U.S. Department of Transportation
Federal Highway Administration

Brent Spence Bridge
Replacement/Rehabilitation Project

KENTUCKY TRANSPORTATION CABINET

Qualitative $PM_{2.5}$ Hot-Spot Analysis

PID No. 75119
HAM-71/75-0.00/0.22
KYTC Project Item No. 6-17

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EXECUTIVE SUMMARY

This Qualitative $PM_{2.5}$ Hot-Spot Analysis has been prepared in support of the Brent Spence Bridge Replacement/Rehabilitation Project (ODOT PID 75119/KYTC Project Item No. 6-17) in Kenton County, Kentucky and Hamilton County, Ohio. The United States Environmental Protection Agency (USEPA) has classified both Kenton and Hamilton counties as nonattainment areas for the annual $PM_{2.5}$ standard. Because the project will affect traffic volumes and diesel truck percentages on heavily traveled roadways in an area classified as nonattainment for the annual $PM_{2.5}$ standard, a qualitative hot-spot analysis is required to demonstrate compliance with the Conformity Rule in accordance with 40 CFR 93.

The analysis complies with the USEPA's guidance entitled "*Transportation Conformity Guidance for Qualitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*" (EPA420-B-06-902). It was conducted using Method A of the guidance document. Under this approach, existing data from a nearby air quality monitor site was used to compare and simulate future $PM_{2.5}$ air quality concentrations for opening year 2022 and design year 2035.

The results of the qualitative hot-spot analysis indicate that air quality levels resulting from the Brent Spence Bridge Replacement/Rehabilitation Project will not cause or exacerbate an exceedance of the annual National Ambient Air Quality Standards (NAAQS) for $PM_{2.5}$. As such, the project meets the Transportation Conformity Rule requirements in 40 CFR 93.116 and 93.123 for $PM_{2.5}$.

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1.0 INTRODUCTION

The Clean Air Act (CAA) requires the United States Environmental Protection Agency (USEPA) to establish National Ambient Air Quality Standards (NAAQS) for the following pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter smaller than 10 microns in diameter (PM_{10}), particulate matter smaller than 2.5 microns in diameter ($PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb).

The USEPA also must identify all geographic areas in compliance with the NAAQS and those not attaining the NAAQS. Areas not in NAAQS compliance are designated as nonattainment areas. The CAA requires that a State Implementation Plan (SIP) be prepared for each nonattainment area.

The USEPA's Transportation Conformity Rule requires SIP conformity determinations on transportation plans, programs, and projects before they are approved or adopted. Conformity is defined as conformity to a SIP purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of the standards.

The Conformity Rule also establishes the process by which federal agencies determine conformance of proposed projects that are federally funded or require federal approval, such as the Brent Spence Bridge Replacement/Rehabilitation Project. This determination must demonstrate that the project would not cause or contribute to new violations of air quality standards, exacerbate existing violations, or interfere with timely attainment or required interim emissions reductions towards attainment.

1.1 Project Background

The Interstate 75 (I-75) corridor within the Greater Cincinnati/Northern Kentucky region is a major thoroughfare for local and regional mobility. Locally, it connects to I-71, I-74 and US Route 50. The Brent Spence Bridge provides an interstate connection over the Ohio River and carries both I-71 and I-75 traffic (Exhibit 1). The bridge also facilitates local travel by providing access to Covington, Kentucky and downtown Cincinnati, Ohio. Safety, congestion and geometric problems exist on the structure and its approaches. The Brent Spence Bridge, which opened to traffic in 1963, was designed to carry 80,000 vehicles per day. Currently, approximately 160,000 vehicles per day use the Brent Spence Bridge and traffic volumes are projected to increase to approximately 233,000 vehicles per day in 2035 for the No Build Alternative.

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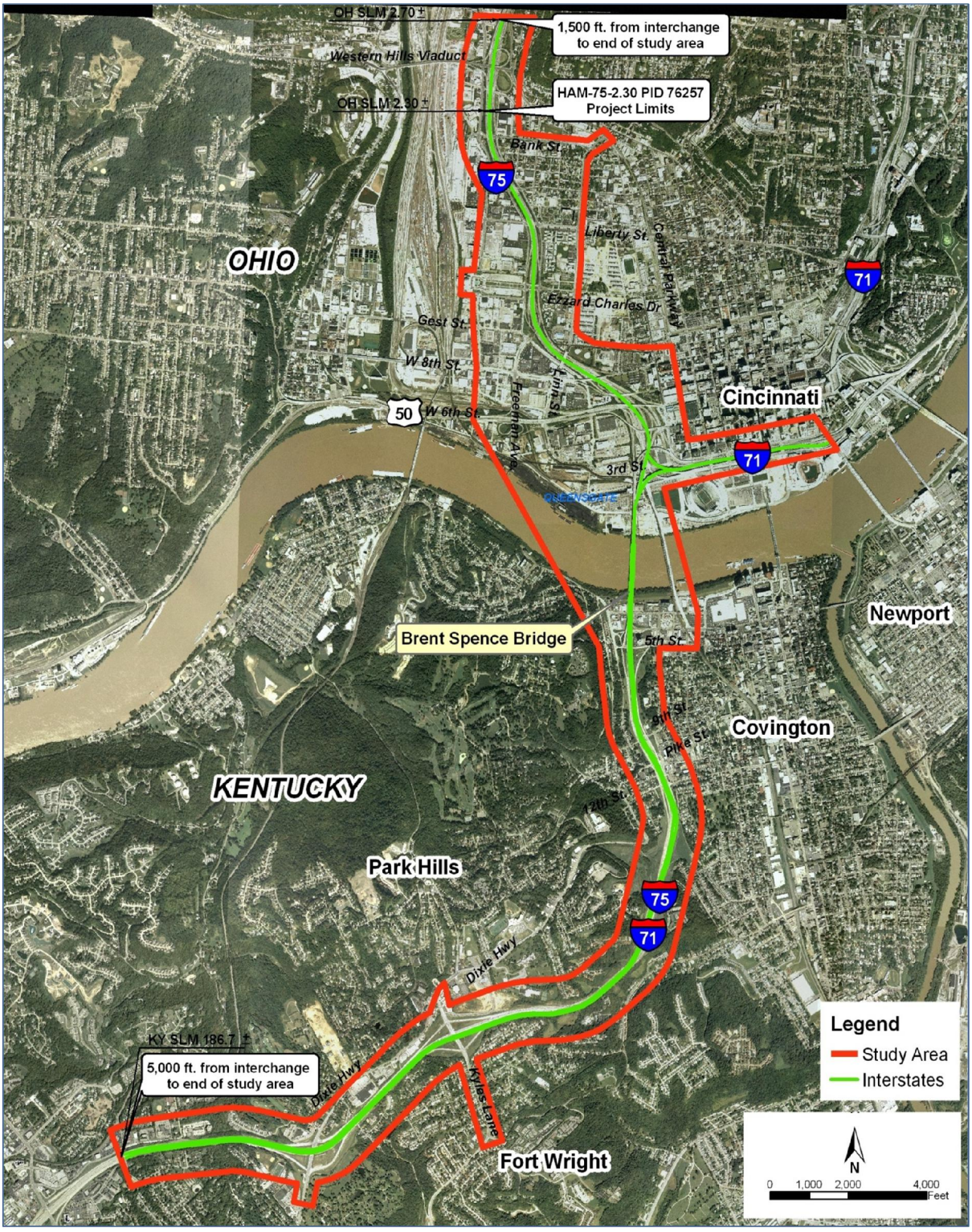

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Exhibit 1. Project Study Area Limits

The I-75 corridor within the Greater Cincinnati/Northern Kentucky region is experiencing problems that threaten the overall efficiency and flexibility of this vital trade corridor. Areas of concern include, but are not limited to, growing demand and congestion, land use pressures, environmental concerns, adequate safety margins, and maintaining linkage in key mobility, trade, and national defense highways

The I-75 corridor has been the subject of numerous planning and engineering studies over the years and is a strategic link in the region's and the nation's highway network. As such, the Ohio Department of Transportation (ODOT) and the Kentucky Transportation Cabinet (KYTC), in cooperation with the Federal Highway Administration (FHWA), are proposing to improve the operational characteristics of I-75, I-71 and the Brent Spence Bridge in the Greater Cincinnati/Northern Kentucky region through a major transportation project.

1.2 Purpose and Need

The Brent Spence Bridge Replacement/Rehabilitation Project is intended to improve the operational characteristics within the corridor for both local and through traffic. In the Greater Cincinnati/Northern Kentucky region, the interstate corridor suffers from congestion and safety–related issues as a result of inadequate capacity to accommodate current traffic demand. The objectives of this project are to:

- Improve traffic flow and level of service;
- Improve safety;
- Correct geometric deficiencies; and
- Maintain connections to key regional and national transportation corridors.

1.3 Study Corridor

The overall project corridor is located along a 7.8-mile segment of I-75 within the Commonwealth of Kentucky (state line mile 186.7) and the State of Ohio (state line mile 2.7). The southern limit of the project is 5,000 feet south of the midpoint of the Dixie Highway Interchange on I-71/I-75 in Fort Wright, south of Covington, Kentucky. The northern limit of the project is 1,500 feet north of the midpoint of the Western Hills Viaduct Interchange on I-75 in Cincinnati, Ohio. The eastern and western limits of the study area generally follow the existing alignment of I-75. The project study area limits are depicted in Exhibit 1.

1.4 Feasible Alternatives

The Brent Spence Bridge Rehabilitation/Reconstruction project is currently in Steps 6 and 7 of ODOT's Project Development Process (PDP). Two feasible alternatives and the No Build Alternative are being developed and studied in more detail. The two feasible Build alternatives selected for Steps 6 and 7 are Alternative E and Alternative I, which is a combination of Conceptual Alternatives C and D from Step 5 of the PDP.

1.4.1 Alternative E

Alternative E utilizes the existing I-71/I-75 alignment from the southern project limits at the Dixie Highway Interchange north to the Kyles Lane Interchange. The Dixie Highway and Kyles Lane interchanges will be modified slightly to accommodate a collector-distributor (C-D) roadway, which will be constructed along both sides of I-71/I-75 between the two interchanges. North of the Kyles Lane Interchange, the alignment shifts to the west to accommodate additional I-71/I-

75 travel lanes. Between Kyles Lane and KY 12th Street, six lanes will be provided in each direction for a total of 12 travel lanes.

Near KY 12th Street, the northbound alignment separates into two routes; one for interstate traffic and one for a local C-D roadway. Between Pike Street and KY 9th Street, the interstate separates into I-71 and I-75 only routes. The C-D roadway will carry local traffic northbound and provide access to Covington at KY 12th and 5th streets and access from KY 9th and 4th streets. The southbound C-D roadway will carry traffic from Ohio and cross over I-71 and I-75 and provide access to both the interstate and into Covington at KY 9th Street.

A portion of Crescent Avenue will be closed with a new connection to Bullock Street. Access from Covington for southbound interstate traffic is located at KY 12th Street. Bullock Street will be extended north from Pike Street to KY 9th, 5th, and 4th streets and Jillians Way will be extended north from Pike Street to KY 9th and 5th, and 4th streets. Bullock Street and Jillians Way will function as one way pair local frontage roadways.

A new double deck bridge, the new Ohio River Bridge, will be built just west (downstream) of the existing Brent Spence Bridge to carry northbound and southbound I-71 and I-75 traffic. On the upper deck, I-71 southbound will have three lanes and I-71 northbound will have two lanes. On the lower deck, I-75 will have three northbound and three southbound lanes. The existing Brent Spence Bridge will be rehabilitated to carry northbound and southbound local traffic with two lanes in the southbound direction and three lanes in the northbound direction.

In Ohio, Alternative E reconfigures I-75 through the I-71/I-75/US 50 Interchange and eliminates some of the existing access points along I-75. Existing ramps to I-71, US 50 and downtown Cincinnati will be reconfigured. The existing direct connections between I-75 to westbound and from eastbound US 50 will be maintained in Alternative E. US 50 will be reconfigured to eliminate left-hand entrances and exits. The OH 5th Street overpass will be eliminated and the OH 6th Street Expressway will be reconfigured as a two-way, six-lane elevated roadway with a new signalized intersection for US 50 access and egress. Access between southbound I-71 (Fort Washington Way) and northbound I-75 will be provided near OH 9th Street as a direct connection. Both I-75 southbound and US 50 (OH 6th Street Expressway) will have access to northbound I-71 (Fort Washington Way).

A local C-D roadway will carry local traffic northbound from the existing Brent Spence Bridge and provide access to OH 2nd, 5th, and 9th streets, Winchell Avenue and access from OH 4th before reconnecting to I-75 just south of the Linn Street overpass. The northbound ramps from OH 6th and 9th streets to I-75 will be removed requiring traffic from these points to utilize a new local roadway parallel to I-75 connecting to Winchell Avenue and access the interstate at Bank Street. Southbound I-75 traffic will separate from the local C-D roadway near Ezzard Charles Drive. The southbound C-D roadway will carry traffic over I-75 to OH 7th Street, allowing traffic to either access downtown at 7th Street, travel south to OH 5th and 2nd streets, or travel across the existing Brent Spence Bridge into Covington. Access to the local southbound C-D roadway will be provided at Western Avenue and at OH 4th and 8th streets.

Alternative E also improves Western and Winchell avenues to facilitate traffic flow and increase capacity. The ramps to Western Avenue and from Winchell Avenue just north of Ezzard Charles Drive will be removed. The ramp from Freeman Avenue to I-75 northbound and the ramp from I-75 southbound to Freeman Avenue will remain. Between Ezzard Charles Drive and

Western Hills Viaduct, southbound I-75 will have six lanes, northbound I-75 will have five lanes. The Western Hills Viaduct Interchange will be reconfigured to provide a full movement interchange. The improved interchange will be a single point urban interchange (SPUI) design.

1.4.2 Alternative I

Alternative I is a combination of Alternatives C and D with certain design elements of Alternative G. Alternative I utilizes the existing I-71/I-75 alignment from the southern project limits at the Dixie Highway Interchange north to the Kyles Lane Interchange. The Dixie Highway and Kyles Lane interchanges will be modified slightly to accommodate a C-D roadway, which will be constructed along both sides of I-71/I-75 between the two interchanges. North of the Kyles Lane Interchange, the alignment shifts to the west to accommodate additional I-71/I-75 travel lanes. Between Kyles Lane and KY 12th Street, six lanes will be provided in each direction for a total of 12 travel lanes. Near KY 12th Street, the alignment northbound separates into three routes for I-71, I-75 and a local C-D roadway.

In Alternative I, access into Covington from the interstate will be provided by the local C-D roadway; at KY 12th Street for northbound traffic and at KY 5th and 9th streets for southbound traffic. Access from Covington for northbound traffic will be provided by a ramp located between Pike Street and KY 9th Street from Jillians Way. The ramp will provide direct access to I-71 from Covington and provide access to I-75 northbound using the C-D roadway through downtown Cincinnati and connecting at the merge near Ezzard Charles Drive. Access from Covington will also be provided at KY 4th Street to the northbound C-D roadway. Access from Covington for southbound interstate traffic is located at KY 12th Street. Bullock Street will be extended north from Pike Street to KY 9th and 4th streets and Jillians Way will be extended north from Pike Street to KY 9th and 5th streets. Bullock Street and Jillians Way will function as one way pair local frontage roadways.

A new double deck bridge will be built just west of the existing Brent Spence Bridge to carry northbound and southbound I-75 (three lanes in each direction), two lanes for southbound I-71 and three lanes for southbound local traffic. The existing Brent Spence Bridge will be rehabilitated to carry two lanes for northbound I-71 and three lanes for northbound local traffic.

Alternative I reconfigures I-75 through the I-71/I-75/US 50 Interchange and eliminates all access to and from I-75 from KY 12th Street to the Freeman Avenue overpass in the northbound direction. Alternative I eliminates access to I-75 southbound between the Freeman Avenue exit and KY 9th Street. Alternative I also eliminates access from I-75 southbound between the US 50/6th Street overpass and Kyles Lane.

In Ohio, a local C-D roadway will be constructed along both sides of I-75. The local northbound C-D roadway will carry local traffic from the existing bridge and provide access ramps to OH 2nd Street, I-71 northbound, US 50 westbound, OH 5th Street, and Winchell Avenue before reconnecting to I-75 just south of Ezzard Charles Drive. The northbound ramps from OH 4th Street will utilize the new local northbound C-D roadway for access to I-75. The northbound ramps from OH 6th and 9th streets to I-75 will be removed requiring traffic from these two points to utilize a new local roadway parallel to I-75 connecting to Winchell Avenue and access the interstate at Bank Street. The southbound C-D roadway begins near the Ezzard Charles Drive overpass and carries both downtown Covington and Cincinnati traffic. The southbound C-D roadway will provide access to OH 7th, 5th and 2nd streets, as well as connecting to access

ramps from Western Avenue, OH 9th Street, and US 50 eastbound. The C-D roadway will continue south over the new bridge into Covington.

Between Ezzard Charles Drive and the Western Hills Viaduct, northbound I-75 will have five lanes and southbound I-75 will have six lanes, for a total of 11 travel lanes. The ramps to Western Avenue and from Winchell Avenue just north of Ezzard Charles Drive to the Interstate will be eliminated. The southbound ramp to Freeman Avenue and the northbound ramp from Freeman Avenue to I-75 will remain. Alternative I also improves Western and Winchell avenues to facilitate traffic flow and increase capacity. Ramps to Western Avenue and from Winchell Avenue will be provided around the Western Hills Viaduct Interchange, which will be reconfigured to be a Tight Urban Diamond design.

1.4.3 No Build Alternative

The No Build Alternative consists of minor, short-term safety and maintenance improvements to the Brent Spence Bridge and I-75 corridor, which would maintain continuing operations all within existing right-of-way.

The No Build Alternative does not meet the purpose and need for this project. This alternative does not improve traffic flow, and existing congestion will increase. The No Build Alternative does not provide improvements for safety. Lane widths would remain and the lack of shoulders on the Brent Spence Bridge would continue. Geometric deficiencies would not be corrected. The No Build Alternative would maintain existing connections to local, regional, and national transportation corridors, but does not improve these connections. The No Build Alternative is retained as a baseline alternative to compare with the feasible Build Alternatives.

2.0 EXISTING CONDITIONS

2.1 National Ambient Air Quality Standards

As required by the Clean Air Act (CAA), National Ambient Air Quality Standards (NAAQS) have been established by the United States Environmental Protection Agency (USEPA) for the following pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter smaller than 10 microns in diameter (PM_{10}), particulate matter smaller than 2.5 microns in diameter ($PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). These standards are summarized in Table 1. The "primary" standards, as identified in this table, have been established by the USEPA to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation and other aspects of the general welfare.

Based on data from the USEPA, $PM_{2.5}$ poses a health concern because it can be inhaled and accumulated in the respiratory system. Sources of $PM_{2.5}$ include all types of combustion (motor vehicles, power plants, wood burning, etc.) and some industrial processes. The current NAAQS for $PM_{2.5}$ are a 24-hour maximum level of 35.0 micrograms per cubic meter ($\mu g/m^3$) and an annual averaged level of 15.0 $\mu g/m^3$.

2.2 Applicability of Conformity Rule

Transportation conformity is required under CAA section 176(c) (42 U.S.C. 7506(c)) to ensure that federally supported highway and transit projects are consistent with ("conform to") the purpose of the state implementation plan (SIP). Conformity to the SIP means that transportation activities will not cause new air quality violations, increase existing violations, or delay timely attainment of the relevant NAAQS. USEPA's Transportation Conformity Rule (40 CFR 51.390 and Part 93) establishes the criteria and procedures for determining whether transportation activities conform to the SIP. The SIP sets forth strategies for achieving NAAQS. Projects must also be included in a Transportation Improvement Program (TIP) that conforms with the SIP. Localized impacts from proposed projects must conform to the SIP in non-attainment and maintenance areas.

On March 10, 2006, the USEPA published a final rule that establishes the transportation conformity criteria and procedures for determining which transportation projects must be analyzed for local air quality impacts in $PM_{2.5}$ and PM_{10} nonattainment and maintenance areas (71 CFR 12468). Section 107 of the 1977 Clean Air Act Amendment requires that the USEPA publish a list of all geographic areas in compliance with the NAAQS, plus those not attaining the NAAQS. Areas not in NAAQS compliance are deemed nonattainment areas. Previously designated nonattainment areas that have since demonstrated compliance with the NAAQS are designated as maintenance areas. An area's designation is based on the data collected by the state monitoring network on a pollutant-by-pollutant basis.

The project area is located in Kenton County, Kentucky and Hamilton County, Ohio. The USEPA has classified both counties as nonattainment areas for the annual $PM_{2.5}$ standard. As such, the Brent Spence Bridge Replacement/Rehabilitation Project must demonstrate compliance with the Conformity Rule for this standard. A request for redesignation to maintenance was submitted by the Ohio Environmental Protection Agency (OEPA) to the USEPA in December of 2010, and the Kentucky Energy and Environment Cabinet made a redesignation request for northern Kentucky in January 2011.

Table 1. National Ambient Air Quality Standards

Pollutant	Primary Standards		Secondary Standards	
	Level	Averaging Time	Level	Averaging Time
Carbon Monoxide	9 ppm (10 mg/m^3)	8-hour [1]	None	
	35 ppm (40 mg/m^3)	1-hour [1]		
Lead	0.15 $\mu g/m^3$ [2]	Rolling 3-Month Average	Same as Primary	
	1.5 $\mu g/m^3$	Quarterly Average	Same as Primary	
Nitrogen Dioxide	0.053 ppm (100 $\mu g/m^3$)	Annual (Arithmetic Mean)	Same as Primary	
	0.100 ppm	1-hour [3]	None	
Particulate Matter (PM_{10})	150 $\mu g/m^3$	24-hour [4]	Same as Primary	
Particulate Matter ($PM_{2.5}$)	15.0 $\mu g/m^3$	Annual [5] (Arithmetic Mean)	Same as Primary	
	35 $\mu g/m^3$	24-hour [6]	Same as Primary	
Ozone	0.075 ppm (2008 std)	8-hour [7]	Same as Primary	
	0.08 ppm (1997 std)	8-hour [8]	Same as Primary	
	0.12 ppm	1-hour [9]	Same as Primary	
Sulfur Dioxide	0.03 ppm	Annual (Arithmetic Mean)	0.5 ppm (1300 $\mu g/m^3$)	3-hour [1]
	0.14 ppm	24-hour [1]		

[1] Not to be exceeded more than once per year.
[2] Final rule signed October 15, 2008.
[3] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).
[4] Not to be exceeded more than once per year on average over 3 years.
[5] To attain this standard, the 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m3.
[6] To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m3 (effective December 17, 2006).
[7] To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (effective May 27, 2008)
[8] (a) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
(b) The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as USEPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.
(c) USEPA is in the process of reconsidering these standards (set in March 2008).
[9] (a) USEPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard ("anti-backsliding").
(b) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is <1.

Source: http://www.epa.gov/air/criteria.html

3.0 AFFECTED ENVIRONMENT

3.1 Meteorology

The Brent Spence Bridge Replacement/Rehabilitation Project is located in the Greater Cincinnati/Northern Kentucky region. The study area is located within the northern limit of the humid subtropical climate and the southern limit of the humid continental climate zone, with average temperatures by United States standards. Summers are hot, humid and wet. July is the warmest month, with an average high of 87°F (31°C) and an average low of 68°F (20°C). Winters are generally cool to cold, with occasional snowfall. January is the coldest month, with an average high of 38°F (3°C) and an average low of 21°F (-6°C). Precipitation is fairly evenly distributed each month, averaging 41 inches of rainfall and 23.4 inches of snowfall annually. The meteorology in the region can generally be categorized as variable, since wind speed and intensity vary during the day.

3.2 Air Quality Data

The monitored data for all $PM_{2.5}$ monitors within the vicinity of the project are shown in Table 2. The 2101 West 8th Street monitor is the nearest monitor to the study area in Ohio. The 1401 Dixie Highway monitor is the nearest monitor to the study area in Kentucky. This table presents the last three years of available monitored at each of these stations in order to illustrate the region's general air quality trends. As highlighted in Table 2, $PM_{2.5}$ monitored values are trending downward near the study area, indicating an improvement in $PM_{2.5}$ air quality levels.

3.3 Re-entrained Road Dust

The study area is within a densely populated urban area with few unpaved roads. Re-entrained road dust is primarily generated by traffic on non-paved roads (i.e. dirt or gravel roads). This hot-spot analysis does not consider $PM_{2.5}$ road dust emissions because a finding of significance has not been made by the United States Environmental Protection Agency (USEPA) or the state environmental agencies.

Table 2. $PM_{2.5}$ Monitored Data for the Study Area

Standard/ Exceedance	250 William Howard Taft Cincinnati, OH			11590 Grooms Rd Cincinnati, OH			Seymour & Vine St Cincinnati, OH			2101 W. 8th St Cincinnati, OH			2059 Sherman Ave Norwood, OH			300 Murray Rd St. Bernard, OH			3254 E. Kemper Rd Sharonville, OH		
	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009
24-hour Concentration - 98th Percentile (microgram per cubic meter [µg/m3])	34.7	25.5	24.8	34.7	27.0	24.2	36.5	34.7	31.1	35.9	27.5	27.0	33.7	30.3	25.7	35.4	31.0	28.7	34.0	28.2	N/A
National Annual Average (µg/m3)	15.09	12.62	12.73	14.63	12.48	12.11	16.59	15.25	13.89	15.90	14.40	13.71	15.09	13.74	12.97	16.07	14.40	13.44	14.85	13.32	N/A

Standard/ Exceedance	Bonita and St. John Middletown, OH			400 Nilles Rd Fairfield, OH			2400 Clermont Center Drive Batavia, OH			416 Southeast Street Lebanon, OH			1401 Dixie Highway Covington, KY			524a John Hill Road Highland Heights, KY		
	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009
24-hour Concentration - 98th Percentile (microgram per cubic meter [µg/m3])	36.8	30.9	25.3	34.5	31.5	27.2	33.5	23.6	22.0	33.6	24.2	23.6	31.6	25.2	23.1	34.0	26.1	22.5
National Annual Average (µg/m3)	15.41	14.32	12.68	14.94	13.75	13.08	14.01	11.75	11.01	13.98	11.92	11.70	14.20	11.99	11.04	14.36	11.83	11.34

Source: http://epa.ohio.gov/portals/27/SIP/Appendix_A-2_1_AQS_Data.pdf
N/A = data not available

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4.0 CONFORMITY DETERMINATION

Impacts from small particulate matter ($PM_{2.5}$) can be both regional and local. $PM_{2.5}$ comes from disturbed vacant land, construction activity, and paved road dust. Motor vehicle exhaust, particularly from diesel vehicles, is also a source of $PM_{2.5}$. $PM_{2.5}$ is also created by secondary formation from precursor elements such as sulfur dioxide (SO_2), nitrogen oxides (NO_X), volatile organic compounds (VOCs), and ammonia (NH_3). Secondary formation occurs due to chemical reactions in the atmosphere generally downwind from the original emission source. Thus it is appropriate to predict concentrations of $PM_{2.5}$ on both a regional and a localized basis.

4.1 Agency Roles and Responsibility

The Ohio Department of Transportation (ODOT) and Kentucky Transportation Cabinet (KYTC) are the project sponsors and are responsible for developing this $PM_{2.5}$ hot-spot analysis; the Federal Highway Administration (FHWA) is responsible for making project level conformity determinations. ODOT and KYTC, in cooperation with the FHWA, is responsible for conducting the environmental analysis and review to comply with the National Environmental Policy Act (NEPA), as required by the Council on Environmental Quality regulations (40 CFR 1500-1508) and the FHWA/Federal Transit Administration (FTA) Environmental Impact and Related Procedures (23 CFR 771). FHWA is also responsible for determining that the requirements of the transportation Conformity Rule are met. The $PM_{2.5}$ hot-spot analysis will be included in the environmental document for this project. In Ohio, the Ohio Environmental Protection Agency (OEPA) and the United States Environmental Protection Agency (USEPA) are responsible for developing the conformity State Implementation Plan (SIP) and other SIP documents, which are submitted to USEPA for approval. OEPA is also an active member of the interagency consultation process addressed below in this analysis. In Kentucky, the KYTC, the Kentucky Energy and Environmental Cabinet, and the USEPA are responsible for developing the SIP and related documents.

OEPA prepared its SIP for $PM_{2.5}$ in July 2008 and submitted it to USEPA on July 16, 2008. The submittal included a demonstration of attainment of the air quality standards by April 2010, and is in the process of applying to have the area re-designated as attainment for $PM_{2.5}$. Over the past two years, several mobile diesel reduction projects have taken place in all of Ohio's nonattainment areas. Ohio's Diesel Emission Reduction Grant Program (DERG) earmarked $19.8 million over the biennium to reduce diesel emissions. OEPA believes that after looking at the emissions reductions that will occur as a result of federal and state rules, other local control measures, trends in ambient monitoring data, as well as the air quality modeling, the weight-of-evidence allows OEPA to conclude that Ohio has been able to attain and maintain the $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) throughout the State. In December 2010, OEPA submitted a Clean Data Request to USEPA for the $PM_{2.5}$ annual standard. The request asks USEPA to make a determination of attainment of the $PM_{2.5}$ annual standard for the currently nonattaining areas in the State of Ohio.

Additionally, in January 2011, the Energy and Environment Cabinet of Kentucky requested that the USEPA make a determination of attainment of the annual $PM_{2.5}$ standard for the nonattaining areas in northern Kentucky, including Kenton County.

4.2 The Conformity Analysis Interagency Consultation Process

Ohio Administrative Code (OAC) Section 3745-101-04 defines the consultation procedures for the state formally. Similarly, in Kentucky, the amendment to 401 KAR 50:066 contains interagency consultation procedures to be used by state, local and federal air quality and transportation planning agencies when determining whether or not federally funded transportation activities conform to the SIP.

In general, the lead agencies in the conformity process assume responsibility for preparing and distributing draft documents with supporting information, and assure that each affected party involved in the conformity process is included in the consultation process. Following the USEPA's release of designations for fine particles, area's planning partners have devoted considerable effort to coordinate their activities with each other, USEPA, and FHWA. Frequent e-mail and phone conversations have taken place, and a $PM_{2.5}$ conformity training session was held on September 22, 2005. Hosted by ODOT, the session provided Ohio metropolitan planning organizations (MPOs), ODOT, OEPA and FHWA staffs with an in depth review of conformity issues related to the fine particles standard. On December 9, 2010, it was determined that the Brent Spence Bridge Replacement/Rehabilitation Project was a project of air quality concern.

4.3 Public Participation

ODOT will solicit public comments on the qualitative hot-spot analysis via the Brent Spence Bridge Rehabilitation/Replacement project website. Public comments may also be submitted during public hearings for the project.

4.4 Regional Impacts

The regional (or mesoscale) analysis of a project determines its overall impact on regional air quality levels. A transportation project can be analyzed as part of a regional transportation network developed by a MPO, county or state. Projects included in such a network are often found in an area's Transportation Improvement Plan (TIP). The TIP utilizes estimated vehicle miles traveled (VMT) and vehicle hours traveled (VHT) within a region to estimate daily "pollutant burden" levels. The results of this analysis can be used to determine if an area is in conformity with regulations set forth in the Final Conformity Rule.

The latest regional emissions and air quality conformity analysis was completed in June 2008 with the adoption of the Ohio Kentucky Indiana Regional Council of Governments (OKI) 2030 Regional Transportation Plan (RTP) and amended FY 2008-FY 2011 TIP. With the RTP's local adoption, it was submitted to the Federal Highway and Federal Transit administrations. The Brent Spence Bridge Rehabilitation/Replacement Project, identified as KYTC Project ID #6-17.03, 6-17.04, and ODOT PID 75119, was included in this analysis. This analysis found that the RTP and, therefore, the individual projects contained in the plan, are conforming projects, and will have air quality impacts consistent with those identified in the SIP for achieving the NAAQS.

Though the conformity analysis conducted by OKI determined that the project conforms to the air quality goals of the area, a project level regional analysis was conducted to estimate the project's impact on regional air quality levels. The regional analysis utilizes VMT and VHT within the region, with corresponding emission factors from the USEPA latest emission factor program, MOBILE6.2, to determine daily "pollutant burden" levels under each alternative. To determine

the year that the highest $PM_{2.5}$ levels are expected to occur, a screening analysis of the opening year (2022) VMT and emissions vs. the design year (2035) VMT and emissions was conducted. The VMT from 2022 to 2035 is predicted to increase by approximately 13 percent. $PM_{2.5}$ emissions are predicted to decrease by approximately 4 percent during this same time period. Based on this information, the VMT growth rate will negate the predicted decrease in $PM_{2.5}$ emissions in the year 2035, making 2035 the predicted worst case analysis year for estimating $PM_{2.5}$ project impacts.

The regional emissions analysis was conducted for the No Build and Build Alternatives (Alternative E and Alternative I). The analysis was based on regional VMT estimates by roadway type along with associated VHT estimates. Emission factors were obtained using USEPA's MOBILE6.2 emission factor program with area specific data supplied by OKI. The results for the study area are shown in Table 3. The project is predicted to reduce overall VMT and direct $PM_{2.5}$ emissions by approximately 0.1 percent. The project is also predicted to increase overall NO_x emissions (which can react in the atmosphere and indirectly form $PM_{2.5}$) by approximately 0.1 percent under Alternative E and 0.2 percent under Alternative I. These changes are very small and are essentially not measurable. The overall effect of the project on regional $PM_{2.5}$ and NO_x levels, therefore, will likely result in no measurable changes in regional $PM_{2.5}$ and NO_x burden levels.

Table 3. Regional $PM_{2.5}$ Emissions with Project Alternatives

Alternative	VMT (miles)	Average Speed	Emission Burden (Tons per Day)		Percent Change from No Build Alternative		
			$PM_{2.5}$	NOx	VMT	$PM_{2.5}$	NOx
2035 No Build	89,731,288	32.0	1.3	32.5	Not Applicable	Not Applicable	Not Applicable
2035 Alternative E	89,667,285	32.0	1.3	32.6	-0.1	-0.1	0.1
2035 Alternative I	89,667,285	32.0	1.3	32.6	-0.1	-0.1	0.2

4.5 Localized Impacts

Because the study area is classified as a nonattainment area for the 1997 (annual) $PM_{2.5}$ standard, a determination must be made, following USEPA's March 29, 2006 guidance "*Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas"* (EPA420-B-06-902), as recommended in USEPA's Final Rule regarding the localized or "hot-spot" analysis of $PM_{2.5}$ and PM_{10} (40 CFR Part 93 – issued on March 10, 2006), as to whether the project is one of air quality concern.

Following these guidelines, a $PM_{2.5}$ hot-spot analysis should be conducted according to qualitative guidance only if the project is an air quality concern, as defined in 40 CFR 93.123(b)(1) as:

- New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;

- Projects affecting intersections that are at level of service (LOS) D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E or F because of increased traffic volumes from a significant number of diesel vehicles;
- New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;
- Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and
- Projects in or affecting locations, areas, or categories of sites which are identified in the $PM_{2.5}$ or PM_{10} applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

Examples of projects of air quality concern that would be covered by 40 CFR 93.123(b)(1)(i) and (ii) include:

- A project on a new highway or expressway that serves a significant volume of diesel truck traffic, such as facilities with greater than 125,000 annual average daily traffic (AADT) where eight percent or more of such AADT is diesel truck traffic;
- New exit ramps and other highway facility improvements to connect a highway or expressway to a major freight, bus, or intermodal terminal;
- Expansion of an existing highway or other facility that affects a congested intersection (operated at LOS D, E, or F) that has a significant increase in the number of diesel trucks; and
- Similar highway projects that involve a significant increase in the number of diesel transit buses and/or diesel trucks.

Examples of projects of air quality concern that would be covered by 40 CFR 93.123(b)(1)(iii) and (iv) include:

- A major new bus or intermodal terminal that is considered to be a “regionally significant project” under 40 CFR 93.101; and
- An existing bus or intermodal terminal that has a large vehicle fleet where the number of diesel buses increases by 50 percent or more, as measured by bus arrivals.

The Brent Spence Bridge Replacement/Rehabilitation Project is not proposing to expand or create new bus or rail terminals. As such, the applicable concerns regarding this project involve increasing diesel truck traffic on the highways and affecting congested intersections with a significant increase in the number of diesel trucks.

4.6 Determination of Project Significance

The study area includes numerous roadway links with a total Average Daily Traffic (ADT) of over 125,000, along with eight percent trucks. As discussed in FHWA’s frequently asked questions document regarding USEPA’s guidance, 125,000 ADT and eight percent trucks is an example of a roadway that may be of concern, rather than a strict guideline. Applying these guidance values, a roadway of concern is one with approximately 10,000 trucks (125,000 times eight percent). A sampling of roadway segments in the study area is shown in Table 4. Both 2022 and 2035 values are shown in this table to fully highlight predicted project impacts, though,

as described previously, 2035 values are expected to demonstrate the highest project impacts. Full ADT and truck percentage information for the project can be found in Appendix A

There are intersections that are projected to experience an increase in traffic due to the project. Seventy intersections within the study area were screened to determine if the project caused any sites to deteriorate to a LOS D or below. Forty-eight of these intersections are located in Ohio and 22 are located in Kentucky. Sixteen out of 70 sites failed the screening, which indicates that these sites experience a deterioration in LOS to D or below because of the project. Nine of the failing intersections are located in Ohio and seven are located in Kentucky. These locations generally experience an increase in overall traffic volume, with a corresponding increase in truck volumes. The decreases in LOS are generally due to the overall increase in volume rather than a significant increase in diesel truck traffic.

Based on the volumes and truck percentages along the affected roadways, project-related changes in volumes and levels of service on these roadways, and monitored ambient air quality data within the study area, ODOT has determined that the project is one of air quality concern.

Table 4. AADT and Truck Percentages within the Study Area

Roadway Segment	Alternative	Average Daily Traffic (2022)	Average Daily Traffic (2035)	Trucks (%)	Number of Trucks (2022)	Percent of Truck Change as Compared to the No Build Alternative (2022)	Number of Trucks (2035)	Percent of Truck Change as Compared to the No Build Alternative (2035)
Ohio								
Western Hills Viaduct – Upper Level	No Build	38,081	43,340	5	1,904	Not Applicable	2,167	Not Applicable
	Alternative E	37,150	42,280	5	1,857	-2.5	2,114	-2.4
	Alternative I	35,568	40,480	5	1,778	-6.6	2,024	-6.6
Western Hills Viaduct – Lower Level	No Build	18,144	20,650	3	544	Not Applicable	620	Not Applicable
	Alternative E	16,290	18,540	3	489	-10.1	556	-10.3
	Alternative I	11,361	12,930	3	341	-37.3	388	-37.4
I-75 North of Western Hills Viaduct	No Build	159,451	181,470	18	28,701	Not Applicable	32,662	Not Applicable
	Alternative E	160,356	182,500	18	28,864	0.6	32,817	0.5
	Alternative I	168,826	192,140	18	30,389	5.9	34,504	5.6
I-75 North of OH 9th Street (including C-D roads as applicable)	No Build	127,740	145,380	18	22,993	Not Applicable	26,168	Not Applicable
	Alternative E	152,448	173,500	18	27,441	19.3	31,230	19.3
	Alternative I	151,376	172,280	18	27,248	18.5	31,010	18.5
West OH 9th Street to Winchell Avenue/I-75NB	No Build	13,189	15,010	3	396	Not Applicable	450	Not Applicable
	Alternative E	8,708	9,910	3	261	-34.1	297	-34
	Alternative I	8,672	9,870	3	260	-34.3	2,96	-34.2
Intersection of McMillan Street and McMicken Avenue	No Build	11,590	13,190	5	579	Not Applicable	660	Not Applicable
	Alternative E	15,675	17,840	4	627	8.3	714	8.2
	Alternative I	17,468	19,880	5	873	50.8	994	50.6

Table 4. AADT and Truck Percentages within the Study Area (Continued)

Roadway Segment	Alternative	Average Daily Traffic (2022)	Average Daily Traffic (2035)	Trucks (%)	Number of Trucks (2022)	Percent of Truck Change as Compared to the No Build Alternative (2022)	Number of Trucks (2035)	Percent of Truck Change as Compared to the No Build Alternative (2035)
Kentucky								
Brent Spence Bridge	No Build	173,149	197,060	11	19,046	Not Applicable	21,677	Not Applicable
	Alternative E	204,649	232,910	20	40,930	114.9	46,582	114.9
	Alternative I	204,649	232,910	16	32,744	71.9	37,266	71.9
I-71/I-75 Between Pike Street and KY 5th Street	No Build	166,770	189,800	17	28,351	Not Applicable	32,266	Not Applicable
	Alternative E	219,235	249,510	17	37,270	31.5	42,417	31.5
	Alternative I	188,851	214,930	16	30,216	6.6	34,389	6.6
I-71/I-75 Between KY 12th Street and Pike Street	No Build	166,515	189,510	17	28,308	Not Applicable	32,217	Not Applicable
	Alternative E	197,954	225,290	18	35,632	25.9	40,552	25.9
	Alternative I	193,886	220,660	16	31,022	9.6	35,306	9.6
I-71/I-75 Between Kyles Lane and KY 12th Street	No Build	164,187	186,860	19	31,196	Not Applicable	35,503	Not Applicable
	Alternative E	194,870	221,780	19	37,025	18.7	42,138	18.7
	Alternative I	194,870	221,780	19	37,025	18.7	42,138	18.7
I-71/I-75 Between Dixie Highway and Kyles Lane	No Build	158,555	180,450	20	31,711	Not Applicable	36,090	Not Applicable
	Alternative E	187,225	213,080	19	35,573	12.2	40,485	12.2
	Alternative I	187,225	213,080	19	35,573	12.2	40,485	12.2
I-71/I-75 South of Dixie Highway	No Build	157,325	179,050	19	29,892	Not Applicable	34,020	Not Applicable
	Alternative E	186,839	212,640	19	35,499	18.8	40,402	18.8
	Alternative I	186,839	212,640	19	35,499	18.8	40,402	18.8

5.0 QUALITATIVE HOT-SPOT ANALYSIS

Because the study area is classified as a nonattainment area for the 1997 (annual) $PM_{2.5}$ standard and the project was determined to be of air quality concern, a qualitative hot-spot analysis, following the United States Environmental Protection Agency's (USEPA) "*Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas",* was conducted, as recommended in the USEPA's Final Rule regarding the localized or "hot-spot" analysis of $PM_{2.5}$ and PM_{10} (40 CFR Part 93 – issued on March 10, 2006).

The USEPA Guidance document describes two analysis methods: the first is to compare the study area to a location that is currently monitored for $PM_{2.5}$ and has similar traffic characteristics (referred to as Method A); the second uses the results of existing air quality studies and information that is available for the project location (Method B). Since an appropriate surrogate monitor was identified that has existing traffic volumes and truck percentages similar to future traffic volumes and truck percentages on the heavily traveled roadways affected by the project, Method A was used for this analysis.

A surrogate monitor (i.e. a monitor not in the geographical area of the project but rather located near a different roadway with similar characteristics) was identified near the study area to simulate air pollution generated with the study area for the opening year (2022) and the design year (2035), based on available average daily traffic (ADT) information and in consultation with members of the interagency consultation group. The monitor, at 11590 Grooms Road in Cincinnati, Ohio, is located near roadways that currently carry traffic volumes with a similar truck percentage to those that are predicted for the Brent Spence Replacement/Rehabilitation Project in 2022 and 2035. This monitor, identified as 39-061-0006, is located approximately four miles east of I-75 in northern Hamilton County and is situated along I-275 (Exhibit 2).

