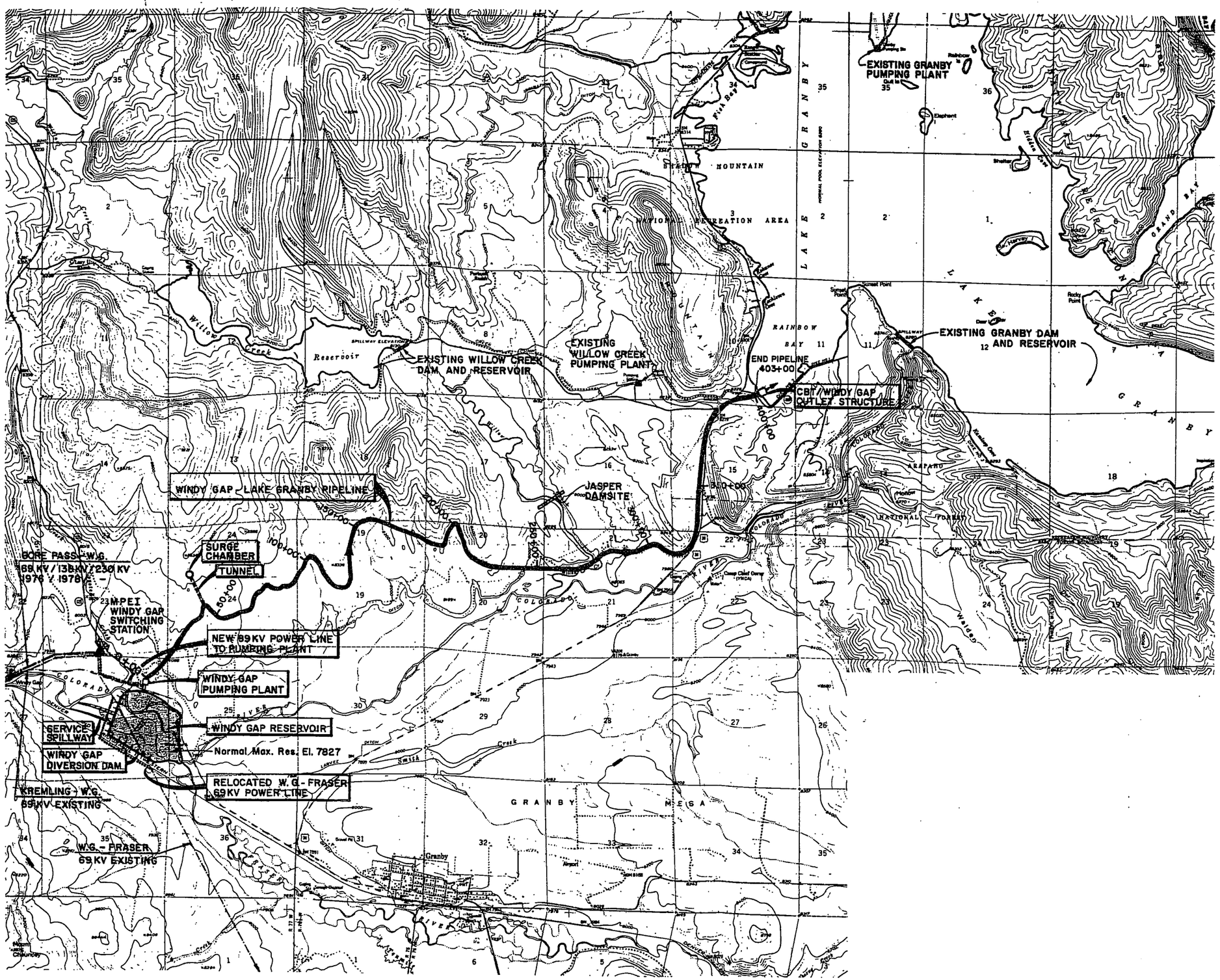
6520



APPROXIMATE MEAN DECLINATION, 1957

LEGEND

- ▲ EXISTING MOUNTAIN PARK ELECTRIC, INC. SWITCHING STATION
- EXISTING 69 KV POWER LINE
- FUTURE EXTENSION LINE
- PROPOSED WINDY GAP PROJECT 69 KV POWER LINE
- PROPOSED PIPELINE
- □ PROPOSED PUMPING PLANT AND STRUCTURE
- PROPOSED TUNNEL

NOTES:

THE RECOMENDED DEVELOPMENT PLAN INCLUDES THE FOLLOWING FACILITIES:

1. DIVERSION DAM AND RESERVOIR APPROXIMATELY ONE MILE ABOVE WINDY GAP
2. PUMPING PLANT WITH MAXIMUM DISCHARGE CAPACITY OF 300 cfs
3. A 40,300 FOOT LONG, 7FOOT DIAMETER PIPELINE FROM WINDY GAP PUMPING PLANT TO LAKE GRANBY.
4. A COMBINED CBT/WINDY GAP PROJECT OUTLET STRUCTURE FOR DISCHARING BOTH WILLOW CREEK AND WINDY GAP WATER INTO LAKE GRANBY.

SCALE

1 MILE 0 0.5 1

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

Topography has been taken from the U.S.G.S 7½ minute Quadrangle Sheets of the area.

MUNICIPAL SUBDISTRICT
NORTHERN COLORADO WATER CONSERVANCY DISTRICT

WINDY GAP PROJECT

RECOMMENDED DEVELOPMENT PLAN

INTERNATIONAL ENGINEERING COMPANY, INC.

DESIGNED IECO	CHECKED WJE GE	APPROVED	
DRAWN S.Z	INSPECT	RECOMMENDED	
		DATE FEBRUARY, 1976	

IECO
220 MONTGOMERY STREET
SAN FRANCISCO CALIFORNIA 94104

DRAWING NO. JM-03-205

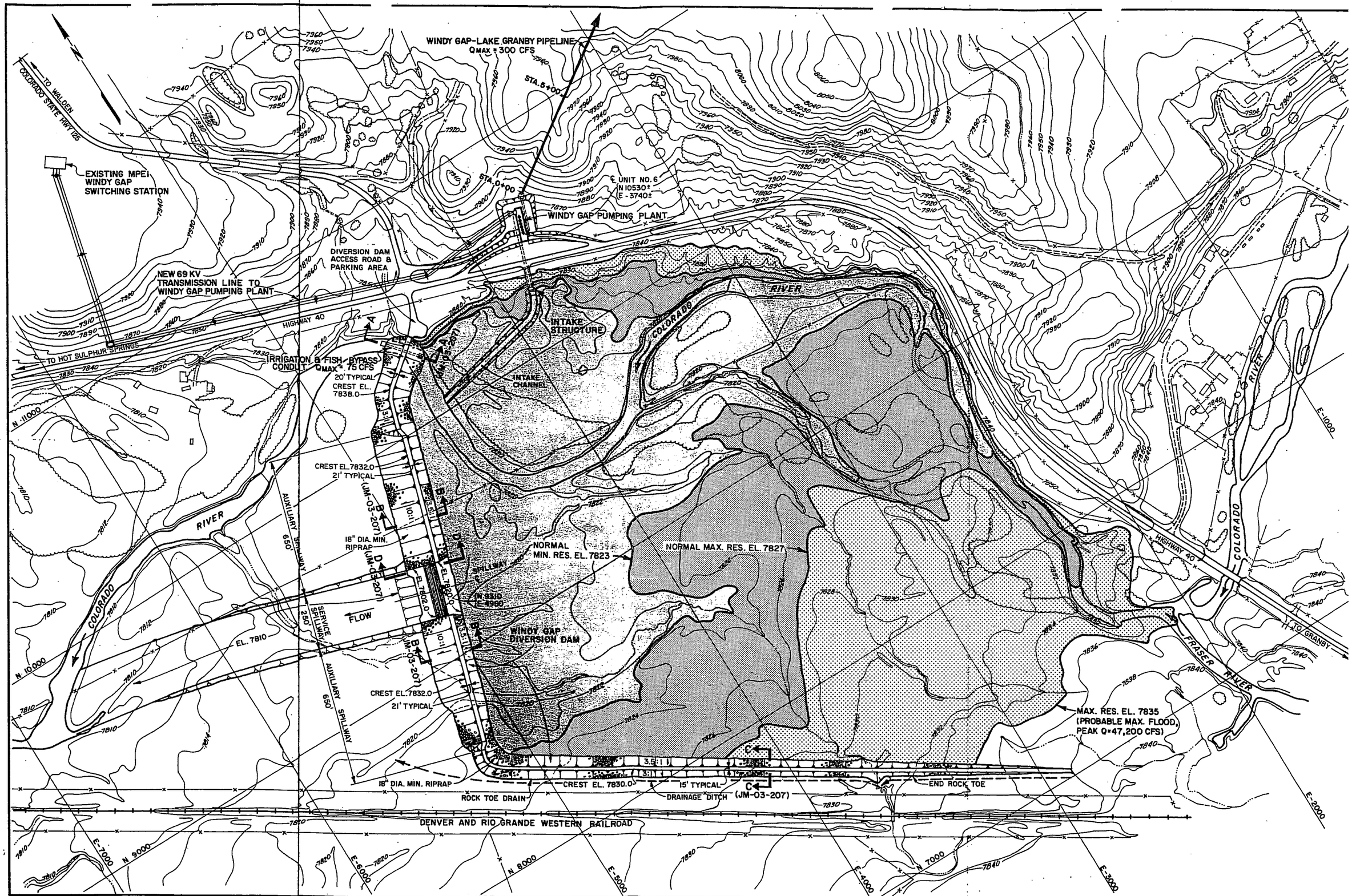
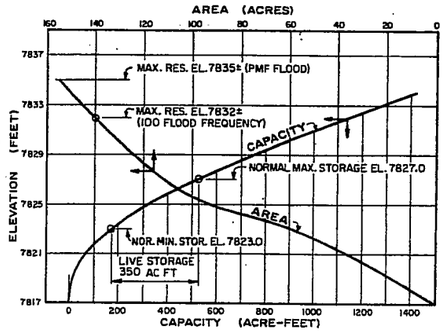

