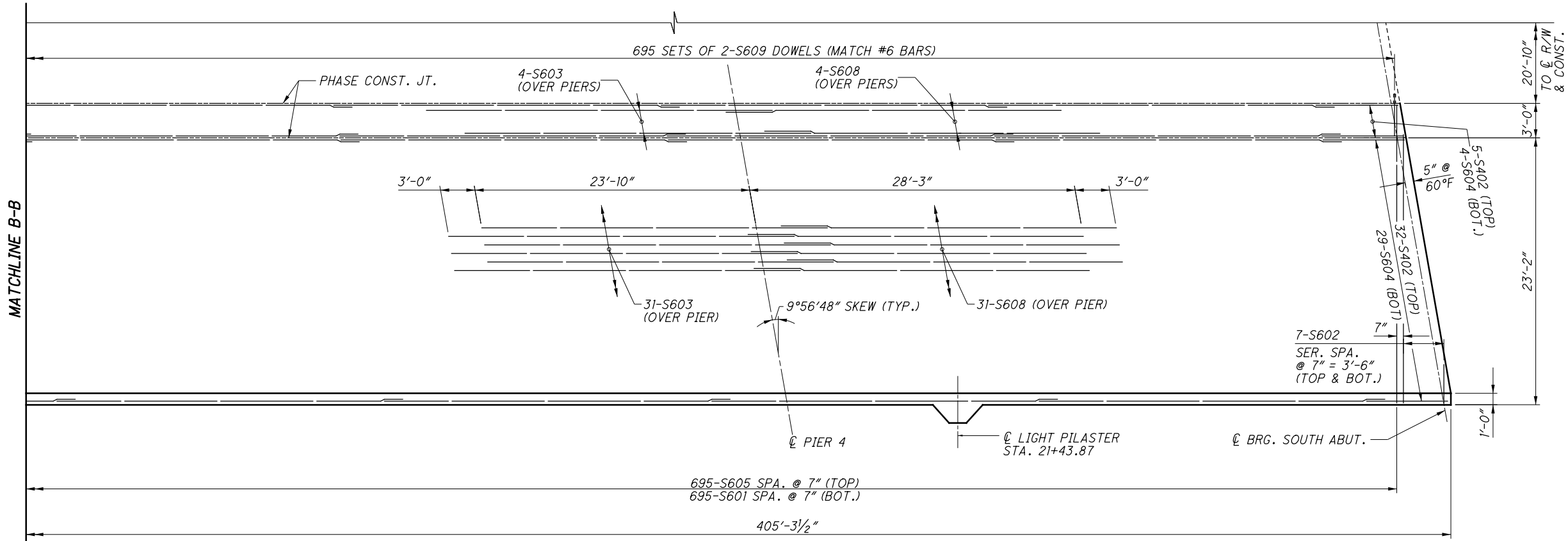
PLAN

NOTES:

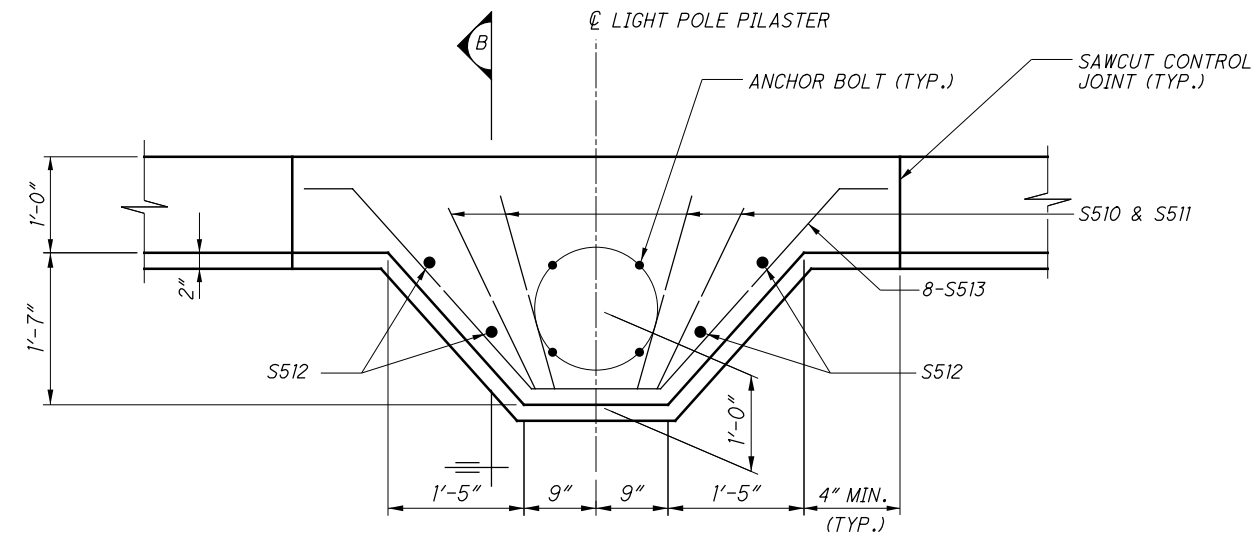
1. FOR TRANSVERSE SECTION, SEE SHT. NO. 27/39.
2. FOR SIDEWALK REINFORCING DETAILS, SEE SHT. NO. 30/39.

 DESIGN AGENCY GPD GROUP <small>Class, Pkg, Scheme, Burns & McDonnell, Inc. 3995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.318.3344 Copyright © Class, Pkg, Scheme, Burns & McDonnell, Inc. 2015</small>	DATE 3-1-17
	REVISIONS DGN 3-1-17 STRUCTURE FILE NUMBER 1812556
DESIGNED SAT CHECKED DJC	DRAWN SAT REVISIONS
DECK REINFORCING DETAILS BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480	
CUY-TRANSPORTATION BLVD. PID No. 80974	
28 / 39	
214 225	

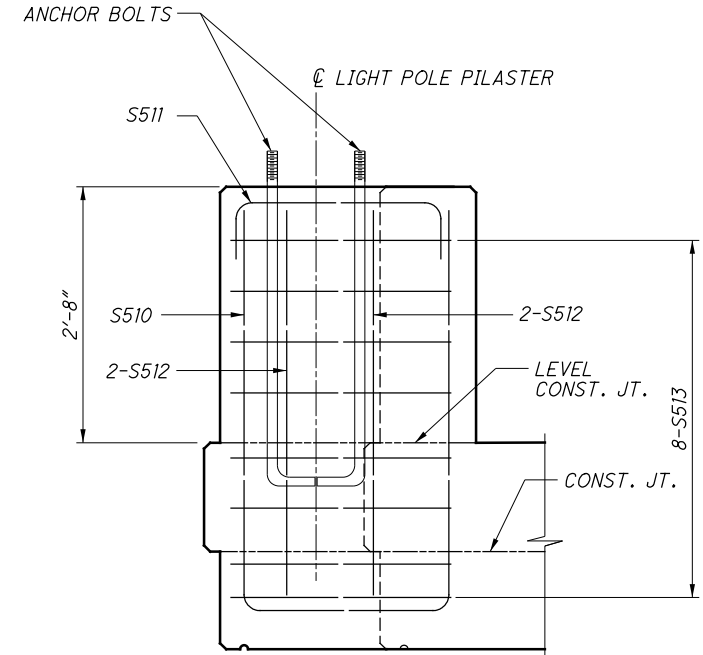
\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955\PCP001.DGN
 3/1/2017 3:42:33 PM GDDTV81STD.LUSER



PLAN



TYPICAL LIGHT POLE PILASTER



SECTION B
 DECK SLAB REINFORCING NOT SHOWN

NOTES:

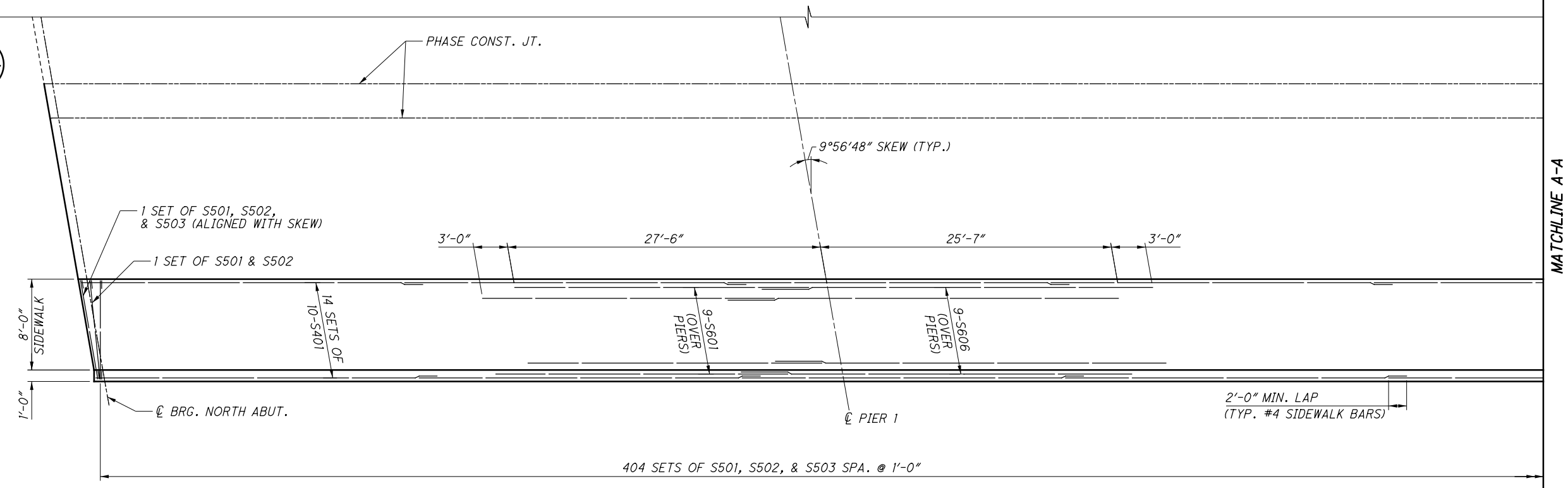
1. FOR TRANSVERSE SECTION, SEE SHT. NO. 27/39.
2. FOR SIDEWALK REINFORCING DETAILS, SEE SHT. NO. 30/39.
3. FOR ADDITIONAL LIGHT POLE PILASTER DETAILS SEE ODOT STD. DWG. HL-20.14.



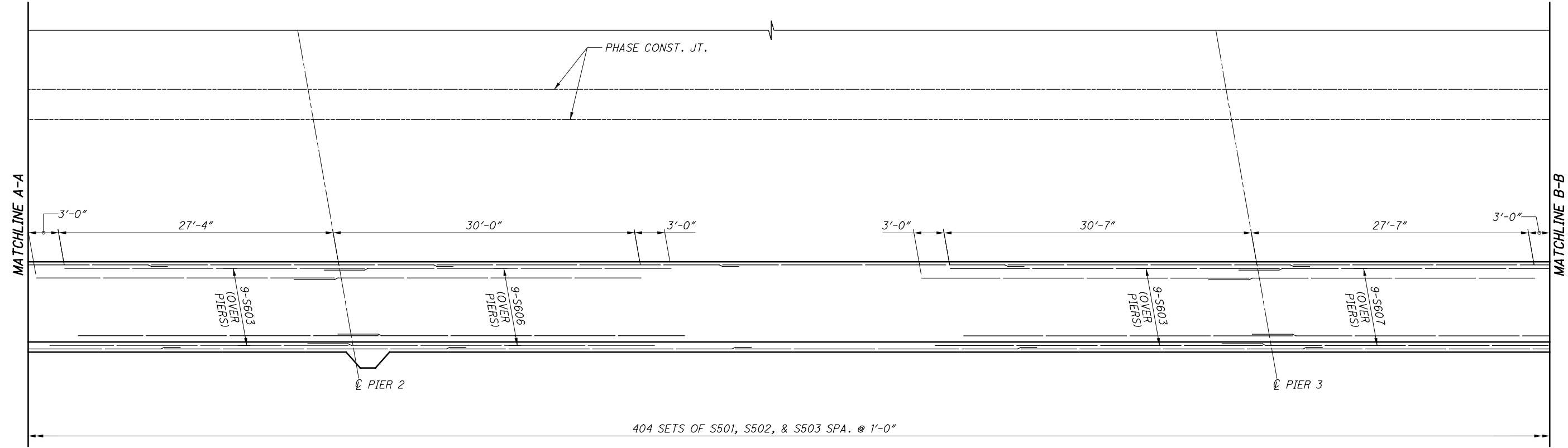
MATCHLINE B-B

 DESIGN AGENCY GPD GROUP <small>Class, Pyle, Schomer, Burns & Delaney, Inc. 3995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.318.3344 Copyright © Class, Pyle, Schomer, Burns & Delaney, Inc. 2015</small>	DATE	3-1-17
	REVIEWED	DGN
DESIGNED	SAT	DUC
DRAWN	SAT	REVISED
DECK REINFORCING DETAILS BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480		
CUY- TRANSPORTATION BLVD. PID No. 80974		
29/39		

\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955COPR002.DGN
 3/1/2017 3:43:40 PM GDDTV81STD_USER



PLAN



PLAN

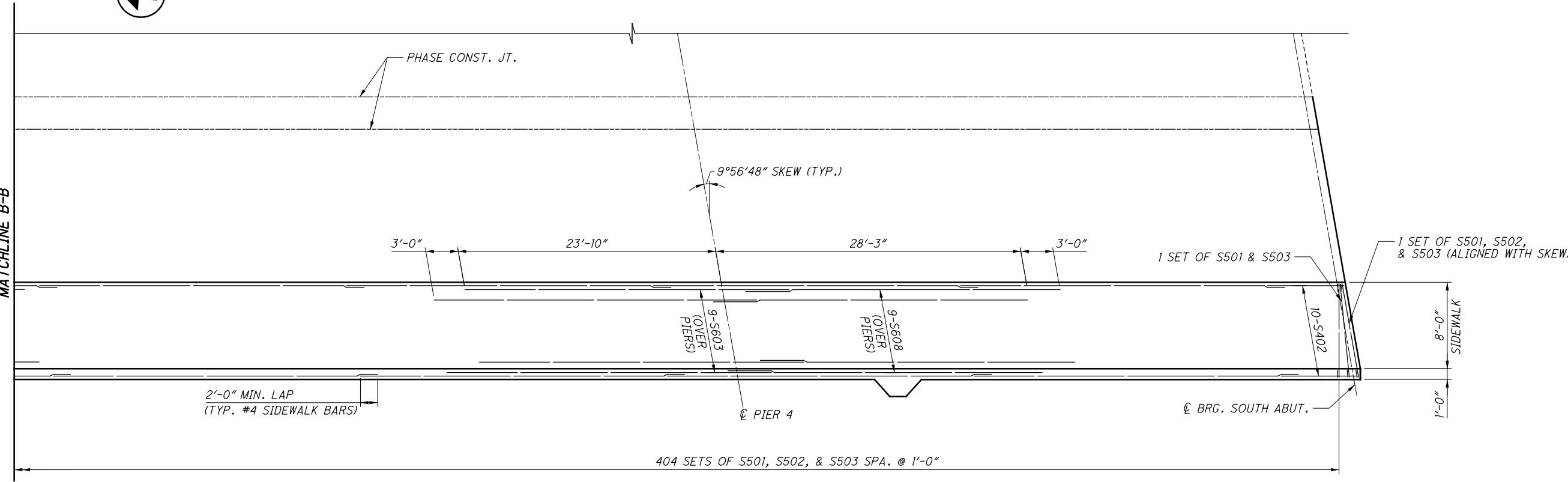
NOTES:

- FOR TRANSVERSE SECTION INCLUDING ADDITIONAL SIDEWALK REINFORCING DETAILS, SEE SHT. NO. 27/39.
- STAGGER EVERY OTHER #6 BAR OVER THE PIERS IN THE SIDEWALK A MINIMUM OF 3'-0" PAST THE DIMENSIONS SHOWN.

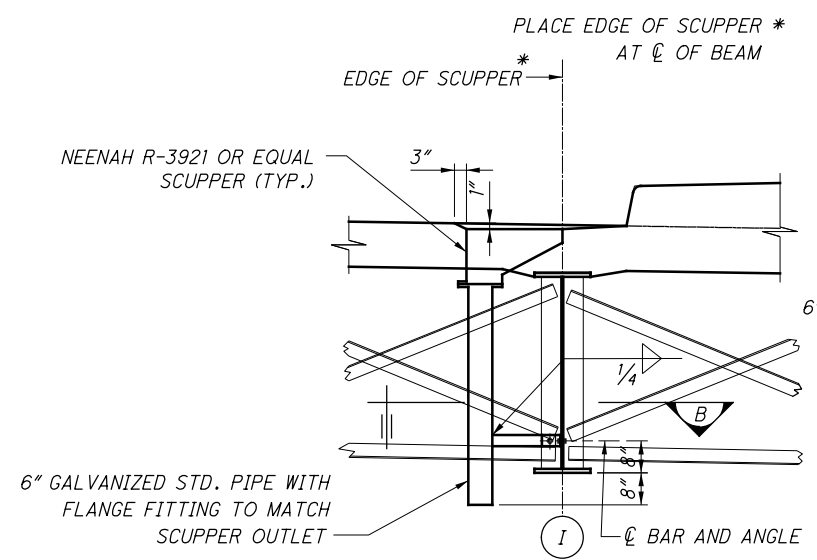
DESIGNED	SAT	CHECKED	DUC
DRAWN	SAT	REVISED	
REVIEWED	DGN	STRUCTURE FILE NUMBER	1812556
DATE	3-1-17		



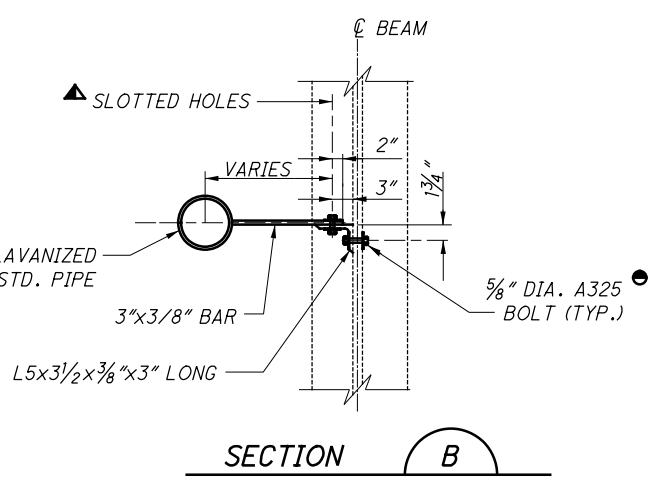
MATCHLINE B-B



PLAN



TYPICAL SCUPPER DETAIL



SECTION B

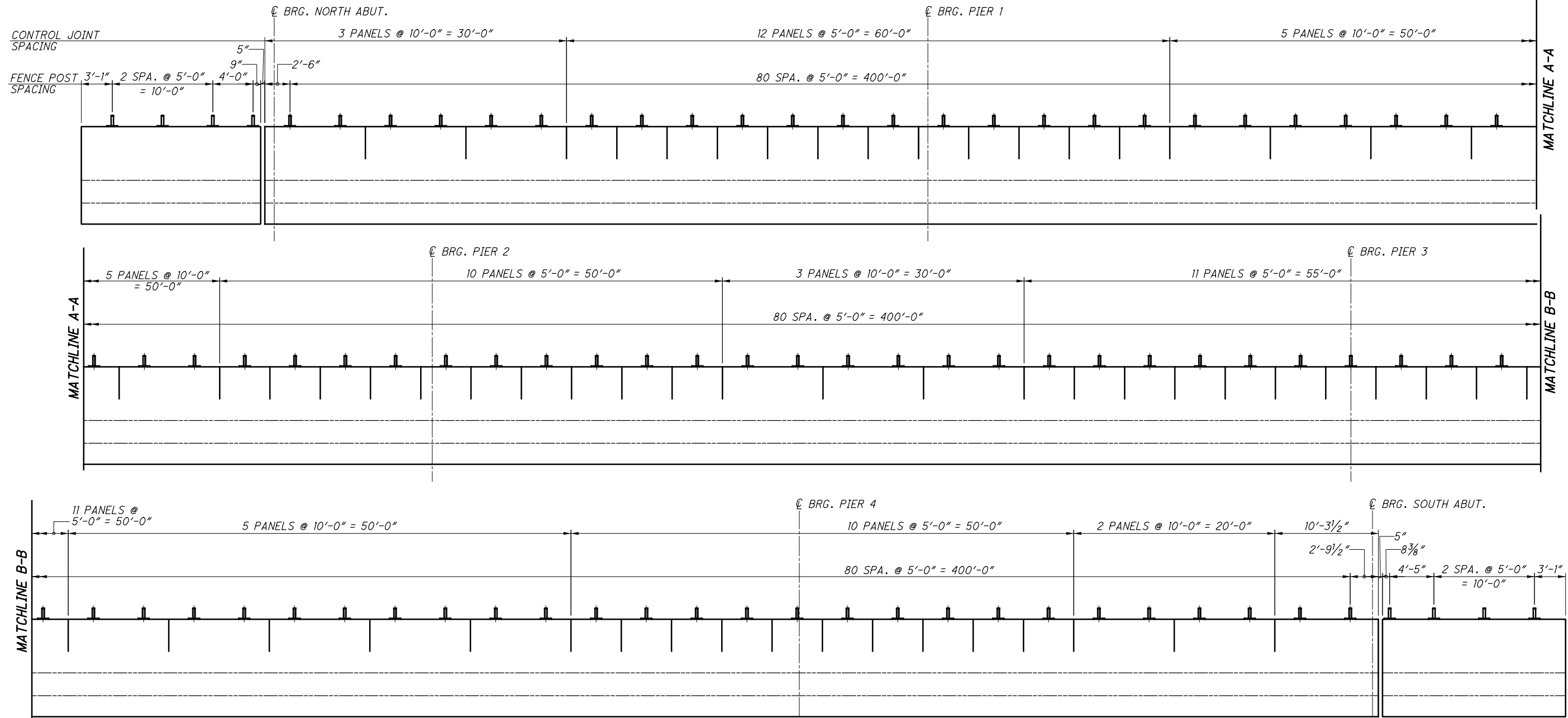
- ▲ SEE FASTENER NOTE NO. 1 ON STD. DWG. GSD-1-96.
- SEE FASTENER NOTE NO. 2 ON STD. DWG. GSD-1-96.

NOTES:

1. FOR TRANSVERSE SECTION INCLUDING ADDITIONAL SIDEWALK REINFORCING DETAILS, SEE SHT. NO. [27/39].
2. THE FOUR (4) EXISTING SCUPPERS AT THE SOUTHWEST CORNER OF THE BRIDGE AT THE TOE OF THE EXISTING CURB SHALL BE REPLACED IN KIND AT THE TOE OF THE NEW CURB ACCORDING TO THE DETAILS AS DEPICTED ON THIS SHEET AND AT THE LOCATIONS SHOWN ON SHEET [23/39]. THE TYPE OF SCUPPER SHALL BE AS SHOWN, OR APPROVED EQUAL. PAYMENT FOR ALL WORK TO FURNISH AND INSTALL THE SCUPPERS PER THE PLAN SHALL BE INCLUDED WITH ITEM 518 - SCUPPER, INCLUDING SUPPORTS, AS PER PLAN.

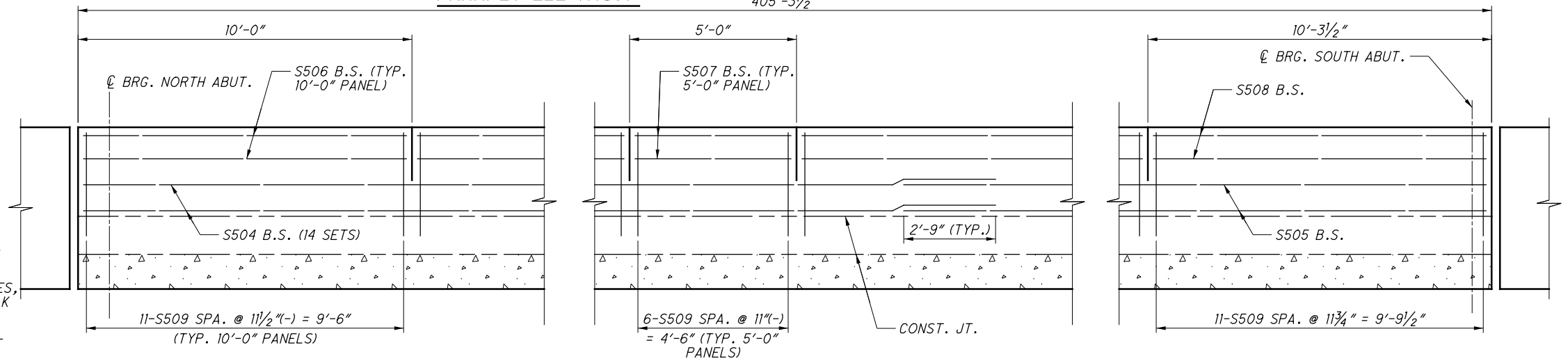
\\AKRINDA\DATA\2016\201605\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955\SCUPP002.DGN
 3/1/2017 3:44:01 PM GDDTV81STD.LUSER

 GPD GROUP <small>Class, P.E., Schomer, Burns & DeLawa, Inc. 3951 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.318.3344 Copyright © Class, P.E., Schomer, Burns & DeLawa, Inc. 2015</small>	DESIGN AGENCY	DATE 3-1-17	REVISIONS DGN STRUCTURE FILE NUMBER 1812556	DRAWN SAT	CHECKED DUC
SIDEWALK REINFORCING DETAILS BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480					
CUY-TRANSPORTATION BLVD. 80974 PID No. 80974					
31 / 39					
(217 / 225)					



PARAPET ELEVATION

405'-3 1/2"



PARAPET DETAILS

NOTES:

- FOR DETAILS NOT SHOWN, SEE STANDARD DRAWINGS BR-2-15 & VPF-1-90.
- FOR ABUTMENT RAILING REINFORCING, SEE SHT. NOS. [12/39] & [15/39].
- ITEM 607- VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN: THIS ITEM SHALL BE AS PER THE DETAILS IN THE PLAN WITH THE APPLICABLE PORTIONS OF STANDARD DRAWING VPF-1-90 AND THE MANUFACTURER'S RECOMMENDATIONS.