The most recent (2009) traffic counts were provided by the Ohio Department of Transportation's (ODOT)'s web-based traffic count information and maps service. The ADT along I-275 east of the surrogate monitor was 107,580 and the ADT was 136,770 along I-75 with a total ADT for the surrogate site of 244,350 vehicles. As shown in Table 5, the surrogate site ADT for 2009 is higher than the ADTs of the Build Alternatives in 2022 and approximately the same as the 2035 ADTs at the selected analysis locations along the project corridor. These analysis locations were chosen for comparison because they have some of the highest ADTs and truck percentages within the study area, as shown in Table 4. The 14 percent truck percentage for the surrogate site is also similar to the truck percentages for the Build Alternatives (14 percent versus 14 to 17 percent).

The last three full years of monitoring data available (2007 to 2009) at the Grooms Road monitor are shown in Table 6. The highest annual measurement taken at this monitor during this time period occurred in 2007 and was 14.63 $\mu g/m^3$. This value is below the NAAQS of 15.0 $\mu g/m^3$. Therefore, as this site is considered an appropriate representative site, the Brent Spence Replacement/Rehabilitation Project will conform to the annual NAAQS for $PM_{2.5}$ in the opening year and design year. The result of the qualitative hot-spot analysis is that the project would not cause or exacerbate a violation of the annual $PM_{2.5}$ standard. Therefore, the Brent Spence Bridge Replacement/Rehabilitation Project complies with USEPA's Conformity Rule.

Exhibit 2. Surrogate Monitor Site at 11590 Grooms Road Cincinnati, Ohio

Table 5. Comparison of the Study Area ADT and Surrogate Site ADT

Description	Year	Total ADT*	Total Number of Trucks	Truck Percentage
Ohio				
No Build Alternative	2022	215,677	32,744	15
	2035	245,460	35,449	14
Alternative E	2022	213,796	32,814	15
	2035	243,320	37,174	15
Alternative I	2022	215,756	34,196	16
	2035	245,550	36,916	15
Kentucky				
No Build Alternative	2022	166,770	28,351	17
	2035	189,800	32,266	17
Alternative E	2022	219,235	37,270	17
	2035	249,510	42,417	17
Alternative I	2022	188,851	30,216	16
	2035	214,930	34,389	16
Surrogate (11590 Grooms Road)	*2009*	*244,350*	*33,850*	*14*

*Ohio ADTs were calculated using the sum of Western Hills Viaduct Upper Level, Western Hills Viaduct Lower Level and I-75 North of Western Hills Viaduct; Kentucky ADTs represent I-71/I-75 between Pike Street and KY 5th Street

Table 6. Surrogate Monitor $PM_{2.5}$ Data for 2007-2009 data

Standard	11590 Grooms Road Cincinnati, Ohio		
	2007	2008	2009
24-hour Concentration- 98th Percentile (microgram per cubic meter [µg/m^3])	34.7	27.0	24.2
National Annual Average µg/m^3	14.63	12.48	12.11

6.0 CONCLUSION

The results of the regional and localized analyses performed for the Brent Spence Replacement/Rehabilitation Project, conducted for both Ohio and Kentucky using the surrogate monitor method as recommended in EPA's "*Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas",* indicate that air quality levels will not exceed the annual National Ambient Air Quality Standards for $PM_{2.5}$. As such, the project meets the Transportation Conformity Rule requirements in 40 CFR 93.116 and 93.123 for $PM_{2.5}$.

Appendix A ADT and Truck Percentage Data

HAM-71/75-0.00/0.22
PID 75119 - Brent Spence Bridge
KYTC Project Item Number 6-17
TRUCK FACTORS

from machine counts				
SITE CODE	DESCRIPTION	T24	AM TD	PM TD
T-01-KY	IR 71/75 SB to 5th Street	0.04	0.04	0.02
T-02-KY	WB 4th Street to SB CD Road	0.05	0.08	0.04
T-03-KY	EB 4th Street to SB CD Road	0.04	0.04	0.05
T-04-KY	WB 4th Street to Crescent Ave	0.11	0.18	0.07
T-05-KY	IR 71/75 SB to Pike Street	0.05	0.07	0.02
T-06A-KY	SB CD Road to IR 71/75 SB	0.05	0.07	0.04
T-06B-KY	SB CD Road to Pike Street	0.04	0.06	0.02
T-07-KY	W. 12th Street to IR 71/75 SB	0.04	0.05	0.02
T-08-KY	IR 71/75 SB to Kyles	0.06	0.07	0.05
T-09-KY	Kyles Lane to IR 71/75 SB	0.03	0.04	0.02
T-10-KY	4th Street to IR 71/75 NB	0.05	0.05	0.04
T-11-KY	Pike Street to IR 71/75 NB	0.06	0.05	0.03
T-12-KY	IR 71/75 NB to 5th Street	0.04	0.04	0.05
T-13-KY	IR 71/75 NB to 12th Street	0.05	0.05	0.02
T-14-KY	Kyles Lane to IR 71/75 NB	0.06	0.05	0.03
T-15-KY	IR 71/75 NB to Kyles Lane	0.03	0.03	0.03
T-16-KY	IR 71/75 SB btw Kyles and 12th	0.19	0.16	0.14
T-17-KY	IR 71/75 NB btw Kyles and 12th	0.19	0.11	0.12
T-18-KY	IR 71/75 NB north of NB ramp to 5th St	0.18	0.09	0.11
T-19-KY	IR 71/75 SB south of SB ramp to 5th St	0.21	0.14	0.13
T-20-KY	NB Clay Wade Bailey Bridge	0.03	0.02	0.02
T-21-KY	SB Clay Wade Bailey Bridge	0.05	0.07	0.03
01	IR 71/75 SB to Dixie Hwy	0.03	0.04	0.02
02	Dixie Hwy to IR 71/75 SB	0.04	0.03	0.03
03	IR 71/75 NB to Dixie Hwy	0.06	0.07	0.05
04	Dixie Hwy to IR 71/75 NB	0.03	0.03	0.02
05	IR 71/75 SB to Buttermilk Pike	0.18	0.10	0.10
06	Buttermilk Pike to IR 71/75 SB	0.13	0.11	0.14
07	IR 71/75 NB to Buttermilk Pike	0.16	0.21	0.18
08	NB Buttermilk Pike to IR 71/75 NB	0.05	0.05	0.03
09	SB Buttermilk Pike to IR 71/75 NB	0.11	0.08	0.10
estimated from upstream and downstream machine counts				
	IR 71/75 SB btw Kyles and Dixie	0.20	0.17	0.15
	IR 71/75 NB btw Kyles and Dixie	0.21	0.14	0.13
	IR 71/75 SB btw Buttermilk and Dixie	0.19	0.16	0.15
	IR 71/75 NB btw Buttermilk and Dixie	0.20	0.13	0.12
	IR 71/75 SB south of Buttermilk	0.18	0.16	0.15
	IR 71/75 NB south of Buttermilk	0.20	0.15	0.13
	All local streets	0.02	0.01	0.01

Burgess and Niple, Inc.
June 1, 2010

INTER-OFFICE COMMUNICATION

TO: Stefan Spinosa, PE, Technical Services Engineer, District 8

FROM: Leigh A. Oesterling, Project Analyses Admin., Office of Technical Services

SUBJECT: **HAM-71/75-0.00/0.22, PID 75119 – 2035 No-Build Certified Traffic**

DATE: April 10, 2008

As requested, the Office of Technical Services has prepared certified design traffic for the Brent Spence Bridge project (PID 75119). Attached are 21 plates showing 2035 ADT, A.M., and P.M. design hour volumes for the No-Build Alternative. Build alternatives will be sent at a later date.

If needed, K and D factors can be calculated from the attached plates. Truck factors are attached separately.

If you have any questions, please contact me at (614) 752-5747.

LAO:lo

attachment

c: J. McQuirt, OTS–P. Siddle, OTS–File

HAM-71/75-0.00/0.22
PID 75119 - Brent Spence Bridge
TRUCK FACTORS

from machine counts				
SITE CODE	DESCRIPTION	T24	AM TD	PM TD
T-01-OH	W. 4th St to IR 75 NB	0.05	0.09	0.04
T-02-OH	IR 71/FWW NB to W. 6th St. Expy (US 50)	0.07	0.07	0.06
T-03-OH	IR 75 NB to W. 5th Street	0.03	0.02	0.02
T-04-OH	IR 75 NB to W. 6th St. Expy (US 50)	0.06	0.04	0.03
T-05-OH	W. 6th St to IR 75 NB	0.07	0.11	0.04
T-06-OH	W. 9th St to IR 75 NB	0.03	0.12	0.02
T-07-OH	Freeman Ave to IR 75 NB	0.21	0.21	0.09
T-08-OH	Winchell Ave to IR 75 NB	0.05	0.08	0.01
T-09-OH	Winchell/Bank to IR 75 NB	0.13	0.15	0.09
T-10-OH	IR 71/FWW to IR 75 NB	0.07	0.06	0.03
T-11-OH	IR 71/FWW NB to 2nd St.	0.04	0.03	0.05
T-12-OH	IR 75 NB to IR 71/FWW	0.16	0.10	0.11
T-13-OH	IR 75 SB to Findlay St.	0.09	0.05	0.12
T-14-OH	IR 75 SB to Western Ave	0.05	0.03	0.06
T-15-OH	Western Ave to IR 75 SB	0.14	0.17	0.10
T-16-OH	IR 75 to Freeman	0.20	0.14	0.09
T-17-OH	IR 75 SB to W. 7th St.	0.05	0.07	0.03
T-18-OH	W. 9th St. to IR 75 SB	0.03	0.04	0.02
T-19-OH	W. 8th St. EB to W. 7th St. EB	0.08	0.07	0.12
T-20-OH	W. 9th St. WB to W. 8th St. WB	0.08	0.11	0.06
T-21-OH	IR 75 SB to 5th St.	0.03	0.04	0.04
T-22-OH	W. 6th St Expy EB (US 50) to 5th St.	0.04	0.04	0.02
T-23-OH	IR 75 SB to 2nd Street	0.03	0.01	0.02
T-24-OH	IR 71/FWW to IR 75 SB	0.20	0.10	0.14
T-25-OH	3rd St. WB to IR 75 SB	0.05	0.11	0.05
T-26-OH	IR 75 SB to IR 71/FWW	0.07	0.07	0.04
T-27-OH	Freeman Ave to W. 6th St Expy WB (US 50)	0.13	0.26	0.05
T-28-OH	Freeman Ave to W. 6th St Expy EB (US 50)	0.14	0.26	0.08
T-29-OH	W. 6th St Expy EB (US 50) to Freeman Ave	0.07	0.04	0.04
T-30-OH	W. 6th St Expy WB (US 50) to Linn St	0.08	0.06	0.06
T-31-OH	W. 6th St EB to W. 6th St Expy EB (US 50)	0.09	0.13	0.04
T-32-OH	W. 6th St. EB to Gest St	0.11	0.32	0.08
T-33-OH	W. 6th St Expy EB (US 50) to IR 75 SB	0.09	0.09	0.05
T-34-OH	W. 6th St Expy EB (US 50) to IR 71/FWW	0.05	0.03	0.04
T-35-OH	W. 6th St Expy EB (US 50) to 2nd St	0.02	0.01	0.02
T-36-OH	Western Hills Viaduct EB to IR 75 SB	0.03	0.03	0.03
T-37-OH	Western Hills Viaduct EB to IR 75 NB	0.05	0.04	0.08
T-38-OH	IR 75 SB to Western Hills Viaduct WB	0.06	0.21	0.05
T-39-OH	IR 75 NB to Western Hills Viaduct WB	0.04	0.04	0.02
T-40-OH	Clay Wade Bailey Brdg SB to Second St	0.04	0.08	0.02
T-41-OH	Clay Wade Bailey Brdg NB to Second St	0.03	0.02	0.02
T-42-OH	IR 75 SB north of Western Hills Viaduct	0.19	0.12	0.16
T-43-OH	IR 75 NB north of Western Hills Viaduct	0.17	0.14	0.14
T-44-OH	IR 75 SB south of SB ramp to Freeman Ave	0.15	0.08	0.11
T-45-OH	IR 75 NB south of NB ramp from Freeman Ave	0.17	0.13	0.10
T-46-OH	IR 75 SB btw 6th & 5th St. Viaducts	0.24	0.14	0.16
T-47-OH	IR 75 NB btw 6th & 5th St. Viaducts	0.24	0.16	0.20
1001	Liberty to IR 471 SB	0.02	0.03	0.01
2001	IR 471 NB to Liberty	0.03	0.02	0.03
3001	Gilbert to IR 71 NB	0.05	0.09	0.02

Office of Technical Services
Ohio Department of Transportation
April 10, 2008

HAM-71/75-0.00/0.22
PID 75119 - Brent Spence Bridge
TRUCK FACTORS

from ODOT Traffic Survey Reports				
SITE CODE	DESCRIPTION	T24	AM TD	PM TD
	HAM-71-0.00 (Brent Spence Bridge)	0.11	0.07	0.07
	HAM-71-0.22 (northeast of IR 75)	0.17	0.10	0.10
	HAM-71-1.26 (northeast of US 50 ramps)	0.14	0.08	0.08
	HAM-71-1.92 (north of IR 471 ramps)	0.12	0.07	0.07
	HAM-75-0.71 (north of US 50/6th St Expy)	0.15	0.09	0.09
	HAM-75-0.86 (north of 9th Street)	0.18	0.11	0.11
	HAM-75-1.24 (north of Freeman Ave)	0.16	0.10	0.10
	HAM-75-1.42 (north of Ezzard Charles)	0.16	0.10	0.10
	HAM-75-1.90 (north of Findlay)	0.16	0.10	0.10
	HAM-75-2.51 (north of Wester Hills Viaduct)	0.16	0.10	0.10
from ODOT ramp counts				
SITE CODE	DESCRIPTION	T24	AM TD	PM TD
103931	IR 471 NB to IR 71 NB	0.05	0.04	0.04
104031	IR 71 SB to IR 471 SB	0.13	0.11	0.12
104731	IR 71 NB to US 50 EB	0.09	0.08	0.08
103731	2nd St to IR 71 NB	0.02	0.03	0.01
104231	US 50 WB to IR 71 SB	0.03	0.01	0.02
104131	IR 71 SB to 3rd Street	0.06	0.06	0.04
103831	5th Street to IR 71 NB	0.06	0.06	0.06

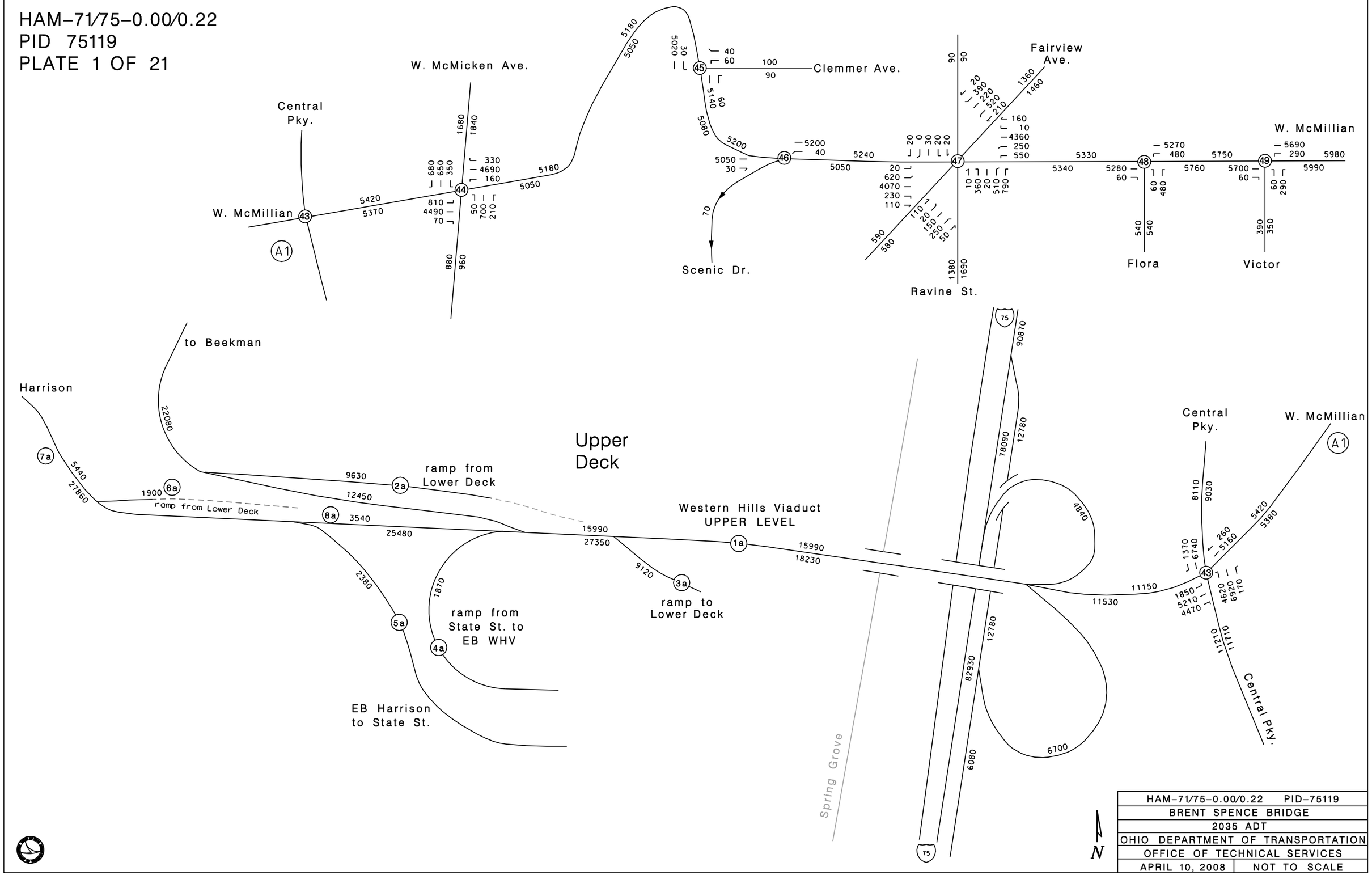
Office of Technical Services
Ohio Department of Transportation
April 10, 2008

HAM-71/75-0.00/0.22
PID 75119 - Brent Spence Bridge
TRUCK FACTORS

from intersection turning movement counts (where vehicle class is available)				
SITE CODE	DESCRIPTION	T24	AM TD	PM TD
43	WHV/McMillan @ Central Pkwy			
	East Leg	0.01	0.01	0.01
	North Leg	0.01	0.01	0.01
	West Leg	0.01	0.01	0.01
	South Leg	0.01	0.01	0.01
26	WHV Lower Level @ Spring Grove			
	North Leg	0.05	0.05	0.03
	West Leg	0.08	0.12	0.06
	South Leg	0.08	0.08	0.04
44	McMillan @ McMicken			
	East Leg	0.04	0.06	0.03
	North Leg	0.08	0.10	0.05
	West Leg	0.02	0.03	0.01
	South Leg	0.18	0.26	0.13
45	McMillan @ Clemmer			
	East Leg	0.00	0.00	0.00
	North Leg	0.05	0.06	0.02
	South Leg	0.05	0.06	0.02
46	McMillan @ Scenic			
	East Leg	0.05	0.06	0.02
	West Leg	0.05	0.06	0.02
	South Leg	0.00	0.00	0.00
47	McMillan @ Ravine @ Fairview			
	East Leg	0.05	0.07	0.03
	North Leg	0.13	0.08	0.23
	West Leg	0.05	0.06	0.02
	South Leg	0.04	0.03	0.03
	Northeast Leg (Fairview)	0.04	0.04	0.03
	Southwest Leg (Fairview)	0.11	0.25	0.05
48	McMillan @ Flora			
	East Leg	0.05	0.07	0.03
	West Leg	0.05	0.07	0.03
	South Leg	0.00	0.00	0.00
49	McMillan @ Victor			
	East Leg	0.05	0.07	0.02
	West Leg	0.05	0.07	0.03
	South Leg	0.03	0.04	0.03
	All other local streets	0.02	0.01	0.01

Office of Technical Services
Ohio Department of Transportation
April 10, 2008

HAM-71/75-0.00/0.22
PID 75119
PLATE 1 OF 21

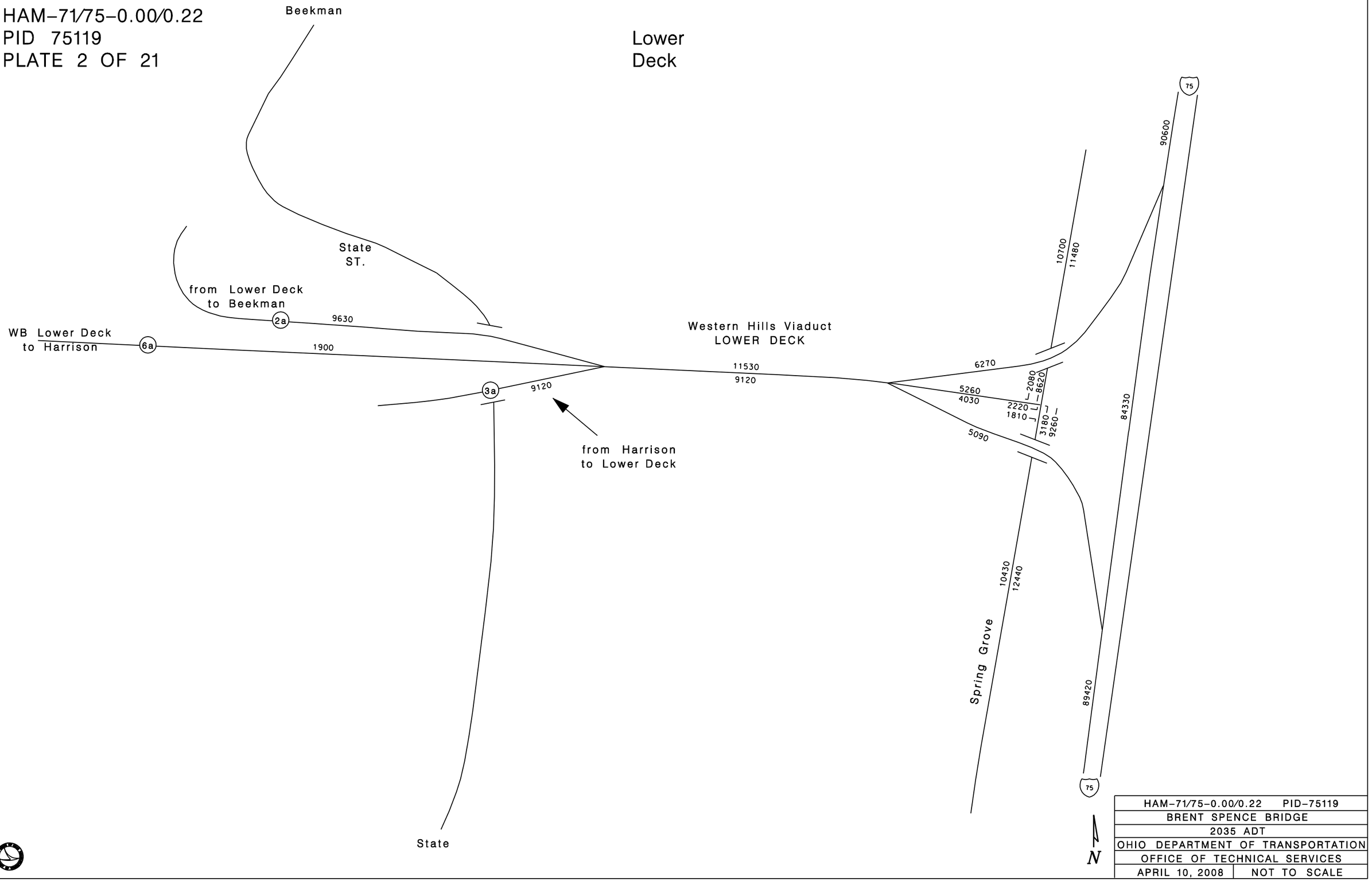


HAM-71/75-0.00/0.22 PID-75119	
BRENT SPENCE BRIDGE	
2035 ADT	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

N

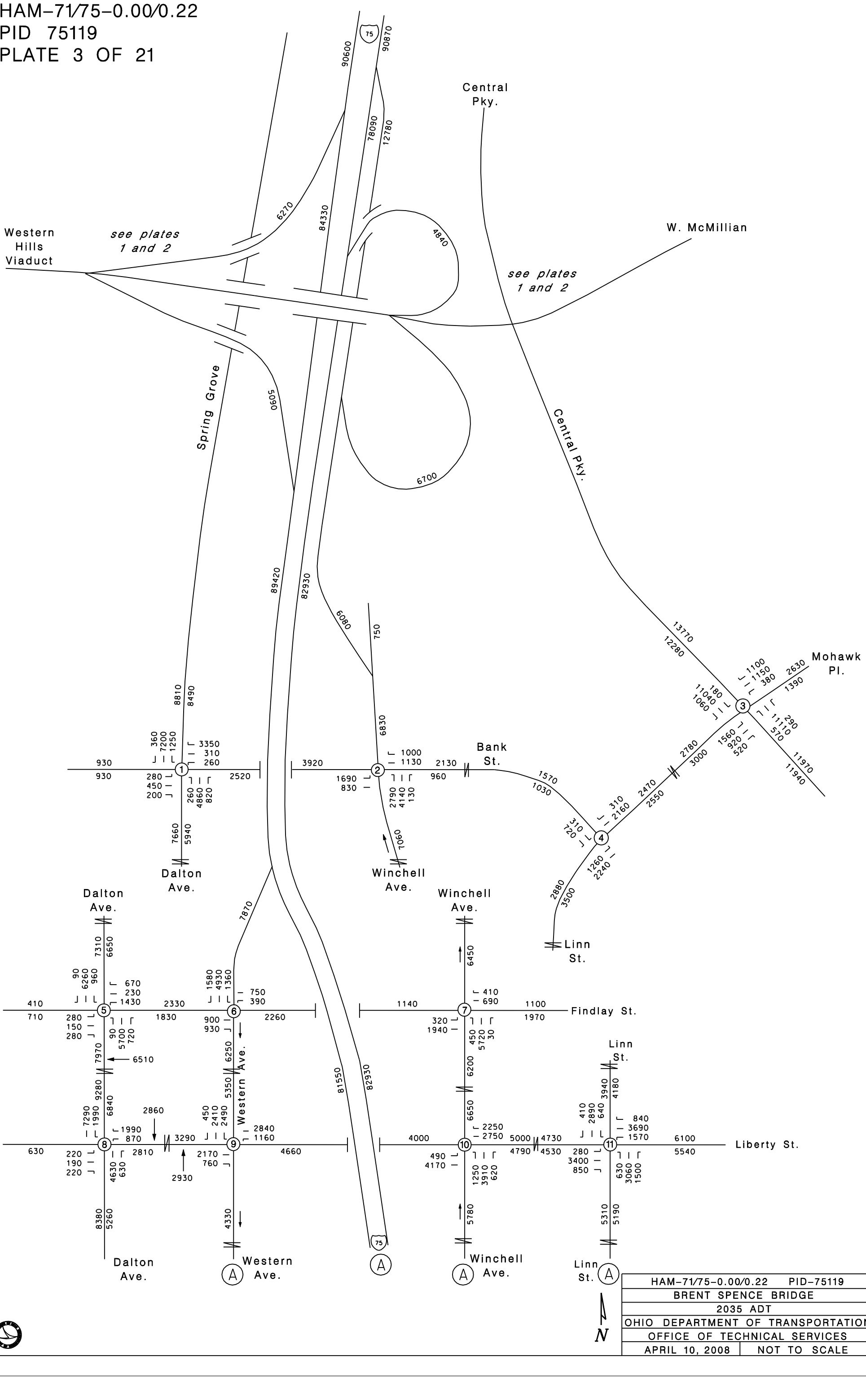
HAM-71/75-0.00/0.22
PID 75119
PLATE 2 OF 21

Lower
Deck



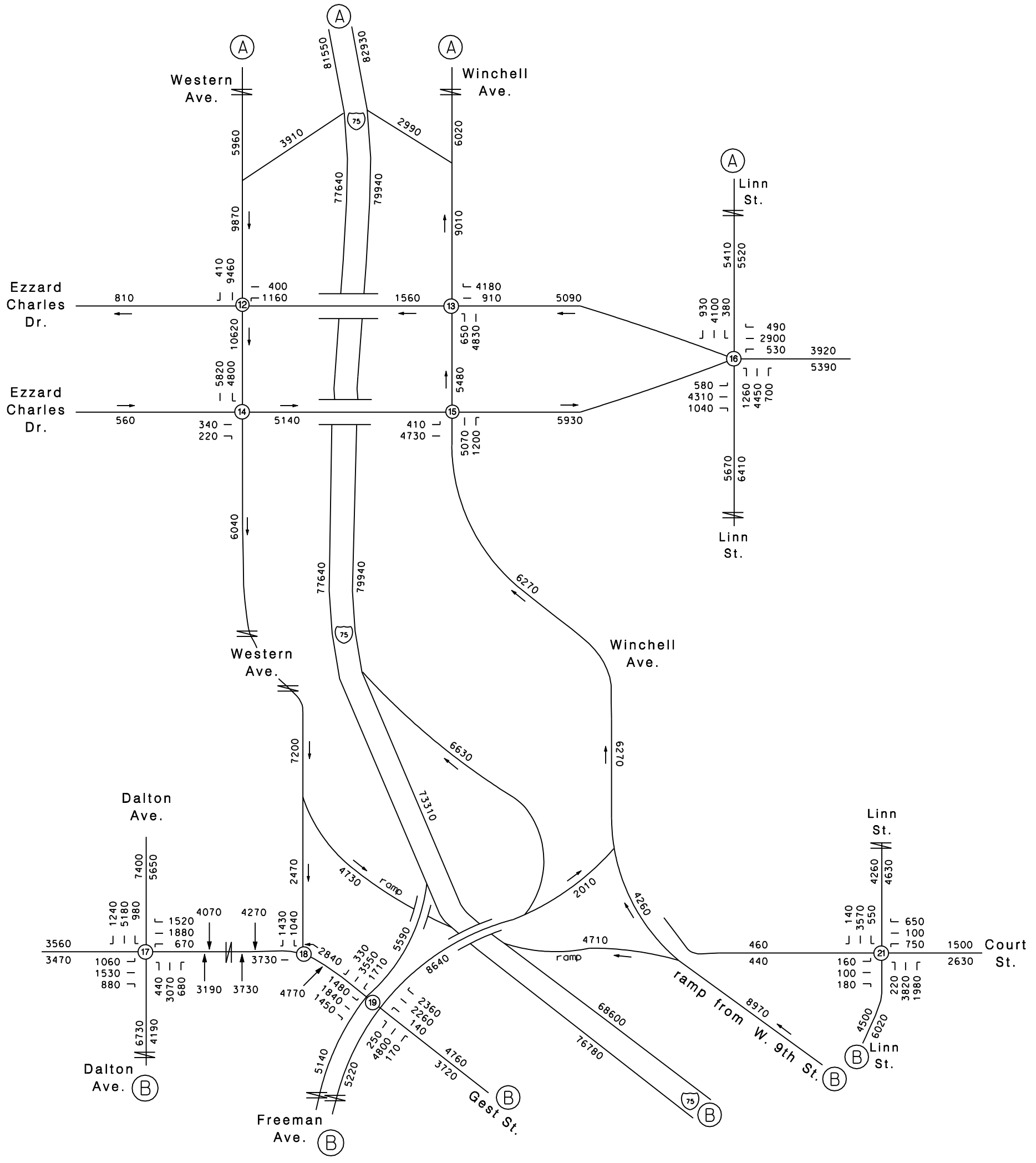
HAM-71/75-0.00/0.22 PID-75119	
BRENT SPENCE BRIDGE	
2035 ADT	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 3 OF 21



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
2035 ADT	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 4 OF 21



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
2035 ADT	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

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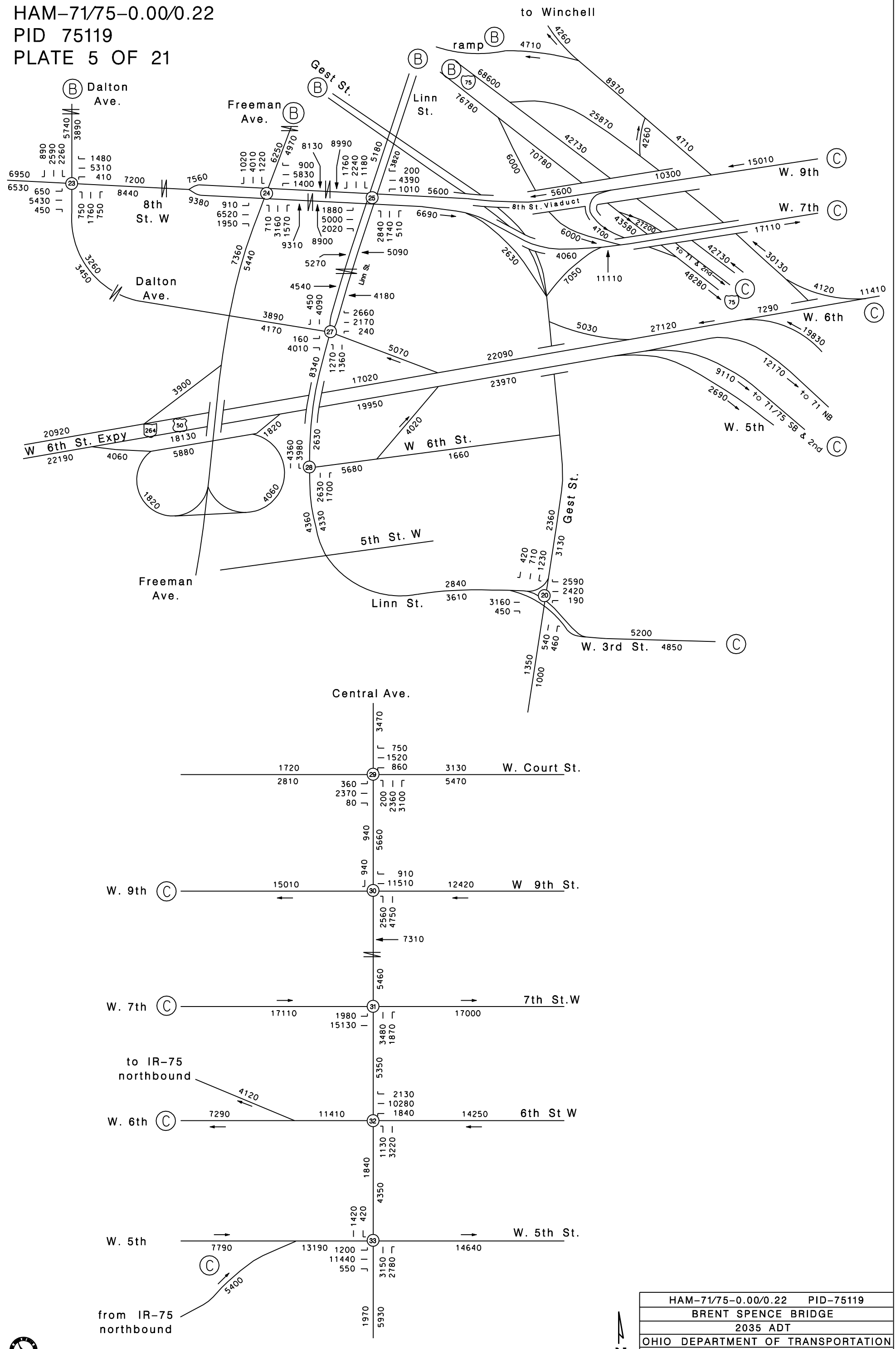
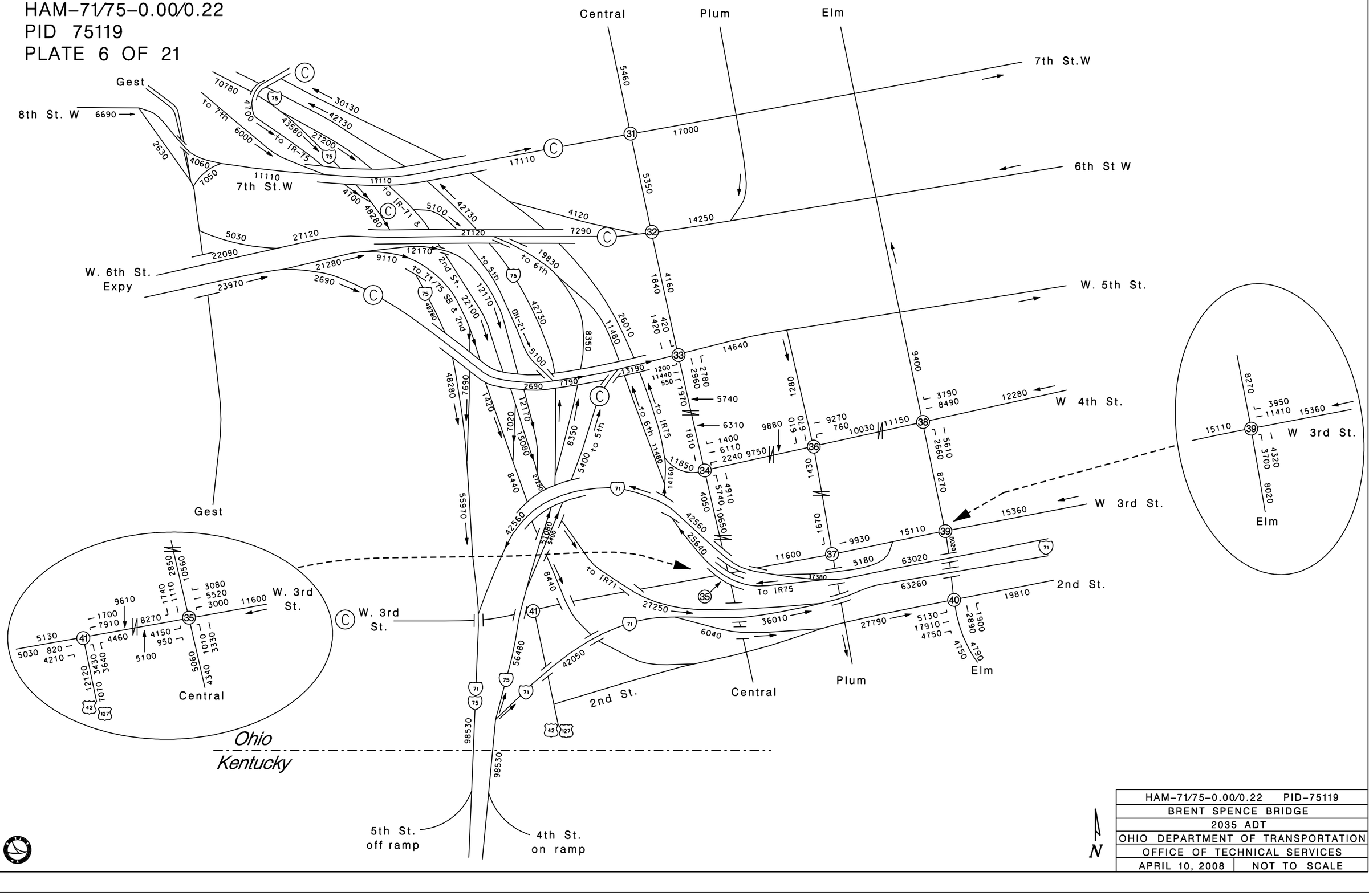
HAM–71/75–0.00/0.22
PID 75119
PLATE 5 OF 21



HAM–71/75–0.00/0.22 PID–75119	
BRENT SPENCE BRIDGE	
2035 ADT	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

HAM-71/75-0.00/0.22
PID 75119
PLATE 6 OF 21



HAM-71/75-0.00/0.22 PID-75119	
BRENT SPENCE BRIDGE	
2035 ADT	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

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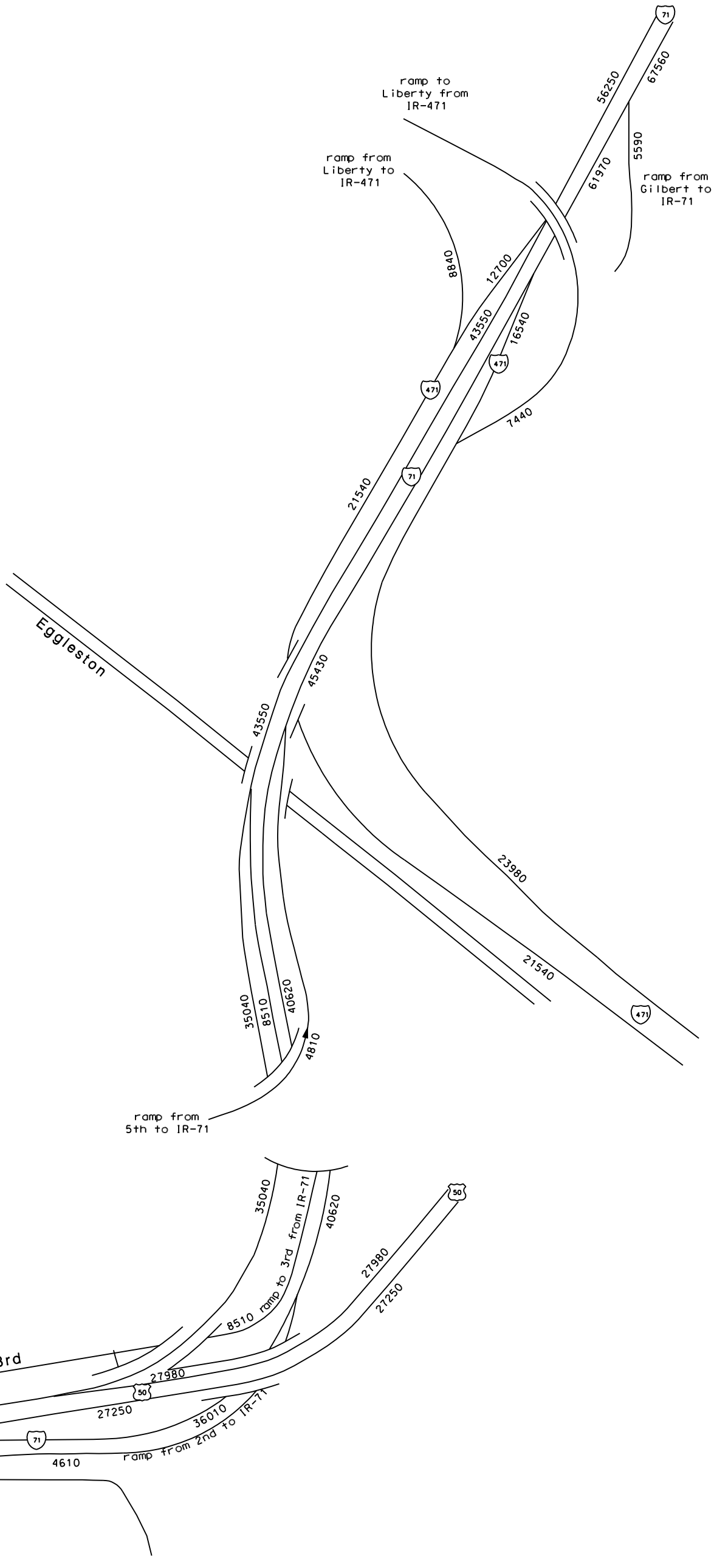
HAM-71/75-0.00/0.22
PID 75119
PLATE 7 OF 21



HAM-71/75-0.00/0.22 PID-75119	
BRENT SPENCE BRIDGE	
2035 ADT	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

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HAM-71/75-0.00/0.22
PID 75119
PLATE 8 OF 21

W. McMicken Ave.
Central Pky.
W. McMillian
A1
Clemmer Ave.
Scenic Dr.
Fairview Ave.
Ravine St.
Flora
Victor
W. McMillian

to Beekman
Harrison
Upper Deck
ramp from Lower Deck
ramp from Lower Deck
Western Hills Viaduct UPPER LEVEL
ramp to Lower Deck
ramp from State St. to EB WHV
EB Harrison to State St.
Spring Grove
Central Pky.
W. McMillian
A1
Central Pky.

