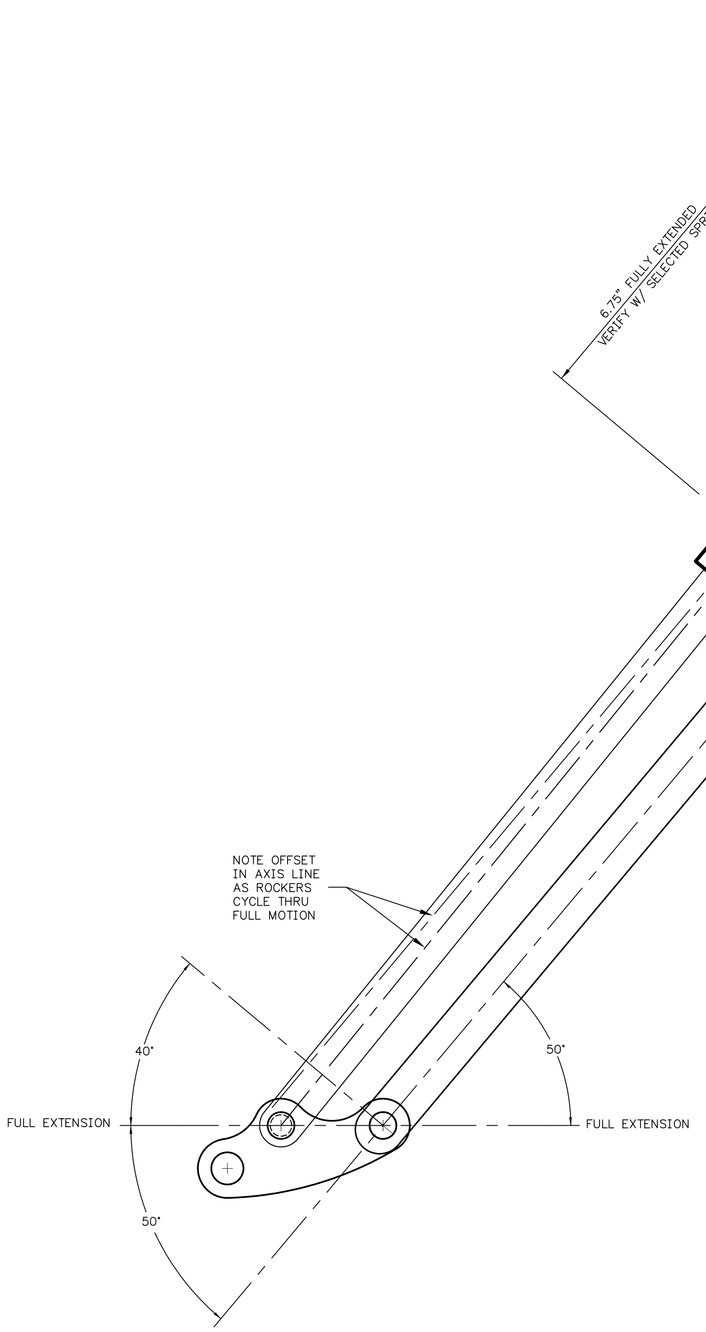
CHOPPER BUILDERS HANDBOOK



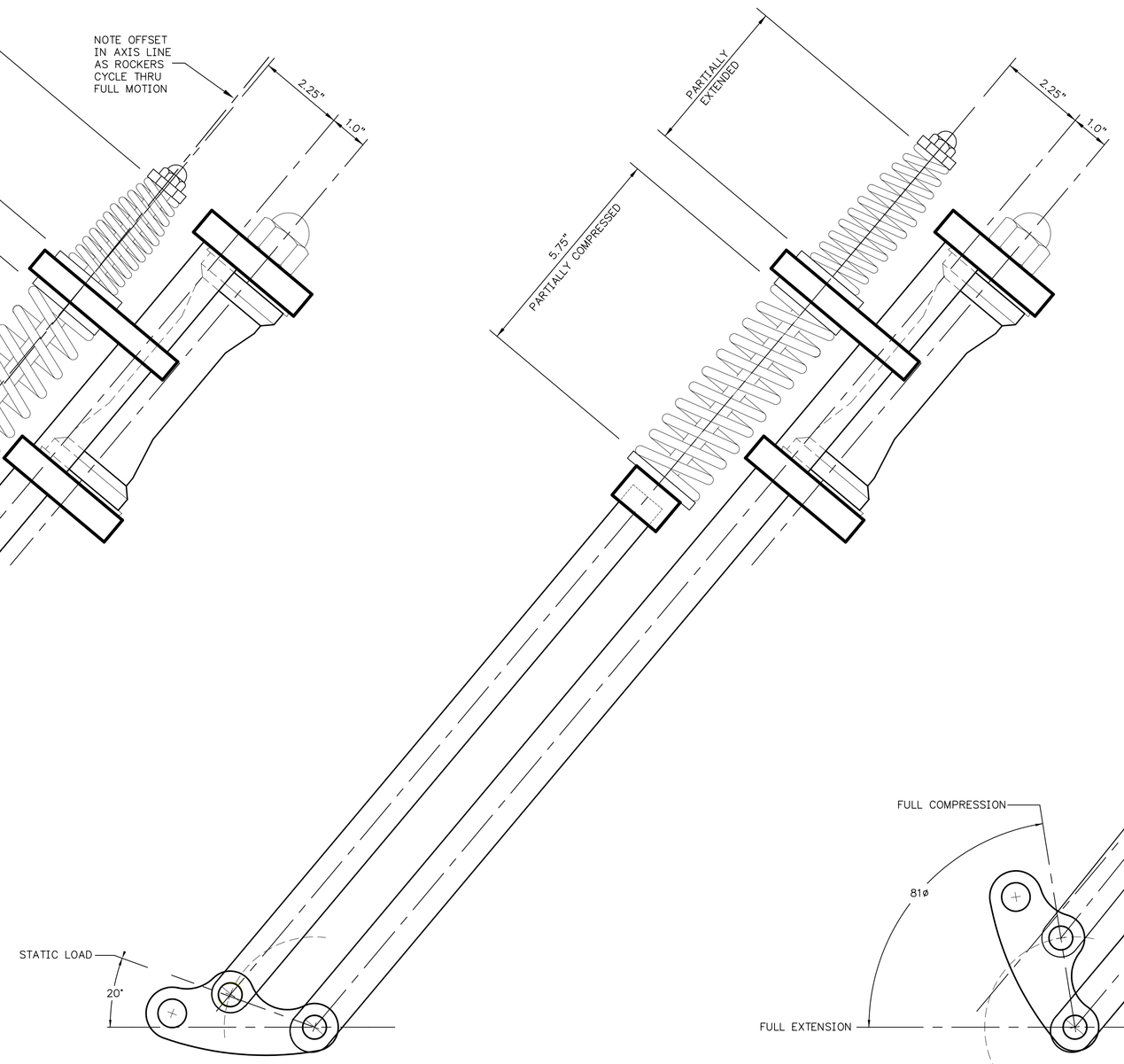
FULL EXTENSION - NO LOAD

SCALE 1/2" = 1"

NOTE THAT ALL ANGLES AND DIMENSIONS THAT ARE RELATED TO THE FORK LEGS OR ROCKERS ARE ALWAYS TAKEN TO THE INTERSECTION POINTS OF THE ROCKER PIVOT BOLTS AND HAVE NOTHING WHATEVER TO DO WITH THE FINAL LOCATION OF THE FRONT AXLE HOLE AS THIS POINT CAN BE SIGNIFICANTLY MODIFIED BY THE FABRICATOR.

THIS DIAGRAM PRERESENTS THE CONDITION AND CONFIGURATION OF THE FORK ASSEMBLY WHEN THE FRAME HAS BEEN RAISED ENOUGH SO THAT THE FRONT WHEEL IS FREE OF THE PAVEMENT OR THE BIKE IS REBOUNDING FROM A LARGE BUMP. IT IS THE CONDITION OF MAXIMUM EXTENSION OF THE MAIN (COMPRESSION) SPRINGS AND MAXIMUM COMPRESSION OF THE UPPER (REBOUND) SPRINGS.

