

SECTION 9.0
RECOMMENDED ALIGNMENT

SECTION 9.0 RECOMMENDED ALIGNMENT

9.1 RECOMMENDED ALIGNMENT DESCRIPTION

Based upon the higher construction costs, higher number of displacements, floodplain impacts, socio-economic impacts, and lack of public support Alignment 4 was eliminated from further study and Alignment 1 was selected as the recommended Alignment. The recommended alignment is shown in Figure 9.1 and in detail in the design study plans. The proposed bridge drawings for the two bridges necessary for the selected alignment are shown in Figures 9.2 and 9.3.

9.2 PURPOSE AND NEED

The recommended alignment would best fulfill the purpose and need for the project described in Section 2.0. It would enhance economic growth by providing improved access across the Illinois Central Railroad tracks and to potential development areas in the corridor. The selected alignment would enhance system continuity between Interstate 57 and U.S. 45, thereby reducing future traffic loads on the existing transportation system.

9.3 POLICY VARIANCES

Variations would be required from the policies stated in the Federal Aid Procedures for Local Highway Improvements and the Bureau of Location and Environment Policies and Procedures Manual. These variations would be requested to reduce construction costs, right-of-way requirements, environmental impacts, and displacements. The variations requested along with the reason for the variance are summarized below:

Policy: BDE Procedure Memorandum 94-14 states that left turn lanes at major crossroads ($ADT \geq 1500$) generally should be channelized (buried) where the median width of the expressway is equal to or greater than 12.0 m (40 ft.) or where the intersection will be signalized.

Variance: Non-channelized (adjacent) left turn lanes are recommended.

Reason: Due to the service area and type of facility being proposed it is anticipated that adjacent left turn lanes would be a safer and more economical option. Adjacent left turns are also consistent with the connecting facilities. If high accident locations result, then the turn lanes could be channelized in the future. This could possibly be done in connection with signalization of the intersection.

Policy: The IDOT FAP Manual recommends 4:1 ditch foreslopes for heights up to 7.6 m (25 ft) and 4:1 backslopes for heights up to 4.6 m (15 ft), 3:1 backslopes for heights from 4.6-7.6 m (15-25 ft), and 2:1 slopes for all heights over 7.6 m (25 ft).

Variance: 2:1 ditch foreslopes and backslopes outside of the 9.0 m (30 ft) clear zone are recommended for all heights.

Reason: The drainage characteristics of the project corridor require wide, deep ditches along the proposed route. In order to reduce the amount of right-of-way necessary and agricultural impacts, 2:1 slopes are being recommended outside of the 9.0 m (30 ft) clear zone.

Policy: According to the IDOT Drainage Manual Section 6-301, the minimum grade for earth ditches is 0.3 percent.

Variance: A minimum ditch grade of 0.2 percent is recommended.

Reason: The flow of water between Interstate 57 and the Saline Branch is controlled by the invert of the proposed culvert under the Illinois Central Railroad tracks. The project corridor does not provide enough natural relief to accommodate ditches with grades that exceed 0.2 percent in most areas. The cities and county are aware of the additional expenses involved in maintaining a low slope ditch.

Policy: According to the IDOT BLE Manual Section 3-312, "Where a rural highway is developed with only partial control of access (expressway), interchanges should be constructed initially at all Marked Route crossroads.

Variance: A signalized at-grade intersection is recommended.

Reason: Due to the additional right-of-way, agricultural impacts, and displacements necessary to construct a grade separated interchange, an at-grade intersection is recommended. An interchange design is not consistent with either Olympian Drive or U.S. Route 45.

Policy: The IDOT FAP Manual Figure 5-8b recommends a maximum grade of 3 percent for a 100 km/hr (60 mph) design speed on level terrain in rural conditions.

Variance: A 4 percent maximum grade is recommended.

Reason: In order to reduce the quantity of right-of-way and earthwork necessary to construct a grade separated crossing of the Illinois Central Railroad tracks, a 4 percent maximum grade is recommended. This is consistent with an urban design and the existing grades at the Interstate 57 interchange. It is anticipated that, as the project corridor develops, Olympian Drive will function as an urban arterial.

Approval for the variances was given at the Federal Highway Administration Early Coordination Meeting held on January 22, 1996 at the Illinois Department of Transportation District 5 headquarters in Paris, Illinois. A copy of the meeting minutes is attached in Appendix D.

