

## Welsh Mills Society

### Foundry Patterns for waterwheel shrouds

The Society has acquired, through the generosity of St Fagans National History Museum, a number of wooden patterns for waterwheel shrouds. They had been used by the Cambrian Foundry, Newtown, Montgomeryshire, in the c19th and early c20th, and had been gifted to the museum in 1980.

The cost of pattern-making is a major element of the cost for anyone wishing to obtain a new waterwheel. In accord with its aims of encouraging the preservation of water power, the Society is prepared to lend these patterns, for a small fee, to anyone wishing to build a new waterwheel.

We have patterns for eighteen different waterwheels:

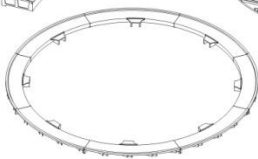
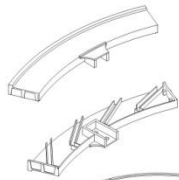
	Diameter	No. of sections	No. of buckets	Bucket material
No. 1	10ft 3in	8	32	wood
No. 2	9ft 3in	6	30	wood
No. 3	16ft 2in	8	48	wood
No. 4	8ft 8in	6	30	sheet iron
No. 5	13ft 3in	8	32 paddles	wood
No. 6	8ft	6	12 paddles	wood
No. 7	10ft 1in	8	32	wood
No. 8	16ft 3in	8	40	wood
No. 9	51ft	18	144	wood
No. 10	9ft 6in	6	36	wood
No. 11	31ft 9in	12	84	wood
No. 12	16ft 6in	10	50	wood
No. 13	20ft 6in	10	50	sheet iron
No. 14	15ft 3in	8	32	wood
No. 15	20ft 3in	8	56	wood
No. 16	18ft 9in	8	48	sheet iron
No. 17	16ft 9in	8	40 paddles	wood
No. 18	17ft 3in	8	40 paddles	wood

Please direct expressions of interest to Andrew Findon at [welshmills@fsmail.net](mailto:welshmills@fsmail.net)

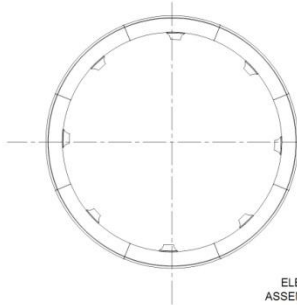
WHEEL REF No1



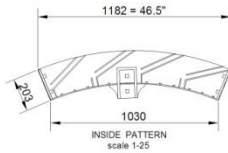
2no WOODEN PATTERNS ARE AVAILABLE COMPRISING MATCHED PAIR OF RIGHT & LEFT SIDES TO GIVE WHEEL APPROX 10'-3" dia. FROM 8 SECTIONS EACH SIDE, WITH PROVISION 32 WOODEN BUCKETS



ISOMETRIC VIEW OF ASSEMBLED WHEEL



ELEVATION OF ASSEMBLED WHEEL  
scale 1-50



1182 = 46.5"

1030

INSIDE PATTERN  
scale 1-25

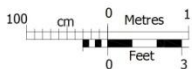


OUTSIDE PATTERN  
scale 1-25

NOTE.  
Do not scale drawings  
Users of the patterns should check all the  
dimensions before use to satisfy  
themselves as to the accuracy and  
suitability for their intended purpose

Both patterns have 3no. 3mm  
formers at each end for fettling All  
vertical faces are tapered

2no WOODEN PATTERNS ARE  
AVAILABLE COMPRISING MATCHED  
PAIR OF RIGHT SIDE & LEFT SIDE TO  
GIVE WHEEL APPROX 10'-3" dia. FROM  
8  
SECTIONS EACH SIDE, WITH TOTAL 32  
BUCKETS



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Welsh Mills Society

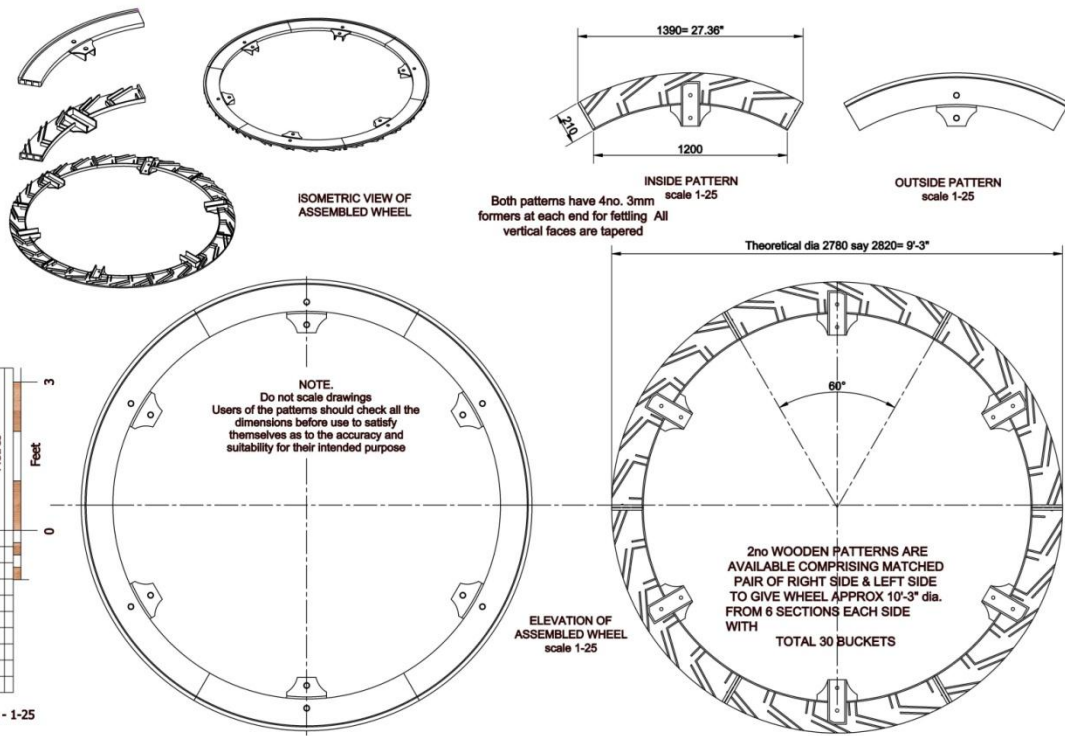
Drawn Date Scale  
JB 12/14

WATERWHEEL PATTERN REF NO 1 - 10'-3" (3115mm)

WHEEL REF No 2



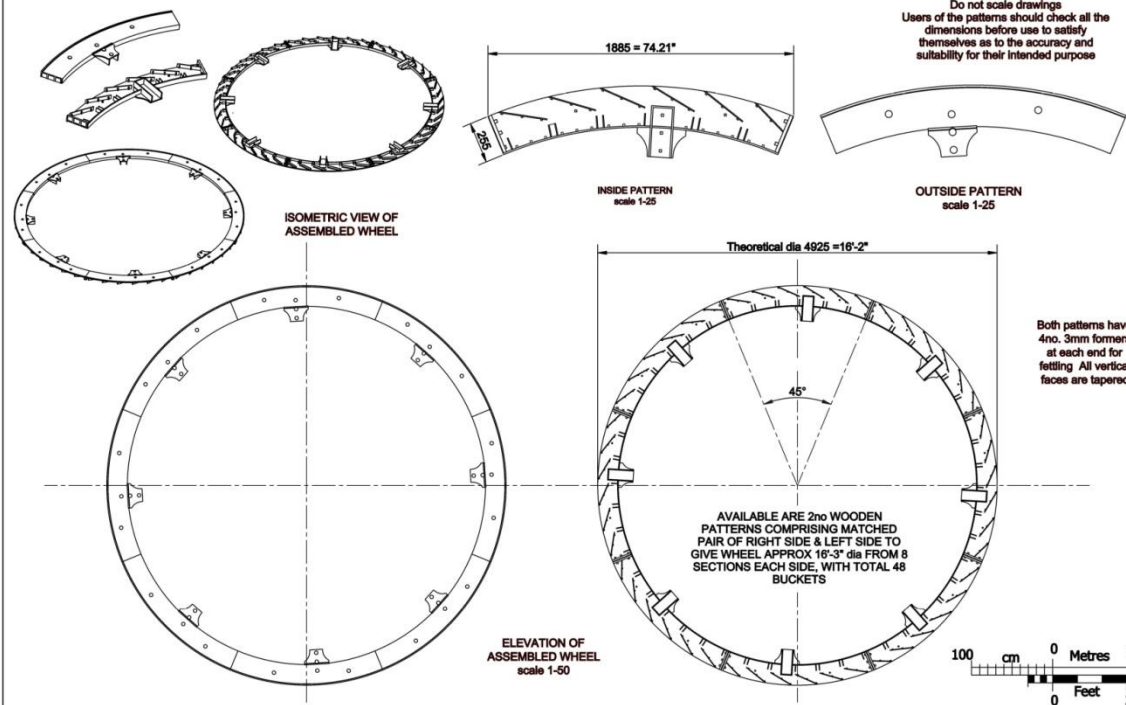
2no WOODEN PATTERNS ARE AVAILABLE  
 COMPRISING MATCHED PAIR OF RIGHT & LEFT  
 SIDES TO GIVE WHEEL APPROX 10'-3" dia.  
 FROM 6 SECTIONS EACH SIDE, WITH  
 PROVISION 30 WOODEN BUCKETS



WHEEL REF No 3



2no WOODEN PATTERNS ARE AVAILABLE COMPRISING MATCHED PAIR OF RIGHT & LEFT SIDES TO GIVE WHEEL APPROX 16'-3" dia. FROM 8 SECTIONS EACH SIDE, WITH PROVISION FOR 48 WOODEN BUCKETS

