CCA

INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

COUNTRY USSR (Ukrainian SSR)

SUBJECT Industries in Kiev and Dnepropetrovsk

REPORT

DATE DISTR. 23 JUN 1953

NO. PAGES 2

REFERENCES

DATE OF INFO.

PLACE & DATE ACQ.

50X1-HUM

50X1-HUM

SOURCE EVALUATIONS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

Attachment 1: The Bolshevik Machine Construction Plant in Kiev. This is a fairly detailed report on the plant organization and layout.[1] Sketches, descriptions, and production data are given on parts produced at the plant's steel casting foundry.

Attachment 2: The Bolshevik Plant in Kiev. The report contains fairly superficial information on plant production, operations, and layout.

1

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

STATE	X	ARMY	X	NAVY	X	AIR	15	FBI		AEC						

(Note: Washington distribution indicated by "X"; Field distribution by "#".)

INFORMATION REPORT INFORMATION REPORT

Attachment 3: The Kiev Machine Construction Plant (PROMSTROYDETAL). A reestimate of the number of plant employees, and descriptions, with accompanying sketches, of the chief plant products are given.[1]

Attachment 4: The Lenin Pipe Plant in Dnepropetrovsk. Information is given on plant organization, layout, and production. [redacted] orders were received at the plant from the Ministry of Defense Industry for pipes considered special because of the quality of the steel used and the pressure tests they underwent before shipment. These pipes ranged in diameter from 80 to 140 mm and in lengths from six to eight m; the pipe walls were from two to five mm thick. Pressure tests were effected by placing the pipe between two valves of the testing machine and submitting it to water pressure supplied by a pump, of from 25 to 140 at, according to the use to be made of the pipe. 50X1-HUM

[redacted] 50X1-HUM

[redacted]

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

Attachment 4

50X1-HUM

LENIN PIPE PLANT IN DNEPROPETROVSK

Identification and Location of Plant

1. The operating name of the Lenin Pipe Plant was Truboprokatnyy Zavod im. Lenina. It was not known by any other name and had no numerical designation. The plant was subordinate to the Ministry of Ferrous Metallurgy. It employed about 8,200 persons, 80 percent of whom were skilled laborers. No prisoners of war, penal laborers, or foreigners were employed. 50X1-HUM the plant director was a Soviet named Popov (fnu);

2. The plant was located on the Dnepropetrovsk-Diyevka highway, next to the Zavod Petrovskogo, near the Kaydaki neighborhood.[1] The streetcar line used to go to the plant began in Ozernaya Square and ended at the DZMO Plant. The Lenin Pipe Plant was completely surrounded by a brick wall which was about two meters high except for the section running west from the main entrance, which was about four meters high; the entire wall was about 40 centimeters thick. The plant measured about 1,800 by 900 meters. Its main facade faced south. (See sketch on page 9 for the plant's layout.)

Plant's Products

3. The Lenin Plant produced pipes for heating systems, water and oil pipelines, steam boilers, and ship shafts, in diameters ranging from five to 500 millimeters, in lengths of from six to eight meters, and the thicknesses of the pipe walls varied from one to ten millimeters. Orders were received from the Ministry of Defense Industry for pipes considered special because of the quality of the steel used and the pressure tests they underwent before shipment. These pipes ranged in diameter from 80 to 140 millimeters and in lengths from six to eight meters; the pipe walls were from two to five millimeters thick. The pressure tests were effected by placing the pipe between two valves of the testing machine and submitting it to water pressure supplied by a water pump, of from 25 to 140 atmospheres, according to the use to be made of the pipe.

4. A fixed part of the plant's production went to the Ministry of Automobile Industry 50X1-HUM This consisted of about 1,000 pipes daily which were about 1.4 meters long, with a diameter of about 0.8 meters, and the pipe wall was two or three millimeters thick.

5. The mean daily production of the plant in 1953 to 1954 was as follows:

a. Seamless tubes, 78 metric tons

b. Welded pipe, 35 metric tons

c. Steel stock, 98 metric tons

When necessary, production could be increased 40 percent above these figures. Efforts to increase production under the Five Year plan for 1950 to 1955 took the form of collective agreements among the workers, sections, shops, and plants. These agreements were established by the

labor unions and consisted in the fulfillment of the Plan. Workers and plants exceeding the Plan's goals were rewarded. whether or not production figures were falsified in order to meet Plan goals. In general, the Lenin Pipe Plant had no difficulty in maintaining a good average with respect to quantity and quality of work, although in the shop producing welded pipe, there was some difficulty with the electric welding process because of the malfunctioning of the electric welding machine. It was planned to install more machinery in this shop in order to increase production.

Packing

6. Wooden boxes with "Truboprakatnyy Zavod Lenina" marked on them were used for packing the plant's products. Special precautions were observed only in the packing of special orders intended for the Ministries of Defense Industry and Automobile Industry; these pipes were greased and wrapped in cellophane type paper, then packed in wood shavings in wooden boxes.

7. The plant was not dependent on foreign imports. It received the following raw materials in the approximate quantities and from the sources listed:

   a. Iron, 198,000 kilograms daily, equivalent to three railroad cars full, from the Petrovska plant in Dnepropetrovsk.

   b. Gas and coke, from the Koksokhim Zavod im. Kalinina in Dnepropetrovsk. About 100,000 kilograms of coke were received daily in two railroad cars;

   c. Steel sheet in rolls and special steel sheet, about 224,000 kilograms weekly, equivalent to about three and one-half railroad cars full, from the Gorkiy Plant in Gorkiy.

   d. Coal, about 50,000 kilograms daily, from the Donbas area in the Stalino region.

   The approximate mean daily consumption of the above materials was as follows: Iron, 180,000 kilograms; coke, 90,000 kilograms; steel sheet, 30,000 kilograms; and coal, 45,000 kilograms. The prime materials were transported in railroad cars about 14 meters long, four meters high, and three meters wide.

Water Supply and Sources of Energy

8. The plant had no water tanks or pumps because all its water was supplied by the neighboring Petrovska Plant.

9. The electric powerhouse located in Podgorodnoye supplied both the Lenin Plant and the city of Dnepropetrovsk with electric power. Two Soviet-made electric generators were installed on the first floor of the building designated as point No. (13) on the sketch on page 9 ; Of the two electric power lines entering the plant, one was an underground high-tension line that came from the Petrovska Plant, supplying electric power for the plant machinery. The other electric power line came from the city electric power system and supplied electricity for illumination of the shops and offices. Electric power was supplied for plant machinery at 360 volts, and for illumination of shops and offices, at 220 volts. the electric power supply adequate as there were no restrictions on the use of electricity nor had there ever been a shortage of electricity. The electricity had never been cut off for other than momentary power failures. The plant had no electric power installation for emergency use.

10. The plant had six conical, brick chimneys about 3.5 meters in diameter at the base; these chimneys belonged to the buildings located at the following points on the sketch on page 9 :

(5) one chimney, about 20 meters high.

(6) two chimneys, about 25 meters high.

(14) one chimney, about 20 meters high.

(15) two chimneys, about 25 meters high.

Layout

11. Following is the legend to the sketch on page 9 which gives the plant's layout. The numbers in parentheses are keyed to those on the sketch.

(1) Entrance gate for personnel.

(2) Gas storage tank, cylindrical, built of iron, painted aluminum color, approximately ten meters high and eight meters in diameter. Gas used for plant work came from the central gas storage tank in the city.

(3) Gas storage tank, asme as that described in (2) above, recently built and not yet in operation.

(4) Storehouse, laboratories, and repair shop. Its shape was that shown in the sketch. It was a two-story brick building measuring about 200 X 250 meters, with a tile roof and no basement. The building was not fire-resistant. The first story was a storehouse and the second story contained laboratories and a repair shop.

50X1-HUM

(5) Shop producing hot-drawn (seamless) boiler tubes. The shop was a one-story, concrete building that measured about 150 X 400 meters. It had no basement. One-half of the roof was of sheet iron; the other half was glass.

The shop produced hot-drawn tubes in diameters ranging from five to 150 millimeters and in lengths of from six to eight meters; the thickness of the tube walls was from two to three millimeters. These tubes were used in boilers. Soviet and German machines in good operating condition were used in the production of these tubes;

50X1-HUM

50X1-HUM

In this same shop, the tubes were cut and prepared for shipment by being wired together in groups without any other kind of packaging; the tubes were loaded into railroad cars for shipment to various points in the USSR. About 400 persons worked on each of three shifts.

50X1-HUM

(6) Sheet metal rolling shop. The shop was a one-story concrete building that measured about 120 X 480 meters with no basement. The roof was partly of sheet iron and partly of glass.

This shop produced metal sheets about 10 meters long, 0.4 meters wide, and from two to three millimeters thick; these sheets were used by the plant for the production of tubes. Soviet machines in good condition were used in the production of this sheet metal;

50X1-HUM

about 70 percent of the sheet metal produced by this shop was used by the plant itself for the production of tubes, and the rest of the sheet metal was shipped to other points in the USSR. About 500 persons worked in this shop.

50X1-HUM

50X1-HUM

(7) Railroad entrance.

(8) Machine shop, offices, and showers. This two-story brick building with tile roof measured about 80 X 200 meters; the first story was

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

a machine shop and the second contained shop offices and showers. It had no basement.

The machine shop repaired machinery used at the plant; it contained lathes, planers, milling machines, drill presses, and boring machines, of Soviet, German, and make. The Soviet machinery, which was of Krasnyy Proletariy make, was in good condition; the other machinery was old and in poor condition. About 200 persons worked in this shop.

50X1-HUM

50X1-HUM

50X1-HUM

(9) Main plant office, a two-story building measuring about 80 X 100 meters, in which about 60 persons worked.

(10) Compressor station, a one-story concrete building, measuring about 40 X 80 meters, in which four compressors were installed. The roof was also concrete,

There was no basement. The compressors were of Soviet make and were in good condition;

Three persons worked at the compressor station.

50X1-HUM

50X1-HUM

(11) Machine shop, dining room, showers, and gas rescue squad. This two-story brick building measured about 80 X 280 meters; the roof was of sheet iron.

The first story contained a machine shop which repaired machinery used in the foundry and in the sheet metal rolling shop. The second story contained the dining room, showers, and housed the gas rescue squad which was equipped with ten gas masks, resuscitators, and stretchers. The machine shop contained the following Soviet-made equipment: one planing machine, three drill presses, and finishing tables, all in good condition. The lathes were of Krasnyy Proletariy make;

About 200 persons worked in the machine shop.

50X1-HUM

50X1-HUM

(12) Personnel and vehicle entrance gate.

(13) Construction shop and electric powerhouse. This was a two-story brick building that measured about 110 X 290 meters. The first story contained a shop dedicated to construction and plant building repairs, and two electric generators; the second story was an electric powerhouse containing two Soviet-made transformers

50X1-HUM

and a shop for the repair of wearing apparel. This building had a basement about 3.5 meters deep, half of which was used for installations of the electric powerhouse, and half as a clothing and wearing-apparel storehouse. The building had a tile roof.

The shop had a cement mixer and other construction equipment as well as a carpentry shop. A total of about 250 persons worked in the shops and electric powerhouse.

50X1-HUM

(14) Shop producing hot-and cold-drawn pipe, a one-story brick and concrete building measuring about 120 X 550 meters; it had no basement. The roof was made of glass and sheet iron.

The shop produced hot- and cold-drawn pipe in diameters ranging from 45 to 500 millimeters and in lengths of from six to eight meters; the thickness of the tube walls was from two to four millimeters. These pipes were used in water and oil pipelines. Soviet machines in good condition were used in the production of these pipes;

50X1-HUM

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

(15) Steel Foundry, a one-story brick and concrete building that measured about 250 X 500 meters. It had no basement; the roof was tile. [redacted] Fifty percent of the steel produced by the foundry was used by the plant in the production of tubes; the remainder was shipped by rail to other points in the USSR. The foundry had four coke-burning furnaces, each about ten meters high. The foundry employed about 500 persons on each of three shifts. 50X1-HUM

(16) Shop producing welded pipe, a one-story building measuring about 650 X 160 meters with no basement. It was built of brick and concrete; the roof was of sheet iron and glass. [redacted] The shop produced welded pipe in diameters ranging from 45 to 140 millimeters and in lengths of from six to eight meters; the thickness of the pipe walls was from two to three millimeters. These pipes were used in the construction of ship shafts and water and oil pipelines. The shop used Soviet-made Gorkiy automatic electric welding machines that had been made in 1948 and were in good condition, presses, cutters, and threading machines. About 4,500 pipes daily, or about 1,500 each shift, were produced here. The pipe was shipped by rail to various points in the USSR [redacted] About 400 persons worked on each of the three shifts. 50X1-HUM 50X1-HUM

(17) Compressor station, a one-story concrete building measuring about 50 x 50, with no basement. The roof was of sheet iron. [redacted] The compressor station had six Soviet made Kirova compressors that had been made in 1950; the station employed about ten persons. 50X1-HUM

(18) Dining room and showers, a one-story building measuring about 80 X 300 meters, with no basement.

(19) Machine shop repairing pipe-shop machinery, dining room, and showers. This was a two-story brick building measuring about 60 x 360 meters with no basement and a tile roof. [redacted] The machine shop was on the first floor and the showers and dining room wer on the second. Soviet and German-made lathes, planers, and drill presses in fair condition were used in this shop. The Soviet machines were of Krasnyy Proletariy and of Leningrad make; the German machines came from East Germany. About 50 persons worked in this shop. 50X1-HUM

(19-A) Shop under construction. The building measured about 100 X 150 meters; [redacted] 50X1-HUM

(20) Pedestrian bridge.

(21) Plant's main entrance, on a bridge built over railroad tracks.

(22) Point controlling acess to plant.

(23) Personnel office.

(24) Plant clinic.

(25) Garage.

12. Two railroad lines of standard Soviet gauge entered the plant, one from the west, and one from the south; both lines connected with the Dnepropetrovsk-Dneprodzerzhinsk (N48-31, E34-38) line. Sidings are indicated on the sketch on page 9. Railroad cars consisted of boxcars, closed cars, and flat cars. All materiel was in good condition. There were no special installations for loading and unloading. The cars were loaded by crane. From six to ten railroad cars entered and left the plant daily. Those cars arriving transported the raw materials listed in paragraph 7. above; those leaving the plant transported pipe. 90 percent of all materials entered and left by rail. 50X1-HUM

Highways and Vehicles

13. The highway servicing the plant was a branch of the Dnepropetrovsk-Dneprodzerzhinsk highway. It was asphalt, about nine meters wide, and was adequate for two-lane traffic. This highway had a good drainage system and was always open to traffic. The plant employed about two and one-half ton and four-ton ZIS and GAZ trucks and had a garage where trucks were repaired. These trucks transported food, clothing, lumber, and plant products; ten percent of all materials entered and left the plant by trucks which were not used for the transport of raw materials. 50X1-HUM

Organization and Working Conditions

14. The plant worked three shifts; the two day-shifts were eight hours, and the night shift, seven hours long. 3,200 workers were employed on the morning shift, 3,000 on the afternoon shift, and 2,000 on the night shift. The difference in numbers was because office, construction, machine shop, and storehouse personnel did not work on the afternoon and night shifts. Vacations normally lasting 12 days were given throughout the year. Eighty percent of plant personnel received an average monthly salary of 1,000 rubles. no strikes, complaints, or special privileges and attendance was good. Each shop had an infirmary attended by a nurse for emergency cases; there was also a clinic with doctors in attendance. The shop had the following organization: shop chief, aide to shop chief, shop offices and technical department, shift foreman, section head, and workers of categories 5, 6, and 7. The shop had two sections, pipe production and final processing. For the plant's table of organization, see sketch on page 10. 50X1-HUM 50X1-HUM 50X1-HUM

Storage

15. The plant's only storehouse (point (4) on the sketch on page 9) covered an area of about 1,200 square meters, had a tile roof, and was built of brick. It was used for storage of materials for plant use such as electric cables, motors, tools, clothes, heavy greases, and oils; about eight drums of grease and ten drums of oil were stored there. Normally, when the plant products had to be stored, they were kept in the various shops until shipment.

Fire Prevention

16. Each shop or section had its own fire-fighting squad comprised of employees and fire-fighting equipment such as axes, water hoses, buckets, hooks, and fire extinguishers with a list of those persons designated to use this equipment. In addition, each shop had fire extinguishers hung on the walls, and boxes of sand distributed throughout the shop. In each shop, one door was designated as an emergency exit, and the area around it was kept free of everything that might hinder egress. Each shop also had an exterior metal ladder that went from ground level to the roof. The

plant did not have its own firehouse, but in an emergency, could call on the firehouse located about 200 meters away which served all the plants in the area.

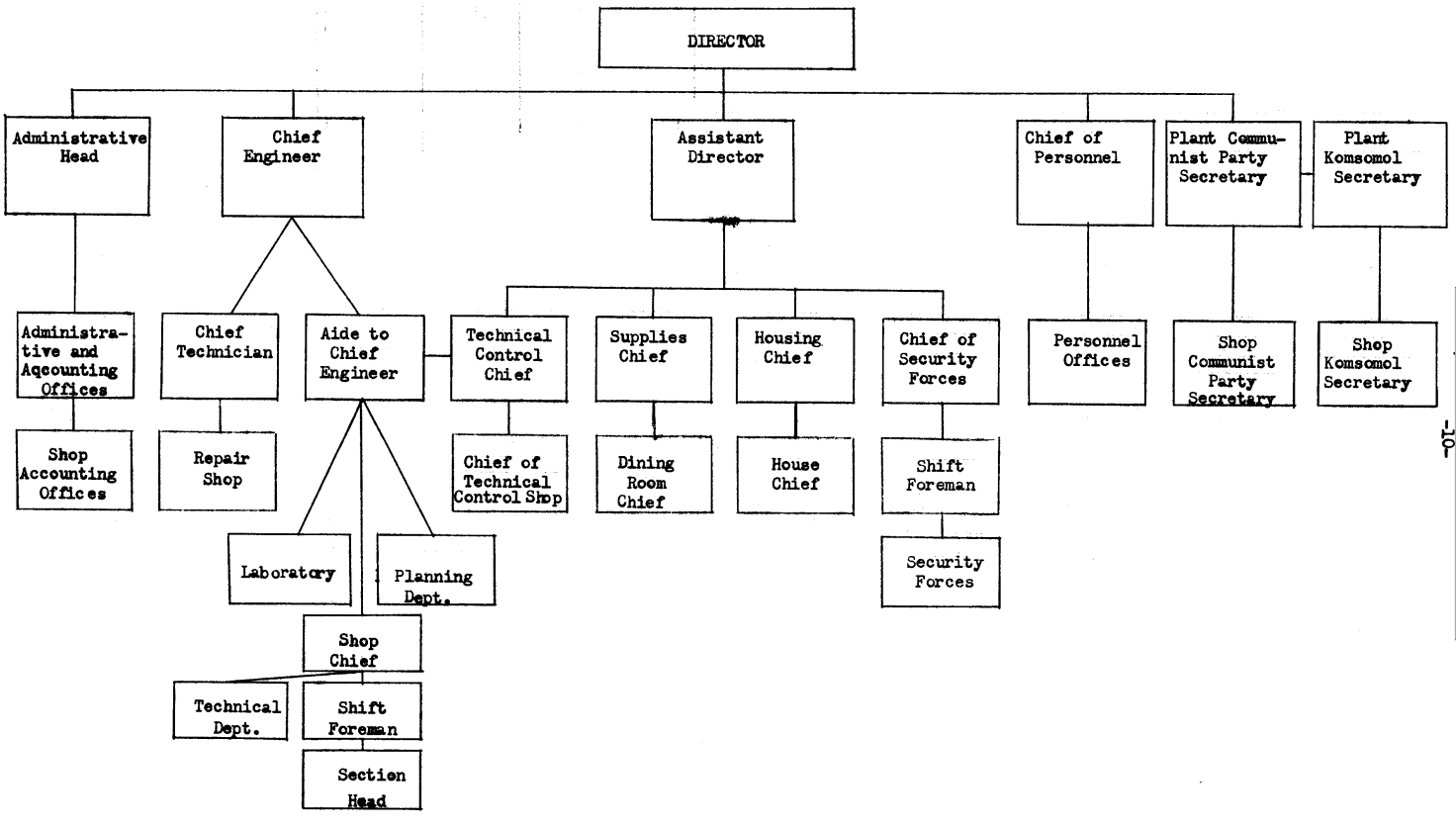
Security

17. Workers could enter and leave the plant only through the doors designated on the sketch on page 9 as Nos. (1), (12), and (21), and it was necessary to present a pass bearing a photograph. Excepting the laboratory and electric powerhouse, to which entry was forbidden to persons not working in them, employees were allowed to go freely from one shop to another. One plant guard each was stationed at points (1) and (7) on the sketch on page 9 and two each at points (12) and (22). Each watch had its chief in charge of the guard posts and plant interior and there was a chief in charge of all the plant guards who totaled 22. The guards belonged to the BOKHRA (Boennorizrovannaya Okhrana). They were armed with rifles and pistols and wore blue uniform, a blue cap, and high boots; the collar points of their high-buttoned jackets were red.

Production Process for Shop No. 16, Producing Welded Pipe

18. [redacted] the production process for the shop [redacted] as follows (see sketches on pages 11 to 14 for the layout and machinery in use in this shop). The rolls of sheet steel were transported by crane to the pipe-making machines; the roll was placed on a feeder roller, and the sheet passed through the polisher to the rollers which gave it the form of a pipe. These passed through the adjustment device to the automatic welding apparatus and were then cut to predetermined lengths. Once the pipes were cut, they were transported by crane to be pressure tested. If the pipe met pressure requirements, it was sent to the threading machines to receive an inside or outside thread. Rejects were sent for cutting to necessary lengths and were put to uses considered not important. Once the pipes had been threaded, they were marked to identify the shift and the date produced in order to be able to fix responsibility in case of failure. After marking, pipes to be used for water and oil pipelines were painted black and stored in the shop for shipment [redacted] Within the shop, materials were transported by three and five-ton overhead cranes. The pipe-making machines producing welded pipe were the only automatic machines in the shop. About 150 workers were employed in the production of the pipe, and about 350 in its final processing.

TABLE OF ORGANIZATION OF LENIN PIPE PLANT



50X1-HUM

50X1-HUM

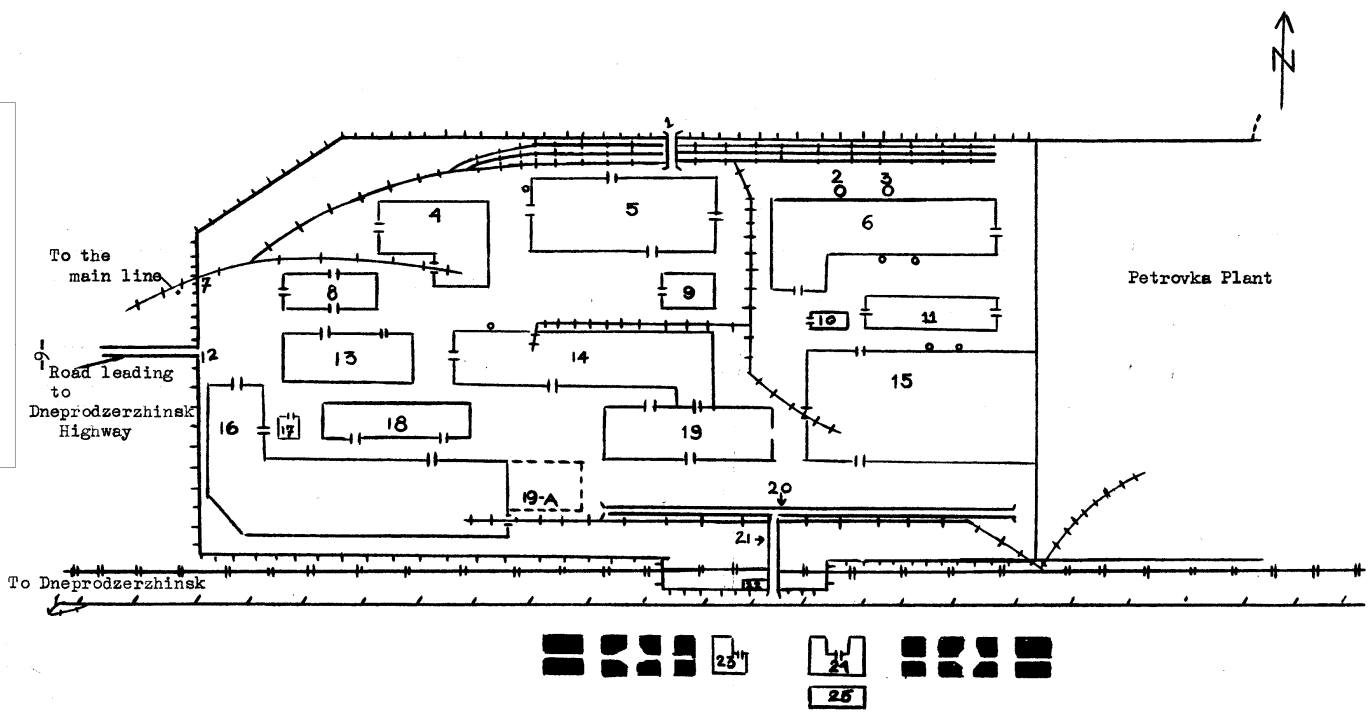
CONFIDENTIAL

CONFIDENTIAL

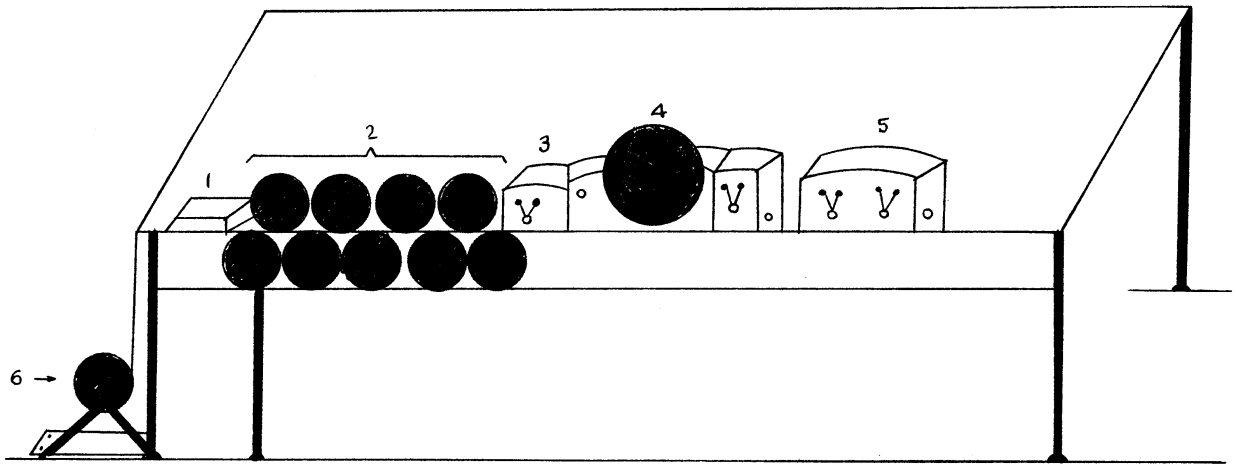
-10-

Attachment #

Layout of Lenin Pipe Plant in Dnepropetrovsk



Pipe-Making machines installed in Shop No. 16 of Lenin Pipe Plant

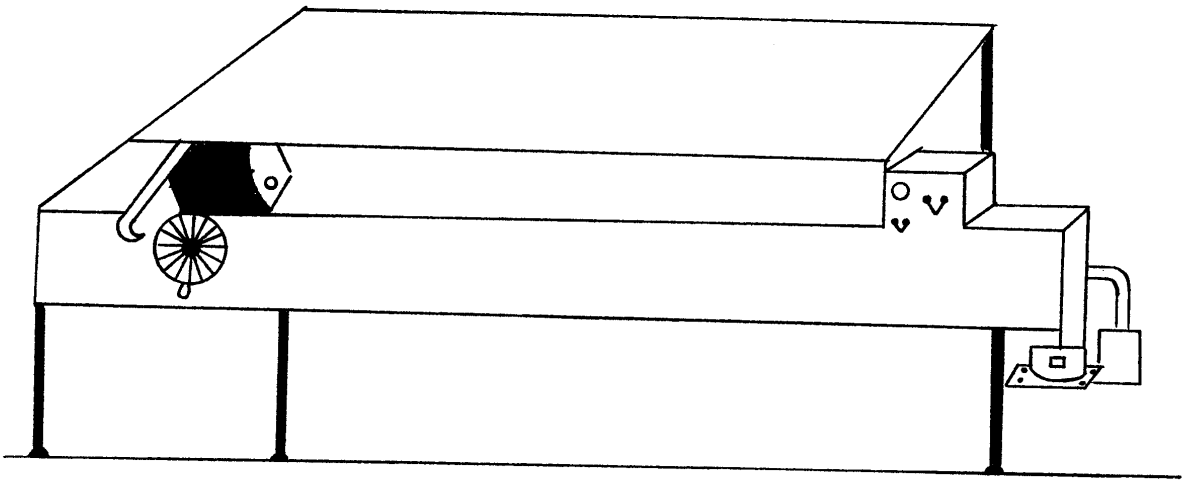


Make: Gorkiy of Soviet manufacture, 1948

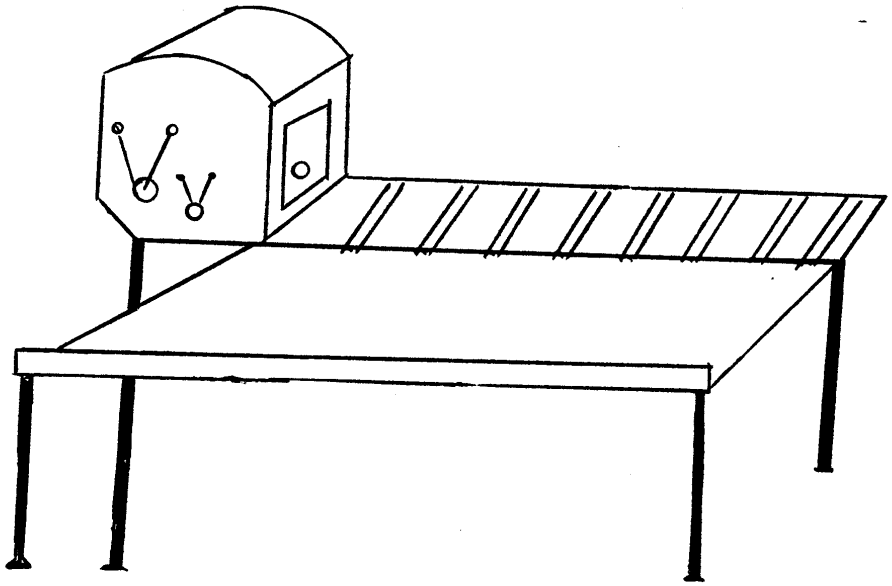
1. Polisher
2. Rollers to form the pipe
3. Pipe adjusting device
4. Automatic welder
5. Automatic cutter
6. Support for rolls of sheet.

Attachment 4

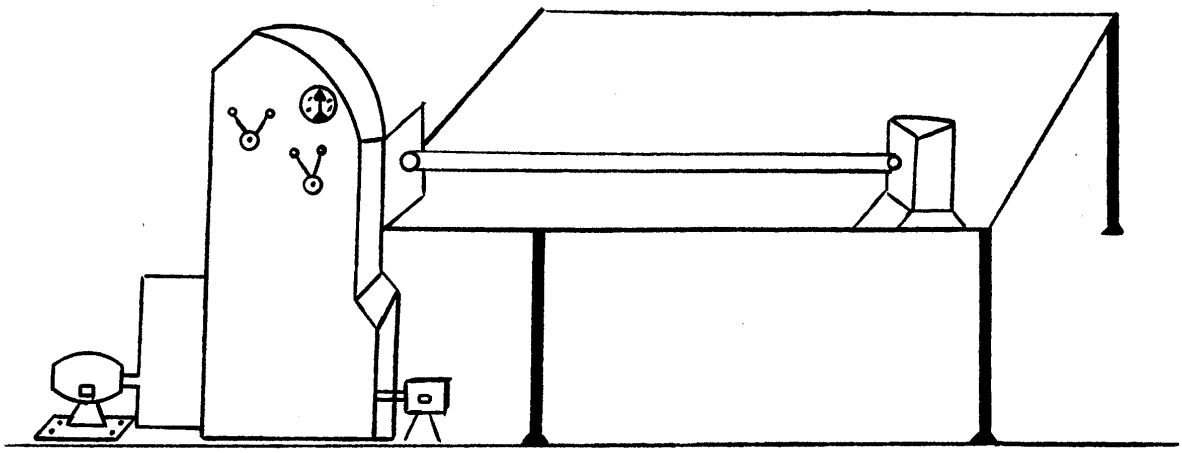
Pipe Cutters installed in Shop No. 16 of Lenin Pipe Plant.



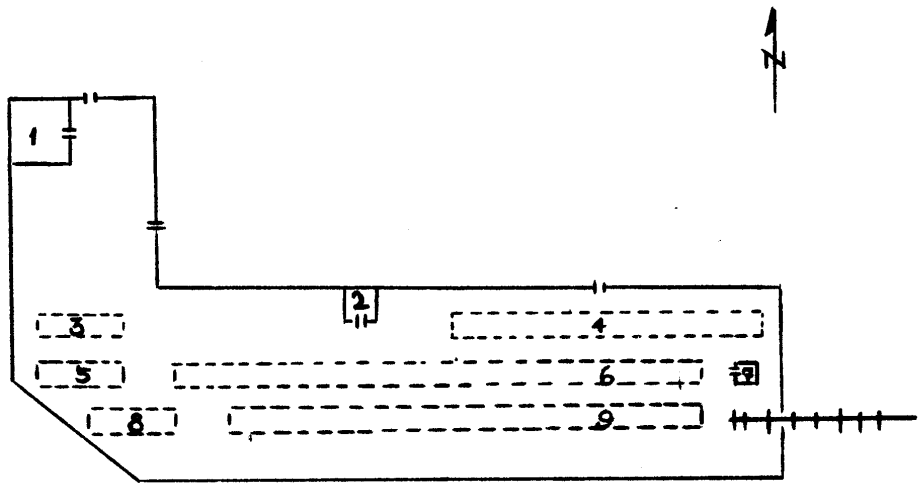
Threading Machine Installed in Shop No. 16 of Lenin Pipe Plant



Presses Installed in Shop No. 16 of Lenin Pipe Plant



LAYOUT OF SHOP PRODUCING WELDED PIPE (SHOP NO. 16) AT LENIN PIPE PLANT



Approximate Scale: 1:5,000

1. Repair Section
2. Shop Offices
3. Pipe making machine
4. Hydraulic presses
5. Pipe-making machine
6. Hydraulic presses, cutters, and threading machines.
7. Control office.
8. Pipe-making machine
9. Hydraulic presses, cutters, and threading machines.

Attachment

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

Attachment 3

50X1-HUM

KIEV MACHINE CONSTRUCTION PLANT (PROMSTROYDETAL)

1. the number of Soviet employees at the Kiev Machine Construction Plant (PROMSTROYDETAL) to have been close to 1,200 or 1,300. breakdown of employees by sections is as follows: 50X1-HUM 50X1-HUM

a.	Administration	75
b.	1st Mechanical Workshop	350
c.	2nd Mechanical Workshop	300
d.	Iron Foundry	100
e.	Assembly Workshop	150
f.	Instruments Repair Shop	50
g.	Mechanical Parts Repair Shop	50
h.	Warehouse Personnel	50
i.	Laborers	100
j.	Guards	25
		1,250

2. Assembly of cranes, hoists, winches, and various building construction implements represented the plant's chief production. Gears, nuts, bolts, and structural parts were produced on a continuous basis as components for the crane assembly. Following is a description of items produced at the Kiev Machine Construction Plant during 1955 and 1956. Each part is illustrated by a sketch, on pages 4 to 8 .

a. Jib Crane (Bashennyy Kran), ordinary large-size construction or loading crane. The assembly of these cranes comprised the plant's major production. 14 to 15 cranes were assembled monthly. Figures of the yearly production plan were unknown but the Soviets say that the plant overfilled its established production norm. The assembly of the cranes was performed in the open and they were then transported from the plant in eight sections. See sketch No. 1 on page 4 . 50X1-HUM 50X1-HUM

b. Automotive Wrecker Crane (Avtomashinnyy Kran), described as a common type, small-size hoist, mounted on a motor vehicle, an all-purpose crane. Two to four were produced monthly; production was not continuous. This crane was not assembled at the plant. See sketch No. 2 on page 5 .

c. Winch (Lebedka), in production at PROMSTROYDETAL during 1955 to 1956. This was ordinary light-weight equipment for building construction, assembled at the plant with structural parts which were obtained from other factories. Some parts such as gear wheels, nuts, and bolts were produced at the plant as required. On the average, production varied from eight to ten monthly. See sketch No. 3 on page 6 . 50X1-HUM

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

50X1-HUM

50X1-HUM

50X1-HUM

e. Conical Gear (Konicheskaya shesterna or Zubchatka). The cutting of this gear began at the plant similar orders for the production of such gears were given to many of the Kiev area machine construction plants. many of these gears were being produced at several different places. Rough molded forms were delivered to the 2nd Mechanical Workshop for cutting. approximately 300 to 400 such units were produced per day by three working shifts of four workers each. The units were packed in wooden boxes, 200 units to a box. The only lettering on a box stated that it was a shipment for an agricultural station or farm (Otpravka v selshokhozy-aystvennyyu stantsiyu). Only one size was cut at the plant. Weight per unit was about 1.5 to 2 kilograms. 25 teeth per unit. See sketch No. 5 on page 8 .

50X1-HUM

50X1-HUM

50X1-HUM

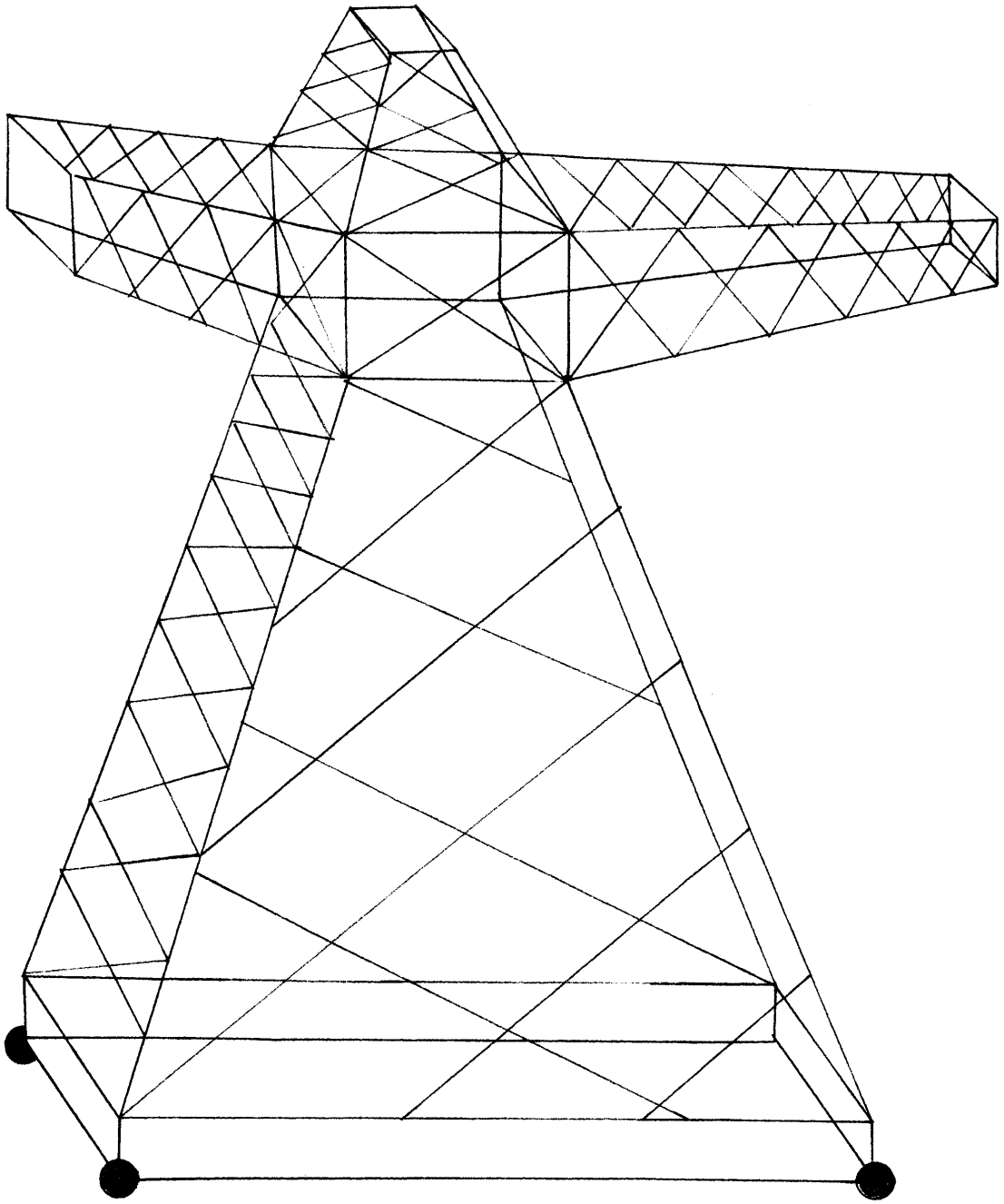
50X1-HUM

50X1-HUM

50X1-HUM

[redacted] Sketch No. 1 50X1-HUM

Jib Crane

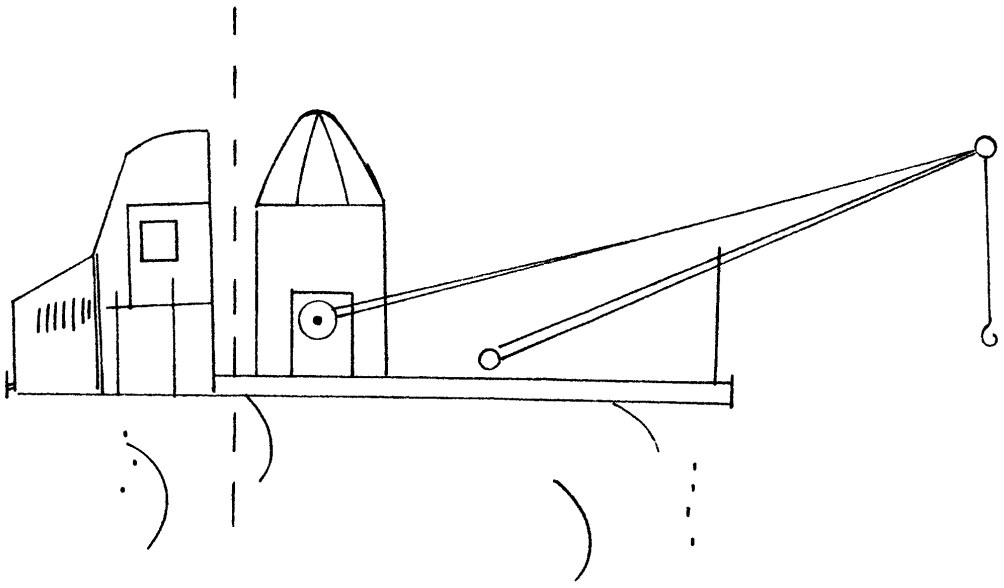


50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

Sketch No. 2 50X1-HUM
Automotive Wrecker Crane



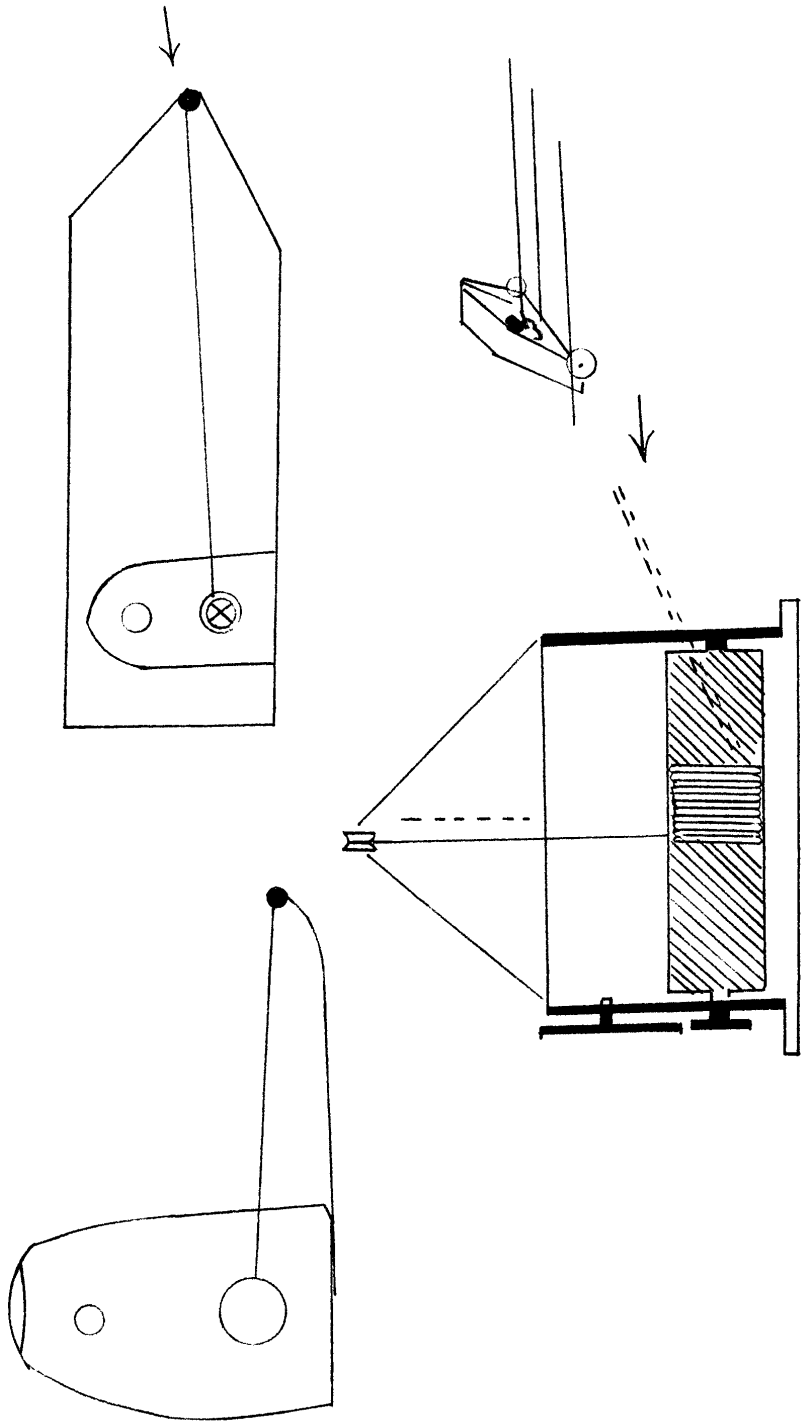
C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

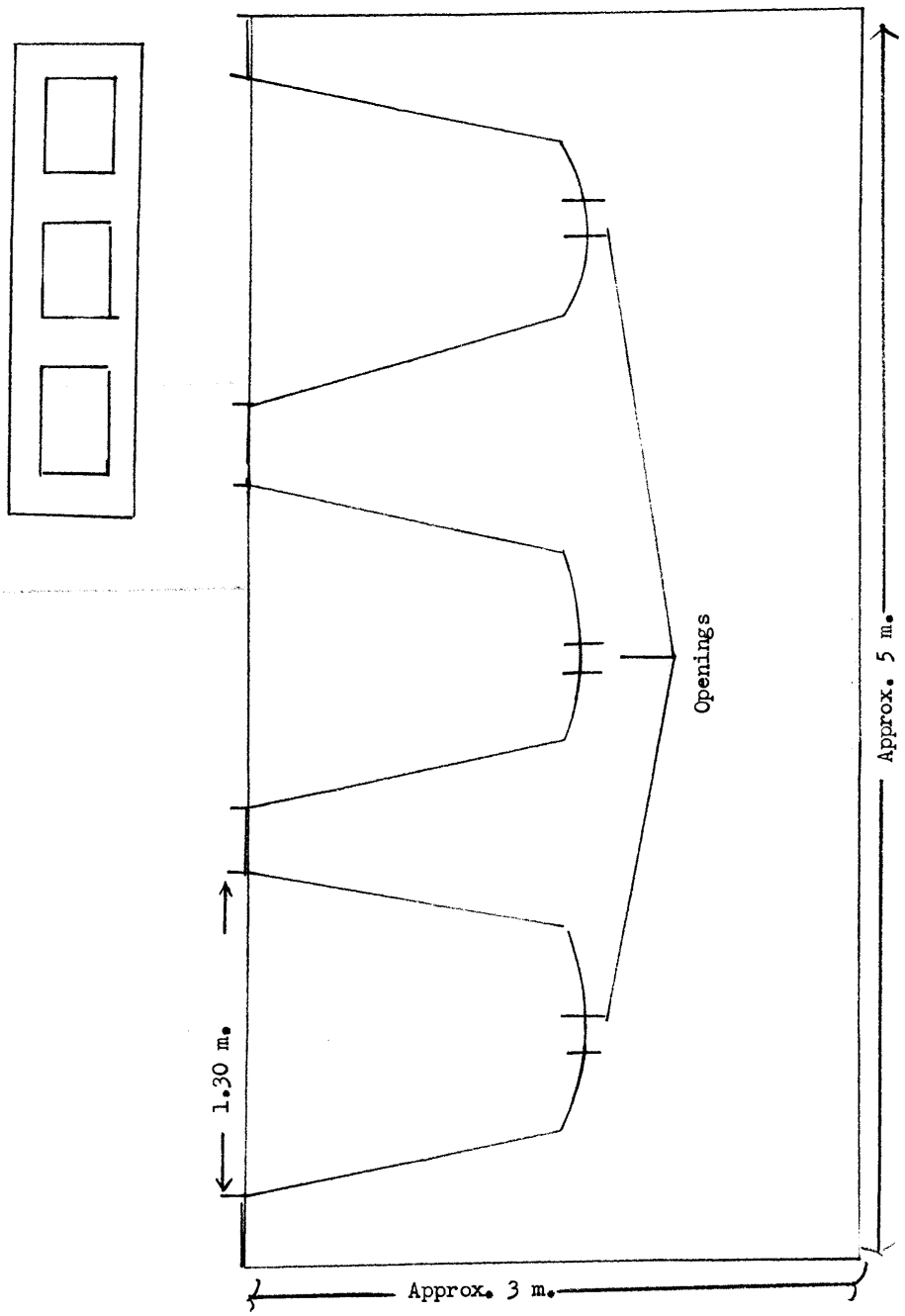
Sketch No. 3

50X1-HUM

Winch

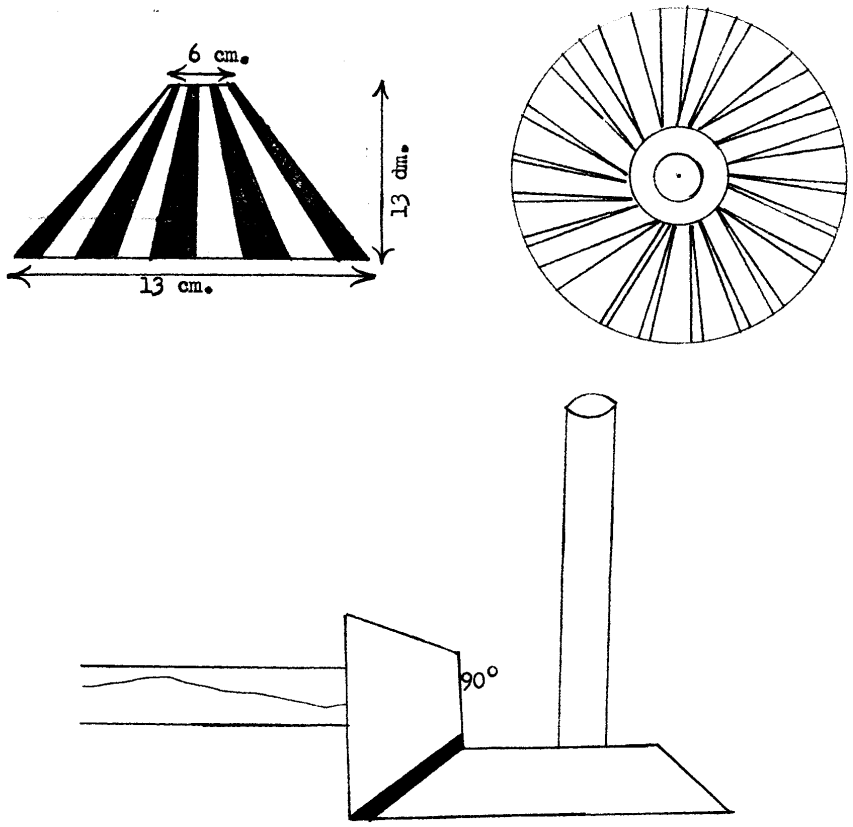


[redacted] Sketch No. 4 50X1-HUM
Unidentified Object Called "Bunkeva"



[redacted] Sketch No. 5

Conical Gear



Attachment 2

50X1-HUM

BOLSHEVIK PLANT IN KIEV

Location

1. The Bolshevik Plant, subordinate to the Ministry of Machine Building was located between the Brest-Litovsk highway and Pervaya Dachnaya and Tretya Dachnaya ulitsa in the city of Kiev. Its location is indicated on the map on page 9. 50X1-HUM

General

2. The plant was of pre-revolutionary construction, but during WW II it had been stripped of machinery by the Soviets who moved it to the Caucasus or the Urals, and later almost completely destroyed by the retreating Germans. The plant occupied an almost square area with a perimeter of approximately 1,500 meters surrounded by a two-and-a-half meter high wood and stone wall except where the plant was bordered by buildings. Vehicle and personnel entrances were located on Tretya Dachnaya ulitsa. The one-story, reinforced concrete buildings were constructed with a structural-metal framework, and hollow concrete-block roofs covered with a type of tar called "golipot". There were no basements or secret sections in these structures. It was rumored that a new shop was to be built in one of the unused areas of the plant but no more details were known about this proposed shop. The plant machinery was of good quality and in good condition although it was not new.

Installations

3. The numbers in parentheses below refer to sketch of the plant layout on page 10. 50X1-HUM

(1) Rubbish dump. An open yard some six meters wide between the plant buildings and wall.

(2) Nickel-plated, bed-construction shop. Nickel-plated, pipe, bed-frames were constructed in this shop and stamped with the name "Bolshevik". They were packed in wood crates with pieces of corrugated cardboard as protection. The shop had the following sections:

(a) Nickel-plating section.
(b) Painting section.
(c) Foundry section.
(d) Assembly section.
(e) Welding section.

(3) Pipe-extruding machine.

(4) Former site of outmoded buildings which had been demolished in 1953.

(5) Fire department personnel living quarters. The plant had a crew of professional firemen who were lodged in this building. The firemen

inspected the shops in order to be sure that the fire precaution regulations were being observed. Each shop was equipped with fire hydrants, sand buckets and foam extinguishers. In case of emergency, workers acted as auxiliary firemen; these workers received extra vacation time for this service.

(6) Foundry. This was an old structure. Cast iron was produced here.

(7) Foundry sand dump.

(8) Machine repair shop. Approximately 100 employees worked in the machine shop on a single shift, making the gears, shafts, and did the other work involved in machinery repair. A sketch of this shop on page 11 is explained by the following legend:

1 Machine assembly section.

2 Welding shop.

3 Finishing section with finishing tables.

4 Shop chief's office.

5 Cloakroom.

6 Toilets.

7 Shop entrance.

8 Tool and material supply.

9 Soviet-make, vertical planing machine and two polishing machines. One of the polishing machines was magnetic and of Soviet-make.

10 Lathes. There were 12 lathes, the largest, a modern, 7-meter machine of German-make in the year 1954. The other lathes were of Soviet-make.

11 Two Soviet-make milling machines.

12 Fifteen-ton bridge crane.

13 Horizontal saw and circular saw of Soviet-make.

14 Three Soviet-make drilling machines and three Soviet-make planers. One of the drilling machines was very old; one of the planers was a large table planer.

15 Rubbish dump. An open yard some six meters wide between the shop building and the plant wall where waste material was dumped.

16 Open areas.

17 Location of the bed-construction shop.

(9) Prospective site for a scrap iron dump.

(10) Foundry scrap iron dump.

(11) Machine assembly shop.

(12) Coal dump.

(13) Compressor center. The shops were supplied with compressed air from this center.

(14) Railroad entrance.

(15) Heating plant coal dump.

(16) Forge and metal shop. These were subordinate to the boiler shop.

(17) Heating plant.

(18) Welding shop.

(19 a.) Boiler shop.

(19 b.) Boiler finishing shop.

(20) Scrap iron and coal dump.

(21 a.) Iron foundry.

(21 b.) Brick smokestack.

(22) Apprentices' four-story, living quarters.

(23) Two story, administration office, building.

(24) Personnel and vehicle entrance. This road led to the tool and materials supply shop (8).

(25) Security office.

(26) Union office and guards.

(27) Party office.

(28) Vehicle entrance.

(29) Garage. This garage was too small for all of the plant vehicles. A small repair shop for minor repairs only was located here. Major repairs were believed to be attended to outside the plant.

(30) Number 6 streetcar line. This streetcar line originated in front of the city railroad station.

A. Unused plant areas. There was a one to two meter difference in the level of this terrain.

Products

4. In addition to the aforementioned bed frames, the plant produced two types of boilers which were described as follows. See [redacted] sketch on Page 12. These boilers were said to be destined for the chemical industry since the plant in general manufactured machines for this industry. 50X1-HUM

A. [redacted] one type of boiler as follows: A type of horizontal, pressure resistent boiler manufactured by the boiler shop. [redacted] It was approximately 25 meters long 50X1-HUM

and three meters in diameter, built of 20 millimeter thick sheet iron, with an interior lining of an alloy consisting mostly of tin and lead some 30 millimeters thick, welded to the sheet iron. It was painted with a dark lead or silver paint and was believed to weigh from 20 to 30 tons. The boiler had a dome with a cover that could be opened. A valve was located on the upper part of the cover and a pipe with another valve at the end of this lead-off pipe from the dome. Another valve was located near the bottom of the boiler. It was also equipped with gauges, possibly thermometers or manometers and there were more pipes and gauges This boiler was transported resting on curved supports on two four-axle platform cars of from 40 to 50 ton capacity each. 50X1-HUM 50X1-HUM

B. Another boiler was a vertical boiler 5 meters high and some 3 meters in diameter with thick walls. It had a dome-shaped cover on strong double hinges with one or more forked projections by which it was hermetically sealed by means of a bolt and butterfly nut. On the upper edge was a bronze toothed ring of the sort that looked as though it might be used to engage a gear. It had measuring gauges, thermometers or manometers, pipes and valves. 50X1-HUM

C. There was no military production in this plant 50X1-HUM

Raw Materials

5. The following raw materials were used at the plant: coal, scrap iron, clay, sand, and a white-colored rock, petroleum, gasoline, grease, mineral oil, paint, wood, lead, copper, tin, bronze, aluminum in small quantities, soft wood charcoal used in the foundry in the casting of certain small parts needing a special hardness, oxygen and acetylene.

Production Process

6. In the iron and steel foundries, certain standard processes were used; the raw materials were mixed with clay, sand and carbon. beets were used to produce harness or cohesion in certain alloys. Pieces were sand blasted, polished, and chisled to size before leaving the foundry. The steel worked in this plant was of No. 2 hardness. Within the plant, the large pieces were handled by crane; molten metal was transported in ladles suspended from bars, and smaller pieces by conveyor belt. No automation existed in the plant. Certain machines had mechanical controls which did not eliminate the necessity of having a man stationed at the machine. Some lathes and milling machines were set up to do a specific job which produced a part ready to be tested. 50X1-HUM

Production Norms

7. Although the production norms could be fulfilled easily, workers worked hard in order to increase their daily wage. There were frequent meetings to stimulate production and to explain to the workers the benefits of increased production. Nevertheless, there were occasions when the work was slack due either to deficiencies of materials or to defective planning. Plans to increase production were foreseen in the rumored construction of another shop within the plant although its proposed function was unknown.

Water and Power Supply

8. The plant used the regular city water and electricity supply. The plant used 380 volt electrical power with three-phase current for welding. No failure in the electricity supply was noted 50X1-HUM

Railroad Transportation

9. A single railroad line entered the plant from the east and joined another line which led to the river port. Old, four-axle platform cars or low, wood, gondola c rs, loaded with scrap iron, sand or stone, and empty cars were seen in the plant area. Small, old, Soviet-make locomotives from the main line were employed at the plant. Loading and unloading was accomplished with bridge cranes within the various shop buildings and a gantry crane served the foundry.

Highway Transportation

10. The plant had access to the Brest-Litovsk highway by way of Dachnaya ulitsa, an all-season asphalt road some eight meters wide, with good drainage, and to all appearances adequate for the plant traffic. Snow plows cleared the street immediately in the event of heavy snows. Highway transportation was more important than the railroad transportation; oxygen bottles, coke, wood, acids, and paint were generally brought into the plant by truck, and the manufactured machinery as well as the waste products from the foundry was generally shipped out by the same means. The plant had approximately fifteen, three-ton trucks with wooden bodies and a one-and-a-half-ton capacity dump truck as well. In addition, the transportation facilities were augmented by vehicles from other plants or motor pools. 50X1-HUM

Security

11. Approximately 12 plant employed guards, three or four to a shift, were armed with carbines and sometimes pistols. Guards were posted at the vehicle, personnel, and railroad entrances and the portion along the plant wall on the Brest-Litovsky road between the fire department and the bed construction shop. No guards were posted outside the plant. A pass with a photograph and name of the shop in which the worker was employed was necessary for entering or leaving the plant. The workers were signed in by the shop chief, and he or the shop master would sign an authorization to leave the plant during working hours when this was necessary. Within the plant movement was unrestricted.

Air Raid Precautions

12. 50X1-HUM not observed any air raid precautions, but obligatory conferences on defense against atomic warfare and radio activity were given by experts. It was not known whether these experts were civilian or military men since they always came to the plant in civilian dress. The lectures were illustrated with drawings and photographs, and on certain occasions films showing aspects and consequences of atomic activity were recommended.

Working Conditions

13. All plant shops worked the eight-hour shift from 0800 hours to 1700 hours with a one-hour lunch period. In the shops in which there was more than one shift, the second shift ran from 1700 hours until 0100 hours and the third shift was a seven hour shift which ran from 0100 hours until 0800 hours. Saturdays, only one six-hour shift was worked, ending at 1400 hours.

24 days annual leave. Three days extra annual leave were given for having worked in the plant for more than three years, and another five days of annual leave was added for being a member of the auxillary fire service. Annual leave was generally taken in the summer, but could be taken at any time of the year, as long as it did not conflict with the needs of the plant. Sanitary conditions were good, especially in the shops which had been reconstructed, but in the foundry, an old building, they were bad due to the smoke, poor ventillation, poor lighting conditions, and low ceilings. While there were no strikes, complaints or privileges, there was some degree of absenteeism, sometimes with justifiable reasons, and other times because of drink.

Organization and Personnel

14. Approximately 5000 workers were employed at the plant. The shop chief was a licensed machinist and under him was the shop master, a mechanical technician, a quality control supervisor who was a specialist, a section master, a time keeper and the workers, totaling in all approximately 100 persons. There were no prisoners, convicts, or foreigners plant personalities:

Goncharov (fnu). Plant director until 1953 or 1954.

he had been relieved of his post for not fulfilling production quotas.

Ivan Ivanovich or Basilovich. He was a crane engineer.

