

REV.	DATE	DESCRIPTION	APPROVAL
A	11-16-10	ADDED G. E. CO. TRIP	[Signature]
B	12-27-10	ADDITIONS FOR SITE DEV.	[Signature]
C	12-27-10	ADD 48\"/>	

NOTES:

- COLUMBIA GAS & ELECTRIC SUBSTATION OAKLAND (PH 91) MAY 17, 1970 AND PLAT BOOK 18 FOLD 74 MAY 28, 1970 TAX MAP NO 36-P-283.
- THIS SECTION OF THE DISTRICT OF HOWARD COUNTY CONTAINS 6.174 AC. ±
- ZONING: N.T.
- SEE DRAWING 59-61-E FOR SOIL EROSION AND FOR 48\"/>

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ROADWAYS: COMPACT SUBGRADE TO 95% DENSITY AS DETERMINED BY STANDARD TESTS. CRUSHED STONE BASE IN 18\"/>

APPROVED FOR THE CITY OF BALTIMORE FOR PUBLIC WATER SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 HOWARD COUNTY HEALTH OFFICER

APPROVED-HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
 PLANNING DIRECTOR  
 CHIEF ENGINEER-DIVISION OF LAND DEVELOPMENT

APPROVED:  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 DIRECTOR  
 CHIEF OF BUREAU OF HIGHWAYS

ENGINEERING  
 2300 34.51 3KV 3ø 60- SERVICE  
 OUTDOOR SUBSTATION  
 C.O.L.U.M.B.I.A  
 BALTIMORE GAS AND ELECTRIC COMPANY  
 ELECTRIC ENGINEERING DEPARTMENT  
 DRAWN BY: [Signature]  
 CHECKED BY: [Signature]  
 SCALE: 1"=20'  
 REVISIONS: 5.3 - E.O. 2.1  
 DWG. 59-61-E  
 DATE: 5-3-09  
 PKFZ

30X  
 SDP 70-05-C

CONSTRUCTION SPECS AND NOTES:

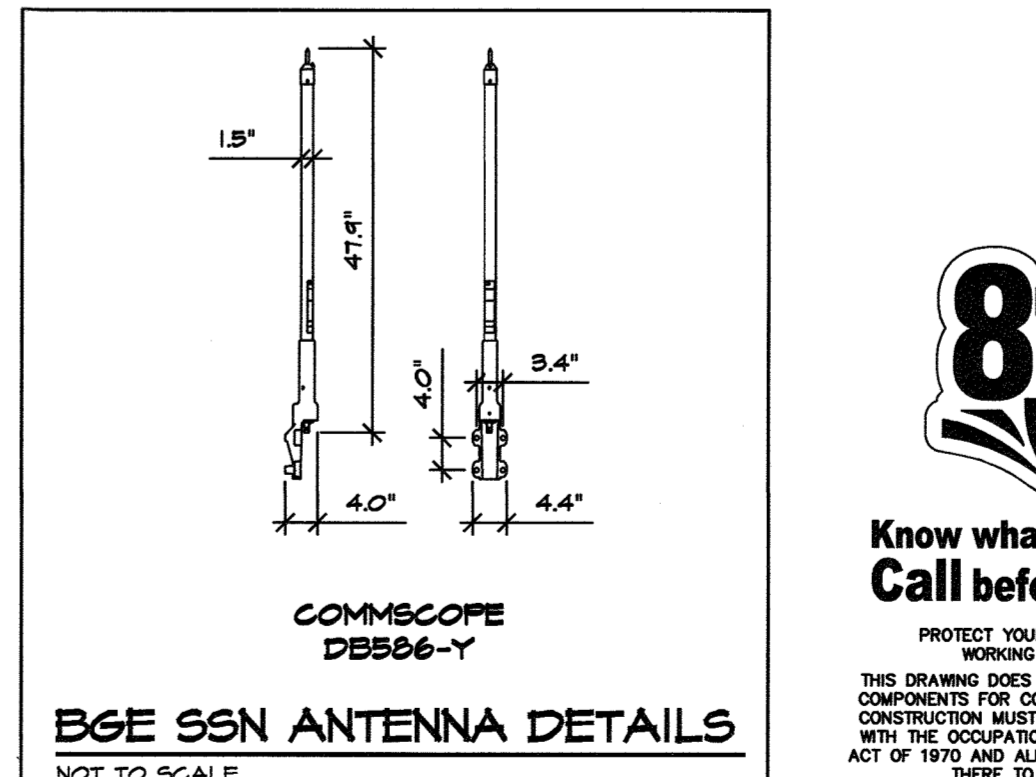
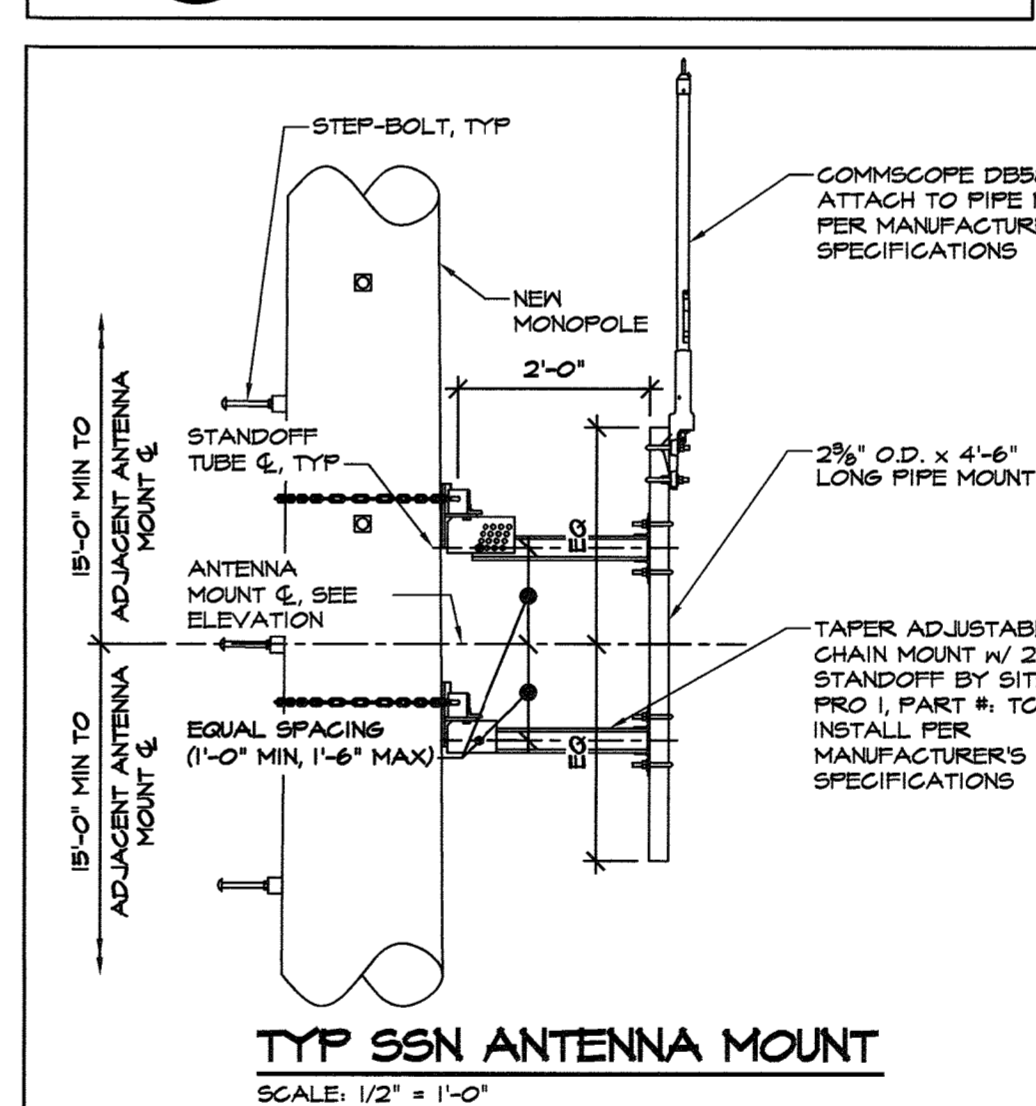
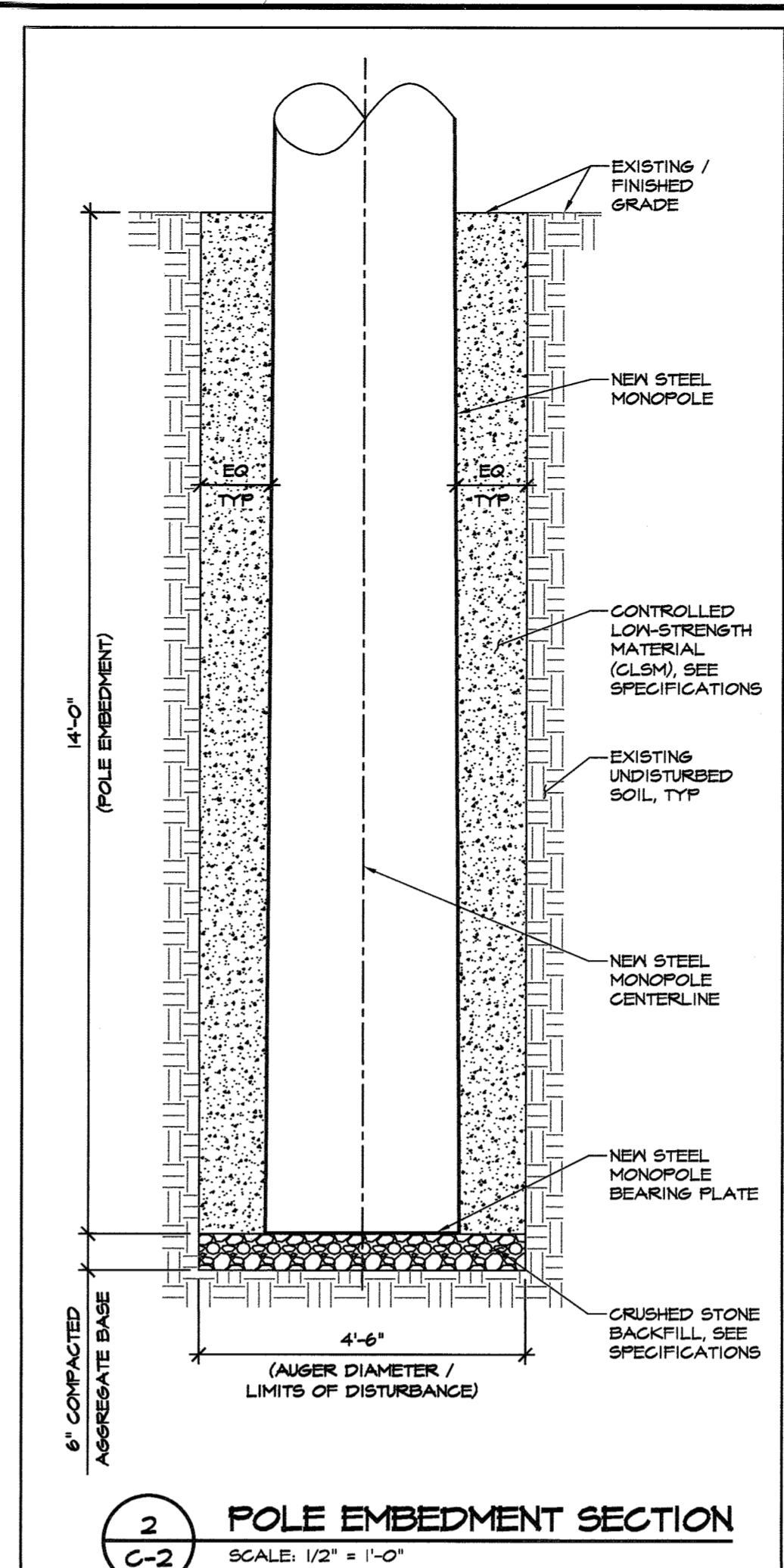
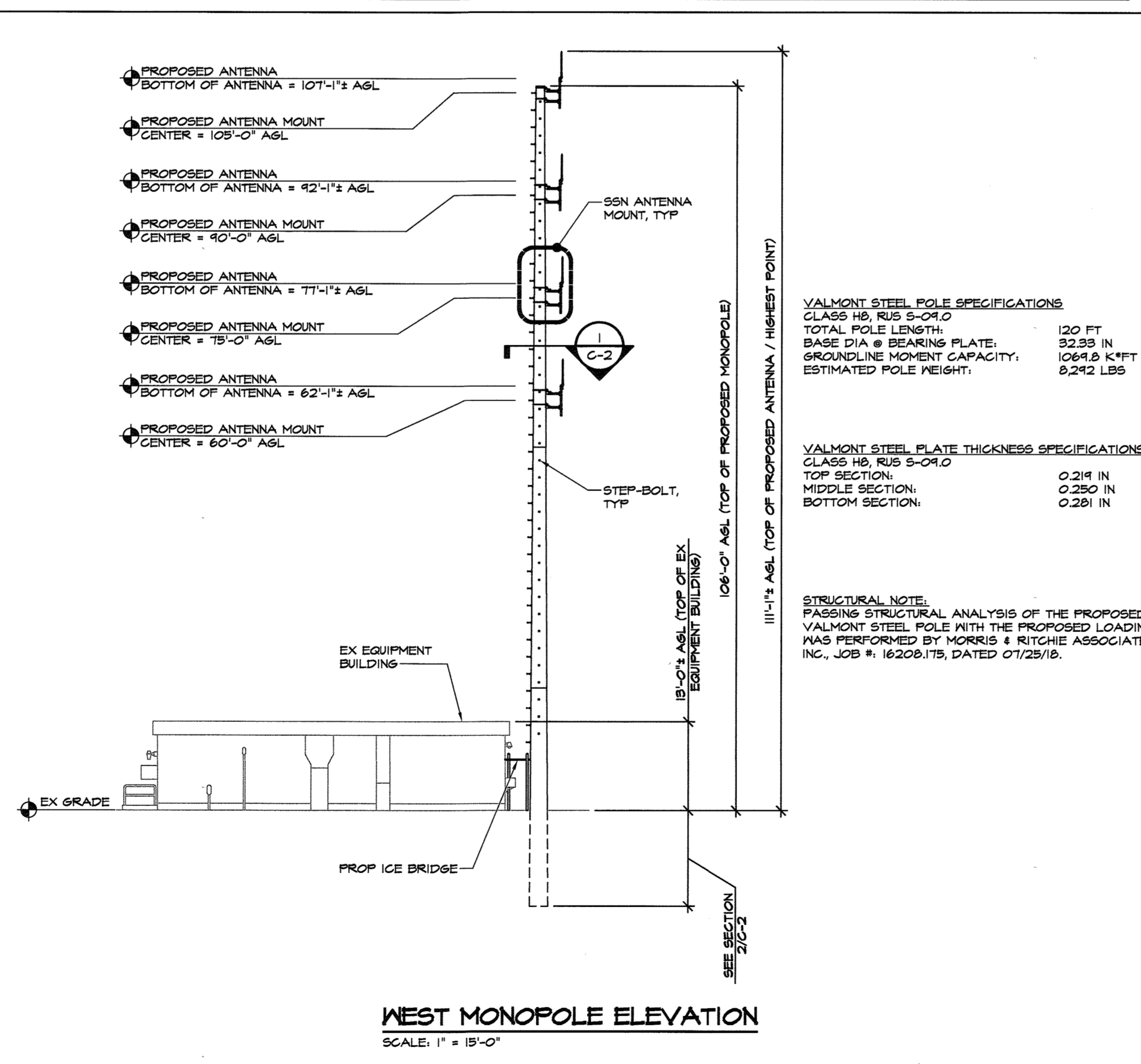
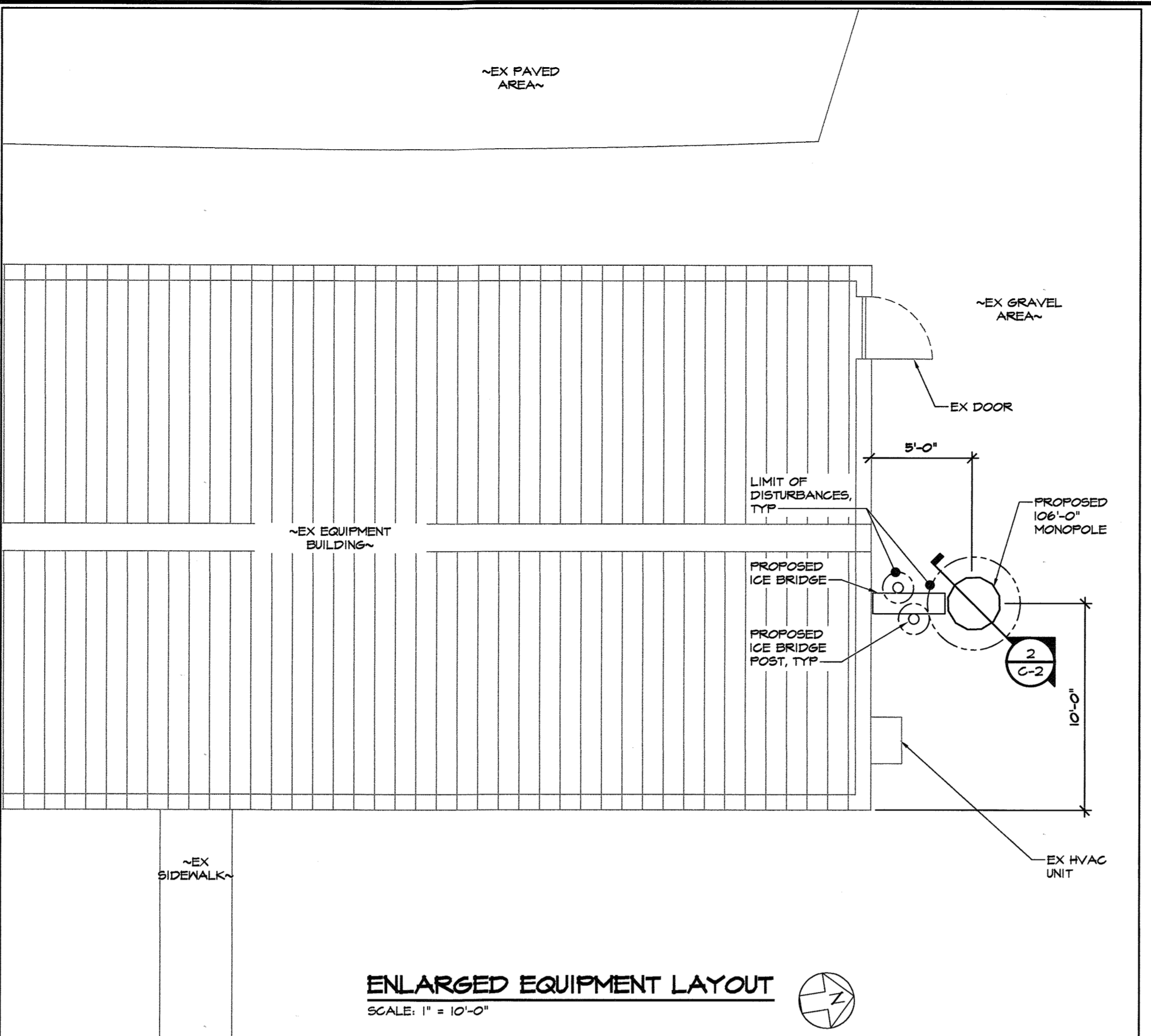
- CODES
A. ANSI/TIA-222-G-2-2014 "STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS", AND ALL SUBSEQUENT SUPPLEMENTS
B. INTERNATIONAL BUILDING CODE (IBC-2015)
C. IN ADDITION, ALL CONSTRUCTION SHALL CONFORM WITH THE GOVERNING LOCAL BUILDING CODE
DESIGN LOADS
A. THE EMBEDDED STEEL MONOPOLE HAS BEEN DESIGNED TO SUPPORT THE APPURTENANCES LISTED IN THE MONOPOLE ANALYSIS REPORT BY MORRIS & RITCHIE ASSOCIATES, JOB NO. 16208.175, DATED JULY 28, 2019.
B. WIND LOAD DESIGN DATA
ULTIMATE WIND SPEED (NO ICE): VU1 = 120 MPH
BASIC WIND SPEED (WITH ICE): VU = 40 MPH
DESIGN RADIAL ICE THICKNESS: 3/4" (ICE THICKNESS INCREASES WITH HEIGHT)
RISK CATEGORY: III/IV
EXPOSURE CATEGORY: C
TOPOGRAPHIC CATEGORY: I
C. EARTHQUAKE LOAD DESIGN DATA
NOT APPLICABLE: Se < 1.00
D. THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACINGS AS REQUIRED DURING ERECTION AND CONSTRUCTION DESIGN OF TEMPORARY BRACINGS IS THE RESPONSIBILITY OF THE CONTRACTOR. SEE CONTROLLED LOW-STRENGTH MATERIAL SECTION OF NOTES FOR ADDITIONAL INFORMATION.

- MISCELLANEOUS
A. THE CONTRACTOR SHALL INSTALL THE EMBEDDED STEEL MONOPOLE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS, IN ADDITION TO THE SPECIFICATIONS ON THESE DRAWINGS.
B. THE CONTRACTOR SHALL LOCATE ALL UTILITIES IN THE AREA OF CONSTRUCTION AND PREVENT DAMAGE TO THEM. SHOULD DAMAGE OCCUR TO ANY UTILITIES, THE CONTRACTOR IS REQUIRED TO REPAIR THE DAMAGE TO THE SATISFACTION OF THE OWNER AT HIS OWN EXPENSE.
C. IN CASES OF CONFLICT BETWEEN THE DRAWINGS AND/OR SPECIFICATIONS OR EXISTING CONDITIONS, CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONALS AND OBTAIN CLARIFICATION PRIOR TO BEGINNING AND PROCEEDING WITH WORK.
D. THE CONTRACTOR SHALL NOT SUBMIT REPRODUCTIONS OF THE STRUCTURAL CONTRACT DOCUMENTS AS SHOP DRAWINGS.
E. SCALES SHOWN ON THE STRUCTURAL CONTRACT DRAWINGS ARE FOR GENERAL INFORMATION ONLY. DIMENSIONAL INFORMATION SHALL NOT BE OBTAINED BY SCALING THE DRAWINGS.
F. APPLY DETAILS, SECTIONS AND NOTES ON THE DRAWINGS WHERE CONDITIONS ARE SIMILAR TO THOSE INDICATED BY DETAIL, DETAIL TITLE OR NOTE.
G. PROVIDE SHORING AND PROTECTION FOR EXCAVATION AS NECESSARY TO PREVENT CAVING AND COMPLY WITH ALL LOCAL OSHA RULES AND REGULATIONS.
H. SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS MUST BE SUBMITTED BY THE CONTRACTOR OR OWNER FOR REVIEW BY THE ENGINEER. IF THE CONTRACTOR OR OWNER FAILS TO SUBMIT THE SHOP DRAWINGS, THE ENGINEER WILL NOT BE RESPONSIBLE FOR STRUCTURAL CERTIFICATION AND DESIGN OF THE PROJECT. THE SHOP DRAWINGS SHALL INDICATE ANY DEVIATIONS OR OMISSIONS FROM THE CONTRACT DOCUMENTS. THE GENERAL CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS PRIOR TO THE SUBMISSION AND MAKE ALL CORRECTIONS DEEMED NECESSARY.

