

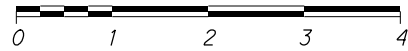
I:\Projects\CCG2\Roadway\Sheets\Survey\_Control\82119GT001.dgn 6/6/2014 9:45:51 AM Nate\_Verseput



**LOCATION MAP**

LATITUDE: 41°29'03" LONGITUDE: 81°41'30"

SCALE IN MILES



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

**DESIGN DESIGNATION**  
 SEE SHEET 2

**DESIGN EXCEPTIONS**  
 N. A.

**UNDERGROUND UTILITIES**  
 CONTACT BOTH SERVICES  
 CALL TWO WORKING DAYS  
 BEFORE YOU DIG

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

OHIO UTILITIES PROTECTION SERVICE  
 NON-MEMBERS  
 MUST BE CALLED DIRECTLY

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

PLANS PREPARED BY:

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

STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION  
**CUY-90-14.90**

**CITY OF CLEVELAND  
 CUYAHOGA COUNTY**

**INDEX OF SHEETS:**

TITLE SHEET.....	1
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**Trumbull-Great Lakes-Ruhlin**  
*a joint venture*

**BU# 46 - SURVEY CONTROL PLAN**

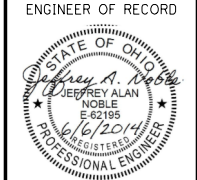
STANDARD CONSTRUCTION DRAWINGS				SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS

**PROJECT DESCRIPTION**  
 THE PROJECT IS THE CONSTRUCTION OF A NEW IR 90 EASTBOUND BRIDGE OVER THE CUYAHOGA RIVER VALLEY AND APPROCHES. APPROACH WORK INCLUDES IMPROVEMENTS ON IR 71; REHABILITATION OF TWO BRIDGES OVER CITY STREETS; REPLACEMENT OF FOUR BRIDGES OVER CITY STREETS; AND MINOR WIDENING OF ONE BRIDGE OVER IR 77 RAMP. EXIT AND ENTRANCE RAMP WITHIN THE PROJECT LIMITS WILL BE RECONSTRUCTED. PORTIONS OF AFFECTED CITY STREETS WILL BE RECONSTRUCTED.

PROJECT LENGTH = 1.50 MILE.

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

**2013 SPECIFICATIONS**  
 THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.



DATE	REVISIONS	NO.

FEDERAL PROJECT NO. **E101 (051)**

**RF.C.140617.IQF.BU46.SurveyControlPlan - IQM J. Jordan**

CONSTRUCTION PROJECT NO. **133000**

RAILROAD INVOLVEMENT  
**NS, CSX, AND GCRTA**

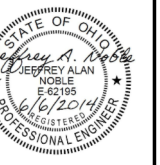
SURVEY CONTROL

**CUY-90-14.90**  
 PID No. 82119

## DESIGN DESIGNATIONS

Roadway Name	Build Year ADT (2015)	Design Year ADT (2035)	Design Hourly Volume (2035)	Truck Volume (%)	Design Speed (MPH)	Legal Speed (MPH)	Design Functional Classification	Maintaining Agency
I-90 (Tremont)	64,000	69,000	7,050	8	60	50	Urban Interstate	ODOT
I-90 (Over Cuyahoga River)	71,000	77,000	8,050	8	60	50	Urban Interstate	ODOT
I-90 (Over Ontario St.)	59,000	64,000	6,630	8	60	50	Urban Interstate	ODOT
I-90 (Over E. 9th St.)	45,000	48,000	5,030	8	60	50	Urban Interstate	ODOT
I-90 EB Interim	NA	NA	NA	NA	50	50	Urban Interstate	ODOT
I-90 WB Interim	NA	NA	NA	NA	50	50	Urban Interstate	ODOT
I-71	NA	NA	NA	NA	70	60	Urban Interstate	ODOT
I-77 (Between Broadway and I-90)	NA	NA	NA	NA	60	50	Urban Interstate	ODOT
I-90 Eastbound to I-90 Eastbound (B1)	27,000	30,100	3,130	6	45 (Minimum)		Directional Ramp	ODOT
Interim East 14th Street Eastbound to I-77 Southbound	NA	NA	NA	NA	25 (Minimum)		Directional Ramp	ODOT
Fairfield Ramp to I-90 Eastbound (B2)	7,300	7,900	1,000	5	30 (Minimum)		Diamond Ramp	ODOT
I-90 Eastbound Ramp to Ontario (B3)	8,900	9,200	1,010	15	25 (Minimum)		Loop Ramp	ODOT
I-90 Eastbound Ramp to East 9th Street South (B4)	3,200	3,700	420	3	25 (Minimum)		Loop Ramp	ODOT
I-90 Eastbound Ramp to East 9th Street North (B5)	7,600	7,800	890	3	25 (Minimum)		Loop Ramp	ODOT
West 14th Street Extension	3,500	3,600	390	3	30	25	Urban Collector	City of Cleveland
University Road	NA	NA	NA	NA	30	25	Urban Local	City of Cleveland
East 9th Street (Between Canal and Broadway)	3,400	3,600	390	35	30	25	Urban Collector	City of Cleveland
East 14th Street	17,200	19,100	1,860	NA	30	25	Urban Collector	City of Cleveland
East 30th Street					30	25	Urban Arterial	City of Cleveland
Broadway Avenue (East of East 14th Street)	13,400	14,000	1,420	NA	35	35	Urban Arterial	City of Cleveland
Broadway Avenue (Between E. 14th Street and E. 9th Street)	10,600	12,400	970	NA	35	35	Urban Collector	City of Cleveland
Commercial Road	NA	NA	NA	NA	25	25	Urban Collector, Future Urban Local	City of Cleveland
Carnegie Avenue	20,900	24,000	2,320	NA	30	25	Urban Arterial	City of Cleveland
East 9th Street (Between Carnegie and Broadway)	NA	NA	NA	NA	30	25	Urban Arterial	City of Cleveland
Central Viaduct Historic Way	NA	NA	NA	NA	25	25	Urban Local	City of Cleveland
Orange Avenue	23,100	23,300	2,200	NA	35	35	Urban Arterial	City of Cleveland
Ontario Street	33,700	33,200	3,660	NA	35 North of Carnegie 30 South of Carnegie	35 North of Carnegie 25 South of Carnegie	Urban Arterial	City of Cleveland
Canal Road	NA	NA	NA	NA	30	25	Urban Collector	City of Cleveland
West 3rd Street	NA	NA	NA	NA	35	35	Urban Collector	City of Cleveland
West 14th Street	11,900	12,300	1,340	NA	30	25	Urban Collector	City of Cleveland
Abbey Avenue	1,500	1,200	140	NA	30	25	Urban Collector	City of Cleveland
Fairfield Avenue	1,500	1,500	170	NA	25	25	Urban Collector	City of Cleveland
Kenilworth Avenue	NA	NA	NA	NA	30	25	Urban Local	City of Cleveland
Starkweather Avenue	NA	NA	NA	NA	30	25	Urban Local	City of Cleveland
Woodland Avenue	NA	NA	NA	NA	35	35	Urban Arterial	City of Cleveland
Orange Avenue Connector	NA	NA	NA	NA	35	35	Urban Arterial	City of Cleveland
East 22nd Street	11,500	11,800	1,350	NA	30	25	Urban Arterial	City of Cleveland
Towpath Trail	NA	NA	NA	NA	20		Shared Use Path	Multi-Party Agreement

ENGINEER OF RECORD



NO.	REVISIONS	DATE

DESIGN AGENCY  
 URS  
 Trumbull-Great Lakes-Ruhlin  
 a joint venture

george y. vojtech  
 GEORGE Y. VOJTECH  
 BRIDGE ENGINEERING & CONSTRUCTION

SURVEY CONTROL

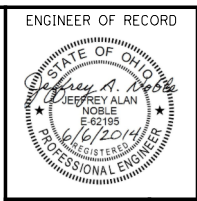
RFC. 140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan

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25

DESIGN DESIGNATIONS

CUY-90-14.90  
PID No. 82119



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DESIGN AGENCY  
**URS**  
 Trumbull-Great Lakes-Ruhlin  
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GEORGE Y. VOINOVICH  
 BRIDGE ENGINEER  
 TRANSPORTATION

SURVEY CONTROL

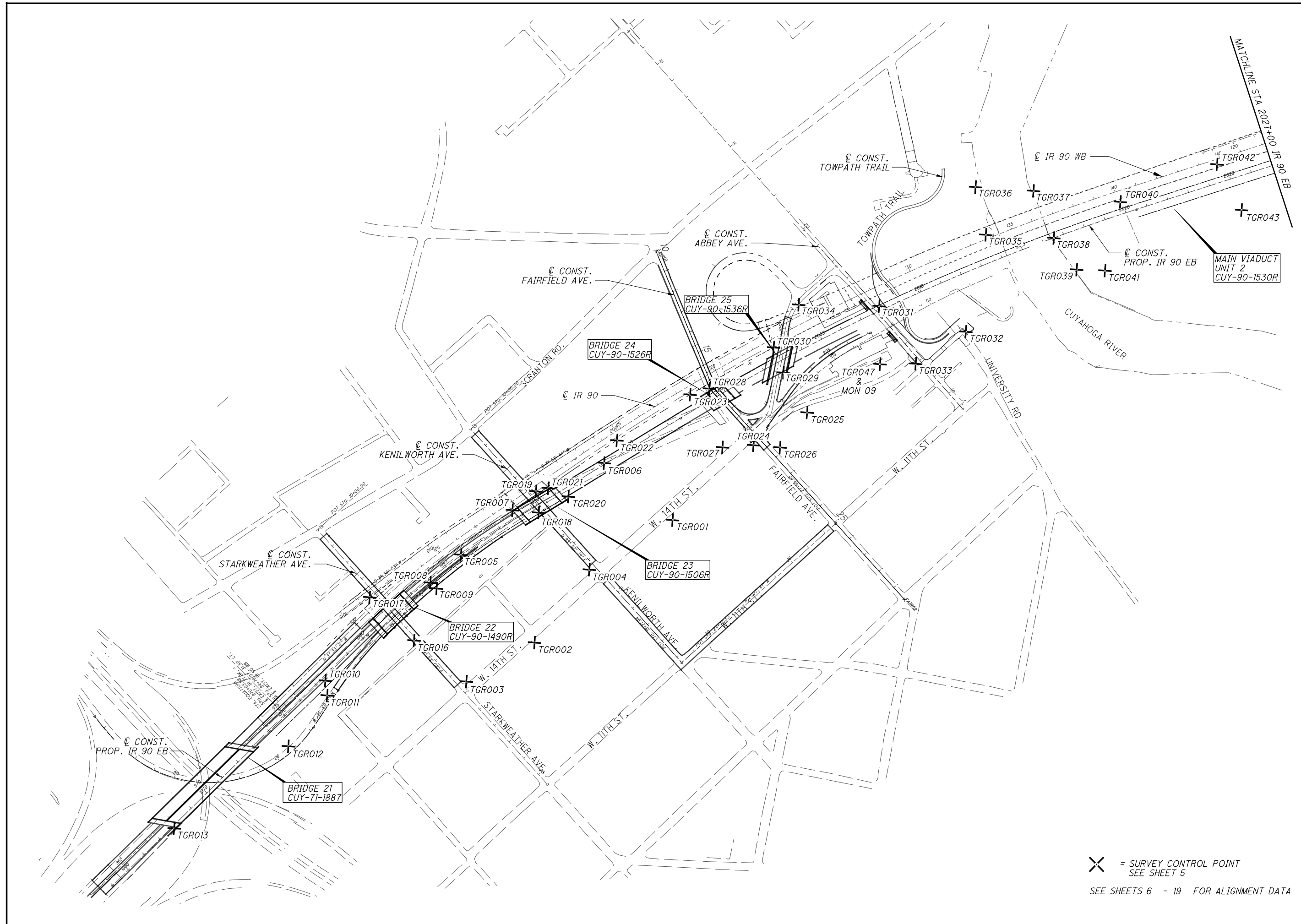
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PROJECT SCHEMATIC PLANS - CONTROL POINTS

CUY-90-14.90  
 PID No. 82119

DESIGNED: NGB  
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3  
 25



✕ = SURVEY CONTROL POINT  
 SEE SHEET 5

SEE SHEETS 6 - 19 FOR ALIGNMENT DATA



NO.	REVISIONS	DATE

DESIGN AGENCY  
**URS**  
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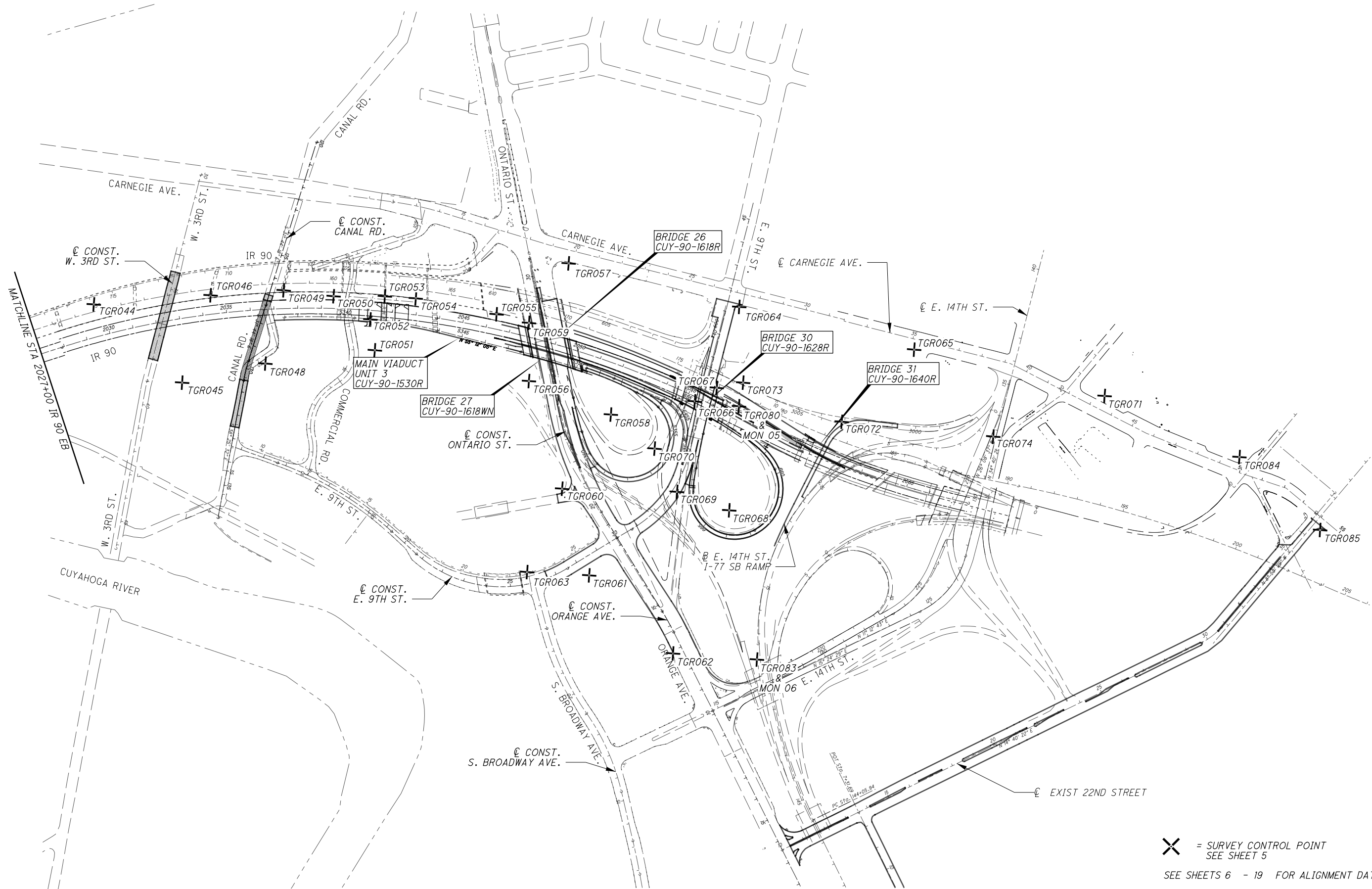


SURVEY CONTROL

CUY-90-14.90  
 PID No. 82119

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	4/25

PROJECT SCHEMATIC PLANS - CONTROL POINTS



✕ = SURVEY CONTROL POINT  
 SEE SHEET 5

SEE SHEETS 6 - 19 FOR ALIGNMENT DATA

MATCHLINE STA 2027+00 IR 90 EB



### SURVEY CONTROL POINTS

POINT	NORTH	EAST	ELEVATION	DESCRIPTION
MON 01	679869.4451	2200367.3468	579.89	N/A
MON 02	678635.2988	2198625.1362	583.79	N/A
MON 03	674663.8540	2192958.5246	601.17	N/A
MON 04	673376.9712	2191613.2628	582.36	N/A
MON 05	667185.2676	2192915.2726	696.15	N/A
MON 06	666543.1483	2193770.5297	695.57	N/A
MON 07	664881.1501	2200632.3926	676.40	N/A
MON 08	665171.0566	2199152.8207	676.78	N/A
MON 09	663172.0615	2190334.2447	697.66	N/A
MON 10	662208.9589	2189857.4214	694.50	N/A
MON 11	651599.3181	2161986.4743	714.63	N/A
MON 12	652222.0046	2183191.1445	688.92	N/A
TGR001	661994.052	2190250.779	678.30	KS PIN (229)
TGR002	661154.179	2190259.882	679.14	KS PIN (227)
TGR003	660803.461	2190190.446	679.53	MAGNAIL FND (226)
TGR004	661560.136	2190172.886	678.18	MAGNAIL SET
TGR005	661163.538	2189738.504	699.38	MAGNAIL SET
TGR006	661929.147	2189850.556	N/A	MAGNAIL SET
TGR007	661473.403	2189738.978	699.78	MAGNAIL SET
TGR008	660974.745	2189743.381	700.05	MAGNAIL SET
TGR009	660979.121	2189781.905	N/A	KS PIN (224)
TGR010	660321.557	2189766.459	703.80	MAGNAIL SET
TGR011	660283.763	2189822.851	700.00	MAGNAIL SET
TGR012	659998.883	2189881.728	691.62	MAGNAIL SET
TGR013	659361.4978	2189822.898	N/A	MAGNAIL SET
TGR014	658890.991	2189858.025	690.01	MAGNAIL SET
TGR015	658579.13	2189877.476	680.76	MAGNAIL SET
TGR016	660746.409	2189893.111	678.92	MAGNAIL FND (225)
TGR017	660722.917	2189612.215	678.78	MAGNAIL SET
TGR018	661556.081	2189825.719	677.25	MAGNAIL SET
TGR019	661610.134	2189744.444	677.01	MAGNAIL SET
TGR020	661705.852	2189859.153	695.42	KS PIN (222)
TGR021	661661.982	2189770.315	698.41	MAGNAIL SET
TGR022	662040.41	2189810.88	696.71	MAGNAIL SET
TGR023	662428.497	2189872.111	693.09	MAGNAIL SET
TGR024	662495.548	2190234.787	677.16	KS PIN (220)
TGR025	662777.195	2190282.519	678.52	MAGNAIL SET
TGR026	662579.985	2190321.793	680.07	MAGNAIL SET
TGR027	662382.652	2190149.794	677.11	MAGNAIL SET
TGR028	662512.967	2189909.296	661.33	MAGNAIL SET
TGR029	662814.766	2190075.014	N/A	KS PIN (217)
TGR030	662856.453	2189959.529	682.64	MAGNAIL SET
TGR031	663342.246	2190131.905	675.85	MAGNAIL SET
TGR032	663563.576	2190478.776	675.55	MAGNAIL SET
TGR033	663295.836	2190439.144	675.36	MAGNAIL SET
TGR034	663069.971	2189887.163	675.87	MAGNAIL SET
TGR035	663921.533	2190205.194	587.96	RBS
TGR036	664028.764	2190010.436	586.94	MAGNAIL SET
TGR037	664216.481	2190196.585	580.93	MAGNAIL SET
TGR038	664145.86	2190419.146	578.03	KS PIN (214)