HAM-71/75-0.00/0.22 PID-75119	
BRENT SPENCE BRIDGE	
2035 AM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

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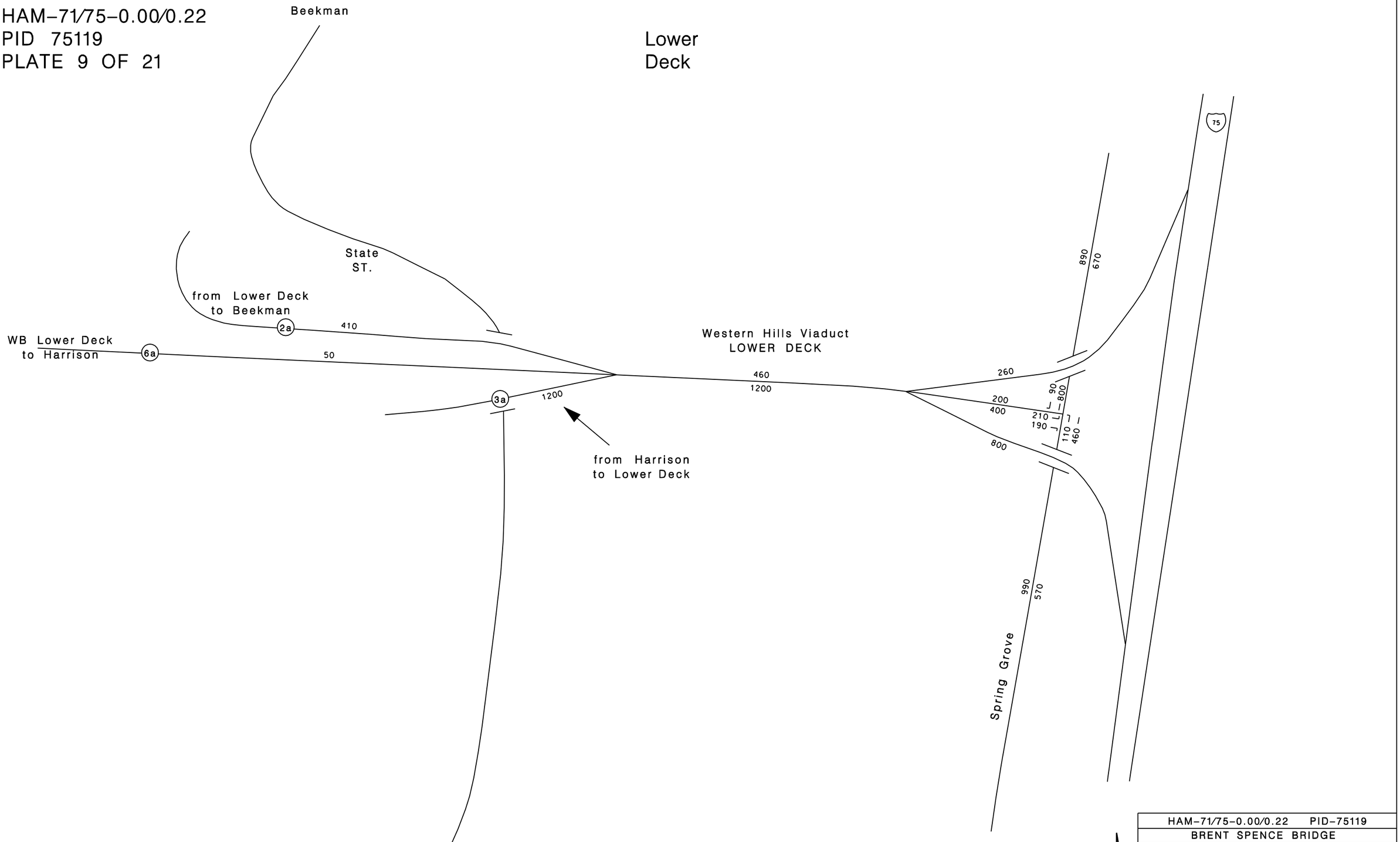
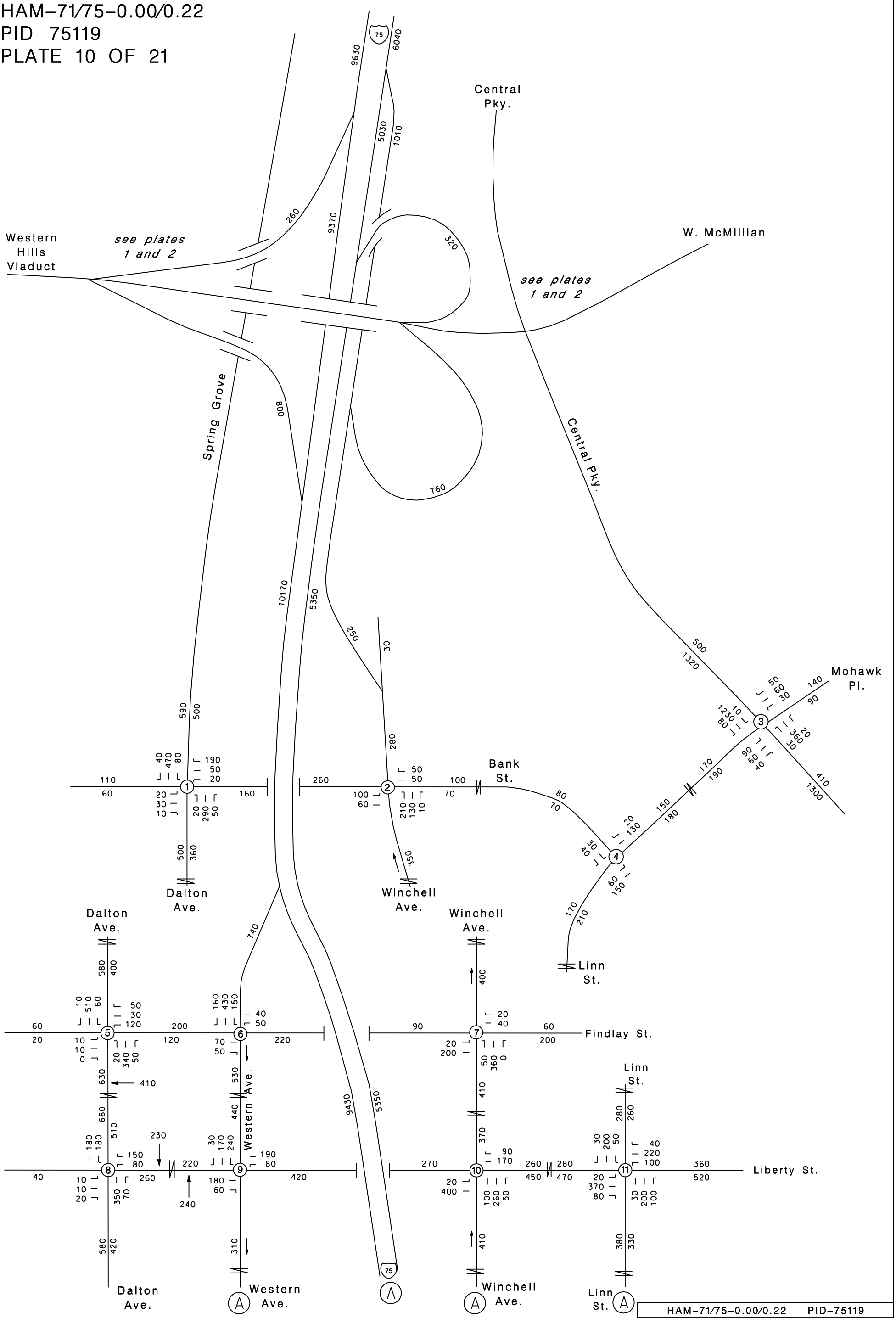
HAM-71/75-0.00/0.22
PID 75119
PLATE 9 OF 21

Lower
Deck



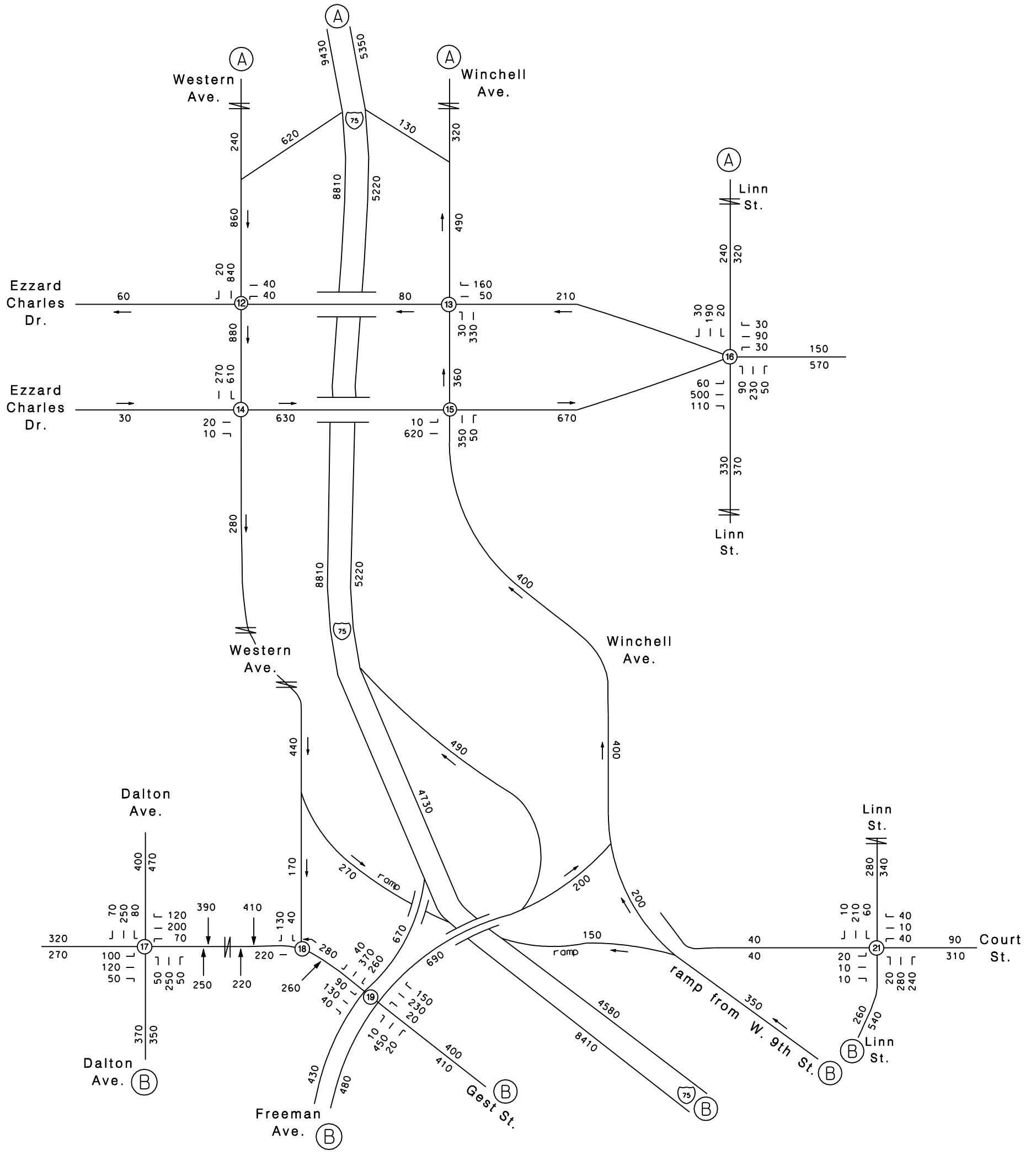
HAM-71/75-0.00/0.22 PID-75119	
BRENT SPENCE BRIDGE	
2035 AM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 10 OF 21



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
2035 AM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

HAM-71/75-0.00/0.22
PID 75119
PLATE 11 OF 21



HAM-71/75-0.00/0.22	PID-75119
BRENT SPENCE BRIDGE	
2035 AM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

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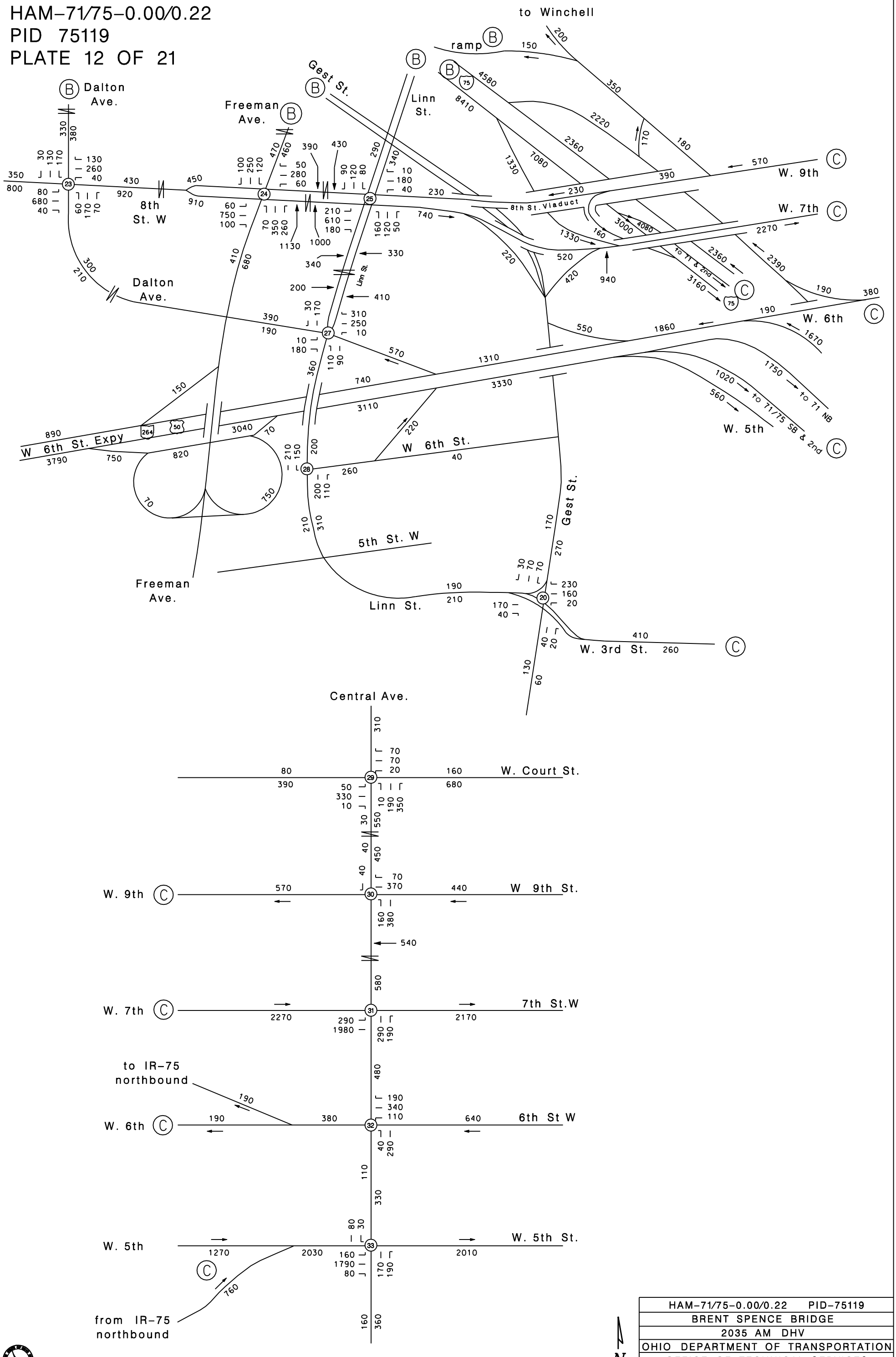
HAM–71/75–0.00/0.22
PID 75119
PLATE 12 OF 21



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
2035 AM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

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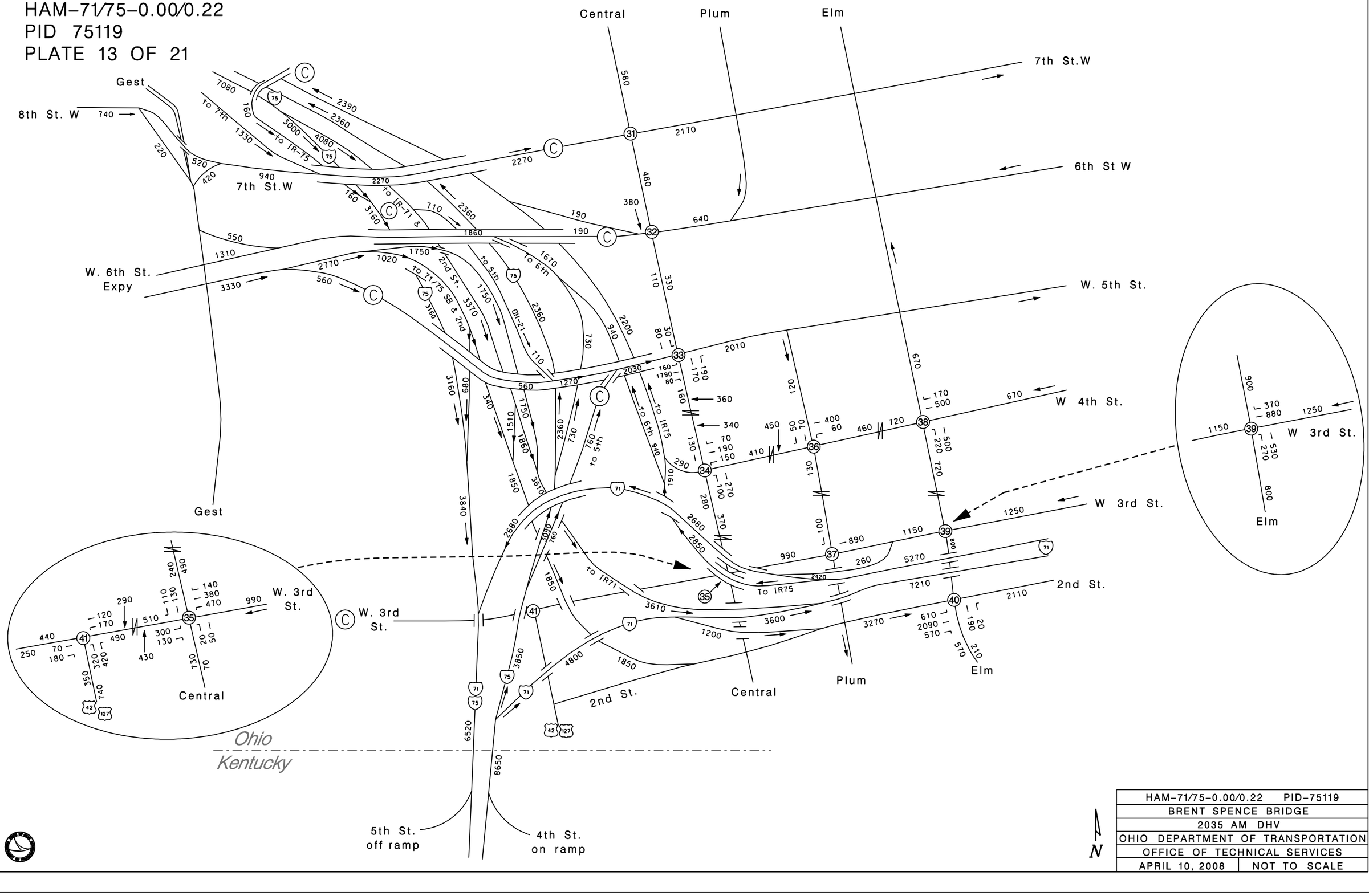
HAM-71/75-0.00/0.22
PID 75119
PLATE 13 OF 21



HAM-71/75-0.00/0.22 PID-75119	
BRENT SPENCE BRIDGE	
2035 AM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

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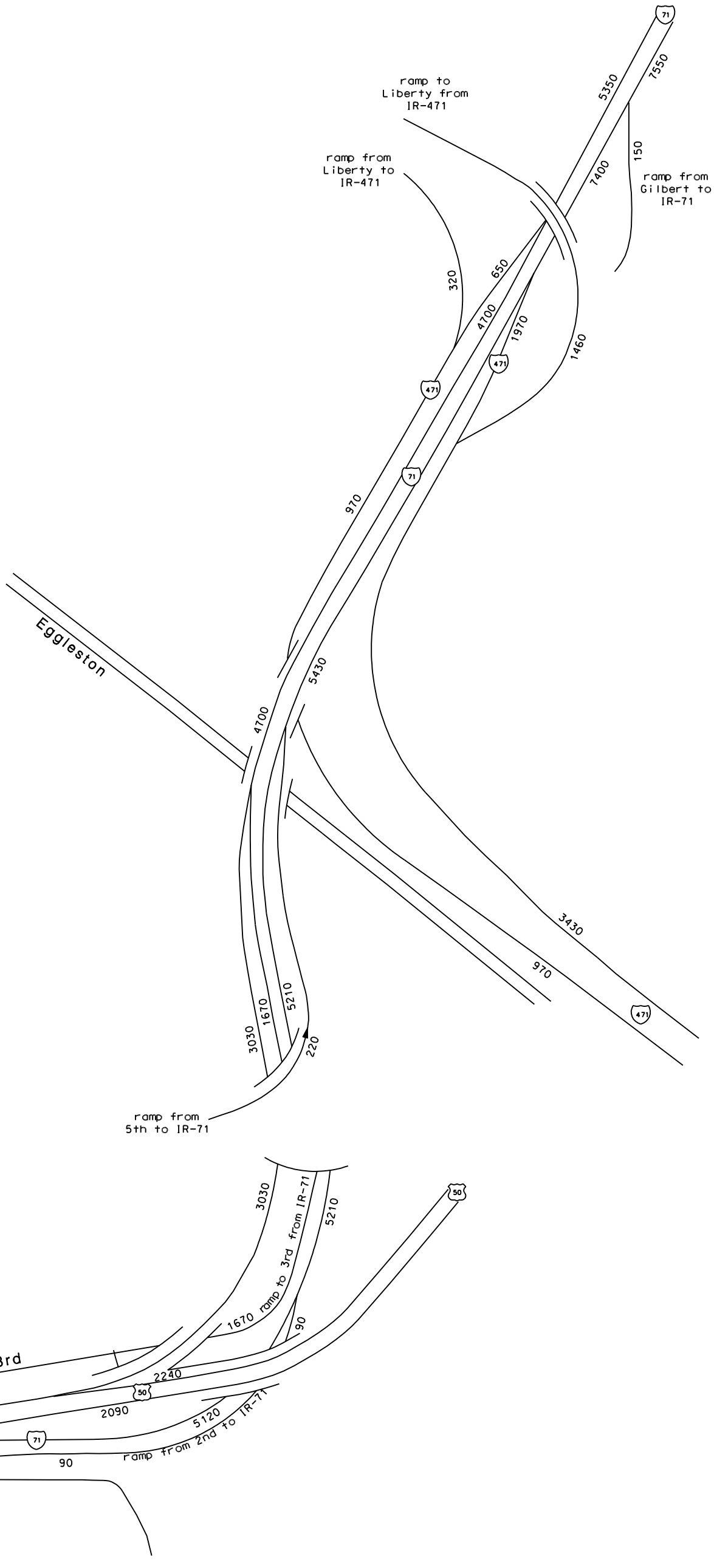
HAM-71/75-0.00/0.22
PID 75119
PLATE 14 OF 21



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HAM-71/75-0.00/0.22 PID-75119	
BRENT SPENCE BRIDGE	
2035 AM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

HAM-71/75-0.00/0.22
PID 75119
PLATE 15 OF 21

W. McMicken Ave.
Central Pky.
W. McMillian
A1
Clemmer Ave.
Scenic Dr.
Fairview Ave.
Ravine St.
W. McMillian
Flora
Victor

to Beekman
Harrison
Upper Deck
ramp from Lower Deck
ramp from Lower Deck
Western Hills Viaduct
UPPER LEVEL
ramp from State St. to EB WHV
ramp to Lower Deck
EB Harrison to State St.
Spring Grove
Central Pky.
W. McMillian
A1
Central Pky.

HAM-71/75-0.00/0.22 PID-75119
BRENT SPENCE BRIDGE
2035 PM DHV
OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF TECHNICAL SERVICES
APRIL 10, 2008 | NOT TO SCALE

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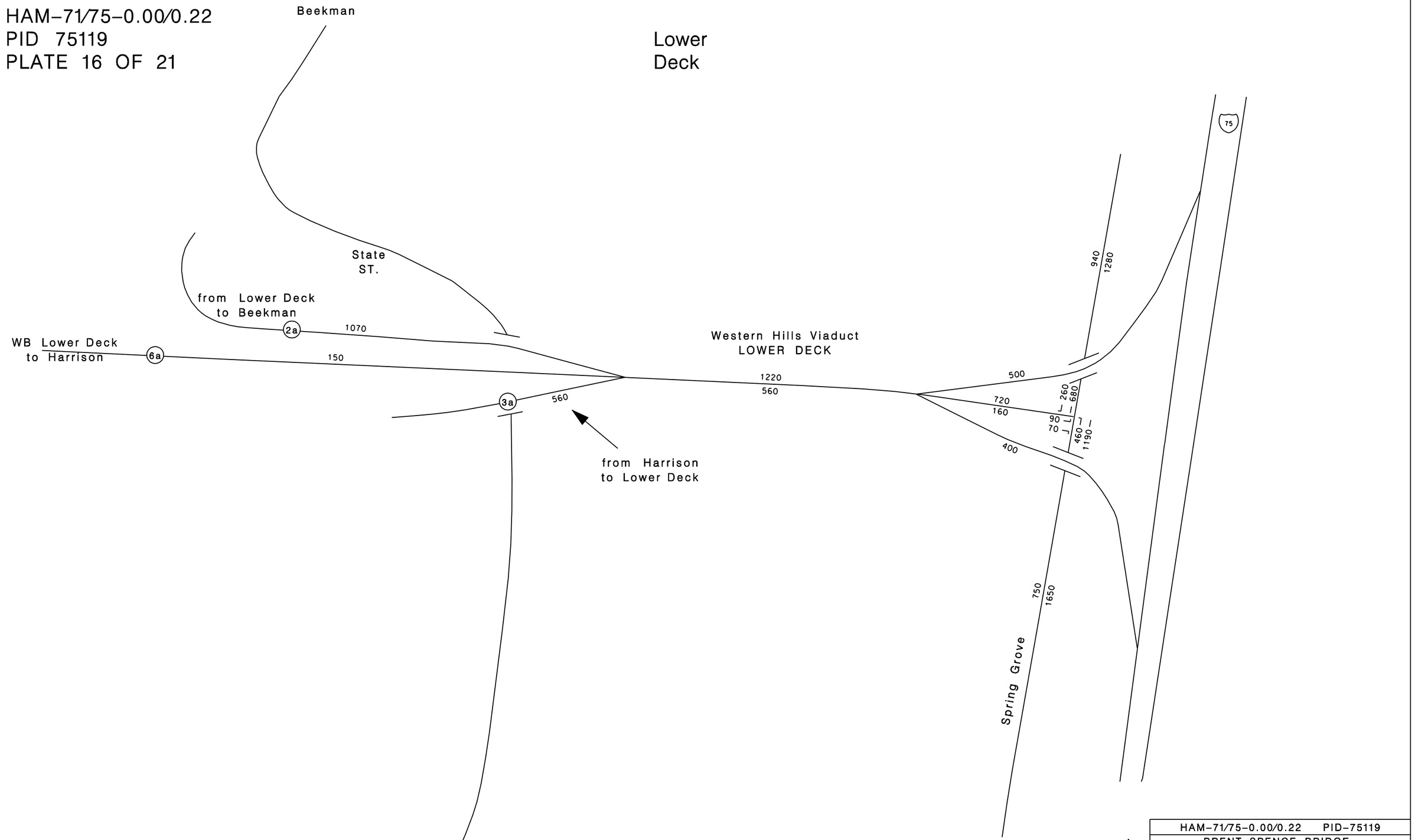
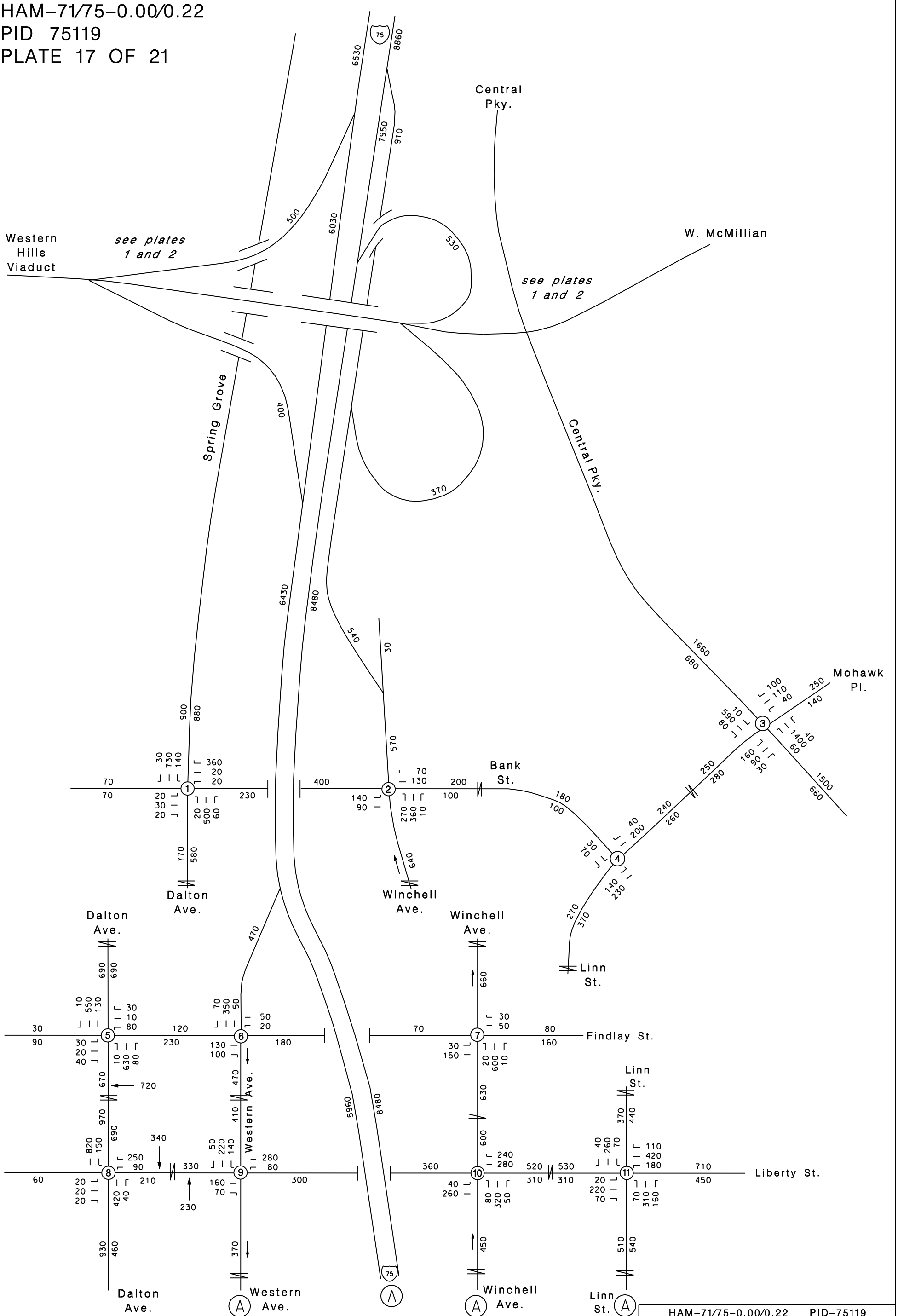
HAM–71/75–0.00/0.22
PID 75119
PLATE 16 OF 21

Lower
Deck



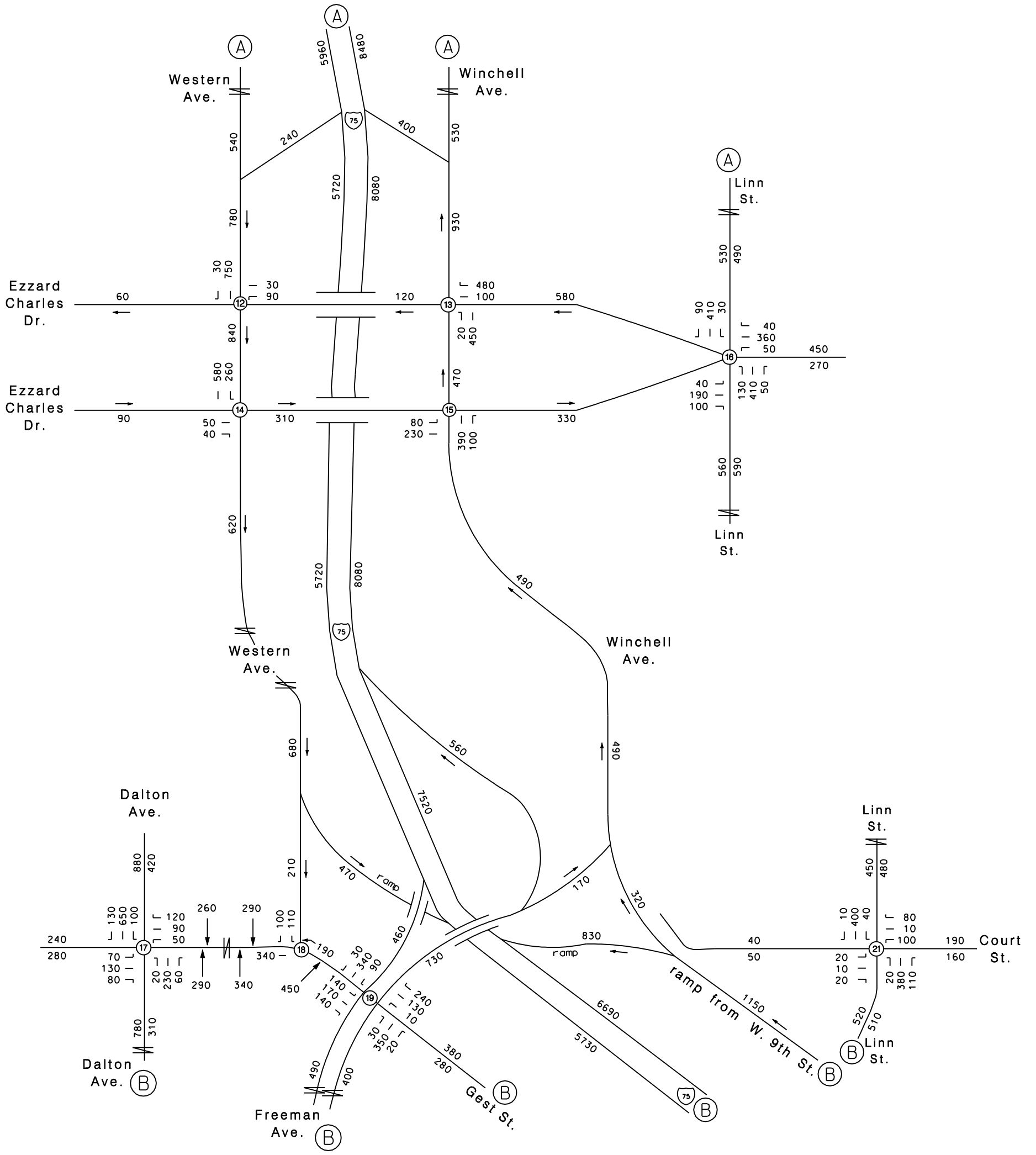
HAM–71/75–0.00/0.22 PID–75119	
BRENT SPENCE BRIDGE	
2035 PM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 17 OF 21



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
2035 PM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

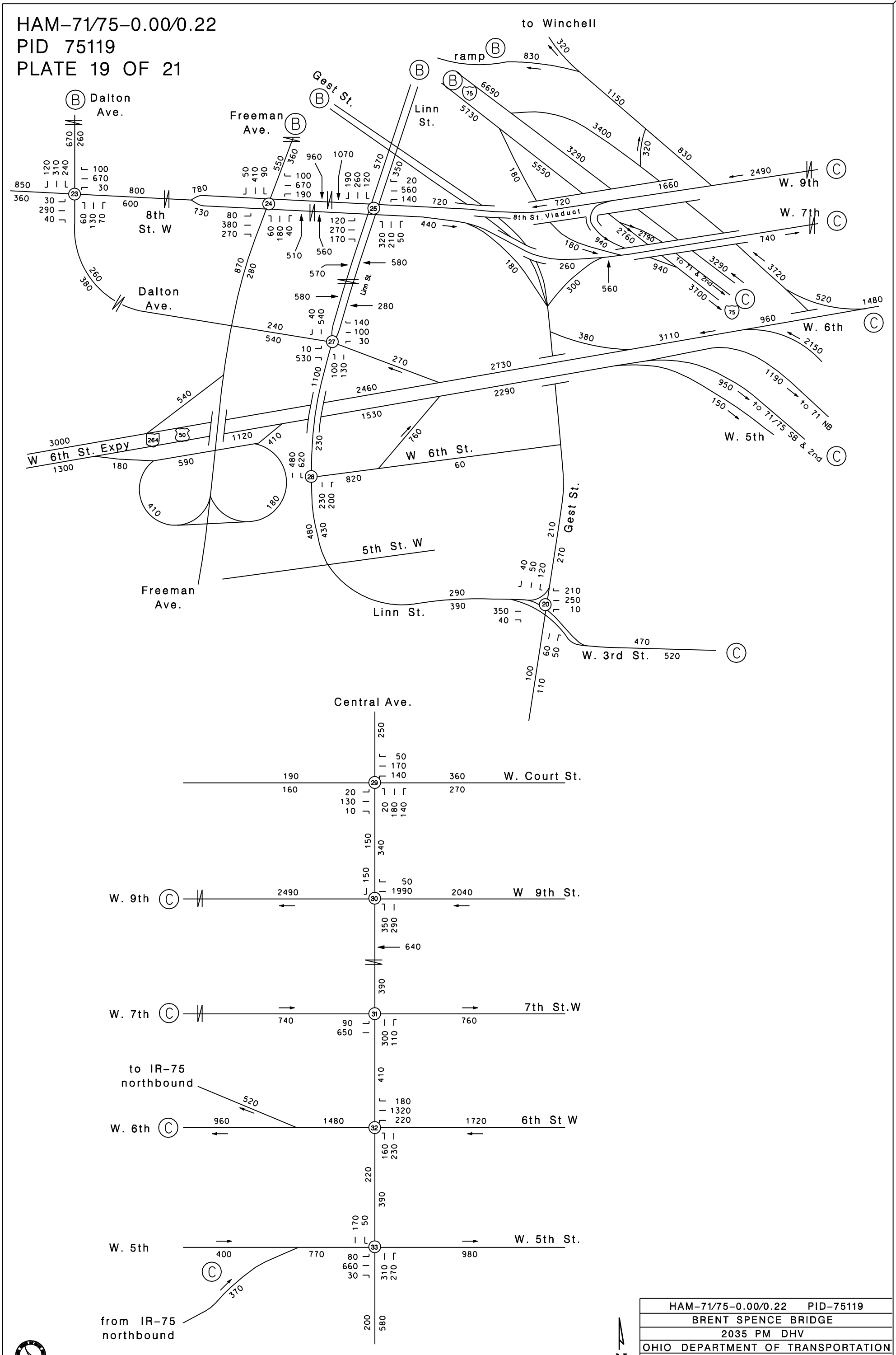
HAM–71/75–0.00/0.22
PID 75119
PLATE 18 OF 21



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
2035 PM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

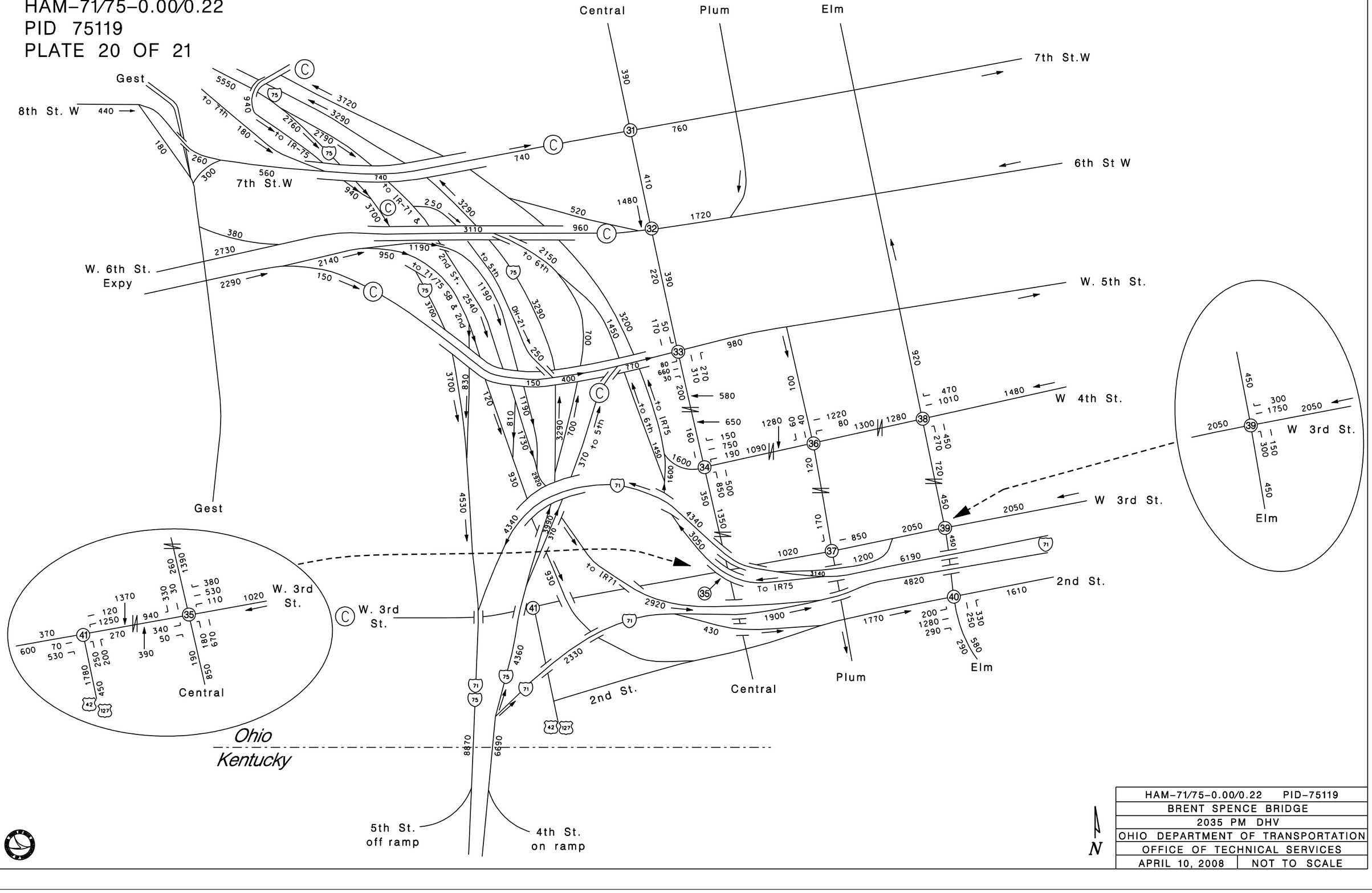
N

HAM–71/75–0.00/0.22
PID 75119
PLATE 19 OF 21



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
2035 PM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

HAM-71/75-0.00/0.22
PID 75119
PLATE 20 OF 21



HAM-71/75-0.00/0.22 PID-75119	
BRENT SPENCE BRIDGE	
2035 PM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

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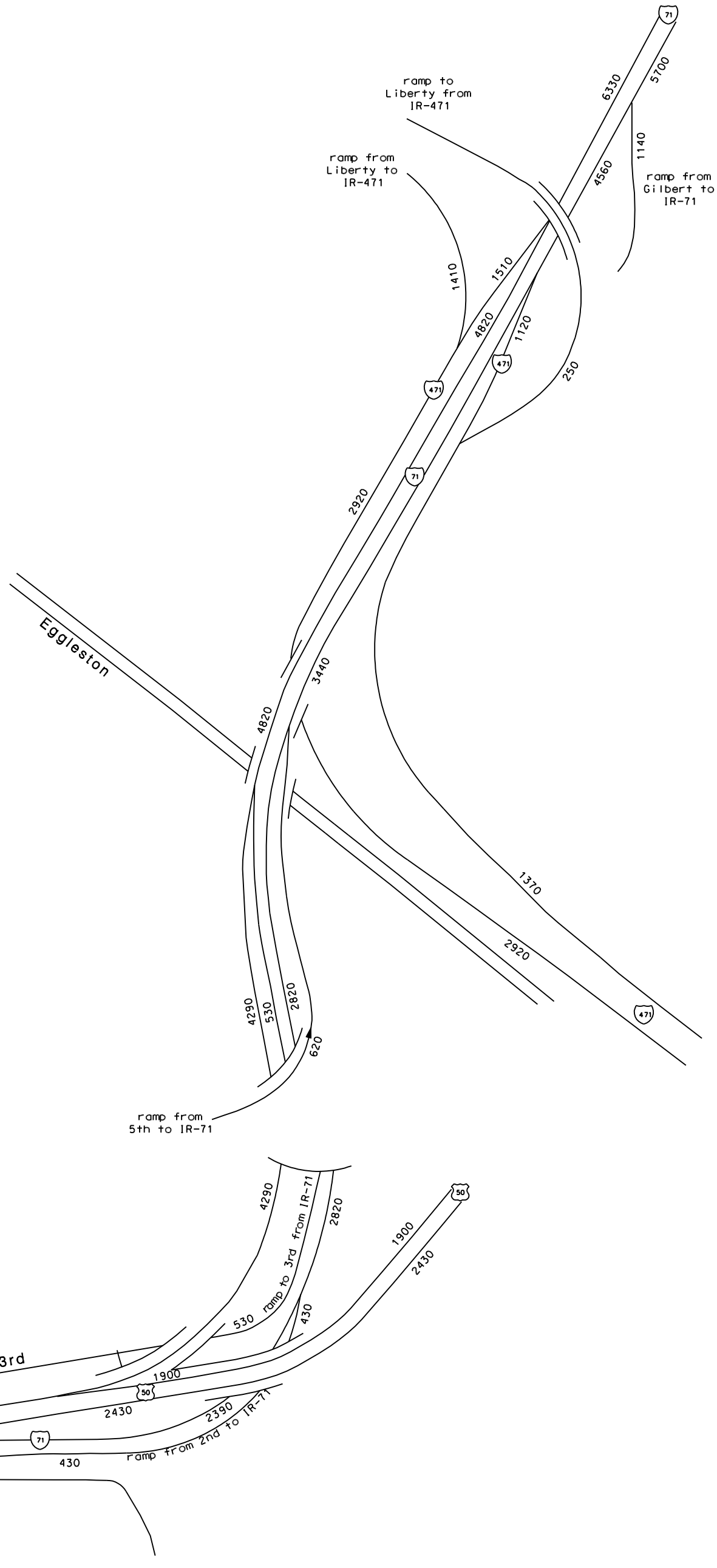
HAM-71/75-0.00/0.22
PID 75119
PLATE 21 OF 21



HAM-71/75-0.00/0.22	PID-75119
BRENT SPENCE BRIDGE	
2035 PM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
APRIL 10, 2008	NOT TO SCALE

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INTER-OFFICE COMMUNICATION

TO: Stefan Spinosa, PE, Technical Services Engineer, District 8

FROM: Leigh A. Oesterling, Project Analyses Admin., Office of Technical Services

SUBJECT: **HAM-71/75-0.00/0.22, PID 75119 – 2035 Build Alt. E Certified Traffic**

DATE: September 10, 2008

As requested, the Office of Technical Services has prepared certified design traffic for the Brent Spence Bridge project (PID 75119). Attached are 24 plates showing 2035 ADT, A.M., and P.M. design hour volumes for Build Alternative E. The final build alternative (Build Alt. B) will be sent at a later date.

