

Called
Spring
City

102

705

BLOCK

LOT

5

QUALIFICATION CODE

ADDRESS (SITE)

301 Chambers Bridge Rd

PERMIT NO.

06-1163



CONSTRUCTION PERMIT APPLICATION

06-0698

Applicant Completes: Sections I, II, III (optional), IV, VI, and VII

I. IDENTIFICATION

1. Proposed Work Site at: 301 Chambers Bridge Road, Brick, NJ 08723
2. Name of Owner in Fee: Ocean County Gut. / Howard Asay Tel. (733) 929-2157
Address 101 Hagar Ave, Toms River 08753
street municipality zip code
3. Ownership in fee: Public X Private
4. Principal Contractor: New Jersey Business Systems Tel. (609) 587-5500
Address 7C Morlen Drive, Robinsville NJ
License No. OR, if new home, Builder Reg. No. Exp. Date
Federal Employee No. 22-2871405 FAX: (609) 587-6660
5. Architect or Engineer: Bill Morrison Tel. (733) 856-451-4661
Address 1 Main Street, Fairton, NJ 08220 Contact
6. Responsible Person in Charge once Work has Begun Craig Lerman (LTW)
Tel. (973) 882-9205 x12 FAX: (973) 882-4563

V. FEE SUMMARY (for office use only)

		Update	Update
1. Building	\$		
2. Electrical			
3. Plumbing			
4. Fire Protection			
5. Elevator Devices			
6. Subtotal	\$		
7. Less 20% for State Plan Review			
8. Subtotal	\$		
9. State Permit Fee Surcharge			
10. Subtotal	\$		
11. Cert. of Occupancy			
12. Other			
13. TOTAL	\$		

VI. BUILDING/SITE CHARACTERISTICS

1. Number of Stories _____
2. Height of Structure _____ ft.
3. Area — Largest Floor _____ sq. ft.
4. New Building Area _____ sq. ft.
5. Volume of New Structure _____ cu. ft.
6. Construction Classification _____
7. Total Land Area Disturbed _____ sq. ft.
8. Flood Hazard Zone _____
9. Base Flood Elevation _____ ft.
10. Wetlands yes _____
no _____
11. Max. Live Load _____
12. Max. Occupancy Load _____

(office use only)

no young
pls
tower
communication tower

OPTIONAL (for office use only)

II. PROPOSED WORK	Est. Cost	Plans Rec'd	Date Rec'd	Rejection Date	Approval Date	Re-viewer	Resubmission Dates		Re-viewer
							Approval	Rejection	
1. ☐ Minor Work									
2. ☐ New Building									
3. ☐ Addition									
4. ☐ a. Repair									
☐ b. Alteration									
☐ c. Renovation									
☐ d. Reconstruction									
5. ☐ Fire Protection									
6. ☐ Plumbing									
7. ☐ Electrical									
8. ☐ Elevator Devices									
9. ☐ Asbestos Abat. Subch. 8									
10. ☐ Lead Hazard Abatement									
11. ☐ Demolition									
TOTAL COSTS									

VII. DESCRIPTION OF BUILDING USE

A. RESIDENTIAL

1. State Specific Use: _____
2. Use Group: _____
3. Change in Use Group, Indicate Former: _____
4. No. of dwelling units: _____
Before Construction _____
After Construction _____
Net Gain or Loss _____

B. NON-RESIDENTIAL

1. State Specific Use: _____
2. Use Group: _____
3. Change in Use Group, Indicate Former: _____

III. DO YOU WANT: (optional)

1. ☐ Partial Releases
2. ☐ Prototype Processing

IV. DOES OR WILL YOUR BUILDING CONTAIN ANY OF THE FOLLOWING?

1. ☐ Elevators/Escalators/Lifts/
Dumbwaiters/Moving Walks
2. ☐ High Pressure Boilers
3. ☐ Pressure Vessels
4. ☐ Refrigeration Systems
5. ☐ Cross-Connections/Backflow Preventers
6. ☐ Hazardous Uses/Places of Assembly
7. ☐ Sprinklers
8. ☐ Smoke Control Systems in Open Wells
9. ☐ Underground Storage Tanks
10. ☐ Swimming Pools, Spas and Hot Tubs

CERTIFICATION IN LIEU OF OATH

I. OWNER SECTION (to be completed if the applicant is the owner in fee)

I hereby certify that I am the owner in fee of the property listed on Page 1.

Mark the following applicable boxes:

- A. ☐ I further certify that a new home (private residence) will be constructed on this property for my own use and occupancy. This dwelling is to be occupied by myself and is not to be used for any purpose other than single family residential use. I attest that all construction, plumbing, or electrical work will be done, in whole or in part, by me or by subcontractors under my supervision, in accordance with all applicable laws; and, I further acknowledge that said new home is not covered under the New Home Warranty and Builders Registration Act (N.J.S.A. 46:3B-1 et seq.) and that such fact shall be disclosed to any person purchasing this property within ten years of the date of issuance of a certificate of occupancy.

I UNDERSTAND THAT IN MARKING BOX A, I ACKNOWLEDGE THAT I AM ASSUMING RESPONSIBILITY FOR THE WORK DONE ON SAID PROPERTY, THE CONDITION OF THE PROPERTY PRIOR TO, DURING, AND AFTER ANY WORK PERFORMED, AND FOR THE PERFORMANCE OF THE SUBCONTRACTORS I HIRE, EMPLOY, OR OTHERWISE CONTRACT OR WITH WHOM I MAKE AGREEMENTS TO PERFORM WORK. I AM VOLUNTARILY AND KNOWINGLY ASSUMING THIS RESPONSIBILITY.

- B. ☐ I further certify the following as required by the New Jersey Uniform Construction Code, N.J.A.C. 5:23-2.15(e)1.vii:

I personally prepared the plans submitted for: 1) the new home referred to in A.; or, 2) an addition, alteration, renovation, or repair to an existing single family residence owned and occupied by myself and located on the property listed on Page 1; or, 3) a new structure that will be physically separate from, but that will be deemed part of, an existing single family residence that is owned and occupied by myself and located on the property listed on Page 1.

- C. ☐ I further certify that I will perform or supervise the following work:

C.1. ☐ Building C.2. ☐ Fire Protection

I further certify that I will perform the following work:

C.3. ☐ Electrical C.4. ☐ Plumbing

- D. ☐ I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I understand that if any of the above statements are willfully false, I am subject to punishment.

Signature _____ Date _____

II. AGENT SECTION (to be completed if the applicant is not the owner in fee)

I hereby certify the following as required by the Uniform Construction Code, N.J.A.C. 5:32-2.15(d): the proposed work is authorized by the owner in fee; and I have been authorized by the owner in fee to make this application as his agent.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I understand that if any of the above statements are willfully false, I am subject to punishment.

☒ Check if contractor.

Agent Name Let's Think Wireless, LLC

Address 30 Chapin Road - Unit #1209

Pine Brook, NJ 07058

Telephone (973) 882-9205 X12

Signature [Signature]

III. ☐ LEAD HAZARD ABATEMENT: Include Homeowner or Building Owner Affidavit as per N.J.A.C. 5:17.



Brick Township
401 Chambersbridge Rd
Brick, NJ 08723

Date Issued 06/15/2011
Control Number C-06-0698
Permit Number 06-1163
Permit Issue Date 04/24/2006
Certificate Number 06-1163

Certificate

Construction Code Division
(Certificate of Approval)

Identification

Work Site Location: 301 CHAMBERS BRIDGE RD. , NJ Block: 702 Lot: 5 Qual: _____
Owner in Fee: OCEAN COUNTY
Owner Address: 101 HOOPER AVENUE TOMS RIVER NJ 08753
Telephone: (732) 929-2157
Contractor LET'S THINK WIRELESS, LLC
Address 30 CHAPIN ROAD UNIT 1209 PINE BROOK NJ 07058
Telephone: (973) 882-9205 Fax: _____
License Number or Builders Registration Number: _____ Federal Emp. Number: _____

Home Warranty Number: _____

Type of Warranty Plan: ☐ State ☐ Private

Use Group: U Construction Classification: _____

Maximum Live Load: 0 Maximum Occupancy Load: 0

Description of Work/Use: RADIO TOWER CONSTRUCT 80' AGL RADIO TOWER FOR O.C. GOVT USE (NO CELLUAR)
FREE-STANDING (SELF-SUPPORTING) TOWER

Certificate Comments:

☐ **Certificate of Occupancy**

This serves notice that said building or structure has been constructed in accordance with the New Jersey Uniform Construction Code and is approved for occupancy.

☒ **Certificate of Approval**

This serves notice that the work completed has been constructed or installed in accordance with the New Jersey Uniform Construction Code and is approved. If the permit was issued for minor work, this certificate was based upon what was visible at the time of inspection.

☐ **Certificate of Continued Occupancy**

This serves notice that based on a general inspection of the visible parts of the building there are no imminent hazards and the building is approved for continued occupancy.

☐ **Temporary Certificate of Compliance**

The following conditions must be met no later than or the owner will be subject to fine or order to vacate:
This certificate has an expiration date of:
Conditions to be met:

☐ **Certificate of Clearance - Lead Abatement 5:17**

This serves notice that based on written certification, lead abatement was performed as per NJAC5:17 to the following extent.

- ☐ Total removal of lead-based paint hazards in scope of work
☐ Partial or limited time period (_____ years); see file

☐ **Certificate of Clearance - Asbestos Abatement**

This serves notice that based on written certification, asbestos abatement was performed to the following extent.

- ☐ Total removal of asbestos hazards in scope of work
☐ Partial or limited time period (_____ years); see file

☐ **Certificate of Compliance**

This serves notice that said potentially hazardous equipment has been installed and/or maintained in accordance with the New Jersey Uniform Construction Code and is approved for use until

☐ **Temporary Certificate of Occupancy**

The following conditions must be met no later than: or the owner will be subject to fine or order to vacate:
This certificate has an expiration date of:
Conditions to be met:

Construction Official

Fee: \$0.00

Check Number: _____

Collected By: _____



CONSTRUCTION PERMIT

Date Issued 04/24/2006
Control # C-06-0698
Permit # 06-1163

IDENTIFICATION Block: 702 Lot: 5 Qualifier _____
Work Site Location: 301 CHAMBERS BRIDGE RD., NJ Contractor LET'S THINK WIRELESS, LLC
Address _____ Address 30 CHAPIN ROAD UNIT 1209 PINE BROOK NJ 07058
Owner in Fee OCEAN COUNTY
Address 101 HOOPER AVENUE TOMS RIVER NJ 08753 Telephone: (973) 882-9205
Telephone: (732) 929-2157 Lic. No. or Bldrs. Reg. No. _____
Federal Employee. No. _____

Is hereby granted permission to perform the following work:

- ☒ BUILDING ☐ PLUMBING ☐ LEAD HAZARD ABATEMENT
☐ ELECTRICAL ☐ FIRE PROTECTION ☐ DEMOLITION
☐ ELEVATOR DEVICES ☐ ASBESTOS ABATEMENT (Subchapter 8 only) ☐ OTHER

DESCRIPTION OF WORK:

RADIO TOWER CONSTRUCT 80' AGL RADIO TOWER FOR O.C. GOVT USE (NO CELLUAR)
FREE-STANDING (SELF-SUPPORTING) TOWER

Note: If construction does not commence within one (1) year of date of issuance, or if construction ceases for a period of six (6) months, this permit is void.

Estimated Cost of Work \$20,000

Construction Official _____ Date 04/24/2006

U.C.C. F170
equiv (rev 8/03)

1 WHITE - INSPECTOR

2 CANARY - OFFICE

3 PINK - TAX ASSESSOR

4 GOLD - APPLICANT

PAYMENTS (Office Use Only)

Building	\$0
Electrical	\$0
Plumbing	\$0
Fire Protection	\$0
Elevator Devices	\$0
Other	\$0.00
DCA Training Fee	\$0
CO Fee	
Other	\$0
Total	\$0
Check No.	
Cash	\$0
Credit	\$0
Collected By	Ann Marie Hanlon

REQUIRED INSPECTIONS

Construction work must be inspected in accordance with the State Uniform Construction Code Regulations N.J.A.C. 5:23-2.18. This agency will carry out such periodic inspections during the progress of work as are necessary to insure that the work installed conforms with the requirements of the Uniform Construction Code.

The owner or other responsible person in charge of work must notify this agency when work is ready for any required inspections specified below. Requests for inspections must be made at least 24 hours prior to the time the inspection is desired. Inspections will be performed within three business days of the time for which they are requested. The work must not proceed in a manner which will preclude the inspection until it has been made and approval granted.

- ☐ Required inspections for all subcodes for one- and two-family dwellings are as follows:
1. The bottom of footing trenches before placement of footings, except that in cases of pile foundations, inspections shall be made in accordance with the requirements of the building subcode.
 2. Foundations and all walls up to grade level prior to back filling.
 3. All structural framing, connections, wall and roof sheathing and insulation; electrical rough wiring, panel and service installation; rough plumbing. The framing inspection shall take place after the rough electrical and plumbing inspections and after the installation of the heating, ventilation and /or air conditioning duct system. The insulation inspection shall be performed after all other subcode rough inspections and prior to the installation of any interior finish material.
 4. Installation of all finished materials, sealings of exterior joints, plumbing piping, trim and fixtures; electrical wiring, devices and fixtures; mechanical systems equipment.

Additional required inspections for all subcodes of construction, for other than one- and two-family dwellings, are fire suppression systems, heat producing devices and Barrier Free subcode accessibility, if applicable.

- ☐ Required special inspections. The applicant by accepting the permit will be deemed to have consented to these requirements:
- ☐ A final inspection is required for each applicable subcode area before a final Certificate of Occupancy or Approval may be issued. The final inspections include the installation of all interior and exterior finish materials, sealing of exterior joints, mechanical system and other required equipment; electrical wiring, devices and fixtures; plumbing pipes, trim and fixtures; tests required by any provision of the adopted subcodes, Barrier Free accessibility, if applicable; and verification of compliance with NJAC 5:23-3.5, "Posting structures".
- ☐ A complete copy of released plans must be kept on the job site.

If you do not understand any of this information, please ask.



BUILDING SUBCODE TECHNICAL SECTION



A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 702 Lot 5 Qualification Code _____
 Work Site Location: Four Bad Golf Course
301 Chambers Bridge Road, Brick, NJ 08723
 Owner in Fee: Ocean County Govt - 011 Howard I Asay
 Address: 101 Hopper Avenue, Toms River, NJ

Tel. (732) 929-2157
 Contractor: New Jersey Business Systems
 Address: 7C Marden Drive, Robbinsville, NJ
 Tel. (609) 687-5500 FAX (609) 687-6660
 Contractor License No. of Builder Registration No. _____
 Federal Emp. No. 22-2871405

JOB SUMMARY (Office Use Only)

PLAN REVIEW	Date	Initial	INSPECTIONS	Dates (Month/Day)	Approval	Initial
☒ No Plans Required			Type:	Failure	Failure	
☒ All	<u>4-20-06</u>		Footings		<u>5/19/06</u>	<u>WY</u>
☒ Footing			Footings Bonding			
☐ Foundation			Foundation			
☐ Frame			Slab			
☐ Other			Frame			
Joint Plan Review Required:			Truss Sys./Bracing			
☐ Elec. ☐ Plumb. ☐ Fire ☐ Elevator			Barrier-Free			
SUBCODE APPROVAL			Insulation			
☐ CO ☐ CCO			Finishes - Base Layer			
Date: <u>5/19/06</u>			Energy			
			Mechanical			
Approved by: <u>5/19/06</u>			TCO			
			Other			
			Final		<u>5/19/06</u>	<u>WY</u>
			Barrier-Free			

B. BUILDING CHARACTERISTICS

Use Group: Present _____ Proposed _____
 Constr. Class: Present _____ Proposed _____
 No. of Stories: _____
 Height of Structure: 80 Ft.
 Area — Largest Floor: _____ Sq. Ft.
 New Bldg. Area/All Floors: _____ Sq. Ft.
 Volume of New Structure: _____ Cu. Ft.
 Total Land Area Disturbed: _____ Sq. Ft.

Est. Cost of Bldg. Work:
 1. New Bldg. \$ 20,000.00
 2. Rehabilitation \$ _____
 3. Total (1+2) \$ 20,000.00

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Signature: [Signature]

D. TECHNICAL SITE DATA

See Birdsall's OK

DESCRIPTION OF WORK

Construction of 80' Atr. Radial Tower for O.C. Govt Use (No cellular) Free-Standing (Self-Supporting) Lattice Tower

TYPE OF WORK:

- ☐ New Building
- ☐ Addition
- ☐ Rehabilitation
- ☐ Roofing
- ☐ Siding
- ☐ Fence _____ Height (exceeds 6') _____ Sq. Ft.
- ☐ Sign _____
- ☐ Pool
- ☐ Asbestos Abatement Subchapter 8
- ☐ Lead Haz. Abatement NJAC 5:17
- ☒ Other Radial Tower
- ☐ Demolition

FEE (Office Use Only)

Administrative Surcharge \$ _____
 Minimum Fee \$ _____
 State Permit Surcharge Fee \$ _____
 TOTAL FEE \$ _____

Date Received
Control #
Date Issued
Permit #

4/24/06
06-1163



BUILDING SUBCODE TECHNICAL SECTION



A. IDENTIFICATION--APPLICANT: COMPLETE ALL APPLICABLE INFORMATION, WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 707 Lot 5 Qualification Code _____

Work Site Location Force Road Golf Course

Owner In Fee Orphan Country Club - 0157 Howard T Asad

Address 101 Hopper Avenue, Toms River, NJ

Tel. (732) 929-2157

Contractor Alvin Tereza Buswell Sustad

Address 714 Horden Drive, Kalamazoo, MI

Tel. (616) 687-5500 FAX (616) 687-6660

Contractor License No. of Builder Registration No. _____

Federal Emp. No. 22-2871405

JOB SUMMARY (Office Use Only)

PLAN REVIEW	Date	Initial	INSPECTIONS	Dates (Month/Day)			
			Type:	Failure	Failure	Approval	Initial
☒ No Plans Required			Footings				
☒ All			Footings Bonding				
☒ Footing			Foundation				
☐ Foundation			Slab				
☐ Frame			Frame				
☐ Other			Truss Sys./Bracing				
Joint Plan Review Required:			Barrier-Free				
☐ Elec. ☐ Plumb. ☐ Fire ☐ Elevator			Insulation				
SUBCODE APPROVAL			Finishes - Base Layer				
☐ CO ☐ CCO ☐ CA			Energy - Final				
Date:			Mechanical				
Approved by:			TCO				
			Other				
			Final				
			Barrier-Free				

B. BUILDING CHARACTERISTICS

Use Group	Present	Proposed	Est. Cost of Bldg. Work:
Constr. Class	Present	Proposed	1. New Bldg. \$ <u>20,000.00</u>
No. of Stories			2. Rehabilitation \$ _____
Height of Structure	<u>80</u>		3. Total (1+2) \$ <u>20,000.00</u>
Area - Largest Floor		Sq. Ft.	
New Bldg. Area/All Floors		Sq. Ft.	
Volume of New Structure		Cu. Ft.	
Total Land Area Disturbed		Sq. Ft.	

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Signature [Signature]

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK

Construction of 80' AGL (adj.)
Tower for cell. (not use
(NO CELLULAR))
Fire Stairing (see Supp. copy)
1st floor Tower

TYPE OF WORK:

- ☐ New Building
- ☐ Addition
- ☐ Rehabilitation
- ☐ Roofing
- ☐ Siding
- ☐ Fence _____ Height (exceeds 6') _____ Sq. Ft.
- ☐ Sign _____
- ☐ Pool
- ☐ Asbestos Abatement Subchapter 8
- ☐ Lead Haz. Abatement NJAC 5:17
- ☒ Other Krad in Tower
- ☐ Demolition

FEE (Office Use Only)

Administrative Surcharge \$	_____
Minimum Fee \$	_____
State Permit Surcharge Fee \$	_____
TOTAL FEE \$	_____

U.C.C. F110
(rev. 07/03)

1 White = Inspector Copy
2 Canary = Office Copy
3 Pink = Office Copy
4 Gold = Applicant Copy

Date Received
Control #
Date Issued
Permit #

112.166
06-1163



BUILDING SUBCODE TECHNICAL SECTION



A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 707 Lot 5 Qualification Code

Work Site Location Fore Ditch Lane

Owner in Fee 301 Chambers Barber Road Brick NT 08923

Address 101 Hopper Avenue, Toms River, NJ

Tel. (732) 999-2157

Contractor John T. Brown, Inc.

Address 77 Marion Drive, Kibblesville, NJ

Tel. (609) 657-5508 FAX (609) 657-6660

Contractor License No. of Builder Registration No.

Federal Emp. No. 22-8871405

JOB SUMMARY (Office Use Only)

PLAN REVIEW	Date	Initial	INSPECTIONS	Dates (Month/Day)	Initial
			Type:	Failure	Failure
☒ All	<u>4-20-01</u>	<u>FR</u>	Footings		
☒ Footing			Footings Bonding		
☐ Foundation			Foundation		
☐ Frame			Slab		
☐ Other			Frame		
			Truss Sys./Bracing		
			Barrier-Free		
			Insulation		
			Finishes -Base Layer		
			Finishes -Final		
			Energy		
			Mechanical		
			TCO		
			Other		
			Final		
			Barrier-Free		

B. BUILDING CHARACTERISTICS

Use Group	Present	Proposed	Est. Cost of Bldg. Work:
Constr. Class	<u>Present</u>	<u>Proposed</u>	1. New Bldg. \$ <u>2,000,000</u>
No. of Stories	<u> </u>	<u> </u>	2. Rehabilitation \$ <u> </u>
Height of Structure	<u>40</u>	<u> </u>	3. Total (1+2) \$ <u>2,000,000</u>
Area — Largest Floor	<u> </u>	<u> </u>	
New Bldg. Area/All Floors	<u> </u>	<u> </u>	
Volume of New Structure	<u> </u>	<u> </u>	
Total Land Area Disturbed	<u> </u>	<u> </u>	

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Signature

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK

See Birdsall's OK

10-1-01

TYPE OF WORK:

- ☐ New Building
- ☐ Addition
- ☐ Rehabilitation
- ☐ Roofing
- ☐ Siding
- ☐ Fence
- ☐ Sign
- ☐ Pool
- ☐ Asbestos Abatement Subchapter 8
- ☐ Lead Haz. Abatement NJAC 5:17
- ☒ Other Demolition

FEE (Office Use Only)

Administrative Surcharge \$	
Minimum Fee \$	
State Permit Surcharge Fee \$	
TOTAL FEE \$	

TOWNSHIP OF BRICK

OCEAN COUNTY, NEW JERSEY
401 CHAMBERS BRIDGE ROAD, BRICK, N.J. 08723

Joseph C. Scarpelli, Mayor

Township Council:

Anthony Matthews - President
Stephen C. Acropolis - Vice-President
Kathy M. Russell
Joseph Sangiovanni
Ruthanne Scaturro
Michael A. Thulen, Sr.
Dan Toth



Department of Engineering
Office of the Municipal Engineer
(732) 262-1040
Fax: (732) 262-8954
<http://www.twp.brick.nj.us>

Date: 2/3/06

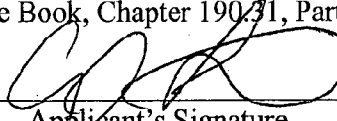
PLOT PLAN EXEMPT FORM

Block: 707 Lot: 5

Property Address: 301 Chambers Bridge Road

I, Craig Lerman of LTW, LLC
(name) (address)

request to be exempt from the plot plan requirement for an addition, fence, shed, deck, pool, retaining wall, etc. as outlined in the Brick Land Use Book, Chapter 190.31, Part B.