THE ANCHORS SHALL BE CAST IN PLACE WITH 7" MINIMUM EMBEDMENT.

AT LOCATIONS WHERE THE FENCE SPANS ACROSS THE EXPANSION JOINT, DO NOT INSTALL LINE RAILS AND EXPANSION JOINT SLEEVES; HOWEVER, THE FABRIC SHALL REMAIN CONTINUOUS ACROSS THE EXPANSION JOINT.

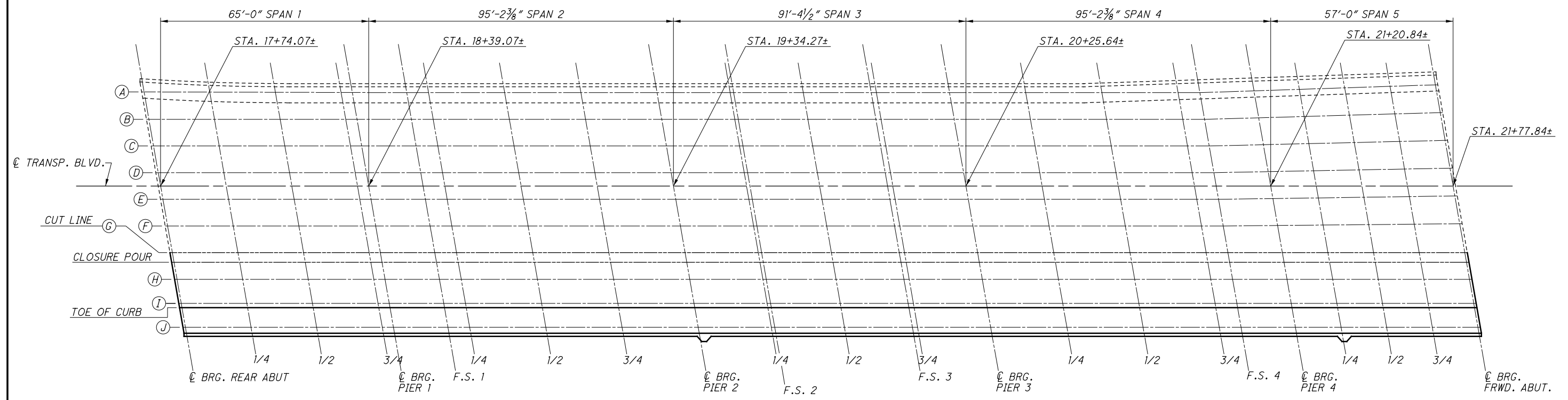
THE COLOR OF THE FENCE FABRIC, RAILS, POSTS, PLATES, TIE WIRES, AND ADDITIONAL VISUAL HARDWARE AND CAULK SHALL BE BLACK.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER LINEAR FOOT FOR ITEM 607 - VANDAL PROTECTION FENCE 6' STRAIGHT, COATED FABRIC, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

\\AKR\BNA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955\PCIPR003.DGN
 3/1/2017 3:44:29 PM GDDTV81STD_USER

DESIGNED	SAT	CHECKED	DJC
DRAWN	SAT	REVIEWED	DGN
DATE	3-1-17	STRUCTURE FILE NUMBER	1812556

\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955SD0065.DGN
 3/1/2017 3:56:01 PM GDDTV81STD_USER



ELEVATION LINE LOCATION PLAN



NOTES:
 FOR ELEVATION TABLES, SEE SHT. NOS. [34/39] & [35/39].

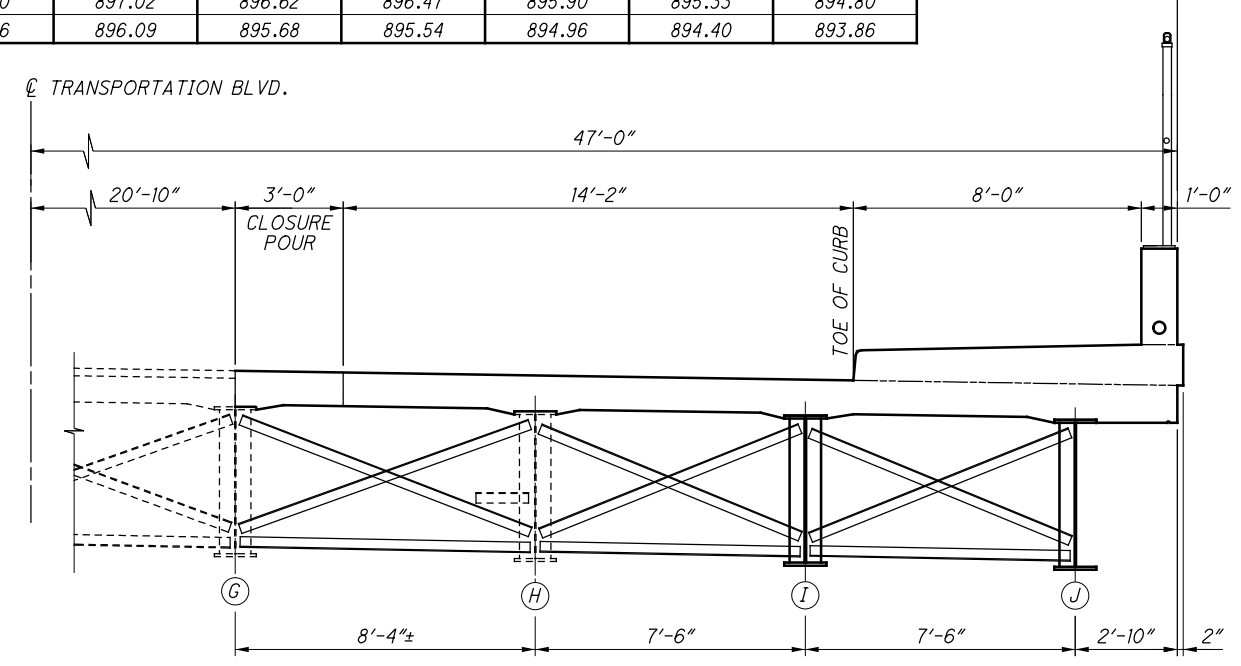
DESIGN AGENCY GPD GROUP <small>Class, P.E., Schomer, Burns & DeHaven, Inc. 5995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.318.3544 Copyright © 2015, P.E. Schomer, Burns & DeHaven, Inc. 2015</small>	DATE 3-1-17
	REVIEWED DGN STRUCTURE FILE NUMBER 1812556
DRAWN RFV	REVISIONS REVISED
DESIGNED REV CHECKED DJC	DATE 3-1-17
ELEVATION LINE LOCATION PLAN BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480	
CUY - TRANSPORTATION BLVD. PID No. 80974	
33 / 39	
219 225	

\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955SD003.DGN
 3/1/2017 3:55:05 PM GDDTV81STD_USER

DECK ELEVATIONS TABLE											
SPAN POINT	N.A. BRGS.	SPAN 1			PIER 1	SPAN 2				PIER 2	
		1/4	1/2	3/4		F.S. 1	1/4	1/2	3/4		
CUT LINE/ GIRDER G	ELEVATIONS	17+77.72	17+98.22	18+18.72	18+39.22	18+42.72	18+59.72	18+66.52	18+90.32	19+14.12	19+37.92
	A	898.95	898.46	898.00	897.55	897.47	897.07	896.90	896.31	895.76	895.26
	B										
	C										
	D										
	E										
	F										
CLOSURE POUR	ELEVATIONS	17+78.25	17+98.75	18+19.25	18+39.75	18+43.25	18+60.25	18+67.05	18+90.85	19+14.65	19+38.45
	A	898.88	898.40	897.94	897.49	897.42	897.00	896.84	896.24	895.70	895.20
	B										
	C										
	D										
	E	898.88	898.42	897.96	897.49	897.42	897.05	896.88	896.31	895.74	895.20
	F										
GIRDER H	ELEVATIONS	17+79.18	17+99.68	18+20.18	18+40.68	18+44.18	18+61.18	18+67.98	18+91.78	19+15.58	19+39.38
	A	898.80	898.30	897.83	897.39	897.32	896.90	896.74	896.14	895.59	895.10
	B										
	C										
	D										
	E	898.80	898.32	897.85	897.39	897.32	896.95	896.78	896.20	895.63	895.10
	F	897.86	897.38	896.91	896.46	896.38	896.01	895.84	895.27	894.69	894.16
GIRDER I	ELEVATIONS	17+80.50	18+01.00	18+21.50	18+42.00	18+45.50	18+62.50	18+69.30	18+93.10	19+16.90	19+40.70
	A	898.64	898.15	897.68	897.24	897.17	896.75	896.59	895.98	895.45	894.95
	B										
	C										
	D										
	E	898.64	898.16	897.70	897.25	897.17	896.78	896.63	896.05	895.49	894.95
	F	897.71	897.23	896.76	896.31	896.23	895.84	895.69	895.11	894.55	894.01
TOE OF CURB	ELEVATIONS	17+80.73	18+01.23	18+21.73	18+42.23	18+45.73	18+62.73	18+69.53	18+93.33	19+17.13	19+40.93
	A	898.62	898.12	897.65	897.22	897.15	896.72	896.56	895.95	895.42	894.92
	B										
	C										
	D										
	E	898.62	898.14	897.67	897.22	897.15	896.75	896.60	896.03	895.46	894.92
	F										
GIRDER J	ELEVATIONS	17+81.81	18+02.31	18+22.81	18+43.31	18+46.81	18+63.81	18+70.61	18+94.41	19+18.21	19+42.01
	A	898.49	898.00	897.53	897.10	897.02	896.59	896.43	895.83	895.30	894.80
	B										
	C										
	D										
	E	898.49	898.03	897.55	897.10	897.02	896.62	896.47	895.90	895.33	894.80
	F	897.55	897.09	896.61	896.16	896.09	895.68	895.54	894.96	894.40	893.86