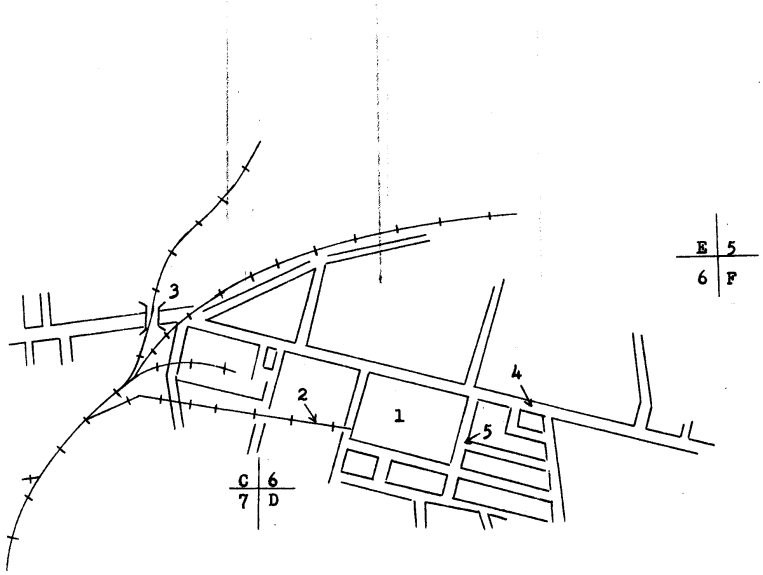
Legend for the sketch of the boilers produced by the Bolshevik Plant in Kiev.

Figure I

1. Specially lined metal casing.
2. Measuring devices.
3. Dome of boiler with valve on top.
4. Lead-off pipe with valve.
5. Valve.
6. Platform cars for transporting boiler.

Figure II

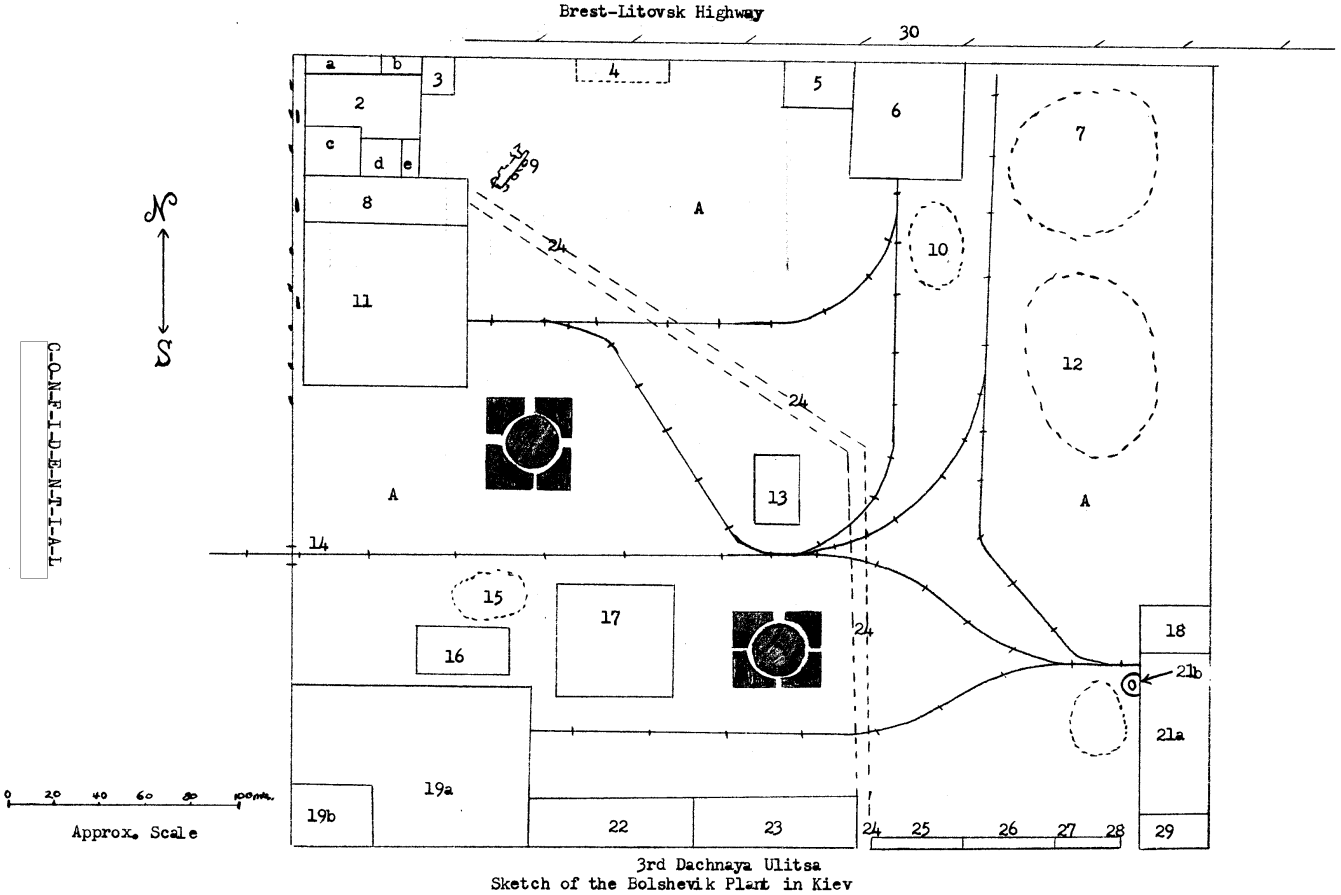
1. Cover
2. Iron hinges.
3. Toothed, bronze ring.
4. Bolt with butterfly nut.
5. Measuring device, perhaps for indicating level.



Scale 1:25,000

1 - Bolshevik Plant
2 - Railroad Line to Plant
3 - Highway Overpass
4 - Brest-Litovsk Highway
5 - Pervaya Dachnaya Ulitsa

Attachment 2



3rd Dachnaya Ulitsa
Sketch of the Bolshevik Plant in Kiev

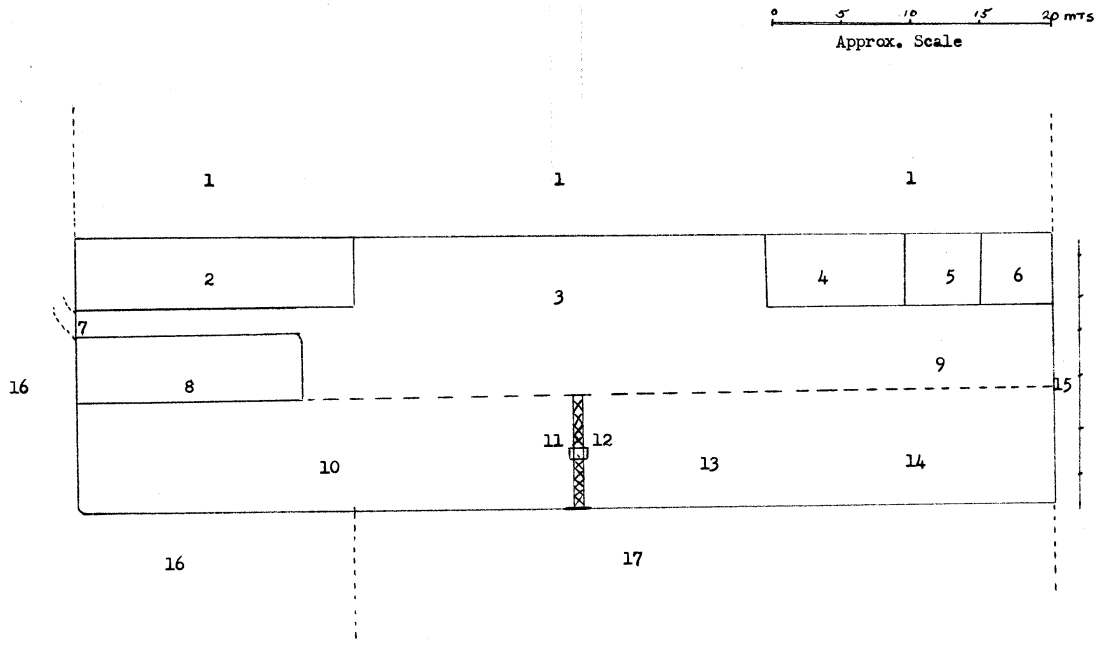
C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM
50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

- 10 -

Attachment 2



Sketch of the Machine Repair Shop of the Bolshevik Plant in Kiev.

Attachment 2

Sketch of Boilers Manufactured by the Bolshevik Plant in Kiev.

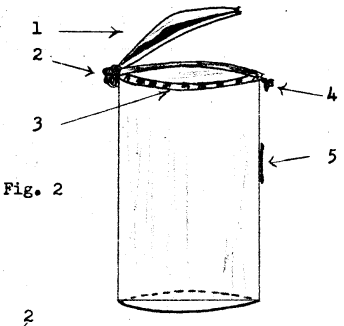


Fig. 2

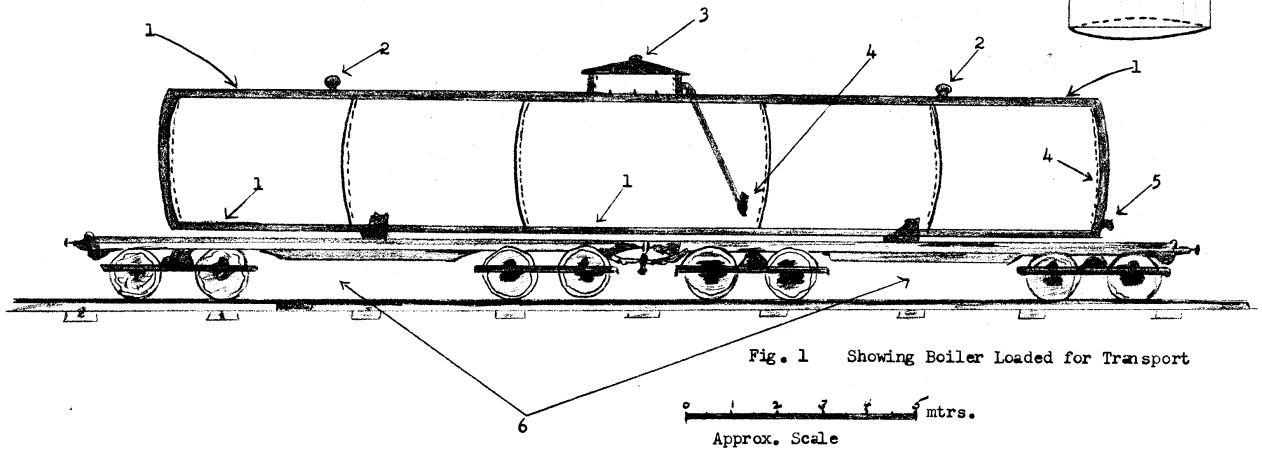


Fig. 1 Showing Boiler Loaded for Transport

Approx. Scale

Attachment 3

50X1-HUM

Attachment

C-O-N-F-I-D-E-N-T-I-A-L

Attachment 1

50X1-HUM

"BOLSHEVIK" MACHINE CONSTRUCTION PLANT IN KIEV

General Information

1. the Bolshevik Machine Construction Plant in Kiev was subordinate to the Ministry of Machine Production Industry (Ministerstvo mashinostroitelnoy promyshlenosti). 50X1-HUM

50X1-HUM

pinpointed the location of this plant as being in the west northwest section of Kiev in the vicinity of Pushkinskiy Park (see sketch No. 3 on page 19.) The plant was situated on even ground with several of its main streets asphalt-paved. The remainder of the grounds was of hard dirt. (See sketch on page 17 for the plant's layout.) The plant was surrounded by a wooden fence, excepting the areas occupied by buildings numbered points 2, 4, 5, and 29 on the sketch on page 17. 50X1-HUM

50X1-HUM

observed no barbed wire strung along the fences, no watch towers, flood lights, alarm systems, barred windows, nor excessive guarding of the plant. Walking guards were observed within the plant area. 50X1-HUM

Although special passes were required for entry into the various buildings of the plant, this regulation was not always strictly enforced. The plant was guarded by civilian (industrial) male and female guards. The guards were armed with rifles and side arms. the daily guard shifts consisted of from 10 to 12 guards per shift. 50X1-HUM

2. on the possible use of the equipment observed at the plant for military purposes, observed only one military person there, a naval officer who frequently entered the Chemical Equipment Assembly Shop. 50X1-HUM

3. Following is the legend for Sketch No. 1 on page 17, giving the layout of the Bolshevik Plant area. The numbers in parentheses are keyed to those on the sketch.

(1) Main Personnel Entrance. This entrance consisted of three personnel passages admitting the workers into the plant. During the morning rush hour, all three passages were open and were guarded by at least two guards each. During working hours, only one entrance remained open for daily traffic. A similar procedure was followed at the end of the working day and during changes of working shifts. Workers were required to show their entrance passes when entering or leaving the plant.

(2) Administration Building. This was a three-story, brick construction, dimensions not further identified. The ground floor contained several rooms occupied by the plant's finance section, Party and Komsomol offices, a dining hall, and some

50X1-HUM

50X1-HUM

Attachment 1

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

other administrative offices. The offices of the plant director, chief engineer, chief mechanic, chief metallurgist, the plant's Partkom secretary, archives, and some offices belonging to the plant's political organizations were located on the second floor. The third floor was occupied by the designing section, draftsmen, and other technical offices.

(2a) Lower floor, occupied by the pass office and guard room. The chief of the plant guard complement had his offices on the second floor.

(2b) Plant's telephone switchboard, serviced by one telephone operator during each working shift.

(3) Motor traffic gate. Estimated motor traffic per hour was 20 to 30 vehicles.

(4) Vehicle repair and maintenance garage. Trucks and cars were parked outside the building.

(5) Steel Casting Foundry. (For a detailed description of this workshop, see Sketch 2 on page 18.)

(6) Three underground storage tanks for mazut supplies. Mazut was used for firing the Martin furnaces at the Steel Casting Foundry (Point 5). These storage tanks were periodically resupplied by rail tanks, believed [redacted] to be of 60-ton capacity. The fuel was pumped into the foundry by electric pressure pumps. [redacted]

50X1-HUM

50X1-HUM

(7) Two smokestacks, one for each of the Martin furnaces at the Steel Casting Foundry. Their estimated height was 25 to 30 meters each.

(8) Instruments Production Workshop (Instrumentalnyy Tsekh), a one-story, brick building. This workshop produced and repaired instruments and tools used at the plant. Approximately 50 milling, cutting and turning lathe operators, and other mechanics were employed at this shop.

(9) This space, representing the corner second floor of Point 8, housed the plant's dispensary. Eight to ten doctors and medical personnel were believed [redacted] to have serviced this dispensary.

50X1-HUM

(10) Hardening and Tempering Workshop (Termicheskiy Otdel).

(11) Forge Shop (Kuznechnyy Tsekh).

(12) Iron Foundry (Chugunoliteynyy Tsekh).[1]

(13) Two smokestacks belonging to Point 12. Each did not extend higher than two-to-three meters above the workshop's roof.

(14) Fire department and fire detection tower, the latter known as the "Kalancha".

(15) Storage shed for wooden models.

[redacted]

50X1-HUM

Attachment I

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

(16) Area at which scrap metals were crushed and flattened.

(17) Electric Repair Shop. This shop serviced all electric needs of the plant.

(18) Carpentry for manufacturing wooden models.

(19) This one-story brick building contained offices of the rail supervisor controlling and servicing rail traffic within the plant area. Control of incoming raw materials and outgoing products was also within the duties of the rail traffic supervisor.

(20) This one-story building contained offices supervising distribution of raw materials to the various workshops of the plant and control of the open-air scrap iron dump (Point 20a).

(20a) Open-air Scrap Iron Dump and Storage Area of Other Materials. Materials stored at this dump included pig iron, iron bars and rods of various sizes, iron and steel sheets, copper and steel wire, ferromanganese, ferrosilici, magnesite, iron ore, brass, and bronze. Chrome and aluminum were not stored in the open and were believed to have been kept under strict control and under guard. Metal pipes of various sizes were also observed. 50X1-HUM

(21) Lumber Yard Area.

(22) Fuel Supply Dump. Similarly supervised by Point 20, this dump stored coal, oil drums, gasoline and paint containers, etc. A variety of construction bricks were also stored at several areas of this dump.

(23) Chemical Apparatus Assembly Workshop. This workshop was considered a restricted area during 1949 to 1952. The only military person observed entering this building was a Soviet naval officer of an unknown rank. 50X1-HUM Several of the molded products from the Steel Casting Foundry were shipped at various times to this workshop but the final products assembled at this shop were unknown 50X1-HUM

(24) Second Mechanical Workshop (Vtoroy Mekhanicheskiy Tsekh).

(25) First Mechanical Workshop (Pervyy Mekhanicheskiy Tsekh).

(26) Boiler Workshop (Kotelnyy Tsekh).

(27) Acid Resistant Workshop (Kislotoupornyy Tsekh).[2]

(28) Plant Technical School.

(29) Central Chemical Laboratory.

(30) Personnel Department and Workers' Housing Administration.

(31) Gas Station, servicing motor vehicles of the plant.

(32) Carpentry Shop. this shop manufactured a variety of beds for sale to local customers. 50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

Attachment 1

(33) Recreation Area. Summer theater for concerts and stage performances attended by plant personnel and local population.

(34) Group of buildings comprising a children's hospital, district hospital (Poliklinika), local school, and dwellings for plant workers and local inhabitants.

(35) Gas and steam heat plant for the Bolshevik Plant.

(36) Electric power supply and transformer station.

(37) Housing area outside the plant.

Steel Casting Foundry

4. [redacted] 50X1-HUM

5. [redacted] the items molded at the steel casting foundry were either shipped in rough form to the zavod's Mechanical Workshop (Point 25 of Sketch No. 1) or the Chemical Equipment Assembly Workshop (Point 23 of Sketch No. 1) for further processing. Various parts were also shipped at times by rail directly from the foundry to an unknown outside consumer.

6. Following is the legend for Sketch No. 2 on page 18, giving the layout of the Steel Casting Foundry. The numbers in parentheses are keyed to those on the sketch.

(1) Scrap Iron and Raw Materials Supply Storage (Sklad loma). [redacted] "Sektarnyy Dvor." It was an open shed, approximately 45 x 10 meters and five meters high. The dotted lines on the sketch signify iron columns supported with several iron rods, diagonally welded on to each column. Along the outer wall of the shed were a number of storage bins containing the following materials for the foundry: 50X1-HUM

a. Iron ore
b. Ferromanganese
c. Ferrosilici
d. Aluminum
e. Pig iron (chugun)
f. Bronze
g. Magnesite
h. Ferrochrome
i. Stainless steel scrap
j. Steel scrap

Attachment I

50X1-HUM

Along the inner wall were stored various types of bricks used for the rebuilding and renovation of the Martin furnaces. These included black chrome bricks, spotted dark gray chromo-magnesite, red magnesite, and white fire-resistant bricks. Supplies of crushed dolomite were stored at several spots within the shed area. The required materials were supplied to the foundry in trucks and by rail from the open dump (See Point 20a on Sketch No. 1 on page 17). At times iron ore was shipped to the foundry by rail directly from outside sources in quantities of 20 to 25 tons at a time. Forty to sixty percent quality ferromanganese and ferrosilici were supplied whenever needed in quantities of 10 to 15 tons; aluminum, in various kilogram quantities; pig iron, 40 to 50 tons; bronze, three to four tons; and magnesite, in the form of small stones, ten to 15 tons, etc.

(2) Platform. This metal platform served as the transmission point of materials from storage to the furnaces by means of overhead electric traveling cranes.

(3) Scales, capacity seven to eight tons.

(4) Overhead Traveling Crane.

(5) Two Martin Furnaces. The furnaces were in operation on a 24-hour daily basis, in two shifts, with five workers servicing each furnace during each shift. Each furnace had a 15-ton smelting capacity. Every five to six months, the furnaces had to undergo renovation or complete rebuilding, lasting at times from three to four weeks. During renovation, only one furnace was in operation.

(6) Electric Oven (Elektricheskaya Pech). Of Soviet origin, this oven was installed at the foundry approximately in 1951 or 1952. It was of one-ton capacity. This oven was used for smelting ferrochrome and stainless steel. The oven was heated by means of electrodes, 1.5 meters long and 9 to 15 centimeters in diameter. the electrodes were supplied to the plant from a source outside the zavod. the electrodes were supplied in wooden crates which indicated that they came from a graphite factory. The electrodes were shipped in boxes containing two or three electrodes each, depending on the size. The oven operated only eight to ten hours daily and was serviced by four specialists.

50X1-HUM

50X1-HUM

(7) Core Mold Section (Shishelnoye Otdeleniye). This section was serviced predominantly by 20 to 25 female personnel.

(8) Molding Section I (Melkiy Prolet). This section was used for molding medium and small products from ferrochrome, stainless steel, and ordinary steel. It was serviced by 25 to 30 male workers and three overhead electric traveling cranes. did not observe any items of military nature being molded here.

50X1-HUM

(9) Molding Section II (Bolshoy Prolet). In this section large objects were molded in series production. Its dimensions were 40 x 10 meters and seven meters high. A long, wide

Attachment 1

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

window ran along the entire wall facing the Brestlitovskoye shosse. This section had three overhead traveling cranes, two stamping machines, one wall crane, and other molding implements. Seventy to 80 male specialists serviced this section.

(9a) Two stamping machines.

(10) Drying Ovens.

(11) Entrance.

(12) Storage of lime, clay and sand.

(12a) Bins for mixing and preparing above materials for molds.

(13) Cleaning and Trimming Section. Rough molds were cleaned and trimmed before being inspected by the OTK and shipped out of the foundry. Approximately 60 workers serviced this section.

(14) Mechanical Workshop.

(15) Electrical Workshop.

(16) OTK Team. One inspector with two assistants worked at this section during one daily shift only.

the inspector would paint a large red cross on items rejected

50X1-HUM

(17) Single-Track Rail Line.

(18) Red Corner (Krasnyy Ugolok).

(19) Design and Drawing Office. The second floor of this building and that of (20) below contained offices of the foundry chief, secretary of the foundry's Partorg, and several administrative offices.

