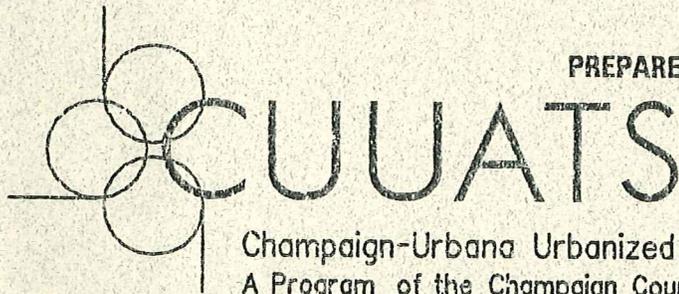


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"As Approved"*

**COMBINED DESIGN STUDY REPORT  
CURTIS ROAD  
F.A. 807 / 7147 IMPROVEMENTS  
DUNCAN ROAD to FIRST STREET**

**SECTION NO. 00-00374-00-ES  
PROJECT NO. M-5181 (036)  
JOB NO. P-95-073-00  
CHAMPAIGN COUNTY**



**PREPARED FOR:**

Champaign-Urbana Urbanized Area Transportation Study  
A Program of the Champaign County Regional Planning Commission

**PREPARED BY:**

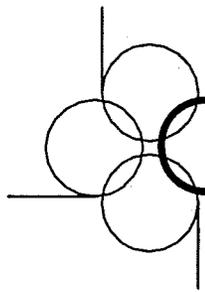


**VOLUME I**

**Clark Dietz**

**COMBINED DESIGN STUDY REPORT**  
**CURTIS ROAD**  
**F.A. 807 / 7147 IMPROVEMENTS**  
**DUNCAN ROAD to FIRST STREET**

**SECTION NO. 00-00374-00-ES**  
**PROJECT NO. M-5181 (036)**  
**JOB NO. P-95-073-00**  
**CHAMPAIGN COUNTY**



**PREPARED FOR:**

**CUUATS**

Champaign-Urbana Urbanized Area Transportation Study  
A Program of the Champaign County Regional Planning Commission

**VOLUME I**

**PREPARED BY:**



**APRIL 2004**

**CURTIS ROAD IMPROVEMENTS**

**DUNCAN ROAD TO FIRST STREET**

Route: F.A. 807/7147

County: Champaign

Local Agency: County of Champaign

Project No.: M-5181(036)

L.A. Section No.: 00-00374-00-ES

Project Length: 16,880 feet (3.20 miles)

Street/Road Name: Curtis Road

Termini: From approximately 181 feet west of the proposed intersection of Duncan Road to approximately 838 feet east of the proposed intersection with First Street.

**DESIGN APPROVAL RECOMMENDED**

*Dennis L. Urziska*  
Champaign County Engineer

June 30, 2004  
Date

*P. Plankots*  
IDOT District

7/26/04  
Date

**DESIGN APPROVED**

*Charles J. Ingersoll*  
Bureau of Local Roads and Streets

7/28/04  
Date

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**CHECK LIST FOR  
PHASE I REPORTS**

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1. Discussion at District Coordination Meeting (See Section 19-1).

If project was discussed at one or more district coordination meetings, list the date(s) and include a copy of the pertinent parts of the meeting minutes.

12-1-98

5-12-00

Date(s) discussed: 3-17-03See Exhibit(s): Section VI2. State Clearinghouse Coordination (See Section 19-1).

Required on projects eligible for Federal funding that meet any of the following criteria:

- involves upgrading of an existing facility or provides new access to an area, in effect, consisting of more than 3R or modernization;
- changes the use, scope, or intensity of use of existing facilities;
- requires additional right-of-way;
- involves potentially significant social, economic, or environmental impacts; or
- requires a Federal license or permit.

Early Warning Notice  
Design Stage Sign-off

Date Submitted: NADate Submitted: 11-6-01Date Received: 5-28-04

See Section VI

3. Environmental Survey Request (See Section 27-1).

Required for any project involving:

- additional ROW or easements;
- drainage structure runaround or any in-stream work; or
- potential effect on a known wetland, recognized natural area/nature preserve, or location where a State or Federal-listed T/E species is known to occur.

Also required for all borrow/contractor-use areas and for certain proposed access control revisions for freeways on the State highway system.

Survey Request Form

Date Submitted: 2-24-00

Survey Results/Clearance for:

- Cultural Resources
- Biological Resources
- Wetlands Resources

Date Received: 4-27-01See Exhibit: \*Date Received: 3-18-03See Exhibit: \*Date Received: 3-6-03See Exhibit: \*

\*See "Project Overview" within  
ECAD Appendix

**CHECKLIST FOR PHASE I REPORTS**

Figure 12-3H

12-3(41)



7. Section 4(f) Evaluation (See Section 26-2).

Required for use of land from a significant publicly owned park, recreational area, wildlife and waterfowl refuge, or any land from a significant historic site.

FHWA 4(f) Approval:

Date: NA  
See Exhibit: \_\_\_\_\_8. Section 6(f) Land and Water Conservation (LAWCON) Fund Act Conversion Request (See Section 26-3).

Required when lands that have LAWCON funds involved in their purchase or development will be converted to other than public outdoor recreation uses.

NPS 6(f) Conversion Approval:

Date: NA  
See Exhibit: \_\_\_\_\_9. Open Space Land Acquisition and Development (OSLAD) Land Conversion Request (See Section 26-4).

Required when lands that have OSLAD funds involved in their purchase or development will be converted to other than public outdoor recreational uses.

IDNR OSLAD Conversion Approval:

Date: NA  
See Exhibit: \_\_\_\_\_10. Section 106 (National Historic Preservation Act) Compliance (See Section 26-5).

Required when sites on or eligible for the National Register of Historic Places will be affected.

Compliance Documentation:

Date: NA  
See Exhibit: \_\_\_\_\_11. Historic Bridge Compliance (See Section 26-5).

Required when bridge on the Historic Bridge Survey (HBS) is involved.

Compliance Documentation:

Date: NA  
See Exhibit: \_\_\_\_\_**CHECKLIST FOR PHASE I REPORTS**

**Figure 12-3H**  
(Continued)

12-3(43)

12. State Historic Act Compliance (See Section 26-5).

Required when State-only funded project involves impacts to site(s) listed on the Illinois Register of Historic Places or site(s) on or eligible for the National Register of Historic Places.

Compliance Documentation: \_\_\_\_\_ Date: NA  
See Exhibit: \_\_\_\_\_

13. Flood Plain Encroachment Studies (See Section 26-7 of BDE Manual and Section 3-004 of the IDOT Drainage Manual).

Required for Federal or State funded projects that would involve encroachments in flood plains as discussed in the cited references.

Flood Plain Encroachment Studies: \_\_\_\_\_ See: ECAD Record  
Resource/Issue IX

14. Flood Plain Finding (See Section 26-7).

Required when project will entail a significant flood plain encroachment.

FHWA Flood Plain Finding: \_\_\_\_\_ See Exhibit: NA

15. Wetlands Finding (See Section 26-8).

Required when a project involving Federal funding or approvals involves unavoidable adverse impacts to wetlands.

FHWA Wetlands Finding: \_\_\_\_\_ See Exhibit: NA

16. Wetlands Mitigation/Compensation Plan (See Section 26-8).

Required for adverse wetlands impacts as directed by the Corps of Engineers Section 404 permit requirements or when the wetlands impacts are subject to compliance with the Illinois Interagency Wetland Policy Act.

Corps Approval of Plan: \_\_\_\_\_ Date: NA  
See Exhibit: \*

IDNR Approval of Plan (See Topic #17). \_\_\_\_\_  
\*Programmatic Review Action,  
Coordination with USCOE  
not required

## CHECKLIST FOR PHASE I REPORTS

Figure 12-3H  
(Continued)



20a. State Endangered Species and Natural Areas Protection Act Compliance (See Section 26-9).

Required for projects that may adversely affect a State-listed threatened or endangered species or natural area.

Response/Biological Opinion from IDNR:                      Date: 7-2-02  
See Exhibit: ECAD Appendix

20b. State Endangered Species Protection Act Incidental Taking Authorization

Required for any project that will result in killing or injuring of a State-listed animal species.

Incidental Taking Authorization recommended?              Yes NA              No NA

21. Federal AD1006 Form for Evaluation of Farmland Conversion Impacts (See Section 26-10).

Required for projects that require additional right-of-way outside of any corporate limits unless any one of the paragraphs in Section 26-10.04(b) applies.

AD1006 Form:    See Exhibit: NA

22. State Farmland Preservation Act Compliance (See Section 26-10).

Required for State highway and bridge projects funded in whole or in part with State funds and which require additional right-of-way unless any of the paragraphs in 26-10.05(b) apply.

Response from IDOA:    Date: NA  
See Exhibit: \_\_\_\_\_

23. Noise Analyses (Including Construction Noise; See Section 26-6).

Required for projects involving the construction of a State highway on new location or the physical alteration of an existing State highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes.

Noise Analysis:    See: Appendix C and  
ECAD Record Resource/Issue V

**CHECKLIST FOR PHASE I REPORTS**

**Figure 12-3H**  
(Continued)

24. Air Quality Conformity Documentation (See Section 26-11).

Required for all State highway projects funded or approved by the FHWA under *Title 23 USC* and to "regionally significant projects" in nonattainment areas, regardless of whether such projects are Federally funded or approved under *Title 23*.

Statement on Conformity: ECAD Record  
See: Resource/Issue IV

25. Air Quality - Microscale CO Analysis (See Sections 23-2.02(e), 24-3.07(e), and 25-3.09(e)).

Potential involvement if the project will have an average daily traffic greater than 16,000 upon completion of the project.

Microscale CO Analysis: ECAD Record  
See: Resource/Issue IV

26. Special Waste Procedures Compliance (See Section 27-2).

Required for all State highway projects.

CERCLIS Statement: See: Appendix C and ECAD  
 Results of Screening/Survey (as appropriate): See: Record Resource/Issue XI

27. Section 401 Water Quality Certification (See Section 28-2).

Required for any Federal license or permit that involves a discharge into waters of the United States.

401 Water Quality Certification required?      Yes   X        No \_\_\_\_\_

28. Section 404 Permit (See Section 28-2).

Required for discharge of dredge or fill material into waters of the United States, including wetlands.

Section 404 Permit required?      Yes   X        No \_\_\_\_\_

29. Section 9 Permit (See Section 28-2).

Required for construction of bridges or causeways over navigable waters of the United States.

Section 9 permit required?      Yes \_\_\_\_\_      No   X  

**CHECKLIST FOR PHASE I REPORTS**

**Figure 12-3H**  
(Continued)

30. Section 10 Permit (See Section 28-2).

Required for structures or work (other than bridges and causeways) that affects the navigable waters of the United States.

Section 10 permit required? Yes \_\_\_\_\_ No X

31. Section 402 National Pollutant Discharge Elimination System (NPDES) Point-Source Permit (See Section 28-2).

Required for projects, such as rest areas, that involve a point-source discharge of pollutants into waters of the United States.

NPDES point-source permit required? Yes \_\_\_\_\_ No X

32. Section 402 NPDES Construction Permit (See Section 28-2).

Required for projects that will involve clearing, grading, and excavation activities that result in the disturbance of 5 acres (2.02 hectares) or more of total land area. Effective March 10, 2003, this permit will be required for projects that will result in the disturbance of one acre (4050 m<sup>2</sup>) or more of total land area.

NPDES construction permit required? Yes X No \_\_\_\_\_

33. IDNR/Office of Water Resources Floodway Permit (See Section 28-3).

Required for construction in the floodway of identified streams serving a tributary area of 650 acres (259 hectares) or more in urban areas or 6500 acres (2590 hectares) or more in rural areas.

Floodway permit required? Yes X No \_\_\_\_\_

34. IDNR/Office of Water Resources Public Waters Permit (See Section 28-3).

Required for construction in rivers, lakes, streams, and waterways considered "public waters."

Public waters permit required? Yes X No \_\_\_\_\_

## CHECKLIST FOR PHASE I REPORTS

Figure 12-3H  
(Continued)

35. IDNR/Office of Water Resources Permit for Floodway Construction in Northeastern Illinois (See Section 28-3).

Required for new construction within the regulatory floodways of rivers, lakes, and streams in Cook, DuPage, Kane, Lake, McHenry, and Will counties, excluding the City of Chicago.

Permit for floodway construction  
in Northeastern Illinois needed?

Yes \_\_\_\_\_ No X

36. Hydraulic Analysis/Report (See 2-602 of the IDOT Drainage Manual).

Required for all drainage structures designed or reviewed by the central Bureau of Bridges and Structures.

See: NA

37. Coordination with Division of Aeronautics.

Required for projects that have obstructions greater than 12 ft (4 m) height or that are a new vertical or horizontal alignment and that are within 2 miles (3.2 km) of public airports, within 1 mile (1.6 km) of private airports, or within 0.5 miles (800 m) of a restricted landing strip.

Response from Division of Aeronautics:

Date: 1-29-02  
See Exhibit: Section VI

38. Coordination with Federal Aviation Administration (See Section 11-2).

Required for publicly owned airports.

Response from FAA:

Date: NA  
See Exhibit: Section VII

39. Crash Data and Analysis (See Section 11-2).

Required for all projects. (Should include information on wet weather cluster sites.)

See: Appendix A

### CHECKLIST FOR PHASE I REPORTS

Figure 12-3H  
(Continued)

12-3(49)

40. Bridge Condition Report (See Chapter 39).

Required for bridge work.

Bridge Condition Report Approval Letter: See Exhibit: NA

41. Pavement Analysis (See Chapter 54).

Proposed Typical Cross Section or BDE Approval Letter See: To be performed in Phase II

42. Traffic Management Analysis Report (See Chapter 13).

Required to indicate how traffic will be maintained during reconstruction or rehabilitation.

See: Appendix A

43. Geotechnical Report (See Section 11-2).

Required for projects on new alignment or major reconstruction projects.

See: To be performed in Phase II

44. Tree Survey (See Chapter 59).

Required for projects that may require removal of trees.

Was a tree survey conducted? Yes \_\_\_\_\_ No X  
See: \_\_\_\_\_

45. Mailbox Supports (See Chapters 49 and 58).

Have supports been investigated and property owners contacted? Yes \_\_\_\_\_ No X  
See: \_\_\_\_\_

46. Bicycle Accommodations (See Chapter 17).

Have accommodations been considered and investigated? Yes X No \_\_\_\_\_  
See: Design Exhibits

47. Other Coordination.

Examples would include, but not be limited to, interested or affected elected officials, organizations (such as local historic preservation groups), and local agencies (such as drainage districts).

See Exhibit(s): Section VI

**CHECKLIST FOR PHASE I REPORTS**

12-3(50)

**Figure 12-3H  
(Continued)**

## **SUMMARY OF PROPOSED IMPROVEMENTS**

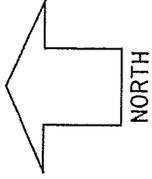
The location of the Curtis Road improvements is depicted within the following Figures 1 and 2. The ultimate development of Curtis Road will provide four travel lanes for the majority of the project's length which occurs between Duncan Road and the new Canadian National/Illinois Central (CN/IC) Railroad Bridge. Two lanes will be provided east of the railroad bridge to First Street. The roadway will include, at all locations, either a barrier median to control access to adjacent developmental property; or, an additional center two-way left turn lane to facilitate safe ingress/egress of existing developed properties.

A relocation of the CN/IC railroad track and embankment will be required to develop a grade separated crossing over Curtis Road. The relocation will involve raising the track profile approximately 15 feet and lowering Curtis Road approximately five feet in order to achieve the subway crossing. The vertical railroad relocation will be developed along a new horizontal track alignment which is offset 60 feet east of the existing track. The track relocation will commence just north of the existing at-grade crossing of Church Street in Savoy and end at the existing railroad bridge over Windsor Road in Champaign; a total distance of approximately 2.1 miles. A railroad bridge, 183 feet in length, will be required to span the new Curtis Road width.

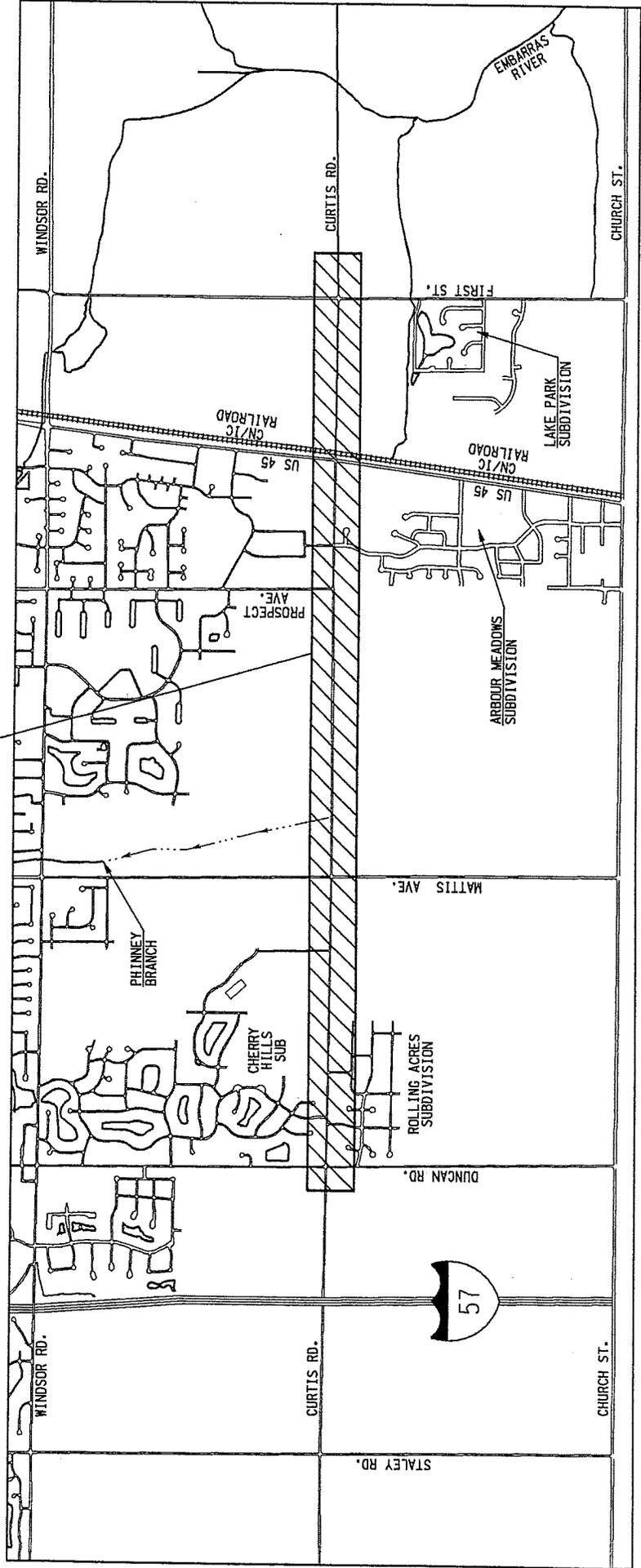
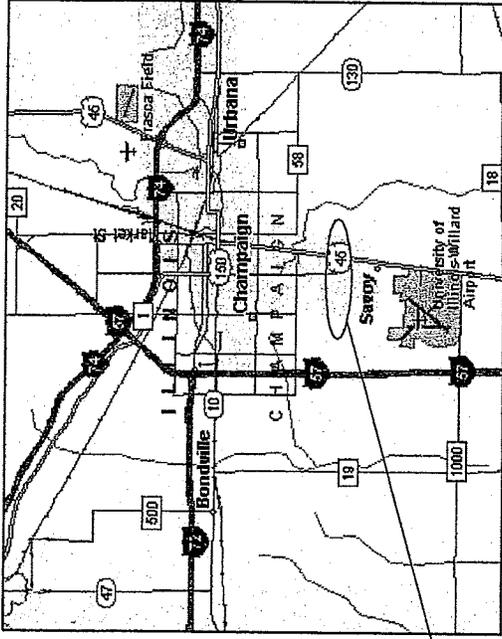
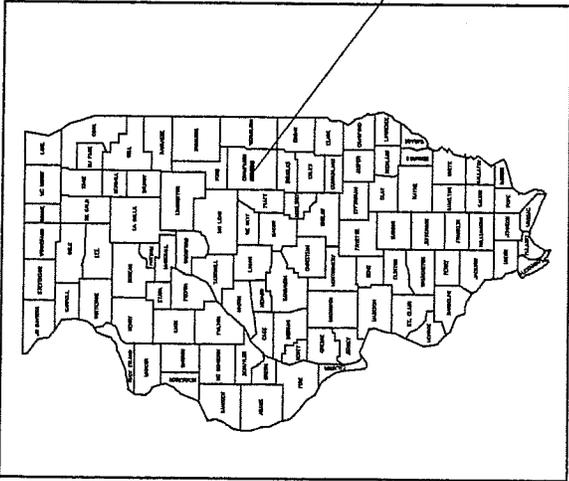
The companion "Combined Design Study Exhibits" (separate cover) depict the topography and culture of the project corridor as well as the proposed horizontal and vertical realignments of Curtis Road, the stormwater drainage systems, additional rights-of-way and easements required for construction, and the realignment of the CN/IC Railroad necessary to develop a grade separated crossing of Curtis Road. Various roadway typical sections for the proposed improvements are shown along the 3.20 mile roadway corridor length within the areas in which they are utilized. Designated locations for future access to Curtis Road are shown and future intersection designs are depicted.

# PROJECT LOCATION MAP

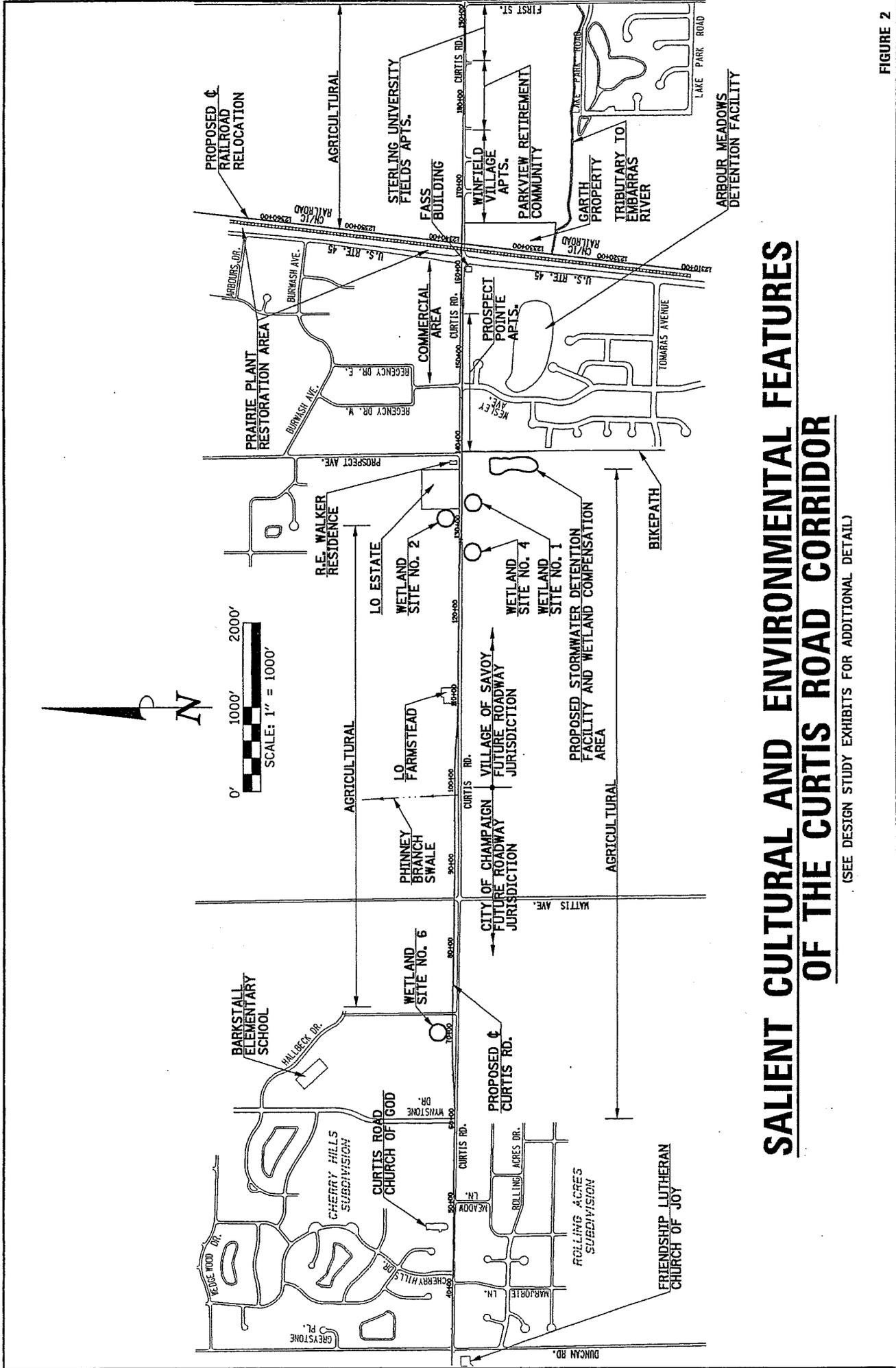
**CURTIS ROAD (FAP 807) IMPROVEMENTS  
 DUNCAN ROAD TO FIRST STREET  
 SECTION : 00-00374-00-ES  
 PROJECT : M-5181 (036)  
 JOB : P-95-073-00  
 CHAMPAIGN COUNTY**



**PROJECT LOCATION**



**FIGURE 1**



# SALIENT CULTURAL AND ENVIRONMENTAL FEATURES OF THE CURTIS ROAD CORRIDOR

(SEE DESIGN STUDY EXHIBITS FOR ADDITIONAL DETAIL)

## **ADJACENT IMPROVEMENTS / PROJECT TERMINI / ECAD**

The planning for a new interchange with Interstate 57 and the development of Curtis Road as a principal east-west arterial street across the southern periphery of the Champaign-Urbana urbanized area began in 1973 when the Champaign-Urbana Urbanized Area Transportation Study (CUUATS) designated the westerly extension of Curtis Road as a future interchange location on I-57. This designation was supported in 1977 by the “Interstate Route 57 Interchange Study” performed by the Illinois Department of Transportation (IDOT). A request for an access point on I-57 at Curtis Road was granted to IDOT by the Federal Highway Administration (FHWA) in 1981 (see Section VI). Since that time, the results of a continuing, comprehensive and cooperative long-range transportation planning process administered by CUUATS have continued to identify the improvement of Curtis Road as a required component of the area’s arterial street network. Access to I-57 via the extension of Curtis Road was reaffirmed by the FHWA in their March 26, 2002 approval of IDOT’s Access Justification Report (see Section VI).

The prosecution of Phase I and Phase II engineering for the I-57 interchange and the extension and improvement of Curtis Road is a cooperative and coordinated effort between the agencies of IDOT and CUUATS. IDOT is responsible for preliminary engineering of the interchange and Curtis Road between Staley and Duncan Roads. CUUATS is likewise responsible for Curtis Road between Duncan Road and First Street. This project development procedure was approved by FHWA at a meeting with IDOT on March 12, 2000 (see Section VI). Additionally, FHWA concurred that an ECAD analysis is adequate between Duncan Road and First Street.

The logical termini for these projects between Staley Road and First Street were determined at a December 1, 1998 Coordination Meeting among the local agencies, IDOT and FHWA (see Section VI).

## **PROJECT HISTORY**

As development of the Champaign-Urbana urbanized area continued to push southward, the need to reserve and protect a Curtis Road right-of-way corridor for future roadway improvements became acutely apparent. In 1989, the CUUATS Policy Committee passed a resolution reserving 100 feet of right-of-way along Curtis Road from Staley Road in Champaign to Illinois Route 130 in Urbana (see Section VI). More recently, continuing updates of the urbanized area's Long Range Transportation Plan have recognized the need for improvement to Curtis Road and have supported this improvement in conjunction with a proposed interchange at Curtis Road and I-57.

### ***Curtis Road Scoping Study***

In April 1995, the Curtis Road Subcommittee was appointed by the Technical Committee of CUUATS to conduct a Scoping Study of the Curtis Road corridor between Staley Road and Illinois Route 130. The objective of the Scoping Study was to identify the feasibility of improving Curtis Road by examining the physical, environmental, and developmental aspects of the roadway corridor. The goal of the study was to establish preliminary information and design criteria needed to proceed with more detailed engineering investigations, design, and assessments of project impacts.

Specifically, the Scoping Study addressed the following issues of the Curtis Road corridor:

- existing and anticipated land use;
- ranges of existing and anticipated arterial street traffic volumes;
- alternative roadway cross sections;
- alternative roadway alignments between Duncan Road and Mattis Ave.;
- potential right-of-way requirements;
- access control requirements;
- potential utility impacts;
- required structures;
- costs for right-of-way acquisition, utility relocation, construction, and engineering services; and,
- potential environmental concerns.

The Scoping Study was developed over a period of time involving eleven Subcommittee meetings which were actively attended by the public between July 1995 and February 1997. An informational public hearing was also held in February 1997 and the final Scoping Study Report was issued by CUUATS in March 1997.

***Results of the Scoping Study***

The Curtis Road Subcommittee's recommendations to the Policy and Technical Committees of CUUATS led CUUATS to resolve that (see Section VI):

- rights-of-way and future access along Curtis Road as depicted within the "Final Curtis Road/I-57 Scoping Study Report" be reserved as shown and that future access to Curtis Road be limited to minimize traffic conflicts;
- an approved interchange at I-57 and Curtis Road should be provided; and,
- a request be made to IDOT to conduct a Phase I Engineering Study for the proposed interchange with I-57 and Curtis Road from Staley Road to Duncan Road.

Inherent in the request to IDOT was that CUUATS would concurrently undertake a Phase I Engineering Study for the designated priority section of Curtis Road between Duncan Road and First Street.

The completion of the Curtis Road Scoping Study would normally have allowed initiation of full Phase I Combined Design Studies and Environmental Impact Assessments for the entire project corridor between Staley Road and Illinois Route 130. However, CUUATS assessed their transportation improvement funding priorities and concluded that sufficient resources were not available to fund complete Phase I engineering development of the entire project corridor at that time. In an effort to keep development of the Curtis Road project moving forward, CUUATS took the following actions.

- Requested and received agreement that IDOT would provide Phase I services for the project corridor between Staley and Duncan Roads including the new interchange with I-57.
- Prioritized the local agencies Phase I development of the project corridor between Duncan Road and First Street.
- Allocated funding to perform a Preliminary Engineering Study (PES) of the section of Curtis Road between Duncan Road and First Street.

In October of 1998 the engineering firm of Clark Dietz, Inc. was retained by CUUATS to perform the Preliminary Engineering Study for Curtis Road.

***Goal and Objective of the Preliminary Engineering Study***

The goal in development of the PES was to build upon the data base and design considerations of the Scoping Study and to formulate roadway design recommendations which ultimately must be approved by IDOT and FHWA. This work also served to provide the information necessary to formulate an assessment of environmental impacts associated with the project. The objective of this effort was to provide CUUATS with documents depicting a more refined configuration and design of the improvements to Curtis Road required to meet future roadway transportation needs.

The PES did not fully constitute a formal Phase I Combined Design Study for the purpose of securing project Design Approval. However, it was developed in sufficient detail to provide the implementing agencies with valuable insights regarding project design elements, development costs, and project corridor impacts that would facilitate further efforts toward obtaining Design Approval and Environmental Compliance sign-offs and developing financial strategies for project implementation.

***Results of the Preliminary Engineering Study***

The completion of the Curtis Road Preliminary Engineering Study resulted in the following accomplishments.

- Detailed mapping of the existing Curtis Road corridor was developed depicting an engineering and cultural database which includes: surface elevation contours and a definition of existing drainage patterns; topographical features; utility types and locations; land section line and property parcel lines; and property owner identifications.
- Preliminary traffic volume forecasts for year 2026 project implementation were completed which generally supported the need for construction of a four-lane arterial roadway as well as a grade separated crossing of Curtis Road and the CN/IC Railroad.
- Issues of access management between Curtis Road and areas of existing land use and future land use development were defined and resolved through the synthesis of typical roadway sections which respect the sensitivity of developed properties and enhance the safety of their access while conversely managing access to areas of future land development.
- A conceptual and feasible stormwater management plan was developed for each of the three project corridor watersheds. Drainage outlet constraints were identified and procedures were recommended to relieve these constraints.

- Proposed horizontal and vertical roadway alignments were designed with respect to identified alignment controls within the corridor. Cross sectional analysis was performed throughout the project's length to determine construction limits and the extent and configuration of required additional right-of-way acquisitions.
- Intersection geometrics and auxiliary turn lanes were designed to accommodate the anticipated traffic movements and volumes predicted by the preliminary traffic forecasts.
- The feasibility of constructing a grade separated crossing of the CN/IC Railroad was ascertained and coordination with railroad officials was initiated.
- Component construction elements were determined and quantified. A preliminary opinion of probable construction costs as well as the costs of subsequent engineering, land acquisition, and identified utility relocations were assembled to provide the implementing agencies an itemized estimate of total project costs for various sections comprising the entire project length.
- A public information and involvement program was executed during development of the PES consisting of three project newsletters and two public information meetings.

The Preliminary Engineering Study was completed and accepted by CUUATS in the summer of 2000 and the following year the engineering firm of Clark Dietz, Inc. proceeded with more detailed design and environmental investigations.

#### **PHASE I COMBINED DESIGN STUDY**

The development of the Preliminary Engineering Study resulted in public and agency consensus of a proposed improvement plan and established preliminary designs for further refinement and investigation of environmental impact. The recent Phase I Combined Design Study effort has consisted of the following.

- Updated Traffic Volume Forecasts
- Development of Formal Intersection Design Studies
- Expansion of previous stormwater drainage studies and determination of detention requirements.
- Development of railroad bridge type, size and location elements.
- Continued coordination with railroad officials pursuant to approval of line/grade and bridge type.

- Determination of a project construction phasing plan.
- Environmental coordination, studies and development of the Environmental Class of Action Determination.
- Project cost estimate updates.
- Continued public involvement and agency coordination.

The goal of the current Phase I Design and Environment studies is to secure project design approval and concurrence with the assessment of its environmental impact.

## ENVIRONMENTAL SETTING

Curtis Road travels through three distinct areas of land use along its three mile length between Duncan Road and First Street. Its western section between Duncan Road and Station 60± (0.5 mile) is characterized by the suburban single-family residential environment of the adjacent Cherry Hills and Rolling Acres subdivisions. In the eastern section, between Prospect Avenue and First Street (1.0 mile), land use is predominantly a mix of commercial enterprises and multi-family housing with exception of an area of open farmland between the CN/IC Railroad and First Street on the north side of Curtis Road. The middle and longest section (1.5 mile) of Curtis Road travels through open farmland.

Salient cultural features within the western section of Curtis Road consist of the following.

- Friendship Lutheran Church of Joy: Located in the southwest quadrant of the intersection of Duncan Road and Curtis Road extended, this church is planning a significant expansion of its facilities in the near future. The “footprint” of this expansion is shown on Design Exhibits 2 and 15.
- Rolling Acres Subdivision: Bounded on the north by Curtis Road and on the west by Duncan Road, this long established and maturely landscaped subdivision extends along the south side of Curtis Road from Duncan Road to Station 60±. See Design Exhibits 2, 3, 4 and 15.
- Cherry Hills Subdivision: Located on the north side of Curtis Road across from the Rolling Acres subdivision, Cherry Hills will continue its easterly expansion to Station 62± near Wynstone Drive, a recently constructed collector street. See Design Exhibits 3 and 4.
- Curtis Road Church of God: Located on the north side of Curtis Road near Station 47, the location of this building represents a significant alignment control for the widening of Curtis Road. See Design Exhibit 3.

Salient cultural and environmental features within the middle section of Curtis Road consist of the following.

- Wetlands: The National Wetland Inventory Mapping (Bondville quadrant) indicates the presence of four small isolated wetland areas at the following locations:
  - Sta. 69± adjacent to the north side of existing Curtis Road;
  - Sta. 125± adjacent to the south side of existing Curtis Road;
  - Sta. 130± adjacent to the north side of existing Curtis Road;
  - Sta. 133± adjacent to the south side of existing Curtis Road.

All of the above wetland locations are typed PEMAf and are currently farmed.

- Barkstall Elementary School: The temporary access drive to this public school is shown near Station 72 on the north side of Curtis Road. A permanent access road from Mattis Avenue to the school will be completed as part of continuing residential development in this area and the existing temporary drive will be abandoned. See Design Exhibit 5.
- Lo Farmstead: Currently accessed from the north side of Curtis Road near Station 110, the location of this residence represents a significant alignment control for the widening of Curtis Road. See Design Exhibit 7.
- Lo Estate and R.E. Walker Residence: Both properties are located on the north side of Curtis Road between Station 132± and Prospect Avenue. The Dr. and Mrs. Lo property is bounded by a brick privacy fence along Curtis Road and contains a residence and various agricultural structures. The Robert E. Walker property fronts the northwest quadrant of the Curtis/Prospect Intersection and contains a small single-family residence. The location of both properties presents a significant alignment control for the widening of Curtis Road. See Design Exhibits 8 and 9.

Salient cultural features within the eastern section of Curtis Road consist of the following.

- Prospect Pointe Apartments: Located on the south side of Curtis Road, this large apartment complex extends from Prospect Avenue to approximate Station 155. See Design Exhibits 9 and 10.
- Commercial District: Various commercial enterprises are located north of Curtis Road between Station 144± and U.S. 45. See Design Exhibits 9 and 10 for the names of these various businesses.
- FASS Building: The Federation of Animal Science Societies building fronts directly on the southwest quadrant of the Curtis/U.S. 45 intersection. This substantial brick and concrete structure provides two levels of office space. A retaining wall immediately adjacent to the south sidewalk of Curtis Road provides access to the lower level. The front of the building provides a stairway immediately adjacent to the sidewalk along U.S. 45 and access to the upper level. This building presents a significant alignment control for the widening of Curtis Road. See Design Exhibit 10.
- CN/IC Railroad Corridor: The Canadian National/Illinois Central Railroad corridor between Church Street in Savoy and Windsor Road in Champaign is approximately 135 feet in width and intersects Curtis Road near Station 162+50 immediately east of U.S. 45. A single track is currently operated and maintained by the railroad and sits atop an embankment which was originally constructed to accommodate two tracks; the second track being removed several years ago. The

right-of-way corridor is characterized by various types of unmaintained vegetation throughout and significant tree growth south of Curtis Road. The westerly railroad right-of-way line borders U.S. 45 and the area between the roadway pavement and the railroad right-of-way is used primarily for longitudinal storm drainage and contains a prairie plant restoration area. The easterly right-of-way line borders predominantly open farmland except for a grain elevator business (Grand Prairie Cooperative) at Church Street and the Garth property at Curtis Road. The Garth property contains a family residence and several out-buildings formerly used for a landscaping business. On the north side of Curtis Road, the easterly right-of-way line borders a natural gas facility operated by the Illinois Power Company. See Design Exhibits 20 through 26.

- Winfield Village Apartments: This large apartment complex is located along the south side of Curtis Road between approximate Stations 166 and 176. See Design Exhibits 10 and 11.
- Parkview Retirement Community: This recently constructed assisted living facility is located on the south side of Curtis Road between Station 177 and 184. See Design Exhibit 11.
- Sterling University Fields Apartments: This recently constructed development is located near Station 185 on the south side of Curtis and is bounded by the southwest quadrant of the First Street and Curtis Road intersection. See Design Exhibits 11, 12, and 19.

## **INFRASTRUCTURE**

### ***Local Road System***

The significant roadways encompassed by the study area consist of Curtis Road and the north/south intersecting roadways: Duncan Road, Mattis Avenue, Prospect Avenue, U.S. 45 and First Street. These intersecting roadways are separated by 1.00 mile, 1.00 mile, 0.43 mile and 0.57 mile respectively. Duncan Road, Mattis Avenue, Prospect Avenue and First Street at Curtis Road are rural roadway facilities which serve as extensions of their urban street counterparts within the more populated area to the north. U.S. 45 is a multi-lane federal route under the jurisdiction of the Illinois Department of Transportation. The local roadways are under the jurisdiction of the City of Champaign from a point on Curtis Road located one-quarter mile east of Mattis Avenue to the west and the Village of Savoy from the same point to the east.

With the exceptions of Curtis Road between Station 140+ and U.S. 45, and U.S. 45, the local roadways have a bituminous pavement width of approximately 20 feet with narrow adjacent earth or aggregate shoulders flanked by roadside drainage ditches. The referenced exception

of Curtis Road was improved in 1994 by the Village of Savoy and upgraded to a three-lane P.C. concrete pavement 36 feet in width with adjacent curb/gutter, storm sewers and sidewalks.

All intersections, except for the signalized intersection with U.S. 45, are at least partially stop-controlled. The Village of Savoy has stated its future plans do not include the southerly extension of Prospect Avenue.

### ***Stormwater Drainage System***

Curtis Road traverses through three watersheds between Duncan Road and First Street. From west to east these drainage basins are: the Kaskaskia, the Phinney Branch, and the Embarras. The basin divides, as they intersect Curtis Road, are located at approximate Stations 47 and 118 (see Design Exhibits 3 and 7). The Kaskaskia Basin encompasses about 1400 feet of the Curtis Road study corridor and drains predominantly to the west. The Embarras basin encompasses about 7300 feet of the study corridor and drains predominantly to the east. The Phinney Branch basin drains south to north and includes 7100 feet of Curtis Road.

Kaskaskia basin drainage east of Duncan Road is outlet from the study area via three existing culverts crossing under Duncan Road at approximate Stations 323, 328 and 337 (see Design Exhibits 15 and 16).

Phinney Branch basin drainage south of Curtis Road is outlet from the study area through a culvert under Curtis Road at Station 98± (see Design Exhibit 6).

The Embarras drainage basin outlets from the study area at two locations. The area of the watershed between the basin divide at Station 118± and U.S. 45, approximately 4300 feet along Curtis Road, is outlet via a storm sewer system which commences at the Prospect/Curtis intersection and extends easterly for 2300 feet along Curtis Road to U.S. 45. This storm sewer system drains Savoy's previously reconstructed section of Curtis Road and discharges into two large storm sewer interceptors. One 48-inch diameter interceptor sewer runs south along the west side of Wesley Avenue (see Design Exhibit 9). Another 60-inch diameter interceptor sewer runs south from Station 155± through the Prospect Pointe Apartment Complex (see Design Exhibit 10). Both interceptor sewers discharge into the Arbour Meadows regional detention facility which in turn outlets under U.S. 45 and through an existing culvert under the CN/IC Railroad near railroad station 12326 (see Design Exhibit 22). From this point the flow is channeled easterly to a lake within the Lake Park subdivision, (which fronts the west side of First Street) and is outlet into a drainage swale tributary to the Embarras River (see Figure 1).

The remainder of the Embarras drainage basin within the study area from just east of the CN/IC Railroad to First Street drains easterly along Curtis Road to First Street. At this point it is outlet via cross road culverts onto a farmland swale tributary to the Embarras River (see Design Exhibits 12 and 19).

### ***Canadian National/Illinois Central Railroad***

The CN/IC Railroad operates a single two-way track adjacent to U.S. 45 which carries both passenger and freight trains. Daily train traffic consists of two northbound and southbound passenger trains and 13 northbound and southbound freight trains for a total of 30 trains per day. Operational speeds may vary between 40 mph and 70 mph for the freight trains and 79 mph for the passenger trains. The at-grade crossing of Curtis Road is protected with flashing signals and gate arms. Due to the proximity of the adjacent U.S. 45 and Curtis Road intersection, the roadway and railway signalization systems are interconnected for coordination.

### ***Utility Systems***

The entire length of the existing Curtis Road right-of-way corridor is heavily populated with major utility transmission facilities serving the urbanized area. Such facilities include:

- 6, 8, 12 and 16-inch diameter water mains;
- 6, 8 and 12-inch natural gas pipelines;
- large capacity underground telephone cables;
- aerial electric transmission lines; and,
- both gravity and force main sanitary sewers.

The majority of these utility runs are contained within the existing Curtis Road right-of-way (some on easement within the existing right-of-way) with the notable exception of Illinois Power's aerial electric transmission poles which are situated just outside the existing right-of-way limits.

## **INFRASTRUCTURE DEFICIENCIES**

### ***Local Road System***

The local roads within the study area are rural "farm-to-market" section line roadways which were never intended to carry the ever increasing traffic volumes being precipitated by the continued southerly expansion of the urbanized area. The bituminous pavements currently in place are, for the most part, inadequate for the conveyance of today's traffic. Current symptoms of pavement distress exhibited by all the roadways will continue and worsen with future growth in traffic volume. With the exception of Savoy's reconstructed portion of Curtis Road, these roadways will require a continued expenditure to maintain a traversable surface. An increase in vehicular loadings is only part of the problem to maintaining pavement serviceability. The current vertical alignment of these roadways, in conjunction with inadequate storm drainage conveyance, results in frequent pavement flooding, saturation of the pavement subgrade and weakening of the pavement system. In addition, to constructing a structurally adequate pavement system, roadway alignments and storm

drainage conveyance facilities will have to be improved to develop a roadway surface capable of accommodating future traffic.

Numerous safety deficiencies abound within the local travelways. The existing 20-foot pavement width and adjacent shoulders are too narrow. Intersection turning radii are inadequate. Numerous adjacent obstructions present safety hazards with no recoverable clear zone for an errant vehicle. The vertical alignments of these roadways were constructed basically upon the “lay of the land” and result in an erratic roadway profile with varying levels of sight distance deficiencies. The most notable of these sight distance deficiencies occurs at the Curtis/Duncan intersection and the CN/IC Railroad grade crossing. A vertical alignment correction must be performed on the north leg of Duncan Road to enable a clear view of this intersection to approaching southbound motorists. Likewise, the alignment of Curtis Road across the railroad crossing should be improved so that approaching westbound vehicles realize a clear view of the U.S. 45 intersection. Additionally, vertical alignments must be improved throughout the project corridor in order to provide adequate freeboard above adjacent highwater elevations.

The results of an accident analysis for Curtis Road (see Appendix A) show that no areas of high accident frequencies or rates exist within the study corridor. The small number of accidents that are on record for this corridor have no readily identifiable pattern or cause and as such provide little opportunity for correlation with specifically required safety improvements via roadway or intersection geometric modification. The safety issues that are present on the existing roadway, while not demonstratively apparent in terms of accidents caused, must nonetheless be addressed by a wider roadway section and the horizontal and vertical realignment of Curtis Road and its associated crossroad approaches.

### ***Stormwater Drainage System***

With exception of Savoy’s previously reconstructed portion of Curtis Road, storm drainage facilities within the project study area are woefully inadequate. Adjacent roadside ditches are shallow or non-existent in some locations. Cross-road culverts are grossly undersized. These deficiencies coupled with low vertical roadway alignments results in several areas which are frequently flooded. Additionally, stormwater outlet deficiencies have been observed in both the Kaskaskia and Phinney Branch drainage basins.

A significant drainage outfall from the study area within the Kaskaskia basin is located at the intersection of Duncan Road and Rolling Acres Drive (see Design Exhibit 14). A median ditch on Rolling Acres Drive provides the main conveyance of stormwater flows from the majority of the subdivision area. This discharge is routed under Duncan Road and into a shallow drainage swale which has been partially infilled by previous development in this area. Conveyance structures at this location must be upsized and capacity of the outlet channel increased so that flooding of the roadway improvements at this low point is prevented.

Curtis Road crosses the Phinney Branch basin at its upper, most southerly reach. Accordingly, ground surface topography in the “headwater” portion of this basin is very flat. Overland drainage swales are nearly imperceptible and meander in an attempt to find an outfall. Depressional storage is common resulting in the wetland areas cited earlier. The general drainage pattern is sluggish in both a south to north direction, and as well, transversely toward a confluence at the basin low point located near Station 98 on Curtis Road. At this point, upland stormwater flow discharges into an overland swale which meanders northerly through open farmland to a box culvert under Windsor Road. In order for this drainage system to accommodate discharges from a widened Curtis Road and to eliminate corridor flooding, both the conveyance of flows toward the basin confluence and the conveyance of flow to the Windsor Road box culvert must be significantly improved.

Drainage conveyance within the study area encompassed by the Embarras basin has been improved and a positive outlet obtained by Savoy’s reconstruction of Curtis Road and the installation of storm sewers. However, there remains a 2,000 foot section of Curtis Road between the basin high point near Station 118 and Prospect Avenue, for which drainage facilities are virtually non-existent. Additionally, the outlet for Embarras drainage east of the CN/IC Railroad at First Street must also be improved.

#### ***Canadian National/Illinois Central Railroad***

The existing at-grade crossing of Curtis Road and the CN/IC Railroad has experienced only six accidents in the past 40 years. Three of these accidents involved one fatality and two injuries resulting in a ratio of deaths and injuries per accident of 0.50 for the 40 year period. This ratio is significantly lower than the state wide average ratio of 0.64 for the three year period 1997 through 1999 for which statistics are currently available.

As the urbanized area continues to develop in the vicinity of Curtis Road, the accident frequency of this at-grade crossing is expected to increase with the growing volume of traffic using this crossing. Article 7-3.03 (a) of IDOT’s latest Bureau of Design and Environment (BDE) Manual states: “A grade separation should be provided where a highway is constructed or reconstructed across a railroad when the (expected) accident frequency for gates exceeds 0.02 and the benefit-cost ratio equals or exceeds 1.0.” The Expected Accident Frequency (EAF) for the Curtis Road at-grade railroad crossing is defined by the following formula.

$$EAF = A \times B \times T$$

Where: A = a factor representing the future volume of Curtis Road crossing traffic;

B = a factor representing the existing signalized and gated protection of a crossing located within an urban area;

and, T = number of trains per day.

Using the forecasted year 2026 ADT of 10,000 vehicles per day and the current 30 trains per day:

$EAF = 0.012674 \times 0.08 \times 30 = 0.03$ ; thus a grade separation will be warranted at this location based on the expected accident frequency of one accident every 33 years for the existing signalized and gated crossing of future traffic on Curtis Road.

The BDE Manual also prescribes a procedure for determining the benefit-cost ratio of a grade separation. This procedure was performed and it was determined that a benefit-cost ratio equal to or exceeding 1.0 could not be obtained. The primary reason for failing to meet this portion of the grade separation warrant is due to the high cost of the two-mile railroad relocation necessary to develop the grade separation versus the low cost of only one expected accident within a 33 year period for signalized/gated crossing protection. The expected accident frequency for the existing signalized and gated crossing would have to grow to one accident in every 34 month period in order to realize a benefit-cost ratio of one. Assuming the volume of trains to remain constant, Curtis Road traffic will never achieve the growth to develop this level of expected accident frequency.

There is however, a very important additional factor inherent in this existing at-grade railroad crossing which is not adequately considered in the above warrant analyses. IDOT BDE Procedure Memorandum 97-28 contains design guidelines for at-grade railroad crossings which are located within 200 feet of an adjacent intersection. The distance from the centerpoint of the Curtis Road/U.S. 45 intersection to the centerline of the CN/IC Railroad track is approximately 125 feet. The memorandum identifies ten intersection design factors aimed at preventing vehicles from stopping or standing on the railroad track while waiting to cross the adjacent intersection. The most notable of these factors is a minimum clear storage distance requirement of 81 feet between the intersection stop bar and the closest rail. The distance currently provided for storage at this location is only 61 feet and will not accommodate the length of many tractor-trailer trucks. Likewise, there is a great probability of various vehicle combinations (i.e. a car plus a school bus) exceeding the available storage length and being unwittingly subjected to the hazard of a crossing train. The likelihood of such a scenario will increase over time as Curtis Road traffic volume continues to increase. Additionally, the three and one-half percent roadway gradient between U.S. 45 and the railroad track exceeds current design policy for the approach to the U.S. 45 intersection. This steep gradient may result in the inability of motorists to stop without entering the immediately adjacent intersection during slippery pavement conditions.

In order to improve the Curtis Road at-grade crossing of the CN/IC Railroad to current design policy, the railroad track must be shifted an absolute minimum of 20 feet to the east and lowered approximately two feet. This would be more economical than constructing a grade separation but would also be an expensive undertaking. The end result would be a definite improvement although a grade separation would still be warranted due to the expected accident frequency.

The IDOT policy memorandum referenced above was developed in response to some of the recommendations contained in the National Transportation Safety Board's report on the Fox River Grove accident. This accident claimed the lives of seven school children when their school bus was impacted by a high speed commuter train. The bus was trapped upon the railroad track within a queue of vehicles awaiting passage through an immediately adjacent intersection. The probability of such a similar disaster occurring even at an improved Curtis Road railroad crossing will forever remain given the proximity of U.S. 45 and the railroad. This and similar hazardous railroad crossings throughout the state should be eliminated given the opportunity to do so. The reconstruction of Curtis Road to accommodate developing land use and increasing traffic volume presents such an opportunity.

### **PURPOSE AND NEED**

The purpose and need for improvement of Curtis Road is to:

1. comply with the long range transportation and mobility plan ("C-U in 2030" / December, 1999) developed by CUUATS per the requirements of the Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21);
2. establish safe and improved system connectivity of the planned interchange of I-57 and Curtis Road with the major north/south streets of the urbanized area and U.S. 45;
3. eliminate the hazardous proximity of the Curtis Road intersections with U.S. 45 and the CN/IC Railroad by developing a grade separation of Curtis Road and the railroad;
4. correct the current deficiencies of pavement structure and width, roadway alignments, intersection geometrics, traffic control, and stormwater drainage thereby developing a safe and efficient travelway for accommodating the anticipated increase in traffic;
5. provide a roadway facility which complements the existing function of adjacent land use, affords safe and effective access to developed property and, establishes the control of access necessary for the orderly development of future land use. Additionally, the facility should minimize encroachment upon sensitive residential properties, natural resources, and prime farmland.

## **PROJECT ALTERNATIVES AND NO-ACTION**

In April 1995, the Curtis Road Subcommittee was appointed by the Technical Committee of CUUATS to conduct a Scoping Study of the Curtis Road corridor between Staley Road and Illinois Route 130. The objective of the Scoping Study was to identify the feasibility of improving Curtis Road by examining the physical, environmental, and developmental aspects of the roadway corridor. The goal of the study was to establish preliminary information and design concepts needed to proceed with more detailed Phase I engineering investigations, design solutions, and assessments of project impacts.

The fundamental philosophy adhered to in design of the Curtis Road improvements is to develop a safe, efficient and cost effective transportation link. An additional goal is to minimize, to the extent possible, the impacts to adjacent land use of developing a four-lane arterial roadway. Within the Curtis Road corridor, the adjacent land use includes two churches, two residential subdivisions, four isolated family residences, three apartment complexes, one commercial district, one office building, prime farmland, and four small isolated wetland areas. It was apparent from the onset of the design effort that the urbanizing corridor of Curtis Road already contained significant developments as well as adjacent natural resources which precluded the opportunity for consideration of vastly divergent alignment alternatives.

However, the Scoping Study did investigate four alternative alignments and various typical sections of Curtis Road within the more developed residential area of Curtis Road near the Cherry Hills and Rolling Acres subdivisions and easterly within the farmland area toward Mattis Avenue. These subdivisions are located immediately east of Duncan Road as shown on Figure 2.

Scoping Study Alternate I: This alternate consisted of a Curtis Road alignment diverging northerly from the existing centerline at a point about 1300 feet east of Wynstone Drive then around the north side of the Curtis Road Church of God (see Figure 2) and intersecting Duncan Road approximately 300 feet north of the existing intersection. It then transitioned back to an alignment along the section line about 1300 feet west of Duncan Road. Curtis Road would be developed within the subdivision and farmland areas to four 12-foot travel lanes with a 16-foot raised median and 10-foot shoulders with roadside ditching. A right-of-way corridor approximately 150 feet in width would be required. The existing Curtis Road pavement would remain as a frontage road to provide direct access to Rolling Acres residences.

While this alternate resulted in virtually no encroachment of Rolling Acres properties, it ignored the potential expansion of the Cherry Hills subdivision. This expansion has since occurred within this alignment corridor thus eliminating this alternate from further design consideration. Additionally, since this alignment diverged significantly from the existing right-of-way corridor, this alternate required the greatest amount of additional right-of-way

and prime farm land acquisition. Although this prime farmland lies within the one and one-half mile corporate planning boundary of the City of Champaign and is slated for future land use development, the premature depletion of this natural resource was considered unnecessary. Further design development of this alternate would not result in compliance with item No. 5 of the above stated project purpose and need.

Scoping Study Alternates II, III and IV: These alternates considered alignments varying north and south about the existing centerline. Each alternate included four 12-foot travel lanes plus a 16-foot raised median. Drainage for each alternate within the subdivision area would be provided by curb and gutter inlets and storm sewer. Alternates II and III used different configurations of a frontage road along the south side of Curtis Road to provide access to Rolling Acres properties. Alternate IV eliminated the frontage road and provided accel/decel shoulders between the outside traffic lanes and the curb and gutter to provide right-in/right-out access to abutting properties. Within the farmland area east of Wynstone Drive, the typical section for these three alternates was the same as Alternate I consisting of four 12-foot travel lanes with a 16-foot raised median, and 10-foot shoulders with roadside ditching.

All three of these alternates represented varying degrees of trade-off between encroachment upon Rolling Acres residential properties and the depletion of available land needed for the further southerly expansion of the Cherry Hills subdivision. Resultant required right-of-way corridor widths within the subdivision area ranged approximately between 148 and 164 feet. Further design development of these alternates would not result in compliance with Item No. 5 of the stated project purpose and need due to excessive right-of-way widths and loss of the neighborhood's residential character.

Phase I Study Alternate V: Subsequent Phase I studies recognized the alternatives analysis of the Scoping Study within the Rolling Acres/Cherry Hills subdivision area and adjacent farmland and worked toward continued refinement. Extensive public comment on the four alternates considered during the Scoping Study identified Alternate I above as the public's preferred alternate for the reason it did not require the acquisition of right-of-way from the residences of Rolling Acres subdivision. Opposition was voiced to the excessive encroachment of residential property resulting from Alternates II, III and IV.

Alternate V was developed during Phase I studies to satisfy all requirements of the purpose and need for improving Curtis Road. The Alternate V alignment varies only slightly north and south about the existing centerline. In order to minimize right-of-way needs and provide management of safe access to numerous abutting residential properties, the 16-foot raised median proposed in Alternates II, III, and IV was replaced through the subdivision area with a 12-foot two-way left turn lane (TWLTL). This eliminated the right-of-way acquisition for segregated frontage road access or roadway safety shoulders to accommodate driveway turning movements. As with Alternates II, III and IV, a closed drainage system with curb and gutter was used in lieu of roadside ditching to further reduce right-of-way requirements.

Resultant right-of-way corridor width within the subdivision area was approximately 90 to 116 feet compared to as much as 164 feet with previous alternates. This same typical section with four 12-foot travel lanes was also utilized within the commercial land use area between Prospect Avenue and U.S. 45 due to similar right-of-way restrictions and the need to maintain access to abutting properties. The TWLTL was extended to First Street, with only two 12-foot travel lanes needed to accommodate future traffic, and employed a combination of closed and open drainage systems. As originally conceived in the Scoping Study, the typical roadway section through the farmland area consisted of four 12-foot travel lanes, 10-foot shoulders with roadside ditching, and employed an 18-foot raised median which limited access of future abutting land development to one-quarter mile intervals.

No-Action Alternative: The No-Action Alternative does not address the stated purpose and need for the improvement of Curtis Road.

1. It does not comply with the proposed long-range transportation plan which calls for the improvement of Curtis Road as identified by CUUATS in their report “C-U in 2030” (December, 1999).
2. Safe and improved system connectivity of the planned interchange of I-57 and Curtis Road with the major north/south streets of the urbanized area and U.S. 45 would not be realized.
3. A continued safety concern would remain due to the hazardous proximity of the existing Curtis Road intersection with U.S. 45 and the existing at-grade crossing of the CN/IC Railroad.
4. Failure to improve Curtis Road would allow current facility deficiencies to remain thus resulting in potentially unsafe travel conditions for continually increasing traffic volume.
5. No-Action does not provide the ability to safely manage access to existing developed properties nor does it provide the control of access necessary for the orderly development of future adjacent land use. No-Action does meet the goal of minimizing encroachment upon sensitive residential properties, natural resources, and prime farmland.

Proposed Build Alternate:

The No-Action alternative does not satisfy items No. 1 through No. 4 and only partially meets item No. 5 of the above stated purpose and need for the improvement of Curtis Road. Alternates I, II, III and IV do satisfy items No. 1 through No. 4 of the project purpose and need; however, an additional goal was to identify a facility design which would best satisfy item No. 5 as well. This would be accomplished in part by minimizing encroachment of the fully developed and maturely landscaped Rolling Acres subdivision south of Curtis Road

while allowing continued development of the Cherry Hills subdivision north of Curtis Road. Alternate V fully satisfies item No. 5 within the subdivision area and throughout the length of improvement. Alternate V also fully meets the requirements of items No. 1 through No. 4 of the purpose and need for improving Curtis Road.