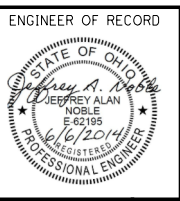
FOR CONTROL POINT LOCATIONS SEE SHEETS 3 - 4  
FOR MONUMENT LOCATIONS SEE SHEETS 20 - 25

### SURVEY CONTROL POINTS

POINT	NORTH	EAST	ELEVATION	DESCRIPTION
TGR039	664129.821	2190595.868	579.95	MAGNAIL FND
TGR040	664482.156	2190493.592	583.34	MAGNAIL SET
TGR041	664224.22	2190683.814	580.90	RBS
TGR042	664926.09	2190653.301	584.99	RBS
TGR043	664874.384	2190883.043	584.16	MAGNAIL SET
TGR044	665414.377	2190808.85	583.84	MAGNAIL SET
TGR045	665479.265	2191301.658	584.86	MAGNAIL SET
TGR046	665811.146	2191102.615	586.30	RBS
TGR047	663172.065	2190334.202	697.66	MON 09
TGR048	665796.818	2191471.059	612.06	MAGNAIL SET
TGR049	666057.228	2191288.455	627.94	MAGNAIL SET
TGR050	666199.969	2191445.188	666.48	MAGNAIL SET
TGR051	666181.683	2191730.953	669.83	RBS
TGR052	666252.485	2191620.646	668.91	KS PIN (203)
TGR053	666362.702	2191587.246	664.76	MAGNAIL SET
TGR054	666455.404	2191679.171	669.02	MAGNAIL SET
TGR055	666668.464	2191952.886	N/A	MAGNAIL SET
TGR056	666586.929	2192254.754	672.46	RBS
TGR057	667038.335	2191990.139	669.12	MAGNAIL SET
TGR058	666755.064	2192587.628	672.65	RBS
TGR059	666747.576	2192069.883	669.58	MAGNAIL SET
TGR060	666395.148	2192689.051	675.37	MAGNAIL SET
TGR061	666241.926	2193039.36	676.38	RBS
TGR062	666293.002	2193519.223	676.94	MAGNAIL SET
TGR063	666053.659	2192857.203	668.63	MAGNAIL SET
TGR064	667460.755	2192599.961	671.45	MAGNAIL SET
TGR065	667899.332	2193219.109	673.29	MAGNAIL SET
TGR066	667058.568	2192777.767	673.25	MAGNAIL SET
TGR067	667165.79	2192795.244	672.95	MAGNAIL SET
TGR068	666867.054	2193219.303	674.52	RBS
TGR069	666752.015	2193016.372	673.36	MAGNAIL SET
TGR070	666800.151	2192816.998	680.42	RBS
TGR071	668377.2443	2193892.539	N/A	KS PIN (207)
TGR072	667469.742	2193248.349	681.87	MAGNAIL SET
TGR073	667263.894	2192851.681	695.52	MAGNAIL SET
TGR074	667910.795	2193714.062	670.36	KS PIN (200)
TGR080	667185.3413	2192915.227	696.15	MON 05
TGR083	666543.1937	2193770.5098	N/A	MON 06
TGR084	668637.46	2194459.37	N/A	KS PIN (208)
TGR085	668692.47	2194914.26	N/A	KS PIN (209)

**PROJECT HORIZONTAL CONTROL**  
THE HORIZONTAL COORDINATES EXPRESSED HEREIN ARE PROJECT GROUND COORDINATES IN U.S. SURVEY FEET BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM, NORTH ZONE, NAD83(1995) AS DETERMINED BY G.P.S. SURVEYS CONDUCTED BY BURGESS & NIPLE, INC. IN APRIL, 2004. THIS SURVEY WAS TIED TO BURGESS & NIPLE MONUMENTS MON 05, MON 06, MON 09 AND MON 10. THE COMBINED SCALE AND ELEVATION FACTOR OF THE PROJECT IS 0.99994020409. A PROJECT ADJUSTMENT FACTOR OF 3.28102952549 MAY BE USED TO OBTAIN PROJECT GROUND COORDINATES IN U.S. SURVEY FEET FROM OHIO STATE PLANE COORDINATES IN METERS.

**PROJECT VERTICAL CONTROL**  
ALL ELEVATIONS ARE ORTHOMETRIC HEIGHTS USING THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). THE ELEVATIONS ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENTS 282 (PID-MB1787), 42 (PID-MB1788) AND 264 (PID-MB1505).



NO.	REVISIONS	DATE

DESIGN AGENCY  
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SURVEY CONTROL

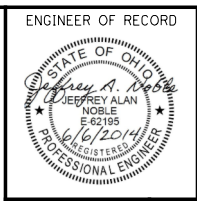
**RFC. 140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan**

**CUY-90-14.90**  
PID No. 82119

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25

SURVEY CONTROL POINTS



NO.	REVISIONS	DATE

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*a joint venture*

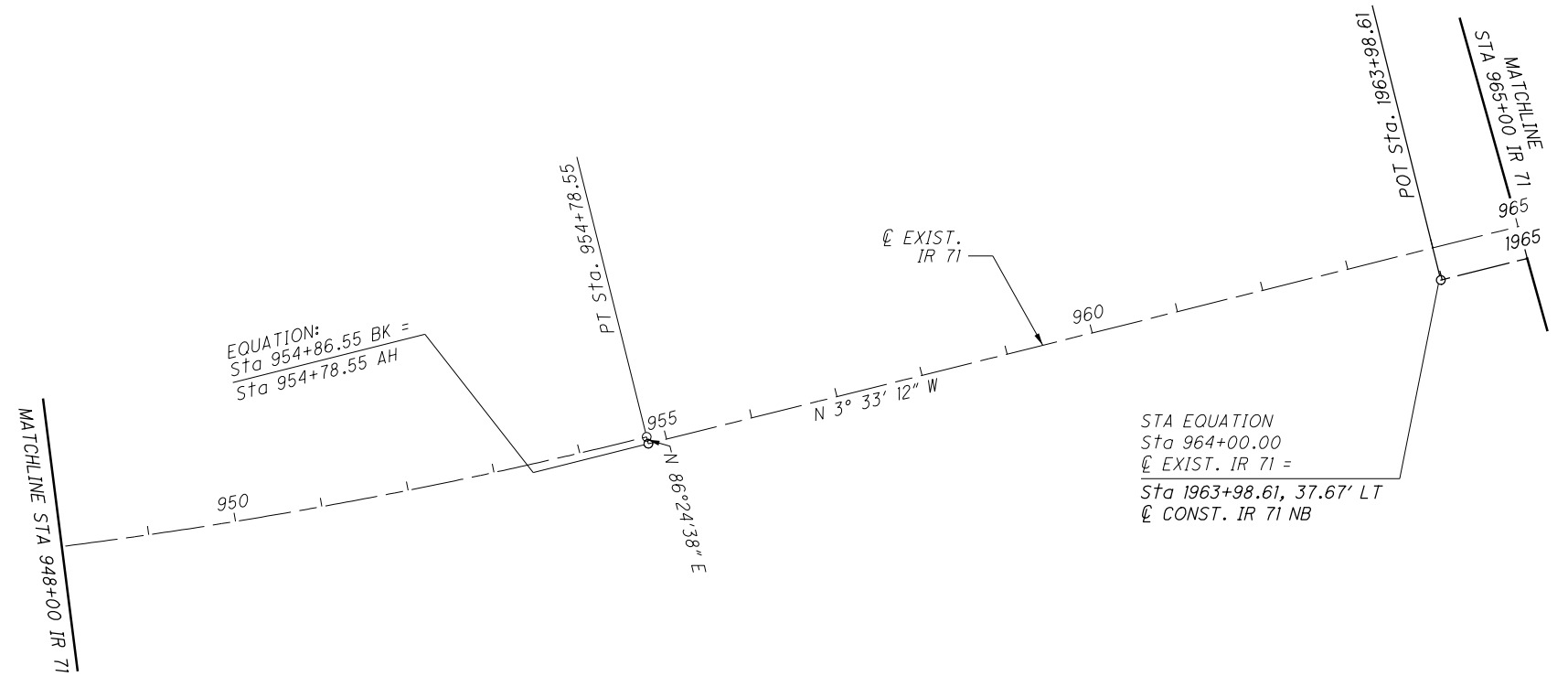
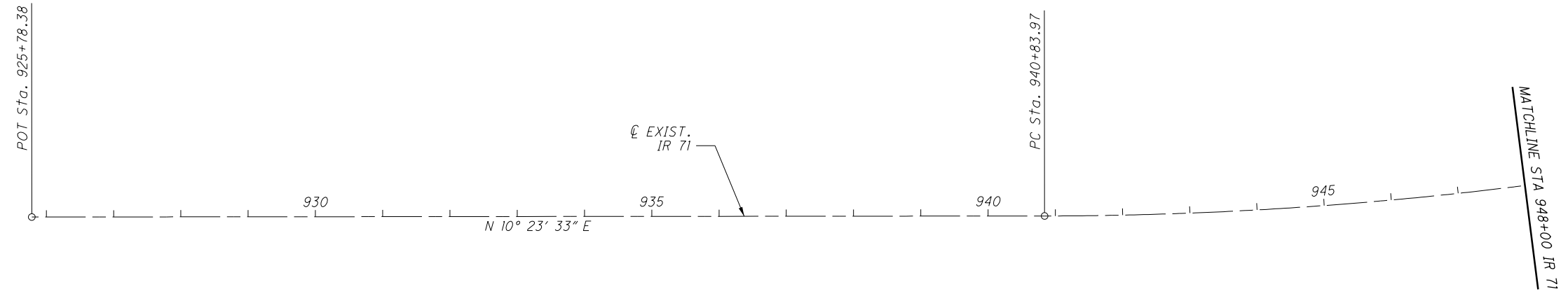


SURVEY CONTROL  
**RFC.140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan**

CUY-90-14.90  
 PID No. 82119

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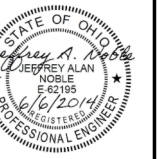
SCHEMATIC PLANS - ALIGNMENTS - IR 71 STA. 925+00 TO STA. 965+00



EQUATION:  
 Sta 954+86.55 BK =  
 Sta 954+78.55 AH

STA EQUATION  
 Sta 964+00.00  
 @ EXIST. IR 71 =  
 Sta 1963+98.61, 37.67' LT  
 @ CONST. IR 71 NB

□ = ALIGNMENT INTERSECTION  
 SEE SHEET 19 FOR ALIGNMENT INTERSECTION TABLE



DATE	REVISIONS	NO.

DESIGN AGENCY  
**URS**  
 Trumbull-Great Lakes-Ruhlin  
*a joint venture*



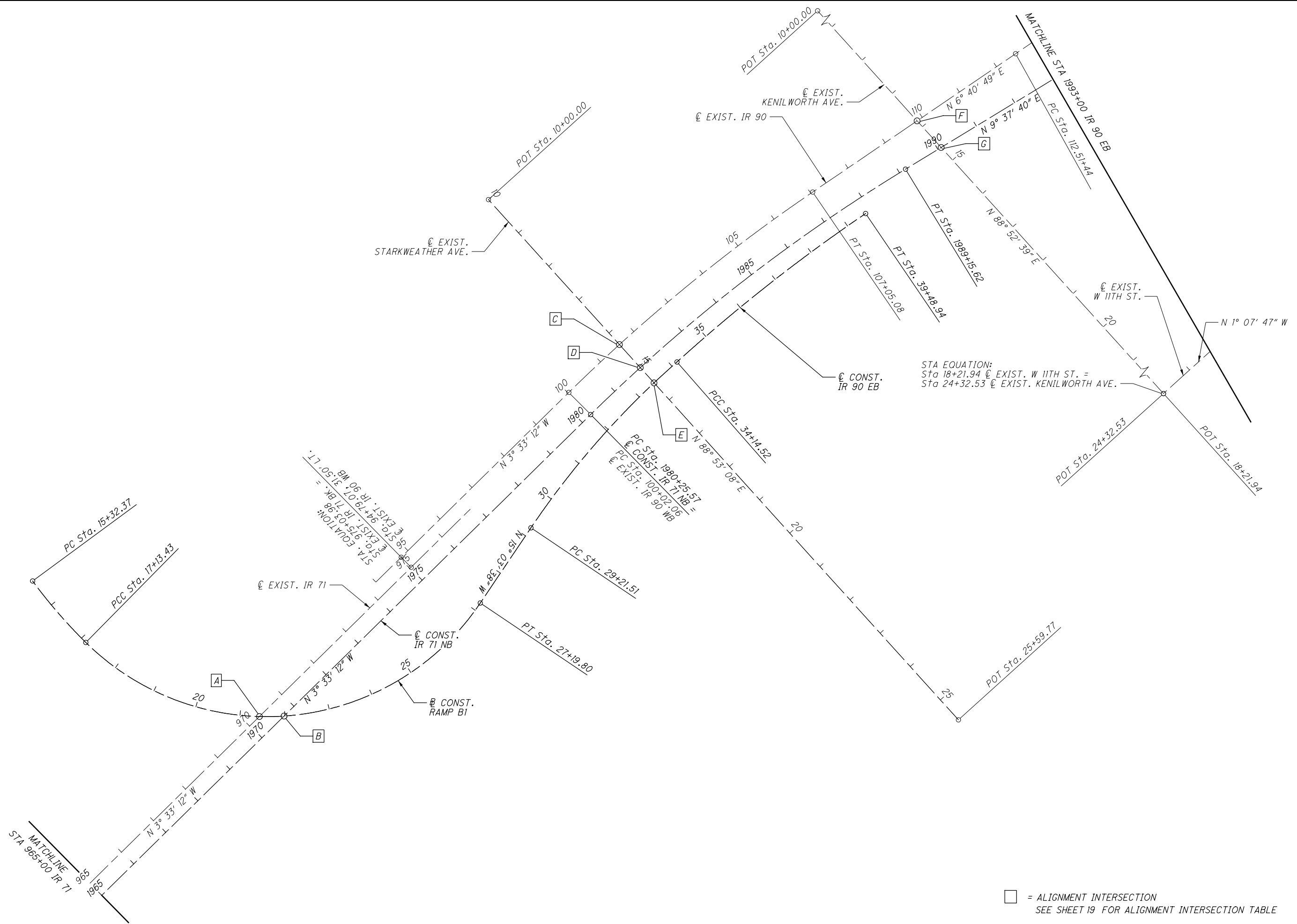
SURVEY CONTROL  
**RFC.140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan**  
**SCHEMATIC PLANS - ALIGNMENTS - IR 90 EB STA. 1965+00 TO STA. 1993+00**

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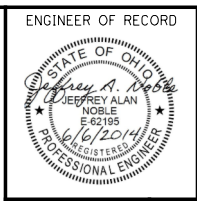
HORIZONTAL SCALE IN FEET

**CUY-90-14.90**  
 PID No. 82119

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 25



= ALIGNMENT INTERSECTION  
 SEE SHEET 19 FOR ALIGNMENT INTERSECTION TABLE



DATE	REVISIONS	NO.

DESIGN AGENCY  
**URS**  
 Trumbull-Great Lakes-Ruhlin  
 a joint venture



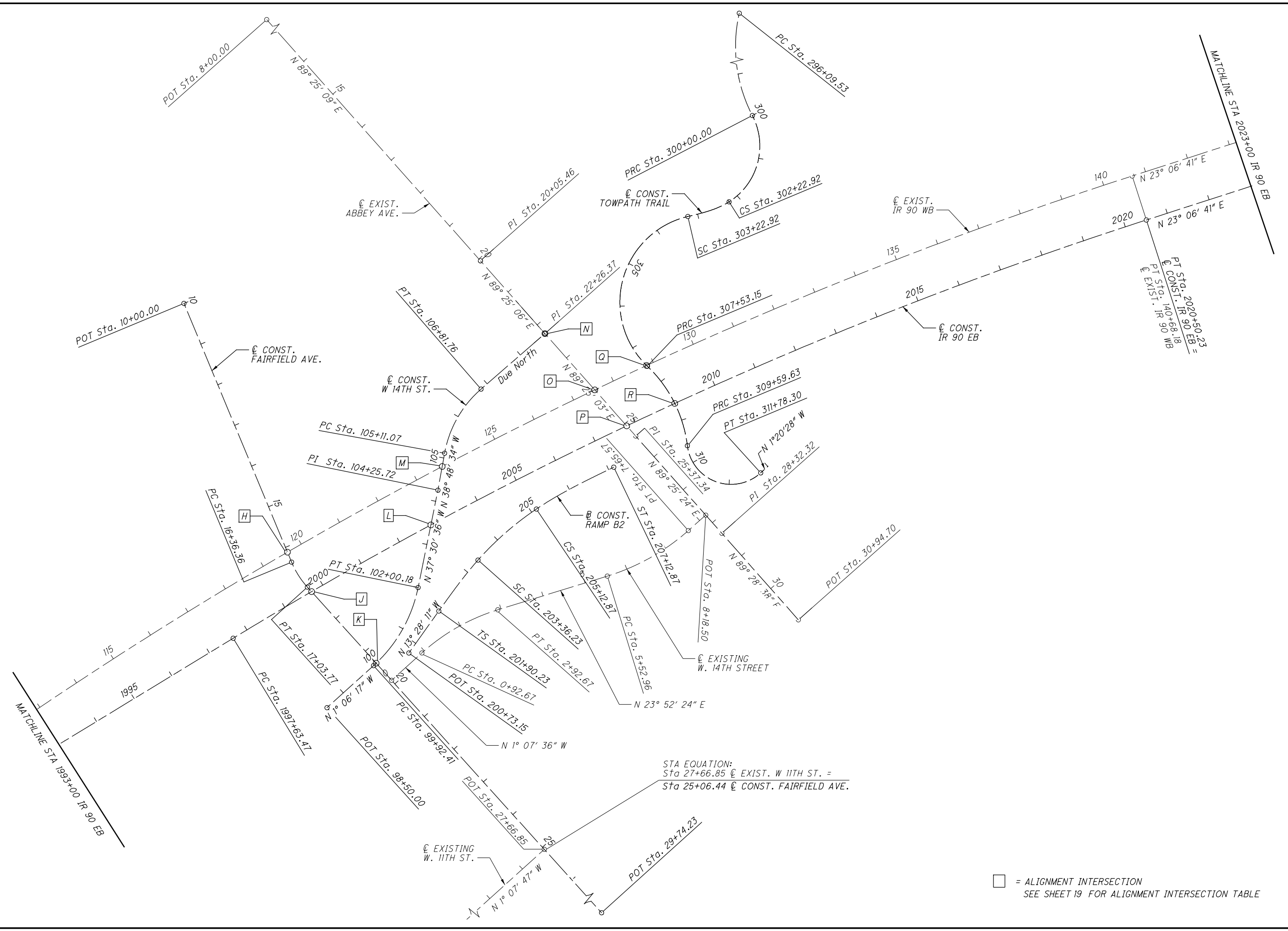
SURVEY CONTROL  
**RFC.140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan**  
**SCHEMATIC PLANS - ALIGNMENTS - IR 90 EB STA. 1990+00 TO STA. 2023+00**

