

**CITY OF FREEPORT
PLANNING COMMISSION
Tuesday, February 24, 2015, 6:00 P.M.
Freeport Police Department, Municipal Courtroom
430 North Brazosport Boulevard
Freeport, Texas**

AGENDA

Edward Garcia, Chairman
Tobey Davenport
Royce McCoy

Lesa Girouard
Eddie Virgil

NOTICE is hereby given that the Planning Commission of the City of Freeport, Texas will meet in a regular meeting on **Tuesday, February 24, 2015 at 6:00 P.M.** at the Freeport Police Department, Municipal Courtroom, 430 North Brazosport Boulevard, Freeport, Texas to discuss the following:

1. Open Meeting.
2. Invocation.
3. Approval of the Minutes for February 3rd and 17th, 2015 Called Meetings.
4. Discuss/consider making a recommendation to the City Council to schedule a Joint Public Hearing to grant a Specific Use Permit (SUP) to Kimley-Horn and Associates for Verizon Wireless to erect a new 151' High, Monopole, Telecommunication Tower on portion of the property legally described as:
A0049 A CALVIT BC C DIV 14, 101B.526.527B, 7.2 ACRES
Locally known as 2121 Zapata Road.
5. Consideration of approving and signing a re-plat for Robert and Linda Fox, on Lots 4 and 5, Block 102, Freeport Townsite, Recorded in Volume 2, Page 95 of the Brazoria County Plat Records in the S.F. Austin Survey Abstract 32, City of Freeport, Brazoria County, Texas, dated January 2015. Locally known as 819 W. 5th Street.
6. Discuss/consider a request by Ms. Laura Tolar (1709 N. Ave. G), to change traffic signs at City of Freeport Streets; Adding "Stop" signs on Wharton at Ave. "H" (to

replace Yield signs), and move these "Yield" signs to intersection of Ave. "I" and Wharton to slow down the traffic.

7. Presentation by Mrs. Jennifer Hawkins, the Director of Freeport Economic Development Corporation (EDC) on current Development Projects within and around the City.
8. Adjourn.

NOTE: ITEMS NOT NECESSARILY DISCUSSED IN THE ORDER THEY APPEAR ON THE AGENDA. THE PLANNING COMMISSION, AT ITS DISCRETION, MAY TAKE ACTION ON ANY OR ALL OF THE ITEMS LISTED.

I, Delia Munoz, City Secretary, City of Freeport, Texas, hereby certify that this Agenda was posted on the official bulletin board/glass door of City Hall facing the rear parking lot of the building with 24-hour access at 200 West 2nd Street, Freeport, Texas on or before **Friday, February 20, 2015 at 5:00 P.M.**

Delia Munoz, City Secretary
City of Freeport, Texas

COUNTY OF BRAZORIA)(

CITY OF FREEPORT)(

BE IT REMEMBERED that the Planning and Traffic Commission of the City of Freeport, Texas met in a called meeting on, **Tuesday, February 3rd, 2015 at 6:00 P.M.** at the Police Department, Municipal Court Room, 430 North Brazosport Boulevard, Freeport, Texas to discuss the following:

Planning Commission:

**Edward Garcia – Chairman
Tobey Davenport
Royce McCoy
Lesa Girouard
Eddie Virgil**

Staff: Kola Olayiwola, Building & Code Official
Wallace Shaw, City Attorney

Guests: David L Hennig
Cory Mc Minn
Simon Virgil

Open Meeting.

There being a quorum Mr. Edward Garcia called the meeting to order at 6:00 p.m.

Invocation.

Mr. Wallace Shaw opened the meeting with a prayer.

Approval of the Minutes for January 27th, 2015 Meeting.

On a motion by Mrs. Eddie Virgil, seconded by Mrs. Lesa Girouard, with all present voting "Aye", the minutes of January 27th, 2015 were approved.

Presentation by Mr. David Henning and Mr. Corey McMinn on Temporary Housing.

The Presenters

Mr. Hennig: Gave a presentation on a proposal to bring in pre-manufactured modular structures to inside the City limits as temporary housing for Plant Workers. Each unit will be 16'W x 80'L (240SF) and consists of 4-6 dwelling units. Per his presentation, the critical items to make the plan work will include; availability of utilities (water & sewer) from the City, and a tract of land for lease to accommodate the proposed housing units. Revenues and proceeds from the venture will be split 50% each for Residential and Commercial Developments within the targeted zone. He also implied that facility may be structured as gated community for safety and security purposes.

Mr. McMinn/2nd Presenter: Followed up where Mr. Hennig stopped; He elaborated on the land/properties that they have looked at on the East End of Town, and the challenges they are facing due to multiple ownership. He asked P&Z Commissioners to show flexibility and make their proposal work. He argued that temporary housing is needed to make the plant workers stay and shop in Freeport districts.

The Planning Commission

Mr. McCoy: Sought clarifications on how this project will be different from Hotel & Motel that are already in the City. The response was that, Hotel/Motel is daily rental while the proposed Temporary Housing will be operated on Monthly rates.

Mrs. Girouard: Expresses concern on where these kinds of Temporary Housing are going to be placed. Being temporary in nature, she wants assurance about security. She clarified her position on the issue and why she accepted to serve on the P&Z Board. Her hop is to see good things happening in Freeport. As such, she is not fully onboard with the proposal and needs more information to make any recommendations to the City Council.

Mr. Garcia: Also asked where the project will be located on the East End of town. He is aware of the multiple land ownership- which may impede the Land Use options (SUP, PUD, and Variance) associated with the project. To move forward, he would like to see plans, specifications and investment reports. He also suggests that, the presenters get with the appropriate City staff, i.e. the Building & Code Official for guidance on code requirements and applicable City ordinances.

Mrs. Virgil: Shears the same sentiment with the P&Z Chairman and would also like to see more information on the proposed venture before making any recommendations to the City Council.

Mr. Davenport: Compared the proposed venture to the old Temporary Housing for Chemical Plants that existed way back then. He wants to know from the presenters- who else have this, and how are they being managed? In other words, he wants the presenters to do more research and come back to the P&Z Commission.

Adjourn.

Mr. Edward Garcia adjourned the meeting at 6:35 p.m.

These minutes read and approved this _____ day of _____, 2015.

Chairman Edward T. Garcia
City of Freeport, TX

City Secretary- Delia Munoz
City of Freeport, Texas

COUNTY OF BRAZORIA)(

CITY OF FREEPORT)(

BE IT REMEMBERED that the Planning and Traffic Commission of the City of Freeport, Texas met in a called meeting on, **Tuesday, February 17th, 2015 at 6:00 P.M.** at the Police Department, Municipal Court Conference Room, 430 North Brazosport Boulevard, Freeport, Texas to discuss the following:

Planning Commission:

**Edward Garcia – Chairman
Tobey Davenport
Royce McCoy
Lesa Girouard
Eddie Virgil**

Staff: Kola Olayiwola, Building & Code Official
Wallace Shaw, City Attorney (at Council Meeting)

Guests:
Simon Virgil

Open Meeting.

There being a quorum Mr. Edward Garcia called the meeting to order at 6:00 p.m.

Invocation.

Mr. Tobey Davenport opened the meeting with a prayer.

Consideration of approving the modified truck route in the City of Freeport

On a motion by Mr. Davenport, seconded by Mrs. Girouard, the Planning Commission unanimously voted not to approve the modified truck route in the City of Freeport.

The general conscientious of the Planning Commission is that no new data have been provided to the Commission to warrant the requested changes to the previously approved truck route.

Mr. Garcia (Chairman) added that, he was told that the Port of Freeport will work out Inter Local Agreement- that will address future maintenance of the roads that are included in the proposed revisions to the truck route.

Mr. Davenport read out his 10 points response titled "Why I don't want my tax dollars being used for maintenance on Terminal and East Eight as a truck route."

- 1) Route approved recently (less than 1yr I think).
- 2) No significant data is presented to warrant change.

- 3) Present truck route is 100% maintained by City (State in some areas), i.e., 288, 332 & 1495.
- 4) East 2nd has always been Commercial and has a concrete base (built as an extension of SH 36) and would be much cheaper to maintain than Terminal and East Eight.
- 5) Distance on Sycamore +/- 2.5 Blocks (not a major liability).
- 6) Terminal/East Eight too narrow and inadequate construction for 18 wheelers, this would be dangerous (no shoulder, etc.)
- 7) Port owns significant property in this area and someday will want it rezoned Commercial or Industrial.
- 8) Truck Route Benefits Port overwhelmingly.
- 9) Remaining residents quality of life negatively impacted.
- 10) Route should remain same unless Port signs a perpetual maintenance agreement with Freeport and files it in County Clerk's office.

In closing, the Chairman (Mr. Garcia) asked that, the Director for Freeport Economic Development Corporation (EDC) be invited to the next P&Z Meeting, slated for February 24th, 2015 to make a presentation to the Commission on all new Development Projects in the City. Mr. Garcia feels that, this will help the P&Z Commission in having a clear perspective of the Developments in and around the City.

Adjourn.

Mr. Edward Garcia adjourned the meeting at 6:15 p.m.

These minutes read and approved this _____ day of _____, 2015.

Chairman Edward T. Garcia
City of Freeport, TX

City Secretary- Delia Munoz
City of Freeport, Texas

City of Freeport
Building Department
Phone: 979-233-3526

For Office Use Only

Case Number: _____
Date Filed: _____
P & Z Date: _____
Council Date: _____

**Application for
Specific Use Permit**

1. Address or general location of site: 2121 Zapata St., Freeport TX

2. Subdivision	Block	Lots	Acres
<u>A0049 A Calvit BC</u>	<u>C DIV 14</u>	<u>101B.526.527B</u>	<u>7.2</u>

3. Current Zoning Classification: M-1

4. Proposed use of the site (please be specific): Installation of a new
151' monopole.

5. Reason for requesting a specific use permit: Seeking approval for
a communication tower.

I hereby certify that I am the owner or duly authorized agent of the owner, for the purposes of this application. The application fee of \$150.00 to cover the cost of this specific use permit application has been paid to the City of Freeport on _____, 20____. I also certify that I have been informed and understand the regulations regarding specific use permits as specified in the Zoning Ordinance of the City of Freeport. I understand it is necessary for me or my authorized agent to be present at both the Planning and Zoning Commission and the City Council public hearings.

