



**CUY-90-14.90**

**PID 77332/85531**

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**APPENDIX EC-02**

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**Airway-Highway Clearance Form  
(Contract Document)**

State of Ohio  
Department of Transportation  
Jolene M. Molitoris, Director

**Innerbelt Bridge  
Construction Contract Group 1 (CCG1)**

May 28, 2009

Ms. Bonita G. Teeuwen, P.E., Deputy Director  
Ohio Department of Transportation, District 12  
5500 Transportation Boulevard  
Garfield Heights, Ohio 44125Attention: Mr. Craig Hebebrand, P.E.  
Project ManagerSubject: I-90 Central Viaduct  
Innerbelt Bridge Construction  
PID No. 77332  
Airway/Highway Clearance Analysis

Dear Mr. Hebebrand:

We have reviewed the above mentioned project and have determined that the project will encroach onto the 100:1 notification surface of Burke Lakefront (BKL). This determination is based on an airport elevation of 584 feet and a project elevation of 820 feet, with a distance of 9,979.2 feet between the airport and the project location. It has also been determined that the above mentioned project will not encroach into the 100:1 notification surface of Cleveland-Hopkins International (CLE) and Cuyahoga County (CGF) or the 25:1 notification surface of the heliports at Metro Health Medical Center and St. Vincent Hospital. The attached diagrams will provide a detailed analysis of the study.

The study has determined that a negative height of clearance (136 feet) exists between the 100:1 notification surface of BKL and the project. Although within the Notification Surface, based on 1404.1.4 this project is exempt from notification. Attached are diagrams to support this conclusion.

Sincerely,

**MICHAEL BAKER JR., INC.**Jeff Broadwater, P.E.  
Project Manager

S.O. No. 117124

Subject: Central Viaduct  
Airway/Highway Clearance Sheet No. 1 of 2



(LID Manual Vol 3) Drawing No. \_\_\_\_\_

Computed by RLF Checked By JM Date 5-28-09

① Burke Lakefront (BKL)  
Runways:  $6198' \times 150'$   
 $5200' \times 100'$

ELEV: 584'  
DIST to Proj: 1.89 mi (9,979.2')

② Cleveland Hopkins Int (CLE)  
Runways:  $8999' \times 150'$   
 $9000' \times 150'$   
 $7096' \times 150'$   
 $6015' \times 150'$

ELEV: 792'  
DIST to Proj: 8.72 mi (46,042')

③ Cuyahoga County (CGF)  
Runways:  $5101' \times 100'$

ELEV: 879'  
DIST to Proj: 10.35 mi (54,648')

\* Airport Elevations obtained from "Ohio Airport Directory" 2009 ed.  
\* Distances to proj. obtained online from the Federal Aviation Admin.  
(See attached)

④ Metro Health Medical Ctr (Heliport)

ELEV: 723'  
Ground Elev = 673' (Google Earth)  
5 stories  $\approx$  50'  
DIST to Proj: 1.82 mi (9,610')

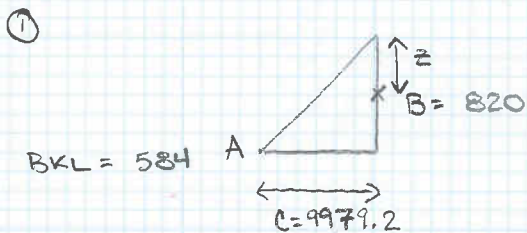
⑤ St. Vincent Hospital (Heliport)

ELEV: 667'  
Ground elev = 667' (Google Earth)  
Heliport on ground  
DIST to Proj: 1.04 mi (5,491')

- Project ELEV: 717.57' use say 720'  
(This is based on CEGal Profile provided by B?N on May 8, 2009)

- From 1404.1.2 Controlling Notification 13:
  - 100:1 for 20,000 feet with runway exceeding 3,200 feet (Cases 1-3)
  - 25:1 for heliports at 5,000 feet (Cases 4 & 5)

- From Figure 1404-3, large bridge with equipment:
  - add 100 feet to project elevation
  - ELEV = 820 feet



$$z = \frac{C}{x} + A - B \quad x = 100:1$$

$$z = \frac{9979.2}{100} + 584 - 820 = -136.21$$

\* Although proj elev. is above notification surface, based on 1404.1.4 NO2, Notification is NOT required. (See attached)

S.O. No. 117124

Subject: Central Viaduct  
Airway/Highway Clearance (LID Manual Vol 3)

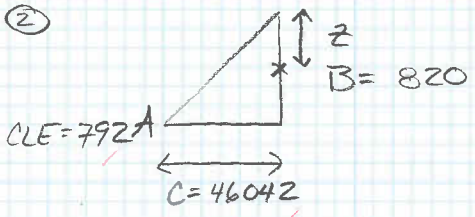
Baker

Sheet No. 2 of 2

Drawing No.

Computed by RLF Checked By SM Date 5-28-09

②



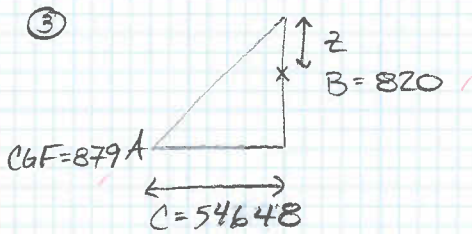
$$z = \frac{C}{x} + A - B$$

$$x = 100:1$$

$$z = \frac{46042}{100} + 792 - 820 = 432.42$$

No Notification

③



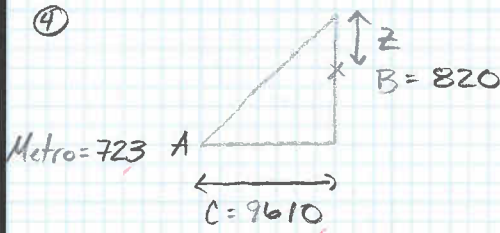
$$z = \frac{C}{x} + A - B$$

$$x = 100:1$$

$$z = \frac{54648}{100} + 879 - 820 = 605.48$$

No Notification

④



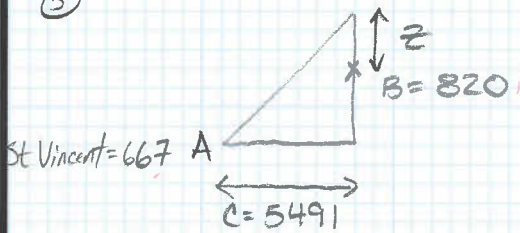
$$z = \frac{C}{x} + A - B$$

$$x = 25:1$$

$$z = \frac{9610}{25} + 723 - 820 = 287.40$$

No Notification

⑤



$$z = \frac{C}{x} + A - B$$

$$x = 25:1$$

$$z = \frac{5491}{25} + 667 - 820 = 66.64$$

No Notification

## SECTION 1400 Review Submissions

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- B. 50:1, for a horizontal distance of 10,000 feet [3 kilometers] from the nearest point of the nearest runway, for any airport where the length of the longest runway does not exceed 3,200 feet [975 meters], excluding heliports.
- C. 25:1, for a horizontal distance of 5,000 feet [1.5 kilometers] from the nearest point of the nearest landing and takeoff area, for a heliport.

See **Figure 1404-1** for a graphical depiction of these surfaces.

### 1404.1.3 Traverse Way Adjustments

In determining whether any roadway or other traverse way (e.g., railroad, waterway, bikeway, etc.) will violate the limits described in the previous section, it is necessary to include an additional upward height above the traverse way elevation for vehicles that might travel on the facility. The adjustments are as follows:

1. 17 feet [5.2 meters] for Interstate highways, other freeways, and expressways.
2. 15 feet [4.6 meters] for all other public roadways and commercial driveways.
3. 10 feet [3.0 meters] for all private roads and driveways.
4. 23 feet [7.0 meters] for railroads.
5. An amount equal to the height of the highest mobile object that would normally traverse the facility, for a waterway or for any other traverse way not previously mentioned.

This additional height must be considered to apply over the full width of the traveled portion and the shoulders of the roadway. **Figure 1404-1** includes examples of several traverse way adjustments.

### 1404.1.4 Exceptions to Notification Requirements

**FAA** notification is not required where one or more of the following applies to the object penetrating the notification surface:

1. The object is shielded by existing structures of a permanent and substantial character or by natural terrain or topographic features, of equal or greater height.
2. The object is located in the congested area of a city, town, or settlement where it is evident beyond all reasonable doubt that there could be no adverse effect on safe air navigation.
3. The object is an antenna of 20 feet [6 meters] or less in height, except one that would increase the height of another antenna structure.