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HORIZONTAL SCALE IN FEET

**CUY-90-14.90**  
 PID No. 82119

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NO.	REVISIONS	DATE

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SURVEY CONTROL

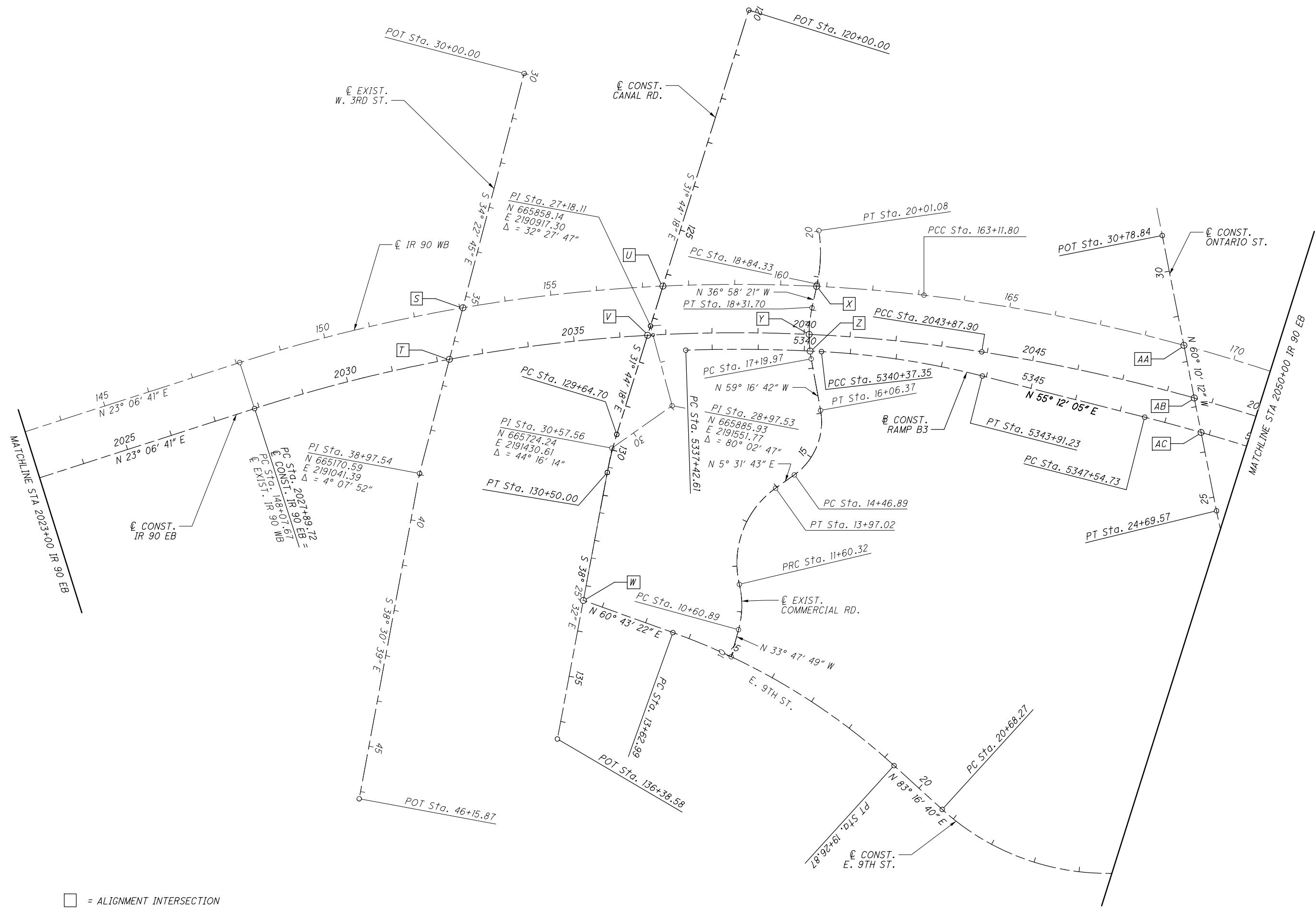
DESIGNED: NGB  
 CHECKED: JAN

HORIZONTAL SCALE: 1" = 200'

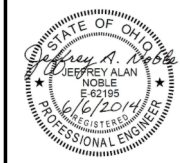
CUY-90-14.90  
 PID No. 82119

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RFC. 140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan  
 SCHEMATIC PLANS - ALIGNMENTS - IR 90 EB STA. 2023+00 TO STA. 2050+00



□ = ALIGNMENT INTERSECTION  
 SEE SHEET 19 FOR ALIGNMENT INTERSECTION TABLE



NO.	REVISIONS	DATE

DESIGN AGENCY  
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 Trumbull-Great Lakes-Ruhlin  
 a joint venture



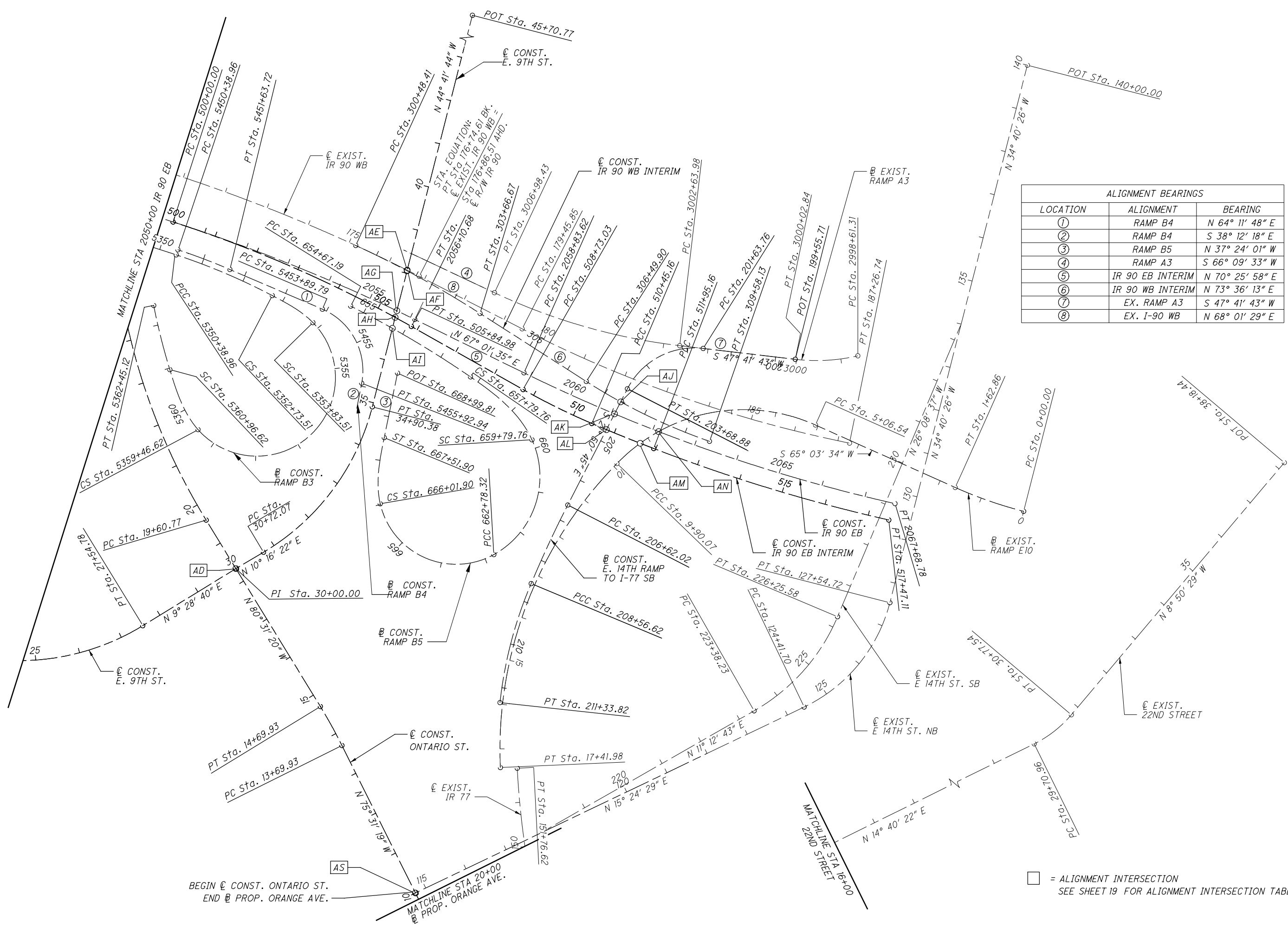
SURVEY CONTROL

CUY-90-14.90  
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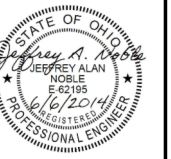
RFC. 140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan  
 SCHEMATIC PLANS - ALIGNMENTS - IR 90 EB STA. 2050+00 TO STA. 2067+68.78

ALIGNMENT BEARINGS		
LOCATION	ALIGNMENT	BEARING
①	RAMP B4	N 64° 11' 48" E
②	RAMP B4	S 38° 12' 18" E
③	RAMP B5	N 37° 24' 01" W
④	RAMP A3	S 66° 09' 33" W
⑤	IR 90 EB INTERIM	N 70° 25' 58" E
⑥	IR 90 WB INTERIM	N 73° 36' 13" E
⑦	EX. RAMP A3	S 47° 41' 43" W
⑧	EX. I-90 WB	N 68° 01' 29" E



BEGIN @ CONST. ONTARIO ST.  
 END @ PROP. ORANGE AVE.

□ = ALIGNMENT INTERSECTION  
 SEE SHEET 19 FOR ALIGNMENT INTERSECTION TABLE



NO.	DATE	REVISIONS

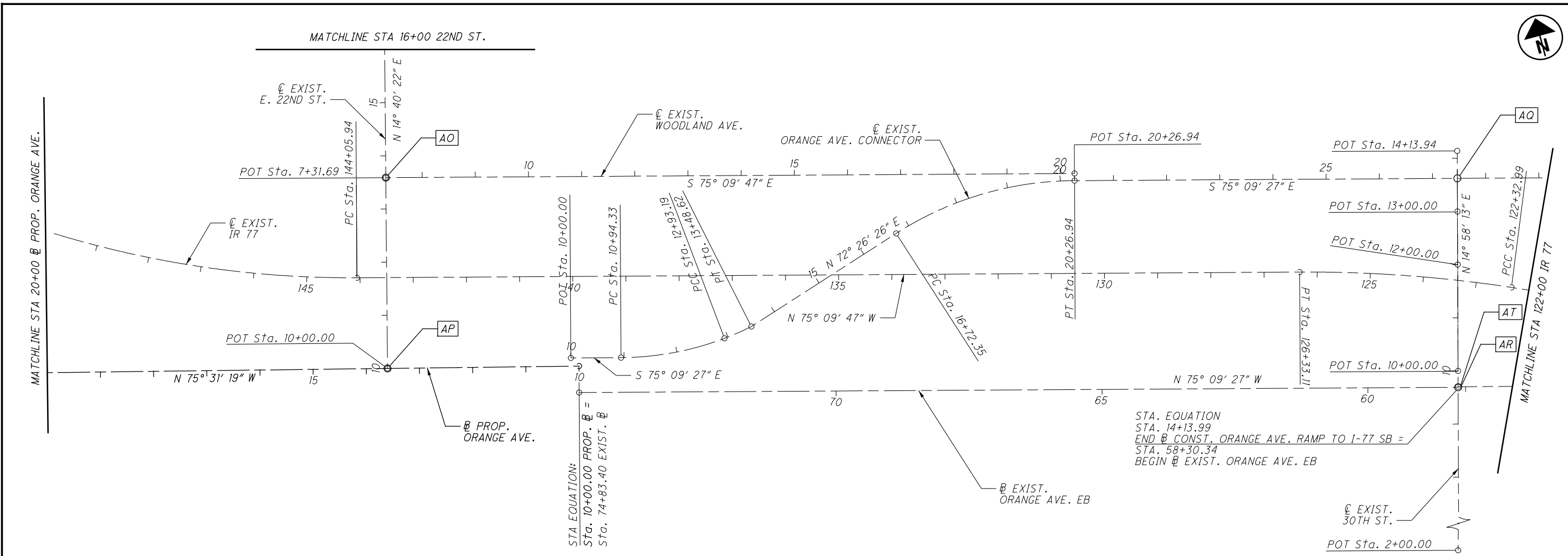
DESIGN AGENCY  
**URS**  
 Trumbull-Great Lakes-Ruhlin  
*a joint venture*



SURVEY CONTROL  
**RFC. 140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan**

**CUY-90-14.90**  
 PID No. 82119

DESIGNED NGB	CHECKED JAN	11 25
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□ = ALIGNMENT INTERSECTION  
 SEE SHEET 19 FOR ALIGNMENT INTERSECTION TABLE

IR 90 WB EXISTING CURVE DATA

EX WB IR 90 CURVE 1

P.I.= Sta. 103+54.50
D = 10° 14' 02" (RT)
Dc = 1° 27' 20"
R = 3,936.03'
T = 352.45'
L = 703.03'
E = 15.75'
C = 702.09'
C.B. = N 1° 33' 48" E
PC = 100+02.06 N = 660,598.66 E = 2,189,666.02
PI = 103+54.50 N = 660,950.43 E = 2,189,644.18
PT = 107+05.08 N = 661,300.49 E = 2,189,685.18

EX WB IR 90 CURVE 2

P.I.= Sta. 126+69.54
D = 16° 25' 51" (RT)
Dc = 0° 35' 00"
R = 9,822.14'
T = 1,418.10'
L = 2,816.74'
E = 101.84'
C = 2,807.09'
C.B. = N 14° 53' 45" E
PC = 112+51.44 N = 661,843.14 E = 2,189,748.73
PI = 126+69.54 N = 663,251.61 E = 2,189,913.70
PT = 140+68.18 N = 664,555.90 E = 2,190,470.33

EX WB IR 90 CURVE 3

P.I.= Sta. 155+71.38
D = 24° 28' 02" (RT)
Dc = 1° 37' 36"
R = 3,522.25'
T = 763.70'
L = 1,504.13'
E = 81.84'
C = 1,492.72'
C.B. = N 35° 20' 42" E
PC = 148+07.67 N = 665,236.05 E = 2,190,760.60
PI = 155+71.38 N = 665,938.46 E = 2,191,060.36
PCC= 163+11.80 N = 666,453.64 E = 2,191,624.13

EX WB IR 90 CURVE 4

P.I.= Sta. 170+00.53
D = 20° 26' 46" (RT)
Dc = 1° 30' 01"
R = 3,819.00'
T = 688.73'
L = 1,362.81'
E = 61.61'
C = 1,355.59'
C.B. = N 57° 48' 06" E
PCC= 163+11.80 N = 666,453.64 E = 2,191,624.13
PI = 170+00.53 N = 666,918.24 E = 2,192,132.56
PT = 176+74.61 N = 667,175.97 E = 2,192,771.24

EX WB IR 90 CURVE 5

P.I.= Sta. 183+38.73
D = 15° 37' 04" (LT)
Dc = 2° 00' 00"
R = 2,864.79'
T = 392.88'
L = 780.89'
E = 26.81'
C = 778.47'
C.B. = N 60° 12' 57" E
PC = 179+45.85 N = 667,273.01 E = 2,193,011.74
PI = 183+38.73 N = 667,420.03 E = 2,193,376.07
PT = 187+26.74 N = 667,659.71 E = 2,193,687.37

IR 90 EB PROPOSED CURVE DATA

EB IR 90 CURVE 1

P.I.= Sta. 1984+72.57
D = 13° 10' 52" (RT)
Dc = 1° 28' 51"
R = 3,868.86'
T = 447.00'
L = 890.05'
E = 25.74'
C = 888.09'
C.B. = N 3° 02' 14" E
eMAX. = 0.037
PC = 1980+25.57 N = 660,602.93 E = 2,189,735.06
PI = 1984+72.57 N = 661,049.07 E = 2,189,707.35
PT = 1989+15.62 N = 661,489.78 E = 2,189,782.11

EB IR 90 CURVE 2

P.I.= Sta. 2009+12.16
D = 13° 29' 01" (RT)
Dc = 0° 35' 23"
R = 9,717.14'
T = 1,148.68'
L = 2,286.75'
E = 67.66'
C = 2,281.48'
C.B. = N 16° 22' 10" E
eMAX. = 0.020
PC = 1997+63.47 N = 662,325.69 E = 2,189,923.91
PI = 2009+12.16 N = 663,458.19 E = 2,190,116.03
PT = 2020+50.23 N = 664,514.69 E = 2,190,566.90

EB IR 90 CURVE 3

P.I.= Sta. 2036+03.70
D = 26° 47' 46" (RT)
Dc = 1° 40' 36"
R = 3,417.25'
T = 813.98'
L = 1,598.18'
E = 95.61'
C = 1,583.65'
C.B. = N 36° 30' 33" E
eMAX. = 0.040
PC = 2027+89.72 N = 665,194.83 E = 2,190,857.17
PI = 2036+03.70 N = 665,943.49 E = 2,191,176.67
PCC= 2043+87.90 N = 666,467.71 E = 2,191,799.37

EB IR 90 CURVE 4

P.I.= Sta. 2050+03.88
D = 17° 07' 08" (RT)
Dc = 1° 24' 00"
R = 4,092.56'
T = 615.98'
L = 1,222.78'
E = 46.10'
C = 1,218.24'
C.B. = N 58° 28' 01" E
eMAX. = 0.035
PCC= 2043+87.90 N = 666,467.71 E = 2,191,799.37
PI = 2050+03.88 N = 666,864.42 E = 2,192,270.60
PT = 2056+10.68 N = 667,104.84 E = 2,192,837.72

EB IR 90 CURVE 5

P.I.= Sta. 2063+28.19
D = 13° 16' 39" (LT)
Dc = 1° 30' 00"
R = 3,819.72'
T = 444.58'
L = 885.17'
E = 25.78'
C = 883.19'
C.B. = N 60° 23' 15" E
eMAX. = 0.037
PC = 2058+83.62 N = 667,211.37 E = 2,193,089.00
PI = 2063+28.19 N = 667,384.89 E = 2,193,498.32
PT = 2067+68.78 N = 667,647.78 E = 2,193,856.84

IR 90 WB INTERIM CURVE DATA

WB IR 90 INTERIM CURVE 1

P.I.= Sta. 302+07.80
D = 7° 57' 22" (RT)
Dc = 2° 29' 59"
R = 2,292.00'
T = 159.39'
L = 318.26'
E = 5.54'
C = 318.01'
C.B. = N 69° 37' 32" E
eMAX. = 0.016
PC = 300+48.41 N = 667,113.65 E = 2,192,625.59
PI = 302+07.80 N = 667,179.37 E = 2,192,770.80
PT = 303+66.67 N = 667,224.37 E = 2,192,923.70

WB IR 90 INTERIM CURVE 2

P.I.= Sta. 308+04.72
D = 13° 25' 21" (LT)
Dc = 4° 21' 17"
R = 1,315.72'
T = 154.82'
L = 308.23'
E = 9.08'
C = 307.52'
C.B. = N 66° 53' 33" E
eMAX. = 0.030
PC = 306+49.90 N = 667,304.32 E = 2,193,195.41
PI = 308+04.72 N = 667,348.02 E = 2,193,343.93
PT = 309+58.13 N = 667,425.01 E = 2,193,478.26

IR 90 EB INTERIM CURVE DATA

EB IR 90 INTERIM CURVE 1

P.I.= Sta. 502+93.50
D = 11° 36' 07" (RT)
Dc = 1° 59' 00"
R = 2,888.90'
T = 293.50'
L = 584.98'
E = 14.87'
C = 583.98'
C.B. = N 64° 37' 54" E
eMAX. = 0.035
PC = 500+00.00 N = 666,838.65 E = 2,192,316.90
PI = 502+93.50 N = 666,990.56 E = 2,192,568.03
PT = 505+84.98 N = 667,088.85 E = 2,192,844.57

EB IR 90 INTERIM CURVE 2

P.I.= Sta. 509+59.18
D = 6° 20' 12" (LT)
Dc = 3° 40' 53"
R = 1,556.40'
T = 86.15'
L = 172.13'
E = 2.38'
C = 172.04'
C.B. = N 67° 15' 52" E
eMAX. = 0.030
PC = 508+73.03 N = 667,185.32 E = 2,193,115.98
PI = 509+59.18 N = 667,214.18 E = 2,193,197.16
PCC= 510+45.16 N = 667,251.81 E = 2,193,274.66

EB IR 90 INTERIM CURVE 3

P.I.= Sta. 511+20.17
D = 2° 13' 59" (LT)
Dc = 1° 29' 19"
R = 3,848.72'
T = 75.01'
L = 150.00'
E = 0.73'
C = 149.99'
C.B. = N 62° 58' 46" E
eMAX. = 0.030
PCC= 510+45.16 N = 667,251.81 E = 2,193,274.66
PI = 511+20.17 N = 667,284.58 E = 2,193,342.13
PCC= 511+95.16 N = 667,319.95 E = 2,193,408.28

EB IR 90 INTERIM CURVE 4

P.I. Sta. 514+71.62
Δ = 8° 16' 46" (LT)
Dc = 1° 30' 00"
R = 3,819.72'
T = 276.46'
L = 551.96'
E = 9.99'
C = 551.48'
C.B. = N 57° 53' 18" E
PCC= 511+95.16 N = 667,319.95 E = 2,193,408.28
PI = 514+71.62 N = 667,454.41 E = 2,193,661.45
PT = 517+47.11 N = 667,613.10 E = 2,193,875.38

ENGINEER OF RECORD

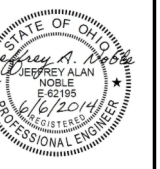


Table with columns: DATE, REVISIONS, NO.

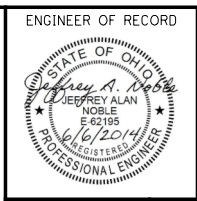
DESIGN AGENCY: URS Trumbull-Great Lakes-Ruhlin a joint venture



SURVEY CONTROL: RFC.140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan

CUY-90-14.90 PID No. 82119

DESIGNED: NGB, CHECKED: JAN, 12/25



DATE	REVISIONS	NO.

DESIGN AGENCY  
**URS**  
 Trumbull-Great Lakes-Ruhlin  
 a joint venture



SURVEY CONTROL

**RFC. 140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan**

CUY-90-14.90  
 PID No. 82119

DESIGNED NGB	CHECKED JAN	13 25
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RAMP B1 CURVE DATA

RAMP B1 CURVE 1  
 P.I. Sta. 16+23.09  
 $\Delta = 9^\circ 03' 10''$  (LT)  
 $Dc = 5^\circ 00' 00''$   
 $R = 1,145.92'$   
 $T = 90.72'$   
 $L = 181.06'$   
 $E = 3.59'$   
 $C = 180.87'$   
 C.B. = S  $89^\circ 53' 48''$  E  
 $PC = 15+32.37$  N = 659,422.83 E = 2,189,200.70  
 $PI = 16+23.09$  N = 659,415.51 E = 2,189,291.12  
 $PCC = 17+13.43$  N = 659,422.51 E = 2,189,381.56

RAMP B1 CURVE 2  
 P.I. Sta. 24+04.02  
 $\Delta = 100^\circ 38' 15''$  (LT)  
 $Dc = 10^\circ 00' 00''$   
 $R = 572.96'$   
 $T = 690.59'$   
 $L = 1,006.38'$   
 $E = 324.37'$   
 $C = 881.91'$   
 C.B. = N  $35^\circ 15' 29''$  E  
 $PCC = 17+13.43$  N = 659,422.51 E = 2,189,381.56  
 $PI = 24+04.02$  N = 659,475.77 E = 2,190,070.10  
 $PT = 27+19.80$  N = 660,142.64 E = 2,189,890.65

RAMP B1 CURVE 3  
 P.I. Sta. 31+69.39  
 $\Delta = 14^\circ 47' 25''$  (RT)  
 $Dc = 3^\circ 00' 00''$   
 $R = 1,909.86'$   
 $T = 247.88'$   
 $L = 493.01'$   
 $E = 16.02'$   
 $C = 491.64'$   
 C.B. = N  $7^\circ 39' 56''$  W  
 $eMAX. = 0.055$   
 $PC = 29+21.51$  N = 660,337.42 E = 2,189,838.24  
 $PI = 31+69.39$  N = 660,576.78 E = 2,189,773.83  
 $PCC = 34+14.52$  N = 660,824.66 E = 2,189,772.66

RAMP B1 CURVE 4  
 P.I. Sta. 36+82.17  
 $\Delta = 7^\circ 59' 58''$  (RT)  
 $Dc = 1^\circ 29' 49''$   
 $R = 3,827.81'$   
 $T = 267.65'$   
 $L = 534.42'$   
 $E = 9.35'$   
 $C = 533.99'$   
 C.B. = N  $2^\circ 45' 52''$  E  
 $eMAX. = 0.055$   
 $PCC = 34+14.52$  N = 660,824.66 E = 2,189,772.66  
 $PI = 36+82.17$  N = 661,092.25 E = 2,189,766.89  
 $PT = 39+48.94$  N = 661,358.03 E = 2,189,798.42

RAMP B2 CURVE DATA

RAMP B2 SPIRAL 1  
 P.I. STA. 202+87.62  
 $Ls = 146.00'$   
 $f s = 6^\circ 00' 34''$   
 $LT = 97.39'$   
 $ST = 48.72'$   
 $x = 145.84'$   
 $y = 5.10'$   
 $k = 72.97'$   
 $p = 1.28'$   
 $eMAX. = 0.016$   
 $TS = 201+90.23$  N = 662,718.94 E = 2,190,183.59  
 $PI = 202+87.62$  N = 662,813.65 E = 2,190,160.90  
 $SC = 203+36.23$  N = 662,861.95 E = 2,190,154.58

RAMP B2 CURVE 1  
 P.I. Sta. 204+44.44  
 $\Delta = 28^\circ 46' 56''$  (RT)  
 $Dc = 8^\circ 13' 56''$   
 $R = 696.00'$   
 $\Delta c = 14^\circ 32' 26''$  (RT)  
 $Lc = 176.63'$   
 $Es = 24.44'$   
 $C = 176.16'$   
 C.B.1 = N  $11^\circ 28' 00''$  W  
 C.B. = N  $0^\circ 11' 24''$  W  
 C.B.2 = S  $12^\circ 34' 08''$  W  
 $eMAX. = 0.060$   
 $SC = 203+36.23$  N = 662,861.95 E = 2,190,154.58  
 $PI = 204+25.03$  N = 662,949.99 E = 2,190,143.05  
 $CS = 205+12.87$  N = 663,038.11 E = 2,190,153.99

RAMP B2 SPIRAL 2  
 P.I. STA. 205+79.66  
 $Ls = 200.00'$   
 $f s = 8^\circ 13' 56''$   
 $LT = 133.48'$   
 $ST = 66.80'$   
 $x = 199.59'$   
 $y = 9.56'$   
 $k = 99.93'$   
 $p = 2.39'$   
 $eMAX. = 0.060$   
 $CS = 205+12.87$  N = 663,038.11 E = 2,190,153.99  
 $PI = 205+79.66$  N = 663,104.40 E = 2,190,162.23  
 $ST = 207+12.87$  N = 663,233.14 E = 2,190,197.48

POT = 200+73.15 N = 662,605.07 E = 2,190,210.86

RAMP B3 CURVE DATA

RAMP B3 CURVE 1  
 P.I. Sta. 5338+90.07  
 $\Delta = 4^\circ 59' 39''$  (RT)  
 $Dc = 1^\circ 41' 40''$   
 $R = 3,381.25'$   
 $T = 147.46'$   
 $L = 294.73'$   
 $E = 3.21'$   
 $C = 294.64'$   
 C.B. = N  $41^\circ 34' 18''$  E  
 $eMAX. = 0.040$   
 $PC = 5337+42.61$  N = 665,984.83 E = 2,191,375.23  
 $PI = 5338+90.07$  N = 666,099.31 E = 2,191,468.18  
 $PCC = 5340+37.35$  N = 666,205.26 E = 2,191,570.74

RAMP B3 CURVE 2  
 P.I. Sta. 5342+14.85  
 $\Delta = 11^\circ 12' 23''$  (RT)  
 $Dc = 3^\circ 10' 00''$   
 $R = 1,809.34'$   
 $T = 177.51'$   
 $L = 353.88'$   
 $E = 8.69'$   
 $C = 353.32'$   
 C.B. = N  $49^\circ 35' 54''$  E  
 $eMAX. = 0.046$   
 $PCC = 5340+37.35$  N = 666,205.26 E = 2,191,570.74  
 $PI = 5342+14.85$  N = 666,332.95 E = 2,191,694.03  
 $PT = 5343+91.23$  N = 666,434.26 E = 2,191,839.79

RAMP B3 CURVE 3  
 P.I. Sta. 5348+96.91  
 $\Delta = 4^\circ 02' 47''$  (RT)  
 $Dc = 1^\circ 25' 25''$   
 $R = 4,024.57'$   
 $T = 142.17'$   
 $L = 284.23'$   
 $E = 2.51'$   
 $C = 284.17'$   
 C.B. = N  $57^\circ 13' 28''$  E  
 $eMAX. = 0.020$   
 $PC = 5347+54.73$  N = 666,641.70 E = 2,192,138.29  
 $PI = 5348+96.91$  N = 666,722.84 E = 2,192,255.04  
 $PCC = 5350+38.96$  N = 666,795.54 E = 2,192,377.22

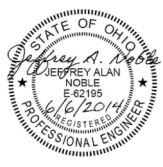
RAMP B3 CURVE 4  
 P.I. Sta. 5351+56.50  
 $\Delta = 9^\circ 22' 55''$  (RT)  
 $Dc = 4^\circ 00' 00''$   
 $R = 1,432.39'$   
 $T = 117.54'$   
 $L = 234.55'$   
 $E = 4.81'$   
 $C = 234.28'$   
 C.B. = N  $63^\circ 56' 19''$  E  
 $eMAX. = 0.040$   
 $PCC = 5350+38.96$  N = 666,795.54 E = 2,192,377.22  
 $PI = 5351+56.50$  N = 666,855.64 E = 2,192,478.23  
 $CS = 5352+73.51$  N = 666,898.47 E = 2,192,587.68

RAMP B3 SPIRAL 1  
 P.I. STA. 5353+47.22  
 $Ls = 110.00'$   
 $f s = 17^\circ 52' 30''$   
 $LT = 73.71'$   
 $ST = 37.01'$   
 $x = 108.93'$   
 $y = 11.36'$   
 $k = 54.82'$   
 $p = 2.85'$   
 $eMAX. = 0.059$   
 $CS = 5352+73.51$  N = 666,898.47 E = 2,192,587.68  
 $PI = 5353+47.22$  N = 666,925.33 E = 2,192,656.33  
 $SC = 5353+83.51$  N = 666,927.59 E = 2,192,693.27

RAMP B3 CURVE 5  
 P.I. Sta. 5356+51.84  
 $\Delta = 225^\circ 15' 37''$  (RT)  
 $Dc = 32^\circ 30' 00''$   
 $R = 176.29'$   
 $\Delta c = 183^\circ 00' 37''$  (RT)  
 $Lc = 563.11'$   
 $Es = 193.51'$   
 $C = 352.47'$   
 C.B.1 = N  $74^\circ 34' 59''$  E  
 C.B. = S  $1^\circ 59' 25''$  E  
 C.B.2 = S  $74^\circ 13' 22''$  E  
 $eMAX. = 0.059$   
 $SC = 5353+83.51$  N = 666,927.59 E = 2,192,693.27  
 $PI = 5420+93.21$  N = 666,518.51 E = 2,185,996.04  
 $CS = 5359+46.62$  N = 666,575.33 E = 2,192,705.51

RAMP B3 SPIRAL 2  
 P.I. STA. 5359+97.49  
 $Ls = 150.00'$   
 $f s = 24^\circ 22' 30''$   
 $LT = 100.96'$   
 $ST = 50.88'$   
 $x = 147.31'$   
 $y = 21.00'$   
 $k = 74.55'$   
 $p = 5.28'$   
 $eMAX. = 0.059$   
 $CS = 5359+46.62$  N = 666,575.33 E = 2,192,705.51  
 $PI = 5359+97.49$  N = 666,574.90 E = 2,192,654.63  
 $ST = 5360+96.62$  N = 666,615.79 E = 2,192,562.32

RAMP B3 CURVE 6  
 P.I. Sta. 5361+70.93  
 $\Delta = 5^\circ 56' 24''$  (RT)  
 $Dc = 4^\circ 00' 00''$   
 $R = 1,432.39'$   
 $T = 74.32'$   
 $L = 148.50'$   
 $E = 1.93'$   
 $C = 148.44'$   
 C.B. = N  $63^\circ 08' 25''$  W  
 $eMAX. = 0.016$   
 $PC = 5360+96.62$  N = 666,615.79 E = 2,192,562.32  
 $PI = 5361+70.93$  N = 666,645.89 E = 2,192,494.37  
 $PT = 5362+45.12$  N = 666,682.85 E = 2,192,429.90



DATE	REVISIONS	NO.

DESIGN AGENCY  
**URS**  
 Trumbull-Great Lakes-Ruhlin  
 a joint venture



SURVEY CONTROL

RFC. 140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan

DESIGNED NGB  
 CHECKED JAN

CUY-90-14.90  
 PID No. 82119

14  
 25

IR 90 EB RAMP B4 CURVE DATA

RAMP B4 CURVE 1

P.I. Sta. 5451+01.38  
 $\Delta = 4^\circ 56' 56''$  (RT)  
 $Dc = 3^\circ 58' 00''$   
 $R = 1,444.39'$   
 $T = 62.42'$   
 $L = 124.76'$   
 $E = 1.35'$   
 $C = 124.72'$   
 C.B. = N 61° 43' 20" E  
 eMAX. = 0.040  
 PC = 5450+38.96 N = 666,805.85 E = 2,192,371.08  
 PI = 5451+01.38 N = 666,837.77 E = 2,192,424.73  
 PT = 5451+63.72 N = 666,864.94 E = 2,192,480.92

RAMP B4 CURVE 2

P.I. Sta. 5455+10.39  
 $\Delta = 77^\circ 35' 53''$  (RT)  
 $Dc = 38^\circ 11' 50''$   
 $R = 150.00'$   
 $T = 120.60'$   
 $L = 203.15'$   
 $E = 42.47'$   
 $C = 187.98'$   
 C.B. = S 77° 00' 15" E  
 eMAX. = 0.060  
 PC = 5453+89.79 N = 666,963.34 E = 2,192,684.45  
 PI = 5455+10.39 N = 667,015.84 E = 2,192,793.02  
 PT = 5455+92.94 N = 666,921.07 E = 2,192,867.61

RAMP B5 CURVE 1

P.I. Sta. 656+23.72  
 $\Delta = 7^\circ 48' 50''$  (RT)  
 $Dc = 2^\circ 29' 59''$   
 $R = 2,292.00'$   
 $T = 156.53'$   
 $L = 312.57'$   
 $E = 5.34'$   
 $C = 312.33'$   
 C.B. = N 71° 31' 11" E  
 eMAX. = 0.035  
 PC = 654+67.19 N = 667,015.76 E = 2,192,720.96  
 PI = 656+23.72 N = 667,075.38 E = 2,192,865.69  
 CS = 657+79.76 N = 667,114.76 E = 2,193,017.18

RAMP B5 SPIRAL 1

P.I. STA. 659+10.02  
 $Ls = 200.00'$   
 $fs = 31^\circ 08' 52''$   
 $LT = 130.26'$   
 $ST = 74.10'$   
 $x = 193.68'$   
 $y = 38.33'$   
 $k = 99.02'$   
 $p = 7.54'$   
 eMAX. = 0.059  
 CS = 657+79.76 N = 667,114.76 E = 2,193,017.18  
 PI = 659+10.02 N = 667,147.54 E = 2,193,143.25  
 SC = 659+79.76 N = 667,126.40 E = 2,193,214.27

RAMP B5 CURVE 2

P.I. Sta. 661+64.74  
 $\Delta = 85^\circ 31' 47''$  (RT)  
 $Dc = 28^\circ 38' 52''$   
 $R = 200.00'$   
 $T = 184.97'$   
 $L = 298.56'$   
 $E = 72.43'$   
 $C = 271.60'$   
 C.B. = S 30° 39' 39" E  
 eMAX. = 0.059  
 SC = 659+79.76 N = 667,126.40 E = 2,193,214.27  
 PI = 661+64.74 N = 667,073.63 E = 2,193,391.56  
 PCC = 662+78.32 N = 666,892.77 E = 2,193,352.77

RAMP B5 CURVE 3

P.I. Sta. 665+10.30  
 $\Delta = 105^\circ 56' 25''$  (RT)  
 $Dc = 32^\circ 44' 26''$   
 $R = 175.00'$   
 $T = 231.98'$   
 $L = 323.58'$   
 $E = 115.59'$   
 $C = 279.41'$   
 C.B. = S 65° 04' 27" W  
 eMAX. = 0.059  
 PCC = 662+78.32 N = 666,892.77 E = 2,193,352.77  
 PI = 665+10.30 N = 666,665.95 E = 2,193,304.13  
 CS = 666+01.90 N = 666,775.01 E = 2,193,099.38

IR 90 EB RAMP B5 CURVE DATA

RAMP B5 SPIRAL 2

P.I. STA. 666+52.79  
 $Ls = 150.00'$   
 $fs = 24^\circ 33' 19''$   
 $LT = 100.98'$   
 $ST = 50.89'$   
 $x = 147.27'$   
 $y = 21.15'$   
 $k = 74.54'$   
 $p = 5.32'$   
 eMAX. = 0.059  
 CS = 666+01.90 N = 666,775.01 E = 2,193,099.38  
 PI = 666+52.79 N = 666,798.94 E = 2,193,054.47  
 ST = 667+51.90 N = 666,879.16 E = 2,192,993.14

EXISTING RAMP E10 CURVE DATA

EXIST. RAMP E10 CURVE 1

P.I. = Sta. 0+81.63  
 $D = 9^\circ 46' 18''$  (RT)  
 $Dc = 6^\circ 00' 00''$   
 $R = 954.93'$   
 $T = 81.63'$   
 $L = 162.86'$   
 $E = 3.48'$   
 $C = 162.66'$   
 C.B. = S 60° 10' 25" W  
 PC = 0+00.00 N = 667,854.53 E = 2,194,059.33  
 PI = 0+81.63 N = 667,808.05 E = 2,193,992.23  
 PT = 1+62.86 N = 667,773.62 E = 2,193,918.22

