



**Cochise County**  
**Community Development**  
 Planning, Zoning and Building Safety Division

*Public Programs...Personal Service*  
 www.cochise.az.gov

## Special Use Project Application

### Applicant's Certification & Acknowledgement

By signing below, I certify that:

1. I am the Owner or authorized Agent of the Owner of the property being developed.
2. I am applying for the meetings/ review(s) indicated below.
3. I have read and understand the information provided in this Application Guide.
4. This application is complete and accurate to the best of my knowledge. Submission of false information may constitute fraud, and may be punishable by fine, imprisonment, or both pursuant to A.R.S. §13-2310.
5. I hereby request all inspections necessary to process this application, and if the permit is issued I request all inspections necessary to monitor progress, and document completion, at all stages of the work related to this permit.

By signing below, I acknowledge that:

6. Incomplete or inaccurate submittals by the Owner, Applicant or any other representative may result in delays, return of submittals, or denial of this application.
7. The submittal is subject to an administrative review of 10-business days (5-business days initial review, 5-business days resubmittal review) at which time I will receive written or electronic notice if the application is complete or, in the case of an incomplete application, a list of deficiencies that need to be corrected. An application will not pass the review for administrative completeness until all deficiencies have been corrected.
8. If the County does not issue a written or electronic notice of administrative completeness within the 10-business days, the application will be deemed administratively complete and the substantive review process begins.
9. The overall review time is 130-business days.
10. The substantive review process is 120-business days.

**Planning, Zoning and Building Safety**

1415 Melody Lane, Building E  
 Bisbee, Arizona 85603  
 520-432-9300  
 520-432-9278 fax  
 1-877-777-7958  
 planningandzoning@cochise.az.gov

**Highway and Floodplain**

1415 Melody Lane, Building F  
 Bisbee, Arizona 85603  
 520-432-9300  
 520-432-9337 fax  
 1-800-752-3745  
 highway@cochise.az.gov  
 floodplain@cochise.az.gov

2. How many acres will be cleared? Less than 5% of one acre  
If more than one acre is to be cleared describe the proposed dust and erosion control measures to be used

(Show on site plan if appropriate.) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**SECTION D - Hazardous or Polluting Materials**

Some businesses involve materials that can contaminate the soil, air, water, waste disposal system or environment in general. Precautions must be taken to protect the environment when such products are distributed to or from the site, stored, manufactured, processed, disposed of, or released as raw materials, products, wastes, emissions, or discharges (When sold or incorporated in a product these materials are required to have Material Safety Data Sheets (MSDS) supplied by the manufacturer.) Examples of such products include but are not limited to paint, solvents, chemicals and chemical wastes, oil, pesticides, herbicides, fertilizers, radioactive materials, biological wastes etc.

Does the proposed use have any activities involving such materials?

Yes \_\_\_ No X If yes, complete the attached *Hazardous or Polluting Materials Use Questionnaire*.

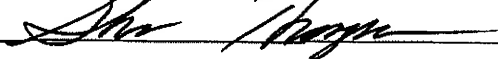
**Note:** Depending on quantities, this question does not apply to ordinary household or office products or wastes such as cleansers, waxes or office supplies. Answer YES only if the materials are involved in the commercial or special use process or if landscaping or maintenance chemicals (pesticides, fertilizers, paints, etc.) will be present in quantities greater than 50 pounds (solids) or 25 gallons (liquids).

If you answer NO to this question but in the County's experience, the type of business proposed typically uses such materials, you will be asked to complete the *Hazardous or Polluting Materials Questionnaire* prior to processing this Commercial Use/ Building/ Special Use Permit.

**Applications that involve hazardous or polluting materials may take a longer than normal processing time due to the need for additional research. The Arizona Department of Environmental Quality Compliance Assistance Program can address questions about Hazardous Materials (1-800-234-5677, ext. 4333).**

**SECTION E - Applicant's Statement**

I hereby certify that I am the owner or duly authorized owner's agent and all information in this questionnaire, in the Joint Permit Application and on the site plan is accurate. I understand that if any information is false, it may be grounds for revocation of the Commercial Use/ Building/ Special Use Permit.

Applicant's Signature 

Shane Thompson

Print Applicant's Name \_\_\_\_\_

Date signed 7/19/19

**COMMERCIAL USE/BUILDING PERMIT/SPECIAL USE PERMIT QUESTIONNAIRE  
(TO BE PRINTED IN INK OR TYPED)**

TAX PARCEL NUMBER 204-03-036

APPLICANT Valley Connections, L.L.C.

ADDRESS PO Box 970 Willcox, AZ 85644

CONTACT TELEPHONE NUMBER 520-384-8993

EMAIL ADDRESS: shane.thompson@vtc.net

PROPERTY OWNER (IF OTHER THAN APPLICANT) Cochise Elementary School Dist. #26

ADDRESS 5025 N Bowie Cochise, AZ 85606

DATE SUBMITTED 7/23/2019

Special Use Permit Public Hearing Fee (if applicable)	\$ <u>300.00</u>
Building/Use Permit Fee	\$ _____
<b>Total paid</b>	<b>\$ <u>300.00</u></b>

**PART ONE - REQUIRED SUBMITTALS**

1. Cochise County Joint Application (attached).
2. Questionnaire with all questions completely answered (attached).
3. A minimum of (6) copies of a site plan drawn to scale and completed with all the information requested on the attached Sample Site Plan and list of Non-residential Site Plan Requirements. **(Please note that nine (9) copies will be required for projects occurring inside the Uniform Building Code enforcement area. In addition, if the site plan is larger than 11 by 17 inches, please provide one reduced copy.)**
4. Proof of ownership/agent. If the applicant is not the property owner, provide a notarized letter from the property owner stating authorization of the Commercial Building/Use/Special Use Application.
5. Proof of Valid Commercial Contractor's License. (Note: any building used by the public and/or employees must be built by a Commercial Contractor licensed in the State of Arizona.)
6. Hazardous or Polluting Materials Questionnaire, if applicable.

**OTHER ATTACHMENTS THAT MAY BE REQUIRED DEPENDING ON THE SCOPE OF THE PROJECT**

1. Construction Plans (possibly stamped by a licensed Engineer or Architect)
2. Off-site Improvement Plans
3. Soils Engineering Report
4. Landscape Plan
5. Hydrology/Hydraulic Report

6. Traffic Impact Analysis (TIA): **Where existing demonstrable traffic problems have already been identified such as high number of accidents, substandard road design or surface, or the road is near or over capacity, the applicant may be required to submit additional information on a TIA.**
7. Material Safety Data Sheets
8. Extremely Hazardous Materials Tier Two Reports
9. Detailed Inventory of Hazardous or Polluting Materials along with a Contingency Plan for spills or releases

The Commercial Permit Coordinator/Planner will advise you as soon as possible if and when any of the above attachments are required.

## PART TWO - QUESTIONNAIRE

In the following sections, thoroughly describe the proposed use that you are requesting. **Attach separate pages if the lines provided are not adequate for your response.** Answer each question as completely as possible to avoid confusion once the permit is issued.

### SECTION A - General Description (Use separate sheets as needed)

1. What is the existing use of the property?

vacant land

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- What is the proposed use or improvement?

100' Communications/Broadband Tower

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2. Describe all activities that will occur as part of the proposed use. In your estimation, what impacts do you think these activities will have on neighboring properties?

We will have a contractor build the tower and we will place equipment to provide broadband services  
Once construction has been completed, the activity at the site should not be significant.

3. Describe all intermediate and final products/services that will be produced/offered/sold.

Communications & Broadband Internet

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4. What materials will be used to construct the building(s)? (Note, if an existing building(s), please list the construction type(s), i.e., factory built building, wood, block, metal)

The tower is a factory built galvanized metal structure anchored in concrete foundations.

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5. Will the project be constructed/completed within one year or phased? One Year  \_\_\_\_\_  
 Phased  if phased, describe the phases and depict on the site plan. \_\_\_\_\_
- 
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6. Provide the following information (when applicable):

A. Days and hours of operation: Days: N/A Hours (from N/A AM to N/A PM)

B. Number of employees: Initially: N/A Future: N/A  
Number per shift Seasonal changes \_\_\_\_\_

C. Total average daily traffic generated:

(1) How many vehicles will be entering and leaving the site.  
On average less than one vehicle per month after short period of initial construction  
\_\_\_\_\_

(2) Total trucks (e.g., by type, number of wheels, or weight)  
light or medium duty pickup truck  
\_\_\_\_\_  
\_\_\_\_\_

(3) Estimate which direction(s) and on which road(s) the traffic will travel from the site?  
West on Rath Ave and South on N Dos Cabezas St. Then East to Site  
\_\_\_\_\_

(4) If more than one direction, estimate the percentage that travel in each direction  
N/A  
\_\_\_\_\_

(5) At what time of day, day of week and season (if applicable) is traffic the heaviest  
Monday-Friday 8-5 with exceptions for urgent troubleshooting and repair  
\_\_\_\_\_

Circle whether you will be on public water system or private well. If private well, show the location on the site plan.  
**Estimated total gallons of water used: per day** 0 **per year** 0

Will you use a septic system? Yes \_\_\_\_\_ No  If yes, is the septic tank system existing?

Yes \_\_\_\_\_ No  Show the septic tank, leach field and 100% expansion area on the site plan.

G. Does your parcel have permanent legal access\*? Yes  No \_\_\_\_\_ if no, what steps are you taking to obtain such access?  
\_\_\_\_\_  
\_\_\_\_\_

\*Section 1807.02A of the Cochise County Zoning Regulations stipulates that no building permit for a non-residential use shall be issued unless a site has permanent and direct access to a publicly maintained street or street where a private maintenance agreement is in place. Said access shall be not less than twenty (20) feet wide throughout its entire length and shall adjoin the site for a minimum distance of twenty (20) feet. If access is from a private road or easement provide documentation of your right to use this road or easement and a private maintenance agreement.

H. For Special Uses only - provide deed restrictions that apply to this parcel if any.

Attached \_\_\_\_\_ NA

8. Identify how the following services will be provided:

Service	Utility Company/Service Provider	Provisions to be made
Water	N/A	
Sewer/Septic	N/A	
Electricity	SSVEC	Aerial Service Drop
Natural Gas	N/A	
Telephone	N/A	
Fire Protection	N/A	

**SECTION B - Outdoors Activities/Off-site Impacts**

1. Describe any activities that will occur outdoors.

Periodic Maintenance of Tower and Radios

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2. Will outdoor storage of equipment, materials or products be needed? Yes \_\_\_\_\_ No  if yes, show the location on the site plan. Describe any measures to be taken to screen this storage from neighboring properties. Chain Link Security Fence

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Will any noise be produced that can be heard on neighboring properties? Yes \_\_\_\_\_ No  if yes; describe the level and duration of this noise. What measures are you proposing to prevent this noise from being heard on neighboring properties?

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3. Will any vibrations be produced that can be felt on neighboring properties? Yes \_\_\_ No  if yes; describe the level and duration of vibrations. What measures will be taken to prevent vibrations from impacting neighboring properties?

N/A

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4. Will odors be created? Yes \_\_\_\_\_ No  If yes, what measures will be taken to prevent these odors from escaping onto neighboring properties?\_

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5. Will any activities attract pests, such as flies? Yes \_\_\_\_\_ No  If yes, what measures will be taken to prevent a nuisance on neighboring properties?

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6. Will outdoor lighting be used? Yes \_\_\_\_ No  If yes, show the location(s) on the site plan. Indicate how neighboring properties and roadways will be shielded from light spillover. Please provide manufacturer's specifications.

7. Do signs presently exist on the property? Yes \_\_\_\_ No  If yes, please indicate type (wall, freestanding, etc.) and square footage for each sign and show location on the site plan.

A. \_\_\_\_\_ B. \_\_\_\_\_ C. \_\_\_\_\_ D. \_\_\_\_\_

8. Will any new signs be erected on site? Yes \_\_\_\_ No  If yes, show the location(s) on the site plan. Also, draw a sketch of the sign to scale, show the copy that will go on the sign and **FILL OUT A SIGN PERMIT APPLICATION** (attached).

9. Show on-site drainage flow on the site plan. Will drainage patterns on site be changed?  
Yes \_\_\_\_ No

If yes, will storm water be directed into the public right-of-way? Yes \_\_\_\_ No

Will washes be improved with culverts, bank protection, crossings or other means?

Yes \_\_\_\_ No

If yes to any of these questions, describe and/or show on the site plan.

10. What surface will be used for driveways, parking and loading areas? (i.e., none, crushed aggregate, chipseal, asphalt, other)

Crushed Rock  
\_\_\_\_\_

11. Show dimensions of parking and loading areas, width of driveway and exact location of these areas on the site plan. (See site plan requirements checklist.)

12. Will you be performing any off-site construction (e.g., access aprons, driveways, and culverts)?  
Yes \_\_\_\_ No  If yes, show details on the site plan. **Note: The County may require off-site improvements reasonably related to the impacts of the use such as road or drainage improvements.**

**SECTION C - Water Conservation and Land Clearing**

1. If the developed portion of the site is one acre or larger, specific measures to conserve water on-site must be addressed. Specifically, design features that will be incorporated into the development to reduce water use, provide for detention and conserve and enhance natural recharge areas must be described. The Planning Department has prepared a *Water Wise Development Guide* to assist applicants. This guide is available upon request. If the site one acre or larger, what specific water conservation measures are proposed? Describe here or show on the site plan submitted with this application.

N/A  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. How many acres will be cleared? Less than 5% of one acre  
If more than one acre is to be cleared describe the proposed dust and erosion control measures to be used  
(Show on site plan if appropriate.) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### SECTION D - Hazardous or Polluting Materials

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Applicant's Signature 

Shane Thompson

Print Applicant's Name \_\_\_\_\_

Date signed 7/19/19

Cochise Tower Neighborhood View



RATH AVE

204-03-036, 035 & 034

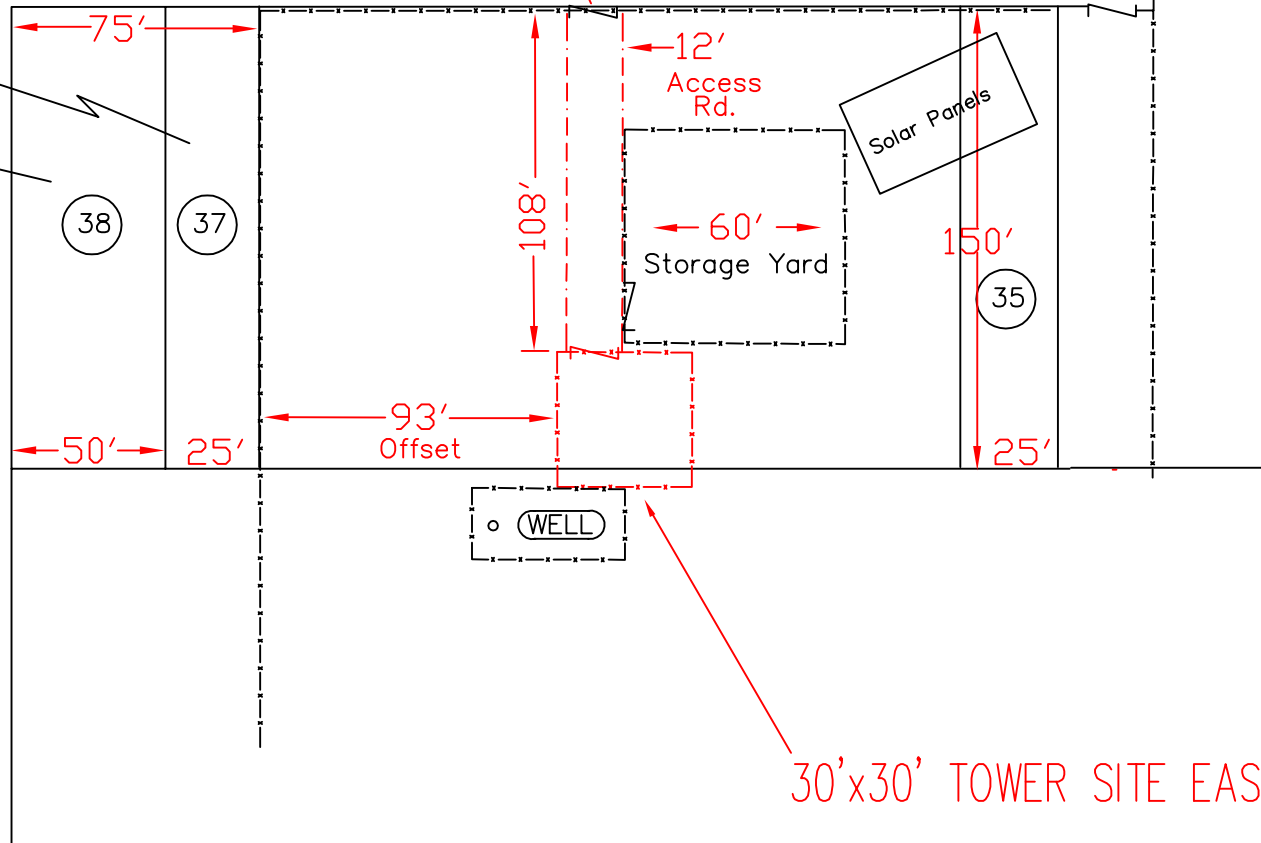
Cochise Elementary School

20' Easement

Robin & Roque Reyes

Carol Ann Cartwell

DOS CABEZAS ST



Place 12' Gate

Access Rd.

Solar Panels

Storage Yard

WELL

30'x30' TOWER SITE EASEMENT

CO. Valley Telecom Group

EXCH. 384

COUNTY: COCHISE

ROUTE

SHEET OF

REA PROJECT: P.A.

J.O. NO.

CONST. SHT OF

MAP REF.

TWP15S RGE 24E SEC 20

TAX DIST 2601

FILED: 7/23/19

REL TO CONST

COSNT COMP

ENG COMP



CONTRACTOR RESPONSIBLE FOR LOCATION OF EXISTING UTILITIES

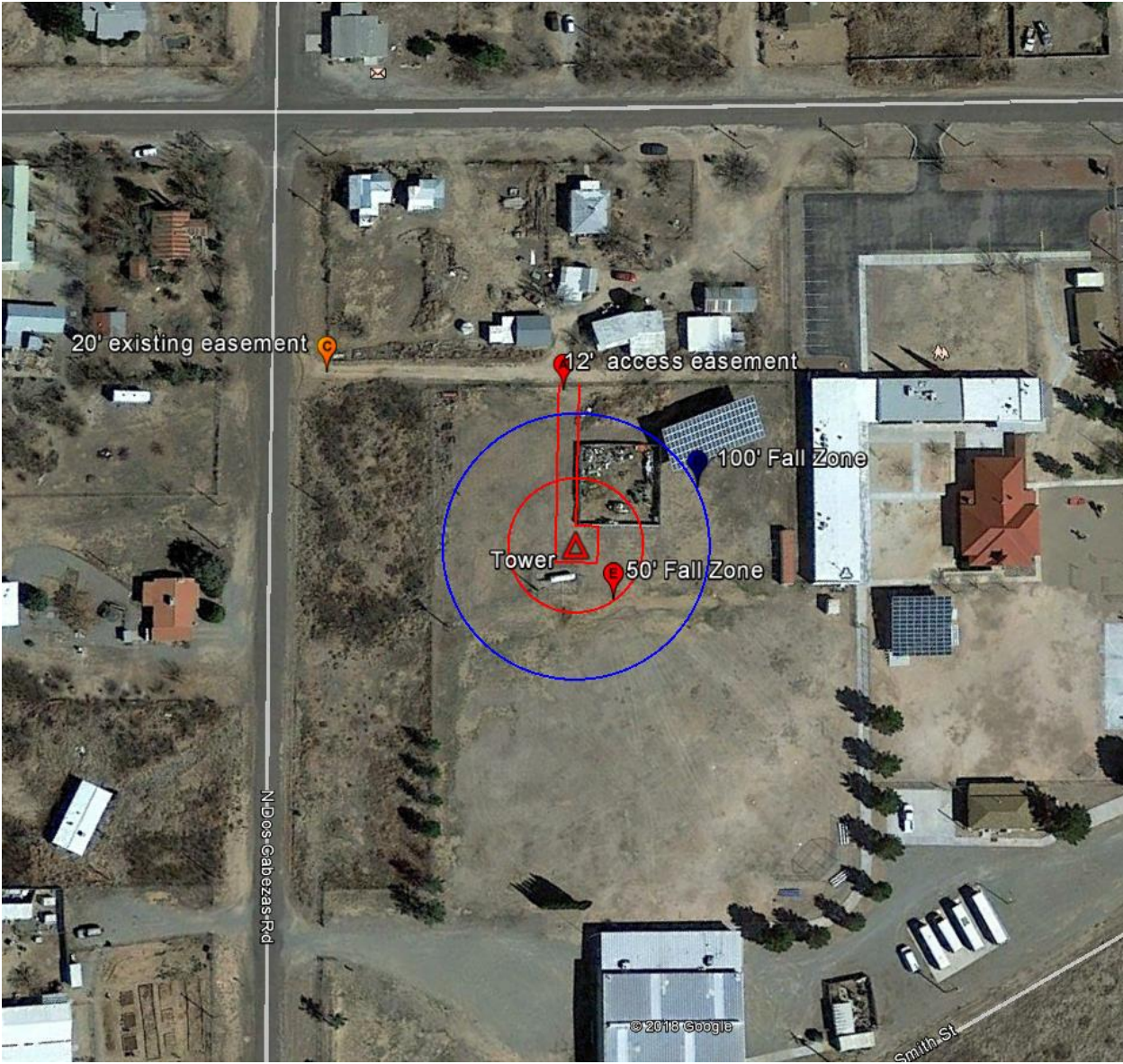
ARIZONA BLUE STAKE 1-800-782-5348

SUB. INFO.

# Updated Overview of Tower Site



Updated Circles Showing Potential Fall Zone



## Supplemental Information for the Application

Site Description – The site is leased from Cochise Elementary School (see attached). The tower will be placed within a 30'x30' chain link security fence on an unused area at the northwest corner of the school grounds. The school grounds are enclosed by a chain link security fence. A 12' access gate will be added to the perimeter fence to allow access. Alternate access via the school driveway near the southwest corner of the school grounds is also available.

Tower Description – The proposed tower is a 100' ROHN HD self-supported structure specifically built and engineered to withstand the local climate and ground conditions. Each of the three legs on the structure will be bolted and secured to the engineered foundation of approximately 15'x15'. The lattice style structure adds additional strength and rigidity to the tower while minimizing the bulk and weight. The tower will accommodate an additional communications tenant per 1813.02. The triangular tower base is approximately 7' in diameter which will place it over 11' from our security fence. Resulting in over 100' from both property lines.

FAA & FCC Registrations are being filed simultaneously with this application.

Citizen Review Report – On June 27, 2019 we mailed the attached letter to the 45 addresses on the mailing list provided by Peter Gardner on May 20. These letter were mailed via USPS First Class Mail from the Willcox Post Office. None of the letters were returned as undeliverable by the USPS.

Responses: Three neighbors contacted Mr. Troy Judd with inquiries about the proposed tower. One of the three inquired via email as to whether he would be able to receive the new wireless internet product since his home was close to the tower. He was pleased to learn that we will be engineering the system to assure the feasibility of such service. The other two inquiries were made by phone and concerned about potential radio waves. We assured both of them that all emissions will be well within the established standards. One of these last two parties was also concerned about the impact this tower might have on the view of the mountains. We explained that the height of this tower will make it less noticeable as will the fact that it will not be lighted. Both of these factors will reduce the impact on the view. Subsequently one of these three individuals sent a follow up letter reiterating concerns for radio waves and raising other questions about the historic nature of the school and whether background checks are required for workers on school property. We comply with security procedures as defined by each of the schools that we work with.



Valley Telephone Cooperative Copper Valley Telephone Valley Connections, LLC  
Valley Telecommunications - Internet - Business Systems

July 19, 2019

Cochise County Planning, Zoning and Building Safety

1415 Melody Lane, Building E

Bisbee, Arizona 85603

To Whom It May Concern:

Please accept this letter as authorization for Shane Thompson, Engineering Supervisor, to discuss and sign Applications and Permits on behalf of Valley Telecom Group. Including Valley Connections, Valley Telephone Cooperative, and Copper Valley Telephone.

Sincerely,

A handwritten signature in black ink that reads "Kristi L. Lee". The signature is written in a cursive, flowing style.

Kristi L. Lee

Chief Operations Officer

Email: [Kristi.lee@teamvtg.net](mailto:Kristi.lee@teamvtg.net)

Office: 520-384-8902



Valley Telephone Cooperative | Copper Valley Telephone | Valley Connections  
Telephone | Internet | Business Solutions

June 27, 2019

Dear Friends and Neighbors,

Valley TeleCom Group is preparing to offer an exciting new internet service in the Cochise area. This unlimited wireless internet service will allow us to expand the area served. As you may be aware, Valley has been providing state of the art communications services to our neighbors in southeast Arizona and southwest New Mexico since 1962. Our headquarters is located at 752 E. Maley Street in Willcox

In order to provide this new internet service to Cochise and the surrounding area, we will need to erect a 100-foot-tall tower on property owned by the Cochise Elementary School at 5025 N. Bowie Avenue in Cochise. The tower is proposed to be located to the west of the solar array near the alley off of N. Dos Cabezas Road. This tower will be enclosed by a new 30 feet by 30 feet security fence.

The county requires us to go through the zoning process of acquiring a special use authorization. Part of that process includes getting feedback from you, our neighbors.

You will also be receiving a letter from the county, with contact information in case of objections to the project. If you have any concerns, questions or objections, we ask and encourage you to contact us first. We are happy to address them, and it may be something we haven't thought of that will make the project that much better. We hope that this will be the start of a very cooperative relationship.

Thank you for your time and consideration. Please find my contact information below:

Troy Judd, CFO  
752 E. Maley Avenue  
Willcox, AZ 85643  
520-384-8934  
[troy.judd@vtc.net](mailto:troy.judd@vtc.net)

Sincerely,

A handwritten signature in black ink that reads "Troy Judd".

Troy Judd, CFO

ARIZONA ELECTRIC PWR INC (APAC)  
PO BOX 670  
BENSON AZ 85602

COCHISE LAND LLC  
1129 E VILLAGE CIRCLE DR S  
PHOENIX AZ 85022

GUZMAN BERNARDO V & NANCY E  
PO BOX 1102  
COCHISE AZ 85606

ATEN DANIEL E & CORI L  
PO BOX 1132  
COCHISE AZ 85606

COLE CLARKE C & LAURA M  
P O BOX 127  
WILLIAMS AZ 86046

HARTMAN JEREMIAH P  
289 34TH STREET NORTH  
ST PETERSBURG FL 33713

BARTLEY SALLY  
PO BOX 1035  
COCHISE AZ 85606

COTA GLORIA ETALS  
1105 E 10TH ST  
DOUGLAS AZ 85607

HILL JOSEPH SR & LINDA  
16811 S WILMOT RD  
SAHUARITA AZ 85629

BONVISUTO JUSTIN M  
360 FARMINGTON AVE  
BRISTOL CT 06010

COULTER WALTER  
28005 RIDGEBLUFF CT  
RANCHO PALOS V CA 90275

JOHNSON BILLY  
7 FARMWOOD DR  
PROSPECT CT 06712

BUHOT MARY  
P O BOX 1065  
COCHISE AZ 85606

FELIX PATRICK DEVERN & VICTORIA /  
PO BOX 1055  
COCHISE AZ 85606

JUPIN AUDREY M  
P O BOX 1093  
COCHISE AZ 85606

CARPER KRISTINE GAY  
PO BOX 1043  
COCHISE AZ 85606

FEREND GERDALINE  
1553 ARLINGTON BLVD  
EL CERRITO CA 94530

KEEPING THOMAS CHARLES  
20149 WOODWARD STREET  
CLINTON TWP MI 48035

CARTER MARIAN M  
2149 E NORMA  
WEST COVINA CA 91791

FLANDERS FRANK W & CINDA L  
PO BOX 1071  
COCHISE AZ 85606

LEMMON DENNIS  
3620 N MOUNTAIN AVE  
TUCSON AZ 85719

CARTWELL CAROL ANN  
155 E DRAGON TRL  
COCHISE AZ 85606

FRANCQUE FAMILY TRUST  
1018 N ROSE ST  
ESCONDIDO CA 92027

LEWIS SHAWN & ELIZABETH  
605 S GLENBROOK ST  
GREENACRES WA 99016

CHOATE SHIELDS RUFUS  
HC 65 BOX 51 TRES LAGUNAS RANCH  
PIE TOWN NM 87827

FRAZIER FRANCES MARGARET  
302 S 8TH STREET  
WILLIAMS AZ 86046

MARTIN JAMES A ETUX  
1253 E FIRST AVE  
CHICO CA 95926

COCHISE CHURCH & HISTORICAL ASSC  
PO BOX 1132  
COCHISE AZ 85606

GESSERT PHILLIP  
5062 N COCHISE STRONGHOLD RD  
COCHISE AZ 85606

MEERE CAROL A  
1129 E VILLAGE CIRCLE DR S  
PHOENIX AZ 85022

NELSON CASEY L  
1018 ROSE  
ESCONDIDO CA 92027

TUCKER KARI LYNN  
150 N 1100 E UNIT 48  
WASHINGTON UT 84780

NELSON JAMES C  
4210 JONATHON PL  
OCEANSIDE CA 92056

UNION PACIFIC RAILROAD  
1400 DOUGLAS STREET, STOP 1640  
OMAHA NE 68179

O DELL JESS D  
PO BOX 1065  
COCHISE AZ 85606

WALLACE MARY M TRUST  
2449 W HEARN RD  
PHOENIX AZ 85023

REGNIER GARY DAVID & DEBRA A  
PO BOX 1089  
COCHISE AZ 85606

WELTER MARLENE M  
735 RIVERTREE DR  
OCEANSIDE CA 92054

REYES ROBIN & ROQUE  
2801 SOYAL OVI  
FLAGSTAFF AZ 86005

YORK FARMS INC  
70 MILL CANYON RD  
SAN MARINO CA 91108

RICKETTS BRYAN D & CAROLYN V  
PO BOX 1103  
COCHISE AZ 85606

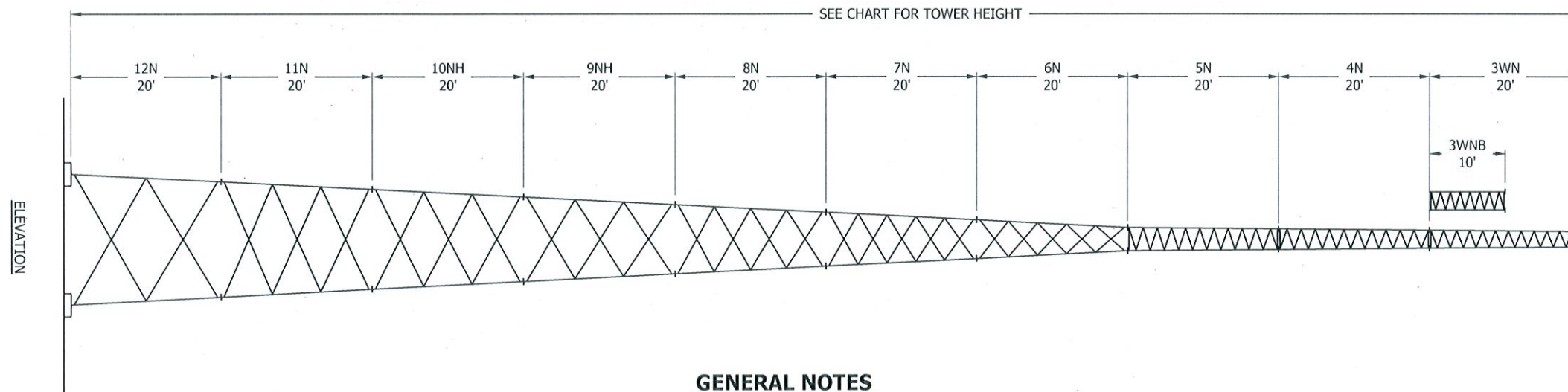
RONE RICHARD W & GABRIELA FAMIL  
PO BOX 1033  
COCHISE AZ 85606

RUIZ MANUEL ODESSIS  
PO BOX 27725  
TUCSON AZ 85726

SAMUEL JULIAN M & GERYL L  
PO BOX 1131  
COCHISE AZ 85606

SOUTHWEST SEA LAND LLC  
551 CARLA WAY  
LA JOLLA CA 92037

TOWER ASSEMBLY NUMBER	TOWER HEIGHT (FT)	TOP	BASE SECTIONS			EFFECTIVE PROJECTED AREA (SQ. FT.)			
			BASE	A-BOLTS 12 REQ'D	FACE SPREAD	TOP		30' BELOW TOP	
						EXP B	EXP C	EXP B	EXP C
SS040HD90	40	3WN	4N	SB4	2'-2"	41	29	60	40
SS050HD90	50	3WNB	5N	SB5	2'-6"	36	27	60	40
SS060HD90	60	3WN	5N	SB5	2'-6"	35	26	60	40
SS070HD90	70	3WNB	6N62	5/8X42	4'-6 1/4"	32	23	54	38
SS080HD90	80	3WN	6N62	5/8X42	4'-6 1/4"	22	15	37	25
SS090HD90	90	3WNB	7N165	5/8X42	6'-6 3/4"	27	18	46	30
SS100HD90	100	3WN	7N165	5/8X42	6'-6 3/4"	20	13	34	21
SS110HD90	110	3WNB	8N106	5/8X42	8'-6 3/4"	24	10	41	17
SS120HD90	120	3WN	8N106	5/8X42	8'-6 3/4"	18	11	31	18
SS130HD90	130	3WNB	9N82	5/8X42	10'-6 3/4"	21	9	36	15
SS140HD90	140	3WN	9N82	5/8X42	10'-6 3/4"	16	10	27	17
SS150HD90	150	3WNB	10N183	3/4X48	12'-7 1/4"	19	11	33	18
SS160HD90	160	3WN	10N183	3/4X48	12'-7 1/4"	15	8	25	14
SS170HD90	170	3WNB	11N332	7/8X60	14'-7 7/8"	18	9	31	15
SS180HD90	180	3WN	11N332	7/8X60	14'-7 7/8"	13	6	21	10
SS190HD90	190	3WNB	12N18	7/8X60	16'-8 3/8"	17	7	30	13



**GENERAL NOTES**

- STANDARD TOWER DESIGNS ARE IN ACCORDANCE WITH APPROVED NATIONAL STANDARD ANSI/TIA-222-G, STRUCTURAL CLASS II, TOPOGRAPHIC CATEGORY 1, 3/4" DESIGN ICE THICKNESS, SEISMIC COEFFICIENT S=1.0.
- TOWER DESIGNS ASSUME ALLOWABLE EFFECTIVE PROJECTED AREAS ARE SYMMETRICALLY PLACED ON THE TOWER.
- DESIGNS ASSUME ONE 7/8" LINE TO TOP AND TWO 7/8" LINES TO 30 FEET BELOW TOP, ONE LINE ON EACH FACE.
- ALL TOWERS ARE PROVIDED WITH STEP BOLTS AND A TAPERED TOP.
- GROUNDING KIT MUST BE ORDERED SEPARATELY.
- ASSEMBLY DRAWINGS AND STANDARD FOUNDATION DETAILS ARE SUPPLIED WITH THE TOWER.
- CUSTOM DESIGNS FOR SITE-SPECIFIC APPLICATIONS ARE AVAILABLE UPON REQUEST.
- INSTALL WARNING PLATE IN A HIGHLY VISIBLE LOCATION.
- ALL ANTENNA INSTALLATIONS MUST BE GROUNDED IN ACCORDANCE WITH LOCAL AND NATIONAL CODES.
- FOR ADDITIONAL BRACING, GROUTING AND DRAINAGE DETAILS SEE DRAWING SK720305
- FOR TAPERED TOP DETAILS SEE DRAWING SK670407
- ALL TOWERS WITH 3WN TOP SECTIONS PROVIDED WITH 3TT TAPERED TOP.
- ALL TOWERS WITH 3WNB TOP SECTION PROVIDED WITH 4TTN TAPERED TOP.
- FOR STEP BOLT DETAILS SEE DRAWING B651264.
- FOR FOUNDATION DETAILS SEE DRAWING DWG-0693 B090548.
- FOR ANCHORS AND SHORT BASE INSTALLATION SEE DRAWING NUMBERS B050439 AND CU730104.

FILE NO.

REVISIONS				
REV	DESCRIPTION	DWN	CHK	APP
4	REVISED GENERAL NOTES	JEC	MDF	HA
DATE: 6/17/2015				

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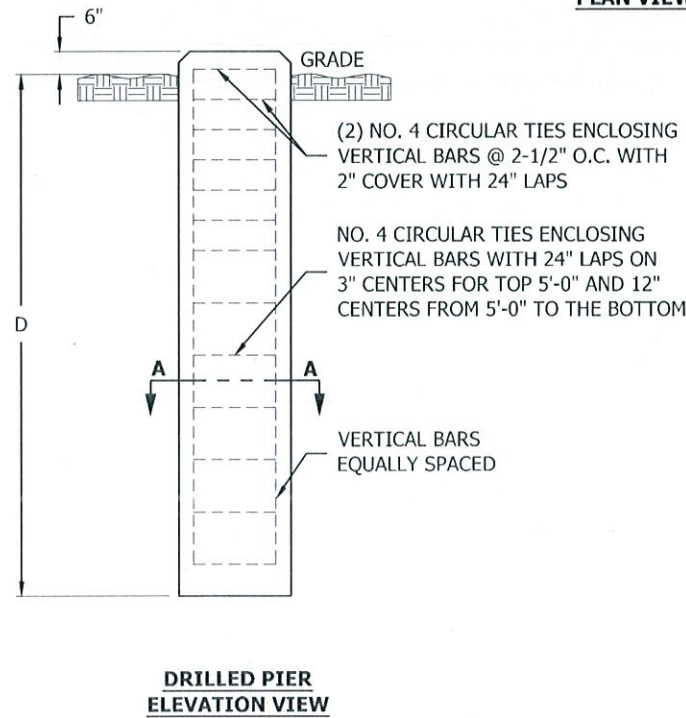
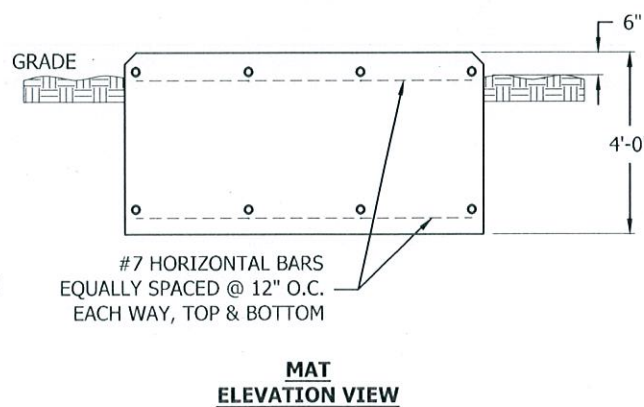
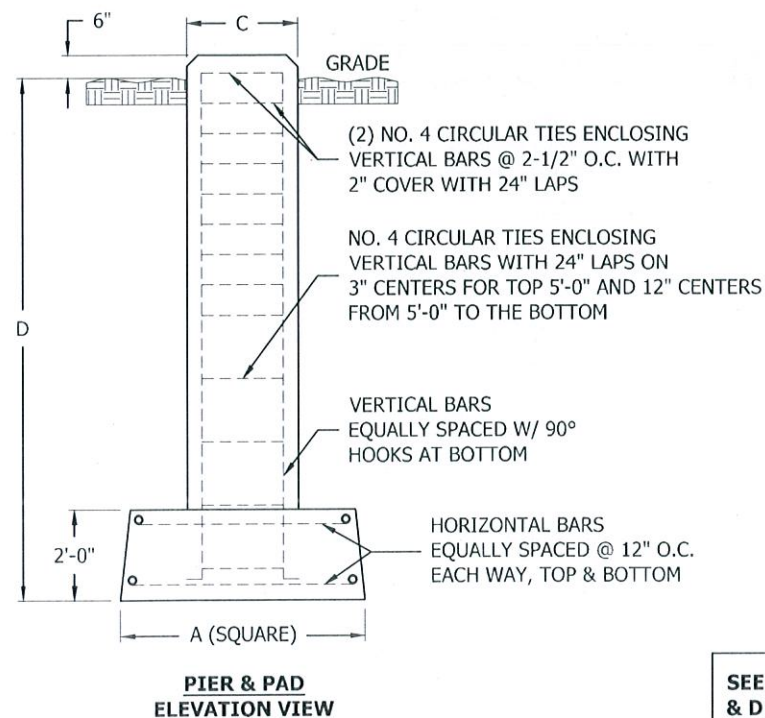
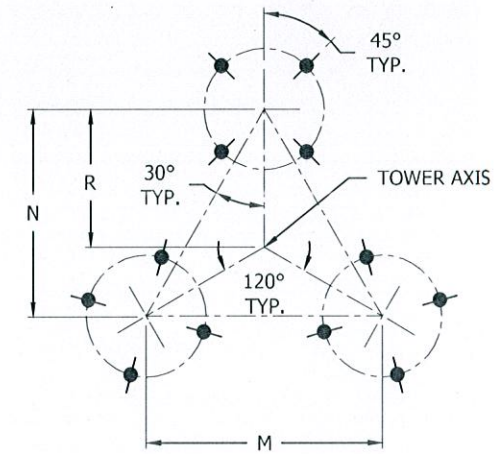
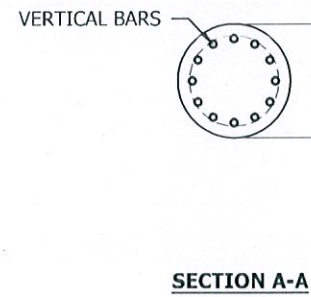
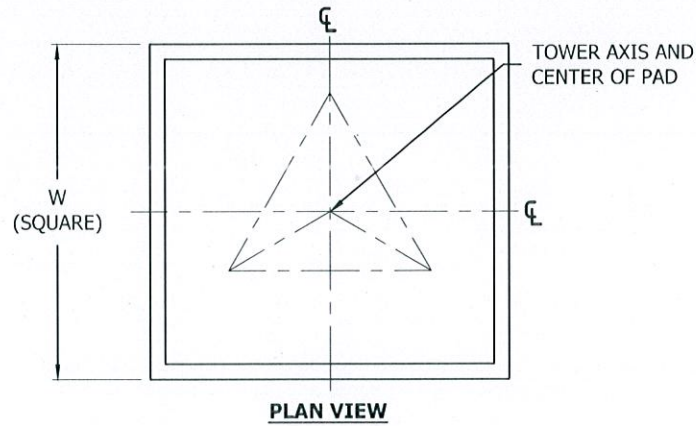
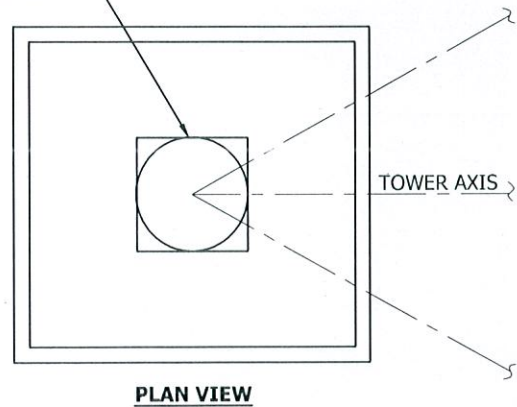
ERECTION PROFILE  
HDSSV REV G 90 MPH 3-SEC, 3/4" ICE

DWN: CEJ	CHK'D: JDM	DATE: 06/20/13
ENGR: HA	SHEET #: 1 OF 1	
PRJ. ENGR:	PRJ. MANG'R:	
DRAWING NO: DWG-0805	REV: 4	

**SELF-SUPPORTING TOWER STANDARD FOUNDATIONS PER ANSI/TIA-222-G PRESUMPTIVE CLAY SOIL**

TOWER BASE SECTION	ANCHOR BOLT DATA						PIER & PAD						MAT		DRILLED PIER				
	LAYOUT DIMENSIONS			A-BOLTS 12- REQ'D OR SHORT BASE	BOLT CIRCLE DIA. INCHES	PROJ. INCHES	DIMENSIONS			VERTICAL BARS	HORIZONTAL BARS	REQ'D CONCRETE (cu.yds-3 fnds)		W	REQ'D CONCRETE (cu.yds)	DIMENSIONS		VERTICAL BARS	REQ'D CONCRETE (cu.yds-3 fnds)
	M	N	R				D	A	C			ROUND PIER	SQUARE PIER			D	Y		
3WN	-	-	-	SB3	3 1/2	-	-	-	-	-	-	-	-	6'-9"	6.8	-	-	-	-
4N	-	-	-	SB4	4 1/4	-	-	-	-	-	-	-	-	8'-0"	9.5	-	-	-	-
5N	-	-	-	SB5	4 1/4	-	-	-	-	-	-	-	-	8'-9"	11.3	-	-	-	-
6N62	4'-6 1/4"	3'-11"	2'-7 5/16"	5/8X42	4 15/16	3 1/2	-	-	-	-	-	-	-	10'-3"	15.6	-	-	-	-
7N165	6'-6 3/4"	5'-8 3/16"	3'-9 1/2"	5/8X42	4 15/16	3 1/2	8'-0"	4'-6"	2'-0"	(8) - #6	#6	6.3	6.9	11'-6"	19.6	-	-	-	-
8N106	8'-6 3/4"	7'-5"	4'-11 5/16"	5/8X42	4 15/16	3 1/2	8'-0"	5'-0"	2'-0"	(8) - #6	#7	7.3	7.9	14'-3"	30.1	15'-0"	2'-6"	(8) - #8	8.4
9N325/9N82	10'-6 3/4"	9'-1 3/4"	6'-1 3/16"	5/8X42	4 15/16	3 1/2	8'-0"	5'-6"	2'-0"	(8) - #6	#7	8.4	9	16'-0"	37.9	18'-0"	2'-6"	(8) - #8	10.2
10N387/10N183	12'-7 1/4"	10'-11"	7'-3 5/16"	3/4X48	5 21/32	4	8'-6"	5'-6"	2'-0"	(8) - #6	#7	8.6	9.2	18'-3"	49.3	20'-0"	2'-6"	(8) - #8	11.1
11N332	14'-7 7/8"	12'-8 5/16"	8'-5 9/16"	7/8X60	7 1/16	5	9'-0"	6'-0"	2'-6"	(8) - #8	#7	11.4	12.6	-	-	22'-0"	2'-6"	(8) - #8	12.3
12N18	16'-8 3/8"	14'-5 9/16"	9'-7 11/16"	7/8X60	7 1/16	5	9'-0"	6'-6"	2'-6"	(8) - #8	#7	12.8	13.9	-	-	25'-0"	2'-6"	(8) - #8	13.9

ROUND OR SQUARE PIER



SEE DRAWING B090548 FOR GENERAL FOUNDATION NOTES & DRAWING B050439 FOR ANCHOR BOLT LAYOUT

FILE NO.

REVISIONS				
REV.	DESCRIPTION	DWN	CHK	APP
3	ADDED 12N FOUNDATIONS	SM	HA	HA
DATE: 11/25/14				



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SELF-SUPPORTING TOWER  
STANDARD FOUNDATIONS  
ANSI/TIA-222-G

DWN: CEJ	CHK'D: SM	DATE: 01/24/13
ENGR: HA	SHEET #:	
PRJ. ENGR:	PRJ. MANG'R:	
DRAWING NO: DWG-0693	REV: 3	


**STANDARD FOUNDATION NOTES  
ANSI/TIA-222-G**

1. STANDARD FOUNDATION DESIGNS ARE IN ACCORDANCE WITH ANSI/TIA-222-G, "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES", SECTION 9 AND ANNEX F FOR THE FOLLOWING PRESUMPTIVE CLAY SOIL PARAMETERS:

N (blows/ft) [blows/m]	Φ (deg)	Y (lb/ft <sup>3</sup> ) [kN/m <sup>3</sup> ]	C (psf) [kPa]	Ultimate Bearing (psf) [kPa]		Ultimate Skin Friction (psf) [kPa]	k (pci) [kN/m <sup>3</sup> ]	ε <sub>s</sub>
				Shallow Fnds.	Deep Fnds.			
8 [26]	0	110 [17]	1000 [48]	5000 [240]	9000 [431]	500 [24]	150 [41,000]	0.01

2. THE PURCHASER MUST VERIFY THAT ACTUAL SITE SOIL PARAMETERS MEET OR EXCEED ANSI/TIA-222-G PRESUMPTIVE CLAY SOIL DESIGN PARAMETERS AND THAT THE PENETRATION AND/OR ZONE OF SEASONAL MOISTURE VARIATION AT THE SITE. FOUNDATION DESIGN MODIFICATIONS MAY BE REQUIRED IN THE EVENT PRESUMPTIVE CLAY SOIL PARAMETERS ARE NOT APPLICABLE FOR THE ACTUAL SUBSURFACE CONDITIONS ENCOUNTERED.
3. A SITE-SPECIFIC INVESTIGATION IS REQUIRED FOR CLASS III STRUCTURES IN ACCORDANCE WITH ANSI/TIA-222-G.
4. FOUNDATION DESIGNS ASSUME FIELD INSPECTIONS WILL BE PERFORMED BY THE PURCHASER'S REPRESENTATIVE TO VERIFY THAT CONSTRUCTION MATERIALS, INSTALLATION METHODS AND ASSUMED DESIGN PARAMETERS ARE ACCEPTABLE BASED ON THE CONDITIONS EXISTING AT THE SITE.
5. WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES, SAFETY REGULATIONS AND UNLESS OTHERWISE NOTED, THE LATEST REVISION OF ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE". PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, EXISTING CONSTRUCTION AND UTILITIES SHALL BE ESTABLISHED PRIOR TO FOUNDATION INSTALLATION.
6. CONCRETE MATERIALS SHALL CONFORM TO THE APPROPRIATE STATE REQUIREMENTS FOR EXPOSED STRUCTURAL CONCRETE.
7. PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR RESISTANCE TO LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENT OF ACI 318 CHAPTER 4 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE. AS A MINIMUM, CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4500 PSI (31.0 MPa) IN 28 DAYS.
8. MAXIMUM SIZE OF AGGREGATE SHALL NOT EXCEED SIZE SUITABLE FOR INSTALLATION METHOD UTILIZED OR 1/3 CLEAR DISTANCE BEHIND OR BETWEEN REINFORCING. MAXIMUM SIZE MAY BE INCREASED TO 2/3 CLEAR DISTANCE PROVIDED WORKABILITY AND METHODS OF CONSOLIDATION SUCH AS VIBRATING WILL PREVENT HONEYCOMBS OR VOIDS.
9. 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 INDICATED.
10. REINFORCING CAGES SHALL BE BRACED TO RETAIN PROPER DIMENSIONS DURING HANDLING, THROUGHOUT PLACEMENT OF CONCRETE AND DURING EXTRACTION OF TEMPORARY CASING.
11. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.

12. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES (76 mm) UNLESS OTHERWISE NOTED. APPROVED SPACERS SHALL BE USED TO INSURE A 3 INCH (76 mm) MINIMUM COVER ON REINFORCEMENT. CONCRETE COVER FROM TOP OF FOUNDATION TO ENDS OF VERTICAL REINFORCEMENT SHALL NOT EXCEED 3 INCHES (76 mm) NOR BE LESS THAN 2 INCHES (51 mm).
13. SPACERS SHALL BE ATTACHED INTERMITTENTLY THROUGHOUT THE ENTIRE LENGTH OF VERTICAL REINFORCING CAGES TO INSURE CONCENTRIC PLACEMENT OF CAGES IN EXCAVATIONS.
14. FOUNDATION DESIGNS ASSUME STRUCTURAL BACKFILL TO BE COMPACTED IN 8 INCH (200 mm) MAXIMUM LAYERS TO 95% OF MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D698. ADDITIONALLY, STRUCTURAL BACKFILL MUST HAVE A MINIMUM COMPACTED UNIT WEIGHT OF 100 POUNDS PER CUBIC FOOT (16 kN/m<sup>3</sup>).
15. FOUNDATION DESIGNS ASSUME LEVEL GRADE AT THE SITE.
16. FOUNDATION INSTALLATION SHALL BE SUPERVISED BY PERSONNEL KNOWLEDGEABLE AND EXPERIENCED WITH THE PROPOSED FOUNDATION TYPE. CONSTRUCTION SHALL BE IN ACCORDANCE WITH GENERALLY ACCEPTED INSTALLATION PRACTICES.
17. FOR FOUNDATION AND ANCHOR TOLERANCES SEE DRAWING A810214.
18. LOOSE MATERIAL SHALL BE REMOVED FROM BOTTOM OF EXCAVATION PRIOR TO CONCRETE PLACEMENT. SIDES OF EXCAVATION SHALL BE ROUGH AND FREE OF LOOSE CUTTINGS.
19. CONCRETE SHALL BE PLACED IN A MANNER THAT WILL PREVENT SEGREGATION OF CONCRETE MATERIALS, INFILTRATION OF WATER OR SOIL AND OTHER OCCURRENCES WHICH MAY DECREASE THE STRENGTH OR DURABILITY OF THE FOUNDATION.
20. FREE FALL CONCRETE MAY BE USED PROVIDED FALL IS VERTICAL DOWN WITHOUT HITTING SIDES OF EXCAVATION, FORMWORK, REINFORCING BARS, FORM TIES, CAGE BRACING OR OTHER OBSTRUCTIONS. UNDER NO CIRCUMSTANCES SHALL CONCRETE FALL THROUGH WATER.
21. CONCRETE SHALL BE PLACED AGAINST UNDISTURBED SOIL EXCEPT FOR PIERS OR PIER AND PAD FOUNDATIONS. FORMS FOR PIERS SHALL BE REMOVED PRIOR TO PLACING STRUCTURAL BACKFILL.
22. CONSTRUCTION JOINTS, IF REQUIRED IN PIER MUST BE AT LEAST 12 INCHES (305 mm) BELOW BOTTOM OF EMBEDMENTS AND MUST BE INTENTIONALLY ROUGHENED TO A FULL AMPLITUDE OF 1/4 INCH (6 mm). FOUNDATION DESIGN ASSUMES NO OTHER CONSTRUCTION JOINTS.
23. CASING, IF USED, SHALL NOT BE LEFT IN PLACE. EQUIPMENT, PROCEDURES, AND PROPORTIONS OF CONCRETE MATERIALS SHALL INSURE CONCRETE WILL NOT BE ADVERSELY DISTURBED UPON CASING REMOVAL. DRILLING FLUID, IF USED, SHALL BE FULLY DISPLACED BY CONCRETE AND SHALL NOT BE DETRIMENTAL TO CONCRETE OR SURROUNDING SOIL. CONTAMINATED CONCRETE SHALL BE REMOVED FROM TOP OF FOUNDATION AND REPLACED WITH FRESH CONCRETE.
24. TOP OF FOUNDATION SHALL BE SLOPED TO DRAIN WITH A FLOATED FINISHED. EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4" X 3/4" (19 mm X 19 mm) MINIMUM.
25. FOR ANCHOR BLOCK TYPE FOUNDATIONS, FOR GUYED TOWERS, ADDITIONAL CORROSION PROTECTION MAY BE REQUIRED FOR STEEL GUY ANCHORS IN DIRECT CONTACT WITH SOIL. DESIGN ASSUMES PERIODIC INSPECTIONS WILL BE PERFORMED OVER THE LIFE OF THE STRUCTURE TO DETERMINE IF ADDITIONAL ANCHOR CORROSION PROTECTION MEASURES MUST BE IMPLEMENTED BASED ON OBSERVED SITE-SPECIFIC CONDITIONS.

FILE NO.				
REVISIONS				
REV.	DESCRIPTION	DWN	CHK	APP
2	REVISED NOTE 7 TO 4500 PSI DATE: 2/10/2014	JHY	HA	HA
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ANSI/TIA-222-G STANDARD FOUNDATION NOTES				
DWN:	FAD	CHK'D:	HA	DATE: Nov/20/2009
ENG'R:	HA	SHEET #: 1 OF 1		
PRJ. ENGR:	PRJ. MANG'R:			
DRAWING NO: B090548				REV: 2

# FOUNDATION AND ANCHOR TOLERANCES

## ALL FOUNDATIONS

1. CONCRETE DIMENSIONS: PLUS OR MINUS 1" (25mm)
2. DEPTH OF FOUNDATION: PLUS 3" (76mm) OR MINUS 0"
3. DRILLED FOUNDATIONS OUT OF PLUMB: 1.0°
4. REINFORCING STEEL PLACEMENT: PER A.C.I. 301
5. PROJECTION OF EMBEDMENTS: PLUS OR MINUS 1/8" (3mm)
6. VERTICAL EMBEDMENTS OUT OF PLUMB: 0.5°

## ANCHOR BOLTS

7. MAXIMUM DISTANCE FROM CENTERLINE OF ANCHOR BOLTS TO CENTERLINE OF FOUNDATION: 1/24 OF PIER DIAMETER UP TO A MAXIMUM OF 2" (51mm)
8. ANCHOR BOLT SPACING: 1/16" (2mm)
9. ANCHOR BOLT CIRCLE ORIENTATION: 0.25°
10. ANCHOR BOLT CIRCLE DIAMETER: PLUS OR MINUS 1/16" (2mm)

## SELF-SUPPORTING TOWERS

11. FACE SPREAD DIMENSION CENTER TO CENTER OF ANCHOR BOLT CIRCLES: PLUS OR MINUS 1/16" (2mm) OR 1/16" (2mm) PER 20 FT. (6m) OF FACE SPREAD
12. MAXIMUM DIFFERENCE BETWEEN ANY TWO FOUNDATION ELEVATIONS: 1/2" (13mm)


## GUYED TOWERS

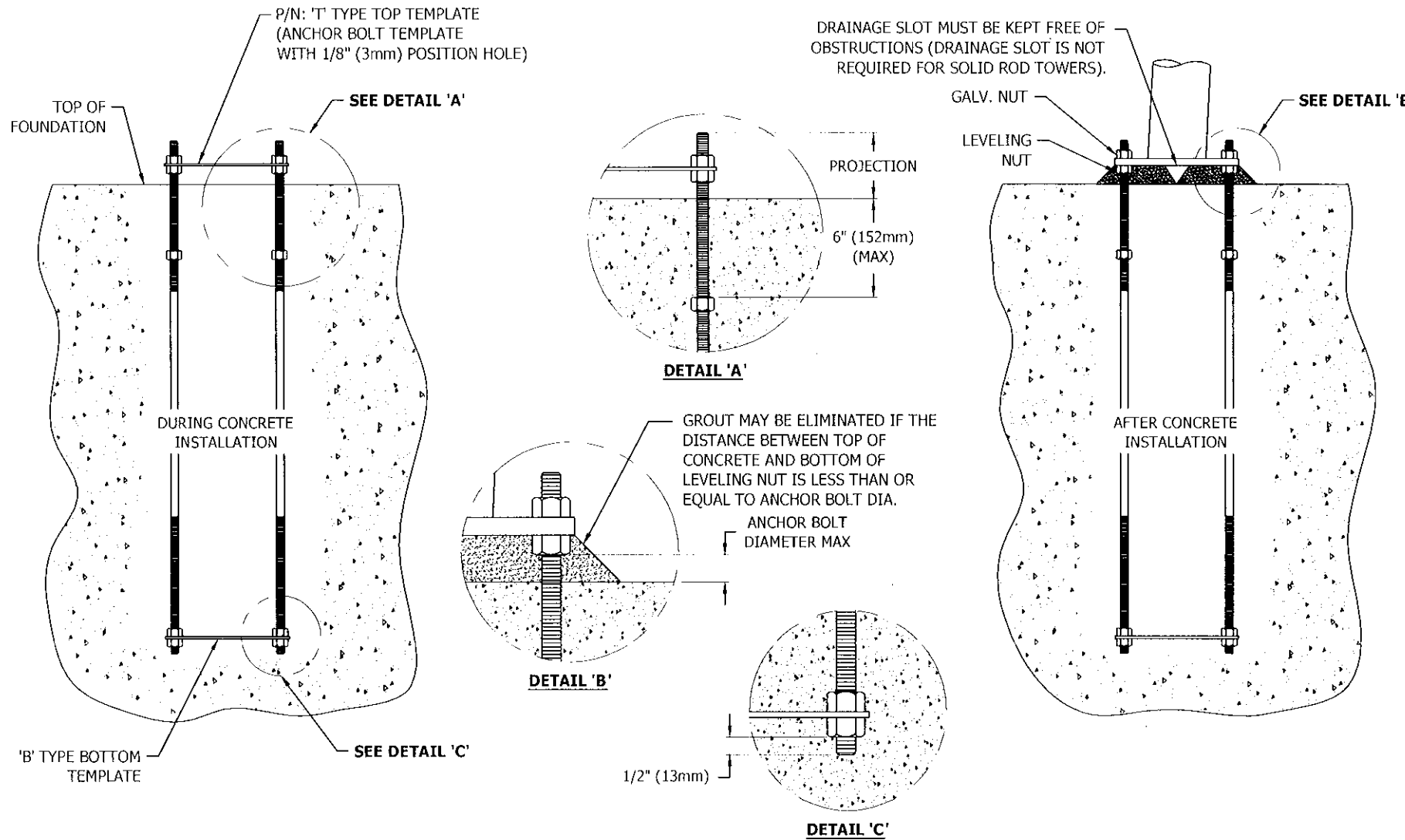
13. GUY RADIUS: PLUS OR MINUS 5% OF DISTANCE SPECIFIED
14. ANCHOR ELEVATION: PLUS OR MINUS 5% OF GUY RADIUS
15. ANCHOR ALIGNMENT (PERPENDICULAR TO GUY RADIUS): 1.0°
16. ANCHOR ROD SLOPE: PLUS OR MINUS 1.0°
17. ANCHOR ROD ALIGNMENT WITH GUY RADIUS: PLUS OR MINUS 1.0°
18. ANCHOR HEAD OUT OF PLUMB: 1.0°
19. GUY INITIAL TENSION: PLUS OR MINUS 10% OF TENSION SPECIFIED

NOTE: TOLERANCES IN NOTES 13 AND 14 CAN NOT OCCUR SIMULTANEOUSLY.

### WARNING!!!

AFTER ANCHOR BOLTS ARE INSTALLED IN CONCRETE HAS TAKEN ITS INITIAL SET, ANCHOR BOLTS MUST NOT BE MOVED, BENT OR REALIGNED IN ANY MANNER. A NUT LOCKING DEVICE MUST BE INSTALLED ON ALL ANCHOR BOLTS.

FILE NO.				
REVISIONS				
REV.	DESCRIPTION	DWN	CHK	APP
9	UPDATED TITLE BLOCK DATE: 05/13/2015	JHY	JDM	HA
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FOUNDATION & ANCHOR TOLERANCE				
DWN:	CSR	CHK'D:	KTL	DATE:
				09/25/1987
ENGR:	XK	SHEET #:	1 OF 1	
PRJ. ENGR:		PRJ. MANG'R:		
DRAWING NO:	A810214			REV:
				9



**ANCHOR BOLT INSTALLATION TOLERANCES**

1. FACE SPREAD DIMENSION CENTER-TO-CENTER OF ANCHOR BOLT CIRCLES - PLUS OR MINUS 1/16" (2mm) OR 1/16"(2mm) PER 20 FT. (6m) OF FACE SPREAD.
2. MAXIMUM DIFFERENCE BETWEEN ANY TWO FOUNDATION ELEVATIONS - 1/2" (13mm).
3. CONCRETE DIMENSIONS - PLUS OR MINUS 1" (25mm).
4. DEPTH OF FOUNDATION - PLUS 3" (76mm) OR MINUS 0".
5. DRILLED FOUNDATIONS OUT OF PLUMB - 1.0 DEGREE.
6. REINFORCING STEEL PLACEMENT - PER A.C.I. 301.
7. PROJECTION OF EMBEDMENTS - PLUS OR MINUS 1/8" (3mm).
8. VERTICAL EMBEDMENTS OUT OF PLUMB - 1/2 DEGREE.
9. MAXIMUM DISTANCE FROM CENTERLINE OF ANCHOR BOLTS TO CENTERLINE OF FOUNDATION - 1/24 OF PIER DIAMETER UP TO A MAXIMUM OF 2" (50mm).
10. ANCHOR BOLT SPACING - 1/16" (2mm).
11. ANCHOR BOLT CIRCLE ORIENTATION - 1/4 DEGREE.
12. ANCHOR BOLT CIRCLE DIAMETER - PLUS OR MINUS 1/16" (2mm).

**!!! WARNING !!!**

- AFTER ANCHOR BOLTS ARE INSTALLED AND CONCRETE HAS TAKEN ITS INITIAL SET, ANCHOR BOLTS MUST NOT BE MOVED, BENT OR REALIGNED IN ANY MANNER.

**ANCHOR BOLT TIGHTENING NOTES**


1. NUTS, THREADS AND ALL NUT CONTACT SURFACES MUST BE CLEANED AND LUBRICATED AFTER CONCRETE INSTALLATION AND IMMEDIATELY BEFORE INSTALLATION OF LEVELING AND TOP NUTS. NUTS MUST BE FREE TO MOVE THROUGHOUT THE ENTIRE LENGTH OF THE ANCHOR BOLT THREAD PROJECTION.
2. AFTER LEVELING THE LEVELING NUTS AND SETTING THE BASE PLATE, TOP NUTS MUST BE INSTALLED IN AN INCREMENTAL STAR TIGHTENING SEQUENCE TO A SNUG TIGHT CONDITION FOLLOWED BY TIGHTENING THE LEVELING NUTS IN A SIMILAR PATTERN TO A SNUG TIGHT CONDITION. SNUG TIGHT IS DEFINED BY THE TIGHTNESS OBTAINED WITH THE EFFORT OF ONE PERSON WITH A 12 INCH NOMINAL LENGTH WRENCH.
3. AFTER ALL TOP AND LEVELING NUTS ARE TIGHTENED TO A SNUG TIGHT CONDITION, TOP NUTS SHALL BE FURTHER TIGHTENED IN AN INCREMENTAL STAR PATTERN WITH THE LEVELING NUTS SECURED TO RESULT IN A 1/3 TOP NUT ROTATION FOR ANCHOR BOLTS 1-1/2 INCHES OR LESS IN DIAMETER, OR A 1/6 TOP NUT ROTATION FOR ANCHOR BOLTS GREATER THAN 1-1/2 INCHES IN DIAMETER.

**NOTES**

1. ALL ANCHOR BOLTS MUST MEET OR EXCEED REQUIREMENTS OF A.S.T.M. F1554-S2, S5 GRADE 105.
2. GROUT TO BE 5000 PSI MIN. ULTIMATE STRENGTH/7 DAY NON-SHRINKING AND NON-METALLIC.
3. SPECIAL CARE MUST BE TAKEN WHEN LIFTING ANCHOR BOLT CLUSTER, IN ORDER TO PREVENT ANCHOR BOLT TEMPLATE DISTORTION.
4. ANCHOR BOLT ASSEMBLY MUST BE ADEQUATELY SUPPORTED AND RESTRAINED TO PREVENT MOVEMENT OF THE CLUSTER DURING CONCRETE INSTALLATION.
5. IT IS THE RESPONSIBILITY OF THE FOUNDATION CONTRACTOR TO VERIFY THAT THE CORRECT ANCHOR BOLT TEMPLATE AND FOUNDATION SHOWN ON RESPECTIVE SITE DRAWINGS ARE BEING USED.
6. IT IS THE RESPONSIBILITY OF THE FOUNDATION DESIGN ENGINEER TO INSURE THAT THE ANCHORAGES PROVIDED ARE COMPATIBLE WITH THE PROPOSED FOUNDATION DESIGNS AND THAT THE CAPACITIES OF THE ANCHORAGES ARE NOT LIMITED BY THE STRENGTH OF THE FOUNDATIONS.

**!! WARNING !!**  
**PRIOR TO PLACING CONCRETE:**  
 • CHECK THAT THE TEMPLATE ANCHOR BOLT CIRCLE MATCHES THE ANCHOR BOLT CIRCLE SHOWN ON THE STRUCTURE DRAWING.  
 • CALL ROHN (309)-566-3000 FOR ANY DISCREPANCY.

FILE NO.				
REVISIONS				
REV.	DESCRIPTION	DWN	CHK	APP
4	ADDED DIMENSION TO SHOW PROJECTION	CEJ	JDM	HA
DATE: 01/30/14				

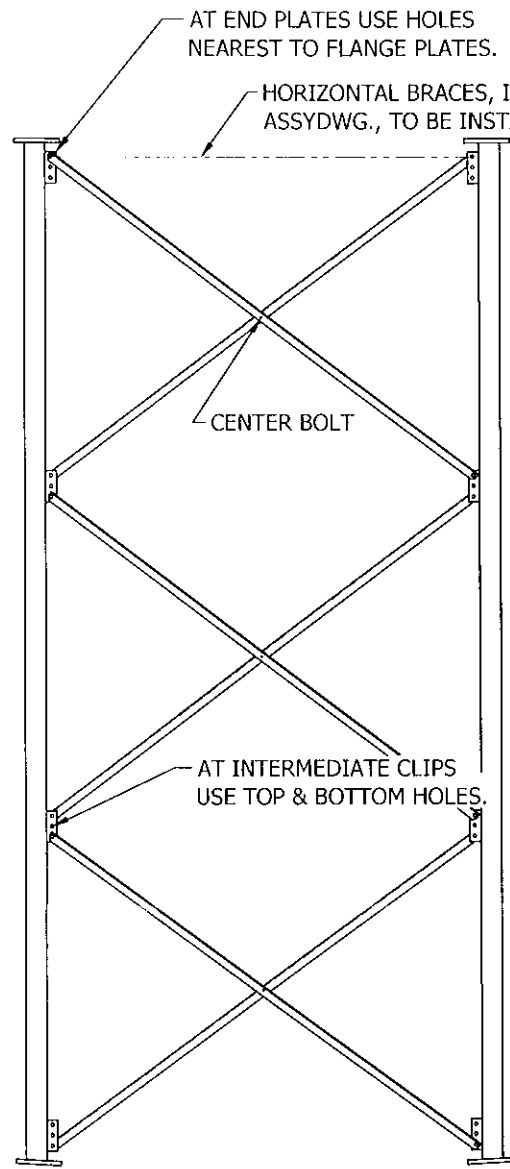


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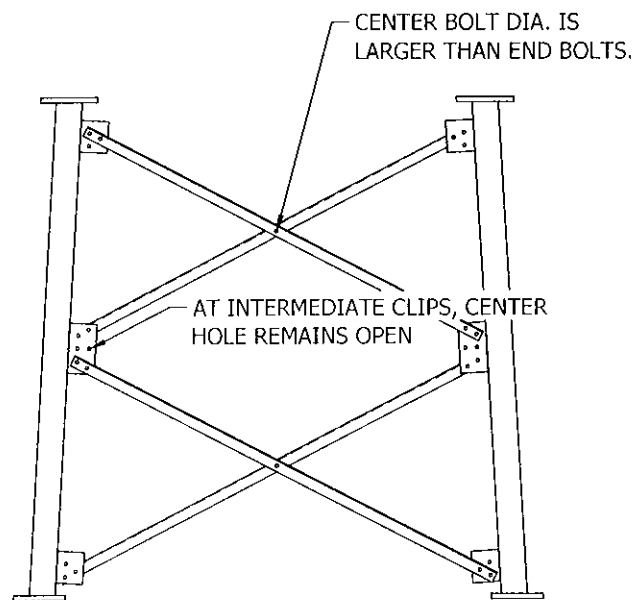
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**ANCHOR BOLT LAYOUTS  
 FOR 5/8", 3/4", 7/8", & 1" ANCHOR BOLTS**

DWN: MF	CHK'D: KTL	DATE: 09/07/05
ENG'R: HA	SHEET #: 1 OF 1	
PRJ. ENG'R:	PRJ. MANG'R:	
DRAWING NO: B050439	REV: 4	

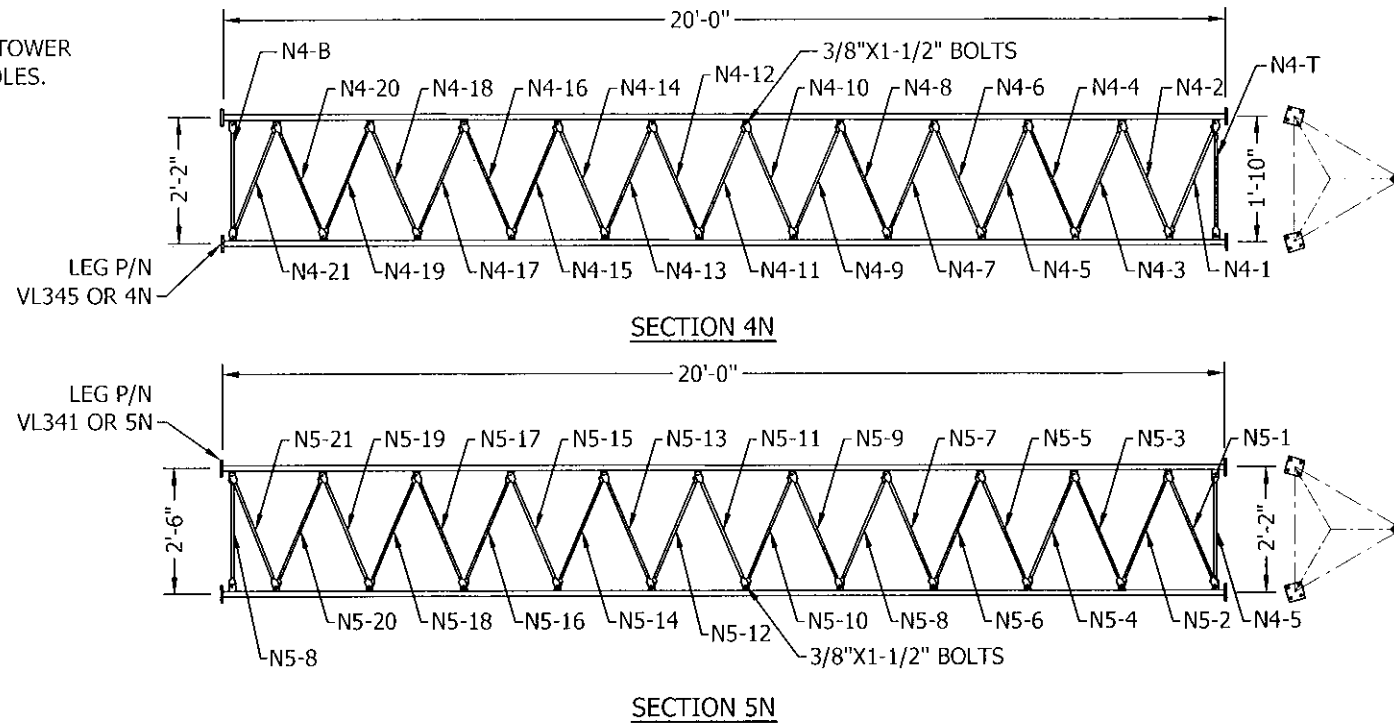


TYPICAL ONE BOLT, BRACE CONNECTION DETAIL

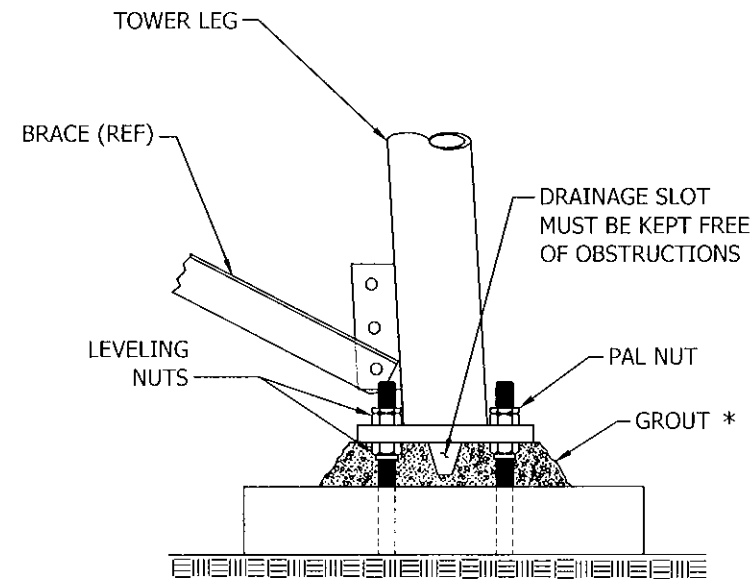
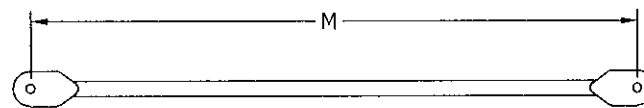


TYPICAL TWO-BOLT, BRACE CONNECTION DETAIL

NOTE: SECTIONS SHOULD BE ASSEMBLED ON EVEN GROUND & LEVELED TO INSURE STRAIGHTNESS



IMPORTANT: LEG P/N IS STAMPED AT BOTTOM OF BASE FLANGE PLATE OF EACH SECTION LEG.



GROUTING AND DRAINAGE DETAILS

\* GROUT MUST BE STRUCTURAL & MUST BE 5000 PSI (34.5 MPa) MINIMUM ULTIMATE STRENGTH NON-SHRINK & NON-METALLIC OR APPROVED EQUAL AND INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

SECTION 4N		SECTION 5N	
P/N	M	P/N	M
N4-1	21 3/8"	N5-1	24 3/4"
N4-2	21 15/16"	N5-2	25 1/4"
N4-3	22 1/16"	N5-3	25 7/16"
N4-4	22 1/4"	N5-4	25 5/8"
N4-5	22 3/8"	N5-5	25 3/4"
N4-6	22 9/16"	N5-6	25 15/16"
N4-7	22 3/4"	N5-7	26 1/8"
N4-8	22 7/8"	N5-8	26 1/4"
N4-9	23 1/16"	N5-9	26 7/16"
N4-10	23 3/16"	N5-10	26 5/8"
N4-11	23 3/8"	N5-11	26 3/4"
N4-12	23 9/16"	N5-12	26 15/16"
N4-13	23 11/16"	N5-13	27 1/8"
N4-14	23 7/8"	N5-14	27 5/16"
N4-15	24 1/16"	N5-15	27 7/16"
N4-16	24 3/16"	N5-16	27 5/8"
N4-17	24 3/8"	N5-17	27 13/16"
N4-18	24 9/16"	N5-18	28"
N4-19	24 11/16"	N5-19	28 1/8"
N4-20	24 7/8"	N5-20	28 5/16"
N4-21	25 1/16"	N5-21	28 1/2"
N4-T	18 9/16"		
N4-B	22 1/2"		

FILE NO. Standard-SSV				
REVISIONS				
REV.	DESCRIPTION	DWN	CHK	APP
8	VL341 WAS VL346 DATE: Mar/21/2005	M.F.	JDM	H.A.

DWG REFERENCE



6718 WEST PLANK ROAD  
PEORIA, IL 61604  
TOLL FREE 800-727-ROHN

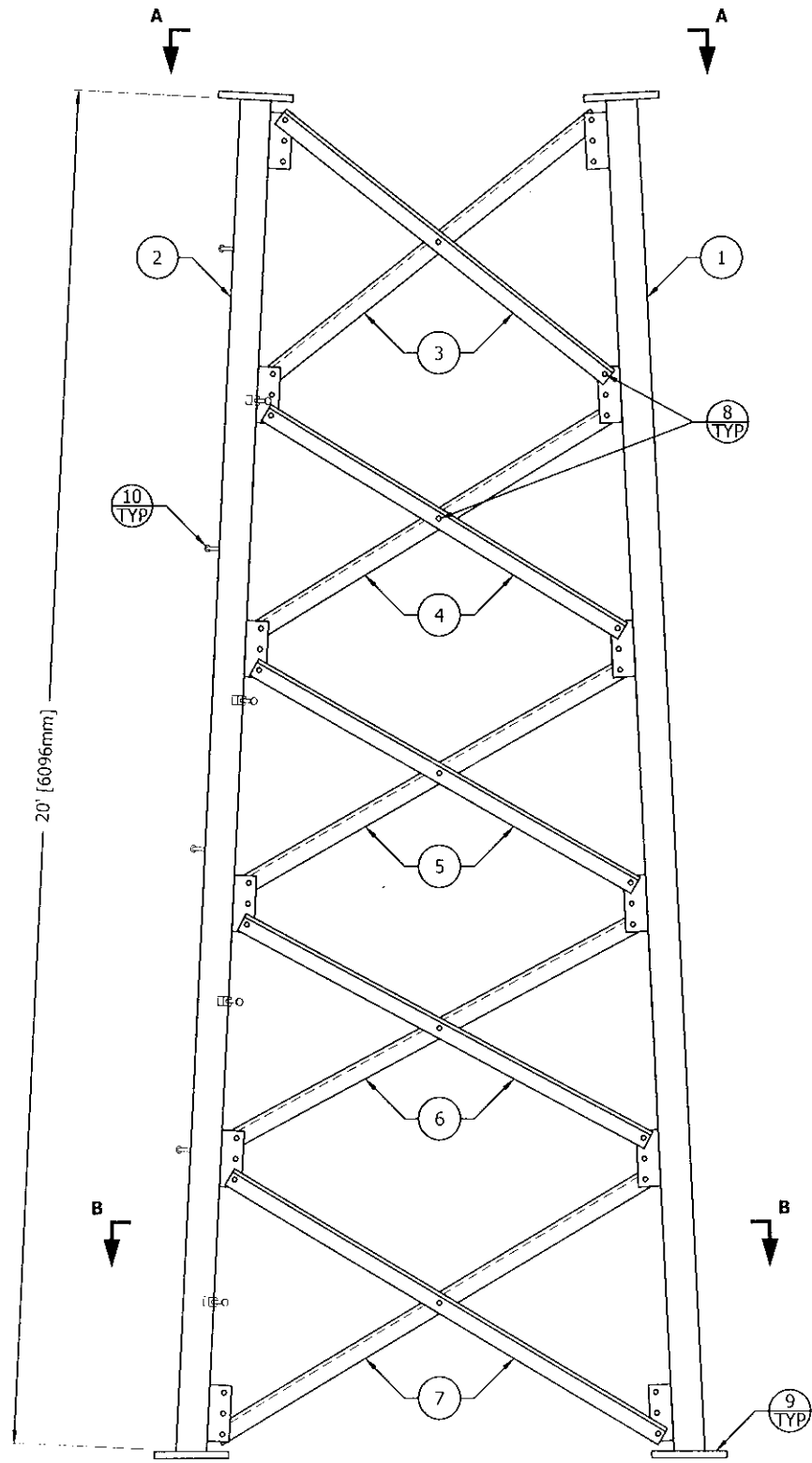
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TOWER PROFILE  
GROUTING & DRAINAGE DETAIL

DWN:	O.H	CHK'D:	WDU	DATE:	Mar/03/1972
ENGR:	TWS				
DRAWING NO:	SK720305			REV:	8

Aug/29/2006 11:57:47 AM

11/2/2006



ELEVATION VIEW

FLANGE	OFFSET	BEVEL	FLANGE PLATE (P/N)	SPREAD
TOP	N/A	N/A	5" X 5" X 3/4" (P/N: 5A)	4'-6 1/4" [1378mm]
BOTTOM	1/4" [6mm]	3 1/3° STD	5" X 5" X 3/4" (P/N: 5B)	6'-6 3/4" [2000mm]

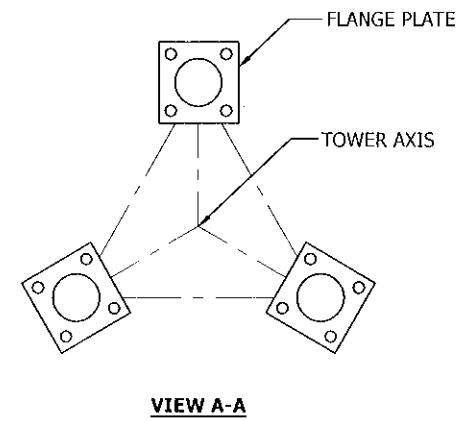
**SECTION ASSEMBLY P/N: 7N165**

**BILL OF MATERIAL**

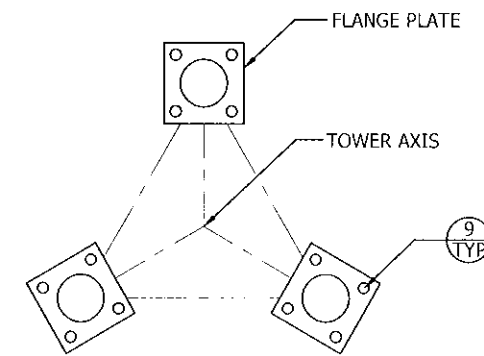
ITEM	PART NO.	QTY	DESCRIPTION	
1	VL144	2	LEG SSV 6-7N 2STD 20'5 5BASEOF	[PIPE 51mm STD]
2	VL144S	1	LEG SSV 6-7N 2STD 20'5 5BASEOF	[PIPE 51mm STD]
3	N71	6	BRACE DS SS7T L1.5X.13X5.71'	[L 38x38x3]
4	N72	6	BRACE DS SS7T L1.5X.13X6.03'	[L 38x38x3]
5	N73	6	BRACE DS SS7T L1.5X.13X6.35'	[L 38x38x3]
6	N74	6	BRACE DS SS7T L1.5X.13X6.69'	[L 38x38x3]
7	N75	6	BRACE DS SS7T L1.5X.13X6.92'	[L 38x38x3]
8	210017GA	75	BOLT ASSY 1/2 X 1-1/4 HSB A325	[M13x32]
9	110161	12	NUT 5/8 ( JAM - PAL ) HDG	[M16]
10	5/8STEP	16	BOLT ASSY STEP 5/8X7 W/DBN	[M16x178]

**GENERAL NOTES:**

- LEG PART NUMBER IS STAMPED AT THE BOTTOM OF EACH LEG AND MUST BE LOCATED AT THE BOTTOM OF THE SECTION FOR PROPER ASSEMBLY.
- STEP BOLTS ARE PROVIDED ON ONE LEG ONLY.
- THIS SECTION IS A BASE SECTION. SEE THE TOWER ASSEMBLY FOR ANCHOR BOLTS. PAL NUTS ARE SUPPLIED FOR THE ANCHOR BOLTS.
- DRAWING IS N.T.S. AND IS FOR ASSEMBLY PURPOSES ONLY.
- NOMINAL METRIC EQUIVALENTS ARE GIVEN FOR REFERENCE ONLY AND SHALL NOT BE SUBSTITUTED FOR THE DESCRIBED SIZES UNLESS OTHERWISE APPROVED BY ROHN PRODUCTS.



VIEW A-A



VIEW B-B

FILE NO.				
REVISIONS				
REV	DESCRIPTION	DWN	CHK	APP
3	REDRAWN	JHY	CEJ	HA
DATE: 11/13/2012				

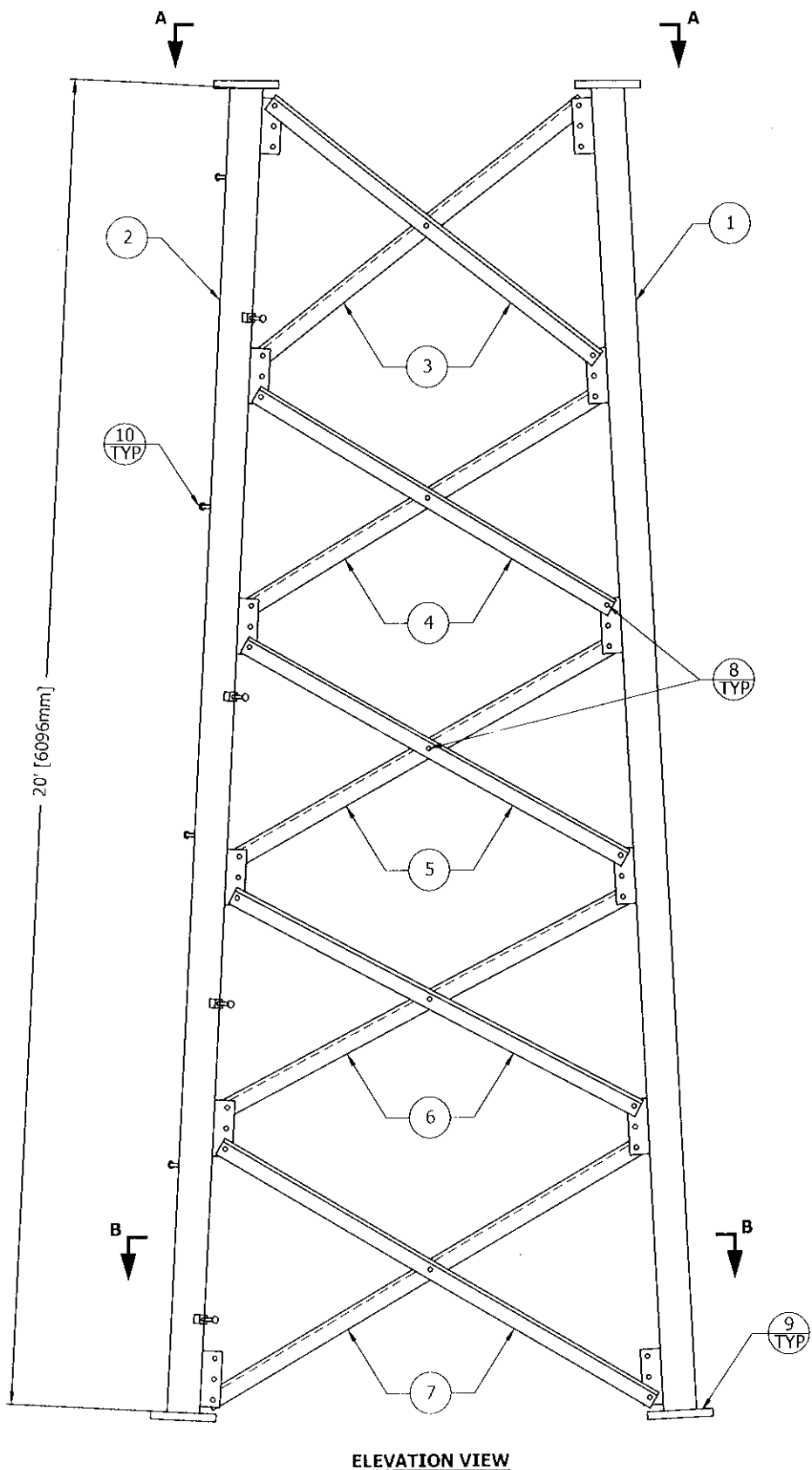


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SECTION ASSEMBLY  
DETAILS FOR SSV 7N165 (BASE)

DWN: MK	CHK D: KTL	DATE: Jun/3/1982
ENGR: OH	SHEET #: 1 OF 1	
PRJ. ENGR:	PRJ. MANG'R:	
DRAWING NO: A820222	REV: 3	



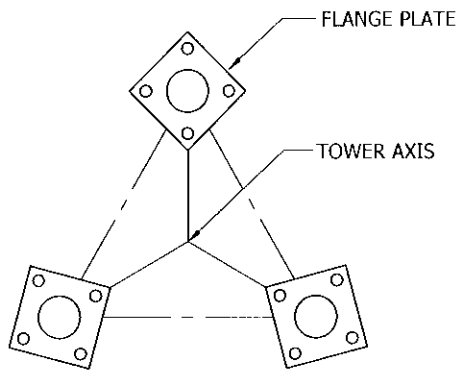
ELEVATION VIEW

FLANGE	OFFSET	BEVEL	FLANGE PLATE (P/N)	SPREAD
TOP	N/A	3 1/3° REV	4 1/2" X 4 1/2" X 5/8" (P/N: VL906)	2'-6" [762mm]
BOTTOM	N/A	N/A	5" X 5" X 3/4" (P/N: 5A)	4'-6 1/4" [1378mm]

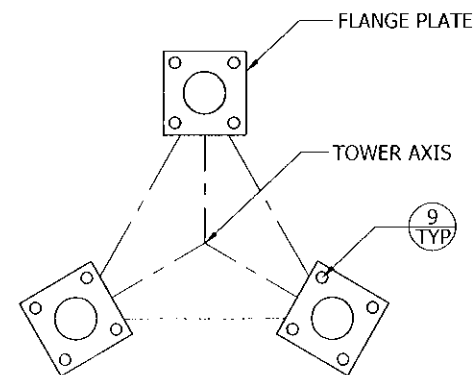
SECTION ASSEMBLY P/N: 6N				
BILL OF MATERIAL				
ITEM	PART NO.	QTY	DESCRIPTION	
1	VL347	2	LEG SSV 6N 2STD 20' 45BEV 5	[PIPE 51mm STD]
2	VL347S	1	LEG SSV 6N 2STD 20' 45BEV 5	[PIPE 51mm STD]
3	N61	6	BRACE DS SS6T L1.5X.13X4.39'	[L 38x38x3]
4	N62	6	BRACE DS SS6T L1.5X.13X4.61'	[L 38x38x3]
5	N63	6	BRACE DS SS6T L1.5X.13X4.86'	[L 38x38x3]
6	N64	6	BRACE DS SS6T L1.5X.13X5.14'	[L 38x38x3]
7	N65	6	BRACE DS SS6T L1.5X.13X5.28'	[L 38x38x3]
8	210017GA	75	BOLT ASSY 1/2 X 1-1/4 HSB A325	[M13x32]
9	210033GA	12	BOLT ASSY 5/8 X 2-1/2 HSB A325	[M16x64]
10	5/8STEP	16	BOLT ASSY STEP 5/8X7 W/DBN	[M16x178]

**GENERAL NOTES:**

- LEG PART NUMBER IS STAMPED AT THE BOTTOM OF EACH LEG AND MUST BE LOCATED AT THE BOTTOM OF THE SECTION FOR PROPER ASSEMBLY.
- STEP BOLTS ARE PROVIDED ON 1 LEG ONLY.
- FLANGE BOLTS ARE FOR FLANGE PLATES AT THE BOTTOM OF THE SECTION.
- DRAWING IS N.T.S. AND IS FOR ASSEMBLY PURPOSES ONLY.
- NOMINAL METRIC EQUIVALENTS ARE GIVEN FOR REFERENCE ONLY AND SHALL NOT BE SUBSTITUTED FOR THE DESCRIBED SIZES UNLESS OTHERWISE APPROVED BY ROHN PRODUCTS.



VIEW A-A



VIEW B-B

FILE NO.

REVISIONS

REV	DESCRIPTION	DWN	CHK	APP
6	REDRAWN DATE: Aug-9-2012	JHY	JDM	HA



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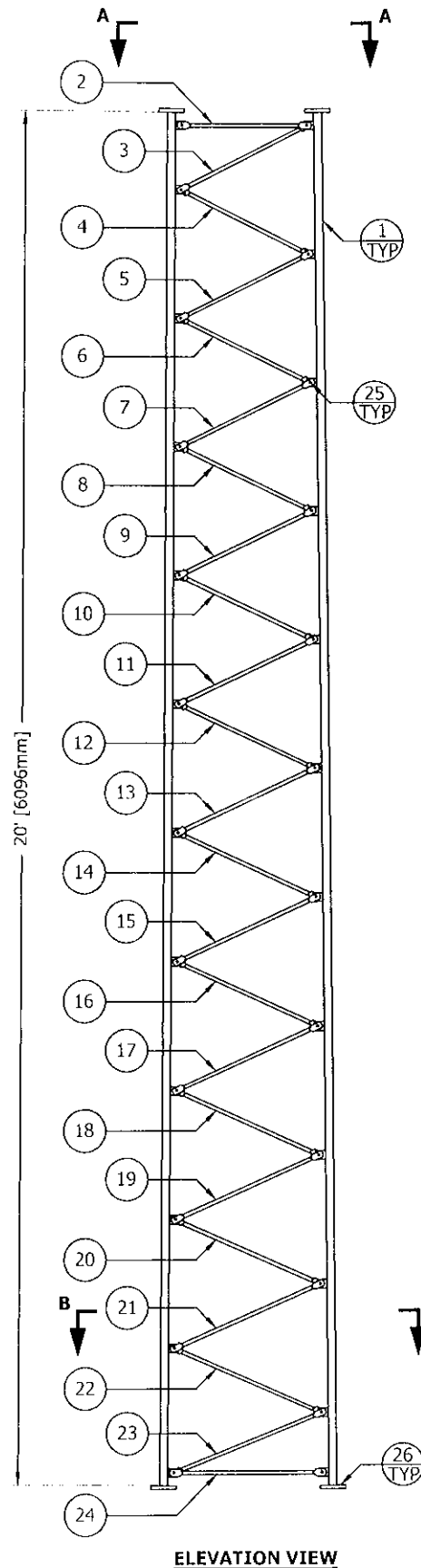
SECTION ASSEMBLY  
DETAILS FOR SSV 6N

DWN: AED    CHK'D: WDU    DATE: Oct/18/1978

ENGR: TWS    SHEET #: 1 OF 1

PRJ. ENGR:    PRJ. MANG'R:

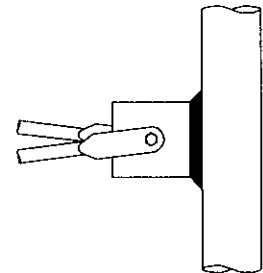
DRAWING NO: A780200    REV: 6



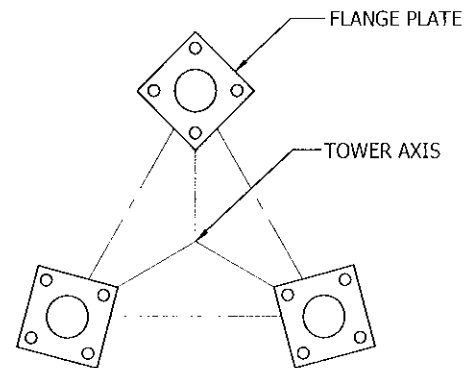
ELEVATION VIEW

**GENERAL NOTES:**

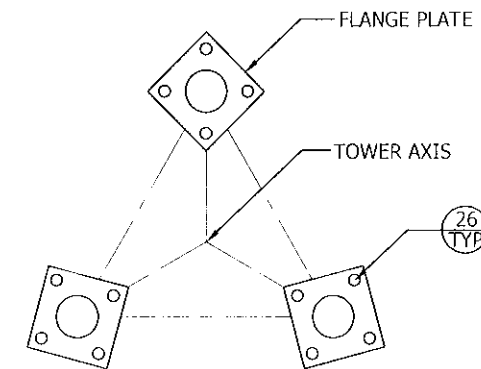
1. LEG PART NUMBER IS STAMPED AT THE BOTTOM OF EACH LEG AND MUST BE LOCATED AT THE BOTTOM OF THE SECTION FOR PROPER ASSEMBLY.
2. FLANGE BOLTS ARE FOR FLANGE PLATES AT THE BOTTOM OF THE SECTION.
3. DRAWING IS N.T.S. AND IS FOR ASSEMBLY PURPOSES ONLY.
4. NOMINAL METRIC EQUIVALENTS ARE GIVEN FOR REFERENCE ONLY AND SHALL NOT BE SUBSTITUTED FOR THE DESCRIBED SIZES UNLESS OTHERWISE APPROVED BY ROHN PRODUCTS.



BRACING DETAIL



VIEW A-A



VIEW B-B

FLANGE	OFFSET	BEVEL	FLANGE PLATE (P/N)	SPREAD
TOP	N/A	N/A	4 1/2" X 4 1/2" X 5/8" (P/N: VL901)	2'-2" [660mm]
BOTTOM	N/A	N/A	4 1/2" X 4 1/2" X 5/8" (P/N: VL901)	2'-6" [762mm]

**SECTION ASSEMBLY P/N: 5N**

**BILL OF MATERIAL**

ITEM	PART NO.	QTY	DESCRIPTION
1	VL341	3	LEG SSV 5N/5NST 1.44SR 20' 45 [BAR RND 37mm SR]
2	N45	3	BRACE DIAG SSV RD BAR .63X1.98 [BAR RND 16mm]
3	N51	3	BRACE DIAG SSV RD BAR .63X2.18 [BAR RND 16mm]
4	N52	3	BRACE DIAG SSV RD BAR .63X2.22 [BAR RND 16mm]
5	N53	3	BRACE DIAG SSV RD BAR .63X2.23 [BAR RND 16mm]
6	N54	3	BRACE DIAG SSV RD BAR .63X2.25 [BAR RND 16mm]
7	N55	3	BRACE DIAG SSV RD BAR .63X2.26 [BAR RND 16mm]
8	N56	3	BRACE DIAG SSV RD BAR .63X2.28 [BAR RND 16mm]
9	N57	3	BRACE DIAG SSV RD BAR .63X2.29 [BAR RND 16mm]
10	N58	3	BRACE DIAG SSV RD BAR .63X2.30 [BAR RND 16mm]
11	N59	3	BRACE DIAG SSV RD BAR .63X2.31 [BAR RND 16mm]
12	N510	3	BRACE DIAG SSV RD BAR .63X2.33 [BAR RND 16mm]
13	N511	3	BRACE DIAG SSV RD BAR .63X2.34 [BAR RND 16mm]
14	N512	3	BRACE DIAG SSV RD BAR .63X2.36 [BAR RND 16mm]
15	N513	3	BRACE DIAG SSV RD BAR .63X2.38 [BAR RND 16mm]
16	N514	3	BRACE DIAG SSV RD BAR .63X2.39 [BAR RND 16mm]
17	N515	3	BRACE DIAG SSV RD BAR .63X2.40 [BAR RND 16mm]
18	N516	3	BRACE DIAG SSV RD BAR .63X2.42 [BAR RND 16mm]
19	N517	3	BRACE DIAG SSV RD BAR .63X2.43 [BAR RND 16mm]
20	N518	3	BRACE DIAG SSV RD BAR .63X2.45 [BAR RND 16mm]
21	N519	3	BRACE DIAG SSV RD BAR .63X2.46 [BAR RND 16mm]
22	N520	3	BRACE DIAG SSV RD BAR .63X2.47 [BAR RND 16mm]
23	N521	3	BRACE DIAG SSV RD BAR .63X2.49 [BAR RND 16mm]
24	N58	3	BRACE DIAG SSV RD BAR .63X2.30 [BAR RND 16mm]
25	210008GA	72	BOLT ASSY 3/8 X 1-1/2 HCS G5 [M10x38]
26	210032GA	12	BOLT ASSY 5/8 X 2-1/4 HSB A325 [M16x57]

FILE NO.

REVISIONS

REV	DESCRIPTION	DWN	CHK	APP
5	REDRAWN DATE: Aug/9/2012	JHY	JDM	HA



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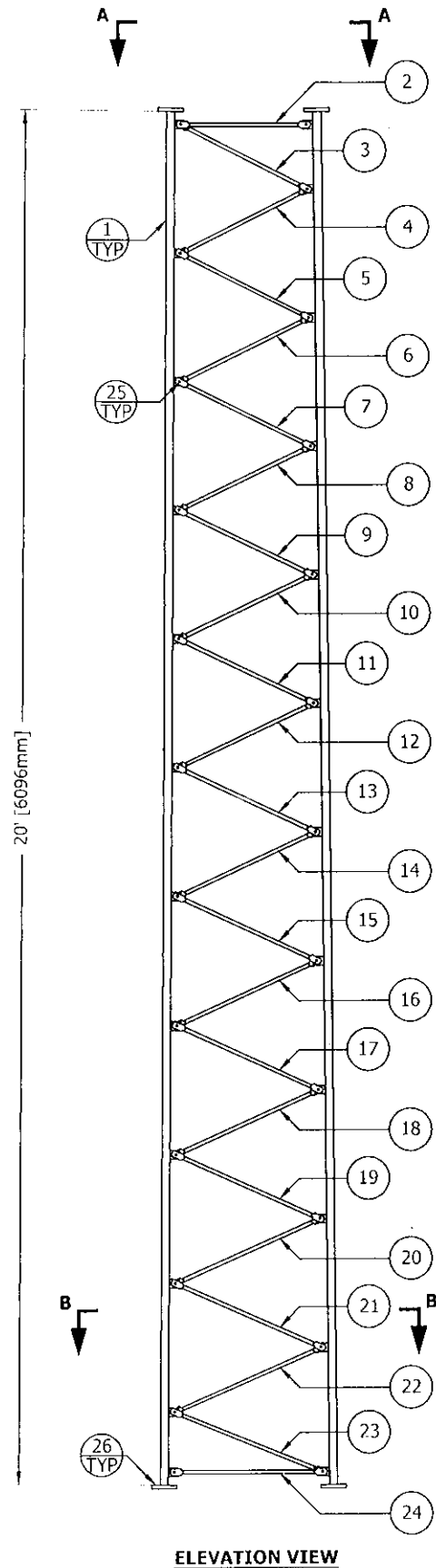
SECTION ASSEMBLY  
DETAILS FOR SSV 5N

DWN: AED	CHK'D: JD	DATE: Mar/22/1979
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ENG'R: TWS	SHEET #: 1 OF 1
---------------	--------------------

PRJ. ENGR:	PRJ. MANG'R:
------------	--------------

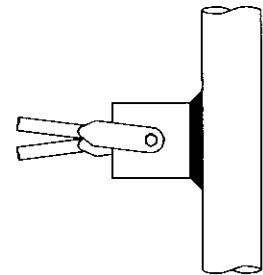
DRAWING NO: A790119	REV: 5
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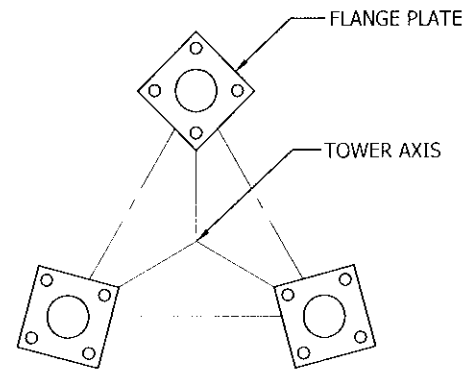
ELEVATION VIEW

**GENERAL NOTES:**

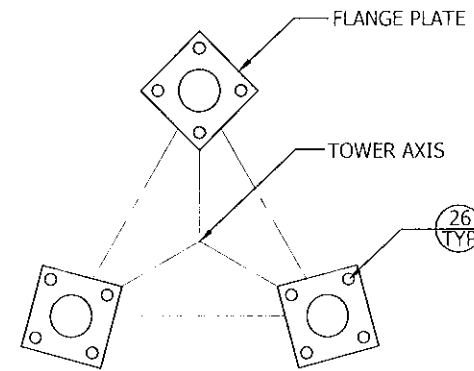
1. LEG PART NUMBER IS STAMPED AT THE BOTTOM OF EACH LEG AND MUST BE LOCATED AT THE BOTTOM OF THE SECTION FOR PROPER ASSEMBLY.
2. FLANGE BOLTS ARE FOR FLANGE PLATES AT THE BOTTOM OF THE SECTION.
3. DRAWING IS N.T.S. AND IS FOR ASSEMBLY PURPOSES ONLY.
4. NOMINAL METRIC EQUIVALENTS ARE GIVEN FOR REFERENCE ONLY AND SHALL NOT BE SUBSTITUTED FOR THE DESCRIBED SIZES UNLESS OTHERWISE APPROVED BY ROHN PRODUCTS.



BRACING DETAIL



VIEW A-A



VIEW B-B

**SECTION ASSEMBLY P/N: 4N**

**BILL OF MATERIAL**

ITEM	PART NO.	QTY	DESCRIPTION	
1	VL345	3	LEG SSV 4N 1.25SR 20' 4 45	[BAR RND 32mm SR]
2	N4T	3	BRACE H SSV RD BAR .63X1.66'	[BAR RND 16mm]
3	N41	3	BRACE DIAG SSV RD BAR .63X1.90	[BAR RND 16mm]
4	N42	3	BRACE DIAG SSV RD BAR .63X1.94	[BAR RND 16mm]
5	N43	3	BRACE DIAG SSV RD BAR .63X1.95	[BAR RND 16mm]
6	N44	3	BRACE DIAG SSV RD BAR .63X1.97	[BAR RND 16mm]
7	N45	3	BRACE DIAG SSV RD BAR .63X1.98	[BAR RND 16mm]
8	N46	3	BRACE DIAG SSV RD BAR .63X1.99	[BAR RND 16mm]
9	N47	3	BRACE DIAG SSV RD BAR .63X2.01	[BAR RND 16mm]
10	N48	3	BRACE DIAG SSV RD BAR .63X2.02	[BAR RND 16mm]
11	N49	3	BRACE DIAG SSV RD BAR .63X2.04	[BAR RND 16mm]
12	N410	3	BRACE DIAG SSV RD BAR .63X2.05	[BAR RND 16mm]
13	N411	3	BRACE DIAG SSV RD BAR .63X2.06	[BAR RND 16mm]
14	N412	3	BRACE DIAG SSV RD BAR .63X2.08	[BAR RND 16mm]
15	N413	3	BRACE DIAG SSV RD BAR .63X2.09	[BAR RND 16mm]
16	N414	3	BRACE DIAG SSV RD BAR .63X2.10	[BAR RND 16mm]
17	N415	3	BRACE DIAG SSV RD BAR .63X2.12	[BAR RND 16mm]
18	N416	3	BRACE DIAG SSV RD BAR .63X2.13	[BAR RND 16mm]
19	N417	3	BRACE DIAG SSV RD BAR .63X2.15	[BAR RND 16mm]
20	N418	3	BRACE DIAG SSV RD BAR .63X2.16	[BAR RND 16mm]
21	N419	3	BRACE DIAG SSV RD BAR .63X2.17	[BAR RND 16mm]
22	N420	3	BRACE DIAG SSV RD BAR .63X2.19	[BAR RND 16mm]
23	N421	3	BRACE DIAG SSV RD BAR .63X2.20	[BAR RND 16mm]
24	N4B	3	BRACE H SSV RD BAR .63X1.99'	[BAR RND 16mm]
25	210008GA	72	BOLT ASSY 3/8 X 1-1/2 HCS G5	[M10x38]
26	210032GA	12	BOLT ASSY 5/8 X 2-1/4 HSB A325	[M16x57]

FLANGE	OFFSET	BEVEL	FLANGE PLATE (P/N)	SPREAD
TOP	N/A	N/A	4" X 4" X 1/2" (P/N: 4A)	1'-10" [559mm]
BOTTOM	N/A	N/A	4 1/2" X 4 1/2" X 5/8" (P/N: 45A)	2'-2" [660mm]

FILE NO.

REVISIONS				
REV.	DESCRIPTION	DWN	CHK	APP
4	REDRAWN	JHY	JOM	HA
DATE: Aug/9/2012				

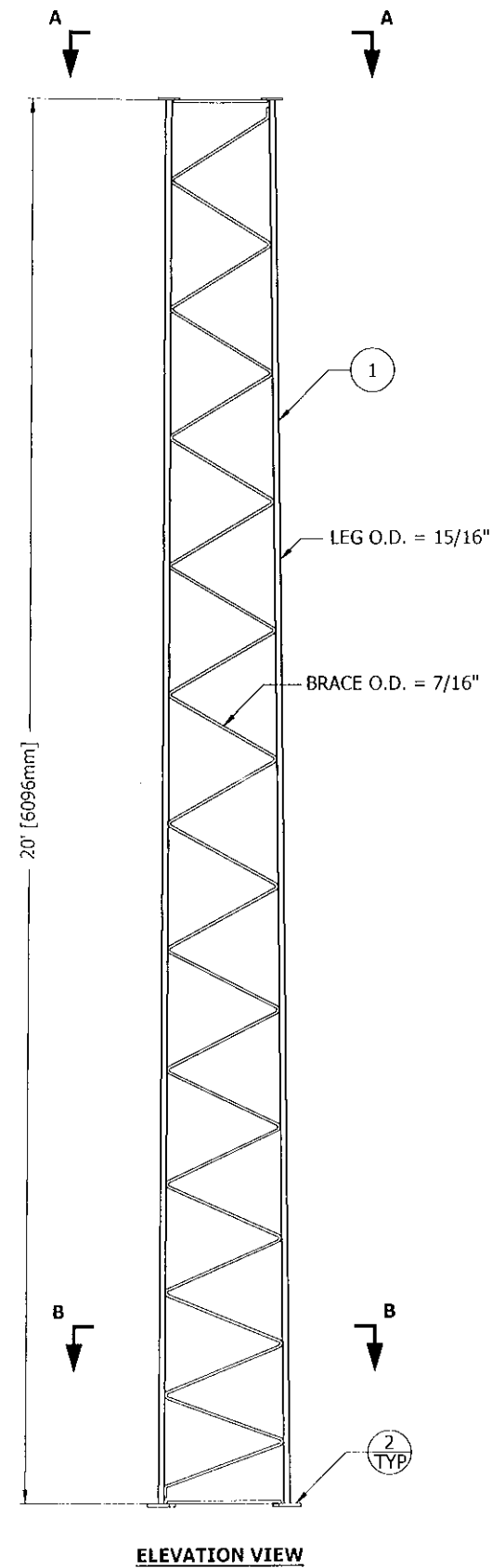


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SECTION ASSEMBLY  
DETAILS FOR SSV 4N

DIVN: AED	CHK'D: RAM	DATE: Mar/17/1979
ENGR: TWS	SHEET #: 1 OF 1	
PRJ. ENGR:	PRJ. MANG'R:	
DRAWING NO: A790110		REV: 4

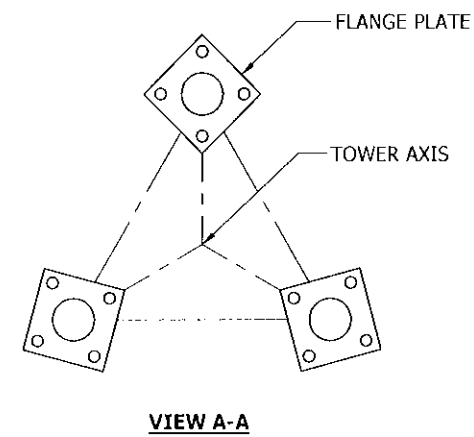


ELEVATION VIEW

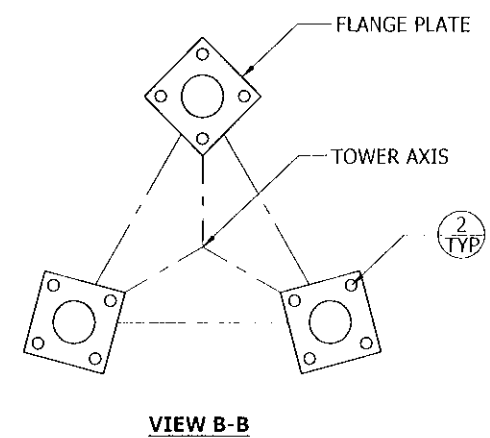
SECTION ASSEMBLY P/N: 3WN				
BILL OF MATERIAL				
ITEM	PART NO.	QTY	DESCRIPTION	
1	VS3	1	SECTION 20' 3WN WELDED HDG	
2	210020GA	12	BOLT ASSY 1/2 X 2 HSB A325	[M13x51]

**GENERAL NOTES:**

1. LEG PART NUMBER IS STAMPED AT THE BOTTOM OF EACH LEG AND MUST BE LOCATED AT THE BOTTOM OF THE SECTION FOR PROPER ASSEMBLY.
2. FLANGE BOLTS ARE FOR FLANGE PLATES AT THE BOTTOM OF THE SECTION.
3. DRAWING IS N.T.S. AND IS FOR ASSEMBLY PURPOSES ONLY.
4. NOMINAL METRIC EQUIVALENTS ARE GIVEN FOR REFERENCE ONLY AND SHALL NOT BE SUBSTITUTED FOR THE DESCRIBED SIZES UNLESS OTHERWISE APPROVED BY ROHN PRODUCTS.



VIEW A-A



VIEW B-B

FLANGE	OFFSET	BEVEL	FLANGE PLATE (P/N)	SPREAD
TOP	N/A	1/2° REV	3" X 3" X 3/8" (P/N: 3A)	1'-6" [457mm]
BOTTOM	N/A	1/2° STD	4" X 4" X 1/2" (P/N: 4C)	1'10" [559mm]

FILE NO.				
REVISIONS				
REV	DESCRIPTION	DWN	CHK	APP
6	REDRAWN	JHY	JD:1	HA
DATE: Oct:30/2012				

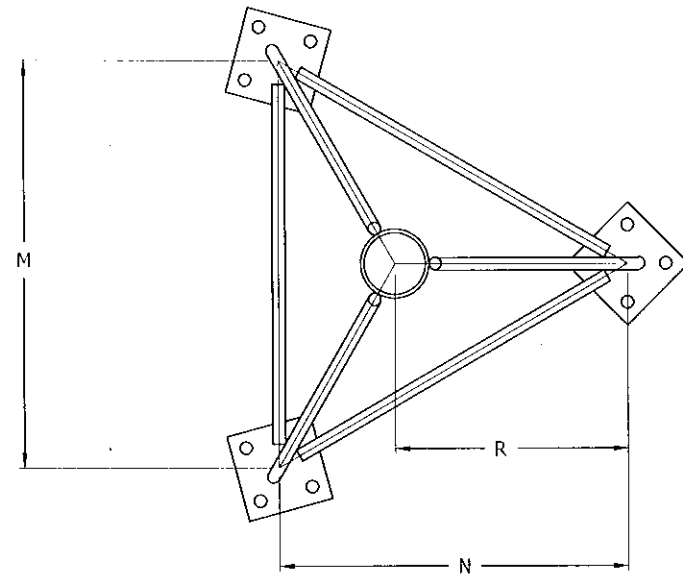


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SECTION ASSEMBLY  
DETAILS FOR SSV 3WN

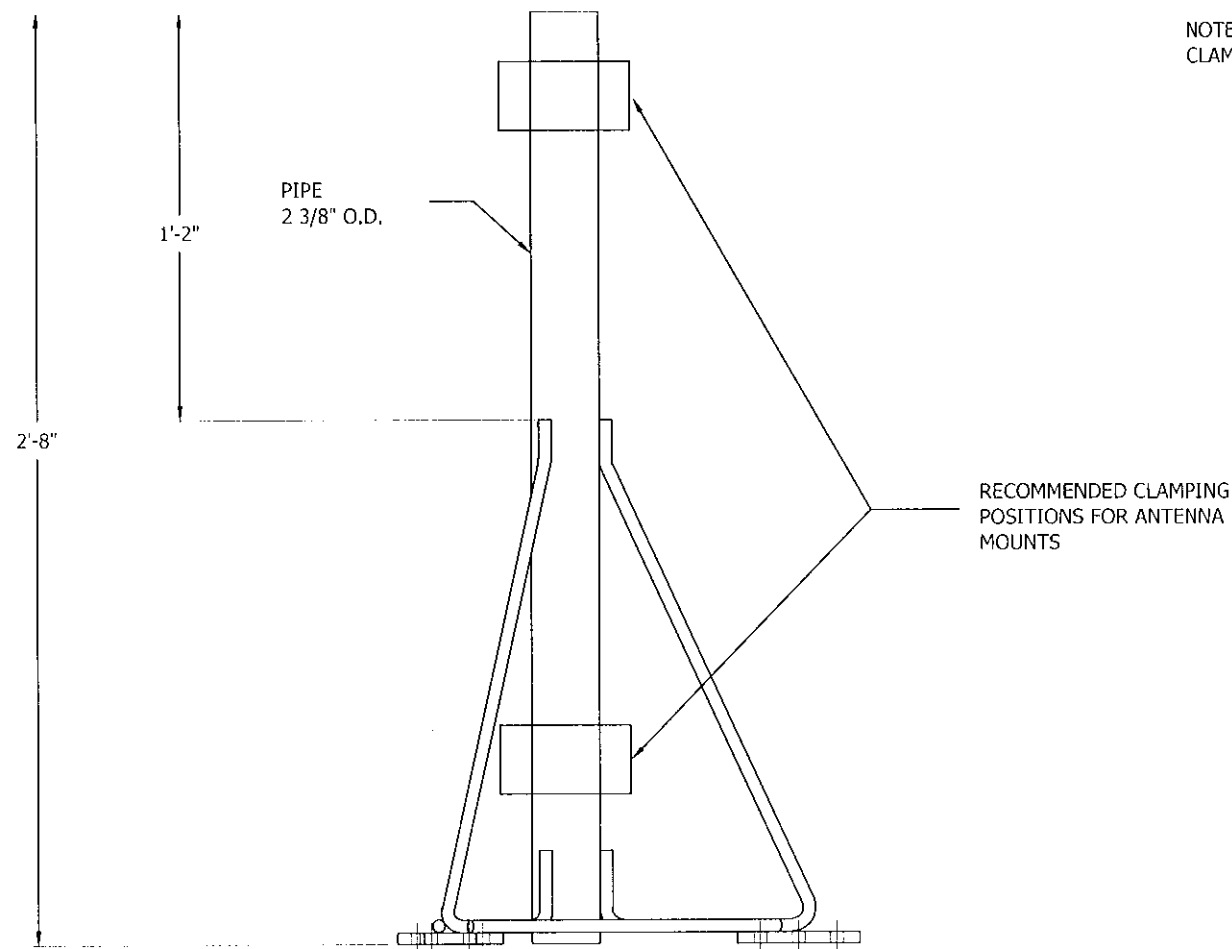
DWN: AED	CHK'D: RAM	DATE: Mar/14/1979
ENG'R: TWS	SHEET #: 1 OF 1	
PRJ. ENG'R:	PRJ. MANG'R:	
DRAWING NO: A790097	REV: 6	



### TAPERED TOP ASSY BILL OF MATERIALS DETAIL

ASSY P/N	TOWER SEC.	M	N	R	FLANGE PLATE SIZE	FLANGE BOLTS		
	NUMBER					QTY	SIZE	P/N
1TT	1W, 1WB, 2W	1'-2"	1'-0 1/8"	0'-8 1/16"	3 X 3 X 3/8	9	3/8 X 1-1/2	210008GA
3TT	2WST, 2WB, 3WN	1'-6"	1'-3 9/16"	0'-10 3/8"	3 X 3 X 3/8	9	3/8 X 1-1/2	210008GA
4TTN	3WNST, 3WNB, 4N	1'-10"	1'-7 1/16"	1'-0 11/16"	4 X 4 X 1/2	9	1/2 X 2	210020GA
5TTN	4NST, 4NA, 4WB, 4NC, 5N	2'-2"	1'-10 1/2"	1'-3"	4-1/2 X 4-1/2 X 5/8	9	5/8 X 2-1/4	210032GA
6TT	5NST, 5NA, 5NB, 5NC, 6N	2'-6"	2'-2"	1'-5 5/16"	4-1/2 X 4-1/2 X 5/8	9	5/8 X 2-1/4	210032GA

NOTE: DESIGN BASED ON THRUST OF 500# AT CLAMPING POSTIONS



FILE NO.

REVISIONS				
REV.	DESCRIPTION	DWN	CHK	APP
12	UPDATED TO NEW STANDARDS DATE: 07/29/11	JEC	KTL	DWG

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TAPERED TOP ASSEMBLY

DWN: MDI	CHK'D: OH	DATE: JAN/03/1967
ENG'R: CW	SHEET #: 1 OF 1	
DRAWING NO: SK670407		REV: 12

FILE NO.

REVISIONS

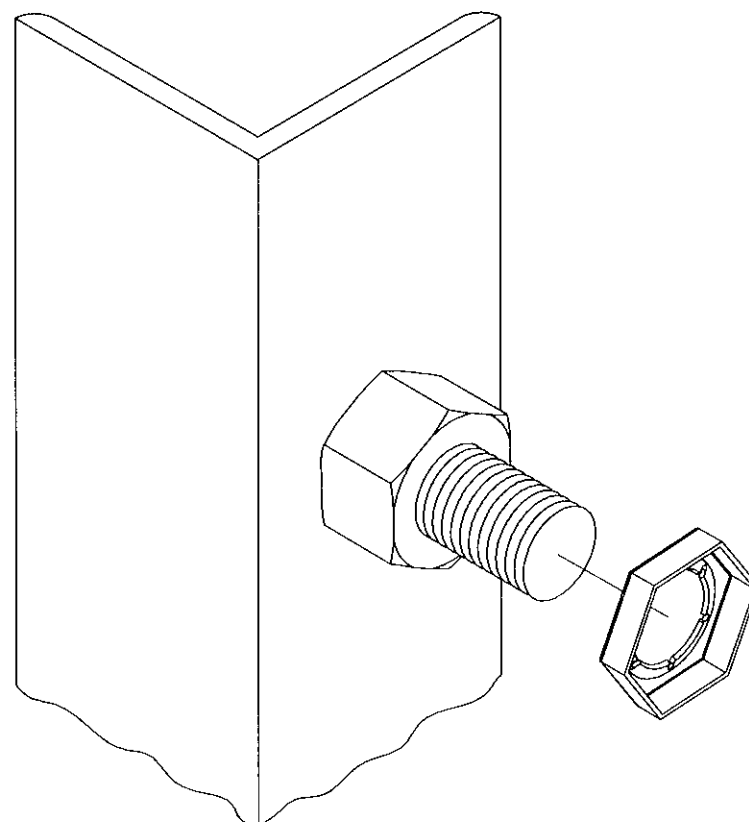
REV.	DESCRIPTION	DWN	CHK	APP
7	CHANGE NOTATION. DATE: 01/11/12	JEC	JDM	HA

**ASSEMBLY BOLT INSTALLATION**

1. UNLESS OTHERWISE SPECIFIED, ASSEMBLY BOLTS AND ANCHOR BOLTS ARE TO BE TIGHTENED TO A SNUG TIGHT CONDITION (MEMBERS IN FIRM CONTACT) AND MUST INCLUDE A NUT LOCKING DEVICE. NO MINIMUM BOLT TENSION OR TORQUE VALUES ARE REQUIRED. WHEN LOCK WASHERS ARE PROVIDED AS A NUT LOCKING DEVICE, REPLACE ANY DAMAGED WASHERS DUE TO OVER TIGHTENING.
2. WASHERS ARE TO BE INSTALLED OVER SLOTTED HOLES.

**PAL NUT INSTALLATION**

1. PAL NUTS ARE TO BE INSTALLED AFTER NUTS ARE TIGHT AND WITH EDGE LIP OUT (SEE PICTURE). PAL NUTS ARE NOT REQUIRED WHEN SELF-LOCKING NUTS OR LOCK WASHERS ARE PROVIDED.



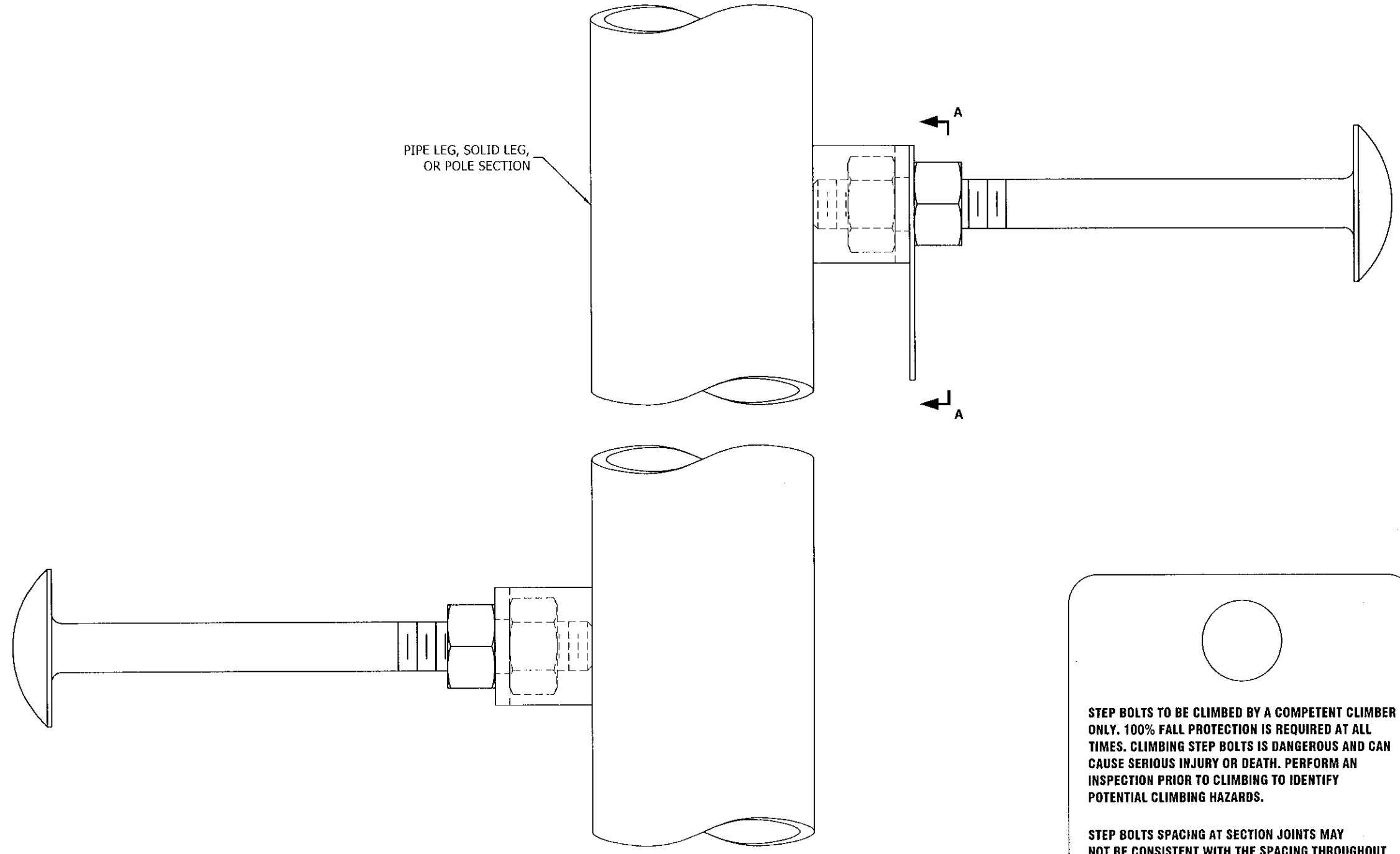
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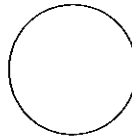
BOLT ASSEMBLY INSTALLATION

DWN: OH	CHK'D: GHB	DATE: 07/05/79
ENGR: TWS	SHEET #: 1 OF 1	
DRAWING NO: A790135	REV: 7	

FILE NO.				
REVISIONS				
REV.	DESCRIPTION	DWN	CHK	APP.
6	UPDATED TITLE BLOCK	JHY	JDM	HA
DATE: 11/23/2015				



- NOTE:**
1. STEP BOLTS MUST BE TURNED UNTIL THE FRONT EDGE OF THE BOLT TOUCHES THE SIDE OF THE STRUCTURE.
  2. STEP BOLTS ARE SUPPLIED FOR CONSTRUCTION PURPOSES AND ARE NOT INTENDED FOR USE BY UNQUALIFIED PERSONNEL.
  3. DEVIATION FROM PERFECT ALIGNMENT IS ACCEPTABLE. SOME SPACING INCONSISTENCY MAY EXIST AT SPLICE LOCATIONS.
  4. IF STEP BOLTS ARE BELIEVED TO PRESENT SAFETY PROBLEMS TO PERSONNEL, DO NOT INSTALL THE STEP BOLTS.



**STEP BOLTS TO BE CLIMBED BY A COMPETENT CLIMBER ONLY. 100% FALL PROTECTION IS REQUIRED AT ALL TIMES. CLIMBING STEP BOLTS IS DANGEROUS AND CAN CAUSE SERIOUS INJURY OR DEATH. PERFORM AN INSPECTION PRIOR TO CLIMBING TO IDENTIFY POTENTIAL CLIMBING HAZARDS.**

**STEP BOLTS SPACING AT SECTION JOINTS MAY NOT BE CONSISTENT WITH THE SPACING THROUGHOUT THE STRUCTURE. FLANGE PLATES AT SECTION JOINTS, GUYS, ATTACHMENTS TO LEGS, ETC. MAY BE AN OBSTRUCTION TO CONTINUOUS CLIMBING.**

**VIEW A-A**  
**STEP BOLT CLIMBING WARNING SIGN**  
 (INSTALL WARNING SIGN IN BOTTOM 5' OF STRUCTURE)

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**STEP BOLT INSTALLATION DETAIL**

DWN:	OH	CHK'D:	TWS	DATE:	04/16/1974
ENGR:	CW		SHEET #: 1 OF 1		
PRJ. ENGR:			PRJ. MANG'R:		
DRAWING NO:	B651264			RFV:	6