# PUBLIC NOTICE

**APPLICANT**: TDOT
505 Deaderick Street
Suite 900 James K Polk Bldg.
Nashville, TN 37243-0339
(615) 253-2477

**PERMIT APPLICATION:** NRS #06.186

**LOCATION**: I-640 From West of Clinton Highway to East of Bruhn Road
Site Lat.36.0027 $^{o}$ Long. –83.9553$^{o}$
Knoxville, Knox County

**WATERSHED DESCRIPTION**: The project is located in the Tennessee- Watts Bar Lake (HUC 06010201) watershed. Land use surrounding the project is urban residential and commercial. Two streams, 2 seeps, and 1 spring exist in the project area. These streams are tributaries to Second Creek. Stream 3, flows south along the ramp from I-275 North to I-640 East. This stream is to remain unaffected by the project. Stream 4 begins near Bruhn Road, Station 133, and flows into stream 3 near Station 120 right. This stream flows southwest on the south side of I-640 East. The existing channel is the roadside, riprap ditch with minimal canopy. The spring and two seeps flow from the existing riprap slope to this stream.

Second Creek has been assessed as impaired for *E. coli*, nitrates, and loss of habitat due to siltation. A contact advisory is in place on this stream. USGS Topo Quad: Knoxville, TN (147-NW) and Fountain City(146-SW).

**PROJECT DESCRIPTION:** This application is for aquatic resource alterations along a 1.05-mile segment of I-640, part of the Smartfix40 Project. I-640 is being widened to six lanes. The on and off ramps in the I-75/I-640/I-275 interchanges are being modified, one bridge is being widened and a retaining wall is being constructed in front of the abutment for Norfolk Southern railroad bridge.

One stream (Stream 4) is being impacted. Proposed is a relocation from a 557 ft riprap ditch with single retaining walls in some locations into a 569.35 ft concrete lined channel with continuous retaining walls on both sides of the stream from Stations 132+90+/- to Station 124+00+/-. Proposed as mitigation for this impact is $111,400 to the Tennessee Stream Mitigation Program.

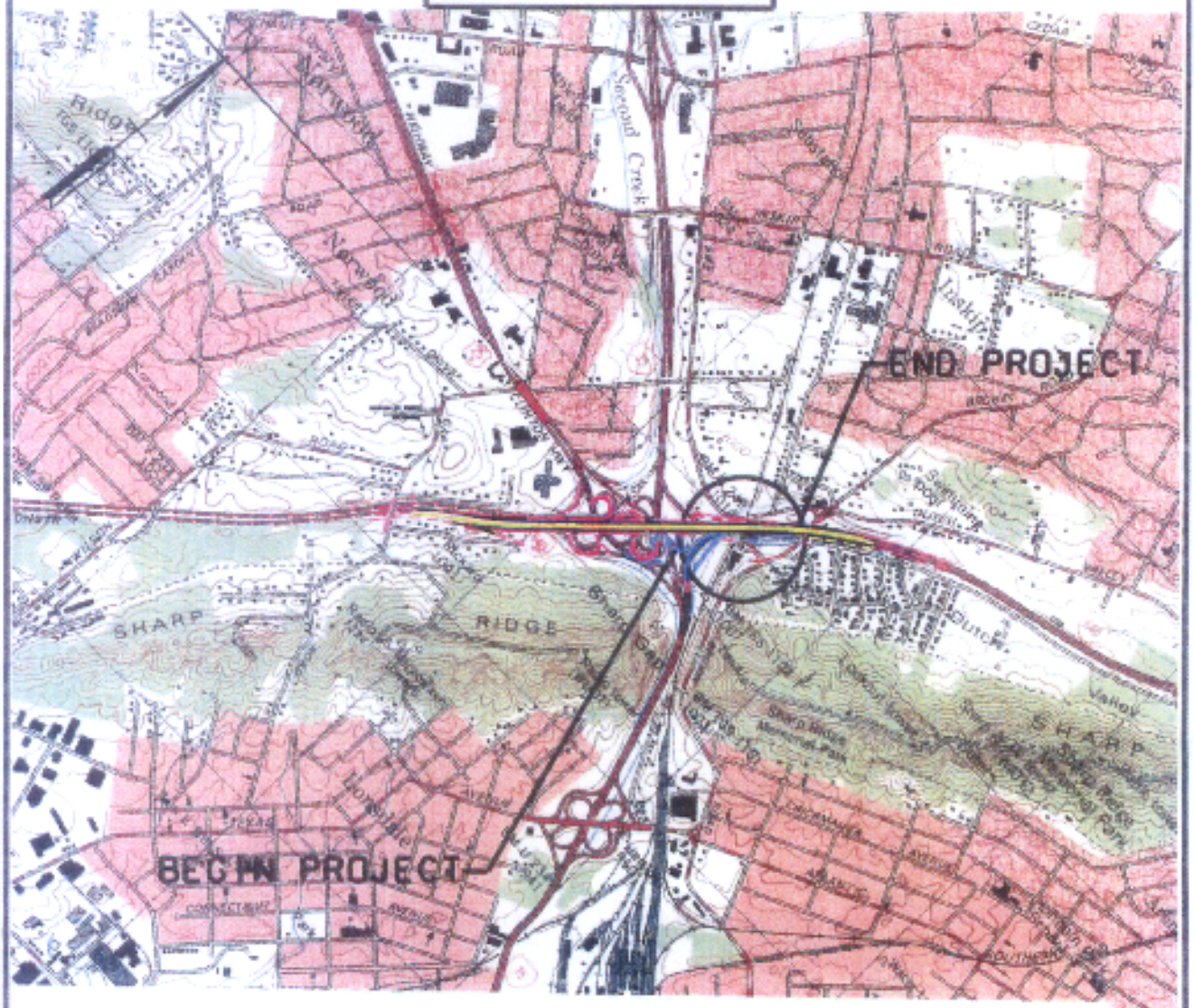
At the existing railroad bridge pier adjacent to the I-640 eastbound lane is a triangular diversion of the stream around the pier through 3 existing concrete pipes with wingwalls on the inlet and outlet. Proposed is the removal of the 25 ft wingwall and 2.14 ft of one concrete pipe at the inlet to be replaced with 18.53ft, 10ft x 5ft slab bridge. At the outlet the existing 15 ft paved ditch, 7 ft wingwall and approximately 30 ft of each of the two pipes will be removed to be replaced with a 20 ft paved ditch and a 31.73 ft, 10 ft x 5ft slab bridge.

