

V 収集資料リスト

今回の調査においては、今後の調査に関連したすべての収集資料リストを日本で作成して、CFEでのこの作成リストについて協議の結果プロ形成調査に必要な16項目について収集した。

収 集 資 料 リ ス ト

1. Informacion Hydrometeorologic De La Cuenca De La Presa La Soledad
2. Grafica De Volumenes Vaso La Soledad Y Su Dismimcion Por Azolvamiento (1962~1983)
3. C.M Mazatepec Vaso La Soledad - Puebla (1962~1990)
4. Grafica De Areas, Capacidades Presa La Soledad La C.M Mazatepec
5. Procendimiento Para La Operacion
6. Systema Atexcaco, Presa La Soledad (Orr Del Barreno S1, S2, S3, S4)
7. Cuenca Rio Apulco (流域内砂防ダム位置図)
8. Informacion Basica C.F.E 1990
9. Systema Electrico National Lineas De Transmision De 115A 400kv (1989)
10. Central Hidroelectrica Mazatepec
11. Region De Generacion Hidroelectrica Papaloapan (水車・ニードルバルブ取換記録1988)
12. Grafica De Volumenes Desalojados Por El Verterdor En La Presa La Soledad
13. Grafica De Comportamiento Anual De Generacion Bruta, Agua Turbinada, Aportacion Y Descarga Por Vertedor
14. Systema Hidroelectrico Del Rio Apuluco, Planta de Mazatepec.
15. 深浅測量図 (3葉)
16. Desarroio Del Mercado Electrico 1986 - 2000

VI. 参 考 資 料

CFEへ提出したTOR (案)

[FOR THE REFERENCE ONLY]

DEVELOPMENT COOPERATION STUDY
BY THE GOVERNMENT OF JAPAN

APPLICATION

From the government of the United Mexican States for a Feasibility Study on the Rehabilitation Project Mazatepec Hydroelectric Power Station to the Government of Japan.

I. Project digest

1. Project title

Feasibility Study on the Rehabilitation Project of Mazatepec Hydroelectric Power Station.

2. Location

Mazatepec in Veracruz State

3. Responsible agency and executive agency

Comision Federal de Electricidad

4. Justification of the Project

To formulate an optimum plan for the Rehabilitation Project of Mazatepec hydroelectric power station through the evaluation of its technical, social, economical and financial feasibility.

5. Desirable time of commencement of Project

The total capacity of la Soledad Reservoir is 47.0 million cubicmeters. However, the volume of the deposit in the reservoir was. in1990. 37.0 million cubicmeters. The present state of power station is severe and the station will halt in a few years if any efficient countermeasures are not taken. Therefore, the Project should be commenced as soon as possible.

II. Terms of reference of the proposed Study

1. Need/Justification of the Study

Mazatepec hydroelectric power station is dam-and-conduit type power plant with the La Soledad reservoir. This station which is one of the important plant in Mexico, has been operated since 1963 and supplies a maximum output of 208.8 MW to Mexico City.

The sediment accumulated in the reservoir has increased year by year (37 million cubic meters in 1990). The level of the deposit now reaches up to the crest of the spillway, and the sediment inflowing into the waterway has caused erosion of the water turbine runners.

Therefore, the station is suffering from lowering of its Power generation efficiency and may come to a halt unless any effective countermeasures or rehabilitation plans are taken.

In order to avoid the said situation, Government of the United Mexican States requests the Japanese Government to provide the Technical Cooperation.

2. Objectives of the Study

Objectives of the Study are to prepare countermeasures against sediment in La Soleda reservoir of Mazatepec hydroelectric power station and erosion of the turbines in consideration of technical, economical and environmental aspects, and to formulate a rehabilitation plan in order to maintain (or recover to some extent) function of the power station.

3. Study area

*Mazatepec hydroelectric power station and La Soledad reservoir is located 200 km north of Puebla City.

*Rio Apulco and Rio Xiucayucan, flowing into La Soleda reservoir.

4. Scope of the Study

The Study will be carried out in the following three (3) stages:

Basic Study Stage
Detail Study Stage
Preliminary Design Stage

(1) Basic Study

- 1) Collection and review of all existing data, reports and other relevant information.
- 2) Site reconnaissance
 - a) Geography, geology, vegetation and land use survey in the upstream basin of the dam.
 - b) Preliminary hydrological survey
 - c) Survey of the existing water utilization in the downstream basin of the dam.
 - d) Study on past and present operation and maintenance of the power station.
 - e) Survey of sediment in the reservoir.
 - f) Survey of present situation of the water turbines,
 - g) Survey of hydraulic structures and machines.
- 3) Power Survey
 - a) Collection and review of past and present power demand data and load forecast
 - b) Collection and review of future power expansion program.
- 4) Study of countermeasures against the reservoir sediment
 - a) Study of methods of discharging reservoir sediment.
 - b) Study of improvement of intake and waterway facilities to reduce sediment inflow.
- 5) Study of prevention methods for sediment inflow to the reservoir.
- 6) Study of repair plans for water turbine runners.
- 7) Study of suitable power generating schedule.
- 8) Formulation of alternative schemes for the determination of an optimum rehabilitation plan.

(2) Detailed Study

- 1) Surveys needed to the implementation of the preliminary Design.
- 2) Sediment characteristics study.

- 3) Hydrological Study
Observation and sampling of stream flow, bed load material and suspended material at existing gauging stations.
- 4) Study of influence by sediment on water turbines and waterway structures.
- 5) Environmental impact study
Assessment of impact in the Project area.
- 6) Study of compensation, if any.

(3) Preliminary Design

- 1) Study of optimal rehabilitation plan.
- 2) Preliminary design
- 3) Environmental assessment
- 4) Cost estimate
- 5) Preparation of construction schedule
- 6) Economic and financial analysis

5. Study schedule

The period of the Study will be tentatively 15 months.

6. Requested Study for Japanese technical cooperation

(1) Dispatch of the Japanese Study Team for the establishment of a plan and feasibility study for the requested Project.

(2) Technical transfer to the counterparts from Comision Federal de Electricidad through the implementation of the Study.

III. UNDERTAKINGS OF THE MEXICAN SIDE

1. To facilitate smooth conduct of the Study, Comision Federal de Electricidad (hereinafter referred as CFE) shall take through the competent authorities necessary measures for the Japanese Study

Team and its members to enjoy such privileges and immunities as provided for in the article V, (e), VI, VII, VIII of the Agreement on Technical Cooperation: between the Government of United Mexican States and the Government of Japan signed on 2 December 1986.

2. CFE shall act as counterpart agency to the Japanese Study Team and also as the coordinating body in relation to other government and non-governmental organization for the smooth conduct of the Study.

3. CFE shall take the necessary measures in cooperation with other relevant organizations.

(1) To inform the members of the Study Team of any existing risk in the Study area and to take any measure deemed necessary to secure the safety of the Study Team.

(2) To facilitate legal entry with permission into private properties or restricted areas for the conduct of the Study.

(3) To secure permission for the Japanese study Team to take all data and documents (including maps and photographs) related to the Study out of the United Mexican States to Japan.

4. CFE shall, at its own expense, provide the Japanese Study Team with the followings in cooperation with other organization concerned:

(1) Available data and information related to the Study.

(2) Counterpart personnel.

(3) Suitable office space with necessary equipment in Mexico City and in the Mazatepec hydroelectric power station.

(4) Credentials or identification cards.

(5) Appropriate number of vehicles with drivers.

