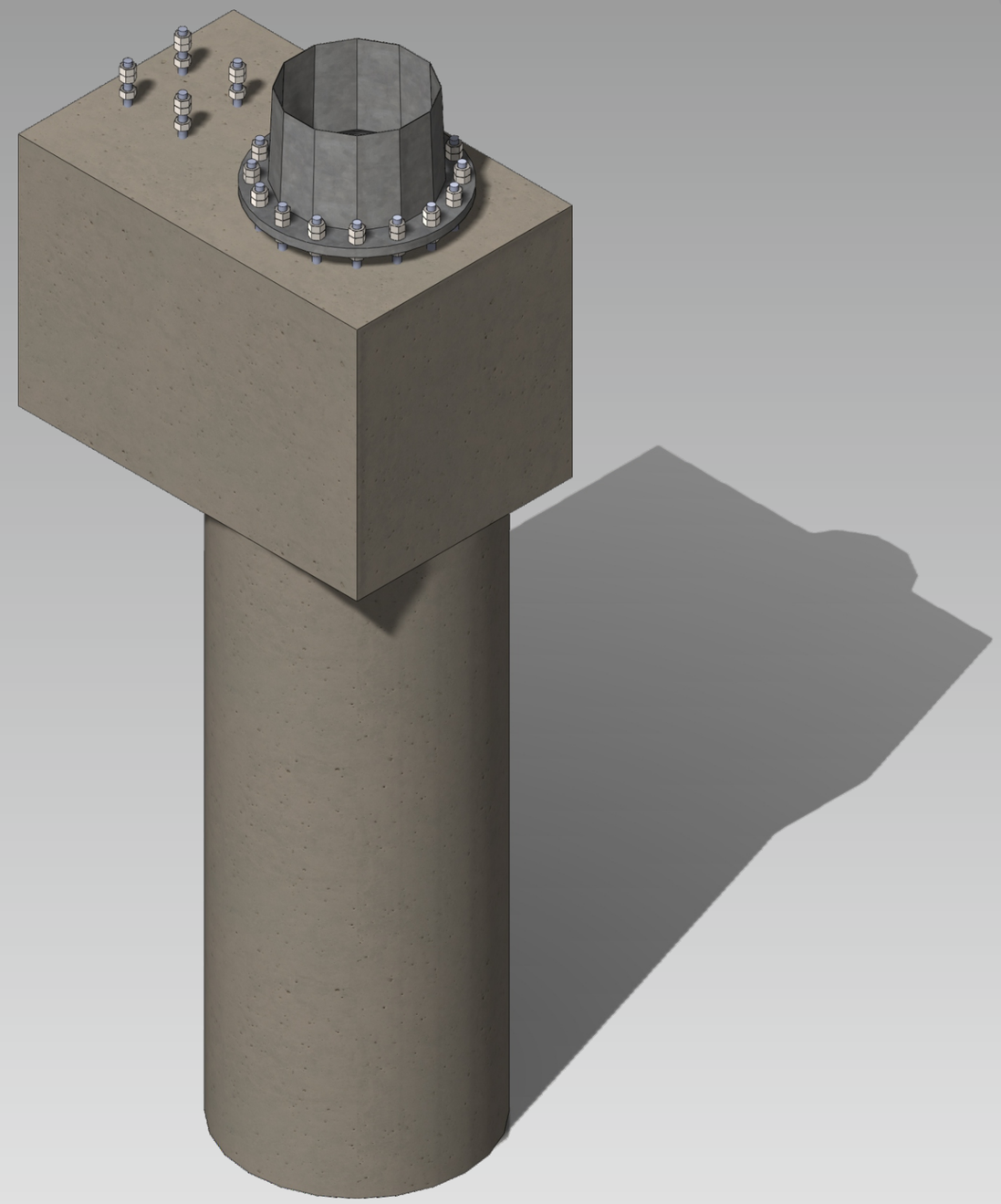
Pier Foundation Details

ARE 11mTower

Kingspan 6kW Turbine



ARE 11m Tower
Kingspan 6kW Turbine

REV	DATE	DESCRIPTION
A	22/04/13	ISSUED FOR APPROVAL

jor Joseph O'Reilly
Consulting Civil & Structural Engineers