**Figure 1404-2** includes examples of locations where **FAA** notification is and is not required.

### 1404.1.5 Temporary Structures and Construction Equipment

It is possible that a project located within 20,000 feet [6.1 kilometers] of an airport will not require **FAA** notification for permanent features, but will require notification for temporary structures or construction equipment. **Figure 1404-3** contains height allowances for equipment or structures associated with various types of construction. These allowances should be used to determine if the notification surface will be penetrated. For short projects (100 feet [30 meters] or less in length), any applicable heights should be considered to apply over the entire length of the project.



\* Because the project is shielded by the city of Cleveland, this meets 1404.1.4 #2 exemption requirement & need no notification

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## Search Airports

### Airports matching: CLEVELAND, OH

12 airports found

| ID     | City                    | Name  | Remarks |
|--------|-------------------------|---|---------|
| ② KCLE | Cleveland, OH, USA      | Cleveland-Hopkins International Airport     |         |
| ① KBKL | Cleveland, OH, USA      | Burke Lakefront Airport                     |         |
| ③ KCGF | Cleveland, OH, USA      | Cuyahoga County Airport                     |         |
| OI51   | Cleveland, OH, USA      | 4th District Police Station Heliport        | Private |
| ④ 53OI | Cleveland, OH, USA      | Metro Health Medical Center Heliport        | Private |
| 8OI8   | East Cleveland, OH, USA | Meridia Huron Hospital Heliport             | Private |
| OI50   | Cleveland, OH, USA      | 1st District Police Sta Heliport            | Private |
| 7OH9   | Cleveland, OH, USA      | Cleveland Police Dept 6th District Heliport | Private |
| 77OI   | Cleveland, OH, USA      | University Hospitals of Cleveland Heliport  | Private |
| 6OI8   | Cleveland, OH, USA      | Cleveland Clinic Foundation Heliport        | Private |
| ⑤ 8OI6 | Cleveland, OH, USA      | St Vincent Charity Hospital Heliport        | Private |
| 16OH   | Cleveland, OH, USA      | Lutheran Hospital Heliport                  | Private |

\* Those not highlighted are not within studied range

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Circle Search For Airports Results

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| Name                   | Locator Id | Site Type | City      | State | Latitude         | Longitude        | Distance(NM) | Azimuth |
|------------------------|------------|-----------|-----------|-------|------------------|------------------|--------------|---------|
| BURKE LAKEFRONT        | BKL        | Airport   | CLEVELAND | OH    | 41° 31' 3.00" N  | 81° 41' 0.00" W  | 1.89         | 169.57° |
| CLEVELAND-HOPKINS INTL | CLE        | Airport   | CLEVELAND | OH    | 41° 24' 33.90" N | 81° 51' 17.93" W | 8.72         | 57.89°  |
| CUYAHOGA COUNTY        | CGF        | Airport   | CLEVELAND | OH    | 41° 33' 54.45" N | 81° 29' 10.88" W | 10.35        | 117.13° |

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 measured from approx proj. location  
 41° 29' 11.0" N  
 81° 41' 27.5" W  
 (from Google Earth)





**RAMP A6**  
 P.I. STA. 802+30.45  
 Δ = 175° 02' 15" (LTI)  
 LS = 175.00'  
 BS = 34° 46' 53"  
 LT = 119.00'  
 ST = 60.40'  
 x = 68.66'  
 y = 34.49'  
 k = 86.44'  
 p = 8.74'

P.I. STA. 807+96.68  
 Δ = 195° 02' 15" (LTI)  
 LS = 200.00'  
 BS = 39° 45' 00"  
 LT = 136.86'  
 ST = 69.88'  
 x = 100.59'  
 y = 44.69'  
 k = 98.42'  
 p = 11.37'

P.I. STA. 816+82.05  
 Δ = 17° 05' 11" (LTI)  
 LS = 17.05'  
 BS = 10° 47' 41"  
 LT = 131.95'  
 ST = 263.89'  
 E = 0.84'  
 e<sub>max</sub> = NC  
 V<sub>max</sub> = 60 MPH  
 WIDENING = N/A

P.I. STA. 103+54.51  
 Δ = 10° 14' 02" (RTI)  
 LS = 10° 17' 50" (RTI)  
 DC = 1° 30' 00"  
 R = 1,819.72'  
 T = 411.57'  
 L = 819.38'  
 E = 22.11'  
 e<sub>max</sub> = 0.037  
 V<sub>max</sub> = 60 MPH  
 WIDENING = N/A

P.I. STA. 105+41.54  
 Δ = 37° 08' 00" (RTI)  
 LS = 22° 44' 11"  
 R = 252.00'  
 T = 84.56'  
 L = 163.17'  
 E = 13.81'  
 e<sub>max</sub> = NC  
 V<sub>max</sub> = 25 MPH  
 WIDENING = N/A

P.I. STA. 105+11.79  
 Δ = 9° 06' 08" (RTI)  
 LS = 0° 33' 00"  
 R = 1,100.80'  
 T = 87.62'  
 L = 174.88'  
 E = 3.48'

P.I. STA. 105+68.38  
 Δ = 1° 11' 31" (RTI)  
 LS = 0° 18' 02"  
 R = 19,063.98'  
 T = 198.29'  
 L = 396.56'  
 E = 1.03'  
 e<sub>max</sub> = NC  
 V<sub>max</sub> = 45 MPH  
 WIDENING = N/A

P.I. STA. 105+92.11  
 Δ = 7° 07' 42" (LTI)  
 LS = 2° 00' 00"  
 R = 2,864.79'  
 T = 178.45'  
 L = 356.44'  
 E = 5.55'  
 e<sub>max</sub> = 0.035  
 V<sub>max</sub> = 50 MPH  
 WIDENING = N/A

P.I. STA. 109+68.88  
 Δ = 1° 01' 18"  
 R = 1,100.80'  
 T = 87.62'  
 L = 174.88'  
 E = 3.48'

P.I. STA. 109+11.79  
 Δ = 9° 06' 08" (RTI)  
 LS = 0° 33' 00"  
 R = 1,100.80'  
 T = 87.62'  
 L = 174.88'  
 E = 3.48'

P.I. STA. 109+58.94  
 Δ = 13° 02' 22" (RTI)  
 LS = 9° 38' 40"  
 R = 594.08'  
 T = 67.89'  
 L = 135.20'  
 E = 3.67'

P.I. STA. 109+68.38  
 Δ = 1° 11' 31" (RTI)  
 LS = 0° 18' 02"  
 R = 19,063.98'  
 T = 198.29'  
 L = 396.56'  
 E = 1.03'  
 e<sub>max</sub> = NC  
 V<sub>max</sub> = 45 MPH  
 WIDENING = N/A

P.I. STA. 109+92.11  
 Δ = 7° 07' 42" (LTI)  
 LS = 2° 00' 00"  
 R = 2,864.79'  
 T = 178.45'  
 L = 356.44'  
 E = 5.55'  
 e<sub>max</sub> = 0.035  
 V<sub>max</sub> = 50 MPH  
 WIDENING = N/A

P.I. STA. 109+92.11  
 Δ = 7° 07' 42" (LTI)  
 LS = 2° 00' 00"  
 R = 2,864.79'  
 T = 178.45'  
 L = 356.44'  
 E = 5.55'  
 e<sub>max</sub> = 0.035  
 V<sub>max</sub> = 50 MPH  
 WIDENING = N/A

P.I. STA. 109+92.11  
 Δ = 7° 07' 42" (LTI)  
 LS = 2° 00' 00"  
 R = 2,864.79'  
 T = 178.45'  
 L = 356.44'  
 E = 5.55'  
 e<sub>max</sub> = 0.035  
 V<sub>max</sub> = 50 MPH  
 WIDENING = N/A

**RAMP A7**  
 P.I. STA. 100+01.85  
 Δ = 3° 02' 12" (RTI)  
 DC = 1° 30' 00"  
 R = 3,819.72'  
 T = 101.85'  
 L = 203.66'  
 E = 1.36'  
 e<sub>max</sub> = 0.028  
 V<sub>max</sub> = 50 MPH  
 WIDENING = N/A

P.I. STA. 100+01.85  
 Δ = 3° 02' 12" (RTI)  
 DC = 1° 30' 00"  
 R = 3,819.72'  
 T = 101.85'  
 L = 203.66'  
 E = 1.36'  
 e<sub>max</sub> = 0.028  
 V<sub>max</sub> = 50 MPH  
 WIDENING = N/A

P.I. STA. 100+68.88  
 Δ = 1° 01' 18"  
 R = 1,100.80'  
 T = 87.62'  
 L = 174.88'  
 E = 3.48'

P.I. STA. 101+11.79  
 Δ = 9° 06' 08" (RTI)  
 LS = 0° 33' 00"  
 R = 1,100.80'  
 T = 87.62'  
 L = 174.88'  
 E = 3.48'

