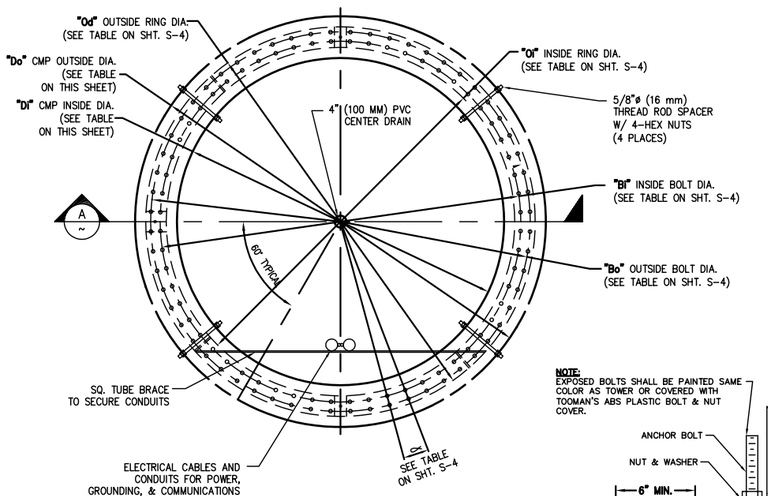
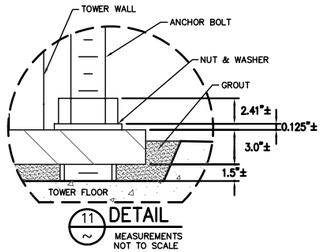


TOP VIEW OF FOUNDATION PLAN

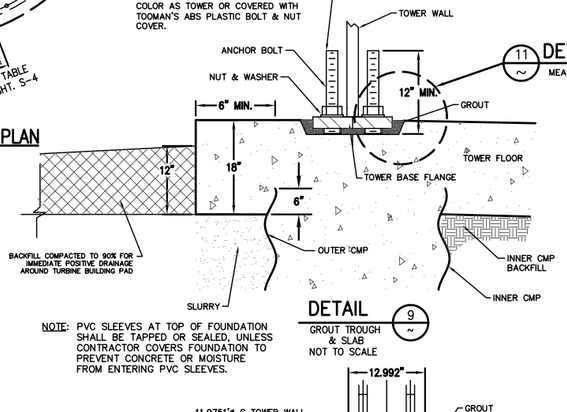
NOT TO SCALE



11 DETAIL — MEASUREMENTS
NOT TO SCALE

GROUT TROUGH NOTE:
GROUT TROUGH, FILLED WITH NON SHRINK GROUT, SHALL BE 1" BEYOND INSIDE AND OUTSIDE EDGE OF BASE FLANGE. TROUGH MAY NEED TO BE DEEPENED WITH 1/2"x16" PIECE OF STYROFOAM OR EQUAL

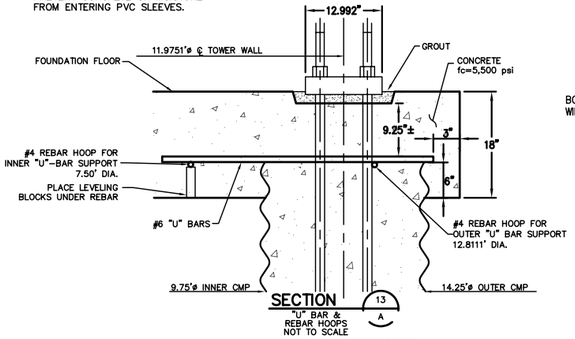
NOTE:
EXPOSED BOLTS SHALL BE PAINTED SAME COLOR AS TOWER OR COVERED WITH TOOMAN'S ABS PLASTIC BOLT & NUT COVER.



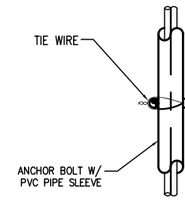
11 DETAIL — MEASUREMENTS

NOTE: PVC SLEEVES AT TOP OF FOUNDATION SHALL BE TAPPED OR SEALED, UNLESS CONTRACTOR COVERS FOUNDATION TO PREVENT CONCRETE OR MOISTURE FROM ENTERING PVC SLEEVES.