Additionally, a 15ft, 12 ft x 5ft slab bridge is proposed as an outfall to Stream 4 at Station 132+90+/- Rt.

In accordance with the Tennessee Antidegradation Statement (Rule 1200-4-3-.06), the Division has determined that the proposed activity will not result in degradation to the streams described above.

**PERMIT COORDINATOR:** Judy Manners

Vicinity Map




0 2000 4000

SCALE: 1" 2000': CONTOUR INTERVALS 20'

QUAD MAP: KNOXVILLE, TENNESSEE 147-NW AND FOUNTAIN CITY, TENNESSEE 146-SW

KNOX

APPLICATION BY:

TENNESSEE DEPARTMENT OF TRANSPORTATION
VICINITY MAP

I-640 FROM STA. 124+00.00 (I-640) TO
STA. 129+77.00 (I-640)
FED. AID PROJECT NO. IM-640-7(160)
STATE PROJECT NO. 47008-3146-44

CITY OF KNOXVILLE, TENNESSEE

DATE: 5-22-06 REVISED: NA SHEET 1 OF 7

# Location Map

N

LOCATION 1
I-640
STA. 124+00 TO
STA. 129+77

0 1000 2000 3000 FT.

KNOX

APPLICATION BY:

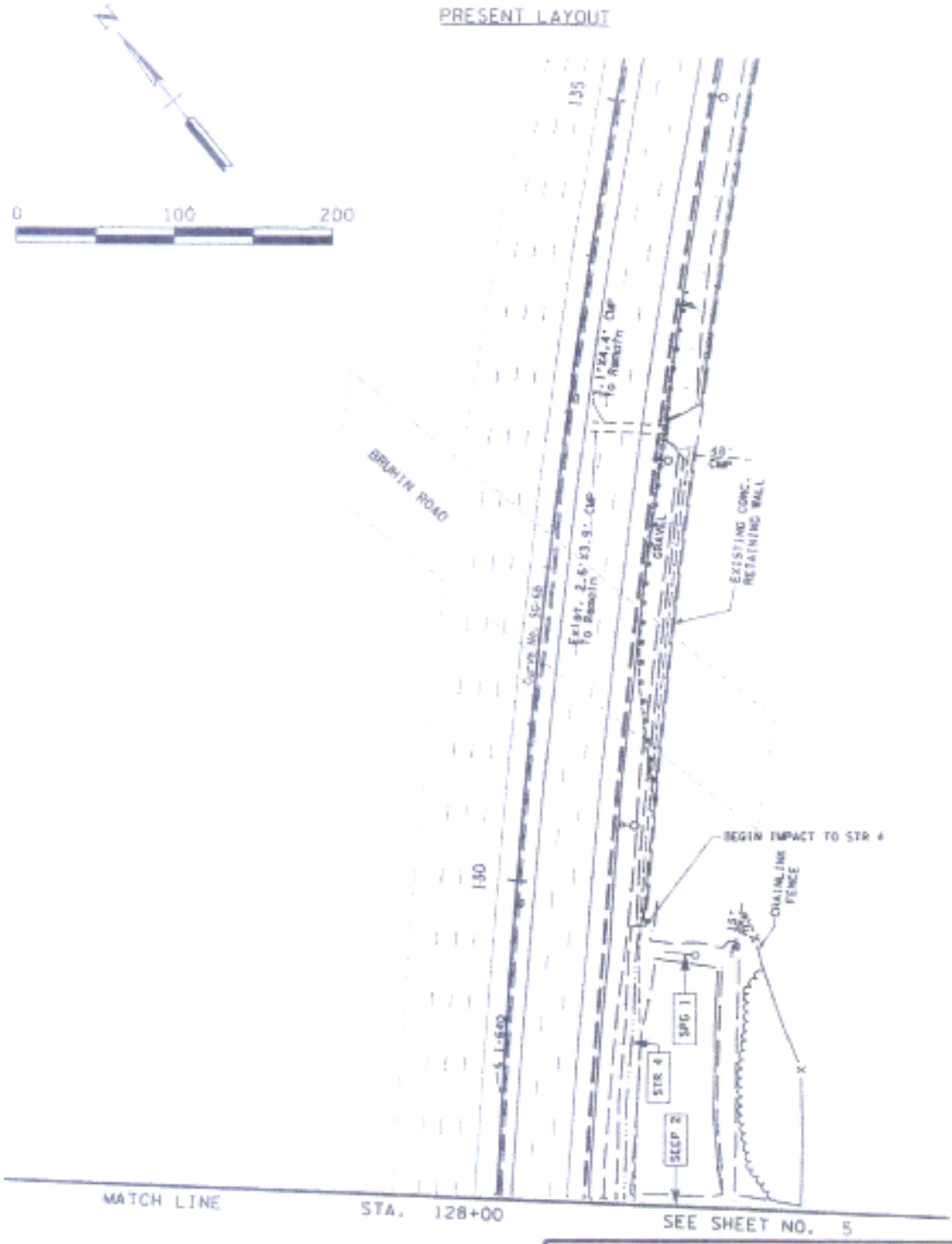
TENNESSEE DEPARTMENT OF TRANSPORTATION
CHANNEL CHANGES DUE TO
LONGITUDINAL STREAM ENCROACHMENT
I-640 FROM STA. 124+00.00 (I-640) TO
STA. 129+77.00 (I-460)
FED. AID PROJECT NO. IM-640-7(160)
STATE PROJECT NO. 47008-3146-44
KNOXVILLE, TENNESSEE

DATE: 5-22-06 REVISED: NA

SHEET 2 OF 7

# Permit Sketch

PRESENT LAYOUT




APPLICATION BY:
TENNESSEE DEPARTMENT OF TRANSPORTATION

CHANNEL CHANGES DUE TO
LONGITUDINAL STREAM ENCROACHMENT

I-640 FROM STA. 124+00.00 (I-640) TO
STA. 129+77.00 (I-640)

