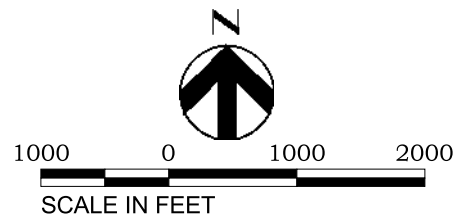




LEGEND

- - - City Boundary
- Drainage Basin Boundary
- Drainage Network
- Streets
- ⊙ NF-ST-1 Structure Identification Number



Source: Dubuque Area Geographic Information System (DAGIS), dated May 2000

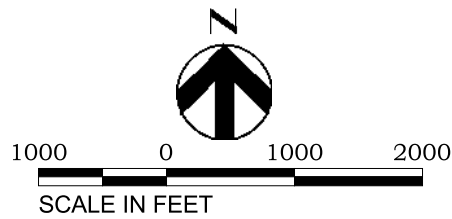
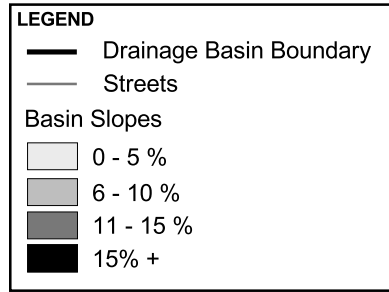
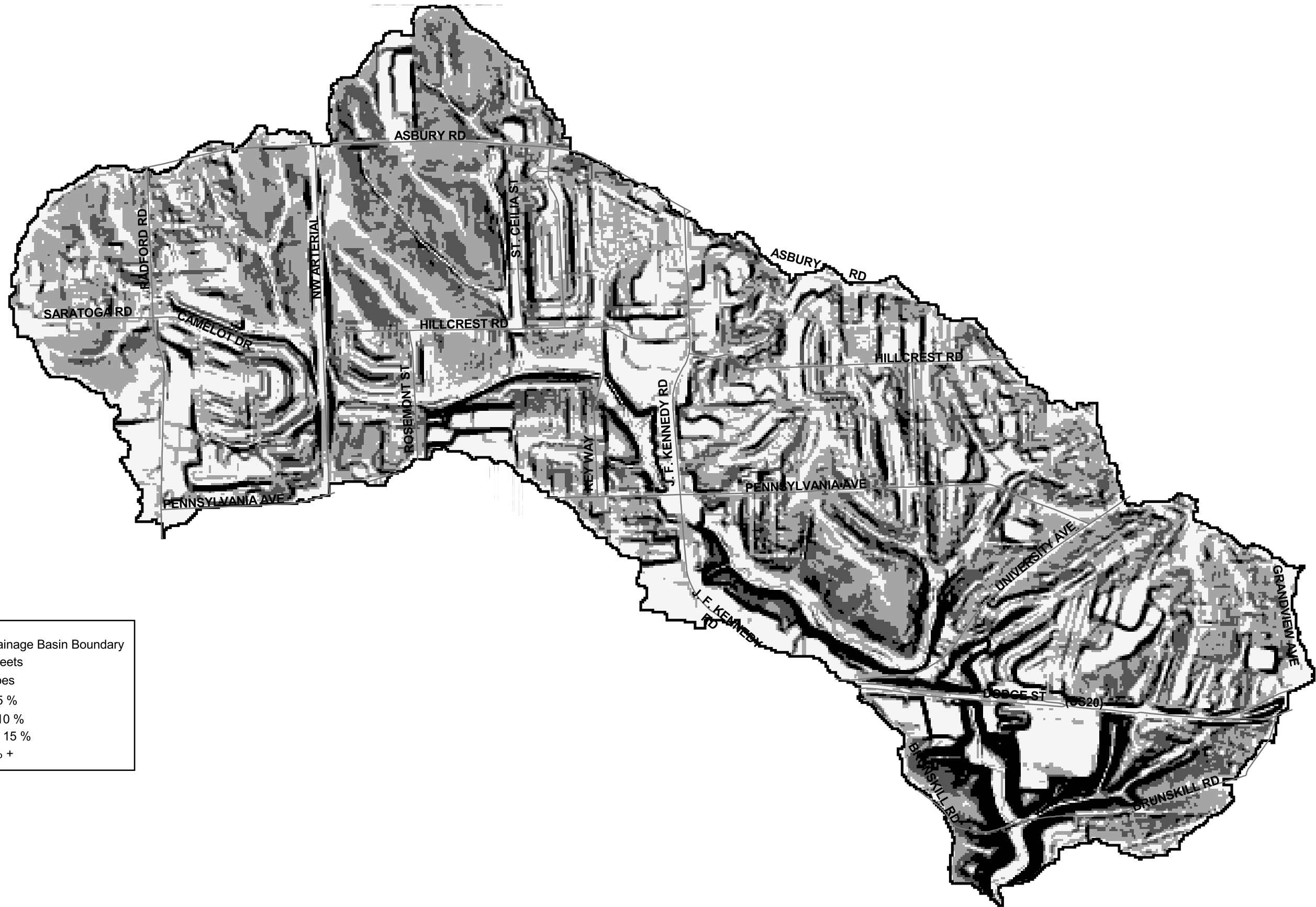
North Fork Catfish Creek Drainage Basin General Drainage Basin



Drainage Basin Master Plan
City of Dubuque, Iowa

Date
FALL 2001

Figure
3-1



HDR

HDR Engineering, Inc.

Source: Dubuque Area Geographic Information System (DAGIS), dated May 2000

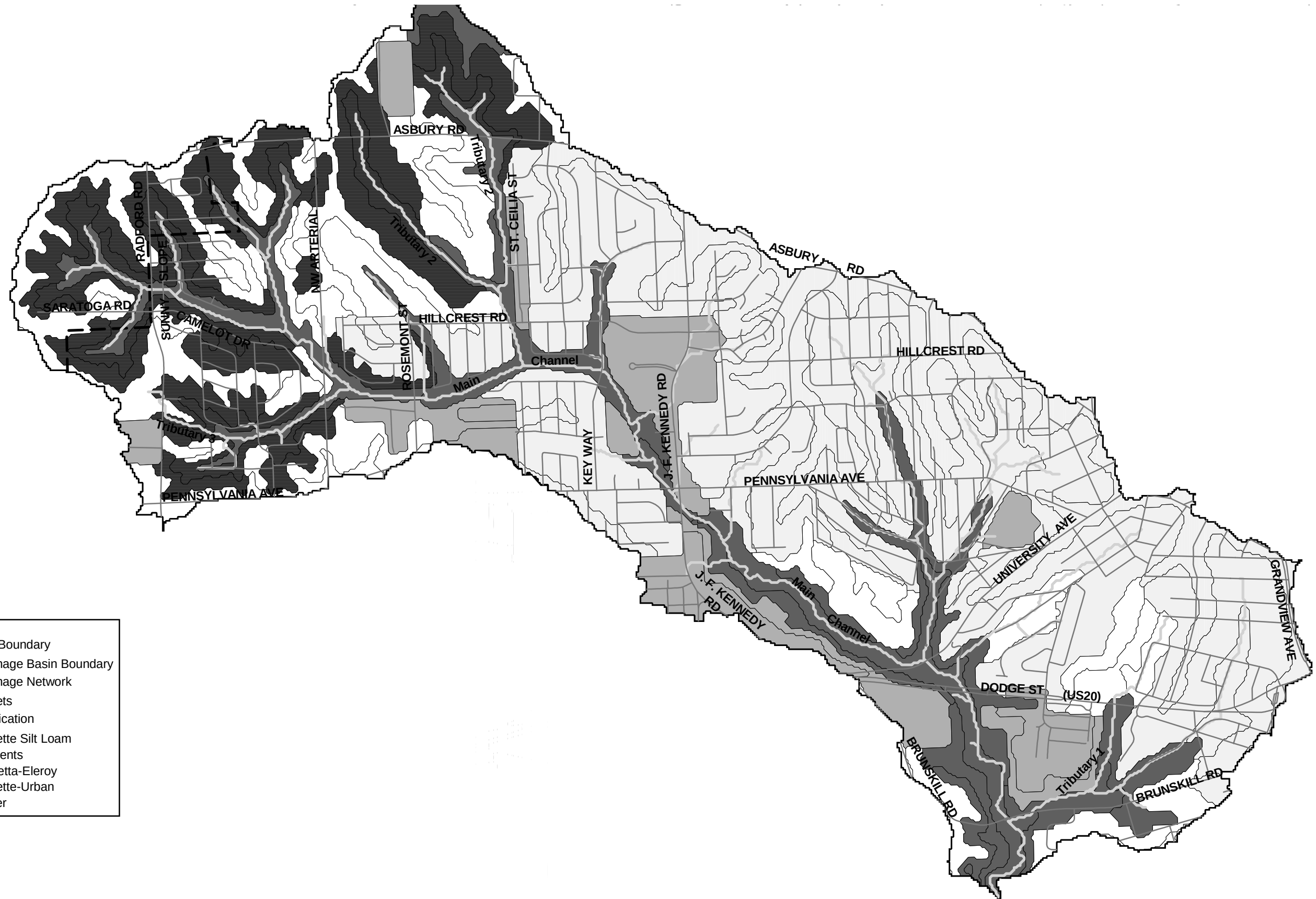
North Fork Catfish Creek Drainage Basin Basin Slope Map



Drainage Basin Master Plan
City of Dubuque, Iowa

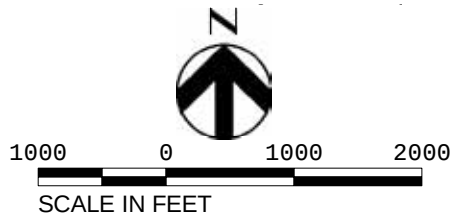
Date
FALL 2001

Figure
3-2



LEGEND

- City Boundary
- Drainage Basin Boundary
- Drainage Network
- Streets
- Soil Classification
 - Fayette Silt Loam
 - Orthents
 - Rozetta-Eleroy
 - Fayette-Urban
 - Other



HDR Engineering, Inc.

Source: Iowa Cooperative Soil Survey, Dubuque Area Geographic Information System (DAGIS), dated May 2000

North Fork Cattfish Creek Drainage Basin Soil Classification Map



Drainage Basin Master Plan
City of Dubuque, Iowa

Date
FALL 2001

Figure
3-3

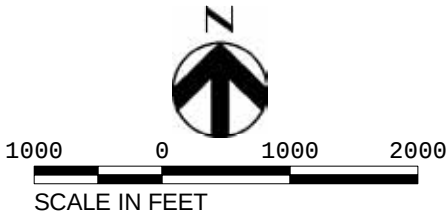


LEGEND

— Drainage Basin Boundary
— Drainage Network

Land Use

- ST - STREETS
- IND - INDUSTRIAL
- CO - COMMERCIAL
- INS - INSTITUTIONAL
- HD - HIGH DENSITY RESIDENTIAL
- MD - MEDIUM DENSITY
- LD - LOW DENSITY RESIDENTIAL
- AG - AGRICULTURE
- OP - OPEN SPACE AND GRASS



- Notes:**
1. Hydrologic analysis performed was based on ultimate land use development classification, except for agricultural land, where the land use was based on agriculture.
 2. Missing data was supplemented, as directed by city staff.



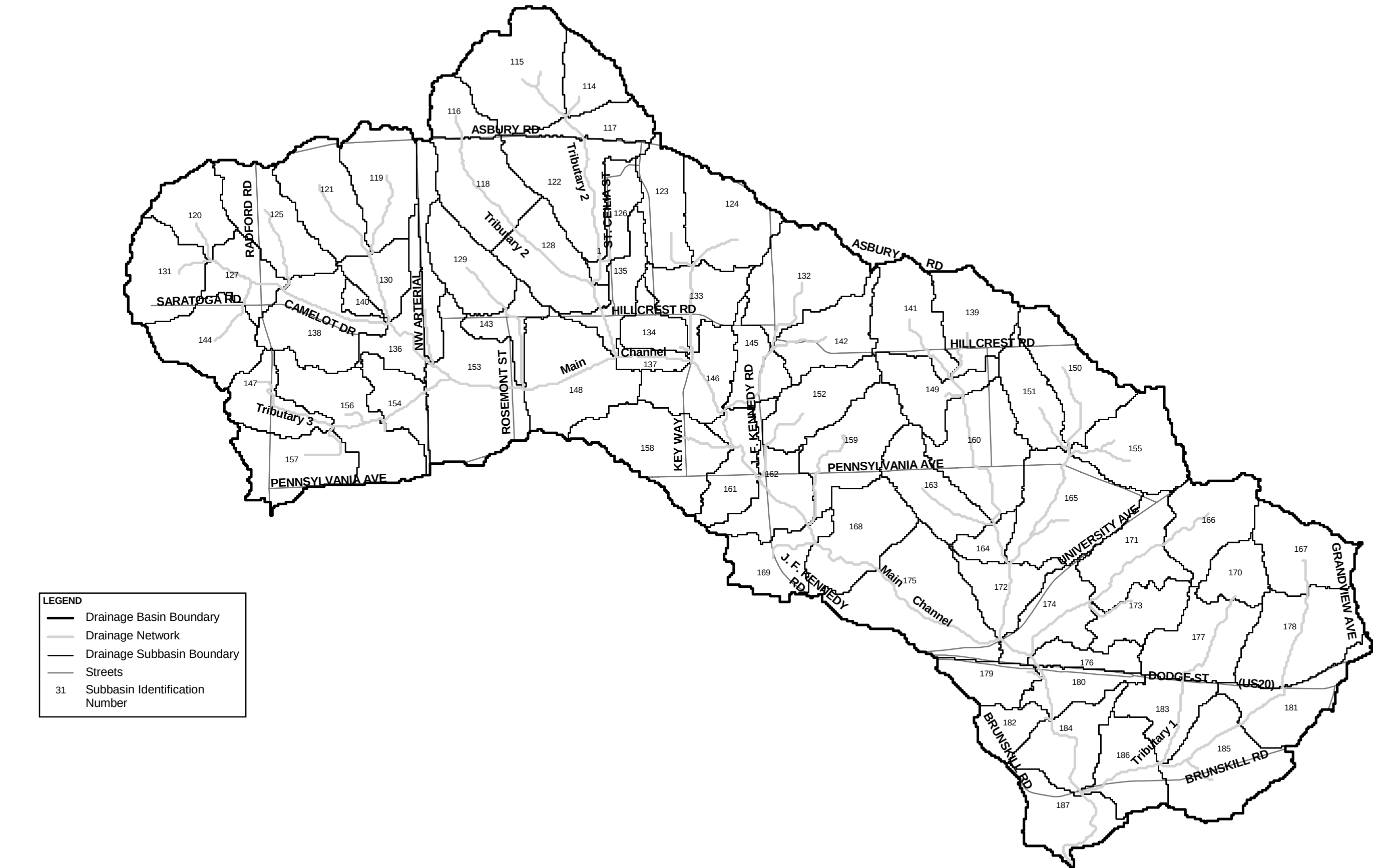
Source: Dubuque Area Geographic Information System (DAGIS), dated May 2000

**North Fork Catfish Creek Drainage Basin
Land Use Classification**



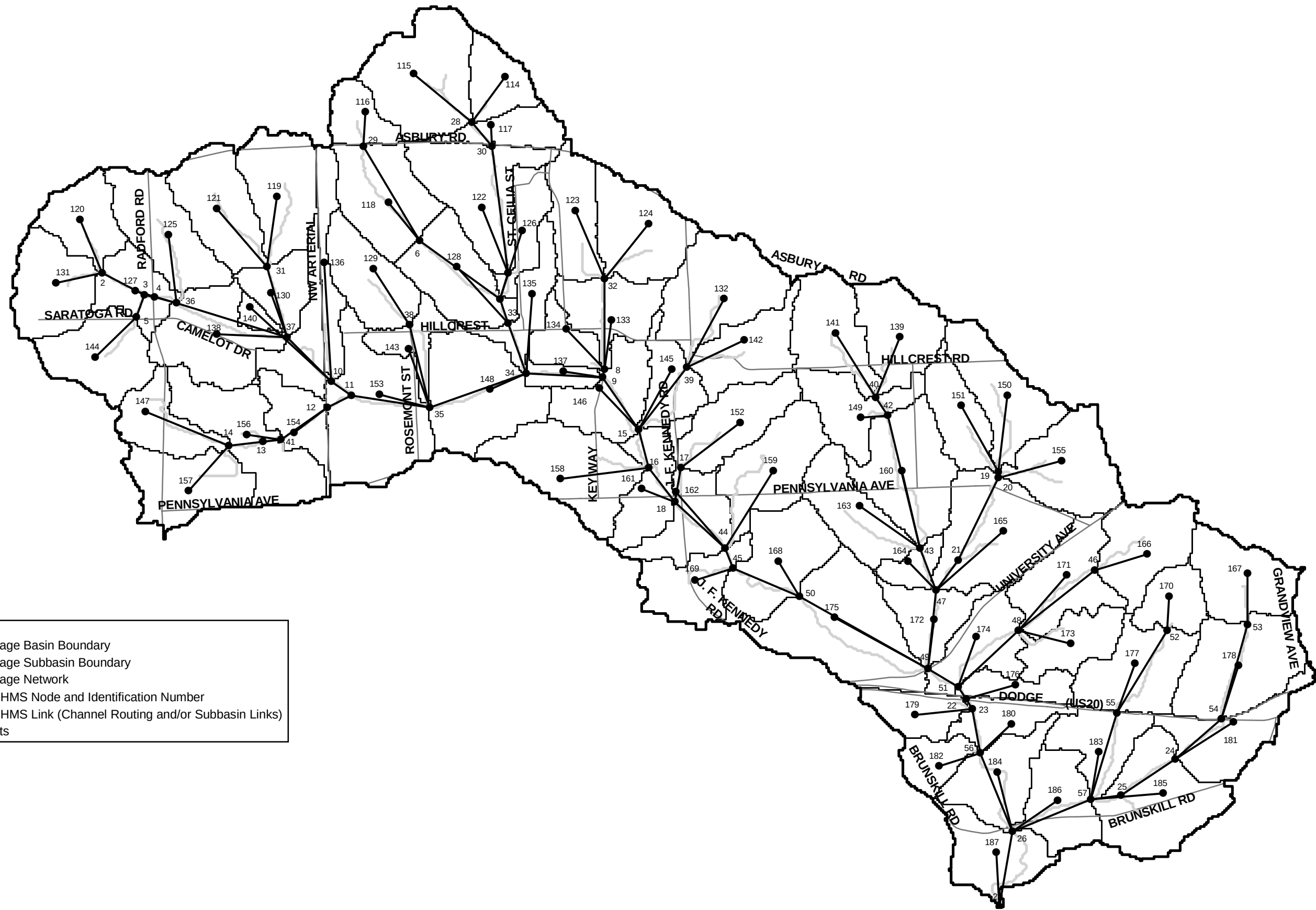
Drainage Basin Master Plan
City of Dubuque, Iowa

Date	FALL 2001
Figure	3-4



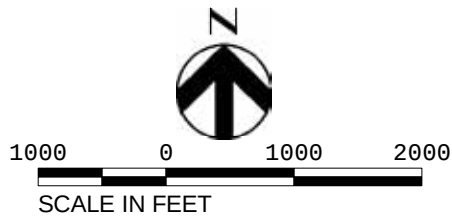
Date
FALL 2001

Figure
3-5



LEGEND

- Drainage Basin Boundary
- Drainage Subbasin Boundary
- Drainage Network
- 120 HEC-HMS Node and Identification Number
- HEC-HMS Link (Channel Routing and/or Subbasin Links)
- Streets



Notes:

1. Location of peak discharges defined by HEC-HMS node identification number.
2. HEC-HMS links represent combining runoff from adjacent subbasins and/or routing runoff through a channel section.



Source: HEC-HMS CRWR PRE-PRO, ArcView Version 4

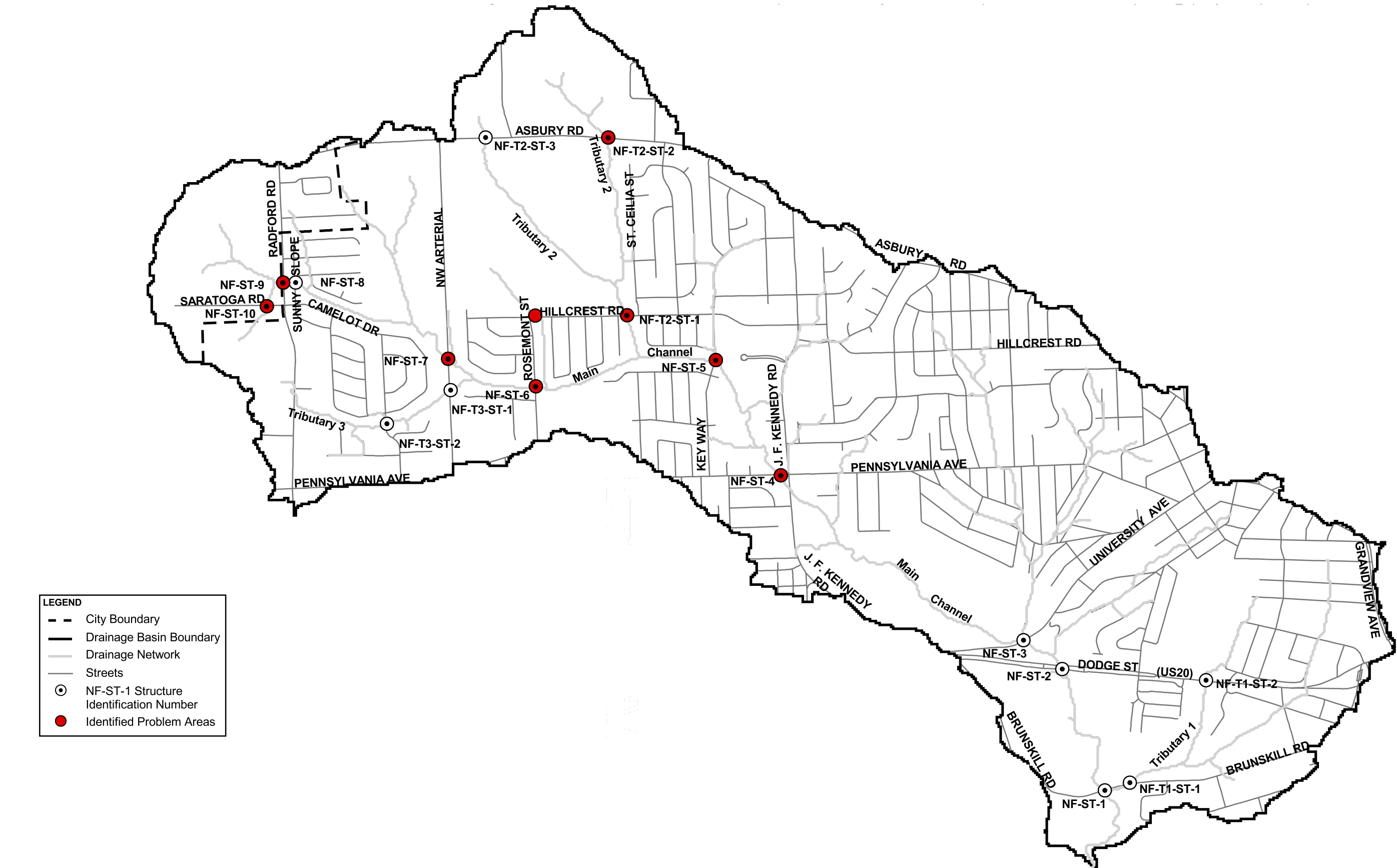
**North Fork Cattfish Creek Drainage Basin
HEC-HMS Model Schematic**