If needed, K and D factors can be calculated from the attached plates. Truck factors (attached) remain nearly the same as those provided for earlier Build Alternatives.

If you have any questions, please contact me at (614) 752-5747.

LAO:lo

attachments

c: J. McQuirt, OTS–P. Siddle, OTS–File

HAM-71/75-0.00/0.22
PID 75119 - Brent Spence Bridge
ALTERNATIVE E
TRUCK FACTORS

from machine counts				
SITE CODE	DESCRIPTION	T24	AM TD	PM TD
T-01-OH	W. 4th St to IR 75 NB	0.05	0.09	0.04
ALT E	**W. 4th St. to IR 75 SB**	**0.05**	**0.09**	**0.04**
T-02-OH	IR 71/FWW NB to W. 6th St. Expy (US 50 WB)	0.07	0.07	0.06
ALT E	**IR 71/FWW NB to W. 6th St. EB**	**0.07**	**0.07**	**0.06**
T-03-OH	IR 75 NB to W. 5th Street	0.03	0.02	0.02
T-04-OH	IR 75 NB to W. 6th St. Expy (US 50 WB)	0.06	0.04	0.03
ALT E	**IR 75 NB to W. 6th St. EB**	**0.06**	**0.04**	**0.03**
T-05-OH	W. 6th St to IR 75 NB	0.07	0.11	0.04
T-06-OH	W. 9th St to Winchell	0.03	0.12	0.02
ALT E	**Local C/D NB to IR 75 (north of W. 9th)**	**0.06**	**0.10**	**0.04**
T-07-OH	Freeman Ave to IR 75 NB	0.21	0.21	0.09
T-09-OH	**Winchell/Bank to IR 75 (Local C/D) NB**	**0.13**	**0.15**	**0.09**
T-10-OH	IR 71/FWW to IR 75 NB	0.07	0.06	0.03
T-11-OH	**Local CD NB to 2nd St.**	**0.04**	**0.03**	**0.05**
T-12-OH	IR 71 NB to IR 71/FWW NB	0.16	0.10	0.11
ALT E	**IR 75 SB to Local/CD (south of WHV)**	**0.06**	**0.06**	**0.05**
T-13-OH	IR 75 SB to Findlay St.	0.09	0.05	0.12
T-15-OH	Western Ave to IR 75 SB	0.14	0.17	0.10
T-17-OH	IR 75 SB to W. 7th St.	0.05	0.07	0.03
T-18-OH	W. 9th St. to IR 75 SB	0.03	0.04	0.02
T-19-OH	W. 8th St. EB to W. 7th St. EB	0.08	0.07	0.12
T-20-OH	W. 9th St. WB to W. 8th St. WB	0.08	0.11	0.06
T-21-OH	IR 75 SB to 5th St.	0.03	0.04	0.04
T-23-OH	IR 75 SB to 2nd Street	0.03	0.01	0.02
T-24-OH	IR 71/FWW SB to IR 71 SB	0.20	0.10	0.14
T-25-OH	3rd St. WB to IR 75 SB	0.05	0.11	0.05
T-26-OH	IR 75 SB to IR 71/FWW	0.07	0.07	0.04
T-27-OH	Freeman Ave to W. 6th St Expy WB (US 50)	0.13	0.26	0.05
T-28-OH	Freeman Ave to W. 6th St Expy EB (US 50)	0.14	0.26	0.08
T-29-OH	W. 6th St Expy EB (US 50) to Freeman Ave	0.07	0.04	0.04
T-30-OH	W. 6th St Expy WB (US 50) to Linn St	0.08	0.06	0.06
T-31-OH	W. 6th St EB to W. 6th St Expy EB (US 50)	0.09	0.13	0.04
T-32-OH	W. 6th St. EB to Gest St	0.11	0.32	0.08
T-33-OH	W. 6th St Expy EB (US 50) to IR 75 SB	0.09	0.09	0.05
T-34-OH	W. 6th St Expy EB (US 50) to IR 71/FWW	0.05	0.03	0.04
T-36-OH	Western Hills Viaduct to IR 75 SB	0.03	0.03	0.03
T-37-OH	Western Hills Viaduct to IR 75 NB	0.05	0.04	0.08
T-38-OH	IR 75 SB to Western Hills Viaduct	0.06	0.21	0.05
T-39-OH	IR 75 NB to Western Hills Viaduct	0.04	0.04	0.02
T-40-OH	Clay Wade Bailey Brdg SB to Second St	0.04	0.08	0.02
T-41-OH	Clay Wade Bailey Brdg NB to Second St	0.03	0.02	0.02
T-42-OH	IR 75 SB north of Western Hills Viaduct	0.19	0.12	0.16
T-43-OH	IR 75 NB north of Western Hills Viaduct	0.17	0.14	0.14
ALT E	**IR 75 SB south of SB on ramp from Western**	**0.15**	**0.08**	**0.11**
T-45-OH	IR 75 NB south of Freeman Ave	0.17	0.13	0.10
T-46-OH	IR 75 SB btw 6th & 5th St. Viaducts	0.24	0.14	0.16
T-47-OH	IR 75 NB btw 6th & 5th St. Viaducts	0.24	0.16	0.20
1001	Liberty to IR 471 SB	0.02	0.03	0.01
2001	IR 471 NB to Liberty	0.03	0.02	0.03
3001	Gilbert to IR 71 NB	0.05	0.09	0.02
ALT E	**IR 75 NB to Central Pkwy**	**0.04**	**0.04**	**0.02**
ALT E	**Central Pkwy to IR 75 NB**	**0.04**	**0.04**	**0.02**
from ODOT Traffic Survey Reports				

Office of Technical Services
Ohio Department of Transportation
September 10, 2008

HAM-71/75-0.00/0.22
PID 75119 - Brent Spence Bridge
ALTERNATIVE E
TRUCK FACTORS

SITE CODE	DESCRIPTION	T24	AM TD	PM TD
	HAM-71-0.00 (Brent Spence Bridge)	0.11	0.07	0.07
	HAM-71-0.22 (northeast of IR 75)	0.17	0.10	0.10
	HAM-71-1.26 (northeast of US 50 ramps)	0.14	0.08	0.08
	HAM-71-1.92 (north of IR 471 ramps)	0.12	0.07	0.07
	HAM-75-0.71 (north of US 50/6th St Expy)	0.15	0.09	0.09
	HAM-75-0.86 (north of 9th Street)	0.18	0.11	0.11
	HAM-75-1.24 (north of Freeman Ave)	0.16	0.10	0.10
	HAM-75-1.42 (north of Ezzard Charles)	0.16	0.10	0.10
	HAM-75-1.90 (north of Findlay)	0.16	0.10	0.10
	HAM-75-2.51 (north of Western Hills Viaduct)	0.16	0.10	0.10
from ODOT ramp counts				
SITE CODE	DESCRIPTION	T24	AM TD	PM TD
103931	IR 471 NB to IR 71 NB	0.05	0.04	0.04
104031	IR 71 SB to IR 471 SB	0.13	0.11	0.12
104731	IR 71 NB to US 50 EB	0.09	0.08	0.08
103731	2nd St to IR 71 NB	0.02	0.03	0.01
104231	US 50 WB to IR 71 SB	0.03	0.01	0.02
104131	IR 71 SB to 3rd Street	0.06	0.06	0.04
103831	5th Street to IR 71 NB	0.06	0.06	0.06
from intersection turning movement counts (where vehicle class is available)				
SITE CODE	DESCRIPTION	T24	AM TD	PM TD
43	WHV/McMillan @ Central Pkwy			
	East Leg	0.01	0.01	0.01
	North Leg	0.01	0.01	0.01
	West Leg	0.01	0.01	0.01
	South Leg	0.01	0.01	0.01
26	WHV Lower Level @ Spring Grove			
Alt E	**East Leg**	**0.04**	**0.02**	**0.02**
	North Leg	0.05	0.05	0.03
	West Leg	0.08	0.12	0.06
	South Leg	0.08	0.08	0.04
44	McMillan @ McMicken			
	East Leg	0.04	0.06	0.03
	North Leg	0.08	0.10	0.05
	West Leg	0.02	0.03	0.01
	South Leg	0.18	0.26	0.13
45	McMillan @ Clemmer			
	East Leg	0.00	0.00	0.00
	North Leg	0.05	0.06	0.02
	South Leg	0.05	0.06	0.02
46	McMillan @ Scenic			
	East Leg	0.05	0.06	0.02
	West Leg	0.05	0.06	0.02
	South Leg	0.00	0.00	0.00
47	McMillan @ Ravine @ Fairview			
	East Leg	0.05	0.07	0.03
	North Leg	0.13	0.08	0.23

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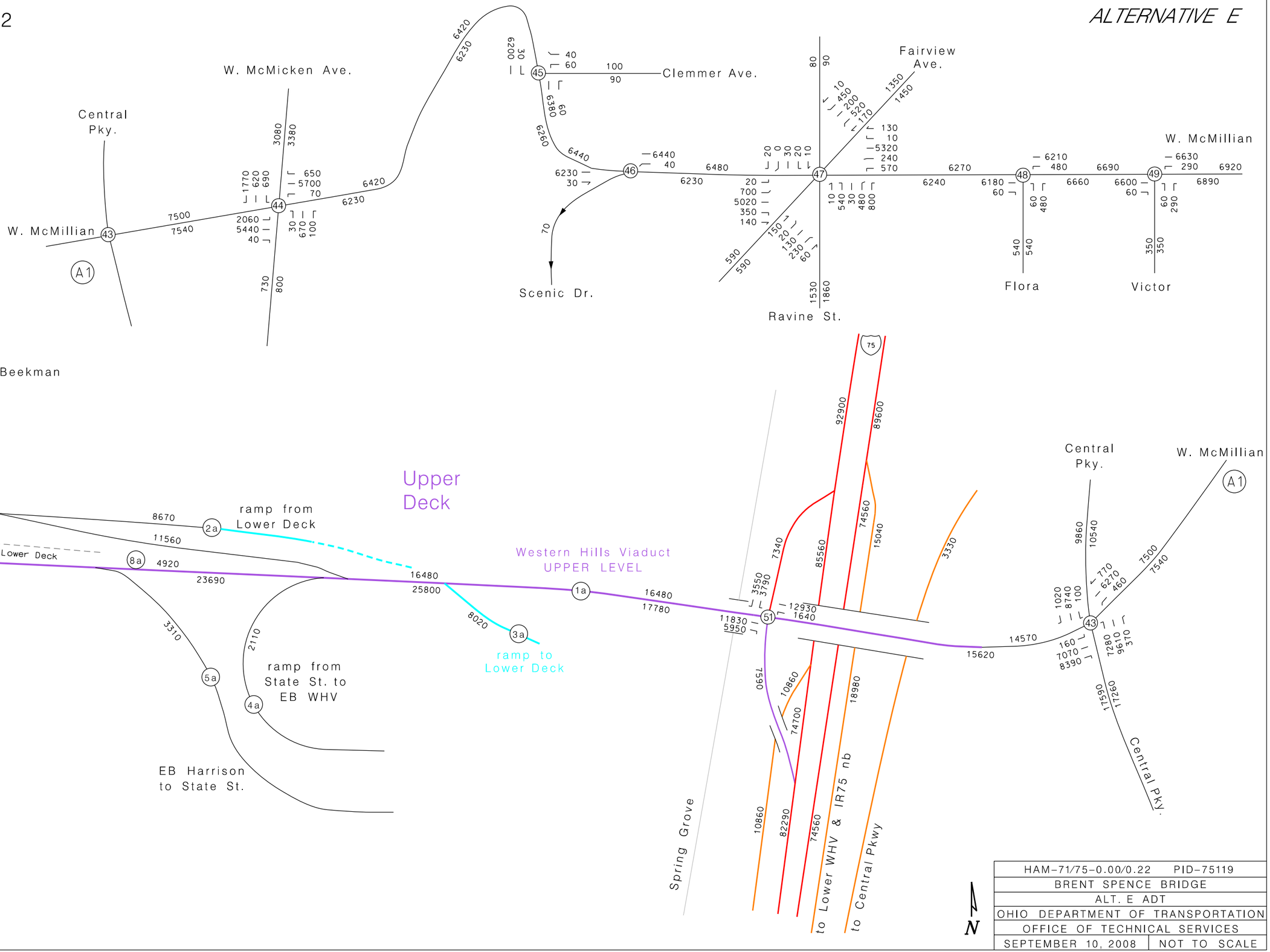
Ohio Department of Transportation
September 10, 2008

HAM-71/75-0.00/0.22
PID 75119 - Brent Spence Bridge
ALTERNATIVE E
TRUCK FACTORS

	West Leg	0.05	0.06	0.02
	South Leg	0.04	0.03	0.03
	Northeast Leg (Fairview)	0.04	0.04	0.03
	Southwest Leg (Fairview)	0.11	0.25	0.05
48	McMillan @ Flora			
	East Leg	0.05	0.07	0.03
	West Leg	0.05	0.07	0.03
	South Leg	0.00	0.00	0.00
49	McMillan @ Victor			
	East Leg	0.05	0.07	0.02
	West Leg	0.05	0.07	0.03
	South Leg	0.03	0.04	0.03
	All other	0.02	0.01	0.01

HAM–71/75–0.00/0.22
PID 75119
PLATE 1 OF 24

ALTERNATIVE E

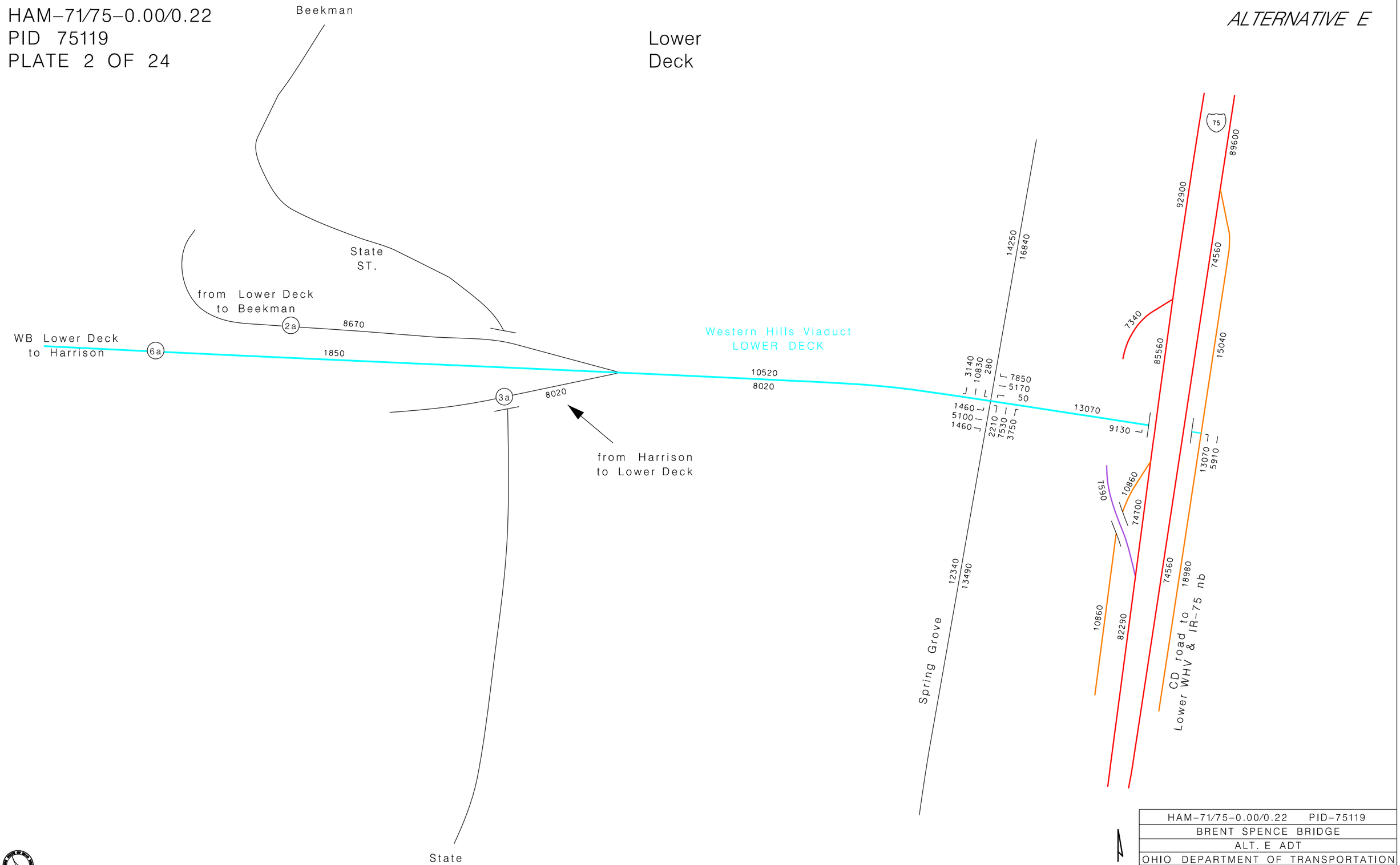


HAM–71/75–0.00/0.22 PID–75119
BRENT SPENCE BRIDGE
ALT. E ADT
OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF TECHNICAL SERVICES
SEPTEMBER 10, 2008 | NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 2 OF 24

ALTERNATIVE E

Lower
Deck



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. E ADT	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

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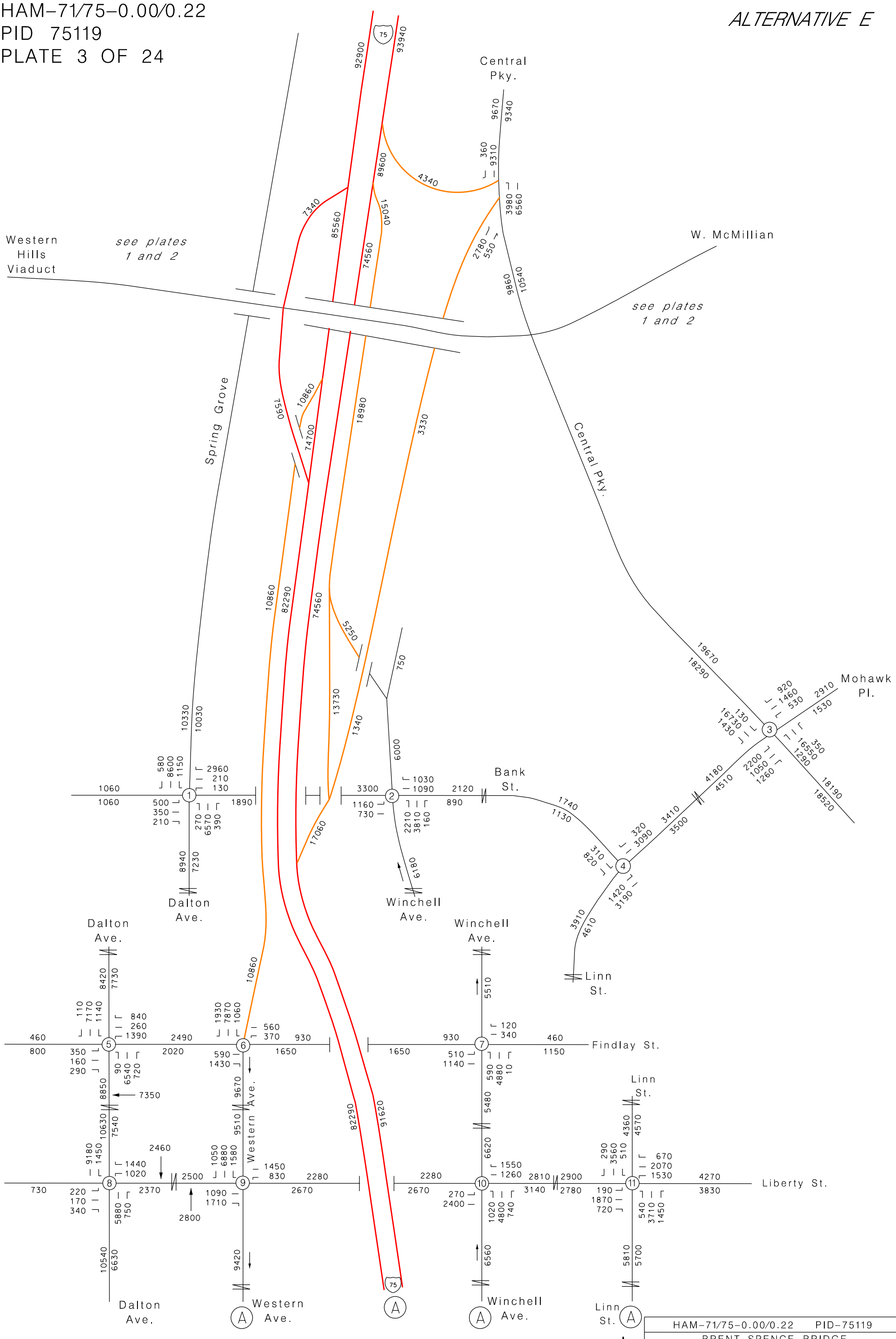
HAM–71/75–0.00/0.22
PID 75119
PLATE 3 OF 24

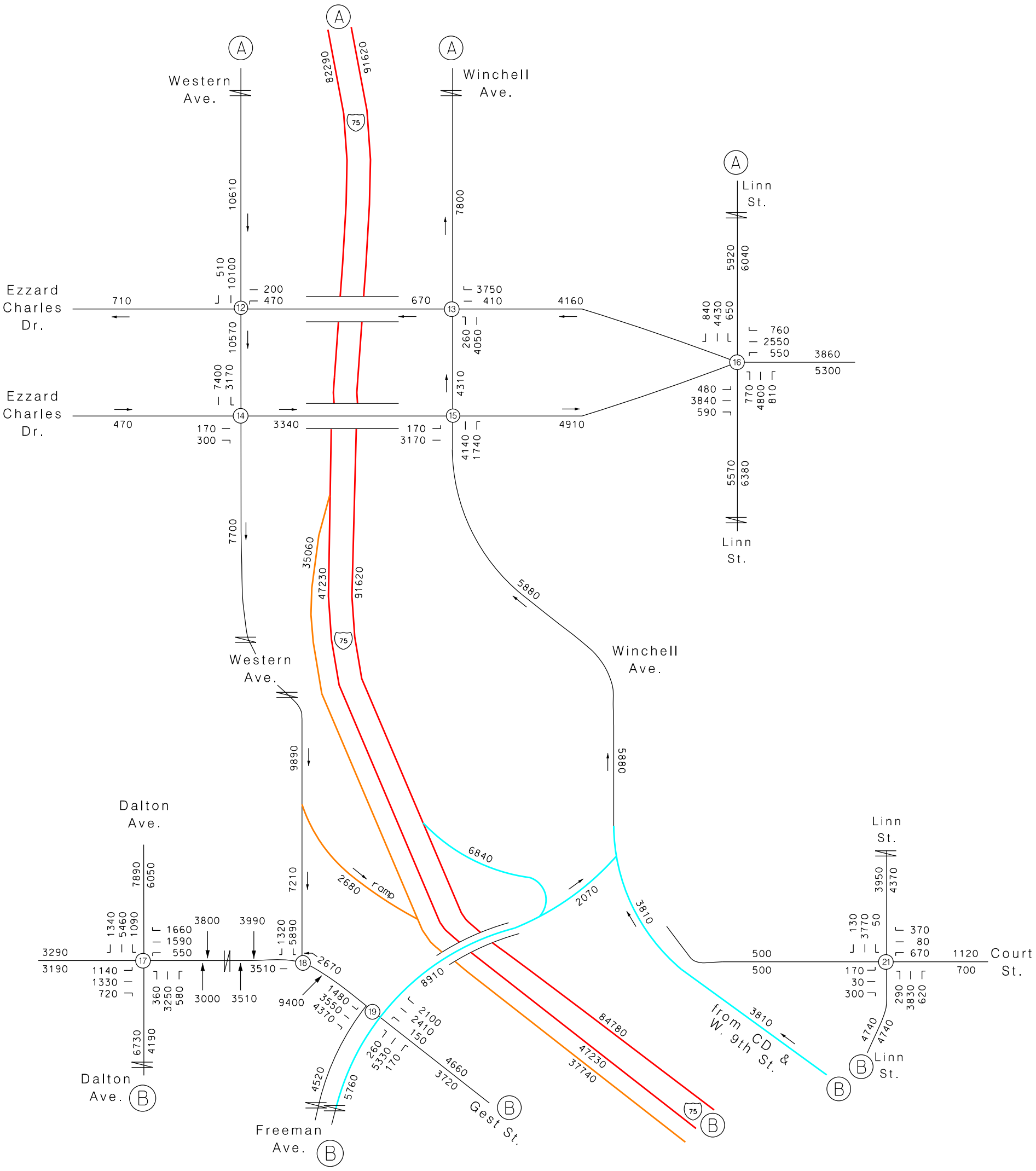
ALTERNATIVE E



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. E ADT	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 4 OF 24

ALTERNATIVE E



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. E ADT	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

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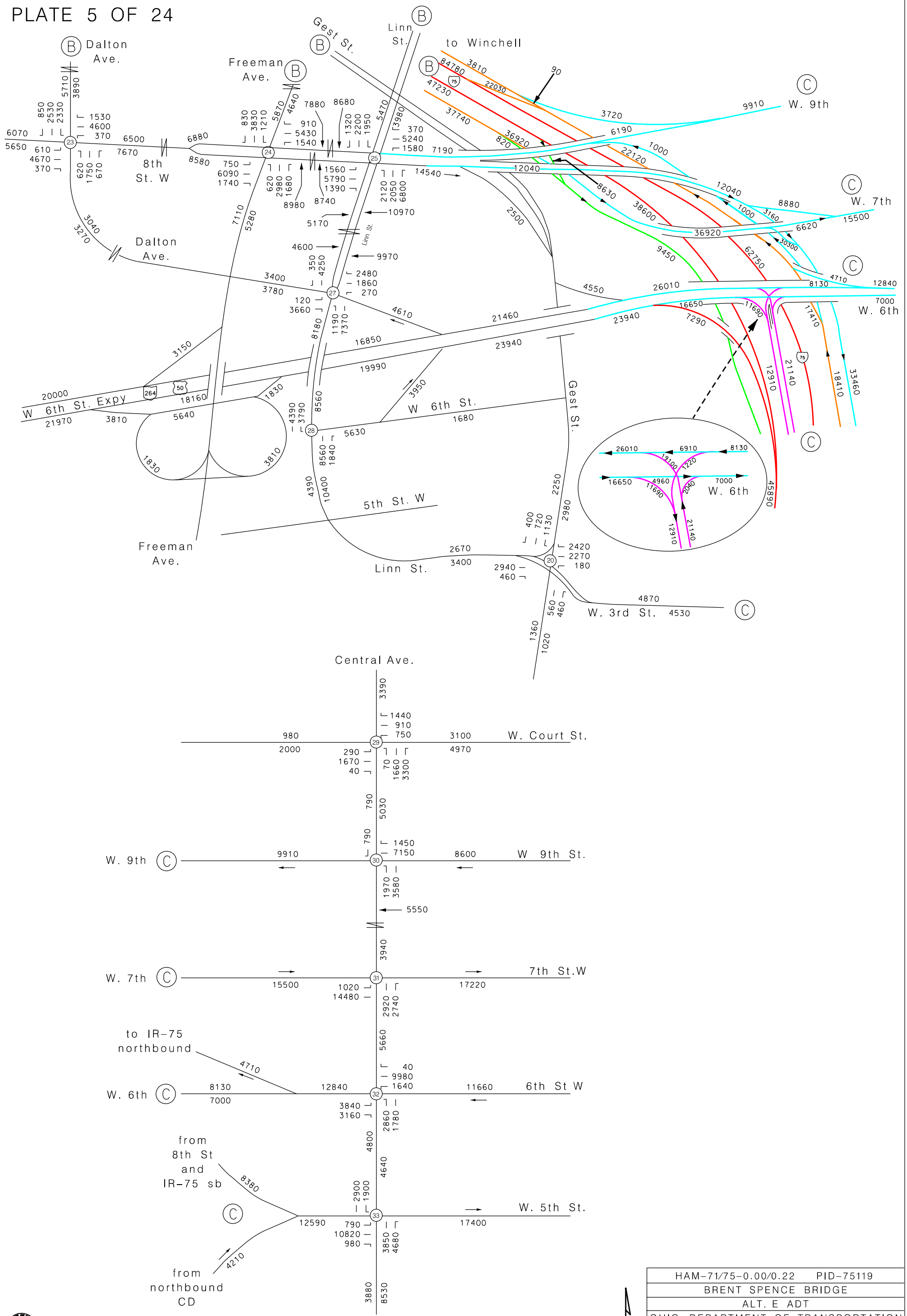
HAM–71/75–0.00/0.22
PID 75119
PLATE 5 OF 24

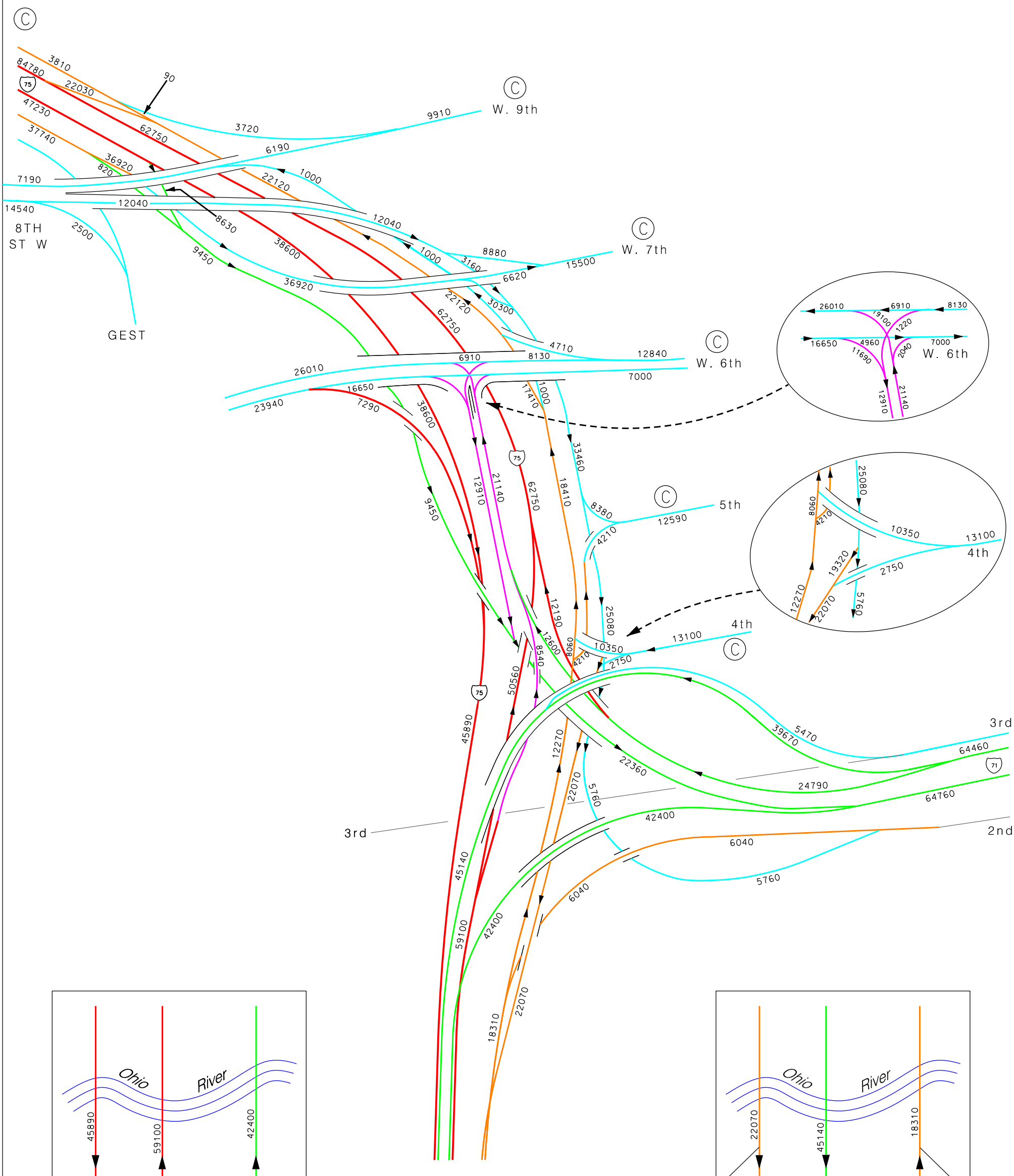
ALTERNATIVE E



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. E ADT	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 6 OF 24

ALTERNATIVE E



HAM–71/75–0.00/0.22 PID–75119
BRENT SPENCE BRIDGE
ALT. E ADT
OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF TECHNICAL SERVICES
SEPTEMBER 10, 2008 | NOT TO SCALE

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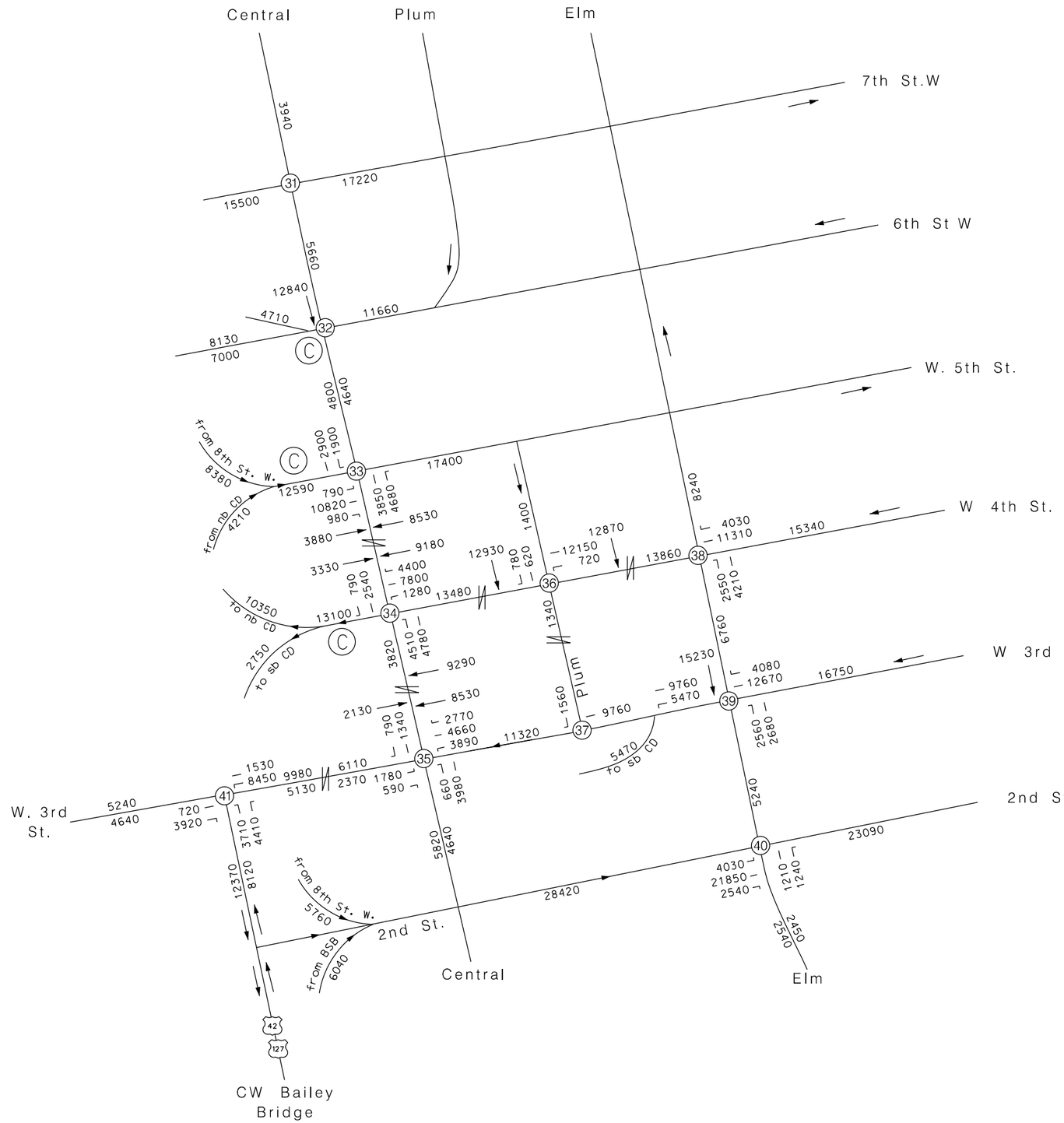
HAM-71/75-0.00/0.22
PID 75119
PLATE 7 OF 24

