Santa Monica College

SANTA MONICA COLLEGE

75' MONOPOLE

LOCATION:

23555 CIVIC CENTER WAY
MALIBU, CA 90265
LOS ANGELES COUNTY

LATITUDE AND LONGITUDE COORDINATES FOR COMMUNICATION TOWER
34 deg 2' 14.1972" N
118 deg 41' 22.9416" W

2

ALL STRUCTURAL COMPONENTS TO BE CONNECTED TOGETHER SHALL BE COMPLETELY FIT UP ON THE GROUND OR OTHERWISE VERIFIED FOR COMPATIBILITY PRIOR TO LIFTING ANY COMPONENT INTO PLACE. REPAIRS REQUIRED DUE TO FIT-UP OR CONNECTION COMPATIBILITY PROBLEMS AFTER PARTIAL ERECTION ARE THE FINANCIAL RESPONSIBILITY OF THE CONTRACTOR.

DRAWING INDEX

SPECIAL INSPECTIONS:

1. STEEL FABRICATION SHALL BE DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION.
2. NO FIELD WELDING SHALL BE PERMITTED
3. THE FOLLOWING SPECIAL INSPECTIONS SHALL BE REQUIRED PER CHAPTER 17A OF THE 2010 CBC:

- CONTINUOUS SPECIAL INSPECTION OF DRILLING OPERATIONS FOR PIER FOUNDATIONS (TABLE 1705.8)
- CONTINUOUS SPECIAL INSPECTION TO VERIFY LOCATION, PLUMBNESS, DIAMETER, AND LENGTH OF PIER FOUNDATIONS (TABLE 1705.8)
- PERIODIC SPECIAL INSPECTION OF PLACEMENT OF REINFORCING STEEL (TABLE 1705.A.3)
- CONTINUOUS SPECIAL INSPECTION OF ANCHOR BOLTS PRIOR TO AND DURING CONCRETE PLACEMENT (TABLE 1705.A.3)
- CONTINUOUS SPECIAL INSPECTON OF CONCRETE PLACEMENT (TABLE 1705.A.3)
- NDS TESTING OF BASEPLATE WELD. TEST PROCEDURE PER DSA

STRUCTURAL OBSERVATION:

STRUCTURAL OBSERVATION IS REQUIRED.

SHOP DRAWINGS:

1. CONTRACTOR TO PROVIDE A DETAILED SHOP DRAWING AND SPECIFICATIONS FOR MONOPOLE FOR REVIEW AND APPROVAL BY THE COUNTY AND THE DESIGN TEAM.

2. CABLE LATTER TO SECURE CABLES AT REQUIRED INTERVALS TO BE SUBMITTED TO BE REVIEWED AND APPROVED BY THE COUNTY AND DESIGN TEAM.

1

CLIENT

SANTA MONICA COLLEGE

Santa Monica College
1900 Pico Boulevard
Santa Monica, CA 90405
USA • (310) 434-4000

PROJECT NAME

SMC MALIBU CAMPUS / SHERIFF'S SUBSTATION
MALIBU CA, 90265

No.

U1642.001.192

DESIGN TEAM

QDG ARCHITECTURE
3055 WILSHIRE BLVD, SUITE 1110
LOS ANGELES, CALIFORNIA 90010
213.387.4701 QDG-ARCHITECTURE.COM

VECTOR ENGINEERS
9138 S. STATE STREET, SUITE 101
SANDY, UT 84070
P: (801) 990-1775 F: (801) 990-1776
VECTOR PROJECT: #U1642-001-141

AGENCY APPROVAL

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APPL. No. 03-115508
AC FLS DB SS BY
DATE AUG 2 6 2019

LICENSED ARCHITECT
JAVIER M. MOLINA
No. C 23685
REN. 7-31-21
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
WELLS HOLMES
S 2020
STRUCTURAL
STATE OF CALIFORNIA

08/20/2019

ISSUE

--	06-30-15	DSA SET
1	06-07-18	DSA REVISION
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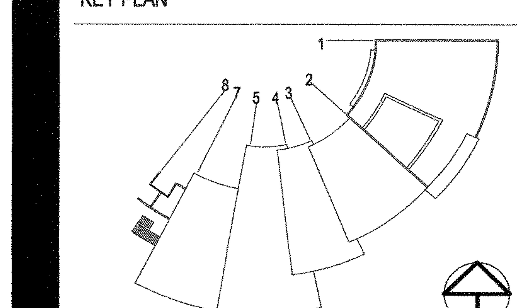
KEY PLAN



SHEET TITLE

TITLE SHEET

SHEET NUMBER

CT-1

DISHES SWAY-BARS/STABILIZATION RODS
CONTRACTOR TO PROVIDE SHOP DRAWINGS INDICATING DISHES SWAY-BARS/STABILIZATION RODS. THEY SHALL HAVE ADEQUATE ROOM FOR BOTH ELEVATION AND AZIMUTH SWIPE/PANNING.

CONTRACTOR SHALL SUBMIT VERIFICATION OF ANTENNAS COORDINATES LAYOUTS, AS NOTED AND PATH PROFILE FOR COUNTY APPROVAL PRIOR TO INSTALLATIONS.

1

LATITUDE AND LONGITUDE COORDINATES FOR COMMUNICATION TOWER
34 deg 2' 14.1972" N
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NOTE: MONOPOLE DESIGNED FOR (3) PLATFORMS w/ MAX C_AA_A = 90 FT^2
MAX WEIGHT = 4500 lbs each

INITIAL LOADING:

APPURTENANCE	ELEVATION	WEIGHT LBS
5/8"ø x 16' TALL LIGHTNING ROD	75'-0"	50
22'-0" PLATFORM	75'-0"	4500
(2) PD1151-6 WHIP	75'-0"	102
(1) UHX8 DISH	75'-0"	288.4
(1) UHX6 DISH	65'-0"	880
(1) VIC100 GPS	60'-0"	54
(2) RC3DC-3315-PF-48	59'-0"	241.3
(6) NHH-65B-R2B	55'-0"	487.2
22'-0" PLATFORM	55'-0"	4500
(2) 8843 RRU	55'-0"	228.6
(2) 4449 RRU	55'-0"	172.4
(1) YAGI	55'-0"	53
(2) BA6012-5	55'-0"	94.2
(2) BCD-7506-EDIN	55'-0"	132
(1) UHX8 DISH	45'-0"	880
22'-0" PLATFORM	35'-0"	4500
(2) PD1151-6N	35'-0"	102
(1) PD220-2N	35'-0"	67
(1) PD220-8N	35'-0"	71
(1) CP610	35'-0"	71
(1) X50A	35'-0"	51
(1) 8230	35'-0"	54
(2) BA40-41	35'-0"	156
(12) 1-5/8"ø COAX	0'-75'	648
(12) 1-5/8"ø COAX	0'-60'	518
(12) 1-5/8"ø COAX	0'-50'	432
(12) 1-5/8"ø COAX	0'-35'	302

FUTURE LOADING:

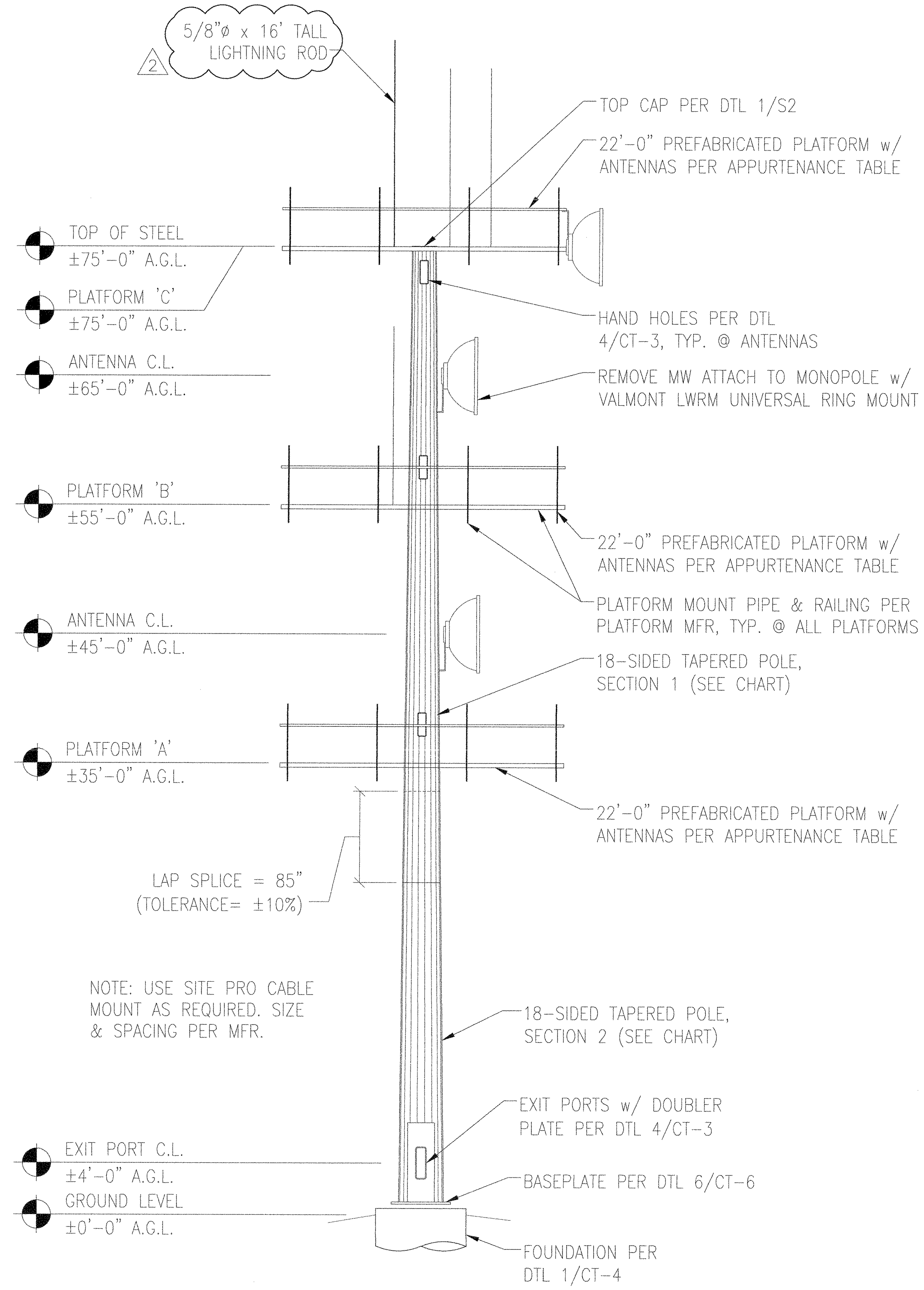
APPURTENANCE	ELEVATION	WEIGHT LBS
(9) 15'-3" WHIP	75'-0"	459
(4) NHH-65B-R2B	55'-0"	324.8
(3) 20'-3" WHIP	35'-0"	234