Alternate V best satisfies all five items of the stated project purpose and need and accordingly is selected as the proposed Build Alternate. The Build Alternate is fully defined by the alignments and typical sections shown on Design Exhibits 2 through 12.

## **DESIGN DATA**

### *Mapping and Design Exhibits*

Aerial photography and topographic mapping of the project corridor was supplied by IDOT. The original IDOT mapping was provided in Metric scale. Subsequent to receipt of this mapping, a decision was made by CUUATS to develop the project in English units. This conversion was performed modifying the mapping's scale and digital terrain model so that one-foot interval contours of the existing terrain could be exhibited. Through the use of "Geopak" coordinate based highway design software, it was possible to prescribe various proposed roadway centerline horizontal and vertical alignments within the digital terrain model in order to develop cross sections of the existing terrain and the proposed roadway template. The one-foot interval contour lines used in design analysis have been deleted from the Design Exhibits to enhance the clarity of existing and proposed features.

The mapping was augmented with the addition of existing roadway right-of-way lines and property lines. The basis of control for these additions was provided by performing a field survey traverse through various land section corners, from which rights-of-way and property configurations are legally described, and tying this traverse to the horizontal control points originally utilized for development of the mapping. Courthouse research produced the required descriptions of existing property parcels and rights-of-way which could then be related to the section corners (lines) within the coordinate based map model. Cultural features such as street names, property names and other notation were also added.

Additional mapping beyond the limits provided by IDOT was required along the CN/IC Railroad corridor. This mapping was provided by Aerial Mapping Services, Inc. The latter mapping model utilized the same horizontal and vertical control datums used by IDOT thus assuring good correlation between the two models. Unfortunately, mapping coverage along the railroad corridor was underestimated and had to be supplemented with ground survey data between Church Street and railroad Station 12305.

In several areas throughout the project corridor, the map information needed to be supplemented by physical ground surveys. In such instances ground surveys were based on the H/V control utilized for the mapping and in all instances good correlation was obtained.

Utility locations on the Design Exhibits have been shown to the accuracy of information provided by the utility owners, plans of the existing roadways, and surface evidence of their locations. Little information has been obtained regarding the depths of subsurface installations.

Cross sections depicting existing terrain as well as proposed roadway grading have been developed to the limits of all major roadways within the project corridor. This work was performed for the CN/IC Railroad corridor as well. These cross sections have not been included in the Design Exhibits in order to minimize bulk, but are available upon request.

The plan views of the Design Exhibits do however indicate the lateral limits of construction by a small dotted line .....

***Traffic Volumes***

IDOT has developed a year 2026 forecast of traffic volumes for Curtis Road between Staley Road and First Street for the condition of a new I-57 interchange with Curtis Road. Existing (2006) and projected (2026) ADT and DHV traffic volumes are shown on their analysis within the following Figures 3 through 9.

***Roadway Functional Classification***

The current CUUATS functional classification of the various project study-area roadways is:

- Curtis Road (Duncan to U.S. 45): other principal arterial
- Curtis Road (U.S. 45 to First): local street
- Duncan Road: collector
- Mattis Avenue (north of Curtis): minor arterial
- Mattis Avenue (south of Curtis): local street
- Prospect Avenue: collector
- U.S. 45: other principal arterial
- First Street (north of Curtis): minor arterial
- First Street (south of Curtis): local street.

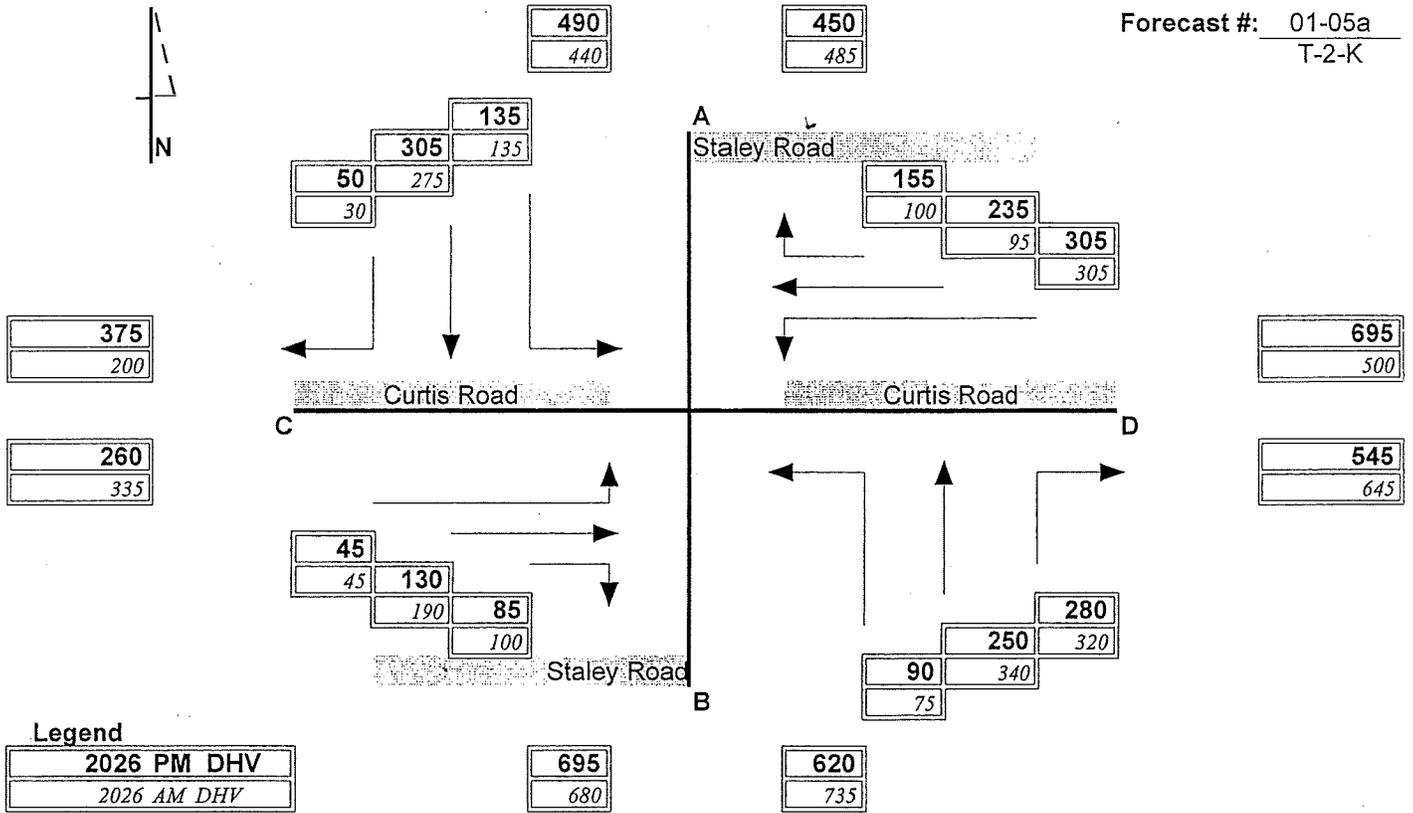
**Illinois Department of Transportation  
INTERSECTION TRAFFIC MOVEMENT**

To: CUUATS  
From: Traffic Studies  
Cons. Sec. \_\_\_\_\_  
Date: 01-10-01

County: Champaign City: Savoy

Location: Curtis Road and Staley Road (with FAI-57 interchange) By: WRG

Forecast #: 01-05a  
T-2-K



Movement	30th Maximum Hour Traffic Year of Construction 2006		Percent Truck Traffic in 30th Max. Hour		2006 Dir. Volume Approach Departure		Estimated Percent Increase By	30th Maximum Hour Traffic Year of Forecast 2026	
	A.M.	P.M.	2006	2026	A.M.	P.M.		A.M.	P.M.
AB	80	125	2.0	2.0	Leg "A"		AB	275	305
BA	145	75	2.0	2.0	210	245	BA	340	250
AC	15	15	2.0	2.0	235	235	AC	30	50
CA	15	25	2.0	2.0	Leg "B"		CA	45	45
AD	115	105	3.0	3.0	180	95	AD	135	135
DA	75	135	3.0	3.0	105	170	DA	100	155
BC	5	5	2.0	2.0	Leg "C"		BC	75	90
CB	15	15	2.0	2.0	50	55	CB	100	85
BD	30	15	2.0	2.0	35	40	BD	320	280
DB	10	30	2.0	2.0	Leg "D"		DB	305	305
CD	20	15	2.0	2.0	100	185	CD	190	130
DC	15	20	2.0	2.0	165	135	DC	95	235
Total-A	445	480		2006 ADT= 4500	2026 ADT= 9000			925	940
Total-B	285	265		2006 ADT= 2700	2026 ADT= 13000			1415	1315
Total-C	85	95		2006 ADT= 900	2026 ADT= 5700			535	635
Total-D	265	320		2006 ADT= 2900	2026 ADT= 11500			1145	1240

NOTE : Assumed major commercial generator in SE quadrant

FIGURE 3

**Illinois Department of Transportation  
INTERSECTION TRAFFIC MOVEMENT**

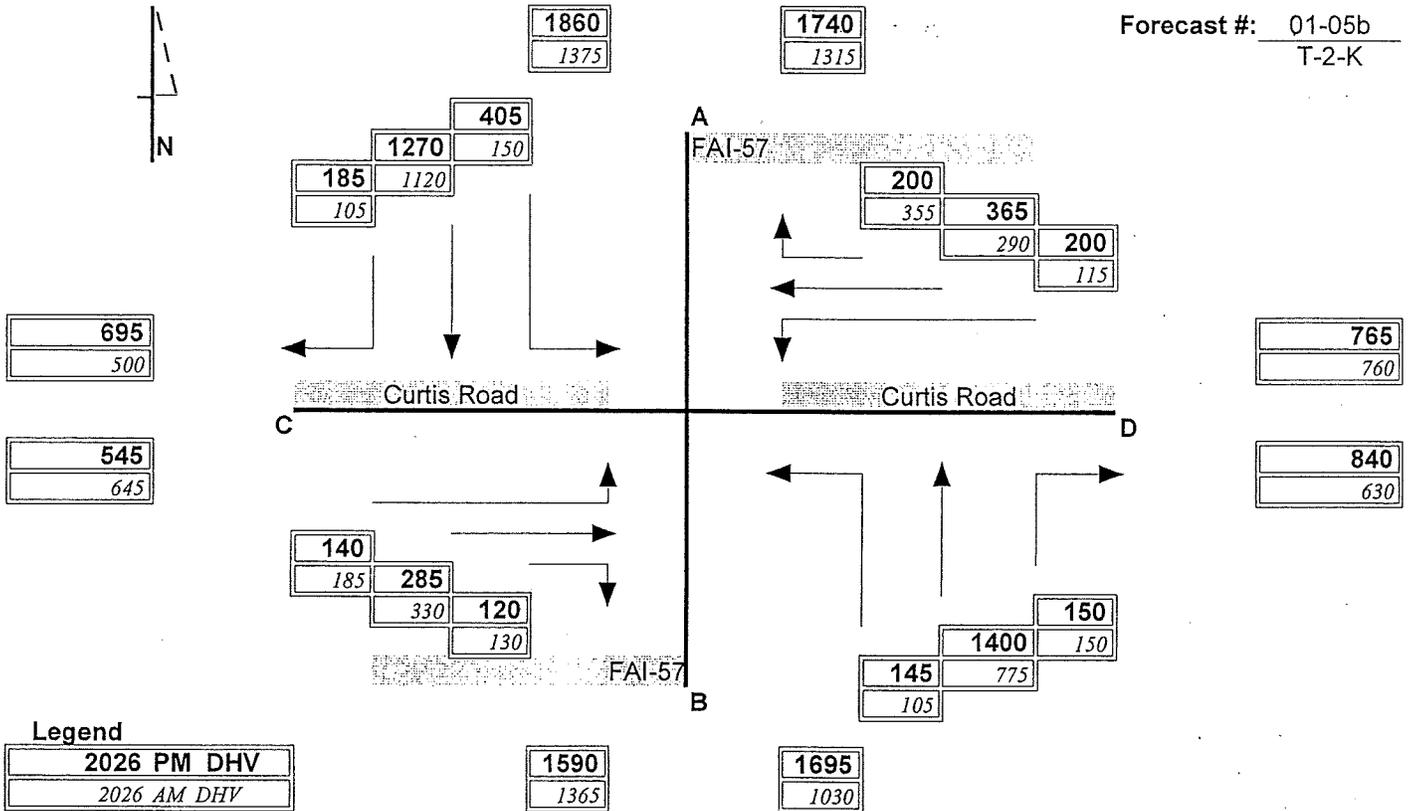
To: CUUATS  
From: Traffic Studies  
Cons. Sec. \_\_\_\_\_  
Date: 01-10-01

County: Champaign City: Savoy

Location: Curtis Road and FAI Route 57

By: WRG

Forecast #: 01-05b  
T-2-K



Movement	30th Maximum Hour Traffic Year of Construction 2006		Percent Truck Traffic in 30th Max. Hour		2006 Dir. Volume Approach Departure		Estimated Percent Increase By	30th Maximum Hour Traffic Year of Forecast 2026	
	A.M.	P.M.	2006	2026	A.M.	P.M.		A.M.	P.M.
AB	930	1105	50.0	50.0	Leg "A"		AB	1120	1270
BA	640	1255	50.0	50.0	1040	1345	BA	775	1400
AC	20	60	3.0	3.0	860	1420	AC	105	185
CA	60	50	3.0	3.0	Leg "B"		CA	185	140
AD	90	180	2.0	2.0	795	1365	AD	150	405
DA	160	115	2.0	2.0	1015	1295	DA	355	200
BC	30	25	5.0	5.0	Leg "C"		BC	105	145
CB	20	35	5.0	5.0	165	135	CB	130	120
BD	125	85	2.0	2.0	100	185	BD	150	150
DB	65	155	2.0	2.0	Leg "D"		DB	115	200
CD	85	50	2.0	2.0	275	370	CD	330	285
DC	50	100	2.0	2.0	300	315	DC	290	365
Total-A	1900	2765		2006 ADT= 29000	2026 ADT= 37500			2690	3600
Total-B	1810	2660		2006 ADT= 28000	2026 ADT= 34000			2395	3285
Total-C	265	320		2006 ADT= 2900	2026 ADT= 11500			1145	1240
Total-D	575	685		2006 ADT= 6000	2026 ADT= 14500			1390	1605

NOTE :

FIGURE 4

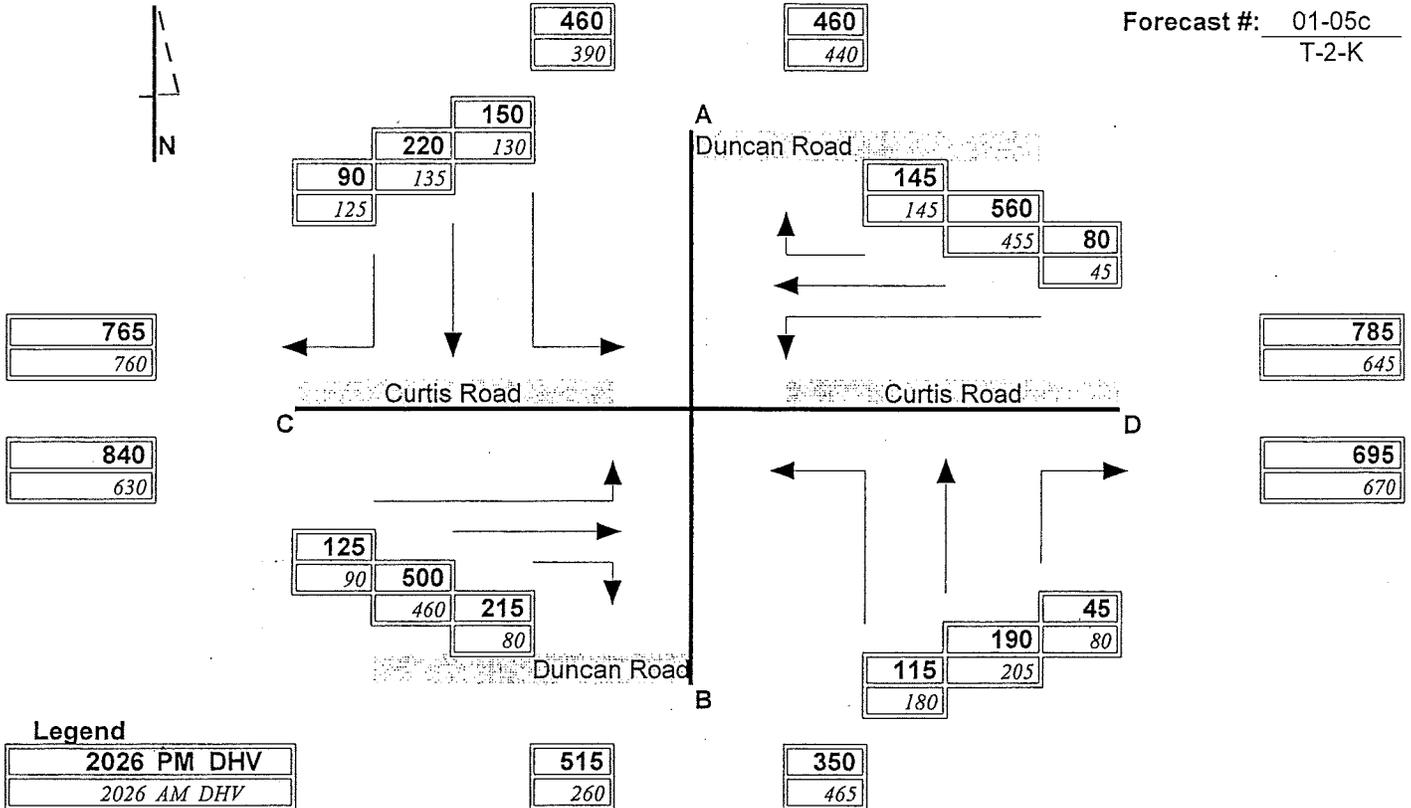
**Illinois Department of Transportation  
INTERSECTION TRAFFIC MOVEMENT**

To: CUUATS  
From: Traffic Studies  
Cons. Sec. \_\_\_\_\_  
Date: 01-10-01

County: Champaign City: Savoy

Location: Curtis Road and Duncan Road (with FAI-57 interchange) By: WRG

Forecast #: 01-05c  
T-2-K



Movement	30th Maximum Hour Traffic Year of Construction 2006		Percent Truck Traffic in 30th Max. Hour		2006 Dir. Volume Approach Departure		Estimated Percent Increase By	30th Maximum Hour Traffic Year of Forecast 2026	
	A.M.	P.M.	2006	2026	A.M.	P.M.		A.M.	P.M.
AB	90	135	2.0	2.0	Leg "A"		AB	135	220
BA	145	120	2.0	2.0	220	270	BA	205	190
AC	30	25	2.0	2.0	290	240	AC	125	90
CA	25	30	2.0	2.0	Leg "B"		CA	90	125
AD	100	110	2.0	2.0	210	165	AD	130	150
DA	120	90	2.0	2.0	130	200	DA	145	145
BC	25	20	2.0	2.0	Leg "C"		BC	180	115
CB	15	25	2.0	2.0	300	315	CB	80	215
BD	40	25	2.0	2.0	275	370	BD	80	45
DB	25	40	2.0	2.0	Leg "D"		DB	45	80
CD	260	260	2.0	2.0	365	455	CD	460	500
DC	220	325	2.0	2.0	400	395	DC	455	560
Total-A	510	510		2006 ADT= 4500	2026 ADT= 8500			830	920
Total-B	340	365		2006 ADT= 3250	2026 ADT= 7500			725	865
Total-C	575	685		2006 ADT= 6000	2026 ADT= 14500			1390	1605
Total-D	765	850		2006 ADT= 7800	2026 ADT= 13500			1315	1480

NOTE :

FIGURE 5

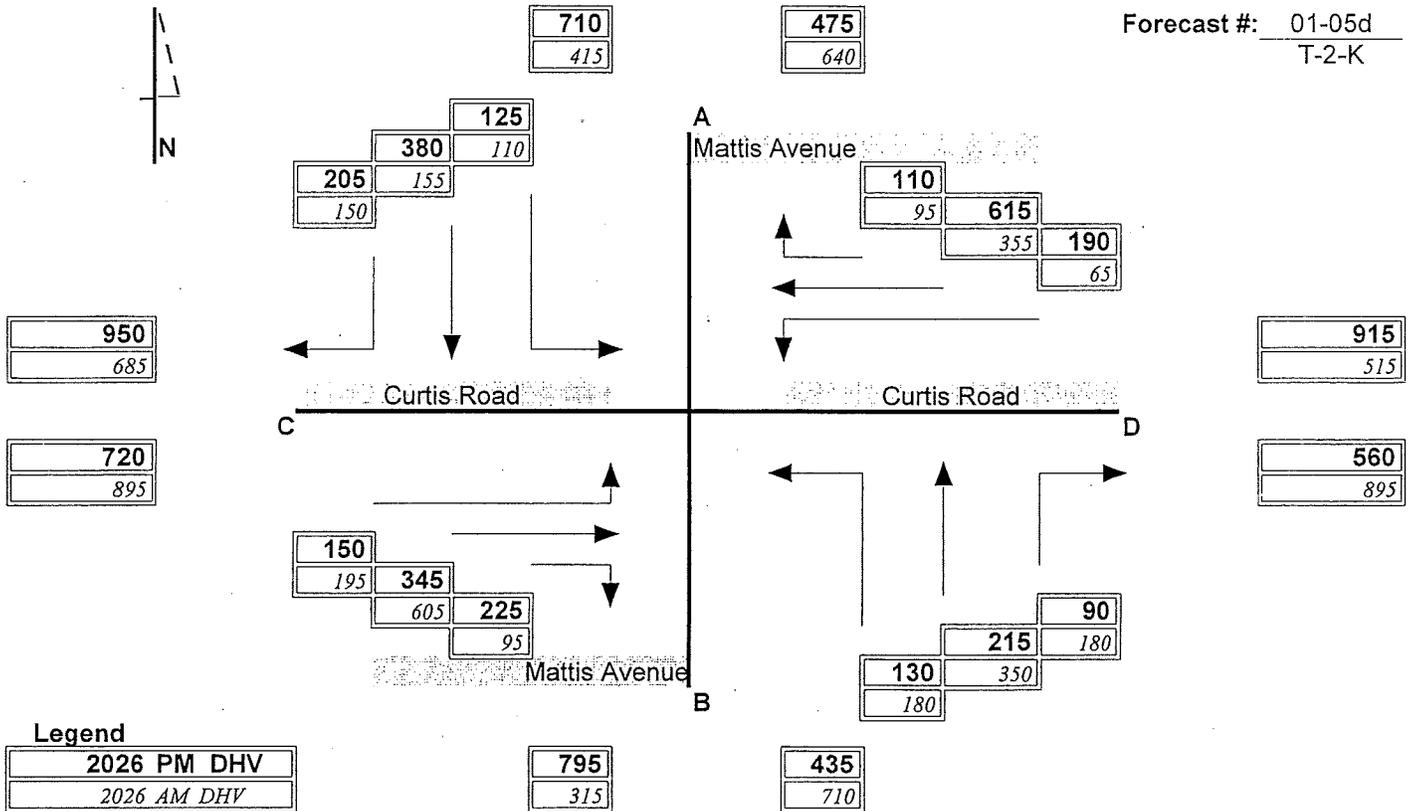
**Illinois Department of Transportation  
INTERSECTION TRAFFIC MOVEMENT**

To: CUUATS  
From: Traffic Studies  
Cons. Sec. \_\_\_\_\_  
Date: 01-10-01

County: Champaign City: Savoy

Location: Curtis Road and Mattis Avenue (with FAI-57 interchange) By: WRG

Forecast #: 01-05d  
T-2-K



Move-ment	30th Maximum Hour Traffic Year of Construction 2006		Percent Truck Traffic in 30th Max. Hour		2006 Dir. Volume Approach Departure		Estimated Percent Increase By	30th Maximum Hour Traffic Year of Forecast 2026	
	A.M.	P.M.	2006	2026	A.M.	P.M.		A.M.	P.M.
AB	105	245	2.0	2.0	Leg "A"		AB	155	380
BA	240	145	2.0	2.0	305	500	BA	350	215
AC	105	145	2.0	2.0	465	340	AC	150	205
CA	145	100	2.0	2.0	Leg "B"		CA	195	150
AD	95	110	2.0	2.0	455	265	AD	110	125
DA	80	95	2.0	2.0	190	475	DA	95	110
BC	80	55	2.0	2.0	Leg "C"		BC	180	130
CB	40	100	2.0	2.0	625	420	CB	95	225
BD	135	65	2.0	2.0	405	620	BD	180	90
DB	45	130	2.0	2.0	Leg "D"		DB	65	190
CD	440	220	2.0	2.0	345	645	CD	605	345
DC	220	420	2.0	2.0	670	395	DC	355	615
Total-A	770	840	2006 ADT= 7500		2026 ADT= 10500		1055		1185
Total-B	645	740	2006 ADT= 6500		2026 ADT= 11000		1025		1230
Total-C	1030	1040	2006 ADT= 10000		2026 ADT= 15500		1580		1670
Total-D	1015	1040	2006 ADT= 10000		2026 ADT= 14000		1410		1475

NOTE :

FIGURE 6

**Illinois Department of Transportation  
INTERSECTION TRAFFIC MOVEMENT**

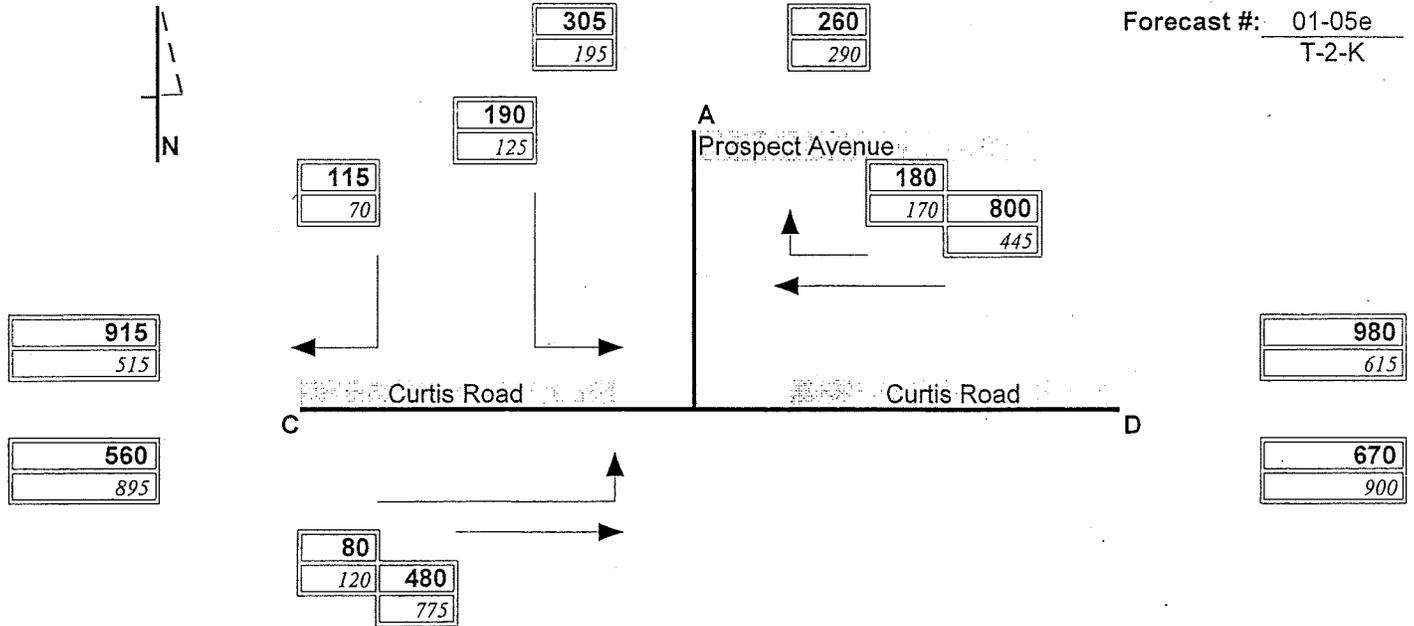
To: CUUATS  
From: Traffic Studies  
Cons. Sec. \_\_\_\_\_  
Date: 01-10-01

County: Champaign City: Savoy

Location: Curtis Road and Prospect Avenue (with FAI-57 interchange)

By: WRG

Forecast #: 01-05e  
T-2-K



**Legend**

2026 PM DHV
2026 AM DHV

Move-ment	30th Maximum Hour Traffic Year of Construction 2006		Percent Truck Traffic in 30th Max. Hour		2006 Dir. Volume Approach Departure		Estimated Percent Increase By		30th Maximum Hour Traffic Year of Forecast 2026	
	A.M.	P.M.	2006	2026	A.M.	P.M.			A.M.	P.M.
AB	----	----	----	----	Leg "A"		----	AB	----	----
BA	----	----	----	----	165	265	----	BA	----	----
AC	55	90	2.0	2.0	245	225		AC	70	115
CA	90	60	2.0	2.0	Leg "B"			CA	120	80
AD	110	175	2.0	2.0	---	--		AD	125	190
DA	155	165	2.0	2.0	---	--		DA	170	180
BC	----	----	----	----	Leg "C"		----	BC	----	----
CB	----	----	----	----	670	395	----	CB	----	----
BD	----	----	----	----	345	645	----	BD	----	----
DB	----	----	----	----	Leg "D"		----	DB	----	----
CD	580	335	2.0	2.0	445	720		CD	775	480
DC	290	555	2.0	2.0	690	510		DC	445	800
Total-A	410	490			2006 ADT= 4500		2026 ADT= 5100		485	565
Total-B	----	----			----		----		----	----
Total-C	1015	1040			2006 ADT= 10000		2026 ADT= 14000		1410	1475
Total-D	1135	1230			2006 ADT= 11500		2026 ADT= 15000		1515	1650

NOTE :

FIGURE 7

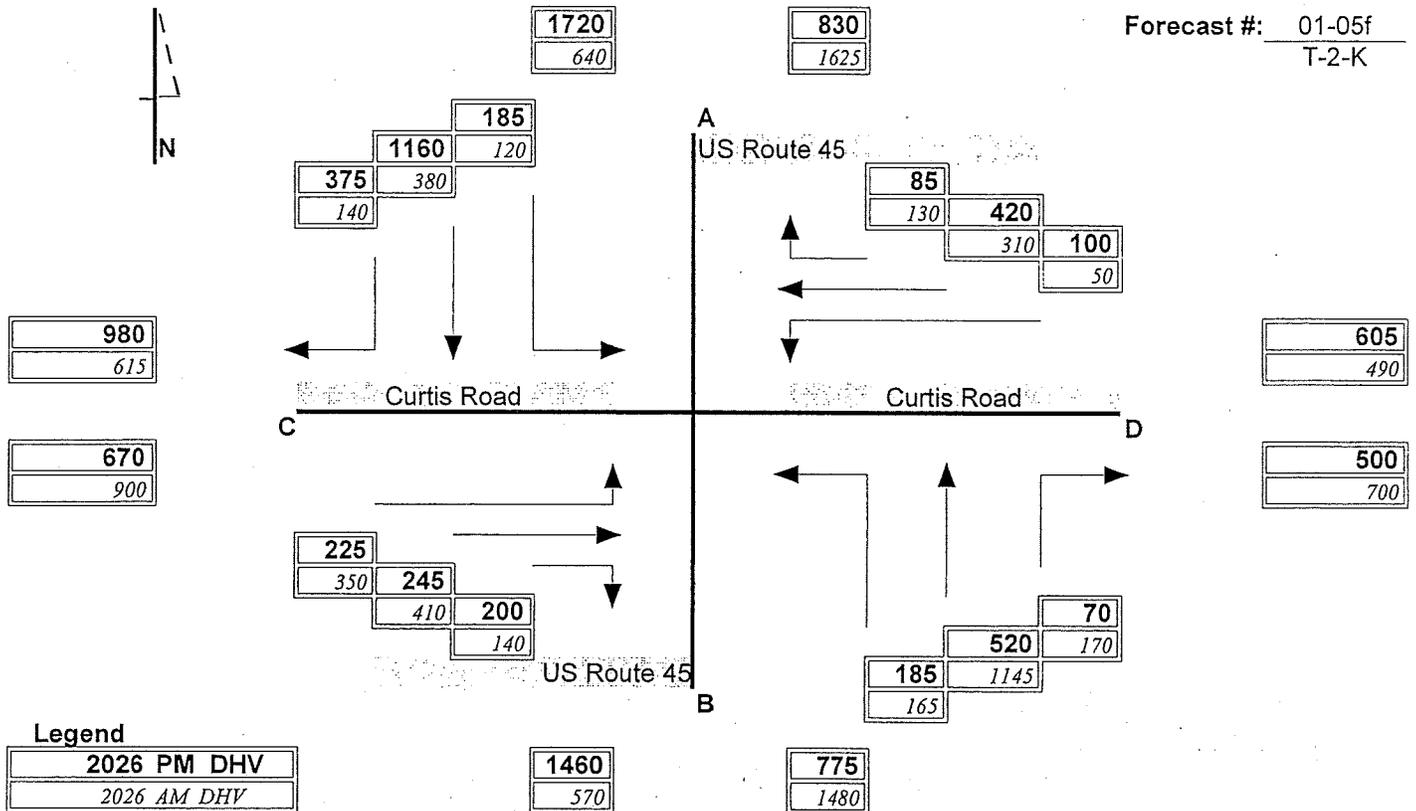
**Illinois Department of Transportation  
INTERSECTION TRAFFIC MOVEMENT**

To: CUUATS  
From: Traffic Studies  
Cons. Sec. \_\_\_\_\_  
Date: 01-10-01

County: Champaign City: Savoy

Location: Curtis Road and US Route 45 (with FAI-57 interchange) By: WRG

Forecast #: 01-05f  
T-2-K



Move-ment	30th Maximum Hour Traffic Year of Construction 2006		Percent Truck Traffic in 30th Max. Hour		2006 Dir. Volume Approach Departure		Estimated Percent Increase By	30th Maximum Hour Traffic Year of Forecast 2026	
	A.M.	P.M.	2006	2026	A.M.	P.M.		A.M.	P.M.
AB	330	1010	2.0	2.0	Leg "A"		AB	380	1160
BA	995	450	2.0	2.0	520	1455	BA	1145	520
AC	90	280	2.0	2.0	1380	690	AC	140	375
CA	270	170	2.0	2.0	Leg "B"		CA	350	225
AD	100	165	2.0	2.0	1250	600	AD	120	185
DA	115	70	2.0	2.0	450	1235	DA	130	85
BC	105	95	2.0	2.0	Leg "C"		BC	165	185
CB	80	140	2.0	2.0	690	510	CB	140	200
BD	150	55	2.0	2.0	445	720	BD	170	70
DB	40	85	2.0	2.0	Leg "D"		DB	50	100
CD	340	200	2.0	2.0	405	500	CD	410	245
DC	250	345	2.0	2.0	590	420	DC	310	420
Total-A	1900	2145		2006 ADT= 20000	2026 ADT= 23500			2265	2550
Total-B	1700	1835		2006 ADT= 18000	2026 ADT= 21500			2050	2235
Total-C	1135	1230		2006 ADT= 11500	2026 ADT= 15000			1515	1650
Total-D	995	920		2006 ADT= 8500	2026 ADT= 10000			1190	1105

NOTE :

FIGURE 8

**Illinois Department of Transportation  
INTERSECTION TRAFFIC MOVEMENT**

To: CUUATS  
From: Traffic Studies  
Cons. Sec. \_\_\_\_\_

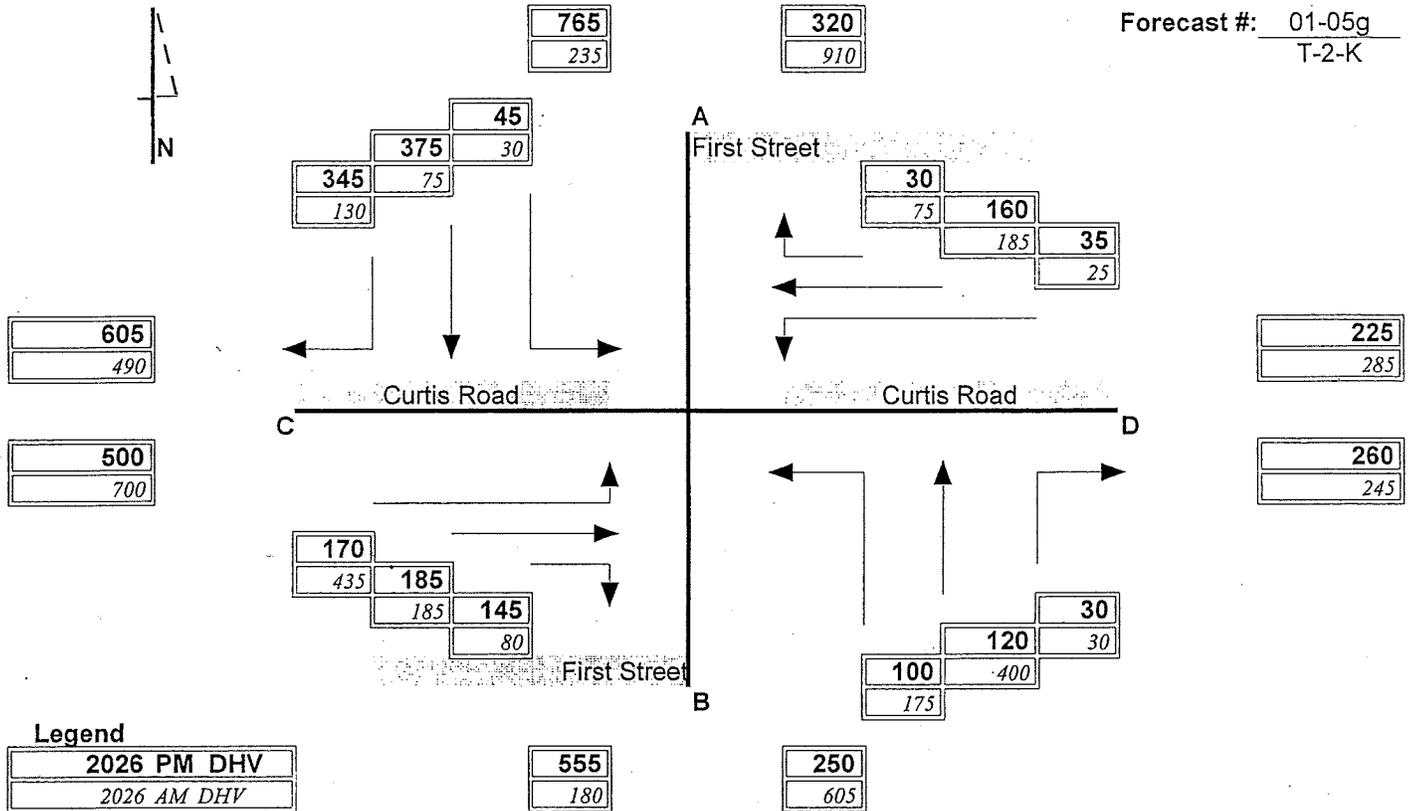
County: Champaign City: Savoy

Date: 01-10-01

Location: Curtis Road and First Street (with FAI-57 interchange)

By: WRG

Forecast #: 01-05g  
T-2-K



Movement	30th Maximum Hour Traffic Year of Construction 2006		Percent Truck Traffic in 30th Max. Hour		2006 Dir. Volume Approach Departure		Estimated Percent Increase By	30th Maximum Hour Traffic Year of Forecast 2026	
	A.M.	P.M.	2006	2026	A.M.	P.M.		A.M.	P.M.
AB	60	325	2.0	2.0	Leg "A"		AB	75	375
BA	355	100	2.0	2.0	190	665	BA	400	120
AC	110	310	2.0	2.0	810	265	AC	130	345
CA	400	145	2.0	2.0	Leg "B"		CA	435	170
AD	20	30	2.0	2.0	520	190	AD	30	45
DA	55	20	2.0	2.0	125	470	DA	75	30
BC	145	70	2.0	2.0	Leg "C"		BC	175	100
CB	50	120	2.0	2.0	590	420	CB	80	145
BD	20	20	2.0	2.0	405	500	BD	30	30
DB	15	25	2.0	2.0	Leg "D"		DB	25	35
CD	140	155	2.0	2.0	220	165	CD	185	185
DC	150	120	2.0	2.0	180	205	DC	185	160
Total-A	1000	930			2006 ADT= 8500	2026 ADT= 9500		1145	1085
Total-B	645	660			2006 ADT= 5800	2026 ADT= 7500		785	805
Total-C	995	920			2006 ADT= 8500	2026 ADT= 10000		1190	1105
Total-D	400	370			2006 ADT= 3500	2026 ADT= 4500		530	485

NOTE :

FIGURE 9

## **DESIGN APPROACH**

The fundamental philosophy adhered to in design of the Curtis Road improvements has been to develop a safe, efficient and cost effective transportation link while minimizing, to the extent possible, the impacts to adjacent properties of developing a four-lane arterial roadway. Within the Curtis Road corridor, the adjacent land use includes two churches, two residential subdivisions, four isolated family residences, three apartment complexes, one commercial district, one office building, prime farmland, and four small isolated wetland areas. It was apparent from the onset of design development that the urbanizing corridor of Curtis Road already contained significant developments as well as adjacent natural resources which precluded the opportunity for consideration of vastly divergent alignment alternatives. The success of project implementation would be founded on safe and efficient roadway designs which recognized the following goals and their inherent sensitivity to adjacent properties.

### Design Development Goals

- Limit right-of-way acquisition in the southwest corner of the Curtis/Duncan intersection in order to permit future construction of the new Friendship Lutheran Church of Joy.
- Minimize encroachment of Rolling Acres subdivision properties which front the east side of Duncan Road.
- Maximize use of available existing right-of-way along the north side of Curtis Road in order to minimize encroachment of Rolling Acres subdivision properties which front the south side of Curtis Road.
- Avoid the Curtis Road Church of God building on the north side of Curtis Road.
- Avoid impacts to businesses and apartments which are concentrated east of Prospect Avenue.
- Avoid the Federation of Animal Science Societies (FASS) building located immediately adjacent to southwest quadrant of the Curtis/U.S. 45 intersection.
- Maintain or modify access to all developed properties which currently are accessed from the various project roadways.
- Designate specific access points along the farmland section of Curtis Road so that access to future land development may be managed safely with travel along Curtis Road.
- Avoid or minimize impacts to natural resources.

Where possible, design elements have been included in the formulation of the proposed roadway typical sections to minimize additional right-of-way requirements within sensitive land use areas. Access to existing developed properties will be managed and maintained by the proposed design. Access will be controlled to abutting properties which have yet to be

developed by the use of raised median to minimize the number of ingress/egress points along Curtis Road thus facilitating both orderly land development and motoring safety along the travelway.

In addition to the responsible development of roadway typical sections, considerable effort has been expended on the design of roadway alignments to minimize encroachment of adjacent properties. Horizontal alignments have been shifted to avoid sensitive areas. Vertical alignments have been developed to promote drainage of the roadway corridor without excessive cuts or fills encroaching abutting property.

The proposed roadway typical sections and alignments depicted in the companion “Combined Design Study Exhibits” satisfy the purpose and need for this project stated earlier.

The development of a grade separation between Curtis Road and the CN/IC Railroad required the resolution of a complex set of interrelated geometric controls and alignments. Fundamental to the proposed design of this facility was a desire to achieve the Curtis Road subway crossing of the railroad without lowering the intersection of U.S. 45. To lower this intersection, in order to reduce the amount by which the railroad must be raised, would require the removal of the FASS building, substantial pavement removal along U.S. 45 and the west leg of Curtis Road (both recently reconstructed), relocation of access to businesses on the west leg of Curtis Road, further acquisition of the Garth property and additional encroachment of Winfield Village. Additionally, the resultant further lowering of Curtis Road from that depicted on Design Exhibit 10, would preclude the possibility of gravity drainage of the subway. An alternative alignment for the railroad relocation, based on a 90-foot offset from the existing track, was originally proposed. Since this resulted in a 30-foot offset from the existing railroad bridge over Windsor Road, the CN/IC Railroad would not approve this alignment.

## **DESIGN CRITERIA AND VARIANCES**

The following technical references were utilized during design development:

- “Federal-Aid Procedures for Local Highway Improvements”; IDOT Bureau of Local Roads and Streets
- “Bureau of Design and Environment Manual”; IDOT Division of Highways
- “A Policy on Geometric Design of Highways and Streets” 2001; American Association of State Highway and Transportation Officials
- “Guide for Development of Bicycle Facilities” 1999; American Association of State Highway and Transportation Officials

- “Curtis Road/I-57 Scoping Study” March 1997; Champaign-Urbana Urbanized Area Transportation Study
- “Access Management Guidelines” October 2001; Champaign-Urbana Urbanized Area Transportation Study
- “Champaign County Regional Natureways, Bikeways and Trails Plan” August 1999; Champaign County Regional Planning Commission
- “Phinney Branch Creek Master Plan” January 1996; City of Champaign
- “Manual for Railway Engineering”; American Railway Engineering Association
- “Standards for the Maintenance of Way and Structures”; Illinois Central Railroad
- 7.5 Minute Series Topographic Mapping developed by the United States Department of Interior Geological Survey

The following pages are IDOT form BLR 5253 – “Approval of Design Variance”. This form summarizes all salient level one and level two project applicable design criteria. Compliance with the applicable design criteria is noted; or, justification for variance from a stipulated criterion is provided.



**Project Identification**

Local Agency: Champaign County County: Champaign  
(County, Municipality, Road District / Township)  
Section No.: 00 - 00374 - 00 - ES Route: F.A. 807/7147

Street/Road Name: Curtis Road

Project Limits: From approximately 181 feet west of the proposed intersection of Duncan Road to approximately 838 feet east of the proposed intersection with First Street

Project Length: 16,880 feet (3.20 miles) Functional Classification: Closed Suburban O.P.A.

Design Year: 2026 Design Traffic:  DHV 1,670  ADT 15,500

Existing Structure No.: None Proposed Structure No.: Not yet assigned

**Project Scope of Work**

- a. Is this project located on the NHS?  Yes  No
- b. Is this project on a Strategic Regional Arterial (SRA) route?  Yes  No
- c. Funding  MFT/State Assistance  Federal
- d. Type of Work  New Construction  Reconstruction  3R
- e. Design Guidelines  Urban  Suburban  Rural  3R  Other \_\_\_\_\_

f. Provide a brief project description (major construction elements):  
 The development of Curtis Road will provide four travel lanes for the majority of the project's length which occurs between Duncan Road and the new Canadian National/Illinois Central (CN/IC) Railroad Bridge. Two lanes will be provided east of the railroad bridge to First Street. The roadway will include, at all locations, either a barrier median to control access to adjacent developmental property; or, an additional center two-way left turn lane to facilitate safe ingress/egress of existing developed properties.  
 A relocation of the CN/IC railroad track and embankment will be required to develop a grade separated crossing over Curtis Road. The relocation will involve raising the track profile approximately 15 feet and lowering Curtis Road approximately five feet in order to achieve the subway crossing. The vertical railroad relocation will be developed along a new horizontal track alignment which is offset 60 feet east of the existing track. The track relocation will commence just north of the existing at-grade crossing of Church Street in Savoy and end at the existing railroad bridge over Windsor Road in Champaign; a total distance of approximately 2.1 miles. A railroad bridge, 183 feet in length, will be required to span the new Curtis Road width.

**District Coordination Meetings**

Has project been previously discussed at district coordination meetings?  Yes  No  
(If yes, attach minutes of variance approvals)  
Dates: 12/1/98 and 03/17/03

## Level One Design Variance Approval

Local Agency: Champaign County

Section No.: 00-00374-00-ES

Design Criteria for Project (Provide numerical value where indicated)	BLR&S Criteria	Variance		Summary of Variance and Justification
		Yes	No	
1. Design Speed: <u>45 mph</u>	40mph	<input type="checkbox"/>	<input checked="" type="checkbox"/>	BDE: 48-2.02
2. Level of Service (Mainline): <u>C and better</u>	LOS-C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAPLHI: 5-8-19
<b>3. Lane Widths</b>				
a. Through Lanes: <u>12 feet</u>	12'	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAPLHI: 5-8-4/5-8-19
b. Turn Lanes: <u>and TWLTL = 12 feet</u>	12'	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAPLHI: 5-8-20
c. Parking Lanes: <u>No Parking-0 feet</u>		<input type="checkbox"/>	<input type="checkbox"/>	
d. Bike Lanes: <u>On each side of Curtis Road: one-way separated shared- use path = 8 feet; or, one-way bike lane on shoulder = 5 feet</u>	5' min. separated, 4' min. on shoulder	<input type="checkbox"/>	<input checked="" type="checkbox"/>	BLR Memo # 97-7
<b>4. Through Travel Lane Cross Slopes</b>				
Inside Lane: <u>1.5 %</u>	1.5%	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAPLHI: 5-8-12/5-8-24
Outside Lane: <u>2.0 %</u> (if more than 2 lanes)	2.0%	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAPLHI: 5-8-12/5-8-24
<b>5. Shoulder Widths: <u>Curtis = 10 feet, crossroads = 8 or 10 feet</u></b>				
	10' on Curtis; 8'- 10' on crossroad	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAPLHI: 5-8-4
<b>6. Horizontal Curvature (Minimum Radius)</b>				
<u>6456.68 feet</u>	763.94' min.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAPLHI: 5-8-11 All curves have been set at R=6456.68' and do not require superelevation
List curves not meeting criteria				
<u>Sta.</u>	<u>Radius</u>	<u>Design Speed</u>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
<b>7. Superelevation Rates</b>				
<u>e<sub>max</sub> normal crown %</u>	8.0% max.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAPLHI: 5-8-65 Normal crown is maintained through all curves
List curves for which e does not meet criteria				
<u>PI Sta.</u>	<u>Radius</u>	<u>e</u>	<u>Design Speed</u>	<input type="checkbox"/>
				<input type="checkbox"/>
				<input type="checkbox"/>
				<input type="checkbox"/>
<b>8. Maximum Grade: <u>4.0 %</u></b>				
	4% to 7%	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAPLHI: 5-8-11/5-8-24
<b>9. Minimum Intersection Sight Distance</b>				
<u>Urban=300 feet/Rural=&gt;500 feet</u>	Urban:300 feet min., 400 feet desired. Rural:465'	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAPLHI: 5-8-25/5-8-14
List locations not meeting the criteria				
<u>Cross Road</u>	<u>Distance</u>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	



Level One Design Variance Approval

Local Agency: Champaign County

Section No.: 00-00374-00-ES

13. Vertical Clearances:

- Over Roadway/RR \_\_\_\_\_ feet
- Under Structure 14'-9" feet

16'-3"	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<p>FAPLHI: 5-9-28</p> <p>The grade separation realignment design reflects that the CN/IC Railroad has dictated a maximum 60' offset from their existing track and a maximum climbing gradient of 0.39% for the railroad relocation. To achieve 16'-3" vertical clearance under the railroad bridge would require further lowering of Curtis Road. If lowered, the required approach stopping sight distance would also require the lowering and reconstruction of US 45. If US 45 is lowered, access to the FASS Building would be eliminated and the building would have to be purchased and removed. In addition, the relatively new concrete pavement (intended to be resurfaced) on the west leg of the Curtis/US45 intersection would also have to be lowered and reconstructed. These additional costs, in excess of \$2 million, are not warranted when one considers that the vertical clearance requirement for a state jurisdictional facility of the same classification is 14'-9".</p>
14. Accessibility Criteria for Disabled Persons List any feature not meeting ADA Criteria			
None	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

**Level One Design Variance Approval**

Local Agency: Champaign County

Section No.: 00-00374-00-ES

<p>15. Roadside Clear Zone:</p> <p>a. Tangent <u>2 feet from face of curb (urban). With 6:1 foreslope (rural) = 20 feet</u></p> <p>b. Outside of Curve <u>20 feet</u></p> <p align="center">List criteria for each radius</p> <table border="0"> <tr> <td align="center"><u>Radius (ft)</u></td> <td align="center"><u>Clear Zone (ft)</u></td> </tr> </table>	<u>Radius (ft)</u>	<u>Clear Zone (ft)</u>	<p>1.5' &amp; 18'-20'</p> <p>20'</p>	<table border="0"> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>BDE: 38-3.02(f)/Fig. 38-3A</p> <p>BDE: Fig.38-3D. No clear zone adjustment is required since curve radii are greater than 2860'.</p>
<u>Radius (ft)</u>	<u>Clear Zone (ft)</u>														
<input type="checkbox"/>	<input checked="" type="checkbox"/>														
<input type="checkbox"/>	<input checked="" type="checkbox"/>														
<input type="checkbox"/>	<input type="checkbox"/>														
<input type="checkbox"/>	<input type="checkbox"/>														
<input type="checkbox"/>	<input type="checkbox"/>														
<p>16. Intersection(s) Level of Service: <u>C and better</u></p>	<p>C</p>	<table border="0"> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>FAPLHI: 5-8-19</p>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>														
<p>17. Warrants for Stop Signs or Signals</p> <table border="0"> <tr> <td align="center"><u>Cross Road</u></td> <td align="center"><u>Warrant</u></td> </tr> <tr> <td>Duncan, Mattis, Prospect, and First US 45</td> <td>#1 &amp; #3 signal modernization</td> </tr> </table>	<u>Cross Road</u>	<u>Warrant</u>	Duncan, Mattis, Prospect, and First US 45	#1 & #3 signal modernization		<table border="0"> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>MUTCD</p>		
<u>Cross Road</u>	<u>Warrant</u>														
Duncan, Mattis, Prospect, and First US 45	#1 & #3 signal modernization														
<input type="checkbox"/>	<input checked="" type="checkbox"/>														
<input type="checkbox"/>	<input checked="" type="checkbox"/>														
<input type="checkbox"/>	<input type="checkbox"/>														
<p>18. Pavement Design (list any variance to policy)</p> <p>None- Final pavement design will be done in Phase II when soils survey is performed.</p>		<table border="0"> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>FAPLHI: 5-8-29/5-8-134</p>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>														

Prepared By: CLARK DIETZ, INC.  
 Designer (Local Agency or Consultant)

Date: 4-13-04

When Prepared by Consultant  
 Local Agency Concurrence: Nennis L. Krzicker

Date: 04-14-04

[Signature]  
 IDOT District Office Concurrence

5/21/04  
 Date

Charles J. Ingersoll  
 Central BLR&S Approval

5/25/04  
 Date



## Level Two Design Variance Approval

Local Agency: Champaign County

Section No.: 00-00374-00-ES

**b. Design of Sidewalks**

- Width: Sidewalk included on shared-use path is 4 feet, sidewalk on Duncan Road is 5 feet
- Buffer Distance: 1 feet

4 feet

2 feet

A reduction from 2' to 1' in buffer distance between the outside edge of shared-use path and the proposed R.O.W. is warranted in the urban roadway sections due to the proximity of residential and commercial properties. This issue was discussed and agreed to at an 11-5-03 meeting of the Local Agencies, District 5 and Central offices of the BLR&S

- Cross Slope: 2 %
- Longitudinal Grades: 4 %

2% max.

5% max.

**c. Median**

- Type: Raised Curb (B-6.12)
- Width: 18 feet

18'-22'

BDE: 34-3.04(c)/Fig.48-6A

The 18'-wide median is proposed for two reasons. First, this rural roadway section traverses thru prime farmland and it is desired to minimize the magnitude of this acquisition. Second, the volume of traffic at intersections with future collector streets is anticipated to be of sufficient magnitude to warrant traffic signalization thus eliminating a need for the wider storage zone the 22' median would provide for a left-turning vehicle from the cross street.

- d. Shoulder Cross Slopes: 4 %

4%

BDE: 34-2.02(c)

- e. Rollover Factor 6 %

8%

FAPLHI: 5-8-4

- f. Curb and Gutter Type B-6.24

B-6.24

BDE: Fig. 48-6A

**Level Two Design Variance Approval**

Local Agency: Champaign County

Section No.: 00-00374-00-ES

<p>g. Roadway Element</p> <ul style="list-style-type: none"> <li>• Steepest Front Slopes: <u>4:1 beyond clearzone</u> (H:V)</li> <li>• Steepest Back Slopes: <u>3:1 beyond clearzone</u> (H:V)</li> </ul>	<p>4:1</p> <p>3:1</p>	<p><input type="checkbox"/>      <input checked="" type="checkbox"/></p> <p><input type="checkbox"/>      <input checked="" type="checkbox"/></p>	<p>FAPLHI: 5-8-4/ BDE: Fig. 34-4A BDE: Fig. 34-4C</p>
<p>5. Drainage (Flood Frequency)</p> <p>a. Pavement: <u>10</u> years</p> <p>b. Structure: <u>50</u> years</p> <p>c. Storm Sewer: <u>10</u> years</p>	<p>10yr.</p> <p>50yr.</p> <p>10yr.</p>	<p><input type="checkbox"/>      <input checked="" type="checkbox"/></p> <p><input type="checkbox"/>      <input checked="" type="checkbox"/></p> <p><input type="checkbox"/>      <input checked="" type="checkbox"/></p>	<p>Drainage Manual: Table 1-304</p>

## Level Two Design Variance Approval

Local Agency: Champaign County

Section No.: 00-00374-00-ES

<p>b. Skew Angle: <u>Approximately 90</u> Degrees</p>	>60 Degrees	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAPLHI: 5-8-25																					
<p>c. Approach Grades: <u>4 max. or less</u> %</p>	5% max.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAPLHI: 5-8-25																					
<p>d. Design Vehicle: <u>WB-65</u></p>	WB-65	<input type="checkbox"/>	<input checked="" type="checkbox"/>	BDE: Fig. 36-1R																					
<p>e. Turning Radius for Design Vehicle: <u>60' min.</u></p>	45' min.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	BDE: Fig. 31-5B																					
<p>f. Minimum Corner Island Size: <u>Corner Islands not utilized</u></p>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	BDE: 36-2.02																					
<p>g. Minimum Turn Lane Length <u>165</u> feet</p>	165'	<input type="checkbox"/>	<input checked="" type="checkbox"/>	BDE: Fig. 36-3I																					
<ul style="list-style-type: none"> <li>• Approach Taper: <u>45:1</u> feet</li> </ul>	45:1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	BDE: Fig. 36-3J																					
<ul style="list-style-type: none"> <li>• Departure Taper: <u>45:1</u> feet</li> </ul>	45:1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	BDE: Fig. 36-3J																					
<ul style="list-style-type: none"> <li>• Bay Taper: <u>200</u> feet</li> </ul>	200'	<input type="checkbox"/>	<input checked="" type="checkbox"/>	BDE: Fig. 36-3I																					
<p>h. Entrances</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Entrance Type</th> <th style="text-align: center;">Max. Width (ft.)</th> <th style="text-align: center;">Min. Width (ft.)</th> <th style="text-align: center;">Max. Grade(%)</th> <th style="width: 5%;"></th> <th style="width: 5%;"></th> <th style="width: 30%;"></th> </tr> </thead> <tbody> <tr> <td>Commercial</td> <td style="text-align: center;"><u>35'</u></td> <td style="text-align: center;"><u>match existing</u></td> <td style="text-align: center;"><u>6-8%</u></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>FAPLHI: 5-8-100</td> </tr> <tr> <td>Residential</td> <td style="text-align: center;"><u>24'</u></td> <td style="text-align: center;"><u>12'</u></td> <td style="text-align: center;"><u>6-8%</u></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>FAPLHI: 5-8-100</td> </tr> </tbody> </table>					Entrance Type	Max. Width (ft.)	Min. Width (ft.)	Max. Grade(%)				Commercial	<u>35'</u>	<u>match existing</u>	<u>6-8%</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAPLHI: 5-8-100	Residential	<u>24'</u>	<u>12'</u>	<u>6-8%</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAPLHI: 5-8-100
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Residential	<u>24'</u>	<u>12'</u>	<u>6-8%</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAPLHI: 5-8-100																			
7. RR Crossings																									
<p>a. Type of Railroad Protection: <u>Grade Separation</u></p>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAPLHI: 5-8-58																					
<p>b. Crossing Width (at 90° angle) <u>N/A</u> feet</p>		<input type="checkbox"/>	<input type="checkbox"/>	At-grade RR crossing not involved																					
8. Lighting																									
<p>a. Illuminance <u>9.0</u> lux</p>	9.0 lux	<input type="checkbox"/>	<input checked="" type="checkbox"/>	ANSI/IES RP-8-00 page 8, class Major/Low																					
<p>b. Uniformity Ratio <u>3:1</u></p>	3:1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	ANSI/IES RP-8-00 page 8, class Major/Low																					
9. Other Items																									

**Level Two Design Variance Approval**

Local Agency: Champaign County

Section No.: 00-00374-00-ES

ITEM9a.- Reduction in Border Area Width:

The proposed 5'-wide parkway as measured from back of curb to inside edge of shared-use path must be reduced to 3'-wide in various locations to avoid physical conflict with significant horizontal alignment controls. These anticipated locations are:

- vicinity of Curtis Road Church of God; sta. 47Lt.
- vicinity of Lo Property; sta. 132Lt. to 137Lt.
- vicinity of Adjacent Commercial Development, Illinois Power Gas Substation, and Garth Property; sta. 154Lt.&Rt. to 168Lt.&Rt.

ITEM 9b.- Intersection Turning Movements:

The interpretation of the Illinois Vehicle Code(625ILCS 5/11-801) requiring a WB-65 design vehicle to turn into the first available lane of a two-laned intersection leg results in an excessively expansive intersection area. Right-turning WB-65 vehicles would require a larger and further offset compound radius return. Left-turning WB-65 vehicles would require to median nose to recede from the intersection resulting in stop bar to signal head distances exceeding 150 feet. Both geometric conditions markedly increase the paved surface area of the intersection and resultant R.O.W. requirements within sensitive prime farmland and residential/commercial areas. Variance to the referenced code is requested to allow the turning design vehicle to occupy both lanes into which it is turning. See Article 36-2.01(c), item 3 of the BDE Manual

ITEM 9c.- Left-turn Lane Storage Length  
Curtis/U.S. 45 Intersection:

The "red time equation" determines a needed storage length of 283' for year 2026 am/eastbound left-turning peak hour volume. Only 253' can be provided while still accomodating a buried left-turn lane for eastbound traffic with a northbound destination into Woodfield Alley. Expanding median width to provide for the calculated 2026 am left-turn storage need while maintaining a buried left-turn lane into Woodfield Alley would further significantly impact parking spaces and the entrance grade for the "Pages...Bookstore". Future am storage needs greater than 253' are calculated to occur in year 2017 and beyond. The 253' of storage length was calculated based on a prior capacity analysis. The District requested this analysis to be modified, moving 2 seconds of green-time from the east/west phasing to the north/south phasing. A 30' extension of the am/eastbound left-turning storage resulted.



See left column for variance justification.

Level Two Design Variance Approval

Local Agency: Champaign County Section No.: 00-00374-00-ES

Prepared By: CLARK DIETZ, INC Date: 4-13-04  
Designer (Local Agency or Consultant)

When Prepared by Consultant  
Local Agency Concurrence: Dennis J. Unjcker Date: 04-14-04

[Signature] 5/21/04 \_\_\_\_\_  
IDOT District Office Concurrence Date Central BLR&S Approval Date

## **INTRODUCTION**

The ultimate development of Curtis Road will provide four travel lanes for the majority of the project's length which occurs between Duncan Road and the new CN/IC Railroad bridge. Two lanes will be provided east of the railroad bridge to First Street. The roadway will include, at all locations, either a barrier median to control access to adjacent developmental property; or, an additional center two-way left turn lane to facilitate safe ingress/egress of existing developed properties.

A relocation of the CN/IC railroad track and embankment will be required to develop a grade separated crossing over Curtis Road. The relocation will involve raising the track profile approximately 15 feet and lowering Curtis Road approximately five feet in order to achieve the subway crossing. The vertical railroad relocation will be developed along a new horizontal track alignment which is offset 60 feet east of the existing track. The track relocation will commence just north of the existing at-grade crossing of Church Street in Savoy and end at the existing railroad bridge over Windsor Road in Champaign; a total distance of approximately 2.1 miles. A railroad bridge, 183 feet in length, will be required to span the new Curtis Road width.

The companion "Combined Design Study Exhibits" (separate cover) depict the topography and culture of the project corridor as well as the proposed horizontal and vertical realignments of Curtis Road, the stormwater drainage systems, additional rights-of-way and easements required for construction, and the realignment of the CN/IC Railroad necessary to develop a grade separated crossing of Curtis Road. Various roadway typical sections for the proposed improvements are shown along the 3.20 mile roadway corridor length within the areas in which they are utilized. Designated locations for future access to Curtis Road are shown and future intersection designs are depicted.

Significant considerations in the design of the proposed improvements are discussed in the following sections.

## **TYPICAL ROADWAY SECTIONS**

The development of the proposed typical roadway sections for Curtis Road was based upon two primary considerations: the facilitation, or conversely the control, of access to abutting properties; and, the sensitivity of adjacent land use to the development of a major four-lane arterial roadway. The intent was to develop designs which would enable Curtis Road to achieve its role within the local land use area and street network as a major traffic carrier. As part of the development of Curtis Road, the implementing agencies desired to provide safe access to existing abutting properties and also to control access to future land use development in a manner which would not compromise the safe and efficient movement of traffic along Curtis Road. Additionally, it is sought to minimize encroachment onto adjacent developed properties and to construct a roadway environment conducive to adjacent land use.

In keeping with a recommendation developed by the Champaign County Regional Planning Commission, (“Champaign County Regional Natureways, Bikeways and Trails Plan” – August 1999) bicycle travel is to be accommodated by the proposed improvements. Parking is not now provided at any location along Curtis Road. Since all abutting properties have, or will have off-street parking, this element is not included within the roadway typical sections. The various typical roadway sections proposed for the improvement of Curtis Road are shown within the Design Exhibits at the locations along the roadway corridor in which they are utilized.

*Curtis Road Typical Sections Nos. 1, 3 and 4a:* These typical sections are shown on Design Exhibits 3, 9 and 10 respectively. Typical Section No. 1 is employed within the residential area of the Rolling Acres and Cherry Hills subdivisions. Typical Section No. 3 and No. 4a is utilized within the predominantly commercial area between Prospect Avenue and U.S. 45. These typical sections complement the more urbanized areas of the project corridor by providing a center two-way left turn lane for vehicles wishing to access the numerous parcels of currently developed property abutting the roadway right-of-way. In addition, both typical sections minimize encroachment into developed properties by using a “closed” stormwater drainage system consisting of curb and gutter inlets and underground storm sewers. Although construction of a closed drainage system is more expensive than constructing roadside ditches, right-of-way requirements and impacts to adjacent properties are minimized thus justifying the additional cost in these areas. It is acknowledged that both the residential and commercial use areas can generate a moderate amount of pedestrian activity and bike travel to warrant the construction of a shared-use path on each side of the street.

*Curtis Road Typical Section No.2 :* This typical section is shown on Design Exhibits 5 and 7 and is utilized through the undeveloped area of Curtis Road between the residential area on the west (Typical Section No. 1) and the commercial area on the east (Typical Section No. 3). This expansive area of rural open farmland allows the use of a roadside ditch conveyance system for stormwater drainage. A standard three foot ditch depth will be utilized unless a deeper (special) ditch section is needed for additional ditch capacity or stormwater detention; or, where the flowline gradient must deviate from the roadway profile. In either case a “recoverable” 6:1 ditch foreslope is provided within the required 20 foot clear zone. The continued southward expansion of residential development toward this area along Curtis Road is a significant indicator of this area’s burgeoning land development potential. With a view toward this area’s future, the implementing agencies desire to use the design and construction of Curtis Road to manage control of access to adjacent property development. Accordingly, this will be accomplished in part by the use of a barrier median as part of Typical Section No. 2 to discourage future requests for numerous access openings. Additionally, specific access points are designated along this section of Curtis Road about which future land use development can be planned and access to and from Curtis Road can be orderly controlled. Bicycle travel within this section will be accommodated on the outside portion of each adjacent 10-foot wide paved shoulder. Sidewalks are not included as part of the Curtis Road development in this area. Pedestrians will be served by sidewalks required

to be constructed as part of future residential subdivision development. Right-of-way for the future sidewalk locations will be acquired by the implementing agencies as part of the Curtis Road development.

*Curtis Road Typical Sections Nos. 4b, 5 and 6:* These typical sections are shown on Design Exhibits 10, 11 and 12 respectively. Typical Section No. 4b depicts Curtis Road in the vicinity of the CN/IC Railroad underpass. It should be noted that the current traffic volume projections for Curtis Road east of U.S. 45 do not warrant development of more than two through lanes within the foreseeable future. However, a four-lane section under the proposed CN/IC Railroad Bridge is strongly recommended to prevent the elimination of this option for the next generation of urban planners. Typical Section No. 4b transitions to Typical Sections No. 5 and No. 6 which represent the development of Curtis Road as a two-lane facility east of the CN/IC Railroad. Both typical sections are employed where Curtis Road is flanked on the north by University of Illinois farmlands and on the south by existing multi-family residential development. The typical sections are similar to one another, both utilizing roadside ditch drainage along the north side of the roadway and both incorporating a center two-way left turn lane for safe access to the residential properties abutting the south side of the roadway. To minimize encroachment of the Winfield Village apartment complex, Typical Section No. 5 provides a curbed and guttered shoulder and closed drainage system within this area. Typical Section No. 6 can incorporate a roadside ditch and needed stormwater detention along the south side without significant encroachment of the Parkview Retirement Community or the Sterling University Fields Apartment Complex. Bicycle travel is accommodated by both typical sections; either on the roadside shoulders or upon the shared-use path in front of Winfield Village and the Parkview Retirement Community. Pedestrian accommodation is provided along the Sterling University Fields Apartment complex by an existing sidewalk. Curtis Road east of First Street is bordered on both sides by University farmlands and neither bicycle nor pedestrian activity in this area is anticipated.

*Duncan Road Typical Sections Nos 7, 8 and 9*

*Mattis Avenue Typical Section No. 10*

*First Street Typical Section No. 12 and 13:* These typical sections are shown on Design Exhibits 15, 16, 17, 18 and 19 respectively. With one exception, these typical sections are “rural” in nature, employing roadside ditch drainage and shoulders along both sides. However, the east side of the Duncan Road Typical Section No. 7 and No. 8 must use curb and gutter along the edge of pavement with inlets and storm sewer to prevent substantial encroachment of residential properties within the Rolling Acres and Cherry Hills subdivisions. All typical sections provide two through lanes of traffic and incorporate intersection left turn lanes at all locations as well as dedicated right turn lanes where justified by vehicle turning movement analysis. These typical sections do not provide accommodations for pedestrians except along the east side of Duncan Road bordering the Rolling Acres and Cherry Hills subdivisions. Bicycle travel is accommodated on the north leg of Duncan Road and along First Street.

*Prospect Avenue Typical Section No. 11* : This typical section as shown on Design Exhibit 18 depicts an “urban” two-lane section with curb and gutter and a closed drainage system. Sidewalk is provided in front of residences bordering the west side of the street and Savoy’s existing bike path is maintained along the east side. As with all other cross road typical sections, a left turn lane onto Curtis Road is provided.

## **HORIZONTAL ROADWAY ALIGNMENT CONTROLS**

The existing horizontal alignment of Curtis Road is approximately centered on the east-west land section line throughout the three mile project length. Ordinarily, a proposed roadway alignment for reconstructing and widening such a roadway would be precisely centered about the land section lane in an attempt to equalize right-of-way requirements from properties along both sides of the roadway. However, the Curtis Road corridor presents a number of significant cultural features and utility installations that a responsible horizontal roadway alignment should avoid. Accordingly, the proposed horizontal alignments for Curtis Road and Duncan Road must deviate to either side of the land section line in order to avoid these features and utilities. The resultant curvilinear horizontal alignment of Curtis Road is accomplished by a series of long, sweeping reverse curves of very large radii such that the degree of curvature does not require the pavement surface to be superelevated for the 45 mph design speed. The proposed roadway centerline offsets to either side of the land section line are depicted within the plan views of the Design Exhibits. The salient roadway horizontal alignment controls are summarized as follows.

*Friendship Lutheran Church of Joy/Rolling Acres Subdivision*: These two alignment controls are depicted on Design Exhibits 15 and 16. Only a portion of the Church of Joy site development has been completed at this time. Future building and parking lot locations have been shown on the Design Exhibits. The alignment of the south leg of Duncan Road has been set to accommodate the future church site development and avoid encroachment of the adjacent residences of the Rolling Acres Subdivision. Centerline offset from the section lane is 9.84 feet to the west.

*Rolling Acres and Cherry Hills Subdivisions*: Design Exhibit 3 depicts the alignment of Curtis Road at the Duncan Road intersection. In this area it was desired to make maximum available use of the greater width of existing right-of-way on the north side of the road along the Cherry Hills subdivision thus minimizing encroachment onto the residential properties of the Rolling Acres subdivision on the south side. The centerline is offset 11.48 feet north of the section line in this area.

*Curtis Road Church of God*: This church is located near Station 47 and shown on Design Exhibit 3. The alignment of Curtis Road in this area was set by placing the back edge of the shared-use path a minimum 30 feet from the face of the building. The resultant distance from the back of the path to the face of Rolling Acres residences across the road is approximately 65 feet. The proposed centerline of Curtis Road is offset 4.92 feet south of the

section line in this area resulting in the most significant but unavoidable encroachment of the Rolling Acres subdivision. However, once Curtis Road bypasses the church, the roadway alignment is immediately shifted to the north again to minimize further subdivision encroachment.

*Ameritech Electronics Cabinet:* Located outside of the existing right-of-way on the south side of Curtis Road near Station 59 (see Design Exhibit 4) the relocation of this utility installation would represent a significant project expense. Accordingly, the proposed centerline of Curtis Road has been offset 9.84 feet north of the section line to avoid this utility structure. A northerly shift of the proposed centerline in this area is also consistent with minimizing encroachment of the easterly portion of the Rolling Acres subdivision.

*Illinois Power Electrical Transmission Facilities:* These large power poles are located throughout the project corridor and in many places cannot be avoided due to other alignment constraints. However, once Curtis Road bypasses the alignment controls described above and enters the area of open farm land, an opportunity to avoid the expensive relocation of these poles is provided. The relocation of 24 of these poles can be avoided between Curtis Road Stations 61 and 125. Since these poles are located on a utility easement just outside the existing south right-of-way line, a potential minimum savings of \$504,000 in projected utility relocation costs may be realized. The avoidance of these poles is accomplished by a judicious combination of horizontal and vertical roadway alignments, roadside ditch grading, and at some locations the use of ditch checks with flow-through culverts to avoid undermining the pole foundations. Poles will have to be relocated when there is an actual physical conflict or when the pole location lies within the 20 foot clear zone depicted on Typical Section No. 2. Starting near Station 59 the proposed centerline alignment shifts from 9.84 feet north of the section line to 52.49 feet north of the section line at Station 70. This offset was selected as the minimum necessary to prevent pole relocation and to approximately situate the poles outside of the proposed ditch backslope grading limits. This offset alignment does not avoid encroachment of the existing utility easement and the future sidewalk must be positioned along the south side of the power poles thus requiring the acquisition of additional right-of-way. This would encompass Illinois Power's facilities within the proposed right-of-way and Illinois Power would most likely seek protection against any future relocation costs. The 52.49 foot centerline offset continues easterly to Station 100 where the following alignment control takes precedence.

*Lo Farmstead:* Shown on Design Exhibit 7, this farmstead is located on the north side of Curtis Road near Station 110. To avoid this residence the proposed centerline offset must be reduced to 21.65 feet north of the section line. As well, the north roadside ditch cut must be eliminated in this area to minimize the construction limit in front of the house. A longitudinal culvert will maintain conveyance of ditch flow across this property. The 21.65 foot offset was selected to situate the existing power poles just outside the 20 foot clear zone for Curtis Road so that they do not have to be relocated.

*52.49 foot versus 21.65 foot Section Line/Center Line Offset:* The use of either of these alignment offsets for the reasons discussed above has no bearing on the total amount of additional right-of-way required since for either alignment offset the proposed right-of-way width is relatively constant and the existing right-of-way is fully contained within the proposed right-of-way limits. The 21.65 foot offset results in the power poles being situated just outside the 20-foot clearzone limit. The more desirable 52.49 foot offset situates the power poles near the outside of the ditch backslope cut. However, attention is directed to the presence of a buried 8-inch natural gas pipeline along the south side of Curtis Road within the 52.49 foot offset area. The final design effort should include obtaining hard locates of this facility with respect to the proposed ditch grading to determine potential conflict. A reduction of alignment offset from 52.49 feet to 21.65 feet may eliminate any grading conflict but would result in the pipeline being situated under the proposed shoulder which the utility-owner may also deem cause for relocation. The ultimate alignment offset in this area should be further investigated during Phase II project development.

*Lo Estate and R.E. Walker Residence:* These two residential properties are located immediately west of Prospect Avenue on the north side of Curtis Road as shown on Design Exhibits 8 and 9. In addition to avoiding these properties, the proposed Curtis Road alignment must shift southward to align itself with Savoy's previously reconstructed three-lane section of Curtis Road which commences near Station 140 just east of Prospect Avenue. The proposed centerline of Curtis Road will be located 8.85 feet south of the section line. This offset will not match the centerline of the previously reconstructed three-lane section which was centered upon the section line. However, the proposed centerline location will better facilitate the use of existing storm sewer runs in this area by keeping their locations out from under the required pavement widening. The 8.85 foot south side offset was selected to avoid demolition of the brick privacy screen fronting the Lo estate while orienting the alignment as northerly as possible to minimize right-of-way acquisition from the Prospect Pointe apartment complex located east of Prospect Avenue and south of Curtis Road. To accomplish this goal, curb and gutter with a closed drainage system must be installed across the Lo and Walker properties to eliminate a wide ditch cut.

*Pages Bookstore Driveway/FASS Building:* These two locations are shown on Design Exhibit 10. The "Pages for All Ages" bookstore driveway is located on the north side of Curtis road near Station 155 and the FASS building is located in the southwest quadrant of the Curtis/U.S. 45 intersection. Separated by only 500 feet these two features combine to represent a significant alignment control. While the location of a single driveway does not normally represent an alignment control feature, this particular driveway also provides a primary access point to a large shopping center and cannot be relocated. The proposed vertical alignment of Curtis Road in the area must replicate the existing paved surface plus a resurfacing thickness. Unfortunately, the bookstore and shopping center were constructed at a much higher elevation than the existing pavement surface resulting in a relatively steep gradient on the existing driveway. The required pavement widening at this location will steepen this gradient unless the driveway length can be increased by depressing the pavement

surface in front of the bookstore. Therefore, the centerline location of Curtis Road must be oriented as south as possible to achieve an acceptable driveway gradient and yet enable clearance of the FASS building. The 8.85 foot southerly centerline offset alignment between the Lo property and the bookstore driveway represents an alignment location which avoids impacting Lo's brick privacy screen, minimizes right-of-way acquisition to the extent possible across the Prospect Pointe apartment complex, and results in an acceptable bookstore driveway gradient of 8.0 percent. Some modification of adjacent parking lot surface elevation will be required to accommodate this reconstructed driveway. This southerly centerline offset must then be reversed to 9.04 feet north of the section line to avoid the FASS building. This northerly centerline offset was determined by situating the back edge of the combination sidewalk/bikeway directly against the face of a retaining wall located along the north side of the building which allows access to the lower building level. Due to the transition from a southerly to a northerly alignment in this area, a small retaining wall will be required along the north side of Curtis Road between Station 155 and 158 to avoid encroachment of the elevated shopping center parking lot.

*Winfield Village Apartments:* While not a significant alignment control it is desirable to minimize impact to this residential property by orienting the proposed roadway alignment toward the northside farm lands. It was found that the 9.04 foot northerly centerline offset required to avoid the FASS building will adequately accomplish this goal and as well not affect the site features of the Parkview Retirement Community or the Sterling University Fields Apartment Complex. Therefore, this alignment location is held between U.S. 45 and First Street. See Design Exhibits 10, 11 and 12.

## **VERTICAL ROADWAY ALIGNMENT CONTROLS**

The existing vertical alignment of Curtis Road has a number of deficiencies which must be corrected in order to develop a facility which will safely function at the designated 45 mph design speed. The goals in developing the profile gradeline alignments of the various project roadways are to:

- provide adequate stopping sight distance for safe vehicle operation;
- develop adequate roadway and ditch gradients for efficient stormwater drainage; and,
- situate the new pavements above surrounding high stormwater elevations.

In addition to these goals there are a number of vertical alignment controls which must be observed within various sensitive areas throughout the project. Within these areas it is desired to minimize the lateral extent of roadway construction limits so that horizontal clearances are obtained and adjacent property encroachments are reduced. This is accomplished by aligning the limits of the proposed roadway cross section as closely as

possible to the existing ground surface of the adjacent property. Due to the inherent connectivity between vertical and horizontal roadway alignment, many of the horizontal alignment control features reviewed earlier also represent vertical alignment constraints; for example the:

- residential properties bordering the south side of Curtis Road and the east side of Duncan Road;
- Curtis Road Church of God;
- Ameritech Electronics cabinet;
- Lo farmstead and estate properties;
- Savoy's previously reconstructed section of Curtis Road; and,
- Winfield Village Apartment Complex.

Additionally, vertical alignment of Curtis Road at the railroad underpass is controlled by stopping sight distance requirements across the U.S. 45 intersection as well as an elevation required to permit a gravity flow outlet of this low point.

There are two significant vertical realignments within the project study area which should be noted. The Duncan Road vertical realignment shown on Design Exhibits 15 and 16 is required to develop a roadway profile which provides adequate sight distance for vehicles approaching the Curtis road intersection. This requires lowering the north Duncan Road intersection leg approximately five feet and raising the south intersection leg approximately two feet. Design Exhibit 10 depicts the vertical realignment of Curtis Road required to develop a crossing of the CN/IC Railroad. In this area Curtis Road must be lowered approximately five feet.

An additional goal sought in developing the vertical roadway alignment was to balance the amount of earth excavation and infill required to construct the roadbeds and the adjacent ditches. However, within an existing roadway corridor which exhibits alignment and drainage controls similar to those reviewed herein, this is not always possible. Unfortunately, this is the case for this project.

#### **STORMWATER DRAINAGE**

The "Curtis Road Drainage Report" contained within Appendix A provides a detailed and comprehensive analysis of:

- Existing drainage conditions and deficiencies,

- Drainage design criteria and considerations; and
- Proposed drainage improvements and stormwater detention within each drainage basin.

Provided below is a brief overview of the stormwater drainage improvements required for each drainage basin.

### ***Kaskaskia River Basin***

Between the basin highpoint near Curtis Road Station 47 and Duncan Road, stormwater runoff will be accommodated by curb and gutter, inlets and storm sewers. This “urban” section of Curtis Road has been vertically aligned to receive runoff from adjacent properties so that roadside ditching and further encroachment of these properties will not be necessary. The Curtis Road storm sewer interceptor will drain west to the Duncan Road intersection and then south along the east side of Duncan Road to service this portion of curbed and guttered pavement. At Rolling Acres Drive, this storm sewer flow will be combined with the stormwater flow conveyed by the Rolling Acres Drive median ditch. The combined flows outlet via a seven-foot wide by three-foot high box culvert to the west side of Duncan Road into an overland swale. This existing overland swale has been partially infilled and will have to be regraded and reconfigured to accommodate the design discharge and provide the necessary storage volume for stormwater detention. The swale will be improved to outlet into the new roadside ditch of Curtis Road (near Station 24) as it is extended west of Duncan Road toward the new interchange with I-57. The remainder of Duncan Road will be drained primarily by roadside ditching and cross road culverts. See Design Exhibits 2, 3, 15 and 16.

### ***Phinney Branch Basin***

From the drainage basin eastern highpoint near Curtis Road Station 118, roadside ditching will convey stormwater runoff westerly to the basin outlet near Station 98. Storm sewer will service the curbed and guttered section of Curtis Road from the drainage basin western highpoint near Station 47 to a discharge location within the new roadside ditch at Station 63. From this point, roadside ditching will convey stormwater runoff easterly to the basin outlet near Station 98. Culverts will be required to transmit the ditch flow under Mattis Avenue. (See Design Exhibits 3 through 7.) The effective conveyance of stormwater runoff along Curtis Road to the basin outlet can only be accomplished by lowering the existing outlet swale from Curtis Road northward to the recently improved box culvert crossing of Windsor Road. As a result of the City of Champaign’s master planning effort for the Phinney Branch basin, the Windsor Road box culvert has been appropriately sized and set at the proper elevation to accommodate the upstream discharge from Curtis Road. However, the inlet opening of this box culvert has been partially sealed until which time downstream Phinney Branch channel improvements have been completed. The outlet from Curtis Road will require construction of a double eight-foot wide by four-foot high box culvert under Curtis Road. Discharge from this culvert and the ditch along the north side of Curtis Road will

require construction of an outlet channel approximately four feet deep with a 20-foot wide bottom and 3 to 1 sideslopes graded at 0.23% along its one mile length to Windsor Road. Stormwater detention will be provided within the roadside ditches of Curtis Road along its length through the Phinney Branch basin.

### ***Embarras River Basin***

Roadside ditching will convey stormwater flow easterly from the drainage basin high point on Curtis Road near Station 118 to Station 138± where it will be intercepted by a new four-foot wide by two-foot high box culvert. The new box culvert will carry the flow southerly to discharge into a new detention facility located approximately 300 feet south of the Curtis/Prospect intersection. (See Design Exhibits 9 and 13). This new detention facility is located immediately upstream and in-line with two existing downstream detention facilities as shown on Design Exhibit 13. The new facility will provide detention of increased runoff from Curtis Road between Stations 118 and 138. Moreover, it will also provide detention of a larger volume of stormwater runoff by intercepting overland flow from the adjacent farmland to the west. Detention of this farmland run-off is provided in lieu of being able to provide detention of increased runoff from Curtis Road between Station 138 and U.S. 45. The intent of this scenario is to result in a net negligible increase in stormwater discharge to the Arbour Meadows Regional Detention Facility.

Drainage of Curtis Road between Station 138 and U.S. 45 is accomplished primarily by a new Curtis Road storm sewer system and some portions of the existing storm sewer system which were able to be utilized (see Design Exhibits 9 and 10). Drainage of this portion of Curtis Road is currently outlet southerly via two existing storm sewer interceptors into the Arbour Meadows Detention Pond which is shown on Figure 2 and Design Exhibit 13. However, due to inadequate capacity of the existing 48-inch interceptor (Sta. 146+10) the new Curtis Road storm sewer is "back-drained" from this location west to Prospect Avenue, where it is combined with storm sewer from Station 133 (which drains only north side of Curtis Road), and is then routed southerly to the Arbor-Meadows Detention Pond as shown on Design Exhibit 13. The second existing storm sewer interceptor is a 60-inch diameter pipe (Sta. 154+60) which is adequate to accommodate increased Curtis Road runoff between Sta. 152 and U.S. 45. Stormwater from the area of Curtis Road between Stations 146 and 152 can be accommodated by the existing 48-inch interceptor.

East of U.S. 45 to a high point at Station 169, Curtis Road will be depressed to accomplish a subway crossing of the CN/IC Railroad. It was originally intended that drainage to the subway low point at Sta. 166 would be outlet southerly via a storm sewer along the east side of the relocated railroad to a small tributary of the Embarras River (see Figure 2) located about 1100 feet south of Curtis Road. This outlet sewer would be oversized to provide in-pipe stormwater detention. However, the discharge of subway drainage at this location would impact the water quality of the downstream lake within the Lake Park Subdivision. In respect to the concerns voiced by the Lake Park Homeowners Association in this regard, it

was decided instead to route the subway drainage east to a point of discharge within the proposed north roadside ditch near Station 176.

The area of Curtis Road east of the railroad subway will drain from Station 169± easterly toward First Street. Storm sewer will drain the south side of Curtis Road in front of the Winfield Village Apartment Complex and Parkview Retirement Community and discharge into the north roadside ditch near Station 185. Both the northside and southside Curtis Road ditches will provide stormwater detention and will flow to First Street where they are routed southward for a short distance to discharge into an open farmland swale (see Design Exhibits 10, 11, 12 and 19).

#### **ACCESS MANAGEMENT**

Access between Curtis Road and abutting properties was reviewed with respect to areas of currently developed and nondeveloped adjacent land use. In general, the concepts contained within CUUATS's "Access Management Guidelines" (October 2001) were applied to both areas. The undeveloped land use portion of the Curtis Road corridor between Stations 61 and 135 is traversed by Typical Roadway Section No. 2 which incorporates a barrier median for control of access. Within this 7400 foot length of roadway various locations of barrier median openings, to provide left-turn access to future land development collector streets, were reviewed and presented to CUUATS at a meeting on May 19, 1999. It was decided that access to the undeveloped area between Station 61 and Mattis Avenue would be accomplished from Mattis Avenue, and not from Curtis Road, as will be the final access route to the Barkstall Elementary School discussed earlier. Between Mattis and Prospect Avenues, barrier median openings to future collector streets would be provided at one-quarter mile intervals (see Design Exhibits 6, 7 and 8).

Within areas of existing land development along Curtis Road, access to adjacent properties was reviewed with respect to existing driveway locations which are in proximity to the proposed intersection geometrics. The entrance to Woodfield Alley located near Curtis Road Station 158 lies within the suggested 300 foot minimum distance of the U.S. 45 edge of pavement. This entrance on the north side of Curtis Road serves a developing shopping center and cannot be relocated westerly. To prohibit Woodfield Alley turning movements from conflicting with Curtis Road/U.S. 45 intersection operation, egress from the shopping center will be reduced to "right-out" turns only. A raised median on Curtis Road which incorporates a "buried" left turn lane will accommodate eastbound Curtis Road left turns onto Woodfield Alley. See Design Exhibit 10.

A number of property entrances should be relocated to assure safe and efficient intersection operation. On Curtis Road, existing farm access entrances near Stations 88, 110, 137 and 138 should be relocated as shown on the Design Exhibits. Also, the easternmost entrance to the FASS building near Station 159 should be closed and the parking lot reconfigured for a single point of access from its westernmost entrance.

The Garth property entrance relocation shown on Design Exhibit 10 will be required for construction of the proposed railroad bridge. The entrance must be relocated to the east in order to minimize property elevation differential with the depressed alignment of Curtis Road. The resultant entrance location will thus be safely beyond affecting the operation of the U.S. 45 intersection.

On Duncan Road, site development plans for the future Friendship Lutheran Church of Joy have been coordinated to locate the Church's new entrance at the acceptable location shown on Design Exhibit 15.

On Prospect Avenue, the R.E. Walker residence must be acquired in its entirety since no acceptable form of access to this structure as currently configured can be provided once the proposed Curtis/Prospect intersection improvements are constructed. Removal of the R.E. Walker residence provides the opportunity for a supplemental entrance from Prospect Avenue to the Lo Residence and farm operation property. Access to this property from Curtis Road was reduced to "right-in/right-out" only due to the proximity of the Curtis/Prospect intersection and concern over the operation of large farm machinery in this area. See Design Exhibit 18.

## **ROADWAY LIGHTING**

IDOT's "Federal-Aid Program Manual for Local Highway Improvements", page 5-8-2w states that: "Street lighting should be considered at all intersections and continuous lighting should be considered in heavily built up areas, particularly on collector and arterial streets." This manual also states that "in determining the need for street lighting, factors to be taken into consideration include: ratio of night to day accidents, pedestrian and vehicular volumes, types of marginal development, and previous experience at similar locations."

The AASHTO publication, "An Informational Guide to Roadway Lighting" provides guidance similar to the IDOT manual.

NCHRP Report No. 152, "Warrants for Highway Lighting" provides a rating system for determining the warranting condition for highway lighting. It considers geometric, operational and environmental factors, and considers lighting to be warranted when the ratio of night to day accidents is 2:1. Based on the minimal accident history along Curtis Road (see "Accident Analysis" – Appendix A) there is insufficient data to perform a meaningful warrant analysis.

The City of Champaign and Village of Savoy who will have jurisdiction of an improved Curtis Road currently have different municipal policies regarding the installation of roadway lighting. Champaign lights fully developed sections of roadway (i.e. curbed and guttered) while Savoy only lights the location of fire hydrants. Savoy's roadway lighting policy is currently under review.

The primary spirit and intent of the references cited above appears to be the goal of enhancing safety within the travel corridor through the use of roadway lighting within developed areas and at locations of conflicting vehicular and pedestrian movements. In this regard it would be prudent to light the following locations of Curtis Road.

- The major intersections of Curtis Road with Duncan, Mattis, Prospect and U.S. 45.
- The section of Curtis Road from Duncan Road through Wynstone Drive (Sta. 63 – Typical Section No. 1).
- The section of Curtis Road from Prospect Ave. to First Street (Typical Sections No. 3 through No. 6).

#### **SOILS SURVEY/PAVEMENT DESIGN**

A soils survey must be performed during Phase II project development to secure the geotechnical information necessary to develop pavement designs and to define areas of unsuitable subgrade soils.

As a basis for development of a project construction cost estimate, a preliminary pavement design was developed for Curtis Road under an assumed “poor” subgrade condition which is typical for Champaign County soils. The preliminary pavement design for cost estimating purposes is an 8-inch PC concrete pavement over a 12-inch improved subgrade.

#### **CN/IC RAILROAD RELOCATION AND GRADE SEPARATION STRUCTURE**

The relocation of the Canadian National/Illinois Central Railroad necessary to develop a grade separated crossing over Curtis Road is shown on Design Exhibits 20 through 26. The exhibits depict the required horizontal and vertical railroad realignments, typical railway sections, the typical railroad bridge section; and, an elevation view of the bridge spans over Curtis Road as it passes beneath the railroad bridge. The geometrics and alignment of Curtis Road through the grade separation structure are shown on Design Exhibit 10.

The relocation will involve raising the track profile approximately 15 feet and lowering Curtis Road approximately five feet in order to achieve the subway crossing. The vertical railroad relocation will be developed along a new horizontal track alignment which is offset 60 feet east of the existing track. The track relocation will commence just north of the existing at-grade crossing of Church Street in Savoy and end at the existing railroad bridge over Windsor Road in Champaign; a total distance of approximately 2.1 miles. A railroad bridge, 183 feet in length, will be required to span the new Curtis Road width. A preliminary bridge design (type-size-location study) has been accomplished and is shown on Design Exhibit 27.

Design criteria for the railroad relocation and the bridge structure has been fully coordinated with the CN/IC Railroad. Their review of the above referenced Design Exhibits has resulted in concurrence with these preliminary designs. Additionally, the IDOT Bridge Office has approved the preliminary bridge design (see Section VI).

The proposed designs include several requirements deemed necessary by the railroad.

- The offset from the existing track to the relocated track at Curtis Road must be 60 feet. This will match the offset of the previously constructed track relocation over Windsor Road, one mile to the north, and will thus eliminate an additional reverse curve needed to create a greater offset at Curtis Road.
- Although the CN/IC Railroad currently operates on only one track through this area, their existing railroad embankment width previously accommodated two tracks. In respect to the loss of embankment width for the relocated alignment, the railroad has two requirements. First, as shown in the typical section on Design Exhibit 24, the new railroad embankment north of Curtis Road shall be constructed wide enough to accommodate one mainline track and a future siding track. Second, as shown in the typical section on Design Exhibit 22, the new railroad embankment south of Curtis Road need only be constructed wide enough to accommodate a single mainline track. However, sufficient additional right-of-way must be purchased to allow the railroad to widen the embankment should they ever need to return to a dual track operation.
- Due to susceptibility of being impacted by oversized loads, the CN/IC Railroad requires that the beams used for the grade separation structure be standard sized rolled beams which are readily available if replacement is required. This precludes the use of longer-spanning fabricated plate girders and requires the use of a pier within the Curtis Roadway.

## **UTILITY IMPACTS AND RELOCATIONS**

As indicated in Section II, the entire length of the existing Curtis Road right-of-way corridor is heavily populated with major utility transmission facilities serving the urbanized area. The majority of these utility runs are contained within the existing Curtis Road right-of-way (some on easement within the existing right-of-way) with notable exception of Illinois Power's aerial electric transmission poles which are situated just outside the existing right-of-way limits.

Section VI contains a copy of a project coordination submittal sent to various utility companies who have facilities located within the project corridor. The purpose of this transmittal was to afford the utility owners the earliest opportunity to assess the impacts Curtis Road construction may have upon their facilities and to initiate their planning for future relocations.

Most of the existing utilities are currently situated within the existing right-of-way corridor of Curtis Road in close proximity to one another. It can be safely assumed that the impacts to their existing installations will be significant. Some installations are in conflict laterally with the proposed roadway widening or realignment. Some installations may require relocation due to excavations required for the new roadway profile, associated ditches and storm sewer runs. In some areas, required roadway embankment heights may result in an excessive overburden of these facilities or prevent access to future maintenance.

The determination and coordination of actual utility conflicts and relocations will be performed during Phase II final design. The number and sizes of the utilities involved with this project warrants the earliest resolution during Phase II of how and where various utilities would be relocated within or along the proposed right-of-way limits of Curtis Road. This will enable an assessment of the compatibility or need for revision to various roadway design features and right-of-way limits which may be necessary to accommodate these relocations. The influence of utility relocation requirements on the designs proposed by Phase I may be minor. However, an unknown potential to future project scheduling delay and increased implementation cost will remain if this issue is not fully investigated at the earliest time during final design.

The following questions need to be addressed and answered by the utility companies at the onset of final design.

- Do you have plans in the near future to upgrade the size or structure of your installation? Can this upgrade be performed in a manner that will situate your installation outside the zone of conflict with future Curtis Road construction?
- Can your installation remain at its present location and avoid conflict with Curtis Road construction? If so, what would be the impact to the constructed improvements of Curtis Road when the time comes to maintain or replace your facility?
- If you have to relocate your facility, will you relocate within or without the proposed right-of-way limits? If you relocate outside the proposed right-of-way limits, what impacts would be caused to adjacent sensitive properties? If you relocate within the proposed right-of-way limits is there sufficient room to do so and can you avoid relocating beneath the new pavement?
- Who must pay the relocation costs? Who must pay for the acquisition of any additional utility easement?
- How long will it take to construct your relocation? Can you perform the relocation during Curtis Road construction or, due to its magnitude, must it be performed prior to roadway construction? Can your relocation be phased in accordance with the construction phasing plan for Curtis Road?

Discussion of the above issues with the various utility owners has commenced and a preliminary determination of required utility relocations has been quantified. The Project Development Cost Estimate contained in this Section and Appendix A includes the latest determination of project eligible utility relocation costs.

#### **CONSTRUCTION PHASING/EARTHWORK MANAGEMENT/TRAFFIC MAINTENANCE**

An expanded Engineering Report regarding project construction phasing, earthwork management, and maintenance of traffic during construction is contained within Appendix A and is summarized as follows.

The first year funding is expected to be available for the construction of the Curtis Road improvement is fiscal year 2007. Limited available funds on all governmental levels may likely prohibit construction of the entire project length at that time. Construction of the project is expected to occur in prioritized segments. The segments and order of construction of the project were determined by representatives of the implementing agencies. The general construction phase order for the project is as follows.

- Phase I - Duncan Road (Sta. 31+00) to Wynstone Drive (Sta. 63+00) = 3,200'
- Phase II - Wynstone Drive (Sta. 63+00) to west of U.S. 45 (Sta. 143+60) = 8,060'
- Phase III - West of U.S. 45 (Sta. 143+60) to First Street (Sta. 199+80) = 5,620'

These construction phases were analyzed for development of an interim two-lane cross section (Interim-Build) since ultimate development of a four-lane cross section (Full-Build) will not be warranted until sometime in the future. Additionally, the implementing agencies wish to maximize the length of improved roadway given the foreseeable funding limitations.

It is anticipated that Curtis Road will first be improved as a two through lane facility between approximate Stations 31+00 and 143+60 (see Appendix A for two-lane typical sections). The previously improved section of Curtis Road from Station 143+60 to U.S. 45 will serve two lanes of traffic until four lanes are warranted. Once four lanes are required on the west leg of the Curtis/U.S. 45 intersection, the required northerly offset of this new intersection dictates construction of the railroad relocation and grade separation structure as well as the construction of the two-lane portion of Curtis Road easterly to First Street.

The consideration of earthwork management throughout the improvement also played an important role in construction phase selection since management of earthwork volumes can significantly reduce costs due to the limited availability of borrow sites within the area immediately adjacent to the project corridor.

The interim two-lane roadway will be built under road closures with through traffic using marked detour routes on the adjacent local road network. Widening of the interim cross section to four lanes in the future will be performed under standard maintenance of traffic procedures.

### **INTERSECTION DESIGN STUDIES**

Intersection Design Studies (IDS's) have been developed for the Curtis Road intersections with Duncan Road, Mattis Avenue, Prospect Avenue, U.S. 45 and First Street. IDS's have been developed for ultimate "Full-Build" four lane construction phase of Curtis Road (see Design Exhibits 28 through 36), as well as for the "Interim-Build" two-lane construction phase of Curtis Road (see Design Exhibits 37 through 42).

Interim construction of two through travel lanes will occur only at the Duncan Road, Mattis Avenue and Prospect Avenue intersections. Analysis has determined that traffic signal warrants are met at all three intersections using forecasted 2006 year opening traffic volumes. Inherent in this analysis is the assumption that the Curtis Road/Interstate 57 interchange is open at the time of interim construction. All three intersections will be built in their entirety during interim construction since to build less than "Full-Build" would translate to higher capital expenditures in the future due to major modifications in traffic signal equipment (e.g., relocation of mast arms and signal posts and complete removal and replacement of mast arms for adequate mounted length). The fully constructed intersections will be transitioned to the two lane "Interim-Build" Curtis roadway as shown on the interim intersection design studies contained in the Design Exhibits.

### **PHASED PROJECT DEVELOPMENT COST ESTIMATE**

The following Table 1 provides a breakdown of estimated project costs with respect to the three longitudinal phases of Curtis Road construction (see "Construction Phasing/Earthwork Management/Traffic Maintenance") as well as the intermediate intersection locations and north/south cross road improvements. Further demarcation is provided to show the roadway jurisdictional limits of the City of Champaign and Village of Savoy.

Project costs are estimated for the anticipated first year of construction in 2006. Costs are shown for the transverse construction phases of interim-build and full-build. The "total-build" column represents project costs if sufficient funding becomes available and the efficiency of constructing four through traffic lane lanes at once can be realized. The summation of the interim and full-build roadway phases demonstrates the additional costs associated with transverse phased construction in that these costs are approximately two percent higher than the total-build roadway cost. This difference is due primarily to the

construction and subsequent removal of interim project items such as temporary shoulder, interim access drives, seeding, etc.

Tables 2 and 3 provide a jurisdictional breakdown of project costs for the various construction phases.

TABLE 1  
CURTIS ROAD 2006  
CONSTRUCTION PHASING COSTS

		LOCATION	TOTAL-BUILD	INTERIM-BUILD	FULL-BUILD	INTERIM + FULL
CITY OF CHAMPAIGN	PHASE I	31+00 TO 34+00 (DUNCAN ROAD)	\$2,350,900	\$2,350,900	\$5,400	\$2,356,300
		34+00 TO 63+00 (DUNCAN TO WYNSTONE)	\$3,770,500	\$3,638,500	\$367,700	\$4,006,200
	PHASE II	63+00 TO 84+50 (WYNSTONE TO MATTIS)	\$2,124,000	\$1,887,600	\$328,600	\$2,216,200
		84+50 TO 87+00 (MATTIS AVENUE)	\$1,499,100	\$1,499,100	\$5,300	\$1,504,400
		87+00 TO 99+00 (MATTIS TO CITY/VILLAGE LIMIT)	\$1,877,300	\$1,734,000	\$164,700	\$1,898,700
		99+00 TO 137+50 (CITY/VILLAGE LIMIT TO PROSPECT)	\$3,767,400	\$3,220,700	\$619,300	\$3,840,000
VILLAGE OF SAVOY	PHASE III	137+50 TO 143+60 (PROSPECT TO WESLEY)	\$2,124,700	\$2,098,600	\$33,300	\$2,131,900
		143+60 TO 160+50 (WESLEY TO US 45)	\$2,000,600	\$0	\$2,001,800	\$2,001,800
		160+50 TO 162+00 (US ROUTE 45)	\$411,800	\$0	\$411,800	\$411,800
		162+00 TO 190+00 (US 45 TO FIRST)	\$3,072,200	\$0	\$3,072,200	\$3,072,200
		190+00 TO 193+00 (FIRST STREET)	\$1,364,000	\$0	\$1,364,000	\$1,364,000
	193+00 TO 199+80 (FIRST TO PROJECT LIMIT)	\$370,400	\$0	\$370,400	\$370,400	
		TOTAL ROADWAY	\$24,733,000	\$16,430,000	\$8,745,000	\$25,175,000
		TOTAL PHASE III CN/IC RR (CHURCH ST. TO WINDSOR RD.)	\$9,829,000	\$0	\$9,829,000	\$9,829,000
		TOTAL PROJECT COST *	\$34,562,000	\$16,430,000	\$18,574,000	\$35,004,000

\* COSTS INCLUDE CONSTRUCTION, R.O.W. ACQUISITION, ENGINEERING DESIGN, AND CONSTRUCTION OBSERVATION. (4-6-04)

TABLE 2  
CURTIS ROAD 2006  
CONSTRUCTION PHASE COST SUMMARY AND JURISDICTIONAL SPLIT  
(TOTAL-BUILD)

CONSTRUCTION PHASE	TOTAL 2006 COST	CITY OF CHAMPAIGN	VILLAGE OF SAVOY
PHASE I TOTAL-BUILD ROADWAY	\$6,121,400	\$6,121,400	\$0
PHASE II TOTAL-BUILD ROADWAY	\$11,392,500	\$5,500,400	\$5,892,100
PHASE III TOTAL-BUILD ROADWAY	\$7,219,000	\$0	\$7,219,000
PHASE III CN/IC RAILROAD	\$9,829,000	\$0	\$9,829,000
TOTAL PROJECT COST *	\$34,562,000	\$11,622,000	\$22,940,000

\* COSTS INCLUDE CONSTRUCTION, R.O.W. ACQUISITION, ENGINEERING DESIGN, AND CONSTRUCTION OBSERVATION. (4-6-04)

TABLE 3

CURTIS ROAD 2006

CONSTRUCTION PHASE COST SUMMARY AND JURISDICTIONAL SPLIT  
(INTERIM-BUILD AND FULL BUILD)

CONSTRUCTION PHASE	TOTAL 2006 COST	CITY OF CHAMPAIGN	VILLAGE OF SAVOY
PHASE I INTERIM-BUILD ROADWAY	\$5,989,400	\$5,989,400	\$0
PHASE II INTERIM-BUILD ROADWAY	\$10,440,000	\$5,120,700	\$5,319,300
PHASE III INTERIM-BUILD ROADWAY	\$0	\$0	\$0
SUBTOTAL -- INTERIM-BUILD	\$16,429,400	\$11,110,100	\$5,319,300
PHASE I FULL-BUILD ROADWAY	\$373,100	\$373,100	\$0
PHASE II FULL-BUILD ROADWAY	\$1,151,200	\$498,600	\$652,600
PHASE III FULL-BUILD ROADWAY	\$7,220,200	\$0	\$7,220,200
PHASE III CN/IC RAILROAD	\$9,829,000	\$0	\$9,829,000
SUBTOTAL -- FULL-BUILD	\$18,573,500	\$871,700	\$17,701,800
TOTAL PROJECT COST *	\$35,004,000	\$11,982,000	\$23,022,000

\* COSTS INCLUDE CONSTRUCTION, R.O.W. ACQUISITION, ENGINEERING DESIGN, AND CONSTRUCTION OBSERVATION. (4-6-04)

The Environmental Class of Action Determination Document and Record, including environmental compliance coordination and public involvement/coordination, is contained within Appendix B and is briefly summarized as follows.

## **ENVIRONMENTAL CONSEQUENCES**

In reference to the “Class of Action Determination Record” there are four adverse impacts resultant of the proposed improvements to Curtis Road.

### ***Relocations***

One residential displacement (R.E. Walker residence) will occur in the northwest quadrant of the Curtis/Prospect intersection. The provisions of the “Uniform Relocation Assistance and Real Property Acquisition Policies Act” and the IDOT Land Acquisition Procedures Manual will be followed. Comparable housing is currently available in the Champaign-Urbana area. Effort will be made to provide housing of last resort, if necessary, and housing resources are available to all relocatees without discrimination.

Six storage sheds located upon the Garth property will be displaced due to the railroad relocation near Station 12334 Rt. These sheds may be relocated or the property owner compensated for loss in accordance with the IDOT Land Acquisition Procedures Manual.

### ***Agricultural***

A total of about 39.4 acres of prime farmland will be converted to right-of-way or permanent easement for the proposed project. Although there is existing farmland within the project area, the project is within the one and one-half mile corporate planning boundaries of the City of Champaign and Village of Savoy. Therefore, no coordination with the U.S.N.R.C.S. or Illinois Department of Agriculture is required. Permanent drainage easements will necessarily be oriented about existing overland drainage swales. Required right-of-way and other permanent easements will be taken from the peripheral boundary(ies) of agricultural properties so that there are no diagonal property severances or uneconomical remnants created.

### ***Regulatory Floodway***

The location of the Phinney Branch Floodway within the urban area drains an upstream drainage area greater than one square mile. Therefore, construction within the regulated floodway will require an IDNR Office of Water Resources permit.

IDOT/BDE (5-30-02, Appendix B) has determined that: “Because of the construction activity in and around the stream, short-term sedimentation will occur. In accordance with

Chapter 59, Section 8, of the BDE Manual, an erosion and sediment control plan will be designed (in Phase II) incorporating measures to minimize sedimentation effects (and constructed in Phase III). With the implementation of the plan and the use of the Standard Specifications for erosion and sediment control, no long-term adverse impacts to the water quality and biological components of the stream will occur.”

**Wetlands**

Four small farmed wetland areas will be impacted by the project. These wetlands lie north and south and immediately adjacent to the existing Curtis Road alignment. Avoidance of these areas is not possible due to their immediate proximity to Curtis Road. A Wetland Impact Evaluation was submitted to IDOT/BDE and concurrence was received for development of on-site mitigation at a 1:1 ratio for 0.86 acre of impacted wetland as follows:

Wetland Site	Station Location	Type	FQI	Total Acres	Impact Acres
1	Sta. 133±, Rt.	PEMAf	1.0	0.34	0.18
2	Sta. 130±, Lt.	PEMAf	1.0	0.40	0.30
4	Sta. 125±, Rt.	PEMAf	1.0	0.44	0.05
6	Sta. 69±, Lt.	PEMAf	5.2	0.34	0.33
				Total	0.86

A Wetland Compensatory Mitigation Prospectus has been approved by IDOT/BDE. The wetland compensation site will be developed in combination with a required stormwater detention facility to be located about 500 feet south of the Curtis/Prospect intersection.

**ENVIRONMENTAL COMMITMENTS**

The following four commitments are made in respect to the impact/mitigation discussions contained in the ECAD Record.

Tree replacement will be implemented during project construction in accordance with IDOT’s LEN-14 Tree Replacement Policy. See resource/issue item VII.

Temporary fencing marked for “No Intrusion” of workers or equipment will be installed during construction of the railroad relocation to protect sensitive areas identified in the IDOT/BDE 5-30-02 Biological Resources Review (see Appendix B). See resource/issue item VII.

An erosion and sediment control plan will be designed (in Phase II) and implemented during construction to minimize erosion and sedimentation effects. See resource/issue items VIII.1 and IX.2.

A wetland compensation area will be constructed and maintained in accordance with a Wetland Compensatory Mitigation Plan” approved by the IDOT/BDE. See resource/issue item X.

The following index and pages document the coordination which has transpired with various regulatory, interested, or otherwise involved agencies associated with the Curtis Road improvement project.

Page F-1: 5-22-81 FHWA approval of access points for a new interchange on I-57 with Curtis Road.

Page F-2: 7-27-89 CUUATS resolution reserving right-of-way along Curtis Road.

Pages F-3, F-4: 3-5-97 CUUATS resolution supporting the results of the Curtis Road Scoping Study and reserving right-of-way along Curtis Road.

Page F-5: 3-5-98 University of Illinois correspondence opposing the widening of Curtis Road to more than two lanes east of First Street.

Page F-6: 10-1-98 Example of correspondence sent to each utility owner within the project study corridor requesting information on their facilities.

Pages F-7 through F-12: Meeting minutes and handout for an 11-10-98 coordination meeting of the CUUATS Curtis Road Technical Subcommittee to discuss roadway typical sections.

Pages F-13 through F-21: Advance informational submittal to IDOT and FHWA representatives pursuant to a 12-1-98 bi-monthly coordination meeting.

Pages F-22 through F-24: Minutes of a 12-1-98 bi-monthly coordination meeting.

Pages F-25 through F-27: Minutes of a 5-19-99 coordination meeting of the CUUATS Curtis Road Technical Subcommittee to discuss general project issues.

Pages F-28 through F-30: Minutes of a 9-8-99 coordination meeting of the CUUATS Curtis Road Technical Subcommittee to discuss general project issues.

Page F-31: 9-13-99 IDOT correspondence in review of Preliminary Engineering Study results presented at the 9-8-99 meeting.

Pages F-32 through F-35: 1-4-00 Example of a coordination submittal sent to each utility owner within the project study corridor. A full response to this submittal has not yet been received.

Pages F-36 through F-50: 1-4-00 Design criteria and design study submittal to the CN/IC Railroad.

Pages F-51 through F-54: 1-31-00 NIWC response to 1-4-00 utility coordination submittal.

Pages F-55, F-56: 2-4-00 UCSD response to 1-4-00 utility coordination submittal.

Pages F-57 through F-59: Minutes of a 4-24-00 coordination meeting of the CUUATS Curtis Road Technical Subcommittee to review the Preliminary Engineering Study.

F-60, F-61: Minutes of a 5-12-00 IDOT-BDE / FHWA project meeting.

F-62, F-63: 5-25-00 CN/IC Railroad response to 1-4-00 coordination submittal.

F-64, F-65: 5-3-00 file memo regarding CN/IC Railroad coordination.

Page F-66: 5-30-01 file memo regarding UCSD coordination.

Pages F-67 through F-69: Minutes of a 9-26-01 coordination meeting of the CUUATS Curtis Road Technical Subcommittee to discuss project construction phasing.

Pages F-70, F-71: 11-19-01 Design submittal to the CN/IC Railroad.

Pages F-72: 12-19-01 file memo regarding CN/IC Railroad coordination.

Pages F-73, F-74: 5-28-04 Illinois State Clearinghouse project sign-off.

Pages F-75 through F-78: 1-25-02 Coordination submittal to Illinois Division of Aeronautics.

Pages F-79, F-80: 1-29-02 Illinois Division of Aeronautics response to 1-25-02 coordination submittal.

Page F-81: 3-26-02 FHWA conceptual approval of I-57 / Curtis Road interchange.

Page F-82: 4-25-02 file memo regarding UCSD coordination.

Page F-83: 7-30-02 Review submittal of railroad bridge TS&L to CN/IC Railroad and IDOT Bridge Office.

Page F-84: 9-10-02 IDOT Bridge Office approval of railroad bridge preliminary design

Page F-85: 10-30-02 IDOT District 5 acceptance of project Intersection Design Studies.

Pages F-86, F-87: 11-1-02 CN/IC Railroad review response of 7-30-02 submittal.

Page F-88: 11-14-02 file memo regarding CN/IC Railroad coordination.

Pages F-89 through F-95: Minutes of a 11-18-02 coordination meeting of the CUUATS Curtis Road Technical Subcommittee to discuss overall project status / issues.

Pages F-96, F-97: 12-3-02 response to CN/IC Railroad's 11-2-02 review comments.

Page F-98: 12-9-02 File memo regarding CN/IC Railroad coordination.

Page F-99: 12-9-02 CN/IC Railroad response to 12-3-02 transmittal.

Page F-100: 1-10-03 file memo regarding IDOT District 5 review of interim-build Intersection Design Studies.

Pages F-101 through F-112: Minutes of 3-17-03 bi-monthly coordination meeting.

Pages F-113 through F-115: File memo regarding 9-4-03 meeting of the CUUATS Curtis Road Technical Subcommittee to discuss IDOT Project Development Report Review Comments.

Pages F-116 through F-121: Minutes of a 10-22-03 meeting of the CUUATS Curtis Road Technical Subcommittee to discuss IDOT Project Development Report Review Comments.

Pages F-122 through F-124: Minutes of a 11-05-03 meeting of the CUUATS Curtis Road Technical Subcommittee to discuss IDOT Project Development Report Review Comments.

DWM - FYI  
**Memorandum**



U.S. Department  
of Transportation  
Federal Highway  
Administration

Washington, D.C. 20590

Subject: Illinois - I-57, Proposed Interchange with  
Curtis Road - City of Champaign (Your Office  
Memorandum dated May 7 to Mr. R. D. Morgan)

Date: MAY 22 1981

From: Federal Highway Administrator

Reply to  
Attn. of: HNG-11

IDE-05 To: Mr. D. E. Trull  
Regional Federal Highway Administrator  
Homewood, Illinois

The request for additional access points on I-57 at Curtis Road is approved  
subject to compliance with applicable Federal requirements.

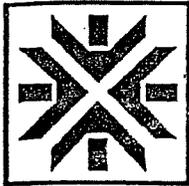
We regard this section of I-57 as a completed section of the Interstate  
Highway System and access is to serve proposed development in the area.  
Therefore, the work is eligible for primary funds or the class of  
Federal-aid funds applicable to the improvement of Curtis Road, but not  
for Interstate funds.

R. A. Barnhart

Federal Highway Administration  
HNG-11:LWPettigrew:ch:60334:5-19-81  
RETYPE:5/20/81

- cc:
- HOA-1
- Mr. Lamm 4218
- Mr. Morgan 3212
- Mr. Phillips 3212
- Mr. Geiser 3206
- Mr. Silence 3206
- FHWA (2) 4211
- Reader file 3206
- File 3206

Post-it <sup>®</sup> Fax Note	7671	Date	# of pages
To	DAVE BAYLOR	From	J.P. VARMA
Co./Dept.	IDST B-5	Co	FHWA
Phone #		Phone #	217-492-4623
Fax #	217-465-5732	Fax #	217.492-4621



**CUUATS**

**Champaign-Urbana Urbanized Area  
Transportation Study**

1303 NORTH CUNNINGHAM AVE.

P.O. BOX 339

URBANA, IL 61801-0339

(217) 328-3313

**RESOLUTION AND STRIP MAP INDICATING RESERVATION  
OF RIGHT-OF-WAY ON CURTIS ROAD**

WHEREAS, all participating agencies of CUUATS agree that Curtis Road is an important major arterial route for east-west traffic movements; and

WHEREAS, the Curtis Road corridor is now under development and Curtis Road roadway will require improvement in the future; and

WHEREAS, it is necessary for the proper development of Curtis Road that sufficient right-of-way be reserved; and

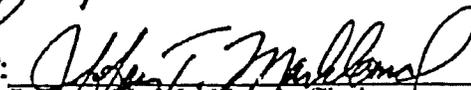
WHEREAS, the local jurisdictions which manage land use and traffic access for certain segments of Curtis Road require specific right-of-way information to guide the planning and development process.

NOW, THEREFORE, BE IT HEREBY RESOLVED, that rights-of-way for Curtis Road and specific intersections be reserved as shown on the accompanying Curtis Road Right-of-Way Reservation Map dated April 1989, and that provisions be made by each respective governmental agency to reserve the appropriate right-of-way and to control the access.

1. Rights-of-way on north and south approaches to Curtis Road intersections shown on the aforementioned strip map will be reserved as shown and future access points shall be limited to minimize traffic conflicts.
2. An approved interchange at Interstate 57 and Curtis Road should be provided.
3. The Curtis Road right-of-way shall be reserved by comprehensive plans, subdivision regulations, zoning ordinances, and other appropriate means as approved by the respective governing agencies.
4. Each implementing CUUATS member agency is urged to adopt and implement this resolution through their governing bodies to assure appropriate planning for the use of Federal-Aid Urban Funds for the Curtis Road improvement.

Passed and Approved this 27<sup>th</sup> Day of July 1989.

ATTEST:

  
Jeffrey T. Markland, Chairman  
Champaign-Urbana Urbanized Area  
Transportation Study Policy Committee

F-2



**CUUATS**

**Champaign-Urbana Urbanized Area  
Transportation Study**

1776 E. WASHINGTON STREET

P.O. BOX 339

URBANA, IL 61801-0339

(217) 328-3313

**RESOLUTION INDICATING SUPPORT FOR  
THE FINAL CURTIS ROAD/INTERSTATE 57 SCOPING STUDY  
AND  
PRESERVATION OF RIGHT-OF-WAY ON CURTIS ROAD**

**WHEREAS**, all participating agencies of CUUATS agree that Curtis Road from Staley Road in Champaign to Illinois Route 130 in Urbana is an important future major arterial route for east-west traffic movements; and

**WHEREAS**, the Curtis Road corridor is now under development and Curtis Road roadway will require improvement in the future; and

**WHEREAS**, all participating agencies agree that an Interchange with Interstate 57 and Curtis Road is necessary; and

**WHEREAS**, all participating agencies concur with the recommendations set forth in the *Final Curtis Road/Interstate 57 Scoping Study, March 1997*, and realize it is necessary that sufficient right-of-way be reserved for the proper development of Curtis Road; and

**WHEREAS**, the local jurisdictions which manage land use and traffic access for certain segments of Curtis Road require specific right-of-way information to guide the planning and development process for establishing setback of future right-of-way purchase.