Drainage Basin Master Plan
City of Dubuque, Iowa

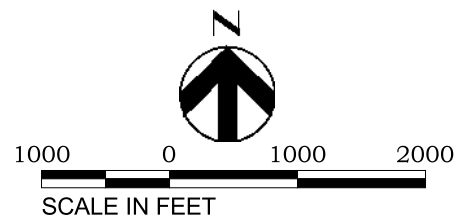
Date
FALL 2001

Figure
3-6



LEGEND

- - - City Boundary
- Drainage Basin Boundary
- Drainage Network
- Streets
- ⊙ NF-ST-1 Structure Identification Number
- Identified Problem Areas



Source: Dubuque Area Geographic Information System (DAGIS), dated May 2000

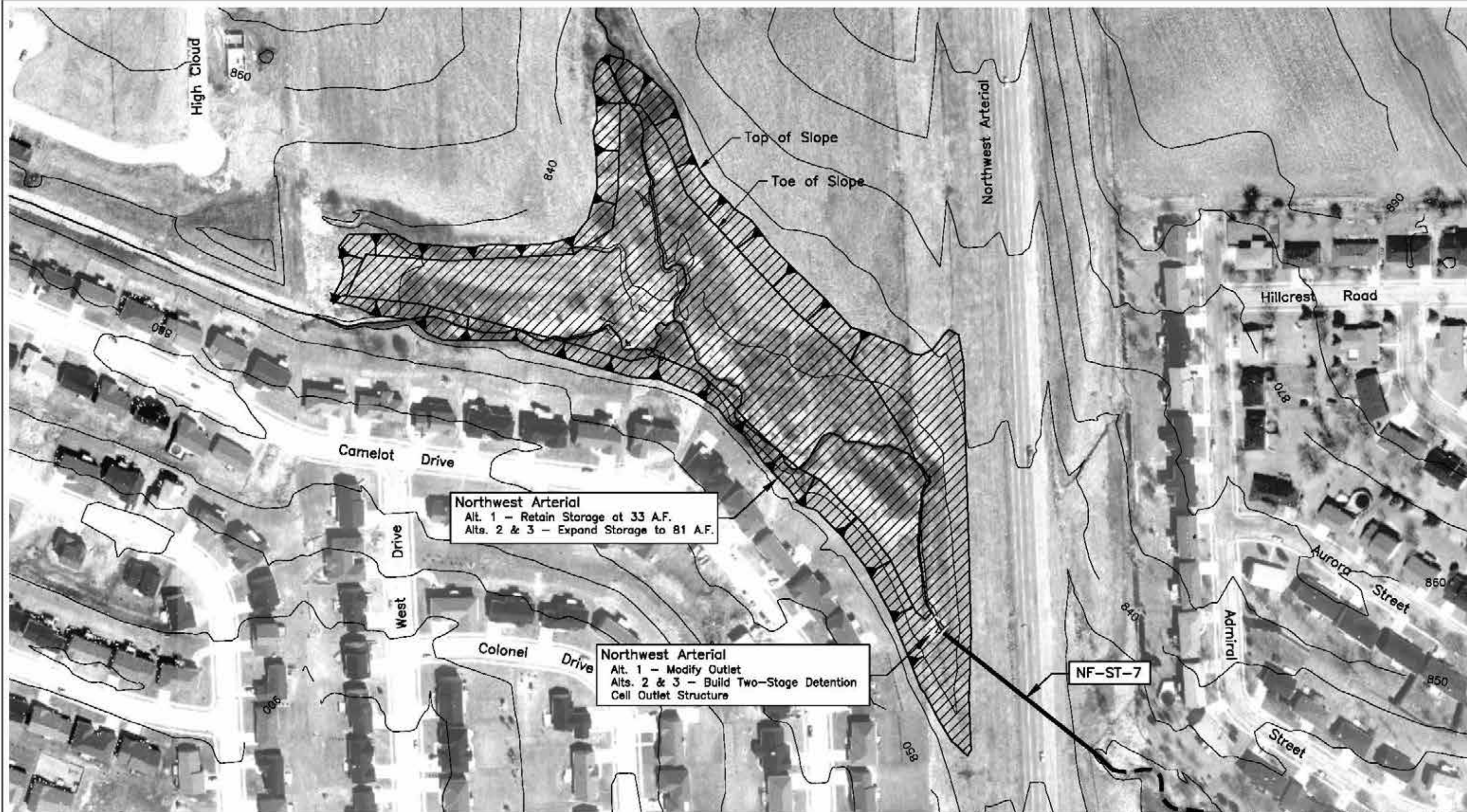
North Fork Catfish Creek Drainage Basin Identified Problem Areas



Drainage Basin Master Plan
City of Dubuque, Iowa

Date
FALL 2001

Figure
3-7



Source: Dubuque Area Geographic Information System (DAGIS), Dated 2000.
Aerial Photography Date 1997.

HDR

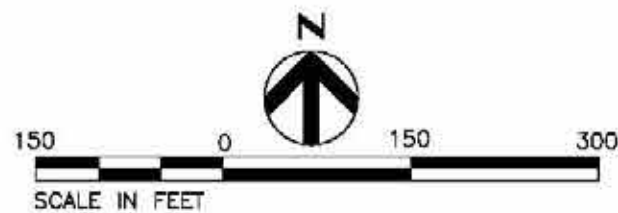
HDR Engineering, Inc.

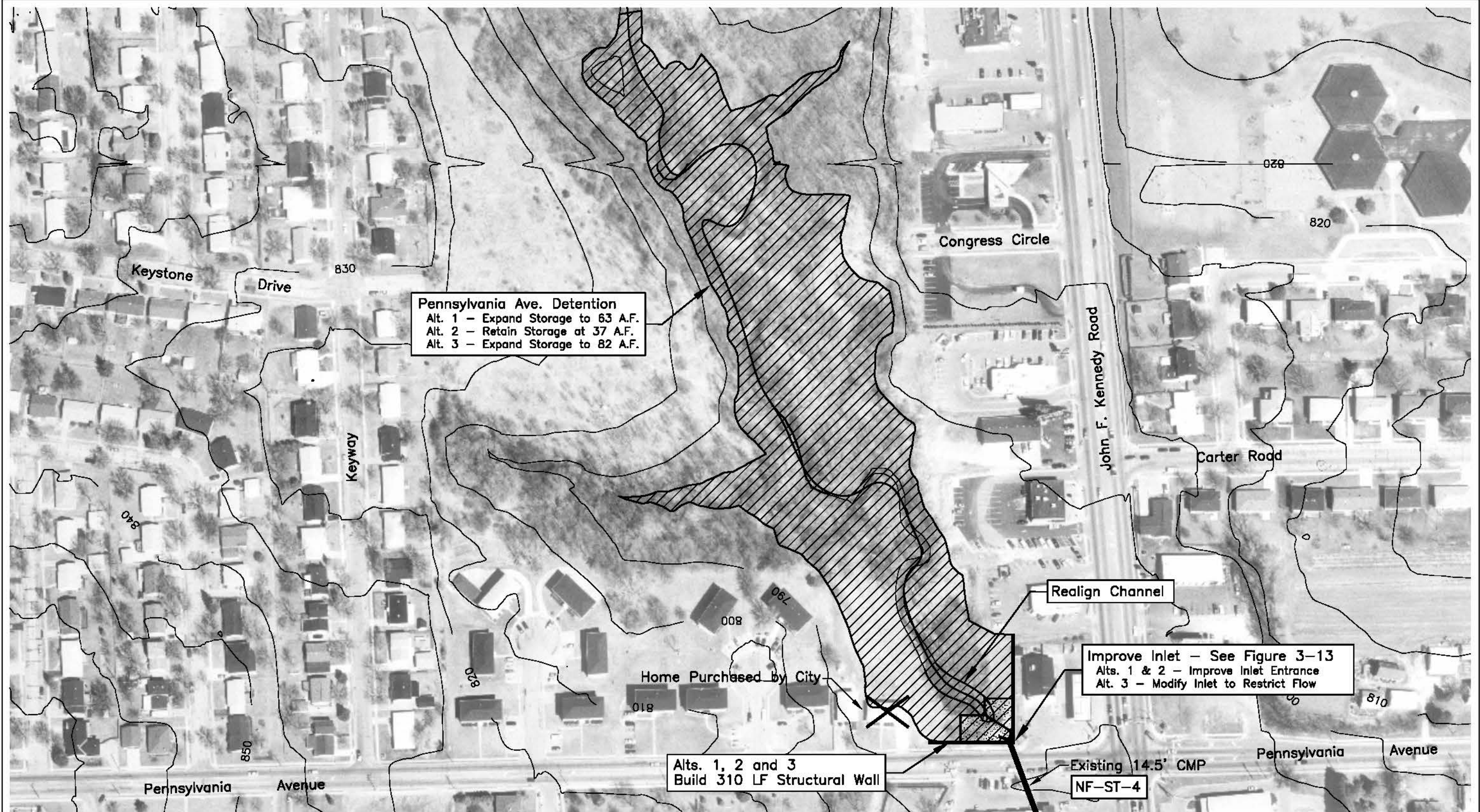
**North Fork Catfish Creek Drainage Basin
Detailed Detention Alternative at Northwest Arterial**

Drainage Basin Master Plan
City of Dubuque, Iowa

Date
Fall 2001

Figure
3-8





Source: Dubuque Area Geographic Information System (DAGIS), Dated 2000.
 Aerial Photography Date 1997.



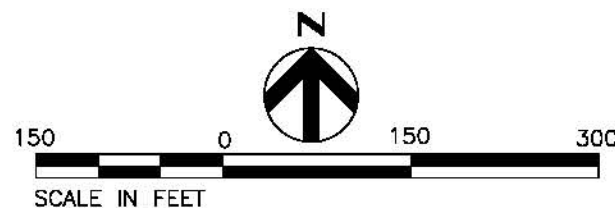
HDR Engineering, Inc.

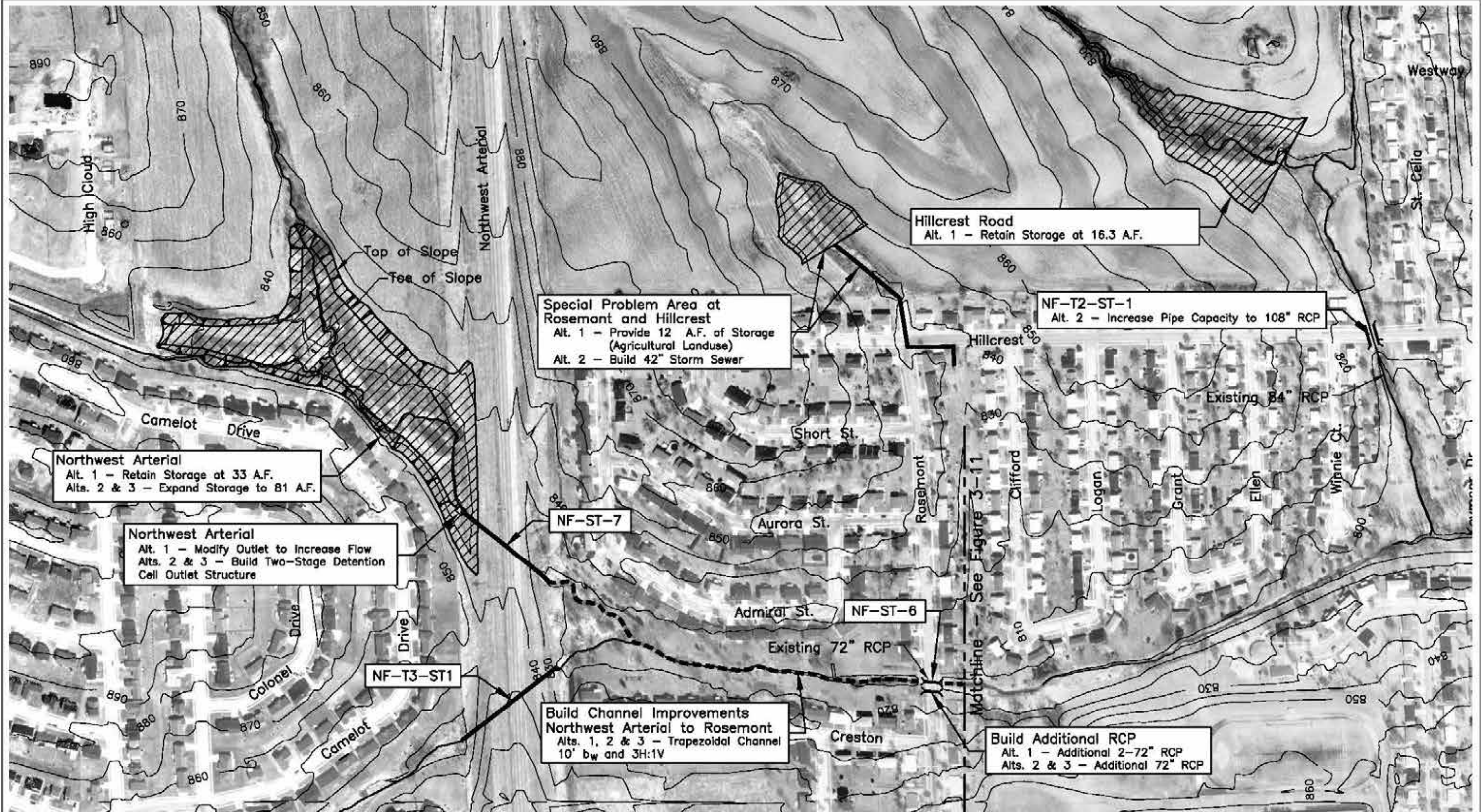
**North Fork Catfish Creek Drainage Basin
 Detailed Detention Alternative at Pennsylvania Ave.**

DRAINAGE BASIN MASTER PLAN
 City of Dubuque, Iowa

Date
 Fall 2001

Figure
 3-9





Source: Dubuque Area Geographic Information System (DAGIS), Dated 2000.
Aerial Photography Date 1997.



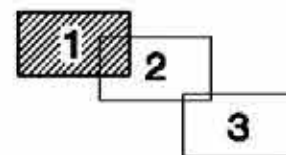
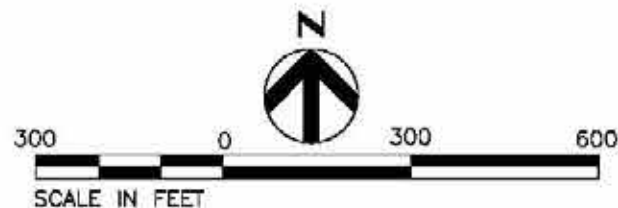
HDR Engineering, Inc.

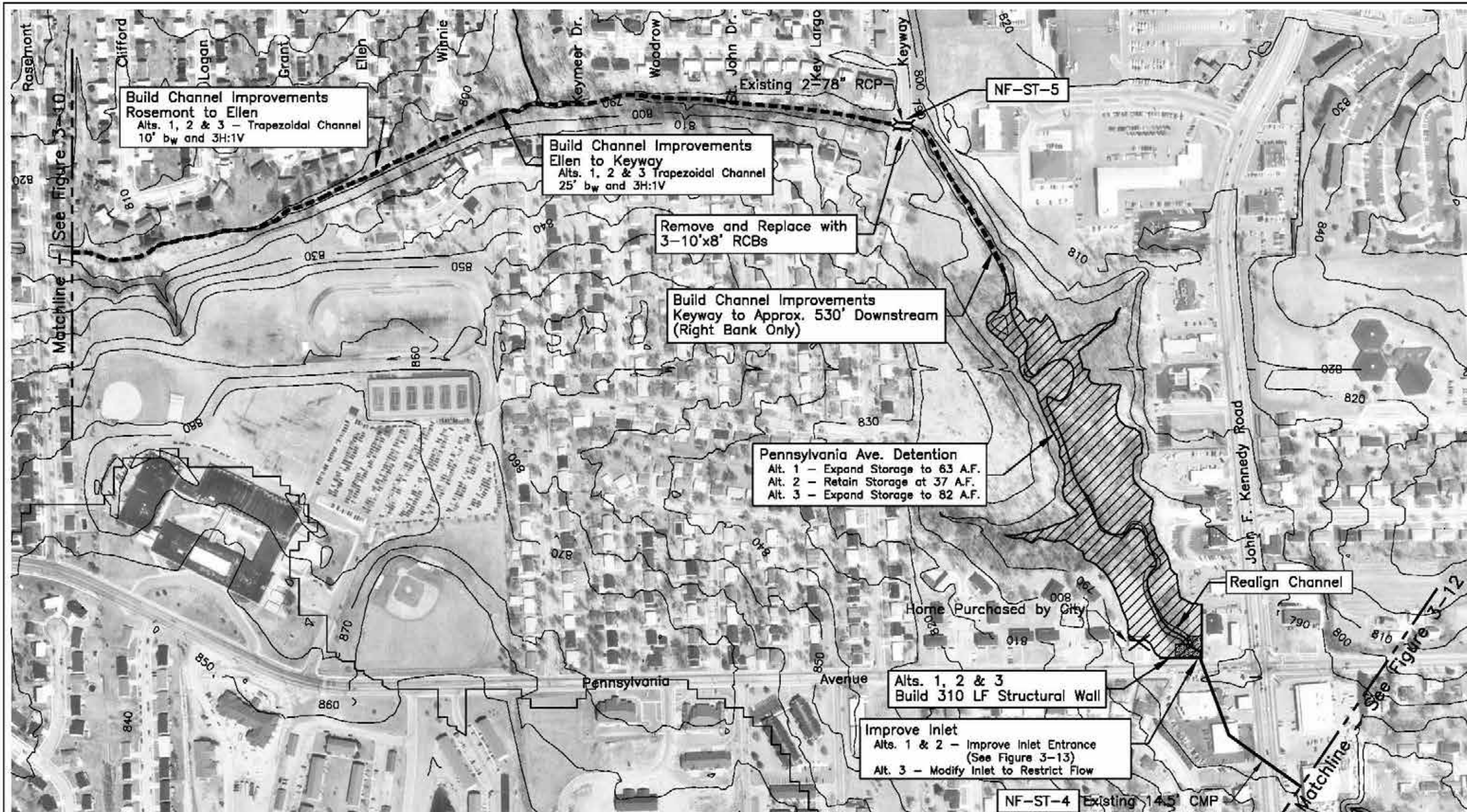
North Fork Catfish Creek Drainage Basin Reach: Northwest Arterial to Rosemont

Drainage Basin Master Plan
City of Dubuque, Iowa

Date
Fall 2001

Figure
3-10





Source: Dubuque Area Geographic Information System (DAGIS), Dated 2000.
 Aerial Photography Date 1997.



