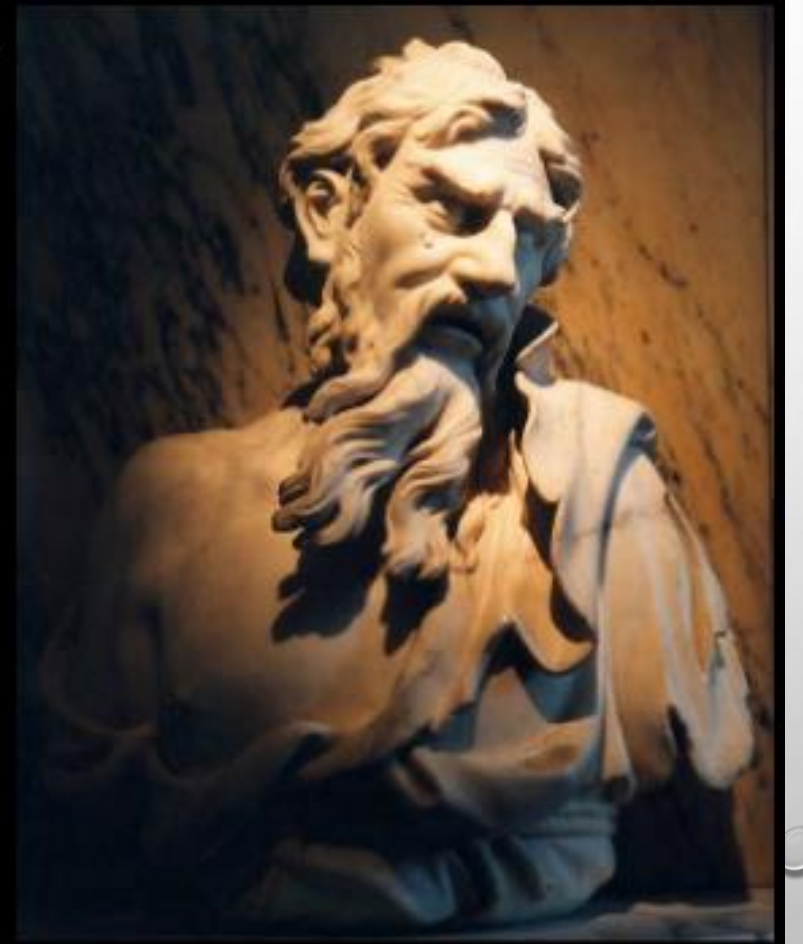


The background of the slide is a light gray gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance.

# THEN AND NOW

CHANGES IN STEEL MILLS, THE IRD &  
PASS DESIGN

The only thing that  
is constant is change.  
~ Heraclitus



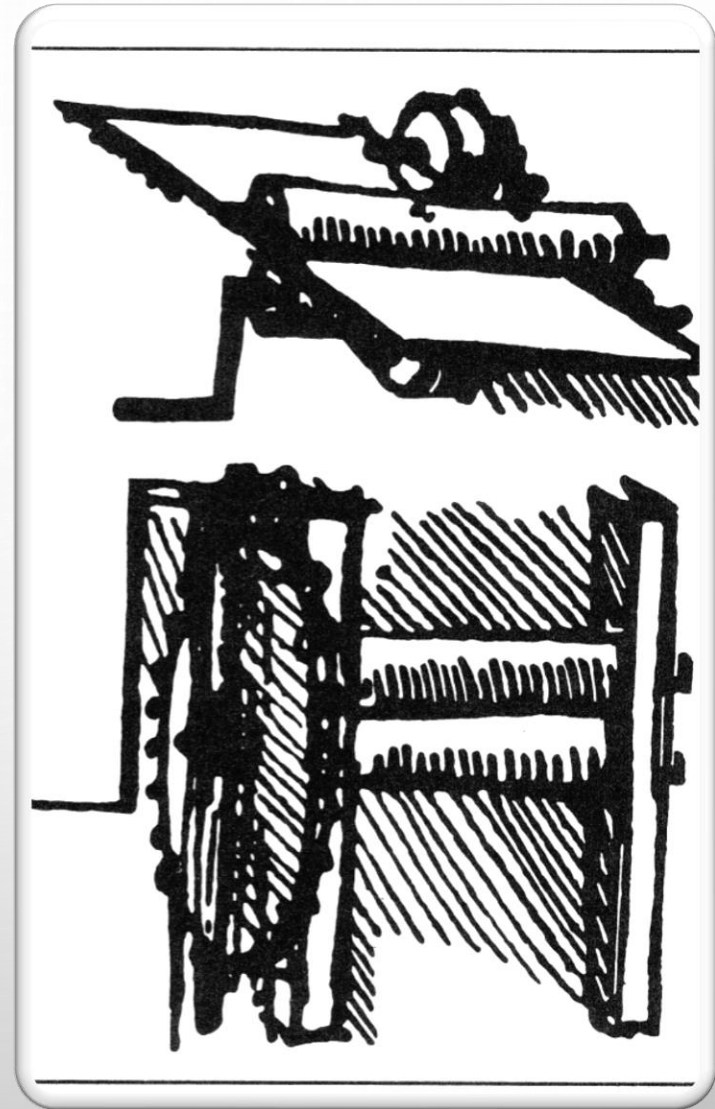
# HISTORY OF ROLLING MILLS

1495 DA VINCI SKETCH OF ROLLING MILL

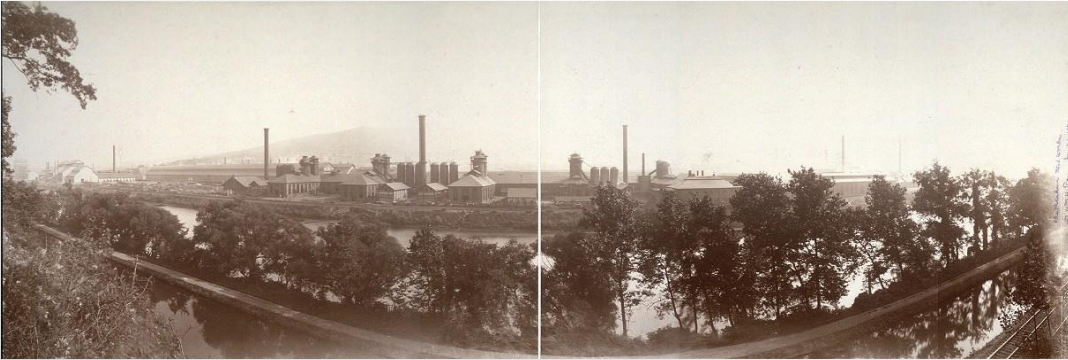
17<sup>TH</sup> CENTURY HOT ROLLING BEGINS

1783 HENRY CORT RECEIVES PATENT FOR  
GROOVED ROLLING

LATE 19<sup>TH</sup> EARLY 20<sup>TH</sup> CENTURIES, LARGE  
STEEL MILLS ARE BUILT



# INTEGRATED MILLS



CONVERTED ORE TO PIG IRON  
CONVERTED PIG IRON TO LIQUID STEEL  
CAST AND SOLIDIFY THE LIQUID STEEL - INOT  
BLOCKS OR BLOOMS  
REHEAT & REDUCE THE SIZE OF THE BLOCKS  
FINISH THE SHAPE



# INTEGRATED MILLS

LARGE FACILITIES – 2,000,000 TONS

FINISHED PRODUCTS - LARGE STRUCTURAL SECTIONS,  
HEAVY PLATE, STRIP, RAIL WAY RAILS , OCCASIONALLY  
LONG PRODUCTS (BAR & PIPE)