ALTERNATIVE E

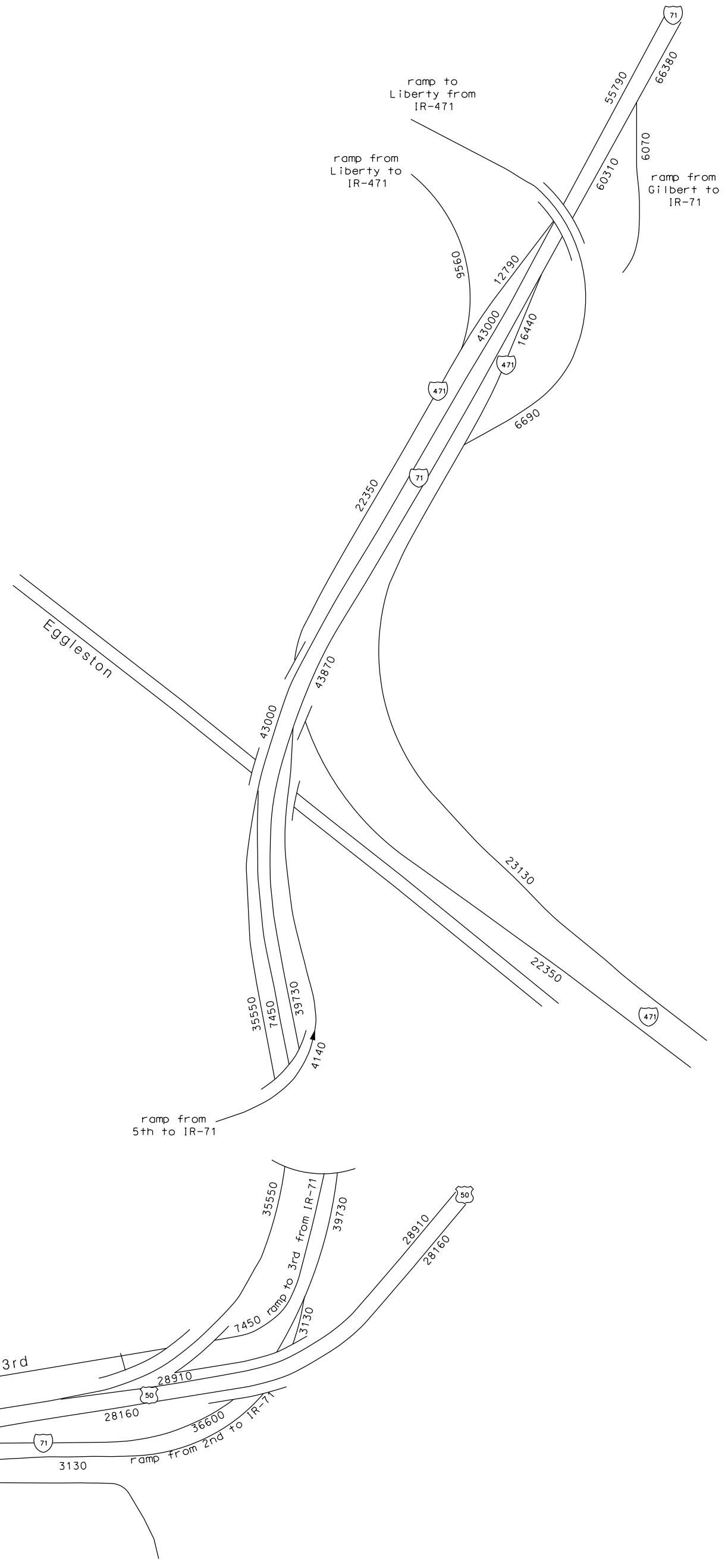


HAM-71/75-0.00/0.22 PID-75119	
BRENT SPENCE BRIDGE	
ALT. E ADT	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

N

HAM-71/75-0.00/0.22
PID 75119
PLATE 8 OF 24

ALTERNATIVE E

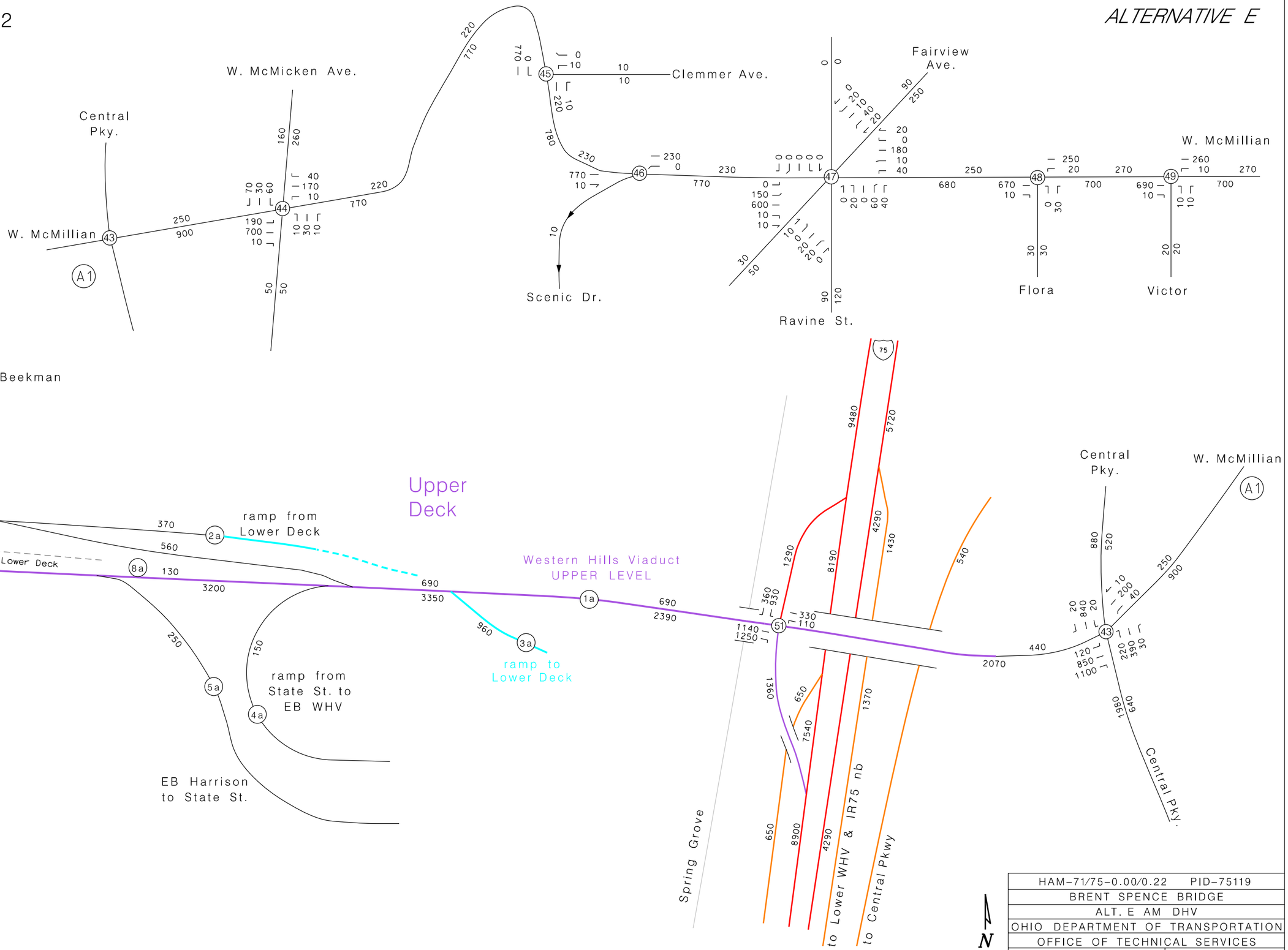


HAM-71/75-0.00/0.22 PID-75119	
BRENT SPENCE BRIDGE	
ALT. E ADT	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

N

HAM–71/75–0.00/0.22
PID 75119
PLATE 9 OF 24

ALTERNATIVE E

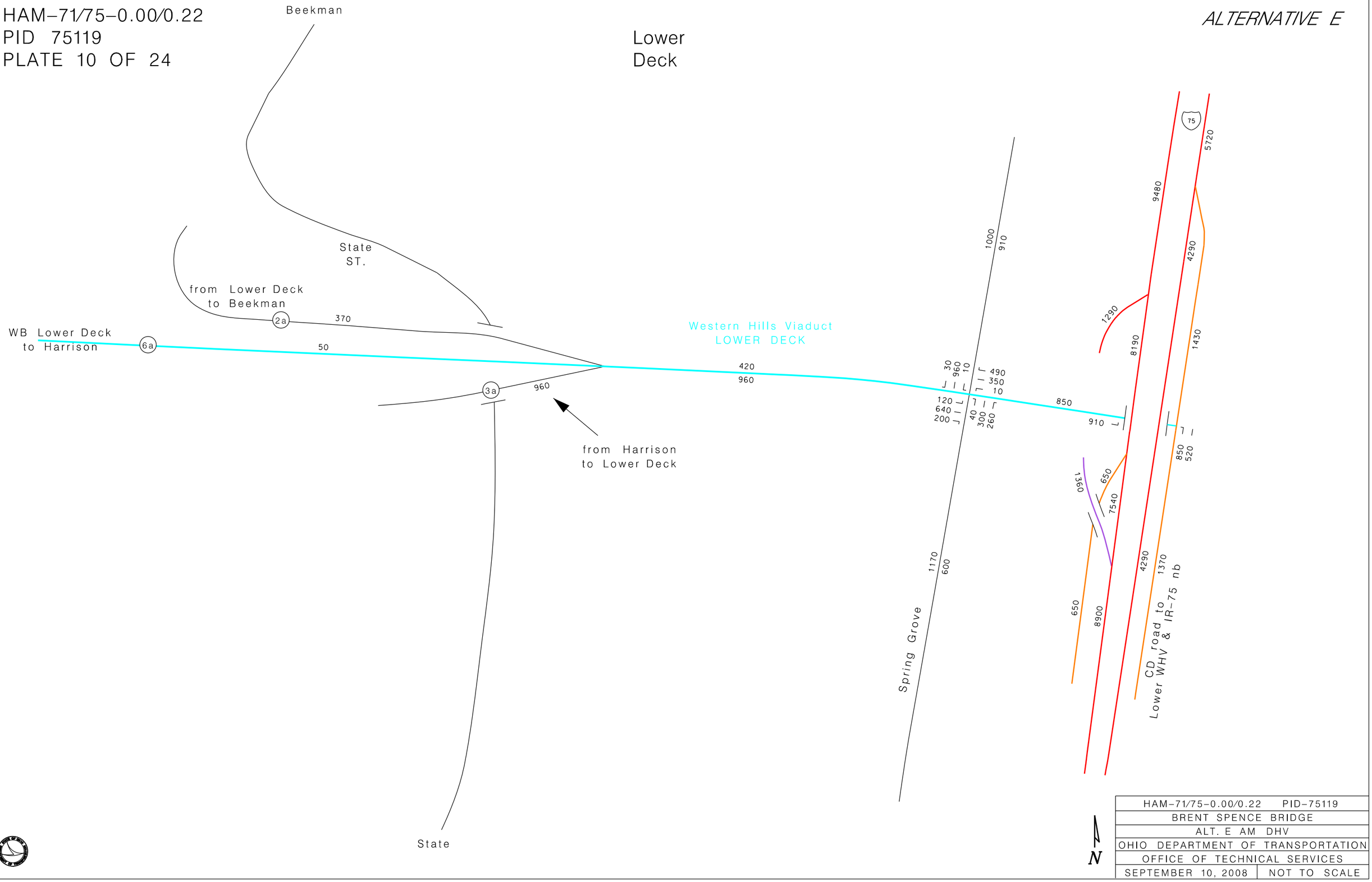


HAM–71/75–0.00/0.22 PID–75119
BRENT SPENCE BRIDGE
ALT. E AM DHV
OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF TECHNICAL SERVICES
SEPTEMBER 10, 2008 | NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 10 OF 24

ALTERNATIVE E

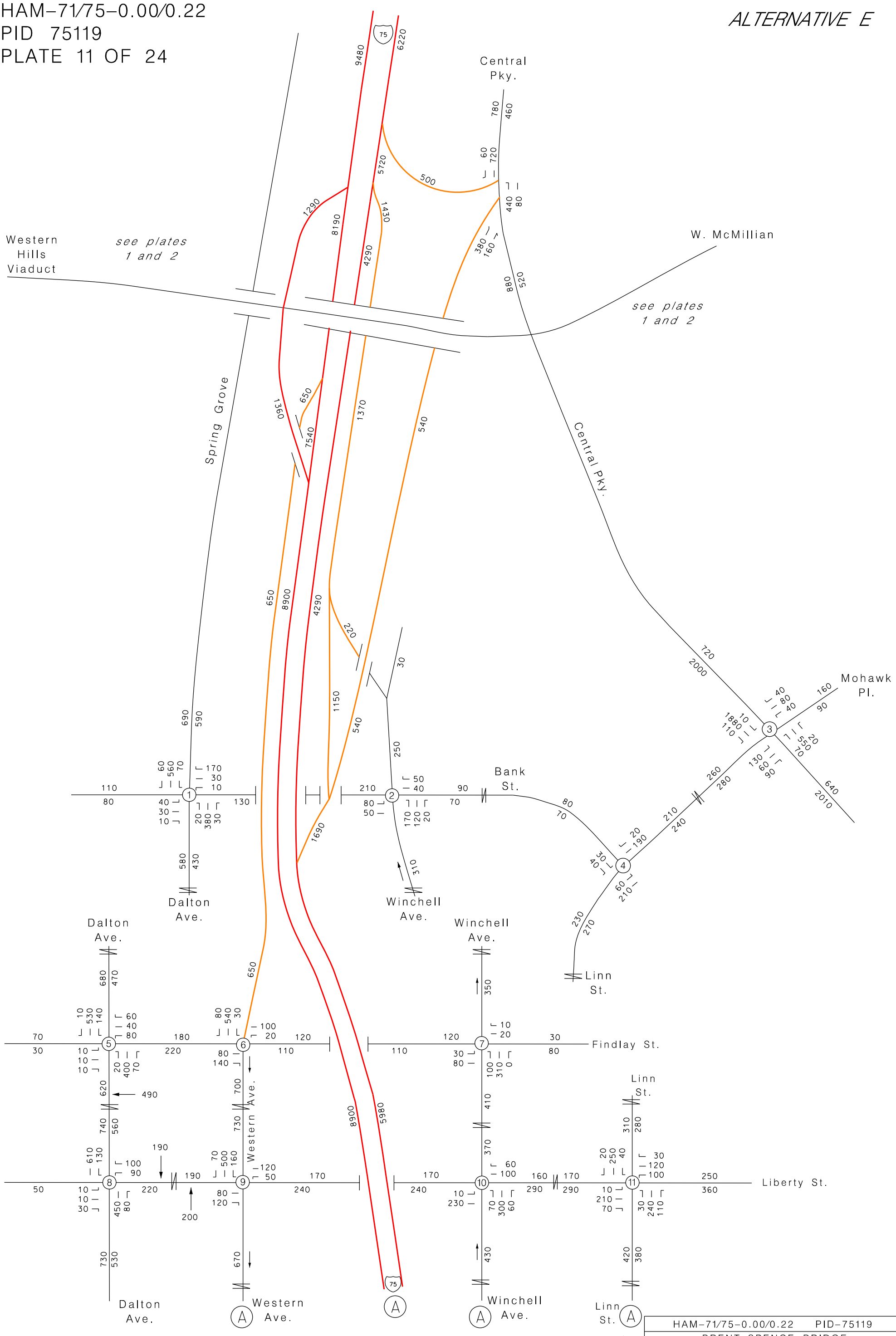
Lower
Deck



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. E AM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 11 OF 24

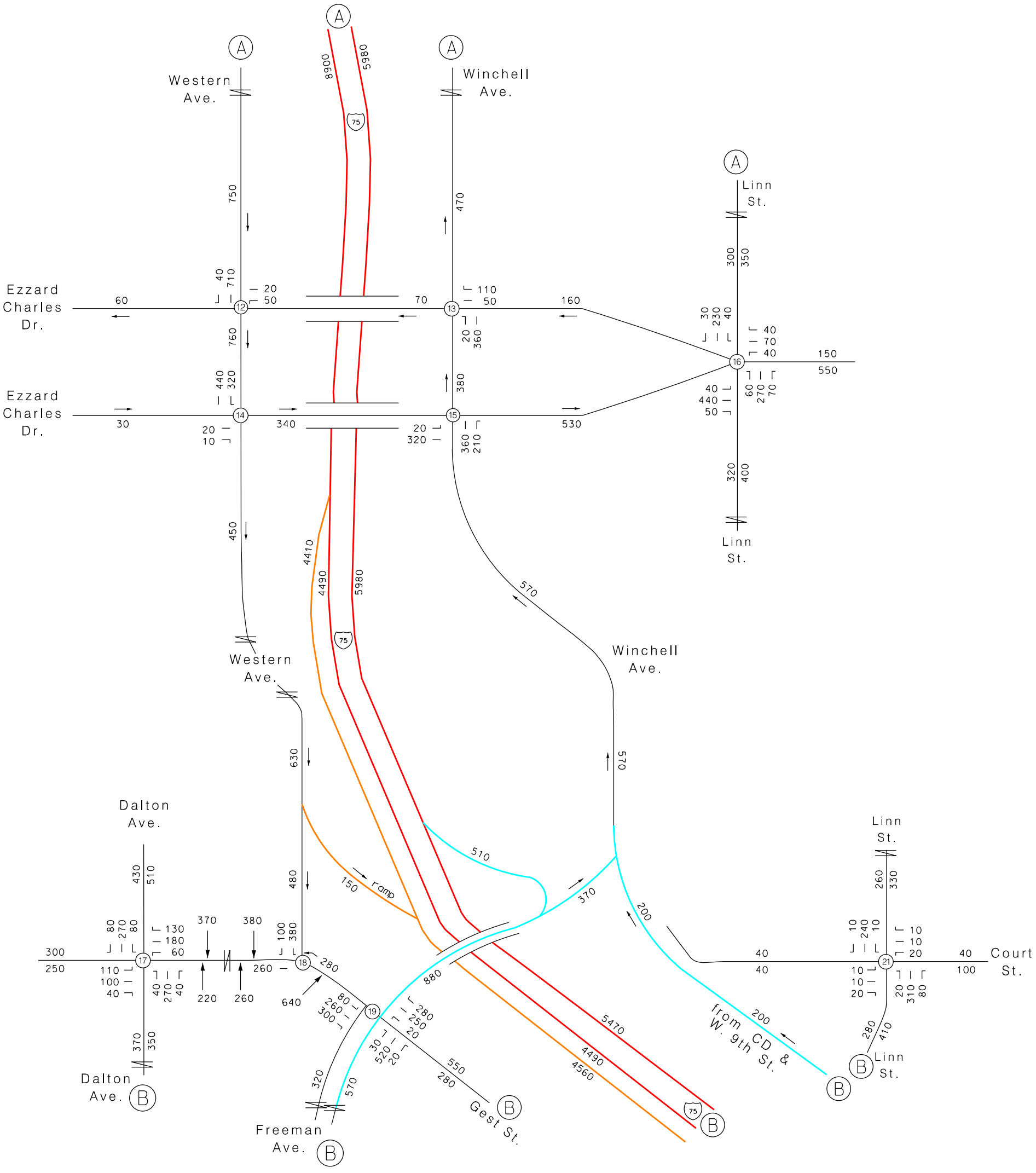
ALTERNATIVE E



HAM–71/75–0.00/0.22 PID–75119	
BRENT SPENCE BRIDGE	
ALT. E AM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 12 OF 24

ALTERNATIVE E



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. E AM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

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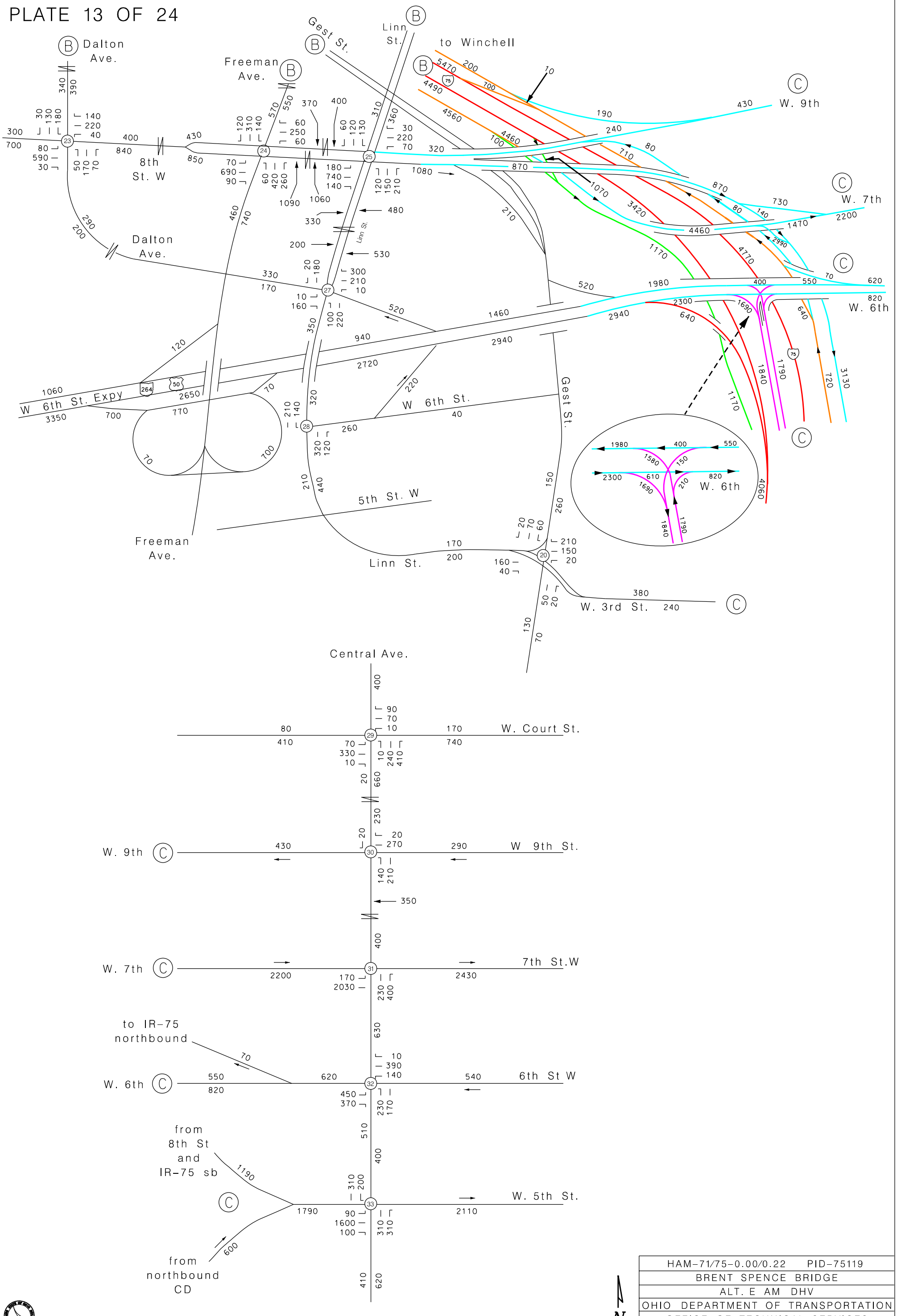
HAM–71/75–0.00/0.22
PID 75119
PLATE 13 OF 24

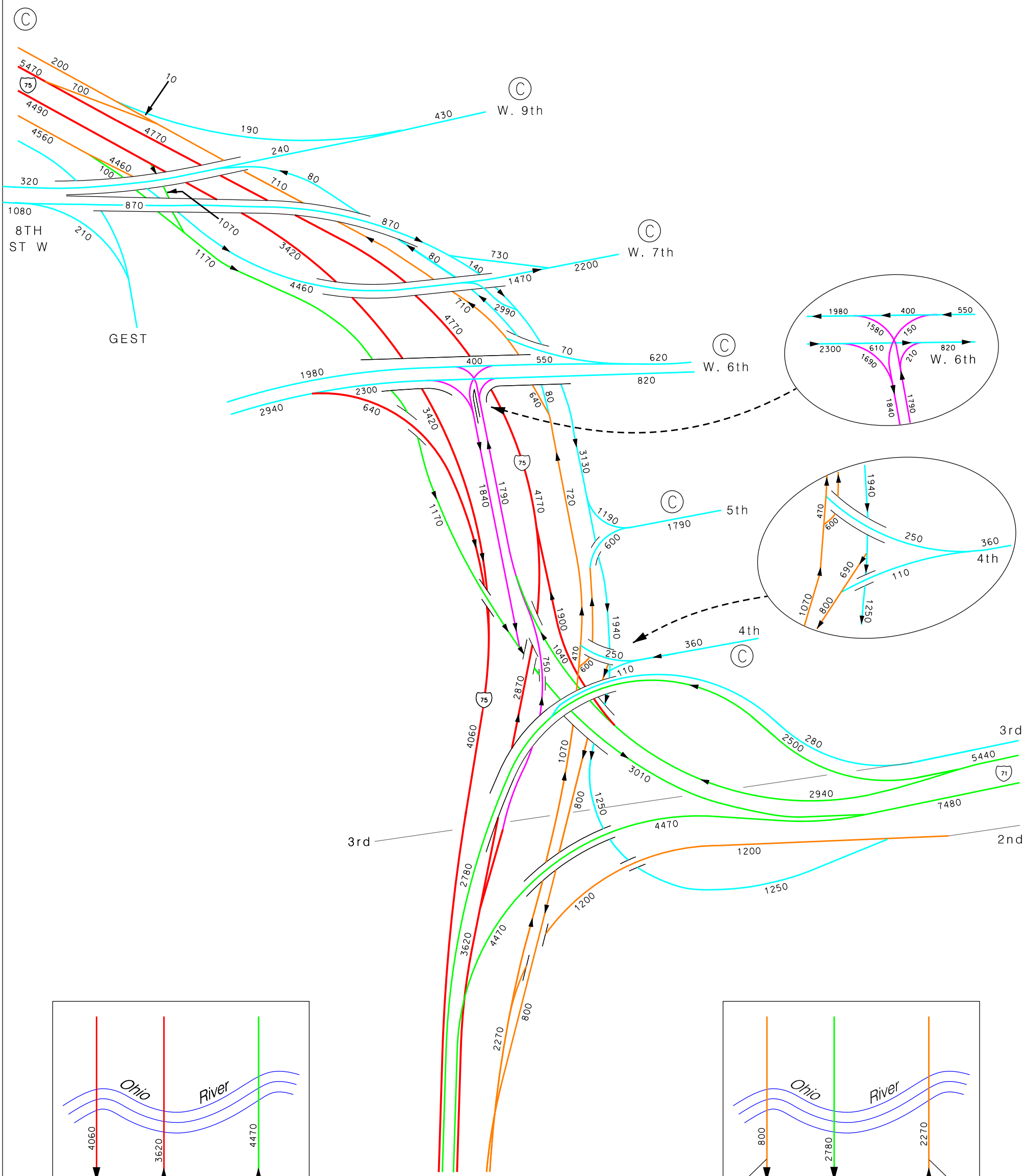
ALTERNATIVE E



HAM–71/75–0.00/0.22 PID–75119	
BRENT SPENCE BRIDGE	
ALT. E AM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

HAM-71/75-0.00/0.22
PID 75119
PLATE 14 OF 24

ALTERNATIVE E



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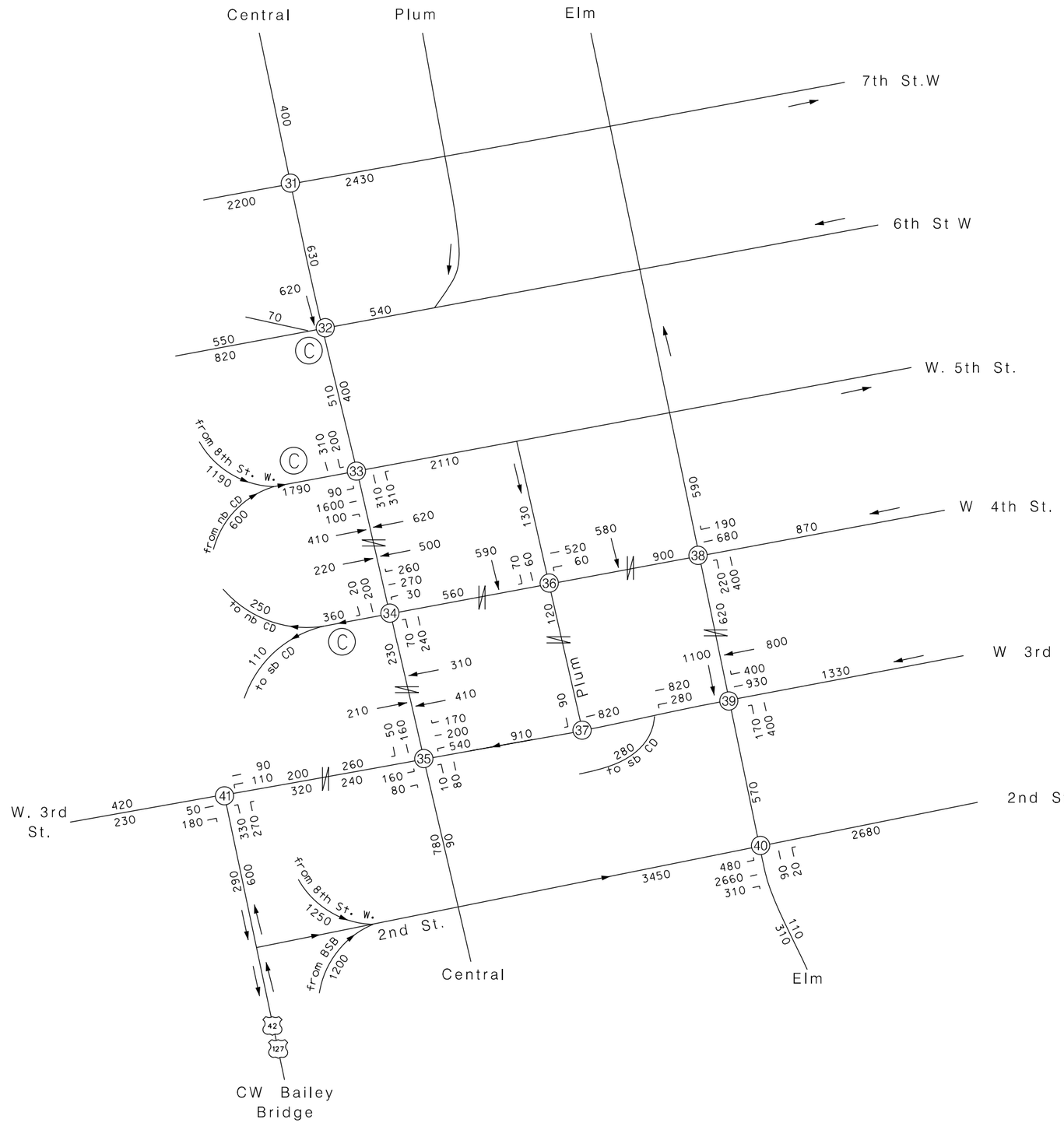
HAM-71/75-0.00/0.22	PID-75119
BRENT SPENCE BRIDGE	
ALT. E AM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

HAM-71/75-0.00/0.22
PID 75119
PLATE 15 OF 24

ALTERNATIVE E

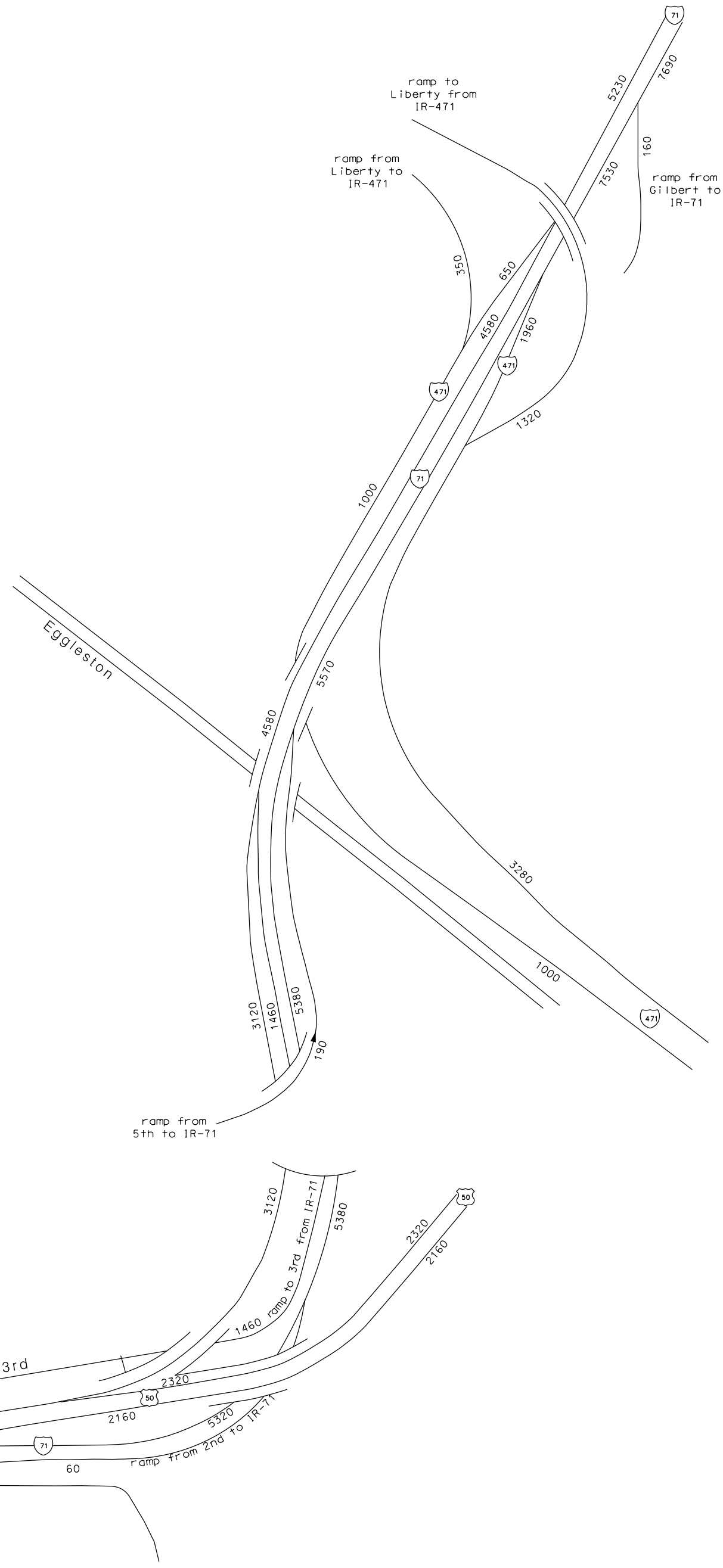


HAM-71/75-0.00/0.22 PID-75119	
BRENT SPENCE BRIDGE	
ALT. E AM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

N

HAM-71/75-0.00/0.22
PID 75119
PLATE 16 OF 24

ALTERNATIVE E



HAM-71/75-0.00/0.22 PID-75119	
BRENT SPENCE BRIDGE	
ALT. E AM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

N

HAM–71/75–0.00/0.22
PID 75119
PLATE 17 OF 24

ALTERNATIVE E

W. McMicken Ave.
Central Pky.
W. McMillian
Clemmer Ave.
Fairview Ave.
Scenic Dr.
Ravine St.
Flora
Victor
A1
Harrison
to Beekman
ramp from Lower Deck
Upper Deck
ramp from Lower Deck
Western Hills Viaduct
UPPER LEVEL
ramp to Lower Deck
ramp from State St. to EB WHV
EB Harrison to State St.
Spring Grove
to Lower WHV & IR75 nb
to Central Pkwy
Central Pky.
W. McMillian
A1
Central Pky.

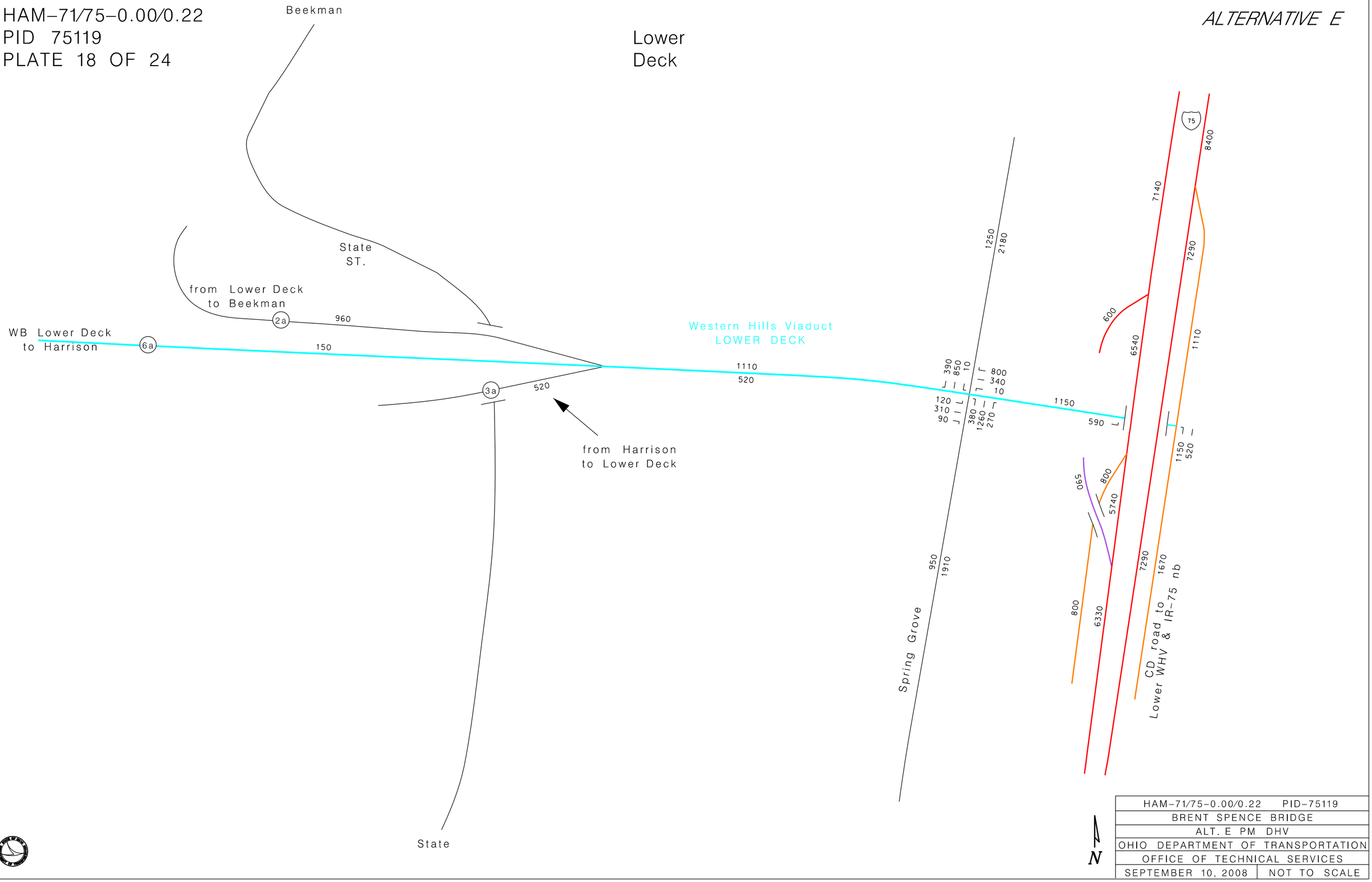
HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. E PM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

N

HAM–71/75–0.00/0.22
PID 75119
PLATE 18 OF 24

ALTERNATIVE E

Lower
Deck

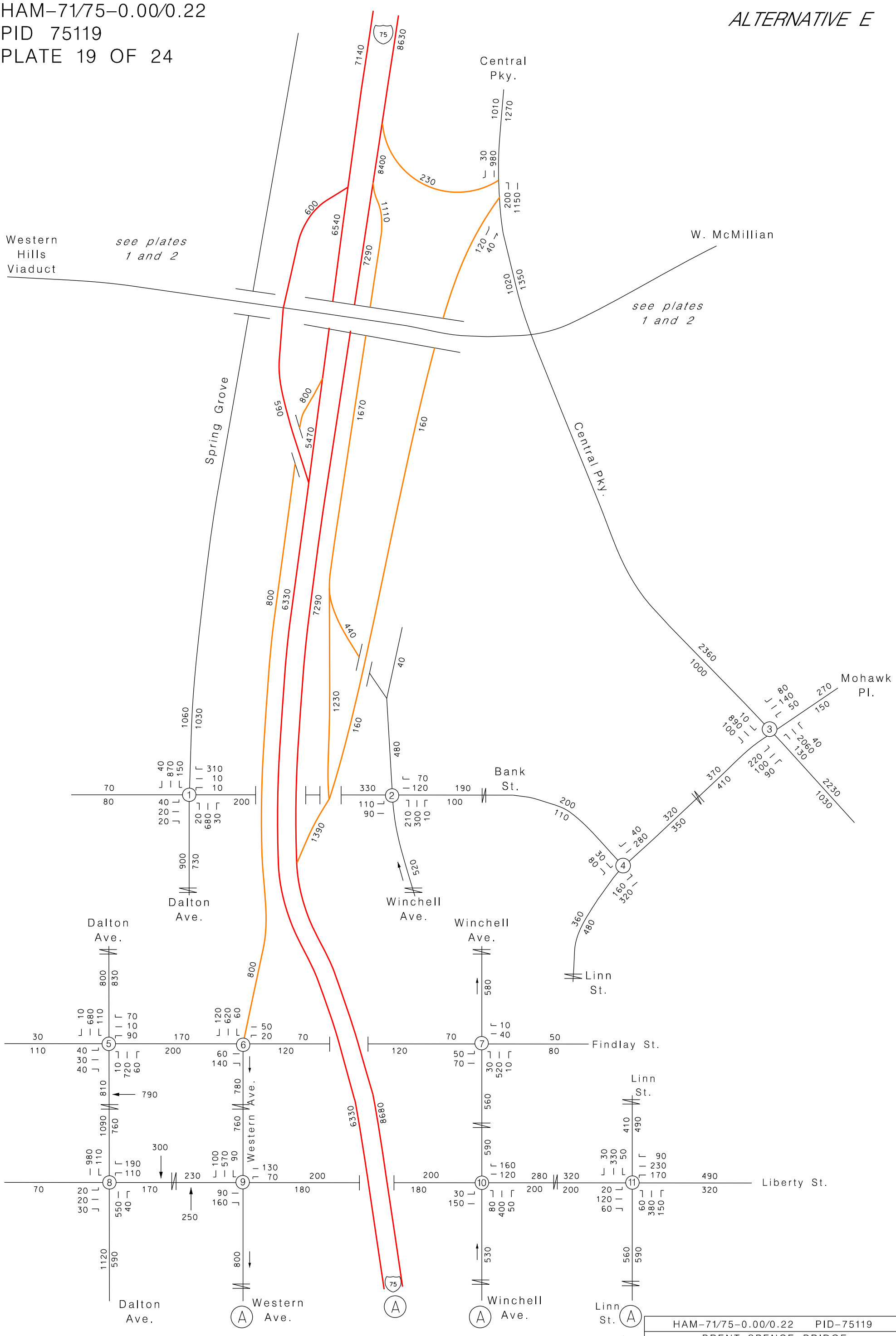


HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. E PM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