EXIST. RAMP E10 CURVE 2

P.I. = Sta. 7+83.80  
 $D = 70^\circ 06' 46''$  (LT)  
 $Dc = 14^\circ 30' 00''$   
 $R = 395.14'$   
 $T = 277.26'$   
 $L = 483.54'$   
 $E = 87.57'$   
 $C = 453.93'$   
 C.B. = S 30° 00' 11" W  
 PC = 5+06.54 N = 667,628.71 E = 2,193,606.59  
 PI = 7+83.80 N = 667,511.79 E = 2,193,355.18  
 PCC = 9+90.07 N = 667,235.61 E = 2,193,379.61

EXIST. RAMP E10 CURVE 3

P.I. Sta. 13+88.62  
 $\Delta = 46^\circ 59' 39''$  (LT)  
 $Dc = 6^\circ 15' 00''$   
 $R = 916.73'$   
 $T = 398.55'$   
 $L = 751.90'$   
 $E = 82.89'$   
 $C = 731.00'$   
 C.B. = S 28° 02' 38" E  
 PCC = 9+90.07 N = 667,235.61 E = 2,193,379.61  
 PI = 13+88.62 N = 666,838.31 E = 2,193,411.20  
 PT = 17+41.98 N = 666,590.43 E = 2,193,723.29

E. 14TH ST. I-77 SB RAMP CURVE DATA

E. 14TH ST. RAMP CURVE 1

P.I. Sta. 202+81.09  
 $\Delta = 69^\circ 32' 28''$  (LT)  
 $Dc = 33^\circ 54' 10''$   
 $R = 169.00'$   
 $T = 117.33'$   
 $L = 205.12'$   
 $E = 36.74'$   
 $C = 192.76'$   
 C.B. = S 12° 55' 29" W  
 eMAX. = 0.060  
 PC = 201+63.76 N = 667,551.00 E = 2,193,311.53  
 PI = 202+81.09 N = 667,472.02 E = 2,193,224.75  
 PT = 203+68.88 N = 667,363.12 E = 2,193,268.41

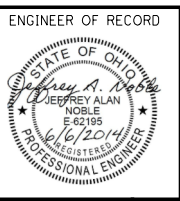
E. 14TH ST. RAMP CURVE 2

P.I. Sta. 207+59.37  
 $\Delta = 4^\circ 27' 35''$  (LT)  
 $Dc = 2^\circ 17' 31''$   
 $R = 2,500.00'$   
 $T = 97.35'$   
 $L = 194.60'$   
 $E = 1.89'$   
 $C = 194.55'$   
 C.B. = S 24° 04' 33" E  
 eMAX. = 0.060  
 PC = 206+62.02 N = 667,091.03 E = 2,193,377.49  
 PI = 207+59.37 N = 667,000.68 E = 2,193,413.72  
 PCC = 208+56.62 N = 666,913.41 E = 2,193,456.86

E. 14TH ST. RAMP CURVE 3

P.I. Sta. 209+96.25  
 $\Delta = 17^\circ 01' 05''$  (LT)  
 $Dc = 6^\circ 08' 21''$   
 $R = 933.27'$   
 $T = 139.63'$   
 $L = 277.20'$   
 $E = 10.39'$   
 $C = 276.18'$   
 C.B. = S 34° 20' 18" E  
 eMAX. = 0.060  
 PCC = 208+56.62 N = 666,913.41 E = 2,193,456.86  
 PI = 209+96.25 N = 666,787.73 E = 2,193,517.69  
 PT = 211+33.82 N = 666,685.36 E = 2,193,612.65

POT = 199+55.71 N = 667,691.03 E = 2,193,465.40



DATE	REVISIONS	NO.

DESIGN AGENCY  
**URS**  
 Trumbull-Great Lakes-Ruhlin  
 a joint venture



SURVEY CONTROL

**RFC. 140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan**

**CUY-90-14.90**  
 PID No. 82119

DESIGNED NGB	CHECKED JAN	15 25
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EX. W 14TH ST. NB CURVE DATA

EX. W 14TH CURVE 1

P.I.= Sta. 1+94.29  
 D = 25° 00' 00" (RT)  
 Dc = 12° 30' 00"  
 R = 458.37'  
 T = 101.62'  
 L = 200.00'  
 E = 11.13'  
 C = 198.42'  
 C.B. = N 11° 22' 24" E  
 PC = 0+92.67 N = 662,627.46 E = 2,190,230.18  
 PI = 1+94.29 N = 662,729.06 E = 2,190,228.18  
 PT = 2+92.67 N = 662,821.98 E = 2,190,269.31

EX. W 14TH CURVE 2

P.I.= Sta. 6+60.91  
 D = 24° 27' 00" (LT)  
 Dc = 11° 30' 00"  
 R = 498.22'  
 T = 107.95'  
 L = 212.61'  
 E = 11.56'  
 C = 211.00'  
 C.B. = N 11° 38' 54" E  
 PC = 5+52.96 N = 663,060.00 E = 2,190,374.65  
 PI = 6+60.91 N = 663,158.71 E = 2,190,418.34  
 PT = 7+65.57 N = 663,266.66 E = 2,190,417.25  
 POT = 8+18.50 N = 663,319.59 E = 2,190,416.72

PR. W 14TH ST. CURVE DATA

W 14TH ST. CURVE 1

P.I. Sta. 100+99.94  
 Δ = 36° 24' 19" (LT)  
 Dc = 17° 31' 18"  
 R = 327.00'  
 T = 107.53'  
 L = 207.77'  
 E = 17.23'  
 C = 204.30'  
 C.B. = N 19° 18' 27" W  
 eMAX. = N.C.  
 PC = 99+92.41 N = 662,525.66 E = 2,190,179.92  
 PI = 100+99.94 N = 662,633.17 E = 2,190,177.85  
 PT = 102+00.18 N = 662,718.46 E = 2,190,112.37

W 14TH ST. CURVE 2

P.I. Sta. 105+99.84  
 Δ = 38° 48' 34" (RT)  
 Dc = 22° 44' 11"  
 R = 252.00'  
 T = 88.77'  
 L = 170.69'  
 E = 15.18'  
 C = 167.45'  
 C.B. = N 19° 24' 17" W  
 eMAX. = N.C.  
 PC = 105+11.07 N = 662,963.88 E = 2,189,921.55  
 PI = 105+99.84 N = 663,033.05 E = 2,189,865.92  
 PT = 106+81.76 N = 663,121.82 E = 2,189,865.92

POT = 98+50.00 N = 662,383.27 E = 2,190,182.67

TOWPATH TRAIL CURVE DATA

TOWPATH TRAIL CURVE 1

P.I.= Sta. 298+29.49  
 D = 65° 48' 03" (LT)  
 Dc = 16° 51' 06"  
 R = 340.00'  
 T = 219.96'  
 L = 390.47'  
 E = 64.95'  
 C = 369.36'  
 C.B. = S 43° 35' 07" E  
 eMAX. = 0.020  
 PC = 296+09.53 N = 664,262.09 E = 2,189,546.37  
 PI = 298+29.49 N = 664,045.94 E = 2,189,587.16  
 PRC= 300+00.00 N = 663,994.54 E = 2,189,801.03

TOWPATH TRAIL CURVE 2

P.I.= Sta. 301+37.81  
 D = 85° 08' 55" (RT)  
 Dc = 38° 11' 50"  
 R = 150.00'  
 T = 137.81'  
 L = 222.92'  
 E = 53.69'  
 C = 202.96'  
 C.B. = S 33° 54' 41" E  
 eMAX. = 0.020  
 PRC= 300+00.00 N = 663,994.54 E = 2,189,801.03  
 PI = 301+37.81 N = 663,962.33 E = 2,189,935.02  
 CS = 302+22.92 N = 663,826.10 E = 2,189,914.26

TOWPATH TRAIL SPIRAL 1

P.I. STA. 302+56.61  
 Ls = 100.00'  
 fs = 19° 05' 55"  
 LT = 67.06'  
 ST = 33.69'  
 x = 98.89'  
 y = 11.02'  
 k = 49.82'  
 p = 2.77'  
 CS = 302+22.92 N = 663,826.10 E = 2,189,914.26  
 PI = 302+56.61 N = 663,792.79 E = 2,189,909.19  
 ST = 303+22.92 N = 663,733.45 E = 2,189,877.95

TOWPATH TRAIL CURVE 3

P.I.= Sta. 306+93.20  
 D = 123° 15' 03" (LT)  
 Dc = 28° 38' 52"  
 R = 200.00'  
 T = 370.28'  
 L = 430.23'  
 E = 220.84'  
 C = 351.94'  
 C.B. = S 33° 51' 50" E  
 eMAX. = 0.020  
 SC = 303+22.92 N = 663,733.45 E = 2,189,877.95  
 PI = 306+93.21 N = 663,405.79 E = 2,189,705.47  
 PRC= 307+53.15 N = 663,441.21 E = 2,190,074.06

TOWPATH TRAIL CURVE 4

P.I.= Sta. 308+60.67  
 D = 39° 26' 08" (RT)  
 Dc = 19° 05' 55"  
 R = 300.00'  
 T = 107.52'  
 L = 206.48'  
 E = 18.69'  
 C = 202.43'  
 C.B. = S 75° 46' 17" E  
 eMAX. = 0.020  
 PRC= 307+53.15 N = 663,441.21 E = 2,190,074.06  
 PI = 308+60.67 N = 663,451.50 E = 2,190,181.09  
 PRC= 309+59.63 N = 663,391.45 E = 2,190,270.28

TOWPATH TRAIL CURVE 5

P.I.= Sta. 311+52.91  
 D = 125° 17' 16" (LT)  
 Dc = 57° 17' 45"  
 R = 100.00'  
 T = 193.28'  
 L = 218.67'  
 E = 117.62'  
 C = 177.63'  
 C.B. = N 61° 18' 09" E  
 eMAX. = 0.020  
 PRC= 309+59.63 N = 663,391.45 E = 2,190,270.28  
 PI = 311+52.91 N = 663,283.52 E = 2,190,430.62  
 PT = 311+78.30 N = 663,476.75 E = 2,190,426.10

FAIRFIELD AVE. CURVE DATA

FAIRFIELD AVE. CURVE 1

P.I. Sta. 16+70.39  
 Δ = 19° 30' 17" (LT)  
 Dc = 28° 56' 14"  
 R = 198.00'  
 T = 34.03'  
 L = 67.40'  
 E = 2.90'  
 C = 67.08'  
 C.B. = S 81° 22' 38" E  
 PC = 16+36.36 N = 662,539.24 E = 2,189,880.39  
 PI = 16+70.39 N = 662,528.51 E = 2,189,912.69  
 PT = 17+03.77 N = 662,529.18 E = 2,189,942.81

POT = 10+00.00 N = 662,739.84 E = 2,189,276.48  
 POT = 29+74.23 N = 662,554.24 E = 2,191,217.42

EX. W. 11TH STREET ALIGNMENT DATA

POT = 18+21.94 N = 661,600.27 E = 2,190,767.86  
 POT = 27+66.85 N = 662,545.01 E = 2,190,749.24

EX. STARKWEATHER AVE. ALIGNMENT DATA

POT = 10+00.00 N = 660,744.91 E = 2,189,224.91  
 POT = 25+59.77 N = 660,775.24 E = 2,190,784.38

EX. KENILWORTH AVE. ALIGNMENT DATA

POT = 10+00.00 N = 661,572.21 E = 2,189,335.60  
 POT = 24+32.53 N = 661,600.27 E = 2,190,767.86

EX. ABBEY AVE. ALIGNMENT DATA

POT = 8+00.00 N = 663,299.54 E = 2,188,439.62  
 PI = 20+05.46 N = 663,311.76 E = 2,189,645.01  
 PI = 22+26.37 N = 663,314.01 E = 2,189,865.91  
 PI = 25+37.34 N = 663,317.17 E = 2,190,176.87  
 PI = 28+32.32 N = 663,320.14 E = 2,190,471.83  
 POT = 30+94.70 N = 663,322.53 E = 2,190,734.20

TREMONT CURVE DATA

ONTARIO ST. CURVE DATA

ONTARIO ST. CURVE 1

P.I. Sta. 14+19.96
Delta = 5° 00' 00" (LT)
Dc = 5° 00' 00"
R = 1,145.92'
T = 50.03'
L = 100.00'
E = 1.09'
C = 99.97'
C.B. = N 78° 01' 19" W
eMAX. = N.C.
PC = 13+69.93 N = 666,354.34 E = 2,193,452.68
PI = 14+19.96 N = 666,366.85 E = 2,193,404.23
PT = 14+69.93 N = 666,375.09 E = 2,193,354.89

ONTARIO ST. CURVE 2

P.I. Sta. 22+17.88
Delta = 20° 21' 07" (RT)
Dc = 4° 00' 00"
R = 1,432.32'
T = 257.11'
L = 508.80'
E = 22.89'
C = 506.13'
C.B. = N 70° 20' 46" W
eMAX. = N.C.
PC = 19+60.77 N = 666,455.91 E = 2,192,870.75
PI = 22+17.88 N = 666,498.25 E = 2,192,617.15
PT = 24+69.57 N = 666,626.14 E = 2,192,394.11

POT = 10+00.00 N = 666,261.85 E = 2,193,810.86
POT = 30+78.84 N = 666,929.21 E = 2,191,865.56

ORANGE AVE. ALIGNMENT DATA

PROP. @ ORANGE AVE. WB

POT = 10+00.00 N = 666,007.89 E = 2,194,794.43
POT = 20+15.82 N = 666,261.85 E = 2,193,810.86

EXIST. @ ORANGE AVE. EB

POT = 58+30.34 N = 665,536.30 E = 2,196,379.57
POT = 74+83.40 N = 665,959.75 E = 2,194,781.67

E 9TH ST. CURVE DATA

E 9TH ST. CURVE 1

P.I. Sta. 16+48.63
Delta = 22° 33' 18" (RT)
Dc = 4° 00' 00"
R = 1,432.39'
T = 285.64'
L = 563.88'
E = 28.20'
C = 560.24'
C.B. = N 72° 00' 01" E
eMAX. = N.C.
PC = 13+62.99 N = 665,561.76 E = 2,191,819.87
PI = 16+48.63 N = 665,701.45 E = 2,192,069.02
PT = 19+26.87 N = 665,734.88 E = 2,192,352.69

E 9TH ST. CURVE 2

P.I. Sta. 24+68.44
Delta = 73° 48' 00" (LT)
Dc = 10° 45' 00"
R = 532.98'
T = 400.18'
L = 686.51'
E = 133.51'
C = 640.03'
C.B. = N 46° 22' 40" E
eMAX. = N.C.
PC = 20+68.27 N = 665,751.44 E = 2,192,493.12
PI = 24+68.44 N = 665,798.28 E = 2,192,890.55
PT = 27+54.78 N = 666,192.99 E = 2,192,956.44

E 9TH ST. CURVE 3

P.I. Sta. 32+92.67
Delta = 44° 58' 07" (LT)
Dc = 10° 45' 00"
R = 532.98'
T = 220.60'
L = 418.31'
E = 43.85'
C = 407.66'
C.B. = N 12° 12' 41" W
eMAX. = N.C.
PC = 30+72.07 N = 666,505.78 E = 2,193,009.67
PI = 32+92.67 N = 666,722.84 E = 2,193,049.01
PT = 34+90.38 N = 666,904.21 E = 2,192,923.45

POT = 45+70.77 N = 667,792.49 E = 2,192,308.47

EX. WOODLAND AVE. ALIGNMENT DATA

POT = 7+31.69 N = 666,445.17 E = 2,194,536.68
POT = 20+26.94 N = 666,113.50 E = 2,195,788.74

EX. W. 3RD ST. ALIGNMENT DATA

POT = 30+00.00 N = 666,113.7807 E = 2,190,691.5811
PI = 38+97.54 N = 665,373.0242 E = 2,191,198.3937
POT = 46+15.87 N = 664,810.9382 E = 2,191,645.6713

CANAL RD. CURVE DATA

CANAL RD. CURVE 1

P.I. = Sta. 130+07.40
D = 6° 41' 14" (LT)
Dc = 7° 50' 23"
R = 730.84'
T = 42.70'
L = 85.30'
E = 1.25'
C = 85.25'
C.B. = S 35° 04' 55" E
eMAX. = N.C.
PC = 129+64.70 N = 665,751.81 E = 2,191,415.08
PI = 130+07.40 N = 665,715.49 E = 2,191,437.55
PT = 130+50.00 N = 665,682.04 E = 2,191,464.08

POT = 120+00.00 N = 666,572.25 E = 2,190,907.1
POT = 136+38.58 N = 665,220.94 E = 2,191,829.8

EX. IR 77 ENTRANCE RAMP CURVE DATA

EX. IR 77 ENTRANCE RAMP CURVE 1

P.I. Sta. 4+25.88
Delta = 11° 33' 30" (LT)
Dc = 6° 00' 00"
R = 954.93'
T = 96.65'
L = 192.64'
E = 4.88'
C = 192.31'
C.B. = N 39° 59' 49" W
PC = 3+29.23 N = 664,991.62 E = 2,197,287.93
PI = 4+25.88 N = 665,071.54 E = 2,197,233.58
PCC = 5+21.87 N = 665,138.95 E = 2,197,164.32

EX. IR 77 ENTRANCE RAMP SPIRAL 1

P.I. Sta. 8+98.42
Delta = 29° 27' 26" (LT)
Dc = 4° 00' 00"
R = 1,432.39'
T = 376.55'
L = 736.43'
E = 48.67'
C = 728.35'
C.B. = N 60° 30' 17" W
PCC = 5+21.87 N = 665,138.95 E = 2,197,164.32
PI = 8+98.42 N = 665,401.58 E = 2,196,894.48
PT = 12+58.30 N = 665,497.55 E = 2,196,530.37

POT = 1+14.07 N = 664,813.71 E = 2,197,408.92
POT = 14+13.99 N = 665,537.24 E = 2,196,379.82

EX. 22ND ST. CURVE DATA

EX. 22ND AVE. CURVE 1

P.I. Sta. 30+25.01
Delta = 23° 30' 50" (LT)
Dc = 22° 03' 43"
R = 259.70'
T = 54.05'
L = 106.58'
E = 5.57'
C = 105.84'
C.B. = N 2° 54' 57" E
PC = 29+70.96 N = 668,004.60 E = 2,194,944.99
PI = 30+25.01 N = 668,056.88 E = 2,194,958.69
PT = 30+77.54 N = 668,110.29 E = 2,194,950.38

POT = 38+18.44 N = 668,842.40 E = 2,194,836.51

EX. ORANGE AVE. CONNECTOR CURVE DATA

EX. ORANGE AVE. CONNECTOR CURVE 1

P.I. Sta. 11+94.83
Delta = 20° 24' 24" (LT)
Dc = 10° 15' 42"
R = 558.35'
T = 100.50'
L = 198.86'
E = 8.97'
C = 197.81'
C.B. = S 85° 21' 39" E
PC = 10+94.33 N = 666,002.52 E = 2,194,874.94
PI = 11+94.83 N = 665,976.78 E = 2,194,972.08
PCC = 12+93.19 N = 665,986.52 E = 2,195,072.10

EX. ORANGE AVE. CONNECTOR CURVE 2

P.I. Sta. 13+20.93
Delta = 6° 06' 41" (LT)
Dc = 11° 01' 36"
R = 519.61'
T = 27.74'
L = 55.42'
E = 0.74'
C = 55.40'
C.B. = N 81° 22' 48" E
PCC = 12+93.19 N = 665,986.52 E = 2,195,072.10
PI = 13+20.93 N = 665,989.21 E = 2,195,099.71
PT = 13+48.62 N = 665,994.83 E = 2,195,126.88

EX. ORANGE AVE. CONNECTOR CURVE 3

P.I. Sta. 18+54.56
Delta = 32° 30' 51" (RT)
Dc = 9° 10' 10"
R = 624.85'
T = 182.21'
L = 354.59'
E = 26.02'
C = 349.85'
C.B. = N 88° 41' 52" E
PC = 16+72.35 N = 666,092.50 E = 2,195,435.53
PI = 18+54.56 N = 666,147.47 E = 2,195,609.25
PT = 20+26.94 N = 666,100.45 E = 2,195,785.28

POT = 10+00.00 N = 666,026.69 E = 2,194,783.76

EX. 30TH ST. ALIGNMENT DATA

POT = 2+00.00 N = 664,793.18 E = 2,196,180.87
POT = 10+00.00 N = 665,566.03 E = 2,196,387.52
POT = 12+00.00 N = 665,759.24 E = 2,196,439.18
POT = 13+00.00 N = 665,855.85 E = 2,196,465.01
POT = 14+13.94 N = 665,965.92 E = 2,196,494.44

ENGINEER OF RECORD

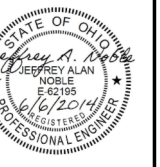


Table with columns: DATE, REVISIONS, NO.

