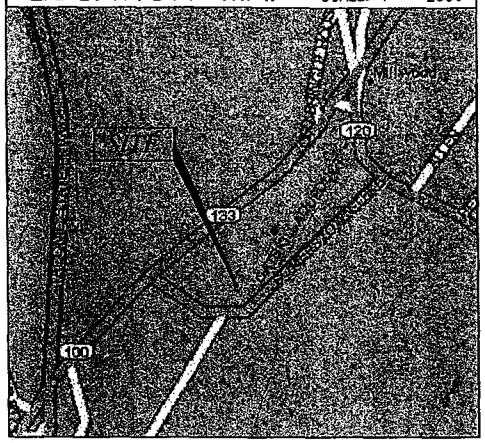
EXHIBIT E

LOCATION MAP

SCALE: 1" = 2000'



SITE DIRECTIONS

TAKE TACONIC PARKWAY NORTH TO RT 100 EXIT. MAKE LEFT OFF EXIT RAMP ONTO CAMPFIRE ROAD. MAKE RIGHT ONTO RT 100/SAWMILL RIVER ROAD. ACCESS ROAD TO SITE WILL BE ON RIGHT.

SHEET INDEX

SHEET NO	DESCRIPTION	REV NO	REVISION DATE
T-1	TITLE SHEET	4	11/10/03
T-2	GENERAL NOTES	4	11/10/03
T-3	ABBREVIATION LIST & LEGEND	4	11/10/03
B-1	BILL OF MATERIALS	4	11/10/03
B-2	RF CABLE SCHEMATIC	4	11/10/03
C-1	NOTES		
C-2	PARTIAL SITE PLAN	4	11/10/03
C-3	SITE DETAIL PLAN	4	11/10/03
C-4	SITE DETAILS	4	11/10/03
C-5	ELEVATION & ANTENNA PLAN	4	11/10/03
C-6	ANTENNA DETAIL & NOTES	4	11/10/03
C-7	CABINET DETAILS	4	11/10/03
C-8	NOTES & DETAILS	4	11/10/03
S-1	STEEL NOTES	4	11/10/03
S-2	CONCRETE NOTES	4	11/10/03
S-3	EQUIPMENT PLAN & DETAILS	4	11/10/03
E-1	ELECTRICAL NOTES	4	11/10/03
E-2	GROUNDING & ELECTRICAL PLAN	4	11/10/03
E-3	ONE-LINE DIAGRAM	4	11/10/03
E-4	GROUNDING DIAGRAM	4	11/10/03
E-5	GROUNDING DETAILS	4	11/10/03
E-6	GROUNDING DETAILS & NOTES	4	11/10/03

THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL ITEMS OF CONCERN HAVE BEEN ADDRESSED AND EACH OF THE DRAWINGS HAS BEEN REVISED AND ISSUED "FOR CONSTRUCTION".

OMNIPOINT COMMUNICATIONS INC

As Agent For
OMNIPOINT FACILITIES NETWORK 2, LLC

SITE NUMBER:
NY-09-215-A
SITE NAME:
CON-ED TOWER E-142

PROJECT DESCRIPTION

INSTALLATION OF THREE (3) UNMANNED EQUIPMENT CABINETS AT GRADE & THREE (3) PANEL ANTENNAS ON AN EXISTING CON-ED UTILITY TOWER.

PROJECT SUMMARY

SITE NUMBER: NY-09-215-A
SITE NAME: CON-ED TOWER E-142
SITE ADDRESS: STATION PLACE
TOWN OF NEW CASTLE, NY
COUNTY: WESTCHESTER
PROPERTY OWNER: CONSOLIDATED EDISON
OF NEW YORK, INC.
4 IRVING PLACE
NEW YORK, NY 10003
APPLICANT: OMNIPOINT COMMUNICATIONS, INC.
AS AGENT FOR
OMNIPOINT NETWORK FACILITIES 2, LLC.
76 PROGRESS DRIVE, 2ND FLR
STAMFORD, CT 06902
PHONE: (203) 328-8900

EQUIPMENT LOCATION: OUTDOOR ☒
INDOOR ☐

ANTENNA LOCATION: GUY TOWER ☐
SELF SUPPORT TWR ☐
EX. LATTICE TOWER ☐
MONOPOLE ☐
ROOFTOP ☐
EX. SILO ☐
EX. UTILITY TOWER ☒

ENGINEER/ SURVEYOR/ STRUCTURAL ENG: TECTONIC ENGINEERING CONSULTANTS P.C.
955 LITTLE BRITAIN ROAD
NEW WINDSOR, NY 12553
CONTACT: EDWARD PIETRASZ
PHONE: (845) 567-6656

ELECTRICAL ENGR: XENON COMPANY
2 KILMER ROAD
EDISON, NJ 08817
CONTACT: ASOK GOSWAMI
PHONE: (732) 339-1400

SITE ACQUISITION: OMNIPOINT WIRELESS
76 PROGRESS DRIVE, 2ND FLR
STAMFORD, CT 06902
CONTACT: ESME LOMBARD
PHONE: (914) 980-2148

RF ENGINEER: OMNIPOINT WIRELESS
76 PROGRESS DRIVE, 2ND FLR
STAMFORD, CT 06902
CONTACT: JONATHAN LINK
PHONE: (201) 757-0477

CONSTRUCTION MGR.: OMNIPOINT WIRELESS
76 PROGRESS DRIVE, 2ND FLR
STAMFORD, CT 06902
CONTACT: RICK FRAZIER
PHONE: (516) 244-9560

CONSOLIDATED EDISON CONTACTS:

EDWARD BUSSE
TRANSMISSION LINE MAINTENANCE
(914) 789-6623

AMIT MUKHOPADHYAY, P.E.
TRANSMISSION ENGINEERING
(212) 460-3685

WILLIAM STACHOWIAK, P.E.
CENTRAL ENGINEERING DEPARTMENT
(212) 460-2932

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OMNIPOINT COMMUNICATIONS INC
As Agent For
OMNIPOINT FACILITIES NETWORK 2, LLC
OMNIPOINT WIRELESS
76 PROGRESS DRIVE, 2ND FLOOR
STAMFORD, CT 06902
OFFICE: (203) 328-8900
FAX: (203) 328-8953

APPROVALS
OMNIPOINT
LANDLORD
RF
CONSTRUCTION

PROJECT NUMBER	DESIGNED BY
2358.092.15A	EP

REV	DATE	REVISION	DRAWN BY
4	4/16/03	FOR COMMENT	JFL
3	6/5/03	FOR PERMIT	JFL
2	7/24/03	REVISED ANTENNAS	CA
1	8/28/03	PER COMMENT	CC
4	11/10/03	FOR CONSTRUCTION	BFK

ISSUED BY: E. Pietrasz
DATE: 11-10-03

STATE OF NEW YORK
KENNETH W. KLIMPEN
LICENSED PROFESSIONAL ENGINEER
59397

SITE INFORMATION
NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

GENERAL NOTES

1. ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF OCI 'STANDARD CONSTRUCTION SPECIFICATIONS'. IN CASE OF A CONFLICT BETWEEN THE CONSTRUCTION SPECIFICATIONS AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN. IN CASE OF A CONFLICT BETWEEN OCI STANDARD PRACTICES AND EITHER THE CONSTRUCTION SPECIFICATIONS OR THE DRAWINGS, THE OCI STANDARD PRACTICE SHALL GOVERN.
2. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NEW YORK STATE BUILDING CODE AND ALL OTHER APPLICABLE CODES AND ORDINANCES.
3. CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
4. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS OTHERWISE NOTED. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO EFFECT ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
5. DIMENSIONS SHOWN ARE TO FINISH SURFACES, UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE CARRIER'S AUTHORIZED REPRESENTATIVE OR THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
6. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
7. CONTRACTOR SHALL RECEIVE CLARIFICATION IN WRITING, AND SHALL RECEIVE IN WRITING AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEMS NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
8. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND TO BE IN THE FIELD.
9. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE BEST CONSTRUCTION SKILLS AND ATTENTION. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT, UNLESS OTHERWISE NOTED.
10. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMEN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE WORK AREA, ADJACENT AREAS, AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS.
12. CONTRACTOR SHALL COORDINATE HIS WORK AND SCHEDULE HIS ACTIVITIES AND WORKING HOURS IN ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THE WORK OF OTHERS AS IT MAY RELATE TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.
14. CONTRACTOR SHALL MAINTAIN LIABILITY INSURANCE TO PROTECT THE OWNER.
15. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
16. MAKE NECESSARY PROVISIONS TO PROTECT EXISTING SURFACES, EQUIPMENT, IMPROVEMENTS, PIPING, ANTENNA AND ANTENNA CABLES. REPAIR ANY DAMAGE THAT OCCURS DURING CONSTRUCTION.
17. REPAIR ALL EXISTING SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND WITH ADJACENT SURFACES.
18. KEEP CONTRACT AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS AND RUBBISH. EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OF THE OWNER SHALL BE REMOVED. LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ITEMS UNTIL COMPLETION OF CONSTRUCTION.
19. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
20. CONTRACTOR SHALL PROVIDE 48 HOURS WRITTEN NOTICE TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
21. CONTRACTOR IS TO REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHOULD COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
22. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE THE DISTRIBUTION OF THE NEW DRAWINGS TO SUBCONTRACTOR AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONSTRUCTION AREA. CONTRACTOR SHALL FURNISH 'AS-BUILT' SET OF DRAWINGS TO THE OWNER UPON COMPILATION OF THE PROJECT.
23. CONTRACTOR TO CONTACT "CALL BEFORE YOU DIG" AT 1-800-922-4455 TO VERIFY AND IDENTIFY THE EXACT LOCATIONS OF ALL UNDERGROUND UTILITIES AND OBSTRUCTIONS IDENTIFIED PRIOR TO COMMENCING WORK IN THE CONTRACT AREA.

PROJECT INFORMATION

JURISDICTION:	TOWN OF NEW CASTLE
CURRENT ZONING:	B-R: RETAIL BUSINESS
SECTION, BLOCK, & LOT:	SECTION 91.8, BLOCK 3, LOT 1
QUADRANGLE MAP:	OSSINING
DECLINATION:	12°±
LATITUDE: (NAD 27)	41° 11' 16" N
LONGITUDE: (NAD 27)	73° 48' 5" W

0 1 2 3

ORIGINAL SIZE IN INCHES

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OMNIPOINT COMMUNICATIONS INC
As Agent For
OMNIPOINT FACILITIES NETWORK 2, LLC
OMNIPOINT WIRELESS, 75 PROGRESS DRIVE, 2ND FLOOR, STAMFORD, CT 06902
OFFICE: (203) 328-9600
FAX: (203) 328-9683

APPROVALS

OMNIPOINT _____
LANDLORD _____
RF _____
CONSTRUCTION _____

PROJECT NUMBER	DESIGNED BY
2358.09215A	EP

REV	DATE	REVISION	DRAWN BY
1	4/16/03	FOR COMMENT	JFL
2	6/5/03	FOR PERMIT	JFL
3	7/24/03	REVISED ANTENNAS	CA
4	8/28/03	PER COMMENT	CC
5	11/10/03	FOR CONSTRUCTION	BPK

ISSUED BY: E. Pietraz — DATE: 11-10-03

STATE OF NEW YORK
KENNETH W. KARKONEN
59897
LICENSED PROFESSIONAL ENGINEER

SITE INFORMATION

NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

T-2

ABBREVIATION LIST

L	ANGLE	GA.	GAUGE	REV	REVISION(S), REVISED
℄	CENTERLINE	GALV.	GALVANIZED	RF.	RADIO FREQUENCY
@	AT	GC	GENERAL CONTRACTOR	RO.	ROUGH OPENING
ℙ	PLATE	GEN	GENERATOR	RM.	ROOM
ø	DIAMETER	GFI	GROUND FAULT INTERRUPTER		
±	PLUS OR MINUS	GND	GROUND	S.C.	SOLID CORE
#	NUMBER	GPS	GLOBAL POSITIONING SYSTEM	SCHED.	SCHEDULE
&	AND	GRC	GALVANIZED RIGID CONDUIT	SIM.	SIMILAR
		G.W.B.	GYPSUM WALLBOARD	SPECS.	SPECIFICATIONS
AC	AIR CONDITIONING			SS.	STAINLESS STEEL
ACT	ACOUSTICAL CEILING TILE	H.C.	HANDICAPPED	STD.	STANDARD
ADJ	ADJUSTABLE	HORIZ.	HORIZONTAL	STL.	STEEL
AIC	AMPS INTERRUPTING CAPACITY	H.P.	HORSEPOWER	STOR.	STORAGE
AFF	ABOVE FINISH FLOOR	HGT.	HEIGHT	STR.	STRUCTURAL
ALUM	ALUMINUM	H.W.	HOT WATER		
ARCH	ARCHITECT(URAL)			T/O	TOP OF
ATTEN	ATTENUATION	I.D.	INSIDE DIAMETER	TEL.	TELEPHONE
AWG	AMERICAN WIRE GAUGE	IGR	INTERIOR GROUND RING (HALO)	TEMP.	TEMPERED, TEMPORARY
		IN.	INCHES(S)	TYP	TYPICAL
B/O	BOTTOM OF			T&B.	TOP AND BOTTOM
BCW	BARE COPPER WIRE	JT.	JOINT		
BLDG	BUILDING			U/G	UNDERGROUND
BLKG.	BLOCKING	KVA	KILO-VOLT-AMPERES	U.L.	UNDERWRITERS LABORATORIES
BTS	BASE TRANSMISSION SYSTEM	KW	KILO-WATT	UNO	UNLESS NOTED OTHERWISE
		LB	POUNDS		
C.F.M.	CUBIC FEET PER MINUTE			VCT.	VINYL COMPOSITION TILE
C.T.	CERAMIC TILE	MAX	MAXIMUM	VERT.	VERTICAL
CL.	CLOSET	MCB	MAIN CIRCUIT BREAKER	VIF	VERIFY IN FIELD
CLG.	CEILING	MECH.	MECHANICAL		
CLR.	CLEAR(ANCE)	MEZZ.	MEZZANINE	WD	WOOD
CMU.	CONCRETE MASONRY UNIT	MFTG.	MANUFACTURING	WF.	WIDE FLANGE
COL.	COLUMN	MGB	MASTER GROUND BAR	WH.	WATER HEATER
COMM.	COMMUNICATION	MIN.	MINIMUM	WWM	WELDED WIRE MESH
CONC.	CONCRETE	MR.	MOISTURE RESISTANT	WP	WEATHERPROOF
CONT.	CONTINUOUS	MTG.	MOUNTING		
		MTL.	METAL		
DET	DETAIL	MPH.	MILES PER HOUR		
DIA	DIAMETER				
DIM	DIMENSION	N/A	NOT APPLICABLE		
DN	DOWN	N.I.C.	NOT IN CONTRACT		
DWG	DRAWING	N.T.S.	NOT TO SCALE		
EA.	EACH	O.C.	ON CENTER		
EF	EXHAUST FAN	O.D.	OUTSIDE DIAMETER		
EL	ELEVATION (DATUM)	O/H	OVERHEAD		
ELEC.	ELECTRICAL				
ELEV.	ELEVATION	PCS	PERSONAL COMMUNICATION SYSTEM		
EMER.	EMERGENCY	PT.	PRESSURE TREATED		
EMT	ELECTRICAL METALLIC TUBING	PL.	PLATE		
EQ.	EQUAL	PPVC	PERFORATED POLYVINYL CHLORIDE		
EQUIP.	EQUIPMENT	PLYWD.	PLYWOOD		
EXIST.	EXISTING	PM.	PRESSED METAL		
		PVC.	POLYVINYL CHLORIDE		
F.A.	FIRE ALARM	PSF.	POUNDS PER SQUARE FOOT		
F.C.	(GWB) FIRE CODE				
F.C.O.	FLOOR CLEAN OUT	R.	RADIUS		
F.D.	FLOOR DRAIN	R.C.P.	REFLECTED CEILING PLAN		
F.O.	FACE OF	RD.	ROOF DRAIN		
FDN.	FOUNDATION	REF.	REFERENCE		
FIN.	FINISH(ED)	REINF.	REINFORCE(D), (ING)		
FL.	FLOOR	REP.	REPRESENTATIVE		
F.T.	FOOT/FEET	REQD	REQUIRED		

LEGEND

- CONTOUR LINE
- INDEX CONTOUR LINE
- EDGE OF PAVEMENT
- CURB
- CHAIN LINK FENCE
- PROPERTY LINE
- ADJOINING PROPERTY LINE
- SWALE LINE
- PROPOSED U/G UTILITIES
- EASEMENT LINE
- STONE WALL
- SILT FENCE
- TREE LINE
- STRUCTURE
- UTILITY POLE
- FIELD INLET
- WELL CAP
- IRON ROD FOUND
- TREES
- ZONE BOUNDARY LINE
- REVISION
- SECTION OR DETAIL NUMBER
- SHEET WHERE DETAIL OR SECTION OCCURS

0 1 2 3

ORIGINAL SIZE IN INCHES

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An Agent For
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OMNIPOINT WIRELESS, 75 PROGRESS DRIVE, 2ND FLOOR, STAMFORD, CT 06902
OFFICE (203) 352-5808
FAX: (203) 352-5863

APPROVALS

OMNIPOINT	
LANDLORD	
RF	
CONSTRUCTION	

PROJECT NUMBER	DESIGNED BY
2338.092154	EP

REV	DATE	REVISION	DRAWN BY
6	4/16/03	FOR COMMENT	JFL
1	8/5/03	FOR PERMIT	JFL
2	7/24/03	REVISED ANTENNAS	CA
3	8/28/03	PER COMMENT	CC
4	11/10/03	FOR CONSTRUCTION	BFK

ISSUED BY: E. Pietrasz — DATE: 11-10-03

STATE OF NEW YORK
KENNETH W. KLINGEN
LICENSED PROFESSIONAL ENGINEER
59897

SITE INFORMATION

NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE

ABBREVIATION LIST & LEGEND

SHEET NUMBER

T-3

BILL OF MATERIALS

CON-ED TOWER E-142 SITE NO.: NY-09-215-A

ITEM NO.	DESCRIPTION	QUANTITY	LENGTH (FT)	TOTAL LENGTH
1	ANTENNA SECTORS:			
	ALPHA : ADFD1820-6565B-XD W/MECHANICAL DOWNTILT KIT	1	N/A	N/A
	BETA : ADFD1820-6565B-XD W/MECHANICAL DOWNTILT KIT	1	N/A	N/A
	GAMMA : ADFD1820-6565B-XD W/MECHANICAL DOWNTILT KIT	1	N/A	N/A
2	JUMPER CABLES:			
	6'-0" - 1/2" CABLEWAVE COAXIAL TOP JUMPER W/ CONNECTORS: (ANTENNA)	12	-	N/A
	6'-0" - 1/2" CABLEWAVE COAXIAL BOTTOM JUMPER W/ CONNECTORS: (SUPERFLEX)	12	-	N/A
	3'-0" - 1/2" CABLEWAVE COAXIAL AMPLIFIER JUMPER W/ CONNECTORS	-	-	N/A
3	MAIN CABLES:			
	1 5/8" DIA. HELIAX COAXIAL	12	CUT TO LENGTH IN FIELD	1500'±*
	1/2" DIA. HELIAX COAXIAL (GPS)	1		25'±*
4	AMPLIFIERS:			
	MHA	-	N/A	N/A
5	GROUNDING KITS & 2- HOLE LUGS FOR:			
	1 5/8" CABLE	36	N/A	N/A
	1/2" CABLE (GPS)	3	N/A	N/A
6	CONNECTORS - UNATTACHED FOR MAIN CABLES:			
	FEMALE "DIN" 1 5/8"	24	N/A	N/A
	FEMALE "DIN" 1/2" (GPS)	2	N/A	N/A
7	NORTEL: S12000 CABINETS	3	N/A	N/A
8	CCI BOOSTER	3	N/A	N/A
9	VIC-100 GPS ANTENNA	1	N/A	N/A

NOTES :
1. ITEMS LISTED ABOVE ARE TO BE SUPPLIED BY OCI AND INSTALLED BY CONTRACTOR.

*2. COAXIAL CABLE LENGTHS ARE ESTIMATED AND TO BE FIELD VERIFIED BY CONTRACTOR PRIOR TO ORDERING MATERIALS.

ANTENNA SCHEDULE

SECTOR	RADIATION CENTER (FT)	MECHANICAL DOWNTILT (DEG)	ORIENTATION CONFIGURATION	ANTENNAS PER SECTOR
ALPHA	96'-9"±	0°	0°	1
BETA	96'-9"±	0°	120°	1
GAMMA	96'-9"±	0°	240°	1

CABLE SCHEDULE

ANTICIPATED COAXIAL CABLE RUN (X) IN FEET	CABLE DIAMETER SIZE
0 < X < 6'	1/2"
6 < X < 100'	7/8"
100 < X < 200'	1-5/8"

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OMNIPOINT COMMUNICATIONS INC
As Agent For
OMNIPOINT FACILITIES NETWORK 2, LLC
OMNIPOINT WIRELESS
78 PROGRESS DRIVE, 2ND FLOOR
STAMFORD, CT 06902
OFFICE: (203) 328-8600
FAX: (203) 328-8653

APPROVALS

OMNIPOINT _____
LANDLORD _____
RF _____
CONSTRUCTION _____

PROJECT NUMBER	DESIGNED BY
2356.09215A	EP

REV	DATE	REVISION	DRAWN BY
0	4/18/03	FOR COMMENT	JFL
1	5/5/03	FOR PERMIT	JFL
2	7/24/03	REVISED ANTENNAS	CA
3	8/28/03	PER COMMENT	CC
4	11/10/03	FOR CONSTRUCTION	BFK

ISSUED BY: 11-10-03 DATE: B. Ferrez

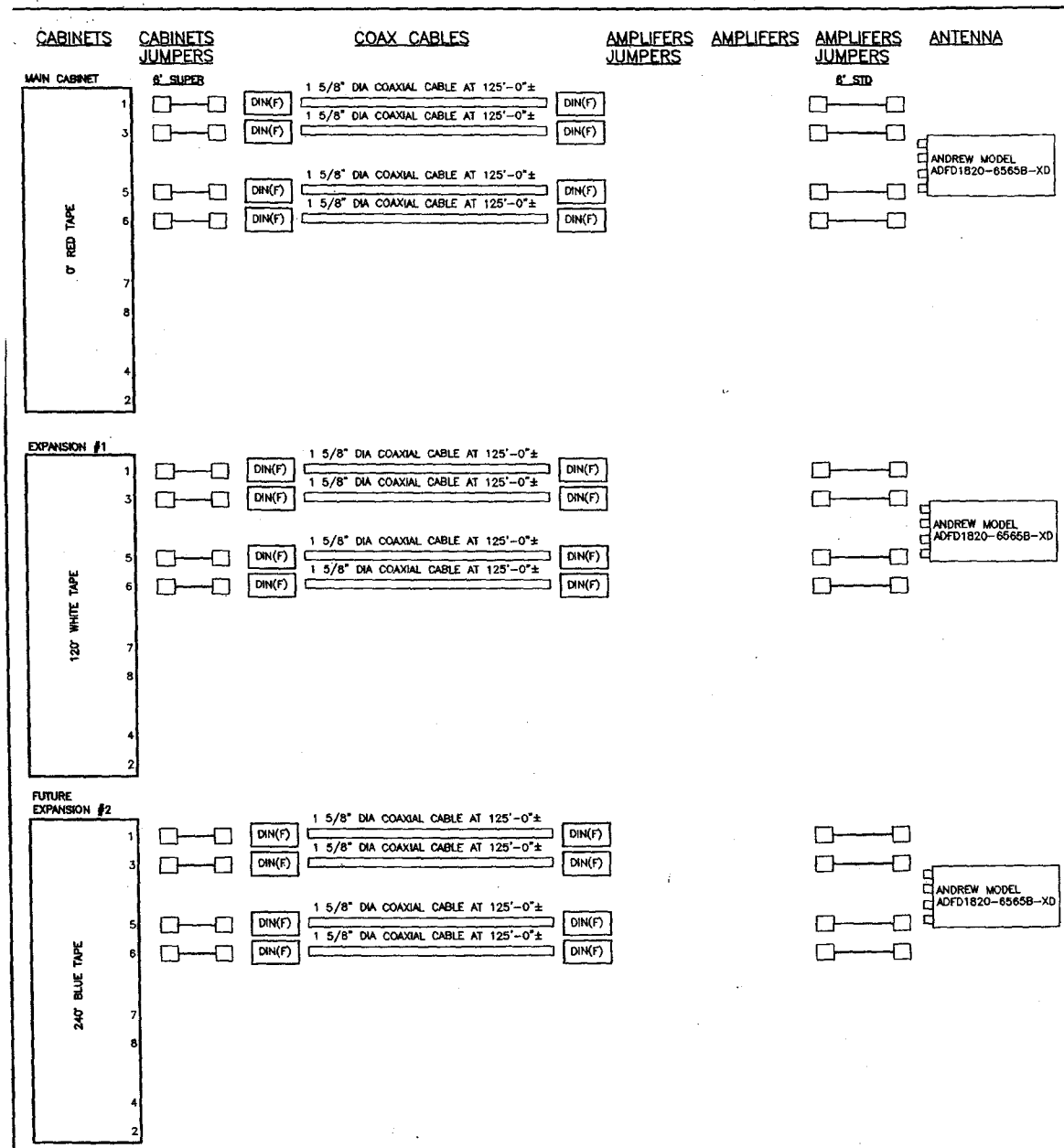
STATE OF NEW YORK
KENNETH W. KUKLEN
LICENSED PROFESSIONAL ENGINEER
59897

SITE INFORMATION
NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE
BILL OF MATERIALS

SHEET NUMBER
B-1

0 1 2 3
ORIGINAL SIZE IN INCHES



NOTES

1. ALL CABLE CONNECTIONS TO BE WEATHERPROOFED. INCLUDING ELECTRICAL TAPE, VAPOR SEAL (BUTYL TAPE), THREE LAYERS OF ELECTRICAL TAPE AND SCOTCH COAT.
2. CONTRACTOR TO PROVIDE DRIP LOOPS IN CABLES AND JUMPERS WHERE NECESSARY.
3. CABLE & JUMPER TAGGING:

   A. COLOR ELECTRICAL TAPE SHALL MARK EACH END OF CABLE AND EACH OF JUMPERS AS CLOSE TO EACH END AS POSSIBLE (NOT TO INTERFERE WITH WEATHER PROOFING).

   B. ALL TAPE MARKINGS TO BE DONE IN SEQUENCE FROM TRUE NORTH, WORKING CLOCKWISE PER SECTOR RED, WHITE, BLUE MARKING (SEQUENCE DENOTED ON MATERIAL LIST).

1 / B-2 RF CABLE SCHEMATIC

SCALE: NTS

0 1 2 3

ORIGINAL SIZE IN INCHES

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• PLANNING • SURVEYING
• ENGINEERING • CONSTRUCTION MANAGEMENT
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OMNIPOINT WIRELESS
74 PROGRESS DRIVE, 2ND FLOOR
STAMFORD, CT 06902
OFFICE: (203) 328-8900
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APPROVALS

OMNIPOINT _____
LANDLORD _____
RF _____
CONSTRUCTION _____

PROJECT NUMBER	DESIGNED BY
2306.09215A	EP

REV	DATE	REVISION	DRAWN BY
1	4/16/03	FOR COMMENT	JFL
2	6/5/03	FOR PERMIT	JFL
3	7/24/03	REVISED ANTENNAS	CA
4	8/28/03	PER COMMENT	CC
5	11/10/03	FOR CONSTRUCTION	BMK

ISSUED BY: E. Pietrasz — DATE: 11-10-03

STATE OF NEW YORK
KENNETH W. KUTTNER
59897
LICENSED PROFESSIONAL ENGINEER

SITE INFORMATION

NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE

RF CABLE SCHEMATIC

SHEET NUMBER

B-2

GENERAL NOTES

1. PROPERTY LINES & EXIST TOWER FEATURES INDICATED BASED ON A SET OF DRAWINGS COMPLETED BY "TECTONIC ENGINEERING AND SURVEYING P.C." FOR "SPRINT SPECTRUM LP" ON JULY 15, 2002 AND A FIELD INSPECTION PERFORMED BY "TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C." ON NOVEMBER 13, 2002.
2. ADJACENT PROPERTY LINES AND TRUE NORTH SHOWN ARE BASED ON DRAWINGS REFERENCED IN NOTE #1.
3. VERTICAL DATUM BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929 (APPROXIMATE).
4. DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO BOTH ANSI/TIA/EIA-222-F-1996 "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES". A BASIC WIND SPEED OF 80 MPH APPLIES TO WESTCHESTER COUNTY, NY, WHERE THE FACILITY IS LOCATED. THE BUILDING CODE OF NEW YORK STATE REQUIRES A 3-SECOND GUST WIND SPEED OF 110 MPH FOR THIS VICINITY, WHICH IS APPROXIMATELY EQUIVALENT TO A FASTEST-MILE WIND SPEED OF 90 MPH. ICE LOADS HAVE BEEN ESTABLISHED BASED ON A 0.5" RADIAL ICE THICKNESS IN ACCORDANCE WITH INDUSTRY STANDARD PRACTICE. A REDUCED WIND SPEED OF 79 MPH IS USED IN CONJUNCTION WITH THIS ICE LOAD.
5. THE PROPOSED FACILITY IS MINIMAL, AND WILL CREATE NEGLIGIBLE ADDITIONAL STORM WATER RUNOFF AND WILL THEREFORE NOT IMPACT THE EXISTING STORM WATER DRAINAGE SYSTEM.
6. THE PROPOSED FACILITY DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.
7. THE PROPOSED FACILITY IS UNMANNED, AND THEREFORE DOES NOT REQUIRE A MEANS OF WATER SUPPLY OR SEWAGE DISPOSAL.
8. NO LANDSCAPING IS PROPOSED WITH THIS APPLICATION.
9. NO LIGHTING IS PROPOSED AS PART OF THIS APPLICATION.
10. NO COMMERCIAL OR RETAIL SIGN(S) SHALL BE ERECTED AS PART OF THIS APPLICATION.
11. THE PROPOSED FACILITY IS NOT WITHIN 2,500 FEET OF ANY HISTORIC DISTRICT OR ANY SITE WITH OFFICIAL DESIGNATION AS A LOCAL LANDMARK, OR WHICH IS LISTED OR DESIGNATED AS ELIGIBLE FOR LISTING ON THE STATE OR THE NATIONAL REGISTERS OF HISTORIC PLACES.
12. THE WETLANDS DELINEATION SHOWN ON SHEET C-2 WAS PERFORMED ON 4/24/01 BY DAVID GRIGGS FROM ERS CONSULTANTS, INC, WARWICK, N.Y.
13. NO TOWN-REGULATED TREES ARE PROPOSED TO BE REMOVED.
14. NO TOWN-REGULATED STEEP SLOPES ARE PROPOSED TO BE DISTURBED.
15. THE PROPOSED FACILITY SHALL BE PAINTED BLACK, OR ANOTHER NEUTRAL OR COMPATIBLE COLOR TO BE DETERMINED BY THE PLANNING BOARD AND THE MOUNTINGS SHALL BE NONREFLECTIVE AND OF THE APPROPRIATE COLOR TO BLEND WITH THEIR BACKGROUND.
16. PROPOSED ANTENNAS WILL BE PAINTED TO MATCH THE COLOR OF THE EXISTING TOWER.

SITE NOTES

1. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS C-2 & C-3.
2. RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
3. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
4. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
5. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
6. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES.
7. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING.
8. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH.
9. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR SEDIMENT AND EROSION CONTROL.
10. ALL RESTORATION ISSUES SHALL BE COMPLETED WITHIN 72 HOURS OF THE COMPLETION OF THE WORK ACTIVITY OR WITHIN A REASONABLE AMOUNT OF TIME AS DIRECTED BY THE CONSTRUCTION MANAGER/ENGINEER.
11. CARE SHALL BE TAKEN TO RETAIN NATURAL GROWTH AND PREVENT DAMAGE TO TREES, WITHIN AND OUTSIDE THE LIMITS OF CONSTRUCTION AND SPECIFIED WORK AREAS, CAUSED BY EQUIPMENT AND MATERIALS. ANY DAMAGE TO THIS NATURAL GROWTH SHALL BE RESTORED AT THE EXPENSE OF THE CONTRACTOR.
12. ALL AREAS DISTURBED BY THE CONTRACTOR WITHOUT AUTHORIZATION SHALL BE RESTORED BY THE CONTRACTOR.
13. IN THE EVENT THE CONTRACTOR DAMAGES AN EXISTING UTILITY SERVICE CAUSING AN INTERRUPTION IN SAID SERVICE, HE SHALL IMMEDIATELY COMMENCE WORK TO RESTORE SERVICE AND MAY NOT CONTINUE HIS WORK OPERATION UNTIL SERVICE IS RESTORED.

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APPROVALS

OMNIPOINT	
LANDLORD	
RF	
CONSTRUCTION	

PROJECT NUMBER	DESIGNED BY
2356.09216A	EP

REV	DATE	REVISION	DRAWN BY
4	4/16/03	FOR COMMENT	JFL
3	8/5/03	FOR PERMIT	JFL
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A	11/10/03	FOR CONSTRUCTION	BFK

ISSUED BY	DATE
E. Piercarz	11-10-03

STATE OF NEW YORK
KENNETH W. RUMSEN
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LICENSED PROFESSIONAL ENGINEER

SITE INFORMATION

NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

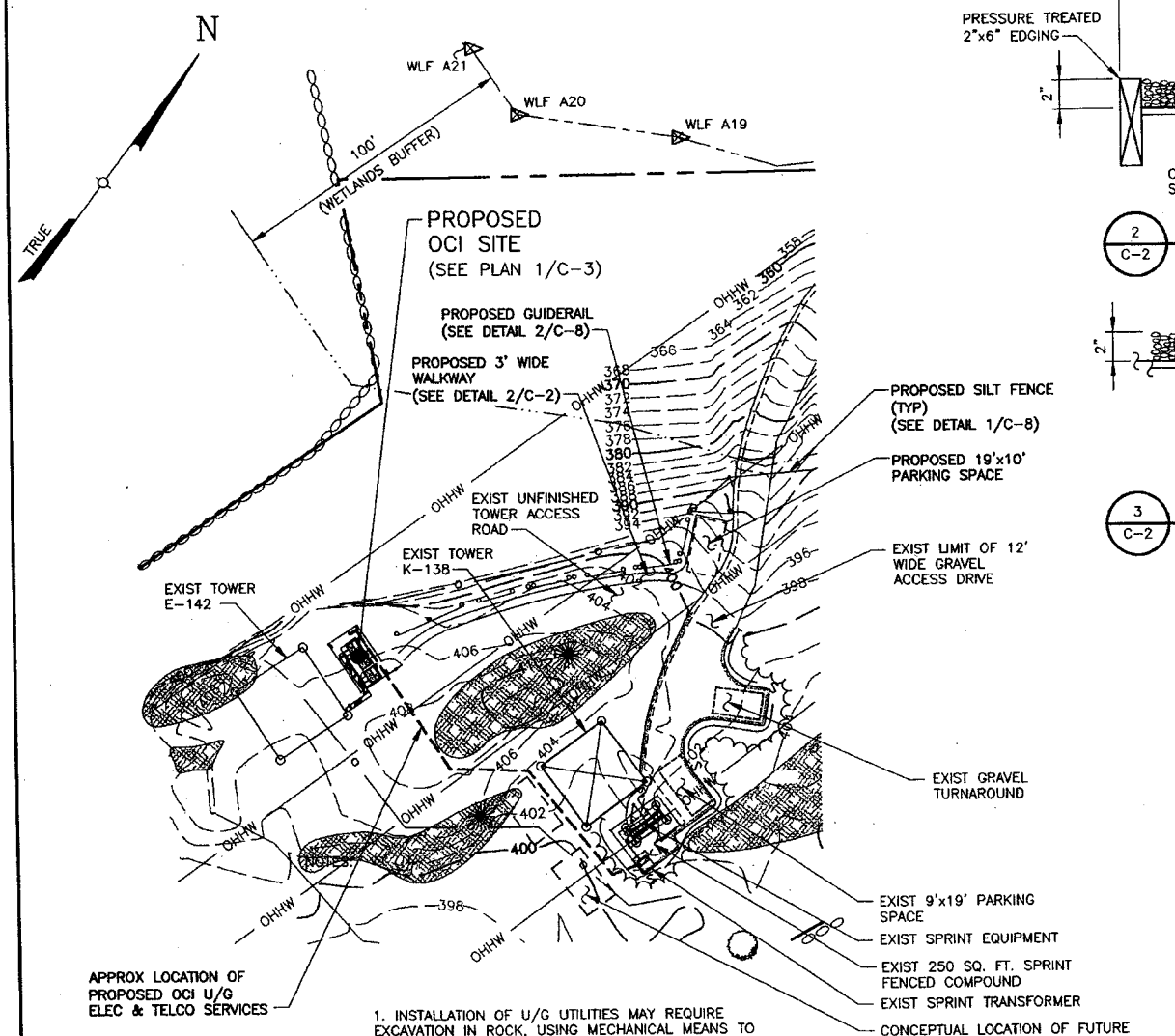
SHEET TITLE

NOTES

SHEET NUMBER

C-1

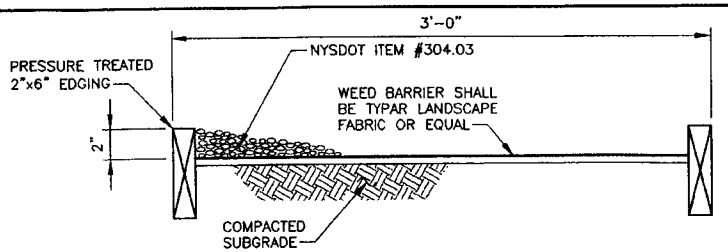
0 1 2 3
ORIGINAL SIZE IN INCHES



1. INSTALLATION OF U/G UTILITIES MAY REQUIRE EXCAVATION IN ROCK, USING MECHANICAL MEANS TO EXCAVATE ROCK.
2. GRADING WITHIN THE LIMITS OF THE COMPOUND IS REQUIRED TO ESTABLISH A UNIFORM ELEVATION.

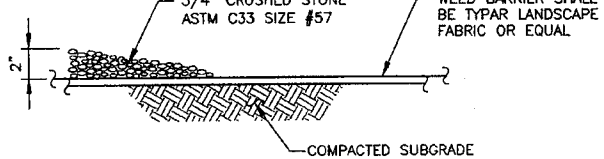
1 / C-2 PARTIAL SITE PLAN

SCALE: 1" = 40'



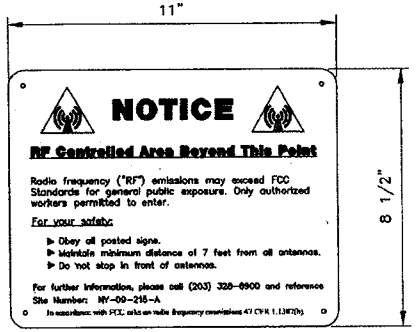
2 / C-2 GRAVEL WALKWAY DETAIL

SCALE: 1 1/2" = 1'-0"



3 / C-2 GRAVEL SURFACING DETAIL

SCALE: 1 1/2" = 1'-0"



(WHITE METAL SIGN W/BLACK LETTERING)

NOTE:
SIGN TO BE MOUNTED ON THE OUTSIDE OF ACCESS GATE TO THE PROPOSED COMPOUND.

4 / C-2 RF NOTICE SIGN

SCALE: 3" = 1'-0"

0 1 2 3

ORIGINAL SIZE IN INCHES

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APPROVALS

OMNIPOINT	
LANDLORD	
RF	
CONSTRUCTION	

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2306.09215A	EP

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ISSUED BY	DATE
E. Poetzsch	11-10-03

STATE OF NEW YORK
KENNETH W. KUTSINEN
LICENSED PROFESSIONAL ENGINEER
59897

SITE INFORMATION

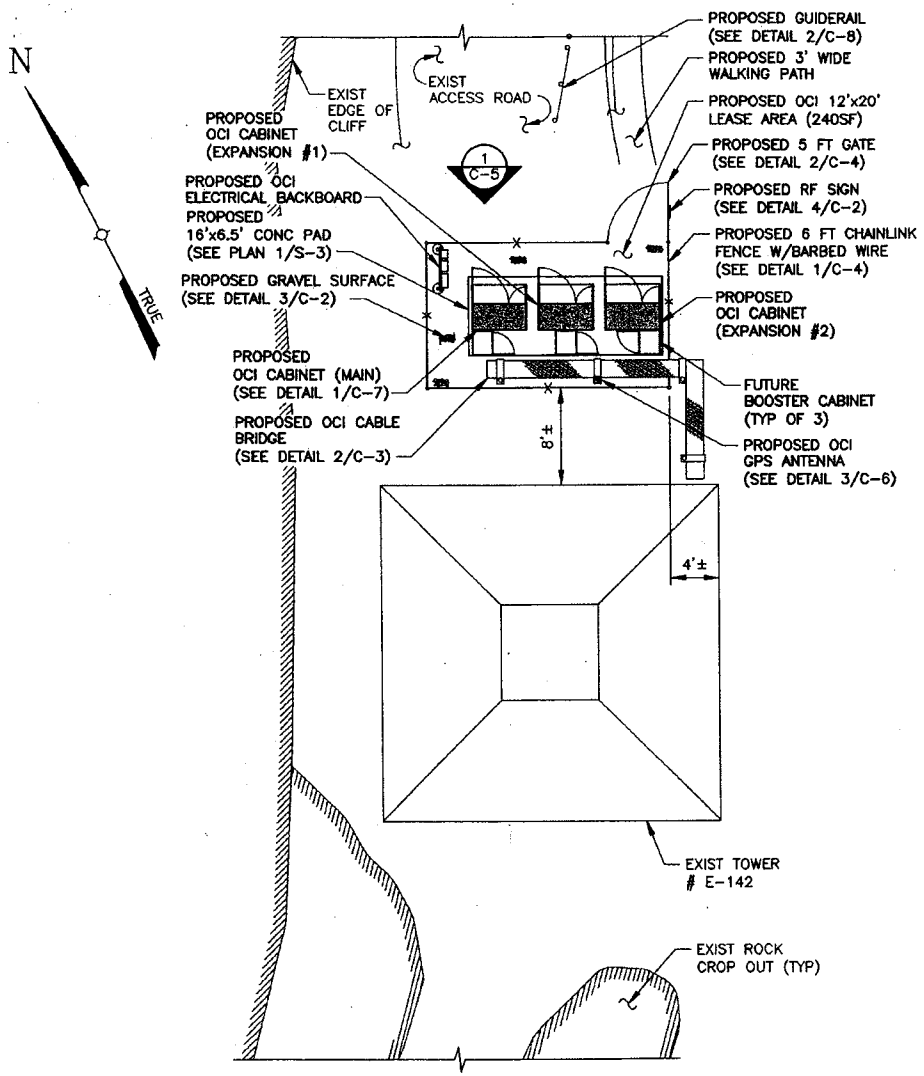
NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE

PARTIAL SITE PLAN

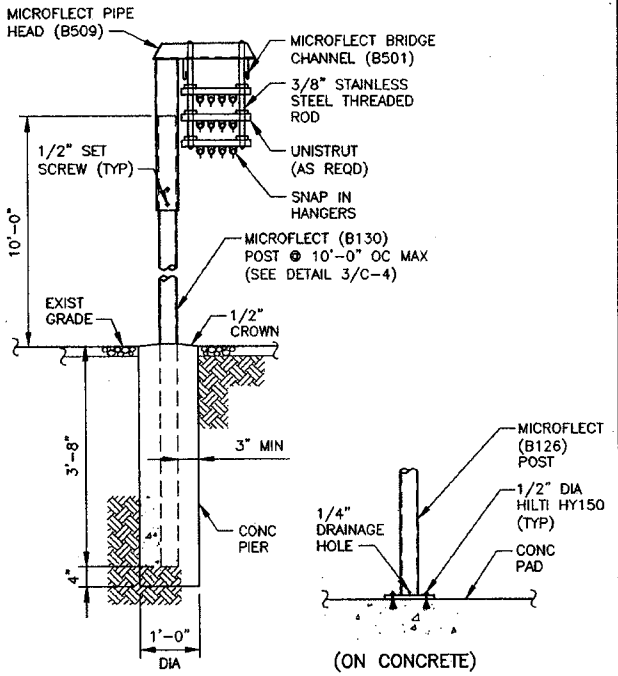
SHEET NUMBER

C-2



1 C-3 SITE DETAIL PLAN

SCALE: 1" = 10'



2 C-3 CABLE BRIDGE (TYP)

SCALE: 1/2" = 1'-0"

0 1 2 3

ORIGINAL SIZE IN INCHES

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APPROVALS

OMNIPOINT	
LANDLORD	
RF	
CONSTRUCTION	

PROJECT NUMBER	DESIGNED BY
2358.08215A	EP

REV	DATE	REVISION	DRAWN BY
1	4/16/03	FOR COMMENT	JFL
2	6/5/03	FOR PERMIT	JFL
3	7/24/03	REVISED ANTENNAS	CA
4	8/28/03	PER COMMENT	CC
5	11/10/03	FOR CONSTRUCTION	BFK

ISSUED BY: E Petersen
DATE: 8-10-03

STATE OF NEW YORK
KENNETH W. KUKKONEN
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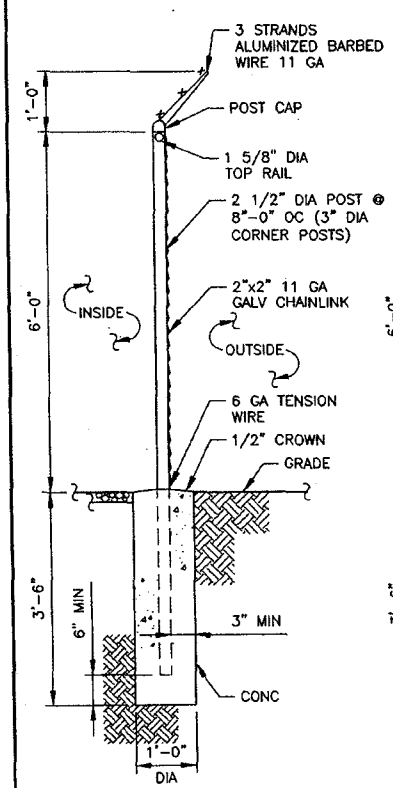
LICENSED PROFESSIONAL ENGINEER

SITE INFORMATION
NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

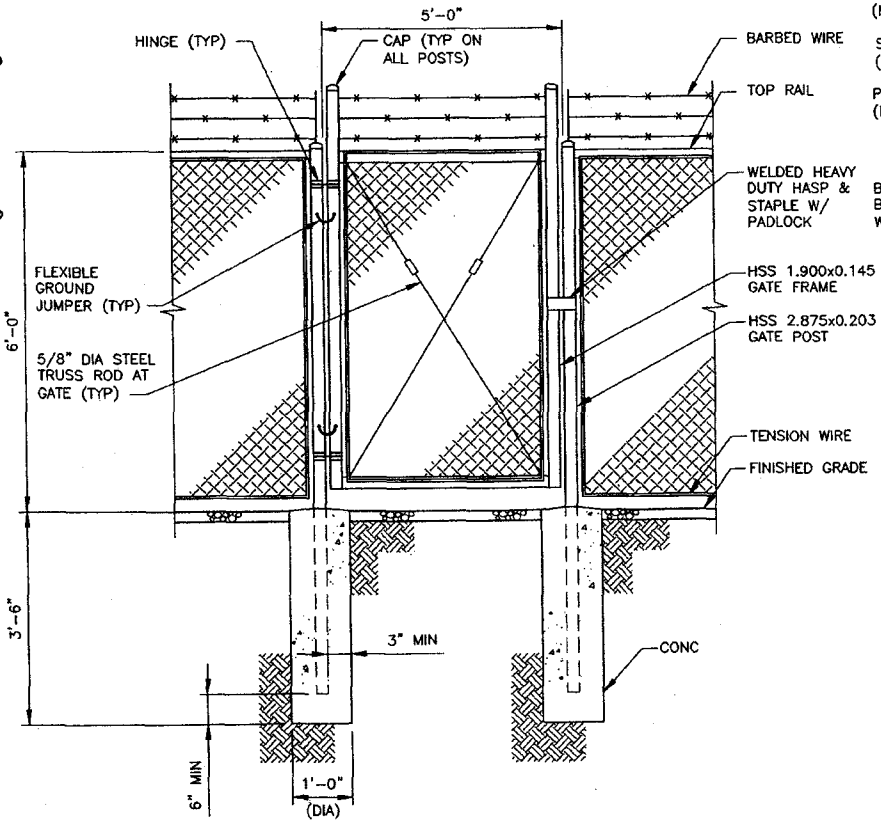
SHEET TITLE
SITE DETAIL PLAN

SHEET NUMBER
C-3



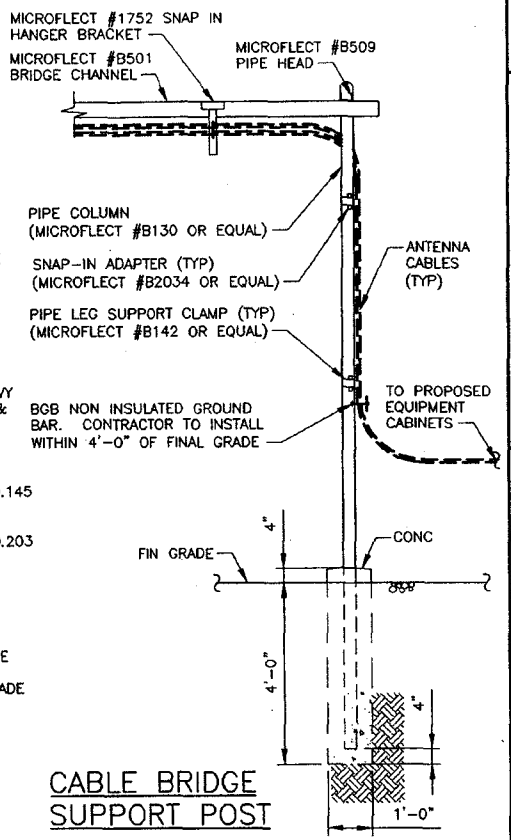
1/C-4 FENCE DETAIL

SCALE: 1/2" = 1'-0"



2/C-4 GATE DETAIL

SCALE: 1/2" = 1'-0"



CABLE BRIDGE SUPPORT POST

3/C-4 DETAIL

SCALE: 3/8" = 1'-0"

0 1 2 3

ORIGINAL SIZE IN INCHES

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APPROVALS
OMNIPOINT
LANDLORD
RF
CONSTRUCTION

PROJECT NUMBER	DESIGNED BY
2356.09215A	EP

REV	DATE	REVISION	DRAWN BY
0	4/18/03	FOR COMMENT	JFL
1	6/5/03	FOR PERMIT	JFL
2	7/24/03	REVISED ANTENNAS	CA
3	8/28/03	PER COMMENT	CC
4	11/10/03	FOR CONSTRUCTION	BFK

ISSUED BY	DATE
E. PETRASZ	11-10-03

STATE OF NEW YORK
KENNETH W. KUEHNEL
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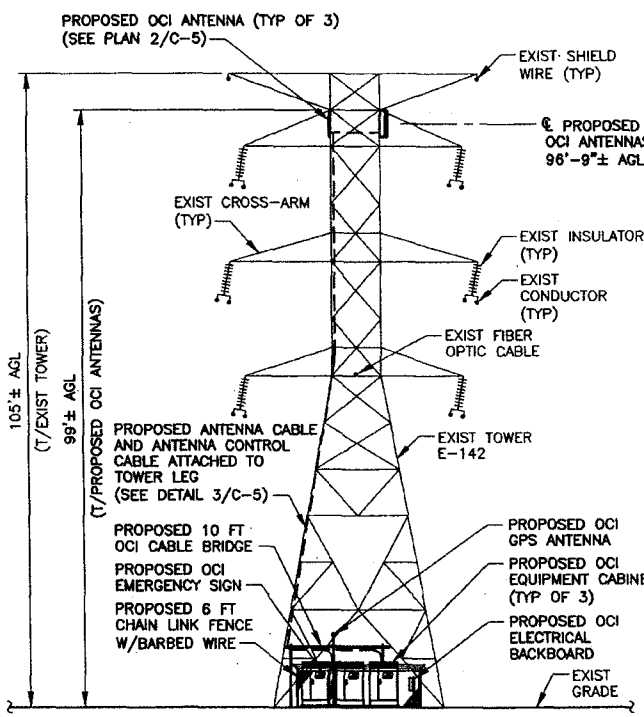
SITE INFORMATION
NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

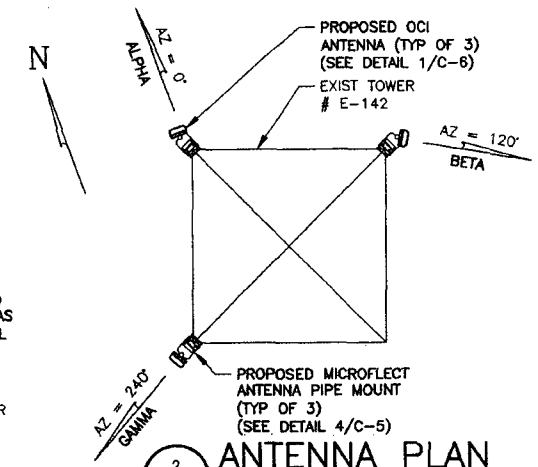
SHEET TITLE
SITE DETAILS

SHEET NUMBER
C-4



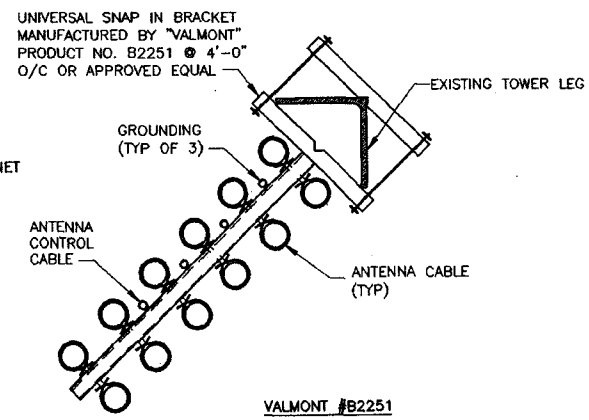
1 C-5 **ELEVATION**

SCALE: 1" = 20'



2 C-5 **ANTENNA PLAN**

SCALE: 1" = 5'



VALMONT #B2251

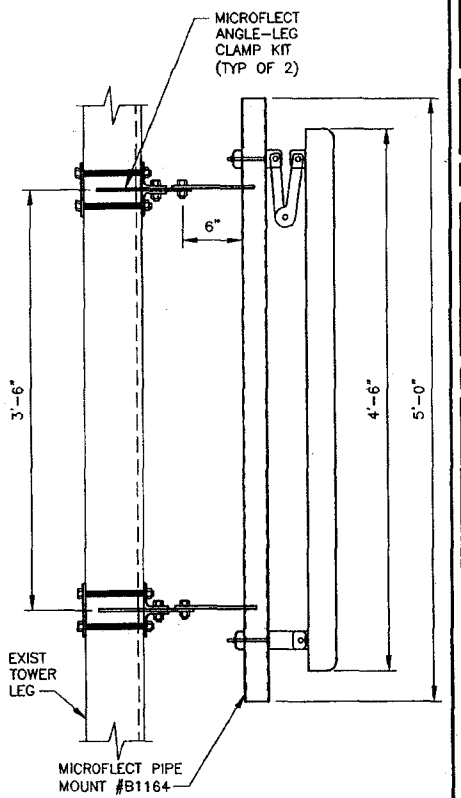
24 Pieces

NOTES:

1. INSTALL UNISTRUTS TO EXISTING TOWER LEG AT LOCATIONS THAT DO NOT INTERFERE WITH EXISTING BRACING MEMBERS.
2. ANTENNA CABLE & HANGER TO BE PAINTED TO MATCH COLOR OF EXIST TOWER.