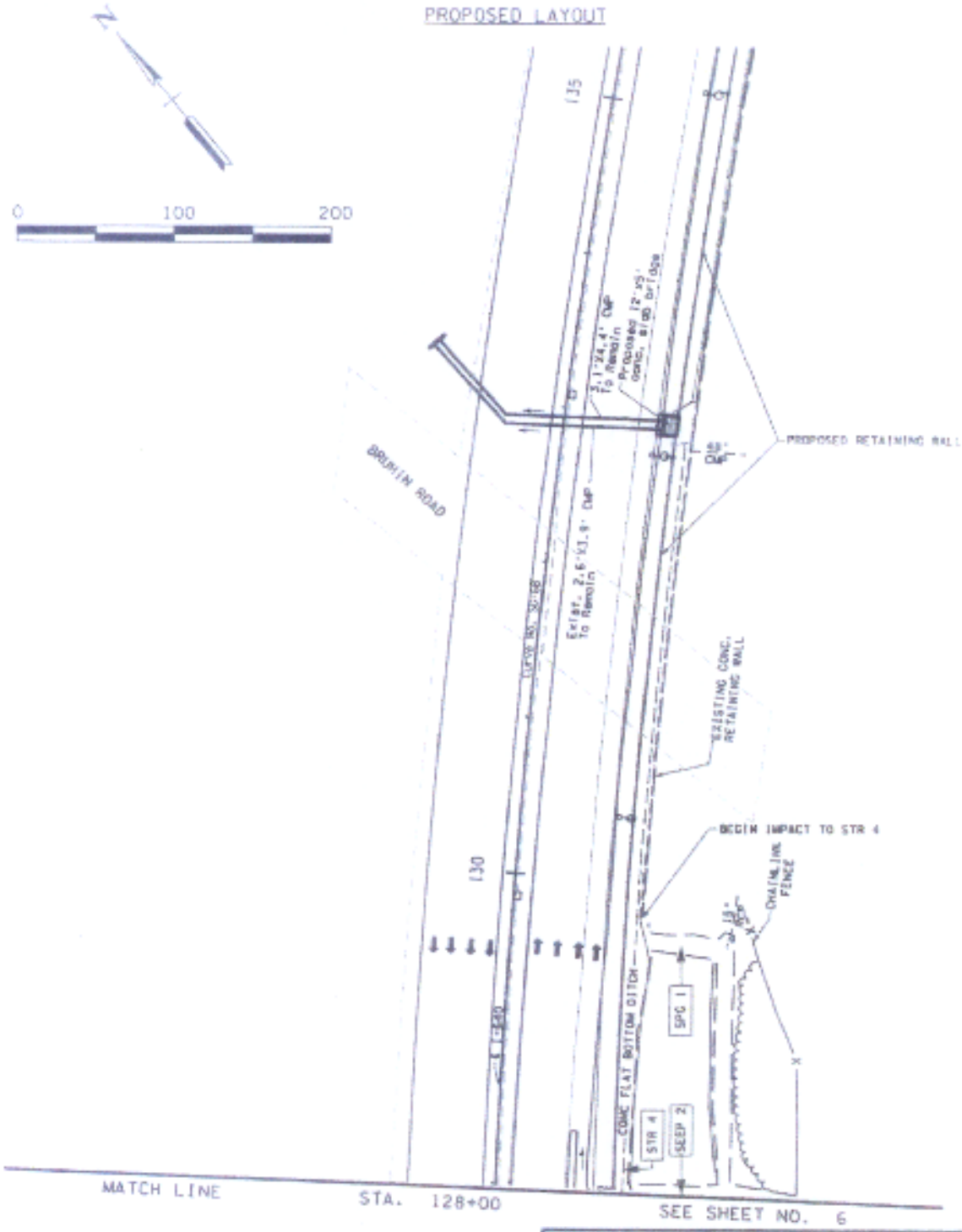
FED. AID PROJECT NO. IM-640-7(160)
STATE PROJECT NO. 47008-3146-44
CITY OF KNOXVILLE, TENNESSEE

DATE: 5-22-06 REVISED: - -

SHEET 3 OF 7

# Permit Sketch

PROPOSED LAYOUT