**NOW, THEREFORE, BE IT HEREBY RESOLVED**, that rights-of-way for Curtis Road and specific intersections be reserved as shown on Figures 8A-8H of the *Final Curtis Road/Interstate 57 Scoping Study, March 1997*, and that provisions be made by each respective governmental agency to reserve the appropriate right-of-way and to control access as shown on Figures 8A-8H of the Final Scoping Study Report.

1. Rights-of-way and future access points on north and south approaches to Curtis Road intersections shown on Figures 8A-8H of the *Final Curtis Road/Interstate 57 Scoping Study Report* will be reserved as shown and future access points shall be limited to minimize traffic conflicts.
2. An approved interchange at Interstate 57 and Curtis Road should be provided.

3. The Curtis Road corridor preservation shall be reserved by comprehensive plans, subdivision regulations, zoning ordinances, and other appropriate means as approved by the respective governing agencies.
4. Each implementing CUUATS member agency is urged to adopt and implement this resolution through their governing bodies to assure appropriate planning for the use of Surface Transportation Program Urban (LOCAL) Funds for the proposed Curtis Road improvements.
5. CUUATS member agencies are urged to adopt an intergovernmental agreement to proceed with the Phase I Engineering Study as recommended in the Final Scoping Study Report.
6. The Curtis Road/Interstate 57 Subcommittee recommends that a request be made to the Illinois Department of Transportation to conduct a Phase I Engineering Study for the proposed Interchange with Interstate 57 and Curtis Road from Staley Road to Duncan Road in Champaign.

Passed and Approved this 5 Day of March 1997.

ATTEST:

Don Flessner  
DON Flessner  
Chairman  
CUUATS Policy Committee

UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN

Office of the Vice Chancellor for Administration and Human Resources  
Swanlund Administration Building  
601 East John Street  
Champaign, IL 61820

March 5, 1998

Mr. Francis J. Barker  
Chairman, Champaign County Board  
1776 East Washington Street  
Urbana, IL 61801

RE: Curtis Road

Dear Mr. Barker:

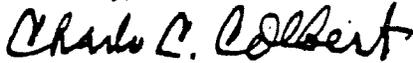
The County, Champaign, Savoy, and the University soon will join in an intergovernmental agreement for an engineering study for the development of Curtis Road from a proposed interchange on I-57 to First Street. And, CUUATS staff advise that there is no projected need for more than two lanes on Curtis Road for more than twenty years.

However, the University is opposed to widening of Curtis Road east of First Street. University master planning for the use of its agricultural lands south of Windsor Road makes it imperative that east west, cross traffic on Curtis Road not be encouraged. From the University's view, it would be better if there were no public traffic on Curtis Road east of First Street.

The University does strongly support creation of the anticipated I-57 interchange on Curtis Road and expansion to four lanes of Curtis Road from the new interchange to U.S. Route 45. These new facilities, when constructed, will work well with the five lanes now in place on Route 45. The planned interchange will provide an excellent gateway to the communities and the University.

This cooperation between the county, the cities, and the University will help promote community interaction and growth. Just as there is understanding and partnership about Curtis Road and interchange development west of First Street, the University needs similar understanding and partnership on maintaining two lanes on Curtis Road east of First Street.

Sincerely,



Charles C. Colbert  
Vice Chancellor

CCC:jro

c: Michael Aiken  
David Dressel  
My linda Granger  
Robert McCleary  
Dannel McCollum  
Terry Ruprecht  
Tod Satterthwaite  
James Trail



October 1, 1998

BRAD NICKEL  
383-7279

Mr. Mark Hiple ✓  
Area Engineer  
Illinois Power Company  
112 Anthony Drive  
Urbana, IL 61801

Re: Curtis Road  
Duncan Rd. to First St.

Gentlemen:

Our firm has been retained by the County of Champaign to provide preliminary design services for the above referenced improvement. See attached sketch for the anticipated limits of proposed work.

The project consists of the installation of new pavement, sidewalk, curb and gutter, and storm sewers.

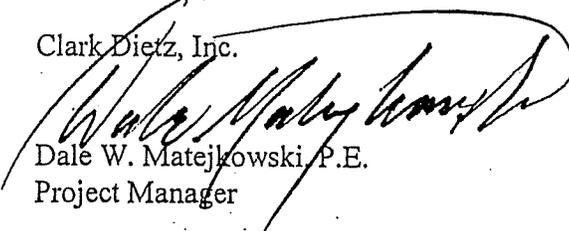
Of major concern during our design effort will be avoidance or minimization of underground utility conflicts with the proposed storm sewer. Accordingly, we wish to review your gas and electric utility maps to supplement our field data.

Please provide a copy of this data at your earliest convenience. As our designs progress we shall forward your office prints of our plans to elicit further coordination and resolution of any utility conflicts.

Should you have any question regarding this project, please do not hesitate to contact the undersigned.

Cordially,

Clark Dietz, Inc.



Dale W. Matejkowski, P.E.  
Project Manager

cc: Mr. Dennis Unzicker

DWM: dnl N:\GENERAL\DOLLIE\001-DI.WPD



MEETING MINUTES

PROJECT: Curtis Road Preliminary Engineering Study

SUBJECT: Preliminary Typical Roadway Sections

DATE/TIME/PLACE: November 10, 1998  
1:30 p.m.  
Clark Dietz Offices - Champaign

<u>ATTENDEES:</u>	<u>NAME</u>	<u>REPRESENTING</u>
	Mr. Dennis Unzicker	Champaign County
	Ms. Mylinda Granger	CUUATS
	Mr. Richard Marley	City of Champaign
	Mr. Frank Rentschler	Village of Savoy
	Mr. Jim Trail	University of Illinois
	Mr. Dale Matejkowski	Clark Dietz, Inc.
	Mr. Jerry Payonk	Clark Dietz, Inc.

If anyone has any additions or modification to these minutes, please contact CDI.

The purpose of the meeting was to discuss preliminary typical sections for the Curtis Road corridor. Other project elements were also discussed. The attached document summarizes CDI's research concerning typical section and a synopsis of preliminary typical sections. In addition to the information contained within this document, the following issues were discussed:

- Originally, a FHWA Bimonthly Coordination Meeting for this project had been scheduled for November 17 at the IDOT District 5 office in Paris, Illinois. This meeting has been rescheduled for 10:00 a.m. on December 1. Dennis Unzicker requested that the meeting time be scheduled for the afternoon. CDI will contact IDOT and attempt to change the time of this meeting.
- Mylinda Granger stated that a county access plan is in the works and is currently in the review draft stage. She will forward a copy of this document to CDI.
- Jim Trail commented that the University of Illinois does not support a 5-lane typical section east of U.S. 45. The University prefers a 3-lane section. My linda will forward to CDI a letter from the University stating their preference for the 3-lane section. CDI will study the development of a 3-lane section in this area. However, the railroad grade separation structure and adjacent U.S. 45 intersection geometrics should be studied for the 5-lane condition.

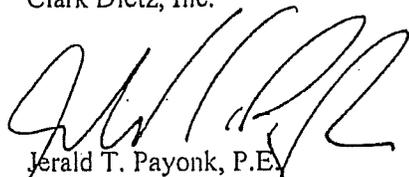
Meeting Minutes  
November 10, 1998  
Page 2

- Curtis Road will have a bikepath along the entire alignment. The bikepath will be in concurrence with Champaign and Urbana's Greenway Plan. Myllinda will forward a copy of this plan to CDI.
- Sidewalks will also be provided. Where adjacent land is already developed at time of construction, sidewalks will be included in the project construction. Where adjacent land is not developed, construction will include a pregrade where sidewalk will eventually be constructed. The developer of the property will be responsible for constructing the sidewalk when the respective property is developed.
- Rick Marley will forward to CDI a copy of the City Ordinance concerning dedication of agricultural land. Rick will also forward a City resolution regarding utilities on R.O.W.
- There is currently no plan to extend Prospect Avenue farther south into Savoy beyond its current termination at Curtis Road.
- Dennis and Myllinda will contact Lynn Forbes at IDOT - District 5 to obtain traffic forecasts for the entire Curtis Road corridor. CDI would like to have forecasts available by January 15, 1999.
- With the exception of the revision for Mr. Trail's comment, it was agreed that the typical sections as discussed would be presented for review at the December FHWA Bimonthly coordination meeting.

With no additional discussion, the meeting was adjourned at approximately 3:15 p.m.

Respectfully Submitted,

Clark Dietz, Inc.



Jerald T. Payonk, P.E.  
Project Engineer

H:\WFILES\CURTIS\11098MM.WPD

Attch.

F-8

**Should a rural or urban typical section be used on Curtis Road between Duncan Road and First Street?**

Before determining the type of section, an investigation must be conducted identifying the parameters which define the rural and urban area. The three sources used throughout CDI's design criteria analysis are the IDOT Bureau of Local Roads and Streets' *Federal Aid Procedures for Local Highway Improvements* (FAPLHI), the IDOT Bureau of Locations and Environment's *Policies and Procedures Manual* (BLE), and the American Association of State Highway and Transportation Officials' *Policy on Geometric Design of Highways and Streets* (AASHTO or the Green Book).

FAPLHI - The FAPLHI does address design criteria for the two sections (rural and urban), but it doesn't identify policy or procedure for determining the use of either section. The manual suggests consulting the BLE or AASHTO.

BLE - The BLE identifies the general character of the two sections but does not identify parameters to determine appropriate use for either section. According to the BLE, rural highways are typified by high speed, low density operations with shoulders and open drainage channels. Urban sections are typified by low speed, high density operations with curb and gutter and sub-surface drainage.

AASHTO- The Green Book presents the clearest definition establishing the difference between urban and rural areas. An urban area is defined as an area within boundaries having a population of 5,000 or more. Rural areas are defined as areas outside the boundaries of urban areas. The Green Book further defines the urban arterial system as a system which carries trips between central business districts and outlying areas, possibly carrying bus routes and providing intracommunity continuity. The rural arterial system is defined as providing for movement suitable for substantial statewide or interstate travel capable of attracting travel over long distances.

With the definitions identified above CDI believes the character of the Curtis Road corridor, both now and in the future, more aptly fits the definition of the urban area. We base this on the AASHTO criterion of population, on AASHTO's definition of the character of the urban arterial, and on the BLE differentiation of the two sections with respect to facility travel speed and the need for access to adjacent properties.

In justification of this classification, we can contrast the urban section with components of the rural section. The rural section is typified by high speed (>45 mph), long distance travel requiring a median width of 50 feet. None of these characteristics are suitable for the development of Curtis Road.

What options are available for urban typical section development?

Median Treatment

One of the more important elements of typical section design is the median configuration. The median enhances operational safety of the arterial, it defines the level of access control, and it provides a sheltered space for left-turning vehicles. The section of median width on a multi-lane urban arterial is a function of numerous considerations which are identified below:

URBAN MEDIAN OPTIONS

	FAPLHI	BLE	AASHTO	Conclusion
12' Median	Not Addressed.	12' flush appropriate in CBD. 12'-14' 2WLT desirable with 14' recommended.	12' is a minimum.	12' would be an absolute minimum.
14' Median	14'-18' recommended for 2WLT's.	14' recommended for 2WLT's - NOT recommended for raised medians.	12' is a minimum, 14' is acceptable.	14' acceptable if raised medians are not proposed.
16' Median	14'-18' recommended for 2WLT's.	16' recommended with M2 traversable curb for 2WLT. 16' acceptable for raised medians.	12' is a minimum, 16' is acceptable.	16' acceptable with raised medians.
18' Median	14'-18' recommended for 2WLT's.	18' recommended with raised curb median particularly if most intersections will be signalized in future.	18' median desirable to provide for 12' median lane and 6' medial separator.	18' recommended with raised medians.
>18' Median	20'-40' recommended if independent profile is required or median landscaping desired.	22' acceptable with raised curbs and should be first design option to provide for smaller vehicle perpendicular storage. 44'-52' recommended for open ditch median.	30'-50' should be considered where at-grade intersections are proposed to provide independent profile.	Not an issue if land acquisition costs are a concern and independent profile is not necessary.

On the subject of raised curb medians, the BLE defines a raised curb as any curb with a height greater than 2". Furthermore, the BLE states the following: "Generally, curb and gutter will be used on the edges of the outer lane due to R.O.W. restrictions and to aid in keeping motorist speeds at 70 km/h (45 mph) or lower. The more restricted cross-section of outside curb and

gutter tends to provide the motorist with a more restrictive feeling and hence less desire to travel at a higher speed."

Considering this, if a raised curb median is proposed, then curb and gutter adjacent to the outer edge of pavement may be utilized in an effort to slow traffic; however, we find no requirement for this. Indeed, there is no requirement for the use of curb and gutter at all within an urban roadway corridor.

Considering the information above, a 16' median width appears to be acceptable for both flush 2WLT's and raised median configurations. An 18' median is recommended with raised curbs and if most intersections are to be signalized. At this time, only major intersections at one-mile spacing are anticipated to be signalized.

#### Edge-of-Pavement Treatment

The edge-of-pavement (EOP) treatment for Curtis Road may consist of three configurations:

Curb & Gutter - As identified above, curb & gutter is generally used when R.O.W. is restricted and when there is a desire to keep vehicle speeds low. Curb & gutter is the single most identifiable component of the urban typical section. It requires a subsurface drainage system. In fill sections, when proposed profile is higher than existing contours of abutting land, an open drainage system is usually required in addition to the subsurface drainage system.

Shoulder - AASHTO states that shoulders are desirable on any highway, and urban arterials are no exception. An EOP treatment with shoulders and open ditches is the cross-sectional design requiring the most R.O.W.

Shoulder with C & G - AASHTO recommends a minimum 6' shoulder to accommodate a disabled vehicle. As described above, when this EOP treatment is utilized in fill sections, an open drainage system would accompany the subsurface drainage. This typical section would represent the widest and most expensive section.

#### Control of Access

The selection of median and EOP treatments for an urban roadway should not be limited to consideration of operation speeds and drainage requirements alone. The provision of control of access must also be considered.

There are two components to access control, an engineered component and a legal component.

Several cross-section elements discussed above can be proposed as a means of providing access control. A raised-curb median provides a physical barrier preventing vehicles from crossing the

centerline of a proposed roadway alignment. An open ditch presents a cross-section element which is not easily traversable. Neither of these treatments alone can control access; a raised-curb median can be removed and an open ditch can be filled in with a culvert to maintain drainage. The second component of access control is the development of an access control program by the local agencies which provides the local government the power to regulate access to public highways within their jurisdiction.

### Anticipated Typical Sections

CDI anticipates a combination of median and EOP treatments will be used throughout the Curtis Road corridor. Sidewalks and bikeways shall be included in each typical section. We break the corridor between Duncan Road and First Street into six sections:

**Duncan Road to Church of God** - Five-lane section with a 16' 2WLT in the center, curb & gutter abutting the edge of pavement. Most likely will use an 18' median (6' raised, 12' LTL) at the Duncan Road intersection to match State's roadway section to the east.

**Church of God to east end of Rolling Acres Subdivision** - Five-lane section with a 16' 2WLT in the center, curb & gutter abutting the south edge of pavement, and 10' shoulder with ditch on the north side.

**East end of Rolling Acres Subdivision to Prospect Avenue** - Five-lane section with a 18' raised median, 10' shoulders and ditches on both sides. Raised median shall be turfed or landscaped.

**Prospect Avenue to U.S. 45** - Five-lane section with a 16' 2WLT in the center, curb & gutter abutting the edge of pavement.

**U.S. 45 to east end of Winfield Village Apartments** - Five-lane section with 16' 2WLT in the center, 8' shoulder with curb & gutter abutting the south edge of pavement, and 10' shoulder with ditch on the north side.

**Winfield Village Apartments to First Street** - Five lane section with an 18' raised median, 10' shoulders and ditches on both sides of alignment.

## Bi-Monthly Coordination Meeting December 1, 1998

Project: Curtis Road Preliminary Engineering Study  
Duncan Road to First Street  
Section: 98-00374-00-ES  
Champaign County

Implementing Agency: Champaign-Urbana Urbanized Area Transportation Study

Dates Previously Discussed: Introductory Presentation

### Curtis Road Planning Background

The planning for a new interchange with I-57 and the development of Curtis Road as a principal east-west cross-town arterial street began in 1973 when CUUATS designated the extension of Curtis Road as a future interchange location on I-57. This designation was supported in 1977 by the "Interstate Route 57 Interchange Study". Since that time, the results of a continuing, comprehensive and cooperative transportation planning process administered by CUUATS have continued to identify the improvement of Curtis Road as a required component of the area's arterial street network.

As development of the urbanized area continued to push southward, the need to reserve and protect a Curtis Road right-of-way corridor for future roadway improvements became acutely apparent. In 1989, the CUUATS Policy Committee passed a resolution reserving 100 feet of right-of-way along Curtis Road from Staley Road in Champaign to Illinois Route 130 in Urbana. More recently, the 1995 update of the urbanized area's Long Range Transportation Plan recognized the need for improvement to Curtis Road and supported this improvement in conjunction with a proposed interchange at Curtis Road and I-57.

Historically, the Comprehensive Plans of CUUATS have reflected a need for enhanced access to the southern part of the urbanized area. The improvement of Curtis Road and the development of its interchange with I-57 would facilitate the following transportation and development needs:

- Provide an alternate route along I-57 between the southwestern and northwestern urbanized areas and by doing so alleviate traffic congestion and impacts along the north-south arterial street system; and,
- Provide the necessary infrastructure improvements along Curtis Road to enhance and support growth opportunities in the City of Champaign and Village of Savoy.

In April 1995, the Curtis Road Subcommittee was appointed by the Technical Committee of CUUATS to conduct a Scoping Study of the Curtis Road corridor between Staley Road and Illinois Route 130. The objective of the Scoping Study was to identify the feasibility of improving Curtis Road by examining the physical, environmental, and developmental aspects of the roadway corridor. The goal of the study was to establish preliminary information and design criteria needed to proceed with more detailed engineering investigations, design, and assessments of project impacts.

Specifically, the Scoping Study addressed the following issues of the Curtis Road corridor:

- existing and anticipated land use;
- ranges of existing and anticipated arterial street traffic volumes;
- alternative roadway cross sections;
- alternative roadway alignments between Duncan Road and Mattis Ave.;
- right-of-way requirements;
- access control requirements;
- potential utility impacts;
- required structures;
- costs for right-of-way acquisition, utility relocation, construction, and engineering services; and,
- potential environmental concerns.

The Scoping Study was developed over a period of time involving eleven Subcommittee meetings which were actively attended by the public between July 1995 and February 1997. An informational public hearing was also held in February 1997 and the final Scoping Study Report was issued by CUUATS in March 1997.

### **Results of Curtis Road Scoping Study**

The Curtis Road Subcommittee's recommendations to the Policy and Technical Committees of CUUATS have lead CUUATS to resolve that:

- rights-of-way and future access along Curtis Road as depicted within the "Final Curtis Road/I-57 Scoping Study Report" be reserved as shown and future access limited to minimize traffic conflicts;
- an approved interchange at I-57 and Curtis Road should be provided; and,
- a request be made to IDOT to conduct a Phase I Engineering Study for the proposed interchange with I-57 and Curtis Road from Staley Road to Duncan Road.

Inherent in the request to IDOT is that CUUATS will concurrently undertake a Phase I Engineering Study for the designated priority section of Curtis Road between Duncan Road and First Street.

Other recommendations and data provided by the Scoping Study consist of the following.

1. The preferred ultimate long range typical roadway cross section for Curtis Road consists of four 12-foot lanes with adjacent 10-foot outside shoulders separated by a 16-foot median. The median width will allow for the development of left turn lanes at intersections or the inclusion of a fifth two-way left turn lane along areas of existing development which require frequent access.
2. Initial development of Curtis Road is most likely envisioned as follows.
  - Staley to U.S. 45/Dunlap: Four thru-lanes with a median or turn lanes as required.
  - U.S. 45/Dunlap to First: Two thru-lanes with a center two-way left turn lane.
  - First to IL. Rt. 130: Two lanes.
 The latter two roadway sections would be widened to provide for four thru-lanes when warranted by future traffic volumes.
3. Roadside ditches are preferred for the conveyance of storm water except where curbs and gutters are necessary due to the right-of-way, utility, or development constraints.
4. The facility would be posted for a 45 mph speed limit and most likely be designed for 55 mph.
5. Existing access as currently provided to Curtis Road shall be maintained unless an alternate access route can be provided.

6. Alternative #2 as depicted in the Scoping Study Report is recommended for the alignment of Curtis Road between Duncan Road and Mattis Avenue.
7. Major utility locations were identified.
8. Potential environmental "hot spots" were identified.
9. A recommendation for an at-grade crossing was made but the desire for a grade separation structure at this location was also noted. Additional study is required to address this issue.
10. A total cost for the ultimate long range improvements to Curtis Road was estimated at \$34 million between Staley Road and First Street and \$23 million between First Street and Illinois Route 130.
11. Significant public involvement and input transpired during the scoping process.

**SCOPE AND INTENT OF WORK**  
**Curtis Road Preliminary Engineering Study**  
**Duncan Road to First Street**

The completion of the Curtis Road Scoping Study would normally allow initiation of full Phase I Location/Design Studies and Environmental Impact Assessments for the entire project corridor between Staley Road and Illinois Route 130. However, CUUATS has assessed their transportation improvement funding priorities and concluded that sufficient resources are not available to fund complete Phase I development of the entire project corridor at this time. In an effort to keep development of the Curtis Road project moving forward, CUUATS has taken the following actions.

- Requested and received agreement that IDOT will provide Phase I services for the project corridor between Staley and Duncan Roads including the new interchange with I-57.
- Prioritized the local agencies Phase I development of the project corridor between Duncan Road and First Street.
- Allocated \$180,000 to fund a preliminary engineering study of the section of corridor prioritized.

The level of funding allocated for the Preliminary Engineering Study, (PES), although substantial, is not sufficient to fully complete Phase I development for the 3.0 mile section of Curtis Road between Duncan Road and First Street. However, a considerable amount of work can be accomplished within this project budget.

The goal in development of the PES will be to build upon the data base and design considerations of the Scoping Study; and, to formulate design recommendations which can be directly used with little or no modification pursuant to obtaining Phase I IDOT design approval. This work will also serve to provide the information necessary to formulate the subsequent assessment of environmental impacts during Phase I pursuant to obtaining FHWA concurrence with these assessments. All preliminary engineering design studies will be performed with respect to the ultimate long-range cross sectional development of Curtis Road.

The PES will accomplish the following.

- Assemble/collate a comprehensive engineering data base and obtain aerial mapping which can be utilized for this study and subsequent work.
- Obtain input from, and coordinate with, affected, regulatory, or otherwise involved agencies.
- Develop forecasted traffic volumes.
- Finalize access control requirements.
- Finalize roadway typical cross sections.
- Develop roadway H/V alignments and right-of-way requirements and identify impacts to adjacent properties.
- Identify existing drainage patterns/problems and develop a conceptual drainage plan for the proposed improvements.
- Inventory existing utility systems and identify required or probable utility relocations.
- Assess the feasibility of a Curtis Road/ICRR grade separation and develop required roadway and railroad H/V alignments and identify required railroad bridge type.
- Develop intersection geometrics.
- Develop project cost estimates of construction, utility relocations, land acquisition and engineering.
- Formulate a Project Development Plan for subsequent engineering and construction sequencing.
- Continue the public involvement and education process.
- File the "Environmental Survey Request" to facilitate Phase I environmental investigations and assessments.
- Compile the Preliminary Engineering Study Report and Exhibits.

### **Today's Discussion**

Are there any questions from IDOT or FHWA regarding the:

- Planning background of Curtis Road;
- Results of CUUATS's Scoping Study;
- PES Scope of Work?

### ***Logical Termini***

The Curtis Road Scoping Study addressed some of the basic design and environmental issues for the Curtis Road corridor between Staley Road and Illinois Route 130. Obviously, it is the long term goal of CUUATS to improve this roadway corridor between these limits of the urbanized area.

In an attempt to manage the improvement planning for this eight-mile long corridor and in recognition of limited resources, CUUATS may consider sequencing its Phase I development of this corridor into two major sections: Staley Road to First Street; and, First Street to Illinois Route 130.

Section 5-220 of IDOT's Location and Environment Manual discusses the concept of "Logical Termini" for the limits of a Location Study. Moreover, this discussion includes the limits of assessment for the project's companion environmental document.

The termini of I-57 and U.S. 45 appear very logical in terms of traffic distribution and generation termini; and, the minor extensions west to Staley Road and east to First Street provide a logical connection of these local collector roadways.

However, since it is the stated intent to ultimately improve Curtis Road to the full eastern limit of the urbanized area, will IDOT or the FHWA decide that Illinois Route 130 represents a more logical eastern terminus? This would require that the Phase I Location/Design Study and Environment Document be comprehensively processed and approved for the entire eight mile corridor at one time.

While a decision on logical termini for this project is of little consequence for initiating preliminary engineering studies between Duncan Road and First Street at this time, the implementing agencies of CUUATS require guidance regarding the eventual sequential or comprehensive processing of formal Phase I documents for the entire corridor. Please advise.

### *Curtis Road Typical Sections*

The CUUATS Scoping Study has identified four required functions of the Curtis Roadway Typical section:

- provide access to currently developed abutting property;
- provide control of access in accordance with an adopted access control plan;
- accommodate storm drainage in the most cost effective manner;
- accommodate pedestrians and bicyclists throughout the corridor.

Adjacent existing abutting land uses are depicted in Exhibit 2. In accordance with AASHTO (Green Book page no. 9) the roadway corridor may be classified as "urban" with urban typical roadway section elements required to accommodate a posted speed limit of 70 KPH (45 MPH). All residential and commercial land uses exhibit numerous existing access points, most of which, must be accommodated by the proposed improvement. Future development of existing agricultural areas will be controlled by an adopted access control plan.

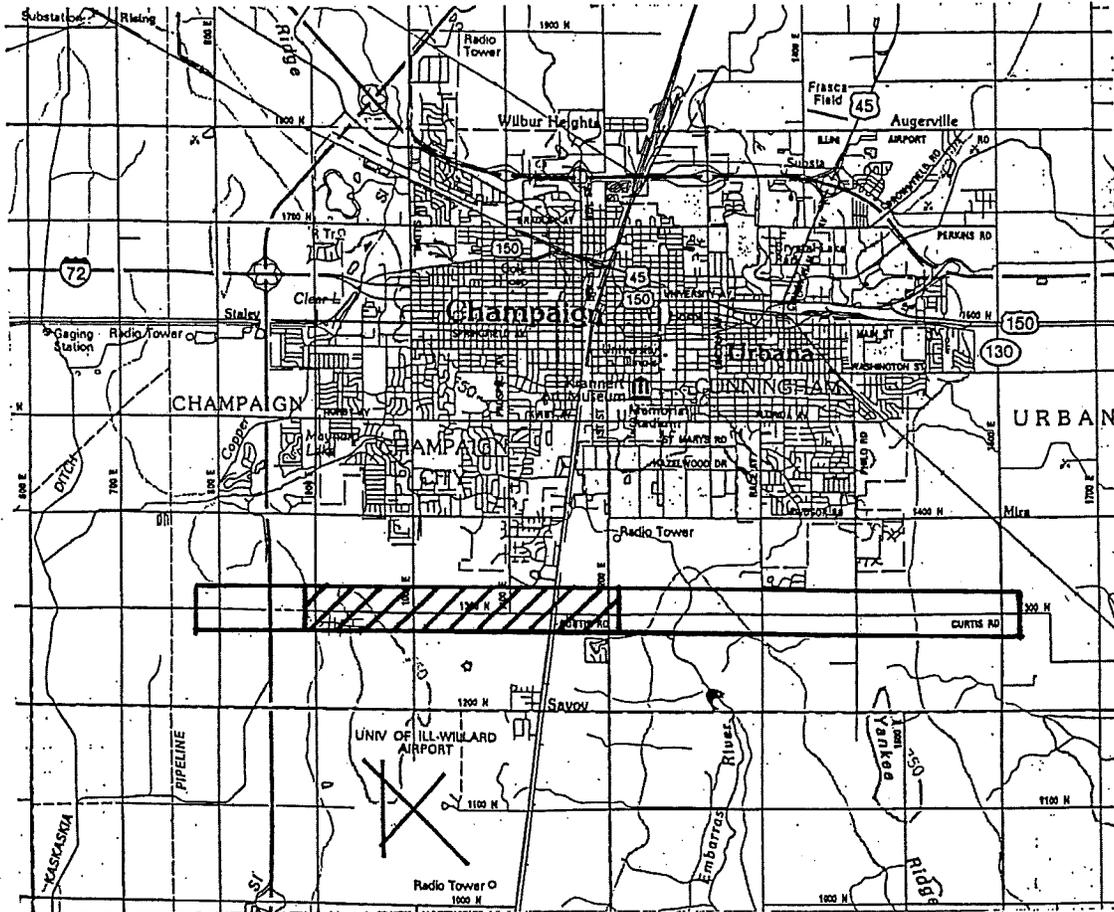
Exhibit 3 depicts the various typical sections proposed for development at various locations within the Duncan to First corridor.

CUUATS would appreciate any comments or suggestions regarding the use of these typical sections (or any component thereof) prior to the commencement of alignment studies. Please advise.

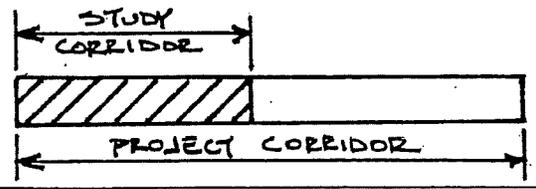
### **Attachments**

- Exhibit 1 – Project Corridor Map
- Exhibit 2 – Project Location Map
- Exhibits 3a/3b – Preliminary Proposed Typical Sections

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- STALEY
- 1-51
- DUNCAN
- MATTIS
- PROSPECT
- U.S. 45
- FIRST
- RICE
- PHILO
- IL. 130



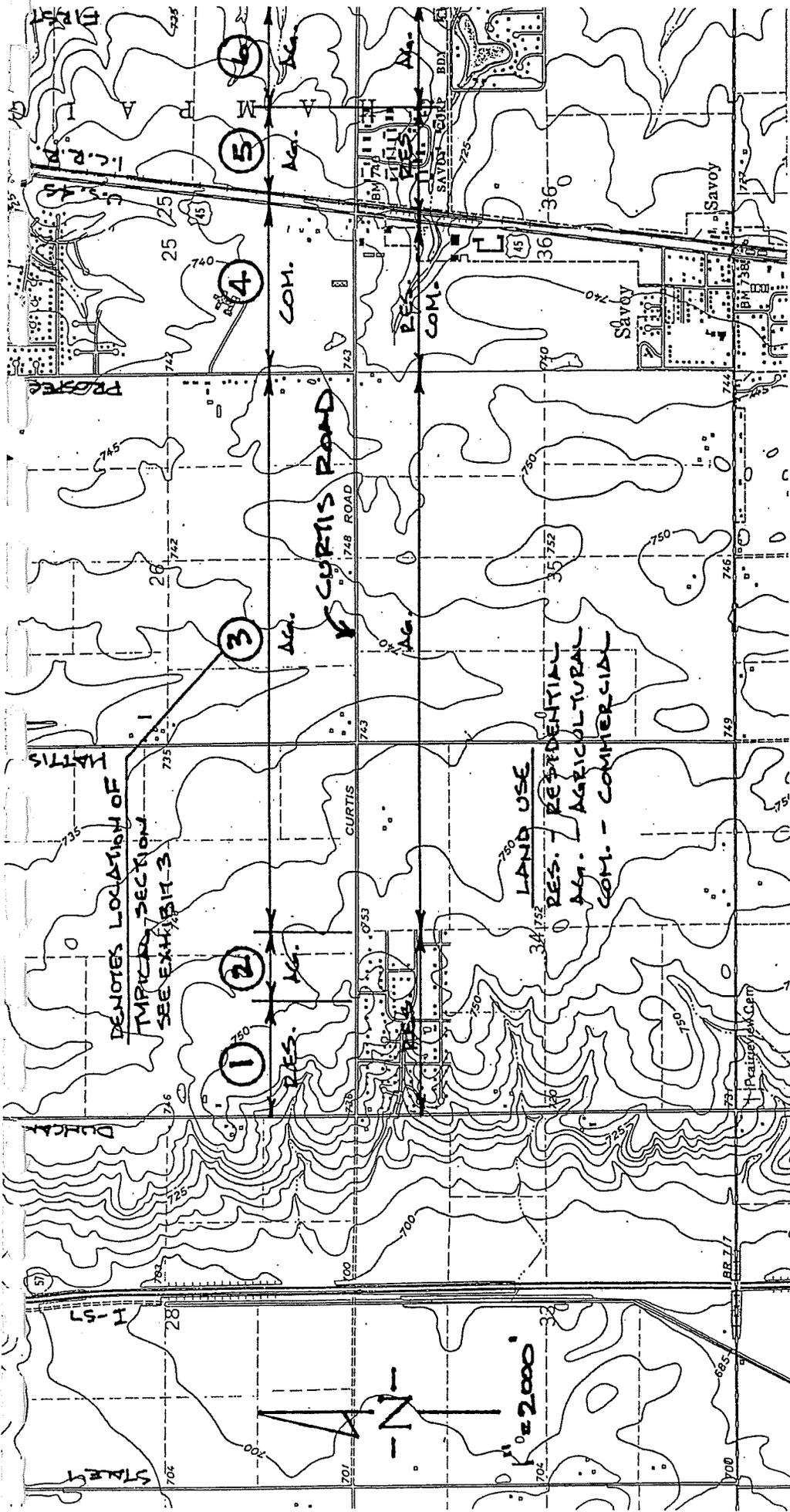
**Project Corridor Map**

**Curtis Road Preliminary Engineering Study  
Duncan Road to First Street**

Section: 98-00374-00-ES

Champaign County, Illinois

Exhibit 1



Project Location Map

# Curtis Road Preliminary Engineering Study

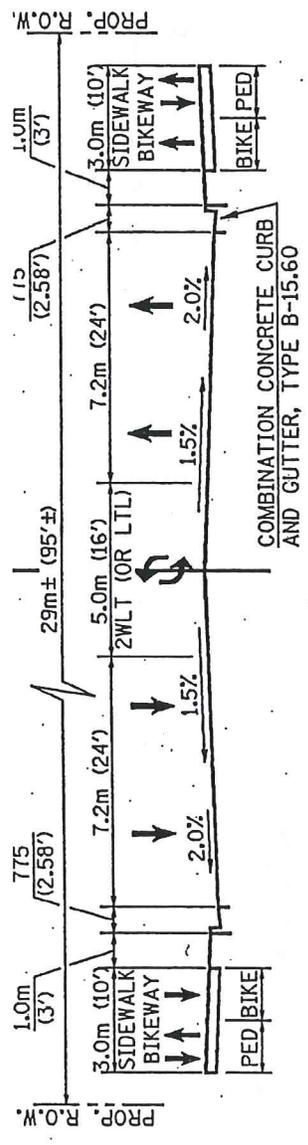
## Duncan Road to First Street

Section: 98-00374-00-ES

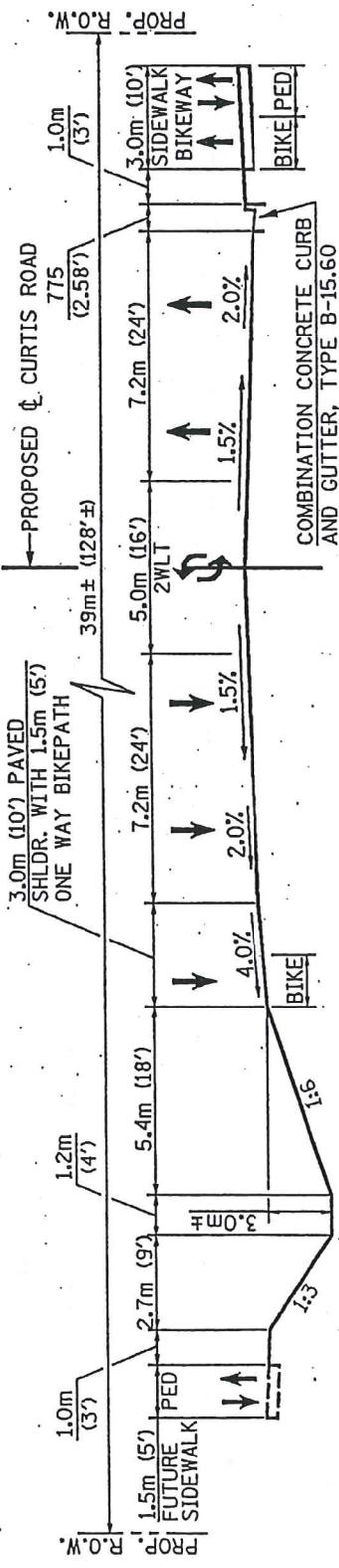
Champaign County, Illinois

Exhibit 2

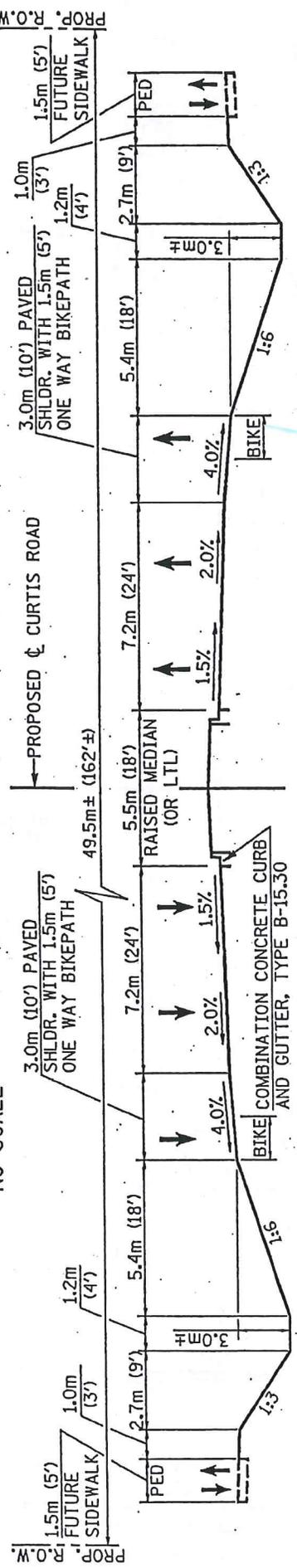
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① **PRELIMINARY PROPOSED TYPICAL SECTION - CURTIS ROAD**  
 DUNCAN ROAD TO CHURCH OF GOD (500m-1640')  
 NO SCALE

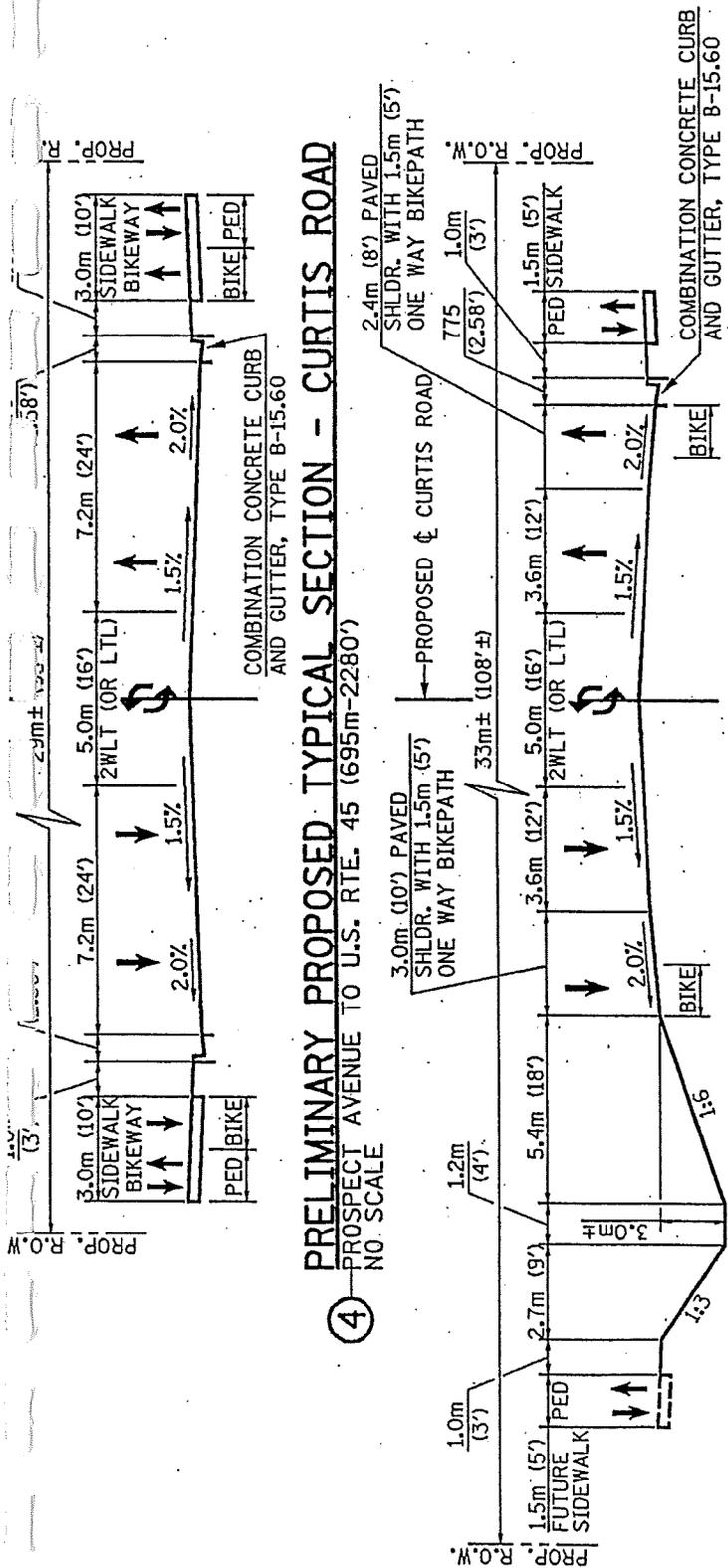


② **PRELIMINARY PROPOSED TYPICAL SECTION - CURTIS ROAD**  
 CHURCH OF GOD TO EAST END OF ROLLING ACRES SUBDIVISION (310m-1015')  
 NO SCALE



③ **PRELIMINARY PROPOSED TYPICAL SECTION - CURTIS ROAD**  
 EAST END OF ROLLING ACRES SUBDIVISION TO PROSPECT AVENUE (2410m-7905')  
 NO SCALE

PRELIMINARY PROPOSED TYPICAL SECTIONS  
**CURTIS ROAD PRELIMINARY ENGINEERING STUDY**  
 DUNCAN ROAD TO FIRST STREET  
 SECTION : 98-00374-00-ES  
 CHAMPAIGN COUNTY, ILLINOIS

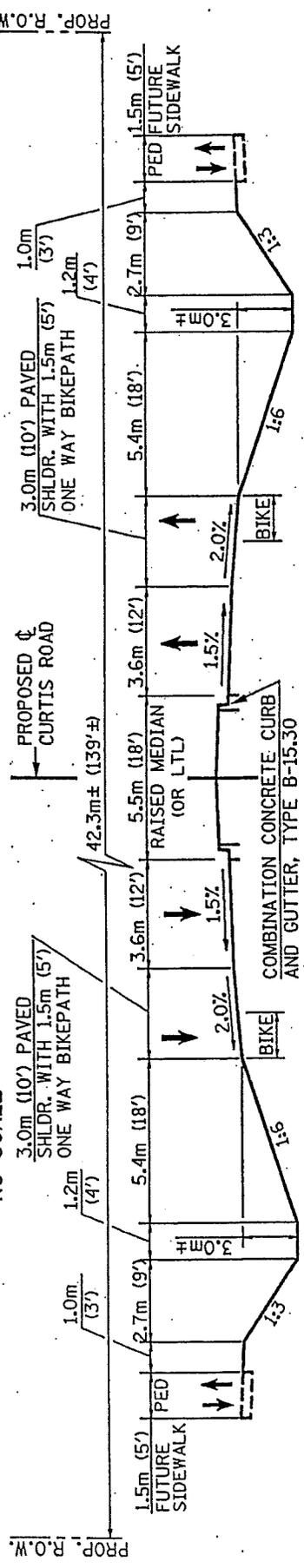


4 PRELIMINARY PROPOSED TYPICAL SECTION - CURTIS ROAD

PROSPECT AVENUE TO U.S. RTE. 45 (695m-2280')  
NO SCALE

5 PRELIMINARY PROPOSED TYPICAL SECTION - CURTIS ROAD

U.S. RTE. 45 TO EAST END OF WINFIELD VILLAGE APARTMENTS (460m-1510')  
NO SCALE



6 PRELIMINARY PROPOSED TYPICAL SECTION - CURTIS ROAD

EAST END OF WINFIELD VILLAGE APARTMENTS TO FIRST STREET (460m-1510')  
NO SCALE

PRELIMINARY PROPOSED TYPICAL SECTIONS  
**CURTIS ROAD PRELIMINARY ENGINEERING STUDY**  
 DUNCAN ROAD TO FIRST STREET  
 SECTION : 98-00374-00-ES  
 CHAMPAIGN COUNTY, ILLINOIS



**MEETING MINUTES**

**PROJECT:** Curtis Road Preliminary Engineering Study  
Duncan Road to First Street  
Section: 98-00374-00-ES  
Champaign County

**SUBJECT:** Bi-Monthly Coordination Meeting  
(Revision #1)

**DATE/TIME/PLACE:** December 1, 1998  
1:30 P.M.  
IDOT - District 5 Office  
Paris, Illinois

<b><u>ATTENDEES:</u></b>	<b><u>NAME</u></b>	<b><u>REPRESENTING</u></b>
	Earl Schroeder*	IDOT - Central Office
	K.T. Desai*	IDOT - Central Office
	Paul Niederhofer*	IDOT - Central Office
	Jim Christian*	FHWA
	Dennis Markwell	IDOT - District 5
	Priscilla Tobias	IDOT - District 5
	Ron Furgeson	IDOT - District 5
	Dennis Unzicker	Champaign County
	Frank Rentschler	Village of Savoy
	Jim Trail	University of Illinois
	Dale Matejkowski	Clark Dietz, Inc. (CDI)
	Jerry Payonk	Clark Dietz, Inc. (CDI)

\* Central Office/FHWA personnel attended meeting through video conferencing.

If anyone has any additions or modifications, please contact CDI. This document reflects modifications made by the Central Office.

The meeting served to introduce the Curtis Road Preliminary Engineering Study to Central Office and FHWA personnel and to discuss several aspects of the project relating to logical termini and typical roadway section. Project information and history was contained within a handout provided for the meeting and is attached to these minutes.

The Curtis Road Preliminary Engineering Study precedes a formal Phase I Engineering Study. The purpose of the current study is to define basic engineering requirements of the

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project, identifying typical section, right-of-way needs and preliminary project costs. Preliminary environmental work was performed in the scoping study.

### Logical Termini

The preliminary engineering study addresses Curtis Road from Duncan Road on the west to First Street on the east. The section of Curtis Road between Staley Road and Duncan Road, including the future I-57 interchange, is currently being studied by IDOT - District 5. Neither study addresses the section of Curtis Road between First Street and IL 130.

The IDOT study shall investigate impacts to Staley Road resultant of the new interchange and development to Curtis Road. Barring the need for additional lanes and impacts on Staley Road because of this improvement, it was concluded that the logical termini for these studies shall be Staley Road to the west and First Street to the east. Development of the Curtis Road section between First Street and IL 130 is not anticipated within the next 20 years.

### Typical Section

Exhibit 2 of the handout identifies existing land uses adjacent to the Curtis Road corridor. For areas identified as residential or commercial a curbed edge-of-pavement treatment with a flush 16' 2WLT is proposed. For areas identified as agricultural an 18' raised median with shoulder along the edge-of-pavement is proposed. Please refer to Exhibits 3a and 3b for specific typical section information.

The 2WLT's are proposed to permit access to residential and commercial properties. The curbed edge-of-pavement treatment in lieu of roadside ditch is proposed to minimize impacts to these properties. Of note, the south side of Curtis Road immediately east of Duncan Road is typified by numerous residential access points to the Rolling Acres Subdivision. The Cherry Hills Subdivision, while not being depicted on this map, has developed on the north side of Curtis Road at this location.

The 18' raised median utilized in agricultural areas is proposed for several reasons. First, the raised median provides a measure of access control. Additionally, it is through the agricultural area that Curtis Road will intersect Mattis Avenue and Prospect Avenue - two likely locations for signalized intersections. The BLE Policies and Procedures Manual recommends an 18' width for raised medians if intersections are to be signalized.

Concern was raised over the ability to keep vehicular traffic at 45 mph. A 2WLT mandates a 45 mph speed limit as does raised curbs, however CUUATS was advised that

this project needs to be designed for the proper posting based on vehicular use. Additionally, the desirability of a consistent cross section was a concern of the Central Office.

The Central Office commented on the continuity of the bikepath. Specifically, why isn't a bikepath contained entirely within the pavement/shoulder system or as a separate path? The issue comes down to the function of the proposed bike trail. The implementing agencies must determine the need and use of the path. Factors to be considered in determining facility use are identified in AASHTO's *Guide for the Development of Bicycle Facilities*.

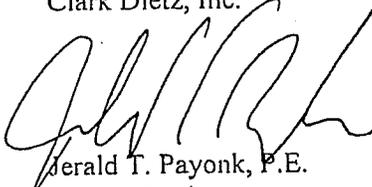
Other Issues

- When environmental studies are completed for the project, analysis of the entire project limits (Staley Road to First Street) should be contained within one document. This will likely be an ECAD analysis and not an Environmental Assessment.
- Traffic counts and forecasts have not been performed. IDOT and CUUATS will generate these numbers.
- The need and purpose for the project must be consistent with the Project's logical termini.
- The Central Office would like a copy of the access break approval for the interchange. This approval letter is attached to these meeting minutes.

With no further questions, the meeting was adjourned at approximately 2:40 p.m.

Respectfully submitted,

Clark Dietz, Inc.



Gerald T. Payonk, P.E.  
Project Engineer

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MEETING MINUTES

**Project:** Curtis Road Preliminary Engineering Study  
Duncan Road to First Street  
Section: 98-00374-00-ES  
Champaign County

**Subject:** Project Progress Meeting

**Date/Time/Place:** May 19, 1999  
9:30 a.m.  
CDI Office  
Champaign, IL

<b>Attendees:</b>	<u>NAME</u>	<u>REPRESENTING</u>
	Dennis Unzicker	Champaign County
	Ron Furgeson	IDOT, District 5
	George Sherer, Jr.	IDOT, District 5
	Priscilla Tobias	IDOT, District 5
	Jim Sullivan	IDOT, District 5
	Dennis Markwell	IDOT, District 5
	Richard Gross	IDOT, District 5
	Rick Marley	City of Champaign Engineering
	Jeff Smith	City of Champaign Engineering
	Gale Price	Champaign City Planning
	Frank Rentschler	Village of Savoy
	Jim Trail	University of Illinois
	Myllinda Granger	CUUATS
	<del>Earl Schroeder</del>	<del>IDOT/Central</del>
	John B. Frye	Champaign Township
	Jerry Payonk	CDI
	Dale Matejkowski	CDI
	Jeff Brillhart	CDI

If anyone has any additions or modifications, please contact CDI.

The purpose of the meeting was to review CDI's efforts to date on the Preliminary Engineering Study for Curtis Road between Duncan Road and U.S. 45.

## Meeting Minutes

Curtis Road Preliminary Engineering Study

Duncan Road to First Street

May 28, 1999

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CDI presented a summary of the work performed to date, the status of project budget and schedule, and work remaining to be performed. Most discussion centered on a review of the design studies. CDI presented an overview of roadway alignment and drainage designs, right-of-way requirements, and utility and access management issues. The following salient items were discussed.

1. One month of project schedule and approximately 3% of project budget was expended on the metric to English conversion. Otherwise, project budget is tracking closely to progress attained.
2. With completion of this meeting CDI will:
  - Revise design exhibits to incorporate review comments;
  - Issue the Curtis/Duncan Road design study to District 5 for their use in initiating their interchange design study;
  - Publish the second project newsletter;
  - Arrange and hold the first Public Information Meeting;
  - Initiate discussions with utility owners to define conflicts and required relocations;
  - Initiate the Curtis/ICRR grade separation study and complete the Curtis alignment studies to First Street.
3. CDI will incorporate a right turn lane for the N.B. Duncan to E.B. Curtis traffic movement.
4. Coordination will be required with IDOT's study west of Duncan Road regarding the movement of pedestrians and bikes through the Duncan/Curtis intersection.
5. The existence of any utility easements along Curtis Road and intersecting side roads must be verified with the utility owners.
6. CDI's proposal of four 11-foot lanes and 14-foot wide median between Prospect Ave. and U.S. 45 will be revised to provide for 12-foot lanes by reducing the 10-foot combination sidewalk bikeway on each side of the street to 8-feet wide.
7. CDI will revise the barrier median breaks to comply with the access points indicated in CUUATS's Scoping Study.

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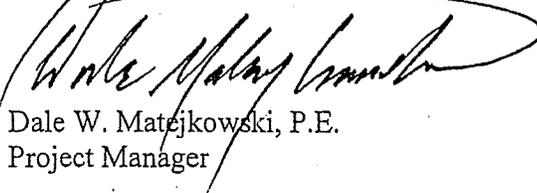
Meeting Minutes  
Curtis Road Preliminary Engineering Study  
Duncan Road to First Street  
May 28, 1999  
Page 3

8. CDI will review the geometric requirements for interim intersection stop control in relation to the geometrics shown for signalization control.
9. The possibility of providing four lanes on Prospect Ave. was discussed. Savoy stated it has no current plan to extend Prospect Ave. south of Curtis Road. This issue will be further discussed between Champaign and Savoy. It was decided to show two lanes on Prospect Ave. at the Public Information Meeting.

With no further discussion the meeting was adjourned at 11:15 a.m.

Respectfully submitted,

Clark Dietz, Inc.



Dale W. Matejkowski, P.E.  
Project Manager

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## MEETING MINUTES

**Project:** Curtis Road Preliminary Engineering Study  
Duncan Road to First Street  
Section: 98-00374-00-ES  
Champaign County

**Subject:** Project Progress Meeting

**Date/Time/Place:** September 8, 1999  
1:30 p.m.  
CDI Office  
Champaign, IL

<b>Attendees:</b>	<b><u>NAME</u></b>	<b><u>REPRESENTING</u></b>
	Jeff Brillhart	CDI
	Dale Matejkowski	CDI
	Dennis Unzicker	Champaign County
	Richard Gross	IDOT, District 5
	Dennis Markwell	IDOT, District 5
	Priscilla Tobias	IDOT, District 5
	Jim Sullivan	IDOT, District 5
	David Fierke	Village of Savoy
	Frank Rentschler	Village of Savoy
	Mylinda Granger	CUUATS
	Rick Marley	City of Champaign Engineering

If anyone has any additions or modifications, please contact CDI.

The purpose of the meeting was to review CDI's efforts to date on the Preliminary Engineering Study for Curtis Road between U.S. 45 and First Street and the Curtis Road/ICRR Grade Separation Study.

CDI presented a summary of the work performed to date, the status of project budget and schedule, and work remaining to be performed. Most discussion centered on a review of the design studies. CDI presented an overview of roadway alignment and drainage designs, right-of-way requirements, and utility and access management issues. The following salient items were discussed.

Meeting Minutes  
Curtis Road Preliminary Engineering Study  
Duncan Road to First Street  
September 9, 1999  
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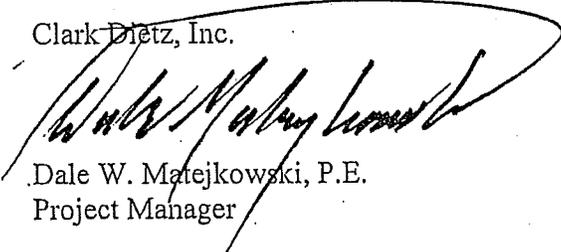
1. IDOT personnel questioned the width of Curtis Road beneath the proposed ICRR bridge. They would like to see a wider roadway section and greater clearance to the main span piers. However, this additional width could probably not be accommodated by a single span as proposed; and, would require a center pier and median. This would produce a much wider roadway section on the east leg of the intersection and present poor transition of thru traffic movement into the narrower west leg.
2. IDOT and the Village of Savoy questioned the adequacy of the Curtis/First intersection in light of the new apartment complex being constructed in the southwest quadrant. It was agreed the traffic forecasts will need to be updated and intersection capacity reviewed during future study efforts.
3. CDI discussed the possibility of studying a Tomaras Avenue grade separation for the Village of Savoy. CDI would like concurrence from the Curtis Road subcommittee for CDI to enter into an agreement with the Village of Savoy in order to perform a feasibility study for the Tomaras grade separation. Mr. Unzicker stated that he would first like a letter from the Village of Savoy addressing this issue. The consensus of the subcommittee was that there would be no conflict of interest and to allow CDI to move ahead with the study, pending approval by the Village of Savoy.
4. The second public information meeting will be held on Wednesday, October 20, 1999 from 5:00 p.m.- 7:00 p.m. at the Head Start School in Savoy. Frank Rentschler will coordinate arrangements for this site.
5. CDI will provide the third project newsletter to Lynda Nelson of CUUATS no later than October 6, 1999 for subsequent distribution. CUUATS will publish public notice for the meeting.

**Meeting Minutes**  
Curtis Road Preliminary Engineering Study  
Duncan Road to First Street  
September 9, 1999  
Page 3

With no further discussion the meeting was adjourned at 3:15 p.m.

Respectfully submitted,

Clark Dietz, Inc.



Dale W. Matejkowski, P.E.  
Project Manager

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F-30



# Illinois Department of Transportation

Division of Highways / District 5  
Rt. 133 West / P.O. Box 610 / Paris, Illinois 61944-0610  
Telephone (217) 465-4181

SEP 15 1999

September 13, 1999

## PROGRAM DEVELOPMENT

### Curtis Road Project

Mr. Dennis Unzicker  
Champaign County Engineer  
1905 East Main Street  
Urbana, Illinois 61801

Dear Mr. Unzicker:

Review of the material presented by Clark Dietz, Inc. at the September 8, 1999 meeting has identified several areas that may warrant further study. The identified areas, along with suggested action, are as follows:

- The proposed typical cross section for the curb and gutter section indicate a back of curb to sidewalk/bikeway dimension of 3' 0". Both AASHTO and IDOT recommend a dimension of 5' 0" from face of curb to sidewalk/bikeway.
- The proposed typical cross section under the proposed railroad structure indicate a face of pier to sidewalk/bikeway dimension of 2' 0". Both AASHTO and IDOT recommend 3' 0" clearance.
- The proposed typical cross section under the proposed railroad structure shows a 2' 0" gutter (in reality, likely a 21" Type B Gutter) adjacent to the sidewalk/bikeway. It is suggested that a 3' 0" Type A Gutter be used in this area, as the narrower gutter can be considered a hazard to the less experienced cyclist.
- Suggest investigating the possibility of extending the separate sidewalk/bikeway eastward along the south side of Curtis Road at least to the South First Street Apartments. It would also be prudent to coordinate with the committee studying South First Street to assure connectivity to any planned bicycle/pedestrian accommodations.
- If the posted speed limit in the area of First Street is to be above 40 mph, it is suggested that deceleration lanes (longer turn lanes and transitions) be considered in the geometric design of the intersection.

If you have any questions or comments, please contact Richard Gross at (217) 465-4181, ext. 303.

Sincerely,

H. L. Forbes  
District Engineer

By

  
Dennis L. Markwell  
Engineer of Program Development

WRG:cw  
wrg15.doc

F-31



January 4, 2000

Mr. Terry Anderson  
Illinois Power Company  
112 Anthony Drive  
Urbana, IL 61801

Re: Curtis Road Preliminary Engineering Study  
Duncan Road to First Street  
Champaign, Illinois

Gentlemen:

Clark Dietz, Inc. has been retained by the Champaign Urbana Urbanized Area Transportation Study (CUUATS) to investigate the primary design elements for the reconstruction and widening of Curtis Road between Duncan Road and First Street as shown on the enclosed location map. The focus of this study has been the development of roadway horizontal and vertical alignments in a manner to minimize impacts to adjacent properties. Additionally, a concept drainage plan has been developed and costs of construction and right-of-way acquisition have been identified.

Enclosed are prints of plans depicting the existing topography of the project corridor and the proposed roadway and railway improvements. The plan and profile views and proposed typical sections are organized in three sets as follows:

- Curtis Road: between Duncan Rd. and First St.;
- Side Roads: Duncan, Mattis, Prospect, and First;
- IC Railroad Relocation: between Windsor Rd. in Champaign and Church St. in Savoy.

The proposed improvements shown in these plans include the realignment and widening of Curtis Road to five lanes between Duncan Rd. and First St. The major intersecting side roads, with exception of U.S. 45, will be widened to include dedicated left or right turn lanes and will be realigned as well. In order to create a subway crossing of the IC Railroad for Curtis Road, the existing railway will be realigned for approximately two miles between Windsor Rd. and Church St.

Mr. Terry Anderson  
January 4, 2000  
Page 2

The location of your utility facilities in relation to the proposed improvements have been highlighted on the plans. These locations were obtained from aerial mapping, field inspections, and any previous information you may have provided us.

The impacts to existing utility installations along Curtis Road will be significant. Some installations are in conflict laterally with the proposed roadway widening. Some installations may require relocation due to the cut required for the new roadway profile and associated roadside ditches. Roadways shown curbed and guttered will require the installation of longitudinal and lateral storm sewer runs. In some areas, required roadway embankment heights may result in an excessive overburden of your facilities.

The purpose of this transmittal is to afford you the earliest opportunity to assess these impacts and initiate your planning for future relocations. The limits of the proposed construction are shown as small dotted lines in the roadway plan views along with the existing and proposed roadway rights-of-way. Should you require cross sections of the proposed roadway/drainage improvements to assist in your analysis, please contact Mr. Jeff Brillhart of this office (217.373.8900). At the bottom of this letter you will find the names and telephone numbers of other utility companies whose facilities are involved and who are in receipt of this same transmittal. We encourage your coordination with one another.

The schedule for this project has not yet been established. Be advised it will take several years for the implementing agencies to acquire the necessary project approvals, secure project funding, develop final designs, and obtain the needed additional right-of-way prior to construction. The next phase of this engineering design study will involve detailed storm drainage designs and additional utility company coordination during 2000. Please retain this transmittal in your file for future coordination purposes.

At this time we seek your response to the following issues.

1. Please verify the existence, location, and extent of your facilities as shown on our drawings. If there are revisions or additional information which should be shown, please mark-up the affected plan sheets and send them back to us. We will incorporate your information into our CADD drawings and return your markups.
2. We assume that the cost of relocating those utilities which are currently situated within the existing roadway rights-of-way, will be borne by the

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Mr. Terry Anderson  
January 4, 2000  
Page 3

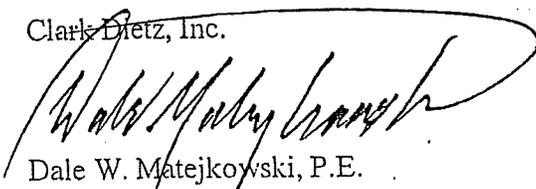
utility owner. If this is not correct, please advise why. Please advise which of your facilities you believe at this time will require relocation.

3. For those utilities currently situated outside the existing roadway rights-of-way, we assume the cost of utility relocations will be borne by the project. Please identify those facilities which are impacted and provide an estimate of their relocation costs.
4. In either case #2 or #3 above, given the anticipated construction limits and proposed right-of-way limits shown in the plans, please advise if you will relocate outside or within the proposed right-of-way limits.
5. Please provide any additional information, comments or suggestions relating to the ultimate disposition of your facilities.

We would greatly appreciate your response to the above items by 2-1-00. Should you have any question regarding the matters herein, please do not hesitate to contact the undersigned.

Cordially,

Clark Dietz, Inc.



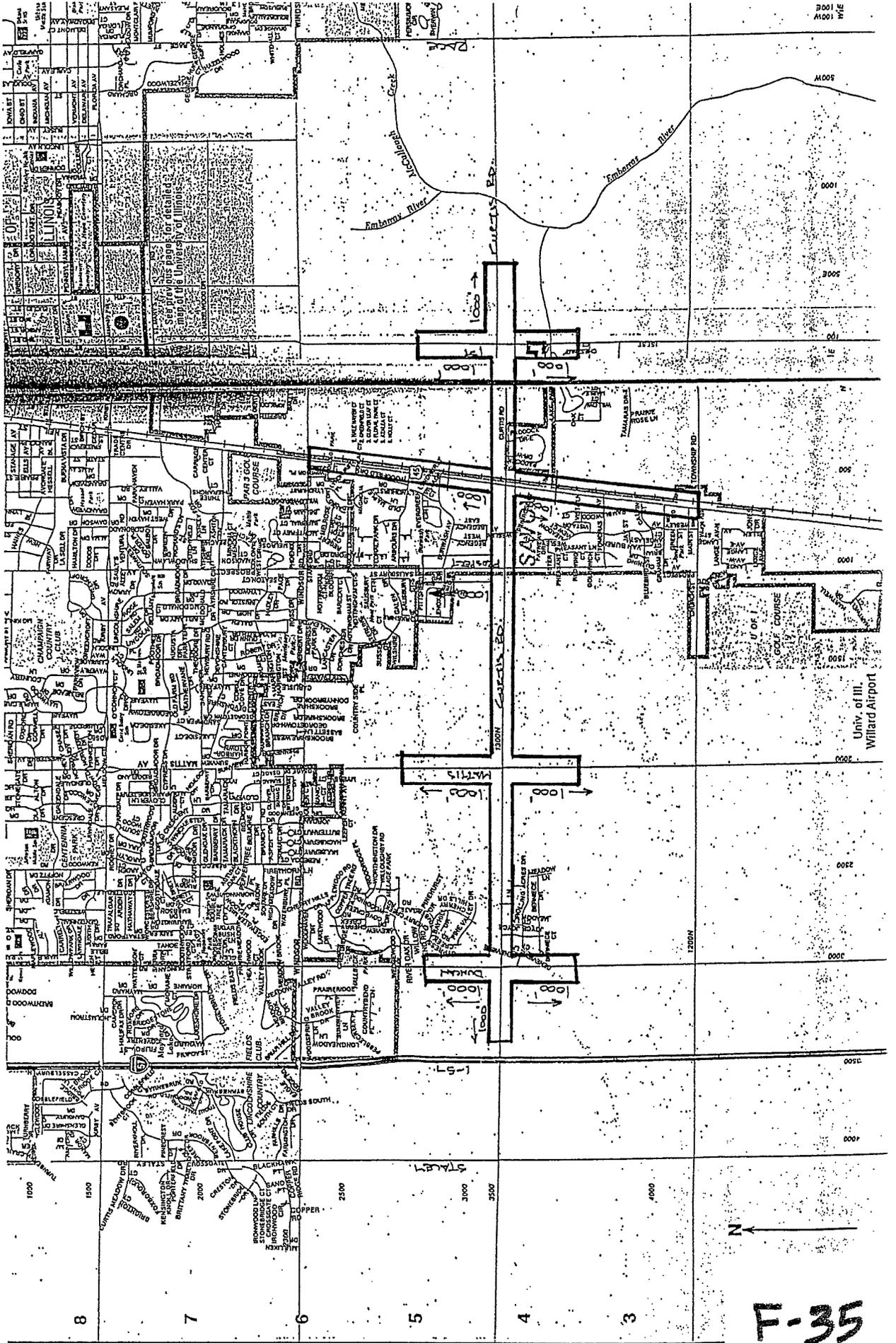
Dale W. Matejkowski, P.E.  
Vice President  
Project Manager

cc: Ameritech, Mr. Bob Hamilton, 217.384.2616  
Northern Illinois Water Corp., Mr. Andy McCarrey, 217.373.3286  
Natural Gas Pipeline Co. of America, Mr. Gary Buchler, 618.829.3224  
AT&T Cable, Mr. Tracy Lynch, 217.384.2539  
Urbana & Champaign Sanitary District, Mr. Dennis Schmidt, 217.367.3409  
Mr. Dennis Unzicker, Chairman, Curtis Road Technical Subcommittee

E-mail Address [dalem@clark-dietz.com](mailto:dalem@clark-dietz.com)

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F-34



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Univ. of Ill.  
Willard Airport

F-35



January 4, 2000

Mr. Tom Zeinz  
Engineer of Public Works  
CN-Illinois Central Railroad  
17641 S. Ashland Ave.  
Homewood, IL 60430

Re: Curtis Road Preliminary Engineering Study  
Duncan Road to First Street  
Champaign, Illinois  
Curtis Road/ICRR Grade Separation Feasibility Study

Dear Mr. Zeinz:

Clark Dietz, Inc. has been retained by the Champaign Urbana Urbanized Area Transportation Study (CUUATS) to investigate the primary design elements for the reconstruction and widening of Curtis Road between Duncan Road and First Street as shown on the enclosed location map. The focus of this study has been the development of roadway horizontal and vertical alignments in a manner to minimize impacts to adjacent properties. Additionally, a concept drainage plan has been developed and costs of construction and right-of-way acquisition have been identified.

As part of the Curtis Road studies, we have investigated the feasibility of developing a grade separation between Curtis Road and the IC Railroad.

The purpose of this transmittal is to afford you the earliest opportunity to review and comment upon the results of our grade separation feasibility study. Enclosed for your review are the following items.

1. Curtis Road Plan/Profile: Sta. 153+00 to Sta. 169+00 (1 sheet).
2. ICRR Plan/Profile: Sta. 12285+00 to Sta. 12390+00 (7 sheets).
3. ICRR Cross-Sections: Sta. 12305+00 to Sta. 12389+00 (10 sheets).
4. CDI Design File Memorandum (6-24-99)
5. CDI Conversation Records (6-10-99, 6-14-99)
6. CDI Correspondence with Village of Savoy (10-11-99)

The design criteria and philosophy utilized in development of this study is outlined in item #4 above.

Mr. Tom Zeinz  
January 4, 2000  
Page 2

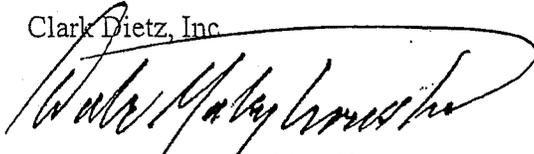
Referencing your comment #6 of the 6-10-99 Conversation Record, please review item #6 above. Due to the significant local financial participation required to develop a Tomaras Ave./ICRR grade separation, the Savoy Village Board has decided to pursue other options for providing efficient emergency access to their area east of the tracks.

The overall schedule for the Curtis Road project has not yet been established. Be advised it will take several years for the implementing agencies of CUUATS to acquire the necessary project approvals, secure project funding, develop final designs, and obtain the needed additional right-of-way prior to construction. Nonetheless, we would appreciate receiving your review comments in the near future as we move into the next phase of our studies. With respect to the grade separation portion of this project, this will include detailed storm drainage analysis as well as development of bridge type, size and location drawings for the grade separation structure.

Should you have any question or require additional information during your review, please do not hesitate to contact the undersigned. By copy of this letter and enclosures we make the same request of Mr. Binder.

Cordially,

Clark Dietz, Inc



Dale W. Matejkowski, P.E.  
Vice President  
Project Manager

cc: Illinois Central Railroad, Mr. Jim Binder, Field Engineer  
Mr. Dennis Unzicker, Chairman, Curtis Road Technical Subcommittee

E-mail Address dalem@clark-dietz.com

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MEMO

To: Design File  
From: CES  
Date: June 24, 1999  
Subject: ICRR Grade Separation Study  
Copies: DWM

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DESIGN POLICIES

*Railroad Realignment*

1. American Railway Engineering Association (AREA), Manual for Railway Engineering.
2. Illinois Central Railroad, Standards for the Maintenance of Way and Structures.
3. Conversations with Tom Zeinz, ICRR Engineer of Public Works and Jim Binder, ICRR Field Engineer.

*Roadway*

1. AASHTO, A Policy on Geometric Design of Highways and Streets "Green Book".
2. IDOT, Design Manual

*Bicycle Facilities*

1. AASHTO, Guide for the Development of Bicycle Facilities

DESIGN PARAMETERS

The following design parameters and/or values were used in the design of the ICRR realignment, Curtis Road and the bicycle path.

*Railroad Realignment*

- Design Speed = 80 mph
- Maximum vertical gradient = 0.36% (same as maximum for Windsor Road railroad realignment)
- Minimum Tangent between reverse curves = 100 feet
- Proposed Bridge designed for single track only. Embankment north of Curtis Rd. designed for two tracks, embankment south of Curtis Rd. designed for one track.
- Maximum Degree of Curve = 15 minutes
- Track Superelevation =  $\frac{3}{4}$ ". Elevate outer rail about inner rail.
- Minimum length of spiral = 94 feet
- Vertical Alignment Maximum rate of change  
Sags = 0.05 ft per 100 ft  
Crest = 0.1 ft per 100 ft

*Roadway*

- Design Speed = 45 mph
- Vertical Alignment Rate of Vertical Curvature, K  
Sags K = 70  
Crest K = 80
- Minimum Vertical Clearance over roadway = 14'-6"  
+future resurfacing  $\frac{+ 3''}{}$   
use 14'-9"

*Bicycle Path*

- Minimum Vertical Clearance over bike path = 8 feet, desirable = 10 feet

## DESIGN PROCEDURE

### *Design Concept*

The overall design concept was to provide a grade separation structure at the ICRR tracks and Curtis Road. In order to obtain this result and provide the least amount of impact to the surrounding properties and the US Route 45 pavement, the ICRR tracks will be shifted to the east and raised to allow Curtis Road traffic to pass under the ICRR tracks at the required design speed.

### *Windsor Road Railroad Realignment (1988)*

The construction plans for the improvements of Route 45 were reviewed. This improvement included the realignment of the ICRR tracks  $\pm 2000$  feet north and south of the Windsor Road bridge. The ICRR tracks were shifted to the east 60 feet from the existing tracks. 30 minute curves were used in the horizontal transitions and the track was superelevated above the recommended ICRR guidelines.

### *Proposed Bridge Structural Depth*

- The existing plate girder bridge at Windsor Rd. has a long span of  $\pm 67'$  and a structural depth (top of rail to bottom of low steel) of  $6'-5'' \pm$ . For our analysis we will use a structural depth of  $7'$ .
- The existing thru girder railroad bridge over FA Route 789 Spur in Madison County has a short span of  $\pm 107'$  and a structural depth of  $4'-10'' \pm$ . For our analysis we will use a structural depth of  $5'$ .

### *Proposed Bridge Span*

- The roadway typical section below the bridge dictates the location of the bridge piers. Initially it was thought that a center pier could be used to shorten the bridge spans thereby reducing the bridge structural depth. However, it was found that if a center pier is used it will need to be protected from vehicular traffic, which in turn necessitates the use of a barrier curb with raised median. A barrier curb with raised median produces a typical section that is not consistent with the required typical section on the west side of Route 45. This difference in typical sections is a concern due to the lane shifting that would result across the intersection of Route 45 and Curtis Rd. Due to this concern a center pier will not be used.
- Since a center pier will not be used, the same typical section on the west side of Route 45 (four-12 ft. lanes with a 14 ft. left turn lane) can be used on the east side of the intersection. The face of the piers will be placed 2 ft from the back of curb. The combination 8 ft. sidewalk/bike path will be placed behind the piers. The edge of sidewalk/bike path will be 2 ft. from the back face of the piers. The resulting center span is  $\pm 74'$  and each side span  $\pm 42'$ .

### *Railroad Realignment*

#### *Vertical Alignment:*

- To minimize the amount of horizontal offset of the tracks to the east, the tracks were raised the maximum amount allowable (0.36%) per ICRR guidelines. The start of the vertical gradient is just north of Church St. since the tracks at Church St. are lower in elevation than Windsor Road and the At-Grade crossing at Church St. could not be impacted. Church St. is approximately one mile south of Curtis Rd. and Windsor Road is approximately one mile north of Curtis Rd.
- The crest vertical curve near Curtis Road was placed on the north side of the proposed bridge so the maximum rail elevations across the bridge could be obtained.

#### Horizontal Alignment

- The horizontal offset of the tracks at Curtis Road was determined using the following design parameters:
  1. Top of rail at Curtis Road of 755.63
  2. Structural depth of 7'
  3. Vertical clearance of 14'-9" (includes 3" future resurfacing)
  4. Roadway design speed of 45 mph.

The following hierarchy of physical constraints were also determined and analyzed to set the horizontal offset of the relocated track:

- A. Use the same horizontal offset as Windsor Road track realignment (60 ft).
  - B. Keep the railroad embankment within the railroad right-of-way.
  - C. Hold existing elevation of Route 45 pavement. Any lowering of Route 45 would impact commercial building at southwest corner of 45 & Curtis.
  - D. Limit encroachment of railroad embankment to outbuildings of Garth property only.
  - E. Limit encroachment of railroad embankment to within acceptable distance of Illinois Power Substation.
  - F. Lower Route 45.
  - G. Encroach upon the IP Substation and the Garth House.
- These constraints were set in increasing order of importance.

The goal was to satisfy the design parameters and keep the impact to the physical constraints to a minimum. From the analysis, physical constraints "A-B" could not be achieved. The primary reason is that the existing track at Curtis Road is only 2 feet above the pavement grade at Route 45 whereas the existing track at Windsor Road was 9 foot above the Route 45 pavement. Physical constraint "C, D & E" could be achieved. The toe of the embankment slope was set at a distance of 20 feet from the Illinois Power Substation. This provided a horizontal offset of 90 feet from the center of the existing tracks. Physical constraints "F & P" were not a concern since constraints "C, D & E" could be satisfied.

- Once the horizontal offset was established the reverse curves were set to provide a minimum of 100 feet of tangent between reverse curves. The controlling design parameters in determining the length of transition are the spiral length, degree of curve and tangent between curves.
- Due to the vertical separation between existing and proposed tracks the horizontal transitions had to start and end near the beginning and ending of the permanent grade change (i.e., the vertical grades determined the limits of rail realignment not the horizontal alignment).

#### *Curtis Road*

- Vertical curves were set to adhere to the maximum rate of curvature and still get traffic below the bridge at Curtis. It was found that this could not be accomplished without at least correcting the pavement cross slope of the north bound lanes on Route 45. These lanes are currently at a flat cross slope of 1% and the correction (mill 3" and resurface 1.5") will bring the cross slope to 1.5%. This correction will allow a steeper vertical gradient between Route 45 and the proposed bridge. Without this correction either the horizontal offset of the tracks would have to increase or the pavement on Route 45 lowered.
- The low point of the vertical profile east of Rte. 45 on Curtis Rd. is at Sta. 165+80.68, Elev. = 729.61. A proposed storm sewer system will drain the low point to the existing

MEMO  
Design File  
June 24, 1999  
Page 4

stone arch culvert approximately 1000 feet south of Curtis Rd. The storm sewer was checked for adequate slope and the following was determined: If Pipe Dia. = 12" then slope is 0.315%, If Pipe Dia. = 18" then slope is 0.28%, If Pipe Dia. = 24" then slope is 0.24%.

*Other Alternatives*

To lessen the impacts as found in this analysis a thru girder bridge structure could be used. A thru girder structure will save approximately 2 feet of structural depth. The ICRR has displayed some resistance to the use of a thru girder (see conversation records) but this could be alleviated if the impacts as discussed in this memo are deemed to great by CUUATS.

## CONVERSATION RECORD

Taken By: Craig E. Shonkwiler *CS*  
Date: June 10, 1999  
Contact Name: Tom R. Zeinz  
Engineer of Public Works  
Organization: Illinois Central Railroad  
17641 S. Ashland Ave.  
Homewood, IL. 60430  
Phone: 708/206-3557  
Project Name: Curtis Road Feasibility Study  
Project Number: C30040  
Copies:

---

Spoke by telephone with Mr. Zeinz today about the feasibility study of the grade separation structure at the ICRR tracks and Curtis Road. The following items were discussed:

1. The maximum gradient the ICRR will permit is the same gradient (-0.36%) as used on the Windsor Road track realignment. ICRR does not want a gradient steeper than this due to increased operating costs (i.e., increased fuel consumption).
2. The maximum speed of Amtrack passenger trains is 79 mph on this track. The Design Speed is 80 mph.
3. The ICRR does not like Thru Girder Bridges due to the clearance restriction. The ICRR also does not like Welded Girders due to increased maintenance costs. The ICRR prefers Rolled Sections.
4. Contact these gentleman for horizontal/vertical guidelines.  
Jim Binder, ICRR Field Engineer, 217-235-3696  
Don Gallery, ICRR Engineer of Track, 708-206-3523
5. Use 100 foot of tangent between reverse curves.
6. Mr. Zienz urged coordination of this study with the planned Tomarus Rd. underpass in Savoy.

## CONVERSATION RECORD

Taken By: Craig E. Shonkwiler  
Date: June 14, 1999 *CES*  
Contact Name: Jim Binder  
Field Engineer  
Organization: Illinois Central Railroad  
Mattoon, IL.  
Phone: 217-235-3696  
Project Name: Curtis Road Feasibility Study  
Project Number: C30040  
Copies:

---

Spoke by telephone with Mr. Binder today about the feasibility study of the grade separation structure at the ICRR tracks and Curtis Road. The following items were discussed:

1. Design Speed is 80 mph.
2. Hold horizontal curves to a maximum of 15 minutes. Windsor Road realignment used 30 minute curves; however, the tracks had to be elevated above the recommended amount in order to provide safe movement for passenger trains.
3. Per ICRR guidelines the maximum superelevation for a 15 minute curve and a design speed of 79 mph is  $\frac{3}{4}$ " (see attached faxed copy).
4. Per ICRR guidelines (see attached faxed copy) the minimum length of spiral for a track elevated  $\frac{3}{4}$ " and design speed of 80 mph is 94 feet.
5. A Thru Girder structure is not preferred due to clearance restrictions. It is desirable to have 8 to 8.5 feet from track centerline for wide loads. If the walkways are put on the inside to the thru girders this width could be accomplished. Mr. Binder suggested contacting Stan Nyszewski, ICRR Engineer of Structures, 708-206-3099 or Don Lewis, Assistant of Engineer of Structures, 708-206-3507 concerning this matter.
6. *VERTICAL ALIGNMENT PER "AREA" MANUALS.*

Bagwell

### SPEED IN MILES PER HOUR

ELEVATION INCHES	LENGTH IN FEET															
	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
1	30	35	41	47	53	58	65	70	77	82	89	94	100	106	112	118
1 1/4	37	44	51	59	66	73	81	88	96	103	111	117	125	132	140	147
1 1/2	44	53	61	71	79	88	97	106	115	124	133	140	150	158	168	176
1 3/4	52	62	72	82	92	102	113	123	134	144	155	164	175	185	196	205
2	59	70	82	94	106	117	130	141	154	165	178	187	200	211	224	235
2 1/4	66	79	92	106	119	131	146	158	173	186	200	210	225	238	252	265
2 1/2	74	88	102	118	132	146	162	176	192	206	222	234	250	264	280	294
2 3/4	81	97	112	130	145	161	178	193	210	227	244	257	275	290	308	323
3	89	106	122	142	158	175	194	211	230	247	266	281	300	317	336	353
3 1/4	96	114	132	154	171	189	210	228	249	268	289	305	325	343	364	383
3 1/2	104	123	143	165	185	204	227	246	269	288	311	328	350	370	392	412
3 3/4	111	132	153	177	198	219	243	264	288	309	333	351	375	396	420	441
4	118	141	163	189	211	234	259	282	307	330	355	374	400	422	448	470
4 1/4	126	150	174	200	224	249	275	300	326	350	377	399	425	449	476	500
4 1/2	133	158	184	212	238	263	292	317	346	371	400	421	450	475	504	529
4 3/4	140	167	194	224	251	277	308	335	365	392	422	445	475	502	532	559
5	148	176	204	236	264	292	324	352	384	412	444	468	500	528	560	588
5 1/4	156	185	214	248	277	307	340	370	403	433	466	491	525	555	588	618
5 1/2	163	194	224	260	290	321	356	387	422	453	488	515	550	581	616	647
5 3/4	170	202	235	271	304	336	373	405	442	474	511	538	575	607	644	676
6	178	211	245	283	317	350	389	422	461	494	533	562	600	634	672	706

#### CAUTION IN CURVES:

1. WHEN SPIRAL LENGTH IS LESS THAN MINIMUM RUN OFF LENGTH, RUN OFF MUST EXTEND ON TO TANGENT - SUBJECT TO FRA RULES.
2. WHEN SPIRAL LENGTH IS THE SAME AS MINIMUM RUN OFF LENGTH, RUN OFF MUST EXTEND TO THE FULL LENGTH OF SPIRAL.
3. WHEN SPIRAL LENGTH IS GREATER THAN MINIMUM RUN OFF LENGTH, RUN OFF MUST EXTEND TO THE FULL LENGTH OF SPIRAL.

Rate of change = 1/4" for distance run in 1 second

F-45

Post-ite Fax Note

7671-

Date 6/14/99

# of pages 2

To: Craig Shanklecker  
Co./Dept. Clark Dietz

From: Jim Bickler  
Co. Illinois Central RR

Phone # 373-8933

Phone # 335-3696

Fax # 373-8933

Fax #

REVISIONS  
6-1-53 REDRAWN  
8-23-82 REV.

ILLINOIS CENTRAL GULF RAILROAD  
OFFICE OF VICE PRESIDENT & CHIEF ENGINEER, CHICAGO, ILL.

(MINIMUM)

RUN OFF TABLE

CORRECT

*Paul Davis*  
ENGR. N. OF W.

APPROVED:

*Jim Bickler*  
VICE PRES. & CHIEF ENGR.

DATE: Jan 1, 1937

DRWG. NO. 6/60

SPEED IN MILES PER HOUR

MINIMUM ELEVATION = 3/4"

DEGREE OF CURVE	10	20	25	30	35	40	45	50	55	60	65	70	75	79
0°15'	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
0°30'	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
0°45'	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
1°00'	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
1°15'	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
1°30'	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
1°45'	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
2°00'	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
2°15'	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
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12°00'	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4

A SUPERELEVATION IN EXCESS OF 5" SHALL NOT BE INSTALLED WITHOUT PERMISSION FROM THE CHIEF ENGINEER.

$E = [(V^2)(D)(0.0007)] - 3$   
 E = SUPERELEVATION (INCHES)

V = MAXIMUM TIMETABLE SPEED PERMITTED ON CURVE IN MPH.  
 REFER TO CURRENT TIMETABLE SPECIAL INSTRUCTIONS.  
 TRAINS MOVING ON MAIN TRACKS IN YARD LIMITS ON ABS TERRITORY MAY MOVE IN ACCORDANCE WITH TIMETABLE SPECIAL INSTRUCTIONS.

D = DEGREE OF CURVE (IN DECIMAL FORM).

NOTE:  
 SUPERELEVATION ROUNDED TO THE NEAREST ONE-QUARTER INCH.

Illinois Central Railroad

CURVE SUPERELEVATION TABLE (PASSENGER AND FREIGHT TRAINS)

ENGINEERING DEPARTMENT

Drawn by: MAM    Scale: NONE    DWG. No. E-3107  
 Chkd. by: DEO    Date: 8/2/97    This No. E-3107

Revisions: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 By: \_\_\_\_\_

APPROVED: \_\_\_\_\_  
 Sheet \_\_\_\_\_ of \_\_\_\_\_

F-46

**Clark Dietz**

October 11, 1999

Village of Savoy  
Attn: Mr. David Fierke, Village Administrator  
Mr. Frank Rentschler, Director of Public Works  
114 W. Church Street P.O. Box 256  
Savoy, IL 61874

Re: Tomaras Ave./ICRR Grade Separation

Gentlemen:

Per your request, CDI has performed a brief overview of the major design parameters involved with developing a grade separated crossing of the IC Railroad by the future extension of Tomaras Avenue. Due to your budget constraints, our effort in this matter has been limited to only ten hours of engineering analysis plus minor field surveys and this letter report. The results of such an abbreviated effort cannot possibly address the myriad of design elements associated with this major civil works project. Please be advised that a significant amount of additional field survey data and further engineering study would be required to adequately assess the feasibility of this project; and, to accurately define the type, size and location of its major components pursuant to developing a responsible estimate of project costs.

However, as a result of our previous efforts in developing the grade separation feasibility study for Curtis Road, we have been able to quickly develop some valuable insights to the Tomaras project which we are able to offer the Village.

Focusing upon the existing U.S. Rt. 45/Tomasas intersection and the extension of Tomaras Avenue under the railroad, we have determined that the railroad track at this location will have to be raised approximately 13.5 feet to accommodate the Tomaras subway. Additionally, Tomaras Ave. extended will need to be depressed approximately 7.0 feet below the existing track elevation at this location. This scenario will provide 14.0 feet of vertical clearance from the bottom of the railroad bridge to the roadway pavement and assumes a six-foot ( $\pm$ ) structural depth for the new railroad bridge.

In addition to elevating the track, the railroad's horizontal alignment must be shifted approximately 90 feet to the east in order to achieve the Tomaras

**F-47**

subway crossing without lowering the pavement along Rt. 45. The 90-foot easterly offset realignment is also required to match the future relocated track position required for the Curtis Road subway crossing. The results of our analysis essentially confirm the vertical differentials cited in IDOT's 2/18/99 letter to the Village. However, be advised that although the horizontal track location at Tomaras is the same as that required for Curtis Road, the track elevation for the Tomaras crossing will be approximately 5.8 feet higher than that required for Curtis Road at this location.

In transitioning the vertical track realignment downward and southward from its high point over Tomaras Ave. extended, we find that the existing track elevation at the Church St. crossing cannot be matched. The anticipated track elevation at this location will be approximately 3.8 feet higher than what currently exists. This presents a significant problem with raising Church St. to match the higher track elevation. The resultant grade between the edge of Rt. 45 pavement and the new track elevation will be excessively steep and will not be permitted by IDOT or the Illinois Commerce Commission.

In order to reduce this gradient, the track must be shifted easterly of its present location. However, the presence of the grain elevator silos at this location limits the easterly distance the track can be shifted. The track can be shifted only 35 feet thus permitting the track to be raised only 0.65 feet while maintaining an acceptable maximum gradient on Church St. of 4%. This is the magnitude of grade which currently exists between Rt. 45 and the railroad track.

Since the track elevation at Church St. will need to be raised 3.8 feet but can only be raised 0.65 feet due to the proximity of the grain silos, one of two actions must be pursued.

One option is to purchase the grain elevator property and pay for the controlled demolition of the huge concrete grain silos. This would allow the track to be shifted approximately 115' east of its present location in order to raise the track 3.8 feet. This would be a very expensive option due to the significant cost of demolition as well as the cost of approximately 4000 feet of track relocation which would be required south of Church St.

A more viable option appears to be that of lowering the track elevation over Tomaras Ave. extended, thus requiring the intersection of Tomaras and Rt. 45 to be lowered approximately 3.15 feet (i.e. 3.80 - 0.65). This would achieve an acceptable grade crossing at Church St., minimize the amount of track

Village of Savoy  
October 7, 1999  
Page 3

relocation required south of Church St., and reduce impact to the grain elevator business. Approximately 1,400 to 1,500 feet of Rt. 45 would need to be removed and lowered. The west leg of Tomaras Ave. would need to be reconstructed for about 200 feet. The feasibility of this option needs to be thoroughly reviewed with respect to the intersection geometrics required to ultimately service future traffic volumes; as well as, any limitation which may be imposed on lowering Rt. 45 by existing storm drainage outfall elevations.

The limitations to our study of this project precludes an accurate determination of project costs. However, some educated "guestimates" may be made.

IDOT's 2/18/99 letter to the Village provides a partial project cost estimate of \$2,365,000. We assume this is an estimate for a "stand alone" Tomaras grade separation project; i.e., from touchdown to touchdown of railroad alignment. However, the Village could realize a substantial savings in railroad realignment costs if the Tomaras project is constructed at the same time as the Curtis project since both projects would share in the cost of their common sections of railroad relocation. In fact, the IC Railroad may not permit the prolonged disruption of their rail operations which two separately constructed projects would impose upon them. Unfortunately, CUUATS may not be in a position to construct the Curtis project for several years.

Assuming a worst case scenario regarding construction timing, an amount of \$900,000 for lowering Rt. 45 would be added to IDOT's original estimate. An additional \$450,000 would also be required for design and construction engineering for a total project cost guestimate of about \$3,500,000 exclusive of the cost of any required right-of-way acquisition along Rt. 45 or the railroad.

Assuming the Illinois Commerce Commission picks up 60% of the tab via its Railroad Grade Crossing Protection Fund, the Village would need \$1,400,000 to fully fund the project.

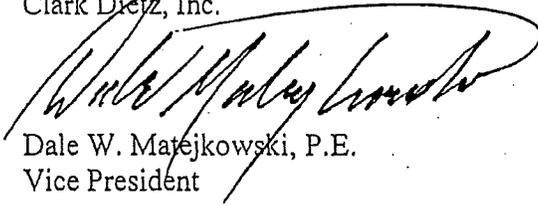
Again, you are cautioned that the above estimates are purely conjecture and that much further engineering study would be required to resolve the issues of project feasibility and cost. Yet, the order of magnitude of the Village's financial participation in this project should be sobering evidence enough to warrant either a decision to move forward with this project or to investigate other options.

Village of Savoy  
October 7, 1999  
Page 4

Should you have any question in regard to the matters herein, please do not hesitate to contact the undersigned.

Cordially,

Clark Dietz, Inc.



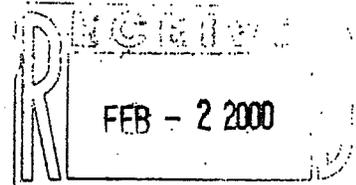
Dale W. Matejkowski, P.E.  
Vice President

cc: Mr. Dennis Unzicker  
Chairman, Curtis Road Technical Subcommittee

E-mail Address [dalem@clark-dietz.com](mailto:dalem@clark-dietz.com)

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F-50



January 31, 2000

Dale Matejkowski, P.E.  
Clark Dietz, Inc.  
1817 S. Neil Street  
Suite 100  
Champaign, IL 61820

Re: Curtis Road Widening from Duncan Road to First St., Champaign Illinois

Dear Mr. Matejkowski:

As requested, Northern Illinois Water Corporation (NIWC) has reviewed our records for our water mains in the location of the area stated above. The current locations of NIWC buried facilities for the area stated above is shown on the Preliminary Plans. The following is a list of the water mains to be relocated and possible water mains to be relocated for this project.

**RELOCATIONS BY NORTHERN ILLINOIS WATER CORP.**

1. Extend a 16" water main west from the 16" tee at the Northwest corner of Curtis Road and Duncan Road to get out from under the proposed street.
2. Retire the 8" water main on the South side of Curtis Road from the cross at the Southeast corner of Curtis Road and Duncan Road to road station 35+50. Tap the existing service lines over to the 16" water main on the North side of the road.
3. Relocate the existing 8" water main from the Northeast corner of Curtis Road and Cherry Hills Drive (the 16"x8" cross) to the South side of Curtis Road. Then extend the 8" water main West along the South side of Curtis Road to the Southwest corner of Curtis Road and Marjorie Lane. Then extend a 6" water main South along the West Side of Marjorie to the approximate Southeast corner of the property of Dewayne Coombs to tie into the existing 6" water main.

F.51

4. Retire the existing 8" water main on the South side of Curtis Road from road station 46+00 to 54+00. Tap the existing service lines over to the 16" water main on the North side of road.
5. Extend the existing 6" water main from the Southeast corner of Curtis Road and Meadow Lane to the 16" water main on the North side of Curtis Road (approximate road station 49+80).
6. Relocate fire hydrant from between 2807 & 2809 Curtis Road to the North side of Curtis Road (approximate road station 39+50).
7. Relocate fire hydrant from between 2603 & 2605 Curtis Road to the North side of Curtis Road (approximate road station 47+30).
8. Make the connection from the 8" water main on the West Side of Cherry Hills Drive to the 16" water main on the North side of Curtis Road (existing 16"x8" cross at approximate road station 42+10).
9. Relocate fire hydrant from between 2501 & 2503 Curtis Road to the North side of Curtis Road (road station 54+00).
10. Relocate fire hydrant at 400 Curtis Road (approximate road station 144+00) to the South to get out from under proposed road widening.
11. Relocate fire hydrant at Curtis Road and Wesley to the North to get out of way of proposed bike path/sidewalk (approximate road station 146+25).
12. Make sure proposed bike path goes around fire hydrant at approximately 85' South of road station 138+80.
13. Relocate fire hydrant at the Southeast property corner of 208 Curtis Road (approximate road station 151+60) to the North off of the 8" water main running North/South behind Savoy Plaza (approximate road station 151+80).
14. Check location of fire hydrant at the Northeast corner of Curtis Road and Savoy Plaza entrance (approximate road station 154+90) to make sure new entrance will not interfere with the existing fire hydrant location.
15. Relocate fire hydrant at the Northwest corner of Curtis Road and North Dunlap Avenue to the North to get out of way of the proposed road widening.
16. Relocate existing 12" and 8" water main from the Northwest corner of Curtis Road and North Dunlap Avenue (U.S. Rte. 45) (approximate road station 160+75) to the Northeast corner of Curtis Road and Paddock Drive West (approximate road station 169+50). Relocation due to cutting down road

elevation to install underpass under Railroad Tracks. Part of the new 12" water main to be in casing which is bored and jacked under Railroad R.O.W. and North Dunlap Avenue (U.S. Rte. 45).

17. Relocate service line to #1 East Curtis Road from approximate road station 163+85 to the East to the approximate road station 164+50, which would be East of the proposed casing for the proposed 12" water main.
18. Relocate fire hydrant at the Southeast corner of Curtis Road and Paddock Drive West to the South to get out of the way of the new bike path/sidewalk.
19. Relocate fire hydrant at the Southeast corner of Curtis Road and Paddock Drive East to the South to get out of the way of the new bike path/sidewalk.
20. Possible water main vertical relocation between road stations 171+00 and 173+00 due to cutting down the grade elevation over the water main. Field verify depth of water main prior to construction.
21. Relocate fire hydrant at approximate road station 179+00 on the North side of Curtis Road to the North to get out of the proposed road.
22. Relocate fire hydrant at approximate road station 183+00 on the North side of Curtis Road to the North to get out of the proposed road.
23. Relocate fire hydrant at approximate road station 187+00 on the North side of Curtis Road to the North to get out of the proposed road.
24. Relocate the fire hydrant at the Northwest corner of Curtis Road and First Street to the North to get out of the proposed road.
25. The service lines for 3601B and 3107 South Duncan Road may need to be lowered due to the proposed ditch at the Southwest corner of Curtis Road and Duncan Road.

### RELOCATIONS BY OTHERS

26. **The fire hydrant at the Northeast corner of Curtis Road and First Street to be relocated by others. This is a private fire hydrant owned by the University of Illinois.**
27. **Possible relocation at the North end of the project on First Street (approximate road station 1154+00). There is a private fire hydrant owned by the University of Illinois and a 6" service line with a meter vault near road station 1154+00. The proposed ditch may require a relocation of these water**

services. Needs to be field verified before construction.

28. Relocate the existing 16" water main that is in a 75' Northern Illinois Water Corp. easement from road station 61+00 to 72+20. Northern Illinois Water Corp. would like this water main relocated to the North in another easement. The easement acquisition and the water main relocation to be paid for by the developer for this relocation. The estimated cost of the water main relocation is \$67,500.00 plus the cost incurred for the easement acquisition.
29. Extend the 6" water main that is in a 40' Northern Illinois Water Corp. easement from road station 134+20 to the South and West to a new easement. The cost of the extension and easement acquisition to be paid for by the developer. The estimated cost of this water main extension is \$6,000.00 plus the cost incurred for the easement acquisition.

Upon review of future cross sections and proposed locations of storm sewers other conflicts may develop.

If you have any questions, please feel free to call me at (217) 373-3286.

Sincerely,

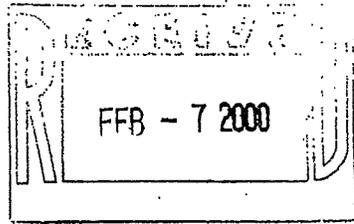


C. Andrew McCarrey  
Engineering Department

enclosure



**URBANA &  
CHAMPAIGN  
SANITARY  
DISTRICT**



**BOARD OF TRUSTEES**

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Donald Flessner  
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**EXECUTIVE DIRECTOR**

Dennis Schmidt

P.O. BOX 669 • 1100 E. UNIVERSITY AVE. • URBANA, IL 61803 • (217) 367-3409 • Fax (217) 367-2603

February 4, 2000

Clark Dietz, Inc.  
1817 South Neil Street, Suite 100  
Champaign, IL 61820

Attn: Dale Matejkowski, P.E.  
Re: Curtis Road Preliminary Engineering Study

Gentlemen:

In response to your letter of January 4, 2000, we are writing to provide you with the following information regarding District facilities impacted by the proposed Curtis Road Improvement.

Regarding the verification of District facilities, we have confirmed that the facilities and locations shown are consistent with the District's available information. However, buried utilities such as force mains should be field located to verify their exact location.

From review of the proposed plans, it is obvious that all of the existing District facilities are within the limits of the proposed roadway pavements. All of these existing facilities are located on permanent easements obtained by the District at the time of construction. It is the District's position that existing gravity sewers can remain in their present location provided that: 1) manholes are properly adjusted, in accordance with District standards, to the new pavement grades, and 2) force mains that terminate into existing manholes are reconstructed to provide adequate cover, a minimum of 42-inches, below proposed pavement grades.

The existing Lake Park force main, which runs from First Street to Prospect Avenue, will end up entirely beneath the proposed pavement. This force main is located on a permanent easement granted to the District for the purpose of constructing, operating and maintaining sanitary sewer facilities. Construction of permanent pavement and drainage appurtenances associated therewith will permanently compromise the District's ability to operate and maintain these facilities. Therefore, it is the District's position that this force main must be permanently relocated to a location outside of the pavement area, and at a depth that will protect it from freezing and damage that may be caused by other improvements associated with the roadway project. Further, it is the District's position that the cost of this work should be borne by the project. Due to time constraints, there has not been sufficient time available to develop specific relocation plans and cost estimates for this work. This information will be developed and forwarded to you as time allows. To assist us in that effort, the District requests that you provide us with a set of cross sections of the proposed roadway/drainage improvements.

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In addition to the existing facilities the District has along Curtis Road, the District's long-range planning work regarding future sewer service to undeveloped areas indicates the need for a new interceptor sewer to be extended east from the District's Southwest Treatment Plant across I-57. East of I-57, it is anticipated that this sewer would be routed along Curtis Road to a point approximately ¼ mile east of Mattis Avenue. When this interceptor is completed, the force mains from the Lake Park and Graham pump stations would be extended to discharge to this new sewer. The District is most interested in coordinating the construction of this interceptor with the Curtis Road improvement to avoid any unnecessary conflicts between the two. To this end the District offers to participate in the on-going planning work for the Curtis Road Improvement.

Thank you for the opportunity to review this preliminary engineering study. If you have any questions, or require additional information, please contact the undersigned at 367-3409.

Sincerely,  
URBANA & CHAMPAIGN SANITARY DISTRICT



Michael R. Little, P.E.  
Director of Engineering Services

Cc: Sam Erwin

## MEETING MINUTES

**Project:** Curtis Road Preliminary Engineering Study  
Duncan Road to First Street  
Section: 98-00374-00-ES  
Champaign County

**Subject:** Review of Curtis Road Preliminary Study Report  
and Design Exhibits dated March 2000

**Date/Time/Place:** April 24, 2000  
10:00 a.m.  
CDI Office, Champaign, IL

<b>Attendees:</b>	<b>Name</b>	<b>Representing</b>
	Dennis Unzicker	Champaign County
	Tim Milan	IDOT OP&P
	George Sherer, Jr.	IDOT, District 5
	Dennis Markwell	IDOT, District 5
	Richard Gross	IDOT, District 5
	Rick Marley	City of Champaign Engineering
	Jeff Smith	City of Champaign Engineering
	Gale Price	Champaign City Planning
	Frank Rentschler	Village of Savoy
	Jim Trail	University of Illinois
	Mylinda Granger	CUUATS
	John B. Frye	Champaign Township
	Jerry Payonk	CDI
	Dale Matejkowski	CDI
	Jeff Brillhart	CDI

If anyone has any additions or modifications, please contact CDI.

The purpose of the meeting was to review the Curtis Road Preliminary Engineering Study Report and Design Exhibits submitted to CUUATS in March 2000.

Open discussion was held on review comments offered by the various agencies. It was decided that CDI would issue an addendum to the Study Report addressing the various review comments. Since the budgeted fee for the PES has been expended, CDI will first provide Chairman Unzicker a fee

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**Meeting Minutes**

Curtis Road Preliminary Engineering Study

Duncan Road to First Street

Section: 98-00374-00-ES

Champaign County

Page 2

proposal for accomplishing this work. Issues to be discussed in the addendum are as follows.

1. Existing roadway jurisdictional limits along Curtis Road will be clarified. East of U.S. 45, jurisdiction is held by the Village of Savoy. West of U.S. 45, jurisdiction is held by Champaign Township except within those areas annexed to the City of Champaign or the Village of Savoy. Since annexation is ongoing, the roadway jurisdictional limits are subject to change. Future jurisdictional limits after the development of Curtis Road are anticipated to be as stated on page II-3 of the Study Report.
2. The project cost estimates will be revised for a concrete pavement instead of a bituminous pavement. Costs for design and construction engineering as a percentage of construction cost will be increased from 16% to 20%. The revised costs will be allocated between the future jurisdictional limits of Champaign and Savoy. Additionally, project costs will be developed for interim construction of only two travel lanes plus the barrier median (or center turn lane) built upon the full roadbed section contained within the right-of-way corridor width necessary to accommodate expansion to four travel lanes.
3. Provide justification for not recommending the Curtis Road typical section alternate which was proposed by the Scoping Study to be used through the Rolling Acres area.
4. Clarify if 6:1 or 4:1 foreslopes should be used within the clearzone area. Backslopes should incorporate a rounded transition to match existing grade. Should backslopes be 3:1 or 4:1 to facilitate mowing?
5. Note that all possible measures will be taken to minimize or eliminate any increase in the rate of stormwater runoff transmitted to the downstream area of the Embarras River.

The addendum will not include revisions to the Design Exhibits, but their necessary modifications will be noted.

In a related matter IDOT's correspondence dated 9-13-99 (see Appendix D, page D-31) was discussed. The five foot clearzone to the bikeway (as referenced in the first three comments of this letter) may be satisfied if the bike lane is situated on the outside of the combination sidewalk/bikeway. The last two comments of this letter will be resolved during further Phase I studies.

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**Meeting Minutes**

Curtis Road Preliminary Engineering Study  
Duncan Road to First Street  
Section: 98-00374-00-ES  
Champaign County  
Page 3

IDOT advised CUUATS that local agencies may not be subject to such a strict application of design criteria and standards as is the state; and, that the FHWA may grant design variations if shown that excessive costs or impacts result from strict adherence to these policies.

IDOT advised CUUATS that they are in the very early stages of the Curtis Road/I-57 interchange study.

Jeff Smith suggested that CUUATS contact the individual property owners affected by the development of Curtis Road to make sure they are aware of these plans and the impacts to their properties.

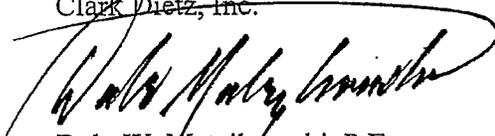
CUUATS agreed to have a meeting in the next 30 days to discuss:

- how to proceed with further Phase I project development;
- whether to process the CUUATS Phase I Curtis Road approval documents separately but parallel to IDOT's interchange design study; or given the issue of "Logical Termini", combine both projects into one processing document; and,
- how to accommodate bike traffic through the Curtis/I-57 interchange area.

With no further discussion the meeting was adjourned at approximately 12:00 noon.

Respectfully submitted,

Clark Dietz, Inc.



Dale W. Matejkowski, P.E.  
Project Manager

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# Illinois Department of Transportation

## Memorandum

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To: File  
From: K. T. Desai  
Subject: FHWA Meeting Minutes  
Date: May 15, 2000

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Curtis Road Improvement (FAU-7147)  
Sec. 98-00374-00-ES  
Champaign County

A meeting was held on May 12, 2000 at Federal Highway Administration (FHWA), 3250 Executive Park Drive in Springfield. The following were in attendance:

Jon-Paul Kohler FHWA  
Kevin McLaury FHWA  
K. T. Desai IDOT

The above-referred preliminary engineering study prepared by Clark Dietz, Inc. was discussed. It was presented to FHWA that the project will be divided in two parts as follows,

1. Proposed Curtis Road/I-57 Interchange project (Staley Road to Duncan Road)
2. Curtis Road Improvement (Duncan Road to First Street)

### Curtis Road/I-57 Interchange

The I-57 Interchange access break was approved by FHWA on May 22, 1981. Because of the lapsed time, the access break request needs to be updated in accordance with the guidelines published by the U.S. Department of Transportation FHWA in the February 11, 1998 Federal Register. FHWA anticipates no problem in the reconfirmation of the previous approval. FHWA agreed to the proposed interchange limits from Staley Road FAU 7154 to Duncan Road FAU 7155.

### Curtis Road Improvement (FAU 7147)

The preliminary engineering study for this improvement was discussed. It was mentioned that the district would like to proceed with PE-I and PE II for Curtis Road project separately from the I-57 interchange; however, both projects are

anticipated to be constructed and opened to traffic about the same time. FHWA agreed to the termini for Curtis Road Improvement to be from Duncan Road FAU 7155 to First Street FAU 7170.

For environmental purposes, FHWA concurred that being an add lanes project an ECAD analysis for this project may be adequate. The results of the analysis and ESR will determine the final processing.

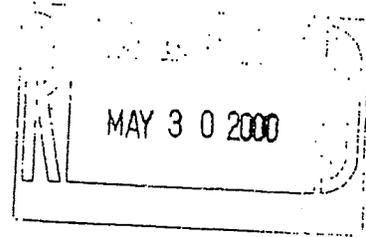
cc: George Sherer

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Tom Zeinz  
Manager Engineering Services  
Engineering

Canadian National/Illinois Central  
17641 Ashland Avenue  
Homewood, Illinois 60430  
Telephone: (708) 206-3557  
Fax: (708) 206-3084



May 25, 2000  
131/5

Mr. Dale W. Matejkowski, P.E.  
Vice President  
Clark Dietz, Inc.  
1817 S. Neil Street, Suite 100  
Champaign, IL 61820

Subject: Curtis Road Grade Separation Feasibility Study  
Champaign, Illinois

Dear Mr. Matejkowski:

Further reference is made to your transmittal of January 4, 2000 concerning the feasibility of constructing a grade separation (subway) structure at Curtis Road and our Champaign tracks at our Milepost 131.2, at/near Champaign, Illinois.

Having completed our review, we desire to convey the following comments:

- 1) While we understand the thought process that led to the recommendation for the Railroad to be offset 90-feet easterly to facilitate a grade separation at this location, the result is a succession of changes in our alignment which, in aggregate, we find highly objectionable. We would decidedly prefer a 60-foot offset so as to be consistent with our alignment over Windsor Road. Obviously, this would require the low steel elevation for the Curtis Road structure to be approximately 1-foot higher than currently indicated to maintain the same clearance over the roadway; however that can be accommodated by a minimal increase in the design track gradient or by other concessions that would permit a shallower structure depth. A notable benefit of utilizing a 60-foot offset is that it would also substantially reduce the additional right-of-way needing to be procured.
- 2) The primary business product we produce is transportation. We're not "in business" to construct or maintain tracks, bridges, signals or even locomotives. Obviously, these are things we have to do to support our primary function, but they are strictly ancillary and *not* our principal focus. As such, our design philosophies for structures which support our tracks are predicated, first and foremost, upon simplicity, the desire to minimize maintenance, not limiting or otherwise dimensionally compromising the types of lading we can transport and, to the greatest possible extent, utilizing materials that are more readily available in the event emergency replacement might be required.

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Mr. Dale W. Matejkowski, P.E.  
May 25, 2000  
Page 2

It is for these reasons we eschew the use of through girder or through truss designs. Such structures, in and of themselves, invariably create clearance restrictions which limit our ability to transport oversized loads (which often *must* be transported by rail since they're too large to be transported over the highway).

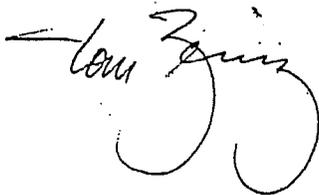
It is also for these reasons we avoid the use of welded girders whenever possible. The possibility of weld failures and the need to continually inspect these welds constitute an unacceptable maintenance burden in a railroad environment. Also, in the event of a weld failure or in the event the girder sustains damage, say from a strike by an oversized highway load, we're out of business until it's repaired or replaced and, if replacement is required, it may be several months before a new girder can be fabricated. On the other hand, railroad structures which utilize rolled beams: a) eliminate potential welding problems; b) are sufficiently redundant (i.e., generally contain a sufficient number of beams) that damage to one beam doesn't necessarily require taking the structure out-of-service; and c) if a beam does need to be replaced, the procurement time is generally much shorter. The only downside is that span lengths are generally limited to approximately 55 feet.

For these reasons, we are compelled to take exception to the decision to rule out a center pier. Additionally, inclusion of a center pier would allow for a sufficient reduction of structure depth that it would then likely be feasible to accommodate a 60-foot offset alignment without having to increase the track gradient. We realize that may cause other project complications, but we view such economic trade-offs as merely part of the challenge of Engineering.

- 3) Lastly, the guidance previously conveyed to you relative to the minimum tangent distance between reverse curves being 100 feet was in error. That is the minimum for temporary tracks or for tracks that carry freight traffic only. To maintain the desired ride quality for passenger trains (AMTRAK) operating at 79 MPH, the preferred tangent distance between reverse curves is 400 feet.

We appreciate this opportunity to provide our comments and do apologize for taking so long to respond.

Sincerely,



F-63

## MEMO

**To:** Dennis Unzicker, Chairman  
CUUATS Curtis Road Technical Subcommittee  
**From:** Dale W. Matejkowski  
**Date:** May 30, 2000  
**Subject:** Railroad, ESR and FHWA Coordination  
**Copies:** Project File

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In accordance with our discussion at the May 23<sup>rd</sup> Curtis Road meeting, I contacted Mr. Tom Zeinz of the CN-Illinois Central Railroad to check on the status of their review of our January 4<sup>th</sup> submittal of the Grade Separation Feasibility Study. Mr. Zeinz returned my call on the 25<sup>th</sup> with the following comments.

1. The railroad objects to the horizontal track realignment offset of 90 feet. The railroad track was offset 60 feet at Windsor Road to create the grade separation at that location. An additional 30-foot offset at Curtis Road would introduce a second "kink" into their alignment which they prefer to eliminate.
2. Mr. Zeinz stated that to reduce the offset to 60 feet would require raising the track over the proposed Curtis Road subway profile at this location by about one foot. The railroad would allow their previously stated maximum grade of 0.36% to increase to 0.40 to accomplish this (actually about 0.38% would be required).
3. The railroad will absolutely not tolerate a welded plate girder structure to accomplish the required span length. Mr. Zeinz stated that future inspection, maintenance and repair of welded sections is a problem for their rail operations. The railroad will only accept standard rolled sections. I explained to Mr. Zeinz that a rolled section would not accommodate the required span length without using a center median pier. This in turn, requires a wider Curtis Roadway and will necessitate the taking the FASS building in the southwest quadrant. Mr. Zeinz replied that by reducing the offset from 90 to 60 feet and by using rolled instead of welded sections, enough savings would result to offset the cost of acquisition and demolition of the FASS building. Additionally, if rolled sections of lesser depth are used, the 60 foot offset might be obtained without the need for increasing the track gradient.

**MEMO**

Dennis Unzicker, Chairman  
CUUATS Curtis Road Technical Subcommittee  
May 30, 2000  
Page 2

4. 400-foot tangent sections will be required between reverse curves due to Amtrak operation. Prior information furnished by the railroad was 100 feet.

I informed Mr. Zeinz that this project will be moving forward into additional and more detailed studies in the near future. This work would include the development of TS&L studies for the railroad bridge and that the above track realignment issues would be further investigated at that time. I will forward to Mr. Zeinz a copy of the completed Curtis Road PES for his future reference. Enclosed is a copy of his follow-up correspondence regarding our conversation.

I received a call on May 30<sup>th</sup> from Mr. Ron Ferguson of IDOT/D-5/BLR. I had asked Mr. George Sherer to check on the status of the Environmental Survey request submitted January 26<sup>th</sup>. Mr. Ferguson advised that due to project priorities the ESR was just recently submitted by BLR/Central to the environmental unit and that it would take about three months to process. Mr. Ferguson verified that IDOT will perform the Wetland Inventory Study.

I also confirmed with Mr. Ferguson that he indeed transmitted two copies of the completed PES to IDOT/Central for their and FHWA review. On May 31<sup>st</sup> he faxed a copy (enclosed) of the minutes of a meeting with FHWA representatives in which this project was discussed.

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F-65

Taken By: YPS       Visit       Telephone      Date: 5.30.01  
 Conference       Incoming  Outgoing

Contact Name: MIKE LITTLE      Organization: SANITARY DISTRICT      Phone: 367-3409

Project Name: CURTIS ROAD      No. C30041

Summary of Issues / Decisions:

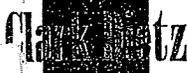
          CALLED MIKE TO DISCUSS FUTURE SANITARY  
INTERCEPTOR TENTATIVELY PLANNED FOR CURTIS  
ROAD CORRIDOR. MIKE INFORMED ME SODEMAN'S  
WAS PERFORMING A LOCATION STUDY FOR  
THEM, BUT PRELIMINARY PLANS CALLED FOR  
THE INTERCEPTOR TO BE LOCATED SOUTH  
OF THE CURTIS ROAD CORRIDOR. THE EXACT  
DISTANCE AND THE LOCATION OF THE  
CONNECTING LATERALS WAS BEING STUDIED  
BUT MIKE PRESUMED NO MEANINGFUL IMPACT  
ON THE CURTIS ROAD IMPROVEMENT. I  
TOLD HIM WE WOULD PROVIDE HIM A  
COPY OF OUR PRELIMINARY DESIGN ONCE  
COMPLETED TO ALLOW HIM TO REVIEW AND  
COMMENT.

Action Taken

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CLARK DIETZ

CONVERSATION RECORD



MEETING MINUTES

Project: Curtis Road Phase I Studies  
Duncan Road to First Street  
Section: 00-00374-00-ES  
Project: M5181 (036)  
Job: P-95-073-00  
Champaign County

Subject: Project Meeting

Date/Time/Place: September 26, 2001  
9:00 a.m.  
CDI Office  
Champaign, IL

Attendees:	<u>NAME</u>	<u>REPRESENTING</u>
	Dennis Unzicker	Champaign County
	Jeff Smith	City of Champaign Engineering
	Steve Wegman	City of Champaign Engineering
	Frank Rentschler	Village of Savoy
	Dennis Markwell	IDOT, District 5
	George Sherer	IDOT, District 5
	Dale Matejkowski	CDI
	Jerry Payonk	CDI

If anyone has any additions or modifications, please contact CDI.

The purpose of this meeting was to review the anticipated order of constructing improvements within the three-mile Curtis Road corridor. Since neither federal nor local funding is sufficient to build the entire improvement length at once, it will be necessary to program a series of phased construction sections and their associated costs within a future time period in order to secure the necessary funding. Due to prior funding commitments, the first year that STP-U funds would be available for Curtis Road is FY 2007.

The implementing agencies consider the first phase of Curtis Road to consist of right-of-way acquisition and utility relocation. Discussion focused on a

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plan of phased construction improvements which could be accommodated by future funding levels.

Mr. Matejkowski advised that a phasing plan should:

- A. Prioritize construction in areas experiencing more rapid growth in traffic volume;
- B. Allow for continuity of traffic and stormwater flows between improved and non-improved roadway sections;
- C. Optimize subsequent use of earthwork volumes; and,
- D. Accommodate a utility relocation scheme.

If only traffic volume growth is considered, the latest traffic forecasts for Curtis Road indicate the following order of construction.

1. Prospect to U.S. 45 (2279')
2. Duncan to Mattis (5299')
3. Mattis to Prospect (5267')
4. U.S. 45 to First (3016')

---

First constructing the roadway sections west of U.S. 45 provides 50,000 cu. yds. of surplus excavation which could be utilized for construction of the railroad relocation east of U.S. 45. The roadway construction between U.S. 45 and First St. will provide an additional 17,000 cu. yds. for this purpose.

If criteria A, B and C above are considered together, CDI would envision the following order of construction.

1. Sta 132 (immediately west of Lo residence) to U.S. 45 (2926')
2. Duncan to Wynstone Drive (Sta 61) (2819')
3. Sta 61 to Sta 132 (7100')
4. U.S. 45 to First (3016')

Mr. Markwell advised the group that in order to secure timely funding for the interchange, which in itself is a large factor in the estimated traffic volumes, the local agencies would have to show a strong commitment toward first developing Curtis Road between Duncan and Mattis.

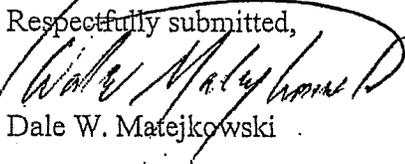
Meeting Minutes  
Curtis Road Phase I Studies  
Duncan Road to First Street  
Page 3

It was therefore decided for funding purposes to consider three overall construction phases:

1. Duncan to Wynstone Drive (2819')
2. Wynstone Drive to U.S. 45 (10,026)
3. U.S. 45 to First Street including the railroad relocation and grade separation structure (3016')

CDI will provide cost breakdowns for these areas based upon construction of an interim two-lane facility. The cost estimates will itemize costs of construction, design and construction engineering, row acquisition and acquisition services, and utility relocations. These costs will be extrapolated from those contained within the Preliminary Engineering Study.