Owner's Signature: _____

Owner's Name: _____

Address: _____

City, State, Zip: _____ Phone: _____

In lieu of representing this request myself as owner of the subject property, I hereby authorize the person designated below to act in the capacity as my agent for the application, processing, representation, and/or presentation of this request. The designated agent shall be the principal contact person with the City (and vice versa) in processing and responding to requirements, information or issues relative to this request.

Andrew Ballard

Signature of Owner

Andrew Ballard

Name Printed or Typed

Chick D. Lewis

Signature of Agent

Christine D. Lewis

Name Printed or Typed

Address of Agent: 3511 PINEMOUNT TR., ALB, HOUSTON, TX 77018

Agent's Phone Number: 713-254-6979

200 WEST SECOND STREET / FREEPORT, TEXAS 77541 / PHONE (979) 233-3520 / FAX (979) 233-2172

PERMIT APPLICATION

Applicant's Name: Melissa Mergajey / Agent - Kinley-Horn and Associates

Owners Name: TEBE LLC / contact: Andrew Ballard

Owners Address: 311 2121 Zapata Street, Freeport, TX 77541

JOB INFORMATION

Contractor's Name: TEBE

Work Location: 2121 Zapata Street, Freeport, TX 77541

Description of Job: Installation of a new 150' monopole tower (designed by others), Fibreband pre-manufactured equipment cabinet and equipment, new antennas and hybrid cables, and all associated work.

Valuation of Job: \$ 150,000.⁰⁰ Permit Fee: \$ 915.⁰⁰

Type of permits needed: Building Electrical Mechanical Plumbing
 Demolition House moving Safety

Phone numbers: Owner of Property (C) 979-452-1774, (O) 979-233-9002
andrew.ballard@ppi-america.com
Contractor TEBE

Plans turned in with application: Yes No
Type: Drawings Prints

Date of Application: 01 / 19 / 15

Applicants Signature: Melissa Mergajey / Agent
melissa.mergajey@kinley-horn.com

SPECIFIC-USE PERMIT SUBMISSION REQUIREMENTS

A. SUBMISSION REQUIREMENTS:

A submission of a specific-use permit to the Building Department shall consist of:

- Application packet including an application form and a signed copy of the submission requirements.
- A \$150 application fee.
- Required drawing(s) (see drawing requirements).

B. APPROVAL PROCESS:

- Submit a reproducible drawing(s) with an application to the Building Department, Freeport City Hall (200 West 2nd Street). Submitting the drawing(s) for review before the application deadline is encouraged in order to allow staff adequate time to review the submittal.
- Interdepartmental staff review (Site Review Committee) is conducted.
- Staff comments are returned to the owner or owner's representative.
- The corrected reproducible(s) is submitted to the Zoning Administrator and the case placed on the Planning and Zoning Commission's agenda for the appropriate meeting.
- Written notice of the public hearing before the Planning and Zoning Commission for the Specific-Use permit will be sent to owners of real property lying within Two Hundred feet (200') of the property upon which the Specific-Use permit is requested, as measured from the subject property inclusive of streets and rights-of-way. This notice will be given not less than Ten (10) days before the public hearing to such property owners as the ownership appears on the last approved City tax roll.
- A public hearing will be held by the Planning and Zoning Commission


(NOTE: THE PROCEDURE CONTINUES ONLY IF AN APPEAL IS REQUESTED.)

- An applicant may appeal the decision of the Planning and Zoning Commission to the City Council by filing an appeal in writing to the Building Department within Fifteen (15) days after the public hearing by the Planning and Zoning Commission.
- A public hearing is scheduled before the City Council. The Council may uphold, modify, or reject the decision of the Planning and Zoning Commission.

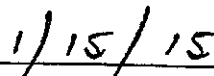
C. ADDITIONAL NOTES:

- Note 1: Application Withdrawal – Any request for withdrawal of an application must be submitted in writing to the Building Secretary. Once a request for a conditional use permit has been advertised and notification of the public hearing mailed, such request must be placed on a public hearing agenda whereby the appropriate body will consider and act on the request for withdrawal of the application at that time. The Planning and Zoning Commission is under no obligation to grant a request for withdrawal of the application, and may still act on the request as originally submitted. It should be understood that there will be no refunds.
- Note 2: Application Presentation – At the applicable Planning and Zoning Commission public hearing, an applicant shall have Fifteen (15) minutes to make a formal presentation of the project proposal. Due to the size and arrangement of the City Council Chambers, tripod-mounted opaque renderings generally prove to be an effective means of presentation. the use of slides is another means of visual aid for project presentations. the applicant shall assume full responsibility for providing a properly prepared and compatible slide carousel to staff prior to the public hearing. The use of transparencies on an overhead projector is another effective means of material presentation. If additional equipment is needed, it shall be the applicant's responsibility to provide or make the necessary arrangements.
- Note 3: Additional Information Submitted – Only the information which has been presented by the applicant at the Planning and Zoning Commission public hearing will be presented to the City Council at an appeal. Any additional information presented to the City Council which has not been previously submitted to and reviewed by the Planning and Zoning Commission will be referred by the City Council back to the Planning and Zoning Commission which may cause delays in action by the City Council.
- Note 4: Scheduling – The zoning application, required fees, and drawings are required to be presented to the Zoning Administrator as specified in the schedule of meetings.

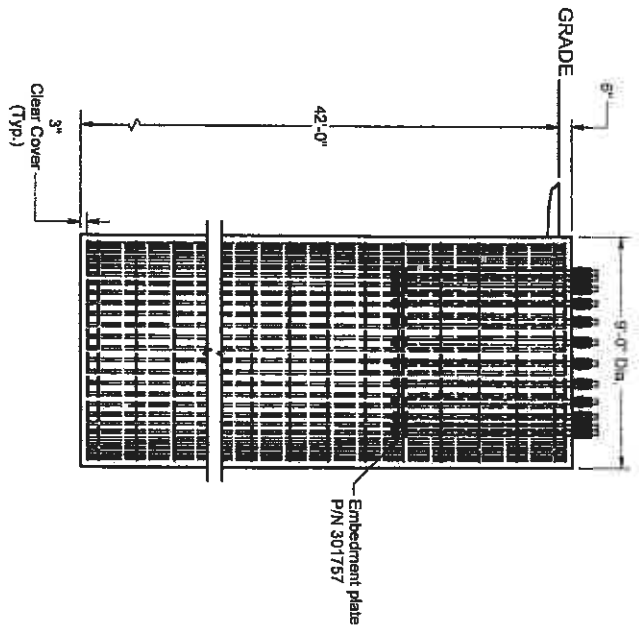
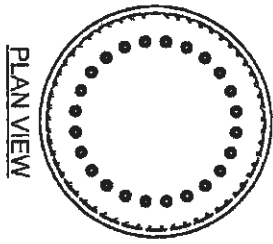
I acknowledge that I have read and understand the conditional use permit procedures and requirements as presented in this packet and by staff at the pre-application conference.



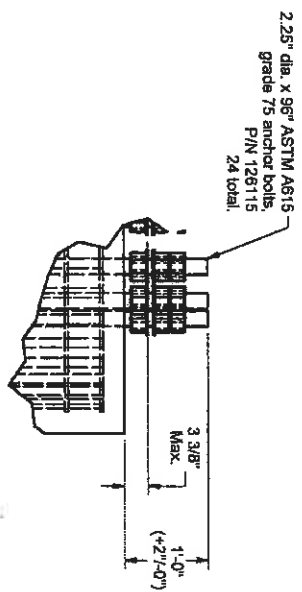
Signature of Applicant or Agent



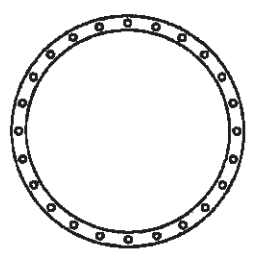
Date



MID-SECTION VIEW
 DRILLED PIER FOUNDATION
 (CONCRETE VOLUME: 100.1 CU. YD.
 TOTAL)



ANCHOR BOLT DETAIL



EMBEDMENT PLATE DETAIL

#11 Reinforcing bars,
 50d" long,
 Equally spaced around inside of ties,
 57 Total.

#4 Reinforcing ties,
 334.0" long before being bent into circle with
 102.00" outer diameter and 15.00" overlap.
 Top 2 ties and bottom 2 ties spaced at 5".
 Remainder of ties equally spaced at 17.63".
 34 Total.



Anchor Bolt Azimuth

REV	BY	DATE	DESCRIPTION

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 or transmitted in any form or by
 any means, electronic or mechanical,
 without our written consent.

ORIG. DATE: 2/6/2015
 DWG. NO.: 301755
 DWG. PROJ. V1.05
 SHEET: 1 OF 2

TITLE
 Verizon Wireless
 NTP 69" X 150"
 Velasco Heights - 180975
 Brazoria Co., TX

211 W. Washington St.
 Suite 100
 Dallas, TX 75201
 Phone: (972) 428-3832
 Fax: (972) 288-4530

STATE OF TEXAS
 JASON MARK LANSBERT
 PROFESSIONAL ENGINEER
 LICENSE NO. 99947
 FEB 9 2015


Foundation Notes

1. This foundation has been designed for the following reactions.
 Shear: 72.2 kips
 Moment: 8271.9 ft-kips
 Weight: 56.4 kips
2. Foundation design is based on the Geotechnical Report dated 01/05/2015, by Gerrontana & Associates, Inc.; Project No. 14-0536.
3. A field inspection shall be performed in order to verify that the actual site soil parameters meet or exceed the assumed soil parameters and that the depth of standard foundations are adequate based on the frost penetration and groundwater depth. Local frost depth must be no deeper than the bottom of the base foundation.
4. Reinforcement shall be deformed and conform to the requirements of ASTM A615 Grade 60 unless otherwise noted. Splices in reinforcement shall not be allowed unless otherwise noted.
5. Welding is prohibited on reinforcing steel and anchorage.
6. Structural backfill must be compacted in 6" loose lifts to a 95% of maximum dry density at optimum moisture content in accordance with ASTM D698. Backfill must be clean and free of organic and frozen soils and foreign materials. Fill should be compacted at water content within 2 percent of optimum.
7. Foundation designs assume level ground at lower site.
8. Loose material shall be removed from bottom of excavation prior to concrete placement.
9. Concrete cover from exposed surface of concrete to surface of reinforcement shall not be less than 3".
10. Concrete and reinforcement installation must conform to ACI 318, "Building Code Requirements for Structural Concrete."
11. Concrete shall develop a minimum compressive strength of 4000 psi in 28 days.
12. Concrete shall be placed as soon as practical after excavating to avoid disturbance of bearing and side wall surfaces.
13. Concrete contractor shall be responsible for properly aligning anchor bolts and materials before and after placing concrete, regardless of whether an anchor bolt template is provided.
14. Positive drainage shall be maintained during construction and throughout the life of the facility to minimize the potential for surface water infiltration.
15. It shall be the contractor's responsibility to locate and prevent damage to any existing underground utilities, foundations or other buried objects that might be damaged or interfered with during construction of the foundation.
16. Groundwater may be encountered at 5 feet bgs at this site based on the geotechnical investigation. Dewatering techniques should be anticipated below this depth.
17. Temporary steel casing or drilling slurry may be required for installation of the drilled piers.
18. Concrete shall be placed by tremie methods if there is more than 1 inch of water or drilling fluid at the bottom of the shaft excavation or if water infiltration exceeds a rise of 1/4" per minute.
19. A clean-out bucket should be used to remove any cuttings and loose soils in the bottom of the shaft excavation.