9.4 SUMMARY OF ALTERNATIVE IMPACTS

The impacts for the two alignments were determined. These included right-of-way, displacements, cost, and environmental impacts. More accurate costs for the recommended alignment are presented in Section 10.0. More detailed environmental impacts for the recommended alignment are presented in the Environmental Class of Action Determination document in Appendix A.

Alignment 1 would require approximately 20 percent more right-of-way than Alignment 4. However, Alignment 4 would displace 9 residences, 1 commercial building, and 4 other buildings in comparison to Alignment 1, which would displace 2 residences and 2 other buildings. Alignment 4 would cost approximately 10 percent more to construct than Alignment 1.

Alignment 1 requires that a Phase II archaeological investigation be conducted at site 11-CH-333 located east of the Saline Branch. The estimated cost for this Phase II investigation is about \$9,000.00. This does not include costs for construction equipment or possible crop damage. Site 11-CH-333 extends in a north-south orientation along a ridge adjacent to the Saline Branch. A shift in Alignment 1, to the north or south, would not avoid the site. Based on the results of the Phase II investigation, a Phase III or recovery phase may be required by the Illinois Historic Preservation Agency. Costs for a Phase III investigation cannot be adequately assessed until the Phase II investigation is completed.

9.5 PROJECT COMMITMENTS

No commitments have been made as part of the planning process for the proposed project.

9.6 ACCESS CONTROL

Access control was previously discussed in Sections 4.4.3 and 6.6. Alignment 1 was reviewed for locations of potential access control breaks. Table 9.1 summarizes the locations of necessary access control breaks and their purpose.

Right-in/right-out entrances would be constructed to maintain access to residences and agricultural property along Olympian Drive where no other means of access is available. Any existing or proposed entrances along Olympian Drive would be removed if a change in land use resulting in increased traffic were to occur. Access would be moved to the nearest crossroad if such a condition occurs.

According to the IDOT Bureau of Location and Environment Manual, no entrance shall be permitted within 90 m (300 ft) of a median crossover if not located directly opposite that crossover, and the number of entrances should be limited to one per 400 m (0.25 mi.) as measured between adjacent intersections.

The *North I-74 Development Area Regional Transportation Study* recommended additional access between Farber Drive and Prospect Avenue by a proposed north-south road entitled Boardwalk. The Olympian Drive Location Study recommends not providing this additional access between Farber Drive and Prospect Avenue. Providing an additional access point along this segment would reduce access spacing to approximately 400 m (0.25 mi.). As discussed previously, access spacings less than 800 m (0.5 mi.) will add increased delay to the system, reducing the level of service. This could also prompt other property owners to request access at a spacing of 540 m (0.3 mi.) to 400 m (0.25 mi.). Adequate access to those properties both north and south of proposed Olympian Drive can

be provided from Prospect Avenue with a well developed system of east-west collector streets similar to that already shown in the City of Champaign's planning documents.

Another option that should be considered is a relocation of Farber Drive to the east. Increasing the distance between the Interstate 57 interchange ramps and Farber Drive will make both intersections function at an increased level of service and will also provide better access to the property north of Olympian Drive. If an intersection is to be located between the ramps and Prospect Avenue it should be located midway between them, or at approximate Station 10+350. If Farber Drive is relocated it might be necessary to construct an access road from the Ghattweb Corporation property to the Farber Drive extension to the north. For these reasons additional study of a Farber Drive relocation and its intersection with Olympian Drive is recommended.

The Design Study Plans contained in Volume 2 of this report show access control extending to the proposed right-of-way at Neil Street, the Atkins property access road, and the Lakey property access road. If a public or commercial access connection is constructed at these locations, access control should be acquired through purchase or dedication to a minimum distance of 90 m (300 ft) from the edge of proposed Olympian Drive.

Table 9.1
Access Control Breaks

Station	Purpose
10+038.00	Median crossover at Farber Drive
10+895.44	Median crossover at Prospect Avenue
11+661.00	Median crossover at proposed Neil Street
12+100.00	Illinois Power entrance
12+463.32	Median crossover at Market Street
13+250.00	Median crossover at Atkins property
14+995.79	Median crossover at Lincoln Avenue
15+800.00	Median crossover at Willow Road
16+602.00	Median crossover at Lakey property

