

SITE SPECIFIC FLOOD TYPES

- U/S Storage Loss
- U/S Increased Runoff
- U/S Avulsions
- D/S Constrictions & Backwater
- D/S Limited Conveyance
- Lateral Encroachments
- Local Land Drainage
- Local Storm Drains
- Ice Jams, Debris Barriers, Sediment
- High Groundwater
- Tidal Influence



CHANNEL ADJUSTMENTS

Attributes

Slope

Vertical

Horizontal

Cross-Section Area

Lateral

Planform

Resistance

Floodplain

Gradation

Sediment load

Potential Adjustments

Increase, Decrease

Aggrade, Degrade

Widen, Narrow

Increase, Decrease

Migration, Avulsion

Pattern, Sinuosity, Position

Smoothen, Roughen

Accretion, Scour, Widen

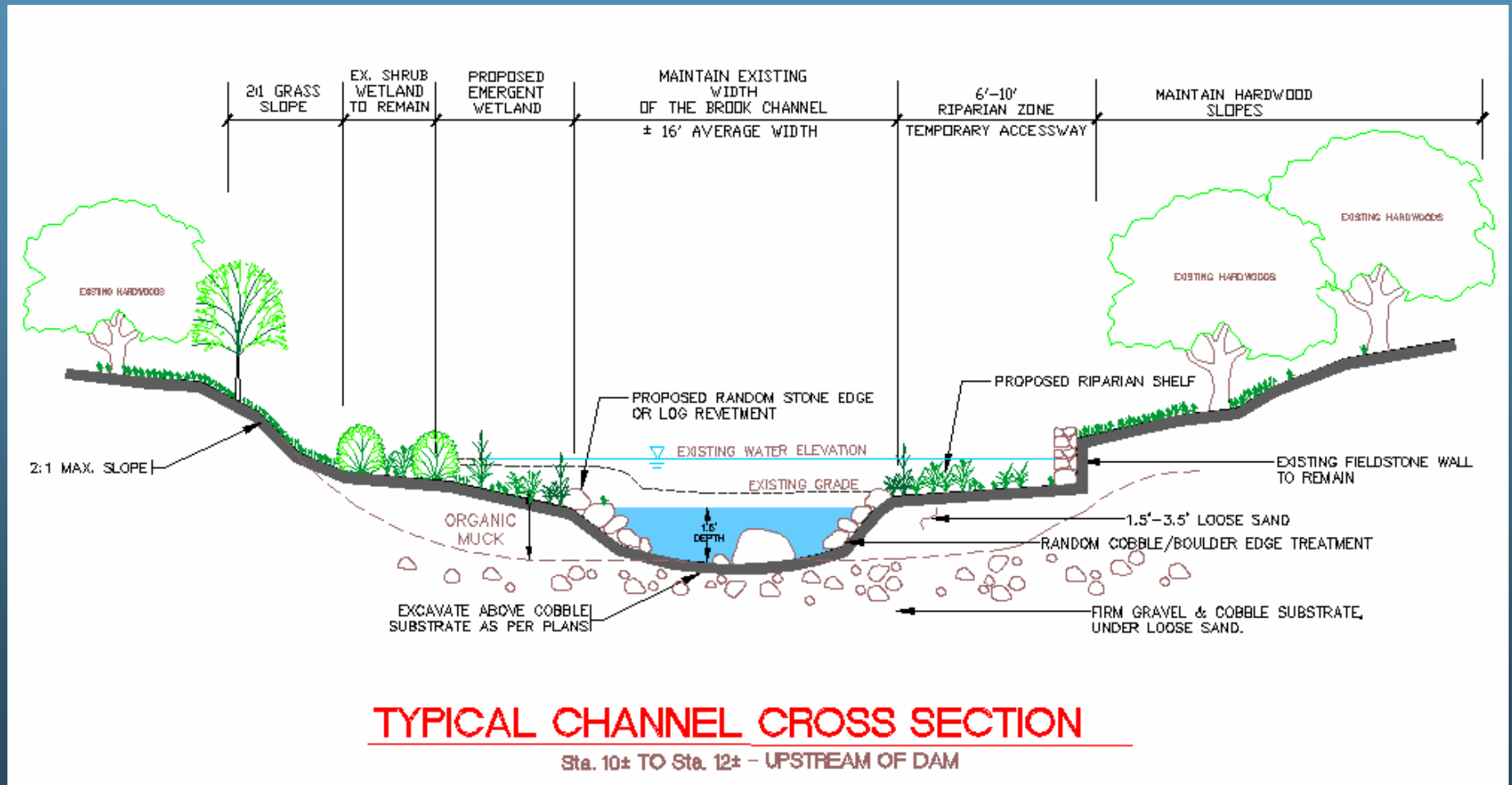
Coarser, Finer

Incision or Braiding

GEOMORPHIC CHANNEL DESIGN

CONCEPTS

- Manage Constrictions
- Equilibrium Slope
- Proper Planform
- Appropriate Sinuosity ~ Energy
- Bankfull Dimensions
- Provide Profile Features – Grade Control in High Velocity
- Match Native Substrate
- Create Roughness – Energy Dissipation Fish Habitat
- Use Compound Channel
- Provide Fish Passage
- Use Woody Debris
- Vegetate Banks
- Enhance Diversity
- Minimize Armor



(Sketch by Mark Arigoni, L.A., Milone & MacBroom)

PHASE I, 1960'S TRADITIONAL DESIGN

Agency Recommends Scrapping Trout Brook Flood Project

By LOUISE AXELSON

WEST HARTFORD — The U.S. Fish and Wildlife Service has recommended scrapping nearly all of a 10 million Trout Brook flood control project planned for the last 25 years.

The service told the Army Corps of Engineers, which asked federal agencies to comment on the plan to rechannel 1.9 miles of the flood-prone brook, that the project is unacceptable because of the loss it would cause to fish and wildlife, and because a practical alternative — flood insurance is available.

