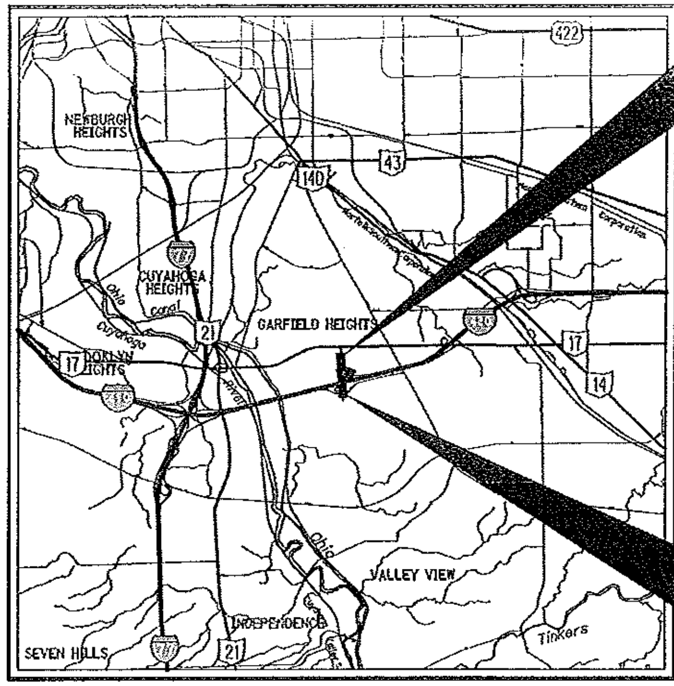
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
CUY-480/ TRANSPORTATION BLVD.
CITY OF GARFIELD HEIGHTS
CUYAHOGA COUNTY



LOCATION MAP

LATITUDE: N 41°24′ 47″ LONGITUDE: W 81°36′ 57″

SCALE IN MILES 0 1 2 3 4

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

DESIGN DESIGNATIONS

SEE SHEET 2

DESIGN EXCEPTIONS

NONE

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

INDEX OF SHEETS:

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.

ENGINEERS SEAL:
SHEETS 107A, 107B, 107C
SIGNED:
DATE: 5.25.17

ENGINEERS SEAL:
ALL SHEETS EXCEPT: 107A, 107B, 107C
SIGNED:
DATE: 05-25-17

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	7-16-10
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
				MT-99.20	7-19-13	TC-41.30	10-18-13	TC-83.20	7-15-16	HL-30.21	1-17-14	875	1-17-14
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		
		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		
MH-1.2	1-15-16	RB-1-55	7-19-13	MT-120.00	1-20-17	TC-52.10	10-18-13	DM-4.4	1-15-16	HL-60.12	7-15-16		
		WPF-1-90	7-17-15			TC-52.20	7-15-16						

APPROVED ______
DATE 5-26-17 MAYOR, CITY OF GARFIELD HEIGHTS

APPROVED ______
DATE 05/26/2017 ENGINEER, CITY OF GARFIELD HEIGHTS

APPROVED ______
DATE 05-25-17 DISTRICT DEPUTY DIRECTOR

APPROVED ______
DATE 6-5-17 DIRECTOR, DEPARTMENT OF TRANSPORTATION

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

FEDERAL PROJECT NO. E060 (401)
PID NO. 80974
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT N/A
CUY-480/ TRANSPORTATION BLVD.

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

UTILITY LINE LEGEND

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

EXISTING UTILITY SYMBOL LEGEND

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

PROPOSED UTILITY SYMBOL LEGEND

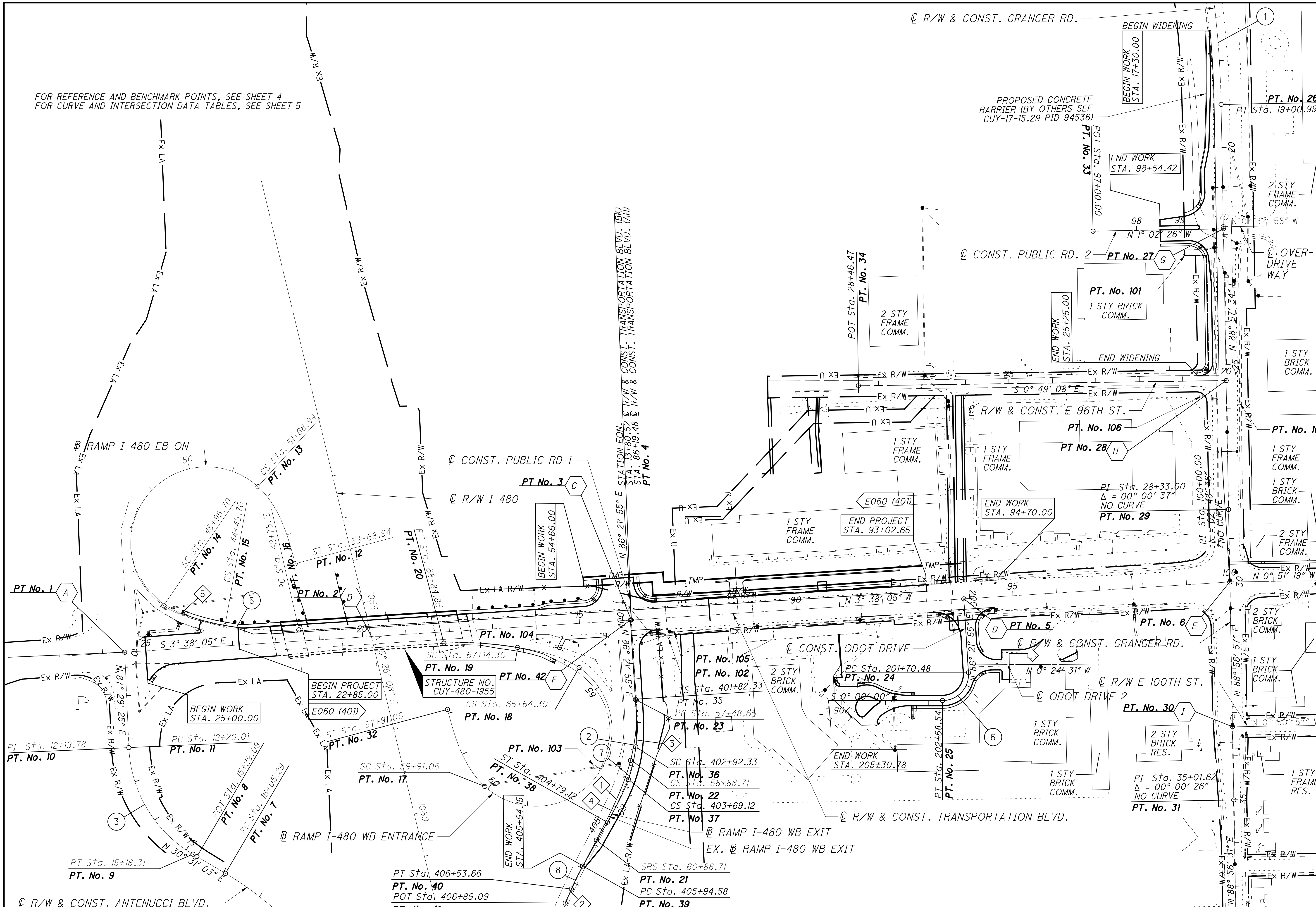
- = Proposed Catch Basins
- = Proposed Manhole
- = Manhole Adjusted To Grade
- = Proposed Water Valve
- = Proposed Fire Hydrant
- = Sanitary Manhole Adjusted To Grade
- = Proposed Traffic Pullbox
- = Proposed Conventional Luminaire
- = Proposed Lighting Pullbox
- = Proposed Decorative Luminaire
- = Proposed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

CALCULATED JMB CHECKED JJS

PLAN LEGEND & DESIGN DESIGNATION

CUY-480/ TRANSPORTATION BLVD.

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



N

0 50 100 200
HORIZONTAL SCALE IN FEET

CALCULATED JMB
CHECKED JJS

SCHEMATIC PLAN BEGIN TO END

CUY-480/ TRANSPORTATION BLVD.

\\AKRN04\DATA\2016\2016051\CUY\80974\ROADWAY\SHEETS\80974GB001.DGN
4/18/2017
11:47:21 AM
ODOTV8ISTD_USER

STATE PLANE GRID
PROJECT ADJUSTMENT FACTOR: 1.00010217

ALL COORDINATES LISTED ARE PROJECT COORDINATES

REFERENCE POINT TABLE

POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	636391.5467	2211078.9310	-	STA. 25+48.87 ℄ R/W & CONST. TRANSPORTATION BLVD.; STA. 10+00.00 ℄ R/W & CONST. ANTENUCCI BLVD.
2	636959.3584	2211042.8624	-	STA. 19+79.91 ℄ R/W & CONST. TRANSPORTATION BLVD.; STA. 1055+80.00 ℄ R/W I-480
3	637557.5427	2211004.8645	-	STA. 13+80.52 ℄ R/W & CONST. TRANSPORTATION BLVD.; STA. 55+64.08 ℄ R/W & CONST. PUBLIC RD. 1
4	637557.5427	2211004.8645	-	STA. 13+80.52 ℄ R/W & CONST. TRANSPORTATION BLVD. (BK); STA. 86+19.48 ℄ R/W & CONST. TRANSPORTATION BLVD. (AH)
5	638322.9901	2210956.2417	-	STA. 93+86.47 ℄ R/W & CONST. TRANSPORTATION BLVD.; STA. 200+00.00 ℄ CONST. ODOT DR.
6	638935.2859	2210917.3474	-	STA. 100+00.00 ℄ R/W & CONST. TRANSPORTATION BLVD.; STA. 29+99.99 ℄ R/W & CONST. GRANGER RD.
7	636623.4561	2211587.7451	-	PC STA. 16+05.29 ℄ R/W & CONST. ANTENUCCI BLVD.
8	636557.8118	2211549.0506	-	POT STA. 15+29.09 ℄ R/W & CONST. ANTENUCCI BLVD.
9	636548.5321	2211543.5806	-	PT STA. 15+18.31 ℄ R/W & CONST. ANTENUCCI BLVD.
10	636401.1704	2211298.5002	-	PI STA. 12+19.78 ℄ R/W & CONST. ANTENUCCI BLVD.
11	636401.1605	2211298.2749	-	PC STA. 12+20.01 ℄ R/W & CONST. ANTENUCCI BLVD.
12	636784.2046	2210875.1952	-	ST STA. 53+68.94 ℄ RAMP I-480 EB ON
13	636698.1171	2210697.8755	-	CS STA. 51+68.94 ℄ RAMP I-480 EB ON
14	636481.1778	2210971.5301	-	SC STA. 45+95.70 ℄ RAMP I-480 EB ON
15	636622.5285	2211017.9541	-	CS STA. 44+45.70 ℄ RAMP I-480 EB ON
16	636792.4138	2211027.4146	-	PC STA. 42+75.15 ℄ RAMP I-480 EB ON
17	637220.5995	2211387.8491	-	SC STA. 59+91.06 ℄ RAMP I-480 WB ON
18	637437.5388	2211114.1944	-	CS STA. 65+64.30 ℄ RAMP I-480 WB ON
19	637296.1880	2211067.7705	-	SC STA. 67+14.30 ℄ RAMP I-480 WB ON
20	637126.3033	2211058.3101	-	PT STA. 68+84.85 ℄ RAMP I-480 WB ON
21	637477.2085	2211511.2492	-	SRS STA. 60+88.71 EX. ℄ RAMP I-480 WB EXIT
22	637555.9502	2211327.8997	-	CS STA. 58+88.71 EX. ℄ RAMP I-480 WB EXIT
23	637569.2434	2211189.0632	-	PC STA. 57+48.65 EX. ℄ RAMP I-480 WB EXIT
24	638333.7978	2211126.3825	-	PC STA. 201+70.48 ℄ CONST. ODOT DR.
25	638273.9185	2211190.1862	-	PT STA. 202+68.54 ℄ CONST. ODOT DR.
26	638915.2990	2209818.5272	-	PT STA. 19+00.99 ℄ R/W & CONST. GRANGER RD.
27	638920.4951	2210104.6194	-	STA. 21+87.13 ℄ R/W & CONST. GRANGER RD.; STA. 100+00.00 ℄ CONST. PUBLIC RD. 2
28	638926.8379	2210453.8542	-	STA. 25+36.42 ℄ R/W & CONST. GRANGER RD.; STA. 20+00.00 ℄ R/W & CONST. E 96TH ST.
29	638932.2234	2210750.3858	-	PI STA. 28+33.00 ℄ R/W & CONST. GRANGER RD.
30	638941.3952	2211250.4313	-	STA. 33+33.13 ℄ R/W & CONST. GRANGER RD.; STA. 0+00.00 ℄ R/W E 100TH ST.
31	638944.4850	2211418.8920	-	PI STA. 35+01.62 ℄ R/W & CONST. GRANGER RD.
32	637134.5120	2211210.5294	-	ST STA. 57+91.06 ℄ RAMP I-480 EB ON
33	638620.5445	2210110.0671	-	POT STA. 97+00.00 ℄ CONST. PUBLIC RD. 2
34	638080.4535	2210465.9513	-	POT STA. 28+46.47 ℄ R/W & CONST. E 96TH ST.
35	637567.1057	2211186.9591	-	TS STA. 401+82.33 ℄ RAMP I-480 WB EXIT
36	937567.8792	2211296.8164	-	SC STA. 402+92.33 ℄ RAMP I-480 WB EXIT
37	637550.8670	2211371.5132	-	CS STA. 403+69.12 ℄ RAMP I-480 WB EXIT
38	637502.5977	2211470.2011	-	ST STA. 404+79.12 ℄ RAMP I-480 WB EXIT
39	637446.1018	2211570.8959	-	PC STA. 405+94.58 ℄ RAMP I-480 WB EXIT
40	637419.7754	2211623.7577	-	PT STA. 406+53.66 ℄ RAMP I-480 WB EXIT
41	637405.5596	2211656.2138	-	POT STA. 406+89.09 ℄ RAMP I-480 WB EXIT
42	637555.5467	2211004.9913	-	STA. 13+82.52 ℄ R/W & CONST. TRANSPORTATION BLVD.; STA. 400+00.00 ℄ RAMP I-480 WB EXIT

BENCHMARKS REFERENCE POINTS

POINT NUMBER	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
101	638831.7950	2210166.2930	891.97	22+47.18	89.80' RT	CAPPED IRON PIN (GRANGER RD.)
102	637643.0180	2211042.5230	910.59	87+02.40	43.00' RT	CAPPED IRON PIN (TRANSPORTATION BLVD.)
103	637473.5830	2211342.5310	892.93	62+97.56	15.60' LT	CAPPED IRON PIN (RAMP I-480 WB ENTRANCE)
104	637436.7670	2211058.1600	904.45	15+04.43	45.53' RT.	MAGNAIL
105	637657.5080	2211031.4310	909.98	87+17.56	32.85' RT.	MAGNAIL
106	638869.1720	2210490.5650	908.79	25+72.08	58.32' RT.	TRAVERSE POINT
107	638958.0460	2210505.8400	905.51	25+88.96	30.26' LT.	GOVCON - BRASS DISK W/ PUNCHMARK

CALCULATED JMB
CHECKED JJS

REFERENCE / BENCHMARK POINTS AND INTERSECTION DATA

CUY-480/
TRANSPORTATION BLVD.

INTERSECTION DATA TABLE	
A	STA. 25+48.87 ℄ R/W & CONST. TRANSPORTATION BLVD. STA. 10+00.00 ℄ R/W & CONST. ANTENUCCI BLVD.
B	STA. 19+79.91 ℄ R/W CONST. TRANSPORTATION BLVD. STA. 1055+80.00 ℄ R/W I-480
C	STA. 13+80.52/STA. 86+19.48 ℄ R/W & CONST TRANSPORTATION BLVD. STA. 55+64.08 ℄ CONST. PUBLIC RD. 1 STA. 55+64.08 EX. ℄ RAMP I-480 WB EXIT
D	STA. 93+86.47 ℄ R/W & CONST. TRANSPORTATION BLVD. STA. 200+00.00 ℄ CONST. ODOT DR.
E	STA. 100+00.00 ℄ R/W CONST. TRANSPORTATION BLVD. STA. 29+99.99 ℄ R/W & CONST. GRANGER RD.
F	STA. 13+82.52 ℄ R/W & CONST. TRANSPORTATION BLVD. STA. 400+00.00 ℄ RAMP I-480 WB EXIT
G	STA. 21+87.13 ℄ R/W & CONST. GRANGER RD. STA. 100+00.00 ℄ CONST. PUBLIC RD. 2
H	STA. 29+99.99 ℄ R/W & CONST. GRANGER RD. STA. 100+00.00 ℄ R/W & CONST. E 96TH ST.
I	STA. 33+33.13 ℄ R/W & CONST. GRANGER RD. STA. 0+00.00 ℄ R/W E 100th ST.

(1) P.I. Sta. 13+90.10, ℄ R/W & CONST. GRANGER RD.
Δ = 26° 00′ 00″ (RT)
Dc = 2° 30′ 00″
R = 2,291.83′
T = 529.11′
L = 1,040.00′
E = 60.28′
C = 1,031.10′
C.B. = N 75° 57′ 34″ E
PC = Sta. 8+60.99
PT = Sta. 19+00.99

(2) P.I. Sta. 58+19.28, EX. ℄ RAMP I-480 WB EXIT
Δ = 18° 12′ 28″ (RT)
Dc = 13° 00′ 00″
R = 440.74′
T = 70.63′
L = 140.06′
E = 5.62′
C = 139.47′
C.B. = S 84° 31′ 51″ E
PC = 57+48.65
CS = 58+88.71

(3) P.I.Sta. 13+82.80, ℄ R/W & CONST. ANTENUCCI BLVD.
Δ = 56° 58′ 22″ (LT)
Dc = 19° 05′ 55″
R = 300.00′
T = 162.79′
L = 298.31′
E = 41.32′
C = 286.17′
C.B. = N 59° 00′ 14″ E

(5) P.I. Sta. 43+60.83, ℄ RAMP I-480 EB ENTRANCE
Δ = 13° 38′ 39″ (RT)
Dc = 8° 00′ 00″
R = 716.20′
T = 85.68′
L = 170.55′
E = 5.11′
C = 170.15′
C.B. = S 3° 11′ 15″ W
PC = Sta. 42+75.15
PT = Sta. 44+45.70

(6) P.I. Sta. 202+34.42, ℄ CONST. ODOT DRIVE
Δ = 93° 38′ 05″ (RT)
Dc = 95° 29′ 35″
R = 60.00′
T = 63.93′
L = 98.05′
E = 27.68′
C = 87.50′
C.B. = S 46° 49′ 02″ E
PC = Sta. 201+70.48
PT = Sta. 202+68.54

(7) P.I. Sta. 403+33.79, ℄ RAMP I-480 WB EXIT
Δ = 32° 55′ 47″ (RT)
Dc = 17° 37′ 46″
R = 325.00′
Δc = 13° 32′ 14″ (RT)
Lc = 76.79′
Ts = 151.46′
E = 15.51′
C = 76.61′
C1 = C2 = 109.86′
C.B.1 = N 89° 35′ 48″ E
C.B. = S 77° 10′ 11″ E
C.B.2 = N 63° 56′ 10″ W
SC = Sta. 402+92.33
CS = Sta. 403+69.12

(8) P.I. Sta. 406+24.15, ℄ RAMP I-480 WB EXIT
Δ = 5° 38′ 30″ (LT)
Dc = 9° 32′ 57″
R = 600.00′
T = 29.56′
L = 59.08′
E = 0.73′
C = 59.05′
C.B. = S 63° 31′ 33″ E
PC = Sta. 405+94.58
PT = Sta. 406+53.66

(1) P.I. STA. 59+55.71, ℄ RAMP I-480 WB EXIT
Ls= 200.00′
s = 13° 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° 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° 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

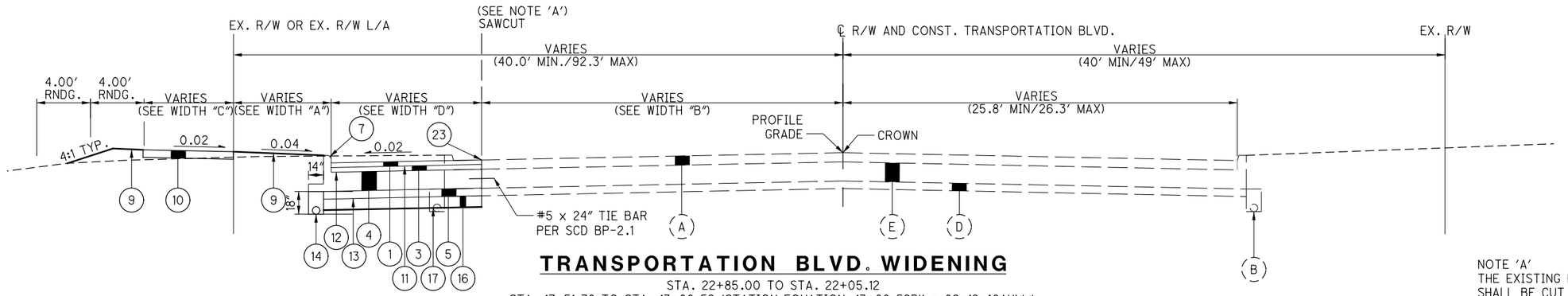
(4) P.I. STA. 404+05.89, ℄ RAMP I-480 WB EXIT
Ls= 110.00′
f s = 9° 41′ 46″
LT = 73.44′
ST = 36.77′
x = 109.69′
y = 6.19′
k = 54.95′
p = 1.55′
CS = Sta. 403+69.12
ST = Sta. 404+79.12

(5) P.I. STA. 45+46.68, ℄ RAMP I-480 EB ENTRANCE
Ls= 150.00′
f s = 24° 33′ 20″
LT = 100.98′
ST = 50.89′
x = 147.27′
y = 21.15′
k = 74.54′
p = 5.32′
SC = Sta. 44+45.70
CS = Sta. 45+95.70

CALCULATED JMB
CHECKED JJS

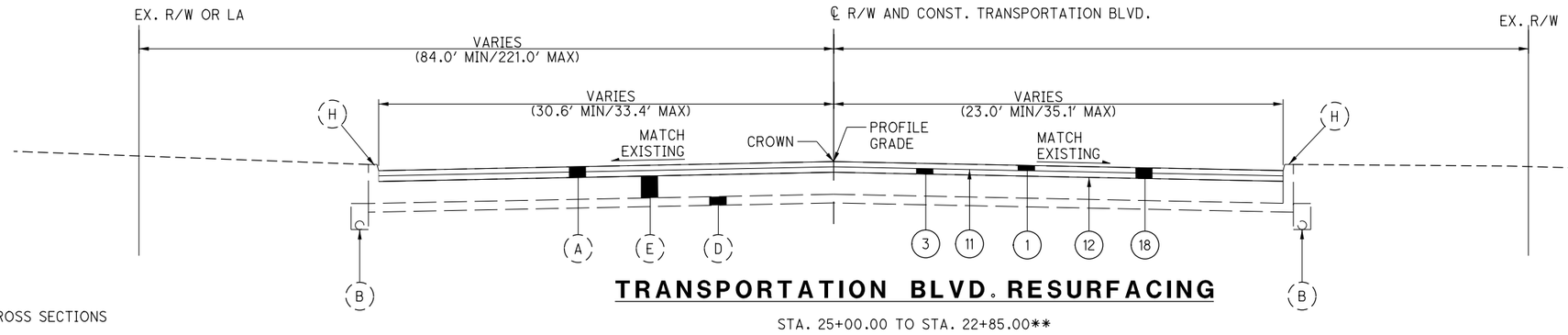
CURVE DATA

CUY-480/
TRANSPORTATION BLVD.



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



TRANSPORTATION BLVD. RESURFACING

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

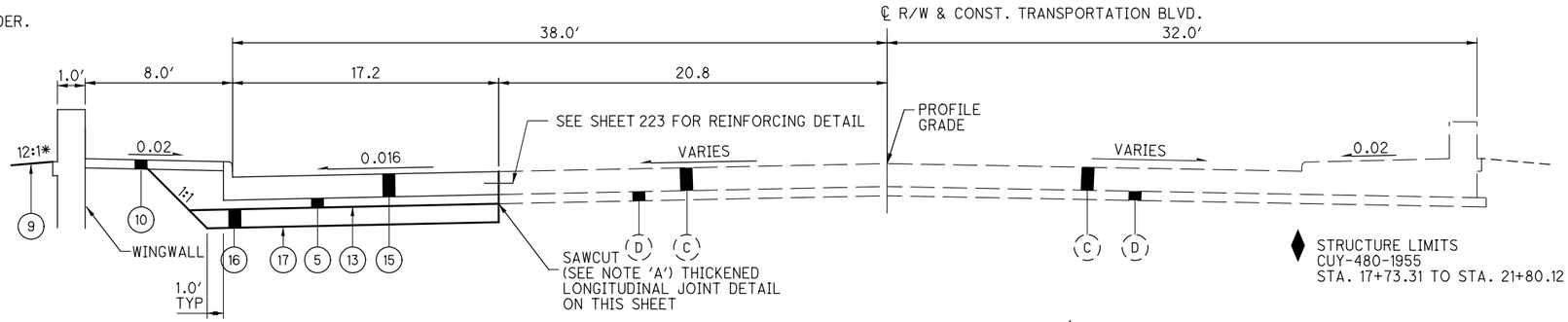
NOTE 'A'
THE EXISTING PAVEMENT EDGE SHALL BE CUT TO LOCATE A SOUND EDGE AS PER CMS SPEC 203.04 (E). VERTICAL FACE OF EXISTING PAVEMENT TO BE COATED WITH ASPHALT BINDER, CMS SPEC 702.1, AS PER CMS SPEC 401.14.

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

* - SEE CROSS SECTIONS

** - SECTION IS SHOWN IN THE DIRECTION OF ASCENDING ORDER.

FOR WIDTH TABLE, SEE SHEET 7



NO.	DESCRIPTION	REV. BY	DATE
1	ITEM NAME REVISED	JMB	1-16-18

TRANSPORTATION BLVD. APPROACH SLAB ♦

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

PROPOSED LEGEND

(1) ITEM 441 - 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M, AS PER PLAN
(2) ITEM SPECIAL - BOLLARD
(3) ITEM 441 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)
(4) ITEM 305 - 9" CONCRETE BASE, CLASS QC1
(5) ITEM 304 - 6" AGGREGATE BASE
(6) ITEM 301 - 6" ASPHALT CONCRETE BASE, PG64-22
(7) ITEM 609 - CURB, TYPE 2-B
(8) ITEM 609 - CURB, TYPE 6
(9) ITEM 659 - SEEDING AND MULCHING, CLASS 1
(10) ITEM 608 - 4" CONCRETE WALK
(11) ITEM 407 - NON-TRACKING TACK COAT (0.1 GAL/SQ. YD.)
(12) ITEM 407 - TACK COAT, 702.13 (0.1 GAL/SQ. YD.)
(13) ITEM 204 - SUBGRADE COMPACTION/PROOF ROLLING
(14) ITEM 605 - 6" BASE PIPE UNDERDRAINS, 707.31 OR 707.41
(15) ITEM 526 - REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN
(16) ITEM 204 - EXCAVATION OF SUBGRADE (T=12") GRANULAR MATERIAL, TYPE B, AS PER PLAN (T=12")
(17) ITEM 861 - GEOGRID FOR SUBGRADE STABILIZATION
(18) ITEM 202 - WEARING COURSE REMOVED
(19) ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A, (448) PG70-22M, AS PER PLAN (SEE NOTE B)
(20) ITEM 442 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A, (448)
(21) ITEM 609 - MEDIAN, MISC.: GRASS PAVER
(22) ITEM 609 - COMBINATION CURB AND GUTTER, TYPE 3 ⚠
(23) ITEM 875 - LONGITUDINAL JOINT ADHESIVE

EXISTING LEGEND

(A) 3"± ASPHALT
(B) UNDERDRAINS
(C) CONCRETE APPROACH SLAB
(D) AGGREGATE
(E) 8"± CONCRETE
(F) 6"± ASPHALT
(G) 10"± CONCRETE
(H) CONCRETE CURB

CALCULATED JMB
CHECKED JJS

TYPICAL SECTIONS

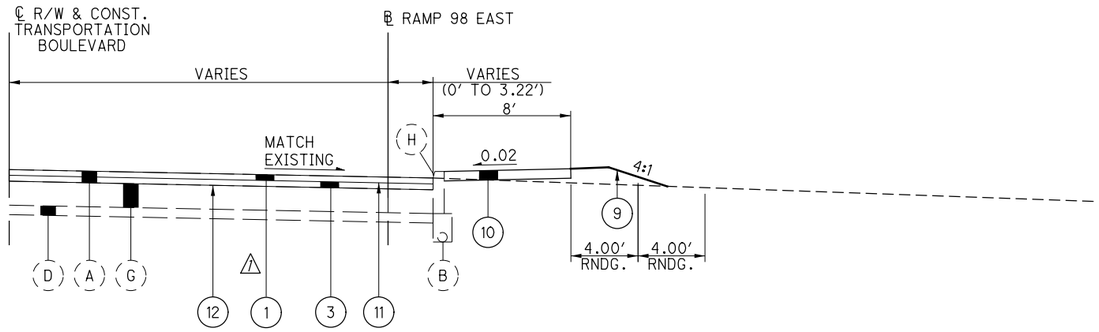
CUY-480/ TRANSPORTATION BLVD.

NO.	DESCRIPTION	REV. BY	DATE
1	QUANTITY REVISIONS	JMB	1-23-18

CALCULATED JMB
CHECKED JJS

WIDTH TABLE

ROAD		WIDTH "A"				WIDTH "B"				WIDTH "C"				WIDTH "D"			
		STATION		WIDTH (FT.)		STATION		WIDTH (FT.)		STATION		WIDTH (FT.)		STATION		WIDTH (FT.)	
		FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO
TRANSPORTATION		22+85.00	15+95.00	0.5'	0.5'	22+85.00	22+50.83	37.7'	23.0'	22+85.00	15+95.00	7.5'	7.5'	22+85.00	22+50.83	2.0'	15.0'
		15+95.00	15+70.00	0.5'	8.0'	22+50.83	21+80.12	23.0'	23.0'	15+95.00	15+70.00	7.5'	5.0'	22+50.83	93+02.65	15.0'	15.0'
		15+70.00	92+09.39	8.0'	8.0'	17+73.31	93+02.65	23.0'	23.0'	15+70.00	92+43.29	5.0'	5.0'	22+50.83	21+80.12	15.0'	15.0'
		92+09.39	92+43.29	8.0'	2.7'									17+73.31	93+02.65	15.0'	15.0'

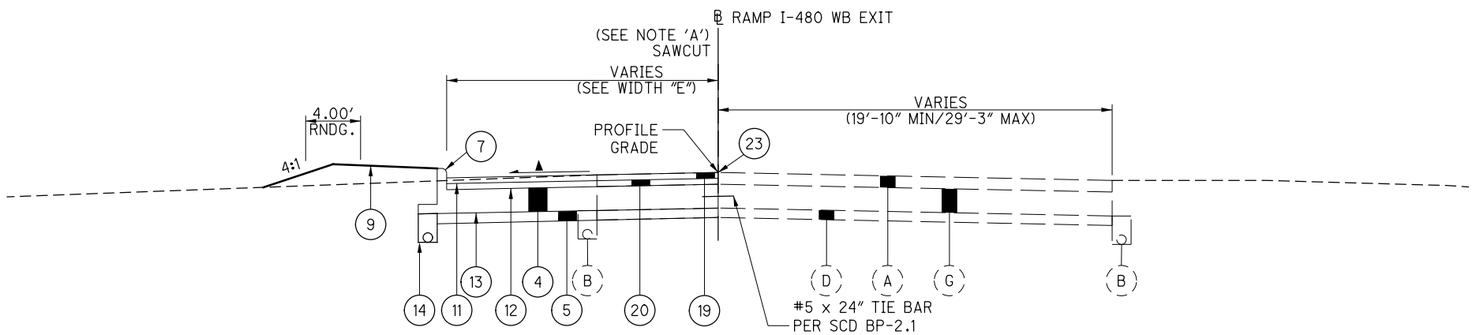


I-480 EB ENTRANCE RAMP (RAMP 98 EAST)

STA. 44+15.52 TO STA. 45+02.54

WIDTH TABLE

		WIDTH "E"			
		STATION		WIDTH (FT.)	
		FROM	TO	FROM	TO
I-480 WB EXIT RAMP		400+24.00	405+38.09	16.0	16.0
		405+38.09	405+94.15	16.0	6.1



I-480 WB EXIT RAMP

STA. 400+24.00 TO STA. 405+94.15

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.

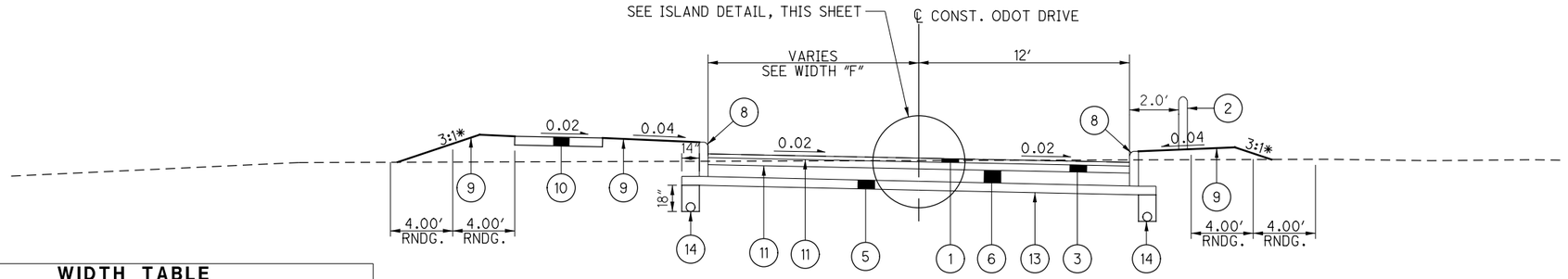
▲ SEE PAVEMENT ELEVATION TABLE, SHEET 106

FOR LEGEND, SEE SHEET 6

TYPICAL SECTIONS

CUY-480/
TRANSPORTATION BLVD.

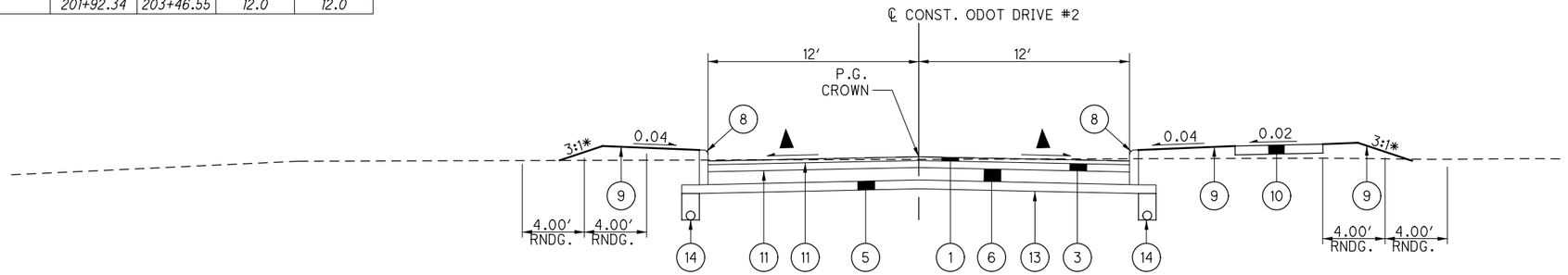
\\KKRN04\DATA\2016\20160051\CUY\80974\ROADWAY\SHEETS\80974GY002.DGN
1/23/2018
11:07:47 AM
ODOTV8ISTD_USER



ODOT DRIVE

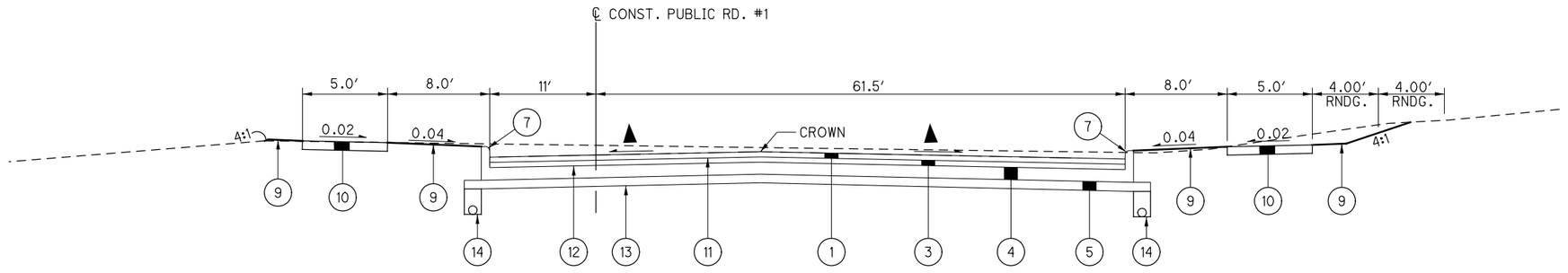
STA. 200+24.00 TO STA. 205+02.30

WIDTH TABLE				
ROAD	WIDTH "F"			
	STATION		WIDTH (FT.)	
	FROM	TO	FROM	TO
ODOT DRIVE	200+66.51	200+99.04	23.0	23.0
	200+99.04	201+92.34	23.0	12.0
	201+92.34	203+46.55	12.0	12.0



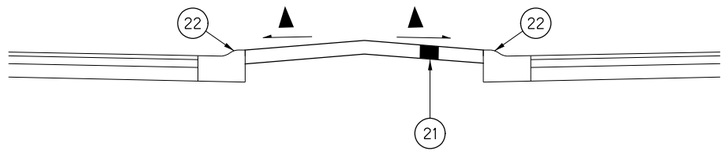
ODOT DRIVE #2

STA. 30+00.00 TO STA. 32+50.64



PUBLIC ROAD #1

STA. 54+66.00 TO STA. 55+41.08



ODOT ISLAND DETAIL

STA. 204+14.16 TO STA. 204+63.00

▲ SEE INTERSECTION DETAILS, SHEETS 100-105

NOTE 'A'
THE EXISTING PAVEMENT SHALL BE CUT TO LOCATE A SOUND PAVEMENT EDGE AS PER SPEC 203.04(E). SEE PLANS FOR SAWCUT LOCATIONS.

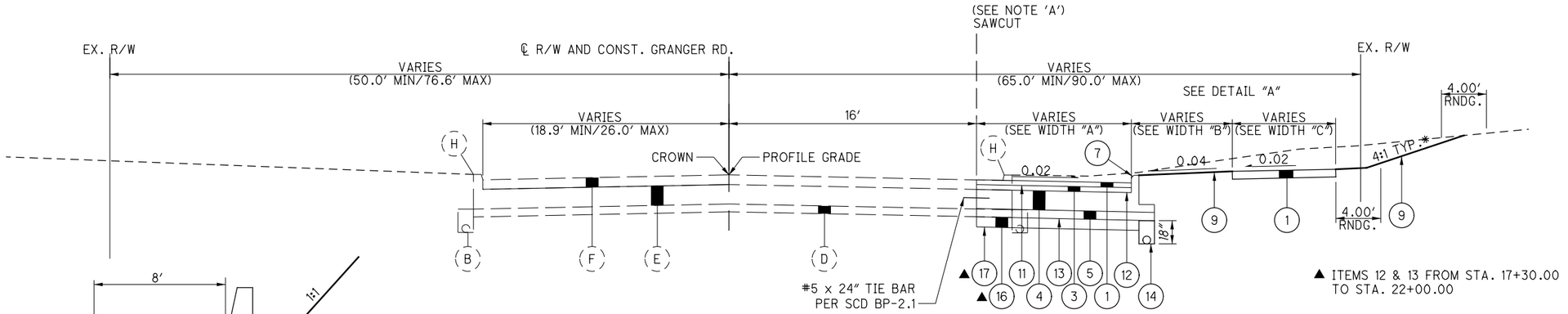
* - SEE CROSS SECTIONS

FOR LEGEND, SEE SHEET 6

CALCULATED JMB CHECKED JJS

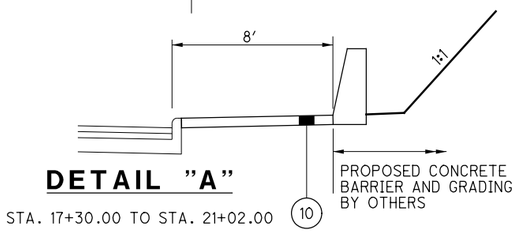
TYPICAL SECTIONS

CUY-480/ TRANSPORTATION BLVD.



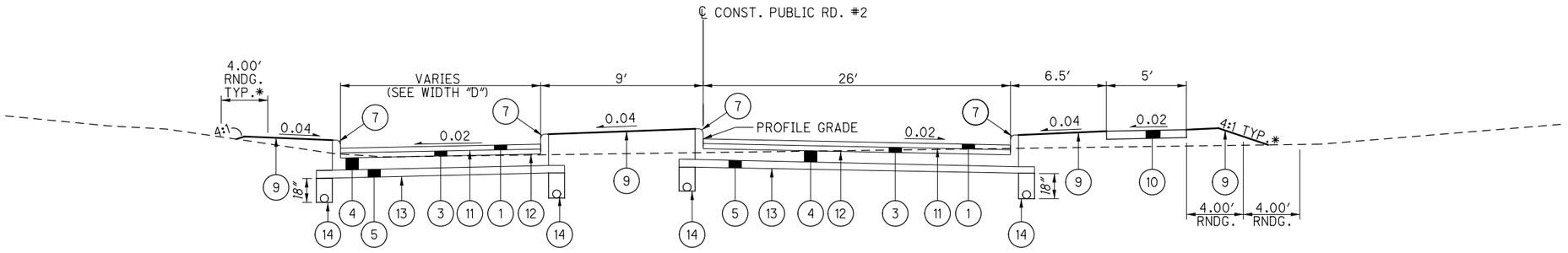
GRANGER RD. WIDENING

STA. 17+30.00 TO STA. 25+25.00



DETAIL "A"

STA. 17+30.00 TO STA. 21+02.00



PUBLIC ROAD #2

STA. 98+54.42 TO STA. 99+62.25

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'								

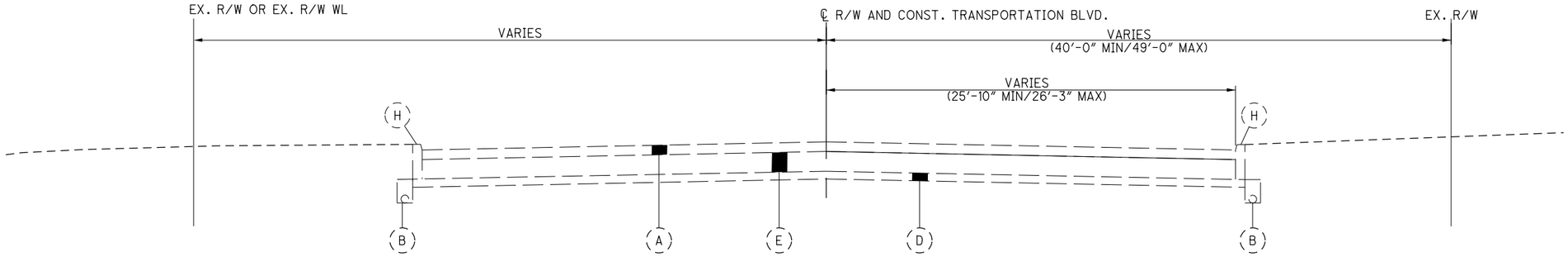
	WIDTH "D"			
	STATION		WIDTH (FT.)	
	FROM	TO	FROM	TO
PUBLIC RD #2	98+54.42	98+59.42	15.0'	15.0'
	98+59.42	99+10.82	15.0'	21.4'

FOR LEGEND, SEE SHEET 6

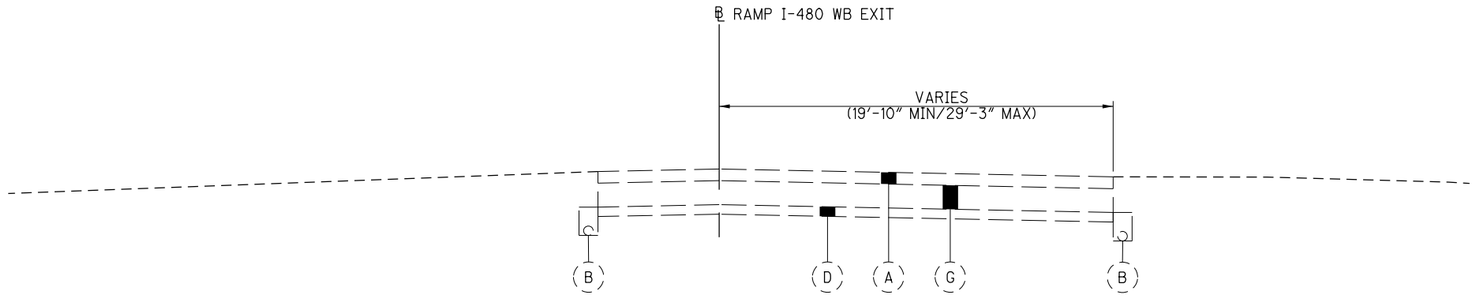
CALCULATED JMB
CHECKED JJS

TYPICAL SECTIONS

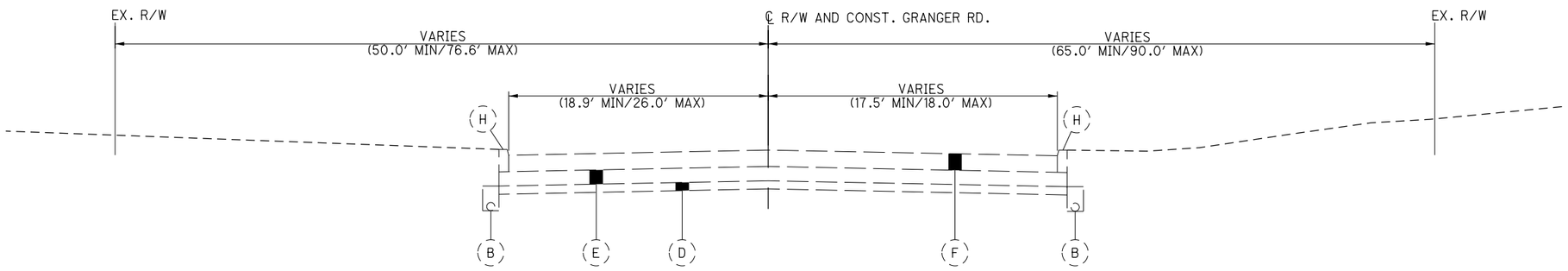
CUY-480/
TRANSPORTATION BLVD.



EXISTING TRANSPORTATION BLVD.



EXISTING I-480 WB EXIT RAMP



EXISTING GRANGER RD.

FOR LEGEND, SEE SHEET 6

CALCULATED JMB
CHECKED JJS

TYPICAL SECTIONS

CUY-480/ TRANSPORTATION BLVD.

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 MAINTENACE
ATTN: HUGH BLOCKSIDGE
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.

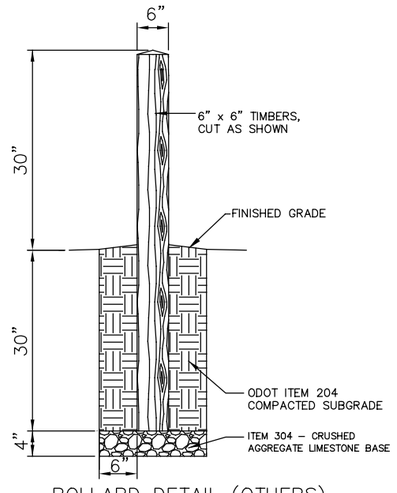
REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE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



BOLLARD DETAIL (OTHERS)
N.T.S.

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)

ITEM 255 - FULL DEPTH PAVEMENT SAWING

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

ITEM 255 - FULL DEPTH PAVEMENT SAWING, 1998 FT

NO.	DESCRIPTION	REV. BY	DATE
1	QUANTITY ADDITION	JMB	1-16-18

CALCULATED JMB CHECKED JJS

GENERAL NOTES

CUY-480/ TRANSPORTATION BLVD.

11
225

\\AKRN04\DATA\2016\2016851\CUY\80974\ROADWAY\SHEETS\80974GN01.DGN
1/17/2018
10:27:59 AM
ODOTV8ISTD_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 CONTRACOR 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 METHOADS:

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.

QUANTITES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED 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.

SUBGRADE STABILIZATION

ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

1. SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.
2. 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.
3. COMPACT THE SUBGRADE ACCORDING TO 204.03.
4. PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO 204.06.

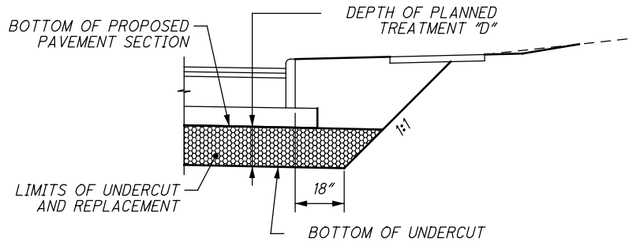
   THE ENGINEER WILL IDENTIFY THE ADDITIONAL AREAS OF EXCAVATION FOR UNSTABLE SUBGRADE BASED ON THE PROOF ROLLING RESULTS AND VISUAL OBSERVATIONS.
5. EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.
6. PROOF ROLL THE STABILIZED AREAS ACCORDING TO 204.06 TO VERIFY STABILITY.
7. 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

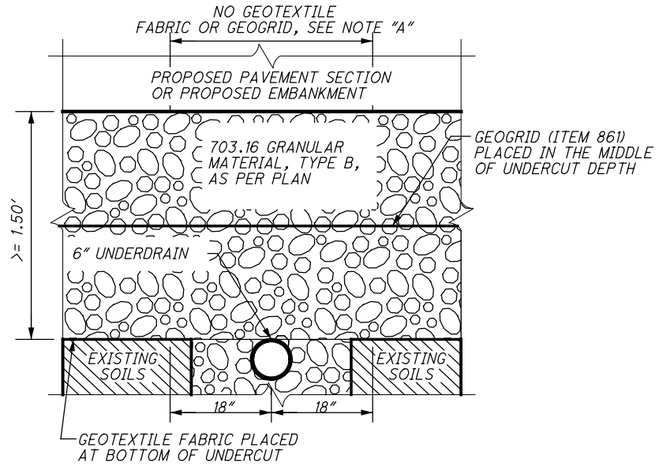


PAVEMENT SUBGRADE DETAIL

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.

CALCULATED JMB CHECKED JJS

GENERAL NOTES

CUY-480/ TRANSPORTATION BLVD.

NOTIFICATIONS & CONTACTS

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING ENTITIES IN WRITING AND VIA TELEPHONE AT LEAST FOURTEEN (14) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION ACTIVITIES. INCLUDED IN THE NOTIFICATION SHALL BE THE PROJECTED DATES AND TIME FRAMES OF ANY ROAD CLOSURES.

1. AMANDA MCFARLAND
   ODOT DISTRICT 12
   PUBLIC INFORMATION OFFICER
   5500 TRANSPORTATION BOULEVARD
   GARFIELD HEIGHTS, OHIO 44125
   (216) 584-2005

2. OHIO STATE HIGHWAY PATROL
   BROOKPARK FACILITY
   5225 WEST 140TH STREET
   BROOKPARK, OHIO 44142
   (216) 265-1677

3. TIMOTHY MCLAUGHLIN
   CITY OF GARFIELD HEIGHTS
   SERVICE DIRECTOR
   5407 TURNEY ROAD
   GARFIELD HEIGHTS, OHIO 44125
   (216) 475-3373

4. CITY OF GARFIELD HEIGHTS
   FIRE DEPARTMENT
   5115 TURNEY ROAD
   GARFIELD HEIGHTS, OHIO 44125
   (216) 475-4053

5. CITY OF GARFIELD HEIGHTS
   POLICE DEPARTMENT
   5555 TURNEY ROAD
   GARFIELD HEIGHTS, OHIO 44125
   (216) 475-5549

6. GARFIELD HEIGHTS CITY SCHOOLS
   5640 BRIARCLIFF DRIVE
   GARFIELD HEIGHTS, OHIO 44125
   (216) 475-8100

7. MIKE SCHIPPER
   GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY
   1240 WEST 6TH STREET
   CLEVELAND, OHIO 44113-1302
   (216) 566-5084

8. JEFFERY MACKO
   GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY
   SERVICE MANAGEMENT DEPARTMENT
   1240 WEST 6TH STREET
   CLEVELAND, OHIO 44113-1302
   (216) 356-3048

9. CITY OF CLEVELAND
   DEPARTMENT OF PUBLIC UTILITIES
   1201 LAKESIDE AVENUE
   CLEVELAND, OHIO 44114
   (216) 664-2444

10. HUGH BLOCKSIDGE
    CUYAHOGA COUNTY DEPARTMENT OF PUBLIC WORKS
    SANITARY DESIGN DIVISION
    2079 EAST 9TH STREET
    CLEVELAND, OHIO 44115
    (216) 443-8205

SEQUENCE OF CONSTRUCTION

PHASE 1

TRANSPORTATION BOULEVARD:
THE CONTRACTOR SHALL CONSTRUCT ALL ROADWAY IMPROVEMENTS ON THE WEST SIDE OF TRANSPORTATION BOULEVARD WHILE MAINTAINING TWO NORTHBOUND AND TWO SOUTHBOUND LANES OF TRAFFIC NORTH OF THE I-480 WESTBOUND EXIT RAMP.

THE CONTRACTOR SHALL WIDEN THE BRIDGE OVER I-480 WHILE MAINTAINING ONE SOUTHBOUND LANE AND TWO NORTHBOUND LANES OF TRAFFIC ON THE BRIDGE.

SOUTH OF THE BRIDGE, THE CONTRACTOR SHALL MAINTAIN TWO SOUTHBOUND LANES AND TWO NORTHBOUND LANES OF TRAFFIC.

THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED TRAFFIC SIGNAL IMPROVEMENTS AT THE TRANSPORTATION BOULEVARD/I-480 EASTBOUND EXIT RAMP/ANTENUCCI BOULEVARD INTERSECTION. THE CONTRACTOR SHALL ALSO CONSTRUCT THE PROPOSED TRAFFIC SIGNALS ON THE WEST SIDE OF THE TRANSPORTATION BOULEVARD/I-480 WESTBOUND EXIT RAMP INTERSECTION. AT NO TIME SHALL THE EXISTING SIGNAL BE OUT OF SERVICE BEFORE THE PROPOSED SIGNAL HAS BEEN INSTALLED AND IS IN WORKING ORDER AND PASSED ALL REQUIRED TESTING. IF THE PROPOSED SIGNAL EQUIPMENT IS NOT AVAILABLE, THE CONTRACTOR SHALL INSTALL A TEMPORARY SIGNAL, AS APPROVED BY THE ENGINEER. THE TEMPORARY SIGNAL SHALL BE INCIDENTAL TO THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC. CONSTRUCTION OF THE PROPOSED OR TEMPORARY SIGNAL OUTSIDE OF THE PHASE 1 WORK AREA WHICH REQUIRES LANE CLOSURES SHALL BE PERMITTED DURING NIGHTTIME HOURS (9:00PM TO 6:00AM), WHERE TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH MT-95.31, MT-95.32, OR MT-97.10.

IMMEDIATELY FOLLOWING COMPLETION OF THE PROPOSED TRAFFIC SIGNAL IMPROVEMENTS AT THE TRANSPORTATION BOULEVARD/I-480 EASTBOUND EXIT RAMP/ANTENUCCI BOULEVARD INTERSECTION, THE PROPOSED PAVEMENT MARKINGS SHALL BE PLACED AND THE OVERHEAD SIGNS SHALL BE ERECTED ON THE I-480 EASTBOUND EXIT RAMP AND ANTENUCCI BOULEVARD. DURING PLACEMENT OF THE FINAL PAVEMENT MARKINGS, TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH MT-99.20. ERECTION OF THE OVERHEAD SIGNS WHICH REQUIRES LANE CLOSURES SHALL BE PERMITTED DURING NIGHTTIME HOURS (9:00PM TO 6:00AM), WHERE TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH MT-95.31, MT-95.32, OR MT-97.10.

PHASE 1A

THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED WALK AND CURB RAMPS IN THE NE AND NW QUADRANTS OF THE TRANSPORTATION BOULEVARD/I-480 EASTBOUND EXIT RAMP/ANTENUCCI BOULEVARD INTERSECTION. ALL PHASE 1 TRAFFIC PATTERNS SHALL BE MAINTAINED, EXCEPT FOR THE AREA BETWEEN THE BRIDGE AND ANTENUCCI BOULEVARD WHERE ONE LANE OF SOUTHBOUND TRAFFIC SHALL BE MAINTAINED ON TRANSPORTATION BOULEVARD. PHASE 1A WORK MAY BE PERFORMED CONCURRENTLY WITH PHASE 1 WORK. PHASE 1A OPERATIONS SHALL BE RESTRICTED TO A WEEKEND PERIOD (6:00PM FRIDAY TO 6:00AM MONDAY).

PRIOR TO OPENING TO TRAFFIC BY 6:00AM MONDAY, THE CONTRACTOR SHALL RE-OPEN BOTH SOUTHBOUND LANES OF TRANSPORTATION BOULEVARD PER THE PHASE 1 TRAFFIC PATTERN.

SEQUENCE OF CONSTRUCTION (CONTINUED)

PHASE 1B

I-480 EASTBOUND ENTRANCE RAMP:
THE CONTRACTOR SHALL CONSTRUCT ALL ROADWAY IMPROVEMENTS ON THE WEST SIDE OF THE I-480 EASTBOUND ENTRANCE RAMP. PHASE 1B WORK MAY BE PERFORMED CONCURRENTLY WITH PHASE 1 WORK. HOWEVER, PHASE 1B WORK SHALL BE PERFORMED AFTER COMPLETION OF PHASE 1A WORK.

PHASE 2

I-480 WESTBOUND EXIT RAMP:
THE CONTRACTOR SHALL CONSTRUCT ALL ROADWAY IMPROVEMENTS EAST OF STA. 56+35 WHILE MAINTAINING EXISTING TRAFFIC PATTERNS.

THE CONTRACTOR SHALL CONSTRUCT THE OVERHEAD SIGN AND SIGNAL IMPROVEMENTS ON THE EAST SIDE OF THE I-480 WESTBOUND EXIT RAMP/TRANSPORTATION BOULEVARD INTERSECTION. AT NO TIME SHALL THE EXISTING SIGNAL BE OUT OF SERVICE BEFORE THE PROPOSED SIGNAL HAS BEEN INSTALLED AND IS IN WORKING ORDER AND PASSED ALL REQUIRED TESTING. IF THE PROPOSED SIGNAL EQUIPMENT IS NOT AVAILABLE, THE CONTRACTOR SHALL INSTALL A TEMPORARY SIGNAL, AS APPROVED BY THE ENGINEER. THE TEMPORARY SIGNAL SHALL BE INCIDENTAL TO THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC. CONSTRUCTION OF THE PROPOSED OVERHEAD SIGN OR THE PROPOSED OR TEMPORARY SIGNAL OUTSIDE OF THE PHASE 2 WORK AREA WHICH REQUIRES LANE CLOSURES SHALL BE PERMITTED DURING NIGHTTIME HOURS (9:00PM TO 6:00AM), WHERE TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH MT-95.31, MT-95.32, OR MT-97.10.

ODOT DISTRICT 12 DRIVE:
THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED ODOT DRIVE INCLUDING ALL ROADWAY, TRAFFIC SIGNALS AND SITE IMPROVEMENTS TO THE ODOT DISTRICT 12 HEADQUARTERS FACILITY. THE EXISTING ODOT DRIVE AT STA. 96+56 SHALL REMAIN OPEN AT ALL TIMES. CONSTRUCTION OF THE PROPOSED SIGNAL OUTSIDE OF THE PHASE 2 WORK AREA WHICH REQUIRES LANE CLOSURES SHALL BE PERMITTED DURING NIGHTTIME HOURS (9:00PM TO 6:00AM), WHERE TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH MT-95.31, MT-95.32, OR MT-97.10.

TRANSPORTATION BOULEVARD:
NO ROADWAY WORK IS PERFORMED DURING PHASE 2 EXCEPT FOR PROPOSED SIGNING ON THE EAST SIDE OF TRANSPORTATION BOULEVARD. CONSTRUCTION OF THE GROUND MOUNTED SIGNS WHICH REQUIRE A LANE CLOSURE SHALL BE PERMITTED DURING NIGHTTIME HOURS (9:00PM TO 6:00AM), WHERE THE RIGHT (CURB) LANE MAY BE CLOSED IN ACCORDANCE WITH MT-95.31. CONSTRUCTION OF THE BRIDGE OVER I-480 SHALL CONTINUE.

SEQUENCE OF CONSTRUCTION (CONTINUED)

PHASE 2A

I-480 WESTBOUND EXIT RAMP INTERSECTION:
THE CONTRACTOR SHALL CONSTRUCT ALL REMAINING ROADWAY AND SIGNAL IMPROVEMENTS ON THE EAST SIDE OF THE TRANSPORTATION BOULEVARD/I-480 WESTBOUND EXIT RAMP INTERSECTION WHILE MAINTAINING A SINGLE LANE OF WESTBOUND RAMP TRAFFIC ON THE I-480 WESTBOUND EXIT RAMP. PHASE 2A OPERATIONS SHALL BE RESTRICTED TO A WEEKEND PERIOD (6:00PM FRIDAY TO 6:00AM MONDAY). PRIOR TO OPENING TO TRAFFIC BY 6:00AM MONDAY, THE CONTRACTOR SHALL RE-OPEN THE I-480 WESTBOUND EXIT RAMP TO TWO LANES OF TRAFFIC AS PER THE PHASE 2 TRAFFIC PATTERN. CONSTRUCTION OF THE PROPOSED SIGNAL OUTSIDE OF THE PHASE 2A WORK AREA WHICH REQUIRES LANE CLOSURES SHALL BE PERMITTED DURING NIGHTTIME HOURS (9:00PM TO 6:00AM), WHERE TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH MT-95.31, MT-95.32, OR MT-97.10.

PHASE 2 TRAFFIC PATTERNS SHALL BE MAINTAINED ON TRANSPORTATION BOULEVARD.

PHASE 3

GRANGER ROAD:
THE CONTRACTOR SHALL CONSTRUCT ALL ROADWAY IMPROVEMENTS ON THE SOUTH SIDE OF GRANGER ROAD, UP TO AND INCLUDING THE INTERMEDIATE COURSE, AND ALL ROADWAY IMPROVEMENTS AT THE GRANGER ROAD/PROPOSED PUBLIC ROAD 2 INTERSECTION WHILE MAINTAINING TWO-WAY, TWO-LANE TRAFFIC.

PROPOSED SIGNING ON THE NORTH SIDE OF GRANGER ROAD SHALL BE CONSTRUCTED. GROUND MOUNTED AND OVERHEAD MOUNTED SIGN CONSTRUCTION WHICH REQUIRE A LANE CLOSURE SHALL BE PERMITTED DURING NIGHTTIME HOURS (9:00PM TO 6:00AM), WHERE TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH MT-95.31 AND MT-97.10.

GRANGER ROAD IMPROVEMENTS MAY BE PERFORMED CONCURRENTLY WITH PHASE 1 AND PHASE 2 TRANSPORTATION BOULEVARD IMPROVEMENTS.

PHASE 4

THE CONTRACTOR SHALL PLACE THE FINAL ASPHALT SURFACE COURSE AND THE REMAINING PROPOSED PAVEMENT MARKINGS. DURING PLACEMENT OF THE FINAL ASPHALT SURFACE COURSE, TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH MT-95.31 OR MT-97.12. DURING PLACEMENT OF THE FINAL PAVEMENT MARKINGS, TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH MT-99.20.

RESTRICTIONS

THE FOLLOWING RESTRICTIONS ARE PLACED ON THE CONTRACTOR. IN THE EVENT THAT AN ALTERNATIVE MAINTENANCE OF TRAFFIC METHOD IS SELECTED, ANY APPROVED ALTERNATE MUST INCLUDE THESE RESTRICTIONS.

1. WORKING TRAFFIC SIGNALS SHALL BE MAINTAINED AT ALL TIMES AT THE FOLLOWING INTERSECTIONS:

   A. TRANSPORTATION BOULEVARD/I-480 EASTBOUND EXIT RAMP/ANTENUCCI BOULEVARD
   B. TRANSPORTATION BOULEVARD/I-480 WESTBOUND EXIT RAMP
   C. TRANSPORTATION BOULEVARD/GRANGER ROAD/ E. 98TH STREET

CALCULATED KRM CHECKED RAK

MAINTENANCE OF TRAFFIC NOTES

CUY-480/ TRANSPORTATION BLVD.

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ITEM 614 - MAINTAINING TRAFFIC

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

1. 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 OMUTCD.

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 CONSTRICTIONS. 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 CAPCACITY 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

CALCULATED KRM CHECKED RAK

MAINTENANCE OF TRAFFIC NOTES

CUY-480/ TRANSPORTATION BLVD.

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 OMUTCD INTENDS THAT FLAGGERS BE USED.

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

- DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
- DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).
- 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.

CALCULATED KRM CHECKED RAK

MAINTENANCE OF TRAFFIC NOTES

CUY-480/ TRANSPORTATION BLVD.

WORKSITE TRAFFIC SUPERVISOR

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

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

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

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

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

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

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

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

2. ATTEND PRECONSTRUCTION MEETING AND ALL PROJECT MEETINGS WHERE TRAFFIC CONTROL MANAGEMENT IS DISCUSSED.

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

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

   A. TRAFFIC INCIDENT MANAGEMENT PLAN (TIMP);
   B. EMERGENCY RESPONSE AND NOTIFICATION;
   C. PROJECT WORK/PHASING CONCERNS (E.G., RAMP CLOSURES); AND
   D. RESPONDERS CONCERNS.

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

WORKSITE TRAFFIC SUPERVISOR (CONTINUED)

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

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

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

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

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

    A. INITIAL TRAFFIC CONTROL SETUP (DAY AND NIGHT REVIEW).
    B. DAILY TRAFFIC CONTROL SETUP AND REMOVAL.
    C. WHEN CONSTRUCTION STAGING CAUSES A CHANGE IN THE TRAFFIC CONTROL SETUP.
    D. CRASH OCCURRENCES WITHIN THE CONSTRUCTION AREA.
    E. REMOVAL OF TRAFFIC CONTROL DEVICES AT THE END OF A PHASE OR PROJECT.
    F. ALL OTHER EMERGENCY TRAFFIC CONTROL NEEDS.

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

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

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

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

    A. FEDERAL, STATE, AND LOCAL TRANSPORTATION AGENCIES (TRAFFIC MANAGEMENT CENTER);
    B. REGIONAL, COUNTY OR LOCAL 911 DISPATCH; AND
    C. TOWING AND RECOVERY PROVIDERS.

WORKSITE TRAFFIC SUPERVISOR (CONTINUED)

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

16. PROPOSE A RESPONSE/ACTION PLAN TO:
    A. ESTABLISH ALTERNATE ROUTE PLANS PER THE PROVIDED ODOT PLAYBOOK;
    B. REMOVE TRAFFIC DEMAND FROM IMPACTED ROADWAY(S);
    C. DIVERT TRAFFIC TO ROUTES THAT CAN ACCOMMODATE DEMANDS;
    D. DETOUR TRAFFIC AWAY FROM SENSITIVE AREAS (SUCH AS SCHOOLS, HOSPITALS, ETC.);
    E. DISCUSS METHODS OF DETERMINING A STAGING AREA FOR RESPONDERS WITHIN OR NEAR THE CONSTRUCTION ZONE; AND
    F. DISCUSS METHODS OF DEVELOPING INGRESS AND EGRESS SITES WITHIN THE CONSTRUCTION ZONE.

    THE RESPONSE/ACTION PLAN SHALL BE SUBMITTED TO ODOT FOR ACCEPTANCE BEFORE THE CONTRACTOR'S FIRST DAY OF WORK.

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

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

        i. LOCATION INCLUDING MILEPOST NUMBER AND DIRECTION OF TRAVEL.
        ii. NUMBER AND TYPE OF VEHICLES INVOLVED.
        iii. ESTIMATED EXTENT OF DAMAGE OR INJURY.
        iv. ESTIMATED NUMBER OF PATIENTS INVOLVED.
        v. ANY POTENTIAL HAZARDOUS CONDITIONS.
        vi. THE PLACARD NUMBER ON ANY HAZARDOUS MATERIALS PLACARD FROM A SAFE DISTANCE.

    B. INITIATE TRAFFIC MANAGEMENT / PROVIDE TRAFFIC CONTROL.
    C. ASSIST MOTORIST WITH DISABLED VEHICLES.
    D. RECOMMEND ROADWAY REPAIR NEEDS.
    E. PROVIDE REPAIR RESOURCES.

18. ATTEND POST-INCIDENT DEBRIEFINGS IF REQUIRED.

THE DEPARTMENT WILL DEDUCT THE PRORATED DAILY AMOUNT OF THE UNIT PRICE BID FOR THE WTS FOR ANY DAY ON WHICH THE CONTRACTOR FAILS TO PERFORM THE DUTIES SET FORTH ABOVE. SHOULD THE CONTRACTOR'S FAILURE TO PERFORM ANY OF THE DUTIES DESCRIBED ABOVE RESULT IN A MAINTENANCE OF TRAFFIC SAFETY ISSUE, THE DEPARTMENT WILL DEDUCT THE PRORATED DAILY AMOUNT FOR ITEM 614 MAINTENANCE OF TRAFFIC FROM THE CONTRACTOR'S NEXT SCHEDULED ESTIMATE.

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

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED FOR THE WORKSITE TRAFFIC SUPERVISOR:

ITEM 614, WORKSITE TRAFFIC SUPERVISOR 4 MNTH

SIGNAL MODIFICATIONS

THE CONTRACTOR SHALL PROVIDE TEMPORARY VEHICLE DETECTION FOR ANY MOVEMENT WHERE AN EXISTING LOOP DETECTOR IS NO LONGER ABLE TO PROVIDE SUCH DETECTION DUE TO THE SHIFTING OF LANES FOR MAINTENANCE OF TRAFFIC PURPOSES. THE USE OF PHASE RECALL IS NOT AN ACCEPTABLE ALTERNATIVE TO PROVIDING THE REQUIRED TEMPORARY VEHICLE DETECTION.

THE CONTRACTOR SHALL ADJUST THE LOCATIONS OF THE EXISTING, TEMPORARY, OR PROPOSED SIGNAL HEADS FOR EACH PHASE OF CONSTRUCTION IN ACCORDANCE WITH THE OMUTCD. THE CONTRACTOR SHALL ENSURE THAT ALL MINIMUM/MAXIMUM SIGNAL HEAD TO PAVEMENT CLEARANCES ARE MAINTAINED AT ALL TIMES, AND SHALL FIRST BE APPROVED BY THE ENGINEER. NO REDUCTION IN CLEARANCES SHALL BE PERMITTED.

THE COST FOR ALL LABOR, EQUIPMENT, TOOLS, AND MATERIALS REQUIRED TO COMPLETE THE ABOVE DESCRIBED WORK SHALL BE INCIDENTAL TO THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLANS.

COOPERATION BETWEEN CONTRACTORS

THE CONTRACTOR SHALL COOPERATE AND COORDINATE OPERATIONS WITH CONTRACTORS ON OTHER PROJECTS THAT MAY BE ADJACENT, NEAR, AND IN FORCE DURING THE LIFE OF THIS CONTRACT.

THE FOLLOWING PROJECTS WILL MOST LIKELY BE UNDER CONSTRUCTION DURING THE LIFE OF THIS CONTRACT:

CUY-17-15.29 SLOPE, PID 103938
ADDRESS SLOPE STABILIZATION AND ROCK FALL ISSUES ALONG GRANGER ROAD (SR 17), JUST EAST OF CANAL ROAD, IN THE CITY OF GARFIELD HEIGHTS.

CUY-480-19.21, PID 85530
RESURFACING OF IR-480 FROM THE VALLEYVIEW BRIDGE TO LEE ROAD IN GARFIELD HEIGHTS AND MAPLE HEIGHTS.

CUY-480-18.42 DECK, PID 90591
DESIGN BUILD PROJECT TO REPLACE THE DECKS OF THE TWIN IR-480 BRIDGES OVER THE CUYAHOGA RIVER VALLEY IN VALLEY VIEW AND INDEPENDENCE. WORK WILL INCLUDE CONSTRUCTING A NEW STRUCTURE BETWEEN THE EXISTING BRIDGES.

CALCULATED KRM CHECKED RAK

MAINTENANCE OF TRAFFIC NOTES

CUY-480/ TRANSPORTATION BLVD.

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.

CALCULATED KRM CHECKED RAK

MAINTENANCE OF TRAFFIC NOTES

CUY-480/ TRANSPORTATION BLVD.

SHEET NO.	REF. NO.	LOCATION	STATION FROM	STATION TO	SIDE	614 INCREASED BARRIER DELINEATION FT	614 WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL) 24" EACH	614 BARRIER REFLECTOR, TYPE 1, ONE-WAY WHITE EACH	614 BARRIER REFLECTOR, TYPE 1, ONE-WAY YELLOW EACH	614 BARRIER REFLECTOR, TYPE 1, BI-DIRECTIONAL EACH	614 OBJECT MARKER, ONE WAY EACH	614 OBJECT MARKER, TWO WAY EACH	614 WORK ZONE LANE LINE, CLASS I MILE	614 WORK ZONE CENTER LINE, CLASS I MILE	614 WORK ZONE EDGE LINE, CLASS I MILE	614 WORK ZONE CHANNELIZING LINE, CLASS I FT	614 WORK ZONE DOTTED LINE, CLASS I FT	614 WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I FT	614 WORK ZONE STOP LINE, CLASS I FT	614 WORK ZONE ARROW, CLASS I EACH	614 WORK ZONE ISLAND MARKING, CLASS I SF	622 PORTABLE BARRIER, 32" FT	622 PORTABLE BARRIER, 32", BRIDGE MOUNTED FT	
	PHASE 1																							
24	PB-1	I-480 WESTBOUND	1054+60	1058+40	LT	60	1	9			9											380		
24	PB-2	I-480 WESTBOUND	1054+50	1058+90	LT	75	1		10		10											440		
24	PB-3	I-480 EASTBOUND	1052+40	1056+20	RT	60	1	9			9											380		
24	PB-4	I-480 EASTBOUND	1051+90	1056+30	RT	75	1		10		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											29								
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	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

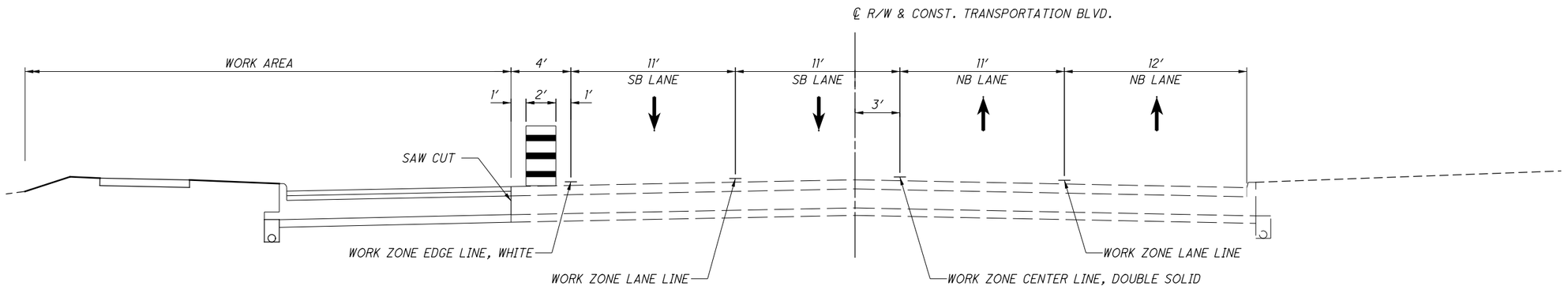
CUY-480/ TRANSPORTATION BLVD.

SHEET NO.	REF. NO.	LOCATION	STATION FROM	STATION TO	SIDE	614 INCREASED BARRIER DELINEATION	614 WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL) 24"	614 BARRIER REFLECTOR, TYPE 1, ONE-WAY WHITE	614 BARRIER REFLECTOR, TYPE 1, ONE-WAY YELLOW	614 BARRIER REFLECTOR, TYPE 1, BI-DIRECTIONAL	614 OBJECT MARKER, ONE WAY	614 OBJECT MARKER, TWO WAY	614 WORK ZONE LANE LINE, CLASS I	614 WORK ZONE CENTER LINE, CLASS I	614 WORK ZONE EDGE LINE, CLASS I	614 WORK ZONE CHANNELIZING LINE, CLASS I	614 WORK ZONE DOTTED LINE, CLASS I	614 WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I	614 WORK ZONE STOP LINE, CLASS I	614 WORK ZONE ARROW, CLASS I	614 WORK ZONE ISLAND MARKING, CLASS I	622 PORTABLE BARRIER, 32"	622 PORTABLE BARRIER, 32", BRIDGE MOUNTED	
						FT	EACH	EACH	EACH	EACH	EACH	EACH	MILE	MILE	MILE	FT	FT	FT	FT	EACH	SF	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											118								
34	CH-5	TRANSPORTATION BLVD.	86+82	88+00	RT											118								
34	CH-6	WB RAMP	56+16	57+40	RT											124								
34	EW-7	TRANSPORTATION BLVD.	14+50	88+00	RT/LT										0.047									
34	EW-8	TRANSPORTATION BLVD.	16+15	14+34	LT										0.034									
34	EW-9	WB RAMP / TRANSPORTATION	57+50	88+00	RT										0.063									
34	LA-3	TRANSPORTATION BLVD.	86+90		LT															1				
34	LA-4	TRANSPORTATION BLVD.	87+56		LT															1				
34	LA-5	WB RAMP	56+24		RT															1				
34	LA-6	WB RAMP	56+24		RT															1				
34	LA-7	WB RAMP	56+90		RT															1				
34	LA-8	WB RAMP	56+90		RT															1				
34	SL-2	TRANSPORTATION BLVD.	86+80		LT														22					
35	CDS-6	TRANSPORTATION BLVD.	91+20	93+00	RT/LT									0.034										
35	CH-7	TRANSPORTATION BLVD.	91+20	92+20	LT											100								
35	CH-8	TRANSPORTATION BLVD.	91+20	92+20	RT											100								
35	EW-10	TRANSPORTATION BLVD.	91+20	93+00	LT										0.034									
35	EW-11	TRANSPORTATION BLVD.	91+20	93+00	RT										0.034									
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										0.019									
36	EW-13	TRANSPORTATION BLVD.	93+00	95+50	RT										0.047									
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										0.095									
37	EW-15	I-480 WB EXIT RAMP	62+50	64+00	RT										0.028									
	PHASE 3																							
40	DW-1	GRANGER ROAD	14+20	16+50	RT												230							
40	EW-16	GRANGER ROAD	14+20	18+00	RT										0.072									
41	EW-17	GRANGER ROAD	18+00	23+00	RT										0.095									
42	CDS-8	E. 96TH ST.	20+32	21+00	LT									0.013										
42	EW-18	GRANGER ROAD/E. 96TH ST.	23+00	21+00	RT/RT										0.060									
42	EW-19	E. 96TH ST./GRANGER ROAD	20+49	26+50	LT/RT										0.024									
42	SL-3	E. 96TH ST.	20+30		LT														19					
SUBTOTALS													0.09	0.11	0.65	560	230		41	6				
TOTALS CARRIED TO GENERAL SUMMARY													0.09	0.11	0.65	560	230		41	6				

CALCULATED KRM
CHECKED RAK

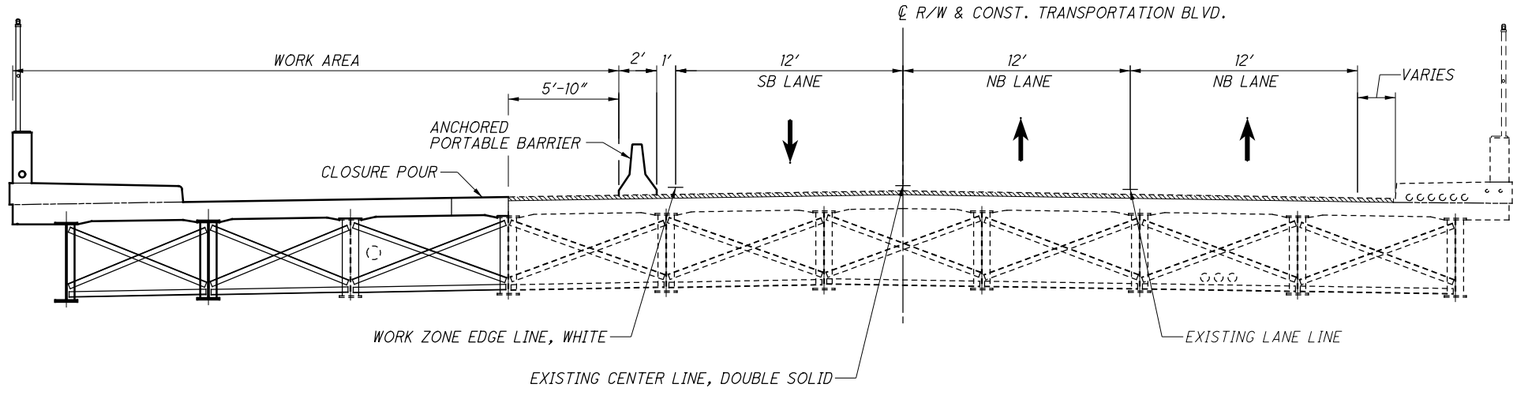
MAINTENANCE OF TRAFFIC SUBSUMMARY

CUY-480/ TRANSPORTATION BLVD.



PHASE 1 - MAINTENANCE OF TRAFFIC TYPICAL SECTION
TRANSPORTATION BLVD.

STA. 86+84 TO STA. 93+40



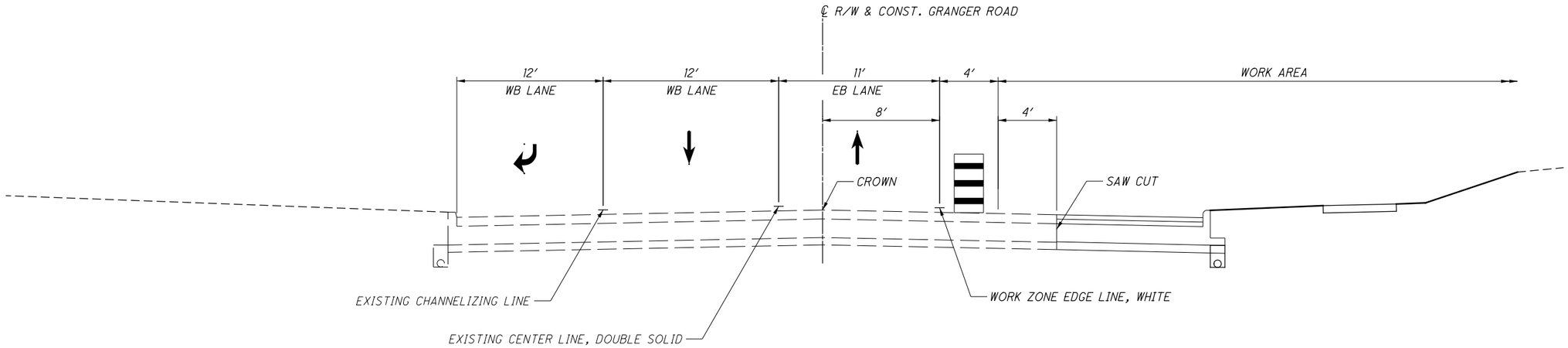
PHASE 1 - MAINTENANCE OF TRAFFIC TRANSVERSE SECTION
TRANSPORTATION BLVD. (LOOKING NORTH)

TRANSPORTATION BLVD. OVER I-480

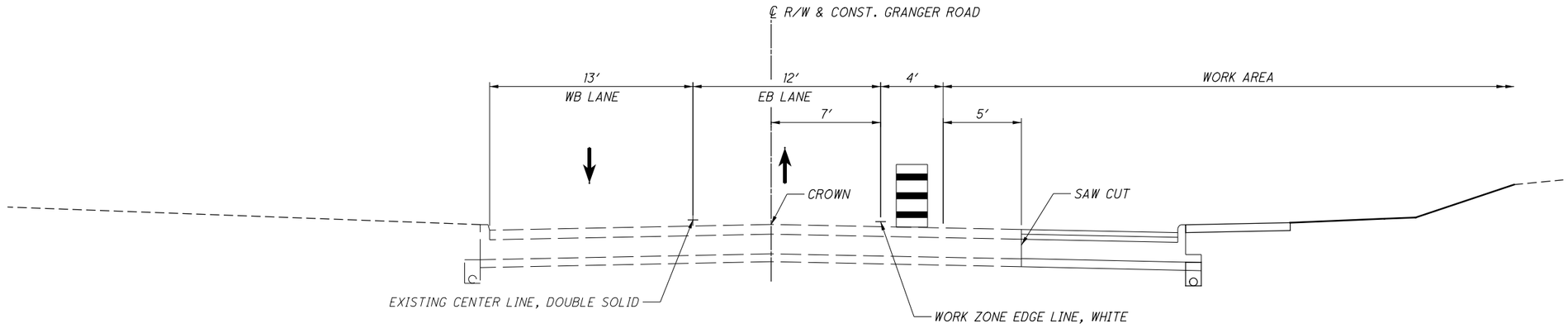
CALCULATED KRM
CHECKED RAK

MAINTENANCE OF TRAFFIC TYPICAL SECTIONS

CUY-480/
TRANSPORTATION BLVD.



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

CALCULATED KRM
CHECKED RAK

MAINTENANCE OF TRAFFIC TYPICAL SECTIONS

CUY-480/
TRANSPORTATION BLVD.

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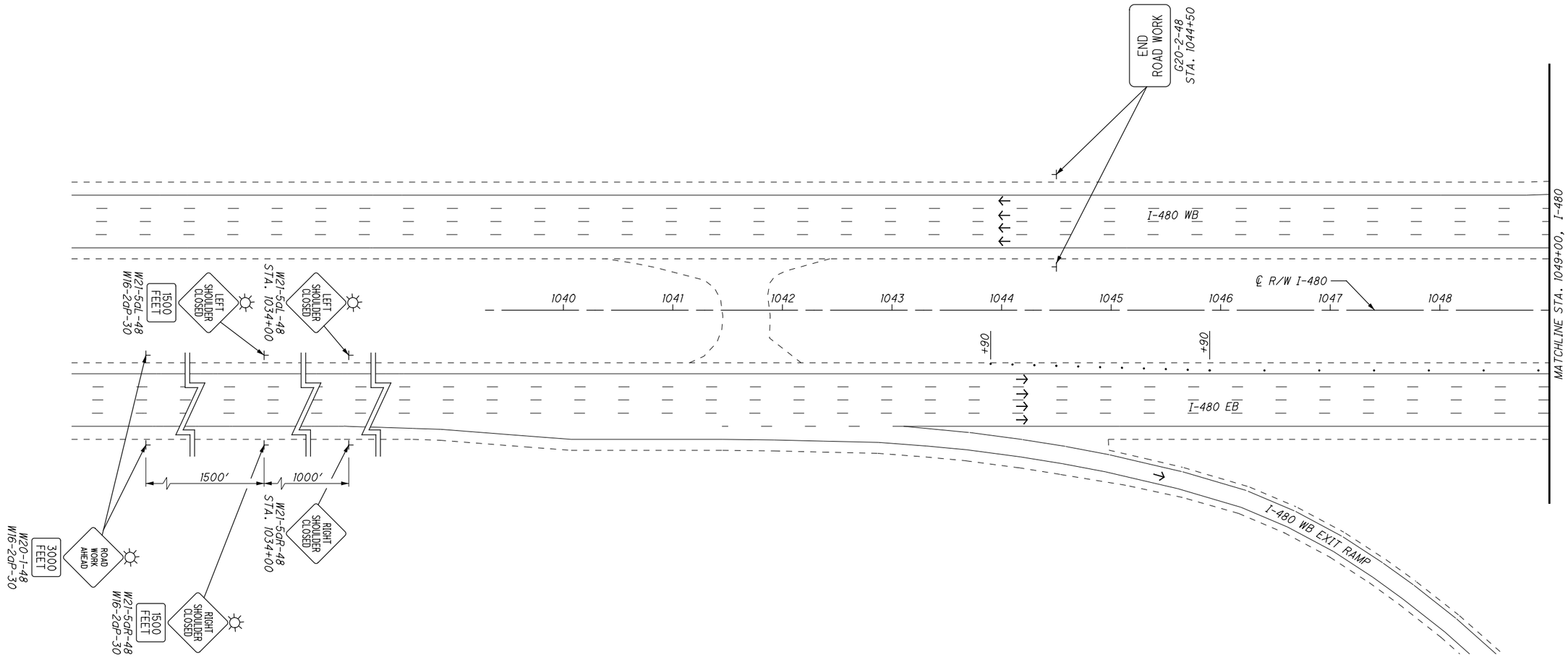

MAINTENANCE OF TRAFFIC LEGEND

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

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED KRM
CHECKED RAK

MAINTENANCE OF TRAFFIC PLAN - PHASES 1 & 2

CUY-480/ TRANSPORTATION BLVD. I-480 SHOULDER CLOSURE, BEGIN TO STA. 1049+00

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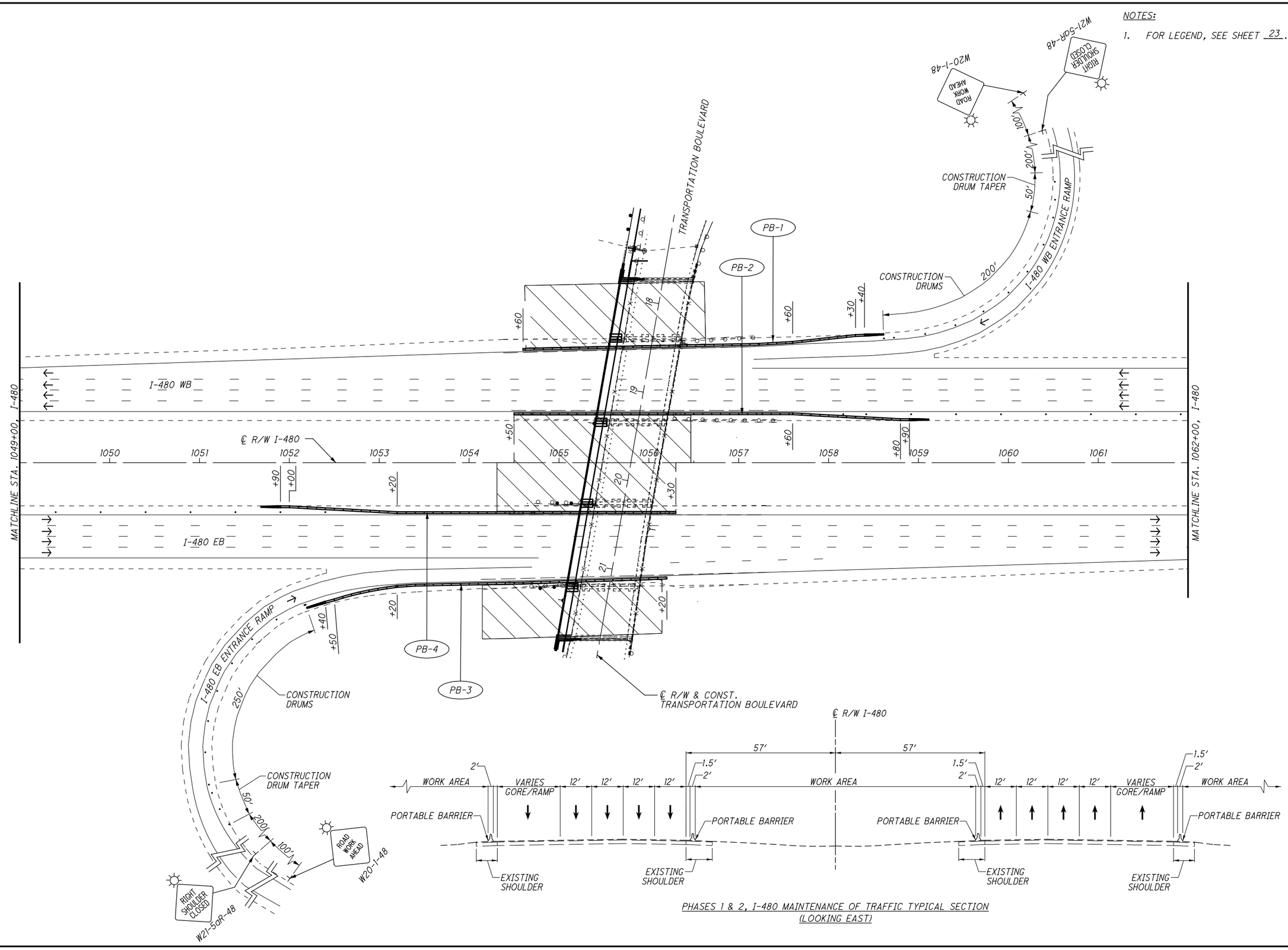
NOTES:

1. FOR LEGEND, SEE SHEET 23.



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

HORIZONTAL SCALE IN FEET: 0, 25, 50, 100

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

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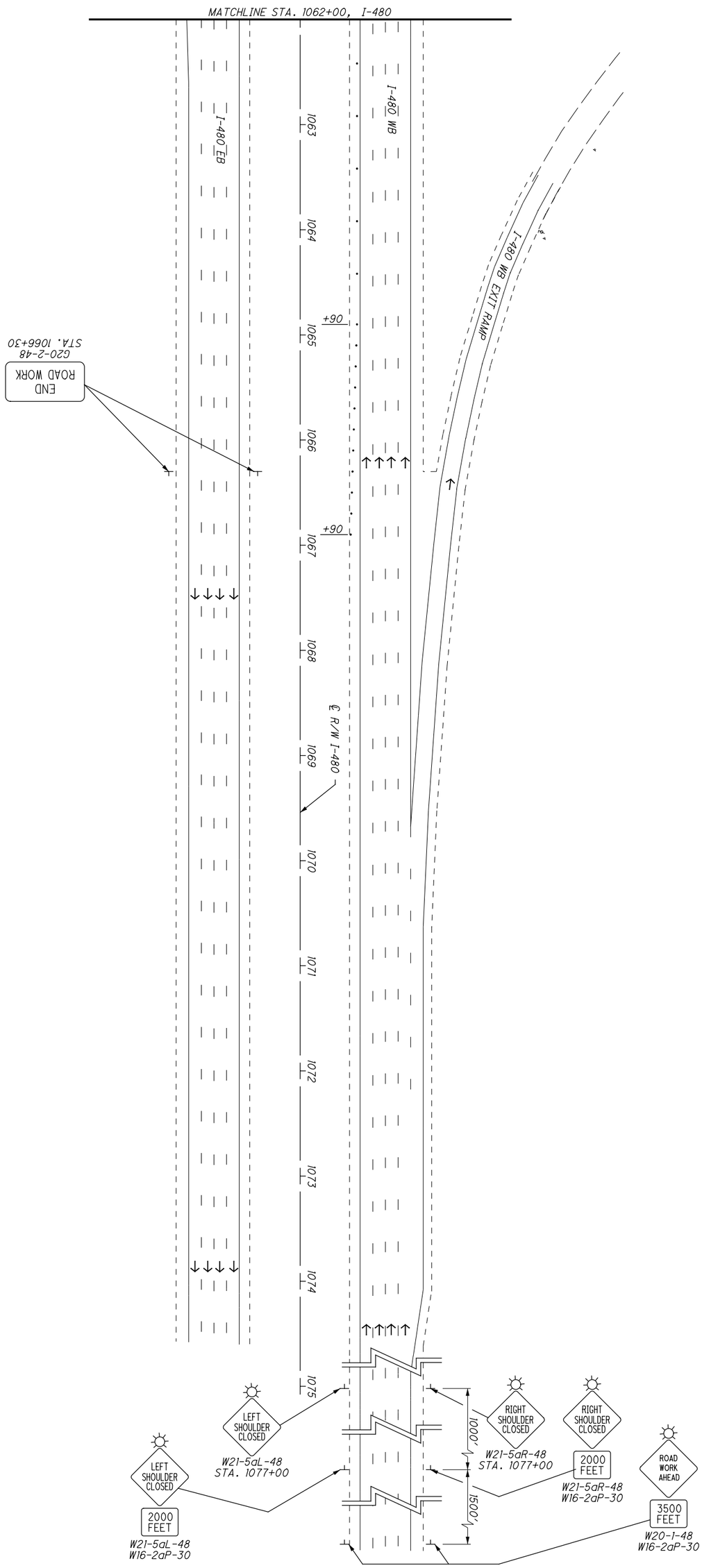
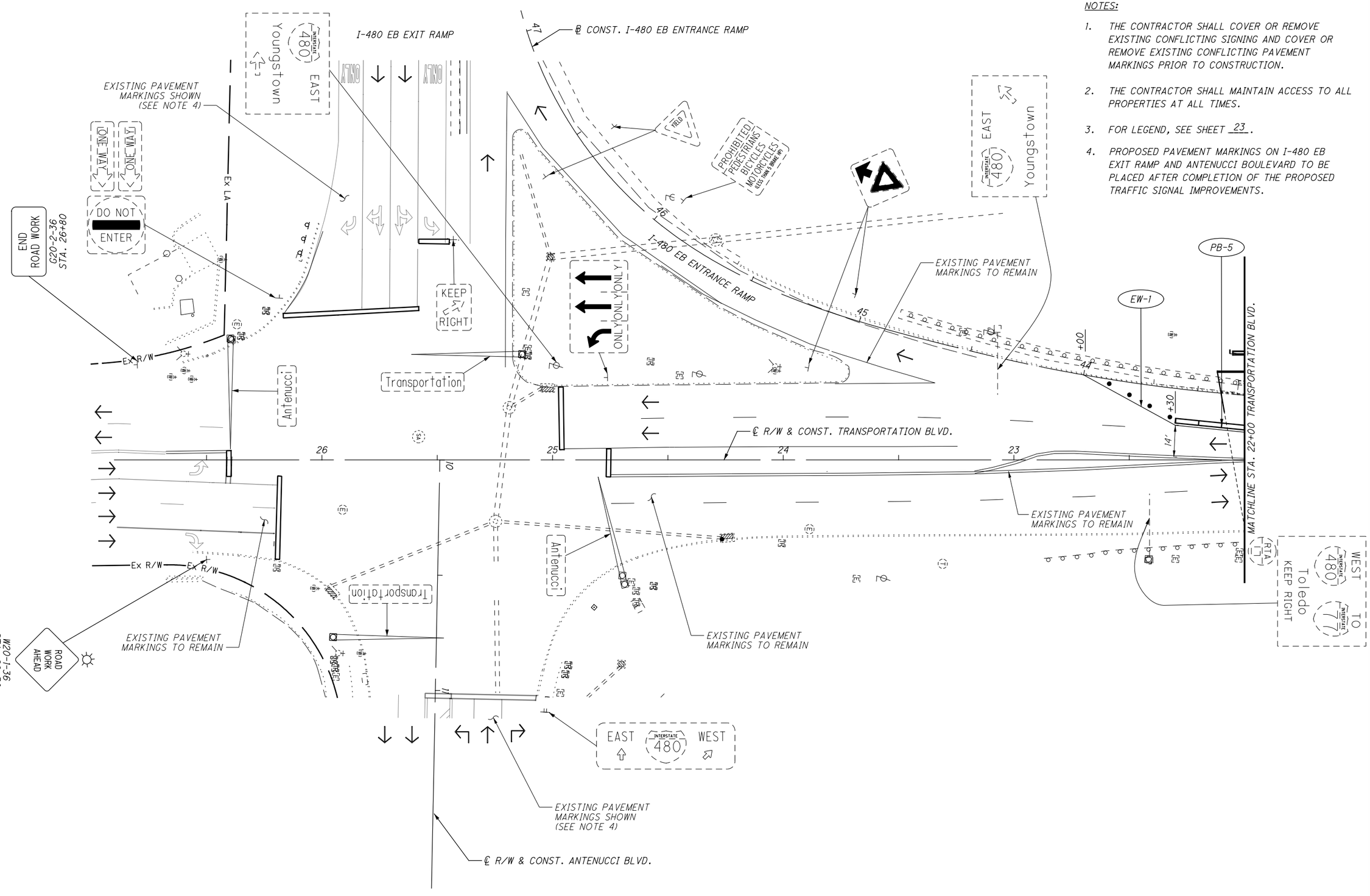


NOTES:

1. FOR LEGEND, SEE SHEET 23.

25 / 225	CUY-480/ TRANSPORTATION BLVD.	MAINTENANCE OF TRAFFIC PLAN - PHASES 1 & 2 I-480 SHOULDER CLOSURE, STA. 1062+00 TO END	CALCULATED KRM / CHECKED RAK	0 50 25 100 HORIZONTAL SCALE IN FEET	N



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HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED KRM
CHECKED RAK

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

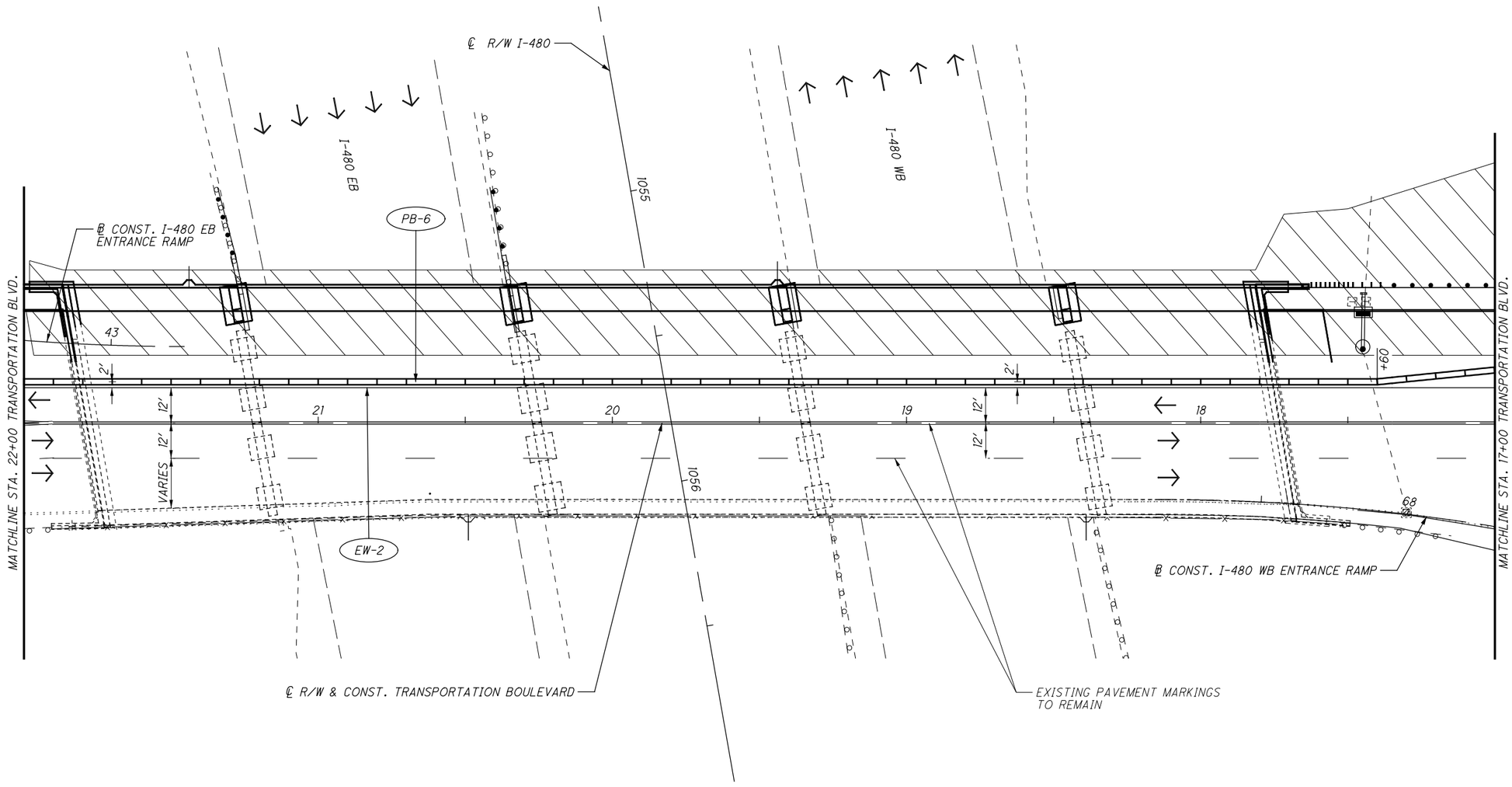
26
225

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 .



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED KRM
CHECKED RAK

MAINTENANCE OF TRAFFIC PLAN - PHASE 1
CUY-480/TRANSPORTATION BLVD. - STA. 22+00 TO STA. 17+00

CUY-480/ TRANSPORTATION BLVD.

MAINTENANCE OF TRANSPORTATION BLVD.