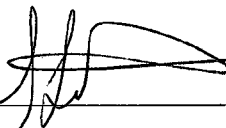

Applicant's Signature

The following shall be submitted with this request:

1. Submit surveys locating existing dwelling and proposed addition. Dimensions of the addition should be included.
2. Proof that the property is not located in a Flood Hazard Area.

Note: Prior to approval a site inspection by the Engineering Department will be performed to verify that the proposed addition will not create a drainage problem.

FOR OFFICE USE ONLY

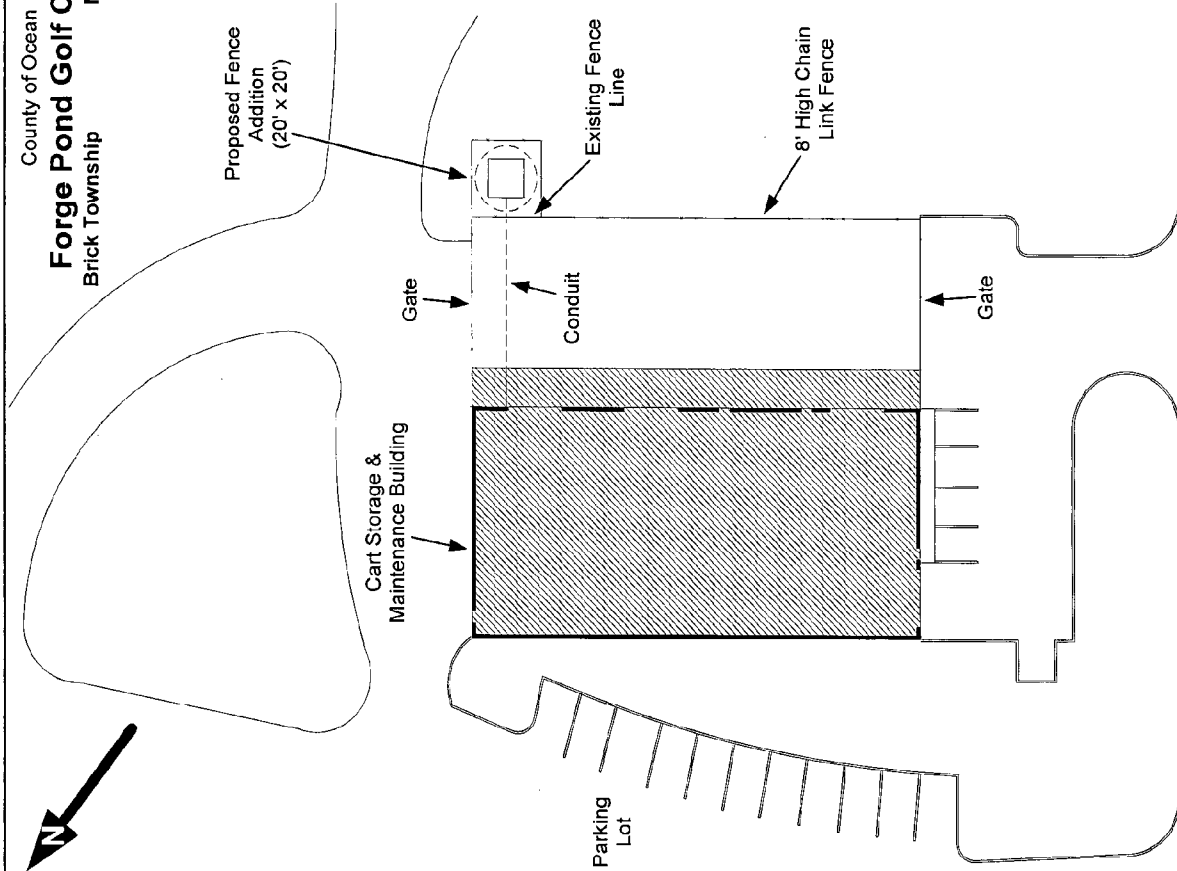
Approved on: 2/10/06 Signed: 

Rejected on: _____ Signed: _____

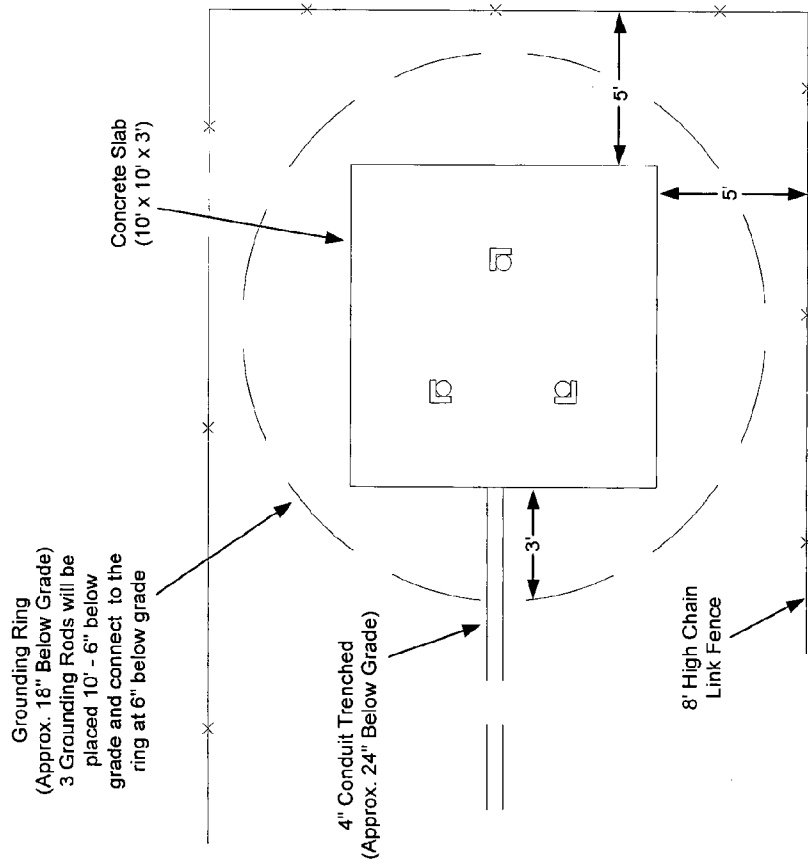
Comments:

County of Ocean
Brick Township
New Jersey

Forge Pond Golf Course



Expanded View of Proposed Tower Location

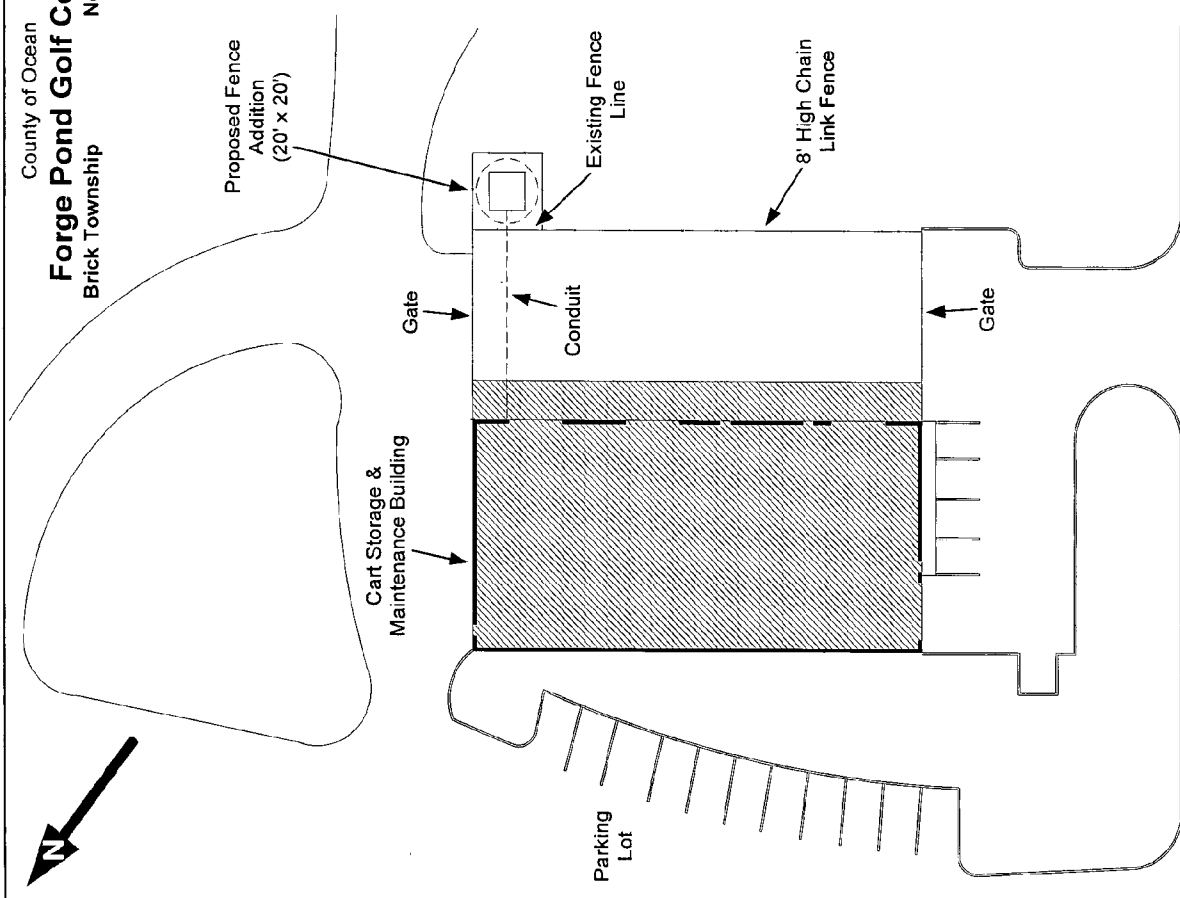


Note:
This will be an 80' tower, 4'-8" at the base and 2' at the top.
For additional tower and grounding information please reference the tower drawing.