(20) Storage Room for Tools, Models, and Various Equipment.

(21) Storage Room for Oxygen Cylinders. observed 50 to 60 cylinders at a time.

50X1-HUM

(22) Smokestacks, approximately 25-30 meters high.

(23) Mazut Storage Area.

(24) Laboratory. This laboratory was known to source as the "Express Lab." It was serviced by five laboratory technicians who worked in three daily shifts. The laboratory performed on-the-spot tests of elements melted in the electric and Martin furnaces.

(25) In the basement of this area was a number of rooms used by the zavod's DOSAAF or DOSARM organizations.[3] Rest rooms and showers for both men and women were also located in this basement.

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

50X1-HUM

Soviets at the Steel Casting Foundry 50X1-HUM

7. During 1949 to 1952, the Steel Casting Foundry employed approximately 350 specialists and workers, of which at least 45 percent were female personnel. Soviets employed there. 50X1-HUM

a. GUSIN (fnu) Foundry chief; He was transferred as chief of the zavod's production department in 1951. During 1952, he served as chief of the Iron Foundry and in 1953 resumed his position as chief of the production department. 50X1-HUM

50X1-HUM

b. PETRIK (fnu) Supervisor of the Martin furnaces, engineer; He was transferred from the plant to an unknown location in 1951, and was replaced by EDIK (see below). 50X1-HUM

c. EDIK (fnu) Replaced Petrik as supervisor of the Martin furnaces in 1951. 50X1-HUM

d. KRAYEVSKIY (fnu) This Soviet was in charge of the large molding section (Bolshoy Prolet (Point 9, Sketch No. 2, on page 18.) 50X1-HUM

Parts Produced at Steel Casting Foundry

8. Following are descriptions of parts produced at the Steel Casting Foundry. Sketches of these parts (Nos. 4 through 16) are on pages 20 to 33.

a. Bob Wheel (Balansir) (Sketch No. 4 on page 20.) "Balansir dlya traktorov." this part was designed for use with some mechanical device of a tractor. During 1949 to 1952, the Steel Casting Foundry was continuously molding this device for a consumer 50X1-HUM estimated the total monthly production of such units to average 400 to 500 per month. The weight of each unit was 18 to 20 kilograms. unable to estimate the cost of each unit. 50X1-HUM Materials used for molding of this part included steel scrap, pig iron, ferrosilicon, and ferromanganese. The melting of the metals was performed in the electric furnace (Point 6, Sketch No. 2 on page 18) at the Steel Casting Foundry. 50X1-HUM after molding, these units were shipped in rough form to the Chemical Apparatus Production Workshop (Point 23, Sketch No. 1 on page 17). During 1952, several times

a number of crates stored in the vicinity of the chemical apparatus shop contained ten of these units each. not observe any mechanical improvements made to these parts. The boxes were seen in the open and the main shipment may have been completed with the remainder left behind as disqualified material. the production of these parts was discontinued in 1953.

b. Metal Cover or Hood (Kryshka) (Sketch No. 5 on page 21 .)
this part as weighing approximately one and one-half or two tons. The dimensions are described on Sketch No. 5 on page 21. five to ten units per month were produced at the steel casting foundry during 1951 or 1952. After molding, this part was shipped to the zavod's Mechanical Workshop (Tsekh) for further processing. The color of the steel was dark gray.

c. Cylindrical Housing (Korpus) (Sketch No. 6 on page 22.)
Three to four units of this part were molded per month at the Steel Casting Foundry during 1951 or 1952. Each weighed approximately four to five tons. The dimensions are given on Sketch No. 6 on page 22. The composition of materials or any specifications were unknown The unit was shipped to the zavod's Mechanical Workshop (Tsekh) for further processing.

d. Cylindrical Housing (Korpus) (Sketch No. 7 on page 23 .)
This Korpus was molded at the steel casting foundry during 1951 to 1952. Ferrochrome was one of the material components used for this part. The housing weighed approximately half a ton. The melting was performed in the electric furnace. The units were molded at the Steel Casting Foundry (Melkiy Prolet). The material used for the core of the three centimeter pipes (see Sketch No. 7 on page 23) Lime and clay were used to form the core mold. The holes running through this housing were placed symmetrically to each other and thinly connected with an interval of one centimeter. Five such units per month were produced during the period 1951 to 1952. the units were shipped to the zavod's Chemical Apparatus Production Shop after molding.

e. Screw Propeller (Vint) (Sketch No. 8 on page 24 .)
These components were periodically molded at the Steel Casting Foundry in casting frames. this production was not on a high priority basis. The units were produced in groups of 25 to 30, whenever work on other projects was at a low. The shop was in no hurry to complete the running order.

Attachment 1

50X1-HUM

Once or twice a month, the workshop would resume production of this part for a period of three to four days.

50X1-HUM

These units were molded in sizes from 25 to 75 centimeters each. estimated the weight for the various sizes to be from ten to 50 kilograms. The melting of ordinary steel scrap for the units was done in the Martin furnace. After cleaning and trimming, these units were inspected by the workshop's OTK personnel.

50X1-HUM

many of these units were rejected and returned to the workshop dump for reuse. Approved units were shipped either to the Mechanical Workshop (Point 27 of Sketch No. 1 on page 17) or directly to a consumer believed these units were designated for use with river craft.

50X1-HUM

f. Ventilator Screw (Vint) (Sketch No. 9 on page 25.)
This device was molded at the Steel Casting Foundry during 1949 to 1952. One or two units were produced per month; the production was sporadic. Mold frames were used for casting this unit. It weighed one ton. The blades were four centimeters thick and 1.5 meters long with seven-centimeter intervals between them; their upper width was 15 centimeters and the lower width was 60 centimeters. The blades bent diagonally downward one-half turn, similar to a ship's propeller screw. Looking down on this device, one could see through it at the upper and lower parts. In the middle, the turn of the blade overlapped visually. such a part might be used with a type of turbine.

50X1-HUM

g. Solid Screw (Vint) (Sketch No. 10 on page 26.)
This item was molded at the Steel Casting Foundry in 1951 or 1952. One or two units were produced monthly at times. Production was sporadic with lay-off intervals of from two to four months. This was a solid, elongated molded part, weighing approximately half a ton, with a half-turn screw-type form. The edges of the turn were slightly thinner.

50X1-HUM

it was shipped out of the plant in rough form by rail without undergoing any finishing process.

h. Tubular Housing (Korpus) (See Sketch No. 11 on page 27.)
This part was molded at the Steel Casting Foundry during 1951; A one-time order

50X1-HUM

was received at the workshop and this order was fulfilled within a period of two months. Ten units of this part were produced and shipped in raw form by rail on completion of molding. believed this housing to have

50X1-HUM

weighed approximately five to eight tons. Dimensions are specified on the sketch on page 27. Ordinary steel scrap was used.

the Korpus could be used at an electric power station as part of a turbine.

50X1-HUM

i. Large Wheel (Koleso) (Sketch No. 12 on page 28.)

50X1-HUM

It was molded in the foundry's large hall (Bolshoy Prolet) and each unit weighed approximately 200 kilograms. Fifty to 55 units per month were molded during 1950 to 1952.

The wheels were shipped to the zavod's Mechanical Workshop in rough casting form. believed this unit

50X1-HUM

to be suitable for large cranes or as electric power plant equipment.

Attachment I

50X1-HUM

j. Gear (Cog) Wheel (Koleso, Zubchatoye) (Sketch No. 13 on pages 29 and 30.). The wheel was molded in the large hall of the Steel Casting Foundry in various sizes ranging from one-half meter to one and one-half meters in diamter. The weight for each unit, depending on the size, also ranged from one-half to two tons. The melting was done in the open-hearth ovens. more pig iron than steel was used for these wheels. No. 30 steel was used because it offered better resistance and helped to avoid breakage during molding. Eight to ten units were molded per month between 1949 and 1952. Similar production continued after 1952. The units were shipped in rough form either by truck to the zavod's Mechanical Workshop, or by rail outside of the plant. Much breakage was experienced at the foundry, especially while molding smaller units. In rough form, this wheel appeared as a cylindrical drum with the rough cogs running along the entire length of the drum. During molding, sufficient material was provided for the cogs for finishing or semifinishing as illustrated on the sketch on pages 29 and 30.

50X1-HUM

50X1-HUM

k. Steel Housing (Korpus) (Sketch No. 14 on page 31 .) This housing was molded only several times during 1951. Two to five units were produced at one time. The sides of this unit were of a five-centimeter thickness. Other dimensions are depicted on the sketch on page 31 . The weight was about two tons. The openings on each side were symmetrical to each other. believed this housing to be applicable for a machine tool bench or a lathe.

50X1-HUM

50X1-HUM

l. Steel Plate I (Plita) (Sketch No. 15 on page 32 .) This steel plate weighed approximately 300 kilograms and was molded from ordinary steel scrap. About four of such plates were produced per month with some interruptions. After molding, these plates were shipped to the zavod's Mechanical Workshop while in the finishing process. Only one side was cleanly finished (ground) with the edges still being in rough form.

50X1-HUM

50X1-HUM

m. Steel Plate II (Plita) (Sketch No. 16 on page 33 .) This was similar to Plate I (l above). The edge cirumference of this plate was slightly lower than the base plate. It was similarly finished on one side only, at the zavod's Mechanical Workshop.

Parts Produced at Iron Foundry

9. Following is a description of the parts produced at the Iron Foundry (Chugunoliteynyy Tsekh).[4] These parts are illustrated in Sketches Nos. 17 through 23 on pages 34 to 42 .

a. Reducer (Reduktor). Sketch No. 17 on pages 34 to 36 has the following breakdown:

17a. Illustration of entire apparatus.
17b. Side view of lower section.
17c. Viewed from above.
17d. Side view of upper section.
17e. Viewed from above.

Attachment 1

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

These reducers were produced at the Iron Foundry approximately 200 such units were molded per month. The units were molded in various sizes, from .5 meters to 2.5 meters. Their weight was from 50 kilograms to one ton, depending on the size and dimensions. There were approximately five or six sizes.

50X1-HUM

50X1-HUM

Although he never saw one in operation, he believed that such an apparatus would be operated electrically. It was in continuous production.

b. Cylindrical Housing (Korpus) (Sketch No. 18 on page 37.) This object was produced at the Iron Foundry during 1953. A similarly shaped Korpus was molded at the Steel Casting Foundry during 1951 to 1952. The weight was from one to two tons. Both ends were open. (See Sketch No. 7 on page 23.) Two or three units were produced per week. Production was not continuous. The units were forwarded to the Mechanical Workshop for processing. A cover, similar to that depicted in Sketch No. 7 on page 23, was also molded at the Iron Foundry conjunctively with the molding of the cylindrical housing.

c. Cast Iron Pipes or Tubes (Truba ili Trubka) (See Sketch No. 19 on page 38.) These pipes were produced in the Iron Foundry during 1952 and 1954.

50X1-HUM

these pipes were produced in accordance with a new order following a new design. The size and diameter are depicted on the sketch on page 38. The approximate weight was between 300 and 400 kilograms.

50X1-HUM

50X1-HUM

estimated the total annual production of such pipes to have amounted to between 50 and 60. The production did not follow a set pattern. During various months, the pipes would be molded in quantities of 10 or 12; during other months, only one or two or none. Only one size of these pipes was produced.

d. Boilers (Kotly) (See Sketch No. 20 on page 39.) This item was produced in the Iron Foundry during 1952 - 1953, Weighing five tons each, only one size was in production which was continuous. Approximately 15 of such units were produced per month, requiring two days of molding for one unit.

50X1-HUM

50X1-HUM

e. Bearing (Podshipnik) (See Sketch No. 21 on page 40 .) This part was known as Podshipnik (bearing) by the Soviets at the workshop. Production was continuous. Approximately 50 such units were molded per day. Sizes ranged from 25 to 75 centimeters each. Correspondingly, the weight ranged from five to between 15 and 25 kilograms for each unit.

50X1-HUM

50X1-HUM

f. Housing (Korpus) (See Sketch No. 22 on page 41.) Production of such units was in process at the Iron Foundry prior to 1952

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

50X1-HUM

Attachment 1

C-O-N-F-I-D-E-N-T-I-A-L

Production of these housings fluctuated from one to two units per day. Their weight was approximately one-half ton. After molding, these units were shipped to the Mechanical Workshop. believed that the three apertures depicted on the upper plate for the housing (see page 34) could be covered by metal plates.

50X1-HUM

50X1-HUM

50X1-HUM

Parts Produced at Acid-Resistant Metal Foundry (Kislotoypornyy Tsekh, Point No. 27 of Sketch No. 1 on page 17.)

10. The only major item molded at the Acid Resistant Metal Foundry on a continuous basis involved the casting of pipes and elbow-joints in various dimensions and sizes.[5] The pipes are illustrated in Sketch No. 23 on page 42. called the material from which the pipes were manufactured "ferrosilid" (in Russian).[6] It was a very sensitive and breakable substance, almost like glass. The rate of breakage during tests was very high. Similarly, the high percentage of breakage during casting was causing loss of earnings for many workers.

50X1-HUM

Sketch No. 24a on page 43 illustrates a cover, almost in the form of half an orange. "Kolpachek" (cap or cover). The material was "ferrosilid"[6]. The inside of the cover had an arched convexity (see sketch No. 24b on page 43), a strip similar to a rib, leading from the center to the inside edge. Production figures were unknown. This foundry also molded several units of the item illustrated in Sketch No. 6 on page 22, which were molded at the Steel Casting Foundry and the Iron Casting Foundry. Material used for this item was also of "ferrosilid". Electrodes, 40 centimeters long and one centimeter in diameter, were also molded at this foundry from ferrosilicon; from 200 to 300 were produced daily. (See Sketch No. 24c on page 43.)

50X1-HUM

there were only two plants molding pipes from silicon (ferrosilicon) in the USSR, the Bolshevik Plant and one in the Urals. the Bolshevik Plant received the first prize at the Czech Industrial Fair for the quality of this product.

50X1-HUM

Central Chemical Laboratory (Point No. 29 of Sketch No. 1 on page 17.) (Tsentralnaya Khimicheskaya Laboratoriya)

11.

50X1-HUM

The request for the performance of a chemical analysis was made from one chief to another through an informal note.

50X1-HUM

The chemical laboratory was located on the second floor of a two-story brick building (see Sketch No. 25 on page 44). observed no barred windows on either floor of the building. The entrance was not guarded but entry to the second floor was restricted,

50X1-HUM

50X1-HUM

12. Following is the legend for Sketch No. 25 on page 44, showing the layout of the ground floor of the Central Chemical Laboratory.

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

50X1-HUM

50X1-HUM

The numbers in parentheses are keyed to those on the sketch.

(1) Several doors of this point faced the hall (Point 2 below). 50X1-HUM

(2) Hall (Koridor)

(3) Stairwell to second floor.

(4) Experimental office for mechanical equipment. This office was utilized by many of the plant's specialists and mechanics for research and experimentation with various equipment worked on. Mechanical experiments were performed at Points 5 and 6 below.

(5) Experimental workshop. Serviced by two or three mechanics permanently employed there.

(6) Experimental workshop. Ordinary workshop equipment as milling, frazing, and boring lathes 50X1-HUM

(7) Office of the personnel director (Nachalnik kadrov).

(8) Office of the secretary to the personnel director.

(9) Administrative office.

(10) Same as above.

(11) Same as above.

(12) Military registration office (Voyennyy stol).

(13) Office of the housing administrator (Zhilotdel).

(14) Administrative offices.

(15) Waiting hall.

(16) Entrance to administrative department.

(17) Entrance to building from plant area.

(18) Recreation area outside of zavod.

13. Following is the legend to Sketch No. 26 on page 45 , showing the layout of the second floor of the Central Chemical Laboratory. The numbers in parentheses are keyed to those on the sketch.

(1) Stairs to ground floor

(2) Storage room (Komnata sklad)

(3) Hall

(4) Laboratory for analysis of oils. observed one small electric oven, scales, containers of all sorts, crucibles, laboratory tables, etc. 50X1-HUM

(5) Similar to Point 4.

50X1-HUM

50X1-HUM

(6) Red Corner (Krasnyy ugolok)

(7) Office of the laboratory chief. 50X1-HUM

(8) Laboratory where the analysis of all types of metals and minerals was performed.

50X1-HUM

Description of Area in the Vicinity of the Bolshevik Plant

14. observed a number of factories located in the vicinity of the Bolshevik Plant. sketch of the area adjacent to the plant in the attempt to pinpoint the approximate location of buildings and sites observed. (See Sketch No. 27 on page 46.) Following is the legend for the sketch. The numbers in parentheses are keyed to those on the sketch. 50X1-HUM

(1) Location of an aircraft Plant. observed this plant, located in the vicinity of a railroad bridge and along both sides of Brestlitovskoye, 50X1-HUM some device for coffee-making equipment, presumably to be installed on passenger aircraft. 50X1-HUM

(2) Possible Location of an Airfield. A field adjacent to the aircraft plant, approximately 1 x 1 kilometer, believed to be the aircraft plant's testing site. observed planes descending on this field 50X1-HUM

(3) Elevated section of the Brestlitovskoye shosse.

(4) Small Railroad Station. Believed to be used for freight and suburban traffic.

(5) Military School. 50X1-HUM

(6) Kiev Construction Plant (Zavod Promstroydetal).

(7) Building in process of construction. This building was in process of construction during 1955 to 1956. it was the site for a future factory. 50X1-HUM

(8) Gipsovyy Zavod. A plant at which construction materials and gypsum products were manufactured.

(9) Building in process of construction.

(10) Asbestos Factory. Produced plates, pipes, etc, presumably for construction purposes.

(11) Gas Plant. it was common knowledge among the local population that this site contained a gas plant. Heavy dark-gray smoke was observed over this site during working hours. 50X1-HUM

Attachment 1

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

(12) Precision Instruments Plant. This plant was known to the local population as "Zavod Tochnykh Priborov."

50X1-HUM

(13) Radio and Television Production Plant. This site was in process of construction during 1955 and 1956.

(14) Cemetery.

(15) Airfield for Civilian Traffic. This site was known to the local population as "Grazhdanskiy Aerodrom" (Civilian Airfield).

50X1-HUM

the aircraft flown over this field were of passenger type, never military.

(16) Building belonging to the airfield

(17) Small Iron Foundry

(18) Bolshevik Machine Construction Plant. About 25 to 30 Spaniards were employed at this plant.

(19) Two small plants. believed to be tractor and motor vehicle repair shops.

(20) Balance Factory. Produced a variety of scales and weights for civilian consumption.

(21) Aviation School. observed students in air force uniform being transported in buses to and from this site.

50X1-HUM

(22) Group of buildingsoccupied by a movie studio

(23) Pushkinskiy Park

(24) Polytechnical Institute

(25) Club, belonging to the workers' of Bolshevik Plant.

(26) Building

50X1-HUM

6. Comment: Possibly, this material is ferrosilicon.

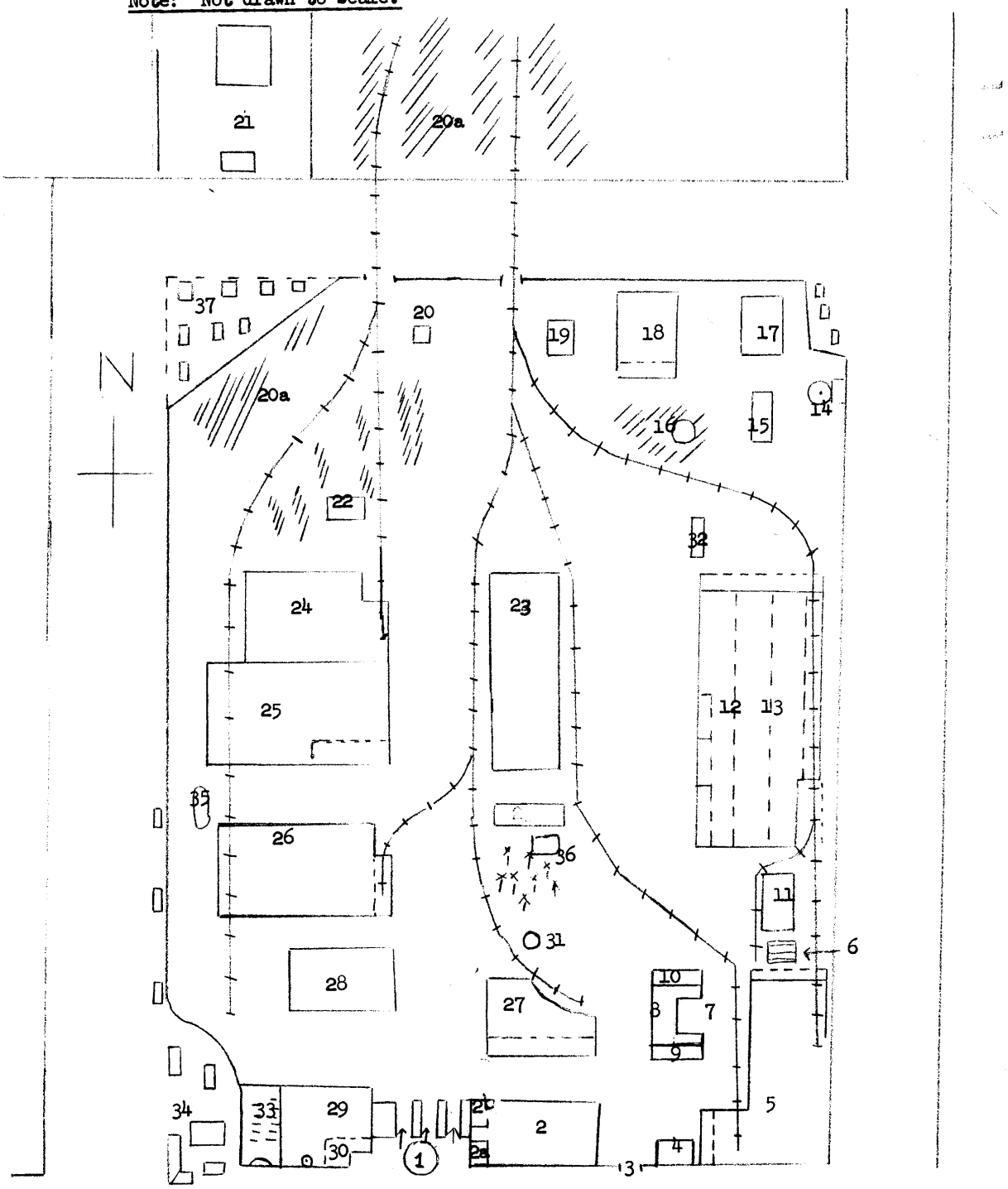
C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

50X1-HUM

Sketch No. 1

Layout of Bolshevik Machine Construction Plant
Note: Not drawn to scale.