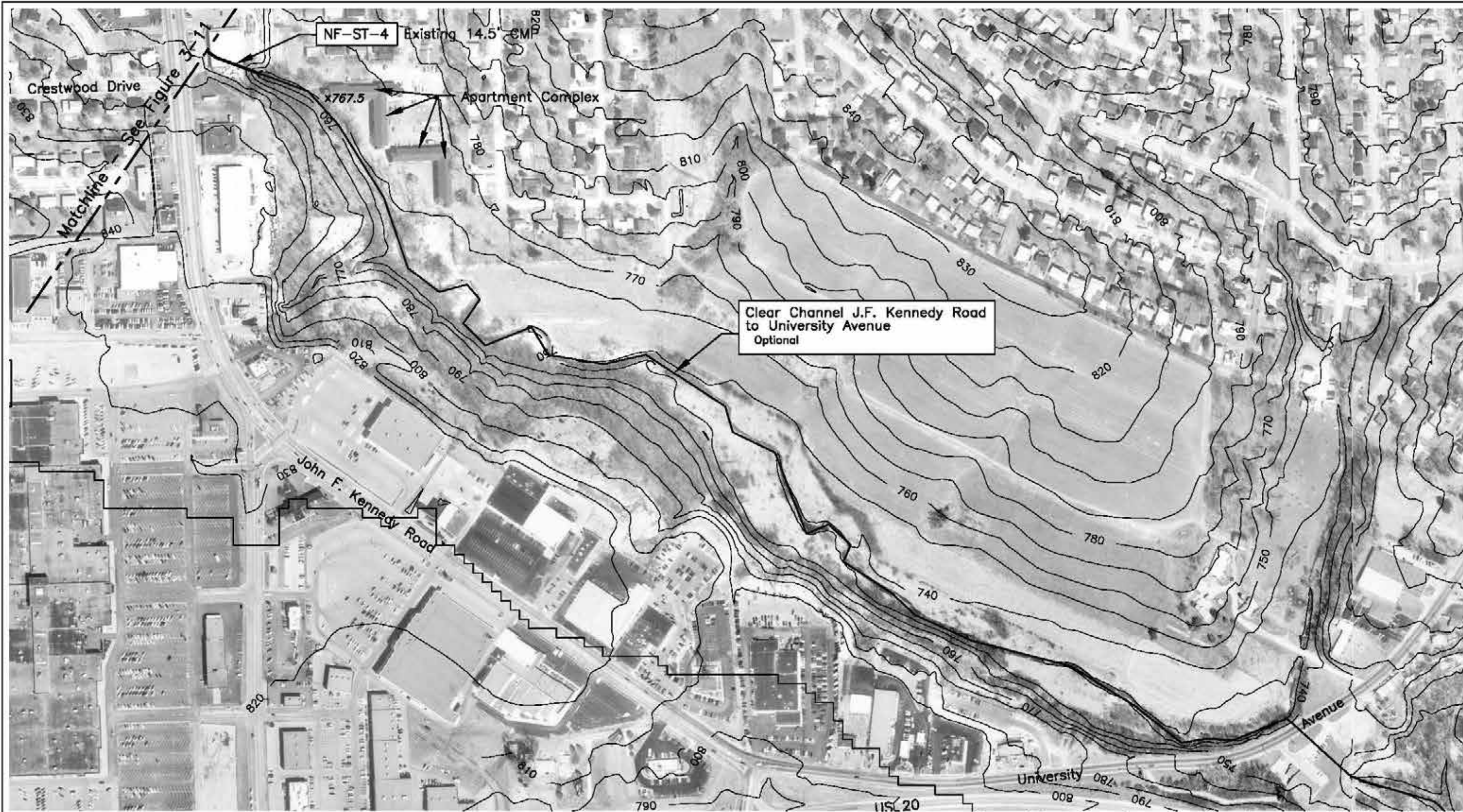
HDR Engineering, Inc.

North Fork Catfish Creek Drainage Basin Reach: Rosemont to Pennsylvania

Drainage Basin Master Plan
 City of Dubuque, Iowa

Date
 Fall 2001

Figure
 3-11



Source: Dubuque Area Geographic Information System (DAGIS), Dated 2000.
 Aerial Photography Date 1997.

HDR

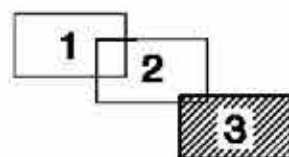
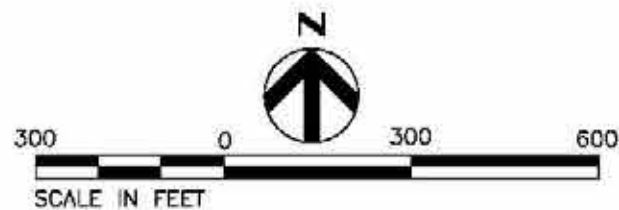
HDR Engineering, Inc.

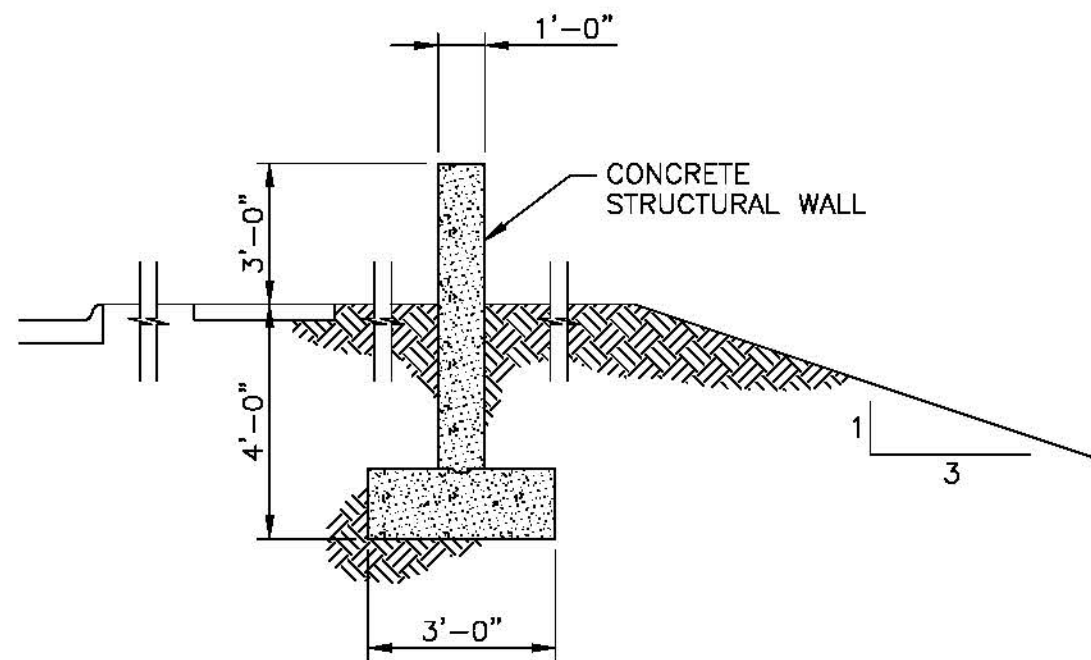
**North Fork Catfish Creek Drainage Basin
 Reach: Pennsylvania to University**

Drainage Basin Master Plan
 City of Dubuque, Iowa

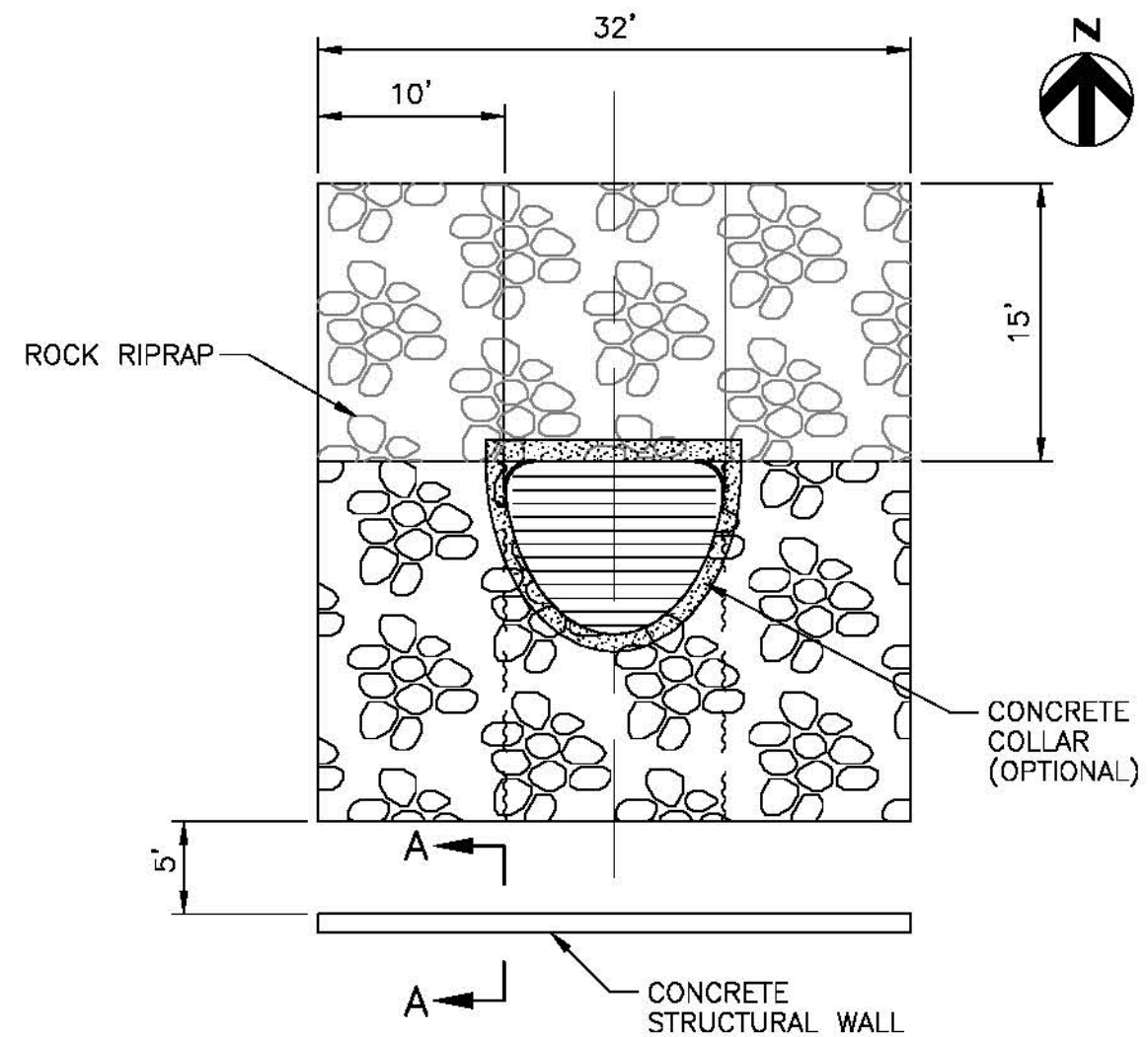
Date
 Fall 2001

Figure
 3-12





SECTION A-A
NO SCALE



PARTIAL PLAN
NO SCALE



HDR Engineering, Inc.

**North Fork Catfish Creek Drainage Basin
Proposed Inlet Improvements at Pennsylvania**

Drainage Basin Master Plan
City of Dubuque, Iowa

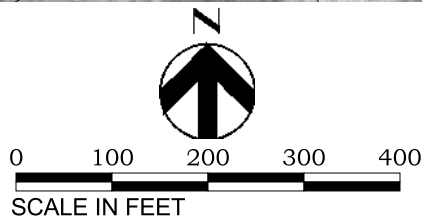
Date
Fall 2001

Figure
3-13



LEGEND

	100-yr Inundation - Existing Conditions
	100-yr Inundation - Alternative 1
	100-yr Inundation - Alternative 2



- Notes:**
- Alternative 1 - Build additional detention storage at Pennsylvania
Build channel improvements from Northwest Arterial to approximately 530 feet downstream of Keyway
- Alternative 2 - Build additional detention storage at Northwest Arterial
Build channel improvements from Northwest Arterial to approximately 530 feet downstream of Keyway
- Alternative 3 - Inundation not shown, as Alternative 3 is similar to Alternative 2 downstream of Keyway and identical to Alternative 1 upstream of Keyway.



Source: Dubuque Area Geographic Information System (DAGIS), dated May 2000, Aerial Photography, dated 1997

**North Fork Catfish Creek Drainage Basin
Flood Inundation Map - Rosemont to Winnie**



Drainage Basin Master Plan
City of Dubuque, Iowa

Date	FALL 2001
Figure	3-14



Notes:

- Alternative 1 - Build additional detention storage at Pennsylvania
Build channel improvements from Northwest Arterial to approximately 530 feet downstream of Keyway
- Alternative 2 - Build additional detention storage at Northwest Arterial
Build channel improvements from Northwest Arterial to approximately 530 feet downstream of Keyway
- Alternative 3 - Inundation not shown, as Alternative 3 is similar to Alternative 2 downstream of Keyway and identical to Alternative 1 upstream of Keyway.



HDR Engineering, Inc.

Source: Dubuque Area Geographic Information System (DAGIS), dated May 2000, Aerial Photography, dated 1997

**North Fork Catfish Creek Drainage Basin
Flood Inundation Map - Winnie to Carter**



Drainage Basin Master Plan
City of Dubuque, Iowa

Date

FALL 2001

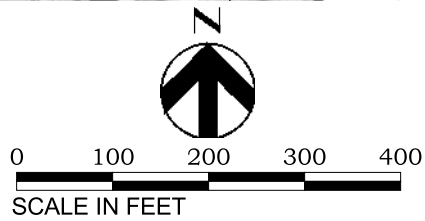
Figure

3-15



LEGEND

- 100-yr Inundation - Existing Conditions
- 100-yr Inundation - Alternative 1
- 100-yr Inundation - Alternative 2



- Notes:**
- Alternative 1 - Build additional detention storage at Pennsylvania
Build channel improvements from Northwest Arterial to approximately 530 feet downstream of Keyway
 - Alternative 2 - Build additional detention storage at Northwest Arterial
Build channel improvements from Northwest Arterial to approximately 530 feet downstream of Keyway
 - Alternative 3 - Inundation not shown, as Alternative 3 is similar to Alternative 2 downstream of Keyway and identical to Alternative 1 upstream of Keyway.



Source: Dubuque Area Geographic Information System (DAGIS), dated May 2000, Aerial Photography, dated 1997

North Fork Catfish Creek Drainage Basin Flood Inundation Map - Carter to Ideal



Drainage Basin Master Plan
City of Dubuque, Iowa

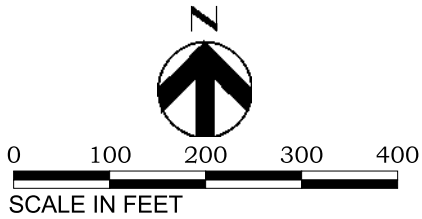
Date
FALL 2001

Figure
3-16



LEGEND

- 100-yr Inundation - Existing Conditions
- 100-yr Inundation - Alternative 1
- 100-yr Inundation - Alternative 2



- Notes:**
- Alternative 1 - Build additional detention storage at Pennsylvania
Build channel improvements from Northwest Arterial to approximately 530 feet downstream of Keyway
 - Alternative 2 - Build additional detention storage at Northwest Arterial
Build channel improvements from Northwest Arterial to approximately 530 feet downstream of Keyway
 - Alternative 3 - Inundation not shown, as Alternative 3 is similar to Alternative 2 downstream of Keyway and identical to Alternative 1 upstream of Keyway.



Source: Dubuque Area Geographic Information System (DAGIS), dated May 2000, Aerial Photography, dated 1997

North Fork Cattfish Creek Drainage Basin Flood Inundation Map - Ideal to University



Drainage Basin Master Plan
City of Dubuque, Iowa

Date
FALL 2001

Figure
3-17