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Workplan.HW336025.09-06-1984.WaterSupplyPlan

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II
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Mr. Albert K. Klaus
New York Department of
Environmental Conservation
21 South Putt Corners Road
New Paltz, New York 12561-1696

NYDEC
New Paltz

Dear Mr. Klaus:

EPA has never received comments from the NYDEC on the report submitted by Fred C. Hart in May, 1984 entitled "Design Requirements for Provision of Water to Affected Parcels on a Permanent Basis". As you will recall, we sent you a copy of this document in late spring. Unless we hear from you by September 21, 1984, we will assume that the NYDEC has no comments on this report.

Sincerely yours,

Patricia Wells

Patricia Wells, Environmental Engineer
New Jersey Investigation and Compliance Section

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NYSDEC
New Paltz

U.S. ENVIRONMENTAL
PROTECTION AGENCY
REGION II
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HAZARDOUS WASTE SITES
REGION II

DESIGN REQUIREMENTS FOR PROVISION
OF WATER TO AFFECTED PARCELS ON A
PERMANENT BASIS

May 1984

Prepared by:

Fred C. Hart Associates, Inc.
530 Fifth Avenue
New York, New York 10036



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1.0 Background

This report describes Fred C. Hart Associates' (FCHA) proposed design for a permanent domestic water supply main along Highland Avenue in the Town of Wallkill, New York. This design is based upon and consistent with the plans and specifications for a water supply main already approved by the Town of Wallkill, except that the FCHA design does not envision a main of a size necessary to provide fire protection as well as a domestic water supply.

1.1 Objective

The objective of the design plan is to provide a domestic water supply to seven homes on Highland Avenue between Park Avenue and the City of Middletown boundaries. The design plan provides an engineer's estimate of the cost for General Switch Corporation (GS) to install such a domestic water supply main, based on FCHA's review of the Town of Wallkill's engineering plans regarding construction of a water main on the Highland Avenue Extension.

1.2 Documents Reviewed

To prepare this design report, several documents were reviewed.

2.0 Proposed Design

2.1 Existing System

The homes on Highland Avenue between Park Avenue and the City of Middletown boundaries to the east rely on the individual wells to supply their water.

The existing water distribution system as provided by the City of Middletown to its Industrial Place Area ends with a six (6) inch plug at Industrial Place approximately 510 feet south of the intersection of Industrial Place and Highland Avenue.

Seven residences, numbers 297, 307, 309, 316, 320, 327 and 329, have been provided with a temporary domestic water supply. This temporary system consists of a two-inch PVC overland domestic water pipe extending from the water main at General Switch, 20 Industrial Place, to house numbers 307, 309, 316, 320, 327 and 329 Highland Avenue. The house located at 297 Highland Avenue is served by a 2" PVC pipe which extends from an existing water main near the Hebrew School.

2.2 Proposed System

2.2.1 Design Parameters. Table 2 summarizes the design parameters recommended by FCHA for the proposed domestic water main on the Highland Avenue Extension. The maximum hourly demand by the homes on Highland Avenue Extension will be 15-25 gallons per minute (gpm). FCHA recommends a minimum of 6 inch (") diameter (D) ductile iron pipe. This ductile iron pipe will have a capacity to carry flows up to 350 gpm. It should be noted that the proposed water main is designed for the purpose of providing domestic water supply and not for providing water to meet fire demand requirements.

2.2.2 Layout of the Proposed Design. Figure 1 provides a layout of FCHA's proposed design. The proposed design consists of 2265' of 6"D pipe which will extend from the Town/City line as it crosses the Highland Avenue Extension, southwesterly to Electric Avenue Extension towards North Street or Rte. 17M, 150' of 6"D down Industrial Place, as well as 45' of 6"D stub up Park Avenue and 40' of 6"D stub up Electric Avenue. The 6"D stubs up Park Avenue and Electric Avenue are designed for future extension if necessary. These stubs will remain plugged until such time as any extension is implemented. Gate valves will be constructed on the water main at the intersections of Highland Avenue with Industrial Place, Electric Avenue, and Park Avenue. Water service connections

from the proposed main will be connected to the seven homes at numbers 297, 307, 309, 316, 320, 327 and 329 Highland Avenue. The service main will consist of 3/4" copper tubing tapped from the water main.

3.0 Implementation Program

The implementation program consists of the installation of the above-described domestic water supply main.

3.1 Cost Estimate

Table 3 provides the cost estimates to provide the domestic water supply main.

It should be noted that all the itemized unit costs include labor, material, equipment and services for the complete site preparation, excavation, installation, backfilling and restoration of all work.

3.2 Schedule

The following provides the key milestone dates for the completion of various items of work, after the date of final

approval by EPA of the design plan.

<u>Item</u>	<u>Cumulative Completion Time (Weeks)</u>
Invitation to Bids, Bid Review, Award of Contract	6
Complete Construction of Water Main	14

The above schedule is based on the assumption that GS. will implement the basic plans prepared by the Township Engineer, with the modifications described herein, rather than being required to develop additional plans and specifications.

4.0 Alternative Proposal

Rather than implementing the above described plan, GS could provide a payment of \$53,200 to cover the cost for a domestic water supply main with appropriate hookups to serve seven homes, if the Town of Wallkill prefers to install a larger water supply main with the capacity for providing fire protection. Fire protection is a community responsibility and the expense of providing fire protection features in the system under consideration is beyond the scope of GS's responsibilities.

TABLE 1

LIST OF PERTINENT DOCUMENTS REVIEWED

Document

- 1 February 29, 1984 EPA Memo - Wallkill Data.
- 2 Water Distribution, Highland Avenue Extension
Contract Drawings 1 and 2 of 2.
- 3 Technical specifications, Town of Wallkill
Emergency Water System, Highland Avenue Extension,
Washington Heights.
- 4 Engineers Report, Emergency Water System
Extension, Washington Heights Section.
- 5 Washington Heights, Wallkill Site Map Composite
Groundwater Monitoring Contours.

TABLE 2

DESIGN PARAMETERS

FCHA Proposed Design

Average Annual Use	75 gpcd
Maximum hourly demand	200% of average annual use
Velocity	4 fps
C for ductile iron pipe	130
Population potentially served*	140
Number of persons per unit	3.5

* This population includes all persons in residences or businesses along Highland Avenue, not just those in the seven residences that are initially hooked up to this main.

TABLE 3

COSTS OF WATER DISTRIBUTION SYSTEM
ON HIGHLAND AVENUE EXTENSION

Proposed Design (FCHA)

<u>Item Description</u>	<u>Unit</u>	<u>\$/Unit*</u>	<u>Quantity*</u>	<u>Total Cost</u>
6" D pipe	LF	18	2415	43,500
Connections	EA	7	500	3,500
Stubs	LF	32	100	3,200
Gate Valves/Boxes	EA	100	10	1,000
Disinfection	LS	2000		<u>2,000</u>
				53,200

*Source: Document 4

LF - Length foot

EA - Each

LS - Lump Sum

Note: The unit costs developed by the Town of Wallkill's water main plans were utilized to develop this estimate.