Signed: _____

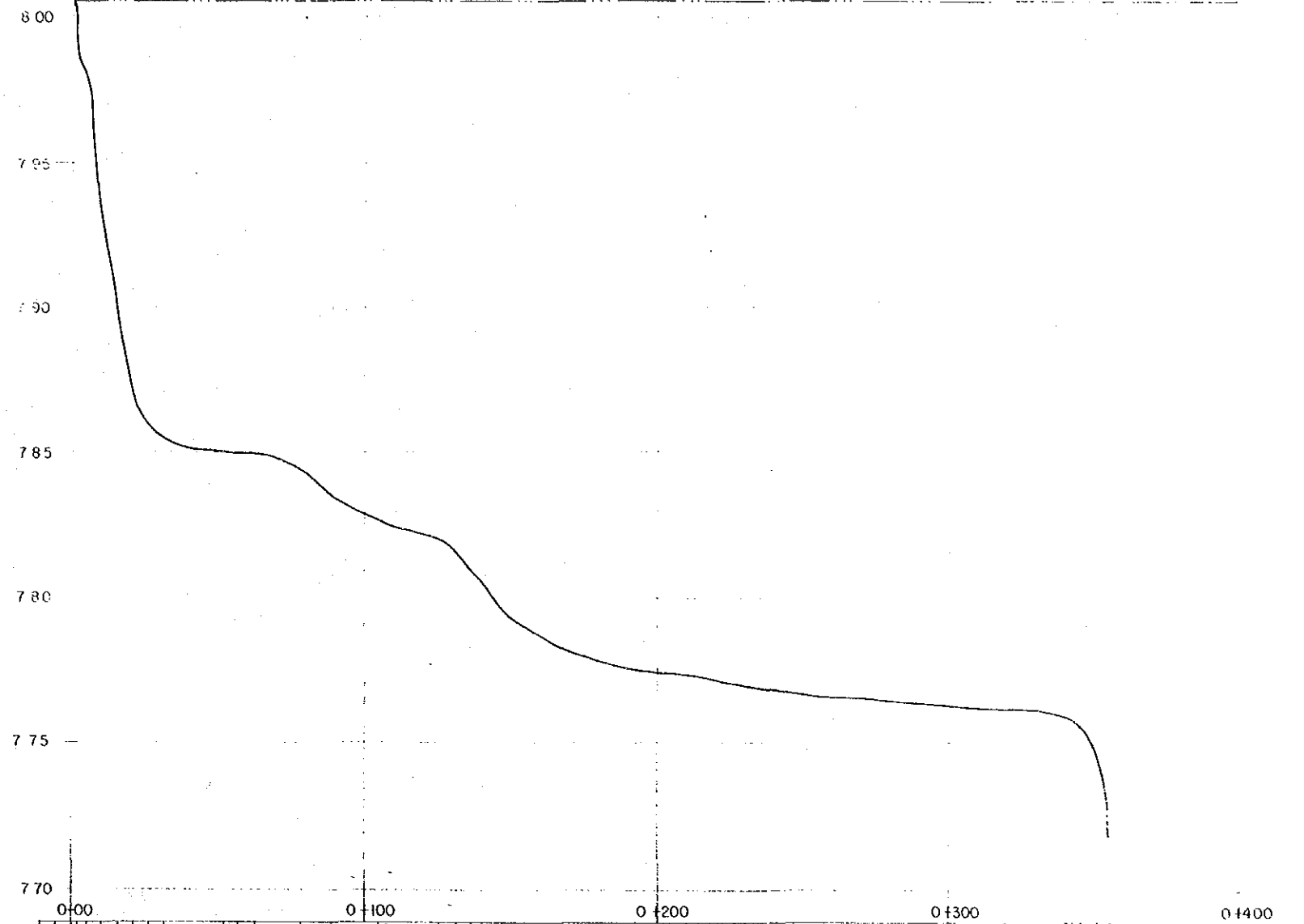
Title: _____

On behalf of the Government of: _____

Date: _____

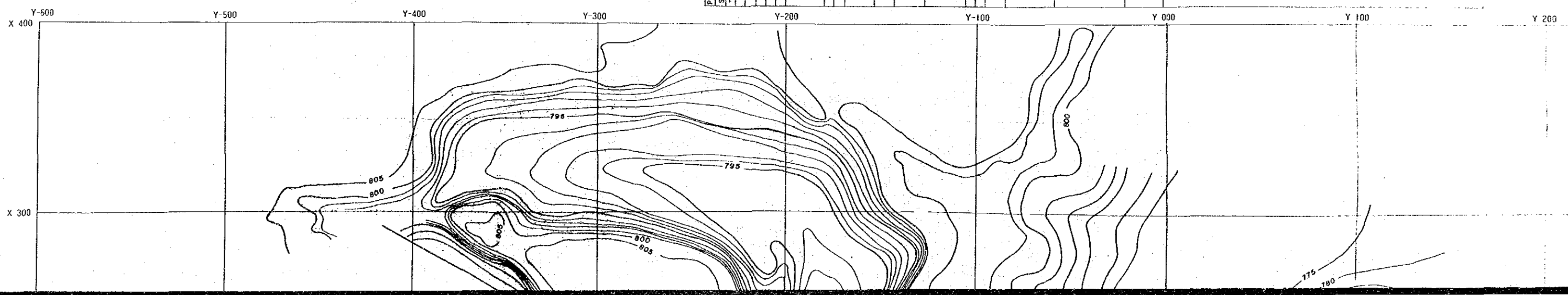
1989年ラ・ソレイダダム堆砂平面縦断図

m. s. n.m.



PERFIL

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	0+020	786.90
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	0+110	772.50
	0+115	771.00
	0+120	770.50
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X 300