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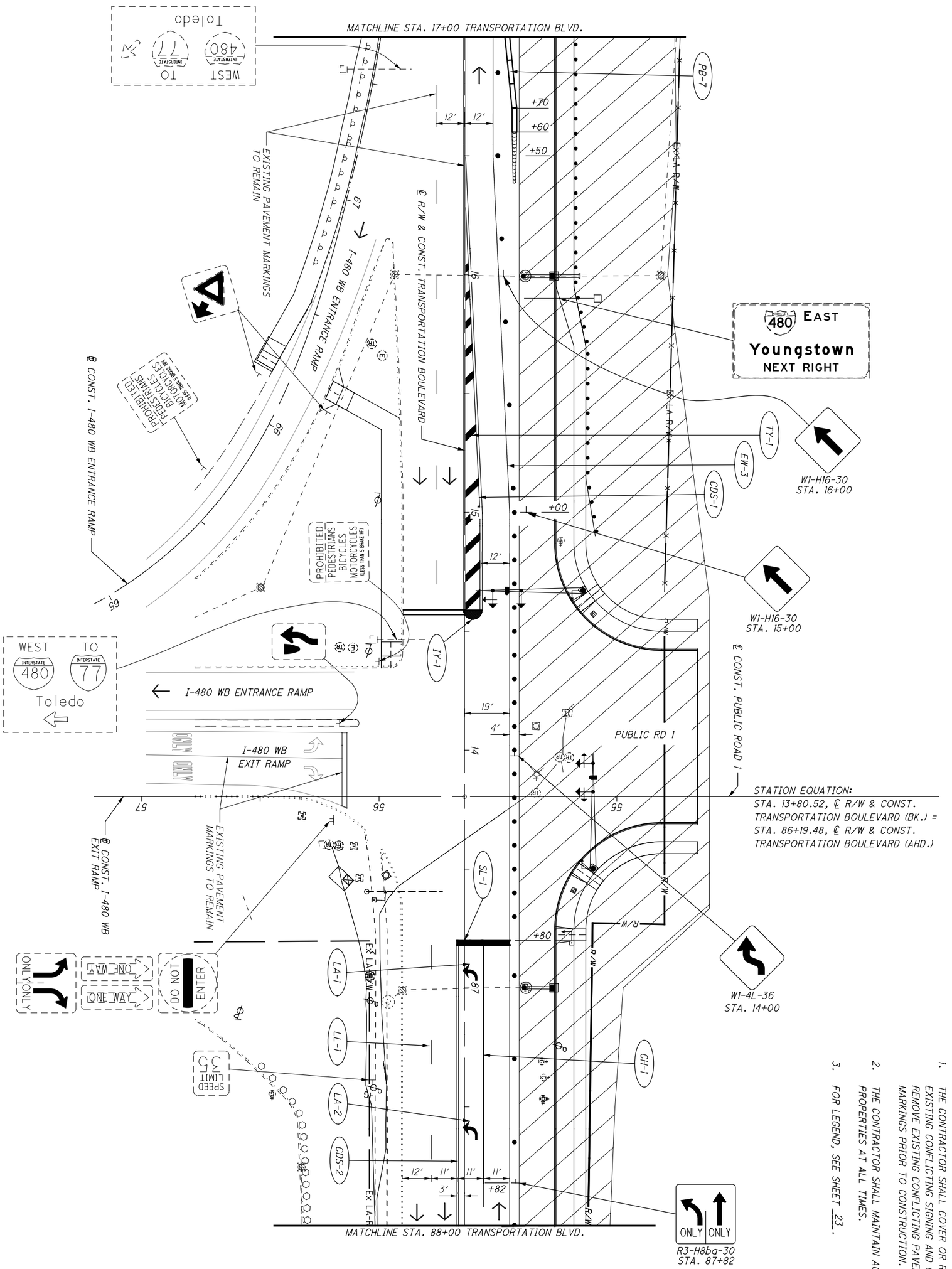


NOTES:

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.

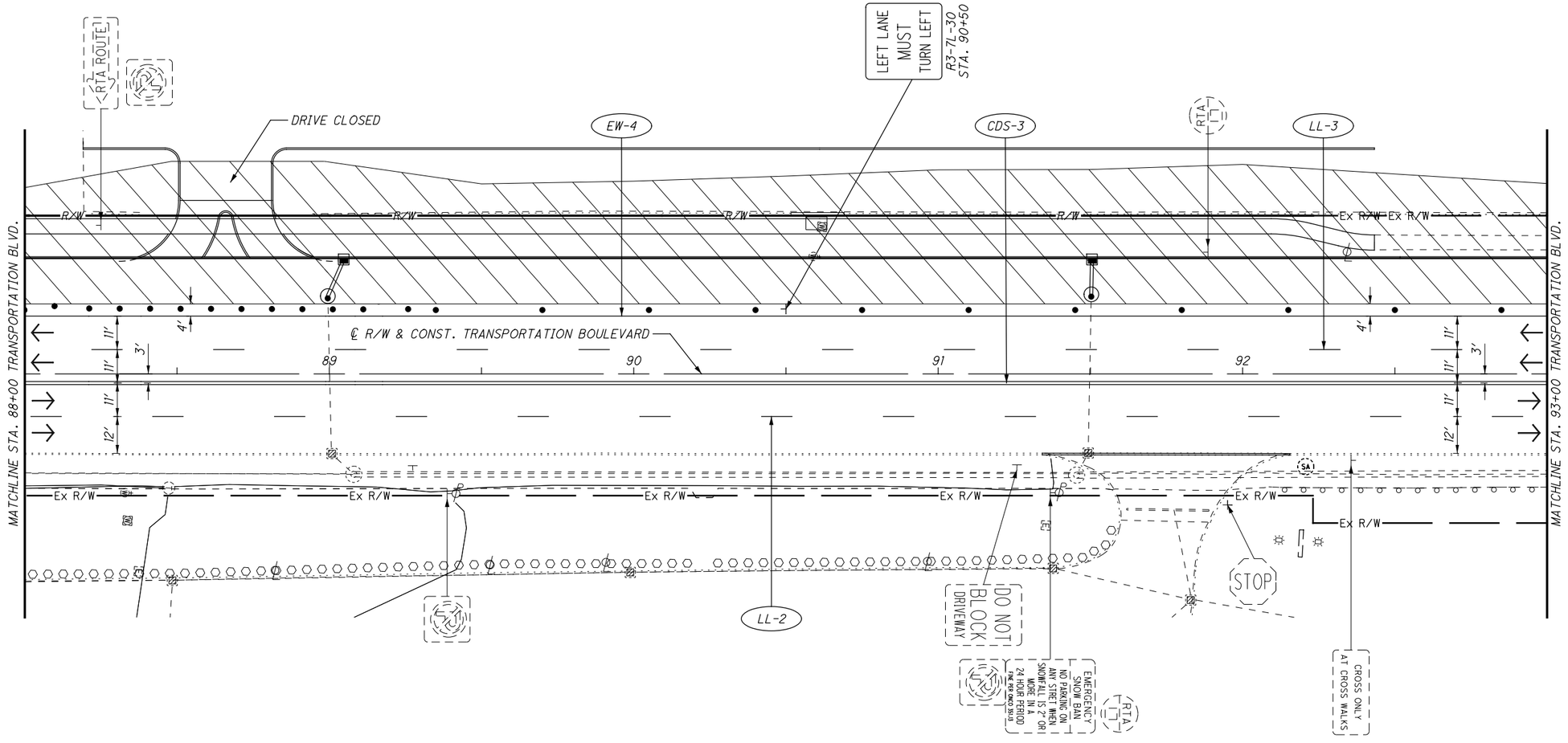
28 / 225	CUY-480/ TRANSPORTATION BLVD.	MAINTENANCE OF TRAFFIC PLAN - PHASE 1 TRANSPORTATION BLVD. - STA. 17+00 TO STA. 88+00	CALCULATED KRM CHECKED RAK	0 10 20 40 HORIZONTAL SCALE IN FEET

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.



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HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED KRM
CHECKED RAK

MAINTENANCE OF TRAFFIC PLAN - PHASE 1

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

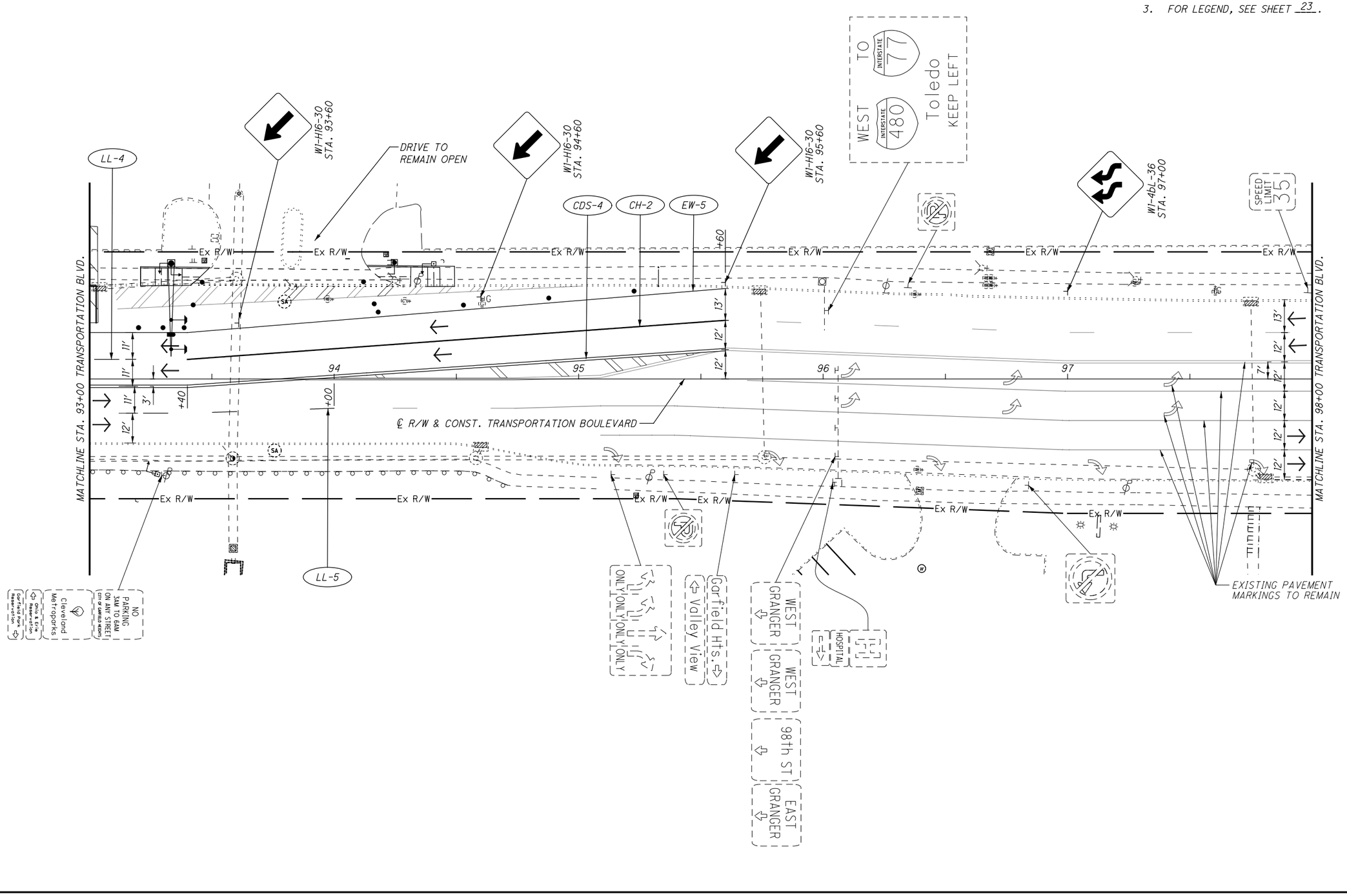
TRANSPORTATION BLVD.

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.



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HORIZONTAL SCALE IN FEET
0 10 20 40

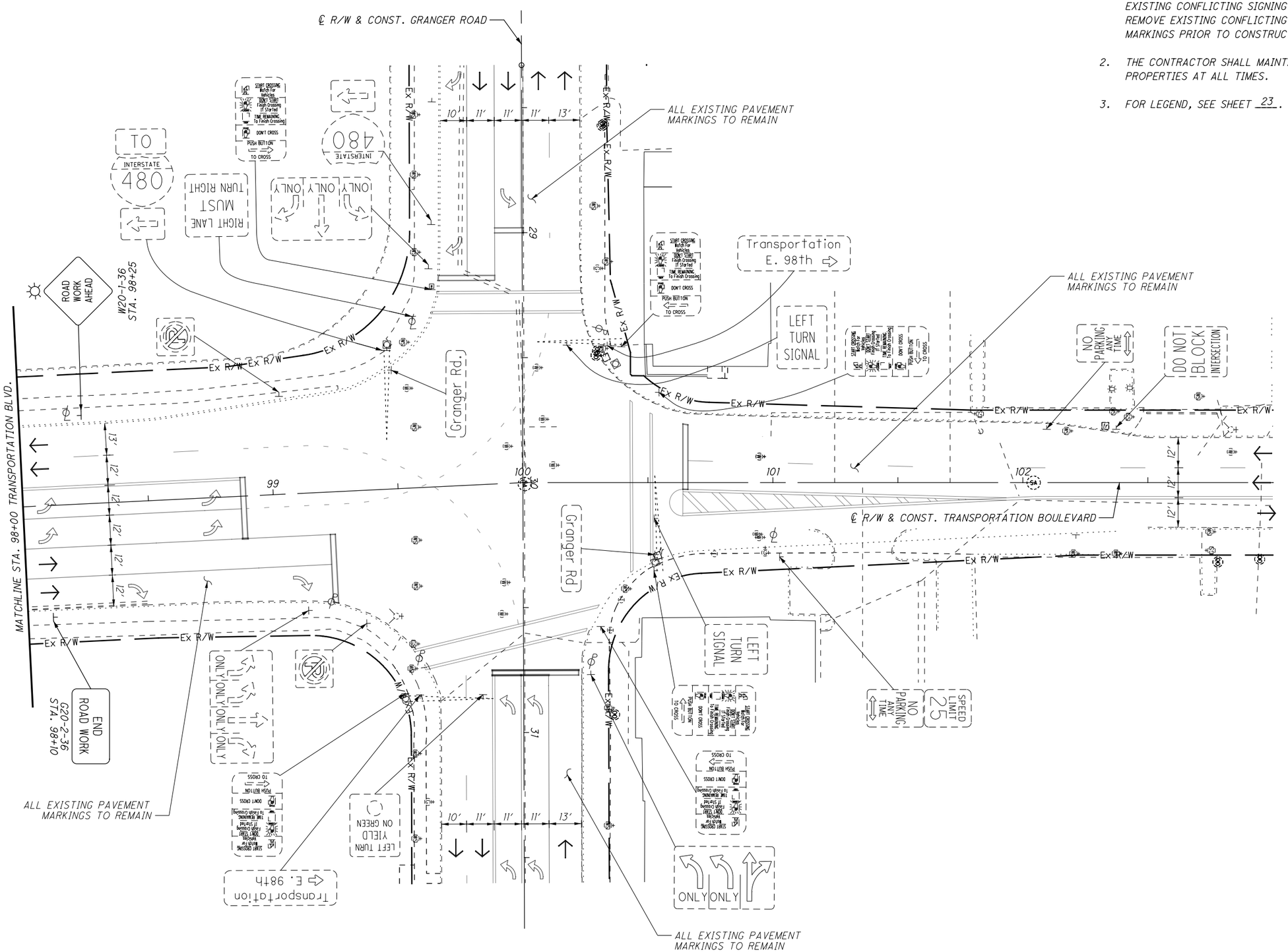
CALCULATED KRM
CHECKED RAK

MAINTENANCE OF TRAFFIC PLAN - PHASE 1

CUY-480/ TRANSPORTATION BLVD. - STA. 93+00 TO STA. 98+00 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.



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HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED KRM
CHECKED RAK

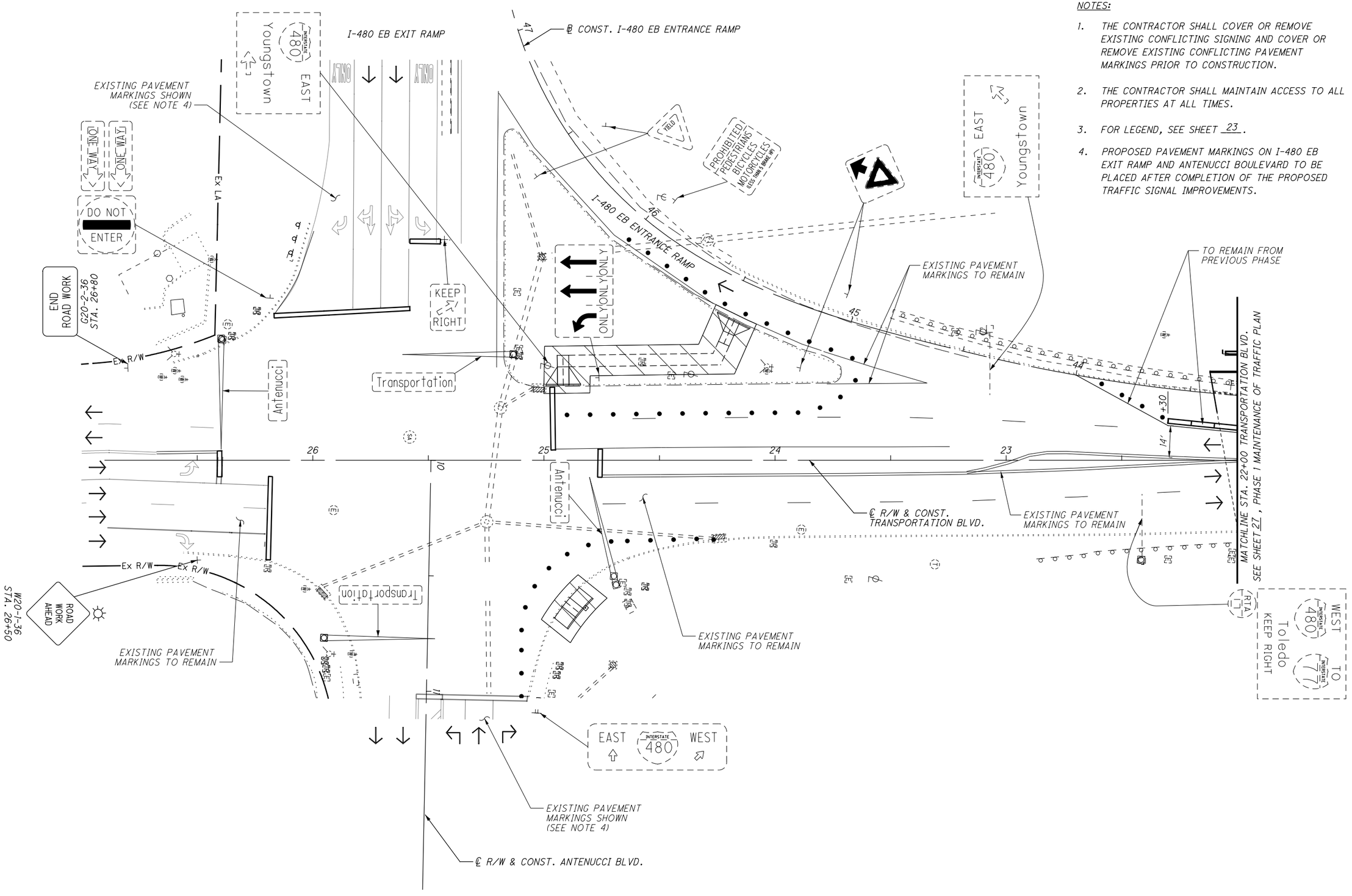
MAINTENANCE OF TRAFFIC PLAN - PHASE 1

CUY-480/ TRANSPORTATION BLVD. - STA. 98+00 TO END

TRANSPORTATION BLVD. - STA. 98+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.



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED KRM
CHECKED RAK

MAINTENANCE OF TRAFFIC PLAN - PHASE 1A

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

TRANSPORTATION BLVD.

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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.

I-480 EB EXIT RAMP

℄ CONST. I-480 EB ENTRANCE RAMP

EXISTING PAVEMENT MARKINGS SHOWN (SEE NOTE 4)

I-480 EB ENTRANCE RAMP

PB-8

ONLY

ONLY

ONLY

ONE WAY

ONE WAY

DO NOT ENTER

Ex LA

END ROAD WORK
G20-2-36
STA. 26+80

KEEP RIGHT

Ex R/W

Antenucci

Transportation

CH-3

EW-6

R=200'

℄ R/W & CONST. TRANSPORTATION BLVD.

EXISTING PAVEMENT MARKINGS TO REMAIN

MATCHLINE STA. 22+00 TRANSPORTATION BLVD.
SEE SHEET 27 , PHASE I MAINTENANCE OF TRAFFIC PLAN

ROAD WORK AHEAD
W20-1-36
STA. 26+50

Ex R/W

Ex R/W

Transportation

Antenucci

EXISTING PAVEMENT MARKINGS TO REMAIN

EXISTING PAVEMENT MARKINGS TO REMAIN

EAST INTERSTATE 480 WEST

EXISTING PAVEMENT MARKINGS SHOWN (SEE NOTE 4)

℄ R/W & CONST. ANTENUCCI BLVD.

WEST TO INTERSTATE 480 INTERSTATE 71 (RIA) Toledo KEEP RIGHT

EAST INTERSTATE 480 Youngstown

YIELD

PROHIBITED PEDESTRIANS BICYCLES MOTORCYCLES (LESS THAN 5 BRAKE HP)

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED KRM CHECKED RAK

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

33
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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.

STATION EQUATION:
STA. 13+80.52, ℄ R/W & CONST. TRANSPORTATION BOULEVARD (BK.) = STA. 86+19.48, ℄ R/W & CONST. TRANSPORTATION BOULEVARD (AHD.)

Transportation

EAST 480 Youngstown NEXT RIGHT

℄ CONST. PUBLIC RD. 1

Ex LA R/W

TO REMAIN FROM PREVIOUS PHASE

PAVEMENT MARKINGS TO REMAIN FROM PREVIOUS PHASE

PUBLIC RD 1

R/W

LEFT TURN YIELD ON GREEN

CH-4

EW-7

℄ R/W & CONST. TRANSPORTATION BOULEVARD

EW-8

℄ CONST. I-480 WB EXIT RAMP

R=8′

R=9′

R=50′

LA-5

LA-6

EXISTING PAVEMENT MARKINGS TO REMAIN

I-480 WB ENTRANCE RAMP

67

66

PROHIBITED PEDESTRIANS BICYCLES MOTORCYCLES (LESS THAN 5 BRAKE HP)

EXISTING PAVEMENT MARKING TO REMAIN

CH-6

LA-7

LA-8

SL-2

I-480 WB EXIT RAMP

EX LA-R/W

D9-2-30
M5-1-30
STA. 57+21

LA-3

CH-5

LA-4

CDS-5

EW-9

SPEED LIMIT 35

ENTER
DO NOT

ONE WAY
ONE WAY

ONLY ONLY

MATCHLINE STA. 17+00 TRANSPORTATION BLVD.
SEE SHEET 27, PHASE 1 MAINTENANCE OF TRAFFIC PLAN

MATCHLINE STA. 88+00 TRANSPORTATION BLVD.

MATCHLINE STA. 57+50 ℄ CONST. I-480 WB EXIT RAMP
SEE SHEET 37

WEST TO 480 77 Toledo

WEST TO 480 77 Toledo

℄ CONST. I-480 WB ENTRANCE RAMP

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED KRM
CHECKED RAK

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

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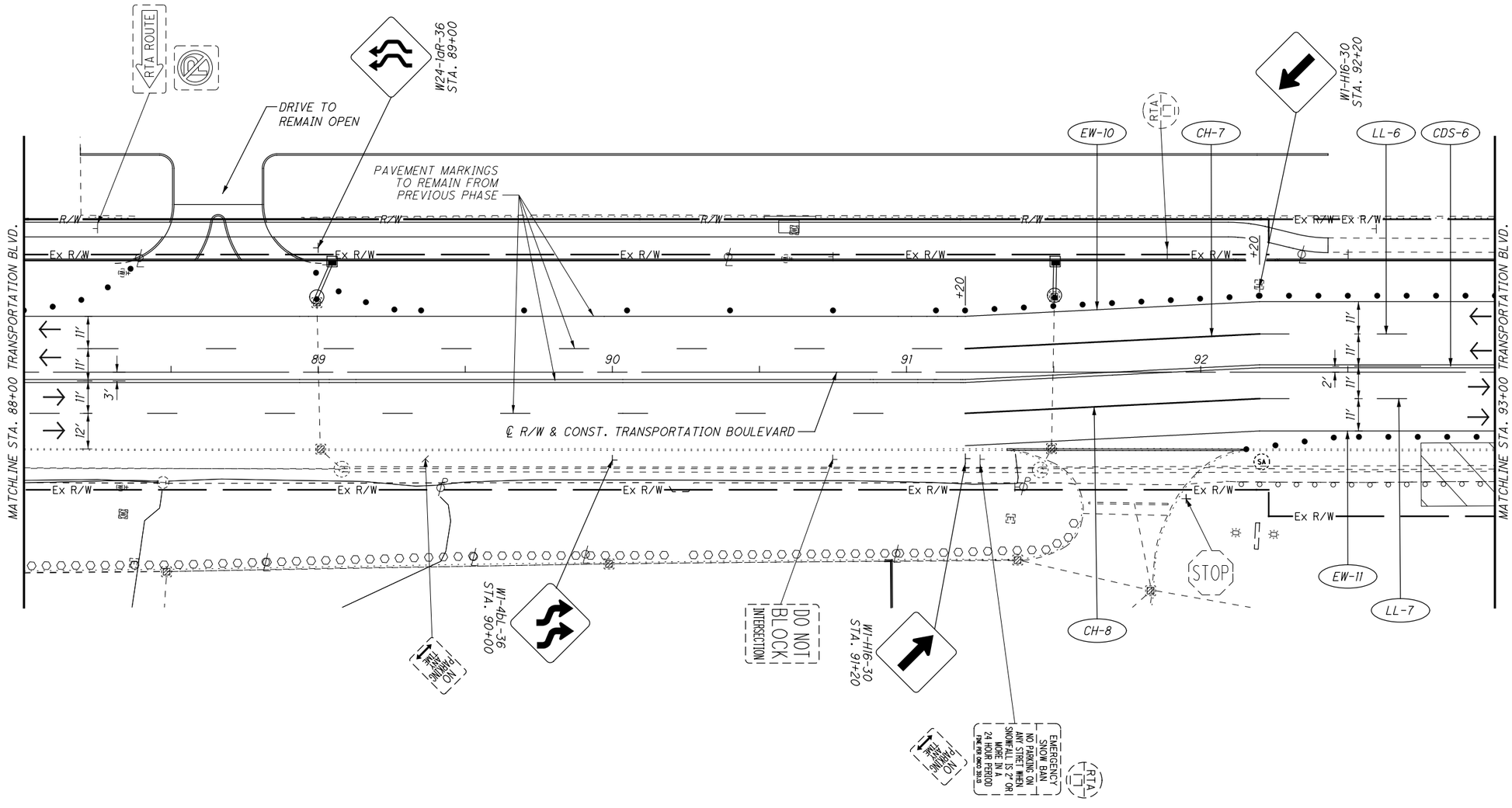
NOTES:

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.



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CALCULATED KRM
CHECKED RAK

HORIZONTAL SCALE IN FEET
0 10 20 40

MAINTENANCE OF TRAFFIC PLAN - PHASE 2

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

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.

DRIVE TO BE CLOSED DURING ERECTION OF THE TRAFFIC SIGNAL ONLY

W1-H16-30 STA. 94+60

W1-H16-30 STA. 95+60

PAVEMENT MARKINGS TO REMAIN FROM PREVIOUS PHASE

W1-4bL-36 STA. 97+00

PAVEMENT MARKINGS TO REMAIN FROM PREVIOUS PHASE

TO WEST INTERSTATE 480 INTERSTATE 77 Toledo KEEP LEFT

SPEED LIMIT 35

CDS-7

EW-12

LL-8

Ex R/W

℄ R/W & CONST. TRANSPORTATION BOULEVARD

℄ CONST. ODOT DRIVE

EW-13

LL-9

ONLY ONLY ONLY ONLY

Garfield Hts. Valley View

West Granger West Granger 98Th St East Granger

HOSPITAL

EXISTING PAVEMENT MARKINGS TO REMAIN

MATCHLINE STA. 93+00 TRANSPORTATION BLVD.

MATCHLINE STA. 98+00 TRANSPORTATION BLVD. SEE SHEET 31, PHASE 1 MAINTENANCE OF TRAFFIC PLAN

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED KRM CHECKED RAK

MAINTENANCE OF TRAFFIC PLAN - PHASE 2

CUY-480/ TRANSPORTATION BLVD. TRANSPORTATION BLVD. - STA. 93+00 TO STA. 98+00

36
225

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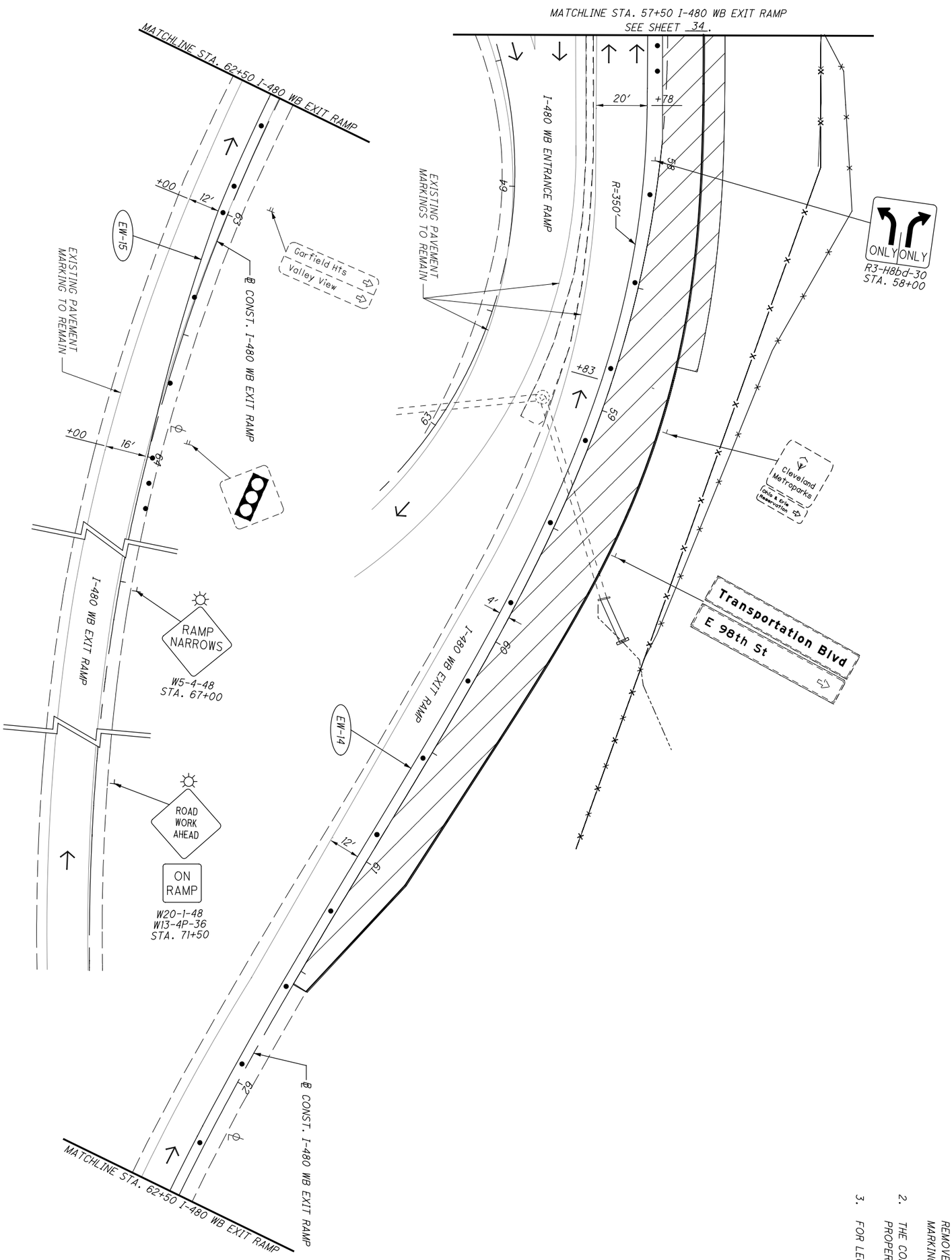


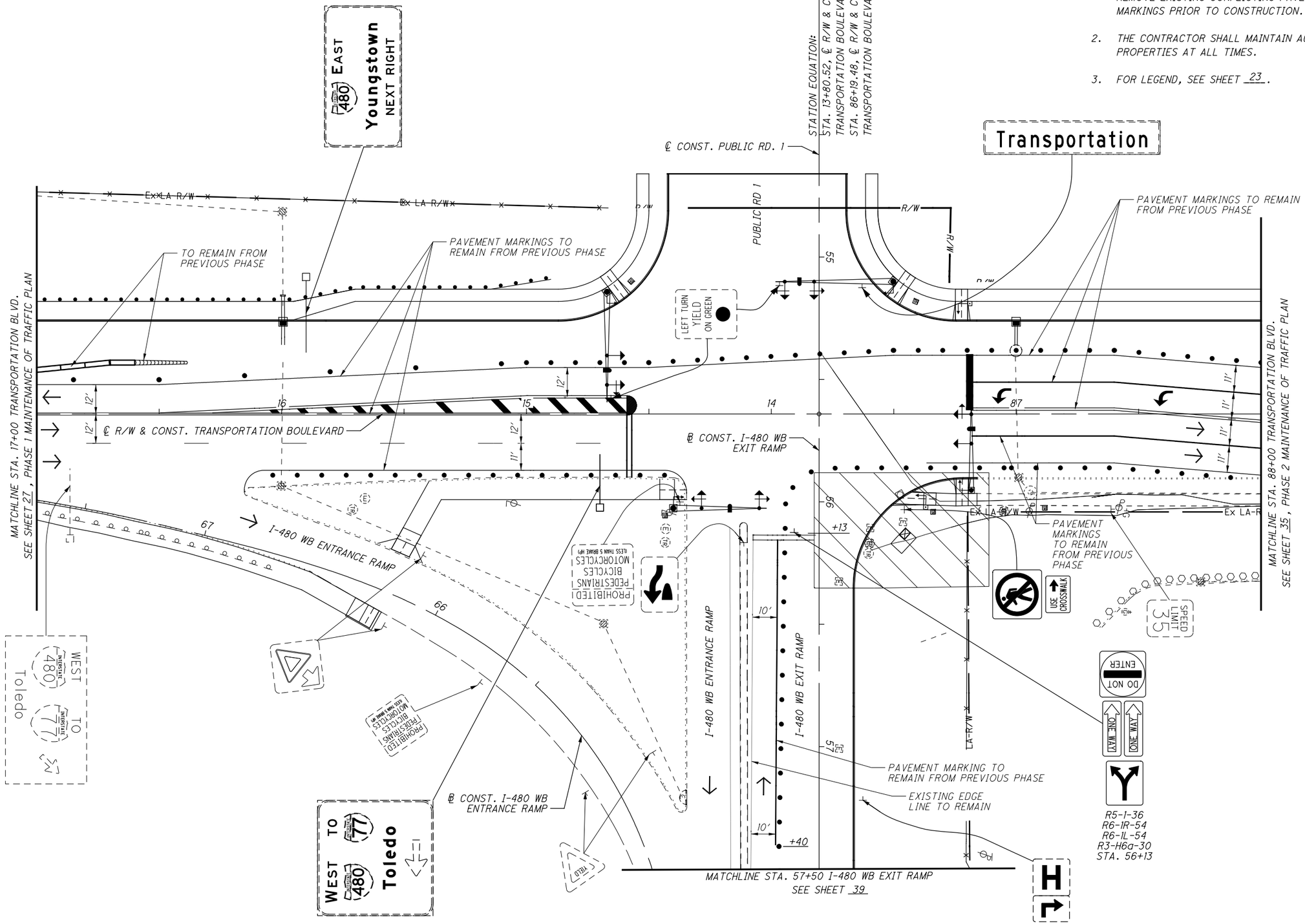
NOTES:

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.

37 / 225	CUY-480/ TRANSPORTATION BLVD.	MAINTENANCE OF TRAFFIC PLAN - PHASE 2 I-480 WB EXIT RAMP - STA. 57+50 TO END	CALCULATED KRM CHECKED RAK	0 20 10 40 HORIZONTAL SCALE IN FEET

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.



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED KRM
CHECKED RAK

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

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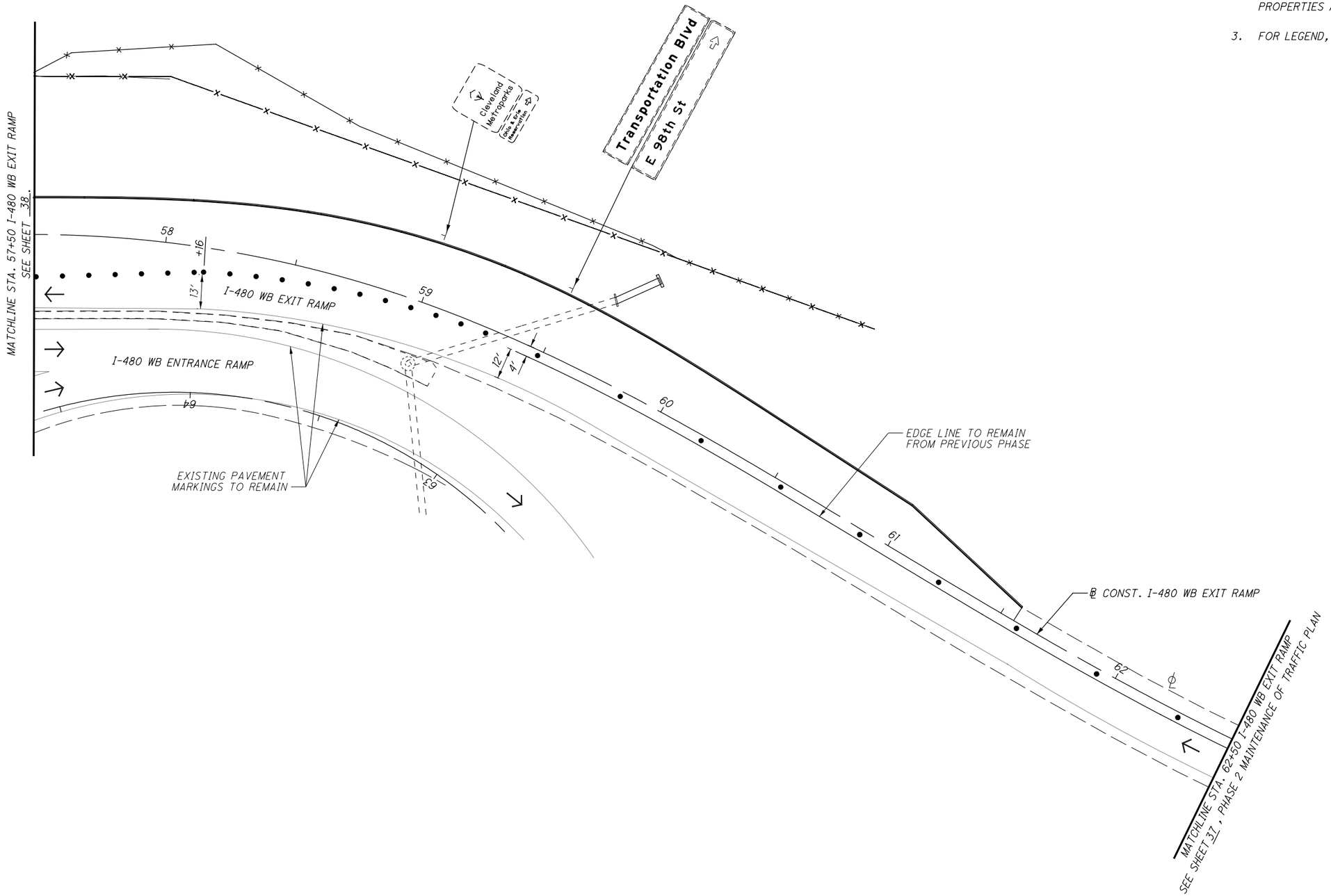
NOTES:

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.



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED KRM
CHECKED RAK

MAINTENANCE OF TRAFFIC PLAN - PHASE 2A

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

CUY-480/
TRANSPORTATION BLVD.

39
225

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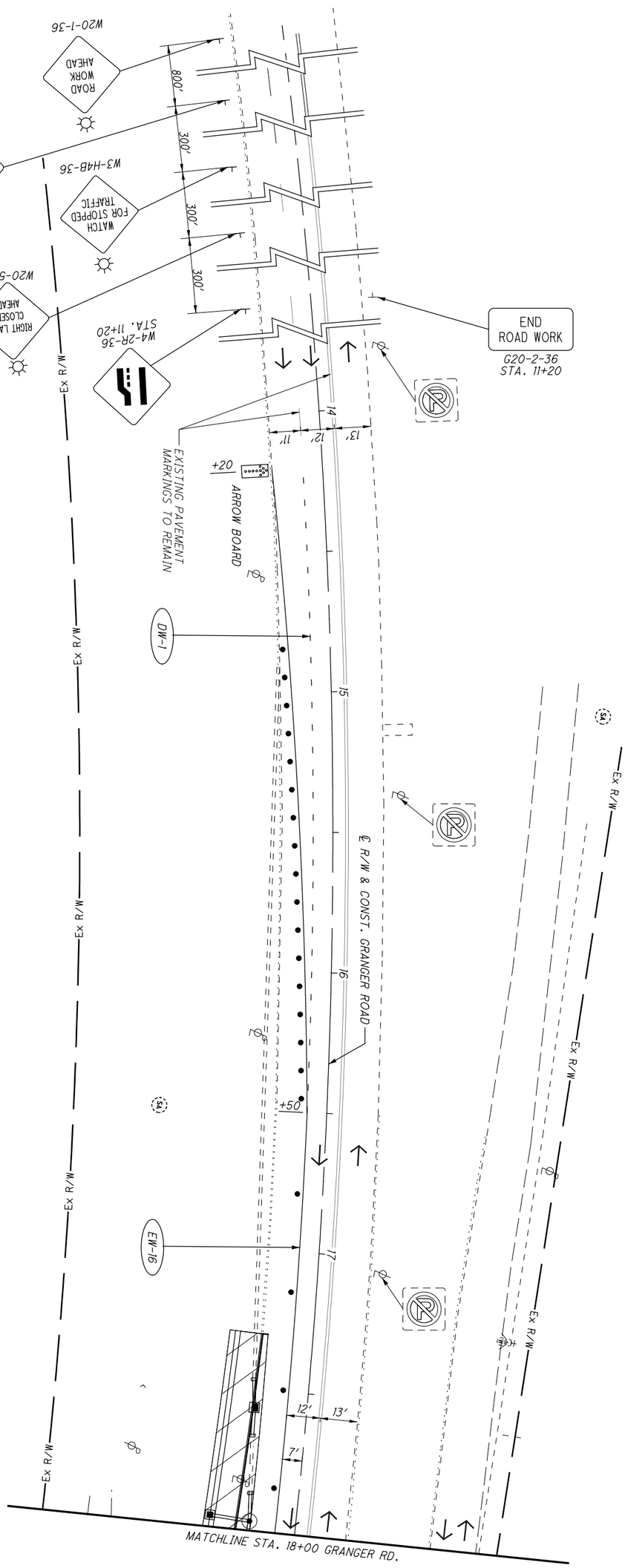


NOTES:

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.

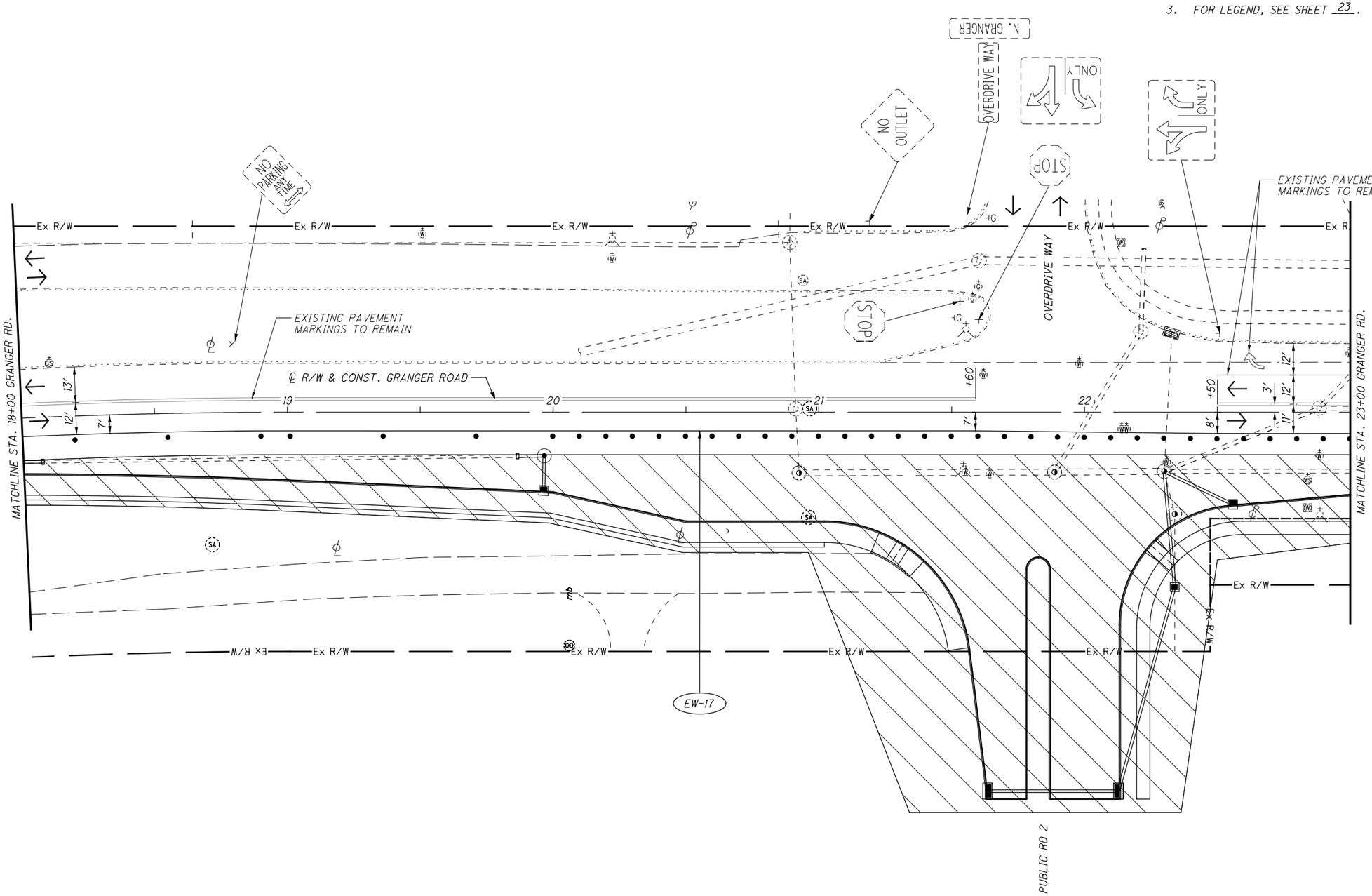
40 / 225	CUY-480/ TRANSPORTATION BLVD.	MAINTENANCE OF TRAFFIC PLAN - PHASE 3 GRANGER RD. - BEGIN TO STA. 18+00	CALCULATED KRM / CHECKED RAK	0 10 20 40 HORIZONTAL SCALE IN FEET	N

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.*



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED KRM
CHECKED RAK

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

CUY-480/
TRANSPORTATION BLVD.

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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.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED KRM
CHECKED RAK

TRAFFIC PLAN - PHASE 3
STA. 23+00 TO END

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

CUY-480/
TRANSPORTATION BLVD.

42
225

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SHEET NUMBER											PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
11	12	13		48	50	54	55	56	57	59	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	
				1125	3			393		4 25			1543	3 202	23000	4 1543 3	SY	PAVEMENT REMOVED	
						2337							2337	202	23500	2337	SY	WEARING COURSE REMOVED	
				3043									3043	202	30000	3043	SF	WALK REMOVED	
				80	3							3	80	202	30700	80	FT	CONCRETE BARRIER REMOVED	
						5 1278		791					5 2069	202	32000	5 2069	FT	CURB REMOVED	
				445	3								445	3 202	35100	445 3	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									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
					12695	1						1	12695	203	10000	12695	CY	EXCAVATION	
					11627								11627	203	20000	11627	CY	EMBANKMENT	
						1278	3220	2220				1356	5362	204	10000	6718	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				4169	2	2				1	4176	204	45000	4177	HOUR	PROOF ROLLING	
1998	2												1998	255	20000	1998	FT	FULL DEPTH PAVEMENT SAWING 2	
				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	
				792								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	18000	159	FT	COMBINATION CURB AND GUTTER, TYPE 3 2	
							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	
				132	3								132	622	90000	132	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	

NO.	DESCRIPTION	REV. BY	DATE
1	QUANTITY REVISIONS	DSM	1-12-18
2	QUANTITY/ITEM NAME REVISIONS	JMB	1-16-18
3	NEW ITEMS/QUANTITY REVISIONS	JMB	1-22-18
4	QUANTITY REVISIONS	DSM	1-22-18
5	QUANTITY REVISIONS	DSM	1-23-18

CALCULATED JJS
CHECKED MVJ

GENERAL SUMMARY

CUY-480/
TRANSPORTATION BLVD.

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SHEET NUMBER											PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	12		48		49	54	55	56	59 △3	176	01/IMS/BR	02/IMS/PV	03/S>2/PV						
																		DRAINAGE CONTINUED	
		△1	426									△1	426	611	04400	△1 426	FT	12" CONDUIT, TYPE B	
			463										463	611	04600	463	FT	12" CONDUIT, TYPE C	
			27										27	611	05900	27	FT	15" CONDUIT, TYPE B	
		△1	10									△1	10	611	06100	△1 10	FT	15" CONDUIT, TYPE C	
			95									21	74	611	13600	95	FT	30" CONDUIT, TYPE C	
			8										8	611	20900	8	FT	48" CONDUIT, TYPE B	
			9										9	611	98150	9	EACH	CATCH BASIN, NO. 3	
			7										7	611	98180	7	EACH	CATCH BASIN, NO. 3A	
			1										1	611	98370	1	EACH	CATCH BASIN, NO. 6	
			4										4	611	98470	4	EACH	CATCH BASIN, NO. 2-2B	
			1										1	611	98571	1	EACH	CATCH BASIN, NO. 2-5, AS PER PLAN	
			11										11	611	99574	11	EACH	MANHOLE, NO. 3	
			1										1	611	99654	1	EACH	MANHOLE ADJUSTED TO GRADE	
			4										4	611	99660	4	EACH	MANHOLE RECONSTRUCTED TO GRADE	
	2		3										5	611	99710	5	EACH	PRECAST REINFORCED CONCRETE OUTLET	
																		PAVEMENT	
							449						449	301	46000	449	CY	ASPHALT CONCRETE BASE, PG64-22	
						684	535	370	△3 4			223	1370	304	20000 △3	1593	CY	AGGREGATE BASE	
						3770		2075	△3 25			1257	4613	305	13010 △3	5870	SY	9" CONCRETE BASE, CLASS QC1	
						601		202				123	680	407	13900	803	GAL	TACK COAT, 702.13	
						601	545	202	△3 5			123	1230	407	20000 △3	1353	GAL	NON-TRACKING TACK COAT	
						233	131	98					462	441	10200	462	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)	
						200	113	84					397	441	50101	397	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M, AS PER PLAN	12
							6						6	441	50400	6	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) (DRIVEWAYS)	
							8						8	441	50600	8	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448) (DRIVEWAYS)	
						52			△3 2			52		442	20001 △3	54	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A, (448), PG70-22M, AS PER PLAN	12
						60			△3 2			60		442	20200 △3	62	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (448)	
							82						82	452	12050	82	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS	
						△2						△2							
						534						219	315	875	10000	534	LB	LONGITUDINAL JOINT ADHESIVE	
																		WATER WORK	
					231								231	638	03000	231	FT	16" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, PUSH-ON JOINTS AND FITTINGS	
	50												50	638	04900	50	FT	1" COPPER SERVICE BRANCH	
	50												50	638	05000	50	FT	1-1/2" COPPER SERVICE BRANCH	
	50												50	638	05100	50	FT	2" COPPER SERVICE BRANCH	
					4								4	638	07480	4	EACH	6" GATE VALVE	
					4								4	638	10200	4	EACH	6" FIRE HYDRANT	
					1								1	638	10300	1	EACH	FIRE HYDRANT EXTENDED AND ADJUSTED TO GRADE	
					4								4	638	10480	4	EACH	FIRE HYDRANT REMOVED	
					5								5	638	10800	5	EACH	VALVE BOX ADJUSTED TO GRADE	
					1								1	638	98000	1	EACH	WATER WORK, MISC.: WATER METER ADJUSTED TO GRADE	
	1												1	638	98000	1	EACH	WATER WORK, MISC.: RETAP AND RECONNECT 1" WATER SERVICE CONNECTION, LONG SIDE COMPLETE	12
					2								2	638	98000	2	EACH	WATER WORK, MISC.: 16" PCCP TO DIP ADAPTOR/CLOSURE PIECE	12
	1												1	638	98000	1	EACH	WATER WORK, MISC.: RETAP AND RECONNECT 1-1/2" WATER SERVICE CONNECTION, LONG SIDE COMPLETE	12
	1												1	638	98000	1	EACH	WATER WORK, MISC.: RETAP AND RECONNECT 2" WATER SERVICE CONNECTION, LONG SIDE COMPLETE	12
	4												4	638	98000	4	EACH	WATER WORK, MISC.: TEMPORARY SERVICE CONNECTION	12
					8								8	638	98000	8	EACH	WATER WORK, MISC.: EXTEND WATER SERVICE CONNECTION	12
	LS												LS	638	98100	LS		WATER WORK, MISC.: CITY OF CLEVELAND WATER DEPARTMENT CHARGES	12
	LS												LS	638	98100	LS		WATER WORK, MISC.: AS-BUILT WATERLINE DRAWINGS	12
					210								210	638	98600	210	FT	WATER WORK, MISC.: WATER MAIN REMOVED	
	50												50	638	98600	50	FT	WATER WORK, MISC.: 6" WATER MAIN D.I.P. ANSI CLASS 52, P.O. JOINTS AND RETAINED MECH. FITTINGS	12
	50												50	638	98600	50	FT	WATER WORK, MISC.: 8" WATER MAIN D.I.P. ANSI CLASS 52, P.O. JOINTS AND RETAINED MECH. FITTINGS	12
																		SANITARY SEWER	
			3										3	611	99661	3	EA	MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN	12
																		LIGHTING	
										50	8	8	34	625	00450	50	EACH	CONNECTION, FUSED PULL-APART	
										63	4	7	52	625	00480	63	EACH	CONNECTION, UNFUSED PERMANENT	
										1			1	625	00481	1	EACH	CONNECTION, UNFUSED PERMANENT, AS PER PLAN	175
										2		1	1	625	10490	2	EACH	LIGHT POLE, CONVENTIONAL, AT10, B35	
										8		3	5	625	10490	8	EACH	LIGHT POLE, CONVENTIONAL, AT15, B35	
										1			1	625	10490	1	EACH	LIGHT POLE, CONVENTIONAL, AT20, B35	
										4	4			625	10490	4	EACH	LIGHT POLE, CONVENTIONAL, A25, B35	
										18		4	14	625	14500	18	EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP	
										4401	1545		2856	625	23200	4401	FT	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE	
										1400			1400	625	23300	1400	FT	NO. 2 AWG 2400 VOLT DISTRIBUTION CABLE	

NO.	DESCRIPTION	REV. BY	DATE
1	QUANTITY REVISIONS	DSM	1-12-18
2	QUANTITY REVISIONS	JMB	1-16-18
3	QUANTITY REVISIONS	DSM	1-22-18

CALCULATED JJS
CHECKED MVJ

GENERAL SUMMARY

CUY-480/
TRANSPORTATION BLVD.

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1/22/2018
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SHEET NUMBER												PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
127	129	130	131	132	133	134	135	136	137	138	176	01/IMS/BR	02/IMS/PV	03/S>2/PV						
																			LIGHTING CONTINUED	
											3735	864	729	2142	625	23400	3735	FT	NO. 10 AWG POLE & BRACKET CABLE	
											993		536	457	625	24320	993	FT	1-1/2" DUCT CABLE WITH THREE NO. 4 AWG 2400 VOLT CABLES	
											1149	485		664	625	25408	1149	FT	CONDUIT, 2", 725.051	
											488			488	625	25600	488	FT	CONDUIT, 4", 725.04	
											2		2		625	26251	2	EACH	LUMINAIRE, TYPE II, 200W, CONVENTIONAL, AS PER PLAN	175
											9		2	7	625	26251	9	EACH	LUMINAIRE, TYPE III, 200W, CONVENTIONAL, AS PER PLAN	175
											4	4			625	26251	4	EACH	LUMINAIRE, TYPE III, 250W, CONVENTIONAL, AS PER PLAN	175
											4	4			625	27501	4	EACH	LUMINAIRE, UNDERPASS, 100W, HPS, AS PER PLAN	175
											1583		496	1087	625	29002	1583	FT	TRENCH, 24" DEEP	
											15		1	14	625	30700	15	EACH	PULL BOX, 725.08, 18"	
											22	4	4	14	625	32000	22	EACH	GROUND ROD	
										⚠	1			1	625	34001	1	EACH	POWER SERVICE, AS PER PLAN A	175
											1			1	625	34001	1	EACH	POWER SERVICE, AS PER PLAN B	175
											1583		149	1434	625	36000	1583	FT	PLASTIC CAUTION TAPE	
											LS			LS	SPEC	62540000	LS		MAINTAIN EXISTING LIGHTING	175
											1			1	SPEC	62540010	1	EACH	REPLACEMENT OF EXISTING LIGHTING UNIT	175
											13	5	3	5	625	75400	13	EACH	LIGHT POLE REMOVED	
											11	5	3	3	625	75500	11	EACH	LIGHT POLE FOUNDATION REMOVED	
											13	5	3	5	625	75506	13	EACH	LUMINAIRE REMOVED	
											7			7	625	98000	7	EACH	LIGHTING MISC,: AREA LUMINAIRE AND POLE	175
											2			2	625	98000	2	EACH	LIGHTING MISC,: CAMERA RELOCATION	175
																			TRAFFIC CONTROL	
						2							2		620	00500	2	EACH	DELINEATOR, POST GROUND MOUNTED	
						2							2		620	31200	2	EACH	REMOVAL OF DELINEATOR	
62													62		621	00100	62	EACH	RPM	
62													62		621	54000	62	EACH	RAISED PAVEMENT MARKER REMOVED	
										3				3	625	32000	3	EACH	GROUND ROD	
							136.6	189.0	115.0				68.8	371.8	630	02101	440.6	FT	GROUND MOUNTED SUPPORT, NO. 2 POST, AS PER PLAN	126
							131.9	27.6	66.8				13.6	212.7	630	03101	226.3	FT	GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN	126
									16.1					16.1	630	04101	16.1	FT	GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN	126
										34.2			34.2		630	06500	34.2	FT	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W6X9	
							28.1						28.1		630	08005	28.1	FT	ONE WAY SUPPORT, NO. 3 POST, AS PER PLAN	126
							2		3				2	3	630	08600	5	EACH	SIGN POST REFLECTOR	
										2			2		630	09000	2	EACH	BREAKAWAY STRUCTURAL BEAM CONNECTION	
										1				1	630	11102	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-16.21, DESIGN 11	
										1				1	630	20400	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 4	
										1				1	630	20500	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 5	
										1				1	630	79000	1	EACH	SIGN HANGER ASSEMBLY, SPAN WIRE	
							4	2						6	630	79101	6	EACH	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN	126
										7				7	630	79200	7	EACH	SIGN ATTACHMENT ASSEMBLY, MAST ARM	
							170.2	106.3	90.0	60.0			31.6	394.9	630	80100	426.5	SF	SIGN, FLAT SHEET	
										48.0			48.0		630	80200	48.0	SF	SIGN, GROUND MOUNTED EXTRUSHEET	
										130.0				130.0	630	80224	130.0	SF	SIGN, OVERHEAD EXTRUSHEET	
										2			2		630	84500	2	EACH	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION	
										3				3	630	84510	3	EACH	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	
							14	4	11				1	28	630	84900	29	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
									1					1	630	85100	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
										1			1		630	85400	1	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	
							16	4	12				1	31	630	86002	32	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
										2			2		630	86102	2	EACH	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL	
							2							2	630	87100	2	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND REERECTION	
							1			7				8	630	87400	8	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	
							1	8	4					13	630	87500	13	EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	
								1	2				2	1	630	87520	3	EACH	REMOVAL OF POLE MOUNTED SIGN AND REERECTION	
										2				2	630	89702	2	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL	
	0.12	0.15			0.05	0.33							0.32	0.33	646	10000	0.65	MILE	EDGE LINE, 4"	
	0.11	0.39	0.29	0.26	0.02									1.07	646	10100	1.07	MILE	LANE LINE, 4"	
	0.08	0.20	0.21	0.32	0.19	0.06								1.06	646	10200	1.06	MILE	CENTER LINE	
	792	1176	1412	980	891	526							802	4975	646	10300	5777	FT	CHANNELIZING LINE, 8"	
	166	180	135	84		30							43	552	646	10400	595	FT	STOP LINE	
	377	582	581	188									230	1498	646	10500	1728	FT	CROSSWALK LINE	
	47	51		114	233	328							62	711	646	10600	773	FT	TRANSVERSE/DIAGONAL LINE	
				57	57									114	646	10800	114	SF	ISLAND MARKING	
	18	21	28	19	10	14							20	90	646	20300	110	EACH	LANE ARROW	

NO.	DESCRIPTION	REV. BY	DATE
1	NEW ITEMS/ITEM REVISIONS	JMB	1-24-18

CALCULATED JJS
CHECKED MVJ

GENERAL SUMMARY

CUY-480/
TRANSPORTATION BLVD.

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

CALCULATED JWG
CHECKED KMG

GENERAL SUMMARY

CUY-480/
TRANSPORTATION BLVD.

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						
																		MAINTENANCE OF TRAFFIC	
		300											300	614	11110	300	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
			4										4	614	11500	4	MNTH	WORKSITE TRAFFIC SUPERVISOR	
				270									270	614	11630	270	FT	INCREASED BARRIER DELINEATION	
				5									5	614	12348	5	EACH	WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL) 24"	
	12												12	614	12500	12	EACH	REPLACEMENT SIGN	
	15												15	614	13000	15	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
				41									41	614	13300	41	EACH	BARRIER REFLECTOR, TYPE B	
				16									16	614	13302	16	EACH	BARRIER REFLECTOR, TYPE B2	
				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	16
				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	
					230								230	614	24000	230	FT	WORK ZONE DOTTED LINE, CLASS I	
				64									64	614	25000	64	FT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I	
				22	41								63	614	26000	63	FT	WORK ZONE STOP LINE, CLASS I	
				2	6							4	4	614	30000	8	EACH	WORK ZONE ARROW, CLASS I	
				25									25	614	32700	25	SF	WORK ZONE ISLAND MARKING, CLASS I	
	120												120	616	10000	120	MGAL	WATER	
				2040									2040	622	41000	2040	FT	PORTABLE BARRIER, 32"	
				430									430	622	41020	430	FT	PORTABLE BARRIER, 32", BRIDGE MOUNTED	
																		STRUCTURES	
							LS				LS			202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	3
							34				34			202	22901	34	SY	APPROACH SLAB REMOVED, AS PER PLAN	8, 9
							LS				LS			503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
							LS				LS			503	21301	LS		UNCLASSIFIED EXCAVATION, AS PER PLAN	3
						2	53			2	53			503	31120	2 53	CY	SHALE EXCAVATION	
							155,832				155832			509	10000	155832	LB	EPOXY COATED REINFORCING STEEL	
							100				100			509	20001	100	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFROCING STEEL, AS PER PLAN	3
						1	1,596			1	1596			510	10000	1 1596	EA	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	
							506				506			511	34446	506	CY	CLASS QC2 CONCRETE WITH QC/QC, BRIDGE DECK	
							41				41			511	34450	41	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)	
							61				61			511	42010	61	CY	CLASS QC1 CONCRETE, PIER ABOVE FOOTINGS	
							76				76			511	43510	76	CY	CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING	
							52				52			511	46510	52	CY	CLASS QC1 CONCRETE, FOOTING	
							400				400			512	10050	400	SY	SEARLING OF CONCRETE SURFACES (NON-EPOXY)	
							620				620			512	10100	620	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
							10				10			512	10300	10	SY	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN	
							22				22			512	33000	22	SY	TYPE 2 WATERPROOFING	
							190,100				190100			513	10280	190100	LB	STRUCTURAL STEEL MEMBERS, LEVEL 4	
							1,000				1000			514	00051	1000	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN	3
							9,750				9750			514	00060	9750	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
							9,750				9750			514	00066	9750	SF	FIELD PAINTING STRUCTURAL STEEL, FINSIH COAT	
							9				9			514	10000	9	EA	FINAL INSPECTION REPAIR	
							54				54			516	12201	54	FT	STRUCTRUAL STEEL EXPANSION JOINT, AS PER PLAN (SLIDING PLATE EXTENSION)	16-17
							2				2			516	46000	2	EA	BEARING DEVICE, BOLSTER (B-275)	
							4				4			516	46200	4	EA	BEARING DEVICE, ROCKER (R-100)	
							6				6			516	46200	6	EA	BEARING DEVICE, ROCKER (R-250)	
							4				4			518	12201	4	EA	SCUPPER, INCLUDING SUPPORTS, AS PER PLAN	31
							60				60			518	21200	60	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
							35				35			518	40001	35	FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	10, 13
							50				50			518	40010	50	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
							40				40			526	15011	40	SY	REINFORCED CONCRETE APPROACH SLAB WITH QC/QA (T=13"), AS PER PLAN	36-37
							50				50			526	25011	50	SY	REINFORCED CONCRETE APPROACH SLAB WITH QC/QA (T=15"), AS PER PLAN	36-37
							436				436			607	39901	436	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN	32
																		INCIDENTALS	
													LS	108	10000	LS		CPM PROGRESS SCHEDULE	
													LS	614	11000	LS		MAINTAINING TRAFFIC	
												3	10	619	16020	3 10	MNTH	FIELD OFFICE, TYPE C	
													LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
													LS	624	10000	LS		MOBILIZATION	

NO.	DESCRIPTION	REV. BY	DATE
1	QUANTITY REVISIONS	JMB	1-16-18
2	QUANTITY REVISIONS	JMB	1-23-18
3	QUANTITY REVISIONS	JMB	1-24-18

CALCULATED JJS
CHECKED MVJ

GENERAL SUMMARY

CUY-480/
TRANSPORTATION BLVD.

SUBSUMMARY

CALCULATED JMB CHECKED

SHEET NO.	202 HEADWALL REMOVED EA	202 PAVEMENT REMOVED SY	202 WALK REMOVED SF	202 PIPE REMOVED, 24" AND UNDER FT	202 PIPE REMOVED, OVER 24" FT	202 GUARDRAIL REMOVED FT	202 MANHOLE REMOVED EA	202 CATCH BASIN REMOVED EA	202 FENCE REMOVED FT	202 REMOVAL, MISC: BOLLARD EA	601 TIED CONCRETE BLOCK MAT, TYPE 1 SY	601 ROCK CHANNEL PROTECTION, TYPE C WITH FILTER CY	602 CONCRETE MASONRY CY	605 6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 707.31 FT	605 6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 707.31 FT	606 GUARDRAIL, TYPE MGS FT	606 ANCHOR ASSEMBLY, MGS TYPE E EA	606 ANCHOR ASSEMBLY, MGS TYPE T EA	606 MGS BRIDGE TERMINAL ASSEMBLLY, TYPE 1 EA	606 MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2 EA	607 FENCE, TYPE CL FT	608 4" CONCRETE WALK SF	202 CONCRETE BARRIER REMOVED FT
				2																			2
51	2			281		747	1	12	1103	14						488	3	1	3	1	792		80
52		2 1125	3043																				
52A																						18402	
52B											2	22											
52C				164	8								2										
53														696	3173								
TOTALS CARRIED TO GENERAL SUMMARY	2	2 1125	3043	2 445	8	747	1	12	1103	14	2	22	2	696	3173	488	3	1	3	1	792	18402	2 80

SHEET NO.	608 CURB RAMP SF	611 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT	611 6" CONDUIT, TYPE B FT	611 6" CONDUIT, TYPE C FT	611 12" CONDUIT, TYPE B FT	611 12" CONDUIT, TYPE C FT	611 15" CONDUIT, TYPE B FT	611 15" CONDUIT, TYPE C FT	611 30" CONDUIT, TYPE C FT	611 48" CONDUIT, TYPE B FT	611 CATCH BASIN, NO. 3 EA	611 CATCH BASIN, NO. 3A EA	611 CATCH BASIN, NO. 6 EA	611 CATCH BASIN, NO. 2-2B EA	611 CATCH BASIN, NO. 2-5, AS PER PLAN EA	611 MANHOLE, NO. 3 EA	611 MANHOLE ADJUSTED TO GRADE EA	611 MANHOLE RECONSTRUCTED TO GRADE EA	611 MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN (SANITARY) EA	611 PRECAST REINFORCED CONCRETE OUTLET EA	622 CONCRETE BARRIER END SECTION, TYPE B EA	622 BARRIER, MISC.: CONCRETE BARRIER, TYPE B FT	SPECIAL BOLLARD EA
51																					2	2 132	68
52	2636																						
52A																							
52B											9	7	1	4	1	11	1	4		1			
52C			20	92	1 426	1 463	27	1 10	95	8									3				
53		275																		2			
TOTALS CARRIED TO GENERAL SUMMARY	2636	275	20	92	1 426	1 463	27	1 10	95	8	9	7	1	4	1	11	1	4	3	3	2	2 132	68

NO.	DESCRIPTION	REV. BY	DATE
1	QUANTITY REVISIONS	DSM	1-12-18
2	NEW ITEMS/QUANTITY REVISIONS	JMB	1-22-18

CUY-480/ TRANSPORATATION BLVD.

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1/22/2018
1:25:16 PM
CQDTV81STD_USER

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	638 16" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, PUSH-ON JOINTS AND FITTINGS	638 6" GATE VALVE	638 WATER WORK, MISC.: 16" PCCP TO DIP ADAPTOR/ CLOSURE PIECE	638 6" FIRE HYDRANT	638 FIRE HYDRANT REMOVED	638 VALVE BOX ADJUSTED TO GRADE	638 WATER WORK, MISC.: WATER METER ADJUSTED TO GRADE	638 WATER WORK MISC.: WATER MAIN REMOVED	638 WATER WORK, MISC.: EXTEND WATER SERVICE CONNECTION	638 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										1
W-8	64	24+86.85		RT									1	
W-9	59	17+88.08		RT			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.

SHEET NO.	STATION TO STATION					203 EXCAVATION CY	203 EMBANKMENT CY	204 EXCAVATION OF SUBGRADE CY	204 GRANULAR MATERIAL, TYPE B, AS PER PLAN CY		659 SEEDING AND MULCHING SY	659 SOIL ANALYSIS TEST EACH	659 TOPSOIL (111*SM)/(1000) CY	659 REPAIR SEEDING AND MULCHING (0.05*SM) SY	659 INTER-SEEDING (0.05*SM) SY	659 COMM. FERTILIZER [(30*SM)+(20*.05*SM)]*9 /(1000*2000) TON	659 LIME (SM)/(4840) ACRE	659 WATER [(2*300*SM) +(300*0.05*SM)]*9 /(1000*1000) MGAL		861 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				37	8	14	14		242									36
84	18+50.00	19+00.00			⚠	79	12	34	34		291									98
85	19+00.99	20+00.00				118	12	51	51		205									142
86	20+50.00	21+50.00				439	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					12695	11627	1252	1252		15797	2	1753	790	790	2.20	3.26	88		3601

NO.	DESCRIPTION	REV. BY	DATE
1	QUANTITY REVISIONS	DSM	1-12-18

CALCULATED JAW
CHECKED JJS

EARTHWORK SUBSUMMARY

CUY-480/ TRANSPORTATION BLVD.

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	202 CONCRETE BARRIER REMOVED	202 HEADWALL REMOVED	202 GUARDRAIL REMOVED	202 MANHOLE REMOVED	202 CATCH BASIN REMOVED	202 FENCE REMOVED	202 PIPE REMOVED, 24" AND UNDER	202 REMOVAL, MISC: BOLLARD	606 GUARDRAIL, TYPE MGS	606 ANCHOR ASSEMBLY, MGS TYPE E	606 ANCHOR ASSEMBLY, MGS TYPE T	606 MGS BRIDGE TERMINAL ASSEMBLLY, TYPE 1		606 MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2	607 FENCE, TYPE CL	622 CONCRETE BARRIER END SECTION, TYPE B	622 BARRIER, MISC.: CONCRETE BARRIER, TYPE B	SPECIAL BOLLARD
		FT			FT	EA	FT	EA	EA	FT	FT	EA	FT	EA	EA	EA		EA	FT	EA	FT	EA
B-1	59	18+51.71	18+40.60	RT	20						⚠1										31	
B-2	59	19+46.88	19+35.80	RT	20																35	
B-3	59	20+38.28	20+27.17	RT	20															1	33	
B-4	59	21+33.48	21+22.37	RT	20															1	33	
BL-1	67	200+60.57	204+11.96	RT																		68
					⚠1																⚠1	
DR-1	61	91+50.30		LT					1													
DR-2	61	88+99.52		LT					1													
DR-3	60	86+99.91		LT					1													
DR-4	60	15+99.41		RT					1													
DR-5	59	17+44.91		RT					1													
DR-6	60	15+99.68		RT					1		⚠1											
DR-7	61	91+37.78		RT					1		136											
DR-8	61	91+82.92		RT					1		45											
DR-10	67	200+69.53		RT					1													
DR-11	63	17+97.26		RT					1													
DR-12	63	19+96.66		RT					1													
DR-13	64	22+22.44		RT					1		⚠1											
DR-17	64	22+33.95		RT				1			100											
F-1	65	401+41.73	404+89.72	LT															489			
F-2	59	17+68.64	14+66.64	RT															303			
FR-2	60	17+72.35	87+03.04	RT						577												
FR-3	65	401+41.73	404+89.72	LT						480												
FR-4	64	21+62.84		RT						46												
G-1	58	23+41.80	22+01.23	LT									100		1			1				
G-2	59	17+65.78	14+89.13	LT									238	1		1						
G-3	59	1054+96.13	1055+08.63	RT									75	1		1						
G-4	59	1054+13.57	1055+25.07	RT									75	1		1						
GR-1	58	23+47.42	22+02.43	LT			148															
GR-2	60	17+64.54	14+30.33	LT			335															
GR-3	61	92+08.57	94+71.02	RT			264															
R-1	67	204+45.40	205+03.84	RT								14										
R-2	66	404+03.11		LT		1																
R-3	67	200+75.16		RT		1																
					⚠1						⚠1										⚠1	
SUBTOTALS CARRIED TO SHEET 48					80	2	747	1	12	1103	281	14	488	3	1	3		1	792	2	132	68

NO.	DESCRIPTION	REV. BY	DATE
1	NEW ITEMS/QUANTITY REVISIONS	JMB	1-22-18

CALCULATED JAW
CHECKED JJS

ROADWAY ESTIMATED QUANTITIES

CUY-480/
TRANSPORTATION BLVD.

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	DISTANCE (D) FT	AVERAGE WIDTH (W) FT	SURFACE AREA (A) SQ FT		WALK REMOVED SF	PAVEMENT REMOVED SY			CURB RAMP SF
									202	202			608
	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		692	1		77	1		
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	1125	1		2636

NO.	DESCRIPTION	REV. BY	DATE
1	QUANTITY REVISION	JMB	1-22-18

CALCULATED JAW
CHECKED JJS

ROADWAY ESTIMATED QUANTITIES

CUY-480/
TRANSPORTATION BLVD.

ROADWAY ESTIMATED QUANTITIES

CUY-480/
TRANSPORTATION BLVD.

CALCULATED JAW
CHECKED JJS

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	DISTANCE (D) FT	AVERAGE WIDTH (W) FT	SURFACE AREA (A) SQ FT	608 4" CONCRETE WALK 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

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REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE		601 TIED CONCRETE BLOCK MAT, TYPE 1 SY	601 ROCK CHANNEL PROTECTION, TYPE C WITH FILTER CY		611 CATCH BASIN, NO. 3 EA	611 CATCH BASIN, NO. 3A EA	611 CATCH BASIN, NO. 2-2B EA	611 CATCH BASIN, NO. 2-5, AS PER PLAN EA	611 CATCH BASIN, NO. 6 EA	611 MANHOLE, NO. 3 EA		611 MANHOLE ADJUSTED TO GRADE EA	611 MANHOLE RECONSTRUCTED TO GRADE EA		611 PRECAST REINFORCED CONCRETE OUTLET 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.

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REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE		202 PIPE REMOVED, 24" AND UNDER FT	202 PIPE REMOVED, OVER 24" FT		602 CONCRETE MASONRY CY		611 6" CONDUIT, TYPE B FT	611 6" CONDUIT, TYPE C FT	611 12" CONDUIT, TYPE B FT	611 12" CONDUIT, TYPE C FT	611 15" CONDUIT, TYPE B FT		611 15" CONDUIT, TYPE C FT	611 30" CONDUIT, TYPE C FT	611 48" CONDUIT, TYPE B FT		611 MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN (SANITARY) 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									12							
P-7	60	D-6	D-30	RT		46											10 ⚠1					
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									⚠1	80 ⚠1								
P-14	63	D-14	D-15	RT									13									
P-16	67	D-18	D-19	LT										24								
P-17	67	D-19	D-20	LT/RT									39									
P-18	67	D-20	D-103	RT										13								
P-19	67	D-21	D-22	LT										37								
P-20	67	D-22	D-104	LT									22									
P-21	67	D-23	202+96.87	RT										37								
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										216								
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										25								
P-111	67	D-111	HW-112	RT										25								
P-114	67	EXISTING	HW-109	RT														35				
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
SUBTOTALS CARRIED TO SHEET 48						164	8		2		20	92	⚠ 426	⚠ 463	27		⚠ 10	95	8		3	

CALCULATED JMB CHECKED

DRAINAGE ESTIMATED QUANTITIES

NO.	DESCRIPTION	REV. BY	DATE
1	QUANTITY REVISIONS	DSM	1-12-18

CUY-480/
TRANSPORTATION BLVD.

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REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE			605 6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 707.31 FT		605 6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 707.31 FT				611 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT		611 PRECAST REINFORCED CONCRETE OUTLET EACH	BENDS & BRANCHES - FOR INFORMATION ONLY		6" PLUG EACH		90° BEND 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		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									
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.

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STATION TO STATION		SIDE	LENGTH (L)	AVERAGE WIDTH (W)	SURFACE AREA (A=LxW)	SURFACE AREA (CADD)	AREA FOR 6" BASE EXTENSION	AREA FOR 20" BASE EXTENSION	AREA FOR 24" BASE EXTENSION	202 WEARING COURSE REMOVED	202 CURB REMOVED	204 SUBGRADE COMPACTION	204 PROOF ROLLING (1 HOUR/2000 SY)	304 6" AGGREGATE BASE	305 9" CONCRETE BASE, CLASS QC1	407 TACK COAT, 702.13 (0.1 GAL/SY)	407 NON-TRACKING TACK COAT (0.1 GAL/SY)	441 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)	441 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE I, (448), PG70-22M, AS PER PLAN	442 11/2" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448), PG70-22M, AS PER PLAN	442 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (448)	609 CURB, TYPE 2-B	875 LONGITUDINAL JOINT ADHESIVE (1 LB/ 4 FT)
FROM	TO		FT	FT	SF	SF	SF	SF	SF	SY	FT	SY	HOUR	CY	SY	GAL	GAL	CY	CY	CY	CY	FT	LB
											2												
TRANSPORTATION BLVD.																					1		
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		2 75.47	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		2 270.51	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						2 106.50	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						2 56.12	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		2 627.85	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						1	81.33	20.33
93+14.59	94+55.25	RT	140.66 2								2 140.70												35.17
21+83.78	22+08.78	RT	25.00	CADD		429.14	12.50	41.67	50.00			53.24	0.03	8.72									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									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		1497.9502						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	2 1278	4169	3	684	3770	601	601	233	200	52	60	1818	570

NO.	DESCRIPTION	REV. BY	DATE
1	QUANTITY REVISIONS	JMB	1-16-18
2	QUANTITY REVISIONS	DSM	1-23-18

CALCULATED JJS
CHECKED MVJ

PAVEMENT CALCULATIONS

CUY-480/
TRANSPORTATION BLVD.

54
225

D:\2016\2016051\CUY\80974\ROADWAY\SHEETS\80974GC002.DGN
1/23/2018
1:31:48 PM
ODOTV8ISTD_USER

STATION TO STATION		SIDE	LENGTH (L)	AVERAGE WIDTH (W)	SURFACE AREA (A=LxW)	SURFACE AREA (CADD)	AREA FOR 6" BASE EXTENSION	AREA FOR 20" BASE EXTENSION	AREA FOR 24" BASE EXTENSION	204 SUBGRADE COMPACTION	204 PROOF ROLLING (1 HOUR/2000 SY)	301 6" ASPHALT CONCRETE BASE, PG64-22	304 4" AGGREGATE BASE	304 6" AGGREGATE BASE	304 8" AGGREGATE BASE	407 NON-TRACKING TACK COAT (0.04 GAL/SY)	407 NON-TRACKING TACK COAT (0.1 GAL/SY) (TWO APPLICATIONS)	441 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)	441 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M, AS PER PLAN	441 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), (DRIVEWAYS)	441 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448), (DRIVEWAYS)	452 8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS	609 COMBINATION CURB AND GUTTER, TYPE 3	609 CURB, TYPE 6	609 MEDIAN, MISC.: GRASS PAVERS
FROM	TO		FT	FT	SF	SF	SF	SF	SF	SY	HOUR	CY	CY	CY	CY	GAL	GAL	CY	CY	CY	CY	SY	FT	FT	SY
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									81.76		506.60	
DV-1 (AREA 2)		LT				1463.96				162.66	0.08				36.15	6.51				5.65	7.91				
TOTALS CARRIED TO GENERAL SUMMARY										3220	2	449	10	488	37	7	538	131	113	6	8	82	159	1883	165

NO.	DESCRIPTION	REV. BY	DATE
1	ITEM NAME REVISION	JMB	1-16-18

CALCULATED JJS
CHECKED MVJ

PAVEMENT CALCULATIONS

CUY-480/
TRANSPORTATION BLVD.

STATION TO STATION		SIDE	LENGTH (L)	AVERAGE WIDTH (W)	SURFACE AREA (A=LxW)	SURFACE AREA (CADD)	AREA FOR 6" BASE EXTENSION	AREA FOR 20" BASE EXTENSION	202 PAVEMENT REMOVED	202 CURB REMOVED	204 SUBGRADE COMPACTION	204 PROOF ROLLING	304 6" AGGREGATE BASE	305 9" CONCRETE BASE, CLASS QC1	407 TACK COAT, 702.13 (0.1 GAL/SY)	407 NON-TRACKING TACK COAT (0.1 GAL/SY)	441 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)	441 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M, AS PER PLAN	609 CURB, TYPE 2-B
FROM	TO		FT	FT	SF	SF	SF	SF	SY	FT	SY	HOUR	CY	SY	GAL	GAL	CY	CY	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

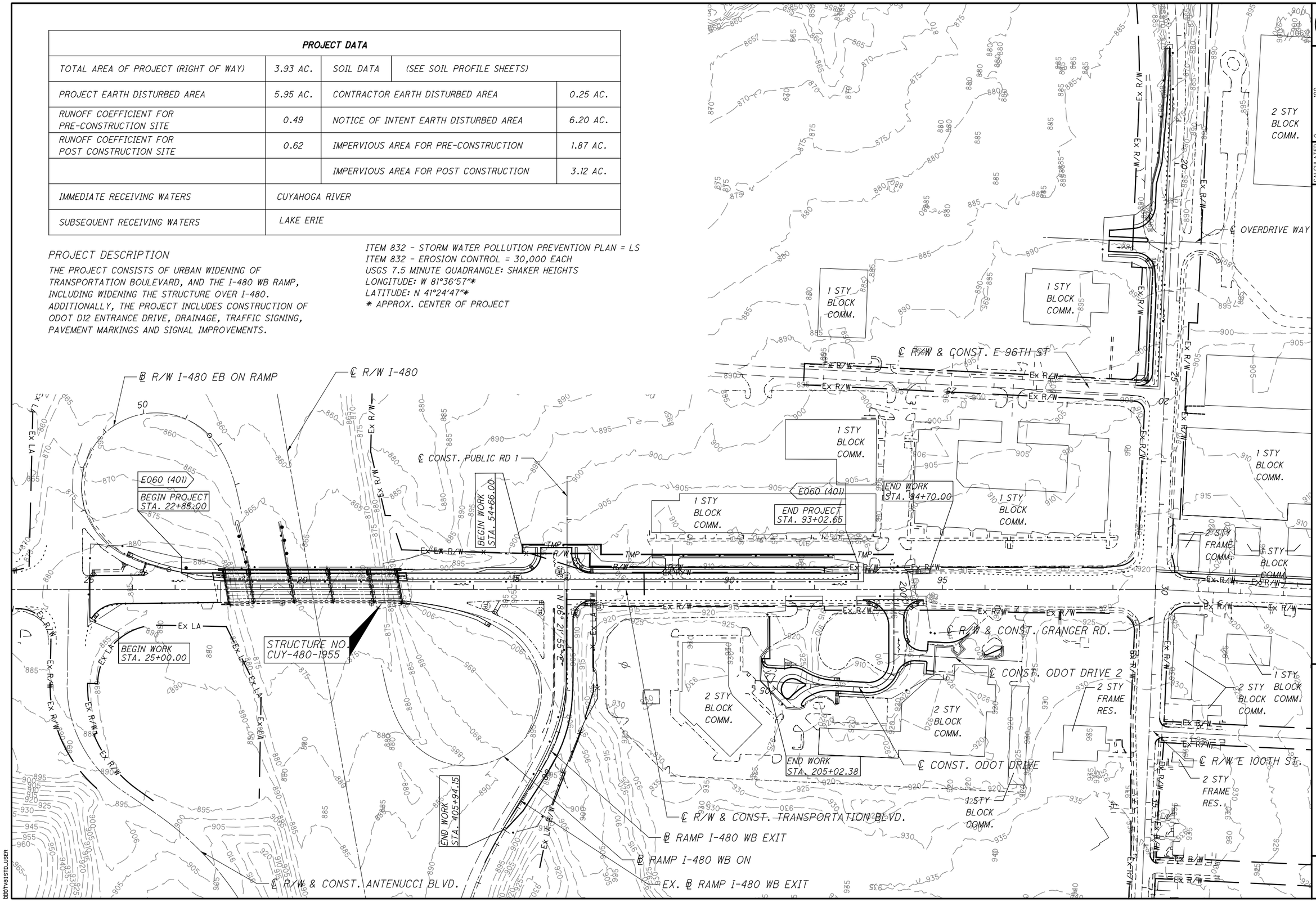
CUY-480/ TRANSPORATION BLVD.

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



HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED JAW
CHECKED JJS

SITE PLAN

CUY-480/ TRANSPORTATION BLVD.

57
225

\\AKRN04\DATA\2016\2016051\CUY\8097A\DRAINAGE\SHEETS\8097ADE001.DGN
4/18/2017
11:49:41 AM
GDOTV8ISTD_USER

5 P.I. Sta. 43+60.83, ℄ RAMP I-480 EB ENTRANCE
Δ = 13° 38′ 39″ (RT)
Dc = 8° 00′ 00″
R = 716.20′
T = 85.68′
L = 170.55′
E = 5.11′
C = 170.15′
C.B. = S 3° 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
Ls= 150.00′
f s = 24° 33′ 20″
LT = 100.98′
ST = 50.89′
x = 147.27′
y = 21.15′
k = 74.54′
p = 5.32′
SC = Sta. 44+45.70
CS = Sta. 45+95.70

VISTA WAY PARTNERS
9701-9791 VISTA WAY

SOUTHSIDE CORPORATE
5595 TRANSPORTATION BLVD

℄ RAMP I-480 EB ENTRANCE

STA. 25+48.87 ℄ R/W & CONST. TRANSPORTATION BLVD.
STA. 10+00.00 ℄ R/W & CONST. ANTENUCCI BLVD.

℄ R/W ANTENUCCI BLVD.

℄ R/W & CONST. TRANSPORTATION BLVD.

BEGIN RESURFACING
BEGIN WORK
STA. 25+00.00

END WALK
STA. 45+30.58

END RESURFACING
STA. 45+02.54

ANCHOR ASSEMBLY,
MGS TYPE T
STA. 23+41.80

BEGIN PROJECT
STA. 22+85.00

BEGIN WIDENING

BTA, TYPE 2 MGS

CONST . LIMITS

SPACE GUARDRAIL POSTS TO AVOID
CONFLICT WITH WATER MAIN

BEGIN CURVE
STA. 22+85.00

END CURVE
STA. 22+64.63

118.3′ R

SAWCUT

END RESURFACING
BEGIN APPROACH SLAB
STA. 22+05.12

MATCHLINE STA. 22+00 TRANSPORTATION BLVD.
SEE SHEET 59

VALVE BOX
ADJUSTED TO
GRADE
STA 22+31.70,
OFFSET 54.32′ RT

MARYMOUNT HOSPITAL
5555 TRANSPORTATION BLVD

FOR LIGHTING PLANS, SEE SHEETS 181 -186
FOR BENCHMARKS, SEE SHEET 4
FOR UNDERDRAIN DETAILS, SEE SHEET 108

EQ60 (4011)

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)

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)

P-50 216′-12″ TYPE C @ 3.55%

879.08 880.06 881.24 882.48 883.75 884.88 886.08 887.17 888.17 889.22

26+00 25+00 24+00 23+00 22+00

HORIZONTAL SCALE IN FEET

CALCULATED JMB CHECKED JJS

PLAN AND PROFILE - TRANSPORTATION BLVD.
CUY-480/ TRANSPORTATION BLVD. BEGIN TO STA. 22+00.00

58
225

SHOULDER RECONSTRUCTION

2" - ITEM 442, ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)

⚠ ITEM SPECIAL, TACK COAT, TRACKLESS TACK, SURFACE COURSE

2" - ITEM 442, ASPHALT CONCRETE INTERMEDIATE COURSE 19 MM, TYPE A (446)

ITEM SPECIAL, TACK COAT, TRACKLESS TACK, INTERMEDIATE COURSE

ITEM 305 - 9" CONCRETE BASE, CLASS QC1

6" - ITEM 304, AGGREGATE BASE ITEM 204, SUBGRADE COMPACTION AND PROOF ROLLING

NO.	DESCRIPTION	REV. BY	DATE
1	ADDED SHOULDER RECONSTRUCTION	DSM	1-22-18

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

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

Ⓐ MASONRY COLLAR PER DM-1.1

Ⓑ 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

STA. 19+79.91 ℄ R/W & CONST. TRANSPORTATION BLVD.
STA. 1055+80.00 ℄ R/W I-480

EX LA-R/W

Ex. R/W

fence

B-006-16

BTA, TYPE 1 MGS

16" PCCP TO DIP ADAPTOR/ CLOSURE PIECE LOCATE TO NEAREST JOINT
STA. 18+10.00±

CONST. LIMITS

16" WATER

16" pccp water

B-001-16 B-002-16 B-003-16 B-004-16 B-005-16

B-4 B-3 B-2 B-1

G-3 G-4

SW-2 SW-3 SW-1

FR-2 F-2 D-7 W-9 P-8 G-2 DR-5 P-9 D-35 GR-2 WR-2 EX-3

guardrail

16" water

conc curb

4" gas

elec

tele

12" stm

SAWCUT

18 S 3° 38' 05" E

38'

23'

8'

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

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

℄ R/W & CONST. TRANSPORTATION BLVD.

N 76° 25' 08" E

STRUCTURE NO.
CUY-480-1955

BEGIN APPROACH SLAB
STA. 21+80.12

END APPROACH SLAB
STA. 17+75.31

END APPROACH SLAB
STA. 17+45.78

concrete

21 20 19

1055 1056

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
12" (W) 890.96 (P-9)

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

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

exist. grade

PROP. 16" WATER

900 895 890 885 880 875 870 865

889.22 890.48 891.68 892.89 894.04 895.25 896.42 897.59 898.75 899.87 901.23

22+00 21+00 20+00 19+00 18+00 17+00

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMB CHECKED JJS

PLAN AND PROFILE - TRANSPORTATION BLVD.
STA. 22+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.

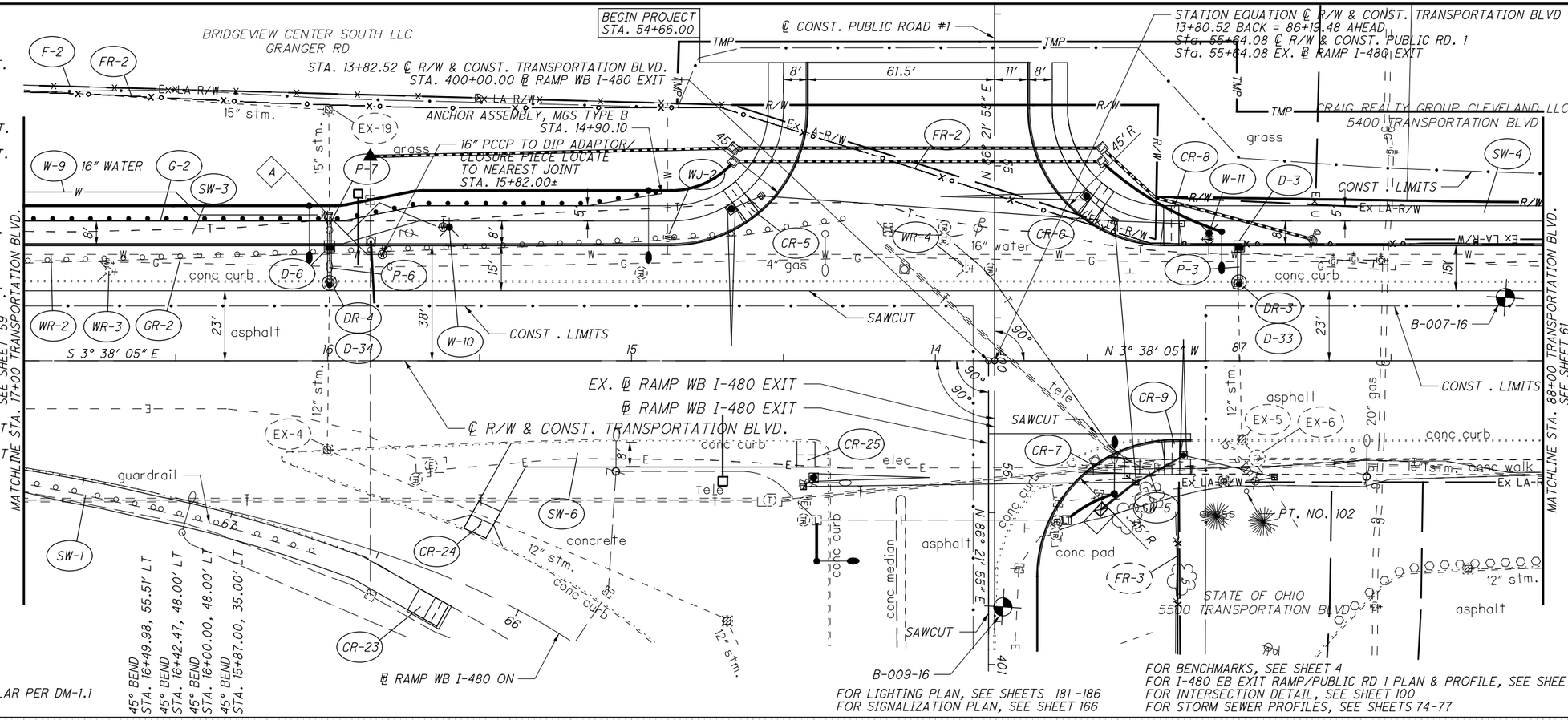
WJ-2
VALVE BOX ADJUSTED TO GRADE
STA. 14+88.35, 41.90' RT.

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.

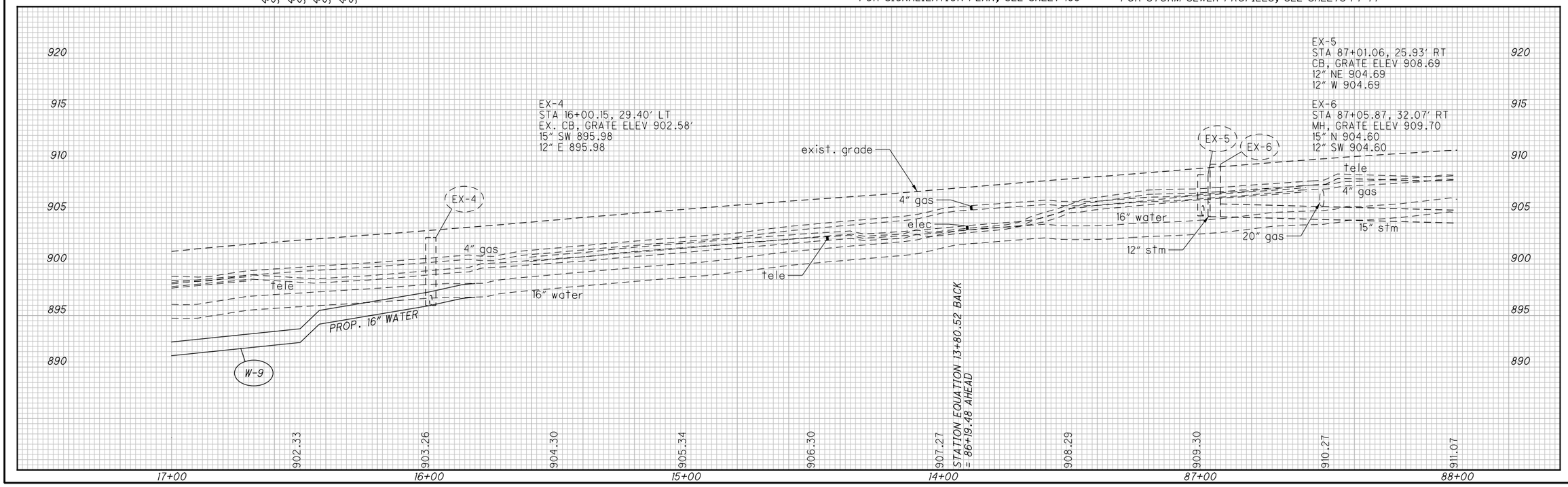
A MASONRY COLLAR PER DM-1.1

45° BEND STA. 16+49.98, 55.51' LT
45° BEND STA. 16+42.47, 48.00' LT
45° BEND STA. 16+00.00, 48.00' LT
45° BEND STA. 15+87.00, 35.00' LT



FOR LIGHTING PLAN, SEE SHEETS 181-186
FOR SIGNALIZATION PLAN, SEE SHEET 166

FOR BENCHMARKS, SEE SHEET 4
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



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMB CHECKED JJS

PLAN AND PROFILE - TRANSPORTATION BLVD. STA. 17+00.00 TO STA. 88+00.00

CUY-480/ TRANSPORTATION BLVD.

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

CRAIG REALITY GROUP CLEVELAND LLC
5400 TRANSPORTATION BLVD

BRIDGEVIEW CENTER SOUTH LLC
GRANGER RD

CRAIG REALTY GROUP CLEVELAND LLC
TRANSPORTATION BLVD

SEE SHEET 60
MATCHLINE STA. 88+00 TRANSPORTATION BLVD.

MATCHLINE STA. 93+00 TRANSPORTATION BLVD.
SEE SHEET 62

℄ R/W & CONST. TRANSPORTATION BLVD.

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

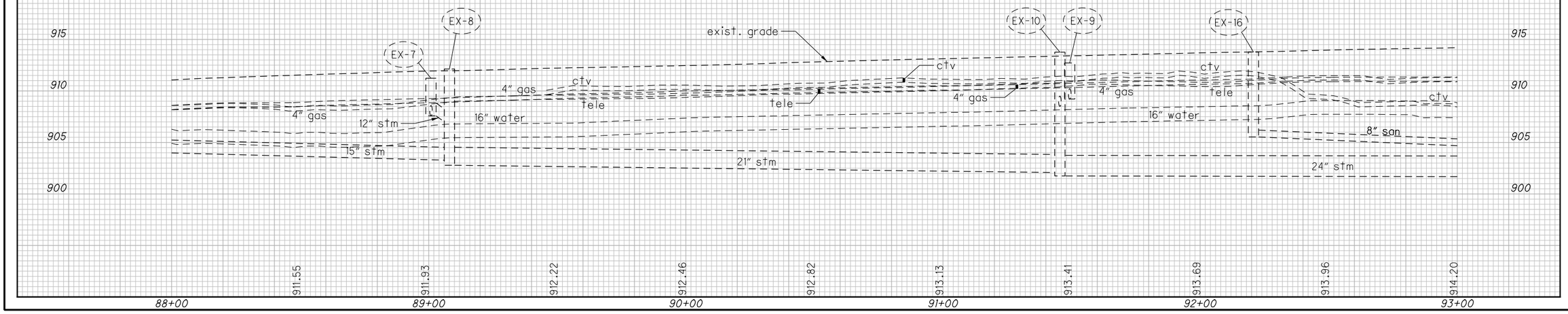
EX-7
STA 89+00.77, 25.81' RT
CB, GRATE ELEV 911.30
12" RCP NE 907.60
12" RCP W 907.80

EX-8
STA 89+08.06, 32.99' RT
MH, RIM ELEV 912.14
21" N 902.79
12" SW 903.29

EX-10
STA 91+45.46, 33.26' RT
MH, RIM ELEV 913.76
21" S 902.08
24" N 901.75
12" NW 909.08

EX-9
STA 91+49.28, 26.00' RT
CB, GRATE ELEV 912.89
12" RCP W 909.49
12" RCP SE 909.24

EX-16
STA 92+20.74, 30.46' RT.
SAN MH, RIM ELEV 913.78
8" SE 905.53
8" N 905.53



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMB
CHECKED JJS

PLAN AND PROFILE - TRANSPORTATION BLVD. STA. 88+00 TO STA. 93+00

CUY-480/ TRANSPORTATION BLVD.

61
225

END PROJECT STA. 93+02.65

E060 (401)

CRAIG REALTY GROUP CLEVELAND LLC
TRANSPORTATION BLVD

END WORK STA. 94+70.00

WINBURY II LIMITED PARTN
5350 TRANSPORTATION BLVD

MEET EX. WALK STA. 93+20.84

END WIDENING

SEE SHEET 61
MATCHLINE STA. 93+00 TRANSPORTATION BLVD.

℄ R/W & CONST. TRANSPORTATION BLVD.

N 3° 38' 05" W

SAWCUT

MEET EX WALK STA. 93+00.00

MEET EX WALK STA. 94+55.25

STA. 93+86.47 ℄ R/W & CONST. TRANSPORTATION BLVD.
STA. 200+00.00 ℄ CONST. ODOT DRIVE

N 86° 21' 55" E

℄ CONST. ODOT DRIVE

STATE OF OHIO
5500 TRANSPORTATION BLVD

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

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)

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMB CHECKED JJS

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

CUY-480/ TRANSPORTATION BLVD.

62
225

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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

BLUE SKY CAMPUS
9501 GRANGER RD

℄ R/W & CONST. GRANGER RD.

P-102 D-17 P-101 P-28 D-16 P-27 DR-11 P-100 D-15 DR-12 P-14 D-14

B-012-16

N88°57′34″E

SAWCUT

PROPOSED CONCRETE BARRIER (BY OTHERS, SEE CUY-17-15.29 PID 94536)

CONST. LIMITS

PROP CATCH BASIN & PIPE (BY OTHERS SEE CUY-17-15.29 PID 94536)

BEGIN WIDENING

PT Sta. 19+00.99

MATCHLINE STA. 20+50 GRANGER RD.
SEE SHEET 64

STA. 20+00.00

BEGIN WORK
STA. 17+30.00

BRIDGEVIEW CENTER SOUTH LLC
GRANGER RD

woods | asphalt | conc curb | grass | ex. 12″ STM | 8″ san | 8″ water | 4″ gas | 12″ gas | 36″ stm | SW-24

Ex R/W | SAN | W | G | M | CTV

(1) P.I. Sta. 13+90.10, ℄ R/W & CONST. GRANGER RD.
Δ = 26° 00′ 00″ (RT)
Dc = 2° 30′ 00″
R = 2,291.83′
T = 529.11′
L = 1,040.00′
E = 60.28′
C = 1,031.10′
C.B. = N 75° 57′ 34″ E
PC = Sta. 8+60.99
PT = Sta. 19+00.99

(A) MASONRY COLLAR PER DM-1.1

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

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-16
STA. 17+97.26, 17.35′ RT
611 MH-3, RIM ELEV 867.64
12″ (SW) 863.78
12″ (E) 863.53 (P-27)
12″ (W) 863.53 (P-28)
12″ (S) BY OTHERS

DR-11
STA. 17+97.26, 17.35′ RT
EX. CB, GRATE ELEV 867.43
EX. 12″ W 863.53
EX. 12″ E 863.53

D-15
STA. 19+96.66, 17.33′ RT
611 MH-3, RIM ELEV 879.37
12″ (S) 875.78 (P-14)
12″ (W) 875.78 (P-100)

DR-12
STA. 19+96.66, 17.33′ RT
EX. CB, GRATE ELEV 879.28
EX. 12″ W 875.78

MASONRY COLLAR PER DM-1.1 | BEGIN WIDENING STA. 17+30.00 | exist. grade

P-102 10′-12″ TYPE B @ 6.96%
P-101 10′-12″ TYPE B @ 3.84%
P-28 10′-12″ TYPE B @ 3.84%
P-27 10′-12″ TYPE B @ 6.27%
P-100 10′-12″ TYPE B @ 6.27%

885 | 880 | 875 | 870 | 865 | 860 | 855 | 850

16+00 | 17+00 | 18+00 | 19+00 | 20+00

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMB
CHECKED JJS

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

CUY-480/
TRANSPORTATION BLVD.

