United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking an "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900-a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Allegheny River Lock and Dam No. 7
other names/site number N/A

2. Location

street & number P.O. Box 874 (along SR 4023, 0.6 mi N of Kittanning Br.) [N/A] not for publication
city or town Kittanning [N/A] vicinity
state Pennsylvania code PA county Armstrong code 005 zip code 16201-0874

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this [ ] nomination [ ] request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property [ ] meets [ ] does not meet the National Register criteria. I recommend that this property be considered significant [ ] nationally [ ] statewide [ ] locally. ([ ] See continuation sheet for additional comments.)

Signature of certifying official/Title Date

State or Federal agency and bureau

In my opinion, the property [x] meets [ ] does not meet the National Register criteria. ([ ] See continuation sheet for additional comments.)

Exec. Dir. 12/31/98
Signature of certifying official/Title Date

PA Historical and Museum Commission
State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the property is

[ ] entered in the National Register
[ ] See continuation sheet
[ ] determined eligible for the National Register
[ ] See continuation sheet
[ ] determined not eligible for the National Register
[ ] removed from the National Register
[ ] other, (explain) _____

Signature of the Keeper Date of Action

5. Classification

Ownership of Property
(Check as many boxes as apply)

[ ] private
[ ] public-local
[ ] public-State
[x] public-Federal

Category of Property
(Check only one box)

[ ] building(s)
[ ] district
[ ] site
[x] structure
[ ] object

Number of Resources within
(Do not include previously listed resources)

Contributing	Noncontributing	
1	0	buildings
0	0	sites
4	0	structures
0	0	objects
5	0	Total

Name of related multiple property listing
(Enter "N/A" if a property is not part of a multiple property listing)

Allegheny River Navigation System, 1739-1948

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions
(Enter categories from instructions)

Transportation: water-related: lock and dam

Current Functions
(Enter categories from instructions)

Transportation: water-related: lock and dam

7. Description

Architectural Classification
(Enter categories from instructions)

Late Nineteenth and Early Twentieth Century Revival

Materials
(Enter categories from instructions)

foundation concrete
walls reinforced concrete
roof rubber membrane
other

Narrative Description
(Describe the historic and current condition of the property on one or more continuation sheets)

PLEASE SEE CONTINUATION SHEET: 7 - 1 ON DOCUMENT PAGE 5

Allegheny River Lock and Dam No. 7
Name of Property

Armstrong County, PA
County and State

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

[x] **A** Property is associated with events that have made a significant contribution to the broad patterns of our history.

[ ] **B** Property is associated with the lives of persons significant in our past.

[x] **C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

[ ] **D** Property has yielded, or is likely to yield, information important in prehistory or history.

Areas of Significance
(Enter categories from instructions)

Transportation
Maritime History
Architecture
Engineering

Period of Significance
1903-1948

Criteria Considerations
(Mark "x" in all the boxes that apply.)

Property is:

[ ] **A** owned by a religious institution or used for religious purposes.
[ ] **B** removed from its original location.
[ ] **C** a birthplace or grave.
[ ] **D** a cemetery.
[ ] **E** a reconstructed building, object, or structure.
[ ] **F** a commemorative property.
[ ] **G** less than 50 years of age or achieved significance within the past 50 years.

Significant Dates

1928-1930 (construction)

Significant Person
(Complete if Criterion B is marked above)
N/A

Cultural Affiliation
N/A

Architect/Builder
Dravo Corporation

Narrative Statement of Significance PLEASE SEE CONTINUATION SHEET: 8-1
(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography
(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

[ ] preliminary determination of individual listing (36 CFR 67) has been requested
[ ] previously listed in the National Register
[ ] previously determined eligible by the NR
[ ] designated a National Historic Landmark
[ ] recorded by Historic American Buildings Survey #_____
[ ] recorded by Historic American Engineering Record #_____

Primary location of additional data:

[x] State Historic Preservation Office
[ ] Other State agency
[x] Federal agency
[ ] Local government
[ ] University
[ ] Other