Design Agency: Trumbull-Great Lakes-Ruhlin a joint venture. URS logo.

Logo for George Voinovich Bridge, Ohio Department of Transportation.

Survey Control logo.

Project ID: CUY-90-14.90, PID No. 82119.

Designed: NGB, Checked: JAN, Date: 16/25.

GATEWAY CURVE DATA

RFC. 140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan



EX. COMMERCIAL ST. CURVE DATA

EX. COMMERCIAL ST. CURVE 1

P.I. Sta. 11+11.65  
 $\Delta = 28^\circ 29' 04''$  (LT)  
 Dc = 28' 38' 52"  
 R = 200.00'  
 T = 50.76'  
 L = 99.43'  
 E = 6.34'  
 C = 98.41'  
 C.B. = N 48° 02' 20" W  
 PC = 10+60.89 N = 665,673.55 E = 2,191,908.52  
 PI = 11+11.65 N = 665,715.73 E = 2,191,880.29  
 PRC = 11+60.32 N = 665,739.34 E = 2,191,835.35

EX. COMMERCIAL ST. CURVE 2

P.I. Sta. 12+94.74  
 $\Delta = 67^\circ 48' 35''$  (RT)  
 Dc = 28' 38' 52"  
 R = 200.00'  
 T = 134.42'  
 L = 236.70'  
 E = 40.97'  
 C = 223.13'  
 C.B. = N 28° 22' 35" W  
 PRC = 11+60.32 N = 665,739.34 E = 2,191,835.35  
 PI = 12+94.74 N = 665,801.87 E = 2,191,716.35  
 PT = 13+97.02 N = 665,935.66 E = 2,191,729.30

EX. COMMERCIAL ST. CURVE 3

P.I. Sta. 15+36.38  
 $\Delta = 64^\circ 48' 25''$  (LT)  
 Dc = 40' 38' 07"  
 R = 141.00'  
 T = 89.49'  
 L = 159.48'  
 E = 26.00'  
 C = 151.12'  
 C.B. = N 26° 52' 30" W  
 PC = 14+46.89 N = 665,985.30 E = 2,191,734.11  
 PI = 15+36.38 N = 666,074.38 E = 2,191,742.73  
 PT = 16+06.37 N = 666,120.10 E = 2,191,665.80

EX. COMMERCIAL ST. CURVE 4

P.I. Sta. 17+76.55  
 $\Delta = 22^\circ 18' 21''$  (RT)  
 Dc = 19' 57' 49"  
 R = 287.00'  
 T = 56.58'  
 L = 111.73'  
 E = 5.52'  
 C = 111.03'  
 C.B. = N 48° 07' 32" W  
 PC = 17+19.97 N = 666,178.13 E = 2,191,568.14  
 PI = 17+76.55 N = 666,207.04 E = 2,191,519.50  
 PT = 18+31.70 N = 666,252.24 E = 2,191,485.47

EX. COMMERCIAL ST. CURVE 5

P.I. Sta. 19+43.32  
 $\Delta = 20^\circ 16' 16''$  (LT)  
 Dc = 17' 21' 44"  
 R = 330.00'  
 T = 58.99'  
 L = 116.75'  
 E = 5.23'  
 C = 116.15'  
 C.B. = N 47° 06' 29" W  
 PC = 18+84.33 N = 666,294.29 E = 2,191,453.82  
 PI = 19+43.32 N = 666,341.42 E = 2,191,418.34  
 PT = 20+01.08 N = 666,373.34 E = 2,191,368.73

EX. RAMP A3 CURVE DATA

EX. RAMP A3 CURVE 1

P.I. = Sta. 2999+32.79  
 $D = 19^\circ 48' 55''$  (RT)  
 Dc = 14' 00' 00"  
 R = 409.26'  
 T = 71.48'  
 L = 141.54'  
 E = 6.20'  
 C = 140.83'  
 C.B. = S 37° 47' 15" W  
 PC = 2998+61.31 N = 667,802.33 E = 2,193,551.69  
 PI = 2999+32.72 N = 667,739.14 E = 2,193,518.26  
 PT = 3000+02.84 N = 667,691.03 E = 2,193,465.39

EX. RAMP A3 CURVE 2

P.I. = Sta. 3004+83.10  
 $D = 18^\circ 27' 51''$  (RT)  
 Dc = 4' 15' 00"  
 R = 1,348.14'  
 T = 219.12'  
 L = 434.45'  
 E = 17.69'  
 C = 432.57'  
 C.B. = S 56° 55' 38" W  
 PC = 3002+63.98 N = 667,515.27 E = 2,193,272.27  
 PI = 3004+83.10 N = 667,367.78 E = 2,193,110.21  
 PT = 3006+98.43 N = 667,279.21 E = 2,191,909.79

EX. IR 71 CURVE DATA

EX. IR 71 CURVE 1

P.I. Sta. 947+84.72  
 $\Delta = 13^\circ 56' 45''$  (LT)  
 Dc = 1° 00' 00"  
 R = 5,729.58'  
 T = 700.75'  
 L = 1,394.58'  
 E = 42.69'  
 C = 1,391.14'  
 C.B. = N 3° 25' 10" E  
 PC = 940+83.97 N = 656,667.92 E = 2,189,764.45  
 PI = 947+84.72 N = 657,357.18 E = 2,189,890.85  
 PT = 954+78.55 N = 658,056.58 E = 2,189,847.42  
 POT = 925+78.38 N = 655,187.04 E = 2,189,492.86

EX. E 14TH ST. ALIGNMENT DATA

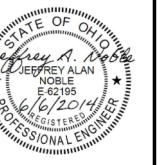
EX. E 14TH ST. NB CURVE 1

P.I. = Sta. 126+09.00  
 $D = 50^\circ 04' 55''$  (LT)  
 Dc = 16' 00' 00"  
 R = 358.10'  
 T = 167.30'  
 L = 313.01'  
 E = 37.15'  
 C = 303.14'  
 C.B. = N 9° 37' 59" W  
 PC = 124+41.70 N = 667,194.41 E = 2,194,067.87  
 PI = 126+09.00 N = 667,355.70 E = 2,194,112.32  
 PT = 127+54.72 N = 667,493.28 E = 2,194,017.15

EX. E 14TH ST. SB CURVE 1

P.I. = Sta. 224+87.22  
 $D = 37^\circ 21' 20''$  (LT)  
 Dc = 13' 00' 00"  
 R = 440.74'  
 T = 148.99'  
 L = 287.35'  
 E = 24.50'  
 C = 282.29'  
 C.B. = N 7° 27' 57" W  
 PC = 223+38.23 N = 667,104.05 E = 2,194,000.69  
 PI = 224+87.22 N = 667,250.20 E = 2,194,029.66  
 PT = 226+25.58 N = 667,383.95 E = 2,193,964.01

ENGINEER OF RECORD



NO.	REVISIONS	DATE

DESIGN AGENCY  
**URS**  
 Trumbull-Great Lakes-Ruhlin  
 a joint venture



SURVEY CONTROL  
**RFC. 140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan**

CUY-90-14.90  
 PID No. 82119

DESIGNED NGB  
 CHECKED JAN  
 17/25

GATEWAY CURVE DATA

EX. IR 77 CURVE DATA

EX. IR 77 CURVE 1

P.I. Sta. 106+33.34  
 $\Delta = 9^\circ 00' 00''$  (LT)  
 $D_c = 2^\circ 14' 58''$   
 $R = 2,547.26'$   
 $T = 200.47'$   
 $L = 400.12'$   
 $E = 7.88'$   
 $C = 399.71'$   
 C.B. = N  $19^\circ 39' 47''$  W  
 PC = 104+32.87 N = 664,349.73 E = 2,197,630.98  
 PI = 106+33.34 N = 664,543.23 E = 2,197,578.54  
 PCC = 108+32.99 N = 664,726.14 E = 2,197,496.48

EX. IR 77 CURVE 2

P.I. Sta. 115+66.12  
 $\Delta = 42^\circ 00' 00''$  (LT)  
 $D_c = 3^\circ 00' 00''$   
 $R = 1,909.86'$   
 $T = 733.13'$   
 $L = 1,400.00'$   
 $E = 135.88'$   
 $C = 1,368.86'$   
 C.B. = N  $45^\circ 09' 47''$  W  
 PCC = 108+32.99 N = 664,726.14 E = 2,197,496.48  
 PI = 115+66.12 N = 665,395.04 E = 2,197,196.39  
 PCC = 122+32.99 N = 665,691.32 E = 2,196,525.80

EX. IR 77 CURVE 3

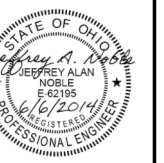
P.I. Sta. 124+33.46  
 $\Delta = 9^\circ 00' 00''$  (LT)  
 $D_c = 2^\circ 14' 57''$   
 $R = 2,547.27'$   
 $T = 200.47'$   
 $L = 400.12'$   
 $E = 7.88'$   
 $C = 399.71'$   
 C.B. = N  $70^\circ 39' 47''$  W  
 PCC = 122+32.99 N = 665,691.32 E = 2,196,525.80  
 PI = 124+33.46 N = 665,772.34 E = 2,196,342.43  
 PT = 126+33.11 N = 665,823.67 E = 2,196,148.64

EX. IR 77 CURVE 4

P.I. Sta. 147+96.60  
 $\Delta = 23^\circ 07' 14''$  (RT)  
 $D_c = 3^\circ 00' 00''$   
 $R = 1,909.86'$   
 $T = 390.66'$   
 $L = 770.68'$   
 $E = 39.54'$   
 $C = 765.46'$   
 C.B. = N  $63^\circ 36' 10''$  W  
 PC = 144+05.94 N = 666,277.64 E = 2,194,434.92  
 PI = 147+96.60 N = 666,377.68 E = 2,194,057.29  
 PT = 151+76.62 N = 666,617.96 E = 2,193,749.27

POT = 68+80.06 N = 660,920.62 E = 2,198,560.28

ENGINEER OF RECORD



NO.	REVISIONS	DATE

DESIGN AGENCY  
 URS  
 Trumbull-Great Lakes-Ruhlin  
 a joint venture

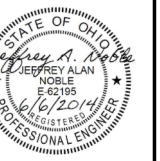


SURVEY CONTROL  
 RFC. 140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan

CUY-90-14.90  
 PID No. 82119

DESIGNED NGB	18
CHECKED JAN	
	25

GATEWAY CURVE DATA



DATE

NO.	REVISIONS

DESIGN AGENCY  
**URS**  
 Trumbull-Great Lakes-Ruhlin  
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SURVEY CONTROL

**RFC.140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan**

DESIGNED NGB  
 CHECKED JAN

CUY-90-14.90  
 PID No. 82119  
 19  
 25

STATION EQUATIONS FOR ALIGNMENT INTERSECTIONS						
	ALIGNMENT NAME	STATION	=	ALIGNMENT NAME	STATION	
						NORTHING (FT) EASTING (FT)
A	Ramp B1	21+43.33	=	I.R. 90 WB	970+30.48 R2	659,606.0391 2,189,759.2229
B	Ramp B1	21+98.18	=	I.R. 90 EB	1970+68.93	659,648.1361 2,189,794.3513
C	Starkweather Ave.	14+34.64	=	I.R. 90 WB	101+56.91	660,753.3662 2,189,659.4659
D	Starkweather Ave.	15+03.80	=	I.R. 90 EB	1981+77.49	660,754.7114 2,189,728.6221
E	Starkweather Ave.	15+49.43	=	Ramp B1	33+45.43	660,755.5986 2,189,774.2389
F	Kenilworth Ave.	13+82.34	=	I.R. 90 WB	109+86.20	661,579.7036 2,189,717.8800
G	Kenilworth Ave.	14+62.11	=	I.R. 90 EB	1990+08.42	661,581.2662 2,189,797.6329
H	I.R. 90 WB	119+63.72	=	Fairfield Ave.	16+11.88	662,546.9567 2,189,857.1603
J	I.R. 90 EB	1999+70.73	=	Fairfield Ave.	17+17.32	662,529.6411 2,189,960.7523
K	Fairfield Ave.	19+36.27	=	W. 14th St.	100+00.53	662,533.7752 2,190,179.6650
L	I.R. 90 EB	2002+81.16	=	W. 14th St.	103+45.24	662,833.54 2,190,024.05
M	W. 14th St.	104+80.43	=	I.R. 90 WB	123+65.58	662,940.0016 2,189,940.7572
N	Abbey Ave.	22+26.37	=	W. 14th St.	108+73.96	663,314.0110 2,189,865.9194
O	Abbey Ave.	23+97.07	=	I.R. 90 WB	127+53.38	663,315.7463 2,190,036.6069
P	Abbey Ave.	25+06.36	=	I.R. 90 EB	2007+79.66	663,316.8573 2,190,145.8946
Q	I.R. 90 WB	128+83.60	=	Towpath Trail	307+51.19	663,441.0323 2,190,072.1099
R	I.R. 90 EB	2009+00.18	=	Towpath Trail	308+59.04	663,432.7201 2,190,179.0626
S	W. 3rd St.	35+25.71	=	I.R. 90 WB	153+07.00	665,679.8992 2,190,988.4351
T	W. 3rd St.	36+41.37	=	I.R. 90 EB	2032+26.41	665,584.4492 2,191,053.7404
U	I.R. 90 WB	157+44.11	=	Canal Rd.	126+27.43	666,038.6434 2,191,237.6659
V	I.R. 90 EB	2036+60.12	=	Canal Rd.	127+39.33	665,943.4713 2,191,296.5332
W	Canal Rd.	133+32.50	=	E. 9th St.	11+56.39	665,460.7264 2,191,639.6559
X	Commercial Rd.	18+79.29	=	I.R. 90 WB	160+77.93	666,290.2658 2,191,456.8549
Y	Commercial Rd.	17+73.45	=	I.R. 90 EB	2040+10.98	666,209.5684 2,191,524.9785
Z	Commercial Rd.	17+37.24	=	Ramp B3	5340+12.58	666,187.3986 2,191,553.5765
AA	I.R. 90 WB	168+87.09	=	Ontario St.	28+35.82	666,808.3243 2,192,076.3827
AB	I.R. 90 EB	2048+60.21	=	Ontario St.	27+19.35	666,750.3904 2,192,177.4187
AC	Ramp B3	5348+81.59	=	Ontario St.	26+43.08	666,712.4504 2,192,243.5856
AD	E. 9th St.	30+00.00	=	Ontario St.	18+32.95	666,434.8640 2,192,996.8213
AE	I.R. 90 WB	176+44.34	=	E. 9th St.	38+07.00	667,164.5317 2,192,743.2205
AF	I.R. 90 WB Int	301+76.89	=	E. 9th St.	38+05.53	667,163.32 2,192,744.06
AG	I.R. 90 EB	2055+66.08	=	E. 9th St.	37+12.96	667,087.2101 2,192,796.7518
AH	I.R. 90 EB Int	505+43.37	=	E. 9th St.	36+97.66	667,074.63 2,192,805.46
AI	E. 9th St.	36+72.38	=	Ramp B5	655+73.18	667,053.8457 2,192,819.8507
AJ	I.R. 90 WB Int	307+39.73	=	E. 14th St. Ramp	204+01.77	667,332.5924 2,193,280.6510
AK	I.R. 90 EB	2061+06.66	=	E. 14th St. Ramp	204+32.06	667,304.4797 2,193,291.9214
AL	I.R. 90 EB Int	510+80.88	=	E. 14th St. Ramp	204+71.83	667,267.5682 2,193,306.7192
AM	I.R. 90 EB	2062+13.53	=	Ramp E10	8+71.93	667,353.0878 2,193,386.8168
AN	I.R. 90 EB_Int	511+62.67	=	Ramp E10	9+20.83	667,304.7570 2,193,379.5662
AO	22nd St.	13+58.96	=	Woodland Ave.	07+31.69	666,445.1775 2,194,536.6868
AP	22nd St.	10+00.00	=	Orange Ave. WB	13+60.10	666,097.9196 2,194,445.7624
AQ	30th St.	13+62.32	=	Woodland Ave.	27+46.79	665,916.0579 2,196,481.1149
AR	30th St.	9+69.22	=	Orange Ave. EB	58+30.34	665,536.30 2,196,379.5703
AS	Ontario St.	10+00.00	=	E. 14th St.	114+74.38	666,261.8547 2,193,810.8614
AT	30th St.	9+69.22	=	Orange to I-77 SB	14+13.99	665,557.24 2,196,379.82

FOR INTERSECTION LOCATIONS SEE SHEETS 6 - 11

# MON 01

# MON 02

BURGESS & NIPLE, INC.

4160 PLEASANT VALLEY ROAD, CHANTILLY, VA 20151-1226  
PH. (703) 631-9630 FAX (703)-631-9177

GEODETTIC CONTROL SHEET Ohio Department of Transportation Cuyahoga County Control			State Plane: OHIO (NORTH ZONE) Datum: NAD 83 (95)
County: CUYAHOCA	Name of Station: 90-175.6	Year: 2004	Vertical Datum: NAVD 88
N 207212.23013m	E 670633.20513m	Elevation 176.75184m	Conversion: US Survey Foot
Lat: 41°31'46.38409"N	Long: 81°39'13.07647"W	Combined Scale Factor: 0.99994020409	
Date: April 29, 2004			

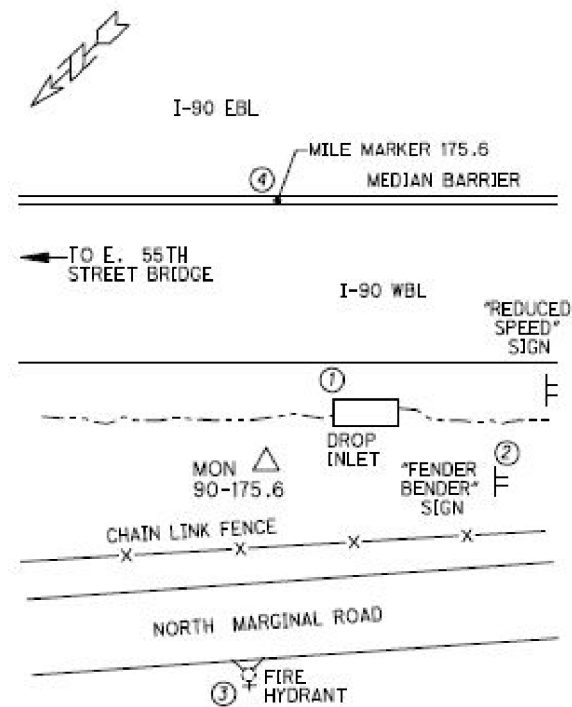
PROJECT COORDINATES:

N 679869.4451'	E 2200367.3468'	Elevation 679.89'
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SKETCH: NOT TO SCALE

REFERENCES:

1. SE CORNER OF DROP INLET = 70.3'
2. SOUTHERN LEG OF ROAD SIGN ("FENDER BENDER") = 138.10'
3. FIRE HYDRANT = 61.1'
4. MILE MARKER 175.6 = 87.8'



BURGESS & NIPLE, INC.