P.I. STA. 101+58.94  
 Δ = 13° 02' 22" (RTI)  
 LS = 9° 38' 40"  
 R = 594.08'  
 T = 67.89'  
 L = 135.20'  
 E = 3.67'

P.I. STA. 105+41.54  
 Δ = 37° 08' 00" (RTI)  
 LS = 22° 44' 11"  
 R = 252.00'  
 T = 84.56'  
 L = 163.17'  
 E = 13.81'  
 e<sub>max</sub> = NC  
 V<sub>max</sub> = 25 MPH  
 WIDENING = N/A

P.I. STA. 105+11.79  
 Δ = 9° 06' 08" (RTI)  
 LS = 0° 33' 00"  
 R = 1,100.80'  
 T = 87.62'  
 L = 174.88'  
 E = 3.48'

P.I. STA. 105+68.38  
 Δ = 1° 11' 31" (RTI)  
 LS = 0° 18' 02"  
 R = 19,063.98'  
 T = 198.29'  
 L = 396.56'  
 E = 1.03'  
 e<sub>max</sub> = NC  
 V<sub>max</sub> = 45 MPH  
 WIDENING = N/A

P.I. STA. 105+92.11  
 Δ = 7° 07' 42" (LTI)  
 LS = 2° 00' 00"  
 R = 2,864.79'  
 T = 178.45'  
 L = 356.44'  
 E = 5.55'  
 e<sub>max</sub> = 0.035  
 V<sub>max</sub> = 50 MPH  
 WIDENING = N/A

P.I. STA. 105+92.11  
 Δ = 7° 07' 42" (LTI)  
 LS = 2° 00' 00"  
 R = 2,864.79'  
 T = 178.45'  
 L = 356.44'  
 E = 5.55'  
 e<sub>max</sub> = 0.035  
 V<sub>max</sub> = 50 MPH  
 WIDENING = N/A

P.I. STA. 105+92.11  
 Δ = 7° 07' 42" (LTI)  
 LS = 2° 00' 00"  
 R = 2,864.79'  
 T = 178.45'  
 L = 356.44'  
 E = 5.55'  
 e<sub>max</sub> = 0.035  
 V<sub>max</sub> = 50 MPH  
 WIDENING = N/A

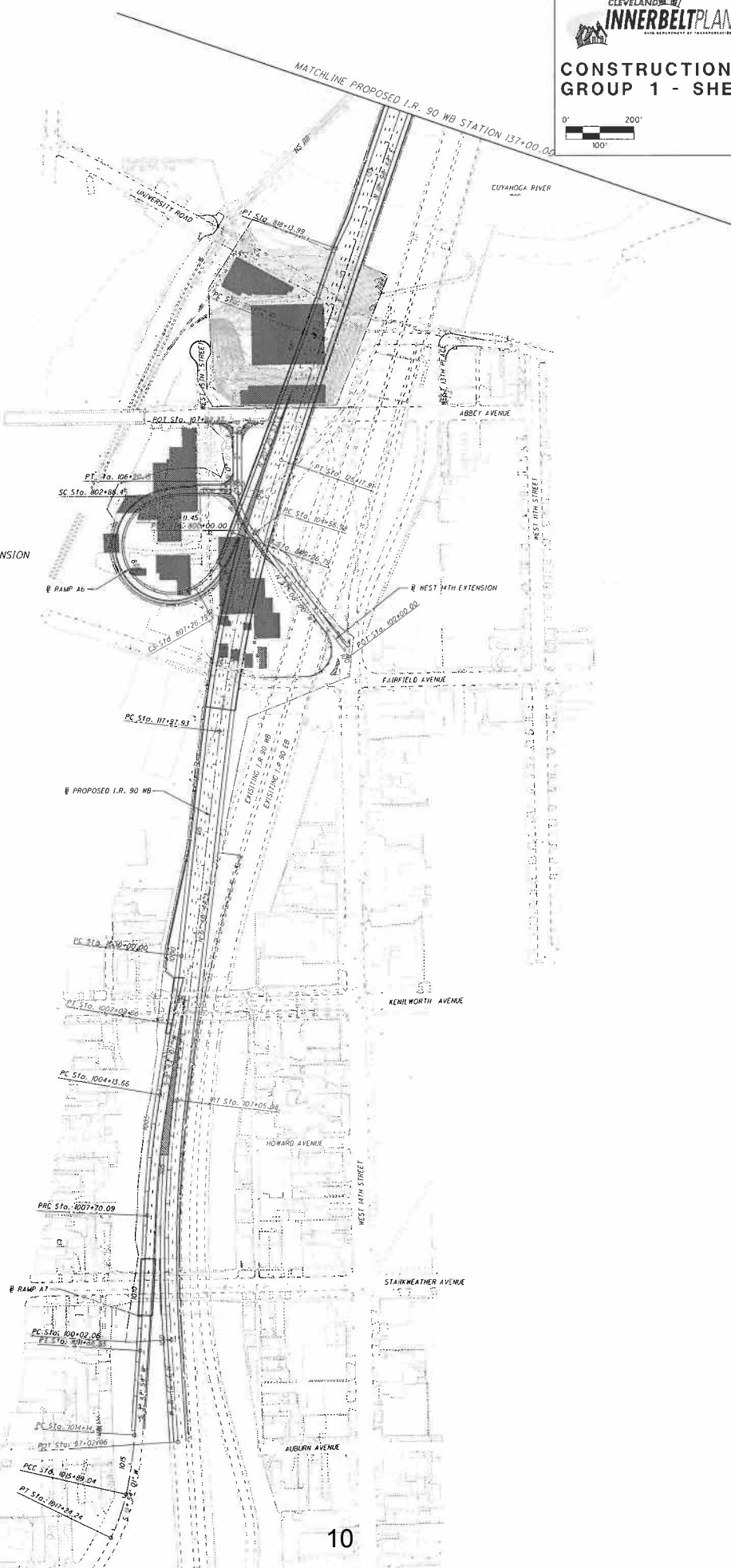
P.I. STA. 105+92.11  
 Δ = 7° 07' 42" (LTI)  
 LS = 2° 00' 00"  
 R = 2,864.79'  
 T = 178.45'  
 L = 356.44'  
 E = 5.55'  
 e<sub>max</sub> = 0.035  
 V<sub>max</sub> = 50 MPH  
 WIDENING = N/A

P.I. STA. 105+92.11  
 Δ = 7° 07' 42" (LTI)  
 LS = 2° 00' 00"  
 R = 2,864.79'  
 T = 178.45'  
 L = 356.44'  
 E = 5.55'  
 e<sub>max</sub> = 0.035  
 V<sub>max</sub> = 50 MPH  
 WIDENING = N/A

P.I. STA. 105+92.11  
 Δ = 7° 07' 42" (LTI)  
 LS = 2° 00' 00"  
 R = 2,864.79'  
 T = 178.45'  
 L = 356.44'  
 E = 5.55'  
 e<sub>max</sub> = 0.035  
 V<sub>max</sub> = 50 MPH  
 WIDENING = N/A