Name of repository:
U.S. Army Corps of Engineers, Pittsburgh District

Allegheny River Lock and Dam No. 7
Name of Property

Armstrong County, PA
County and State

10. Geographical Data

Acreage of Property approximately 19.3 acres

UTM References
(Place additional UTM references on a continuation sheet.) Kittanning, PA

	Zone	Easting	Northing		Zone	Easting	Northing
1	17	623871	4519797	3	17	624263	4519783
2	17	624211	4518699	4	17	624034	4519522

[ ] See continuation sheet

Verbal Boundary Description
(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification
(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Douglas Dinsmore, Ph.D., Principal Investigator
organization Heberling Associates, Inc. date October 28, 1997
street & number 415 Church Street telephone (814) 643-1795
city or town Huntingdon state PA zip code 16652

Additional Documentation

Submit the following items with the completed form.

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.
A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional items
(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of SHPO or FPO.)

name
street & number telephone
city or town state zip code

Allegheny River Lock and Dam No. 7 property includes five contributing resources. Lock and Dam No. 7 consists of four structures, all of which contribute: the lock, dam, esplanade; and the dam abutment. One building, the Operations Building contributes to the property. No other structures or buildings exist at Lock and Dam No. 7.

A navigation facility, the U.S. Army Corps of Engineers constructed Lock and Dam No. 7 in 1928-1930 in the Allegheny River 45.7 miles upstream for its mouth. Built on the west side of the river in a constricted area, Lock and Dam No. 7 permitted slackwater navigation to Kittanning and areas upstream. Situated across the river from Kittanning, the buildings of the town remain visible from the lock. Townspeople fish from the large, prominent abutment. The steel truss of the Kittanning bridge is visible downstream. The railroad tracks of the Pittsburgh and Shawmut Railroad run along the west bank, where the lock is located. Lock and Dam No. 7 appears as another component of the transportation network serving the Kittanning area.

Lock

Land and river walls, sills, miter gates, and valve and gate machinery comprise the locks. The land and river walls are reinforced concrete set on piles driven into the river bed. The upper and lower guard walls are concrete set on stone-filled timber cribs.

The lock, 56 by 360 feet, has a lift of 13.0 feet, from 769.4 to 782.4 feet. The sidewalls are steel-armored concrete, and mooring pins for securing watercraft are set along the walls. Large hydraulic pistons, connected to a rack, move a large gear attached to jointed arms to operate the gates. Similar large hydraulic pistons connected to jointed arms operate the valves. The operating levers are duplicated on both the land and river walls. The river walls originally contained gate pockets and machinery pits on the river side, but these were removed (filled) during a 1994 renovation.

Water enters and exits the lock through eight-by-eight foot culverts in both the land and river walls. The intakes for the culverts are upstream of the upper gates, and downstream of the lower ones. Openings in the lock walls fill and empty the lock from the culverts. Each culvert has two large horizontally-mounted butterfly valves to regulate the flow of water.

The horizontally-framed steel miter gates close against a concrete miter sill. Anode plates diminish the effects of rust, and bubblers in the corners prevent the accumulation of debris and ice in the gate pockets.

An electrically-powered rail-guided mule, installed 1992-1994, provides the power to move tows, disconnected from their tug, out of the lock.

Dam

The approximately 20-foot high fixed-crest dam is 916 feet long. Although the locks sit on timber piles, the dam rests on gravel-filled cylindrical sheet piling, with a slope of approximately 1:2 and a moderate downstream apron to add mass to stabilize the dam. Derrick stone supported by sheet piling adds additional mass downstream. Because the crest of the dam is the same height across its length, water runs over its entire length. There is no spillway. As a result, the dam itself is nearly invisible when viewed from upstream. Buoys and signs reduce danger to river traffic.

Esplanade

The esplanade consists of concrete-paved fill between the former river bank and the lock's land wall. The esplanade is paved with large square of concrete, permitting replacement of sections and weather-related expansion. The esplanade contains the three penstocks for the turbines that power the hydraulic system that operates the valves and gates. The esplanade has been repaired extensively three times since its construction, most recently in 1994.