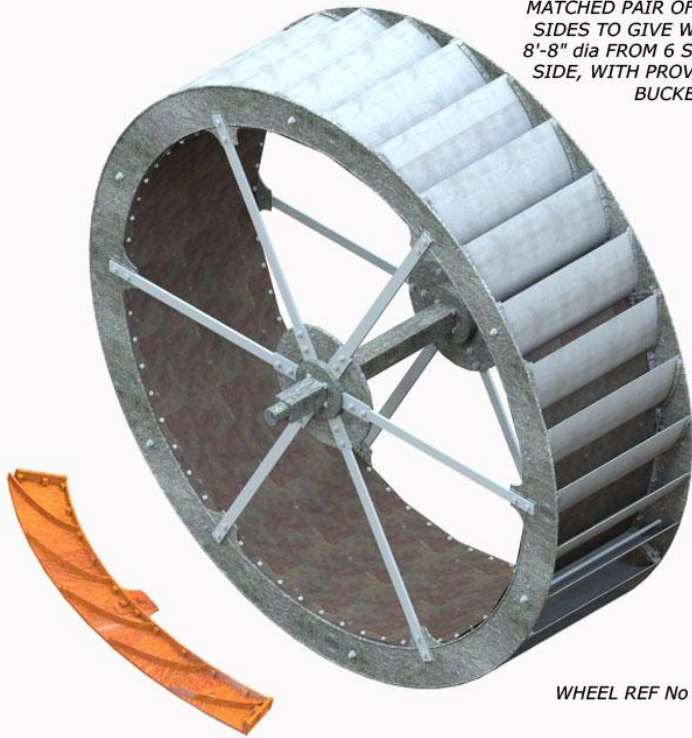


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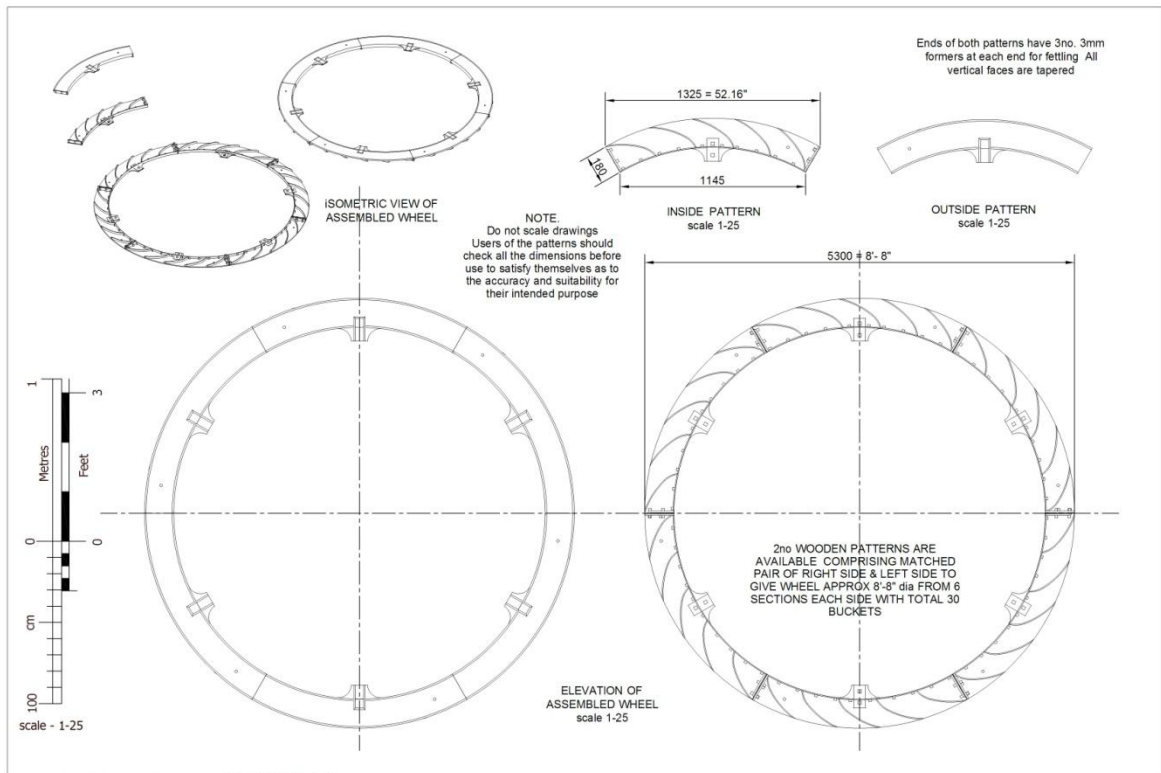
Drawn Date Scale  
JB 12/14

WATERWHEEL PATTERN REF NO 3 - 16'-2" (4925mm)

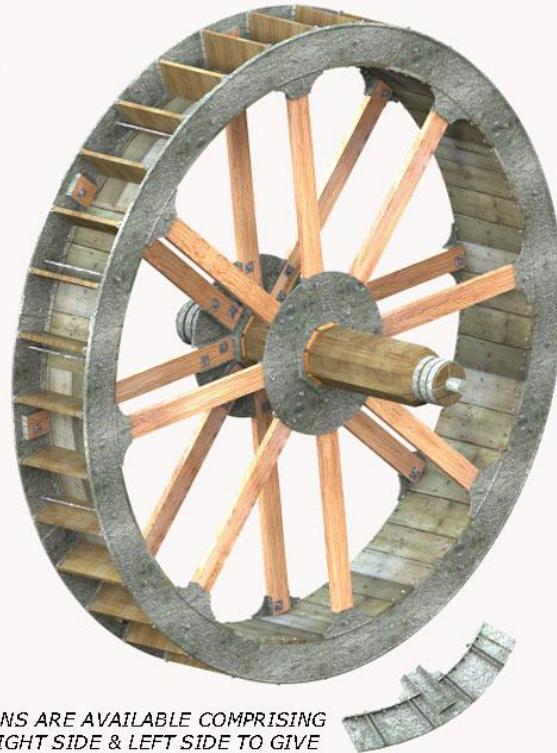
2no WOODEN PATTERNS ARE AVAILABLE COMPRISING MATCHED PAIR OF RIGHT & LEFT SIDES TO GIVE WHEEL APPROX 8'-8" dia FROM 6 SECTIONS EACH SIDE, WITH PROVISION FOR 30 BUCKETS



WHEEL REF No 4

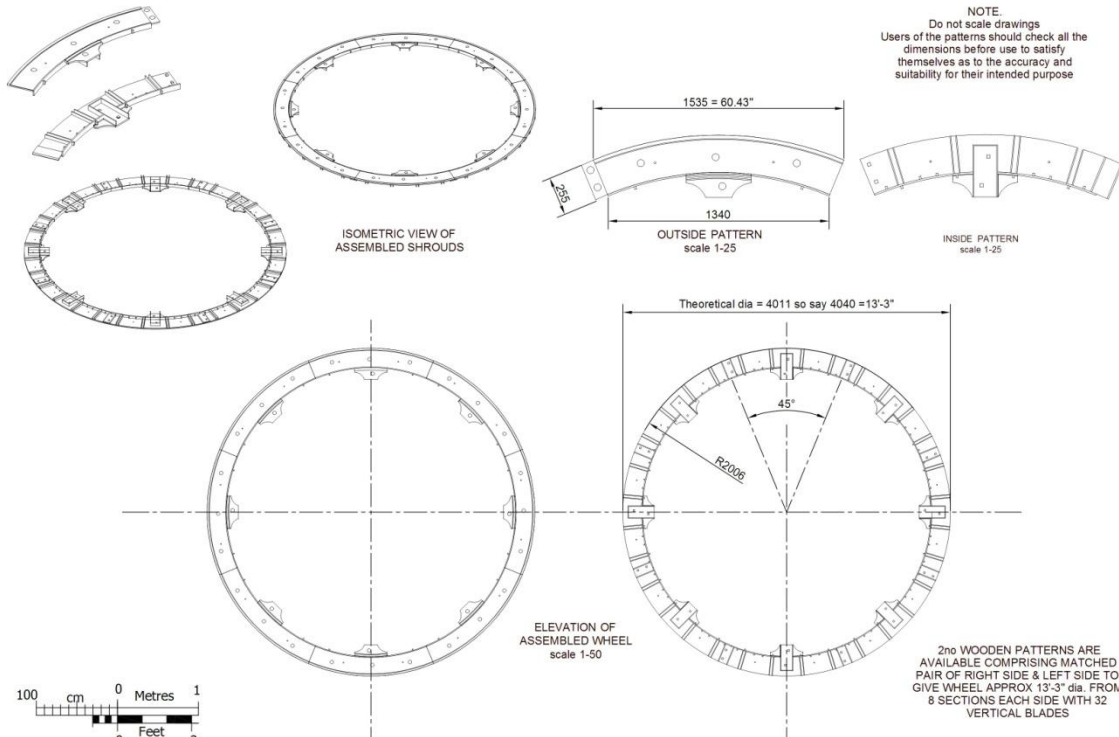


PATTERN NO 5



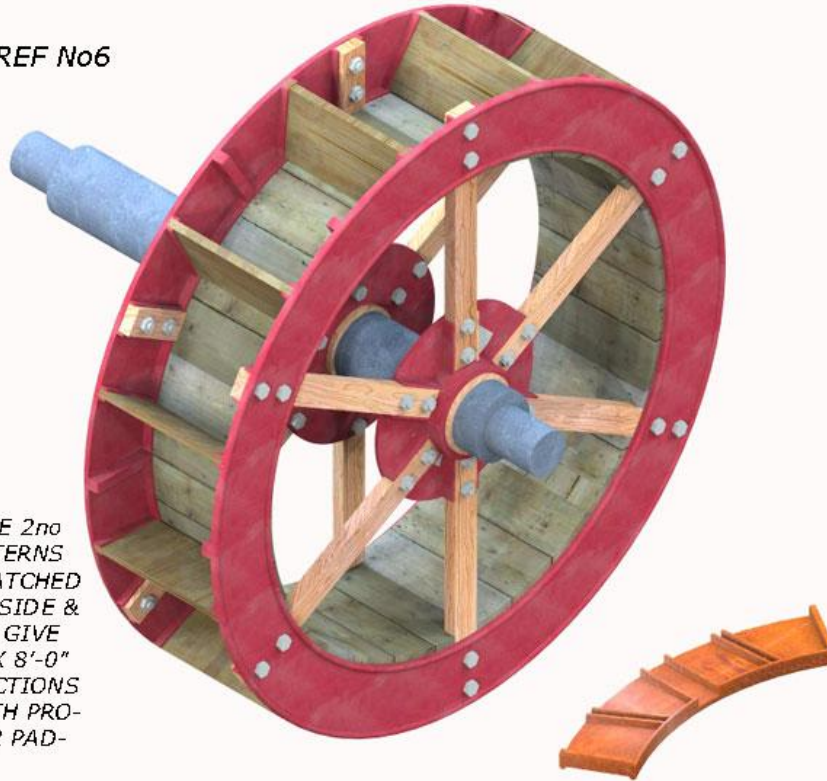
2no WOODEN PATTERNS ARE AVAILABLE COMPRISING MATCHED PAIR OF RIGHT SIDE & LEFT SIDE TO GIVE WHEEL APPROX 13'-3" dia. FROM 8 SECTIONS EACH SIDE WITH PROVISION FOR 32 VERTICAL BLADES

NOTE.  
Do not scale drawings  
Users of the patterns should check all the dimensions before use to satisfy themselves as to the accuracy and suitability for their intended purpose

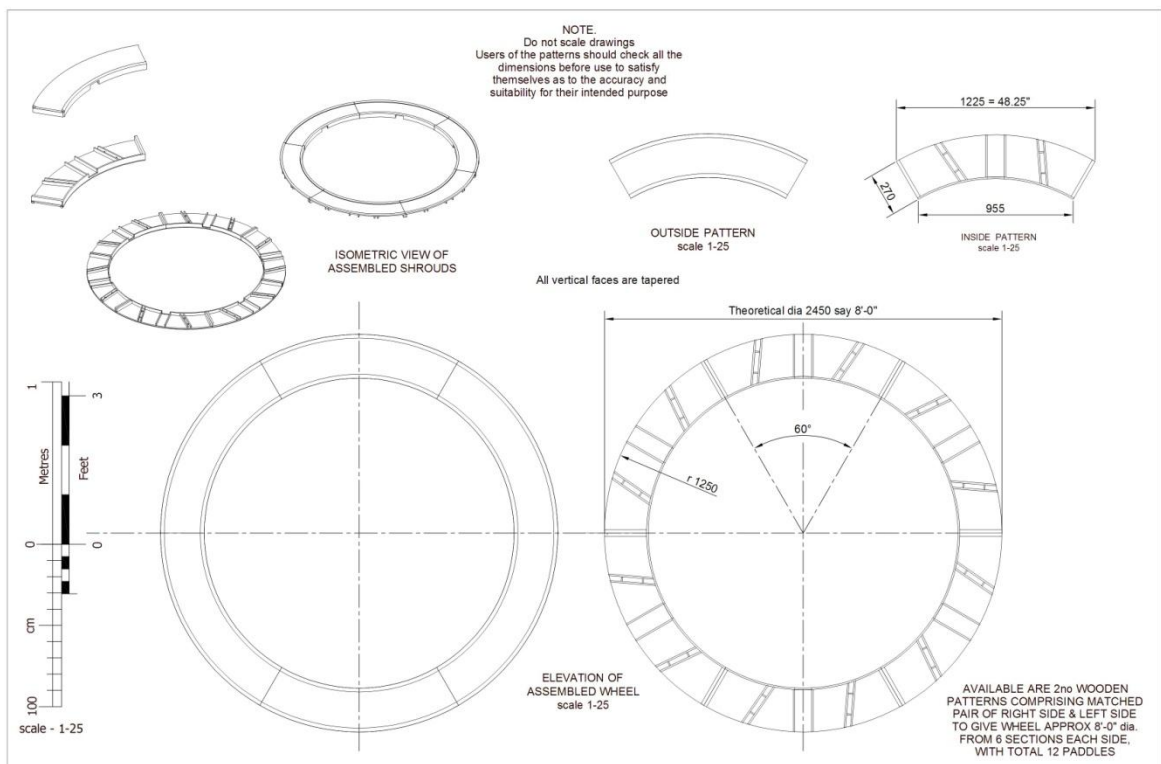


2no WOODEN PATTERNS ARE AVAILABLE COMPRISING MATCHED PAIR OF RIGHT SIDE & LEFT SIDE TO GIVE WHEEL APPROX 13'-3" dia. FROM 8 SECTIONS EACH SIDE WITH 32 VERTICAL BLADES

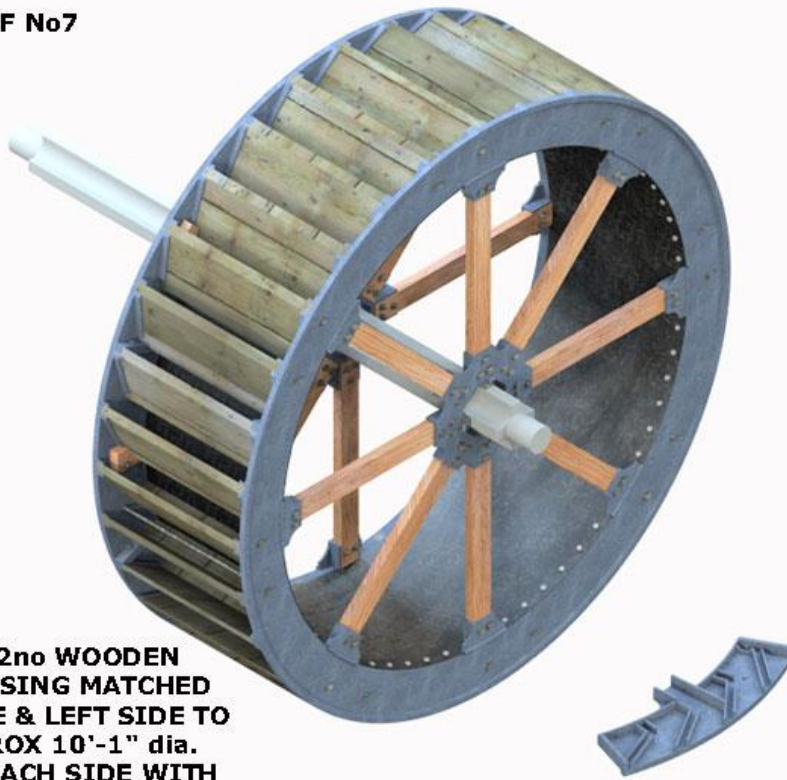
**PATTERN REF No6**



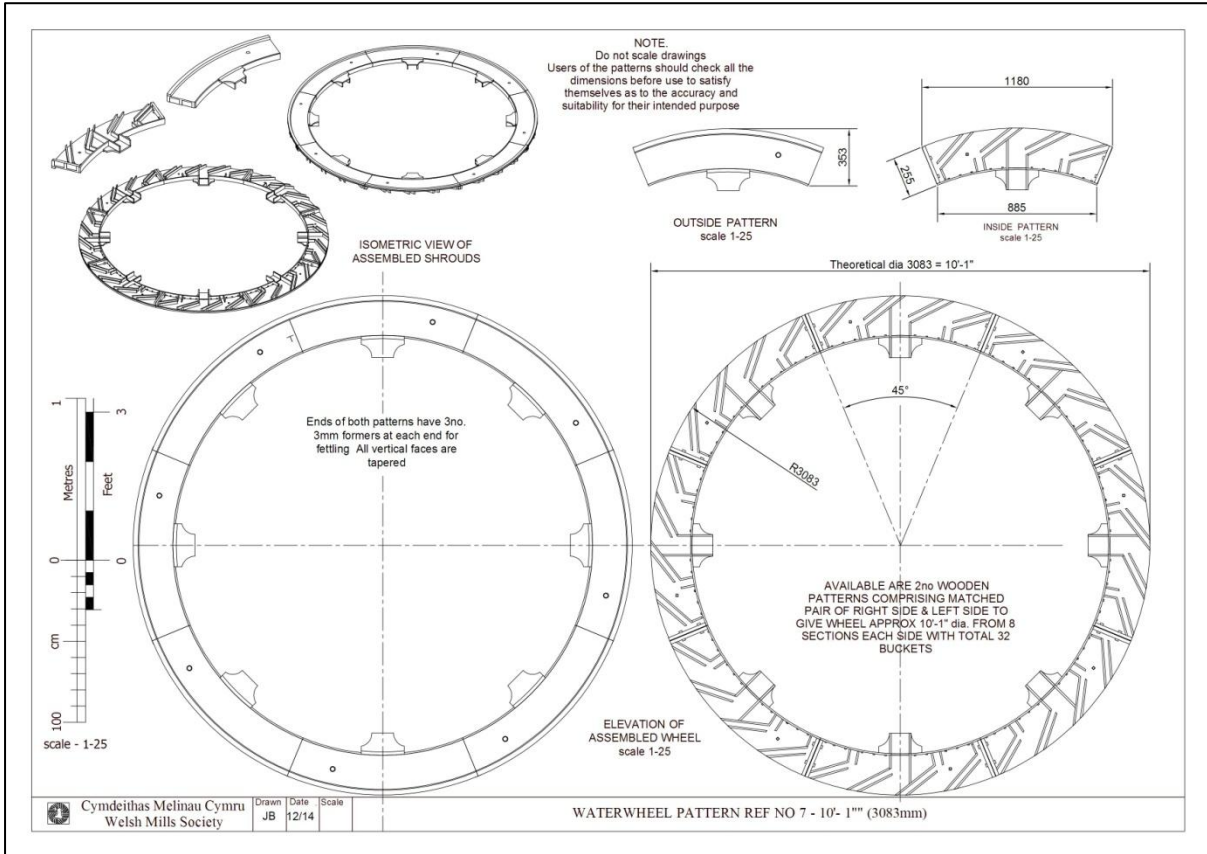
AVAILABLE ARE 2no WOODEN PATTERNS COMPRISING MATCHED PAIR OF RIGHT SIDE & LEFT SIDE TO GIVE WHEEL APPROX 8'-0" dia. FROM 6 SECTIONS EACH SIDE, WITH PROVISION FOR 12 PADDLES