Respectfully submitted,



Dale W. Matejkowski

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Attachment: Curtis Road Cost Estimate (10-5-01)

F-69

November 19, 2001

Mr. Tom Zeinz  
Manager Engineering Services  
CN-Illinois Central Railroad  
17641 S. Ashland Ave.  
Homewood, IL 60430

Re: CN-IC Railroad Relocation  
Curtis Road Location/Design Study  
Duncan Road to First Street  
Section: 00-00374-00-ES  
Champaign County

Dear Mr. Zeinz:

After an extended hiatus work has once again resumed on the referenced project. We have completed our preliminary engineering studies and are moving forward with the necessary efforts to obtain IDOT Design Approval and FHWA Environmental Sign-off.

Reference is made to our previous January 4, 2000 submittal and your review response dated May 25, 2000. This submittal incorporates all elements of your previous review:

- relocation offset reduced from 90 to 60 feet;
- rolled beams utilized in lieu of plate girders;
- tangent distance increased to 400 feet between reverse curves.

Exhibits 18 through 24 along the railroad and Exhibit 10 along Curtis Road depict the revised geometrics. In order to achieve the required vertical clearance under the bridge, track gradient needed to be increased from 0.36% to 0.39%. Exhibit 21 illustrates the proposed bridge span arrangement and preliminary bridge section.

We would like to move forward with formal TS&L development of the railroad structure but hesitate to do so pending your review and approval of the revised alignments. We would appreciate your response at your earliest

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Mr. Tom Zeinz  
November 19, 2001  
Page 2

convenience and are providing Mr. Binder a duplicate of this submittal.  
Thank you.

Cordially,

Clark Dietz, Inc



Dale W. Matejkowski, P.E.  
Vice President  
Project Manager

cc: Mr. Jim Binder, Field Engineer, CN-ICRR  
Mr. Dennis Unzicker, Chairman, Curtis Road Technical Committee

E-mail Address [dalen@clark-dietz.com](mailto:dalen@clark-dietz.com)

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F-71

To: SCT/FIL Date: 12-19-01  
From: BWM Project Name: Curtis Road  
Re: ICR Relocation Project No: C30041

TOM ENZIE CALLED THIS DATE. THEY HAVE COMPLETED THEIR REVIEW OF THE ICR RELOCATION GEOMETRICS AND HAVE NO PROBLEMS WITH THE "CONCEPT".

I TOLD TOM WE WOULD PROCEED WITH THE BRIDGE TS & L FOR THEIR REVIEW AS WELL. HE SUGGESTED THAT BEFORE WE START THAT WE TALK TO THEIR DON LEWIS, MGR. OF BRIDGES AND STRUCTURES — 708/266-3507. THEY HAVE SOME SPECIFIC BRIDGE DESIGN REQUIREMENTS WE SHOULD DISCUSS BEFORE PROCEEDING.

Steve — WE CAN COORDINATE YOUR START ON THIS AFTER THE FIRST OF THE YEAR.

CLARK DIETZ

MEMO



May 28, 2004

Ms. Patricia Marr  
Illinois Department of Transportation  
Division of Highways  
2300 South Dirksen Highway  
Springfield, Illinois 62764

SAI: 01-112313 (Renewal/Revision)  
COUNTY: Champaign - 5  
STAGE: Design  
SECTION #: 00-00374-00-ES  
TITLE: FA 807/7147 - Curtis Road Duncan Road to First Street

## SINGLE POINT OF CONTACT

### Illinois State Clearinghouse

Administered by the

Illinois Department  
of Commerce and  
Economic Opportunity

620 East Adams Street  
6th Floor  
Springfield, Illinois 62701

217/524-0188  
FAX: 217/558-0473  
TDD: 217/785-6055

Rod R. Blagojevich  
Governor

Jack Lavin  
Director

The Illinois State Clearinghouse has processed the subject notification pursuant to the Federal Executive Order 12372. Representatives of State, regional and local organizations whose activities might be affected by action on this project have been provided an opportunity for review and comment.

Based on the information provided and responses of interested parties, it has been determined that:

X  No comments were received during the 30-day review period, which indicates that the proposed project is apparently not in conflict with the state's plans, policies and priorities.

\_\_\_\_\_ The comments received during the 30-day review period indicate that the proposed project is not in conflict with the State's plans, policies and priorities. However, the attached comment(s) and/or recommendation(s) should be taken into consideration by the applicant and the funding agency.

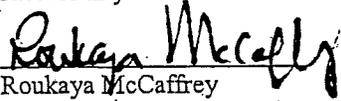
\_\_\_\_\_ The comments received during the 30-day review period indicate that the proposed project is not in conflict with the State's plans, policies and priorities provided the provision(s) outlined in the attachment(s) is/are met.

\_\_\_\_\_ the comments received during the 30-day review period indicate that the proposed project is in conflict with the plans, policies and priorities of the State. See attachment(s) for further explanation.

This notice neither waives the necessity to obtain, nor excuses the failure to obtain, any additional notification, approval, permit, license, contract, right, or other arrangement which may be required for this project. The funding agency will conduct a programmatic review which is separate and distinct from this Executive Order 12372.

This letter is valid for two years from this date. An updated SF 424 form must be submitted to the Illinois State Clearinghouse if revision, continuation or augmentation is sought from the funding agency. Please reference the State Application Identified (SAI) in any future correspondence concerning this project.

Thank you for participating in the State Clearinghouse process. We will you every success in your endeavors.

  
Roukaya McCaffrey  
Coordinator/Single Point of Contact /217-524-0188

Clark Dietz

January 25, 2002

Mr. Robert Hahn  
Illinois Division of Aeronautics  
#1 Langhorne Bond Drive  
Springfield, IL 62707

Re: Curtis Road Phase I Studies  
Duncan Road to First Street  
Section: 00-00374-00-ES  
Project: M-5181 (036)  
Job: P-95-073-00 - Champaign County

Dear Mr. Hahn:

The Curtis Road project is located along the southern periphery of Champaign, Illinois. In reference to the enclosed Project Location Map, the improvement will consist of developing a four-lane arterial class roadway between Duncan Road on the west and First on the east. The improvement will utilize the right-of-way corridor for the existing two-lane facility and will require the acquisition of additional right-of-way. The new roadway will be elevated slightly in various areas along its three mile length.

As part of the roadway improvements, the existing at-grade crossing of the CN/IC Railroad track will be eliminated. A subway crossing of the railroad is proposed in which Curtis Road is lowered and the railroad track is raised. To effect this realignment the railroad track will be shifted from its present location bordering U.S. Rt. 45 approximately 60 feet to the east. Additionally, the railroad track will be gradually raised commencing at Church Street in Savoy to a level at Curtis Road which is approximately 16 feet higher than the existing track elevation in this area. From this point the track elevation will decline to meet its current location at Windsor Road. The total track relocation is two miles between Church Street and Windsor Road.

In accordance with Article 11-2.13 of IDOT's Division of Highways Bureau of Design and Environment Manual, we are required to advise the IDOA that portions of this railroad realignment are within two miles of the University of Illinois Willard Airport. Enclosed are Exhibits 18 through 24 which depict the horizontal and vertical realignment of the railroad. Please review the

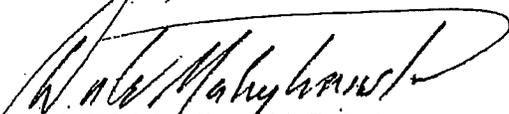
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Mr. Robert Hahn  
January 25, 2002  
Page 2

enclosed and advise us of any concern or comment IDOA may have and whether further coordination with the FAA will be required. Should you have any question, please do not hesitate to contact the undersigned.

Cordially,

Clark Dietz, Inc.



Dale W. Matejkowski, P.E.  
Project Manager

cc: Mr. Dennis Unzicker

E-mail Address [dalem@clark-dietz.com](mailto:dalem@clark-dietz.com)

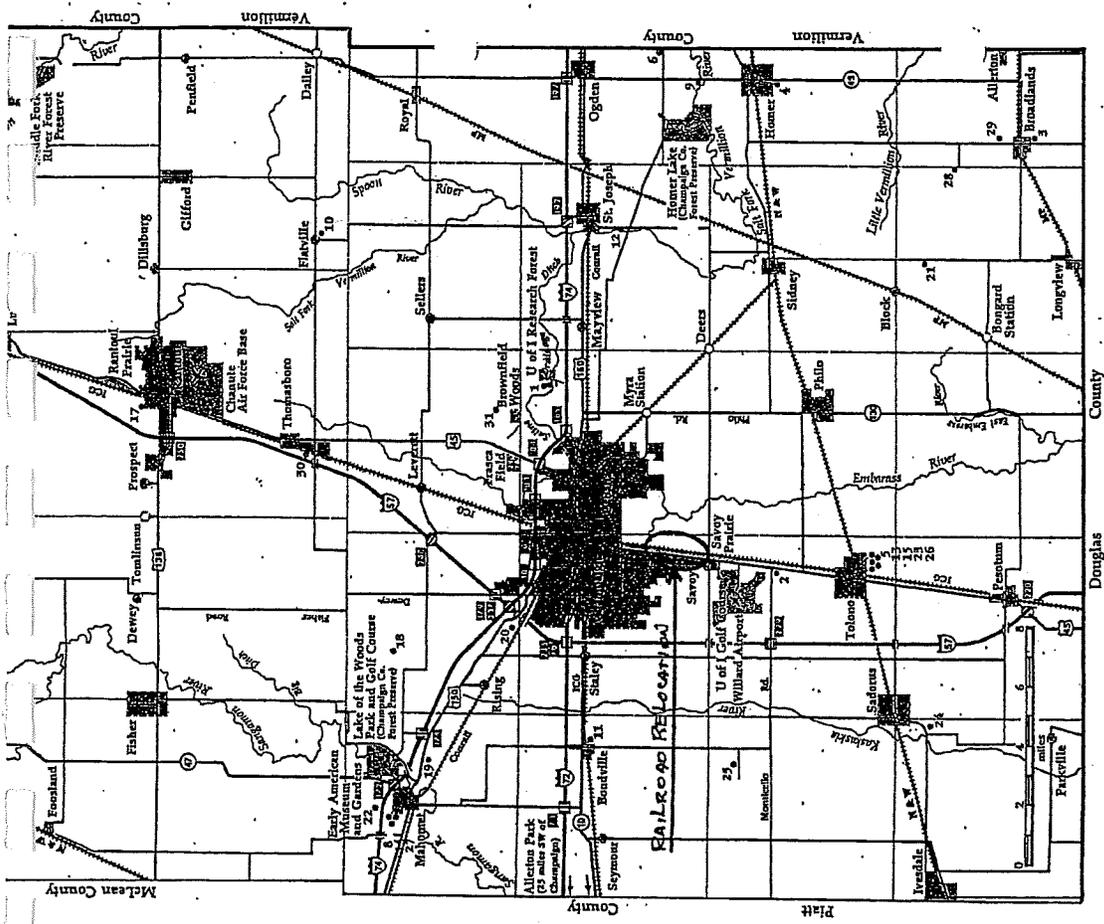
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# County

- 1 Blackberry School
- 2 Brennan School
- 3 Brumby/Brumby House
- 4 Burkhardt/Byrne House
- 5 Burk/Nichols House
- 6 8th Judicial Circuit Marker
- 7 Fielder, Ruamel, Cabins Site
- 8 Honner Park, Old
- 9 Immanuel Lutheran Church of Florville
- 10 Intonathan Station (Blondville Fire Dept)
- 11 Kelley's Tavern Site
- 12 Lincoln Parwell Message (1861) Marker
- 13 Lindley House
- 14 McHenry, William/Dowell House
- 15 McHenry, William/Dowell House
- 16 McHenry, William/Dowell House
- 17 McHenry, William/Dowell House
- 18 McHenry, William/Dowell House
- 19 Niles-God Tavern Site
- 20 Rego Farmhouse
- 21 Raymond House
- 22 Ken Tavern/Sbrigcouch Stop Site
- 23 Richard/Frank House
- 24 Settler in Champaign County
- 25 St. Boniface Roman Catholic Church
- 26 Salisbury/Gardner House
- 27 Smith, George W. Farm
- 28 Stillman Headquarters
- 29 Thompsons Grain Elevator
- 30 Van Buren Post Office Site

- Interstate Highway/Interchange
- U.S. or Illinois Route
- County Highway
- Railroad
- Township Boundary
- Historic Point of Interest
- Conservation/Recreation Area







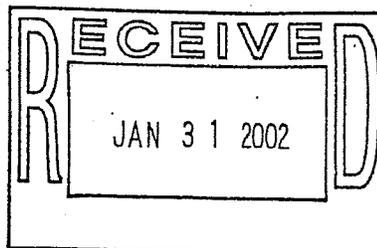
# Illinois Department of Transportation

Division of Aeronautics

1 Langhorne Bond Drive / Capital Airport / Springfield, Illinois / 62707-8415

January 29, 2002

Mr. Dale W. Matejkowski, PE  
Project Manager  
Clark Dietz, Inc.  
1817 South Neil Street, Suite 100  
Champaign, Illinois 61820



RE: Curtis Road Phase I Studies  
Duncan Road to First Street  
Section: 00-00374-00-ES  
Project: M-5181 (036)  
Job: P-95-073-00 – Champaign County

Dear Mr. Matejkowski:

After reviewing the sketch and the railroad elevation plans that you sent me, the Division of Aeronautics has the following comments:

The FAA requires submittal of the Form 7460-1 (see attachment or this can be downloaded from both the IDOT & FAA web-sites) for new construction using the following criteria:

- a. "Any construction or alteration of more than 200' in height above the ground level at its site." [Ref: FAA Form 7460-1 Paragraph 77.13 (a) (1)].
  - b. Any penetration of a 100:1 (for every 100' horizontal – 1' vertical) for "a horizontal distance of 20,000' feet from the nearest point of the nearest runway ..." [Ref: FAA Form 7460-1 Paragraph 77.13 (a) (2) (i)].
1. From the sketch, I scaled a distance of approximately 6,500' from the end of Rwy 22L (U of I – Willard Airport) to intersection of the track and Church Street. Dividing 6,500' by 100 and adding this to the Rwy 22L-end elevation of 746.19', one gets a notification height of 811.19'. Comparing this to a proposed track height of 738.78' and adding the required adjustment height for railroads of 23', an object height of 761.78' is obtained.
  2. Looking at another point, I scaled a distance of approximately 10,700' from the end of Rwy 22L (U of I – Willard Airport) to intersection of the track and Curtis Road. Dividing 10,700' by 100 and adding this to the Rwy 22L-end elevation of 746.19', one gets a notification height of 853.19'. Comparing this to a proposed track height of 757.07' and adding the required adjustment height for railroads of 23', an object height of 780.07' is obtained.
  3. For the expansion of Curtis Road, I did the same calculations as shown above with the construction not being an issue with the notification plane. The only difference in calculations (not shown) from items #1 & #2 above is that the required adjustment is instead 15' for vehicular traffic on public roadways.

F-79

Note: If light poles, signs, construction equipment (i.e., cranes, earth moving equipment, etc.) or any other obstruction is above the notification heights, a FAA Form 7460-1 submittal is required. Also, all new lighting fixtures should be designed to direct light downward as appropriate. Upward or side pointing lights could possibly present a safety hazard to pilots on approach.

In conclusion, this office does not see a need for FAA Form 7460-1 notification for this proposed construction project.

If you have any further questions or problems, please contact me at your convenience at 217-524-1580.

*Robert Hahn 1/29/02*

Robert Hahn  
Airspace Specialist  
Illinois Department of Transportation, Division of Aeronautics

cc: Joe Attwood – Airport Manager, U of I - Willard Airport  
Gary K. Regan – FAA (CHI-ADO-640.5)

Attachment:

F-80



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

Illinois Division

3250 Executive Park Drive  
Springfield, Illinois 62703

March 26, 2002

HDA-IL

Mr. James L. Easterly, Director of Highways  
Illinois Department of Transportation  
2300 South Dirksen Parkway  
Springfield, Illinois 62764

Attention: Mr. Mike Hine, Chief  
Bureau of Design and Environment

Dear Mr. Easterly:

Subject: Access Justification Report (AJR)  
I-57 Curtis Rd Interchange  
Champaign County  
Contract No. 90758

We have received your March 18, 2002 letter requesting conceptual approval for a new interchange at Interstate 57 and Curtis Road in Champaign County.

After reviewing the additional information all eight points, including safety, have been thoroughly discussed and the requirements contained in the AJR guidance are satisfied. Therefore, we give conceptual approval as submitted.

I would like to acknowledge District 5's patience as we improve our joint policy and procedure for AJRs. Sound data provides the best possible information upon which we can make informed decisions concerning requests for new and revised access to the Interstate System.

If there are any further questions or comments please contact Pam Heimsness at (217) 492-4626.

Sincerely yours,

/s/ Norman R. Stoner

Norman R. Stoner, P.E.  
Division Administrator

cc: Mr. Paul Niedernhofer, Bureau of Design and Environment  
Mr. Dennis Markwell, Program Development Engineer, District 5  
PJHeimsness:lrn; file- S:\READING\2002\AJR Curtis Rd.doc

F-81

To: PROJECT FILE Date: 4-25-02  
From: TDW Project Name: Curtis Road  
Re: UCSD NEW Project No: C30041  
SAN JEN INTERCEPTOR

Met this date with Jerry Benhurst of Jordan and Mike Lyle of UCSD to discuss coordination of San Jen installation w/r to Curtis Road design requirements. Furnished both a copy of latest Curtis design exhibits showing final drainage plan. Indicated P.D.W. requirements are still being "worked."

Biggest problem is that District wants to construct San Jen in 2004 but Curtis construction may be as late as 2007, first Duncan to Wynstone, 2nd Wynstone to US 45 3rd US 45 to First. They will review Curtis exhibits and get back to me for further coordination.

I suggested when they had a plan that we host a joint utility meeting to coordinate with other utilities.

New San Jen Improvements est. to cost 8 1/2 mil.

CLARK DIETZ

MEMO

F-82

Clark Dietz

July 30, 2002

Mr. Tom Zeinz  
Manager Engineering Services  
CN-Illinois Central Railroad  
17641 S. Ashland Ave.  
Homewood, IL 60430

Re: CN-IC Railroad Relocation  
Curtis Road Location/Design Study  
Duncan Road to First Street  
Section: 00-00374-00-ES  
Champaign County

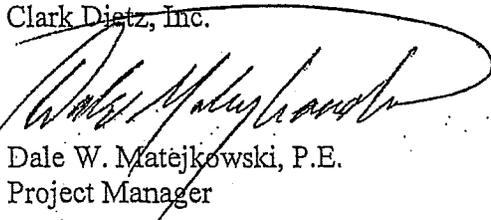
Dear Mr. Zeinz:

Enclosed for review are two copies of the Bridge TS&L Drawing for the CN-Illinois Central Railroad over Curtis Road. Also provided for reference are the soils boring data, PBDHR (BLR 5901) and copies of Exhibits 10 and 22 depicting full plan/profile elements in vicinity of the new bridge.

We are concurrently submitting to IDOT for their review as well. Should you have any question, please do not hesitate to contact the undersigned.

Cordially,

Clark Dietz, Inc.



Dale W. Matejkowski, P.E.  
Project Manager

cc: Mr. Dennis Unzicker  
Mr. Jim Binder

E-mail Address [dalem@clark-dietz.com](mailto:dalem@clark-dietz.com)

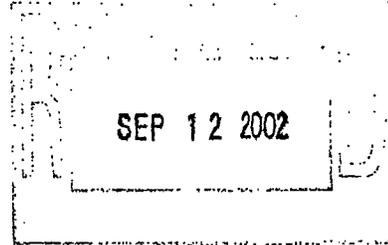
F-83



# Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois 62764

September 10, 2002



Surface Transportation Program-Urban  
Champaign County  
Section 00-00374-00-ES  
CN/IC RR over Curtis Road

Mr. Dale Matejkowski  
Project Manager  
Clark Dietz Inc.  
1817 S. Neil Street, Suite 100  
Champaign, Illinois 61820

Dear Mr. Matejkowski:

The preliminary bridge design for the above-designated project is hereby approved. This approval is based on resolution, with the IDOT Bureau of Local Roads and Streets, of the transition of the proposed urban roadway cross section under the bridge to a rural cross section. If the roadway cross section, horizontal or vertical clearances under the proposed bridge are modified, a TS&L revised plan must be submitted for our review and approval.

Please assign a structure number for the proposed bridge for all future preliminary bridge design and hydraulic reports. This follows procedures set forth in the Federal and MFT Policy manuals.

One set of the approved TS&L drawings, BLR 5901 forms and soils report is being returned to you and to the consultant, Clark Dietz Inc.

Very truly yours,

Ralph E. Anderson  
Engineer of Bridges and Structures

A handwritten signature in cursive script that reads 'John A. Morris' with a small flourish at the end.

By: John A. Morris  
Engineer of Structural Services

TC/bb24092  
cc- David Clark/Attn: David Speicher  
Clark Dietz Inc.

F-84



# Illinois Department of Transportation

Division of Highways / District 5  
13473 IL Highway 133 / P.O. Box 610 / Paris, Illinois / 61944  
Telephone 217/465-4181

Intersection Design Studies  
Route FAP 807  
Section 00-00374-00-ES  
Champaign County

October 30, 2002

Mr. Jerald T. Payonk  
Clark Dietz, Inc.  
1817 South Neil Street  
Champaign, IL 61820-7268

Dear Mr. Payonk:

The enclosed IDS's are acceptable, and may be included in the Project Development Report (PDR) for this project. Since the IDS's do not contain routes under the Department's jurisdiction the District will not be signing the IDS's. However, the local agencies that have jurisdiction of the routes approaching the intersection must sign the IDS. The District and Central Bureau of Local Roads and Streets will approve the proposed scope of work, including the details presented in the IDS's, when the PDR is signed.

If you have any questions, or require additional information, please contact Ms. Kim Mattingly, District Bureau of Local Roads and Streets Technical Services Technician, at 217/466-7256.

Sincerely,

D. Clark  
District Engineer

By   
David A. Speicher  
District Bureau of Local  
Roads and Streets Engineer

KWM:sn  
Attachments  
cc: Dennis Unzicker, Champaign County Engineer  
Rob Macklin, Program Development  
0131N

NOV - 1 2002

F-85



Tom Zeinz  
Manager Engineering Services  
Engineering

Canadian National/Illinois Central  
17641 Ashland Avenue  
Homewood, Illinois 60430  
Telephone: (708) 206-3557  
Fax: (708) 206-3084

NOV - 6 2002

November 1, 2002  
131/5

Mr. Dale W. Matejkowski, P.E.  
Vice President  
Clark Dietz, Inc.  
1817 S. Neil Street, Suite 100  
Champaign, IL 61820

Subject: Illinois Central Railroad Relocation  
Curtis Road Grade Separation Location/Design Study  
Section: 00-00374-00-ES  
Champaign, Illinois  
Champaign County

Dear Mr. Matejkowski:

This is in reply to your transmittal of July 30, 2002 concerning the proposed construction of a grade separation (subway) structure at Curtis Road and our Champaign tracks at our Milepost 131.2, at/near Champaign, Illinois.

Having completed our review of the submitted plans, we wish to convey the following comments:

- 1) As you are aware, this was a double main track operation up until approximately 10 years ago when IC installed its present CTC signal system and removed the 2nd (easterly) Main track. Ever since, our traffic has continued to grow and we anticipate it will continue to for some time into the future. As such, preserving the ability to reinstall our 2nd main at some future date as capacity needs may warrant is of very keen concern. We are not asking for the structure to be designed and constructed to accommodate a future track, nor are we requesting the railroad embankment to the south of Curtis Road initially provide for such; but we do insist on having at least sufficient right-of-way so that we could widen the embankment to the east to accommodate a second track as/when needed in the future.

Exhibit 22 indicates that, south of Curtis Road, the proposed easterly railroad right-of-way line will barely accommodate the proposed toe-of-slope for a single track embankment. Further, locating the storm sewer outfall for the subway drainage along this east toe-of-slope practically precludes being able to widen our embankment to the east in the future unless said sewer is relocated.

We request the storm sewer outfall continue westerly along Curtis Road under the new embankment and then run southerly along the west side of the railroad so as to not interfere with a future embankment widening to the east; also that the

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Mr. Dale W. Matejkowski  
November 1, 2002  
Page 2

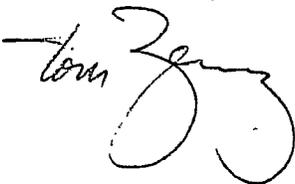
proposed new easterly railroad right-of-way line lie sufficiently east of the east toe-of-slope to accommodate widening said embankment in the future for a second track (15'-0" track centers).

2) The following all pertain to Drawing S-1:

- a) The Location Sketch indicates a tributary to the Upper Embarrass running roughly parallel to and a  $\frac{1}{4}$  mile  $\pm$  south of Curtis Road which intersects our tracks at our Milepost 131-3. We presume this is where you're planning to run the aforementioned storm sewer outfall. There is a 10' x 10' stone and concrete arch under the existing railroad at this location, which will likely need to be extended to the east to accommodate the relocated track.
- b) The typical cross-section of the proposed bridge deck does not indicate butyl rubber as part of the waterproofing. Also the deck drains should be  $\frac{1}{2}$ " thick A588 plate (perforated) in the corners of the concrete deck.
- c) The abutment piles may need more significant batter to resist longitudinal forces. The bridge seats may need to be larger as well.
- d) Gaps at abutment and piers will need steel plate over them and waterproofed.
- e) The design should be AREMA 2002 or later (incorporates new criteria on longitudinal forces) and the design dead load should include an additional 12" of future ballast. Live load should be either E 90 plus impact for equipment without hammer blow, or E 80 plus impact for equipment with hammer blow.
- f) 12" metal shell piles should be pointed and concrete filled.

If you have any questions concerning the above, please contact either myself at the above number or our Manager Bridges & Structures, Don Lewis, at (708) 206-3507.

Sincerely,



F-87

## MEMO

**To:** Curtis Road Project File - Job No. C30041  
**From:** DWM  
**Date:** November 14, 2002  
**Subject:** CN/IC Railroad Relocation and Bridge Structure

---

I spoke this date with Tom Zeinz regarding his letter dated November 1, 2002 which transmitted comments in review of our July 30, 2002 submittal with respect to the referenced subject. Specifically I discussed with Tom, the need for maintaining a dual track width embankment north of the Curtis Road bridge when indeed his recent comment regarding the need for only a single track width embankment south of the Curtis Road bridge was made. Tom indicated the potential for installing a second track north of the Curtis Road bridge is much greater than that south of the bridge. This is due to the railroad yard operations north of town which now currently service the switching and blocking maneuvers that used to be performed in Chicago. These operations tend to string out southerly through town and eventually the CN/IC Railroad envisions the installation, or rather reinstallation, of a second track down to the Curtis Road bridge.

With respect to the railroad's request to move the 42 inch storm sewer outfall from the east to the west side of the railroad, Tom stated he didn't care what side of the railroad this sewer was on as long as it did not conflict with the possible future embankment widening south of the Curtis Road bridge. I advised Tom that extending this sewer to the west side of the railroad would eliminate the elevation differential required for gravity flow drainage of the underpass which outlets to the Embarras tributary 1000 feet south of this location. Additionally, constructing the storm sewer west of the railroad would be within a "no-intrusion area" protecting endangered prairie plant species as well as the threatened Kirkland snake. I advised Tom that the sewer would be maintained on the east side of the railroad embankment, a sufficient distance to allow future embankment widening for a second track.

I also discussed with Tom that should meeting AREMA 2002 loading requirements, we needed to go to a deeper structural depth, could we raise the railroad profile grade slightly to accommodate this differential. Revising the .39 percent grade to .40 percent would gain us an additional 6 inches of vertical clearance at the bridge site. Tom said if this was the case, he would have no problem with such a minor revision.

MEETING MINUTES

**Project:** Curtis Road Phase I Studies  
Duncan Road to First Street  
Section: 00-00374-00-ES  
Project: M5181 (036)  
Job: P-95-073-00  
Champaign County

**Subject:** Project Meeting

**Date/Time/Place:** November 18, 2002  
1:30 p.m.  
CDI Office  
Champaign, IL

<b>Attendees:</b>	<u>Name</u>	<u>Representing</u>
	Dennis Unzicker	Champaign County
	Rick Marley	City of Champaign Engineering
	Dick Helton	Village of Savoy
	Frank Rentschler	Village of Savoy
	Dennis Markwell	IDOT, District 5
	Gary Biehl	University of Illinois
	Jim Novak	Huff & Huff, Inc.
	Dale Matejkowski	Clark Dietz, Inc.
	Jerry Payonk	Clark Dietz, Inc.

---

If anyone has any additions or modifications, please contact CDI.

The purpose of this meeting was to update members of the Curtis Road Technical Advisory Committee (TAC) on the status of Phase I studies. The agenda for this meeting is attached and made part of these minutes. Mr. Matejkowski reviewed each of the agenda items with the TAC members. During ensuing discussion the following salient comments were noted.

Item 1, Roadway Lighting: Champaign and Savoy have different municipal policies regarding the installation of roadway lighting. Champaign lights fully

developed sections of roadway (i.e., curbed and guttered) while Savoy only lights locations of fire hydrants. Savoy's roadway lighting policy is currently under review. The project report will recognize the prudence of lighting the developed portions of Curtis Road.

Item 4, Kaskaskia Stormwater Detention: The 25' wide permanent drainage easement shown on Exhibit 14 will be shown extended on Exhibit 2 toward the existing Curtis Road right-of-way. Detention of increased stormwater discharge from the Curtis Road improvements in this area will be provided within this drainage swale.

Item A, Wetland Compensation Plan: Mr. Matejkowski explained the need for the South Prospect Stormwater Detention Facility as shown on Exhibit 13 and possibly using this facility for the additional purpose of creating a wetland area to compensate for other wetland areas destroyed by the project. Mr. Novak reviewed his exhibit depicting a wetland compensation plan for this area and was instructed to complete the wetland compensation plan submittal to IDOT.

Items B & C, Construction Phasing and Project Cost: Longitudinal and transverse construction phasing plans and associated project costs were reviewed in detail as well as jurisdictional portions of the project costs. The project report will present costs for year 2006, the anticipated first year of project construction.

Item D, CN/IC Railroad Relocation: Mr. Matejkowski explained the latest railroad requirement of acquiring sufficient right-of-way along the east side of the railroad relocation, between Curtis Road and Church Street, which would allow future construction of embankment widening in this area to accommodate the installation of a second track. The railroad currently has sufficient right-of-way to accommodate a future additional track along its current alignment and wants to maintain this available right-of-way along its relocated alignment as well.

The impact of this additional right-of-way acquisition upon the Garth property was discussed. It was acknowledged that right-of-way acquisition from the Garth property would not be required for eight to ten years thus allowing Mr. and Mrs. Garth (senior) full and continued use of their property during their remaining years. Upon their passing, consideration may be given to acquiring the Garth property in its entirety. This track of land could then be used as an immediate source of borrow material for the adjacent railroad embankment

Meeting Minutes  
Curtis Road Phase I Studies  
Duncan Road to First Street  
November 18, 2002  
Page 3

and the resulting borrow pit could provide stormwater detention, thus eliminating the 42-inch diameter storm sewer outfall which has been oversized for this purpose.

The Village of Savoy will attempt to contact the Garth family to pursue this scenario.

Item E, Fee Budget Status: Mr. Matejkowski reported that project costs are tracking project completion very closely at about 72%. Clark Dietz will separately track costs associated with a third revision of the railroad relocation designs resulting from recently stated railroad requirements.

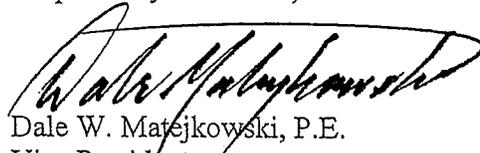
Item F, I-57 Interchange: Mr. Markwell reported that the Environmental Assessment document is currently under review and that only minor comments have thus far been received. Right-of-way acquisition and utility relocation work is programmed for fiscal year 2006.

Project Schedule: CDI will release a project newsletter the first or second week of December. This will be followed by a Public Information Meeting in January. Mr. Rentschler will check on the availability of the Head Start School in Savoy for this purpose. CDI will contact the IDOT District 5 Bureau of Local Roads to determine what dates are available for a project meeting with the FHWA. The Environmental Class of Action Determination (ECAD) document must be submitted for review prior to the FHWA meeting. The Wetland Compensation Plan need not be approved prior to submittal of the ECAD. Given the size and scope of the Curtis Road project CDI should request a special meeting solely for this project. CDI was advised that IDOT has scaled back some public hearing requirements and should contact the District 5-BLR in this regard.

All attendees were furnished the review materials itemized on page 4 of the agenda. Mr. Matejkowski requested review comments at the TAC's earliest convenience.

With no further discussion, the meeting was adjourned at approximately 4:30 p.m.

Respectfully submitted,



Dale W. Matejkowski, P.E.  
Vice President

## AGENDA

### Curtis Road Technical Advisory Committee Meeting 11-18-02 Project Status Update

#### Design Studies

#### 1. Roadway Typical Sections:

- Minor typical section revisions have been made to comply with comments on the PES and review of latest design criteria.
  - 10' shared-use path revised to 8'
  - 16' 2WLT Lane revised to 14'
- Shared-use path extended from Winfield Village to First St.
- Roadway Lighting Warrants have been investigated and cannot be met for night time accident criteria. Report will recommend lighting of all intersections and all curbed roadway sections. Should rural (barrier median) section between Rolling Acres and Prospect be lighted?

#### 2. Traffic Analysis:

- Obtained updated IDOT traffic forecasts for 2026.
  - Determined when four lanes are warranted
  - Determined signals are warranted for interim-build (2-lane) in 2006.
- IDS's for full-build (4-lane) have been developed and approved.
- IDS's for interim-build submitted for review 11-11-02.
- Accidents Analyzed – no bearing on design.

#### 3. CN/IC Railroad Relocation:

- Per railroad requirement, H/V alignments revised from 90' to 60' offset from existing track.
- Per railroad requirement, bridge has been revised from a plate girder structure to rolled beams thus requiring bridge pier and barrier median within the roadway.
- Curtis Road typical section and profile gradeline revised under bridge.
- Bridge TS&L developed and approved by IDOT Bridge Office, Railroad Comments received.
- Assessed availability of nearby borrow source for railroad embankment – not feasible.

#### 4. Drainage:

- Drainage areas determined/runoff rates computed.
- All drainage facilities sized – culverts, sewers, ditching, inlet locations.

- Detention provided for majority of project corridor, in-ditches, in-pipes, and within an off-site detention pond located south of the Prospect intersection.
- Could not find adequate detention opportunity within the Kaskaskia basin, interchange area will receive undetained run-off.
- Arbour Meadows Detention Facility could not be used due to existing inadequate access sewer capacity. The new south Prospect detention pond is also being used to provide wetland compensation.

5. Project Construction Phasing:

- Developed interim-build (2-lane) construction plan within context of phasing construction from Duncan Road toward US 45.
- Interim roadway typical sections and IDS's have been developed.
- Earthwork management analysis performed to determine excess roadway excavation available for railroad embankment (32%).

6. Project Cost Estimate:

- Construction quantities have been recomputed.
- Construction and R.O.W. costs updated to 2002 and forward priced to 2006.
- Costs have been itemized per construction phasing plan and jurisdictional limits.

Coordination and Environmental Studies

7. State Clearinghouse Design Stage sign-off received.
8. IDOA coordination performed with respect to raising the railroad profile and proximity of Willard Airport. No permit or further coordination with FAA required.
9. Cultural Resources (Historic/Archaeological) Clearance obtained.
10. Biological Resources review accomplished by IDOT. Detailed Botanical and Herpetological surveys performed along railroad R.O.W. Significant prairie plants and threatened Kirkland snake will be protected by marked "no intrusion" areas during construction.
11. Extensive noise analysis performed on 34 receptors. 3 sites will incur marginal noise increase. No sites will experience significant noise impact defined by 14 decibel increase.

12. PESA performed to determine presence and risk associated with special or hazardous waste within project corridor project assessed at "Low Risk". Lo property could not be accessed.
13. Biological Resources Clearance pending submittal and approval of wetland compensation plan. Project impacts 4 small "farmed" wetland sites. Trying to recreate 0.9 acre of replacement wetland in conjunction with the south Prospect detention facility.

Issues to Discuss

- A. Wetland Compensation Plan
- B. Construction Phasing/Interim-build typical sections and IDS's
- C. Project Cost Estimate
- D. CN/IC Railroad Relocation and Bridge Structure
- E. Fee Budget Status – CN/IC Extra Work?
- F. Status of I-57 Interchange Studies
- G. Curtis Project Schedule
  - Newsletter
  - Public Information Meeting
    - need wetland compensation plan
  - FHWA Bimonthly Meeting
    - need wetland plan approved?
    - need ECAD prior to
  - Public Hearing
  - Submittal of Design Report and ECAD for approval

Review Items Furnished to TAC

- Project Design Exhibits (41 Sheets) including:
  - Roadway Plan/Profile Sheets
  - South Prospect Detention Facility
  - CN/IC Railroad Relocation Plans
  - Grade Separation Structure TS&L
  - Full-Build Intersection Design Studies
  - Interim-Build Intersection Design Studies
- Drainage Report
- Construction Phasing/Cost/Earthwork/Traffic Maintenance Report
- Noise Analysis Report
- Preliminary Environment Site Assessment (Special Waste)
- Wetland Compensation Plan

file

December 3, 2002

Mr. Tom Zeinz  
Manager Engineering Services  
CN-Illinois Central Railroad  
17641 S. Ashland Ave.  
Homewood, IL 60430

Re: CN-IC Railroad Relocation  
Curtis Road Location/Design Study  
Duncan Road to First Street  
Section: 00-00374-00-ES  
Champaign County

Dear Mr. Zeinz:

Enclosed for review are two copies of the Bridge TS&L Drawing for the CN-Illinois Central Railroad over Curtis Road. Also provided for reference are copies of Exhibits 10 and 19 through 25 depicting full plan/profile elements in vicinity of the new bridge.

The enclosed documents depict revisions resultant of your agency's review comments dated November 1, 2002 (copy enclosed for ready reference). Our response to these review comments is as follows.

Comment 1: Exhibit 21 depicts the proposed typical section for the railroad relocation south of Curtis Road. This typical section has been revised to show possible future embankment widening and the installation of a second track by the railroad. Exhibits 19 through 22 depict the proposed right-of-way which will be acquired to accommodate the future embankment widening. Due to hydraulic constraints and sensitive environmental areas, the 42-inch storm sewer cannot be relocated to the west side of the railroad. Cross-sectional analysis was used to set the proposed right-of-way limits and to assure the storm sewer on the east side is located such that it will not interfere with future embankment construction.

Comment 2a: We have been aware of the need for this culvert extension which is noted on Exhibit 21. Specifics of this culvert extension will be determined during final design.

F-96

Mr. Tom Zeinz  
December 3, 2002  
Page 2

Comment 2b: A 3/32" butyl rubber membrane is now provided under the 1" asphalt planks. The 6" half round, 12 gage perforated drains have been revised to 1/2" thick A588 perforated bent plate.

Comment 2c: The abutment type is conceptual. The number of pile rows, number of piles and their batter will be determined during final design. The abutment type will remain a pile bent.

Comment 2d: A steel plate is now provided over the gaps at the abutments and piers. The plate will be under the 3/32" butyl rubber membrane and the 1" asphalt planks.

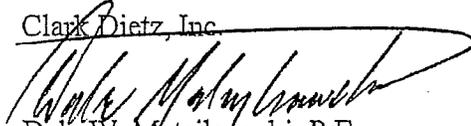
Comment 2e: The bridge will be designed per the 2002 AREMA specification or whatever edition is current at the time CDI is authorized to begin final design. The bridge will be designed to allow for 12" of additional ballast per the CN/IC Design Guidelines dated October 2000. The CN/IC Design Guidelines also specify an E-80 live load plus impact with hammer blow. A steel wide flange beam is still feasible with the revision to the loads. Vertical clearances will decrease approximately 1/4" from that shown on the TS&L drawing. This is based upon preliminary calculations to size the beam. The calculated vertical clearance is 14'-11 1/2" but we showed 14'-11" on the TS&L. Therefore this revision will not require any change to the vertical clearance shown on the TS&L.

Comment 2f: We have noted metal shell piles with a 60 degree pile point.

We are concurrently resubmitting to IDOT for their review as well. Should you have any question, please do not hesitate to contact the undersigned.

Cordially,

Clark Dietz, Inc.



Dale W. Matejkowski, P.E.  
Project Manager

cc: Mr. Dennis Unzicker  
Mr. Jim Binder  
IDOT

E-mail Address dalem@clark-dietz.com

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F-97

MEMO

**To:** Curtis Road Project File - Job No. C30041  
**From:** DWM  
**Date:** December 9, 2002  
**Subject:** Telephone Conversation with Tom Zeinz

---

Tom Zeinz with the Canadian National/Illinois Central Railroad called me today to discuss our submittal to him dated December 3, 2002. This submittal included the revised bridge TS&L drawing for the railroad bridge over Curtis Road as well as copies of design exhibits 10 and 19 through 25 depicting the full plan/profile elements of the railroad relocation. This submittal incorporated revisions to these documents as suggested by Tom's letter dated November 1, 2002. The only comment Tom had on this revised submittal was that the steel plate in Note #3 of the TS&L, which will be provided over the gaps at the abutment and piers, be shown on both the abutment and pier elevation details. I told Tom I would make a note of this graphic addition on my copy of the TS&L drawing. We mutually agreed that no further review is required by the railroad during this Phase 1 portion of the project. Tom indicated to me that everything else shown on the exhibits provided to him looked fine.

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Tom Zeinz  
Manager Engineering Services  
Engineering

Canadian National/Illinois Central  
17641 Ashland Avenue  
Homewood, Illinois 60430  
Telephone: (708) 206-3557  
Fax: (708) 206-3084

DEC 10 2002

December 9, 2002  
131/5

Mr. Dale W. Matejkowski, P.E.  
Vice President  
Clark Dietz, Inc.  
1817 S. Neil Street, Suite 100  
Champaign, IL 61820

Subject: Illinois Central Railroad Relocation  
Curtis Road Grade Separation Location/Design Study  
Section: 00-00374-00-ES  
Champaign, Illinois  
Champaign County

Dear Mr. Matejkowski:

This is in reply to your transmittal of December 3, 2002 (in reply to mine of November 1, 2002) concerning the proposed construction of a grade separation (subway) structure at Curtis Road and our Champaign tracks at our Milepost 131.2, at/near Champaign, Illinois.

Confirming our phone conversation of this date, we concur with all of the responses in your December 3 letter, but wish to point out that your comment 2d is not reflected in the pertinent details ('Elevation at Pier', 'Elevation at Abutment') on Plan Sheet S-1.

Sincerely,

F-99

CLARK DIETZ

To: FILE Date: 1-10-03  
From: JNM Project Name: Curtis Road  
Re: \_\_\_\_\_ Project No: C30041

ON 11-11-02 WE SUBMITTED THE INTERIM  
CONSTRUCTION phase IDS'S for BURMAN, MATTHEW  
& PROSPECT to District 5 for their REVIEW.  
ON 12-17-02 they were RETURNED without  
REVIEW COMMENTS with the ATTACHED  
NOTE INDICATING THAT REVIEW WAS NOT  
NECESSARY.

TRANSMITTAL SLIP		Date 12-17-02
TO: DALE MATEJKOWSKI		
FROM: KIM MATTINGLY		
SUBJECT: INTERIM IDS'S		
ACTION		
<input checked="" type="checkbox"/> NOTE AND FILE	<input type="checkbox"/> PREPARE REPLY FOR MY SIGNATURE	DEC 19 2002
<input type="checkbox"/> NOTE AND RETURN TO ME	<input type="checkbox"/> TAKE APPROPRIATE ACTION	
<input type="checkbox"/> RETURN WITH MORE DETAILS	<input type="checkbox"/> PER YOUR REQUEST	
<input type="checkbox"/> NOTE AND SEE ME ABOUT THIS	<input type="checkbox"/> SIGNATURE	
<input type="checkbox"/> PLEASE ANSWER	<input type="checkbox"/> FOR YOUR INFORMATION	
<input type="checkbox"/> FOR YOUR APPROVAL	<input type="checkbox"/> INVESTIGATE AND REPORT	
<input type="checkbox"/> PER OUR CONVERSATION		
COMMENTS: GEOMETRICS HAS 20YR IDS - THESE ARE THE 10YR INTERIM WE DON'T NEED - YOU DO NOT NEED TO SEND IN ANY OTHERS - PER GEOMETRICS.		
PBM 1326		

MEMO

F-100

## MEETING MINUTES

**Project:** Curtis Road Combined Design Study  
Duncan Road to First Street  
Section: 00-00374-00-ES  
Project: M5181 (036)  
Job: P-95-073-00  
Champaign County

**Subject:** Bi-Monthly Project  
Coordination Meeting

**Date:** March 17, 2003  
10:00 a.m. to 11:00 a.m.  
1:00 p.m. to 2:30 p.m.  
IDOT/District 5 Office  
Paris, IL

**Attendees:**

<u>Name</u>	<u>Representing</u>
David Speicher	IDOT/D-5/LR&S
Darla Latham	IDOT/D-5/LR&S
Adrian Greenwell	IDOT/D-5/LR&S
Kim Mattingly	IDOT/D-5/LR&S
Chuck Crim	IDOT/Central/LR&S
Jason Cowin	FHWA
Pam Heimsness	FHWA
Dennis Unzicker	Champaign County
Rick Marley	City of Champaign
Dale Matejkowski	Clark Dietz, Inc.
Jerry Payonk	Clark Dietz, Inc.

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If anyone has any additions or modifications, please contact CDI.

The purpose of this meeting was to update IDOT and FHWA on the status of the Phase I studies for the above referenced project and to review the previously submitted ECAD Document and Record.

F-101

# Meeting Minutes – Curtis Road Combined Design Study

March 17, 2003

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Dale Matejkowski provided an overview of current project status. The outline of this presentation and associated figures is attached hereto and made part hereof.

The following salient issues were discussed in review of the ECAD.

1. It was noted that more than one year has lapsed since the field review and today's initial presentation of the ECAD. However, Mr. Matejkowski affirmed that the existing conditions of the project corridor have not changed since the field review. It was agreed to waive the one year requirement.
2. It was determined from the attached "Project Overview" that "Cultural Resources" have been cleared for both design approval and letting. "Wetlands" have been cleared for design approval only and will be cleared for letting when the "Wetland Compensation Plan" currently under review is approved. Mr. Crim will verify why "Biological Resources" has not yet been cleared for design approval.
3. The resource/issue items of the ECAD Record were individually reviewed. IDOT and FHWA mutually agreed to close the following items effective 3-17-03.

<u>Item</u>	<u>Impacts Present</u>		
	<u>Yes</u>	<u>No</u>	<u>N/A</u>
I.1 Relocations...	X		
I.2 Changes in Travel Patterns			X
I.3 Economic Impacts		X	
I.4 Change in Land Use...			X
I.5 Community Cohesion			X
I.6 Public Facilities/Services			X
I.7 Title VI/Protected Groups			X
I.8 Environmental Justice			X
I.9 Pedestrian/Bicycle Facilities		X	
II. Agricultural	X		
III.1 Archaeological Sites		X	
III.2 Historic Bridges			X
III.3 Historic Districts/Buildings			X
IV.1 Attainment/Nonattainment Status			X
IV.2 Microscale Analysis			X

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Meeting Minutes – Curtis Road Combined Design Study

March 17, 2003

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<u>Item</u>	<u>Impacts Present</u>		
	<u>Yes</u>	<u>No</u>	<u>N/A</u>
V. Noise		X	
VI. Energy		X	
VIII.1 Surface Water Resources/Quality		X	
VIII.2 Permits		X	
VIII.3 Groundwater Resources/Quality		X	
IX.1 100-year Floodplain		X	
X. Wetlands	X		
XI. Special Waste		X	
XII.1 4 (F)			X
XII.2 6 (F)			X
XII.3 OSLAD Act Lands			X

Only two items remained open. VII-Natural Resources may be closed when Mr. Crim verifies that "Biological Resources" is cleared for design approval. CDI must coordinate with IDNR Office of Water Resources as to whether the Phinney Branch has a regulated floodway and will revise item IX.2 Regulatory Floodway accordingly.

4. It is unlikely that an individual Section 404 permit will be required. Denote need for nationwide permit only.
5. The following "commitments" should be discussed in the ECAD Document.
  - Tree replacement per LEN-14 (Resource/issue Item VII.).
  - Installation of no-intrusion fencing (Resource/issue/Item VII.)
  - Development of an erosion/sediment control plan (Resource/issue Item VIII.1).
  - Construction and maintenance of a wetland compensation area (Resource/issue Item X.).
6. The ECAD Document must be shortened and extraneous information deleted. Format and content shall comply with Chapter 23 of the IDOT/BDE Manual.
7. It was acknowledged that the public involvement program for this project has been extensive. However, a public hearing must be held

**Meeting Minutes – Curtis Road Combined Design Study**

March 17, 2003

Page 4

after all resource/issue items of the ECAD Record have been “closed”. The public hearing announcement must indicate that the ECAD will be available for public review and comment. An “open-house” format may be used for the public hearing. A stenographer must be available to record any comments the public may wish to provide.

8. After the public hearing is held the ECAD must be revised/augmented with the results of the hearing and the resolution of any comments received. It would then be submitted for final review and sign-off.

The format/content of the Design Study Report was discussed. It is preferred that the report be developed in two volumes. Volume I would address all design engineering issues and coordination. Volume II would address all environmental issues and coordination.

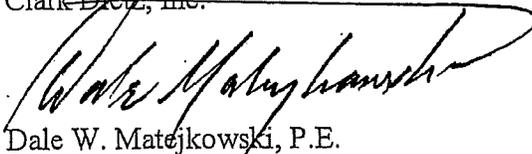
The Design Report and ECAD may be submitted for separate reviews.

All Design Report review comments must be addressed whether or not they are acted upon.

With no further discussion the meeting was adjourned.

Respectfully Submitted,

Clark Dietz, Inc.



Dale W. Matejkowski, P.E.  
Senior Vice President

Postscript: In respect to Item #2 of the Meeting Minutes, Mr. Crim verified that “Biological Resources” received clearance for design approval. See attached email dated 3-18-03.

Copies: Darla Latham, IDOT/D-5  
Curtis Road Technical Advisory Committee

## PROJECT OVERVIEW

Curtis Road Improvement  
Duncan Road to First Street  
Champaign County

### PROJECT SETTING

- Figure 1: Location, Length, Project Relation to I-57 Interchange Study
- Figure 2:
  - Cultural/Environmental Features
  - Proposed Improvements

### PROJECT DEVELOPMENT HISTORY

- Scoping Study (4-95 thru 3-97):
  - Established Roadway Typical Section Requirements
  - Studied Various Alignments
  - "Ball-Parked" R.O.W. Requirements
  - Established Access Control Needs
  - Investigated Utility Impacts
  - Identified Environmental Concerns
- Scoping Study Results:
  - CUUATS resolved to reserve and protect future R.O.W. and establish access control for Curtis Road
  - IDOT agreed to develop Phase I study for Curtis extension, Duncan to Staley, including new I-57 interchange.
  - CUUATS agreed to move forward with detailed studies between Duncan to First.
- Preliminary Engineering Study (10-98 thru 7-2000):
  - Defined overall "footprint" of improvements
  - Augmented project data base/mapping
  - Refined roadway typical section requirements
  - Performed feasibility study of RR Grade Separation
  - Developed Concept Drainage Plan
  - Established intersection geometrics
  - Refined R.O.W. acquisition needs
  - Developed project cost estimates
  - Consensus reached on overall project design
- Phase I Combined Design Study and ECAD (8-01 to present):
  - Further roadway design development
  - Development of Intersection Design Studies

- Additional RR coordination and revision of previous designs
- Railroad Bridge TS&L developed
- Location Drainage Study performed
- Construction Phasing Plan established within an earthwork management program.
- Project costs updated.
- Special Environmental Studies:
  - Wetlands (WIE & Mitigation Plan)
  - Noise Analysis
  - Special/HazWaste (PESA)

#### ENVIRONMENTAL COORDINATION/IMPACTS

- Coordination:
  - 1-26-00: ESR Submitted
  - 4-4-00: IDNR T&E Species Signoff received
  - 4-26-01: SHPO concurrence received
  - 10-25-01: Notification from IDOT/D-5 that cultural coordination clearance completed
  - 3-6-02: IDOT/BDE concurrence with WIE (0.86 Ac.) & 1:1 Mitigation Ratio, Programmatic Action/IDNR Coordination not required.
  - 5-30-02: IDOT/BDE Biological Resources Review received
  - 1-23-03: Wetland Mitigation Plan submitted to IDOT/BDE
- Impacts:
  - One residential displacement (R.E. Walker)
  - Six Storage Shed Relocations (Garth)
  - 39.4 Acres of Prime farmland required (NRCS coordination not required within 1 1/2 mile city planning limits)
  - Three noise receptors will experience marginal noise impacts (within 1 dBA of the N.A.C. – avg. 6.2 dBA increase)
  - 0.86 acre of farmed wetland impacted. Awaiting review of wetland mitigation plan.
  - Awaiting Cultural Clearance?
  - Awaiting Biological Resources Clearance?

#### AGENCY COORDINATION

- 5-22-81: FHWA initial approval of access point for Curtis/I-57 interchange
- 12-1-98: FHWA bi-monthly project coordination meeting. Logical termini (Staley to First) agreed to.
- 3-12-00: IDOT-BDE/FHWA meeting to discuss Curtis PES. Project divided into IDOT section (Staley-Duncan) and L/A section (Duncan-First). Concurrence received for ECAD processing.
- 12-21-01: State Clearinghouse sign-off received

- 1-29-02: IDOA project review completed. No conflict with Willard Airport operations. FAA coordination not required.
- 3-36-02: FHWA concept approval of Curtis/I-57 interchange
- 9-10-02: IDOT/Bridge Office approval of railroad bridge TS&L.
- 12-9-02: CN/IC Railroad concurrence with preliminary railroad relocation design and bridge structure.

## PUBIC INVOLVEMENT

- During Scoping Study:
  - Eleven CUUATS meetings actively attended by public
  - One Public Information Meeting
- During Preliminary Engineering Study:
  - Three Project Newsletters (270 ± recipients)
  - Two Public Information Meetings
- Current Phase I Effort:
  - Two Project Newsletters
  - One Public Information Meeting
  - Final Project Newsletter (To Do)
  - Public Hearing (To Do)
- News Media:
  - Three Local Newspaper Articles
- Results:
  - Appears to be area wide public support for the project
  - Adjacent property owners have voiced support for current designs
  - One formal property owner complaint received (Garth)

## PROJECT IMPLEMENTATION

- Earliest Funding Available: 7-1-06
- City of Champaign to start Phase II Final Design in 3<sup>rd</sup> Quarter 2003.
- Project will be Phase Constructed:
  - Interim-Build: Two Lane plus 2WLT Lane or raised median will first be built:
    - Duncan to Wynstone, then;
    - Wynstone to east of Prospect (Sta. 143+60)
  - Full-Build: When four Lanes are warranted most likely construction order will be:
    - Prospect to First, including railroad relocation.
    - Duncan to Prospect

## PROJECT COST SUMMARY

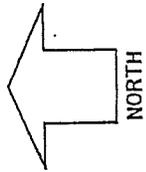
<u>Construction Phase</u>	<u>*Total 2006 Cost</u>
2-Lane Duncan to Wynstone	\$4,979,800
2-Lane Wynstone to Sta. 143+60	9,883,600
Interim-Build Subtotal	\$14,863,000
Full-Build Sta. 143+60 to First	\$6,350,500
- plus RR Relocation and Bridge	8,476,000
Full-Build Duncan to Sta. 143+60	1,524,300
Full-Build Subtotal	\$16,351,000
Total Project Cost	<u>\$31,215,000</u>

\*Costs include Construction, R.O.W. Acquisition, Engineering Design, and Construction Observation.

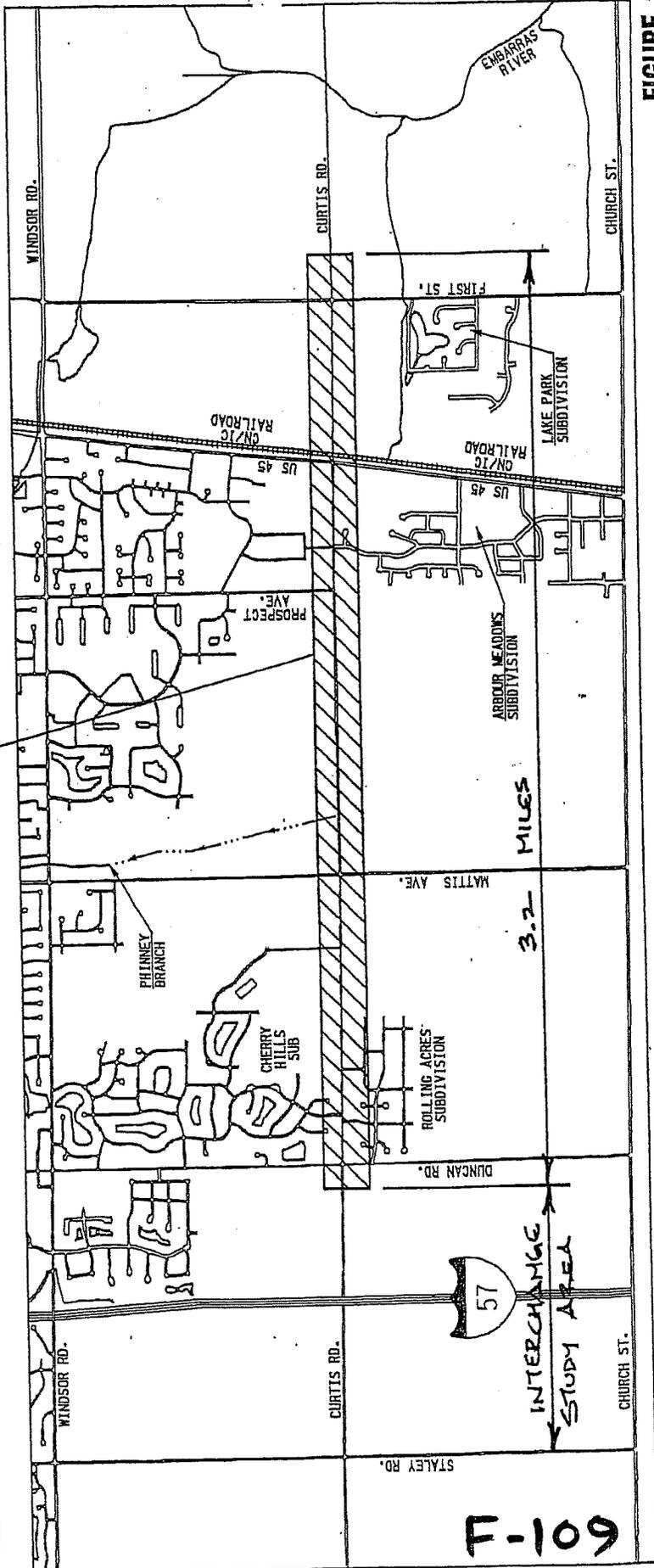
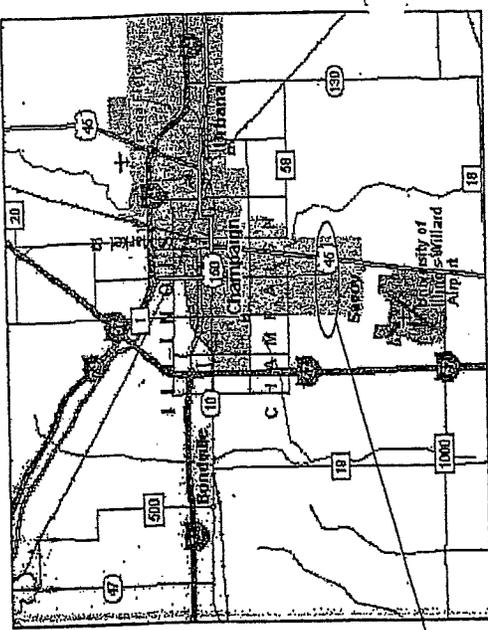
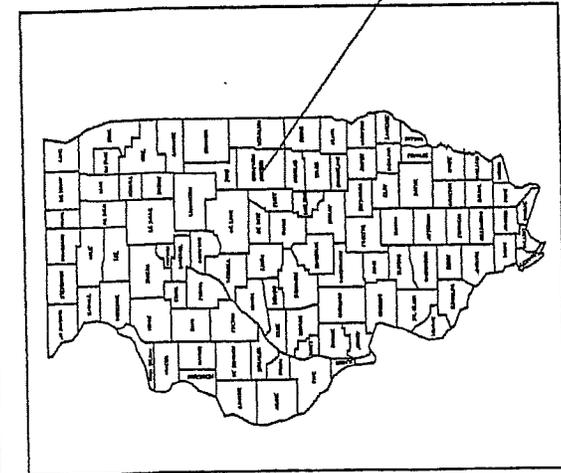
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# PROJECT LOCATION MAP

**CURTIS ROAD (FAP 807) IMPROVEMENTS  
 DUNCAN ROAD TO FIRST STREET  
 SECTION : 00-00374-00-ES  
 PROJECT : M-5181 (036)  
 JOB : P-95-073-00  
 CHAMPAIGN COUNTY**



**PROJECT LOCATION**



**FIGURE 1**



Dale Matejkowski

---

From: Latham, Darla [LathamDK@nt.dot.state.il.us]  
Sent: Tuesday, March 18, 2003 10:46 AM  
To: Dale Matejkowski (E-mail)  
Subject: FW: Route: FA 7147 County(s): Champaign Seq. Nbr.: 8744 District: 5 Section: 98-00374-00-ES

I will mail the updated project overview today.