Operations Building

The two-story flat rubber membrane roofed operations building (powerhouse) is approximately 25 by 65 feet. In a vernacular version of an early twentieth century revival style, the structure has been altered in 1992-1994. Originally, a complex cornice decorated the fascia and faux quoins graced the corners. The window and door apertures are set in full-height panels; the doors used for equipment repair set in a slightly projecting panel. A beam for hoisting

equipment to the second floor projects from just underneath the cornice. The original windows have been replaced. The powerhouse was pargeted in 1994.

The plain interior exemplifies the utilitarian nature of the powerhouse. Two large three-cylinder hydraulic pumps are each powered by a 26-inch water turbine. The turbines also operate a vertically-mounted two-cylinder air compressor and a horizontally-mounted single-cylinder water pump. The original cast-iron shutters that control water flow to the turbines have been replaced with stainless steel ones. Lock 7 retains its oil pressure relief valve, also called an automatic bypass. The third turbine, which operated the electric generator, has been removed, as have the capstans. Electric power is provided by the local power company. A modern diesel-powered generator provides back-up electricity. A two-cylinder back-up hydraulic pump, originally steam-powered, now operates on compressed air, generated from a modern, electric-powered air compressor. An overhead crane provides lift for the large mechanical components. The stair treads are open-grate metal with metal railings. Both machinery and walls have been painted a light blue-gray. An office is on the second story, with the air compressor and back-up diesel generator.

In the basement of the powerhouse, air storage tanks remain. The site of the coal bin, used to hold fuel for the steam boiler that originally heated the structure and provided backup power, has been converted to a storage area. Natural gas now heats the powerhouse, and the modern air compressor powers the backup hydraulic pump. Passageways lead to the tunnel in the land wall, and to the turbine wells.

Alterations

Repairs have occurred to keep Lock and Dam No. 7 functional. Gates have been replaced twice and valves have bee repaired three times. The concrete walls and esplanade have been repaired four times, most recently in 1992-1994. The heating system was switched from coal to its present gas circa 1960. The electric air compressor was installed circa 1975. Other more minor repairs have occurred on an annual basis.

Additional derrick stone was added below the dam and abutment in 1944. Following additional erosion of the dam's abutment on the east side of the river, more derrick stone was added in 1960.

The design and operation of Lock 7 remain much as it was constructed in 1928-1930. Some minor changes have occurred, including remodeling of the office inside the powerhouse, and pargeting of the exterior, which obscured some original stylistic details. The continuity of the original design, layout, and construction remains.

Because of the lock's proximity to the town of Kittanning, no locktenders' houses were constructed at Lock and Dam No. 7.

Statement of Significance

Allegheny River Lock and Dam No. 7 is significant under National Register Criteria A and C as examples of property types *lock, dam, esplanade, and operations buildings* within the Allegheny River Navigation System Multiple Property Listing. Constructed in 1928-1930, Lock 7 became part of an integral slackwater system built to permit commercial barges and towboat access to 72 miles of the Allegheny River.

Proposed in 1898, construction on Lock 7 did not begin until 1928. Although the 1898 proposal of Major Charles F. Powell received support, and Congressional appropriations were delayed by efforts to raise low bridges in Pittsburgh, by work on Locks and Dams Nos. 4, 5 and 6, and by post-World War I recessions. However, appropriations in 1928 permitted contracts to be let later that year. By 1930, most of the facility was completed, and it opened on November 10, 1930. Additional construction continued through 1932.

The contractor for Lock and Dam No. 7 was Dravo Corporation, who had constructed other locks and dams for the Corps, including Dam 5. The designs used were standard designs, modified to fit the particular environmental setting. The similarity of locks and dams of this period on the Allegheny, Monongahela, Ohio, and Kanawha Rivers indicates a common design.

The lock sits on timber piles, but the dam rests on stone-filled cylindrical sheet piling. The use of gravel-filled cylindrical sheet piling, pioneered by the contractor, for the foundation of the dam caused some controversy among the Corps, when some officials doubted the strength of such piling. The concrete dam had been built directly on the sheet piling, leaving portions of the dam unsupported where the cylinders met. However, the fears of the official were assuaged and stone was added downstream (letter of November 19, 1930, E1288, Box 21, National Archives in Philadelphia). In 1944 additional derrick stone was placed downstream of the dam and abutment.

Since construction, alterations have occurred. The heating system was switched from coal to its present gas circa 1960. The electric air compressor was installed circa 1975. The esplanade, walls, and surfaces, in addition to the operations building, were resurfaced in 1992-1994.

Lock and Dam No. 7 is significant under Criterion A, for its contribution to the long-term maritime history of the Allegheny River. The lock and dam are critical to the continuing river transportation, as outlined in the MPDF *Allegheny River Navigation System, 1739-1948*. An integral part of the Allegheny River Navigation System, Lock and Dam No. 7 permitted access to the resources north of Kittanning.

Allegheny River Lock and Dam No. 7 is also significant under Criterion C, as a representative example of lock and dam construction of the period 1928-1930. The lock and dam retains its original appearance, machinery, and function. Lock and Dam No. 7, with no noncontributing resources, retains a high degree of integrity of location, design, setting, materials, workmanship, feeling, and association.

Major Bibliographic References

National Register Multiple Property Documentation Form, *Allegheny River Navigation System, 1739-1948*

Survey conducted in June, 1997

Active Files of the U.S. Army Corps of Engineers, Pittsburgh District offices

National Archives, Philadelphia (letter-sized) E1323C and E1288, and
College Park (oversized) Record Group 77

Verbal Boundary Description

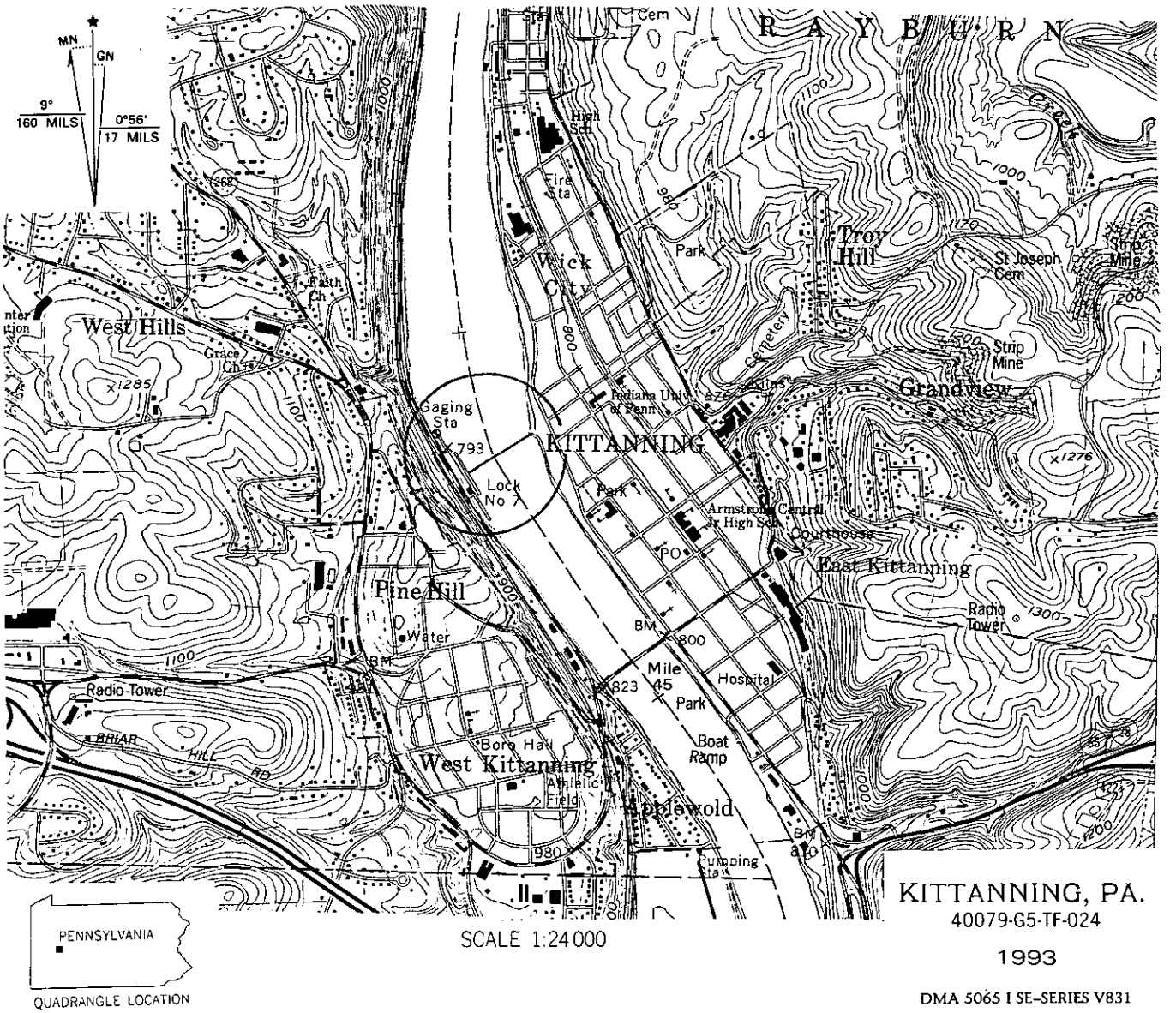
Beginning at a point at the eastern edge of pavement of S.R. 4023, where it intersects the access road to the lock, on the northern edge of pavement of the access road, the boundary runs approximately 75 feet to the northwest along S.R. 4023. It then turns to the northeast for approximately 130 feet, to a point in the river beyond the end of the guide wall. The boundary then runs east across the river to a point near the edge of a parking lot behind an apartment building, approximately 1,220 feet. It then turns to the south-southeast for approximately 225 feet, paralleling the rear of the abutment.

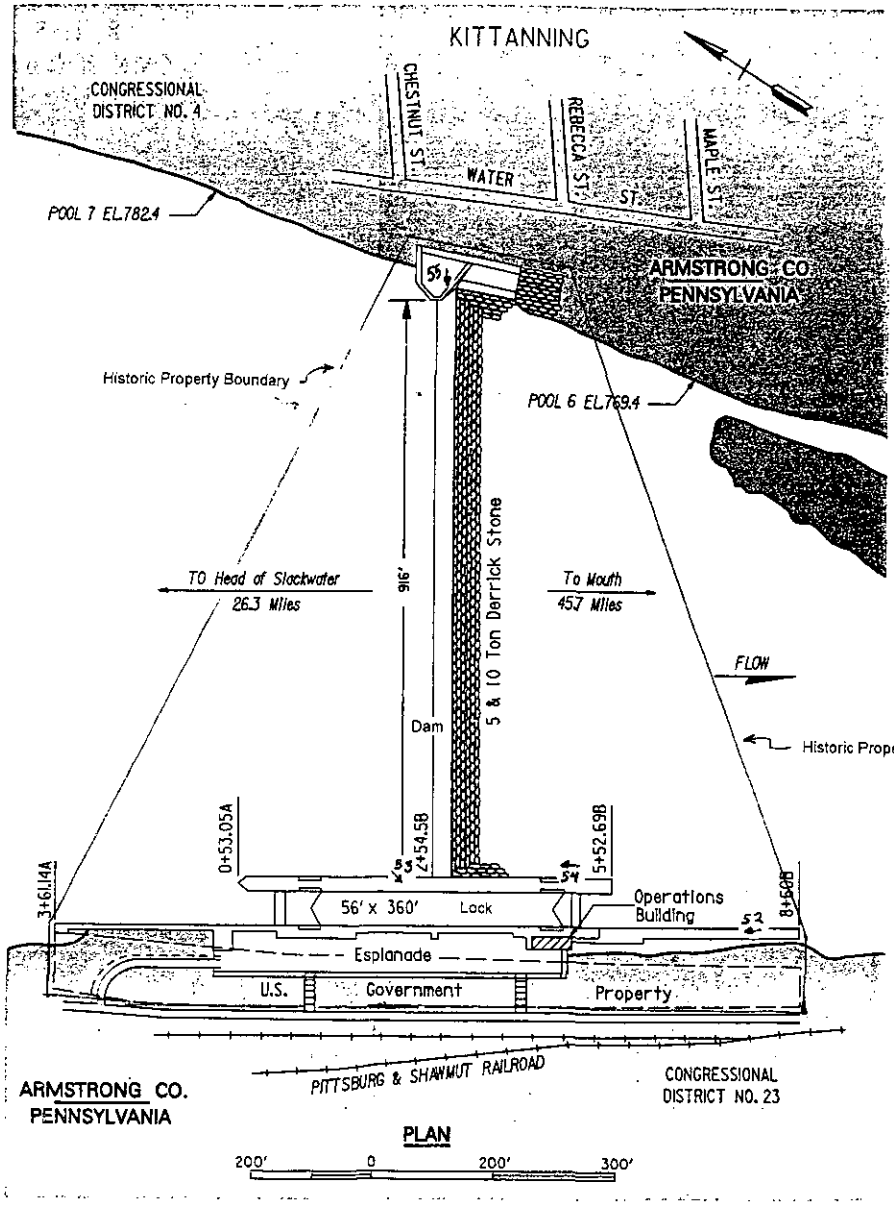
The boundary then turns to the south-southwest, back across the river, for approximately 1,145 feet, near the end of the guide wall. It then runs onshore to the southwest for approximately 125 feet, to the eastern edge of pavement of S.R. 4023. The boundary then follows the eastern edge of pavement of S.R. 4023 to the northwest for approximately 1,155 feet, back to the point of origin.