**PATTERN REF No7**



**AVAILABLE ARE 2no WOODEN PATTERNS COMPRISING MATCHED PAIR OF RIGHT SIDE & LEFT SIDE TO GIVE WHEEL APPROX 10'-1" dia. FROM 8 SECTIONS EACH SIDE WITH TOTAL 32 BUCKETS**

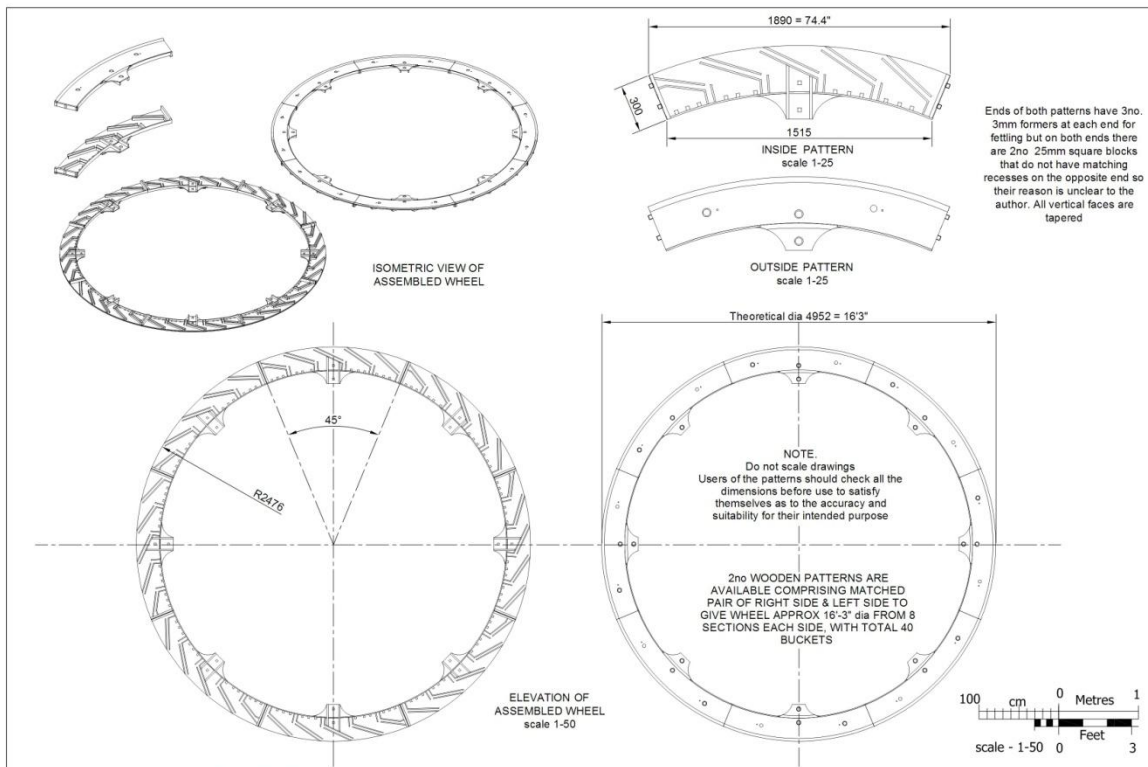




PATTERN REF NO 8



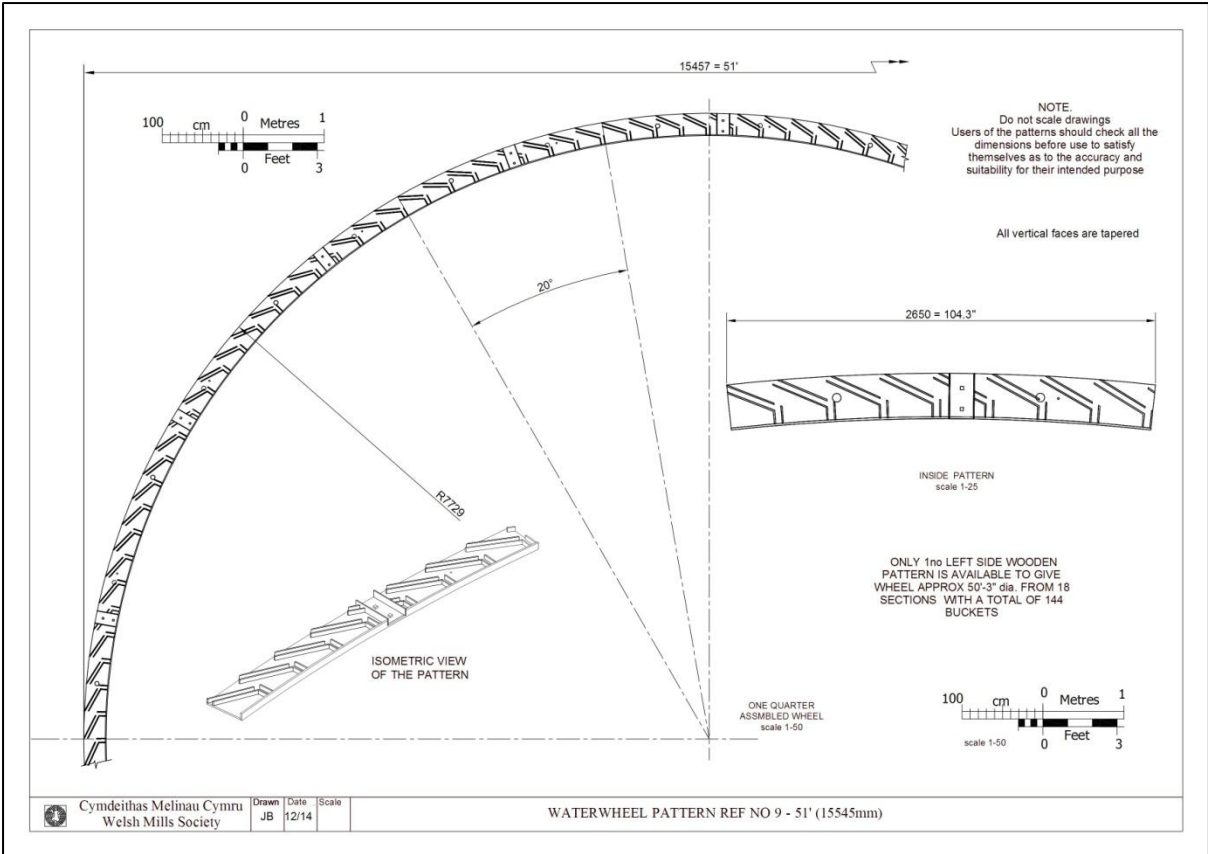
AVAILABLE ARE 2no WOODEN PATTERNS COMPRISING MATCHED PAIR OF RIGHT SIDE & LEFT SIDE TO GIVE WHEEL APPROX 16'-3" dia FROM 8 SECTIONS EACH SIDE WITH PROVISION FOR 40 BUCKETS



Ends of both patterns have 3no. 3mm formers at each end for fettling but on both ends there are 2no 25mm square blocks that do not have matching recesses on the opposite end so their reason is unclear to the author. All vertical faces are tapered

NOTE.  
Do not scale drawings  
Users of the patterns should check all the dimensions before use to satisfy themselves as to the accuracy and suitability for their intended purpose

2no WOODEN PATTERNS ARE AVAILABLE COMPRISING MATCHED PAIR OF RIGHT SIDE & LEFT SIDE TO GIVE WHEEL APPROX 16'-3" dia FROM 8 SECTIONS EACH SIDE, WITH TOTAL 40 BUCKETS