REV	BY	DATE	DESCRIPTION

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ORIG. DATE: 2/6/2015
 DWG. NO.: 301755
 DWG. PROJ.: V1.05
 SHEET: 2 OF 2

<p>TITLE: Verizon Wireless NTP 69" X 150' Verasco Heights - 180875 Brazoria Co., TX</p>	
<p>211 W. Washington St., Suite 2000 South Bend, IN 46801-1705 Bus: (574) 238-5832 Fax: (574) 238-5860</p>	<p>M <input type="checkbox"/> L <input type="checkbox"/> E <input type="checkbox"/></p>



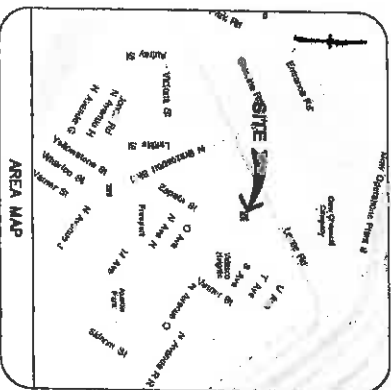
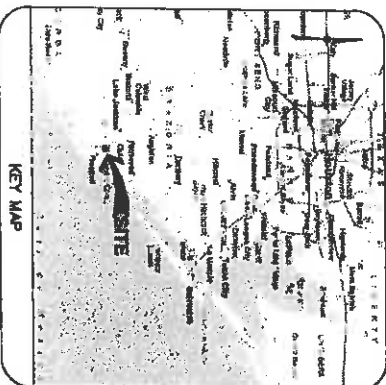
VELASCO HEIGHTS #180975 RAW LAND

SITE INFORMATION

VZM SITE NAME: VELASCO HEIGHTS
VZM PROJECT NUMBER: 20130883740
VZM SITE ADDRESS: 2121 ZAPATA STREET
 FREEPORT, TX 77541
COUNTY: BRAZORIA
JURISDICTION: CITY OF FREEPORT
SITE COORDINATES: N 26° 59' 02.38" (LAT)
 W 95° 22' 22.483" (LONG)
SITE TYPE: RAWLAND
STRUCTURE TYPE: MONOPOLE
TOWER HEIGHT: 151'
OVERALL TOWER HEIGHT: 151'
VZM ANTENNA CL HEIGHT: 147'
PROPERTY OWNER NAME: TANKSTAR, LLC
PROPERTY OWNER ADDRESS: 2121 ZAPATA STREET
 FREEPORT, TX 77541
POWER COMPANY: CENTERCOUNT ENERGY
 (800) 527-7142
TELEPHONE COMPANY: AT&T
 (800) 298-2020
CLIENT/HORN PROJECT NO.: TONY DAWSON

PROJECT SCOPE OF WORK:
 THIS PROJECT CONSISTS OF THE INSTALLATION OF NEW 151' MONOPOLE (DESIGNED BY OTHERS), PERFORM PRE-INSTALLED EQUIPMENT CABINET SAID W/GENERATOR, NEW ANTENNAS AND HYBRID CABLES AND ALL ASSOCIATED WORK.

DRAINAGE DIRECTIONS:
 DRAINAGE COULD BE TOWARD EAST BY GROVE O.E. TURN RIGHT ONTO FREEPORT ROAD AND TURN RIGHT ONTO S 41.8 ROAD NAME CHANGES TO TR-5 / FM-1680 0.2 MI. TURN RIGHT ONTO TR-209 E 0.2 MI. TURN RIGHT AND FOLLOW SENS FOR US-290 EAST 4.1 MI. TAKE RAEP RIGHT AND FOLLOW SENS FOR SMI HOUSTON TOLLWAY SOUTH - TOLL ROAD STOP FOR TOLL SOUTH 0.5 MI. KEEP RIGHT TO STAY ON THE SOUTH SIDE OF TOLLWAY / S SMI HOUSTON FROM W TOWARD FOLLOWING 0.6 MI. TURN RIGHT ONTO SOUTH HWY / TR-288 0.5 MI. TAKE RAEP LEFT AND FOLLOW SENS FROM TR-288 SOUTH 0.3 MI. TURN RIGHT ONTO TR-9 E BELLEVUE / S SMI HOUSTON FROM W TOWARD FOLLOWING 0.6 MI. TURN RIGHT ONTO SOUTH HWY / TR-288 0.5 MI. TAKE RAEP LEFT AND FOLLOW SENS FROM TR-288 SOUTH 0.3 MI. TURN RIGHT ONTO TR-288 S 7.4 MI. ROAD NAME CHANGES TO TR-288 0.4 MI. TURN LEFT ONTO ZAPATA ST 0.2 MI. TURN LEFT ONTO GAVEL DRAINWAY TAKE IMMEDIATE RIGHT, DRIVE THRU PARKING LOT ONTO GAVEL ROAD FOLLOW TO THE LEFT TO THE SITE.
 THE CONTRACTOR MUST VERIFY ALL FIELD MEASUREMENTS AND CONDITIONS PRIOR TO BID AND TO COMMENCEMENT OF CONSTRUCTION.



SHEET NO.	TITLE	SHEET INDEX	SHEET DESCRIPTION
T-1	TITLE SHEET		
	SURVEY		
	SUBMITTED SITE PLAN		
C-1	ENLARGED SITE PLAN		
C-2	FOUND AND EXISTING DETAILS		
C-3	TOWER ELEVATION AND DETAILS		
C-4	GENERAL NOTES AND SPECIFICATIONS		
C-5	MATERIALS DETAILS		
C-6	FOUNDATION DETAILS		
C-7	GROUNDING PLAN AND NOTES		
C-8	ELECTRICAL PLAN AND DETAILS		
E-1	ONE-LINE DIAGRAM AND DETAILS		
E-2	GROUNDING PLAN		
E-3	GROUNDING PLAN		
E-4	GENERAL NOTES AND ABBREVIATIONS		
N-1	GENERAL NOTES		
N-2	GENERAL NOTES AND SPECIFICATIONS		
N-3	GENERAL NOTES		
N-4	GENERAL NOTES		
N-5	GENERAL NOTES AND SPECIFICATIONS		

BUILDING CODES AND STANDARDS
 ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PREVENT WORK NOT CONFORMING TO THESE CODES.
BUILDING CODE: 2006 IRC
STRUCTURAL CODE: 2006 IRC
ELECTRICAL CODE: 2006 NEC
METRIC CODE: 2006 UMC
ELECTRIC CODE: 2006 NEC
ENERGY CODE: 2006 EEC
DESIGN WIND SPEED: 146 MPH



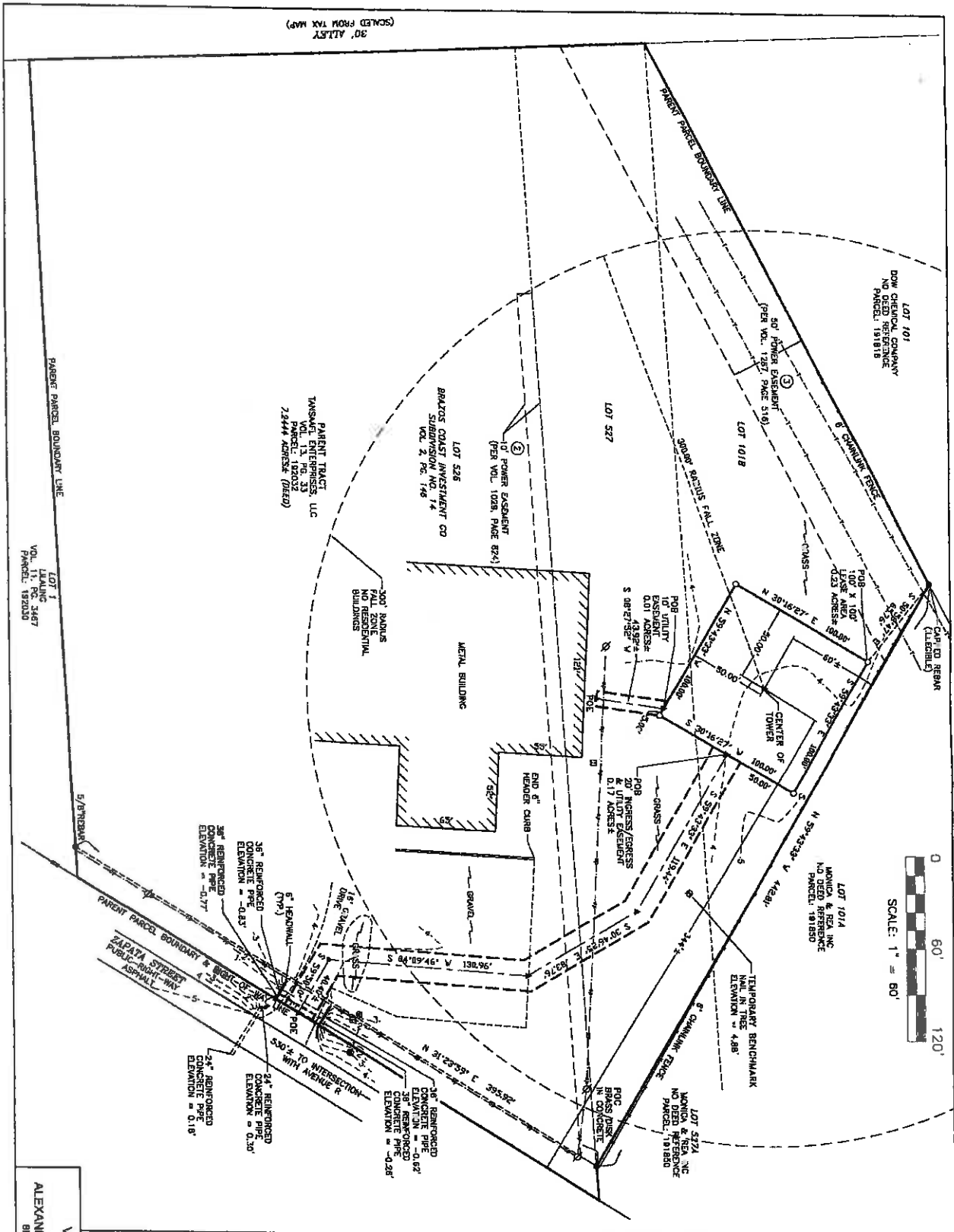
Verizon Wireless
 14123 CORDER RD.
 HOUSTON, TX 77064
 PH: (713) 507-1955