4160 PLEASANT VALLEY ROAD, CHANTILLY, VA 20151-1226  
PH. (703) 631-9630 FAX (703)-631-9177

GEODETTIC CONTROL SHEET Ohio Department of Transportation Cuyahoga County Control			State Plane: OHIO (NORTH ZONE) Datum: NAD 83 (95)
County: CUYAHOCA	Name of Station: 90-175.2	Year: 2004	Vertical Datum: NAVD 88
N 206836.08407m	E 670102.21003m	Elevation 177.94066m	Conversion: US Survey Foot
Lat: 41°31'34.35842"N	Long: 81°39'36.13699"W	Combined Scale Factor: 0.99994020409	
Date: April 29, 2004			

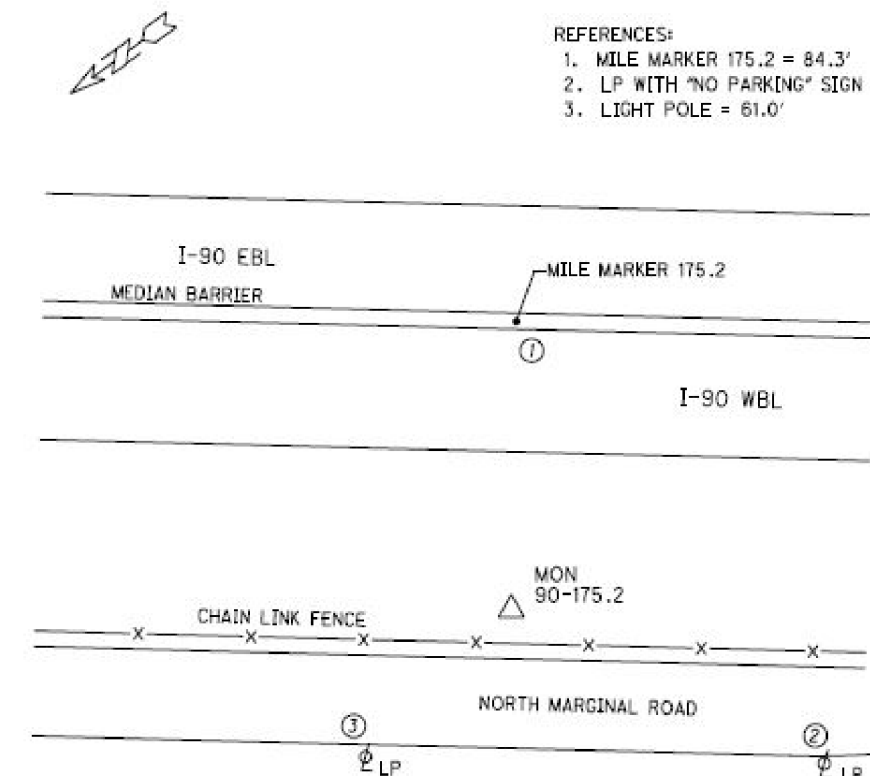
PROJECT COORDINATES:

N 678635.2988'	E 2198625.1362'	Elevation 683.79'
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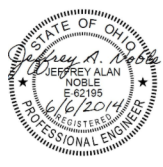
SKETCH: NOT TO SCALE

REFERENCES:

1. MILE MARKER 175.2 = 84.3'
2. LP WITH "NO PARKING" SIGN = 112.5'
3. LIGHT POLE = 61.0'



ENGINEER OF RECORD



DATE	REVISIONS	NO.

DESIGN AGENCY  
**URS**  
Trumbull-Great Lakes-Ruhlin  
*a joint venture*



SURVEY CONTROL  
RFC. 140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan

CUY-90-14.90  
PID No. 82119

DESIGNED NGB	CHECKED JAN	20 25
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SURVEY CONTROL POINTS

# MON 03

# MON 04



DATE	REVISIONS	NO.

DESIGN AGENCY  
**URS**  
 Trumbull-Great Lakes-Ruhlin  
*a joint venture*



SURVEY CONTROL  
 RFC.140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan

CUY-90-14.90  
 PID No. 82119

DESIGNED NGB	CHECKED JAN	21 25
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SURVEY CONTROL POINTS

## BURGESS & NIPLE, INC.

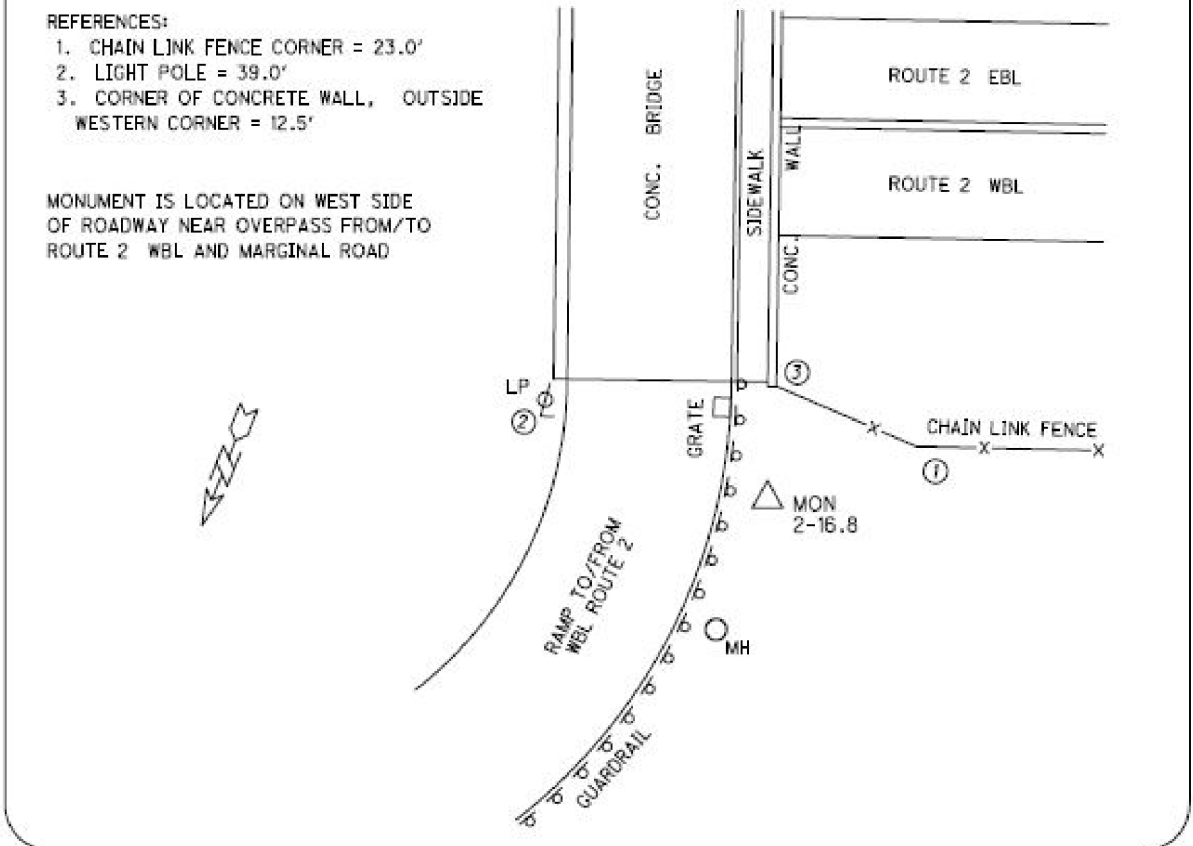
4160 PLEASANT VALLEY ROAD, CHANTILLY, VA 20151-1226  
 PH. (703) 631-9630 FAX (703)-631-9177

GEODETTIC CONTROL SHEET Ohio Department of Transportation Cuyahoga County Control		State Plane: OHIO (NORTH ZONE) Datum: NAD 83 (95)	
County: CUYAHOGA	Name of Station: 2-16.8	Year: 2004	Vertical Datum: NAVD 88
N 205625.66682m	E 668384.27010m	Elevation 183.24368m	Conversion: US Survey Foot
Lat: 41°30'55.65456"N	Long: 81°40'50.72644"W	Combined Scale Factor: 0.99994020409	
Date: April 29, 2004			

PROJECT COORDINATES:

N 674663.8840'	E 2192988.5246'	Elevation 601.17'
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SKETCH: NOT TO SCALE



## BURGESS & NIPLE, INC.

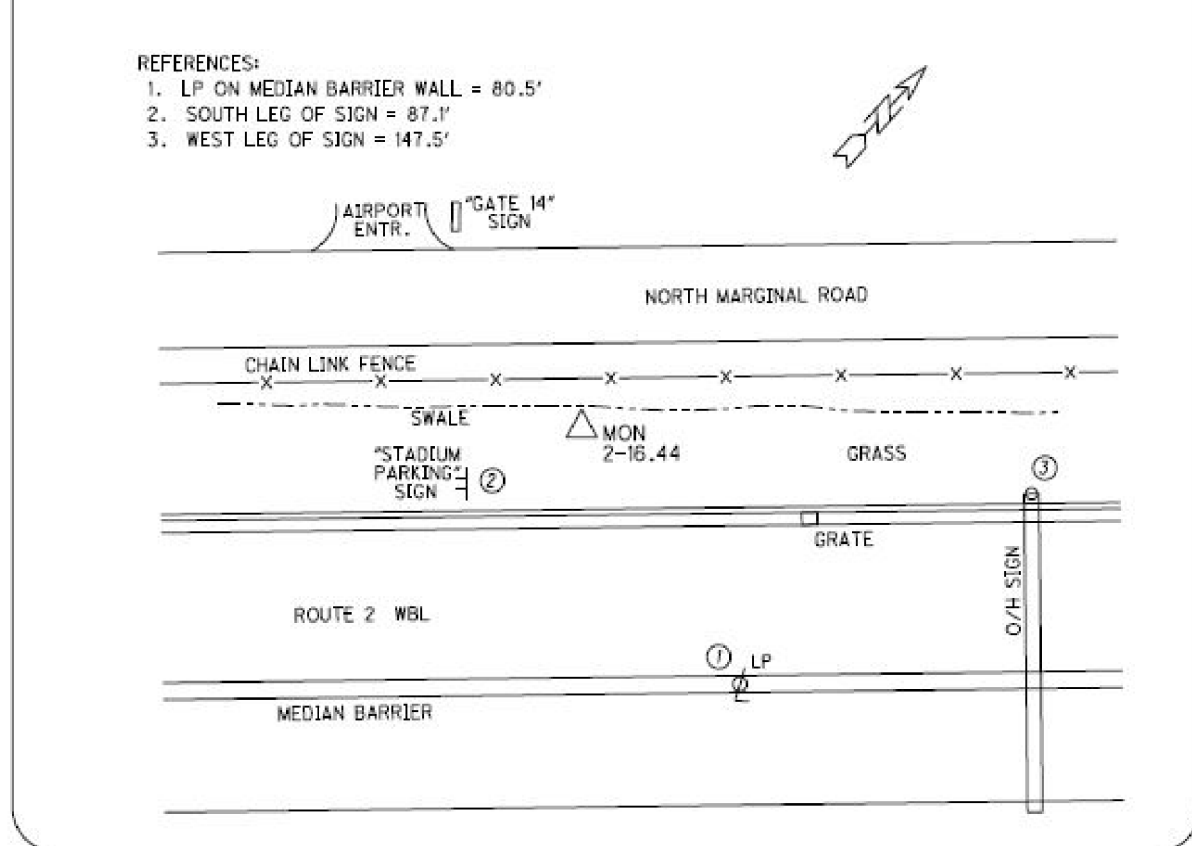
4160 PLEASANT VALLEY ROAD, CHANTILLY, VA 20151-1226  
 PH. (703) 631-9630 FAX (703)-631-9177

GEODETTIC CONTROL SHEET Ohio Department of Transportation Cuyahoga County Control		State Plane: OHIO (NORTH ZONE) Datum: NAD 83 (95)	
County: CUYAHOGA	Name of Station: 2-16.44	Year: 2004	Vertical Datum: NAVD 88
N 205234.04804m	E 667965.11454m	Elevation 177.51436m	Conversion: US Survey Foot
Lat: 41°30'43.08811"N	Long: 81°41'08.96038"W	Combined Scale Factor: 0.99994020409	
Date: April 29, 2004			

PROJECT COORDINATES:

N 673378.9712'	E 2191613.2628'	Elevation 592.36'
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SKETCH: NOT TO SCALE



# MON 05

# MON 06

## BURGESS & NIPLE, INC.

4160 PLEASANT VALLEY ROAD, CHANTILLY, VA 20151-1226  
PH. (703) 631-9630 FAX (703)-631-9177

GEODETTIC CONTROL SHEET Ohio Department of Transportation Cuyahoga County Control		State Plane: OHIO (NORTH ZONE) Datum: NAD 83 (95)	
County: CUYAHOGA	Name of Station: 90-172.2	Year: 2004	Vertical Datum: NAVD 88
N 203346.31627m	E 668361.94418m	Elevation: 212.18591m	Conversion: US Survey Foot
Lat: 41°29'41.77978"N	Long: 81°40'52.61205"W	Combined Scale Factor: 0.99994020409	
Date: April 29, 2004			

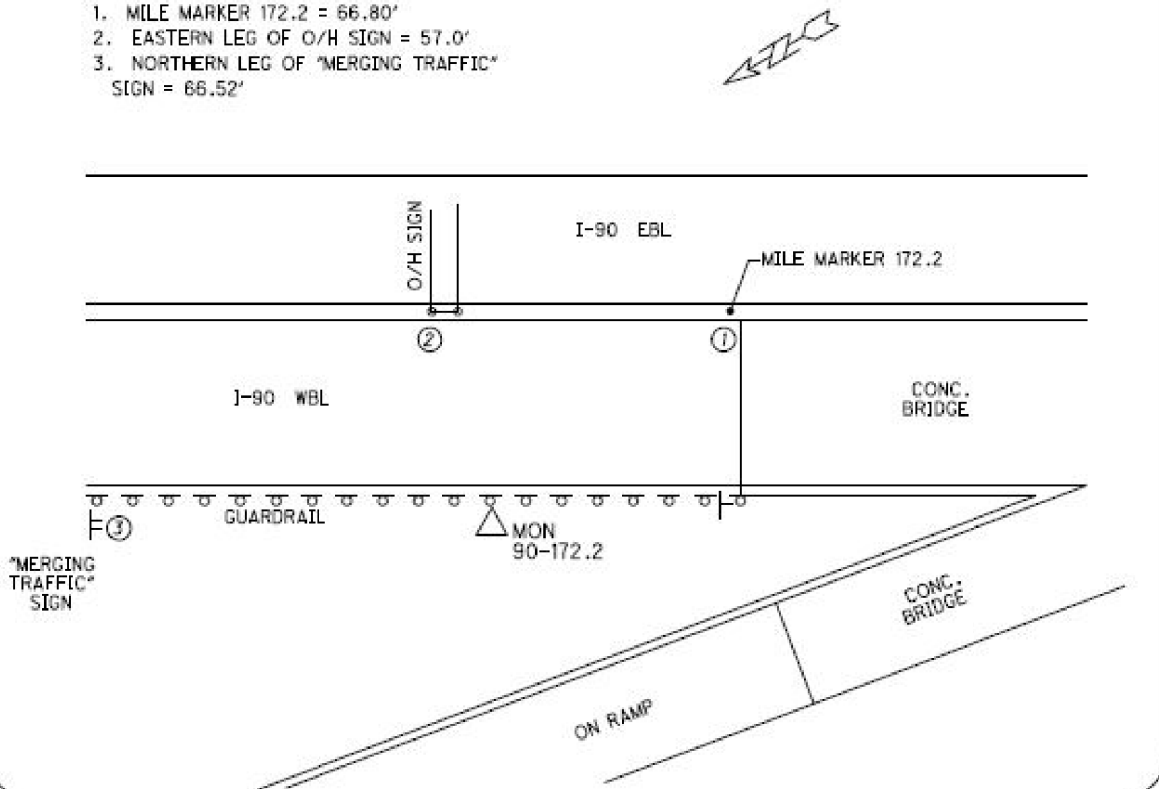
PROJECT COORDINATES:

N 667165.2676'	E 2192915.2726'	Elevation: 696.15'
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SKETCH: NOT TO SCALE

REFERENCES:

1. MILE MARKER 172.2 = 66.80'
2. EASTERN LEG OF O/H SIGN = 57.0'
3. NORTHERN LEG OF "MERGING TRAFFIC" SIGN = 66.52'



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GEODETTIC CONTROL SHEET Ohio Department of Transportation Cuyahoga County Control		State Plane: OHIO (NORTH ZONE) Datum: NAD 83 (95)	
County: CUYAHOGA	Name of Station: 77-162.8	Year: 2004	Vertical Datum: NAVD 88
N 203150.60963m	E 668622.61148m	Elevation: 212.01066m	Conversion: US Survey Foot
Lat: 41°29'35.35676"N	Long: 81°40'41.45369"W	Combined Scale Factor: 0.99994020409	
Date: April 29, 2004			

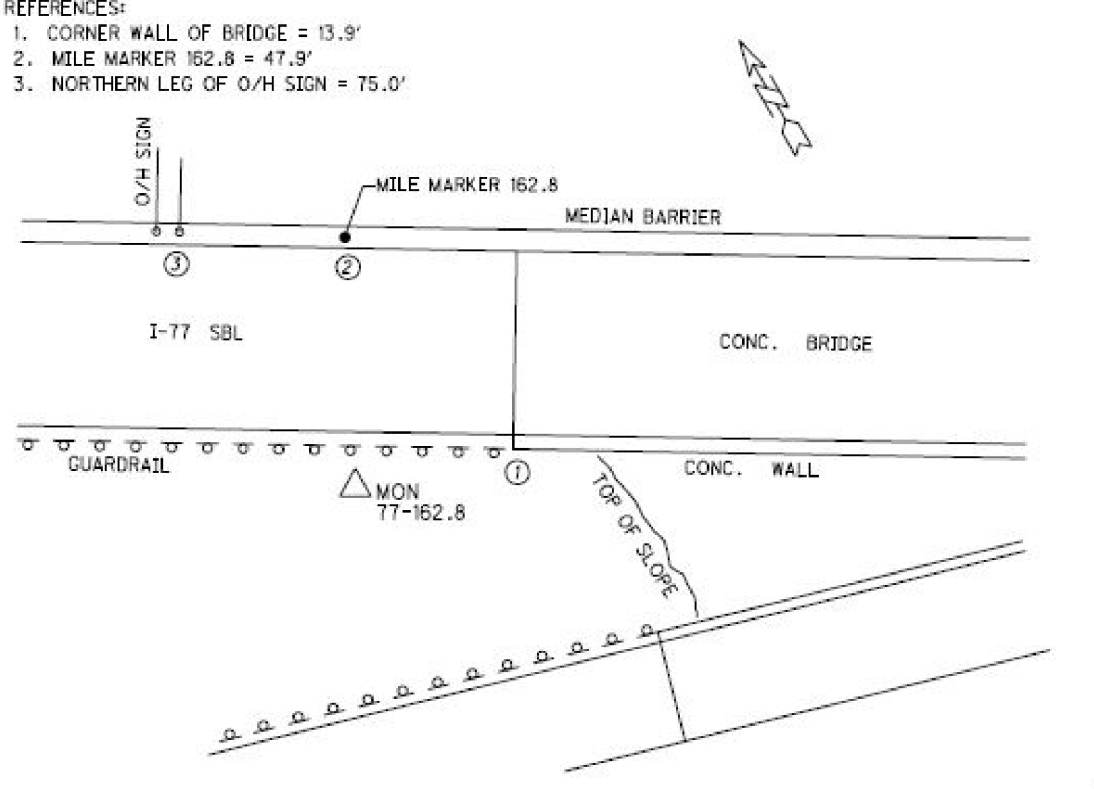
PROJECT COORDINATES:

N 666543.1483'	E 2193770.5297'	Elevation: 695.57'
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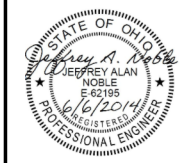
SKETCH: NOT TO SCALE

REFERENCES:

1. CORNER WALL OF BRIDGE = 13.9'
2. MILE MARKER 162.8 = 47.9'
3. NORTHERN LEG OF O/H SIGN = 75.0'



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DATE	REVISIONS	NO.

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SURVEY CONTROL  
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CUY-90-14.90  
PID No. 82119

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SURVEY CONTROL POINTS

RFC.140617.IQF.BU46.SurveyControlPlan - IDQM J. Jordan

# MON 07

# MON 08

## BURGESS & NIPLE, INC.

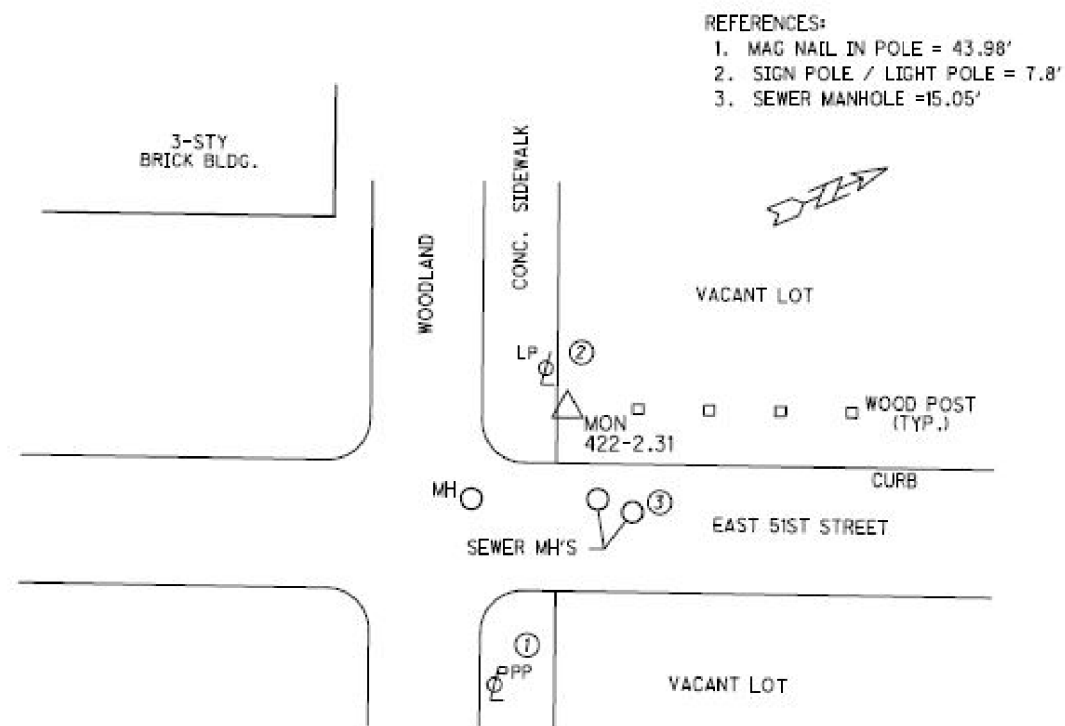
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GEODETTIC CONTROL SHEET Ohio Department of Transportation Cuyahoga County Control			State Plane: OHIO (NORTH ZONE) Datum: NAD 83 (95)
County: CUYAHOGA	Name of Station: 422-2.31	Year: 2004	Vertical Datum: NAVD 88
N 202644.06184m	E 670713.96642m	Elevation 206.16830m	Conversion: US Survey Foot
Lat: 41°29'18.28927"N	Long: 81°39'11.50526"W	Combined Scale Factor: 0.99994020409	
Date: April 29, 2004			

PROJECT COORDINATES:

N 664881.1501'	E 2200632.3926'	Elevation 676.40'
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SKETCH: NOT TO SCALE



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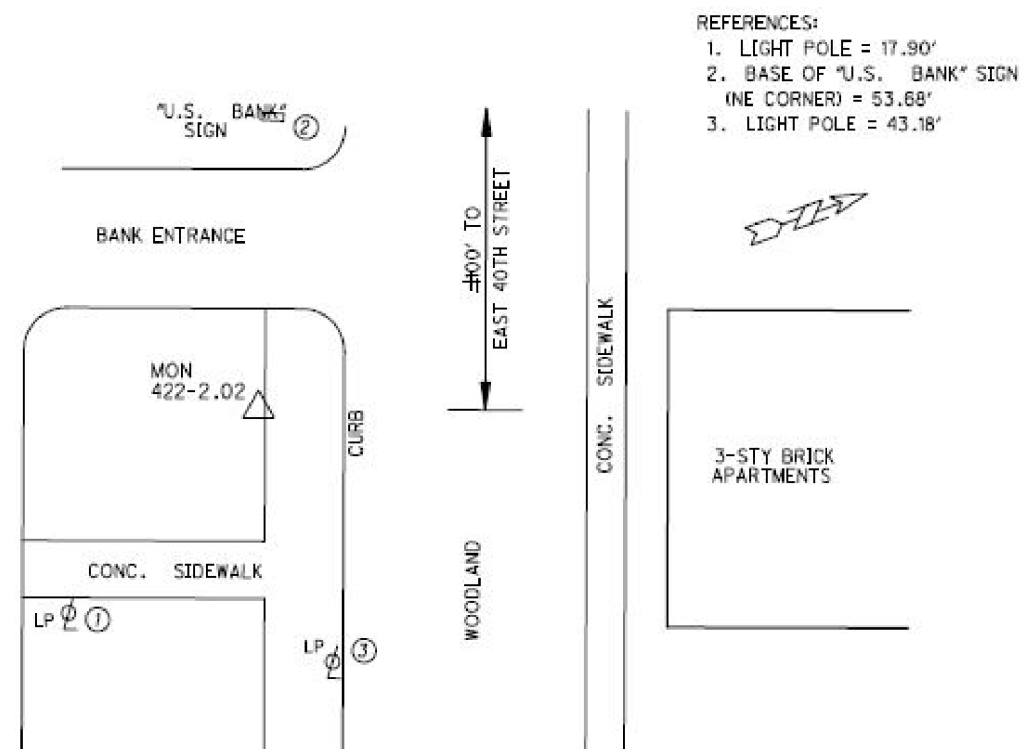
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GEODETTIC CONTROL SHEET Ohio Department of Transportation Cuyahoga County Control			State Plane: OHIO (NORTH ZONE) Datum: NAD 83 (95)
County: CUYAHOGA	Name of Station: 422-2.02	Year: 2004	Vertical Datum: NAVD 88
N 202732.42026m	E 670263.04202m	Elevation 206.28355m	Conversion: US Survey Foot
Lat: 41°29'21.29474"N	Long: 81°39'30.90761"W	Combined Scale Factor: 0.99994020409	
Date: April 29, 2004			

PROJECT COORDINATES:

N 665171.0566'	E 2199152.8307'	Elevation 676.78'
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SKETCH: NOT TO SCALE



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GEODETTIC CONTROL SHEET Ohio Department of Transportation Cuyahoga County Control		State Plane: OHIO (NORTH ZONE) Datum: NAD 83 (95)	
County: CUYAHOCA	Name of Station: 90-171.28	Year: 2004	Vertical Datum: NAVD 88
N 202123.16176m	E 667575.29234m	Elevation: 212.64837m	Conversion: US Survey Foot
Lat: 41°29'02.37090"N	Long: 81°41'27.01541"W	Combined Scale Factor: 0.99994020409	
Date: April 29, 2004			

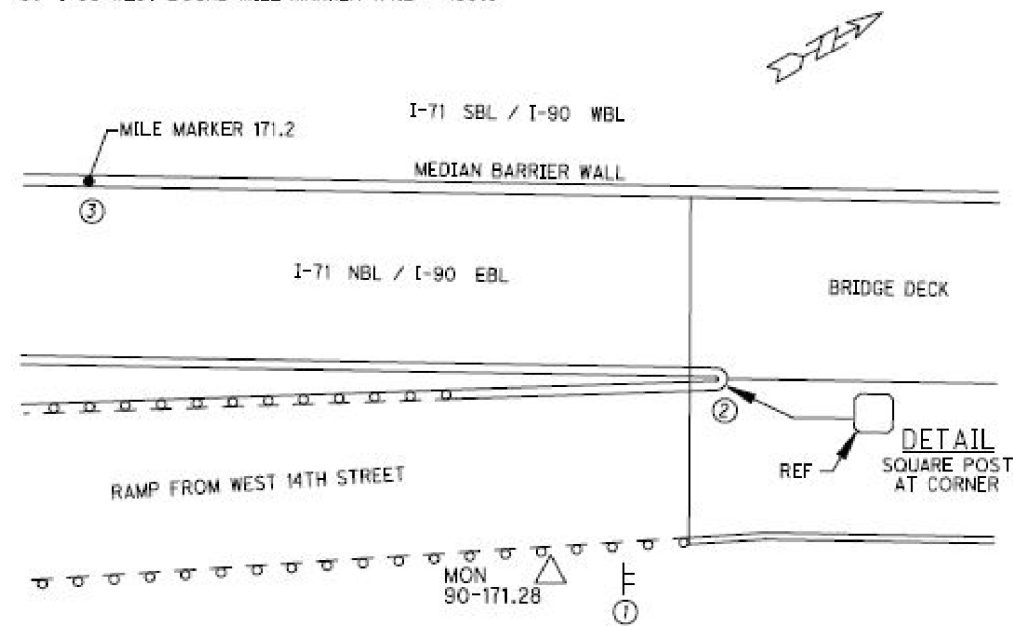
PROJECT COORDINATES:

N 663172.0615'	E 2190334.2447'	Elevation: 697.66'
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SKETCH: NOT TO SCALE

REFERENCES:

- "YIELD" SIGN = 10.1'
- SE CORNER OF BARRIER WALL AT RAMP = 90.1'
- I-90 WEST BOUND MILE MARKER 171.2 = 436.5'



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GEODETTIC CONTROL SHEET Ohio Department of Transportation Cuyahoga County Control		State Plane: OHIO (NORTH ZONE) Datum: NAD 83 (95)	
County: CUYAHOCA	Name of Station: 90-171.08	Year: 2004	Vertical Datum: NAVD 88
N 201829.62506m	E 667429.96500m	Elevation: 211.68293m	Conversion: US Survey Foot
Lat: 41°28'52.89995"N	Long: 81°41'33.39685"W	Combined Scale Factor: 0.99994020409	
Date: April 29, 2004			

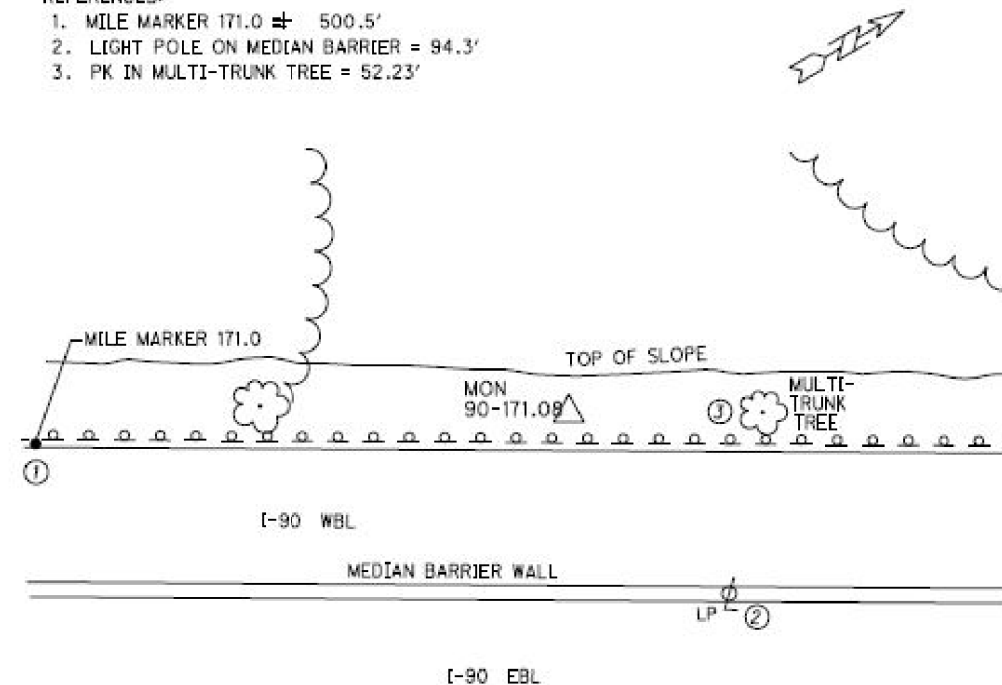
PROJECT COORDINATES:

N 662208.9589'	E 2189857.4214'	Elevation: 694.50'
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SKETCH: NOT TO SCALE

REFERENCES:

- MILE MARKER 171.0 ± 500.5'
- LIGHT POLE ON MEDIAN BARRIER = 94.3'
- PK IN MULTI-TRUNK TREE = 52.23'



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GEODETTIC CONTROL SHEET Ohio Department of Transportation Cuyahoga County Control			State Plane: OHIO (NORTH ZONE) Datum: NAD 83 (95)
County: CUYAHOGA	Name of Station: 71-244.9	Year: 2004	Vertical Datum: NAVD 88
N 198626.47168m	E 665031.03899m	Elevation 217.81996m	Conversion: US Survey Foot
Lat: 41°27'09.78017"N	Long: 81°43'18.03036"W	Combined Scale Factor: 0.99994020409	
Date: April 29, 2004			

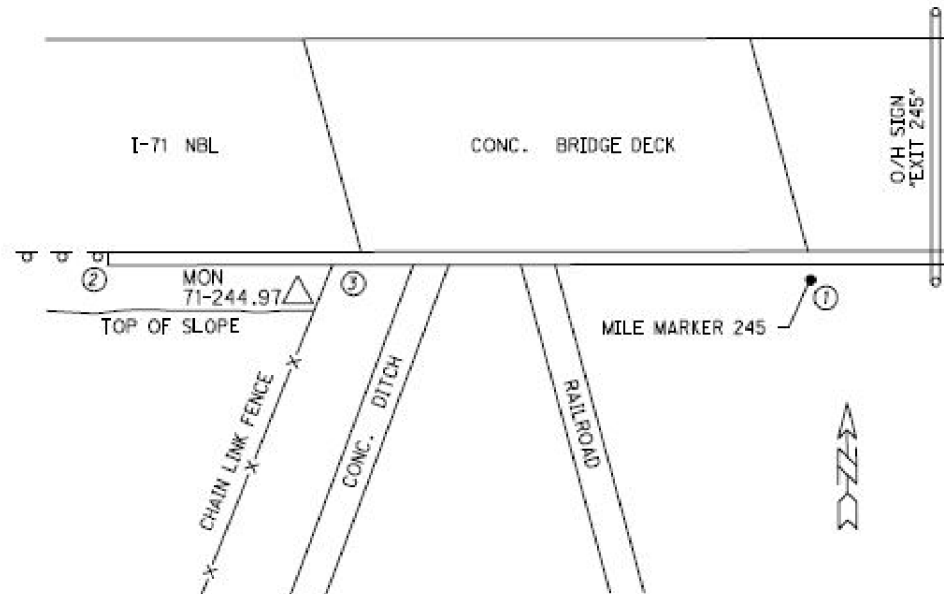
PROJECT COORDINATES:

N 651699.3181'	E 2181986.4743'	Elevation 114.63'
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SKETCH: NOT TO SCALE

REFERENCES:

1. MILE MARKER 245 =± 163'
2. PK NAIL SET IN FIRST WOODEN GUARDRAIL POST SOUTH OF BRIDGE = 20.4'
3. CHISELED "X" ON BRIDGE WALL = 9.8'



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GEODETTIC CONTROL SHEET Ohio Department of Transportation Cuyahoga County Control			State Plane: OHIO (NORTH ZONE) Datum: NAD 83 (95)
County: CUYAHOGA	Name of Station: 71-245.25	Year: 2004	Vertical Datum: NAVD 88
N 198785.77730m	E 665398.20128m	Elevation 209.98366m	Conversion: US Survey Foot
Lat: 41°27'14.83740"N	Long: 81°43'02.14981"W	Combined Scale Factor: 0.99994020409	
Date: April 29, 2004			

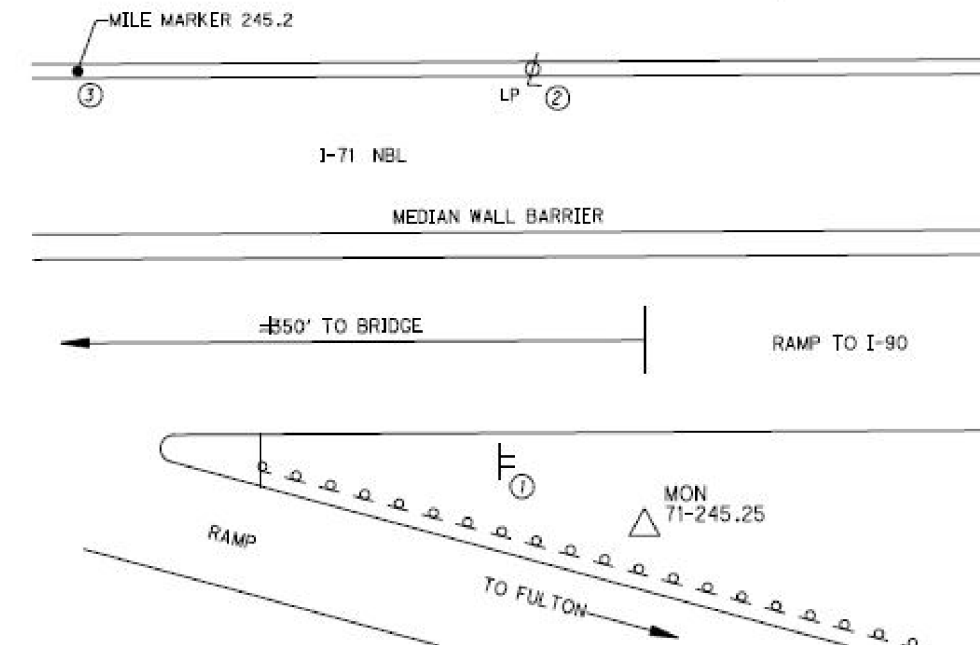
PROJECT COORDINATES:

N 652222.0046'	E 2183191.1446'	Elevation 688.92'
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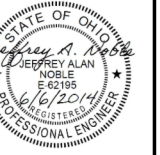
SKETCH: NOT TO SCALE

REFERENCES:

1. SOUTHERN POST ON "EXIT" SIGN = 59.60'
2. LIGHT POLE = 124.60'
3. MILE MARKER 245.2 = 271.33'



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