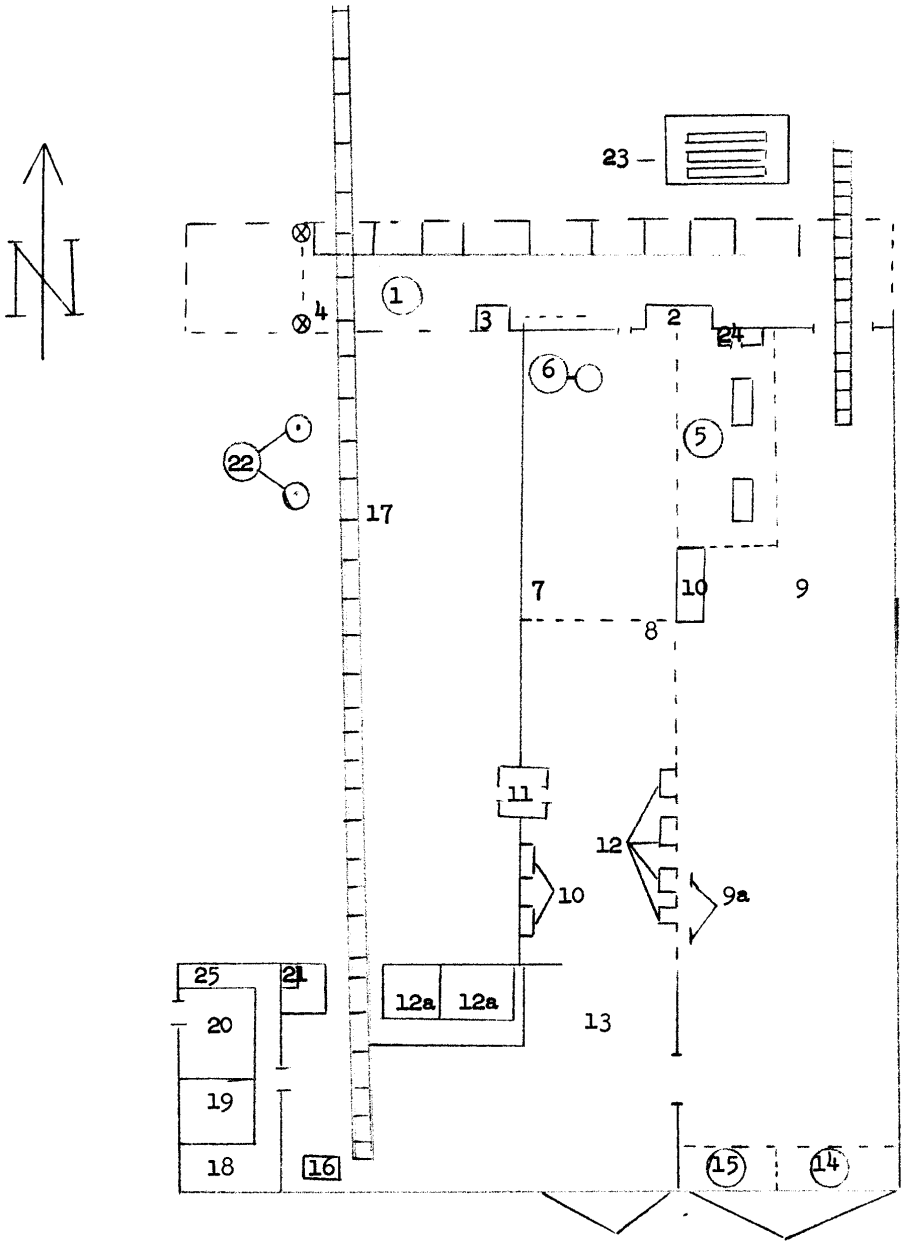
Attachment 1

50X1-HUM

50X1-HUM

Sketch No. 2

Layout of Steel Casting Foundry of Bolshevik Machine Construction Plant



50X1-HUM

Attachment 1

C-O-N-F-I-D-E-N-T-I-A-L

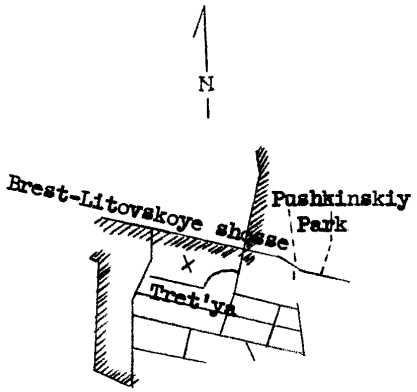
50X1-HUM

50X1-HUM

Sketch No. 3

Location of Bolshevik Machine Construction Plant in Kiev

50X1-HUM



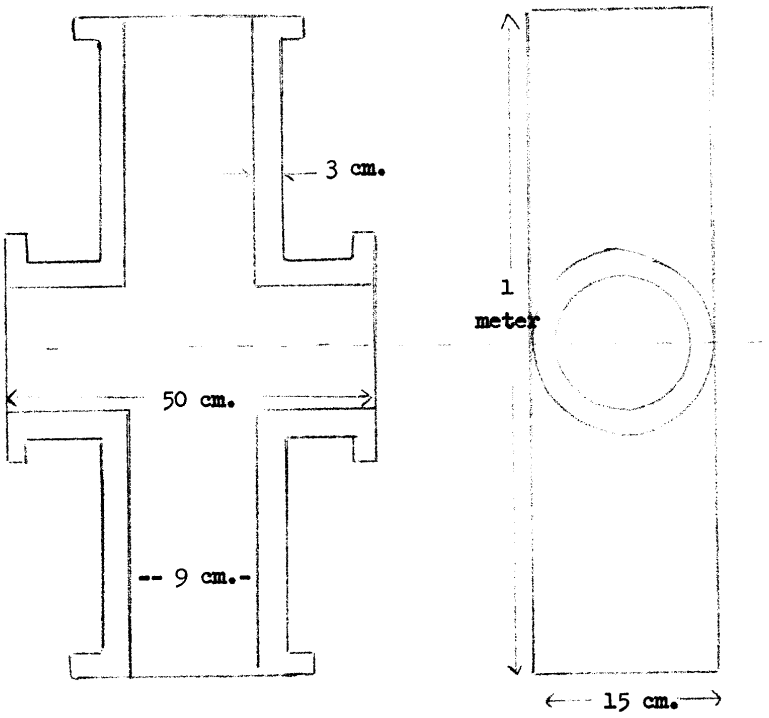
C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

Attachment I

Sketch No. 4

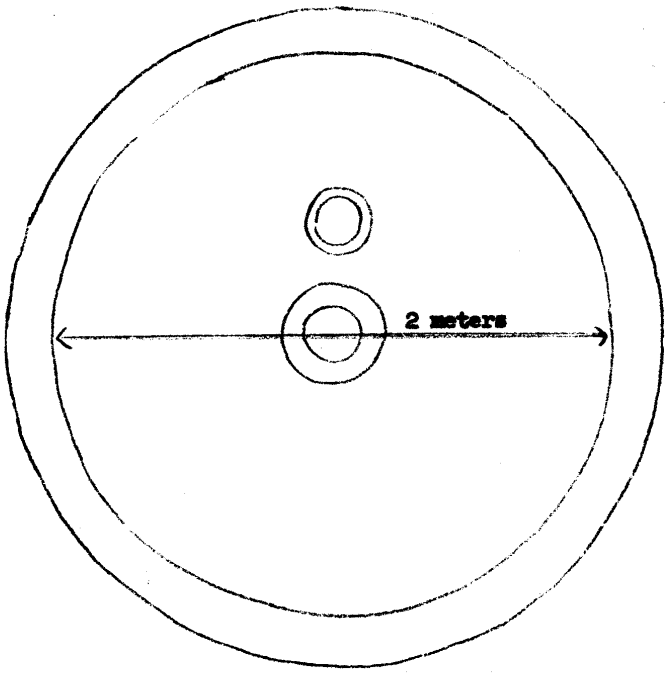
Bob Wheel (Balansir)

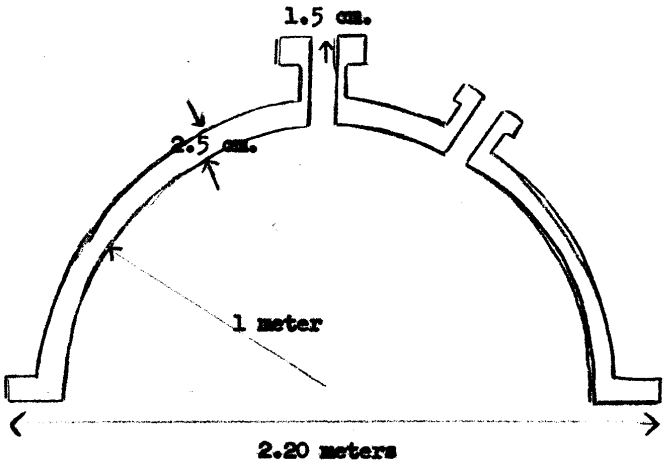


Attachment 1

Sketch No. 5

Metal Cover or Hood (Kryshka)

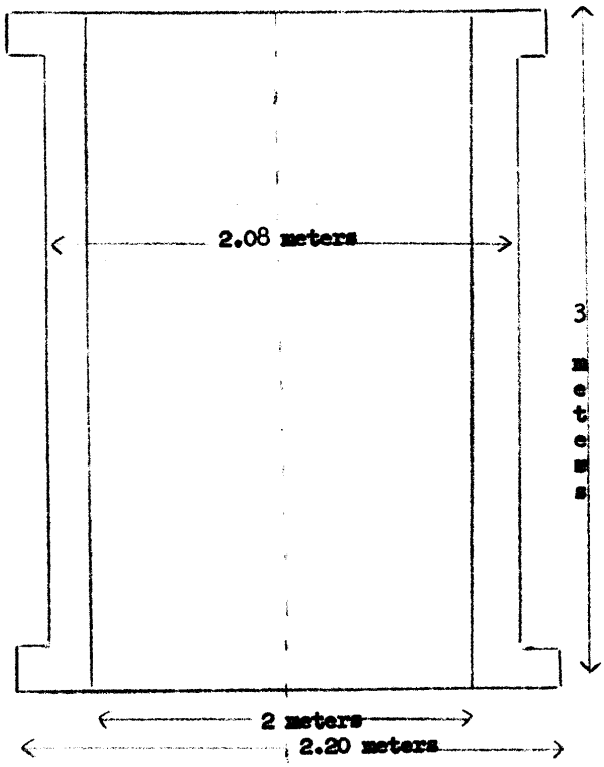




Attachment I

Sketch No. 6

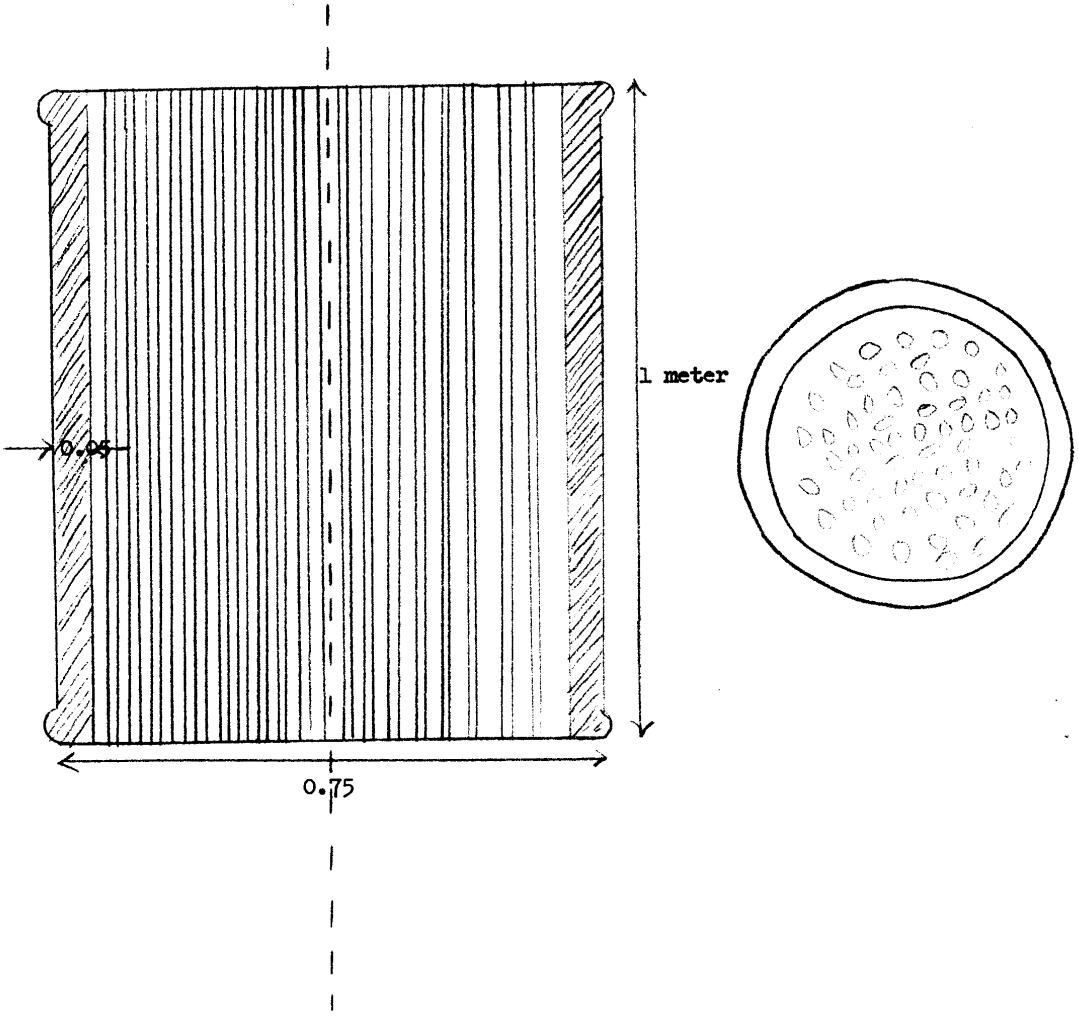
Cylindrical Housing (Korpus)



Attachment I

Sketch No. 7

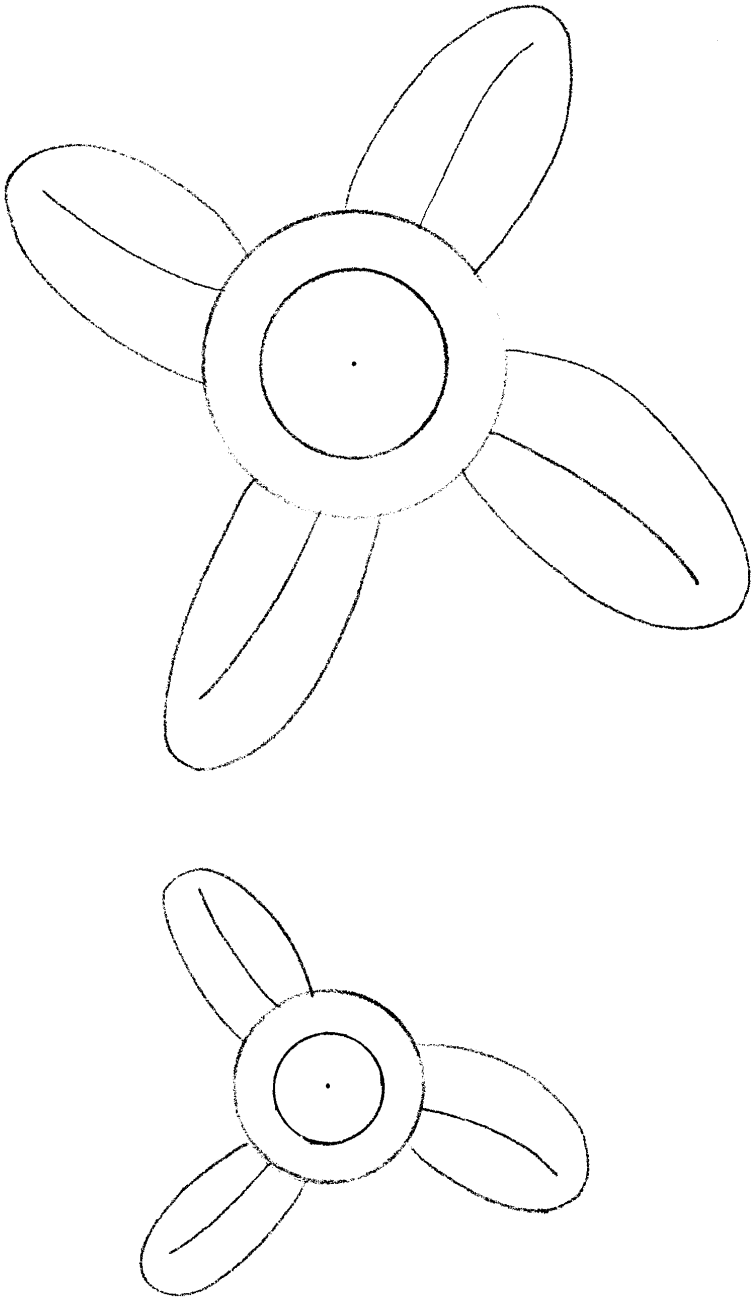
Cylindrical Housing (Korpus)



Attachment I

Sketch No. 8

Three-and four-bladed Screw Propeller (Vint)



Attachment I

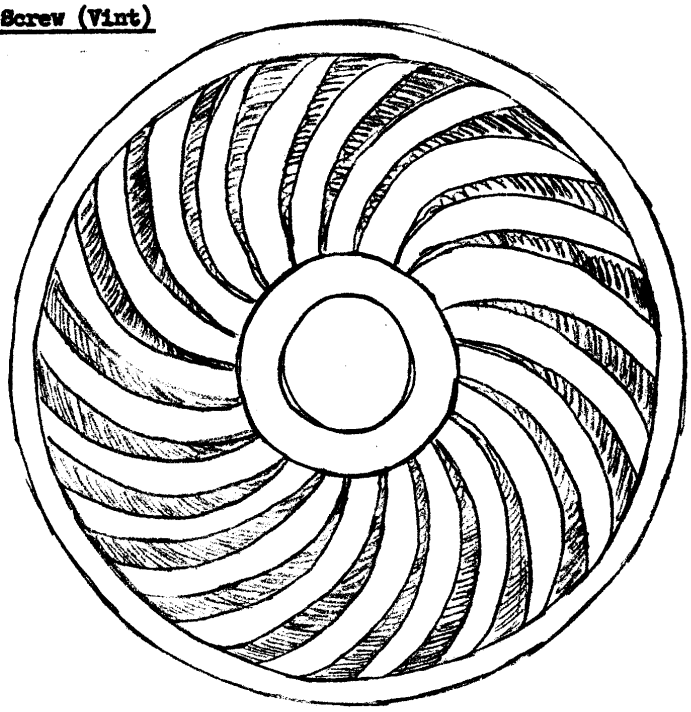
50X1-HUM

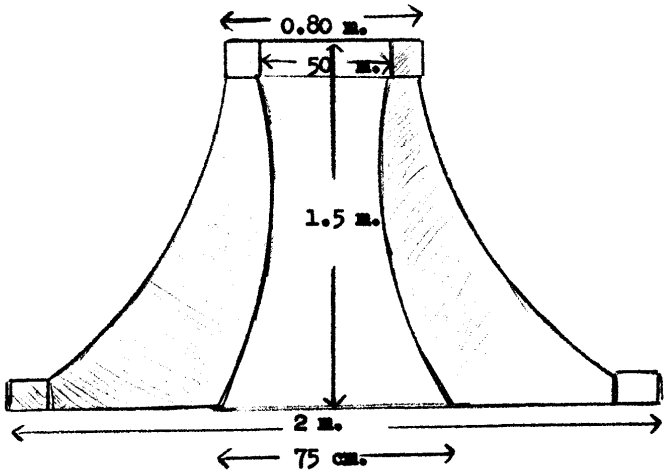
C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

Sketch No. 9

Ventilator Screw (Vint)



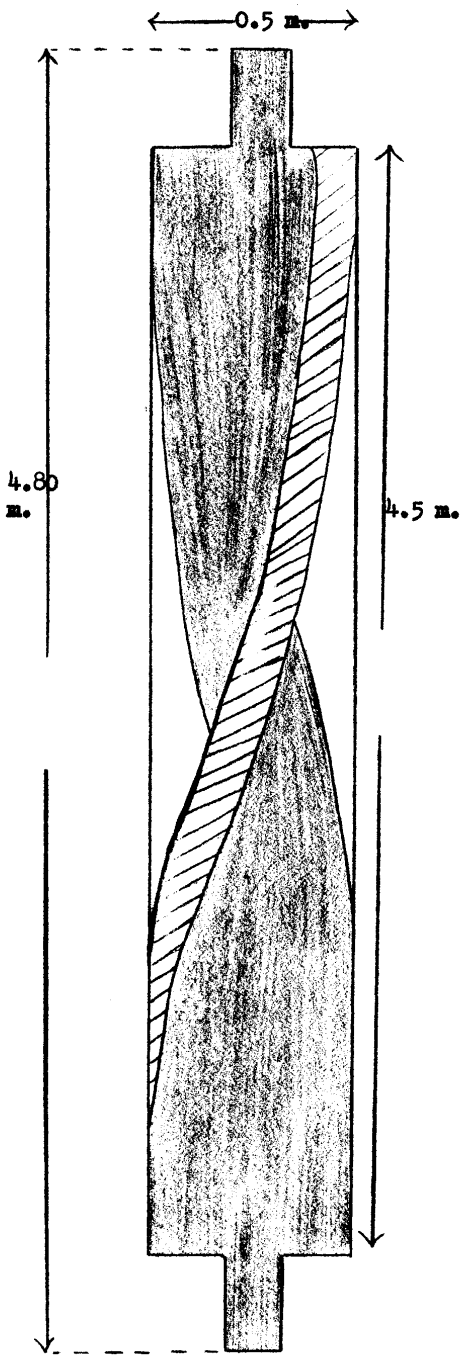


C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

Sketch No. 10

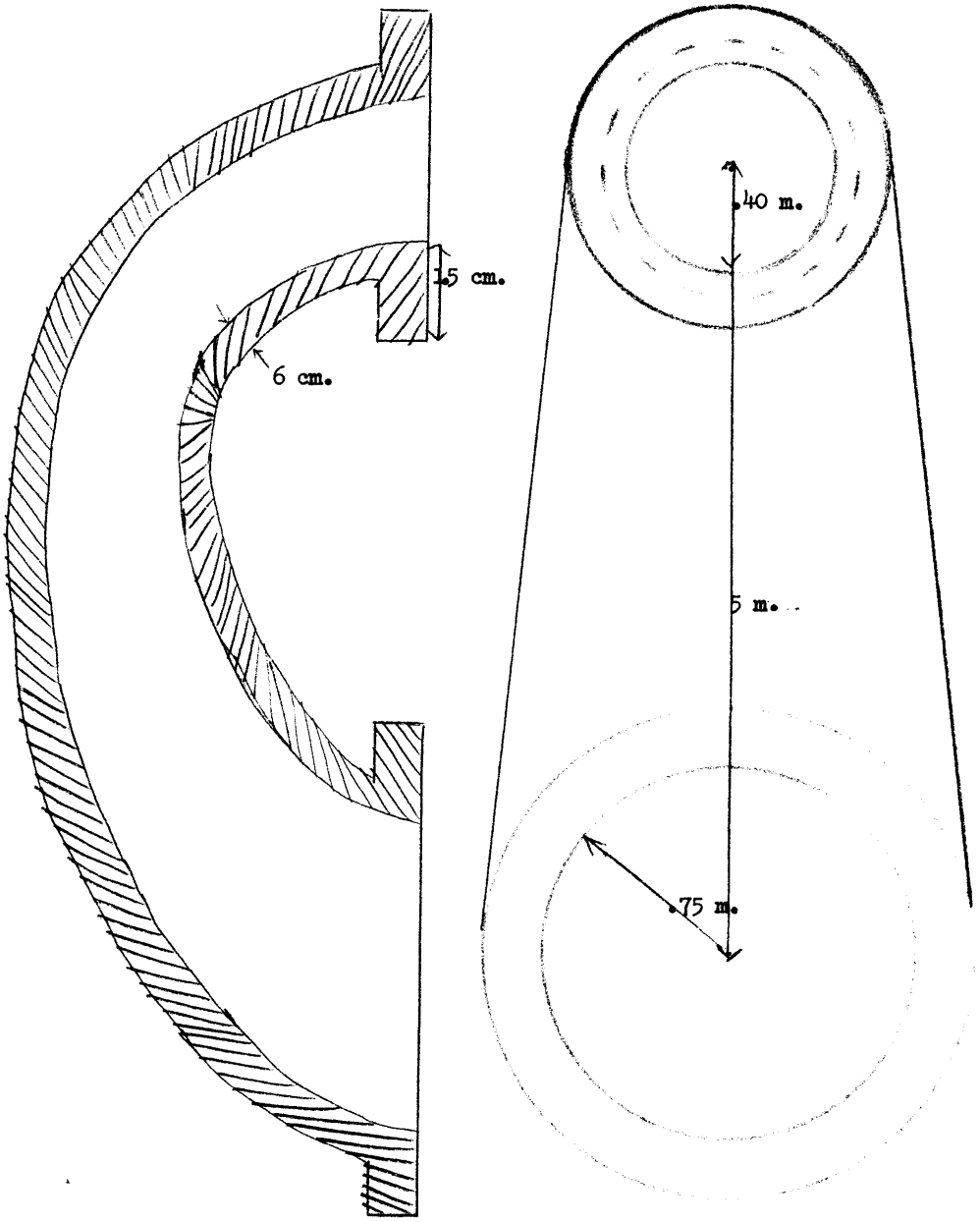
Solid Screw (Vint)



Attachment 1

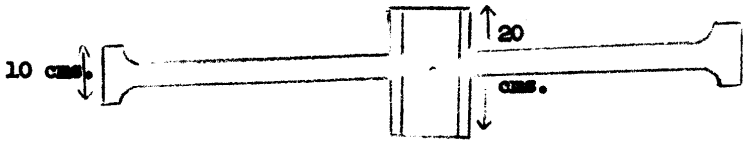
Sketch No. 11

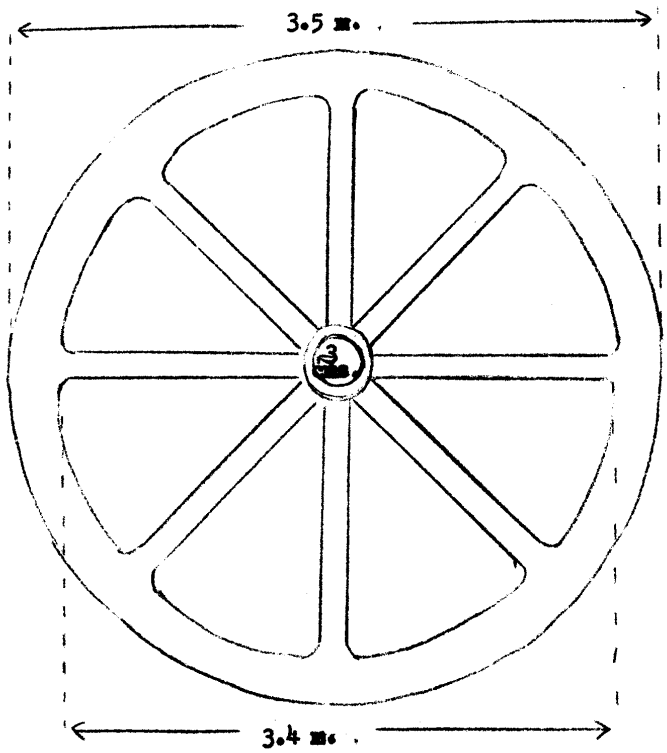
Tubular Housing (Korpus)



Sketch No. 12

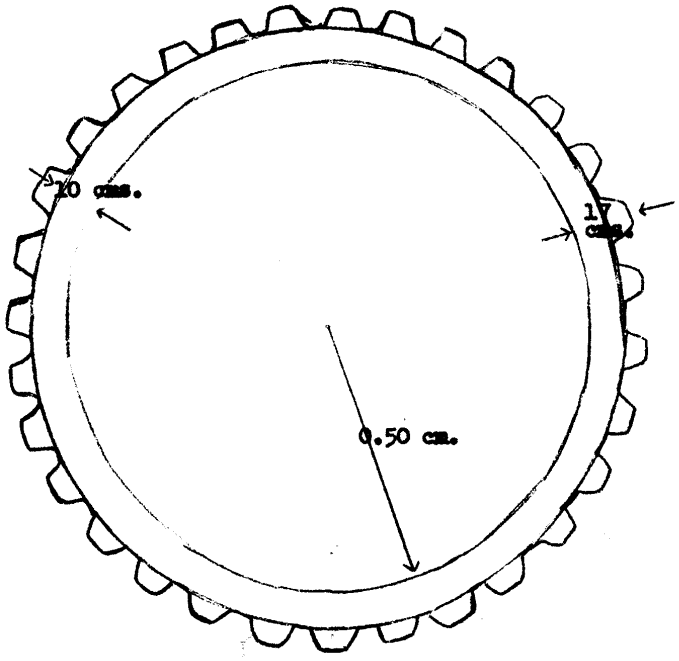
Large Wheel (Koleso)



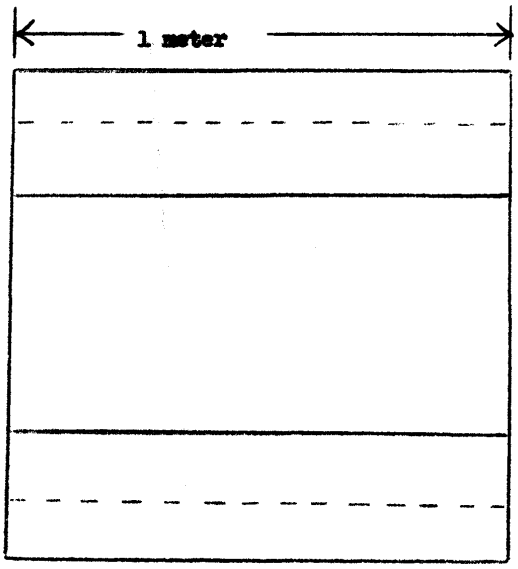


Sketch No. 13

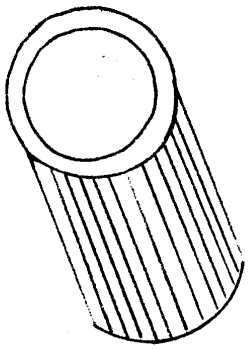
Gear (Cog) Wheel (Koleso, Zubchatoye)



a.

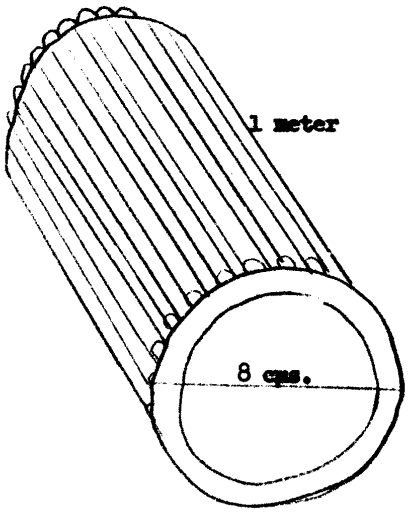


Sketch No. 13



b.

Gear (Cog) Wheel
(Kolese, Zubchatoye)



c.

Gear (Cog) Wheel
(Kolese, Zubchatoye)

Attachment 1

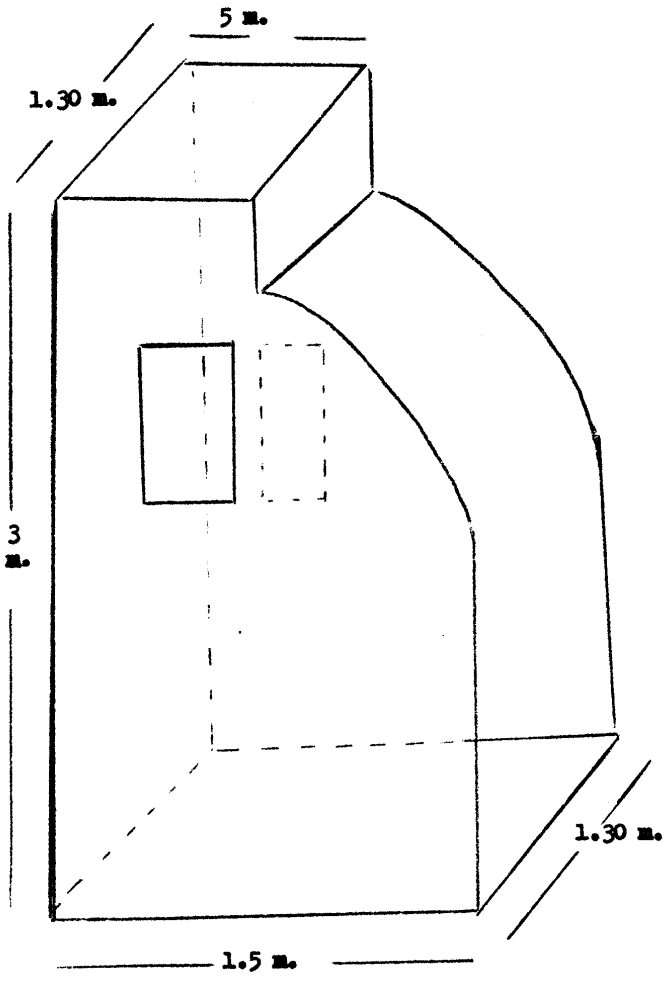
50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

Sketch No. 14

Steel Housing (Korpus)

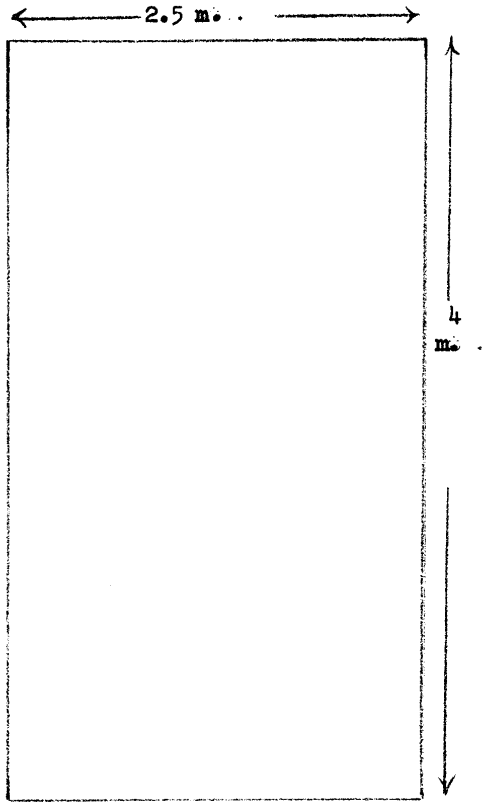


C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

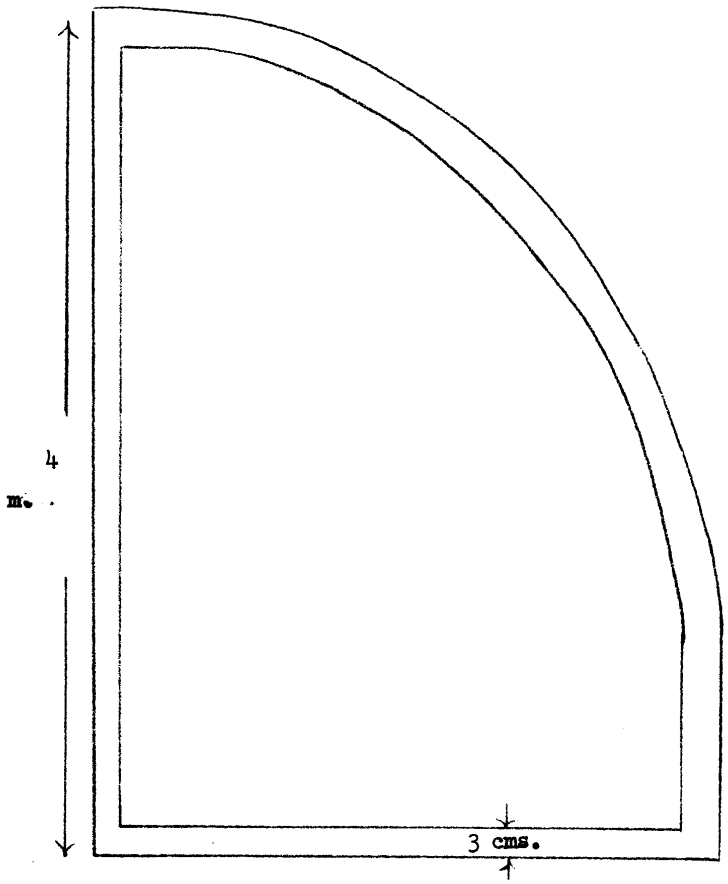
Sketch No. 15

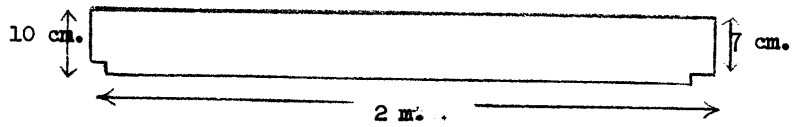
Steel Plate I (Plita)



Sketch No. 16

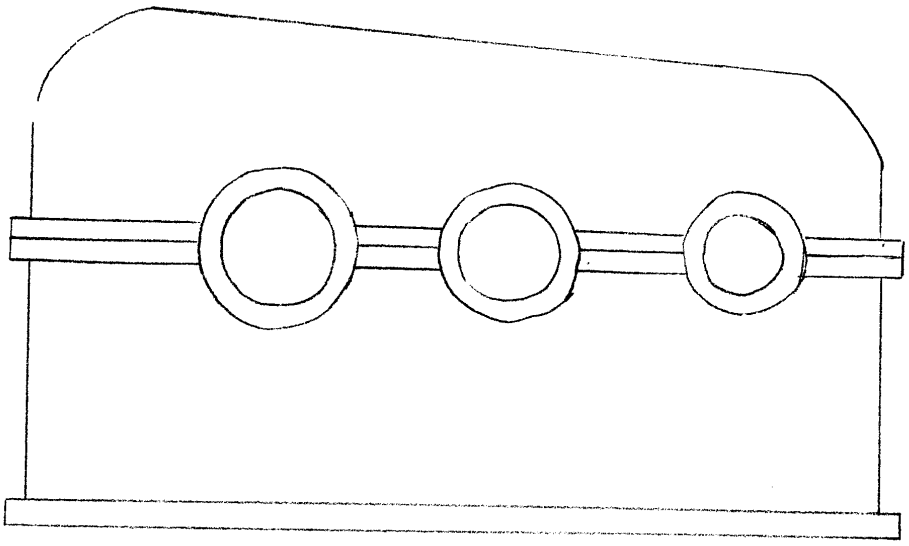
Steel Plate II (Plita)





Sketch No. 17 a.

Reducer (Reduktor)

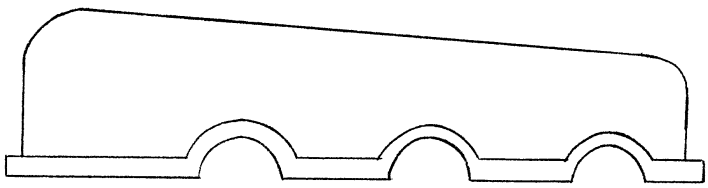


Entire Apparatus

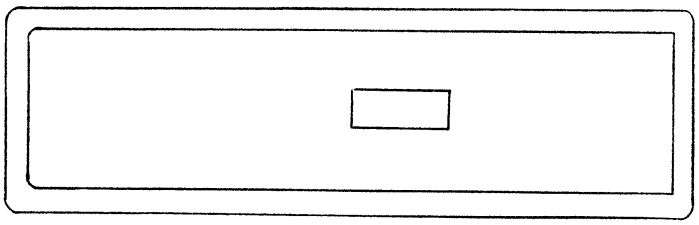
Attachment 1

Sketch No. 17

Reducer (Reduktor)



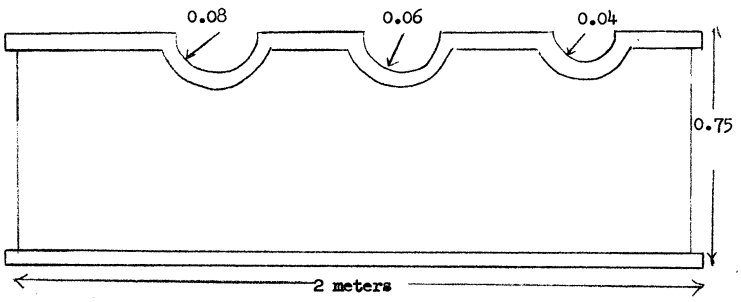
b. Side View of Lower Section



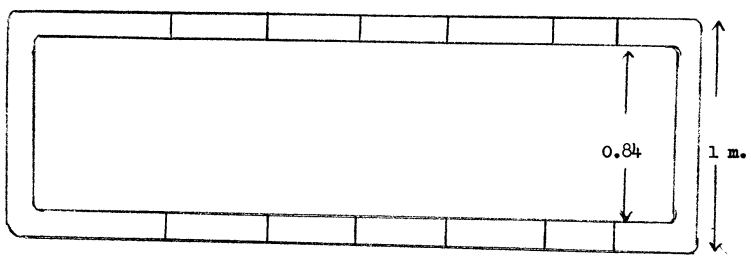
c. Viewed from Above

Attachment 1

Reducer (Reduktor)



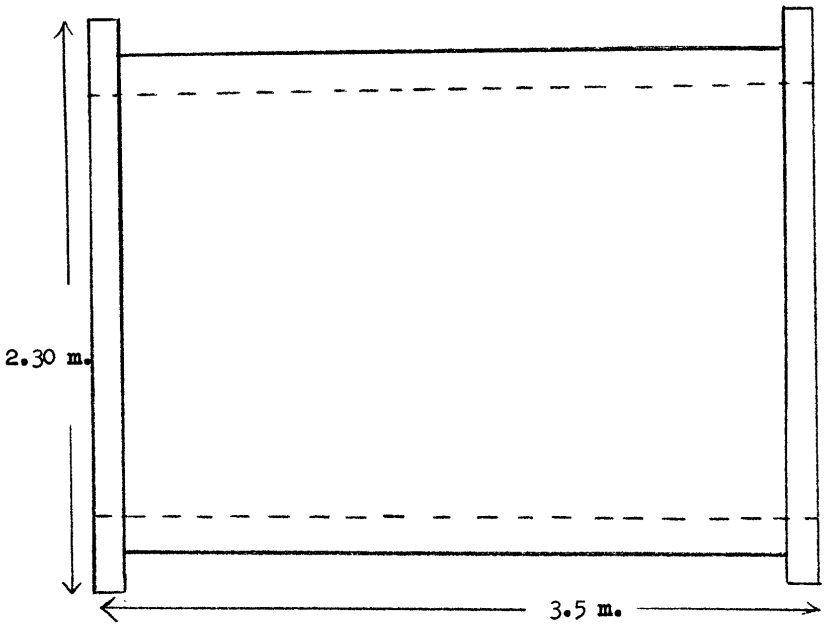
d. Side View of Upper Section

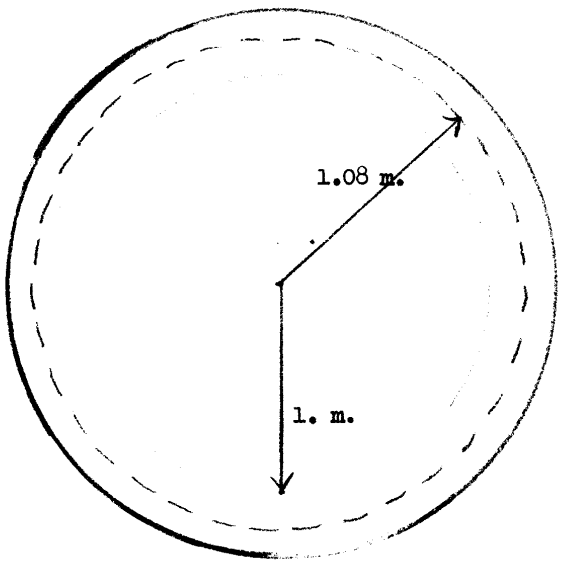


e. Viewed from Above

Sketch No. 18

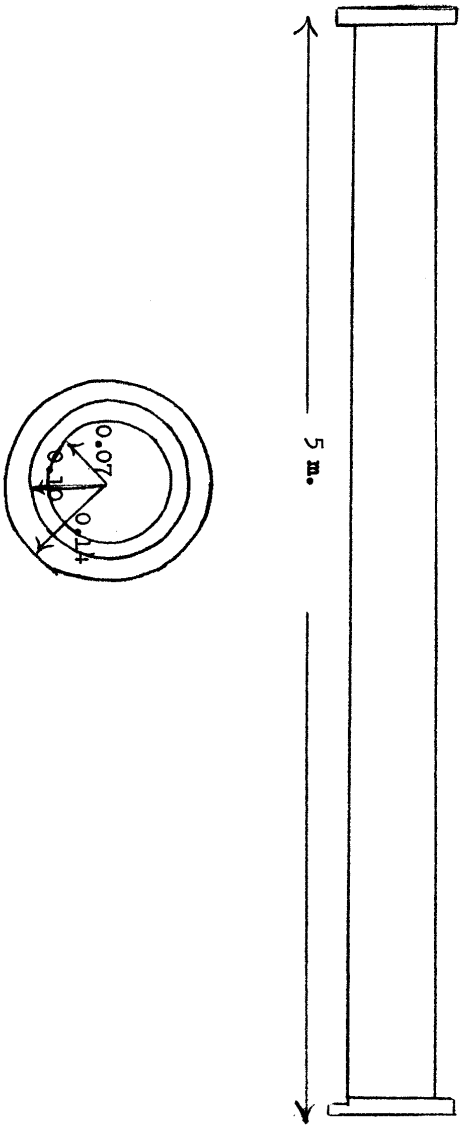
Cylindrical Housing (Korpus)





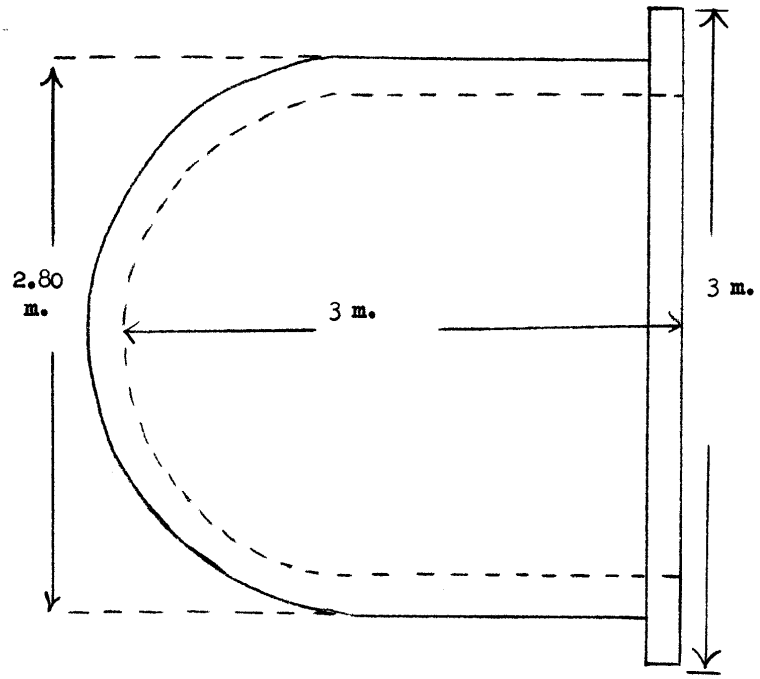
Sketch No. 19

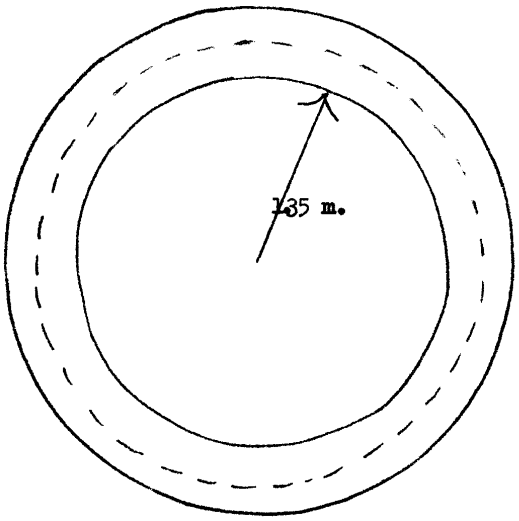
Cast Iron Pipes or Tubes (Truba ili Trubka)



Sketch No. 20

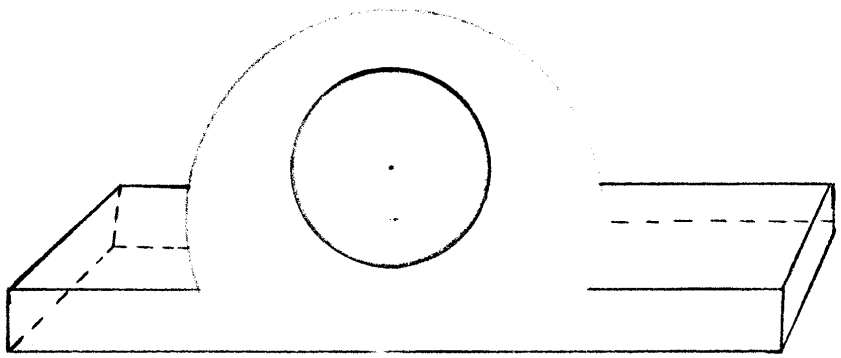
Boiler (Kotly)





Sketch No. 21

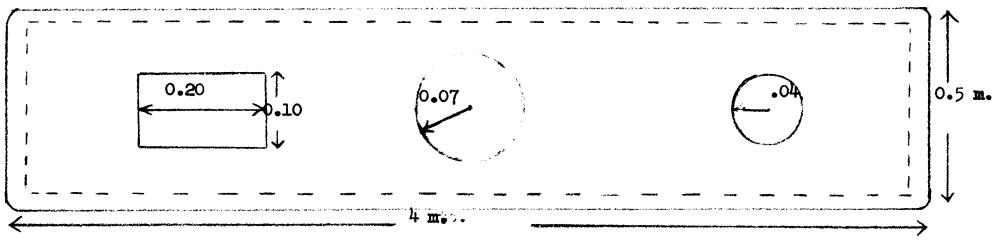
Bearing (Pod Shipnik)

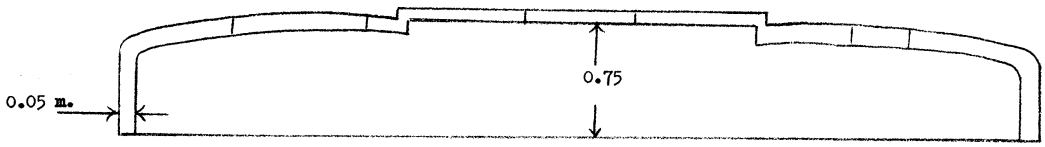


Attachment 1

Sketch No. 22

Housing (Korpus)

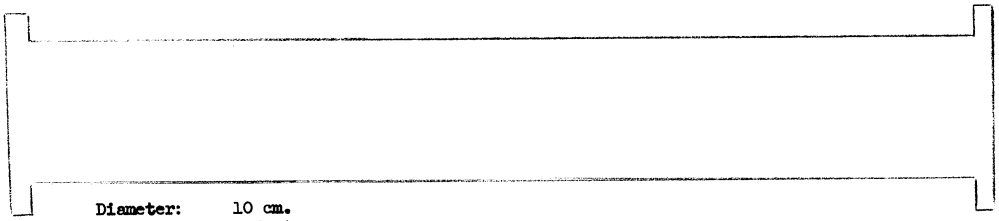




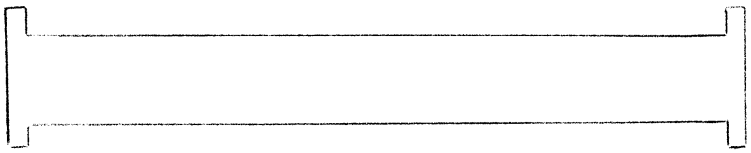
Attachment I

Sketch No. 23

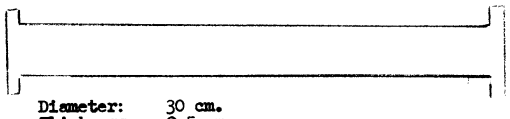
Pipes (Trubki)



Diameter: 10 cm.
Thickness: 1.5 cm.
Length: 3 m.
Weight: 50 kg.



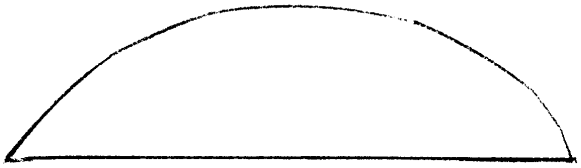
Diameter: 20 cm.
Thickness: 2 cm.
Length: 3 m.
Weight: 75 kg.



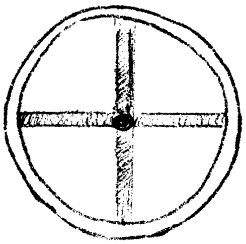
Diameter: 30 cm.
Thickness: 2.5 cm.
Length: 3 m.
Weight: 100 kg.

Sketch No. 24

Cap or Cover (Kolpachek)



a. **Diameter:** 75 cm.
Height: 45 cm.
Weight: 50 kg.
Thickness: $1\frac{1}{2}$ to 2 cm.
Inside Rib: 1 to $1\frac{1}{2}$ cm.



b.

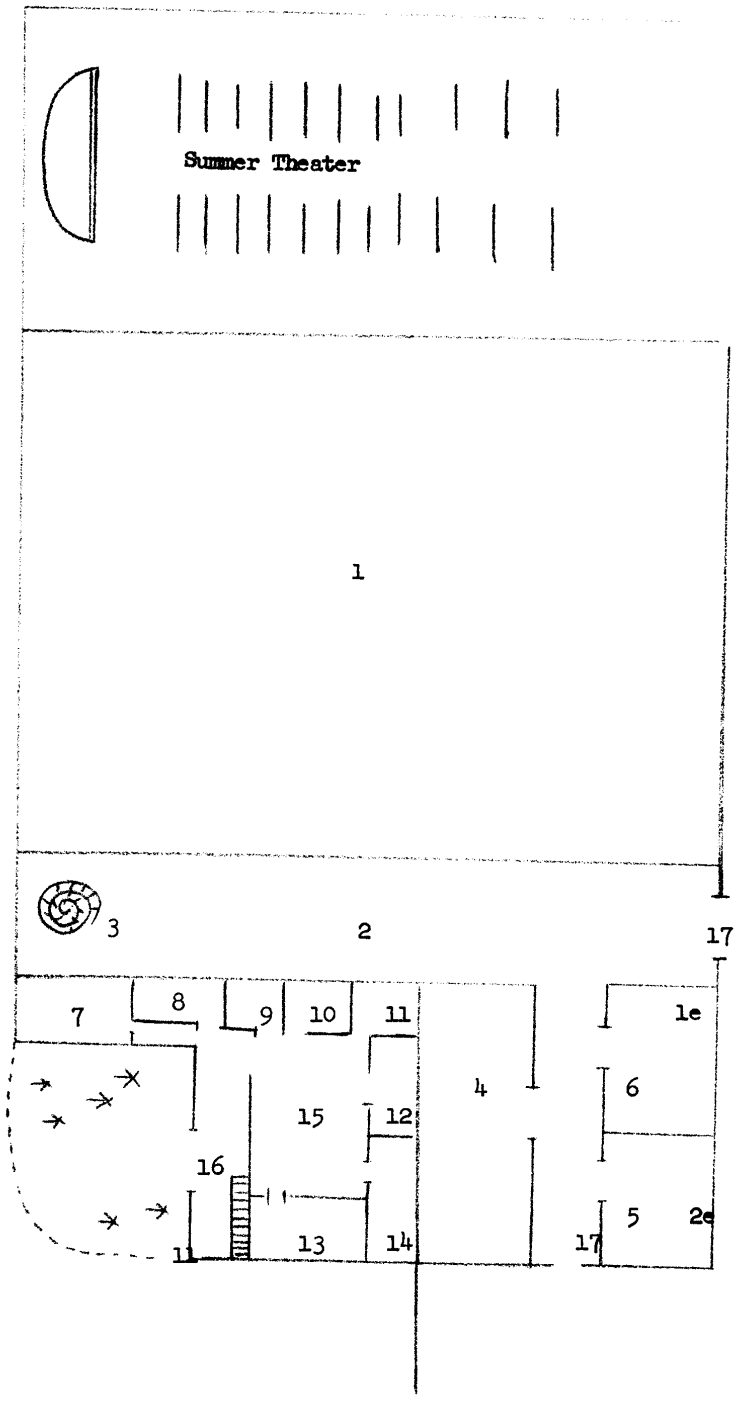
Electrode

c. **Length:** 40 cm.
Diameter: 1 cm.
Material: Ferrosilid

Production:
200 to 300 a day.

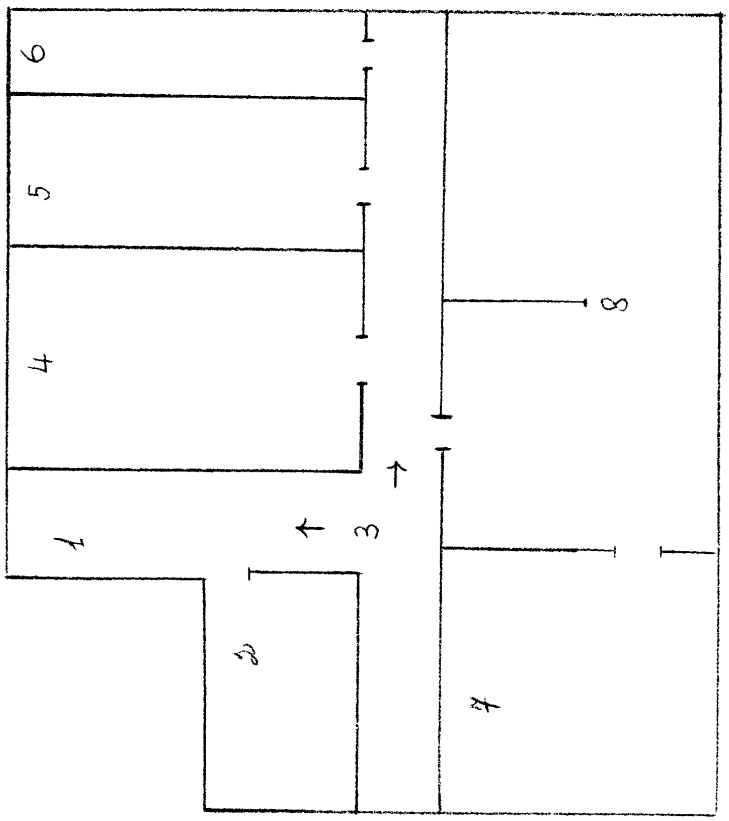
Sketch No. 25

Layout of Ground Floor of Central Chemical Laboratory



Sketch No. 26

Layout of Second Floor of Central Chemical Laboratory



Attachment 1

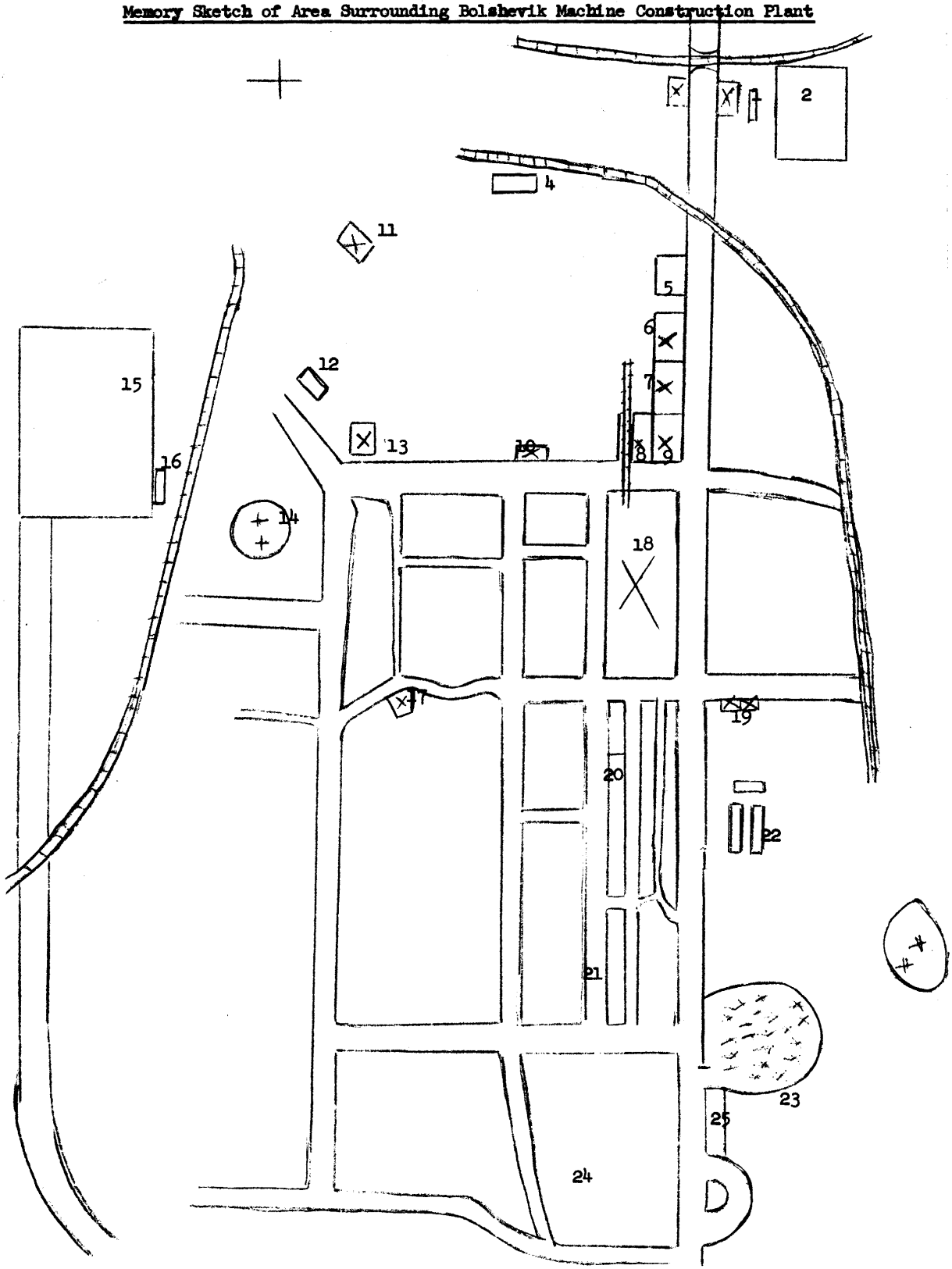
50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

Sketch No. 27

Memory Sketch of Area Surrounding Bolshevik Machine Construction Plant



C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM