

April 20, 2007

Virginia A. Dienstbier, Office Manager
Rural Development Association of NE Kansas
205 S. 8th, Suite 3
P. O. Box 207
Sabetha, KS 66534

Dear Ms. Dienstbier,

I was asked to review the Baileyville Improvement District project for construction of a new sewer lagoon and expansion of an existing lagoon in T2S-R 11E Sec 27 SW. Based on our conversation earlier this week my understanding is that the city currently has no leakage problem with the existing lagoon but is doing expansion mainly for increased capacity. Also you mentioned that the permeability test done on the proposed soil in the construction area showed low permeability.

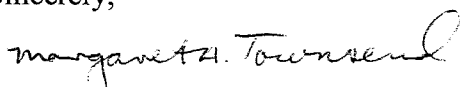
According to the NRCS Web Soil map the area of interest is underlain by the Pawnee clay loam and the Kennebec silt loam. Both of these soils have about 55% or more silt and about 30 to 35% clay in their composition. Since leaching is the most likely problem with the site having a compacted clay liner and possibly a synthetic liner would be the most likely way to minimize this potential problem. I would recommend that the engineering company doing the work have permeability tests done on the soil and follow the KDHE recommendations for lining lagoons. I do not have access to the permeability tests that were done nor am I personally familiar with the soils involved so I would strongly recommend that testing be done prior to construction.

The second issue is the location of the lagoons near the creek to the east. The Kennebec soil is described as occasionally flooded. I presume this is an issue with the present lagoons and that constructions have been selected to minimize the potential for flooding and overtopping of the lagoon if a sufficiently large rain event occurs. I would recommend that the engineers have some sort of design to minimize the potential of this occurring.

There is minimal information concerning groundwater in this region. The records we have show that water level ranges from 9 ft to 30 ft in section 28. These wells are all plugged at this time. The shallow water level would suggest that if leakage occurs from the lagoons that the ground water would eventually be impacted even though the flow downward through the soil would be slow. I would again stress the need to ensure that the lagoons are adequately lined in the KDHE approved method for the area.

Other than the issues above I see no other geologic reason why the project should not proceed. The above comments are based on a conversation with the applicant and also are based on information that the Kansas Geological Survey has on this proposed site. Other geologic and engineering conditions, not discussed here, might affect the stability or safe operation of the proposal. It is the responsibility of the applicant to produce the detailed site evaluation.

Sincerely,



Margaret A. Townsend
Geohydrology Section

**AGENCY REVIEW TRANSMITTAL FORM
BAILEYVILLE IMPROVEMENT DISTRICT
WASTEWATER TREATMENT PROJECT**

Comments By: Kansas Geological Survey Transmittal Date _____

This form provides notification and the opportunity for your agency to review and comment on the proposed project as required by Kansas Department of Commerce, CDBG programs environmental review process. Please complete Parts II and III as appropriate and return to the contact person listed below. Your prompt response will be appreciated.

Return to: Virginia Dienstbier
Rural Development Association of NEK
P.O. Box 207
Sabetha, KS 66534

PART I

REVIEW AGENCIES/COMMISSIONS

☐ Aging	☐ Education	☐ State Forester
☐ Agricultural DWR	☒ Geological Survey	☐ Transportation
☐ Biological Survey	☐ Health & Environment	☐ Water Office, KS
☐ Conservation Comm.	☐ Historical Society	☐ Wildlife & Parks
☐ Commerce	☐ Social & Rehabilitation	

Part II

AGENCY REVIEW COMMENTS

COMMENTS: (attach additional sheet if necessary)

RE:

A tract of land in the Southwest Quarter of Section 27, Township 2 South, Range 11 East of the South Principal Meridian in Nemaha County, Kansas being more fully described as follows:

Beginning at a point on the North Right-of-way line of U.S. Highway 36, said point being 1560.43 feet east and 30.00 feet North of the Southwest Corner of said Section 27, Township 2 South, Range 11 East; Thence Northerly (Az 1 degree 10'05") for 521.32 feet; Thence Easterly (Az 91degrees 10'05") for 309.52 feet; Thence Northwesterly (Az 329 degrees 20'00") for 176.56 feet; Thence Westerly (Az 217 degrees 10'05") for 341.39 feet; Thence Southerly (Az 181 degrees 10' 05") for 671.31 feet to the North Right-of-way line of U.S. Highway 36; Thence Easterly (Az 91 degrees 10' 05") along said North Right-of-way line for 125.00 feet to the Point of Beginning. Containing 2.83 acres more or less.