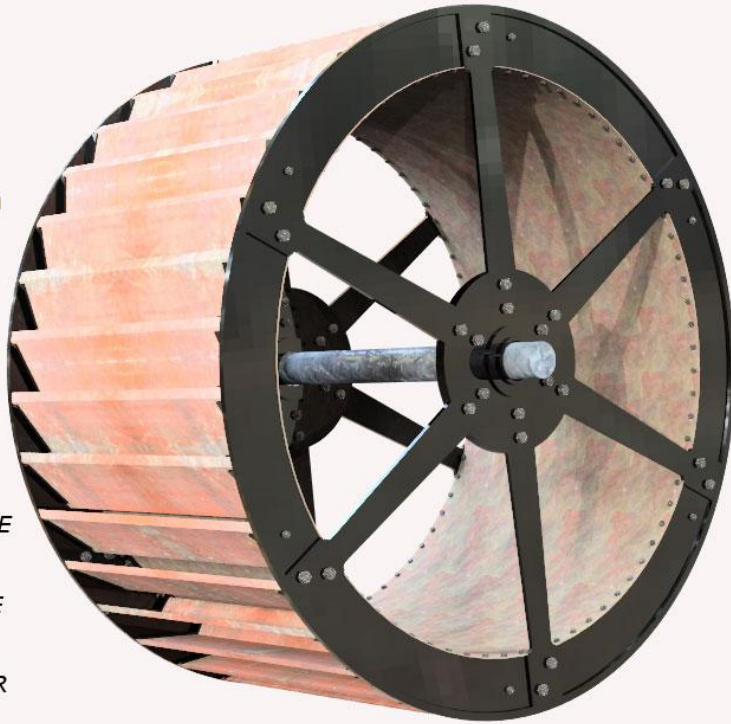


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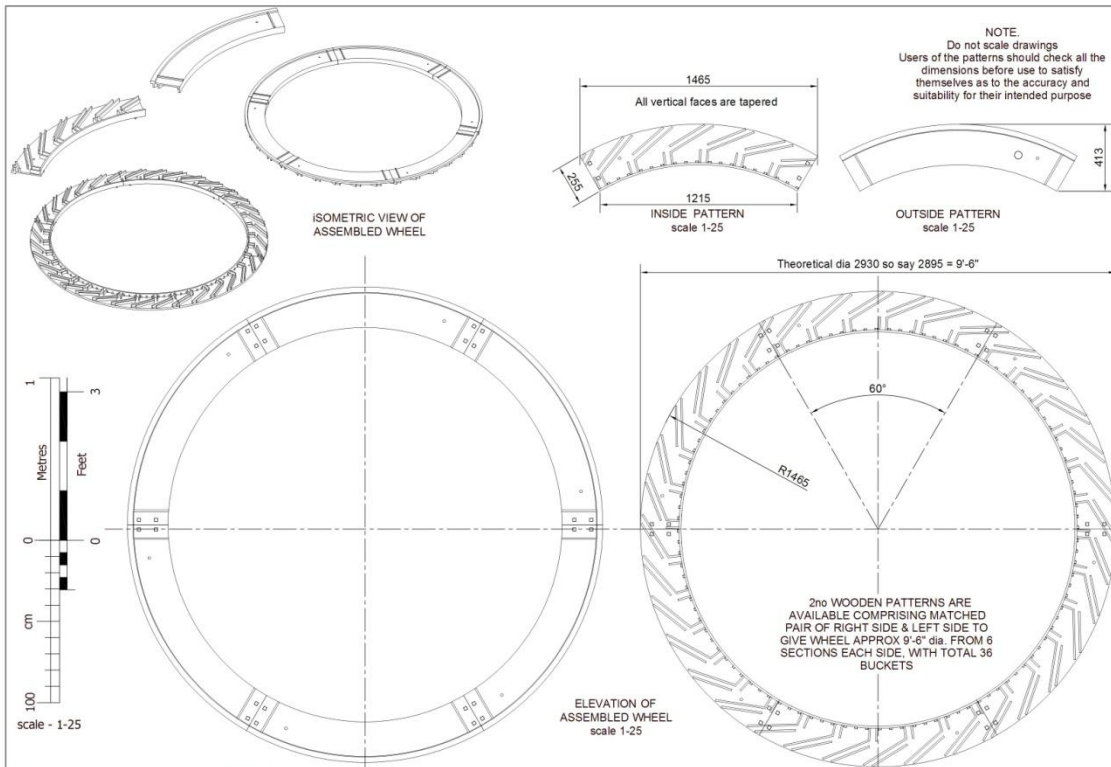
Drawn	Date	Scale
JB	12/14	

WATERWHEEL PATTERN REF NO 9 - 51' (15545mm)

**PATTERN REF No10**



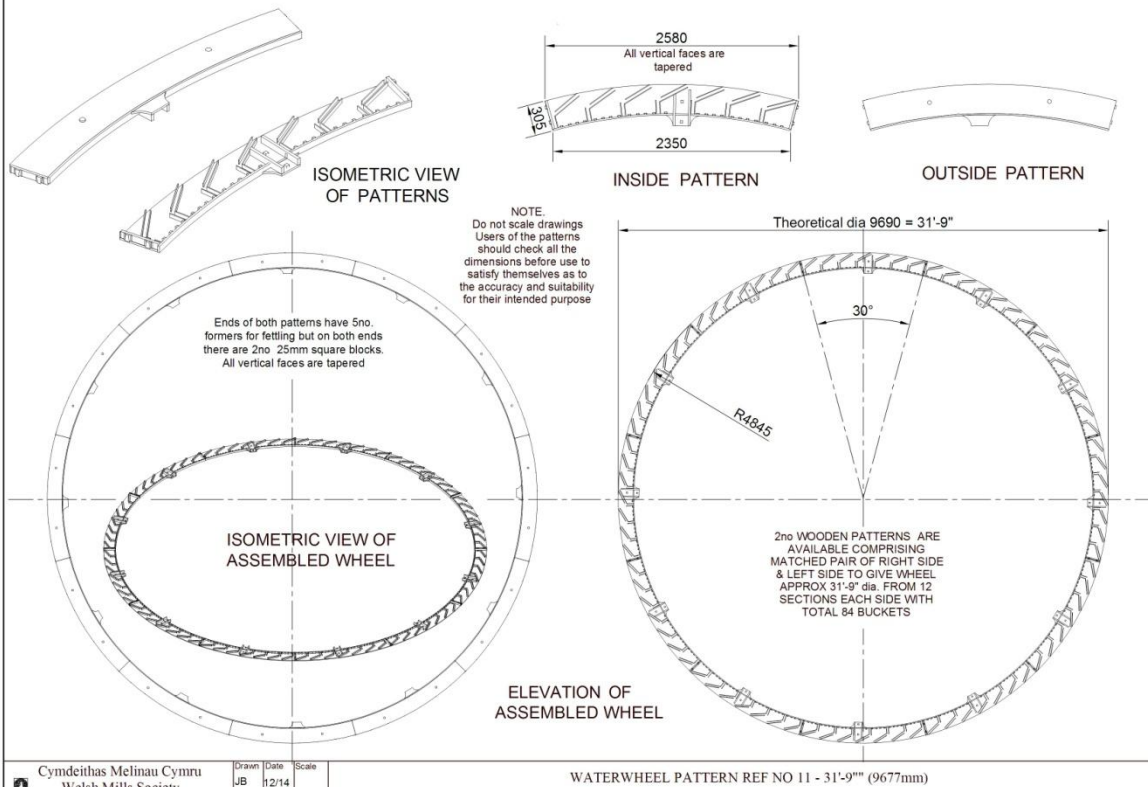
**2no WOODEN PATTERNS ARE AVAILABLE COMPRISING MATCHED PAIR OF RIGHT SIDE & LEFT SIDE TO GIVE WHEEL APPROX 9'-6" dia. FROM 6 SECTIONS EACH SIDE, WITH PROVISION FOR 36 BUCKETS**

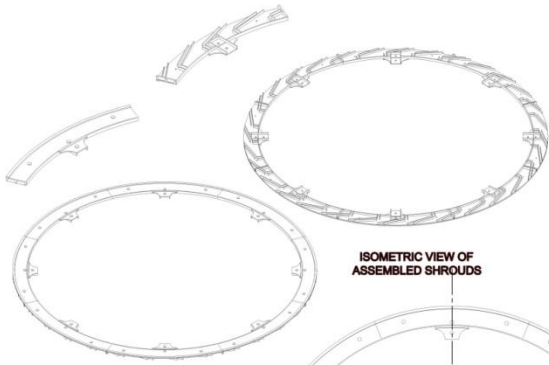


Foundry pattern ref 11



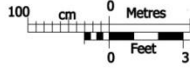
2no WOODEN PATTERNS  
ARE AVAILABLE  
COMPRISING MATCHED  
PAIR OF RIGHT SIDE &  
LEFT SIDE TO GIVE  
WHEEL APPROX 31'-9" dia.  
FROM 12 SECTIONS EACH  
SIDE, WITH PROVISION  
FOR 84 BUCKETS



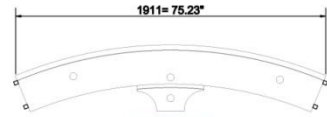


ISOMETRIC VIEW OF ASSEMBLED SHROUDS

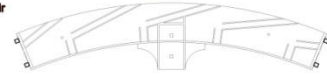
Ends of both patterns have 3no. 3mm formers at each end for fitting. All vertical faces are tapered & the 3mm formers are included in the calculation of the diameter



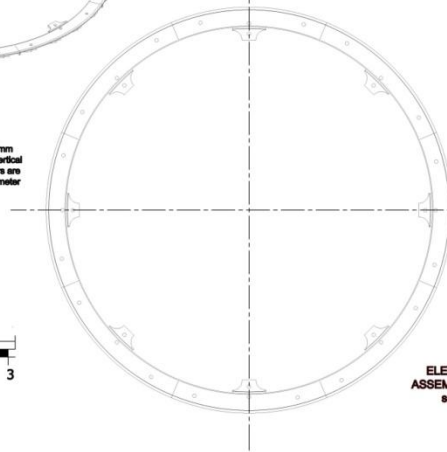
NOTE.  
Do not scale drawings  
Users of the patterns should check all the dimensions before use to satisfy themselves as to the suitability for their intended purpose



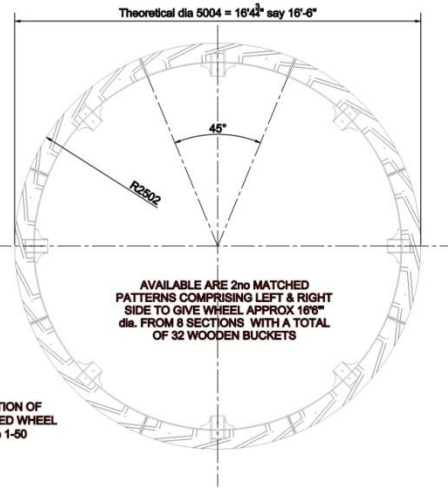
OUTSIDE PATTERN  
scale 1-25



INSIDE PATTERN  
scale 1-25



ELEVATION OF ASSEMBLED WHEEL  
scale 1-50



AVAILABLE ARE 2no MATCHED PATTERNS COMPRISING LEFT & RIGHT SIDE TO GIVE WHEEL APPROX 16'6" dia. FROM 8 SECTIONS WITH A TOTAL OF 32 WOODEN BUCKETS