63
225

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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

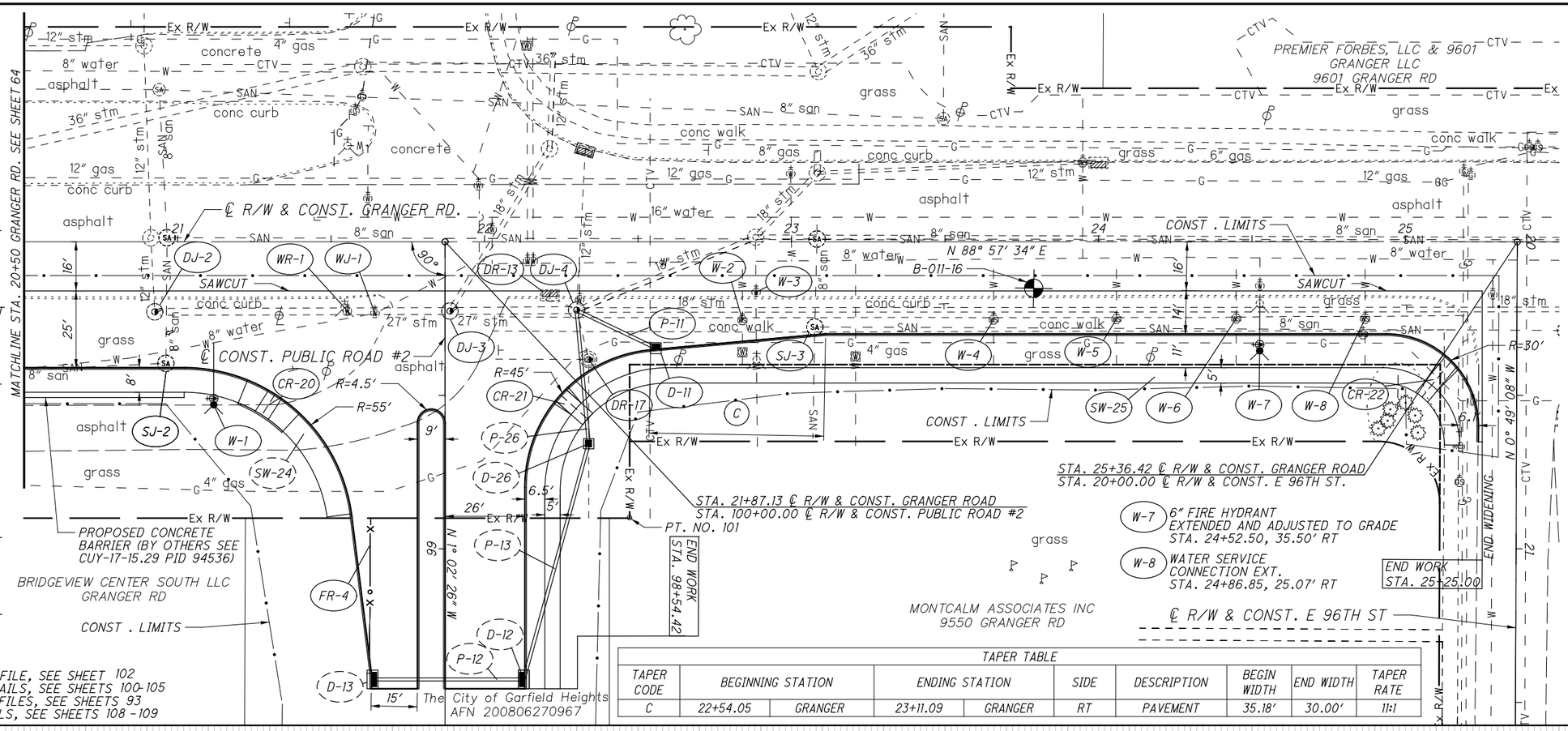
W-2
WATER SERVICE
CONNECTION EXT.
STA. 22+83.98, 25.55' RT

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



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

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

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

SJ-2
STA 20+96.55, 1.33' LT
611 MANHOLE RECONSTRUCTED TO GRADE
PROP. RIM ELEV. 884.34
EX. SAN MH, RIM ELEV 885.29
EX. 8" E 878.39
EX. 10" N 874.89
EX. 10" S 874.89

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

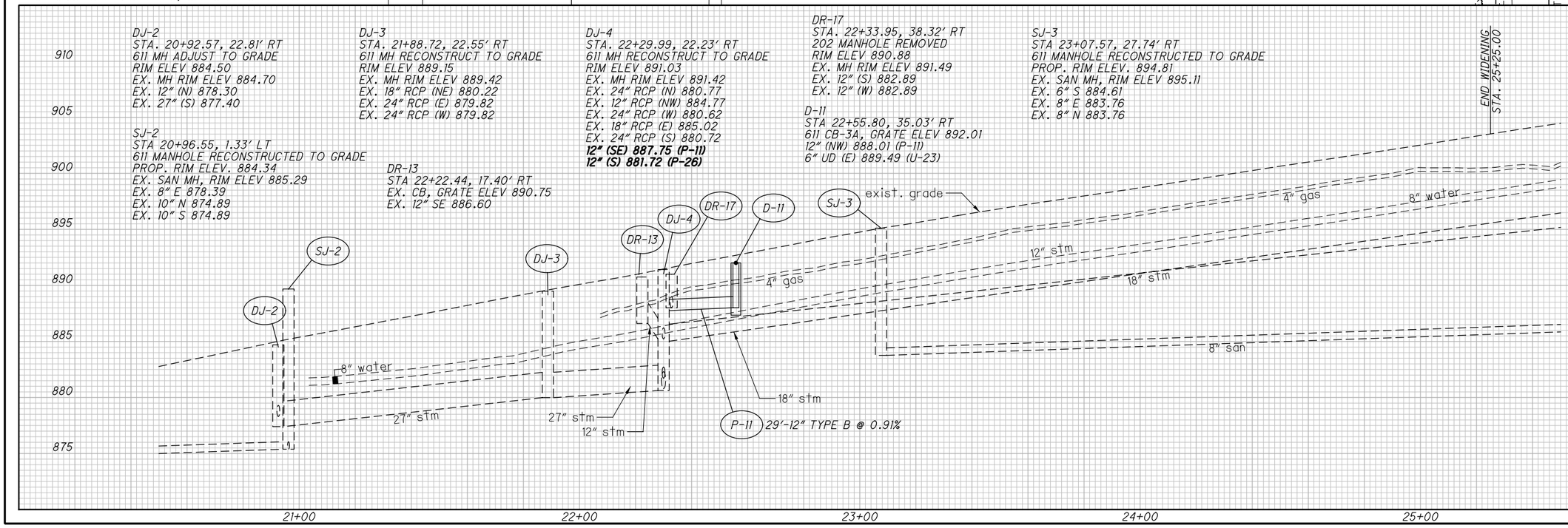
DR-13
STA 22+22.44, 17.40' RT
EX. CB, GRATE ELEV 890.75
EX. 12" SE 886.60

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



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HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED JMB CHECKED JJS

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

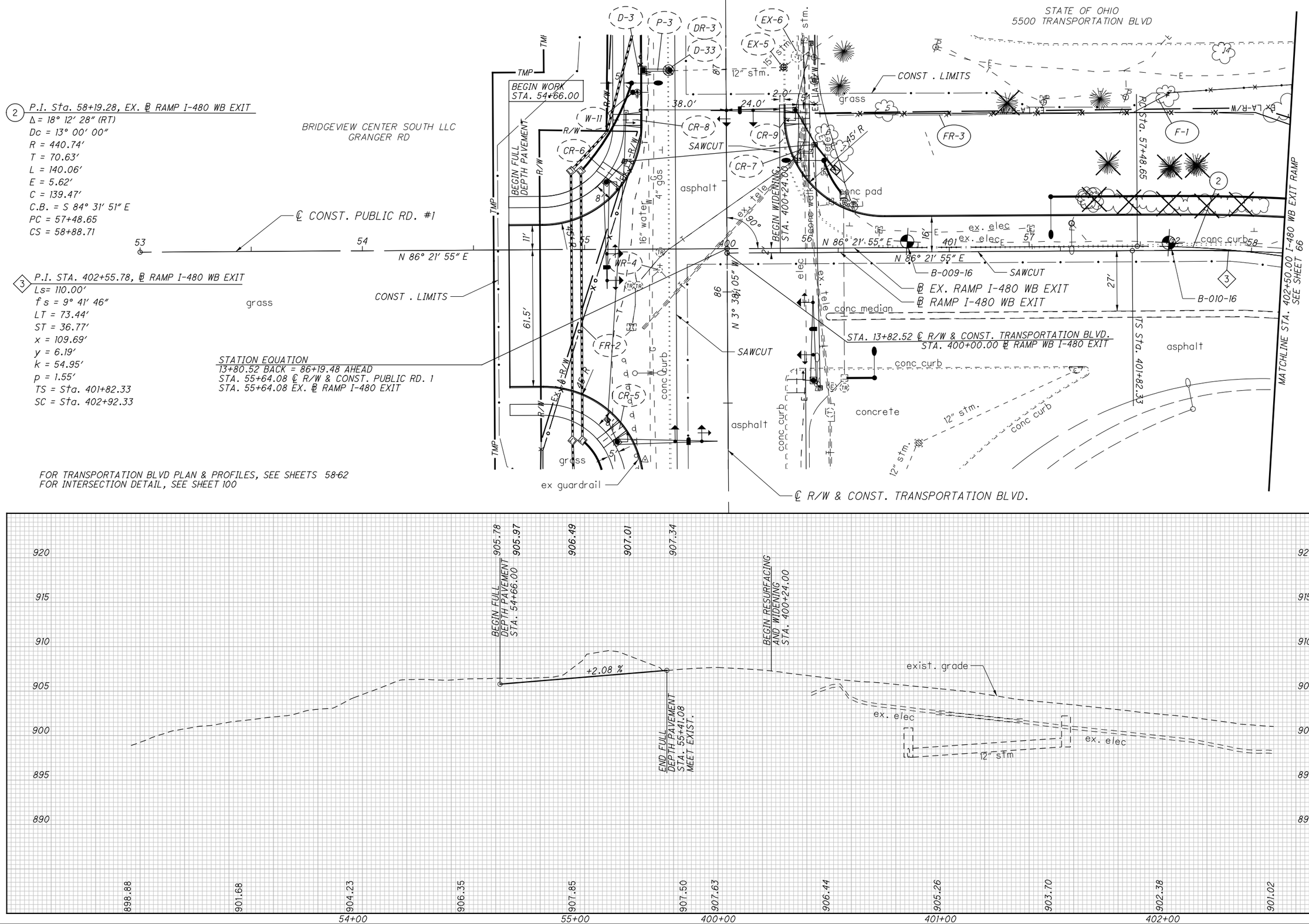
CUY-480/ TRANSPORTATION BLVD.

2 P.I. Sta. 58+19.28, EX. ℄ RAMP I-480 WB EXIT
Δ = 18° 12′ 28″ (RT)
Dc = 13° 00′ 00″
R = 440.74′
T = 70.63′
L = 140.06′
E = 5.62′
C = 139.47′
C.B. = S 84° 31′ 51″ E
PC = 57+48.65
CS = 58+88.71

3 P.I. STA. 402+55.78, ℄ RAMP I-480 WB EXIT
Ls= 110.00′
f s = 9° 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



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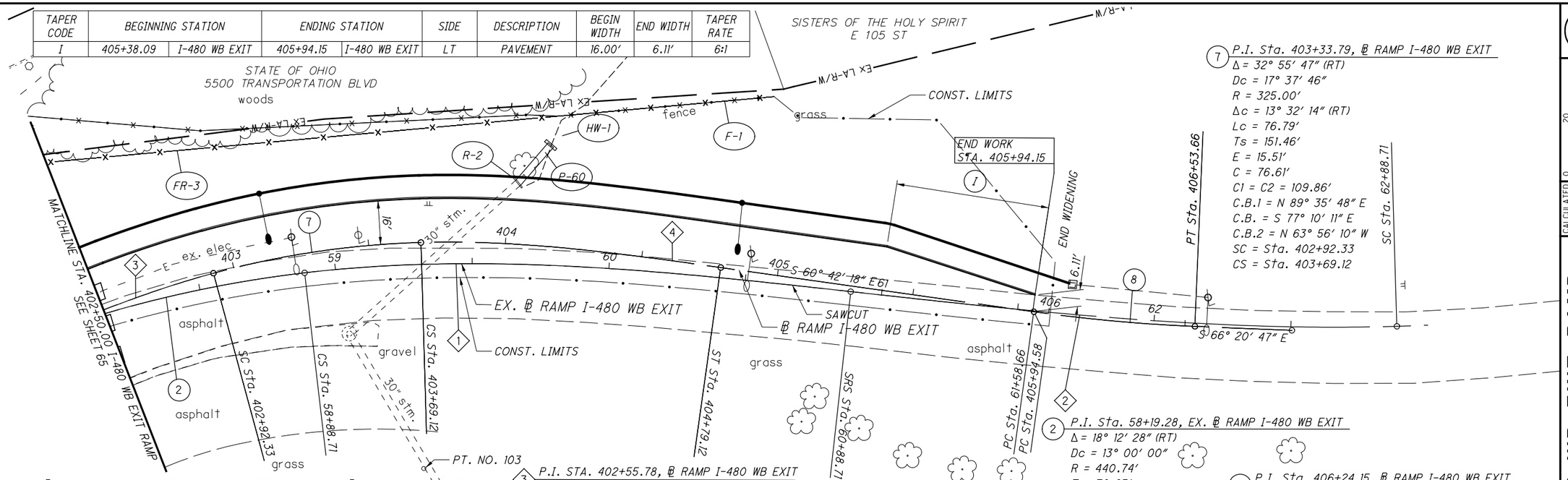
CALCULATED JMB
CHECKED JJS
HORIZONTAL SCALE IN FEET

PLAN AND PROFILE - PUBLIC RD. #1/I 480 WB EXIT RAMP

CUY-480/ TRANSPORTATION BLVD. BEGIN TO STA. 402+50.00

TAPER CODE	BEGINNING STATION		ENDING STATION		SIDE	DESCRIPTION	BEGIN WIDTH	END WIDTH	TAPER RATE
I	405+38.09	I-480 WB EXIT	405+94.15	I-480 WB EXIT	LT	PAVEMENT	16.00′	6.11′	6:1



1 P.I. STA. 59+55.71, ℄ RAMP I-480 WB EXIT
Ls= 200.00′
s = 13° 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° 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

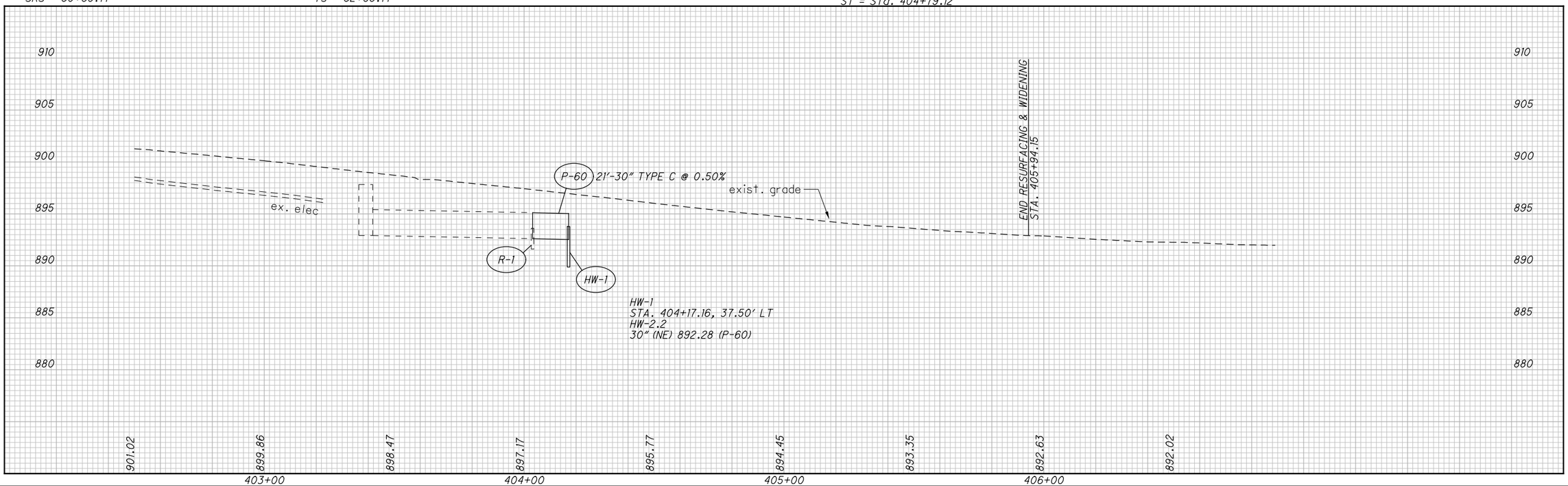
3 P.I. STA. 402+55.78, ℄ RAMP I-480 WB EXIT
Ls= 110.00′
f s = 9° 41′ 46″
LT = 73.44′
ST = 36.77′
x = 109.69′
y = 6.19′
k = 54.95′
p = 1.55′
TS = Sta. 401+82.33
SC = Sta. 402+92.33

4 P.I. STA. 404+05.89, ℄ RAMP I-480 WB EXIT
Ls= 110.00′
f s = 9° 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

7 P.I. Sta. 403+33.79, ℄ RAMP I-480 WB EXIT
Δ = 32° 55′ 47″ (RT)
Dc = 17° 37′ 46″
R = 325.00′
Δc = 13° 32′ 14″ (RT)
Lc = 76.79′
Ts = 151.46′
E = 15.51′
C = 76.61′
C1 = C2 = 109.86′
C.B.1 = N 89° 35′ 48″ E
C.B. = S 77° 10′ 11″ E
C.B.2 = N 63° 56′ 10″ W
SC = Sta. 402+92.33
CS = Sta. 403+69.12

2 P.I. Sta. 58+19.28, EX. ℄ RAMP I-480 WB EXIT
Δ = 18° 12′ 28″ (RT)
Dc = 13° 00′ 00″
R = 440.74′
T = 70.63′
L = 140.06′
E = 5.62′
C = 139.47′
C.B. = S 84° 31′ 51″ E
PC = 57+48.65
CS = 58+88.71

8 P.I. Sta. 406+24.15, ℄ RAMP I-480 WB EXIT
Δ = 5° 38′ 30″ (LT)
Dc = 9° 32′ 57″
R = 600.00′
T = 29.56′
L = 59.08′
E = 0.73′
C = 59.05′
C.B. = S 63° 31′ 33″ E
PC = Sta. 405+94.58
PT = Sta. 406+53.66



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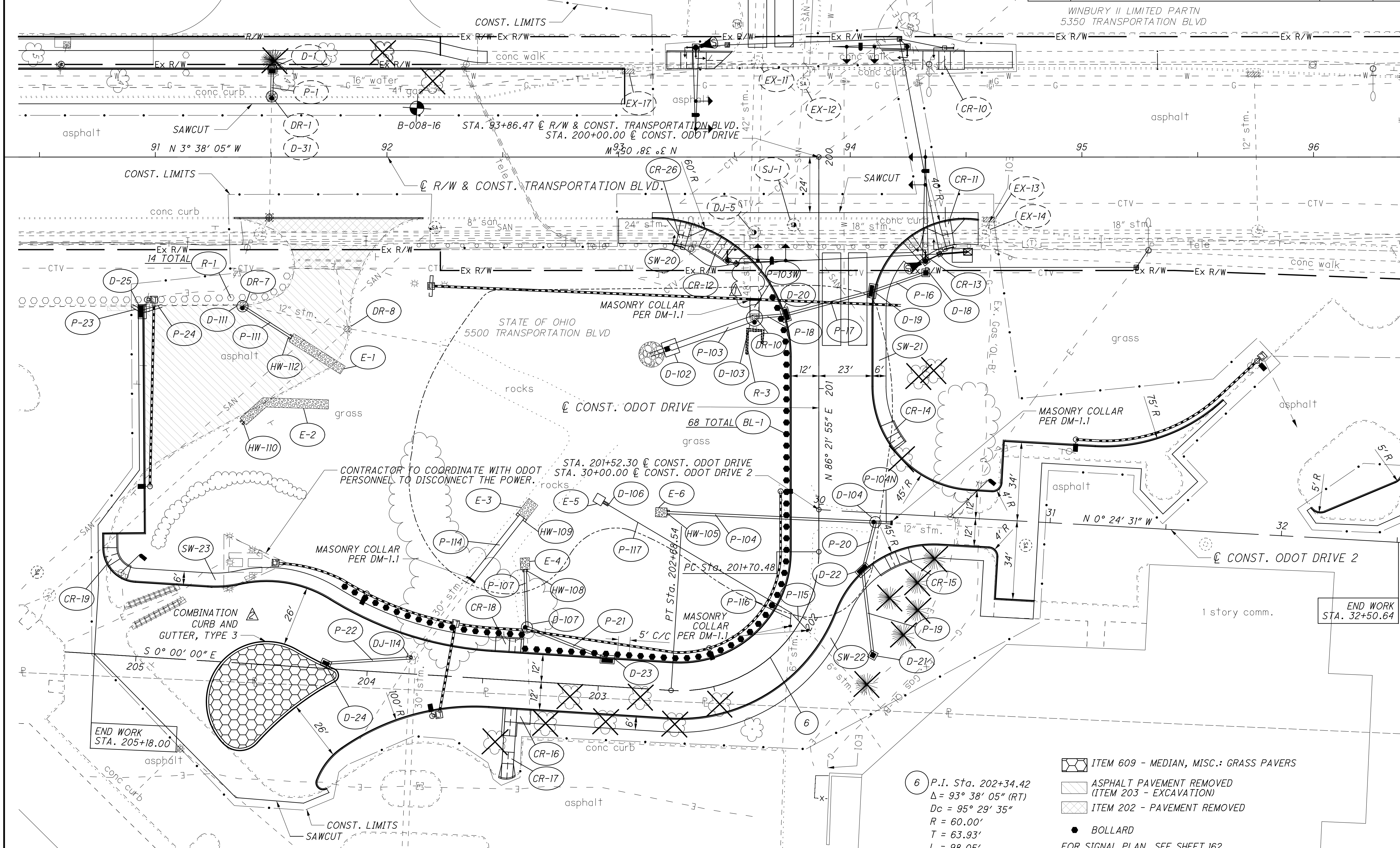
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMB
CHECKED JJS

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

CUY-480/
TRANSPORTATION BLVD.

NO.	DESCRIPTION	REV. BY	DATE
1	EX. CONDUIT SIZE LABEL	DSM	1-12-18
2	ITEM NAME REVISION	JMB	1-16-18



(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
Δ = 93° 38′ 05″ (RT)
Dc = 95° 29′ 35″
R = 60.00′
T = 63.93′
L = 98.05′
E = 27.68′
C = 87.50′
C.B. = S 46° 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

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED JMB CHECKED JJS

PLAN - ODOT DRIVE BEGIN TO END

CUY-480/ TRANSPORTATION BLVD.

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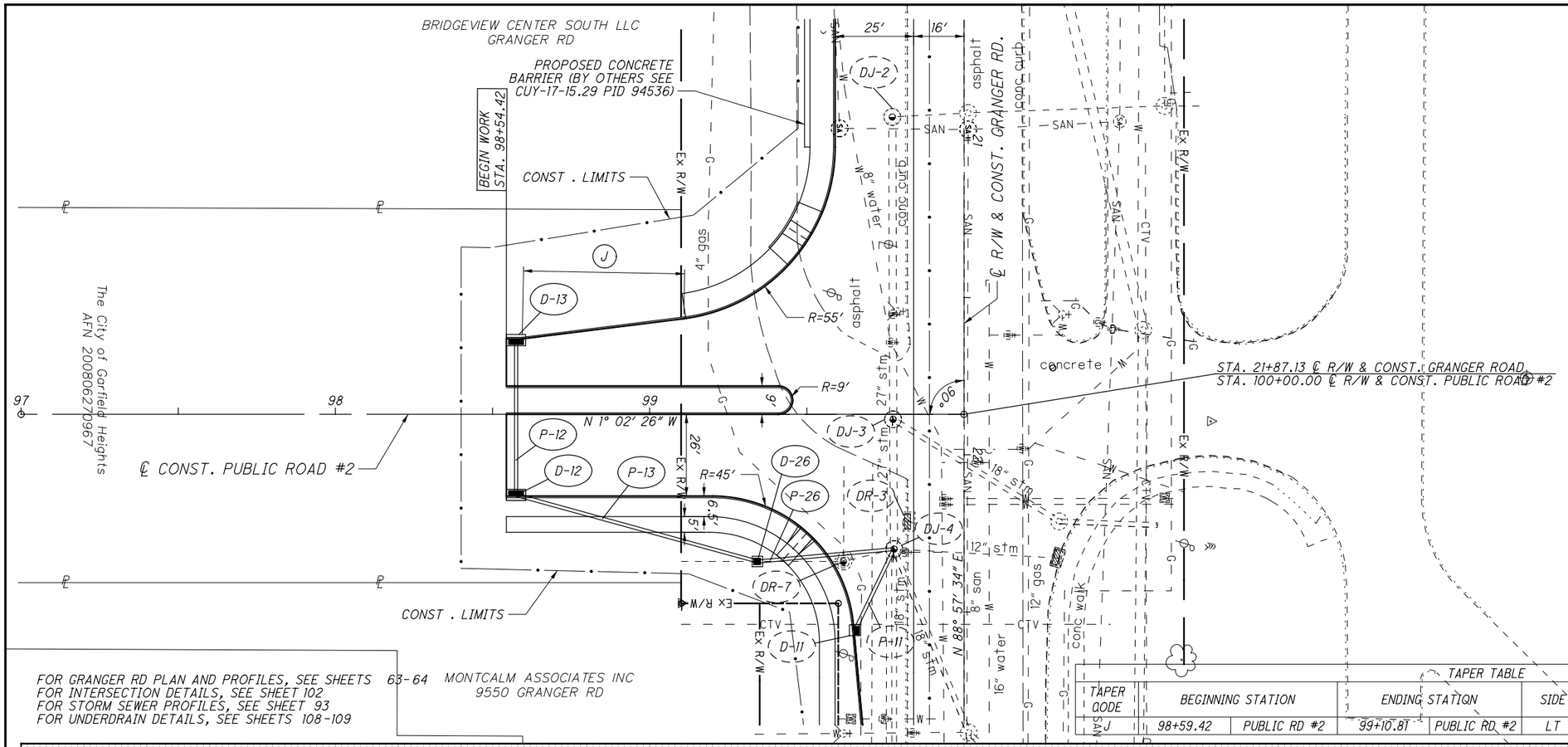
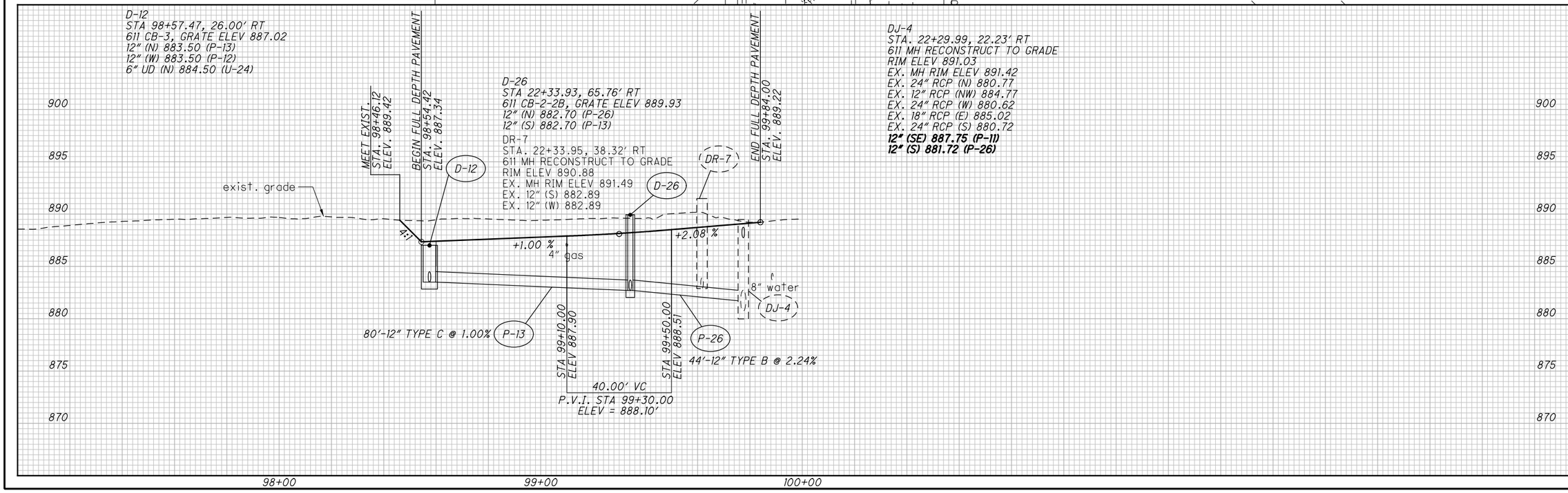


FOR GRANGER RD PLAN AND PROFILES, SEE SHEETS 63-64
FOR INTERSECTION DETAILS, SEE SHEET 102
FOR STORM SEWER PROFILES, SEE SHEET 93
FOR UNDERDRAIN DETAILS, SEE SHEETS 108-109

MONTCALM ASSOCIATES INC
9550 GRANGER RD

TAPER TABLE

TAPER CODE	BEGINNING STATION		ENDING STATION		SIDE	DESCRIPTION	BEGIN WIDTH	END WIDTH	TAPER RATE
J	98+59.42	PUBLIC RD #2	99+10.81	PUBLIC RD #2	LT	PAVEMENT	24.00'	30.42'	8:1



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CALCULATED JMB CHECKED JJS

HORIZONTAL SCALE IN FEET
0 10 20 40

PLAN AND PROFILE - PUBLIC ROAD #2
STA. 97+00.00 TO END

CUY-480/
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

D-18
STA 200+50.00, 46.18' LT
611 CB-2-2B, GRATE ELEV 911.77
12" (S) 908.46 (P-16)

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)

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)

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)

D-21
STA. 202+00.00, 34.54' LT
611 CB-2-2B, GRATE ELEV 914.97
12" (W) 911.51 (P-19)

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

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)

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)

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

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)

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)

DJ-114
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)

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

100.00' VC
P.V.I. STA 200+90.00
ELEV = 913.24'

50.00' VC
P.V.I. STA 202+15.00
ELEV = 918.24'

80.00' VC
P.V.I. STA 203+20.00
ELEV = 916.84'

50.00' VC
P.V.I. STA 204+93.00
ELEV = 925.49'

SAWCUT TRANSPORTATION BLVD.
PVT STA. 200+24.00
ELEV. 914.30

PVC STA. 200+40.00
ELEV. 914.04

PVT STA. 201+40.00
ELEV. 915.24

PVC STA. 201+90.00
ELEV. 917.24

PVT STA. 202+40.00
ELEV. 917.91

PVC STA. 202+80.00
ELEV. 917.38

PVT STA. 203+60.00
ELEV. 918.84

PVC STA. 204+68.00
ELEV. 924.24

PVT STA. 205+18.00
ELEV. 925.78

MEET EXIST.

EX-14 EX-13 DJ-5 D-19 D-18 D-103 D-104 D-22 D-21 D-23 D-107 DJ-114 D-24 D-25

-1.60 % +4.00 % +4.00 % -1.34 % -1.34 % +5.00 % +5.00 % +1.18 %

DR-10

EX. 48" STM

P-103W 8'-48" TYPE B @ 0.00%

P-20 22'-12" TYPE B @ 3.52%

P-19 37'-12" TYPE C @ 2.11%

37'-12" TYPE C @ 0.89% P-21

37'-12" TYPE B @ 4.84% P-22

MASONRY COLLAR DM-1.1

MASONRY COLLAR DM-1.1

ex. 15" STM

ex. 15" STM

9'-15" TYPC B @ 4.06% P-24

6'-15" TYPC B @ 4.39% P-23

914.74 911.41 902.88 902.30 907.38 914.44 916.46 914.85 917.69 928.52 925.84

200+00 201+00 202+00 203+00 204+00 205+00

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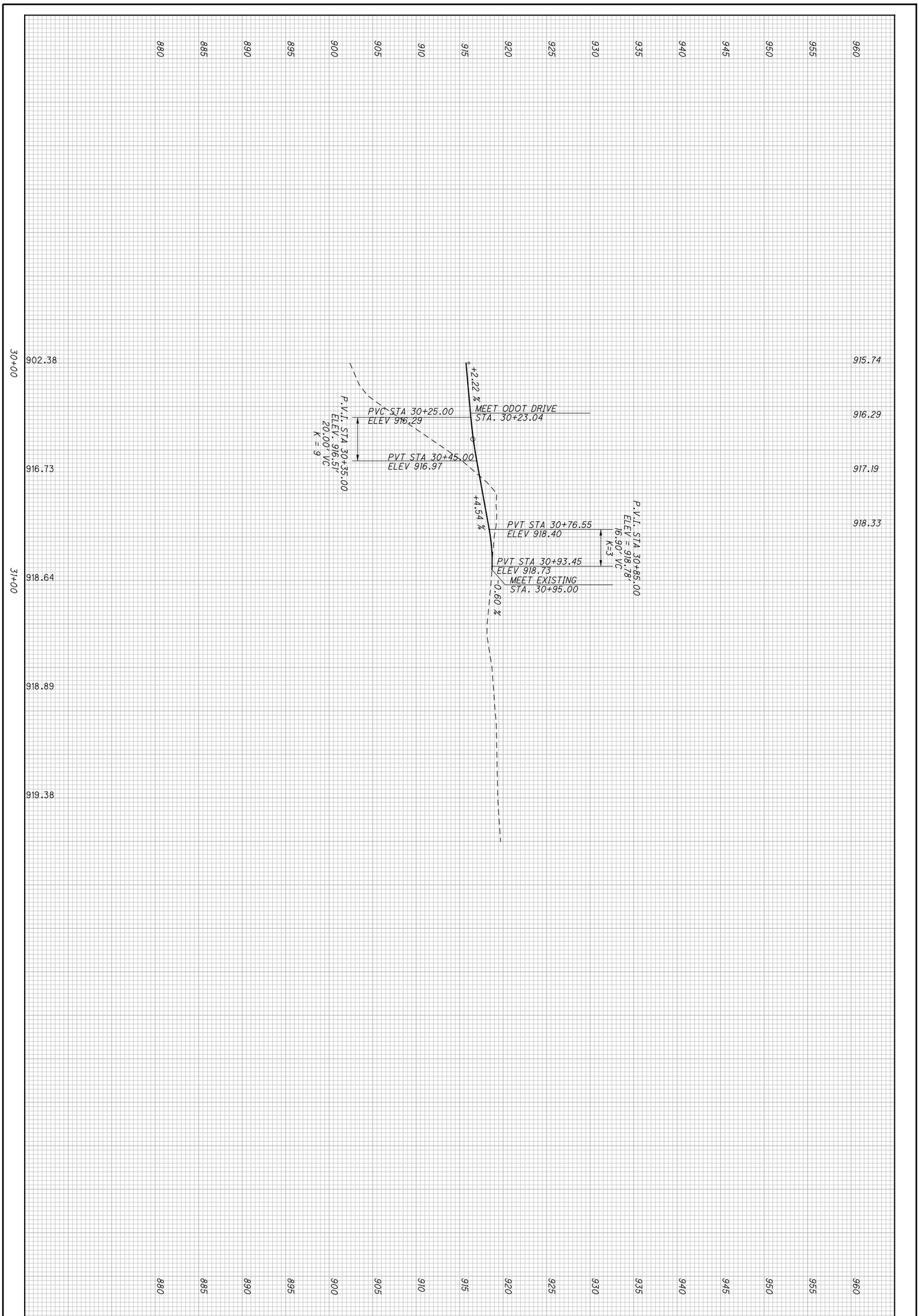
CALCULATED JMB
CHECKED JJS

PROFILE - ODOT DRIVE
BEGIN TO END

CUY-480/
TRANSPORTATION BLVD.



70 / 225	CUY-480/ TRANSPORTATION BLVD.	PROFILE - ODOT DRIVE 2 BEGIN TO END	CALCULATED JMB / CHECKED JJS

SEEDING	
END WIDTH	SQ. YDS.

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

890 885 880 875

4" gas
16" water
elec
tele

883.75
24+50.00
883.75

880 875

elec
4" gas
16" water
12" rcp
EXIST.
25+00.00
882.48
24" rcp
elec
elec
tele
21" rcp

BEGIN WORK
BEGIN RESURFACING
BUTT JOINT
MEET EXISTING

880 875

4" gas
16" water
elec
elec
elec
tele

25+50.00
881.24
8" san

880 875

4" gas
16" water
elec
tele

26+00.00
880.06

885 880 875 870

EX R/W
4" gas
16" water
elec
tele
EX R/W

26+50.00
879.08

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

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED JMB
CHECKED JJS

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

CUY-480/
TRANSPORTATION BLVD.

71
225

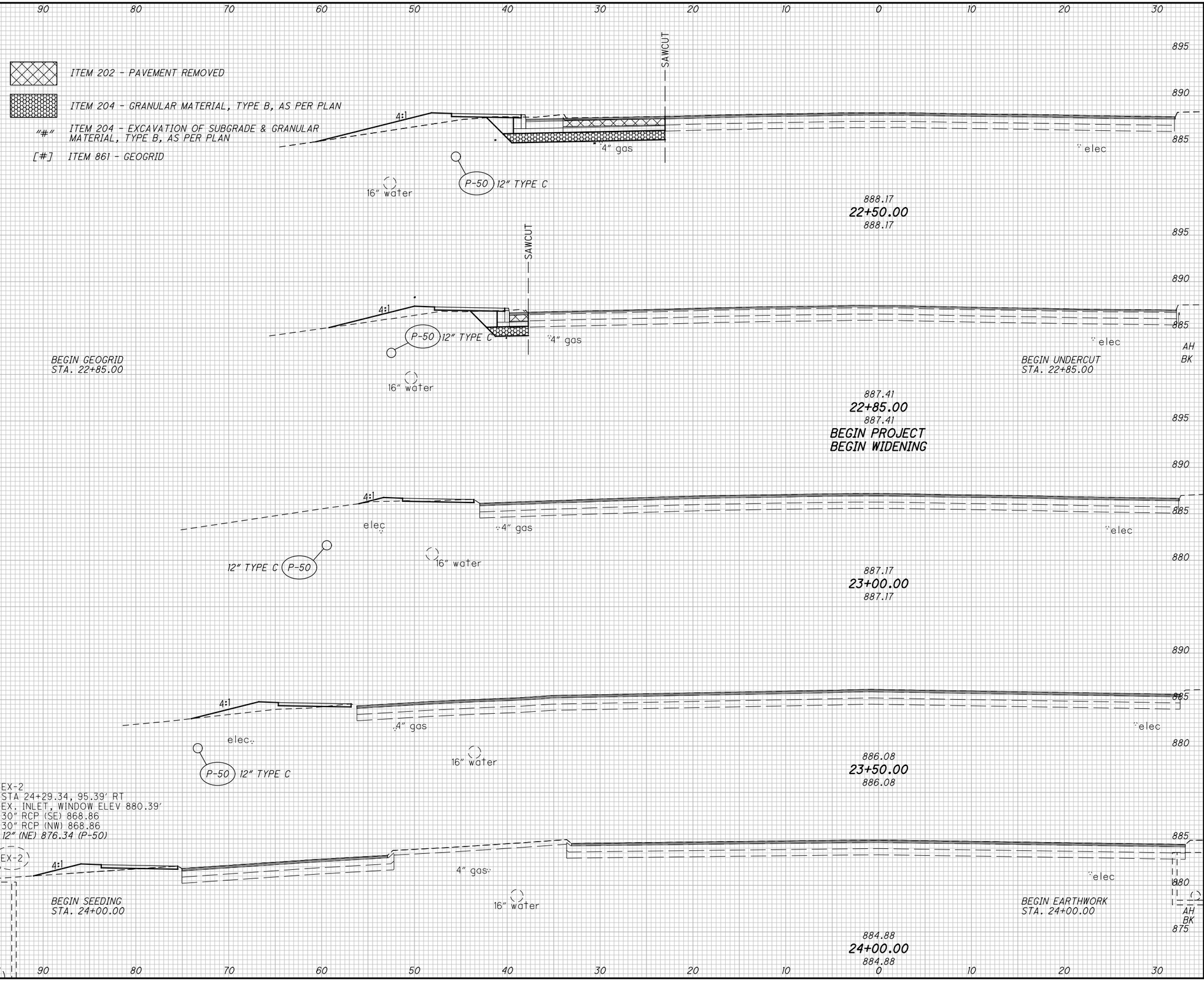
SEEDING END WIDTH	SEEDING SQ. YDS.
	42 [85]
17 [17]	
	60 [41]
14 [4] [0]	
	18
7	
	53
12	
	61
10 0	
	234
	[126]

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



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		29 "28"	12 "28"
4 "17"	14 "17"		
		8 "14"	16 "14"
9 "4" "0"	10 "4" "0"		
		3	3
1	1		
		2	7
1	7		
		2	11
1 0	5 0		
		44	49
		"42"	"42"

CALCULATED JMB
CHECKED JJS

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

CUY-480/ TRANSPORTATION BLVD.

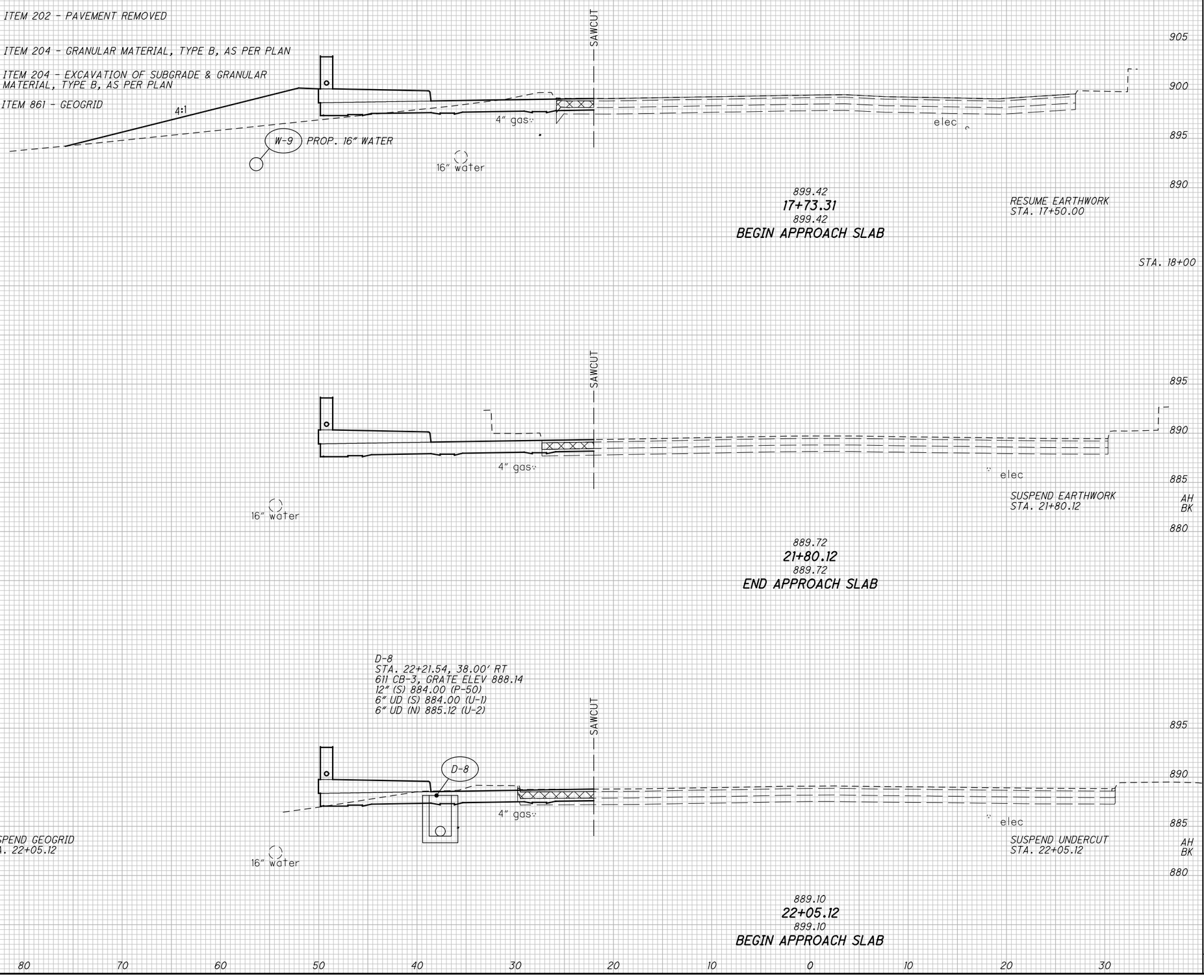
SEEDING END WIDTH	SEEDING SQ. YDS.
	75
28	
	42
0	
	0
0	
[0] [17]	
	117

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



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		17	55
21	49		
		10	24
0	0		
0	0		
31	0		
0	0	29	0
31	0		
"0" "17"	"0" "17"		
		56	79

CALCULATED JMB
CHECKED JJS

CROSS SECTIONS TRANSPORTATION BLVD. STA. 22+00.00 TO STA. 17+73.31

CUY-480/ TRANSPORTATION BLVD.

73
225

SEEDING END WIDTH	SEEDING SQ. YDS.
	314 [94]
45 [17]	
	250 [94]
45 [17]	
	203 [94]
28 [17]	
	6 [3]
35 [17] [0]	
	762 [282]

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

SAWCUT

3:1

4" gas

16" water

elec

W-9 PROP. 16" WATER

16+50.00
902.33

4:1

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-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
12" (W) 890.96 (P-9)

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

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

17+00.00
901.23

MASONRY COLLAR PER DM-1.1

12" STM

P-9 12'-12" TYPE B @ 1.02%

6'-12" TYPE C @ 0.94% P-8

17+50.00
899.87

RESUME GEOGRID
STA. 17+51.78

RESUME UNDERCUT
STA. 17+51.78

17+51.78
899.82

END APPROACH SLAB

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		113 "32"	154 "32"
34 "17"	93 "17"		
		63 "32"	152 "32"
34 "17"	71 "17"		
		56 "32"	119 "32"
27 "17"	58 "17"		
		2 "1"	5 "1"
22	90		
AH "17" BK "0"	"17" "0"		
		213 "97"	490 "97"

CALCULATED JMB
CHECKED JJS

CROSS SECTIONS
STA. 17+51.78 TO STA. 16+50.00

CUY-480/
TRANSPORTATION BLVD.

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

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		154 "66"	42 "66"
58 "30"	45 "30"		
		85 "44"	90 "44"
34 "17"	52 "17"		
		62 "32"	133 "32"
33 "17"	92 "17"		
		60 "32"	153 "32"
32 "17"	73 "17"		
		361 "174"	418 "174"

80 70 60 50 40 30 20 10 0 10 20 30 40

RADIAL TO INT. RETURN

SAWCUT

3:1

4" gas

16" water

elec

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

14+50.00
906.30

15+00.00
905.34

15+50.00
904.30

16+00.00
903.26

EX-19
STA 15+99.68, 82.66' RT
CB, GRATE ELEV 888.19
15" E 881.39

D-30
STA 16+00.00, 87.52' RT
611 CB-2-2B, GRATE ELEV 891.11
15" (E) 886.96 (P-30)
15" (E) 888.11 (P-7)

D-34
STA. 15+99.41, 25.56' RT
611 MH-3, RIM ELEV 902.71
EX. 12" RCP (E) 895.90
EX. 15" CMP (W) 895.90
15" (W) 895.90 (P-6)

DR-4
STA. 15+99.41, 25.56' RT
202 CATCH BASIN REMOVED
EX. CB, GRATE ELEV 902.55
EX. 12" RCP (E) 895.90
EX. 15" CMP (W) 895.90

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)

EX-4
STA 16+00.15, 29.40' LT
EX. CB, GRATE ELEV 902.58'
15" SW 895.98
12" E 895.98

EX-19
EX-4
D-34
DR-4
D-6
2:1
MATCHLINE D
EX L/A
12" stm
15" stm
W-9 PROP. 16" WATER
P-6 12'-15" TYPE B @ 2.00%
P-7 10'-15" TYPE C @ 26.44%
MASONRY COLLAR

910 905 900 895 890 885

CALCULATED JMB
CHECKED JJS

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

75
225

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	144 [147]			197 "49"	11 "49"
30 [36]		146 "36"	7 "36"		
	51 [131]			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"

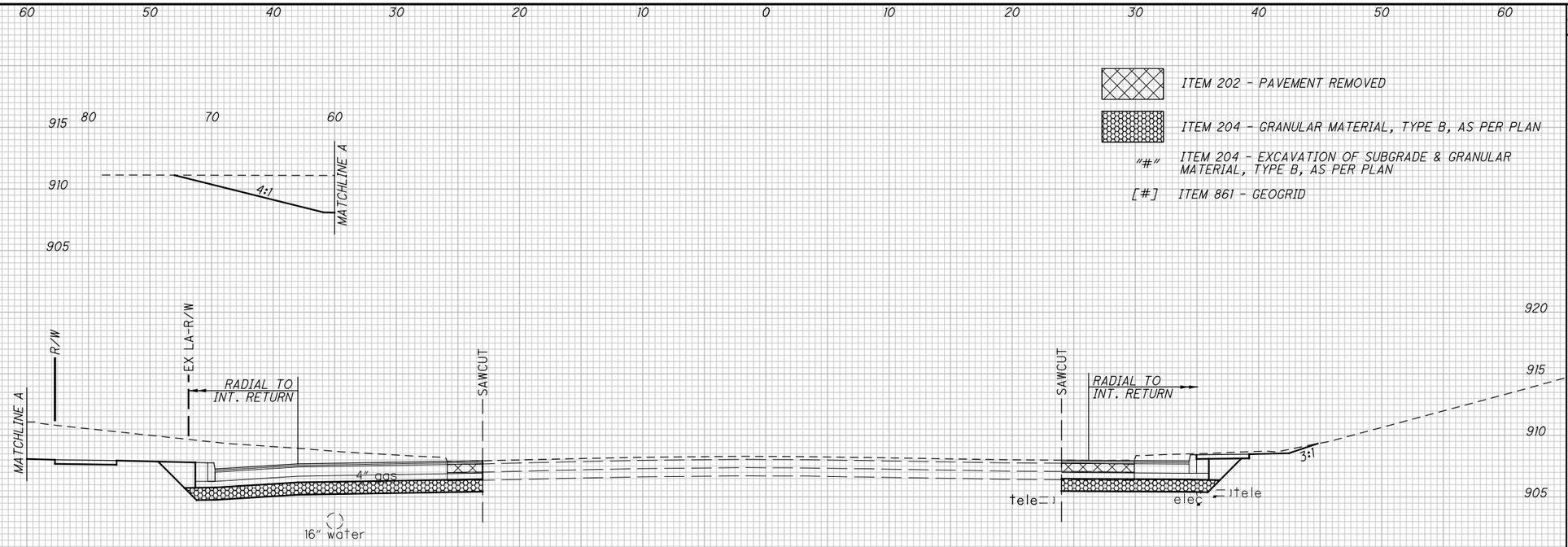
CALCULATED JMB
CHECKED JJS

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



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

CUY-480/
TRANSPORTATION BLVD.

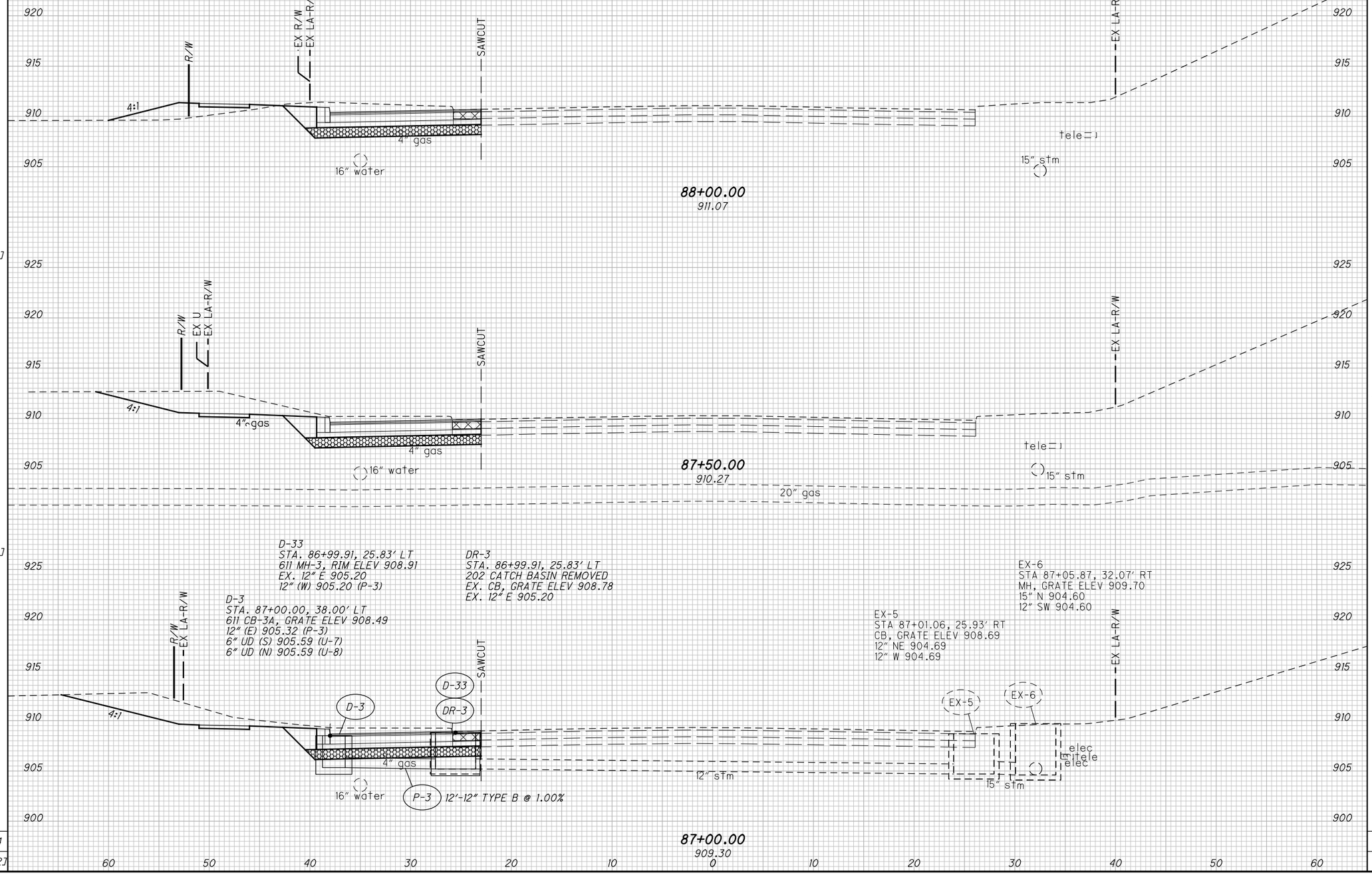
SEEDING END WIDTH	SEEDING SQ. YDS.
	106 [94]
17 [17]	
	97 [94]
18 [17]	
	111 [94]
22 [17]	
	314 [282]

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



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		73 "32"	63 "32"
53 "17"	18 "17"		
		111 "32"	22 "32"
67 "17"	5 "17"		
		124 "32"	9 "32"
67 "17"	5 "17"		
		308 "96"	94 "96"

CALCULATED JMB
CHECKED JJS

CROSS SECTIONS TRANSPORTATION BLVD. STA. 87+00.00 TO STA. 88+00.00

CUY-480/ TRANSPORTATION BLVD.

SEEDING END WIDTH	SEEDING SQ. YDS.
	172 [94]
31 [17]	
	172 [94]
31 [17]	
	59 [64]
0 [17]	
	19 [30]
21 [17]	
	422
	[282]

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		55 "32"	122 "32"
30 "17"	64 "17"		
		56 "32"	109 "32"
31 "17"	54 "17"		
		35 "21"	65 "21"
24 "17"	50 "17"		
		15 "10"	29 "10"
26 "17"	49 "17"		
		161 "95"	325 "95"

CALCULATED JMB
CHECKED JJS

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

CUY-480/ TRANSPORTATION BLVD.

80 70 60 50 40 30 20 10 0 10 20 30 40

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

89+50.00
912.22

SAWCUT, R/W, EX R/W, 6:1, 4" gas, 16" water, tele, 21" stm

D-32
STA. 88+99.52, 25.56' LT
611 MH-3, RIM ELEV 911.49
EX. 12" RCP E 907.94
12" (NW) 907.94 (P-2)

DR-2
STA. 88+99.52, 25.56' LT
202 CATCH BASIN REMOVED
EX. CB, GRATE ELEV 911.34
EX. 12" RCP E 907.94

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)

EX-7
STA 89+00.77, 25.81' RT
CB, GRATE ELEV 911.30
12" RCP NE 907.60
12" RCP W 907.80

EX-8
STA 89+08.06, 32.99' RT
MH, RIM ELEV 912.14
21" N 902.79
12" SW 903.29

7:1, D-2, D-32, DR-2, P-2 13'-12" TYPE B @ 1.50%, 12" stm

89+00.00
911.93

DV-1, MEET EX. 79.25' LT, -3.29 %, -12.00 %, EL. 911.53 56.00' LT, -6.00 %, 15" stm

88+66.01
DV-1 ASPHALT COMM. DRIVE LT.
911.67

17:1, 2.60 %

88+50.00
911.55

SEEDING END WIDTH	SEEDING SQ. YDS.
	172 [94]
31 [17]	
	172 [94]
31 [17]	
	172 [94]
31 [17]	
	516 [282]

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

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

925 920 915 910 905

SAWCUT R/W EX R/W SAWCUT EX R/W

5:1

4" gas

16" water

tele

21" stm

91+00.00
913.13

925 920 915 910 905

SAWCUT R/W EX R/W SAWCUT EX R/W

5:1

4" gas

16" water

tele

21" stm

90+50.00
912.82

925 920 915 910 905

SAWCUT R/W EX R/W SAWCUT EX R/W

6:1

4" gas

16" water

tele

21" stm

90+00.00
912.46

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

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		60 "32"	144 "32"
33 "17"	72 "17"		
		62 "32"	130 "32"
34 "17"	68 "17"		
		58 "32"	126 "32"
29 "17"	68 "17"		
		180 "96"	400 "96"

CALCULATED JMB
CHECKED JJS

CROSS SECTIONS TRANSPORTATION BLVD.
STA. 90+00.00 TO STA. 91+00.00

CUY-480/
TRANSPORTATION BLVD.

SEEDING END WIDTH	SEEDING SQ. YDS.
10	74 [92]
10	3 [6]
10	56 [106]
10	114 [94]
31	172 [94]
31	[17]
	419 [392]

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		57 "31"	31 "31"
41 "21"	9 "21"		
		4 "2"	1 "2"
42 "21"	9 "21"		
		75 "35"	13 "35"
39 "17"	5 "17"		
		65 "32"	86 "32"
31 "17"	88 "17"		
		58 "32"	158 "32"
32 "17"	83 "17"		
		259 "132"	289 "132"

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

93+02.65
914.21
END WIDENING
END PROJECT

93+00.00
914.20

92+50.00
913.96

EX-16
STA 92+20.74, 30.46' RT.
SAN MH, RIM ELEV 913.78
8" SE 905.53
8" N 905.53

92+00.00
913.69

EX-9
STA 91+49.28, 26.00' RT
CB, GRATE ELEV 912.89
12" RCP W 909.49
12" RCP SE 909.24

91+50.00
913.41

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-31
STA. 91+50.30, 26.15' LT
611 MH-3, RIM ELEV 912.95
EX. 12" RCP E 910.19
12" (W) 910.19 (P-1)

DR-1
STA. 91+50.30, 26.15' LT
202 CATCH BASIN REMOVED
EX. CB, GRATE ELEV 912.84
EX. 12" RCP E 910.19

EX-10
STA 91+45.46, 33.26' RT
MH, RIM ELEV 913.76
21" S 902.08
24" N 901.75
12" NW 909.08

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

P-1 11'-12" TYPE B @ 1.50%

CALCULATED JMB
CHECKED JJS

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

CUY-480/ TRANSPORTATION BLVD.

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SEEDING END WIDTH	SEEDING SQ. YDS.
17 [0]	31 [6]
11 [5]	31 [86]
0 [26]	50 [111]
18 [14]	112 [203]

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

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

EX R/W

4:1

2.00%

4" gas

16" water

ctv

elec

tele

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

94+70.00
915.37
END WORK

SAWCUT

RADIAL TO INT. RETURN

2:1

18" stm

94+50.00
915.27

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

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

SEE SHEET 94 MATCHLINE ODOT DR.

8" san

94+00.00
914.85

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

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

42" stm

93+50.00
914.48

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0 "0"	0 "0"		
		5 "2"	2 "2"
14 "5"	5 "5"		
		47 "29"	5 "29"
37 "26"	0 "26"		
		56 "37"	24 "37"
24 "14"	26 "14"		
		108 "68"	31 "68"

CALCULATED JMB
CHECKED JJS

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

CUY-480/ TRANSPORTATION BLVD.

81
225

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SEEDING	
END WIDTH	SQ. YDS.

END AREA	
CUT	FILL

VOLUME	
CUT	FILL

CALCULATED JMB
CHECKED JJS

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

885 880 875 870 865 860 855

rctv
8" san
12" gas
12" stm
8" san

17+00.00
862.27

12" gas
12" stm
8" san

16+50.00
858.81

8" san
12" gas
12" stm
8" san

16+00.00
855.29

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

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SEEDING END WIDTH	SEEDING SQ. YDS.
31 [6]	183 [28]
35 [4]	59 [8]
18 [3]	
0 [0]	
	242
	[36]

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
224 "7"	3 "7"		
		399 "11"	6 "11"
207 "5"	3 "5"		
		100 "3"	2 "3"
63 "4"	3 "4"		
0 "0"	0 "0"		
		499 "14"	8 "14"

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

DR-1
STA. 91+50.30, 26.15' LT
202 CATCH BASIN REMOVED
EX. CB, GRATE ELEV 912.84
EX. 12" RCP E 910.19

PROPOSED CONCRETE BARRIER, GRADING, CATCH BASIN, AND PIPE (BY OTHERS, SEE CUY-17-15.29 PID 94536)

D-16
STA. 17+97.26, 17.35' RT
611 MH-3, RIM ELEV 867.64
12" (SW) 863.78
12" (E) 863.53 (P-27)
12" (W) 863.53 (P-28)
12" (S) BY OTHERS

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)

PROPOSED CONCRETE BARRIER AND GRADING (BY OTHERS, SEE CUY-17-15.29 PID 94536)

18+00.00
868.74

17+50.00
865.56

17+30.00
864.27
BEGIN WORK
BEGIN WIDENING

BEGIN SEEDING AND GEOGRID
STA. 17+30.00

BEGIN EARTHWORK AND UNDERCUT
STA. 17+30.00

SAWCUT

12" gas

4" gas

8" water

8" san

12" stm

CALCULATED JMB
CHECKED JJS

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

CUY-480/
TRANSPORTATION BLVD.

83
225

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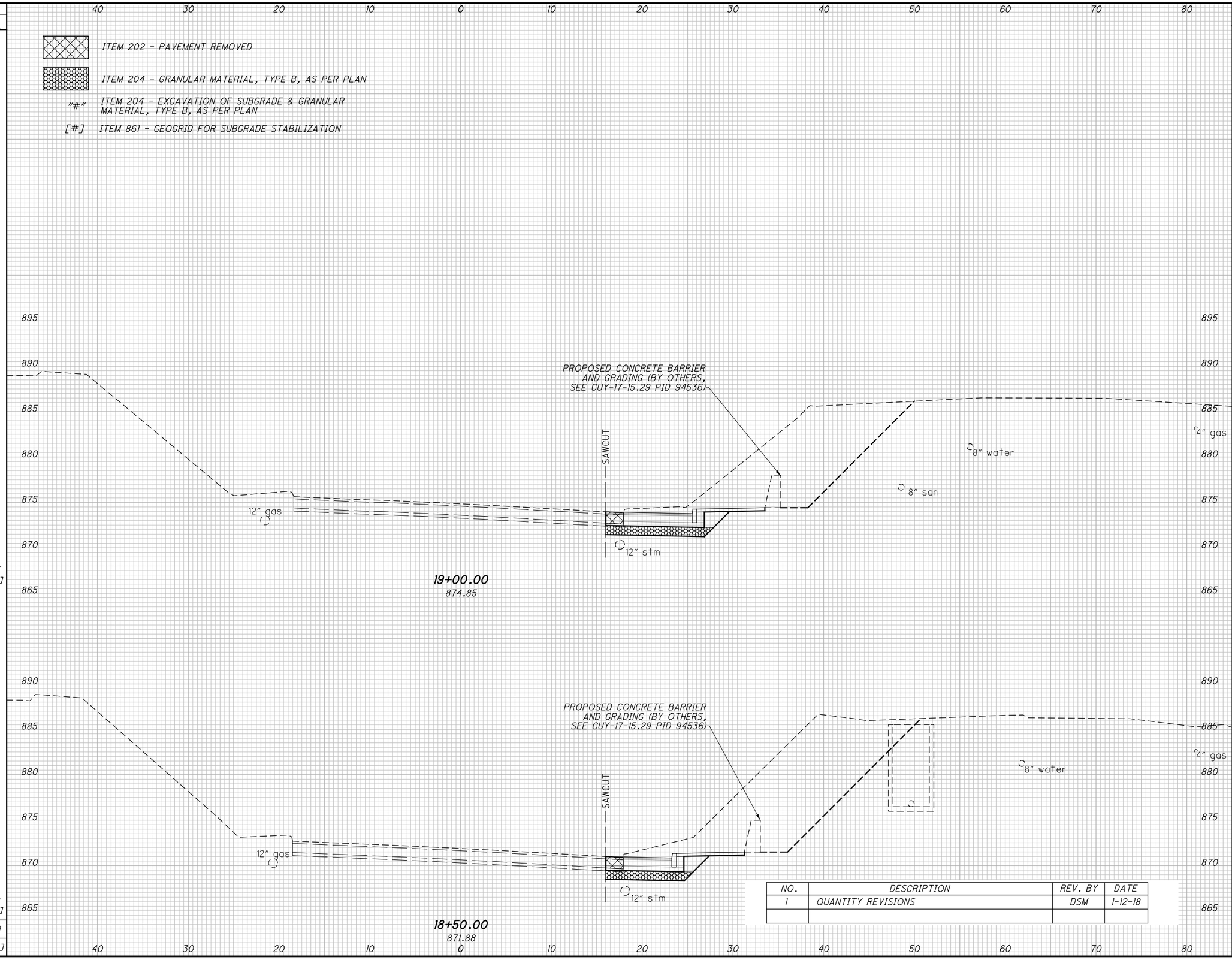
SEEDING END WIDTH	SEEDING SQ. YDS.
22 [11]	133 [56]
26 [9]	158 [42]
	291
	[98]

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



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
27 "11"	3 "11"		
21 "9"	3 "9"		
		44 "19"	6 "19"
		35 "15"	6 "15"
		79	12
		"34"	"34"

NO.	DESCRIPTION	REV. BY	DATE
1	QUANTITY REVISIONS	DSM	1-12-18

CALCULATED JMB
CHECKED JJS

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

CUY-480/ TRANSPORTATION BLVD.

84
225

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SEEDING END WIDTH	SEEDING SQ. YDS.
16 [15]	94 [78]
18 [13]	109 [63]
22 [10]	2 [1]
	205 [142]

D-15
STA. 19+96.66, 17.33' RT
611 MH-3, RIM ELEV 879.37
12" (S) 875.78 (P-14)
12" (W) 875.78 (P-100)

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)

DR-2
STA. 88+99.52, 25.56' LT
202 CATCH BASIN REMOVED
EX. CB, GRATE ELEV 911.34
EX. 12" RCP E 907.94

PROPOSED CONCRETE BARRIER AND GRADING (BY OTHERS, SEE CUY-17-15.29 PID 94536)

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

P-14 13'-12" TYPE B @ 2.45%

20+00.00
880.23

19+50.00
877.62

P.T. 19+00.99
874.91

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
38 "16"	3 "16"		
32 "14"	3 "14"		
25 "10"	2 "10"		
		65 "28"	6 "28"
		52 "22"	5 "22"
		1 "1"	1 "1"
		118 "51"	12 "51"

CALCULATED JMB
CHECKED JJS

CROSS SECTIONS GRANGER RD.
STA. 19+00.99 TO STA. 20+00.00

CUY-480/
TRANSPORTATION BLVD.

85
225

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SEEDING END WIDTH	SEEDING SQ. YDS.
15 [44]	72 [194]
11 [26]	69 [144]
14 [26]	83 [38]
	224 [376]

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

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

900 895 890 885 880

SAWCUT

EX R/W

RADIAL TO INT. RETURN

4:1

12" gas

16" water

8" san

21+50.00
887.74

8" water

27" stm

SJ-2
STA 20+96.55, 1.33' LT
611 MANHOLE RECONSTRUCTED TO GRADE
PROP. RIM ELEV. 884.34
EX. SAN MH, RIM ELEV 885.29
EX. 8" E 878.39
EX. 10" N 874.89
EX. 10" S 874.89

PROPOSED CONCRETE BARRIER AND GRADING (BY OTHERS, SEE CUY-17-15.29 PID 94536)

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

SJ-2

DJ-2

4" gas

12" gas

8" water

12" stm

8" san

10" san

10" san

21+00.00
885.38

PROPOSED CONCRETE BARRIER AND GRADING (BY OTHERS, SEE CUY-17-15.29 PID 94536)

4" gas

12" gas

8" water

8" san

20+50.00
882.77

NO.	DESCRIPTION	REV. BY	DATE
1	QUANTITY REVISIONS	DSM	1-12-18

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
196 "45"	3 "45"		
		1 237 "67"	6 "67"
1 60 "27"	3 "27"		
		1 111 "50"	6 "50"
1 60 "27"	3 "27"		
	1	91 "40"	6 "40"
		439 "157"	18 "157"

CALCULATED JMB CHECKED JJS

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

CUY-480/ TRANSPORTATION BLVD.

SEEDING END WIDTH	SEEDING SQ. YDS.
12	69
13	72
13	36
0	[0]
[34]	42
	[217]
	219
	[217]

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

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

905 900 895 890 885 880

EX R/W

SAWCUT

8" gas
12" gas
12" stm
16" water
8" water
10" san
18" stm
8" san
4" gas
12" stm (TO BE REMOVED)
36" stm
18" stm
4:1

23+50.00
896.84

23+00.00
894.76

22+50.00
892.42

22+00.00
890.09

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

DR-7
STA. 22+33.95, 38.32' RT
611 MH RECONSTRUCT TO GRADE
RIM ELEV 890.88
EX. MH RIM ELEV 891.49
EX. 12" (S) 882.89
EX. 12" (W) 882.89

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)

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-26
STA 22+33.93, 65.76' RT
611 CB-2-2B, GRATE ELEV 889.93
12" (N) 882.70 (P-26)
12" (S) 882.70 (P-13)

RADIAL TO INT. RETURN

DR-3
STA 22+22.44, 17.40' RT
EX. CB, GRATE ELEV 890.75
EX. 12" SE 886.60

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

MATCHLINE PUBLIC ROAD #2

P-11 29'-12" TYPE B @ 0.91%

P-26 44'-12" TYPE B @ 2.24%

END GEOGRID STA. 22+00.00

END UNDERCUT STA. 22+00.00

AH
BK

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
34	6		
		61	12
32	7		
		75	12
49	6		
		114	6
74	0		
"0"	"0"		
"34"	"34"	250	3
		"73"	"73"
		136	33
		"73"	"73"

CALCULATED JMB
CHECKED JJS

CROSS SECTIONS GRANGER RD. STA. 22+00.00 TO STA. 23+50.00

CUY-480/ TRANSPORTATION BLVD.

87
225

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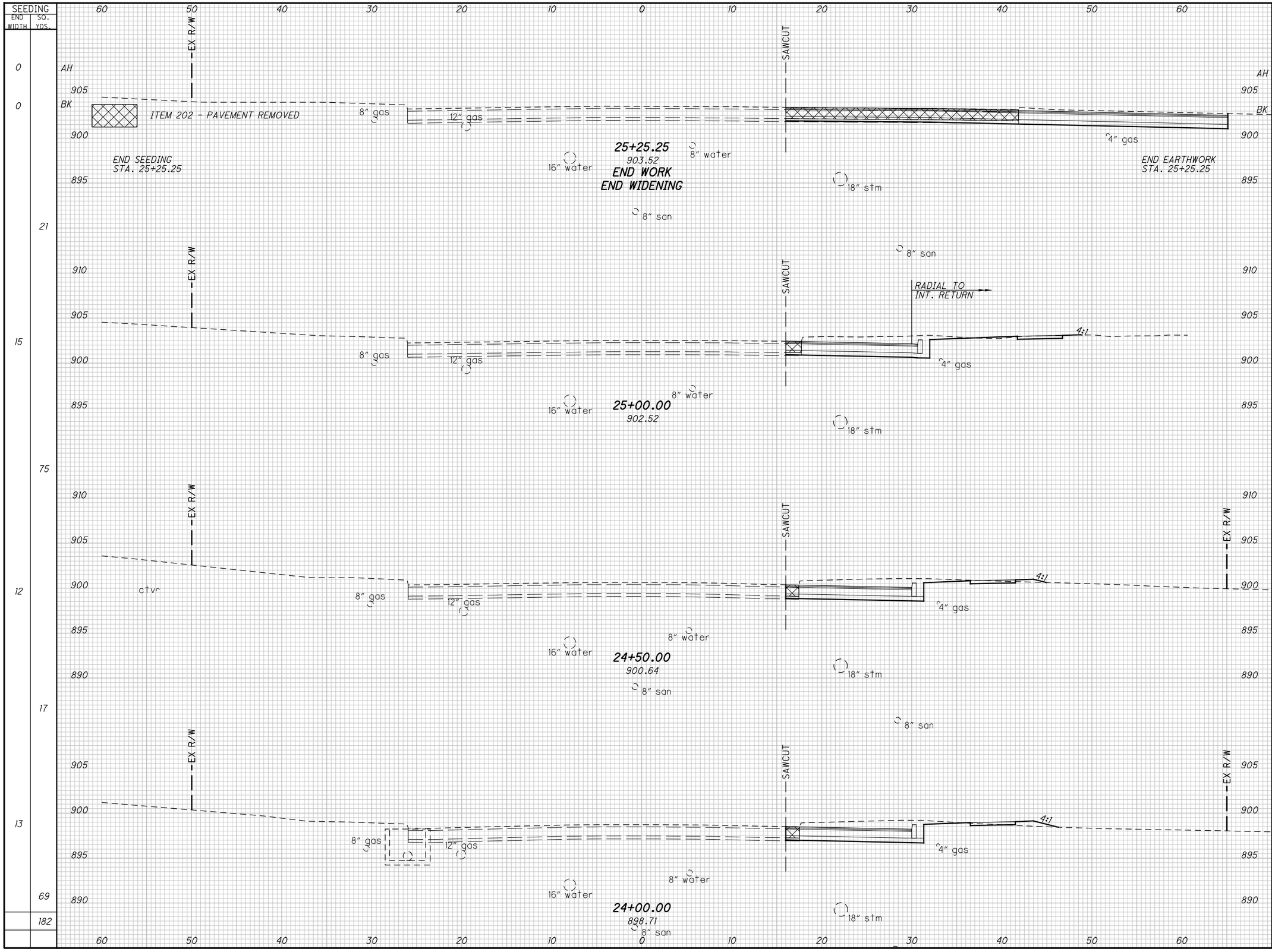
SEEDING END WIDTH	SEEDING SQ. YDS.
0	
0	
	21
15	
	75
12	
	17
13	
69	
	182



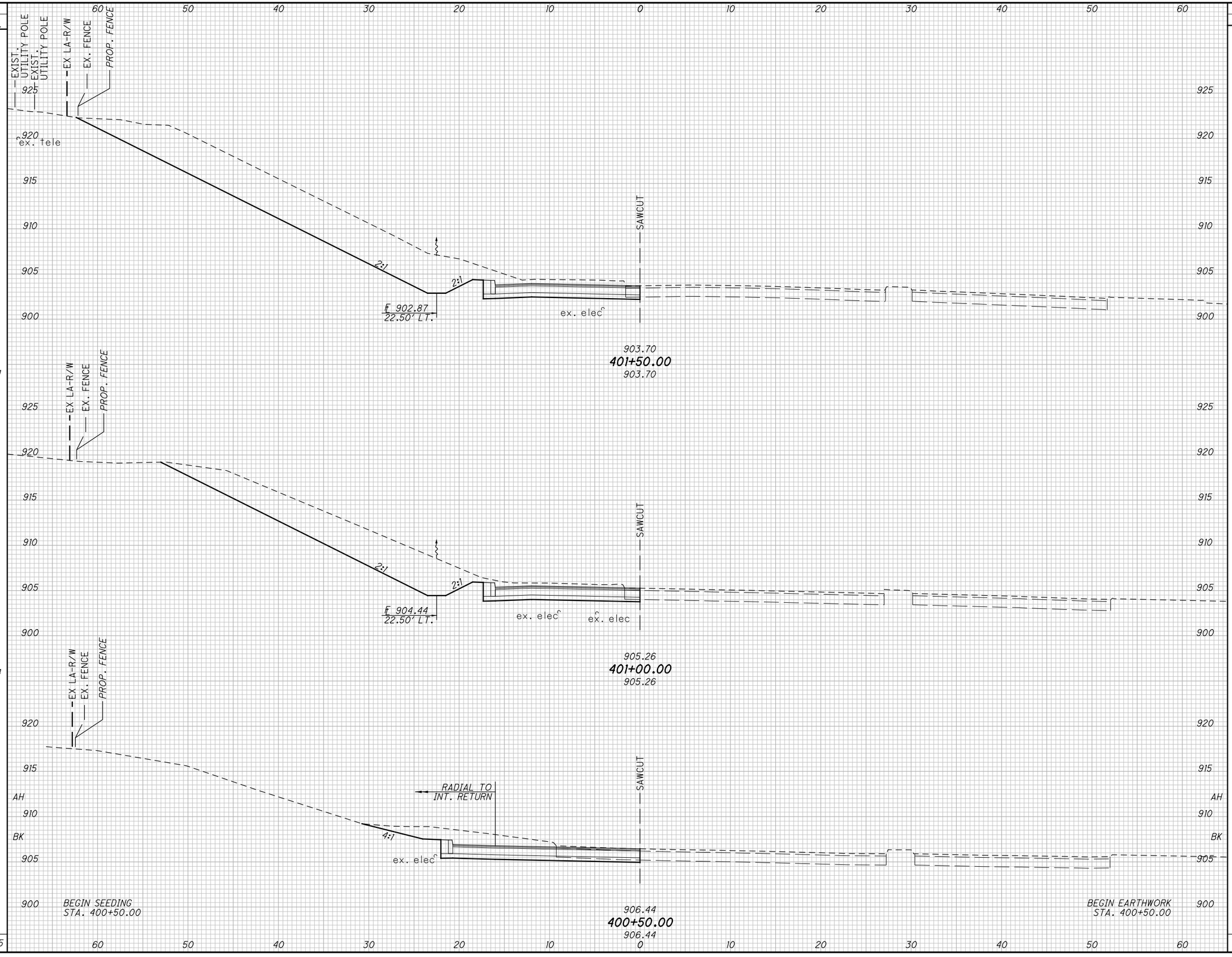
END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	0		
79	0		
		54	2
37	5		
		68	9
36	5		
		66	10
35	6		
		64	11
		252	32

CALCULATED JMB
CHECKED JJS

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

CUY-480/
TRANSPORTATION BLVD.

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
52	261	205	0	319	0
42	144	139	0	180	0
10	10	55	0		
0	0	0	0		
	405			499	0



CALCULATED DSM
CHECKED JJS

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

CUY-480/
TRANSPORTATION BLVD.

89
225

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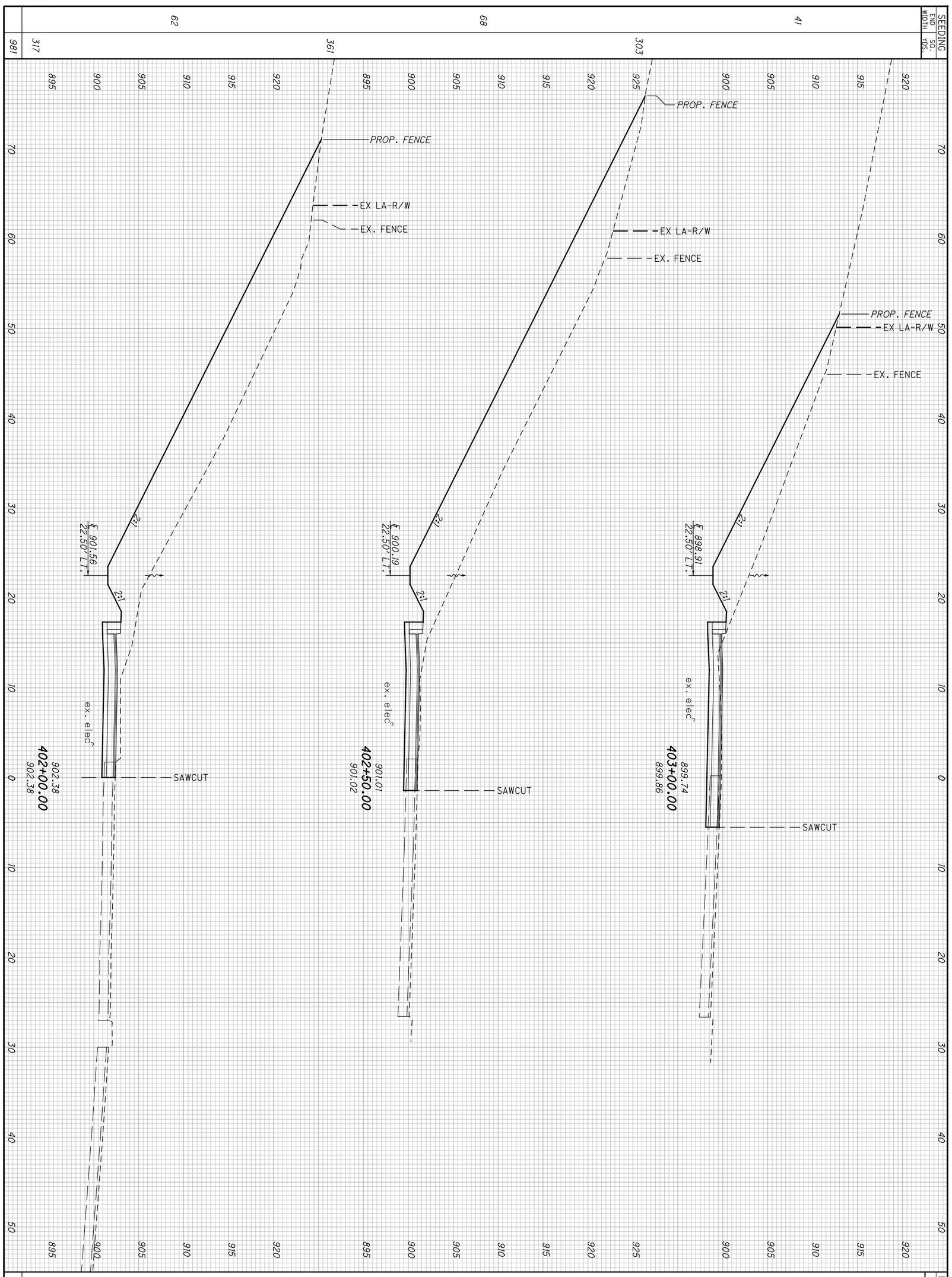


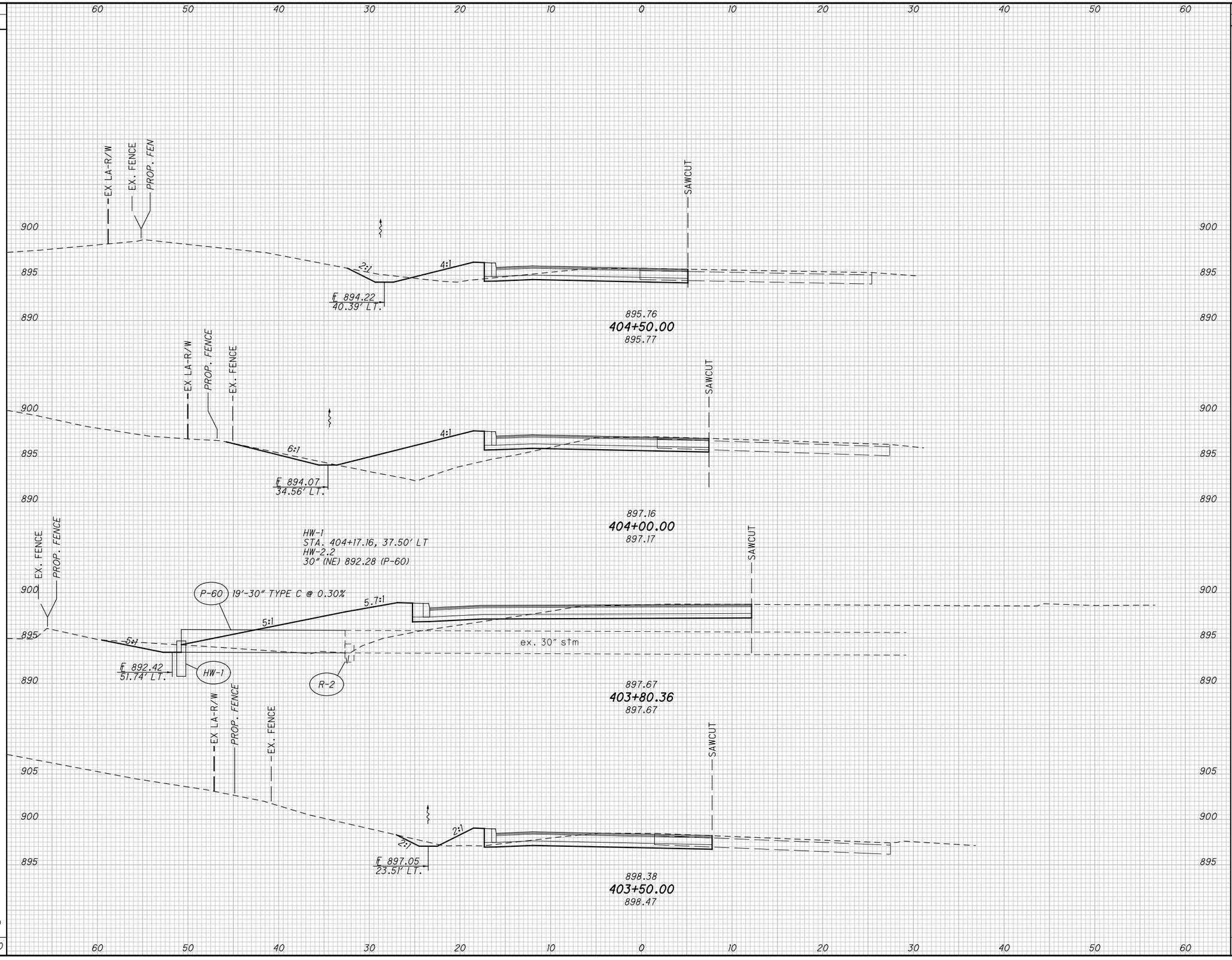
90
225

CUY-480/ TRANSPORTATION BLVD.

CROSS SECTIONS I-480 WB EXIT RAMP
STA. 402+00.00 TO STA. 403+00.00

CALCULATED DSM
CHECKED JJS

SEEDING END WIDTH	SEEDING SQ. YDS.
17	131
30	
13	
	150
	400



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
28	12		
		49	61
25	54		
		53	57
32	8		
		143	7
		245	125

CALCULATED DSM
CHECKED JJS

CROSS SECTIONS I-480 WB EXIT RAMP STA. 403+50.00 TO STA. 404+50.00

CUY-480/
TRANSPORTATION BLVD.

91
225

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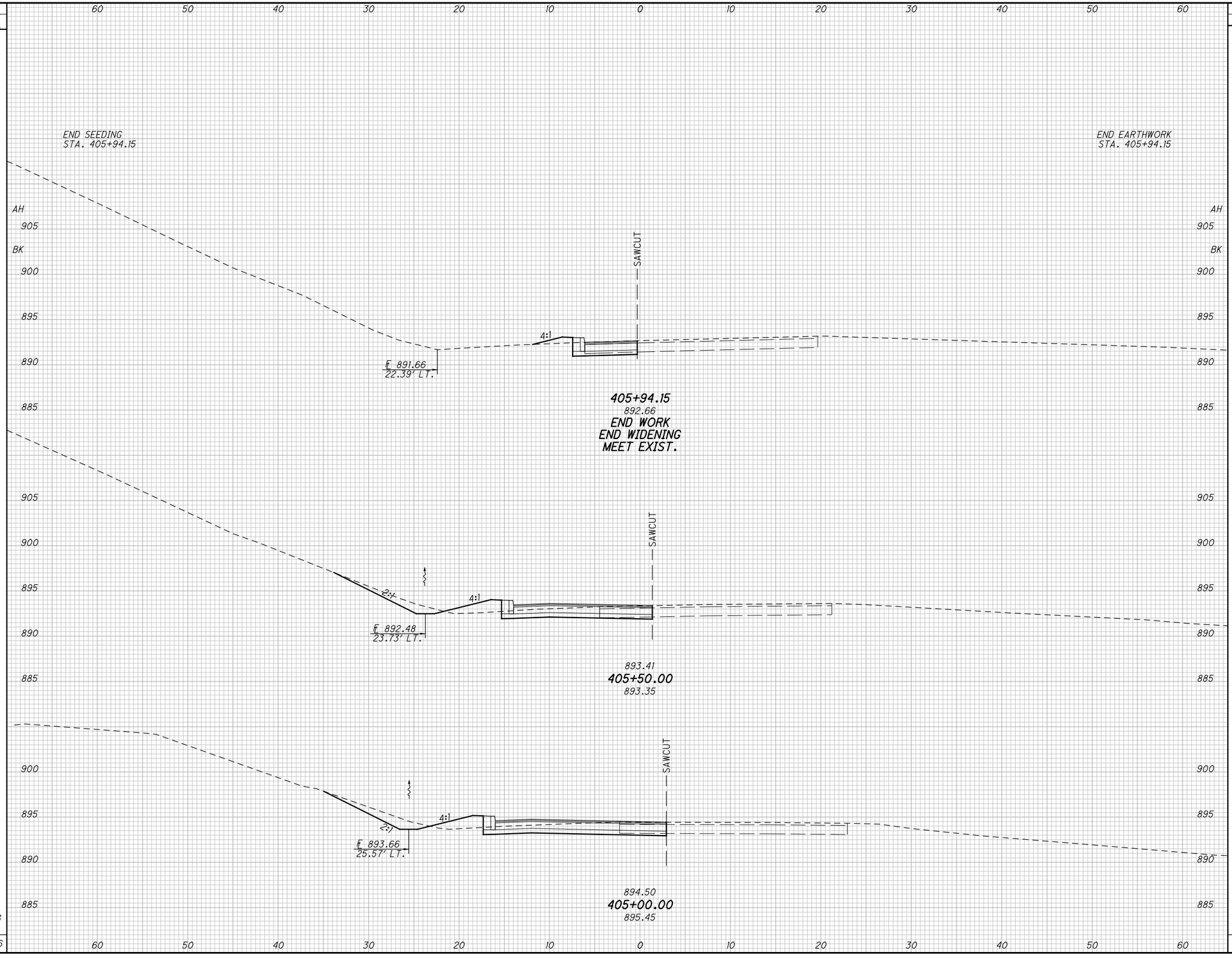
SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0		AH	0	0		
		905				
7		BK	11	2		
		900				
		895				
		890				
	69	885			29	7
		905				
		900				
21		895	25	7		
		890				
		885				
	114	900			52	12
		895				
20		890	31	6		
		885				
103					55	17
	286				136	36



CALCULATED DSM
CHECKED JJS

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

CUY-480/
TRANSPORTATION BLVD.

92
225

\\AKRN04\DATA\2016\2016051\CUY\80974\ROADWAY\SHEETS\80974XS006A.DGN
3/1/2017
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ODOTVBISTD_USER

SEEDING END WIDTH	SEEDING SQ. YDS.
0	
34	
	206
40	
	235
53	
	25
0	
0	
·	466

END SEEDING
STA. 99+50.00

RADIAL TO INT. RETURN

DR-7
STA. 22+33.95, 38.32' RT
611 MH RECONSTRUCT TO GRADE
RIM ELEV 890.88
EX. MH RIM ELEV 891.49
EX. 12" (S) 882.89
EX. 12" (W) 882.89

RADIAL TO INT. RETURN

DR-7

END EARTHWORK
STA. 99+50.00

AH
BK
4:1
3:1
4:1
F 889.93
54.46' RT.
D-26

888.51
99+50.00
890.04

D-26
STA 22+33.93, 65.76' RT
611 CB-2-2B, GRATE ELEV 889.93
12" (N) 882.70 (P-26)
12" (S) 882.70 (P-13)

4:1
4:1
12" TYPE B

887.80
99+00.00
889.40

4:1
4:1

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-13
P-12 49'-12" TYPE B @ 1.00%
D-12

887.34
98+54.42
889.36

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)

BEGIN SEEDING
STA. 98+46.12

BEGIN EARTHWORK
STA. 98+46.12

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	0		
306	2		
		493	2
226	0		
		461	0
320	0		
		50	0
0	0		
0	0		
·	·	1004	2

CALCULATED JMB
CHECKED JJS

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

CUY I-480/ TRANSPORTATION BLVD.

93
225

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3/2/2017
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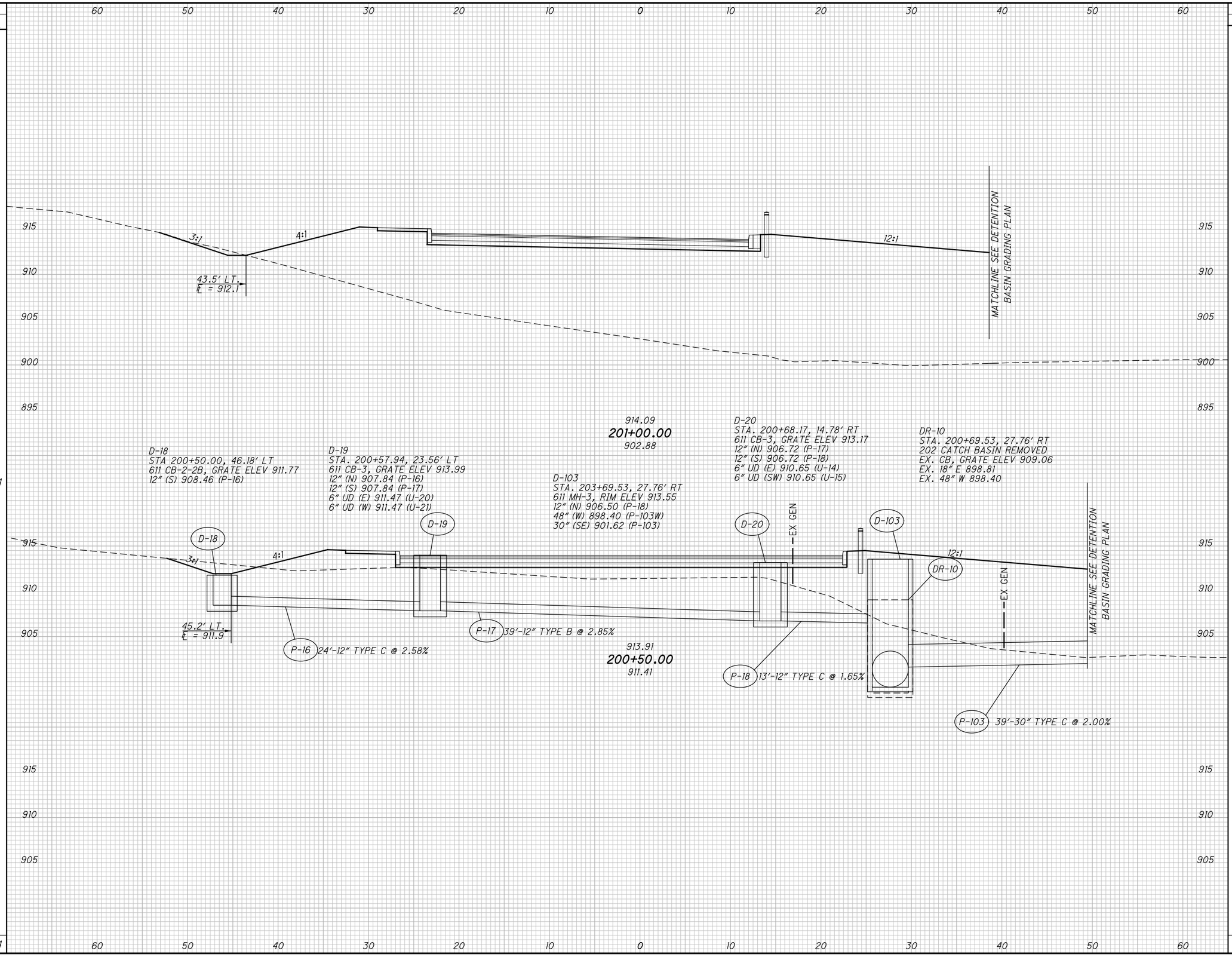
ODOTVBISTD_USER

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
55	294	2	771	8	1007
51	294	7	317	8	1007

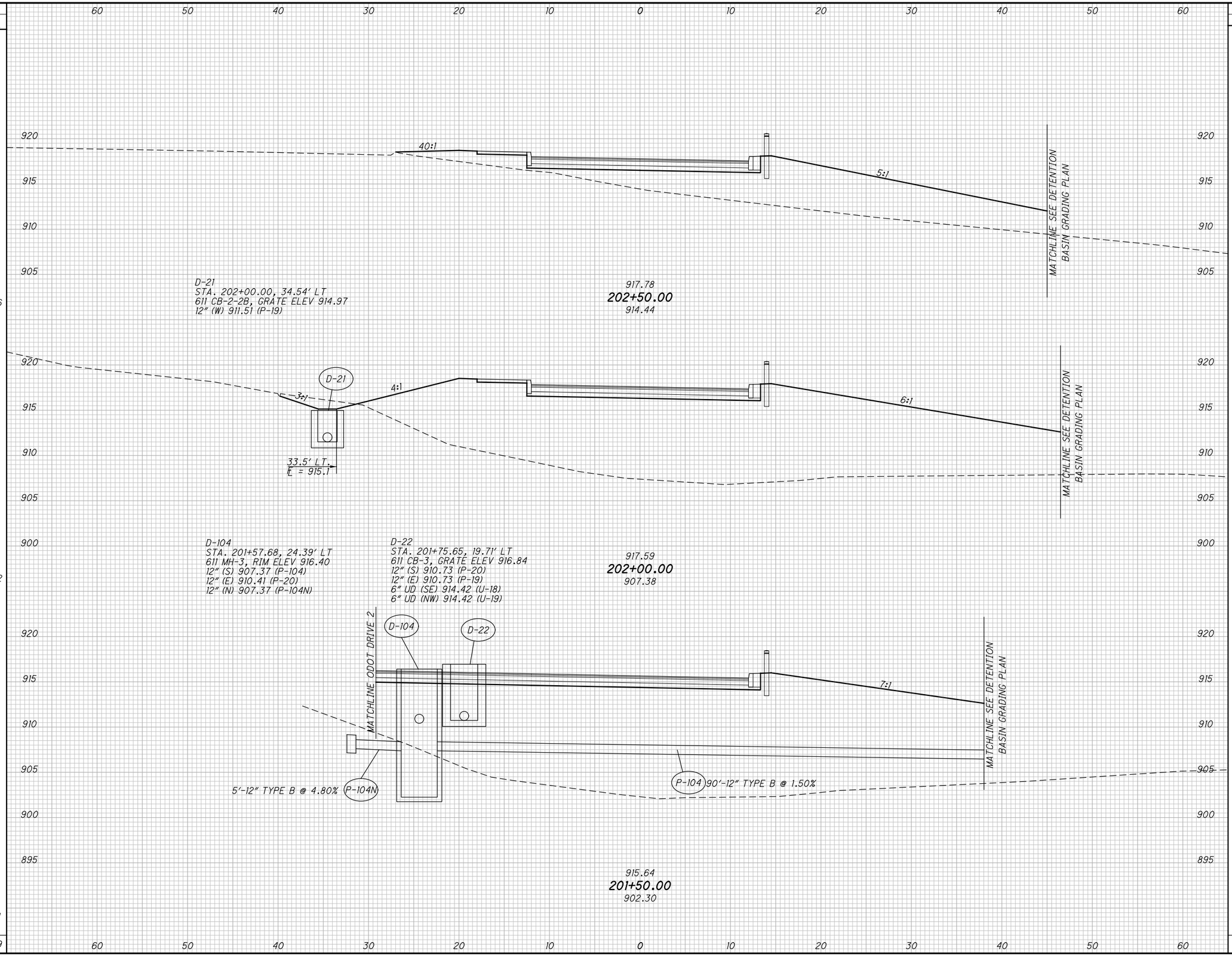
CALCULATED JMB
CHECKED JJS



CROSS SECTIONS - ODOT DRIVE
STA. 200+50.00 TO STA. 201+00.00

CUY-480/
TRANSPORTATION BLVD.

SEEDING END WIDTH	SEEDING SQ. YDS.
44	286
59	
28	
	242
	231
	759



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	196		
		6	721
6	583		
		6	1209
0	723		
		2	1383
		14	3313

CALCULATED JMB
CHECKED JJS

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

CUY-480/
TRANSPORTATION BLVD.

95
225

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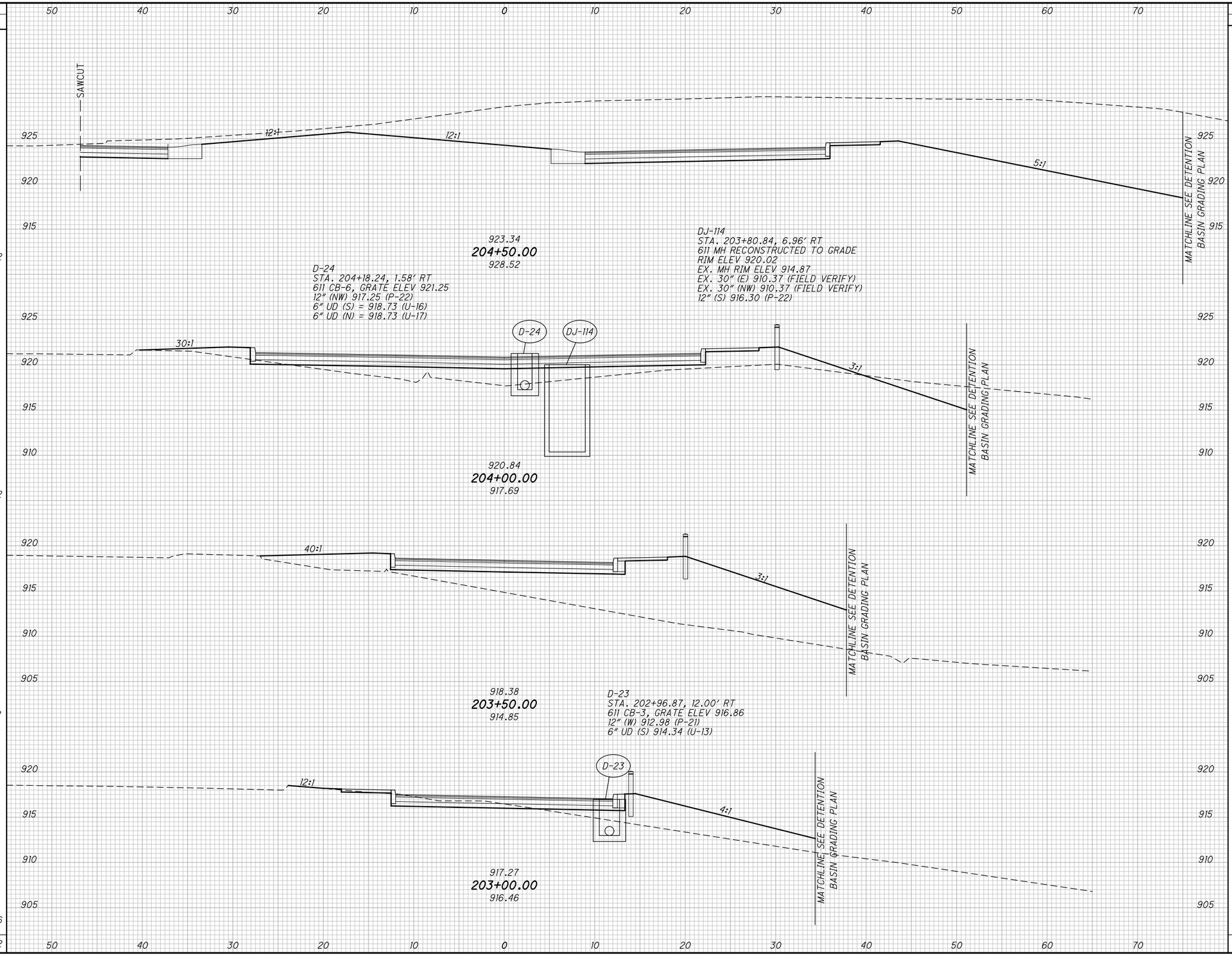
ODOTV8ISTD_USER

SEEDING END WIDTH	SEEDING SQ. YDS.
75	322
41	222
39	192
30	206
	942



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
575	0		
		546	73
15	79		
		14	286
0	230		
		10	268
11	59		
		10	236
		580	863

CALCULATED JMB
CHECKED JJS

CROSS SECTIONS - ODOT DRIVE
STA. 203+00.00 TO STA. 204+50.00

CUY-480/ TRANSPORTATION BLVD.

96
225

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4/18/2017
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QQQTV81STD_USER

SEEDING	
END WIDTH	SQ. YDS.
7	228
	228

END AREA	
CUT	FILL
107	0

VOLUME	
CUT	FILL
631	0
631	0

CALCULATED JMB
CHECKED JJS

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

930 925 920 915

926.06
205+30.78
926.06
END WORK

SAWCUT

4:1

925.52
205+00.00
925.84

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

CUY-480/
TRANSPORTATION BLVD.