**BAILEYVILLE IMPROVEMENT DISTRICT
WASTEWATER TREATMENT PROJECT**
Page 2

Part III

RECOMMENDED ACTIONS/COMMENTS

____ Clearance of the project
Should be granted



Clearance of the project should not be delayed but the Applicant should (in the final application) address and clarify the questions or concerns indicated above.

____ Clearance of the project should be
Delayed until the issues or questions
above have been clarified.



Request the opportunity to review final application prior to submission to the Federal Funding Agency

____ Request a State Process Recommendation
In concurrence with the above comments

Division/Agency/Commission

Reviewer' Name: Margaret A. Townsend
Kansas Geological Survey

Date 4-20-07

March 22, 2007



Rural Development Association
of Northeast Kansas

Kansas Geological Survey
1930 Constant Avenue
Lawrence, KS 66047-3726

205 S. 8th, Suite 3
PO Box 207
Sabetha, KS 66534
Phone: (785) 284-3099
Fax: (785) 284-3117
Email: rdaneknancy@mewlan.com
Email: office.manager@rdanek.com
<http://www.rdanek.com>

RE: Nemaha County on behalf of the Baileyville Improvement District
Wastewater Treatment Improvement – Sewer Lagoon Project

Nemaha County on behalf of the Baileyville Improvement District is applying for a CDBG Grant in the amount of \$173,000 and a KDHE Loan in the amount of \$106,068 with the Baileyville Improvement District providing \$69,194.

The project will consist of constructing one new sewer lagoon and expanding an existing lagoon, more than doubling the capacity of the three existing lagoons. In order to accomplish this expansion the District will need to acquire an additional 2.83 acres adjacent to the existing facility. The legal description of the land to be acquired is as follows:

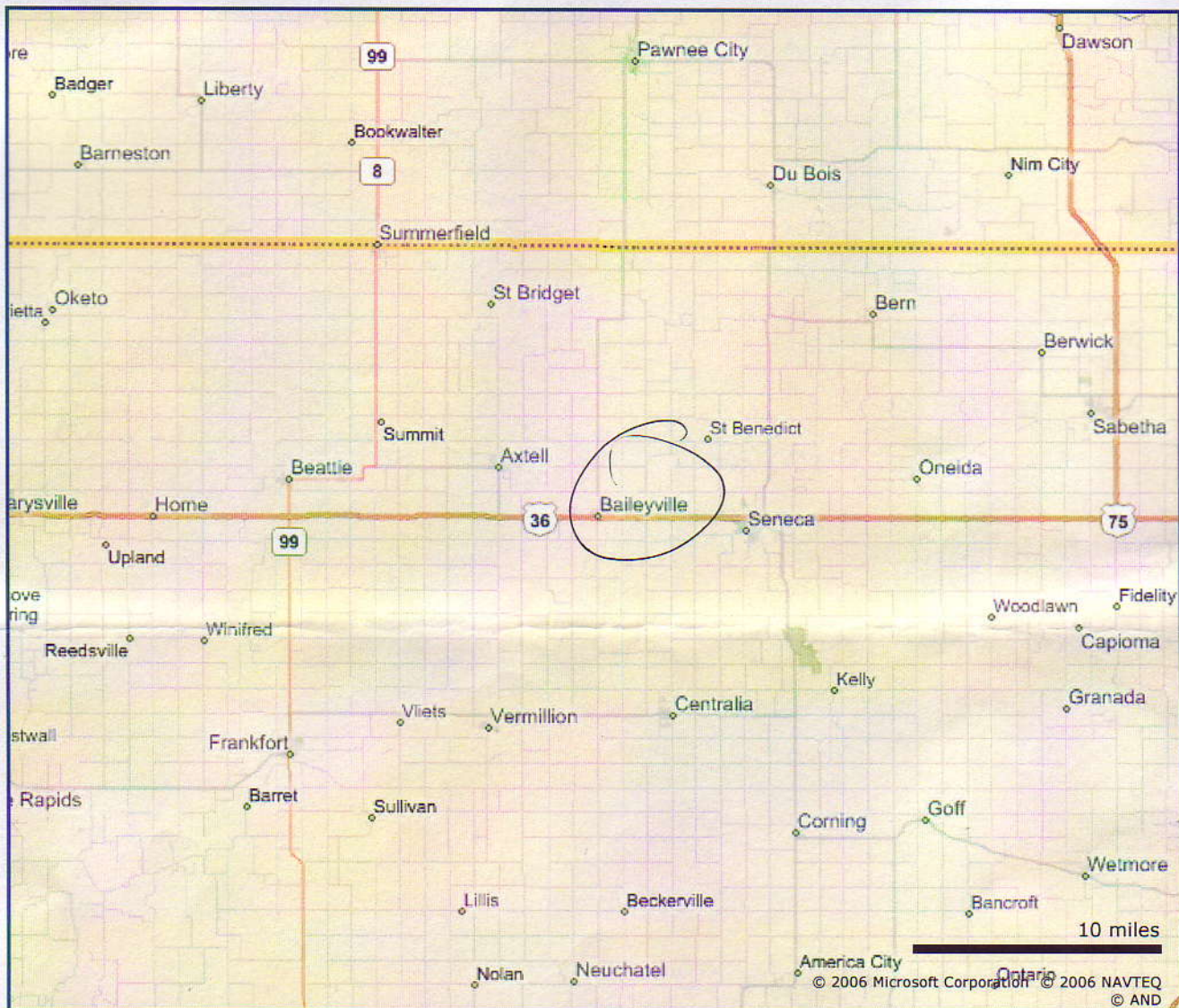
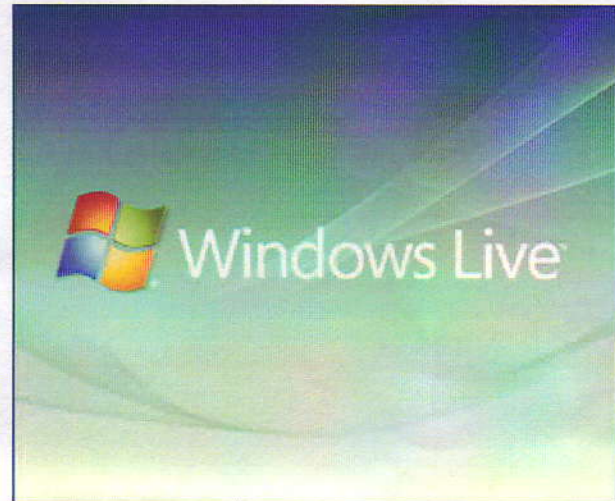
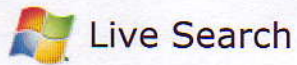
A tract of land in the Southwest Quarter of Section 27, Township 2 South, Range 11 East of the South Principal Meridian in Nemaha County, Kansas being more fully described as follows:

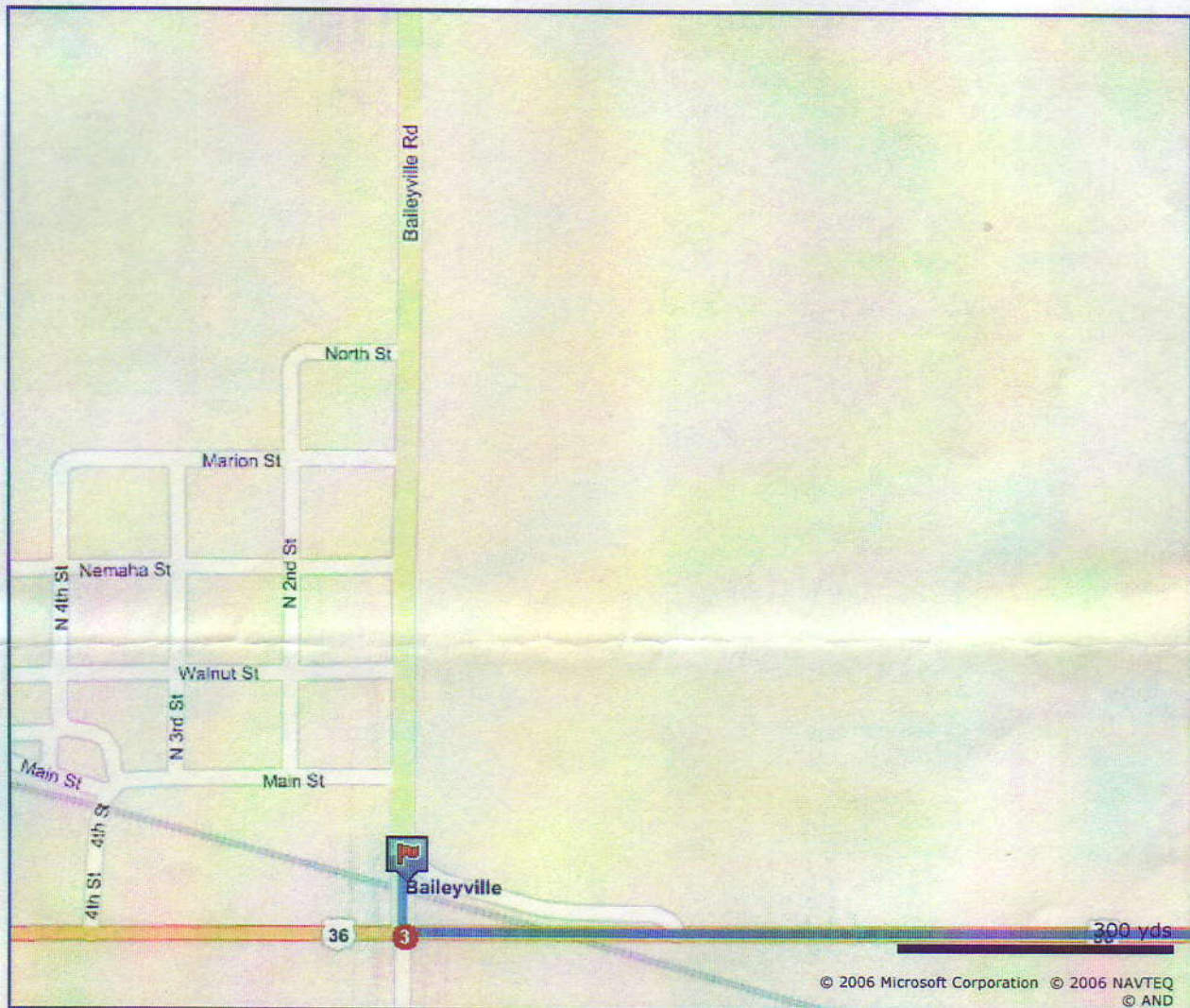
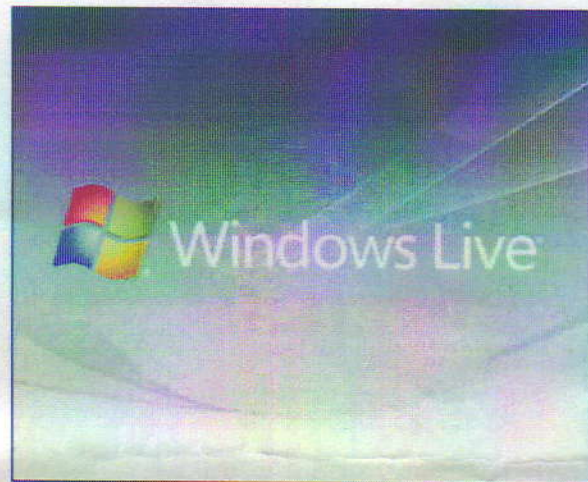
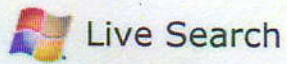
Beginning at a point on the North Right-of-way line of U.S. Highway 36, said point being 1560.43 feet east and 30.00 feet North of the Southwest Corner of said Section 27, Township 2 South, Range 11 East; Thence Northerly (Az 1 degree 10'05") for 521.32 feet; Thence Easterly (Az 91degrees 10'05") for 309.52 feet; Thence Northwesterly (Az 329 degrees 20'00") for 176.56 feet; Thence Westerly (Az 217 degrees 10'05") for 341.39 feet; Thence Southerly (Az 181 degrees 10' 05") for 671.31 feet to the North Right-of-way line of U.S. Highway 36; Thence Easterly (Az 91 degrees 10' 05") along said North Right-of-way line for 125.00 feet to the Point of Beginning. Containing 2.83 acres more or less.

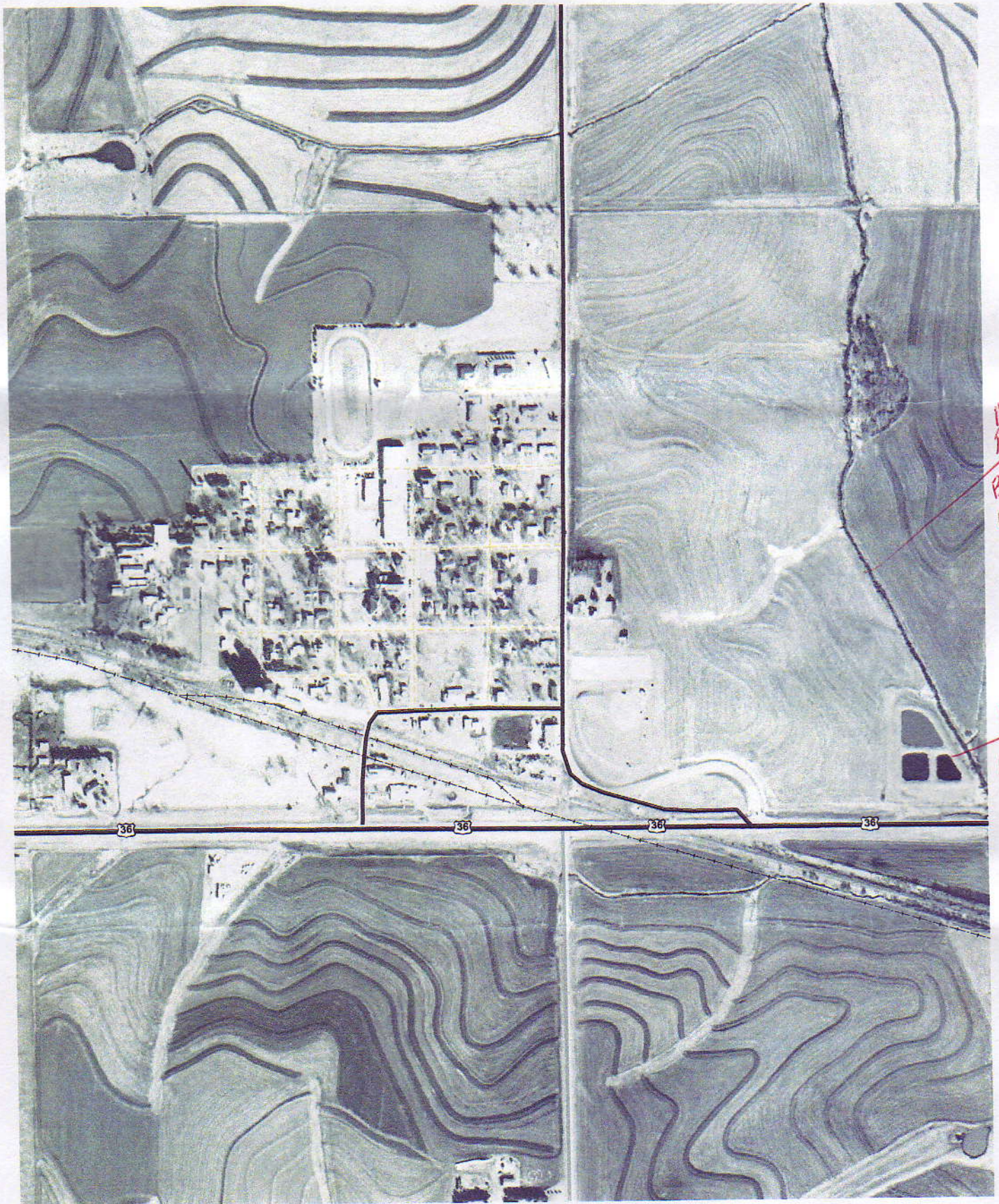
The current use of the land is Agricultural. A map of the area and the project area is enclosed for your reference. If you have questions or need more information, please contact Rural Development Association of Northeast Kansas, 785-284-3099. Please respond by April 23, 2007.