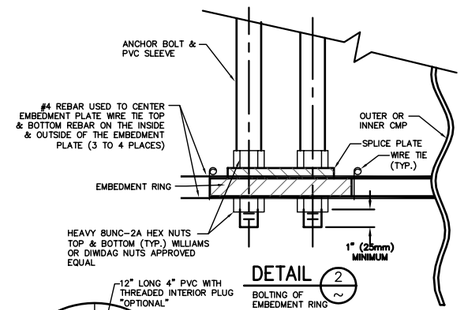
DETAIL 9 — GROUT TROUGH & SLAB
NOT TO SCALE



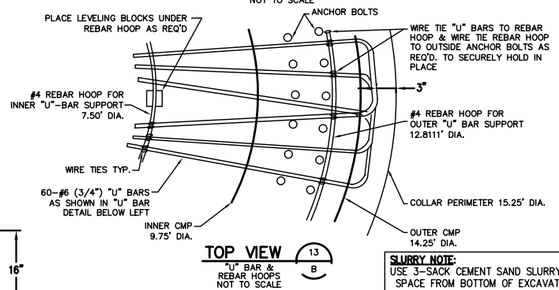
SECTION 13 A — "U" BAR & REBAR HOOPS
NOT TO SCALE



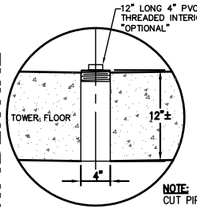
DETAIL 1 — REBAR TIE
NOT TO SCALE



DETAIL 2 — BOLTING OF EMBEDMENT RING
NOT TO SCALE

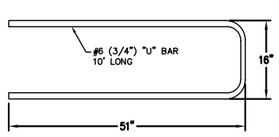


TOP VIEW 13 B — "U" BAR & REBAR HOOPS
NOT TO SCALE



NOTE: CUT PIPE IN FILED TO FIT

12 DETAIL — DRAIN PIPE
NOT TO SCALE



DETAIL 13 C — "U" BAR
NOT TO SCALE

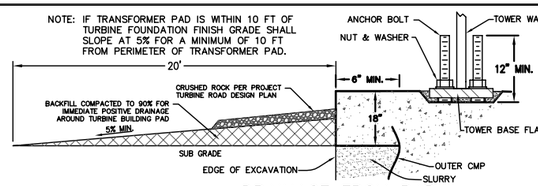
PROPRIETARY WARNING

SEE THE CONFIDENTIALITY STATEMENT. THIS DESIGN AND THESE DRAWINGS ARE CONFIDENTIAL AND PROPRIETARY. IF YOU DO NOT HAVE A SET ASSIGNED AND NUMBERED SPECIFICALLY TO YOU, RETURN THESE IMMEDIATELY TO **PATRICK & HENDERSON, INC.**

THIS SET NO. _____ ASSIGNED TO: _____

NOTE:
TRENCHES FOR GROUNDING AND SECONDARY ELECTRICAL CONDUIT SHALL BE SLURRY BACKFILL

NOTE: IF TRANSFORMER PAD IS WITHIN 10 FT OF TURBINE FOUNDATION FINISH GRADE SHALL SLOPE AT 5% FOR A MINIMUM OF 10 FT FROM PERIMETER OF TRANSFORMER PAD.



DRAINAGE FROM PAD

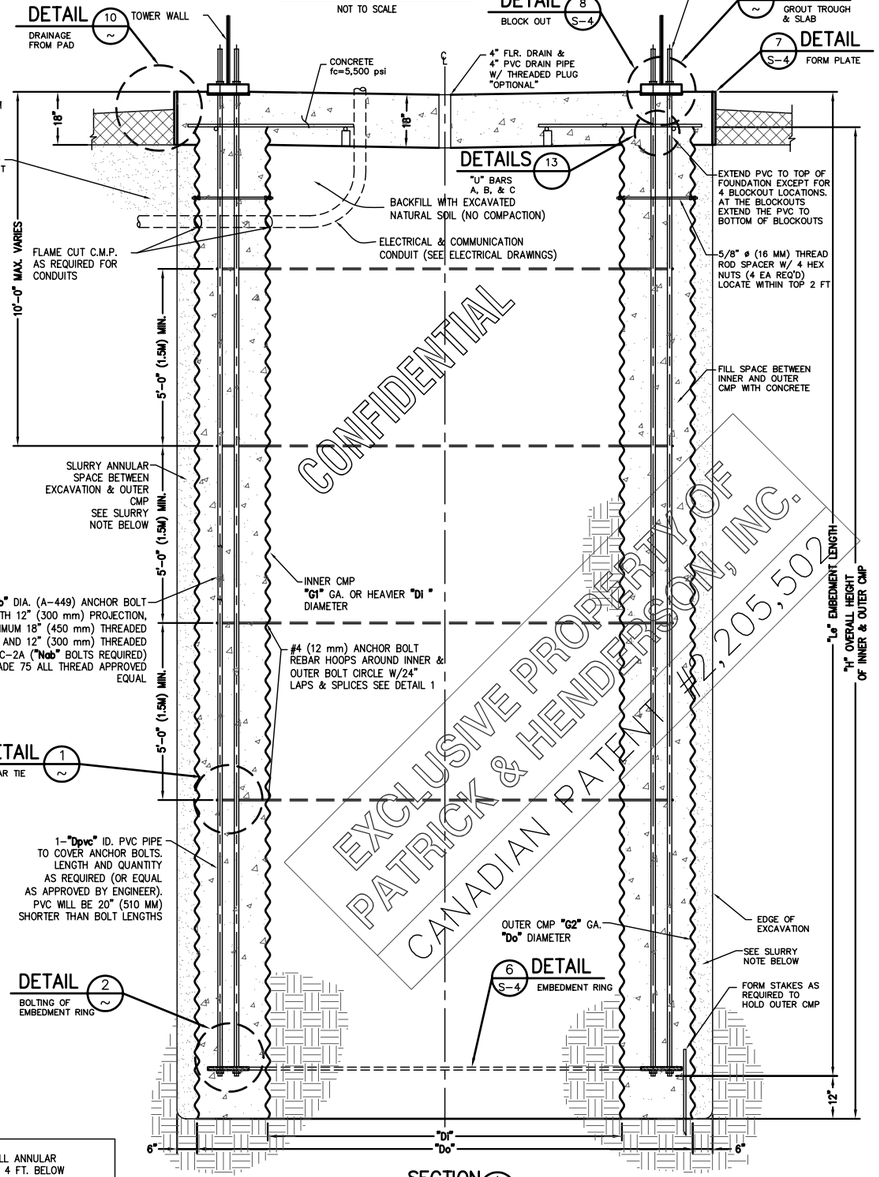
NOT TO SCALE

DETAIL 10 — DRAINAGE FROM PAD

DETAIL 8 S-4 — BLOCK OUT

DETAIL 9 — GROUT TROUGH & SLAB

DETAIL 7 S-4 — FORM PLATE



DETAIL 1 — REBAR TIE

DETAIL 2 — BOLTING OF EMBEDMENT RING

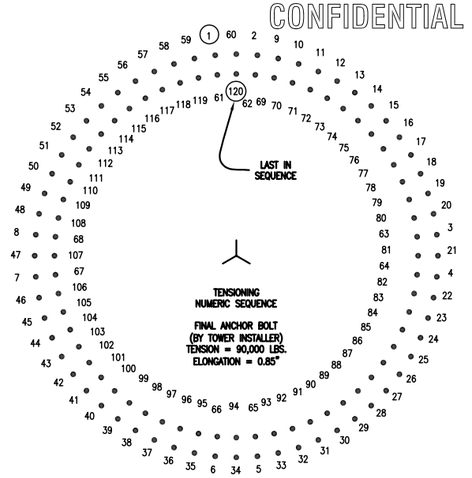
DETAIL 6 S-4 — EMBEDMENT RING

SECTION A — FOUNDATION
NOT TO SCALE

SLURRY NOTE:
USE 3-SACK CEMENT SAND SLURRY TO FILL ANNULAR SPACE FROM BOTTOM OF EXCAVATION TO 4 FT. BELOW FINISH GRADE.
TOP 4 FT SHALL BE 1 SACK CEMENT SAND SLURRY, MINIMUM 30 PSI AT 28 DAYS.

CONTACT ENGINEER FOR CLARIFICATION.

30' FOUNDATION



BOLT TENSIONING SEQUENCE

ANCHOR BOLT TIGHTENING
NOT TO SCALE
NOTE: BOLT TENSIONING PROCEDURES ARE UNDER SEPARATE DOCUMENT AND ARE AVAILABLE UPON REQUEST FROM PATRICK AND HENDERSON INC.

FOUNDATION DIMENSIONS			
"MARK"	VALUE	UNITS	DESCRIPTION
Dab	1.50	IN.	DIAMETER OF ANCHOR BOLTS (OUTSIDE DIAMETER)
Lab	30.0	FT	LENGTH OF ANCHOR BOLTS
Nab	120	EA	NUMBER OF ANCHOR BOLTS
Le	29.0	FT	BOLT EMBEDMENT LENGTH
Dpvc	1.5	IN	DIAMETER OF PVC PIPE SLEEVE
Di	9.75	FT	DIAMETER OF THE INNER CORRUGATED METAL PIPE
Do	14.25	FT	DIAMETER OF THE OUTER CORRUGATED METAL PIPE
H	30.0 *	FT	OVERALL HEIGHT OF INNER / OUTER CMP
G1	12	Ga	GAUGE OF INNER CMP
G2	12	Ga	GAUGE OF OUTER CMP

***FOUNDATION DEPTH BASED ON SOIL CONDITIONS PROVIDED ARE SUBJECT TO REVIEW AND MODIFICATION OF DEPTH ON SITE OR IF ADDITIONAL SOIL INFORMATION IS PROVIDED**

NOTES:

1. POUR SAND CEMENT SLURRY (MIX DESIGN BY ENGINEER) AROUND OUTER C.M.P. BETWEEN C.M.P. & EXCAVATION.
2. POUR MONOLITHICALLY A EIGHTEEN (18) INCH (300 MM) CONCRETE SLAB W/ 2 LAYERS OF 10M (#4 REBAR) AT 8" O.C. & A FOUR (4) INCH ø PVC FLOOR DRAIN, IF FLOOR DRAINS TO CENTER, SHALL BE CONSTRUCTED INSIDE THE INNER C.M.P.
3. THREE (3) SACK SAND CEMENT SLURRY SHALL HAVE A 300 PSI MIN. 28 DAYS COMPRESSION STRENGTH.
4. ONE (1) SACK SAND CEMENT SLURRY SHALL HAVE A 30 PSI MIN. 28 DAY COMPRESSION STRENGTH.

ALLAN P. HENDERSON
NOVIA SCOTIA #15788

DATE:

PATRICK & HENDERSON INC. CIVIL & GEOTECHNICAL ENGINEERING
1965 AIRPORT DRIVE
BAKERSFIELD, CALIFORNIA 93308
(661) 391-9854
FAX: (661) 391-9926
Consulting Engineers
Foundation & Structural Engineering
Land Planning
Land Surveying
Soils Testing

DATE: 01/06/04
SCALE: AS SHOWN
DRAWN BY: JK
APPROVED:

REVISION DESCRIPTION	DATE	BY
REMOVED DECON STUD REPLACED WITH "U" BARS	02/25/04	JK

PREPARED FOR:
VESTAS AMERICAN WIND TECHNOLOGY
111 SW COLUMBIA STREET
SUITE 480
PORTLAND, OR 97201
TELEPHONE: 503-327-2000

DESCRIPTION: FOUNDATION PLAN & SECTION

SHEET: S-3
4 SHEETS
JOB NO.: