

**ILLINOIS SECTION 11
CONSERVATION PLAN
FOR INCIDENTAL TAKING OF
THREATENED OR ENDANGERED SPECIES**

**C.H. 3 (FAS 2192) over Coon Creek
SECTION 07-00188-00-BR
WHITESIDE COUNTY**

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INTRODUCTION AND APPLICABILITY

This report will address Sections 4, 5 & 5.5 of the Illinois Endangered Species Protection Act (520 ICS 10/11) in consultation with the Illinois Department of Natural Resources in preparation of an Incidental Taking Authorization. The subject species are the state endangered Weed Shiner, *Notropis texanus* and Blacknose Shiner, *Notropis heterolepis*. Their location is in Coon Creek on Star Road (C.H. 3), northeast side of Prophetstown, Whiteside County, Illinois (SW ¼ Section 34, T. 20 N., R. 5 E of the 3rd P.M.).

I. DESCRIPTION OF INCIDENTAL TAKING

The proposed improvement involves the removal and replacement of a structurally deficient bridge carrying CH 3 (STAR Road) over Coon Creek in Whiteside County. (Exhibit 1). The original structure was constructed in 1933, is a two lane, single span reinforced concrete girder bridge with closed concrete abutments. The bridge has an overall length of 58'-0" and an out to out deck width of 33'-4" with approach roadway width of 40'-0". The sufficiency rating is 27.5, which under federal guidelines indicates a total replacement is required. The bridge is posted to carry a 15 ton load limit. The bridge has been widened once, in 1971, and the superstructure is in poor condition with advanced deterioration. The bridge and roadway are under the jurisdiction of Whiteside County. Federal funding will be used for the project. (Exhibit 2)

The estimated total number of working days required for the completion of the bridge replacement project is 75 days. The amount of in stream work is minimal. Equipment will not be allowed in the stream for the removal of the existing superstructure. Protection at the proposed piers during the construction will not extend into the stream. No in stream work will be required for the placement of riprap. The existing east abutment is located outside of the normal stream flow and will not require in stream work for removal. The existing west abutment is located at the west edge of the normal stream flow and will require a minimal amount of in stream work to remove the vertical concrete wall to one foot below the existing ground line. Approximately one (1) day of in stream work adjacent to the west edge of the stream at the west abutment will be necessary to remove the existing abutment walls.

Environmental coordination of the project was initiated with IDNR on March 24, 2008 at which time the site was found to be a location of protected resources covered under the Act. Further review by the agency required the scope of work to be performed and the types of mitigation to be performed during construction. After field investigations and further review the IDNR notified IDOT of the need for an Incidental Taking Authorization requiring the preparation of this Conservation Plan. The field investigation collected eight samples of the state endangered Weed Shiner, *Notropis texanus* at the site. The Blacknose Shiner *Notropis heterolepis* was believed to be in the vicinity as the habitat for the shiners are similar. Other endangered species were not found nor are they expected to be present.

Information on the Weed Shiner, *Notropis texanus* shows they occur throughout the Midwest in slow moving, sand bottom streams and backwater areas. Spawning occurs in the late spring with the fish surviving 2-3 years. See Exhibit 3 for more detailed biological data on both the weed shiner and the blacknose shiner.

Erosion while working and the removal of the existing structure present the most danger for fish. While removing the structure, falling debris could, but not likely, kill some of those fish remaining in the area. The activity of construction and noise generated are more likely to drive the fish away to another location. They would be expected to return once things quiet down, since the channel itself would be relatively unchanged. Construction of the new bridge would have little likelihood of debris falling in the stream and the construction of the substructure elements are well away from the normal flow of the stream. It may be expected that during the spawning season the fish may be driven to other reaches of the stream to continue their biological activity.

The existing roadway profile grade will not be raised. Embankment material will be placed on either side of the approach roadway within the project limits, but only minimal grading within the ditch lines will be necessary. Temporary erosion control seeding and perimeter erosion barrier will be utilized to address erosion and subsequent sedimentation within the stream.