Sincerely,

A handwritten signature in cursive script, reading "Virginia A. Dienstbier".
Virginia A. Dienstbier
Office Manager
Enclosures: 36







NORTH
FORK
BLACK
CREEK
WILLOW

BARKYVILLE
LAGOONS



Emergency Management
Nemaha County

September 19, 2006 Duryea

Roads and Cities Nemaha County

— Paved / Chip Seal
— Rock / Gravel
— Undetermined



SOIL SURVEY OF NEMAHA COUNTY, KANSAS

nemaha county Baileyville

MAP LEGEND

	Soil Map Units
	Cities
	Detailed Counties
	Detailed States
	Interstate Highways
	Roads
	Rails
	Water
	Hydrography
	Oceans
	Escarpment, bedrock
	Escarpment, non-bedrock
	Gulley
	Levee
	Slope
	Blowout
	Borrow Pit
	Clay Spot
	Depression, closed
	Eroded Spot
	Gravel Pit
	Gravelly Spot
	Gulley
	Lava Flow
	Landfill
	Marsh or Swamp
	Miscellaneous Water
	Rock Outcrop
	Saline Spot
	Sandy Spot
	Slide or Slip
	Sinkhole
	Sodic Spot
	Spoil Area
	Stony Spot
	Very Stony Spot
	Perennial Water
	Wet Spot

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Nemaha County, Kansas
Spatial Version of Data: 3
Soil Map Compilation Scale: 1:24000

Map comprised of aerial images photographed on these dates:
10/9/1991; 10/17/1991

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend Summary

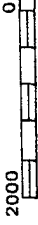
Nemaha County, Kansas

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7050	Kennebec silt loam, occasionally flooded	78.3	19.1
7500	Pawnee clay loam, 1 to 3 percent slopes	15.7	3.8
7510	Pawnee clay, 3 to 7 percent slopes, eroded	184.8	45.1
7681	Wymore silty clay loam, 1 to 3 percent slopes	101.5	24.8
7688	Wymore-Baileyville complex, 3 to 6 percent slopes, eroded	27.2	6.6
9986	Miscellaneous water	2.3	0.6

56% silt + 30% clay



APPROXIMATE SCALE



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

NEMAHA COUNTY,
KANSAS
UNINCORPORATED AREAS

PANEL 75 OF 200

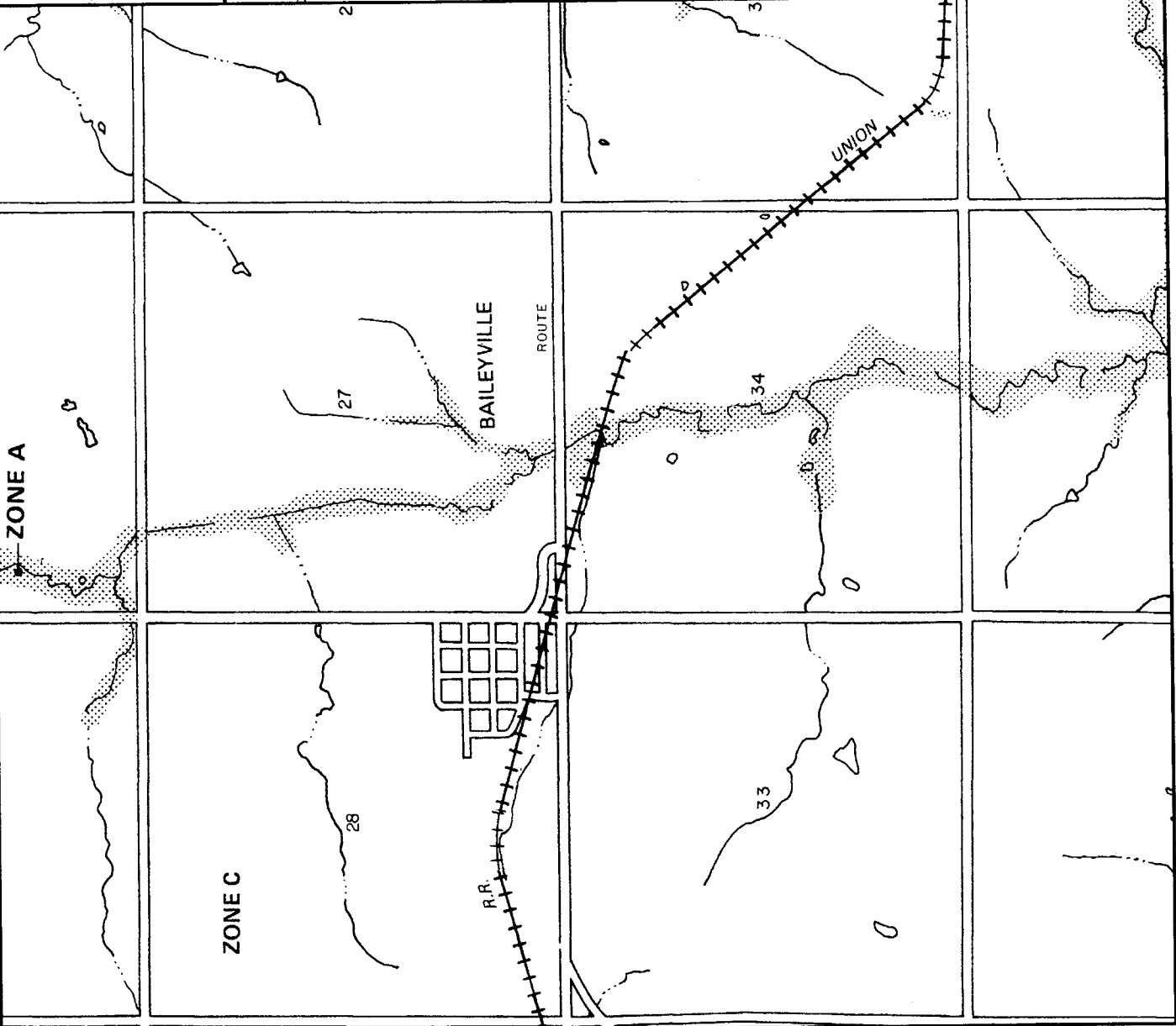
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200237 0075 B

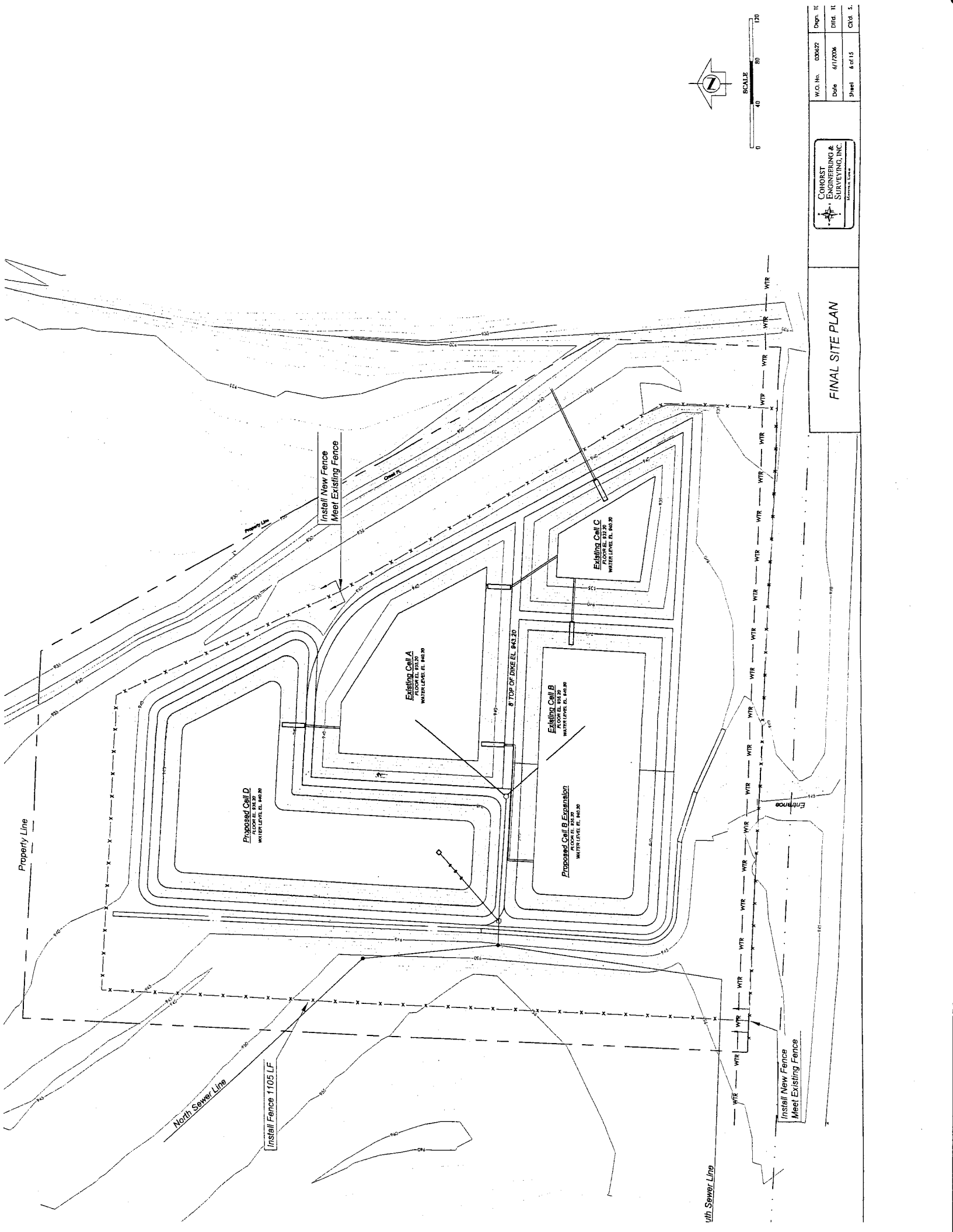
EFFECTIVE DATE:
AUGUST 19, 1985

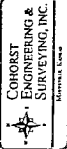


Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov





	W.O. No.	030322	Dgn. TC
	Date	6/17/2006	Dtd. TC
	Sheet	6 of 15	Ctd. S.
FINAL SITE PLAN			