9.7 SIGHT DISTANCE

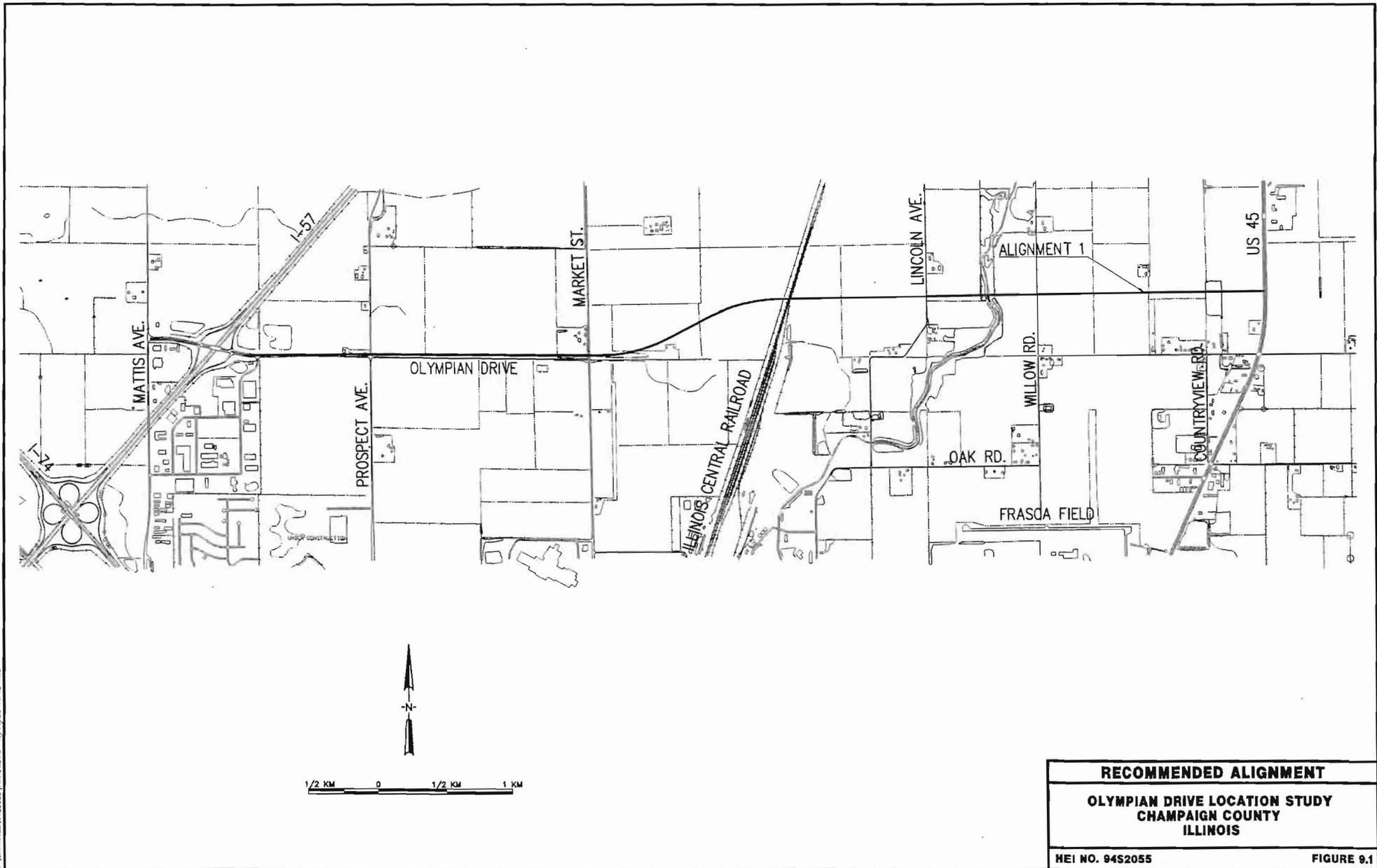
A detailed study was conducted to investigate the horizontal and vertical sight distances for the intersections and entrances along the proposed highway.

Case III B-2 and III C sight distances were checked at all intersections and entrances. These Cases are summarized below:

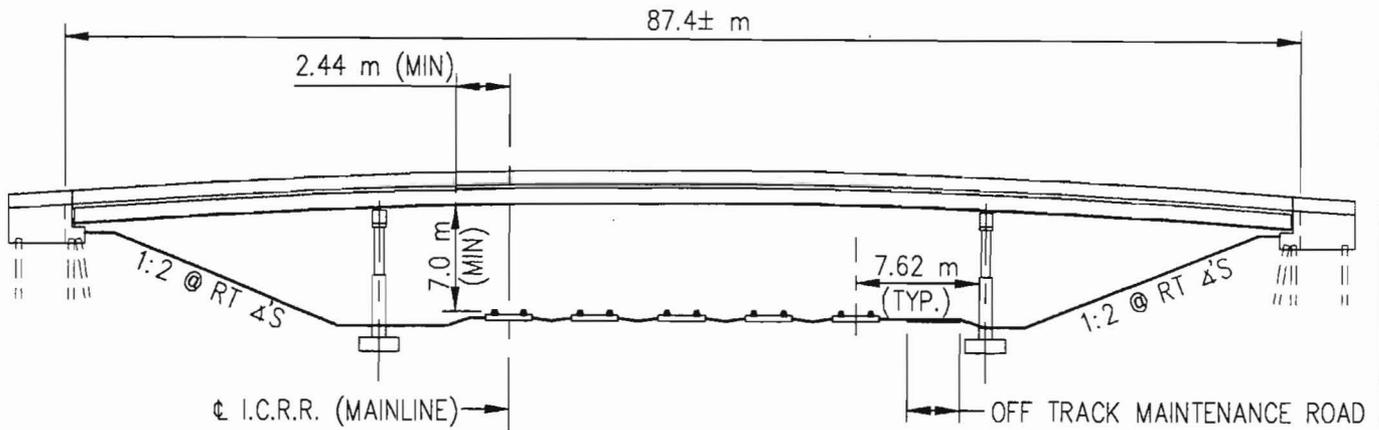
Case III B-2: (Turning Left)	Sight distance required to the right for a vehicle making a left turn into a four lane highway and attaining 85% of the design speed without being overtaken by a vehicle approaching the right reducing to 85% of the design speed.
Case III C: (Turning Right)	Sight distance required to the left to turn right from the minor roadway into the intersecting roadway and to attain 85% of the design speed without being overtaken by a vehicle approaching from the left and reducing its speed to 85% of the design speed.

Minimum horizontal and vertical sight distance is provided at all intersections and entrances. The median crossover located at station 13+250 was checked for sight distance obstruction due to the proposed steel plate beam guardrail. Case III B-2 controls the beginning of the guardrail on the east side of the recommended alignment. Station 13+550 is approximately the first point that guardrail can be constructed on the east side of the alignment.

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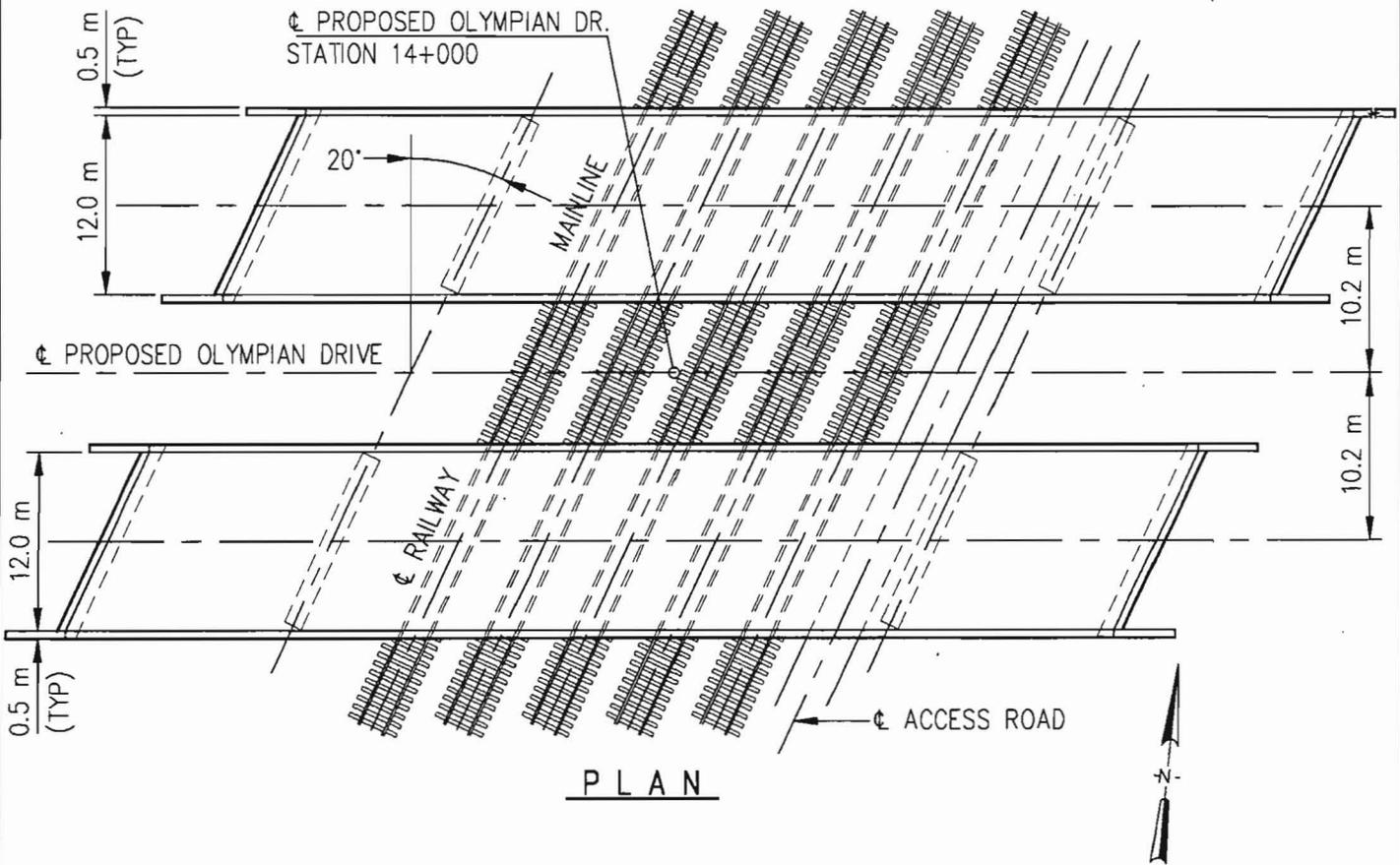