WINDY GAP-LAKE GRANBY PIPELINE
QMAX = 300 CFS
STA. 5+00
STA. 0+00
℄ UNIT NO. 6
N 10530±
E - 3740±
WINDY GAP PUMPING PLANT
TO WALDEN
COLORADO STATE HWY 125
EXISTING MPEI
WINDY GAP
SWITCHING STATION
NEW 69 KV
TRANSMISSION LINE TO
WINDY GAP PUMPING PLANT
DIVERSION DAM
ACCESS ROAD &
PARKING AREA
HIGHWAY 40
TO HOT SULPHUR SPRINGS
INTAKE
STRUCTURE
COLORADO
RIVER
IRRIGATION & FISH BYPASS
CONDUIT QMAX = 75 CFS
20' TYPICAL
CREST EL.
7838.0
INTAKE
CHANNEL
CREST EL. 7832.0
21' TYPICAL
(JM-03-207)
18" DIA. MIN.
RIPRAP
NORMAL
MIN. RES. EL. 7823
NORMAL MAX. RES. EL. 7827
SPILLWAY
EL. 7830.0
EL. 7832.0
N 9310
E 4950
WINDY GAP
DIVERSION DAM
AUXILIARY SPILLWAY
650'
SERVICE
SPILLWAY
250'
FLOW
EL. 7810
MAX. RES. EL. 7835
(PROBABLE MAX. FLOOD,
PEAK Q=47,200 CFS)
FRASER
RIVER
TO GRANBY
HIGHWAY 40
18" DIA. MIN. RIPRAP
ROCK TOE DRAIN
CREST EL. 7830.0
15' TYPICAL
DRAINAGE DITCH (JM-03-207)
END ROCK TOE
DENVER AND RIO GRANDE WESTERN RAILROAD
N. 11000
N. 10000
N 9000
N 8000
N 7000
E-7000
E-6000
E-5000
E-4000
E-3000
E-2000
E-1000
3.5:1
10:1

EXHIBIT A-3



WINDY GAP DIVERSION DAM RES.
AREA-CAPACITY CURVES

WINDY GAP-LAKE GRANBY PIPELINE
Q_{MAX} = 300 CFS
STA. 5+00
STA. 0+00
℄ UNIT NO. 6
N 10530±
E - 3740±
WINDY GAP PUMPING PLANT
DIVERSION DAM ACCESS ROAD & PARKING AREA
KV ISSION LINE TO AP PUMPING PLANT
HIGHWAY 40
IRRIGATON & FISH BYPASS CONDUIT Q_{MAX} = 75 CFS
20' TYPICAL
CREST EL. 7838.0
INTAKE STRUCTURE
INTAKE CHANNEL
COLORADO RIVER
CREST EL. 7832.0
21' TYPICAL
(JM-03-207)
18" DIA. MIN. RIPRAP
AUXILIARY SPILLWAY
650'
SERVICE SPILLWAY
250'
EL. 7820.0
EL. 7802.0
EL. 7810
FLOW
NORMAL MIN. RES. EL. 7823
NORMAL MAX. RES. EL. 7827
N 9310
E 4960
WINDY GAP DIVERSION DAM
MAX. RES. EL. 7835
(PROBABLE MAX. FLOOD, PEAK Q=47,200 CFS)
CREST EL. 7830.0
15' TYPICAL
DRAINAGE DITCH
ROCK TOE DRAIN
END ROCK TOE
DENVER AND RIO GRANDE WESTERN RAILROAD
HIGHWAY 40
TO GRANBY
FRASER RIVER
COLORADO RIVER
E-1000
E-2000
E-3000
E-4000
E-5000
E-6000
N 8000
N 7000

NOTE:

TOPOGRAPHIC MAPPING PREPARED BY HOGAN AND OLHAUSER ENGINEERS, LOVELAND, COLORADO

REFERENCE DRAWINGS:

WINDY GAP DIVERSION DAM & SPILLWAY - PLAN & SECTION JM-03-207
WINDY GAP PUMPING PLANT - SITE PLAN & PROFILE JM-03-208
WINDY GAP DIVERSION DAM - LOCATION OF BOREHOLES & SEISMIC LINES JM-03-231

SCALE 0 100 200 400 600 800 FEET

MUNICIPAL SUBDISTRICT
NORTHERN COLORADO WATER CONSERVANCY DISTRICT

WINDY GAP PROJECT

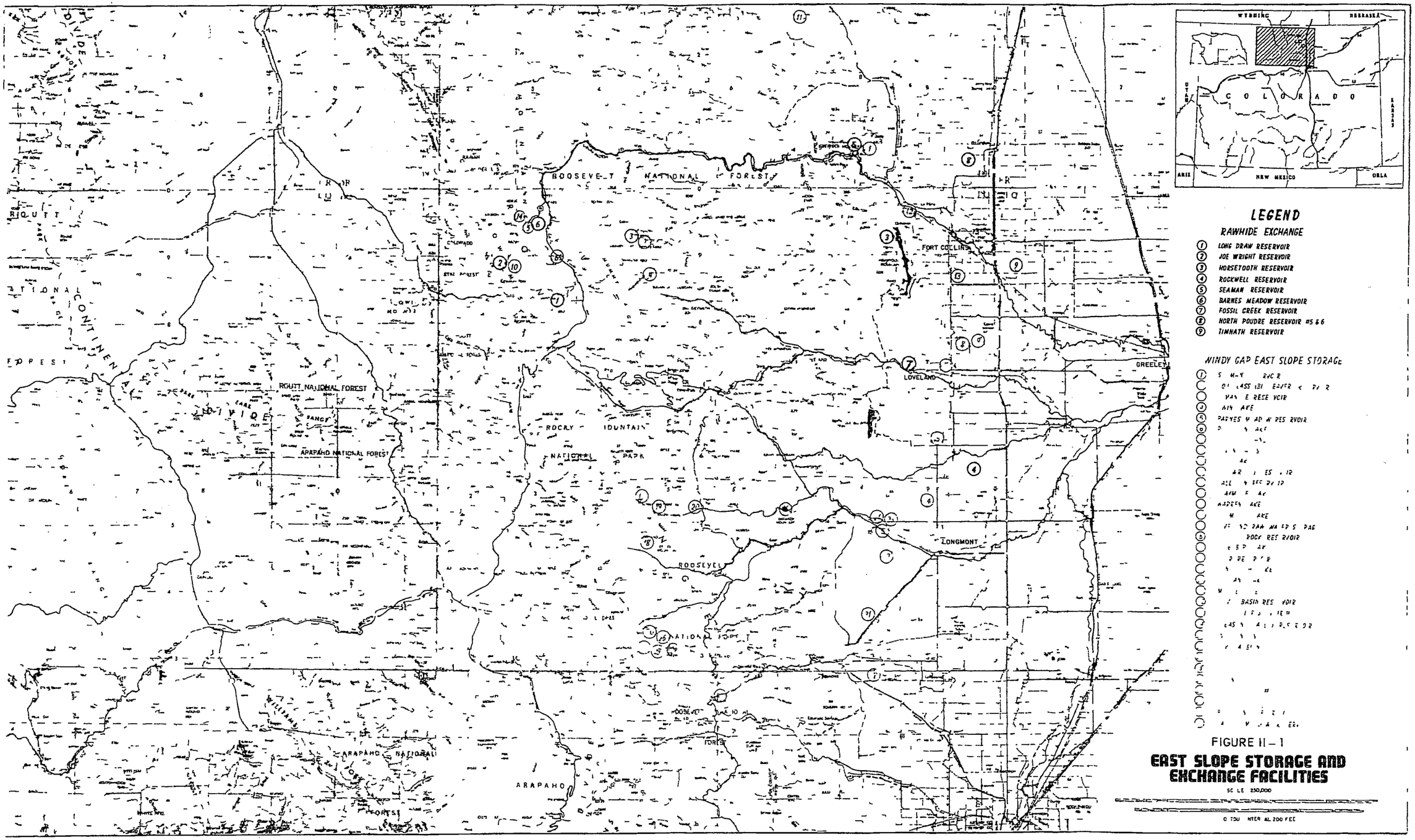
WINDY GAP DIVERSION DAM PLAN

INTERNATIONAL ENGINEERING COMPANY, INC.