2

MONOPOLE SECTION CHART					
SECTION	LENGTH	TOP ø	BOTTOM ø	THICKNESS	WEIGHT
1	49'-3"	21.25"	36.025"	7/32"	3.3 K
2	31.83'	33.46"	43.0125"	5/16"	4.1 K

*INCLUDES EXIT PORT AND BASEPLATE WEIGHT.
DESIGN TAPER = 0.3 IN/FT

2



ELEVATIONS
N.T.S.
1

GENERAL DESIGN NOTES:

STRUCTURAL DESIGN IS BASED ON THE CALIFORNIA BUILDING CODE, 2010 EDITION (2009 IBC) AND THE TIA-222-G STANDARD

DESIGN LOADS:
WIND:
BASIC WIND SPEED: 85mph (3-SEC GUST) PER ASCE 7-05
OCCUPANCY CATEGORY: III
STRUCTURE CLASS: III
EXPOSURE: C
TOPOGRAPHIC CATEGORY: 1
CREST HEIGHT: 0 FT

ICE: NONE PER THE TIA-222-G STANDARD

SEISMIC:
IMPORTANCE FACTOR: 1.5
OCCUPANCY CATEGORY: III
MAPPED SPECTRAL RESPONSE ACCELERATIONS:
S_S = 2.267g, S_1 = 0.90g
SITE CLASS: D
SPECTRAL RESPONSE COEFFICIENTS:
S_{DS} = 1.51g, S_{D1} = 0.90g
SEISMIC DESIGN CATEGORY: E

2

MATERIAL NOTES:

1. 18-SIDED MONOPOLE SHAFT STEEL SHALL CONFORM w/ ASTM A572 GR. 65, U.N.O.
2. BASE PLATE STEEL SHALL CONFORM w/ ASTM A572, GR 60, U.N.O.
3. REINFORCED ACCESS PORT STEEL SHALL CONFORM w/ ASTM A572 GR. 65, U.N.O.
4. ALL OTHER STEEL SHAPES & PLATES SHALL CONFORM w/ ASTM A36, U.N.O.
5. ALL BOLTS FOR STEEL-TO-STEEL CONNECTIONS SHALL CONFORM w/ ASTM A325N, U.N.O.
6. ALL ANCHOR BOLTS SHALL CONFORM w/ ASTM A615 GR. 75, U.N.O.
7. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS IN ACCORDANCE w/ THE LATEST VERSION OF THE AMERICAN WELDING SOCIETY AWS D1.1.
8. ALL STEEL SURFACES SHALL BE GALVANIZED IN ACCORDANCE w/ ASTM A123 AND ASTM A153 STANDARDS.
9. ALL BOLTED CONNECTIONS SHALL BE TIGHTENED PER THE "TURN-OF-NUT" METHOD AS DEFINED BY AISC.

1

BASE DESIGN REACTIONS:
MOMENT, M = 2,429 K-FT (1.6 WIND)
SHEAR, V = 52.8 K (1.6 WIND)
AXIAL, P = 33.6 K (1.2 DEAD)

2

TOWER DESIGN:
TOWER DESIGN SHALL MEET THE LATEST STANDARDS OF TIA-222-G

SUBMITTAL FOR MOUNTING ANTENNAS
CONTRACTOR TO PROVIDE PIPE DIMENSIONS AND OTHER MECHANICAL SPECIFICATIONS THAT DETAILS THE MOUNTING POINTS FOR ANTENNAS FOR REVIEW AND APPROVAL BY THE COUNTY AND THE DESIGN TEAM.

ALL EQUIPMENT TO BE ATTACHED PER MANUFACTURERS SPECIFICATIONS, WITH ENGINEERING CALCULATIONS AND/OR TESTING REPORTS AS NEEDED FOR DSA APPROVAL.

PROVIDE RF EXPOSURE SIGNAGE WITH LOCATIONS COORDINATED WITH THE COUNTY.

1

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LOS ANGELES, CALIFORNIA 90010
213.387.4701 PDG-ARCHITECTURE.COM

VECTOR ENGINEERS

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KEY PLAN

SHEET TITLE
ELEVATION VIEW & NOTES

SHEET NUMBER
CT-2

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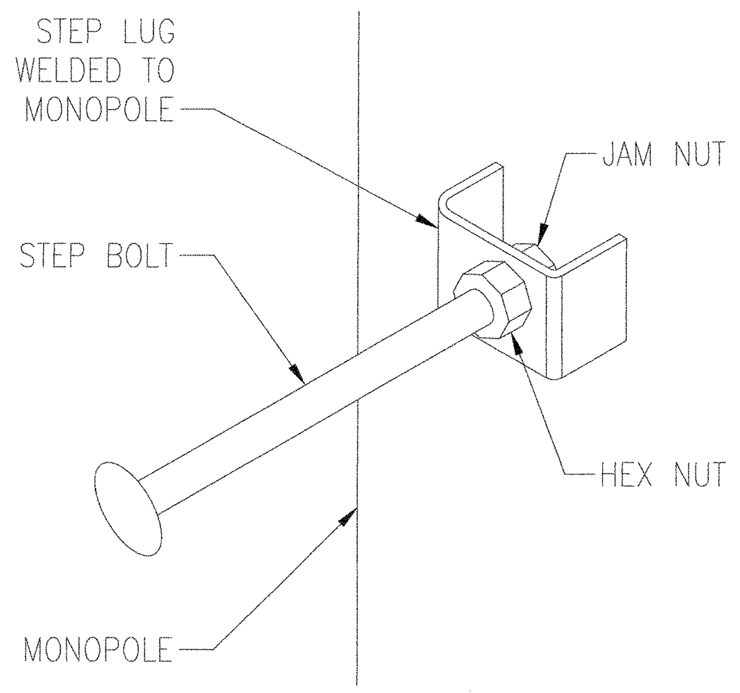
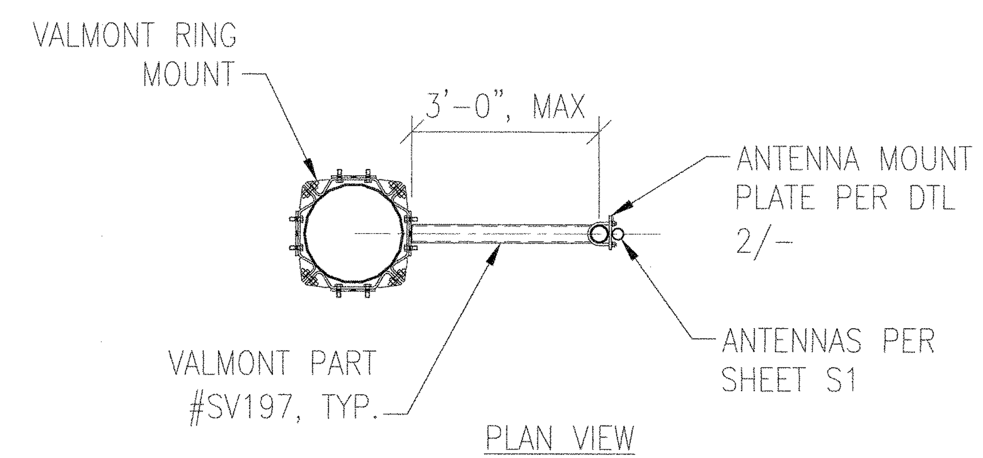


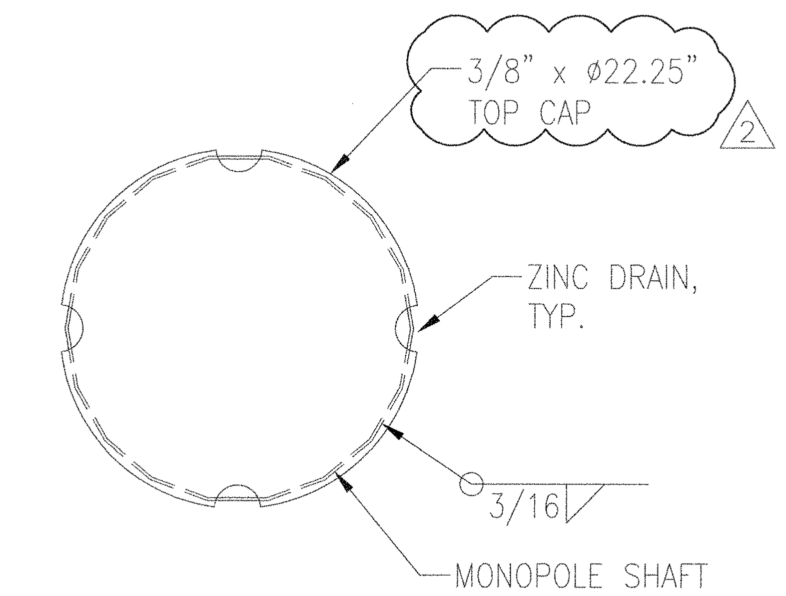
STEP BOLT REQUIREMENTS:

1. CENTER TO CENTER SPACING BETWEEN RUNGS, ALTERNATELY SPACED STEP BOLTS SHALL BE 10" MINIMUM AND 16" MAXIMUM, AND THE SPACING SHALL REMAIN UNIFORM OVER THE LENGTH OF THE CLIMB.
2. ALL STEP BOLTS SHALL BE FREE FROM SPLINTERS SHARP EDGES/BURRS OR PROJECTIONS WHICH MAY POSE A HAZARD.
3. STEP BOLTS SHALL NOT BE LESS THAN ø5/8".
4. CLEAR WIDTH OF STEP BOLTS SHALL NOT BE LESS THAN 4 1/2"; PROVISIONS SHALL BE MADE TO ENSURE A CLIMBER'S FOOT CANNOT SLIDE OFF THE END OF THE STEP BOLT.
5. THE HORIZONTAL SPREAD BETWEEN THE ATTACHMENT POINTS OF STEP BOLTS SHALL NOT EXCEED 24".

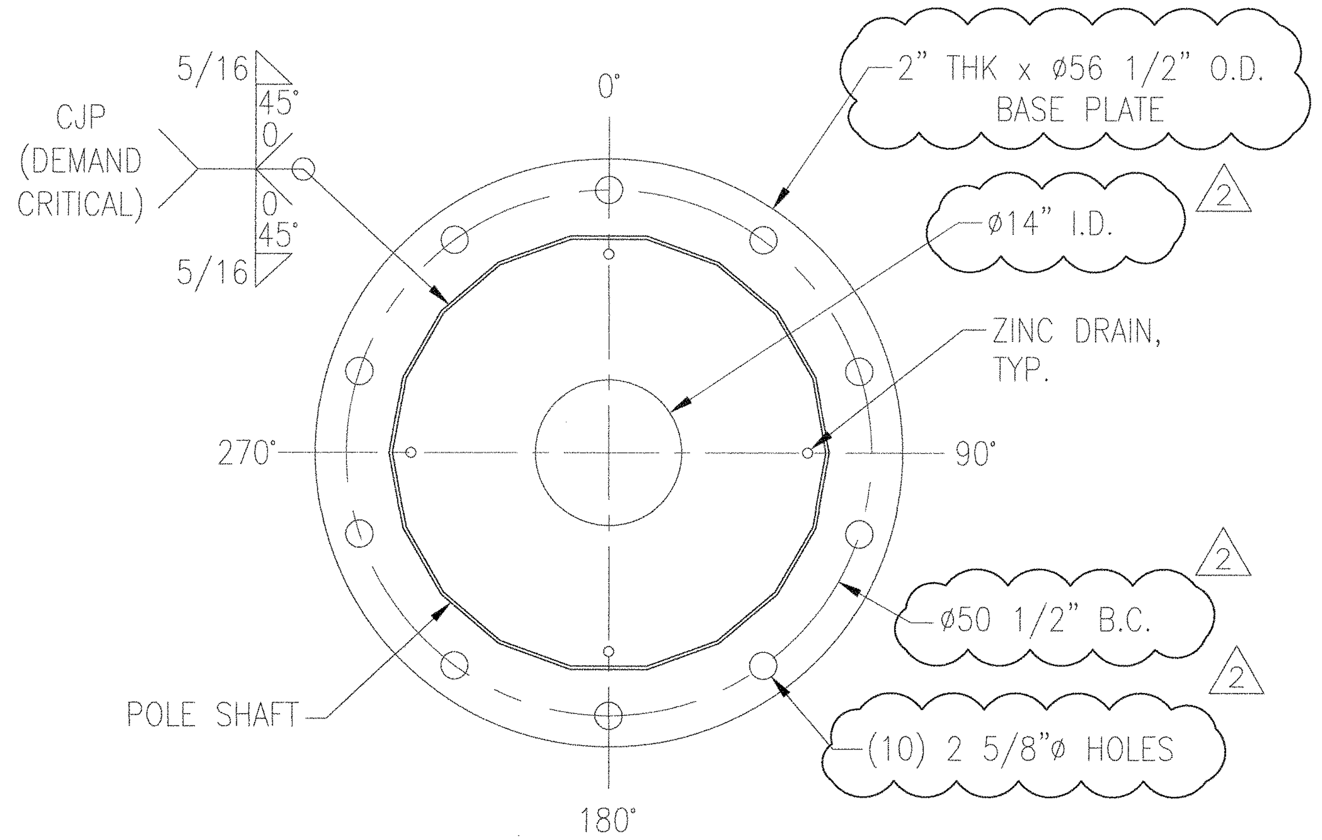
STEP BOLTS N.T.S. (5)



MOUNT N.T.S. (3)



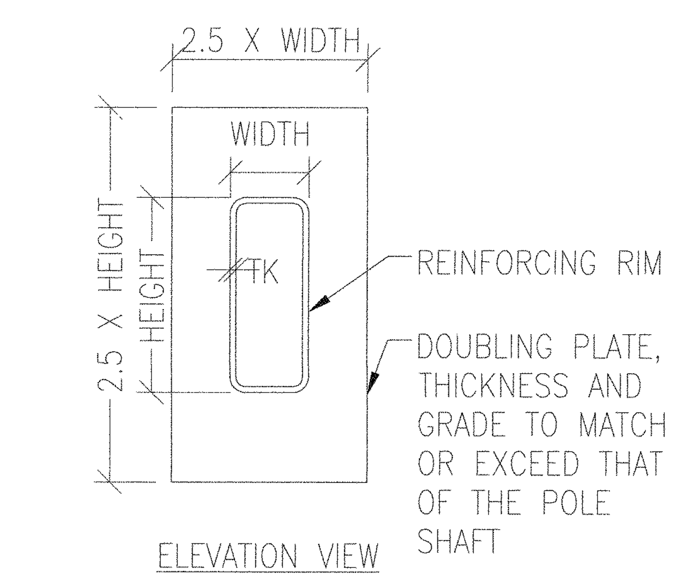
TOP CAP N.T.S. (1)

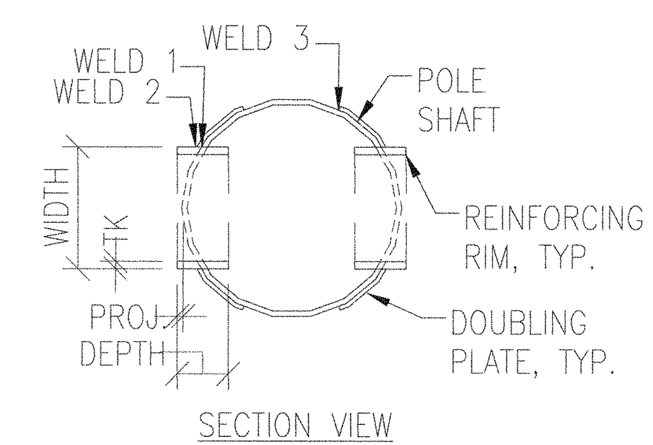


NOTE: STEEL FABRICATOR TO PROVIDE DUCTILITY TEST RESULTS FOR BASE PLATE MATERIAL USED, TEST PROCEDURE PER DSA

BASEPLATE N.T.S. (6)

NOTE: WHERE 2.5 X WIDTH OF THE PORT IS GREATER THAN THE DIAMETER OF THE PIPE THE ENTIRE CIRCUMFERENCE OF THE PIPE SHALL BE ENCASED IN DOUBLING PLATE. ANY SPLICES IN THE DOUBLING PLATE SHALL BE CJP WELDS

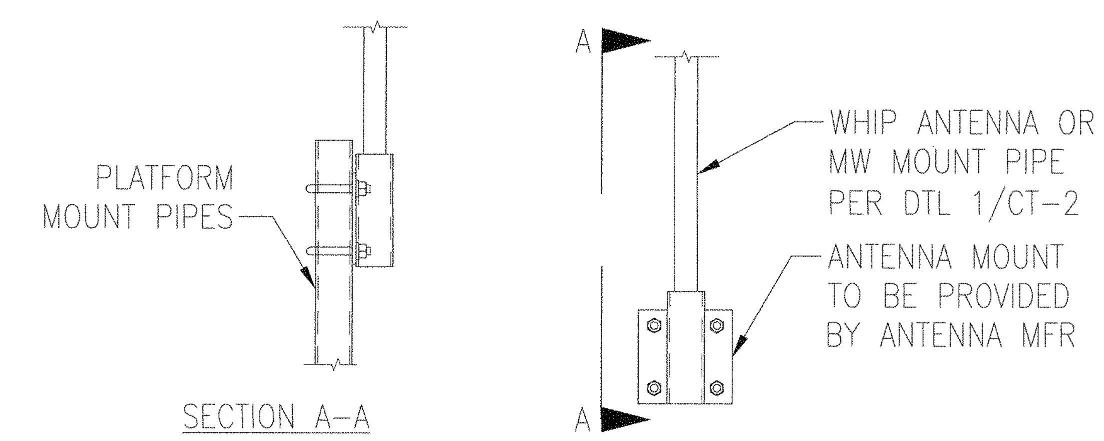




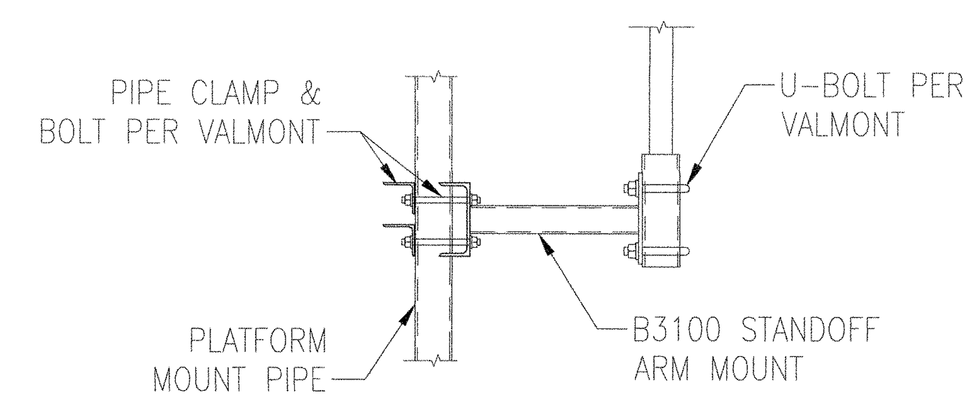
REINFORCED ACCESS PORT SCHEDULE								
ELEV. A.F.L.	SIZE W	SIZE H	QTY.	PORT AZIMUTH	TK	DEPTH (MIN.)	PROJ.	WELD SIZE
±2' BELOW PLATFORM	8"	22"	3	0°, 120°, 240°	1/2"	3"	1/2"	1/2"
4'-0"	10"	30"	2	0°, 180°	3/4"	4"	1"	1/2"

WELD DESCRIPTION:
WELD 1 = PJP, RIM TO POLE SHAFT, ALL AROUND, TYP.
WELD 2 = FILLET, DOUBLING PLATE TO RIM, ALL AROUND, TYP.
WELD 3 = FILLET, DOUBLING PLATE TO POLE SHAFT, ALL AROUND, TYP.

EXIT PORTS N.T.S. (4)



CONDITION A



CONDITION B

TYP. APPURTENANCE ATTACHMENT N.T.S. (2)

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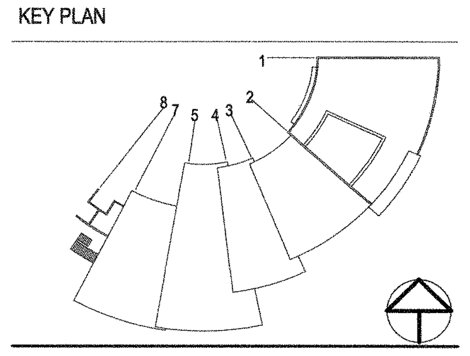


SHEET TITLE

DETAILS

SHEET NUMBER

CT-3

FOUNDATION NOTES:

1. FOUNDATION DESIGN IS BASED ON THE FOLLOWING GEOTECHNICAL REPORT:

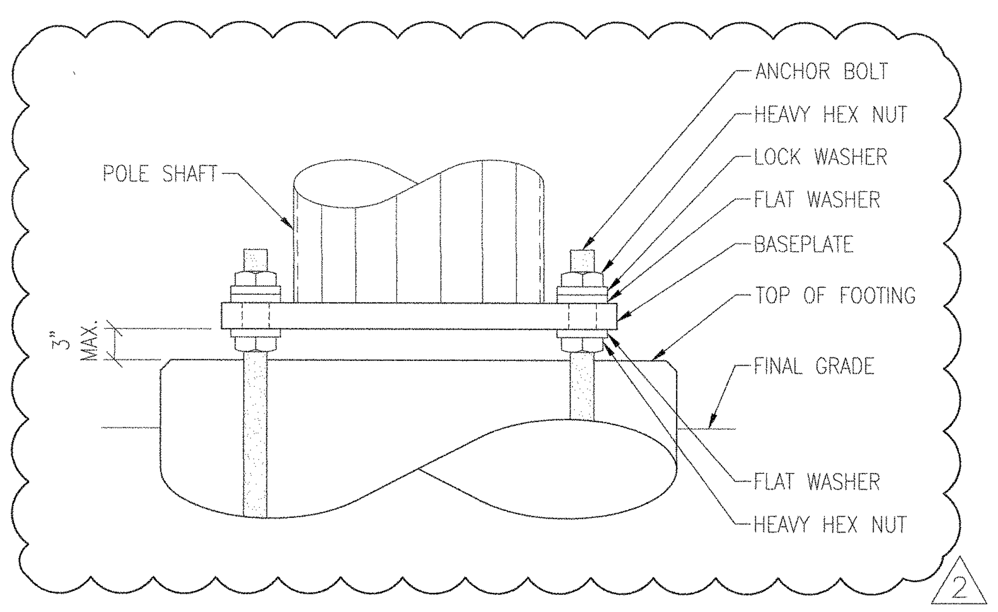
GEOLABS–WESTLAKE VILLAGE
REPORT: W.O. 9279
DATE: DEC. 18, 2013
BEARING = 2000 PSF
LATERAL RESISTANCE = 225 PSF/FT

2. ALL CONCRETE SHALL USE TYPE II PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS. CONCRETE SHALL BE AIR ENTRAINED (6 ± 1.5%). CONCRETE SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.5 CONCRETE SHALL HAVE A SLUMP OF 5" (± 1"). ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH "THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," ACI 318–11. DRILLED PIER FOUNDATION INSTALLATION SHALL BE IN ACCORDANCE WITH ACI 336, "STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF DRILLED PIERS," LATEST EDITION

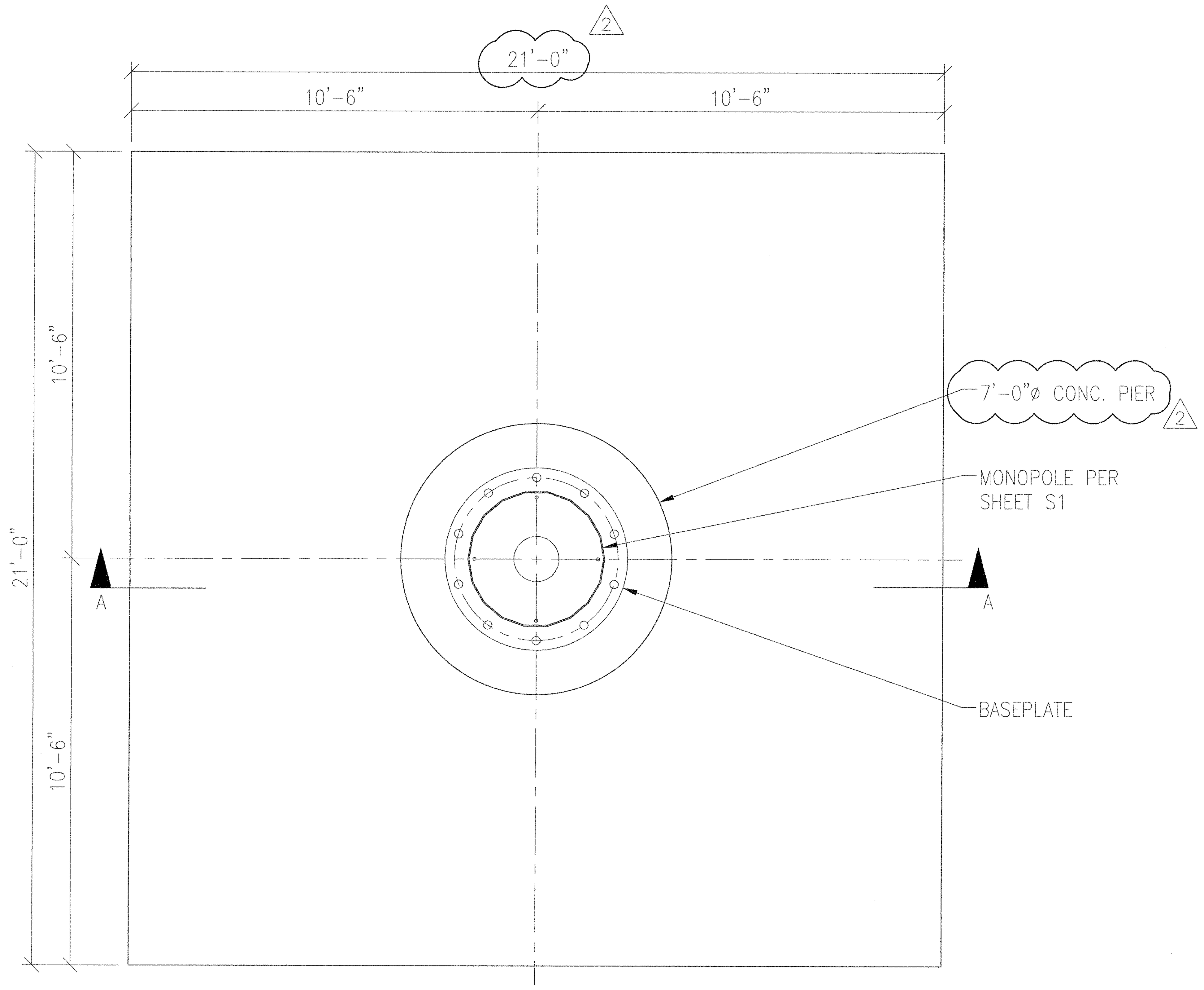
3. REINFORCING STEEL SHALL CONFORM WITH THE REQUIREMENTS OF ASTM A–615, GRADE 60. ALL REINFORCING DETAILS SHALL CONFORM TO "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES," ACI 315, LATEST EDITION, UNLESS DETAILED OTHERWISE ON THIS DRAWING.

4. INSTALLATION OF THE FOUNDATION SHOULD BE OBSERVED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER FIRM. GEOTECHNICAL ENGINEER TO PROVIDE A NOTICE OF INSPECTION FOR THE BUILDING INSPECTOR FOR REVIEW AND RECORD PURPOSES.

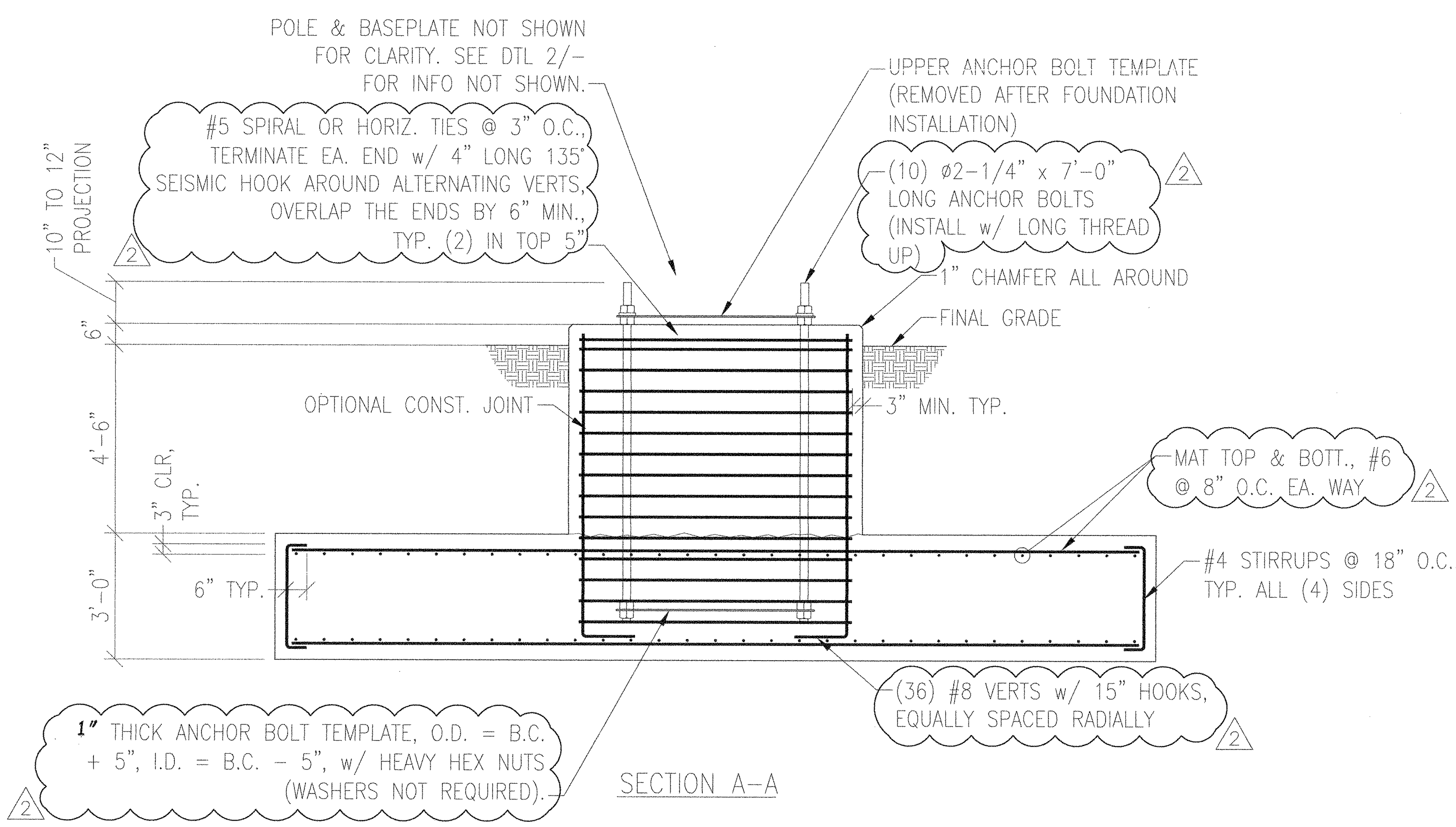
5. TOTAL ESTIMATED CONCRETE FOR MAT FOUNDATION = 50.2 CUBIC YARDS



N.T.S. (2)



PLAN VIEW



SECTION A–A

MAT FOUNDATION

N.T.S. (1)

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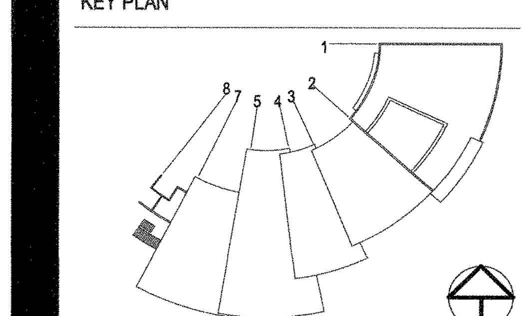

SHEET TITLE

FOUNDATION

SHEET NUMBER

CT-4