3 C-5 **COAX SUPPORT DETAIL**

SCALE: 1 1/2" = 1'-0"



4 C-5 **ANTENNA ELEVATION**

SCALE: 1" = 1'-0"

NOTES:

1. ONE ATCA-AD1-060 ANTENNA CONTROL CABLE ASSEMBLY TO CONTROL THE REMOTE VARIABLE ELECTRICAL DOWNTILT FOR UP TO THREE ANTENNAS. CONTRACTOR TO VERIFY LENGTH OF CONTROL CABLE PRIOR TO ORDERING
2. CONTROL CABLE CARRIES 24V DC WHEN DOWNTILT IS BEING ADJUSTED.
3. CONTROL CABLE WILL BE ROUTED IN PVC CONDUIT TO ANTENNAS FROM EQUIPMENT CABINETS.

0 1 2 3

ORIGINAL SIZE IN INCHES

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APPROVALS

OMNIPOINT	
LANDLORD	
RF	
CONSTRUCTION	

PROJECT NUMBER	DESIGNED BY
2358.09216A	EP

REV	DATE	REVISION	DRAWN BY
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4	7/24/03	REVISED ANTENNAS	CA
3	8/28/03	PER COMMENT	CC
2	11/10/03	FOR CONSTRUCTION	BFK
1			

ISSUED BY	DATE
E. Pietrasz	11-10-03

STATE OF NEW YORK
KENNETH W. KUKKEN
59397
LICENSED PROFESSIONAL ENGINEER

SITE INFORMATION

NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE

ELEVATION & ANTENNA PLAN

SHEET NUMBER

C-5

ANTENNA DATA

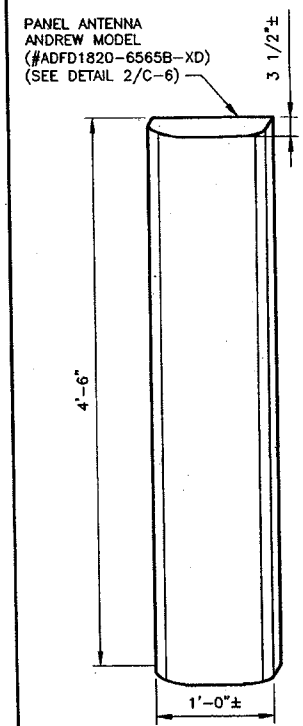
SECTOR	MODEL NO.	NUMBER	AZIMUTH
ALPHA	ADFD1820-6565B-XD	1	0°
BETA	ADFD1820-6565B-XD	1	120°
GAMMA	ADFD1820-6565B-XD	1	240°

ADFD1820-6565B-XD

HEIGHT	54.4"	AZIMUTH BEAMWIDTH	65°
WIDTH	11.8"	ELEVATION BEAMWIDTH	6.5°
DEPTH	3.5"	POLARIZATION	SLANTED ±45°
WEIGHT	15.7 LBS	PORT-TO-PORT ISOLATION	30dB
FRONT WIND LOAD @ 100 MPH	163 LBS	FRONT-TO-BACK RATIO	50 dB
SIDE WIND LOAD @ 100 MPH	57 LBS	VSWR	1.5:1 MAX
RATED WIND VELOCITY	125 MPH	POWER HANDLING	300 WATTS CW
		PASSIVE INTERMODULATION	<-150 dBc
		LIGHTNING PROTECTION	DC GROUND

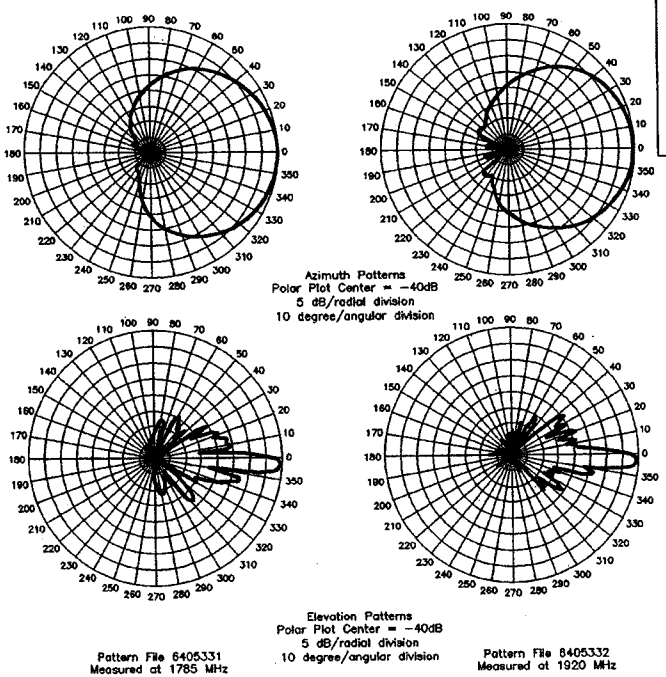
ANTENNA MOUNTING NOTES

1. DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO BOTH ANSI/TIA/EIA-222-F-1996 "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES". A BASIC WIND SPEED OF 80 MPH APPLIES TO WESTCHESTER COUNTY, NY, WHERE THE FACILITY IS LOCATED. THE BUILDING CODE OF NEW YORK STATE REQUIRES A 3-SECOND GUST WIND SPEED OF 110 MPH FOR THIS VICINITY, WHICH IS APPROXIMATELY EQUIVALENT TO A FASTEST-MILE WIND SPEED OF 90 MPH. ICE LOADS HAVE BEEN ESTABLISHED BASED ON A 0.5" RADIAL ICE THICKNESS IN ACCORDANCE WITH INDUSTRY STANDARD PRACTICE. A REDUCED WIND SPEED OF 79 MPH IS USED IN CONJUNCTION WITH THIS ICE LOAD.
2. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
3. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
4. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
5. ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH DOUBLE NUTS AND SHALL BE INSTALLED SNUG TIGHT.
6. DESIGN RESPONSIBILITY OF ANTENNA MOUNTING BRACKETS AND POLES AND ALL COMPONENTS THEREOF AND ATTACHMENT THERE TO SHALL BE THE RESPONSIBILITY OF THE MANUFACTURER. MFR SHALL PROVIDE THE OWNER DRAWINGS DETAILING ALL COMPONENTS OF THE ASSEMBLY, INCLUDING CONNECTIONS, DESIGN LOADS, AND ALL OTHER PERTINENT DATA. ALL SUBMISSIONS SHALL BEAR THE STAMP AND SIGNATURE OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW YORK.
7. ALL WORK SHALL BE PERFORMED IN CALM WEATHER, WITH WIND GUSTS LESS THAN 20 MPH.



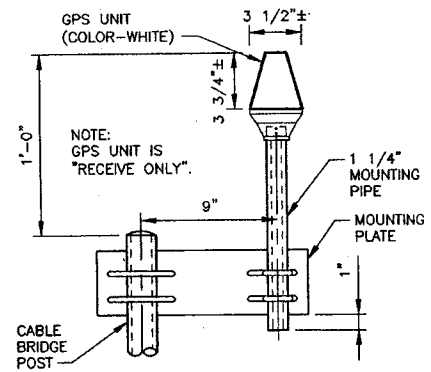
1/C-6 ANTENNA DETAIL

SCALE: 1" = 1'-0"



2/C-6 ANTENNA PATTERNS

SCALE: NTS



3/C-6 GPS UNIT DETAIL

SCALE: 1 1/2" = 1'-0"

0 1 2 3

ORIGINAL SIZE IN INCHES

TECTONIC
• PLANNING • SURVEYING
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OMNIPOINT COMMUNICATIONS INC
As Agent For
OMNIPOINT FACILITIES NETWORK 2, LLC

OMNIPOINT WIRELESS
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STAMFORD, CT 06902
OFFICE: (203) 328-0500
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APPROVALS

OMNIPOINT _____
LANDLORD _____
RF _____
CONSTRUCTION _____

PROJECT NUMBER	DESIGNED BY
2306.09215A	EP

REV	DATE	REVISION	DRAWN BY
0	4/16/03	FOR COMMENT	JFL
1	6/5/03	FOR PERMIT	JFL
2	7/24/03	REVISED ANTENNAS	CA
3	8/28/03	PER COMMENT	CC
4	11/10/03	FOR CONSTRUCTION	BFK

ISSUED BY	DATE
E. Pietrasz	11-10-03

STATE OF NEW YORK
KENNETH W. KUNKEN
59897
LICENSED PROFESSIONAL ENGINEER

SITE INFORMATION

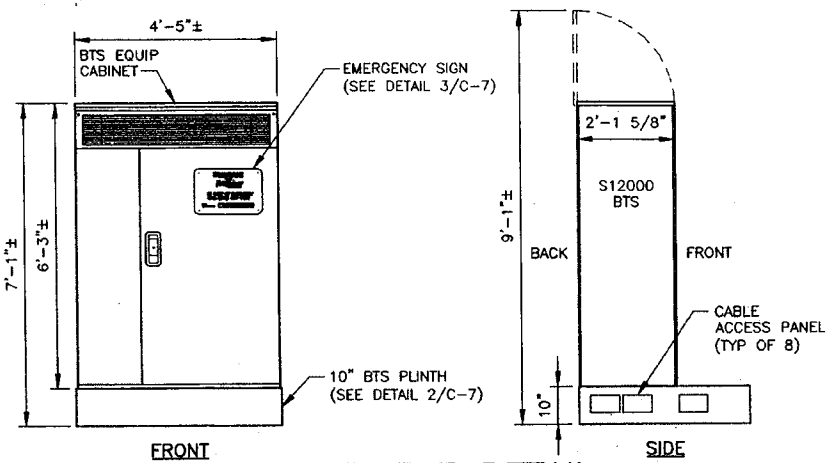
NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE

ANTENNA DETAIL
& NOTES

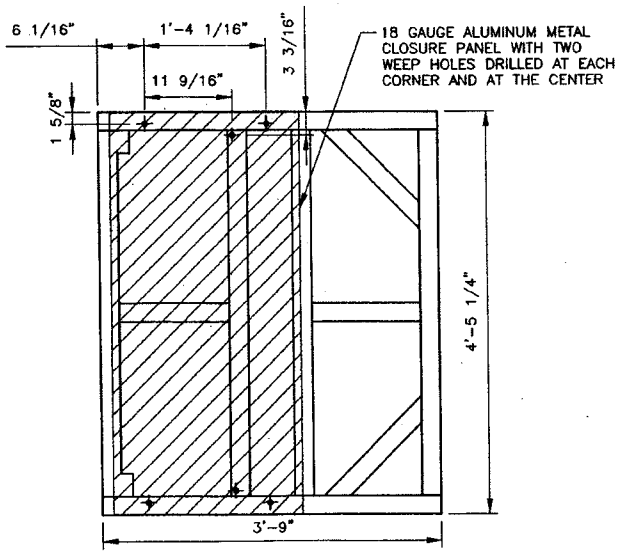
SHEET NUMBER

C-6



1/C-7 EQUIPMENT DETAIL

SCALE: 3/8" = 1'-0"



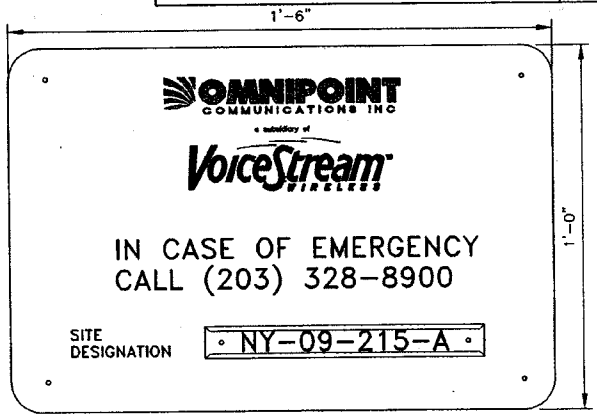
NOTE:
1. CONTRACTOR TO VERIFY ALL BOLT LOCATIONS.
2. ALL HOLES 11/16" DIA. TYPICAL.
3. WEIGHT OF PLINTH IS 110 LBS.

2/C-7 PLAN OF PLINTH

SCALE: 3/4" = 1'-0"

EQUIPMENT SPECIFICATION TABLE

MANUFACTURE MODEL #		NORTEL S12000
FREQUENCY RANGE		900 MHZ GSM/900MHZ EXTENDED GSM 1800MHZ GSM AND DUAL BAND GSM 900/1800 850 MHZ GSM 1900MHZ GSM AND DUAL BAND 850/1900
RECEIVE SENSITIVITY	W/O DIVERSITY WITH DIVERSITY	-110 DBM GUARANTEED (W/O TMA) -115 DBM GUARANTEED (W/O TMA)
HEIGHT		75.2 IN.
WIDTH		53.2 IN.
DEPTH		25.2 IN.
WEIGHT	EMPTY CABINET FULLY EQUIPPED	441 LB 1257 LB
CAPACITY	STANDARD OPTIONAL	12 TRX PER RADIO CABINET UP TO 3 RADIO CABINETS UP TO 4 RADIO CABINETS
CONFIGURATION	MONOBAND TRISECTORIAL DUAL BAND TRISECTORIAL CELL SPLITTING	UP TO S16-16-16 (4 RADIO CABINETS) S222_222 (1 RADIO CABINET) MONO-BCCH DUAL BAND CELLS CELL SPLITTING ACROSS RADIO CABINETS
AMPLIFIER OUTPUT POWER	STANDARD OPTIONAL	30W (+/- 0.5 DB) 60W (+/- 0.5 DB)
TRANSMISSION COUPLING		ALL COUPLING CONFIGURATIONS FROM DUPLEXERS TO 4 WAYS HYBRID COUPLING (H4D)
POWER CONTROL	STATIC DYNAMIC	6 STEPS OF 2DB 15 STEPS OF 2DB
FREQUENCY HOPPING		RF SYNTHESIZED
SUPPORTED VOCODERS		FULL RATE (FR) ENHANCED FULL RATE (EFR) ADAPTIVE MULTI-RATE - FULL RATE (AMR FR) ADAPTIVE MULTI-RATE - HALF RATE (AMR FR)
ENCRYPTION ALGORITHMS		A5/1 & A5/2
POWER SUPPLY	NOMINAL	DC -48V
OPERATIONAL TEMPERATURE RANGE		-5°C TO +45°C
MAX ACOUSTIC NOISE		65 DB(A)
BACKHAUL	STANDARD OPTIONAL	6 E1/T1 LINKS 8 E1/T1 LINKS



(RED METAL SIGN W/WHITE LETTERING)

3/C-7 EMERGENCY SIGN

SCALE: 3" = 1'-0"

0 1 2 3

ORIGINAL SIZE IN INCHES

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OMNIPOINT COMMUNICATIONS INC
As Agent For
OMNIPOINT FACILITIES NETWORK 2, LLC

APPROVALS
OMNIPOINT
LANDLORD
RF
CONSTRUCTION

PROJECT NUMBER: 2336.09215A
DESIGNED BY: EP

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STATE OF NEW YORK
KENNETH W. KUKKONEN
59897
LICENSED PROFESSIONAL ENGINEER

SITE INFORMATION
NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE
CABINET DETAILS

SHEET NUMBER
C-7

SOIL AND EROSION CONTROL NOTES

1. TEMPORARY SEDIMENTATION ENTRAPMENT AREAS SHALL BE PROVIDED AT KEY LOCATIONS TO INTERCEPT AND CLARIFY SILT LADEN RUNOFF FROM THE SITE.
2. SILT THAT LEAVES THE SITE IN SPITE OF THE REQUIRED PRECAUTIONS SHALL BE COLLECTED AND REMOVED AS DIRECTED BY APPROPRIATE MUNICIPAL AUTHORITIES.
3. AT THE COMPLETION OF THE PROJECT, ALL TEMPORARY SILTATION DEVICES SHALL BE REMOVED AND THE AFFECTED AREAS REGRADED, OR TREATED IN ACCORDANCE WITH THE APPROVED SITE PLANS.
4. ALL SEDIMENTATION ENTRAPMENT STRUCTURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS.
5. CONTRACTOR TO INSTALL EROSION CONTROL MEASURES (SILT FENCE AND/OR HAY BALES) AROUND AREAS BEING DISTURBED DURING CONSTRUCTION AND AS NECESSARY.
6. CONTRACTOR TO INSTALL SILT FENCE ON DOWN SLOPE OF ALL UTILITY TRENCHES.
7. a DISTANCES SHOWN FROM THE WETLANDS ON THE CONSTRUCTION PLANS AND SOIL EROSION AND SEDIMENTATION CONTROL PLANS ESTABLISH THE MINIMUM SEPARATION PERMITTED BETWEEN THE PROPOSED CONSTRUCTION ACTIVITIES AND BOUNDARY OF THE WETLANDS.

   b. AREA OF DISTURBANCE LINES SHALL BE CLEARLY DELINEATED IN THE FIELD BY INSTALLING SNOW FENCE AROUND THE ENTIRE PROPOSED CONSTRUCTION AREA. EXCEPT AS NECESSARY TO PROVIDE MITIGATION PLANTINGS, NO ENCROACHMENT BEYOND THESE LIMITS BY WORKERS OR MACHINERY SHALL BE PERMITTED.

   c. GRADING AND CLEARING AND OTHER CONSTRUCTION-RELATED ACTIVITIES SHALL TAKE PLACE ONLY WITHIN THE DELINEATED AREA OF DISTURBANCE LINES. THESE AREA OF DISTURBANCE LINES REPRESENT THE MAXIMUM LIMITS OF CONSTRUCTION ACTIVITIES. EVERY ATTEMPT SHALL BE MADE TO FURTHER REDUCE GRADING AND CLEARING ACTIVITIES WITHIN THE AREA OF DISTURBANCE LINES BY MAINTAINING NATURAL VEGETATION AND TOPOGRAPHY WHEREVER PRACTICABLE.

   d. ALL CONSTRUCTION AND CONSTRUCTION-RELATED ACTIVITIES OCCURRING ON THIS SITE SHALL COMPLY WITH STANDARDS AND RECOMMENDATIONS OF THE LATEST "BEST MANAGEMENT PRACTICES MANUAL FOR CONSTRUCTION RELATED ACTIVITIES" PREPARED BY THE WESTCHESTER COUNTY SOIL AND WATER CONSERVATION DISTRICT.

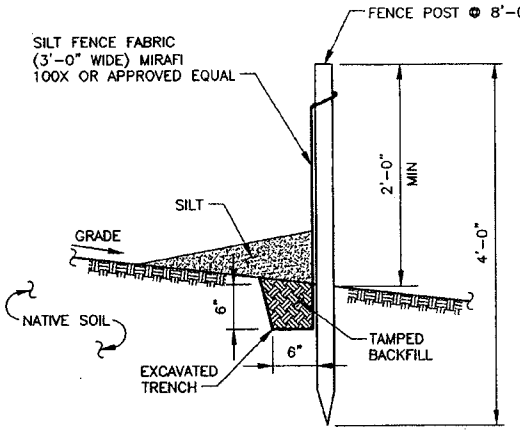
   e. PRIOR TO THE COMMENCEMENT OF ANY SITE WORK, THE APPLICANT SHALL STAKE THE LOCATION OF THE CONSTRUCTION ACTIVITY FOR INSPECTION AND APPROVAL BY THE TOWN ENGINEER.

   f. ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHOWN ON THIS PLAN SHALL BE IN PLACE PRIOR TO THE START OF ANY SITE WORK. THE TOWN ENGINEER SHALL HAVE INSPECTED THE INSTALLATION OF ALL REQUIRED SOIL EROSION AND SEDIMENTATION CONTROL MEASURES PRIOR TO THE AUTHORIZATION TO PROCEED WITH ANY PHASE OF THE SITE WORK.

   g. THROUGHOUT THE CONSTRUCTION PERIOD, A QUALIFIED PROFESSIONAL RETAINED BY THE APPLICANT SHALL, ON AT LEASE A WEEKLY BASIS, PRIOR TO ANY PREDICTED RAIN EVENT AND AFTER ANY RUNOFF-PRODUCING RAIN EVENT, INSPECT THE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES TO ENSURE THEIR PROPER FUNCTIONING.

   h. ALL DRAINAGE STRUCTURES AND ANY OTHER REQUIRED UTILITY APPURTENANCES SHALL BE INSTALLED AS REQUIRED BY TOWN SPECIFICATIONS AND AS SHOWN ON THESE PLANS.

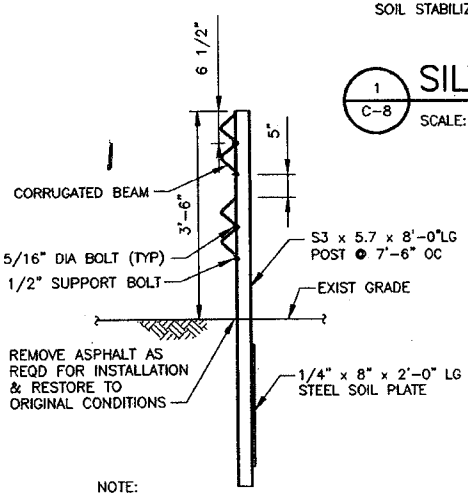
   i. IF THE APPLICANT, DURING THE COURSE OF CONSTRUCTION, ENCOUNTERS SUCH CONDITIONS AS FLOOD AREAS, UNDERGROUND WATER, SOFT OR SILTY AREAS, IMPROPER DRAINAGE, OR ANY OTHER UNUSUAL CIRCUMSTANCES OR CONDITIONS THAT WERE NOT FORESEEN IN THE ORIGINAL PLANNING, HE SHALL REPORT SUCH CONDITIONS IMMEDIATELY TO THE TOWN ENGINEER. THE APPLICANT MAY SUBMIT, IF HE SO DESIRES, HIS RECOMMENDATIONS AS THE SPECIAL TREATMENT TO BE GIVEN SUCH AREAS TO SECURE ADEQUATE, PERMANENT AND SATISFACTORY CONSTRUCTION. THE TOWN ENGINEER, WITHOUT UNNECESSARY DELAY, SHALL INVESTIGATE THE CONDITION OR CONDITIONS, AND SHALL EITHER APPROVE THE APPLICANT'S RECOMMENDATION TO CORRECT THE CONDITIONS, ORDER A MODIFICATION THEREOF, OR ISSUE HIS OWN SPECIFICATION FOR THE CORRECTION OF THE CONDITIONS. IN THE EVENT OF THE APPLICANT'S DISAGREEMENT WITH THE DECISION OF THE TOWN ENGINEER, OR IN THE EVENT OF A SIGNIFICANT CHANGE RESULTING TO THE SITE PLAN OR ANY CHANGE THAT INVOLVES THE WETLANDS REGULATED AREAS, THE MATTER SHALL BE DECIDED BY THE PLANNING BOARD. ANY SUCH CONDITIONS OBSERVED BY THE PLANNING BOARD OR ITS AGENTS SHALL BE SIMILARLY TREATED.



NOTE:
SILT FENCE TO BE MAINTAINED IN PLACE DURING CONSTRUCTION AND SOIL STABILIZATION PERIOD.

1 / C-8 SILT FENCE

SCALE: 3/4" = 1'-0"



NOTE:
CONTRACTOR TO VERIFY THE U/G UTILITIES BEFORE DIGGING OR DRILLING.

2 / C-8 GUIDERAIL DETAIL

SCALE: 1/2" = 1'-0"

0 1 2 3

ORIGINAL SIZE IN INCHES

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APPROVALS

OMNIPOINT	
LANDLORD	
RF	
CONSTRUCTION	

PROJECT NUMBER	DESIGNED BY
2358.08218A	EP

REV	DATE	REVISION	DRAWN BY
4	4/18/03	FOR COMMENT	JFL
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ISSUED BY: E. Pietrasz — DATE: 11-10-03

STATE OF NEW YORK
KENNETH W. KUKKONEN
LICENSED PROFESSIONAL ENGINEER
59897

SITE INFORMATION

NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE

NOTES & DETAILS

SHEET NUMBER

C-8

STEEL NOTES

DESIGN BASIS (BUILDING CODE
GOVERNING CODE OF NEW YORK)

DESIGN LOADS:

SNOW LOAD	45 PSF
WIND LOAD (ANTENNA)	30 PSF
TOTAL EQUIPMENT DEAD LOAD ON FRAME	4200 LBS.

1. DETAIL, FABRICATE AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH THE LATEST AISC MANUAL OF STEEL CONSTRUCTION (ASD), AWS D1.1, AND OTHER CODES, STANDARDS, AND SPECIFICATIONS EXCEPT AS EXPLICITLY MODIFIED HEREIN.
   A) ASTM A36, GRADE 36; ROLLED STEEL, RODS, PLATES, AND U BOLTS
   B) ASTM A325 BEARING TYPE BOLTS FOR ALL BEAMS AND COLUMN CONNECTIONS
2. CONNECTIONS: WELD OR BOLT CONNECTIONS, AS INDICATED:
   A) CONNECTIONS NOT DETAILED ON THE DRAWINGS SHALL CONFORM TO THE REQUIREMENTS OF THE CITED AISC SPECIFICATION.
   B) STRUCTURAL BOLTS SHALL CONFORM TO THE LATEST ASTM A325 "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS".
   C) WHERE THE REACTION VALUES OF BEAMS, BRACING, STRUTS, ETC., ARE NOT SHOWN ON THE DRAWINGS THE CONNECTIONS SHALL BE DESIGNED TO SUPPORT THE END REACTION DERIVED FROM THE TABLES AND FORMULA OF UNIFORM LOAD CONSTANTS IN PART 2, NINTH EDITION, OF THE AISC MANUAL OF STEEL CONSTRUCTION FOR THE GIVEN MEMBER SIZE, SPAN, AND YIELD STRENGTH.
   D) MINIMUM 3/16" FILLET E70-XX WELD SHALL APPLY UNLESS NOTED.
   E) MINIMUM 1/2" DIA. A325 BOLTS SHALL APPLY UNLESS NOTED.
   F) MINIMUM SIZE OF CLIP ANGLES SHALL BE L3x3x3/8" UNLESS NOTED.
   G) ALL GUSSET PLATES SHALL BE 3/8" THICK UNLESS NOTED.
   H) ALL HOLES FOR BOLTS SHALL BE 1/16 INCH LARGER THAN THE BOLT DIAMETER WITH AN EDGE DISTANCE OF AT LEAST 1 1/2 TIMES THE BOLT DIAMETER AND A SPACING OF AT LEAST 3 TIMES THE BOLT DIAMETER. ALL BOLTS SHALL BE PROVIDED WITH PALNUTS OR LOCK NUTS.
3. SUBMIT DRAWINGS OF ALL STRUCTURAL AND MISCELLANEOUS STEEL TO THE ENGINEER FOR APPROVAL, AND INCORPORATE ALL COMMENTS PRIOR TO FABRICATION.
4. CONTRACTOR SHALL COMPLY WITH THE LATEST AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES".
5. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS 1, HILTI KWIK BOLT II OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE FOUR (4) INCHES.
6. ALL EXTERIOR BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
7. ROUND AND SQUARE HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B.
8. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A153 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
9. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
10. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE ENGINEER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER APPROVAL.
11. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
12. GRATING SHALL BE GALVANIZED SERRATED WELDED STEEL BAR GRATING WITH 1"x3/16" BEARING BARS AT 1-3/16" OC. FASTEN TO SUPPORTING MEMBERS WITH SADDLE-TYPE CLIPS AT 2'-0" O.C. AND BAND ALL EXPOSED EDGES.
13. HAMMER DRILLS ARE NOT TO BE USED WHEN DRILLING HOLES FOR SLEEVE OR EXPANSION BOLTS INSTALLED IN MASONRY BLOCKS/BRICKS
14. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF A 5/8" DIAMETER STAINLESS STEEL THREADED ANCHOR ROD WITH NUTS & WASHERS, A SCREEN TUBE WHERE REQUIRED AND AN EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI HIT HY-20 OR HY-150 SYSTEM OR APPROVED EQUAL. MINIMUM EMBEDMENT SHALL BE SIX (6) INCHES UNLESS OTHERWISE NOTED.
15. ALL HOLES TO BE ADDED IN THE FIELD SHALL BE PUNCHED OR DRILLED. NO HOLE BURNING SHALL BE ALLOWED.

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APPROVALS

OMNIPOINT _____
LANDLORD _____
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CONSTRUCTION _____

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E. Pietrasz	11-10-03

STATE OF NEW YORK
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LICENSED PROFESSIONAL ENGINEER

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NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE

STEEL NOTES

SHEET NUMBER

S-1

0 1 2 3
ORIGINAL SIZE IN INCHES

CONCRETE NOTES

1. DESIGN AND CONSTRUCTION OF ALL CONCRETE SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" ACI 318.
2. ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 3000 PSI.
3. CEMENT SHALL BE PORTLAND CEMENT CONFORMING TO ASTM C150 – TYPE I OR II.
4. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60, "DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT".
5. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185, "WELDED STEEL WIRE FABRIC FOR CONCRETE REINFORCEMENT".
6. CONCRETE WORK AND MATERIALS SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 301.
7. SUBMIT CONCRETE MIX DESIGN TO THE DESIGN ENGINEER FOR APPROVAL NOT LESS THAN 3 DAYS PRIOR TO CONSTRUCTION. MIX DESIGN SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT OF CONCRETE.
8. READY MIX CONCRETE SHALL COMPLY WITH ACI 304 AND ASTM C94 WITH A MAXIMUM WATER–CEMENT RATIO OF 0.50. TIME BETWEEN INTRODUCTION OF WATER AND THE PLACEMENT OF CONCRETE SHALL NOT EXCEED 1–1/2 HOURS.
9. CONCRETE AGGREGATES SHALL BE NORMAL WEIGHT, CONFORMING TO ASTM C33. MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE 1".
10. CHLORIDE–CONTAINING ADMIXTURES SHALL NOT BE USED.
11. CONCRETE SLUMP SHALL NOT EXCEED 5 INCHES UNLESS SPECIFICALLY AUTHORIZED BY THE ENGINEER. SLUMP SHALL BE DETERMINED IN ACCORDANCE WITH ASTM C143.
12. PROVIDE AIR ENTRAINMENT IN EXTERIOR EXPOSED CONCRETE TO OBTAIN TOTAL AIR CONTENT OF 5% ± 1% IN ACCORDANCE WITH ACI 301.
13. FOR CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH, CONCRETE COVER FOR REINFORCING SHALL BE: 3" FOR ALL BARS
    FOR CONCRETE EXPOSED TO EARTH OR WEATHER, MINIMUM COVER SHALL BE:
    2" FOR #6 AND LARGER BARS
    1–1/2" FOR #5 AND SMALLER BARS OR WIRE FABRIC
14. LAP SPLICES FOR REINFORCING SHALL BE 40 BAR DIAMETERS, UNLESS OTHERWISE NOTED. STANDARD HOOKS SHALL BE 16 BAR DIAMETERS. ALL OTHER REINFORCING DETAILS SHALL BE IN ACCORDANCE WITH ACI 315.
15. WELDING OF REINFORCING STEEL OR THE APPLICATION OF HEAT TO FACILITATE BENDING IS SPECIFICALLY PROHIBITED.
16. ALL REINFORCING, ANCHOR BOLTS, DOWELS, EMBEDDED STEEL, INSERTS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.
17. PROVIDE A 3/4" CHAMFER AT ALL EXPOSED EDGES OF CONCRETE, UNLESS OTHERWISE NOTED.
18. PROVIDE NOT LESS THAN 48 HOURS NOTICE TO THE FIELD REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE.
19. WHEN AMBIENT TEMPERATURE IS BELOW 50 DEGREES F, CONCRETE MATERIALS AND PLACEMENT SHALL CONFORM TO THE RECOMMENDATIONS OF ACI 306R "COLD WEATHER CONCRETING".
20. WHEN AMBIENT TEMPERATURE IS ABOVE 90 DEGREES F, CONCRETE MATERIALS AND PLACEMENT SHALL CONFORM TO THE RECOMMENDATIONS OF ACI 305R "HOT WEATHER CONCRETING".
21. REMOVE ALL LOOSE MATERIAL AND DEBRIS FROM COMPACTED SUBGRADE SURFACE PRIOR TO PLACING CONCRETE. CONCRETE SHALL NOT BE PLACED ON FROZEN SUBGRADE.
22. CONCRETE SHALL BE SUFFICIENTLY CONSOLIDATED BY VIBRATION TO REMOVE AIR VOIDS. VIBRATION SHALL BE IN ACCORDANCE WITH ACI 309 "STANDARD PRACTICE FOR CONSOLIDATION OF CONCRETE".
23. THE TOP OF ALL CONCRETE SURFACES SHALL BE TRUE AND LEVEL WITH A SMOOTH FLOAT FINISH, UNLESS OTHERWISE NOTED.
24. TESTING OF CONCRETE SHALL BE PERFORMED UNDER THE DIRECTION OF THE CONSTRUCTION MANAGER.
25. THROUGHOUT CONSTRUCTION, THE CONCRETE WORK SHALL BE ADEQUATELY PROTECTED AGAINST DAMAGE DUE TO EXCESSIVE LOADING, CONSTRUCTION EQUIPMENT, MATERIALS OR METHODS, ICE, RAIN, OR SNOW. PROTECT CONCRETE FROM EXCESSIVE HEAT AND FREEZING FOR NOT LESS THAN 14 DAYS.
26. DRYING OUT OF CONCRETE, ESPECIALLY DURING THE FIRST 24 HOURS, SHALL BE CAREFULLY GUARDED AGAINST. ALL SURFACES SHALL BE MOIST CURED OR PROTECTED USING A MEMBRANE CURING AGENT CONFORMING TO ASTM C309 APPLIED AS SOON AS FORMS ARE REMOVED. IF MEMBRANE CURING AGENT IS USED, EXERCISE CARE NOT TO DAMAGE SURFACE.
27. CONTRACTOR SHALL BRING TO THE IMMEDIATE ATTENTION OF THE CONSTRUCTION MANAGER ANY DEFECTS OR ERRORS IN THE WORK; PRIOR TO MAKING REPAIRS. CONTRACTOR SHALL OBTAIN PERMISSION FROM THE OMNIPOINT CONSTRUCTION MANAGER TO PATCH OR OTHERWISE REPAIR DEFECTS OTHER THAN MINOR HONEYCOMBING.
28. GROUT SHALL BE NON–METALLIC, NON–SHRINK, PREPACKAGED GROUT WITH A MINIMUM STRENGTH OF 5,000 PSI AT 28 DAYS, REQUIRING ONLY THE ADDITION OF WATER. GROUT SHALL BE FIVE STAR GROUT AS MANUFACTURED BY FIVE STAR PRODUCTS INC., FAIRFIELD, CT OR APPROVED EQUAL. GROUT SHALL BE MIXED AND PLACED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

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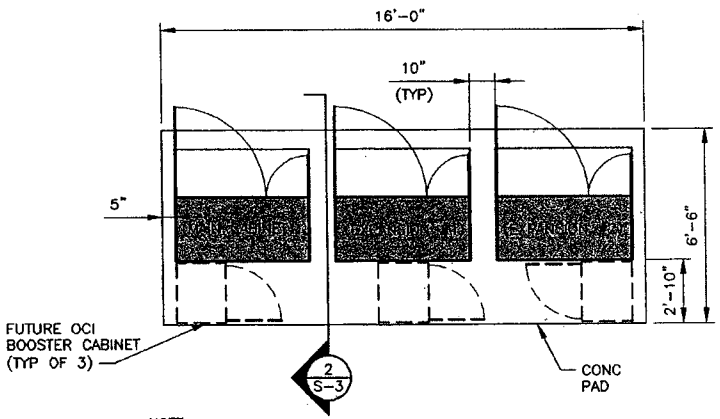
KENNETH W. KUKKONEN
59897
LICENSED PROFESSIONAL ENGINEER

SITE INFORMATION
NY–09–215–A
CON–ED TOWER E–142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE
CONCRETE NOTES

SHEET NUMBER
S–2

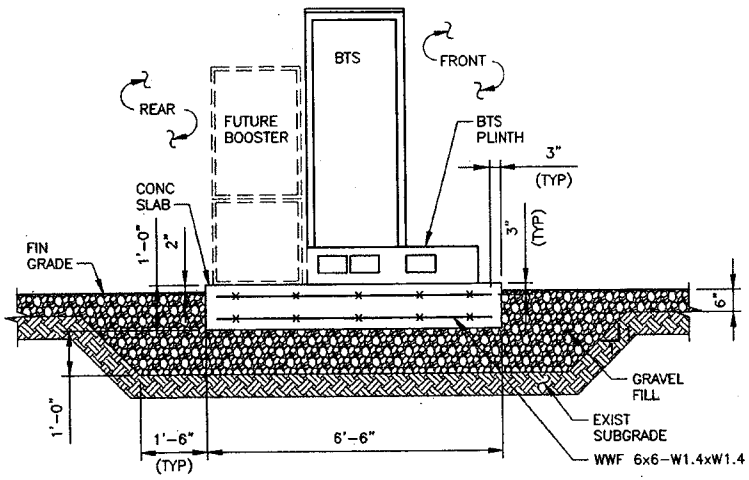
0 1 2 3
ORIGINAL SIZE IN INCHES



NOTE:
1. COORDINATE ALL EQUIPMENT CABINET DIMENSIONS WITH MANUFACTURER.
2. REFER TO SITE PLAN FOR EQUIPMENT ORIENTATION.

1 S-3 EQUIPMENT PLAN

SCALE: 1/4" = 1'-0"



NOTE:
SLAB ON GRADE SHALL BE PLACED OVER A MIN OF 12" GRAVEL TO BE AASHTO NO. 57 OR MID CR-6 ON UNDISTURBED OR WELL COMPACTED SOIL WITH BEARING PRESSURE OF 2000 PSF MIN.

2 S-3 BTS FOUNDATION

SCALE: 3/8" = 1'-0"

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APPROVALS
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RF
CONSTRUCTION

PROJECT NUMBER	DESIGNED BY
2365.09216A	EP

REV	DATE	REVISION	DRAWN BY
1	4/16/03	FOR COMMENT	JFL
2	6/5/03	FOR PERMIT	JFL
3	7/24/03	REVISED ANTENNAS	CA
4	8/28/03	PER COMMENT	CC
5	11/10/03	FOR CONSTRUCTION	BFK

ISSUED BY: E. Pietrasz
DATE: 11-10-03

STATE OF NEW YORK
KENNETH W. KUKAHIEN
LICENSED PROFESSIONAL ENGINEER
59897

SITE INFORMATION
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CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE
EQUIPMENT PLAN
& DETAILS

SHEET NUMBER
S-3

0 1 2 3
ORIGINAL SIZE IN INCHES

ELECTRICAL NOTES

1. CONTRACTOR SHALL PERFORM ALL VERIFICATION OBSERVATION TESTS, AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ENGINEER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
2. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR OTHERWISE REQUIRED.
3. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORIES (U.L.). MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION AND SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU.
4. CONTRACTOR TO COORDINATE WITH BUILDING OWNER FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS TO BE PAID BY CONTRACTOR.
5. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
6. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AS INDICATED BY UTILITY COMPANY AND A MINIMUM OF 22,000 A.I.C.
7. METER SOCKET AMPERES, VOLTAGE, AND NUMBER OF PHASES SHALL BE AS NOTED AND SHALL BE MANUFACTURED BY SQUARE "D" COMPANY, SANGAMO, OR APPROVED EQUAL METER SOCKET SHALL BE APPROVED BY UTILITY COMPANY PRIOR TO INSTALLATION.
8. WIRE AND CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM WITH TYPE THWN INSULATION UNLESS SPECIFICALLY NOTED OTHERWISE.
9. EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANEL BOARD, PULL BOX, J-BOX, SWITCH BOX, ECT., IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT (O.S.H.A.)
10. CONDUIT:
    A. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR.

    B. ELECTRICAL METALLIC TUBING (EMT) SHALL HAVE U.L. LABEL. FITTINGS SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS. NO SET SCREW OR CRIMP TYPE FITTINGS SHALL BE USED.

    C. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE, SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL HAVE FULL SIZE GROUND WIRE.

    D. PVC CONDUIT AND FITTINGS SHALL HAVE U.L. LABEL AND SHALL BE PVC SCHEDULE 40.

    E. CONDUIT SHALL BE SIZED PER NEC OR ANY GOVERNING LOCAL CODE, AND AS SHOWN.

    F. CONDUIT RUNS MAY BE SURFACE MOUNTED IN CEILINGS OR WALLS UNLESS INDICATED OTHERWISE. CONDUIT INDICATED SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH OWNER PRIOR TO INSTALLING.

    G. ALL CONDUIT ONLY (C.O.) RUNS SHALL HAVE A PULL WIRE OR ROPE.
11. REFER TO MANUFACTURERS MANUAL FOR RECOMMENDED FUSE AND WIRE SIZES.
12. ALL FINAL CONNECTIONS TO THE EQUIPMENT ARE TO BE OF FLEXIBLE WEATHERPROOF CONDUIT TO MEET APPLICABLE CODES. CONDUIT TO MEET APPLICABLE CODES.
13. PROVIDE ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, AND CIRCUITS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH, GAINING APPROVALS AND PAYING ALL FEES ASSESSED BY UTILITY COMPANY FOR ELECTRICAL SERVICE.
15. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED AND CODE APPROVED MATERIALS.
16. TELCO CONDUIT RUN IN/ON BUILDINGS SHALL BE 2" DIA. AND HAVE MINIMUM 12" RADIUS BENDS & ELBOWS. CONDUIT RUNS SHALL HAVE ONE 18"x18"x8" PULL BOX AT DEMARC LOCATION. TWO (2) PULL ROPES SHALL BE INSTALLED IN TELCO CONDUIT.
17. CONTRACTOR TO INSTALL BRASS TAGS ON THE COAX CABLE AT THE ANTENNA END & AT THE EQUIPMENT END. THE TAGS MUST INCLUDE SECTOR NO.# AND CABLE LENGTH.

0 1 2 3

ORIGINAL SIZE IN INCHES

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APPROVALS

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LANDLORD _____
RF _____
CONSTRUCTION _____

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2356.09215A	EP

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ISSUED BY	DATE
E. Pietrasz	11-10-03

STATE OF NEW YORK
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STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE

ELECTRICAL NOTES

SHEET NUMBER

E-1

N

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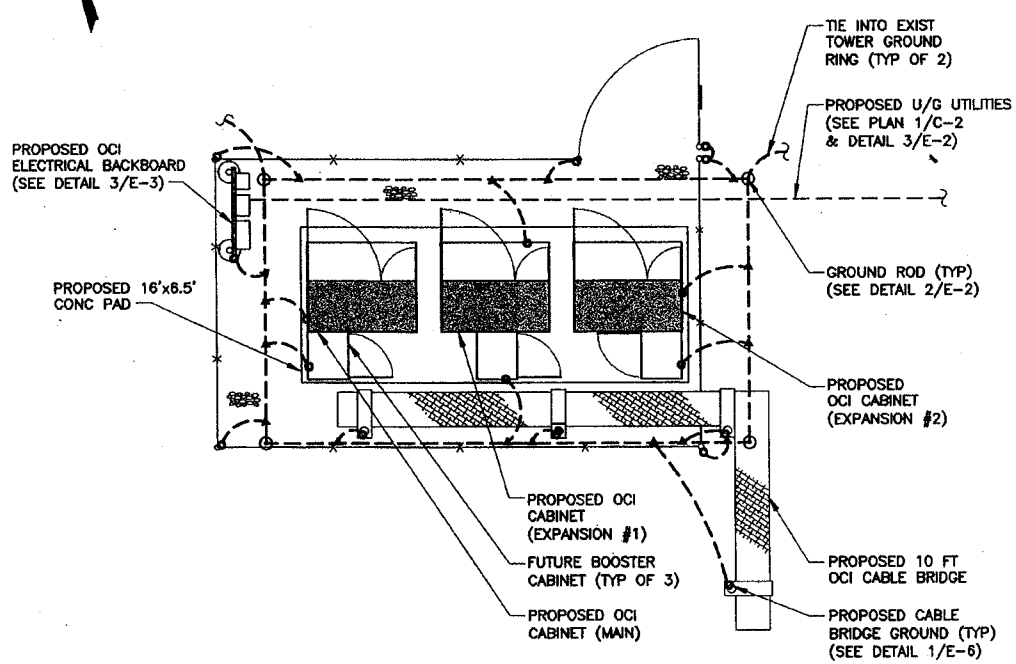
NY industrial code rule 753 requires no less than two working days notice, but not more than ten days notice.

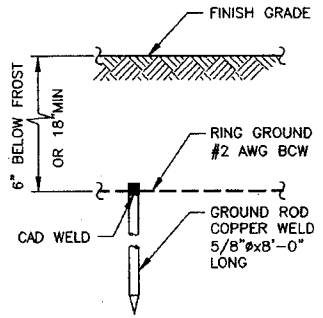
GROUNDING LEGEND

- ⊙ 5/8"x8'-0" COPPER OR STAINLESS STEEL COPPER CLAD GROUND ROD.
- ▲ CADWELD OR OTHER APPROVED EXOTHERMIC WELDING SYSTEM.
- o GROUND LUG
- ---- GROUND CONDUCTOR



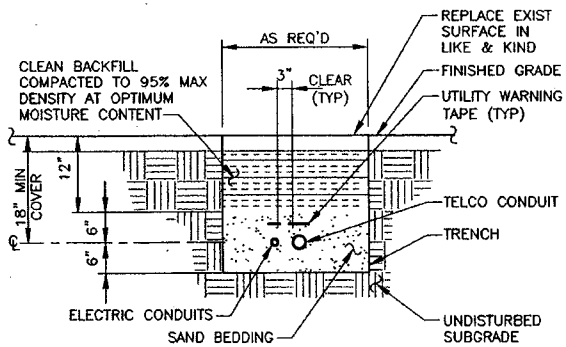
1/E-2 GROUNDING & ELECTRICAL PLAN

SCALE: 1" = 5'



2/E-2 GROUND ROD DETAIL

SCALE: NTS



NOTE:
DETAIL IS APPLICABLE FOR ANY NUMBER OF ELECTRIC CONDUITS.

3/E-2 TRENCH DETAIL

SCALE: 1/2" = 1'-0"

0 1 2 3

ORIGINAL SIZE IN INCHES

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APPROVALS

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LANDLORD	
RF	
CONSTRUCTION	

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ISSUED BY: E. RIETMASE — DATE: 11-10-03

STATE OF NEW YORK
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SITE INFORMATION

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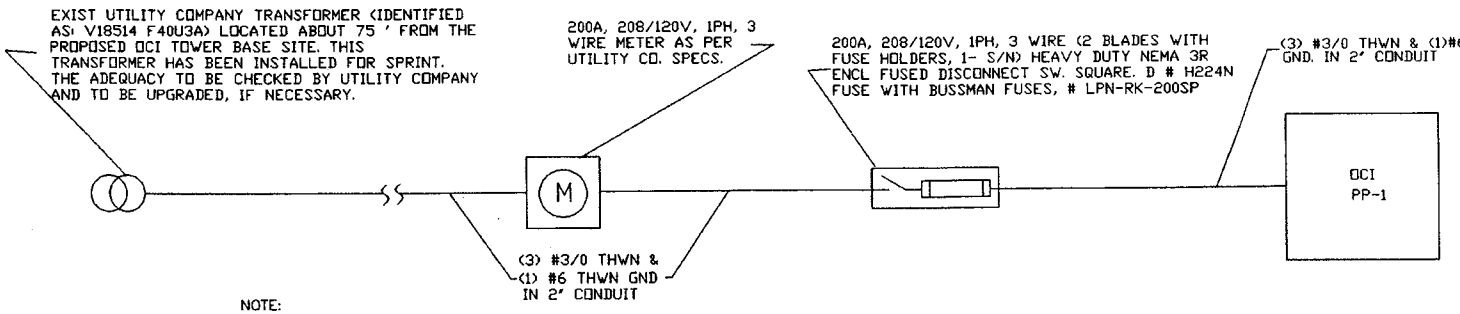
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE

GROUNDING & ELECTRICAL PLAN

SHEET NUMBER

E-2



NOTE:

1. GROUNDING PER NEC AND LOCAL CODES.
2. UPGRADE OF EXIST TRANSFORMER WILL REQUIRE EXISTING ELECTRIC SERVICE TO SITE TO BE TEMPORARILY SHUTDOWN. OCI AND CONTRACTOR TO ARRANGE FOR TEMP POWER WITH EXISTING CARRIERS.
3. ELECTRICAL DOWNTILT CONTROL BOX WILL UTILIZE THE GFI OUTLET WHEN IN USE.