NOTES:

- SCREED ELEVATIONS SHOWN FOR CLOSURE POUR C.J., TOE OF CURB AND GIRDERS "H", "I" & "J" REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO THE DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
- TOP OF HAUNCH ELEVATIONS SHOWN FOR GIRDERS "H", "I" & "J" REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
- FINAL DECK SURFACE ELEVATIONS SHOWN FOR CLOSURE POUR C.J., TOE OF CURB AND GIRDERS "H", "I" & "J" REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.
- THE VALUES SHOWN IN THE DECK ELEVATION TABLES ON THIS SHEET AND TO FOLLOW ARE BASED ON INTERPOLATIONS OF ACTUAL FIELD SURVEY ELEVATIONS OF THE EXISTING DECK ALONG THE PROPOSED CUT LINES. ELEVATIONS AT THE CLOSURE POUR C.J., TOE OF CURB AND GIRDERS "H", "I" & "J" WERE DETERMINED BY EXTENDING THE EXISTING CROSS-SLOPE OF 0.016 OUT TO EACH LOCATION FROM THE DECK SLAB CUT LINE. THE CONTRACTOR SHALL FIELD VERIFY THE ELEVATIONS.
- FOR THE ELEVATIONS AT THE CLOSURE POUR C.J. AND EXISTING GIRDER "H" SURVEY THE BOTTOM OF EXISTING GIRDER "H" PRIOR TO DECK REMOVAL AND AFTER DECK REMOVAL. COMPUTE THE AMOUNT OF REBOUND FOR THIS GIRDER BY SUBTRACTING THE ELEVATIONS BEFORE REMOVAL (B) FROM THE ELEVATIONS AFTER REMOVAL (C). ADD THE REBOUND TO THE FINAL DECK SURFACE ELEVATIONS TO DETERMINE THE DECK SCREED ELEVATIONS. THE COST OF SURVEYING IS CONSIDERED INCIDENTAL TO THE DECK CONSTRUCTION AND SHALL BE INCLUDED WITH ITEM 511 - CLASS QC2 CONCRETE, BRIDGE DECK.



ELEVATION LINE LOCATION

LEGEND

- A = FINAL DECK SURFACE ELEVATION
- B = BOTTOM OF GIRDER ELEVATION BEFORE DECK REMOVAL
- C = BOTTOM OF GIRDER ELEVATION AFTER DECK REMOVAL
- D = REBOUND = C - B
- E = SCREED ELEVATION = A + D
- F = TOP OF HAUNCH ELEVATION = E - 11"

DESIGN AGENCY: **GPD GROUP**
Class, P.E., Schaner, Burns & Dehaven, Inc.
 3095 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.318.3544
 Copyright © Class, P.E., Schaner, Burns & Dehaven, Inc. 2015

DATE	3-1-17
REVIEWED	DGN
DRAWN	RFV
DESIGNED	RFV
CHECKED	DJC
STRUCTURE FILE NUMBER	1812556

ELEVATION LINE LOCATION & TABLE
 BRIDGE NO. CUY-480-1955
 TRANSPORTATION BOULEVARD OVER I-480

CUY - TRANSPORTATION BLVD.
 PID No. 80974

34 / 39
 220
 225

\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955SD000.dgn
 3/1/2017 3:55:32 PM GDDTV81STD_USER

DECK ELEVATIONS TABLE

SPAN POINT		SPAN 3						PIER 3	SPAN 4				PIER 4	SPAN 5			S.A. BRGS.
		1/4	F.S. 2	1/2	F.S. 3	3/4	1/4		1/2	3/4	F.S. 4	1/4		1/2	3/4		
CUT LINE/GIRDER G	ELEVATIONS	19+60.76	19+61.83	19+83.61	20+04.82	20+06.45	20+29.29	20+53.09	20+76.89	21+00.69	21+07.49	21+24.48	21+38.72	21+52.95	21+67.19	21+81.43	
	A	894.70	894.67	894.14	893.65	893.62	893.11	892.53	891.95	891.37	891.21	890.83	890.47	890.13	889.78	889.44	
	B																
	C																
	D																
	E																
	F																
CLOSURE POUR	ELEVATIONS	19+61.29	19+62.35	19+84.13	20+05.35	20+06.97	20+29.82	20+53.62	20+77.42	21+01.22	21+08.02	21+25.02	21+39.27	21+53.52	21+67.77	21+82.02	
	A	894.64	894.61	894.08	893.59	893.56	893.05	892.46	891.88	891.31	891.15	890.76	890.41	890.07	889.72	889.37	
	B																
	C																
	D																
	E	894.65	894.63	894.12	893.61	893.58	893.05	892.50	891.96	891.36	891.18	890.76	890.42	890.08	889.73	889.37	
	F																
GIRDER H	ELEVATIONS	19+62.22	19+63.29	19+85.07	20+06.28	20+07.91	20+30.75	20+54.55	20+78.35	21+02.15	21+08.95	21+25.95	21+40.20	21+54.45	21+68.70	21+82.95	
	A	894.84	894.51	893.99	893.50	893.46	892.96	892.36	891.78	891.21	891.05	890.67	890.31	889.97	889.62	889.26	
	B																
	C																
	D																
	E	894.85	894.53	894.02	893.52	893.48	892.96	892.40	891.85	891.26	891.08	890.67	890.32	889.98	889.62	889.26	
	F	893.91	893.59	893.08	892.58	892.54	892.02	891.46	890.91	890.32	890.14	889.73	889.38	889.04	888.69	888.33	
GIRDER I	ELEVATIONS	19+63.54	19+64.60	19+86.38	20+07.60	20+09.23	20+32.07	20+55.87	20+79.67	21+03.47	21+10.27	21+27.27	21+41.52	21+55.77	21+70.02	21+84.27	
	A	894.39	894.36	893.84	893.35	893.32	892.81	892.20	891.63	891.06	890.90	890.51	890.16	889.82	889.46	889.11	
	B																
	C																
	D																
	E	894.39	894.37	893.87	893.36	893.32	892.81	892.25	891.70	891.11	890.93	890.51	890.17	889.82	889.47	889.11	
	F	893.46	893.44	892.93	892.43	892.38	891.87	891.31	890.77	890.17	890.00	889.58	889.23	888.88	888.53	888.17	
TOE OF CURB	ELEVATIONS	19+63.77	19+64.84	19+86.62	20+07.83	20+09.46	20+32.30	20+56.10	20+79.90	21+03.70	21+10.50	21+27.50	21+41.75	21+56.00	21+70.25	21+84.50	
	A	894.36	894.33	893.81	893.32	893.29	892.78	892.17	891.60	891.03	890.87	890.49	890.14	889.79	889.44	889.08	
	B																
	C																
	D																
	E	894.37	894.34	893.84	893.33	893.30	892.78	892.22	891.68	891.08	890.91	890.49	890.14	889.79	889.44	889.08	
	F																
GIRDER J	ELEVATIONS	19+64.86	19+65.92	19+87.70	20+08.91	20+10.54	20+33.38	20+57.18	20+80.98	21+04.78	21+11.58	21+28.58	21+42.83	21+57.08	21+71.33	21+85.58	
	A	894.23	894.21	893.69	893.20	893.17	892.66	892.05	891.47	890.91	890.75	890.36	890.01	889.66	889.31	888.95	
	B																
	C																
	D																
	E	894.24	894.22	893.71	893.21	893.17	892.66	892.09	891.55	890.95	890.78	890.36	890.01	889.66	889.32	888.95	
	F	893.30	893.29	892.78	892.28	892.24	891.72	891.15	890.61	890.01	889.85	889.42	889.08	888.73	888.38	888.02	

LEGEND

- A = FINAL DECK SURFACE ELEVATION
- B = BOTTOM OF GIRDER ELEVATION BEFORE DECK REMOVAL
- C = BOTTOM OF GIRDER ELEVATION AFTER DECK REMOVAL
- D = REBOUND = C - B
- E = SCREED ELEVATION = A + D
- F = TOP OF HAUNCH ELEVATION = E - 11"