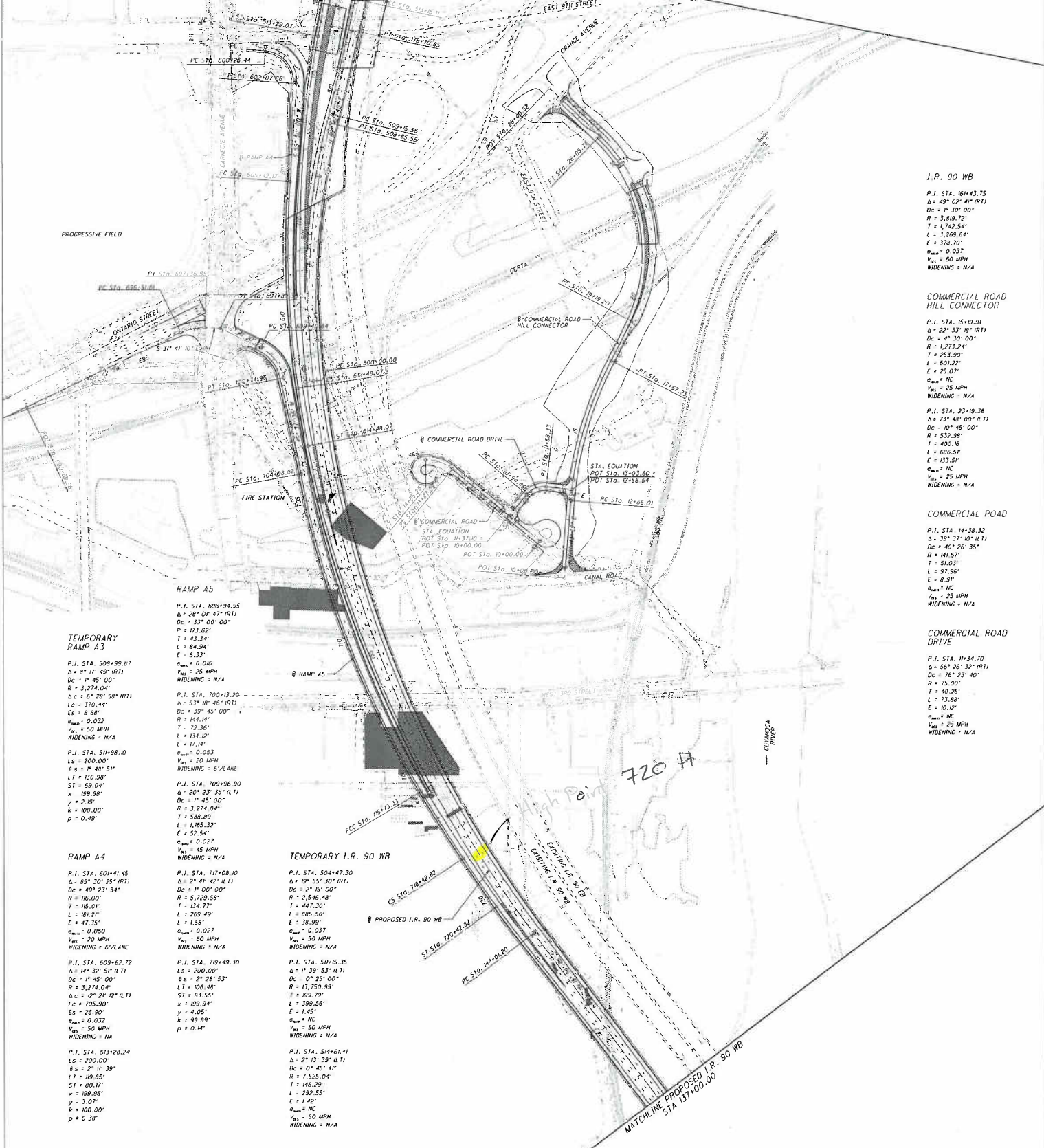
P.I. STA. 105+92.11  
 Δ = 7° 07' 42" (LTI)  
 LS = 2° 00' 00"  
 R = 2,864.79'  
 T = 178.45'  
 L = 356.44'  
 E = 5.55'  
 e<sub>max</sub> = 0.035  
 V<sub>max</sub> = 50 MPH  
 WIDENING = N/A

**CLEVELAND INNERBELT PLAN**  
 A DIVISION OF THE CLEVELAND METROPOLITAN AREA  
**CONSTRUCTION CONTRACT GROUP 1 - SHEET 1**  
 MAY 8, 2009  
 DRAFT



NOTE 45  
 END CONSTRUCTION  
 PROPOSED I.R. 90 WB  
 STA. 177+65.00

MATCHLINE PROPOSED I.R. 90 WB  
 STA 180+00.00



**I.R. 90 WB**  
 P.I. STA. 161+43.75  
 $\Delta = 49^{\circ} 02' 41''$  (RT)  
 $Dc = 1^{\circ} 30' 00''$   
 $R = 3,819.72'$   
 $T = 1,742.54'$   
 $L = 3,289.04'$   
 $E = 378.70'$   
 $e_{min} = 0.037$   
 $V_{85} = 60$  MPH  
 WIDENING = N/A

**COMMERCIAL ROAD HILL CONNECTOR**  
 P.I. STA. 15+19.91  
 $\Delta = 22^{\circ} 33' 18''$  (RT)  
 $Dc = 4^{\circ} 30' 00''$   
 $R = 1,273.24'$   
 $T = 255.90'$   
 $L = 601.22'$   
 $E = 25.07'$   
 $e_{min} = MC$   
 $V_{85} = 25$  MPH  
 WIDENING = N/A  
  
 P.I. STA. 23+19.38  
 $\Delta = 72^{\circ} 48' 00''$  (L)  
 $Dc = 10^{\circ} 45' 00''$   
 $R = 532.98'$   
 $T = 400.16'$   
 $L = 606.51'$   
 $E = 133.51'$   
 $e_{min} = MC$   
 $V_{85} = 25$  MPH  
 WIDENING = N/A

**COMMERCIAL ROAD**  
 P.I. STA. 14+38.32  
 $\Delta = 39^{\circ} 37' 10''$  (L)  
 $Dc = 40^{\circ} 26' 35''$   
 $R = 141.67'$   
 $T = 51.03'$   
 $L = 97.96'$   
 $E = 8.91'$   
 $e_{min} = MC$   
 $V_{85} = 25$  MPH  
 WIDENING = N/A

**COMMERCIAL ROAD DRIVE**  
 P.I. STA. 14+34.70  
 $\Delta = 56^{\circ} 26' 32''$  (RT)  
 $Dc = 18^{\circ} 23' 40''$   
 $R = 75.00'$   
 $T = 40.25'$   
 $L = 73.88'$   
 $E = 10.10'$   
 $e_{min} = MC$   
 $V_{85} = 25$  MPH  
 WIDENING = N/A

**TEMPORARY RAMP A3**  
 P.I. STA. 500+99.87  
 $\Delta = 8^{\circ} 17' 45''$  (RT)  
 $Dc = 1^{\circ} 45' 00''$   
 $R = 3,274.04'$   
 $\Delta C = 6^{\circ} 20' 58''$  (RT)  
 $L = 370.44'$   
 $E = 8.88'$   
 $e_{min} = 0.032$   
 $V_{85} = 50$  MPH  
 WIDENING = N/A

**RAMP A5**  
 P.I. STA. 696+94.95  
 $\Delta = 28^{\circ} 07' 47''$  (RT)  
 $Dc = 33^{\circ} 00' 00''$   
 $R = 173.62'$   
 $T = 43.24'$   
 $L = 84.94'$   
 $E = 5.33'$   
 $e_{min} = 0.016$   
 $V_{85} = 25$  MPH  
 WIDENING = N/A

P.I. STA. 700+13.20  
 $\Delta = 53^{\circ} 18' 46''$  (RT)  
 $Dc = 39^{\circ} 45' 00''$   
 $R = 144.14'$   
 $T = 12.36'$   
 $L = 134.12'$   
 $E = 17.14'$   
 $e_{min} = 0.053$   
 $V_{85} = 20$  MPH  
 WIDENING = 6'/LANE

P.I. STA. 709+16.90  
 $\Delta = 20^{\circ} 23' 35''$  (L)  
 $Dc = 1^{\circ} 45' 00''$   
 $R = 3,274.04'$   
 $T = 1,588.89'$   
 $L = 1,185.32'$   
 $E = 52.54'$   
 $e_{min} = 0.027$   
 $V_{85} = 45$  MPH  
 WIDENING = N/A

**RAMP A4**  
 P.I. STA. 601+41.45  
 $\Delta = 40^{\circ} 30' 25''$  (RT)  
 $Dc = 49^{\circ} 23' 34''$   
 $R = 116.00'$   
 $T = 115.01'$   
 $L = 181.07'$   
 $E = 47.35'$   
 $e_{min} = 0.080$   
 $V_{85} = 20$  MPH  
 WIDENING = 6'/LANE

P.I. STA. 609+62.72  
 $\Delta = 14^{\circ} 32' 55''$  (L)  
 $Dc = 1^{\circ} 45' 00''$   
 $R = 3,274.04'$   
 $\Delta C = 10^{\circ} 21' 12''$  (L)  
 $L = 705.30'$   
 $E = 26.90'$   
 $e_{min} = 0.032$   
 $V_{85} = 50$  MPH  
 WIDENING = NA

P.I. STA. 613+28.24  
 $\Delta = 2^{\circ} 11' 39''$   
 $Dc = 1^{\circ} 19' 55''$   
 $R = 80.17'$   
 $T = 119.96'$   
 $L = 31.07'$   
 $E = 3.07'$   
 $k = 100.00'$   
 $p = 0.38'$

**TEMPORARY I.R. 90 WB**  
 P.I. STA. 711+08.10  
 $\Delta = 2^{\circ} 41' 42''$  (L)  
 $Dc = 1^{\circ} 00' 00''$   
 $R = 5,729.58'$   
 $T = 134.77'$   
 $L = 289.49'$   
 $E = 1.58'$   
 $e_{min} = 0.027$   
 $V_{85} = 60$  MPH  
 WIDENING = N/A