Chambers Bridge Road

 Let's Think WIRELESS, LLC™ A wholly owned subsidiary of WinM3 Software, Inc.	<i>420 Lexington Avenue Suite 444 New York, NY 10170 (212) 850-0400</i>	<table><tr><th colspan="4">TITLE</th></tr><tr><td colspan="4">Ocean County New Jersey Radio Communication Tower: Forge Pond Golf Course, Brick Township LTW ID/Call Sign - Site #9</td></tr><tr><td colspan="4">Plan View</td></tr></table>	TITLE				Ocean County New Jersey Radio Communication Tower: Forge Pond Golf Course, Brick Township LTW ID/Call Sign - Site #9				Plan View				<table><tr><th>REV.</th><th>DESCRIPTION</th><th>DATE</th><th>BY</th></tr><tr><td>A</td><td>Initial drawing release</td><td>1-25-06</td><td>SB</td></tr></table>	REV.	DESCRIPTION	DATE	BY	A	Initial drawing release	1-25-06	SB
TITLE																							
Ocean County New Jersey Radio Communication Tower: Forge Pond Golf Course, Brick Township LTW ID/Call Sign - Site #9																							
Plan View																							
REV.	DESCRIPTION	DATE	BY																				
A	Initial drawing release	1-25-06	SB																				

County of Ocean
Brick Township
Forge Pond Golf Course
New Jersey



Chambers Bridge Road

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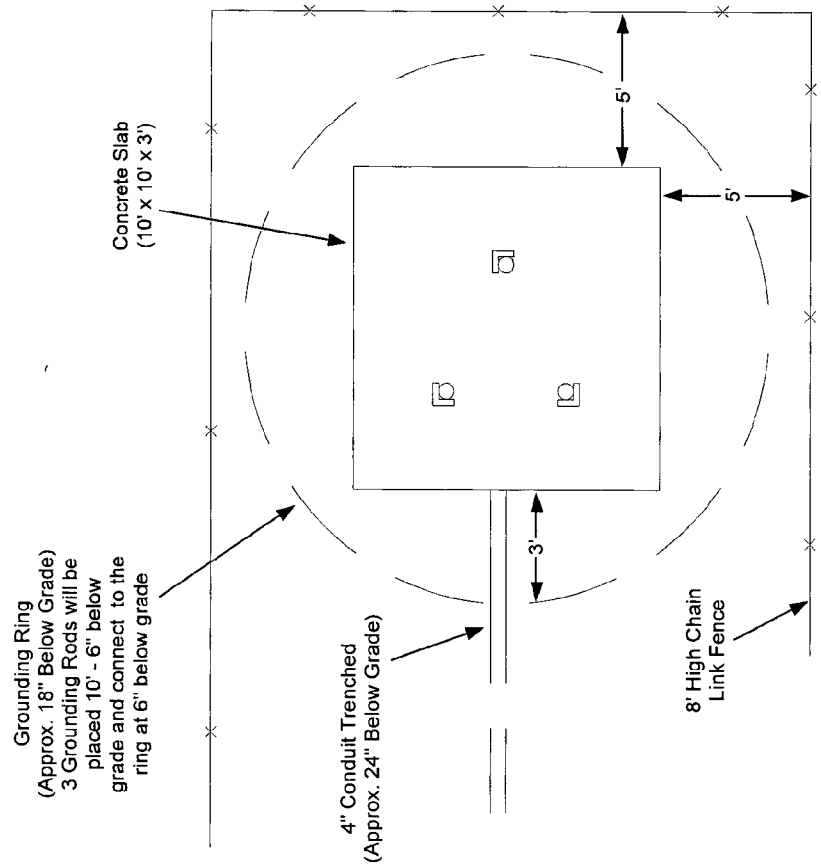
420 Lexington Avenue
Suite 444
New York, NY 10170
(212) 850-0400

TITLE
Ocean County New Jersey
Radio Communication Tower:
Forge Pond Golf Course, Brick Township
LTW ID/Call Sign - Site #9

Plan View

REV.	DESCRIPTION	DATE	BY
A	Initial drawing release	1-25-06	SB

Expanded View of Proposed Tower Location



Note:
This will be an 80' tower, 4'-8" at the base and 2' at the top.
For additional tower and grounding information please reference the tower drawing.

Forward to
Rick maloney.
At Birdsal/-

Bldg

Elect

Fire

Plumbing

(Please mark subcode)

CONTROL NUMBER 0698

TOWNSHIP OF BRICK
APPLICATION REVIEW PROCESS

ADDRESS OF APPLICATION: 301 Chambers Bridge

DATE REVIEWED: 2-13-06

REVIEWED BY: Fmm.

CONTACT CALLED/FAKED: 973-882-4563

① IBC Notes 3-second gust wind speed is AT 33' Tower is 81'-2" A.G.

② IBC Section 3108.4 Notes E1A/T1A 222-E US F AS

Noted on plan, please explain

③ was ICC loading factored in?

④ How do tower sections fasten together?

⑤ No fabrication drawings submitted

⑥ Supply all calculations, loads?

Franklin review template

856-767-6901 - Paul Stubeck/Engineer
EXT 388

Telephone Number	19738824563
Mode	NORMAL
Start	13,11:39
Time	0'28"
Page	1
Result	* O K
Note	

Feb 13 2006 11:40

P.1

** Transmit Conf. Report **

Land Use / Bldg Dept Fax:732-262-8954

Bldg

Elect

Fire

Plumbing

(Please mark sul

CONTROL NUMBER 0698

TOWNSHIP OF BRICK
APPLICATION REVIEW PROCESS

ADDRESS OF APPLICATION: 301 Chambers Bridge

DATE REVIEWED: 2-13-06

REVIEWED BY: FMM

CONTACT CALLED/FAXED: 973-882-4563

① IBC Notes 3-second gust wind speed is AT 33'

② IBC Section 3108.4 Notes EIA/TIA 222-E

Noted on plan, please explain

③ was Ice Loading Factored in?

④ How Do Tower Sections Fasten Together

⑤ No Fabrication Drawings Submitted

Frank/plan review template



BIRDSALL ENGINEERING, INC.
CONSULTING & ENVIRONMENTAL ENGINEERS

611 Industrial Way West, Eatontown, NJ 07724
Phone: 732.380.1700 Fax: 732.380.1701

Job No. 205234000206

MEMORANDUM

TO: Frank Miser
FROM: Rich Maloney
DATE: 04/19/2006
RE: Brick Township Tower

Mr. Miser-

We have reviewed the foundation plan and calculations provided to us by you from Churchill Consulting Engineers and found that the 10.0'x10.0'x3.0' foundation is structurally sufficient for the application intended. Calculations are attached for your records.

If you have any questions or require clarifications on this issue, please do not hesitate to contact me at 732-380-1700, extension 1274.

Thank you,

Richard Maloney, P.E.

Cc: Elissa Commings



BIRDSALL ENGINEERING, INC.
CONSULTING & ENVIRONMENTAL ENGINEERS

ELISSA -
HERE IS THE BRICK TWP
TOWER REVIEW FROM ME.
ANYTHING ELSE LET ME KNOW
-CLAYTON

732-380-1700
www.birdsall.com

Birdsall Engineering, Inc.
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Eatontown, NJ 07724
(P) 732-380-1700
(F) 732-380-1701

Title :
Dsgnr:
Description :

Job #
Date: 3:53PM, 19 APR 06

Scope :

Rev: 510300
User: KW-0604004, Ver 5.1.3, 22-Jun-1999, Win32
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General Footing Analysis & Design

Page 1
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Description TOWER STRUCTURE - DL ONLY

General Information

Calculations are designed to ACI 318-95 and 1997 UBC Requirements

Allowable Soil Bearing	1,500.0 psf	Dimensions...	
Short Term Increase	1.330	Width along X-X Axis	10.000 ft
Base Pedestal Height	0.000 in	Length along Y-Y Axis	10.000 ft
Seismic Zone	0	Footing Thickness	36.00 in
Overburden Weight	0.00 psf	Col Dim. Along X-X Axis	0.00 in
Live & Short Term Combined		Col Dim. Along Y-Y Axis	0.00 in
f_c	4,000.0 psi	Min Steel %	0.0014
F_y	60,000.0 psi	Rebar Center To Edge Distance	3.50 in
Concrete Weight	145.00 pcf		

Loads

Applied Vertical Load...

Dead Load	1.102 k	...ecc along X-X Axis	0.000 in
Live Load	k	...ecc along Y-Y Axis	0.000 in
Short Term Load	k		

Applied Moments...

	Creates Rotation about Y-Y Axis (pressures @ left & right)	Creates Rotation about X-X Axis (pressures @ top & bot)
Dead Load	k-ft	k-ft
Live Load	69.760 k-ft	k-ft
Short Term	k-ft	k-ft

Applied Shears...

	Creates Rotation about Y-Y Axis (pressures @ left & right)	Creates Rotation about X-X Axis (pressures @ top & bot)
Dead Load	k	k
Live Load	1.733 k	k
Short Term	k	k

Summary

Footing Design OK

10.00ft x 10.00ft Footing, 36.0in Thick, w/ Column Support 0.00 x 0.00in x 0.0in high

	DL+LL	DL+LL+ST		Actual	Allowable
Max Soil Pressure	895.8	895.8 psf	Max Mu	5.565 k-ft per ft	
Allowable	1,500.0	1,995.0 psf	Required Steel Area		0.546 in ² per ft
"X" Ecc. of Resultant	20.167 in	20.167 in	Shear Stresses....	V_u	$V_n * \Phi$
"Y" Ecc. of Resultant	0.000 in	0.000 in	1-Way	3.234	107.517 psi
X-X Min. Stability Ratio	No Overturning	1.500 :1	2-Way	0.338	215.035 psi
Y-Y Min. Stability Ratio	2.975				

Footing Design

Shear Forces	ACI 9-1	ACI 9-2	ACI 9-3	$V_n * \Phi$	
Two-Way Shear	0.34 psi	0.25 psi	0.22 psi	215.03 psi	
One-Way Shears...					
V_u @ Left	3.23 psi	2.43 psi	2.08 psi	107.52 psi	
V_u @ Right	-2.76 psi	-2.07 psi	-1.78 psi	107.52 psi	
V_u @ Top	0.23 psi	0.18 psi	0.15 psi	107.52 psi	
V_u @ Bottom	0.23 psi	0.18 psi	0.15 psi	107.52 psi	
Moments	ACI 9-1	ACI 9-2	ACI 9-3	R_u / Φ	As Req'd
Mu @ Left	-5.17 k-ft	-3.88 k-ft	-3.33 k-ft	5.4 psi	-0.55 in ² per ft
Mu @ Right	5.57 k-ft	4.17 k-ft	3.58 k-ft	5.9 psi	0.55 in ² per ft
Mu @ Top	0.19 k-ft	0.14 k-ft	0.12 k-ft	0.2 psi	0.55 in ² per ft
Mu @ Bottom	0.19 k-ft	0.14 k-ft	0.12 k-ft	0.2 psi	0.55 in ² per ft

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General Footing Analysis & Design

Page 2

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Description TOWER STRUCTURE - DL ONLY

Soil Pressure Summary

Service Load Soil Pressures	Left	Right	Top	Bottom
DL + LL	0.00	895.79	446.02	446.02 psf
DL + LL + ST	0.00	895.79	446.02	446.02 psf
Factored Load Soil Pressures				
ACI Eq. 9-1	0.00	1,254.11	624.43	624.43 psf
ACI Eq. 9-2	0.00	940.58	468.32	468.32 psf
ACI Eq. 9-3	0.00	806.21	401.42	401.42 psf

ACI Factors (per ACI, applied internally to entered loads)

ACI 9-1 & 9-2 DL	1.400	ACI 9-2 Group Factor	0.750	UBC 1921.2.7 "1.4" Factor	1.400
ACI 9-1 & 9-2 LL	1.700	ACI 9-3 Dead Load Factor	0.900	UBC 1921.2.7 "0.9" Factor	0.900
ACI 9-1 & 9-2 ST	1.700	ACI 9-3 Short Term Factor	1.300		
...seismic = ST * :	1.100				

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General Footing Analysis & Design

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Description TOWER STRUCTURE - DL + 1/4" ICE

General Information

Calculations are designed to ACI 318-95 and 1997 UBC Requirements

Allowable Soil Bearing	1,500.0 psf	Dimensions...	
Short Term Increase	1.330	Width along X-X Axis	10.000 ft
Base Pedestal Height	0.000 in	Length along Y-Y Axis	10.000 ft
Seismic Zone	0	Footing Thickness	36.00 in
Overburden Weight	0.00 psf	Col Dim. Along X-X Axis	0.00 in
Live & Short Term Combined		Col Dim. Along Y-Y Axis	0.00 in
f_c	4,000.0 psi	Min Steel %	0.0014
F_y	60,000.0 psi	Rebar Center To Edge Distance	3.50 in
Concrete Weight	145.00 pcf		

Loads

Applied Vertical Load...			
Dead Load	1.592 k	...ecc along X-X Axis	0.000 in
Live Load	k	...ecc along Y-Y Axis	0.000 in
Short Term Load	k		
Applied Moments...		<u>Creates Rotation about Y-Y Axis</u>	<u>Creates Rotation about X-X Axis</u>
		(pressures @ left & right)	(pressures @ top & bot)
Dead Load	k-ft		k-ft
Live Load	97.459 k-ft		k-ft
Short Term	k-ft		k-ft
Applied Shears...		<u>Creates Rotation about Y-Y Axis</u>	<u>Creates Rotation about X-X Axis</u>
		(pressures @ left & right)	(pressures @ top & bot)
Dead Load	k		k
Live Load	2.422 k		k
Short Term	k		k

Summary

Footing Design OK

10.00ft x 10.00ft Footing, 36.0in Thick, w/ Column Support 0.00 x 0.00in x 0.0in high

	<u>DL+LL</u>	<u>DL+LL+ST</u>		<u>Actual</u>	<u>Allowable</u>
Max Soil Pressure	1,122.7	1,122.7 psf	Max Mu	8.153 k-ft per ft	
Allowable	1,500.0	1,995.0 psf	Required Steel Area		0.546 in2 per ft
"X" Ecc. of Resultant	27.870 in	27.870 in	Shear Stresses....	<u>Vu</u>	<u>Vn * Phi</u>
"Y" Ecc. of Resultant	0.000 in	0.000 in	1-Way	4.706	107.517 psi
X-X Min. Stability Ratio	No Overturning	1.500 :1	2-Way	0.601	215.035 psi
Y-Y Min. Stability Ratio	2.153				

Footing Design

Shear Forces	<u>ACI 9-1</u>	<u>ACI 9-2</u>	<u>ACI 9-3</u>	<u>Vn * Phi</u>	
Two-Way Shear	0.60 psi	0.45 psi	0.39 psi	215.03 psi	
One-Way Shears...					
Vu @ Left	4.71 psi	3.53 psi	3.03 psi	107.52 psi	
Vu @ Right	-3.55 psi	-2.66 psi	-2.28 psi	107.52 psi	
Vu @ Top	0.28 psi	0.21 psi	0.18 psi	107.52 psi	
Vu @ Bottom	0.28 psi	0.21 psi	0.18 psi	107.52 psi	
Moments	<u>ACI 9-1</u>	<u>ACI 9-2</u>	<u>ACI 9-3</u>	<u>Ru / Phi</u>	<u>As Req'd</u>
Mu @ Left	-6.75 k-ft	-5.06 k-ft	-4.34 k-ft	7.1 psi	-0.55 in2 per ft
Mu @ Right	8.15 k-ft	6.11 k-ft	5.24 k-ft	8.6 psi	0.55 in2 per ft
Mu @ Top	0.28 k-ft	0.21 k-ft	0.18 k-ft	0.3 psi	0.55 in2 per ft
Mu @ Bottom	0.28 k-ft	0.21 k-ft	0.18 k-ft	0.3 psi	0.55 in2 per ft

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General Footing Analysis & Design

Page 2

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Description TOWER STRUCTURE - DL + 1/4" ICE

Soil Pressure Summary

Service Load Soil Pressures	Left	Right	Top	Bottom
DL + LL	0.00	1,122.73	450.92	450.92 psf
DL + LL + ST	0.00	1,122.73	450.92	450.92 psf
Factored Load Soil Pressures				
ACI Eq. 9-1	0.00	1,571.82	631.29	631.29 psf
ACI Eq. 9-2	0.00	1,178.86	473.47	473.47 psf
ACI Eq. 9-3	0.00	1,010.46	405.83	405.83 psf

ACI Factors (per ACI, applied internally to entered loads)

ACI 9-1 & 9-2 DL	1.400	ACI 9-2 Group Factor	0.750	UBC 1921.2.7 "1.4" Factor	1.400
ACI 9-1 & 9-2 LL	1.700	ACI 9-3 Dead Load Factor	0.900	UBC 1921.2.7 "0.9" Factor	0.900
ACI 9-1 & 9-2 ST	1.700	ACI 9-3 Short Term Factor	1.300		
....seismic = ST * :	1.100				

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General Footing Analysis & Design

Page 1

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Description TOWER STRUCTURE - DL + 1/2" ICE

General Information

Calculations are designed to ACI 318-95 and 1997 UBC Requirements

Allowable Soil Bearing	1,500.0 psf	Dimensions...	
Short Term Increase	1.330	Width along X-X Axis	10.000 ft
Base Pedestal Height	0.000 in	Length along Y-Y Axis	10.000 ft
Seismic Zone	0	Footing Thickness	36.00 in
Overburden Weight	0.00 psf	Col Dim. Along X-X Axis	0.00 in
Live & Short Term Combined		Col Dim. Along Y-Y Axis	0.00 in
Pc	4,000.0 psi	Min Steel %	0.0014
Fy	60,000.0 psi	Rebar Center To Edge Distance	3.50 in
Concrete Weight	145.00 pcf		

Loads

Applied Vertical Load...

Dead Load	2.043 k	...ecc along X-X Axis	0.000 in
Live Load	k	...ecc along Y-Y Axis	0.000 in
Short Term Load	k		

Applied Moments...

	<u>Creates Rotation about Y-Y Axis</u> (pressures @ left & right)	<u>Creates Rotation about X-X Axis</u> (pressures @ top & bot)
Dead Load	k-ft	k-ft
Live Load	121.260 k-ft	k-ft
Short Term	k-ft	k-ft

Applied Shears...

	<u>Creates Rotation about Y-Y Axis</u> (pressures @ left & right)	<u>Creates Rotation about X-X Axis</u> (pressures @ top & bot)
Dead Load	k	k
Live Load	3.032 k	k
Short Term	k	k

Summary

Footing Design OK

10.00ft x 10.00ft Footing, 36.0in Thick, w/ Column Support 0.00 x 0.00in x 0.0in high

	<u>DL+LL</u>	<u>DL+LL+ST</u>		<u>Actual</u>	<u>Allowable</u>
Max Soil Pressure	1,420.3	1,420.3 psf	Max Mu	11.091 k-ft per ft	
Allowable	1,500.0	1,995.0 psf	Required Steel Area		0.546 in2 per ft
"X" Ecc. of Resultant	34.347 in	34.347 in	Shear Stresses....	<u>Vu</u>	<u>Vn * Phi</u>
"Y" Ecc. of Resultant	0.000 in	0.000 in	1-Way	6.483	107.517 psi
X-X Min. Stability Ratio	No Overturning	1.500 : 1	2-Way	1.118	215.035 psi
Y-Y Min. Stability Ratio	1.747				

Footing Design

Shear Forces	<u>ACI 9-1</u>	<u>ACI 9-2</u>	<u>ACI 9-3</u>	<u>Vn * Phi</u>	
Two-Way Shear	1.12 psi	0.84 psi	0.72 psi	215.03 psi	
One-Way Shears...					
Vu @ Left	6.48 psi	4.86 psi	4.17 psi	107.52 psi	
Vu @ Right	-3.58 psi	-2.68 psi	-2.30 psi	107.52 psi	
Vu @ Top	0.31 psi	0.24 psi	0.20 psi	107.52 psi	
Vu @ Bottom	0.31 psi	0.24 psi	0.20 psi	107.52 psi	
Moments	<u>ACI 9-1</u>	<u>ACI 9-2</u>	<u>ACI 9-3</u>	<u>Ru / Phi</u>	<u>As Req'd</u>
Mu @ Left	-7.47 k-ft	-5.60 k-ft	-4.80 k-ft	7.9 psi	-0.55 in2 per ft
Mu @ Right	11.09 k-ft	8.32 k-ft	7.13 k-ft	11.7 psi	0.55 in2 per ft
Mu @ Top	0.36 k-ft	0.27 k-ft	0.23 k-ft	0.4 psi	0.55 in2 per ft
Mu @ Bottom	0.36 k-ft	0.27 k-ft	0.23 k-ft	0.4 psi	0.55 in2 per ft

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General Footing Analysis & Design

Page 2

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Description TOWER STRUCTURE - DL + 1/2" ICE

Soil Pressure Summary

Service Load Soil Pressures	Left	Right	Top	Bottom
DL + LL	0.00	1,420.29	455.43	455.43 psf
DL + LL + ST	0.00	1,420.29	455.43	455.43 psf
Factored Load Soil Pressures				
ACI Eq. 9-1	0.00	1,988.40	637.60	637.60 psf
ACI Eq. 9-2	0.00	1,491.30	478.20	478.20 psf
ACI Eq. 9-3	0.00	1,278.26	409.89	409.89 psf

ACI Factors (per ACI, applied internally to entered loads)

ACI 9-1 & 9-2 DL	1.400	ACI 9-2 Group Factor	0.750	UBC 1921.2.7 "1.4" Factor	1.400
ACI 9-1 & 9-2 LL	1.700	ACI 9-3 Dead Load Factor	0.900	UBC 1921.2.7 "0.9" Factor	0.900
ACI 9-1 & 9-2 ST	1.700	ACI 9-3 Short Term Factor	1.300		
....seismic = ST*:	1.100				

STANDARD TOWER

SECTION III	$-q_2 = 31.86$	PSF
IV	$= 29.75$	PSF
V	$= 27.38$	PSF
VI	$= 23.70$	PSF

$A_f = 6.89$	ft ²
$= 8.47$	ft ²
$= 9.73$	ft ²
$= 12.27$	ft ²

$W = 192$	lbs
$= 243$	lbs
$= 286$	lbs
$= 381$	lbs

RATIO SOLID AREA TO GROSS AREA

	<u>SOLID</u>	<u>GROSS</u>	<u>RATIO, G</u>
SECTION III	6.89	46.66	0.147
IV	8.47	59.49	0.141
V	9.73	73.83	0.133
VI	12.27	86.66	0.142

$$C \rightarrow D \sqrt{q_2} = (2/2) \sqrt{31.86}$$

$$= 0.94 < 2.5$$

$$C = 1.3$$

$$F = q_2 G C A_f$$

$$F_{II} = (31.86)(0.85)(1.3)(6.89)$$

$$= 242.56 \text{ lbs @ } 70 \text{ ft}$$

$$F_T = 1130.71 \text{ lbs @ } 35.34$$

$$F_{IV} = (29.75)(0.85)(1.3)(8.47)$$

$$= 278.44 \text{ lbs @ } 50 \text{ ft}$$

$$F_V = (27.38)(0.85)(1.3)(9.73)$$

$$= 294.38 \text{ lbs @ } 30 \text{ ft}$$

$$F_{VI} = (23.70)(0.85)(1.3)(12.27)$$

$$= 321.33 \text{ lbs @ } 10 \text{ ft}$$



BIRDSALL ENGINEERING, INC.

611 Industrial Way West, Eatontown, NJ 07724

www.birdsall.com (732) 380-1700

STANDARD TOWER

Subject BRICK TOWNSHIP

JOB NO. 205234002206

DATE 4/12/2006

SHEET NO. 1 OF

COMPUTED BY CJT

STANDARD TOWER

SECTION III - F = 340 lbs @ 70
 IV = 382 lbs @ 50
 V = 393 lbs @ 30
 VI = 491 lbs @ 10
 ANT = 127 lbs @ 80

MOMENT @ BASE

$$= (340 \times 70) + (382 \times 50) + (393 \times 30) + (491 \times 10) + (127 \times 80)$$

$$= 69760 \text{ ft-lbs}$$

WEIGHT OF STRUCTURE

SECTION	III	IV	V	VI	ANT	STRUCTURE	1/4" ICE	1/2" ICE
						192	281	311
						243	346	452
						256	404	523
						381	443	635
						40	68	42
						1142	1542	2043

AREA OF TOWER w/ICE

SECTION	III	IV	V	VI	1/4"	1/2"
					11.17	15.45
					13.13	17.79
					4.80	19.87
					17.76	23.23
F _{III}					313.24 lbs	573.92 lbs
F _{IV}					44.63	584.82
F _V					447.17	601.6
F _{VI}					465.11	608.32



BIRDSALL ENGINEERING, INC.

611 Industrial Way West, Eatontown, NJ 07724

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STANDARD TOWER
 Subject BRICK TOWNSHIP

JOB NO. 2052340002010

DATE 4/12/2006

SHEET NO. 2 OF

COMPUTED BY CJG

STANDARD TOWER

SECTION	24.44(24.33) ^{2/7}	1/4" ICB CFAC	F	1/2" ICB CFAC	F
III	30.29	16.73	516.96	21.76	689.11
IV	21.52	20	550.4	25.59	734.23
V	24.44	22.88	559.19	29.02	710.25
VI	24.44	21.37	468.92	34.03	831.09
AOT			127		127
TOTAL			2422.47		3032.26
MOMENT			97459.1		121260



BIRDSALL ENGINEERING, INC.

611 Industrial Way West, Eatontown, NJ 07724

www.birdsall.com (732) 380-1700

Subject STANDARD TOWER
BRICK TOWNSHIP

JOB NO. 205234002200

DATE 4/19/2006

SHEET NO. 3 OF

COMPUTED BY CJV

205239- ~~205239~~ 6
ASK ELISA ?

Does Pdr Size Appear
OK ? Based on Pdr info
on Tower ?

Goes Back To ELISA when we have
answer.

Fax Transmittal

CHURCHILL Consulting Engineers

Corporate Headquarters
344 North Route 73, Berlin, NJ 08009
Tel 856-767-6901 Fax 856-767-0272

Date: March 24, 2006 Time: _____
To: Birdsall Engineering/Rich Maloney
From: Paul H. Stubee, P.E.
Fax: 732 380 1701

Total pages including this cover letter: 14

Mailing Originals: NO

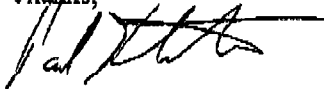
RE: Ocean County 80' STD Tower

Rich,

Following are the standard calculation sheets used for these tower designs and the tower design data sheets for the tower sections used on this tower.

Should you have any questions, please call.

Thanks,



Paul H. Stubee, P.E.

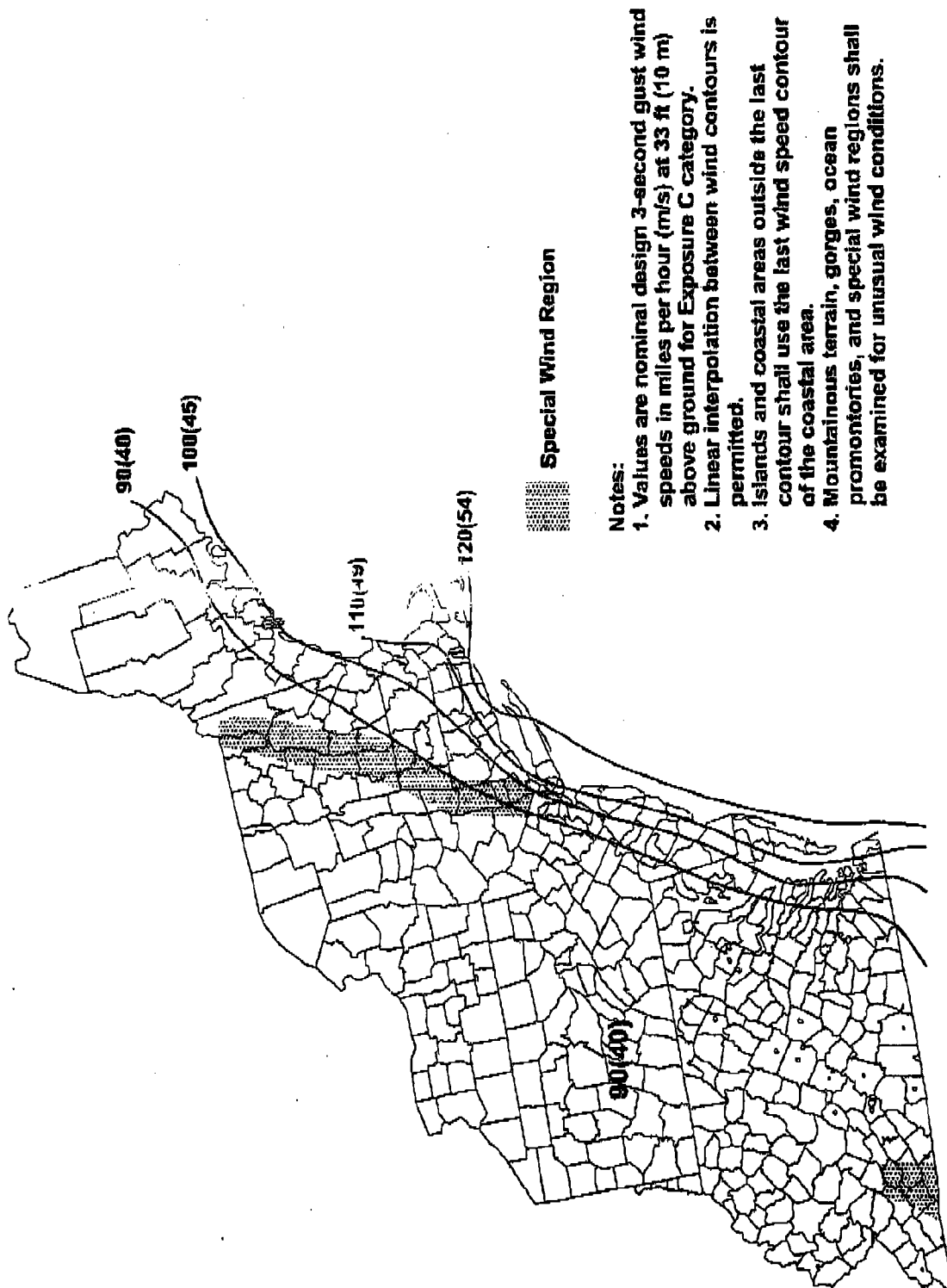


FIGURE 6-1c
BASIC WIND SPEED — MID AND NORTHERN ATLANTIC HURRICANE COASTLINE

STRUCTURAL DESIGN

Speeds determined by the local jurisdiction shall be in accordance with Section 6.5.4 of ASCE 7.

In nonhurricane-prone regions, when the basic wind speed is estimated from regional climatic data, the basic wind speed shall be not less than the wind speed associated with an annual probability of 0.02 (50-year mean recurrence interval), and the estimate shall be adjusted for equivalence to a 3-second gust wind speed at 33 feet (10 m) above ground in exposure Category C. The data analysis shall be performed in accordance with Section 6.5.4 of ASCE 7.

1609.3.1 Wind speed conversion. When required, the 3-second gust wind velocities of Figure 1609 shall be converted to fastest-mile wind velocities using Table 1609.3.1.

1609.4 Exposure category. For each wind direction considered, an exposure category that adequately reflects the characteristics of ground surface irregularities shall be determined for the site at which the building or structure is to be constructed. For a site located in the transition zone between categories, the category resulting in the largest wind forces shall apply. Account shall be taken of variations in ground surface roughness that arise from natural topography and vegetation as well as from constructed features. For any given wind direction, the exposure in which a specific building or other structure is sited shall be assessed as being one of the following categories. When applying the simplified wind load method of Section 1609.6, a single exposure category shall be used based upon the most restrictive for any given wind direction.

1. **Exposure A.** This exposure category is no longer used in ASCE 7.
2. **Exposure B.** Urban and suburban areas, wooded areas or other terrain with numerous closely spaced obstructions having the size of single-family dwellings or larger. Exposure B shall be assumed unless the site meets the definition of another type of exposure.
3. **Exposure C.** Open terrain with scattered obstructions, including surface undulations or other irregularities, having heights generally less than 30 feet (9144 mm) extending more than 1,500 feet (457.2 m) from the building site in any quadrant. This exposure shall also apply to any building located within Exposure B-type terrain where the building is directly adjacent to open areas of Exposure C-type terrain in any quadrant for a distance of more than 600 feet (182.9 m). This category includes flat open

country, grasslands and shorelines in hurricane-prone regions.

4. **Exposure D.** Flat, unobstructed areas exposed to wind flowing over open water (excluding shorelines in hurricane-prone regions) for a distance of at least 1 mile (1.61 km). Shorelines in Exposure D include inland waterways, the Great Lakes and coastal areas of California, Oregon, Washington and Alaska. This exposure shall apply only to those buildings and other structures exposed to the wind coming from over the water. Exposure D extends inland from the shoreline a distance of 1,500 feet (460 m) or 10 times the height of the building or structure, whichever is greater.

1609.5 Importance factor. Buildings and other structures shall be assigned a wind load importance factor, I_w , in accordance with Table 1604.5.

1609.6 Simplified wind load method.

1609.6.1 Scope. The procedures in Section 1609.6 shall be permitted to be used for determining and applying wind pressures in the design of enclosed buildings with flat, gabled and hipped roofs and having a mean roof height not exceeding the least horizontal dimension or 60 feet (18 288 mm), whichever is less, subject to the limitations of Sections 1609.6.1.1 and 1609.6.1.2. If a building qualifies only under Section 1609.6.1.2 for design of its components and cladding, then its main windforce-resisting system shall be designed in accordance with Section 1609.1.1.

Exception: The provisions of Section 1609.6 shall not apply to buildings sited on the upper half of an isolated hill or escarpment meeting all of the following conditions:

1. The hill or escarpment is 60 feet (18 288 mm) or higher if located in Exposure B or 30 feet (9144 mm) or higher if located in Exposure C.
2. The maximum average slope of the hill exceeds 10 percent.
3. The hill or escarpment is unobstructed upwind by other such topographic features for a distance from the high point of 50 times the height of the hill or 1 mile (1.61 km), whichever is less.

TABLE 1609.3.1
EQUIVALENT BASIC WIND SPEEDS^{a,b}

V_{3s}	85	90	100	105	110	120	125	130	140	145	150	160	170
V_{fm}	70	75	80	85	90	100	105	110	120	125	130	140	150

For St: 1 mile per hour = 0.44 m/s.

a. Linear interpolation is permitted.

b. V_{3s} is the 3-second gust wind speed (mph).

c. V_{fm} is the fastest mile wind speed (mph).

CHURCHILL

Consulting Engineers

344 North Route 73, Berlin, NJ 08009
Phone (856) 767-6901 Fax (856) 767-0272

JOB AL05020-011

SHEET NO. _____ OF _____

CALCULATED BY PHS DATE 11/9/05

CHECKED BY _____ DATE _____

SCALE 120-40120-40CLEAN COUNTY80'Design V = 40 MPA (110 3 SEC GUST)24" SQ PANEL ANTENNA

$$G_h = .65 + \frac{.6}{(1/33)^{1/7}} = 1.179$$

$$F = .00256 V^2 \left(\frac{F_z}{33} \right)^{2/7} C_{FA} C_h = 24.44 \left(\frac{F_z}{33} \right)^{2/7} C_{FA}$$

SEC.	Z	C _{FA}	F	P _a	d	W
<u>III</u>	70	11.21	340	9.55	2.31	192
<u>IV</u>	50	13.88	382	14.47	2.887	243
<u>V</u>	33	16.08	393	18.57	3.464	286
<u>VI</u>	33	20.089	491	26.43	4.041	381

$$F_{ant} = 24.44 \left(\frac{81}{33} \right)^{2/7} 4 \text{ ft}$$

$$= 127 \text{ lbs}$$

KD. BY PHS DATE 11/9/05

Ocean Co.

JOB NO. AL05020-011120-40-80 STD
DESIGN V = 90 mph (IBC 110 3 SEC GUST)

TIA-222-F

	TWR. SECT.	100MPH WIND LOADING				ALLOW P	ALLOW V	REMARKS
		ΣH_a	M_a	M_t	P_{att}			
200					KIPS	KIPS		
180								
160								
140								
120								
100								
80	ANT 81' → 127							
60	TOWER 70' → 340 III	467	6067		2.63	9.55		
40	TOWER 50 → 382 IV	844	19277		6.18	14.47		
20	TOWER 30 → 393 V	1242	40137		11.59	18.57		
0	TOWER → 491 VI	1733	69887		17.29	26.43		

$$M_{des} = 26.43 \times 4.041 = 107 \text{ ft-k}$$

P.H.S.

SUBJECT: SQUARE TOWER FOUNDATION - SOIL PRESSURE W/UP LIFT

3

KNOWN: M - FT.KIPS W - KIPS $e = \frac{M}{W}$ - FT.

SELECT b - FT. CALCULATE $f = 2.3284 \%$

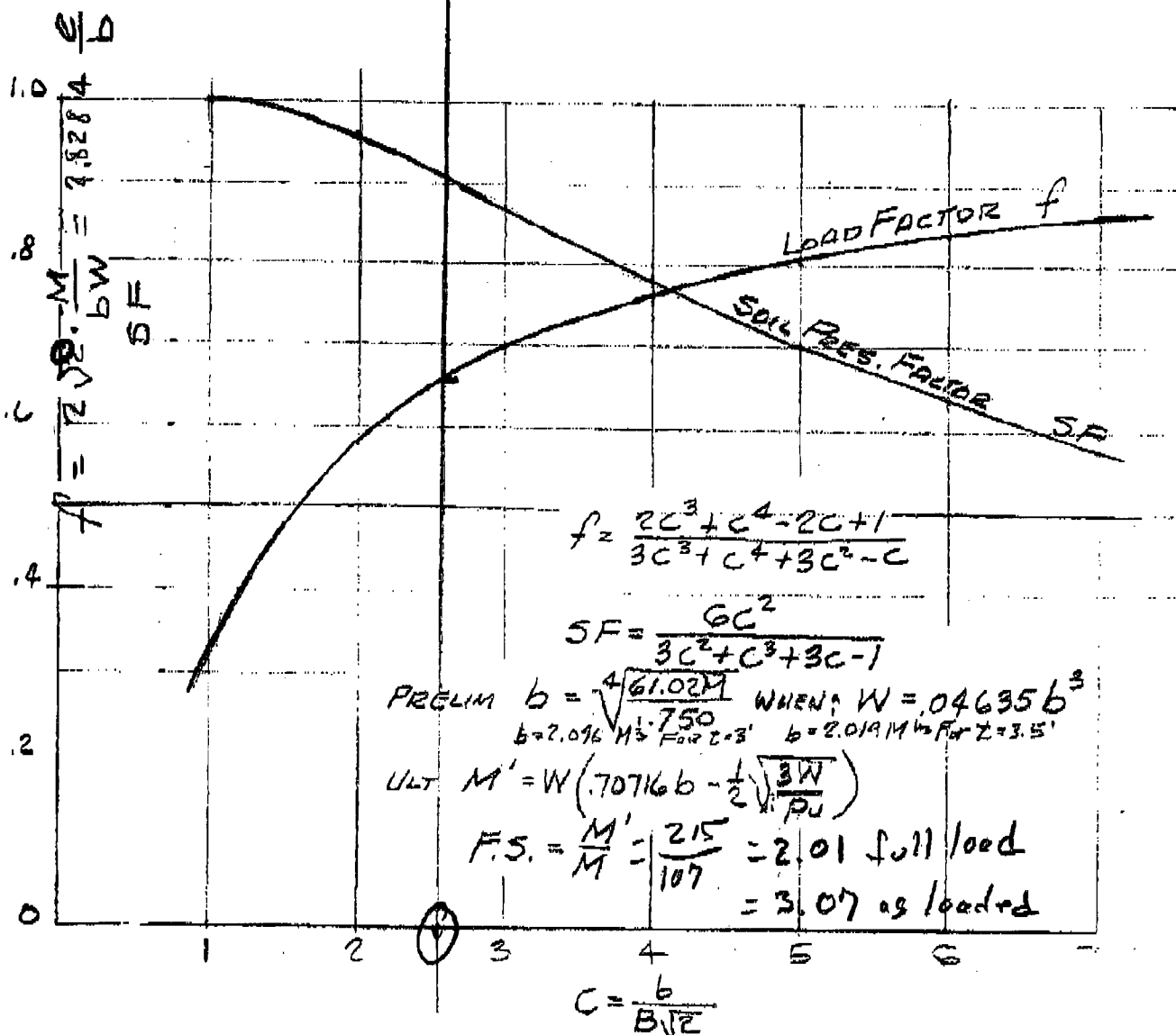
FIND C ON GRAPH & READ SF

CALCULATE: $p_1 = \frac{W}{b^2} \times SF$ - KIPS/S.F. $p_2 = Cp_1$

MAX. SOIL PRES. $p = p_1 + p_2$

M	b	W	$e = \frac{M}{W}$	f	C	SF	p_1	p_2	P
107	10'	46.1	2.321	1.56	2.55	.91	.419	1.07	1.489

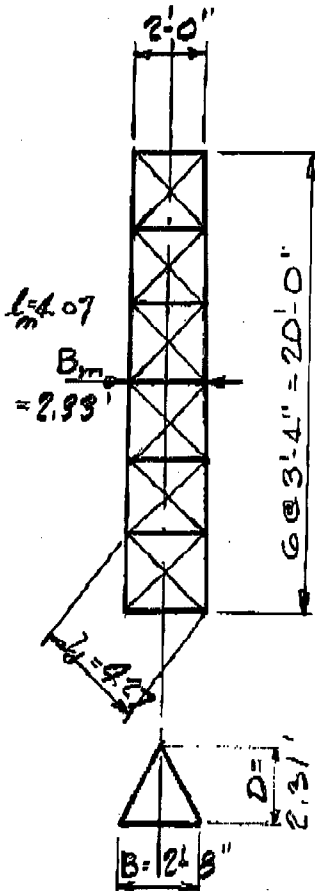
$$10^2 \times 3 \times .15 + 1.1 =$$



BY: A.H.S.
DATE: 11/19/89

ALBERT H. STUBER, PE
CONSULTING ENGINEER
SUBJECT: TOWER DESIGN DATA
STANDARD WT

SH.# 5 of
JOB #

SECTION NO.: III

LEGS: 1" STD. PIPE OD: 1.315 WT.: 1.68
A: 494 r: .421
DIAG: 3/8" R00 OD: .375 WT.: .376
A: 1105
STRUT: 1/2" STD. PIPE OD: .840 WT.: 0.85
A: 250 r: .261

EXPOSED AREA

LEG: $2 \times 20 \times 1.315 / 12 =$ 4.38
DIAG: $6 \times 2 \times 4.07 \times .375 / 12 =$ 1.53
STRUTS: $6 \times 1 \times 2.33 \times .840 / 12 =$.98
TOTAL NO ICE: A_r 6.89

EXPOSED AREA WITH ICE LOAD= 1/4":

LEGS: $2 \times 20 \times .5 / 12 =$ 1.67DIAG: $6 \times 2 \times .5 \times 4.07 / 12 = 1/2$ 2.03STRUTS: $6 \times 1 \times .5 \times 2.33 / 12 = 1/4$.58TOTAL ICE AREA: 1/4" ICE 4.28
1/2" ICE 8.56EXPOSED AREA WITH ICE: A_r 1/4" 11.17
1/2" 15.45

ALLOWABLE LOADS IN MEMBERS:

LEG: $k l / r = 87.4$ $k = .92$ $l = 40$ $D = 2.31$ ft. $F_a = 1.333 \times 14.50 = 19.33$ ksi $P_a = 19.33 \times .494 = 9.55$ kips $M_a = 9.55 \times 2.31 = 22.1$ ft.kipsDIAG: $T_a = 24 \times 1.33 \times 1105 = 3.536$ kips tension
 $l = 4.27$ ft.ALLOW. HOR. = $2 \cos 30 \times 3.536 \times 2.67 / 4.27 = 3.830$ kips SHEARSTRUTS: $k l / r = 86$ $k = .7$ $l = 32$ $F_a = 1.333 \times 14.67 = 19.56$ ksi $P_a = 19.56 \times .25 = 4.89$ kipsALLOW. HOR. = $4.89 \times 2 \cos 30 = 8.47$ kips SHEARMAX. M = 22.1 ft.kipsMAX. H = 3.830 kips

ALBERT H. STUBER, PE
CONSULTING ENGINEERBY: A.H.S.
DATE: 11/19/89SUBJECT: TOWER DESIGN DATA
STANDARD WT.SH.# 6 of
JOB # SECTION NO.: III

WEIGHT OF 20 FT. SECTION:

LEGS: $3 \times 20 \times 1.68 =$
DIAGS: $6 \times 6 \times 4.07 \times .376 =$
STRUTS: $6 \times 3 \times 2.33 \times 0.85 =$ 101
55
36
192

TOTAL WEIGHT SECTION

WEIGHT OF ICE: 1/2"

LEGS: $3 \times 20 \times 3.1416 \times (.375 + .5) \times .5 \times 56 / 144 = 36.65(d + .5)$
DIAGS: $6 \times 6 \times 4.07 \times 3.1416 \times (.375 + .5) \times .5 \times 56 / 144 = 21.99(d + .5)1$
STRUTS: $6 \times 3 \times 2.33 \times 3.1416 \times (.84 + .5) \times .5 \times 56 / 144 = 11.0(d + .5)1$
TOTAL WEIGHT OF ICE1/2"
1/4"67
78
34
179
371TOTAL WEIGHT WITH 1/2" ICE
1/4" ICE89
281SOLIDITY RATIO $e = A_r / A_g$ WHERE $A_g = 20 B_m$

$$C_f = 3.4e^2 - 4.7e + 3.4$$

$$A_e = A_r R_r \quad R_r = .51e^2 + .57$$

	BARE TWR.	+1/4" ICE	+1/2" ICE
A_r	6.89	11.17	15.45
B_m	2.44	2.48	2.52
A_g	48.79	49.63	50.46
e	.1412	.2251	.3062
C_f	2.804	2.514	2.280
R_r	.580	.596	.618
A_e	4.00	6.66	9.55
$C_f A_e$	11.21	16.73	21.76
W	192	281	371

D 2.31

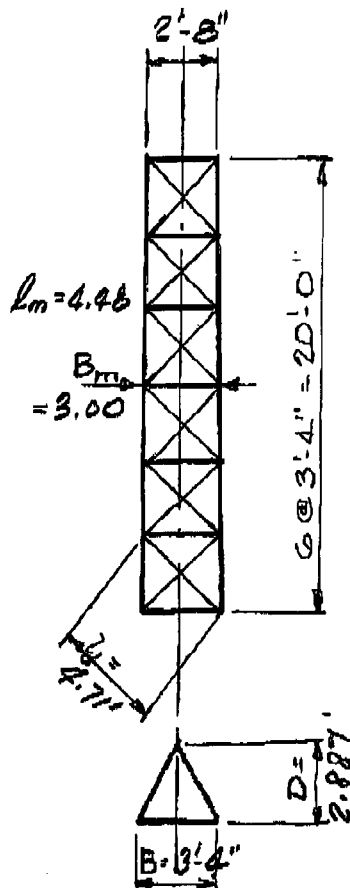
FILE *AC

+BC

BY: A.H.S.
DATE: 11/20/89

ALBERT H. STUBBS, PE
CONSULTING ENGINEER
SUBJECT: TOWER DESIGN DATA
STANDARD WT.

SH.# 7 of
JOB # 1

SECTION NO.: IV

LEGS: $\frac{1}{2}$ STD PIPE OD: 1.660 WT.: 2.27
A: .669 r: .540
DIAG: $\frac{3}{8}$ ROD OD: .375 WT.: .376
A: .1105
STRUT: $\frac{1}{2}$ STD PIPE OD: .840 WT.: 0.85
A: .250 r: .261

EXPOSED AREA

LEG: $2 \times 20 \times 1.660 / 12 =$ 5.53

DIAG: $6 \times 2 \times 4.48 \times .375 / 12 =$ 1.68

STRUTS: $6 \times 1 \times 3.00 \times .840 / 12 =$ 1.26

TOTAL NO ICE: A_r 8.47

EXPOSED AREA WITH ICE LOAD = 1/4":

LEGS: $2 \times 20 \times .5 / 12 =$ 1.67

DIAG: $6 \times 2 \times .5 \times 4.48 / 12 = 1/2$ 2.24

STRUTS: $6 \times 1 \times .5 \times 3.00 / 12 = 1/4$ 0.75

TOTAL ICE AREA: 1/4" ICE 4.66

1/2" ICE 9.32

EXPOSED AREA WITH ICE: A_r 1/4" 13.13

1/2" 17.79

ALLOWABLE LOADS IN MEMBERS:

LEG: $k l / r = 69$
 $k = .93, l = 40$

$D = 2.887$ ft.

$F_a = 1.333 \times 16.53 = 22.04$ ksi

$P_a = .669 \times 22.04 = 14.74$ kips

$M_a = 14.74 \times 2.887 = 42.57$ ft.kips

DIAG: $T_a = 24 \times 1.33 \times .1105 = 3.536$ kips tension
 $l = 4.71$ ft.

ALLOW. HOR. = $2 \cos 30 \times 3.536 \times 3.233 / 14.71 = 4.33$ kips SHEAR

STRUTS: $k l / r = 107$
 $k = .7$
 $l = 40$

$F_a = 1.333 \times 12.07 = 16.09$ ksi

$P_a = 16.09 \times .250 = 4.02$ kips

ALLOW. HOR. = $4.02 \times 2 \cos 30 = 6.97$ kips SHEAR

MAX. M = 42.57 kips

MAX. H = 4.330 kips

ALBERT H. STUBER, PE
CONSULTING ENGINEER

BY: AHS
DATE: 11/20/89

SUBJECT: TOWER DESIGN DATA
STANDARD WT.

SH.# 8 of
JOB #

SECTION NO.: IV

WEIGHT OF 20 FT. SECTION:

LEGS: $3 \times 20 \times 2.27 =$
DIAGS: $6 \times 6 \times 4.48 \times .376 =$
STRUTS: $6 \times 3 \times 3.00 \times .85 =$

136
61
46
243

TOTAL WEIGHT SECTION

WEIGHT OF ICE: $1/2"$

LEGS: $3 \times 20 \times 3.1416 \times (.466 + .5) \times .5 \times 56 / 144 = 36.65(d + .5)$
DIAGS: $6 \times 6 \times 4.48 \times 3.1416 \times (.375 + .5) \times .5 \times 56 / 144 = 21.99(d + .5)$
STRUTS: $6 \times 3 \times 3.00 \times 3.1416 \times (.844 + .5) \times .5 \times 56 / 144 = 11.0(d + .5)$
TOTAL WEIGHT OF ICE $1/2"$

79
86
44
209
103
452
346

TOTAL WEIGHT WITH $1/2"$ ICE
 $1/4"$ ICE

SOLIDITY RATIO $e = A_r / A_g$ WHERE $A_g = 20 B_m$

$$C_f = 3.4e^2 - 4.7e + 3.4$$

$$A_e = A_r R_r \quad R_r = .51e^2 + .57$$

	BARE TWR.	+1/4" ICE	+1/2" ICE
A_r	8.47	13.13	17.79
B_m	3.14	3.18	3.22
A_g	62.77	63.60	64.43
e	.135	.206	.276
C_f	2.828	2.575	2.362
R_r	.579	.592	.609
A_e	4.91	7.77	10.83
$C_f A_e$	13.88	20.00	25.59
W	243	346	452

D 2.887

FILE +AD

+BD

2.75
522
3.842
10.24

BY: AMS
DATE: 11/29/89

ALBERT H. STUBBE, PE
CONSULTING ENGINEER
SUBJECT: TOWER DESIGN DATA
STANDARD WT.

SH.# 10 of
JOB #

SECTION NO.: V

WEIGHT OF 20 FT. SECTION:

LEGS: $3 \times 20 \times 2.72 =$ 163
DIAGS: $6 \times 6 \times .374 \times 4.96 =$ 67
STRUTS: $6 \times 3 \times .85 \times 3.67 =$ 56
TOTAL WEIGHT SECTION 286

WEIGHT OF ICE: 1/2"

LEGS: $3 \times 20 \times 3.1416 \times (.90 + .5) \times .5 \times 56 / 144 = 36.65(d + .5)$
DIAGS: $6 \times 6 \times 4.96 \times 3.1416 \times (.375 + .5) \times .5 \times 56 / 144 = 21.99(d + .5)$
STRUTS: $6 \times 3 \times 3.67 \times 3.1416 \times (.84 + .5) \times .5 \times 56 / 144 = 11.0(d + .5)$
TOTAL WEIGHT OF ICE 1/2" 88
1/4" 95
118 54
523
404

SOLIDITY RATIO $e = A_r / A_g$ WHERE $A_g = 20 B_m$

$$C_f = 3.4e^2 - 4.7e + 3.4$$

$$A_e = A_r R_r \quad R_r = .51e^2 + .57$$

	BARE TWR.	+1/4" ICE	+1/2" ICE
A_r	9.73	14.80	19.87
B_m	3.83	3.87	3.91
A_g	76.57	77.4	78.23
e	0.1270	.1912	.2540
C_f	2.858	2.626	2.426
R_r	0.578	.589	.603
A_e	5.63	8.72	11.98
$C_f A_e$	16.08	22.88	29.06
W	286	404	523

D 3.464
FILE +AE

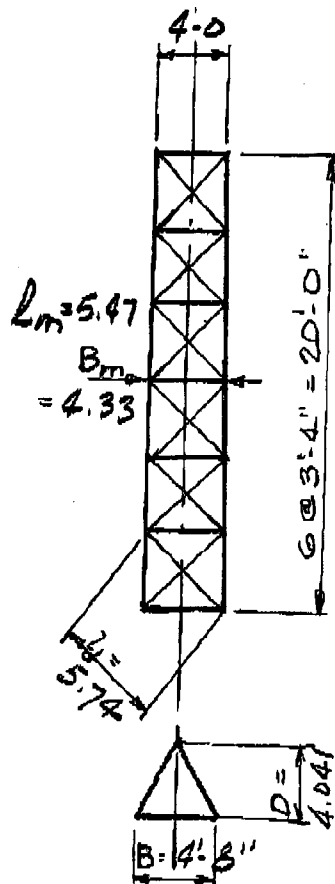
+BE

BY: ALLS
DATE: 11/27/89

ALBERT H. STUBBE, PE
CONSULTING ENGINEER
SUBJECT: TOWER DESIGN DATA
STANDARD

SH.# 11 of
JOB #

SECTION NO.: VI



LEGS: 2" STD PIPE OD: 2.375 WT.: 3.65
A: 1.07 r: .787

DIAG: 3/8 ROD OD: .375 WT.: .376
A: .1105

STRUT: 3/4 STD PIPE OD: 1.050 WT.: 1.13
A: .333 r: .334

EXPOSED AREA

LEG: $2 \times 20 \times 2.375 / 12 = 7.92$

DIAG: $6 \times 2 \times 5.47 \times .375 / 12 = 2.05$

STRUTS: $6 \times 1 \times 4.33 \times 1.05 / 12 = 2.27$

TOTAL NO ICE: A_r 12.27

EXPOSED AREA WITH ICE LOAD= 1/4":

LEGS: $2 \times 20 \times .5 / 12 = 1.67$

DIAG: $6 \times 2 \times .5 \times 5.47 / 12 = 2.73$

STRUTS: $6 \times 1 \times .5 \times 4.33 / 12 = 1.08$

TOTAL ICE AREA: 1/4" ICE 1.08
1/2" ICE 5.48

EXPOSED AREA WITH ICE: A_r 1/4" 10.96
1/2" 17.76

ALLOWABLE LOADS IN MEMBERS:

LEG: $k l / r = 48$
 $k = .95, l = 40$

$D = 4.041$ ft.

$F_a = 1.333 \times 18.58 = 24.71$ ksi

$P_a = 24.71 \times 1.07 = 26.43$ kips

$M_a = 26.43 \times 4.041 = 106.8$ ft.kips

DIAG: $T_a = 24 \times 1.33 \times .1105 = 3.536$ kips tension
 $l = 5.74$ ft.

ALLOW. HOR. = $2 \cos 30 \times 3.536 \times 4.67 / 5.74 = 4.983$ kips SHEAR

STRUTS: $k l / r = 117$
 $k = .7$
 $l = 56$

$F_a = 1.333 \times 10.71 = 14.28$ ksi

$P_a = 14.28 \times .355 = 4.755$ kips

ALLOW. HOR. = $4.755 \times 2 \cos 30 = 8.24$ kips SHEAR

MAX. M = 106.8 kips

MAX. H = 4.755 kips

BY: AMS
DATE: 11/27/89

ALBERT N. STUBER, PE
CONSULTING ENGINEER
SUBJECT: TOWER DESIGN DATA
STANDARD

SH.# 12 of
JOB #

SECTION NO.: VI

WEIGHT OF 20 FT. SECTION:

LEGS: $3 \times 20 \times 3.65 =$
DIAGS: $6 \times 6 \times 5.47 \times .376 =$
STRUTS: $6 \times 3 \times 4.33 \times .113 =$

219
74
88

381

TOTAL WEIGHT SECTION

WEIGHT OF ICE: $1/2"$

LEGS: $3 \times 20 \times 3.1416 \times (2.375 + .5) \times .5 \times 56 / 144 = 36.65(d + .5)$
DIAGS: $6 \times 6 \times 5.47 \times 3.1416 \times (.375 + .5) \times .5 \times 56 / 144 = 21.99(d + .5)1$
STRUTS: $6 \times 3 \times 4.33 \times 3.1416 \times (.1050 + .5) \times .5 \times 56 / 144 = 11.0(d + .5)1$
TOTAL WEIGHT OF ICE

$1/2"$
 $1/4"$

105
105
74

284

142

635

TOTAL WEIGHT WITH $1/2"$ ICE
 $1/4"$ ICE

443

SOLIDITY RATIO $e = A_r / A_g$ WHERE $A_g = 20 B_m$

$$C_f = 3.4e^2 - 4.7e + 3.4$$

$$A_e = A_r R_r \quad R_r = .51e^2 + .57$$

	BARE TWR.	+1/4" ICE	+1/2" ICE
A_r	12.27	17.76	23.23
B_m	4.53	4.57	4.61
A_g	90.59	91.39	92.22
e	.135	.1943	.2519
C_f	2.826	2.615	2.432
R_r	.579	.589	.602
A_e	7.109	10.47	13.99
$C_f A_e$	20.089	27.37	34.08
W	381	493	635

D 4.041

FILE ΔF

+ B.F