DESIGN AGENCY
GPD GROUP
 Civil, P.E., Schaner, Burns & Dehaven, Inc.
 3095 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.318.5544
 Copyright © 2015, Schaner, Burns & Dehaven, Inc. 2015

DESIGNED
 REV
 CHECKED
 DUC

DRAWN
 RFV
 REVISED

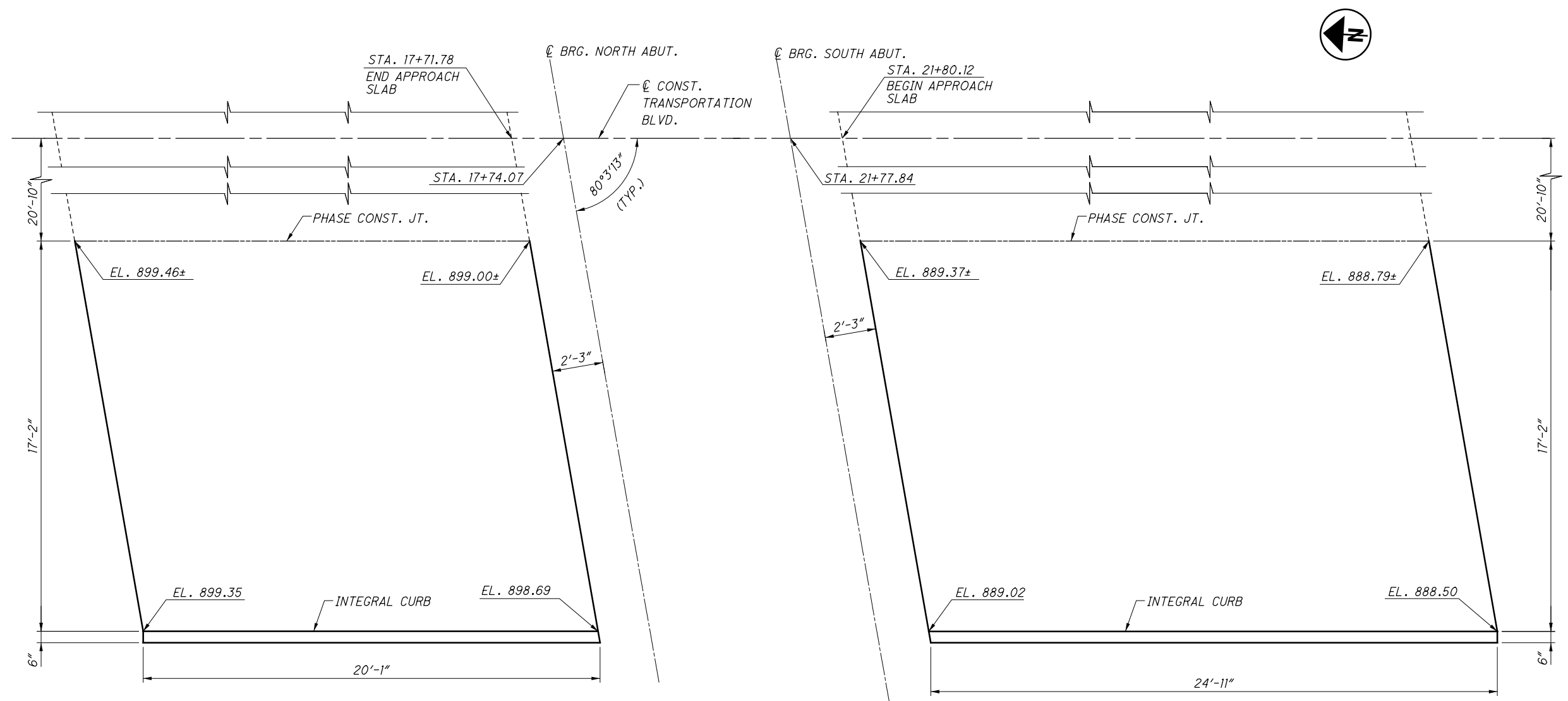
REVIEWED
 DGN
 STRUCTURE FILE NUMBER
 1812556

DATE
 3-1-17

ELEVATION TABLE
 BRIDGE NO. CUY-480-1955
 TRANSPORTATION BOULEVARD OVER I-480

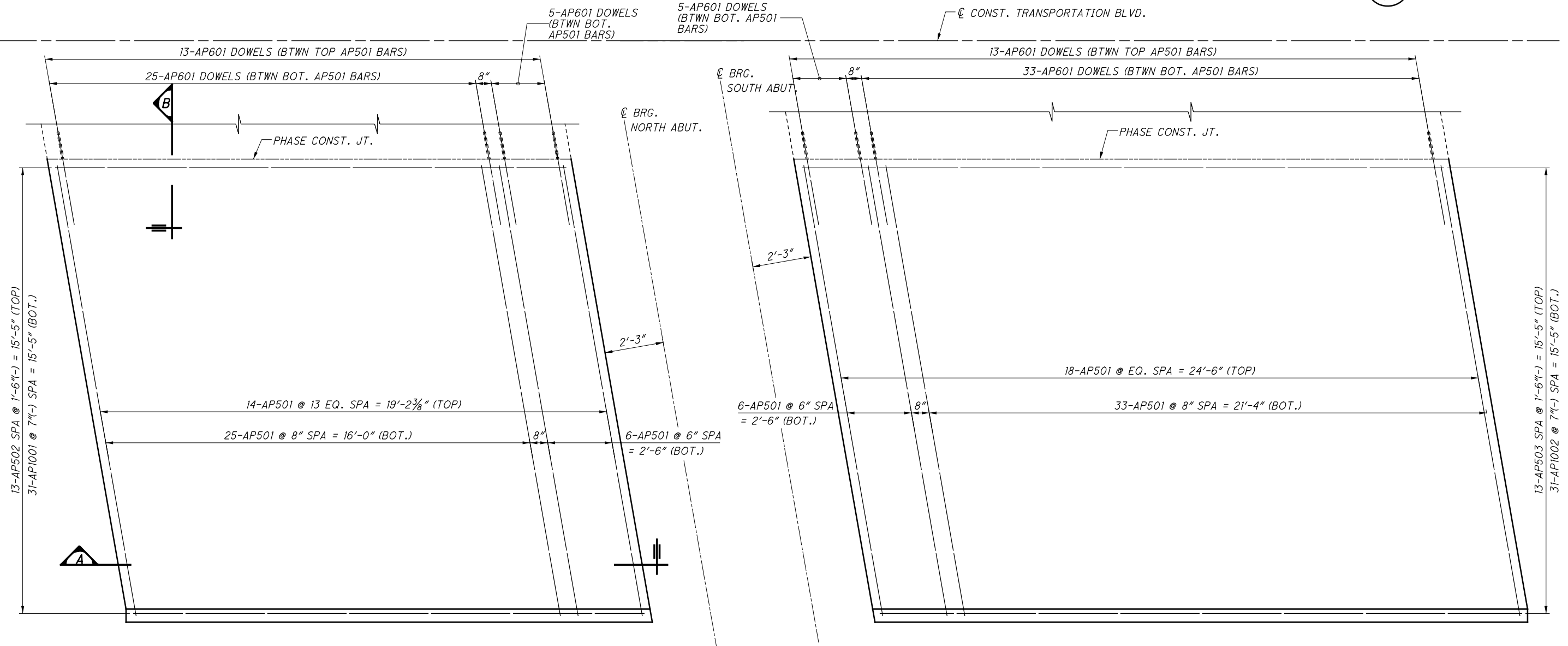
**CUY -
 TRANSPORTATION
 BLVD.
 PID No. 80974**

\\AKRNGA\DATA\2016\2016051\CUY\B0974\STRUCTURES\CUY-480-195\SHEETS\480-195\CHD001.DGN
 3/1/2017 3:46:49 PM GDDTV81STD_USER

