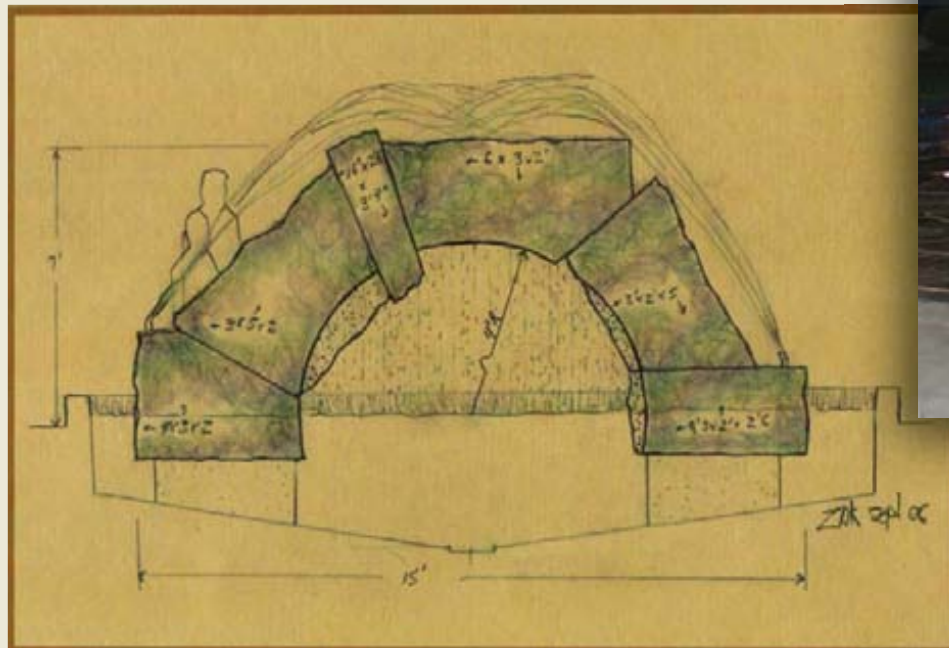


THE WATER-FALL ARCH

HAS ITS ROOTS IN THE FAMOUS GREAT FALLS, THE NAME SAKE OF THE CITY. SIX HUGE STONES SET TOGETHER TO FORM A PORTAL. THE INNER ARCHWAY HAND-CARVED INTO A PORTAL. THE WATER RUNNING FROM THE STONES FORM A VEIL OF RIVULETS, RAINING INTO THE POND WITH PLEASANT SOUND OF RAINFALL



PHOTOGRAPH BY MKM

SEPT. 2006 TO APR. 2009. DESIGNED FOR THE GREAT FALLS PUBLIC LIBRARY TO BE THE CENTER PIECE OF THEIR NEW PLAZA. TO LET KIDS PLAY IN THE WATER IN THE HOT SUMMER MONTHS MAKE IT FRIENDLY AND A POSITIVE THING FOR THE YOUTH. AT NIGHT WITH THE LIGHTS ON THE WATER BECOMES ALIVE DANCING ON THE STONES
- GAIA AND GEO.



53,000 LBS OF STONE IN 5 HUGE HUNKS. BY THE TIME THE FUNDS ARRIVED TO BEGIN THE PROJECT IT WAS MID WINTER. THE STONES WERE DELIVERED IN -20 DEGREE WEATHER. I STUDIED THE STONES ON DAYS AS COOL AS -26. DEC. 20, 2007

AFTER STUDYING THE STONES I REALIZED I COULD MAKE THE ARCH LARGE ENOUGH TO RIDE A BICYCLE THROUGH. I MADE LIFE SIZE MASONITE PATTERNS OF EACH OF THE 6 STONE BLOCKS IN THE ARCH, AND DETERMINED THE HEIGHT OF THE CONCRETE PIERS NEEDED TO BE ONSITE.





I HIRED A SAWING COMPANY TO CUT THE STONES INTO THE ARCH BLOCKS. A FEW STONES MADE MORE THAN ONE BLOCK. SO THE TEXTURE ON EACH BLOCK HAD TO BE CHOSEN BEFORE CUTTING.

I RENTED A YARD CRANE FOR 5 MONTHS TO BUILD THE ARCH. I BUILT A TIMBER AND PLY BOARD PLATFORM TO BE CONCRETE PEDESTALS; BEFORE SETTING THE FIRST STONE.





I BUILT A MAQUETTE' TO SCALE 1 1/2 INCH TO 1 FOOT, TO STUDY HOW TO HANDLE THE STONES AND PLACE THE FALSE WORK FOR THE ARCH. EACH BLOCK AVERAGED 5000 LBS.



THE SAWN JOINTS DID NOT PLANE SO THERE WERE GAPS VARYING UP TO 1 INCH. THE END OF ONE STONE HAD TO BE CARVED TO FIT THE ABUTTING STONE. THIS ARDUOUS TASK TOOK A MONTH AND A HALF, WITH 2 MEN.



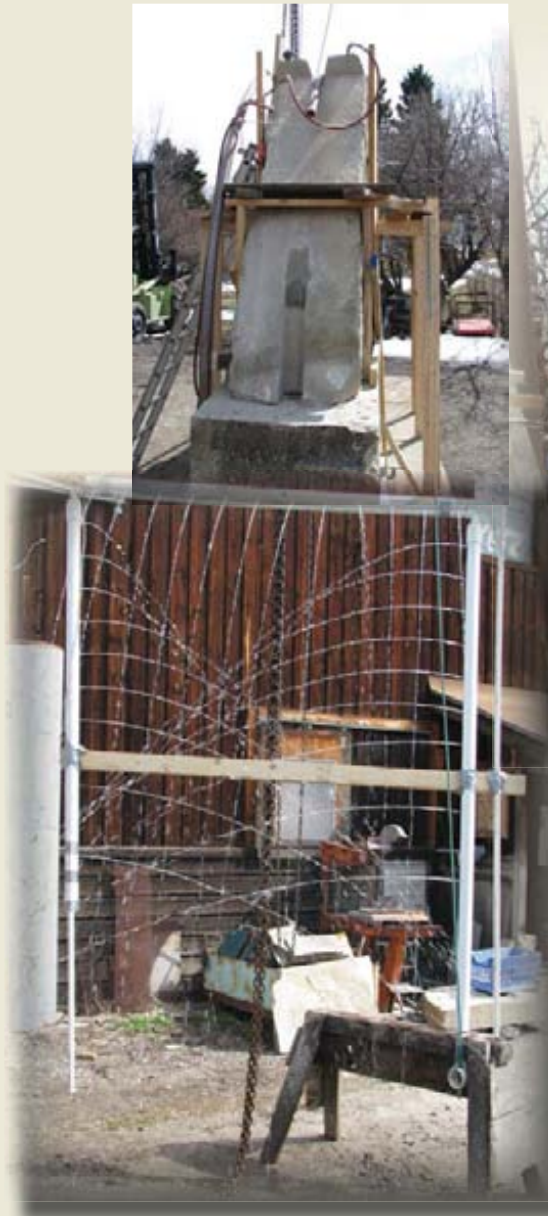
WHEN FULLY ASSEMBLED FOR THE SECOND TIME, I MARKED OUT THE ARCH SEMI-CIRCLE THAT HAD TO BE CUT THROUGH TWO FEET OF SOLID STONE.

THE NEXT LONG AND DIFFICULT JOB WAS TO CARVE THE ARCHWAY. THIS TOOK 2 MONTHS WITH 2 MEN 40 HRS. /WEEK





HOORAY – THE STONE ARCH IS BUILT AND ASSEMBLED FOR THE 3^D TIME. IT IS SET ON STEEL FALSE WORK THAT HAS ADJUSTABLE FEET SO THE STONES CAN BE EXACTLY ALIENED. THIS FALSE WORK WILL BE THE INSTALLATION GUIDE WHEN THE ARCH IS INSTALLED IN GREAT FALLS.



I BRAZED THE SECTIONS OF ROLLED COPPER PIPE TOGETHER IN TO A SEMI-CIRCLE TO MAKE A SPRINKLER. THE CONCEPT OF THE WATER SUPPLY IS TO WET THE STONES AND NOT SPRAY WATER ALL OVER THE GROUNDS. THEN THERE WILL BE A WATER FALL ON EACH SIDE OF THE ARCH RUNNING OFF THE STONES.

FIRST I SLOTTED THE STONES TO RECEIVE THE COPPER SUPPLY LINE.

I DISCOVERED THAT TO GET THE WATER TO HAVE EQUAL PRESSURE IN EACH SEGMENT OF THE SPRINKLER I HAD TO DELIVER WATER TO EACH OF THE THREE SECTIONS OF MANIFOLD ... A FELLOW SCULPTOR IN ARIZ. ALAN HOCKMAN HELPED ME SORT THAT OUT.



THE PLUMBING REQUIRED THE MANIFOLD TO HAVE THREE SUPPLY LINES. THE SPRINKLER HEADS TOOK SEVERAL TRIES TO GET THEM TO ONLY SPRAY WATER ON THE STONES. TO MY SURPRISE, RUNNING FULL TILT, IT TAKES 27 GPM OF WATER. THE SYSTEM IN GREAT FALLS WILL HAVE A RECIRCULATION RESERVOIR AND PUMP SO WE DON'T WASTE WATER.



MORE DELAYS IN CONSTRUCTION OF THE FOUNDATION IN G.F. CAUSED ME TO BUILD CRATES FOR EACH STONE AND STORE THEM AT THE STUDIO FOR THE WINTER. IN THE SPRING OF 2009 I TRANSPORTED THE STONE TO G.F. AND HIRED A CRANE AND HELPER TO DO THE FINAL ASSEMBLY. ON SITE WE ASSEMBLED THE ARCH ONCE TO ASSURE FIT AND THEN FOR THE 6TH AND FINAL TIME ASSEMBLED THE ARCH IN PLACE. THE FINISHED WEIGHT OF THE SCULPTURE IS 29,500 LBS. IT TOOK 3 YEARS TO COMPLETE INCLUDING LOST TIME DUE TO FUMBLING FOR FUNDS AND BIDS BY THE CITY OF G.F. GOVERNMENT WORK IS A CREATURE ALL OF ITS OWN.

NEXT I STARTED OVER AGAIN THE 4TH TIME TAKING THE ARCH APART AND REASSEMBLING IT. THIS TIME TO PLACE STAINLESS STEEL PINS IN EACH JOINT. I HIRED A CRANE COMPANY TO ASSIST THIS PHASE SO MY HELPER AND I COULD WORK THE PINS AND DRILLING TOGETHER.





RUNNING WATER IS A MAGNET FOR KIDS, TODDLERS ON UP.

WATER FALLING FORM BOTH SIDES OF THE STONES CREATE A NATURAL WATERFALL.





THE WATER FALL ARCH ECHOES THE CURVED FAÇADE OF THE LIBRARY, THE WATER FALL IN HONOR OF THE CITY'S NAME. HERE THE GAIA AND GEO OF THE SCULPTURE ARE CLEARLY AVAILABLE.



DUE TO THE STONE SURFACES THE WATER FALL IS TOTALLY ORGANIC AND NATURAL



THIS PROJECT HAS BEEN A CHALLENGE DUE TO THE SCALE AND WEIGHT OF THE PARTS. HANDLING THE 3 TO 7000 LB. BLOCKS SO MANY TIMES, 6 ASSEMBLIES, AND TO BEGIN UNLOADING 53000 LBS. OF STONE IN 5 HUNKS AND SET THEM UP TO BE SAWN. ALL THE WORK WAS DONE IN BOZEMAN AT MY STONE YARD AND STUDIO BY ME AND A HELPER. THE MADDING DELAYS BY THE CITY OF G.F. AND THE LIBRARY ADDED A YEAR TO THE PROJECT AND CAUSED ME TO REFINANCE MY STUDIO TO COMPLETE THE WORK. FROM SEPT. 2006 TO APR. 2007 A BIG PART OF MY LIFE.

YET IT IS A GRAND THING, THE COMBINATION OF MEGALITHIC STONE WORK AND ROMAN ARCH WORK TOGETHER WITH AN ASYMMETRICAL KEYSTONE THAT PENETRATES THE PORTAL SPACE, GIVE THE ARCH A CHARACTER OF ITS OWN.

THE GEOLOGICAL STORIES ON THE FACES OF THE STONES ARE ANOTHER TALE AND THEN THE LIVE ASPECT OF THE WATER FEATURE ADD TO THE PIECE MORE DEPTH, AS WELL AS MAKE IT GEO – GAIA SCULPTURE.