Y-500

Y-400

Y-300

Y-200

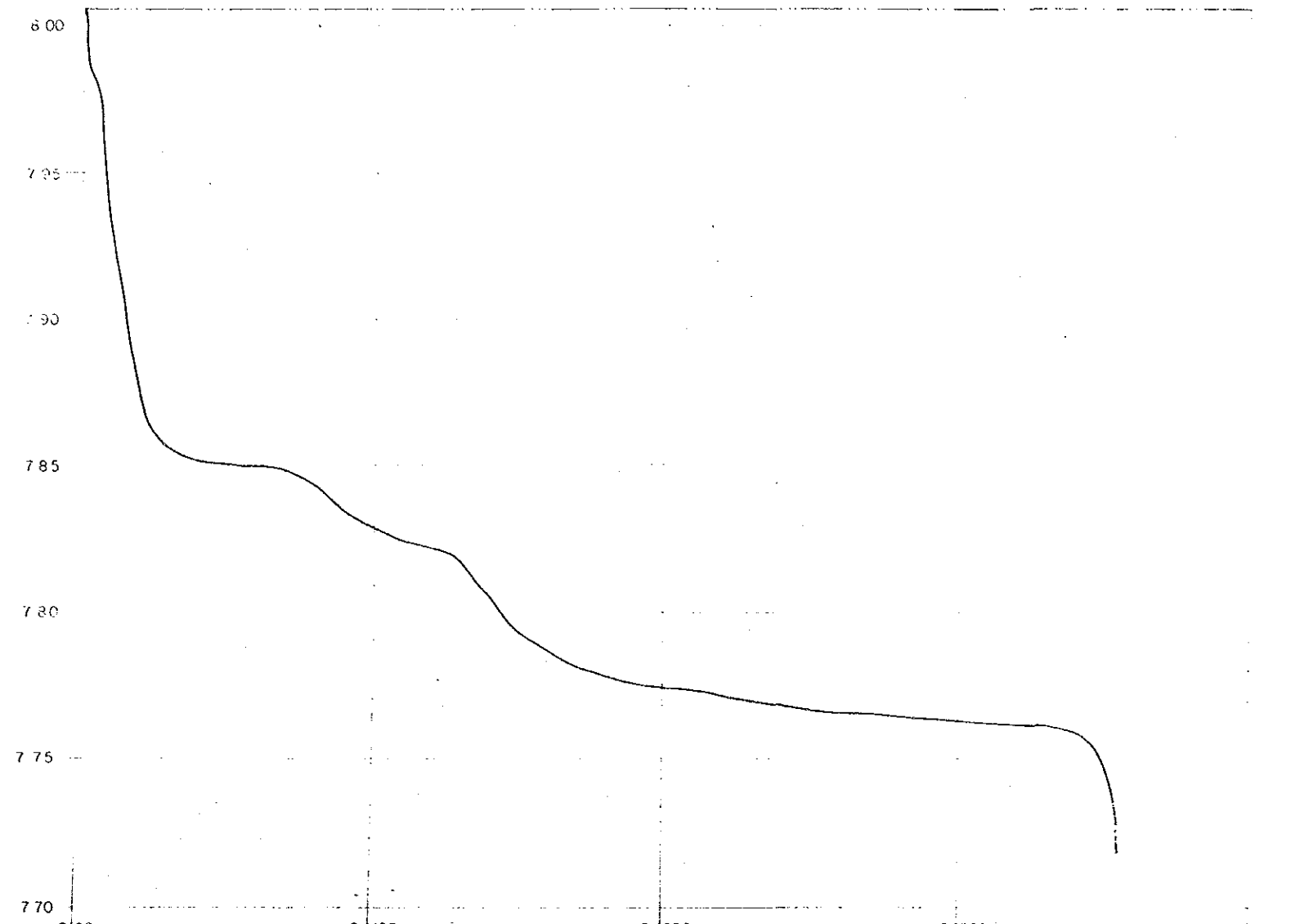
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