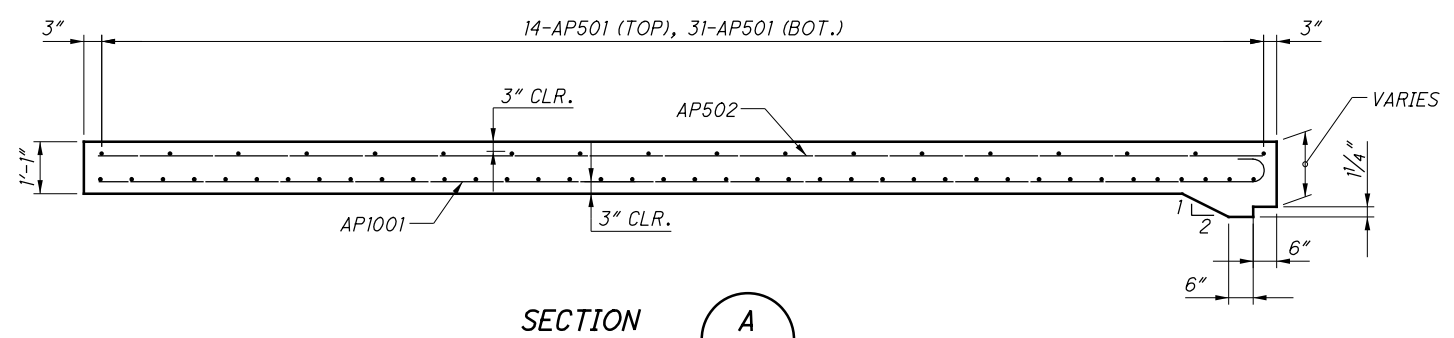
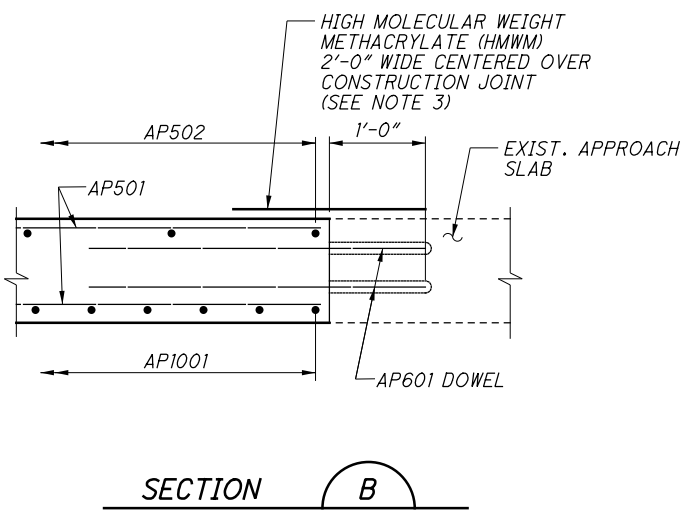


APPROACH SLAB GEOMETRY PLAN

 GPD GROUP <small>3995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.318.3344 Copyright © 2015, GPD Group, Inc.</small>	DESIGNED	DRAWN	REVIEWED	DATE
	RFV	RFV	DGN	3-1-17
CHECKED	REVISED	STRUCTURE FILE NUMBER	1812556	
DUC				
APPROACH SLAB GEOMETRY PLAN BRIDGE NO. CUY-480-1955 TRANSPORTATION BOULEVARD OVER I-480				
CUY - TRANSPORTATION BLVD. PID No. 80974				
36 / 39 222 225				



APPROACH SLAB REINFORCING PLAN



NOTES:

1. DOWELS PROPOSED TO TIE THE PROPOSED PORTIONS OF THE APPROACH SLAB TO THE EXISTING SHALL BE INCLUDED FOR PAYMENT WITH ITEM 510 - DOWEL HOLES WITH NONSHRINK, NON METALLIC GROUT.
2. FOR DETAILS NOT SHOWN, SEE STD. DWG. AS-1-15.
3. THE HMWM SEALER ON THE LONGITUDINAL CONSTRUCTION JOINT ON THE APPROACH SLAB SHALL BE PAID FOR UNDER ITEM - 512 SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN.

DATE	3-1-17
REVIEWED	DGN
DESIGNED	RFV
CHECKED	DJC
STRUCTURE FILE NUMBER	1812556

APPROACH SLAB DETAILS
 BRIDGE NO. CUY-480-1955
 TRANSPORTATION BOULEVARD OVER I-480

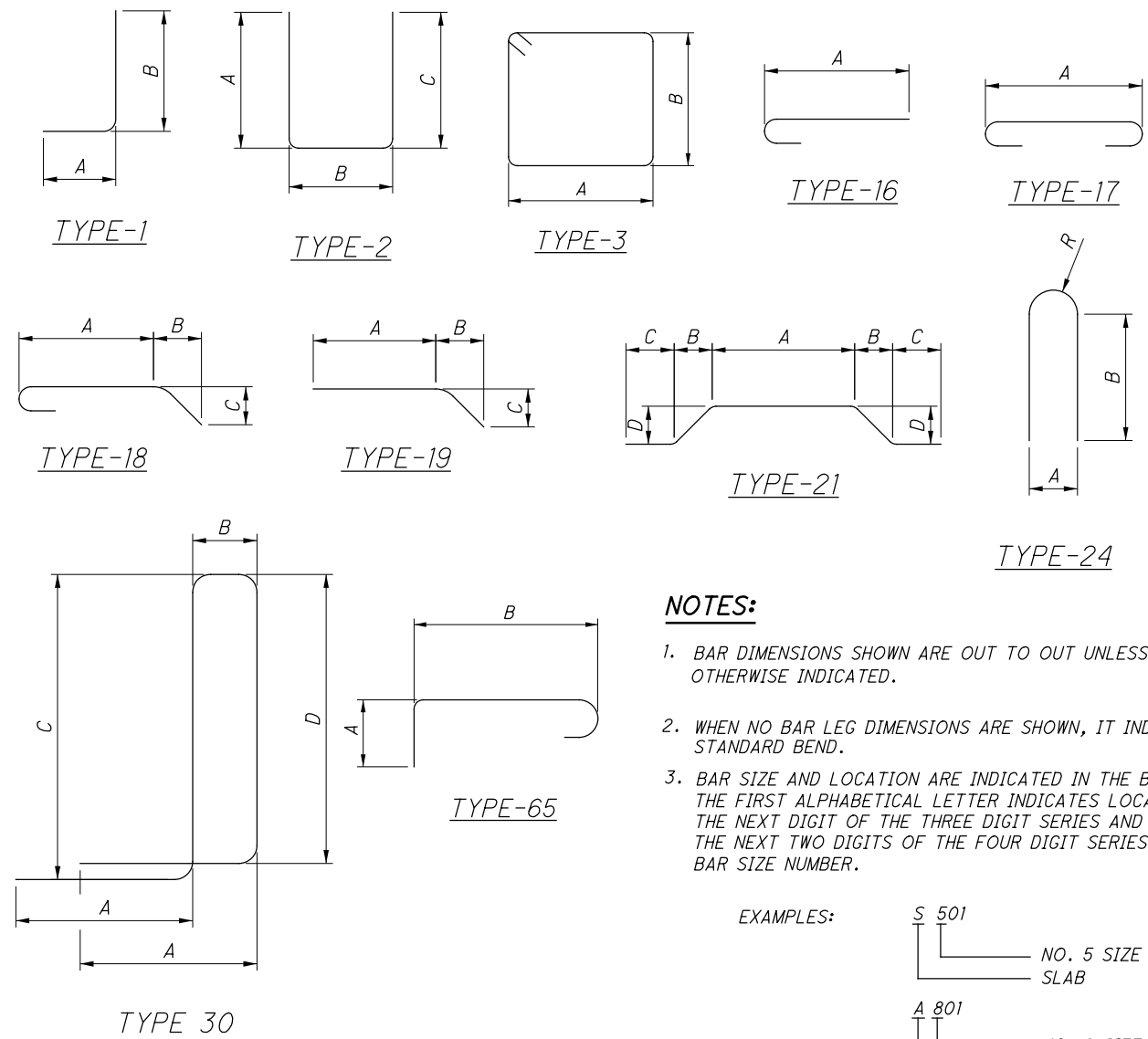
CUY - TRANSPORTATION BLVD.
 PID No. 80974

\\AKR\BNA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955CHD002.DGN
 3/1/2017 3:47:19 PM GDDTV81STD_USER

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						INC.
	REAR	FORWARD	TOTAL				A	B	C	D	E	R	
ABUTMENTS													
A501	9		9	16'-3"	153	STR							
A502	23	23	46	3'-8"	176	STR							
A503	10	11	21	6'-6"	142	2	1'-8"	3'-5"	1'-8"				
A504		12	12	8'-1"	101	1	7'-5"	0'-10"					
A505		9	9	15'-8"	147	STR							
A506	4	4	8	7'-9"	65	STR							
A507	1	1	2	17'-2"	36	STR							
A508		11	11	10'-2"	117	3	1'-7"	3'-2"					
A509	5	5	10	11'-9"	122	STR							
A510	9		9	17'-10"	167	STR							
A511		2 SR OF 3	2 SR OF 3	9'-7" TO 15'-2"	77	STR						2'-9 1/2"	
A512		2	2	11'-8"	24	19	9'-0"	2'-4"	1'-3"				
A513	14	14	28	4'-11"	144	2	2'-0"	1'-2"	2'-0"				
A514		9	9	17'-6"	164	STR							
A515	18	19	37	9'-9"	376	2	4'-8"	0'-8"	4'-8"				
A516	12		12	8'-9"	110	1	8'-1"	0'-10"					
A517	11		11	14'-0"	161	STR							
A518		3	3	17'-5"	54	19	16'-1"	1'-4"	0'-4"				
A519	2		2	11'-1"	23	19	8'-6"	2'-5"	1'-0"				
A520	2 SR OF 3		2 SR OF 3	10'-0" TO 17'-4"	86	STR						3'-8"	
A521	11		11	13'-0"	149	3	3'-2"	3'-0"					
A522	3		3	18'-1"	57	19	16'-9"	1'-4"	0'-4"				
A523	5		5	11'-11"	62	STR							
A524	8		8	7'-3"	60	STR							
A525		5	5	11'-5"	60	STR							
A526		8	8	6'-1"	51	STR							
A601		11	11	8'-5"	139	2	1'-8"	5'-5"	1'-8"				
A602	12	8	20	4'-3"	128	STR							
A603		7	7	14'-6"	152	2	7'-7"	5'-5"	1'-10"				
A604	3	2	5	10'-8"	80	STR							
A605		2	2	6'-9"	20	STR							
A606		8	8	2'-9"	33	1	1'-11"	1'-0"					
A607	6	6	12	4'-8"	84	STR							
A608	10	10	20	8'-3"	248	2	3'-7"	1'-5"	3'-7"				
A609	10	10	20	6'-5"	193	2	2'-11"	0'-11"	2'-11"				
A610	14	15	29	11'-11"	519	2	5'-5"	1'-5"	5'-5"				
A611	7	8	15	10'-7"	238	2	4'-9"	1'-5"	4'-9"				
A612		8	8	14'-4"	172	STR							
A613		13	13	11'-8"	228	1	1'-0"	10'-10"					
A614		13	13	6'-11"	135	STR							
A615	1 SR OF 6		1 SR OF 6	6'-2" TO 14'-4"	92	2	2'-8" TO 6'-9"	1'-2"	2'-8" TO 6'-9"			0'-9 3/4"	
A616	11		11	11'-3"	186	2	3'-1"	5'-5"	3'-1"				
A617			2 SR OF 4	13'-10" TO 14'-3"	169	STR						0'-1 3/4"	
A618	2		2	9'-5"	28	STR							
A619	2		2	6'-1"	18	STR							

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						INC.
	REAR	FORWARD	TOTAL				A	B	C	D	E	R	
ABUTMENTS CONTINUED													
A620	8		8	16'-8"	200	2	8'-4"	5'-5"	3'-3"				
A621	10		10	14'-7"	219	STR							
A622	13		13	2'-3"	44	1	1'-0"	1'-5"					
A623	1 SR OF 6		1 SR OF 6	6'-2" TO 13'-2"	87	2	2'-8" TO 6'-2"	1'-2"	2'-8" TO 6'-2"			0'-8 1/2"	
A624	13		13	6'-5"	125	STR							
A625	8		8	2'-11"	35	1	2'-1"	1'-0"					
A626		2	2	10'-0"	30	STR							
A627	7	8	15	4'-9"	107	2	0'-6"	1'-5"	3'-2"				
A628	1		1	14'-3"	21	STR							
A629	1		1	13'-10"	21	STR							
A630		19	19	15'-2"	433	STR							
A631	1		1	11'-11"	18	2	3'-1"	6'-1"	3'-1"				
A633		1	1	9'-0"	14	2	1'-8"	6'-0"	1'-8"				
A801	6	6	12	4'-10"	155	18	2'-8"	1'-0"	1'-0"				
				ABUTMENT TOTAL =	7255	LBS							

BAR BENDING DIAGRAM



\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480-1955\DR01.DGN
 3/1/2017 3:52:33 PM GDDTV81STD_USER

DESIGN AGENCY
GPD GROUP
 3951 Transportation Blvd., Suite 100, Cleveland, Ohio 44123 216.313.3344
 Copyright © GPD, PWS, Schomer, Burns & DeLaney, Inc. 2015

DATE
 3-1-17

REVIEWED
 DGN
 STRUCTURE FILE NUMBER
 1812556

DRAWN
 RFV
 REVISED

DESIGNED
 REV
 CHECKED
 DJC

REINFORCING SCHEDULE
 BRIDGE NO. CUY-480-1955
 TRANSPORTATION BOULEVARD OVER I-480

CUY-TRANSPORTATION BLVD.
 PID No. 80974

38 / 39

224
 225

\\AKRINDA\DATA\2016\2016051\CUY\80974\STRUCTURES\CUY-480-1955\SHEETS\480L-1955\DR201.DGN
 3/1/2017 3:52:51 PM GDDTV81STD_USER

MARK	NUMBER					LENGTH	WEIGHT	TYPE	DIMENSIONS						INC.
	PIER 1	PIER 2	PIER 3	PIER 4	TOTAL				A	B	C	D	E	R	
PIERS															
P401	14	14	12	12	52	3'-9"	130	65	0'-8"	2'-8"					
P501	38	34	30	28	130	10'-0"	1356	24	2'-8"	2'-11"				1'-4"	
P502	22	26	28	26	102	8'-5"	895	2	3'-0"	2'-8"	3'-0"				
P503	1	1		1	3	11'-4"	35	3	2'-8"	2'-8"					
P504	1	1		1	3	11'-6"	36	3	2'-9"	2'-8"					
P505	4	4	4	4	16	11'-8"	195	STR							
P506	4	4	4	4	16	7'-6"	125	19	4'-4"	2'-10"	1'-5"				
P507	2	2	2	2	8	10'-3"	86	STR							
P601	25	25	10	25	85	10'-0"	1277	17	8'-8"						
P602	14	14		14	42	14'-0"	883	17	12'-8"						
P603	7	7	7	7	28	12'-8"	533	STR							
P701	4	4	4	4	16	16'-9"	545	2	2'-9"	11'-7"	2'-9"				
P801			17		17	14'-4"	651	17	12'-8"						
P802			19		19	10'-4"	524	17	8'-8"						
P1001	26				26	26'-10"	3002	1	2'-0"	25'-2"					
P1002		26			26	24'-7"	2750	1	2'-0"	22'-11"					
P1003				26	26	21'-4"	2387	1	2'-0"	19'-8"					
P1101			36		36	22'-9"	4351	1	2'-3"	20'-10"					
PIER TOTAL =							19761	LBS							

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						INC.
					A	B	C	D	E	R	
DECK AND PARAPET											
S401	658	30'-0"	13186	STR							
S402	47	13'-0"	408	STR							
S501	408	8'-8"	3688	STR							
S502	407	2'-2"	920	2	0'-8"	1'-1"	0'-8"				
S503	407	2'-6"	1061	2	0'-8"	1'-5"	0'-8"				
S504	56	30'-0"	1752	STR							
S505	4	23'-6"	98	STR							
S506	72	9'-8"	726	STR							
S507	172	4'-8"	837	STR							
S508	4	9'-11"	41	STR							
S509	467	9'-2"	4424	30	1'-6"	0'-8"	3'-1"	2'-11"			
S510	8	10'-2"	85	2	4'-2"	2'-1"	4'-2"				
S511	8	3'-0"	25	2	0'-7"	2'-1"	0'-7"				
S512	8	4'-2"	35	STR							
S513	16	7'-9"	129	21	1'-4"	1'-10"	0'-6"	2'-1"			
S601	739	25'-10"	28674	STR							
S602	4 SR OF 7	3'-4" TO 23'-4"	561	STR						3'-4"	
S603	594	30'-0"	26766	STR							
S604	33	28'-2"	1396	STR							
S605	695	26'-6"	27663	16	25'-10"						
S606	88	34'-4"	4538	STR							
S607	44	35'-2"	2324	STR							
S608	44	29'-1"	1922	STR							
S609	1404	3'-7"	7557	STR							
DECK & PARAPET TOTAL =			128816	LBS							

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						INC.
	REAR	FORWARD	TOTAL				A	B	C	D	E	R	
APPROACH SLABS													
AP501	45	57	102	17'-5"	1853	STR							
AP502	13		13	19'-6"	264	STR							
AP503		13	13	24'-6"	332	STR							
AP601	43	51	94	3'-7"	506	STR							
API001	31		31	20'-11"	2790	16	19'-6"						
API002		31	31	25'-11"	3457	16	24'-6"						
APPROACH SLAB TOTAL =					9202	LBS							

NOTE: APPROACH SLAB REINFORCING INCLUDED WITH ITEM 526 FOR PAYMENT.

REINFORCING SCHEDULE

BRIDGE NO. CUY-480-1955
 TRANSPORTATION BOULEVARD OVER I-480

CUY - TRANSPORTATION BLVD.
 PID No. 80974

DESIGNED: REV. CHECKED: DJC
 DRAWN: RFV. REVISED:
 REVIEWED: DGN. STRUCTURE FILE NUMBER: 1812556
 DATE: 3-1-17

DESIGN AGENCY:
GPD GROUP
 Glenn, Pyle, Schomer, Burns & DeLaney, Inc.
 3995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.318.3344
 Copyright © Glenn, Pyle, Schomer, Burns & DeLaney, Inc. 2015