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+353 (0)46 907 7032
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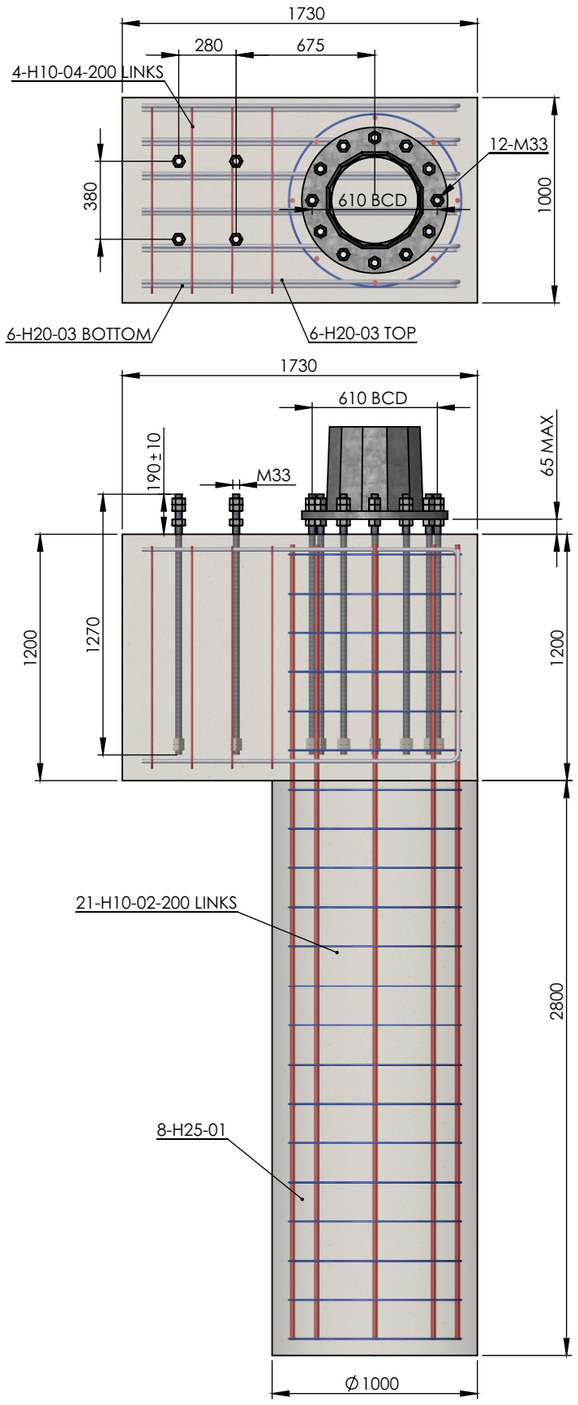
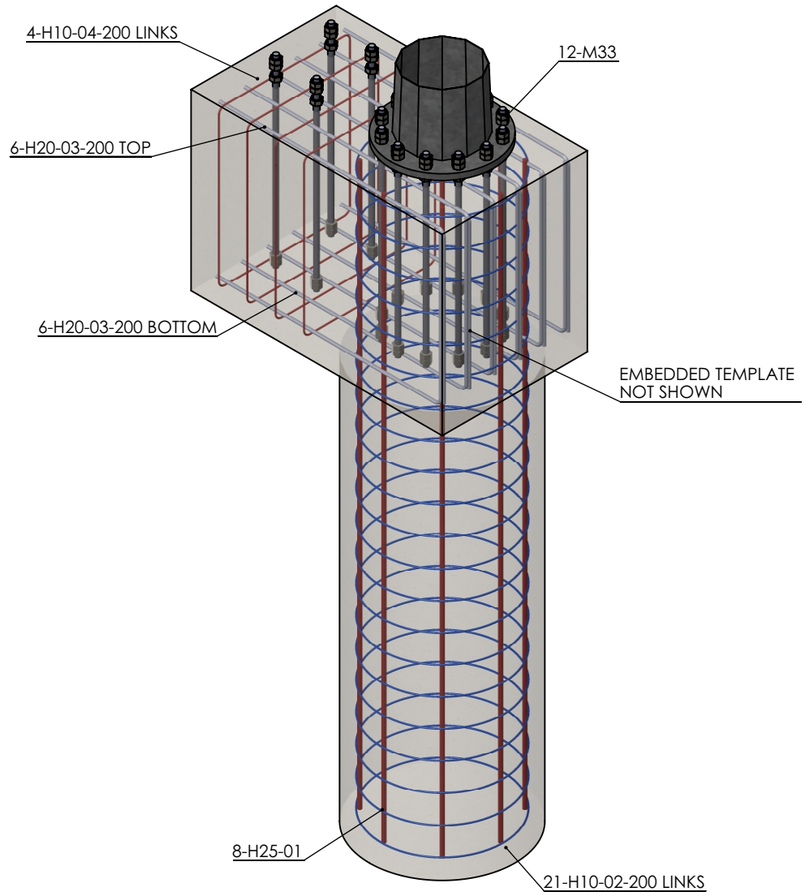
ARE
AMERICAN RESOURCE & ENERGY
www.arewindtowers.com

PROJECT		
FOUNDATION DESIGN		
SCALE: NTS	DATE: APRIL 2013	
JOB. No.: J12-036	DRAWING No.: ARE-12-001	REV: A





Pier Foundation
Concrete Volume: 4.27m^3
Reinforcement Weight: 220kg

Reinforcement Schedule

Member	Bar mark	Type and size (type size)	No. of mbrs	No. of bars in each	Total no.	Length of each bar † mm	Shape code	*A* * mm	*B* * mm	*C* * mm	*D* * mm	*E/R* * mm	Rev letter
	01	H 25	1	8	8	3875	00	3875					
	02	H 10	1	21	21	2900	75	850	240				
	03	H 16	1	12	12	1925	11	1050	900				
	04	H 16	1	4	4	4225	51	900	1075				

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Kingspan 6kW Turbine
Pier Foundation

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PROJECT: FOUNDATION DESIGN		
SCALE: NTS	DATE: APRILI 2013	
JOB. No.: J12-036	DRAWING No.: ARE-12-002	REV: A

NOTES:

THE FOUNDATION HAS BEEN DESIGNED IN ACCORDANCE WITH EN 1997-1:2004 & BS 8110-1:1997.
& DESIGNED TO RESIST THE MAXIMUM TOWER ULTIMATE REACTIONS PROVIDED BY ARE.
BASE PLATE AND HOLDING DOWN BOLT DESIGN CARRIED OUT BE ARE.

MAXIMUM TOWER ULTIMATE REACTIONS
VERTICAL REACTION - (Fz) = 24kN
HORIZONTAL REACTION - (Fx) =29kN
MOMENT REACTION - (My) = 235kNm

GEOTECHNICAL DATA

THE FOUNDATION DESIGN IS BASED ON PRESUMPTIVE SOIL PARAMETERS
A MINIMUM ALLOWABLE SOIL BEARING PRESSURE OF 100kN/m2 IS REQUIRED FOR PAD FOUNDATIONS.
A FIRM CLAY WITH A MINIMUM UNDRAINED SHEAR STRENGTH, CU=50kN/M2 IS REQUIRED FOR PIER / ROOT FOUNDATIONS.
IT IS ASSUMED THAT GROUND WATER IS NOT PRESENT WITHIN THE DEPTH OF THE FOUNDATION.

EARTHWORKS

THE FOUNDATION EXCAVATION SHALL BE FREE OF ALL SURFACE ORGANIC MATERIAL

CONCRETE

CONCRETE TO BE GRADE C25/30 TO BS EN 206-1 AND BS 8550-2
CONCRETE HARDENING TIME - THE FOUNDATION SHOULD BE POURED TWO WEEKS PRIOR TO ERECTION OF THE TOWER

REINFORCEMENT

REINFORCEMENT TO BE HIGH YIELD TYPE 2 TO BS 4449:1998, TO BE CUT AND BENT IN ACCORDANCE WITH BS 8666:2005

COVER TO REINFORCEMENT TO BE 50mm TOP AND 75mm BOTTOM AND SIDES

ANCHOR BOLTS

PLEASE REFER TO ARE DRAWING FOR SPECIFICATION AND INSTRUCTIONS ON CORRECT INSTALLATION OF HOLDING DOWN BOLTS

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Kingspan 6kW Turbine
Pier Foundation

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