1/E-3 ONE-LINE DIAGRAM

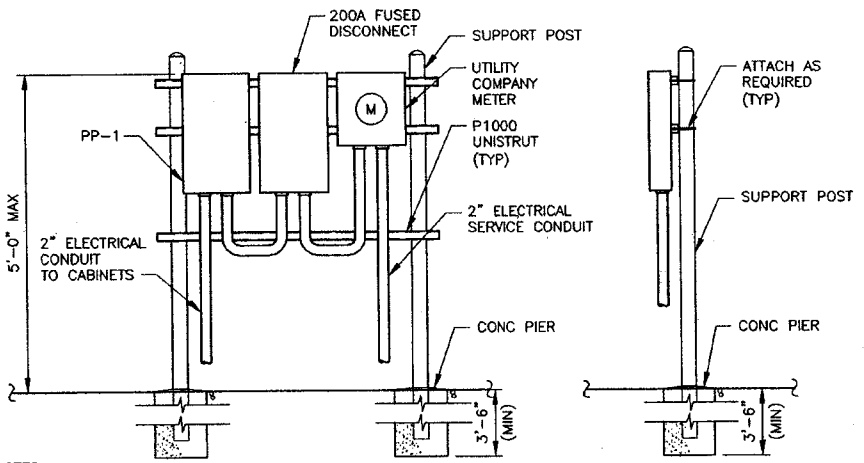
SCALE: NTS

NEW PANEL PP-1 MAINS: 200A MAIN BREAKER
120/240V, 1-PHASE, 3-WIRE NEMA 3R SURFACE MOUNT, 16 POLES TOTAL

LOAD	CONDUCTORS	C.B.	200A MAIN	C.B.	CONDUCTORS	LOAD
MAIN BTS	(3) #6 THWN & (1) #10 GND COND IN 1" RIGID STEEL CONDUIT	50	1, 2	50	(3) #6 THWN & (1) #10 GND COND IN 1" RIGID STEEL CONDUIT	BTS EXPAN #2
BTS EXPAN #1	(3) #6 THWN & (1) #10 GND COND IN 1" RIGID STEEL CONDUIT	50	3, 4	20	(2) #12 THWN & (1) #12 GND COND IN 3/4" RIGID STEEL	GFI
			5, 6			
			7			BLANK

2/E-3 PANEL SCHEDULE

SCALE: NTS



NOTES:

1. ALL EQUIPMENT SHALL BE GROUNDED.
2. ALL ELECTRICAL ENCLOSURES TO BE NEMA 3R RATED.
3. SEE SITE PLAN FOR GENERAL ROUTING OF ALL CONDUITS. DETERMINE EXACT ROUTINGS IN FIELD.
4. ELECTRICAL EQUIPMENT SHALL BE MIN. 3'-0" FROM ANY STRUCTURE.
5. ALL COVERPLATES TO BE WEATHERPROOF.

3/E-3 ELECT/TELCO BACKBOARD

SCALE: NTS

0 1 2 3
ORIGINAL SIZE IN INCHES

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APPROVALS

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2356.09218A	EP

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STATE OF NEW YORK
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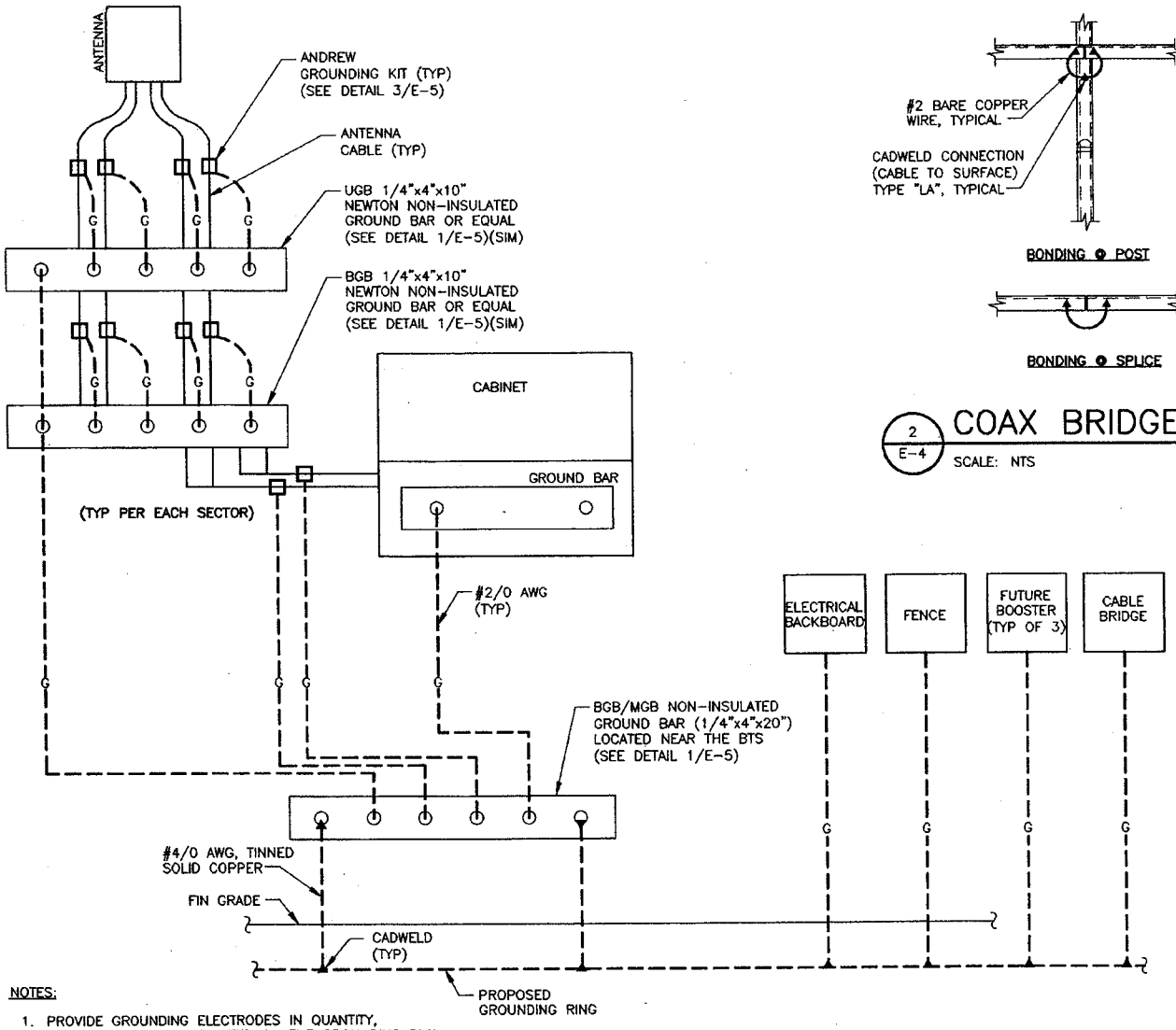
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE

ONE-LINE DIAGRAM

SHEET NUMBER

E-3



NOTES:

1. PROVIDE GROUNDING ELECTRODES IN QUANTITY, TYPE AND SIZE AS INDICATED ON THE GROUNDING PLAN.
2. ALL GROUNDING CONDUCTOR ABOVE GRADE SHALL BE #2 AWG, GREEN INSULATED UNLESS OTHERWISE NOTED.
3. ALL GROUNDING CONDUCTOR BELOW GRADE SHALL BE #2 AWG, TINNED, SOLID COPPER UNLESS OTHERWISE NOTED.

1 / E-4 GROUNDING RISER DIAGRAM

SCALE: NTS

NOTE:
WHERE TRAY IS USED BOND ADJACENT TRAY WITH A #6 STRANDED JUMPER VIA TWO HOLE LUGS. BOND BOTH ENDS TO THE #2 SOLID TINNED WIRE.

2 / E-4 COAX BRIDGE BONDING DETAIL

SCALE: NTS

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STATE OF NEW YORK
KENNETH W. KLEIN
LICENSED PROFESSIONAL ENGINEER
59897

SITE INFORMATION

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CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

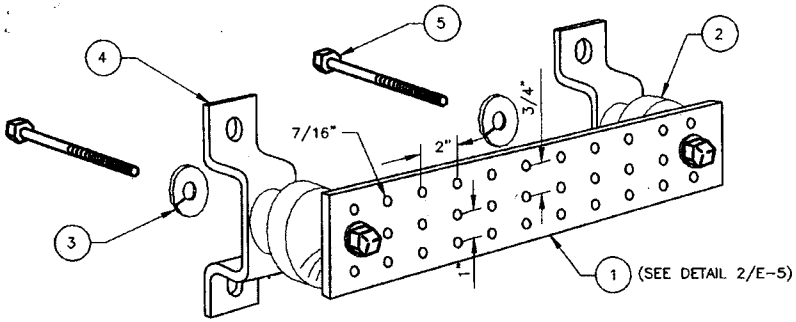
SHEET TITLE

GROUNDING DIAGRAM

SHEET NUMBER

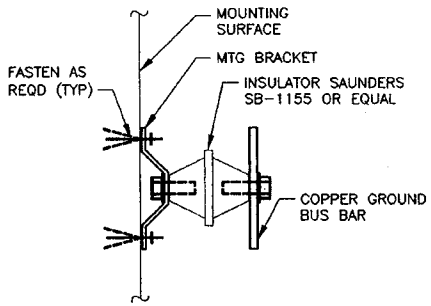
E-4

0 1 2 3
ORIGINAL SIZE IN INCHES

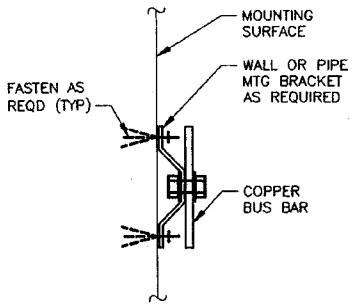


LEGEND

1- COPPER GROUND BAR, 1/4"x 4"x20 HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION
2- INSULATORS
3- 5/8" LOCK WASHERS
4- WALL MOUNTING BRACKET
5- 5/8-11 x 1" H.H.C.S.BOLTS



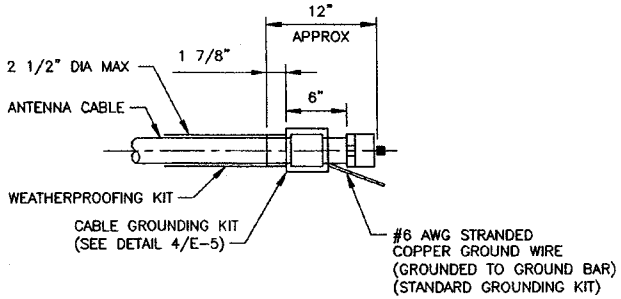
INSULATED GROUND BAR



NON-INSULATED GROUND BAR

1/E-5 GROUNDING BAR DETAIL

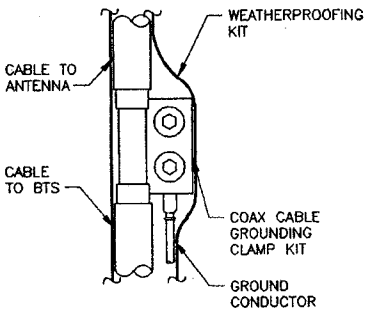
SCALE: NTS



NOTE:
DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

3/E-5 CABLE GROUND KIT DETAIL

SCALE: 1" = 1'-0"

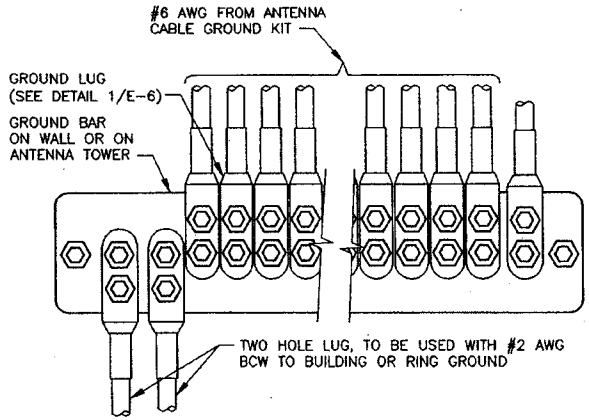


4/E-5 CABLE GROUNDING DETAIL

SCALE: NTS

2/E-5 SECTION

SCALE: 3" = 1'-0"



5/E-5 GROUNDING DETAIL

SCALE: NTS

0 1 2 3

ORIGINAL SIZE IN INCHES

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APPROVALS
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LANDLORD
RF
CONSTRUCTION

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2356.09215A	EP

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ISSUED BY: E. Pietrzak — DATE: 11-10-03

STATE OF NEW YORK
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59897

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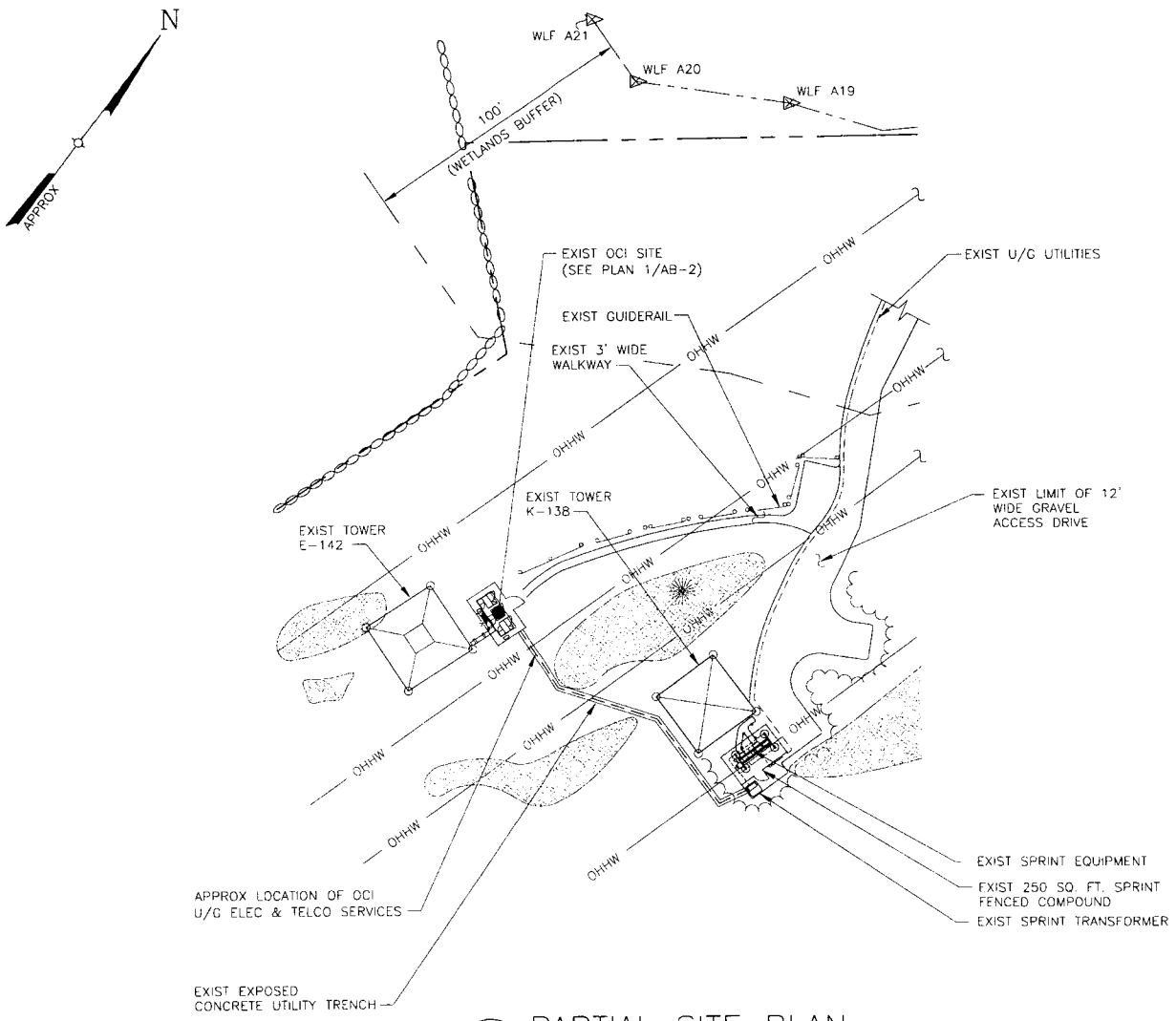
TOWN OF
NEW CASTLE, NY

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
E-5



1 / AB-1 PARTIAL SITE PLAN

SCALE: 1" = 40'

AS-BUILT

0 1 2 3

ORIGINAL SIZE IN INCHES

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CONSTRUCTION _____

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0	01/08/09	AS BUILT	LH

ISSUED BY	DATE
[signature]	1/8/09

STATE OF NEW YORK
RICHARD ALBERT
07123
LICENSED PROFESSIONAL ENGINEER

SITE INFORMATION

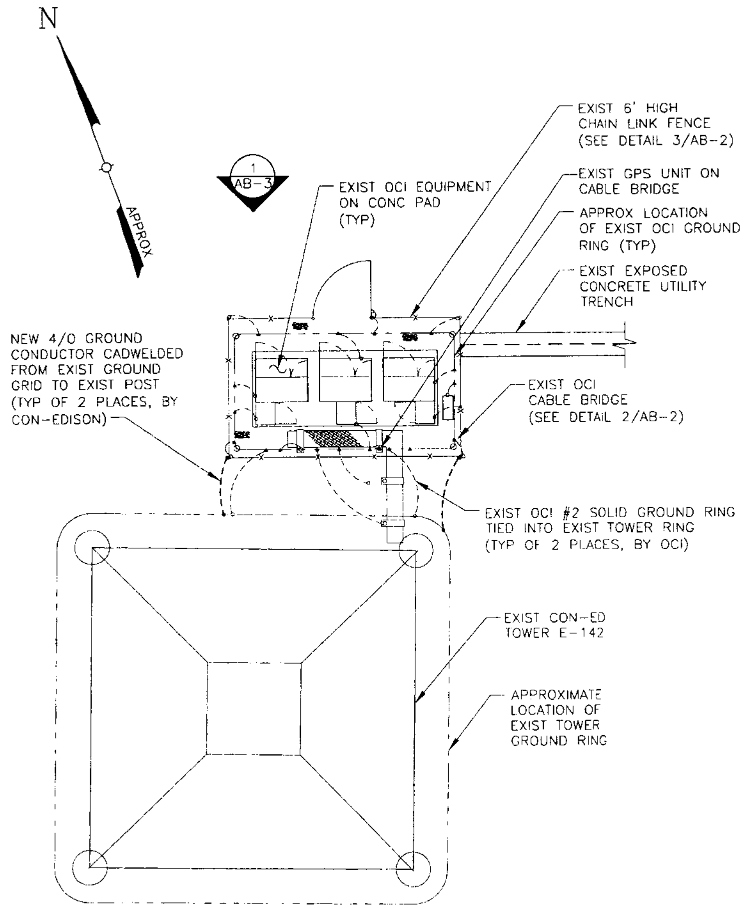
NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE

PARTIAL SITE PLAN

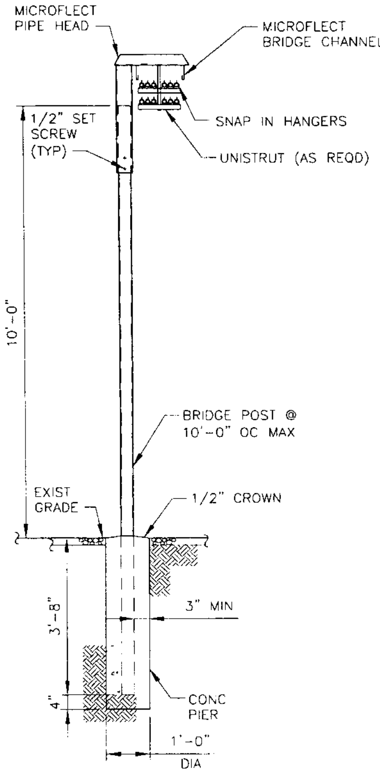
SHEET NUMBER

AB-1



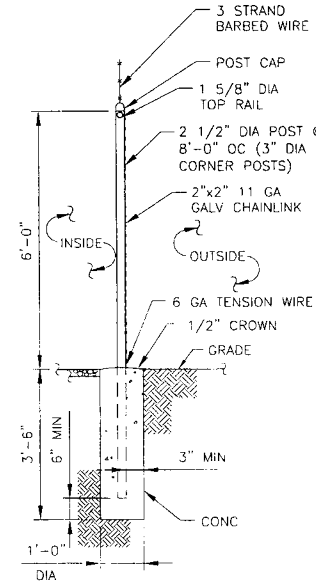
1 AB-2 **SITE DETAIL PLAN**

SCALE: 1" = 10'



2 AB-2 **CABLE BRIDGE**

SCALE: 3/8" = 1'-0"



3 AB-2 **FENCE DETAIL**

SCALE: 3/8" = 1'-0"

AS-BUILT

0 1 2 3

ORIGINAL SIZE IN INCHES

UNAUTHORIZED ALTERATION OR ADDITIONS TO A DOCUMENT BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR IS A VIOLATION OF SECTION 7209 SUBSECTION 2 OF THE NEW YORK STATE EDUCATION LAW.

TECTONIC

- PLANNING
- ENGINEERING
- SURVEYING
- CONSTRUCTION MANAGEMENT

TECTONIC Engineering & Surveying Consultants P.C.

1279 ROUTE 300
NEWBURGH, NY 12550
Phone: (845) 567-6556
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OMNIPOINT COMMUNICATIONS INC

OMNIPOINT COMMUNICATIONS INC
4 SYLVAN DRIVE
PARSIPPANY, NJ 07054
PHONE: (973) 292-4000

APPROVALS

OMNIPOINT ________
LANDLORD ________
RF ________
CONSTRUCTION ________

PROJECT NUMBER	DESIGNED BY
2356.09215A	TN

REV	DATE	REVISION	DRAWN BY
0	01/08/09	AS BUILT	LH

ISSUED BY	DATE
[signature]	1/8/09

STATE OF NEW YORK · LICENSED PROFESSIONAL ENGINEER · 071249

SITE INFORMATION

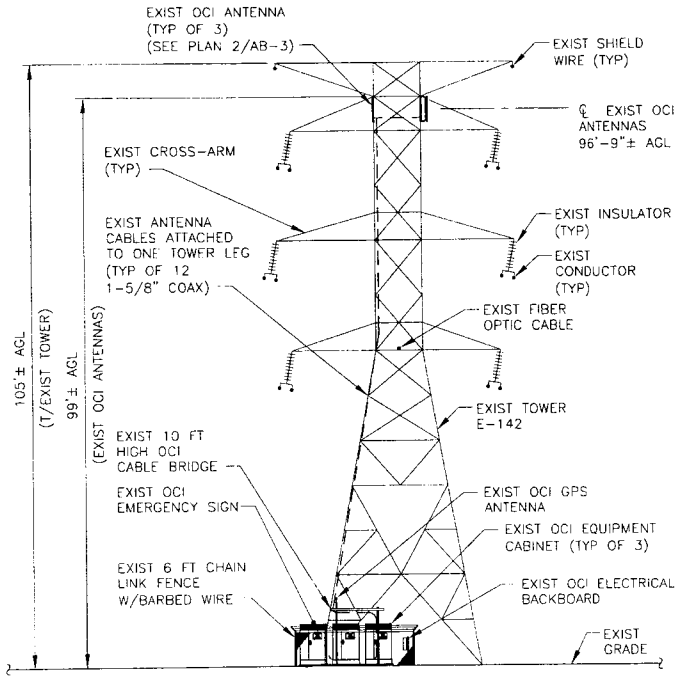
NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE

SITE DETAIL PLAN AND GROUNDING PLAN

SHEET NUMBER

AB-2



1 / AB-3 ELEVATION

SCALE: 1" = 20'

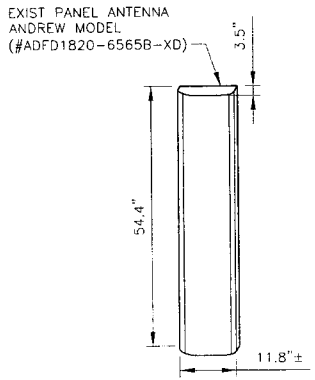
THE ANTENNA INSTALLATION AS SHOWN REQUIRED NO ADDITIONAL REINFORCEMENT AS PER THE STRUCTURAL ANALYSIS PERFORMED BY TECTONIC ENGINEERING, DATED 12/19/2008, REVISION 1.

ANTENNA DATA

ANTENNA SPECIFICATIONS

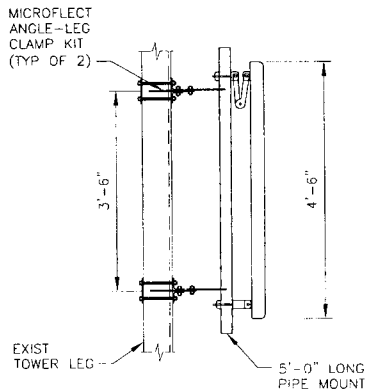
SECTOR	MODEL	ANT. QTY	CABLE SIZE	CABLE QTY	AZIMUTH
ALPHA	ADFD1820-6565B-XD	1	1 5/8"	4	0°
BETA	ADFD1820-6565B-XD	1	1 5/8"	4	120°
GAMMA	ADFD1820-6565B-XD	1	1 5/8"	4	240°

ANDREW ANTENNA	ADFD1820-6565B-XD
HEIGHT	54.4"
WIDTH	11.8"
DEPTH	3.5"
WEIGHT	34.5 LBS
WIND AREA	2.91 SF



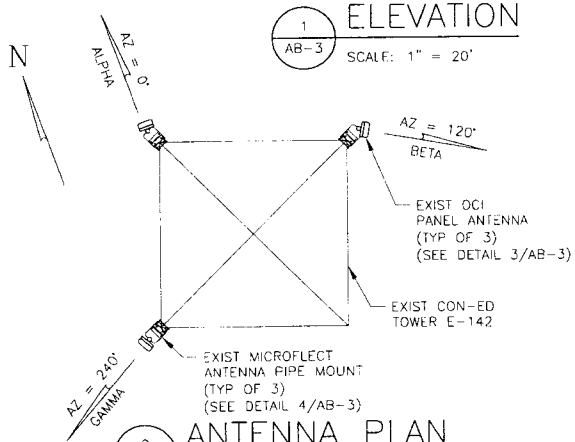
3 / AB-3 ANTENNA DETAIL

SCALE: 1/2" = 1'-0"



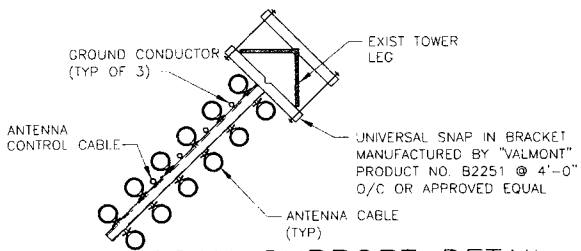
4 / AB-3 ANTENNA ELEVATION

SCALE: 1/2" = 1'-0"



2 / AB-3 ANTENNA PLAN

SCALE: 1" = 5'



5 / AB-3 COAX SUPPORT DETAIL

SCALE: 1" = 1'-0"

AS-BUILT

0 1 2 3

ORIGINAL SIZE IN INCHES

TECTONIC
• PLANNING • SURVEYING
• ENGINEERING • CONSTRUCTION MANAGEMENT
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OMNIPOINT COMMUNICATIONS INC PHONE (973) 292-4000
4 SYLVAN DRIVE
PARSIPPANY, NJ 07504

APPROVALS

OMNIPOINT _____
LANDLORD _____
RF _____
CONSTRUCTION _____

PROJECT NUMBER	DESIGNED BY
2356.09215A	TN

REV	DATE	REVISION	DRAWN BY
0	01/08/09	AS BUILT	LH

ISSUED BY	DATE
[signature]	1/8/09

STATE OF NEW YORK
LICENSED PROFESSIONAL ENGINEER

SITE INFORMATION

NY-09-215-A
CON-ED TOWER E-142
STATION PLACE
TOWN OF
NEW CASTLE, NY

SHEET TITLE

ELEVATION
& ANTENNA PLAN

SHEET NUMBER

AB-3

TECTONIC

CORPORATE OFFICE:
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(845) 567-6656 FAX: (845) 567-8703
www.tectonicengineering.com

Joe Deker
Omnipoint Communications, Inc.
76 Progress Drive
Stamford, CT 06902

March 11, 2003

RE: W.O. 2356.09215A
SITE: NY-09-215-A
CON-ED TOWER #E-142
STATION PLACE
NEW CASTLE, NY
STRUCTURAL CAPACITY VERIFICATION

Mr. Deker:

Omnipoint Communications, Inc. is proposing a telecommunication site at the above referenced tower. The site includes installation of three (3) panel antennas attached to the existing electric transmission line tower. In addition, radio equipment cabinets will be located on a concrete pad at grade.

For the purpose of structural design of the equipment and antenna supports, the most stringent criteria of The Building Code of New York State and the ANSI/TIA/EIA-222-F-1996 "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures" have been applied.

The existing tower was checked against additional loading induced due to the proposed antenna mounts. The proposed installation will be designed so as not to diminish the structural integrity of the existing tower.

Should you have any questions, please do not hesitate to contact me.

Sincerely,
TECTONIC ENGINEERING AND SURVEYING CONSULTANTS P.C.

Kenneth W. Kukkonen

Kenneth W. Kukkonen, P.E.
Assistant Director of Telecommunications

STATE OF NEW YORK
KENNETH W. KUKKONEN
59897
LICENSED PROFESSIONAL ENGINEER

G:\2356-VoiceStream (T-Mobile)\2356-09-215A Con-Ed #E-142\2356-09-215A-ContractDocuments\NW-2356-09-215A str ltr 3-11-03.doc

T-MOBILE: CON EDISON TOWER E-142
W.O. 2356.09215A
SITE NO. NY-09-215-A
EXISTING TRANSMISSION TOWER
MILLWOOD, NY
STRUCTURAL ANALYSIS REPORT
FEBRUARY 27, 2003

1.0 INTRODUCTION

The Consolidated Edison (Con Edison) electric transmission tower no. E-142 is located adjacent to Somerstown Turnpike (Route 100) at Station Place in Millwood, NY. The tower was designed as a part of the 345kV double-circuit transmission line system between the Sprain Brook and Millwood Substations. T-Mobile (aka Omnipoint) anticipates installing its antennas on this tower in the near future.

Tectonic Engineering & Surveying Consultants, P.C. has performed a structural analysis of the tower to verify its adequacy for supporting the proposed antennas in accordance with Con Edison requirements.

1.1 Information Provided

For the purpose of the analysis, we were provided with the following Con Edison drawings:

1. "Design Drawing, 25° Strain Tower Type "D1", Overhead Transmission Line, Dunwoodie to Millwood, N.Y.", drawing no. EO-7436-C, rev. 1, dated 3/7/67.
2. "Overhead Transmission Line, 1956 Line, 345 kV. Modification, Sprain Brook to Millwood Substations, Design of 2 Circuit, 25° Strain Tower, Type D-1", drawing no. EO-13575-B, rev. 1, dated 4/30/69.
3. "Typical Core Footing in Rock for Transmission Towers", drawing no. EO-7300-D, rev. 6, dated 4/17/56.
4. "Design & Construction Summary, Overhead Transmission Line, Sprain Brook to Millwood West Sub-Sta., 345 kV.-Rebuilt 1956 Line, Sheet 2 of 2", drawing no. EO-13610-A, rev. 5, dated 1/4/82.
5. "Jumper & Suspension Attachments, Assembly with Hardware, Bundled Conductors – 345 K.V.", drawing no. EO-13149-C, rev. 2, dated 2/19/69.
6. "Strain Attachment for Hot Line Operation, Assembly with Hardware, Bundled Conductors – 345 K.V.", drawing no. EO-13148-C, rev. 7, dated 3/30/71.

In addition to the above, we also retrieved the following relevant Con Edison documents from our files:

7. "Purchase and Test Manual No. 6 – Section 21, Lattice Steel Transmission Towers, EO-1018-1", dated 6/21/76.
8. "Con Edison Transmission System – P.C.S. Antenna/Cellular Installation Procedure" May 2000.

2.0 ORIGINAL TOWER DESIGN

2.1 Tower Structure

The existing tower E-142 was designed and fabricated by American Bridge based on Con Edison's standard specifications, and was designated as a Type D-1 25° strain tower. It was originally designed and built circa 1956, and was initially designated as tower #167. The tower was upgraded for double conductors circa 1969.

The tower is a four-legged, self-supporting square tower. It consists of a 89'-0" tall body and 16'-0" long extensions on all four (4) legs. It has a total height of 105'-0" from the base of the leg extensions to the top of the tower. Unless otherwise noted, levels throughout this report are relative to the base of the leg extensions.

The tower is approximately 27'-9" wide at the base. The tower tapers uniformly to a width of 8'-0" at the lower cross arm level, which is 55'-0" above the base. It has a uniform width of 8'-0" from the 55'-0" level to the top of the tower in the longitudinal and transverse faces. The lower, middle, and upper cross arms extend to total widths of 35'-8", 40'-8", and 35'-8", respectively. The shield wire peak has a total width of 40'-8".

The tower utilizes single angles for all members, except for the crossarm girts, which are flat bars. The arm hangers and girts for the conductor arms have been replaced with larger members. All connections are bolted.

A diagram of the structure is presented in Figure 1, attached.

2.2 Loading Criteria

The tower was originally designed based on Con Edison design specifications which provide tower strengths that equal or surpass the requirements of the National Electrical Safety Code for Grade "B" construction. The tower was designed to support two (2) 1/2" diameter EHS Copperweld shield wires and six (6) 1,033,500 CM 54/7 ACSR conductors, with a maximum line angle of 25° and an average span of 900'. The tower was designed to withstand loading

conditions of the original Con Edison specifications, including broken conductors and/or shield wire, with their appropriate overload factors.

We believe that at the time of the conductor upgrade, the tower was designed to support two (2) 7 No. 5 Alumoweld shield wires and six (6) twin-bundled 2493 MCM 54/37 ACAR conductors.

2.3 Tower Foundation

The Con Edison drawings indicate that the tower is supported on a rock foundation. The stub angles are encased in a reinforced concrete shaft, which bears at a maximum depth of 9'-0" below the rock surface.

3.0 EXISTING CONFIGURATION

According to the Con Edison drawings provided, the existing tower was installed at a line angle of 5°22', a wind span of 865', and a weight span of 1155', and is currently supporting the following:

Shield Wire:
9/16", 7 No. 5 AWG Alumoweld (2 positions)
Diameter = 0.546 in, Weight = 0.525 lb/ft
Conductor:
Twin Bundled 2493 KCM 54/37 ACAR (6 positions)
Diameter = 1.821 in, Weight = 2.341 lb/ft

It is believed that the tower centerline bisects the conductor line angle complement.

The tower is also supporting one (1) fiber optic cable, connected to the tower at the 55' level. This is believed to have been installed in 1999, and has the following properties:

Fiber Optic Cable:
288 Fiber ADSS (1 position)
Diameter = 1.042 in, Weight = 0.386 lb/ft

4.0 PROPOSED INSTALLATION

It is our understanding that T-Mobile is proposing to install the following items on the tower:

3 EMS DR65-18-02DP panel antennas at the 94' level (centerline), pipe mounted one (1) each on three (3) tower legs
12 1-5/8" diameter coaxial cables to the 94' level in Valmont-Microflect Universal Snap-In Brackets on the inside of one (1) tower leg

5.0 STRUCTURAL ANALYSIS

5.1 Current Loading Criteria

The design of electrical transmission line structures is governed by IEEE Standard C2-2002 "National Electrical Safety Code" (NESC) and ASCE 10-97 "Design of Latticed Steel Transmission Structures". Con Edison has imposed additional design constraints to accommodate local conditions and to account for special design considerations.

The loading conditions considered in our analysis of the tower are for the wind acting perpendicular (90°) to the longitudinal tower face acting in conjunction with the load due to the line angle. The loading conditions considered, including all applicable code requirements and the requirements stipulated by the utility, are summarized as follows:

Loading Condition (LC)	Pressure (psf)		Radial Ice (in)		Overload Factors		
	Wire	Tower	Wire	Tower	Wind	Weight	Wire Tension
1. Con Ed Standard	4	13	0.5	0	2.54	1.27	1.65
2. Con Ed Emergency Ice	8	20	1.0	0	1.00	1.00	1.00
3. Con Ed Hurricane	30	50	0	0	1.00	1.00	1.00
Note: Wind force on the tower is based on 1.5 times the net projected area of one face.							

The Con Edison Stringing & Sagging condition and Climbing condition were not evaluated in the analysis, because they are not affected by the proposed antenna installation.

The design of antenna supports is governed by ANSI/TIA/EIA-222-F-1996 "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures". From this document, a basic wind speed of 80 mph applies to Westchester County, NY where the tower is located. Ice loads have been established based on a 0.5" radial ice thickness in accordance with industry standard practice. A reduced wind speed of 69 mph is used in conjunction with this ice load.

The provisions of ANSI/TIA/EIA-222-F-1996 should be used for the design of the proposed antenna installation. However, the wind and ice loads stipulated by ANSI/TIA/EIA-222-F-1996 are overly conservative for the evaluation of the existing transmission line tower. Therefore, these loads were not considered in our analysis of the tower.

5.2 Procedure

The tower has been analyzed using PLS-Tower, a specialized, three-dimensional structural analysis program. The tower analysis included the existing conductors, shield wires, and fiber optic wire described in Section 3.0 and the proposed T-Mobile antennas and cables described in Section 4.0, using Con Edison loading criteria summarized above.

A breakdown of the total factored loads acting on the tower is provided in the following table:

LC	Conductor Bundle (lbs)			Shield Wire (lbs)		
		Transverse			Transverse	
	Weight	Wind	Wire Tension	Weight	Wind	Wire Tension
1	75690	25428	31800	3788	2606	2428
2	87066	26422	28086	5654	2936	2304
3	38448	47256	21348	1212	2362	1254

LC	Fiber Optic Cable (lbs)			Tower (lbs)		Proposed Installation (lbs)	
		Transverse					
	Weight	Wind	Wire Tension	Weight	Wind	Weight	Wind
1	2140	1680	1200	32640	13160	1330	3180
2	3380	1756	1148	25680	7980	1047	1956
3	444	2252	628	25680	19940	1047	4890

5.3 Assumptions

Several assumptions were made in order to perform the analysis. Each of these is considered by Tectonic to be both reasonable and consistent with current standards of practice.

1. Redundant members, which are not intended to carry loads, are not included in the model.
2. Tower member sizes and material properties are as indicated on the Con Edison drawings.
3. The wind loads applied to the tower due to the antenna installation are conservatively based on the full projected area of all antennas in all loading cases.

4. The tower and its foundation was constructed according to the approved plans, and the connection of the tower to its foundation is considered as pinned.
5. The conductor and shield wire tensions are assumed to be the same as those used in the design of similar towers upgraded circa 1969. The fiber optic cable tension is equal to the shield wire tension.

5.4 Results

Our analysis indicates that the Con Edison emergency ice loading condition (LC2) is the most severe, therefore resulting in maximum member forces in the tower. The member capacities are as indicated in the Con Edison drawings. Details of the critical member forces in terms of their stress ratios are summarized in the following table:

Member Location	Con Edison Member Number	See Note	Stress Ratio - Proposed Condition	
			Compression	Tension
			%	%
16'-0" Leg Ext.	7		57	32
	21		75	34
39'-0" Body	4		59	52
	5		57	33
	14		71	75
	15		44	48
	16		28	18
	17		25	26
	18		32	3
	19		46	31
19'-0" Mid Body	3		49	37
	13		51	50
	33		10	36
	45	1	—	67
19'-0" Upper Body	2		47	22
	12		53	51
	34		0	16
	44	1	—	75
12'-0" Body	1		53	3
	11		43	38
	32		0	13
	34		0	16
	43	1	0	29
Lower arm	27		46	0
	31	1	—	75
	48	1	—	72
Middle arm	26		44	0
	30	1	—	81
	47	1	—	78
Upper arm	25		39	0
	29	1	—	74
	46	1	—	72
SW peak	24		2	12
	28		73	0
Note:	1. Original member previously replaced with larger size in conjunction with conductor upgrade			

Details of all member forces are included in the computer output attached to this report.

The maximum foundation reactions occur for the Con Edison hurricane loading condition (LC3), and are summarized as follows:

Direction	Calculated Reaction
Uplift	110.4 kips
Download	144.0 kips
Shear (longitudinal)	25.8 kips
Shear (transverse)	25.9 kips

Although the original foundation design reactions have not been provided, we have estimated them from the upgraded design loads. The calculated reactions are smaller than the estimated upgraded design reactions.

6.0 CONCLUSIONS AND RECOMMENDATIONS

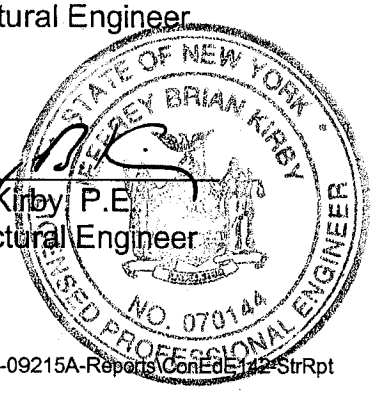
As a result of our analysis, we conclude that the tower has sufficient capacity to support the proposed installation. The tower member stresses are generally low. This is due mainly to the difference between the original design line angle of 25° and the existing line angle of 5°22', and the broken wire conditions that were considered in the original design, but were not included in this analysis. No structural problems for the tower are anticipated, and no modifications are necessary.

We further conclude that the existing foundation has sufficient capacity to support the proposed installation, based on comparison to the foundation reactions resulting from the design loads from the provided Con Edison drawings. No structural problems for the foundation are anticipated, and no modifications are necessary.

The clearance requirements for the proposed installation have not been evaluated in detail. However, the proposed antennas will be mounted directly on the tower legs and the cables will be installed inside the tower legs. Therefore, we expect that the proposed installation will have only a very minor effect on the existing conductor clearances.

Any further changes to the antenna configuration or other appurtenances should be reviewed with respect to their effect on structural loads prior to implementation.

Prepared by: _____
Richard J. Dyer E.I.T.
Staff Structural Engineer



Reviewed by: _____ Date: 2/27/03
Jeffrey B. Kirby, P.E.
Chief Structural Engineer

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TECTONIC

T-MOBILE: CON EDISON TOWER E-142
W.O. 2356.09215A
SITE NO. NY-09-215-A
EXISTING TRANSMISSION TOWER
MILLWOOD, NY
STRUCTURAL ANALYSIS REPORT
FEBRUARY 27, 2003

T. Mobile
E. 142

T-MOBILE: CON EDISON TOWER E-142
W.O. 2356.09215A
SITE NO. NY-09-215-A
EXISTING TRANSMISSION TOWER
MILLWOOD, NY
STRUCTURAL ANALYSIS REPORT
FEBRUARY 27, 2003

1.0 INTRODUCTION

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In addition to the above, we also retrieved the following relevant Con Edison documents from our files:

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8. "Con Edison Transmission System – P.C.S. Antenna/Cellular Installation Procedure" May 2000.

2.0 ORIGINAL TOWER DESIGN

2.1 Tower Structure

The existing tower E-142 was designed and fabricated by American Bridge based on Con Edison's standard specifications, and was designated as a Type D-1 25° strain tower. It was originally designed and built circa 1956, and was initially designated as tower #167. The tower was upgraded for double conductors circa 1969.

The tower is a four-legged, self-supporting square tower. It consists of a 89'-0" tall body and 16'-0" long extensions on all four (4) legs. It has a total height of 105'-0" from the base of the leg extensions to the top of the tower. Unless otherwise noted, levels throughout this report are relative to the base of the leg extensions.

The tower is approximately 27'-9" wide at the base. The tower tapers uniformly to a width of 8'-0" at the lower cross arm level, which is 55'-0" above the base. It has a uniform width of 8'-0" from the 55'-0" level to the top of the tower in the longitudinal and transverse faces. The lower, middle, and upper cross arms extend to total widths of 35'-8", 40'-8", and 35'-8", respectively. The shield wire peak has a total width of 40'-8".

The tower utilizes single angles for all members, except for the crossarm girts, which are flat bars. The arm hangers and girts for the conductor arms have been replaced with larger members. All connections are bolted.

A diagram of the structure is presented in Figure 1, attached.

2.2 Loading Criteria

The tower was originally designed based on Con Edison design specifications which provide tower strengths that equal or surpass the requirements of the National Electrical Safety Code for Grade "B" construction. The tower was designed to support two (2) 1/2" diameter EHS Copperweld shield wires and six (6) 1,033,500 CM 54/7 ACSR conductors, with a maximum line angle of 25° and an average span of 900'. The tower was designed to withstand loading

conditions of the original Con Edison specifications, including broken conductors and/or shield wire, with their appropriate overload factors.

We believe that at the time of the conductor upgrade, the tower was designed to support two (2) 7 No. 5 Alumoweld shield wires and six (6) twin-bundled 2493 MCM 54/37 ACAR conductors.

2.3 Tower Foundation

The Con Edison drawings indicate that the tower is supported on a rock foundation. The stub angles are encased in a reinforced concrete shaft, which bears at a maximum depth of 9'-0" below the rock surface.

3.0 EXISTING CONFIGURATION

According to the Con Edison drawings provided, the existing tower was installed at a line angle of 5°22', a wind span of 865', and a weight span of 1155', and is currently supporting the following:

Shield Wire:
9/16", 7 No. 5 AWG Alumoweld (2 positions)
Diameter = 0.546 in, Weight = 0.525 lb/ft
Conductor:
Twin Bundled 2493 KCM 54/37 ACAR (6 positions)
Diameter = 1.821 in, Weight = 2.341 lb/ft

It is believed that the tower centerline bisects the conductor line angle complement.

The tower is also supporting one (1) fiber optic cable, connected to the tower at the 55' level. This is believed to have been installed in 1999, and has the following properties:

Fiber Optic Cable:
288 Fiber ADSS (1 position)
Diameter = 1.042 in, Weight = 0.386 lb/ft

4.0 PROPOSED INSTALLATION

It is our understanding that T-Mobile is proposing to install the following items on the tower:

3 EMS DR65-18-02DP panel antennas at the 94' level (centerline), pipe mounted one (1) each on three (3) tower legs
12 1-5/8" diameter coaxial cables to the 94' level in Valmont-Microflect Universal Snap-In Brackets on the inside of one (1) tower leg

5.0 STRUCTURAL ANALYSIS

5.1 Current Loading Criteria

The design of electrical transmission line structures is governed by IEEE Standard C2-2002 "National Electrical Safety Code" (NESC) and ASCE 10-97 "Design of Latticed Steel Transmission Structures". Con Edison has imposed additional design constraints to accommodate local conditions and to account for special design considerations.

The loading conditions considered in our analysis of the tower are for the wind acting perpendicular (90°) to the longitudinal tower face acting in conjunction with the load due to the line angle. The loading conditions considered, including all applicable code requirements and the requirements stipulated by the utility, are summarized as follows:

Loading Condition (LC)	Pressure (psf)		Radial Ice (in)		Overload Factors		
	Wire	Tower	Wire	Tower	Wind	Weight	Wire Tension
1. Con Ed Standard	4	13	0.5	0	2.54	1.27	1.65
2. Con Ed Emergency Ice	8	20	1.0	0	1.00	1.00	1.00
3. Con Ed Hurricane	30	50	0	0	1.00	1.00	1.00
Note: Wind force on the tower is based on 1.5 times the net projected area of one face.							

The Con Edison Stringing & Sagging condition and Climbing condition were not evaluated in the analysis, because they are not affected by the proposed antenna installation.

The design of antenna supports is governed by ANSI/TIA/EIA-222-F-1996 "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures". From this document, a basic wind speed of 80 mph applies to Westchester County, NY where the tower is located. Ice loads have been established based on a 0.5" radial ice thickness in accordance with industry standard practice. A reduced wind speed of 69 mph is used in conjunction with this ice load.

The provisions of ANSI/TIA/EIA-222-F-1996 should be used for the design of the proposed antenna installation. However, the wind and ice loads stipulated by ANSI/TIA/EIA-222-F-1996 are overly conservative for the evaluation of the existing transmission line tower. Therefore, these loads were not considered in our analysis of the tower.

5.2 Procedure

The tower has been analyzed using PLS-Tower, a specialized, three-dimensional structural analysis program. The tower analysis included the existing conductors, shield wires, and fiber optic wire described in Section 3.0 and the proposed T-Mobile antennas and cables described in Section 4.0, using Con Edison loading criteria summarized above.

A breakdown of the total factored loads acting on the tower is provided in the following table:

LC	Conductor Bundle (lbs)			Shield Wire (lbs)		
		Transverse			Transverse	
	Weight	Wind	Wire Tension	Weight	Wind	Wire Tension
1	75690	25428	31800	3788	2606	2428
2	87066	26422	28086	5654	2936	2304
3	38448	47256	21348	1212	2362	1254

LC	Fiber Optic Cable (lbs)			Tower (lbs)		Proposed Installation (lbs)	
		Transverse					
	Weight	Wind	Wire Tension	Weight	Wind	Weight	Wind
1	2140	1680	1200	32640	13160	1330	3180
2	3380	1756	1148	25680	7980	1047	1956
3	444	2252	628	25680	19940	1047	4890

5.3 Assumptions

Several assumptions were made in order to perform the analysis. Each of these is considered by Tectonic to be both reasonable and consistent with current standards of practice.

1. Redundant members, which are not intended to carry loads, are not included in the model.
2. Tower member sizes and material properties are as indicated on the Con Edison drawings.
3. The wind loads applied to the tower due to the antenna installation are conservatively based on the full projected area of all antennas in all loading cases.

4. The tower and its foundation was constructed according to the approved plans, and the connection of the tower to its foundation is considered as pinned.
5. The conductor and shield wire tensions are assumed to be the same as those used in the design of similar towers upgraded circa 1969. The fiber optic cable tension is equal to the shield wire tension.

5.4 Results

Our analysis indicates that the Con Edison emergency ice loading condition (LC2) is the most severe, therefore resulting in maximum member forces in the tower. The member capacities are as indicated in the Con Edison drawings. Details of the critical member forces in terms of their stress ratios are summarized in the following table:

Member Location	Con Edison Member Number	See Note	Stress Ratio - Proposed Condition	
			Compression	Tension
			%	%
16'-0" Leg Ext.	7		57	32
	21		75	34
39'-0" Body	4		59	52
	5		57	33
	14		71	75
	15		44	48
	16		28	18
	17		25	26
	18		32	3
	19		46	31
19'-0" Mid Body	3		49	37
	13		51	50
	33		10	36
	45	1	—	67
19'-0" Upper Body	2		47	22
	12		53	51
	34		0	16
	44	1	—	75
12'-0" Body	1		53	3
	11		43	38
	32		0	13
	34		0	16
	43	1	0	29
Lower arm	27		46	0
	31	1	—	75
	48	1	—	72
Middle arm	26		44	0
	30	1	—	81
	47	1	—	78
Upper arm	25		39	0
	29	1	—	74
	46	1	—	72
SW peak	24		2	12
	28		73	0
Note:	1. Original member previously replaced with larger size in conjunction with conductor upgrade			

Details of all member forces are included in the computer output attached to this report.

The maximum foundation reactions occur for the Con Edison hurricane loading condition (LC3), and are summarized as follows:

Direction	Calculated Reaction
Uplift	110.4 kips
Download	144.0 kips
Shear (longitudinal)	25.8 kips
Shear (transverse)	25.9 kips

Although the original foundation design reactions have not been provided, we have estimated them from the upgraded design loads. The calculated reactions are smaller than the estimated upgraded design reactions.

6.0 CONCLUSIONS AND RECOMMENDATIONS

As a result of our analysis, we conclude that the tower has sufficient capacity to support the proposed installation. The tower member stresses are generally low. This is due mainly to the difference between the original design line angle of 25° and the existing line angle of 5°22', and the broken wire conditions that were considered in the original design, but were not included in this analysis. No structural problems for the tower are anticipated, and no modifications are necessary.

We further conclude that the existing foundation has sufficient capacity to support the proposed installation, based on comparison to the foundation reactions resulting from the design loads from the provided Con Edison drawings. No structural problems for the foundation are anticipated, and no modifications are necessary.

The clearance requirements for the proposed installation have not been evaluated in detail. However, the proposed antennas will be mounted directly on the tower legs and the cables will be installed inside the tower legs. Therefore, we expect that the proposed installation will have only a very minor effect on the existing conductor clearances.

Any further changes to the antenna configuration or other appurtenances should be reviewed with respect to their effect on structural loads prior to implementation.

Prepared by: _____
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Reviewed by: _____ Date: 2/27/03
Jeffrey B. Kirby, P.E.
Chief Structural Engineer

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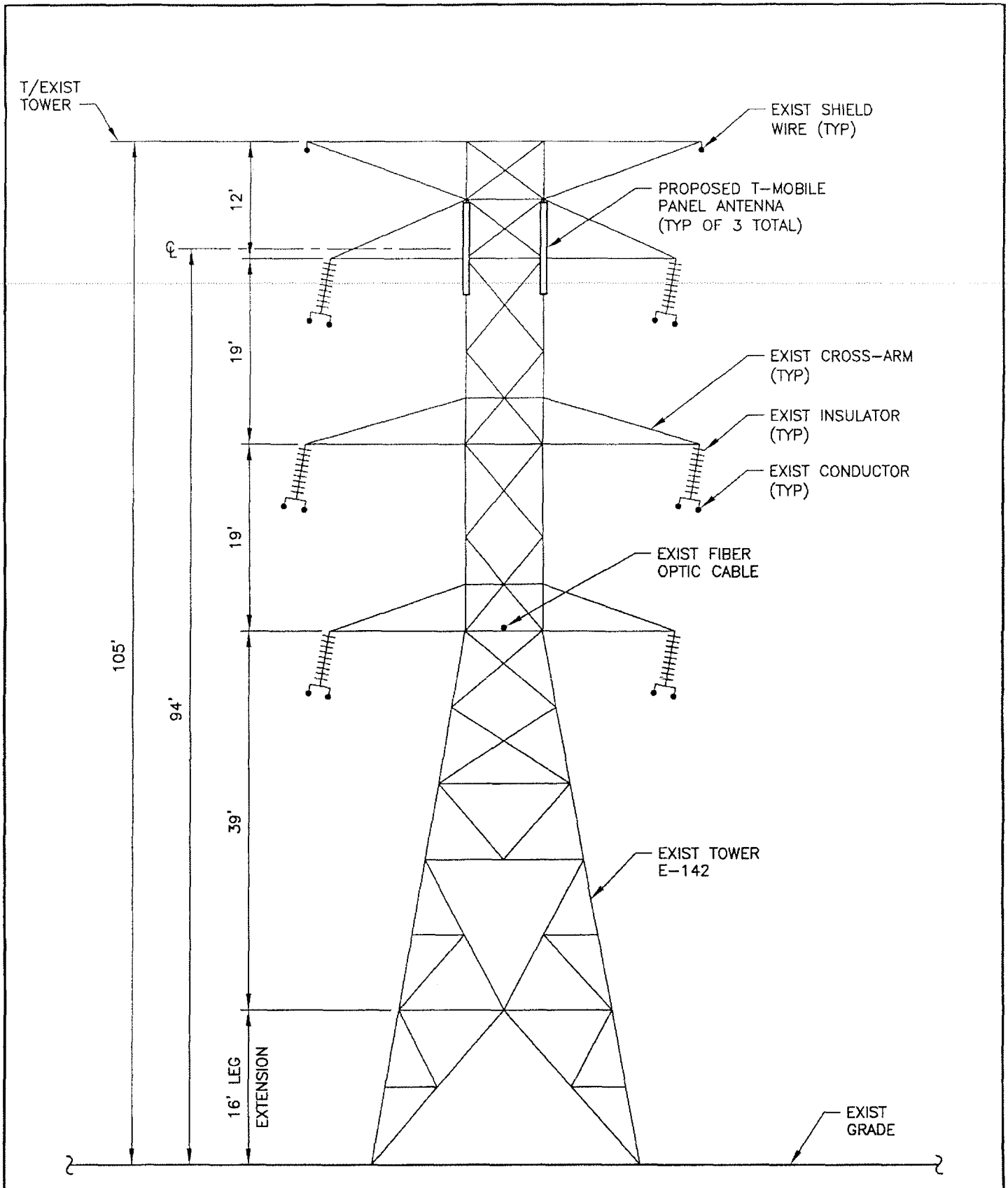


FIGURE 1

W.O. 2356.09215A
KOTONA, NY

SUMMARY OF RESULTS

Project Name : Con Edison Tower E-142 (2356.09215A)
Project Notes: Transmission Tower Analysis
Project File : g:\2356-t-mobile\2356-09215a\2356-09215a-analysis\conede142-twranalysis.tow
Date run : 11:10:28 AM Friday, February 14, 2003
by : Tower Version 6.02
Licensed to : Tectonic Engineering

Successfully performed nonlinear analysis

Clamp insulator "100P" has a structure attach joint "100P" that is fixed with respect to translation ??
The model has 1 warning. ??

Loads from file: g:\2356-t-mobile\2356-09215a\2356-09215a-analysis\twrloads(proposed).lca

*** Analysis Results:

Maximum element utilization is 80.91% for Angle "Arm2dY" in load case "ConEdEmerIce(int)"
Maximum insulator utilization is 17.46% for Clamp "Arm2bP" in load case "ConEdEmerIce(int)"

Summary of Joint Support Reactions For All Loadcases:

Load Case	Joint Label	Long. Force (kips)	Tran. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Vert. Moment (ft-k)	Bending Moment (ft-k)
ConEdStd(int)	100P	-24.25	-24.27	135.34	34.31	0.00	0.00	0.00	0.00
ConEdStd(int)	100X	17.17	-18.03	-77.26	24.90	0.00	0.00	0.00	0.00
ConEdStd(int)	100XY	-16.26	-15.92	-73.32	22.76	0.00	0.00	0.00	0.00
ConEdStd(int)	100Y	23.34	-23.28	130.81	32.96	0.00	0.00	0.00	0.00
ConEdEmerIce(int)	100P	-22.64	-22.68	126.69	32.05	0.00	0.00	0.00	0.00
ConEdEmerIce(int)	100X	14.29	-14.47	-65.03	20.34	0.00	0.00	0.00	0.00
ConEdEmerIce(int)	100XY	-13.84	-11.27	-63.06	17.85	0.00	0.00	0.00	0.00
ConEdEmerIce(int)	100Y	22.19	-24.19	124.24	32.82	0.00	0.00	0.00	0.00
ConEdHurr(int)	100P	-25.78	-25.94	144.02	36.57	0.00	0.00	0.00	0.00
ConEdHurr(int)	100X	24.55	-25.92	-110.37	35.70	0.00	0.00	0.00	0.00
ConEdHurr(int)	100XY	-23.64	-23.29	-106.09	33.18	0.00	0.00	0.00	0.00
ConEdHurr(int)	100Y	24.87	-24.79	139.28	35.11	0.00	0.00	0.00	0.00

Summary of Joint Support Reactions For All Loadcases in Direction of Leg:

Load Case	Support Joint	Origin Joint	Leg Member	Force In Leg Dir. (kips)	Force Perpendicular To Leg (kips)
ConEdStd(int)	100P	101P	Legs1P	139.618	0.022
ConEdStd(int)	100X	101X	Legs1X	-81.004	5.164
ConEdStd(int)	100XY	101XY	Legs1XY	-76.661	4.039
ConEdStd(int)	100Y	101Y	Legs1Y	134.899	0.218
ConEdEmerIce(int)	100P	101P	Legs1P	130.677	0.090
ConEdEmerIce(int)	100X	101X	Legs1X	-68.036	3.723
ConEdEmerIce(int)	100XY	101XY	Legs1XY	-65.489	2.492
ConEdEmerIce(int)	100Y	101Y	Legs1Y	128.493	1.876
ConEdHurr(int)	100P	101P	Legs1P	148.596	0.117
ConEdHurr(int)	100X	101X	Legs1X	-115.759	7.518
ConEdHurr(int)	100XY	101XY	Legs1XY	-110.990	6.085
ConEdHurr(int)	100Y	101Y	Legs1Y	143.637	0.217

Overturning Moment Summary For All Load Cases:

Load Case	Transverse Moment (ft-k)	Longitudinal Moment (ft-k)	Resultant Moment (ft-k)
ConEdStd(int)	5779.872	8.128	5779.877
ConEdEmerIce(int)	5257.018	6.504	5257.022
ConEdHurr(int)	6931.712	6.396	6931.715

*** Overall summary for all load cases - Usage = Maximum Stress / Allowable Stress

Group Summary (Compression Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Max Use In Comp. %	Comp. Control Member	Comp. Force (kips)	Comp. Control Load Case	L/R Capacity (kips)	Comp. Conn. Shear Capacity (kips)	Comp. Conn. Bearing Capacity (kips)	RLX	RLY	RLZ	L/R	Length Comp. Member (ft)	Curve No.	No. Of Bolts Comp.
1	1	SAE	3.5X3.5X0.25	33.0	52.97	52.97	Legs6aY	-10.700	ConEdEmerI	20.200	0.000	0.000	1.000	1.000	1.000	103.75	6.000	1	0
2	2	SAE	6X6X0.375	33.0	46.95	46.95	Legs5aY	-40.474	ConEdStd(i	86.200	0.000	0.000	1.000	2.000	1.000	60.64	4.750	1	0
3	3	SAE	8X8X0.5	33.0	49.11	49.11	Legs4aY	-100.082	ConEdHurr(	203.800	0.000	0.000	1.000	2.000	1.000	45.60	4.750	1	0
4	4	SAE	8X8X0.5	33.0	58.83	58.83	Legs3aY	-137.418	ConEdHurr(	233.600	0.000	0.000	1.000	1.000	1.000	60.73	8.047	1	0

5	5	SAE	8X8X0.75	33.0	56.72	56.72	Legs2aP	-147.017ConEdHurr(	259.200	0.000	0.000	1.000	1.000	1.000	122.24	16.095	4	0
7	7	SAE	8X8X0.75	33.0	56.85	56.85	Legs1P	-148.026ConEdHurr(	260.400	0.000	0.000	1.000	1.000	1.000	125.37	16.507	4	0
11	11	SAE	2X2X0.1875	33.0	43.36	43.36	Dia11bY	-3.989ConEdEmerI	9.200	0.000	0.000	0.750	0.500	0.500	152.28	10.000	5	0
12	12	SAE	3X3X0.25	33.0	53.34	53.34	Dia8aP	-12.642ConEdHurr(	23.700	0.000	0.000	0.750	0.500	0.500	125.88	12.420	5	0
13	13	SAU	4X3.5X0.3125	33.0	51.28	51.28	Dia6aY	-23.025ConEdHurr(	44.900	0.000	0.000	0.750	0.500	0.500	102.08	12.420	2	0
14	14	SAE	3X3X0.25	33.0	74.61	70.77	Dia5bP	-14.721ConEdHurr(	20.800	0.000	0.000	0.750	0.500	0.500	124.61	12.295	5	0
15	15	SAE	3X3X0.25	33.0	48.01	44.37	Dia4bXY	-6.655ConEdHurr(	15.000	0.000	0.000	0.750	0.500	0.500	147.44	14.548	5	0
16	16	SAE	3.5X3.5X0.25	33.0	28.03	28.03	Hor3bP	-3.560ConEdHurr(	12.700	0.000	0.000	1.000	1.000	1.000	235.16	13.600	6	0
17	17	SAE	3.5X3.5X0.25	33.0	26.24	25.15	Dia3aX	-3.522ConEdHurr(	14.000	0.000	0.000	1.000	1.000	1.000	180.56	10.442	6	0
18	18	DAS	2.5X2X0.1875	33.0	32.34	32.34	Hor2bP	-5.822ConEdHurr(	18.000	0.000	0.000	1.000	2.000	1.000	164.00	8.200	6	0
19	19	SAU	3X2X0.25	33.0	45.91	45.91	Dia2aXY	-3.347ConEdEmerI	7.290	0.000	0.000	1.000	0.500	0.500	246.14	17.845	5	0
21	21	SAU	3X2X0.25	33.0	75.01	75.01	Dia1aY	-3.985ConEdEmerI	5.313	0.000	0.000	1.000	0.500	0.500	294.74	21.369	5	0
24	24	SAU	6X3.5X0.3125	33.0	12.17	1.49	Hor13P	-0.687ConEdHurr(	46.000	0.000	0.000	1.000	1.000	1.000	124.35	8.000	6	0
25	25	SAU	6X4X0.3125	33.0	38.48	38.48	Arm3bP	-22.625ConEdEmerI	58.800	0.000	0.000	1.000	0.500	0.500	100.16	14.724	3	0
26	26	SAU	6X4X0.375	33.0	49.05	49.05	Arm2bP	-31.100ConEdEmerI	63.400	0.000	0.000	1.000	0.500	0.500	117.29	17.143	3	0
27	27	SAU	6X4X0.3125	33.0	45.63	45.63	Arm1bP	-27.380ConEdEmerI	60.000	0.000	0.000	1.000	0.500	0.500	100.16	14.724	3	0
28	28	SAU	3.5X2.5X0.25	33.0	73.23	73.23	Arm4bY	-4.687ConEdEmerI	6.400	0.000	0.000	1.000	0.500	0.500	200.33	18.163	5	0
29	29	SAE	2X2X0.25	33.0	74.36	0.00	Arm3dY	0.000	1.678	0.000	0.000	1.000	1.000	1.000	487.96	15.899	5	0
30	30	SAU	3X2X0.3125	33.0	80.91	0.00	Arm2dY	0.000	2.546	0.000	0.000	1.000	1.000	1.000	494.14	17.789	5	0
31	31	SAE	2X2X0.3125	33.0	75.12	0.00	Arm1dY	0.000	12.200	0.000	0.000	1.000	1.000	1.000	476.03	15.471	5	0
32	32	SAE	2.5X2.5X0.1875	33.0	12.68	0.00	IntDia13X	0.000	14.573	0.000	0.000	0.750	0.500	0.500	137.14	11.314	5	0
33	33	SAE	3X3X0.1875	33.0	35.85	9.55	IntDia5P	-2.116ConEdStd(i	22.157	0.000	0.000	0.750	0.500	0.500	113.90	11.314	2	0
34	34	SAU	3X2.5X0.25	33.0	16.21	0.00	IntDia8X	0.000	23.269	0.000	0.000	0.750	0.500	0.500	128.56	11.314	5	0
43	43	SAU	3X2.5X0.3125	33.0	28.62	0.00	Hor12Y	0.000	17.400	0.000	0.000	1.000	1.000	1.000	182.86	8.000	6	0
44	44	BAR	5/16x3.75	33.0	74.93	0.00	Hor9Y	0.000	0.682	0.000	0.000	1.000	1.000	1.000	1064.30	8.000	6	0
45	45	BAR	5/16x3.5	33.0	66.61	0.00	Hor6Y	0.000	0.635	0.000	0.000	1.000	1.000	1.000	1064.30	8.000	6	0
46	46	SAE	2X2X0.25	33.0	71.67	0.00	Arm3cY	0.000	1.801	0.000	0.000	1.000	1.000	1.000	469.73	15.305	5	0
47	47	SAU	3X2X0.3125	33.0	77.68	0.00	Arm2cY	0.000	2.721	0.000	0.000	1.000	1.000	1.000	476.75	17.163	5	0
48	48	SAE	2X2X0.3125	33.0	71.69	0.00	Arm1cY	0.000	2.316	0.000	0.000	1.000	1.000	1.000	457.22	14.860	5	0
Hor1	Hor1	SAU	3.5X3X0.25	33.0	13.45	13.45	Hor1bXY	-1.621ConEdHurr(	12.053	0.000	0.000	2.000	1.000	1.000	237.84	11.000	6	0

Group Summary (Tension Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Max Use In Tens. %	Tension Control Member	Tension Force (kips)	Tension Control Load Case	Net Tens. Section Capacity (kips)	Conn. Tens. Shear Capacity (kips)	Conn. Tens. Bearing Capacity (kips)	Conn. Tens. Rupture Capacity (kips)	Length Tens. Member (ft)	No. Of Bolts Tens.	No. Of Holes
1	1	SAE	3.5X3.5X0.25	33.0	52.97	3.09	Legs6bXY	1.726	ConEdEmerI	55.770	0.000	0.000	0.000	6.000	0	0.000
2	2	SAE	6X6X0.375	33.0	46.95	22.06	Legs5aXY	24.233	ConEdHurr(	109.849	0.000	0.000	0.000	4.750	0	4.000
3	3	SAE	8X8X0.5	33.0	49.11	37.21	Legs4aXY	78.287	ConEdHurr(	210.375	0.000	0.000	0.000	4.750	0	4.000
4	4	SAE	8X8X0.5	33.0	58.83	51.70	Legs3aXY	108.773	ConEdHurr(	210.375	0.000	0.000	0.000	8.047	0	4.000
5	5	SAE	8X8X0.75	33.0	56.72	32.47	Legs2aX	100.468	ConEdHurr(	309.457	0.000	0.000	0.000	16.095	0	4.000
7	7	SAE	8X8X0.75	33.0	56.85	32.17	Legs1X	99.557	ConEdHurr(	309.457	0.000	0.000	0.000	16.507	0	4.000
11	11	SAE	2X2X0.1875	33.0	43.36	37.80	Dia11aXY	3.478	ConEdEmerI	9.200	0.000	0.000	0.000	10.000	0	1.000
12	12	SAE	3X3X0.25	33.0	53.34	51.26	Dia8aX	12.149	ConEdHurr(	23.700	0.000	0.000	0.000	12.420	0	1.000
13	13	SAU	4X3.5X0.3125	33.0	51.28	50.02	Dia6aXY	22.461	ConEdHurr(	44.900	0.000	0.000	0.000	12.420	0	1.000
14	14	SAE	3X3X0.25	33.0	74.61	74.61	Dia5bX	15.518	ConEdHurr(	20.800	0.000	0.000	0.000	12.295	0	1.000
15	15	SAE	3X3X0.25	33.0	48.01	48.01	Dia4bY	7.202	ConEdHurr(	15.000	0.000	0.000	0.000	14.548	0	1.000
16	16	SAE	3.5X3.5X0.25	33.0	28.03	17.81	Hor3bX	2.493	ConEdHurr(	14.000	0.000	0.000	0.000	13.600	0	1.000
17	17	SAE	3.5X3.5X0.25	33.0	26.24	26.24	Dia3aP	3.674	ConEdHurr(	14.000	0.000	0.000	0.000	10.442	0	1.000
18	18	DAS	2.5X2X0.1875	33.0	32.34	3.44	Hor2bXY	1.393	ConEdEmerI	40.457	0.000	0.000	0.000	8.200	0	2.000
19	19	SAU	3X2X0.25	33.0	45.91	31.07	Dia2aP	9.227	ConEdHurr(	29.700	0.000	0.000	0.000	17.845	0	1.000
21	21	SAU	3X2X0.25	33.0	75.01	34.03	Dia1aX	10.107	ConEdHurr(	29.700	0.000	0.000	0.000	21.369	0	1.000
24	24	SAU	6X3.5X0.3125	33.0	12.17	12.17	Arm4cY	5.599	ConEdEmerI	46.000	0.000	0.000	0.000	16.492	0	2.000
25	25	SAU	6X4X0.3125	33.0	38.48	0.00	Arm3bY	0.000		58.800	0.000	0.000	0.000	14.724	0	2.000
26	26	SAU	6X4X0.375	33.0	49.05	0.00	Arm2bY	0.000		63.400	0.000	0.000	0.000	17.143	0	2.000
27	27	SAU	6X4X0.3125	33.0	45.63	0.00	Arm1bY	0.000		60.000	0.000	0.000	0.000	14.724	0	2.000
28	28	SAU	3.5X2.5X0.25	33.0	73.23	0.00	Arm4bY	0.000		6.400	0.000	0.000	0.000	18.163	0	2.000
29	29	SAE	2X2X0.25	33.0	74.36	74.36	Arm3dY	19.258	ConEdEmerI	25.900	0.000	0.000	0.000	15.899	0	1.000
30	30	SAU	3X2X0.3125	33.0	80.91	80.91	Arm2dY	27.347	ConEdEmerI	33.800	0.000	0.000	0.000	17.789	0	1.000
31	31	SAE	2X2X0.3125	33.0	75.12	75.12	Arm1dP	23.737	ConEdEmerI	31.600	0.000	0.000	0.000	15.471	0	1.000
32	32	SAE	2.5X2.5X0.1875	33.0	12.68	12.68	IntDia13P	2.688	ConEdEmerI	21.200	0.000	0.000	0.000	11.314	0	1.000
33	33	SAE	3X3X0.1875	33.0	35.85	35.85	IntDia11P	8.963	ConEdEmerI	25.000	0.000	0.000	0.000	11.314	0	1.000
34	34	SAU	3X2.5X0.25	33.0	16.21	16.21	IntDia8P	5.089	ConEdEmerI	31.400	0.000	0.000	0.000	11.314	0	1.000
43	43	SAU	3X2.5X0.3125	33.0	28.62	28.62	Hor12Y	11.945	ConEdEmerI	41.733	0.000	0.000	0.000	8.000	0	1.000
44	44	BAR	5/16x3.75	33.0	74.93	74.93	Hor9P	24.203	ConEdEmerI	32.300	0.000	0.000	0.000	8.000	0	1.000
45	45	BAR	5/16x3.5	33.0	66.61	66.61	Hor6P	19.717	ConEdEmerI	29.600	0.000	0.000	0.000	8.000	0	1.000
46	46	SAE	2X2X0.25	33.0	71.67	71.67	Arm3cP	18.562	ConEdEmerI	25.900	0.000	0.000	0.000	15.305	0	1.000
47	47	SAU	3X2X0.3125	33.0	77.68	77.68	Arm2cY	26.257	ConEdEmerI	33.800	0.000	0.000	0.000	17.163	0	1.000
48	48	SAE	2X2X0.3125	33.0	71.69	71.69	Arm1cY	22.653	ConEdEmerI	31.600	0.000	0.000	0.000	14.860	0	1.000
Hor1	Hor1	SAU	3.5X3X0.25	33.0	13.45	1.44	Hor1bP	0.595	ConEdHurr(	41.227	0.000	0.000	0.000	11.000	0	1.000

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
ConEdStd(int)	71.02	Arm2dP	Angle
ConEdEmerIce(int)	80.91	Arm2dY	Angle
ConEdHurr(int)	74.61	Dia5bX	Angle

Summary of Insulator Usages:

Insulator Label	Insulator Type	Maximum Usage %	Load case	Weight (lbs)
Arm4aP	Clamp	4.06	ConEdEmerIce(int)	0.0
Arm4bP	Clamp	4.15	ConEdEmerIce(int)	0.0
Arm3aP	Clamp	17.30	ConEdEmerIce(int)	0.0
Arm3bP	Clamp	17.37	ConEdEmerIce(int)	0.0
Arm2aP	Clamp	17.39	ConEdEmerIce(int)	0.0
Arm2bP	Clamp	17.46	ConEdEmerIce(int)	0.0
Arm1aP	Clamp	17.31	ConEdEmerIce(int)	0.0
Arm1bP	Clamp	17.37	ConEdEmerIce(int)	0.0
100P	Clamp	0.70	ConEdStd(int)	0.0
101P	Clamp	1.32	ConEdStd(int)	0.0
102P	Clamp	0.82	ConEdStd(int)	0.0
103P	Clamp	1.07	ConEdHurr(int)	0.0
104P	Clamp	0.48	ConEdStd(int)	0.0
105P	Clamp	1.83	ConEdStd(int)	0.0
105X	Clamp	1.69	ConEdEmerIce(int)	0.0
105XY	Clamp	1.69	ConEdEmerIce(int)	0.0
105Y	Clamp	1.53	ConEdEmerIce(int)	0.0
106P	Clamp	0.24	ConEdStd(int)	0.0
107P	Clamp	0.53	ConEdStd(int)	0.0
108P	Clamp	1.07	ConEdHurr(int)	0.0
109P	Clamp	0.18	ConEdStd(int)	0.0
110P	Clamp	0.32	ConEdStd(int)	0.0
111P	Clamp	0.69	ConEdHurr(int)	0.0
112P	Clamp	0.32	ConEdHurr(int)	0.0
112X	Clamp	0.69	ConEdHurr(int)	0.0
112XY	Clamp	0.69	ConEdHurr(int)	0.0
112Y	Clamp	0.32	ConEdHurr(int)	0.0

*** Weight of structure (lbs):
Weight of Angles*Section DLF: 25691.2
Total: 25691.2

*** End of Report

PROPOSED ANTENNAS AND CABLES

EMS Wireless

DR65-18-XXDP

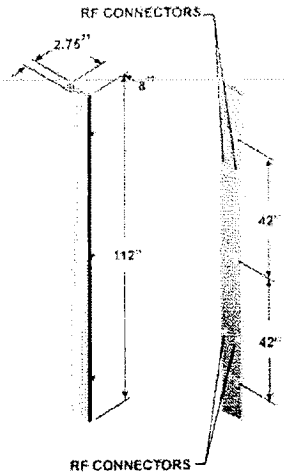
Dual DualPol® Polarization

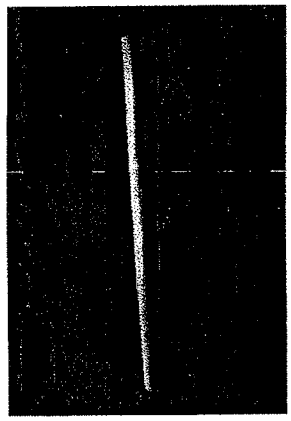
1850 MHz - 1990 MHz

OptiRange™

Electrical Specifications

Azimuth Beamwidth	65°
Elevation Beamwidth	6°
Gain	17.5 dBi (15.4 dBd)
Polarization	Quad Linear, Slant (± 45°)
Port-to-Port Isolation (1 to 2 and 3 to 4)	≥ 30 dB
Port-to-Port Isolation (1 to 3 and 2 to 4)	≥ 30 dB
Front-to-Back Ratio	≥ 25 dB (≥ 30 dB Typ.)
Electrical Downtilt Options	0°, 2°
VSWR	1.35:1 Max
Connectors	4; 7-16 DIN (female)
Power Handling	250 Watts CW
Passive Intermodulation	≤ -150 dBc [2 x 20W (+ 43 dBm)]
Lightning Protection	Chassis Ground





Mechanical Specifications

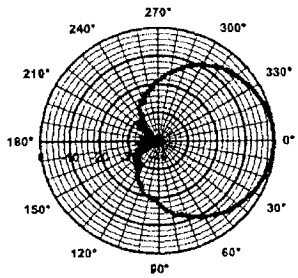
Dimensions (L x W x D)	112 in x 8 in x 2.75 in (284.5 cm x 20.3 cm x 7 cm)
Rated Wind Velocity	150 mph (241 km/hr)
Equivalent Flat Plate Area	6.2 ft² (.58 m²)
Front Wind Load @ 100 mph (161 kph)	179 lbs (796 N)
Side Wind Load @ 100 mph (161 kph)	61 lbs (274 N)
Weight	34 lbs (154 kg)

Mounting Options

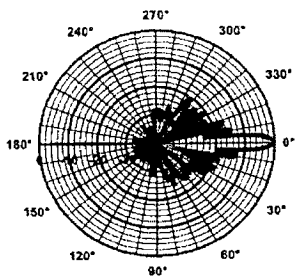
MTG-P00-30, MTG-S02-30, MTG-DXX-30*, MTG-CXX-30*, MTG-C02-30, MTG-TXX-30*

*Note: *Model number shown represents a series of products. See Mounting Options section for specific model number.*

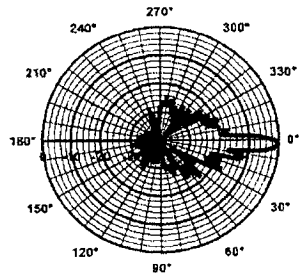
Patterns



Azimuth



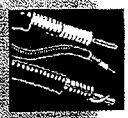
Elevation
0° Downtilt



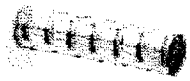
Elevation
2° Downtilt

Revised 04/05/02

+1 770.582.0555 ext. 5310 • Fax +1 770.729.0036
www.emswireless.com



1-5/8" Foam Dielectric, LDF Series – *50-ohm*



LDF7-50A

Description	Type No.

Cable Ordering Information

Standard Cable	
1-5/8" Standard Cable, Standard Jacket	**LDF7-50A**
Fire Retardant Cable	
1-5/8" Fire Retardant Jacket (CATVR)	**LDF7RN-50A**
Low VSWR and Specialized Cables	
1-5/8" Low VSWR, specify operating band	**LDF7P-50A-(**)**

** Insert suffix number from "Low VSWR Specifications" table, page 522.

Characteristics

Electrical	
Impedance, ohms	50 ± 1
Maximum Frequency, GHz	2.5
Velocity, percent	88
Peak Power Rating, kW	315
dc Resistance, ohms/1000 ft (1000 m)	
Inner	0.25 (0.83)
Outer	0.16 (0.52)
dc Breakdown, volts	11000
Jacket Spark, volts RMS	10000
Capacitance, pF/ft (m)	23.1 (75.8)
Inductance, µH/ft (m)	0.058 (0.190)
Mechanical	
Outer Conductor	Copper
Inner Conductor	Copper Tube
Diameter over Jacket, in (mm)	1.98 (50)
Diameter over Copper Outer Conductor, in (mm)	1.825 (46.3)
Diameter Inner Conductor, in (mm)	0.681 (17.3)
Nominal Inside Transverse Dimensions, cm	4.05
Minimum Bending Radius, in (mm)	20 (510)
Number of Bends, minimum (typical)	15 (50)
Bending Moment, lb-ft (N•m)	40 (54.2)
Cable Weight, lb/ft (kg/m)	0.82 (1.2)
Tensile Strength, lb (kg)	800 (363)
Flat Plate Crush Strength, lb/in (kg/mm)	120 (2.1)

Attenuation and Average Power

Frequency MHz	Attenuation dB/100 ft	Attenuation dB/100 m	Average Power, kW
0.5	0.014	0.044	247.0
1	0.019	0.063	175.0
1.5	0.024	0.077	142.0
2	0.027	0.089	123.0
10	0.062	0.202	54.3
20	0.088	0.289	38.1
30	0.109	0.356	30.9
50	0.142	0.465	23.6
88	0.191	0.627	17.5
100	0.205	0.671	16.4
108	0.213	0.699	15.7
150	0.254	0.834	13.2
174	0.276	0.904	12.2
200	0.297	0.976	11.3
300	0.372	1.22	9.01
400	0.437	1.43	7.67
450	0.467	1.53	7.18
500	0.496	1.63	6.76
512	0.503	1.65	6.67
600	0.550	1.81	6.09
700	0.602	1.97	5.57
800	0.650	2.13	5.15
824	0.662	2.17	5.06
894	0.694	2.28	4.83
960	0.724	2.38	4.63
1000	0.742	2.43	4.52
1250	0.848	2.78	3.95
1500	0.947	3.11	3.54
1700	1.02	3.35	3.28
2000	1.13	3.71	2.96
2300	1.23	4.05	2.72
2500	1.30	4.27	2.58

Standard Conditons:
For Attenuation, VSWR 1.0, ambient temperature 20°C (68°F), atmospheric pressure, dry air.
For Average Power, VSWR 1.0, inner temperature 100°C (212°F), ambient temperature 40°C (104°F), atmospheric pressure, dry air, no solar loading.

ANDREW.

LOAD CALCULATIONS

TECTONIC ENGINEERING
& SURVEYING CONSULTANTS, P.C.

W.O. 2356.09215A
CON EDISON TOWER E-142
By: RJD
2/11/2003

CONDUCTOR & SHIELD WIRE LOAD CALCULATIONS

(Con Edison Tower E-142)

Loading Condition 1: Con Edison Standard - Intact - 5° 22'

Wind Pressure =	4.0 psf	Radial Ice =	0.5 inch
		Ice Density =	57 pcf

Overload Factors:

Vertical OLF =	1.27	Transverse OLF =	2.54
Wire Tension OLF =	1.65		

Conductor Data:

Conductor Type:	2493 KCM 54/37 ACAR		
Conductor Diameter:	1.821 in	Weight:	2.341 lb/ft
Conductor Tension:	16900 lb (Back)	Conductors/Bundle:	2 (North)
	16900 lb (Ahead)		2 (South)
Wt. of Insulators, etc.	1000 lb		

Shield Wire Data:

Shield Wire Type:	9/16", 7/5 A.W.G. Alumoweld		
Shield Wire Dia.:	0.546 in	Weight:	0.525 lb/ft
Shield Wire Tension:	7500 lb (Back)		
	7500 lb (Ahead)		

Fiber Optic Cable Data:

Cable Type:	288 Fiber ADSS		
Cable Dia.:	1.042 in	Weight:	0.386 lb/ft
Cable Tension:	7500 lb (Back)		
	7500 lb (Ahead)		

Design Spans and Angle:

Wind Span:	865 ft	Weight Span:	1155 ft
Line Angle:	2.68 deg (Back)		
	2.68 deg (Ahead)		

Force on Conductor:

Transverse Force =	**9354** lb	OR	**10.814** lb/ft
Vertical Force =	**12372** lb	OR	**10.711** lb/ft
Resultant Force =	**15.221** lb/ft		
NESC Constant (K Factor):	0.30 lb/ft		
Final Tranverse Force (Incl. NESC Constant) =			**9538** lb
Final Vertical Force (Incl. NESC Constant) =			**12615** lb
Final Longitudinal Force =			**0** lb

Force on Shield Wire:

Transverse Force =	**2291** lb	OR	**2.648** lb/ft
Vertical Force =	**1724** lb	OR	**1.493** lb/ft
Resultant Force =	**3.040** lb/ft		
NESC Constant (K Factor):	0.30 lb/ft		
Final Tranverse Force (Incl. NESC Constant) =			**2517** lb
Final Vertical Force (Incl. NESC Constant) =			**1894** lb
Final Longitudinal Force =			**0** lb

Force on Fiber Optic Cable:

Transverse Force =	**2654** lb	OR	**3.068** lb/ft
Vertical Force =	**1973** lb	OR	**1.708** lb/ft
Resultant Force =	**3.512** lb/ft		
NESC Constant (K Factor):	0.30 lb/ft		
Final Tranverse Force (Incl. NESC Constant) =			**2881** lb
Final Vertical Force (Incl. NESC Constant) =			**2141** lb
Final Longitudinal Force =			**0** lb

CONDUCTOR & SHIELD WIRE LOAD CALCULATIONS

(Con Edison Tower E-142)

Loading Condition 2: Con Edison Emergency Ice - Intact - 5° 22'

Wind Pressure =	8.0 psf	Radial Ice =	1.0 inch
		Ice Density =	57 pcf

Overload Factors:

Vertical OLF =	1.00	Transverse OLF =	1.00
Wire Tension OLF =	1.00		

Conductor Data:

Conductor Type:	2493 KCM 54/37 ACAR		
Conductor Diameter:	1.821 in	Weight:	2.341 lb/ft
Conductor Tension:	25000 lb (Back)	Conductors/Bundle:	2 (North)
	25000 lb (Ahead)		2 (South)
Wt. of Insulators, etc.	1000 lb		

Shield Wire Data:

Shield Wire Type:	9/16", 7/5 A.W.G. Alumoweld		
Shield Wire Dia.:	0.546 in	Weight:	0.525 lb/ft
Shield Wire Tension:	12300 lb (Back)		
	12300 lb (Ahead)		

Fiber Optic Cable Data:

Cable Type:	288 Fiber ADSS		
Cable Dia.:	1.042 in	Weight:	0.386 lb/ft
Cable Tension:	12300 lb (Back)		
	12300 lb (Ahead)		

Design Spans and Angle:

Wind Span:	865 ft	Weight Span:	1155 ft
Line Angle:	2.68 deg (Back)		
	2.68 deg (Ahead)		

Force on Conductor:

Transverse Force =	**9088** lb	OR	**10.507** lb/ft
Vertical Force =	**14511** lb	OR	**12.564** lb/ft
Resultant Force =	**16.378** lb/ft		
NESC Constant (K Factor):	0.00 lb/ft		
Final Tranverse Force (Incl. NESC Constant) =			**9088** lb
Final Vertical Force (Incl. NESC Constant) =			**14511** lb
Final Longitudinal Force =			**0** lb

Force on Shield Wire:

Transverse Force =	**2620** lb	OR	**3.029** lb/ft
Vertical Force =	**2827** lb	OR	**2.448** lb/ft
Resultant Force =	**3.894** lb/ft		
NESC Constant (K Factor):	0.00 lb/ft		
Final Tranverse Force (Incl. NESC Constant) =			**2620** lb
Final Vertical Force (Incl. NESC Constant) =			**2827** lb
Final Longitudinal Force =			**0** lb

Force on Fiber Optic Cable:

Transverse Force =	**2906** lb	OR	**3.359** lb/ft
Vertical Force =	**3379** lb	OR	**2.925** lb/ft
Resultant Force =	**4.455** lb/ft		
NESC Constant (K Factor):	0.00 lb/ft		
Final Tranverse Force (Incl. NESC Constant) =			**2906** lb
Final Vertical Force (Incl. NESC Constant) =			**3379** lb
Final Longitudinal Force =			**0** lb

CONDUCTOR & SHIELD WIRE LOAD CALCULATIONS

(Con Edison Tower E-142)

Loading Condition 3: Con Edison Hurricane - Intact - 5° 22'

Wind Pressure =	30.0 psf	Radial Ice =	0.0 inch
		Ice Density =	57 pcf

Overload Factors:

Vertical OLF =	1.00	Transverse OLF =	1.00
Wire Tension OLF =	1.00		

Conductor Data:

Conductor Type:	2493 KCM 54/37 ACAR		
Conductor Diameter:	1.821 in	Weight:	2.341 lb/ft
Conductor Tension:	19000 lb (Back)	Conductors/Bundle:	2 (North)
	19000 lb (Ahead)		2 (South)
Wt. of Insulators, etc.	1000 lb		

Shield Wire Data:

Shield Wire Type:	9/16", 7/5 A.W.G. Alumoweld		
Shield Wire Dia.:	0.546 in	Weight:	0.525 lb/ft
Shield Wire Tension:	6700 lb (Back)		
	6700 lb (Ahead)		

Fiber Optic Cable Data:

Cable Type:	288 Fiber ADSS		
Cable Dia.:	1.042 in	Weight:	0.386 lb/ft
Cable Tension:	6700 lb (Back)		
	6700 lb (Ahead)		

Design Spans and Angle:

Wind Span:	865 ft	Weight Span:	1155 ft
Line Angle:	2.68 deg (Back)		
	2.68 deg (Ahead)		

Force on Conductor:

Transverse Force =	**11434** lb	OR	**13.218** lb/ft	
Vertical Force =	**6408** lb	OR	**5.548** lb/ft	
Resultant Force =	**14.335** lb/ft			
NESC Constant (K Factor):	0.00 lb/ft			
Final Tranverse Force (Incl. NESC Constant) =			**11434**	lb
Final Vertical Force (Incl. NESC Constant) =			**6408**	lb
Final Longitudinal Force =			**0**	lb

Force on Shield Wire:

Transverse Force =	**1808** lb	OR	**2.090** lb/ft	
Vertical Force =	**606** lb	OR	**0.525** lb/ft	
Resultant Force =	**2.155** lb/ft			
NESC Constant (K Factor):	0.00 lb/ft			
Final Tranverse Force (Incl. NESC Constant) =			**1808**	lb
Final Vertical Force (Incl. NESC Constant) =			**606**	lb
Final Longitudinal Force =			**0**	lb

Force on Fiber Optic Cable:

Transverse Force =	**2881** lb	OR	**3.330** lb/ft	
Vertical Force =	**446** lb	OR	**0.386** lb/ft	
Resultant Force =	**3.353** lb/ft			
NESC Constant (K Factor):	0.00 lb/ft			
Final Tranverse Force (Incl. NESC Constant) =			**2881**	lb
Final Vertical Force (Incl. NESC Constant) =			**446**	lb
Final Longitudinal Force =			**0**	lb

LOAD CASE 1 - CON ED STANDARD

Tower Loads

Wind Pressure:	8	psf
Flat Surface Shape Factor:	1.6	
Round Surface Shape Factor:	1.0	
Wind Overload Factor:	2.54	
Weight Overload Factor:	1.27	
Radial Ice:	0.50	inch

Antenna Loads

Antennas	Quantity	Net Weight Each (lb)	Total Weight (w/ OLF) (lb)	qz (psf)	Projected Area (ft^2)	z (ft)	Fx (ea) (lb)	Fx (total) (lb)	Fx per leg (lb)	Fy per leg (lb)	Total Moment (ft-kip)
EMS DR65-18-02DP (Proposed T-Mobile)	3	34	130	8.00	6.20	94	201.6	605	151.2	32.4	56.8
			130					605			56.8

Cable Loads

Cable	Quantity	Section	Section Height (ft)	Tributary Cable Length (ft)	qz (psf)	Projected Area (ea) (ft^2)	z (ft)	Fx (ea, w/OLF) (lb)	Fx (total) (lb)	Cable Weight (lb/ft)	Total Cable Weight (w/ OLF) (lb)	Total Moment (ft-kip)
(12) 1-5/8" coax (Note: assumed (8) 1-5/8" cables exposed to wind on one leg)	12	1	16.00	8.00	8.00	1.32	8.00	26.8	215	0.82	100	1.7
	12	2	23.40	19.70	8.00	3.25	27.70	66.1	528	0.82	246	14.6
	12	3	15.60	19.50	8.00	3.22	47.20	65.4	523	0.82	244	24.7
	12	4	19.00	17.30	8.00	2.85	64.50	58.0	464	0.82	216	29.9
	12	5	19.00	19.00	8.00	3.14	83.50	63.7	510	0.82	237	42.6
	12	6	6.00	12.50	8.00	2.06	96.00	41.9	335	0.82	156	32.2
	12	Top		3.00								
			99.0	99.0					2575		1200	145.7

Mount Loads

Mounts	Quantity	Net Weight Each (lb)	Total Weight (w/ OLF) (lb)	qz (psf)	Projected Area (ft^2)	z (ft)	Fx (ea.) (lb)	Fx (total) (lb)	Fx per leg (lb)	Fy per leg (lb)	Total Moment (ft-kip)
			0					0			0.0

LOAD CASE 2 - CON ED EMERGENCY ICE

Tower Loads

Wind Pressure:	12.5	psf
Flat Surface Shape Factor:	1.6	
Round Surface Shape Factor:	1.0	
Wind Overload Factor:	1.00	
Weight Overload Factor:	1.00	
Radial Ice:	1.00	inch

Antenna Loads

Antennas	Quantity	Net Weight Each (lb)	Total Weight (w/ OLF) (lb)	qz (psf)	Projected Area (ft^2)	z (ft)	Fx (ea) (lb)	Fx (total) (lb)	Fx per leg (lb)	Fy per leg (lb)	Total Moment (ft-kip)
EMS DR65-18-02DP (Proposed T-Mobile)	3	34	102	12.50	6.20	94	124.0	372	93.0	25.5	35.0
			102					372			35.0

Cable Loads

Cable	Quantity	Section	Section Height (ft)	Tributary Cable Length (ft)	qz (psf)	Projected Area (ea) (ft^2)	z (ft)	Fx (ea, w/OLF) (lb)	Fx (total) (lb)	Cable Weight (lb/ft)	Total Cable Weight (w/ OLF) (lb)	Total Moment (ft-kip)
(12) 1-5/8" coax (Note: assumed (8) 1-5/8" cables exposed to wind on one leg)	12	1	16.00	8.00	12.50	1.32	8.00	16.5	132	0.82	79	1.1
	12	2	23.40	19.70	12.50	3.25	27.70	40.6	325	0.82	194	9.0
	12	3	15.60	19.50	12.50	3.22	47.20	40.2	322	0.82	192	15.2
	12	4	19.00	17.30	12.50	2.85	64.50	35.7	285	0.82	170	18.4
	12	5	19.00	19.00	12.50	3.14	83.50	39.2	314	0.82	187	26.2
	12	6	6.00	12.50	12.50	2.06	96.00	25.8	206	0.82	123	19.8
	12	Top		3.00								
			99.0	99.0					1584		945	89.6

Mount Loads

Mounts	Quantity	Net Weight Each (lb)	Total Weight (w/ OLF) (lb)	qz (psf)	Projected Area (ft^2)	z (ft)	Fx (ea.) (lb)	Fx (total) (lb)	Fx per leg (lb)	Fy per leg (lb)	Total Moment (ft-kip)
			0					0			0.0

LOAD CASE 3 - CON ED HURRICANE

Tower Loads

Wind Pressure:	31.25	psf
Flat Surface Shape Factor:	1.6	
Round Surface Shape Factor:	1.0	
Wind Overload Factor:	1.00	
Weight Overload Factor:	1.00	
Radial Ice:	0.00	inch

Antenna Loads

Antennas	Quantity	Net Weight Each (lb)	Total Weight (w/ OLF) (lb)	qz (psf)	Projected Area (ft^2)	z (ft)	Fx (ea) (lb)	Fx (total) (lb)	Fx per leg (lb)	Fy per leg (lb)	Total Moment (ft-kip)
EMS DR65-18-02DP (Proposed T-Mobile)	3	34	102	31.25	6.20	94	310.0	930	232.5	25.5	87.4
			102					930			87.4

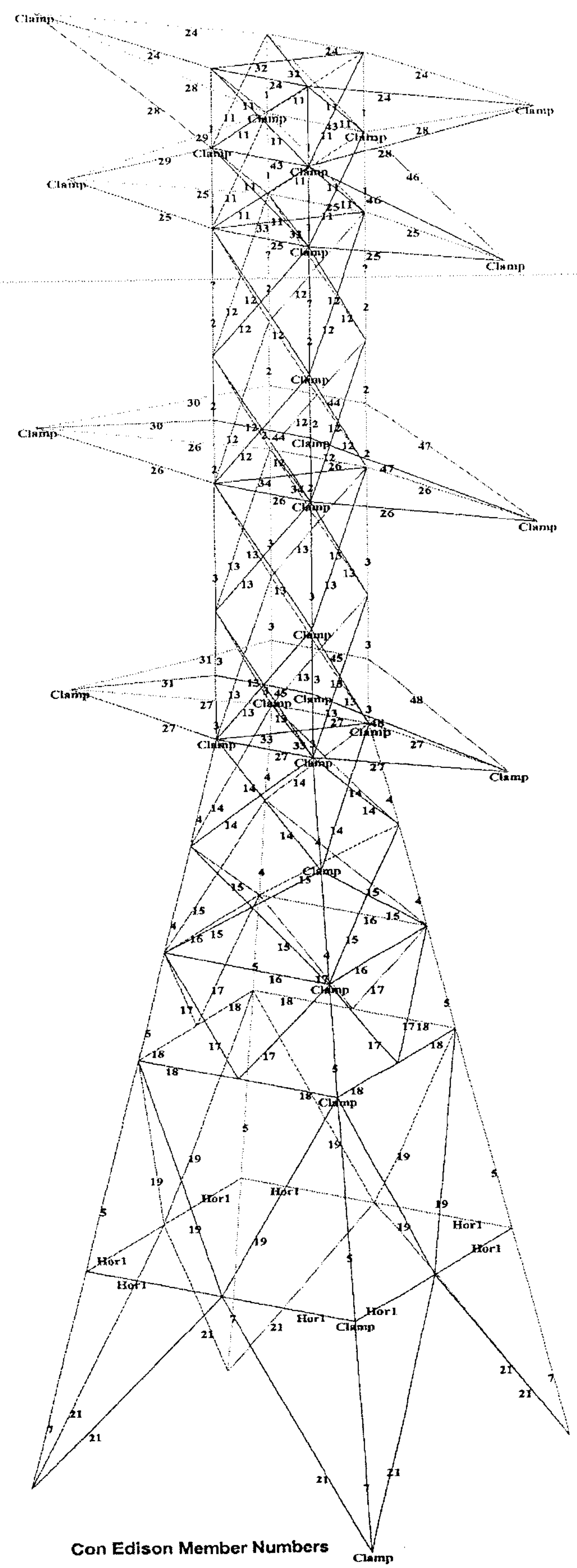
Cable Loads

Cable	Quantity	Section	Section Height (ft)	Tributary Cable Length (ft)	qz (psf)	Projected Area (ea) (ft^2)	z (ft)	Fx (ea, w/OLF) (lb)	Fx (total) (lb)	Cable Weight (lb/ft)	Total Cable Weight (w/ OLF) (lb)	Total Moment (ft-kip)
(12) 1-5/8" coax (Note: assumed (8) 1-5/8" cables exposed to wind on one leg)	12	1	16.00	8.00	31.25	1.32	8.00	41.3	330	0.82	79	2.6
	12	2	23.40	19.70	31.25	3.25	27.70	101.6	813	0.82	194	22.5
	12	3	15.60	19.50	31.25	3.22	47.20	100.5	804	0.82	192	38.0
	12	4	19.00	17.30	31.25	2.85	64.50	89.2	714	0.82	170	46.0
	12	5	19.00	19.00	31.25	3.14	83.50	98.0	784	0.82	187	65.4
	12	6	6.00	12.50	31.25	2.06	96.00	64.5	516	0.82	123	49.5
	12	Top		3.00								
			99.0	99.0					3960		945	224.1

Mount Loads

Mounts	Quantity	Net Weight Each (lb)	Total Weight (w/ OLF) (lb)	qz (psf)	Projected Area (ft^2)	z (ft)	Fx (ea.) (lb)	Fx (total) (lb)	Fx per leg (lb)	Fy per leg (lb)	Total Moment (ft-kip)
			0					0			0.0

TOWER ANALYSIS MODEL AND OUTPUT



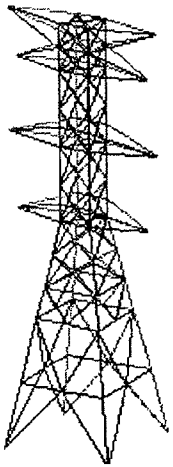
Con Edison Member Numbers

```
*****************************************************************************
*                                                                           *
*    TOWER ANALYSIS AND DESIGN  -  (C) 1986-2000  Power Line Systems, Inc.  *
*                                                                           *
*****************************************************************************

Project Name : Con Edison Tower E-142 (2356.09215A)
Project Notes: Transmission Tower Analysis
Project File : g:\2356-t-mobile\2356-09215a\2356-09215a-analysis\conede142-twranalysis.tow
Date run     : 11:10:27 AM Friday, February 14, 2003
by           : Tower Version 6.02
Licensed to  : Tectonic Engineering

Successfully performed nonlinear analysis

Clamp insulator "100P" has a structure attach joint "100P" that is fixed with respect to translation ??
The model has 1 warning.  ??
```



```
Nonlinear convergence parameters: Use Standard Parameters
Member check option: ASCE 10
Connection rupture check: Not Checked
Apply wind only to face: Yes

Joints Geometry:
```

Joint Label	Symmetry Code	X Coord. (ft)	Y Coord. (ft)	Z Coord. (ft)	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.
100P	XY-Symmetry	13.87	13.87	0	Fixed	Fixed	Fixed	Free	Free	Free
101P	XY-Symmetry	11	11	16	Free	Free	Free	Free	Free	Free
101aP	X-Symmetry	0	11	16	Free	Free	Free	Free	Free	Free
101bP	Y-Symmetry	11	0	16	Free	Free	Free	Free	Free	Free
102P	XY-Symmetry	8.2	8.2	31.6	Free	Free	Free	Free	Free	Free
102aP	X-Symmetry	0	8.2	31.6	Free	Free	Free	Free	Free	Free
102bP	Y-Symmetry	8.2	0	31.6	Free	Free	Free	Free	Free	Free
103P	XY-Symmetry	6.8	6.8	39.4	Free	Free	Free	Free	Free	Free
104P	XY-Symmetry	5.4	5.4	47.2	Free	Free	Free	Free	Free	Free
105P	XY-Symmetry	4	4	55	Free	Free	Free	Free	Free	Free
106P	XY-Symmetry	4	4	59.75	Free	Free	Free	Free	Free	Free
107P	XY-Symmetry	4	4	64.5	Free	Free	Free	Free	Free	Free
108P	XY-Symmetry	4	4	74	Free	Free	Free	Free	Free	Free
109P	XY-Symmetry	4	4	78.75	Free	Free	Free	Free	Free	Free
110P	XY-Symmetry	4	4	83.5	Free	Free	Free	Free	Free	Free
111P	XY-Symmetry	4	4	93	Free	Free	Free	Free	Free	Free
112P	XY-Symmetry	4	4	99	Free	Free	Free	Free	Free	Free
113P	XY-Symmetry	4	4	105	Free	Free	Free	Free	Free	Free
Arm1aP	None	0	17.5	55	Free	Free	Free	Free	Free	Free
Arm1bP	None	0	-18.17	55	Free	Free	Free	Free	Free	Free
Arm2aP	None	0	20	74	Free	Free	Free	Free	Free	Free
Arm2bP	None	0	-20.67	74	Free	Free	Free	Free	Free	Free
Arm3aP	None	0	17.5	93	Free	Free	Free	Free	Free	Free

Arm3bP	None	0	-18.17	93	Free	Free	Free	Free	Free	Free
Arm4aP	None	0	20	105	Free	Free	Free	Free	Free	Free
Arm4bP	None	0	-20.67	105	Free	Free	Free	Free	Free	Free
100X	X-GenXY	13.87	-13.87	0	Fixed	Fixed	Fixed	Free	Free	Free
100XY	XY-GenXY	-13.87	-13.87	0	Fixed	Fixed	Fixed	Free	Free	Free
100Y	Y-GenXY	-13.87	13.87	0	Fixed	Fixed	Fixed	Free	Free	Free
101X	X-GenXY	11	-11	16	Free	Free	Free	Free	Free	Free
101XY	XY-GenXY	-11	-11	16	Free	Free	Free	Free	Free	Free
101Y	Y-GenXY	-11	11	16	Free	Free	Free	Free	Free	Free
101aX	X-Gen	0	-11	16	Free	Free	Free	Free	Free	Free
101bY	Y-Gen	-11	0	16	Free	Free	Free	Free	Free	Free
102X	X-GenXY	8.2	-8.2	31.6	Free	Free	Free	Free	Free	Free
102XY	XY-GenXY	-8.2	-8.2	31.6	Free	Free	Free	Free	Free	Free
102Y	Y-GenXY	-8.2	8.2	31.6	Free	Free	Free	Free	Free	Free
102aX	X-Gen	0	-8.2	31.6	Free	Free	Free	Free	Free	Free
102bY	Y-Gen	-8.2	0	31.6	Free	Free	Free	Free	Free	Free
103X	X-GenXY	6.8	-6.8	39.4	Free	Free	Free	Free	Free	Free
103XY	XY-GenXY	-6.8	-6.8	39.4	Free	Free	Free	Free	Free	Free
103Y	Y-GenXY	-6.8	6.8	39.4	Free	Free	Free	Free	Free	Free
104X	X-GenXY	5.4	-5.4	47.2	Free	Free	Free	Free	Free	Free
104XY	XY-GenXY	-5.4	-5.4	47.2	Free	Free	Free	Free	Free	Free
104Y	Y-GenXY	-5.4	5.4	47.2	Free	Free	Free	Free	Free	Free
105X	X-GenXY	4	-4	55	Free	Free	Free	Free	Free	Free
105XY	XY-GenXY	-4	-4	55	Free	Free	Free	Free	Free	Free
105Y	Y-GenXY	-4	4	55	Free	Free	Free	Free	Free	Free
106X	X-GenXY	4	-4	59.75	Free	Free	Free	Free	Free	Free
106XY	XY-GenXY	-4	-4	59.75	Free	Free	Free	Free	Free	Free
106Y	Y-GenXY	-4	4	59.75	Free	Free	Free	Free	Free	Free
107X	X-GenXY	4	-4	64.5	Free	Free	Free	Free	Free	Free
107XY	XY-GenXY	-4	-4	64.5	Free	Free	Free	Free	Free	Free
107Y	Y-GenXY	-4	4	64.5	Free	Free	Free	Free	Free	Free
108X	X-GenXY	4	-4	74	Free	Free	Free	Free	Free	Free
108XY	XY-GenXY	-4	-4	74	Free	Free	Free	Free	Free	Free
108Y	Y-GenXY	-4	4	74	Free	Free	Free	Free	Free	Free
109X	X-GenXY	4	-4	78.75	Free	Free	Free	Free	Free	Free
109XY	XY-GenXY	-4	-4	78.75	Free	Free	Free	Free	Free	Free
109Y	Y-GenXY	-4	4	78.75	Free	Free	Free	Free	Free	Free
110X	X-GenXY	4	-4	83.5	Free	Free	Free	Free	Free	Free
110XY	XY-GenXY	-4	-4	83.5	Free	Free	Free	Free	Free	Free
110Y	Y-GenXY	-4	4	83.5	Free	Free	Free	Free	Free	Free
111X	X-GenXY	4	-4	93	Free	Free	Free	Free	Free	Free
111XY	XY-GenXY	-4	-4	93	Free	Free	Free	Free	Free	Free
111Y	Y-GenXY	-4	4	93	Free	Free	Free	Free	Free	Free
112X	X-GenXY	4	-4	99	Free	Free	Free	Free	Free	Free
112XY	XY-GenXY	-4	-4	99	Free	Free	Free	Free	Free	Free
112Y	Y-GenXY	-4	4	99	Free	Free	Free	Free	Free	Free
113X	X-GenXY	4	-4	105	Free	Free	Free	Free	Free	Free
113XY	XY-GenXY	-4	-4	105	Free	Free	Free	Free	Free	Free
113Y	Y-GenXY	-4	4	105	Free	Free	Free	Free	Free	Free

Steel Material Properties:

Steel Material Label	Modulus of Elasticity (ksi)	Yield Stress Fy (ksi)	Ultimate Stress Fu (ksi)	Member All. Stress Hyp. 1 (ksi)	Member All. Stress Hyp. 2 (ksi)	Member Rupture Hyp. 1 (ksi)	Member Rupture Hyp. 2 (ksi)	Member Bearing Hyp. 1 (ksi)	Member Bearing Hyp. 2 (ksi)
A7 (33ksi)	2.9e+004	33	60	0	0	0	0	0	0

Angle Properties:

Angle Type	Angle Size	Long Leg (in)	Short Leg (in)	Thick. (in)	Unit Weight (lbs/ft)	Gross Area (in^2)	w/t Ratio	Radius of Gyration Rx (in)	Radius of Gyration Ry (in)	Radius of Gyration Rz (in)	Number of Angles	Wind Width (in)	Short Edge Dist. (in)	Long Edge Dist. (in)	Section Modulus (in^3)
SAE	8X8X0.75	8	8	0.75	39	11.4	8.8	2.47	2.47	1.58	1	8	0	0	0
SAE	8X8X0.5	8	8	0.5	26	7.75	14	2.5	2.5	1.59	1	8	0	0	0
SAE	6X6X0.375	6	6	0.375	15	4.36	14	1.88	1.88	1.19	1	6	0	0	0
SAE	3.5X3.5X0.25	3.5	3.5	0.25	5.8	1.69	12	1.09	1.09	0.694	1	3.5	0	0	0
SAE	3X3X0.25	3	3	0.25	4.9	1.44	9.8	0.93	0.93	0.592	1	3	0	0	0
SAE	3X3X0.1875	3	3	0.1875	3.7	1.09	13	0.939	0.939	0.596	1	3	0	0	0
SAE	2.5X2.5X0.1875	2.5	2.5	0.1875	3.1	0.902	11	0.778	0.778	0.495	1	2.5	0	0	0
SAE	2X2X0.3125	2	2	0.3125	3.9	1.15	3.8	0.601	0.601	0.39	1	2	0	0	0
SAE	2X2X0.25	2	2	0.25	3.2	0.94	5	0.609	0.609	0.391	1	2	0	0	0
SAE	2X2X0.1875	2	2	0.1875	2.4	0.71	8	0.617	0.617	0.394	1	2	0	0	0
SAU	6X4X0.375	6	4	0.375	12	3.61	14	1.93	1.17	0.877	1	6	0	0	0
SAU	6X4X0.3125	6	4	0.3125	10	3.03	17	1.94	1.17	0.882	1	6	0	0	0
SAU	6X3.5X0.3125	6	3.5	0.3125	9.8	2.87	17	1.95	0.996	0.772	1	6	0	0	0
SAU	4X3.5X0.3125	4	3.5	0.3125	7.7	2.25	10	1.26	1.07	0.73	1	4	0	0	0
SAU	3.5X3X0.25	3.5	3	0.25	5.4	1.56	11	1.11	0.914	0.631	1	3.5	0	0	0

SAU	3.5X2.5X0.25	3.5	2.5	0.25	4.9	1.44	11	1.12	0.735	0.544	1	3.5	0	0	0
SAU	3X2.5X0.3125	3	2.5	0.3125	5.6	1.62	7.4	0.937	0.744	0.525	1	3	0	0	0
SAU	3X2.5X0.25	3	2.5	0.25	4.5	1.31	9.5	0.945	0.753	0.528	1	3	0	0	0
SAU	3X2X0.3125	3	2	0.3125	5	1.46	7.6	0.948	0.567	0.432	1	3	0	0	0
SAU	3X2X0.25	3	2	0.25	4.1	1.19	9.8	0.957	0.574	0.435	1	3	0	0	0
DAS	2.5X2X0.1875	2.5	2	0.1875	5.5	1.62	11	0.6	1.24	0.6	2	2.5	0	0	0
BAR	5/16x3.75	3.8	0.31	0.3125	4	1.17	0	1.083	0.0902	0.0902	1	3.8	0	0	0
BAR	5/16x3.5	3.5	0.31	0.3125	3.7	1.09	0	1.01	0.0902	0.0902	1	3.5	0	0	0

Angle Groups:

Group Label	Group Description	Angle Type	Angle Size	Material Type	Element Type	Group Type	Optimize Group	Allow. Add. Angle Width For Optimize (in)
1	1	SAE	3.5X3.5X0.25	A7 (33ksi)	Beam	Leg	None	0.000
2	2	SAE	6X6X0.375	A7 (33ksi)	Beam	Leg	None	0.000
3	3	SAE	8X8X0.5	A7 (33ksi)	Beam	Leg	None	0.000
4	4	SAE	8X8X0.5	A7 (33ksi)	Beam	Leg	None	0.000
5	5	SAE	8X8X0.75	A7 (33ksi)	Beam	Leg	None	0.000
7	7	SAE	8X8X0.75	A7 (33ksi)	Beam	Leg	None	0.000
11	11	SAE	2X2X0.1875	A7 (33ksi)	Truss	Other	None	0.000
12	12	SAE	3X3X0.25	A7 (33ksi)	Truss	Other	None	0.000
13	13	SAU	4X3.5X0.3125	A7 (33ksi)	Truss	Other	None	0.000
14	14	SAE	3X3X0.25	A7 (33ksi)	Truss	Other	None	0.000
15	15	SAE	3X3X0.25	A7 (33ksi)	Truss	Other	None	0.000
16	16	SAE	3.5X3.5X0.25	A7 (33ksi)	Beam	Other	None	0.000
17	17	SAE	3.5X3.5X0.25	A7 (33ksi)	Truss	Other	None	0.000
18	18	DAS	2.5X2X0.1875	A7 (33ksi)	Beam	Other	None	0.000
19	19	SAU	3X2X0.25	A7 (33ksi)	T-Only	Other	None	0.000
21	21	SAU	3X2X0.25	A7 (33ksi)	T-Only	Other	None	0.000
24	24	SAU	6X3.5X0.3125	A7 (33ksi)	Truss	Other	None	0.000
25	25	SAU	6X4X0.3125	A7 (33ksi)	Beam	Other	None	0.000
26	26	SAU	6X4X0.375	A7 (33ksi)	Beam	Other	None	0.000
27	27	SAU	6X4X0.3125	A7 (33ksi)	Beam	Other	None	0.000
28	28	SAU	3.5X2.5X0.25	A7 (33ksi)	Truss	Other	None	0.000
29	29	SAE	2X2X0.25	A7 (33ksi)	T-Only	Other	None	0.000
30	30	SAU	3X2X0.3125	A7 (33ksi)	T-Only	Other	None	0.000
31	31	SAE	2X2X0.3125	A7 (33ksi)	T-Only	Other	None	0.000
32	32	SAE	2.5X2.5X0.1875	A7 (33ksi)	Truss	Other	None	0.000
33	33	SAE	3X3X0.1875	A7 (33ksi)	Truss	Other	None	0.000
34	34	SAU	3X2.5X0.25	A7 (33ksi)	Truss	Other	None	0.000
43	43	SAU	3X2.5X0.3125	A7 (33ksi)	Truss	Other	None	0.000
44	44	BAR	5/16x3.75	A7 (33ksi)	T-Only	Other	None	0.000
45	45	BAR	5/16x3.5	A7 (33ksi)	T-Only	Other	None	0.000
46	46	SAE	2X2X0.25	A7 (33ksi)	T-Only	Other	None	0.000
47	47	SAU	3X2X0.3125	A7 (33ksi)	T-Only	Other	None	0.000
48	48	SAE	2X2X0.3125	A7 (33ksi)	T-Only	Other	None	0.000
Horl	Horl	SAU	3.5X3X0.25	A7 (33ksi)	Beam	Other	None	0.000

Aggregate Angle Information:

Angle Type	Angle Size	Material Type	Total Length (ft)	Total Surface Area (ft^2)	Total Weight (lbs)
SAE	8X8X0.75	A7 (33ksi)	162.60	433.59	6324.96
SAE	8X8X0.5	A7 (33ksi)	140.38	374.34	3706.00
SAE	6X6X0.375	A7 (33ksi)	76.00	152.00	1132.40
SAE	3.5X3.5X0.25	A7 (33ksi)	185.94	216.93	1078.44
SAU	3.5X3X0.25	A7 (33ksi)	88.00	95.33	475.20
DAS	2.5X2X0.1875	A7 (33ksi)	65.60	49.20	360.80
SAU	6X4X0.3125	A7 (33ksi)	147.22	245.36	1516.32
BAR	5/16x3.5	A7 (33ksi)	16.00	10.17	59.52
SAU	6X4X0.375	A7 (33ksi)	83.27	138.79	1024.24
BAR	5/16x3.75	A7 (33ksi)	16.00	10.83	63.84
SAU	3X2.5X0.3125	A7 (33ksi)	16.00	14.67	89.60
SAU	6X3.5X0.3125	A7 (33ksi)	83.27	131.85	816.06
SAU	3X2X0.25	A7 (33ksi)	313.71	261.42	1286.20
SAE	3X3X0.25	A7 (33ksi)	413.46	413.46	2025.94
SAU	4X3.5X0.3125	A7 (33ksi)	198.72	248.39	1530.11
SAE	2X2X0.1875	A7 (33ksi)	160.00	106.67	390.40
SAE	3X3X0.1875	A7 (33ksi)	45.25	45.25	167.90
SAU	3X2.5X0.25	A7 (33ksi)	22.63	20.74	101.82
SAE	2.5X2.5X0.1875	A7 (33ksi)	22.63	18.86	69.47
SAE	2X2X0.3125	A7 (33ksi)	60.66	40.44	237.79
SAU	3X2X0.3125	A7 (33ksi)	69.90	58.25	349.52
SAE	2X2X0.25	A7 (33ksi)	62.41	41.61	199.09
SAU	3.5X2.5X0.25	A7 (33ksi)	71.43	71.43	349.99

Sections:
The adjustment factors below only apply to dead load and wind areas that are calculated for members in the model.
They do not apply to equipment or to manually input dead load and drag areas.

Section Label	Joint Defining Section Bottom	Dead Load Adj. Factor	Transverse Drag Area Adj. Factor For All (Also SAPS)	Longitudinal Drag Area Adj. Factor For All	Transverse Drag Area Adj. Factor For Face	Longitudinal Drag Area Adj. Factor For Face	Adj. Factor for Face Af EIA Only	Adj. Factor for Face Ar EIA Only
1	100P	1.100	0.000	0.000	1.100	1.100	0.000	0.000
2	101P	1.100	0.000	0.000	1.100	1.100	0.000	0.000
3	103P	1.100	0.000	0.000	1.100	1.100	0.000	0.000
4	105P	1.100	0.000	0.000	1.100	1.100	0.000	0.000
5	108P	1.100	0.000	0.000	1.100	1.100	0.000	0.000
6	111P	1.100	0.000	0.000	1.100	1.100	0.000	0.000

Angle Member Connectivity:

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ	Bolt Type	# Bolts	# Bolt Holes	# Shear Planes	Connect Leg	Short Edge Dist. (in)	Long Edge Dist. (in)	End Dist. (in)	Bolt Spacing (in)	Rest. Coef.
Legs1P	7		XY-Symmetry	100P	101P	1	4	1	1	1	5/8 A-394	0	4	0		0	0	0	0	0
Legs2aP	5		XY-Symmetry	101P	102P	1	4	1	1	1	5/8 A-394	0	4	0		0	0	0	0	0
Legs2bP	5		XY-Symmetry	102P	103P	1	4	1	1	1		0	0	0		0	0	0	0	0
Legs3aP	4		XY-Symmetry	103P	104P	1	4	1	1	1	5/8 A-394	0	4	0		0	0	0	0	0
Legs3bP	4		XY-Symmetry	104P	105P	1	4	1	1	1		0	0	0		0	0	0	0	0
Legs4aP	3		XY-Symmetry	105P	106P	1	4	1	2	1	5/8 A-394	0	4	0		0	0	0	0	0
Legs4bP	3		XY-Symmetry	106P	107P	1	4	1	2	1		0	0	0		0	0	0	0	0
Legs4cP	3		XY-Symmetry	107P	108P	1	4	1	1	1		0	0	0		0	0	0	0	0
Legs5aP	2		XY-Symmetry	108P	109P	1	4	1	2	1	5/8 A-394	0	4	0		0	0	0	0	0
Legs5bP	2		XY-Symmetry	109P	110P	1	4	1	2	1		0	0	0		0	0	0	0	0
Legs5cP	2		XY-Symmetry	110P	111P	1	4	1	1	1		0	0	0		0	0	0	0	0
Legs6aP	1		XY-Symmetry	111P	112P	1	4	1	1	1	5/8 A-394	0	2	0		0	0	0	0	0
Legs6bP	1		XY-Symmetry	112P	113P	1	4	1	1	1		0	0	0		0	0	0	0	0
Hor1aP	Hor1		XY-Symmetry	101P	101aP	3	6	2	1	1	5/8 A-394	0	1	0		0	0	0	0	0
Hor1bP	Hor1		XY-Symmetry	101P	101bP	3	6	2	1	1	5/8 A-394	0	1	0		0	0	0	0	0
Hor2aP	18		XY-Symmetry	102P	102aP	3	6	1	2	1	5/8 A-394	0	2	0		0	0	0	0	0
Hor2bP	18		XY-Symmetry	102P	102bP	3	6	1	2	1	5/8 A-394	0	2	0		0	0	0	0	0
Hor3aP	16		Y-Symmetry	103P	103X	3	6	1	1	1	5/8 A-394	0	1	0		0	0	0	0	0
Hor3bP	16		X-Symmetry	103P	103Y	3	6	1	1	1	5/8 A-394	0	1	0		0	0	0	0	0
Hor5P	27		Y-Symmetry	105P	105X	3	6	1	1	1	5/8 A-394	0	1	0		0	0	0	0	0
Hor6P	45		Y-Symmetry	106P	106X	3	6	1	1	1	5/8 A-394	0	1	0		0	0	0	0	0
Hor8P	26		Y-Symmetry	108P	108X	3	6	1	1	1	5/8 A-394	0	1	0		0	0	0	0	0
Hor9P	44		Y-Symmetry	109P	109X	3	6	1	1	1	5/8 A-394	0	1	0		0	0	0	0	0
Hor11P	25		Y-Symmetry	111P	111X	3	6	1	1	1	5/8 A-394	0	1	0		0	0	0	0	0
Hor12P	43		Y-Symmetry	112P	112X	3	6	1	1	1	5/8 A-394	0	1	0		0	0	0	0	0
Hor13P	24		Y-Symmetry	113P	113X	3	6	1	1	1	5/8 A-394	0	1	0		0	0	0	0	0
Dia1aP	21		XY-Symmetry	100P	101bP	3	5	1	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia1bP	21		XY-Symmetry	100P	101aP	3	5	1	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia2aP	19		XY-Symmetry	101bP	102P	3	5	1	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia2bP	19		XY-Symmetry	101aP	102P	3	5	1	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia3aP	17		XY-Symmetry	102bP	103P	3	6	1	1	1	5/8 A-394	0	1	0		0	0	0	0	0
Dia3bP	17		XY-Symmetry	102aP	103P	3	6	1	1	1	5/8 A-394	0	1	0		0	0	0	0	0
Dia4aP	15		XY-Symmetry	103P	104X	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia4bP	15		XY-Symmetry	103P	104Y	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia5aP	14		XY-Symmetry	104P	105X	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia5bP	14		XY-Symmetry	104P	105Y	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia6aP	13		XY-Symmetry	105P	107X	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia6bP	13		XY-Symmetry	105P	107Y	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia7aP	13		XY-Symmetry	107P	108X	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia7bP	13		XY-Symmetry	107P	108Y	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia8aP	12		XY-Symmetry	108P	110X	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia8bP	12		XY-Symmetry	108P	110Y	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia9aP	12		XY-Symmetry	110P	111X	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia9bP	12		XY-Symmetry	110P	111Y	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia10aP	11		XY-Symmetry	111P	112X	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia10bP	11		XY-Symmetry	111P	112Y	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia11aP	11		XY-Symmetry	112P	113X	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Dia11bP	11		XY-Symmetry	112P	113Y	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
IntDia5P	33		X-Symmetry	105P	105XY	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
IntDia8P	34		X-Symmetry	108P	108XY	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
IntDia11P	33		X-Symmetry	111P	111XY	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
IntDia13P	32		X-Symmetry	113P	113XY	2	5	0.75	0.5	0.5	5/8 A-394	0	1	0		0	0	0	0	0
Arm1aP	27		Y-Symmetry	105P	Arm1aP	3	5	1	0.5	0.5	5/8 A-394	0	2	0		0	0	0	0	0
Arm1bP	27		Y-Symmetry	105X	Arm1bP	3	5	1	0.5	0.5	5/8 A-394	0	2	0		0	0	0	0	0
Arm1cP	48		Y-Symmetry	106P	Arm1aP	3	5	1	1	1	5/8 A-394	0	1	0		0	0	0	0	0
Arm1dP	31		Y-Symmetry	106X	Arm1bP	3	5	1	1	1	5/8 A-394	0	1	0		0	0	0	0	0

Arm2aP	26	Y-Symmetry	108P	Arm2aP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Arm2bP	26	Y-Symmetry	108X	Arm2bP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Arm2cP	47	Y-Symmetry	109P	Arm2aP	3	5	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Arm2dP	30	Y-Symmetry	109X	Arm2bP	3	5	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Arm3aP	25	Y-Symmetry	111P	Arm3aP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Arm3bP	25	Y-Symmetry	111X	Arm3bP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Arm3cP	46	Y-Symmetry	112P	Arm3aP	3	5	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Arm3dP	29	Y-Symmetry	112X	Arm3bP	3	5	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Arm4aP	28	Y-Symmetry	112P	Arm4aP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Arm4bP	28	Y-Symmetry	112X	Arm4bP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Arm4cP	24	Y-Symmetry	113P	Arm4aP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Arm4dP	24	Y-Symmetry	113X	Arm4bP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Legs1X	7	X-GenXY	100X	101X	1	4	1	1	1	5/8	A-394	0	4	0	0	0	0	0	0	
Legs1XY	7	XY-GenXY	100XY	101XY	1	4	1	1	1	5/8	A-394	0	4	0	0	0	0	0	0	
Legs1Y	7	Y-GenXY	100Y	101Y	1	4	1	1	1	5/8	A-394	0	4	0	0	0	0	0	0	
Legs2aX	5	X-GenXY	101X	102X	1	4	1	1	1	5/8	A-394	0	4	0	0	0	0	0	0	
Legs2aXY	5	XY-GenXY	101XY	102XY	1	4	1	1	1	5/8	A-394	0	4	0	0	0	0	0	0	
Legs2aY	5	Y-GenXY	101Y	102Y	1	4	1	1	1	5/8	A-394	0	4	0	0	0	0	0	0	
Legs2bX	5	X-GenXY	102X	103X	1	4	1	1	1			0	0	0	0	0	0	0	0	
Legs2bXY	5	XY-GenXY	102XY	103XY	1	4	1	1	1			0	0	0	0	0	0	0	0	
Legs2bY	5	Y-GenXY	102Y	103Y	1	4	1	1	1			0	0	0	0	0	0	0	0	
Legs3aX	4	X-GenXY	103X	104X	1	4	1	1	1	5/8	A-394	0	4	0	0	0	0	0	0	
Legs3aXY	4	XY-GenXY	103XY	104XY	1	4	1	1	1	5/8	A-394	0	4	0	0	0	0	0	0	
Legs3aY	4	Y-GenXY	103Y	104Y	1	4	1	1	1	5/8	A-394	0	4	0	0	0	0	0	0	
Legs3bX	4	X-GenXY	104X	105X	1	4	1	1	1			0	0	0	0	0	0	0	0	
Legs3bXY	4	XY-GenXY	104XY	105XY	1	4	1	1	1			0	0	0	0	0	0	0	0	
Legs3bY	4	Y-GenXY	104Y	105Y	1	4	1	1	1			0	0	0	0	0	0	0	0	
Legs4aX	3	X-GenXY	105X	106X	1	4	1	2	1	5/8	A-394	0	4	0	0	0	0	0	0	
Legs4aXY	3	XY-GenXY	105XY	106XY	1	4	1	2	1	5/8	A-394	0	4	0	0	0	0	0	0	
Legs4aY	3	Y-GenXY	105Y	106Y	1	4	1	2	1	5/8	A-394	0	4	0	0	0	0	0	0	
Legs4bX	3	X-GenXY	106X	107X	1	4	1	2	1			0	0	0	0	0	0	0	0	
Legs4bXY	3	XY-GenXY	106XY	107XY	1	4	1	2	1			0	0	0	0	0	0	0	0	
Legs4bY	3	Y-GenXY	106Y	107Y	1	4	1	2	1			0	0	0	0	0	0	0	0	
Legs4cX	3	X-GenXY	107X	108X	1	4	1	1	1			0	0	0	0	0	0	0	0	
Legs4cXY	3	XY-GenXY	107XY	108XY	1	4	1	1	1			0	0	0	0	0	0	0	0	
Legs4cY	3	Y-GenXY	107Y	108Y	1	4	1	1	1			0	0	0	0	0	0	0	0	
Legs5aX	2	X-GenXY	108X	109X	1	4	1	2	1	5/8	A-394	0	4	0	0	0	0	0	0	
Legs5aXY	2	XY-GenXY	108XY	109XY	1	4	1	2	1	5/8	A-394	0	4	0	0	0	0	0	0	
Legs5aY	2	Y-GenXY	108Y	109Y	1	4	1	2	1	5/8	A-394	0	4	0	0	0	0	0	0	
Legs5bX	2	X-GenXY	109X	110X	1	4	1	2	1			0	0	0	0	0	0	0	0	
Legs5bXY	2	XY-GenXY	109XY	110XY	1	4	1	2	1			0	0	0	0	0	0	0	0	
Legs5bY	2	Y-GenXY	109Y	110Y	1	4	1	2	1			0	0	0	0	0	0	0	0	
Legs5cX	2	X-GenXY	110X	111X	1	4	1	1	1			0	0	0	0	0	0	0	0	
Legs5cXY	2	XY-GenXY	110XY	111XY	1	4	1	1	1			0	0	0	0	0	0	0	0	
Legs5cY	2	Y-GenXY	110Y	111Y	1	4	1	1	1			0	0	0	0	0	0	0	0	
Legs6aX	1	X-GenXY	111X	112X	1	4	1	1	1	5/8	A-394	0	2	0	0	0	0	0	0	
Legs6aXY	1	XY-GenXY	111XY	112XY	1	4	1	1	1	5/8	A-394	0	2	0	0	0	0	0	0	
Legs6aY	1	Y-GenXY	111Y	112Y	1	4	1	1	1	5/8	A-394	0	2	0	0	0	0	0	0	
Legs6bX	1	X-GenXY	112X	113X	1	4	1	1	1			0	0	0	0	0	0	0	0	
Legs6bXY	1	XY-GenXY	112XY	113XY	1	4	1	1	1			0	0	0	0	0	0	0	0	
Legs6bY	1	Y-GenXY	112Y	113Y	1	4	1	1	1			0	0	0	0	0	0	0	0	
Hor1aX	Hor1	X-GenXY	101X	101aX	3	6	2	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Hor1aXY	Hor1	XY-GenXY	101XY	101aX	3	6	2	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Hor1aY	Hor1	Y-GenXY	101Y	101aP	3	6	2	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Hor1bX	Hor1	X-GenXY	101X	101bP	3	6	2	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Hor1bXY	Hor1	XY-GenXY	101XY	101bY	3	6	2	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Hor1bY	Hor1	Y-GenXY	101Y	101bY	3	6	2	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Hor2aX	18	X-GenXY	102X	102aX	3	6	1	2	1	5/8	A-394	0	2	0	0	0	0	0	0	
Hor2aXY	18	XY-GenXY	102XY	102aX	3	6	1	2	1	5/8	A-394	0	2	0	0	0	0	0	0	
Hor2aY	18	Y-GenXY	102Y	102aP	3	6	1	2	1	5/8	A-394	0	2	0	0	0	0	0	0	
Hor2bX	18	X-GenXY	102X	102bP	3	6	1	2	1	5/8	A-394	0	2	0	0	0	0	0	0	
Hor2bXY	18	XY-GenXY	102XY	102bY	3	6	1	2	1	5/8	A-394	0	2	0	0	0	0	0	0	
Hor2bY	18	Y-GenXY	102Y	102bY	3	6	1	2	1	5/8	A-394	0	2	0	0	0	0	0	0	
Hor3aY	16	Y-Gen	103Y	103XY	3	6	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Hor3bX	16	X-Gen	103X	103XY	3	6	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Hor5Y	27	Y-Gen	105Y	105XY	3	6	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Hor6Y	45	Y-Gen	106Y	106XY	3	6	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Hor8Y	26	Y-Gen	108Y	108XY	3	6	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Hor9Y	44	Y-Gen	109Y	109XY	3	6	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Hor11Y	25	Y-Gen	111Y	111XY	3	6	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Hor12Y	43	Y-Gen	112Y	112XY	3	6	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Hor13Y	24	Y-Gen	113Y	113XY	3	6	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Dia1aX	21	X-GenXY	100X	101bP	3	5	1	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia1aXY	21	XY-GenXY	100XY	101bY	3	5	1	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia1aY	21	Y-GenXY	100Y	101bY	3	5	1	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia1bX	21	X-GenXY	100X	101aX	3	5	1	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia1bXY	21	XY-GenXY	100XY	101aX	3	5	1	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia1bY	21	Y-GenXY	100Y	101aP	3	5	1	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia2aX	19	X-GenXY	101bP	102X	3	5	1	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia2aXY	19	XY-GenXY	101bY	102XY	3	5	1	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia2aY	19	Y-GenXY	101bY	102Y	3	5	1	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	

Dia2bX	19	X-GenXY	101aX	102X	3	5	1	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia2bXY	19	XY-GenXY	101aX	102XY	3	5	1	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia2bY	19	Y-GenXY	101aP	102Y	3	5	1	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia3aX	17	X-GenXY	102bP	103X	3	6	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Dia3aXY	17	XY-GenXY	102bY	103XY	3	6	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Dia3aY	17	Y-GenXY	102bY	103Y	3	6	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Dia3bX	17	X-GenXY	102aX	103X	3	6	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Dia3bXY	17	XY-GenXY	102aX	103XY	3	6	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Dia3bY	17	Y-GenXY	102aP	103Y	3	6	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Dia4aX	15	X-GenXY	103X	104P	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia4aXY	15	XY-GenXY	103XY	104Y	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia4aY	15	Y-GenXY	103Y	104XY	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia4bX	15	X-GenXY	103X	104XY	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia4bXY	15	XY-GenXY	103XY	104X	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia4bY	15	Y-GenXY	103Y	104P	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia5aX	14	X-GenXY	104X	105P	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia5aXY	14	XY-GenXY	104XY	105Y	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia5aY	14	Y-GenXY	104Y	105XY	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia5bX	14	X-GenXY	104X	105XY	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia5bXY	14	XY-GenXY	104XY	105X	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia5bY	14	Y-GenXY	104Y	105P	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia6aX	13	X-GenXY	105X	107P	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia6aXY	13	XY-GenXY	105XY	107Y	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia6aY	13	Y-GenXY	105Y	107XY	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia6bX	13	X-GenXY	105X	107XY	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia6bXY	13	XY-GenXY	105XY	107X	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia6bY	13	Y-GenXY	105Y	107P	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia7aX	13	X-GenXY	107X	108P	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia7aXY	13	XY-GenXY	107XY	108Y	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia7aY	13	Y-GenXY	107Y	108XY	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia7bX	13	X-GenXY	107X	108XY	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia7bXY	13	XY-GenXY	107XY	108X	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia7bY	13	Y-GenXY	107Y	108P	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia8aX	12	X-GenXY	108X	110P	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia8aXY	12	XY-GenXY	108XY	110Y	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia8aY	12	Y-GenXY	108Y	110XY	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia8bX	12	X-GenXY	108X	110XY	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia8bXY	12	XY-GenXY	108XY	110X	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia8bY	12	Y-GenXY	108Y	110P	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia9aX	12	X-GenXY	110X	111P	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia9aXY	12	XY-GenXY	110XY	111Y	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia9aY	12	Y-GenXY	110Y	111XY	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia9bX	12	X-GenXY	110X	111XY	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia9bXY	12	XY-GenXY	110XY	111X	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia9bY	12	Y-GenXY	110Y	111P	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia10aX	11	X-GenXY	111X	112P	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia10aXY	11	XY-GenXY	111XY	112Y	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia10aY	11	Y-GenXY	111Y	112XY	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia10bX	11	X-GenXY	111X	112XY	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia10bXY	11	XY-GenXY	111XY	112X	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia10bY	11	Y-GenXY	111Y	112P	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia11aX	11	X-GenXY	112X	113P	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia11aXY	11	XY-GenXY	112XY	113Y	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia11aY	11	Y-GenXY	112Y	113XY	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia11bX	11	X-GenXY	112X	113XY	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia11bXY	11	XY-GenXY	112XY	113X	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Dia11bY	11	Y-GenXY	112Y	113P	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
IntDia5X	33	X-Gen	105X	105Y	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
IntDia8X	34	X-Gen	108X	108Y	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
IntDia11X	33	X-Gen	111X	111Y	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
IntDia13X	32	X-Gen	113X	113Y	2	5	0.75	0.5	0.5	5/8	A-394	0	1	0	0	0	0	0	0	
Arm1aY	27	Y-Gen	105Y	Arm1aP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Arm1bY	27	Y-Gen	105XY	Arm1bP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Arm1cY	48	Y-Gen	106Y	Arm1aP	3	5	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Arm1dY	31	Y-Gen	106XY	Arm1bP	3	5	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Arm2aY	26	Y-Gen	108Y	Arm2aP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Arm2bY	26	Y-Gen	108XY	Arm2bP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Arm2cY	47	Y-Gen	109Y	Arm2aP	3	5	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Arm2dY	30	Y-Gen	109XY	Arm2bP	3	5	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Arm3aY	25	Y-Gen	111Y	Arm3aP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Arm3bY	25	Y-Gen	111XY	Arm3bP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Arm3cY	46	Y-Gen	112Y	Arm3aP	3	5	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Arm3dY	29	Y-Gen	112XY	Arm3bP	3	5	1	1	1	5/8	A-394	0	1	0	0	0	0	0	0	
Arm4aY	28	Y-Gen	112Y	Arm4aP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Arm4bY	28	Y-Gen	112XY	Arm4bP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Arm4cY	24	Y-Gen	113Y	Arm4aP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	
Arm4dY	24	Y-Gen	113XY	Arm4bP	3	5	1	0.5	0.5	5/8	A-394	0	2	0	0	0	0	0	0	

Member Capacities:

Member	Group	Design	Comp.	Design	Tension	L/r	Length		L/r	Connection	Connection	Net	Rupture	RTE End	RTE Edge	Override	Override	Override	Override	Warnings

Label	Label	Comp. Capacity (kips)	Control Criterion	Tension Capacity (kips)	Control Criterion			Comp. Capacity (kips)	Shear Capacity (kips)	Bearing Capacity (kips)	Section Tension Capacity (kips)	Tension Capacity (kips)	Dist. Tension Capacity (kips)	Dist. Tension Capacity (kips)	Comp. Capacity (kips)	Comp. Control Criterion	Tension Capacity (kips)	Tension or Errors Control Criterion
Legs1P	7	206.491	L/r	309.457	Net Sect	125	16.51	206.491	0.000	0.000	309.457	0.000	0.000	0.000	260.400	L/r	0.000	
Legs2aP	5	214.923	L/r	309.457	Net Sect	122	16.09	214.923	0.000	0.000	309.457	0.000	0.000	0.000	259.200	L/r	0.000	
Legs2bP	5	336.870	L/r	377.519	Net Sect	61	8.05	336.870	0.000	0.000	377.519	0.000	0.000	0.000	259.200	L/r	0.000	
Legs3aP	4	228.557	L/r	210.375	Net Sect	61	8.05	228.557	0.000	0.000	210.375	0.000	0.000	0.000	233.600	L/r	0.000	
Legs3bP	4	228.557	L/r	255.750	Net Sect	61	8.05	228.557	0.000	0.000	255.750	0.000	0.000	0.000	233.600	L/r	0.000	
Legs4aP	3	240.421	L/r	210.375	Net Sect	46	4.75	240.421	0.000	0.000	210.375	0.000	0.000	0.000	203.800	L/r	0.000	
Legs4bP	3	240.421	L/r	255.750	Net Sect	46	4.75	240.421	0.000	0.000	255.750	0.000	0.000	0.000	203.800	L/r	0.000	
Legs4cP	3	217.854	L/r	255.750	Net Sect	72	9.50	217.854	0.000	0.000	255.750	0.000	0.000	0.000	203.800	L/r	0.000	
Legs5aP	2	128.630	L/r	109.849	Net Sect	61	4.75	128.630	0.000	0.000	109.849	0.000	0.000	0.000	86.200	L/r	0.000	
Legs5bP	2	128.630	L/r	143.880	Net Sect	61	4.75	128.630	0.000	0.000	143.880	0.000	0.000	0.000	86.200	L/r	0.000	
Legs5cP	2	105.820	L/r	143.880	Net Sect	96	9.50	105.820	0.000	0.000	143.880	0.000	0.000	0.000	86.200	L/r	0.000	
Legs6aP	1	38.468	L/r	44.426	Net Sect	104	6.00	38.468	0.000	0.000	44.426	0.000	0.000	0.000	20.200	L/r	0.000	
Legs6bP	1	38.468	L/r	55.770	Net Sect	104	6.00	38.468	0.000	0.000	55.770	0.000	0.000	0.000	20.200	L/r	0.000	
Hor1aP	Hor1	12.053	L/r	41.227	Net Sect	238	11.00	12.053	0.000	0.000	41.227	0.000	0.000	0.000	0.000		0.000	
Hor1bP	Hor1	12.053	L/r	41.227	Net Sect	238	11.00	12.053	0.000	0.000	41.227	0.000	0.000	0.000	0.000		0.000	
Hor2aP	18	21.440	L/r	40.457	Net Sect	164	8.20	21.440	0.000	0.000	40.457	0.000	0.000	0.000	18.000	L/r	0.000	
Hor2bP	18	21.440	L/r	40.457	Net Sect	164	8.20	21.440	0.000	0.000	40.457	0.000	0.000	0.000	18.000	L/r	0.000	
Hor3aP	16	13.284	L/r	45.088	Net Sect	235	13.60	13.284	0.000	0.000	45.088	0.000	0.000	0.000	12.700	L/r	14.000	Net Sect
Hor3bP	16	13.284	L/r	45.088	Net Sect	235	13.60	13.284	0.000	0.000	45.088	0.000	0.000	0.000	12.700	L/r	14.000	Net Sect
Hor5P	27	58.431	L/r	83.610	Net Sect	109	8.00	58.431	0.000	0.000	83.610	0.000	0.000	0.000	60.000	L/r	60.000	Net Sect
Hor6P	45	0.635	L/r	25.992	Net Sect	1064	8.00	0.635	0.000	0.000	25.992	0.000	0.000	0.000	0.000		29.600	Net Sect
Hor8P	26	73.929	L/r	99.560	Net Sect	109	8.00	73.929	0.000	0.000	99.560	0.000	0.000	0.000	63.400	L/r	63.400	
Hor9P	44	0.682	L/r	28.368	Net Sect	1064	8.00	0.682	0.000	0.000	28.368	0.000	0.000	0.000	0.000		32.300	Net Sect
Hor11P	25	58.431	L/r	83.610	Net Sect	109	8.00	58.431	0.000	0.000	83.610	0.000	0.000	0.000	58.800	L/r	58.800	Net Sect
Hor12P	43	18.420	L/r	41.733	Net Sect	183	8.00	18.420	0.000	0.000	41.733	0.000	0.000	0.000	17.400	L/r	0.000	
Hor13P	24	51.301	L/r	78.858	Net Sect	124	8.00	51.301	0.000	0.000	78.858	0.000	0.000	0.000	46.000	L/r	46.000	Net Sect
Dia1aP	21	5.313	L/r	30.238	Net Sect	295	21.37	5.313	0.000	0.000	30.238	0.000	0.000	0.000	0.000		29.700	Net Sect
Dia1bP	21	5.313	L/r	30.238	Net Sect	295	21.37	5.313	0.000	0.000	30.238	0.000	0.000	0.000	0.000		29.700	Net Sect
Dia2aP	19	7.290	L/r	30.238	Net Sect	246	17.84	7.290	0.000	0.000	30.238	0.000	0.000	0.000	0.000		29.700	Net Sect
Dia2bP	19	7.290	L/r	30.238	Net Sect	246	17.84	7.290	0.000	0.000	30.238	0.000	0.000	0.000	0.000		29.700	Net Sect
Dia3aP	17	19.563	L/r	45.088	Net Sect	181	10.44	19.563	0.000	0.000	45.088	0.000	0.000	0.000	14.000	L/r	14.000	Net Sect
Dia3bP	17	19.563	L/r	45.088	Net Sect	181	10.44	19.563	0.000	0.000	45.088	0.000	0.000	0.000	14.000	L/r	14.000	Net Sect
Dia4aP	15	20.745	L/r	37.663	Net Sect	147	14.55	20.745	0.000	0.000	37.663	0.000	0.000	0.000	15.000	L/r	15.000	Net Sect
Dia4bP	15	20.745	L/r	37.663	Net Sect	147	14.55	20.745	0.000	0.000	37.663	0.000	0.000	0.000	15.000	L/r	15.000	Net Sect
Dia5aP	14	26.611	L/r	37.663	Net Sect	125	12.29	26.611	0.000	0.000	37.663	0.000	0.000	0.000	20.800	L/r	20.800	Net Sect
Dia5bP	14	26.611	L/r	37.663	Net Sect	125	12.29	26.611	0.000	0.000	37.663	0.000	0.000	0.000	20.800	L/r	20.800	Net Sect
Dia6aP	13	49.948	L/r	60.444	Net Sect	102	12.42	49.948	0.000	0.000	60.444	0.000	0.000	0.000	44.900	L/r	44.900	Net Sect
Dia6bP	13	49.948	L/r	60.444	Net Sect	102	12.42	49.948	0.000	0.000	60.444	0.000	0.000	0.000	44.900	L/r	44.900	Net Sect
Dia7aP	13	49.948	L/r	60.444	Net Sect	102	12.42	49.948	0.000	0.000	60.444	0.000	0.000	0.000	44.900	L/r	44.900	Net Sect
Dia7bP	13	49.948	L/r	60.444	Net Sect	102	12.42	49.948	0.000	0.000	60.444	0.000	0.000	0.000	44.900	L/r	44.900	Net Sect
Dia8aP	12	26.283	L/r	37.663	Net Sect	126	12.42	26.283	0.000	0.000	37.663	0.000	0.000	0.000	23.700	L/r	23.700	Net Sect
Dia8bP	12	26.283	L/r	37.663	Net Sect	126	12.42	26.283	0.000	0.000	37.663	0.000	0.000	0.000	23.700	L/r	23.700	Net Sect
Dia9aP	12	26.283	L/r	37.663	Net Sect	126	12.42	26.283	0.000	0.000	37.663	0.000	0.000	0.000	23.700	L/r	23.700	Net Sect
Dia9bP	12	26.283	L/r	37.663	Net Sect	126	12.42	26.283	0.000	0.000	37.663	0.000	0.000	0.000	23.700	L/r	23.700	Net Sect
Dia10aP	11	9.713	L/r	17.258	Net Sect	152	10.00	9.713	0.000	0.000	17.258	0.000	0.000	0.000	9.200	L/r	9.200	Net Sect
Dia10bP	11	9.713	L/r	17.258	Net Sect	152	10.00	9.713	0.000	0.000	17.258	0.000	0.000	0.000	9.200	L/r	9.200	Net Sect
Dia11aP	11	9.713	L/r	17.258	Net Sect	152	10.00	9.713	0.000	0.000	17.258	0.000	0.000	0.000	9.200	L/r	9.200	Net Sect
Dia11bP	11	9.713	L/r	17.258	Net Sect	152	10.00	9.713	0.000	0.000	17.258	0.000	0.000	0.000	9.200	L/r	9.200	Net Sect
IntDia5P	33	22.157	L/r	28.544	Net Sect	114	11.31	22.157	0.000	0.000	28.544	0.000	0.000	0.000	0.000		25.000	Net Sect
IntDia8P	34	23.269	L/r	33.802	Net Sect	129	11.31	23.269	0.000	0.000	33.802	0.000	0.000	0.000	0.000		31.400	Net Sect
IntDial1P	33	22.157	L/r	28.544	Net Sect	114	11.31	22.157	0.000	0.000	28.544	0.000	0.000	0.000	0.000		25.000	Net Sect
IntDial3P	32	14.573	L/r	22.961	Net Sect	137	11.31	14.573	0.000	0.000	22.961	0.000	0.000	0.000	0.000		21.200	Net Sect
Arm1aP	27	61.598	L/r	77.229	Net Sect	96	14.08	61.598	0.000	0.000	77.229	0.000	0.000	0.000	60.000	L/r	60.000	Net Sect
Arm1bP	27	60.557	L/r	77.229	Net Sect	100	14.72	60.557	0.000	0.000	77.229	0.000	0.000	0.000	60.000	L/r	60.000	Net Sect
Arm1cP	48	2.316	L/r	27.774	Net Sect	457	14.86	2.316	0.000	0.000	27.774	0.000	0.000	0.000	0.000		31.600	Net Sect
Arm1dP	31	2.149	L/r	27.774	Net Sect	476	15.47	2.149	0.000	0.000	27.774	0.000	0.000	0.000	12.200	L/r	31.600	Net Sect
Arm2aP	26	72.592	L/r	91.903	Net Sect	113	16.49	72.592	0.000	0.000	91.903	0.000	0.000	0.000	63.400	L/r	63.400	Net Sect
Arm2bP	26	70.795	L/r	91.903	Net Sect	117	17.14	70.795	0.000	0.000	91.903	0.000	0.000	0.000	63.400	L/r	63.400	Net Sect
Arm2cP	47	2.721	L/r	36.981	Net Sect	477	17.16	2.721	0.000	0.000	36.981	0.000	0.000	0.000	0.000		33.800	Net Sect
Arm2dP	30	2.546	L/r	36.981	Net Sect	494	17.79	2.546	0.000	0.000	36.981	0.000	0.000	0.000	0.000		33.800	Net Sect
Arm3aP	25	61.598	L/r	77.229	Net Sect	96	14.08	61.598	0.000	0.000	77.229	0.000	0.000	0.000	58.800	L/r	58.800	Net Sect
Arm3bP	25	60.557	L/r	77.229	Net Sect	100	14.72	60.557	0.000	0.000	77.229	0.000	0.000	0.000	58.800	L/r	58.800	Net Sect
Arm3cP	46	1.801	L/r	22.813	Net Sect	470	15.31	1.801	0.000	0.000	22.813	0.000	0.000	0.000	0.000		25.900	Net Sect
Arm3dP	29	1.678	L/r	22.813	Net Sect	488	15.90	1.678	0.000	0.000	22.813	0.000	0.000	0.000	0.000		25.900	Net Sect
Arm4aP	28	13.291	L/r	32.559	Net Sect	194	17.55	13.291	0.000	0.000	32.559	0.000	0.000	0.000	6.400	L/r	6.400	Net Sect
Arm4bP	28	12.546	L/r	32.559	Net Sect	200	18.16	12.546	0.000	0.000	32.559	0.000	0.000	0.000	6.400	L/r	6.400	Net Sect
Arm4cP	24	49.451	L/r	72.477	Net Sect	128	16.49	49.451	0.000	0.000	72.477	0.000	0.000	0.000	46.000	L/r	46.000	Net Sect
Arm4dP	24	47.410	L/r	72.477	Net Sect	133	17.14	47.410	0.000	0.000	72.477	0.000	0.000	0.000	46.000	L/r	46.000	Net Sect
Legs1X	7	206.491	L/r	309.457	Net Sect	125	16.51	206.491	0.000	0.000	309.457	0.000	0.000	0.000	260.400	L/r	0.000	
Legs1XY	7	206.491	L/r	309.457	Net Sect	125	16.51	206.491	0.000	0.000	309.457	0.000	0.000	0.000	260.400	L/r	0.000	
Legs1Y	7	206.491	L/r	309.457	Net Sect	125	16.51	206.491	0.000	0.000	309.457	0.000	0.000	0.000	260.400	L/r	0.000	
Legs2aX	5	214.923	L/r	309.457	Net Sect	122	16.09	214.923	0.000	0.000	309.457	0.000	0.000	0.000	259.200	L/r	0.000	
Legs2aXY	5	214.923	L/r	309.457	Net Sect	122	16.09	214.923	0.000	0.000	309.457	0.000	0.000	0.000	259.200	L/r	0.000	
Legs2aY	5	214.923	L/r	309.457	Net Sect	122	16.09	214.923	0.000	0.000	309.457	0.000	0.000	0.000	259.200	L/r	0.000	
Legs2bX	5	336.870	L/r	377.519	Net Sect	61	8.05	336.870	0.000	0.000	377.519	0.000	0.000	0.000	259.200	L/r	0.000	
Legs2bXY	5	336.870	L/r	377.519	Net Sect	61	8.05	336.870	0.000	0.000	377.519	0.000	0.000	0.000	259.200	L/r	0.000	

Legs2bY	5	336.870	L/r	377.519	Net Sect	61	8.05	336.870	0.000	0.000	377.519	0.000	0.000	0.000	259.200	L/r	0.000		
Legs3aX	4	228.557	L/r	210.375	Net Sect	61	8.05	228.557	0.000	0.000	210.375	0.000	0.000	0.000	233.600	L/r	0.000		
Legs3aXY	4	228.557	L/r	210.375	Net Sect	61	8.05	228.557	0.000	0.000	210.375	0.000	0.000	0.000	233.600	L/r	0.000		
Legs3aY	4	228.557	L/r	210.375	Net Sect	61	8.05	228.557	0.000	0.000	210.375	0.000	0.000	0.000	233.600	L/r	0.000		
Legs3bX	4	228.557	L/r	255.750	Net Sect	61	8.05	228.557	0.000	0.000	255.750	0.000	0.000	0.000	233.600	L/r	0.000		
Legs3bXY	4	228.557	L/r	255.750	Net Sect	61	8.05	228.557	0.000	0.000	255.750	0.000	0.000	0.000	233.600	L/r	0.000		
Legs3bY	4	228.557	L/r	255.750	Net Sect	61	8.05	228.557	0.000	0.000	255.750	0.000	0.000	0.000	233.600	L/r	0.000		
Legs4aX	3	240.421	L/r	210.375	Net Sect	46	4.75	240.421	0.000	0.000	210.375	0.000	0.000	0.000	203.800	L/r	0.000		
Legs4aXY	3	240.421	L/r	210.375	Net Sect	46	4.75	240.421	0.000	0.000	210.375	0.000	0.000	0.000	203.800	L/r	0.000		
Legs4aY	3	240.421	L/r	210.375	Net Sect	46	4.75	240.421	0.000	0.000	210.375	0.000	0.000	0.000	203.800	L/r	0.000		
Legs4bX	3	240.421	L/r	255.750	Net Sect	46	4.75	240.421	0.000	0.000	255.750	0.000	0.000	0.000	203.800	L/r	0.000		
Legs4bXY	3	240.421	L/r	255.750	Net Sect	46	4.75	240.421	0.000	0.000	255.750	0.000	0.000	0.000	203.800	L/r	0.000		
Legs4bY	3	240.421	L/r	255.750	Net Sect	46	4.75	240.421	0.000	0.000	255.750	0.000	0.000	0.000	203.800	L/r	0.000		
Legs4cX	3	217.854	L/r	255.750	Net Sect	72	9.50	217.854	0.000	0.000	255.750	0.000	0.000	0.000	203.800	L/r	0.000		
Legs4cXY	3	217.854	L/r	255.750	Net Sect	72	9.50	217.854	0.000	0.000	255.750	0.000	0.000	0.000	203.800	L/r	0.000		
Legs4cY	3	217.854	L/r	255.750	Net Sect	72	9.50	217.854	0.000	0.000	255.750	0.000	0.000	0.000	203.800	L/r	0.000		
Legs5aX	2	128.630	L/r	109.849	Net Sect	61	4.75	128.630	0.000	0.000	109.849	0.000	0.000	0.000	86.200	L/r	0.000		
Legs5aXY	2	128.630	L/r	109.849	Net Sect	61	4.75	128.630	0.000	0.000	109.849	0.000	0.000	0.000	86.200	L/r	0.000		
Legs5aY	2	128.630	L/r	109.849	Net Sect	61	4.75	128.630	0.000	0.000	109.849	0.000	0.000	0.000	86.200	L/r	0.000		
Legs5bX	2	128.630	L/r	143.880	Net Sect	61	4.75	128.630	0.000	0.000	143.880	0.000	0.000	0.000	86.200	L/r	0.000		
Legs5bXY	2	128.630	L/r	143.880	Net Sect	61	4.75	128.630	0.000	0.000	143.880	0.000	0.000	0.000	86.200	L/r	0.000		
Legs5bY	2	128.630	L/r	143.880	Net Sect	61	4.75	128.630	0.000	0.000	143.880	0.000	0.000	0.000	86.200	L/r	0.000		
Legs5cX	2	105.820	L/r	143.880	Net Sect	96	9.50	105.820	0.000	0.000	143.880	0.000	0.000	0.000	86.200	L/r	0.000		
Legs5cXY	2	105.820	L/r	143.880	Net Sect	96	9.50	105.820	0.000	0.000	143.880	0.000	0.000	0.000	86.200	L/r	0.000		
Legs5cY	2	105.820	L/r	143.880	Net Sect	96	9.50	105.820	0.000	0.000	143.880	0.000	0.000	0.000	86.200	L/r	0.000		
Legs6aX	1	38.468	L/r	44.426	Net Sect	104	6.00	38.468	0.000	0.000	44.426	0.000	0.000	0.000	20.200	L/r	0.000		
Legs6aXY	1	38.468	L/r	44.426	Net Sect	104	6.00	38.468	0.000	0.000	44.426	0.000	0.000	0.000	20.200	L/r	0.000		
Legs6aY	1	38.468	L/r	44.426	Net Sect	104	6.00	38.468	0.000	0.000	44.426	0.000	0.000	0.000	20.200	L/r	0.000		
Legs6bX	1	38.468	L/r	55.770	Net Sect	104	6.00	38.468	0.000	0.000	55.770	0.000	0.000	0.000	20.200	L/r	0.000		
Legs6bXY	1	38.468	L/r	55.770	Net Sect	104	6.00	38.468	0.000	0.000	55.770	0.000	0.000	0.000	20.200	L/r	0.000		
Legs6bY	1	38.468	L/r	55.770	Net Sect	104	6.00	38.468	0.000	0.000	55.770	0.000	0.000	0.000	20.200	L/r	0.000		
Hor1aX	Hor1	12.053	L/r	41.227	Net Sect	238	11.00	12.053	0.000	0.000	41.227	0.000	0.000	0.000	0.000		0.000		
Hor1aXY	Hor1	12.053	L/r	41.227	Net Sect	238	11.00	12.053	0.000	0.000	41.227	0.000	0.000	0.000	0.000		0.000		
Hor1aY	Hor1	12.053	L/r	41.227	Net Sect	238	11.00	12.053	0.000	0.000	41.227	0.000	0.000	0.000	0.000		0.000		
Hor1bX	Hor1	12.053	L/r	41.227	Net Sect	238	11.00	12.053	0.000	0.000	41.227	0.000	0.000	0.000	0.000		0.000		
Hor1bXY	Hor1	12.053	L/r	41.227	Net Sect	238	11.00	12.053	0.000	0.000	41.227	0.000	0.000	0.000	0.000		0.000		
Hor1bY	Hor1	12.053	L/r	41.227	Net Sect	238	11.00	12.053	0.000	0.000	41.227	0.000	0.000	0.000	0.000		0.000		
Hor2aX	18	21.440	L/r	40.457	Net Sect	164	8.20	21.440	0.000	0.000	40.457	0.000	0.000	0.000	18.000	L/r	0.000		
Hor2aXY	18	21.440	L/r	40.457	Net Sect	164	8.20	21.440	0.000	0.000	40.457	0.000	0.000	0.000	18.000	L/r	0.000		
Hor2aY	18	21.440	L/r	40.457	Net Sect	164	8.20	21.440	0.000	0.000	40.457	0.000	0.000	0.000	18.000	L/r	0.000		
Hor2bX	18	21.440	L/r	40.457	Net Sect	164	8.20	21.440	0.000	0.000	40.457	0.000	0.000	0.000	18.000	L/r	0.000		
Hor2bXY	18	21.440	L/r	40.457	Net Sect	164	8.20	21.440	0.000	0.000	40.457	0.000	0.000	0.000	18.000	L/r	0.000		
Hor2bY	18	21.440	L/r	40.457	Net Sect	164	8.20	21.440	0.000	0.000	40.457	0.000	0.000	0.000	18.000	L/r	0.000		
Hor3aY	16	13.284	L/r	45.088	Net Sect	235	13.60	13.284	0.000	0.000	45.088	0.000	0.000	0.000	12.700	L/r	14.000	Net Sect	
Hor3bX	16	13.284	L/r	45.088	Net Sect	235	13.60	13.284	0.000	0.000	45.088	0.000	0.000	0.000	12.700	L/r	14.000	Net Sect	
Hor5Y	27	58.431	L/r	83.610	Net Sect	109	8.00	58.431	0.000	0.000	83.610	0.000	0.000	0.000	60.000	L/r	60.000	Net Sect	
Hor6Y	45	0.635	L/r	25.992	Net Sect	1064	8.00	0.635	0.000	0.000	25.992	0.000	0.000	0.000	0.000		29.600	Net Sect	
Hor8Y	26	73.929	L/r	99.560	Net Sect	109	8.00	73.929	0.000	0.000	99.560	0.000	0.000	0.000	63.400	L/r	63.400		
Hor9Y	44	0.682	L/r	28.368	Net Sect	1064	8.00	0.682	0.000	0.000	28.368	0.000	0.000	0.000	0.000		32.300	Net Sect	
Hor11Y	25	58.431	L/r	83.610	Net Sect	109	8.00	58.431	0.000	0.000	83.610	0.000	0.000	0.000	58.800	L/r	58.800	Net Sect	
Hor12Y	43	18.420	L/r	41.733	Net Sect	183	8.00	18.420	0.000	0.000	41.733	0.000	0.000	0.000	17.400	L/r	0.000		
Hor13Y	24	51.301	L/r	78.858	Net Sect	124	8.00	51.301	0.000	0.000	78.858	0.000	0.000	0.000	46.000	L/r	46.000	Net Sect	
Dia1aX	21	5.313	L/r	30.238	Net Sect	295	21.37	5.313	0.000	0.000	30.238	0.000	0.000	0.000	0.000		29.700	Net Sect	
Dia1aXY	21	5.313	L/r	30.238	Net Sect	295	21.37	5.313	0.000	0.000	30.238	0.000	0.000	0.000	0.000		29.700	Net Sect	
Dia1aY	21	5.313	L/r	30.238	Net Sect	295	21.37	5.313	0.000	0.000	30.238	0.000	0.000	0.000	0.000		29.700	Net Sect	
Dia1bX	21	5.313	L/r	30.238	Net Sect	295	21.37	5.313	0.000	0.000	30.238	0.000	0.000	0.000	0.000		29.700	Net Sect	
Dia1bXY	21	5.313	L/r	30.238	Net Sect	295	21.37	5.313	0.000	0.000	30.238	0.000	0.000	0.000	0.000		29.700	Net Sect	
Dia1bY	21	5.313	L/r	30.238	Net Sect	295	21.37	5.313	0.000	0.000	30.238	0.000	0.000	0.000	0.000		29.700	Net Sect	
Dia2aX	19	7.290	L/r	30.238	Net Sect	246	17.84	7.290	0.000	0.000	30.238	0.000	0.000	0.000	0.000		29.700	Net Sect	
Dia2aXY	19	7.290	L/r	30.238	Net Sect	246	17.84	7.290	0.000	0.000	30.238	0.000	0.000	0.000	0.000		29.700	Net Sect	
Dia2aY	19	7.290	L/r	30.238	Net Sect	246	17.84	7.290	0.000	0.000	30.238	0.000	0.000	0.000	0.000		29.700	Net Sect	
Dia2bX	19	7.290	L/r	30.238	Net Sect	246	17.84	7.290	0.000	0.000	30.238	0.000	0.000	0.000	0.000		29.700	Net Sect	
Dia2bXY	19	7.290	L/r	30.238	Net Sect	246	17.84	7.290	0.000	0.000	30.238	0.000	0.000	0.000	0.000		29.700	Net Sect	
Dia2bY	19	7.290	L/r	30.238	Net Sect	246	17.84	7.290	0.000	0.000	30.238	0.000	0.000	0.000	0.000		29.700	Net Sect	
Dia3aX	17	19.563	L/r	45.088	Net Sect	181	10.44	19.563	0.000	0.000	45.088	0.000	0.000	0.000	14.000	L/r	14.000	Net Sect	
Dia3aXY	17	19.563	L/r	45.088	Net Sect	181	10.44	19.563	0.000	0.000	45.088	0.000	0.000	0.000	14.000	L/r	14.000	Net Sect	
Dia3aY	17	19.563	L/r	45.088	Net Sect	181	10.44	19.563	0.000	0.000	45.088	0.000	0.000	0.000	14.000	L/r	14.000	Net Sect	
Dia3bX	17	19.563	L/r	45.088	Net Sect	181	10.44	19.563	0.000	0.000	45.088	0.000	0.000	0.000	14.000	L/r	14.000	Net Sect	
Dia3bXY	17	19.563	L/r	45.088	Net Sect	181	10.44	19.563	0.000	0.000	45.088	0.000	0.000	0.000	14.000	L/r	14.000	Net Sect	
Dia3bY	17	19.563	L/r	45.088	Net Sect	181	10.44	19.563	0.000	0.000	45.088	0.000	0.000	0.000	14.000	L/r	14.000	Net Sect	
Dia4aX	15	20.745	L/r	37.663	Net Sect	147	14.55	20.745	0.000	0.000	37.663	0.000	0.000	0.000	15.000	L/r	15.000	Net Sect	
Dia4aXY	15	20.745	L/r	37.663	Net Sect	147	14.55	20.745	0.000	0.000	37.663	0.000	0.000	0.000	15.000	L/r	15.000	Net Sect	
Dia4aY	15	20.745	L/r	37.663	Net Sect	147	14.55	20.745	0.000	0.000	37.663	0.000	0.000	0.000	15.000	L/r	15.000	Net Sect	
Dia4bX	15	20.745	L/r	37.663	Net Sect	147	14.55	20.745	0.000	0.000	37.663	0.000	0.000	0.000	15.000	L/r	15.000	Net Sect	
Dia4bXY	15	20.745	L/r	37.663	Net Sect	147	14.55	20.745	0.000	0.000	37.663	0.000	0.000	0.000	15.000	L/r	15.000	Net Sect	
Dia4bY	15	20.745	L/r	37.663	Net Sect	147	14.55	20.745	0.000	0.000	37.663	0.000	0.000	0.000	15.000	L/r	15.000	Net Sect	
Dia5aX	14	26.611	L/r	37.663	Net Sect	125	12.29	26.611	0.000	0.000	37.663	0.000	0.000	0.000	20.800	L/r	20.800	Net Sect	
Dia5aXY	14	26.611	L/r	37.663	Net Sect	125	12.29	26.611	0.000	0.000	37.663	0.000	0.000	0.000	20.800	L/r	20.800	Net Sect	
Dia5aY	14	26.611	L/r	37.663	Net Sect	125	12.29	26.611	0.000	0.000	37.663	0.000	0.000	0.000	20.800	L/r	20.800	Net Sect	
Dia5bX	14	26.611	L/r	37.663	Net Sect	125	12.29	26.611	0.000	0.000	37.663	0.000	0.000	0.000	20.800	L/r	20.800	Net Sect	
Dia5bXY	14	26.611	L/r	37.663	Net Sect	125	12.29	26.611	0.000	0.000	37.663	0.000	0.000	0.000	20.800	L/r	20.800	Net Sect	

Dia5bY	14	26.611	L/r	37.663	Net Sect	125	12.29	26.611	0.000	0.000	37.663	0.000	0.000	0.000	20.800	L/r	20.800	Net Sect
Dia6aX	13	49.948	L/r	60.444	Net Sect	102	12.42	49.948	0.000	0.000	60.444	0.000	0.000	0.000	44.900	L/r	44.900	Net Sect
Dia6aXY	13	49.948	L/r	60.444	Net Sect	102	12.42	49.948	0.000	0.000	60.444	0.000	0.000	0.000	44.900	L/r	44.900	Net Sect
Dia6aY	13	49.948	L/r	60.444	Net Sect	102	12.42	49.948	0.000	0.000	60.444	0.000	0.000	0.000	44.900	L/r	44.900	Net Sect
Dia6bX	13	49.948	L/r	60.444	Net Sect	102	12.42	49.948	0.000	0.000	60.444	0.000	0.000	0.000	44.900	L/r	44.900	Net Sect
Dia6bXY	13	49.948	L/r	60.444	Net Sect	102	12.42	49.948	0.000	0.000	60.444	0.000	0.000	0.000	44.900	L/r	44.900	Net Sect
Dia6bY	13	49.948	L/r	60.444	Net Sect	102	12.42	49.948	0.000	0.000	60.444	0.000	0.000	0.000	44.900	L/r	44.900	Net Sect
Dia7aX	13	49.948	L/r	60.444	Net Sect	102	12.42	49.948	0.000	0.000	60.444	0.000	0.000	0.000	44.900	L/r	44.900	Net Sect
Dia7aXY	13	49.948	L/r	60.444	Net Sect	102	12.42	49.948	0.000	0.000	60.444	0.000	0.000	0.000	44.900	L/r	44.900	Net Sect
Dia7aY	13	49.948	L/r	60.444	Net Sect	102	12.42	49.948	0.000	0.000	60.444	0.000	0.000	0.000	44.900	L/r	44.900	Net Sect
Dia7bX	13	49.948	L/r	60.444	Net Sect	102	12.42	49.948	0.000	0.000	60.444	0.000	0.000	0.000	44.900	L/r	44.900	Net Sect
Dia7bXY	13	49.948	L/r	60.444	Net Sect	102	12.42	49.948	0.000	0.000	60.444	0.000	0.000	0.000	44.900	L/r	44.900	Net Sect
Dia7bY	13	49.948	L/r	60.444	Net Sect	102	12.42	49.948	0.000	0.000	60.444	0.000	0.000	0.000	44.900	L/r	44.900	Net Sect
Dia8aX	12	26.283	L/r	37.663	Net Sect	126	12.42	26.283	0.000	0.000	37.663	0.000	0.000	0.000	23.700	L/r	23.700	Net Sect
Dia8aXY	12	26.283	L/r	37.663	Net Sect	126	12.42	26.283	0.000	0.000	37.663	0.000	0.000	0.000	23.700	L/r	23.700	Net Sect
Dia8aY	12	26.283	L/r	37.663	Net Sect	126	12.42	26.283	0.000	0.000	37.663	0.000	0.000	0.000	23.700	L/r	23.700	Net Sect
Dia8bX	12	26.283	L/r	37.663	Net Sect	126	12.42	26.283	0.000	0.000	37.663	0.000	0.000	0.000	23.700	L/r	23.700	Net Sect
Dia8bXY	12	26.283	L/r	37.663	Net Sect	126	12.42	26.283	0.000	0.000	37.663	0.000	0.000	0.000	23.700	L/r	23.700	Net Sect
Dia8bY	12	26.283	L/r	37.663	Net Sect	126	12.42	26.283	0.000	0.000	37.663	0.000	0.000	0.000	23.700	L/r	23.700	Net Sect
Dia9aX	12	26.283	L/r	37.663	Net Sect	126	12.42	26.283	0.000	0.000	37.663	0.000	0.000	0.000	23.700	L/r	23.700	Net Sect
Dia9aXY	12	26.283	L/r	37.663	Net Sect	126	12.42	26.283	0.000	0.000	37.663	0.000	0.000	0.000	23.700	L/r	23.700	Net Sect
Dia9aY	12	26.283	L/r	37.663	Net Sect	126	12.42	26.283	0.000	0.000	37.663	0.000	0.000	0.000	23.700	L/r	23.700	Net Sect
Dia9bX	12	26.283	L/r	37.663	Net Sect	126	12.42	26.283	0.000	0.000	37.663	0.000	0.000	0.000	23.700	L/r	23.700	Net Sect
Dia9bXY	12	26.283	L/r	37.663	Net Sect	126	12.42	26.283	0.000	0.000	37.663	0.000	0.000	0.000	23.700	L/r	23.700	Net Sect
Dia9bY	12	26.283	L/r	37.663	Net Sect	126	12.42	26.283	0.000	0.000	37.663	0.000	0.000	0.000	23.700	L/r	23.700	Net Sect
Dia10aX	11	9.713	L/r	17.258	Net Sect	152	10.00	9.713	0.000	0.000	17.258	0.000	0.000	0.000	9.200	L/r	9.200	Net Sect
Dia10aXY	11	9.713	L/r	17.258	Net Sect	152	10.00	9.713	0.000	0.000	17.258	0.000	0.000	0.000	9.200	L/r	9.200	Net Sect
Dia10aY	11	9.713	L/r	17.258	Net Sect	152	10.00	9.713	0.000	0.000	17.258	0.000	0.000	0.000	9.200	L/r	9.200	Net Sect
Dia10bX	11	9.713	L/r	17.258	Net Sect	152	10.00	9.713	0.000	0.000	17.258	0.000	0.000	0.000	9.200	L/r	9.200	Net Sect
Dia10bXY	11	9.713	L/r	17.258	Net Sect	152	10.00	9.713	0.000	0.000	17.258	0.000	0.000	0.000	9.200	L/r	9.200	Net Sect
Dia10bY	11	9.713	L/r	17.258	Net Sect	152	10.00	9.713	0.000	0.000	17.258	0.000	0.000	0.000	9.200	L/r	9.200	Net Sect
Dia11aX	11	9.713	L/r	17.258	Net Sect	152	10.00	9.713	0.000	0.000	17.258	0.000	0.000	0.000	9.200	L/r	9.200	Net Sect
Dia11aXY	11	9.713	L/r	17.258	Net Sect	152	10.00	9.713	0.000	0.000	17.258	0.000	0.000	0.000	9.200	L/r	9.200	Net Sect
Dia11aY	11	9.713	L/r	17.258	Net Sect	152	10.00	9.713	0.000	0.000	17.258	0.000	0.000	0.000	9.200	L/r	9.200	Net Sect
Dia11bX	11	9.713	L/r	17.258	Net Sect	152	10.00	9.713	0.000	0.000	17.258	0.000	0.000	0.000	9.200	L/r	9.200	Net Sect
Dia11bXY	11	9.713	L/r	17.258	Net Sect	152	10.00	9.713	0.000	0.000	17.258	0.000	0.000	0.000	9.200	L/r	9.200	Net Sect
Dia11bY	11	9.713	L/r	17.258	Net Sect	152	10.00	9.713	0.000	0.000	17.258	0.000	0.000	0.000	9.200	L/r	9.200	Net Sect
IntDia5X	33	22.157	L/r	28.544	Net Sect	114	11.31	22.157	0.000	0.000	28.544	0.000	0.000	0.000	0.000		25.000	Net Sect
IntDia8X	34	23.269	L/r	33.802	Net Sect	129	11.31	23.269	0.000	0.000	33.802	0.000	0.000	0.000	0.000		31.400	Net Sect
IntDia11X	33	22.157	L/r	28.544	Net Sect	114	11.31	22.157	0.000	0.000	28.544	0.000	0.000	0.000	0.000		25.000	Net Sect
IntDia13X	32	14.573	L/r	22.961	Net Sect	137	11.31	14.573	0.000	0.000	22.961	0.000	0.000	0.000	0.000		21.200	Net Sect
Arm1aY	27	61.598	L/r	77.229	Net Sect	96	14.08	61.598	0.000	0.000	77.229	0.000	0.000	0.000	60.000	L/r	60.000	Net Sect
Arm1bY	27	60.557	L/r	77.229	Net Sect	100	14.72	60.557	0.000	0.000	77.229	0.000	0.000	0.000	60.000	L/r	60.000	Net Sect
Arm1cY	48	2.316	L/r	27.774	Net Sect	457	14.86	2.316	0.000	0.000	27.774	0.000	0.000	0.000	0.000		31.600	Net Sect
Arm1dY	31	2.149	L/r	27.774	Net Sect	476	15.47	2.149	0.000	0.000	27.774	0.000	0.000	0.000	12.200	L/r	31.600	Net Sect
Arm2aY	26	72.592	L/r	91.903	Net Sect	113	16.49	72.592	0.000	0.000	91.903	0.000	0.000	0.000	63.400	L/r	63.400	Net Sect
Arm2bY	26	70.795	L/r	91.903	Net Sect	117	17.14	70.795	0.000	0.000	91.903	0.000	0.000	0.000	63.400	L/r	63.400	Net Sect
Arm2cY	47	2.721	L/r	36.981	Net Sect	477	17.16	2.721	0.000	0.000	36.981	0.000	0.000	0.000	0.000		33.800	Net Sect
Arm2dY	30	2.546	L/r	36.981	Net Sect	494	17.79	2.546	0.000	0.000	36.981	0.000	0.000	0.000	0.000		33.800	Net Sect
Arm3aY	25	61.598	L/r	77.229	Net Sect	96	14.08	61.598	0.000	0.000	77.229	0.000	0.000	0.000	58.800	L/r	58.800	Net Sect
Arm3bY	25	60.557	L/r	77.229	Net Sect	100	14.72	60.557	0.000	0.000	77.229	0.000	0.000	0.000	58.800	L/r	58.800	Net Sect
Arm3cY	46	1.801	L/r	22.813	Net Sect	470	15.31	1.801	0.000	0.000	22.813	0.000	0.000	0.000	0.000		25.900	Net Sect
Arm3dY	29	1.678	L/r	22.813	Net Sect	488	15.90	1.678	0.000	0.000	22.813	0.000	0.000	0.000	0.000		25.900	Net Sect
Arm4aY	28	13.291	L/r	32.559	Net Sect	194	17.55	13.291	0.000	0.000	32.559	0.000	0.000	0.000	6.400	L/r	6.400	Net Sect
Arm4bY	28	12.546	L/r	32.559	Net Sect	200	18.16	12.546	0.000	0.000	32.559	0.000	0.000	0.000	6.400	L/r	6.400	Net Sect
Arm4cY	24	49.451	L/r	72.477	Net Sect	128	16.49	49.451	0.000	0.000	72.477	0.000	0.000	0.000	46.000	L/r	46.000	Net Sect
Arm4dY	24	47.410	L/r	72.477	Net Sect	133	17.14	47.410	0.000	0.000	72.477	0.000	0.000	0.000	46.000	L/r	46.000	Net Sect

Sum of Dead Load and Drag Areas From Equipment, Input and Calculated:

Joint Label	Dead Load (kips)	X-Drag Area (ft^2)	Y-Drag Area (ft^2)
100P	0.45	0.000	0.000
101P	0.763	0.000	0.000
101aP	0.242	0.000	0.000
101bP	0.242	0.000	0.000
102P	0.647	0.000	0.000
102aP	0.116	0.000	0.000
102bP	0.116	0.000	0.000
103P	0.521	0.000	0.000
104P	0.378	0.000	0.000
105P	0.505	0.000	0.000
106P	0.186	0.000	0.000
107P	0.417	0.000	0.000
108P	0.543	0.000	0.000
109P	0.143	0.000	0.000
110P	0.251	0.000	0.000
111P	0.339	0.000	0.000
112P	0.191	0.000	0.000

113P	0.197	0.000	0.000
Arm1aP	0.224	5.024	0.000
Arm1bP	0.234	5.267	3.338
Arm2aP	0.318	6.695	0.000
Arm2bP	0.33	6.968	3.908
Arm3aP	0.213	5.067	0.000
Arm3bP	0.223	5.307	3.522
Arm4aP	0.272	7.141	0.000
Arm4bP	0.283	7.426	4.514
100X	0.45	0.000	8.872
100XY	0.45	8.872	8.872
100Y	0.45	8.872	0.000
101X	0.763	0.000	13.536
101XY	0.763	13.536	13.536
101Y	0.763	13.536	0.000
101aX	0.242	0.000	14.199
101bY	0.242	14.199	0.000
102X	0.647	0.000	12.080
102XY	0.647	12.080	12.080
102Y	0.647	12.080	0.000
102aX	0.116	0.000	5.199
102bY	0.116	5.199	0.000
103X	0.521	0.000	11.644
103XY	0.521	11.644	11.644
103Y	0.521	11.644	0.000
104X	0.378	0.000	9.482
104XY	0.378	9.482	9.482
104Y	0.378	9.482	0.000
105X	0.509	0.000	9.704
105XY	0.509	14.701	9.704
105Y	0.505	14.516	0.000
106X	0.188	0.000	4.053
106XY	0.188	6.137	4.053
106Y	0.186	6.079	0.000
107X	0.417	0.000	9.779
107XY	0.417	9.779	9.779
107Y	0.417	9.779	0.000
108X	0.547	0.000	9.874
108XY	0.547	15.559	9.874
108Y	0.543	15.374	0.000
109X	0.144	0.000	3.466
109XY	0.144	6.371	3.466
109Y	0.143	6.282	0.000
110X	0.251	0.000	7.334
110XY	0.251	7.334	7.334
110Y	0.251	7.334	0.000
111X	0.343	0.000	7.299
111XY	0.343	12.296	7.299
111Y	0.339	12.112	0.000
112X	0.193	0.000	5.576
112XY	0.193	9.111	5.576
112Y	0.191	8.954	0.000
113X	0.201	0.000	2.979
113XY	0.201	8.663	2.979
113Y	0.197	8.479	0.000
Total	25.7	358.381	266.038

Unadjusted Dead Load and Drag Areas by Section:

Section Label	Unfactored Dead Load (kips)	X-Drag Area All (ft^2)	Y-Drag Area All (ft^2)	X-Drag Area Face (ft^2)	Y-Drag Area Face (ft^2)
1	3.269	80.778	80.778	32.261	32.261
2	5.662	137.855	137.855	56.380	56.380
3	3.067	92.742	92.742	38.447	38.447
4	4.676	163.208	125.259	66.937	47.963
5	3.646	148.521	100.049	62.761	38.525
6	3.035	153.363	71.887	69.015	28.277
Total	23.356	776.468	608.571	325.801	241.852

Angle Member Weights and Surface Areas by Section:

Section Label	Unfactored Weight (kips)	Factored Weight (kips)	Unfactored Surface Area (ft^2)	Factored Surface Area (ft^2)
1	3.269	3.596	318.529	350.382
2	5.662	6.229	618.476	680.323
3	3.067	3.374	449.884	494.873
4	4.676	5.144	646.976	711.674

5	3.646	4.010	579.330	637.263
6	3.035	3.339	586.374	645.012
Total	23.356	25.691	3199.569	3519.526

*** Insulator Data

Clamp Properties:

Label	Stock Number	Holding Capacity (lbs)
Misc	1e+005	

Clamp Insulator Connectivity:

Clamp Label	Structure And Tip Attach	Property Set
Arm4aP	Arm4aP	Misc
Arm4bP	Arm4bP	Misc
Arm3aP	Arm3aP	Misc
Arm3bP	Arm3bP	Misc
Arm2aP	Arm2aP	Misc
Arm2bP	Arm2bP	Misc
Arm1aP	Arm1aP	Misc
Arm1bP	Arm1bP	Misc
100P	100P	Misc
101P	101P	Misc
102P	102P	Misc
103P	103P	Misc
104P	104P	Misc
105P	105P	Misc
105X	105X	Misc
105XY	105XY	Misc
105Y	105Y	Misc
106P	106P	Misc
107P	107P	Misc
108P	108P	Misc
109P	109P	Misc
110P	110P	Misc
111P	111P	Misc
112P	112P	Misc
112X	112X	Misc
112XY	112XY	Misc
112Y	112Y	Misc

*** Loads Data

Loads from file: g:\2356-t-mobile\2356-09215a\2356-09215a-analysis\twrloads(proposed).lca

Vector Load Cases:

Load Case Description	Dead Load Factor	SF for Steel Poles, Arms, and Towers	SF for Wood Poles	SF for Conc. Ult.	SF for Conc. First Crack	SF for Conc. Zero Tens.	SF for Guys	SF for Non-Steel Arms	SF for Braces	SF for Insuls.	SF For Found.	Trans. Wind Pressure (psf)	Longit. Wind Pressure (psf)	Point Loads	Wind Model	EDF Load Type	Joint Displ.
ConEdStd(int)	1.2700	1.00000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	1.0000	1.0000	49.53	0	22 loads	Standard	Hyp 1	
ConEdEmerIce(int)	1.0000	1.00000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	1.0000	1.0000	30	0	22 loads	Standard	Hyp 1	
ConEdHurr(int)	1.0000	1.00000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	1.0000	1.0000	75	0	22 loads	Standard	Hyp 1	

Point Loads for Load Case "ConEdStd(int)":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)
Arm1aP	12615	9538	0
Arm1bP	12615	9538	0
Arm2aP	12615	9538	0
Arm2bP	12615	9538	0
Arm3aP	12615	9538	0
Arm3bP	12615	9538	0
Arm4aP	1894	2517	0
Arm4bP	1894	2517	0
105P	535	720	0
105X	535	720	0

105Y	535	720	0
105XY	535	720	0
112P	32	151	0
112X	32	151	0
112XY	32	151	0
112Y	32	151	0
100P	100	215	0
101P	246	528	0
103P	244	523	0
105P	216	464	0
108P	237	510	0
111P	156	335	0

Point Loads for Load Case "ConEdEmerIce(int)":

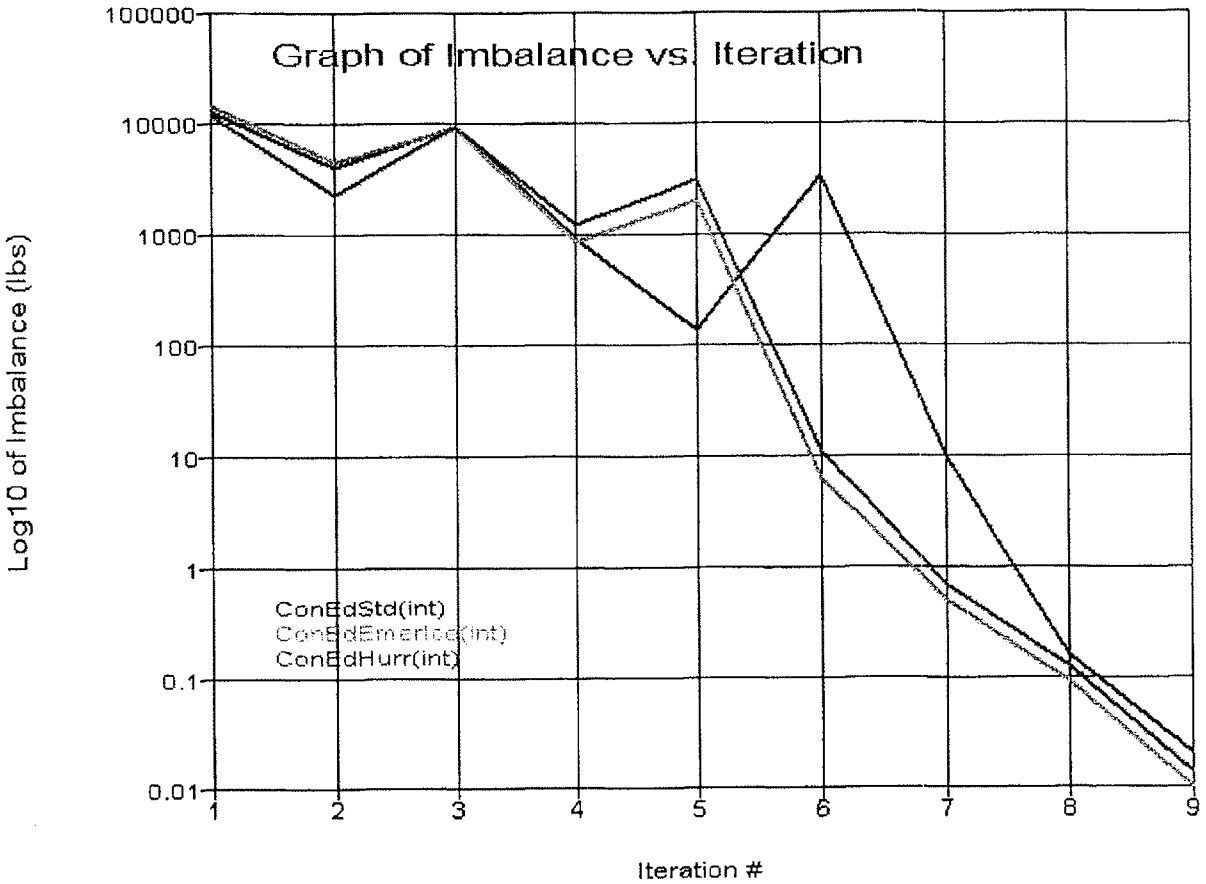
Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)
Arm1aP	14511	9088	0
Arm1bP	14511	9088	0
Arm2aP	14511	9088	0
Arm2bP	14511	9088	0
Arm3aP	14511	9088	0
Arm3bP	14511	9088	0
Arm4aP	2827	2620	0
Arm4bP	2827	2620	0
105P	845	726	0
105X	845	726	0
105Y	845	726	0
105XY	845	726	0
112P	26	93	0
112X	26	93	0
112XY	26	93	0
112Y	26	93	0
100P	79	132	0
101P	194	325	0
103P	192	322	0
105P	170	285	0
108P	187	314	0
111P	123	206	0

Point Loads for Load Case "ConEdHurr(int)":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)
Arm1aP	6408	11434	0
Arm1bP	6408	11434	0
Arm2aP	6408	11434	0
Arm2bP	6408	11434	0
Arm3aP	6408	11434	0
Arm3bP	6408	11434	0
Arm4aP	606	1808	0
Arm4bP	606	1808	0
105P	111	720	0
105X	111	720	0
105Y	111	720	0
105XY	111	720	0
112P	26	233	0
112X	26	233	0
112XY	26	233	0
112Y	26	233	0
100P	79	330	0
101P	194	813	0
103P	192	804	0
105P	170	714	0
108P	187	784	0
111P	123	516	0

*** Analysis Results:

Maximum element utilization is 80.91% for Angle "Arm2dY" in load case "ConEdEmerIce(int)"
Maximum insulator utilization is 17.46% for Clamp "Arm2bP" in load case "ConEdEmerIce(int)"



Angle Forces For All Load Cases:
Positive for tension - negative for compression

Group Label	Angle Label	Max. Tens. For All LC (kips)	Max. Comp. For All LC (kips)	LC 1 (kips)	LC 2 (kips)	LC 3 (kips)
7	Legs1P	0.000	-148.026	-138.817	-130.155	-148.026
5	Legs2aP	0.000	-147.017	-137.544	-129.155	-147.017
5	Legs2bP	0.000	-137.882	-130.729	-124.345	-137.882
4	Legs3aP	0.000	-136.832	-130.354	-124.964	-136.832
4	Legs3bP	0.000	-117.225	-112.909	-109.085	-117.225
3	Legs4aP	0.000	-97.017	-94.189	-91.343	-97.017
3	Legs4bP	0.000	-93.601	-87.587	-83.857	-93.601
3	Legs4cP	0.000	-68.503	-68.503	-66.693	-68.368
2	Legs5aP	0.000	-40.209	-40.209	-40.003	-37.272
2	Legs5bP	0.000	-33.825	-33.562	-32.478	-33.825
2	Legs5cP	0.000	-20.009	-19.712	-20.009	-16.568
1	Legs6aP	0.000	-10.693	-9.705	-10.693	-5.898
1	Legs6bP	0.107	-0.369	-0.081	0.107	-0.369
Hor1	Hor1aP	0.000	-0.083	-0.083	-0.036	-0.026
Hor1	Hor1bP	0.595	0.000	0.271	0.131	0.595
18	Hor2aP	0.000	-0.959	-0.933	-0.796	-0.959
18	Hor2bP	0.000	-5.822	-4.181	-3.001	-5.822

16	Hor3aP	0.000	-0.473	-0.473	-0.473	-0.303
16	Hor3bP	0.000	-3.560	-3.309	-3.116	-3.560
27	Hor5P	0.000	-20.923	-18.340	-20.923	-9.354
45	Hor6P	19.717	0.000	17.239	19.717	8.766
26	Hor8P	0.000	-27.312	-23.869	-27.312	-12.010
44	Hor9P	24.203	0.000	21.195	24.203	10.802
25	Hor11P	0.000	-22.170	-19.519	-22.170	-9.982
43	Hor12P	11.941	0.000	10.968	11.941	5.854
24	Hor13P	0.759	-0.687	-0.219	0.759	-0.687
21	Dia1aP	0.000	0.000	0.000	0.000	0.000
21	Dia1bP	0.015	-0.131	-0.131	0.015	0.000
19	Dia2aP	9.227	0.000	6.394	4.463	9.227
19	Dia2bP	0.048	-0.041	0.048	-0.041	-0.022
17	Dia3aP	3.674	0.000	2.605	1.933	3.674
17	Dia3bP	0.395	0.000	0.395	0.243	0.316
15	Dia4aP	0.000	-2.546	-1.333	-0.739	-2.546
15	Dia4bP	6.928	0.000	5.963	5.686	6.928
14	Dia5aP	0.000	-5.309	-5.309	-5.108	-5.193
14	Dia5bP	0.000	-14.721	-12.204	-10.885	-14.721
13	Dia6aP	0.000	-22.822	-18.761	-17.097	-22.822
13	Dia6bP	0.000	-9.239	-9.036	-9.239	-8.119
13	Dia7aP	0.000	-22.669	-19.039	-17.594	-22.669
13	Dia7bP	3.366	0.000	3.366	3.033	3.329
12	Dia8aP	0.000	-12.642	-10.790	-9.879	-12.642
12	Dia8bP	0.000	-4.310	-3.956	-4.310	-2.569
12	Dia9aP	0.000	-12.067	-10.364	-9.566	-12.067
12	Dia9bP	0.000	-1.428	-1.226	-1.428	-0.862
11	Dia10aP	0.000	-2.688	-2.666	-2.688	-2.239
11	Dia10bP	0.000	-1.196	-1.196	-1.128	-0.976
11	Dia11aP	0.217	-0.563	-0.052	0.217	-0.563
11	Dia11bP	0.000	-3.982	-3.538	-3.982	-1.830
33	IntDia5P	0.000	-2.116	-2.116	-2.070	-1.444
34	IntDia8P	5.089	0.000	4.597	5.089	2.399
33	IntDia11P	8.963	0.000	8.004	8.963	4.194
32	IntDia13P	2.688	0.000	2.621	2.688	1.495
27	Arm1aP	0.000	-16.632	-13.690	-16.632	-3.564
27	Arm1bP	0.000	-27.380	-24.880	-27.380	-16.316
48	Arm1cP	22.570	0.000	19.707	22.570	10.040
31	Arm1dP	23.737	0.000	20.825	23.737	10.737
26	Arm2aP	0.000	-20.513	-17.191	-20.513	-5.488
26	Arm2bP	0.000	-31.100	-28.154	-31.100	-17.950
47	Arm2cP	26.255	0.000	23.031	26.255	11.838
30	Arm2dP	27.347	0.000	24.005	27.347	12.343
25	Arm3aP	0.000	-12.310	-9.949	-12.310	-1.725
25	Arm3bP	0.000	-22.625	-20.652	-22.625	-14.028
46	Arm3cP	18.562	0.000	16.244	18.562	8.348
29	Arm3dP	19.254	0.000	16.832	19.254	8.565
28	Arm4aP	0.000	-4.516	-3.261	-4.516	-1.275
28	Arm4bP	0.000	-4.684	-3.384	-4.684	-1.320
24	Arm4cP	5.598	0.000	4.364	5.598	2.130
24	Arm4dP	2.993	0.000	1.776	2.993	0.136
7	Legs1X	99.557	0.000	70.186	60.117	99.557
7	Legs1XY	98.044	0.000	68.459	62.345	98.044
7	Legs1Y	0.000	-143.201	-134.345	-124.622	-143.201
5	Legs2aX	100.468	0.000	71.285	60.978	100.468
5	Legs2aXY	98.961	0.000	69.561	63.223	98.961
5	Legs2aY	0.000	-142.362	-133.292	-123.806	-142.362
5	Legs2bX	107.478	0.000	76.377	65.101	107.478
5	Legs2bXY	106.484	0.000	75.366	64.749	106.484
5	Legs2bY	0.000	-135.960	-128.741	-123.134	-135.960
4	Legs3aX	107.457	0.000	76.780	65.854	107.457
4	Legs3aXY	108.773	0.000	78.010	66.657	108.773
4	Legs3aY	0.000	-137.418	-130.821	-125.096	-137.418
4	Legs3bX	90.439	0.000	63.508	54.301	90.439
4	Legs3bXY	93.862	0.000	66.937	56.244	93.862
4	Legs3bY	0.000	-119.907	-115.521	-110.284	-119.907
3	Legs4aX	74.665	0.000	52.879	45.587	74.665
3	Legs4aXY	78.287	0.000	56.551	47.611	78.287
3	Legs4aY	0.000	-100.082	-97.260	-92.833	-100.082
3	Legs4bX	78.166	0.000	59.579	53.151	78.166
3	Legs4bXY	81.733	0.000	63.204	55.153	81.733
3	Legs4bY	0.000	-96.614	-90.610	-85.320	-96.614
3	Legs4cX	49.901	0.000	34.334	28.757	49.901
3	Legs4cXY	51.516	0.000	35.987	29.699	51.516
3	Legs4cY	0.000	-69.613	-69.613	-67.161	-69.502
2	Legs5aX	23.748	0.000	14.472	10.980	23.748
2	Legs5aXY	24.233	0.000	14.975	11.289	24.233
2	Legs5aY	0.000	-40.474	-40.474	-40.104	-37.539
2	Legs5bX	27.209	0.000	21.157	18.549	27.209
2	Legs5bXY	27.687	0.000	21.657	18.858	27.687
2	Legs5bY	0.000	-34.091	-33.826	-32.578	-34.091

2	Legs5cX	7.960	0.000	3.191	1.273	7.960
2	Legs5cXY	8.137	0.000	3.376	1.394	8.137
2	Legs5cY	0.000	-19.969	-19.707	-19.969	-16.587
1	Legs6aX	0.000	-5.254	-3.997	-5.254	-1.017
1	Legs6aXY	0.000	-5.233	-3.972	-5.233	-0.988
1	Legs6aY	0.000	-10.700	-9.711	-10.700	-5.901
1	Legs6bX	1.720	0.000	1.578	1.720	1.049
1	Legs6bXY	1.726	0.000	1.585	1.726	1.057
1	Legs6bY	0.102	-0.376	-0.087	0.102	-0.376
Hor1	Hor1aX	0.000	-0.275	-0.275	-0.235	-0.233
Hor1	Hor1aXY	0.000	-0.267	-0.267	-0.236	-0.226
Hor1	Hor1aY	0.000	-0.204	-0.204	-0.169	-0.142
Hor1	Hor1bX	0.000	-1.570	-1.146	-0.755	-1.570
Hor1	Hor1bXY	0.000	-1.621	-1.176	-0.886	-1.621
Hor1	Hor1bY	0.000	-0.206	-0.206	-0.100	-0.171
18	Hor2aX	0.000	-4.113	-2.695	-2.138	-4.113
18	Hor2aXY	0.000	-4.334	-3.025	-2.294	-4.334
18	Hor2aY	0.000	-0.638	-0.536	-0.570	-0.638
18	Hor2bX	0.000	-1.136	-0.914	-0.582	-1.136
18	Hor2bXY	1.393	-1.251	-1.059	1.393	-1.251
18	Hor2bY	0.000	-3.928	-2.689	-0.173	-3.928
16	Hor3aY	0.000	-0.663	-0.663	-0.525	-0.615
16	Hor3bX	2.493	0.000	1.996	1.819	2.493
27	Hor5Y	0.000	-20.970	-18.486	-20.970	-9.618
45	Hor6Y	19.714	0.000	17.229	19.714	8.751
26	Hor8Y	0.000	-27.433	-24.086	-27.433	-12.349
44	Hor9Y	24.203	0.000	21.190	24.203	10.792
25	Hor11Y	0.000	-22.243	-19.652	-22.243	-10.194
43	Hor12Y	11.945	0.000	10.972	11.945	5.859
24	Hor13Y	0.764	-0.683	-0.215	0.764	-0.683
21	Dia1aX	10.107	0.000	6.859	4.677	10.107
21	Dia1aXY	6.595	-0.681	4.216	-0.681	6.595
21	Dia1aY	0.000	-3.985	0.000	-3.985	0.000
21	Dia1bX	9.065	0.000	6.247	4.962	9.065
21	Dia1bXY	8.796	0.000	5.853	4.779	8.796
21	Dia1bY	0.000	0.000	0.000	0.000	0.000
19	Dia2aX	0.000	-0.335	-0.209	-0.214	-0.335
19	Dia2aXY	0.043	-3.347	0.043	-3.347	-0.131
19	Dia2aY	6.025	-0.384	3.885	-0.384	6.025
19	Dia2bX	7.467	0.000	4.991	4.120	7.467
19	Dia2bXY	7.832	0.000	5.530	4.381	7.832
19	Dia2bY	0.271	0.000	0.126	0.271	0.232
17	Dia3aX	0.000	-3.522	-2.412	-1.782	-3.522
17	Dia3aXY	0.000	-1.979	-1.156	-1.126	-1.979
17	Dia3aY	2.131	0.000	1.348	1.278	2.131
17	Dia3bX	0.000	-0.159	-0.159	-0.044	-0.097
17	Dia3bXY	0.348	0.000	0.348	0.196	0.243
17	Dia3bY	0.000	-0.215	-0.215	-0.104	-0.178
15	Dia4aX	2.925	0.000	2.666	2.439	2.925
15	Dia4aXY	1.845	0.000	1.599	1.845	1.723
15	Dia4aY	0.000	-1.435	-0.329	-0.208	-1.435
15	Dia4bX	0.000	-6.303	-5.245	-4.935	-6.303
15	Dia4bXY	0.000	-6.655	-5.773	-5.186	-6.655
15	Dia4bY	7.202	0.000	6.391	5.849	7.202
14	Dia5aX	2.280	-0.588	0.177	-0.588	2.280
14	Dia5aXY	0.751	-1.334	-1.192	-1.334	0.751
14	Dia5aY	0.000	-4.378	-3.920	-4.378	-3.645
14	Dia5bX	15.518	0.000	13.994	13.035	15.518
14	Dia5bXY	15.048	0.000	13.278	12.694	15.048
14	Dia5bY	0.000	-14.290	-11.559	-10.611	-14.290
13	Dia6aX	22.258	0.000	18.506	17.060	22.258
13	Dia6aXY	22.461	0.000	18.888	17.237	22.461
13	Dia6aY	0.000	-23.025	-19.134	-17.260	-23.025
13	Dia6bX	4.285	0.000	1.512	0.701	4.285
13	Dia6bXY	5.378	0.000	2.440	1.237	5.378
13	Dia6bY	0.000	-9.921	-9.921	-9.722	-9.164
13	Dia7aX	22.015	0.000	18.459	17.123	22.015
13	Dia7aXY	22.111	0.000	18.742	17.239	22.111
13	Dia7aY	0.000	-22.780	-19.334	-17.723	-22.780
13	Dia7bX	0.000	-1.945	-1.068	-0.531	-1.945
13	Dia7bXY	0.037	-0.784	-0.073	0.037	-0.784
13	Dia7bY	2.522	0.000	2.427	2.522	2.231
12	Dia8aX	12.149	0.000	10.281	9.424	12.149
12	Dia8aXY	12.044	0.000	10.250	9.399	12.044
12	Dia8aY	0.000	-12.543	-10.761	-9.853	-12.543
12	Dia8bX	0.000	-3.116	-2.624	-3.116	-0.858
12	Dia8bXY	0.000	-2.965	-2.384	-2.965	-0.554
12	Dia8bY	0.000	-4.429	-4.168	-4.429	-2.843
12	Dia9aX	11.925	0.000	10.680	10.092	11.925
12	Dia9aXY	11.811	0.000	10.642	10.063	11.811
12	Dia9aY	0.000	-11.951	-10.326	-9.538	-11.951

12	Dia9bX	0.373	-0.024	0.050	-0.024	0.373
12	Dia9bXY	0.677	0.000	0.289	0.125	0.677
12	Dia9bY	0.000	-1.545	-1.435	-1.545	-1.132
11	Dia10aX	1.267	0.000	0.687	0.250	1.267
11	Dia10aXY	1.254	0.000	0.681	0.249	1.254
11	Dia10aY	0.000	-2.695	-2.676	-2.695	-2.252
11	Dia10bX	0.000	-0.805	-0.798	-0.805	-0.238
11	Dia10bXY	0.000	-0.793	-0.783	-0.793	-0.222
11	Dia10bY	0.000	-1.207	-1.207	-1.133	-0.991
11	Dia11aX	3.476	0.000	3.262	3.476	2.128
11	Dia11aXY	3.478	0.000	3.262	3.478	2.127
11	Dia11aY	0.218	-0.559	-0.050	0.218	-0.559
11	Dia11bX	0.000	-3.425	-3.012	-3.425	-1.534
11	Dia11bXY	0.000	-3.414	-2.998	-3.414	-1.517
11	Dia11bY	0.000	-3.989	-3.548	-3.989	-1.844
33	IntDia5X	0.000	-1.751	-1.459	-1.751	-0.922
34	IntDia8X	4.720	0.000	3.924	4.720	1.633
33	IntDial1X	8.848	0.000	7.809	8.848	3.944
32	IntDial3X	2.680	0.000	2.610	2.680	1.482
27	Arm1aY	0.000	-16.683	-13.805	-16.683	-3.688
27	Arm1bY	0.000	-27.284	-24.717	-27.284	-16.124
48	Arm1cY	22.653	0.000	19.854	22.653	10.202
31	Arm1dY	23.664	0.000	20.678	23.664	10.564
26	Arm2aY	0.000	-20.482	-17.162	-20.482	-5.456
26	Arm2bY	0.000	-31.068	-28.116	-31.068	-17.894
47	Arm2cY	26.257	0.000	23.034	26.257	11.843
30	Arm2dY	27.347	0.000	23.995	27.347	12.321
25	Arm3aY	0.000	-12.279	-9.914	-12.279	-1.680
25	Arm3bY	0.000	-22.600	-20.630	-22.600	-14.000
46	Arm3cY	18.559	0.000	16.234	18.559	8.332
29	Arm3dY	19.258	0.000	16.836	19.258	8.569
28	Arm4aY	0.000	-4.508	-3.250	-4.508	-1.262
28	Arm4bY	0.000	-4.687	-3.391	-4.687	-1.330
24	Arm4cY	5.599	0.000	4.360	5.599	2.123
24	Arm4dY	3.004	0.000	1.789	3.004	0.152

*** Analysis Results for Load Case No. 1 "ConEdStd(int)" - Number of iterations in SAPS 9

Equilibrium Joint Positions and Rotations:

Joint Label	X-Displ (ft)	Y-Displ (ft)	Z-Displ (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Pos (ft)	Y-Pos (ft)	Z-Pos (ft)
100P	0	0	0	-0.0634	-0.1030	0.1133	13.87	13.87	0
101P	-0.01595	0.01302	-0.007665	-0.0637	-0.0409	0.1243	10.98	11.01	15.99
101aP	-0.01591	-0.008342	-0.01541	-0.0565	0.0305	0.0043	-0.01591	10.99	15.98
101bP	8.266e-005	0.01297	-0.005561	-0.0185	-0.0492	0.0996	11	0.01297	15.99
102P	-0.01172	0.027	-0.01129	-0.0786	-0.0171	0.1279	8.188	8.227	31.59
102aP	-0.01155	0.01658	-0.01457	-0.0733	0.0114	0.0079	-0.01155	8.217	31.59
102bP	0.004889	0.02775	-0.003328	-0.0448	-0.0180	0.0768	8.205	0.02775	31.6
103P	-0.009722	0.03616	-0.01256	-0.0967	0.0172	0.1345	6.79	6.836	39.39
104P	-0.001569	0.0477	-0.01385	-0.0991	-0.0281	0.1391	5.398	5.448	47.19
105P	-0.009731	0.06169	-0.01699	-0.1839	-0.0836	0.1269	3.99	4.062	54.98
106P	-0.01039	0.07945	-0.01902	-0.2279	0.1056	0.1210	3.99	4.079	59.73
107P	0.003456	0.09805	-0.02093	-0.2184	0.1363	0.1158	4.003	4.098	64.48
108P	-0.004538	0.1356	-0.0239	-0.2583	-0.1824	0.1068	3.995	4.136	73.98
109P	-0.0175	0.1591	-0.02549	-0.2929	0.0592	0.1030	3.983	4.159	78.72
110P	0.003288	0.1827	-0.02685	-0.2739	0.2304	0.0997	4.003	4.183	83.47
111P	-0.002199	0.228	-0.02844	-0.2916	-0.1102	0.0967	3.998	4.228	92.97
112P	0.00452	0.2589	-0.02971	-0.2865	0.0569	0.0957	4.005	4.259	98.97
113P	-0.002755	0.2874	-0.0298	-0.2650	-0.1316	0.0967	3.997	4.287	105
Arm1aP	-0.01147	0.0586	-0.104	-0.4463	0.0113	0.0286	-0.01147	17.56	54.9
Arm1bP	0.006325	0.06738	-0.01499	0.1533	0.0050	0.0283	0.006325	-18.1	54.99
Arm2aP	-0.01061	0.1307	-0.1589	-0.5661	0.0081	0.0312	-0.01061	20.13	73.84
Arm2bP	0.01095	0.1415	-0.003907	0.1540	0.0087	0.0311	0.01095	-20.53	74
Arm3aP	-0.006692	0.2247	-0.1218	-0.4273	0.0083	0.0313	-0.006692	17.72	92.88
Arm3bP	0.01261	0.2338	0.02713	0.0116	0.0089	0.0313	0.01261	-17.94	93.03
Arm4aP	-0.00627	0.2872	-0.117	0.0000	0.0000	0.0000	-0.00627	20.29	104.9
Arm4bP	0.01574	0.2869	0.09786	0.0000	0.0000	0.0000	0.01574	-20.38	105.1
100X	0	0	0	0.0097	-0.0539	-0.2933	13.87	-13.87	0
100XY	0	0	0	0.0339	0.0624	0.3450	-13.87	-13.87	0
100Y	0	0	0	-0.0435	-0.0548	-0.0953	-13.87	13.87	0
101X	-0.001288	0.01325	0.0009901	0.0027	-0.0581	-0.2938	11	-10.99	16
101XY	0.0009593	0.009714	0.001597	0.0201	0.0657	0.3469	-11	-10.99	16
101Y	-0.01584	0.009363	-0.002385	-0.0501	0.0012	-0.0842	-11.02	11.01	16
101aX	-0.000188	0.1617	-0.02484	0.0070	0.0005	0.0005	-0.000188	-10.84	15.98
101bY	-0.01698	0.009413	-0.001639	-0.0080	0.0332	-0.0000	-11.02	0.009413	16
102X	-0.00102	0.02792	0.001967	-0.0198	-0.0191	-0.2114	8.199	-8.172	31.6
102XY	9.862e-005	0.02356	0.002742	-0.0102	0.0272	0.2660	-8.2	-8.176	31.6

102Y	-0.01145	0.02289	-0.007423	-0.0678	0.0524	-0.0729	-8.211	8.223	31.59
102aX	-0.0004977	0.05681	-0.0009305	-0.0145	0.0020	0.0092	-0.0004977	-8.143	31.6
102bY	-0.01683	0.02336	-0.001062	-0.0338	0.0397	0.0123	-8.217	0.02336	31.6
103X	-0.0002927	0.0363	0.002499	-0.0277	-0.0562	-0.1621	6.8	-6.764	39.4
103XY	-0.0008459	0.03203	0.003274	-0.0187	0.0648	0.2172	-6.801	-6.768	39.4
103Y	-0.008803	0.03183	-0.009519	-0.0868	0.0037	-0.0813	-6.809	6.832	39.39
104X	-0.004567	0.04597	0.002826	-0.0698	0.0288	-0.1532	5.395	-5.354	47.2
104XY	0.003259	0.0418	0.003658	-0.0597	-0.0202	0.2087	-5.397	-5.358	47.2
104Y	-0.01243	0.04352	-0.01161	-0.0899	0.0526	-0.0845	-5.412	5.444	47.19
105X	0.005058	0.0634	0.003747	-0.1124	-0.0829	-0.1083	4.005	-3.937	55
105XY	-0.006408	0.05946	0.004669	-0.1089	0.0951	0.1651	-4.006	-3.941	55
105Y	0.0001789	0.05775	-0.01561	-0.1805	0.1045	-0.0712	-4	4.058	54.98
106X	-0.007336	0.07512	0.004834	-0.1882	-0.1129	-0.0805	3.993	-3.925	59.75
106XY	0.00715	0.0711	0.005831	-0.1870	0.1293	0.1378	-3.993	-3.929	59.76
106Y	0.002402	0.07542	-0.0177	-0.2268	-0.0885	-0.0646	-3.998	4.075	59.73
107X	-0.007408	0.0947	0.006053	-0.2669	0.0918	-0.0532	3.993	-3.905	64.51
107XY	0.008671	0.09051	0.007127	-0.2651	-0.0736	0.1111	-3.991	-3.909	64.51
107Y	-0.01017	0.09383	-0.01967	-0.2164	-0.1210	-0.0587	-4.01	4.094	64.48
108X	0.008193	0.1375	0.007395	-0.2090	-0.0517	0.0036	4.008	-3.863	74.01
108XY	-0.004041	0.1332	0.008544	-0.2091	0.0691	0.0553	-4.004	-3.867	74.01
108Y	0.0004373	0.1313	-0.02269	-0.2585	0.1988	-0.0482	-4	4.131	73.98
109X	-0.01111	0.1542	0.00787	-0.2434	-0.1502	0.0174	3.989	-3.846	78.76
109XY	0.01668	0.15	0.009031	-0.2430	0.1675	0.0421	-3.983	-3.85	78.76
109Y	0.01475	0.1549	-0.02429	-0.2926	-0.0425	-0.0438	-3.985	4.155	78.73
110X	-0.005336	0.1793	0.008595	-0.3329	0.1733	0.0297	3.995	-3.821	83.51
110XY	0.01232	0.175	0.009777	-0.3323	-0.1557	0.0304	-3.988	-3.825	83.51
110Y	-0.004686	0.1783	-0.02566	-0.2732	-0.2139	-0.0399	-4.005	4.178	83.47
111X	0.01357	0.2299	0.008682	-0.2428	0.0145	0.0582	4.014	-3.77	93.01
111XY	-0.003696	0.2255	0.009883	-0.2429	0.0031	0.0030	-4.004	-3.774	93.01
111Y	0.003484	0.2237	-0.02725	-0.2916	0.1268	-0.0355	-3.997	4.224	92.97
112X	-0.002903	0.2572	0.008108	-0.2784	-0.0710	0.0583	3.997	-3.743	99.01
112XY	0.01455	0.2528	0.009307	-0.2785	0.0881	0.0029	-3.985	-3.747	99.01
112Y	-0.001489	0.2546	-0.02852	-0.2867	-0.0398	-0.0346	-4.001	4.255	98.97
113X	0.01349	0.2876	0.008201	-0.2958	0.2701	0.0566	4.013	-3.712	105
113XY	-5.8e-005	0.2832	0.009406	-0.2959	-0.2527	0.0046	-4	-3.717	105
113Y	0.007534	0.2831	-0.02861	-0.2651	0.1485	-0.0355	-3.992	4.283	105

Joint Support Reactions:

Joint Label	X-Force (kips)	% X Usage	Y-Force (kips)	% Y Usage	Z-Force (kips)	Comp. % Uplift Usage	% X-Moment Usage	X-M. (ft-k)	% X-M. Usage	Y-Moment (ft-k)	% Y-M. Usage	Z-Moment (ft-k)	% Z-M. Usage	Max. % Usage
100P	-24.254	0.0	-24.272	0.0	135.336	0.0	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.0
100X	17.174	0.0	-18.025	0.0	-77.256	0.0	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.0
100XY	-16.261	0.0	-15.924	0.0	-73.316	0.0	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.0
100Y	23.340	0.0	-23.277	0.0	130.810	0.0	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.0

Joint Displacements, Loads and Member Forces on Joints:

Joint Label	X External Load (kips)	Y External Load (kips)	Z External Load (kips)	X Member Force (kips)	Y Member Force (kips)	Z Member Force (kips)	X Disp. (ft)	Y Disp. (ft)	Z Disp. (ft)
100P	0.0000	0.2150	-0.6709	24.2536	24.0570	-134.5645	0.0000	0.0000	0.0000
101P	0.0000	0.5280	-1.2148	-0.0000	-0.5280	1.2148	-0.0160	0.0130	-0.0077
101aP	0.0000	0.0000	-0.3076	-0.0000	-0.0000	0.3076	-0.0159	-0.0083	-0.0154
101bP	0.0000	0.0000	-0.3076	-0.0000	0.0000	0.3076	0.0001	0.0130	-0.0056
102P	0.0000	0.0000	-0.8212	0.0000	0.0000	0.8212	-0.0117	0.0270	-0.0113
102aP	0.0000	0.0000	-0.1476	-0.0000	-0.0000	0.1476	-0.0115	0.0166	-0.0146
102bP	0.0000	0.0000	-0.1476	-0.0000	0.0000	0.1476	0.0049	0.0278	-0.0033
103P	0.0000	0.5230	-0.9054	-0.0000	-0.5230	0.9054	-0.0097	0.0362	-0.0126
104P	0.0000	0.0000	-0.4805	-0.0000	0.0000	0.4805	-0.0016	0.0477	-0.0139
105P	0.0000	1.1840	-1.3929	0.0000	-1.1840	1.3929	-0.0097	0.0617	-0.0170
106P	0.0000	0.0000	-0.2367	0.0000	-0.0000	0.2367	-0.0104	0.0794	-0.0190
107P	0.0000	0.0000	-0.5300	-0.0000	0.0000	0.5300	0.0035	0.0981	-0.0209
108P	0.0000	0.5100	-0.9262	0.0000	-0.5100	0.9262	-0.0045	0.1356	-0.0239
109P	0.0000	0.0000	-0.1811	-0.0000	-0.0000	0.1811	-0.0175	0.1591	-0.0255
110P	0.0000	0.0000	-0.3183	-0.0000	0.0000	0.3183	0.0033	0.1827	-0.0269
111P	0.0000	0.3350	-0.5865	0.0000	-0.3350	0.5865	-0.0022	0.2280	-0.0284
112P	0.0000	0.1510	-0.2743	-0.0000	-0.1510	0.2743	0.0045	0.2589	-0.0297
113P	0.0000	0.0000	-0.2503	-0.0000	0.0000	0.2503	-0.0028	0.2874	-0.0298
Arm1aP	0.0000	9.5380	-12.8990	-0.0000	-9.5380	12.8990	-0.0115	0.0586	-0.1040
Arm1bP	0.0000	9.7034	-12.9116	0.0000	-9.7034	12.9116	0.0063	0.0674	-0.0150
Arm2aP	0.0000	9.5380	-13.0183	-0.0000	-9.5380	13.0183	-0.0106	0.1307	-0.1589
Arm2bP	0.0000	9.7315	-13.0338	0.0000	-9.7315	13.0338	0.0110	0.1415	-0.0039
Arm3aP	0.0000	9.5380	-12.8858	-0.0000	-9.5380	12.8858	-0.0067	0.2247	-0.1218
Arm3bP	0.0000	9.7124	-12.8977	0.0000	-9.7124	12.8977	0.0126	0.2338	0.0271
Arm4aP	0.0000	2.5170	-2.2399	-0.0000	-2.5170	2.2399	-0.0063	0.2872	-0.1170
Arm4bP	0.0000	2.7406	-2.2530	0.0000	-2.7406	2.2530	0.0157	0.2869	0.0979
100X	0.0000	0.4394	-0.5709	-17.1740	17.5859	77.8271	0.0000	0.0000	0.0000

100XY	0.0000	0.4394	-0.5709	16.2606	15.4846	73.8871	0.0000	0.0000	0.0000
100Y	0.0000	0.0000	-0.5709	-23.3401	23.2766	-130.2387	0.0000	0.0000	0.0000
101X	0.0000	0.6705	-0.9688	-0.0000	-0.6705	0.9688	-0.0013	0.0132	0.0010
101XY	0.0000	0.6705	-0.9688	-0.0000	-0.6705	0.9688	0.0010	0.0097	0.0016
101Y	0.0000	0.0000	-0.9688	0.0000	0.0000	0.9688	-0.0158	0.0094	-0.0024
101aX	0.0000	0.7033	-0.3076	0.0000	-0.7033	0.3076	-0.0002	0.1617	-0.0248
101bY	0.0000	0.0000	-0.3076	-0.0000	-0.0000	0.3076	-0.0170	0.0094	-0.0016
102X	0.0000	0.5983	-0.8212	-0.0000	-0.5983	0.8212	-0.0010	0.0279	0.0020
102XY	0.0000	0.5983	-0.8212	-0.0000	-0.5983	0.8212	0.0001	0.0236	0.0027
102Y	0.0000	0.0000	-0.8212	0.0000	0.0000	0.8212	-0.0114	0.0229	-0.0074
102aX	0.0000	0.2575	-0.1476	0.0000	-0.2575	0.1476	-0.0005	0.0568	-0.0009
102bY	0.0000	0.0000	-0.1476	-0.0000	-0.0000	0.1476	-0.0168	0.0234	-0.0011
103X	0.0000	0.5767	-0.6614	0.0000	-0.5767	0.6614	-0.0003	0.0363	0.0025
103XY	0.0000	0.5767	-0.6614	0.0000	-0.5767	0.6614	-0.0008	0.0320	0.0033
103Y	0.0000	0.0000	-0.6614	-0.0000	-0.0000	0.6614	-0.0088	0.0318	-0.0095
104X	0.0000	0.4696	-0.4805	-0.0000	-0.4696	0.4805	-0.0046	0.0460	0.0028
104XY	0.0000	0.4696	-0.4805	-0.0000	-0.4696	0.4805	0.0033	0.0418	0.0037
104Y	0.0000	0.0000	-0.4805	0.0000	-0.0000	0.4805	-0.0124	0.0435	-0.0116
105X	0.0000	1.2006	-1.1816	0.0000	-1.2006	1.1816	0.0051	0.0634	0.0037
105XY	0.0000	1.2006	-1.1816	0.0000	-1.2006	1.1816	-0.0064	0.0595	0.0047
105Y	0.0000	0.7200	-1.1769	0.0000	-0.7200	1.1769	0.0002	0.0578	-0.0156
106X	0.0000	0.2007	-0.2383	-0.0000	-0.2007	0.2383	-0.0073	0.0751	0.0048
106XY	0.0000	0.2007	-0.2383	-0.0000	-0.2007	0.2383	0.0072	0.0711	0.0058
106Y	0.0000	0.0000	-0.2367	0.0000	0.0000	0.2367	0.0024	0.0754	-0.0177
107X	0.0000	0.4843	-0.5300	-0.0000	-0.4843	0.5300	-0.0074	0.0947	0.0061
107XY	0.0000	0.4843	-0.5300	-0.0000	-0.4843	0.5300	0.0087	0.0905	0.0071
107Y	0.0000	0.0000	-0.5300	-0.0000	-0.0000	0.5300	-0.0102	0.0938	-0.0197
108X	0.0000	0.4891	-0.6948	0.0000	-0.4891	0.6948	0.0082	0.1375	0.0074
108XY	0.0000	0.4891	-0.6948	0.0000	-0.4891	0.6948	-0.0040	0.1332	0.0085
108Y	0.0000	0.0000	-0.6892	0.0000	-0.0000	0.6892	0.0004	0.1313	-0.0227
109X	0.0000	0.1717	-0.1833	-0.0000	-0.1717	0.1833	-0.0111	0.1542	0.0079
109XY	0.0000	0.1717	-0.1833	-0.0000	-0.1717	0.1833	0.0167	0.1500	0.0090
109Y	0.0000	0.0000	-0.1811	-0.0000	0.0000	0.1811	0.0148	0.1549	-0.0243
110X	0.0000	0.3633	-0.3183	-0.0000	-0.3633	0.3183	-0.0053	0.1793	0.0086
110XY	0.0000	0.3633	-0.3183	-0.0000	-0.3633	0.3183	0.0123	0.1750	0.0098
110Y	0.0000	0.0000	-0.3183	-0.0000	0.0000	0.3183	-0.0047	0.1783	-0.0257
111X	0.0000	0.3615	-0.4351	0.0000	-0.3615	0.4351	0.0136	0.2299	0.0087
111XY	0.0000	0.3615	-0.4351	0.0000	-0.3615	0.4351	-0.0037	0.2255	0.0099
111Y	0.0000	0.0000	-0.4305	0.0000	-0.0000	0.4305	0.0035	0.2237	-0.0273
112X	0.0000	0.4272	-0.2777	-0.0000	-0.4272	0.2777	-0.0029	0.2572	0.0081
112XY	0.0000	0.4272	-0.2777	-0.0000	-0.4272	0.2777	0.0146	0.2528	0.0093
112Y	0.0000	0.1510	-0.2743	-0.0000	-0.1510	0.2743	-0.0015	0.2546	-0.0285
113X	0.0000	0.1476	-0.2548	-0.0000	-0.1476	0.2548	0.0135	0.2876	0.0082
113XY	0.0000	0.1476	-0.2548	-0.0000	-0.1476	0.2548	-0.0001	0.2832	0.0094
113Y	0.0000	0.0000	-0.2503	-0.0000	0.0000	0.2503	0.0075	0.2831	-0.0286

Moments for Angles Modeled as Beams:

Angle Label	Torsion (ft-lbs)	Origin X Moment (ft-lbs)	Origin Z Moment (ft-lbs)	End X Moment (ft-lbs)	End Z Moment (ft-lbs)
Legs1P	-0.00	-0.00	0.00	1312.90	1334.76
Legs2aP	22.85	-1471.68	-1306.29	-636.62	-1092.73
Legs2bP	84.34	606.44	1074.26	2868.01	1846.52
Legs3aP	207.43	-2911.58	-1875.87	-4192.31	-3210.38
Legs3bP	204.48	4213.42	3182.81	5067.57	-1018.37
Legs4aP	-141.86	3283.62	3022.89	158.57	-10546.65
Legs4bP	-139.58	-158.99	10546.68	530.24	8346.20
Legs4cP	-141.90	-529.71	-8346.19	-1982.06	3072.39
Legs5aP	-21.77	1014.68	-3485.68	234.53	-8995.55
Legs5bP	-20.34	-234.67	8995.57	205.18	5091.22
Legs5cP	-20.47	-205.09	-5091.22	-412.85	-1207.97
Legs6aP	-0.07	37.46	836.50	49.94	443.54
Legs6bP	-0.01	-49.94	-443.47	-0.00	0.03
Hor1aP	-2.87	85.85	-67.08	173.78	-166.99
Hor1bP	3.29	138.64	81.30	83.22	60.71
Hor2aP	-2.69	23.09	97.14	37.41	-159.04
Hor2bP	0.44	17.63	-32.77	0.76	-141.89
Hor3aP	29.18	32.23	-12.66	-39.29	-320.52
Hor3bP	-3.98	-0.48	137.90	-14.09	-86.02
Hor5P	-3.13	352.70	-625.41	-360.27	-1483.19
Hor8P	-407.07	626.66	-249.65	45.78	-698.10
Hor11P	-327.97	281.11	-319.71	-208.39	-460.09
Arm1aP	248.18	1350.25	525.67	70.80	321.82
Arm1bP	-224.11	1330.28	-374.71	67.09	-104.63
Arm2aP	392.10	1545.79	367.90	97.95	209.10
Arm2bP	-207.96	1919.41	44.31	51.11	99.30
Arm3aP	227.90	617.30	339.08	67.34	203.63
Arm3bP	-90.94	1367.15	338.58	26.54	284.95
Legs1X	0.00	0.00	-0.00	-236.89	-60.42

Legs1XY	0.00	-0.00	-0.00	-360.22	225.86
Legs1Y	-0.00	0.00	0.00	-1033.90	1358.92
Legs2aX	1062.53	-87.39	-31.86	262.73	-700.57
Legs2aXY	-1060.58	49.15	-121.57	218.33	710.13
Legs2aY	-12.55	800.03	-1274.46	74.03	246.81
Legs2bX	998.61	-277.71	717.73	-2201.40	2689.10
Legs2bXY	-989.34	-239.79	-729.44	-2214.20	-2689.02
Legs2bY	-69.52	-91.94	-235.97	2831.90	-1590.32
Legs3aX	503.36	2241.87	-2652.07	3510.99	-6251.11
Legs3aXY	-492.22	2251.52	2657.22	3548.94	6228.06
Legs3aY	-197.72	-2877.06	1633.54	-4250.71	3106.15
Legs3bX	506.71	-3463.19	6277.45	-8055.66	8799.81
Legs3bXY	-495.81	-3501.30	-6254.69	-8392.86	-8684.11
Legs3bY	-194.51	4271.12	-3078.24	5399.39	1198.90
Legs4aX	771.75	841.24	-11498.49	-4583.05	-9340.29
Legs4aXY	-756.46	1126.06	11643.22	-4462.59	9178.14
Legs4aY	161.40	3603.62	-3131.23	300.21	10710.05
Legs4bX	775.34	4585.09	9339.00	-1075.03	-5330.42
Legs4bXY	-760.25	4464.54	-9176.88	-1165.00	5352.86
Legs4bY	158.83	-300.71	-10710.07	446.25	-8382.35
Legs4cX	775.59	1076.32	5330.12	3151.32	10474.01
Legs4cXY	-760.51	1166.26	-5352.56	3175.89	-10463.60
Legs4cY	161.10	-445.65	8382.35	-1965.91	-3081.53
Legs5aX	119.22	-1192.23	-9821.18	-1977.20	-7574.92
Legs5aXY	-114.21	-1198.68	9813.98	-1968.43	7568.03
Legs5aY	27.48	1020.32	3492.79	247.74	8997.31
Legs5bX	122.05	1977.87	7574.72	-61.06	195.61
Legs5bXY	-116.98	1969.07	-7567.81	-72.08	-198.89
Legs5bY	26.11	-247.92	-8997.30	198.04	-5088.94
Legs5cX	122.00	61.15	-195.61	1087.94	1615.92
Legs5cXY	-116.91	72.17	198.89	1092.08	-1611.40
Legs5cY	26.27	-197.91	5088.95	-411.16	1204.07
Legs6aX	-0.20	44.17	-1003.31	-40.00	-802.27
Legs6aXY	0.18	42.66	1001.80	-41.05	801.84
Legs6aY	0.06	38.65	-835.03	50.58	-443.08
Legs6bX	-0.00	40.00	802.33	0.00	0.02
Legs6bXY	-0.00	41.05	-801.80	-0.00	0.02
Legs6bY	-0.00	-50.58	443.11	0.00	0.01
Hor1aX	-1.65	353.44	1441.15	425.54	1686.28
Hor1aXY	-5.26	345.39	-1397.83	425.36	-1686.32
Hor1aY	-2.57	209.73	93.29	173.80	166.97
Hor1bX	3.45	108.78	-388.41	83.21	-60.72
Hor1bXY	-12.82	101.12	344.10	66.93	55.12
Hor1bY	-12.69	118.65	-125.19	66.95	-55.13
Hor2aX	-2.71	12.15	407.31	22.72	878.33
Hor2aXY	-2.18	10.10	-330.05	22.65	-878.34
Hor2aY	-2.81	16.87	-13.51	37.43	159.03
Hor2bX	0.49	13.22	-473.51	0.77	141.89
Hor2bXY	6.41	12.83	403.91	1.07	-137.72
Hor2bY	6.45	17.99	-44.44	1.06	137.72
Hor3aY	-24.26	32.08	-47.72	-38.37	262.05
Hor3bX	-3.58	-59.38	-167.36	66.05	226.35
Hor5Y	26.14	346.43	596.14	-366.92	1457.84
Hor8Y	404.47	646.58	244.14	64.84	694.48
Hor11Y	325.45	283.70	316.86	-205.24	457.61
Arm1aY	-246.81	1376.56	-528.51	75.45	-321.83
Arm1bY	226.08	1301.85	374.93	60.15	104.63
Arm2aY	-392.12	1543.90	-376.06	97.87	-209.11
Arm2bY	208.45	1918.35	-51.01	49.09	-99.31
Arm3aY	-227.83	617.02	-342.09	67.55	-203.63
Arm3bY	91.29	1366.55	-341.29	25.26	-284.95

Summary of Clamp Capacities and Usages:

Clamp Label	Force (kips)	Allowable (kips)	Usage %
Arm4aP	3.37	100.00	3.37
Arm4bP	3.55	100.00	3.55
Arm3aP	16.03	100.00	16.03
Arm3bP	16.15	100.00	16.15
Arm2aP	16.14	100.00	16.14
Arm2bP	16.27	100.00	16.27
Arm1aP	16.04	100.00	16.04
Arm1bP	16.15	100.00	16.15
100P	0.70	100.00	0.70
101P	1.32	100.00	1.32
102P	0.82	100.00	0.82

103P	1.05	100.00	1.05
104P	0.48	100.00	0.48
105P	1.83	100.00	1.83
105X	1.68	100.00	1.68
105XY	1.68	100.00	1.68
105Y	1.38	100.00	1.38
106P	0.24	100.00	0.24
107P	0.53	100.00	0.53
108P	1.06	100.00	1.06
109P	0.18	100.00	0.18
110P	0.32	100.00	0.32
111P	0.68	100.00	0.68
112P	0.31	100.00	0.31
112X	0.51	100.00	0.51
112XY	0.51	100.00	0.51
112Y	0.31	100.00	0.31

*** Analysis Results for Load Case No. 2 "ConEdEmerIce(int)" - Number of iterations in SAPS 9

Equilibrium Joint Positions and Rotations:

Joint Label	X-Displ (ft)	Y-Displ (ft)	Z-Displ (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Pos (ft)	Y-Pos (ft)	Z-Pos (ft)
100P	0	0	0	-0.0518	-0.0980	0.1124	13.87	13.87	0
101P	-0.01503	0.01024	-0.007552	-0.0570	-0.0395	0.1219	10.98	11.01	15.99
101aP	-0.015	-0.01078	-0.01494	-0.0482	0.0258	0.0224	-0.015	10.99	15.99
101bP	-0.001197	0.01021	-0.005205	-0.0181	-0.0391	0.0750	11	0.01021	15.99
102P	-0.01106	0.02293	-0.01103	-0.0732	-0.0169	0.1266	8.189	8.223	31.59
102aP	-0.01091	0.01175	-0.01433	-0.0709	0.0090	0.0207	-0.01091	8.212	31.59
102bP	0.003317	0.02347	-0.003748	-0.0420	-0.0131	0.0610	8.203	0.02347	31.6
103P	-0.009162	0.03132	-0.0123	-0.0927	0.0138	0.1351	6.791	6.831	39.39
104P	-0.001435	0.04232	-0.01357	-0.0937	-0.0244	0.1471	5.399	5.442	47.19
105P	-0.008913	0.05503	-0.01667	-0.1787	-0.0961	0.1378	3.991	4.055	54.98
106P	-0.01107	0.07225	-0.01863	-0.2182	0.0950	0.1304	3.989	4.072	59.73
107P	0.003113	0.08971	-0.02046	-0.2015	0.1495	0.1236	4.003	4.09	64.48
108P	-0.00362	0.1244	-0.02334	-0.2456	-0.1947	0.1115	3.996	4.124	73.98
109P	-0.01911	0.1469	-0.02492	-0.2793	0.0450	0.1073	3.981	4.147	78.73
110P	0.002979	0.1692	-0.02625	-0.2550	0.2555	0.1035	4.003	4.169	83.47
111P	-0.001066	0.2112	-0.02785	-0.2776	-0.1140	0.0995	3.999	4.211	92.97
112P	0.004447	0.2405	-0.02923	-0.2700	0.0514	0.0986	4.004	4.24	98.97
113P	-0.002013	0.2672	-0.02928	-0.2479	-0.1173	0.0994	3.998	4.267	105
Arm1aP	-0.01221	0.05095	-0.1088	-0.4779	0.0098	0.0333	-0.01221	17.55	54.89
Arm1bP	0.008392	0.061	-0.02623	0.2085	0.0068	0.0328	0.008392	-18.11	54.97
Arm2aP	-0.01125	0.1186	-0.1634	-0.5972	0.0082	0.0347	-0.01125	20.12	73.84
Arm2bP	0.013	0.1309	-0.02129	0.2236	0.0089	0.0345	0.013	-20.54	73.98
Arm3aP	-0.007065	0.207	-0.1227	-0.4427	0.0084	0.0348	-0.007065	17.71	92.88
Arm3bP	0.01446	0.2173	0.01594	0.0570	0.0089	0.0347	0.01446	-17.95	93.02
Arm4aP	-0.006784	0.2669	-0.1134	0.0000	0.0000	0.0000	-0.006784	20.27	104.9
Arm4bP	0.01777	0.2659	0.08869	0.0000	0.0000	0.0000	0.01777	-20.4	105.1
100X	0	0	0	0.0026	-0.0335	-0.1955	13.87	-13.87	0
100XY	0	0	0	0.0529	0.0437	0.2560	13.87	-13.87	0
100Y	0	0	0	-0.0056	-0.0515	-0.0911	13.87	13.87	0
101X	-0.0005688	0.0104	0.001115	-0.0061	-0.0391	-0.1960	11	-10.99	16
101XY	0.0004747	0.001805	0.002791	0.0192	0.0505	0.2608	11	-11	16
101Y	-0.01495	0.001551	-0.003444	-0.0401	0.0003	-0.0757	11.01	11	16
101aX	-8.738e-005	0.1056	-0.01527	0.0046	0.0037	0.0174	-8.738e-005	-10.89	15.98
101bY	-0.01641	0.001576	0.001006	-0.0191	0.0254	0.0140	11.02	0.001576	16
102X	-0.0003978	0.02358	0.001828	-0.0283	-0.0094	-0.1474	8.2	-8.176	31.6
102XY	0.000435	0.01577	0.00345	-0.0266	0.0224	0.2144	8.2	-8.184	31.6
102Y	-0.01081	0.01597	-0.007803	-0.0685	0.0482	-0.0632	8.211	8.216	31.59
102aX	-5.48e-006	0.04126	0.0007145	-0.0272	0.0053	0.0242	-5.48e-006	-8.159	31.6
102bY	-0.01411	0.016	-0.001416	-0.0353	0.0352	0.0211	8.214	0.016	31.6
103X	0.0003235	0.03146	0.002167	-0.0311	-0.0459	-0.1175	6.8	-6.769	39.4
103XY	-0.0001796	0.02493	0.003531	-0.0274	0.0588	0.1839	6.8	-6.775	39.4
103Y	-0.008296	0.02478	-0.009758	-0.0852	0.0042	-0.0735	6.808	6.825	39.39
104X	-0.003351	0.04034	0.002342	-0.0709	0.0346	-0.1287	5.397	-5.36	47.2
104XY	0.00363	0.03475	0.00354	-0.0651	-0.0217	0.1948	5.396	-5.365	47.2
104Y	-0.01172	0.0367	-0.01164	-0.0897	0.0456	-0.0835	5.412	5.437	47.19
105X	0.005667	0.05697	0.002959	-0.0993	-0.0926	-0.0999	4.006	-3.943	55
105XY	-0.005184	0.05237	0.004013	-0.0974	0.1074	0.1664	4.005	-3.948	55
105Y	4.868e-005	0.05044	-0.01538	-0.1769	0.1150	-0.0733	4	4.05	54.98
106X	-0.007232	0.06729	0.003893	-0.1723	-0.1075	-0.0736	3.993	-3.933	59.75
106XY	0.009008	0.06266	0.004987	-0.1717	0.1244	0.1404	3.991	-3.937	59.75
106Y	0.003687	0.06762	-0.01737	-0.2176	-0.0779	-0.0653	3.996	4.068	59.73
107X	-0.006037	0.08588	0.00498	-0.2572	0.1073	-0.0478	3.994	-3.914	64.5
107XY	0.009248	0.08115	0.006117	-0.2562	-0.0894	0.1148	3.991	-3.919	64.51
107Y	-0.009158	0.08496	-0.01922	-0.2004	-0.1333	-0.0580	4.009	4.085	64.48
108X	0.009154	0.1266	0.006097	-0.1893	-0.0729	0.0062	4.009	-3.873	74.01
108XY	-0.003071	0.1218	0.007277	-0.1894	0.0905	0.0614	4.003	-3.878	74.01

108Y	0.0002883	0.1196	-0.02213	-0.2458	0.2116	-0.0448	-4	4.12	73.98
109X	-0.01225	0.1413	0.006438	-0.2224	-0.1513	0.0192	3.988	-3.859	78.76
109XY	0.01977	0.1365	0.007624	-0.2222	0.1688	0.0487	-3.98	-3.863	78.76
109Y	0.01716	0.1422	-0.02372	-0.2791	-0.0280	-0.0402	-3.983	4.142	78.73
110X	-0.004309	0.1653	0.007068	-0.3220	0.2013	0.0308	3.996	-3.835	83.51
110XY	0.01324	0.1605	0.008267	-0.3216	-0.1837	0.0374	-3.987	-3.84	83.51
110Y	-0.003546	0.1643	-0.02504	-0.2545	-0.2385	-0.0359	-4.004	4.164	83.47
111X	0.0146	0.2133	0.007023	-0.2225	0.0032	0.0581	4.015	-3.787	93.01
111XY	-0.002793	0.2084	0.008237	-0.2225	0.0145	0.0106	-4.003	-3.792	93.01
111Y	0.003265	0.2063	-0.02664	-0.2777	0.1311	-0.0309	-3.997	4.206	92.97
112X	-0.001881	0.2385	0.006304	-0.2606	-0.0693	0.0581	3.998	-3.761	99.01
112XY	0.01549	0.2337	0.007516	-0.2607	0.0867	0.0106	-3.985	-3.766	99.01
112Y	-0.0004741	0.2357	-0.02802	-0.2701	-0.0341	-0.0301	-4	4.236	98.97
113X	0.01416	0.2672	0.006425	-0.2804	0.2643	0.0566	4.014	-3.733	105
113XY	0.001237	0.2624	0.007642	-0.2804	-0.2468	0.0122	-3.999	-3.738	105
113Y	0.007763	0.2624	-0.02807	-0.2479	0.1345	-0.0308	-3.992	4.262	105

Joint Support Reactions:

Joint Label	X-Force (kips)	% X Usage	Y-Force (kips)	% Y Usage	Z-Force (kips)	Comp. % Usage	Uplift % Usage	X-Moment (ft-k)	% X-M. Usage	Y-Moment (ft-k)	% Y-M. Usage	Z-Moment (ft-k)	% Z-M. Usage	Max. % Usage
100P	-22.643	0.0	-22.682	0.0	126.686	0.0	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.0
100X	14.292	0.0	-14.467	0.0	-65.032	0.0	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.0
100XY	-13.840	0.0	-11.274	0.0	-63.059	0.0	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.0
100Y	22.191	0.0	-24.186	0.0	124.244	0.0	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.0

Joint Displacements, Loads and Member Forces on Joints:

Joint Label	X External Load (kips)	Y External Load (kips)	Z External Load (kips)	X Member Force (kips)	Y Member Force (kips)	Z Member Force (kips)	X Disp. (ft)	Y Disp. (ft)	Z Disp. (ft)
100P	0.0000	0.1320	-0.5285	22.6425	22.5498	-126.1577	0.0000	0.0000	0.0000
101P	0.0000	0.3250	-0.9568	-0.0000	-0.3250	0.9568	-0.0150	0.0102	-0.0076
101aP	0.0000	0.0000	-0.2422	-0.0000	-0.0000	0.2422	-0.0150	-0.0108	-0.0149
101bP	0.0000	0.0000	-0.2422	0.0000	-0.0000	0.2422	-0.0012	0.0102	-0.0052
102P	0.0000	0.0000	-0.6466	-0.0000	-0.0000	0.6466	-0.0111	0.0229	-0.0110
102aP	0.0000	0.0000	-0.1162	-0.0000	-0.0000	0.1162	-0.0109	0.0117	-0.0143
102bP	0.0000	0.0000	-0.1162	0.0000	0.0000	0.1162	0.0033	0.0235	-0.0037
103P	0.0000	0.3220	-0.7128	-0.0000	-0.3220	0.7128	-0.0092	0.0313	-0.0123
104P	0.0000	0.0000	-0.3784	-0.0000	0.0000	0.3784	-0.0014	0.0423	-0.0136
105P	0.0000	1.0110	-1.5205	0.0000	-1.0110	1.5205	-0.0089	0.0550	-0.0167
106P	0.0000	0.0000	-0.1863	-0.0000	-0.0000	0.1863	-0.0111	0.0722	-0.0186
107P	0.0000	0.0000	-0.4173	0.0000	0.0000	0.4173	0.0031	0.0897	-0.0205
108P	0.0000	0.3140	-0.7297	0.0000	-0.3140	0.7297	-0.0036	0.1244	-0.0233
109P	0.0000	0.0000	-0.1426	-0.0000	0.0000	0.1426	-0.0191	0.1469	-0.0249
110P	0.0000	0.0000	-0.2507	-0.0000	-0.0000	0.2507	0.0030	0.1692	-0.0262
111P	0.0000	0.2060	-0.4619	0.0000	-0.2060	0.4619	-0.0011	0.2112	-0.0278
112P	0.0000	0.0930	-0.2168	-0.0000	-0.0930	0.2168	0.0044	0.2405	-0.0292
113P	0.0000	0.0000	-0.1971	-0.0000	0.0000	0.1971	-0.0020	0.2672	-0.0293
Arm1aP	0.0000	9.0880	-14.7346	-0.0000	-9.0880	14.7346	-0.0122	0.0510	-0.1088
Arm1bP	0.0000	9.1882	-14.7445	0.0000	-9.1882	14.7445	0.0084	0.0610	-0.0262
Arm2aP	0.0000	9.0880	-14.8285	-0.0000	-9.0880	14.8285	-0.0112	0.1186	-0.1634
Arm2bP	0.0000	9.2052	-14.8408	0.0000	-9.2052	14.8408	0.0130	0.1309	-0.0213
Arm3aP	0.0000	9.0880	-14.7242	-0.0000	-9.0880	14.7242	-0.0071	0.2070	-0.1227
Arm3bP	0.0000	9.1937	-14.7336	0.0000	-9.1937	14.7336	0.0145	0.2173	0.0159
Arm4aP	0.0000	2.6200	-3.0994	-0.0000	-2.6200	3.0994	-0.0068	0.2669	-0.1134
Arm4bP	0.0000	2.7554	-3.1097	0.0000	-2.7554	3.1097	0.0178	0.2659	0.0887
100X	0.0000	0.2662	-0.4495	-14.2921	14.2013	65.4812	0.0000	0.0000	0.0000
100XY	0.0000	0.2662	-0.4495	13.8402	11.0079	63.5081	0.0000	0.0000	0.0000
100Y	0.0000	0.0000	-0.4495	-22.1907	24.1859	-123.7947	0.0000	0.0000	0.0000
101X	0.0000	0.4061	-0.7628	0.0000	-0.4061	0.7628	-0.0006	0.0104	0.0011
101XY	0.0000	0.4061	-0.7628	-0.0000	-0.4061	0.7628	0.0005	0.0018	0.0028
101Y	0.0000	0.0000	-0.7628	0.0000	0.0000	0.7628	-0.0149	0.0016	-0.0034
101aX	0.0000	0.4260	-0.2422	-0.0000	-0.4260	0.2422	-0.0001	0.1056	-0.0153
101bY	0.0000	0.0000	-0.2422	-0.0000	-0.0000	0.2422	-0.0164	0.0016	0.0010
102X	0.0000	0.3624	-0.6466	0.0000	-0.3624	0.6466	-0.0004	0.0236	0.0018
102XY	0.0000	0.3624	-0.6466	-0.0000	-0.3624	0.6466	0.0004	0.0158	0.0034
102Y	0.0000	0.0000	-0.6466	0.0000	0.0000	0.6466	-0.0108	0.0160	-0.0078
102aX	0.0000	0.1560	-0.1162	0.0000	-0.1560	0.1162	-0.0000	0.0413	0.0007
102bY	0.0000	0.0000	-0.1162	-0.0000	-0.0000	0.1162	-0.0141	0.0160	-0.0014
103X	0.0000	0.3493	-0.5208	0.0000	-0.3493	0.5208	0.0003	0.0315	0.0022
103XY	0.0000	0.3493	-0.5208	-0.0000	-0.3493	0.5208	-0.0002	0.0249	0.0035
103Y	0.0000	0.0000	-0.5208	0.0000	-0.0000	0.5208	-0.0083	0.0248	-0.0098
104X	0.0000	0.2845	-0.3784	0.0000	-0.2845	0.3784	-0.0034	0.0403	0.0023
104XY	0.0000	0.2845	-0.3784	-0.0000	-0.2845	0.3784	0.0036	0.0348	0.0035
104Y	0.0000	0.0000	-0.3784	0.0000	-0.0000	0.3784	-0.0117	0.0367	-0.0116
105X	0.0000	1.0171	-1.3541	0.0000	-1.0171	1.3541	0.0057	0.0570	0.0030
105XY	0.0000	1.0171	-1.3541	0.0000	-1.0171	1.3541	-0.0052	0.0524	0.0040

105Y	0.0000	0.7260	-1.3505	0.0000	-0.7260	1.3505	0.0000	0.0504	-0.0154
106X	0.0000	0.1216	-0.1877	0.0000	-0.1216	0.1877	-0.0072	0.0673	0.0039
106XY	0.0000	0.1216	-0.1877	-0.0000	-0.1216	0.1877	0.0090	0.0627	0.0050
106Y	0.0000	0.0000	-0.1863	0.0000	0.0000	0.1863	0.0037	0.0676	-0.0174
107X	0.0000	0.2934	-0.4173	-0.0000	-0.2934	0.4173	-0.0060	0.0859	0.0050
107XY	0.0000	0.2934	-0.4173	0.0000	-0.2934	0.4173	0.0092	0.0812	0.0061
107Y	0.0000	0.0000	-0.4173	-0.0000	0.0000	0.4173	-0.0092	0.0850	-0.0192
108X	0.0000	0.2962	-0.5471	0.0000	-0.2962	0.5471	0.0092	0.1266	0.0061
108XY	0.0000	0.2962	-0.5471	0.0000	-0.2962	0.5471	-0.0031	0.1218	0.0073
108Y	0.0000	0.0000	-0.5427	-0.0000	0.0000	0.5427	0.0003	0.1196	-0.0221
109X	0.0000	0.1040	-0.1443	-0.0000	-0.1040	0.1443	-0.0123	0.1413	0.0064
109XY	0.0000	0.1040	-0.1443	0.0000	-0.1040	0.1443	0.0198	0.1365	0.0076
109Y	0.0000	0.0000	-0.1426	0.0000	0.0000	0.1426	0.0172	0.1422	-0.0237
110X	0.0000	0.2200	-0.2507	-0.0000	-0.2200	0.2507	-0.0043	0.1653	0.0071
110XY	0.0000	0.2200	-0.2507	-0.0000	-0.2200	0.2507	0.0132	0.1605	0.0083
110Y	0.0000	0.0000	-0.2507	-0.0000	0.0000	0.2507	-0.0035	0.1643	-0.0250
111X	0.0000	0.2190	-0.3426	0.0000	-0.2190	0.3426	0.0146	0.2133	0.0070
111XY	0.0000	0.2190	-0.3426	0.0000	-0.2190	0.3426	-0.0028	0.2084	0.0082
111Y	0.0000	0.0000	-0.3389	-0.0000	0.0000	0.3389	0.0033	0.2063	-0.0266
112X	0.0000	0.2603	-0.2194	-0.0000	-0.2603	0.2194	-0.0019	0.2385	0.0063
112XY	0.0000	0.2603	-0.2194	-0.0000	-0.2603	0.2194	0.0155	0.2337	0.0075
112Y	0.0000	0.0930	-0.2168	0.0000	-0.0930	0.2168	-0.0005	0.2357	-0.0280
113X	0.0000	0.0894	-0.2006	-0.0000	-0.0894	0.2006	0.0142	0.2672	0.0064
113XY	0.0000	0.0894	-0.2006	-0.0000	-0.0894	0.2006	0.0012	0.2624	0.0076
113Y	0.0000	0.0000	-0.1971	0.0000	0.0000	0.1971	0.0078	0.2624	-0.0281

Moments for Angles Modeled as Beams:

Angle Label	Torsion (ft-lbs)	Origin X Moment (ft-lbs)	Origin Z Moment (ft-lbs)	End X Moment (ft-lbs)	End Z Moment (ft-lbs)
Legs1P	0.00	0.00	0.00	1340.65	1151.59
Legs2aP	40.37	-1476.74	-1133.22	-640.02	-963.40
Legs2bP	148.57	612.82	934.48	2777.29	1530.98
Legs3aP	299.16	-2819.07	-1561.40	-3929.30	-2574.69
Legs3bP	296.40	3944.77	2551.26	4323.85	-2091.15
Legs4aP	-183.38	3328.16	1762.43	524.89	-11943.68
Legs4bP	-181.06	-525.51	11943.69	681.44	8044.23
Legs4cP	-183.45	-680.77	-8044.23	-2285.53	4290.07
Legs5aP	-25.72	1022.38	-4652.05	264.11	-10121.88
Legs5bP	-24.39	-264.30	10121.88	297.43	5323.15
Legs5cP	-24.58	-297.31	-5323.15	-562.21	-1110.32
Legs6aP	-0.07	32.60	786.25	51.26	397.08
Legs6bP	-0.00	-51.26	-397.05	-0.00	0.01
Hor1aP	-3.51	76.63	-51.61	156.96	-134.44
Hor1bP	-0.16	116.99	85.40	69.22	46.33
Hor2aP	-1.14	22.33	84.57	35.37	-141.56
Hor2bP	-1.95	17.89	27.61	2.30	-112.47
Hor3aP	23.75	35.02	34.13	-28.82	-228.11
Hor3bP	-2.99	-0.39	118.27	-10.05	-98.26
Hor5P	-10.18	356.45	-499.89	-435.53	-1366.68
Hor8P	-379.40	567.53	-201.86	-95.21	-659.87
Hor11P	-308.25	284.37	-292.44	-268.52	-443.30
Arm1aP	279.57	1544.53	536.00	81.72	319.46
Arm1bP	-256.43	1541.14	-364.59	74.66	-102.22
Arm2aP	426.48	1781.32	357.08	106.98	195.72
Arm2bP	-255.11	2170.41	41.62	61.96	98.21
Arm3aP	246.04	776.19	315.41	72.89	181.30
Arm3bP	-116.31	1488.94	327.90	33.52	281.25
Legs1X	-0.00	-0.00	-0.00	-300.82	-68.00
Legs1XY	0.00	-0.00	0.00	-853.34	580.65
Legs1Y	-0.00	-0.00	-0.00	-357.26	1873.31
Legs2aX	658.22	86.72	5.62	243.90	-714.78
Legs2aXY	-678.60	662.46	-512.05	275.41	680.79
Legs2aY	-12.94	203.58	-1748.41	-218.56	-61.39
Legs2bX	540.64	-253.98	743.41	-1937.31	2611.91
Legs2bXY	-546.04	-286.68	-716.82	-1882.70	-2672.64
Legs2bY	-125.04	199.31	83.50	2822.34	-1206.20
Legs3aX	166.40	1974.46	-2590.40	3178.13	-6201.87
Legs3aXY	-165.04	1920.01	2652.93	3184.00	6198.94
Legs3aY	-286.01	-2863.72	1252.09	-3972.67	2477.22
Legs3bX	169.47	-3133.95	6224.24	-7755.25	9440.54
Legs3bXY	-168.18	-3139.92	-6221.30	-7930.25	-9379.18
Legs3bY	-283.04	3987.57	-2453.50	4490.22	2200.99
Legs4aX	730.52	264.93	-11756.04	-4966.83	-10680.84
Legs4aXY	-723.26	414.70	11830.60	-4906.20	10594.85
Legs4aY	198.27	3499.38	-1809.38	603.92	12027.52
Legs4bX	734.41	4969.04	10679.55	-1134.28	-4711.90
Legs4bXY	-727.24	4908.37	-10593.57	-1182.01	4720.93
Legs4bY	195.81	-604.60	-12027.52	634.78	-8063.57

Legs4cX	734.64	1135.26	4711.62	3568.12	11170.90
Legs4cXY	-727.48	1182.99	-4720.65	3583.71	-11165.52
Legs4cY	198.19	-634.05	8063.57	-2274.48	-4295.95
Legs5aX	113.17	-1495.13	-10532.84	-2248.95	-8745.51
Legs5aXY	-110.58	-1502.47	10529.48	-2247.85	8742.70
Legs5aY	29.65	1023.59	4657.05	268.74	10121.92
Legs5bX	116.29	2249.69	8745.28	-18.64	702.55
Legs5bXY	-113.62	2248.58	-8742.47	-24.41	-705.53
Legs5bY	28.42	-268.96	-10121.91	294.38	-5321.69
Legs5cX	116.28	18.68	-702.55	1151.71	1556.93
Legs5cXY	-113.60	24.44	705.53	1154.88	-1553.99
Legs5cY	28.64	-294.25	5321.70	-560.74	1108.00
Legs6aX	-0.20	44.36	-955.34	-45.61	-784.81
Legs6aXY	0.19	43.08	954.27	-46.63	784.47
Legs6aY	0.07	33.73	-785.26	51.83	-396.74
Legs6bX	-0.00	45.61	784.83	0.00	0.01
Legs6bXY	-0.00	46.63	-784.45	-0.00	0.00
Legs6bY	0.00	-51.83	396.74	0.00	-0.00
Hor1aX	-4.25	222.71	925.48	275.41	1103.20
Hor1aXY	-5.77	217.89	-900.48	275.26	-1103.23
Hor1aY	-3.26	188.14	52.74	156.98	134.43
Hor1bX	-0.06	83.66	-272.08	69.22	-46.33
Hor1bXY	-9.92	57.64	226.21	10.85	20.63
Hor1bY	-9.91	36.61	-95.30	10.86	-20.62
Hor2aX	-0.54	4.77	211.60	12.06	578.07
Hor2aXY	-0.34	3.53	-171.90	12.03	-578.07
Hor2aY	-1.25	15.74	-37.34	35.38	141.56
Hor2bX	-1.92	9.12	-332.65	2.31	112.47
Hor2bXY	6.58	6.86	309.36	2.57	-103.28
Hor2bY	6.61	19.15	-76.77	2.56	103.28
Hor3aY	-21.70	31.20	-68.19	-28.62	199.00
Hor3bX	-1.46	-52.06	-138.83	56.52	174.09
Hor5Y	21.57	351.80	480.89	-440.80	1354.98
Hor8Y	377.58	577.21	196.39	-86.73	658.23
Hor11Y	306.69	286.47	290.28	-266.23	442.05
Arm1aY	-279.08	1556.74	-540.07	83.37	-319.46
Arm1bY	257.58	1525.94	366.03	70.61	102.21
Arm2aY	-426.70	1778.63	-362.60	106.09	-195.72
Arm2bY	255.37	2170.14	-44.79	60.87	-98.21
Arm3aY	-246.07	775.66	-317.37	72.79	-181.30
Arm3bY	116.56	1488.49	-329.43	32.63	-281.25

Summary of Clamp Capacities and Usages:

Clamp Label	Force (kips)	Allowable (kips)	Usage %
Arm4aP	4.06	100.00	4.06
Arm4bP	4.15	100.00	4.15
Arm3aP	17.30	100.00	17.30
Arm3bP	17.37	100.00	17.37
Arm2aP	17.39	100.00	17.39
Arm2bP	17.46	100.00	17.46
Arm1aP	17.31	100.00	17.31
Arm1bP	17.37	100.00	17.37
100P	0.54	100.00	0.54
101P	1.01	100.00	1.01
102P	0.65	100.00	0.65
103P	0.78	100.00	0.78
104P	0.38	100.00	0.38
105P	1.83	100.00	1.83
105X	1.69	100.00	1.69
105XY	1.69	100.00	1.69
105Y	1.53	100.00	1.53
106P	0.19	100.00	0.19
107P	0.42	100.00	0.42
108P	0.79	100.00	0.79
109P	0.14	100.00	0.14
110P	0.25	100.00	0.25
111P	0.51	100.00	0.51
112P	0.24	100.00	0.24
112X	0.34	100.00	0.34
112XY	0.34	100.00	0.34
112Y	0.24	100.00	0.24

*** Analysis Results for Load Case No. 3 "ConEdHurr(int)" - Number of iterations in SAPS 9

Equilibrium Joint Positions and Rotations:

Joint Label	X-Displ (ft)	Y-Displ (ft)	Z-Displ (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Pos (ft)	Y-Pos (ft)	Z-Pos (ft)
100P	0	0	0	-0.0730	-0.1078	0.1053	13.87	13.87	0
101P	-0.01716	0.01608	-0.007809	-0.0722	-0.0408	0.1174	10.98	11.02	15.99
101aP	-0.01713	-0.002359	-0.01529	-0.0638	0.0324	0.0076	-0.01713	11	15.98
101bP	0.003642	0.01596	-0.004829	-0.0206	-0.0560	0.1226	11	0.01596	16
102P	-0.01269	0.03308	-0.01132	-0.0906	-0.0164	0.1184	8.187	8.233	31.59
102aP	-0.01251	0.02333	-0.0145	-0.0848	0.0119	0.0117	-0.01251	8.223	31.59
102bP	0.005936	0.03412	-0.001804	-0.0511	-0.0184	0.0941	8.206	0.03412	31.6
103P	-0.01056	0.04408	-0.01242	-0.1042	0.0263	0.1222	6.789	6.844	39.39
104P	-0.001718	0.05698	-0.01359	-0.1136	-0.0384	0.1098	5.398	5.457	47.19
105P	-0.01135	0.07456	-0.01652	-0.1971	-0.0410	0.0950	3.989	4.075	54.98
106P	-0.007443	0.0937	-0.01861	-0.2535	0.1316	0.0956	3.993	4.094	59.73
107P	0.004619	0.1154	-0.02065	-0.2662	0.0889	0.0973	4.005	4.115	64.48
108P	-0.006539	0.1609	-0.02366	-0.2906	-0.1311	0.1009	3.993	4.161	73.98
109P	-0.01065	0.187	-0.02513	-0.3248	0.1029	0.0997	3.989	4.187	78.72
110P	0.005083	0.2138	-0.02651	-0.3244	0.1403	0.0998	4.005	4.214	83.47
111P	-0.004647	0.2678	-0.02791	-0.3223	-0.0906	0.1016	3.995	4.268	92.97
112P	0.00634	0.3021	-0.02874	-0.3234	0.0744	0.1006	4.006	4.302	98.97
113P	-0.003822	0.335	-0.02888	-0.3095	-0.1815	0.1020	3.996	4.335	105
Arm1aP	-0.01318	0.07325	-0.08539	-0.3338	0.0119	0.0340	-0.01318	17.57	54.91
Arm1bP	0.00779	0.07778	0.02407	-0.0295	0.0056	0.0336	0.00779	-18.09	55.02
Arm2aP	-0.01261	0.1581	-0.1367	-0.4415	0.0087	0.0373	-0.01261	20.16	73.86
Arm2bP	0.01307	0.1639	0.053	-0.0723	0.0092	0.0370	0.01307	-20.51	74.05
Arm3aP	-0.0084	0.2661	-0.1112	-0.3530	0.0089	0.0377	-0.0084	17.77	92.89
Arm3bP	0.01479	0.271	0.06217	-0.1292	0.0094	0.0376	0.01479	-17.9	93.06
Arm4aP	-0.008141	0.3341	-0.126	0.0000	0.0000	0.0000	-0.008141	20.33	104.9
Arm4bP	0.01829	0.3346	0.1178	0.0000	0.0000	0.0000	0.01829	-20.34	105.1
100X	0	0	0	0.0142	-0.0697	-0.3689	13.87	-13.87	0
100XY	0	0	0	0.0449	0.0801	0.4283	-13.87	-13.87	0
100Y	0	0	0	-0.0467	-0.0623	-0.0835	-13.87	13.87	0
101X	-0.001946	0.01634	0.001822	0.0042	-0.0721	-0.3703	11	-10.98	16
101XY	0.001774	0.01167	0.002618	0.0252	0.0817	0.4315	-11	-10.99	16
101Y	-0.01708	0.0112	-0.002289	-0.0561	-0.0028	-0.0712	-11.02	11.01	16
101aX	-0.0001282	0.2103	-0.03175	0.0070	0.0008	0.0030	-0.0001282	-10.79	15.97
101bY	-0.02218	0.01124	-0.0003331	-0.0114	0.0391	-0.0164	-11.02	0.01124	16
102X	-0.00115	0.03433	0.003756	-0.0212	-0.0208	-0.2537	8.199	-8.166	31.6
102XY	0.0005344	0.0288	0.00471	-0.0109	0.0308	0.3169	-8.199	-8.171	31.6
102Y	-0.0124	0.02786	-0.007274	-0.0788	0.0533	-0.0555	-8.212	8.228	31.59
102aX	-0.0003412	0.07275	7.022e-005	-0.0151	0.0025	0.0132	-0.0003412	-8.127	31.6
102bY	-0.01866	0.02855	0.0006172	-0.0404	0.0419	0.0025	-8.219	0.02855	31.6
103X	-5.603e-005	0.04418	0.004868	-0.0383	-0.0614	-0.1802	6.8	-6.756	39.4
103XY	-0.0007468	0.03886	0.005793	-0.0288	0.0717	0.2440	-6.801	-6.761	39.41
103Y	-0.009568	0.03868	-0.009251	-0.0934	-0.0048	-0.0697	-6.81	6.839	39.39
104X	-0.005455	0.05616	0.005707	-0.0801	0.0281	-0.1409	5.395	-5.344	47.21
104XY	0.004506	0.05109	0.006663	-0.0695	-0.0175	0.2056	-5.395	-5.349	47.21
104Y	-0.01358	0.05191	-0.01124	-0.1042	0.0637	-0.0464	-5.414	5.452	47.19
105X	0.005873	0.07547	0.007585	-0.1564	-0.0413	-0.0786	4.006	-3.925	55.01
105XY	-0.006843	0.07082	0.008593	-0.1528	0.0551	0.1451	-4.007	-3.929	55.01
105Y	0.0008155	0.06991	-0.01506	-0.1935	0.0626	-0.0299	-3.999	4.07	54.98
106X	-0.004002	0.09153	0.009125	-0.2346	-0.1220	-0.0520	3.996	-3.908	59.76
106XY	0.004319	0.08678	0.01021	-0.2331	0.1399	0.1194	-3.996	-3.913	59.76
106Y	-0.001472	0.08895	-0.01721	-0.2522	-0.1138	-0.0295	-4.001	4.089	59.73
107X	-0.0079	0.1138	0.01072	-0.2908	0.0404	-0.0262	3.992	-3.886	64.51
107XY	0.00978	0.1088	0.01188	-0.2885	-0.0207	0.0945	-3.99	-3.891	64.51
107Y	-0.01219	0.1105	-0.01932	-0.2638	-0.0728	-0.0300	-4.012	4.11	64.48
108X	0.008402	0.1619	0.0127	-0.2651	0.0180	0.0271	4.008	-3.838	74.01
108XY	-0.003403	0.1569	0.01393	-0.2652	0.0007	0.0429	-4.003	-3.843	74.01
108Y	0.001698	0.1558	-0.02237	-0.2907	0.1485	-0.0315	-3.998	4.156	73.98
109X	-0.00335	0.1845	0.01352	-0.3005	-0.1382	0.0406	3.997	-3.815	78.76
109XY	0.009857	0.1795	0.01477	-0.2998	0.1568	0.0302	-3.99	-3.821	78.76
109Y	0.007237	0.1819	-0.02386	-0.3244	-0.0852	-0.0293	-3.993	4.182	78.73
110X	-0.004486	0.2123	0.01446	-0.3551	0.0791	0.0524	3.996	-3.788	83.51
110XY	0.01252	0.2071	0.01572	-0.3541	-0.0600	0.0193	-3.987	-3.793	83.52
110Y	-0.00708	0.2087	-0.02524	-0.3233	-0.1228	-0.0284	-4.007	4.209	83.47
111X	0.01361	0.2688	0.01487	-0.2969	0.0505	0.0785	4.014	-3.731	93.01
111XY	-0.002481	0.2636	0.01616	-0.2971	-0.0316	-0.0051	-4.002	-3.736	93.02
111Y	0.005467	0.2626	-0.02664	-0.3223	0.1083	-0.0283	-3.995	4.263	92.97
112X	-0.00157	0.3013	0.01464	-0.3195	-0.0716	0.0790	3.998	-3.699	99.01
112XY	0.01458	0.2961	0.01592	-0.3195	0.0899	-0.0056	-3.985	-3.704	99.02
112Y	-0.003672	0.2969	-0.02747	-0.3236	-0.0562	-0.0273	-4.004	4.297	98.97
113X	0.01452	0.3352	0.01465	-0.3263	0.2663	0.0771	4.015	-3.665	105
113XY	0.0003852	0.33	0.01594	-0.3264	-0.2478	-0.0037	-4	-3.67	105
113Y	0.00834	0.3298	-0.02762	-0.3095	0.1995	-0.0287	-3.992	4.33	105

Joint Support Reactions:

Joint Label	X-Force	% X	Y-Force	% Y	Z-Force	Comp. %	Uplift %	X-Moment	% X-M.	Y-Moment	% Y-M.	Z-Moment	% Z-M.	Max. %

	(kips)	Usage	(kips)	Usage	(kips)	Usage	Usage	(ft-k)	Usage	(ft-k)	Usage	(ft-k)	Usage	Usage
100P	-25.782	0.0	-25.939	0.0	144.025	0.0	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.0
100X	24.550	0.0	-25.923	0.0	-110.372	0.0	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.0
100XY	-23.637	0.0	-23.292	0.0	-106.087	0.0	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.0
100Y	24.868	0.0	-24.791	0.0	139.279	0.0	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.0

Joint Displacements, Loads and Member Forces on Joints:

Joint Label	X External Load (kips)	Y External Load (kips)	Z External Load (kips)	X Member Force (kips)	Y Member Force (kips)	Z Member Force (kips)	X Disp. (ft)	Y Disp. (ft)	Z Disp. (ft)
100P	0.0000	0.3300	-0.5285	25.7815	25.6095	-143.4962	0.0000	0.0000	0.0000
101P	0.0000	0.8130	-0.9568	-0.0000	-0.8130	0.9568	-0.0172	0.0161	-0.0078
101aP	0.0000	0.0000	-0.2422	-0.0000	-0.0000	0.2422	-0.0171	-0.0024	-0.0153
101bP	0.0000	0.0000	-0.2422	0.0000	-0.0000	0.2422	0.0036	0.0160	-0.0048
102P	0.0000	0.0000	-0.6466	-0.0000	-0.0000	0.6466	-0.0127	0.0331	-0.0113
102aP	0.0000	0.0000	-0.1162	-0.0000	-0.0000	0.1162	-0.0125	0.0233	-0.0145
102bP	0.0000	0.0000	-0.1162	0.0000	-0.0000	0.1162	0.0059	0.0341	-0.0018
103P	0.0000	0.8040	-0.7128	-0.0000	-0.8040	0.7128	-0.0106	0.0441	-0.0124
104P	0.0000	0.0000	-0.3784	-0.0000	0.0000	0.3784	-0.0017	0.0570	-0.0136
105P	0.0000	1.4340	-0.7865	0.0000	-1.4340	0.7865	-0.0114	0.0746	-0.0165
106P	0.0000	0.0000	-0.1863	0.0000	0.0000	0.1863	-0.0074	0.0937	-0.0186
107P	0.0000	0.0000	-0.4173	-0.0000	0.0000	0.4173	0.0046	0.1154	-0.0207
108P	0.0000	0.7840	-0.7297	0.0000	-0.7840	0.7297	-0.0065	0.1609	-0.0237
109P	0.0000	0.0000	-0.1426	0.0000	0.0000	0.1426	-0.0107	0.1870	-0.0251
110P	0.0000	0.0000	-0.2507	-0.0000	0.0000	0.2507	0.0051	0.2138	-0.0265
111P	0.0000	0.5160	-0.4619	0.0000	-0.5160	0.4619	-0.0046	0.2678	-0.0279
112P	0.0000	0.2330	-0.2168	-0.0000	-0.2330	0.2168	0.0063	0.3021	-0.0287
113P	0.0000	0.0000	-0.1971	-0.0000	0.0000	0.1971	-0.0038	0.3350	-0.0289
Arm1aP	0.0000	11.4340	-6.6316	-0.0000	-11.4340	6.6316	-0.0132	0.0732	-0.0854
Arm1bP	0.0000	11.6844	-6.6415	0.0000	-11.6844	6.6415	0.0078	0.0778	0.0241
Arm2aP	0.0000	11.4340	-6.7255	-0.0000	-11.4340	6.7255	-0.0126	0.1581	-0.1367
Arm2bP	0.0000	11.7271	-6.7378	0.0000	-11.7271	6.7378	0.0131	0.1639	0.0530
Arm3aP	0.0000	11.4340	-6.6212	-0.0000	-11.4340	6.6212	-0.0084	0.2661	-0.1112
Arm3bP	0.0000	11.6982	-6.6306	0.0000	-11.6982	6.6306	0.0148	0.2710	0.0622
Arm4aP	0.0000	1.8080	-0.8784	-0.0000	-1.8080	0.8784	-0.0081	0.3341	-0.1260
Arm4bP	0.0000	2.1465	-0.8887	0.0000	-2.1465	0.8887	0.0183	0.3346	0.1178
100X	0.0000	0.6654	-0.4495	-24.5502	25.2572	110.8216	0.0000	0.0000	0.0000
100XY	0.0000	0.6654	-0.4495	23.6371	22.6269	106.5369	0.0000	0.0000	0.0000
100Y	0.0000	0.0000	-0.4495	-24.8684	24.7915	-138.8293	0.0000	0.0000	0.0000
101X	0.0000	1.0152	-0.7628	0.0000	-1.0152	0.7628	-0.0019	0.0163	0.0018
101XY	0.0000	1.0152	-0.7628	-0.0000	-1.0152	0.7628	0.0018	0.0117	0.0026
101Y	0.0000	0.0000	-0.7628	0.0000	0.0000	0.7628	-0.0171	0.0112	-0.0023
101aX	0.0000	1.0649	-0.2422	0.0000	-1.0649	0.2422	-0.0001	0.2103	-0.0318
101bY	0.0000	0.0000	-0.2422	-0.0000	-0.0000	0.2422	-0.0222	0.0112	-0.0003
102X	0.0000	0.9060	-0.6466	0.0000	-0.9060	0.6466	-0.0011	0.0343	0.0038
102XY	0.0000	0.9060	-0.6466	-0.0000	-0.9060	0.6466	0.0005	0.0288	0.0047
102Y	0.0000	0.0000	-0.6466	0.0000	0.0000	0.6466	-0.0124	0.0279	-0.0073
102aX	0.0000	0.3899	-0.1162	0.0000	-0.3899	0.1162	-0.0003	0.0727	0.0001
102bY	0.0000	0.0000	-0.1162	-0.0000	-0.0000	0.1162	-0.0187	0.0286	0.0006
103X	0.0000	0.8733	-0.5208	0.0000	-0.8733	0.5208	-0.0001	0.0442	0.0049
103XY	0.0000	0.8733	-0.5208	0.0000	-0.8733	0.5208	-0.0007	0.0389	0.0058
103Y	0.0000	0.0000	-0.5208	-0.0000	-0.0000	0.5208	-0.0096	0.0387	-0.0093
104X	0.0000	0.7111	-0.3784	0.0000	-0.7111	0.3784	-0.0055	0.0562	0.0057
104XY	0.0000	0.7111	-0.3784	-0.0000	-0.7111	0.3784	0.0045	0.0511	0.0067
104Y	0.0000	0.0000	-0.3784	0.0000	-0.0000	0.3784	-0.0136	0.0519	-0.0112
105X	0.0000	1.4478	-0.6201	0.0000	-1.4478	0.6201	0.0059	0.0755	0.0076
105XY	0.0000	1.4478	-0.6201	0.0000	-1.4478	0.6201	-0.0068	0.0708	0.0086
105Y	0.0000	0.7200	-0.6165	0.0000	-0.7200	0.6165	0.0008	0.0699	-0.0151
106X	0.0000	0.3039	-0.1877	-0.0000	-0.3039	0.1877	-0.0040	0.0915	0.0091
106XY	0.0000	0.3039	-0.1877	-0.0000	-0.3039	0.1877	0.0043	0.0868	0.0102
106Y	0.0000	0.0000	-0.1863	0.0000	0.0000	0.1863	-0.0015	0.0889	-0.0172
107X	0.0000	0.7334	-0.4173	-0.0000	-0.7334	0.4173	-0.0079	0.1138	0.0107
107XY	0.0000	0.7334	-0.4173	0.0000	-0.7334	0.4173	0.0098	0.1088	0.0119
107Y	0.0000	0.0000	-0.4173	-0.0000	-0.0000	0.4173	-0.0122	0.1105	-0.0193
108X	0.0000	0.7406	-0.5471	0.0000	-0.7406	0.5471	0.0084	0.1619	0.0127
108XY	0.0000	0.7406	-0.5471	0.0000	-0.7406	0.5471	-0.0034	0.1569	0.0139
108Y	0.0000	0.0000	-0.5427	0.0000	0.0000	0.5427	0.0017	0.1558	-0.0224
109X	0.0000	0.2600	-0.1443	-0.0000	-0.2600	0.1443	-0.0033	0.1845	0.0135
109XY	0.0000	0.2600	-0.1443	0.0000	-0.2600	0.1443	0.0099	0.1795	0.0148
109Y	0.0000	0.0000	-0.1426	0.0000	0.0000	0.1426	0.0072	0.1819	-0.0239
110X	0.0000	0.5501	-0.2507	-0.0000	-0.5501	0.2507	-0.0045	0.2123	0.0145
110XY	0.0000	0.5501	-0.2507	-0.0000	-0.5501	0.2507	0.0125	0.2071	0.0157
110Y	0.0000	0.0000	-0.2507	-0.0000	0.0000	0.2507	-0.0071	0.2087	-0.0252
111X	0.0000	0.5475	-0.3426	0.0000	-0.5475	0.3426	0.0136	0.2688	0.0149
111XY	0.0000	0.5475	-0.3426	0.0000	-0.5475	0.3426	-0.0025	0.2636	0.0162
111Y	0.0000	0.0000	-0.3389	0.0000	0.0000	0.3389	0.0055	0.2626	-0.0266
112X	0.0000	0.6512	-0.2194	-0.0000	-0.6512	0.2194	-0.0016	0.3013	0.0146

112XY	0.0000	0.6512	-0.2194	-0.0000	-0.6512	0.2194	0.0146	0.2961	0.0159
112Y	0.0000	0.2330	-0.2168	-0.0000	-0.2330	0.2168	-0.0037	0.2969	-0.0275
113X	0.0000	0.2234	-0.2006	-0.0000	-0.2234	0.2006	0.0145	0.3352	0.0147
113XY	0.0000	0.2234	-0.2006	-0.0000	-0.2234	0.2006	0.0004	0.3300	0.0159
113Y	0.0000	0.0000	-0.1971	-0.0000	0.0000	0.1971	0.0083	0.3298	-0.0276

Moments for Angles Modeled as Beams:

Angle Label	Torsion (ft-lbs)	Origin X Moment (ft-lbs)	Origin Z Moment (ft-lbs)	End X Moment (ft-lbs)	End Z Moment (ft-lbs)
Legs1P	0.00	0.00	0.00	1395.74	1466.08
Legs2aP	-0.30	-1559.05	-1427.11	-635.32	-1292.27
Legs2bP	-32.19	605.75	1296.27	3031.55	2568.45
Legs3aP	13.99	-3081.47	-2591.87	-4732.95	-4874.11
Legs3bP	10.34	4771.96	4835.94	7173.68	2168.30
Legs4aP	36.76	3151.01	6656.58	-870.52	-5724.07
Legs4bP	38.36	870.58	5724.06	-46.79	8784.89
Legs4cP	36.60	46.65	-8784.90	-840.21	-899.84
Legs5aP	0.98	852.23	354.67	82.23	-4983.22
Legs5bP	2.10	-82.22	4983.22	-72.55	4129.80
Legs5cP	2.26	72.54	-4129.80	91.82	-1496.33
Legs6aP	-0.04	33.62	990.39	31.75	602.10
Legs6bP	-0.00	-31.75	-602.05	-0.00	0.02
Hor1aP	-3.36	83.37	-37.91	173.48	-129.30
Hor1bP	6.06	145.48	26.93	82.03	31.25
Hor2aP	-2.94	23.06	94.77	37.27	-133.05
Hor2bP	1.04	16.41	-126.37	-3.35	-178.24
Hor3aP	34.88	29.35	-70.90	-38.81	-384.71
Hor3bP	-4.30	8.06	119.59	-23.92	-70.29
Hor5P	-0.33	329.41	-939.17	-77.72	-1572.00
Hor8P	-464.31	763.49	-401.14	461.84	-722.14
Hor11P	-371.17	220.20	-402.70	-35.00	-486.85
Arm1aP	134.23	696.90	413.24	36.11	286.84
Arm1bP	-113.46	632.86	-272.31	36.75	-50.34
Arm2aP	260.33	709.66	365.24	64.51	231.14
Arm2bP	-52.76	1059.63	102.05	14.50	121.91
Arm3aP	156.06	52.62	400.65	45.98	268.28
Arm3bP	-8.68	943.56	372.16	3.74	290.89
Legs1X	-0.00	-0.00	0.00	-263.21	-162.50
Legs1XY	0.00	-0.00	-0.00	-451.51	386.26
Legs1Y	-0.00	0.00	-0.00	-1049.86	1495.43
Legs2aX	1481.09	-142.98	42.81	410.40	-689.54
Legs2aXY	-1479.98	60.14	-251.00	368.99	710.90
Legs2aY	18.95	812.87	-1407.13	88.45	356.63
Legs2bX	1575.05	-428.36	672.69	-2899.29	2774.52
Legs2bXY	-1561.46	-393.61	-696.37	-2908.49	-2774.88
Legs2bY	55.69	-105.05	-367.93	3033.95	-2253.40
Legs3aX	993.06	2948.62	-2722.21	4359.92	-6124.50
Legs3aXY	-975.24	2954.27	2730.64	4386.79	6104.47
Legs3aY	3.49	-3084.88	2294.29	-4814.55	4739.09
Legs3bX	997.24	-4306.78	6161.31	-8661.60	6658.51
Legs3bXY	-979.69	-4333.72	-6141.55	-8995.89	-6520.62
Legs3bY	7.49	4852.35	-4700.39	7529.46	-1944.06
Legs4aX	731.30	2405.78	-10440.49	-3194.73	-4645.20
Legs4aXY	-707.33	2696.99	10572.08	-3044.76	4485.38
Legs4aY	-6.73	3501.86	-6757.78	-699.89	5885.61
Legs4bX	733.35	3195.66	4644.23	-842.16	-6999.15
Legs4bXY	-709.46	3045.63	-4484.46	-947.90	7018.53
Legs4bY	-8.53	699.89	-5885.61	-129.74	-8819.68
Legs4cX	733.88	844.02	6998.87	1763.33	7802.16
Legs4cXY	-709.96	949.70	-7018.23	1781.76	-7786.34
Legs4cY	-6.79	129.71	8819.68	-840.76	887.05
Legs5aX	113.03	-259.46	-7142.20	-1068.05	-3580.52
Legs5aXY	-105.54	-262.66	7131.94	-1049.02	3572.01
Legs5aY	7.51	870.37	-346.28	105.74	4984.92
Legs5bX	114.50	1068.31	3580.40	-173.76	-1375.61
Legs5bXY	-106.98	1049.27	-3571.89	-190.43	1372.49
Legs5bY	6.42	-105.77	-4984.92	-80.60	-4127.22
Legs5cX	114.28	174.01	1375.60	836.90	1702.04
Legs5cXY	-106.75	190.66	-1372.47	840.62	-1695.96
Legs5cY	6.27	80.63	4127.22	90.70	1491.32
Legs6aX	-0.13	38.64	-1082.35	-14.84	-795.02
Legs6aXY	0.11	36.65	1080.47	-16.15	794.49
Legs6aY	0.03	35.79	-988.78	32.88	-601.65
Legs6bX	-0.00	14.83	795.06	0.00	0.01
Legs6bXY	-0.00	16.15	-794.48	-0.00	0.01
Legs6bY	-0.00	-32.88	601.65	0.00	0.00
Hor1aX	-1.07	467.81	1907.07	557.45	2217.90
Hor1aXY	-7.25	457.94	-1861.04	557.18	-2217.96

Hor1aY	-3.10	216.70	63.63	173.50	129.28
Hor1bX	6.27	111.68	-441.77	82.02	-31.26
Hor1bXY	-15.80	103.78	393.15	59.47	20.12
Hor1bY	-16.64	114.44	-65.84	59.51	-20.13
Hor2aX	-3.06	18.93	659.86	30.55	1229.97
Hor2aXY	-2.12	16.34	-581.46	30.46	-1229.97
Hor2aY	-3.04	16.55	-10.22	37.28	133.04
Hor2bX	1.12	11.53	-564.65	-3.35	178.24
Hor2bXY	5.72	11.84	498.96	-2.82	-172.43
Hor2bY	5.79	16.35	48.52	-2.82	172.43
Hor3aY	-30.40	26.76	11.35	-40.05	327.68
Hor3bX	-3.80	-64.80	-190.59	73.11	249.72
Hor5Y	20.82	318.84	906.71	-87.84	1544.87
Hor8Y	460.17	781.19	390.43	479.83	713.83
Hor11Y	368.04	221.83	398.35	-31.69	482.82
Arm1aY	-132.30	726.82	-419.34	42.62	-286.84
Arm1bY	115.90	601.60	271.02	28.10	50.33
Arm2aY	-260.11	709.86	-375.93	65.40	-231.14
Arm2bY	53.57	1056.63	-110.35	11.12	-121.91
Arm3aY	-155.94	53.25	-404.85	46.34	-268.29
Arm3bY	9.30	941.78	-375.74	1.51	-290.89

Summary of Clamp Capacities and Usages:

Clamp Label	Force (kips)	Allowable (kips)	Usage %
Arm4aP	2.01	100.00	2.01
Arm4bP	2.32	100.00	2.32
Arm3aP	13.21	100.00	13.21
Arm3bP	13.45	100.00	13.45
Arm2aP	13.27	100.00	13.27
Arm2bP	13.52	100.00	13.52
Arm1aP	13.22	100.00	13.22
Arm1bP	13.44	100.00	13.44
100P	0.62	100.00	0.62
101P	1.26	100.00	1.26
102P	0.65	100.00	0.65
103P	1.07	100.00	1.07
104P	0.38	100.00	0.38
105P	1.64	100.00	1.64
105X	1.57	100.00	1.57
105XY	1.57	100.00	1.57
105Y	0.95	100.00	0.95
106P	0.19	100.00	0.19
107P	0.42	100.00	0.42
108P	1.07	100.00	1.07
109P	0.14	100.00	0.14
110P	0.25	100.00	0.25
111P	0.69	100.00	0.69
112P	0.32	100.00	0.32
112X	0.69	100.00	0.69
112XY	0.69	100.00	0.69
112Y	0.32	100.00	0.32

*** Overall summary for all load cases - Usage = Maximum Stress / Allowable Stress

Group Summary (Compression Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Max Use In Comp. %	Comp. Control Member	Comp. Force (kips)	Comp. Control Load Case	L/R Comp. Capacity (kips)	Conn. Shear Capacity (kips)	Conn. Bearing Capacity (kips)	RLX	RLY	RLZ	L/R Comp.	Length Comp. Member (ft)	Curve No.	No. Of Bolts Comp.
1	1	SAE	3.5X3.5X0.25	33.0	52.97	52.97	Legs6aY	-10.700	ConEdEmerI	20.200	0.000	0.000	1.000	1.000	1.000	103.75	6.000	1	0
2	2	SAE	6X6X0.375	33.0	46.95	46.95	Legs5aY	-40.474	ConEdStd(i	86.200	0.000	0.000	1.000	2.000	1.000	60.64	4.750	1	0
3	3	SAE	8X8X0.5	33.0	49.11	49.11	Legs4aY	-100.082	ConEdHurr(	203.800	0.000	0.000	1.000	2.000	1.000	45.60	4.750	1	0
4	4	SAE	8X8X0.5	33.0	58.83	58.83	Legs3aY	-137.418	ConEdHurr(	233.600	0.000	0.000	1.000	1.000	1.000	60.73	8.047	1	0
5	5	SAE	8X8X0.75	33.0	56.72	56.72	Legs2aP	-147.017	ConEdHurr(	259.200	0.000	0.000	1.000	1.000	1.000	122.24	16.095	4	0
7	7	SAE	8X8X0.75	33.0	56.85	56.85	Legs1P	-148.026	ConEdHurr(	260.400	0.000	0.000	1.000	1.000	1.000	125.37	16.507	4	0
11	11	SAE	2X2X0.1875	33.0	43.36	43.36	Dia11bY	-3.989	ConEdEmerI	9.200	0.000	0.000	0.750	0.500	0.500	152.28	10.000	5	0
12	12	SAE	3X3X0.25	33.0	53.34	53.34	Dia8aP	-12.642	ConEdHurr(	23.700	0.000	0.000	0.750	0.500	0.500	125.88	12.420	5	0
13	13	SAU	4X3.5X0.3125	33.0	51.28	51.28	Dia6aY	-23.025	ConEdHurr(	44.900	0.000	0.000	0.750	0.500	0.500	102.08	12.420	2	0
14	14	SAE	3X3X0.25	33.0	74.61	70.77	Dia5bP	-14.721	ConEdHurr(	20.800	0.000	0.000	0.750	0.500	0.500	124.61	12.295	5	0
15	15	SAE	3X3X0.25	33.0	48.01	44.37	Dia4bXY	-6.655	ConEdHurr(	15.000	0.000	0.000	0.750	0.500	0.500	147.44	14.548	5	0
16	16	SAE	3.5X3.5X0.25	33.0	28.03	28.03	Hor3bP	-3.560	ConEdHurr(	12.700	0.000	0.000	1.000	1.000	1.000	235.16	13.600	6	0
17	17	SAE	3.5X3.5X0.25	33.0	26.24	25.15	Dia3aX	-3.522	ConEdHurr(	14.000	0.000	0.000	1.000	1.000	1.000	180.56	10.442	6	0

18	18	DAS	2.5X2X0.1875	33.0	32.34	32.34	Hor2bP	-5.822ConEdHurr(	18.000	0.000	0.000	1.000	2.000	1.000	164.00	8.200	6	0
19	19	SAU	3X2X0.25	33.0	45.91	45.91	Dia2aXY	-3.347ConEdEmerI	7.290	0.000	0.000	1.000	0.500	0.500	246.14	17.845	5	0
21	21	SAU	3X2X0.25	33.0	75.01	75.01	Dia1aY	-3.985ConEdEmerI	5.313	0.000	0.000	1.000	0.500	0.500	294.74	21.369	5	0
24	24	SAU	6X3.5X0.3125	33.0	12.17	1.49	Hor13P	-0.687ConEdHurr(	46.000	0.000	0.000	1.000	1.000	1.000	124.35	8.000	6	0
25	25	SAU	6X4X0.3125	33.0	38.48	38.48	Arm3bP	-22.625ConEdEmerI	58.800	0.000	0.000	1.000	0.500	0.500	100.16	14.724	3	0
26	26	SAU	6X4X0.375	33.0	49.05	49.05	Arm2bP	-31.100ConEdEmerI	63.400	0.000	0.000	1.000	0.500	0.500	117.29	17.143	3	0
27	27	SAU	6X4X0.3125	33.0	45.63	45.63	Arm1bP	-27.380ConEdEmerI	60.000	0.000	0.000	1.000	0.500	0.500	100.16	14.724	3	0
28	28	SAU	3.5X2.5X0.25	33.0	73.23	73.23	Arm4bY	-4.687ConEdEmerI	6.400	0.000	0.000	1.000	0.500	0.500	200.33	18.163	5	0
29	29	SAE	2X2X0.25	33.0	74.36	0.00	Arm3dY	0.000	1.678	0.000	0.000	1.000	1.000	1.000	487.96	15.899	5	0
30	30	SAU	3X2X0.3125	33.0	80.91	0.00	Arm2dY	0.000	2.546	0.000	0.000	1.000	1.000	1.000	494.14	17.789	5	0
31	31	SAE	2X2X0.3125	33.0	75.12	0.00	Arm1dY	0.000	12.200	0.000	0.000	1.000	1.000	1.000	476.03	15.471	5	0
32	32	SAE	2.5X2.5X0.1875	33.0	12.68	0.00	IntDia13X	0.000	14.573	0.000	0.000	0.750	0.500	0.500	137.14	11.314	5	0
33	33	SAE	3X3X0.1875	33.0	35.85	9.55	IntDia5P	-2.116ConEdStd(i	22.157	0.000	0.000	0.750	0.500	0.500	113.90	11.314	2	0
34	34	SAU	3X2.5X0.25	33.0	16.21	0.00	IntDia8X	0.000	23.269	0.000	0.000	0.750	0.500	0.500	128.56	11.314	5	0
43	43	SAU	3X2.5X0.3125	33.0	28.62	0.00	Hor12Y	0.000	17.400	0.000	0.000	1.000	1.000	1.000	182.86	8.000	6	0
44	44	BAR	5/16x3.75	33.0	74.93	0.00	Hor9Y	0.000	0.682	0.000	0.000	1.000	1.000	1.000	1064.30	8.000	6	0
45	45	BAR	5/16x3.5	33.0	66.61	0.00	Hor6Y	0.000	0.635	0.000	0.000	1.000	1.000	1.000	1064.30	8.000	6	0
46	46	SAE	2X2X0.25	33.0	71.67	0.00	Arm3cY	0.000	1.801	0.000	0.000	1.000	1.000	1.000	469.73	15.305	5	0
47	47	SAU	3X2X0.3125	33.0	77.68	0.00	Arm2cY	0.000	2.721	0.000	0.000	1.000	1.000	1.000	476.75	17.163	5	0
48	48	SAE	2X2X0.3125	33.0	71.69	0.00	Arm1cY	0.000	2.316	0.000	0.000	1.000	1.000	1.000	457.22	14.860	5	0
Hor1	Hor1	SAU	3.5X3X0.25	33.0	13.45	13.45	Hor1bXY	-1.621ConEdHurr(	12.053	0.000	0.000	2.000	1.000	1.000	237.84	11.000	6	0

Group Summary (Tension Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Max Use In Tens. %	Tension Control Member	Tension Force (kips)	Tension Control Load Case	Net Tens. Section Capacity (kips)	Conn. Tens. Shear Capacity (kips)	Conn. Tens. Bearing Capacity (kips)	Conn. Tens. Rupture Capacity (kips)	Length Tens. Member (ft)	No. Of Bolts Tens.	No. Of Holes
1	1	SAE	3.5X3.5X0.25	33.0	52.97	3.09	Legs6bXY	1.726	ConEdEmerI	55.770	0.000	0.000	0.000	6.000	0	0.000
2	2	SAE	6X6X0.375	33.0	46.95	22.06	Legs5aXY	24.233	ConEdHurr(	109.849	0.000	0.000	0.000	4.750	0	4.000
3	3	SAE	8X8X0.5	33.0	49.11	37.21	Legs4aXY	78.287	ConEdHurr(	210.375	0.000	0.000	0.000	4.750	0	4.000
4	4	SAE	8X8X0.5	33.0	58.83	51.70	Legs3aXY	108.773	ConEdHurr(	210.375	0.000	0.000	0.000	8.047	0	4.000
5	5	SAE	8X8X0.75	33.0	56.72	32.47	Legs2aX	100.468	ConEdHurr(	309.457	0.000	0.000	0.000	16.095	0	4.000
7	7	SAE	8X8X0.75	33.0	56.85	32.17	Legs1X	99.557	ConEdHurr(	309.457	0.000	0.000	0.000	16.507	0	4.000
11	11	SAE	2X2X0.1875	33.0	43.36	37.80	Dia11aXY	3.478	ConEdEmerI	9.200	0.000	0.000	0.000	10.000	0	1.000
12	12	SAE	3X3X0.25	33.0	53.34	51.26	Dia8aX	12.149	ConEdHurr(	23.700	0.000	0.000	0.000	12.420	0	1.000
13	13	SAU	4X3.5X0.3125	33.0	51.28	50.02	Dia6aXY	22.461	ConEdHurr(	44.900	0.000	0.000	0.000	12.420	0	1.000
14	14	SAE	3X3X0.25	33.0	74.61	74.61	Dia5bX	15.518	ConEdHurr(	20.800	0.000	0.000	0.000	12.295	0	1.000
15	15	SAE	3X3X0.25	33.0	48.01	48.01	Dia4bY	7.202	ConEdHurr(	15.000	0.000	0.000	0.000	14.548	0	1.000
16	16	SAE	3.5X3.5X0.25	33.0	28.03	17.81	Hor3bX	2.493	ConEdHurr(	14.000	0.000	0.000	0.000	13.600	0	1.000
17	17	SAE	3.5X3.5X0.25	33.0	26.24	26.24	Dia3aP	3.674	ConEdHurr(	14.000	0.000	0.000	0.000	10.442	0	1.000
18	18	DAS	2.5X2X0.1875	33.0	32.34	3.44	Hor2bXY	1.393	ConEdEmerI	40.457	0.000	0.000	0.000	8.200	0	2.000
19	19	SAU	3X2X0.25	33.0	45.91	31.07	Dia2aP	9.227	ConEdHurr(	29.700	0.000	0.000	0.000	17.845	0	1.000
21	21	SAU	3X2X0.25	33.0	75.01	34.03	Dia1aX	10.107	ConEdHurr(	29.700	0.000	0.000	0.000	21.369	0	1.000
24	24	SAU	6X3.5X0.3125	33.0	12.17	12.17	Arm4cY	5.599	ConEdEmerI	46.000	0.000	0.000	0.000	16.492	0	2.000
25	25	SAU	6X4X0.3125	33.0	38.48	0.00	Arm3bY	0.000		58.800	0.000	0.000	0.000	14.724	0	2.000
26	26	SAU	6X4X0.375	33.0	49.05	0.00	Arm2bY	0.000		63.400	0.000	0.000	0.000	17.143	0	2.000
27	27	SAU	6X4X0.3125	33.0	45.63	0.00	Arm1bY	0.000		60.000	0.000	0.000	0.000	14.724	0	2.000
28	28	SAU	3.5X2.5X0.25	33.0	73.23	0.00	Arm4bY	0.000		6.400	0.000	0.000	0.000	18.163	0	2.000
29	29	SAE	2X2X0.25	33.0	74.36	74.36	Arm3dY	19.258	ConEdEmerI	25.900	0.000	0.000	0.000	15.899	0	1.000
30	30	SAU	3X2X0.3125	33.0	80.91	80.91	Arm2dY	27.347	ConEdEmerI	33.800	0.000	0.000	0.000	17.789	0	1.000
31	31	SAE	2X2X0.3125	33.0	75.12	75.12	Arm1dP	23.737	ConEdEmerI	31.600	0.000	0.000	0.000	15.471	0	1.000
32	32	SAE	2.5X2.5X0.1875	33.0	12.68	12.68	IntDia13P	2.688	ConEdEmerI	21.200	0.000	0.000	0.000	11.314	0	1.000
33	33	SAE	3X3X0.1875	33.0	35.85	35.85	IntDia11P	8.963	ConEdEmerI	25.000	0.000	0.000	0.000	11.314	0	1.000
34	34	SAU	3X2.5X0.25	33.0	16.21	16.21	IntDia8P	5.089	ConEdEmerI	31.400	0.000	0.000	0.000	11.314	0	1.000
43	43	SAU	3X2.5X0.3125	33.0	28.62	28.62	Hor12Y	11.945	ConEdEmerI	41.733	0.000	0.000	0.000	8.000	0	1.000
44	44	BAR	5/16x3.75	33.0	74.93	74.93	Hor9P	24.203	ConEdEmerI	32.300	0.000	0.000	0.000	8.000	0	1.000
45	45	BAR	5/16x3.5	33.0	66.61	66.61	Hor6P	19.717	ConEdEmerI	29.600	0.000	0.000	0.000	8.000	0	1.000
46	46	SAE	2X2X0.25	33.0	71.67	71.67	Arm3cP	18.562	ConEdEmerI	25.900	0.000	0.000	0.000	15.305	0	1.000
47	47	SAU	3X2X0.3125	33.0	77.68	77.68	Arm2cY	26.257	ConEdEmerI	33.800	0.000	0.000	0.000	17.163	0	1.000
48	48	SAE	2X2X0.3125	33.0	71.69	71.69	Arm1cY	22.653	ConEdEmerI	31.600	0.000	0.000	0.000	14.860	0	1.000
Hor1	Hor1	SAU	3.5X3X0.25	33.0	13.45	1.44	Hor1bP	0.595	ConEdHurr(	41.227	0.000	0.000	0.000	11.000	0	1.000

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
ConEdStd(int)	71.02	Arm2dP	Angle
ConEdEmerIce(int)	80.91	Arm2dY	Angle
ConEdHurr(int)	74.61	Dia5bX	Angle

Summary of Insulator Usages:

Insulator Label	Insulator Type	Maximum Usage %	Load case	Weight (lbs)
Arm4aP	Clamp	4.06	ConEdEmerIce(int)	0.0
Arm4bP	Clamp	4.15	ConEdEmerIce(int)	0.0
Arm3aP	Clamp	17.30	ConEdEmerIce(int)	0.0
Arm3bP	Clamp	17.37	ConEdEmerIce(int)	0.0
Arm2aP	Clamp	17.39	ConEdEmerIce(int)	0.0
Arm2bP	Clamp	17.46	ConEdEmerIce(int)	0.0
Arm1aP	Clamp	17.31	ConEdEmerIce(int)	0.0
Arm1bP	Clamp	17.37	ConEdEmerIce(int)	0.0
100P	Clamp	0.70	ConEdStd(int)	0.0
101P	Clamp	1.32	ConEdStd(int)	0.0
102P	Clamp	0.82	ConEdStd(int)	0.0
103P	Clamp	1.07	ConEdHurr(int)	0.0
104P	Clamp	0.48	ConEdStd(int)	0.0
105P	Clamp	1.83	ConEdStd(int)	0.0
105X	Clamp	1.69	ConEdEmerIce(int)	0.0
105XY	Clamp	1.69	ConEdEmerIce(int)	0.0
105Y	Clamp	1.53	ConEdEmerIce(int)	0.0
106P	Clamp	0.24	ConEdStd(int)	0.0
107P	Clamp	0.53	ConEdStd(int)	0.0
108P	Clamp	1.07	ConEdHurr(int)	0.0
109P	Clamp	0.18	ConEdStd(int)	0.0
110P	Clamp	0.32	ConEdStd(int)	0.0
111P	Clamp	0.69	ConEdHurr(int)	0.0
112P	Clamp	0.32	ConEdHurr(int)	0.0
112X	Clamp	0.69	ConEdHurr(int)	0.0
112XY	Clamp	0.69	ConEdHurr(int)	0.0
112Y	Clamp	0.32	ConEdHurr(int)	0.0

*** Weight of structure (lbs):

Weight of Angles*Section DLF:	25691.2
Total:	25691.2

*** End of Report

TECTONIC

CON EDISON TOWER E-142 / T-MOBILE
W.O. 4216.MASTER (31.18)
EXISTING TRANSMISSION TOWER
MILLWOOD, NY
STRUCTURAL ANALYSIS REPORT – REVISION 1
DECEMBER 19, 2008

1.0 INTRODUCTION

The Consolidated Edison (Con Edison) electrical transmission tower no. E-142 is located adjacent to Somerstown Turnpike (Route 100) at Station Place in Millwood, NY. The tower was designed as a part of the 345kV double-circuit transmission line system between the Sprain Brook and Millwood Substations. T-Mobile (aka Omnipoint) has an existing antenna installation on this tower.

Tectonic Engineering & Surveying Consultants P.C. has performed a structural analysis of the tower to verify its adequacy for supporting the existing antenna and cable configuration in accordance with Con Edison's requirements.

This revision incorporates field information regarding the existing T-Mobile installation. The previous report for this tower was prepared under Tectonic W.O. 2356.09215A in 2003.

1.1 Information Provided

For the purpose of the analysis, Tectonic retrieved the following relevant information from its files:

1. "Design Drawing, 25° Strain Tower Type "D1", Overhead Transmission Line, Dunwoodie to Millwood, N.Y.", drawing no. EO-7436-C, rev. 1, dated 3/7/67.
2. "Overhead Transmission Line, 1956 Line, 345 kV. Modification, Sprain Brook to Millwood Substations, Design of 2 Circuit, 25° Strain Tower, Type D-1", drawing no. EO-13575-B, rev. 1, dated 4/30/69.
3. "Typical Core Footing in Rock for Transmission Towers", drawing no. EO-7300-D, rev. 6, dated 4/17/56.
4. "Design & Construction Summary, Overhead Transmission Line, Sprain Brook to Millwood West Sub-Sta., 345 kV.-Rebuilt 1956 Line, Sheet 2 of 2", drawing no. EO-13610-A, rev. 5, dated 1/4/82.
5. "Jumper & Suspension Attachments, Assembly with Hardware, Bundled Conductors – 345 K.V.", drawing no. EO-13149-C, rev. 2, dated 2/19/69.
6. "Strain Attachment for Hot Line Operation, Assembly with Hardware, Bundled Conductors – 345 K.V.", drawing no. EO-13148-C, rev. 7, dated 3/30/71.

7. "Purchase and Test Manual No. 6 – Section 21, Lattice Steel Transmission Towers, EO-1018-1", dated 6/21/76.
8. "Con Edison Transmission System – P.C.S. Antenna/Cellular Installation Procedure" May 2000.

2.0 ORIGINAL TOWER DESIGN

2.1 Tower Structure

The existing tower E-142 was designed and fabricated by American Bridge based on Con Edison's standard specifications, and was designated as a Type D-1 25° strain tower. It was originally designed and built circa 1956, and was initially designated as tower #167. The tower was upgraded for double conductors circa 1969.

The tower is a four-legged, self-supporting square tower, consisting of an 89'-0" tall body and 16'-0" long extensions on all four (4) legs. It has a total height of 105'-0" from the base of the leg extensions to the top of the tower. Unless otherwise noted, levels throughout this report are relative to the base of the leg extensions.

The tower is approximately 27'-9" wide at the base. The tower tapers uniformly to a width of 8'-0" at the lower cross arm level, which is 55'-0" above the base. It has a uniform width of 8'-0" from the 55'-0" level to the top of the tower in the longitudinal and transverse faces. The lower, middle, and upper cross arms extend to total widths of 35'-8", 40'-8", and 35'-8", respectively. The shield wire peak has a total width of 40'-8".

The tower utilizes single angles for all members, except for the crossarm girts, which are flat bars. The arm hangers and girts for the conductor arms have been replaced with larger members. All connections are bolted.

A diagram of the structure is presented in Figure 1, attached.

2.2 Loading Criteria

The tower was originally designed based on Con Edison design specifications which provide tower strengths that equal or surpass the requirements of the National Electrical Safety Code for Grade "B" construction. The tower was designed to support two (2) 1/2" diameter EHS Copperweld shield wires and six (6) 1,033,500 CM 54/7 ACSR conductors, with a maximum line angle of 25° and an average span of 900'. The tower was designed to withstand loading

conditions of the original Con Edison specifications, including broken conductors and/or shield wire, with their appropriate overload factors.

We believe that at the time of the conductor upgrade, the tower was designed to support two (2) 7 No. 5 Alumoweld shield wires and six (6) twin-bundled 2493 MCM 54/37 ACAR conductors.

2.3 Tower Foundation

The Con Edison drawings indicate that the tower is supported on a rock foundation. The stub angles are encased in a reinforced concrete shaft, which bears at a maximum depth of 9'-0" below the rock surface.

3.0 EXISTING CONFIGURATION

According to the Con Edison drawings provided, the existing tower was installed at a line angle of 5°22', a wind span of 865', and a weight span of 1155', and is currently supporting the following:

Shield Wire:
9/16", 7 No. 5 AWG Alumoweld (2 positions)
Diameter = 0.546 in, Weight = 0.525 lb/ft

Conductor:
Twin Bundled 2493 KCM 54/37 ACAR (6 positions)
Diameter = 1.821 in, Weight = 2.341 lb/ft

It is believed that the tower centerline bisects the conductor line angle complement.

The tower is also supporting one (1) fiber optic cable, connected to the tower at the 55' level. This is believed to have been installed in 1999, and has the following properties:

Fiber Optic Cable:
288 Fiber ADSS (1 position)
Diameter = 1.042 in, Weight = 0.386 lb/ft

We also understand that T-Mobile has an existing installation on the tower as follows:

3 Andrew ADFD1820 panel antennas at the 94' level (centerline), pipe mounted one (1) each on three (3) tower legs
12 1-5/8" diameter coaxial cables to the 94' level in Valmont-Microflect Universal Snap-In Brackets on the inside of one (1) tower leg

4.0 PROPOSED INSTALLATION

It is our understanding that no additional antennas or other equipment are proposed to be installed on the tower at this time.

5.0 STRUCTURAL ANALYSIS

5.1 Current Loading Criteria

The design of electrical transmission line structures is governed by IEEE Standard C2-2007 "National Electrical Safety Code" (NESC) and ASCE 10-97 "Design of Latticed Steel Transmission Structures". Con Edison has imposed additional design constraints to accommodate local conditions and to account for special design considerations.

The loading conditions considered in our analysis of the tower are for the wind acting perpendicular (90°) to the longitudinal tower face acting in conjunction with the load due to the line angle. The loading conditions considered, including all applicable code requirements and the requirements stipulated by the utility, are summarized as follows:

Loading Condition (LC)	Pressure (psf)		Radial Ice (in)		Overload Factors		
	Wire	Tower	Wire	Tower	Wind	Weight	Wire Tension
1. Con Ed Standard	4	13	0.5	0	2.54	1.27	1.65
2. Con Ed Emergency Ice	8	20	1.0	0	1.00	1.00	1.00
3. Con Ed Hurricane	30	50	0	0	1.00	1.00	1.00
Note: Wind force on the tower is based on 1.5 times the net projected area of one face.							

The Con Edison Stringing & Sagging condition and Climbing condition were not evaluated in the analysis, because they are not affected by the existing antenna installation.

The design of antenna supports is governed by ANSI/TIA/EIA-222-F-1996 "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures". From this document, a basic wind speed of 80 mph applies to Westchester County, NY where the tower is located. Ice loads have been established based on a 0.5" radial ice thickness in accordance with industry standard practice. A reduced wind speed of 69 mph is used in conjunction with this ice load.

The provisions of ANSI/TIA/EIA-222-F-1996 should be used for the design of the antenna installation. However, the wind and ice loads stipulated by ANSI/TIA/EIA-222-F-1996 are overly conservative for the evaluation of the existing transmission line tower. Therefore, these loads were not considered in our analysis of the tower.

5.2 Procedure

The tower has been analyzed using PLS-Tower, a specialized, three-dimensional structural analysis program. The tower analysis included the existing conductors, shield wires, and fiber optic cable, and the existing T-Mobile antennas and cables described in Section 3.0, using Con Edison loading criteria summarized above.

A breakdown of the total factored loads acting on the tower is provided in the following table:

LC	Conductors (lbs)			Shield Wires (lbs)		
		Transverse			Transverse	
	Weight	Wind	Wire Tension	Weight	Wind	Wire Tension
1	75690	25428	31800	3788	2606	2428
2	87066	26422	28086	5654	2936	2304
3	38448	47256	21348	1212	2362	1254

LC	Fiber Optic Cable (lbs)			Tower (lbs)		Existing Installation (lbs)	
		Transverse					
	Weight	Wind	Wire Tension	Weight	Wind	Weight	Wind
1	2140	1680	1200	32640	13160	1522	2414
2	3380	1756	1148	25680	7980	1198	1485
3	444	2252	628	25680	19940	1198	3713

All conductors shield wires, and the fiber optic cable were considered intact, and no broken wire loading conditions were considered in the analysis.

5.3 Assumptions

Several assumptions were made in order to perform the analysis. Each of these is considered by Tectonic to be both reasonable and consistent with current standards of practice.

1. Redundant members, which are not intended to carry loads, are not included in the model.
2. Tower member sizes and material properties are as indicated on the Con Edison drawings.
3. The wind loads applied to the tower due to the antenna installation are

conservatively based on the full projected area of all antennas in all loading cases.

4. The tower and its foundation were constructed according to the approved plans.
5. The connection of the tower to its foundation is considered as pinned.
6. The conductor and shield wire tensions are assumed to be the same as those used in the design of similar towers upgraded circa 1969.
7. The fiber optic cable tension is equal to the shield wire tension.

5.4 Results

Our analysis indicates that the Con Edison Emergency Ice loading condition (LC2) is the most severe, therefore resulting in maximum member forces in the tower. The member capacities are as indicated in the Con Edison drawings. Details of the critical member forces in terms of their stress ratios are summarized in the following table:

Member Location	Con Edison Member Number	See Note	Stress Ratio	
			Compression %	Tension %
16'-0" Leg Ext.	7		55	31
	21		60	48
39'-0" Body	4		58	51
	5		54	31
	14		71	74
	15		44	48
	16		25	18
	17		22	23
	18		41	1
	19		42	42
19'-0" Mid Body	3		48	36
	13		51	50
	33		9	36
	45	1	---	67
19'-0" Upper Body	2		47	22
	12		53	51
	34		---	16
	44	1	---	75
12'-0" Body	1		53	3
	11		43	38
	32		---	13
	43	1	---	29
Lower arm	27		46	---
	31	1	---	75
	48	1	---	72
Middle arm	26		49	---
	30	1	---	81
	47	1	---	78
Upper arm	25		38	---
	29	1	---	74
	46	1	---	72
SW peak	24		1	12
	28		73	---

Note: 1. Original member previously replaced with larger size in conjunction with conductor upgrade.

Details of all member forces are included in the computer output attached to this report.

The maximum foundation reactions occur for the Con Edison Hurricane loading condition (LC3), and are summarized as follows:

Direction	Calculated Reaction Per leg	Total
Download per leg	140.9 kips	--
Uplift per leg	106.9 kips	--
Shear (transverse)	27.0 kips	98.8 kips
Shear (longitudinal)	26.8 kips	0.0 kips

Although the original foundation design reactions have not been provided, we have estimated them from the upgraded design loads. The calculated reactions are smaller than the estimated upgraded design reactions.

6.0 CONCLUSIONS AND RECOMMENDATIONS

As a result of our analysis, we conclude that the tower has sufficient capacity to support the existing T-Mobile installation under all loading conditions used in our analysis. The tower member stresses are generally low. This is due mainly to the difference between the original design line angle of 25° and the existing line angle of 5°22'. No structural problems for the tower are anticipated, and no modifications are necessary.

We further conclude that the existing foundation has sufficient capacity to support the installation, based on comparison to the foundation reactions resulting from the design loads listed on the Con Edison drawings. No structural problems for the foundation are anticipated, and no modifications are necessary.

Any further changes to the antenna configuration or other appurtenances should be reviewed with respect to their effect on structural loads prior to implementation.

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