N

HAM–71/75–0.00/0.22
PID 75119
PLATE 19 OF 24

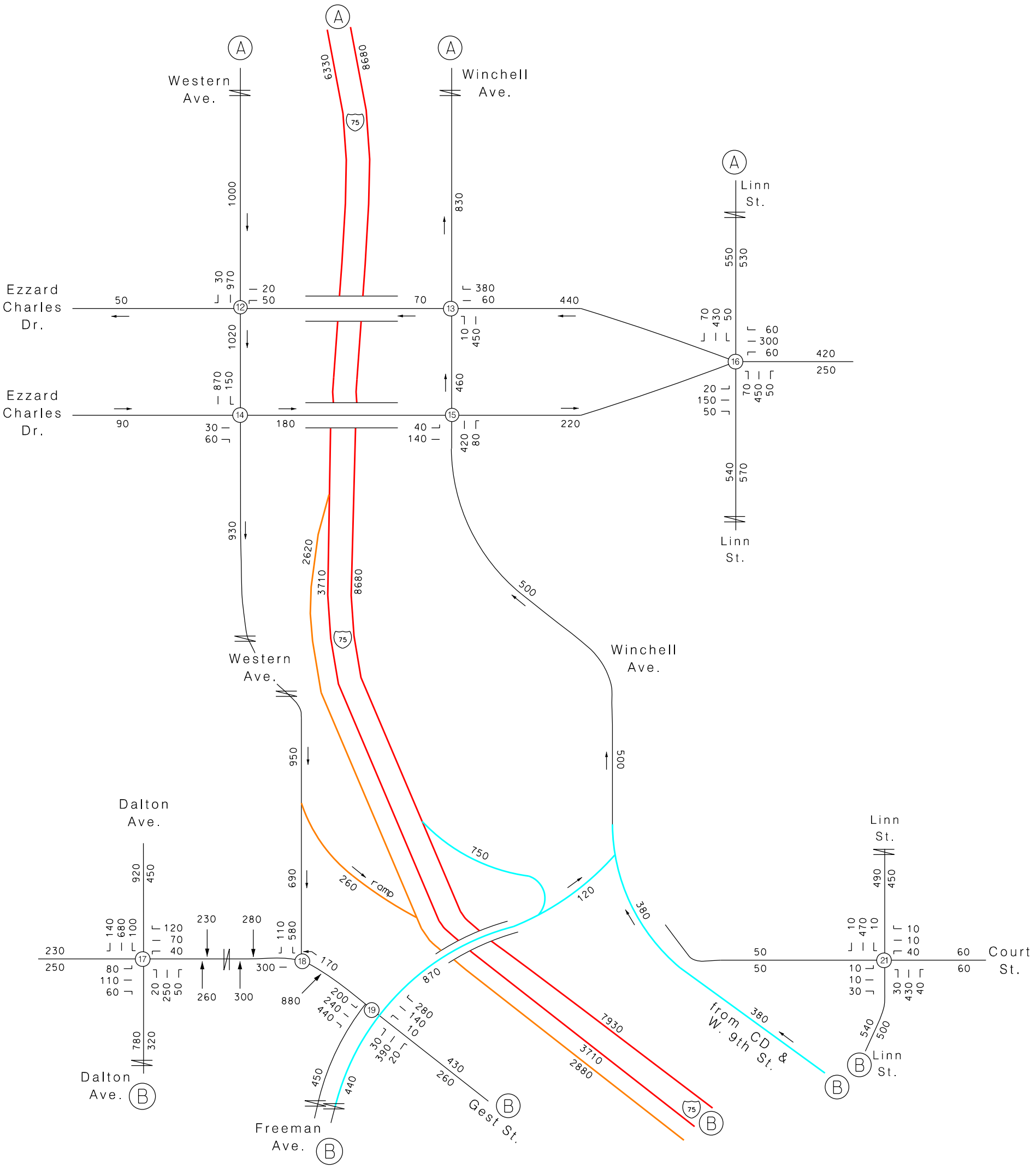
ALTERNATIVE E



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. E PM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 20 OF 24

ALTERNATIVE E



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. E PM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

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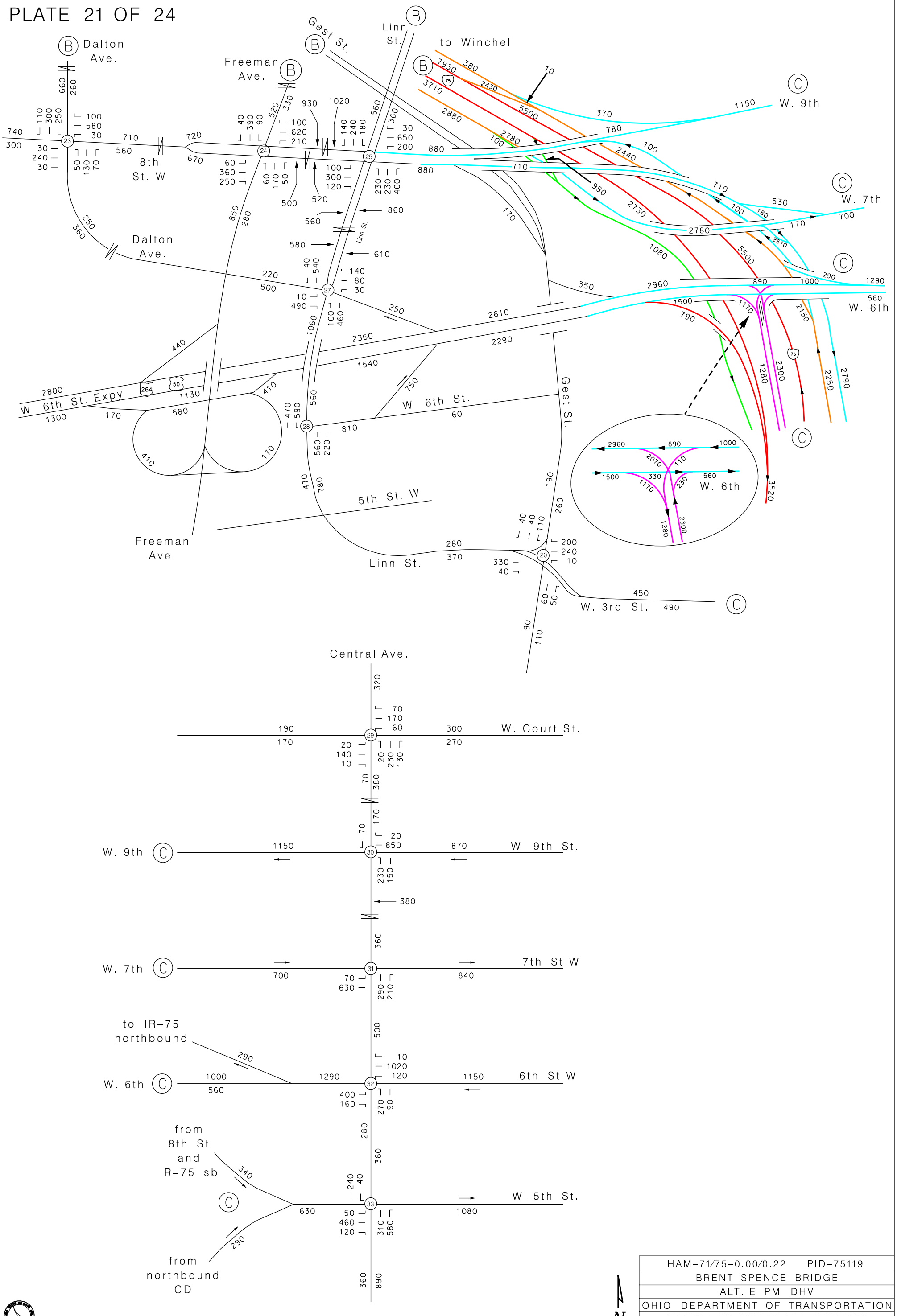
HAM–71/75–0.00/0.22
PID 75119
PLATE 21 OF 24

ALTERNATIVE E



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. E PM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

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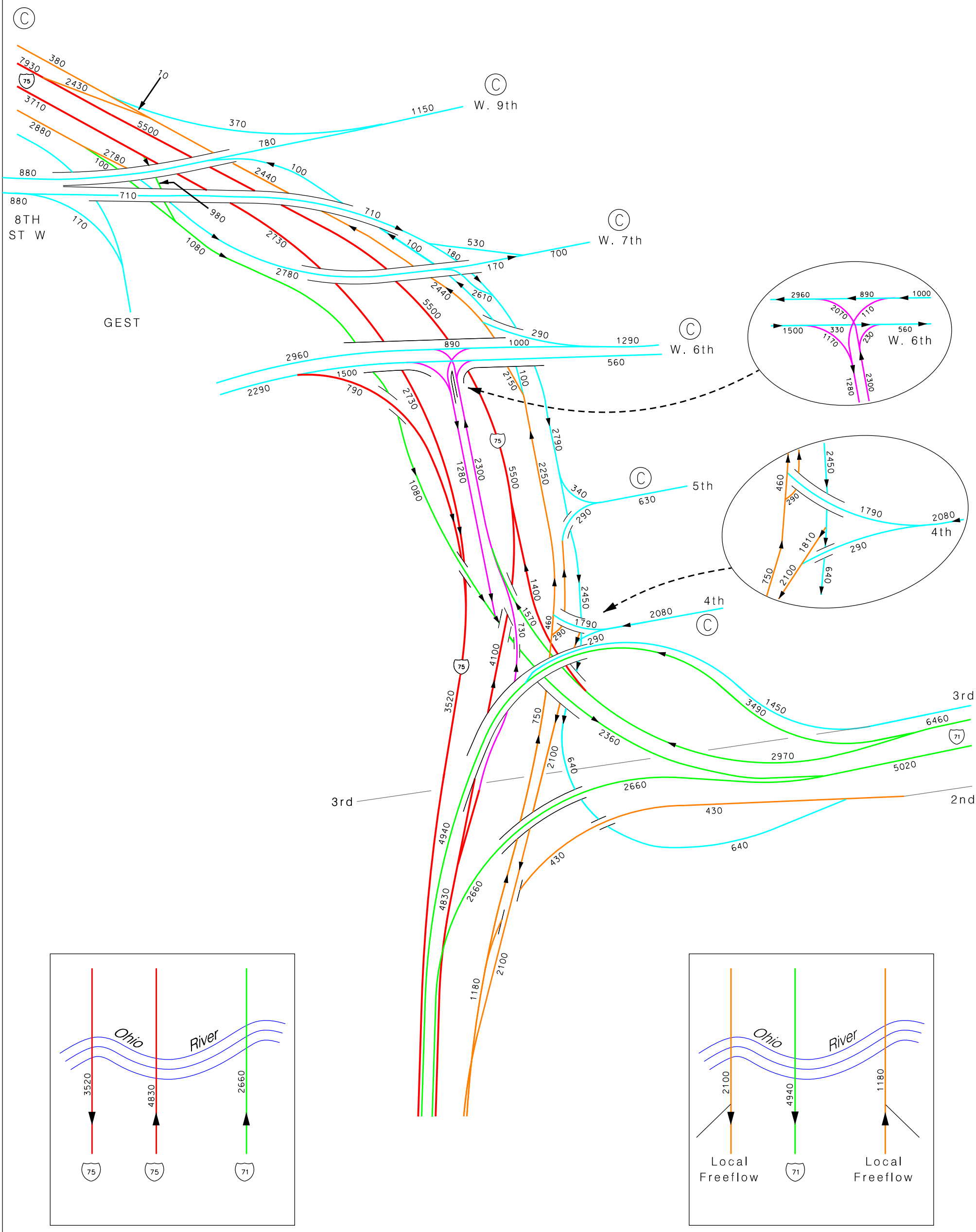
HAM-71/75-0.00/0.22
PID 75119
PLATE 22 OF 24

ALTERNATIVE E



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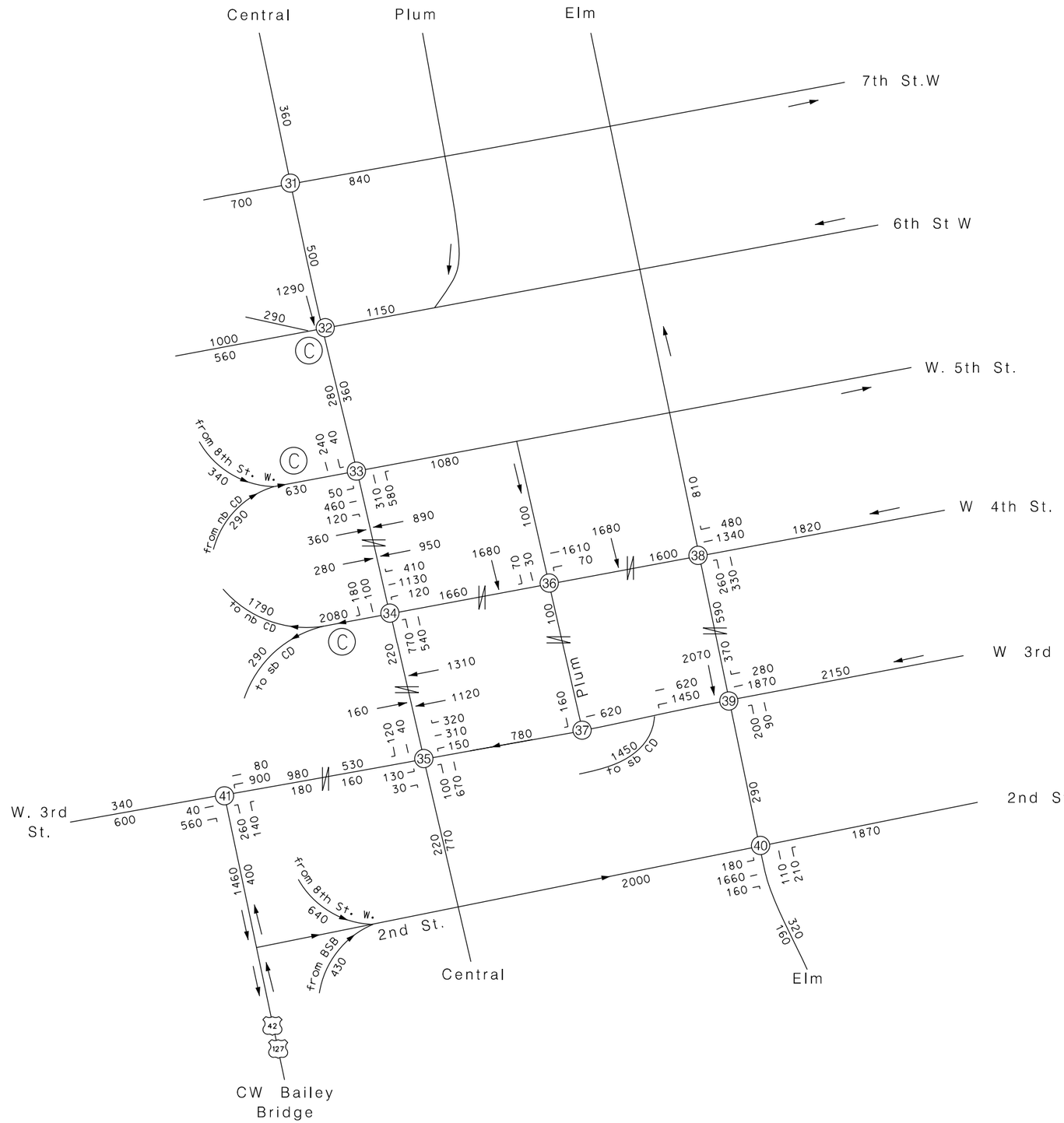
HAM-71/75-0.00/0.22	PID-75119
BRENT SPENCE BRIDGE	
ALT. E PM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

HAM-71/75-0.00/0.22
PID 75119
PLATE 23 OF 24

ALTERNATIVE E

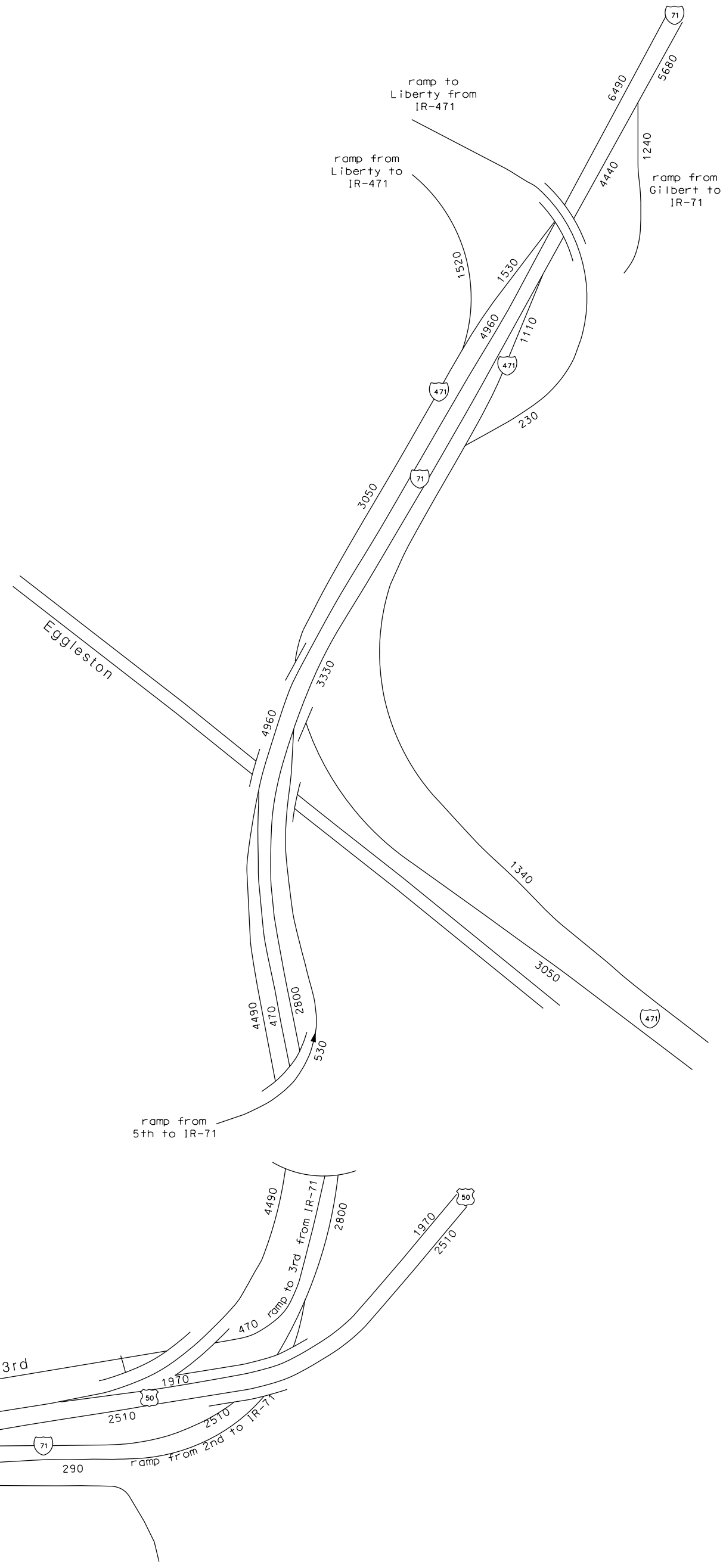


HAM-71/75-0.00/0.22 PID-75119	
BRENT SPENCE BRIDGE	
ALT. E PM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

N

HAM-71/75-0.00/0.22
PID 75119
PLATE 24 OF 24

ALTERNATIVE E



HAM-71/75-0.00/0.22 PID-75119	
BRENT SPENCE BRIDGE	
ALT. E PM DHV	
OHIO DEPARTMENT OF TRANSPORTATION	
OFFICE OF TECHNICAL SERVICES	
SEPTEMBER 10, 2008	NOT TO SCALE

N

OHIO DEPARTMENT OF TRANSPORTATION
CENTRAL OFFICE • 1980 WEST BROAD STREET • COLUMBUS, OH 43223
TED STRICKLAND, GOVERNOR • JOLENE M. MOLITORIS, DIRECTOR

May 14, 2010

Randy Kill
Burgess & Niple
5085 Reed Road
Columbus, OH 43220

RE: HAM-71/75-0.00/0.22, PID 75119, Build Alt. C-D Certified Traffic *Revised*

Dear Mr. Kill:

In reply to the revised traffic forecasts received May 14, 2010, the Office of Multi-Modal Planning has reviewed the 2035 traffic for the subject study and the volumes that were provided are reasonable.

The traffic forecasts shown on the attached pages provided by Burgess & Niple are be certified for use in the HAM-71/75-0.00/0.22 project.

If you have any questions, please contact me at (614) 644-8195 or at rebecca.salak@dot.state.oh.us.

Sincerely,

Rebecca Salak

Becky Salak
Modeling & Forecasting
Office of Multi-Modal Planning

c: M. Byram, OMP – L. Duguid, OMP - File

HAM–71/75–0.00/0.22
PID 75119
PLATE 1 OF 24

ALTERNATIVE C–D

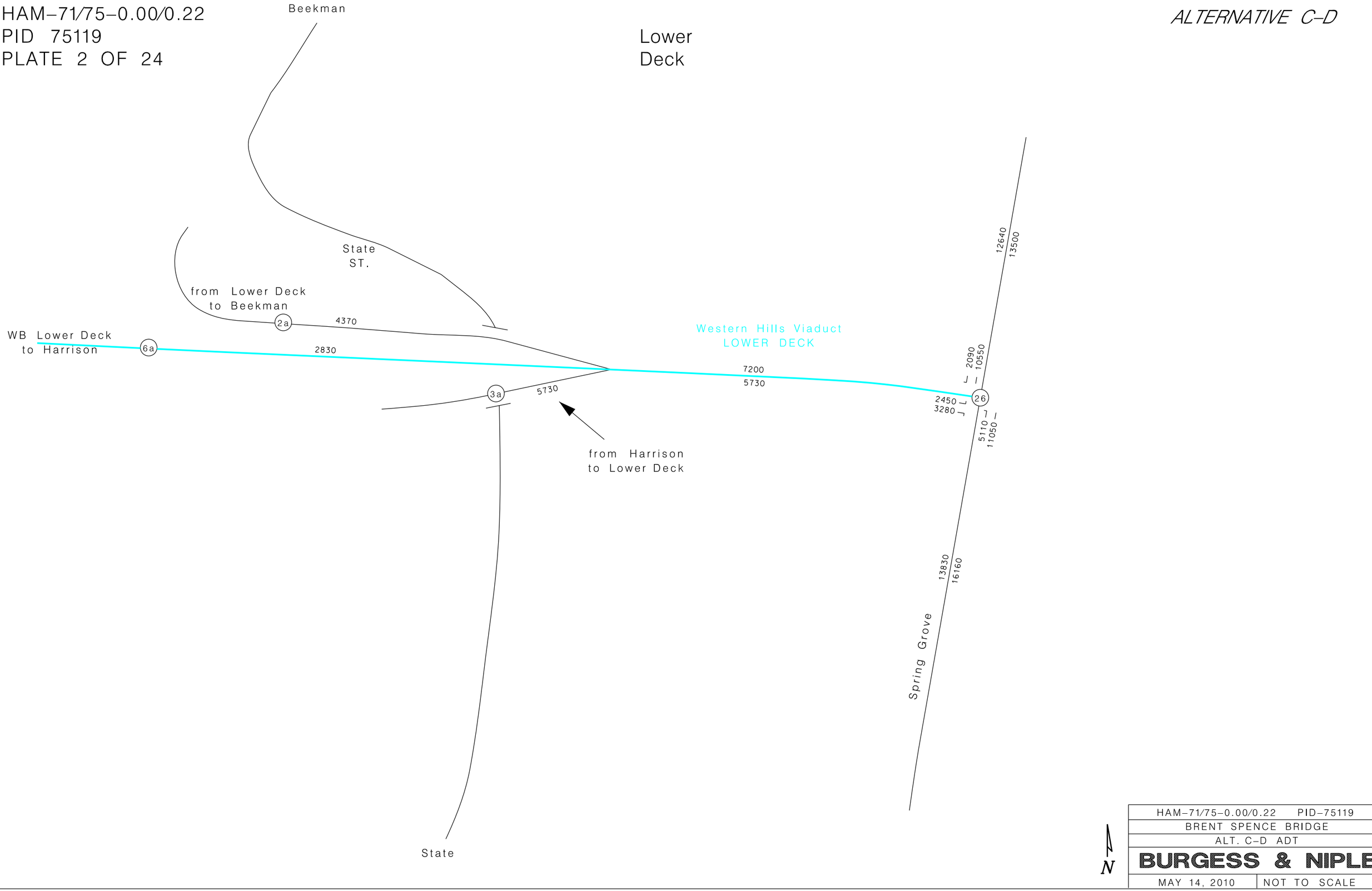
W. McMicken Ave.
Central Pky.
W. McMillian
A1
to Beekman
Harrison
Clemmer Ave.
Fairview Ave.
Scenic Dr.
Ravine St.
Flora
Victor
W. McMillian
Upper Deck
ramp from Lower Deck
Western Hills Viaduct UPPER LEVEL
ramp to Lower Deck
ramp from State St. to EB WHV
EB Harrison to State St.
Spring Grove
Central Pky.
W. McMillian

HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. C–D ADT	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 2 OF 24

ALTERNATIVE C–D

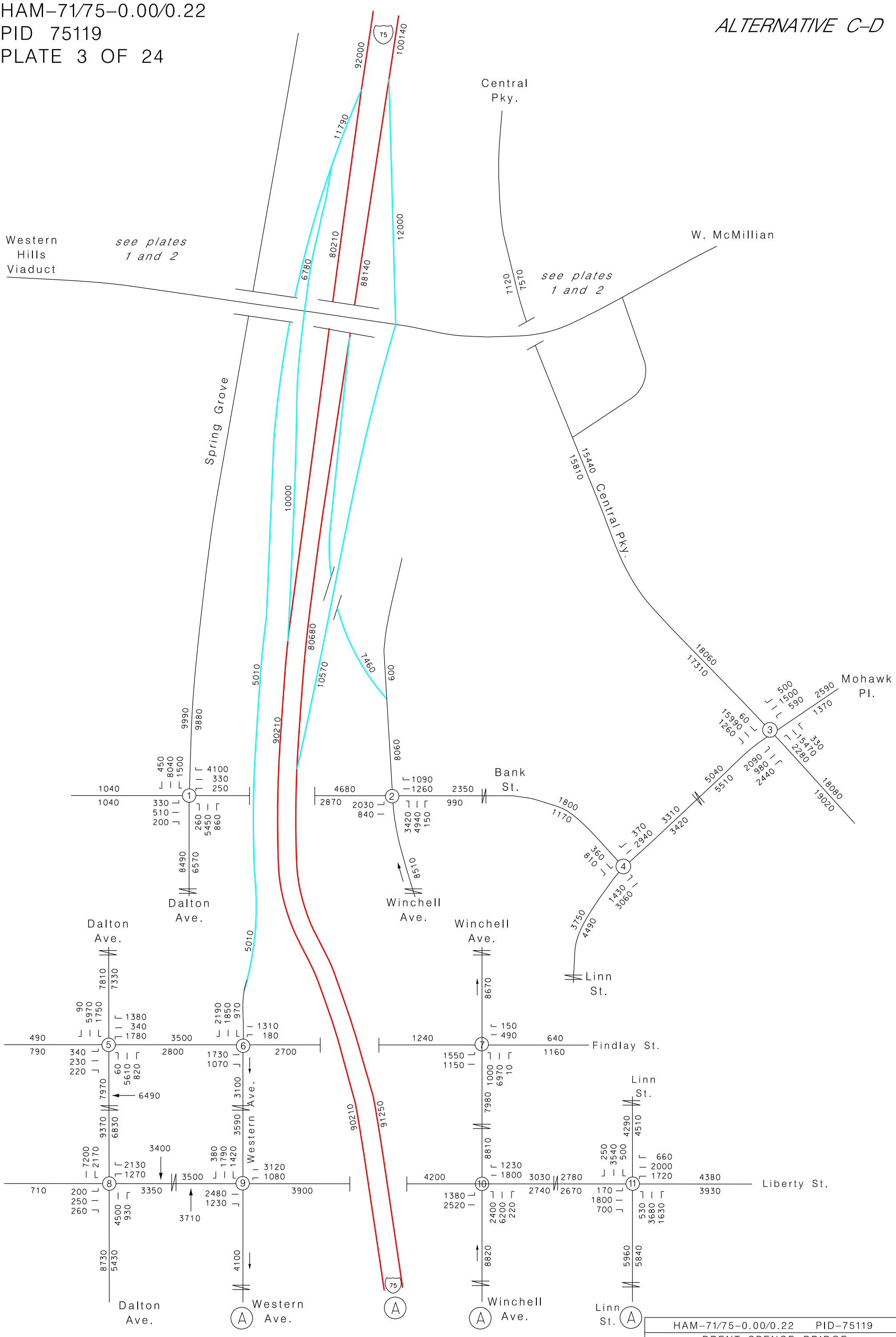
Lower
Deck



HAM–71/75–0.00/0.22 PID–75119	
BRENT SPENCE BRIDGE	
ALT. C–D ADT	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 3 OF 24

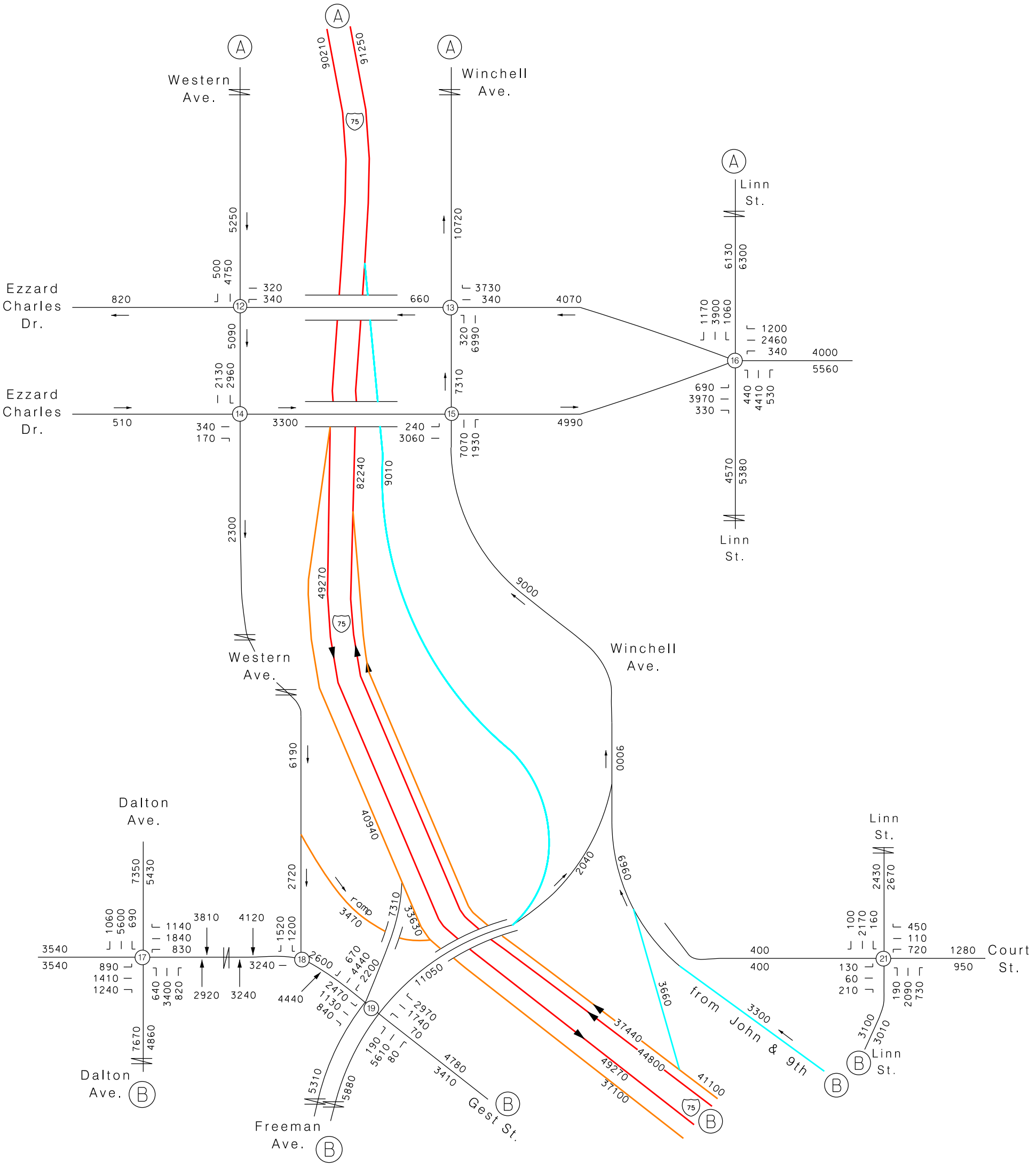
ALTERNATIVE C–D



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. C–D ADT	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 4 OF 24

ALTERNATIVE C–D

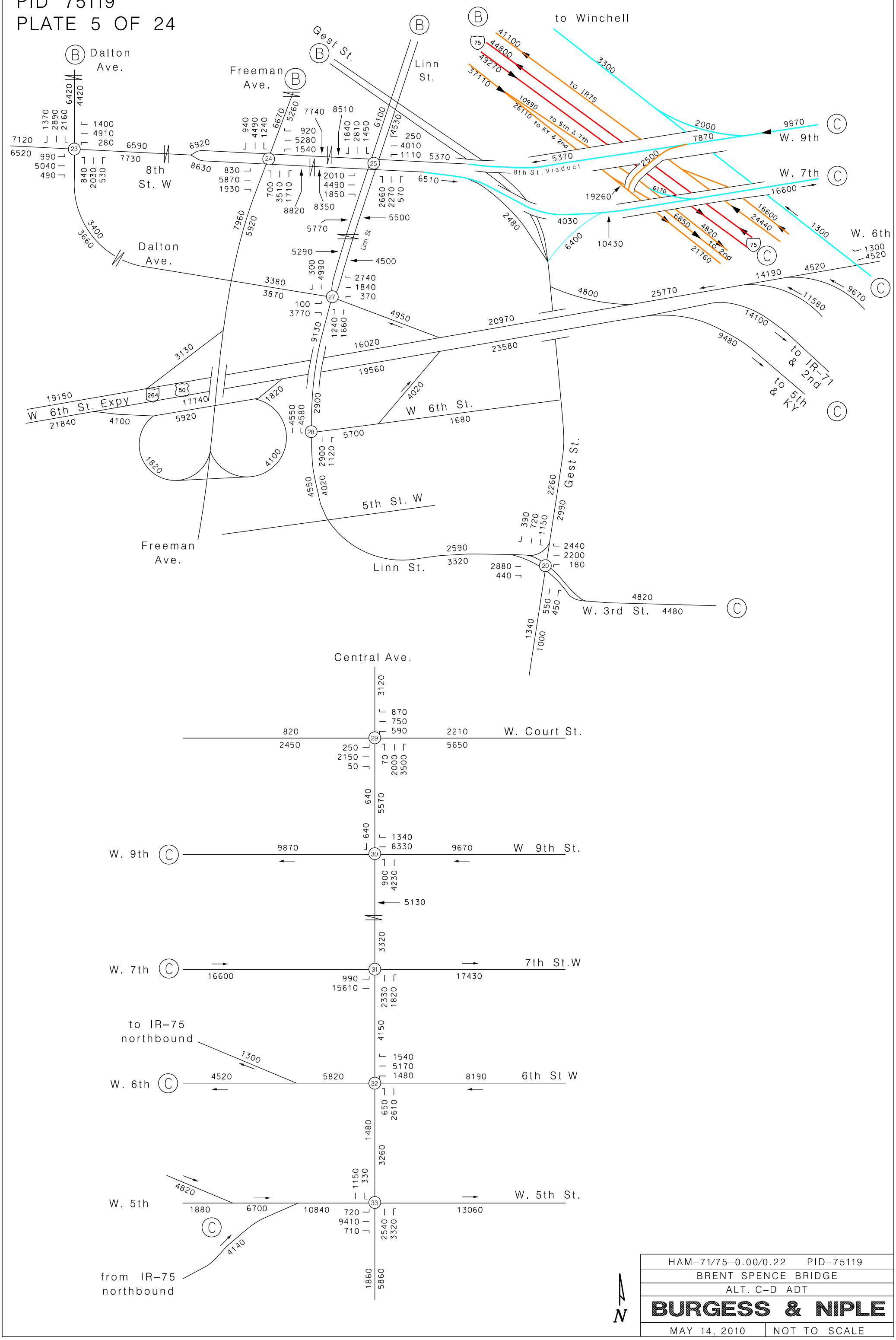


HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. C–D ADT	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

N

HAM–71/75–0.00/0.22
PID 75119
PLATE 5 OF 24

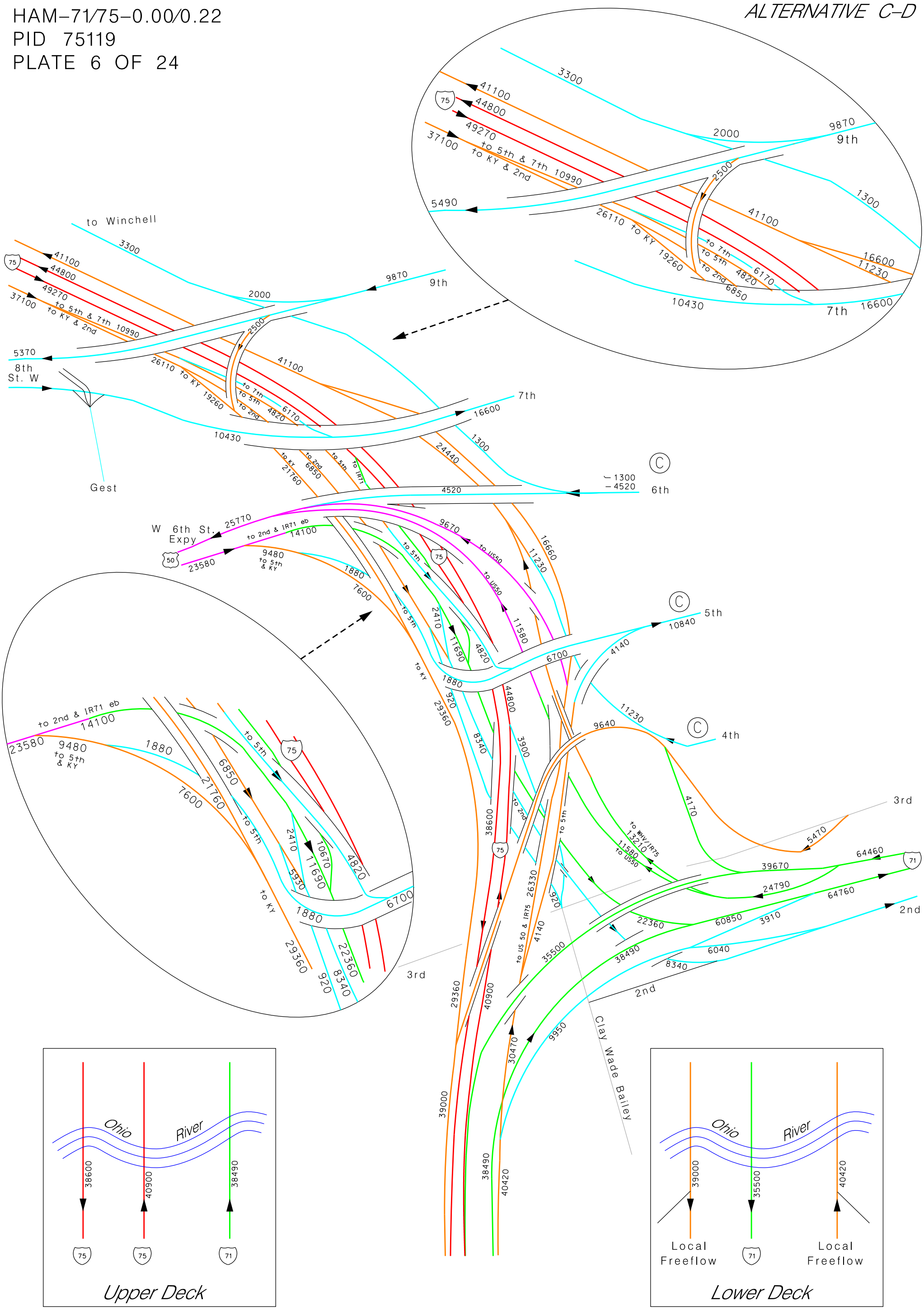
ALTERNATIVE C–D



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. C–D ADT	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

HAM-71/75-0.00/0.22
PID 75119
PLATE 6 OF 24

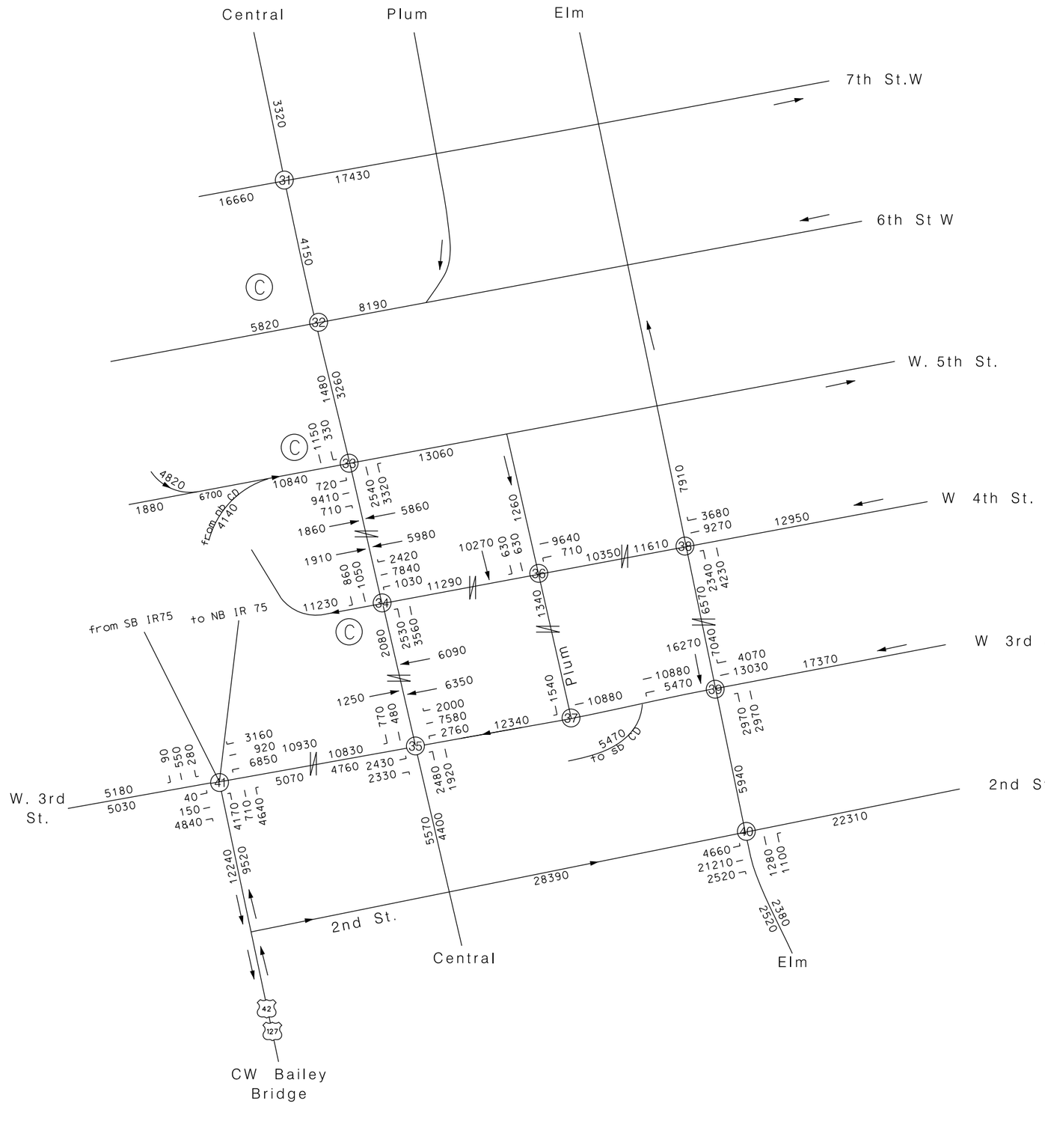
ALTERNATIVE C-D



HAM-71/75-0.00/0.22	PID-75119
BRENT SPENCE BRIDGE	
ALT. C-D ADT	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 7 OF 24