RECOMMENDED ALIGNMENT	
OLYMPIAN DRIVE LOCATION STUDY CHAMPAIGN COUNTY ILLINOIS	
HEI NO. 94S2055	FIGURE 9.1

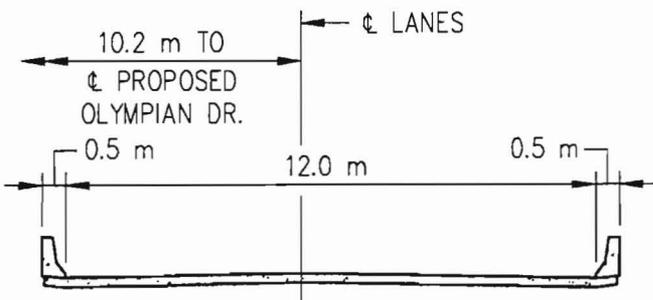


ELEVATION

THE PROFILE GRADE, BRIDGE LENGTH & PIER LOCATIONS ARE SUBJECT TO REFINEMENT IN DETAILED DESIGN.



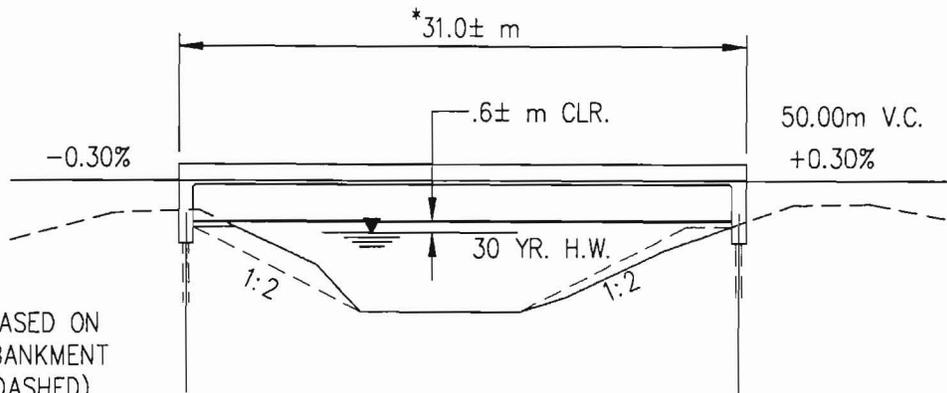
PLAN



CROSS SECTION

BRIDGE OVER ILLINOIS CENTRAL RAILROAD

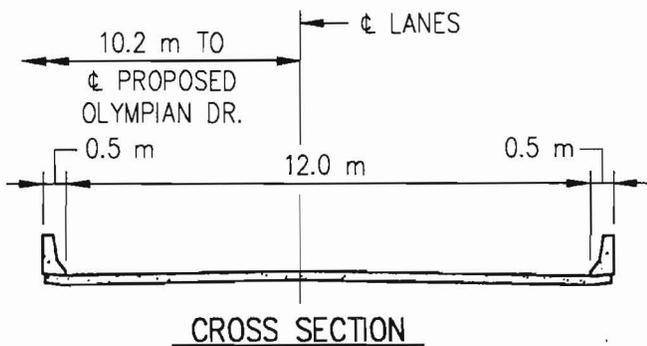