P.I. STA. 719+49.30  
 $\Delta = 200.00'$   
 $\Delta = 2^{\circ} 28' 53''$   
 $R = 106.48'$   
 $ST = 93.55'$   
 $w = 189.94'$   
 $y = 4.05'$   
 $k = 99.99'$   
 $p = 0.14'$

P.I. STA. 511+15.35  
 $\Delta = 1^{\circ} 30' 53''$  (L)  
 $Dc = 0^{\circ} 25' 00''$   
 $R = 13,750.99'$   
 $T = 99.79'$   
 $L = 399.56'$   
 $E = 1.45'$   
 $e_{min} = MC$   
 $V_{85} = 50$  MPH  
 WIDENING = N/A

**TEMPORARY I.R. 90 WB**  
 P.I. STA. 514+47.30  
 $\Delta = 8^{\circ} 55' 30''$  (RT)  
 $Dc = 2^{\circ} 15' 00''$   
 $R = 2,546.48'$   
 $T = 447.30'$   
 $L = 485.58'$   
 $E = 38.99'$   
 $e_{min} = 0.037$   
 $V_{85} = 50$  MPH  
 WIDENING = N/A

P.I. STA. 514+61.41  
 $\Delta = 2^{\circ} 13' 39''$  (L)  
 $Dc = 0^{\circ} 45' 47''$   
 $R = 7,525.04'$   
 $T = 146.29'$   
 $L = 230.55'$   
 $E = 1.42'$   
 $e_{min} = MC$   
 $V_{85} = 50$  MPH  
 WIDENING = N/A



# CONSTRUCTION CONTRACT GROUP 1 - SHEET 3

MAY 8, 2009  
DRAFT



### TEMPORARY RAMP A3

P.I. STA. 599+20.57  
Δ = 19° 59' 54" (R/L)  
R = 402.28'  
T = 70.82'  
L = 140.29'  
E = 619'

P.I. STA. 604+22.04  
Δ = 19° 59' 54" (R/L)  
R = 1637.02'  
T = 222.89'  
L = 493.05'  
E = 619'

$V_{max} = 35$  MPH  
WIDENING = 14'

### TEMPORARY I.R. 90 NB

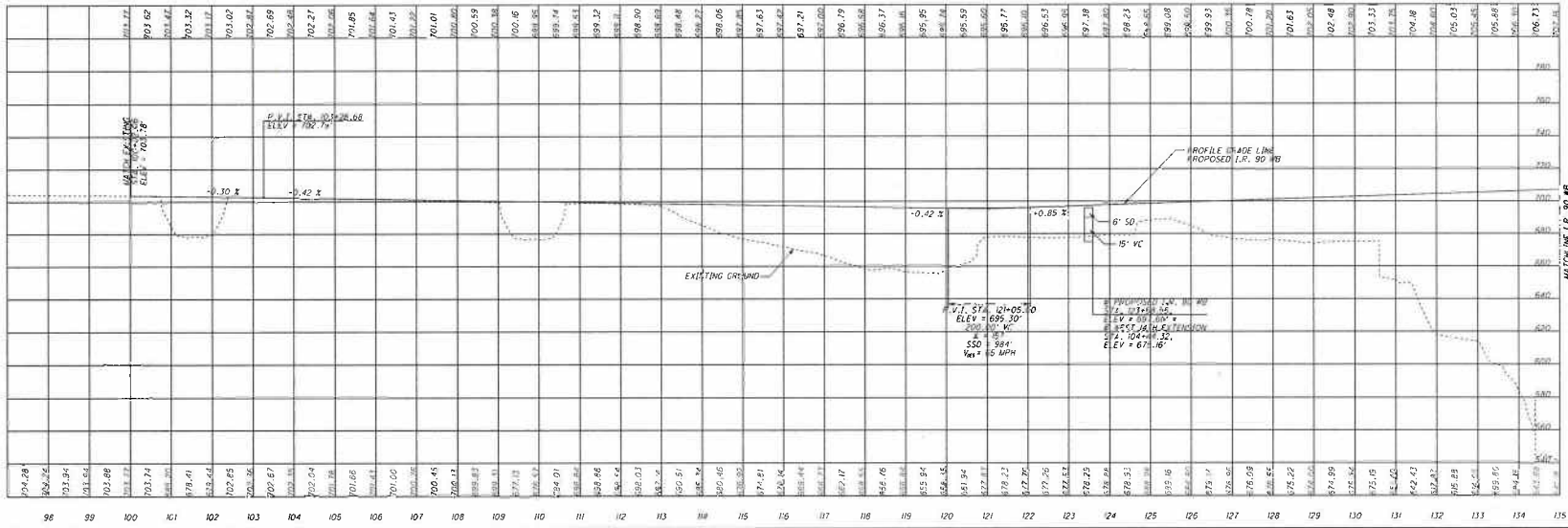
P.I. STA. 514+61.41  
Δ = 7° 17' 39" (L/R)  
R = 1528.64'  
T = 146.29'  
L = 292.55'  
E = 619'

P.I. STA. 519+52.85  
Δ = 10° 35' 17" (L/R)  
R = 1111.00'  
T = 145.07'  
L = 228.47'  
E = 619'

$V_{max} = 35$  MPH  
WIDENING = 14'