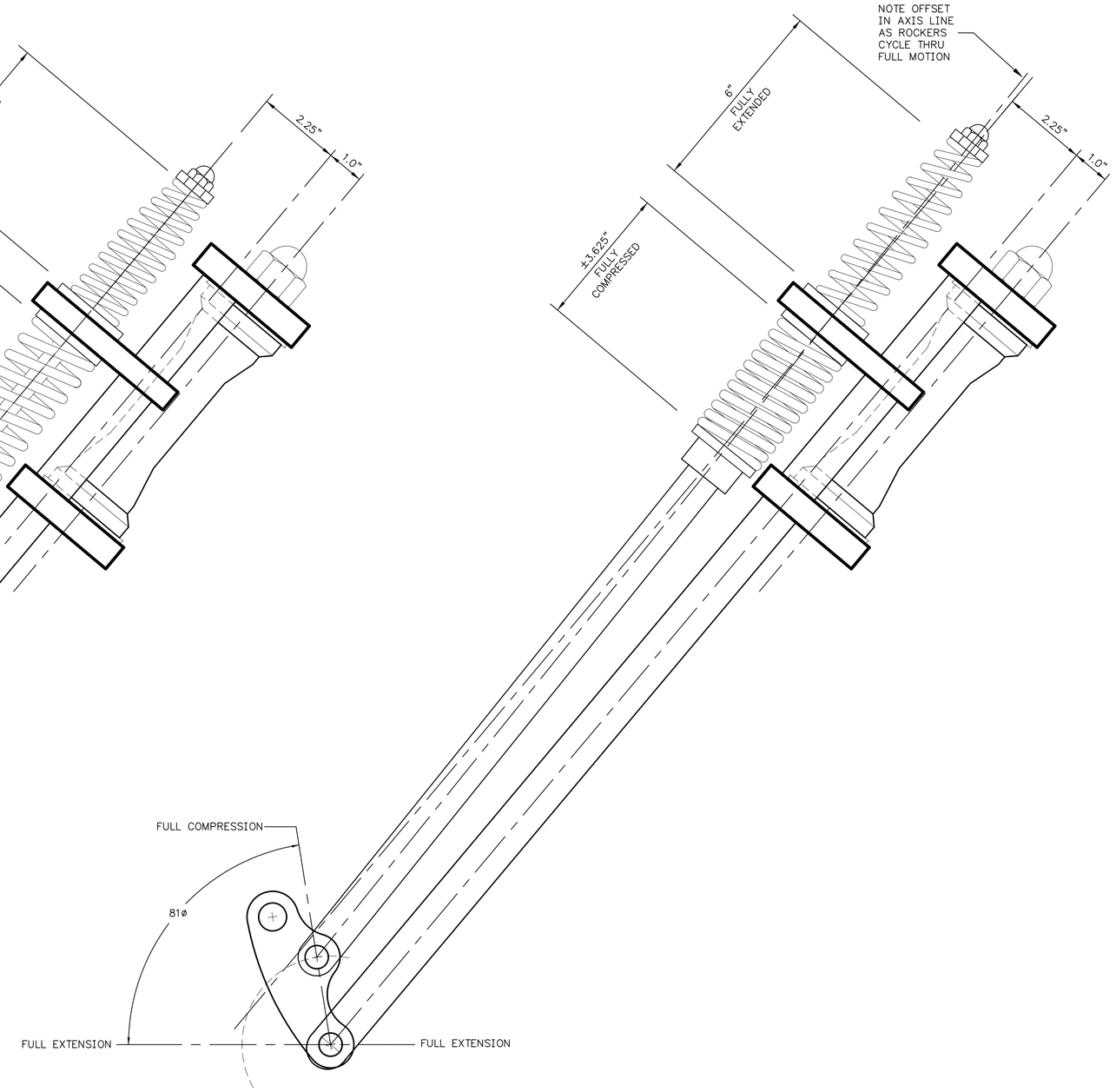
SPRING ADJUSTMENT:
IN THIS CONFIGURATION, BEFORE YOU MOUNT THE FORKS, YOU WANT TO ADJUST THE TOP SPRING RETAINER NUT AND ACORN LOCK NUT SO THAT THE UPPER (REBOUND) SPRING IS ALMOST, BUT NOT QUITE, IN FULL COMPRESSION. THE OBJECTIVE IS TO LEAVE ABOUT 1/16–INCH OF SPACE BETWEEN THE COMPRESSED COILS.



PARTIAL COMPRESSION - BIKE AT REST

THIS DIAGRAM ILLUSTRATES THE FORK ASSEMBLY WHEN THE BIKE IS UNDER A LOAD BUT AT REST. IT'S THE STATIC, NON–MOVING CONDITION WHEN THE LOWER (COMPRESSION) SPRINGS ARE JUST SUPPORTING THE FRONTEND WEIGHT OF THE BIKE. IN THIS SITUATION THE LOWER SPRINGS ARE TYPICALLY COM–PRESSED ONLY AN INCH WHILE THE UPPER (REBOUND) SPRINGS ARE EXTENDED BY A LIKE AMOUNT.

NOTE THAT THE AXLE HOLE IS JUST SLIGHTLY ABOVE A HORIZONTAL LINE GOING THRU THE REAR ROCKER PIVOT. IN ALMOST ALL SPRINGER SETUPS YOU WANT THE AXLE HOLE ABOVE THE REAR ROCKER BY AT LEAST 1/2–INCH, OFTEN AS MUCH AS 1–INCH.



FULL COMPRESSION - MAXIMUM LOAD

THIS DIAGRAM REPRESENTS THE FORK ASSEMBLY IN A CONDITION OF HITTING A VERY LARGE BUMP WHERE THE LOWER (COMPRESSION) SPRINGS ARE VERY NEARLY COMPLETELY COMPRESSED WHILE THE UPPER (REBOUND) SPRINGS ARE FULLY EXTENDED.

SPRING ADJUSTMENT:
IN THIS CONDITION YOU WANT THE UPPER (REBOUND) SPRING TO STILL HAVE A VERY SLIGHT AMOUNT OF TENSION IN IT. IN OTHERWORDS IT SHOULD NOT BE SO EXTENDED THAT IT 'RATTLES' IN THE SEAT OR APPEARS TO BE LOOSE IN ANY WAY.

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GARY W. WEISHAUPT

PERFORMANCE ENGINEERING
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Key Plan

Project Title

CHOPPER BUILDERS HANDBOOK

SPRINGER FORKS

PLAN SF-19-1

Drawn By	GWW
Date	11–14–05
Checked By	HC
Date	11–16–05
Scale	1/2"=1"
Plot At:	1"=1"
Project No.	–

Sheet Description

SPRINGER MOTION DIAGRAMS

Sheet No.

SF1.9