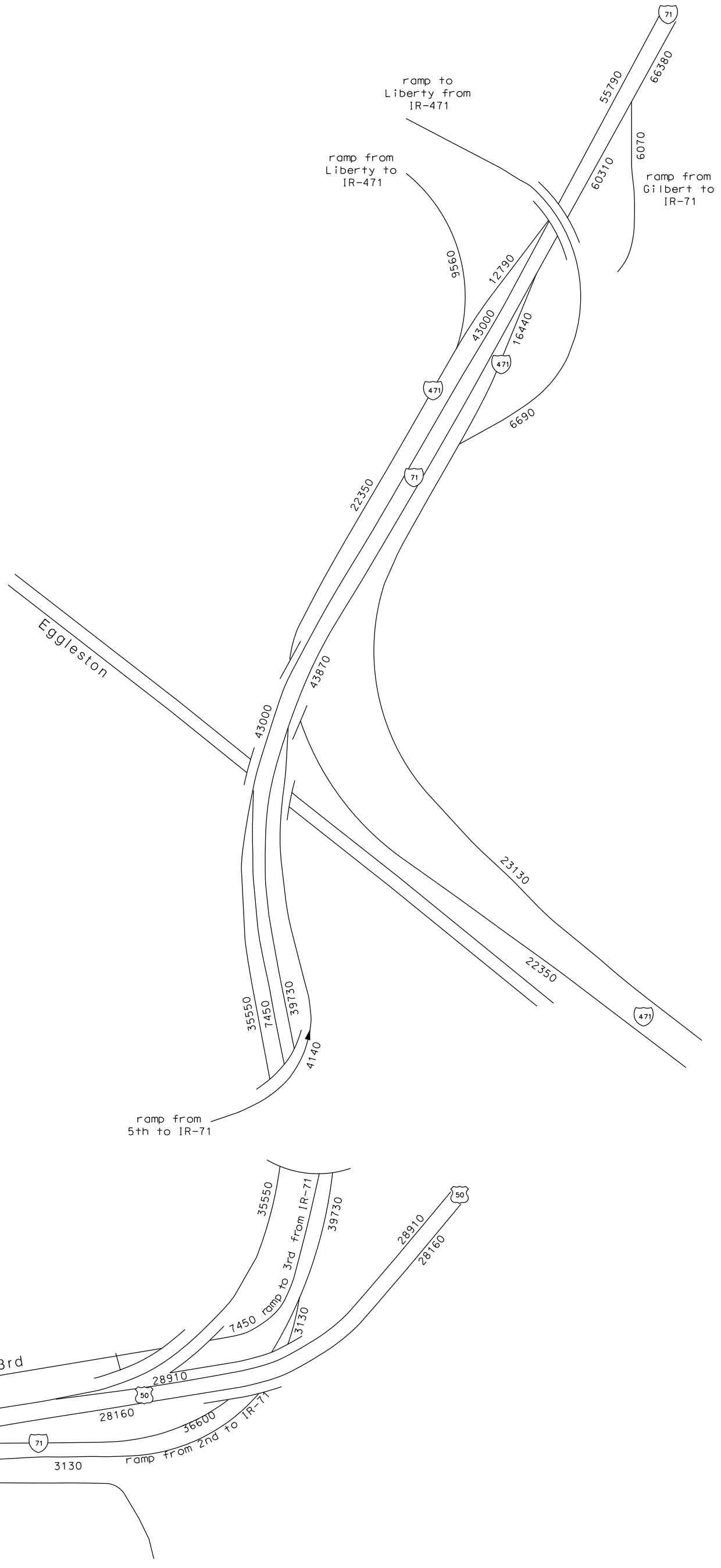
ALTERNATIVE C–D



HAM–71/75–0.00/0.22 PID–75119
BRENT SPENCE BRIDGE
ALT. C–D ADT
BURGESS & NIPLE
MAY 14, 2010 | NOT TO SCALE

HAM-71/75-0.00/0.22
PID 75119
PLATE 8 OF 24

ALTERNATIVE C-D

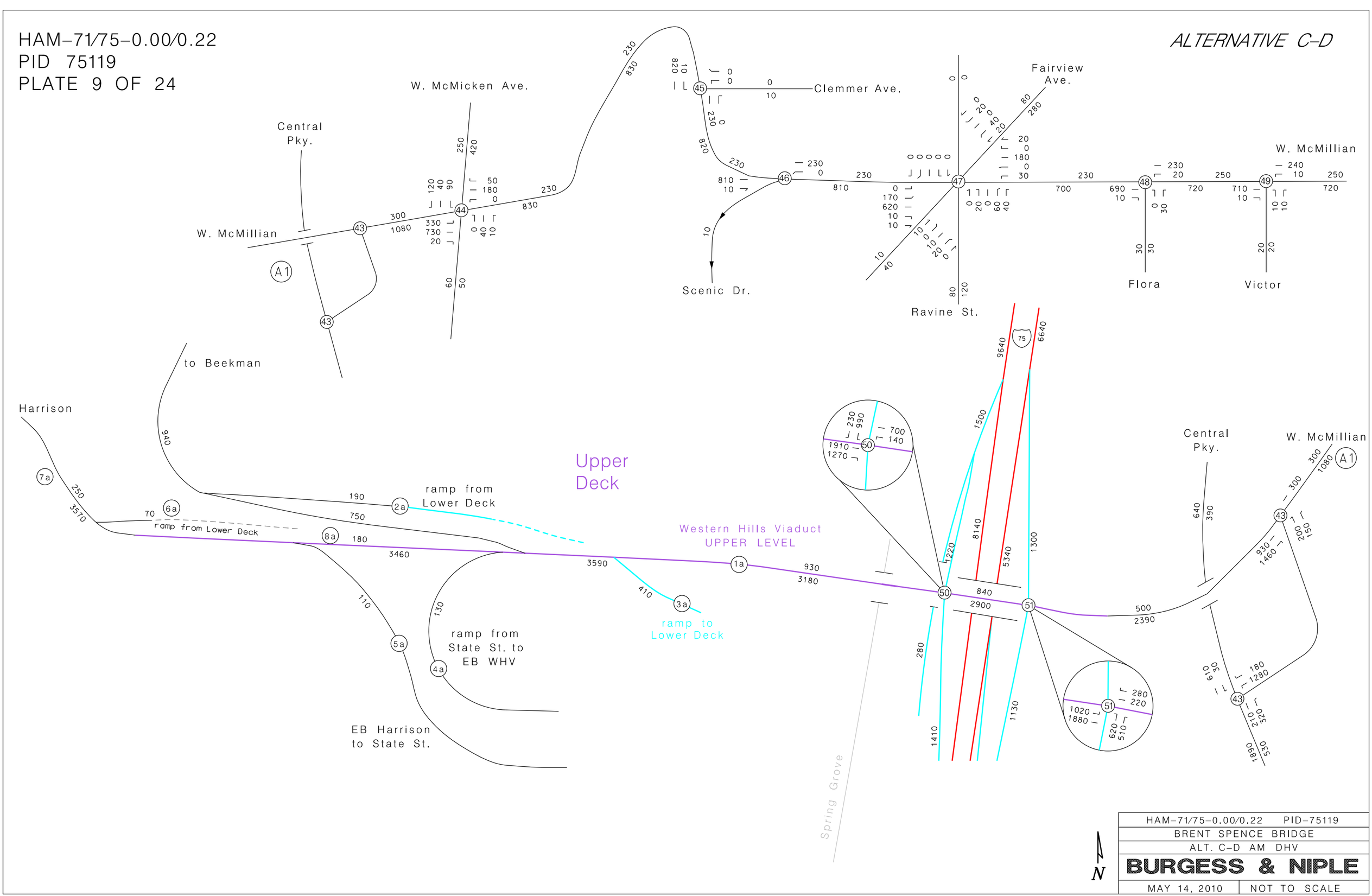


HAM-71/75-0.00/0.22	PID-75119
BRENT SPENCE BRIDGE	
ALT. C-D ADT	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

N

HAM–71/75–0.00/0.22
PID 75119
PLATE 9 OF 24

ALTERNATIVE C–D

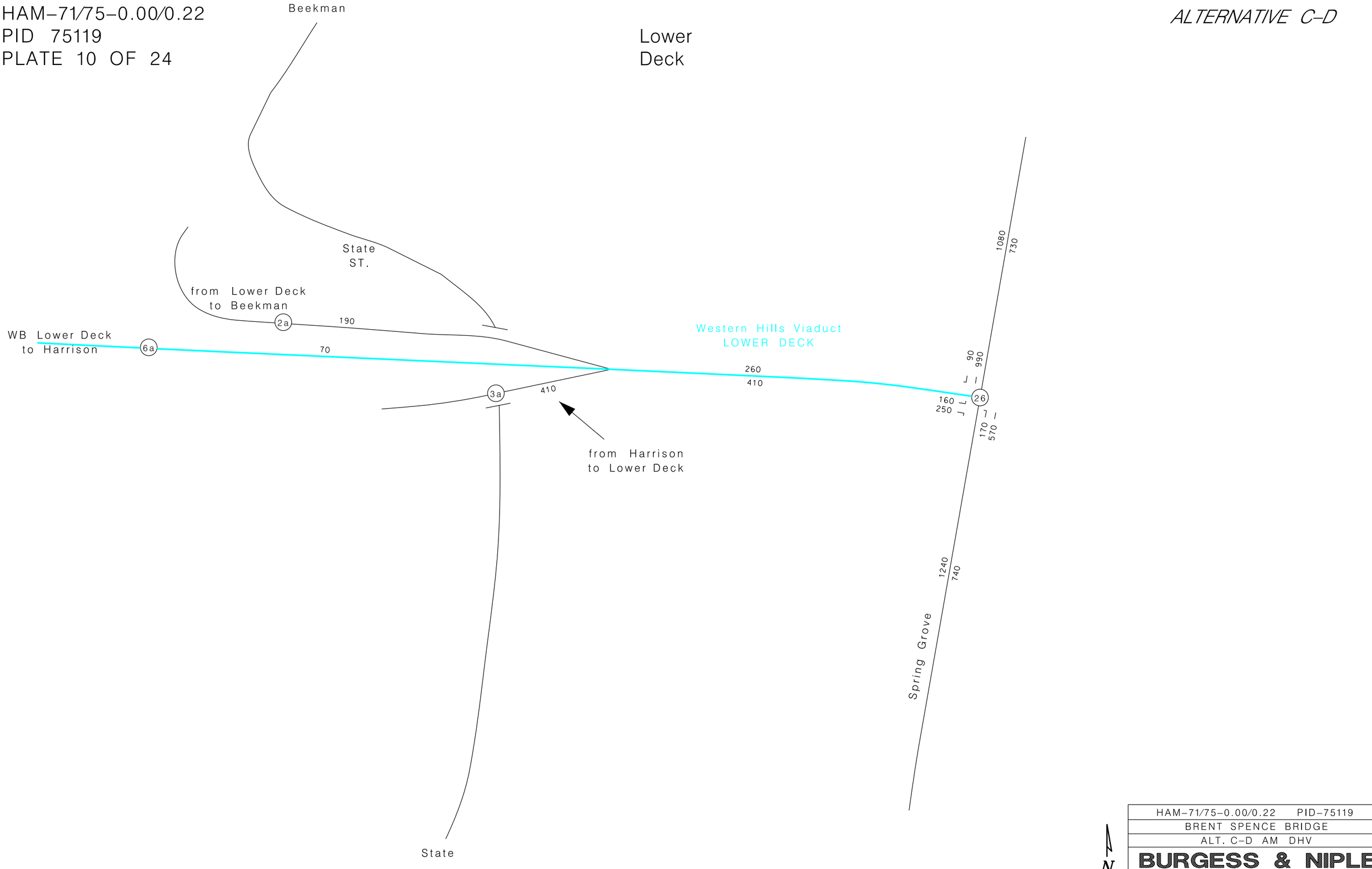


HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. C–D AM DHV	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 10 OF 24

ALTERNATIVE C–D

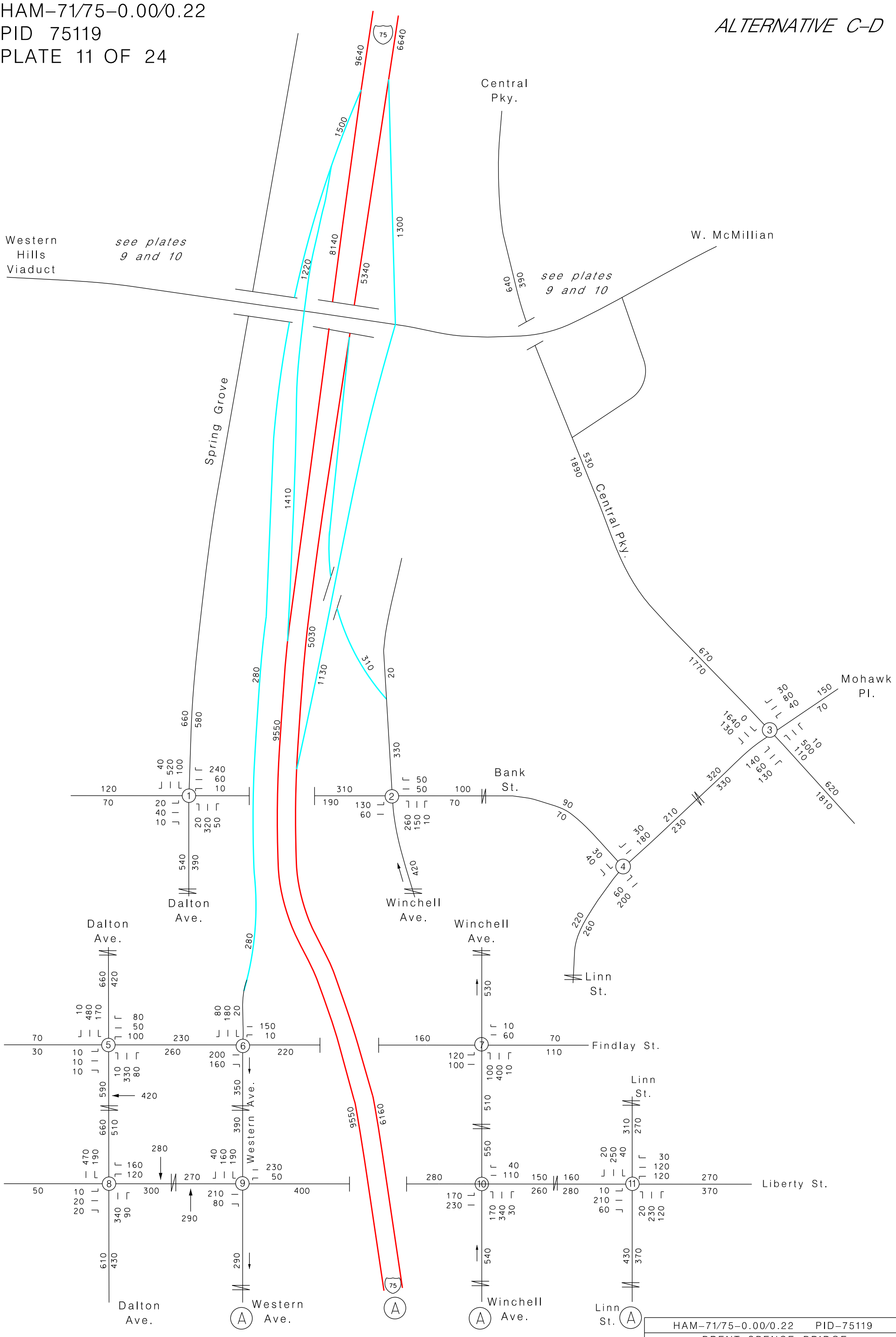
Lower
Deck



HAM–71/75–0.00/0.22 PID–75119	
BRENT SPENCE BRIDGE	
ALT. C–D AM DHV	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 11 OF 24

ALTERNATIVE C–D

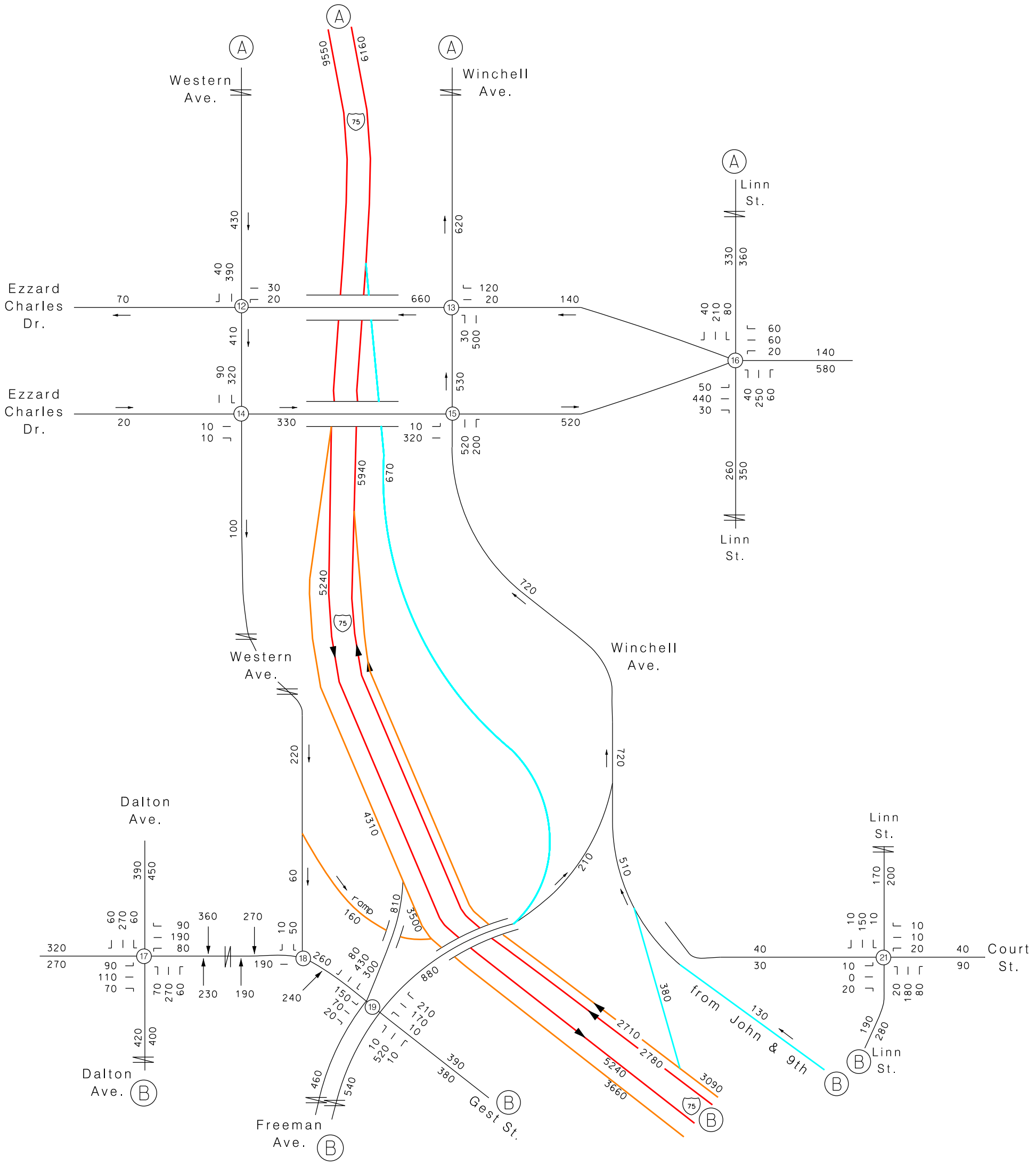


HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. C–D AM DHV	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

N

HAM–71/75–0.00/0.22
PID 75119
PLATE 12 OF 24

ALTERNATIVE C–D

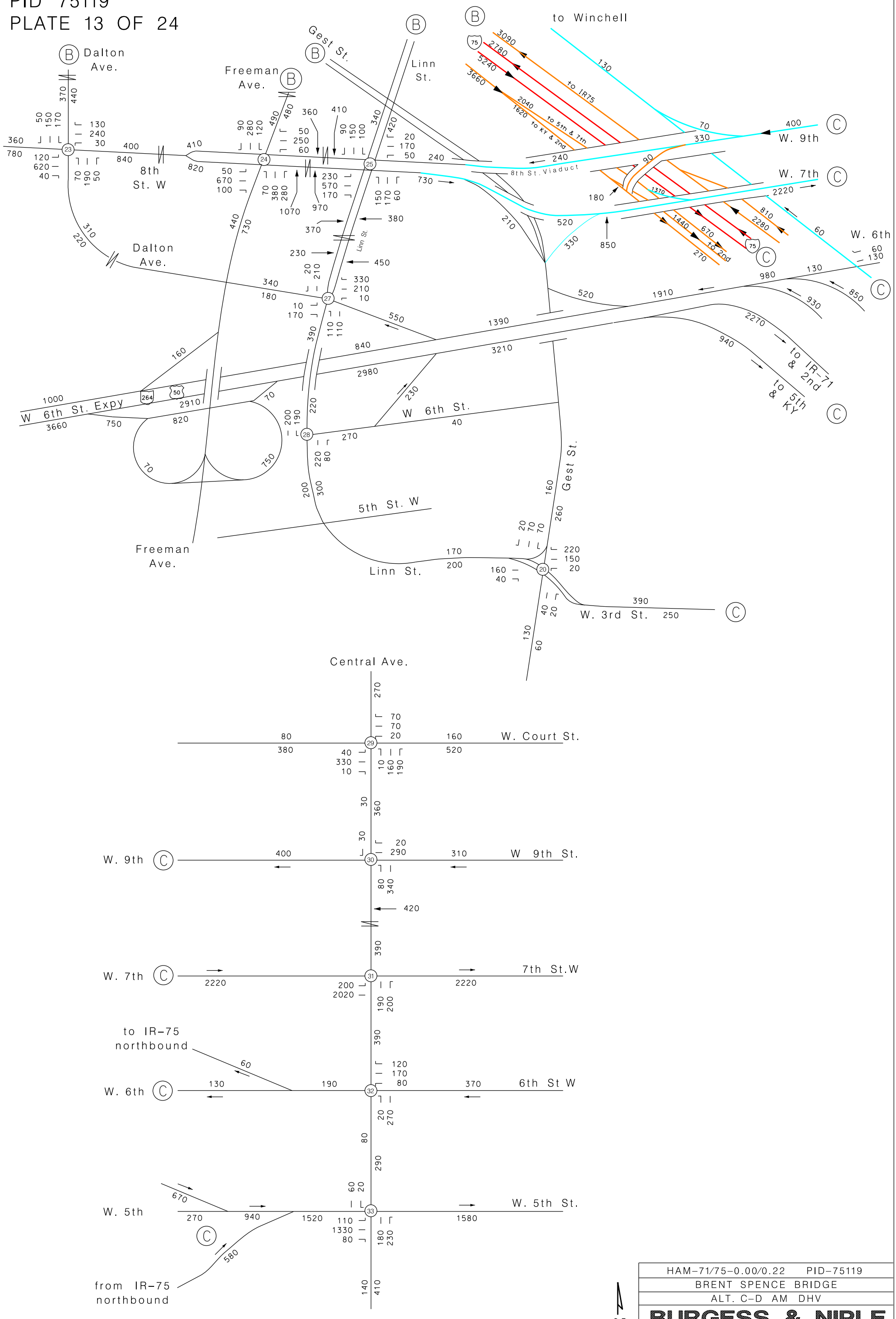


HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. C–D AM DHV	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

N

HAM–71/75–0.00/0.22
PID 75119
PLATE 13 OF 24

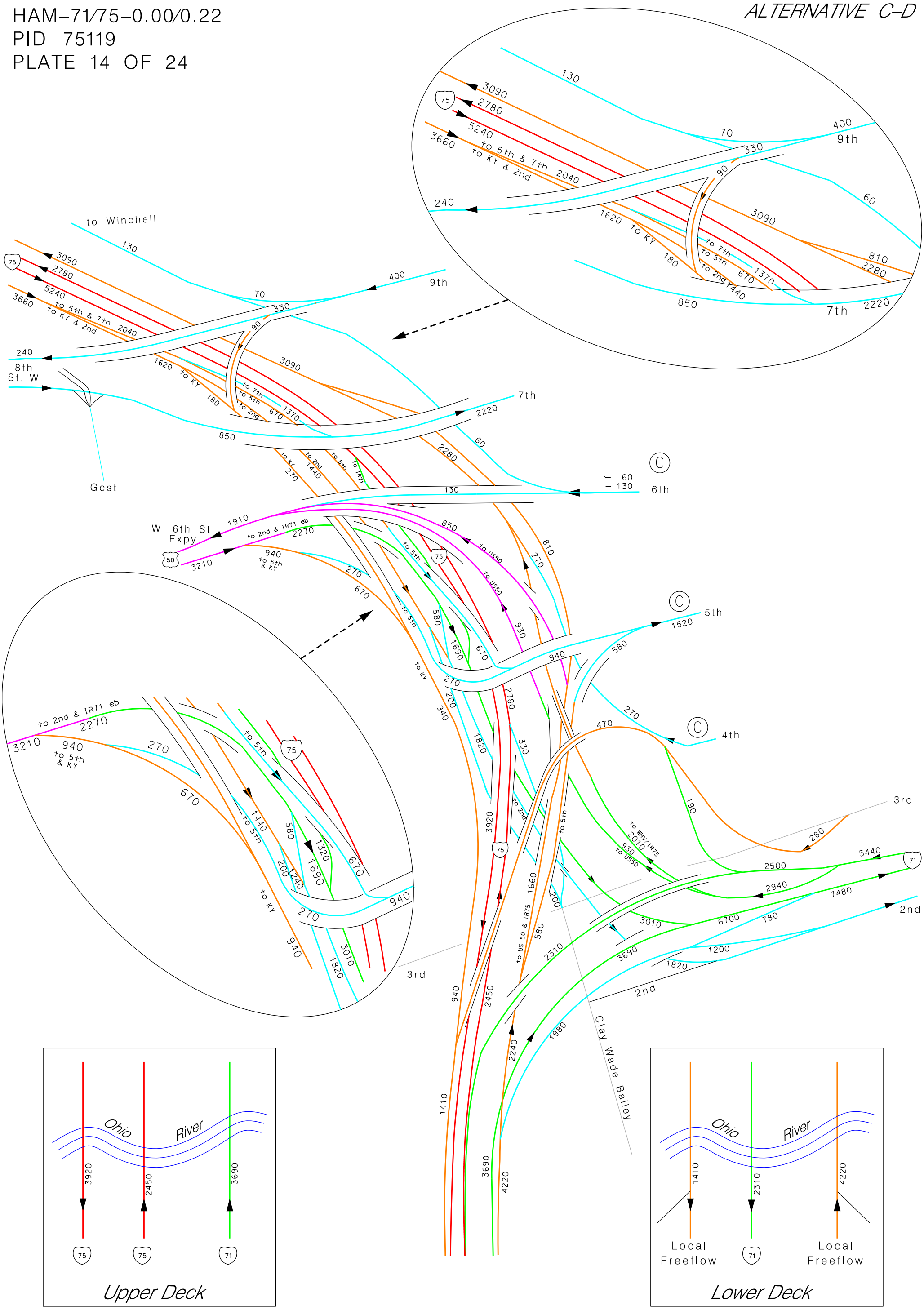
ALTERNATIVE C–D



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. C–D AM DHV	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 14 OF 24

ALTERNATIVE C–D



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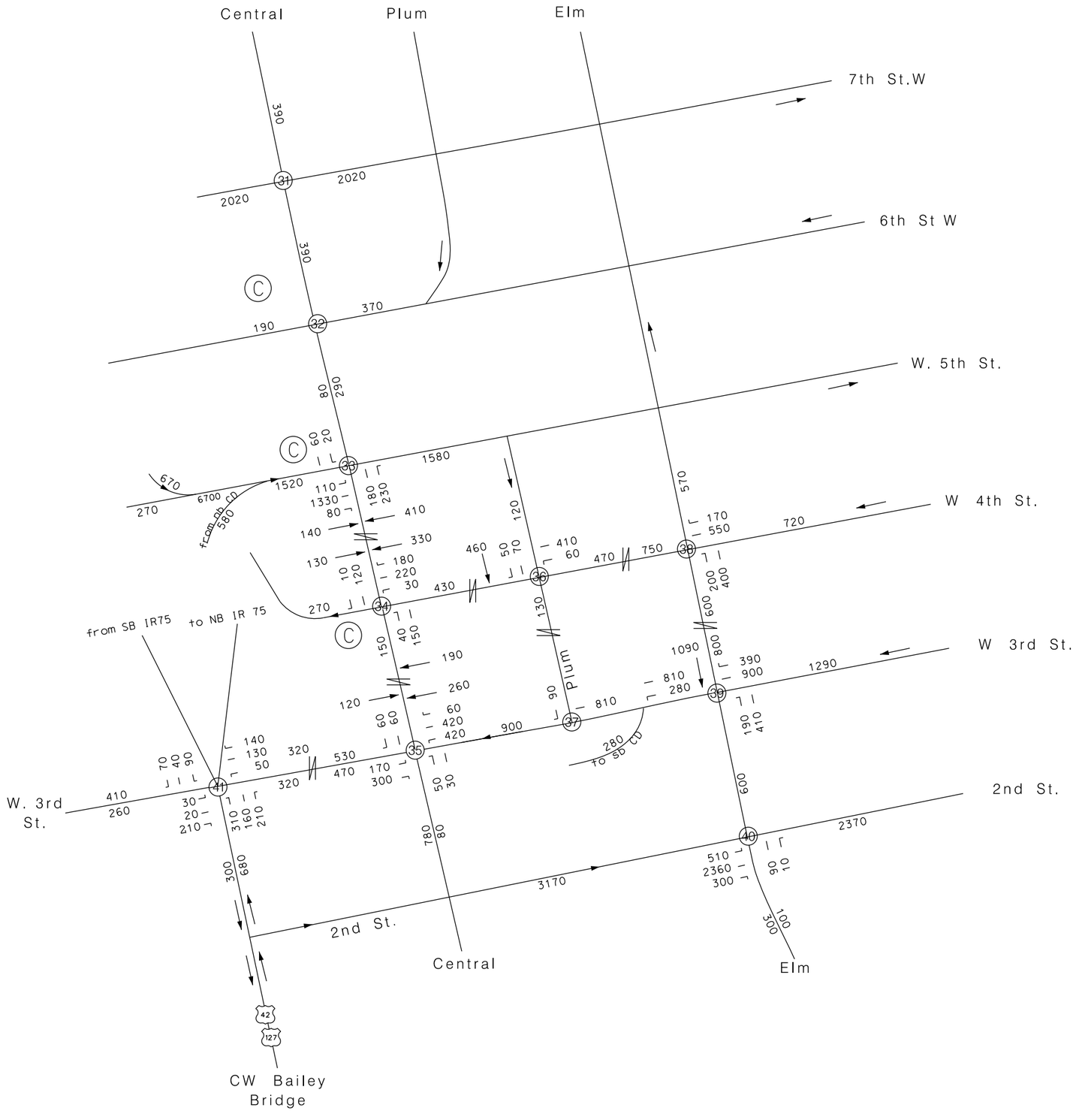
HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. C–D AM DHV	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 15 OF 24

ALTERNATIVE C–D

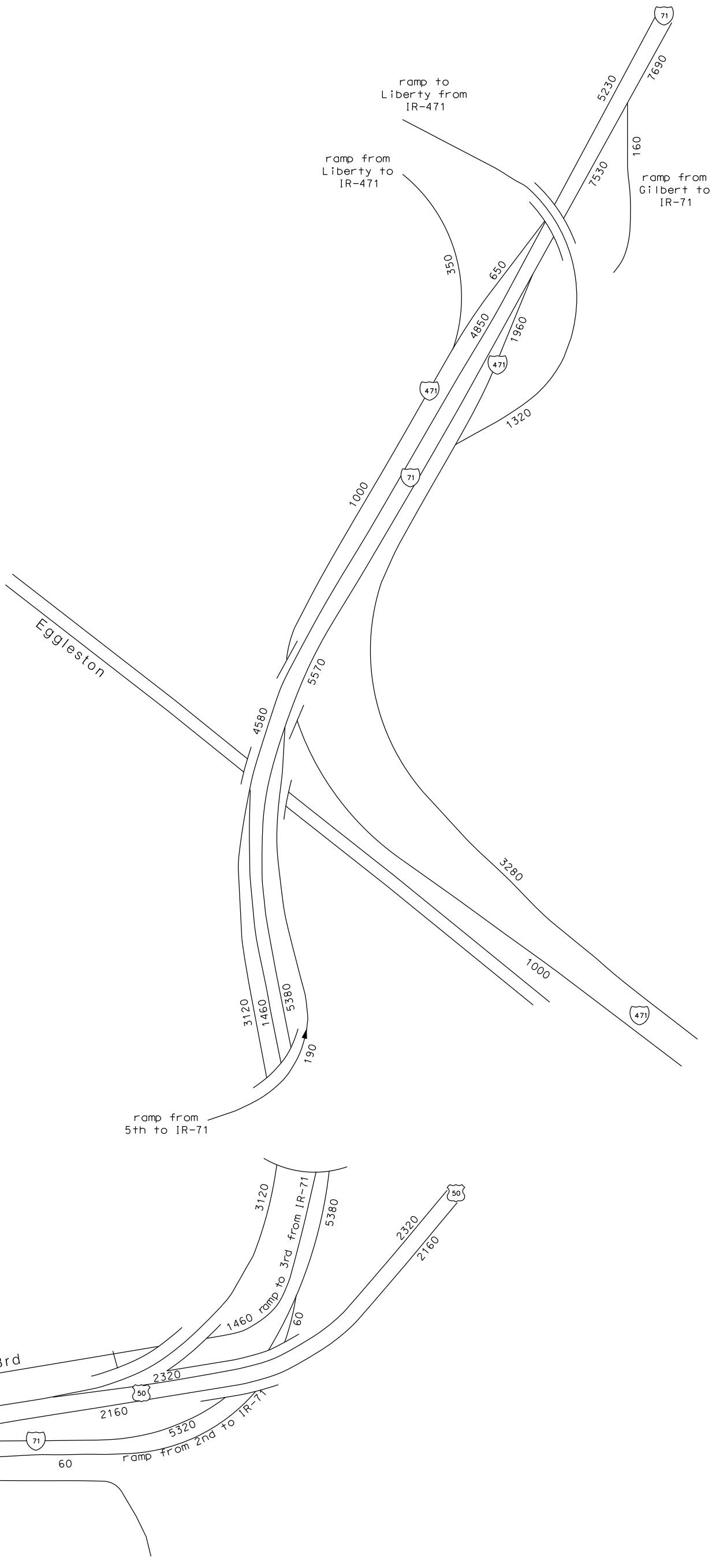


HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. C–D AM DHV	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

N

HAM-71/75-0.00/0.22
PID 75119
PLATE 16 OF 24

ALTERNATIVE C-D



HAM-71/75-0.00/0.22	PID-75119
BRENT SPENCE BRIDGE	
ALT. C-D AM DHV	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

N

HAM–71/75–0.00/0.22
PID 75119
PLATE 17 OF 24

ALTERNATIVE C–D

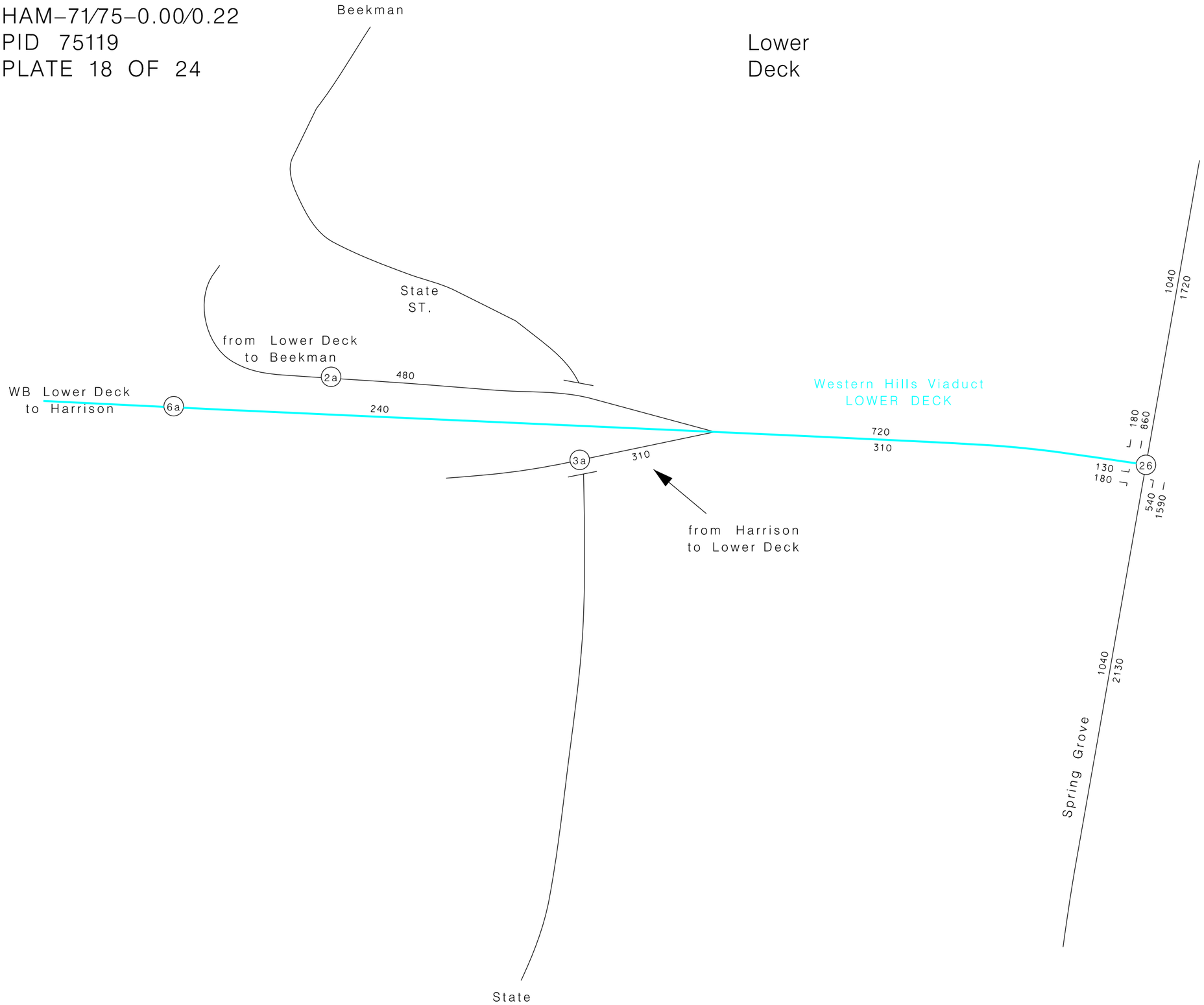
W. McMicken Ave.
Central Pky.
W. McMillian
A1
Clemmer Ave.
Scenic Dr.
Fairview Ave.
Ravine St.
Flora
Victor
W. McMillian
to Beekman
Harrison
Upper Deck
ramp from Lower Deck
Western Hills Viaduct UPPER LEVEL
ramp to Lower Deck
ramp from State St. to EB WHV
EB Harrison to State St.
Spring Grove
Central Pky.
W. McMillian

HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. C–D PM DHV	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 18 OF 24

ALTERNATIVE C–D

Lower
Deck



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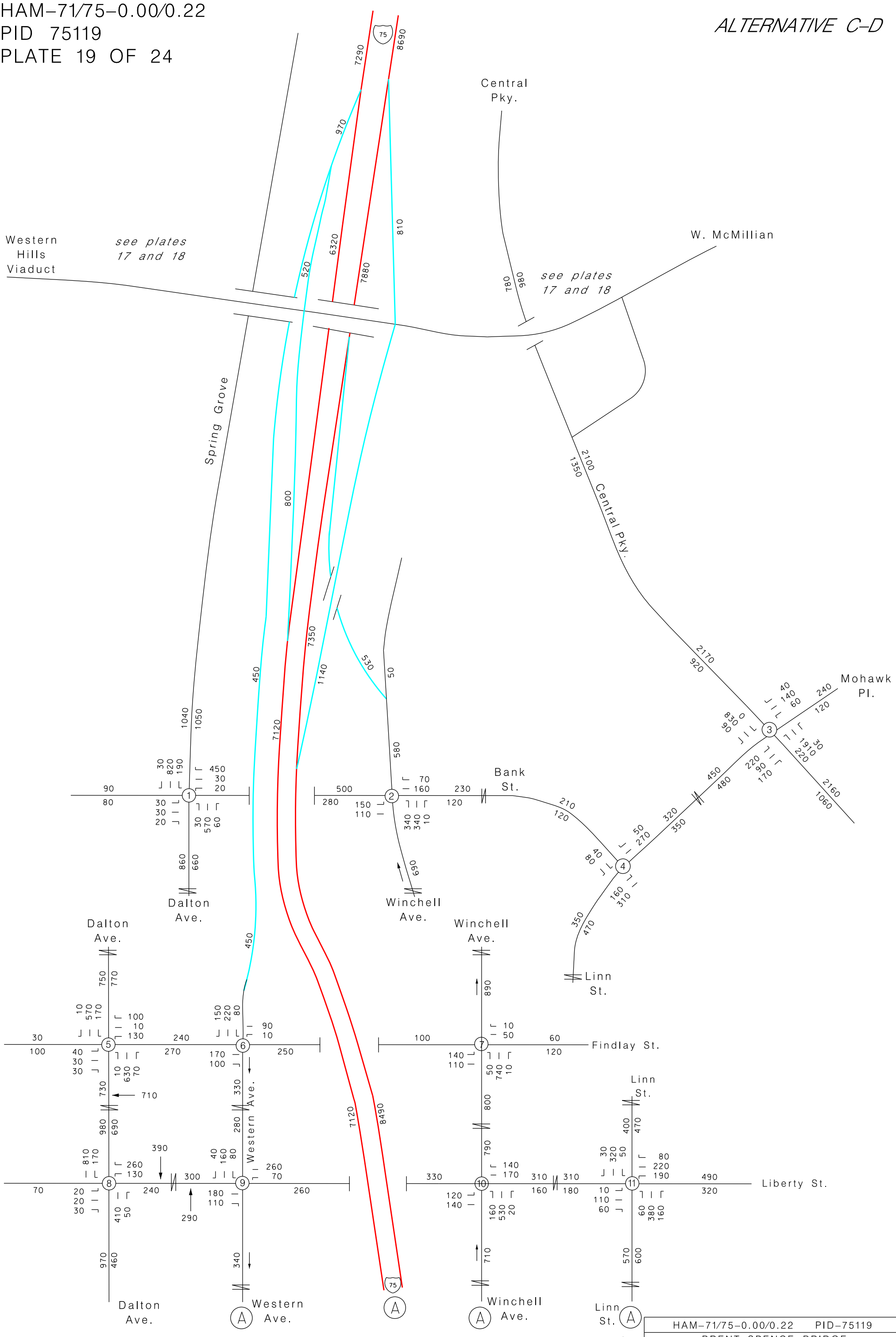
HAM–71/75–0.00/0.22 PID–75119	
BRENT SPENCE BRIDGE	
ALT. C–D PM DHV	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 19 OF 24