LITTLE ABILITY TO ADJUST PRODUCTION RATES

# MINIMILLS

CONVERT SCRAP TO LIQUID  
STEEL

CAST BILLET OR NEAR NET  
SHAPE

REHEAT BILLETS

REDUCE TO FINISHED SHAPE



# MINIMILLS

SMALLER FACILITIES – 400,000 – 600,000 TON

FINISHED PRODUCTS - REBAR, FLATS, ANGLE,  
CHANNEL, PIPE, WIRE ROD, LIGHT RAILS, SPECIALTY  
SHAPES

GREATER ABILITY TO ADJUST PRODUCTION RATES TO  
MEET DEMAND

# MICRO MILLS

COVERT SCRAP TO LIQUID STEEL

CAST DIRECTLY TO ROLL MILL  
FOR FINISH SHAPE





# MICRO MILLS

SMALLER FACILITIES – 200,000 – 400,000 TON

IMPROVED YIELD – LESS NOSES TO COBBLE

FINISHED PRODUCTS ARE MOSTLY REBAR, CAN  
PRODUCE OTHER SMALL SHAPES AND SPECIALTY  
PRODUCTS

GREATER ABILITY TO ADJUST PRODUCTION RATES TO  
MEET DEMAND

# INSTITUTE OF ROLL DESIGN

SPRING 1975 ROB KIBLER DISTRUBUTES FLIER

FIRST ORGANIZATIONAL MEETING SEPT. 13, 1975

FIRST ACTUAL MEETING DEC. 4 1975

42 CHARTER MEMBERS – 27 PRESENT

JULY 8, 1977 FIRST SOLO MEETING WITH TOUR

1984 FIRST CANADIAN MEETING

1987 FIRST HOSPITALITY SUITE

SOME THOUGHTS ON ORIGINATING A

Roll Design Institute

WHICH SHOULD BE FOUNDED TO ASSURE HIGH  
STANDARDS OF TECHNICAL COMPETENCE AND PROFESSIONAL  
INTEGRITY IN ROLL MILL ROLL DESIGN, AS WELL AS  
ESTABLISH A COMMON PARITY AMONG ALL ROLL DESIGN  
ENGINEERS TO FURTHER PROMOTE THE CRAFT, PER SE.  
IT SHOULD BE OPEN TO ALL QUALIFYING PERSONS  
MILL ROLL DESIGNERS, ROLL MILL SUPERINTENDENTS, ROLL  
TECHNICIANS, AND OTHERS CAPABLE OF CONTRIBUTING  
TO THE ART. (EX. MEMBER STATUS, DECISIONS FROM A COMMON ANCHOR,  
OR HONORARY OR RELEVENT ETC.) (THEY WOULD OWN SHARES, ETC.)

THE GOVERNING BODY SHOULD BE ITS OFFICERS:

Pres

Vice Pres

Sec/Treas (INITIALLY - WILL BE LATER)

AND AS MANY DIRECTORS AS THE WISH  
OF THE MEMBERSHIP WARRANTS.

IT SHOULD BE FINANCED AS FOLLOWS:

" " HAVE A MAILING ADDRESS

" " CHARGE TAKEN DUES FOR PUTTING OFFICE SUPPLIES ETC.

" " EVENTUALLY BY EACH SOME FORM OF "SHARE" (BASED ON)

" " PROVIDE A JOB PLACEMENT SERVICE.

" " DO OFFICIALLY WHAT WE'VE BEEN DOING

UNOFFICIALLY AS BEING BODILYMAN - ESTABLISH

ON INDEPENDENT EXPENSE!

Rob Kibler

12/13/74

# INSTITUTE OF ROLL DESIGN

## SEVERAL FIRSTS

### 1989-1991

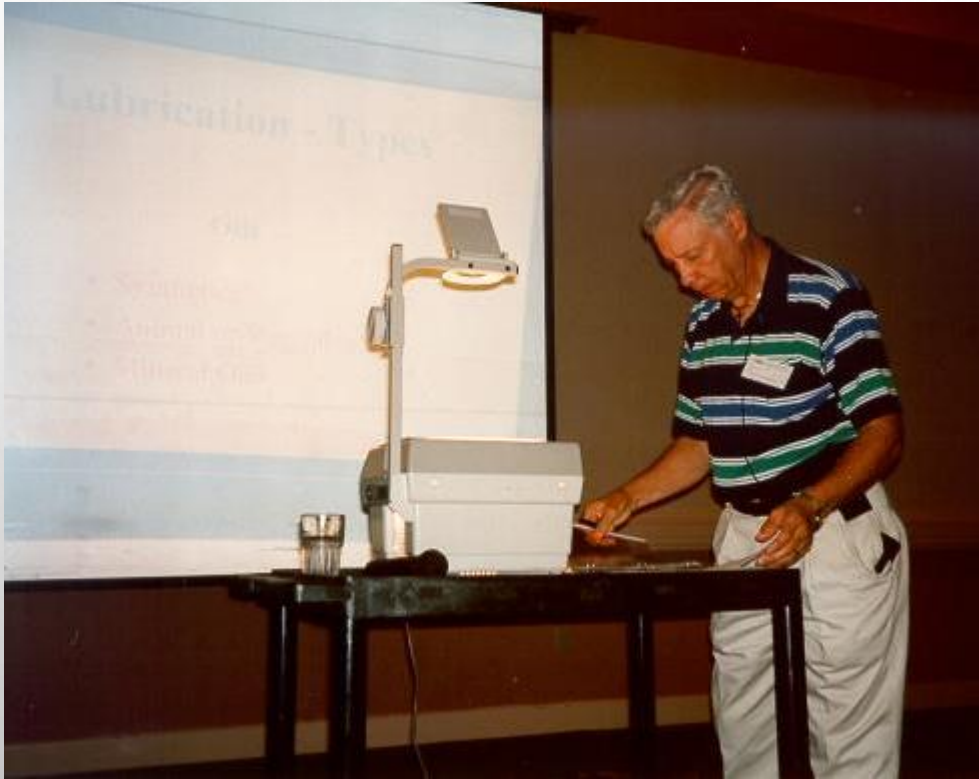
KEYNOTE SPEAKER  
COMPUTERIZED RECORDS  
ROLL DESIGN CERTIFICATION  
TECHNICAL PAPER AWARDS  
WIRE ROD COMMITTEE  
MEMBERSHIP DIRECTORY  
ROUND TABLE DISCUSSION

### 1991-1995

HARDNESS COMMITTEE  
EDUCATION COMMITTEE  
CAD/CAM USERS GROUP  
LADIES SUITE AND TOUR  
SCHOLARSHIP AWARD  
OPERATOR MEMBERS

### 1997-PRESENT

INTERNET COMMITTEE  
WEB PAGE  
HOSPITALITY SUITE COMBINE  
STRUCTURAL COMMITTEE MEETING  
MERCHANT COMMITTEE MEETING  
FIRST LADY OFFICER  
FIRST ONLINE REGISTRATION PAYMENT



# PRESENTATIONS

- DIE ROLLING – HORSE SHOES
- GREASE OR AIR OIL
- IN HOUSE TRAINING PROGRAMS
- ROLL DESIGN JEOPARDY GAME
- HISTORIES OF ROLLING AND ROLLING MILLS
- EFFECTIVE ROLL COOLING
- ADVANTAGES AND DISADVANTAGES OF DIFFERENT ROLL MATERIALS
- PASS DESIGN CLASSES – VARIOUS CHANNEL & ANGLE



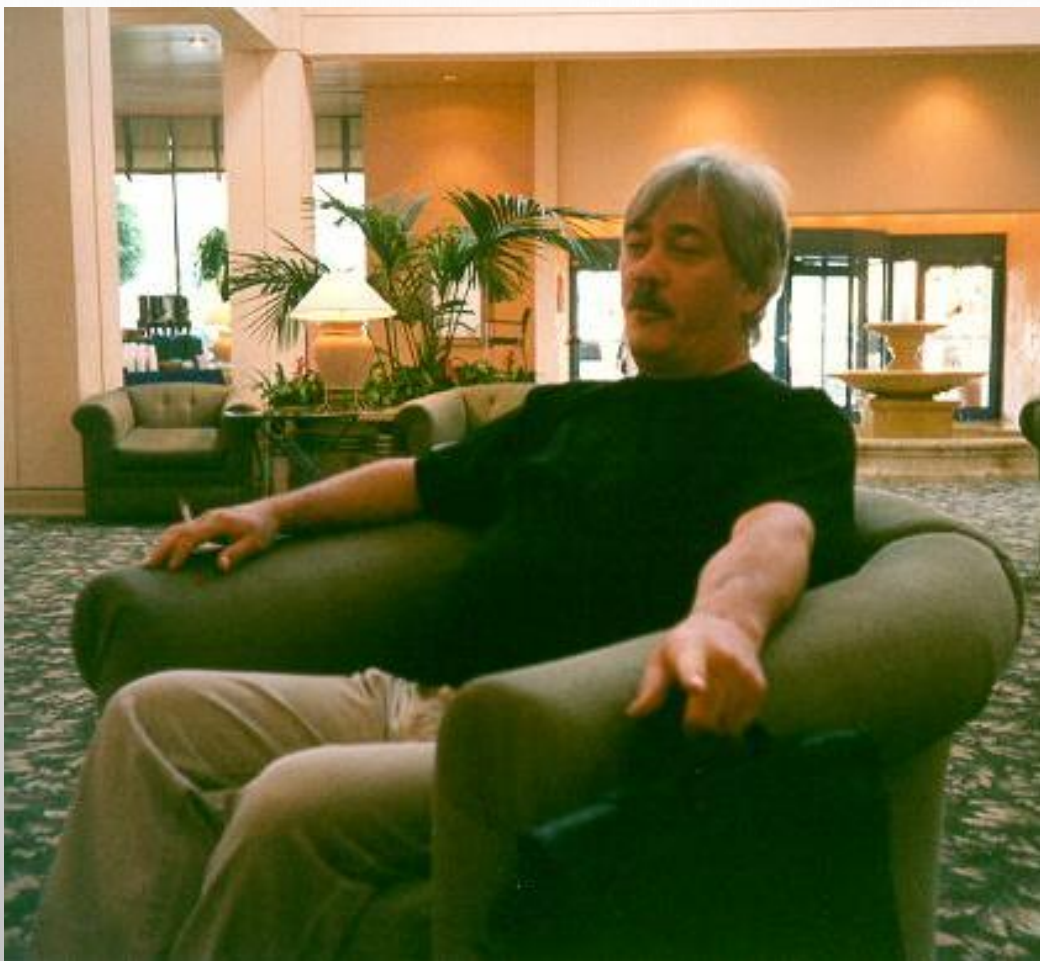
IRD  
meeting  
Jan. 30, 1985







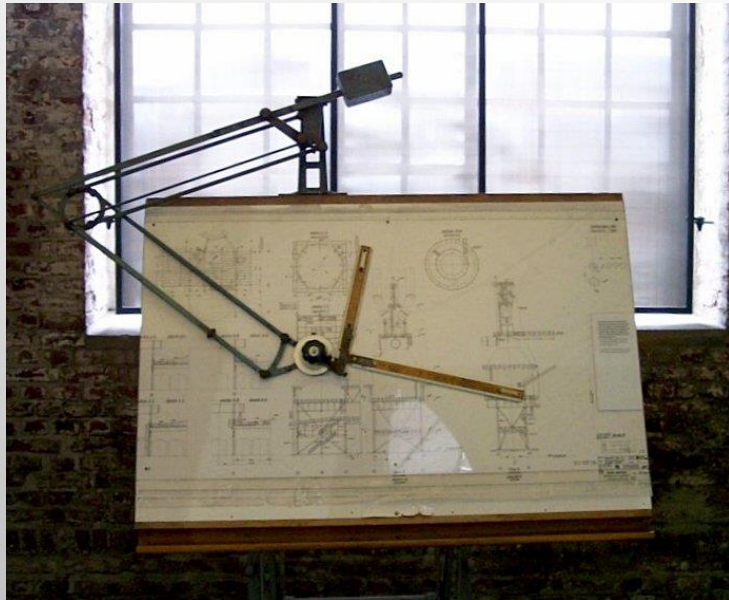






# PASS DESIGN

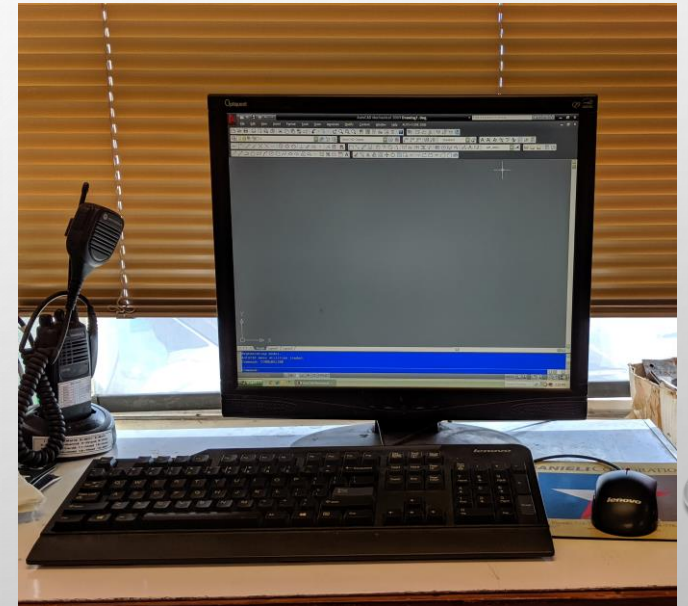
DRAFTING BOARD



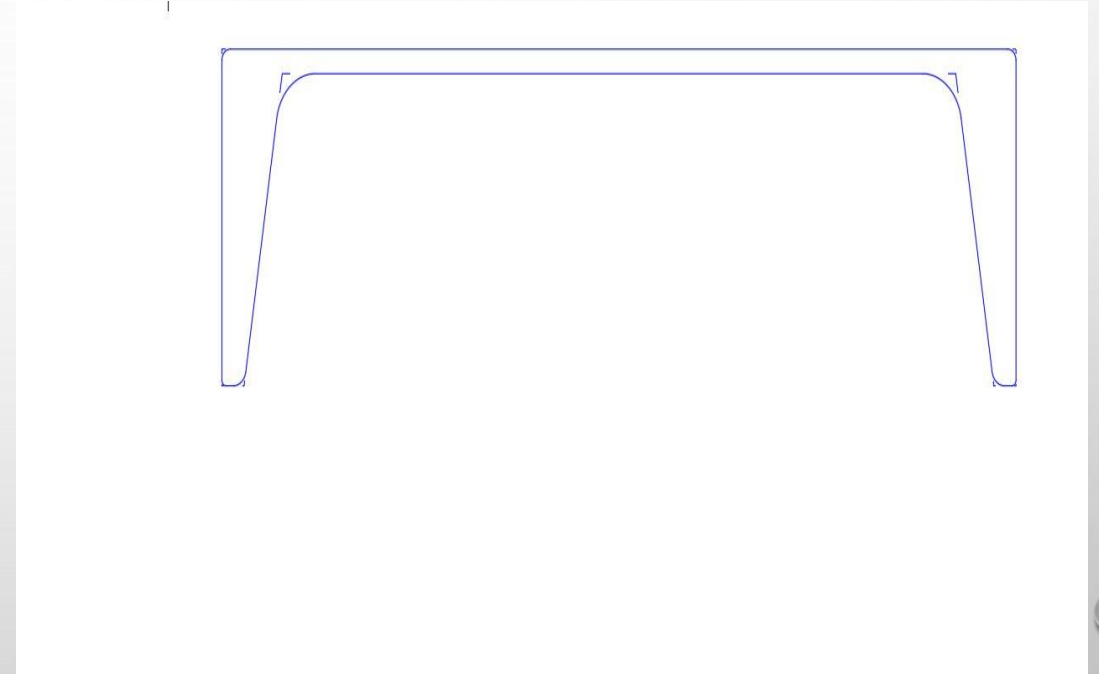
OTHER TOOLS



TODAY



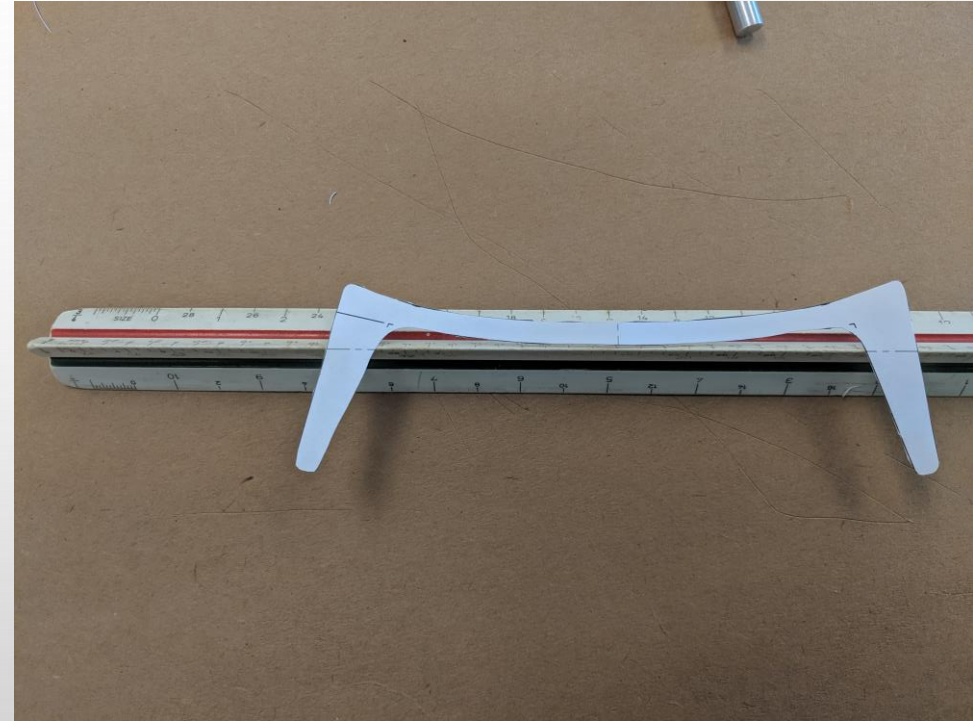
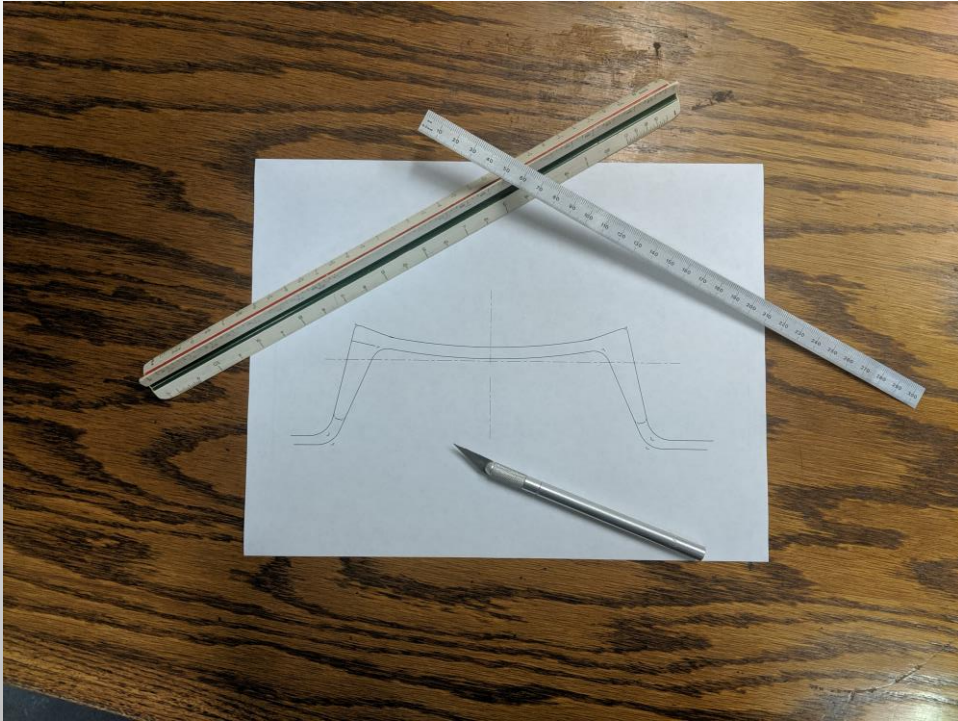
# FINDING AREA



Area = 1.902, Perimeter = 18.318

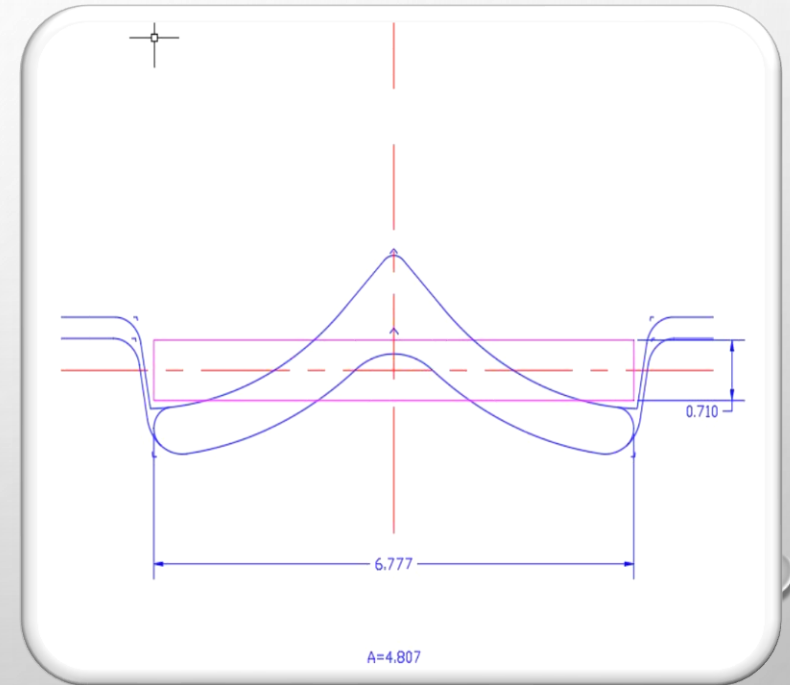
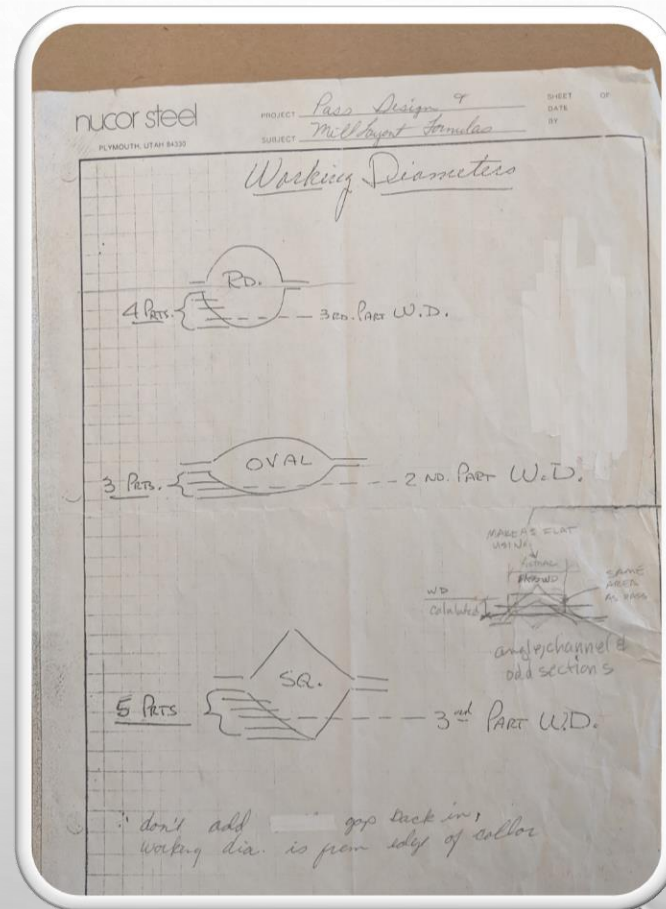
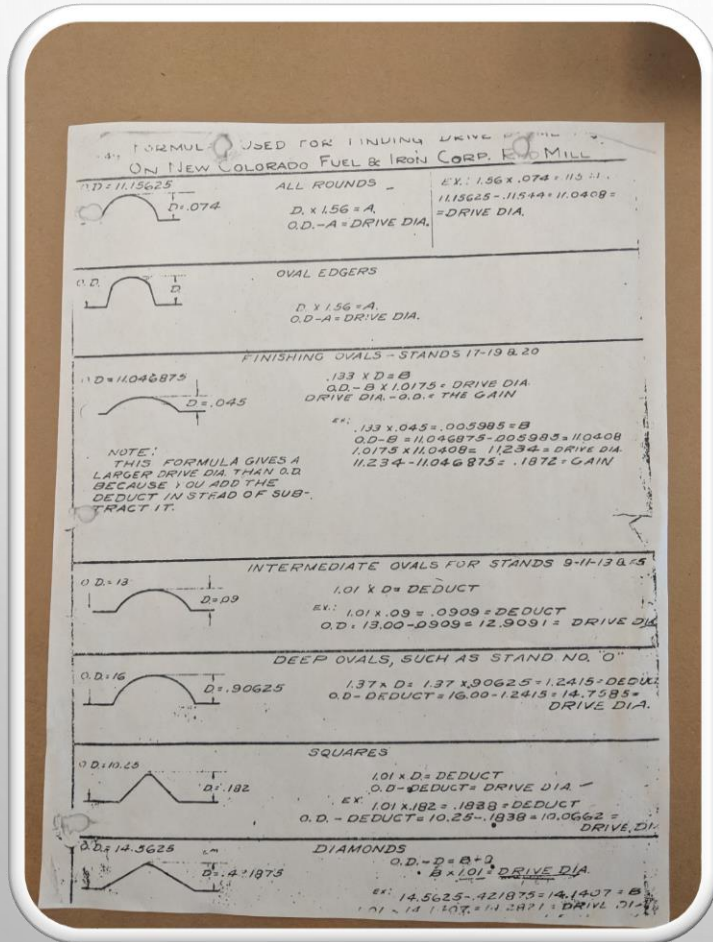
# PITCH LINE

LINE WHERE AREA OF THE BAR ABOVE AND BELOW ARE EQUAL



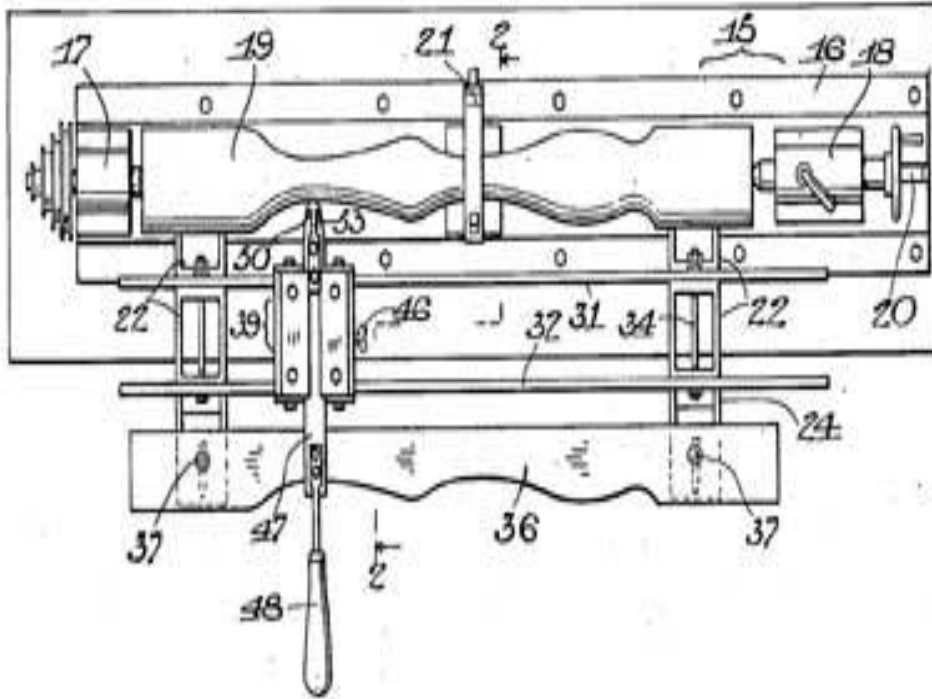
# WORKING DIAMETER

DIAMETER OF THE ROLL WHERE THE BAR AND THE ROLL ARE GOING THE SAME SPEED





# CUTTING THE ROLLS



```
1000.NCC - Notepad
File Edit Format View Help
%
O1000
T0100
G65 H01 P#101 Q260000
G65 H03 P#102 Q#101 R#500
G65 H01 P#2701 Q-#102
N0020 G92 S190
N0030 G96 S400
N0040 T0101(TOOL 3/4)
N0050 M24
N0060 G04 X1.0
N0070 M03
N0080 G04 X1.0
N0090 G00 X27.25 Z0.475
N0100 Z-0.375
N0110 G01 X26.75 Z-0.375 F0.020
N0120 Z-35.058
N0130 G03 X25.25 Z-35.808 I-0.75 K0.
N0140 G01 X25.25 Z-35.908
N0150 G00 X27.25 Z-35.908
N0160 Z-0.375
N0170 G01 X26.75 Z-0.375
N0180 G02 X25.25 Z0.375 I-0.75 K0.
N0190 G01 X25.25 Z0.475]
N0200 G00 X26.95 Z0.475
T100
G65 H01 P#2701 Q0
N0210 M30
%
```





**QUESTIONS?**

**COMMENTS!**



The image features a light gray background with a subtle gradient. In the top-left and bottom-right corners, there are several realistic water droplets of various sizes, rendered with soft shadows and highlights to give them a three-dimensional appearance. The text "THANK YOU" is centered in the middle of the page.

**THANK YOU**