97
225

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3/1/2017
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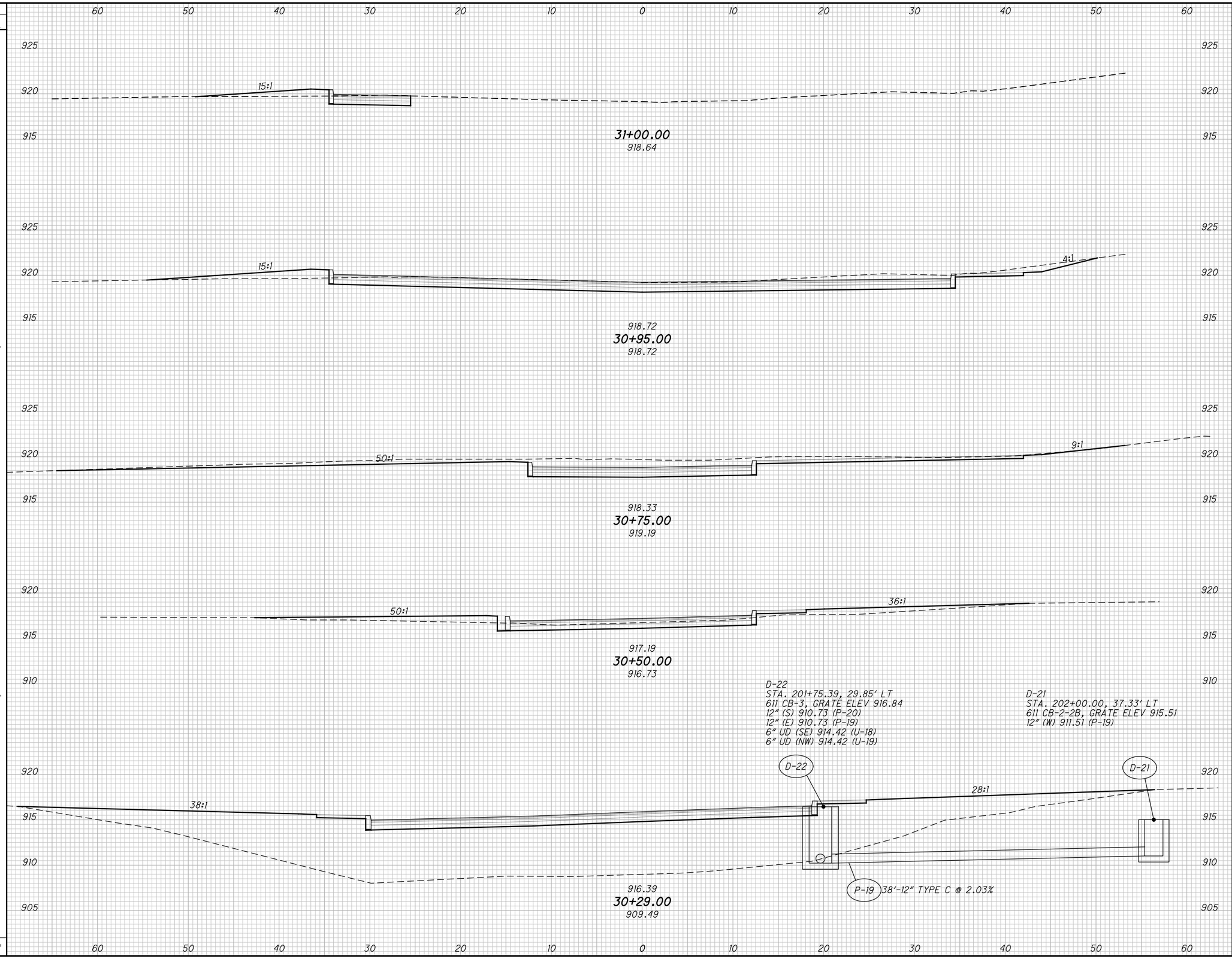
ODOTV8ISTD_USER

SEEDING END WIDTH	SEEDING SQ. YDS.
15	13
33	107
63	161
53	138
65	419



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
10	7		
		18	3
88	11		
		122	9
77	1		
		88	23
18	24		
		14	405
0	496		
		242	440

CALCULATED JMB
CHECKED JJS

CROSS SECTIONS - ODOT DRIVE 2
STA. 30+29.00 TO STA. 31+00.00

CUY-480/
TRANSPORTATION BLVD.

98
225

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3/2/2017
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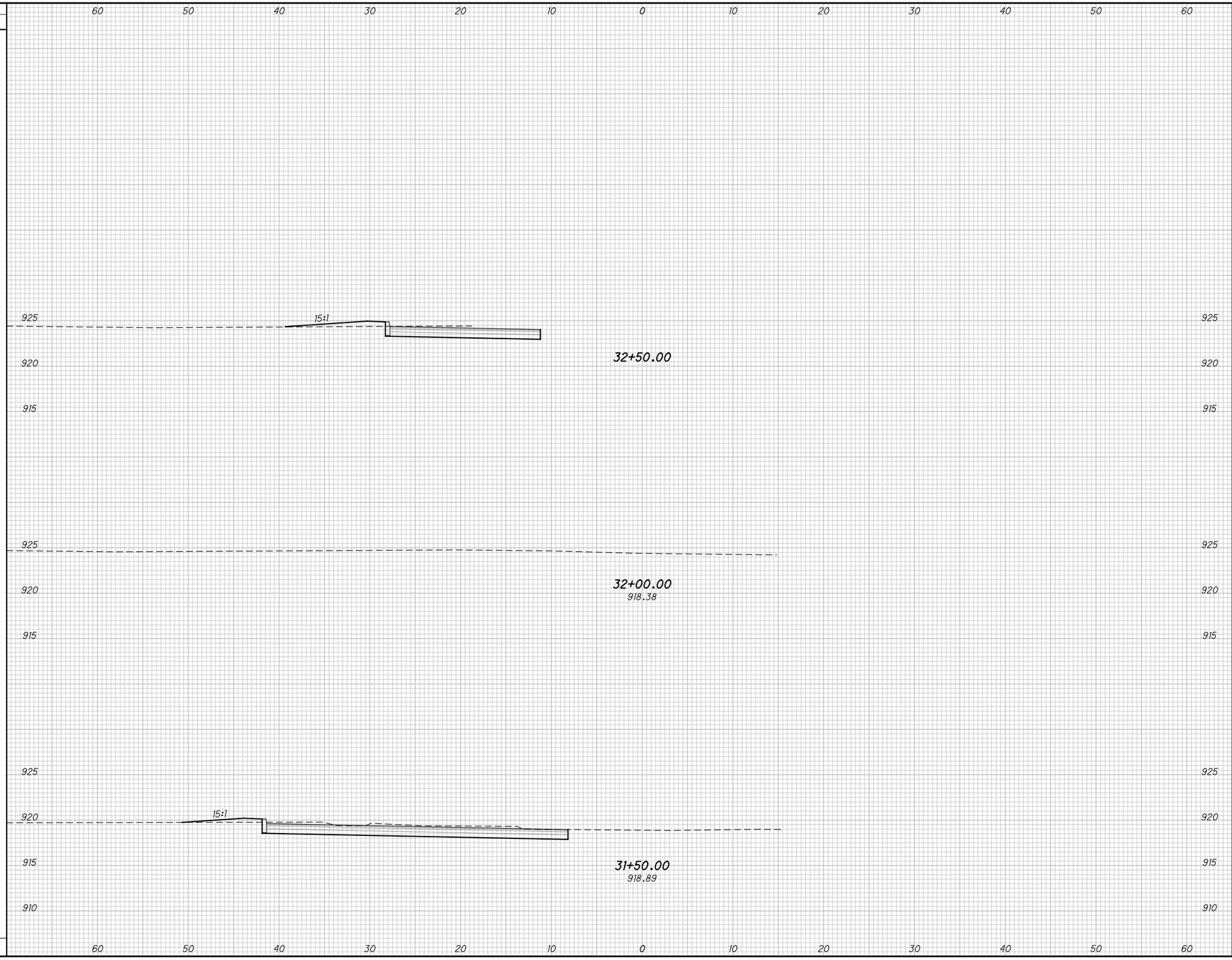
SEEDING	
END WIDTH	SQ. YDS.
11	61
0	
9	67
	178



END AREA	
CUT	FILL
20	4
0	0
41	2

VOLUME	
CUT	FILL
37	7
76	4
95	17
208	28

CALCULATED JMB
CHECKED JJS

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

CUY-480/
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.

Δ = 90° 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

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

Δ = 90° 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.

℄ CONST. PUBLIC ROAD 1

CROWN

N 86° 21′ 55″ E

CURB RAMP, TYPE A2

CURB RAMP, TYPE A2

CURB RAMP, TYPE A2

D-3

DR-3

D-33

SAWCUT

℄ R/W & CONST. TRANSPORTATION BLVD.

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; ℄ RAMP I-480 WB EXIT

EX. ℄ RAMP I-480 WB EXIT

℄ RAMP CONST. I-480 WB EXIT

SAWCUT

℄ 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.

Δ = 89° 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.

HORIZONTAL SCALE IN FEET

CALCULATED JAW
CHECKED JJS

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

100
225

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CURB RAMP, TYPE B3

CURB RAMP, TYPE B2

5A

CURB RAMP, TYPE B3

CURB RAMP, TYPE B2

STA. 93+86.47; ℄ R/W & CONST. TRANSPORTATION BLVD.
STA. 200+00.00; ℄ CONST. ODOT DR.

℄ R/W & CONST. TRANSPORTATION BLVD.

93

94

95

N 3° 38′ 05″ W

200

90°0′0″

24.00′

SAWCUT

913.80±
+00.00

913.88±
+25.00

913.96±
+50.00

914.19±
+75.00

914.30±
+86.47

914.41±
+00.00

914.63±
+25.00

914.83±
+50.00

914.86±
+75.00

EX-13

EX-14

10′

913.89

913.84

913.74

913.65

913.58

913.52

913.43

913.34

913.52

913.66

7.06′

SJ-1

DJ-5

D-20

CURB RAMP, TYPE B1

CURB RAMP, TYPE A1

913.67
+50.00

913.59
+75.00

913.85
+00.00

913.91
+50.00

914.37
+50.00

913.83
+75.00

914.29
+75.00

914.09
+00.00

914.55
+00.00

N 86° 21′ 55″ E

201

914.61

914.72

914.85

914.90

914.40

914.28

914.16

914.28

D-19

D-18

CURB RAMP, TYPE A1

12.00′

23.00′

℄ CONST. ODOT DR.

℄ R/W & CONST. TRANSPORTATION BLVD.
STA. 93+14.47, 86.22′ RT.
℄ CONST. ODOT DRIVE
STA. 200+86.22, 72.00′ RT.

Δ = 89° 52′ 53″
R = 60.00′
L = 94.12′
T = 59.88′

P.C. STA. 93+14.59, 26.22′ RT. ℄ R/W & CONST. TRANSPORTATION BLVD.
P.T. STA. 200+86.22, 12.00′ RT. ℄ CONST. ODOT DR.

℄ R/W & CONST. TRANSPORTATION BLVD.
STA. 94+49.47, 66.51′ RT.
℄ CONST. ODOT DRIVE
STA. 200+66.51, 63.00′ LT.

Δ = 98° 18′ 16″
R = 40.00′
L = 68.63
T = 46.26′

P.C. STA. 200+66.51, 23.00′ LT. ℄ CONST. ODOT DR.
P.T. STA. 94+55.25, 26.93′ RT. ℄ R/W & CONST. TRANSPORTATION BLVD.

HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED JAW
CHECKED JJS

INTERSECTION DETAILS
CUY-480/ TRANS. BLVD. & ODOT DRIVE

CUY-480/
TRANSPORTATION BLVD.

101
225

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4/18/2017
11:58:34 AM
ODOTV81STD_USER

℄ R/W & CONST. GRANGER ROAD

STA. 21+87.13; ℄ R/W & CONST. GRANGER RD.
STA. 100+00.00; ℄ CONST. PUBLIC ROAD 2

21 22 23

N 88° 57′ 34″ E

90°0′0″

16.00′

SAWCUT

882.38± +50.00 | 883.68± +75.00 | 885.03± +00.00 | 886.26± +25.00 | 887.49± +50.00 | 888.67± +75.00 | 889.22± +87.13 | 889.81± +00.00 | 890.94± +25.00 | 892.12± +50.00 | 893.35± +75.00 | 894.48± +00.00 | 895.59± +25.00

25.00′

DJ-2

881.86 | 883.16 | 884.51 | 885.74 | 887.00 +50.68

8.0′

884.61 | 885.19 | 885.72 | 886.03 | 886.22 | 886.51 | 886.89 | 887.09 | 887.19

10′ 10′ 10′ 9.77′ 9.78′ 10′ 10′

887.48

CURB RAMP, TYPE B2

887.25

887.85 +25.00

887.16

887.60 +00.00

887.07

887.38 +75.00

15.00′

D-13

886.97 | 887.20 +54.42

21.42′

℄ R/W & CONST. GRANGER RD.
STA. 21+02.13, 96.00′ RT.
℄ CONST. PUBLIC ROAD 2
STA. 99+04.00, 85.00′ LT.

Δ = 82° 52′ 30″
R = 55.00′
L = 79.55′
T = 48.55′

P.C. STA. 21+02.13, 41.00′ RT. ℄ R/W & CONST. GRANGER RD.
P.T. STA. 99+10.82, 30.42′ LT. ℄ CONST. PUBLIC RD. 2

889.03 +75.00

DJ-3

888.49 +50.00

4.50′R

+ 8.00′

888.08 +25.00

N 1° 02′ 26″ W 99

887.80 +00.00 | 888.16

26.00′

887.55 +75.00 | 887.49

887.34 +54.42 | 886.94

6.5′ 5.0′

D-12

℄ CONST. PUBLIC ROAD 2

DJ-4

19.18′

14.00′

894.16 | 895.30

892.99

11.0′

5.0′

891.72

DJ-1

889.96 +13.13

890.49

889.73

888.87

888.72

10′ 10′ 10′ 10′ 10′ 10′ 10′

6.61′

891.29 | 890.71 | 890.39 | 890.26 | 889.88 | 889.16 | 888.72

28.18′

D-11

CURB RAMP, TYPE A2

D-26

℄ R/W & CONST. GRANGER RD.
STA. 22+58.13, 80.00′ RT.
℄ CONST. PUBLIC ROAD 2
STA. 99+20.00, 71.00′ RT.

Δ = 84° 48′ 20″
R = 45.00′
L = 66.61′
T = 41.09′

P.C. STA. 99+20.00, 26.00′ RT.
℄ CONST. PUBLIC RD. 2
P.T. STA. 22+54.05, 35.18′ RT.
℄ R/W & CONST. TRANSPORTATION BLVD.

FACE OF WALK
℄ R/W & CONST. GRANGER RD.
STA. 22+59.63, 10.00′ RT.
℄ CONST. PUBLIC ROAD 2
STA. 99+19.00, 72.50′ RT.

Δ = 90° 0′ 0″
R = 40.00′
L = 62.83′
T = 40.00′

P.C. STA. 99+19.00, 32.50′ RT.
℄ CONST. PUBLIC RD. 2
P.T. STA. 22+59.63, 41.00′ RT.
℄ R/W & CONST. TRANSPORTATION BLVD.

HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED JAW
CHECKED JJS

INTERSECTION DETAILS
GRANGER ROAD/PUBLIC ROAD 2
CUY-480/ TRANSPORTATION BLVD.

102
225

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3/2/2017
3:43:26 PM
CQQTY81STD_USER

℄ R/W & CONST. GRANGER ROAD

STA. 25+36.42; ℄ R/W & CONST. GRANGER RD.
STA. 20+00.00; ℄ R/W & CONST. E 96TH ST.

24 | N 88° 57′ 34″ E | 25 | 26

SA

90°13′18″

16.0′
14.0′
11.0′
5.0′

898.50±
+00.00

899.37±
+25.00

900.36±
+50.00

901.42±
+75.00

902.43±
+00.00

903.42±
+16.04

903.34±
+25.00

898.21
+00.00

899.08
+25.00

900.07
+50.00

901.13
+75.00

901.89

902.21

902.39

902.53

902.71

902.82

10′
10′
7.24′
10′
10′

11.00′

903.06±
+50.00

902.72±
+65.17

902.72±
+65.17

℄ R/W & CONST. GRANGER RD.
STA. 24+93.75, 60.00′ RT.
℄ R/W & CONST. E 96TH ST.
STA. 20+60.16, 42.43′ RT.

Δ = 90° 13′ 35″
R = 30.00′
L = 47.24′
T = 30.12′

P.C. STA. 24+93.75, 30.00′ RT. ℄ R/W & CONST. GRANGER RD.
P.T. STA. 20+60.16, 12.43′ RT. ℄ R/W & CONST. E 96TH ST.

FACE OF WALK
℄ R/W & CONST. GRANGER RD.
STA. 24+92.66, 66.00′ RT.
℄ R/W & CONST. E 96TH ST.
STA. 20+66.17, 43.51′ RT.

Δ = 90° 26′ 52″
R = 25.00′
L = 39.47′
T = 25.20′

P.C. STA. 24+92.66, 41.00′ RT. ℄ R/W & CONST. GRANGER RD.
P.T. STA. 20+66.27, 18.51′ RT. ℄ R/W & CONST. E 96TH ST.

21

S 0° 48′ 08″ E

℄ R/W & CONST. E 96TH ST.

HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED JAW
CHECKED JJS

INTERSECTION DETAILS
GRANGER ROAD/E. 96th ST.

CUY-480/ TRANSPORTATION BLVD.

103
225

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3/2/2017
3:43:52 PM
CDQTV81STD.USER

(6) P.I. Sta. 202+34.42, ℄ CONST. ODOT DRIVE
Δ = 93° 38′ 05″ (RT)
Dc = 95° 29′ 35″
R = 60.00′
T = 63.93′
L = 98.05′
E = 27.68′
C = 87.50′
C.B. = S 46° 49′ 02″ E
PC = Sta. 201+70.48
PT = Sta. 202+68.54

℄ CONST. ODOT DR.
STA. 200+99.04, 68.00′ LT.
℄ CONST. ODOT DRIVE 2
STA. 30+64.90, 57.00′ LT.

Δ = 86°46′ 26″
R = 45.00′
L = 68.15′
T = 42.54′

P.C. STA. 200+99.04, 23.00′ LT. ℄ CONST. ODOT DR.
P.T. STA. 30+64.90, 12.00′ LT. ℄ CONST. ODOT DRIVE 2

℄ CONST. ODOT DR.
STA. 201+92.34, 57.00′ LT.
℄ CONST. ODOT DRIVE 2
STA. 30+52.61, 57.00′ RT.

Δ = 72°21′ 10″
R = 45.00′
L = 56.83′
T = 32.91′

P.C. STA. 201+92.34, 12.00′ LT. ℄ CONST. ODOT DR.
P.T. STA. 30+52.61, 12.00′ RT. ℄ CONST. ODOT DRIVE 2

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

℄ CONST. ODOT DR.

℄ CONST. ODOT DRIVE 2

N 86° 21′ 55″ E

N 0° 24′ 31″ W

S 00°00′ 00″ E

CURB RAMP, TYPE B1

CURB RAMP, TYPE A1

CURB RAMP, TYPE A1

CURB RAMP, TYPE B1

CURB RAMP, TYPE A1

D-20 D-21 D-22 D-23

201 202 203 30 31

12.00′ 23.00′ 24.00′ 10′ 8.15′ 8.42′ 4′ R

913.83 +75.00 914.29 +75.00
913.85 +00.00 914.09 +00.00
914.47 +25.00 914.71 +25.00 915.17 +25.00
915.40 +50.00 915.64 +50.00
916.40 +75.00 916.64 +75.00
916.48 +65.00 916.76 +25.00
917.35 +00.00 917.59 +00.00
917.75 +25.00 917.83 +00.00
917.88 +00.00 917.99 +25.00
918.23 +25.00
914.54 914.69 915.08 915.46 915.65 916.45 917.25 917.82
915.77 +41.58 915.83 +25.00 916.96 +50.00 917.19 +50.00 918.40 +75.00
916.29 +25.00 918.33 +75.00
918.72 +95.00 919.41 +95.00
917.30 917.69 917.11 917.06 917.04 917.31 917.58
916.96 +50.00 918.57 +75.00

HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED JAW
CHECKED JJS

INTERSECTION DETAILS
ODOT DRIVE/ODOT DRIVE 2

CUY-480/
TRANSPORTATION BLVD.

104
225

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(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

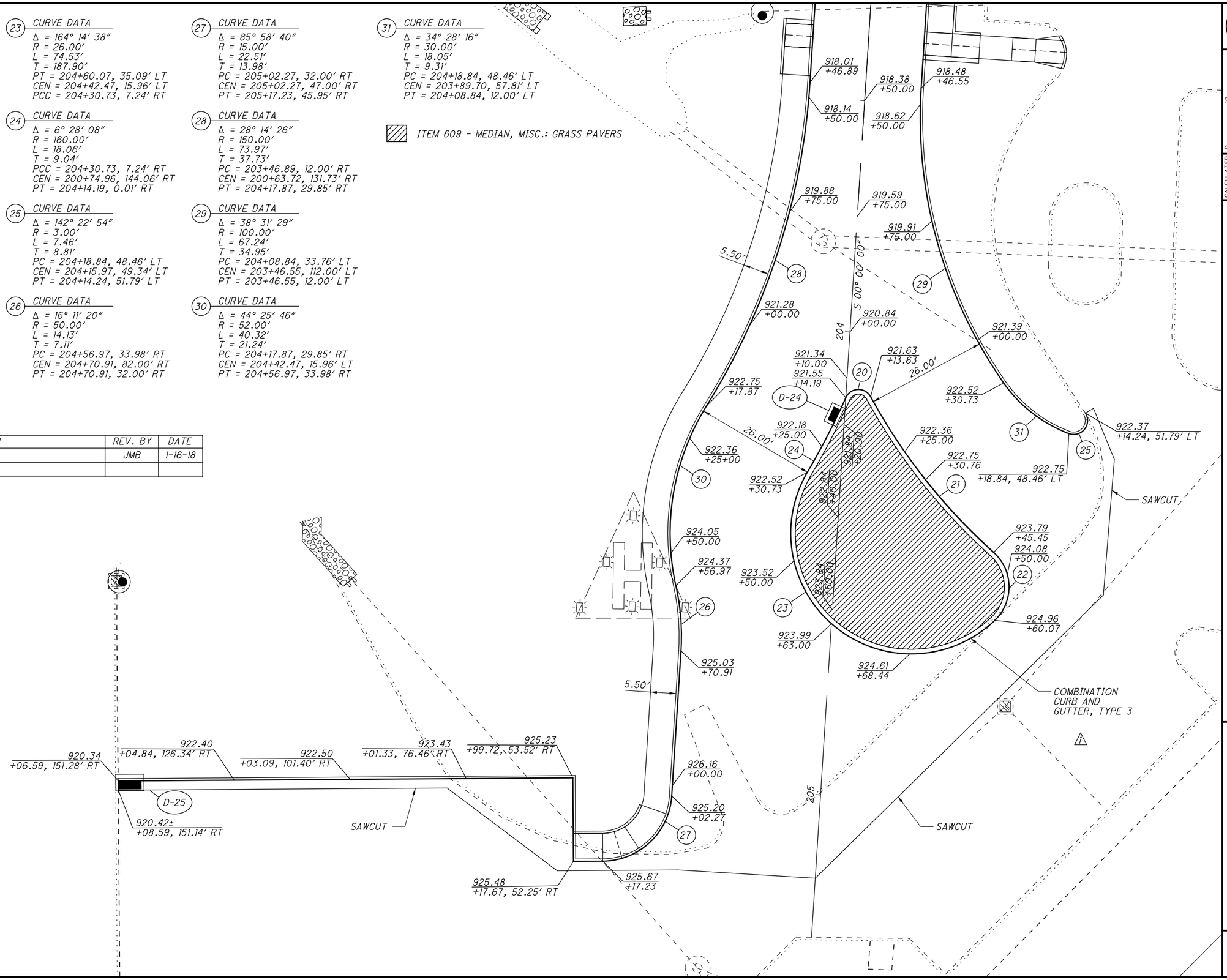
(29) CURVE DATA
Δ = 38° 31′ 29″
R = 100.00′
L = 67.24′
T = 34.95′
PC = 204+08.84, 33.76′ LT
CEN = 203+46.55, 112.00′ LT
PT = 203+46.55, 12.00′ LT

(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

NO.	DESCRIPTION	REV. BY	DATE
1	ITEM NAME REVISION	JMB	1-16-18



HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED JAW
CHECKED JJS

INTERSECTION DETAILS
ODOT DRIVE

CUY-480/
TRANSPORTATION BLVD.

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PAVEMENT ELEVATION TABLE

I-480 WB EXIT RAMP

LEFT SIDE					CENTERLINE CONTROL		RIGHT SIDE					REMARKS
EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH (SEE NOTE 'A')	STATION	PROFILE GRADE	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	EDGE ELEVATION	
					56+00.00	906.88	25.23	-0.0226	-0.57		906.31	
					56+50.00	905.61	25.21	-0.0213	-0.54		905.07	
					57+00.00	904.04	25.15	-0.0138	-0.35		903.69	
					57+50.00	902.75	25.12	-0.0193	-0.49		902.26	
					58+00.00	901.26	24.26	-0.0266	-0.65		900.61	
					58+50.00	900.00	20.10	-0.0412	-0.83		899.17	
					59+00.00	898.55	18.00	-0.0405	-0.73		897.82	
					59+50.00	897.30	16.00	-0.0357	-0.57		896.73	
					60+00.00	895.98	16.00	-0.0245	-0.39		895.59	
					60+50.00	984.73	16.00	-0.0097	-0.16		984.57	
					61+00.00	893.57	16.00	0.0089	0.14		893.71	
					61+50.00	982.73	16.00	0.0252	0.40		983.13	
					61+58.00	892.64	16.00	0.0257	0.41		893.05	

CALCULATED JJS
CHECKED MVJ

PAVEMENT ELEVATION TABLE

CUY-480/
TRANSPORTATION BLVD.

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225

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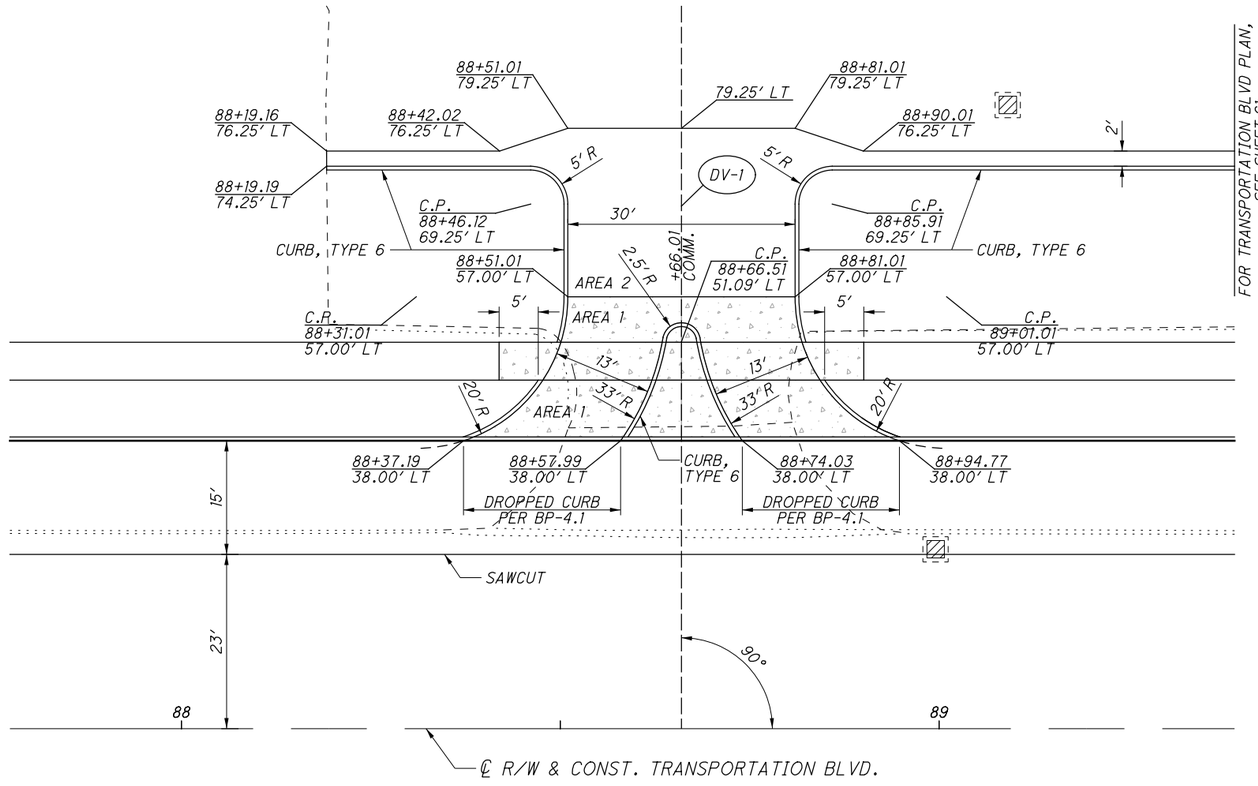
USAGE	INSIDE LIMITS OF APRON (AREA 1)	OUTSIDE LIMITS OF APRON (AREA 2)
COMMERCIAL	8" ITEM 452 NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS 4" ITEM 304 AGGREGATE BASE	1¼" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), (DRIVEWAYS) ITEM 407 TACK COAT, TRACKLESS TACK FOR INTERMEDIATE COURSE (0.04 GAL/S.Y.) 1¾" 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.	DRIVEWAYS 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

HORIZONTAL SCALE IN FEET
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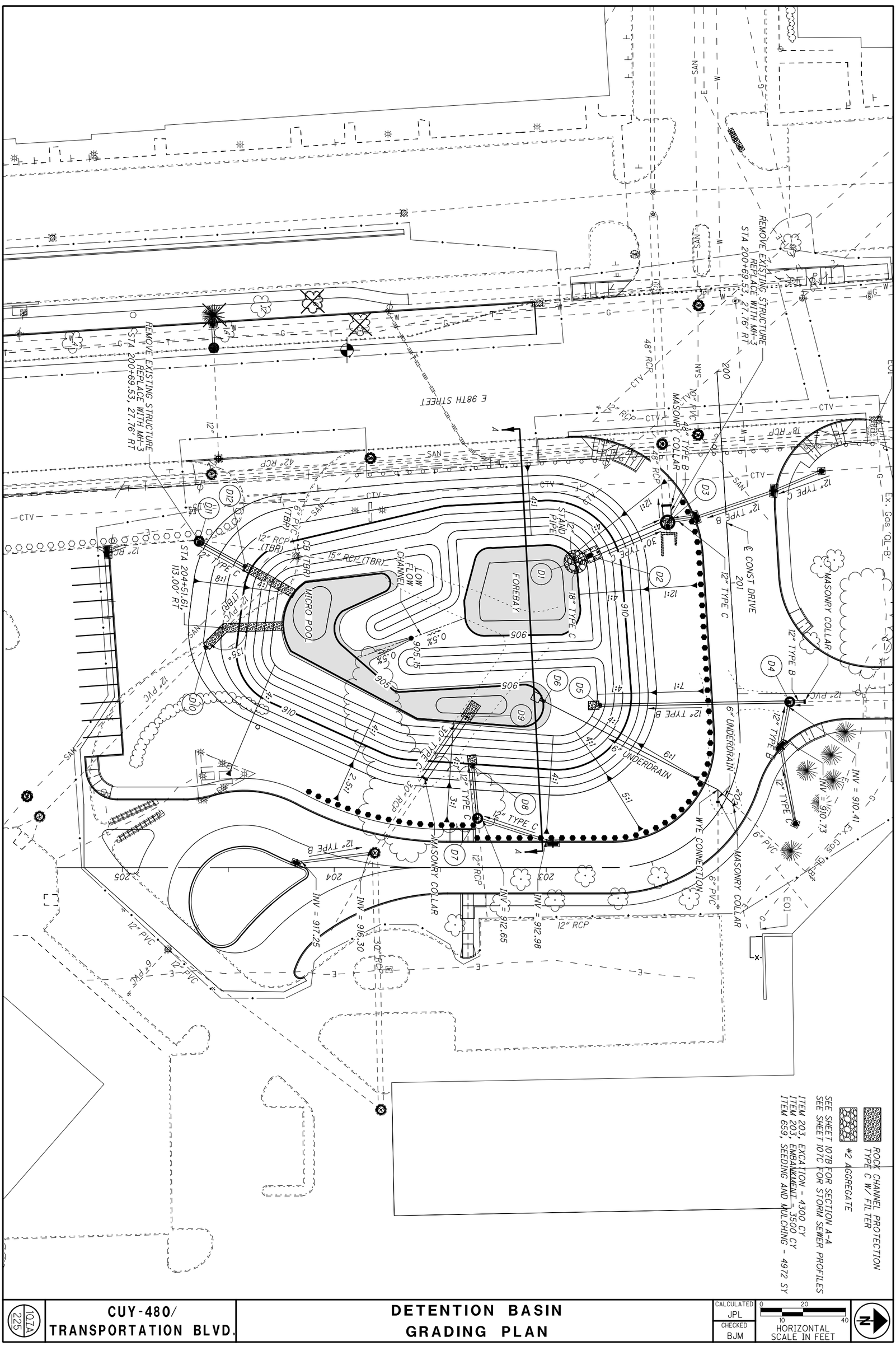
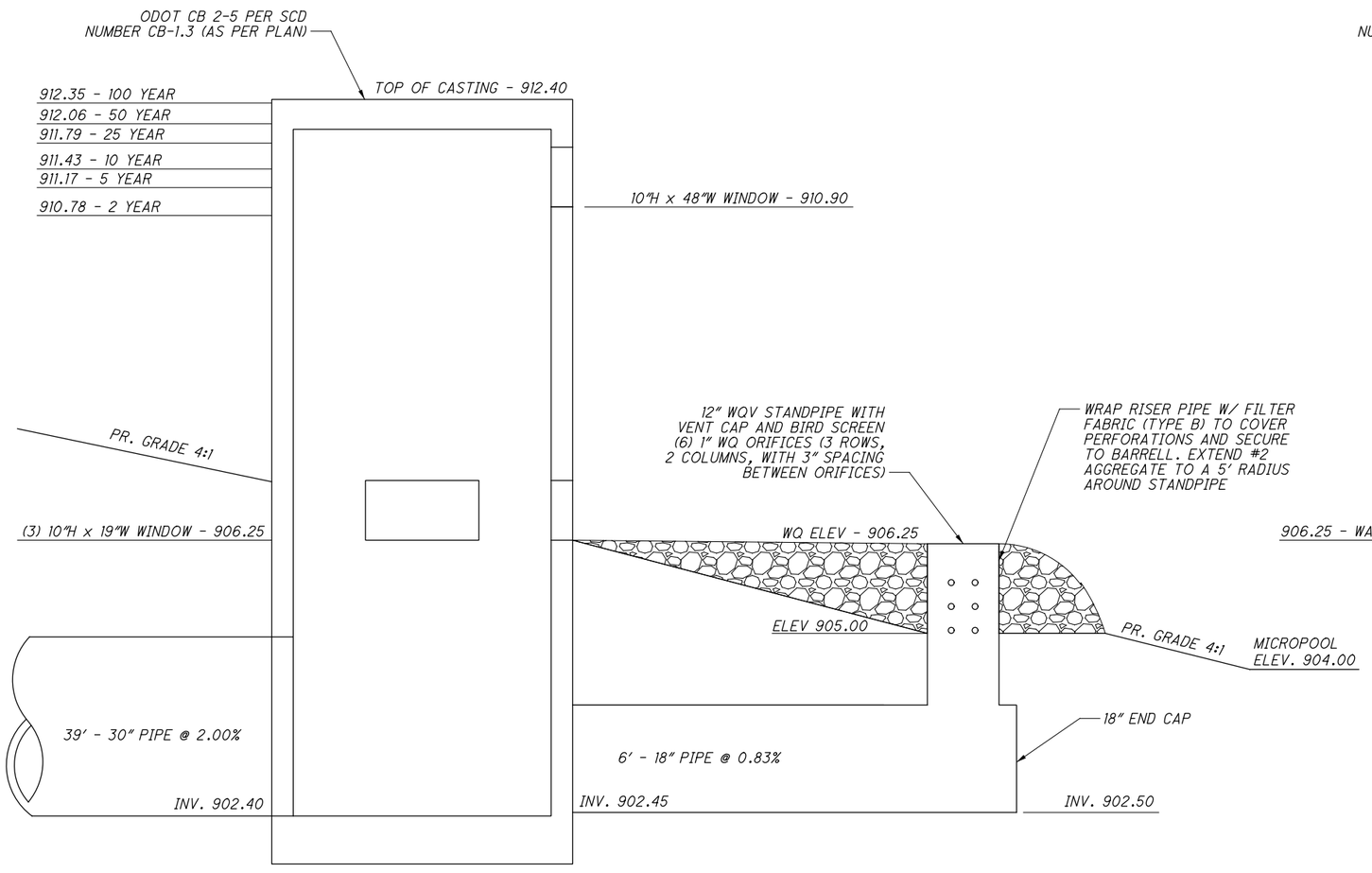
CALCULATED JMB
CHECKED JJS

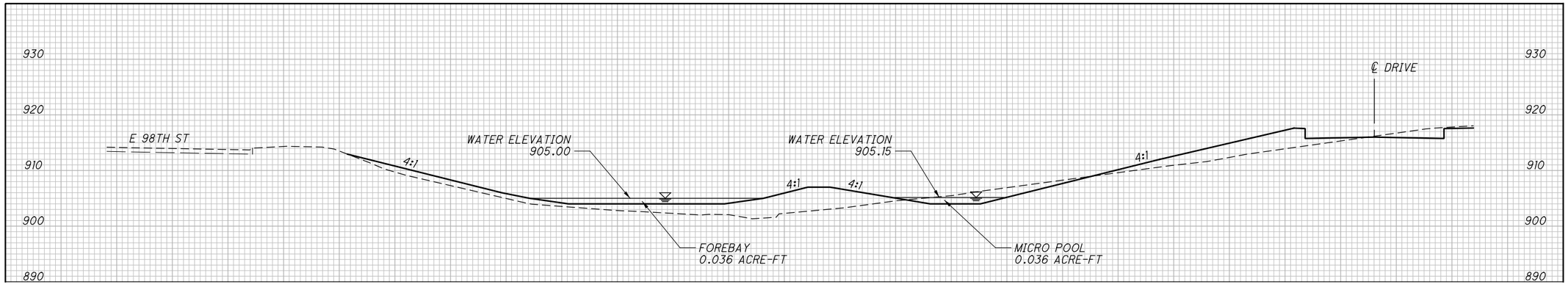
DRIVE DETAILS

CUY-480/ TRANSPORTATION BLVD.



107A / 225	CUY-480/ TRANSPORTATION BLVD.	DETENTION BASIN GRADING PLAN	CALCULATED JPL / CHECKED BJM	0 10 20 40 HORIZONTAL SCALE IN FEET





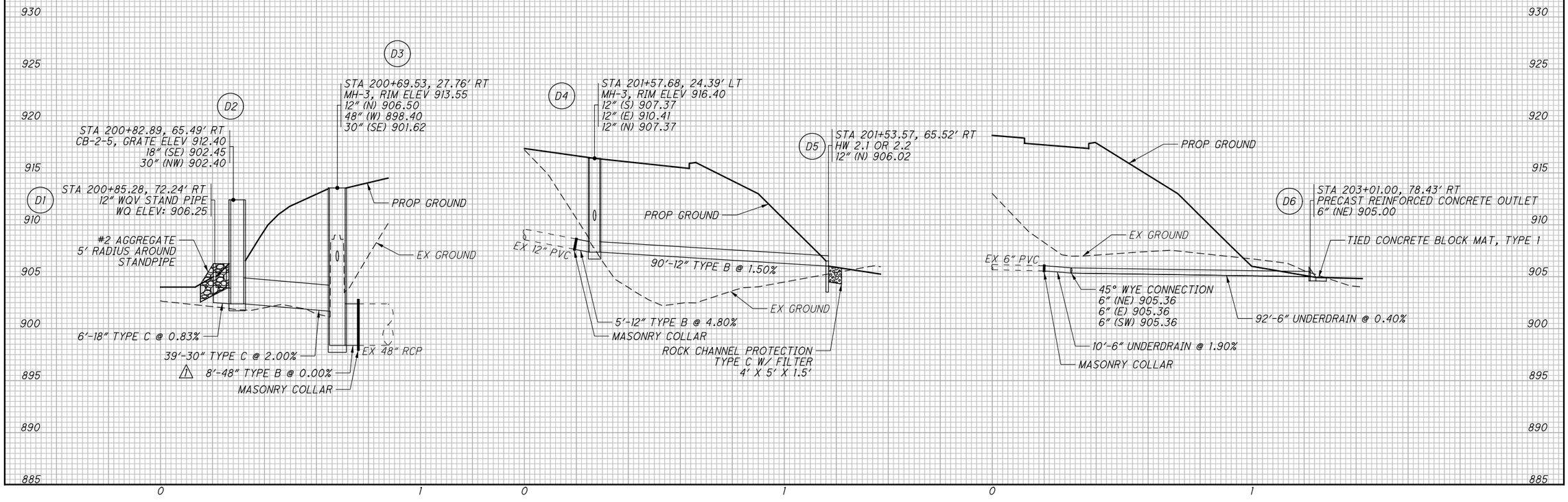
SECTION A-A

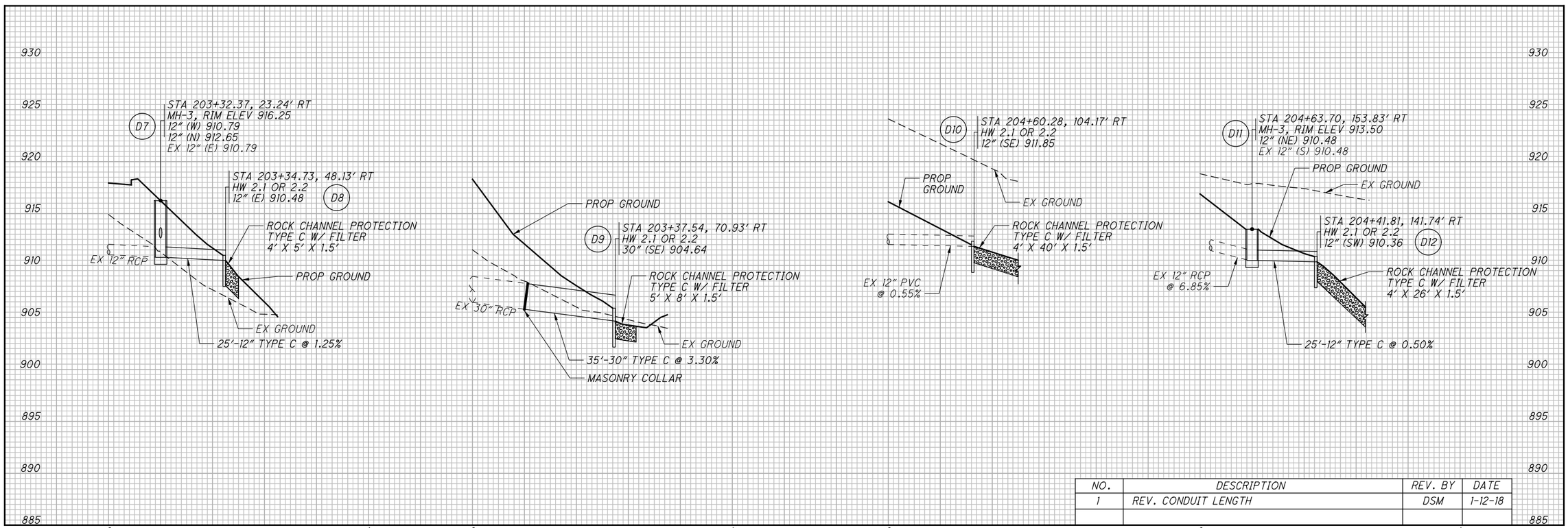
CALCULATED JPL
CHECKED BJM

DETENTION BASIN GRADING AND STRUCTURE DETAILS

CUY-480/
TRANSPORTATION BLVD.

10.7B
225





NO.	DESCRIPTION	REV. BY	DATE
1	REV. CONDUIT LENGTH	DSM	1-12-18

CALCULATED ARM
CHECKED BJM

STORM SEWER PROFILES
PIPES ENETERING DETENTION BASIN

CUY-480/
TRANSPORTATION BLVD.

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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)

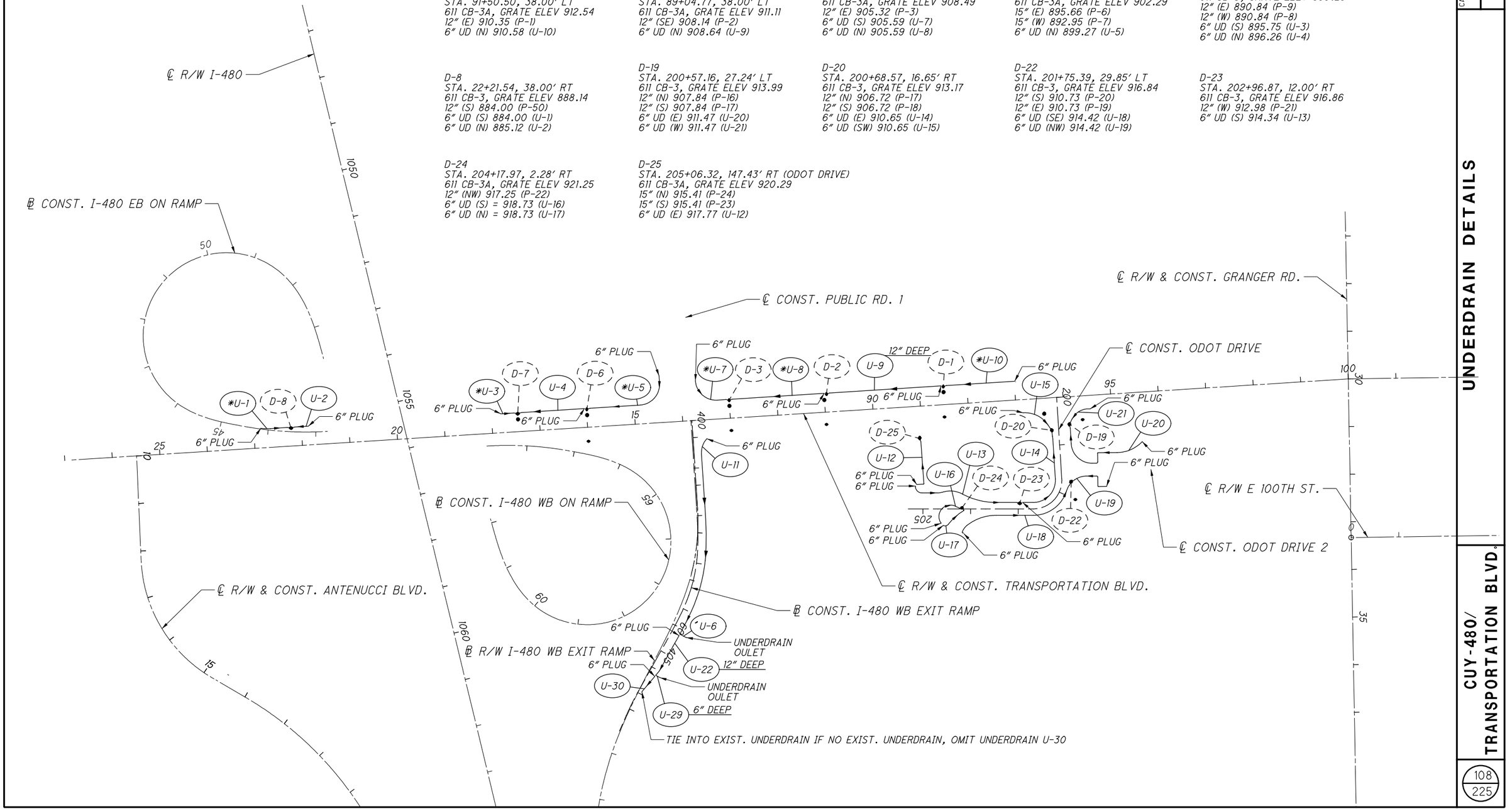
D-20
STA. 200+68.57, 16.65' RT
611 CB-3, GRATE ELEV 913.17
12" (N) 906.72 (P-17)
12" (S) 906.72 (P-18)
6" UD (E) 910.65 (U-14)
6" UD (SW) 910.65 (U-15)

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)



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HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED JMB
CHECKED JJS

UNDERDRAIN DETAILS

CUY-480/ TRANSPORTATION BLVD.

108
225

FOR ESTIMATED QUANTITIES, SEE SHEET 53

Δ UNDERDRAIN 12" DEEP

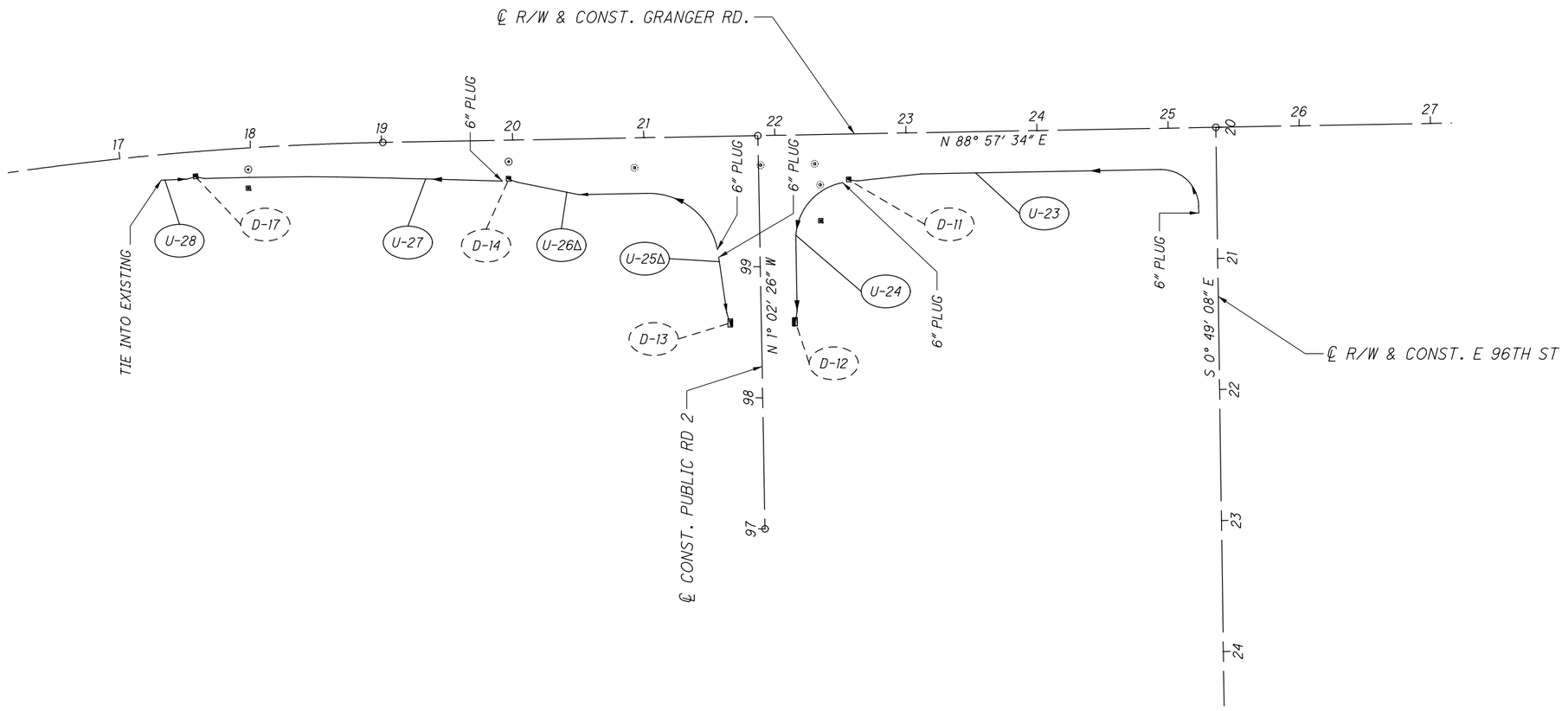
D-11
STA 22+55.80, 35.03' RT
611 CB-3A, GRATE ELEV 892.01
12" (NW) 888.01 (P-11)
6" UD (E) 889.49 (U-23)

D-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-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-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)

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)



N

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JMB
CHECKED JJS

UNDERDRAIN DETAILS

CUY-480/
TRANSPORTATION BLVD.

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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 COMMISIONER 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 CLEVLEAND 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 TRANSFERED 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 DISCRESION 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 MICRSOFT 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:

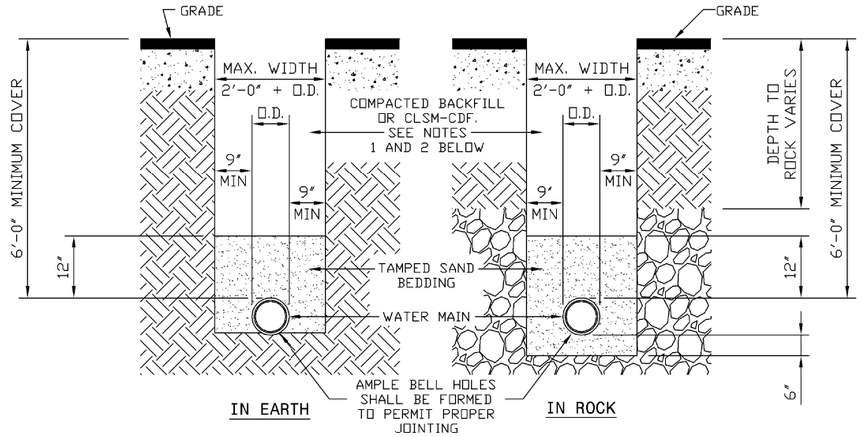
24. IF A WATER MAIN OR SERVICE CONNECTION BREAK OCCURS DURING CONSTRUCTION AND EMERGENCY ASSISTANCE IS REQUIRED, PLEASE NOTIFY CLEVELAND WATER AT 216-664-3060.

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

CALCULATED JJS CHECKED DJM

WATER MAIN NOTES

CUY-480/ TRANSPORTATION BLVD.

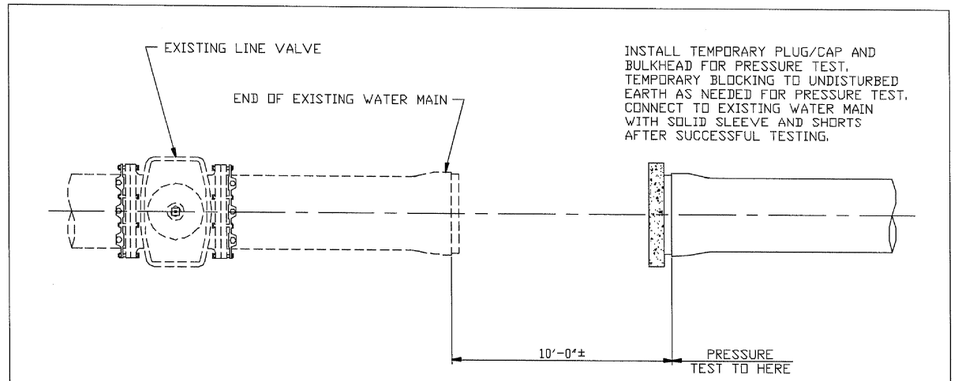


WATER MAIN TRENCH DETAILS

- NOT TO SCALE -

NOTES:
1) PREMIUM BACKFILL CONSISTING OF CONTROLLED LOW STRENGTH MATERIAL - CONTROLLED DENSITY FILL (CLSM-CDF) "FLOWABLE FILL" IS REQUIRED:
   A) UNDER ALL EXISTING OR FUTURE PAVEMENTS, SIDEWALKS AND DRIVES WITHIN THE CITY OF CLEVELAND CORPORATION LIMITS.
   B) AS SPECIFIED IN LOCAL MUNICIPALITIES SERVED BY CWD (SEE LOCAL REQUIREMENTS)
2) 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.
3) 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.
4) MINIMUM COMPACTION FOR ALL SAND BEDDING, BACKFILL AND PREMIUM BACKFILL SHALL BE 95% STANDARD PROCTOR.
5) PAVEMENT, SIDEWALK OR DRIVES TO BE INSTALLED IN ACCORDANCE WITH LOCAL MUNICIPALITY'S SPECIFICATIONS.

STD-001 | DATE: 2-2-2012

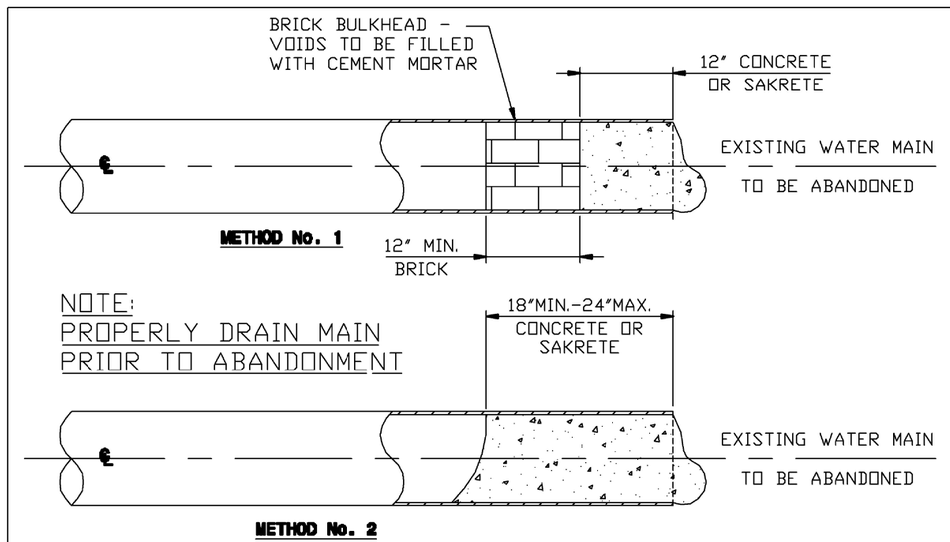


NOTE:
PRESSURE TESTING OF WATER MAINS:
WHERE NEW/EXTENDED WATER MAINS ARE CONNECTED TO AN EXISTING WATER MAIN FOR PRESSURE TEST, RESULTING IN FAILURE OF THE PRESSURE TEST OR ANY DAMAGE TO THE EXISTING WATER MAIN , OR ITS APPURTENANCES, THE REPAIR THEREOF SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.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



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/AWWA C-105/A21.5-99, CLASS 'C', METHOD 'B'.

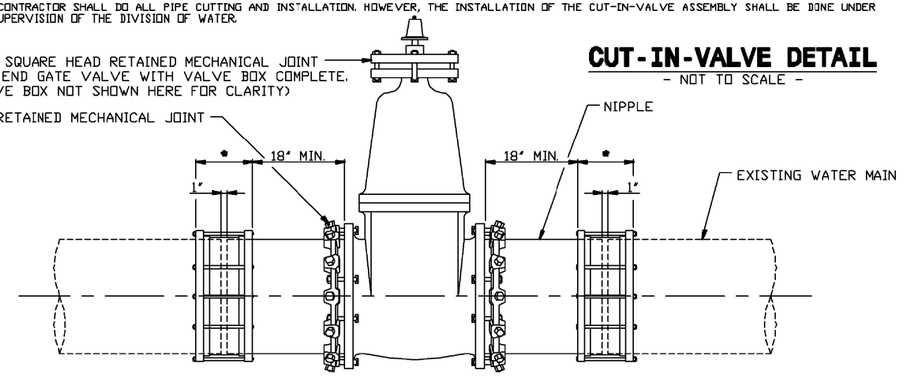
THE DIVISION OF WATER WILL DETERMINE THE FIELD LOCATION OF THE CUT-IN-VALVE ASSEMBLY. THE DIVISION OF WATER WILL ALSO SET THE TIME OF INSTALLATION OF THE CUT-IN-VALVE ASSEMBLY.

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.

C.W.D. SQUARE HEAD RETAINED MECHANICAL JOINT BELL END GATE VALVE WITH VALVE BOX COMPLETE. (VALVE BOX NOT SHOWN HERE FOR CLARITY)

CUT-IN-VALVE DETAIL

- NOT TO SCALE -



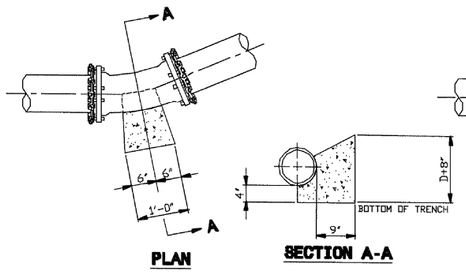
NOTE:
BEFORE CUTTING EXISTING WATER MAIN, THE NIPPLES SHALL BE CONNECTED TO THE MECHANICAL JOINT BELL END GATE VALVE. AFTER CUTTING PIPE, FINAL CONNECTIONS SHALL BE MADE WITH COUPLINGS/SOLID SLEEVES AS SPECIFIED.

STD-005 | DATE: 10-1-97 | BY: RSK

CALCULATED JJS | CHECKED DJM

WATER MAIN DETAILS

CUY-480/ TRANSPORTATION BLVD.



TYPICAL THRUST BLOCK DETAIL FOR HORIZONTAL DEFLECTION FOR PIPE UP TO 16" DIAMETER

- NOT TO SCALE -
D = PIPE DIAMETER

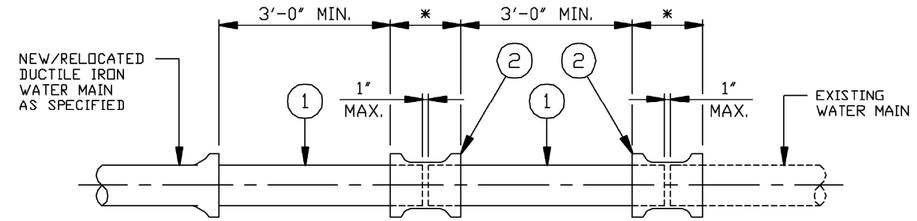
NOTE 1: ALL DIMENSIONS SHOWN HEREON ARE MINIMUM; THRUST BLOCK SHALL BE POURED TO UNDISTURBED EARTH.

NOTE 2: ALL CONCRETE FOR THRUST BLOCKS SHALL BE CLASS "C" HAVING 4,000 PSI 28 DAY COMPRESSIVE STRENGTH.

NOTE 3: DO NOT COVER BOLTS WITH CONCRETE ON MECHANICAL JOINTS.

NOTE 4: USE FORMS WHEN POURING CONCRETE TO MAINTAIN SHAPE AND DIMENSIONS OF THRUST BLOCKS.

STD-006 | DATE: 1-15-98 | BY: RSK



SLEEVE-IN INSTALLATION DETAIL

- NOT TO SCALE -

1) PLAIN END x PLAIN END DUCTILE IRON PIPE AS SPECIFIED (CUT TO SUIT).

2) *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.

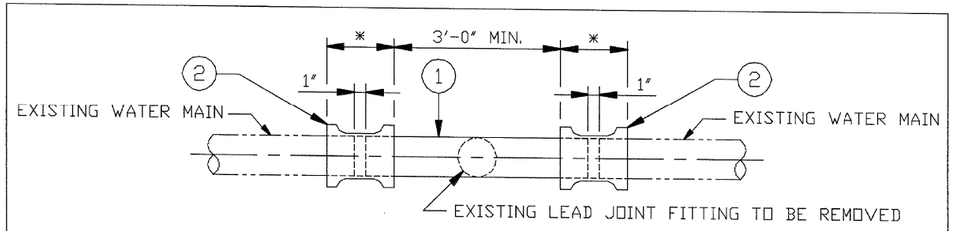
COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL 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.

3) 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/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

STD-007 | DATE: 10-1-97 | BY: RSK



SPOOL PIECE INSTALLATION DETAIL

NOT TO SCALE

1) PLAIN END x PLAIN END DUCTILE IRON PIPE AS SPECIFIED (CUT TO SUIT).

2) *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.

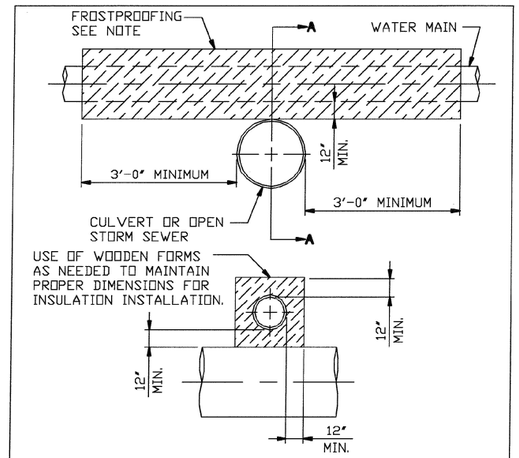
COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL 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.

3) 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/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

STD-008 | DATE: 10-1-97 | BY: RSK



SECTION A-A

MINIMUM ONE (1) FOOT FROSTPROOFING INSULATION ENVELOPE REQUIRED WITH WATER MAIN LAID WITH LESS THAN FIVE (5) FT. COVER; CROSSING OVER STORM SEWERS 24" AND LARGER; OR CROSSING UNDER OPEN END CULVERTS, OR OTHERWISE DIRECTED BY C.W.D.
IN NO CASE SHALL THE MAINS BE LAID WITH LESS THAN 3'-6" OF COVER IN UNPAVED AREAS & 3'-0" TO BOTTOM OF SLAB IN PAVED AREAS.
NOTE:
COMPACTED "WITCOLITE" INSULATION AS MANUFACTURED BY PIONEER PRODUCTS, DIVISION OF WITCO CHEMICAL COMPANY, INC. OR "GILSULATE 500 XR" AS MANUFACTURED BY AMERICAN THERMAL PRODUCTS, INC.

TYPICAL FROSTPROOFING DETAIL

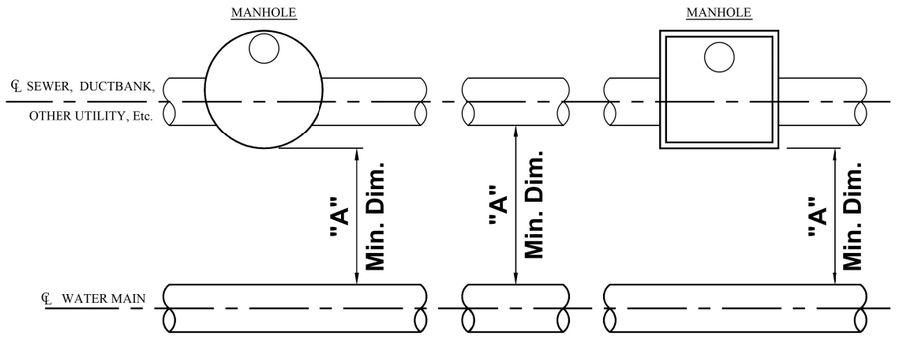
- NOT TO SCALE -

STD-009 | DATE: 10-1-97 | BY: RSK

CALCULATED ERS | CHECKED DEN

WATER MAIN DETAILS

CUY-480/ TRANSPORTATION BLVD.



PLAN VIEW

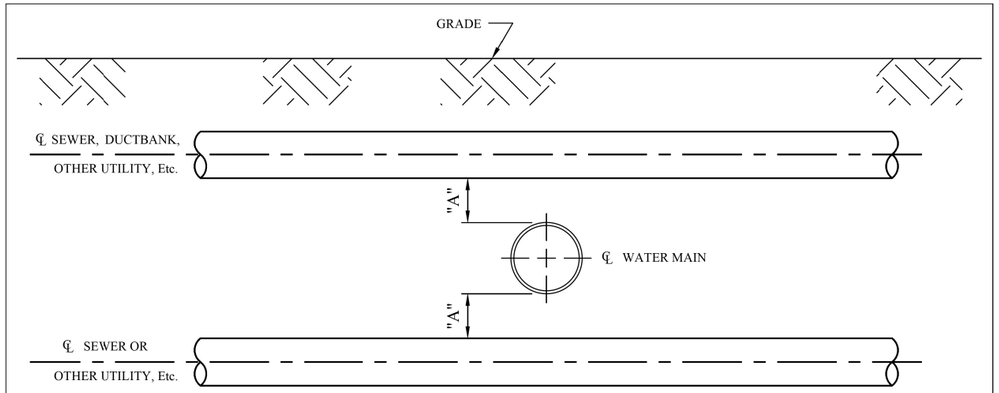
- SEE STD-018 FOR PROFILE VIEW -

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

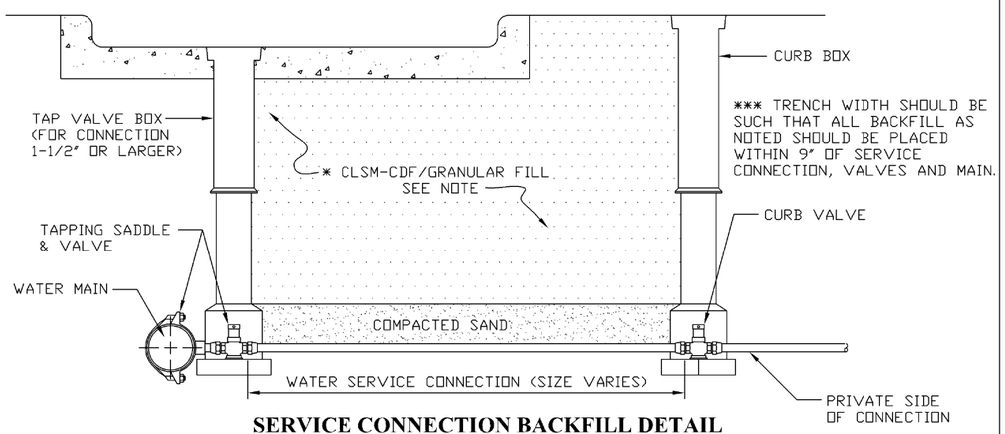
VERTICAL CLEARANCE FOR UTILITIES

NOT TO SCALE

STD-018 | DATE: 7-02-2014 | BY: MTA

** CLEVELAND REQUIRED MIX DESIGN -
CEMENT - 50 LBS. PER CUBIC YARD
SAND - 2850 LBS. PER CUBIC YARD
WATER - 50 GALLONS PER CUBIC YARD
RHEOCELL 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 -

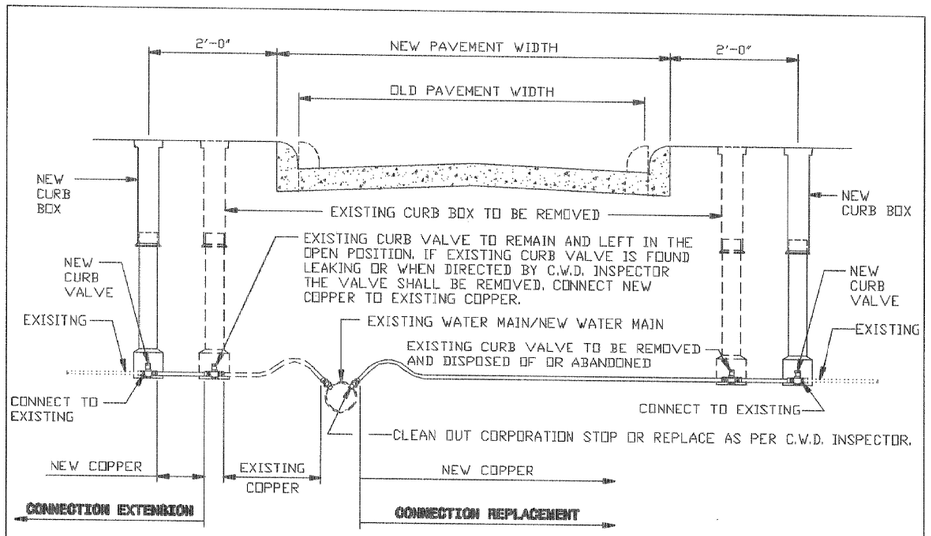
NOTES:
1) CONTRACTOR SHALL USE SPECIAL CARE IN PLACING THE SAND BEDDING BACKFILL, SO AS TO AVOID SCRAPING OF THE EXTERIOR COATING, INJURING THE PIPE, DISTORTING OR MOVING THE PIPE WHEN COMPACTING THE SAME. THE SAND BEDDING BACKFILL SHALL BE TAMPED IN SIX (6) INCH LAYERS, SIMULTANEOUSLY ON EACH SIDE OF 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

CALCULATED JJS
CHECKED DJM

WATER MAIN DETAILS

CUY-480/
TRANSPORTATION BLVD.

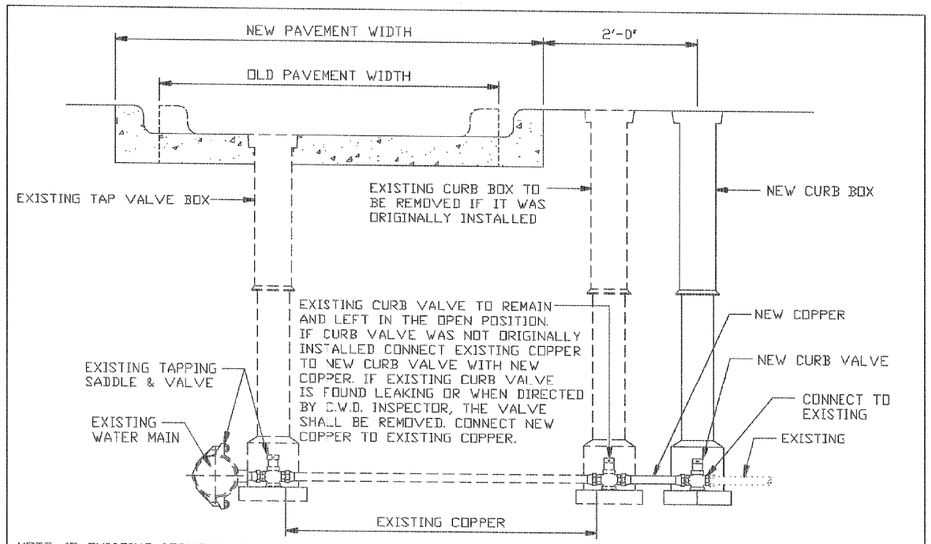


NOTE: IF EXISTING SERVICE CONNECTION IS FOUND TO BE GALVANIZED OR LEAD REPLACE FROM CORPORATION STOP TO CURB VALVE.

WATER SERVICE CONNECTION EXTENSION OR REPLACEMENT FOR 1" & SMALLER

- NOT TO SCALE -

STD-C01 | DATE: 5-11-98 | BY: RSK

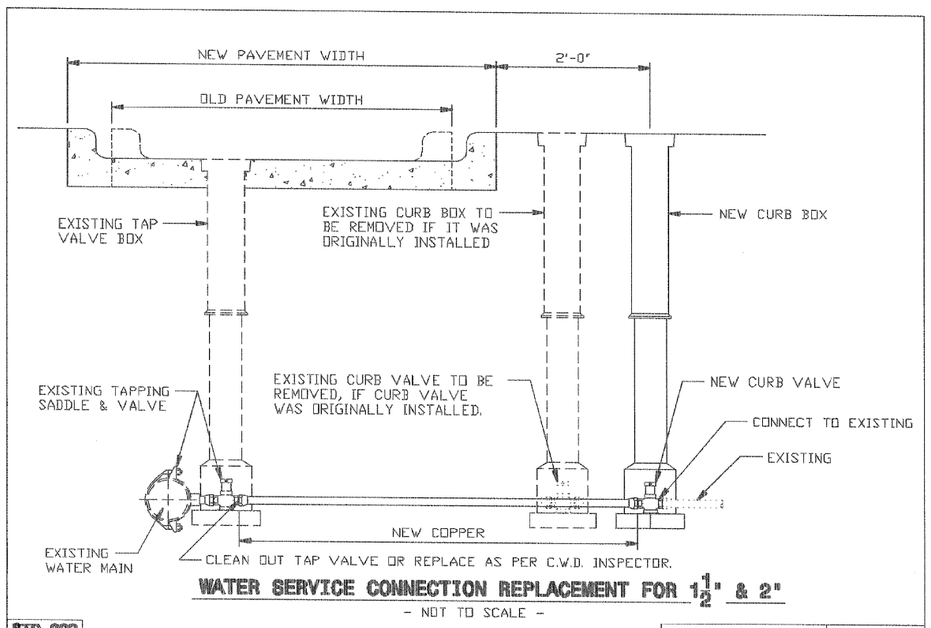


NOTE: IF EXISTING SERVICE CONNECTION IS FOUND TO BE GALVANIZED OR LEAD REPLACE FROM TAP VALVE TO CURB VALVE.

WATER SERVICE CONNECTION EXTENSION FOR $1\frac{1}{2}$" & 2"

- NOT TO SCALE -

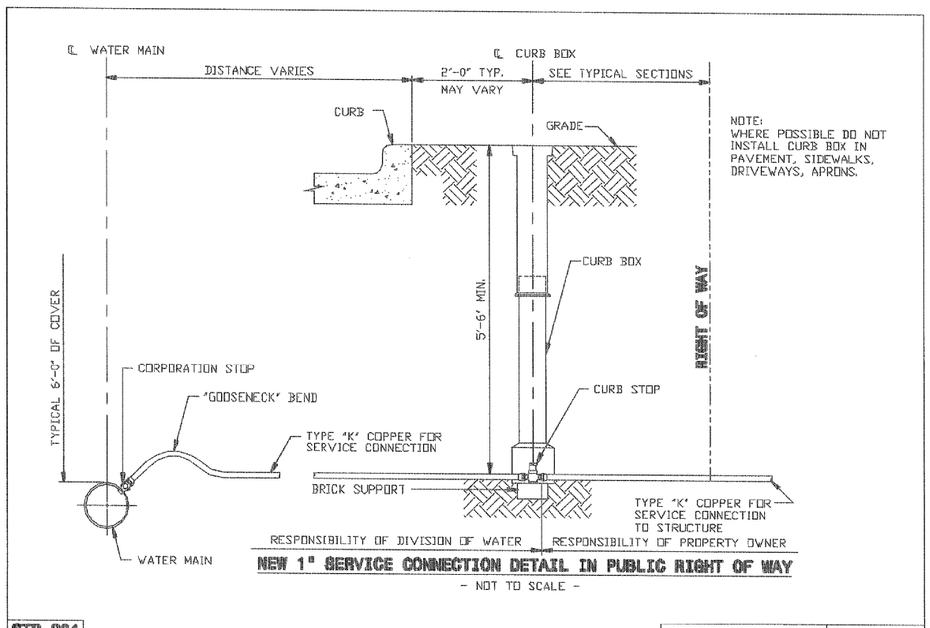
STD-C02 | DATE: 10-1-97 | BY: RSK



WATER SERVICE CONNECTION REPLACEMENT FOR $1\frac{1}{2}$" & 2"

- NOT TO SCALE -

STD-C03 | DATE: 10-1-97 | BY: RSK



NEW 1" SERVICE CONNECTION DETAIL IN PUBLIC RIGHT OF WAY

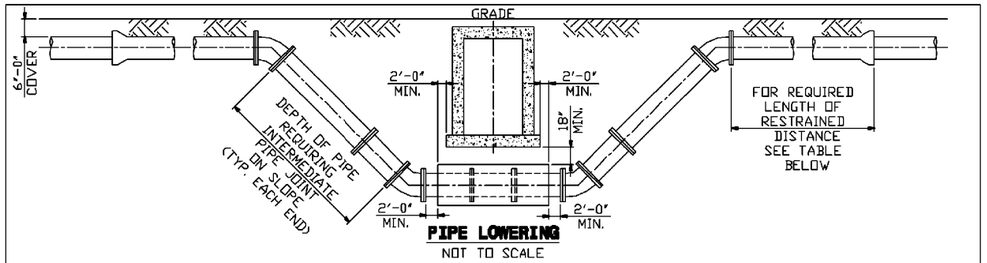
- NOT TO SCALE -

STD-C04 | DATE: 10-1-97 | BY: RSK

CALCULATED ERS | CHECKED DEN

WATER MAIN DETAILS

CUY-480/
TRANSPORTATION BLVD.



PIPE LOWERING

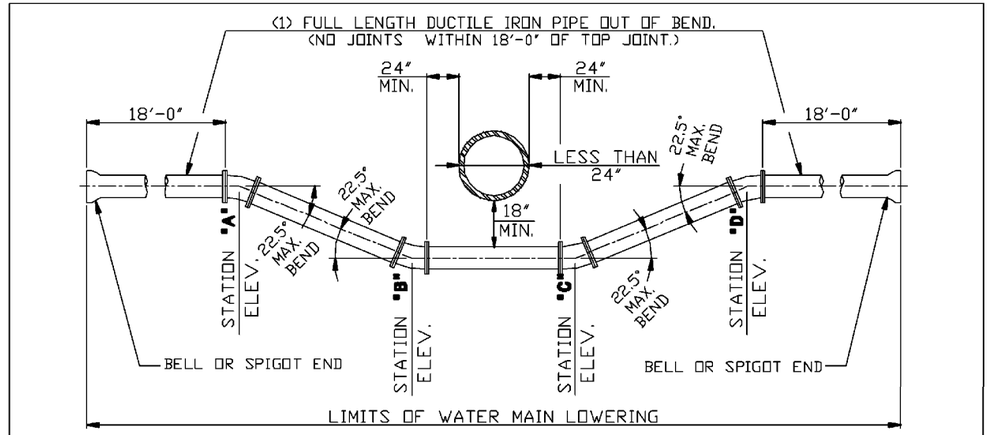
NOT TO SCALE

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)
		166 to 275 PSI	THREE (3)
16"	11°15'	0 to 275 PSI	ONE (1)
	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.

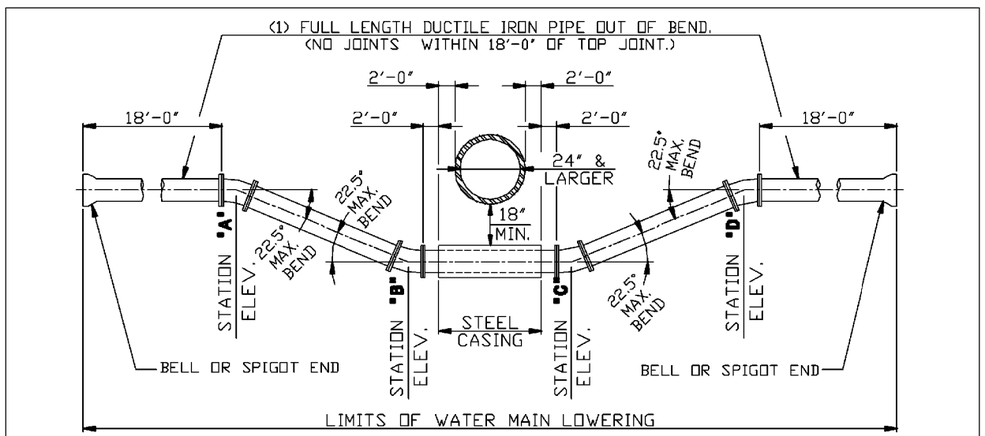
2) WHERE DEPTH OF LOWERING REQUIRES AN INTERMEDIATE JOINT BETWEEN STATIONS "A" & "B" AND/OR "C" & "D" THE ENTIRE LOWERING SHALL BE MADE WITH DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PIPE AND DUCTILE IRON CLASS 350, CEMENT LINED FITTINGS **ALL** HAVING BOLTLESS RESTRAINED PUSH-ON JOINTS, TYPE I.

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 "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.

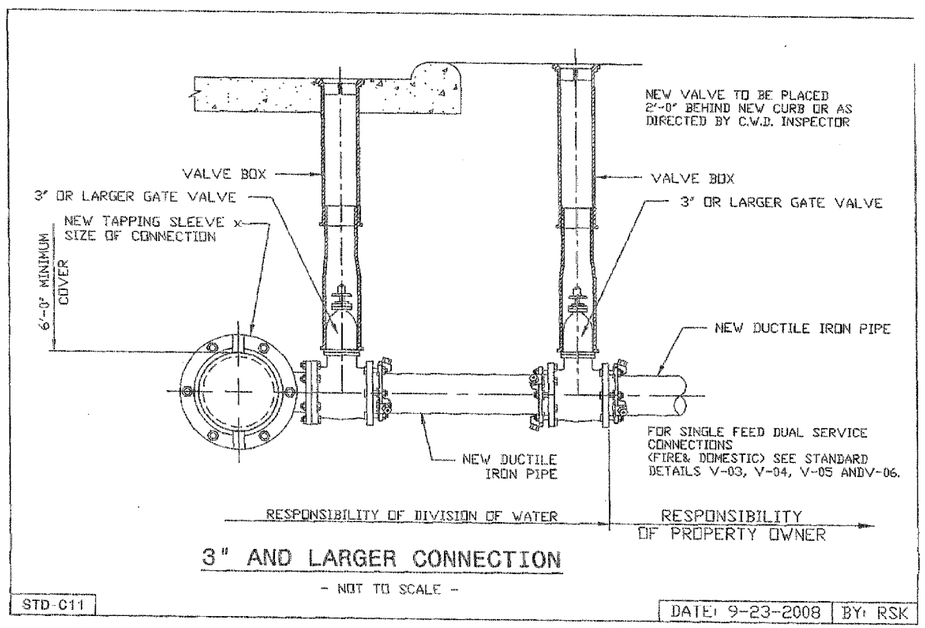
2) WHERE DEPTH OF LOWERING REQUIRES AN INTERMEDIATE JOINT BETWEEN STATIONS "A" & "B" AND/OR "C" & "D" THE ENTIRE LOWERING SHALL BE MADE WITH DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PIPE AND DUCTILE IRON CLASS 350, CEMENT LINED FITTINGS **ALL** HAVING BOLTLESS RESTRAINED PUSH-ON JOINTS, TYPE I.

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-L05 | - NOT TO SCALE - | DATE: 10-1-97 | BY: RSK



3" AND LARGER CONNECTION

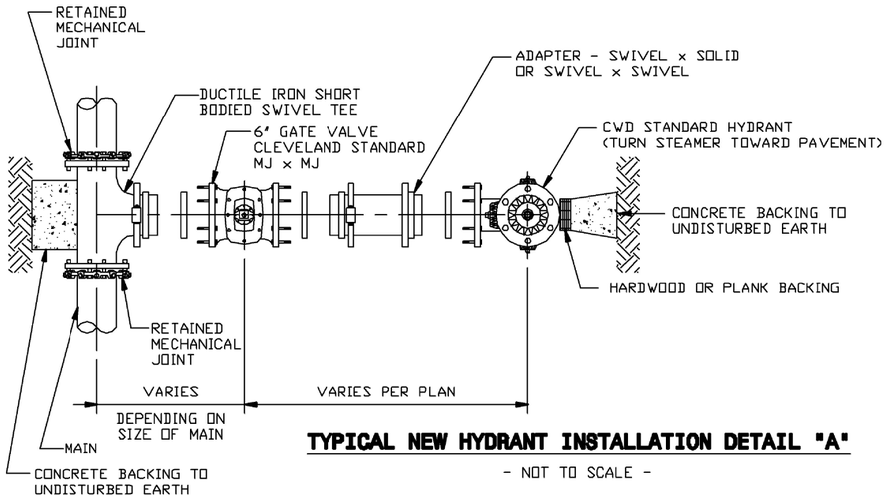
- NOT TO SCALE -

STD-C11 | DATE: 9-23-2008 | BY: RSK

CALCULATED ERS | CHECKED DEN

WATER MAIN DETAILS

CUY-480/ TRANSPORTATION BLVD.



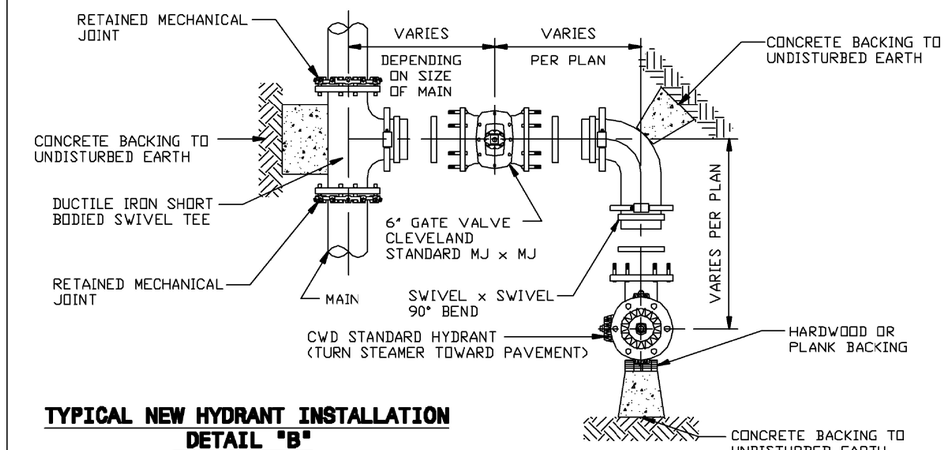
TYPICAL NEW HYDRANT INSTALLATION DETAIL "A"

- 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.

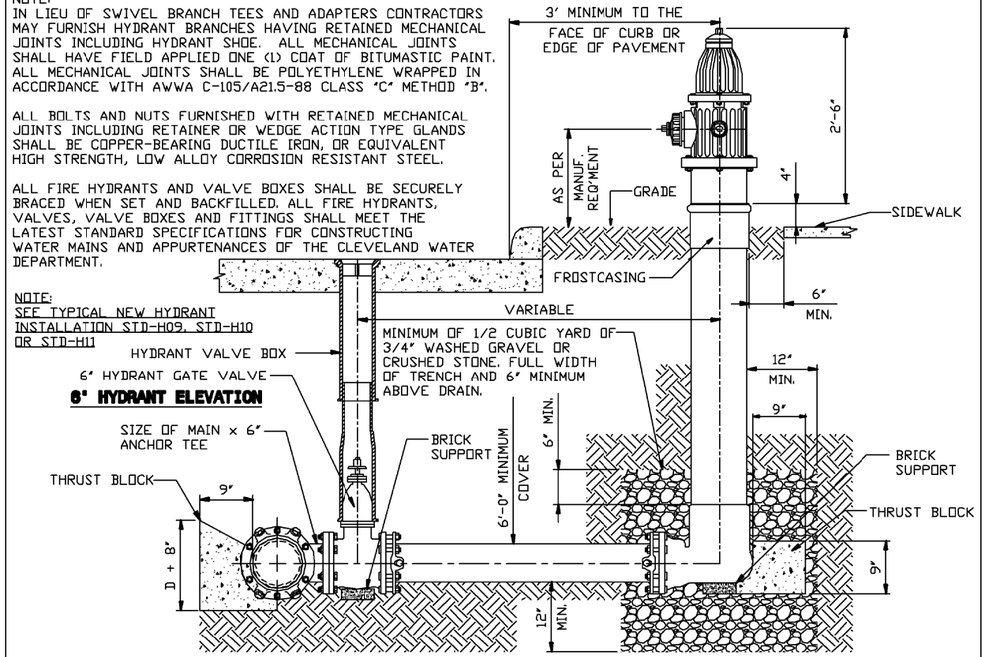
STD-H10 | DATE: 10-1-97 | BY: RSK

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-105/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.

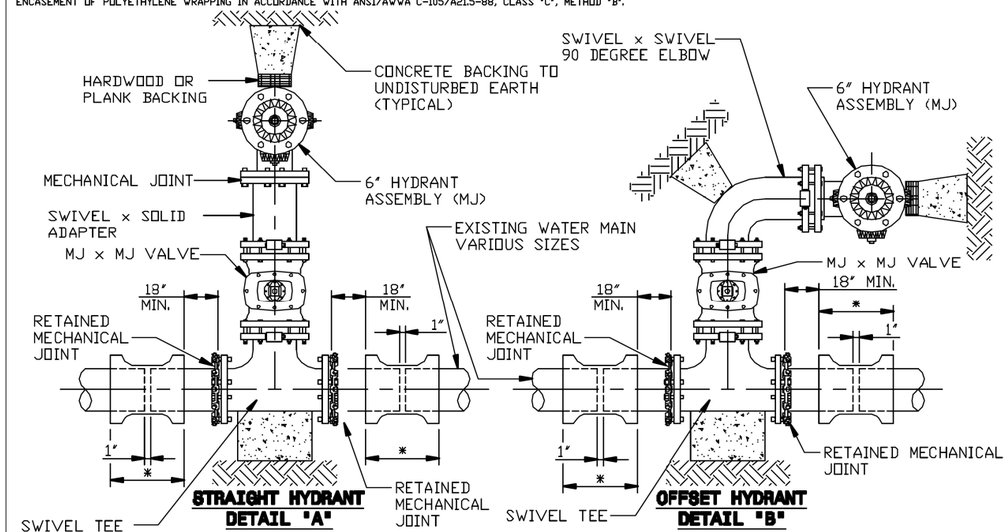
ALL FIRE HYDRANTS AND VALVE BOXES SHALL BE SECURELY BRACED WHEN SET AND BACKFILLED. ALL FIRE HYDRANTS, VALVES, VALVE BOXES AND FITTINGS SHALL MEET THE LATEST STANDARD SPECIFICATIONS FOR CONSTRUCTING WATER MAINS AND APPURTENANCES OF THE CLEVELAND WATER DEPARTMENT.

NOTE:
SEE TYPICAL NEW HYDRANT INSTALLATION STD-H09, STD-H10 OR STD-H11



STD-H13 | DATE: 2-23-2005 | 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. ROD AND CLAMP COMPRESSION COUPLING AS DIRECTED BY C.W.D. INSPECTOR.
ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THESE 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/AWWA C-105/A21.5-88, CLASS 'C', METHOD 'B'.



STRAIGHT HYDRANT DETAIL "A"

OFFSET HYDRANT DETAIL "B"

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

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

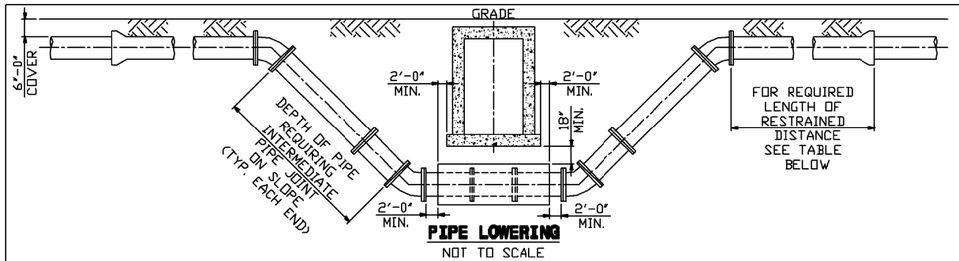
- NOT TO SCALE -

STD-H08 | DATE: 10-1-97 | BY: RSK

CALCULATED ERS CHECKED DEN

WATER MAIN DETAILS

CUY-480/ TRANSPORTATION BLVD.



PIPE LOWERING

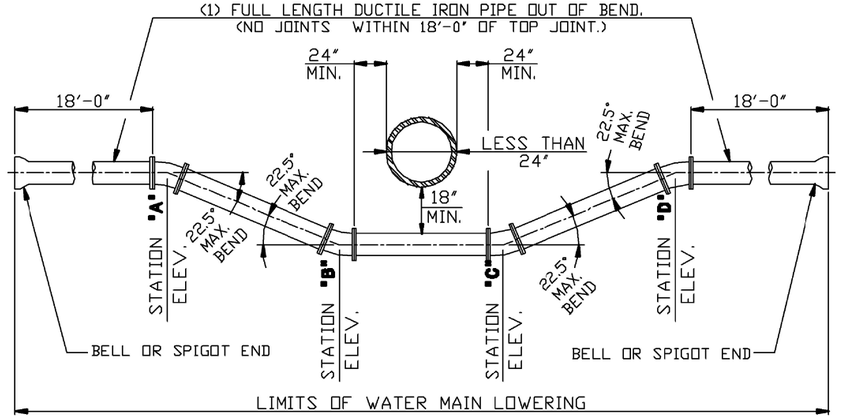
NOT TO SCALE

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)
		166 to 275 PSI	THREE (3)
16"	11°15'	0 to 275 PSI	ONE (1)
	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.

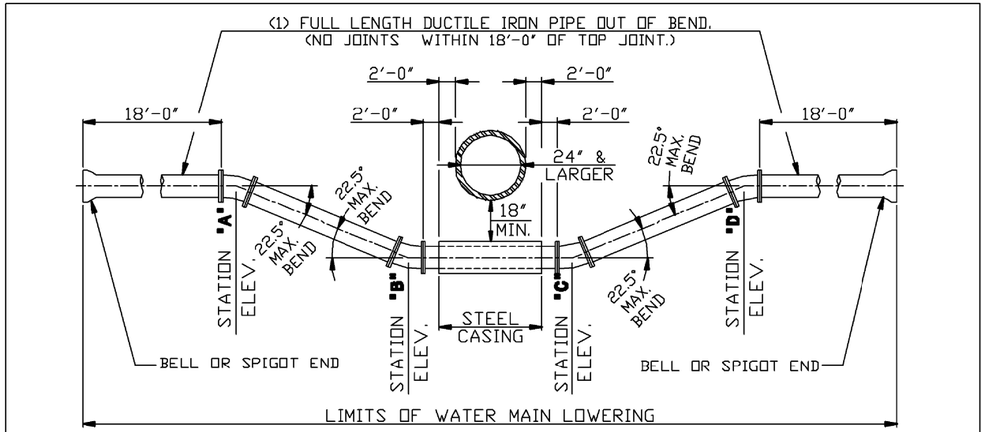
2) WHERE DEPTH OF LOWERING REQUIRES AN INTERMEDIATE JOINT BETWEEN STATIONS "A" & "B" AND/OR "C" & "D" THE ENTIRE LOWERING SHALL BE MADE WITH DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PIPE AND DUCTILE IRON CLASS 350, CEMENT LINED FITTINGS **ALL** HAVING BOLTLESS RESTRAINED PUSH-ON JOINTS, TYPE I.

3) WHERE LENGTH OF LOWERING UNDER OBSTRUCTION(S) 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 OBSTRUCTION(S) 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.

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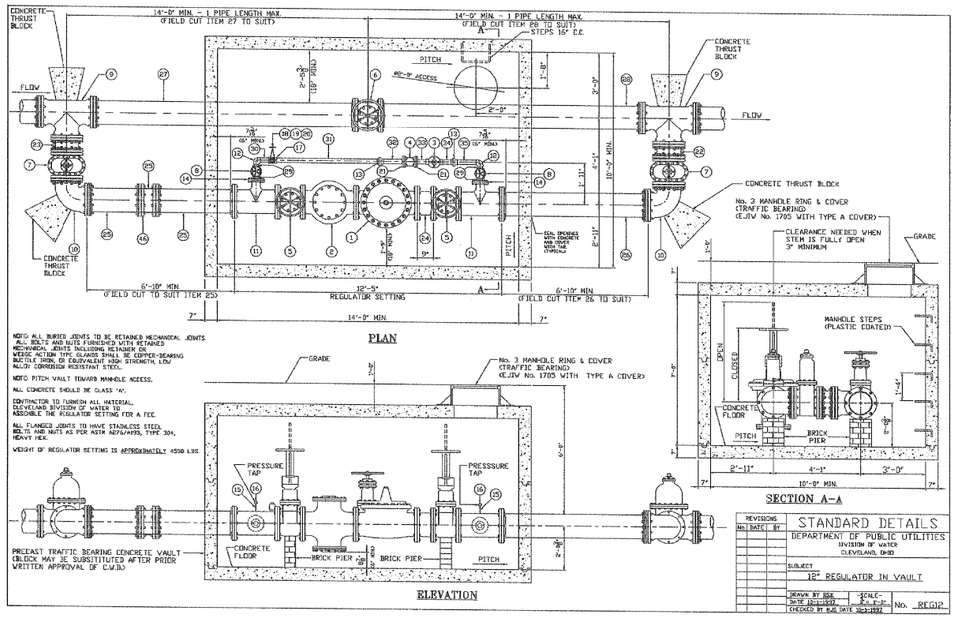
DETAIL FOR WATER MAIN LOWERING UNDER OBSTRUCTIONS
24" & LARGER IN DIAMETER OR WIDTH FOR "NEW CONSTRUCTION"

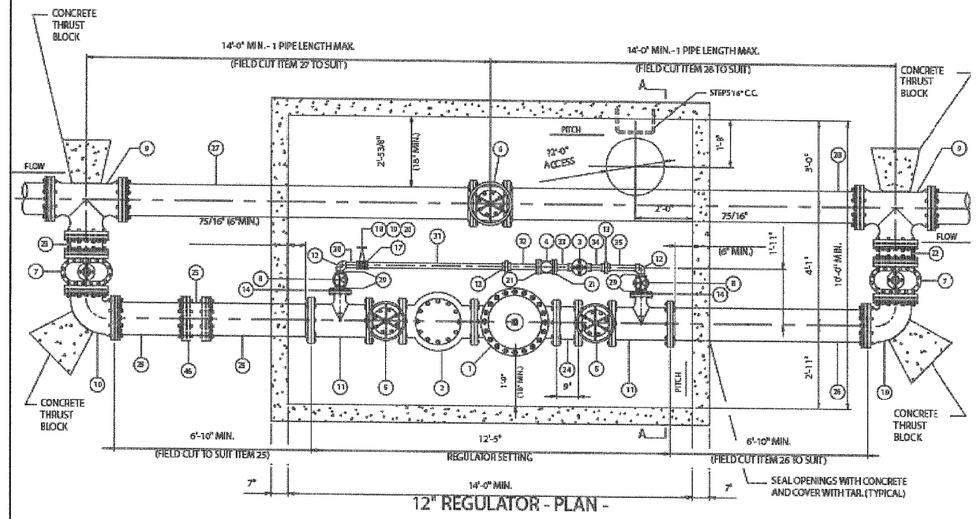
STD-L05 | - NOT TO SCALE - | DATE: 10-1-97 | BY: RSK

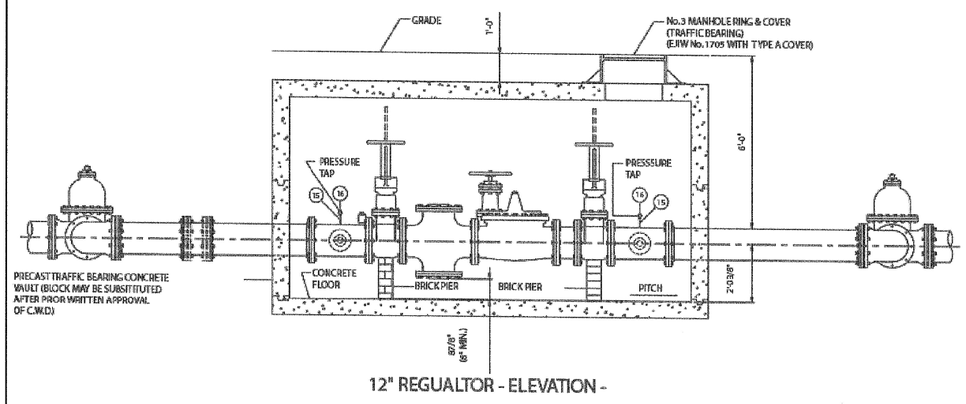
CALCULATED ERS | CHECKED DEN

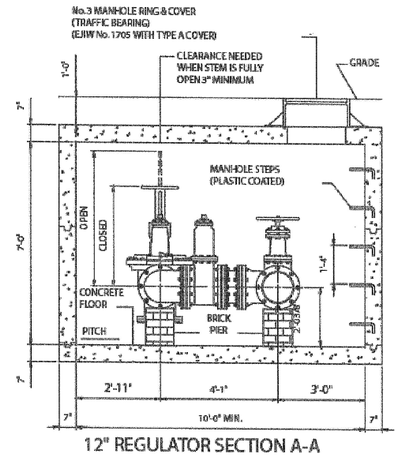
WATER MAIN DETAILS

CUY-480/
TRANSPORTATION BLVD.









CALCULATED ERS
CHECKED DEN

WATER MAIN DETAILS

CUY-480/
TRANSPORTATION BLVD.

MATERIALS REQUIRED FOR INSTALLATION OF 12" REGULATOR

ITEM	REQ'D	SIZE	DESCRIPTION
1	1	12"	CLAYTON REGULATOR **OR** OCV REGULATOR **OR** EQUAL, FLANGED
2	1	12"	ROSS STRAINER, FLANGED
3	1	2"	CLAYTON REGULATOR **OR** OCV REGULATOR **OR** EQUAL, SCREWED **OR** FLANGED
4	1	2"	ROSS STRAINER, FLANGED
5	2	12"	O.S. & Y. GATE VALVE, FLANGED
6	1	12"	GATE VALVE, FLANGED **OR** RETAINED MECHANICAL JOINT WITH HAND WHEEL
7	2	2"	GATE VALVE, RETAINED MECHANICAL JOINT
8	2	2"	O.S. & Y. BRASS GATE VALVE, SCREWED
9	2	12" x 12" x 12"	TEE, RETAINED MECHANICAL JOINT
10	2	12"	90 DEGREE COMPACT ELBOW, RETAINED MECHANICAL JOINT x PLAIN END
11	2	12" x 12" x 4"	TEE, FLANGED
12	2	2"	90 DEGREE BRASS ELBOW, SCREWED
13	2	2"	UNIONS BRASS, SCREWED
14	2	2" x 9"	REDUCING FLANGE, SCREWED
15	2	1/4" x 4"	BRASS NIPPLE, SCREWED
16	2	1/4"	BALL VALVE BRASS, SCREWED
17	1	2" x 2" x 2"	BRASS TEE, SCREWED
18	1	2" x 6"	BRASS NIPPLE, SCREWED
19	1	2"	BRASS GATE VALVE, SCREWED
20	1	2"	BRASS PLUG, SCREWED

ITEM	REQ'D	SIZE	DESCRIPTION
21	2	2"	COMPANION FLANGE

NOTE: (4) 2" COMPANION FLANGES REQ'D IF FLANGED 2" REGULATOR IS USED

NOTE: PIPE LENGTHS ARE APPROXIMATE, CUT TO SUIT

22	13-1/2" LONG	12"	CLASS 52 DUCTILE IRON PIPE PLAIN END x PLAIN END
23	13-1/2" LONG	12"	CLASS 52 DUCTILE IRON PIPE PLAIN END x PLAIN END
24	9" LONG	12"	CLASS 52 DUCTILE IRON PIPE FLANGED SPACER
25	84-1/2" LONG	12"	CLASS 52 DUCTILE IRON PIPE FLANGED x PLAIN END
26	84-1/2" LONG	12"	CLASS 52 DUCTILE IRON PIPE FLANGED x PLAIN END
27	149" LONG **OR** 1 PIPE LENGTH	12"	CLASS 52 DUCTILE IRON PIPE FLANGED x PLAIN END **OR** PLAIN END x PLAIN END TO MATCH ITEM 6
28	149" LONG **OR** 1 PIPE LENGTH	12"	CLASS 52 DUCTILE IRON PIPE FLANGED x PLAIN END **OR** PLAIN END x PLAIN END TO MATCH ITEM 6
29	(4) 2-5/16" LONG	2"	BRASS CLOSE NIPPLE
30	6" LONG	2"	BRASS PIPE
31	54-3/4" LONG	2"	BRASS PIPE
32	12" LONG	2"	BRASS PIPE
33	6" LONG	2"	BRASS PIPE
34	6" LONG	2"	BRASS PIPE
35	12" LONG	2"	BRASS PIPE
36	120	7/8" x 3-3/4"	MACHINE BOLTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304
37	120	7/8"	HEX NUTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304

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

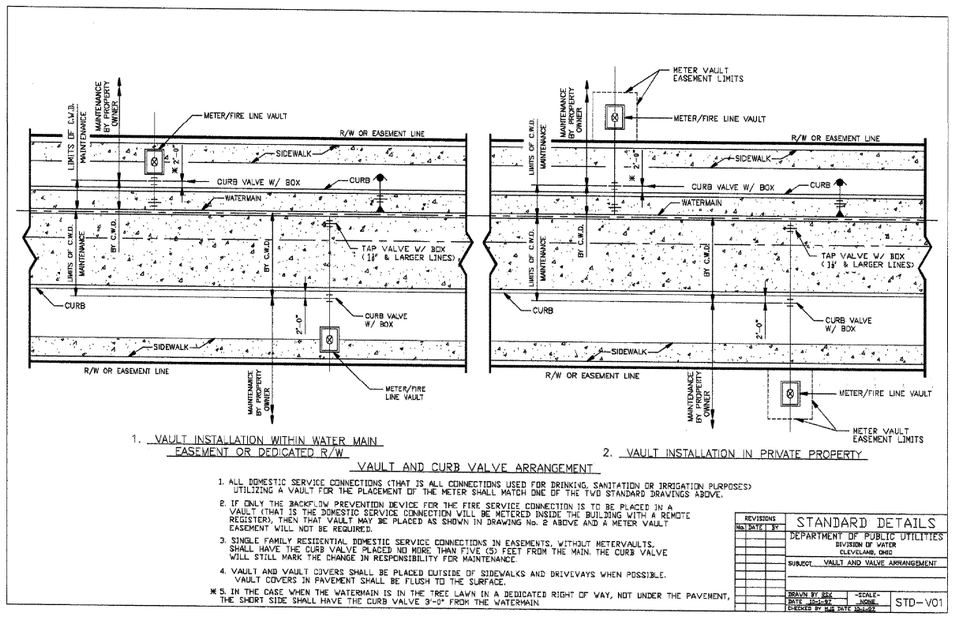
43	24	5/8"	HEX NUTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304
44	12	12"	RETAINED MECHANICAL JOINTS WITH ACCESSORIES
	14	12"	RETAINED MECHANICAL JOINTS WITH ACCESSORIES IF OPTIONAL SOLID SLEEVE USED
45	2	#2	VALVEBOXES SET TO GRADE FOR ITEM #7 (NOT SHOWN ON DRAWING FOR CLARITY)
46	1	12"	**OPTIONAL** 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



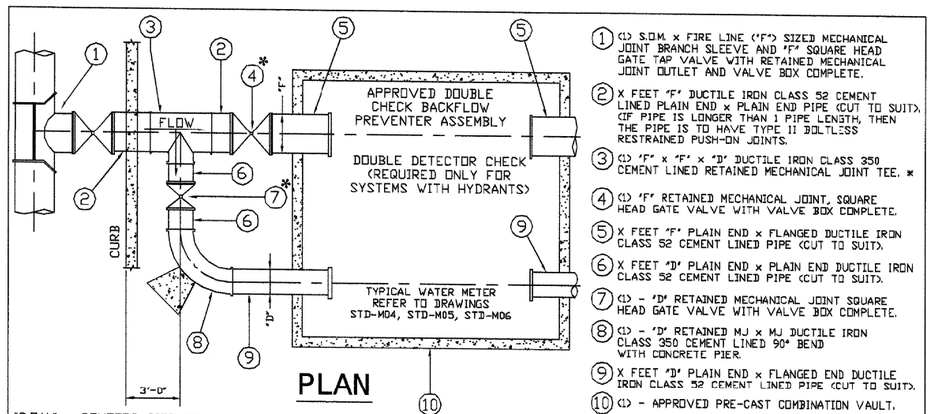
VAULT AND CURB VALVE ARRANGEMENT

1. 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.
2. 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.
3. 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.
4. VAULT 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		
NO.	DATE	BY

STANDARD DETAILS
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER
CLEVELAND, OHIO
SUBJECT: VAULT AND VALVE ARRANGEMENT
DRAWN BY BSK | -SCALE- NONE
DATE 8-04-08
CHECKED BY THE DATE 8-04-08
STD-V01



1. (1) S.D.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. (1) 'F' x 'F' x 'D' DUCTILE IRON CLASS 350 CEMENT LINED RETAINED MECHANICAL JOINT TEE. *
4. (1) '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. (1) - 'D' RETAINED MECHANICAL JOINT SQUARE HEAD GATE VALVE WITH VALVE BOX COMPLETE.
8. (1) - '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. (1) - APPROVED PRE-CAST COMBINATION VAULT.

* CURB VALVES MUST BE LOCATED IN THE RIGHT OF WAY

'S.D.M.' - DENOTES SIZE OF MAIN.
'F' - DENOTES NOMINAL PIPE DIAMETER OF FIRE LINE.
'D' - DENOTES NOMINAL PIPE DIAMETER OF DOMESTIC LINE.
* MAY SUBTITUTE '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 DETIRMINED 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 ONSITE. 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.

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-
DATE 12-10-2004 | NONE
CHECKED BY ___ DATE ___
STD-V03

CALCULATED ERS | CHECKED DEN

WATER MAIN DETAILS

CUY-480/ TRANSPORTATION BLVD.

119 / 225

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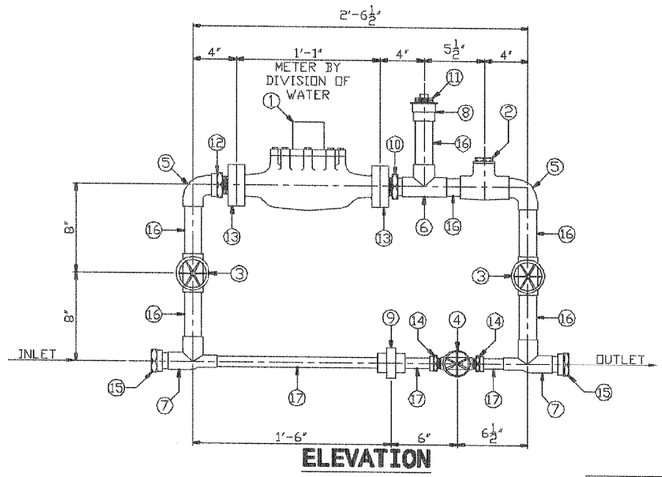
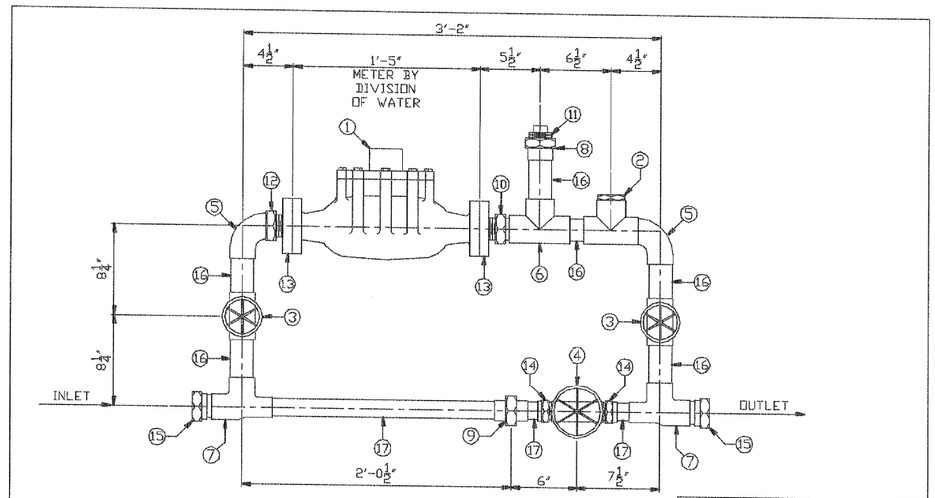


ELEVATION

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 1½" METER SETTING WITH 1½" METER FOR VAULTS
DRAWN BY RSK | -SCALE- 3" = 1'-0"
DATE 10-1-1997
CHECKED BY MJS DATE 10-1-97
STD-M01

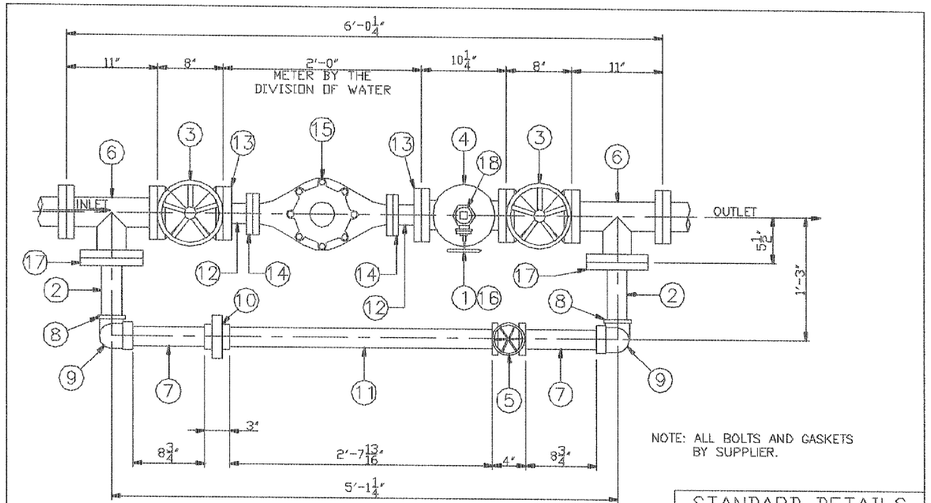


ELEVATION

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 | -SCALE- 3" = 1'-0"
DATE 10-1-1997
CHECKED BY MJS DATE 10-1-97
STD-M02

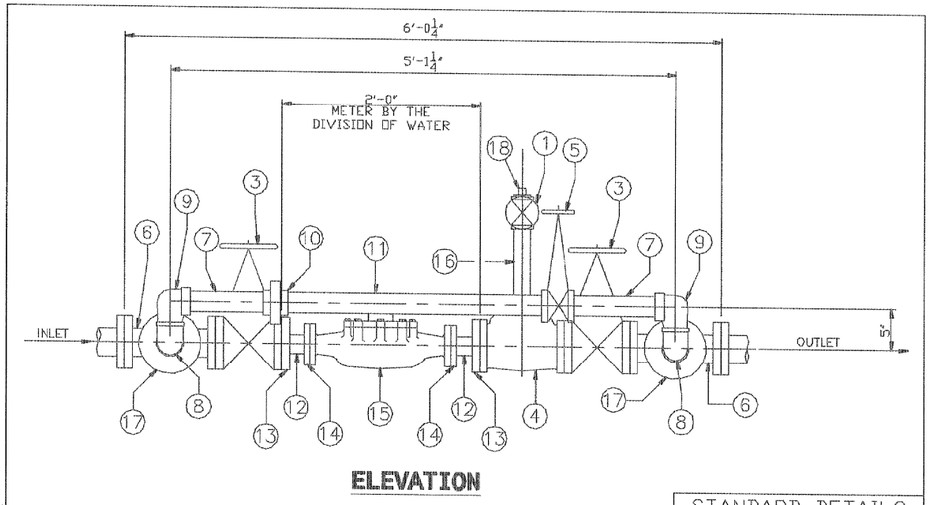


PLAN

NOTE: ALL BOLTS AND GASKETS BY SUPPLIER.

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.

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



ELEVATION

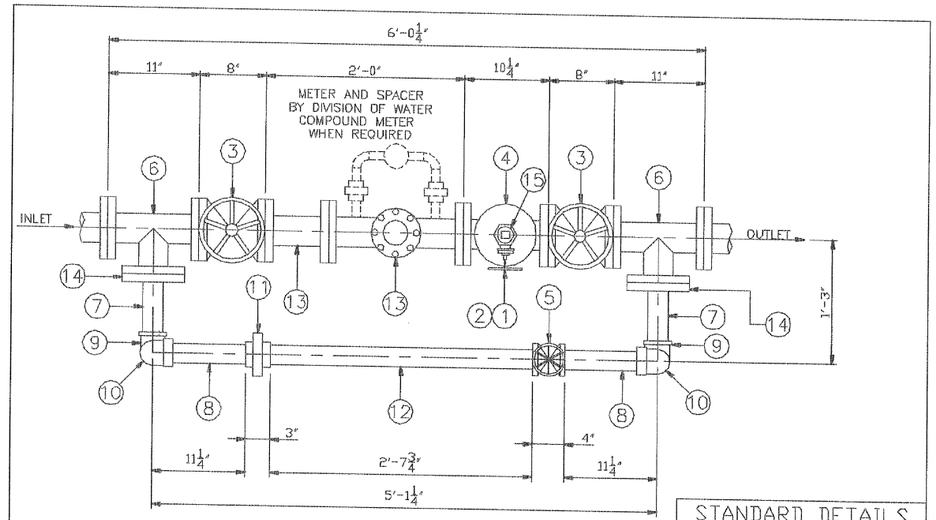
NOTE: ALL BOLTS AND GASKETS BY SUPPLIER.

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

CALCULATED JJS | CHECKED DJM

WATER MAIN DETAILS

CUY-480/
TRANSPORTATION BLVD.



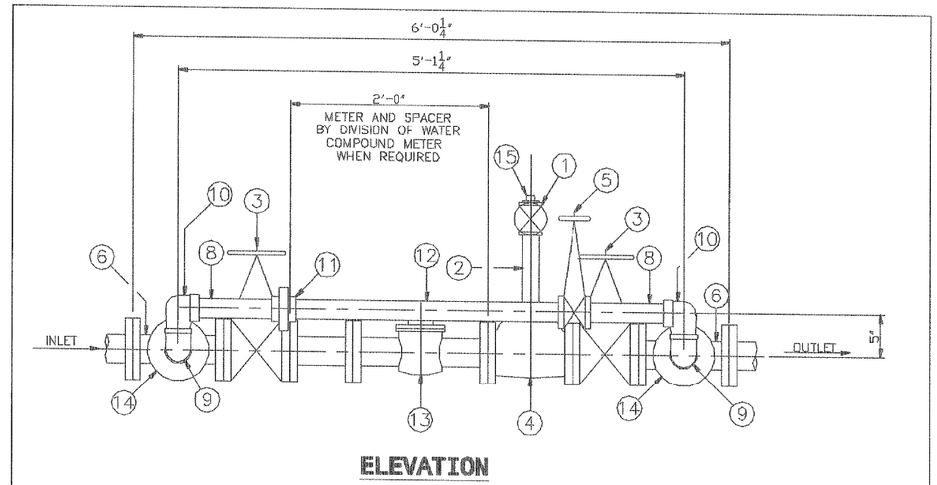
PLAN

NOTE: ALL BOLTS AND GASKETS
BY SUPPLIER

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. 12) WILL BE MADE BY THE DIVISION OF WATER AS NEEDED.

STANDARD DETAILS
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER
CLEVELAND, OHIO
SUBJECT STANDARD 3" METER SETTING
WITH 3" METER FOR VAULTS

DRAWN BY RSK	-SCALE-	STD-M06
DATE 10-1-1997	3/16" = 1"	
CHECKED BY MJS DATE 10-1-97		

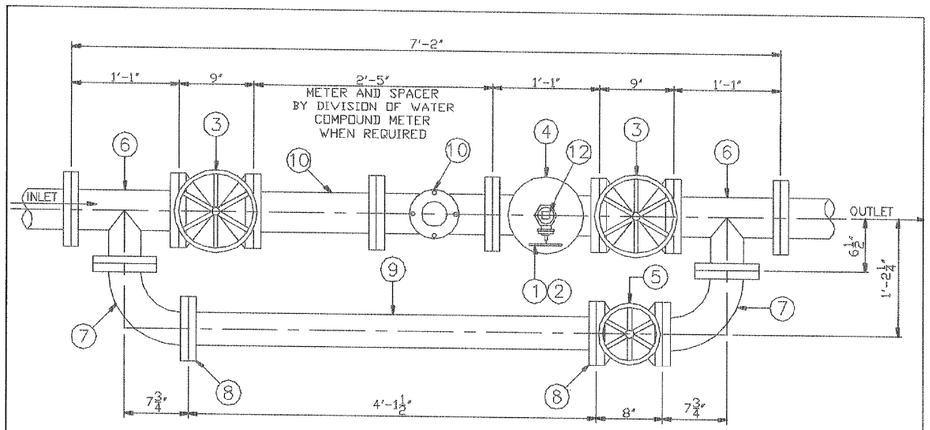


ELEVATION

NOTE: ALL BOLTS AND GASKETS
BY SUPPLIER

STANDARD DETAILS
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER
CLEVELAND, OHIO
SUBJECT STANDARD 3" METER SETTING
WITH 3" METER FOR VAULTS

DRAWN BY RSK	-SCALE-	STD-M07
DATE 10-1-1997	3/16" = 1"	
CHECKED BY MJS DATE 10-1-97		



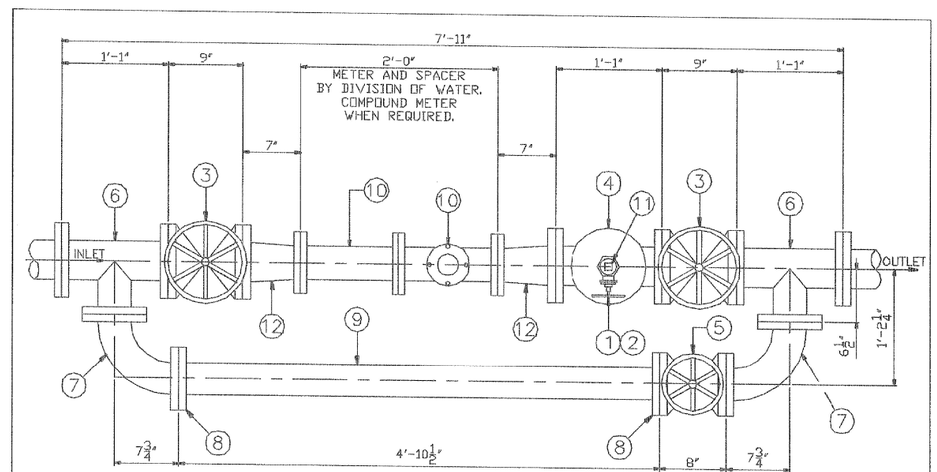
PLAN

NOTE:
ALL BOLTS AND GASKETS
BY SUPPLIER.

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. 9) WILL BE MADE BY THE DIVISION OF WATER AS NEEDED.

STANDARD DETAILS
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER
CLEVELAND, OHIO
SUBJECT STANDARD 4" METER SETTING
WITH 4" METER FOR VAULTS

DRAWN BY RSK	-SCALE-	STD-M08
DATE 10-1-1997	3/16" = 1"	
CHECKED BY MJS DATE 10-1-97		



PLAN

NOTE:
ALL BOLTS AND GASKETS
BY SUPPLIER.

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. 9) WILL BE MADE BY THE DIVISION OF WATER AS NEEDED.

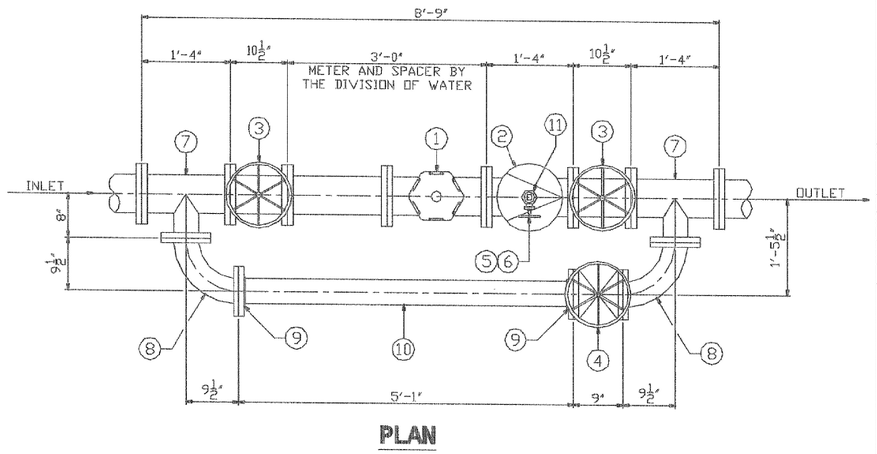
STANDARD DETAILS
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER
CLEVELAND, OHIO
SUBJECT STANDARD 4" METER SETTING
WITH 3" METER FOR VAULTS

DRAWN BY RSK	-SCALE-	STD-M09
DATE 5-18-1998	3/16" = 1"	
CHECKED BY MJS DATE 5-18-98		

CALCULATED ERS
CHECKED DEN

WATER MAIN DETAILS

CUY-480/
TRANSPORTATION BLVD.

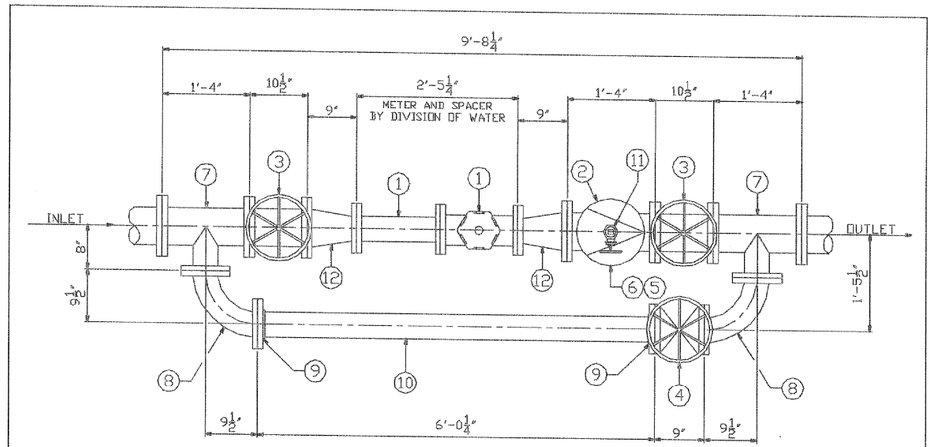


PLAN

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 RSK | -SCALE- | DATE 4-26-2005 | CHECKED BY | DATE | STD-M10

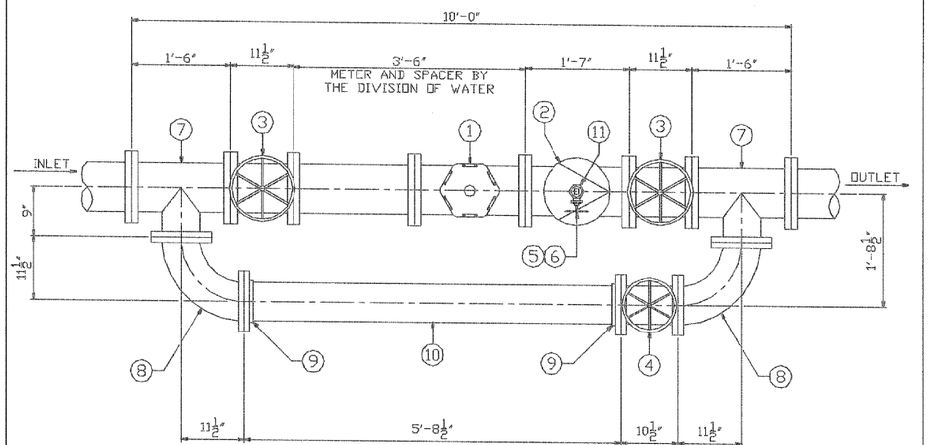


PLAN

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 Nc. 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 RSK | -SCALE- | DATE 5-18-1998 | CHECKED BY MJS DATE 5-18-98 | STD-M11

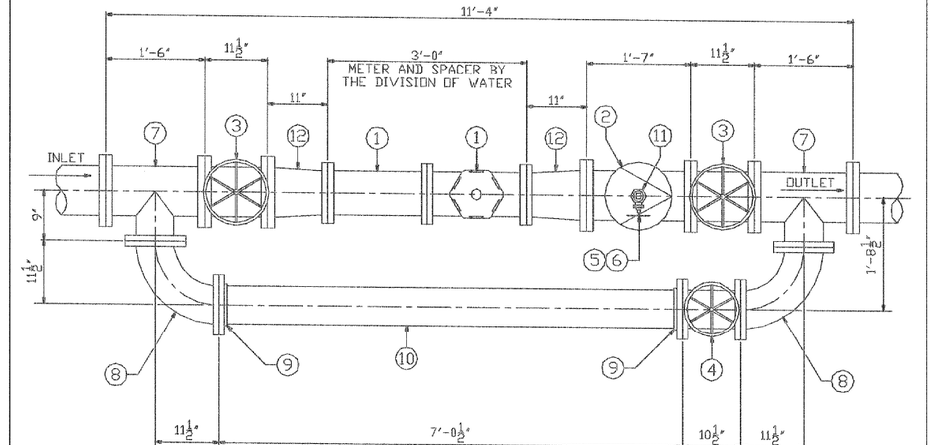


PLAN

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 DIVISON 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 RSK | -SCALE- | DATE 10-1-1997 | CHECKED BY MJS DATE 10-1-97 | 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 DIVISON OF WATER AS NEEDED.

STANDARD DETAILS
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER
CLEVELAND, OHIO
SUBJECT: STANDARD 8" METER SETTING WITH 6" METER FER VAULTS
DRAWN BY RSK | -SCALE- | DATE 4-26-2005 | CHECKED BY | DATE | STD-M13

CALCULATED JJS | CHECKED DJM

WATER MAIN DETAILS

CUY-480/
TRANSPORTATION BLVD.

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

STANDARE 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

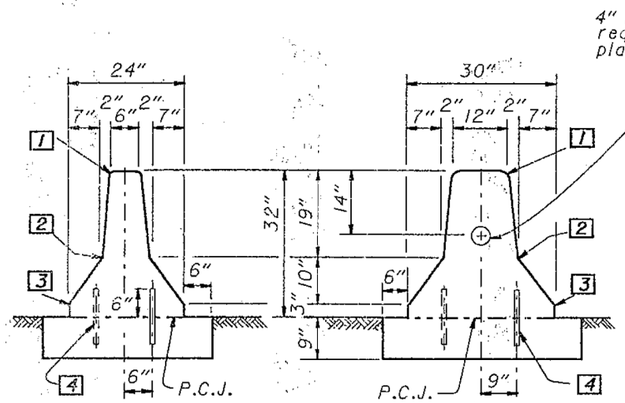
(SEE DRAWING No. STD-M13 & STD-V01).

4-26-2005

CALCULATED ERS
CHECKED DEN

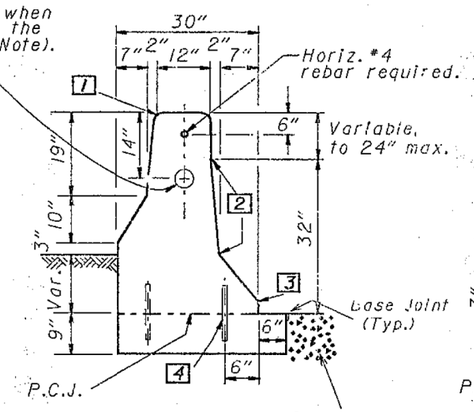
WATER MAIN DETAILS

CUY-480/
TRANSPORTATION BLVD.

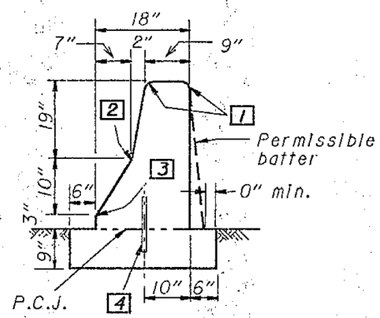


TYPE A

TYPE B



TYPE C

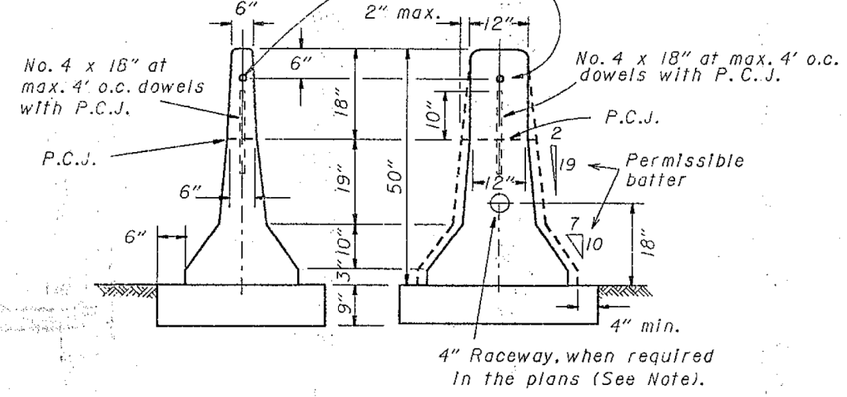


TYPE D

NORMAL SECTIONS

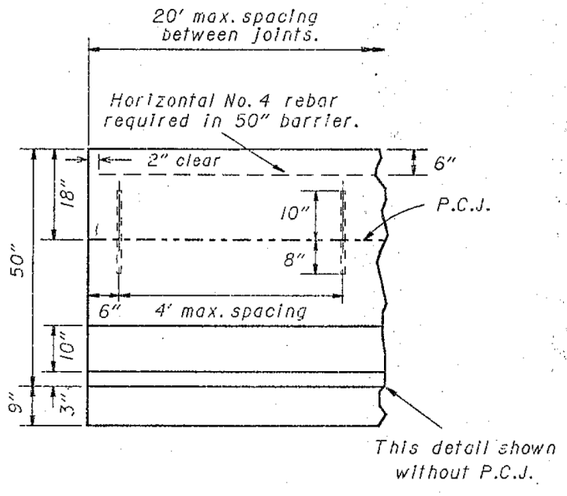
LEGEND

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.

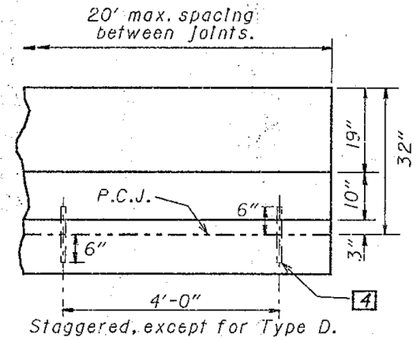


TYPE A50 TYPE B50

50" BARRIERS - TYPICAL SECTIONS



50" BARRIER



32" BARRIER

BARRIER ELEVATIONS

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 I-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 foot 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 lineal 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.

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

CONCRETE BARRIER

DATE 10-30-92

STANDARD CONSTRUCTION DRAWING **MC-9.3**

APPROVED E.K. Hildebrand ENGR., L & D

CALCULATED JMB CHECKED JJS

PLAN INSERT SHEETS

CUY-480/ TRANSPORTATION BLVD.

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.

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ITEM 621 - RAISED PAVEMENT MARKER SUBSUMMARY

ROADWAY	SHEET NO.	STATION TO STATION		SIDE	INTERVAL	1-WAY WHITE	2-WAY WH/RED	2-WAY YEL/RED	RAISED PAVEMENT MARKER REMOVED
I-480 EB EXIT RAMP	143	25+92	26+12	RT	40	2			2
I-480 EB EXIT RAMP	143	25+82	25+82	RT	40		2		2
I-480 EB EXIT RAMP	143	25+70	25+70	RT	40		2		2
I-480 EB EXIT RAMP	143	25+58	25+58	RT	40		2		2
I-480 EB EXIT RAMP	152	26+12	26+12	RT	40	3			3
I-480 EB EXIT RAMP	152	25+82	25+82	RT	40		3		3
I-480 EB EXIT RAMP	152	25+70	25+70	RT	40		3		3
I-480 EB EXIT RAMP	152	25+58	25+58	RT	40		3		3
I-480 EB EXIT RAMP	152	25+47	25+47	RT	80			2	2
I-480 WB EXIT RAMP	145	56+10	57+50	LT	40	3			3
I-480 WB EXIT RAMP	145	56+10	57+50	RT	40		3		3
I-480 WB EXIT RAMP	145	56+10	57+50	RT	40		3		3
I-480 WB EXIT RAMP	145	56+10	57+50	RT	80			1	1
I-480 WB EXIT RAMP	154	57+50	60+43	LT	40	8			8
I-480 WB EXIT RAMP	154	60+43	63+23	LT/RT	80	3			3
I-480 WB EXIT RAMP	154	57+50	60+99	LT/RT	40		8		8
I-480 WB EXIT RAMP	154	57+50	59+27	RT	40		4		4
I-480 WB EXIT RAMP	154	57+50	63+23	RT	80			7	7
TOTALS						19	33	10	62
TOTALS CARRIED TO GENERAL SUMMARY						62			62

CALCULATED SLB CHECKED TJR

RAISED PAVEMENT MARKER SUBSUMMARY

CUY-480/ TRANSPORTATION BLVD.

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PAVEMENT MARKING SUBSUMMARY - 1 OF 7

CUY-480/ TRANSPORTATION BLVD.

CALCULATED SLB CHECKED TJR

SHEET NO.	REF. NO.	LOCATION	STATION FROM	STATION TO	SIDE	620 DELINEATOR, POST GROUND MOUNTED (EACH)	620 REMOVAL OF DELINEATOR (EACH)	646 EDGE LINE, 4" (WHITE) (FT)	646 EDGE LINE, 4" (YELLOW) (FT)	646 LANE LINE, 4" (FT)	646 CENTER LINE, DOUBLE SOLID (FT)	646 CHANNELIZING LINE, 8" (FT)	646 STOP LINE (FT)	646 CROSSWALK LINE (FT)	646 TRANSVERSE/DIAGONAL LINE (WHITE) (FT)	646 TRANSVERSE/DIAGONAL LINE (YELLOW) (FT)	646 ISLAND MARKING (YELLOW) (SF)	646 LANE ARROW (EACH)	646 DOTTED LINE (FT)	646 REMOVAL OF PAVEMENT MARKING (EACH)	646 REMOVAL OF PAVEMENT MARKING (FT)	646 REMOVAL OF PAVEMENT MARKING (SF)	646 REMOVAL OF PAVEMENT MARKING (FT)
139		TRANSPORTATION BLVD.			RT															1			
139		TRANSPORTATION BLVD.			RT															1			
139		TRANSPORTATION BLVD.			RT															1			
139		TRANSPORTATION BLVD.			RT															1			
139		TRANSPORTATION BLVD.			RT																		53
139		TRANSPORTATION BLVD.			RT																12		
139		TRANSPORTATION BLVD.			RT																58		
139		TRANSPORTATION BLVD.			RT																85		
139		TRANSPORTATION BLVD.			RT																85		
139		TRANSPORTATION BLVD.			RT																85		
139		TRANSPORTATION BLVD.			RT																		85
139		ANTENUCCI BLVD.	11+01		LT/RT																48		
139		ANTENUCCI BLVD.	11+03	12+00	LT																97		
139		ANTENUCCI BLVD.	11+03	12+00	LT																97		
139		ANTENUCCI BLVD.	11+03	12+00	LT																		97
139		ANTENUCCI BLVD.	11+03	12+00	RT																		97
139		ANTENUCCI BLVD.	11+03	12+00	LT/RT																104		
139		ANTENUCCI BLVD.	11+25		LT															1			
139		ANTENUCCI BLVD.	11+25		LT															1			
139		ANTENUCCI BLVD.	11+25		LT															1			
139		ANTENUCCI BLVD.	11+92		LT															1			
139		ANTENUCCI BLVD.	11+92		LT															1			
140		TRANSPORTATION BLVD.			RT															1			
140		TRANSPORTATION BLVD.			RT															1			
140		TRANSPORTATION BLVD.			RT															1			
140		TRANSPORTATION BLVD.			RT															1			
140		TRANSPORTATION BLVD.			RT															1			
140		TRANSPORTATION BLVD.			RT															1			
140		TRANSPORTATION BLVD.			RT																		126
140		TRANSPORTATION BLVD.			RT																		126
140		TRANSPORTATION BLVD.			RT																126		
140		TRANSPORTATION BLVD.			RT																126		
140		TRANSPORTATION BLVD.			RT																126		
141		ANTENUCCI BLVD.	12+00	12+75	RT																		75
141		ANTENUCCI BLVD.	14+36	14+91	RT																55		
141		ANTENUCCI BLVD.	14+50		LT															1			
141		ANTENUCCI BLVD.	14+89		LT															1			
141		ANTENUCCI BLVD.	12+00	14+91	LT																		291
141		ANTENUCCI BLVD.	15+34		LT/RT																	22	
141		ANTENUCCI BLVD.	12+00	12+97	LT																97		
141		ANTENUCCI BLVD.	12+00	12+97	LT																97		
141		ANTENUCCI BLVD.	12+00	14+26	RT/LT																		226
141		ANTENUCCI BLVD.	12+00	14+26	LT																212		
141		ANTENUCCI BLVD.	15+36	16+81	LT																41		
141		ANTENUCCI BLVD.	15+36	16+81	LT																		145
141		ANTENUCCI BLVD.	15+36	16+81	LT/RT																		145
TOTAL FEET																				17	1551	22	1466
TOTAL MILES																							0.28
TOTALS CARRIED TO GENERAL SUMMARY																				17	1551	22	0.28

SHEET NO.	REF. NO.	LOCATION	STATION FROM	STATION TO	SIDE	620 DELINEATOR, POST GROUND MOUNTED	620 REMOVAL OF DELINEATOR	646 EDGE LINE, 4" (WHITE)	646 EDGE LINE, 4" (YELLOW)	646 LANE LINE, 4"	646 CENTER LINE, DOUBLE SOLID	646 CHANNELIZING LINE, 8"	646 STOP LINE	646 CROSSWALK LINE	646 TRANSVERSE/DIAGONAL LINE (WHITE)	646 TRANSVERSE/DIAGONAL LINE (YELLOW)	646 ISLAND MARKING (YELLOW)	646 LANE ARROW	646 DOTTED LINE	646 REMOVAL OF PAVEMENT MARKING	646 REMOVAL OF PAVEMENT MARKING	646 REMOVAL OF PAVEMENT MARKING	646 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													1									
142	LA	TRANSPORTATION BLVD.	23+41		CEN													1									
142	LA	TRANSPORTATION BLVD.	24+07		CEN													1									
142	LA	TRANSPORTATION BLVD.	24+73		CEN													1									
142	LA	TRANSPORTATION BLVD.	25+52		RT													1									
142	LA	TRANSPORTATION BLVD.	25+52		RT													1									
142	LA	TRANSPORTATION BLVD.	25+64		RT													1									
142	LA	TRANSPORTATION BLVD.	25+64		RT													1									
142	LA	TRANSPORTATION BLVD.	25+76		RT													1									
142	LA	TRANSPORTATION BLVD.	25+76		RT													1									
142	LA	TRANSPORTATION BLVD.	25+87		RT													1									
142	LA	TRANSPORTATION BLVD.	25+87		RT													1									
142	DW	TRANSPORTATION BLVD.	24+96	25+58	LT/RT														125								
142	DW	TRANSPORTATION BLVD.	25+67	25+70	LT/RT														154								
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													1									
142	LA	ANTENUCCI BLVD.	11+15		LT													1									
142	LA	ANTENUCCI BLVD.	11+15		RT													1									
142	LA	ANTENUCCI BLVD.	11+81		LT													1									
142	LA	ANTENUCCI BLVD.	11+81		LT													1									
142	LA	ANTENUCCI BLVD.	11+81		RT													1									
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.

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SHEET NO.	REF. NO.	LOCATION	STATION FROM	STATION TO	SIDE	620 DELINEATOR, POST GROUND MOUNTED	620 REMOVAL OF DELINEATOR	646 EDGE LINE, 4" (WHITE)	646 EDGE LINE, 4" (YELLOW)	646 LANE LINE, 4"	646 CENTER LINE, DOUBLE SOLID	646 CHANNELIZING LINE, 8"	646 STOP LINE	646 CROSSWALK LINE	646 TRANSVERSE/DIAGONAL LINE (WHITE)	646 TRANSVERSE/DIAGONAL LINE (YELLOW)	646 ISLAND MARKING (YELLOW)	646 LANE ARROW	646 DOTTED LINE	646 REMOVAL OF PAVEMENT MARKING	646 REMOVAL OF PAVEMENT MARKING	646 REMOVAL OF PAVEMENT MARKING	646 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													1									
144	LA	TRANSPORTATION BLVD.	18+26		RT													1									
144	LA	TRANSPORTATION BLVD.	18+92		RT													1									
144	LA	TRANSPORTATION BLVD.	19+58		RT													1									
144	LA	TRANSPORTATION BLVD.	20+24		RT													1									
144	LA	TRANSPORTATION BLVD.	20+90		RT													1									
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								39														
145	SL	TRANSPORTATION BLVD.	86+86		LT/RT								39														
145	CW	TRANSPORTATION BLVD.	86+73		LT/RT									129													
145	LA	TRANSPORTATION BLVD.	14+96		RT													1									
145	LA	TRANSPORTATION BLVD.	15+62		RT													1									
145	LA	TRANSPORTATION BLVD.	16+28		RT													1									
145	LA	TRANSPORTATION BLVD.	16+94		RT													1									
145	LA	TRANSPORTATION BLVD.	86+96		LT													1									
145	LA	TRANSPORTATION BLVD.	87+62		LT													1									
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									49													
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				138																		
145	CH	I-480 WB EXIT RAMP	56+12	57+50	RT							138															
145	CH	I-480 WB EXIT RAMP	56+12	57+50	RT							138															
145	SL	I-480 WB EXIT RAMP	56+10		LT/RT								43														
145	CW	I-480 WB EXIT RAMP	55+54		LT/RT									181													
145	LA	I-480 WB EXIT RAMP	56+20		LT													1									
145	LA	I-480 WB EXIT RAMP	56+20		RT													1									
145	LA	I-480 WB EXIT RAMP	56+20		RT													1									
145	LA	I-480 WB EXIT RAMP	56+86		LT													1									
145	LA	I-480 WB EXIT RAMP	56+86		RT													1									
145	LA	I-480 WB EXIT RAMP	56+86		RT													1									
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							41															
145	CH	PUBLIC ROAD 1	54+66	55+07	RT							41															
145	CH	PUBLIC ROAD 1	54+66	55+07	RT							41															
145	SL	PUBLIC ROAD 1	55+09		LT/RT								59														
145	CW	PUBLIC ROAD 1	55+22		LT/RT									223													
145	TW	PUBLIC ROAD 1	54+66	55+07	RT										51												
145	LA	PUBLIC ROAD 1	54+99		RT													1									
145	LA	PUBLIC ROAD 1	54+99		RT													1									
145	LA	PUBLIC ROAD 1	54+99		RT													1									
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.

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SHEET NO.	REF. NO.	LOCATION	STATION FROM	STATION TO	SIDE	620 DELINEATOR, POST GROUND MOUNTED	620 REMOVAL OF DELINEATOR	646 EDGE LINE, 4" (WHITE)	646 EDGE LINE, 4" (YELLOW)	646 LANE LINE, 4"	646 CENTER LINE, DOUBLE SOLID	646 CHANNELIZING LINE, 8"	646 STOP LINE	646 CROSSWALK LINE	646 TRANSVERSE/DIAGONAL LINE (WHITE)	646 TRANSVERSE/DIAGONAL LINE (YELLOW)	646 ISLAND MARKING (YELLOW)	646 LANE ARROW	646 DOTTED LINE	646 REMOVAL OF PAVEMENT MARKING	646 REMOVAL OF PAVEMENT MARKING	646 REMOVAL OF PAVEMENT MARKING	646 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													1									
146	LA	TRANSPORTATION BLVD.	88+94		LT													1									
146	LA	TRANSPORTATION BLVD.	89+60		LT													1									
146	LA	TRANSPORTATION BLVD.	90+26		LT													1									
146	LA	TRANSPORTATION BLVD.	90+92		LT													1									
146	LA	TRANSPORTATION BLVD.	91+58		LT													1									
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													1									
147	LA	TRANSPORTATION BLVD.	94+59		LT													1									
147	LA	TRANSPORTATION BLVD.	94+84		RT													1									
147	LA	TRANSPORTATION BLVD.	95+19		RT													1									
147	LA	TRANSPORTATION BLVD.	95+19		RT													1									
147	LA	TRANSPORTATION BLVD.	95+50		RT													1									
147	LA	TRANSPORTATION BLVD.	95+85		RT													1									
147	LA	TRANSPORTATION BLVD.	95+85		RT													1									
147	LA	TRANSPORTATION BLVD.	96+16		LT													1									
147	LA	TRANSPORTATION BLVD.	96+16		RT													1									
147	LA	TRANSPORTATION BLVD.	96+51		RT													1									
147	LA	TRANSPORTATION BLVD.	96+51		RT													1									
147	LA	TRANSPORTATION BLVD.	96+82		LT													1									
147	LA	TRANSPORTATION BLVD.	96+82		RT													1									
147	LA	TRANSPORTATION BLVD.	97+17		RT													1									
147	LA	TRANSPORTATION BLVD.	97+17		RT													1									
147	LA	TRANSPORTATION BLVD.	97+48		LT													1									
147	LA	TRANSPORTATION BLVD.	97+48		RT													1									
147	LA	TRANSPORTATION BLVD.	97+83		RT													1									
147	LA	TRANSPORTATION BLVD.	97+83		RT													1									
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													1									
147	LA	ODOT DRIVE	200+55		LT													1									
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.

SHEET NO.	REF. NO.	LOCATION	STATION FROM	STATION TO	SIDE	620 DELINEATOR, POST GROUND MOUNTED EACH	620 REMOVAL OF DELINEATOR EACH	646 EDGE LINE, 4" (WHITE) FT	646 EDGE LINE, 4" (YELLOW) FT	646 LANE LINE, 4" FT	646 CENTER LINE, DOUBLE SOLID FT	646 CHANNELIZING LINE, 8" FT	646 STOP LINE FT	646 CROSSWALK LINE FT	646 TRANSVERSE/DIAGONAL LINE (WHITE) FT	646 TRANSVERSE/DIAGONAL LINE (YELLOW) FT	646 ISLAND MARKING (YELLOW) SF	646 LANE ARROW EACH	646 DOTTED LINE FT	646 REMOVAL OF PAVEMENT MARKING EACH	646 REMOVAL OF PAVEMENT MARKING FT	646 REMOVAL OF PAVEMENT MARKING SF	646 REMOVAL OF PAVEMENT MARKING 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													1									
148	LA	TRANSPORTATION BLVD.	98+14		RT													1									
148	LA	TRANSPORTATION BLVD.	98+49		RT													1									
148	LA	TRANSPORTATION BLVD.	98+49		RT													1									
148	LA	TRANSPORTATION BLVD.	98+80		LT													1									
148	LA	TRANSPORTATION BLVD.	98+80		RT													1									
148	LA	TRANSPORTATION BLVD.	99+15		RT													1									
148	LA	TRANSPORTATION BLVD.	99+15		RT													1									
148	DW	TRANSPORTATION BLVD.	98+88		LT/RT														148								
148	DW	TRANSPORTATION BLVD.	98+90		LT/RT														166								
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											90											
150	LL	GRANGER RD.	21+00	24+95	RT					395																	
150	LL	GRANGER RD.	24+35	26+00	LT					165									165								
150	CDS	GRANGER RD.	21+00	26+00	LT/RT						500								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											24											
150	IY	GRANGER RD.	25+00		LT/RT												57										
150	LA	GRANGER RD.	21+13		CEN													1									
150	LA	GRANGER RD.	21+13		RT													1									
150	LA	GRANGER RD.	22+50		RT													1									
150	LA	GRANGER RD.	22+50		LT													1									
150	LA	GRANGER RD.	23+16		RT													1									
150	LA	GRANGER RD.	23+16		LT													1									
150	LA	GRANGER RD.	23+82		RT													1									
150	LA	GRANGER RD.	23+82		LT													1									
150	LA	GRANGER RD.	25+87		RT													1									
150	CH	PUBLIC RD. #2	98+54	99+40	RT							86															
150	SL	PUBLIC RD. #2	99+42		RT								31														
150	CW	PUBLIC RD. #2	99+54		LT/RT									188													
150	LA	PUBLIC RD. #2	99+32		RT													1									
150	LA	PUBLIC RD. #2	99+32		RT													1									
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.

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SHEET NO.	REF. NO.	LOCATION	STATION FROM	STATION TO	SIDE	620 DELINEATOR, POST GROUND MOUNTED EACH	620 REMOVAL OF DELINEATOR EACH	646 EDGE LINE, 4" (WHITE) FT	646 EDGE LINE, 4" (YELLOW) FT	646 LANE LINE, 4" FT	646 CENTER LINE, DOUBLE SOLID FT	646 CHANNELIZING LINE, 8" FT	646 STOP LINE FT	646 CROSSWALK LINE FT	646 TRANSVERSE/DIAGONAL LINE (WHITE) FT	646 TRANSVERSE/DIAGONAL LINE (YELLOW) FT	646 ISLAND MARKING (YELLOW) SF	646 LANE ARROW EACH	646 DOTTED LINE FT	646 REMOVAL OF PAVEMENT MARKING EACH	646 REMOVAL OF PAVEMENT MARKING FT	646 REMOVAL OF PAVEMENT MARKING SF	646 REMOVAL OF PAVEMENT MARKING FT				
151	LL	GRANGER RD.	26+00	26+86	LT					86																	
151	CDS	GRANGER RD.	26+00	26+86	RT/LT						86																
151	CH	GRANGER RD.	26+00	26+17	LT							17															
151	CH	GRANGER RD.	26+00	26+86	RT							86															
152	EW	TRANSPORTATION BLVD.	25+92	25+92	RT			126																			
152	EY	TRANSPORTATION BLVD.	25+47	25+47	RT				126																		
152	CH	TRANSPORTATION BLVD.	25+58	25+58	RT							126															
152	CH	TRANSPORTATION BLVD.	25+70	25+70	RT							126															
152	CH	TRANSPORTATION BLVD.	25+82	25+82	RT							126															
152	LA	TRANSPORTATION BLVD.	25+52		RT													1									
152	LA	TRANSPORTATION BLVD.	25+64		RT													1									
152	LA	TRANSPORTATION BLVD.	25+76		RT													1									
152	LA	TRANSPORTATION BLVD.	25+87		RT													1									
153	CDS	ANTENUCCI BLVD.	12+00	14+91	RT/LT						291																
153	CDS	ANTENUCCI BLVD.	12+00	14+91	RT/LT						291																
153	CDS	ANTENUCCI BLVD.	15+33	16+81	LT						148																
153	CDS	ANTENUCCI BLVD.	15+33	16+81	RT/LT						148																
153	CH	ANTENUCCI BLVD.	12+00	12+97	LT							97															
153	CH	ANTENUCCI BLVD.	12+00	13+02	LT							102															
153	CH	ANTENUCCI BLVD.	12+00	13+73	LT							173															
153	CH	ANTENUCCI BLVD.	14+53	14+91	RT							38															
153	TW	ANTENUCCI BLVD.	12+00	13+02	LT										47												
153	TY	ANTENUCCI BLVD.	12+00	14+91	RT/LT											139											
153	TY	ANTENUCCI BLVD.	15+33	16+81	RT/LT											47											
153	IY	ANTENUCCI BLVD.	14+93		LT												10										
153	IY	ANTENUCCI BLVD.	15+28		LT/RT												47										
153	LA	ANTENUCCI BLVD.	12+47		LT													1									
153	LA	ANTENUCCI BLVD.	12+47		LT													1									
153	LA	ANTENUCCI BLVD.	12+47		LT													1									
153	LA	ANTENUCCI BLVD.	13+13		LT													1									
153	LA	ANTENUCCI BLVD.	13+13		LT													1									
153	LA	ANTENUCCI BLVD.	14+81		RT													1									
153	DW	ANTENUCCI BLVD.	13+73	14+33	LT														60								
153	DW	ANTENUCCI BLVD.	13+93	14+53	RT														60								
TOTAL FEET								252		86	964	891			233		57	10	120								
TOTAL MILES								0.05		0.02	0.19																
TOTALS CARRIED TO GENERAL SUMMARY								0.05		0.02	0.19	891			233		57	10	120								

CALCULATED SLB
CHECKED TJR

PAVEMENT MARKING SUBSUMMARY - 6 OF 7

CUY-480/
TRANSPORTATION BLVD.

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SHEET NO.	REF. NO.	LOCATION	STATION FROM	STATION TO	SIDE	620 DELINEATOR, POST GROUND MOUNTED EACH	620 REMOVAL OF DELINEATOR EACH	646 EDGE LINE, 4" (WHITE) FT	646 EDGE LINE, 4" (YELLOW) FT	646 LANE LINE, 4" FT	646 CENTER LINE, DOUBLE SOLID FT	646 CHANNELIZING LINE, 8" FT	646 STOP LINE FT	646 CROSSWALK LINE FT	646 TRANSVERSE/DIAGONAL LINE (WHITE) FT	646 TRANSVERSE/DIAGONAL LINE (YELLOW) FT	646 ISLAND MARKING (YELLOW) SF	646 LANE ARROW EACH	646 DOTTED LINE FT	646 REMOVAL OF PAVEMENT MARKING EACH	646 REMOVAL OF PAVEMENT MARKING FT	646 REMOVAL OF PAVEMENT MARKING SF	646 REMOVAL OF PAVEMENT MARKING FT
154	EW	I-480 WB EXIT RAMP	57+50	63+23	LT/RT			573															
154	EY	I-480 WB EXIT RAMP	57+50	63+23	RT				573														
154	EY	I-480 WB EXIT RAMP	59+37	62+50	RT				313														
154	CH	I-480 WB EXIT RAMP	57+50	60+99	LT/RT							349											
154	CH	I-480 WB EXIT RAMP	57+50	59+27	RT							177											
154	TY	I-480 WB EXIT RAMP	59+37	62+50	RT											62							
154	LA	I-480 WB EXIT RAMP	57+52		LT													1					
154	LA	I-480 WB EXIT RAMP	57+52		RT													1					
154	LA	I-480 WB EXIT RAMP	57+52		RT													1					
154	LA	I-480 WB EXIT RAMP	58+18		LT													1					
154	LA	I-480 WB EXIT RAMP	58+18		RT													1					
154	LA	I-480 WB EXIT RAMP	58+18		RT													1					
154	LA	I-480 WB EXIT RAMP	58+84		LT													1					
154	LA	I-480 WB EXIT RAMP	58+84		LT													1					
154	LA	I-480 WB EXIT RAMP	59+50		LT													1					
154	LA	I-480 WB EXIT RAMP	59+50		LT													1					
154	LA	I-480 WB EXIT RAMP	60+16		LT													1					
154	LA	I-480 WB EXIT RAMP	60+16		RT													1					
154	LA	I-480 WB EXIT RAMP	60+82		LT													1					
154	LA	I-480 WB EXIT RAMP	60+82		RT													1					
154	DW	I-480 WB EXIT RAMP	59+27	59+87	RT																		
154	DW	I-480 WB EXIT RAMP	60+99	61+68	LT/RT																		
154		I-480 WB EXIT RAMP			LT	2	2																
155	EW	ODOT DRIVE	204+87	205+02	RT			15															
155	EW	ODOT DRIVE	204+93	205+02	LT/RT			29															
155	EW	ODOT DRIVE	204+87	204+93	RT/LT			22															
155	EY	ODOT DRIVE	203+88	204+54	LT				66														
155	EY	ODOT DRIVE	203+89	204+60	RT/LT				140														
155	CDS	ODOT DRIVE	201+50	203+88	LT/CEN						238												
155	CDS	ODOT DRIVE	203+54	203+89	RT/CEN						35												
155	SL	ODOT DRIVE	205+02		LT								16										
155	SL	ODOT DRIVE	204+93		LT/RT								14										
155	TW	ODOT DRIVE	204+85	205+05	RT										30								
155	TY	ODOT DRIVE	203+54	204+79	LT/RT											236							
TOTAL FEET						2	2	1731			273	526	30		328			14					
TOTAL MILES								0.33			0.06												
TOTALS CARRIED TO GENERAL SUMMARY						2	2	0.33			0.06	526	30		328			14					

CALCULATED SLB
CHECKED TJR

PAVEMENT MARKING SUBSUMMARY - 7 OF 7

CUY-480/
TRANSPORTATION BLVD.

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SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630 GROUND MOUNTED SUPPORT, NO. 2 POST, AS PER PLAN FT	630 GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN FT	630 GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN FT	630 ONE WAY SUPPORT, NO. 3 POST, AS PER PLAN FT	630 SIGN POST REFLECTOR EACH	630 SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN EACH	630 SIGN, FLAT SHEET SF	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED SIGN AND REERECTION EACH	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH	630 REMOVAL OF OVERHEAD MOUNTED SIGN AND REERECTION EACH	630 REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL EACH	630 REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL EACH	630 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						10.0							
143	S-2	I-480 EB ENTRANCE RAMP	44+32	RT	W3-2-36	36" X 36"	14.8						9.0							
143	S-3	I-480 EB ENTRANCE RAMP	45+37	RT	W11-2-36	36" X 36"		14.8/14.8					9.0							
					W16-7PL-24	24" X 12"							2.0							
143	S-4	I-480 EB ENTRANCE RAMP	45+37	LT	W11-2-36	36" X 36"		14.8/14.8					9.0							
					W16-7PR-24	24" X 12"							2.0							
143	S-28	SP-1			D3-1							1								
143	S-29	SP-4			D3-1							1								
143	R-1	TRANSPORTATION BLVD.		LT	W9-1									1		1				
143	R-2	TRANSPORTATION BLVD.		LT	D3-1												1			
143	R-3	I-480 EB ENTRANCE RAMP		LT	W3-2									1		2				
143	R-4	I-480 EB ENTRANCE RAMP		RT	W3-2									1		2				
143	R-5	TRANSPORTATION BLVD.		RT	D3-1												1			
143	R-6	TRANSPORTATION BLVD.		RT	SPECIAL									1		2				
145	S-5	I-480 WB EXIT RAMP	56+10	RT	R5-10e-30	30" X 30"	13.0						6.3							
145	S-5A	I-480 WB ENTRANCE RAMP	66+35	RT	W11-2-36	36" X 36"		14.8/14.8					9.0							
					W16-7PR-24	24" X 12"							2.0							
145	S-5B	I-480 WB ENTRANCE RAMP	66+35	LT	W11-2-36	36" X 36"		14.8/14.8					9.0							
					W16-7PL-24	24" X 12"							2.0							
145	S-5C	I-480 WB ENTRANCE RAMP	67+35	LT	W3-2-36	36" X 36"	14.8						9.0							
145	S-6	TRANSPORTATION BLVD.	14+50	LT	R9-3-18	18" X 18"	13.1						2.3							
					R9-3bPR-18	18" X 12"							1.5							
145	S-7	I-480 WB EXIT RAMP	56+10	LT	R5-1-36	36" X 36"				15.1/13.0	2		9.0							
					R6-1R-54	54" X 18"							6.8							
					R6-1L-54	54" X 18"							6.8							
145	S-8	I-480 WB EXIT RAMP	57+21	LT	D9-2-30	30" X 30"	14.9/14.9						6.3							
					M5-1R-30	30" X 21"							4.4							
145	S-9	TRANSPORTATION BLVD.	87+37	RT	R2-1-30	30" X 36"		13.5					7.5							
145	S-10	TRANSPORTATION BLVD.	15+40	RT	R7-1-12	12" X 18"	12.0						1.5							
145	S-10A	TRANSPORTATION BLVD.	14+75	RT	R9-3-18	18" X 18"	13.1						2.3							
					R9-3bPL-18	18" X 12"							1.5							
145	S-30	SP-1			D3-1-126	126" X 24"						1	21.0							
145	S-31	SP-4			D3-1-126	126" X 24"						1	21.0							
145	R-8	I-480 WB EXIT RAMP		RT	R5-10e									1		1				
145	R-9	TRANSPORTATION BLVD.		LT	R5-1									1		2				
					R6-1R									1						
					R6-1L									1						
					R3-H8bd									1						
145	R-10	TRANSPORTATION BLVD.		LT	D9-2									1		1				
					M5-1R									1						
145	R-11	TRANSPORTATION BLVD.		RT	R2-1														1	
145	R-12	TRANSPORTATION BLVD.		RT	D3-1													1		
145	R-13	TRANSPORTATION BLVD.		RT	R8-3									1		1				
145	R-13A	I-480 WB ENTRANCE RAMP		RT	W3-2									1		2				
145	R-13B	I-480 WB ENTRANCE RAMP		LT	W3-2									1		2				
TOTALS CARRIED TO GENERAL SUMMARY							136.6	131.9		28.1	2	4	170.2	14		16	2	1	1	

CALCULATED SLB
CHECKED TJR

SIGNING SUBSUMMARY - 1 OF 3

CUY-480/ TRANSPORTATION BLVD.

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630 GROUND MOUNTED SUPPORT, NO. 2 POST, AS PER PLAN FT	630 GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN FT	630 GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN FT	630 ONE WAY SUPPORT, NO. 3 POST, AS PER PLAN FT	630 SIGN POST REFLECTOR EACH	630 SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN EACH	630 SIGN, FLAT SHEET SF	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED SIGN AND REERECTION EACH	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH	630 REMOVAL OF OVERHEAD MOUNTED SIGN AND REERECTION EACH	630 REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL EACH	630 REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL EACH	630 REMOVAL OF POLE MOUNTED SIGN AND REERECTION EACH
146	S-11	TRANSPORTATION BLVD.	89+36	RT	R7-1-12	12" X 18"	12.0						1.5							
146	S-12	TRANSPORTATION BLVD.	91+25	RT	R7-1-12	12" X 18"		14.6					1.5							
					SPECIAL															
146	S-13	TRANSPORTATION BLVD.	92+10	RT	R3-H8cg-48	48" X 30"	13.0/13.0						10.0							
146	S-14	TRANSPORTATION BLVD.	92+60	LT	R3-H8cg-48	48" X 30"	13.0/13.0						10.0							
146	S-16	TRANSPORTATION BLVD.	90+75	LT	R7-1-12	12" X 18"	12.0						1.5							
146	S-17	TRANSPORTATION BLVD.	89+00	LT	R10-H7a-24	24" X 30"	13.0						5.0							
146	S-18	TRANSPORTATION BLVD.	88+25	LT	R7-1-12	12" X 18"	12.0						1.5							
146	R-15	TRANSPORTATION BLVD.		RT	R8-3														1	
146	R-16	TRANSPORTATION BLVD.		RT	R10-H7a									1		1				
146	R-17	TRANSPORTATION BLVD.		RT	R8-3														1	
					SPECIAL															1
146	R-18	TRANSPORTATION BLVD.		RT	R1-1									1		1				
146	R-19	TRANSPORTATION BLVD.		RT	SPECIAL									1		1				
146	R-20	TRANSPORTATION BLVD.		LT	R8-3														1	
146	R-21	TRANSPORTATION BLVD.		LT	R8-3														1	
146	R-22	TRANSPORTATION BLVD.		LT	R10-H7a									1		1				
146	R-23	TRANSPORTATION BLVD.		LT	R8-3														1	
147	S-20	ODOT DRIVE	200+94	LT	R3-H8bj-36	36" X 30"		13.0					7.5							
147	S-21	TRANSPORTATION BLVD.	95+51	LT	R3-H8cg-48	48" X 30"	13.0/13.0						10.0							
147	S-32	SP-1			D3-1-126	126" X 24"						1	21.0							
147	S-33	SP-4			D3-1-126	126" X 24"						1	21.0							
149	S-34	GRANGER RD.	18+80	LT	R7-1-12	12" X 18"	12.0						1.5							
149	S-35	GRANGER RD.	17+50	RT	R7-1-12	12" X 18"	12.0						1.5							
149	S-36	GRANGER RD.	19+00	RT	R7-1-12	12" X 18"	12.0						1.5							
149	S-37	GRANGER RD.	20+01	RT	R3-H8da-54	54" X 30"	13.0 / 13.0						11.3							
149	R-30	GRANGER RD.		LT	R8-3														1	
149	R-31	GRANGER RD.		RT	R8-3														1	
149	R-32	GRANGER RD.		RT	R8-3														1	
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

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SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630 GROUND MOUNTED SUPPORT, NO. 2 POST, AS PER PLAN FT	630 GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN FT	630 GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN FT	630 ONE WAY SUPPORT, NO. 3 POST, AS PER PLAN FT	630 SIGN POST REFLECTOR EACH	630 SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN EACH	630 SIGN, FLAT SHEET SF	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED SIGN AND REERECTION EACH	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH	630 REMOVAL OF OVERHEAD MOUNTED SIGN AND REERECTION EACH	630 REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL EACH	630 REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL EACH	630 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

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3/1/2017
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SHEET NO.	REFERENCE NO.	LOCATION	SIDE	DETAIL PAGE	STATION	625 GROUND ROD EACH	630 GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W6X9 FT	630 BREAKAWAY STRUCTURAL BEAM CONNECTION EACH	630 OVERHEAD SIGN SUPPORT, TYPE TC-16.21, DESIGN 11 EACH	630 OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 4 EACH	630 OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 5 EACH	630 SIGN HANGER ASSEMBLY, SPAN WIRE EACH	630 SIGN ATTACHMENT ASSEMBLY, MAST ARM EACH	630 SIGN, FLAT SHEET SF	630 SIGN, GROUND MOUNTED EXTRUSHEET SF	630 SIGN, OVERHEAD EXTRUSHEET SF	630 GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION EACH	630 RIGID OVERHEAD SIGN SUPPORT FOUNDATION EACH	630 REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL EACH	630 REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL EACH	630 REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL 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								
													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	
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 SIGN AND BEAM SUBSUMMARY

CUY-480/
TRANSPORTATION BLVD.

MATCHLINE A, 150' RT. OF ℄ 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.

Ex LA

Ex R/W

℄ R/W I-480 EB ON RAMP

45

℄ R/W & CONST. TRANSPORTATION BLVD.

26 25 24 23

℄ R/W ANTENUCCI BLVD.

Ex R/W Ex R/W

BEGIN LANE LINE REMOVAL
STA. 11+03

Ex R/W Ex R/W

Ex LA Ex LA

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

N

0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED BEB
CHECKED AKF

PAVEMENT MARKING REMOVAL PLAN
CUY-480/ TRANSPORTATION BLVD. / I-480 WB RAMPS
ANTENUCCI BLVD.

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9:15:39 AM
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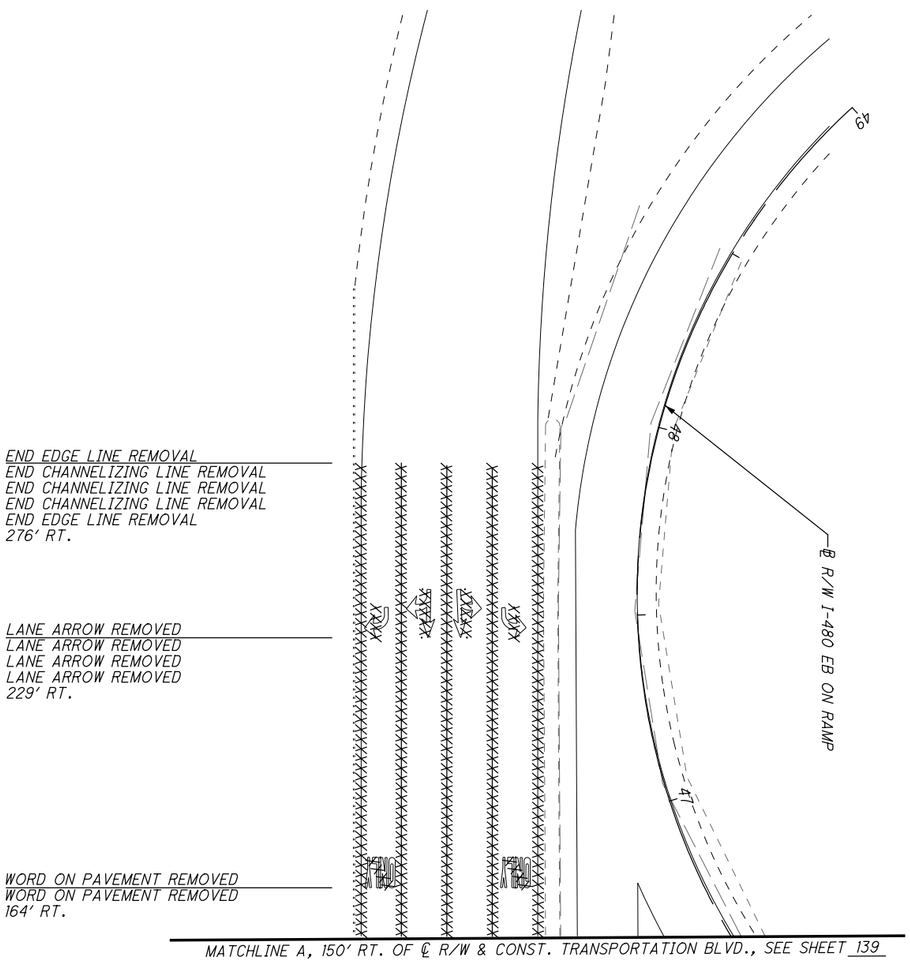

LEGEND

XXX EXISTING PAVEMENT MARKINGS TO BE REMOVED

140 / 225	CUY-480/ TRANSPORTATION BLVD.	PAVEMENT MARKING REMOVAL PLAN BEGIN TO 150' RT. OF TRANSPORTATION BLVD.	CALCULATED BEB / CHECKED AKF	0 10 20 40 HORIZONTAL SCALE IN FEET

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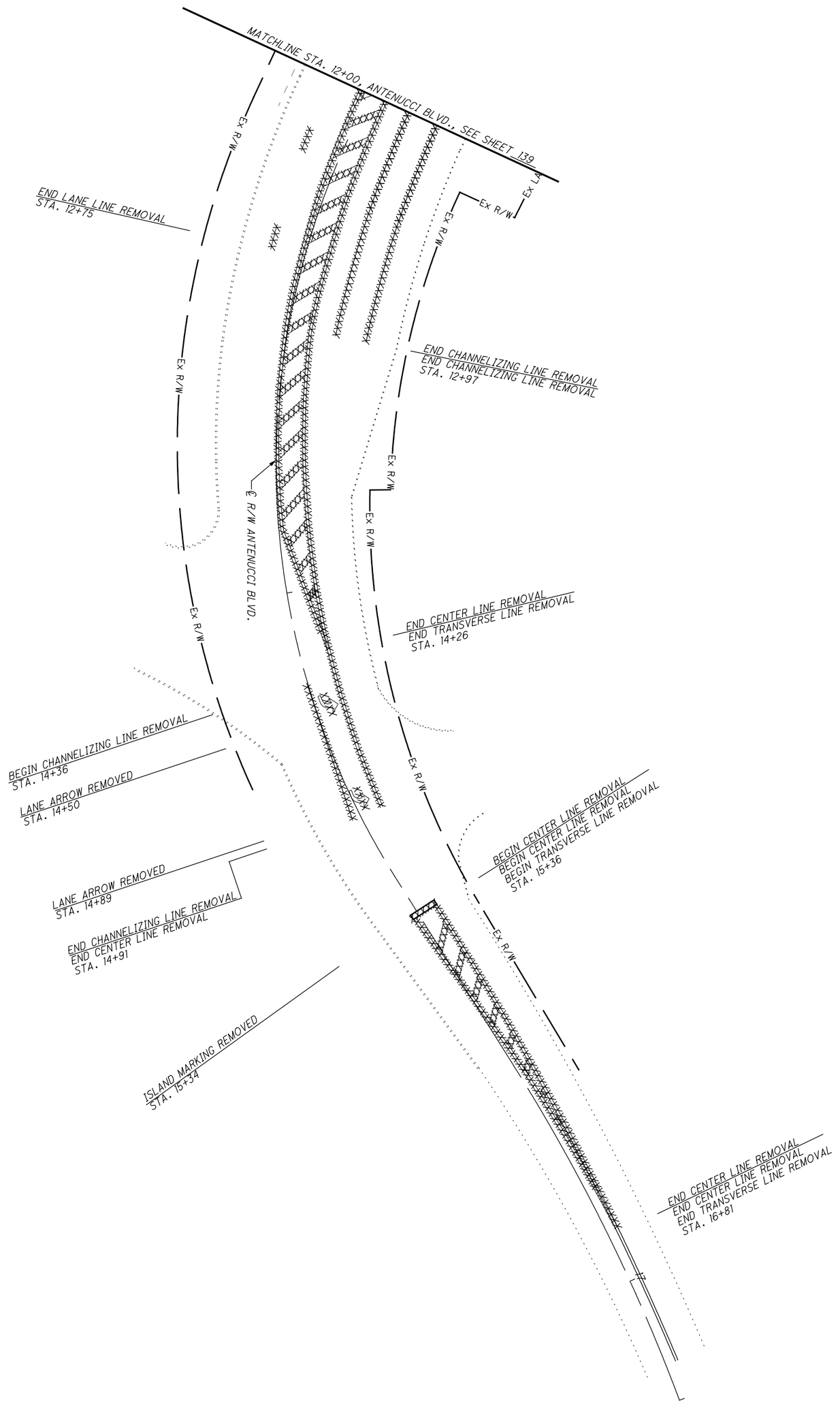


LEGEND

XXX EXISTING PAVEMENT MARKINGS TO BE REMOVED

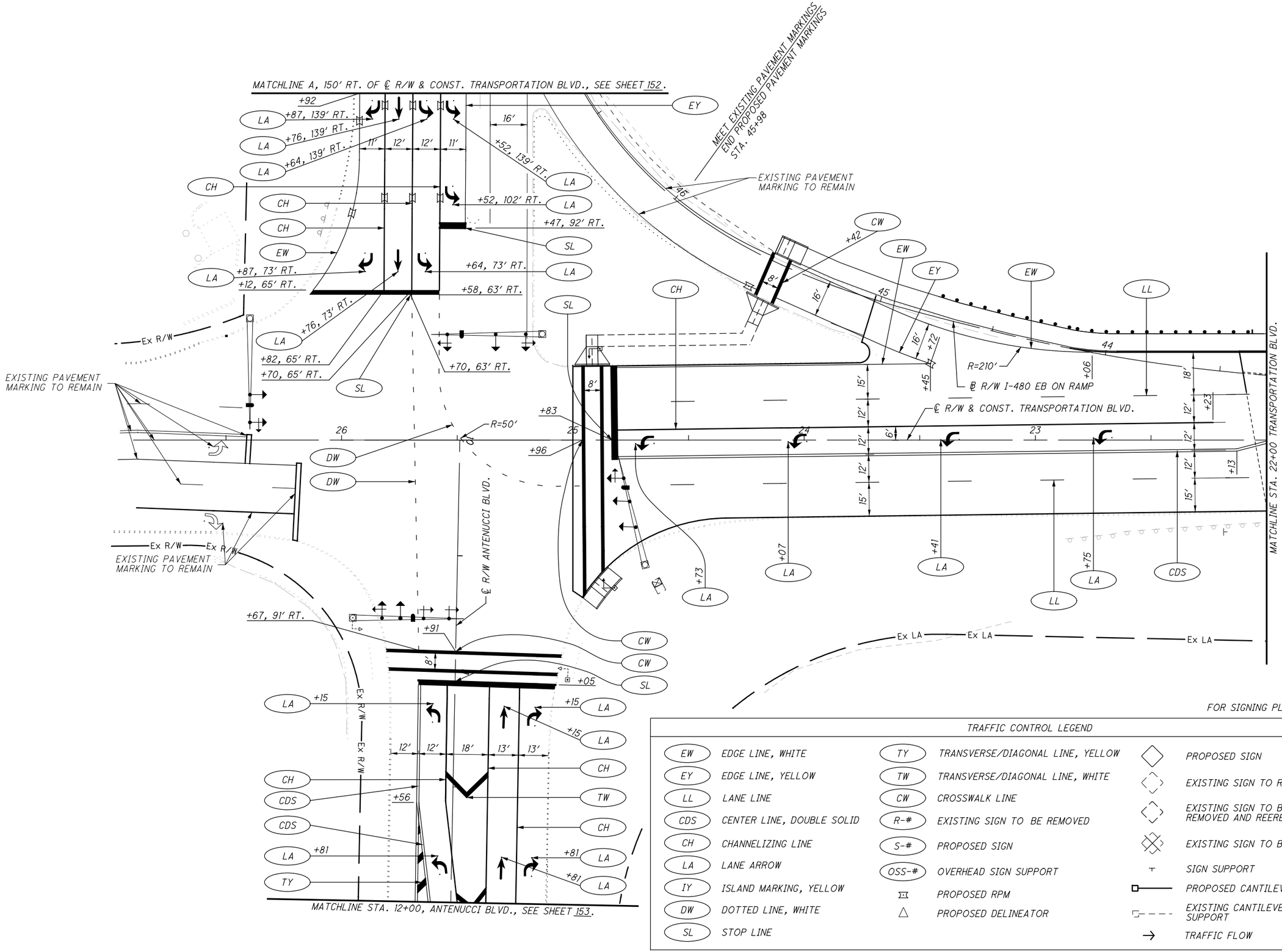
CUY-480/
TRANSPORTATION BLVD.

PAVEMENT MARKING REMOVAL PLAN
STA. 12+00 TO END

CALCULATED BEB
CHECKED AKF

0 10 20 40
HORIZONTAL SCALE IN FEET

N



FOR SIGNING PLAN, SEE SHEET 143.

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				

N

0 10 20 40 HORIZONTAL SCALE IN FEET

CALCULATED BEB CHECKED AKF

PAVEMENT MARKING PLAN
BEGIN TO STA. 22+00

CUY-480/ TRANSPORTATION BLVD.

142 / 225

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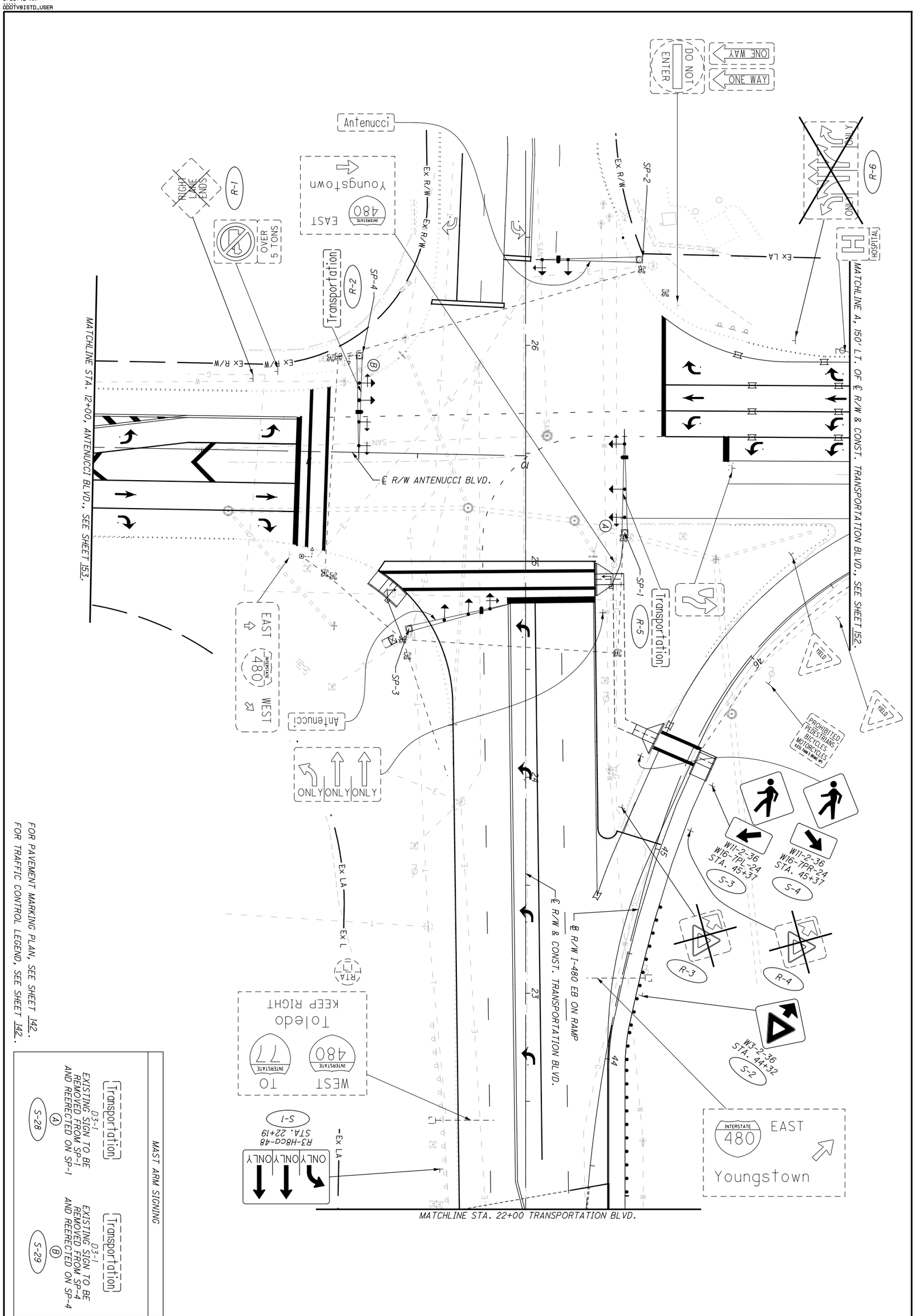

FOR PAVEMENT MARKING PLAN, SEE SHEET 142.
FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.

MAST ARM SIGNING

Transportation D3-1	EXISTING SIGN TO BE REMOVED FROM SP-3 AND REERECTED ON SP-1 (A) S-28
Transportation D3-1	EXISTING SIGN TO BE REMOVED FROM SP-4 AND REERECTED ON SP-4 (B) S-29

CUY-480/
TRANSPORTATION BLVD.

SIGNING PLAN
BEGIN TO STA. 22+00

CALCULATED BEB
CHECKED AKF

0 10 20 40
HORIZONTAL SCALE IN FEET

N

FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED BEB
CHECKED AKF

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

CUY-480/
TRANSPORTATION BLVD.

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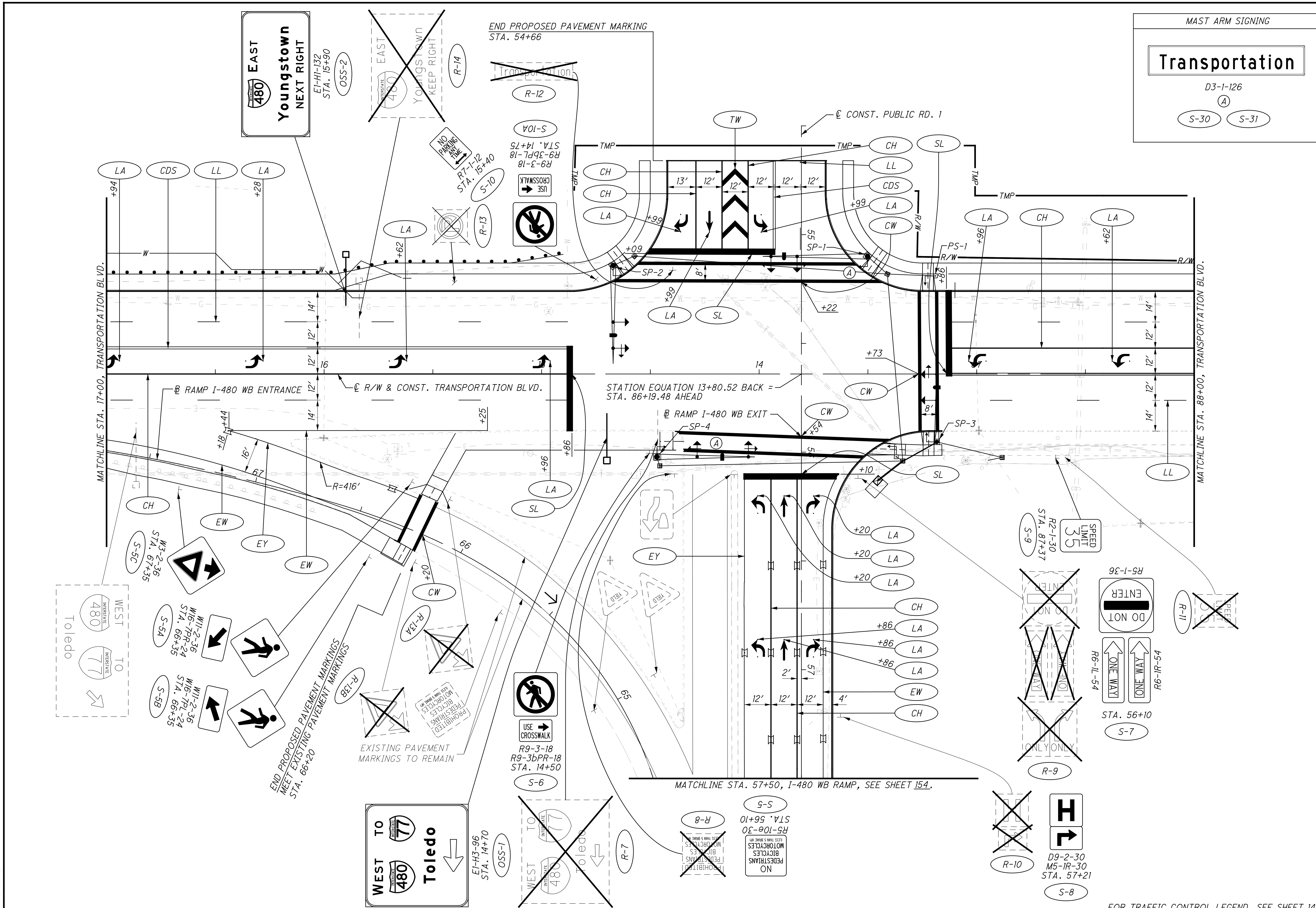

FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED BEB
CHECKED AKF

TRAFFIC CONTROL PLAN
STA. 17+00 TO STA. 88+00

CUY-480/
TRANSPORTATION BLVD.

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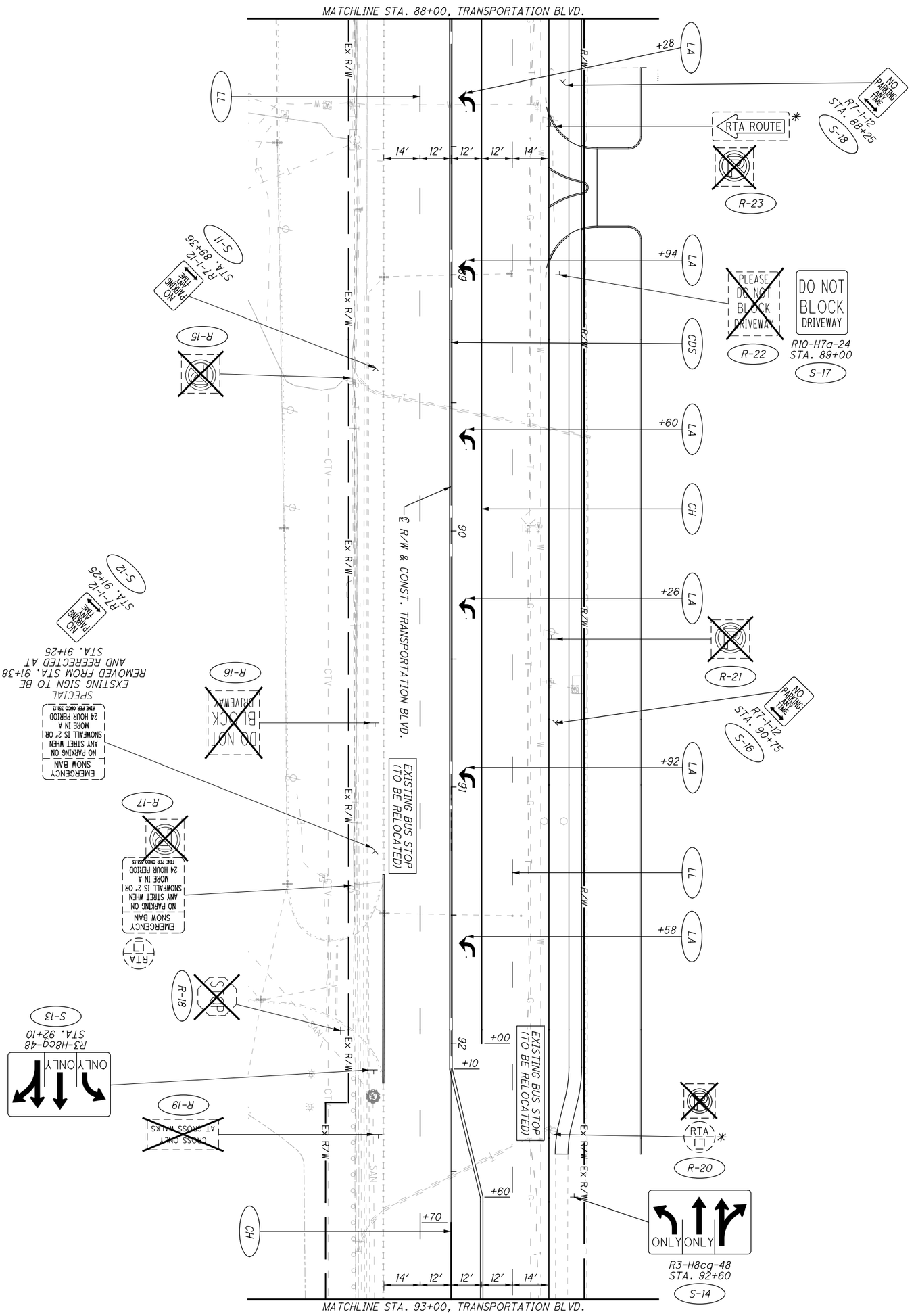


* RTA SIGNS TO BE REMOVED BY OTHERS.
FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.

CUY-480/
TRANSPORTATION BLVD.

TRAFFIC CONTROL PLAN
STA. 88+00 TO STA. 93+00

CALCULATED BEB
CHECKED AKF

0 10 20 40
HORIZONTAL SCALE IN FEET

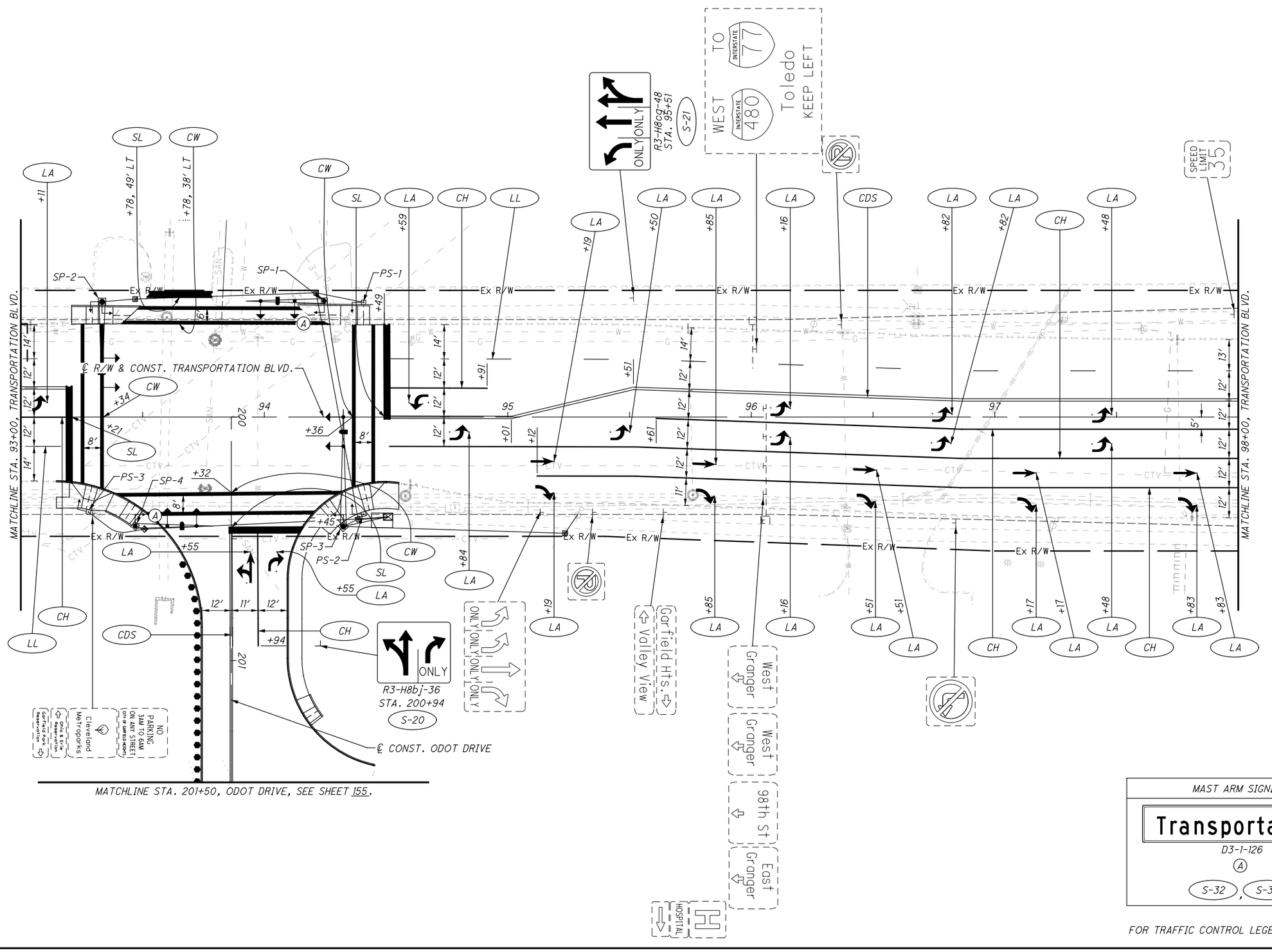
N

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

CUY-480/
TRANSPORTATION BLVD.

CALCULATED BEB
CHECKED AKF

HORIZONTAL SCALE IN FEET
0 10 20 40



MAST ARM SIGNING

Transportation

D3-1-126

Ⓐ

S-32, S-33

FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.

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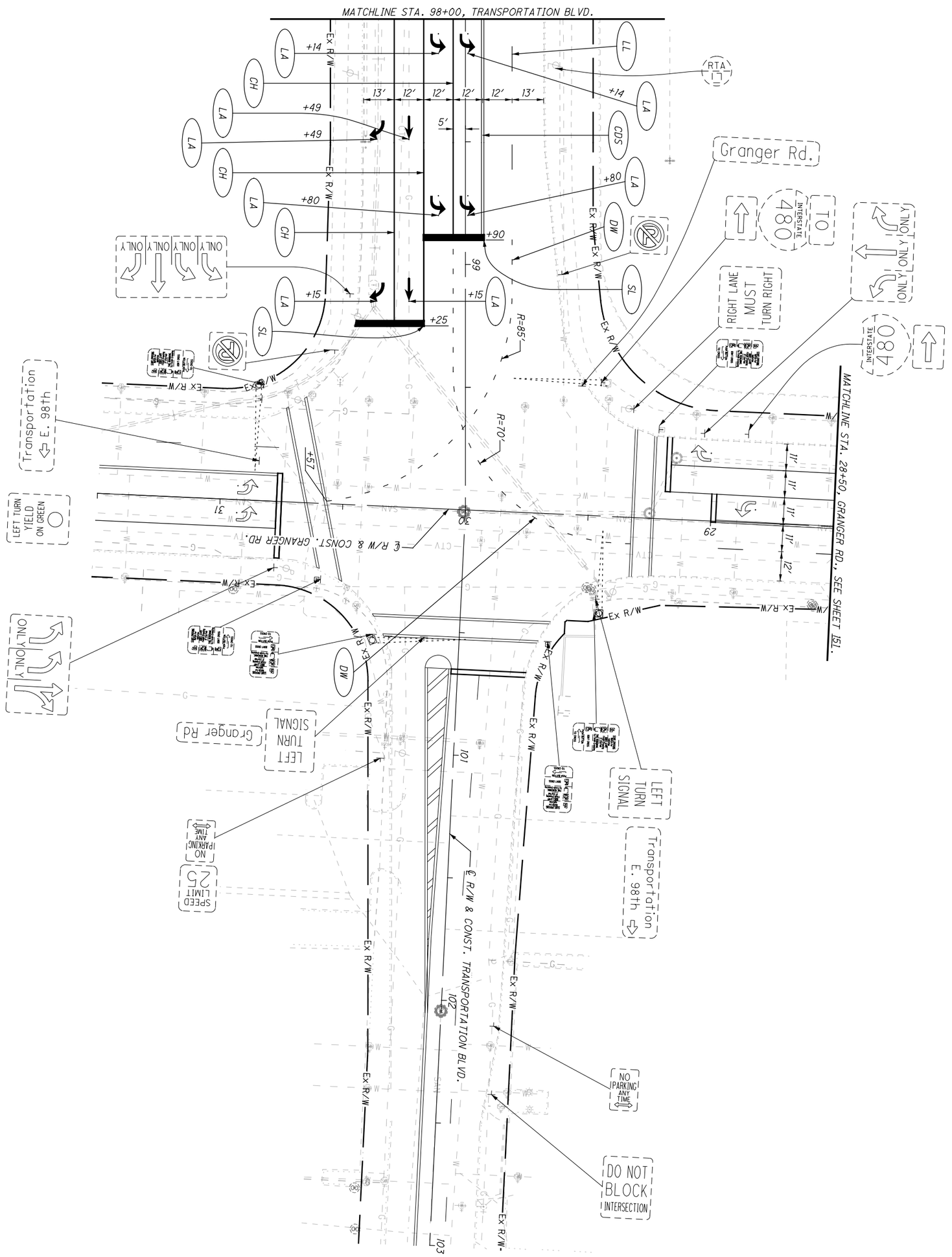

FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.

148
225

CUY-480/
TRANSPORTATION BLVD.

TRAFFIC CONTROL PLAN
STA. 98+00 TO END

CALCULATED BEB
CHECKED AKF

0 10 20 40
HORIZONTAL SCALE IN FEET

N

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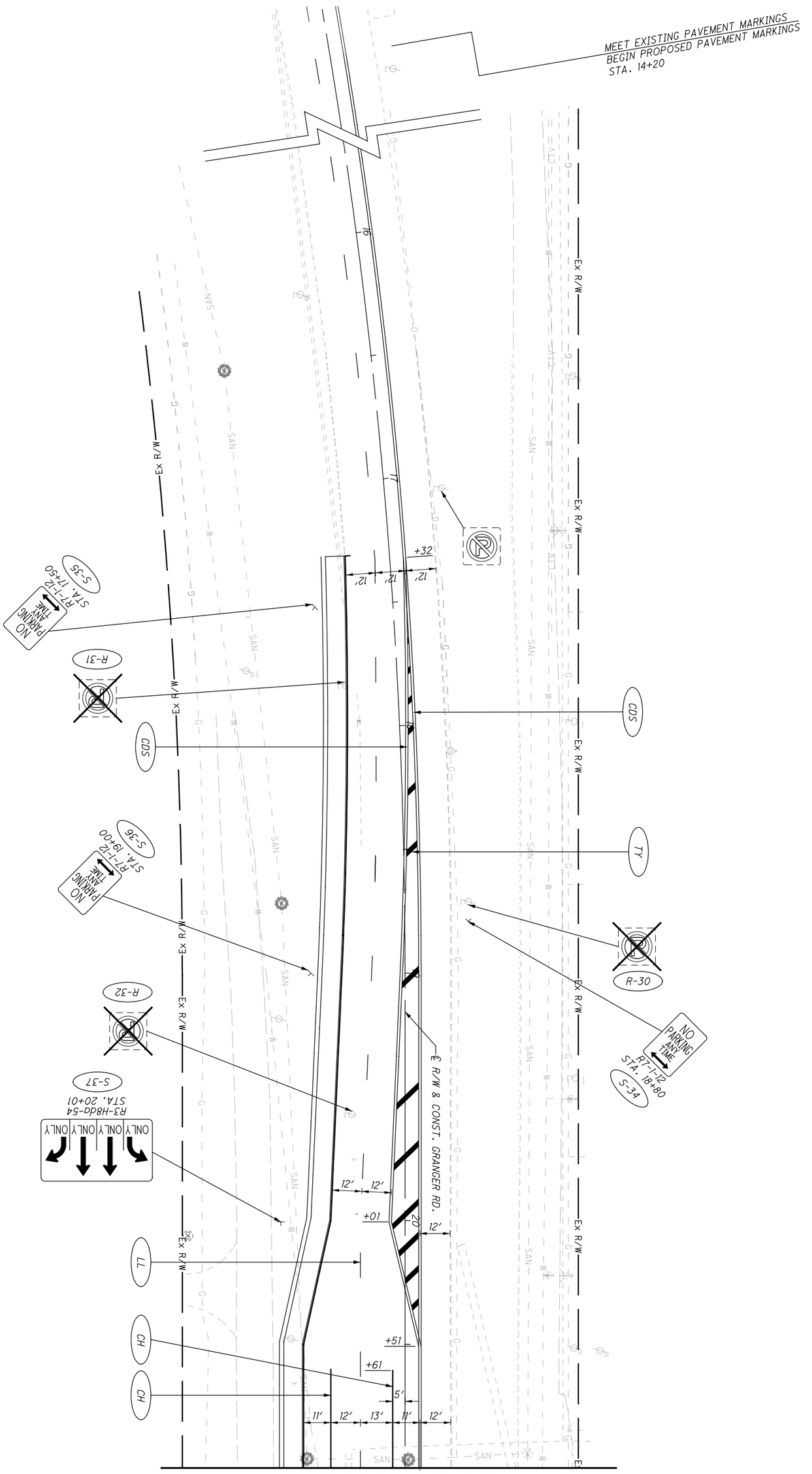


FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.

149
225

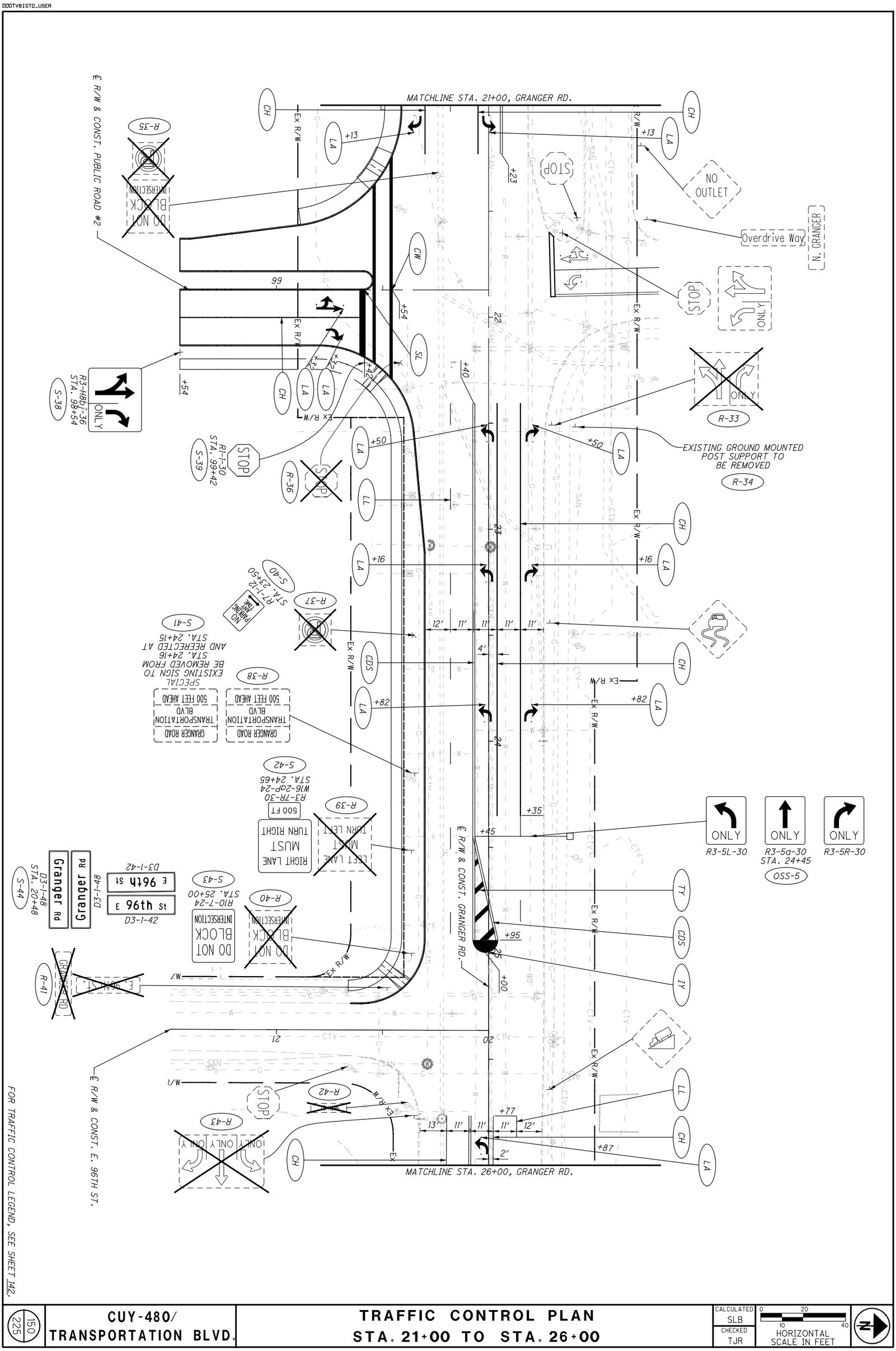
CUY-480/
TRANSPORTATION BLVD.

TRAFFIC CONTROL PLAN
BEGIN TO STA. 21+00

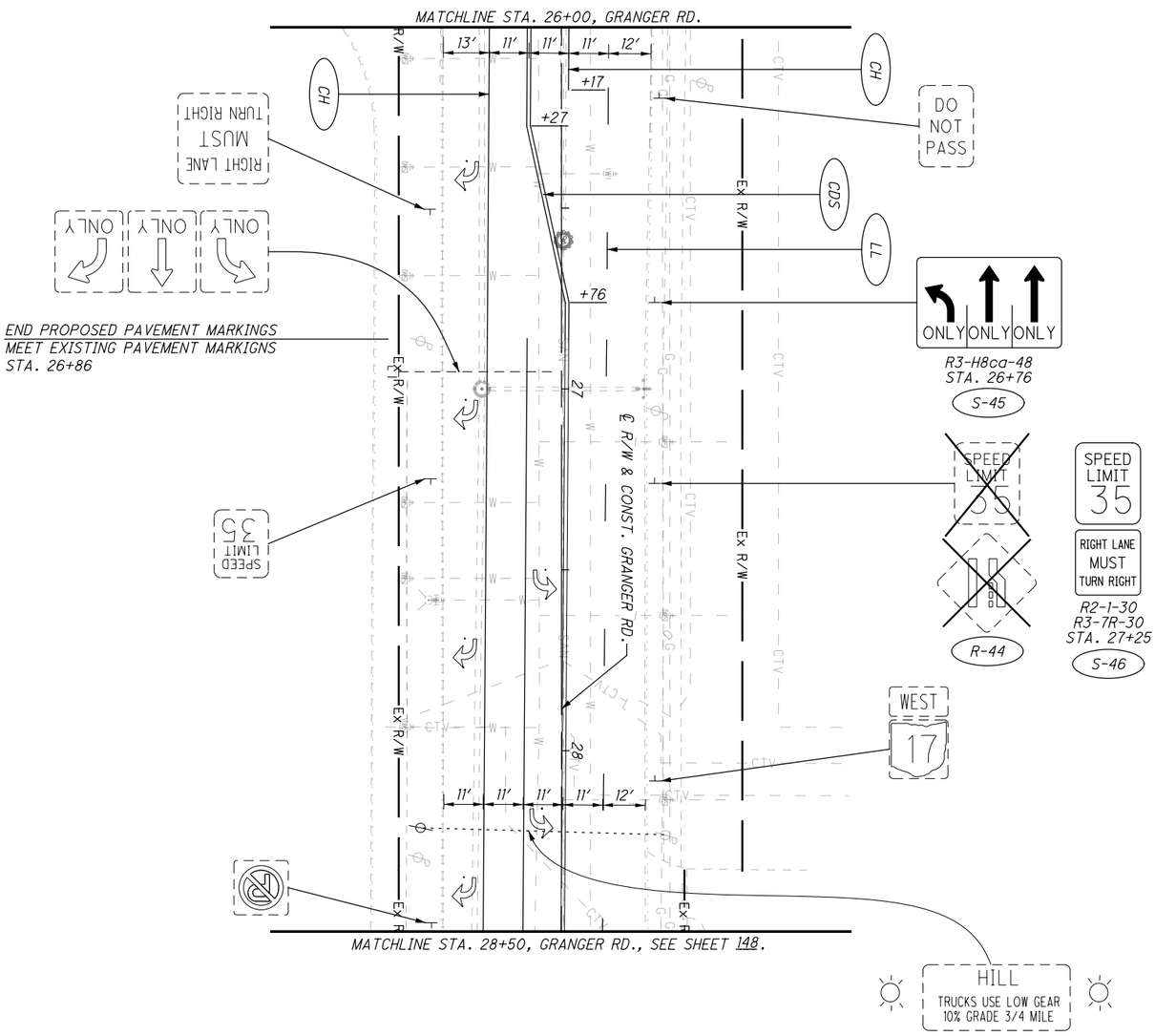
CALCULATED SLB
CHECKED TJR

0 10 20 40
HORIZONTAL SCALE IN FEET

N



150 / 225	CUY-480/ TRANSPORTATION BLVD.	TRAFFIC CONTROL PLAN STA. 21+00 TO STA. 26+00	CALCULATED SLB / CHECKED TJR	0 10 20 40 HORIZONTAL SCALE IN FEET



FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.

151 / 225	CUY-480/ TRANSPORTATION BLVD.	TRAFFIC CONTROL PLAN STA. 26+00 TO STA. 28+50	CALCULATED SLB / CHECKED TJR	0 10 20 40 HORIZONTAL SCALE IN FEET

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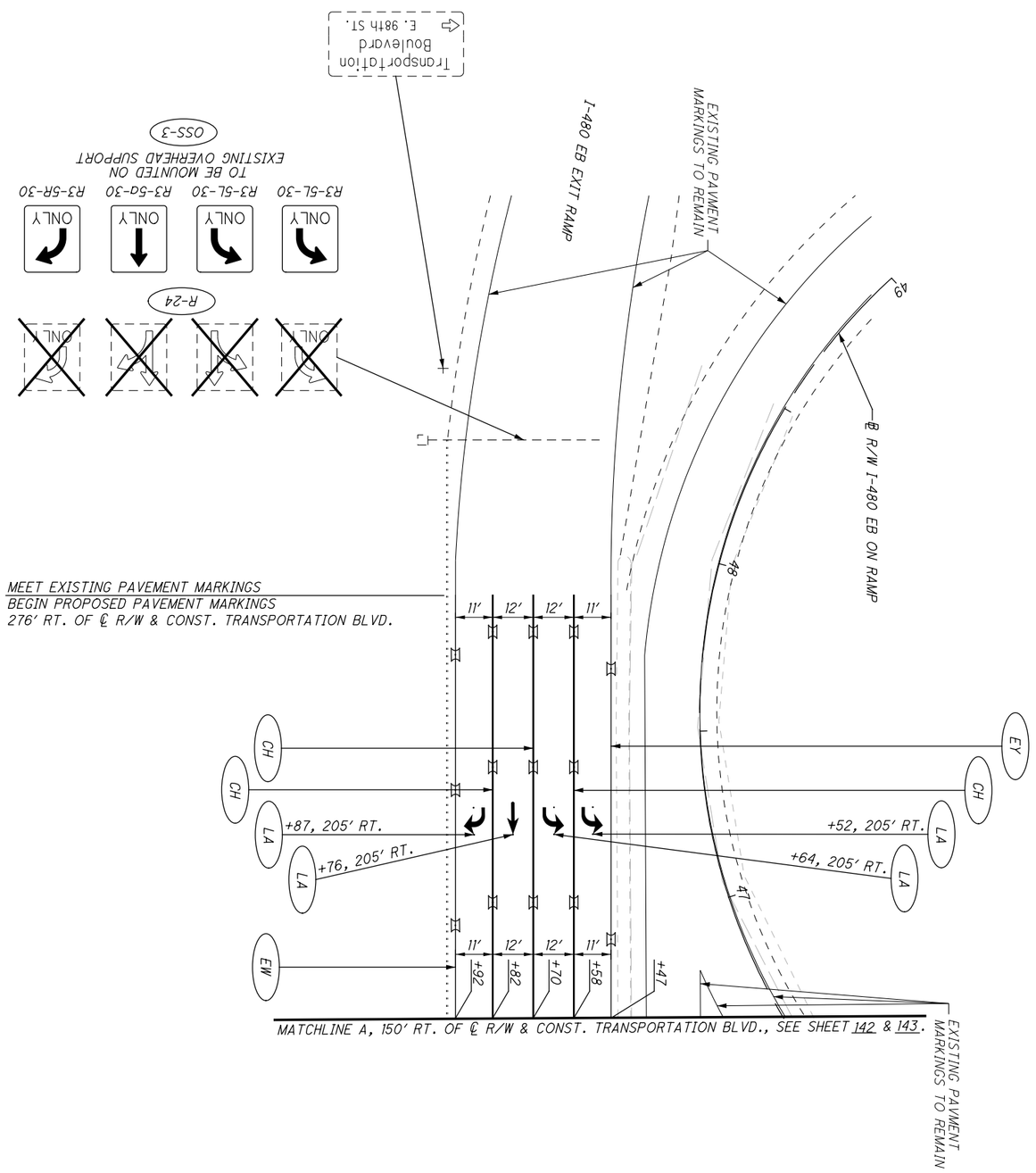

FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.

152 / 225	CUY-480/ TRANSPORTATION BLVD.	TRAFFIC CONTROL PLAN BEGIN TO 150' RT. OF TRANSPORTATION BLVD.	CALCULATED BEB / CHECKED AKF	0 10 20 40 HORIZONTAL SCALE IN FEET

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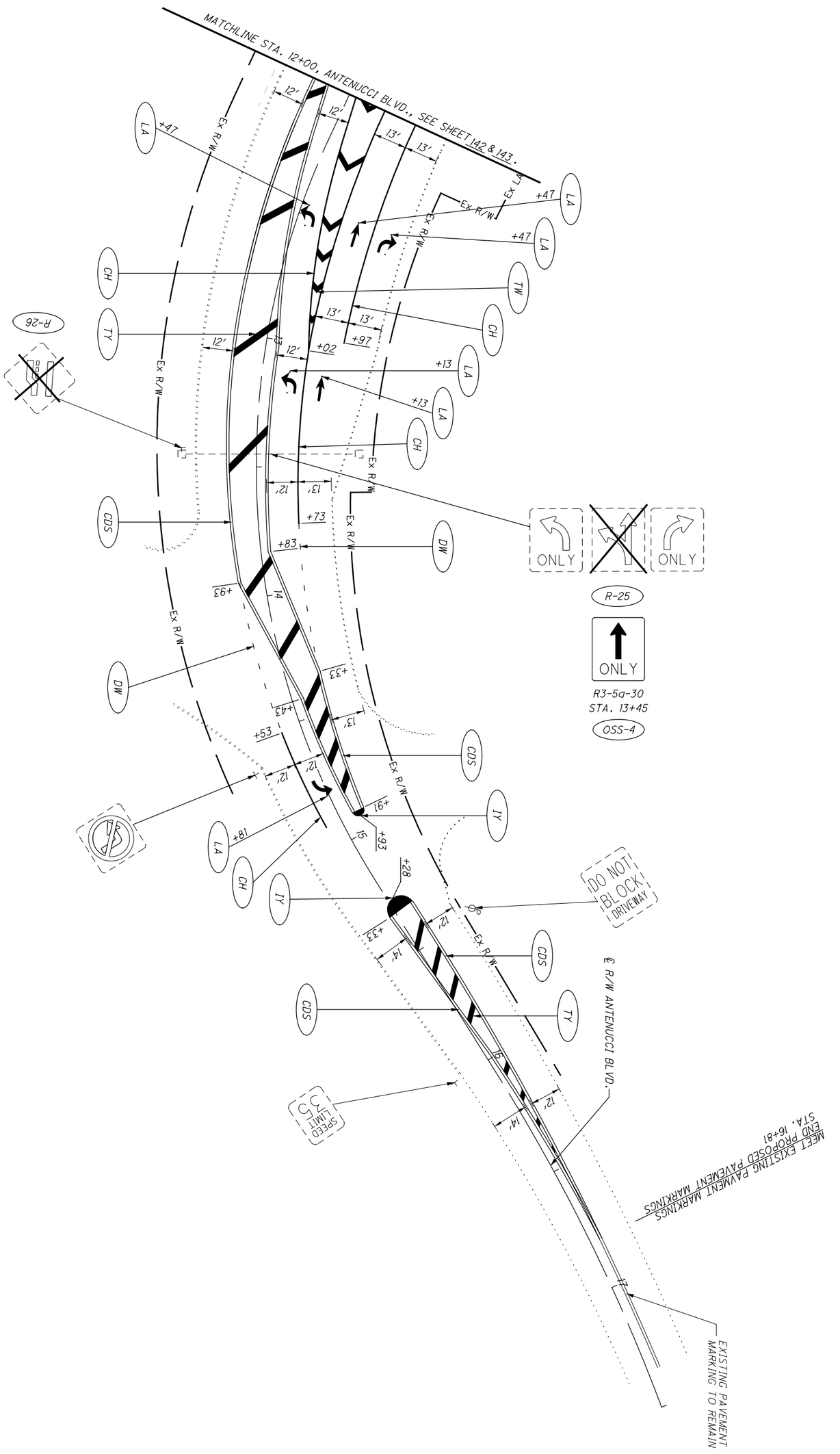
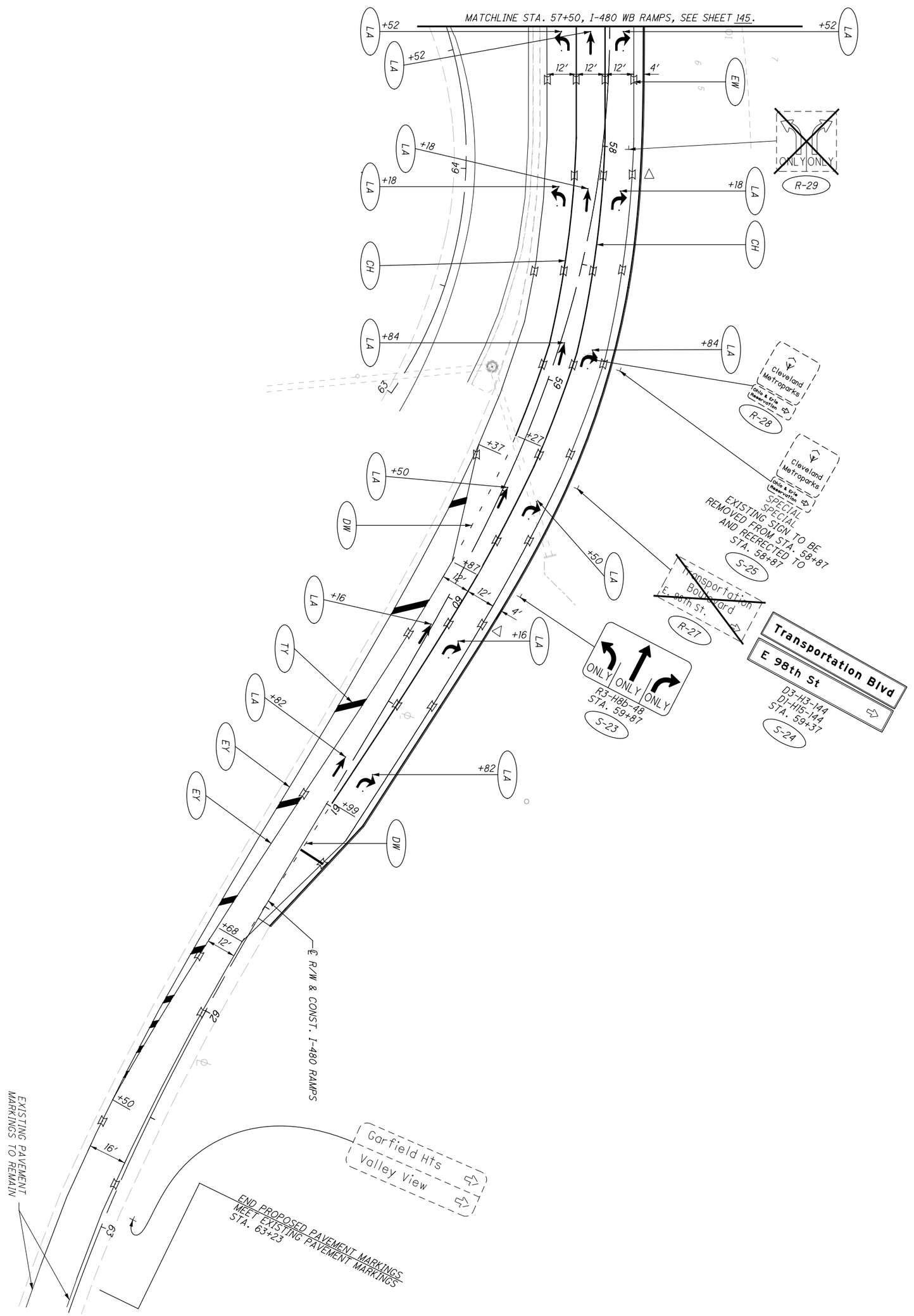


FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.

153 / 225	CUY-480/ TRANSPORTATION BLVD.	TRAFFIC CONTROL PLAN STA. 12+00 TO END	CALCULATED BEB / CHECKED AKF	0 10 20 40 HORIZONTAL SCALE IN FEET



FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.

CUY-480/
TRANSPORTATION BLVD.

TRAFFIC CONTROL PLAN
STA. 57+50 TO END

CALCULATED BEB
CHECKED AKF

0 10 20 40
HORIZONTAL SCALE IN FEET

N

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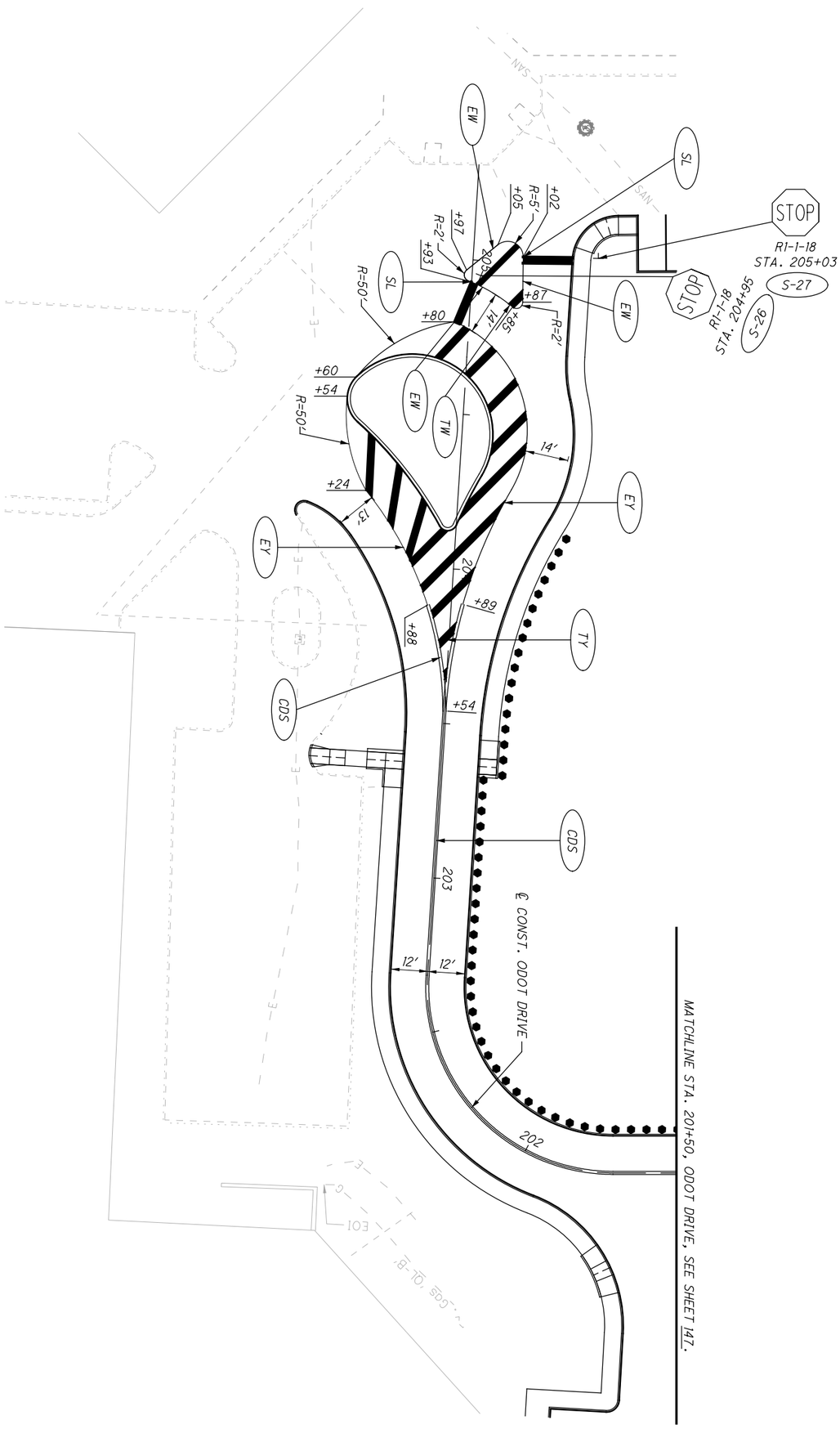


FOR TRAFFIC CONTROL LEGEND, SEE SHEET 142.

155
225

CUY-480/
TRANSPORTATION BLVD.

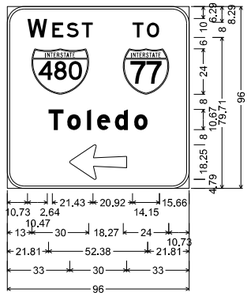
TRAFFIC CONTROL PLAN
STA. 201+50 TO END

CALCULATED BEB
CHECKED AKF

0 10 20 40
HORIZONTAL SCALE IN FEET

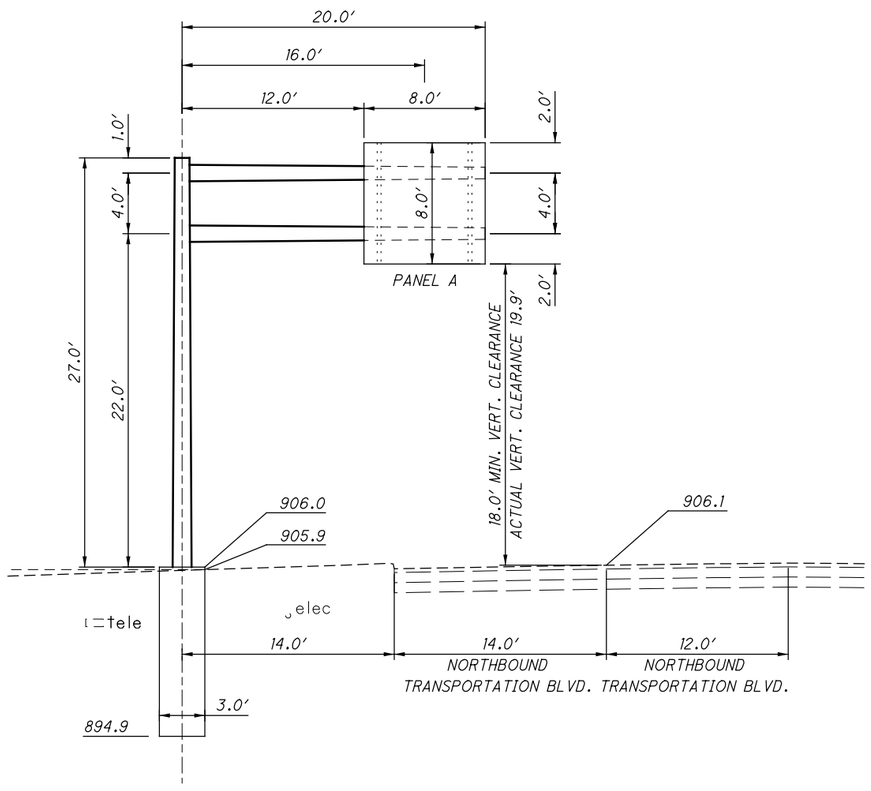
SIGN INFORMATION	
PANEL A	
DESIGN LEVEL:	3
TEXT FONT:	E
PANEL SIZE:	8′ X 8′
BACKGROUND:	GREEN
FILL COLOR:	WHITE
NUMBER OF BRACKETS:	2
SIGN SUPPORT INFORMATION	
TOTAL SIGN AREA:	64 SQ. FT.
TOTAL ℄ TO ℄ LENGTH:	16 FT.
DESIGN TYPE:	TC-12.30, DESIGN 4

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.

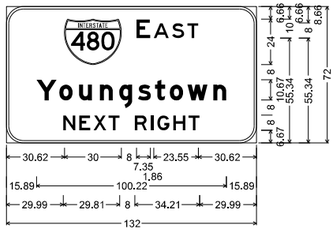


OSS-1 OVERHEAD SIGN SUPPORT TYPE TC-12.30, DESIGN 4
STA. 14+70, LT., TRANSPORTATION BLVD. SOUTHBOUND

SEE SHEET 145 FOR PLAN VIEW.

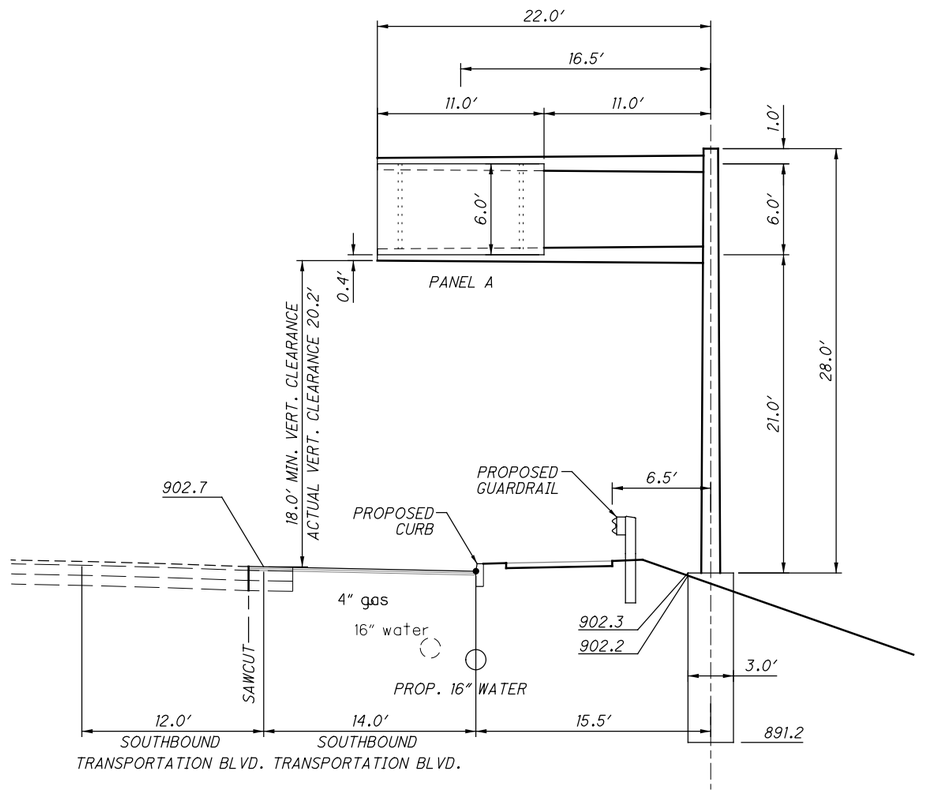
SIGN INFORMATION	
PANEL A	
DESIGN LEVEL:	3
TEXT FONT:	E
PANEL SIZE:	11′ X 6′
BACKGROUND:	GREEN
FILL COLOR:	WHITE
NUMBER OF BRACKETS:	3
SIGN SUPPORT INFORMATION	
TOTAL SIGN AREA:	66 SQ. FT.
TOTAL ℄ TO ℄ LENGTH:	16.5 FT.
DESIGN TYPE:	TC-12.30, DESIGN 5

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.

HORIZONTAL SCALE IN FEET
0 2.5 5 10

CALCULATED SLB
CHECKED TJR

SIGN SUPPORT DETAILS

CUY-480/ TRANSPORTATION BLVD.

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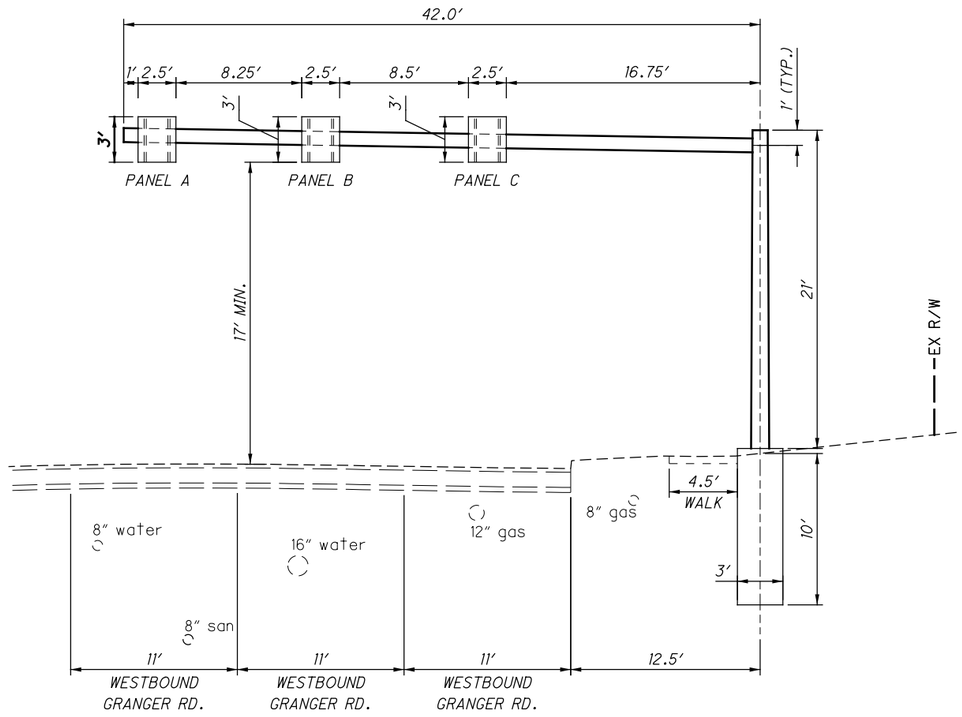
SIGN INFORMATION	
PANEL A:	R3-5L-30
PANEL B:	R3-5a-30
PANEL C:	R3-5R-30
NUMBER OF BRACKETS:	6

SIGN SUPPORT INFORMATION			
SUPPORT TYPE	DESIGN NUMBER	FOUNDATION DEPTH	FOUNDATION DIAMETER
TC-16.21	11	10.0′	36″

PANEL A
N.T.S.

PANEL B
N.T.S.

PANEL C
N.T.S.



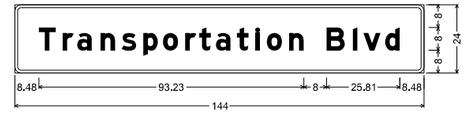
OSS-5 OVERHEAD SIGN SUPPORT TYPE TC-16.21, DESIGN 11
STA. 24+45, GRANGER RD.

NOTES:

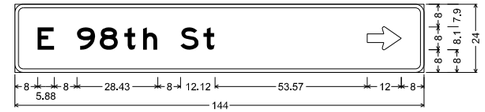
1. ALL SIGNS ARE VIEWED IN THE DIRECTION OF TRAVEL.
2. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN FIELD PRIOR TO ANY EXCAVATION.

SEE SHEET ___ FOR PLAN VIEW.

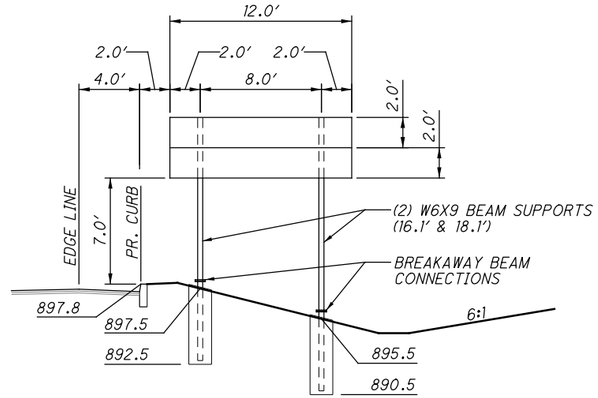
SIGN INFORMATION	
PANEL A	
SIGN DESIGNATION:	D3-H3-144
TEXT FONT:	E
PANEL SIZE:	12′ X 2′
BACKGROUND:	GREEN
FILL COLOR:	WHITE
PANEL B	
SIGN DESIGNATION:	D1-H15-144
TEXT FONT:	E
PANEL SIZE:	12′ X 2′
BACKGROUND:	GREEN
FILL COLOR:	WHITE
PROPOSED BEAM INFORMATION	
TOTAL SIGN AREA:	48 SQ. FT.
DESIGN TYPE:	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:

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

SEE SHEET 154 FOR PLAN VIEW.

HORIZONTAL SCALE IN FEET
0 2.5 5 10

CALCULATED SLB
CHECKED TJR

SIGN SUPPORT DETAILS
GRANGER ROAD / I-480 WB EXIT RAMP
CUY-480/ TRANSPORTATION BLVD.

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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:

COND. NO.	COLOR	VEHICLE SIGNAL	PEDESTRIAN SIGNAL
1	BLACK	GREEN BALL	#1 WALK
2	WHITE	AC NEUTRAL	AC NEUTRAL
3	RED	RED BALL	#1 DW/FDW
4	GREEN	EQUIPMENT GROUND	EQUIPMENT GROUND
5	ORANGE	YELLOW BALL	#2 DW/FDW
6	BLUE	GREEN ARROW	#2 WALK
7	WHITE/BLACK STRIPE	YELLOW ARROW	NOT USED

6. POWER SERVICE AND DISCONNECT SWITCH.

   A. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.

   B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.

      I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.

      II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.

7. PAYMENT - ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

ITEM 632 - 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.

CALCULATED JWG CHECKED RMG

TRAFFIC SIGNAL GENERAL NOTES

CUY-480/ TRANSPORTATION BLVD.

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.

CALCULATED JWG CHECKED RMG

SIGNAL GENERAL NOTES

TRAFFIC SIGNAL

CUY-480/ TRANSPORTATION BLVD.

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 ADDITON 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 ADDITON 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.

CALCULATED JWG
CHECKED RMG

TRAFFIC SIGNAL GENERAL NOTES

CUY-480/ TRANSPORTATION BLVD.

TRAFFIC SIGNAL SUBSUMMARY

CALCULATED JWG
CHECKED KMG

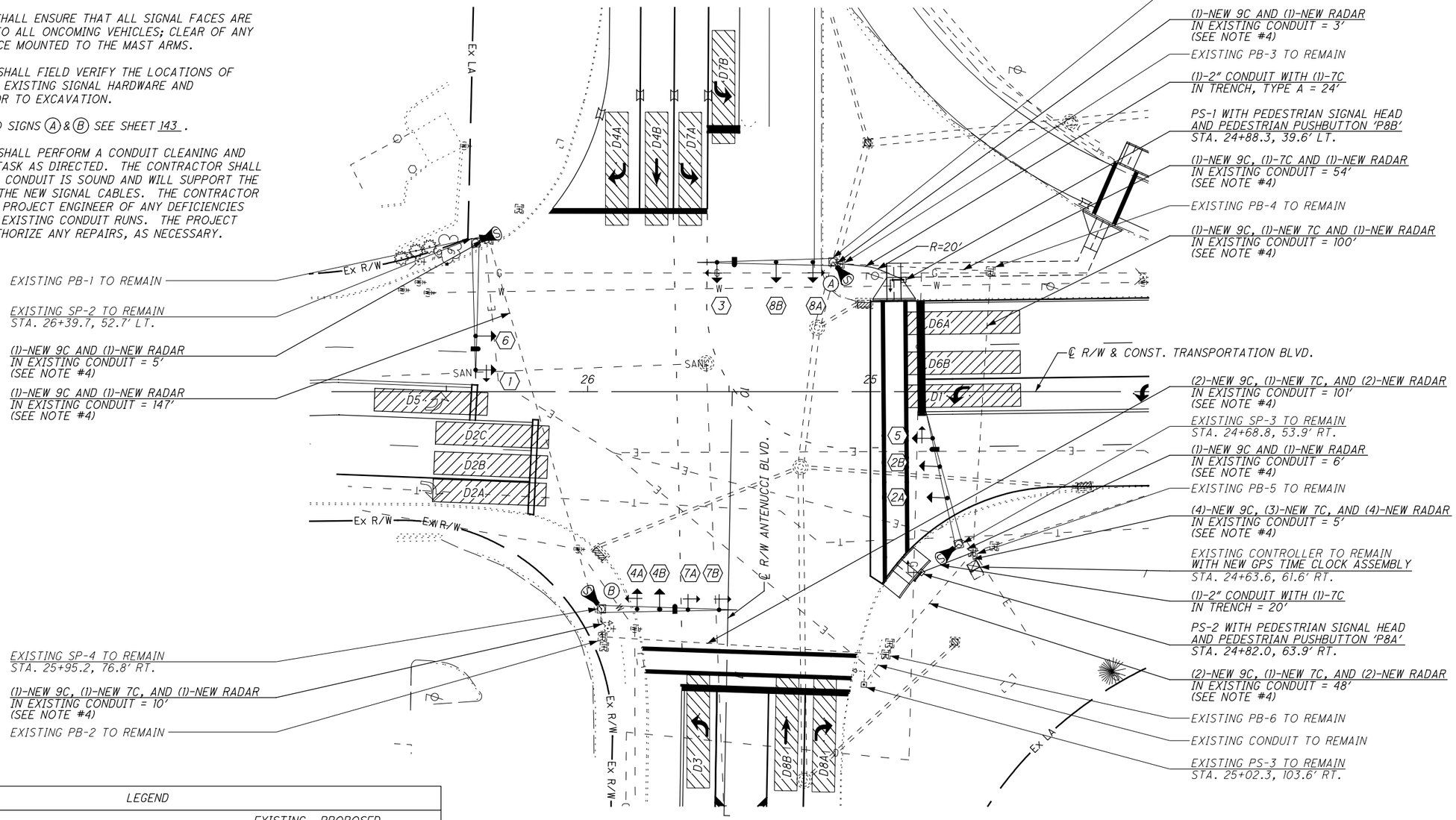
SHEET	LOCATION	625 CONDUIT, 2", 725.04 FT	625 CONDUIT, 3", 725.04 FT	625 CONDUIT, 4", 725.04 FT	625 CONDUIT, JACKED OR DRILLED, 725.04, 4" FT	625 CONDUIT CLEANED AND CABLES REMOVED FT	625 TRENCH FT	625 TRENCH IN PAVED AREA, TYPE A FT	625 PULL BOX, 725.08, 18" EACH	625 PULL BOX, 725.08, 24" EACH	625 GROUND ROD EACH	625 PLASTIC CAUTION TAPE FT	632 VEHICULAR SIGNAL HEAD, MISC.: VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE EACH	632 VEHICULAR SIGNAL HEAD, MISC.: VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE EACH	632 VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN EACH	632 VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN EACH	632 PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN EACH	632 COVERING OF VEHICULAR SIGNAL HEAD EACH	632 COVERING OF PEDESTRIAN SIGNAL HEAD EACH	632 PEDESTRIAN PUSHBUTTON, AS PER PLAN EACH	632 SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG FT	632 SIGNAL CABLE, 9 CONDUCTOR, NO. 14 AWG FT	632 SIGNAL SUPPORT FOUNDATION EACH	632 PEDESTAL FOUNDATION EACH	632 POWER CABLE, 2 CONDUCTOR, NO. 6 AWG FT
162	TRANSPORTATION BLVD / I-480 EB RAMPS / ANTENUCCI BLVD	44				484	20	24				44	7	5			2	12	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	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 SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG FT	632 POWER SERVICE, AS PER PLAN EACH	632 CONDUIT RISER, 2" DIAMETER EACH	632 SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 2, AS PER PLAN EACH	632 SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 4, AS PER PLAN EACH	632 SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 11, AS PER PLAN EACH	632 SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 12, AS PER PLAN EACH	632 PEDESTAL, 8', TRANSFORMER BASE EACH	632 REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN EACH	633 CONTROLLER UNIT, TYPE 2070E WITH 2070-1C CPU, AS PER PLAN EACH	633 GPS (GLOBAL POSITIONING SYSTEM) CLOCK ASSEMBLY EACH	633 CABINET, TYPE 332 EACH	633 CABINET FOUNDATION EACH	633 CONTROLLER WORK PAD EACH	633 PREEMPTION, AS PER PLAN EACH	633 PREEMPTION RECEIVING UNIT EACH	633 PREEMPTION DETECTOR CABLE FT	633 PREEMPTION PHASE SELECTOR EACH	633 PREEMPTION CONFIRMATION LIGHT, AS PER PLAN EACH	809 ADVANCE RADAR DETECTION, AS PER PLAN EACH	809 STOP-BAR RADAR DETECTION, AS PER PLAN 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	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	1	4	723	1	4		2			
TOTALS CARRIED TO GENERAL SUMMARY		407	2	2	2	2	2	2	7	2	2	3	2	2	2	2	8	1539	2	8	1	10			

CUY-480/
TRANSPORTATION BLVD.

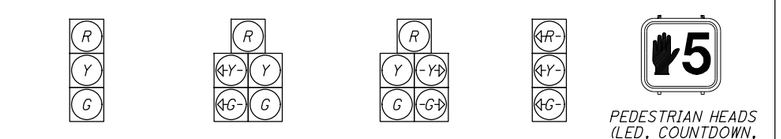
NOTES:

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.



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



1. ALL SIGNAL HEADS SHALL HAVE 12" LED LENSES.
2. ALL SIGNAL HEADS SHALL BE BLACK IN COLOR.
3. ALL SIGNAL HEAD VISORS SHALL BE CUTAWAY TYPE.

PEDESTRIAN SIGNS

R10-3e-9
1 - RIGHT ARROW (PS-1)
1 - LEFT ARROW (PS-2)

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'

N

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JWG
CHECKED RMG

TRAFFIC SIGNAL PLAN

CUY-480/ TRANSPORTATION BLVD. / I-480 EB RAMPS / ANTENUCCI BLVD. / TRANSPORTATION BLVD.

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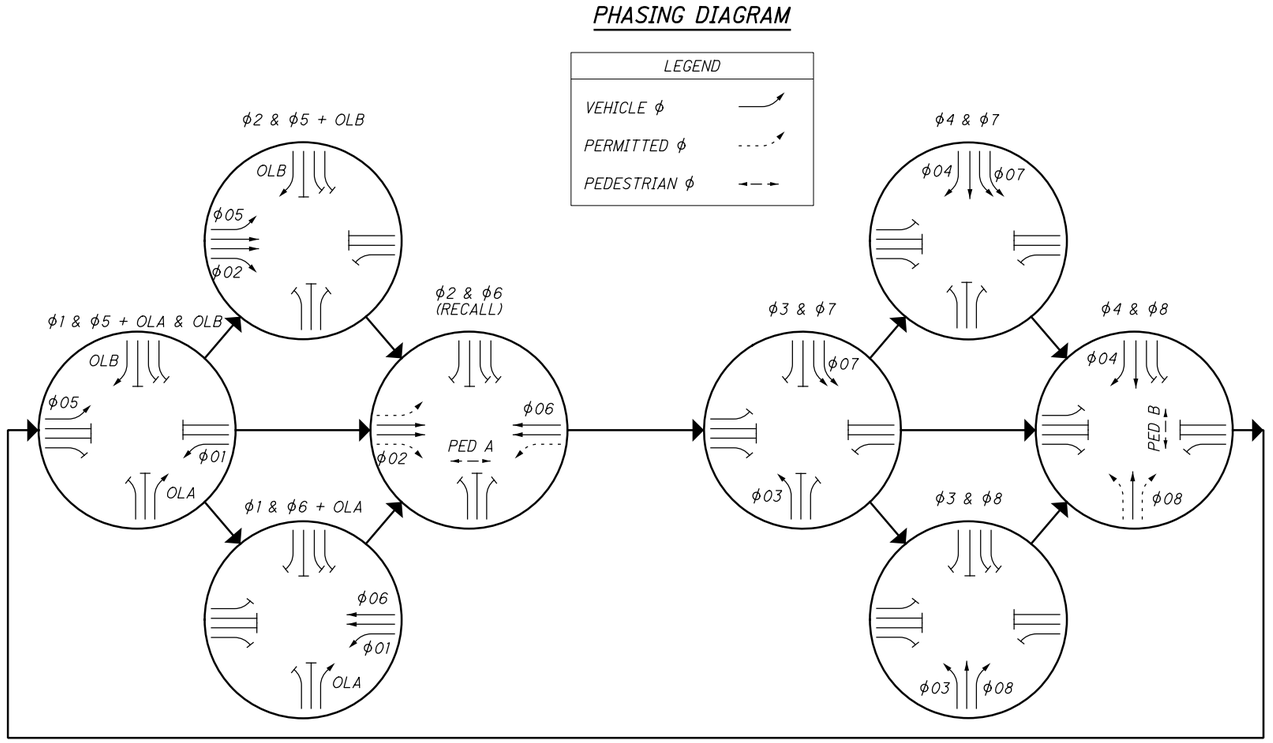
SIGNAL TIMING CHART

INTERSECTION: TRANSPORTATION BLVD / I-480 EB RAMPS / ANTENUCCI BLVD MAINTAINING AGENCY: ODOT									
START UP START IN: ALL RED TIME FOR FLASH OR ALL RED: 5 FIRST PHASE(S): (2+6) COLOR DISPLAYED: GREEN			DUAL ENTRY: YES		PHASES:		2, 4, 6, 8		
			REST IN RED:		RING 1 -		RING 2 -		
			OVERLAP		A	B	C	D	
			PHASES		1	3	5	-	
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 OMUTCD FIGURE 4E-2.
- ALL DETECTOR DELAYS SHALL BE PLACED IN THE CONTROLLER.
- ENABLE ϕ3 AND ϕ7 DETECTOR SWITCHING TO ALLOW ϕ3 AND ϕ7 TO EXTEND ϕ4 AND ϕ8 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 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)
D1	SBLT	PRESENCE	ϕ1	5	ϕ1	STOP BAR	40
D2A	NBRT	PRESENCE	ϕ2	10	-	STOP BAR	40
D2B	NB	PRESENCE	ϕ2	0	-	STOP BAR	40
D2C	NB	PRESENCE	ϕ2	0	-	STOP BAR	40
D3	WBLT	PRESENCE	ϕ3	5	ϕ3	STOP BAR	40
D4A	EBRT	PRESENCE	ϕ4	10	ϕ4	STOP BAR	40
D4B	EB	PRESENCE	ϕ4	0	-	STOP BAR	40
D5	NBLT	PRESENCE	ϕ5	5	ϕ5	STOP BAR	40
D6A	SB	PRESENCE	ϕ6	0	-	STOP BAR	40
D6B	SB	PRESENCE	ϕ6	0	-	STOP BAR	40
D7A	EBLT	PRESENCE	ϕ7	5	ϕ7	STOP BAR	40
D7B	EBLT	PRESENCE	ϕ7	5	ϕ7	STOP BAR	40
D8A	WBRT	PRESENCE	ϕ8	10	ϕ8	STOP BAR	40
D8B	WB	PRESENCE	ϕ8	0	-	STOP BAR	40

PREEMPT CHANNELS

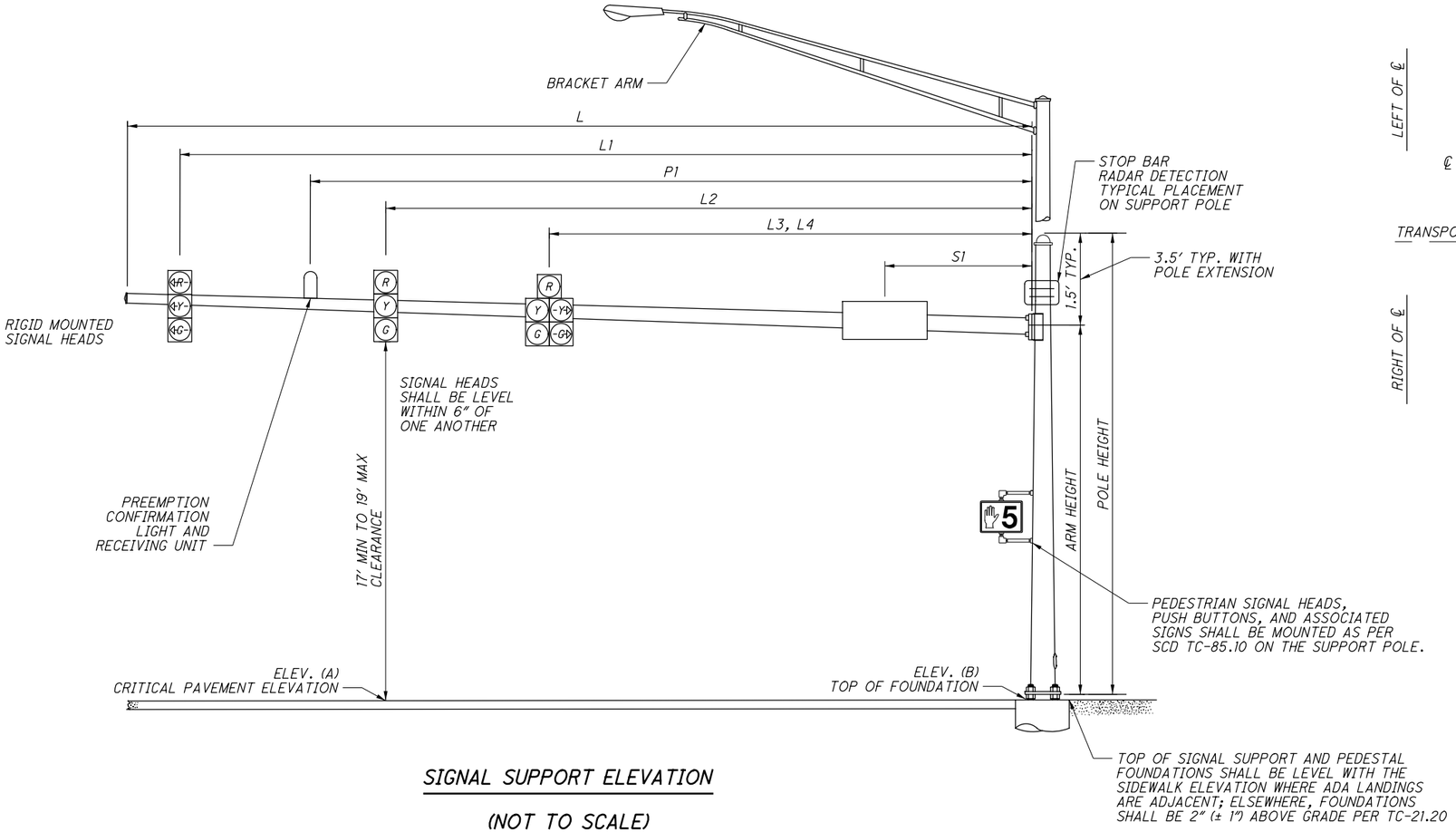
CHANNEL 1 = ϕ(2+5) (NORTHBOUND ONLY)
CHANNEL 2 = ϕ(1+6) (SOUTHBOUND ONLY)
CHANNEL 3 = ϕ(4+7) (EASTBOUND ONLY)
CHANNEL 4 = ϕ(3+8) (WESTBOUND ONLY)

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 ϕ (2+6).
5. IF PREEMPT PHASE = RETURN PHASE ϕ (2+6) THEN YELLOW AND ALL RED CLEARANCE AFTER PREEMPT SHALL NOT BE DISPLAYED.

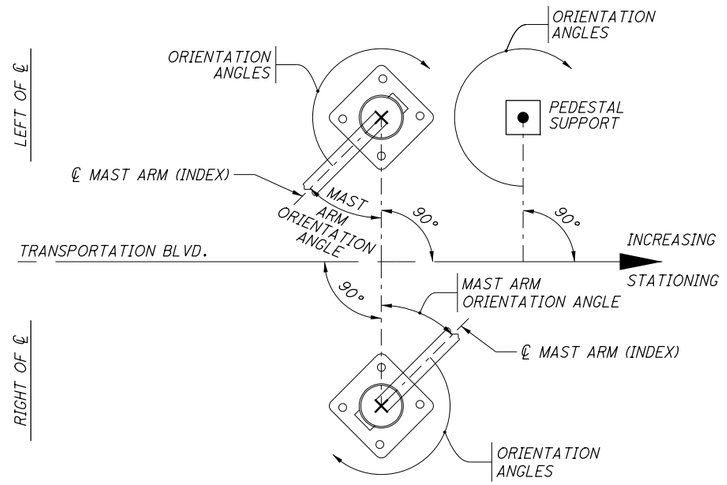
CALCULATED JWG
CHECKED RMG

TRAFFIC SIGNAL PLAN DETAILS
TRANSPORTATION BLVD. / I-480 EB RAMPS / ANTENUCCI BLVD.
CUY-480/ TRANSPORTATION BLVD.



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	ORIENTATION ANGLES FROM MAST ARM 'A' / INDEX LINE		
			A	B	DESIGN TYPE	DESIGN NO.	POLE HEIGHT	ARM HEIGHT	L	L1	L2	L3	L4	P1	S1		PEDESTRIAN SIGNAL	PEDESTRIAN BUTTON	HANDHOLE
							FT	FT	FT	FT	FT	FT	FT	FT	FT	DEG	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	-	-	-	-	8	-	-	-	-	-	-	-	-	-	90	90	180
PS-2	24+82.0	63.9' RT	-	-	-	-	8	-	-	-	-	-	-	-	-	-	270	220	130
EX. PS-3	25+02.3	103.6' RT	-	-	-	-	X	-	-	-	-	-	-	-	-	-	X	X	X

NOTES:

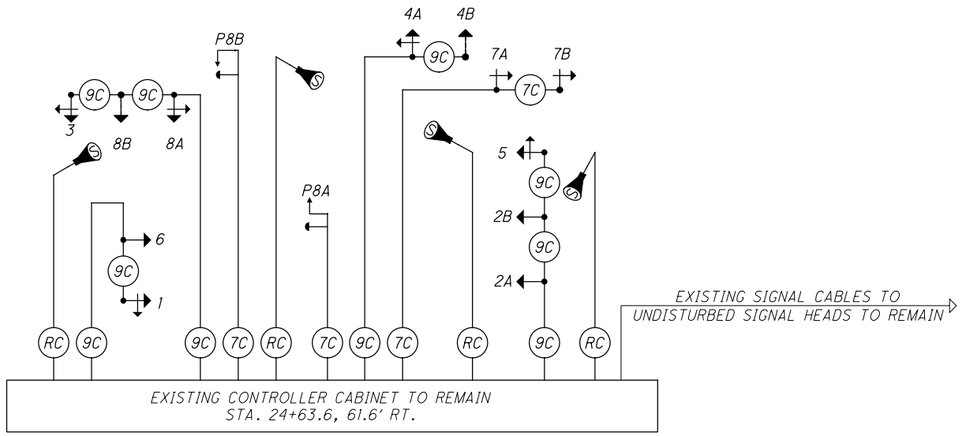
1. AN "X" DENOTES VALUES OF EXISTING SIGNAL EQUIPMENT THAT SHALL REMAIN UNDISTURBED THROUGHOUT THE DURATION OF CONSTRUCTION.

CALCULATED JWG
CHECKED RMG

TRAFFIC SIGNAL PLAN DETAILS

CUY-480/ TRANSPORTATION BLVD. / I-480 EB RAMPS / ANTENUCCI BLVD. TRANSPORTATION BLVD.

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.

FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1	R	ϕ6 R	Y
	Y	ϕ6 Y	
	G	ϕ6 G	
(SB LT)	<--Y---	ϕ1 Y	
	<--G---	ϕ1 G	
2A, 2B	R	ϕ2 R	Y
	Y	ϕ2 Y	
(NB)	G	ϕ2 G	
3	R	ϕ8 R	R
	Y	ϕ8 Y	
	G	ϕ8 G	
(WB LT)	<--Y---	ϕ3 Y	
	<--G---	ϕ3 G	
4A	R	ϕ4 R	R
	Y	ϕ4 Y	
	G	ϕ4 G	
	---Y-->	OLB Y	
(EB RT)	---G-->	OLB G	
4B	R	ϕ4 R	R
	Y	ϕ4 Y	
(EB)	G	ϕ4 G	
5	R	ϕ2 R	Y
	Y	ϕ2 Y	
	G	ϕ2 G	
	<--Y---	ϕ5 Y	
(NB LT)	<--G---	ϕ5 G	
LS = LOAD SWITCH			

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
6	R	ϕ6 R	Y
	Y	ϕ6 Y	
(SB)	G	ϕ6 G	
7A, 7B	<--R---	ϕ7 R	R
	<--Y---	ϕ7 Y	
(EB LT)	<--G---	ϕ7 G	
8A	R	ϕ8 R	R
	Y	ϕ8 Y	
	G	ϕ8 G	
	---Y-->	OLA Y	
(WB RT)	---G-->	OLA G	
8B	R	ϕ8 R	R
	Y	ϕ8 Y	
(WB)	G	ϕ8 G	
PEDESTRIAN MOVEMENTS			
P2A-P2B EAST	W	PEDA ϕ2 G	OUT
	DW	PEDA ϕ2 R	
P8A-P8B NORTH	W	PEDB ϕ8 G	OUT
	DW	PEDB ϕ8 R	
OVERLAPS			
	PEDA=LS9		
	PEDB=LS10		
	OLA=LS13		
	OLB=LS14		

LEGEND

4 OR 5 SECTION VEHICULAR SIGNAL HEAD, 1-WAY	9C — SIGNAL CABLE, 9 CONDUCTOR, NO. 14 AWG
3 SECTION VEHICULAR SIGNAL HEAD, TURN ARROWS, 1-WAY	7C — SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY	RC — RADAR DETECTION CABLE
PEDESTRIAN SIGNAL HEAD	S — STOP BAR RADAR DETECTION UNIT
PEDESTRIAN PUSHBUTTON	

CALCULATED JWG
CHECKED RMG

TRAFFIC SIGNAL PLAN DETAILS
I-480 EB RAMPS / ANTENUCCI BLVD. / TRANSPORTATION BLVD.
CUY-480/ TRANSPORTATION BLVD. ANTENUCCI BLVD.

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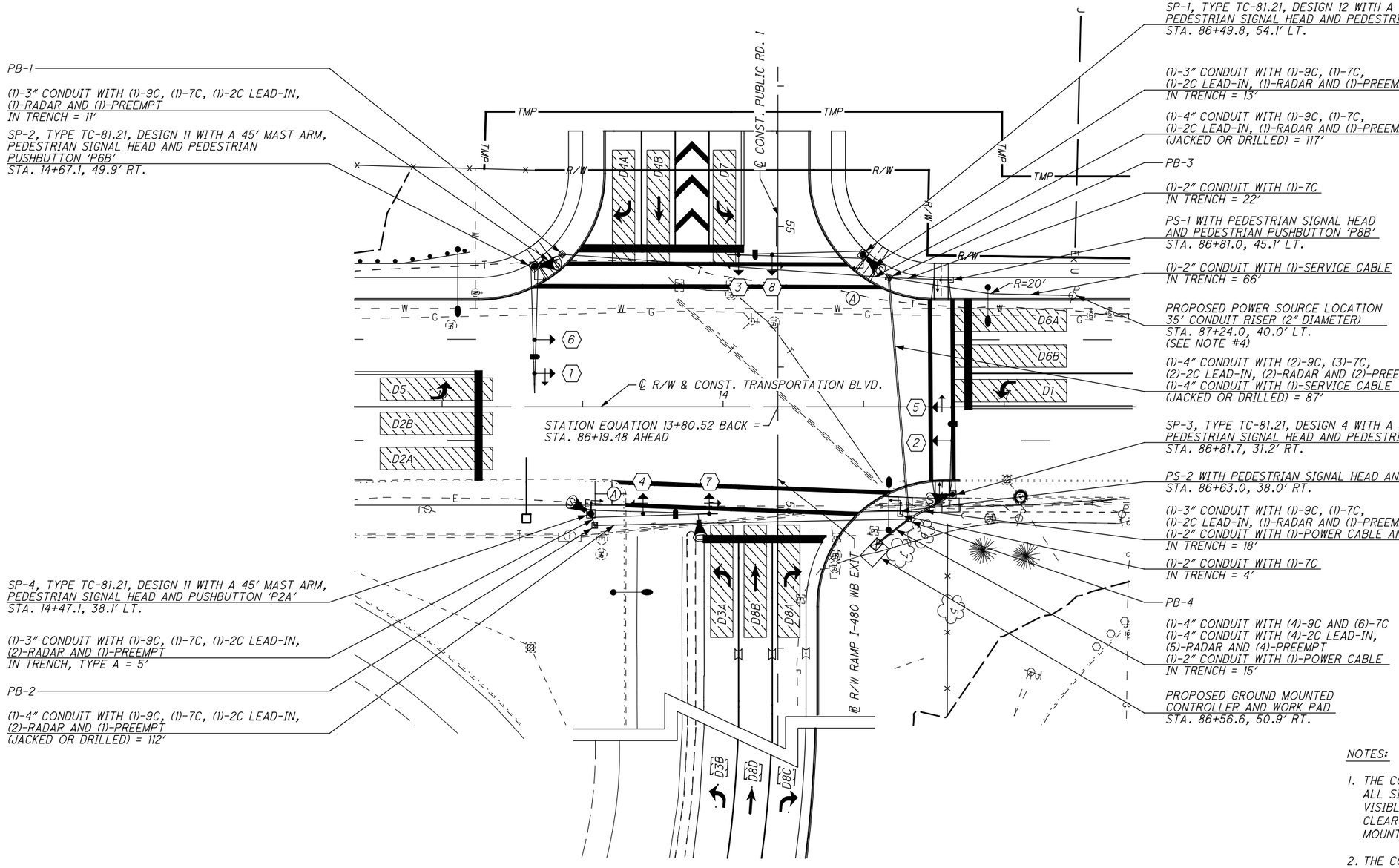
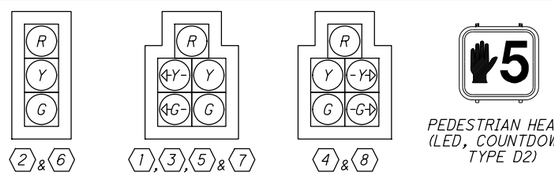


LEGEND

TRAFFIC SIGNAL, 3 UNIT HEAD, 12"		CONTROLLER CABINET AND WORK PAD (TS-2)	
TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"		TRAFFIC PULL BOX	TR
SIGNAL SUPPORT POLE		STOP BAR RADAR DETECTION UNIT	S
		DILEMMA ZONE RADAR DETECTION UNIT	D
PEDESTRIAN SIGNAL		DETECTION ZONE	
PEDESTRIAN PUSH BUTTON		PROPOSED CONDUIT	
PEDESTAL SUPPORT		PREEMPTION RECEIVING UNIT AND CONFIRMATION LIGHT	

SIGNAL TYPES



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)

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.

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

HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED JWG
CHECKED RMG

TRAFFIC SIGNAL PLAN

CUY-480/ TRANSPORTATION BLVD. / TRANSPORTATION BLVD. / I-480 WB RAMPS / PUBLIC RD. 1

166
225

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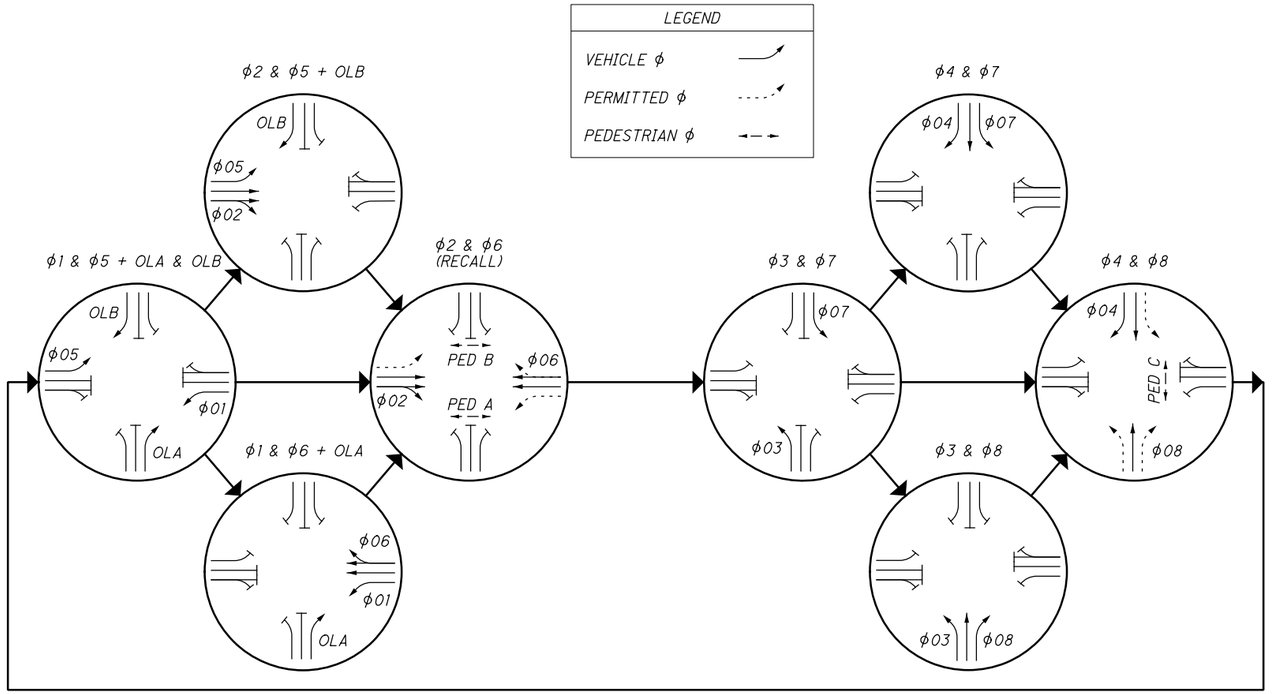
SIGNAL TIMING CHART

INTERSECTION: TRANSPORTATION BLVD / I-480 WB RAMPS / PUBLIC RD 1 MAINTAINING AGENCY: OHIO DEPARTMENT OF TRANSPORTATION									
START UP START IN: ALL RED TIME FOR FLASH OR ALL RED: 5 FIRST PHASE(S): (2+6) COLOR DISPLAYED: GREEN			DUAL ENTRY: YES		PHASES:		2, 4, 6, 8		
			REST IN RED:		RING 1 -		RING 2 -		
			OVERLAP			A	B	C	D
			PHASES			1	5	-	-
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 OMUTCD FIGURE 4E-2.
- ALL DETECTOR DELAYS SHALL BE PLACED IN THE CONTROLLER.
- ENABLE ϕ3 AND ϕ7 DETECTOR SWITCHING TO ALLOW ϕ3 AND ϕ7 TO EXTEND ϕ4 AND ϕ8 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	ϕ1	5	ϕ1	STOP BAR	40	4
D2A	NB	PRESENCE	ϕ2	0	-	STOP BAR	40	4
D2B	NB	PRESENCE	ϕ2	0	-	STOP BAR	40	4
D3A	WBLT	PRESENCE	ϕ3	5	ϕ3	STOP BAR	40	4
D3B	WBLT	PULSE	ϕ3	0	ϕ3	CALL/EXTEND PHASE 3	6	200
D4A	EB	PRESENCE	ϕ4	10	ϕ4	STOP BAR	40	4
D4B	EB	PRESENCE	ϕ4	0	-	STOP BAR	40	4
D5	NBLT	PRESENCE	ϕ5	5	ϕ5	STOP BAR	40	4
D6A	SB	PRESENCE	ϕ6	0	-	STOP BAR	40	4
D6B	SB	PRESENCE	ϕ6	0	-	STOP BAR	40	4
D7	EBLT	PRESENCE	ϕ7	5	ϕ7	STOP BAR	40	4
D8A	WB	PRESENCE	ϕ8	10	ϕ8	STOP BAR	40	4
D8B	WB	PRESENCE	ϕ8	0	-	STOP BAR	40	4
D8C	WB	PULSE	ϕ8	0	ϕ8	CALL/EXTEND PHASE 8	6	200
D8D	WB	PULSE	ϕ8	0	ϕ8	CALL/EXTEND PHASE 8	6	200

PREEMPT CHANNELS

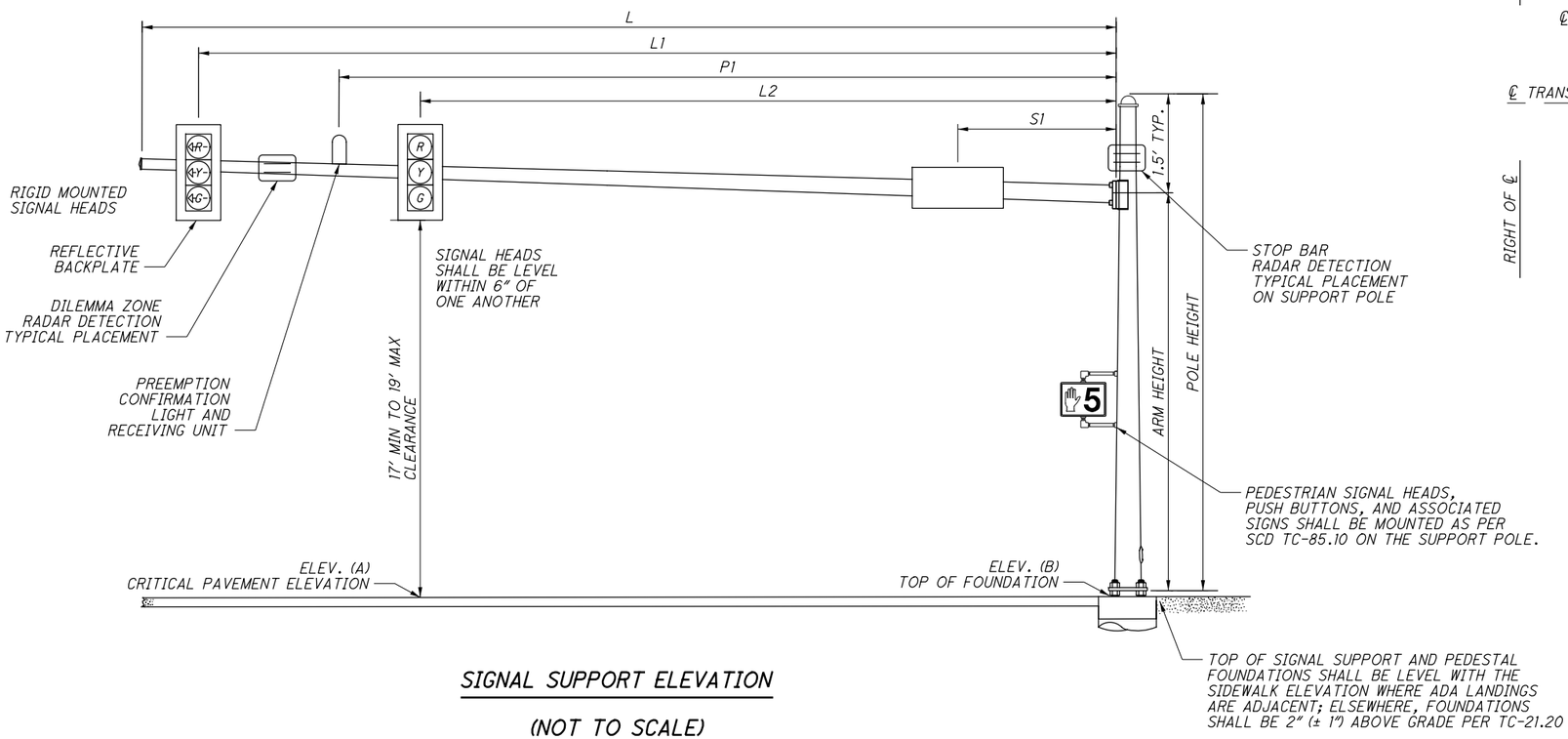
CHANNEL 1 = ϕ(2+5) (NORTHBOUND ONLY)
CHANNEL 2 = ϕ(1+6) (SOUTHBOUND ONLY)
CHANNEL 3 = ϕ(4+7) (EASTBOUND ONLY)
CHANNEL 4 = ϕ(3+8) (WESTBOUND ONLY)

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 ϕ (2+6).
5. IF PREEMPT PHASE = RETURN PHASE ϕ (2+6) THEN YELLOW AND ALL RED CLEARANCE AFTER PREEMPT SHALL NOT BE DISPLAYED.

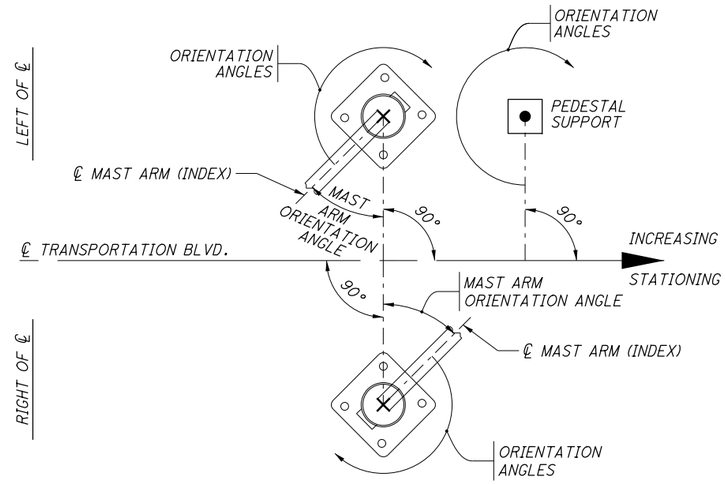
CALCULATED JWG
CHECKED RMG

TRAFFIC SIGNAL PLAN DETAILS / PUBLIC RD.1
TRANSPORTATION BLVD. / I-480 WB RAMPS
CUY-480/ TRANSPORTATION BLVD.



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	ORIENTATION ANGLES FROM MAST ARM 'A' / INDEX LINE			
			A	B	DESIGN TYPE	DESIGN NO.	POLE HEIGHT	ARM HEIGHT	L	L1	L2	P1	S1		PEDESTRIAN SIGNAL	PEDESTRIAN BUTTON	POWER SERVICE	HANDHOLE
							FT	FT	FT	FT	FT	FT	FT	DEG	DEG	DEG	DEG	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

CALCULATED JWG
CHECKED RMG

TRAFFIC SIGNAL PLAN DETAILS

CUY-480/ TRANSPORTATION BLVD. / I-480 WB RAMPS / PUBLIC RD. 1

TRANSPORTATION BLVD.

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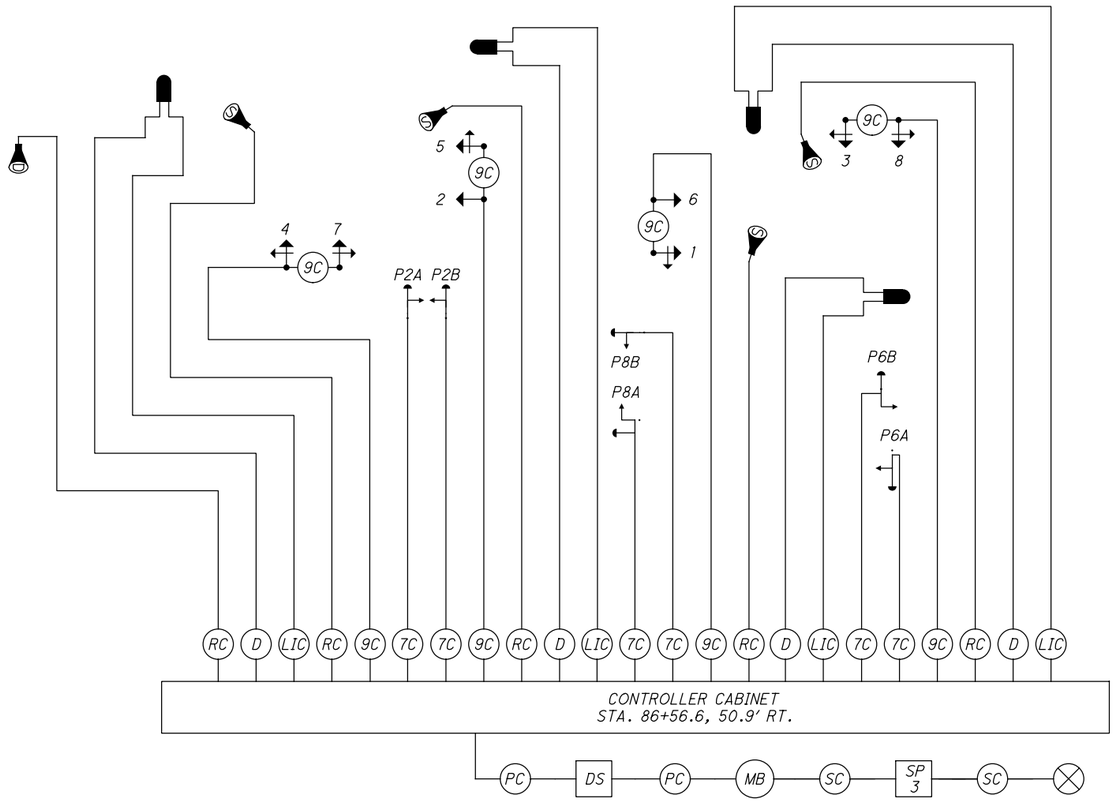
WIRING DIAGRAM



FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1 (SB LT)	R	ϕ6 R	Y
	Y	ϕ6 Y	
	G	ϕ6 G	
	<--Y---	ϕ1 Y	
	<--G---	ϕ1 G	
2 (NB)	R	ϕ2 R	Y
	Y	ϕ2 Y	
	G	ϕ2 G	
3 (WB LT)	R	ϕ8 R	R
	Y	ϕ8 Y	
	G	ϕ8 G	
	<--Y---	ϕ3 Y	
	<--G---	ϕ3 G	
4 (EB RT)	R	ϕ4 R	R
	Y	ϕ4 Y	
	G	ϕ4 G	
	---Y-->	OLB Y	
	---G-->	OLB G	
5 (NB LT)	R	ϕ2 R	Y
	Y	ϕ2 Y	
	G	ϕ2 G	
	<--Y---	ϕ5 Y	
	<--G---	ϕ5 G	
LS = LOAD SWITCH			

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
6 (SB)	R	ϕ6 R	Y
	Y	ϕ6 Y	
	G	ϕ6 G	
7 (EB LT)	R	ϕ4 R	R
	Y	ϕ4 Y	
	G	ϕ4 G	
	<--Y---	ϕ7 Y	
	<--G---	ϕ7 G	
8 (WB RT)	R	ϕ8 R	R
	Y	ϕ8 Y	
	G	ϕ8 G	
	---Y-->	OLA Y	
	---G-->	OLA G	
PEDESTRIAN MOVEMENTS			
P2A-P2B EAST	W	PEDA G (ϕ2)	OUT
	DW	PEDA R (ϕ2)	
P6A-P6B WEST	W	PEDB G (ϕ6)	OUT
	DW	PEDB R (ϕ6)	
P8A-P8B NORTH	W	PEDC G (ϕ8)	OUT
	DW	PEDC R (ϕ8)	
OVERLAPS			
-	PEDA = LS9	PEDC = LS11	-
	PEDB = LS10	-	
-	OLA = LS13	-	-
	OLB = LS14	-	

LEGEND

- 4 OR 5 SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- 3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSHBUTTON
- STOP BAR RADAR DETECTION UNIT
- DILEMMA ZONE RADAR DETECTION UNIT
- PREEMPTION CONFIRMATION LIGHT AND RECEIVING UNIT
- LIC — 2/C NO. 14 AWG (LEAD-IN CABLE)
- 7C — SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
- 9C — SIGNAL CABLE, 9 CONDUCTOR, NO. 14 AWG
- RC — RADAR DETECTION CABLE
- D — PREEMPTION DETECTOR CABLE
- POWER SOURCE
- SC — SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG
- PC — POWER CABLE, 2 CONDUCTOR, NO. 6 AWG
- MB — METER BASE
- DS — SIGNAL DISCONNECT SWITCH

CALCULATED JWG
CHECKED RMG

TRAFFIC SIGNAL PLAN DETAILS

TRANSPORTATION BLVD. / I-480 WB RAMPS / PUBLIC RD. 1

CUY-480/ TRANSPORTATION BLVD.

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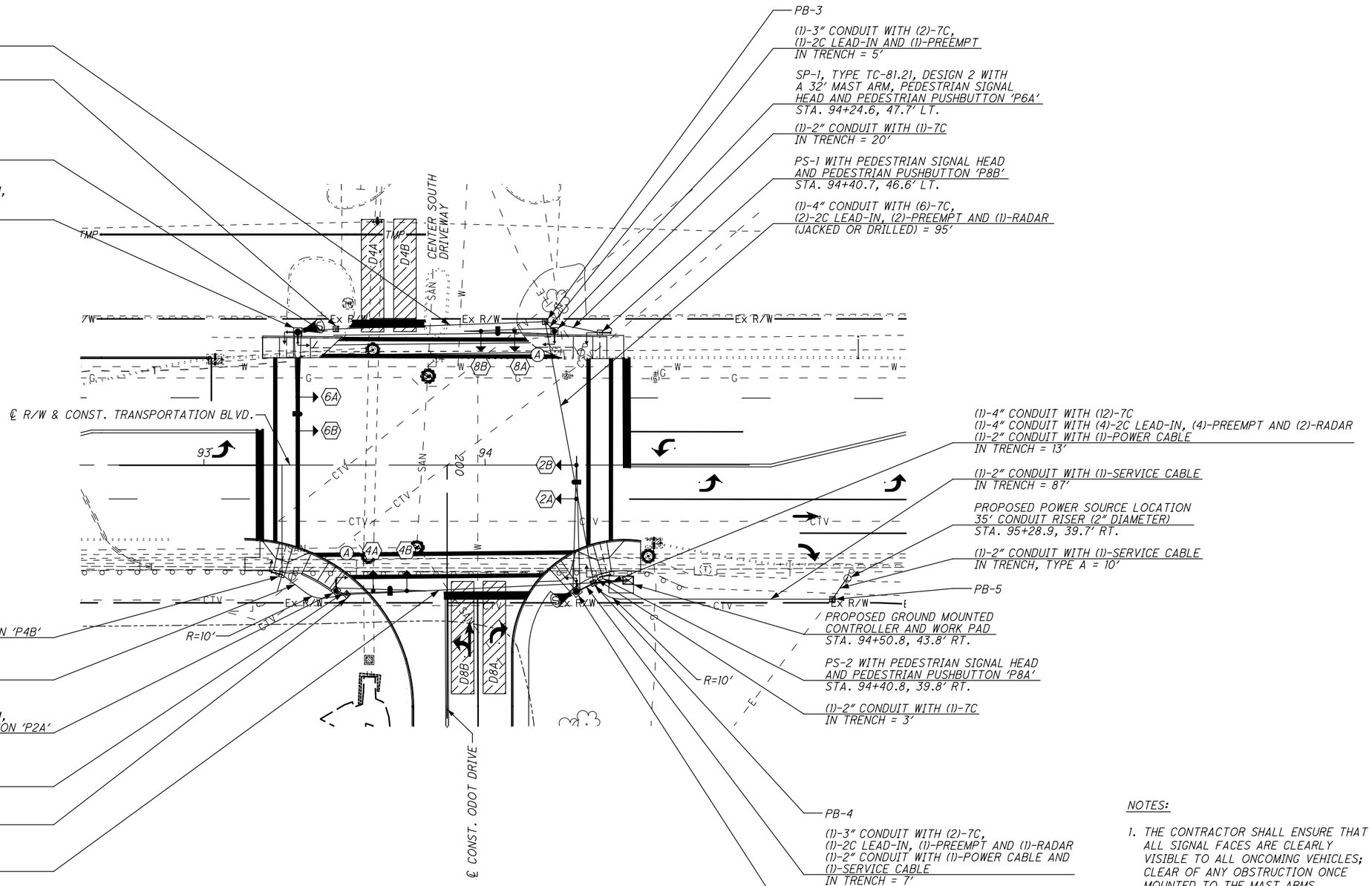
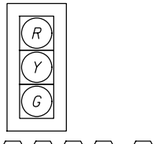


LEGEND			
TRAFFIC SIGNAL, 3 UNIT HEAD, 12"		CONTROLLER CABINET AND WORK PAD (TS2)	
TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"		STOP BAR RADAR DETECTION UNIT	
SIGNAL SUPPORT POLE		DETECTION ZONE	
PEDESTRIAN SIGNAL		PROPOSED CONDUIT	
PEDESTRIAN PUSH BUTTON		PREEMPTION RECEIVING UNIT AND CONFIRMATION LIGHT	
PEDESTAL SUPPORT		TRAFFIC PULL BOX	

SIGNAL TYPES

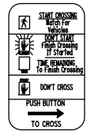


2A, 2B, 4A, 4B, 6A, 6B, 8A & 8B

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
3 - RIGHT ARROW (SP-2, SP-2, PS-2)
5 - LEFT ARROW (SP-1, SP-3, SP-4, PS-1, PS-3)

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.

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

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JWG
CHECKED RMG

TRAFFIC SIGNAL PLAN
CUY-480/ TRANSPORTATION BLVD. / ODOT DRIVE / CENTER SOUTH DRIVEWAY
CUY-480/ TRANSPORTATION BLVD. / TRANSPORTATION BLVD. / CENTER SOUTH DRIVEWAY

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SIGNAL TIMING CHART

INTERSECTION: TRANSPORTATION BLVD / ODOT DR / CENTER SOUTH DRIVEWAY
MAINTAINING AGENCY: OHIO DEPARTMENT OF TRANSPORTATION

START UP
START IN: ALL RED
TIME FOR FLASH OR ALL RED: 5
FIRST PHASE(S): (2+6)
COLOR DISPLAYED: GREEN

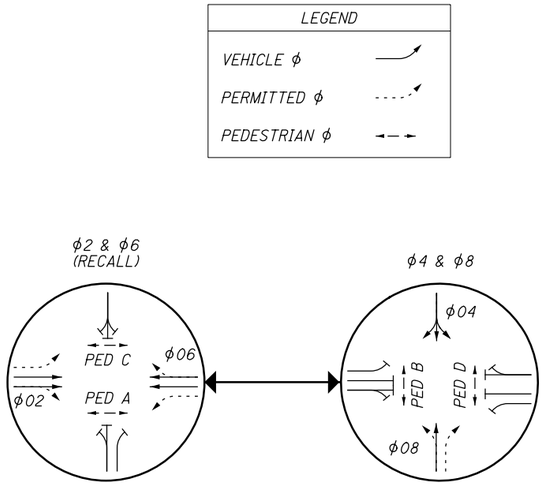
DUAL ENTRY: YES | PHASES: 2, 4, 6, 8
REST IN RED: RING 1 - | RING 2 -

OVERLAP	A	B	C	D
PHASES	-	-	-	-

INTERVAL OR FEATURE			CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)			1	2	3	4	5	6	7	8
DIRECTION			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



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	ϕ4	10	ϕ4	STOP BAR	40
D4B	EB	PRESENCE	ϕ4	0	-	STOP BAR	40
D8A	WB	PRESENCE	ϕ8	10	ϕ8	STOP BAR	40
D8B	WB	PRESENCE	ϕ8	0	-	STOP BAR	40

PREEMPT CHANNELS

CHANNEL 1 = ϕ(2) (NORTHBOUND ONLY)
CHANNEL 2 = ϕ(6) (SOUTHBOUND ONLY)
CHANNEL 3 = ϕ(4) (EASTBOUND ONLY)
CHANNEL 4 = ϕ(8) (WESTBOUND ONLY)

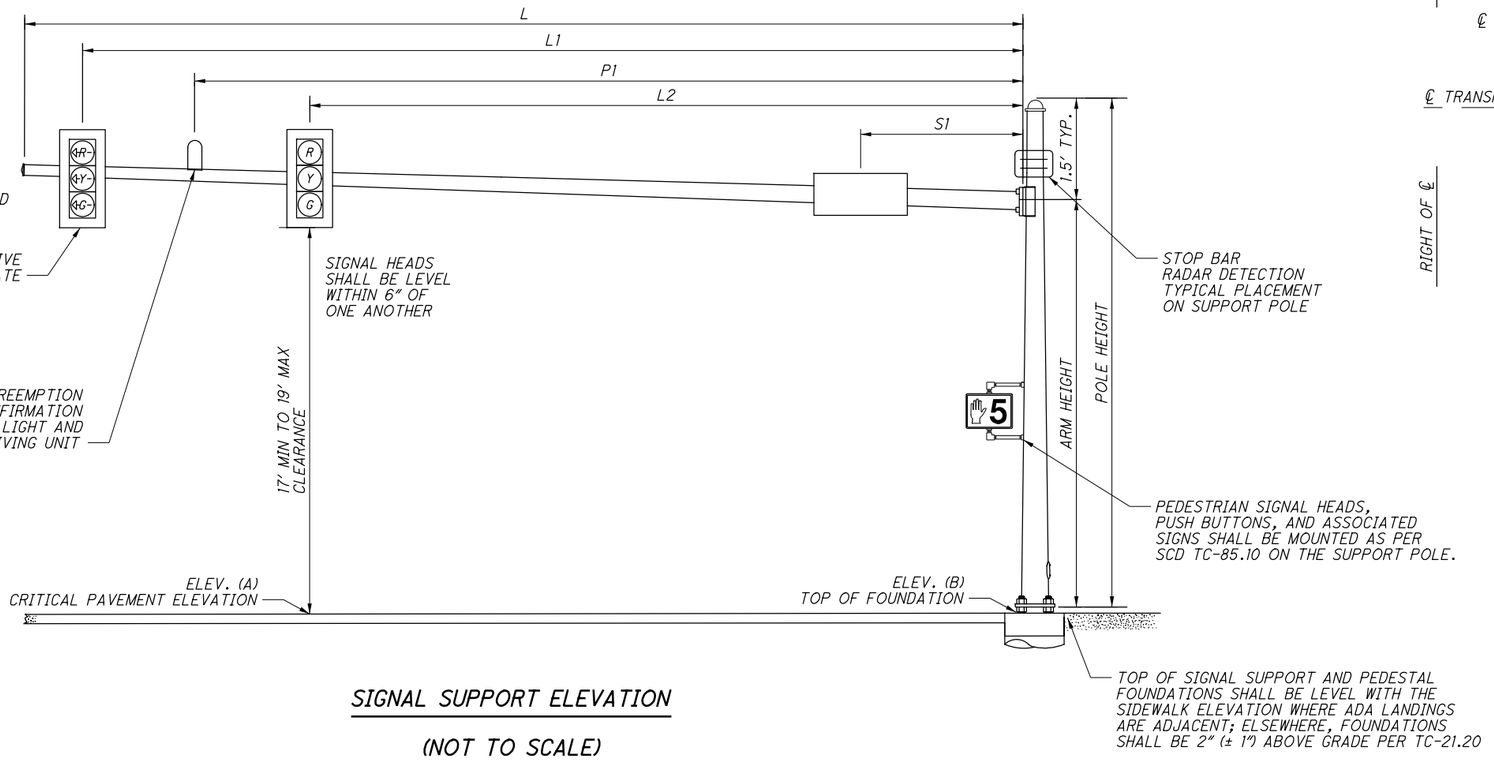
PREEMPT NOTES:

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 ϕ (2+6).
5. IF PREEMPT PHASE = RETURN PHASE ϕ (2+6) THEN YELLOW AND ALL RED CLEARANCE AFTER PREEMPT SHALL NOT BE DISPLAYED.

CALCULATED JWG | CHECKED RMG

TRAFFIC SIGNAL PLAN DETAILS
TRANSPORTATION BLVD. / ODOT DRIVE / CENTER SOUTH DRIVEWAY

CUY-480/
TRANSPORTATION BLVD.



SIGNAL SUPPORT ELEVATION

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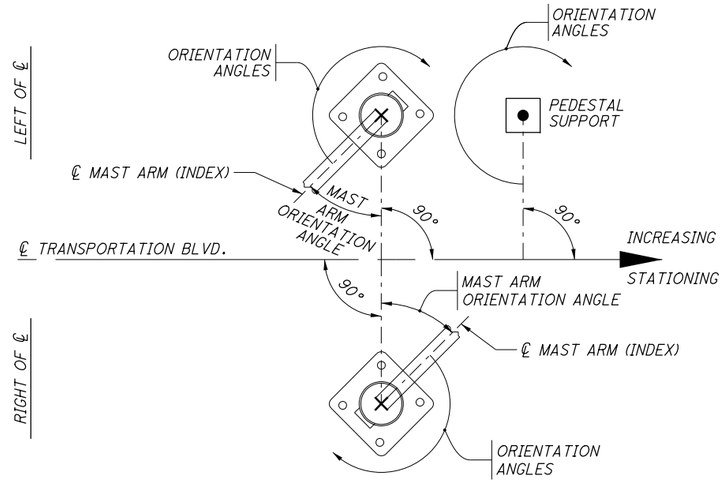

POLE ORIENTATION

(NOT TO SCALE)

MAST ARM TABLE

SUPPORT NO.	STATION	OFFSET	ELEVATION		SIGNAL SUPPORT DETAILS									MAST ARM 'A' ORIENTATION ANGLE	ORIENTATION ANGLES FROM MAST ARM 'A' / INDEX LINE			
			A	B	DESIGN TYPE	DESIGN NO.	POLE HEIGHT	ARM HEIGHT	L	L1	L2	P1	S1		PEDESTRIAN SIGNAL	PEDESTRIAN BUTTON	POWER SERVICE	HANDHOLE
							FT	FT	FT	FT	FT	FT	FT	DEG	DEG	DEG	DEG	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

CALCULATED JWG
CHECKED RMG

TRAFFIC SIGNAL PLAN DETAILS

CUY-480/ TRANSPORTATION BLVD. / ODOT DRIVE / CENTER SOUTH DRIVEWAY

TRANSPORTATION BLVD.

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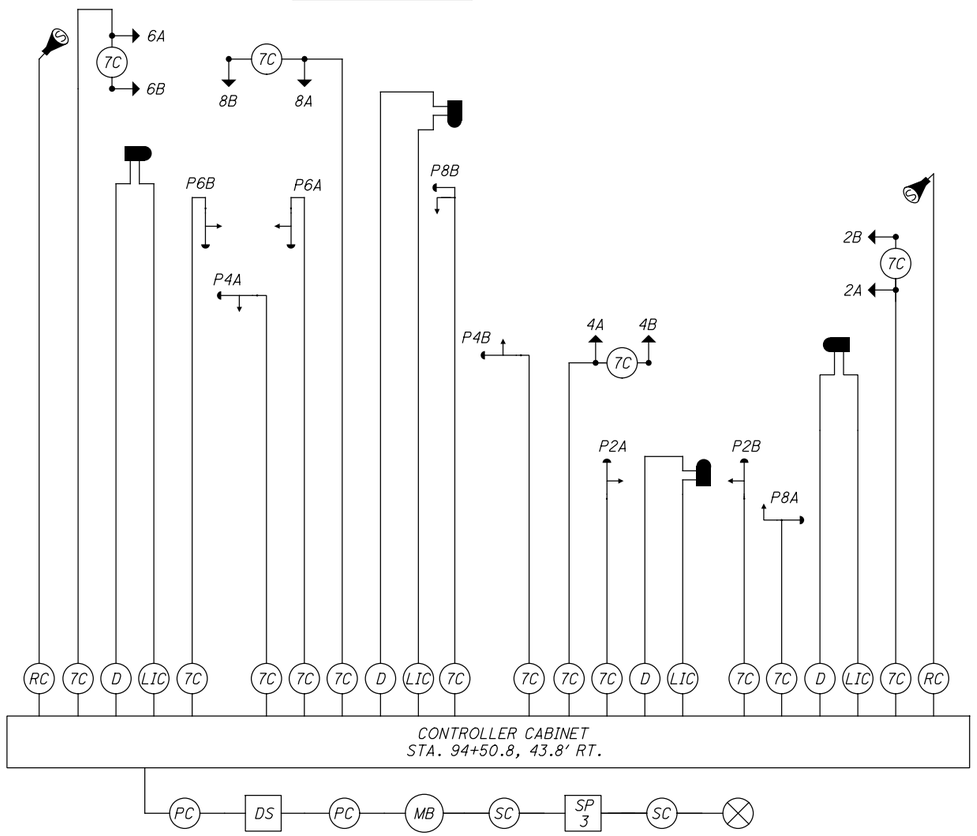
WIRING DIAGRAM



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	D	PREEMPTION DETECTOR CABLE
	3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY	RC	RADAR DETECTION CABLE
	PEDESTRIAN SIGNAL HEAD		POWER SOURCE
	PEDESTRIAN PUSHBUTTON	SC	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG
	PREEMPTION CONFIRMATION LIGHT AND RECEIVING UNIT	PC	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG
S	STOP BAR RADAR DETECTION UNIT	MB	METER BASE
LIC	2/C NO. 14 AWG (LEAD-IN CABLE)	DS	SIGNAL DISCONNECT SWITCH
7C	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		

CALCULATED JWG
CHECKED RMG

TRAFFIC SIGNAL PLAN DETAILS
CUY-480/ TRANSPORTATION BLVD. / ODOT DRIVE / CENTER SOUTH DRIVEWAY
TRANSPORTATION BLVD.

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COORDINATION TIMING CHART

	SPLITS (G+Y+AR) IN SECONDS								OFFSET 1 (SEC)	OFFSET 2 (SEC)
PHASE	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	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

	SPLITS (G+Y+AR) IN SECONDS								OFFSET 1 (SEC)	OFFSET 2 (SEC)
PHASE	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	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

	SPLITS (G+Y+AR) IN SECONDS								OFFSET 1 (SEC)	OFFSET 2 (SEC)
PHASE	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	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

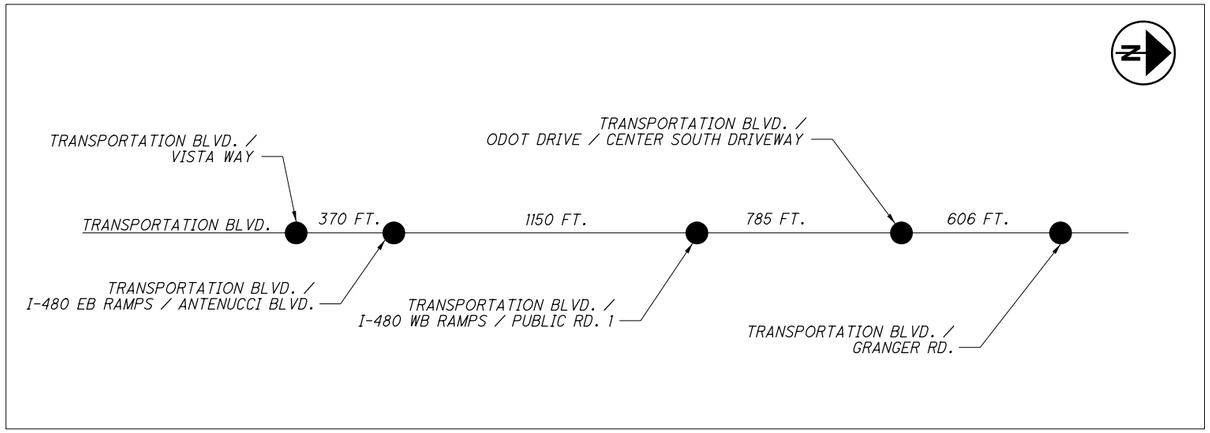
	SPLITS (G+Y+AR) IN SECONDS								OFFSET 1 (SEC)	OFFSET 2 (SEC)
PHASE	1	2	3	4	5	6	7	8		
DIRECTION	SBL	NB	WBL	EB	NBL	SB	EBL	WB		
PLAN NO.	TRANSPORTATION BOULEVARD / I-480 EB RAMPS / ANTENUCCI BOULEVARD									
1/1/1	15	35	15	35	15	35	30	20	45	-
2/2/2	15	35	15	35	15	35	30	20	55	-
3/3/3	15	35	15	35	15	35	30	20	20	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

	SPLITS (G+Y+AR) IN SECONDS								OFFSET 1 (SEC)	OFFSET 2 (SEC)
PHASE	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	-	-

CALCULATED JWG
CHECKED KMG

TRAFFIC SIGNAL COORDINATION PLAN
TRANSPORTATION BOULEVARD

CUY-480/
TRANSPORTATION BLVD.

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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 AE2081I, COOPER "WALL LIGHT"WITH PHOTOMETRIC DISTRIBUTION WPK15SXX, GENERAL ELECTRIC "VERSAFLOOD II WALLIGHTER" 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.

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.

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.

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 A

IN ADDITION TO THE REQUIREMENTS OF C.M.S. 625.22 AND OTHERWISE NOTED IN THIS PLAN, THE FOLLOWING POWER SERVICE REQUIREMENTS FOR CIRCUIT "ITRAN" SHALL APPLY:

WHEN A NEW POWER SERVICE HAS BEEN ESTABLISHED THE CONTRACTOR SHALL PRESENT AN INVOICE TO THE PROJECT ENGINEER FOR ANY CHARGES MADE BY THE POWER COMPANY FOR WORK BY THE COMPANY IN CONJUNCTION WITH THE ESTABLISHMENT OF THE REQUIRED SERVICE. THE INVOICE SHALL INCLUDE ITEMIZED MATERIALS, LABOR AND ALL OVERHEAD COSTS SUPPLIED BY THE POWER COMPANY IN ESTABLISHING THE SERVICE. ONCE THE INVOICE IS APPROVED BY THE PROJECT ENGINEER, THE CONTRACTOR SHALL BE REIMBURSED ACCORDINGLY FOR WORK DONE BY THE POWER COMPANY.

ELECTRICAL ENERGY FROM EXISTING POWER SERVICES SHALL CONTINUE TO BE CHARGED TO THE MAINTAINING AGENCY. THE CONTRACTOR SHALL PAY ELECTRICAL ENERGY CHARGES FOR NEW POWER SERVICES ESTABLISHED BY THIS PROJECT. AFTER ACCEPTANCE OF THE LIGHTING, THE ENGINEER SHALL ENSURE THAT EACH POWER SERVICES' ELECTRICAL ENERGY ACCOUNT AND BILLING ADDRESS ARE IN THE NAME OF THE MAINTAINING AGENCY NOTED IN THE PLANS. THIS SHALL BE DONE FOR EACH NEW POWER SERVICE ESTABLISHED BY THIS PROJECT.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE OF EACH FOR ITEM 625-POWER SERVICE, AS PER PLAN B WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

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ITEM 625, POWER SERVICE, AS PER PLAN B ⚠

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, IPH, 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 MOUNITNG 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.

NO.	DESCRIPTION	REV. BY	DATE
1	NEW ITEMS/ITEM REVISIONS	JMB	1-24-18

CALCULATED WF | CHECKED MM

LIGHTING NOTES

CUY-480/ TRANSPORTATION BLVD.

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	⚠1										625	34001	1	EACH	POWER SERVICE, AS PER PLAN, A	175
	1											625	34001	1	EACH	POWER SERVICE, AS PER PLAN, B ⚠1	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

NO.	DESCRIPTION	REV. BY	DATE
1	NEW ITEMS/ITEM REVISIONS	JMB	1-24-18

CALCULATED WF
CHECKED MM

LIGHTING GENERAL SUMMARY

CUY-480/
TRANSPORTATION BLVD.

LIGHTING SUBSUMMARY

CALCULATED WF | CHECKED MM

REFERENCE NUMBER	SHEET NUMBER	SIDE	ROADWAY	STATION TO STATION	625 LIGHT POLE, CONVENTIONAL, AT10, B35 EACH	625 LIGHT POLE, CONVENTIONAL, AT15, B35 EACH	625 LIGHT POLE, CONVENTIONAL, AT20, B35 EACH	625 LIGHT POLE, CONVENTIONAL, A25, B35 EACH	625 LUMINAIRE, TYPE II, 200W, CONVENTIONAL, AS PER PLAN EACH	625 LUMINAIRE, TYPE III, 200W, CONVENTIONAL, AS PER PLAN EACH	625 LUMINAIRE, TYPE III, 250W, CONVENTIONAL, AS PER PLAN EACH		625 LIGHT POLE FOUNDATION, 24" X 6' DEEP EACH	625 PULL BOX, 725.08, 18" EACH		625 TRENCH, 24" DEEP FT	625 CONDUIT, 2", 725.051 FT	625 CONDUIT, 4", 725.04 FT	625 POWER SERVICE, AS PER PLAN A EACH	625 1-1/2" DUCT CABLE WITH THREE NO. 4 AWG 2400 VOLT CABLES FT	625 NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE FT	625 NO. 10 AWG POLE & BRACKET CABLE FT	625 CONNECTION, FUSED PULL-APART EACH	625 CONNECTION, UNFUSED PERMANENT EACH	625 GROUND ROD EACH	625 PLASTIC CAUTION TAPE FT	625 POWER SERVICE, AS PER PLAN B EACH	625 CONNECTION, UNFUSED PERMANENT, AS PER PLAN EACH	625 NO. 2 AWG 2400 VOLT DISTRIBUTION CABLE FT
PB-1	181	LT	I-480 EB ON RAMP	44+50										1										3					
	181	LT	I-480 EB ON RAMP	44+50 TO 44+39												10					20						10			
L-1	181	LT	I-480 EB ON RAMP	44+39		1				1			1										186	2	1	1				
PB-2	181	LT	I-480 EB ON RAMP	43+62										1										3					
C-1		LT	TRANSPORTATION BLVD.	43+62 TO 21+44													86					288								
L-2	182	LT	TRANSPORTATION BLVD.	21+44				1			1												216	2	1	1				
C-2	182	LT	TRANSPORTATION BLVD.	21+44 TO 19+44													200					630								
L-3	182	LT	TRANSPORTATION BLVD.	19+44				1			1												216	2	1	1				
C-3	182	LT	TRANSPORTATION BLVD.	19+44 TO 17+46													199					627								
PB-3	182	LT	TRANSPORTATION BLVD.	17+46										1										3					
	182	LT	TRANSPORTATION BLVD.	17+46 TO 17+29												17					27						17			
L-4	182	LT	TRANSPORTATION BLVD.	17+29		1				1			1										186	2	1	1				
		LT	TRANSPORTATION BLVD.	17+29 TO 16+06												123					133						123			
L-5	183	LT	TRANSPORTATION BLVD.	16+06		1				1			1										186	2	1	1				
	183	LT	TRANSPORTATION BLVD.	16+06 TO 14+95												114					124						114			
L-6	183	LT	TRANSPORTATION BLVD.	14+95			1			1			1										201	2	1	1				
	183	LT	TRANSPORTATION BLVD.	14+95 TO 14+66												34					44						34			
PB-4	183	LT	TRANSPORTATION BLVD.	14+66										1										3					
C-4	183	LT	TRANSPORTATION BLVD.	14+66 TO 86+55														122				396								
PB-5	183	LT	TRANSPORTATION BLVD.	86+55										1										3					
	183	LT	TRANSPORTATION BLVD.	86+55 TO 86+94												50					60						50			
L-7	183	LT	TRANSPORTATION BLVD.	86+94	1					1			1										171	2	1	1				
PB-6	181	RT	TRANSPORTATION BLVD.	22+30										1										3					
	181	RT	TRANSPORTATION BLVD.	22+30 TO 22+20												11					21						11			
L-8	181	RT	TRANSPORTATION BLVD.	22+20		1				1			1										186	2	1	1				
L-9	182	RT	TRANSPORTATION BLVD.	20+25				1			1												216	2	1	1				
L-10	182	RT	TRANSPORTATION BLVD.	18+39				1			1												216	2	1	1				
L-11	183	RT	TRANSPORTATION BLVD.	14+39	1					1			1										171	2	1	1				
	183	RT	TRANSPORTATION BLVD.	14+39 TO 14+39												14					24						14			
EX. PB	183	RT	TRANSPORTATION BLVD.	14+39																				3						
PB-8	183	LT	RAMP I-480 WB EXIT	400+52										1										3					
	183	LT/RT	RAMP I-480 WB EXIT/TRANS. BLVD.	400+52 TO 86+59												18					28						18			
L-12	183	RT	TRANSPORTATION BLVD.	86+59		1				1			1										186	2	1	1				
L-13	183	LT	RAMP I-480 WB EXIT	401+46		1				1			1										186	2	1	1				
		LT	RAMP I-480 WB EXIT	401+46 TO 403+14												176					186						176			
L-14	184	LT	RAMP I-480 WB EXIT	403+14		1			1				1										186	2	1	1				
	184	LT	RAMP I-480 WB EXIT	403+14 TO 404+83												179					189						179			
L-15	184	LT	RAMP I-480 WB EXIT	404+83		1			1				1										186	2	1	1				
	184	LT	RAMP I-480 WB EXIT	404+83 TO 406+07												127					137						127			
PB-9	184	LT	RAMP I-480 WB EXIT	406+07										1										3					
PS-1	183	LT	TRANSPORTATION BLVD.	15+86 ⚠																1	⚠									
PS-2	183	LT	TRANSPORTATION BLVD.	87+24																								1	1	
	183	LT	TRANSPORTATION BLVD.	87+24 TO 86+55													78													352
PB-17	183	LT	TRANSPORTATION BLVD.	86+55										1										4					
	183	LT	TRANSPORTATION BLVD.	86+55 TO 14+66														122												528
PB-16	183	LT	TRANSPORTATION BLVD.	14+66										1										4					
	183	LT	TRANSPORTATION BLVD.	14+66 TO 1TRAN													120													520
TOTALS CARRIED TO GENERAL SUMMARY					2	8	1	4	2	9	4		11	10		873	683	244	1	993	1941	2895	38	42	15	873	1	1	1400

NO.	DESCRIPTION	REV. BY	DATE
1	NEW ITEMS/ITEM REVISIONS	JMB	1-24-18

CUY-480/
TRANSPORTATION BLVD.

REFERENCE NUMBER	SHEET NUMBER	SIDE	ROADWAY	STATION TO STATION	625 LUMINAIRE, UNDERPASS, AS PER PLAN	625 LIGHTING MISC,: CAMERA RELOCATION					625 LIGHTING MISC,: AREA LUMINAIRE AND POLE	625 LIGHT POLE FOUNDATION, 24" X 6' DEEP, AS PER PLAN	625 PULL BOX, 725.08, 18"	625 TRENCH, 24" DEEP	625 CONDUIT, 2", 725.051	625 CONDUIT, 4", 725.04	625 NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE	625 NO. 10 AWG POLE & BRACKET CABLE	625 CONNECTION, FUSED PULL-APART	625 CONNECTION, UNFUSED PERMANENT	625 GROUND ROD	625 PLASTIC CAUTION TAPE	
					EACH	EACH					EACH	EACH	EACH	FT	FT	FT	FT	FT	EACH	EACH	EACH	FT	
PB-10	186	RT	ODOT DRIVE	205+02									1							3			
	186	RT	ODOT DRIVE	205+02 TO 204+99										81	81		273					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 LIGHT POLE REMOVED	625 LIGHT POLE FOUNDATION REMOVED	625 LUMINAIRE REMOVED																
					EACH	EACH	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																
R-8	182				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	0

CALCULATED WF CHECKED MM

LIGHTING SUBSUMMARY

CUY-480/ TRANSPORTATION BLVD.

℄ CONST. PUBLIC RD 2

℄ R/W & CONST. E 96TH ST

℄ R/W & CONST. GRANGER RD.

℄ CONST. ODOT DRIVE

℄ R/W & CONST. TRANSPORTATION BLVD.

℄ R/W E 100TH ST.

℄ CONST. PUBLIC RD 1

℄ R/W I-480

℄ R/W I-480 EB ON RAMP

℄ CONST. I-480 WB EXIT RAMP

℄ R/W & CONST. I-480 WB ON RAMP

℄ R/W I-480 WB EXIT RAMP

℄ R/W & CONST. ANTENUCCI BLVD.

181

182

183

184

185

186

Ex R/W

Ex LA

Ex LA-R/W

Ex U

TMP R/W

1045 1050 1055 1060

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED WF
CHECKED MM

LIGHTING SCHEMATIC PLAN

CUY-480/ TRANSPORTATION BLVD.

LIGHTING WORK

179
225

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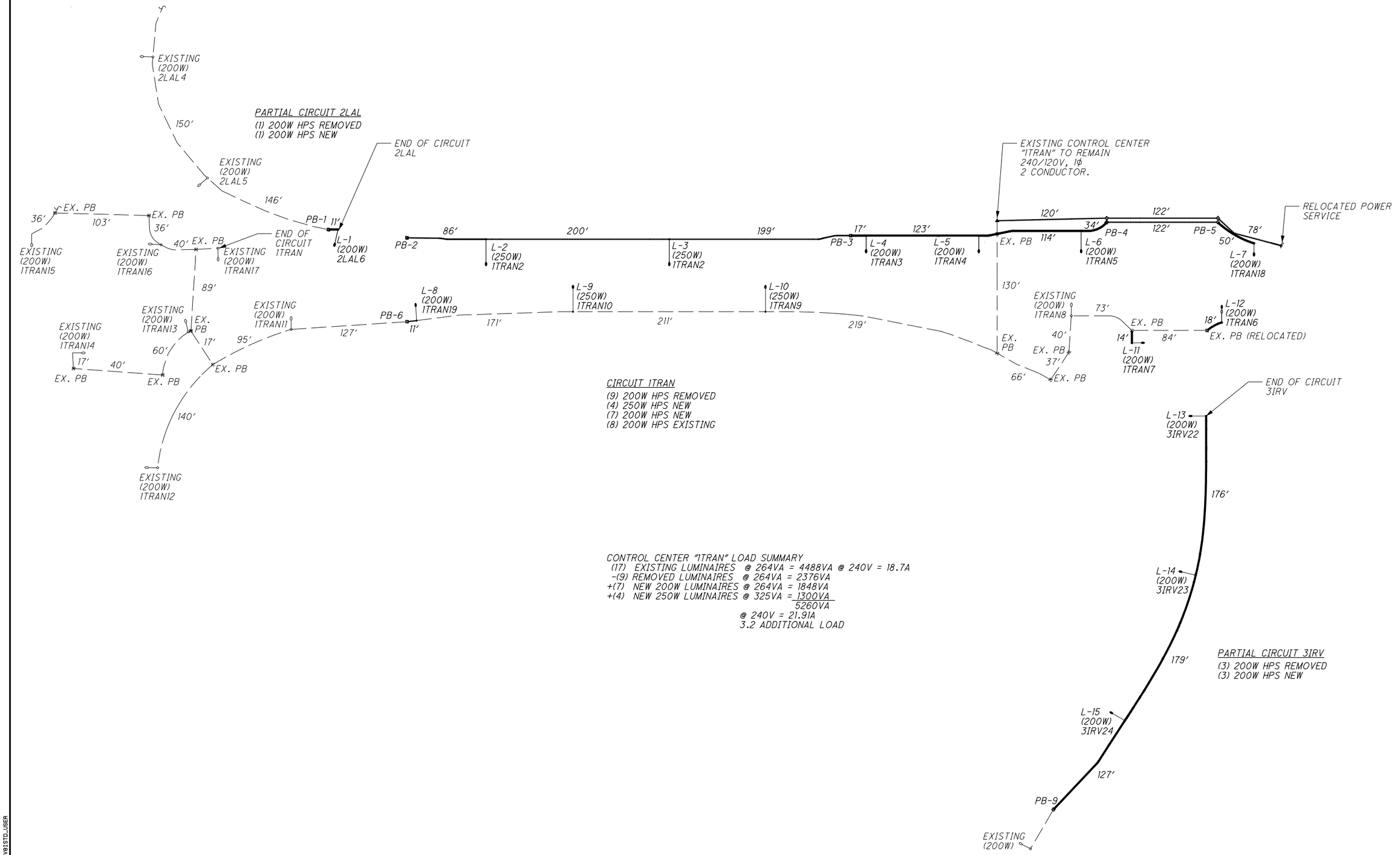

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HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED WF
CHECKED MM

LIGHTING CIRCUIT DIAGRAM
BEGIN TO STA. 22+00

CUY-480/
TRANSPORTATION BLVD.

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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.

END OF LIGHTING AREA OF WORK.
REFER TO SCHEMATIC PLAN FOR AREAS OF LIGHTING WORK.

EXISTING 200W, HPS LUMINAIRE TO REMAIN (CKT. 2LAL5)

EXISTING LIGHTING PULLBOX TO REMAIN V.I.F.

EXISTING 200W, HPS LUMINAIRE TO REMAIN (CKT. ITRANI6)

EXISTING LIGHTING PULLBOX TO REMAIN V.I.F.

EXISTING 200W, HPS LUMINAIRE TO REMAIN (CKT. ITRANI7)

PULL BOX, 18" STA. 44+50, 10.7' LT. PB-1 (1)

EXISTING 200W, HPS POLE MOUNTED LUMINAIRE TO BE REMOVED (EXIST. CKT. 2LAL6) R-1

TYPE III, 200W HPS, 15' BRACKET ARM STA. 44+39, 13.2' LT. (NEW CKT. 2LAL6) L-1

PULL BOX, 18" STA. 43+62, 17.4' LT. PB-2

EXISTING LIGHTING PULLBOX TO REMAIN V.I.F.

EXISTING 200W, HPS LUMINAIRE MOUNTED ON COMBO SIGNAL POLE TO REMAIN (CKT. ITRANI5)

℄ R/W I-480 EB ON RAMP

℄ R/W & CONST. TRANSPORTATION BLVD.

MATCHLINE STA. 22+00 TRANSPORTATION BLVD. SEE SHEET 182.

(1) PB-6 PULL BOX, 18" STA. 22+30, 42.9' RT.

L-8 TYPE III, 200W, HPS, 15' BRACKET ARM STA. 22+20, 41.7' RT. (CKT. ITRANI9)

EXISTING 200W, HPS LUMINAIRE TO REMAIN (CKT. ITRANI1)

EXISTING LIGHTING PULLBOX TO REMAIN. V.I.F.

EXISTING 200W, HPS LUMINAIRE MOUNTED ON COMBO SIGNAL POLE TO REMAIN (CKT. ITRANI3)

EXISTING 200W, HPS LUMINAIRE MOUNTED ON COMBO SIGNAL POLE TO REMAIN (CKT. ITRANI4)

EXISTING LIGHTING PULLBOX TO REMAIN. V.I.F.

EXISTING LIGHTING PULLBOX TO REMAIN. V.I.F.

TO EXISTING ITRANI2 TO REMAIN

END OF LIGHTING AREA OF WORK.
REFER TO SCHEMATIC PLAN FOR AREAS OF LIGHTING WORK.

LEGEND

- SUB-SUMMARY REFERENCE NUMBER, R-INDICATES REMOVAL
- EXISTING LIGHTING CIRCUIT TO REMAIN. VERIFY IN FIELD.
- NEW DIRECT BURIED DUCT CABLE, 1½" 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

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED WF
CHECKED MM

LIGHTING PLAN
BEGIN TO STA. 22+00
CUY-480/ TRANSPORTATION BLVD.

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C-2 (2) #4 AWG, 2400V
IN 2" CONDUIT
(ROUTED IN BRIDGE PARAPET)

R-2 EXISTING 200W, HPS
LUMINAIRE MOUNTED ON EXISTING
LIGHT POLE PILASTER TO BE REMOVED
(EXIST. CKT. 1TRAN1)

L-2 TYPE III, 250W, HPS, 25' BRACKET ARM
STA. 21+44, 47.0' LT.
(MOUNTED ON LIGHT POLE PILASTER)
(NEW CKT. 1TRAN1)

C-1 (2) #4 AWG, 2400V
IN 2" CONDUIT
(ROUTED IN BRIDGE PARAPET)

C-3 (2) #4 AWG, 2400V
IN 2" CONDUIT
(ROUTED IN BRIDGE PARAPET)

L-3 TYPE III, 250W, HPS, 25' BRACKET ARM
STA. 19+44, 47.0' LT.
(MOUNTED ON LIGHT POLE PILASTER)
(NEW CKT. 1TRAN2)

R-3 EXISTING 200W, HPS
LUMINAIRE MOUNTED ON EXISTING
LIGHT POLE PILASTER TO BE REMOVED
(EXIST. CKT. 1TRAN2)

L-4 TYPE III, 200W, HPS, 15' BRACKET ARM
STA. 17+29, 51.0' LT.
(NEW CKT. 1TRAN3)

PB-3 PULL BOX, 18"
STA. 17+46, 51.0' LT.

R-4 EXISTING 200W, HPS
POLE MOUNTED LUMINAIRE
TO BE REMOVED
(EXIST. CKT. 1TRAN3)

MATCHLINE STA. 22+00, TRANSPORTATION BLVD.
SEE SHEET 181.

℄ R/W & CONST. TRANSPORTATION BLVD.

21 20 19 18

MATCHLINE STA. 17+00, TRANSPORTATION BLVD.
SEE SHEET 183.

R-7 L-9 TYPE III, 250W, HPS, 25' BRACKET ARM
STA. 20+25, 32.0' RT.
(MOUNTED ON LIGHT POLE PILASTER)
(CKT. 1TRAN10)

R-8 L-10 TYPE III, 250W, HPS, 25' BRACKET ARM
STA. 18+39, 32.0' RT.
(MOUNTED ON LIGHT POLE PILASTER)
(CKT. 1TRAN9)

U-1 EXISTING UNDERPASS WALLPACKS
TO BE REMOVED AND REPLACED
(TYPICAL OF 4)

SEE SHEET 181 FOR LIGHTING PLAN LEGEND.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED WF
CHECKED MM

LIGHTING PLAN
STA. 22+00 TO STA. 17+00
CUY-480/ TRANSPORTATION BLVD.

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NOTES

1. LUMINAIRES MOUNTED ON CONVENTIONAL LIGHT POLES AND COMBINATION SIGNAL POLES SHALL BE MOUNTED AT 36.5' AFG.

⚠ ⚠

PS-1 POWER SERVICE, AS PER PLAN A
EXISTING CONTROL CENTER "ITRAN"
STA. 15+86, 67.2' LT.

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-16 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.

PB-17 PULL BOX, 18"
STA. 86+55, 70.0' LT.

PB-5 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-2 POWER SERVICE, AS PER PLAN B
RELOCATED CEI POLE 73150
STA. 87+24, 40.0' LT.

CONNECTION, UNFUSED PERMANENT, AS PER PLAN
(ATT & POWER SERVICE
FOR ODOT CAMERA)

℄ CONST. PUBLIC RD. 1

℄ R/W & CONST. TRANSPORTATION BLVD.

STA. 13+80.52 BACK ℄ R/W & CONST. TRANSPORTATION BLVD.
STA. 86+19.48 AHEAD R/W & CONST. TRANSPORTATION BLVD.

MATCHLINE STA. 17+00, TRANSPORTATION BLVD.
SEE SHEET 182.

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. 3IRV20)

CKT. 3IRV

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. 3IRV21)

② 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)

CKT. 3IRV

℄ CONST. RAMP I-480 WB EXIT

EXISTING 250W, HPS
LUMINAIRE TO REMAIN

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 ① 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. 3IRV22)

R-11 EXISTING 200W, HPS
POLE MOUNTED LUMINAIRE
TO BE REMOVED
(EXIST. CKT. 3IRV22)

MATCHLINE STA. 401+86, I-480 WB RAMP
SEE SHEET 184.

L-12

NO.	DESCRIPTION	REV. BY	DATE
1	NEW ITEMS/ITEM REVISIONS	JMB	1-24-18

SEE SHEET 181 FOR LIGHTING PLAN LEGEND.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED WF
CHECKED MM

LIGHTING PLAN
STA. 17+00 TO STA. 88+00

CUY-480/
TRANSPORTATION BLVD.

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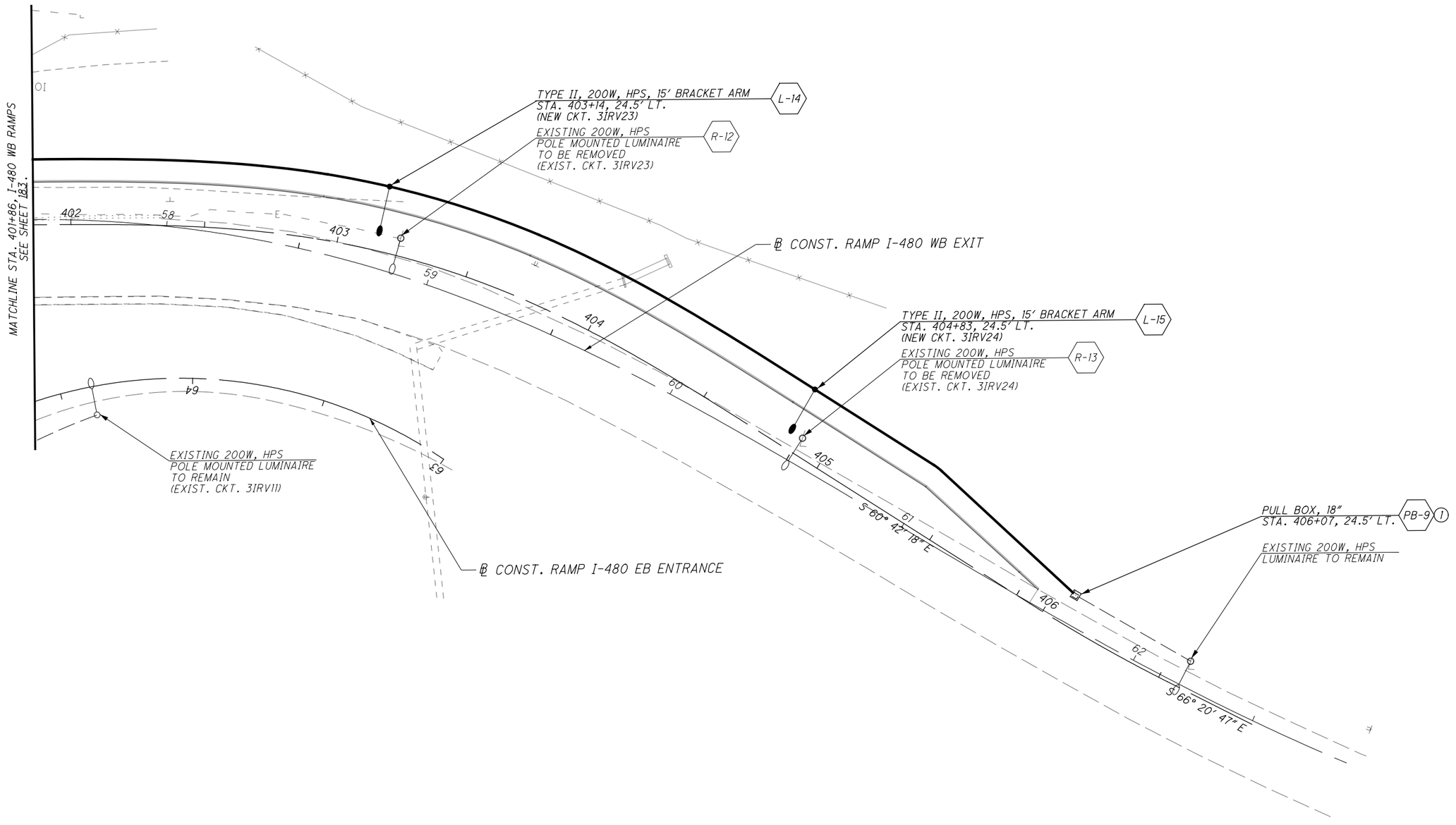
KEY NOTES

(1) PROVIDE PULL BOX FOR CONNECTION TO EXISTING LIGHTING CIRCUIT.



SEE SHEET 181 FOR LIGHTING PLAN LEGEND.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED WF
CHECKED MM

LIGHTING PLAN
STA. 57+50 TO END

CUY-480/
TRANSPORTATION BLVD.

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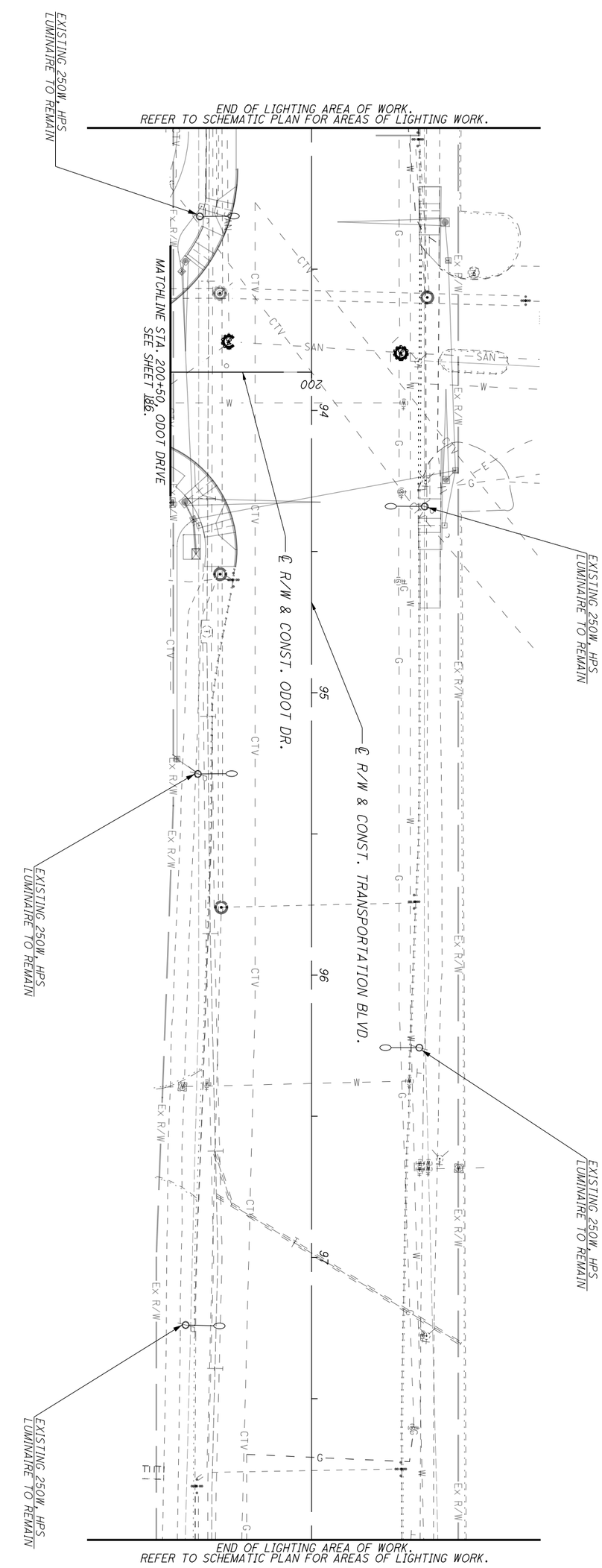

CUY-480/
TRANSPORTATION BLVD.

LIGHTING PLAN
STA. 93+00 TO STA. 98+00

CALCULATED WF
CHECKED MM

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HORIZONTAL SCALE IN FEET

N

NOTES

1. AREA LIGHTS SHALL BE MOUNTED AT 30' AFG ON SQUARE ALUMINUM POLE, DARK BRONZE

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/1Φ LIGHTING CIRCUIT FROM ODOT OFFICE ELECTRICAL PANEL. COORDINATE IN FIELD.
3. PROVIDE PULLBOX 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. DISCONNET AND REMOVE WIRING BACK TO SOURCE OR NEXT DEVICE TO REMAIN. EXISTING CONDUIT SYSTEM TO BE USED FOR NEW LIGHTING CIRCUIT.

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 C-6

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. L-17

NEW PULL BOX, 18" STA. 203+63, 22.9' RT. 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 C-7

NEW PULL BOX, 18" STA. 203+68, 16.9' LT. PB-14

AREA LUMINAIRE AND POLE, 250W METAL HALIDE STA. 203+71, 17.4' LT. L-18

EXISTING HELIPAD LIGHTING TO BE REMOVED, SALVAGED, AND RETURNED TO ODOT. (TYPICAL 6) R 5

NEW LOCATION FOR RELOCATED SECURITY CAMERA AND ASSOCIATED POLE. PROVIDE NEW FOUNDATION. STA. 205+01, 43.9' RT. S-1 4

EXISTING POLE MOUNTED SECURITY CAMERA TO BE RELOCATED

LEGEND

- 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

HORIZONTAL SCALE IN FEET 0 15 30 60

CALCULATED WF CHECKED MM

LIGHTING PLAN
ODOT DRIVE

CUY-480/ TRANSPORTATION BLVD.

186 225

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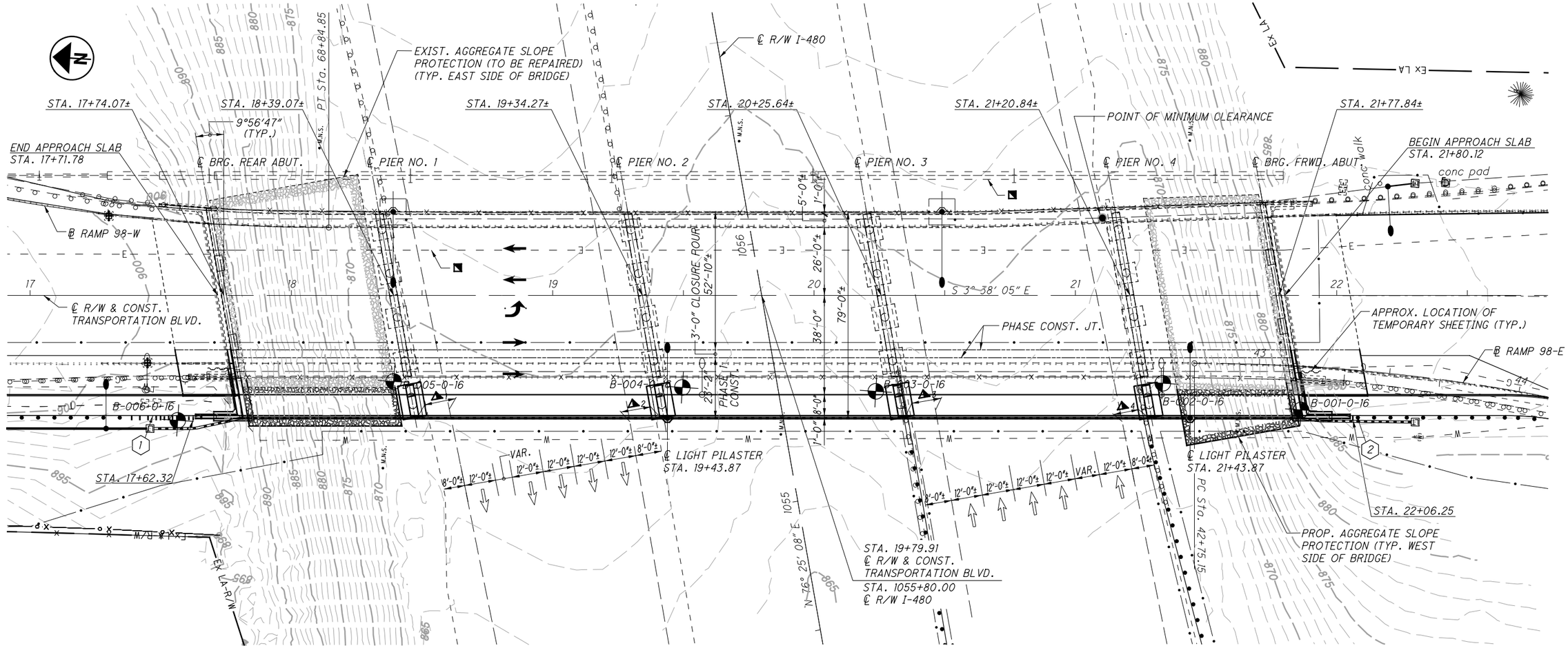

PLAN

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

MINIMUM VERTICAL CLEARANCE:

● 15.89′ EXIST. AND PROP.

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

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.

EXISTING STRUCTURE

TYPE: CONTINUOUS WELDED STEEL GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE

SPANS: 65′-0″±, 95′-2⅜″±, 91′-4½″±, 95′-2⅜″±, 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: 2½″± 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′-2⅜″±, 91′-4½″±, 95′-2⅜″±, 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″

DESIGN AGENCY
GPD GROUP.
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
5500 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 - 216.518.5544

DESIGNED	DRAWN	REVIEWED	DATE
DGN	RPR	TJW	3-1-17
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SAT		1812556	

CUYAHOGA COUNTY
STA. 17+71.78
STA. 21+80.12

SITE PLAN
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-TRANSPORTATION BLVD.
PID No. 80974

1/39
187/225

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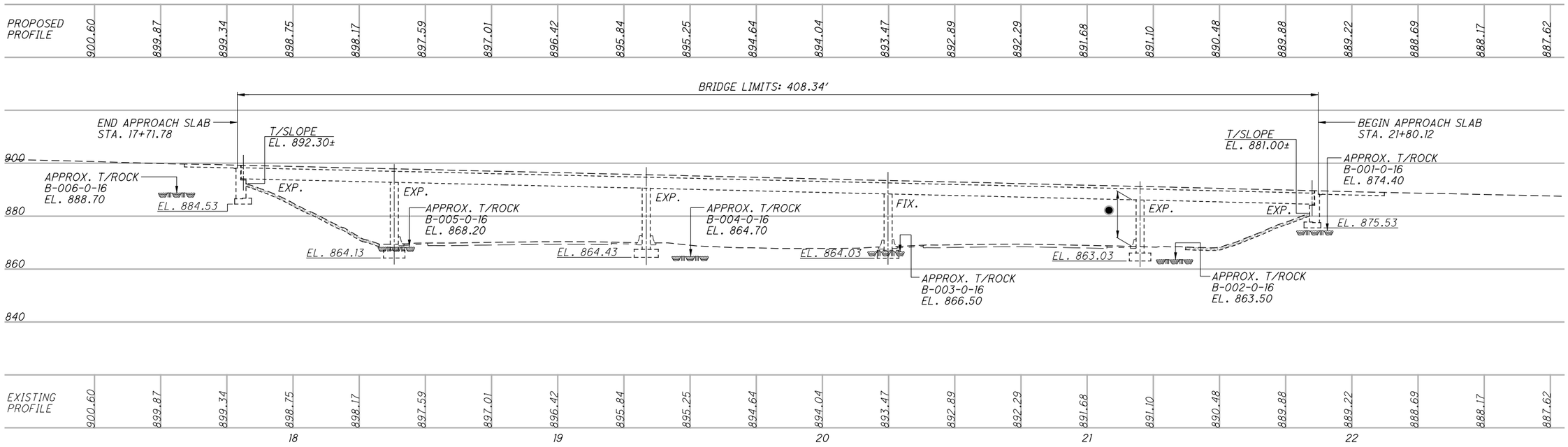

PROFILE ALONG ℄ CONST. & R/W TRANSPORTATION BLVD.

MINIMUM VERTICAL CLEARANCE:

- 15.89' EXIST. AND PROP.

DESIGN AGENCY
GPD GROUP.
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
5995 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 - 216.518.5544

DESIGNED	DRAWN	REVIEWED	DATE
DGN	RPR	TJW	3-1-17
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SAT		1812556	

CUYAHOGA COUNTY
STA. 17+71.78
STA. 21+80.12

SITE PLAN - PROFILE
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974

2 / 39

188
225

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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
2½" 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 PREPARATAION 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.

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DESIGN AGENCY
GPD GROUP.
Akron, Philadelphia, Boston & Baltimore, Inc.
5500 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 - 216.518.2544

DESIGNED	DRAWN	REVIEWED	DATE
RFV	RFV	DGN	3-1-17
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DJC		1812556	

GENERAL NOTES
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974

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	2 53	CY	SHALE EXCAVATION		2 53			
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	1 1596	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	98		1404	1 94	
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.	PREFORMED 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
℄	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

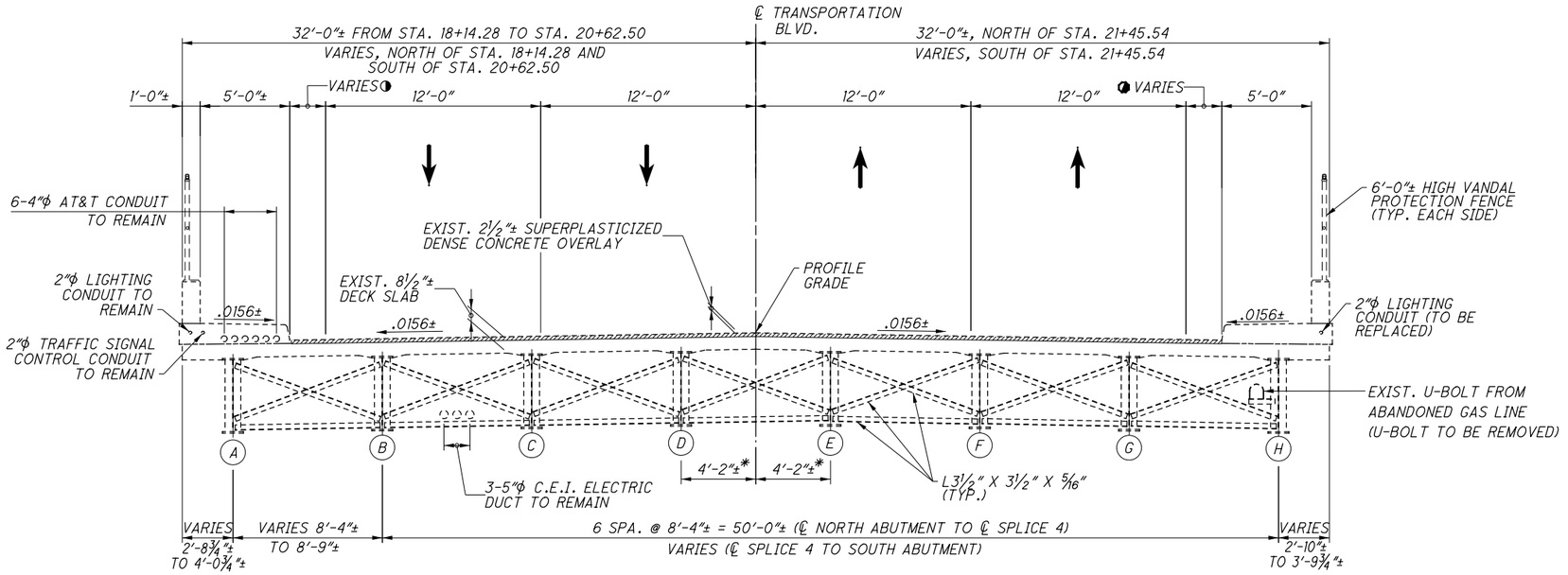
NO.	DESCRIPTION	REV. BY	DATE
1	QUANTITY REVISIONS	JMB	1-16-18
2	QUANTITY REVISIONS	JMB	1-23-18

DESIGN AGENCY
GPD GROUP.
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
2550 Transportation Blvd., Suite 100, Cleveland, Ohio 44115 - 216.518.1544

DESIGNED RFV | DRAWN RFV | REVIEWED DGN | DATE 3-1-17
CHECKED DJC | REVISED | STRUCTURE FILE NUMBER 1812556

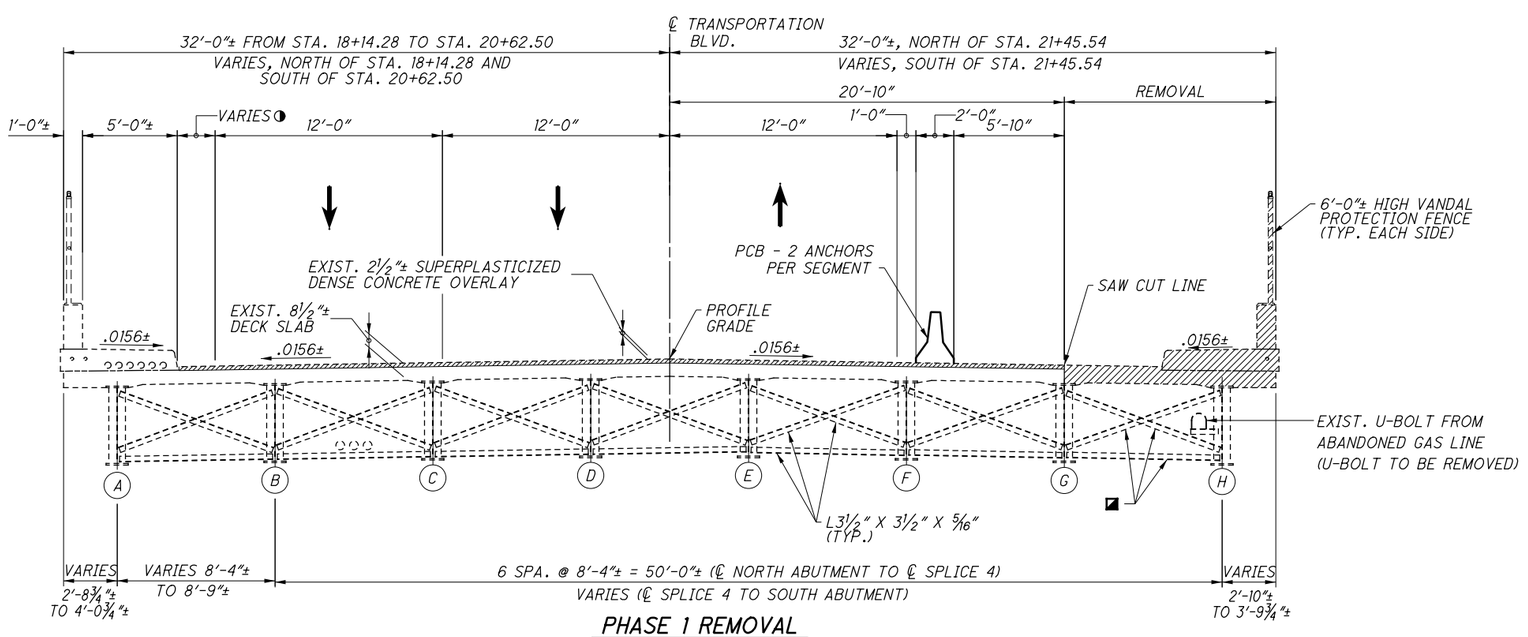
ESTIMATED QUANTITIES
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974



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.

◑ 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)

◐ SHOULDER VARIES FROM 2'-0" TO 2'-11 7/16" SOUTH OF STA. 21+45.54 (MEASURED FROM GUTTERLINE TO EDGE OF LANE AT ℄ OF BEARING)

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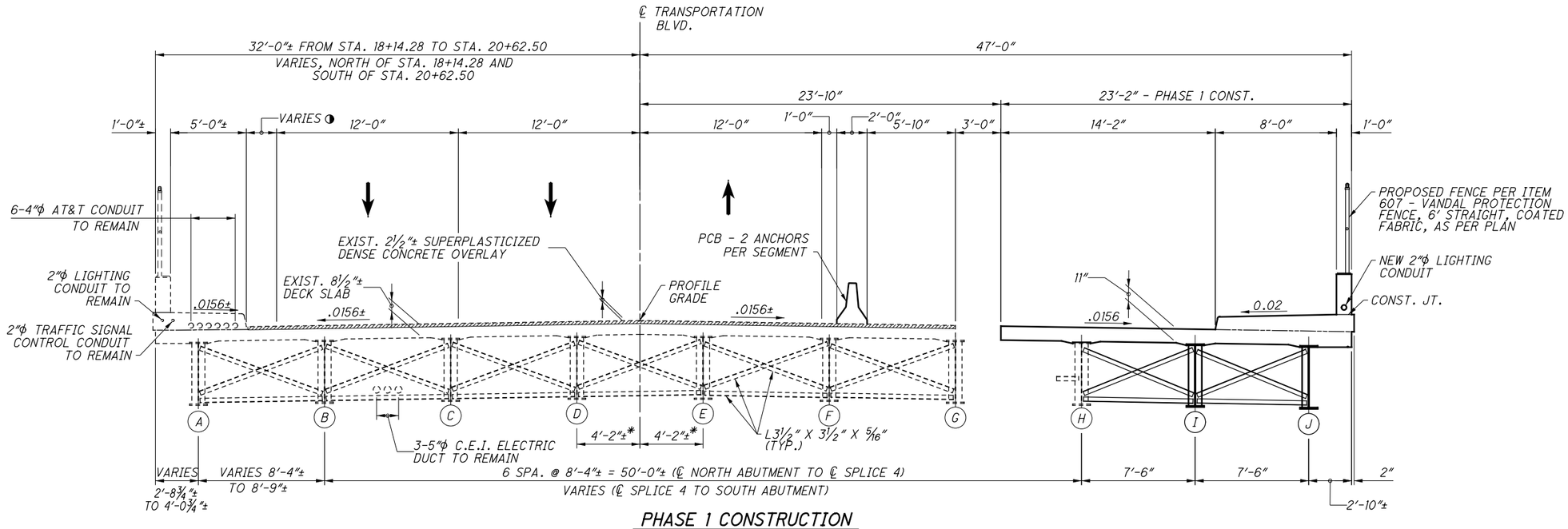
TJW	SAT	DGN	3-1-17
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DJC		1812556	

PHASE CONSTRUCTION DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974



PHASE 1 CONSTRUCTION

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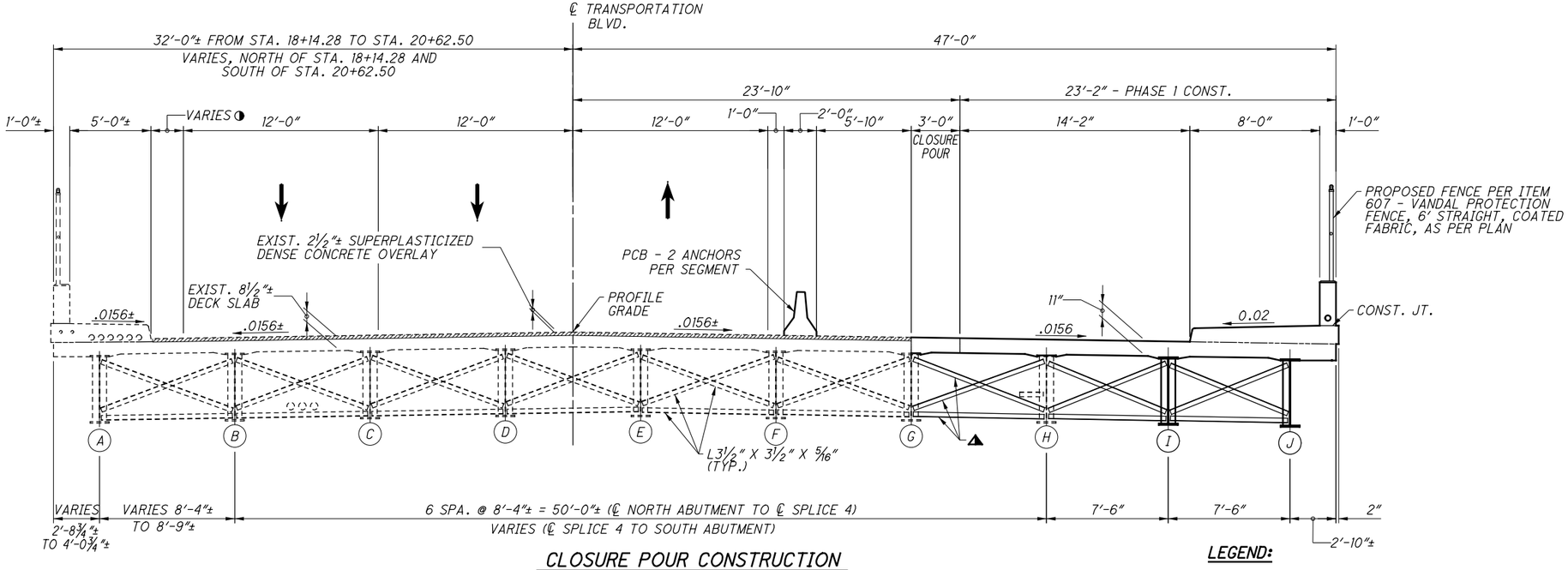

CLOSURE POUR CONSTRUCTION

(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)

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2955 Independence Blvd., Suite 100, Cleveland, Ohio 44115 216.518.1344

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DJC		1812556	

PHASE CONSTRUCTION DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION BLVD.
PID No. 80974

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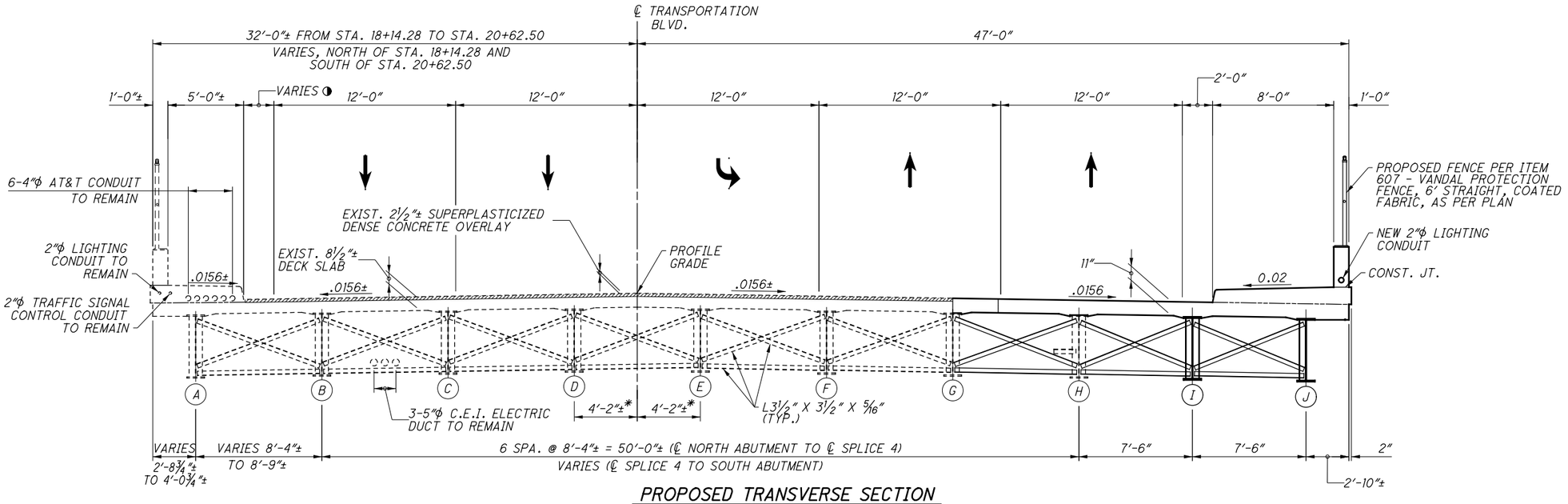

PROPOSED TRANSVERSE SECTION

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 ℄ OF BEARING)

DESIGN AGENCY
GPD GROUP.
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3955 Hamilton Blvd., Suite 100, Cleveland, Ohio 44121 - 216.518.1344

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TJW	SAT	DGN	3-1-17
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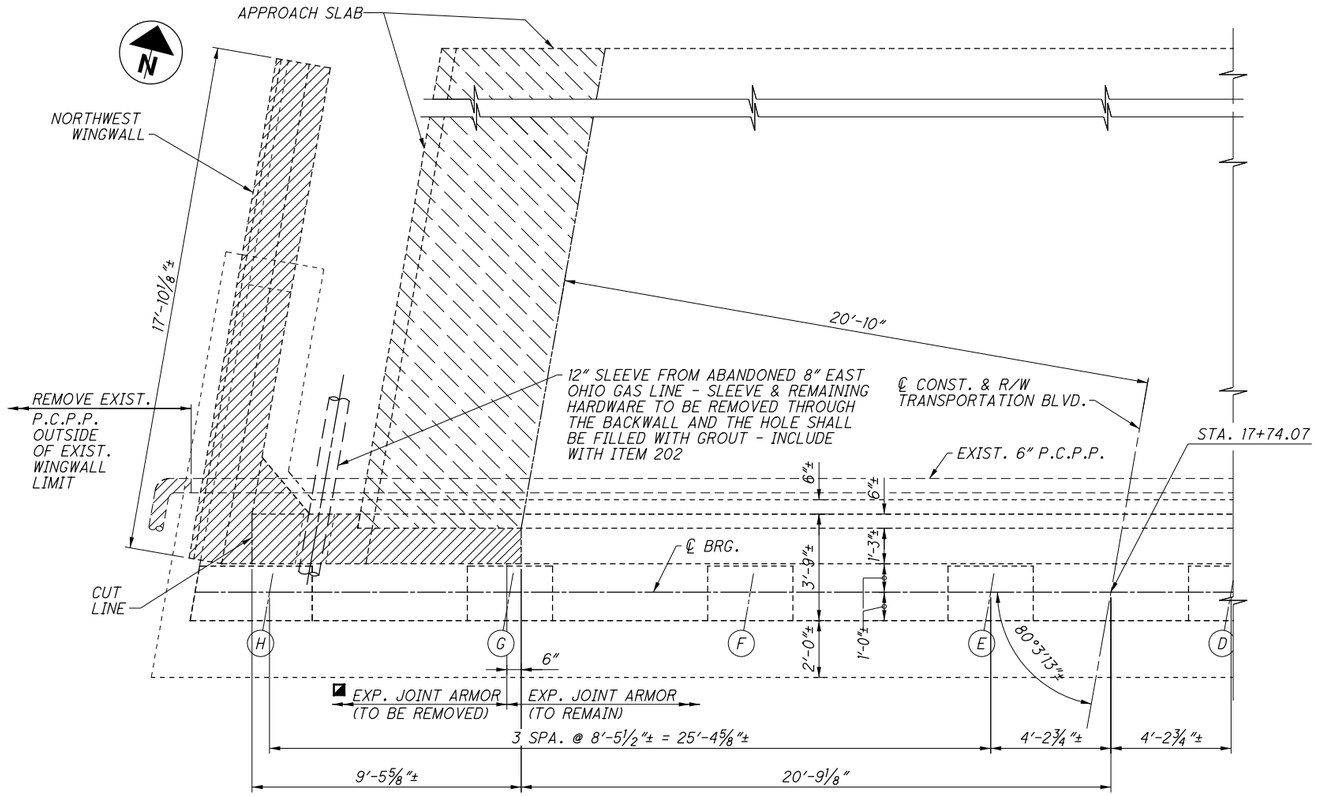
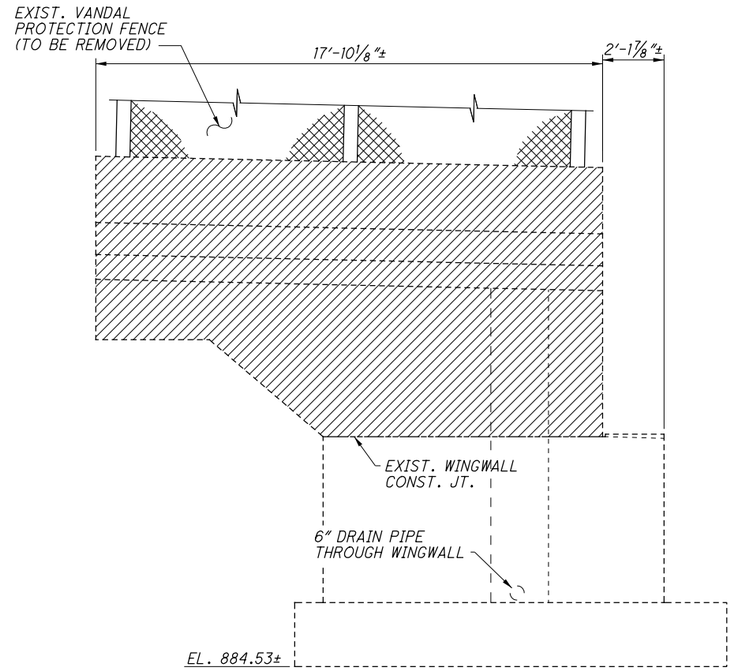
DJC		1812556	

PHASE CONSTRUCTION DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

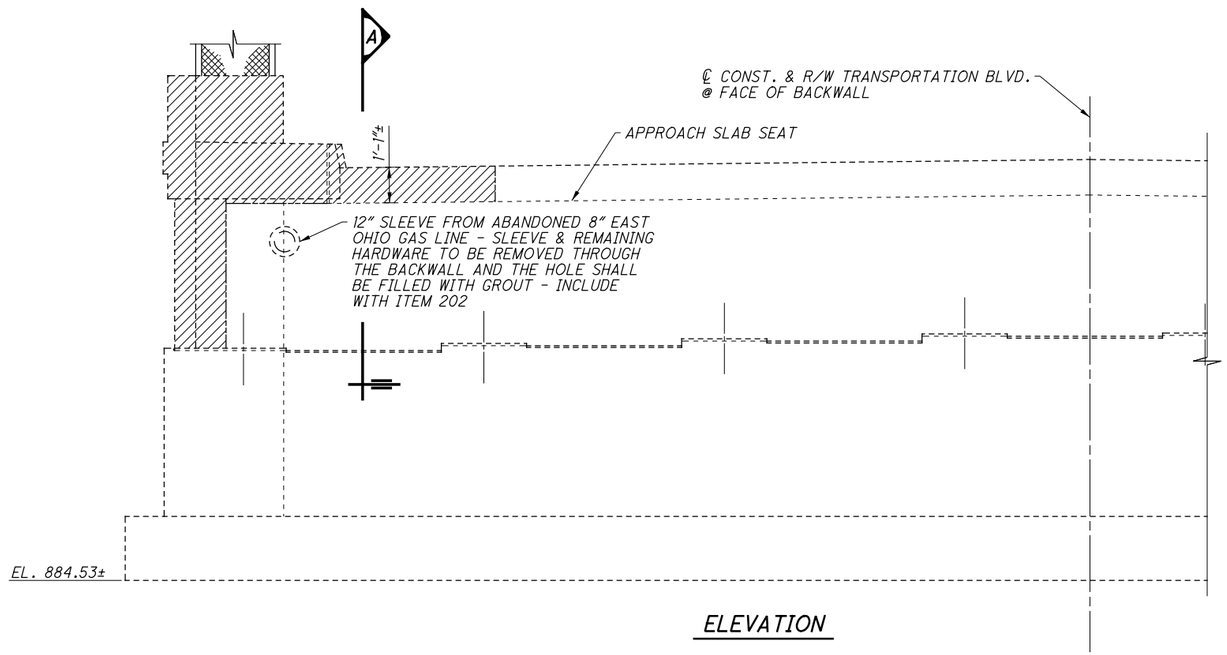
CUY-TRANSPORTATION BLVD.
PID No. 80974



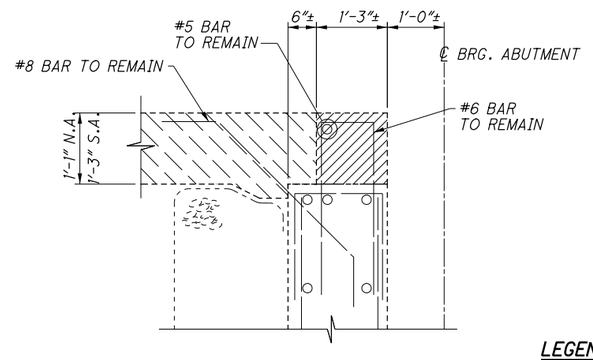
PLAN



NORTHWEST WINGWALL ELEVATION



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.
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
2550 Transportation Blvd., Suite 100, Cleveland, Ohio 44115 - 216.518.5544

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NORTH ABUTMENT REMOVAL PLAN
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974

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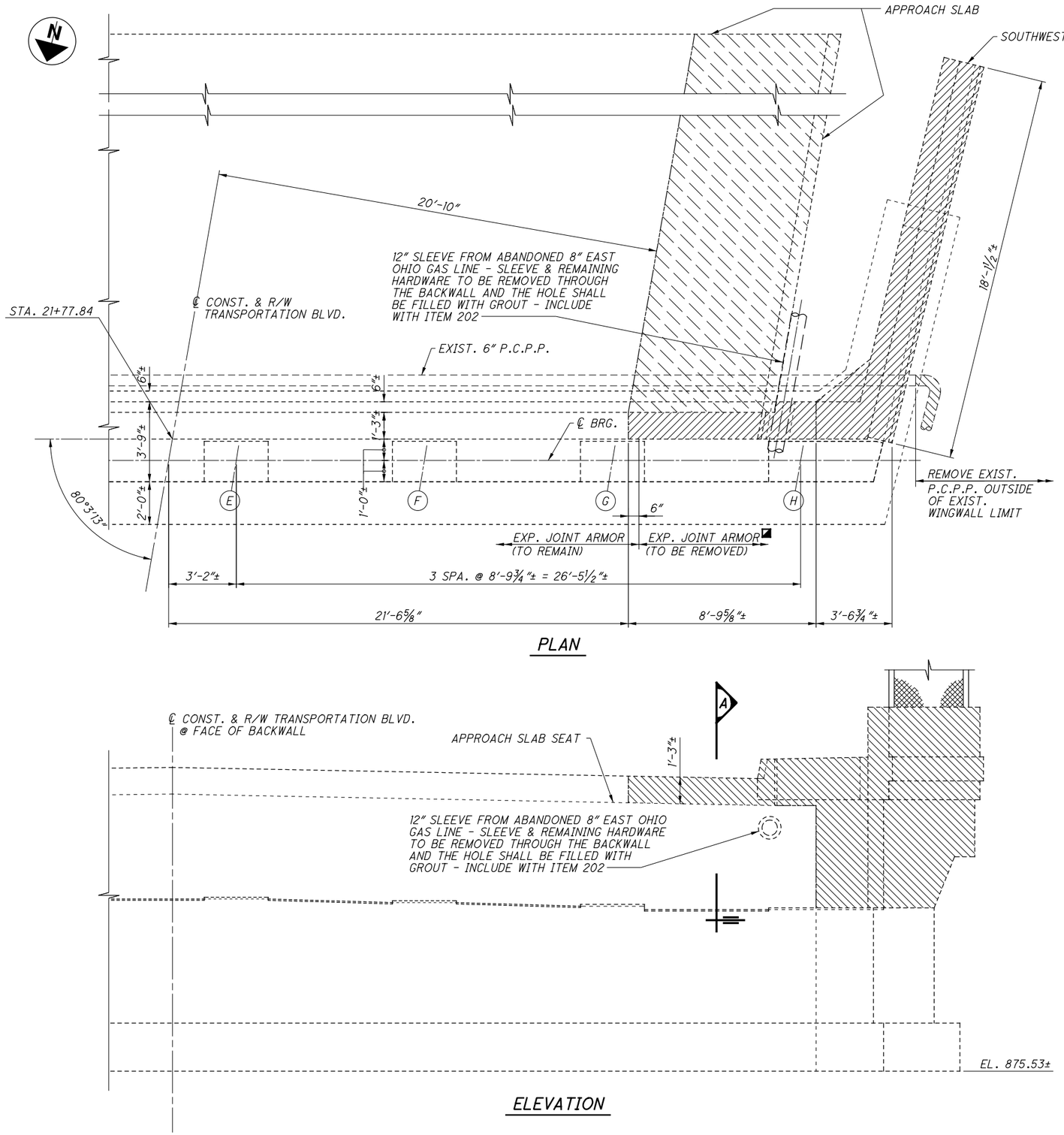
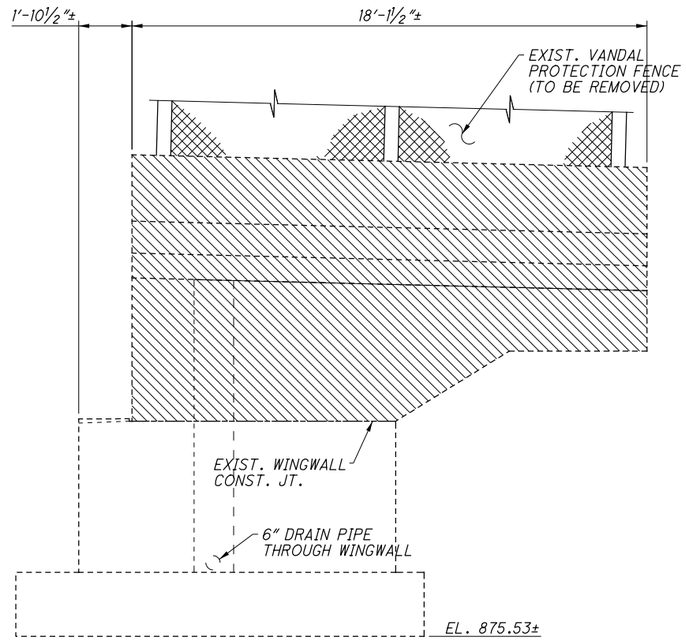


PLAN

ELEVATION



SOUTHWEST WINGWALL 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.

DESIGN AGENCY
GPD GROUP.
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5500 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 - 216.518.5544

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SOUTH ABUTMENT REMOVAL PLAN
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974

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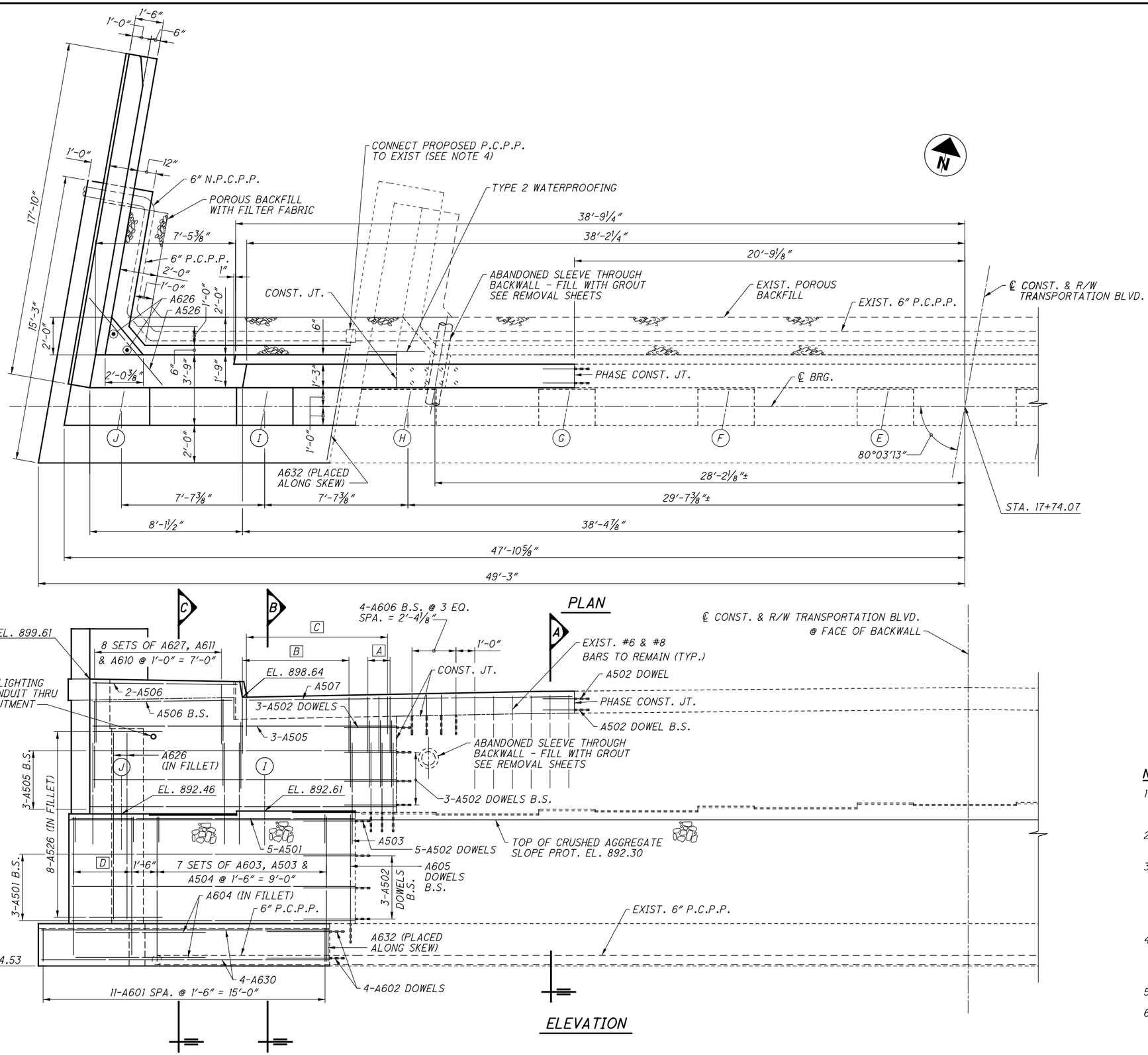

LEGEND:

- 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.

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NORTH ABUTMENT PLAN & ELEVATION
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION BLVD.
PID No. 80974

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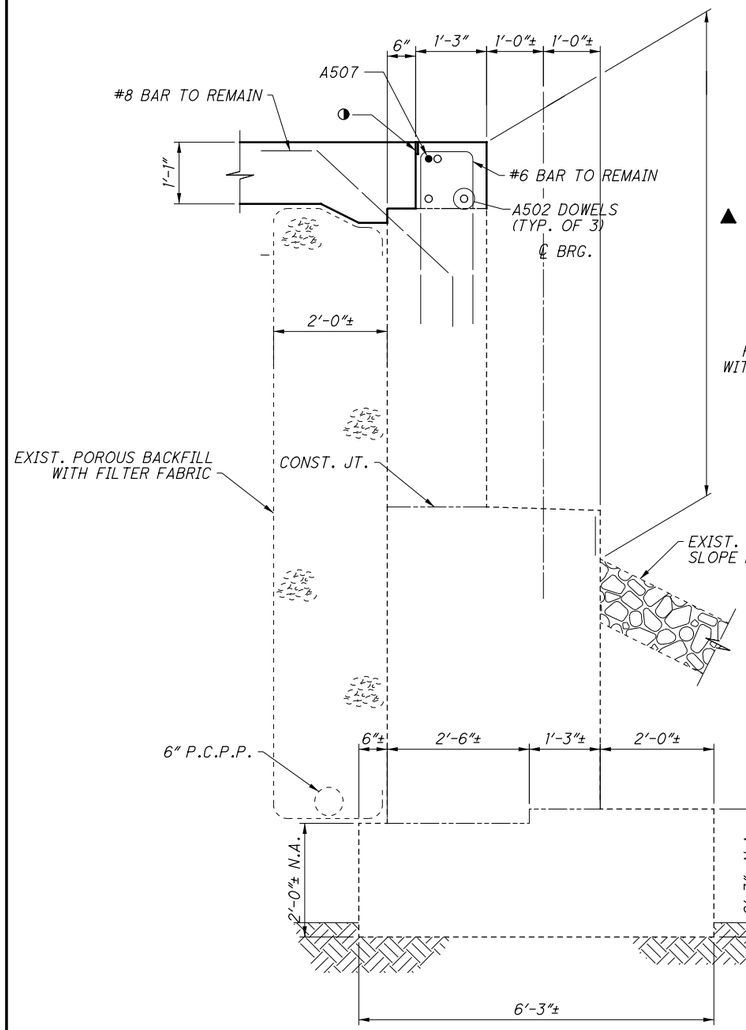
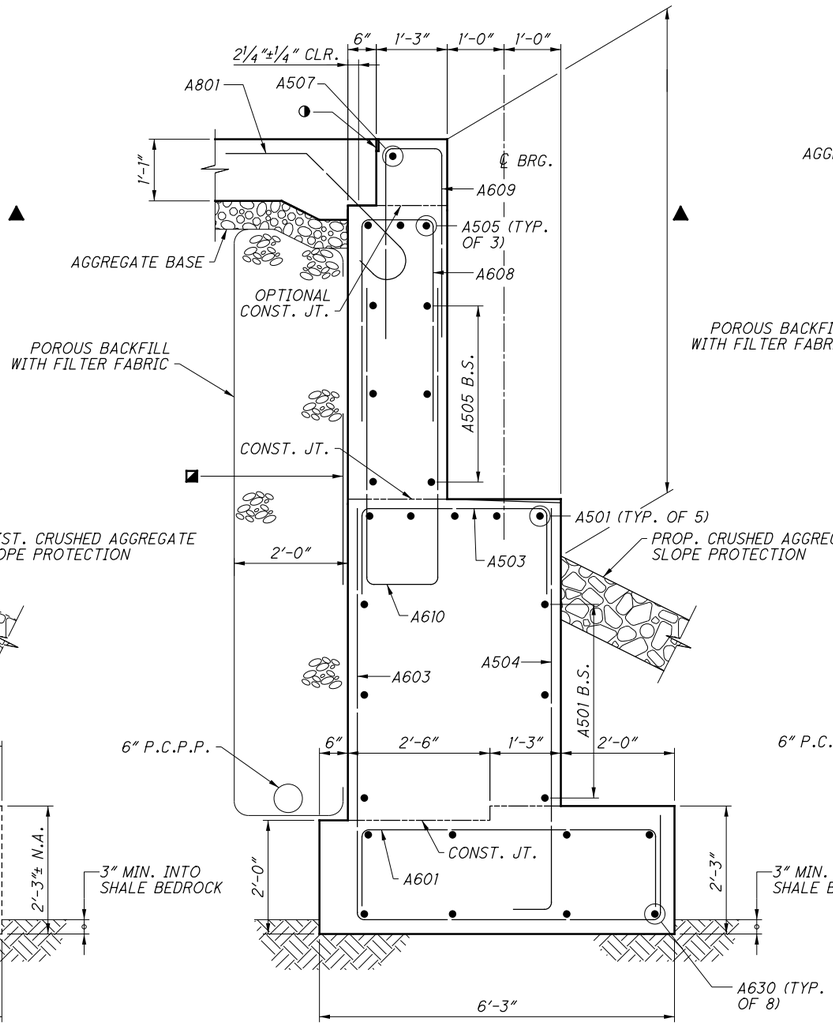


SECTION A



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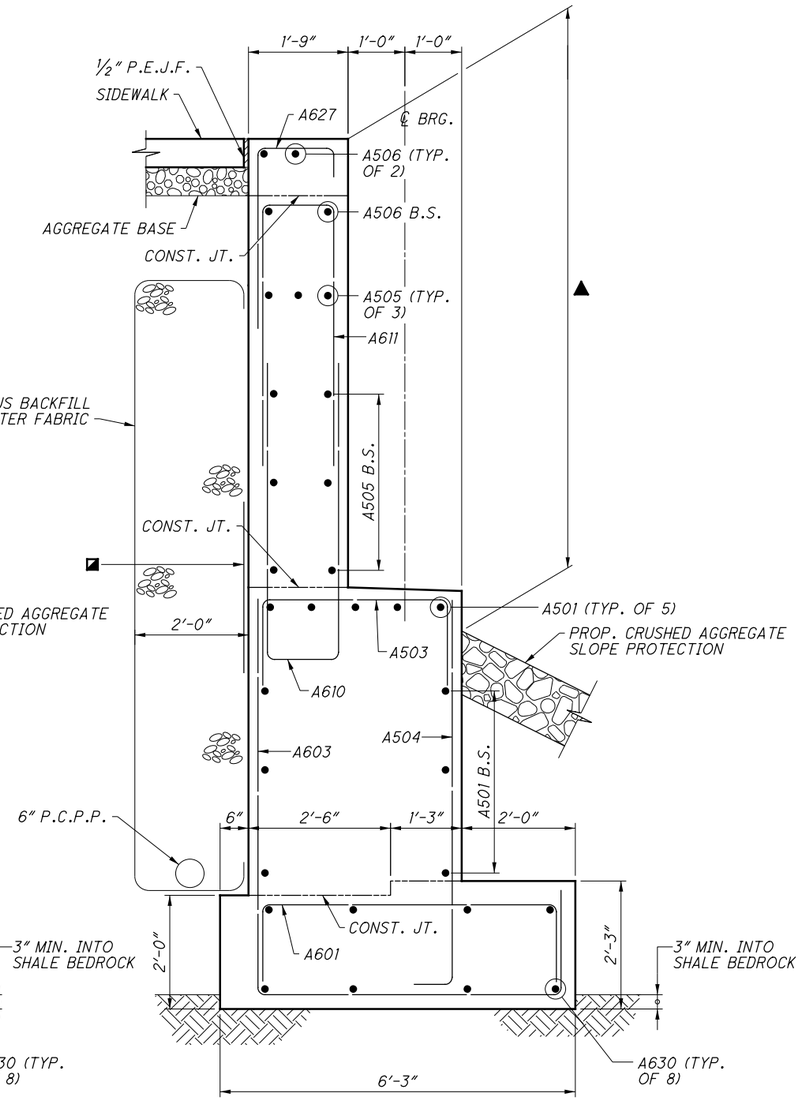

SECTION C

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.

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NORTH ABUTMENT DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
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BLVD.
PID No. 80974

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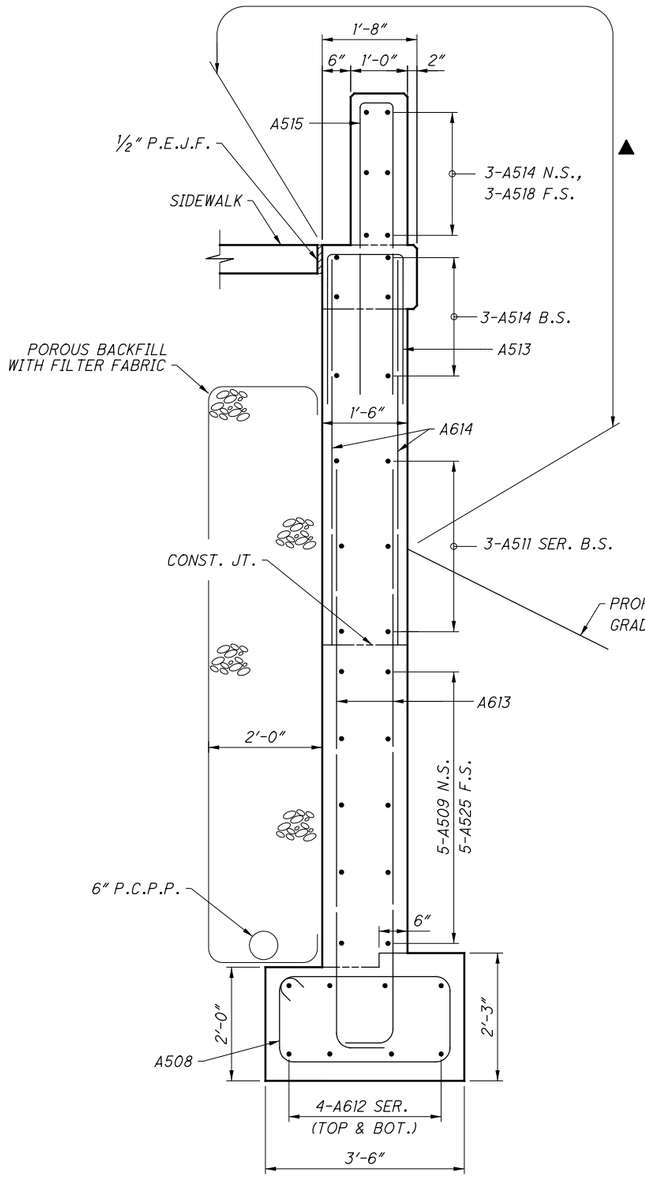

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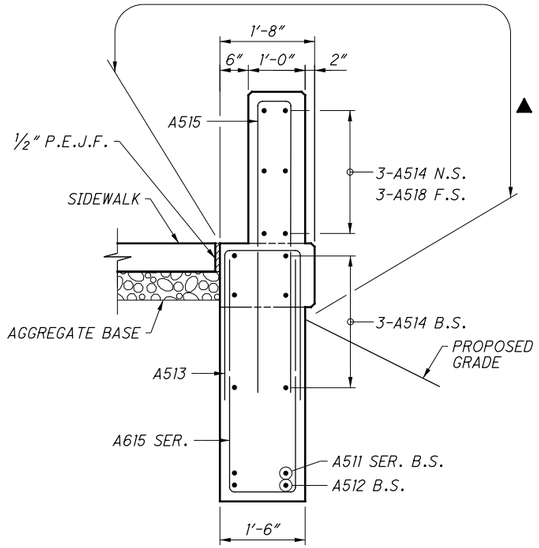
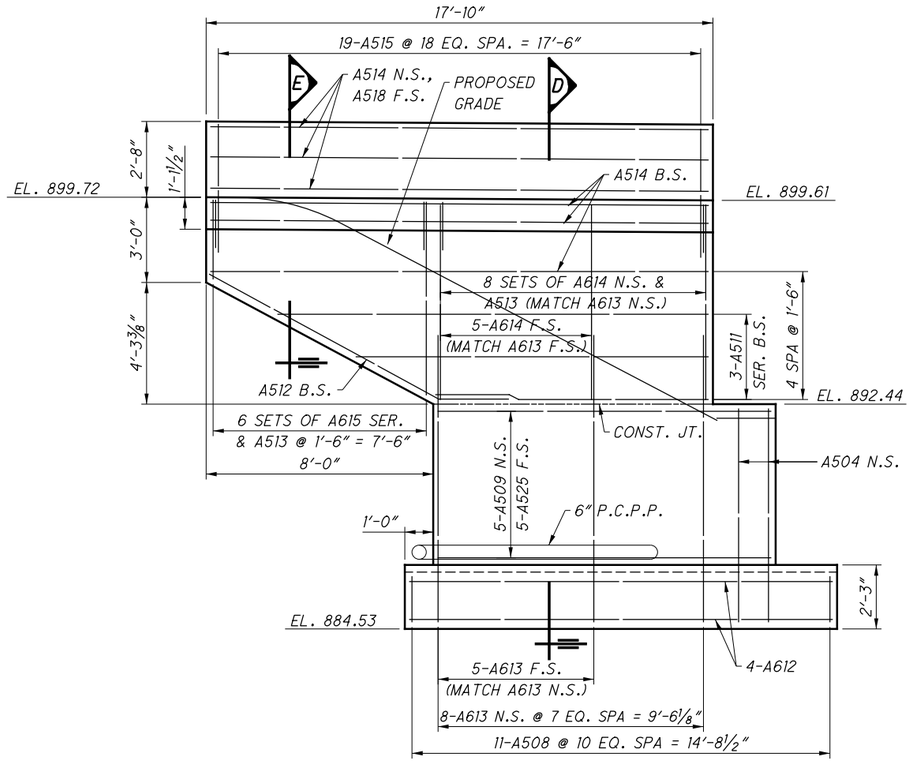


SECTION E



NORTH 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"

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NORTH ABUTMENT WINGWALL DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

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BLVD.
PID No. 80974

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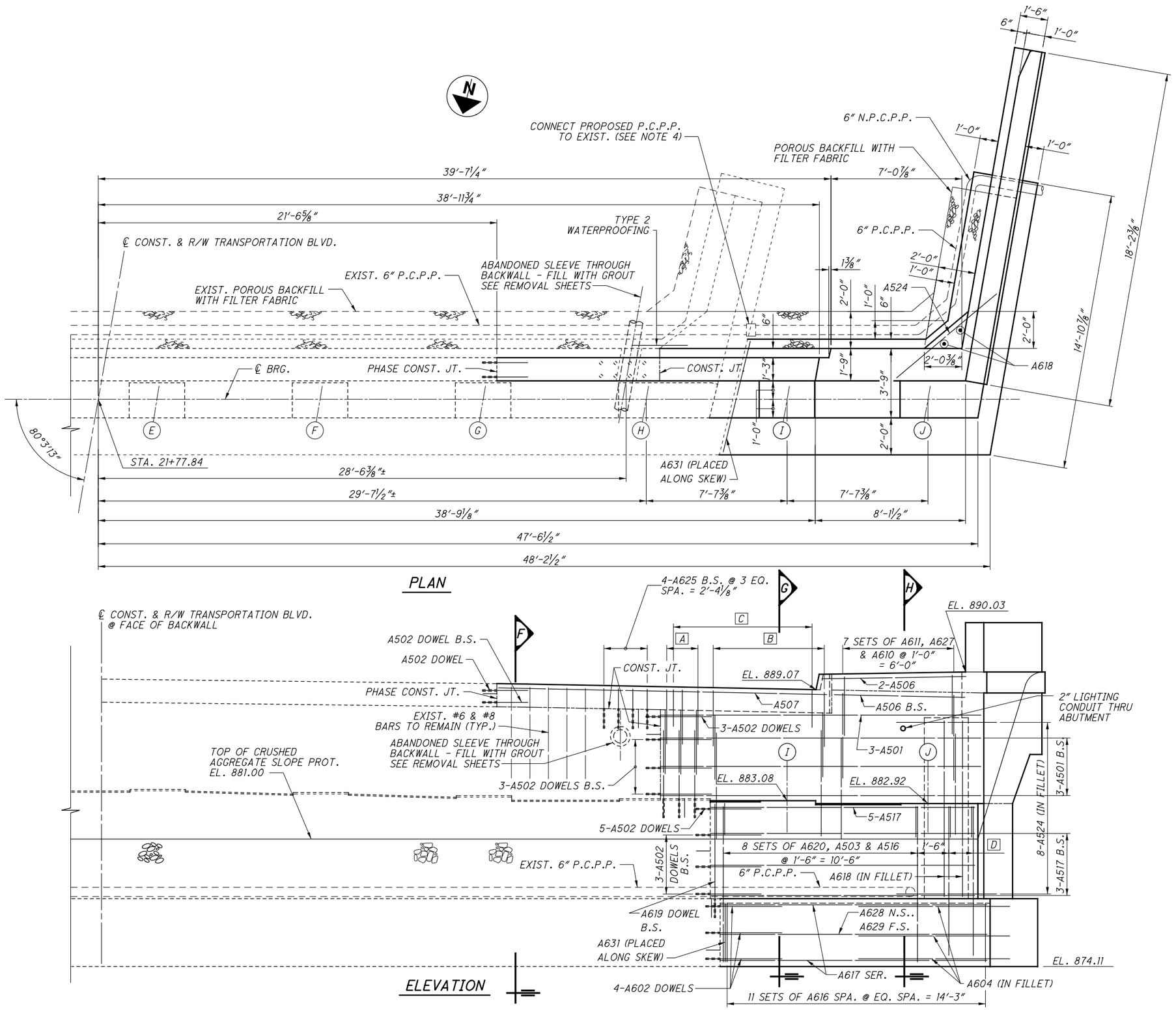

LEGEND:

- 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.

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GPD GROUP.
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
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SOUTH ABUTMENT PLAN & ELEVATION

BRIDGE NO. CUY-480-1955
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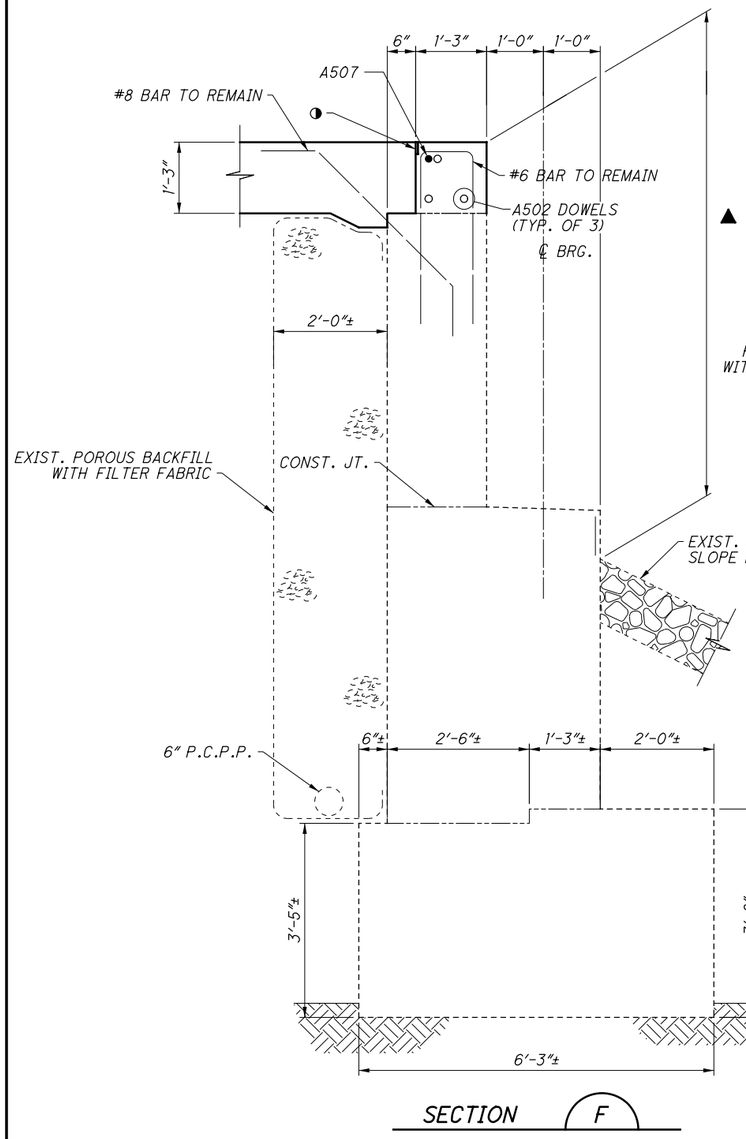
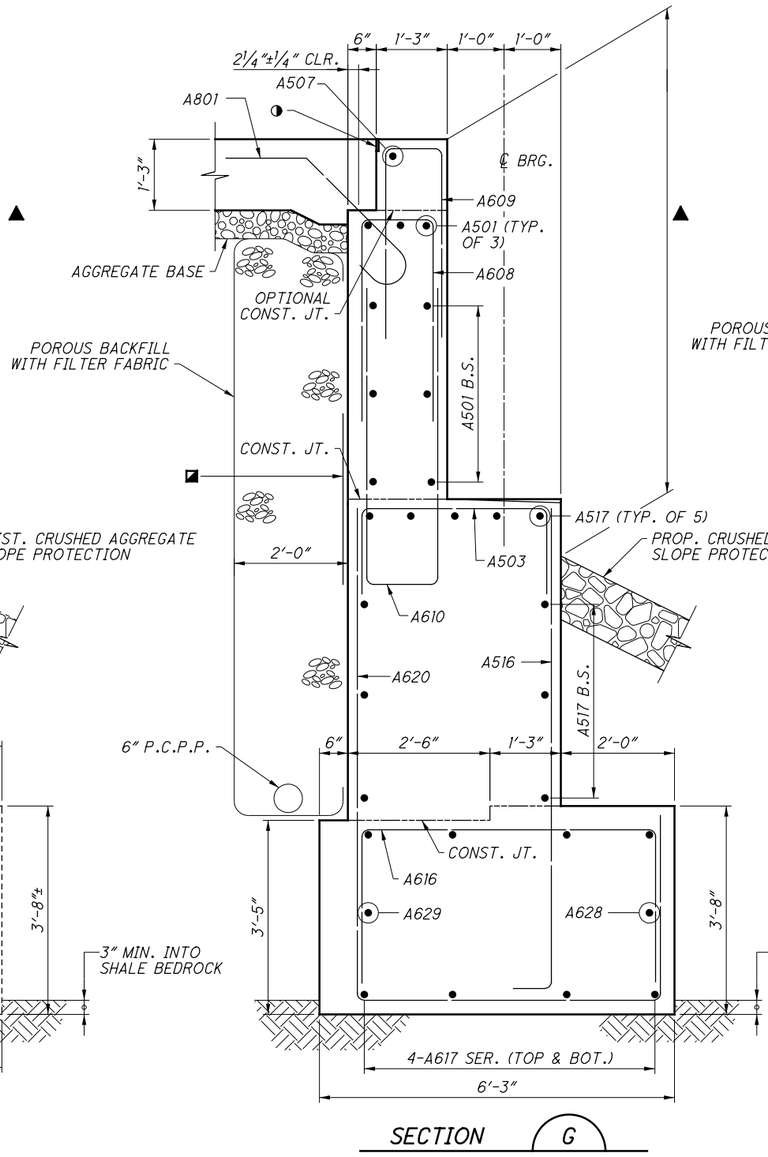
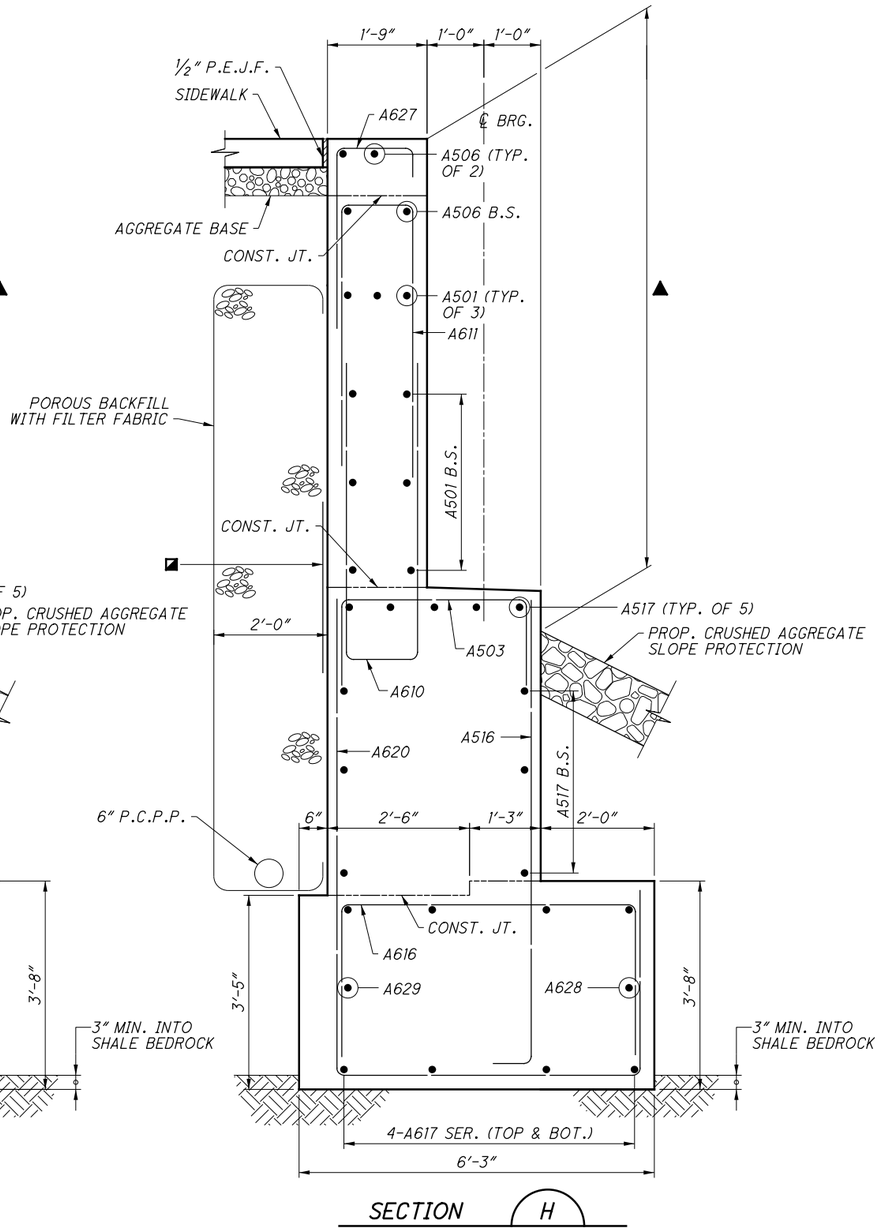


SECTION F



SECTION G



SECTION H

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
GPD GROUP.
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
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DESIGNED	DRAWN	REVIEWED	DATE
SAT	SAT	DGN	3-1-17
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DJC		1812556	

SOUTH ABUTMENT DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974

14 / 39

200
225

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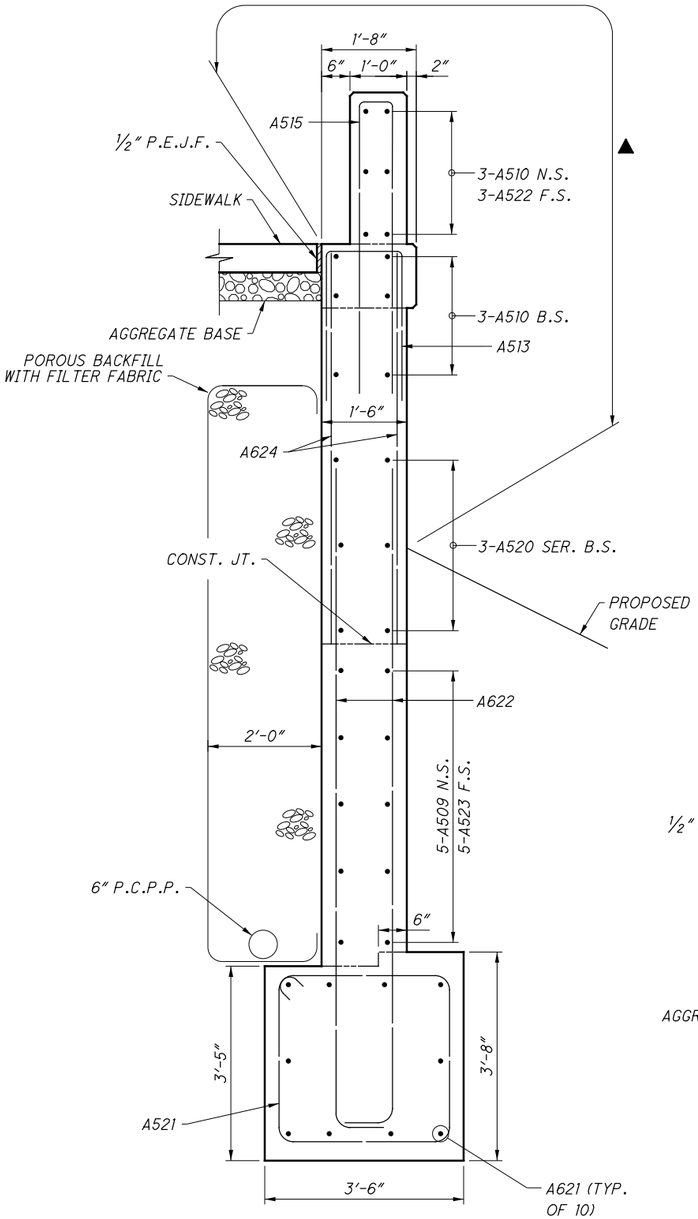

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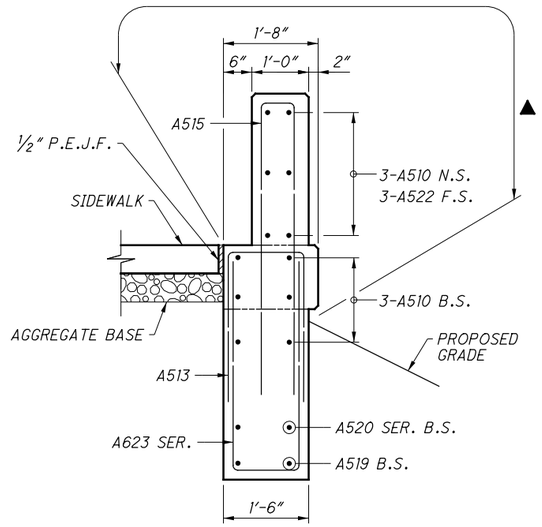
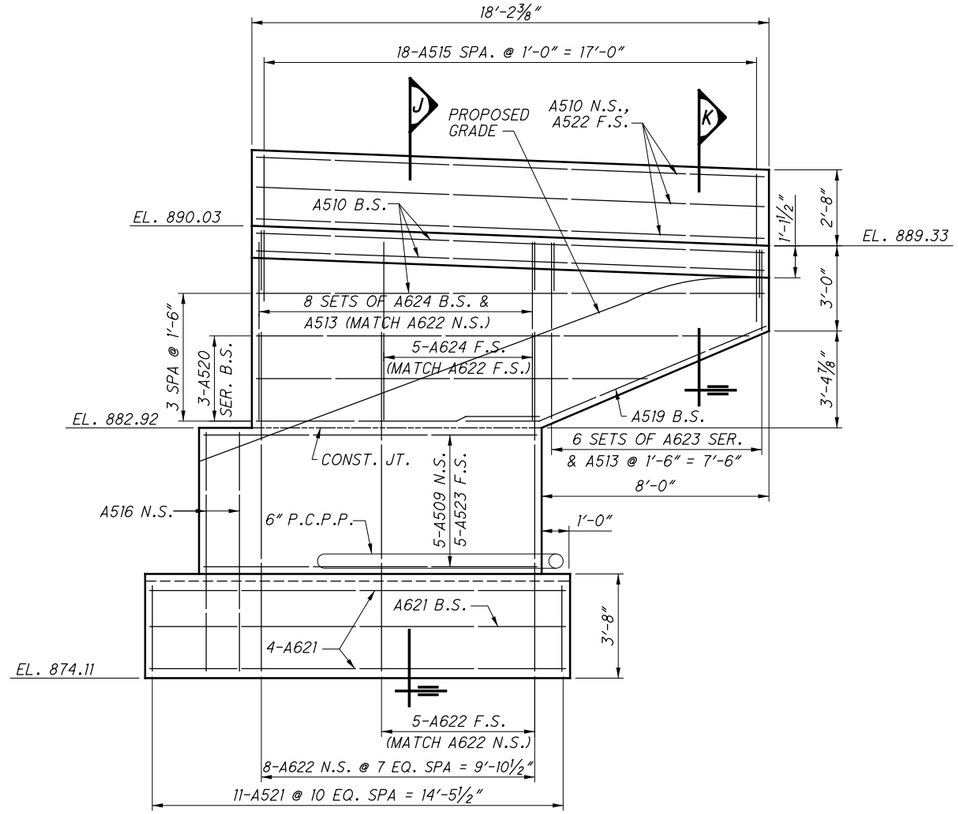


SECTION K



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"

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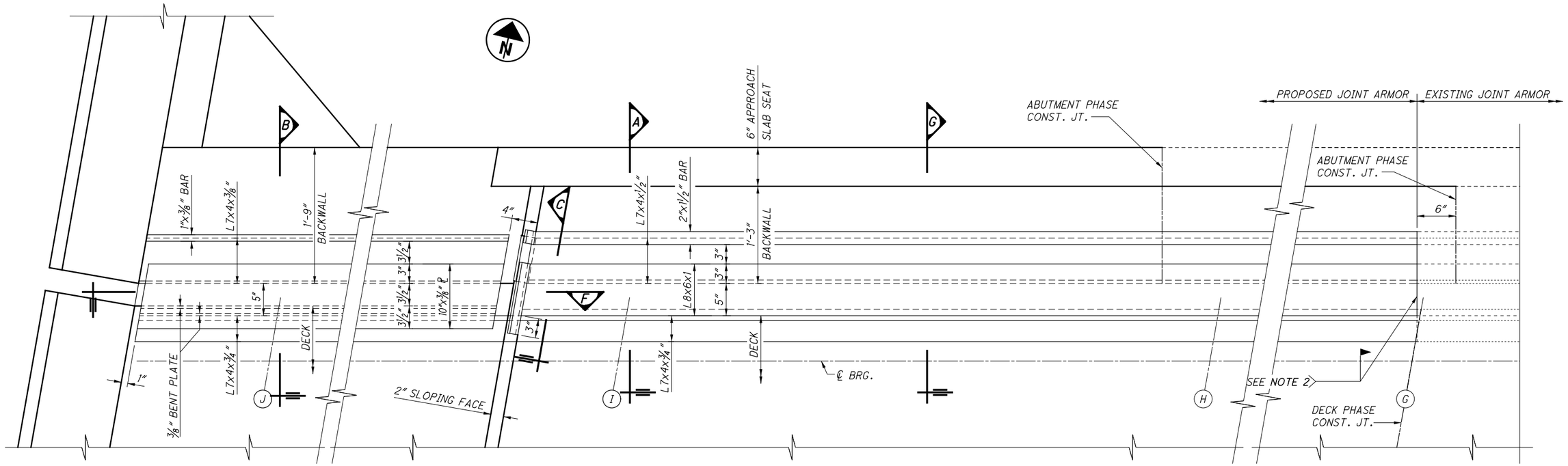
DJC		1812556	

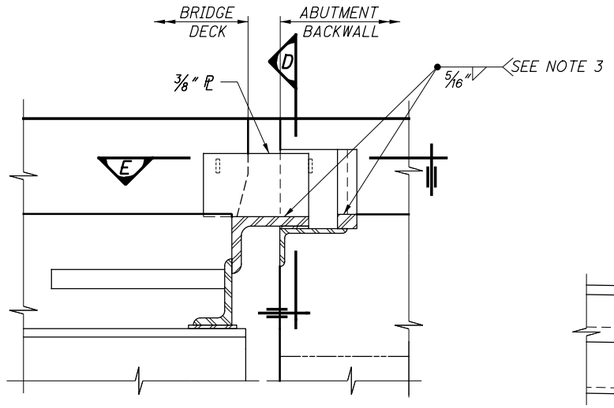
SOUTH ABUTMENT WINGWALL DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974



EXPANSION JOINT PLAN

NORTH ABUTMENT SHOWN
SOUTH ABUTMENT SIMILAR



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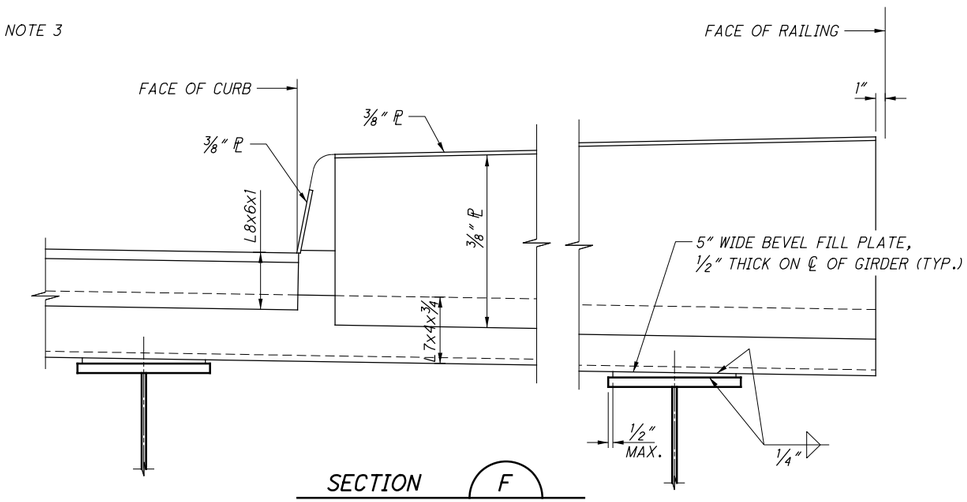

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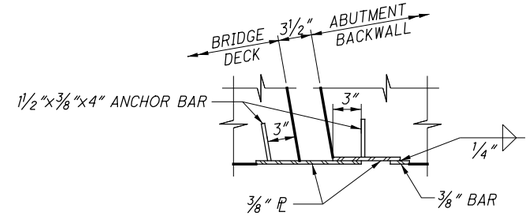
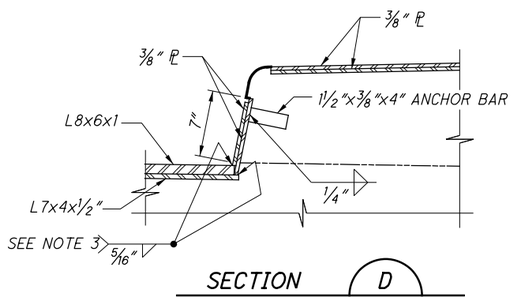


SECTION E



SECTION D

NOTES:

1. FOR SECTIONS A, B & G, SEE SHT. NO. 17/39 .
2. THE JOINTS IN THE ARMOR STEEL SHALL BE COMPLETE PENETRATION WELDS GROUND FLUSH ON SLIDING PLATES.
3. WELDS LOCATED ON NON-STRESS-CARRYING MEMBERS.