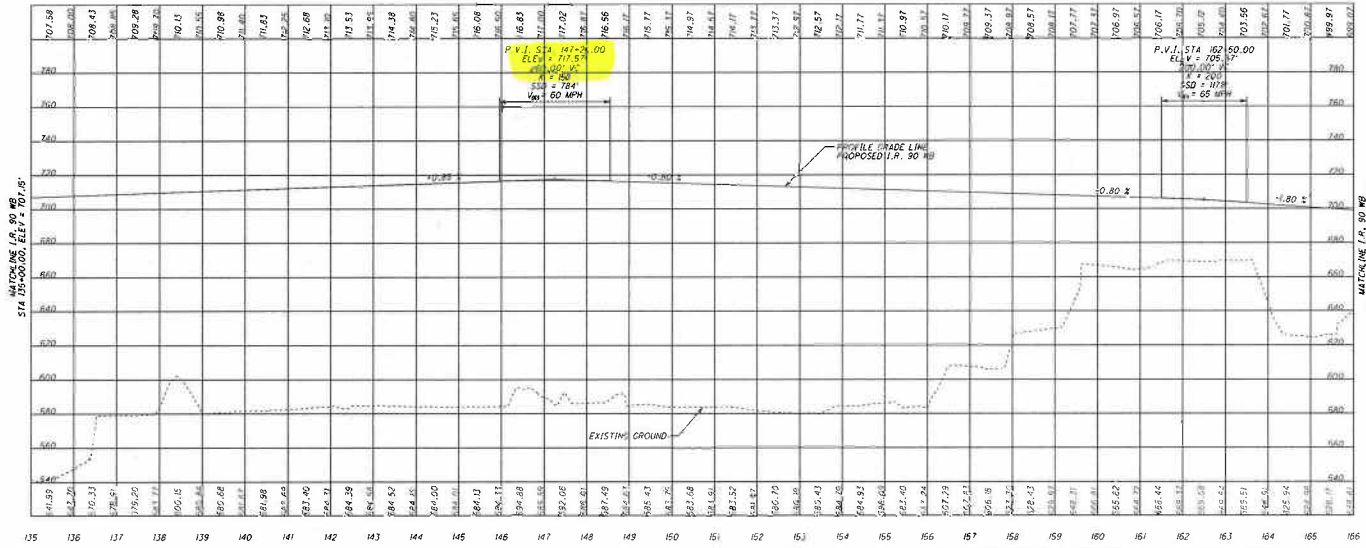
THE WOLSTEIN CENTER  
AT CLEVELAND STATE  
UNIVERSITY


**PROPOSED I.R. 90 WB**



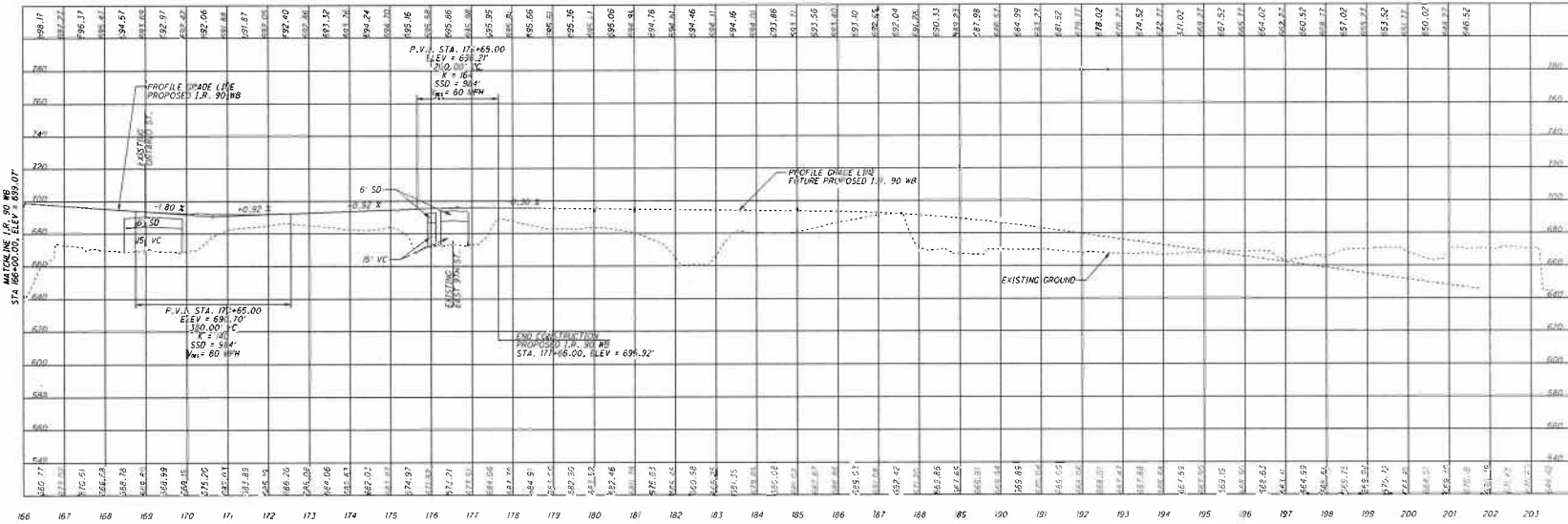
13

**PROPOSED I.R. 90 WB**

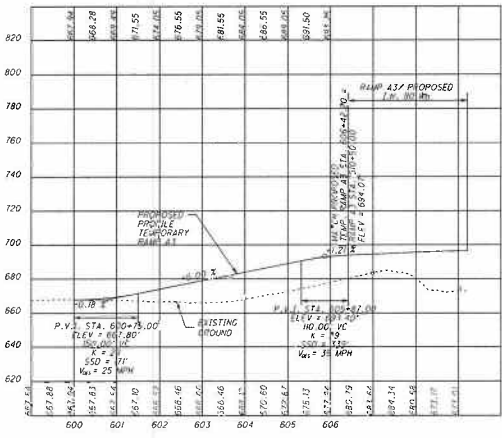



  
**CONSTRUCTION CONTRACT**  
**GROUP 1 PROFILES -**  
**SHEET 1**  
 MAY 8, 2009  
 DRAFT

**PROPOSED I.R. 90 WB**

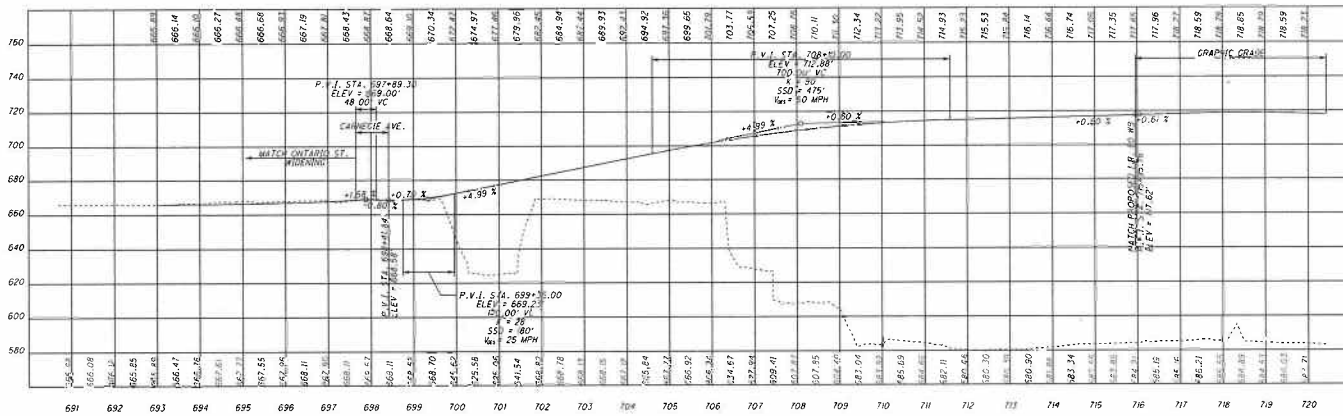


**TEMPORARY RAMP A3**



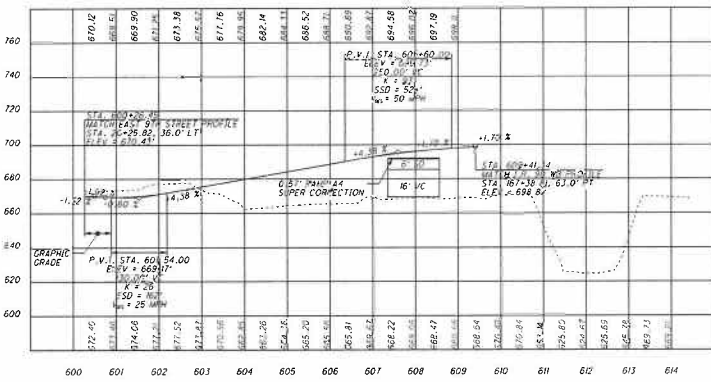

  
**CONSTRUCTION CONTRACT**  
**GROUP 1 PROFILES -**  
**SHEET 2**  
 MAY 8, 2009  
 DRAFT

RAMP A5



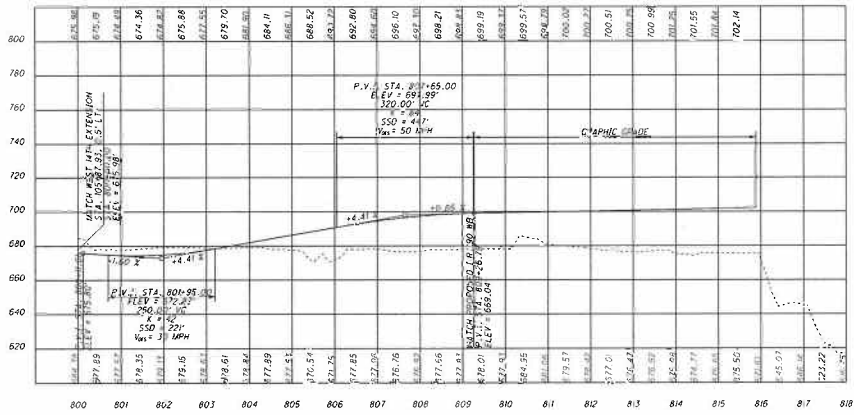
15

RAMP A4

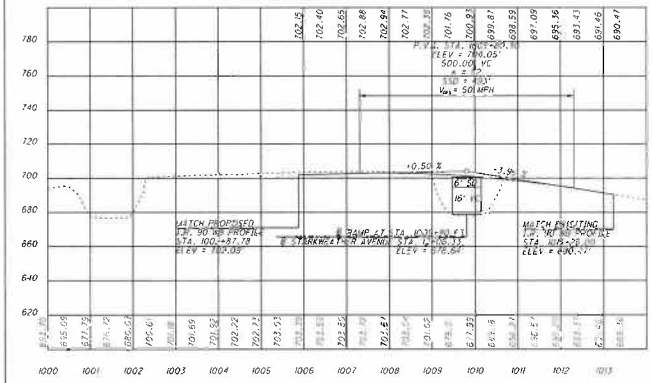



  
**CONSTRUCTION CONTRACT**  
**GROUP 1 PROFILES -**  
**SHEET 3**  
 MAY 8, 2009  
 DRAFT

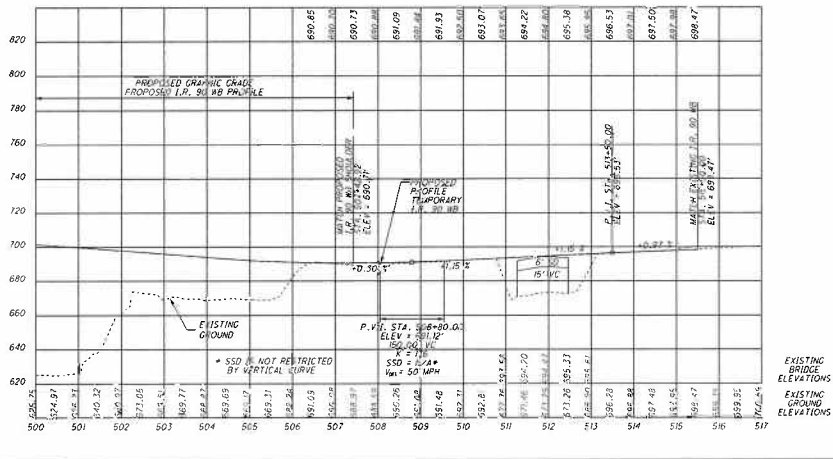
**RAMP A6**



**RAMP A7**



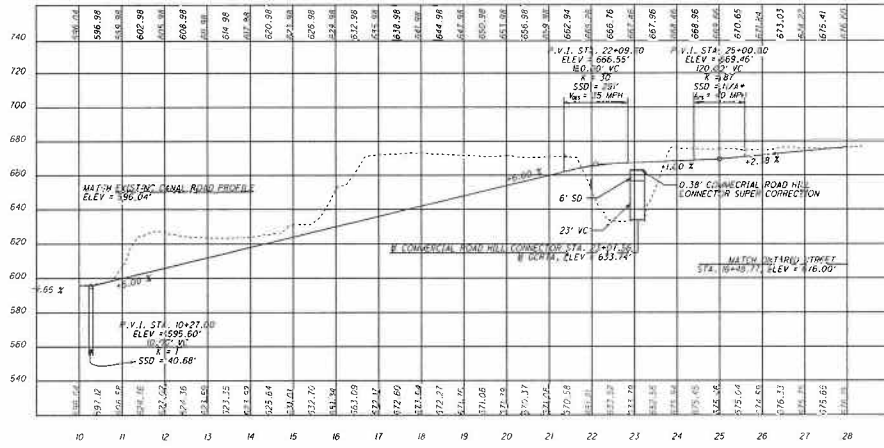
**TEMPORARY I.R. 90 WB**



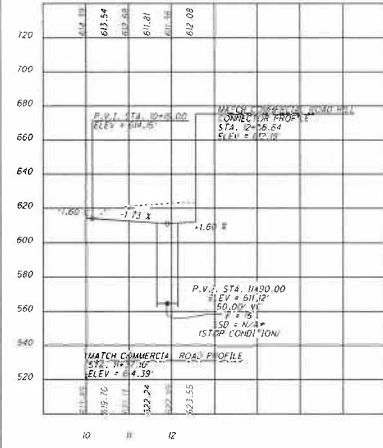

  
**CONSTRUCTION CONTRACT**  
**GROUP 1 PROFILES -**  
**SHEET 4**  
 MAY 8, 2009  
 DRAFT



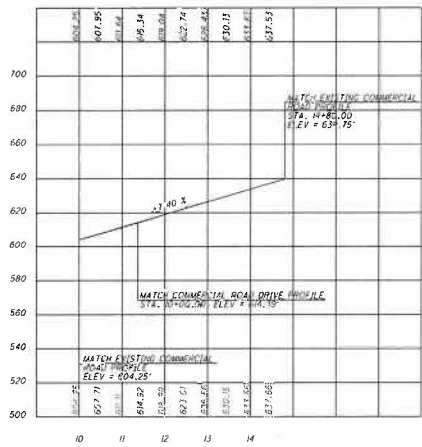
**COMMERCIAL ROAD HILL CONNECTOR**



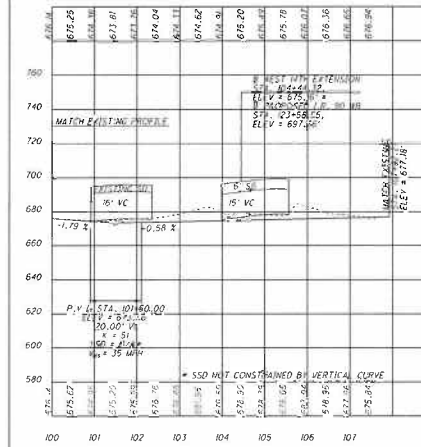
**COMMERCIAL ROAD DRIVE**



**COMMERCIAL ROAD**



**WEST 14TH EXTENSION**



**CLEVELAND INNERBELT PLAN**  
 OHIO DEPARTMENT OF TRANSPORTATION

**CONSTRUCTION CONTRACT  
 GROUP 1 PROFILES -  
 SHEET 5**

MAY 8, 2009  
 DRAFT

Cleveland **BKL** Burke Lakefront

Cleveland **BKL** Elevation **584'**

**Burke Lakefront**

N 41-31-02.8 W 81-41-00.5

AWOS/ASOS 125.25 (216) 241-6904

**Communications**

ATIS: **125.25** Runway Lights  
 Tower: **124.3** See Remarks See Remarks  
 Ground: **121.9**  
 Cinc Del: **121.9**  
 Unicom: **122.95**  
 Dep/App: **125.35 Cleveland App.**

**Runway Information**

| Runway  | L x W    | Surface | Approach Aids | Dspl Thld |
|---------|----------|---------|---------------|-----------|
| 06L-24R | 6198x150 | ASPH    | VASI,REIL-06L | 264 /     |
| 06R-24L | 5200x100 | ASPH    | REIL-24L      | 268 /     |

Traffic Pattern: **Right Hand Traffic for 24R, 24L**

**General Information**

Manager: Khalid Bahhur  
 Arpt Add: 1501 N. Marginal Road  
 Cleveland, OH 44114  
 Airport Phone: (216) 781-6411

**Services**

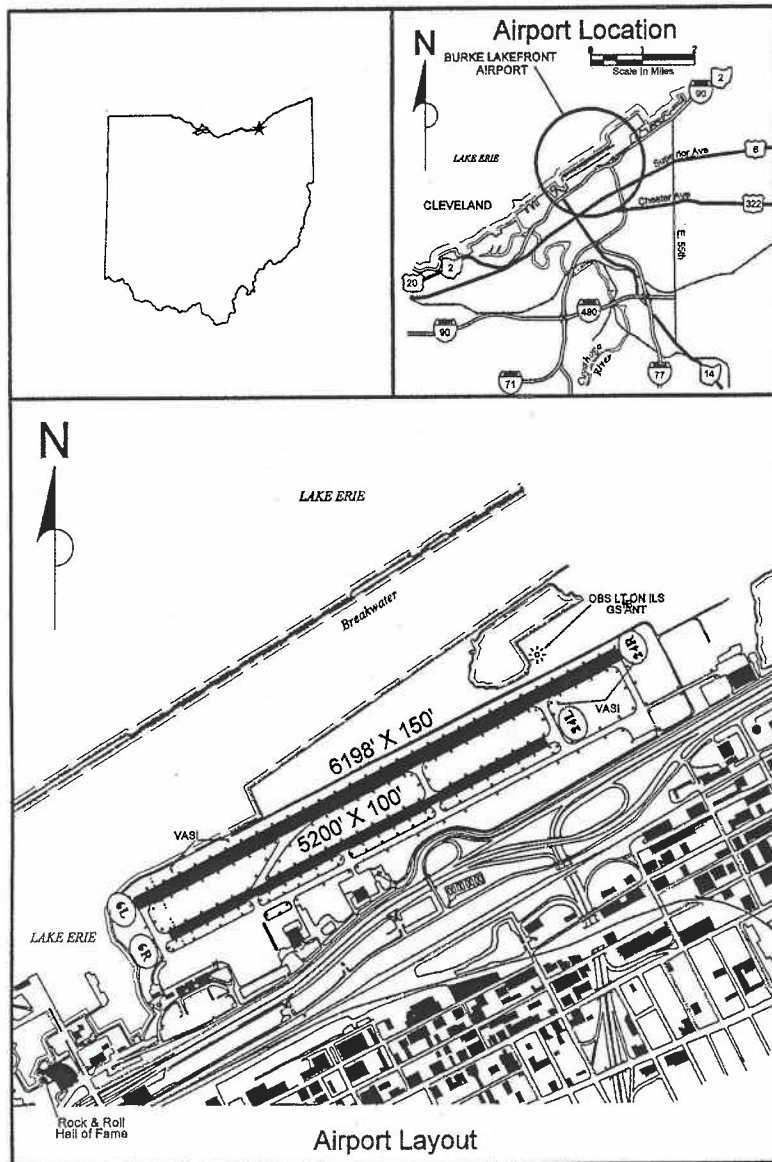
Fuel: 100LL Jet A  
 Repairs: Major, Major  
 Storage: Tie / Hgr