> -----Original Message-----

> From: Crim, Charles L.  
> Sent: Tuesday, March 18, 2003 10:23 AM  
> To: Latham, Darla; Mattingly, Kimberly; Heimsness, Pamela  
> Subject: FW: Route: FA 7147 County(s): Champaign Seq. Nbr.: 8744  
> District: 5 Section: 98-00374-00-ES

>  
> This signoff clears the Natural Resource section of the Curtis Road  
> ECAD. The consultant should enter today's date in the "No" column of  
> impacts present and close this item as discussed at yesterday's  
> coordination meeting.

> -----Original Message-----

> From: Marlow, Scott L.  
> Sent: Tuesday, March 18, 2003 9:30 AM  
> To: Crim, Charles L.  
> Subject: Route: FA 7147 County(s): Champaign Seq. Nbr.: 8744  
> District: 5 Section: 98-00374-00-ES

>  
> A 'Cleared for Design Approval' date has been entered for Sequence  
> Number 8744 on the Biological form.

**MEMO**  
Curtis Road Meeting File  
September 4, 2003  
Page 2

way for this project would definitely have to be acquired from them. The Village did not see the necessity of these relocations and resultant strained relations with the Lo family. However, Chuck Crim remained unmoved and insisted that these relocations be incorporated in the Phase I documents.

P.S.: The week following this meeting, I understand that the Village of Savoy, the developer and Daily Associates met in District 5 with District Engineer, Dave Clark; BLR Bureau Chief, Dave Spiker; and Darla Latham to discuss the Woodfield Alley issue. As a result of this meeting, the District reaffirmed Chuck Crim's decision to extend the barrier median.

projects\c30041\9-4-03 TAC mtg memo.doc

F-114

**Dale Matejkowski**

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**From:** Latham, Darla [LathamDK@nt.dot.state.il.us]  
**Sent:** Tuesday, September 16, 2003 12:54 PM  
**To:** Dale Matejkowski (E-mail)  
**Subject:** FW: Woodfield Alley, Curtis Road Project at Savoy

> -----Original Message-----

> From: Crim, Charles L.  
> Sent: Monday, September 08, 2003 9:17 AM  
> To: Speicher, David; Latham, Darla  
> Cc: Houser, Larry D.  
> Subject: Woodfield Alley, Curtis Road Project at Savoy

> We have taken under consideration the request by the consultants and  
> developer to reduce the length of the median on the Curtis Road leg of  
> the US Route 45 intersection. We feel this would be detrimental to  
> the safe and efficient operation of the intersection. The median  
> length should be as calculated from the necessary storage and taper  
> length based on the capacity analysis. This would make the Woodfield  
> Alley entrance a right in/right out. We see no need to relocate the  
> Woodfield Alley entrance to the west with this project.

## MEETING MINUTES

**Project:** Curtis Road – Phase I  
**Date/Time:** October 22, 2003 – 10:00 a.m.  
**Location:** Clark Dietz, Inc. – Champaign, Illinois  
**Attendees:** Steve Wegman – City of Champaign  
Rick Marley – City of Champaign  
Frank Rentschler – Village of Savoy  
Dick Helton – Village of Savoy  
Dennis Unzicker – Champaign County  
Darla Latham – IDOT/Dist. 5 LR&S  
Craig Emberton – IDOT/Dist. 5 Prog. Dev.  
David Speicher – IDOT/Dist. 5 LR&S  
Dennis Markwell – IDOT/Dist. 5 Prog. Dev.  
Dale Matejkowski – Clark Dietz, Inc.  
Jerry Payonk – Clark Dietz, Inc.  
**Copies:** Attendees

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Minutes of this meeting were prepared by Jerry Payonk of Clark Dietz, Inc. (CDI). Please inform him of corrections or modifications.

The purpose of the meeting was to discuss status of the Curtis Road project regarding review comments from the IDOT Central Bureau of Local Roads and Streets (CBLR&S), and to review remaining scope of work.

Dale Matejkowski presented an overview of recent project history. CDI met with the Curtis Road Technical Advisory Committee (TAC) on September 22, 2003 to discuss the CBLR&S comments. As a result of this meeting, District 5 then met with the CBLR&S on October 16, 2003 to express the TAC's concern over revisions requested by CBLR&S to bicycle travel accommodations; and, turning movement requirements which would increase intersection size.

Dale Matejkowski handed out the attached document entitled *Curtis Road Design Study Revisions* to summarize the impact of CBLR&S review comments.

Regarding bike travel facilities, Item No. 2 of the handout summarizes the impact of the CBLR&S's resolve in denying the use of 8'-wide, one-way bike, shared-use paths in urban sections. However, one-way bike travel will be permitted (in an interim sense) on the roadway shoulders in the rural section with the provision that the implementing agencies require that future adjacent

development in this area: construct a 10'-wide two-way shared-use path on the north side of the road. In the urban sections, CBLR&S is requiring a 10'-wide two-way shared-use path on the north side of the road and a 5'-wide sidewalk on the south. The most significant impacts of this urban typical section modification involves a centerline shift to the south at the Curtis Road Church of God, a modification to the Railroad Bridge TS&L, and modification of the intersection design studies.

Steve Wegman and Rick Marley stated that the CBLR&S's refusal to permit an 8'-wide one-way shared-use path in an urban setting contradicts current BDE policy allowing for an 8'-wide two-way shared-use facility for volumes less than 100 users *per peak hour*. Steve stated that this discrepancy does not make sense and would be difficult to explain to the City Council when the 8'-wide one-way design has been implemented throughout the City. The City is of the opinion that a 10'-wide path is over-design and the City has a history of an 8'-wide design performing adequately. The City acknowledges that the existing 8' one-way paths are occasionally used for two-way traffic, but with the very low volume of bikers (less than 100 users *per day*) this does not present a problem. It is not clear why the BDE would have a lesser standard than the FAPLHI; or why the CBLR&S would hold the local agencies to a higher standard than the State.

Dennis Markwell suggested that District 5 and the implementing agencies make another attempt to discuss their concerns on this issue with the CBLR&S.

The implementing agencies wish to talk to the CBLR&S on three issues:

- 1) The shared-use path issue.
- 2) The U.S. 45/Curtis Road Intersection
  - LOS issues on Curtis Road vs. U.S. 45
  - Access to Woodfield Alley
- 3) The Lo Property
  - Relocation of the existing field entrance
  - The recommended residential entrance relocation

Item No. 26 pertains to design variance requests which will be considered by CBLR&S for 14-9" railroad bridge vertical clearance, an 18'-wide raised median, and intersection turning vehicle paths.

Dale Matejkowski discussed several other modifications to the plans as a result of further analysis of the project.

**Meeting Minutes**

October 22, 2003

Page 3

Point No. 3 in the attached handout identifies recommended shoulder widths for all side roads on the project. Previous analysis had recommended a 6' shoulder on all side roads. Per FAPLHI these shoulders should be either 8' or 10'. The implementing agencies concur with this recommendation.

Point No. 5 briefly identifies a need to connect any future shared-use path and sidewalk (constructed by future development) across the Mattis Avenue intersection. A revised IDS should address this issue identifying connectors to the future segregated path and sidewalk and re-aligning the box culverts to accommodate these connectors.

Point No. 8 is a revision to the Curtis Road/First Street IDS to accommodate bike travel through the intersection. The implementing agencies recommend one-way bike travel on the shoulders for the south, north and west legs.

Dave Speicher inquired about closed drainage leading to the South Prospect Detention Facility. Open drainage may be easier to maintain. Frank Rentschler indicated that the Village will get back to CDI concerning the drainage treatment they prefer.

The implementing agencies concurred with Mr. Matejkowski's recommendation that the proposed access point immediately south of Wynstone Drive should be of identical width as the existing Wynstone entrance. All proposed ¼-mile point access locations within the Village of Savoy should measure 36' in width from back-to-back of curb.

Dale Matejkowski raised a concern about constructing left turn-lane median breaks before future side roads are developed. Dennis Markwell indicated that the District has not experienced a problem with such median breaks and does not anticipate a need to close these breaks until future development occurs.

With no further discussion, the meeting was adjourned at approximately 11:40 a.m.

CURTIS ROAD DESIGN STUDY REVISIONS  
(Curtis 10-22-03 TAC Meeting)

TYPICAL SECTIONS

1. Use 22'-Wide Raised Median – We will request design variance for 18'-wide raised median based on additional acquisition of prime farmland and future signalization of collector street intersections.
  
2. Use 10'-Wide Shared-Use Path – CBLR&S does not acknowledge the use of one-way bike operation on shared-use paths. Must assume bikes will operate two-way and CBLR&S suggests we provide a minimum 10'-wide shared-use path on north side and 5'-wide sidewalk on south side. Impacts:
  - Duncan Road centerline offset remains at 11.48'.
  - Increases Church of God centerline offset from 4.92' to 8.40' (use 3' Parkway/2' Buffer).
  - Lo Residence centerline offset can remain 8.85' (use 3' Parkway/2' Buffer).
  - No need for increased centerline offset at FASS and no need to relocate RR Bridge.
  - Results in 1' buffer at FASS.
  - Must resubmit TS&L for revised span lengths.
  - Along path: Parkway width increases from 3' to 5' and R.O.W. buffer zone increases from 1' to 3'.
  - Along sidewalk: Parkway width increases from 3' to 5' per BLR, *BDE requires only 3' parkway.*
  - In rural section: Interim one-way bike travel is permitted on shoulders. *Local agencies must commit to future development of 10' shared-use path on north side / 5' sidewalk on south side. Must future sidewalk also cross Mattis I/S? Build Mattis I/S connectors to future walk and path now?*
  
- \*3. *Widen shoulders from 6' to 8' on Duncan, Mattis and First? Stripe shoulder for 4' one-way bike lane on north leg of Duncan and north/south legs of First. Per CUUATS functional classification and FAPLHI:*

	Class	Shldr. Width	Rural Speed	Urban Speed	Design Speed
-Duncan N. & S. Legs:	Collector	8'	60	30	45
-Mattis North Leg:	Minor Arterial	10'	60	30	45
-Mattis South Leg:	Local Street	8'	50	30	45
-First North Leg:	Minor Arterial	10'	60	30	40
-First South Leg:	Local Street	8'	50	30	40

## INTERSECTIONS

4. Duncan:
  - Show IDOT Geometrics and profile on West Leg.
  - \* - Revise North Leg for Bikes on Shoulders; this will match future improvement to Duncan Road.
  - Revise for new path/sidewalk layout on Curtis.
5. Mattis:
  - Move field entrance from Curtis to North Leg.
  - *Include connectors to future segregated path and sidewalk?*
6. Prospect:
  - *Extend Barrier Median on West Leg?*
  - *Provide Lo Residential Entrance on North Leg or just allow right-in/right-out only?*
  - *Relocate Lo Field Entrance to South Leg.*
  - Revise for new path/sidewalk layout on Curtis.
7. U.S. 45:
  - *Extend barrier median on West Leg – Woodfield Alley becomes right-in/right-out only?*
  - *Revise to LOS-C on Curtis? Resubmit IDS to BDE and request design variance if BDE will not accept increased delay on U.S. 45.*
  - Revise for new path/sidewalk layout on Curtis.
8. First Street:
  - \* - Revise for E-W Bike travel thru intersection and N-S bike travel on First Street.

### All Intersections:

9. Develop Auto-Turn Diagrams for each IDS (3 sheets each).
10. Reflect revisions on interim IDS's.

## PLANS

11. Revise plan/profile sheets for typical section and intersection revisions.
12. Revise plan/profile for centerline shift at Church of God.
13. Configure/Quantify all TCE.
14. Call-out all taper rates, decel and storage lengths.

15. Call-out all side street radii.
16. Verify 12'min./24'max. P.E.'s, 35' max C.E.'s
17. Relocate field entrance Sta. 89+40 to Mattis.
18. Cross-section analysis and revisions.
19. Revise/Resubmit TSL for revised span lengths.
20. Miscellaneous Plan Notations (Phase II Type).
21. *Replace 4' x 2' culvert with ditch?*
- \*22. *Review Wynstone Drive Extension – Future Collector Street Typical Sections. Address raised median openings?*

#### DESIGN REPORT

23. Revise Construction Quantities, R.O.W. Acquisition, and Cost Estimate. Provide expanded cost estimate of utility relocations.
24. Update expired IDNR T&E Species Sign-Off (*submitted 9-22-03*).
25. Re-write/expand "Purpose and Need".
26. Expand Design Criteria Elements/Values and develop design variance requests for:
  - 14'-9" vertical clearance. (16'-3" is BLR requirement.)
  - 18' wide median.
  - Reduced parkway and R.O.W. Buffer widths in isolated areas.
  - Intersection turning movements.
  - *Increased intersection delay on U.S. 45?*
27. Update text to reflect design revisions.

#### ECAD

28. No comments provided on ECAD. Reflect Design Report Revisions.

C30041\10-22 TAC Mtg Dsgn Stdy Rev.doc

## MEETING MINUTES

**Project:** Curtis Road – Phase I Design Study  
**Date:** November 5, 2003 – 1:00 p.m.  
**Location:** Savoy Community Building – Savoy, Illinois  
**Attendees:** Steve Wegman – City of Champaign  
Rick Marley – City of Champaign  
Frank Rentschler – Village of Savoy  
Dick Helton – Village of Savoy  
Dennis Unzicker – Champaign County  
Chuck Crim – IDOT/Central BLR&S  
Darla Latham – IDOT/Dist. 5 BLR&S  
Craig Emberton – IDOT/Dist. 5 Prog. Dev.  
David Speicher – IDOT/Dist. 5 BLR&S  
Dennis Markwell – IDOT/Dist. 5 Prog. Dev.  
Dale Matejkowski – Clark Dietz, Inc.  
Tom Jordan – Daily & Associates  
Jim Whitman – Regency Commercial Associates

**Copies:** Attendees

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Minutes of this meeting were prepared by Dale Matejkowski of Clark Dietz, Inc. (CDI). Please inform him of corrections or modifications.

The purpose of the meeting was to discuss three remaining issues resultant of IDOT's review of the Phase I Project Development Report (PDR).

### Issue No. 1

The PDR proposes the use of 8'-wide, one-way bike, shared-use paths on each side of Curtis Road within the urban roadway sections. IDOT has suggested the use of a 10'-wide, two-way bike, shared-use path on the north side of Curtis Road with a 5'-wide sidewalk on the south side of Curtis Road.

Mr. Marley presented images depicting various facilities for bike travel throughout the community. These images showed the common use of one-way bike paths. It was stressed that the local agencies prefer the use of one-way bike operation and have demonstrated a history of safe operation on these facilities. Given the observed volume of bike travel on these existing paths, it was also noted that the anticipated volume of bike travel along Curtis Road would be minimal: significantly less than 100 users per hour. As such, the proposed 8'-wide, one-way bike, shared-use paths proposed by the PDR are

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in compliance with the design criteria stipulated in BLR Memo #97-7: "Policies and Procedures for Local Bicycle Facilities".

After additional discussion both Central and District BLR offices concurred in the use of 8'-wide, one-way bike, shared-use paths. The typical section will consist of a 5'-wide parkway (measured from face-of-curb to inside edge-of-path), an 8'-wide path, and a 1'-wide buffer area between the outside edge-of-path and the proposed right-of-way. The path pavement will be marked and signage installed directing one-way bike travel to the inside 4'-wide lane of the path and pedestrian travel to the outside 4'-wide lane.

#### Issue No. 2

This issue involved access via Woodfield Alley (Sta. 158+25) to a future commercial development in the northwest quadrant of the Curtis/U.S. 45 intersection. Due to traffic operations concern, IDOT had proposed to extend westerly the raised barrier median on the west leg of the intersection thus limiting Woodfield Alley access to right-in and right-out only. The Village of Savoy and the developer of this property expressed concern in limiting access to this development; particularly, the eastbound Curtis Road left-turns into Woodfield Alley. After much discussion it was decided to extend the barrier median and incorporate a "buried" left-turn bay within the median extension to accommodate the critical left-turn movement into Woodfield Alley. Concern was voiced if sufficient length would be available between the Woodfield Alley entrance and the Pages Bookstore entrance (Sta. 154+75) to accommodate the necessary geometrics and traffic volume storage lengths.

It was decided that Clark Dietz would develop an Intersection Design Study of the proposed scheme. Mr. Jordan will furnish predicted traffic volumes for Woodfield Alley for this study. The IDS will include an explanation of any design variances required and will be reviewed by IDOT's District and Central Offices pursuant to resolving this issue.

#### Issue No. 3

This issue involved entrance access to the Lo residential property and the Lo agriculture property. Both entrances are located across from each other (Sta. 135) and just west of the Curtis/Prospect intersection. Due to traffic operations concern, IDOT had proposed to extend the raised barrier median at Sta. 134+50 easterly to the Curtis/Prospect intersection. The existing field entrance would be relocated as the south leg of the Prospect intersection.

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Curtis Road – Phase I Design Study  
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The residential entrance would thus be limited to right-in/right-out access but would be supplemented by a new entrance to this property off the north leg of the intersection.

The Village of Savoy argued the necessity of these access revisions. After much discussion it was decided to accept IDOT's proposed revisions.

In other discussion, Mr. Crim advised that the current width required for a two-way, left-turn lane is 12' desirable, 13' maximum. The Curtis Road PDR will be revised accordingly.

With no further discussion the meeting was adjourned at approximately 3:00 p.m.

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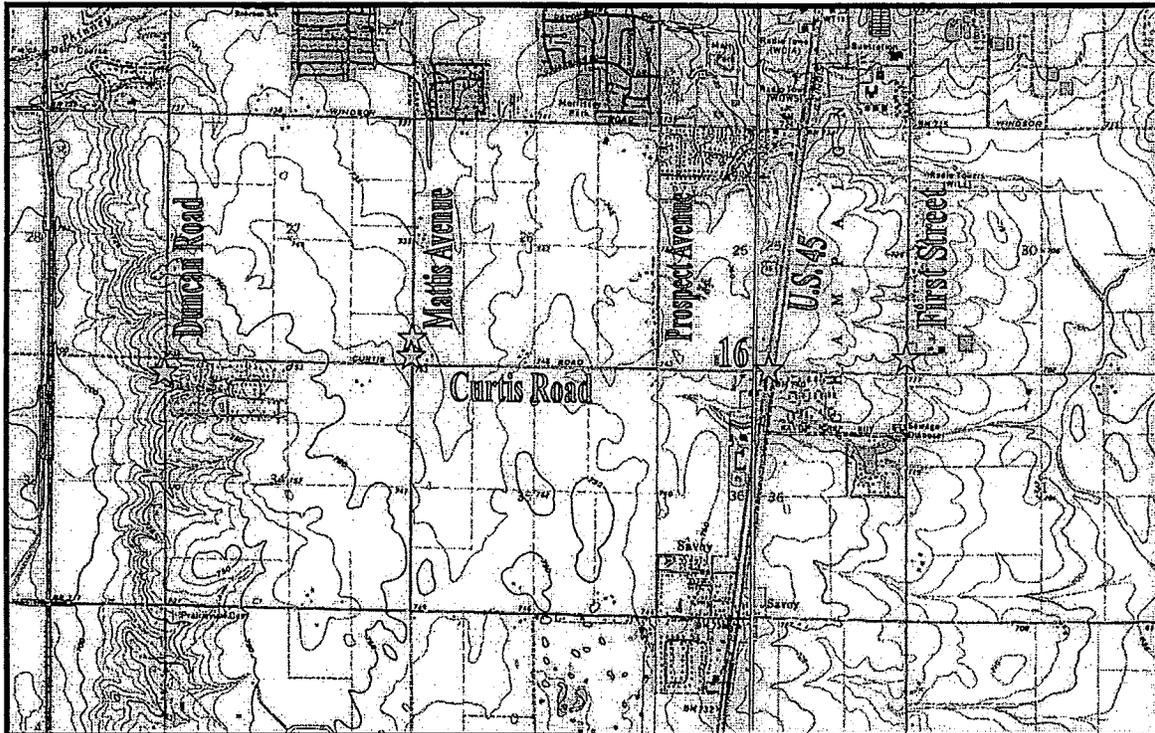
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**CURTIS ROAD IMPROVEMENTS**

**Accident Analysis**

**by Clark Dietz, Inc.**

The purpose of an accident analysis during a Phase I study is to assist in demonstrating the need for a highway improvement. As the need for the proposed improvement to Curtis Road has been substantiated by numerous other criteria discussed elsewhere within this report, the undertaking of an accident analysis within the corridor was performed to identify what, if any, hazardous conditions exist currently and to insure their mitigation under the proposed improvement program. With this criterion in mind, accident reports and statistics were gathered from the Champaign County Sheriff's Office, which has jurisdiction over Curtis Road itself, and the Illinois Department of Transportation, which maintains U.S. 45, the highest traffic volume thoroughfare within the project corridor. The accident reports, plotted geographically on the corridor map below, show the locations of all reported accidents that occurred between 1998-2000, the three most recent years of available accident data.



**Accident Spot Map**

As the map shows, the highest concentration of accidents has occurred at or near the intersection of U.S. 45 and Curtis Road. The clustering of accidents in this location is not unexpected given the high relative traffic volumes that are experienced at the intersection. To determine what, if any, areas of high accidents exist within the corridor, the Illinois Department of Transportation's HALIS (High Accident Location Identification System) was utilized. This system allows for the comparison of accident frequency, rate, severity, and change over time between the route under consideration and statewide statistics gathered by the department. If the route under consideration falls more than one standard deviation above the statewide average, the area is considered to be a high accident location and steps should be taken to ascertain the nature of the accidents on record and to provide recommendations for any necessary mitigating roadway improvements.

With the data provided by both the state and the county, the two criteria used for HALIS on Curtis Road were accident frequency and rate. Due to the much higher quantity of accidents at the Curtis Road and U.S. 45 intersection, this location was analyzed separately from the rest of the corridor. The frequency of accidents was determined by computing the number of accidents per year per mile on roadway segments, and the number of accidents per year at intersection locations. The rate of accidents was determined by using the following equations:

$$\text{Rate (Segments): } \frac{(\# \text{ of crashes}) (1,000,000)}{(\text{AADT}) (365) (3) (\text{length})}$$

$$\text{Rate (Intersections): } \frac{(\# \text{ of crashes}) (1,000,000)}{(\text{AADT}) (365) (3)}$$

Outside of the Curtis Road and U.S. 45 intersection, the rest of the 3.0-mile long corridor has experienced only four reported accidents within the past three years. This equates to an average frequency of 0.44 accidents per year per mile, which is well below the statewide accident average of 2.03 on similar two-lane rural roadways. The segment accident rate was calculated using an AADT of 4900, the highest existing AADT measured within the Curtis Road corridor. This produces a rate of 0.249, again well below the state average of 0.675. This corridor area clearly is not a high accident area and as such no remedial measures are required. The four accidents all occurred during daylight hours and as such, the Curtis Road corridor does not meet the 2:1 night-to-day accident ratio required for roadway lighting considerations.

At the intersection of U.S. 45 and Curtis Road, a total of 16 accidents have occurred, most within the intersection area itself. This equates to an average frequency of 5.3 accidents per year, well below the statewide average of 9.2 in similar urban signalized intersections. The intersection accident rate was determined using an intersection existing AADT of 18,800, which produced an accident rate of 0.777. This is higher than the statewide average rate of 0.526, but below the high accident rate of 0.898. However, since the intersection was currently exhibiting higher than average accident rates, a more thorough examination of the individual accident reports was undertaken. In studying the reports, the majority of the accidents on record occurred between vehicles traveling north and south on U.S. 45, a route that will be subject to only minor geometric reconfiguration during the improvement of Curtis Road and as such provides limited opportunity for safety enhancement. Only five of the reported accidents involved vehicles moving on Curtis Road, and three of those involved westbound vehicles. Westbound vehicles at this intersection have to pass over the existing at-grade railroad crossing, whose location immediately east of U.S. 45 creates an intersection sight distance issue due to a substandard crest vertical curve. This safety issue will be remedied by the construction of a grade separation structure over the proposed Curtis Road alignment and should help to reduce some of these turning accidents. In addition, the replacement of the at-grade crossing will eliminate the railroad preemption phasing which is currently utilized at the intersection. While it cannot be definitively established that this non-standard phasing

method played a role in any of the accidents between north- and southbound vehicles on U.S. 45, the creation of a more standardized phasing sequence will provide drivers with a more readily understood and familiar signal operation at the intersection, hopefully reducing accidents on this route as well. Of the 16 accidents, only two occurred during night or lighted conditions, removing this intersection from roadway lighting consideration.

The results of the accident analysis for Curtis Road show that no areas of high accident frequencies or rates exist within the study corridor. The small number of accidents that are on record for this corridor have no readily identifiable pattern or cause and as such provide little opportunity for safety improvement through roadway or intersection geometric modification. The safety issues that are present on the existing roadway, while not demonstratively apparent in terms of accidents caused, are addressed by the proposed wider roadway section and the horizontal and vertical realignment of Curtis Road and its associated crossroad approaches.

**CURTIS ROAD IMPROVEMENTS**

**Curtis Road Drainage Report**

**By Clark Dietz, Inc.**

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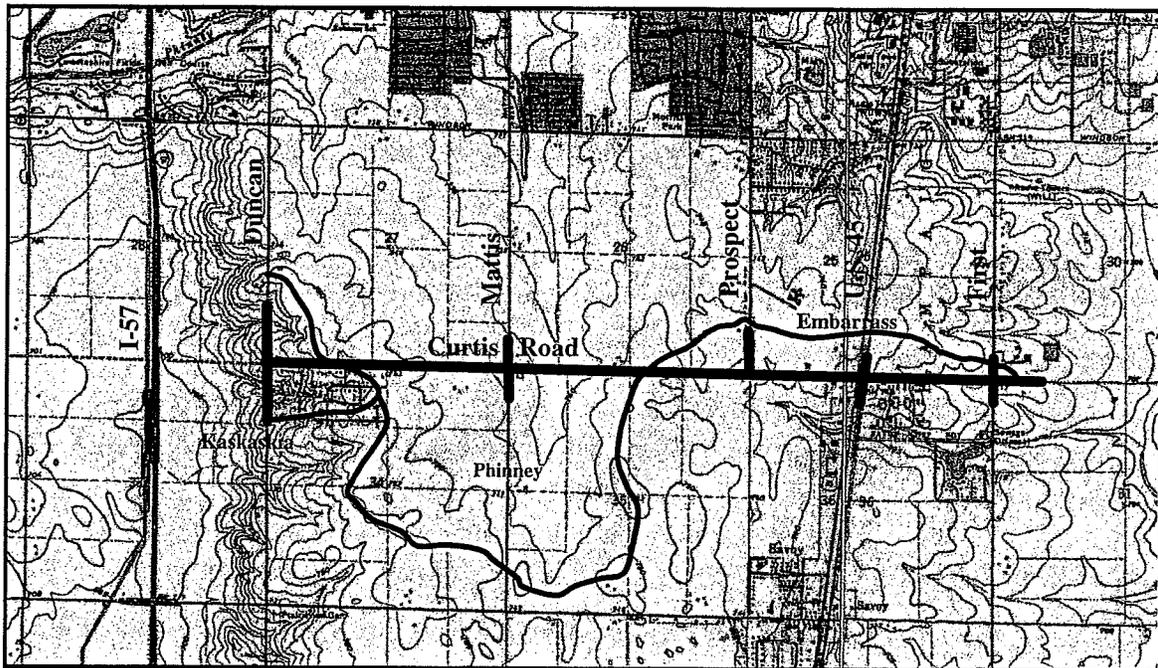
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## INTRODUCTION

Improvements to the Curtis Road stormwater management system are necessitated by the development of Curtis Road and the need to upgrade the existing drainage facilities. The widening of roadway pavement and the subway created by the railroad grade separation require that the drainage system be modified to accommodate both the increased stormwater discharged by the improvements as well as minimize drainage impacts on areas both up and downstream. A mixture of urban and rural stormwater management systems are used to accommodate these discharges and provide detention for the increased peak flows created by the improvement. Proposed drainage facilities are depicted within the companion "Combined Design Study Exhibits" provided under separate cover.

## EXISTING CONDITIONS AND DEFICIENCIES

Curtis Road traverses through three watersheds between Duncan Road and First Street. (See Figure A below for an outline of the project limits and the approximate boundaries of each drainage basin.) From west to east these drainage basins are: the Kaskaskia, the Phinney, and the Embarras. The Kaskaskia Basin encompasses about 1,400 feet of the Curtis Road study corridor and drains predominately to the west. The Phinney Branch basin drains south to north and includes 7,100 feet of Curtis Road. The Embarras basin encompasses about 7,300 feet of the study corridor and drains predominately to the east.



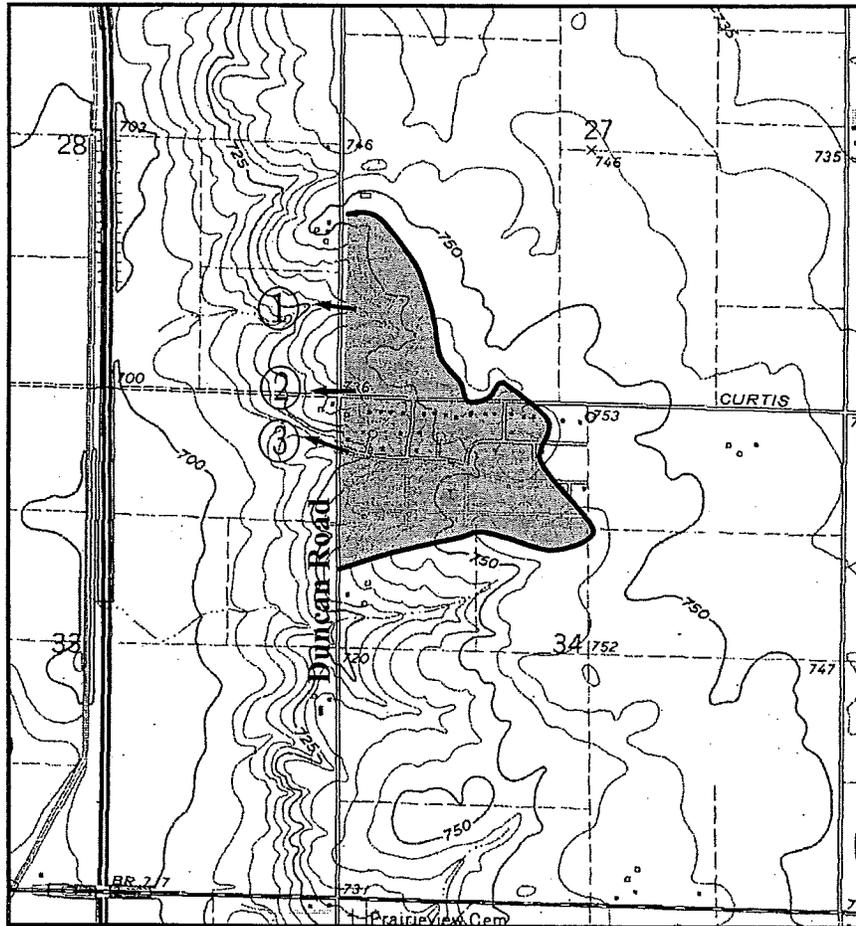
*Figure A*

With the exception of Savoy's previously reconstructed portion of Curtis Road between Prospect Avenue and First Street, storm drainage facilities within the project study area are

woefully inadequate. Roadside ditches are shallow and poorly defined or even non-existent in some locations. Several significant crossroad culverts are grossly undersized or have outfalls that hinder their hydraulic performance. These deficiencies coupled with the low existing vertical roadway alignments result in several areas that become flooded even in very moderate storm events. At times, this flooding becomes so severe that the Curtis Road pavement is overtopped by impeded stormwater.

The Kaskaskia drainage basin covers approximately 125 acres and has three principle outlets within the study area. (See Figure B for drainage area boundaries and drainage outlet locations.)

The northern portion of the basin flows westerly through a recently constructed subdivision and outlets across Duncan Road through an existing box culvert (Outlet location 1). The middle portion of the basin flows westerly utilizing a system of roadside ditches and culverts along Curtis Road. The ditches outlet from the study area on the west side of Duncan Road (Outlet location 2). The southern portion, located in the Rolling Acres subdivision southeast of the Curtis and Duncan intersection, is drained primarily via a large median ditch located on Rolling Acres Drive.



**Figure B**

This ditch outlets to a culvert under Duncan Road and into an existing drainage swale west of the roadway (Outlet location 3). The drainage swale has been partially infilled by an adjacent development and will require regrading and widening to handle the discharges anticipated not only by existing conditions but by the roadway improvements as well. The drainage basin is highly relieved and features both a mature subdivision development (Rolling Acres) and another more recently constructed (Cherry Hills). While no reports of flooding were noted, the horizontal and vertical realignments of both Curtis Road and Duncan Road will require the implementation of a new drainage scheme and the replacement of existing stormwater facilities to convey the anticipated runoffs.

The Phinney drainage basin covers approximately 605 acres and outlets the study area via a group of pipe culverts under Curtis Road east of Mattis Avenue. (See Figure C for drainage area boundaries.) Curtis Road crosses the Phinney Branch at its upper, most southerly reach. Accordingly, ground surface topography in the “headwater” portion of this basin is very flat.

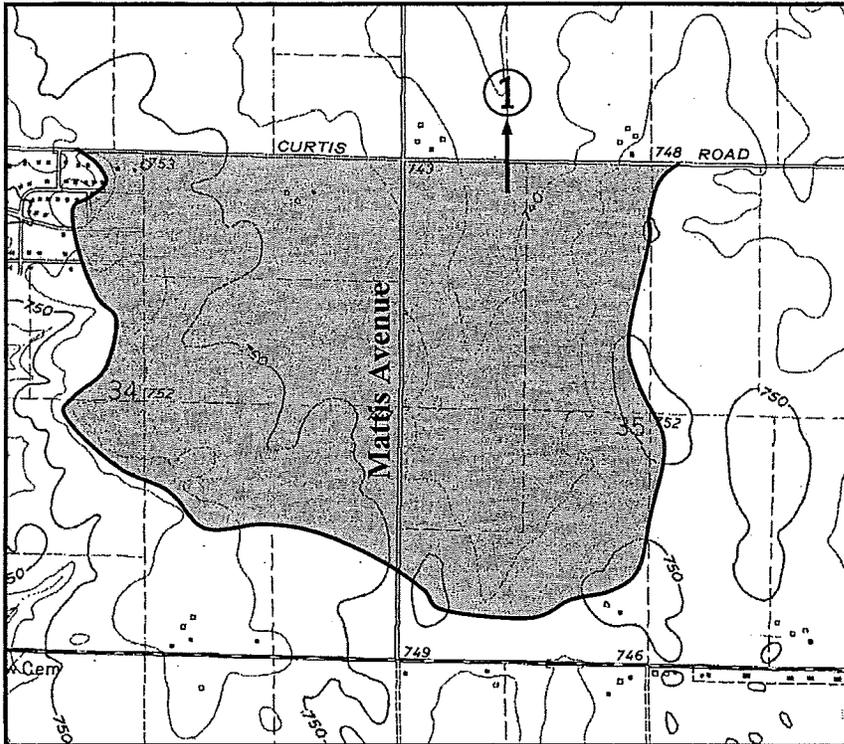


Figure C

Overland drainage swales are nearly imperceptible through the farm fields and meander in an attempt to find an outfall. The general drainage pattern is sluggish in a south to north direction, ultimately flowing to a confluence at the basin low point near the existing Curtis Road culvert (Outlet location 1). From this point, the flow discharges into an overland swale which meanders northerly through open farmland to a box culvert under Windsor Road. The current culvert under Curtis Road is

inadequate to convey the existing discharges developed at this location. This lack of sufficient capacity results in roadway overtopping, creating hazardous driving conditions and greatly accelerating the rate of pavement deterioration and failure. The roadside ditches on Curtis Road within this basin are very poorly defined, preventing stormwater runoff from reaching its natural outfall and creating areas of localized flooding and roadway overtopping. Substantial modifications to the existing drainage system, both upstream and downstream of the crossroad culvert, will be necessary to eliminate this chronic flooding and improve stormwater conveyance.

The Embarras drainage basin covers approximately 120 acres and outlets the study area in several locations. (See Figure D for drainage area boundaries.) West of U.S. 45, the landscape is flat and populated by various commercial developments and residences. The recently reconstructed portion of Curtis Road between Prospect and U.S. 45 is drained via a storm sewer system and outlets into a 48” and 60” storm sewer pipe into the Arbour Meadows regional detention facility south of Curtis Road. This facility then outlets easterly under U.S. 45 and the CN/IC railroad tracks into another detention pond within the Lake Park subdivision which in turn outlets into a drainage swale tributary to the Embarras River.

No reports of flooding have been made in this area although an examination of previously performed drainage calculations reveals that the existing storm sewer system along the reconstructed section of Curtis Road was designed with capacity for only a 5-year return

period storm. A very small portion of Curtis Road between U.S. 45 and the CN/IC railroad drains to an existing 24" culvert which provides conveyance for stormwater discharges from the east side of U.S. 45. The remainder of the Embarras drainage basin from the CN/IC railroad to First Street drains easterly along Curtis Road to First Street. At this point it is outlet via

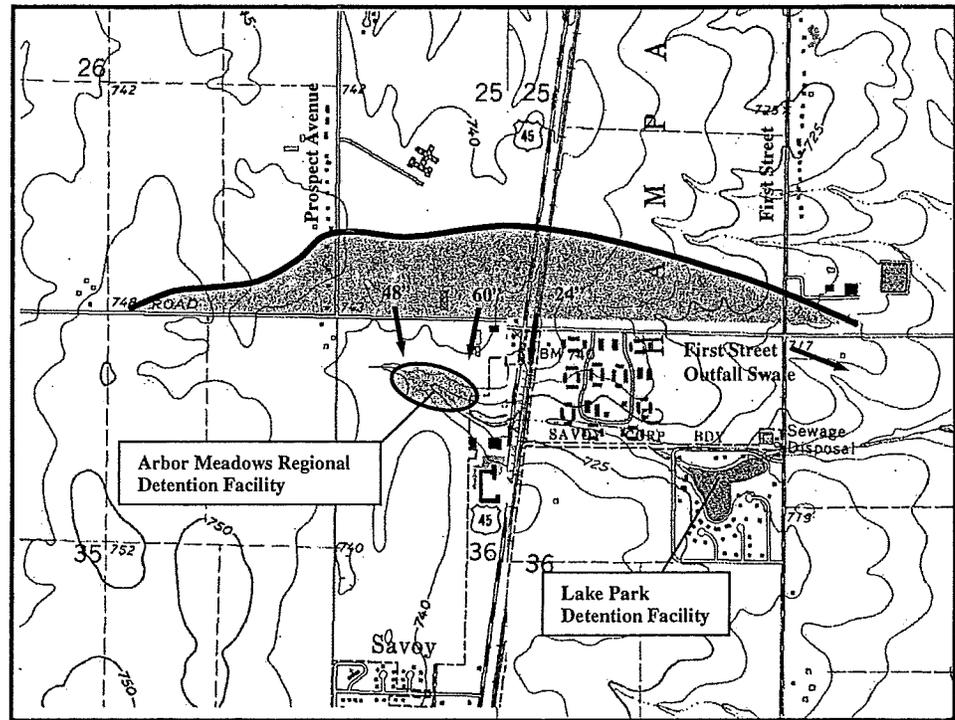


Figure D

crossroad culverts onto a farmland swale tributary to the Embarras River designated as the First Street Outfall Swale on Figure D. The landscape in this area has somewhat more relief and contains several large apartment complexes on the south side of Curtis Road and farmland on the north. The roadside ditches in the southwest quadrant of the First Street/Curtis Road intersection operate in conjunction with a recently constructed detention facility for the new apartment complexes and care will have to be taken to insure that any modifications to these ditches do not adversely impact the other facilities. No reports of flooding were noted in this section of the drainage area, although the poorly defined ditches on the north side of Curtis Road most likely cause ponding that extends beyond the right of way limits.

## DESIGN CRITERIA AND CONSIDERATIONS

The development of the proposed stormwater management system involved the incorporation of numerous design criteria as well as other important considerations. Design criteria developed by Illinois Department of Transportation's Bureau of Local Roads and Streets and the I.D.O.T. Drainage Manual developed by the Bureau of Bridges and Structures served as guidelines in the development of a comprehensive stormwater management system. In addition, factors such as existing utility locations, adjacent property utilization, and environmental impacts were also considered. Stormwater discharges for the various return

period storm events were calculated using the Rational Method and Bulletin 70 rainfall intensities for small drainage areas and the TR-55 procedure for drainage areas in excess of 200 acres.

To determine the discharges necessary for the design of the stormwater management facilities detailed below, the following "C" coefficients were used throughout the project for their respective land uses:

0.30	Row crop farmland with no existing development
0.50	Developed residential, light commercial, and other developed areas
0.95	Roadway pavement system

While a more detailed determination of "C" coefficients could have been performed for each individual drainage subbasins (for example, the precise measurement and computation of the composite "C" value generated by each residential parcel), on-going construction and development within the corridor would have made such a detailed analysis erroneous before this Phase I study could be completed. In addition, currently undeveloped areas within the study corridor have been given land use designations for future development and their resultant drainage impact cannot be accurately gauged at this time. However, any such development within these areas would, by both city and county ordinance, be required to provide a system of stormwater detention so as not to increase the peak discharges currently experienced downstream. Due to the dynamic nature of the development potential in this area, the values above were utilized and considered conservative with respect to future development and attendant stormwater detention.

The storm sewer systems incorporated throughout the project were designed using a 10-year return period storm event as required by the Drainage Manual. Storm sewer inlet structures were located at intervals consistent with the maintenance of allowable gutter spreads and depths as mandated by I.D.O.T. Where possible, the storm sewer mainlines were located with sufficient depth to provide accessibility for future roadside developments. However, in many areas the lack of sufficient vertical relief and the elevation limitations of the receiving stormwater outlets required the installation of these facilities at minimal depths. In addition, these limitations also required that many of the storm sewer pipes be laid at a minimal slope, in some cases as small as 0.2 percent for large mainline sections. A minimum pipe size of 12" was utilized to reduce the likelihood of debris blockage. The storm sewer networks were modeled using Haestad Method's StormCAD stormwater management software to ensure compliance with guidelines developed by the Illinois Department of Transportation.

The roadside ditches were designed using a 50-year return period storm event as mandated by the Drainage Manual. In most cases, the ditches and their associated slopes were designed to parallel the adjacent pavement gradeline to maintain a uniform ditch profile. However, several special ditches were developed to accommodate unique circumstances, particularly in areas of storm sewer and ditch transition. Special ditch designs were also developed to allow for properly sized crossroad culverts and to accommodate stilling basins, stormwater detention, and other drainage facilities. This results in relatively flat ditch slopes that vary to as little as 0.2 percent, far from ideal, but necessary due to the limited relief available throughout much of the project length. The ditch networks were modeled using

Haestad Methods FlowMaster stormwater management software to determine design flows and depths.

The crossroad culverts were designed using a 50-year return period storm event as required by the Drainage Manual. In addition, the culverts were checked to ensure sufficient performance under the discharges experienced during a 100-year storm event. The culverts were also utilized to realize detention opportunities within the roadside ditches. In some cases, the culverts were oversized or placed below the design flowline to provide flexibility for future developers. In developing the culvert designs, a minimum of 1.25 feet of separation between the high water elevation and the edge of shoulder was utilized for the 50-year design storm to ensure the stability of the pavement system and supporting subgrade. The 100-year design storm was used to ensure roadway overtopping would not be experienced during this infrequent rainfall event. Both return period events were also checked to ensure their compliance with created head requirements and confirm that adjacent properties outside of the right of way limits would not be impacted by the culverts' headwaters. The culverts' performances were modeled using Haestad Methods' CulvertMaster stormwater management software to size the culverts and to determine resultant high water elevations.

Detention calculations were performed and facilities developed based on the discharges associated with a 50-year return period design storm. The stormwater storage volumes required were generated by following the procedures developed in the Drainage Manual. Where possible, detention opportunities were maximized within the proposed stormwater management system to minimize the impacts of the increased discharges associated with the Curtis Road development on downstream locations. Effort was taken to minimize the right-of-way necessary for stormwater detention compliance by utilizing existing facilities where possible. Where new facilities were required, care was taken to locate such facilities in areas where their impact would have the least amount of impact on surrounding land use. These facilities were also checked with 100-year design discharges to ensure their safe operation during these extreme events. The detention facilities were modeled using Haestad Methods PondPack management software to determine their storage capacity and high water level associated with various storm events.

## **PROPOSED IMPROVEMENTS**

The improvements proposed during this Phase I analysis provide the basis for an effective stormwater management system throughout the Curtis Road development area. While not of sufficient scope or detail to qualify as final designs, they provide an effective outline from which final designs and plans can be developed. Tables A and B at the end of this report respectively summarize the project's significant stormwater conveyance culverts and stormwater detention facilities.

Due to the location specific nature of the stormwater management improvements, the developments within each drainage basin are individually discussed below.

## ***Kaskaskia Drainage Basin***

Please refer to Exhibits 2, 3, 15, and 16 of the Design Exhibits for plan, profile, and location information regarding the proposed drainage improvements within this basin.

Due to the existing property development that has occurred along Curtis Road within this basin, the stormwater runoff generated by the Curtis Road improvement will be conveyed via curb and gutter and a storm sewer system to minimize property encroachments and additional right-of-way requirements. The existing drainage pattern would suggest an outfall on the northwest quadrant of the Duncan Road/Curtis Road intersection, but the depth of the storm sewer system and the resultant impact on right of way requirements coupled with the high velocities generated by the vertical relief in this area made it impractical to outlet the storm sewer in this location. Instead, this storm sewer system was joined to a proposed storm sewer system on the east side of Duncan Road that in turn outlets into a new box culvert under Duncan Road near Rolling Acres Drive. The west side of Duncan Road will be drained via roadside ditch placed at minimal depths throughout due to very small anticipated discharge quantities.

### **Storm Sewers**

Due to the high level of relief which exists along this section of Curtis Road and the potential for further roadside development in this area, the storm sewer system was designed to provide a minimum of three feet of cover above the top of the pipes. This requirement set the invert elevation used on the upstream end of the system and was used to determine the pipe slopes along the Curtis Road mainline. This criterion also set the inverts of the Duncan Road storm sewer system, although the cover was reduced to two feet near the Rolling Acres Drive intersection to accommodate the culvert outlet requirements.

### **Roadside and Outfall Ditches**

The entire west side and a very short portion of the northeast side of the Duncan Road improvements will be drained via roadside ditch. These ditches will, for the most part, be set at the minimum depths as shown by Typical Sections 7, 8, and 9 shown on the referenced Design Exhibits. Only near the intersection of Curtis Road, where some modifications may be necessary to insure connectivity with the IDOT designed extension of Curtis Road, and near Rolling Acres Drive, where the culvert invert will require some application of a special ditch profile, will the depths be greater than the three feet minimum. The flows in these ditches will be very minor and some consideration should be given during final design to the possibility of further reducing their minimal depth to minimize right of way impacts. The flows from the crest of Duncan Road at approximately Station 333+00 and northerly will drain to an existing culvert that will be extended to accommodate the pavement widening at this location. As no survey information was available regarding the inverts of this existing culvert, final design should include modifications to the ditch profiles in this area to accommodate the existing culvert invert elevations.

An existing drainage swale carries stormwater from the Duncan Road / Rolling Acres culvert to the west. Upon future IDOT extension of Curtis Road, this swale will most likely flow

into a roadside ditch on the south side of the Curtis Road extension. The current swale is not clearly defined and in several locations is actually impeded by trees and other vegetation. The new culvert invert elevations and design discharges will require this channel to be regraded and more clearly defined. Various cross section alternatives and their resultant flow depths should be more closely explored during final design when more information relating to the drainage scheme developed for the Curtis Road extension becomes available.

### **Culverts**

Two existing culverts will be impacted by this improvement. The first, located at the intersection of Rolling Acres Drive and Duncan Road, is a 30" CMP that provides drainage for the Rolling Acre's subdivision median stormwater ditch. Due to the increased flows generated by the Duncan Road improvements and the additional flows diverted via the Curtis Road storm sewer system, the existing culvert will be removed and a new 7' x 3' box culvert installed. A structure of this size will allow the flows anticipated during both a 50- and 100-year storm to be passed by the culvert without impact on the surrounding properties. However, to provide flexibility for future development in the area, it is recommended that a 7' by 4' box culvert be installed in this location with a one-foot sump created in the culvert. Should future development increase the peak discharges at this location, the inflow and outfall channels can be lowered to take advantage of this additional capacity.

The second culvert is located north of the Duncan Road crest at approximately Station 337+50. This existing 3'x2' box culvert will remain in place provided it is compatible with the ditch depth requirements finalized during Phase II of this project. The culvert will have to be extended due to the increased pavement width at this area. As development is currently ongoing in this area, the Phase II field survey should identify if any other modifications to this structure will be required.

### **Detention**

Due to the widening of the Curtis Road and Duncan Road pavements, stormwater detention is required within this basin. The land use within the proposed right of way limits currently produces a "C" value of 0.41. Under fully developed proposed conditions, this value will rise to 0.68, necessitating 0.93 acre-feet of storage be provided during a 50-year return period rainfall event. Very little detention opportunity exists within the project limits of the Kaskaskia Basin. Significant levels of vertical relief, shallow ditch depths, and right of way restrictions eliminate most detention possibilities. However, the outfall channel downstream of the Rolling Acres Drive/Duncan Road culvert shown on Design Exhibits 2 and 15 is of lesser slope and should be able to provide the required detention storage by using ditch checks within the channel to create impoundment of stormwater flows.

### ***Phinney Drainage Basin***

Please refer to Exhibits 3 thru 7 and 17 of the Design Exhibits for plan, profile, and location information regarding the proposed drainage improvements within this basin.

Due to the residential subdivision land use on the westernmost portion of this drainage basin, stormwater runoff in this portion of the Curtis Road will be conveyed via concrete curb and

gutter and a stormwater sewer system. This system outlets into the north roadside ditch east of the Curtis Road intersection with Wynstone Drive. East of this intersection, the roadway transitions to a rural type roadway typical section (see Typical Section 2 on Design Exhibit 5) and runoff will be conveyed via roadside ditches and crossroad culverts. The southside roadway ditches and the cropland south of Curtis Road will flow into a crossroad culvert at Station 98+00. The flows from this culvert and the north side roadway ditches will flow into a proposed drainage channel that ultimately outlets at an existing crossroad culvert under Windsor Road.

Due to the large drainage area upstream of the Curtis Road / Phinney Branch culvert, TR-55 software was used to quantify the amount of stormwater discharge. Initial studies developed expected discharge values that ranged from 458 cfs to 635 cfs under a 50-year storm event. These values were largely based on differences between drainage basin ponding values. Using 1% ponding, 635 cfs was calculated while a 5% value for ponding produced 458 cfs. This large variation required some attempt at quantifying the amount of ponding that was taking place. While a large scale site survey was obviously impractical, a study was performed to determine the amount of ponding that would be created by roadway overtopping at the existing Phinney Branch cross-road culvert, a scenario that has been observed even during relatively low return period storms. This study revealed that approximately 7.5 acres, or 1.2% of the total 605 acres of total tributary drainage area, would experience ponding during a road overtopping event. This measured area only included the area within the 400' limit of contour mapping provided from aerial photography. Significant ponding could reasonably be expected outside of this limit, however, no practical means was available to quantify this. Further iterations within the TR-55 program revealed that for ponding values between 2% and 3.5%, the expected flow value remained essentially constant. As such, the flow produced by this range of ponding values was used for proposed culvert design. It was determined that areas of ponding south of the available contour limits could easily be 2-3 times what was observed within the limits, but it would be difficult to justify the use of a value 4 times or more. The 2.0% to 3.5% level of ponding produces a conservative discharge amount, especially when considering that while future developments may eliminate the ponding all together, current municipal subdivision regulations will require construction of upstream stormwater detention consistent with the level of future land use development.

### **Storm Sewers**

To facilitate a reasonable ditch depth east of the Wynstone Drive intersection and to ensure positive ditch drainage easterly to the Phinney Branch, the storm sewer system on Curtis Road within this basin was designed using both minimal depths and minimal slopes. Inlets were designed to provide a minimum of 2 feet of cover above the top of pipe. 12" pipes were laid at 0.4% slope, 15"-21" pipes were laid at 0.3% slope, and 24" and greater pipes were laid at 0.2% slope. This allowed the storm sewer system to outlet into the north side Curtis Road ditch without dramatically affecting the ditch profile and resultant right-of-way requirements.

## **Roadside and Outfall Ditches**

The majority of the runoff within this drainage basin is conveyed via roadside ditch. Due to the existing topography and the very limited vertical relief provided within the basin, the majority of the ditches are not the typical three-foot deep ditch referred to on Typical Section 2 of the Design Exhibits. Instead, most are what is referred to on the Section as a "special ditch." These ditches, with a four-to-one front slope once beyond the pavement clear zone, were designed to provide sufficient capacity for the anticipated discharges, to work with the proposed culverts and ditch checks to maximize detention opportunities, and to ensure that design year discharges and created heads would not extend beyond the right-of-way limits. Where special ditches were used, their corresponding profile has been identified on the Design Exhibits and the ditch slope designated. Ditch slopes within this basin varied from as much as 1.5%± to as little as 0.22%±. The latter is typically undesirable for roadside ditches due to its tendency to create standing water and wetland vegetation. However, the topography in this area and existing outfall elevation limitations prevented the use of more desirable ditch profile grade lines. The ditch profiles for the Mattis Avenue roadside ditches are shown on Exhibit 17 of the Design Exhibits and were necessary to interface with the Curtis Road ditches and to maximize culvert-created detention opportunities.

Of particular interest for the drainage analysis was the Phinney outfall channel between Curtis Road and Windsor Road. The existing drainage swale meanders through row crop farmland and outlets to an existing crossroad culvert under Windsor Road. In order to eliminate the frequently observed flooding taking place along Curtis Road, this outlet channel was redesigned. The new channel was lowered nearly four feet at its origin at Curtis Road and the entire length regraded and given a clearly defined trapezoidal shape. The proposed cross section is shown on Exhibit 6 of the Design Exhibits. Final design studies should include a field survey of this area to ensure that the cross section and ditch slope recommended are able to contain the anticipated discharges without encroachment beyond the recommended drainage easement limits.

## **Culverts**

Three significant culverts were sized within this drainage basin, although several other minor entrance culverts and ditch checks were also hydraulically modeled. Ditch checks that were used for detention purposes are identified as such on the Design Exhibits while other ditch checks shown are used solely to provide ground embedment of nearby power poles. These ditch checks are not included in the culvert tables, but will be sized during final design to operate under a zero head condition.

Two of the major culverts were located at the intersection of Curtis Road and Mattis Avenue. Both the north and south Curtis Road ditches pass under the Mattis Avenue pavement at this location. Due to the detention requirements within this basin (more following), these culverts were sized to maximize available storage capacity in the upstream ditches while still adhering to design criteria stated previously. The tailwater conditions present at these culverts, created by downstream entrance culverts and ditch checks, caused culvert sizes to be greater than expected for their anticipated flows, but were necessary to meet both the detention needs and design criteria requirements. The resulting 6' x 3' and 8' x 4' box

culverts would be placed a foot below the upstream and downstream flowlines and would convey the flows necessary under the tailwater conditions anticipated to provide for significant levels of stormwater storage in the upstream ditches on both Curtis Road and Mattis Avenue.

The Curtis Road / Phinney Branch crossroad culvert will be a unique design. Anticipated discharge values and freeboard requirements dictate that a double 8'x4' box culvert be used for the crossing. However, to facilitate the possible drainage conditions that may result from the anticipated development of areas south of Curtis Road, it is recommended that construction of double 8' x 5' box culvert take place in this location. As discussed previously, the culvert bottom would be lowered a foot below the upstream and downstream flowlines, creating a 1' sump in the box which could be used by later developers. A unique drop structure will be required at the upstream portion of the culvert to facilitate discharges from the surrounding farmland, roadside ditches, and culvert outlets. The drop structure will have to accommodate a culvert invert from the east, ditch flows from the west, and steep grading to the culvert inlet on the south. Final field surveys and design studies will be required to determine the structural design best suited to interface with the existing terrain and the proposed improvements.

### **Detention**

Due to the widening of the Curtis Road and Mattis Avenue pavements, stormwater detention is required within this basin. The land use within the proposed right-of-way currently produces a "C" value of 0.39. Under fully developed proposed conditions, this value will rise to 0.63, necessitating 3.0 acre-feet of storage be provided during a 50-year return period rainfall event. The culvert sizings and ditch check installations allow the proposed roadside ditches to accommodate nearly 3.9 acre-feet. While significantly higher than the required level of detention, the improvements to the outfall channel between Curtis Road and Windsor Road may increase the rate of discharge to downstream facilities. A more thorough hydraulic analysis can be performed once final survey information has been gathered. Several of the ditch checks placed along Curtis Road may be able to be removed and upstream culverts resized due to reduced tailwater conditions.

### ***Embarras Drainage Basin***

Due to the large size of the Embarras drainage basin and its multi-faceted hydraulic characteristics within the project corridor, the drainage analysis following will segregate the basin into two parts, Western and Eastern, with U.S. 45 serving as the line of division.

### ***Western Embarras Drainage Basin***

Please refer to Exhibits 7 thru 10, 13 and 18 of the Design Exhibits for plan, profile, and location information regarding the proposed drainage improvements within this basin.

The drainage system within the Western Embarras drainage basin, which stretches from Curtis Road Station 118+11 to U.S. 45, will have three outlets under the proposed stormwater management scheme. In order to better provide a clear picture of how each

system will operate, the systems will be discussed individually instead of combining them for a general discussion of storm sewers, ditches, culverts, and detention.

The two existing outlets of this portion of Curtis Road area, 48" and 60" interceptor sewers that carry storm water runoff to the Arbor Meadows detention facility (see Figure D), will be supplemented by an additional outlet, and a new 2-acre detention facility (see Design Exhibit 13) southwest of the intersection of Prospect Avenue and Curtis Road. All three outlets are discussed individually below. Drainage design within this portion of the Embarras Basin was driven by the design criteria outlined previously and was also oriented to the concerns of the Arbor Meadows Homeowners Association, who is responsible for the maintenance and upkeep of the Arbor Meadows Regional Detention Facility. Their concerns that further development of the Curtis Road roadway corridor would lead to increased levels of stormwater discharge and sedimentation within their detention facility were given careful consideration, and in conjunction with the existing development that has already taken place within this area, led to the decision to propose the construction of a new detention facility south of Prospect Avenue.

### **South Prospect Detention Facility**

Initial reviews of the existing drainage scheme on the most westerly portion of the Embarras drainage basin (from approximately Station 118+00 to Station 152+50) revealed much of the existing runoff being intercepted by a recently constructed storm sewer system. This system then outlets into a south flowing 48" storm sewer interceptor near Wesley Avenue which drains to the Arbor Meadows Regional Detention Facility. The proposed drainage scheme was to utilize this same outlet until it was discovered that this outlet system could only accommodate the peak flows associated with a 5-year storm event, not the 10-year storm sewer design criteria being utilized by this Phase I study. This existing condition, coupled with the nearly 1.3 acre-feet of stormwater detention storage required in this area, made such an outlet location impractical. As such, a search for another means of conveying the stormwater and providing detention for the increased rate of discharge was made. After studying multiple scenarios, the most plausible solution was the creation of a new detention facility southwest of the Curtis Road and Prospect Avenue intersection. This facility would operate in conjunction with an existing downstream dry-bottom detention facility south of the Prospect Pointe apartments. The dry-bottom facility outlets directly into the Arbor Meadows detention facility and great care was taken to ensure that the peak discharges and high water elevations in both the Arbor Meadow facility and the dry-bottom basin were not impacted by the additional flows generated by the Curtis Road improvements. The new south Prospect detention facility (shown on Exhibit 13 of the Design Exhibits) will store overland flows from the farmlands directly west of the dry-bottom facility and roadside ditch flows from the rurally developed sections of Curtis Road west of the Lo property (Station 132). As such, the new storm sewer system installed under Prospect Avenue and Curtis Road in this area (Station 133-145), a system very sensitive to tailwater conditions, will be able to outlet directly into the existing dry-bottom facility south of the Prospect Pointe apartments without having an adverse impact on peak discharges or high water elevations in downstream stormwater detention facilities. This system will back-drain Curtis Road from Wesley Avenue (Station 146) to Prospect Avenue, thereby reducing the discharge currently conveyed into the existing overburdened 48" storm sewer interceptor. This allows flows westerly from

the crest of Curtis Road at Station 152+50 to flow undetained into the 48" interceptor at Wesley Avenue without adverse impacts. The new storm sewer will also be extended north on Prospect Avenue and will intercept ditch flows north of the improvement limits to an existing high point on Prospect Avenue approximately 900 feet north of Curtis Road. A 4' x 2' box culvert starting at Station 138, with capacity for the 50-year design storm discharges of the Curtis Road ditches, will intercept this ditch flow near the Prospect Avenue intersection and convey it directly into the new South Prospect detention facility. This new detention facility will actually detain more water than is warranted by the roadway improvement in order to ensure that the hydraulic performance of both the Prospect Pointe dry-bottom basin and the Arbor Meadows detention facility downstream are not negatively effected by the Curtis Road developments. Final sizing of the new basin, the outlet structure, and the regrading necessary to provide positive drainage in the existing dry-bottom basin should all be revisited after reviewing more thorough survey information during final design. As discussed elsewhere, the South Prospect detention facility will also serve as a wetland compensation area.