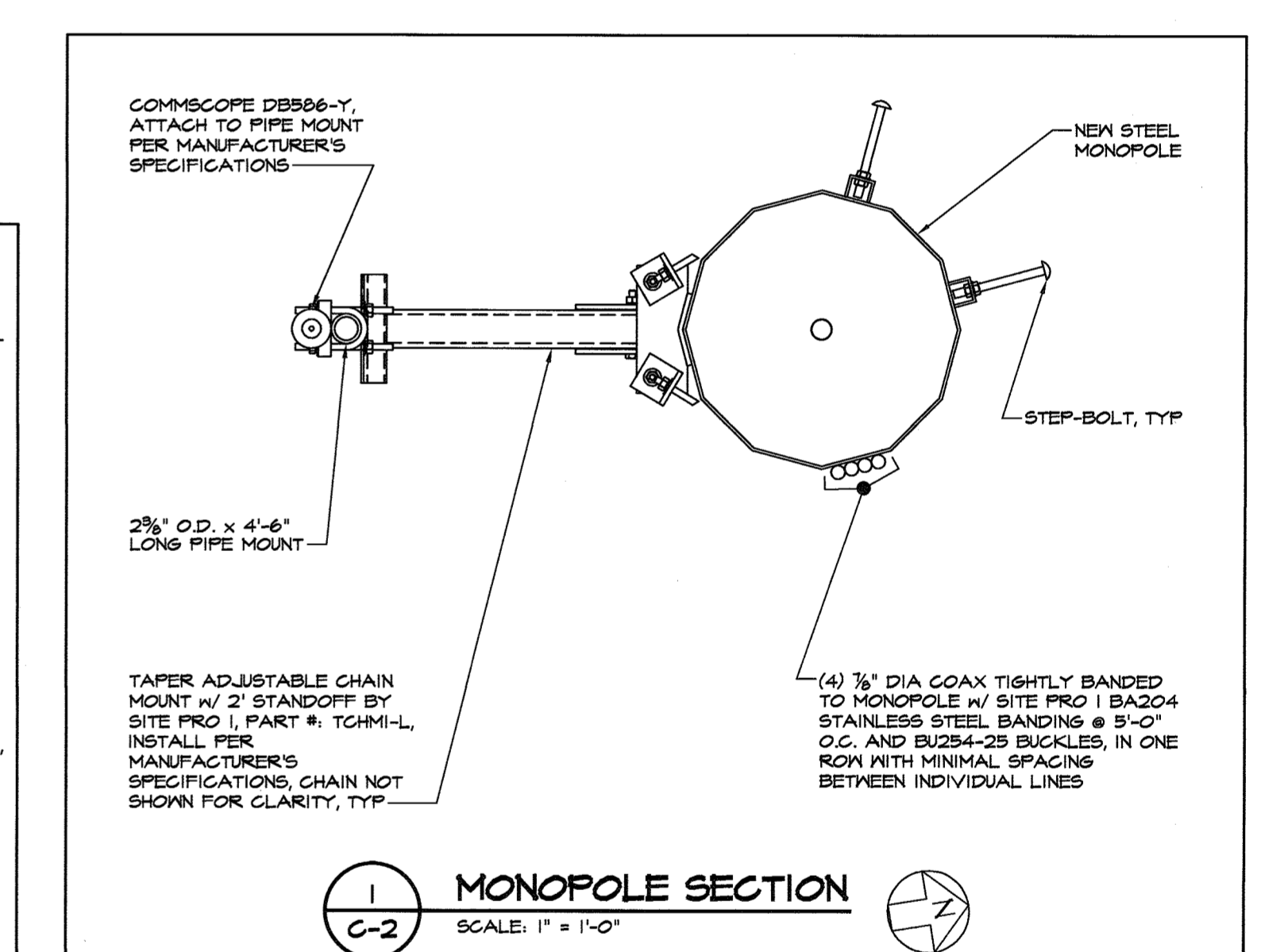
- EMBEDDED STEEL MONOPOLE
A. STEEL MONOPOLE SPECIFICATIONS:
MANUFACTURER: VALMONT NEWMARK
DESIGNATION: CLASS HB, RUS 5-04.0 (12-SIDED)
POLE TYPE: THREE-PIECE WITH SLIP JOINTS
TOTAL POLE LENGTH: SEE DRAWINGS
TOP SECTION THICKNESS: 0.214 IN
MIDDLE SECTION THICKNESS: 0.280 IN
BOTTOM SECTION THICKNESS: 0.291 IN
BASE DIA @ BEARING PLATE: 52.33 IN
GROUNDLINE MOMENT CAPACITY: 1069.8 K'FT
APPROXIMATE POLE WEIGHT: 8,242 LBS
EMBEDMENT LENGTH: SEE DRAWINGS
B. MISCELLANEOUS SPECIFICATIONS:
STEEL FINISH: GALVANIZED
CORROSION: 1'-6" ABOVE GRADE TO BOTTOM OF POLE
CLIMBING HARDWARE: STEP-BOLTS 10' ABOVE GRADE TO TOP OF POLE

- STRUCTURAL AND MISCELLANEOUS STEEL
A. ALL STEEL CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE AISC STEEL CONSTRUCTION MANUAL "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" (ANSI/AISC 360) AND THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
B. ALL PIPE SHALL CONFORM TO ASTM A53, GRADE B (Fy = 35 KSI).
C. ALL U-BOLTS SHALL CONFORM TO ASTM A307 (Fu = 60 KSI).
D. ALL NUTS SHALL CONFORM TO ASTM A563.
E. ALL WASHERS SHALL CONFORM TO ASTM F436.
F. FIELD WELDING IS NOT PERMITTED.
G. THE CONTRACTOR SHALL NOT SPLICE OR CUT OPENINGS IN STEEL MEMBERS NOT SHOWN ON CONTRACT DRAWINGS WITHOUT THE PERMISSION OF THE STRUCTURAL ENGINEER.
H. ALL STEEL MEMBERS, FABRICATIONS AND ASSEMBLIES SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A135 AFTER FABRICATION. ALL BOLTS, WASHERS & NUTS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM F2324.
I. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A760.
J. AN INDEPENDENT INSPECTION AGENCY SHALL INSPECT ALL STRUCTURAL STEEL AND VERIFY THAT IT CONFORMS TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. FIELD INSPECTION REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN 5 DAYS OF THE INSPECTION. THE CONTRACTOR SHALL NOTIFY THE INSPECTION AGENCY OF ALL PHASES OF STEEL CONSTRUCTION AND WELDING.

- STRUCTURAL BACKFILL
CRUSHED STONE:
A. STONE SHALL BE 1" DIAMETER OR SMALLER MEETING THE GRADATION REQUIREMENTS OF SIZE NO. 57 PER COARSE AGGREGATE OF ASTM C89.
B. STONE SHALL BE DEPOSITED IN 6 INCH MAXIMUM LOOSE LIFTS AND COMPACTED TO THE SPECIFIED FINISHED GRADE.
CONTROLLED LOW-STRENGTH MATERIAL (CLSM):
A. ALL CLSM CONSTRUCTION SHALL CONFORM TO THE LATEST STANDARD FOR CONTROLLED LOW-STRENGTH MATERIAL (ACI 224).
B. CLSM MATERIAL SPECIFICATIONS:
1. AGGREGATE SHALL CONFORM TO ASTM C89. COARSE AGGREGATE SHALL CONSIST OF A WELL-GRADED MIXTURE OF CRUSHED ROCK OR SAND WITH A MAXIMUM SIZE AGGREGATE OF 3/4". 100% SHALL PASS THE #20 SIEVE. NOT MORE THAN 80% SHALL BE RETAINED BY THE #40 SIEVE AND NOT MORE THAN 10% SHALL PASS THE NUMBER 200 SIEVE. ALL MATERIAL SHALL BE FREE FROM ORGANIC MATTER AND NOT CONTAIN MORE ALKALI, SULFATES, OR SALTS THAN THE NATIVE MATERIAL AT THE SITE.
2. THE ENTRAINED AIR CONTENT SHALL BE A MINIMUM OF 8% AND A MAXIMUM OF 20%.
3. AIR ENTRAINING ADMIXTURE AND/OR WATER REDUCING AGENT MAY BE ADDED TO IMPROVE THE WORKABILITY AND SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C260 AND ASTM C494, RESPECTIVELY.
4. WATER SHALL BE POTABLE, CLEAN AND FREE FROM OBJECTIONABLE QUANTITY OF SILTY ORGANIC MATTER, ALKALI, SALTS, AND OTHER IMPURITIES.
C. CLSM PERFORMANCE SPECIFICATIONS:
1. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 300 PSI.
2. THE MINIMUM UNCONFINED COMPRESSIVE STRENGTH AT 6-HOURS SHALL BE 50 PSI. THE STEEL MONOPOLE SHALL BE TEMPORARILY SUPPORTED DURING THE CLSM 6-HOUR SETTING PERIOD TO ALLOW THE CLSM TO PROPERLY CURE.
3. THE MINIMUM FLOW (SLUMP) SHALL BE 8 INCHES WHEN TESTED IN ACCORDANCE WITH ASTM D6103.
D. ALL CLSM MIX DESIGNS, INCLUDING CEMENT CONTENT, WATER CEMENT RATIO, FINE AND COARSE AGGREGATE CONTENT AND ALL ADMIXTURES, SHALL BE REVIEWED BY ENGINEER PRIOR TO PLACING FIRST CLSM.
E. ALL CLSM SHALL BE SAMPLED AND TESTED BY THE TESTING AGENCY. THE CONTRACTOR SHALL NOTIFY THE TESTING AGENCY 48 HOURS PRIOR TO THE PLACING OF ANY CLSM. TESTING SHALL BE IN ACCORDANCE WITH ASTM C84.
F. THE CLSM SHALL NOT BE REQUIRED TO SUPPORT WIND LOADINGS FOR A MINIMUM OF 6 HOURS AND ALL TEMPORARY BRACING NECESSARY TO SUPPORT THE MONOPOLE STRUCTURE DURING CONSTRUCTION SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR. SHOP DRAWINGS SIGNED AND SEALED BY A REGISTERED ENGINEER IN THE STATE OF MARYLAND SHALL BE SUBMITTED FOR REVIEW. SHOP DRAWINGS SHALL INDICATE THE TYPE, EXTENT, SIZE, AND LOCATION OF ALL TEMPORARY BRACINGS, AS WELL AS THE SEQUENCE OF CONSTRUCTION.



- SITE NOTES:
1. SITE DATA: DEED BOOK: 00889 PAGE: 00472
PARCEL ID: 814026
TRACT AREA: 12.1400 ACRES
DISTRICT: 06
ADDRESS: 8448 OAKLAND MILLS RD
COLUMBIA, MD 21048
EXISTING USE: UTILITY SUBSTATION
2. ZONING: NT
3. TOTAL DISTURBED AREA = (1/4) \* (4.5 FT)^2 + 2 \* ((1/4) \* (1.5 FT)^2) = ~20 SF
4. TOTAL DISTURBED VOLUME = (4.5 FT \* (1/4) \* (4.5 FT)^2) + 2 \* (0.5 FT \* (1/4) \* (1.5 FT)^2) = ~248 CF = ~4 CY
5. APPROXIMATE HORIZONTAL AND VERTICAL CONTROL: GROUND ELEVATION: 886.0' AMSL (AVG)
NORTH: N 91.20'
LONGITUDE: W 76° 44' 40.13"
HIGHEST APPURTENANCE ON MONOPOLE: 111' ASL
TOTAL ELEVATION (ANGL): 4641' ANGL.
6. THE PROPOSED FACILITIES WILL CONSIST OF FOUR (4) OMNI-DIRECTIONAL ANTENNAS MOUNTED ON A NEW 106'-0' MONOPOLE FOR THE RECEPTION OF BALTIMORE GAS & ELECTRIC TELECOMMUNICATIONS.
7. THE STRUCTURE WILL NOT SUPPORT LIGHTS OR SIGNS UNLESS REQUIRED FOR AIRCRAFT WARNING OR OTHER SAFETY RECORDS.
8. THE APPLICANT WILL PROVIDE A CERTIFICATION FROM A REGISTERED ENGINEER THAT THE STRUCTURE WILL MEET THE APPLICABLE DESIGN STANDARDS FOR WIND LOADS PER THE REQUIREMENTS OF THE TELECOMMUNICATIONS INDUSTRY ASSOCIATION.
9. IF THE ANTENNAS ARE NO LONGER USED FOR TELECOMMUNICATIONS PURPOSES FOR A CONTINUOUS PERIOD OF ONE (1) YEAR, THEY SHALL BE REMOVED BY THE ANTENNA OWNER AT OWNER'S EXPENSE.
10. NO WATER OR SANITARY UTILITIES ARE REQUIRED FOR THE OPERATION OF THIS FACILITY.
11. STORM-WATER MANAGEMENT NOTE: NO STORM-WATER MANAGEMENT IS REQUIRED FOR THIS SITE.
12. THIS PLAN PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT. PLAN IS SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD.
13. ALL DETAILS SHOWN ARE 'STANDARD' OR 'TYPICAL' FOR REFERENCE ONLY. FOR ACTUAL DETAILS, SEE ARCHITECTURAL, STRUCTURAL, OR CONSTRUCTION PLANS BY OTHERS.
14. STRUCTURAL ANALYSIS/DESIGN TO BE PERFORMED BY OTHERS AT CLIENT AND/OR OWNER'S DISCRETION PRIOR TO COMMENCEMENT OF ANY WORK.
GENERAL NOTES:
1. CONTRACTOR SHALL NOTIFY "MISS UTILITY" (1-800-287-7777) 48 HOURS PRIOR TO DOING ANY EXCAVATION IN THIS AREA. CONTRACTOR SHALL CONTACT A SUBSURFACE UTILITY LOCATOR FOR LOCATION OF EXISTING UTILITIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL VERIFY EXISTING UTILITY LOCATIONS BY TEST FIT AS NECESSARY. LOCATION OF UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE AND FOR PLANNING PURPOSES ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. DAMAGE TO UTILITIES OR PROPERTY OF OTHER BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE REPAIRED TO PRECONSTRUCTION CONDITIONS BY THE CONTRACTOR.
2. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND ORDINANCES, THE LATEST EDITION THEREOF.
3. BUILDING PERMIT WILL BE OBTAINED BY BALTIMORE GAS & ELECTRIC. GENERAL CONTRACTOR SHALL SECURE ELECTRICAL PERMIT FOR THIS PROJECT FROM ALL APPLICABLE GOVERNMENTAL AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASKING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
4. CONTRACTOR SHALL COORDINATE ALL UTILITY CONNECTIONS WITH APPROPRIATE UTILITY OWNERS.
5. THESE PLANS ARE NOT FOR RECORDATION OR CONVEYANCE.
6. EXISTING PAVEMENT AND OTHER SURFACES DISTURBED BY CONTRACTOR (WHICH ARE NOT TO BE REMOVED) SHALL BE REPAIRED TO PRECONSTRUCTION CONDITIONS BY THE CONTRACTOR.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chief, Development Engineering Division: [Signature] 3-26-19
DATE: 3-26-19

APPROVED: PLANNING BOARD OF HOWARD COUNTY
Chief, Division of Land Development: [Signature] 3-28-19
DATE: 3-28-19
DATE: 3/7/19

MORRIS & RITCHIE ASSOCIATES, INC. ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
14280 PARK CENTER DRIVE LAUREL, MD 20707
(410) 792-9792 / (301) 776-1690
FAX: (410) 792-7395 MRAGTA.COM
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COLUMBIA SUBSTATION - BGE SDP-70-05
ESSENTIAL TELECOMMUNICATION STRUCTURE
CONSTRUCTION DETAILS AND NOTES
COUNCIL DISTRICT 3, ZONE NT/TOWN
8445 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND - HOWARD COUNTY
DATE: 3-12-2019 REVISIONS: REVISED SITE DEVELOPMENT PLAN FOR TELECOM STRUCTURE AND NEW SHEET 2 MONOPOLE DETAILS JOB NO.: 16208175 SCALE: SEE DETAIL DATE: 3-20-2019
DRAWN BY: MAM
DESIGN BY: MAM
REVIEW BY: TM
SHEET: 2 OF 2

Vertical text on the left margin: P:\PROJ\16208175 - Columbia Substation\Plan\SDP\Plan\SDP.dwg, 3/27/2019 12:05:07 PM, M:\mitchell, 1/1, Copyright 2019 Morris & Ritchie Associates, Inc.