The service does not oppose the replacement of five bridges included in the plans.

The Fish and Wildlife Services opinion comes as planning for the project is nearly complete, dismaying state and local officials who say the agency had ample opportunity to express opposition earlier. The project is scheduled to go to bid next spring.

David McQuade, an aide to U.S. Rep. William R. Cotter, D-1st District, said Tuesday Cotter asked representatives of the corps, Fish and Wildlife Service and the federal Environmental Protection Agency to discuss the project's status at a meeting today.

He said there are indications the EPA also is going to comment negatively on the flood control project.

The corps is receiving recommendations from federal agencies before deciding whether to issue the permit needed for work to begin on Trout Brook.

"What is likely to happen is that the corps will probably sit down with Fish and Wildlife and EPA" to see how the project can be modified to meet their objections, McQuade said.

He said the project could be stalled if the corps issues a permit over the agencies' objections and they appeal.

"We've really been up to our ears in this project," Town Engineer William A. Farrell said dependently Tuesday. Noting that West Hartford has spent thousands of dollars for design work, a land-

scape architect and soil borings, and that the state has set aside \$1.8 million for land acquisition, most of which has been approved based on "Where were they in 1978?"

The Fish and Wildlife Service maintains it did not receive a copy of environmental impact statements on the project which West Hartford sent to federal agencies in 1978.