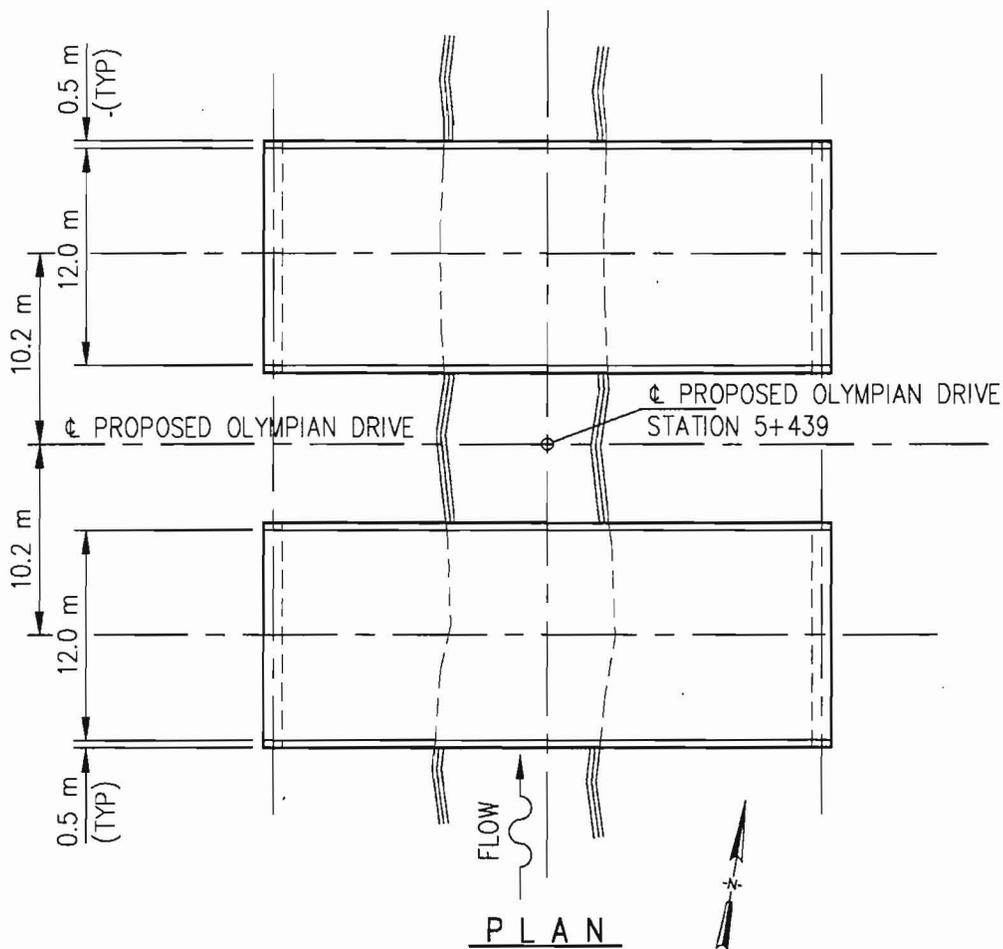
**OLYMPIAN DRIVE LOCATION STUDY
CHAMPAIGN COUNTY
ILLINOIS**



* BRIDGE LENGTH BASED ON 1:2 MAXIMUM EMBANKMENT SLOPES (SHOWN DASHED) FROM EXISTING STREAMBED.

ELEVATION

THE PROFILE GRADE AND BRIDGE LENGTH ARE SUBJECT TO REFINEMENT IN DETAILED DESIGN.



BRIDGE OVER SALINE BRANCH

OLYMPIAN DRIVE LOCATION STUDY
CHAMPAIGN COUNTY
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