#### **48" Existing Storm Sewer Interceptor**

As discussed previously, much of the existing storm sewer system connected to the 48" interceptor sewer west of Wesley Avenue will be removed. This includes the area inlets that currently convey flows from the roadside ditches of both Curtis Road and Prospect Avenue, and the curb inlets that provide drainage for the existing Curtis Road pavement between Prospect Avenue and Wesley Avenue. By removing these discharges from the 48" interceptor, sufficient capacity can be created to allow the 600' of Curtis Road improvement east of Wesley to flow into this interceptor. The existing 36" interceptor that conveys flows from an inlet located on the southeast corner of Arbours Subdivision Number 14 (see Design Exhibit 9) will remain in place. The overall discharge to the 48" sewer is actually decreased by this flow re-distribution, providing a margin of safety given the 5-year storm capacity of the existing sewer.

#### **60" Existing Storm Sewer Interceptor**

From the crest of Curtis Road near Station 152+50 to U.S. 45, the existing south flowing 60" interceptor storm sewer provides the most logical source of outfall for the new storm sewer system required by the Curtis Road improvement. The existing storm sewer network north of Curtis Road will be kept in place with modifications to the existing inlet system along the north side of Curtis Road as shown on Design Exhibit 10. A new area inlet will be provided on the south side of the parking lot (Station 159, Lt.) and will be connected to the existing 36" storm sewer. The new Curtis Road storm sewer system will operate on a completely different network, interfacing only at its connection to the 60" interceptor sewer near Station 154+50. This separation allows the new storm sewer network to be oversized to provide inline storage for the 0.1 acre-feet of detention that is required by the roadway improvements in this area. The new Curtis Road storm sewer will be located on the south side of the Curtis Road improvement and will connect to the existing 60" interceptor. A restrictor, located immediately upstream of the new Curtis Road storm sewer's connection to the existing interceptor, will be developed during final design to ensure the full storage potential of the oversized pipes is realized.

## ***Eastern Embarras Drainage Basin***

Please refer to Exhibits 10 thru 12 and 19 of the Design Exhibits for plan, profile, and location information regarding the proposed drainage improvements within this basin.

The drainage system within the Eastern Embarras drainage basin, which stretches from U.S. 45 to the project limits of Curtis Road east of First Street, will have three outlets under the proposed stormwater management scheme. In order to better provide a clear picture of how each system will operate, the systems will be discussed individually instead of combining them for a general discussion of storm sewers, ditches, culverts, and detention.

Currently, the entire Curtis Road roadway corridor east of U.S. 45, with the exception of approximately 100' of pavement between the railroad tracks and the U.S. 45 intersection, drains easterly down Curtis Road and outlets via crossroad culverts near the intersection of Curtis Road and First Street. Due to the railroad grade separation, this flow pattern could be slightly changed and it was intended that a portion of the Curtis Road corridor stormwater runoff, within the subway area, would be conveyed to the Embarras channel upstream of its current point of discharge at First Street. However, the Lake Park Homeowners Association, whose subdivision lake lies between the current outfall location east of First Street and a possible upstream outlet for subway drainage, has expressed considerable concern about increased discharge, sedimentation, and poor quality runoff from the Curtis Road improvements entering the lake. These concerns were taken into consideration during the development of the proposed drainage scheme outlined below.

### **24" Culvert**

Immediately east of the intersection of U.S. 45 and Curtis Road is a 24" culvert that provides conveyance for stormwater flowing southerly in a roadside ditch on the east side of U.S. 45. While the culvert will most likely have to be lowered slightly due to the lowered pavement grade line generated by the railroad grade separation, the size of the structure should be sufficient. The Curtis Road improvements will not impact the drainage area of the culvert and as such, a change in discharge is not anticipated. A slight decrease in discharge will probably occur due to the placement of a curb and gutter system on Curtis Road, but the reduction in flow will be negligible. Final design surveys and plans will determine how much the culvert will need to be lowered and what resultant modifications will be necessary to upstream and downstream ditch profiles.

### **Railroad Grade Separation Subway**

In areas where the roadway profile creates a subway where water can easily become entrapped and render the roadway impassible, IDOT requirements stipulate the design of a storm sewer system with inlet spacing and network capacity for a 50-year design storm. As such a subway will be created by the railroad grade separation structure east of U.S. 45, the IDOT requirements apply. It was originally perceived that the proposed Curtis Road storm sewer system within the subway area would intercept the flows generated by such a storm event and route them via a new 42" storm sewer interceptor (oversized for detention) south along the east side of the proposed railroad right-of-way (see Design Exhibits 22 and 23) into

a swale near R.R. Station 12326 which is tributary to the Lake Park Subdivision and the downstream Embarras Channel. However, concern regarding the impact upon water quality of the subdivision lake led to abandonment of this drainage scheme. It was decided instead to route the subway drainage east via a separate sewer for the 50 yr. design flow, to a point of discharge within the proposed north roadside ditch near Station 176.

### **First Street Outfall Swale**

East of the subway area (see Typical Section 5 on Exhibit 11 of the Design Exhibits), a mixture of rural and urban stormwater management methods are used. On the north side of the roadway, a roadside ditch is used to convey the overland flows from the farmlands north of the Curtis Road improvement. On the south side of the roadway, existing residential developments dictated the use of a curb and gutter system to minimize right-of-way encroachment thus requiring the installation of a subsurface storm sewer system. This system outlets across Curtis Road into the north ditch at Station 184+00. The south ditch in this location does not have sufficient depth to accept the storm sewer outlet and any significant modifications to the proposed southside ditch profile in this location would create conflicts with an existing sidewalk and storm sewer system located on the north side of Sterling University Fields apartment's parking lot. This existing storm sewer system services the apartment complex and outlets into a detention facility developed for the use of Sterling University Fields and Parkview Retirement Community. As such, the north Curtis Road ditch will be lowered in this area to accept the Curtis Road storm sewer outlet and the additional ditch depth will be used to accommodate some of the 0.8 acre-feet of stormwater detention storage that is required by this section of the roadway improvement. The culverts at the intersection of Curtis Road and First Street (see Design Exhibit 19) are designed to operate together to maximize the detention opportunities provided in the upstream roadside ditches and actually provide about a tenth of an acre-foot more storage than required. An existing 4'x2' box culvert is currently in place under the recently constructed entrance to the Sterling University Fields apartments from First Street. As the culvert appears to be grossly oversized given its minuscule immediate drainage area, it is assumed to play some type of a role in the performance characteristics of the new detention facility constructed south of the apartment complex. As the pavement grade line of both Curtis Road and First Street will be raised significantly by the proposed improvements, potentially eliminating an existing avenue of high water relief, an identically sized culvert will be placed under First Street downstream of the entrance to insure adequate capacity for whatever role the existing system might be performing. The size is also consistent with the design criteria identified previously. Final design should verify what this role is and size the cross road culvert in this location accordingly.

### **PERMITS**

Activities within the project waterways involving the construction of the Phinney Branch box culvert and associated downstream Phinney Branch channel grading (see Design Exhibit 6); and, the extension of the existing railroad culvert within a tributary to the Embarras River (see Design Exhibit 22) will require the following permits to be acquired during Phase II:

- Section 404 (USA COE)

- Section 401 Water Quality Certification (IEPA)
- IDNR Office of Water Resources Public Waters Permit
- IDNR Office of Water Resources Floodway Permit (Phinney Channel Grading)

This project will result in the disturbance of one or more acres of total land area. Accordingly, it is subject to the requirement for a National Pollutant Discharge Elimination System (NPDES-Phase II) permit for stormwater discharges from the construction sites. Permit coverage for the project will be obtained during Phase II project development in accordance with IDOT/BLR memorandum #02-22 dated 10-31-02. Requirements applicable to such a permit will be followed, including the preparation of a Stormwater Pollution Prevention Plan. Such a plan will identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges from the construction site and shall describe and ensure the implementation of practices which will be used to reduce the pollutants in discharges associated with construction site activity and to assure compliance with the terms of the permit.

**Table A**  
**Across-Road Culvert Summary**

Location	Size* (feet)	Type	50 Year Discharge (cfs)	100 Year Discharge (cfs)	50 Year HWE (feet)	100 Year HWE (feet)
<i><b>Curtis Road</b></i>						
98+10	8' x 5'	D. Box	477	585	736.68	737.67
131+40	2' x 3'	Box	7	8	741.55	742.63
192+25	4' x 4'	Box	66	75	717.34	717.65
<i><b>Duncan Road</b></i>						
322+50	7' x 4'	Box	116	132	721.07	721.38
<i><b>Mattis Avenue</b></i>						
491+80	8' x 4'	Box	73	83	739.85	740.06
493+65	6' x 3'	Box	49	56	739.19	740.15
<i><b>First Street</b></i>						
1146+15	4' x 3'	Box	11	13	715.01	715.11
1149+10	4' x 4'	Box	61	69	718.21	718.77

**\*Note: Bottom of box culverts to be placed one-foot below proposed flow line.**

**Table B**

**Detention Summary**

Storage Area	Detention Created By:	Detention Provided (ac.-ft.)
<i>Kaskaskia (0.93 ac-ft required)</i> In outfall channel from south leg of Duncan Road.	Ditch checks within outfall channel	0.93
<i>Phinney (2.98 ac-ft required)</i> North Curtis Road Ditch North Curtis Road Ditch West Mattis Avenue Ditch North Curtis Road Ditch East Mattis Avenue Ditch South Curtis Road Ditch South Curtis Road Ditch West Mattis Avenue Ditch South Curtis Road Ditch East Mattis Avenue Ditch North Curtis Road Ditch North Curtis Road Ditch South Curtis Road Ditch	Driveway culvert @ Station 72+00 LT. Mattis Avenue north culvert LT. Mattis Avenue north culvert LT. Ditch check culvert @ Station 89+40 LT. Ditch check culvert @ Station 89+40 LT. Driveway culvert @ Station 75+80 RT. Mattis Avenue south culvert RT. Mattis Avenue south culvert RT. Ditch check culvert @ Station 89+00 RT. Ditch check culvert @ Station 89+00 RT. Driveway culvert @ Station 112+10 LT. Collector street culvert @ Station 99+00 LT. Collector street culvert @ Station 99+00 RT.	0.32 0.01 0.15 0.31 0.93 0.03 0.03 0.04 0.27 0.47 0.03 0.58 0.78 3.95
<i>West Embarrass - 48" (1.27 ac-ft required)</i> South Prospect Detention Facility	Proposed outlet structure	3.98
<i>West Embarrass - 60" (0.07 ac-ft required)</i> Inline detention in storm sewer pipes	Storm sewer restrictor	0.07
<i>East Embarrass - Subway Drainage</i> Inline detention in storm sewer pipes	Storm sewer restrictor	0.14
<i>East Embarrass - First Street Outlet (0.81 ac-ft required)</i> North Curtis Road Ditch West First Street Ditch North Curtis Road Ditch	First Street north culvert LT. First Street north culvert LT. Curtis Road culvert @ Station 192+20	0.24 0.22 0.25 0.85

**Curtis Road Improvements**

**Project Construction Phasing**

**Phased Construction Cost**

**Earthwork Management**

**Traffic Maintenance Analysis**

**by Clark Dietz, Inc.**

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The interim-build consists primarily of constructing, at a minimum, two through lanes of pavement on Curtis Road from Duncan Road to the existing P.C. concrete pavement just east of Prospect Avenue.

*Interim Typical Section No. 1A, 2A & 3A:* These interim typical sections are shown in Exhibit B. The interim typical sections are keyed to the ultimate full-build typical sections shown in the Design Exhibits. For example, Interim Typical Section No. 1A is at the same location as Full Typical Section No. 1 contained in the Design Exhibits.

*Interim Typical Section No. 1A:* The key to the development of this typical section is the limitation of adverse construction impacts on the residences south of the roadway in the Rolling Acres Subdivision. By completely constructing the southern portion of the proposed pavement during the interim-build, permanent access can be provided to all south side properties during future full-build construction thus limiting disruption to these residential properties primarily to the interim-build construction period. The primary elements to be constructed during the interim-build are: 44 of 62 feet of proposed pavement, the southside curb and gutter, the northside and southside shared-use paths, and all mainline and lateral storm sewers. Interim drainage will be handled by modifying the permanent manholes on the north side of the roadway to accept roadside swale drainage flow by temporarily using IDOT Type 8 Grates (i.e., beehive grates) and removing those grates and installing curb inlets during the future construction. Southside drainage will enter the proposed storm sewer system at the curb inlets. The northside shoulders will consist of six feet of proposed pavement striped as shoulder and two feet of temporary aggregate safety shoulder.

*Interim Typical Section No. 2A:* This typical section was designed to easily meld with the future full-build typical section and still provide access control to potential developing properties along the corridor. Essentially, the drainage features, roadbed and middle portion of the full-build typical section will be constructed during the interim-build. The shoulders will consist of six foot of proposed pavement striped as shoulder with two feet of temporary aggregate for a total of eight foot of shoulder.

*Interim Typical Section No. 3A:* Limited room for temporary drainage features and the proximity of the Prospect Avenue intersection force construction of the full-build typical section during the interim-build phase at this location.

*Duncan Road, Mattis Avenue & Prospect Avenue Intersections:* Analysis has determined that traffic signal warrants can be met at all three intersections using forecasted 2006 year opening traffic volumes. Inherent in this analysis is the assumption that the Curtis Road/Interstate 57 interchange is open at the time of interim construction. All three intersections will be built in their entirety during interim construction since to build less than full-build would translate to higher capital expenditures in the future due to major modifications in traffic signal equipment (e.g., relocation of mast arms and signal posts and complete removal and replacement of mast arms for adequate mounted length). The fully constructed intersections will be transitioned to the two-lane interim-build Curtis Roadway as shown on the interim intersection design studies (IDS's) contained in the Design Exhibits.

### ***Transverse Construction Phasing – Full Build***

Completion of the interim construction phases will provide two improved through travel lanes and associated turn-lanes and median along Curtis between Duncan Road and Sta. 143+60, which is approximately 500 feet east of Prospect Avenue. The existing three-lane concrete pavement will remain in service between Sta. 143+60 and U.S. 45. The intersections of Duncan, Mattis and Prospect will be built in their entirety and transitioned as shown in the Interim Intersection Design Studies contained with the Design Exhibits.

Construction of the remaining full-build typical section elements and construction of the last phase of roadway improvement between U.S. 45 and First Street, including the railroad relocation and grade separation structure, can be prioritized within a future context of area land use development and traffic volume growth.

The traffic volume forecast for this project suggests the first section of Curtis Road requiring four through travel lanes will be from Prospect Ave. to U.S. 45. However, the horizontal shift and reconfiguration of the Curtis/U.S. 45 intersection (i.e. offsets between existing and proposed east-west lane locations), as well as the vertical realignment of Curtis Road, require the concurrent reconstruction of the east-west legs of this intersection. There is no interim-build scenario for the reconstruction of this intersection which would safely accommodate the motoring public at this highly trafficked location.

Accordingly, when the railroad relocation and grade separation structure are built, full-build construction of Curtis Road between Sta. 143+60 (east leg of fully constructed Prospect intersection) and First Street must be accomplished.

### **PHASED PROJECT DEVELOPMENT COST ESTIMATE**

Exhibit B-1 provides a breakdown of estimated project costs with respect to project stations which designate limits of mainline Curtis Road improvement as well as intermediate intersection locations and north/south cross road improvements. Further demarcation is provided to show the limits of longitudinal construction phases as well as the roadway jurisdictional limits of the City of Champaign and Village of Savoy.

Project costs are estimated for the anticipated first year of construction in 2006. Costs are shown for the transverse construction phases of interim-build and full-build. The "total-build" column represents project costs if sufficient funding becomes available and the efficiency of constructing four through traffic lane lanes at once can be realized. The summation of the interim and full-build roadway phases demonstrates the additional costs associated with transverse phased construction in that these costs are approximately two percent higher than the total-build roadway cost. This difference is due primarily to the construction and subsequent removal of interim project items such as temporary shoulder, interim access drives, seeding, etc.

Exhibits B-2 and B-3 provide a jurisdictional breakdown of project costs for the various construction phases.

## EARTHWORK MANAGEMENT

The estimated surplus excavation volumes for full four-lane construction of the Curtis Road project are summarized as follows.

		<u>Surplus Excavation (c.y.)</u>
• Duncan Rd. to Wynstone Dr.*	=	27,800
• Wynstone Dr. to U.S. 45**	=	77,900
• U.S. 45 to First St.***	=	<u>15,100</u>
Totals	=	120,800

\* includes Duncan Rd. intersection

\*\* includes Mattis Ave. & Prospect Avenue intersection

\*\*\* includes First Street intersection, includes subway but not the railroad embankment

The earthwork quantities for the interim-build scenario from Duncan Road to just east of Prospect Avenue are approximate of those for full four-lane construction of this section of roadway. It is estimated there will be 102,000 cubic yards of total surplus excavation as a result of building the Duncan to Prospect section of the interim roadway. This volume is  $102,000/120,800 \times 100 = 84\%$  of the total project surplus excavation. This surplus excavation should be stockpiled within the proposed railroad right-of-way for later use in construction of the CN/IC Railroad embankment.

The total amount of earth needed for relocating the CN/IC Railroad tracks is estimated to be 305,100 cubic yards. Comparing the available surplus excavation and the total amount of earth needed for this project results in a shortfall of 184,300 cubic yards.

The availability of potential borrow sites within one mile of the CN/IC Railroad grade separation structure was investigated. The result of the investigation identified two potential borrow sites within one mile. The University of Illinois was consulted (see Exhibit C) concerning the possibility of incorporating a borrow pit within agricultural ground north of Curtis Road and east of the railroad. The result of this inquiry is that, due to future unknowns regarding University planning for this area, a borrow pit is not foreseeable at this time. It is recommended that the University of Illinois be consulted during final project design concerning this matter. Another potential borrow pit location was investigated within the planned expansion of the Prairie Field subdivision south of Curtis Road and east of the railroad in the Village of Savoy (see Exhibit D). The result of this inquiry is that due to the linear configuration of a borrow pit necessary to accommodate subdivision layout, the pond would not present an aesthetic amenity to the developing subdivision. Therefore a borrow pit at this location is not foreseeable at this time.

Per Article 107.22 of the IDOT Standard Specifications (January 2002) an environmental review of a contractor proposed borrow site must be performed before construction starts. This requires archaeological, threatened and endangered species, and wetland reviews.

## **TRAFFIC MAINTENANCE ANALYSIS**

For duration of the interim-build construction, Curtis Road should be closed to through traffic. The variance between the proposed and existing horizontal and vertical alignments prohibits constructing the project under traffic. Local traffic should be allowed access to private properties during the duration of the interim-build by utilizing temporary aggregate access drives and sequencing the road closures. Through traffic will be detoured onto the readily available adjacent local road system. The structural and geometric elements of the detour route should be evaluated and, if necessary, improvements should be made prior to detouring through traffic to this system of local roads.

Future widening of the interim-build typical section can be performed under traffic with standard maintenance of traffic procedures.

Railroad traffic will be maintained on its existing track during the construction of the parallel embankment and track from Church Street in Savoy to Windsor Road in Champaign. Construction of track tie-ins at both ends of the railroad realignment embankment should occur simultaneously under railway closure. The CN/IC Railroad should be consulted concerning construction sequencing at these locations.



MEETING MINUTES

Project: Curtis Road Phase I Studies
Duncan Road to First Street
Section: 00-00374-00-ES
Project: M5181.(036)
Job: P-95-073-00
Champaign County

Subject: Project Meeting

Date/Time/Place: September 26, 2001
9:00 a.m.
CDI Office
Champaign, IL

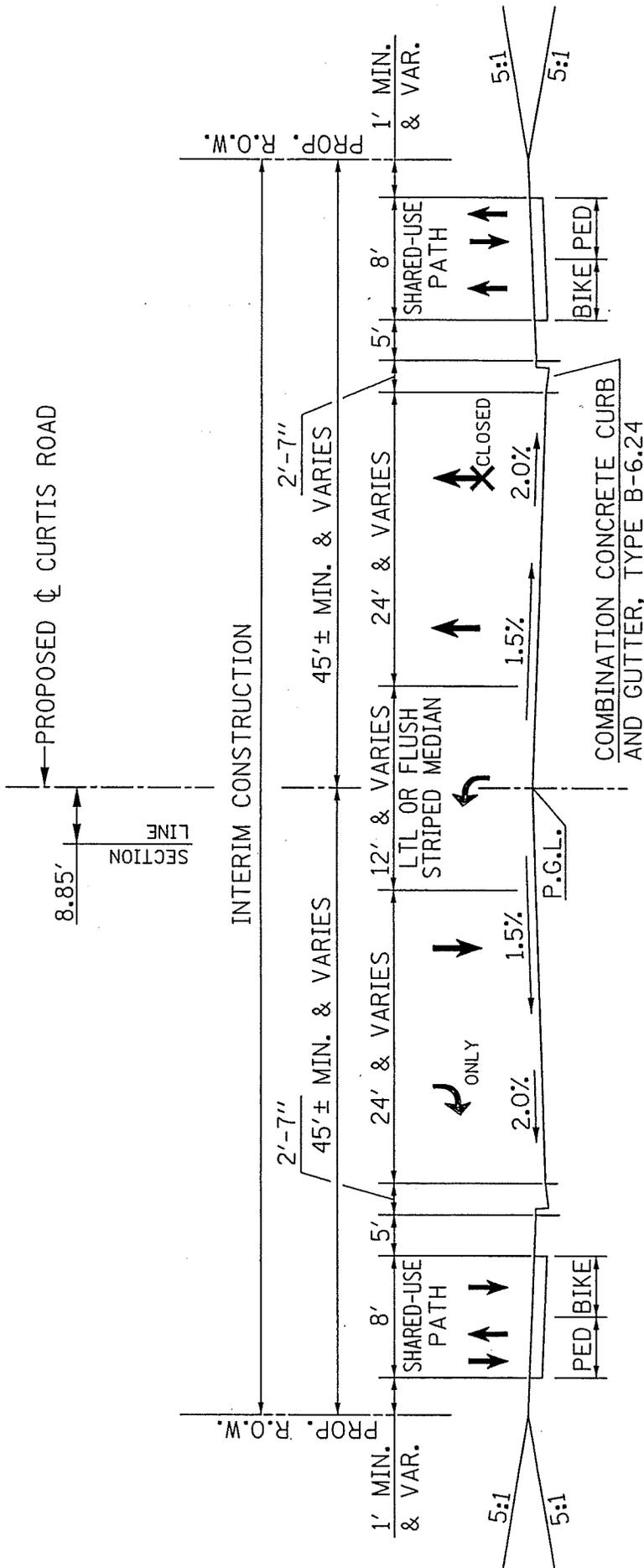
Attendees: NAME REPRESENTING
Dennis Unzicker Champaign County
Jeff Smith City of Champaign Engineering
Steve Wegman City of Champaign Engineering
Frank Rentschler Village of Savoy
Dennis Markwell IDOT, District 5
George Sherer IDOT, District 5
Dale Matejkowski CDI
Jerry Payonk CDI

If anyone has any additions or modifications, please contact CDI.

The purpose of this meeting was to review the anticipated order of constructing improvements within the three-mile Curtis Road corridor. Since neither federal nor local funding is sufficient to build the entire improvement length at once, it will be necessary to program a series of phased construction sections and their associated costs within a future time period in order to secure the necessary funding. Due to prior funding commitments, the first year that STP-U funds would be available for Curtis Road is FY 2007.

The implementing agencies consider the first phase of Curtis Road to consist of right-of-way acquisition and utility relocation. Discussion focused on a

Exhibit A



**3A** PROPOSED INTERIM-BUILD TYPICAL SECTION - CURTIS ROAD

LO RESIDENCE TO PROSPECT POINTE APARTMENTS  
 \* STA. 138+47 TO STA. 143+60 (513')  
 (WIDEN AND RESURFACE EXISTING 3-LANE P.C. CONCRETE PAVEMENT SECTION, STA. 139+85 TO 143+60)  
 (MAINTAIN EXISTING 3-LANE P.C. CONCRETE PAVEMENT SECTION, STA. 143+60 TO U.S. RTE. 45)  
 NO SCALE

\* SEE PROSPECT AVENUE INTERIM INTERSECTION DESIGN STUDY CONTAINED IN THE DESIGN EXHIBITS

CURTIS ROAD 2006  
CONSTRUCTION PHASING COSTS

		LOCATION	TOTAL-BUILD 2006	INTERIM-BUILD 2006	FULL-BUILD 2006	INTERIM + FULL 2006
CITY OF CHAMPAIGN	PHASE I	31+00 TO 34+00 (DUNCAN ROAD)	\$2,350,900	\$2,350,900	\$5,400	\$2,356,300
		34+00 TO 63+00 (DUNCAN TO WYNSTONE)	\$3,770,500	\$3,638,500	\$367,700	\$4,006,200
	PHASE II	63+00 TO 84+50 (WYNSTONE TO MATTIS)	\$2,124,000	\$1,887,600	\$328,600	\$2,216,200
		84+50 TO 87+00 (MATTIS AVENUE)	\$1,499,100	\$1,499,100	\$5,300	\$1,504,400
		87+00 TO 99+00 (MATTIS TO CITY/VILLAGE LIMIT)	\$1,877,300	\$1,734,000	\$164,700	\$1,898,700
VILLAGE OF SAVOY	PHASE III	99+00 TO 137+50 (CITY/VILLAGE LIMIT TO PROSPECT)	\$3,767,400	\$3,220,700	\$619,300	\$3,840,000
		137+50 TO 143+60 (PROSPECT TO WESLEY)	\$2,124,700	\$2,098,600	\$33,300	\$2,131,900
		143+60 TO 160+50 (WESLEY TO US 45)	\$2,000,600	\$0	\$2,001,800	\$2,001,800
		160+50 TO 162+00 (US ROUTE 45)	\$411,800	\$0	\$411,800	\$411,800
		162+00 TO 190+00 (US 45 TO FIRST)	\$3,072,200	\$0	\$3,072,200	\$3,072,200
		190+00 TO 193+00 (FIRST STREET)	\$1,364,000	\$0	\$1,364,000	\$1,364,000
		193+00 TO 199+80 (FIRST TO PROJECT LIMIT)	\$370,400	\$0	\$370,400	\$370,400
		TOTAL ROADWAY	\$24,733,000	\$16,430,000	\$8,745,000	\$25,175,000
		TOTAL PHASE III CN/IC RR (CHURCH ST. TO WINDSOR RD.)	\$9,829,000	\$0	\$9,829,000	\$9,829,000
		TOTAL PROJECT COST *	\$34,562,000	\$16,430,000	\$18,574,000	\$35,004,000

\* COSTS INCLUDE CONSTRUCTION, R.O.W. ACQUISITION, ENGINEERING DESIGN, AND CONSTRUCTION OBSERVATION. (4-6-04)

## MEMO

**To:** Curtis Road Project File #26  
**From:** DWM  
**Date:** January 15, 2002  
**Subject:** Prairie Field Borrow Pit

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During the month of November 2001, we investigated the possibility of developing a borrow pit to supply the necessary embankment material for the railroad relocation south of Curtis Road. The attached borrow pit plan indicates the location, size and configuration of the only possible borrow pit that can be developed in this area due to the platted subdivision development for Prairie Fields subdivision. I discussed the potential of this borrow pit development with David Fierke, Savoy Village Administrator. We mutually concurred that due to the linear configuration of the borrow pit, this facility wouldn't really present an aesthetic amenity to the developing subdivision. Additionally, should a borrow pit be developed as an aesthetic amenity, this would require a significant number of residential lots to be sacrificed for this purpose. This would represent a direct cost to the Village of Savoy.

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**CURTIS ROAD IMPROVEMENTS**

**Expanded Project Cost Estimate**

**by Clark Dietz, Inc.**

CURTIS ROAD  
TOTAL-BUILD PROJECT COST SUMMARY - 2006  
(DUNCAN ROAD TO FIRST STREET)

LOCATION	COST
31+00 TO 34+00 (DUNCAN ROAD)	\$2,350,841.00
34+00 TO 63+00 (DUNCAN TO WYNSTONE)	\$3,770,484.00
63+00 TO 84+50 (WYNSTONE TO MATTIS)	\$2,123,991.50
84+50 TO 87+00 (MATTIS AVENUE)	\$1,499,066.00
87+00 TO 99+00 (MATTIS TO CITY/VILLAGE LIMIT)	\$1,877,222.50
99+00 TO 137+50 (CITY/VILLAGE LIMIT TO PROSPECT)	\$3,767,352.50
137+50 TO 143+60 (PROSPECT TO WESLEY)	\$2,124,676.00
143+60 TO 160+50 (WESLEY TO US 45)	\$2,000,504.00
160+50 TO 162+00 (US ROUTE 45)	\$411,722.50
162+00 TO 190+00 (US 45 TO FIRST)	\$3,072,151.50
190+00 TO 193+00 (FIRST STREET)	\$1,363,952.00
193+00 TO 199+80 (FIRST TO PROJECT LIMIT)	\$370,325.50
SUBTOTAL ROADWAY IMPROVEMENTS	\$24,732,289.00
CN/IC RR BRIDGE & TRACK RELOCATION (CHURCH ST. TO WINDSOR RD.)	\$9,828,835.00
TOTAL PROJECT COST *	\$34,561,124.00

\* COSTS INCLUDE CONSTRUCTION, R.O.W. ACQUISITION, ENGINEERING DESIGN, AND CONSTRUCTION OBSERVATION. (4-6-04)

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ESTIMATE OF COST - 2006

TOTAL-BUILD ROADWAY IMPROVEMENT COST

CODE NO.	ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
	RETAINING WALL	FOOT	351	\$185.00	\$64,935.00
	PAVEMENT MARKING - LETTERS AND SYMBOLS	SQ FT	4424	\$4.50	\$19,908.00
	PAVEMENT MARKING - LINE	FOOT	132240	\$1.00	\$132,240.00
	LIGHT POLES (CITY OWNED)	EACH	122	\$3,250.00	\$396,500.00
	TRAFFIC SIGNALS	L SUM	1	\$600,000.00	\$600,000.00
	TRAFFIC CONTROL 4%	L SUM	1	\$567,000.00	\$567,000.00
	CONSTRUCTION LAYOUT 3%	L SUM	1	\$426,000.00	\$426,000.00
	CONTINGENCY 10%	L SUM	1	\$1,507,000.00	\$1,507,000.00
	SUBTOTAL CONSTRUCTION				\$16,512,279.00
	DESIGN AND CONSTRUCTION ENGINEERING 20%				\$3,309,000.00
	PROJECT ELIGIBLE UTILITY RELOCATIONS	L SUM	1	\$1,670,340.00	\$1,670,340.00
	UTILITY RELOCATION EASEMENTS	L SUM	1	\$64,420.00	\$64,420.00
	CONTINGENCY FOR ADJUDICATION AND RESULTANT RELOCATION OF GAS UTILITIES ON EASEMENTS WITHIN EXISTING R.O.W.	L SUM	1	\$800,000.00	\$800,000.00
	SUBTOTAL UTILITY RELOCATIONS				\$2,534,760.00
	R.O.W. ACQUISITION (RESIDENTIAL)	ACRE	3.3	\$97,500.00	\$321,750.00
	R.O.W. ACQUISITION (UNDEVELOPED)	ACRE	28.6	\$43,000.00	\$1,229,800.00
	R.O.W. ACQUISITION (DEVELOPED)	ACRE	0.8	\$195,000.00	\$156,000.00
	PERMANENT DRAINAGE EASEMENT (UNDEVELOPED)	ACRE	11.4	\$43,000.00	\$490,200.00
	TEMPORARY CONSTRUCTION EASEMENT (RESIDENTIAL)	ACRE	2.3	\$10,000.00	\$23,000.00
	TEMPORARY CONSTRUCTION EASEMENT (UNDEVELOPED)	ACRE	0.5	\$5,000.00	\$2,500.00
	TEMPORARY CONSTRUCTION EASEMENT (DEVELOPED)	ACRE	0.6	\$20,000.00	\$12,000.00
	ACQUISITION OF R.E. WALKER RESIDENCE	L SUM	1	\$141,000.00	\$141,000.00
	SUBTOTAL R.O.W./EASEMENT ACQUISITION				\$2,376,250.00
	<b>TOTAL:</b>				<b>\$24,732,289.00</b>

ESTIMATE OF COST - 2006

TOTAL-BUILD CN/IC RAILROAD BRIDGE AND TRACK RELOCATION COST

CODE NO.	ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
	TREE REMOVAL	EACH	276	\$435.00	\$120,060.00
	EARTH EXCAVATION	CU YD	0	\$10.00	\$0.00
	BORROW EXCAVATION (ON-SITE)	CU YD	120838	\$3.50	\$422,933.00
	BORROW EXCAVATION (OFF-SITE)	CU YD	184248	\$8.00	\$1,473,984.00
	EMBANKMENT	CU YD	228814	\$0.00	\$0.00
	SEEDING	ACRE	24.1	\$2,800.00	\$67,480.00
	MULCH	ACRE	24.1	\$2,300.00	\$55,430.00
	TEMPORARY EROSION CONTROL	FOOT	11055	\$3.50	\$38,692.50
	RIPRAP	SQ YD	100	\$51.00	\$5,100.00
	BOX CULVERTS 10' x 9'	FOOT	93	\$920.00	\$85,560.00
	BALLAST	CU YD	11476	\$30.50	\$350,018.00
	SUB-BALLAST	CU YD	14395	\$30.50	\$439,047.50
	RAILROAD TIES	EACH	6448	\$68.50	\$441,688.00
	TRACK SPIKES	EACH	30000	\$0.55	\$16,500.00
	TRACK INSTALLATION COMPLETE	FOOT	10477	\$98.00	\$1,026,746.00
	RAILROAD TRACK REMOVAL	FOOT	10477	\$11.00	\$115,247.00
	REPROFILE EXISTING TRACK	FOOT	761	\$109.00	\$82,949.00
	RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1	\$85,500.00	\$85,500.00
	FLAGGER (ASSUME 1.5 FLAGGERS REQUIRED)	HOURL	3000	\$71.50	\$214,500.00
	BUILDING REMOVAL (GARTH PROPERTY OUT-BUILDINGS)	EACH	6	\$5,750.00	\$34,500.00
	BRIDGE STRUCTURE	L SUM	1	\$880,000.00	\$880,000.00
	CONSTRUCTION LAYOUT 3%	L SUM	1	\$179,000.00	\$179,000.00
	CONTINGENCY 10%	L SUM	1	\$614,000.00	\$614,000.00
	SUBTOTAL CONSTRUCTION				\$6,748,935.00
	DESIGN AND CONSTRUCTION ENGINEERING 20%				\$1,350,000.00
	PROJECT ELIGIBLE UTILITY RELOCATIONS	L SUM	1	\$794,400.00	\$794,400.00
	UTILITY RELOCATION EASEMENTS	L SUM	1	\$101,000.00	\$101,000.00
	CONTINGENCY FOR ADJUDICATION AND RESULTANT RELOCATION OF GAS UTILITIES ON EASEMENTS WITHIN EXISTING R.O.W.	L SUM	1	\$458,000.00	\$458,000.00
	SUBTOTAL UTILITY RELOCATIONS				\$1,353,400.00
	R.O.W. ACQUISITION (RESIDENTIAL)	ACRE	2.2	\$97,500.00	\$214,500.00
	R.O.W. ACQUISITION (UNDEVELOPED)	ACRE	2.1	\$43,000.00	\$90,300.00
	R.O.W. ACQUISITION (DEVELOPED)	ACRE	0.3	\$195,000.00	\$58,500.00
	PERMANENT MAINTENANCE EASEMENT	ACRE	0.6	\$22,000.00	\$13,200.00
	TEMPORARY CONSTRUCTION EASEMENT (RESIDENTIAL)	ACRE	0.0	\$10,000.00	\$0.00
	TEMPORARY CONSTRUCTION EASEMENT (UNDEVELOPED)	ACRE	0.0	\$5,000.00	\$0.00
	TEMPORARY CONSTRUCTION EASEMENT (DEVELOPED)	ACRE	0.0	\$20,000.00	\$0.00
	SUBTOTAL R.O.W./EASEMENT ACQUISITION				\$376,500.00
	<b>TOTAL:</b>				<b>\$9,828,835.00</b>

CURTIS ROAD  
INTERIM-BUILD PROJECT COST SUMMARY - 2006  
(DUNCAN ROAD TO WESLEY AVENUE)

LOCATION	COST
31+00 TO 34+00 (DUNCAN ROAD)	\$2,350,841.00
34+00 TO 63+00 (DUNCAN TO WYNSTONE)	\$3,638,440.00
63+00 TO 84+50 (WYNSTONE TO MATTIS)	\$1,887,550.50
84+50 TO 87+00 (MATTIS AVENUE)	\$1,499,066.00
87+00 TO 99+00 (MATTIS TO CITY/VILLAGE LIMIT)	\$1,733,904.50
99+00 TO 137+50 (CITY/VILLAGE LIMIT TO PROSPECT)	\$3,220,638.00
137+50 TO 143+60 (PROSPECT TO WESLEY)	\$2,098,536.50
143+60 TO 160+50 (WESLEY TO US 45)	\$0.00
160+50 TO 162+00 (US ROUTE 45)	\$0.00
162+00 TO 190+00 (US 45 TO FIRST)	\$0.00
190+00 TO 193+00 (FIRST STREET)	\$0.00
193+00 TO 199+80 (FIRST TO PROJECT LIMIT)	\$0.00
SUBTOTAL ROADWAY IMPROVEMENTS	\$16,428,976.50
CN/IC RR BRIDGE & TRACK RELOCATION (CHURCH ST. TO WINDSOR RD.)	\$0.00
TOTAL PROJECT COST *	\$16,428,976.50

\* COSTS INCLUDE CONSTRUCTION, R.O.W. ACQUISITION, ENGINEERING DESIGN, AND CONSTRUCTION OBSERVATION. (4-6-04)

ESTIMATE OF COST - 2006

INTERIM-BUILD ROADWAY IMPROVEMENT COST

CODE NO.	ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
	DEMOLITION/GRADING OF R.E. WALKER RESIDENCE	L SUM	1	\$28,700.00	\$28,700.00
	TREE REMOVAL	EACH	68	\$435.00	\$29,580.00
	EARTH EXCAVATION	CU YD	104128	\$7.00	\$728,896.00
	CHANNEL EXCAVATION	CU YD	29009	\$7.00	\$203,063.00
	FURNISHED EXCAVATION	CU YD	4511	\$12.00	\$54,132.00
	EMBANKMENT	CU YD	27862	\$0.00	\$0.00
	EXPLORATION TRENCH	FOOT	30510	\$3.50	\$106,785.00
	SEEDING	ACRE	39.1	\$2,800.00	\$109,480.00
	MULCH	ACRE	39.1	\$2,300.00	\$89,930.00
	TEMPORARY EROSION CONTROL	FOOT	15930	\$3.50	\$55,755.00
	RIPRAP	SQ YD	328	\$51.00	\$16,728.00
	PROCESSING LIME MODIFIED SOILS 12"	SQ YD	96942	\$5.50	\$533,181.00
	BITUMINOUS CONCRETE BINDER COURSE 1.5"	TON	149	\$76.00	\$11,324.00
	BITUMINOUS CONCRETE SURFACE COURSE 1.5"	TON	149	\$78.00	\$11,622.00
	PORTLAND CEMENT CONCRETE PAVEMENT 8"	SQ YD	77858	\$43.50	\$3,386,823.00
	PORTLAND CEMENT CONCRETE BASE COURSE 8"	SQ YD	697	\$41.50	\$28,925.50
	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT 8"	SQ YD	1822	\$48.00	\$87,456.00
	PORTLAND CEMENT CONCRETE SIDEWALK 6"	SQ FT	71194	\$6.50	\$462,761.00
	BITUMINOUS SHOULDERS 6"	SQ YD	5537	\$24.00	\$132,888.00
	BITUMINOUS CONCRETE PAVEMENT 8" (TEMPORARY)	SQ YD	3440	\$35.00	\$120,400.00
	TEMPORARY PAVEMENT REMOVAL	SQ YD	3000	\$11.00	\$33,000.00
	AGGREGATE SHOULDERS 8"	SQ YD	3062	\$11.00	\$33,682.00
	BOX CULVERTS 2' x 2'	FOOT	120	\$210.00	\$25,200.00
	BOX CULVERTS 3' x 2'	FOOT	478	\$245.00	\$117,110.00
	BOX CULVERTS 4' x 2'	FOOT	682	\$295.00	\$201,190.00
	BOX CULVERTS 4' x 3'	FOOT	0	\$350.00	\$0.00
	BOX CULVERTS 6' x 2'	FOOT	203	\$400.00	\$81,200.00
	BOX CULVERTS 7' x 3'	FOOT	140	\$490.00	\$68,600.00
	BOX CULVERTS 8' x 3'	FOOT	190	\$535.00	\$101,650.00
	BOX CULVERTS 8' x 4'	FOOT	290	\$585.00	\$169,650.00
	PIPE CULVERTS 12"	FOOT	410	\$26.00	\$10,660.00
	PIPE CULVERTS 24"	FOOT	200	\$37.00	\$7,400.00
	ELLIPTICAL CULVERTS 24" x 38"	FOOT	15	\$52.00	\$780.00
	STORM SEWERS 12"	FOOT	3390	\$38.00	\$128,820.00
	STORM SEWERS 15"	FOOT	708	\$41.00	\$29,028.00
	STORM SEWERS 18"	FOOT	643	\$43.00	\$27,649.00
	STORM SEWERS 21"	FOOT	1592	\$47.00	\$74,824.00
	STORM SEWERS 24"	FOOT	552	\$50.00	\$27,600.00
	STORM SEWERS 30"	FOOT	0	\$63.00	\$0.00
	STORM SEWERS 36"	FOOT	1189	\$79.00	\$93,931.00
	STORM SEWERS 42"	FOOT	317	\$98.00	\$31,066.00
	STORM SEWERS 48"	FOOT	0	\$146.00	\$0.00
	STORM SEWERS 22" x 34"	FOOT	159	\$54.00	\$8,586.00
	DRAINAGE STRUCTURES	EACH	130	\$1,500.00	\$195,000.00
	FLARED END SECTIONS	EACH	6	\$870.00	\$5,220.00
	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	FOOT	10450	\$20.00	\$209,000.00
	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24	FOOT	9708	\$22.00	\$213,576.00
	CONCRETE MEDIAN, TYPE SB-6.12	SQ FT	9910	\$12.00	\$118,920.00
	CONCRETE MEDIAN, TYPE SB-6.18	SQ FT	0	\$12.00	\$0.00

ESTIMATE OF COST - 2006

INTERIM-BUILD ROADWAY IMPROVEMENT COST

CODE NO.	ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
	CONCRETE MEDIAN, TYPE SB-6.24	SQ FT	0	\$12.00	\$0.00
	CONCRETE MEDIAN, TYPE SB-9.24	SQ FT	0	\$13.00	\$0.00
	CONCRETE MEDIAN SURFACE 4"	SQ FT	.66094	\$5.50	\$363,517.00
	RETAINING WALL	FOOT	0	\$185.00	\$0.00
	PAVEMENT MARKING - LETTERS AND SYMBOLS	SQ FT	2488	\$4.50	\$11,196.00
	PAVEMENT MARKING - LINE	FOOT	77090	\$1.00	\$77,090.00
	LIGHT POLES (CITY OWNED)	EACH	57	\$3,250.00	\$185,250.00
	TRAFFIC SIGNALS	L SUM	1	\$350,000.00	\$350,000.00
	TRAFFIC CONTROL 4%	L SUM	1	\$371,000.00	\$371,000.00
	CONSTRUCTION LAYOUT 3%	L SUM	1	\$279,000.00	\$279,000.00
	CONTINGENCY 10%	L SUM	1	\$989,000.00	\$989,000.00
	SUBTOTAL CONSTRUCTION				\$10,837,824.50
	DESIGN AND CONSTRUCTION ENGINEERING 20%				\$2,170,000.00
	PROJECT ELIGIBLE UTILITY RELOCATIONS	L SUM	1	\$1,103,532.00	\$1,103,532.00
	UTILITY RELOCATION EASEMENTS	L SUM	1	\$36,520.00	\$36,520.00
	CONTINGENCY FOR ADJUDICATION AND RESULTANT RELOCATION OF GAS UTILITIES ON EASEMENTS WITHIN EXISTING R.O.W.	L SUM	1	\$375,000.00	\$375,000.00
	SUBTOTAL UTILITY RELOCATIONS				\$1,515,052.00
	R.O.W. ACQUISITION (RESIDENTIAL)	ACRE	2.4	\$97,500.00	\$234,000.00
	R.O.W. ACQUISITION (UNDEVELOPED)	ACRE	23.4	\$43,000.00	\$1,006,200.00
	R.O.W. ACQUISITION (DEVELOPED)	ACRE	0.1	\$195,000.00	\$19,500.00
	PERMANENT DRAINAGE EASEMENT (UNDEVELOPED)	ACRE	11.3	\$43,000.00	\$485,900.00
	TEMPORARY CONSTRUCTION EASEMENT (RESIDENTIAL)	ACRE	1.7	\$10,000.00	\$17,000.00
	TEMPORARY CONSTRUCTION EASEMENT (UNDEVELOPED)	ACRE	0.5	\$5,000.00	\$2,500.00
	TEMPORARY CONSTRUCTION EASEMENT (DEVELOPED)	ACRE	0.0	\$20,000.00	\$0.00
	ACQUISITION OF R.E. WALKER RESIDENCE	L SUM	1	\$141,000.00	\$141,000.00
	SUBTOTAL R.O.W./EASEMENT ACQUISITION				\$1,906,100.00
	<b>TOTAL:</b>				<b>\$16,428,976.50</b>

ESTIMATE OF COST - 2006

INTERIM-BUILD CN/IC RAILROAD BRIDGE AND TRACK RELOCATION COST

CODE NO.	ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
	TREE REMOVAL	EACH	0	\$435.00	\$0.00
	EARTH EXCAVATION	CU YD	0	\$10.00	\$0.00
	BORROW EXCAVATION (ON-SITE)	CU YD	0	\$3.50	\$0.00
	BORROW EXCAVATION (OFF-SITE)	CU YD	0	\$8.00	\$0.00
	EMBANKMENT	CU YD	0	\$0.00	\$0.00
	SEEDING	ACRE	0	\$2,800.00	\$0.00
	MULCH	ACRE	0	\$2,300.00	\$0.00
	TEMPORARY EROSION CONTROL	FOOT	0	\$3.50	\$0.00
	RIPRAP	SQ YD	0	\$51.00	\$0.00
	BOX CULVERTS 10' x 9'	FOOT	0	\$920.00	\$0.00
	BALLAST	CU YD	0	\$30.50	\$0.00
	SUB-BALLAST	CU YD	0	\$30.50	\$0.00
	RAILROAD TIES	EACH	0	\$68.50	\$0.00
	TRACK SPIKES	EACH	0	\$0.55	\$0.00
	TRACK INSTALLATION COMPLETE	FOOT	0	\$98.00	\$0.00
	RAILROAD TRACK REMOVAL	FOOT	0	\$11.00	\$0.00
	REPROFILE EXISTING TRACK	FOOT	0	\$109.00	\$0.00
	RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	0	\$85,500.00	\$0.00
	FLAGGER (ASSUME 1.5 FLAGGERS REQUIRED)	HOUR	0	\$71.50	\$0.00
	BUILDING REMOVAL (GARTH PROPERTY OUT-BUILDINGS)	EACH	0	\$5,750.00	\$0.00
	BRIDGE STRUCTURE	L SUM	0	\$880,000.00	\$0.00
	CONSTRUCTION LAYOUT 3%	L SUM	1	\$0.00	\$0.00
	CONTINGENCY 10%	L SUM	1	\$0.00	\$0.00
	SUBTOTAL CONSTRUCTION				\$0.00
	DESIGN AND CONSTRUCTION ENGINEERING 20%				\$0.00
	PROJECT ELIGIBLE UTILITY RELOCATIONS	L SUM	0	\$0.00	\$0.00
	UTILITY RELOCATION EASEMENTS	L SUM	0	\$0.00	\$0.00
	CONTINGENCY FOR ADJUDICATION AND RESULTANT RELOCATION OF GAS UTILITIES ON EASEMENTS WITHIN EXISTING R.O.W.	L SUM	0	\$0.00	\$0.00
	SUBTOTAL UTILITY RELOCATIONS				\$0.00
	R.O.W. ACQUISITION (RESIDENTIAL)	ACRE	0.0	\$97,500.00	\$0.00
	R.O.W. ACQUISITION (UNDEVELOPED)	ACRE	0.0	\$43,000.00	\$0.00
	R.O.W. ACQUISITION (DEVELOPED)	ACRE	0.0	\$195,000.00	\$0.00
	PERMANENT MAINTENANCE EASEMENT	ACRE	0.0	\$22,000.00	\$0.00
	TEMPORARY CONSTRUCTION EASEMENT (RESIDENTIAL)	ACRE	0.0	\$10,000.00	\$0.00
	TEMPORARY CONSTRUCTION EASEMENT (UNDEVELOPED)	ACRE	0.0	\$5,000.00	\$0.00
	TEMPORARY CONSTRUCTION EASEMENT (DEVELOPED)	ACRE	0.0	\$20,000.00	\$0.00
	SUBTOTAL R.O.W./EASEMENT ACQUISITION				\$0.00
	<b>TOTAL:</b>				<b>\$0.00</b>

CURTIS ROAD  
FULL-BUILD PROJECT COST SUMMARY - 2006  
(DUNCAN ROAD TO FIRST STREET)

LOCATION	COST
31+00 TO 34+00 (DUNCAN ROAD)	\$5,394.00
34+00 TO 63+00 (DUNCAN TO WYNSTONE)	\$367,694.00
63+00 TO 84+50 (WYNSTONE TO MATTIS)	\$328,512.00
84+50 TO 87+00 (MATTIS AVENUE)	\$5,294.00
87+00 TO 99+00 (MATTIS TO CITY/VILLAGE LIMIT)	\$164,636.00
99+00 TO 137+50 (CITY/VILLAGE LIMIT TO PROSPECT)	\$619,275.50
137+50 TO 143+60 (PROSPECT TO WESLEY)	\$33,231.50
143+60 TO 160+50 (WESLEY TO US 45)	\$2,001,724.00
160+50 TO 162+00 (US ROUTE 45)	\$411,722.50
162+00 TO 190+00 (US 45 TO FIRST)	\$3,072,151.50
190+00 TO 193+00 (FIRST STREET)	\$1,363,952.00
193+00 TO 199+80 (FIRST TO PROJECT LIMIT)	\$370,325.50
SUBTOTAL ROADWAY IMPROVEMENTS	\$8,743,912.50
CN/IC RR BRIDGE & TRACK RELOCATION (CHURCH ST. TO WINDSOR RD.)	\$9,828,835.00
TOTAL PROJECT COST *	\$18,572,747.50

\* COSTS INCLUDE CONSTRUCTION, R.O.W. ACQUISITION, ENGINEERING DESIGN, AND CONSTRUCTION OBSERVATION. (4-6-04)

ESTIMATE OF COST - 2006

FULL-BUILD ROADWAY IMPROVEMENT COST

CODE NO.	ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
	DEMOLITION/GRADING OF R.E. WALKER RESIDENCE	L SUM	0	\$28,700.00	\$0.00
	TREE REMOVAL	EACH	18	\$435.00	\$7,830.00
	EARTH EXCAVATION	CU YD	29185	\$7.00	\$204,295.00
	CHANNEL EXCAVATION	CU YD	0	\$7.00	\$0.00
	FURNISHED EXCAVATION	CU YD	680	\$12.00	\$8,160.00
	EMBANKMENT	CU YD	7804	\$0.00	\$0.00
	EXPLORATION TRENCH	FOOT	12417	\$3.50	\$43,459.50
	SEEDING	ACRE	9.1	\$2,800.00	\$25,480.00
	MULCH	ACRE	9.1	\$2,300.00	\$20,930.00
	TEMPORARY EROSION CONTROL	FOOT	8115	\$3.50	\$28,402.50
	RIPRAP	SQ YD	148	\$51.00	\$7,548.00
	PROCESSING LIME MODIFIED SOILS 12"	SQ YD	51755	\$5.50	\$284,652.50
	BITUMINOUS CONCRETE BINDER COURSE 1.5"	TON	1248	\$76.00	\$94,848.00
	BITUMINOUS CONCRETE SURFACE COURSE 1.5"	TON	1429	\$78.00	\$111,462.00
	PORTLAND CEMENT CONCRETE PAVEMENT 8"	SQ YD	38298	\$43.50	\$1,665,963.00
	PORTLAND CEMENT CONCRETE BASE COURSE 8"	SQ YD	6371	\$41.50	\$264,396.50
	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT 8"	SQ YD	1067	\$48.00	\$51,216.00
	PORTLAND CEMENT CONCRETE SIDEWALK 6"	SQ FT	55102	\$6.50	\$358,163.00
	BITUMINOUS SHOULDERS 6"	SQ YD	19754	\$24.00	\$474,096.00
	TEMPORARY PAVEMENT REMOVAL	SQ YD	440	\$11.00	\$4,840.00
	BOX CULVERTS 2' x 2'	FOOT	0	\$210.00	\$0.00
	BOX CULVERTS 3' x 2'	FOOT	0	\$245.00	\$0.00
	BOX CULVERTS 4' x 2'	FOOT	95	\$295.00	\$28,025.00
	BOX CULVERTS 4' x 3'	FOOT	225	\$350.00	\$78,750.00
	BOX CULVERTS 6' x 2'	FOOT	0	\$400.00	\$0.00
	BOX CULVERTS 7' x 3'	FOOT	0	\$490.00	\$0.00
	BOX CULVERTS 8' x 3'	FOOT	0	\$535.00	\$0.00
	BOX CULVERTS 8' x 4'	FOOT	0	\$585.00	\$0.00
	PIPE CULVERTS 12"	FOOT	0	\$26.00	\$0.00
	PIPE CULVERTS 24"	FOOT	175	\$37.00	\$6,475.00
	ELLIPTICAL CULVERTS 24" x 38"	FOOT	0	\$52.00	\$0.00
	STORM SEWERS 12"	FOOT	2121	\$38.00	\$80,598.00
	STORM SEWERS 15"	FOOT	449	\$41.00	\$18,409.00
	STORM SEWERS 18"	FOOT	828	\$43.00	\$35,604.00
	STORM SEWERS 21"	FOOT	844	\$47.00	\$39,668.00
	STORM SEWERS 24"	FOOT	857	\$50.00	\$42,850.00
	STORM SEWERS 30"	FOOT	187	\$63.00	\$11,781.00
	STORM SEWERS 36"	FOOT	158	\$79.00	\$12,482.00
	STORM SEWERS 42"	FOOT	107	\$98.00	\$10,486.00
	STORM SEWERS 48"	FOOT	31	\$146.00	\$4,526.00
	STORM SEWERS 22" x 34"	FOOT	0	\$54.00	\$0.00
	DRAINAGE STRUCTURES	EACH	67	\$1,500.00	\$100,500.00
	ADJUST STRUCTURE WITH NEW FRAME AND GRATE	EACH	19	\$800.00	\$15,200.00
	FLARED END SECTIONS	EACH	2	\$870.00	\$1,740.00
	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	FOOT	0	\$20.00	\$0.00
	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24	FOOT	10481	\$22.00	\$230,582.00
	CONCRETE MEDIAN, TYPE SB-6.12	SQ FT	185	\$12.00	\$2,220.00
	CONCRETE MEDIAN, TYPE SB-6.18	SQ FT	147	\$12.00	\$1,764.00
	CONCRETE MEDIAN, TYPE SB-6.24	SQ FT	1903	\$12.00	\$22,836.00

ESTIMATE OF COST - 2006

FULL-BUILD CN/IC RAILROAD BRIDGE AND TRACK RELOCATION COST

CODE NO.	ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
	TREE REMOVAL	EACH	276	\$435.00	\$120,060.00
	EARTH EXCAVATION	CU YD	0	\$10.00	\$0.00
	BORROW EXCAVATION (ON-SITE)	CU YD	120838	\$3.50	\$422,933.00
	BORROW EXCAVATION (OFF-SITE)	CU YD	184248	\$8.00	\$1,473,984.00
	EMBANKMENT	CU YD	228814	\$0.00	\$0.00
	SEEDING	ACRE	24.1	\$2,800.00	\$67,480.00
	MULCH	ACRE	24.1	\$2,300.00	\$55,430.00
	TEMPORARY EROSION CONTROL	FOOT	11055	\$3.50	\$38,692.50
	RIPRAP	SQ YD	100	\$51.00	\$5,100.00
	BOX CULVERTS 10' x 9'	FOOT	93	\$920.00	\$85,560.00
	BALLAST	CU YD	11476	\$30.50	\$350,018.00
	SUB-BALLAST	CU YD	14395	\$30.50	\$439,047.50
	RAILROAD TIES	EACH	6448	\$68.50	\$441,688.00
	TRACK SPIKES	EACH	30000	\$0.55	\$16,500.00
	TRACK INSTALLATION COMPLETE	FOOT	10477	\$98.00	\$1,026,746.00
	RAILROAD TRACK REMOVAL	FOOT	10477	\$11.00	\$115,247.00
	REPROFILE EXISTING TRACK	FOOT	761	\$109.00	\$82,949.00
	RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1	\$85,500.00	\$85,500.00
	FLAGGER (ASSUME 1.5 FLAGGERS REQUIRED)	HOUR	3000	\$71.50	\$214,500.00
	BUILDING REMOVAL (GARTH PROPERTY OUT-BUILDINGS)	EACH	6	\$5,750.00	\$34,500.00
	BRIDGE STRUCTURE	L SUM	1	\$880,000.00	\$880,000.00
	CONSTRUCTION LAYOUT 3%	L SUM	1	\$179,000.00	\$179,000.00
	CONTINGENCY 10%	L SUM	1	\$614,000.00	\$614,000.00
	SUBTOTAL CONSTRUCTION				\$6,748,935.00
	DESIGN AND CONSTRUCTION ENGINEERING 20%				\$1,350,000.00
	PROJECT ELIGIBLE UTILITY RELOCATIONS	L SUM	1	\$794,400.00	\$794,400.00
	UTILITY RELOCATION EASEMENTS	L SUM	1	\$101,000.00	\$101,000.00
	CONTINGENCY FOR ADJUDICATION AND RESULTANT RELOCATION OF GAS UTILITIES ON EASEMENTS WITHIN EXISTING R.O.W.	L SUM	1	\$458,000.00	\$458,000.00
	SUBTOTAL UTILITY RELOCATIONS				\$1,353,400.00
	R.O.W. ACQUISITION (RESIDENTIAL)	ACRE	2.2	\$97,500.00	\$214,500.00
	R.O.W. ACQUISITION (UNDEVELOPED)	ACRE	2.1	\$43,000.00	\$90,300.00
	R.O.W. ACQUISITION (DEVELOPED)	ACRE	0.3	\$195,000.00	\$58,500.00
	PERMANENT MAINTENANCE EASEMENT	ACRE	0.6	\$22,000.00	\$13,200.00
	TEMPORARY CONSTRUCTION EASEMENT (RESIDENTIAL)	ACRE	0.0	\$10,000.00	\$0.00
	TEMPORARY CONSTRUCTION EASEMENT (UNDEVELOPED)	ACRE	0.0	\$5,000.00	\$0.00
	TEMPORARY CONSTRUCTION EASEMENT (DEVELOPED)	ACRE	0.0	\$20,000.00	\$0.00
	SUBTOTAL R.O.W./EASEMENT ACQUISITION				\$376,500.00
	<b>TOTAL:</b>				<b>\$9,828,835.00</b>