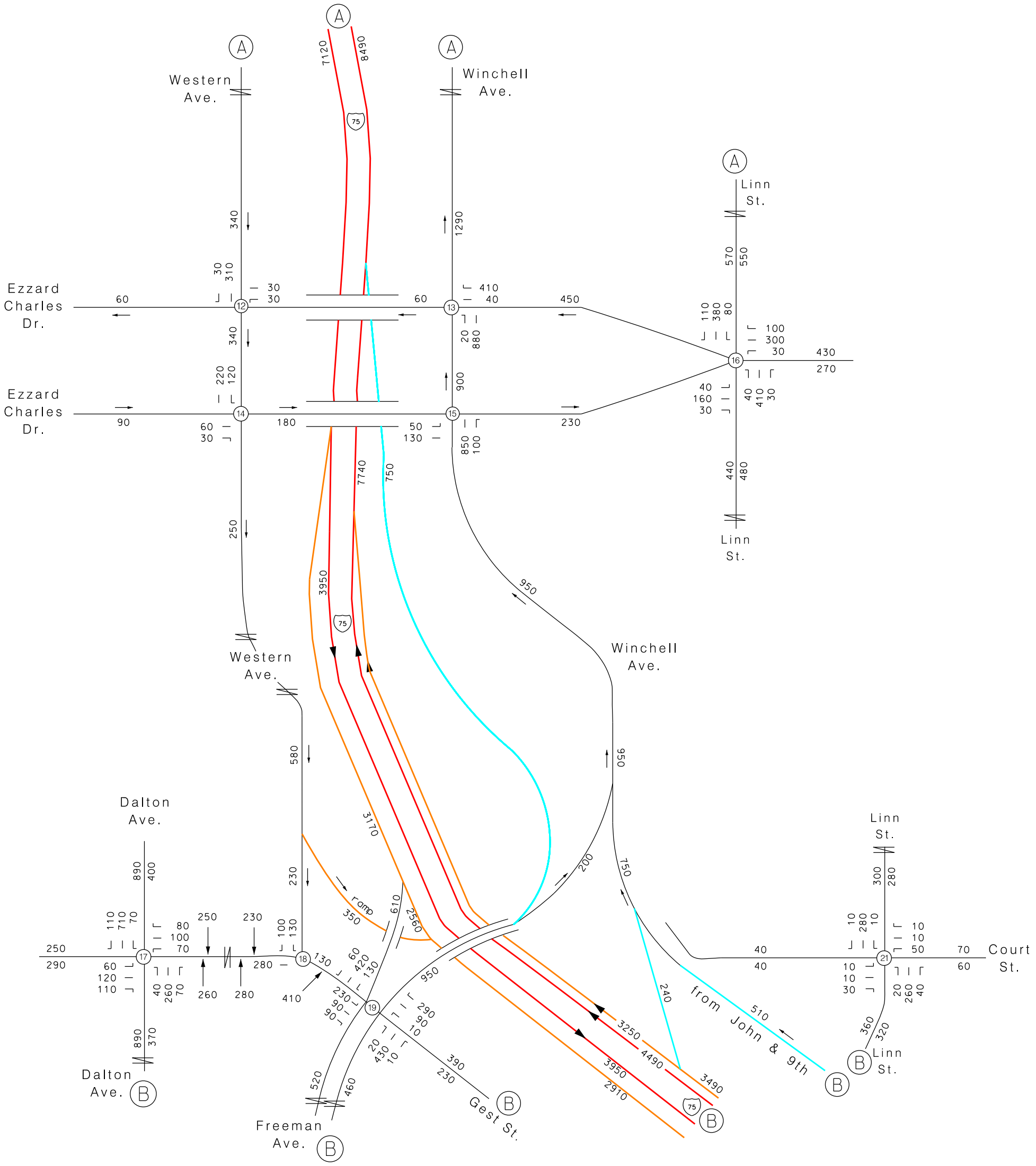
ALTERNATIVE C–D



HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. C–D PM DHV	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 20 OF 24

ALTERNATIVE C–D

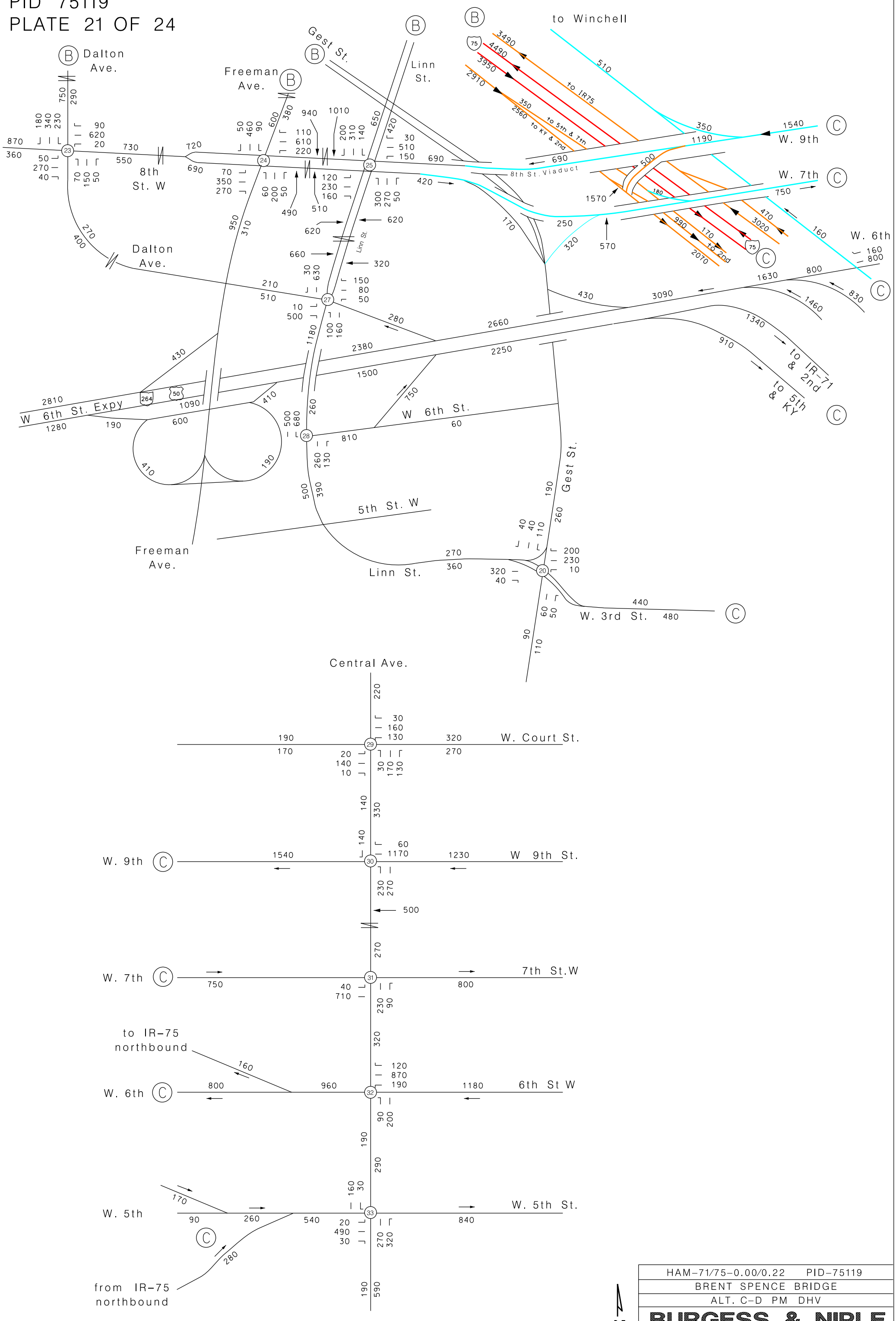


HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. C–D PM DHV	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

N

HAM-71/75-0.00/0.22
PID 75119
PLATE 21 OF 24

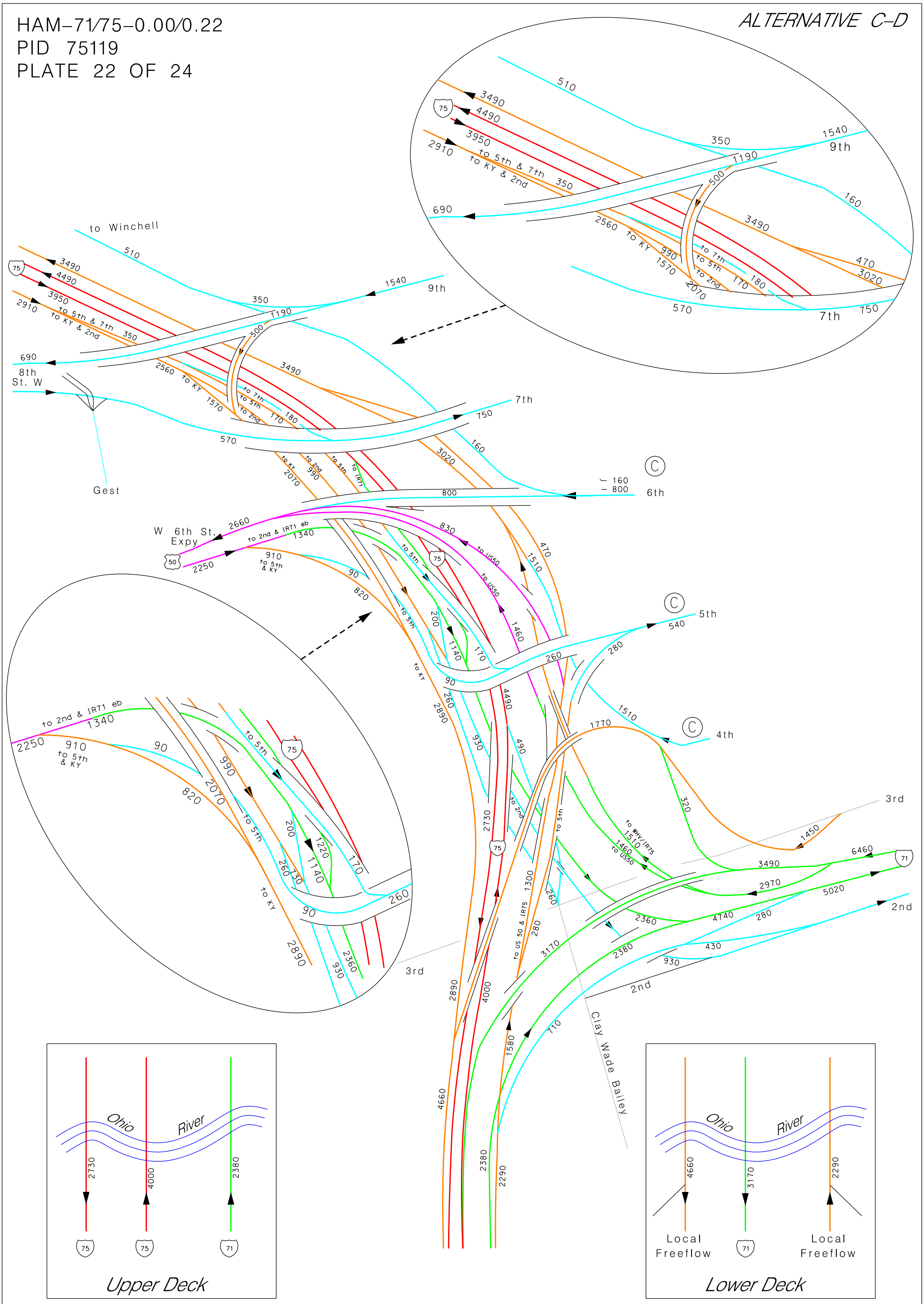
ALTERNATIVE C-D



HAM-71/75-0.00/0.22	PID-75119
BRENT SPENCE BRIDGE	
ALT. C-D PM DHV	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 22 OF 24

ALTERNATIVE C–D

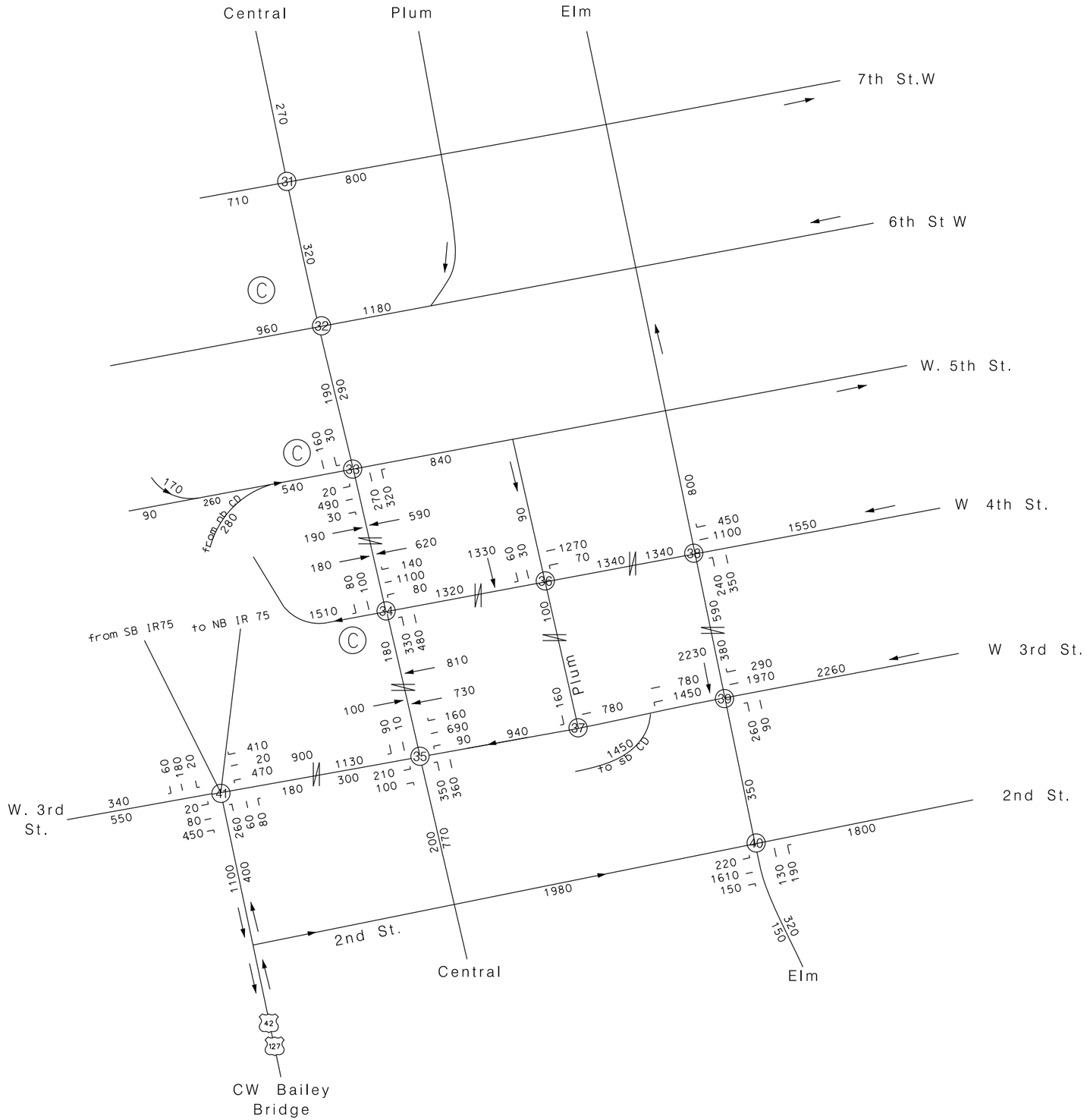


N

HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. C–D PM DHV	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

HAM–71/75–0.00/0.22
PID 75119
PLATE 23 OF 24

ALTERNATIVE C–D



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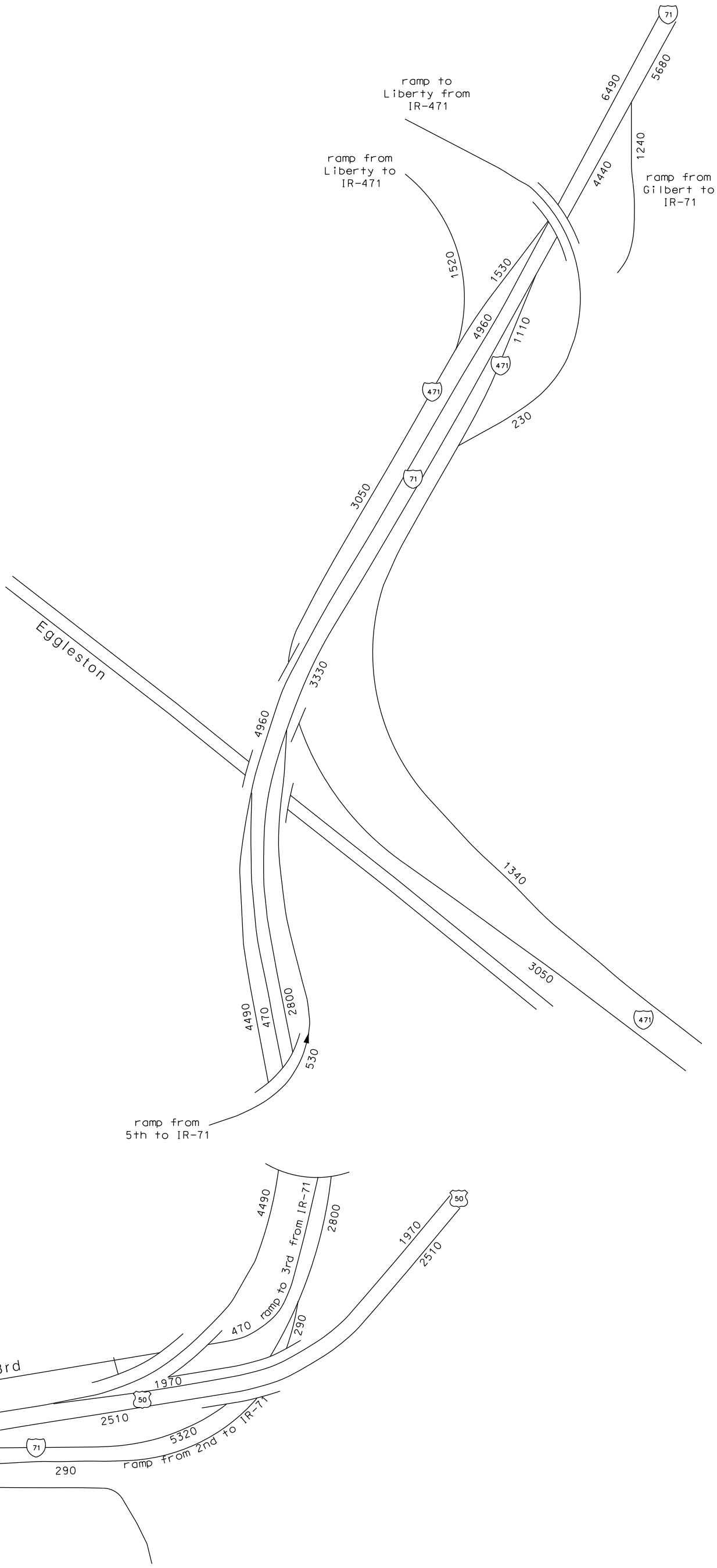
HAM–71/75–0.00/0.22 PID–75119	
BRENT SPENCE BRIDGE	
ALT. C–D PM DHV	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

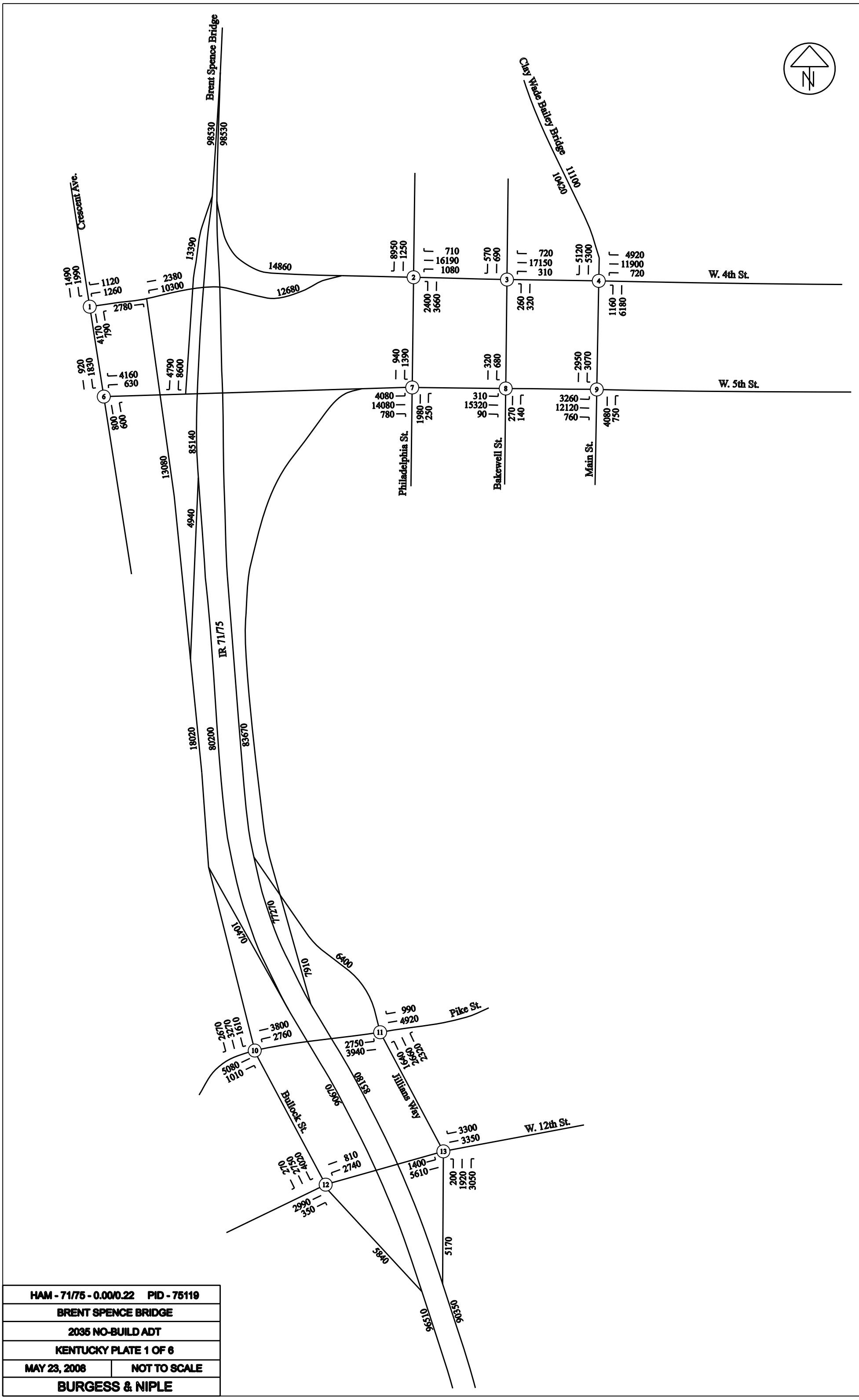
HAM–71/75–0.00/0.22
PID 75119
PLATE 24 OF 24

ALTERNATIVE C–D

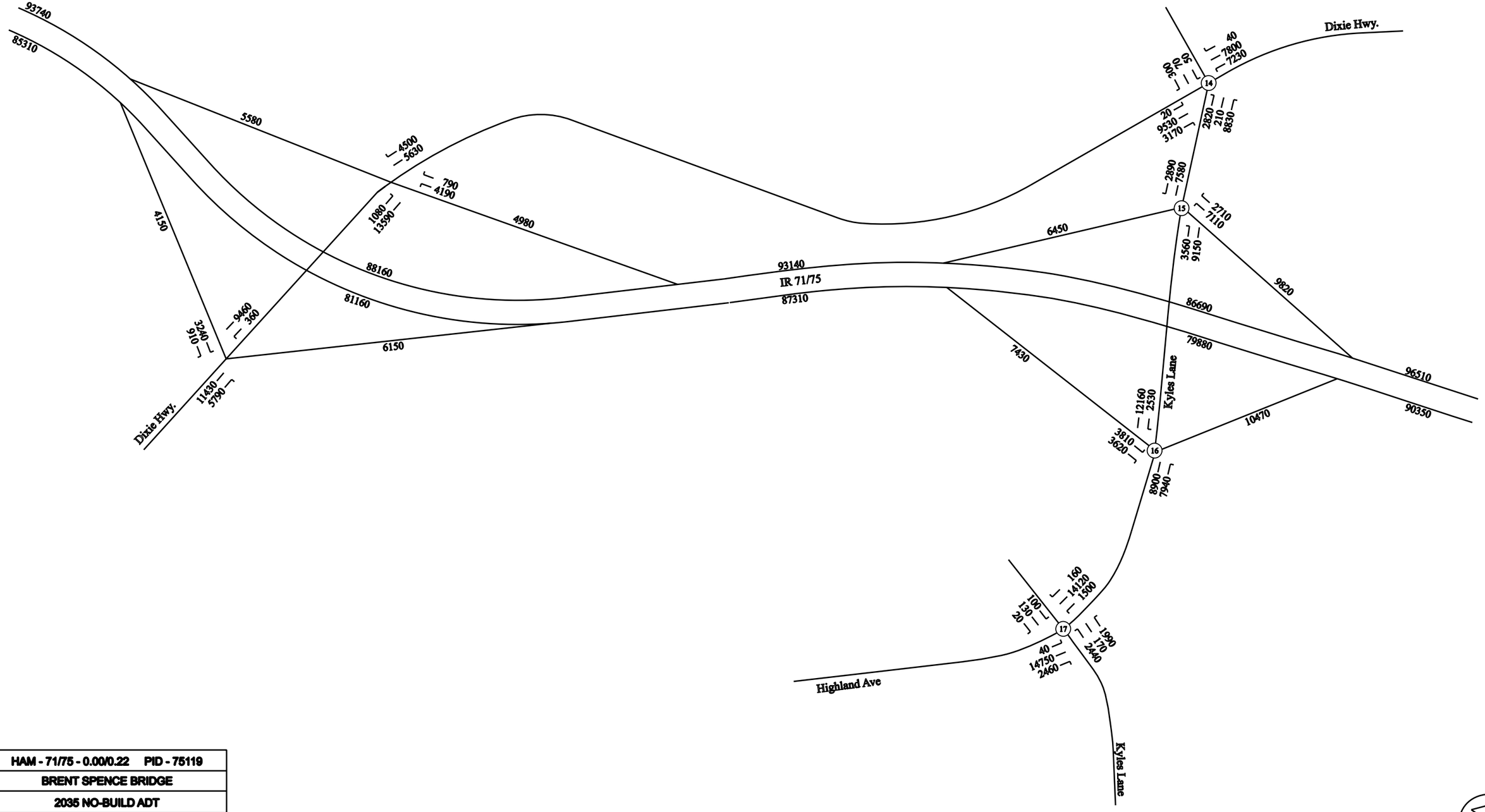


HAM–71/75–0.00/0.22	PID–75119
BRENT SPENCE BRIDGE	
ALT. C–D PM DHV	
BURGESS & NIPLE	
MAY 14, 2010	NOT TO SCALE

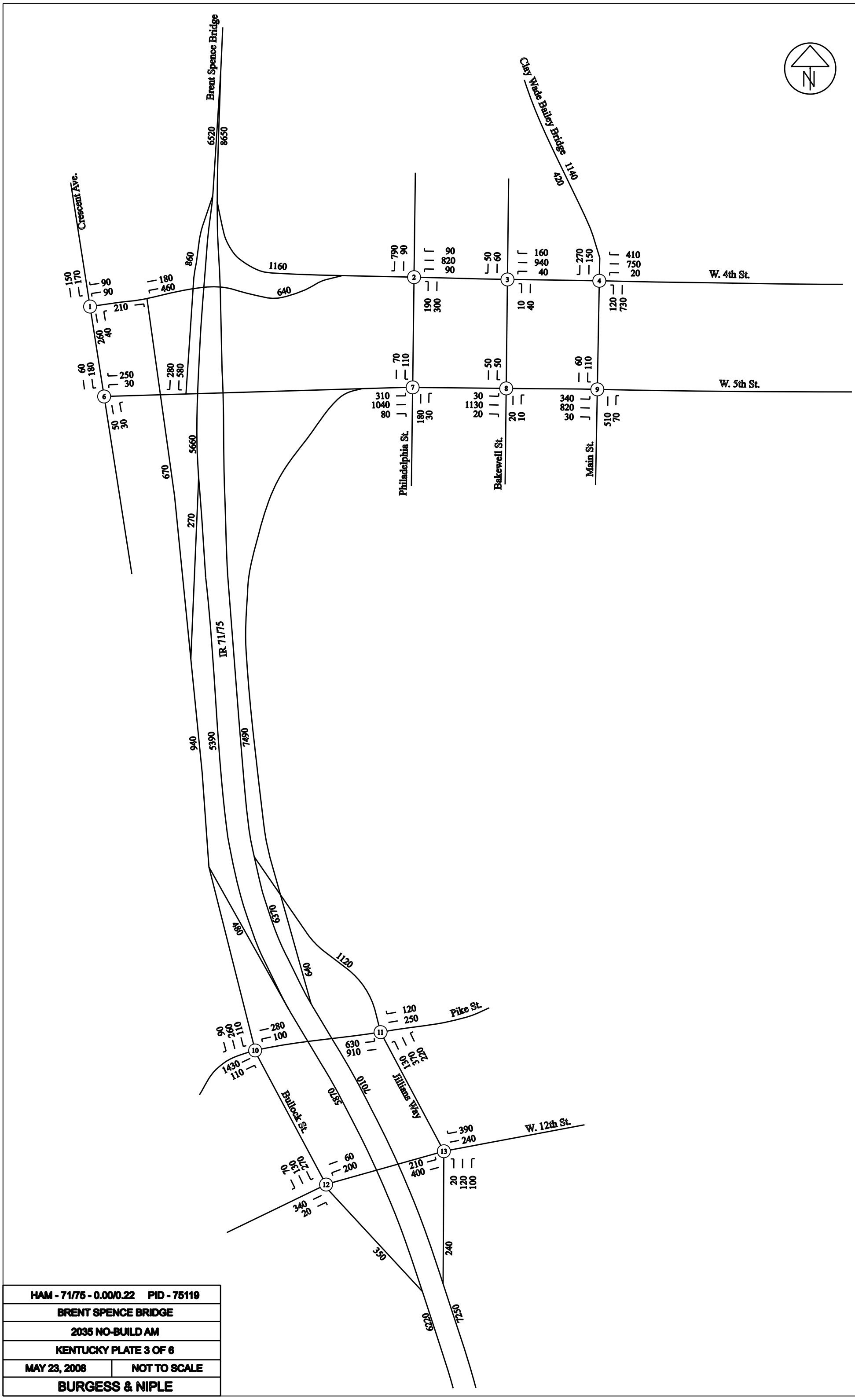
N



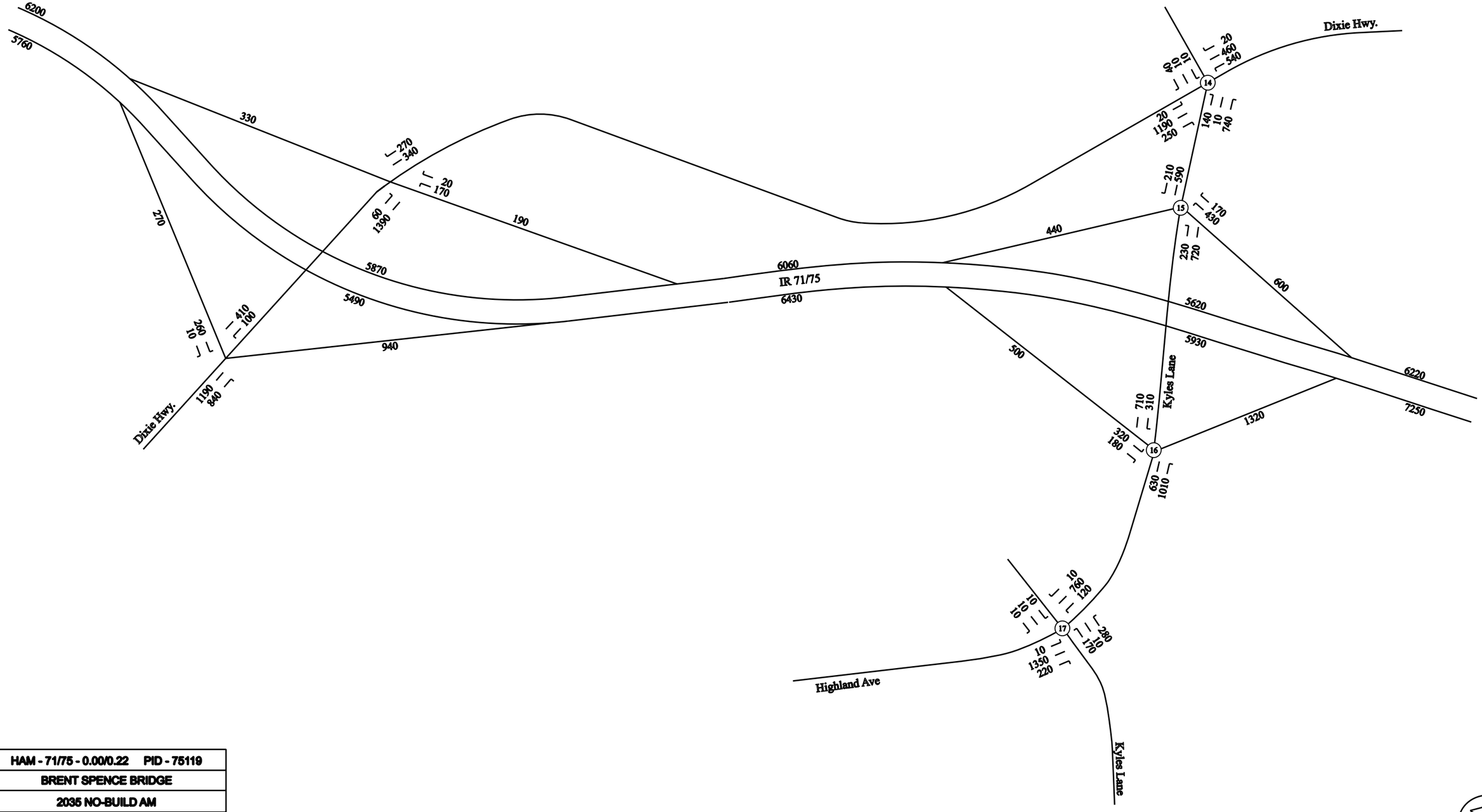
HAM - 71/75 - 0.00/0.22 PID - 75119	
BRENT SPENCE BRIDGE	
2035 NO-BUILD ADT	
KENTUCKY PLATE 1 OF 6	
MAY 23, 2008	NOT TO SCALE
BURGESS & NIPLE	



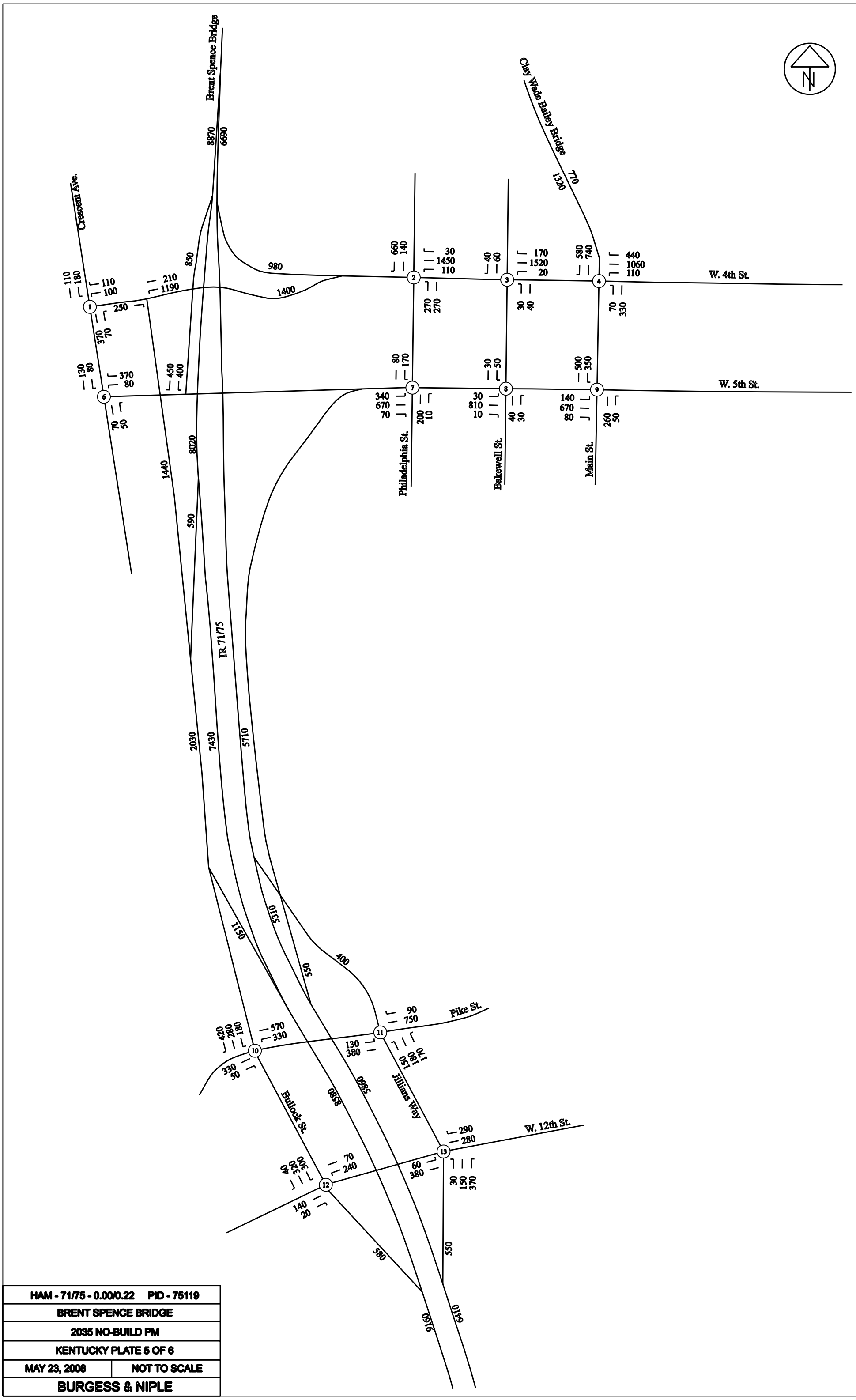
HAM - 71/75 - 0.00/0.22 PID - 75119	
BRENT SPENCE BRIDGE	
2035 NO-BUILD ADT	
KENTUCKY PLATE 2 OF 6	
MAY 23, 2008	NOT TO SCALE
BURGESS & NIPLE	



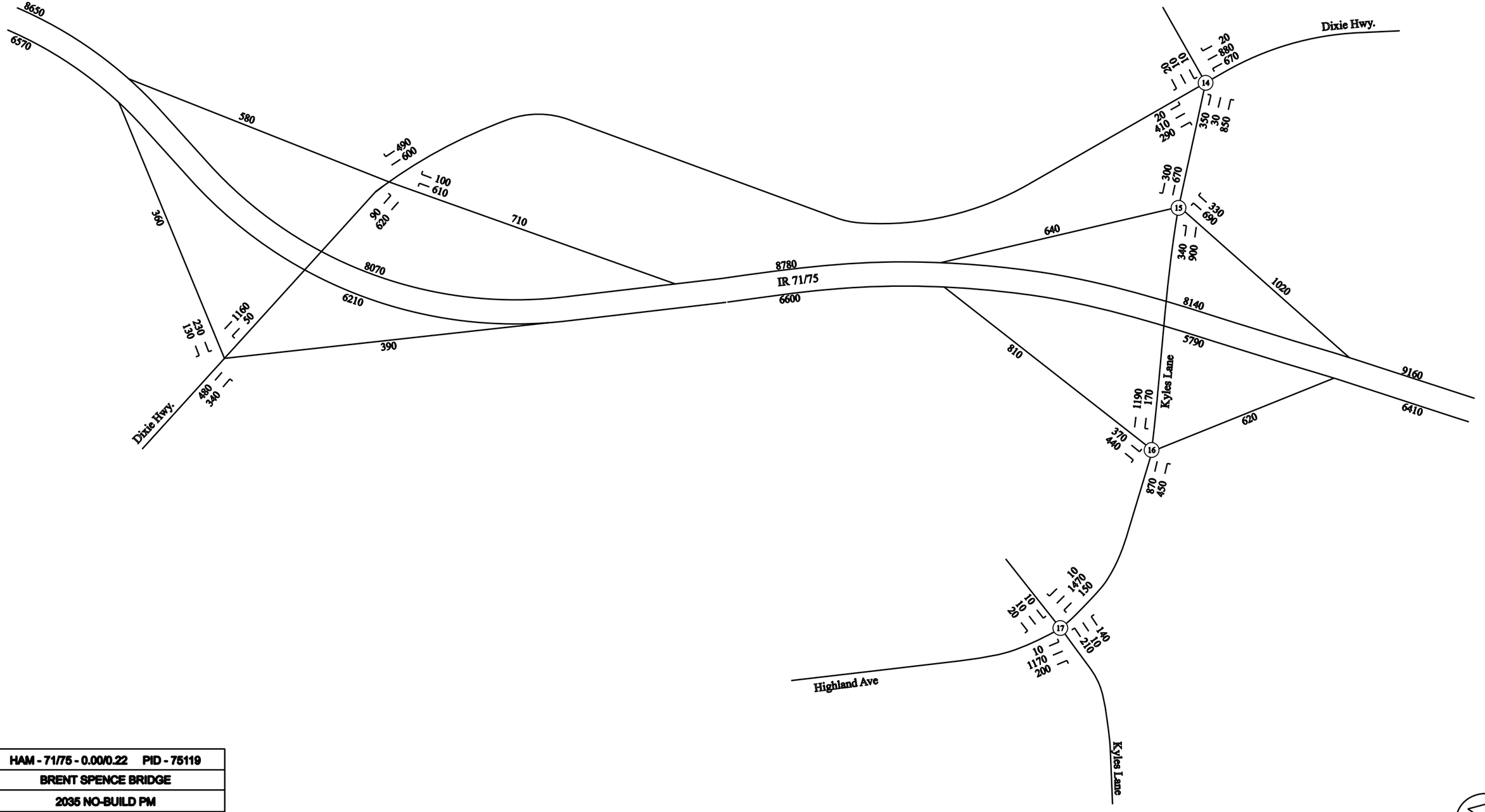
HAM - 71/75 - 0.00/0.22 PID - 75119	
BRENT SPENCE BRIDGE	
2035 NO-BUILD AM	
KENTUCKY PLATE 3 OF 6	
MAY 23, 2008	NOT TO SCALE
BURGESS & NIPLE	



HAM - 71/75 - 0.00/0.22 PID - 75119	
BRENT SPENCE BRIDGE	
2035 NO-BUILD AM	
KENTUCKY PLATE 4 OF 6	
MAY 23, 2008	NOT TO SCALE
BURGESS & NIPLE	



HAM - 71/75 - 0.00/0.22 PID - 75119	
BRENT SPENCE BRIDGE	
2035 NO-BUILD PM	
KENTUCKY PLATE 5 OF 6	
MAY 23, 2008	NOT TO SCALE
BURGESS & NIPLE	



HAM - 71/75 - 0.00/0.22 PID - 75119	
BRENT SPENCE BRIDGE	
2035 NO-BUILD PM	
KENTUCKY PLATE 6 OF 6	
MAY 23, 2008	NOT TO SCALE
BURGESS & NIPLE	