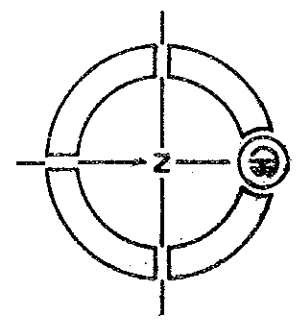
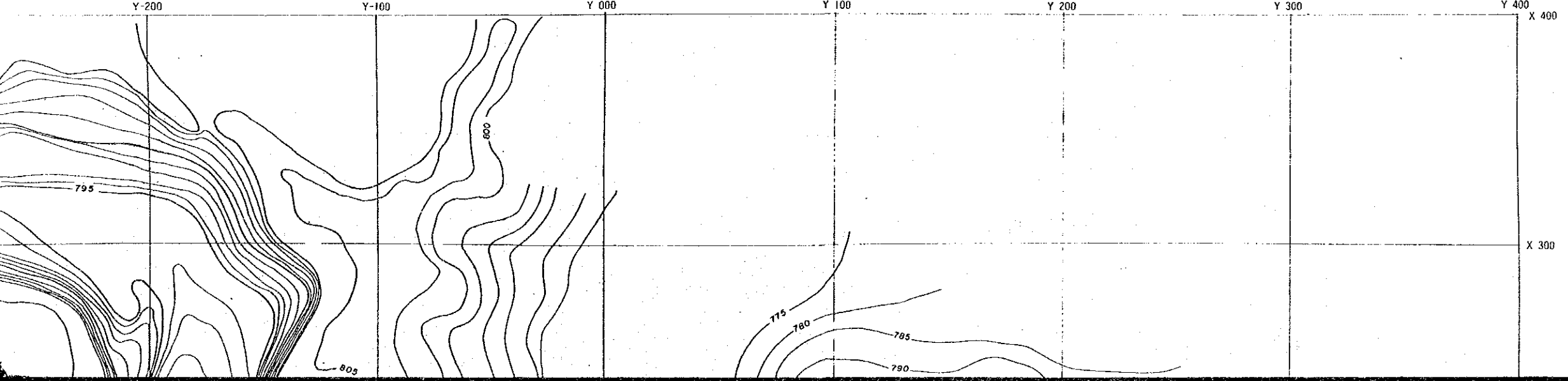
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