Attended: Months Days Hours  
 All All All

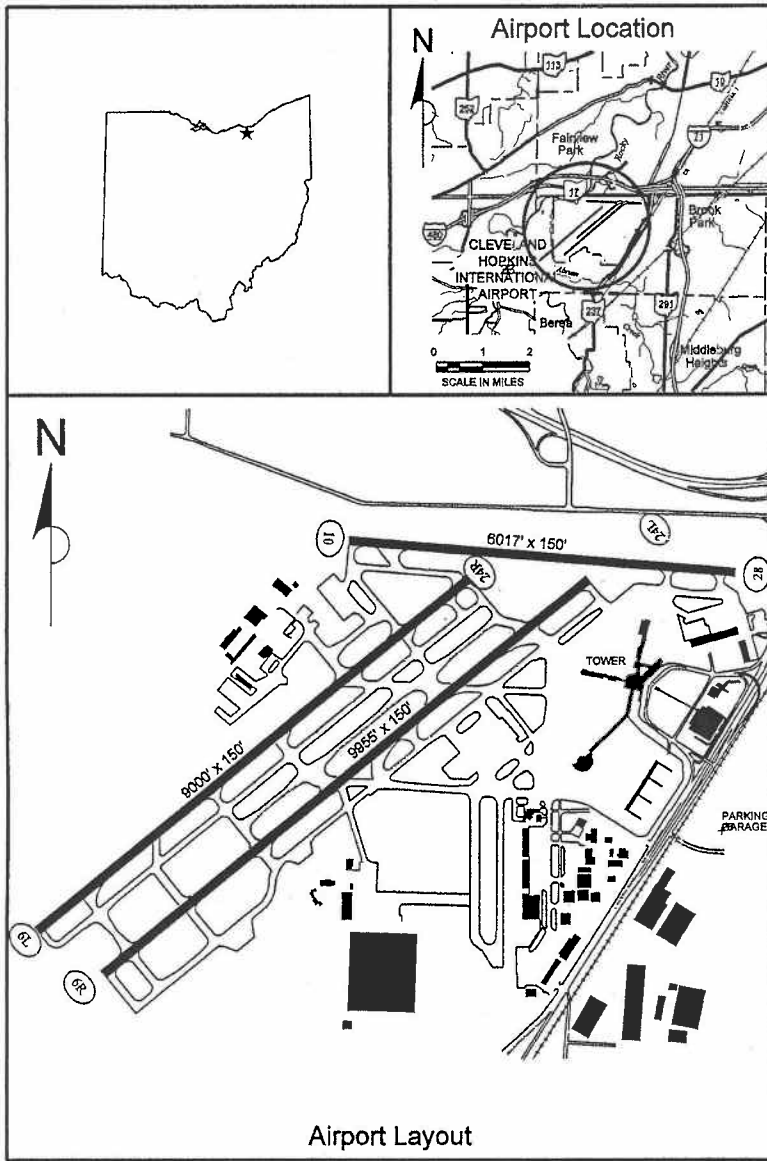
Food: Restaurants near airport.

**Remarks**

Landing fee. All traffic over water. Bird activity. Ship masts and barge mounted cranes. When twr clsd activate MALSF on 124.3. Twr Hours: Mon (0700)-Fri (2300), Sat (0700-2300), Sun (0800-0000).



**Cleveland CLE Cleveland-Hopkins**



**Cleveland CLE Elevation 792'**  
**Cleveland-Hopkins International**

N 41-24-39.2 W 81-50-57.8

AWOS/ASOS 127.85 (216) 267-9955

**Communications**

ATIS: 127.85  
 Tower: 120.9  
 Ground: 121.7  
 Clnc Del: 125.05  
 Unicom: 122.95  
 Dep/App: 124.0 Cleveland App.

**Runway Information**

| Runway  | L x W    | Surface | Approach Aids        | Dspl Thld |
|---------|----------|---------|----------------------|-----------|
| 06R-24L | 8999x150 | CONC    | PAPI ALSF2 06R       |           |
| 06L-24R | 9000x150 | CONC    | PAPI MALSAR 06L-24R  |           |
| 06C-24C | 7096x150 | CONC    | PAPI REIL 06C-24C    |           |
| 10-28   | 6015x150 | ASPH    | PAPI 10-28 MALSAR 28 |           |

Traffic Pattern: Standard Traffic

**General Information**

Manager: Fred Szabo  
 Arpt Add: 5300 Riverside Dr.  
 Cleveland, OH 44135-3193  
 Airport Phone: (216) 265-6100

**Services**

Fuel: 100LL Jet A1+  
 Repairs: Major, Major  
 Storage: Tie / Hgr

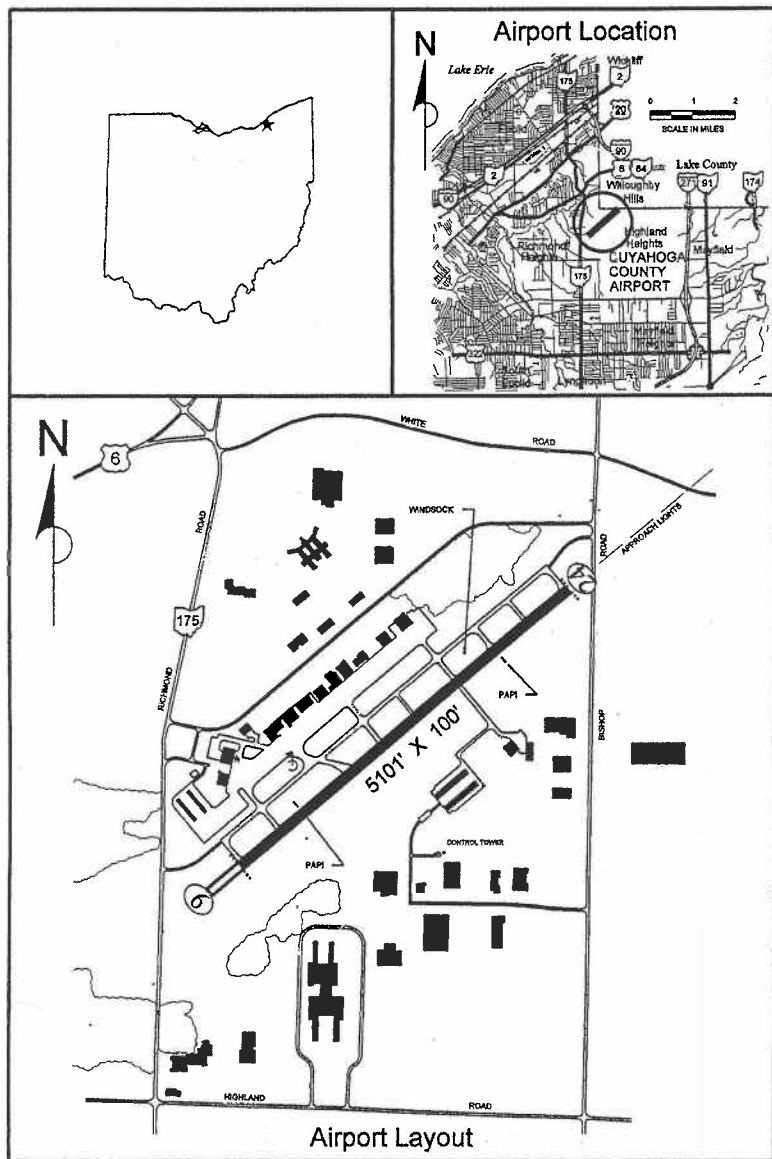
Attended: Months All Days All Hours All

Food: Restaurants in Terminal

**Remarks**

Landing fee on all aircraft. Airport of entry. Deer and birds in vicinity of airport.

Cleveland CGF Cuyahoga County



Cleveland CGF Elevation 879'  
 Cuyahoga County  
 N 41-33-54.2 W 81-29-11.4

AWOS/ASOS

**Communications**

ATIS:  
 Tower: 118.5 (0700-2300) Runway Lights  
 Ground: 121.85 See Remarks  
 Cinc Del: 121.85  
 Unicom: 122.95  
 Dep/App: 125.35 Cleveland App.

**Runway Information**

| Runway | L x W    | Surface | Approach Aids | Dspl Thld |
|--------|----------|---------|---------------|-----------|
| 06-24  | 5101x100 | ASPH    | REIL& PAPI    |           |

Traffic Pattern: Standard Traffic

**General Information**

Manager: Kevin Delaney  
 Arpt Add: 26300 Curtiss Wright Parkway  
 Cleveland, OH 44143  
 Airport Phone: (216) 289-4111

**Services**

Fuel: 100LL Jet A  
 Repairs: Major, Major  
 Storage: Tie / Hgr

Attended: Months Days Hours  
 All All All

Food: Restaurant on field

**Remarks**

Landing fee. Parking fee over two hours. Birds at times. Avoid flying over school 3/4 mile SW of Apt. When twr clsd, activate HIRL Rwy 6-24, REIL Rwy 6 and MALSR Rwy 24 on 118.5.