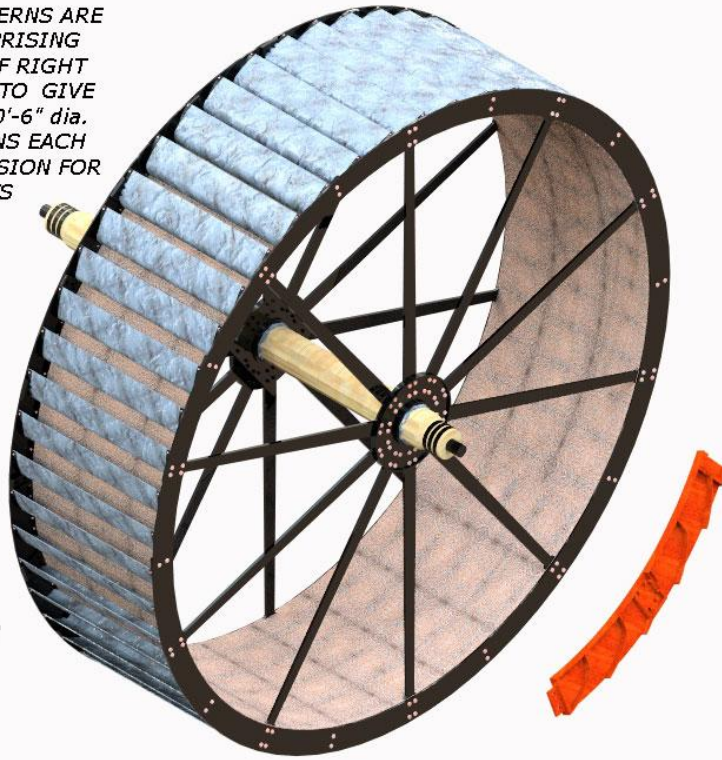


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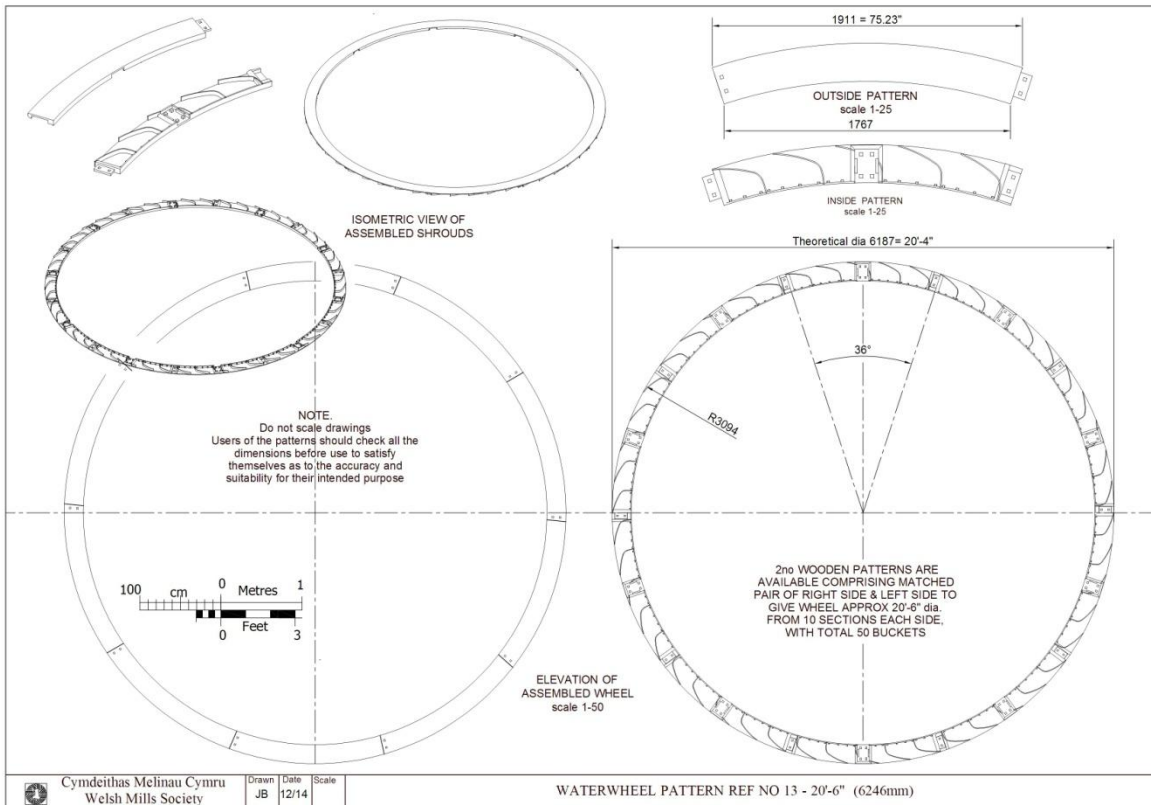
Drawn	Date	Scale
JB	12/14	

WATERWHEEL PATTERN REF NO 12 - 16'-6"

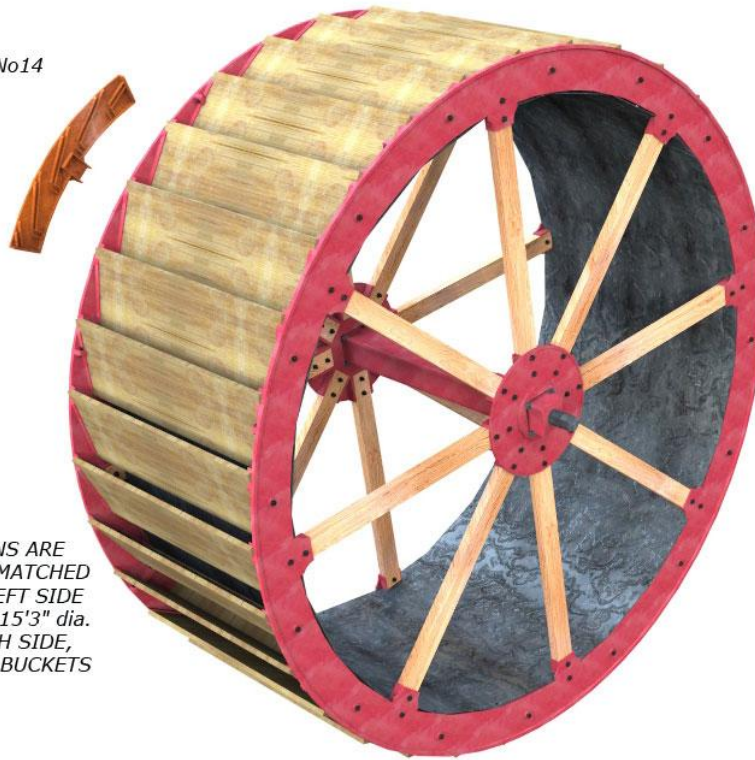
2no WOODEN PATTERNS ARE AVAILABLE COMPRISING MATCHED PAIR OF RIGHT SIDE & LEFT SIDE TO GIVE WHEEL APPROX 20'-6" dia. FROM 10 SECTIONS EACH SIDE, WITH PROVISION FOR 50 BUCKETS



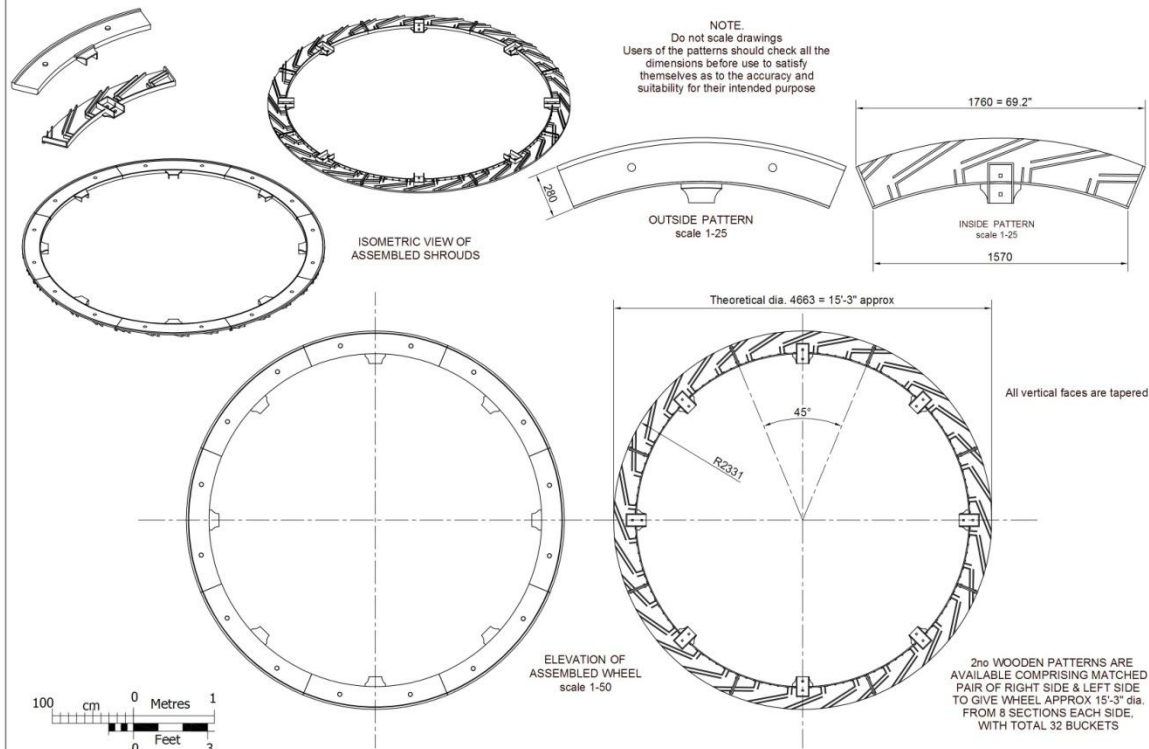
FOUNDRY PATTERN  
ref 13



FOUNDRY PATTERN No14



2no WOODEN PATTERNS ARE AVAILABLE COMPRISING MATCHED PAIR OF RIGHT SIDE & LEFT SIDE TO GIVE WHEEL APPROX 15'3" dia. FROM 8 SECTIONS EACH SIDE, WITH PROVISION FOR 32 BUCKETS

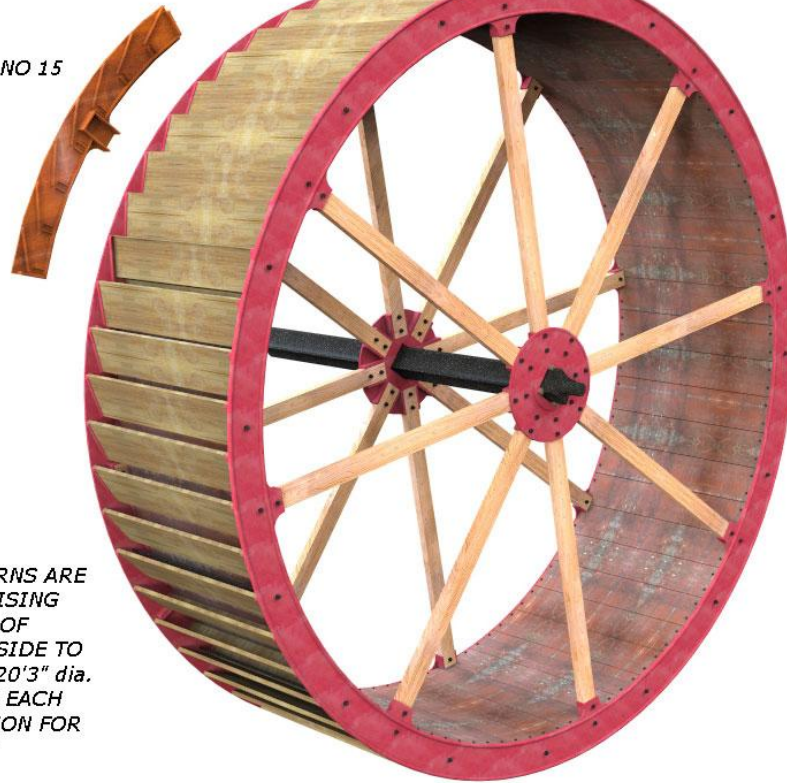


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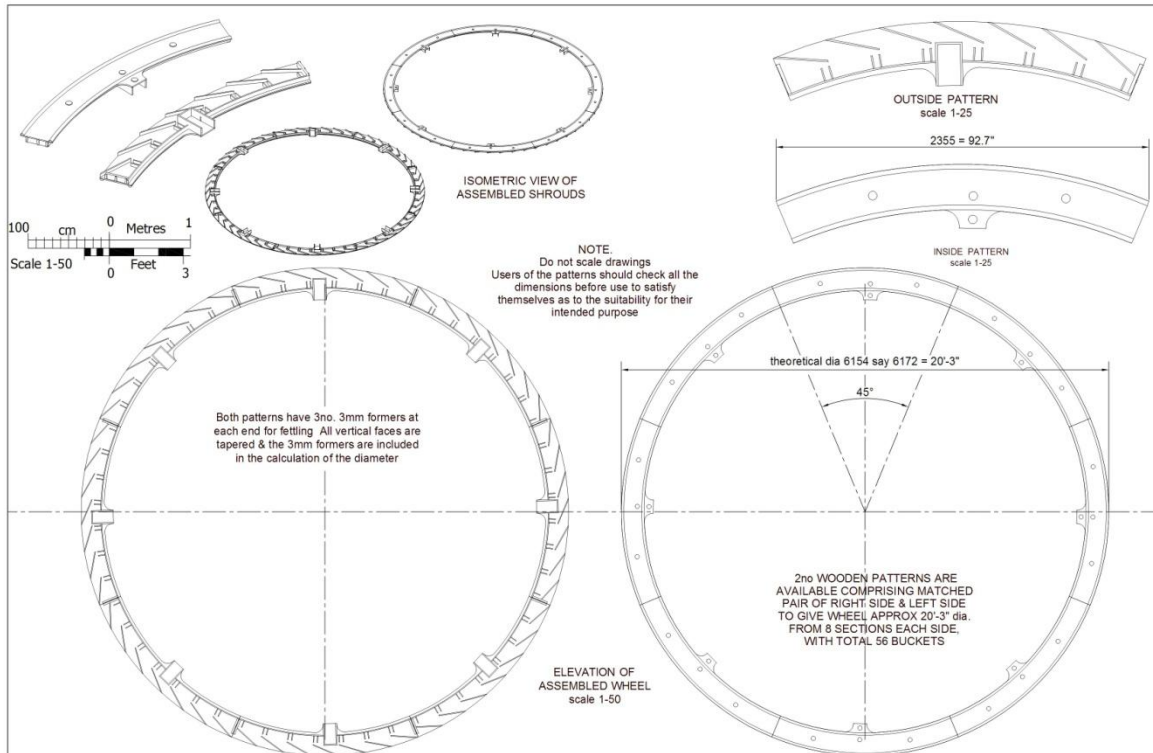
Drawn Date Scale  
JB 12/14

WATERWHEEL PATTERN REF NO 14 - 15'- 3" (4656mm)

**FOUNDRY PATTERN NO 15**



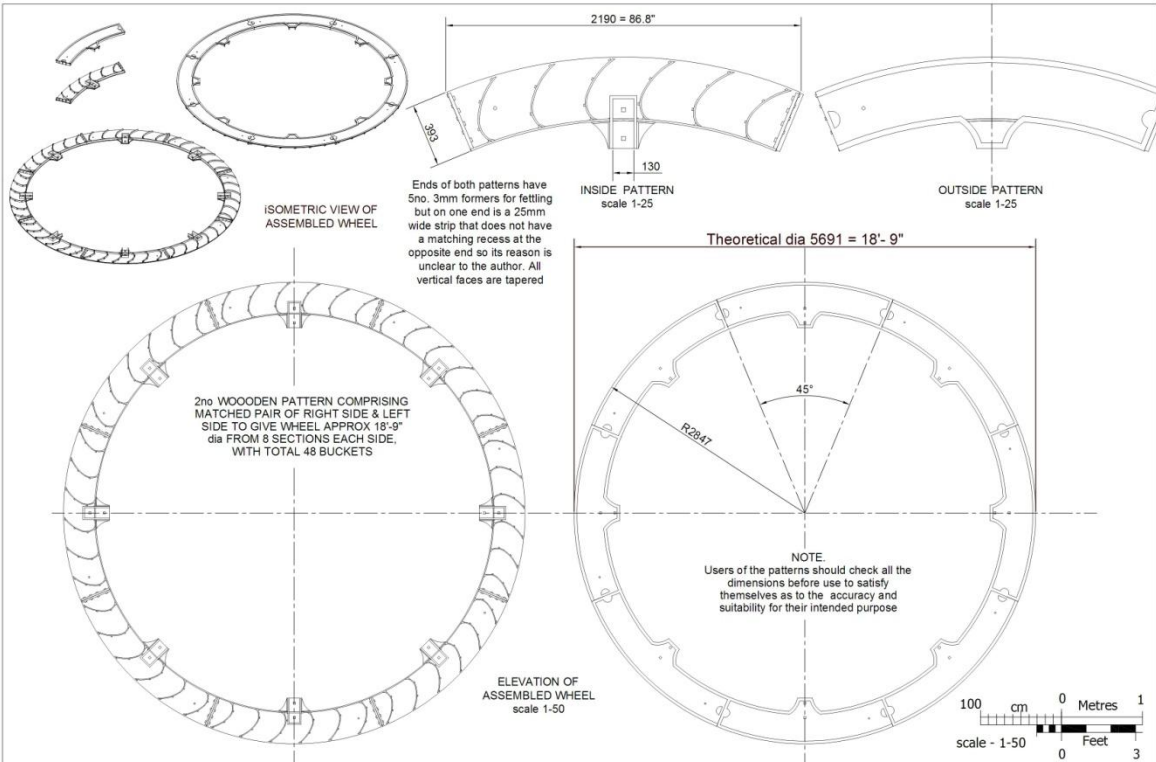
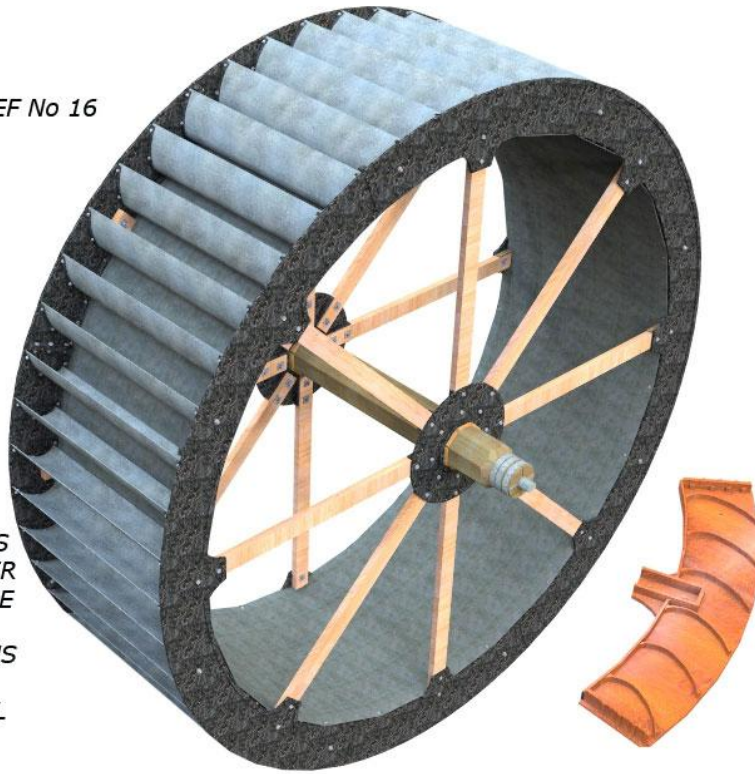
**2no WOODEN PATTERNS ARE AVAILABLE COMPRISING MATCHED PAIR OF RIGHT SIDE & LEFT SIDE TO GIVE WHEEL APPROX 20'3" dia. FROM 8 SECTIONS EACH SIDE, WITH PROVISION FOR 56 BUCKETS**





**FOUNDRY PATTERN REF No 16**

**2no WOODEN PATTERNS  
COMPRISING MATCHED PAIR  
OF RIGHT SIDE & LEFT SIDE  
TO GIVE WHEEL APPROX  
18'-9" dia FROM 8 SECTIONS  
EACH SIDE, WITH  
PROVISION FOR 48 METAL  
BUCKETS**