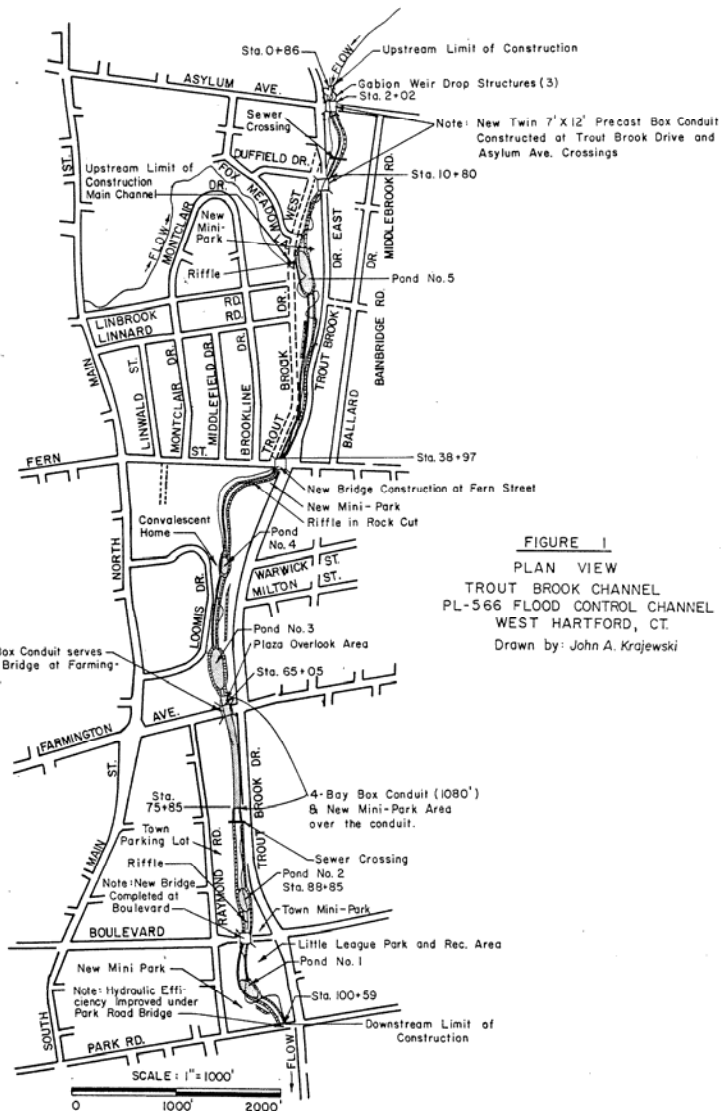
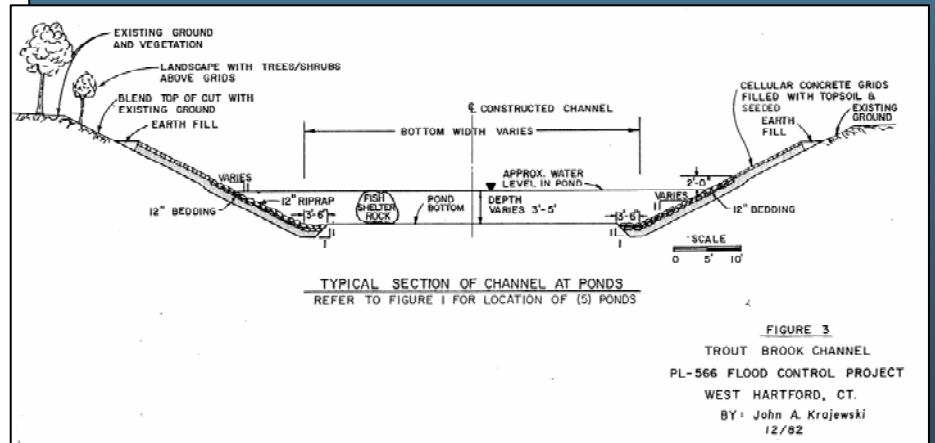


FIGURE 1
 PLAN VIEW
 TROUT BROOK CHANNEL
 PL-566 FLOOD CONTROL CHANNEL
 WEST HARTFORD, CT.
 Drawn by: John A. Krajewski



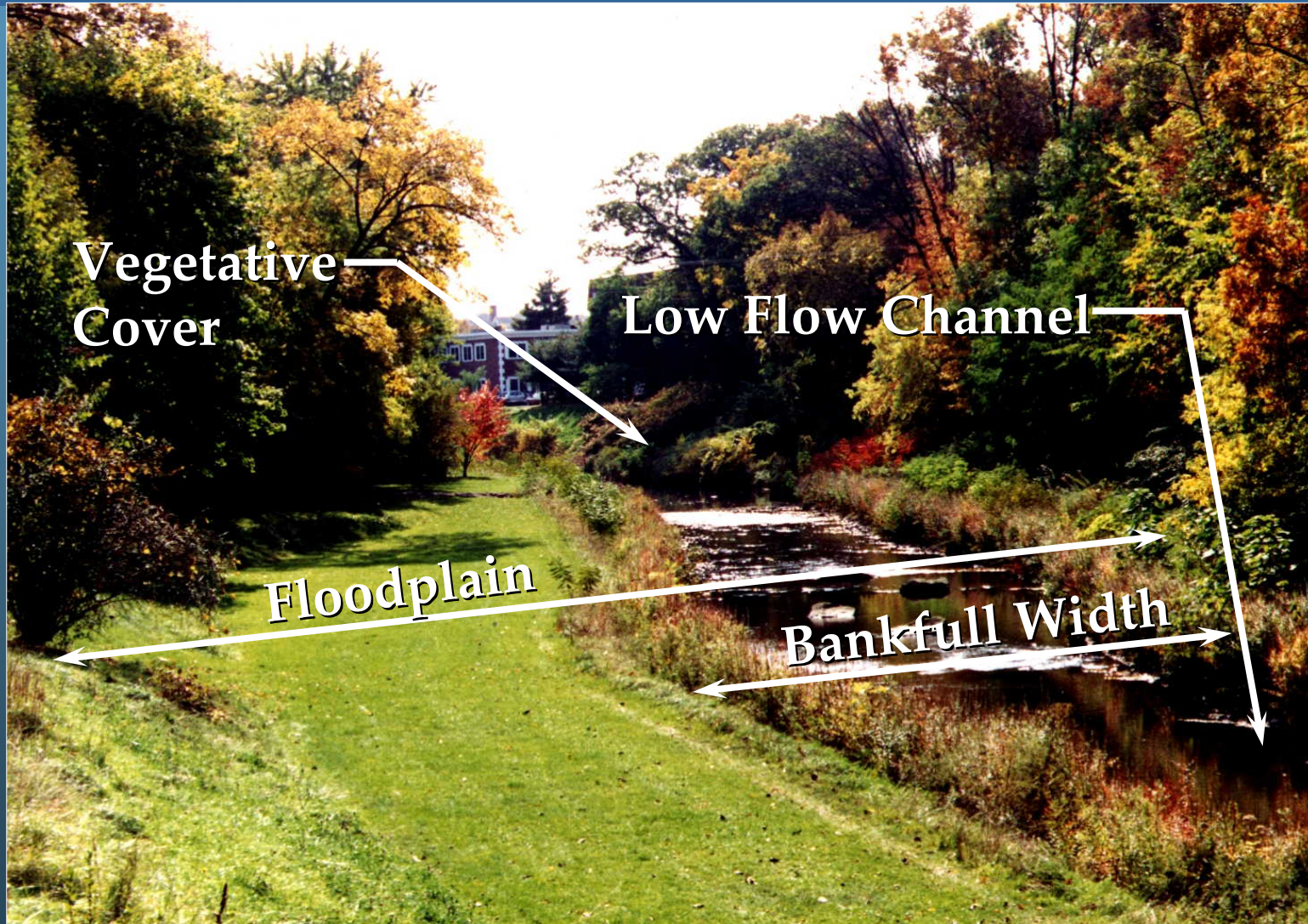
TYPICAL SECTION OF CHANNEL AT PONDS
 REFER TO FIGURE 1 FOR LOCATION OF (5) PONDS