APPLICATION BY:
TENNESSEE DEPARTMENT OF TRANSPORTATION

CHANNEL CHANGES DUE TO
LONGITUDINAL STREAM ENCROACHMENT

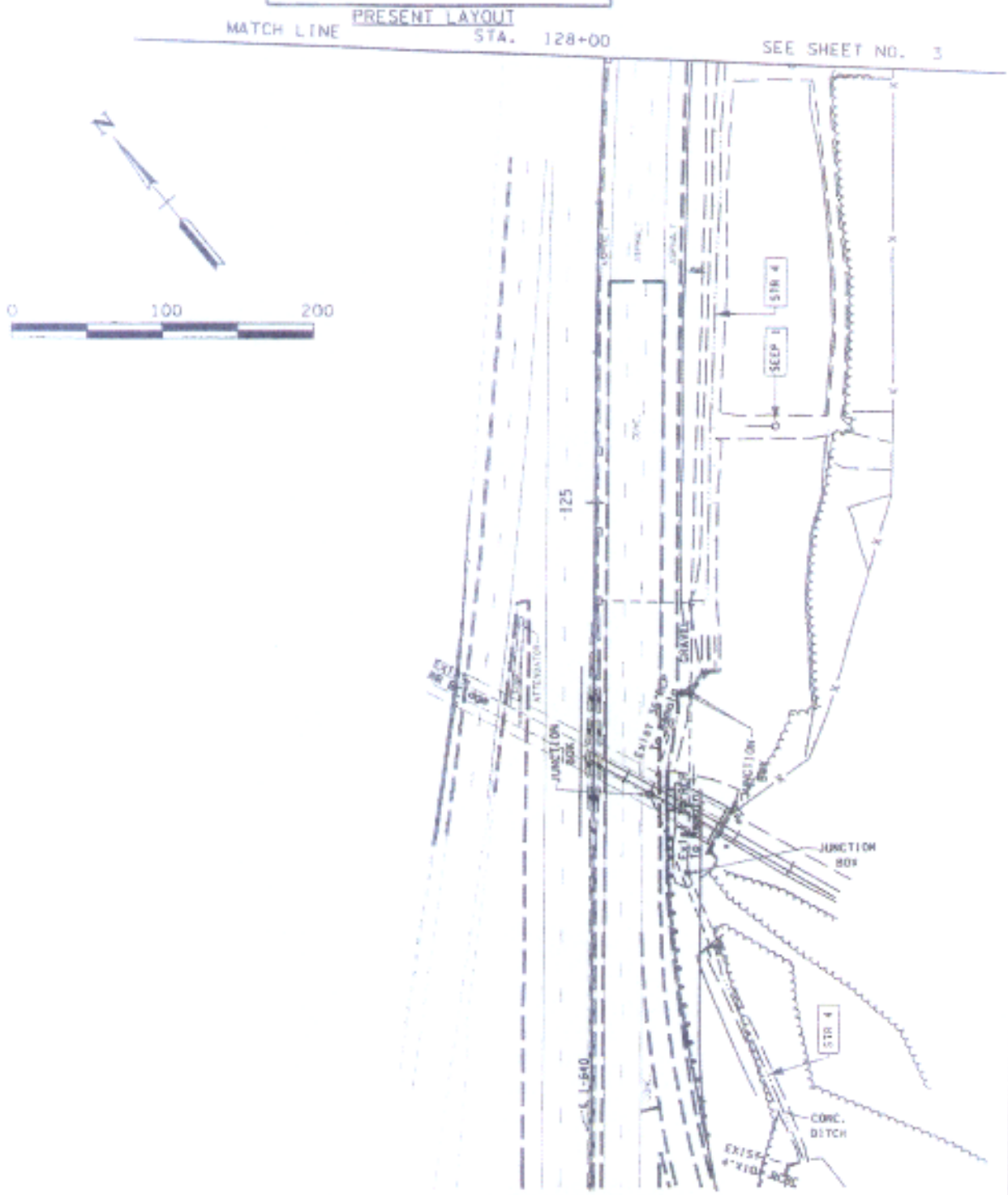
I-640 FROM STA. 124+00.00 (I-640) TO
STA. 129+77.00 (I-640)

FED. AID PROJECT NO. (M-640-7(160)
STATE PROJECT NO. 47008-3146-44
CITY OF KNOXVILLE, TENNESSEE

DATE: 5-22-06 REVISED: - -

SHEET 4 OF 7

# Permit Sketch




APPLICATION BY:
TENNESSEE DEPARTMENT OF TRANSPORTATION

CHANNEL CHANGES DUE TO
LONGITUDINAL STREAM ENCROACHMENT

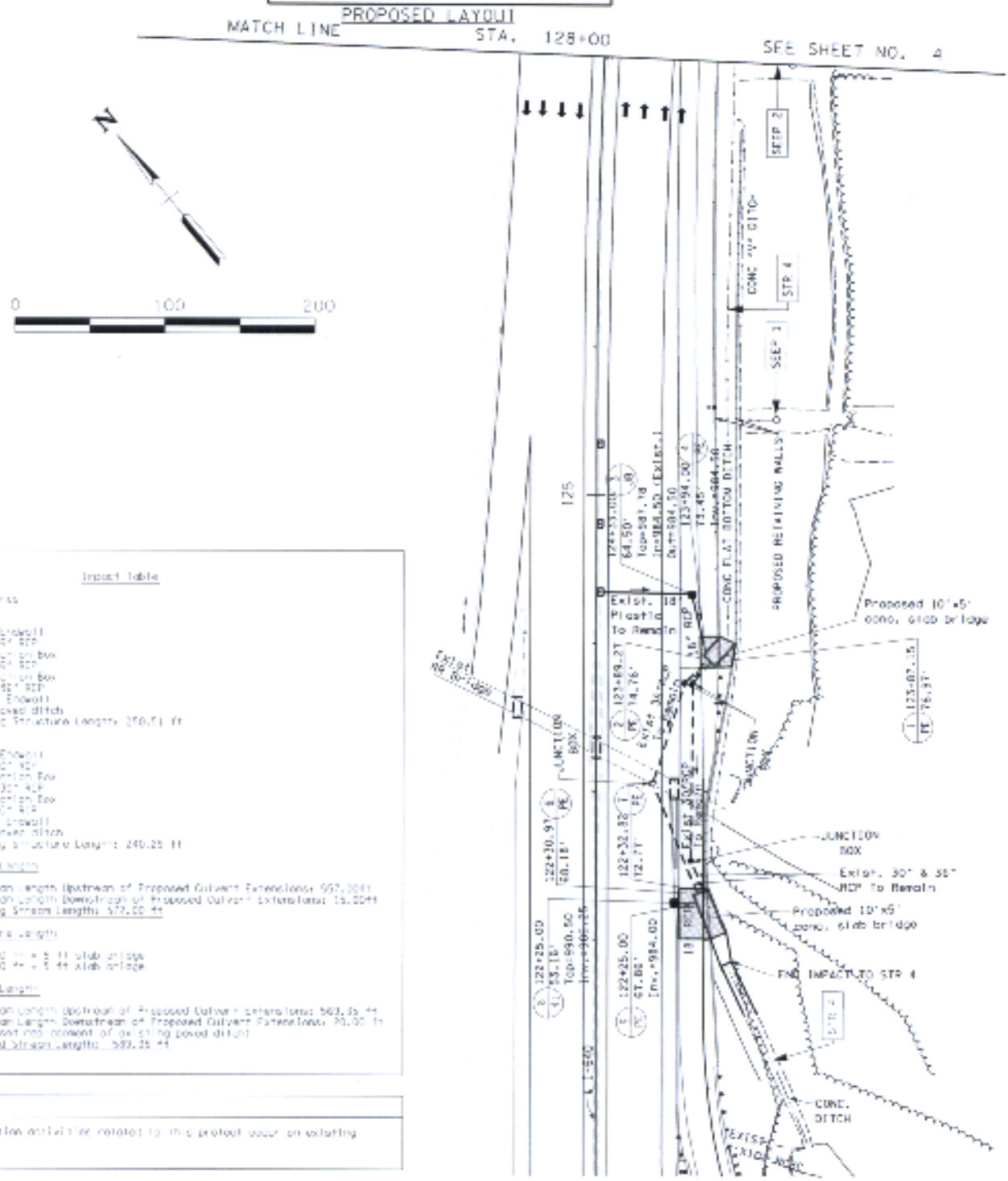
I-640 FROM STA. 124+00.00 (I-640) TO
STA. 129+77.00 (I-640)

FED. AID PROJECT NO. IM-640-7(160)
STATE PROJECT NO. 47008-3146-44
CITY OF KNOXVILLE, TENNESSEE

DATE: 5-22-06 REVISED: - -

SHEET 5 OF 7

# Permit Sketch




Impact Table

Existing structures

NW Culvert:
25 ft of "U" Endwall
20.05 ft of 99" RCP
4.0 ft of Junction Box
67.16 ft of 99" RCP
4.0 ft of Junction Box
108.30 ft of 99" RCP
7.0 ft of "U" Endwall
15.00 ft of paved ditch
Total Existing Structure Length: 250.51 ft

SE Culvert:
25 ft of "U" Endwall
15.24 ft of 30" RCP
4.0 ft of Junction Box
116.38 ft of 30" RCP
4.0 ft of Junction Box
49.67 ft of 30" RCP
4.0 ft of "U" Endwall
15.00 ft of paved ditch
Total Existing Structure Length: 240.25 ft

Existing Stream Length

Existing Stream Length Upstream of Proposed Culvert Extensions: 557.00ft
Existing Stream Length Downstream of Proposed Culvert Extensions: 15.00ft
Total Existing Stream Length: 572.00 ft

Proposed Structure Length

18.53 ft of 10 ft x 5 ft slab bridge
31.33 ft of 10 ft x 5 ft slab bridge

Proposed Stream Length

Proposed Stream Length Upstream of Proposed Culvert Extensions: 563.35 ft
Proposed Stream Length Downstream of Proposed Culvert Extensions: 20.00 ft
(Proposed replacement of existing paved ditch)
Total Proposed Stream Length: 583.35 ft

PROPERTY OWNERS

All construction activities related to this project occur on existing TDOT R.O.W.

APPLICATION BY:
TENNESSEE DEPARTMENT OF TRANSPORTATION

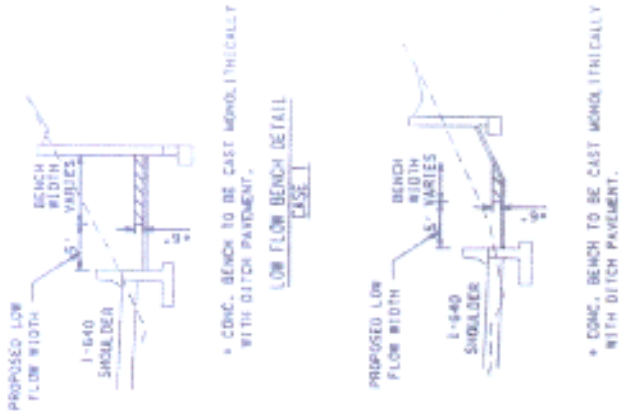
CHANNEL CHANGES DUE TO
LONGITUDINAL STREAM ENCROACHMENT

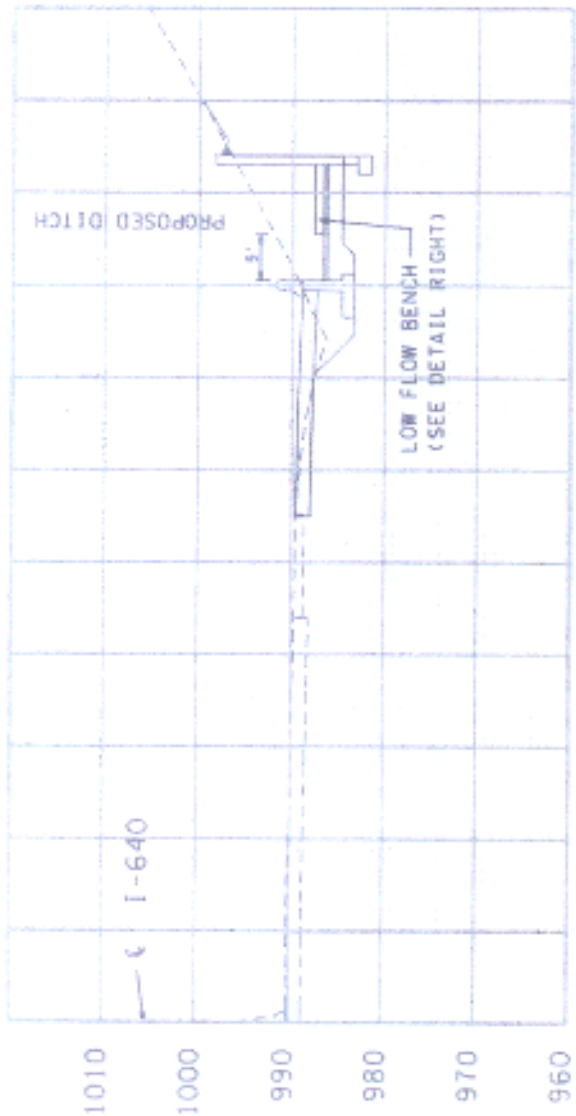
I-640 FROM STA. 124+00.00 (I-640) TO
STA. 129+77.00 (I-640)

FED. AID PROJECT NO. IM-640-7(160)
STATE PROJECT NO. 47008-3146-44
CITY OF KNOXVILLE, TENNESSEE

DATE: 5-22-06 REVISED: - -

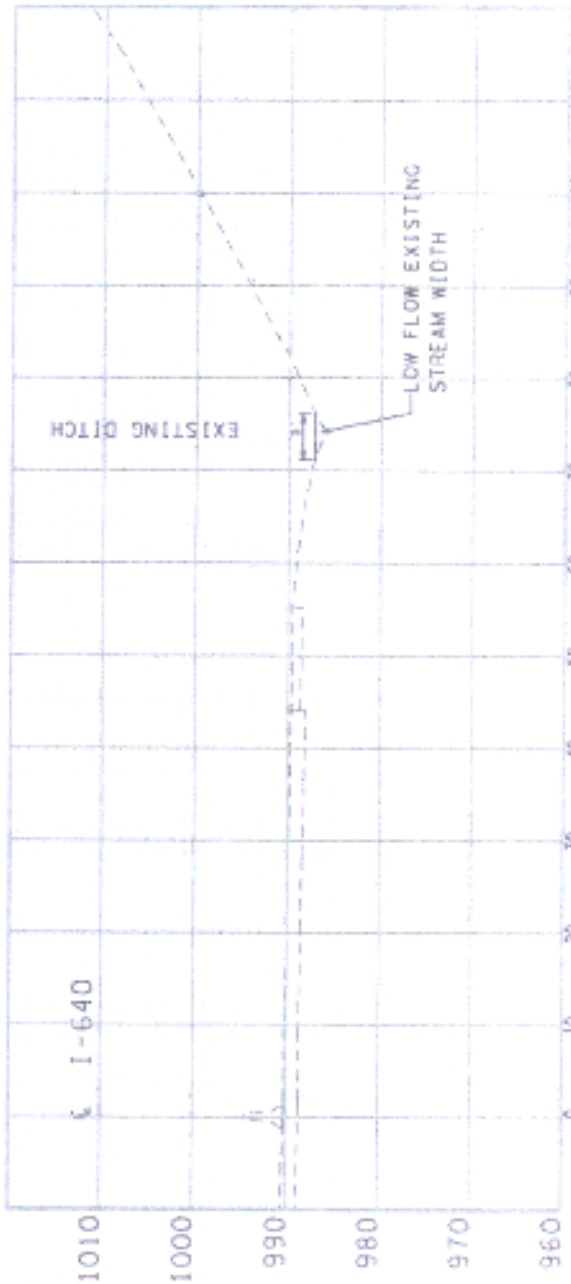
# Permit Sketch




PROPOSED TYPICAL DITCH SECTION

SCALE: 1"=20' VERT; 1"=20' HORIZ.