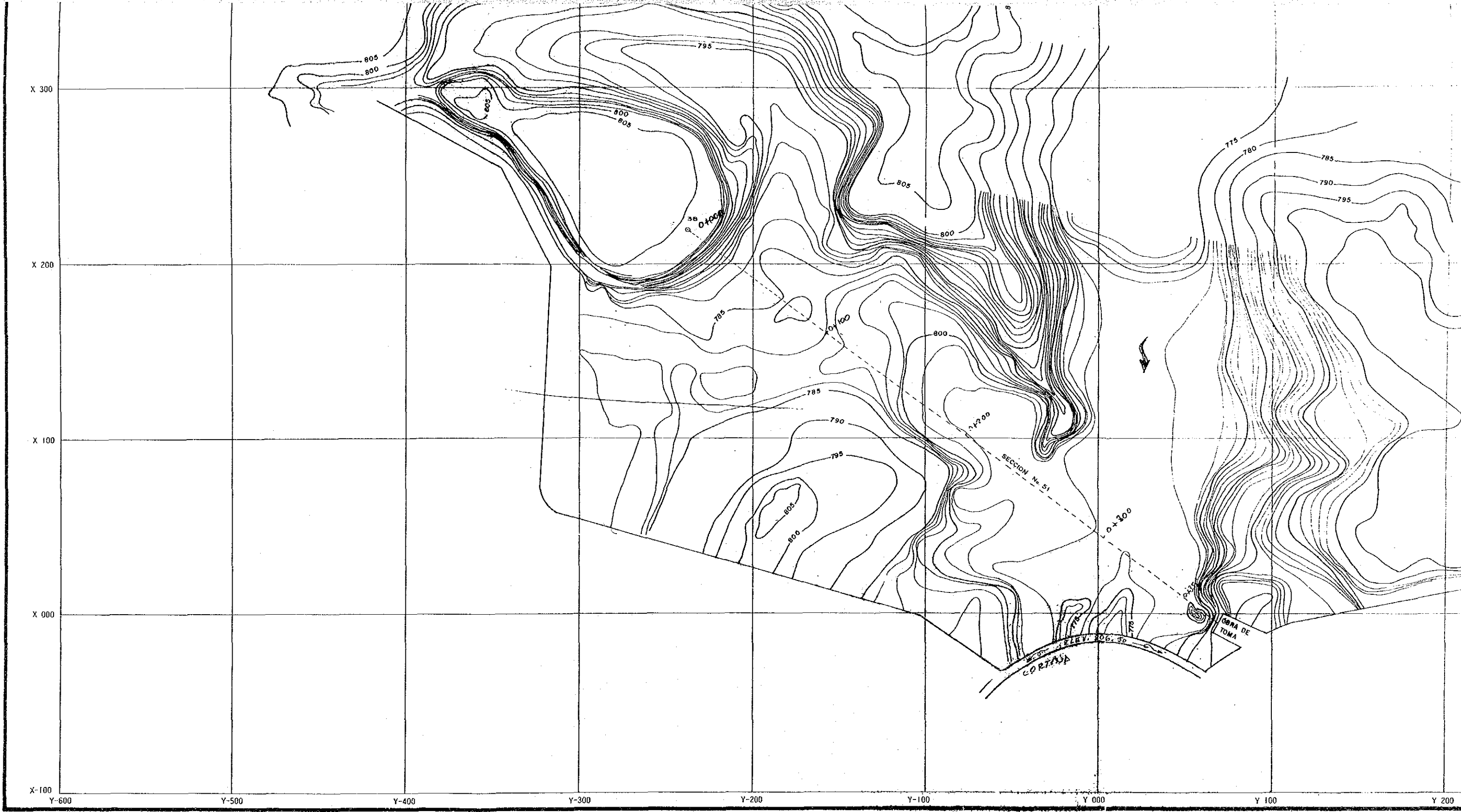
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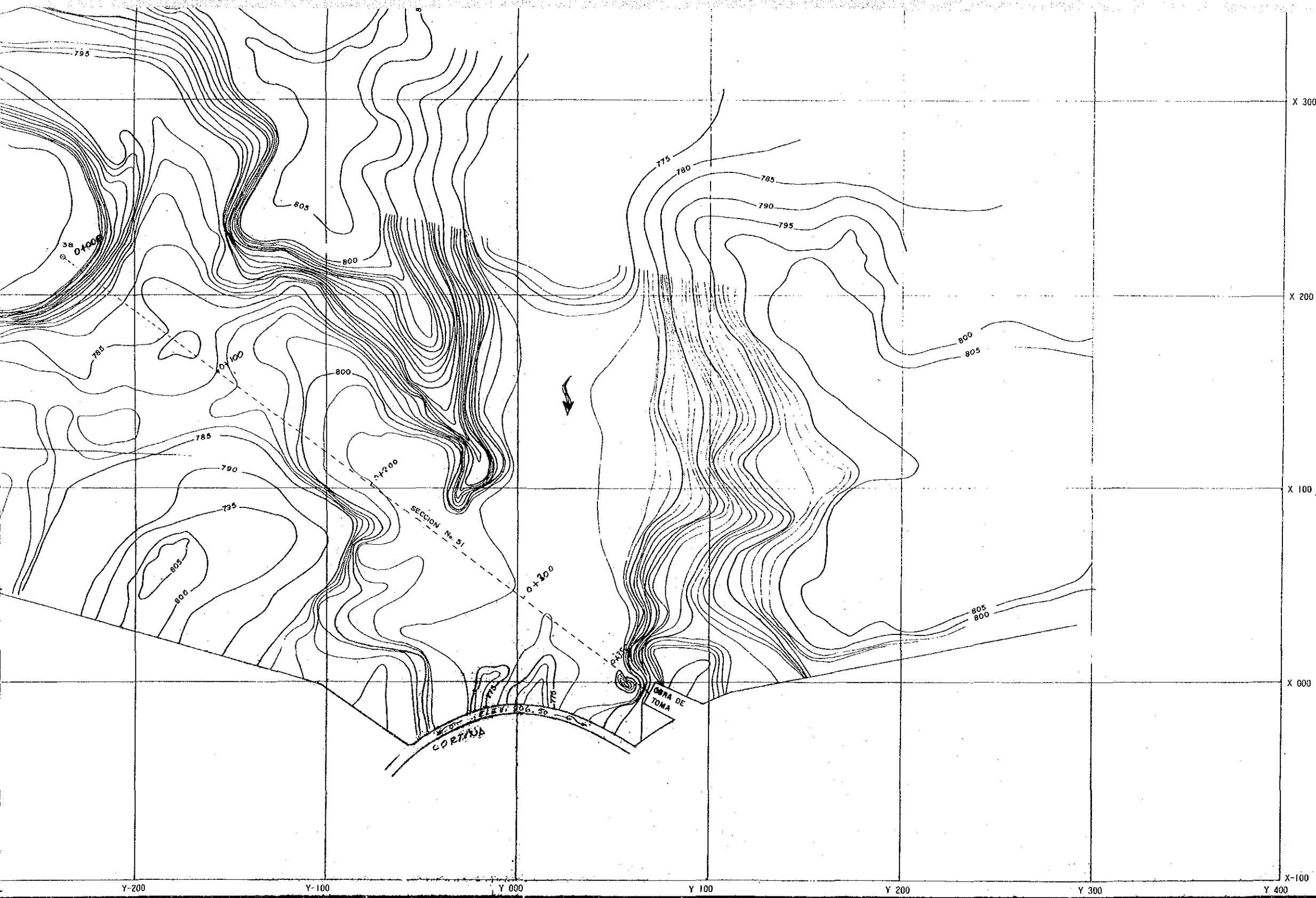