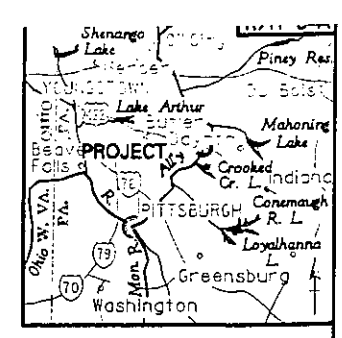
Boundary Justification

The historic property boundary for Lock and Dam No. 7 was drawn to include the primary extant historic components of the lock and dam complex.

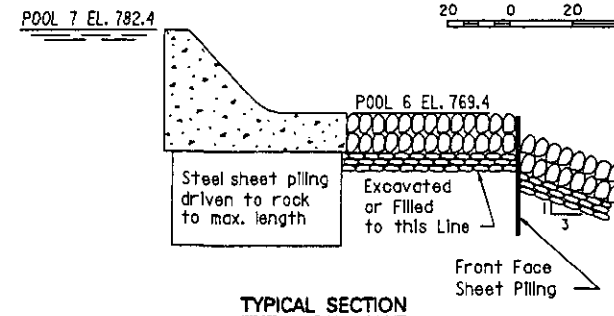
USGS MAP OF LOCK AND DAM NO. 7



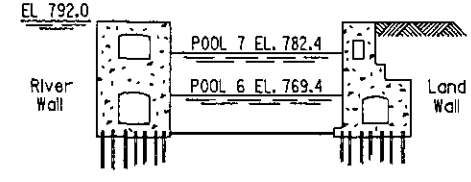




VICINITY MAP
SCALE OF MILES
20 0 20 40



TYPICAL SECTION OF DAM
10' 0 20'



SECTION THROUGH LOCK
20' 0 40'

ALLEGHENY RIVER
LOCK & DAM 7
PLAN AND SECTIONS

PITTSBURGH DISTRICT, PITTSBURGH, PA.

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