Kimley-Horn
 646 NORTH GRAMERCY STREET, SUITE 150
 TAMPA, FL 33602
 PHONE: (813) 833-1400
 WWW.KIMLEY-HORN.COM

VELASCO HEIGHTS
 #180975
 2121 ZAPATA STREET
 FREEPORT TX 77541
 BRAZORIA COUNTY

TITLE SHEET

T-1



TOWER INFO

LYNURVE: 28°59'03.291\"/>



LEGEND

- = 5/8\"/>

Kimley-Horn

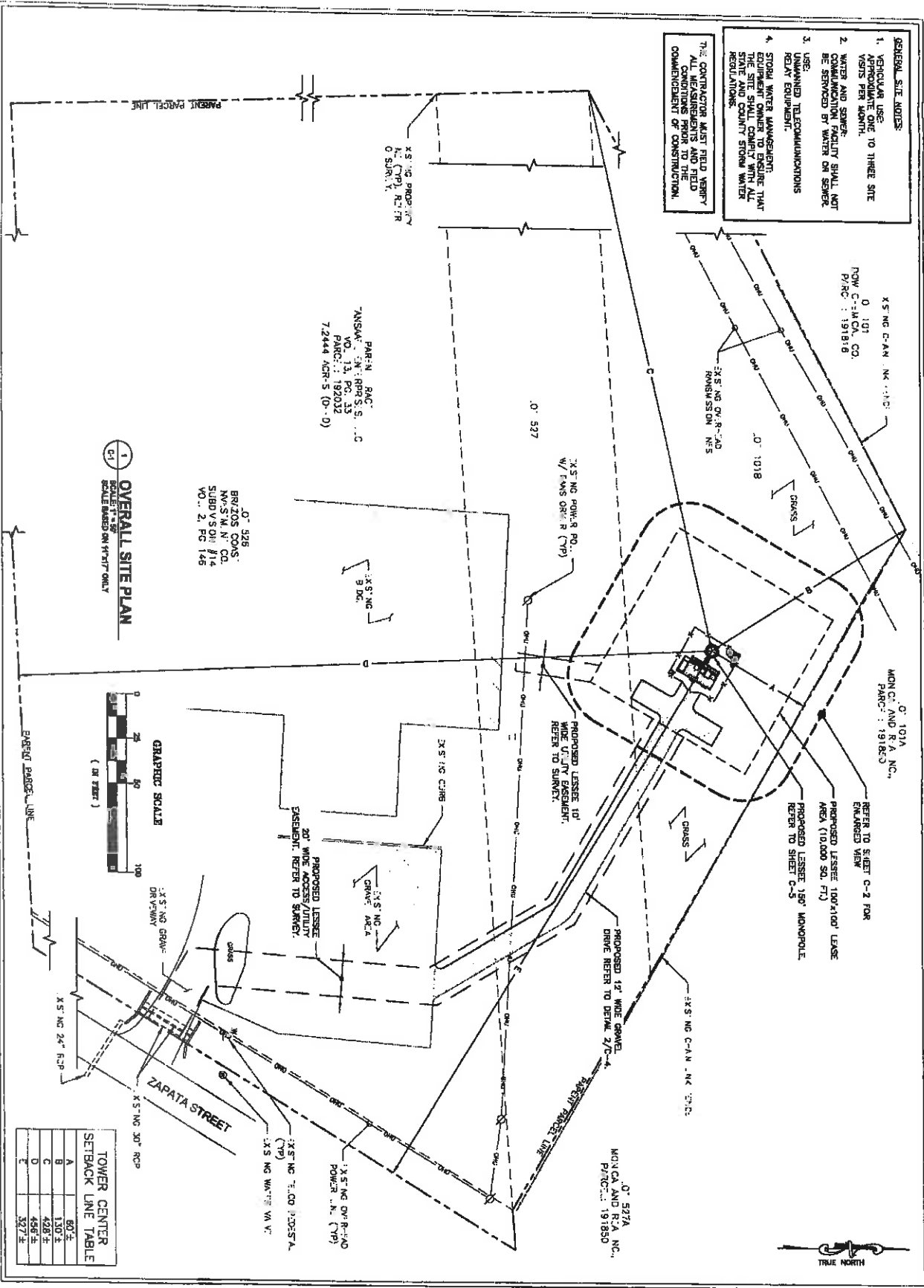
654 NORTH PARKWAY STREET
DALLAS, TEXAS 75202
WWW.KIMLEY-HORN.COM

VEASCO HEIGHTS
180875
ALEXANDER CALVIT LEAGUE, A-49
BRAZORIA COUNTY, TEXAS

NO.	REVISION	DATE
1	ISSUED FINAL SURVEY	12/30/14
2		
3		
4		
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10		
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29		
30		

30' ALLIEST
(SCALED FROM TAX MAP)

- GENERAL SITE NOTES:**
1. VEHICULAR USES APPROXIMATE ONE TO THREE SITE VISITS PER MONTH.
 2. WATER AND SEWER COMMUNICATION FACILITY SHALL NOT BE SERVICED BY WATER OR SEWER.
 3. USES UNLIMITED TELECOMMUNICATIONS RENTAL EQUIPMENT.
 4. STORM WATER MANAGEMENT: THE CONTRACTOR SHALL VERIFY THAT THE SITE SHALL COMPLY WITH ALL STATE AND COUNTY STORM WATER REGULATIONS.
- THE CONTRACTOR MUST FIELD VERIFY ALL MEASUREMENTS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.**



OVERALL SITE PLAN
 SCALE: 1" = 50'
 SCALE BASED ON 11/17/07 ONLY



TOWER CENTER SETBACK LINE TABLE

SETBACK	SETBACK
A	50'
B	100'
C	125'
D	150'
E	175'
F	200'



verizonwireless
 14123 CROSS RD.
 HOUSTON, TX 77095
 PH: (713) 507-1995

Kimley»Horn
 655 NORTH FRANKLIN STREET, SUITE 150
 HOUSTON, TEXAS 77002
 PHONE: (832) 828-1480
 WWW.KHLEI-HORN.COM

NO.	DATE	DESCRIPTION	BY	CHKD
1	04/27/14	ISSUED FOR REVIEW		
2	05/01/14	REVISED PER COMMENTS		
3	05/01/14	REVISED CONFORMANCE		

VELASCO HEIGHTS
 #180975
 2101 ZAPATA STREET
 FREEPORT, TX 77741
 BRAZORIA COUNTY

OVERALL SITE PLAN

C-1

Pole Section Data

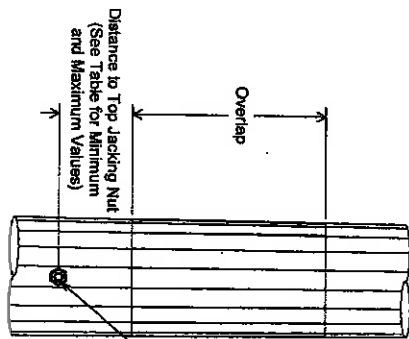
Section	Bottom Height (ft)	Top Height (ft)	Length (ft)	Number of Sides	Bottom OD (in)	Top OD (in)	Wall Thickness (in)	Material	Approximate Weight (lb)	Design Overlap (in)	Minimum Overlap (in)	Maximum Overlap (in)	Design Distance to Top Jacking Nut (in)	Maximum Distance to Top Jacking Nut (in)	Minimum Distance to Top Jacking Nut (in)
1	130	150	20	18	26.0750	18.0000	0.1875	A572-85	970	42	36.15/16	46.3/16	15	20.1/16	10.13/16
2	93	133.5	40.5	18	37.6013	23.2744	0.3750	A572-85	3380	63	55.1/4	69.5/16	15	22.3/4	8.11/16
3	45.25	98.25	53	18	53.5553	34.8056	0.4375	A572-85	11850	90	79	99	15	26	5
4	0	52.75	52.75	18	58.5000	49.8397	0.4375	A572-85	17770	0	0	0	0	0	0



Tower Reactions

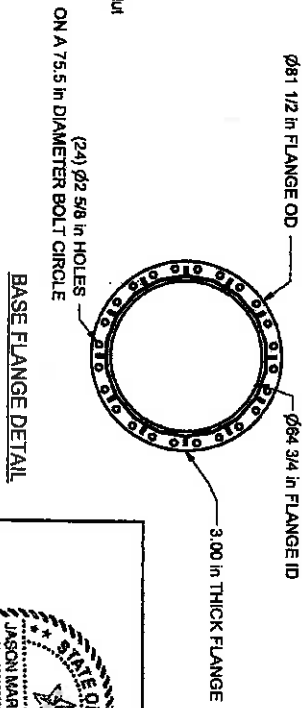
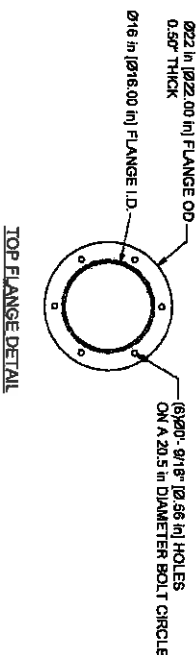
No Ice
 Shear: 72.2 kips
 Moment: 8271.9 ft-kips
 Weight: 56.4 kips

With Ice
 Shear: 3.8 kips
 Moment: 414.5 ft-kips
 Weight: 81.1 kips



A jacking nut is placed near the top of each section which will have another section placed on top. The distance from this nut to the bottom of the next section must not exceed the value given in the column labeled "Maximum Distance to Top Jacking Nut."

Pole Splice Detail

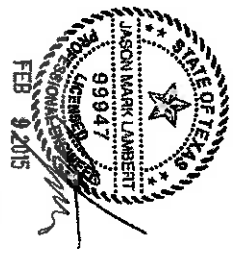


REV	BY	DATE	DESCRIPTION

DATE: 2/5/2015
 DWG. NO.: 301754
 SHEET: 1 OF 4

TITLE
 Verizon Wireless
 NTP 89" X 150"

Veraco Heights - 180975
 Brazoria Co., TX



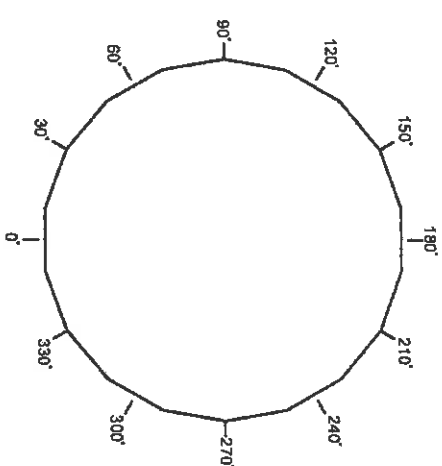
NEFLD
 211 W. Washington St.
 South, Suite 2000
 Bldg. (574)286-5852
 Fax: (574)286-5880

Portholes			
Elevation (ft)	Qty	Size (in)	Azimuth (deg)
144	3	6 x 12	60, 180, 300
140	3	6 x 12	60, 180, 300
124	3	6 x 12	60, 180, 300
75	1	9 x 24	0
75	1	9 x 24	90
75	1	9 x 24	180

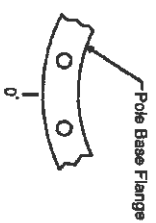
Dish Loading		
Height	Qty	Description
127'	2	6' Dish with Radome

Antenna Loading		
Height	Qty	Description
150'	1	10' Lightning Rod
147'	12	Panel-100x15x11
147'	24	CBC7821
147'	12	Alcatel-Lucent RRH2x40-HW
147'	2	Raycap RxCDC-3315-PF-48
147'	2	Raycap RxCDC-3315-PF-48
147'	1	MC-K12 with VSR.MTG.RR
127'	1	Clamp Ring Assembly
127'	2	Dish Pipe Mount
127'	1	Clamp Ring Assembly
137'	1	MC-K12 with VSR.MTG.RR
137'	2	Raycap RxCDC-3315-PF-48
137'	2	Raycap RxCDC-3315-PF-48
137'	12	Alcatel-Lucent RRH2x40-HW
137'	8	CBC7821
137'	12	Panel-100x15x11
137'	16	CBC7821

Feedline Loading		
Height	Qty	Description
0' - 147'	4	AVAT-50 (1-5/8 LOW DENSIT. FOAM)
0' - 137'	4	AVAT-50 (1-5/8 LOW DENSIT. FOAM)
0' - 127'	2	EM60



Note:
The azimuths referenced here are only to illustrate where the pole features are in relation to each other. The azimuths are not to indicate which cardinal direction the anchor bolts or the pole should be positioned.



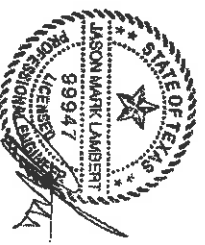
Anchor Bolt Holes
Are on Either Side of
the 0 Degree Azimuth
Anchor Bolt Azimuth

REV	BY	DATE	DESCRIPTION

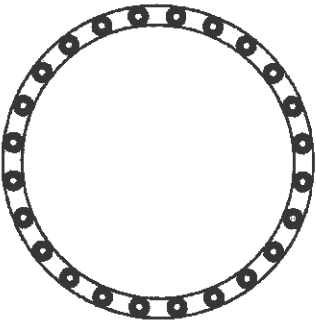
COPYRIGHT NOTICE:
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Nelson A. Williams & Associates, Inc.
and shall remain confidential
without our written consent.

ORIG. DATE:	26/2015	DWG. NO.:	301754
DWG. PRDGE.:	VZ.05	SHEET:	2 OF 4

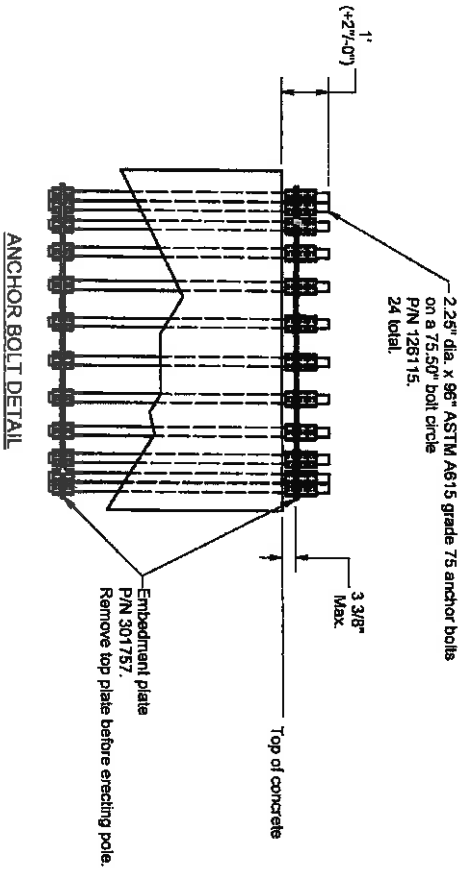
TITLE:	Verizon Wireless NTP 88' X 150'
PROJECT:	Valasco Heights - 180975 Brazeron Co., TX
DATE:	FEB 9 2015
SCALE:	AS SHOWN
DESIGNED BY:	
CHECKED BY:	
DATE:	



211 W. Washington St.
South Bend, IN 46601-1705
Ph: (574) 288-3832
Fax: (574) 283-5860



PLAN VIEW



ANCHOR BOLT DETAIL

REV	BY	DATE	DESCRIPTION

<p>GOVERNMENT NOTICE This drawing is the property of Nelson Inc. It is not to be reproduced, copied or traced in whole or in part without our written consent.</p>		<p>ORIG. DATE: 2/5/2015</p>	<p>DWG. NO. 301754</p>
<p>DWG. PROJ: V2.05</p>	<p>SHEET: 3 OF 4</p>	<p>TITLE Verizon Wireless NTP 69" X 150' Vallesco Heights - 180875 Brazoria Co., TX</p>	

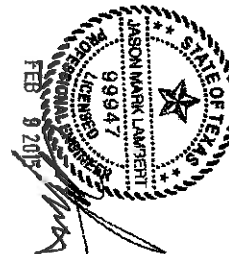
<p>211 W. Main Street Suite 2000 Brazoria, TX 77603-1705 Ph: (714) 228-8132 Fax: (714) 228-8189</p>	
---	--

Tower Notes:

1. Tower is designed per TIA-222-G, "Structural Standard for Antenna Supporting Structures and Antennae," for the following loading conditions:
 130 mph 3-second gust basic wind speed with no ice (Equivalent to 168 mph 3-second gust ultimate design wind speed)
 30 mph 3-second gust basic wind speed with 1/2 inch basic ice thickness
 Structure Class: II
 Exposure Category: C
2. Topographic Category: 1
3. A tower field inspection shall be performed in order to verify that design exposure and topographic parameters are consistent with the existing tower site conditions.
4. Tower design includes the antennas, dishes, and/or fins listed in the appurtenance loading tables on sheet 2.
5. Antenna mounting pipes may need to be field cut to match the lengths listed in the appurtenance loading tables on sheet 2.
6. Tower member design does not include stresses due to erection since erection equipment and procedures are unknown. Tower installation shall be performed by competent and qualified erectors in accordance with TIA-222-G and OSHA standards and all applicable building codes.
7. Field connections shall be bolted. No field welds shall be allowed unless otherwise noted.
8. Structural bolts shall conform to ASTM A325, except for 1/2 inch diameter and smaller bolts, which shall conform to ASTM A449 or SAE A429 Grade 5.
9. Structural steel and connection bolts shall be galvanized after fabrication in accordance with TIA-222-G.
10. All high strength bolts shall be tightened to a "snug tight" condition as defined in the RCSC "Specification for Structural Joints Using ASTM A325 or A490 Bolts."
11. Tower shall be grounded in conformance with local building codes, FAA regulations, and TIA-222-G.
12. Allowable tolerance on as-bull tower steel height is plus 1% or minus 1/2%.
13. Maintenance and inspection shall be performed over the life of the structure in accordance with TIA-222-G.
14. Material specifications:
 NTP 18-Sided Pole - ASTM A572 Grade 55
 Pole Flange - ASTM A572 Grade 50
 Pole Porthole Rim - ASTM A572 Grade 65
15. A jacking nut is placed near the top of each section which will have another section placed on top. The distance from this top jacking nut to the bottom of the next section must not exceed the value given in the column labeled "Maximum Distance to Top Jacking Nut." Jacking may be required to achieve the proper overlap.
16. The horizontal distance between the vertical centerlines at any two elevations shall not exceed 0.25 percent of the vertical distance between the two elevations. Measure early in the morning before the sunward side of the pole expands.
17. Sections must be erected with the 0 degree azimuth lined up to ensure proper fit.
18. Remove anchor bolt template before erecting pole. Non-shrink grout may be placed under base flange after leveling pole. Drain holes must be provided if grouting.
19. Concrete contractor shall be responsible for properly aligning anchor bolts and materials before and after placing concrete, regardless of whether an anchor bolt template is provided.

REV	BY	DATE	DESCRIPTION

COPYRIGHT NOTICE: This drawing is the property of NTP Inc. It is not to be reproduced, copied or traced in whole or in part without our written consent.			
ORIG. DATE:	2/6/2015	ORIG. NO.	301754
DMG. PROJ.	v2.05	SHEET:	4 OF 4

<p>TITLE Verizon Wireless NTP 68" X 150" Verasco Heights - 150675 Brazoria Co., TX</p>	
<p>211 W. Washington St., Suite 2000 South Bend, IN 46601-1705 Ph: (317)251-3832 Fax: (317)251-8130</p>	<p>IN E L L O</p>



N E L L O

Design Supporting Calculations

Sales Order: SO21899
Drawing Number(s)
Tower: 301754
Foundation: 301755
Order Description: NTP 69" X 150'
Site Name: Velasco Heights - 180975
Location: Brazoria County, TX

Prepared For:
Customer: Verizon Wireless
Contact: David E. Freeman
Date: 2/9/2015



FEB 9 2015

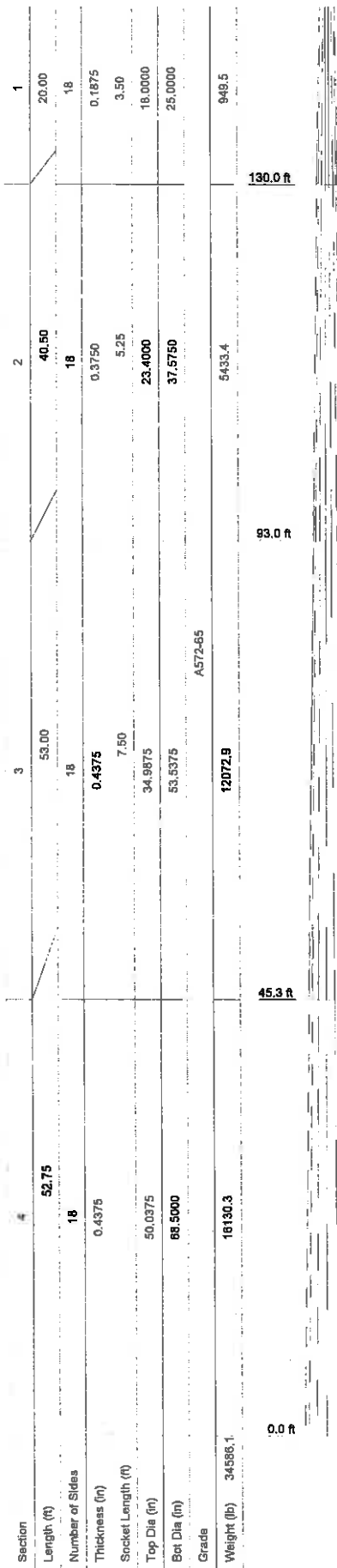
Table of Contents

Tower Analysis - Short form

Tower Analysis - Long form

Foundation Analysis

Seismic Analysis



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
10' Lightning Rod	150	(2) Raycap RxxDC-3315-PF-48	137
(4) Panel-100x15x11	147	(4) Alcatel-Lucent RRH2x40-HW	137
(4) Panel-100x15x11	147	(4) Alcatel-Lucent RRH2x40-HW	137
(4) Panel-100x15x11	147	(4) Alcatel-Lucent RRH2x40-HW	137
(8) CBC7821	147	(8) CBC7821	137
(8) CBC7821	147	(4) Panel-100x15x11	137
(8) CBC7821	147	(4) Panel-100x15x11	137
(4) Alcatel-Lucent RRH2x40-HW	147	(4) Panel-100x15x11	137
(4) Alcatel-Lucent RRH2x40-HW	147	(8) CBC7821	137
(4) Alcatel-Lucent RRH2x40-HW	147	(8) CBC7821	137
(2) Raycap RxxDC-3315-PF-48	147	Dish Pipe Mount	127
Raycap RxxDC-3315-PF-48	147	Dish Pipe Mount	127
Raycap RxxDC-3315-PF-48	147	Clamp Ring Assembly	127
MC-K12 with VSR.MTC.RR	147	Clamp Ring Assembly	127
MC-K12 with VSR.MTC.RR	137	6' HP Dish	127
Raycap RxxDC-3315-PF-48	137	6' HP Dish	127
Raycap RxxDC-3315-PF-48	137		

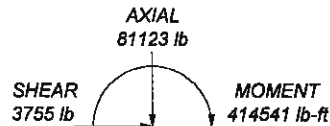
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

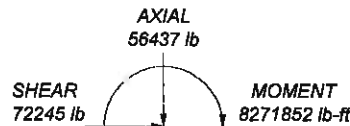
TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-G Standard.
2. Tower designed for a 130 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 30 mph basic wind with 0.50 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 98.6%

ALL REACTIONS
ARE FACTORED



TORQUE 138 lb-ft
30 mph WIND - 0.5000 in ICE



TORQUE 3954 lb-ft
REACTIONS - 130 mph WIND

Nello Corporation
211 W. Washington St., Suite 2000
South Bend, IN 46601
Phone: 574-288-3632
FAX: 574-288-5860

Job: **SO21899; Tower 301754; Foundation 301754**
Project: **NP 150' - Velasco Heights - 180975 - Brazoria Co., TX**
Client: **Verizon Wireless** Drawn by: **Tony2 tnxTower 6.1.2.0** App'd:
Code: **TIA-222-G** Date: **02/05/15** Scale:
Path: **N:\em3017301754.epr** Dwg N

tnxTower Nello Corporation 211 W. Washington St., Suite 2000 South Bend, IN 46601 Phone: 574-288-3632 FAX: 574-288-5860	ob SO21899; Tower 301754; Foundation 301755	age 1 of 69
	ro ect NP 150' - Velasco Heights - 180975 - Brazoria Co., TX	Date 16:26:15 02/05/15
	Client Verizon Wireless	Designe b Tony2 tnxTower 6.1.2.0

Tower Input Data

There is a pole section.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

- Basic wind speed of 130 mph.
- Structure Class II.
- Exposure Category C.
- Topographic Category 1.
- Crest Height 0.00 ft.
- Nominal ice thickness of 0.5000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 30 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity √ Leg Bolts Are At Top Of Section √ Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) Add IBC .6D+W Combination | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area √ Use Clear Spans For KL/r √ Retension Guys To Initial Tension √ Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. √ Autocalc Torque Arm Areas √ SR Members Have Cut Ends Sort Capacity Reports By Component √ Triangulate Diamond Inner Bracing | <ul style="list-style-type: none"> Treat Feedline Bundles As Cylinder Use ASCE 10 X-Brace Ly Rules √ Calculate Redundant Bracing Forces √ Ignore Redundant Members in FEA √ SR Leg Bolts Resist Compression √ All Leg Panels Have Same Allowable Offset Girt At Foundation Consider Feedline Torque Include Angle Block Shear Check <li style="text-align: center;">Poles √ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets |
|--|--|---|

Tapered Pole Section Properties

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	150.00-130.00	20.00	3.50	18	18.0000	25.0000	0.1875	0.7500	A572-65 (65 ksi)
L2	130.00-93.00	40.50	5.25	18	23.4000	37.5750	0.3750	1.5000	A572-65 (65 ksi)
L3	93.00-45.25	53.00	7.50	18	34.9875	53.5375	0.4375	1.7500	A572-65

tnxTower Nello Corporation 211 W. Washington St., Suite 2000 South Bend, IN 46601 Phone: 574-288-3632 FAX: 574-288-5860	ob SO21899; Tower 301754; Foundation 301755	age 2 of 69
	ro ect NP 150' - Velasco Heights - 180975 - Brazoria Co., TX	Date 16:26:15 02/05/15
	Client Verizon Wireless	Designe b Tony2 tnxTower 6.1.2.0

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L4	45.25-0.00	52.75		18	50.0375	68.5000	0.4375	1.7500	(65 ksi) A572-65 (65 ksi)

Tapere ole roperties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ²	J in ⁴	I/Q in ²	w in	w/t
L1	18.2777	10.6007	424.9328	6.3234	9.1440	46.4712	850.4248	5.3013	2.8380	15.136
	25.3857	14.7665	1148.5693	8.8084	12.7000	90.4385	2298.6500	7.3847	4.0700	21.707
L2	25.0049	27.4055	1835.5852	8.1739	11.8872	154.4170	3673.5858	13.7054	3.4584	9.222
	38.1547	44.2773	7741.1318	13.2060	19.0881	405.5475	15492.4495	22.1429	5.9532	15.875
L3	37.3931	47.9770	7235.4673	12.2653	17.7737	407.0896	14480.4552	23.9931	5.3878	12.315
	54.3634	73.7360	26266.7290	18.8505	27.1971	965.7933	52568.0204	36.8750	8.6526	19.777
L4	53.4749	68.8758	21407.5743	17.6080	25.4190	842.1862	42843.3172	34.4444	8.0366	18.369
	69.5567	94.5133	55315.4082	24.1622	34.7980	1589.6146	110703.601	47.2656	11.2860	25.797

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals
ft	ft ²	in					in	in
L1 150.00- 130.00				1	1	1.1		
L2 130.00- 93.00				1	1	1.1		
L3 93.00-45.25				1	1	1.1		
L4 45.25-0.00				1	1	1.1		

onopole ase late Data

ase late Data	
Base plate is square	
Base plate is grouted	
Anchor bolt grade	A615-75
Anchor bolt size	2.2500 in
Number of bolts	24
Embedment length	60.0000 in
f _c	3 ksi
Grout space	0.5000 in
Base plate grade	A572-50
Base plate thickness	3.0000 in
Bolt circle diameter	75.5000 in
Outer diameter	81.5000 in
Inner diameter	64.7500 in
Base plate type	Plain Plate

ee ine inear ppurtenances ntere s rea

tnxTower Nello Corporation 211 W. Washington St., Suite 2000 South Bend, IN 46601 Phone: 574-288-3632 FAX: 574-288-5860	ob SO21899; Tower 301754; Foundation 301755	age 51 of 69
	ro ect NP 150' - Velasco Heights - 180975 - Brazoria Co., TX	Date 16:26:15 02/05/15
	Client Verizon Wireless	Designe b Tony2 tnxTower 6.1.2.0

6' HP Dish - Elevation 127 - From Leg B											
Wind Azimuth °	C _A	C _S	C _M	F _A	F _S	F _M	V _x	V _y	OTM _x	OTM _y	Torque
				lb	lb	lb-ft	lb	lb	lb-ft	lb-ft	lb-ft
300	0.002210	0.000000	0.000000	279.89	0.00	0.00	-242.39	-139.95	-17623.29	30524.43	0.00
330	0.001950	0.001050	-0.000277	246.96	132.98	-210.49	-147.39	-238.65	-30158.15	18458.59	-68.23

Dis Totals Ser ice

Wind Azimuth °	V _x	V _y	OTM _x	OTM _y	Torque
	lb	lb	lb-ft	lb-ft	lb-ft
0	-36.30	-432.31	-55053.45	4351.09	171.90
30	117.22	-304.04	-38762.61	-15146.18	242.12
60	215.14	-124.21	-15924.57	-27582.17	0.00
90	321.91	50.50	6264.33	-41142.50	-242.12
120	356.24	247.60	31294.88	-45502.14	-171.90
150	234.53	407.96	51661.00	-30044.39	-126.92
180	-10.29	404.10	51171.15	1047.74	-427.58
210	-236.13	339.50	42966.65	29728.79	-505.49
240	-360.52	208.15	26284.84	45526.68	0.00
270	-412.08	34.74	4262.56	52074.61	505.49
300	-355.11	-193.14	-24678.20	44839.39	427.58
330	-236.04	-407.09	-51849.70	29717.54	126.92

orce Totals

Load Case	Vertical Forces	Sum of Forces X	Sum of Forces Z	Sum of Overturning Moments, M _x	Sum of Overturning Moments, M _y	Sum of Torques
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Leg Weight	34586.09					
Bracing Weight	0.00					
Total Member Self-Weight	34586.09			16.65	-162.01	
Total Weight	47030.89			16.65	-162.01	
Wind 0 deg - No Ice		-145.70	-44999.99	-5024382.66	17669.28	636.01
Wind 30 deg - No Ice		22002.19	-38624.38	-4307539.88	-2450111.98	1163.14
Wind 60 deg - No Ice		38127.68	-22056.35	-2456423.54	-4245311.15	80.28
Wind 90 deg - No Ice		44385.80	220.22	27310.97	-4947337.10	-1024.09
Wind 120 deg - No Ice		38823.24	22626.18	2527658.66	-4332973.74	-555.74
Wind 150 deg - No Ice		22540.13	39124.85	4370460.43	-2517265.21	-312.50
Wind 180 deg - No Ice		-98.77	44851.97	5005618.19	13055.02	-1977.46
Wind 210 deg - No Ice		-22626.07	38810.43	4331202.27	2529021.10	-2544.98
Wind 240 deg - No Ice		-38890.45	22496.74	2512386.03	4341859.32	-80.28
Wind 270 deg - No Ice		-44858.87	227.05	29525.71	5007093.03	2405.94
Wind 300 deg - No Ice		-38817.29	-22340.45	-2491337.84	4331894.53	1897.18
Wind 330 deg - No Ice		-22548.06	-39120.28	-4369845.59	2517948.44	312.50
Member Ice	8547.51					
Total Weight Ice	70689.00			-141.14	-503.16	
Wind 0 deg - Ice		-8.17	-3746.55	-393687.28	494.91	26.99
Wind 30 deg - Ice		1844.45	-3225.00	-338491.47	-193673.23	61.48
Wind 60 deg - Ice		3195.66	-1848.21	-193764.72	-335167.95	5.91
Wind 90 deg - Ice		3710.37	12.39	1393.28	-389501.01	-51.25
Wind 120 deg - Ice		3235.00	1880.35	197496.28	-340123.99	-21.08
Wind 150 deg - Ice		1874.79	3253.27	341760.98	-197457.61	-6.47
Wind 180 deg - Ice		-5.69	3738.16	392339.56	258.56	-103.02

tnxTower Nello Corporation 211 W. Washington St., Suite 2000 South Bend, IN 46601 Phone: 574-288-3632 FAX: 574-288-5860	ob SO21899; Tower 301754; Foundation 301755	age 66 of 69
	ro ect NP 150' - Velasco Heights - 180975 - Brazoria Co., TX	Date 16:26:15 02/05/15
	Client Verizon Wireless	Design b Tony2 tnxTower 6.1.2.0

Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
	33.3421							
	33.3421 - 30.9605		66503.90	2724400.00	0.024	467.26	12842333.33	0.000
	30.9605 - 28.5789		66961.00	2749780.00	0.024	467.20	13152166.67	0.000
	28.5789 - 26.1974		67416.20	2774740.00	0.024	467.14	13463500.00	0.000
	26.1974 - 23.8158		67869.50	2799300.00	0.024	467.09	13776333.33	0.000
	23.8158 - 21.4342		68320.90	2823440.00	0.024	467.05	14090416.00	0.000
	21.4342 - 19.0526		68770.40	2847170.00	0.024	467.01	14405833.33	0.000
	19.0526 - 16.6711		69217.90	2870490.00	0.024	466.98	14722416.00	0.000
	16.6711 - 14.2895		69663.60	2893400.00	0.024	466.95	15040082.67	0.000
	14.2895 - 11.9079		70107.20	2915900.00	0.024	466.92	15358749.33	0.000
	11.9079 - 9.52632		70548.90	2937980.00	0.024	466.90	15678416.00	0.000
	9.52632 - 7.14474		70988.60	2959660.00	0.024	466.89	15998833.33	0.000
	7.14474 - 4.76316		71426.20	2980930.00	0.024	466.88	16320000.00	0.000
	4.76316 - 2.38158		71861.90	3001780.00	0.024	466.87	16641833.33	0.000
	2.38158 - 0		72295.60	3022230.00	0.024	466.86	16964249.33	0.000

ole nteraction Design Data

Section No.	Elevation ft	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		ϕP_n	ϕM_{nx}	ϕM_{ny}	ϕV_n	ϕT_n			
L1	150 - 148.969	0.000	0.006	0.000	0.001	0.000	0.007 ✓	1.000	4.8.2 ✓
	148.969 - 147.938	0.000	0.008	0.000	0.001	0.000	0.008 ✓	1.000	4.8.2 ✓
	147.938 - 146.906	0.004	0.015	0.000	0.051	0.000	0.022 ✓	1.000	4.8.2 ✓
	146.906 - 145.875	0.004	0.081	0.000	0.051	0.000	0.087 ✓	1.000	4.8.2 ✓
	145.875 - 144.844	0.004	0.143	0.000	0.050	0.000	0.149 ✓	1.000	4.8.2 ✓
	144.844 - 143.813	0.004	0.201	0.000	0.050	0.000	0.207 ✓	1.000	4.8.2 ✓
	143.813 - 142.781	0.004	0.256	0.000	0.050	0.000	0.262 ✓	1.000	4.8.2 ✓
	142.781 - 141.75	0.004	0.308	0.000	0.049	0.000	0.314 ✓	1.000	4.8.2 ✓
	141.75 - 140.719	0.004	0.357	0.000	0.049	0.000	0.363 ✓	1.000	4.8.2 ✓
	140.719 - 139.688	0.004	0.403	0.000	0.049	0.000	0.410 ✓	1.000	4.8.2 ✓
	139.688 - 0	0.004	0.448	0.000	0.048	0.000	0.454 ✓	1.000	4.8.2 ✓

tnxTower Nello Corporation 211 W. Washington St., Suite 2000 South Bend, IN 46601 Phone: 574-288-3632 FAX: 574-288-5860	ob SO21899; Tower 301754; Foundation 301755	age 69 of 69
	ro ect NP 150' - Velasco Heights - 180975 - Brazoria Co., TX	Date 16:26:15 02/05/15
	Client Verizon Wireless	Designe b Tony2 tnxTower 6.1.2.0

Section No.	Elevation ft	Ratio P_n	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	9.52632								
	9.52632 - 7.14474	0.009	0.971	0.000	0.024	0.000	0.981 ✓	1.000	4.8.2 ✓
	7.14474 - 4.76316	0.009	0.973	0.000	0.024	0.000	0.983 ✓	1.000	4.8.2 ✓
	4.76316 - 2.38158	0.009	0.975	0.000	0.024	0.000	0.984 ✓	1.000	4.8.2 ✓
	2.38158 - 0	0.009	0.976	0.000	0.024	0.000	0.986 ✓	1.000	4.8.2 ✓

Section Capacit Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail	
L1	150 - 130	Pole	TP25x18x0.1875	1	-7030.79	975606.00	80.4	Pass	
L2	130 - 93	Pole	TP37.575x23.4x0.375	2	-15717.30	3127090.00	93.8	Pass	
L3	93 - 45.25	Pole	TP53.5375x34.9875x0.4375	3	-31520.20	5007490.00	91.6	Pass	
L4	45.25 - 0	Pole	TP68.5x50.0375x0.4375	4	-56372.40	6044450.00	98.6	Pass	
							Summary		
							Pole (L4)	98.6	Pass
							Base Plate	96.9	Pass
							RATING =	98.6	Pass

Drilled Pier Foundation Design

Order/Quote Number: SO21899
 Part Number: 301755
 Tower Model: NTP 69" x 150"
 Company: Verizon Wireless
 Site: Velasco Heights - 180975 - Brazoria Co., TX



211 W. Washington St
 Suite 20000
 South Bend, IN 46701
 574-285-3832 (phone)
 574-285-5880 (fax)
 www.nelloinc.com

Tower Reactions (Factored)

Compression:	58.437 kips
Uplift:	0.000 kips
Shear:	72.245 kips
Moment:	8271.852 ft-kips

Foundation Design Reactions

Additional Load Factor:	1.00
Compression:	58.437 kips
Uplift:	226.195 kips
Shear:	72.245 kips
Moment:	8271.852 ft-kips

ANSI/TIA-222-G - Design Factors

Uplift Resistance Phi:	0.75
Compressive Resistance Phi:	0.75
Bearing Capacity Phi:	0.75
Lateral Resistance Phi:	0.75

Design Dimensions

Pole OD:	68.6 in
Pier Diameter:	9 ft
Pier Extension:	0.5 ft
Pier Depth:	42 ft
Volume:	100.1 yd ³

Foundation LPILE Loads (Divided by Φ_s)

Shear Load:	96,327 lb
Moment Load:	132,349,632 lb-in
Axial Load:	75,249 lb

Summary Check

Uplift:	OK
Compression:	OK
Max Pier Length to Width Ratio:	OK
Neglect to Frost Depth:	OK
Neglect Top Portion of Pier:	OK
Minimum Depth:	OK
Minimum Vertical Reinforcement:	OK
Rebar Strength:	OK
Rebar Spacing:	OK
Anchor Steel Strength:	OK
Anchor Bolt Development:	OK
Anchor Concrete Strength:	OK
Anchor Bolt Spacing:	OK
Embedment Plate Fit:	OK
Pier Deflection:	OK

Site Details

Frost Depth:	0.417 ft
Water Depth:	5 ft
Upper Pier Neglected:	5 ft
Minimum Pier Depth:	ft
Soil Induced Uplift Load:	226.2 kips
Seismic Site Class:	D
Design Response Acc., S _{DS} :	0.063 g
Design Response Acc., S ₁ :	0.054 g
Seismic Design Category:	A

Material Specifications

Concrete Strength:	4000 psi
Rebar Yield Strength:	60 ksi
Concrete Weight:	150 pcf
Clear Cover:	3 in
Clear Cover (Top of Pier):	3 in

Geotechnical Report

Company: Gorrondos & Associates, Inc.
 Date: 1/6/2015
 Project: 14-0538

Max. Foundation Capacity Rating: 58.5%

Compression/Uplift Resistance Design

Layer	Depth (ft)	Depth (ft)	Length (ft)	Diameter (ft)	Allowable Skin Friction				Ultimate Skin Friction				Concrete Weight (pcf)	Concrete Weight (kips)	Ultimate Capacity (kips)	Uplift (kips)	Creep (kips)	Total Resistance
					Uplift		Compression		Uplift		Compression							
					(kaf)	Safety Factor	(kaf)	Safety Factor	(kaf)	(kips)	(kaf)	(kips)						
1	-0.5	0	0.5	8	0.000	2.0	0.000	2.0	0.000	0.00	0.000	0.00	150	3.82	0.00	0.00	3.82	0.00
2	0	5	5	8	0.000	2.0	0.000	2.0	0.000	0.00	0.000	0.00	150	38.17	6.00	3.0	36.17	0.00
3	5	10	5	8	0.300	2.0	0.300	2.0	0.600	84.82	0.800	84.82	87.6	22.28	0.00	0.00	107.11	84.82
4	10	15	5	8	0.250	2.0	0.250	2.0	0.500	70.99	0.500	70.99	87.6	22.23	0.00	0.00	92.98	70.99
5	15	20	5	8	0.500	2.0	0.500	2.0	1.000	763.41	0.000	0.00	87.6	120.37	0.00	0.00	883.76	0.00
6	20	25	5	8	0.0	0.0	0.000	0.0	0.000	0.00	0.000	0.00	87.6	0.00	0.00	0.00	0.00	0.00
7	25	30	5	8	0.0	0.0	0.000	0.0	0.000	0.00	0.000	0.00	87.6	0.00	0.00	0.00	0.00	0.00
8	30	35	5	8	0.0	0.0	0.000	0.0	0.000	0.00	0.000	0.00	87.6	0.00	0.00	0.00	0.00	0.00
9	35	40	5	8	0.0	0.0	0.000	0.0	0.000	0.00	0.000	0.00	87.6	0.00	0.00	0.00	0.00	0.00
10	40	42	2	8	0.0	0.0	0.000	0.0	0.000	0.00	0.000	0.00	87.6	0.00	18.00	1145.11	0.00	1145.11
Total										918.92		155.51	208.94		1145.11	844.40	875.46	

Brown's Method Stability Analysis

Primary Soil Type	Undrained Shear Strength (ksf)	Soil Unit Weight (pcf)	Passive Pressure Coefficient	Location of Maximum Moment, F ₁ (ft)	Maximum Moment (kip-ft)	Induced Moment (kip-ft)	Yield Moment (kip-ft)	Location of Maximum Moment, F ₂ (ft)	Minimum Length of drilled Pier (ft)	Actual Length of drilled Pier (ft)	Life Ultimate Deflection (in)	Life Service Deflection (in)
Clay	1,000	60	N/A	1.18	12435.0	9326.2	9466.2	24.78	40.87	42.00	8.94	0.03

Solve Minimum Length (Sand)

Vertical Reinforcement Design

Number of Bars	Bar Size	Bar Length (ft)	Bar Diameter (in)	Bar Weight (lb/ft)	Total Bar Weight (lb)	Bar Area (sq in)	Total Bar Area (sq in)	Minimum Bar Area Required (sq in)	Rebar Core Diameter (in)	Cr-Cr Spacing (in)	Clear Spacing (in)	Outer Diameter (in)	Inner Diameter (in)	Thickness (in)	Section Modulus (in ³)	Induced Moment (ft-kips)	Induced Stress (ksi)	Design Stress (ksi)
57	11	504	1.410	5.313	12719	1.56	88.82	45.80	98.590	5.5	4.1	89.67	98.31	0.568	2207.8	8830.71	50.55	54

Development Length - Vertical Rebar

Bar Size	Rein Location Factor, ψ _r	Casting Factor, ψ _c	Rein Size Factor, ψ _s	Lightweight Concrete Strength Factor, λ	Spacing or Cover, c (in)	Transverse Rein Index, K _{tr}	Development Length, L _d (in)	Excess Rein. Reduc. %	Development Length, L _d (in)
11	1.0	1.0	1.0	1.0	2.74	0.0	51.5	Yes	0.84

Tie Reinforcement Design

Number of Bars	Bar Size	Bar Diameter (in)	Bar Weight (lb/ft)	Total Bar Weight (lb)	Bar Area (sq in)	Overlap Length (in)	Total Length (in)	Zone	Maximum Tie Spacing (in)	Zone Distance (in)	Number of Tie Spacing (ft)	Actual Tie Spacing (in)	Number of Ties per Zone	Standard Confinement Applied
31	4	0.500	0.688	576	0.20	15.0	334.0	End	5	5	1	5	2	
								Top	0	0	0	0	0	
								Middle	18	493.5	28	17 10/16	27	
								End	5	5	1	5	2	

Splice Length - Ties

Bar Size	Rein Location Factor, ψ _r	Casting Factor, ψ _c	Rein Size Factor, ψ _s	Lightweight Aggregate Factor, λ	Spacing or Cover, c (in)	Transverse Rein Index, K _{tr}	Development Length, L _d (in)	Splice Length, 1.3 * L _d (in)
4	1.0	1.0	0.8	1.0	3.25	0.0	12.0	14.8

Anchor Bolt and Embedment Plate Details

Number of Bolt	Bolt Diameter (in)	Bolt Length (in)	Anchor Bolt P/N	Bolt Projection (in)	Projection Tolerance Above (in)	Projection Tolerance Below (in)	Plate P/N	Plate O.D. Width (in)	Plate I.C. (in)	Plate Thickness (in)	Bolt Circle Diameter (in)	Grip Space Beneath Plate (in)	Anchor Bolt Detail Type
24	2.25	126115	12	2	0	301757	80.5	70.5	0.375	75.5	3.375	(d) No Grout	

Anchor Bolt Properties & Forces

Yield Strength (ksi)	Ultimate Tensile Strength (ksi)	Bolt Threads per Inch	Root Diameter of Bolt (in)	Bolt Gross Area (in ²)	Bolt Net Area (in ²)	Bolt Cage Moment of Inertia (in ⁴)	Top of Concrete to Bottom of Leveling Nut (in)	Plate Section Modulus (in ³)	Maximum Bolt Tensile Force (kip)	Maximum Bolt Compressive Force (kip)	Maximum Bolt Shear Force (kip)	Bending Moment Due to Shear (kip-ft)	Magnitud. Force at Bolt Head (kip)
75	100	4.5	2.033	3.976	3.248	17100.75	1.125	1.401	216.770	221.473	3.010	0.183	27,213

Anchor Concrete Design

Anchor Embedment Depth (in)	Effective Embedment Depth (in)	Required Tensile Development Length (in)	Rebars Engaged by Bolts (in)	Spacing / Cover Dimension (in)	Transverse Rein Index	Anchor Tensile Development Length (in)	Force Resisted by Embedment (%)	Max Nut Width Across Plate (in)	Net Bearing Area of Head (in ²)	Cracking Modification Factor	Pullout Reduction Factor	Nominal Pullout Strength of Single Anchor	Design Pullout Strength (kip)
82.00	79.38	48.24	63.63	4.94	0.02	90.77	87%	3.500	6.633	1.4	0.70	297.148	208.003

Anchor Steel Design

Bolt Resistance Factor	Bolt Nominal Tensile Strength (kip)	Bolt Design Tensile Strength (kip)	Shear Reduction Factor	Grout Factor	Bolt Design Shear Strength (kip)	Bolt Design Shear Strength (kip)	Combined Shear & Tension	Flexure Resistance Factor	Bolt Design Flexure Strength (kip-ft)	Interaction Resistance Factor	Etc	Anchor Bolt Interaction Equation	Anchor Spacing - Cr-Cr (in)	Gap Between Rebar & Plate (in)
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Template: Drilled Pier.rvt
 N:\SO21899
 3/17/15, 9:38 AM

0.75	324.788	243.576	0.55	1.00	126.660	134.193	0.793	0.50	7.883	0.80	0.50	0.676	9.883	8.84
		OK			OK	OK	OK		OK			OK	OK	OK

Notes

- Foundation design is based on the Geotechnical Report dated 01/05/2015, by Corronдона & Associates, Inc., Project No. 14-0536.
- Groundwater may be encountered at 5 feet bgs at this site based on the geotechnical investigation. Dewatering techniques should be anticipated below this depth.
- Temporary steel casing or drilling slurry may be required for installation of the drilled piers.
- Concrete shall be placed by tremie methods if there is more than 1 inch of water or drilling fluid at the bottom of the shaft excavation or if water infiltration exceeds a rise of 1/4" per minute.
- A clean-out bucket should be used to remove any cuttings and loose soils in the bottom of the shaft excavation.

Munoz, Delia

From: Olayiwola, Kola
Sent: Wednesday, February 18, 2015 8:46 AM
To: Tolar, Laura; Munoz, Delia
Subject: RE: Planning Commission Agenda Request

I will have the request included in the Agenda.
However, for public record purposes P&Z Commissioners would like to know the name of the requestor and where he/she resides.

Thank you,

Kola Olay, MCP, CFM.
Building & Code Official
Master City Planner

From: Tolar, Laura
Sent: Tuesday, February 17, 2015 3:31 PM
To: Olayiwola, Kola; Munoz, Delia
Subject: Planning Commission Agenda Request

Kola,

As a citizen of Freeport, I am requesting an item on the next planner's agenda.

I would like to have the signage on Wharton Street considered for change. I have included a map to indicate the current signage and a suggestion of the proposed change.

My problem is that folks that turn off Brazosport Blvd. onto Wharton don't stop or even slow down when they get to Ave. H at the yield sign. Several times I have almost been hit. They just sail on through until they get to Ave. G at the stop sign. I would like to suggest adding stop signs on Wharton at Ave. H to replace the yield signs. Also, at the intersection of Ave. I and Wharton, I would like the yield signs that are currently on Ave. I be moved to Wharton to slow these folks down after coming off the highway as it is approximately almost 700 feet to Ave. H from Brazosport.

The pink lines below indicate my normal path going out to Brazosport Blvd. and often run into this issue.

Please let me know if you need clarification.