EXISTING TYPICAL DITCH SECTION

SCALE: 1"=20' VERT; 1"=20' HORIZ.

APPLICATION BY:

TENNESSEE DEPARTMENT OF TRANSPORTATION

CHANNEL CHANGES DUE TO
LONGITUDINAL STREAM ENCROACHMENT

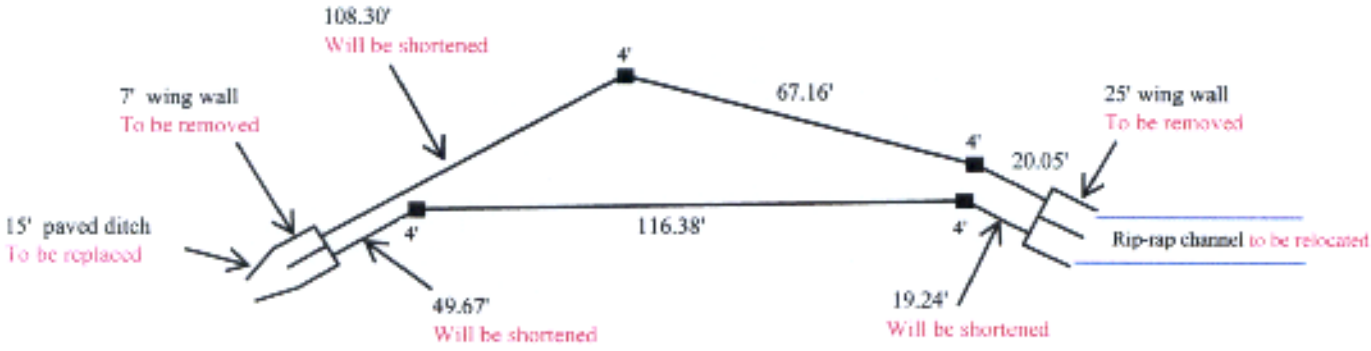
I-640 FROM STA. 124+00.00 (I-640) TO
STA. 129+77.00 (I-640)

FED. AID PROJECT NO. IM-640-7(160)
STATE PROJECT NO. 47008-3146-44
CITY OF KNOXVILLE, TENNESSEE

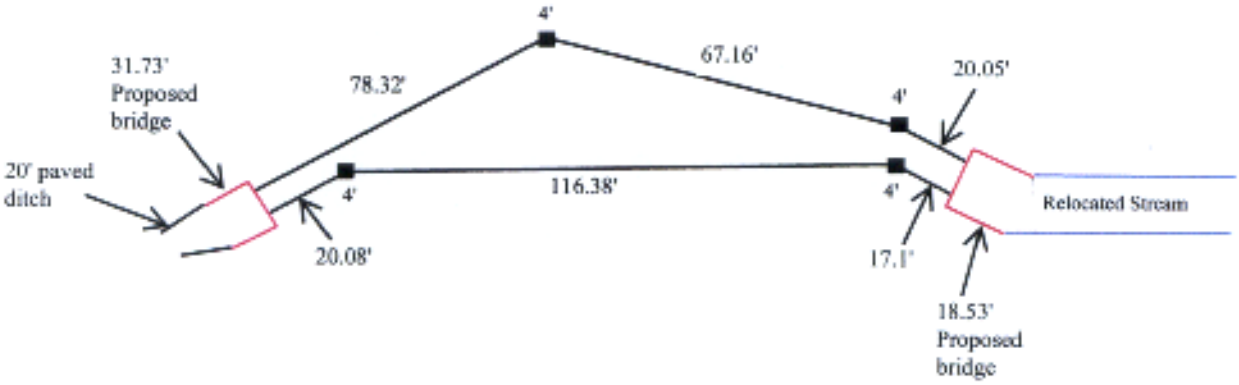
DATE: 5-22-06 REVISED: - -

SHEET 7 OF 7

**NOT TO SCALE**




## Existing Conditions




## Proposed Conditions

**NOT TO SCALE**

Photo 9. STR-3 at outlet of box culvert (left) under I-640.
STR-4 is flowing in from the right.

Photo 10. STR-4 as it emerges from pipe in wall of abutment at Bruhn Road
and flows in concrete lined channel.

Photo 11. Downstream view of STR-4 after it emerges from pipe in bridge abutment at Bruhn Rd.

Photo 12. Downstream view of STR-4 between Bruhn Rd. and the railroad bridge over I-640. SPG-1 emerges from base of rip-rap slope drain at left, just past end of concrete drain.

Photo 13. Upstream view of STR-4 as it flows out of double pipe under I-640.

Photo 14. Downstream view of STR-4 as it flows out of double pipe under I-640 and toward confluence with STR-3.