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GPD GROUP.
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TJW		1812556	

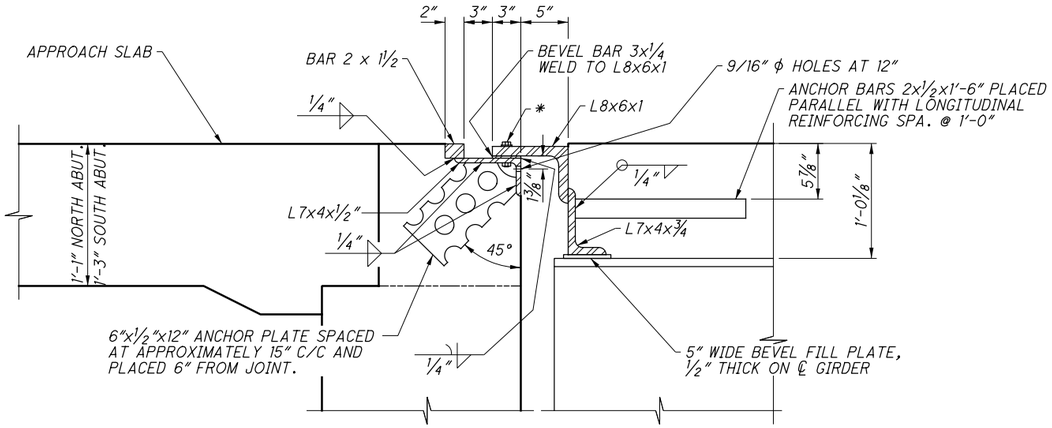
EXPANSION JOINT PLAN AND DETAILS

BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

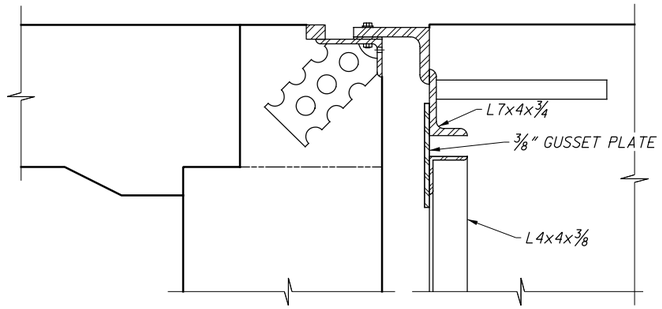
CUY-
TRANSPORTATION
BLVD.
PID No. 80974

16 / 39

202
225



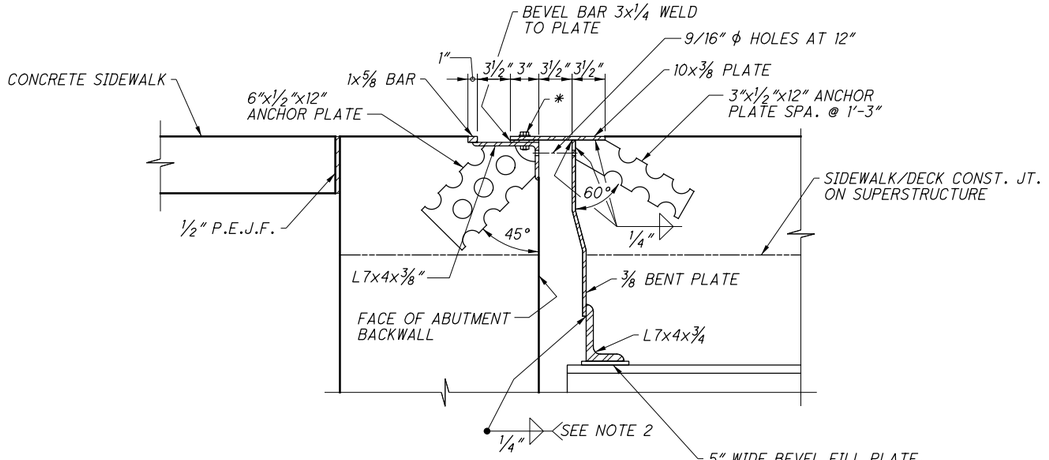
SECTION A



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:

1. FOR ADDITIONAL NOTES & EXPANSION JOINT DETAILS NOT SHOWN, SEE ODOT ARCHIVED STD. DWG. SD-1-69 DATED 6-12-69.
2. WELDS LOCATED ON NON-STRESS-CARRYING MEMBERS.

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TJW	SAT	DGN	3-1-17
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DJC		1812556	

EXPANSION JOINT DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-TRANSPORTATION BLVD.
PID No. 80974

17/39

203/225

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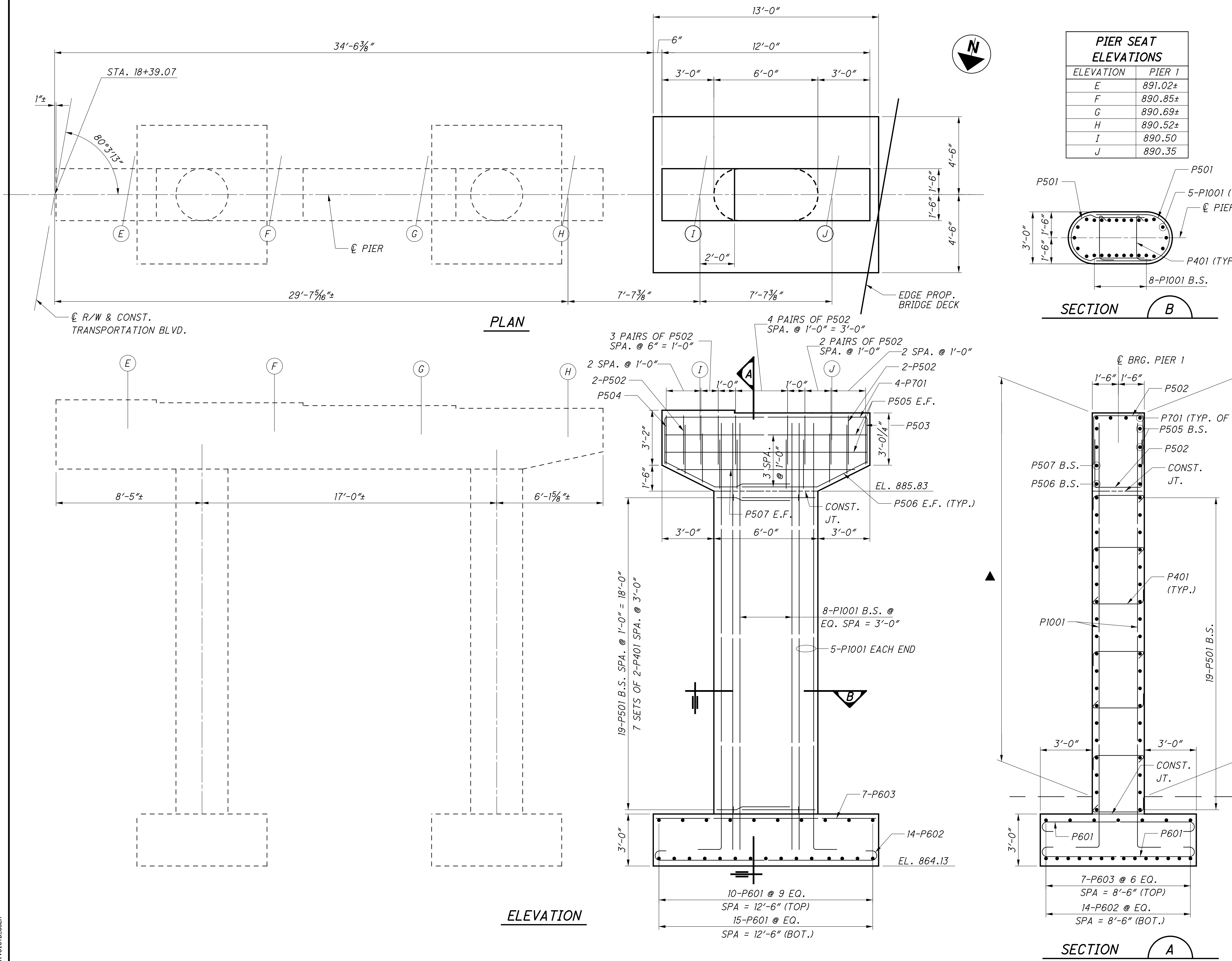

PIER SEAT ELEVATIONS	
ELEVATION	PIER 1
E	891.02±
F	890.85±
G	890.69±
H	890.52±
I	890.50
J	890.35

NOTES:

MINIMUM LAP LENGTHS ARE AS FOLLOWS:

NO. 5 BARS = 1'-9" (VERT.)
NO. 5 BARS = 2'-9" (HORIZ.)

DESIGN AGENCY
GPD GROUP®
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
5595 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.518.5544

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STRUCTURE FILE NUMBER 1812556
DRAWN RFV REVISED
DESIGNED RFV CHECKED DJC

PIER 1 DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-TRANSPORTATION BLVD.
PID No. 80974

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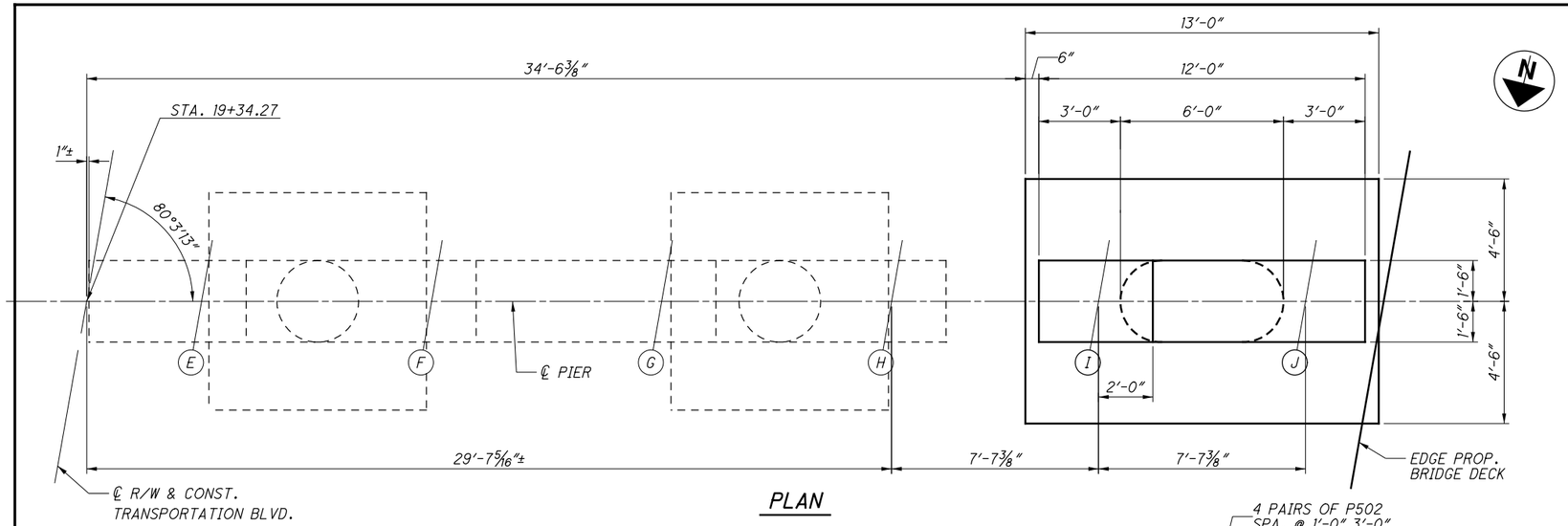
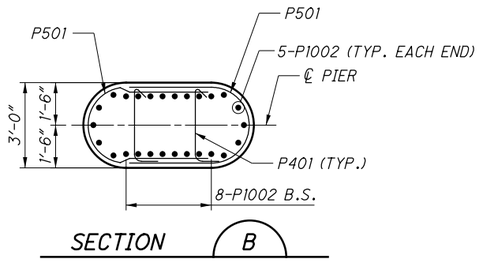
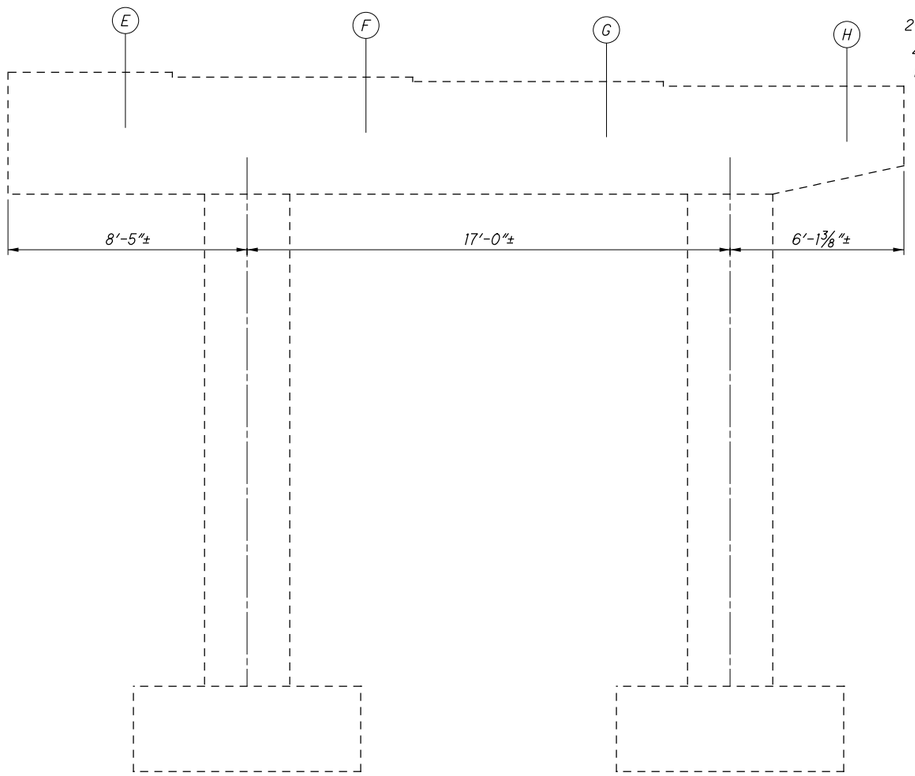


PLAN

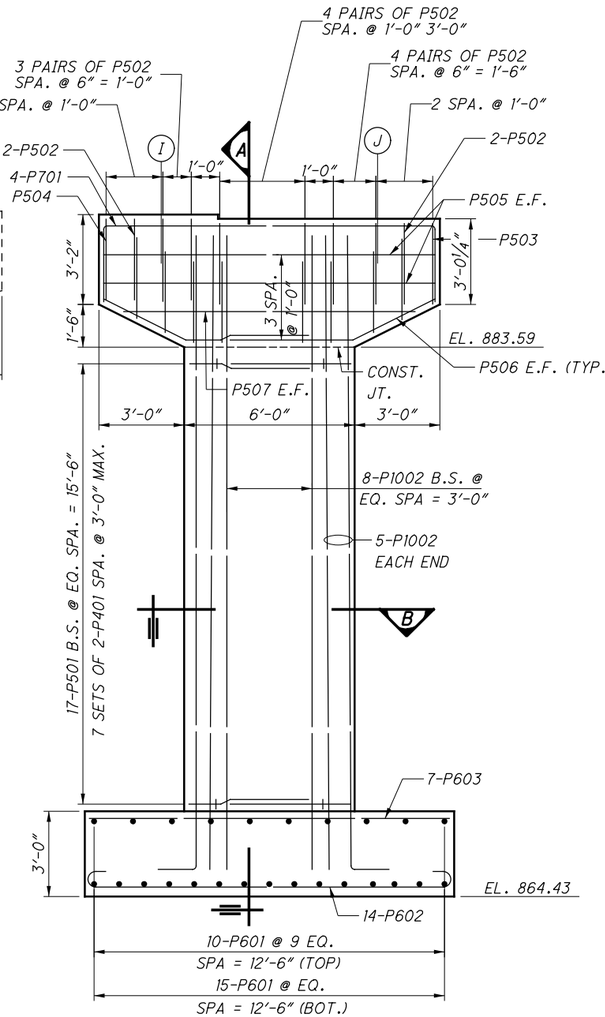
PIER SEAT ELEVATIONS	
ELEVATION	PIER 2
E	888.74±
F	888.57±
G	888.41±
H	888.25±
I	888.26
J	888.11

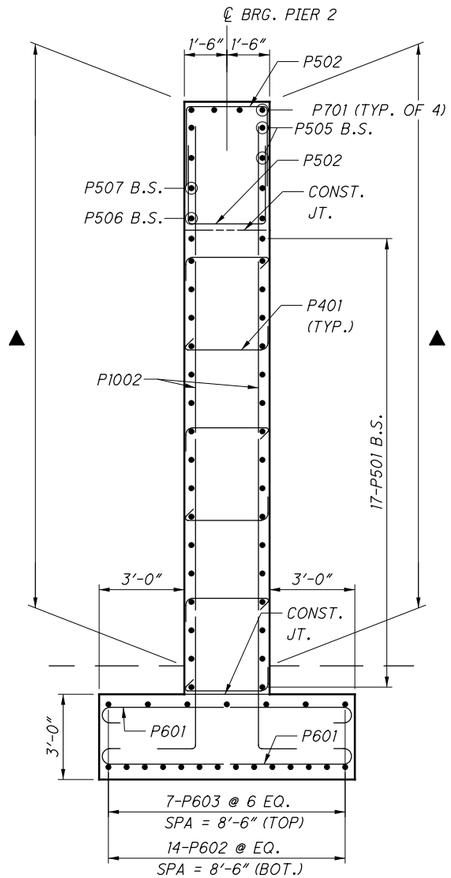


SECTION B



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.
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
5500 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 — 216.518.5544

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RFV	RFV	DGN	3-1-17
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DJC		1812556	

PIER 2 DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974

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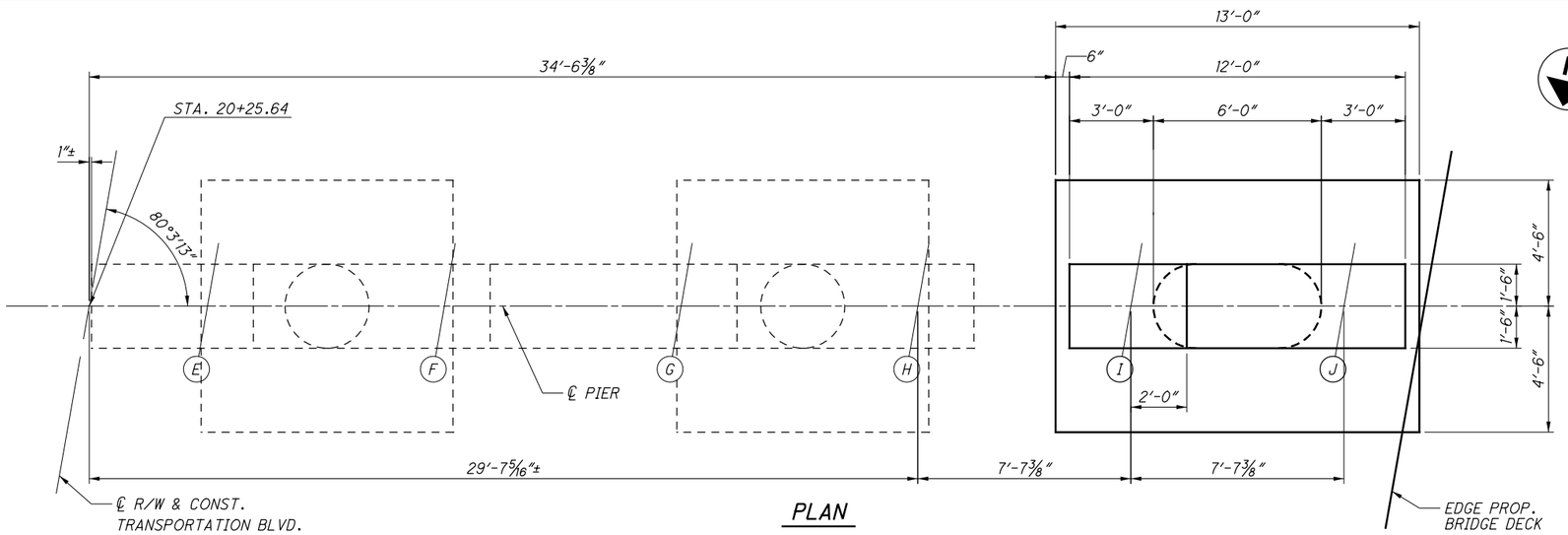
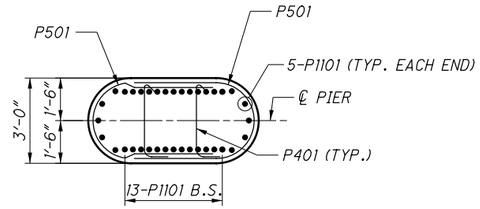
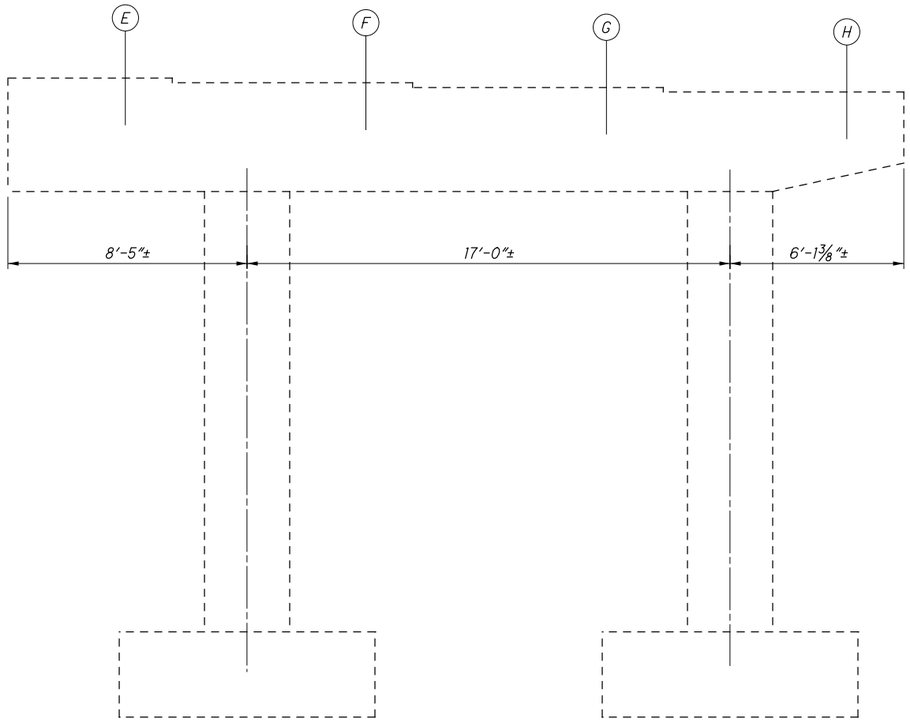


PLAN

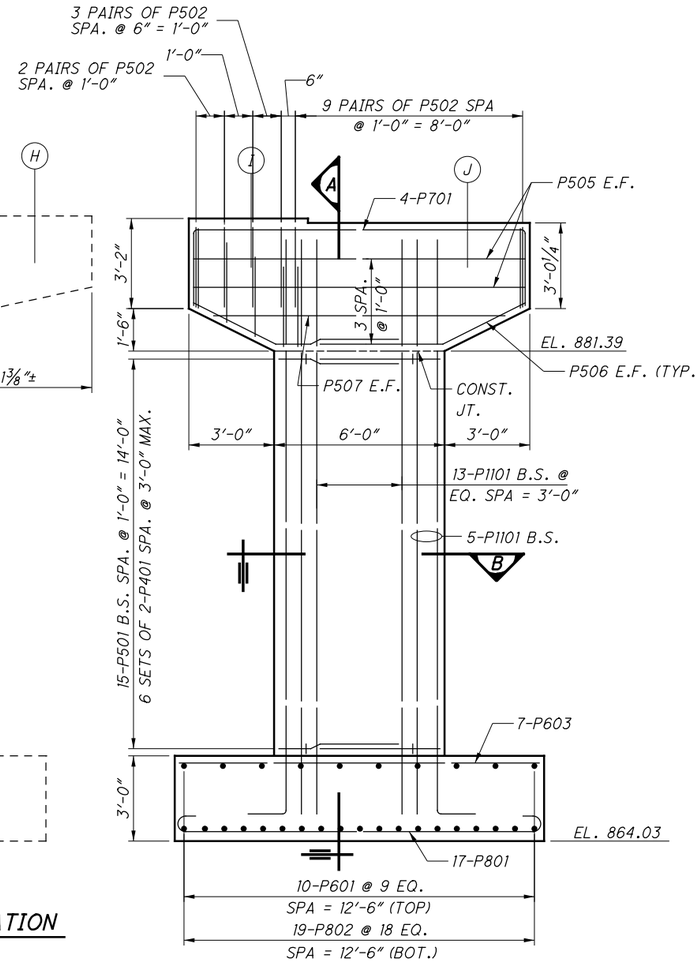
PIER SEAT ELEVATIONS	
ELEVATION	PIER 3
E	886.52±
F	886.36±
G	886.19±
H	886.03±
I	886.06
J	885.91

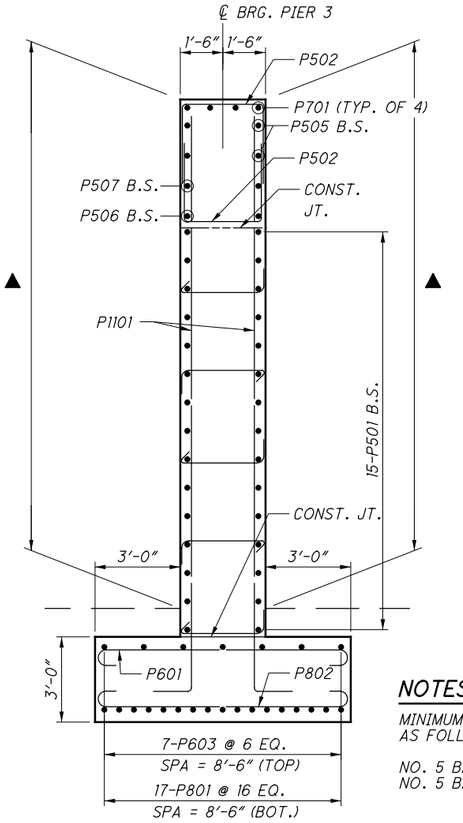


SECTION B



ELEVATION





SECTION A

NOTES:

MINIMUM LAP LENGTHS ARE AS FOLLOWS:

NO. 5 BARS = 1'-9" (VERT.)
NO. 5 BARS = 2'-9" (HORIZ.)

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RFV	RFV	DGN	3-1-17
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DJC		1812556	

PIER 3 DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974

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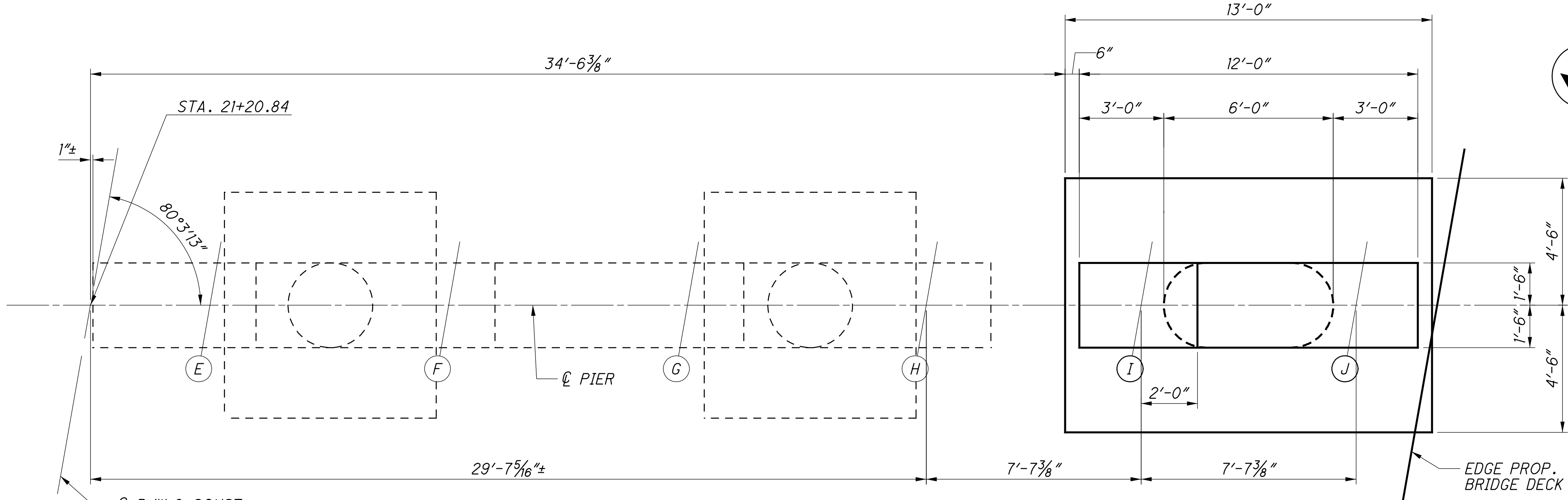
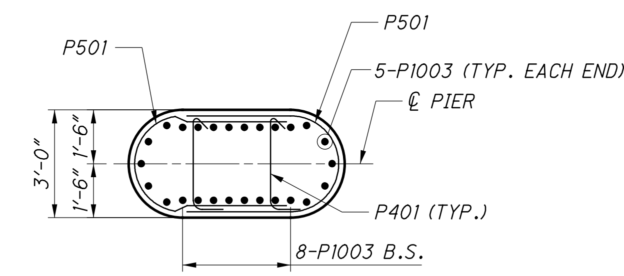


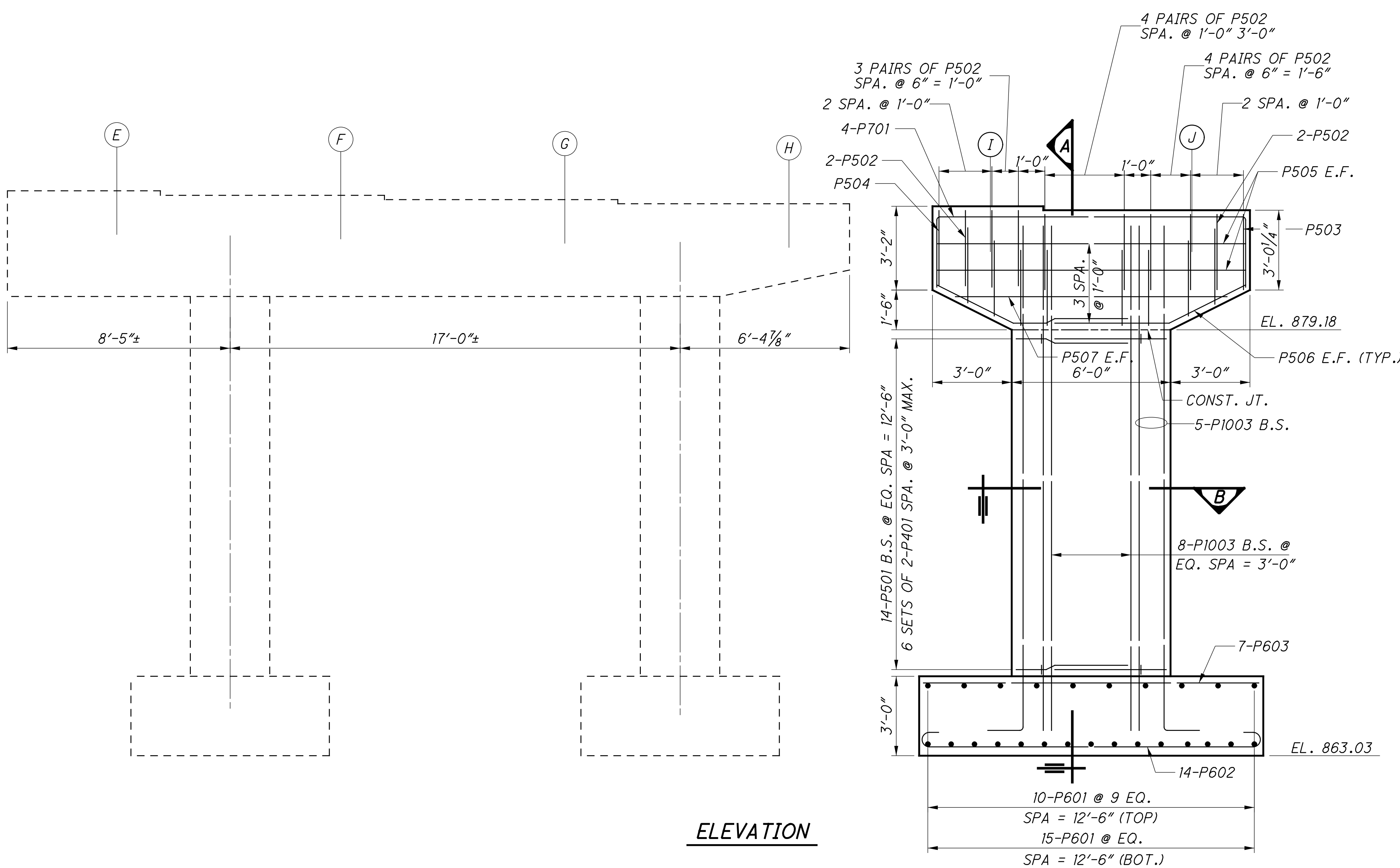
PLAN

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



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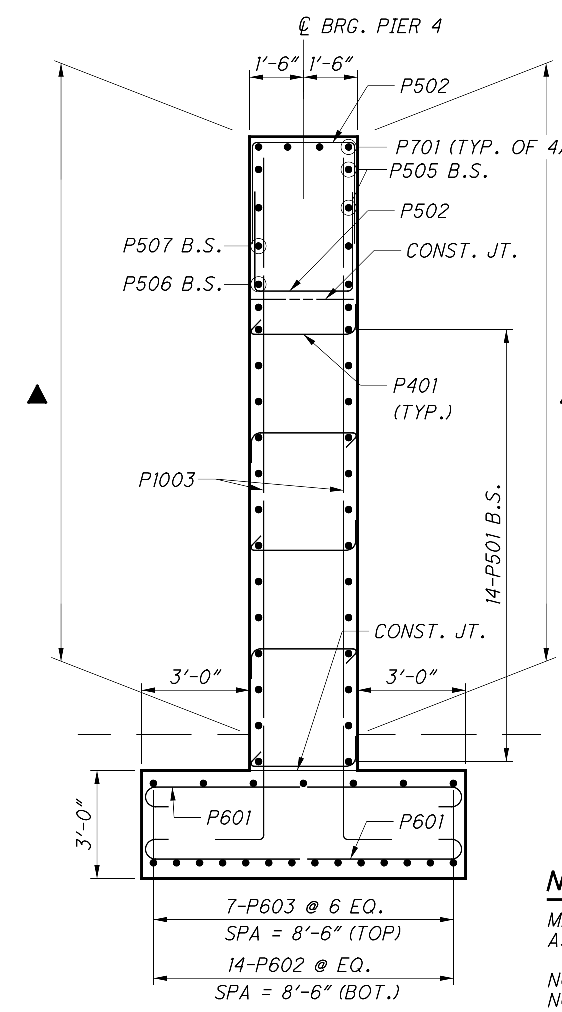

SECTION A

NOTES:

MINIMUM LAP LENGTHS ARE AS FOLLOWS:

NO. 5 BARS = 1'-9" (VERT.)
NO. 5 BARS = 2'-9" (HORIZ.)

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CHECKED	REVISED	STRUCTURE FILE NUMBER
DJC		1812556

PIER 4 DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-TRANSPORTATION BLVD.
PID No. 80974

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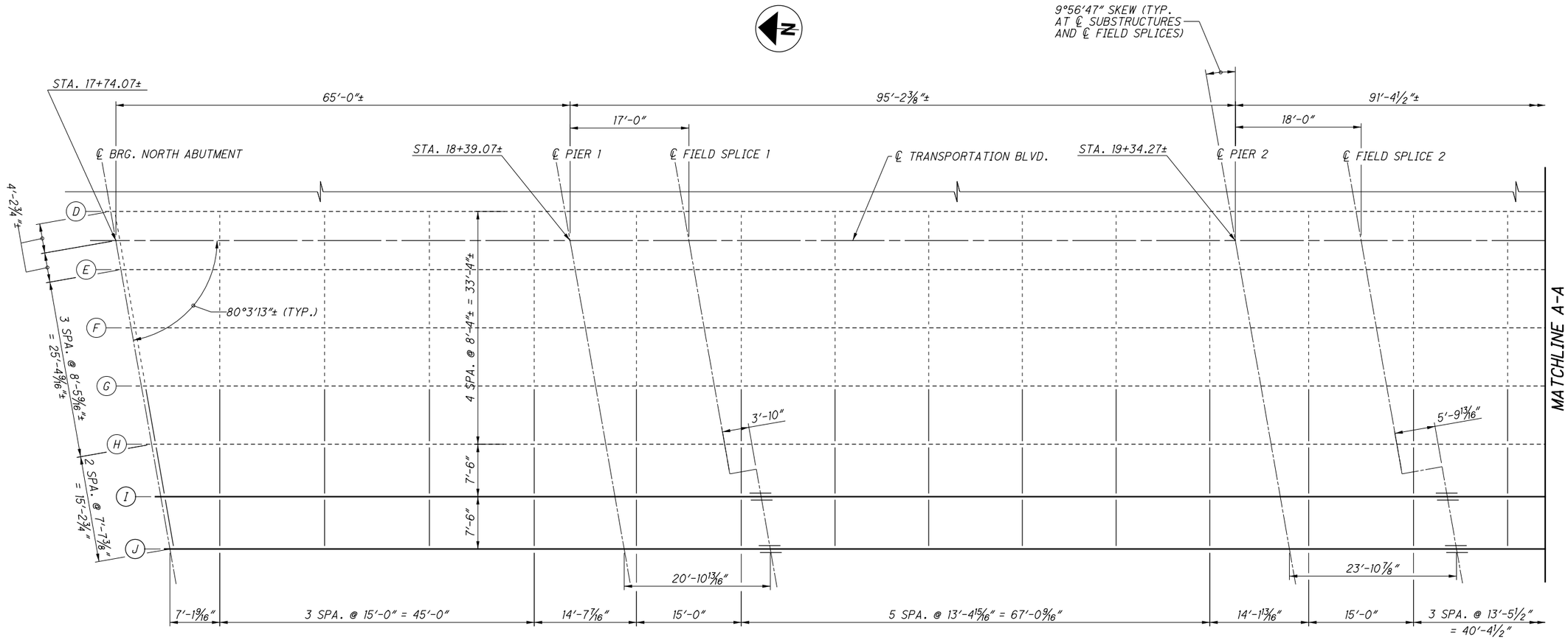

PLAN

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 .

DESIGN AGENCY
GPD GROUP.
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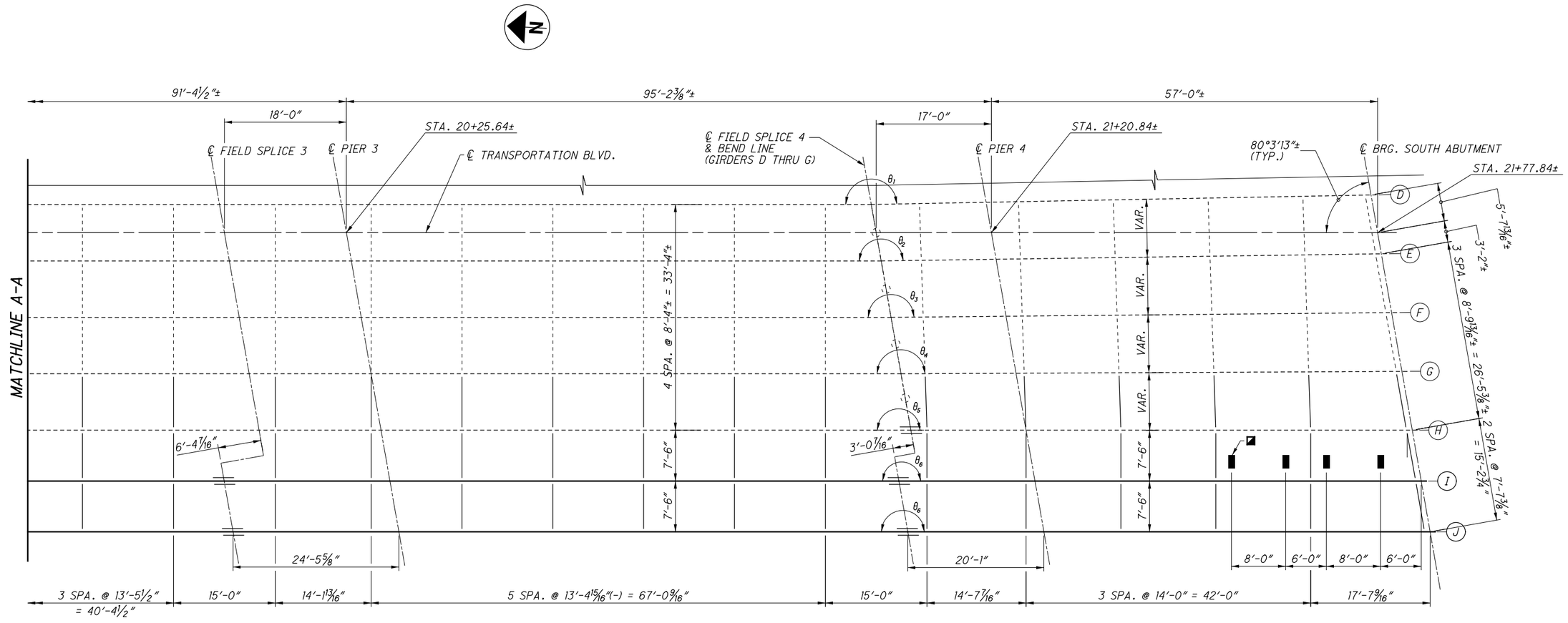
FRAMING PLAN
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-TRANSPORTATION BLVD.
PID No. 80974



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 .

DESIGN AGENCY
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Glaus, Pyle, Schomer, Burns & DeFazio, Inc.
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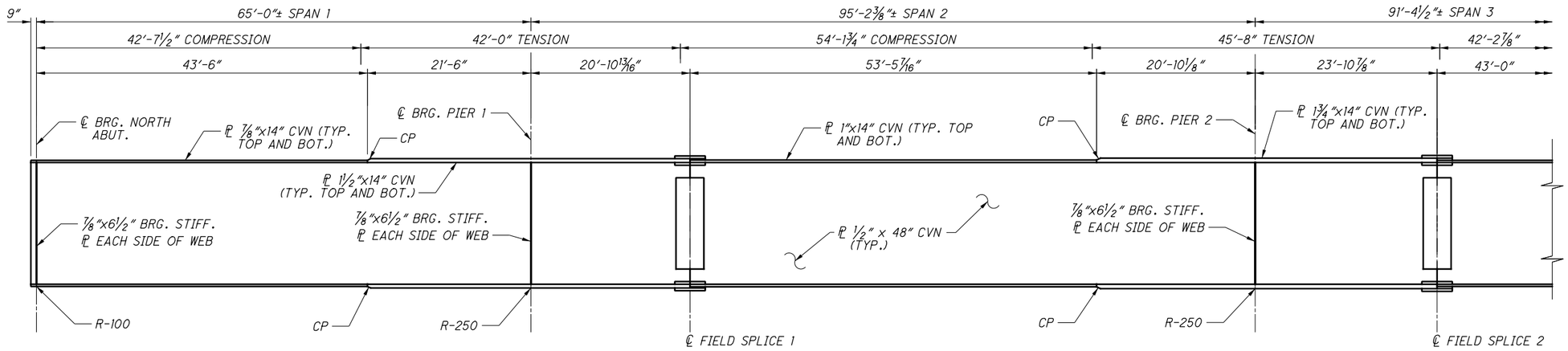
FRAMING PLAN
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

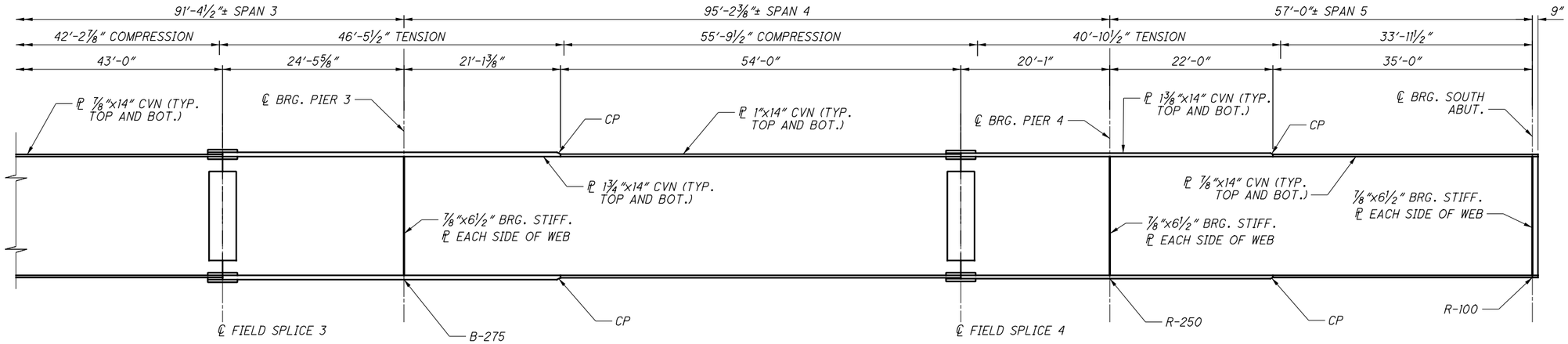
CUY-TRANSPORTATION BLVD.
PID No. 80974

23/39

209/225



GIRDER ELEVATION - GIRDERS I AND J



GIRDER ELEVATION - GIRDERS I AND J

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

NOTES:

1. CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
2. FOR MORE INFORMATION ON BEARING STIFFENERS, SEE SHT. NO. 25/39.
3. 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" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.

DESIGN AGENCY
GPD GROUP.
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
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SAT	SAT	DGN	3-1-17
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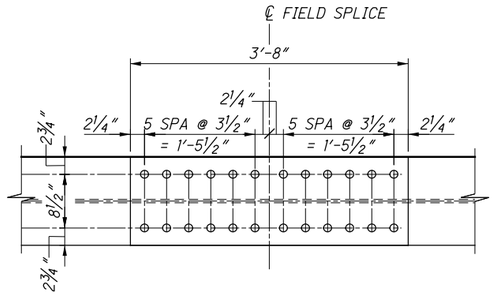
TJW		1812556	

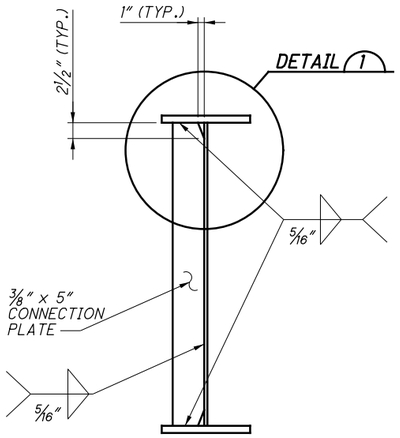
PROPOSED GIRDER ELEVATION DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974

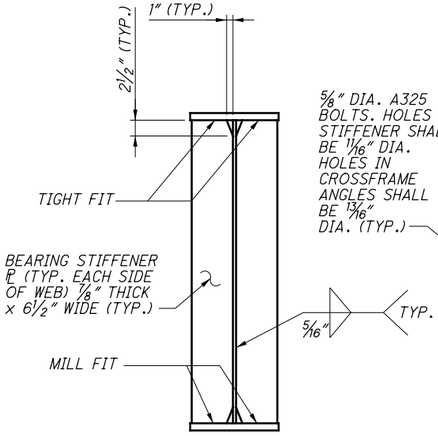


FLANGE SPLICE

TOP SPLICE SHOWN, BOTTOM SIMILAR (TYP. AT ALL LOCATIONS)

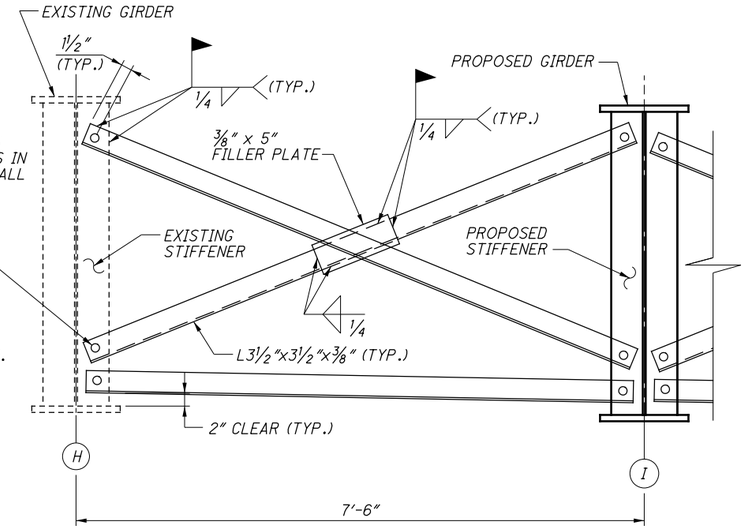


CROSSFRAME STIFFENER PLATE DETAIL

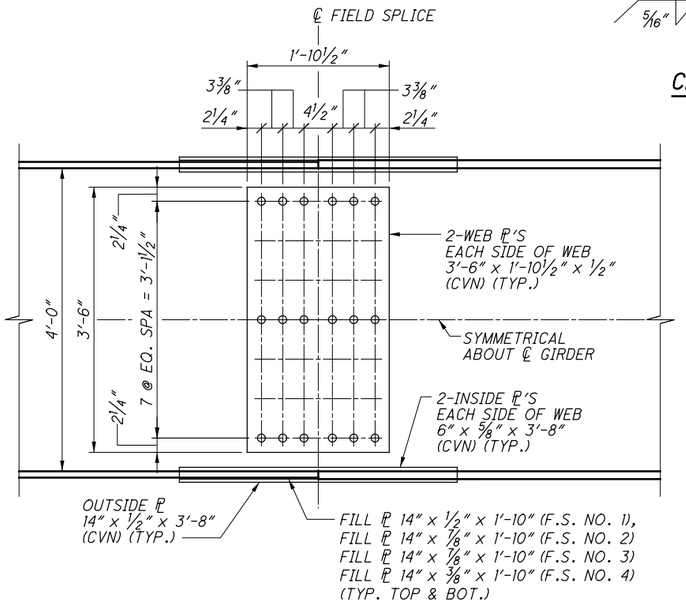


BEARING STIFFENER DETAIL

ALL BEARING STIFFENERS SHALL BE PLACED PERPENDICULAR TO THE WEB AND BE TRUE VERTICAL



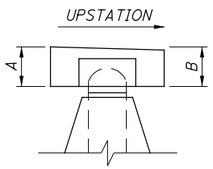
PARTIAL TRANSVERSE SECTION (WEST)



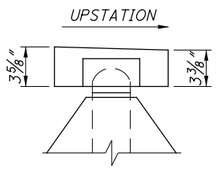
WEB SPLICE

(TYP. AT ALL LOCATIONS)

ROCKER TOP PLATE DIMENSIONS			
LOCATION	ROCKER TYPE	A	B
ABUTS.	R-100	2⅝"	2⅜"
PIERS	R-250	3⅝"	3⅜"

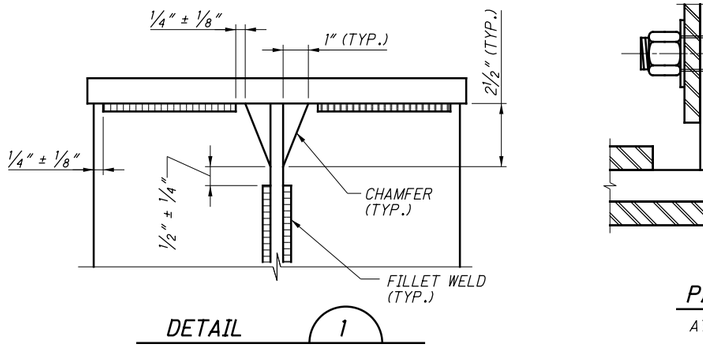


ROCKER TOP PLATE DETAIL

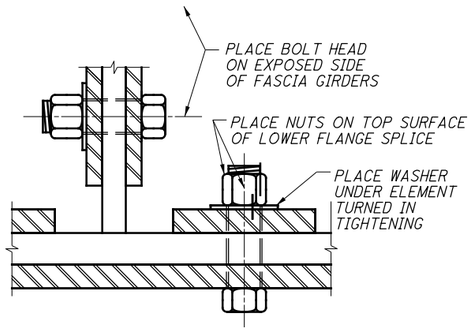


BOLSTER TOP PLATE DETAIL

B-275 @ PIER 3

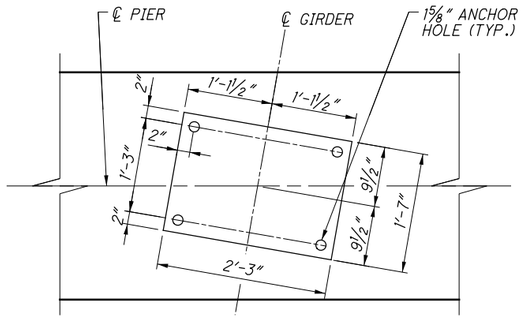


DETAIL 1



PARTIAL SECTION

AT ℄ OF GIRDER SPLICE



BOLSTER BASE PLATE

NOTES:

1. ALL FIELD SPLICE FASTENERS SHALL BE 1⅛" DIA., ASTM A325, HIGH STRENGTH BOLTS, TYPE I
2. FOR ADDITIONAL STRUCTURAL STEEL NOTES, SEE SHT. NOS. 22/39 THRU 24/39 .

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BOLTED SPLICE AND MISCELLANEOUS DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974

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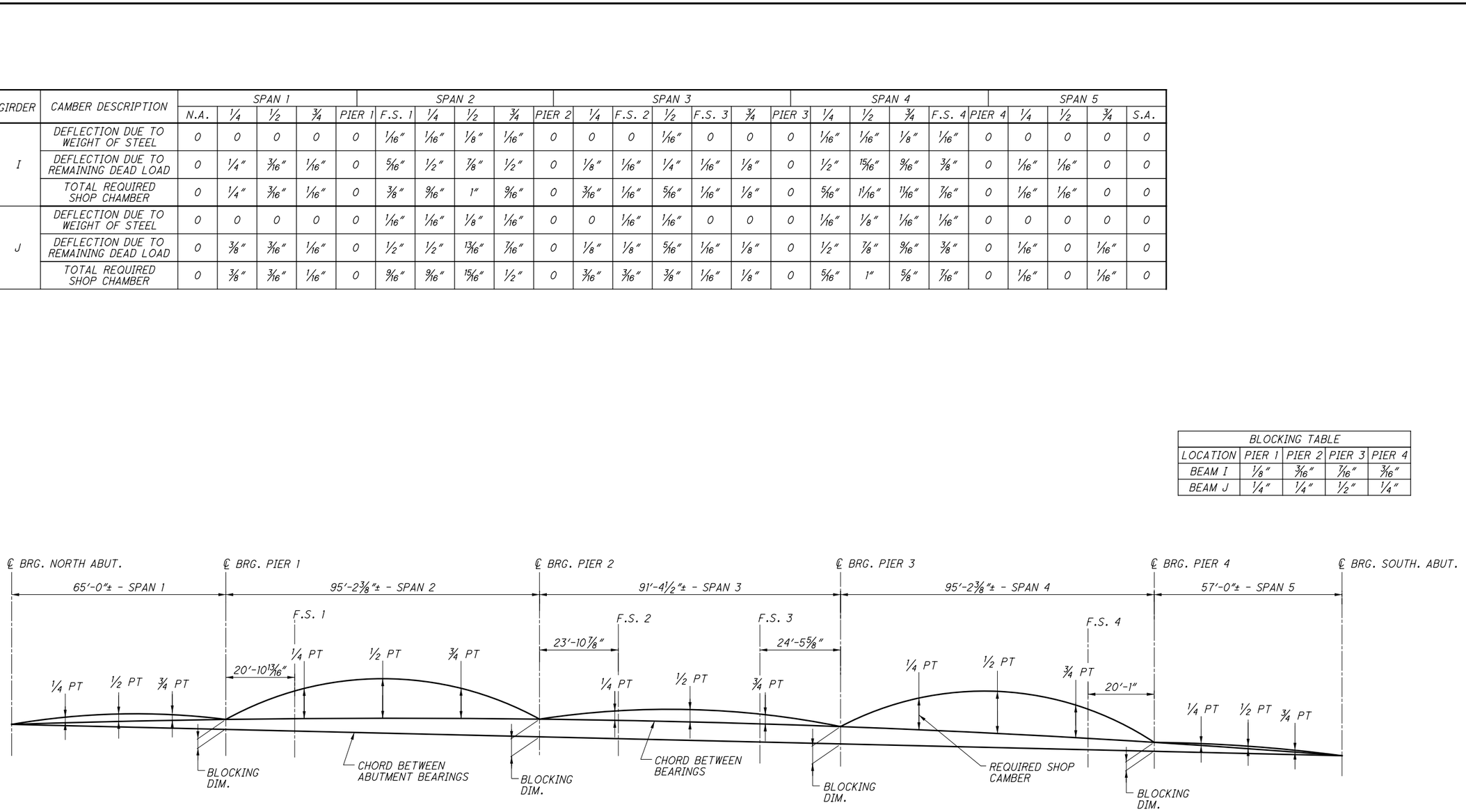
GIRDER	CAMBER DESCRIPTION	SPAN 1					SPAN 2					SPAN 3						SPAN 4					SPAN 5				
		N.A.	1/4	1/2	3/4	PIER 1	F.S. 1	1/4	1/2	3/4	PIER 2	1/4	F.S. 2	1/2	F.S. 3	3/4	PIER 3	1/4	1/2	3/4	F.S. 4	PIER 4	1/4	1/2	3/4	S.A.
I	DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	0	0	1/16"	1/16"	1/8"	1/16"	0	0	0	1/16"	0	0	0	1/16"	1/16"	1/8"	1/16"	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
	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"	11/16"	7/16"	0	1/16"	1/16"	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
	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"	7/16"	3/16"
BEAM J	1/4"	1/4"	1/2"	1/4"



CAMBER & BLOCKING DIAGRAM

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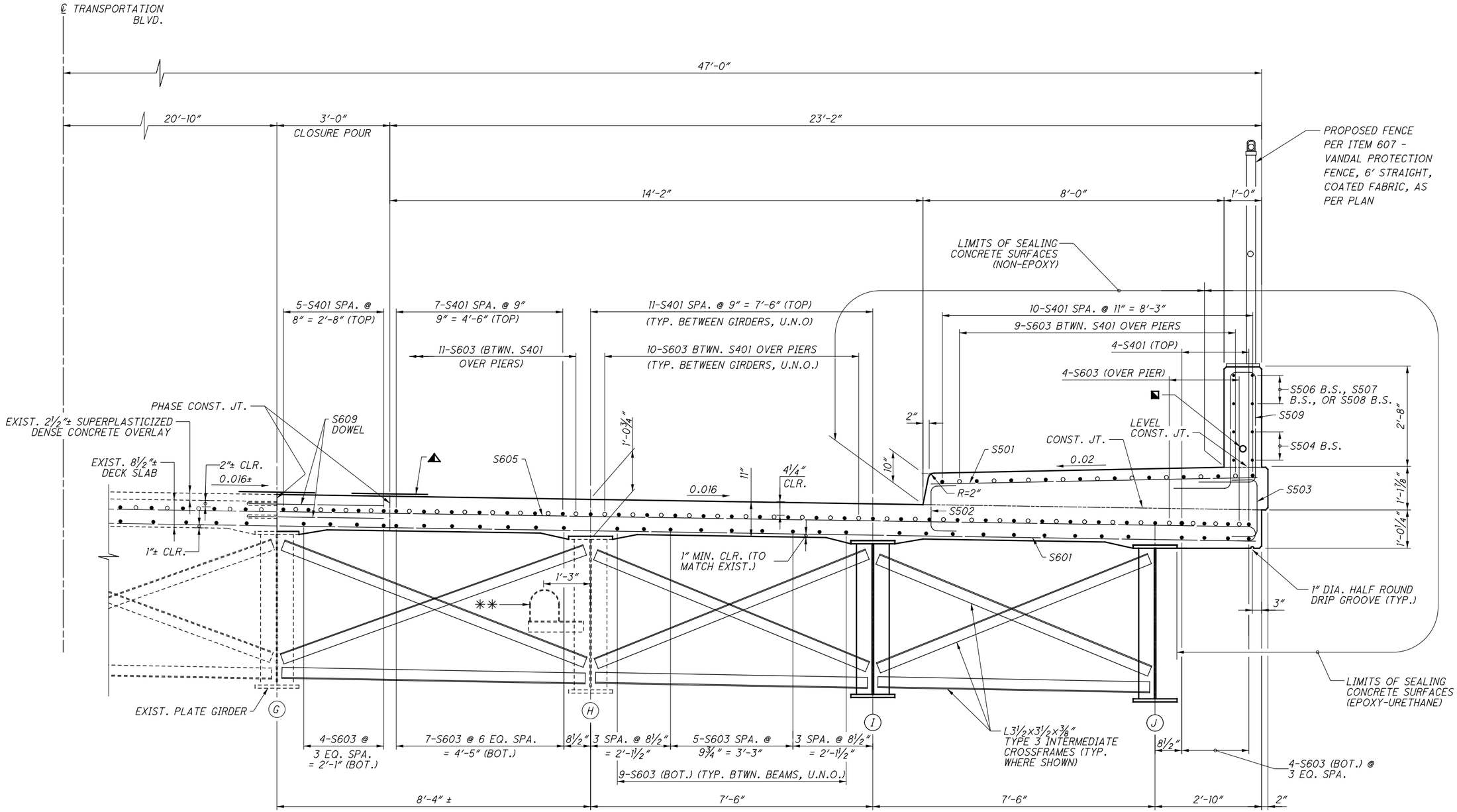
CAMBER AND DEFLECTION TABLE

BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974



PARTIAL TRANSVERSE SECTION (WEST)

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

NOTE:

1. SEE PHASE CONSTRUCTION DETAILS FOR EXISTING CROSSFRAME REMOVAL AND REPLACEMENT REQUIREMENTS BETWEEN GIRDERS Ⓖ AND Ⓗ.
2. 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 HAUNCH THICKNESS WAS MEASURED AT THE CENTER LINE OF THE GIRDER, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.24.
3. 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).
4. FOR PARAPET REINFORCING DETAILS, SEE SHT. NO. 32/39.
5. #6 DECK DOWEL BARS SHALL BE EMBEDDED 9" MINIMUM INTO THE EXISTING DECK SLAB.

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TRANSVERSE SECTION DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

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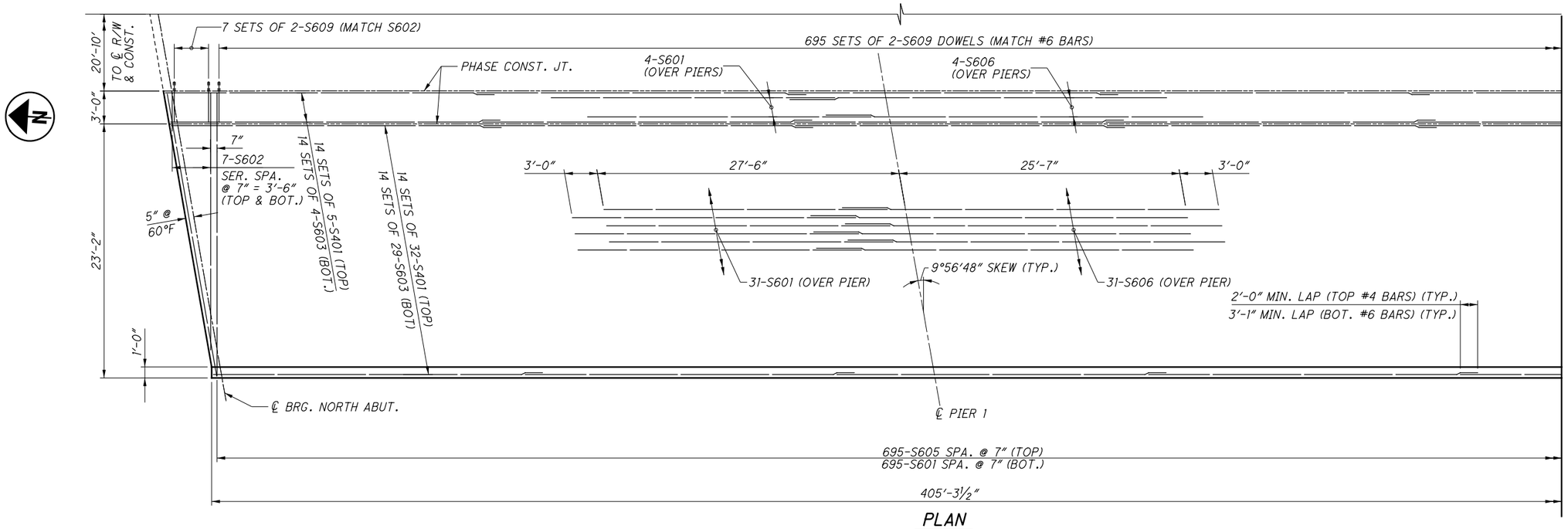
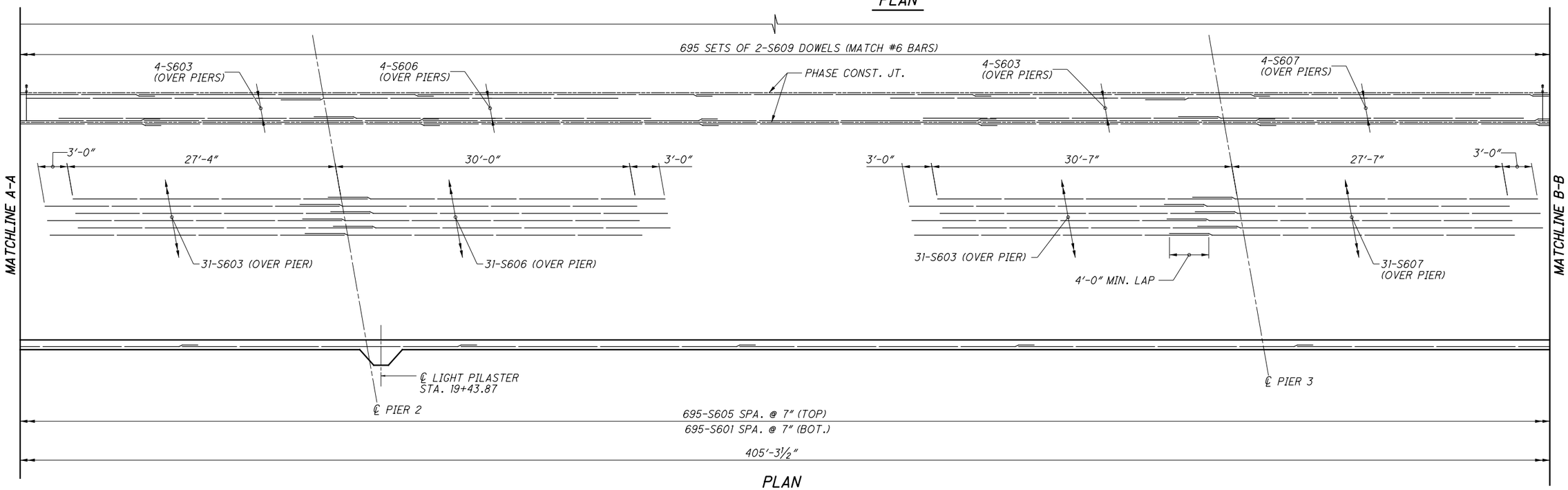
BLVD.
PID No. 80974



PLAN



PLAN

NOTES:

1. FOR TRANSVERSE SECTION, SEE SHT. NO. 27/39 .
2. FOR SIDEWALK REINFORCING DETAILS, SEE SHT. NO. 30/39 .

DESIGN AGENCY
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DECK REINFORCING DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-TRANSPORTATION BLVD.
PID No. 80974

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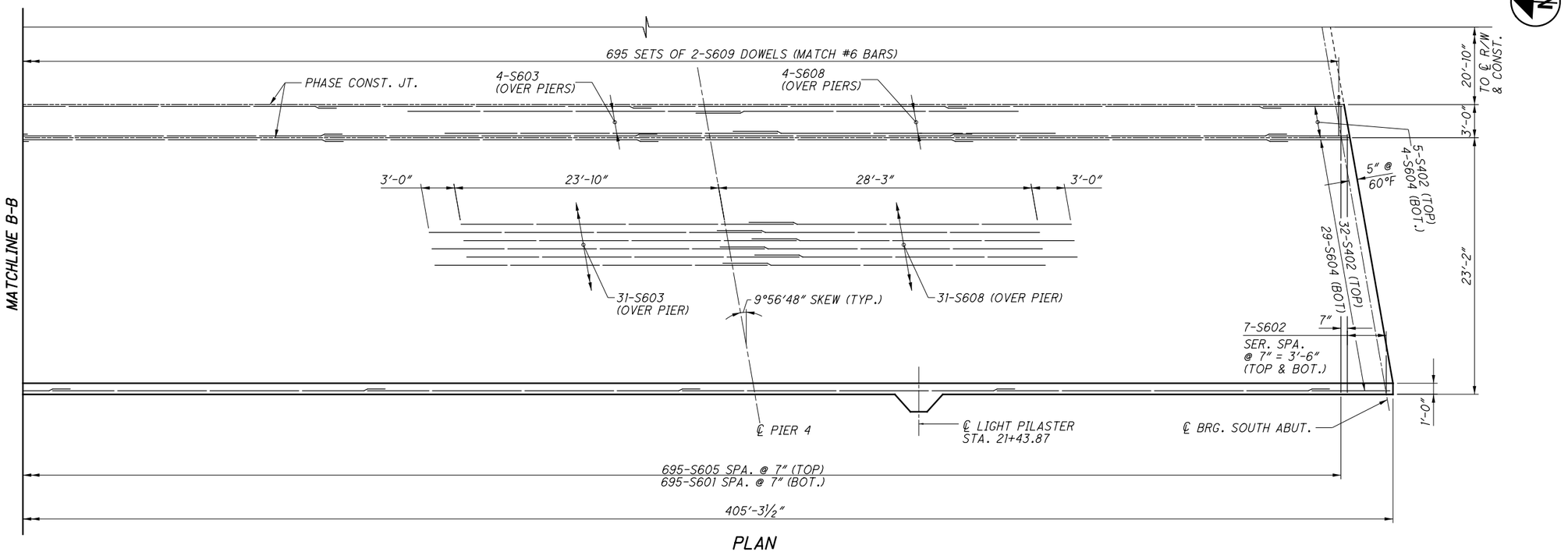

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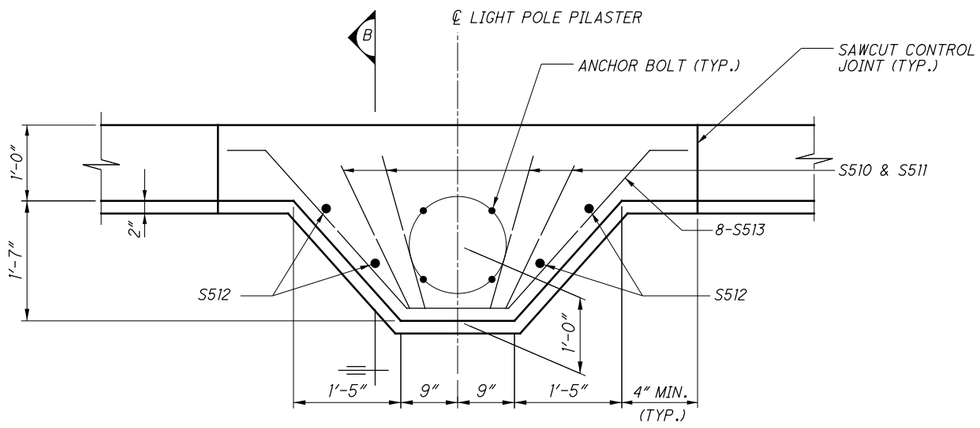
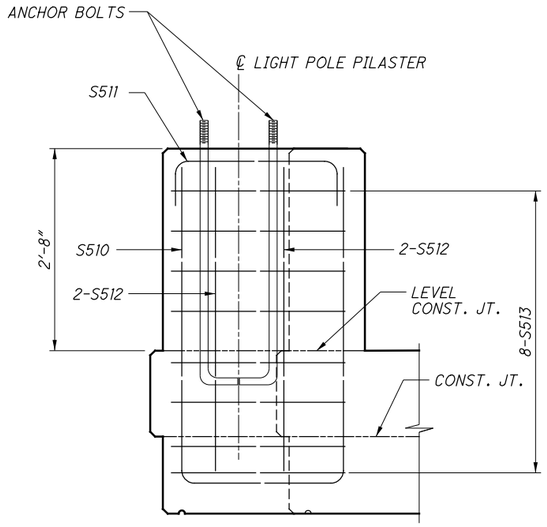


TYPICAL LIGHT POLE PILASTER



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.

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DECK REINFORCING DETAILS

BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
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BLVD.
PID No. 80974

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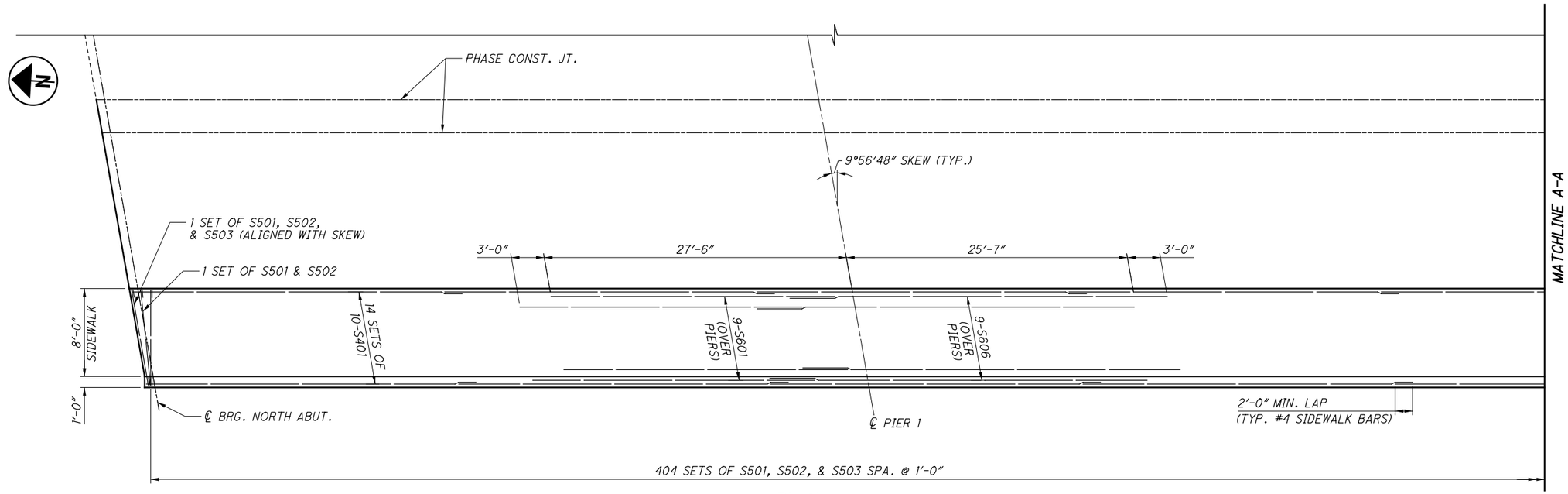

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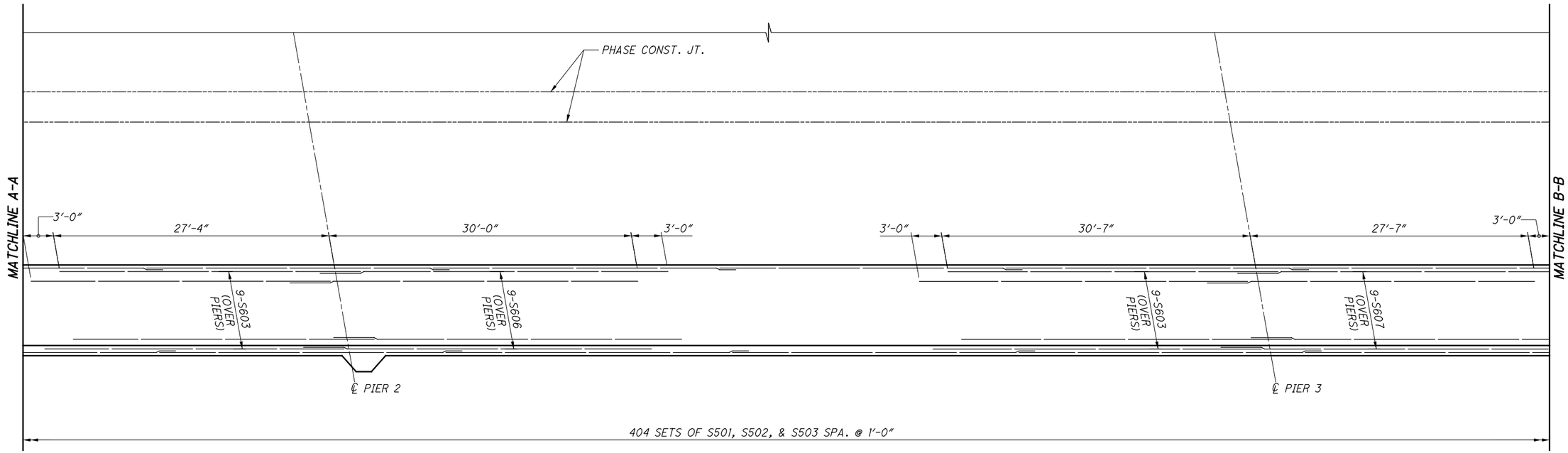

PLAN

NOTES:

1. FOR TRANSVERSE SECTION INCLUDING ADDITIONAL SIDEWALK REINFORCING DETAILS, SEE SHT. NO. 27/39.
2. STAGGER EVERY OTHER #6 BAR OVER THE PIERS IN THE SIDEWALK A MINIMUM OF 3'-0" PAST THE DIMENSIONS SHOWN.

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SIDEWALK REINFORCING DETAILS

BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974

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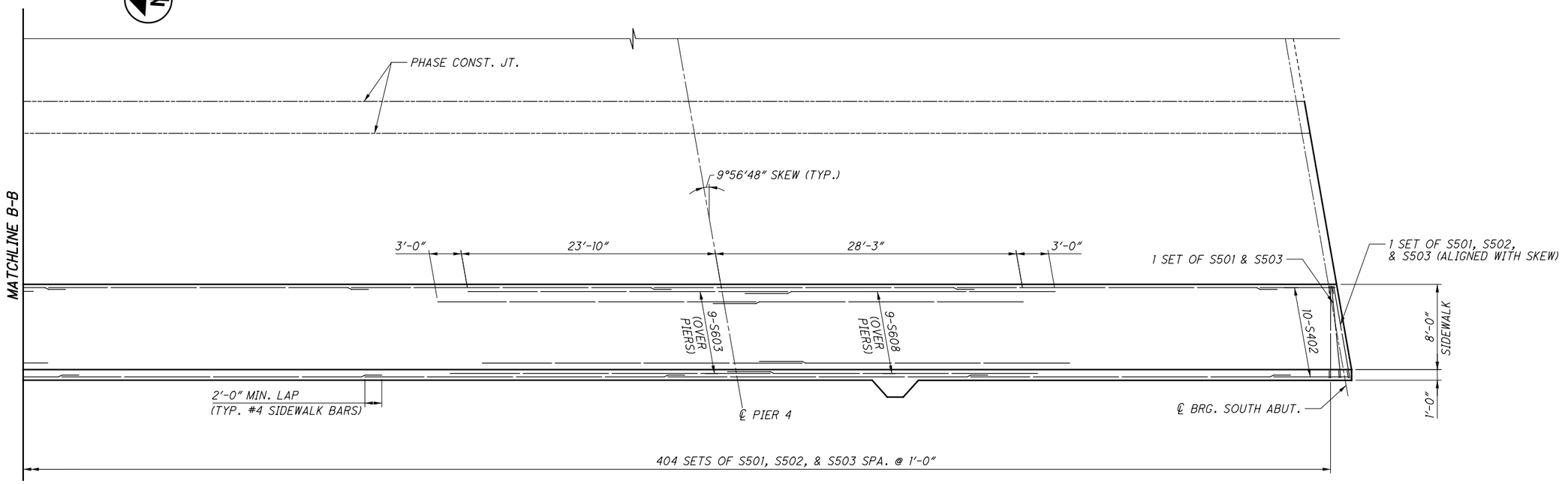

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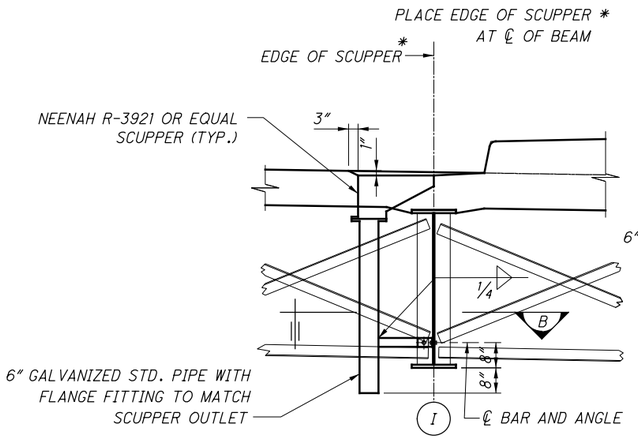
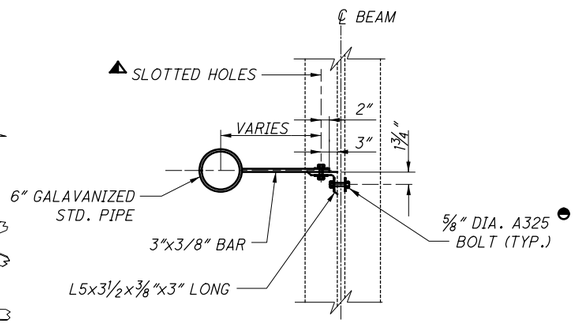


TYPICAL SCUPPER DETAIL



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.

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SIDEWALK REINFORCING DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

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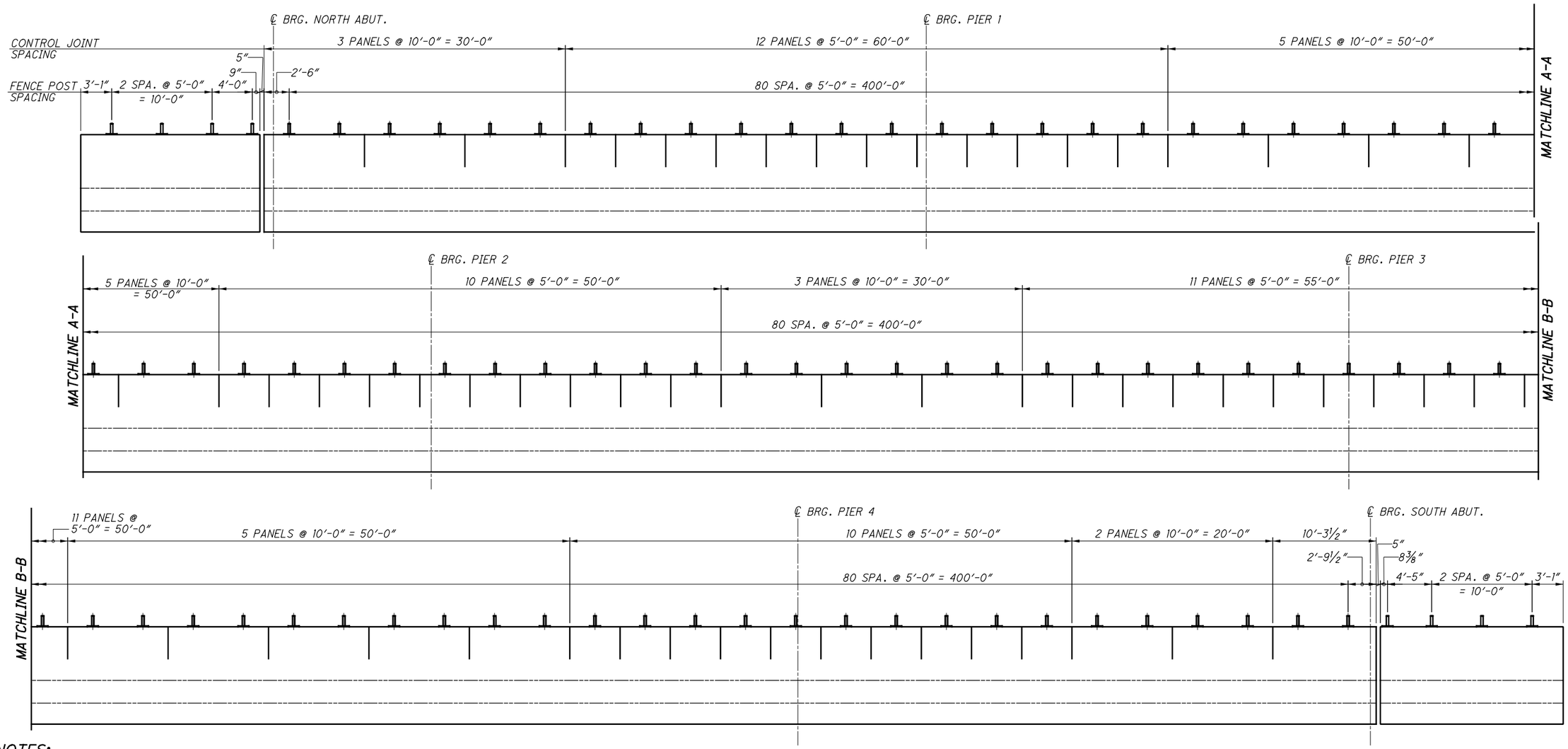


NOTES:

1. FOR DETAILS NOT SHOWN, SEE STANDARD DRAWINGS BR-2-15 & VPF-1-90.
2. FOR ABUTMENT RAILING REINFORCING, SEE SHT. NOS. 12/39 & 15/39.
3. 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.

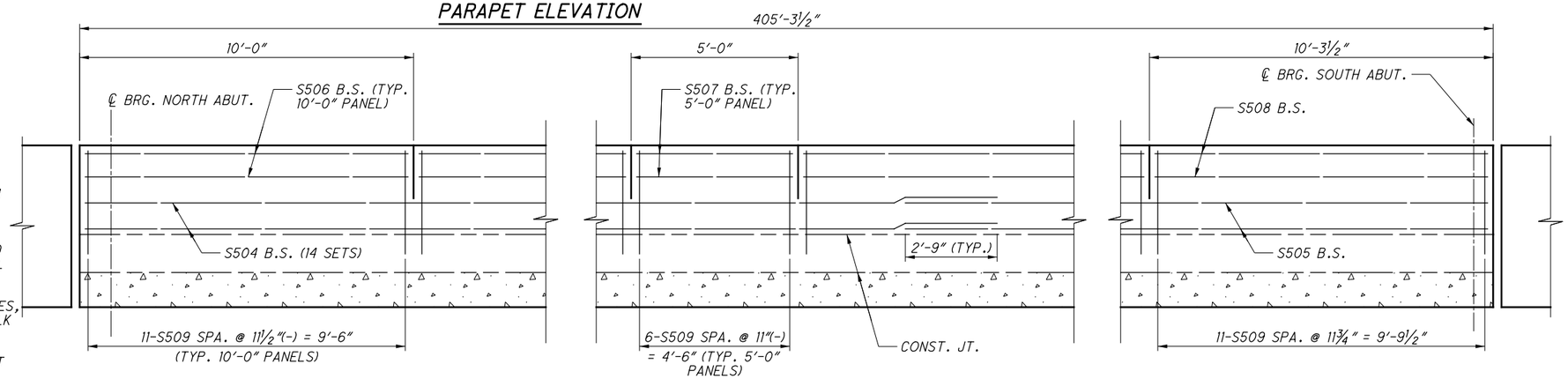
   THE ANCHORS SHALL BE CAST IN PLACE WITH 7" MINIMUM EMBEDMENT.

   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.

PARAPET ELEVATION



PARAPET DETAILS

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BRIDGE RAILING DETAILS
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

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TRANSPORTATION
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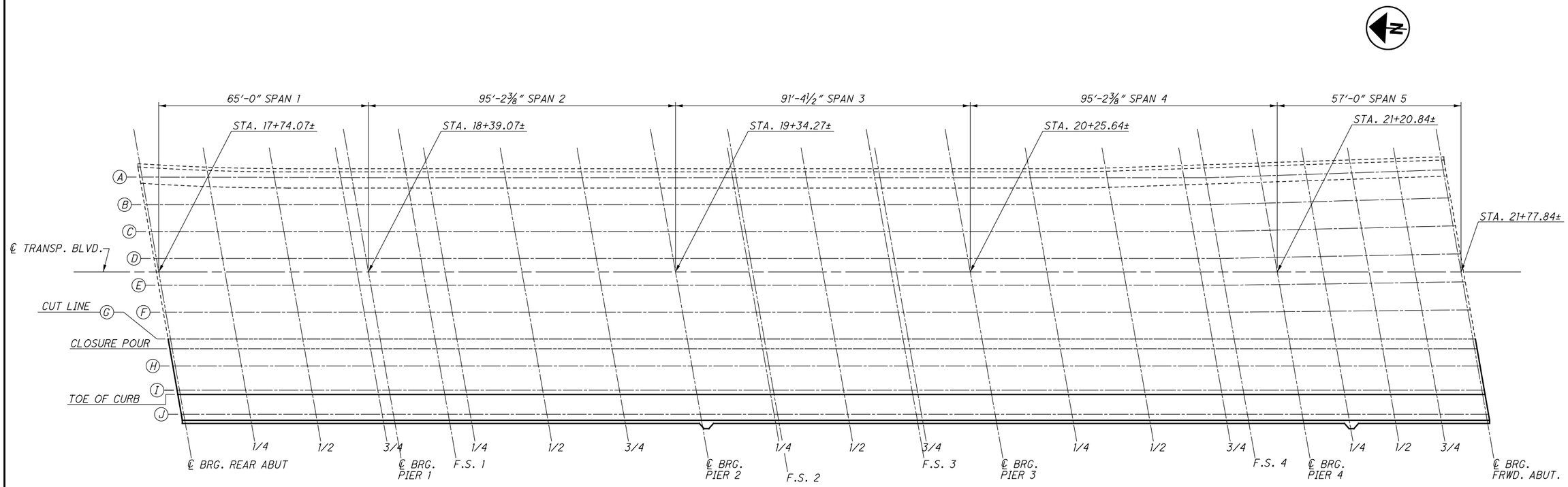

ELEVATION LINE LOCATION PLAN

NOTES:

FOR ELEVATION TABLES, SEE SHT. NOS. 34/39 & 35/39.

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ELEVATION LINE LOCATION PLAN
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

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TRANSPORTATION
BLVD.
PID No. 80974

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219
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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:

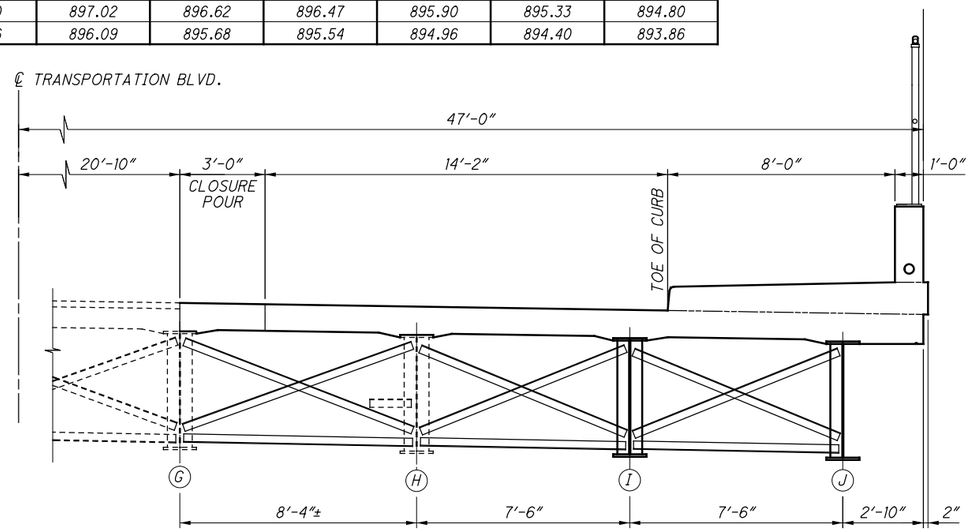
1. SCREED ELEVATIONS SHOWN FOR CLOSURE POUR C.J., TOE OF CURB AND GIRDERS "H", "I" & "J" REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO THE DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

2. 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.

3. 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.

4. 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.

5. 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.
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
3955 Transportation Blvd., Suite 100, Cleveland, Ohio 44131 - 216.518.1554

DESIGNED	DRAWN	REVIEWED	DATE
RFV	RFV	DGN	3-1-17
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DJC		1812556	

ELEVATION LINE LOCATION & TABLE
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974

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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"

FOR NOTES ON THE DECK ELEVATIONS, SEE SHT. NO. 34/39 .

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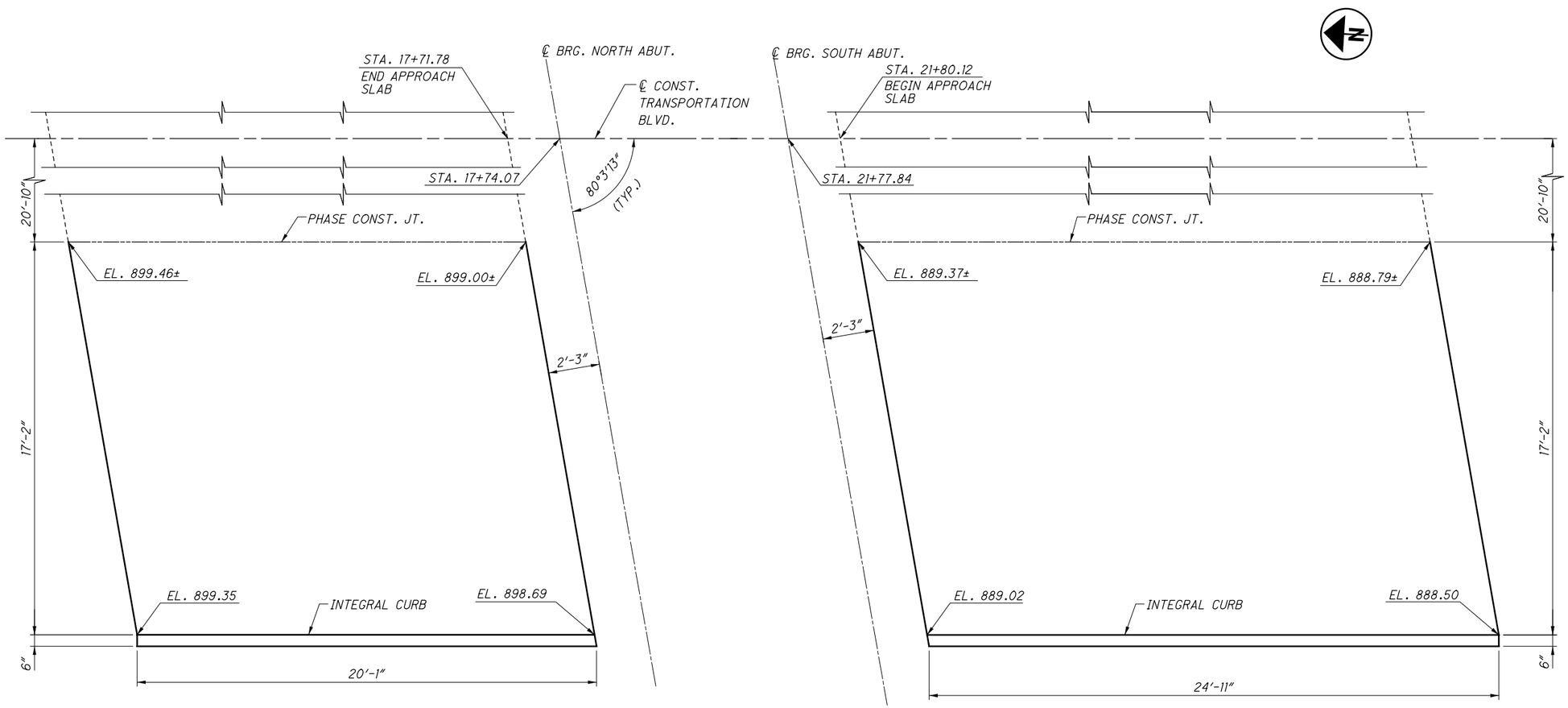
DESIGN AGENCY
GPD GROUP®
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
5595 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.518.5544

DESIGNED RFV | DRAWN RFV | REVIEWED DGN | DATE 3-1-17
CHECKED DJC | REVISED | STRUCTURE FILE NUMBER 1812556

ELEVATION TABLE
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-TRANSPORTATION BLVD.
PID No. 80974



APPROACH SLAB GEOMETRY PLAN

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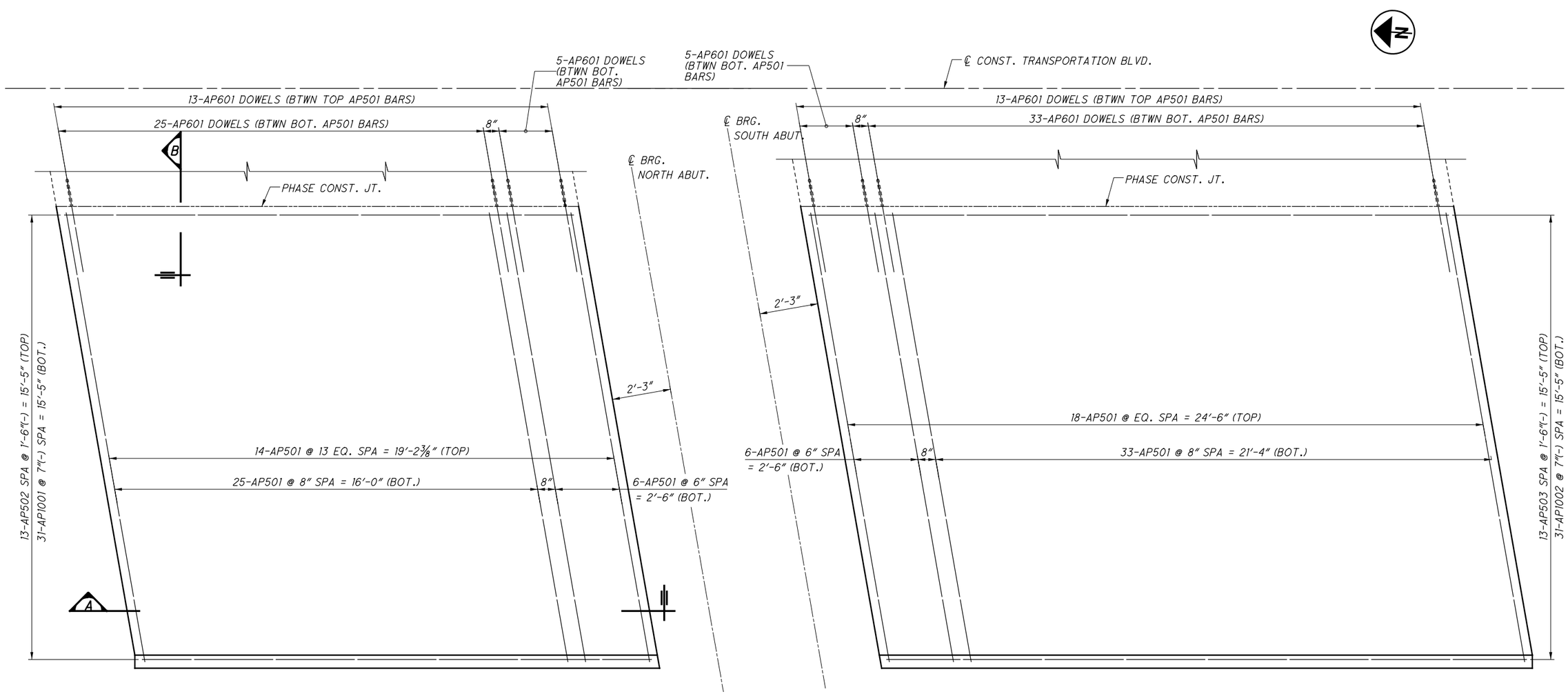
DESIGN AGENCY
GPD GROUP.
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
5500 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 - 216.518.5544

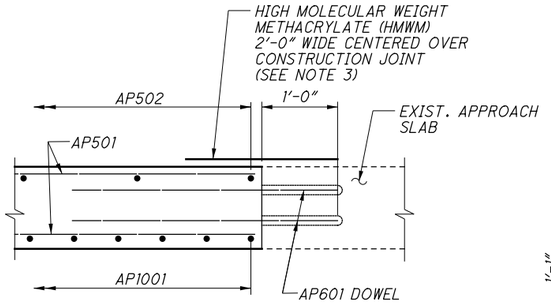
DESIGNED	DRAWN	REVIEWED	DATE
RFV	RFV	DGN	3-1-17
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DJC		1812556	

APPROACH SLAB GEOMETRY PLAN
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

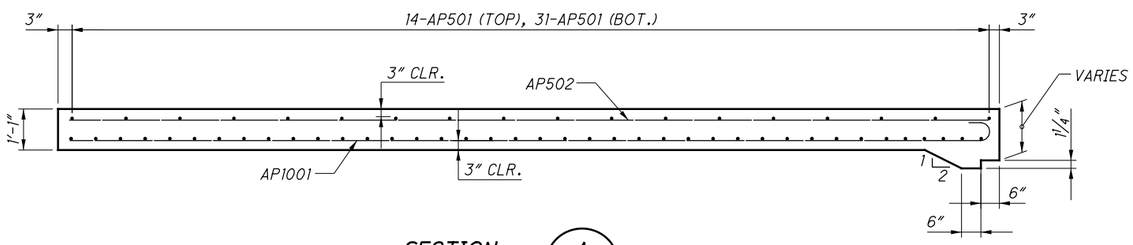
CUY-
TRANSPORTATION
BLVD.
PID No. 80974



APPROACH SLAB REINFORCING PLAN



SECTION B



SECTION A

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.

DESIGN AGENCY
GPD GROUP.
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
2550 Transportation Blvd., Suite 100, Cleveland, Ohio 44115 - 216.518.5544

DESIGNED	DRAWN	REVIEWED	DATE
RFV	RFV	DGN	3-1-17
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DJC		1812556	

APPROACH SLAB DETAILS

BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974

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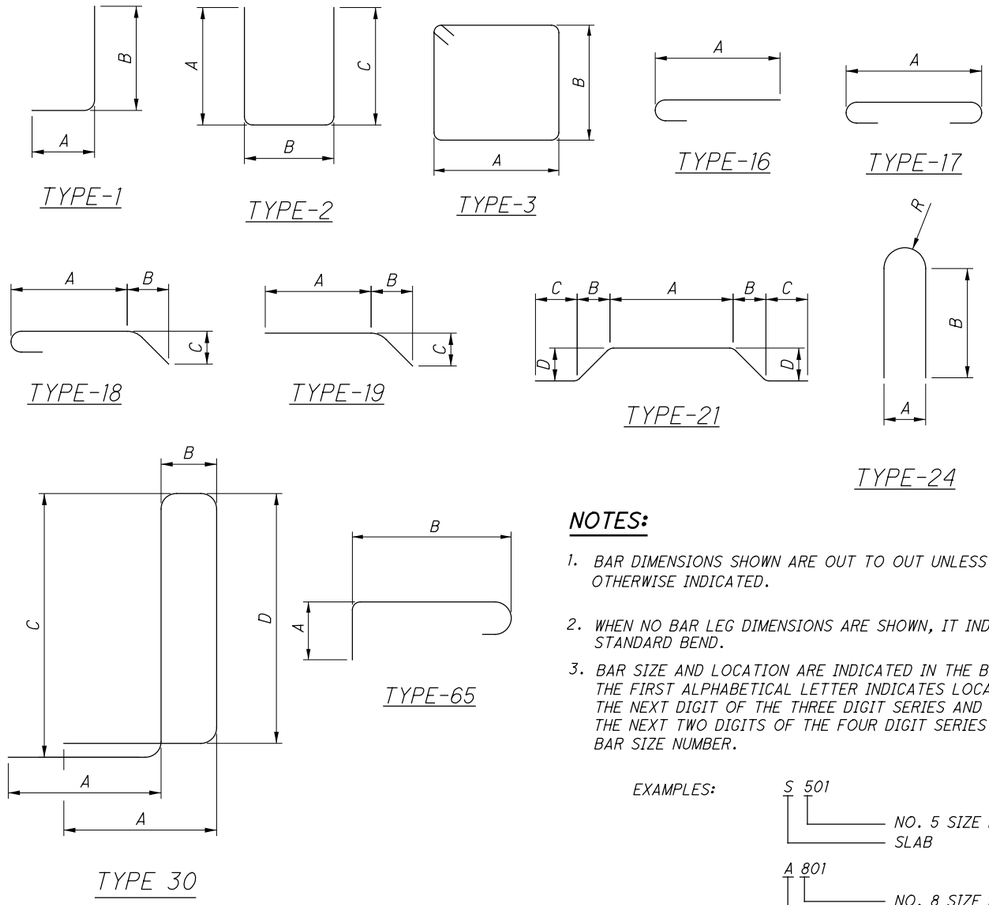
MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						INC.
	REAR	FORWARD	TOTAL				A	B	C	D	E	R	
ABUTMENTS													
A501	9		9	16′-3″	153	STR							
A502	23	23	46	3′-8″	176	STR							
A503	10	11	21	6′-6″	142	2	1′-8″	3′-5″	1′-8″				
A504		12	12	8′-1″	101	1	7′-5″	0′-10″					
A505		9	9	15′-8″	147	STR							
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 ½″
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 ¾″
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 ¾″
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 ½″
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



NOTES:

1. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED.
2. WHEN NO BAR LEG DIMENSIONS ARE SHOWN, IT INDICATES STANDARD BEND.
3. BAR SIZE AND LOCATION ARE INDICATED IN THE BAR MARK. THE FIRST ALPHABETICAL LETTER INDICATES LOCATION. THE NEXT DIGIT OF THE THREE DIGIT SERIES AND THE NEXT TWO DIGITS OF THE FOUR DIGIT SERIES INDICATE BAR SIZE NUMBER.

EXAMPLES:

S 501 — NO. 5 SIZE BAR, SLAB

A 801 — NO. 8 SIZE BAR, ABUTMENT

DESIGN AGENCY
GPD GROUP.
Glaus, Pyle, Schomer, Burns & DeFazio, Inc.
5500 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 — 216.518.1544

DESIGNED RFV | DRAWN RFV | CHECKED DJC | REVIEWED DGN | DATE 3-1-17 | REVISED

STRUCTURE FILE NUMBER 1812556

REINFORCING SCHEDULE
BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974

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							
AP1001	31		31	20'-11"	2790	16	19'-6"						
AP1002		31	31	25'-11"	3457	16	24'-6"						
		APPROACH SLAB TOTAL =			9202	LBS							

NOTE: APPROACH SLAB REINFORCING INCLUDED WITH ITEM 526 FOR PAYMENT.

DESIGN AGENCY
GPD GROUP.
Glaus, Pyle, Schomer, Burns & DeFenzo, Inc.
5500 Transportation Blvd., Suite 100, Cleveland, Ohio 44125 216.518.1544

DESIGNED	DRAWN	REVIEWED	DATE
RFV	RFV	DGN	3-1-17
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DJC		1812556	

REINFORCING SCHEDULE

BRIDGE NO. CUY-480-1955
TRANSPORTATION BOULEVARD OVER I-480

CUY-
TRANSPORTATION
BLVD.
PID No. 80974