FIGURE 3
 TROUT BROOK CHANNEL
 PL-566 FLOOD CONTROL PROJECT
 WEST HARTFORD, CT.
 BY: John A. Krajewski
 12/82

TROUT BROOK PROJECTS

<u>ITEM</u>	<u>PHASE I</u>	<u>PHASE II</u>
Alignment	Straight	Sinuuous
Lining	Concrete	Turf/Riprap/ Cellelor Blocks
Shape	Tradazoidal	Compound
Profile	Uniform Slope	Pool, Riffles, Rims
Access	None	Bike Trail
Base Width Feet	40 Feet	30 Feet to 110 Feet
Hydrology	100-Year Flood	2 Year, 25 Year, 100 Year

TROUT BROOK – WEST HARTFORD, CT



TROUT BROOK WEST HARTFORD, CT

Fish and Fowl will Thrive in Brook

By RAYMOND T. DeMEO

It's been almost four years since the Town of West Hartford cleared the way for preliminary work to begin on the \$10 million Trout Brook Flood Control Project. And it will be another four years before work is finally completed.

But when the rechanneling, landscaping, and bridge modifications on the 1.7-mile stretch of Trout Brook between Park Road and Asylum Avenue are over, residents and businesses harried by the brook's periodic flooding should find relief.

And recreation-seeking residents may also be pleased to find new beauty in areas of the stream that once boasted beer cans as their most prominent vegetation.

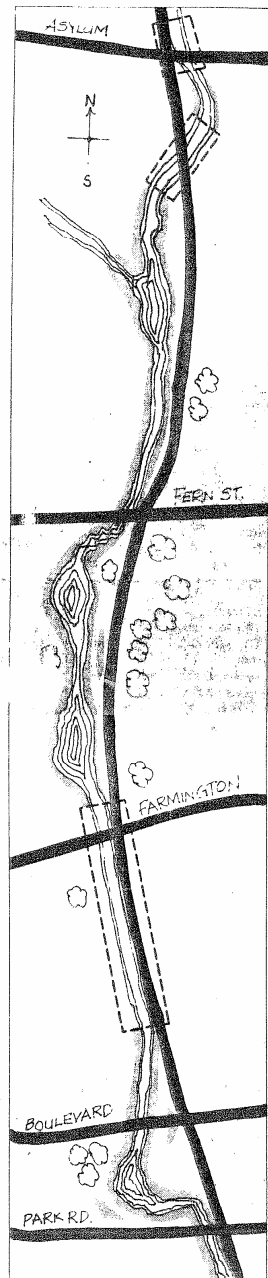
The flood control project is the joint effort of a number of federal and state agencies, as well as the town's engineering, physical services and leisure services departments. Prominently involved in the rechanneling and landscaping end of the plan is the U.S. Department of Agriculture's Soil Conservation Service, which is funding about two thirds of the project.

Helping to pick up the tab on the redesigning of bridges over Farmington Avenue and Boulevard are the Federal Highway Administration and the state Department of Transportation.

VISUALLY, THE most dramatic change anticipated in the project is the construction of a concrete culvert, 13 feet wide by 13 feet high, that will enclose the stream in an underground channel from roughly 1,000 feet south of the Farmington Avenue bridge to 250 feet north of the bridge. The culvert will be covered by eight feet of soil and grass.

According to Town Engineer William Farrell, the purpose of the culvert, which is being constructed under the auspices of the SCS, is to allow previously inaccessible property to the center of the brook to be reclaimed by Raymond Road businesses, most notable Williams Ford, which maintains a large parking lot on the brook's west bank.

Aside from the culvert, the emphasis is on maintaining the brook's natural flow, while widening its channel to avert potential flooding. Beginning at Park Road, and continuing northward to the beginning of the culvert, a cellular concrete grid will be installed on the sides of the brook. This will be covered with grass. The grid will serve to hold the soil in place during rain.



Phase 2, 1980
Geomorphic Based Design

DELLWOOD CHANNEL (Greenville, SC)

EXISTING CONDITIONS

- Urbanizing Watershed
- High Runoff Rates
- Channel Degradation
- Bank Instability
- Sanitary Sewer Exposure
- Loss of Rear Yards
- High Sediment Loads
- Disconnected From Floodplain