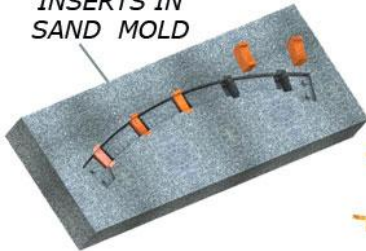
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Welsh Mills Society

Drawn JB Date 12/14 Scale

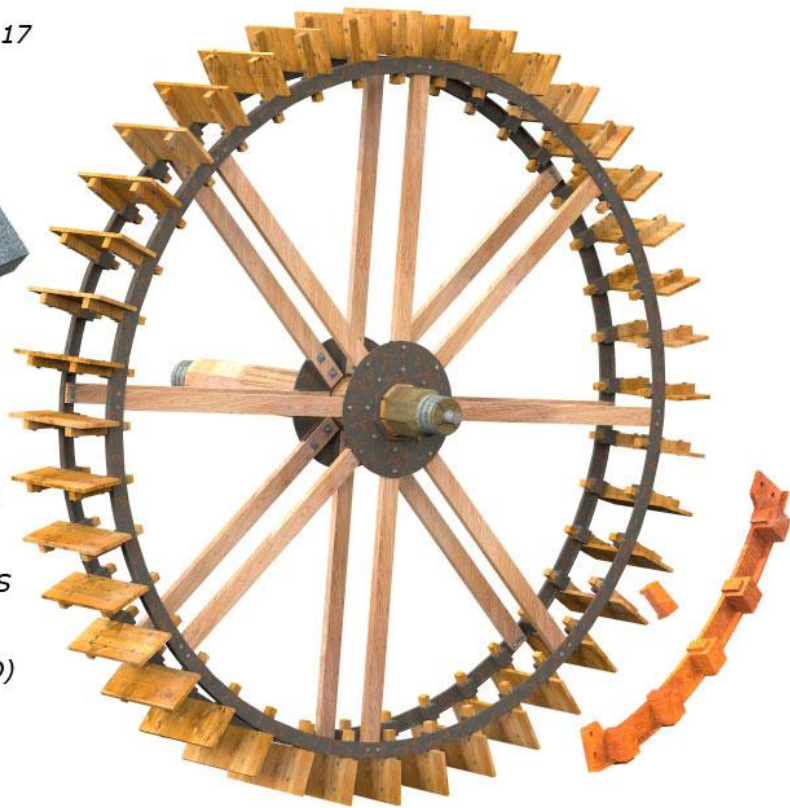
WATERWHEEL PATTERN REF NO 16 - 18'-9" (5715mm)

**FOUNDRY PATTERN No 17**

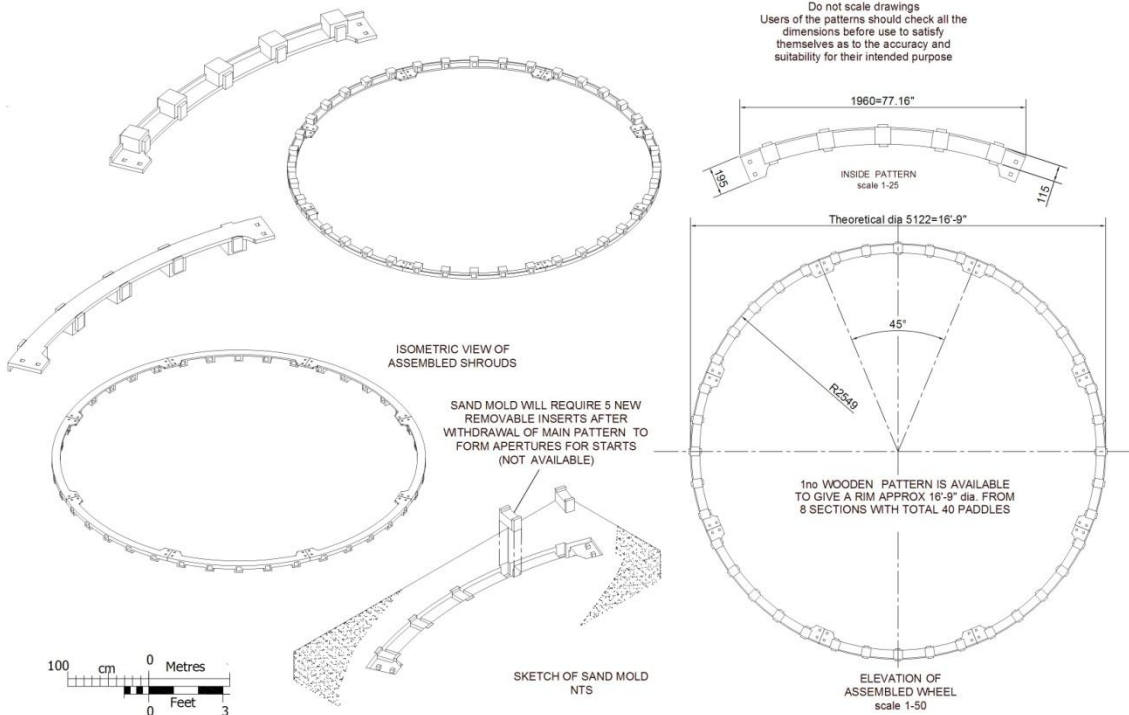
**INSERTS IN SAND MOLD**



**1no REVERSIBLE WOODEN PATTERN IS AVAILABLE TO GIVE A RIM APPROX 16'-9" dia. FROM 8 SECTIONS WITH TOTAL 40 PADDLES (INSERTS FOR START APERTURES WILL BE NEEDED)**



**NOTE**  
Do not scale drawings  
Users of the patterns should check all the dimensions before use to satisfy themselves as to the accuracy and suitability for their intended purpose



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Welsh Mills Society

Drawn Date Scale  
JB 12/14

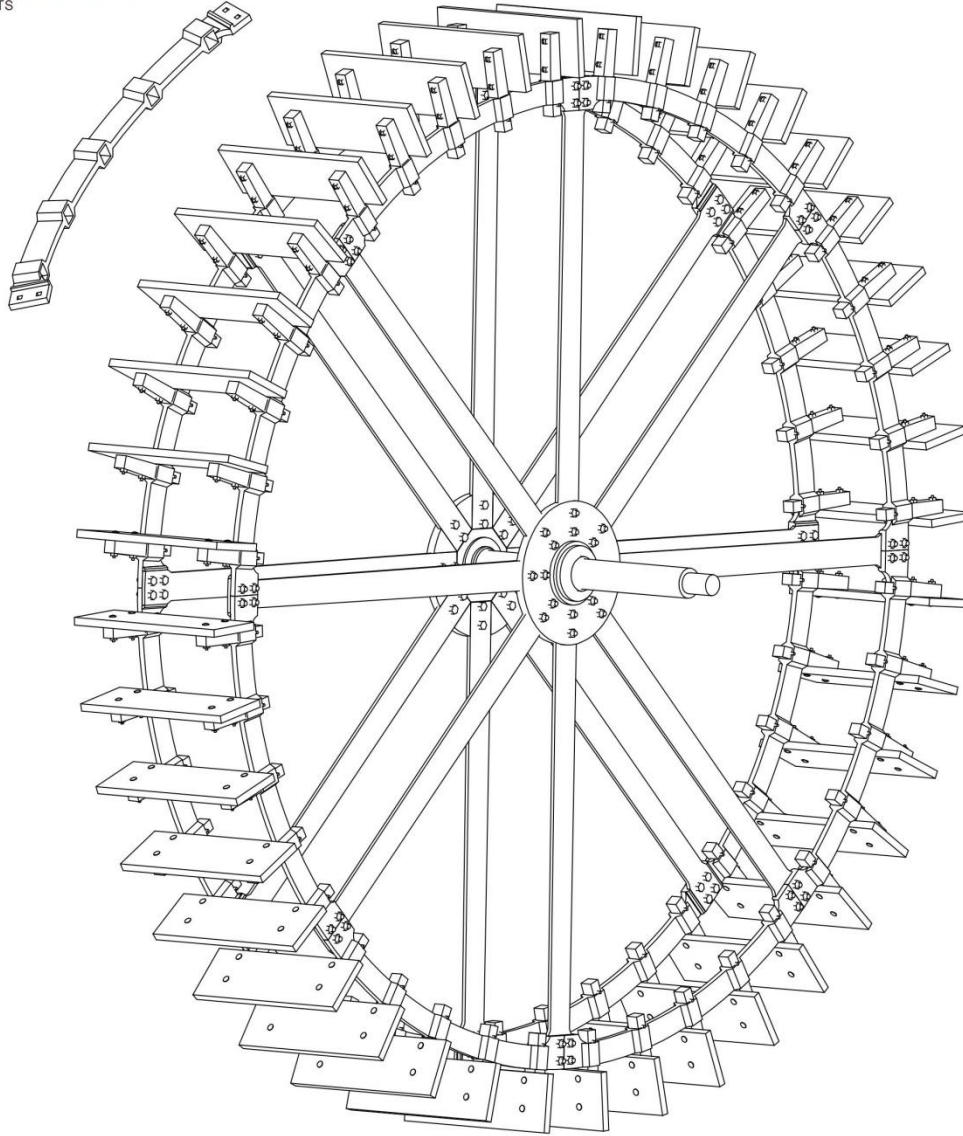
WATERWHEEL PATTERN REF NO 17 - 16'-9" - 5105mm



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## FOUNDRY PATTERN REF No 18

SAND MOLD WILL REQUIRE 5 NEW  
REMOVABLE INSERTS AFTER  
WITHDRAWAL OF MAIN PATTERN  
TO FORM APERTURES FOR  
STARTS



1no REVERSIBLE WOODEN PATTERN IS AVAILABLE  
TO GIVE A RIM APPROX 17'-3" dia. FROM 8 SECTIONS  
WITH TOTAL 40 PADDLES

HUB, ARMS, SOLE. SHAFT AND BUCKETS SHOWN FOR REF ONLY