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0+015	0+015	789.40
0+020	0+020	786.50
0+025	0+025	783.40
0+030	0+030	780.00
0+035	0+035	777.40
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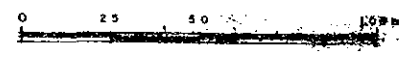




SIMBOLOGIA

CURVA DE NIVEL MAESTRA ——— 600 ———
 CURVA DE NIVEL ORDINARIA ——— 500 ———

ESCALA GRAFICA



ESCALA 1 : 1,000

EQUIDISTANCIA ENTRE CURVA DE NIVEL A CADA 5M

COMISION FEDERAL DE ELECTRICIDAD	SUBDIRECCION DE CONSTRUCCION UNIDAD DE ESTUDIOS DE INGENIERIA CIVIL	
	SUBUNIDAD DE ESTUDIOS CIVILES DEPARTAMENTO DE TOPOS Y BAT. SUPERINTENDENCIA DE ESTUDIOS ZONA GOLFO	
PRESALA SOLEDAO PUE. BATIMETRIA DE DETALLE AREA CRITICA		
FORMO : ING. E. LAGUNES	APROBO : ING. R. DELA PENA	
REVISO : ING. F. GARCIA M.	Vo. Bo : ING. J. A. MAZA A	
FECHA : MAYO-1930	PLANO No. 1 DE 1	DIBUJO : ———
No. CLASIFICACION	LOCAL	OF. NALES

JICA