II. MEASURES TO MINIMIZE AND MITIGATE IMPACTS

To minimize construction impacts the new structure will be designed as an open, three spanned bridge with pile bent piers. The piers will be located outside the normal pool elevation of the stream, thus reducing the disturbance to the channel during low flows. Stone riprap will be provided on the west side between the abutment and Pier 1 to protect this area from erosion. On the east side of the stream, riprap will be placed from the abutment down to the lower berm, but above the normal water elevation. The riprap placement will extend five foot beyond the width of the bridge. Standard practice for placement of the steel girders on the piers and the subsequent forming of the concrete deck will likely produce little spillage into the stream. However, special provisions will be written into the contract cautioning against dropping into the stream.

Removal of the existing structure presents more difficulties in preventing material from falling into the stream. To remove the existing structure, a contractor would typically allow large portions of the existing deck girders and beams to fall into the stream. The existing structure is a single span bridge with a superstructure consisting of reinforced concrete girders and 2 prestressed concrete deck beams on each side. The substructure consists of closed reinforced concrete abutments on pile supported footings.

To limit the degree to which material is dropped, the contractor will utilize the following procedure:

- a. Remove all existing wearing surface from the structure
- b. Perform a full-depth saw cut through the existing cast-in-place concrete deck for the entire length of the structure between and parallel to the deck girders.
- c. Remove each deck girder and associated deck concrete individually, while maintaining bracing to stabilize remaining deck girders
- d. Remove each precast prestressed concrete deck beam individually
- e. Remove the vertical walls of both abutments to an elevation 1-foot below the proposed ground line, while ensuring that large portions of the walls to not fall "forward" into the stream.

To further minimize project impacts, a temporary runaround will be eliminated from consideration. The road will be closed and traffic will be diverted to other nearby roads. Special provisions will be included in the contract requiring the contractor to follow the mitigating procedures. It will be the Resident Engineer's responsibility, acting as the County's agent, to monitor all activities of the Contractor, including compliance with the special provisions regarding mitigation and the use of best management practices.

Erosion and sediment control Best Management Practices (BMP's) will be utilized to prevent additional silt from entering the stream. National Pollutant Discharge Elimination System (NPDES) documentation will be included regardless of whether or not this project requires NPDES documentation. This will include a storm water pollution prevention plan, contractor certification statement, weekly inspections of BMP's and the reporting of incidents of non-compliance. The Illinois Department of Transportation's Bureau of Design and Environment (BDE) Special Provisions entitled "National Pollutant Discharge Elimination System /Erosion and Sediment Control Deficiency Deduction" and "Temporary Erosion Control" will be included in the special provisions for this project. The BDE form 2342 entitled Storm Water Pollution Prevention Plan will be included in the project Proposal Booklet to establish control and practices to be used, such as preservation of mature vegetation, protection of trees, temporary erosion control seeding, and perimeter erosion control barrier.

III. ANALYSIS OF PROJECT ALTERNATIVES

There are four alternatives for this project involving this bridge. The alternatives are as follows:

- A. DO NOTHING
- B. REHABILITATE THE STRUCTURE
- C. CONSTRUCT A NEW STRUCTURE ON OFFSET ALIGNMENT
- D. CONSTRUCT A NEW STRUCTURE ON EXISTING ALIGNMENT

ALTERNATIVE A – DO NOTHING

This alternative would result in the least immediate adverse effect on the endangered species. Residents would be forced to contend with the geometric, hydraulic, and structural deficiencies that currently exist. As a result, a structurally deficient and obsolete structure with a load restriction would remain in service. The structure would continue to deteriorate and potentially fail in time, causing permanent and costly adverse travel for the public. Alternate A is not a feasible and prudent alternative due to the likelihood of continued deterioration and eventual closure to the structure.

ALTERNATIVE B – REHABILITATE THE STRUCTURE

Rehabilitation of the existing bridge to meet modern day structural and geometric requirements would involve a complicated and costly scope of work. Changes required to upgrade the deck geometry to the minimum required would significantly affect the bridge superstructure and substructure. The superstructure is in such poor condition that re-incorporation of any part into the new structure is out of the question.

The existing abutments would also require total replacement to remedy existing poor conditions and to accommodate a wider superstructure. The above factors would result in substantial

costs for rehabilitation of this bridge. Therefore, Alternative B is rejected as a feasible and prudent improvement option.

ALTERNATIVE C – CONSTRUCT A NEW STRUCTURE ON OFFSET ALIGNMENT

The presence of a state park on the north side of the road precludes constructing a new structure and roadway to the north of the existing structure. This alternative would involve leaving the existing bridge in place and constructing a new bridge on an offset alignment from the existing bridge. An offset alignment to the south would require the introduction of two sets of horizontal reverse curves to the roadway, which presently lies on a tangent alignment. The location of the proposed centerline would be approximately 80 feet south of the existing structure. A design speed of 45 miles per hour would be required for this alignment shift. New right of way would be required creating significant impacts to adjoining properties. The cost for this alternative would exceed all alternatives by adding hundreds of feet of approach roadway and embankment. Consequently, consideration of this alternative for the proposed improvement was rejected as a feasible and prudent improvement option in favor of the final alternative, Alternate D.

ALTERNATIVE D – CONSTRUCT A NEW STRUCTURE ON EXISTING ALIGNMENT

Alternate D is the preferred alternative for this location. Complete removal and replacement of the structure, coupled with minor improvements to the approach roadways along the existing alignment would provide the maximum benefit to the area residents. (See Exhibit 2)

The preliminary estimated cost for this improvement is \$740,000. No new right of way will be needed to construct the bridge. Roadway excavation and embankment work necessary to improve the existing vertical alignment through the site will be minimal.

Alternative D is the most practical, beneficial and cost effective improvement option for this project. It has been selected as the preferred alternative for this proposed improvement section.

IV. BIOLOGICAL DATA AND SURVIVAL OF SPECIES AFTER PROJECT IS COMPLETED

The state endangered Weed Shiner, *Netropis texanuus* is known to occur sporadically throughout the Rock River drainage basin. They have been found in the Sugar River in Winnebago County, the south branch of Kishwaukee river in Dekalb county, the Yellow Creek in Stephenson County, the Rock River in Ogle County, the Green River in Henry County, in Coon Creek, and Fairfield Ditch in Bureau County. In Illinois spawning likely occurs in July and into early August. The shiner is attracted to sandy, gravelly stretches of creeks and small to medium rivers with high water clarity. Such habitat was found along Coon Creek, a tributary of the Rock River. (See Exhibit 3)

The state endangered Blacknose Shiner, *Netropis heterolepis* is known to historically occur in the Kishwaukee River system, Coon Creek, and Fairfield Ditch No. 1 in Bureau County. The Blacknose Shiner survives in habitat similar to that preferred by the Weed Shiner (clear sandy runs of creeks and small rivers). Like the Weed Shiner, the biology of the Illinois Blacknose Shiner is relatively unknown. While the species has not been collected from tributaries of the Rock River, it is possible for the species to occur in Coon Creek.

Both species can be expected to be disturbed by any construction activities in or near the channel. For that reason the design of the structure has been modified so that the foundation elements will be outside the normal water elevation. The removal of the existing structure should be of short duration and with mitigating measures, the disturbance to the species will be minimized. The streambed itself will see little or no physical change with the habitat upstream and downstream remaining the same. It would be expected, too, that the subject species will retreat during the construction (approximately 3 months) and return once the work is completed.

Construction activity will be limited to the existing right of way, 50 foot either side of the centerline of roadway. This area is shown on the plans, and the contractor will be required to work within these limits. The resident engineer and the contractor will be directed by the contract of the need to exercise caution when working over or near the channel. Workers will be instructed not to intentionally kill or harm any aquatic life and to report sightings to the resident engineer. Following construction, all disturbed areas will be re-seeded. The cost of seeding is included in the project cost.

V. IMPLEMENTING AGREEMENT

- A. Names of all participants in the execution of the conservation plan, including public bodies, corporations, organizations, and private individuals.

Steve Haring, P.E.
County Engineer
Whiteside County

Laura J. Connolly
Federal Aid Unit Leader
IL. Dept. of Transportation

Felicia Hurley
Natural Resources Survey Coordinator
IL. Dept. of Transportation

Steve Hammer
Transportation Review Program
IL. Dept. of Natural Resources

Sam F. Madonia, P.E.
Senior Project Engineer
Fehr-Graham & Associates, LLC

- B. The obligations and responsibilities of each of the identified participants with schedules and deadlines for completion of activities in the conservation plan and a schedule for preparation of progress report to be provided to the Department.

The Illinois Department of Natural Resources is responsible for the review of this conservation plan and for the subsequent issuance of the Incidental Take.

The Illinois Department of Transportation is responsible for all biological clearance coordination and recommendations related to the project

Whiteside County is responsible for completing the project and implementing those items listed under the Incidental Take Notice.

- C. Assurances that each participant in the execution of the conservation plan has the legal authority to carry out their respective obligations and the responsibilities under the conservation plan.

This project is authorized by the Illinois Department of Transportation and Whiteside County, which receive funding from the Illinois General Assembly and the Federal Government in carrying out its programs.

- D. Assurances of compliance with all other federal, state, and local regulations pertinent to the proposed action and to execution of the conservation plans.

The Illinois Department of Transportation and Whiteside County exclusively abide by the National Environmental Policy Act and all associated state and federal environmental laws in carrying out its mission of performing the most environmentally sensitive methods of transportation planning and engineering.

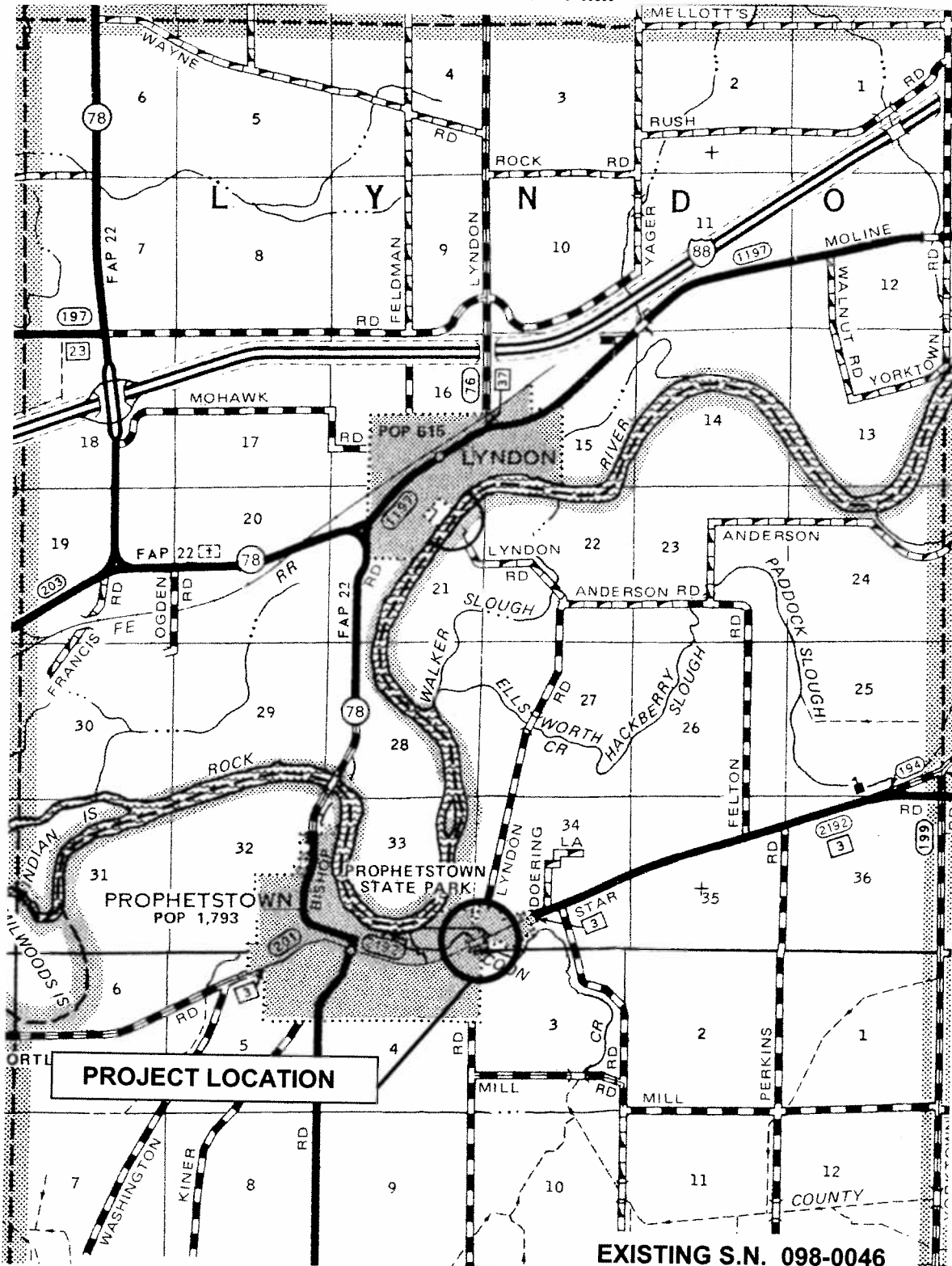
- E. Copies of any federal authorizations for taking already issues to the applicant

Not applicable since the Weed Shiner, *Notropis texanus* and the Blacknose Shiner, *Notropis heterolepis* are not federally threatened or endangered.

- F. For projects that will result in the taking of endangered or threatened species of plants, copies of expressed written permission of the landowner.

Not applicable since no plants are involved.

R. 5 E. OF THE 4TH P.M.



T. 20 N.

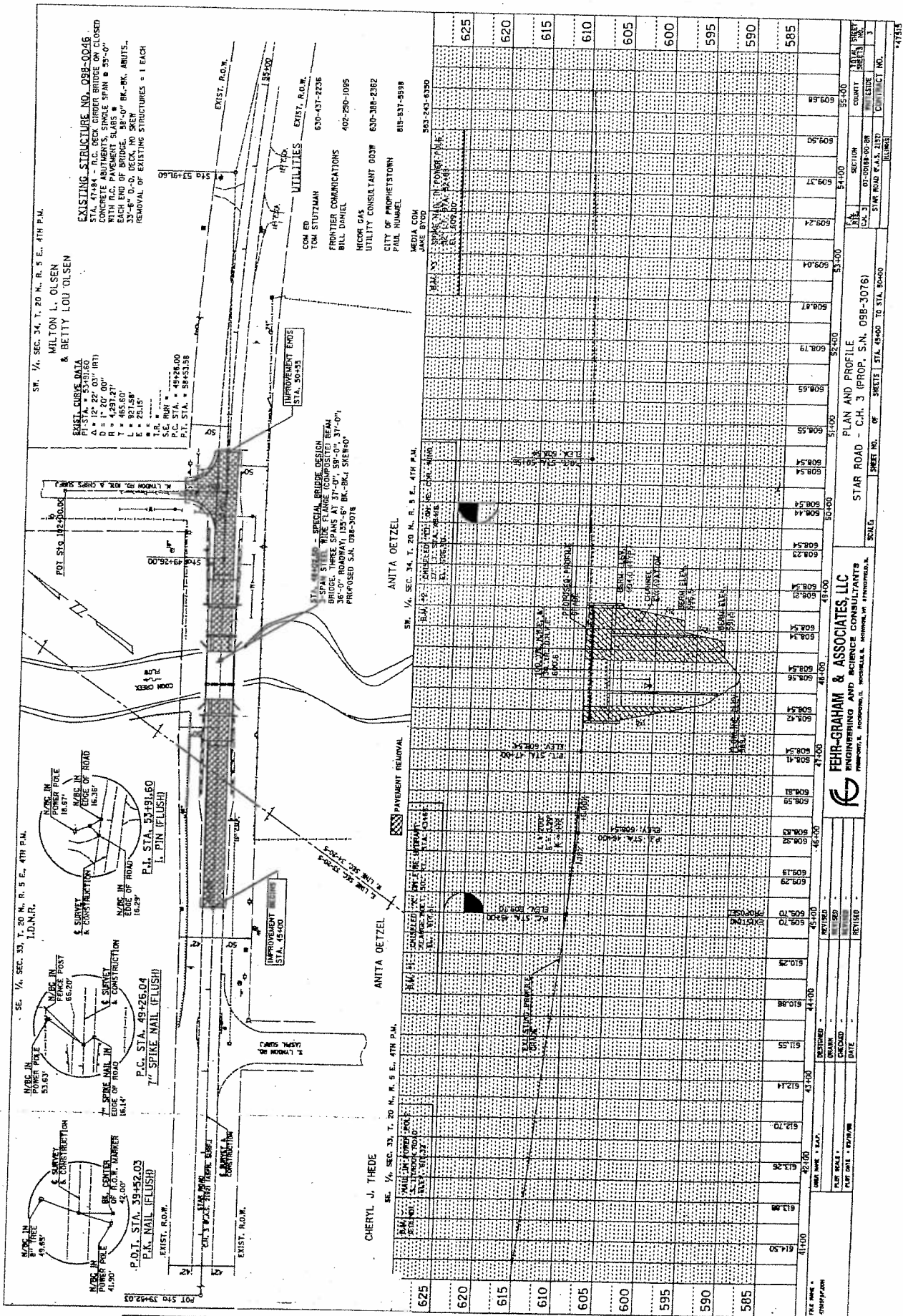
T. 19 N.

PROJECT LOCATION

EXISTING S.N. 098-0046
PROPOSED S.N. 098-3076



WHITESIDE COUNTY
SECTION 07-00188-00-BR
C. H. 3 (F.A.S. 2192) OVER
COON CREEK



EXISTING STRUCTURE NO. 098-0046
 STA. 47+84 - R.C. BECK CURVED BRIDGE ON CLOSED
 CONCRETE ABUTMENTS, SINGLE SPAN @ 33'-0"
 WITH R.C. PAVEMENT SLABS
 REMOVAL OF BRIDGE, 38'-0" BK-RK, ABUTTS.,
 33'-5" BK-RK, BRIDGE,
 REMOVAL OF EXISTING STRUCTURES = 1 EACH

EXISTING CURVE DATA
 A = 12' 22" (3.71 RT)
 D = 1' 20" (0.00)
 R = 4,237.27'
 L = 95.80'
 E = 23.15'
 P.C. STA. = 49+26.00
 P.T. STA. = 50+53.38

SR. 1/4, SEC. 34, T. 20 N., R. 5 E., 4TH P.M.
 MILTON L. OLSEN
 & BETTY LOU OLSEN

STA. 48+00 - SPECIAL BRIDGE DESIGN
 SPAN 51'-0" WITH 2 LANE
 BRIDGE, THREE SPANS AT 37'-0", 50'-0", 37'-0"
 PROPOSED S.N. 098-3076

ANITA OETZEL
 SR. 1/4, SEC. 34, T. 20 N., R. 5 E., 4TH P.M.

CHERYL J. THEIDE
 SR. 1/4, SEC. 33, T. 20 N., R. 5 E., 4TH P.M.

FEHR-GRAHAM & ASSOCIATES, LLC
 ENGINEERING AND ARCHITECTURAL CONSULTANTS
 PROJECT: STAR ROAD - C.H. 3 (PROP. S.N. 098-3076)
 SHEET NO. OF SHEETS 24 OF 24

| NO. | DATE | REVISION |
|-----|----------|--------------------|
| 1 | 10/15/10 | ISSUED FOR PERMITS |
| 2 | 11/15/10 | REVISED |
| 3 | 12/15/10 | REVISED |

SCALE: AS SHOWN
 DATE: 11/15/10

EXHIBIT 2