DESIGNED IECO | CHECKED WRE GH | APPROVED
DRAWN NER | INSPECT | RECOMMENDED
DATE FEBRUARY 1976

IECO
220 MONTGOMERY STREET
SAN FRANCISCO CALIFORNIA 94104

DRAWING NO. JM-03-206



LEGEND

RAWHIDE EXCHANGE

1. LONG DRAW RESERVOIR
2. JOE WRIGHT RESERVOIR
3. HORSETOOTH RESERVOIR
4. ROCKWELL RESERVOIR
5. SEAMAN RESERVOIR
6. BARNES MEADOW RESERVOIR
7. FOSSIL CREEK RESERVOIR
8. NORTH POUDRE RESERVOIR #5 & 6
9. TIMNATH RESERVOIR

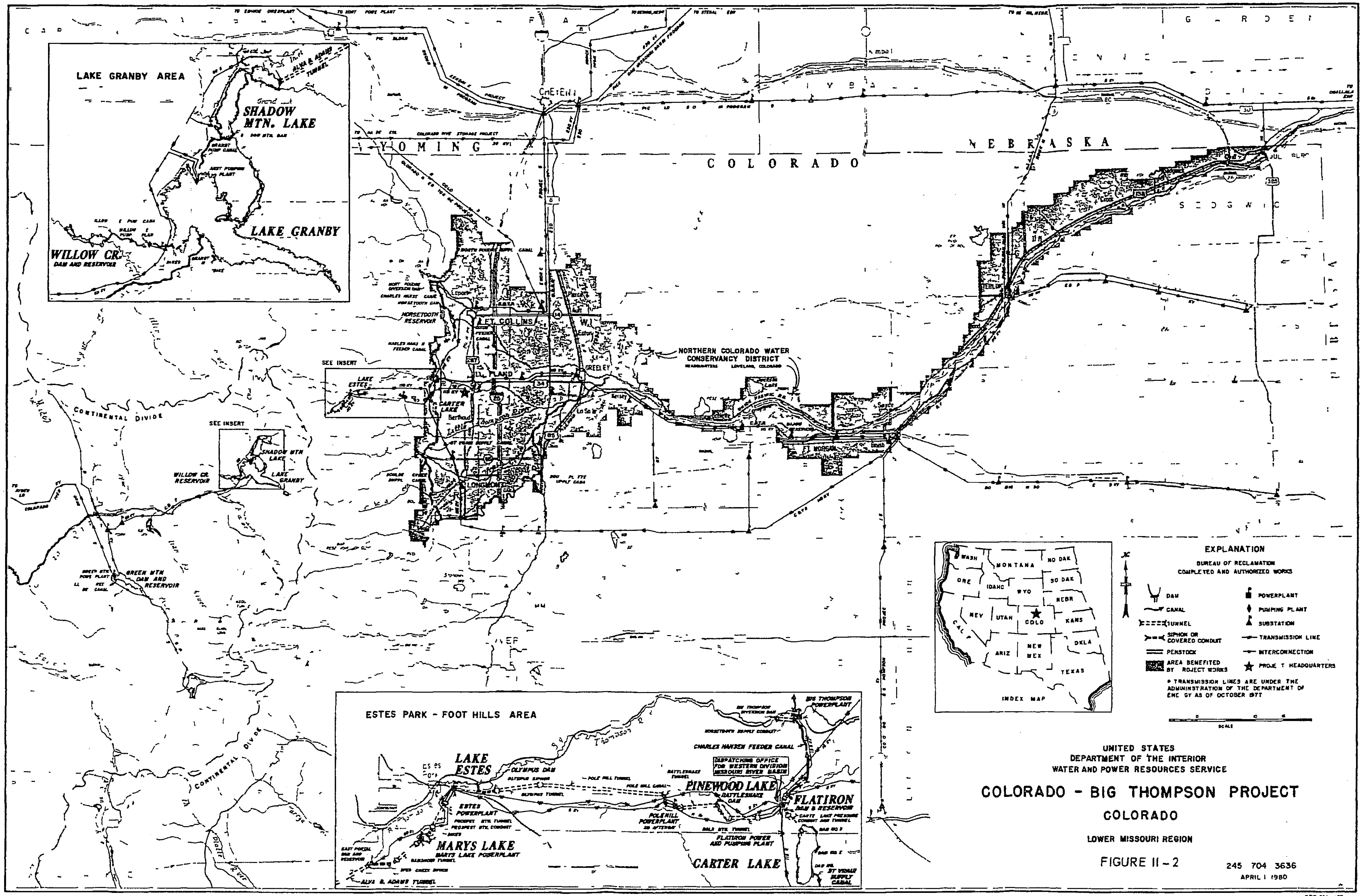
WINDY GAP EAST SLOPE STORAGE

FIGURE II – 1

EAST SLOPE STORAGE AND EXCHANGE FACILITIES

SCALE 250,000

0 TOU NTER AL 200 FEE


LAKE GRANBY AREA
SHADOW MTN. LAKE
LAKE GRANBY
WILLOW CR.
DAM AND RESERVOIR
WYOMING
NEBRASKA
COLORADO
NORTHERN COLORADO WATER CONSERVANCY DISTRICT
FT. COLLINS
GREELEY
HORSETOOTH RESERVOIR
SEE INSERT
LAKE ESTES
CARTER LAKE
LONGMONT
CONTINENTAL DIVIDE
SHADOW MTN LAKE
WILLOW CR. RESERVOIR
LAKE GRANBY
GREEN MTN DAM AND RESERVOIR
ESTES PARK - FOOT HILLS AREA
LAKE ESTES
OLYMPUS DAM
ESTES POWERPLANT
MARYS LAKE
MARYS LAKE POWERPLANT
ALVA B. ADAMS TUNNEL
PINEWOOD LAKE
RATTLESNAKE DAM
POLEHILL POWERPLANT
FLATIRON
DAM & RESERVOIR
FLATIRON POWER AND PUMPING PLANT
CARTER LAKE
BIG THOMPSON POWERPLANT
CHARLES HANSEN FEEDER CANAL
DISPATCHING OFFICE FOR WESTERN DIVISION MISSOURI RIVER BASIN
INDEX MAP
WASH
MONTANA
NO DAK
ORE
IDAHO
WYO
SO DAK
NEBR
NEV
UTAH
COLO
KANS
CALIF
ARIZ
NEW MEX
OKLA
TEXAS
EXPLANATION
BUREAU OF RECLAMATION COMPLETED AND AUTHORIZED WORKS
DAM
CANAL
TUNNEL
SIPHON OR COVERED CONDUIT
PENSTOCK
AREA BENEFITED BY PROJECT WORKS
POWERPLANT
PUMPING PLANT
SUBSTATION
TRANSMISSION LINE
INTERCONNECTION
PROJECT HEADQUARTERS

UNITED STATES
DEPARTMENT OF THE INTERIOR
WATER AND POWER RESOURCES SERVICE

COLORADO - BIG THOMPSON PROJECT

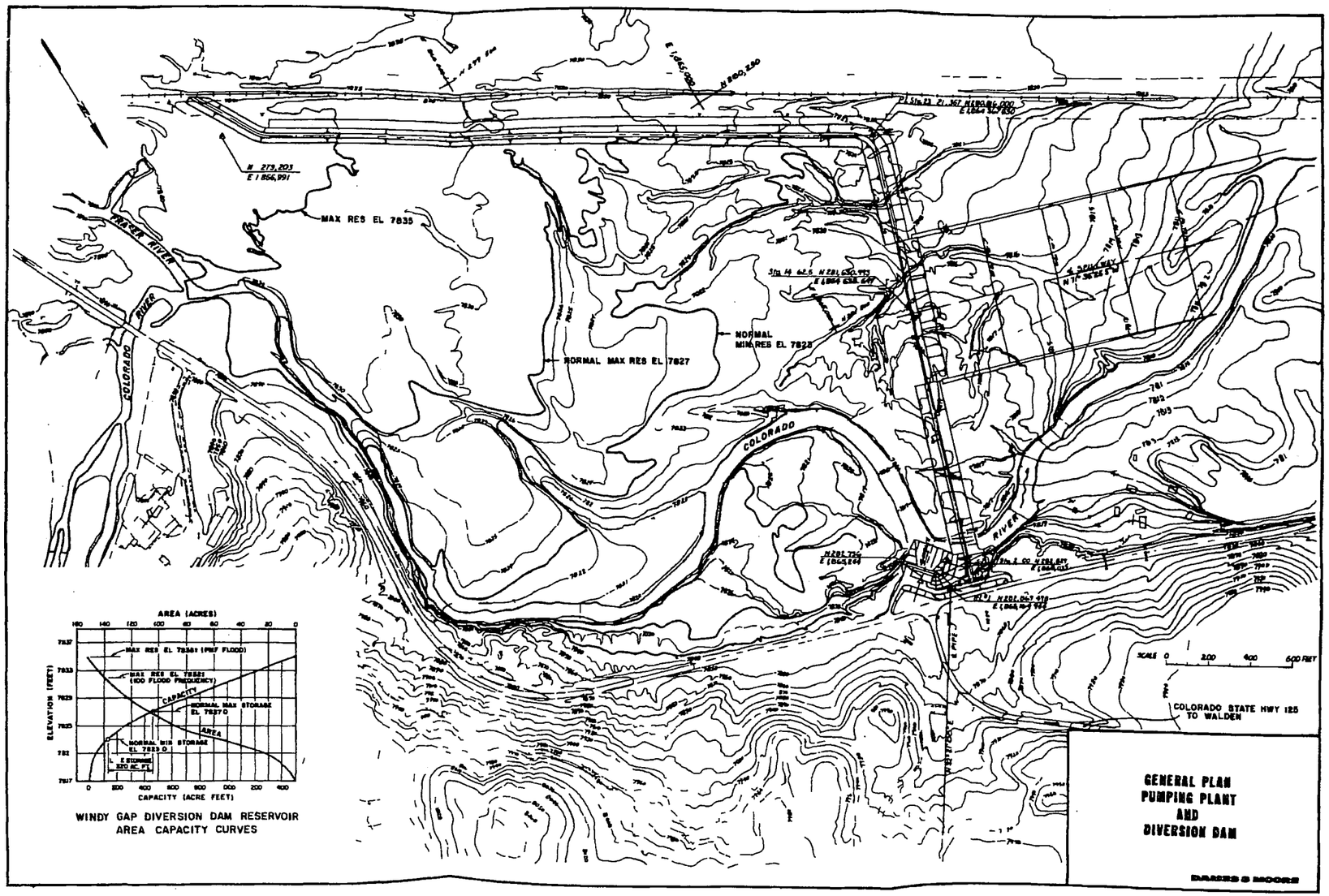
COLORADO

LOWER MISSOURI REGION

FIGURE II - 2

245 704 3636
APRIL 1 1980

GPO 835 677



WINDY GAP DIVERSION DAM RESERVOIR
AREA CAPACITY CURVES

FIGURE II – 4

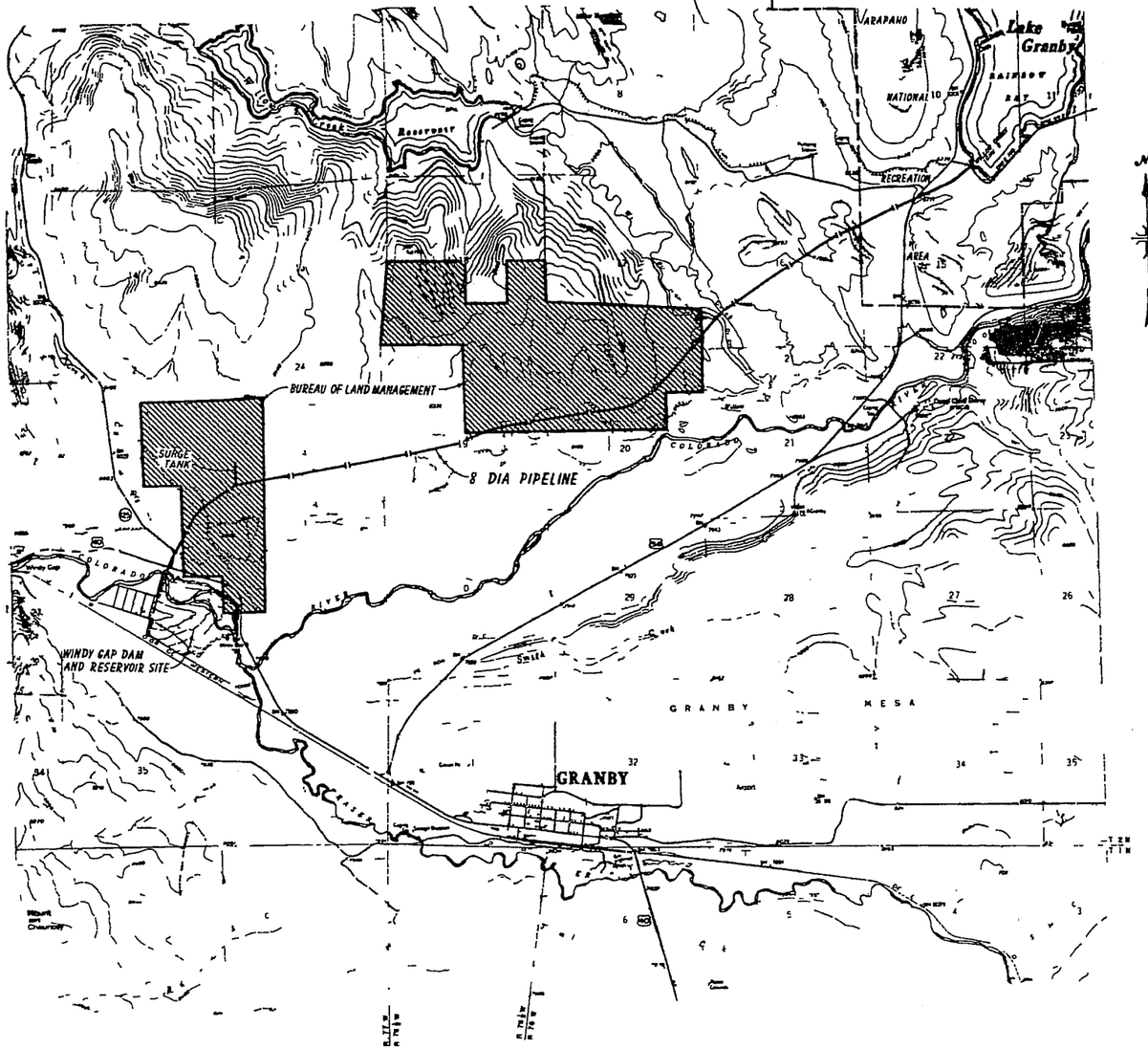


FIGURE II – 5

PIPELINE ALIGNMENT

SCALE 1:24,000

1 0 1 MILE

1 0 1 KILOMETER

CONTOUR INTERVAL 40 FEET

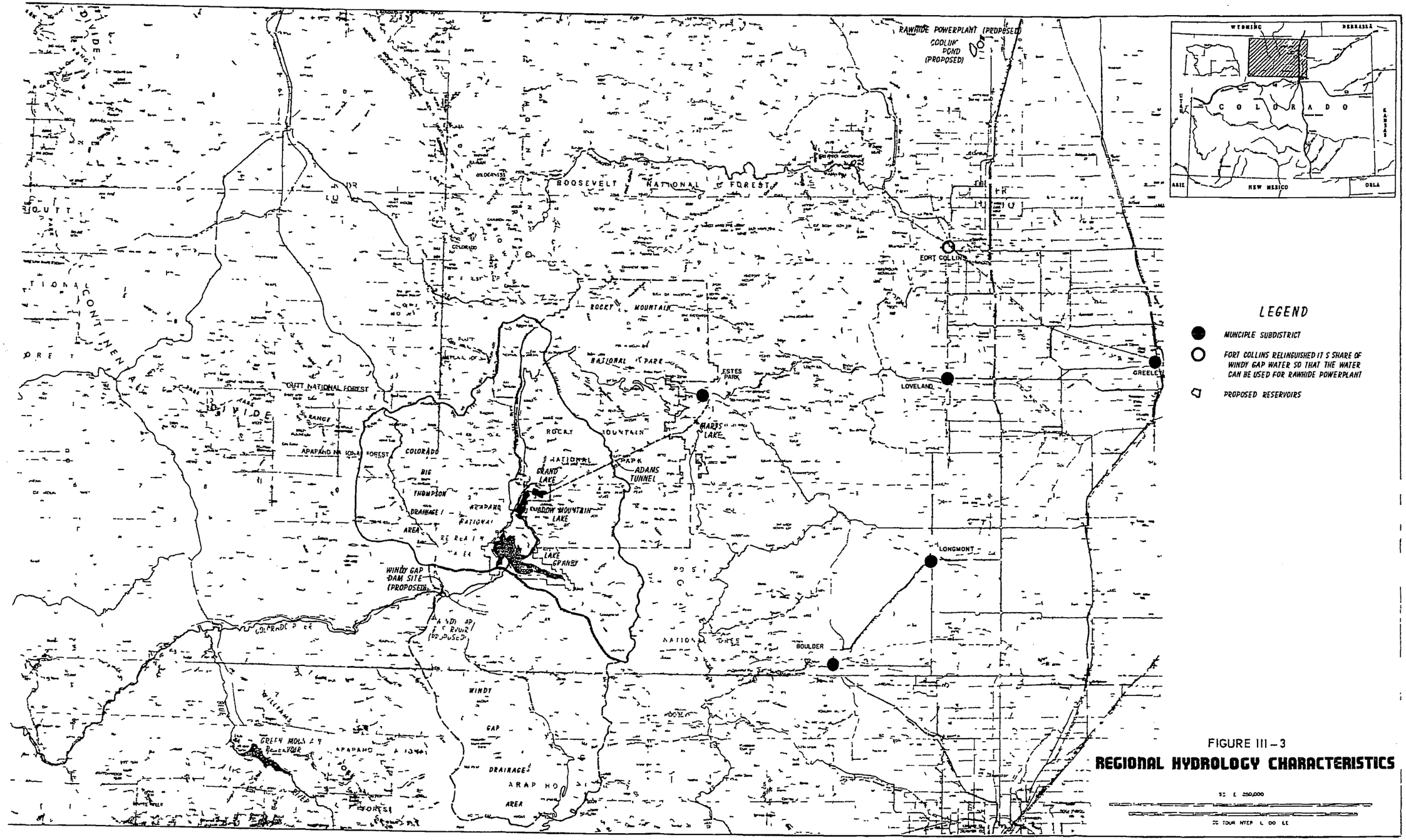
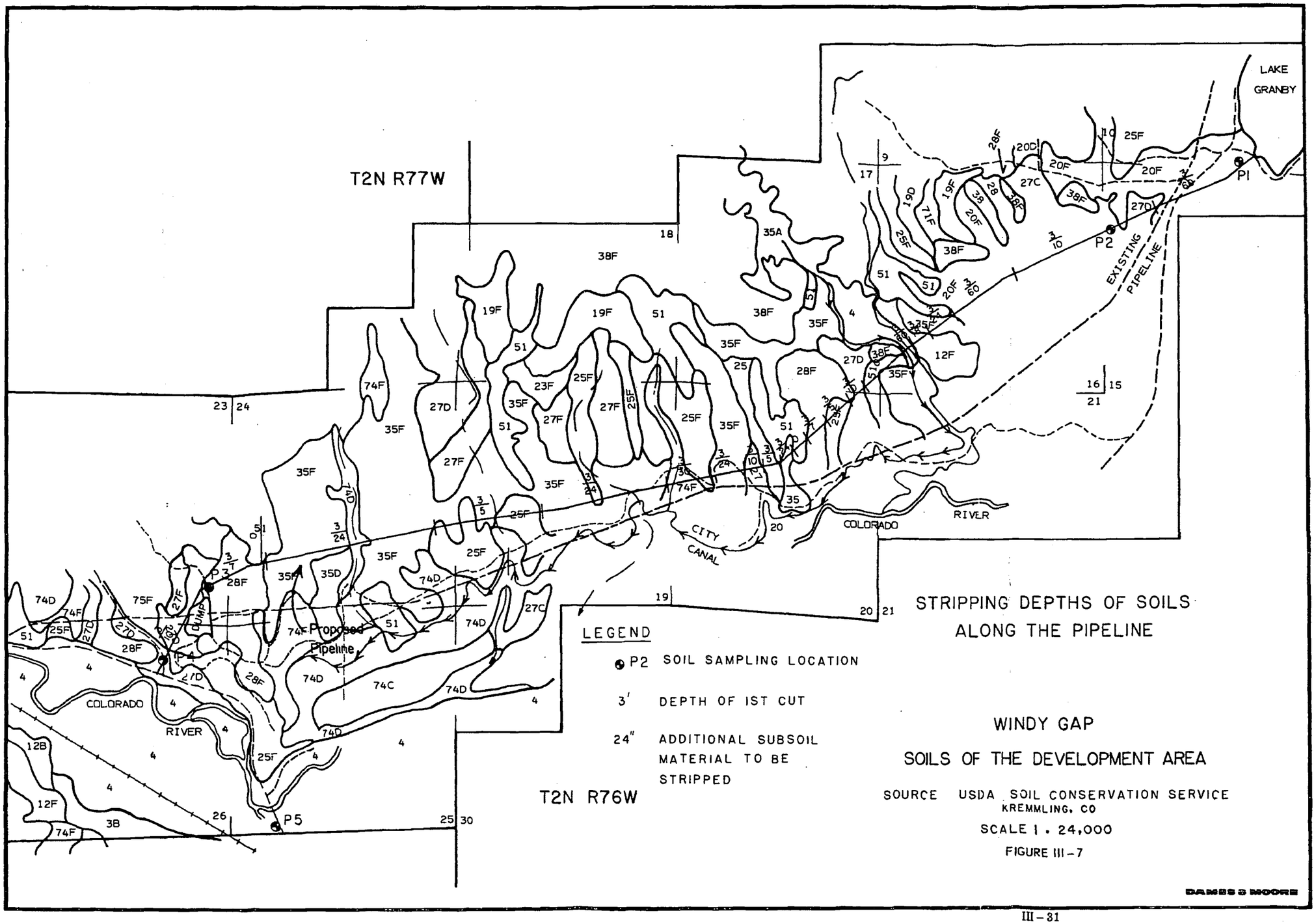


FIGURE III – 3

REGIONAL HYDROLOGY CHARACTERISTICS



STRIPPING DEPTHS OF SOILS ALONG THE PIPELINE

WINDY GAP

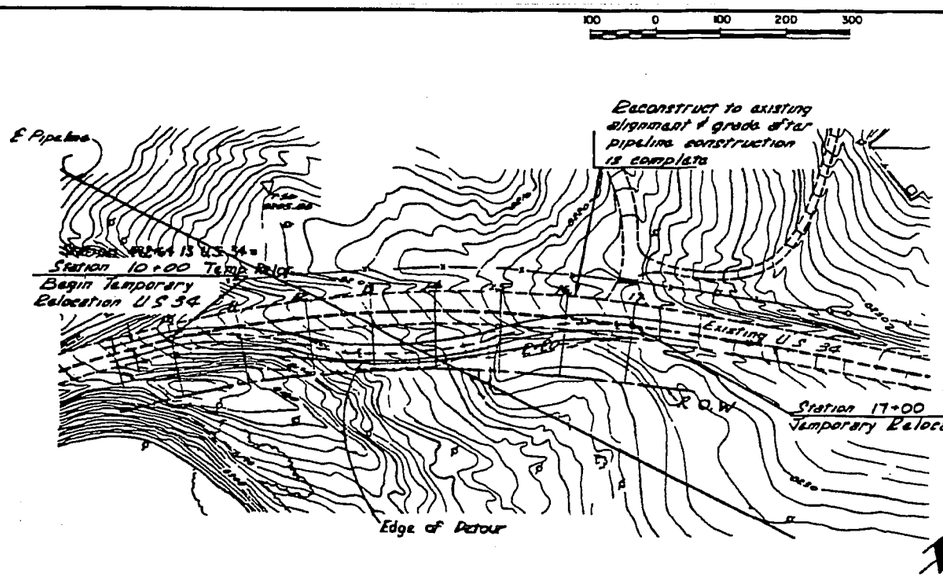
SOILS OF THE DEVELOPMENT AREA

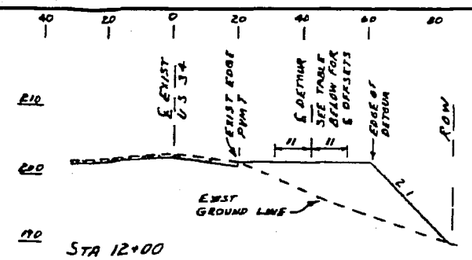
SOURCE USDA SOIL CONSERVATION SERVICE KREMMLING, CO

SCALE 1 . 24,000

FIGURE III-7

DAMES & MOORE





STA 12+00
TYPICAL SECTION

DETOUR OFFSET TABLE

STATION	E OFFSET	EDGE OF DETOUR OFFSET
10+00	0	20 *
11+00	10	35
12+00	42	60
13+00	59	78
14+00	58	77
15+00	38	80
16+00	10	35
17+00	0	20 *

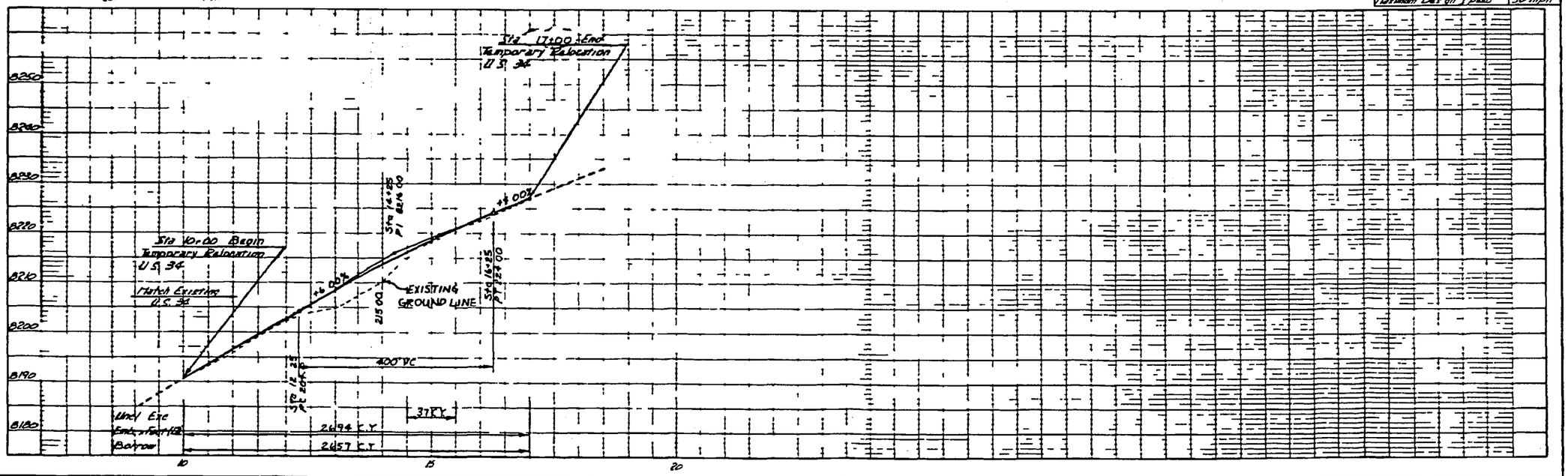
* EXIST EDGE OF PVMT

GENERAL NOTES FOR ALL HIGHWAY RELATED CONSTRUCTION

1 ALL WORK SHALL BE DONE IN ACCORDANCE WITH STATE OF COLORADO DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
2 FOR DETAILS OF TYPICAL SECTIONS SEE SHEET JM 80 200
3 THE EXISTING COLORADO 125 PAVEMENT SHALL BE OBLITERATED BETWEEN STATION 209 32 88 AND EXISTING U S 40 WHERE IT DOES NOT OVERLAP WITH THE NEW PAVEMENT
4 RELOCATED COLORADO 125 SHALL EXTEND FROM STATION 200 72 TO EXISTING U S 40 AS SHOWN ON THE PLAN WHEN THE TEMPORARY RELOCATION OF U S 40 IS REMOVED COLORADO 125 RELOCATION IS PERMANENT
5 ALL ROAD APPROACHES SHALL BE GRAVEL SURFACED WITH A 6 INCH THICKNESS OF AGGREGATE BASE COURSE EXTENDING APPROXIMATELY TO THE RIGHT-OF-WAY LINE APPROACHES REQUIRING BITUMINOUS PAVEMENT SHALL BE PRIMED AND A 2 THICKNESS OF PAVEMENT PLACED 50 FEET OUT FROM EDGE OF SHOULDER OR TO THE RIGHT-OF WAY LINE WHICHEVER IS LESS
6 ANY TEMPORARY CONSTRUCTION ROAD ENTRANCE TO U S 40 SHALL BE APPROVED BY THE COLORADO DEPARTMENT OF HIGHWAYS

DESIGN DATA	
Maximum Degree of Curve	22°55 Ch.
Maximum Grade	6.00 %
Max. min S.S.D. Horizontal	>200
Max. min S.S.D. Vertical	650
Maximum Design Speed	30 mph

Toe of Slopes Legend
——— Cut ——— Fill



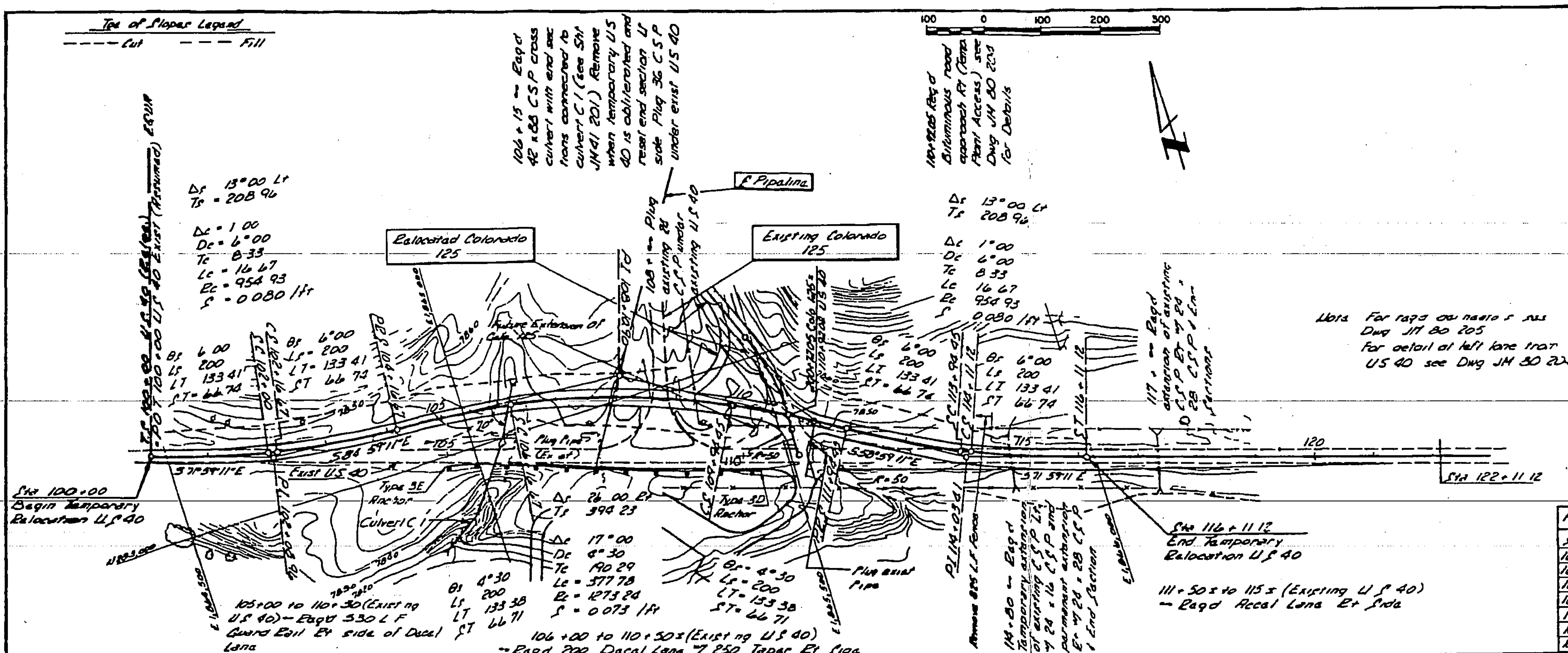
Designed S McBeth	Checked CLB	Submitted	No.	Made By	On	Description	
Drawn R E Grimsrud	Prints	Recommended Carl L Brown					
Date 7-25-77	Books	Approved					

International Engineering Company, Inc.
San Francisco, California

TEMPORARY RELOCATION
US 34

NCWCD Municipal Subdistrict
Windy Gap Project

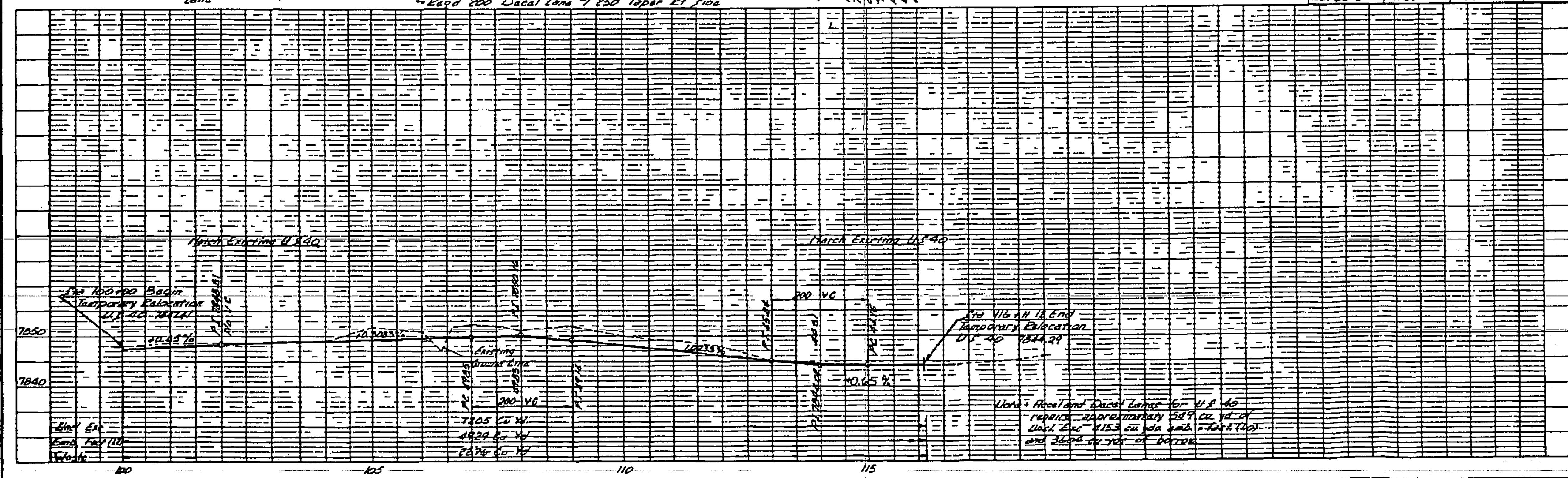
Job No.	Drawing No.
808	JM-80 200



DESIGN DATA	
Maximum Degree of Curve	6°00
Maximum Grade	2.02 %
Maximum S S D Horizontal	> 550
Maximum S S D Vertical	625
Maximum Design Speed	55 mph

PAVEMENT WIDENING TEMP US 40 RT SIDE

STATION	WIDENING FT	STATION	WIDENING FT
103 + 16 67	0 00	116 + 61 12	11 00
104 + 00	1 67	117 + 00	10 22
105 + 00	3 67	118 + 00	8 22
106 + 00	5 67	119 + 00	6 22
107 + 00	7 67	120 + 00	4 22
108 + 00	9 67	121 + 00	2 22
108 + 66 67	11 00	122 + 11 12	0 00



Designed R McBeth	Chkd C L B	Submitted	
Drawn R E Swanson	Insp	Recommended Caleb B...	
Date 7 31-77	Scale	Approved	

REVISIONS

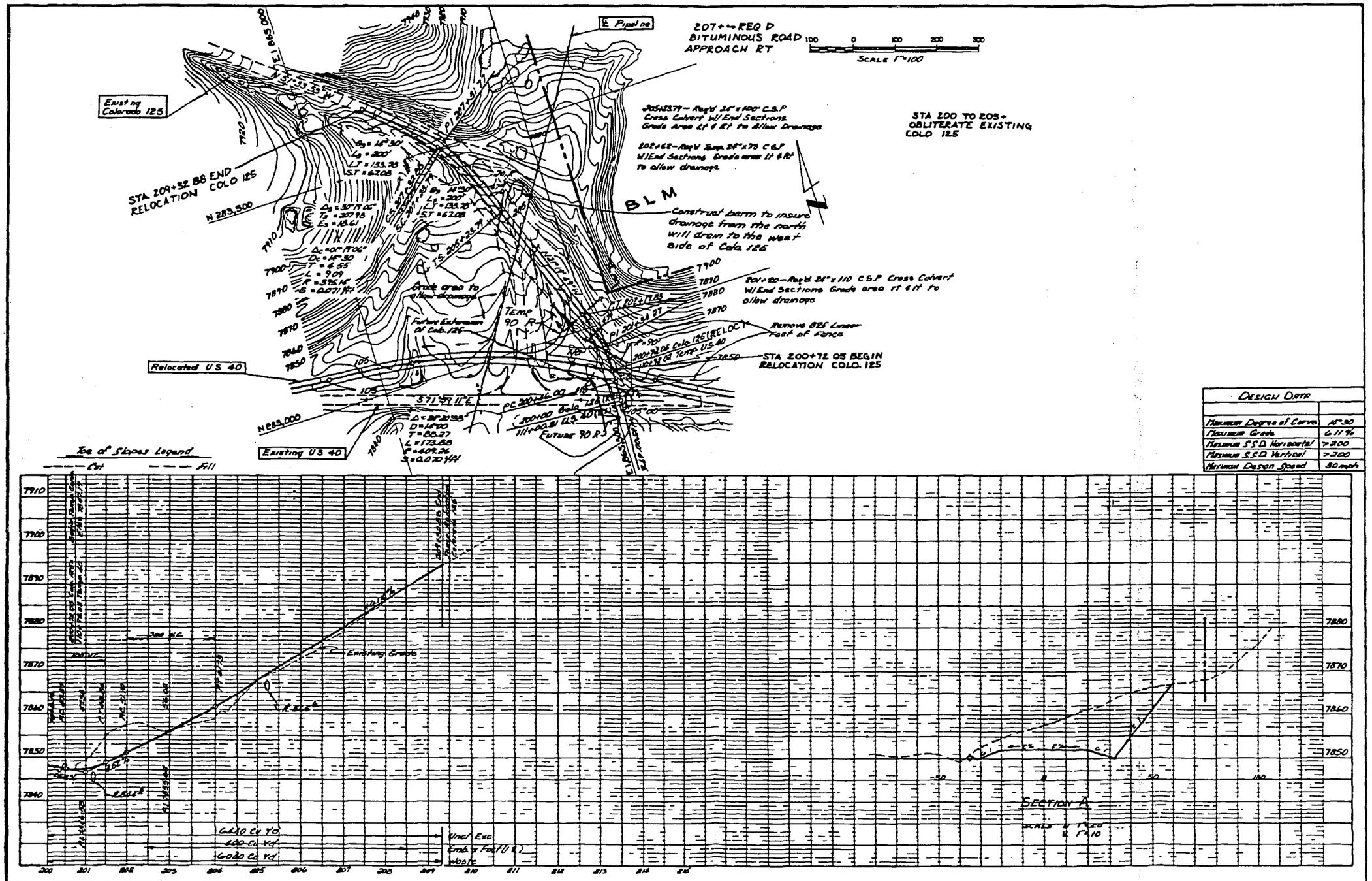
No	Made By	D	Description
1	R C		Revise Colo 125 Relocation

International Engineering Company Inc
San Francisco California

TEMPORARY RELOCATION
US 40

NCWCD Municipal Subdistrict
Windy Gap Project

Job No	Drawing No.
809	JM 80-201



Designed RPC	Drawn CLB	Submitted	1 11-80 Windy Gap Colo 125 Relocation	International Engineering Company Inc. San Francisco, California
Traced RPC	Checked	Recommended Colo Dept		
Date 11-80	Scale H 1"=100 V 1"=10	Approved		

RELOCATION COLORADO 125

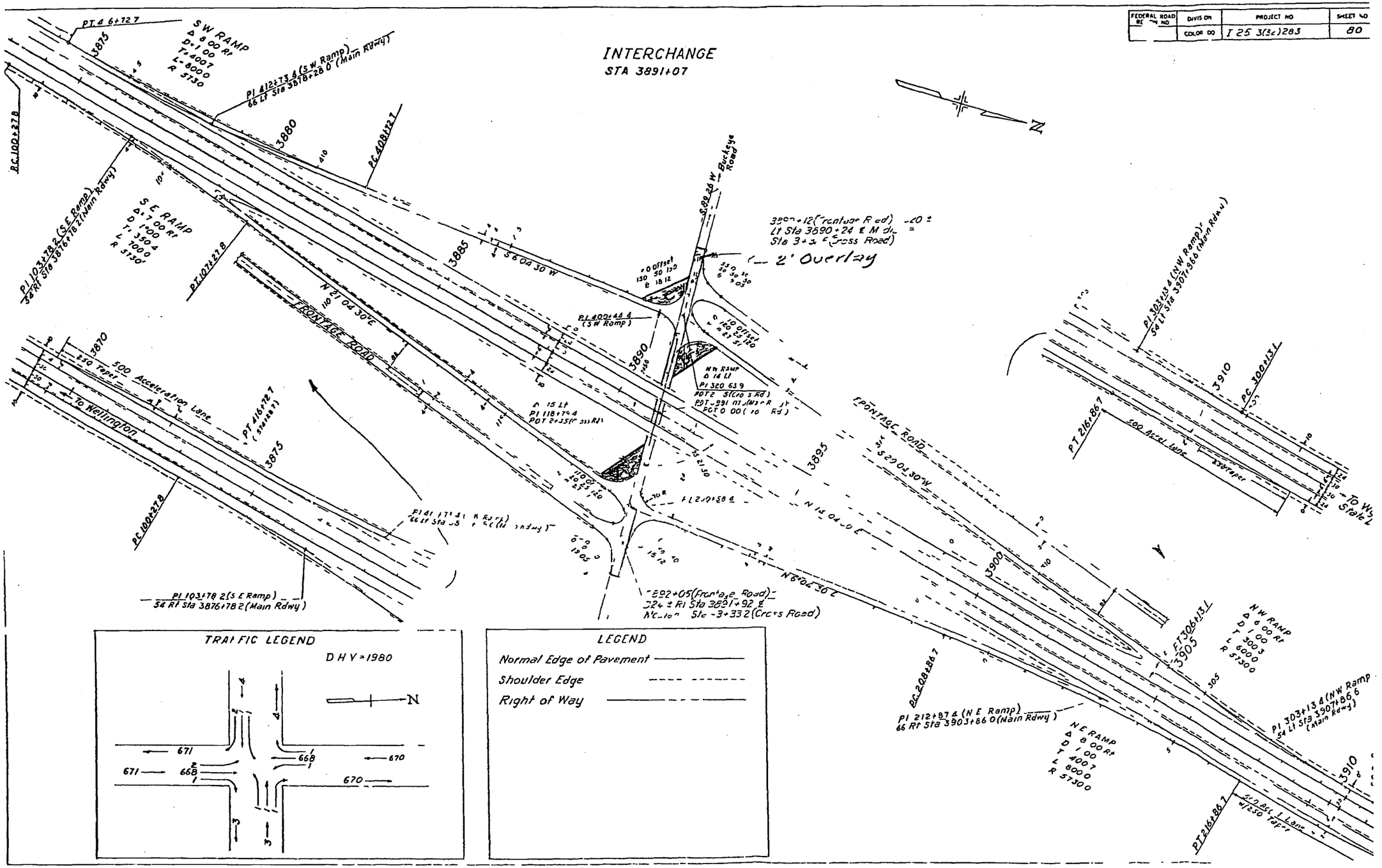
NCWCD Municipal Subdistrict Windy Gap Project

Job No. 809 | Drawing No. JM-80-202

FEDERAL ROAD RE NO	DIVIS ON	PROJECT NO	SHEET NO
	COLOR CO	I 25 3(3c)283	80

INTERCHANGE

STA 3891+07



TRAFFIC LEGEND

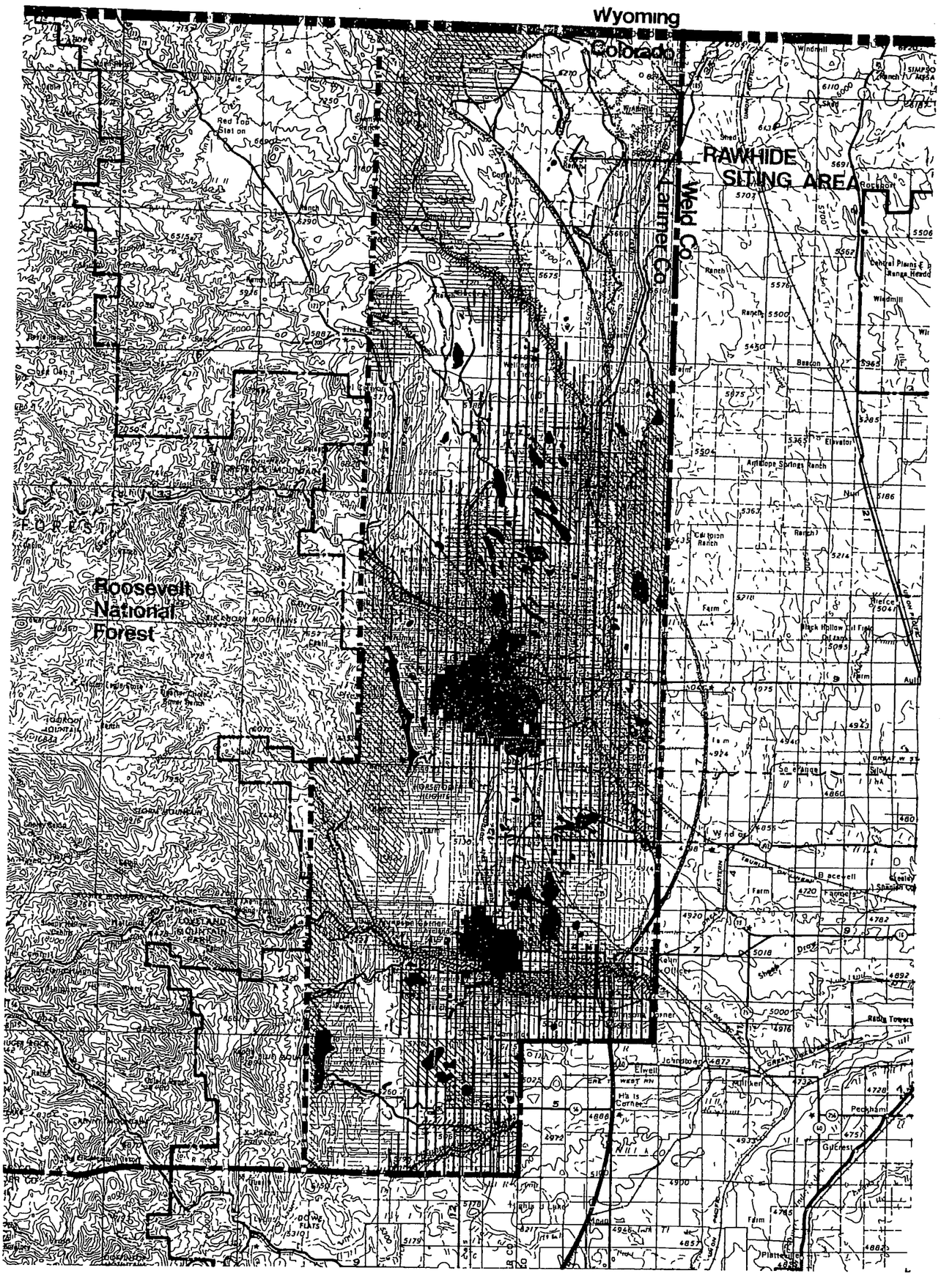
DHV = 1980

LEGEND

Normal Edge of Pavement ———

Shoulder Edge - - - - - -

Right of Way ——— — — ———



Constraints Composite

- Municipality
- Community Buffer Zone
- Cultural Resources Buffer Zone
- View Quality Buffer Zone
- Irrigated Cropland
- Wildlife Habitat
- Reservoirs
- Primary Groundwater Resources
- Major Perennial Watercourses
- 100 Year Floodplains
- Airport Clearance Zone
- Air Quality Buffer Zone

Platte River Power Authority

POWER PLANT SITING STUDY

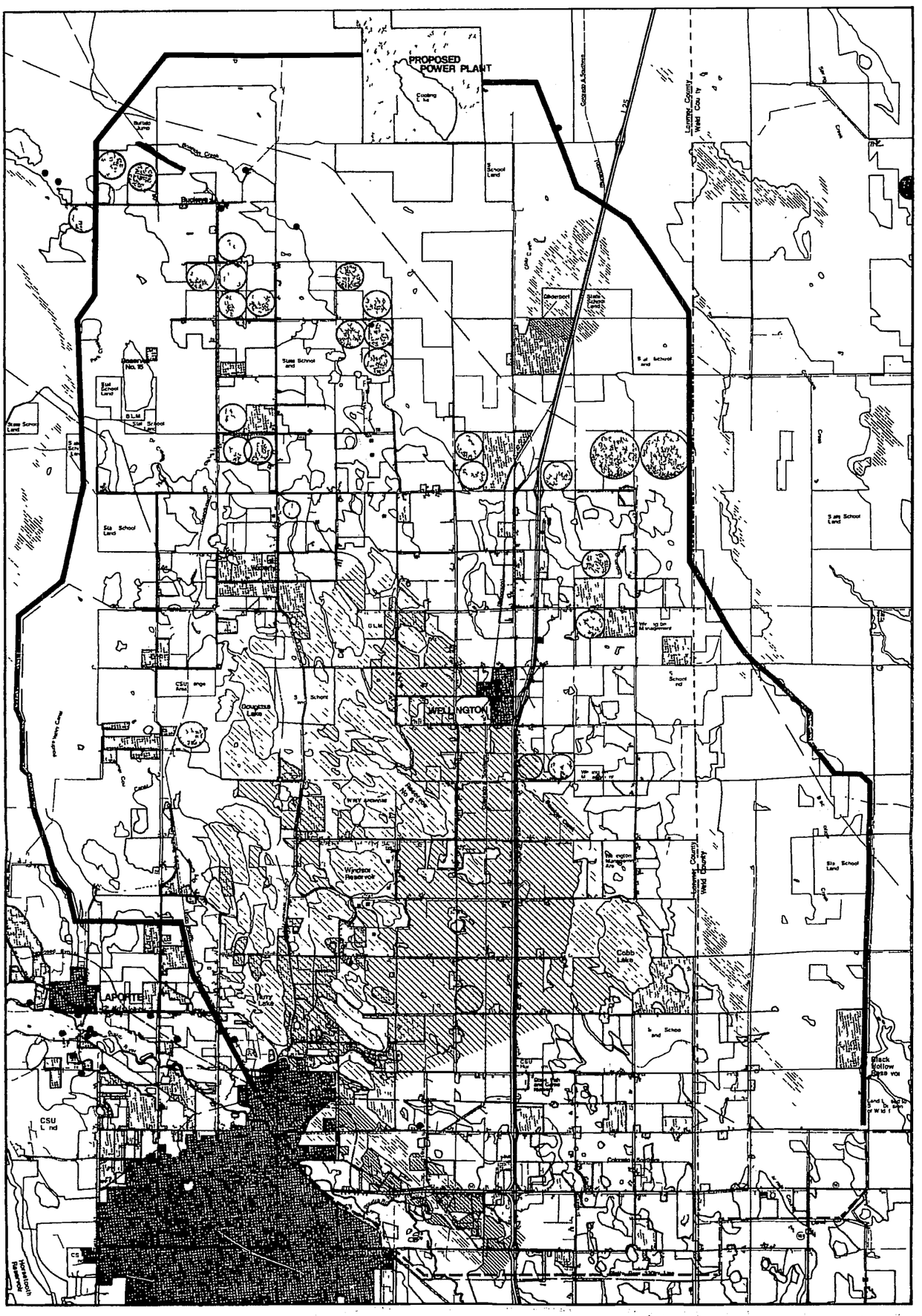
Northern Larimer County

EDAW inc Environmental Planning

0 2 4 8 Miles

N

Replacement for Figure II-12a
at page II-48



Proximity of buildings to possible transmission line along roads
- Homes within right-of-way
- Homes within 50–100'
- Homes beyond 100'
- Auxiliary Buildings
- Commercial Building
- Institutions
- Oil Wells
- State Highways
- County Roads
- Railroads
- Streams
- P V R E A Distribution Lines
- P S C Distribution Lines
- Transmission Lines
- Substations

- Public and Reserved Lands
- Cultural Resources
- Airspace Zones
- Subdivisions
- Communities
- Rangeland
- Center Pivot Irrigation
- Non-irrigated Cropland
- Irrigated Cropland
- Waterfowl Flight Area
- Seasonal Lakes
- Lakes &/or Reservoirs
- Ridgelines
- Proposed Routes

Preferred Transmission Routes

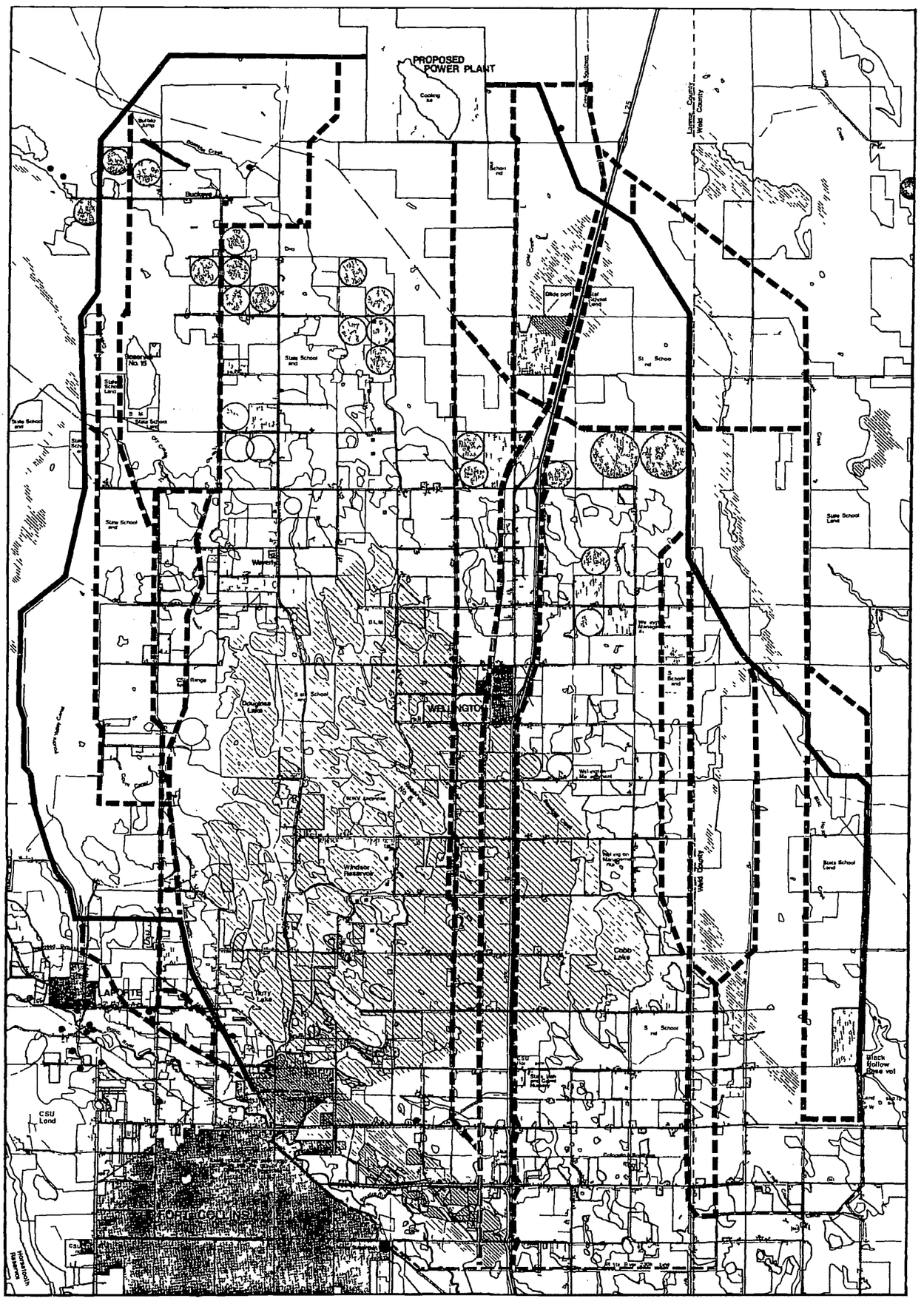
Rawhide Energy Project
Environmental Impact Analysis

640 Acres

0 2000 6000 Feet

N

EDAW inc Environmental Planning



- Proximity of buildings to possible transmission line along roads
- Homes within right-of-way
- Homes within 50-100'
- Homes beyond 100'
- Auxiliary Buildings
- Commercial Building
- Institutions
- Oil Wells
- State Highways
- County Roads
- Railroads
- Streams
- P V R E A Distribution Lines
- P S C Distribution Lines
- Transmission Lines
- Substations

- Public and Reserved Lands
- Cultural Resources
- Airspace Zones
- Subdivisions
- Communities
- Rangeland
- Center Pivot Irrigation
- Non-irrigated Cropland
- Irrigated Cropland
- Waterfowl Flight Area
- Seasonal Lakes
- Lakes &/or Reservoirs
- Ridgelines
- Proposed Routes
- Alternative Routes Evaluated

Alternate Transmission Routes

Rawhide Energy Project
Environmental Impact Analysis

640 Acres

0 2000 6000 Fe t

N

EDAW inc Environmental Planning

Suggested new Figure IX-3