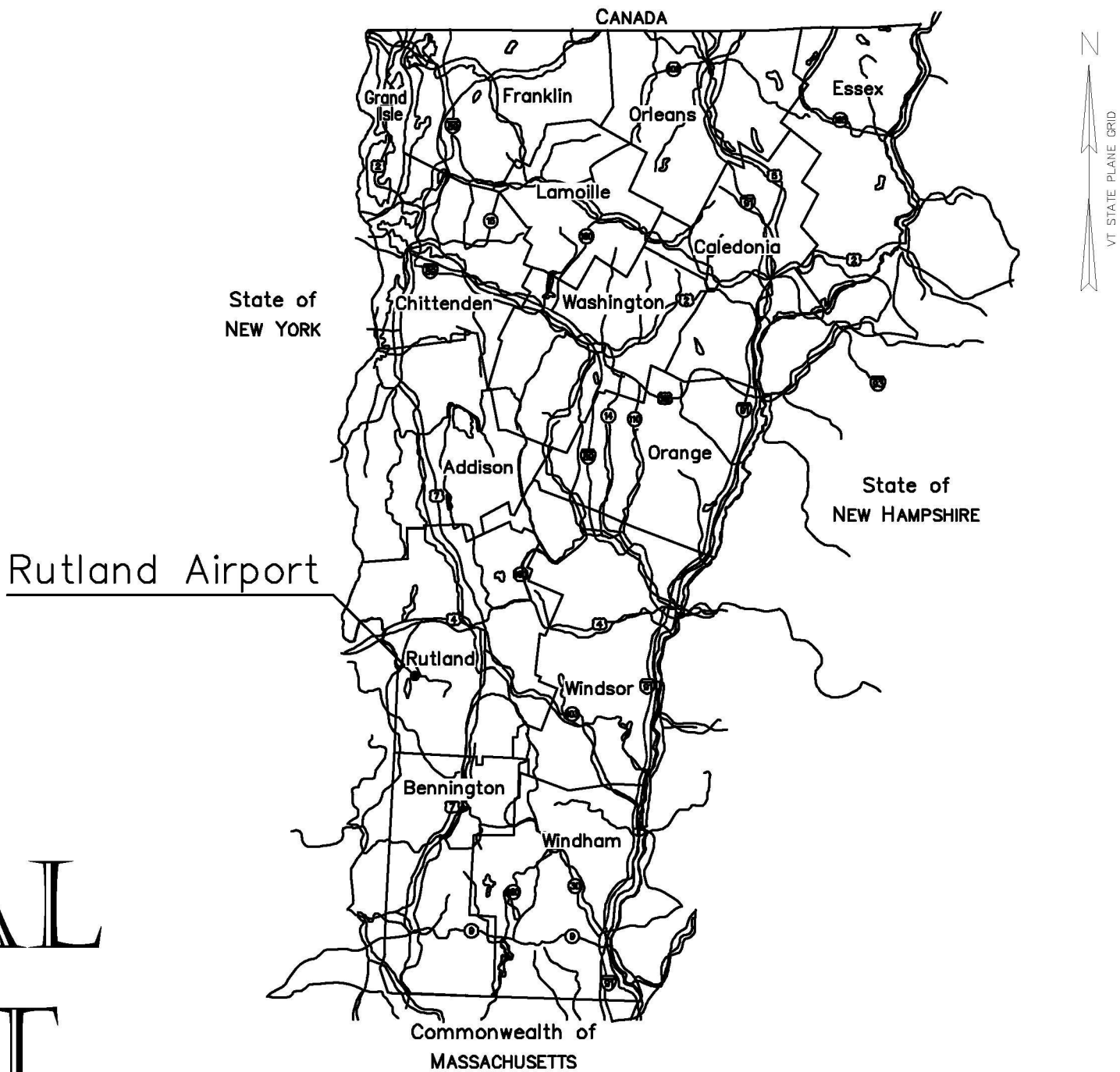


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STATE OF VERMONT AGENCY OF TRANSPORTATION



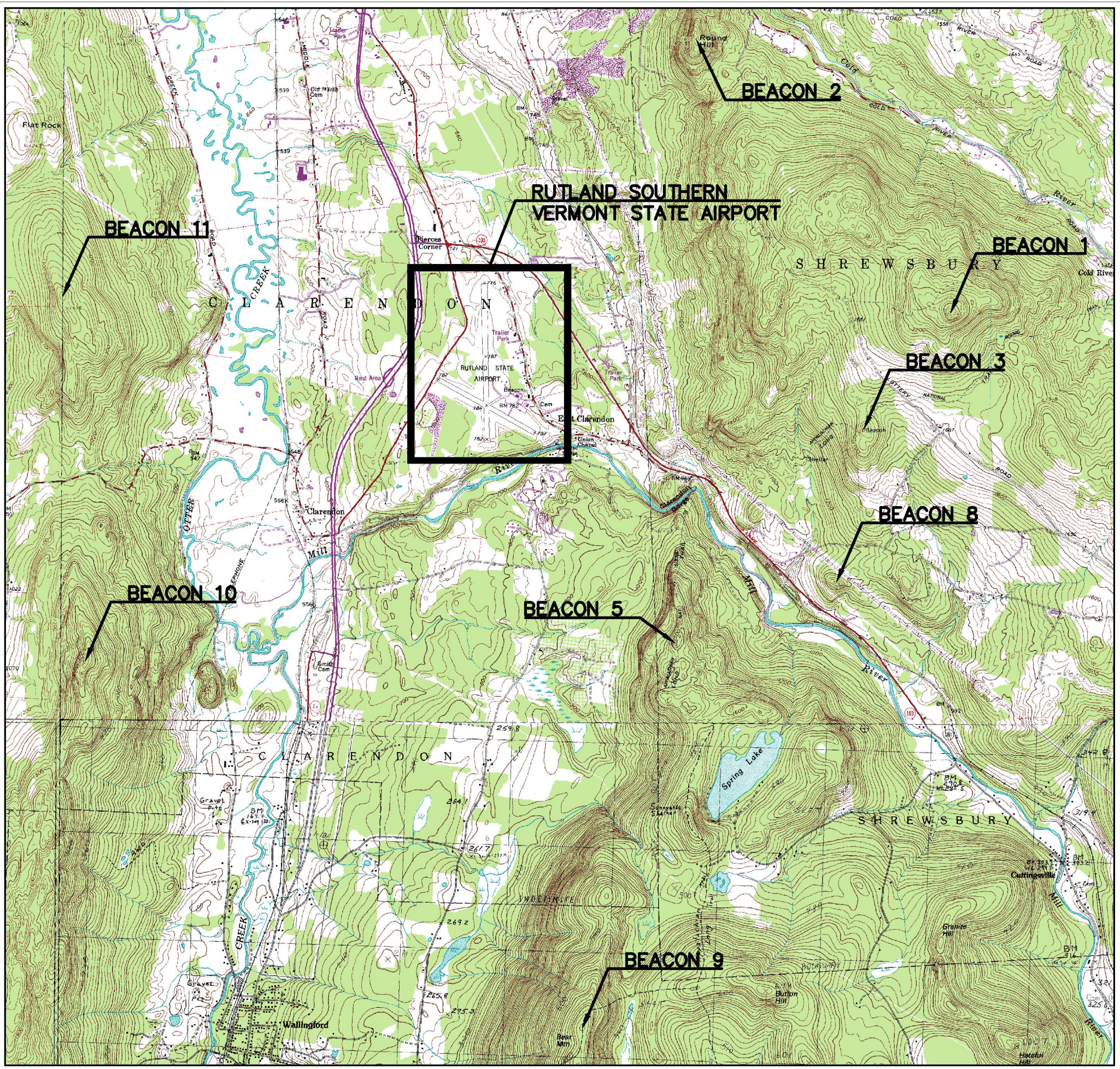
RUTLAND SOUTHERN VERMONT REGIONAL AIRPORT HAZARD BEACON REPLACEMENT NORTH CLARENDON, VERMONT



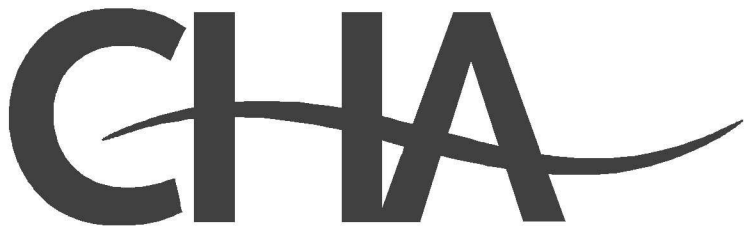
STATE OF VERMONT
NOT TO SCALE

INDEX OF SHEETS:

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E-403	ELECTRICAL DETAILS
E-404	ELECTRICAL DETAILS
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S-102	STRUCTURAL DETAILS



BEACON LOCATION MAP
NO SCALE



III Winners Circle, PO Box 5269 • Albany, NY 12205-0269
Main: (518) 453-4500 • www.chacompanies.com

RECORD DRAWING 12/30/15

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TEMPORARY CONSTRUCTION ACCESS AGREEMENTS:

BEACON 1:

PROPERTY OWNERS:
LOTTERY ROAD, TOWN OF SHREWSBURY, VT

ACCESS DESCRIPTION:
BEACON IS ACCESSED FROM LOTTERY ROAD IN SHREWSBURY. THE RIGHT-OF-WAY (ROW) IS APPROXIMATELY 0.3 MILES LONG, MODERATELY STEEP AND CLEAR CUT. ATV TRAILS ARE ALONG THE LENGTH OF THE ROW. ACCESS VIA AN EXISTING LOGGING ROAD THAT RUNS GENERALLY WEST OF THE ROW AND CUTS ACROSS THE ROW SOUTHEAST OF THE BEACON.

BEACON 2:

PROPERTY OWNERS:
4400 COLD RIVER ROAD, TOWN OF SHREWSBURY, VT
240 WALLACE ROAD, TOWN OF SHREWSBURY, VT

ACCESS DESCRIPTION:
BEACON IS LOCATED AT THE INTERSECTION OF COLD RIVER ROAD AND WALLACE ROAD IN SHREWSBURY. THE ROW IS APPROXIMATELY 0.3 MILES LONG, VERY STEEP AND HAS LITTLE TREE GROWTH. BEACON IS INACCESSIBLE WITHOUT THE USE OF WINCHES DUE TO THE STEEPNESS OF THE GRADE AND THE PRESENCE OF BEDROCK OUTCROPPINGS AROUND THE ENTIRE HILL TOP. HISTORICALLY ONLY LOGGING EQUIPMENT HAVE TRAVERSED THE HILL WITH WINCHES TO ADVANCE PAST AN ATV TRAIL THAT ENDS APPROXIMATELY HALFWAY UP THE HILLSIDE. ANY WETLANDS IDENTIFIED WITHIN OR ADJACENT TO THE PROPOSED CONSTRUCTION ACCESS NEED TO BE AVOIDED. A RARE PLANT SPECIES HAS BEEN IDENTIFIED ON THE CLIFF LOCATED APPROXIMATELY 100 FEET SOUTH OF THE POWERLINE. DISTURBANCES TO THE CLIFF AREA NEED TO BE AVOIDED. THE CONTRACTOR MUST DETERMINE THE BEST ACCESS ROUTE AND METHOD. AN ON-SITE MEETING CONCERNING THE ACCESS ROUTE WILL BE REQUIRED WITH THE CONTRACTOR, PROPERTY OWNERS AND THE ENVIRONMENTAL CONSULTANT FROM THE SMART ASSOCIATES PRIOR TO THE START OF CONSTRUCTION.

BEACON 5:

PROPERTY OWNERS:
1169 SPRING LAKE ROAD, TOWN OF SHREWSBURY, VT

ACCESS DESCRIPTION:
BEACON IS ACCESSED BY PROPERTY ON SPRING LAKE RANCH ROAD IN SHREWSBURY. THE ROW IS ACCESSED FROM EXISTING HIKING TRAILS DENOTED BY RED AND BLUE BLAZES. AT THE POINT OF INTERSECTION WITH THE ROW, THE RED/BLEU ATV/HIKING TRAIL OVERLAPS WITH THE APPALACHIAN TRAIL. TRAVERSE ALONG THE TRAIL, PARALLEL TO THE ROW, UNTIL ACCESS CAN BE GAINED TO THE TOWER SITE. CONSTRUCTION EQUIPMENT MUST BE CLEANED (I.E. SOIL AND PLANT MATERIAL BRUSHED OFF) BEFORE ENTERING SITE TO MINIMIZE THE SPREAD OF INVASIVE SPECIES ALONG THE APPALACHIAN TRAIL/LONG TRAIL.

BEACON 8:

PROPERTY OWNERS:
67 & 137 VT ROUTE 103, TOWN OF SHREWSBURY, VT
246 LINCOLN HILL ROAD, TOWN OF SHREWSBURY, VT

ACCESS DESCRIPTION:
BEACON IS ACCESSED FROM LINCOLN HILL ROAD IN SHREWSBURY. THERE IS AN EXISTING VELCO RIGHT OF WAY ON LINCOLN HILL ROAD THAT IS CLEAR CUT WITH MINOR SHRUBS. TRAVERSE PARALLEL TO AND SOUTH OF THE VELCO ROW. ACCESS SHALL BE OBTAINED FROM THE NORTH SLOPE OF THE BEACON HILL.

BEACON 9:

PROPERTY OWNER:
1169 SPRING LAKE ROAD, TOWN OF WALLINGFORD, VT

ACCESS DESCRIPTION:
BEACON IS LOCATED ON BEAR MOUNTAIN AND CAN BE ACCESSED FROM THE SPRING LAKE RANCH PROPERTY ON SPRING LAKE ROAD IN WALLINGFORD. THE RANCH HAS A RED-BLAZED ATV TRAIL THAT MEETS WITH THE APPALACHIAN TRAIL APPROXIMATELY 0.25 MILES FROM THE TRAIL HEAD, OVERLAPS FOR APPROXIMATELY 0.6 MILES, THEN DIVERGES WITH THE APPALACHIAN TRAIL AT PATCH HOLLOW. THE ATV TRAIL AGAIN MEETS WITH THE APPALACHIAN TRAIL APPROXIMATELY 0.25 MILES NORTH OF THE TOWER SITE. TRAVERSE PARALLEL TO THE APPALACHIAN TRAIL UNTIL ACCESS CAN BE GAINED TO THE TOWER SITE. THE TRAILS INCLUDE SEVERAL CULVERTS AND FOOT BRIDGES THROUGH WETLAND AREAS THAT MUST BE BRIDGED FOR ACCESS BY THE CONSTRUCTION EQUIPMENT. THESE CROSSINGS INCLUDE ONE (1) METAL CULVERT, EIGHT (8) WOODEN FOOT BRIDGES, AND TEN (10) PLASTIC CULVERTS/STONE BRIDGES. THE CONTRACTOR WILL BE RESPONSIBLE FOR NOT DAMAGING THE EXISTING BRIDGES AND CULVERTS AND NOT CREATING ANY DISTURBANCE TO THE WETLAND AREAS. SOME TREE CLEARING WILL ALSO BE REQUIRED IN THE UPPER SECTION OF THE ACCESS ROUTE TO CREATE A WIDE ENOUGH PATH FOR THE CONSTRUCTION EQUIPMENT. CONSTRUCTION EQUIPMENT MUST BE CLEANED (I.E. SOIL AND PLANT MATERIAL BRUSHED OFF) BEFORE ENTERING SITE TO MINIMIZE THE SPREAD OF INVASIVE SPECIES ALONG THE APPALACHIAN TRAIL/LONG TRAIL.

GENERAL NOTES:

- ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES, AND REGULATIONS.
- THE ENGINEER RESERVES THE RIGHT TO EXAMINE ANY WORK DONE ON THIS PROJECT AT ANY TIME TO DETERMINE THE CONFORMANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS OF THIS PROJECT, AS INTENDED AND INTERPRETED BY THE ENGINEER.
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND STIPULATED IN THE PROJECT SPECIFICATIONS.
- STORAGE AREAS FOR CONTRACTOR'S EQUIPMENT AND MATERIALS SHALL BE WITHIN THE IMMEDIATE WORK LIMITS ONLY.
- THE CONTRACTOR SHALL:
 - VERIFY ALL CONDITIONS IN THE FIELD PRIOR TO COMMENCEMENT OF WORK AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
 - EXAMINE THE SITE AND INCLUDE IN HIS WORK THE EFFECT OF ALL EXISTING CONDITIONS ON THE WORK.
 - PROVIDE AND INSTALL ALL MATERIALS AND PERFORM ALL WORK IN ACCORDANCE WITH RECOGNIZED GOOD STANDARD PRACTICE.
 - HOLD THE OWNER HARMLESS AGAINST ANY AND ALL CLAIMS ARISING FROM WORK DONE BY THE CONTRACTOR ON THE SITE.
- RUBBISH, DEBRIS, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- ALL EXISTING ACTIVE 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. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH STATE OF VERMONT GUIDELINES FOR EROSION AND SEDIMENT CONTROL AND COORDINATED WITH THE TOWN/COUNTY CODE ENFORCEMENT OFFICE.
- FOR PROJECTS IN SIMILAR LOCATIONS, A GIN POLE TOWER ERECTION TECHNIQUE HAS BEEN USED AS A COST-EFFECTIVE CONSTRUCTION PRACTICE. HOWEVER, THE TOWER ERECTION MEANS AND METHODS ARE THE CONTRACTOR'S RESPONSIBILITY. NOTE THAT AT THE TOWER SITES, THE CONTRACTOR WILL NOT GENERALLY HAVE ACCESS TO PROPERTY BEYOND THE LIMITS OF THE BEACON TOWER EASEMENTS (AS ILLUSTRATED), WHICH SHOULD BE RECOGNIZED WHEN CONSIDERING ERECTION TECHNIQUES.

SURVEY NOTES:

- BASE MAPPING PREPARED BY VERMONT SURVEY AND ENGINEERING, INC. FROM AN OCTOBER 2011 FIELD SURVEY.
- NORTH ORIENTATION IS VERMONT GRID NORTH.
- COORDINATES SHOWN ARE REFERENCED TO VERMONT STATE PLANE 4400-VT NAD 83 (FEET).
- CONTOURS AND ELEVATIONS ARE BASED ON NAVD 88.
- SUBJECT TO ALL RIGHTS, EASEMENTS, COVENANTS OR RESTRICTIONS OF RECORD.
- A FULL BOUNDARY SURVEY WAS NOT PERFORMED BY VERMONT SURVEY AND ENGINEERING, INC. IN CONJUNCTION WITH THIS PROJECT.

SURVEY LEGEND

- 1440'

EXISTING CONTOUR
- VSE H/V CONTROL POINT
- UTILITY POLE & GUY
- AERIAL ELECTRIC
- CHAIN-LINK FENCE
- TREE LINE
- LEDGE OUTCROP
- EDGE EASEMENT

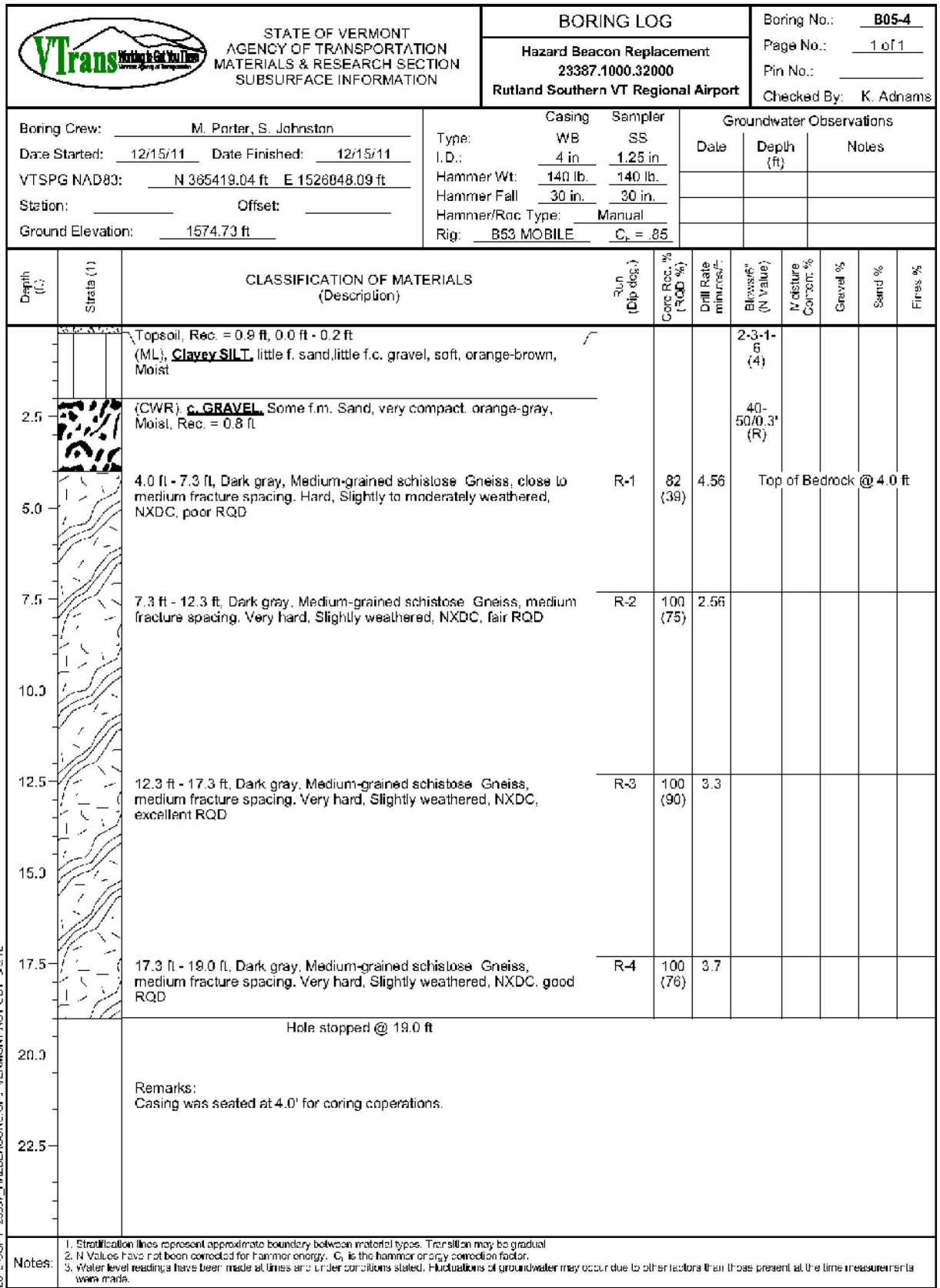
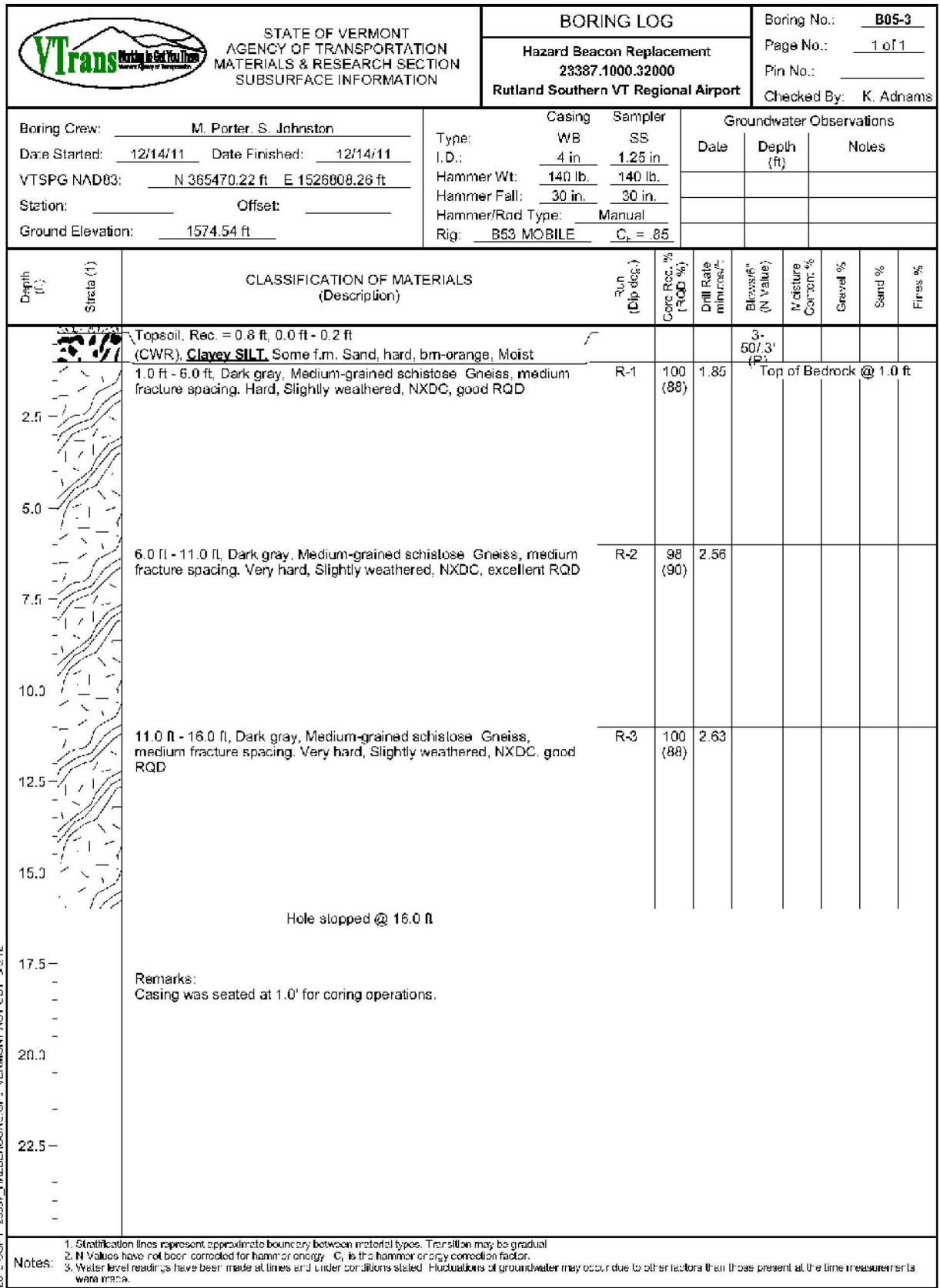
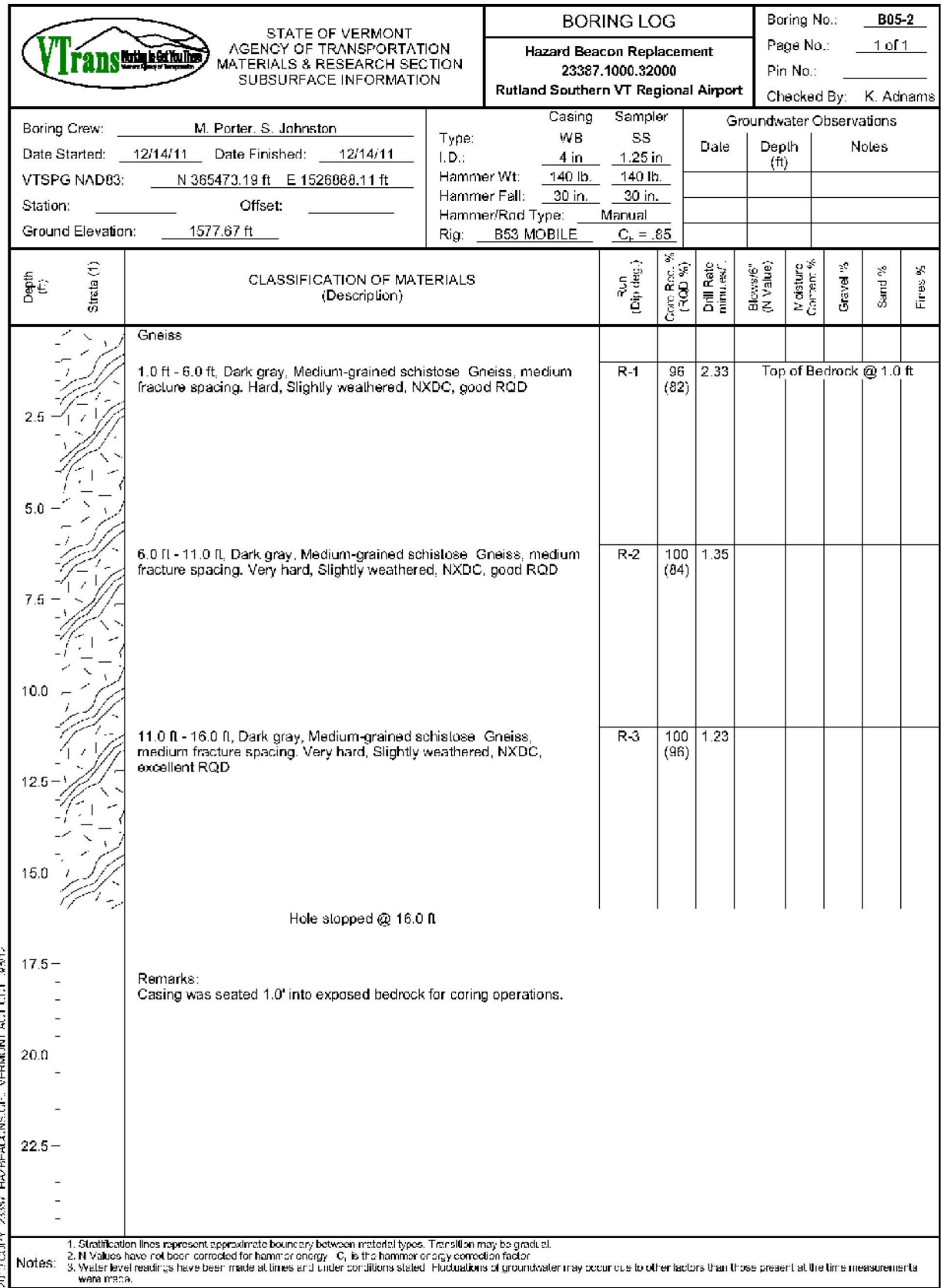
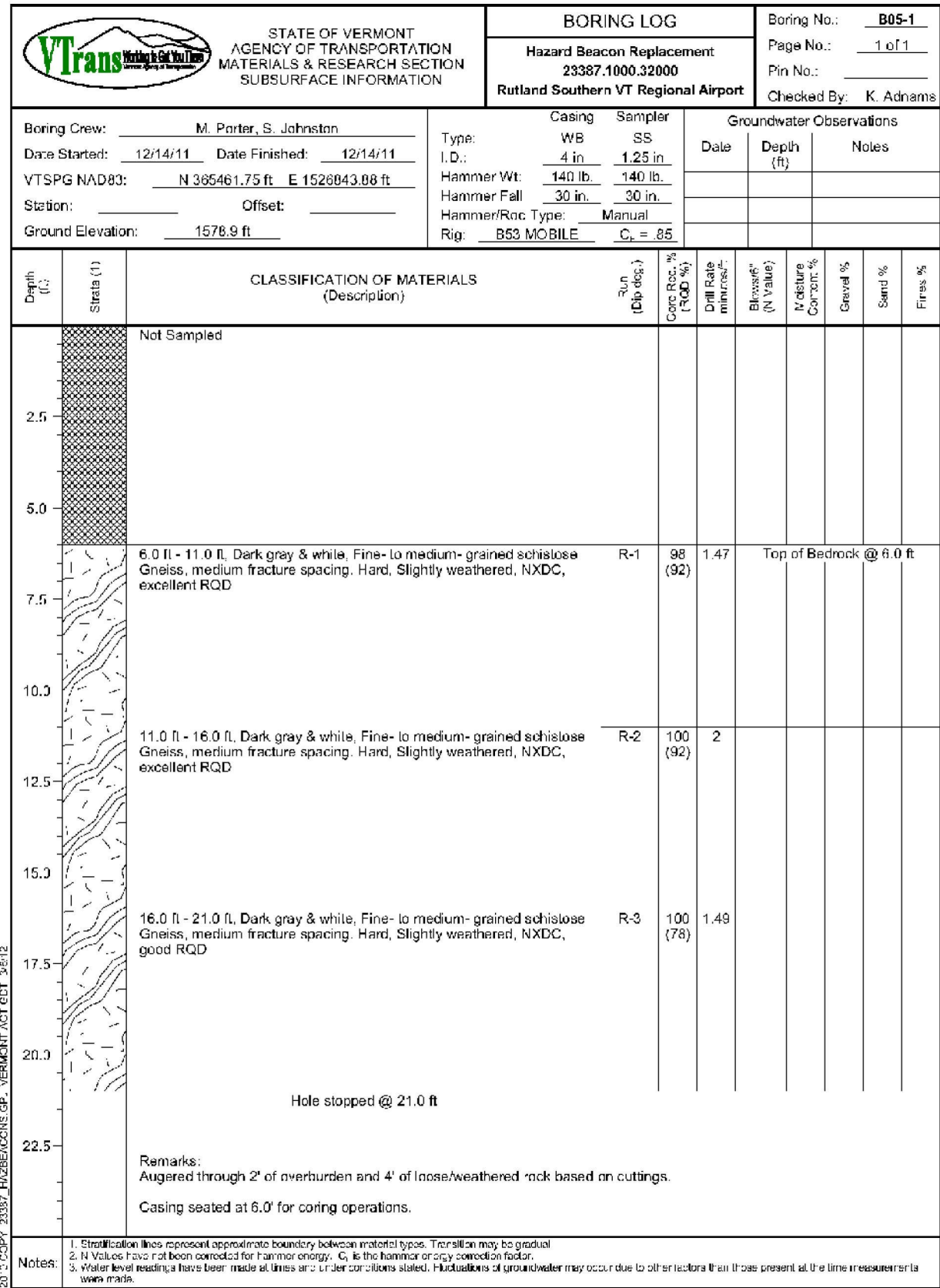
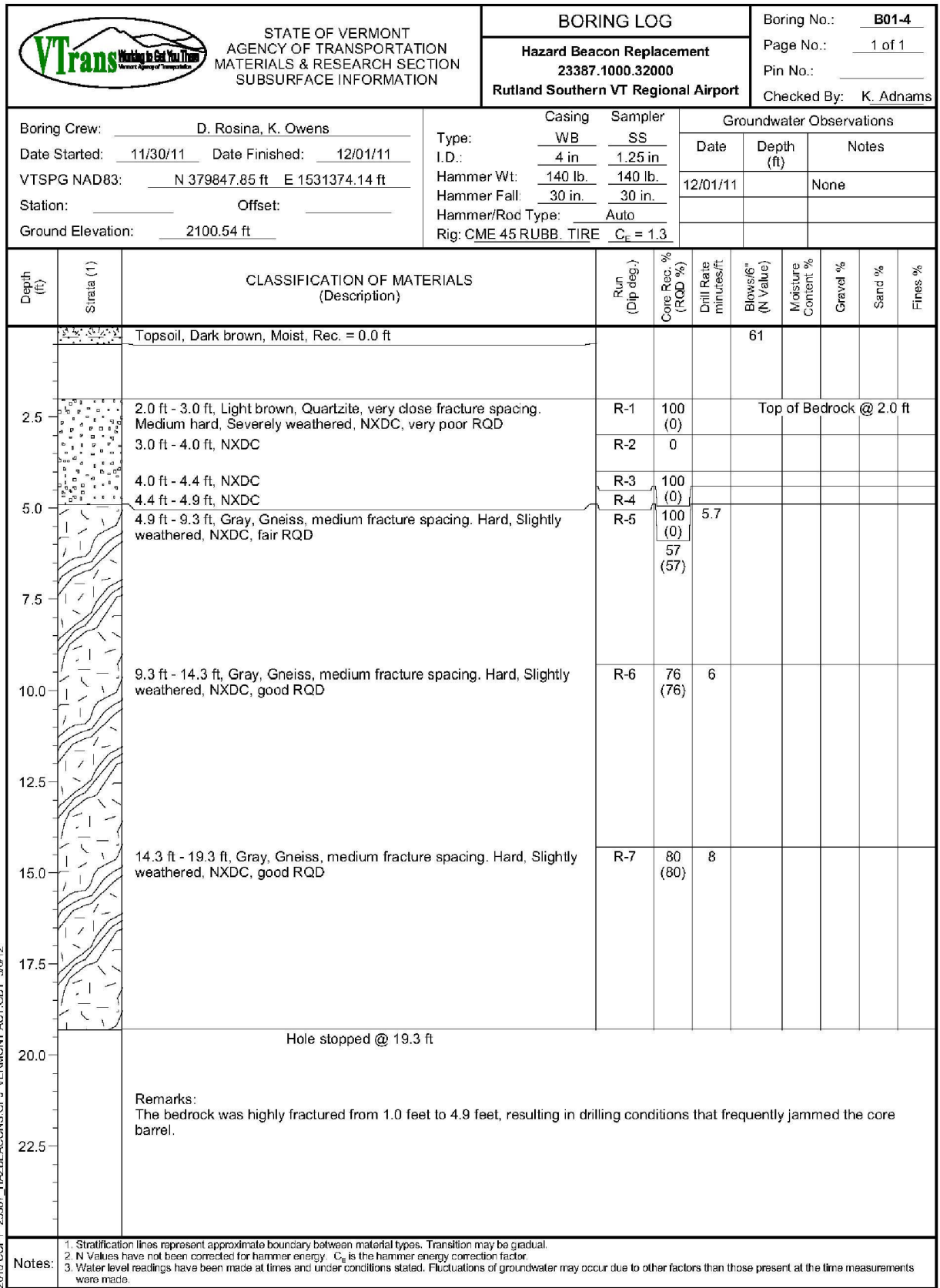
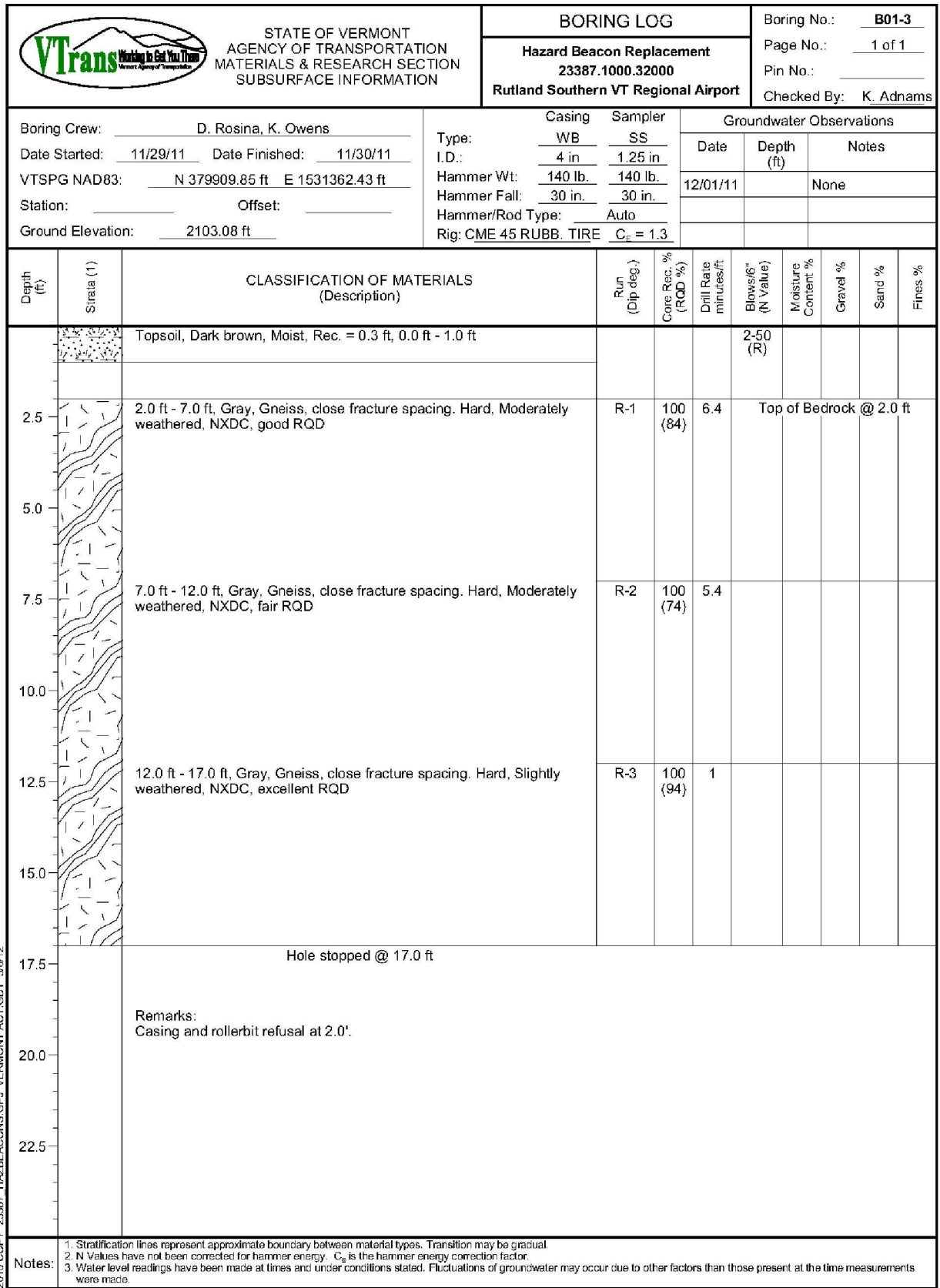
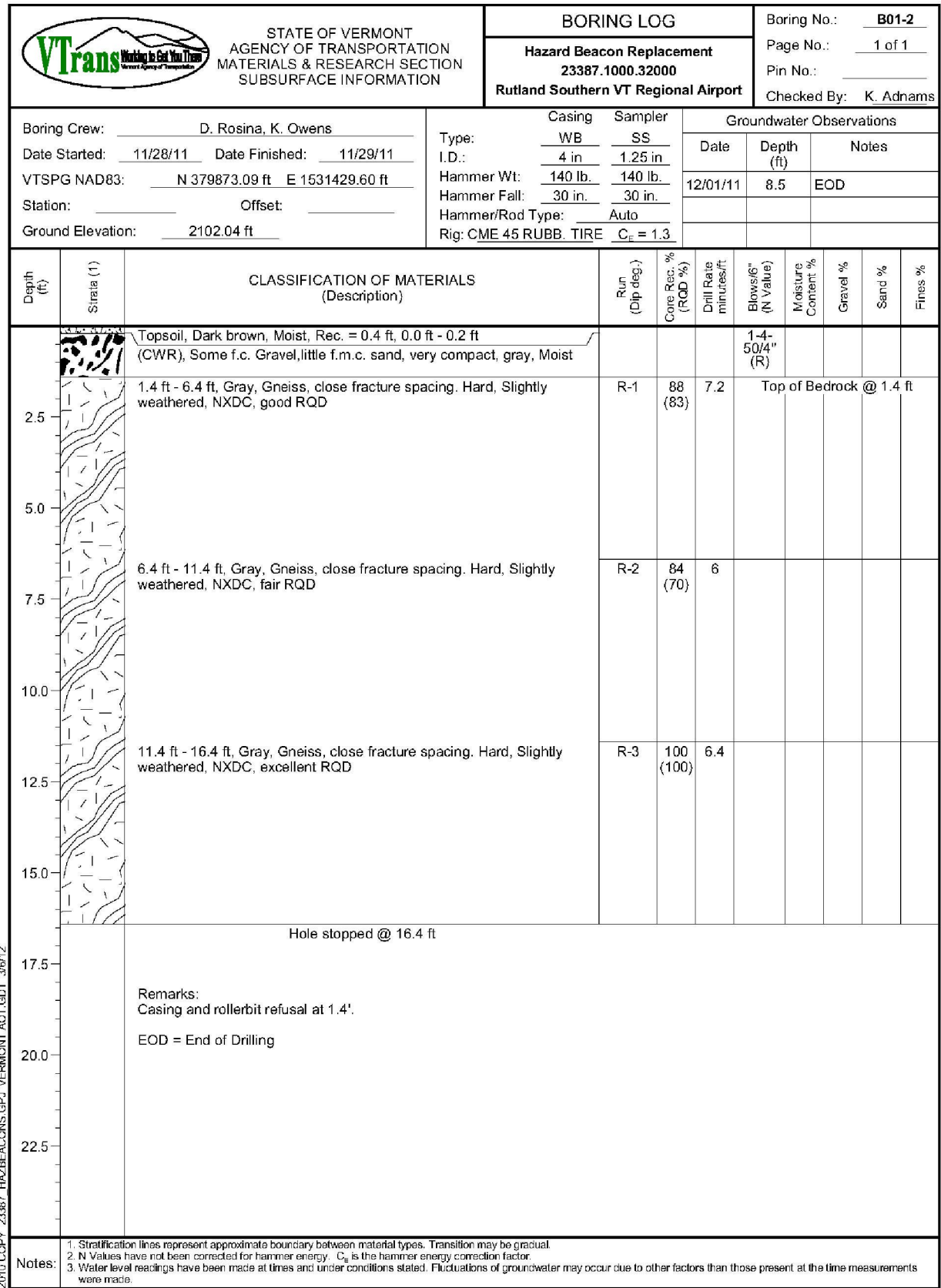
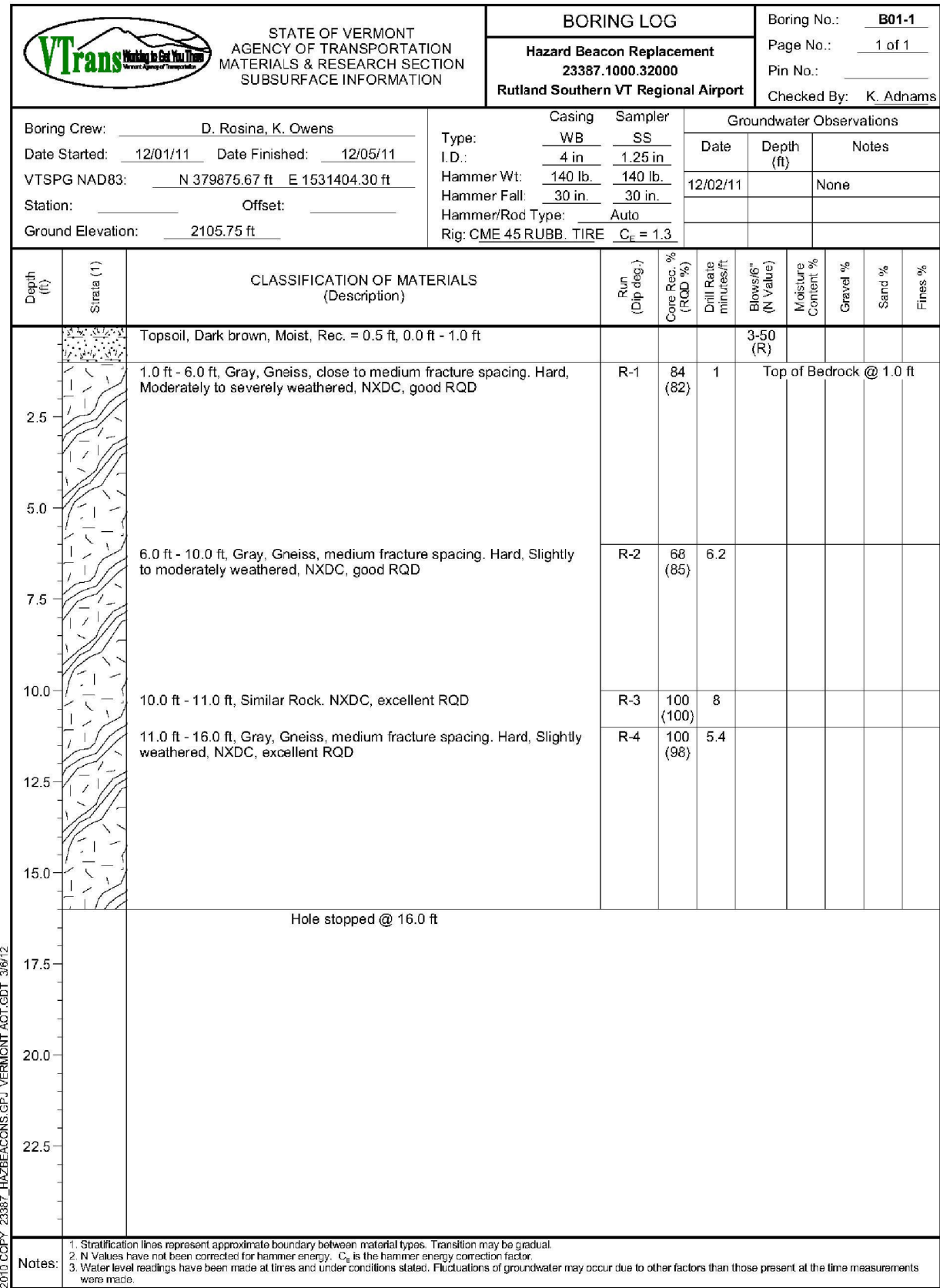
REMOVAL NOTES:

- ALL EXISTING ITEMS REQUIRING REMOVAL SHALL BE REMOVED DOWN TO GRADE, UNLESS OTHERWISE NOTED.
- ALL EXISTING GUY ANCHORS CAN BE CUT DOWN TO GRADE.
- ALL EXISTING WOOD DISTRIBUTION POLES SUPPLYING POWER TO THE EXISTING BEACON TOWER SHALL BE CUT 6" BELOW GRADE. THE REMAINING PORTION OF THE POLE UNDERGROUND WILL BE COVERED WITH IN SITU SOIL.
- ALL EXISTING STRUCTURES TO BE REMOVED SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTORS EXPENSE.
- ALL ITEMS MARKED FOR REMOVAL AND INCIDENTAL REMOVALS NECESSARY FOR PROPOSED CONSTRUCTION, EXCEPT FOR TREES, SHALL BE DISPOSED OF OFF-SITE AT THE CONTRACTOR'S EXPENSE, INCLUDING ALL CONSTRUCTION DEBRIS.
- ANY ALUMINUM CONTROL BOXES MOUNTED ON EXISTING TOWERS SHALL BE SALVAGED AND TURNED OVER TO THE VTRANS MAINTENANCE SUPERVISOR.
- ALL TREES THAT ARE IN DIRECT CONFLICT OF ANY PROPOSED EQUIPMENT SHALL BE REMOVED IMMEDIATELY FOR CONSTRUCTION ACTIVITIES. TREES THAT ARE NOT IN DIRECT CONFLICT OF ANY PROPOSED EQUIPMENT CAN ONLY BE REMOVED BETWEEN NOVEMBER 15, 2012 AND MARCH 1, 2013 DUE TO ENVIRONMENTAL RESTRICTIONS AND MAY REQUIRE REMOBILIZATION. REFER TO PROJECT SPECIFICATIONS SECTION 311000 SITE CLEARING FOR TREE REMOVAL AND DISPOSAL PROCEDURES.
- THE CONTRACTOR SHALL RESTORE AREA TO ORIGINAL OR BETTER CONDITION UPON SUBSTANTIAL COMPLETION OF WORK. ANY DAMAGE TO THE APPALACHIAN TRAIL/LONG TRAIL MUST BE REPAIRED AFTER CONSTRUCTION IS COMPLETE.

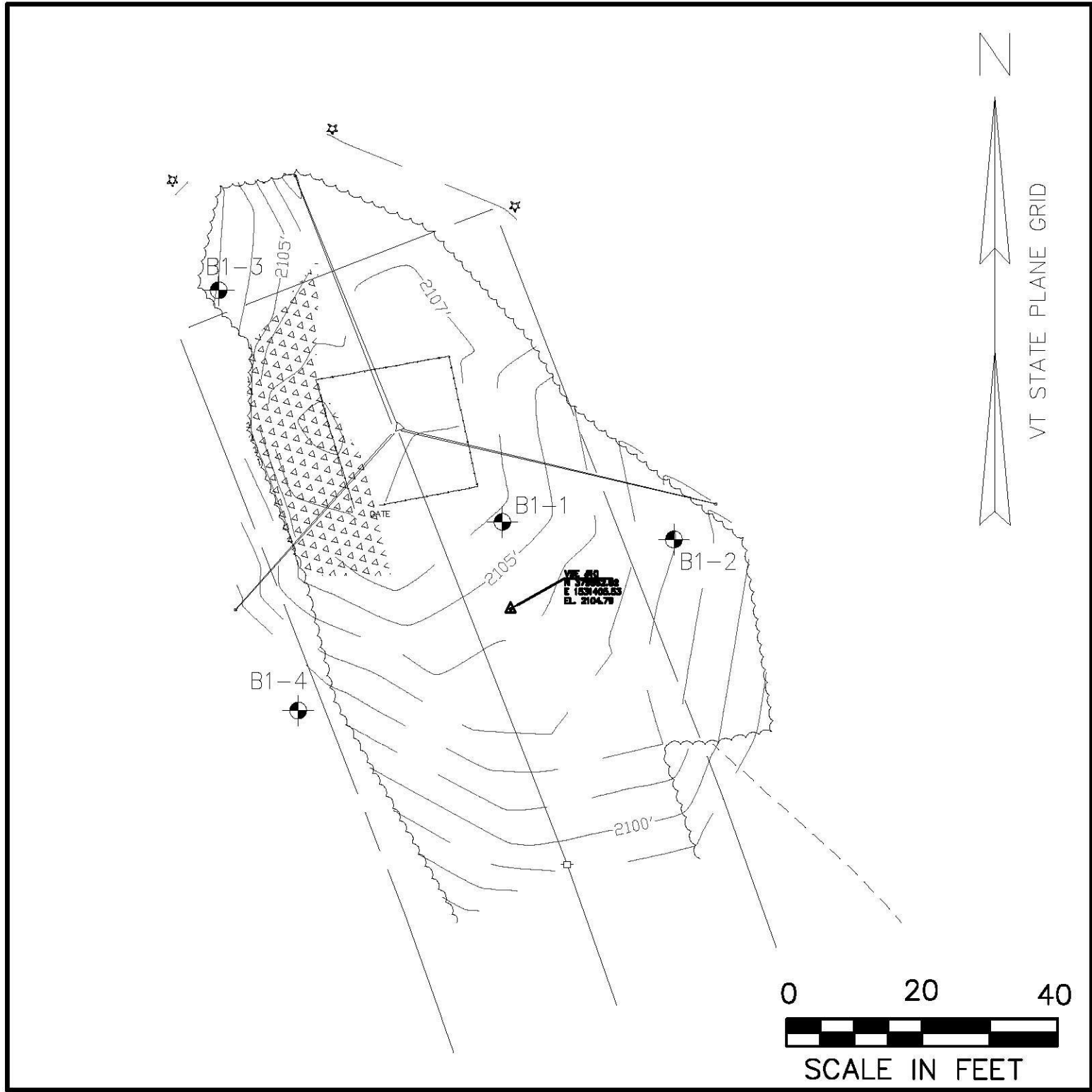
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GENERAL NOTES

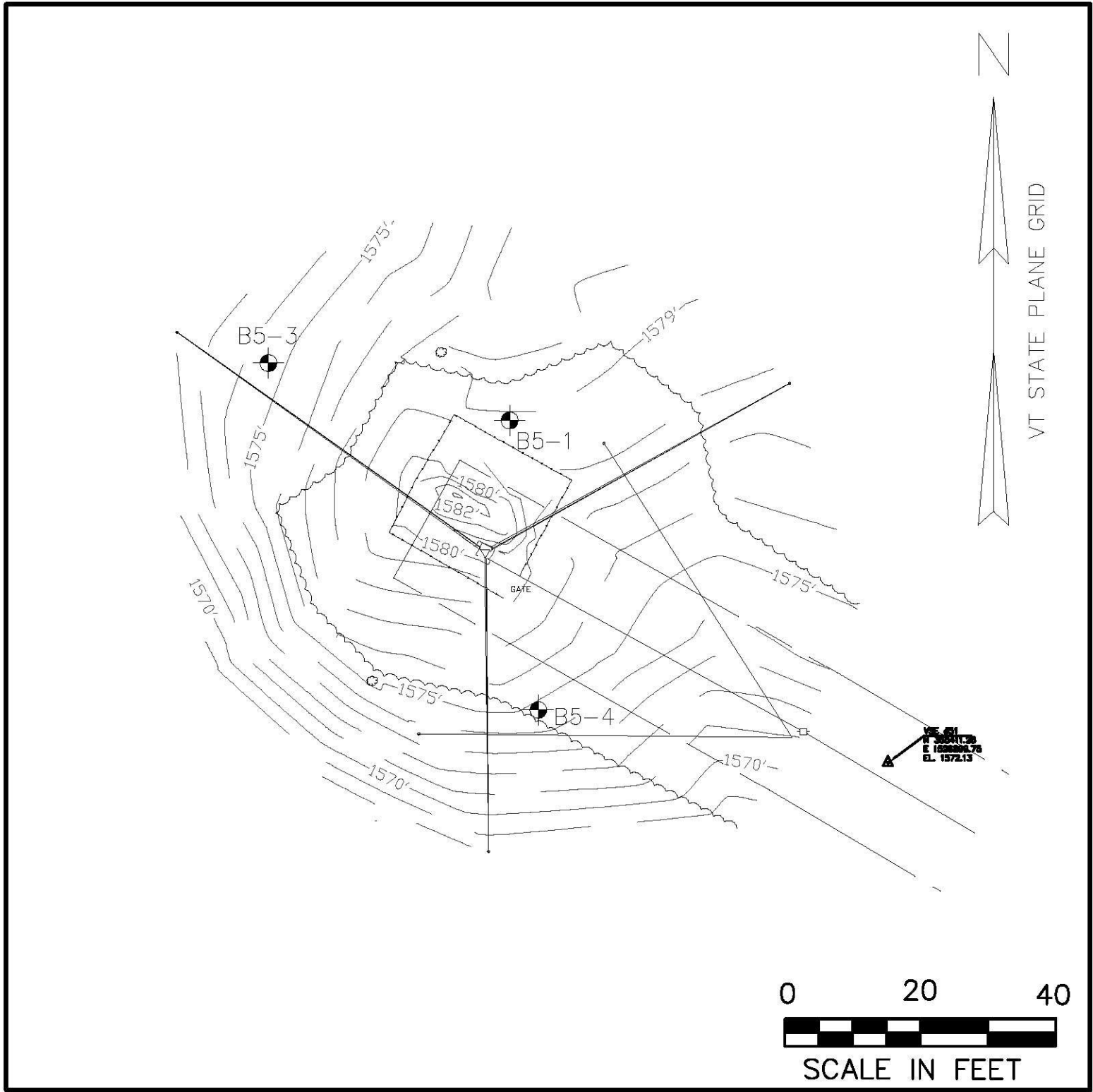
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PROJECT NUMBER: 23387	
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PROJECT LEADER: HAW	DRAWN BY: DBT
DESIGNED BY: HAW	CHECKED BY: MEH
DWG. NO.: C-002	SHEET 2 OF 17



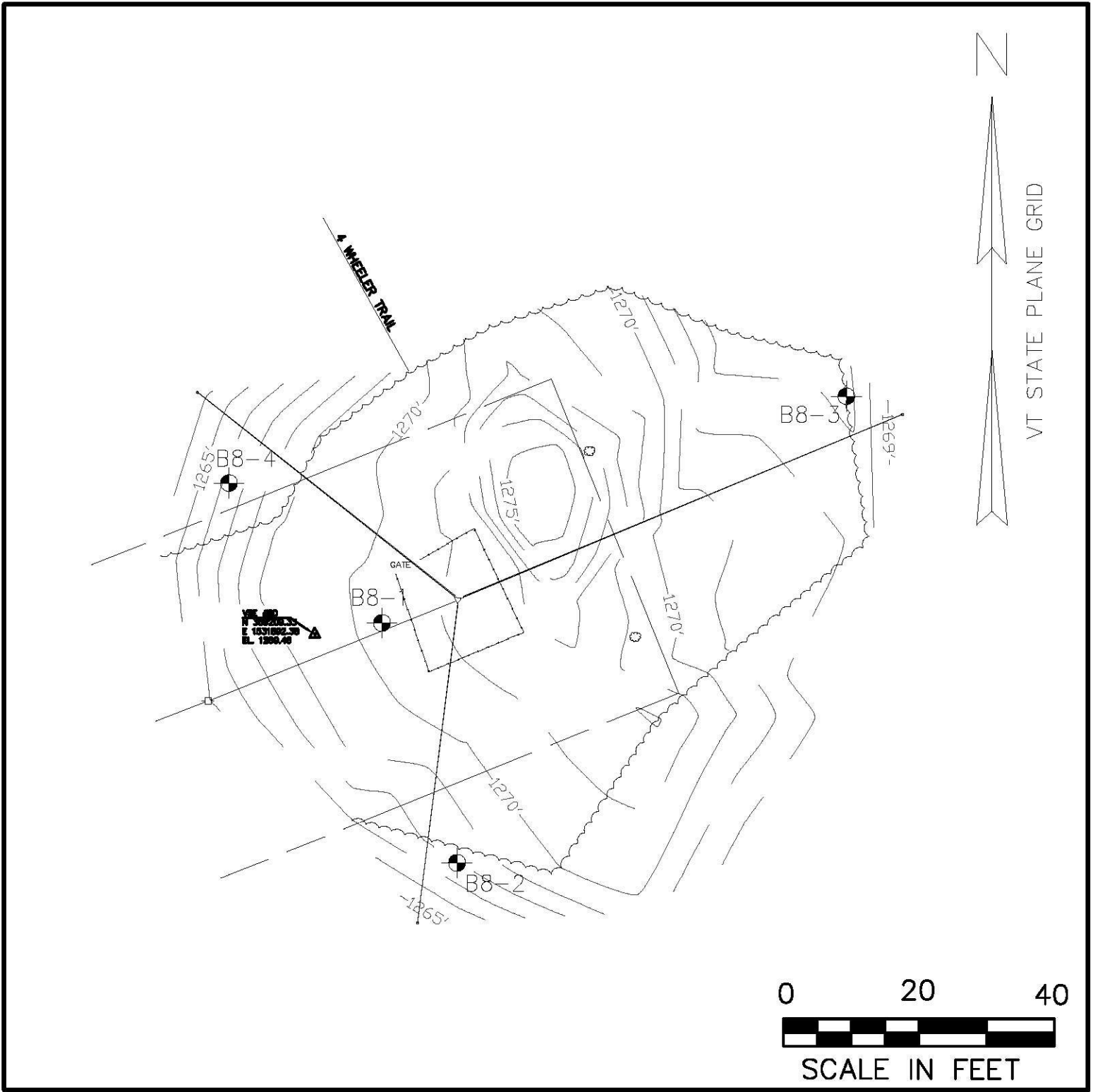
VTTrans			STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION			BORING LOG			Boring No.: B08-1		
			Hazard Beacon Replacement			23387.1000.32000			Page No.: 1 of 1		
			Rutland Southern VT Regional Airport			Checked By: K. Adams			Pin No:		
Boring Crew: M. Porter, K. Owens			Casing			Sampler			Groundwater Observations		
Date Started: 12/08/11 Date Finished: 12/08/11			Type: WB SS			Date			Depth (ft)		
VTSPG NAD83: N 369211.01 ft E 1531992.27 ft			ID: 4 in 1.25 in			Notes					
Station: Offset:			Hammer Wt: 140 lb 140 lb			Hammer Fall: 30 in 30 in			12/08/11 8.3		
Ground Elevation: 1270.31 ft			Hammer/Rod Type: Manual			Rig: B53 MOBILE			Ct = 85		
Depth (ft)			CLASSIFICATION OF MATERIALS (Description)			Run (ft/sec)			Blow(s) (ft/sec)		
						Cone (lb/ft²)			Duff Rate (min/sec)		



HAZARD BEACON #1 SUBSURFACE LOGS



HAZARD BEACON #5 SUBSURFACE LOGS



HAZARD BEACON #8 SUBSURFACE LOGS

LEGEND

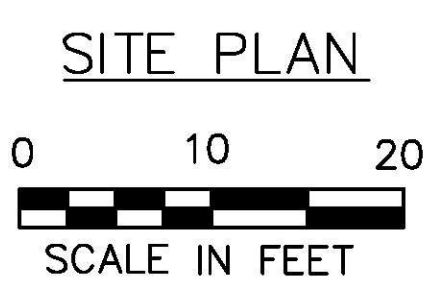
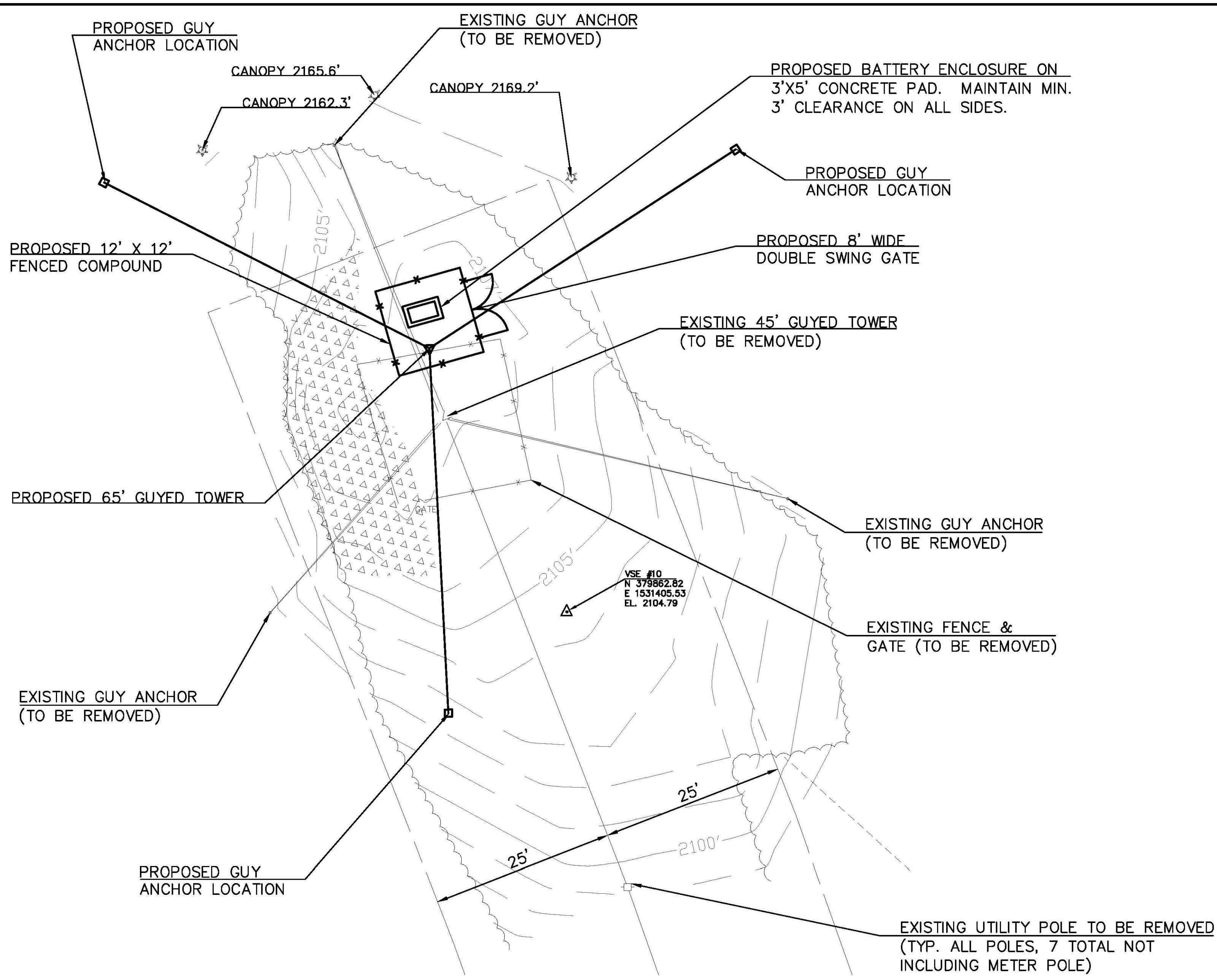
B3-1
APPROXIMATE BORING LOCATION

RECORD DRAWING 12/30/15

SUBSURFACE LOG PLANS

PROJECT NAME: RUTLAND BEACON REPLACEMENT	
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FILE NAME: C005_23387.DWG	PLOT DATE: 12/28/2015
PROJECT LEADER: HAW	DRAWN BY: DBT
DESIGNED BY: HAW	CHECKED BY: MEH
DWG. NO.: C-005	SHEET 5 OF 17

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USER = \$USER\$



TREE REMOVAL GUIDELINES:
ALL TREES WITHIN THE GENERAL LIMITS OF THE PROPOSED GUYS THAT EXTEND BEYOND A TOP ELEVATION OF 2144' SHALL BE REMOVED. SEE REMOVAL NOTE 7 ON GENERAL NOTES SHEET C-002.

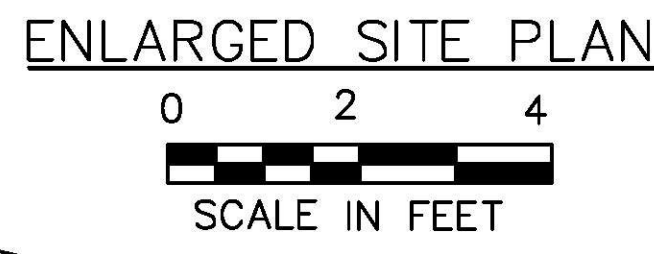
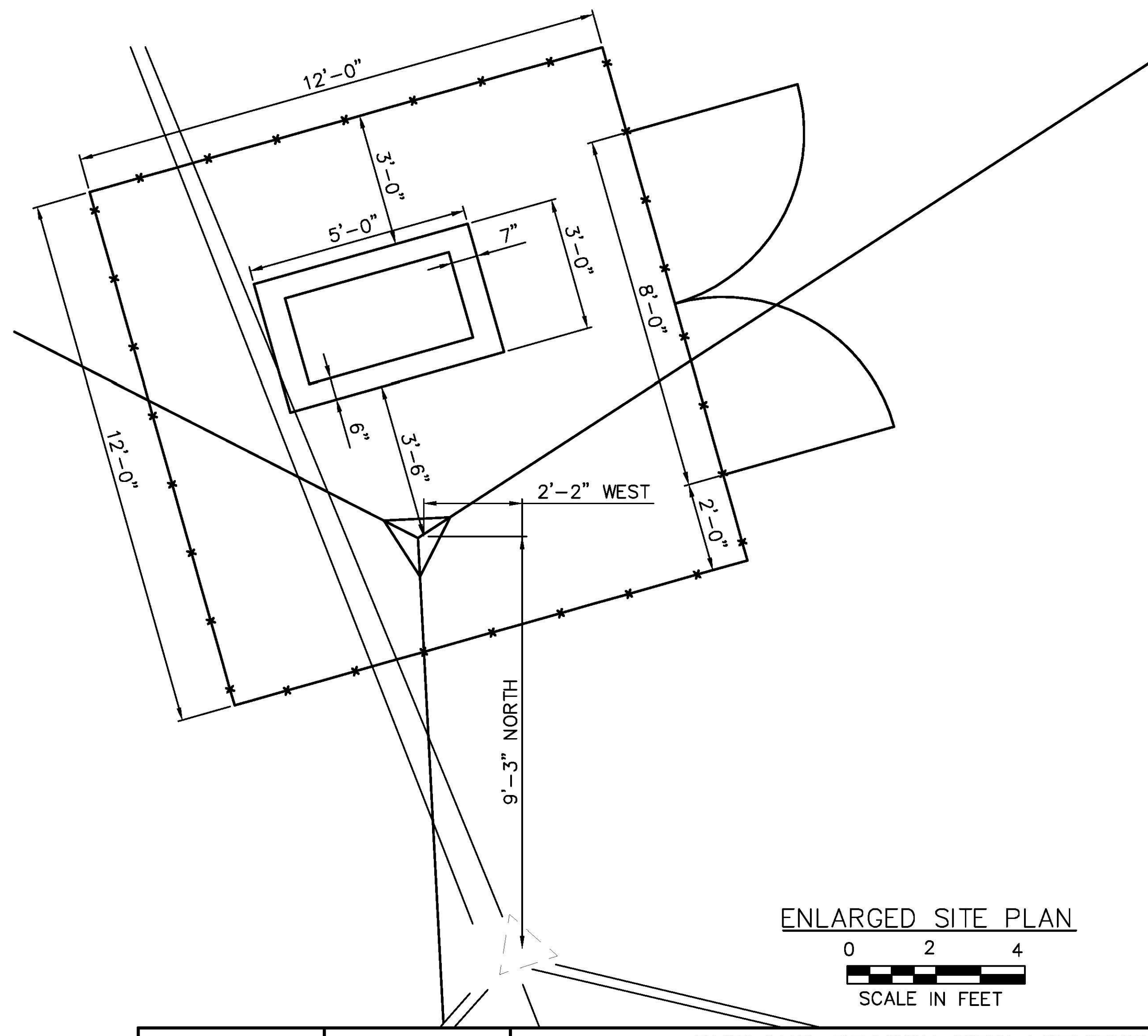
UTILITY REMOVAL GUIDELINES:
EXISTING UTILITY POLES SHALL BE REMOVED TO 6" BELOW GRADE. EXISTING OVERHEAD UTILITY LINES SHALL BE REMOVED BACK TO THE SOURCE AND SHALL BE COORDINATED WITH THE UTILITY COMPANY. IF THE METER AND POLE IT IS ATTACHED TO ARE STAND-ALONE AND IT DOES NOT SERVICE ANY RESIDENTIAL CUSTOMERS IN ADDITION TO THE BEACON, THEN THE CONTRACTOR SHALL COORDINATE REMOVAL OF THE POLE WITH THE UTILITY COMPANY, PROVIDED ITS REMOVAL WOULD NOT HINDER ANY OTHER UTILITY LINES.

EXISTING SITE STATISTICS
Beacon Number 1 - Poor Farm Beacon
Lease/Access Agreement - (From VAOT Beacon Book)
An easement and right-of-way 50' wide.
No mention of additional land around the beacon, or for guy wires.
No restrictions of record on cutting width.
Top Beacon - 2154.8'
Top Tower - 2152.2'
Guy Attachments - 2147.5' & 2127.2'
Electric Service - 2131.1' & 2128.6'
Base Tower - 2107.2'

NOTE:
PROPOSED GUY ANCHOR RADIUS TO BE DETERMINED BY TOWER MANUFACTURER. GUY ANCHOR RADIUS SHALL BE AS SMALL AS STRUCTURALLY ALLOWED AND SHALL NOT EXCEED 50' RADIUS.

- CONSTRUCTION SEQUENCE**
- CONSTRUCTION NOTES:**
1. ASSEMBLE AND INSTALL TOWER, GUY WIRES AND GUY ANCHORS PER THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
 2. LOCATE TOWER BASE AND GUY ANCHOR LOCATIONS PER THIS DRAWING BY CHA.
 3. TOWER BASE SHALL BE INSTALLED ON AS FLAT A SURFACE AS POSSIBLE, IF LOCATION VARIES GREATLY FROM WHAT IS SHOWN, NOTIFY ENGINEER.
 4. CONTRACTOR IS RESPONSIBLE FOR LOAD TESTING ROCK ANCHORS.
 5. CONSTRUCTION OF THE NEW TOWER MUST BE COMPLETE AND THE NEW BEACON MUST BE OPERATIONAL BEFORE COMMENCING DEMOLITION ACTIVITIES.

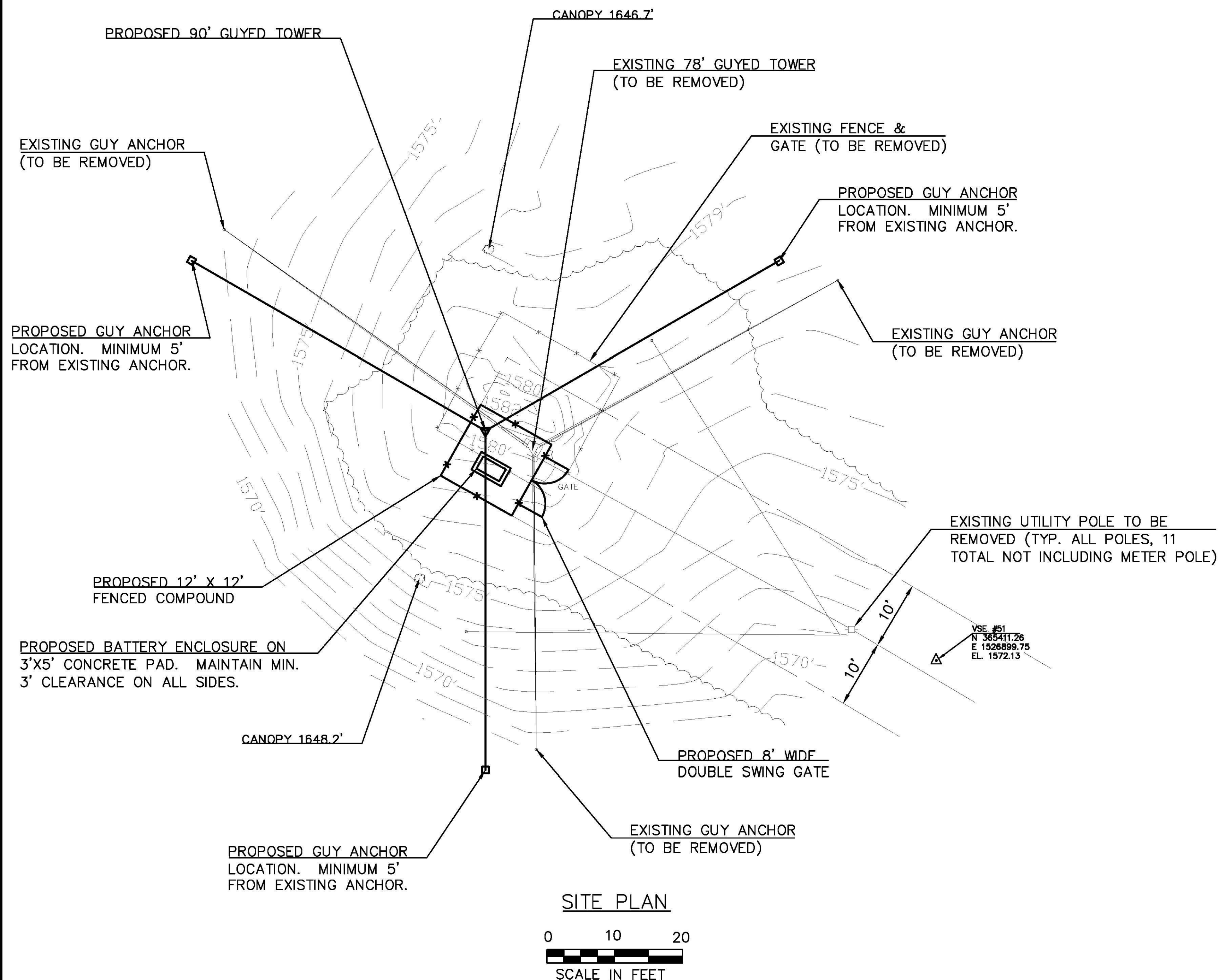
- DEMOLITION NOTES:**
1. CONTRACTOR TO REMOVE TOP-MOST SECTION OF TOWER PRIOR TO REMOVING ANY GUY WIRES, IF APPLICABLE.
 2. REMOVE GUY WIRES AT HIGHEST ELEVATION PRIOR TO REMOVING ANY OTHER SETS OF GUYS.
 3. DEMOLITION OF THE TOWER SHALL CONSIST OF REMOVING ALL TOWER SECTIONS AT THE HIGHEST ELEVATIONS FIRST, UNTIL GUY WIRE LOCATIONS ARE ENCOUNTERED.
 4. CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SUPPORTING THE STRUCTURE WHILE GUY WIRES ARE REMOVED.
 5. REMOVE GUY ONCE TOWER SECTIONS ABOVE THEM ARE REMOVED.
 6. REMOVE TOWER STRUCTURE IN ITS ENTIRETY, INCLUDING BUT NOT LIMITED TO, ITS BASE, BASE PLATE AND ANCHORS.
 7. COMPLETELY REMOVE ALL GUY ANCHORS FROM THEIR EXISTING LOCATIONS ONCE THE TOWER IS REMOVED. GUY ANCHORS ARE TO BE CUT AT ROCK SURFACE.
 8. CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE REMOVAL AND DISPOSAL OF ALL TOWER ELEMENTS PROPERLY, INCLUDING PROPER LEAD PAINT REMOVAL IF APPLICABLE.



RECORD DRAWING
12/30/15

**BEACON 1
SITE PLAN**

PROJECT NAME: RUTLAND BEACON REPLACEMENT	
PROJECT NUMBER: 23387	
FILE NAME: C101_23387.DWG	PLOT DATE: 12/28/2015
PROJECT LEADER: HAW	DRAWN BY: DBT
DESIGNED BY: HAW	CHECKED BY: MEH
DWG. NO.: C-101	SHEET 6 OF 17



TREE REMOVAL GUIDELINES:

ALL TREES WITHIN THE GENERAL LIMITS OF THE PROPOSED GUYS
THAT EXTEND BEYOND A TOP ELEVATION OF 1642' SHALL BE
REMOVED. SEE REMOVAL NOTE 7 ON GENERAL NOTES SHEET C-002.

UTILITY REMOVAL GUIDELINES:

EXISTING UTILITY POLES SHALL BE REMOVED TO 6" BELOW GRADE. EXISTING OVERHEAD UTILITY LINES SHALL BE REMOVED BACK TO THE SOURCE AND SHALL BE COORDINATED WITH THE UTILITY COMPANY. IF THE METER AND POLE IT IS ATTACHED TO ARE STAND-ALONE AND IT DOES NOT SERVICE ANY RESIDENTIAL CUSTOMERS IN ADDITION TO THE BEACON, THEN THE CONTRACTOR SHALL COORDINATE REMOVAL OF THE POLE WITH THE UTILITY COMPANY, PROVIDED ITS REMOVAL WOULD NOT HINDER ANY OTHER UTILITY LINES.

EXISTING SITE STATISTICS

Beacon Number 5 – Spring Lake Ranch
Note: This site is almost entirely bedrock.

Lease/Access Agreement – (From VAOT Beacon Book)
Cabin to Long Trail, 50' easement right, privilege, and right of way.
Long Trail to light, 20' easement right, privilege, and right of way.

Top Beacon - 1660.8'
Top Tower - 1658.3'
Guy Attachments - 1658.2', 1632.6', & 1605.2'
Electric Service - 1598.2'
Base Tower - 1580.2'

NOTE:

PROPOSED GUY ANCHOR RADIUS TO BE DETERMINED BY TOWER MANUFACTURER. GUY ANCHOR RADIUS SHALL BE AS SMALL AS STRUCTURALLY ALLOWED AND SHALL NOT EXCEED 50' RADIUS.

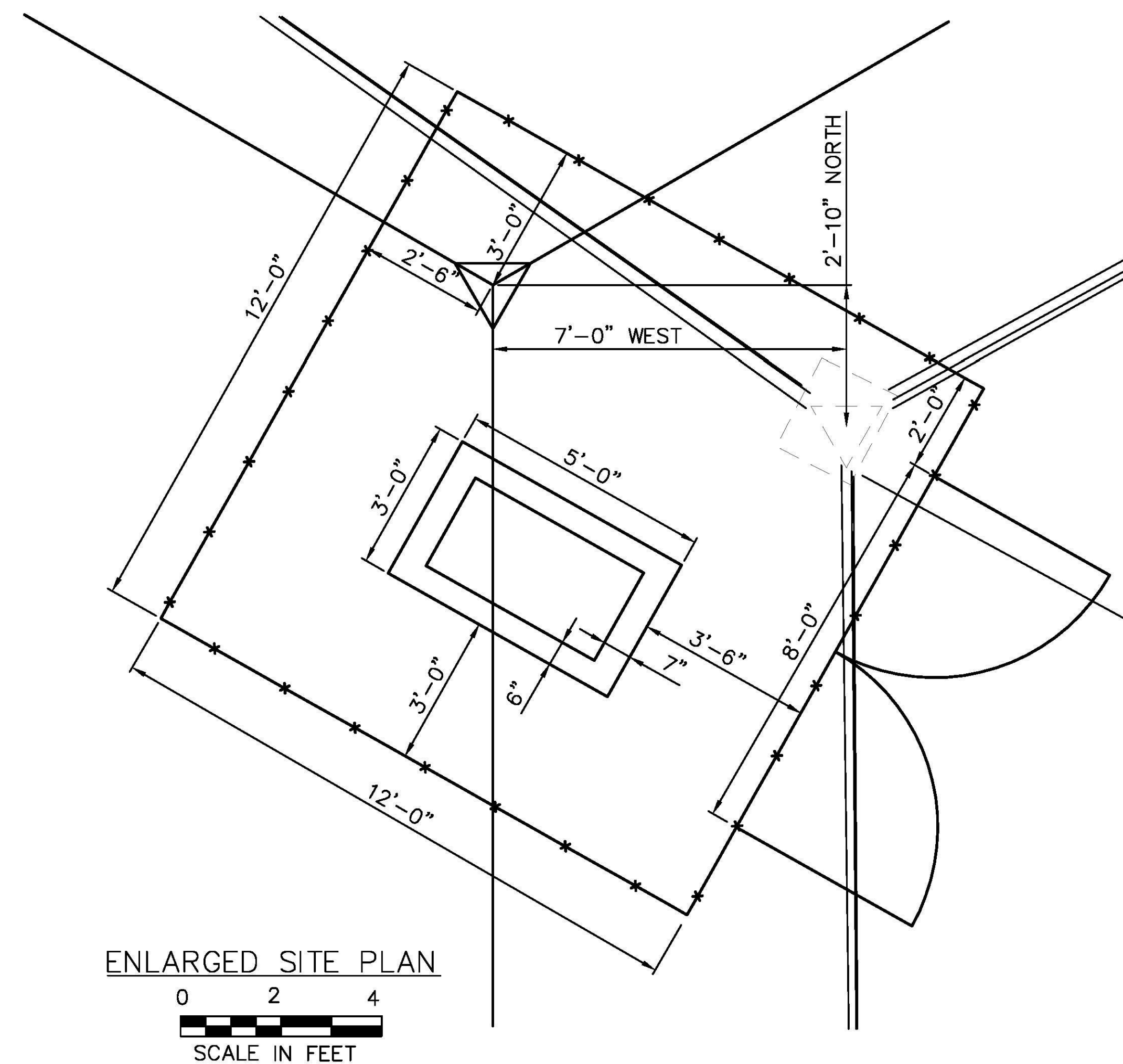
CONSTRUCTION SEQUENCE

CONSTRUCTION NOTES:

1. ASSEMBLE AND INSTALL TOWER, GUY WIRES AND GUY ANCHORS PER THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
2. LOCATE TOWER BASE AND GUY ANCHOR LOCATIONS PER THIS DRAWING BY CHA.
3. TOWER BASE SHALL BE INSTALLED ON AS FLAT A SURFACE AS POSSIBLE, IF LOCATION VARIES GREATLY FROM WHAT IS SHOWN, NOTIFY ENGINEER.
4. CONTRACTOR IS RESPONSIBLE FOR LOAD TESTING ROCK ANCHORS.
5. CONSTRUCTION OF THE NEW TOWER MUST BE COMPLETE AND THE NEW BEACON MUST BE OPERATIONAL BEFORE COMMENCING DEMOLITION ACTIVITIES.

DEMOLITION NOTES:

1. CONTRACTOR TO REMOVE TOP—MOST SECTION OF TOWER PRIOR TO REMOVING ANY GUY WIRES, IF APPLICABLE.
2. REMOVE GUY WIRES AT HIGHEST ELEVATION PRIOR TO REMOVING ANY OTHER SETS OF GUYS.
3. DEMOLITION OF THE TOWER SHALL CONSIST OF REMOVING ALL TOWER SECTIONS AT THE HIGHEST ELEVATIONS FIRST, UNTIL GUY WIRE LOCATIONS ARE ENCOUNTERED.
4. CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SUPPORTING THE STRUCTURE WHILE GUY WIRES ARE REMOVED.
5. REMOVE GUY ONCE TOWER SECTIONS ABOVE THEM ARE REMOVED.
6. REMOVE TOWER STRUCTURE IN ITS ENTIRETY, INCLUDING BUT NOT LIMITED TO, ITS BASE, BASE PLATE AND ANCHORS.
7. COMPLETELY REMOVE ALL GUY ANCHORS FROM THEIR EXISTING LOCATIONS ONCE THE TOWER IS REMOVED. GUY ANCHORS ARE TO BE CUT AT ROCK SURFACE.
8. CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE REMOVAL AND DISPOSAL OF ALL TOWER ELEMENTS PROPERLY, INCLUDING PROPER LEAD PAINT REMOVAL IF APPLICABLE.



ENLARGED SITE PLAN

0 2 4
SCALE IN FEET

BEACON 5 SITE PLAN

PROJECT NAME:	RUTLAND BEACON REPLACEMENT
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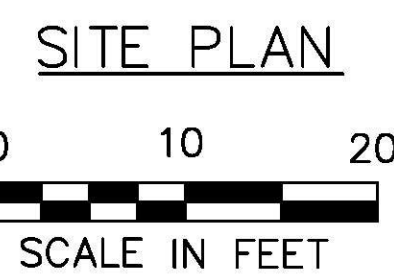
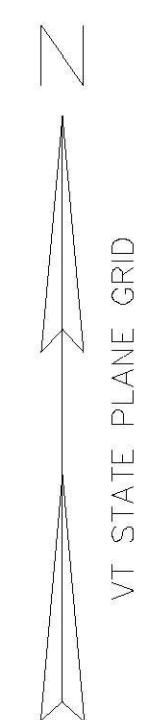
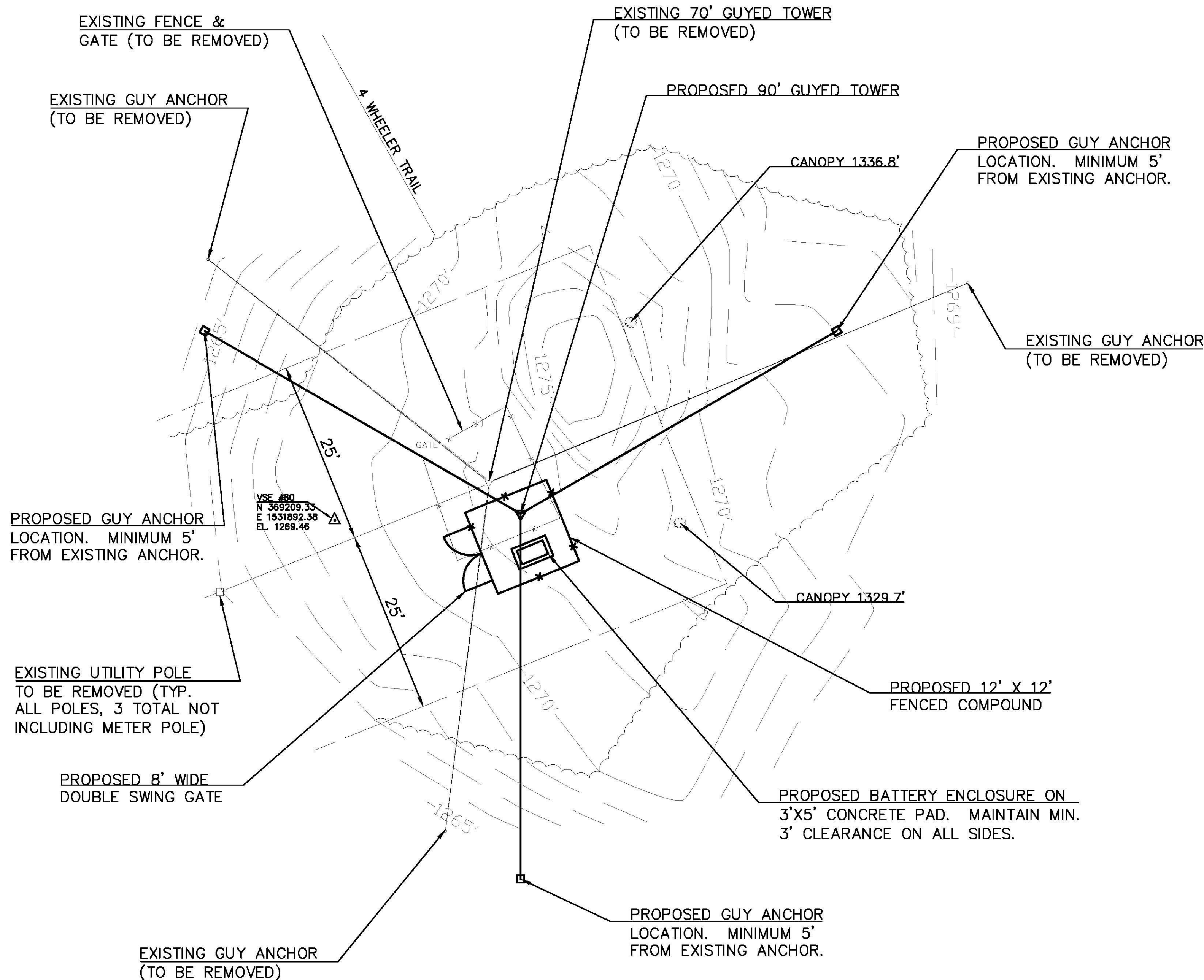
PROJECT NUMBER: 23387

FILE NAME: C103_23387.DWG
PROJECT LEADER: HAW
DESIGNED BY: HAW
DWG. NO.: C-103

PLOT DATE: 12/28/2015
DRAWN BY: DBT
CHECKED BY: MEH
SHEET 8 OF 17

RECORD DRAWING

File: V:\PROJECTS\ANY\K2\23387\CA0D\ACAD\C104_23387.DWG
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DATE/TIME = \$DATE\$.
USER = \$USER\$



TREE REMOVAL GUIDELINES:
ALL TREES WITHIN THE GENERAL LIMITS OF THE PROPOSED GUYS THAT EXTEND BEYOND A TOP ELEVATION OF 1333' SHALL BE REMOVED. SEE REMOVAL NOTE 7 ON GENERAL NOTES SHEET C-002.

UTILITY REMOVAL GUIDELINES:
EXISTING UTILITY POLES SHALL BE REMOVED TO 6" BELOW GRADE. EXISTING OVERHEAD UTILITY LINES SHALL BE REMOVED BACK TO THE SOURCE AND SHALL BE COORDINATED WITH THE UTILITY COMPANY. IF THE METER AND POLE IT IS ATTACHED TO ARE STAND-ALONE AND IT DOES NOT SERVICE ANY RESIDENTIAL CUSTOMERS IN ADDITION TO THE BEACON, THEN THE CONTRACTOR SHALL COORDINATE REMOVAL OF THE POLE WITH THE UTILITY COMPANY, PROVIDED ITS REMOVAL WOULD NOT HINDER ANY OTHER UTILITY LINES.

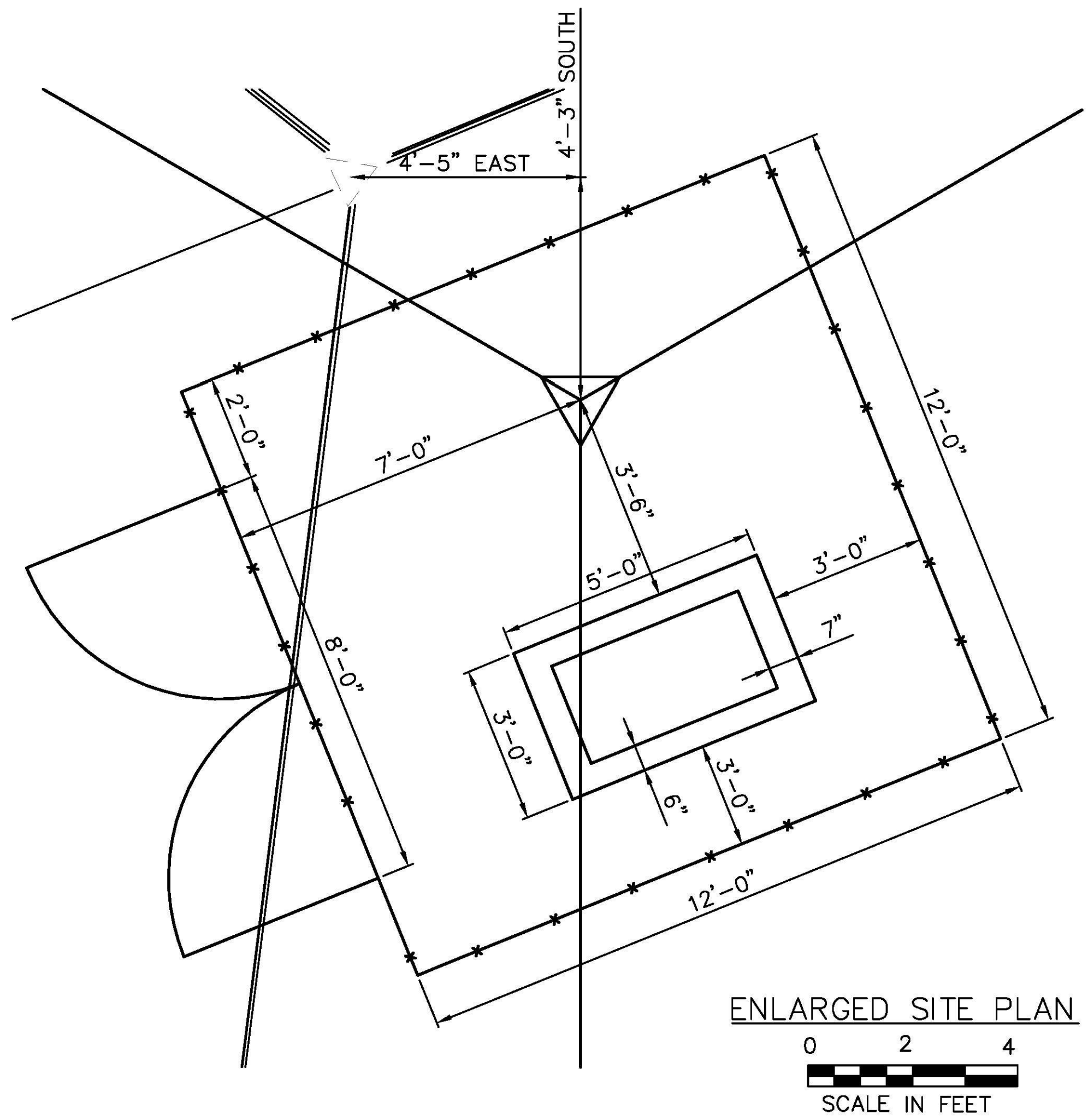
EXISTING SITE STATISTICS
Beacon Number 8 - Lincoln Hill Beacon
Lease/Access Agreement - (From VAOT Beacon Book)
An easement and right-of-way 50' wide.
No mention of additional land around the beacon, or for guy wires.
No restrictions of record on cutting width.
Top Beacon - 1342.4'
Top Tower - 1339.9'
Guy Attachments - 1335.5', 1313.4', & 1290.8'
Electric Service - 1313.4'
Base Tower - 1271.3'

NOTE:
PROPOSED GUY ANCHOR RADIUS TO BE DETERMINED BY TOWER MANUFACTURER. GUY ANCHOR RADIUS SHALL BE AS SMALL AS STRUCTURALLY ALLOWED AND SHALL NOT EXCEED 50' RADIUS.

CONSTRUCTION SEQUENCE

- CONSTRUCTION NOTES:**
1. ASSEMBLE AND INSTALL TOWER, GUY WIRES AND GUY ANCHORS PER THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
 2. LOCATE TOWER BASE AND GUY ANCHOR LOCATIONS PER THIS DRAWING BY CHA.
 3. TOWER BASE SHALL BE INSTALLED ON AS FLAT A SURFACE AS POSSIBLE, IF LOCATION VARIES GREATLY FROM WHAT IS SHOWN, NOTIFY ENGINEER.
 4. CONTRACTOR IS RESPONSIBLE FOR LOAD TESTING ROCK ANCHORS.
 5. CONSTRUCTION OF THE NEW TOWER MUST BE COMPLETE AND THE NEW BEACON MUST BE OPERATIONAL BEFORE COMMENCING DEMOLITION ACTIVITIES.

- DEMOLITION NOTES:**
1. CONTRACTOR TO REMOVE TOP-MOST SECTION OF TOWER PRIOR TO REMOVING ANY GUY WIRES, IF APPLICABLE.
 2. REMOVE GUY WIRES AT HIGHEST ELEVATION PRIOR TO REMOVING ANY OTHER SETS OF GUYS.
 3. DEMOLITION OF THE TOWER SHALL CONSIST OF REMOVING ALL TOWER SECTIONS AT THE HIGHEST ELEVATIONS FIRST, UNTIL GUY WIRE LOCATIONS ARE ENCOUNTERED.
 4. CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SUPPORTING THE STRUCTURE WHILE GUY WIRES ARE REMOVED.
 5. REMOVE GUY ONCE TOWER SECTIONS ABOVE THEM ARE REMOVED.
 6. REMOVE TOWER STRUCTURE IN ITS ENTIRETY, INCLUDING BUT NOT LIMITED TO, ITS BASE, BASE PLATE AND ANCHORS.
 7. COMPLETELY REMOVE ALL GUY ANCHORS FROM THEIR EXISTING LOCATIONS ONCE THE TOWER IS REMOVED. GUY ANCHORS ARE TO BE CUT AT ROCK SURFACE.
 8. CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE REMOVAL AND DISPOSAL OF ALL TOWER ELEMENTS PROPERLY, INCLUDING PROPER LEAD PAINT REMOVAL IF APPLICABLE.

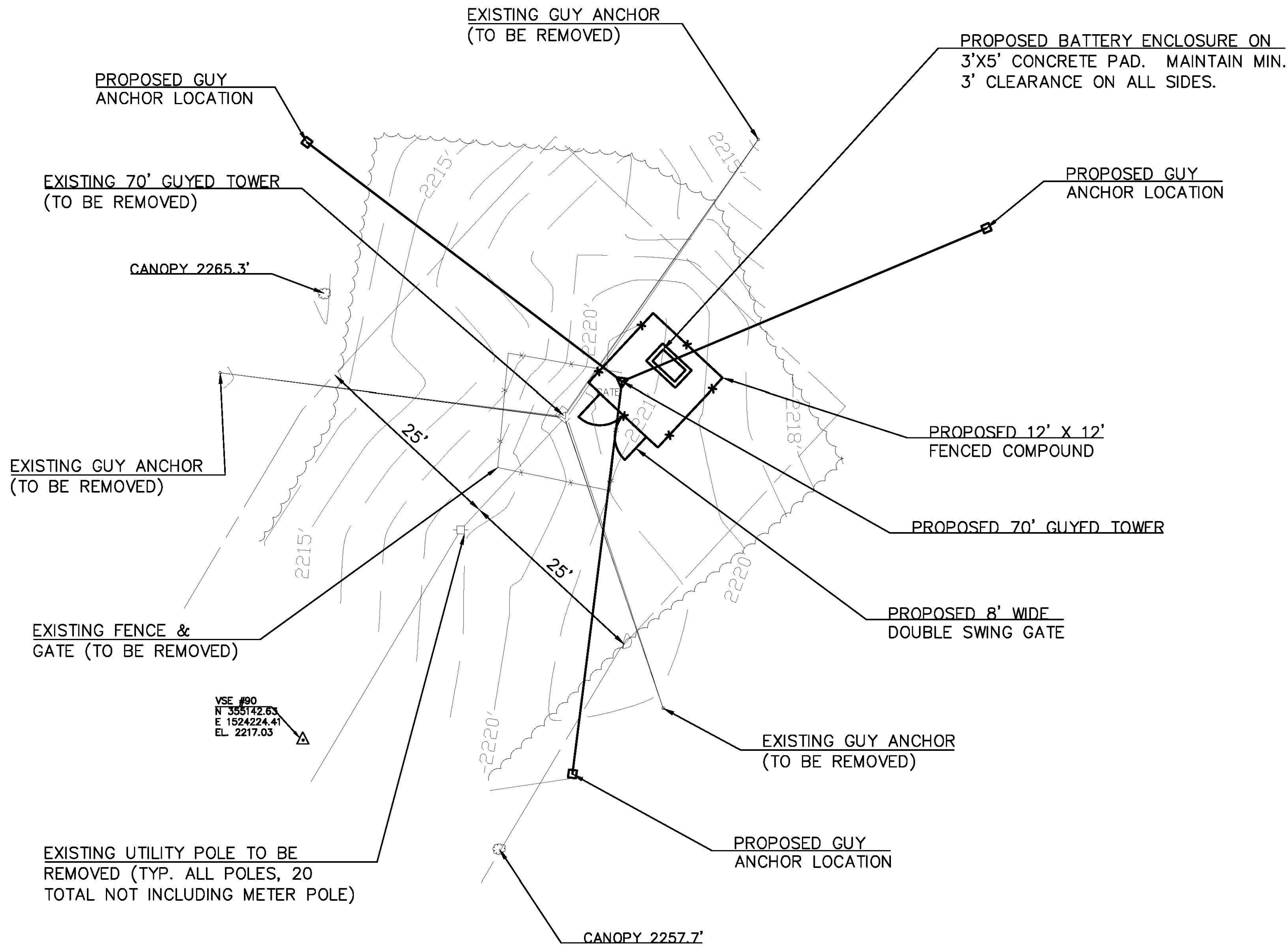


RECORD DRAWING 12/30/15

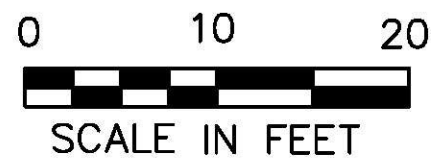
**BEACON 8
SITE PLAN**

PROJECT NAME: RUTLAND BEACON REPLACEMENT	
PROJECT NUMBER: 23387	
FILE NAME: C104_23387.DWG	PLOT DATE: 12/28/2015
PROJECT LEADER: HAW	DRAWN BY: DBT
DESIGNED BY: HAW	CHECKED BY: MEH
DWG. NO.: C-104	SHEET 9 OF 17

File: V:\PROJECTS\ANY\K2\23387\CA00\ACAD\C105_23387.DWG
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DATE/TIME = \$DATE\$
USER = \$NTUSER\$



SITE PLAN



TREE REMOVAL GUIDELINES:

ALL TREES WITHIN THE GENERAL LIMITS OF THE PROPOSED GUYS THAT EXTEND BEYOND A TOP ELEVATION OF 2262' SHALL BE REMOVED. SEE REMOVAL NOTE 7 ON GENERAL NOTES SHEET C-002.

UTILITY REMOVAL GUIDELINES:

EXISTING UTILITY POLES SHALL BE REMOVED TO 6" BELOW GRADE. EXISTING OVERHEAD UTILITY LINES SHALL BE REMOVED BACK TO THE SOURCE AND SHALL BE COORDINATED WITH THE UTILITY COMPANY. IF THE METER AND POLE IT IS ATTACHED TO ARE STAND-ALONE AND IT DOES NOT SERVICE ANY RESIDENTIAL CUSTOMERS IN ADDITION TO THE BEACON, THEN THE CONTRACTOR SHALL COORDINATE REMOVAL OF THE POLE WITH THE UTILITY COMPANY, PROVIDED ITS REMOVAL WOULD NOT HINDER ANY OTHER UTILITY LINES.

EXISTING SITE STATISTICS

Beacon Number 9 - Bear Mountain

Lease/Access Agreement - (From VAOT Beacon Book)

An easement and right-of-way 50' wide.

No mention of additional land around the beacon, or for guy wires.

No restrictions of record on cutting width.

Top Beacon - 2291.5'

Top Tower - 2289.0'

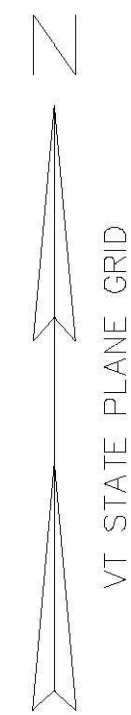
Guy Attachments - 2278.8', 2259.4', & 2240.0'

Electric Service - 2256.9' & 2254.6'

Base Tower - 2220.5'

NOTE:

PROPOSED GUY ANCHOR RADIUS TO BE DETERMINED BY TOWER MANUFACTURER. GUY ANCHOR RADIUS SHALL BE AS SMALL AS STRUCTURALLY ALLOWED AND SHALL NOT EXCEED 50' RADIUS.



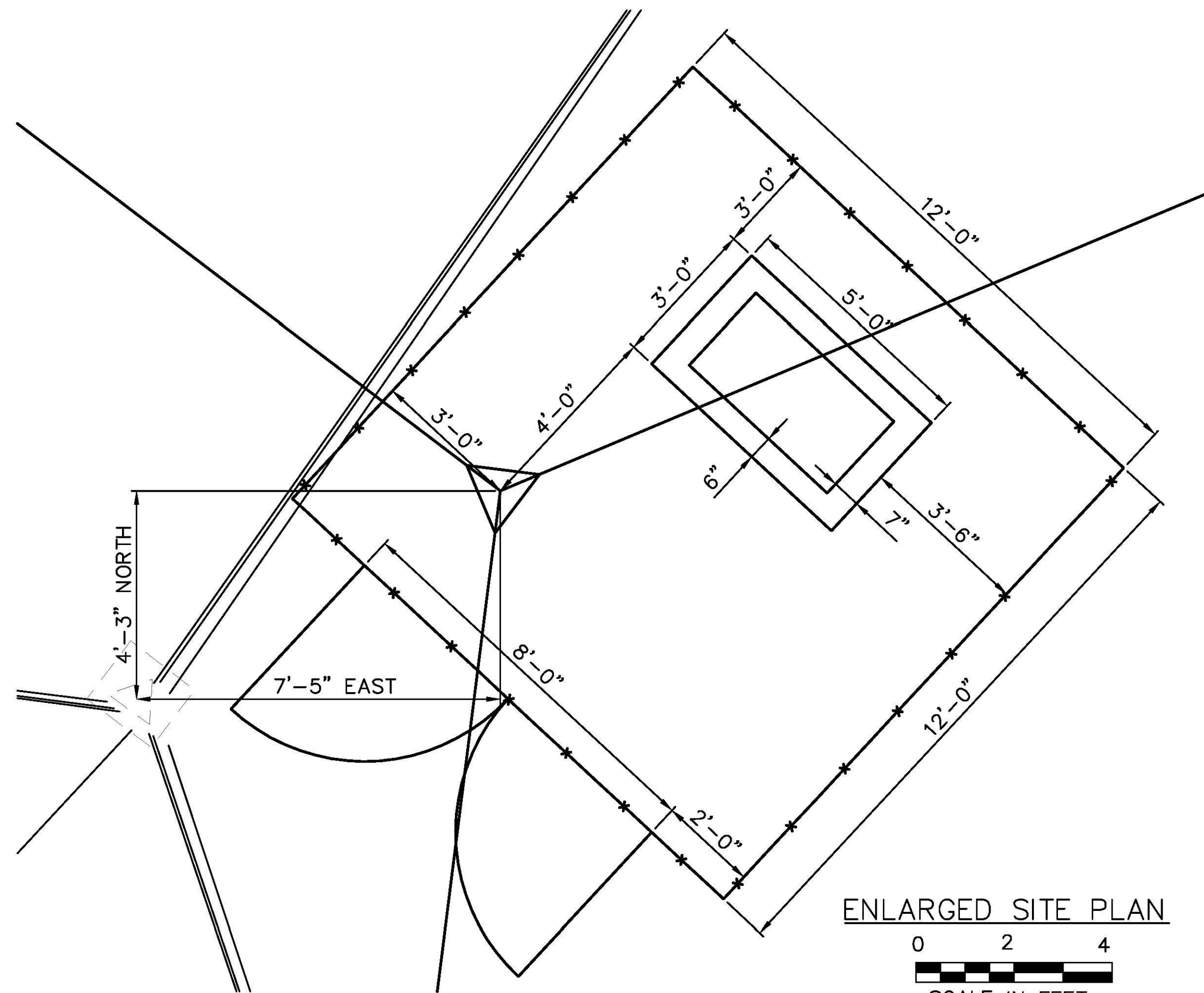
CONSTRUCTION SEQUENCE

CONSTRUCTION NOTES:

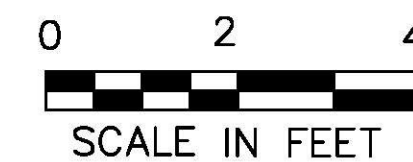
1. ASSEMBLE AND INSTALL TOWER, GUY WIRES AND GUY ANCHORS PER THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
2. LOCATE TOWER BASE AND GUY ANCHOR LOCATIONS PER THIS DRAWING BY CHA.
3. TOWER BASE SHALL BE INSTALLED ON AS FLAT A SURFACE AS POSSIBLE, IF LOCATION VARIES GREATLY FROM WHAT IS SHOWN, NOTIFY ENGINEER.
4. CONTRACTOR IS RESPONSIBLE FOR LOAD TESTING ROCK ANCHORS.
5. CONSTRUCTION OF THE NEW TOWER MUST BE COMPLETE AND THE NEW BEACON MUST BE OPERATIONAL BEFORE COMMENCING DEMOLITION ACTIVITIES.

DEMOLITION NOTES:

1. CONTRACTOR TO REMOVE TOP-MOST SECTION OF TOWER PRIOR TO REMOVING ANY GUY WIRES, IF APPLICABLE.
2. REMOVE GUY WIRES AT HIGHEST ELEVATION PRIOR TO REMOVING ANY OTHER SETS OF GUYS.
3. DEMOLITION OF THE TOWER SHALL CONSIST OF REMOVING ALL TOWER SECTIONS AT THE HIGHEST ELEVATIONS FIRST, UNTIL GUY WIRE LOCATIONS ARE ENCOUNTERED.
4. CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SUPPORTING THE STRUCTURE WHILE GUY WIRES ARE REMOVED.
5. REMOVE GUY ONCE TOWER SECTIONS ABOVE THEM ARE REMOVED.
6. REMOVE TOWER STRUCTURE IN ITS ENTIRETY, INCLUDING BUT NOT LIMITED TO, ITS BASE, BASE PLATE AND ANCHORS.
7. COMPLETELY REMOVE ALL GUY ANCHORS FROM THEIR EXISTING LOCATIONS ONCE THE TOWER IS REMOVED. GUY ANCHORS ARE TO BE CUT AT ROCK SURFACE.
8. CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE REMOVAL AND DISPOSAL OF ALL TOWER ELEMENTS PROPERLY, INCLUDING PROPER LEAD PAINT REMOVAL IF APPLICABLE.



ENLARGED SITE PLAN



RECORD DRAWING 12/30/15

BEACON 9
SITE PLAN

PROJECT NAME: RUTLAND BEACON REPLACEMENT

PROJECT NUMBER: 23387

FILE NAME: C105_23387.DWG

PROJECT LEADER: HAW

DESIGNED BY: HAW

DWG. NO.: C-105

PLOT DATE: 12/28/2015

DRAWN BY: DBT

CHECKED BY: MEH

SHEET 10 OF 17

ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AFF/G	ABOVE FINISHED FLOOR/GRADE
AIC	AMPERE INTERRUPTING CAPACITY
AT	AMPERE TRIP
AUX	AUXILIARY
A/V	AUDIBLE/VISUAL
AWG	AMERICAN WIRE GAUGE
BB	BACKBOARD
BCW	BARE COPPER WIRE
BATT	BATTERY
BTM	BOTTOM
BKR	BREAKER
BLDG	BUILDING
C	CONDUIT
CAB	CABINET
CATV	COMMUNICATION ACCESS TELEVISION (CABLE TELEVISION)
CB	CIRCUIT BREAKER
CIR	CIRCUIT
CKT	CIRCUIT
CL	CENTER LINE
CO	COMPANY
COMM	COMMUNICATIONS
CONN	CONNECTION, CONNECT
CUH	CABINET UNIT HEATER
CT	CURRENT TRANSFORMER
CU	COPPER
CWA	CONSTANT WATTAGE AUTOTRANSFORMER
△	DELTA CONNECTION
D	DEEP
DB	DECIBEL
DET	DETECTOR
DIA	DIAMETER
DISC	DISCONNECT
DIST	DISTRIBUTION
DIV	DIVISION
DN	DOWN
DWG	DRAWING
EA	EACH
EBH	ELECTRIC BASEBOARD HEATER
EF	EXHAUST FAN
EL	ELEVATION
ELEC	ELECTRIC(AL)
EMER	EMERGENCY
ENCL	ENCLOSURE
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXT	EXTERIOR
F	FUSE(D)
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FC	FOOTCANDLES
FIXT	FIXTURE
FLR	FLOOR
FLUOR	FLUORESCENT
FT	FOOT (FEET)
FUT	FUTURE

G, GND	GROUND
GALV	GALVANIZE(D)
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
HD	HEAVY DUTY
HGT	HEIGHT
HID	HIGH INTENSITY DISCHARGE
HO	HIGH OUTPUT
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HPF	HIGH POWER FACTOR
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HV	HIGH VOLTAGE
HW	HOT WATER
ID	IDENTIFY, IDENTIFICATION
INCAND	INCANDESCENT
J-BOX	JUNCTION BOX
J.C.	JANITOR CLOSET
JCT	JUNCTION
KCM/Kc mil	THOUSAND CIRCULAR MILS
KVA	KILO VOLT AMPERE
KW	KILOWATT
LGT	LIGHTING
LT(S)	LIGHT(S)
LED	LIGHT EMITTING DIODE
L	LOUVER
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MFR	MANUFACTURER
MH	METAL HALIDE
MECH	MECHANICAL
MIN	MINIMUM
ML	MOTORIZED LOUVER
MLO	MAIN LUGS ONLY
MT	MOUNT
MTD	MOUNTED
MTR	MOTOR
N	NORTH
NEC	NATIONAL ELECTRICAL CODE
NF	NON-FUSED
NL	NIGHT LIGHT
No/#	NUMBER
NYSEG	NEW YORK STATE ELECTRIC & GAS COMPANY
OC	OVER COUNTER
OL	OVERLOAD
P	POLE(S)
PA	PUBLIC ADDRESS
PNL	PANEL
PR	PAIR
PRI	PRIMARY
PWR	POWER
∅	PHASE
PT	PRESSURE TREATED

RECEPT	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
RM	ROOM
SEC	SECONDARY
SH	SHIELDED
SPKR	SPEAKER
SW	SWITCH
TEMP	TEMPORARY/TEMPERATURE
T-STAT	THERMOSTAT
TB	TERMINAL BOARD
TYP	TYPICAL
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
V	VOLT, VOLTS
VA	VOLT-AMPERES
W	WATT, WIRE
W/	WITH
WP	WEATHERPROOF
XFMR/T	TRANSFORMER
Y	WYE CONNECTION

DEVICES AND APPURTENANCES

	GROUND ROD 5/8" X 10'-0" COPPER CLAD OR GROUNDING PLATE SEE DETAIL ON CIVIL DWG CONTRACT
	BONDING [USE HIGH COMPRESSION FITTINGS (BURNDY, MAC PRODUCTS) FOR "T" TAP, "C" TAP AND BUTT SPLICE]. PROVIDE EXOTHERMIC WELD WHERE POSSIBLE.
	PHOTOCELL

ONE LINE DIAGRAMS

	CONNECTED CONDUCTORS
	CROSSING OF CONDUCTORS NOT CONNECTED
	FUSE
	GROUNDING CONNECTION
	FUSED DISCONNECT SWITCH AND/OR BOLT PRESSURE SWITCH
	INDICATES EQUIPMENT ENCLOSURE
	FUSED DISCONNECT SWITCH

GENERAL

	NUMBER IN CIRCLE, WITH OR WITHOUT ARROW OR LEADER, REFER TO MATCHING NUMBERED CODED NOTE
	NUMBER IN DIAMOND, WITH OR WITHOUT ARROW OR LEADER; REFER TO THE DEMOLITION CODED NOTE WITH THE MATCHING NUMBER
	DETAIL CALLOUT

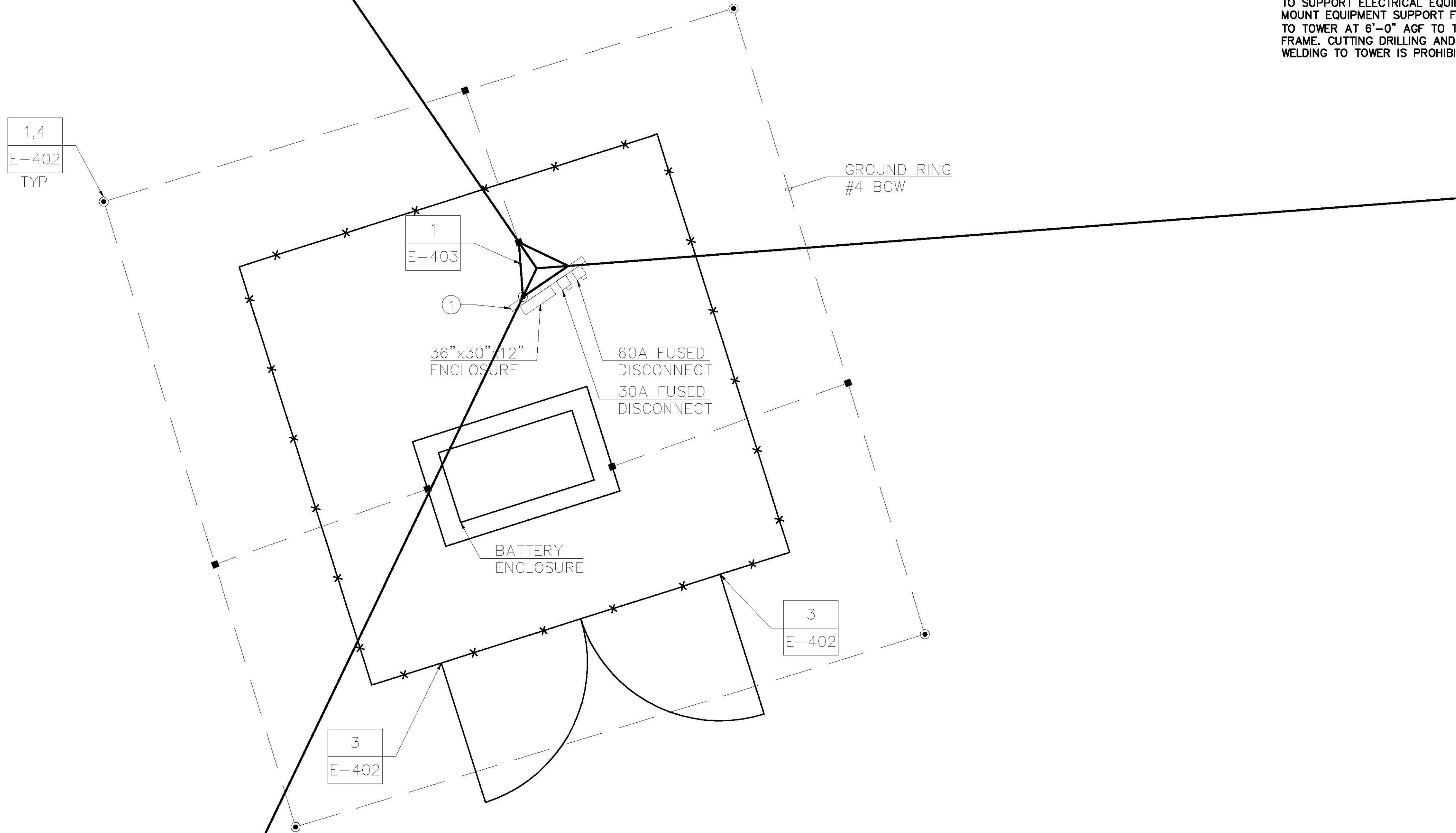
GENERAL NOTES

- REFER TO CIVIL AND STRUCTURAL DRAWINGS FOR SYMBOLS ASSOCIATED WITH WORK, EQUIPMENT, ETC. BY OTHER(S).
- ALL WORK SHOWN ON THE ELECTRICAL DRAWINGS SHALL BE BY THE ELECTRICAL CONTRACT UNLESS OTHERWISE INDICATED.
- COORDINATE WORK WITH ALL TRADES.
- CONDUIT RUNS SHOWN ARE DIAGRAMMATIC UON. EXACT LOCATION OF ALL CONDUIT RUNS SHALL BE DETERMINED IN THE FIELD. COORDINATE INSTALLATIONS AND AVOID CONFLICT WITH WORK BY OTHER TRADES.
- GENERAL NOTES APPLY TO ALL CONTRACT DRAWINGS.

RECORD DRAWING 12/30/15

ELECTRICAL
LEGEND &
ABBREVIATIONS

PROJECT NAME:	RUTLAND BEACON REPLACEMENT		
PROJECT NUMBER:	23387		
FILE NAME: E001_23387.DWG	PROJECT LEADER: HAW		PLOT DATE: 12/28/2015
DESIGNED BY: PR	DWG. NO.: E--001		DRAWN BY: DAS
			CHECKED BY: BS
			SHEET 11 OF 17



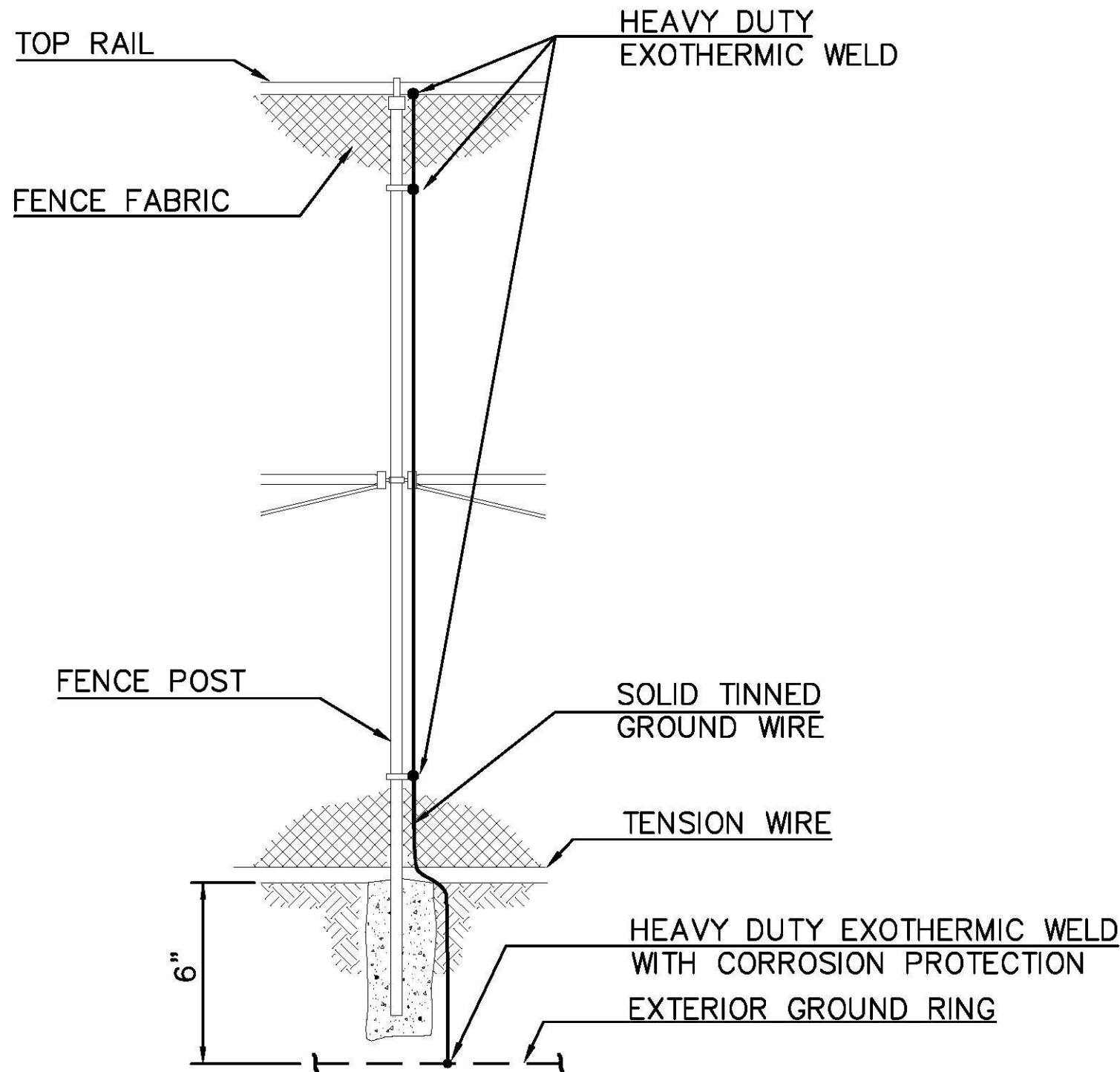
CODED NOTES

① PROVIDE GALVANIZED STEEL CHANNEL AND STAINLESS STEEL HARDWARE TO FABRICATE A FRAME TO SUPPORT ELECTRICAL EQUIPMENT. MOUNT EQUIPMENT SUPPORT FRAME TO TOWER AT 6'-0" AGF TO TOP OF FRAME. CUTTING DRILLING AND WELDING TO TOWER IS PROHIBITED.

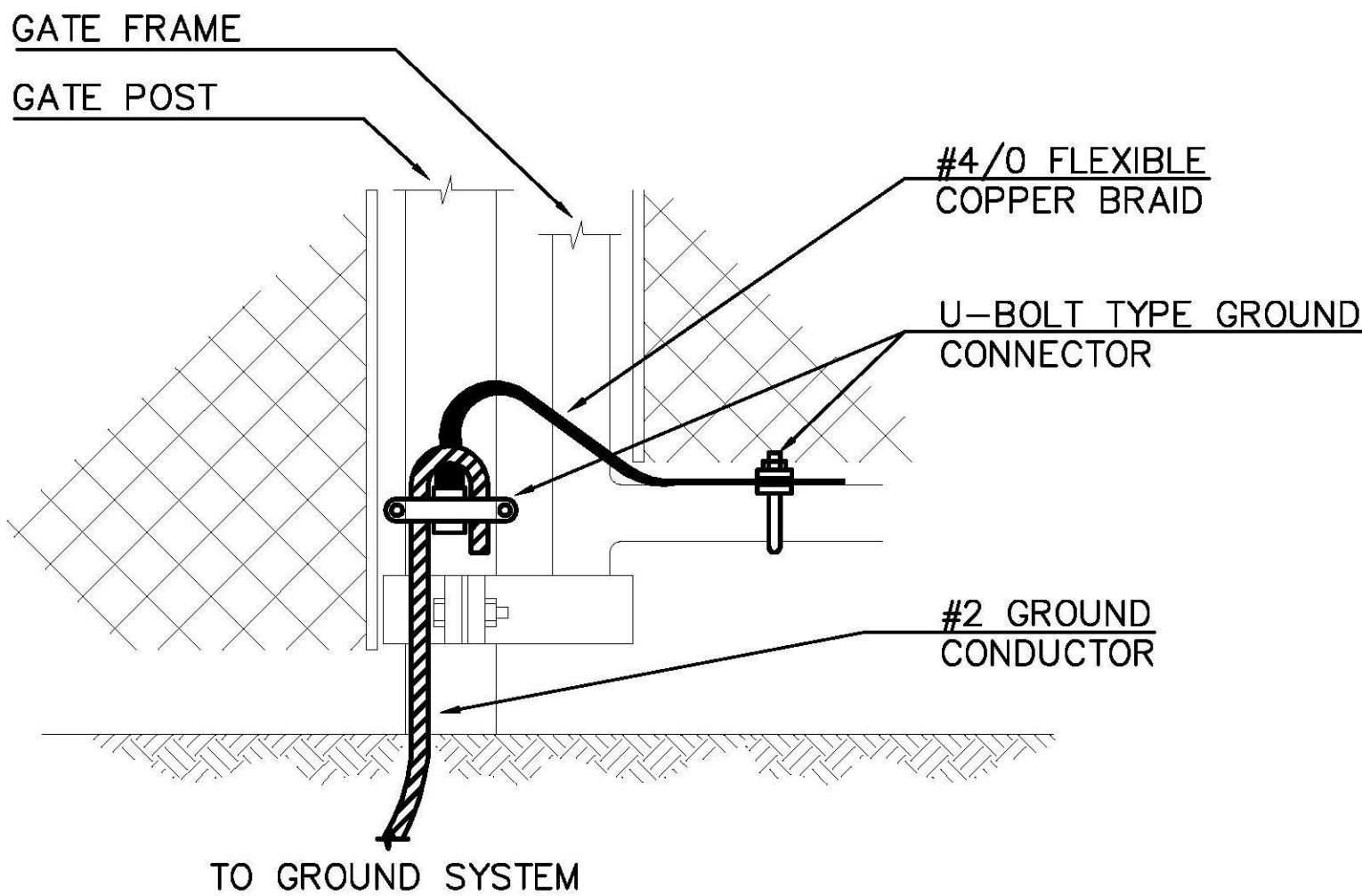
RECORD DRAWING 12/30/15

**ELECTRICAL
TYPICAL
SITE PLAN**

PROJECT NAME: RUTLAND BEACON REPLACEMENT	
PROJECT NUMBER: 23387	
FILE NAME: E401_23387.DWG	PLOT DATE: 12/28/2015
PROJECT LEADER: HAW	DRAWN BY: DAS
DESIGNED BY: PR	CHECKED BY: BS
DWG. NO.: E-401	SHEET 12 OF 17

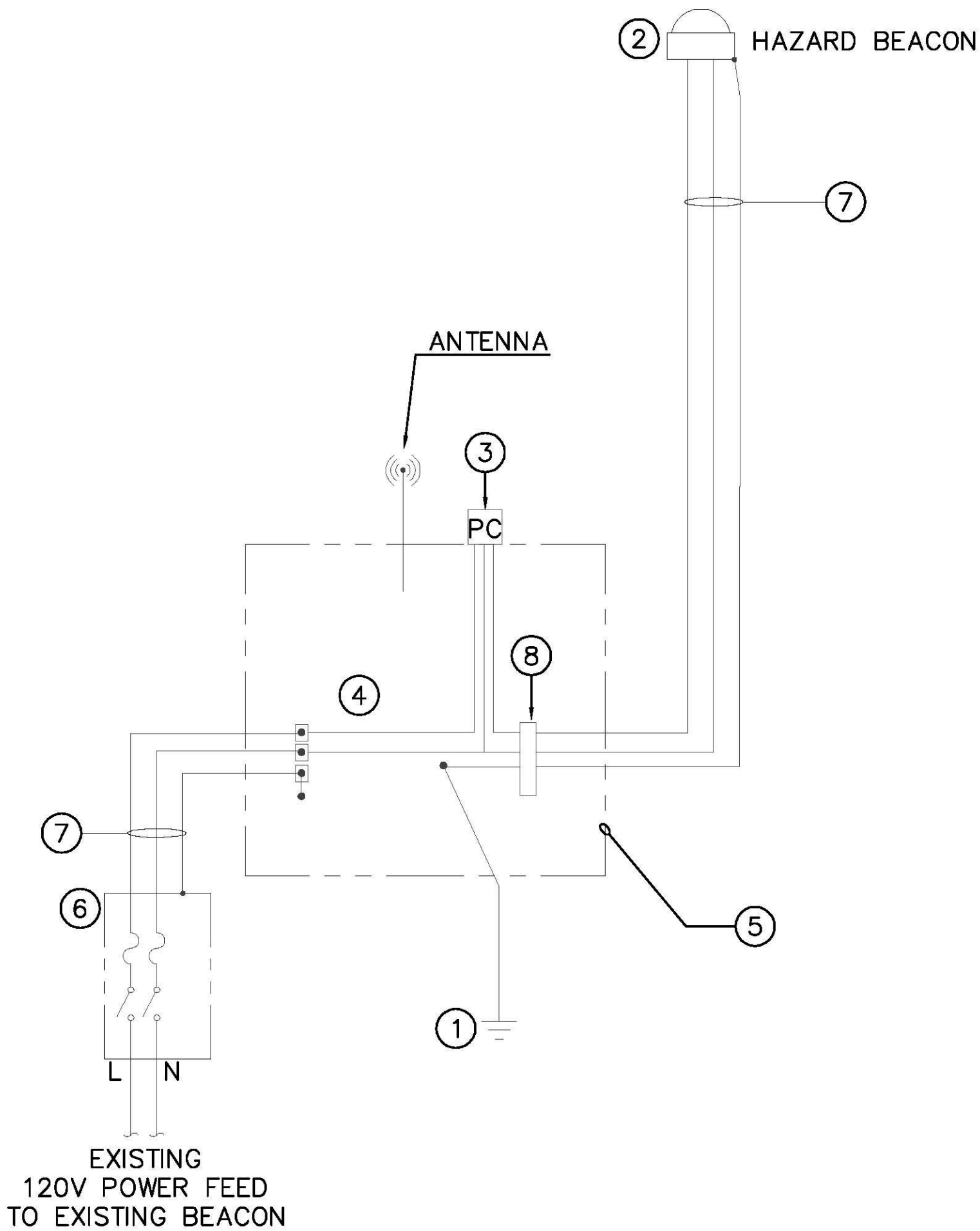


1 FENCE GROUNDING
- NOT TO SCALE

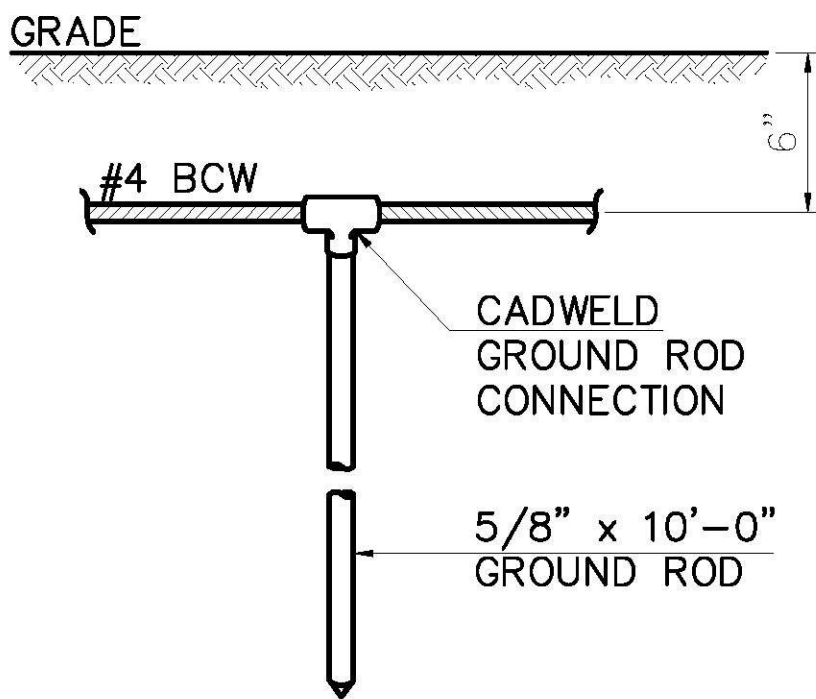


NOTE:
FENCE GROUND CONNECTIONS SHALL BE AT EACH CORNER. GATE JUMPER SHALL BE #4/0 FLEXIBLE COPPER BRAID WITH SLEEVES ON EACH DESIGNED FOR EXOTHERMIC WELDING AND INSTALLED SO THAT JUMPER WILL NOT BE SUBJECTED TO DAMAGING STRAIN WHEN GATE IS FULLY OPENED IN EITHER DIRECTION.

3 TYPICAL GATE - GROUNDING
- NOT TO SCALE

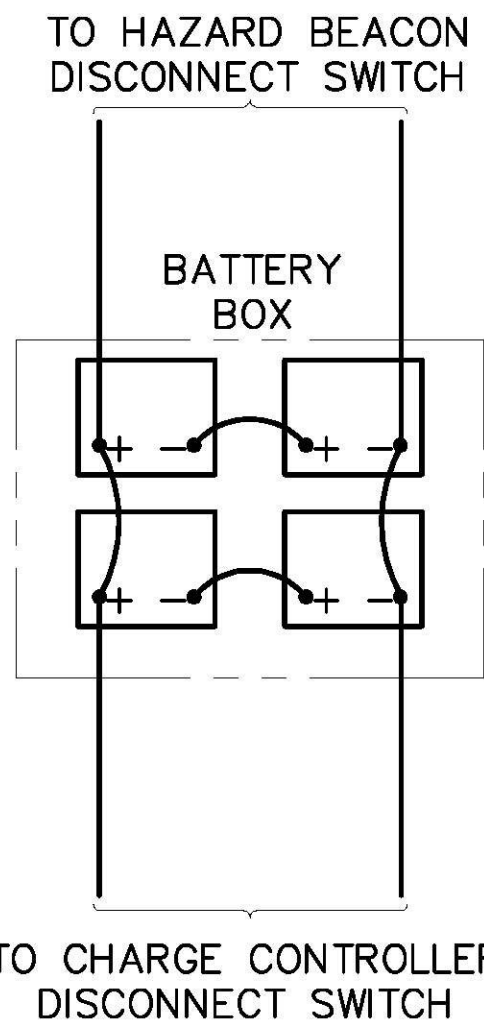


2 LED BEACON WITH REMOTE MONITORING
- NOT TO SCALE



NOTE
1. PROVIDE GROUND PLATE IF ROCK IS ENCOUNTERED. SEE DETAIL 2 DWG E-403.

4 GROUND ROD DETAIL
- NOT TO SCALE



5 BATTERY WIRING DIAGRAM
- NOT TO SCALE

GENERAL NOTES

- ALL EQUIPMENT SUCH AS BUT NOT LIMITED TO DISCONNECT, ENCLOSURE SHALL HAVE A LOCK-OUT/TAG-OUT OPTION.
- USE RGS CONDUIT UNLESS OTHERWISE NOTED.
- CUTTING, DRILLING AND WELDING TO TOWER IS PROHIBITED.

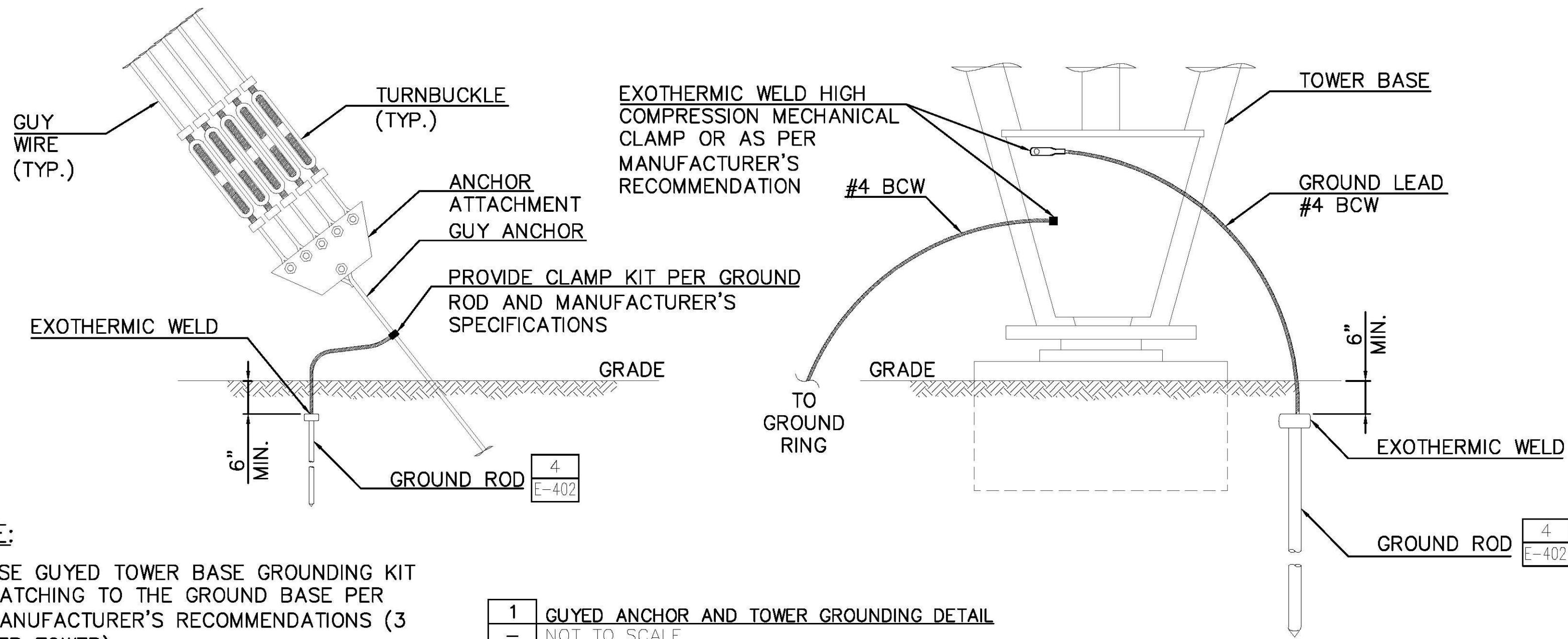
CODED NOTES

- PROVIDE GROUNDING WITH #8 THWN-2 AND (1) 5/8"x10' COPPER CLAD GROUND ROD. TOP OF GROUND ROD SHALL BE DRIVEN TO A DEPTH OF 6" BELOW FINISH GRADE AND CONNECTION SHALL BE MADE BY EXOTHERMIC METHODS. SEE DETAIL 4 ON THIS DRAWING WHEN ENCOUNTERED WITH BEDROCK USE GROUND PLATE. SEE DETAIL 2 ON DRAWING E-403.
- REMOVE EXISTING HAZARD BEACON AND PROVIDE FAA APPROVED LED HAZARD BEACON (FARLIGHT NV-L864LED-DC-20 OR APPROVED EQUAL). POWER CONSUMPTION EQUAL LESS THAN 10W (AVERAGE). SET HAZARD BEACON TO OPERATE IN THE FLASHING MODE.
- PROVIDE LOW VOLTAGE OUTDOOR [UL LISTED WET LOCATION] RATED FAA APPROVED RIPLEY 6589C-FAA PHOTOCELL ON ENCLOSURE FOR EASE OF REPAIR AND PER OWNERS DIRECTION. COORDINATE EXACT LOCATION AT FIELD. REFER TO WIRING DIAGRAM IN FARLIGHT'S LED BEACON MANUAL.
- PROVIDE REMOTE MONITORING SYSTEM. COMPLETE SYSTEM SHALL INCLUDE BUT NOT LIMITED TO POWER SUPPLY (24VDC), CELLULAR MODEM, DAQ, LIGHT TEST SWITCH AND COMMISSIONING OF SYSTEM TO OWNER. CONTACT NORTHMARK COMMUNICATIONS, DAVE COLTER, TELEPHONE: (603)763-4982 OR (603)763-4976, EMAIL: NORTHMARK@MYFAIRPOINT.NET.
- PROVIDE NEMA 4X ENCLOSURE (HOFFMAN A24H2412SS6LP OR APPROVED EQUAL) WITH INTEGRAL MOUNTING PLATE (HOFFMAN A24P24SS6) AND (2) FILTERED VENTILATION LOUVERS. LOCATE LOUVERS ON BOTTOM OF ENCLOSURE ONE ON EACH SIDE (HOFFMAN AVK44 OR APPROVED EQUAL) AND (2) RAIN SHROUD (HOFFMAN SH0900005H OR APPROVED EQUAL). MOUNT ASSEMBLY ON TOWER AT 6'-0" AFG.
- PROVIDE 2 POLE, 30A RATED, 250V RATED, HEAVY DUTY, FUSIBLE NEMA 4X SAFETY SWITCH WITH 2A FUSE.
- PROVIDE (2)#8 THWN-2, (1)#8G THWN-2 IN 1" RGS CONDUIT WITH HANGERS, SUPPORTS, CLAMPS, ETC. AS REQUIRED.
- PROVIDE SURGE PROTECTION DEVICE MANUFACTURED BY PHOENIX CONTACT (MODEL NO. PT-2-PE/S-120AC) FOR 120V AC SYSTEM.

RECORD DRAWING
12/30/15

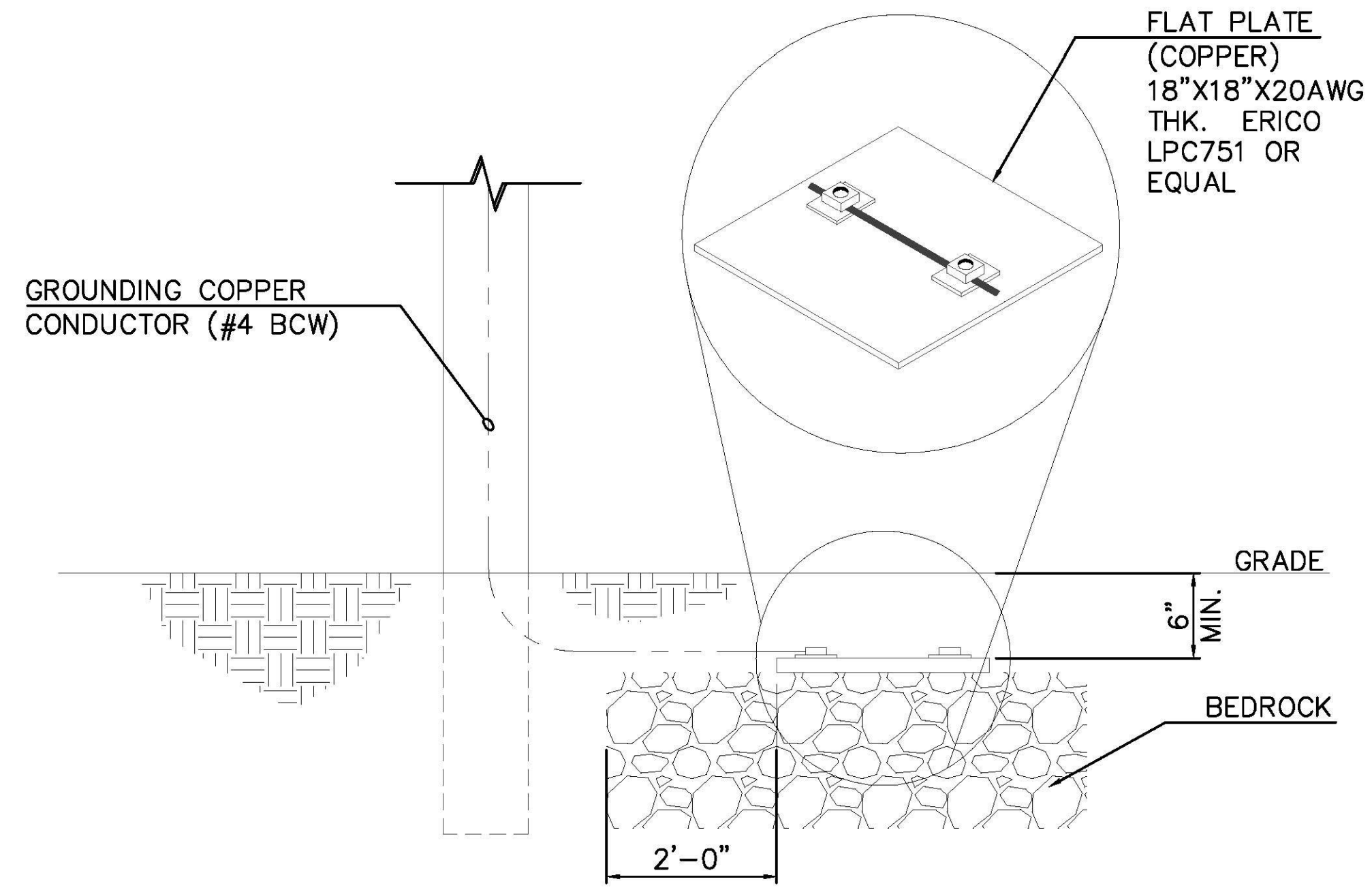
**ELECTRICAL
DETAILS**

PROJECT NAME: RUTLAND BEACON REPLACEMENT
PROJECT NUMBER: 23387
FILE NAME: E402_23387.DWG
PROJECT LEADER: HAW
DESIGNED BY: PR
DWG. NO.: E-402
PLOT DATE: 12/28/2015
DRAWN BY: DAS
CHECKED BY: BS
SHEET 13 OF 17



NOTE:
1. USE GUYED TOWER BASE GROUNDING KIT MATCHING TO THE GROUND BASE PER MANUFACTURER'S RECOMMENDATIONS (3 PER TOWER).

1 GUYED ANCHOR AND TOWER GROUNDING DETAIL
- NOT TO SCALE



NOTE:
1. WHERE ROCK IS ENCOUNTERED.

2 GROUNDING PLATE DETAIL
- NOT TO SCALE

RECORD DRAWING 12/30/15

ELECTRICAL
DETAILS

PROJECT NAME: RUTLAND BEACON REPLACEMENT
PROJECT NUMBER: 23387
FILE NAME: E403_23387.DWG
PROJECT LEADER: HAW
DESIGNED BY: PR
DWG. NO.: E-403
PLOT DATE: 12/28/2015
DRAWN BY: DAS
CHECKED BY: BS
SHEET 14 OF 17

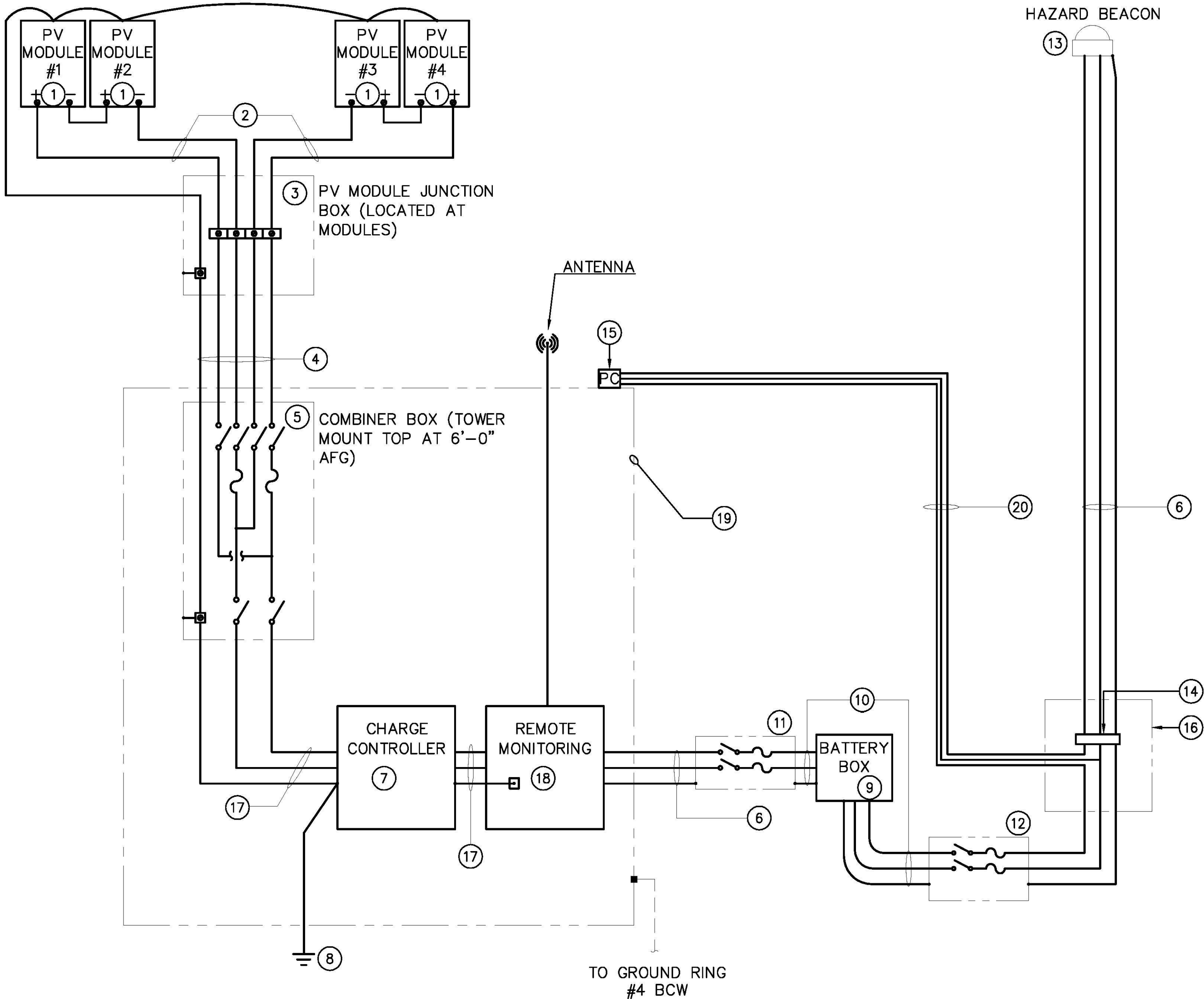
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User: Medina, Perry
Last Saved By: 2789
Saved: 12/28/2015 2:52:43 PM
Plotted: 12/28/2015 3:18:21 PM
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DATE/TIME = \$DATE\$.
USER = \$USER\$.

GENERAL NOTES

- A. ALL EQUIPMENT SUCH AS BUT NOT LIMITED TO DISCONNECT, ALL ENCLOSURE SHALL HAVE LOCK-OUT/TAG-OUT OPTION.
- B. USE RGS CONDUIT UNLESS OTHERWISE NOTED.
- C. CUTTING, DRILLING AND WELDING TOWER IS PROHIBITED.
- D. REMOTE MONITORING SHALL INCLUDE BUT NOT LIMITED TO CELLULAR MODEM, DATA ACQUISITION, DIN RAIL MOUNT AND WIRELESS ANTENNA.

CODED NOTES

- 1 PROVIDE PV MODULES (SUN MODULE SW240 POLY OR APPROVED EQUAL) AND ALUMINUM SIDE OF POLE MOUNTING SYSTEM. MODULES SHALL BE ARRANGED IN A 2x2 PATTERN. TILT ANGLE SET TO 90° VERTICAL. MOUNTING SYSTEM SHALL BE PROVIDED WITH A 140 MPH WIND LOADING CAPACITY WITH MODULES INSTALLED. SEE DRAWING S-101 FOR MOUNTING OF MODULES.
- 2 PROVIDE #8 USE-2 CONDUCTORS NOT EXCEEDING 10'-0" IN TOTAL LENGTH. SECURE CONDUCTORS TO AVOID WIND AND WEATHER DAMAGE.
- 3 PROVIDE 8"x8"x4" NEMA 4X JUNCTION BOX WITH INTERNAL MOUNTING PLATE, POWER DISTRIBUTION BLOCKS (SQ.D.#LBC 162101 OR APPROVED EQUAL) WITH INSULATING COVER, AND GROUNDING LUG. MOUNT ADJACENT TO PV MODULES.
- 4 PROVIDE (4)#6 THWN-2, (1)#6G THWN-2 IN 1-1/2" RGS CONDUIT WITH HANGERS, SUPPORTS, CLAMPS, ETC. AS REQUIRED.
- 5 PROVIDE DISCONNECT COMBINER BOX (SOLARBOS #CS28-04-15-4XF OR APPROVED EQUAL) WITH 15 AMP DCV RATED FUSES AND GROUNDING LUG. MOUNT COMBINER BOX INSIDE ENCLOSURE.
- 6 PROVIDE (2)#6 THWN-2, (1)#6G THWN-2 IN 1-1/2" RGS CONDUIT WITH HANGERS, SUPPORTS, CLAMPS, ETC. AS REQUIRED.
- 7 PROVIDE CHARGE CONTROLLER (TRISTAR MPPT-60 CONTROLLER OR APPROVED EQUAL). MOUNT CONTROLLER INSIDE ENCLOSURE.
- 8 PROVIDE PV SYSTEM NEGATIVE GROUNDING WITH #8 THWN-2 AND (1) 3/4"x10' COPPER CLAD GROUND ROD. GROUND ROD SHALL BE DRIVEN TO A DEPTH OF 6" BELOW FINISH GRADE AND CONNECTION SHALL BE MADE BY EXOTHERMIC METHODS. WHEN ENCOUNTERED WITH BEDROCK USE GROUND PLATE. SEE DETAIL 2 ON DWG E-403.
- 9 PROVIDE (1) 26"x46"x16" NON-INSULATED, VENTILATED CHEST STYLE BATTERY ENCLOSURES (POWER FAB# BB4-8G8D OR APPROVED EQUAL) SET ON CONCRETE SLAB SEE DETAIL 2 ON S-101, AND (4) 12VDC, 258 AHR BATTERIES (SUN XTENDER # PVX-2580L OR APPROVED EQUAL). INSTALL (4) BATTERIES IN BOX. CONNECT BATTERIES IN (2) SERIES/PARALLEL STRINGS. SEE BATTERY WIRING DIAGRAM ON THIS DRAWING.
- 10 PROVIDE (2)#6 THWN-2, (1)#6G THWN-2 IN 1-1/2" LFMC NOT EXCEEDING 6'-0".
- 11 PROVIDE 2 POLE, 60 AMP, 250 VOLT, HEAVY DUTY, FUSIBLE, NEMA 4X, DC RATED DISCONNECT SWITCH WITH 60 AMP DCV RATED FUSES AND PERMANENT LABEL WHICH READS: "WARNING ELECTRIC SHOCK HAZARD. DO NOT TOUCH TERMINALS. TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION." MOUNT ON TOWER AT 6'-0" AFG.
- 12 PROVIDE 2 POLE, 30 AMP, 250 VOLT, HEAVY DUTY, FUSIBLE, NEMA 4X, DC RATED DISCONNECT SWITCH WITH 6 AMP DCV RATED FUSES. MOUNT ON TOWER AT 6'-0" AFG.
- 13 PROVIDE FAA APPROVED LED HAZARD BEACON (FARLIGHT NV-L864LED-DC-20 OR APPROVED EQUAL). POWER CONSUMPTION EQUAL LESS THAN 10W (AVERAGE) SET HAZARD BEACON TO OPERATE IN THE FLASHING MODE.
- 14 PROVIDE SURGE PROTECTION DEVICE MANUFACTURED BY PHOENIX CONTACT [MODEL NO. PT2+1-S-48DC] FOR 24-48 VDC SYSTEM.
- 15 PROVIDE LOW VOLTAGE OUTDOOR [UL LISTED WET LOCATION] RATED FAA APPROVED RIPLEY 6589C-FAA RATED FOR 24VDC NOMINAL] PHOTOCCELL ON HOFFMAN ENCLOSURE FOR EASE OF REPAIR AND PER OWNERS DIRECTION. COORDINATE EXACT LOCATION AT FIELD. PROVIDE 3/4" RGS CONDUIT FOR WIRING. REFER TO WIRING DIAGRAM IN FARLIGHT'S LED BEACON MANUAL.
- 16 PROVIDE NEMA ENCLOSURE, 4"x4"x2" FOR "DIN" RAIL MOUNT OF SURGE PROTECTION DEVICE MANUFACTURED BY PHOENIX CONTACT.
- 17 PROVIDE (2)#6 THWN-2, (1)#6G THWN-2 WITH APPROPRIATE MOUNTING CLAMPS INSIDE THE NEMA 4X ENCLOSURE. MAINTAIN TURN RADIUS PER LATEST NEC AND WIRE MANUFACTURER'S REQUIREMENTS.
- 18 PROVIDE CAT6 (PLENUM RATED) WITH RJ-45 TERMINATIONS ON EACH END BETWEEN CHARGE CONTROLLER AND MODEM FOR ETHERNET CONNECTION. MOUNT INSIDE ENCLOSURE. CONTACT NORTHMARK COMMUNICATIONS, DAVE COLTER, TELEPHONE: (603)763-4982 OR (603)763-4976, EMAIL: NORTHMARK@MYFAIRPOINT.NET.
- 19 PROVIDE NEMA 4X ENCLOSURE (HOFFMAN A36H3012SS6LP OR APPROVED EQUAL) WITH INTEGRAL MOUNTING PLATE (HOFFMAN A36P30SS6) AND (2) FILTERED VENTILATION LOUVERS. LOCATE LOUVERS ON BOTTOM OF ENCLOSURE ONE ON EACH SIDE (HOFFMAN AVK66 OR APPROVED EQUAL) AND (2) RAIN SHROUD (HOFFMAN SH0900005H OR APPROVED EQUAL). MOUNT ASSEMBLY ON TOWER AT 6'-0" AFG TO TOP.
- 20 PROVIDE (2)#6 THWN-2, (1)#6G THWN-2 IN 1-1/2" RGS CONDUIT WITH HANGERS, SUPPORTS, CLAMPS, ETC AS REQUIRED.



1 PHOTOVOLTAIC SYSTEM - 4 PANEL SCHEMATIC
- NOT TO SCALE

RECORD DRAWING 12/30/15

ELECTRICAL
DETAILS

PROJECT NAME: RUTLAND BEACON REPLACEMENT	
PROJECT NUMBER: 23387	
FILE NAME: E404_23387.DWG	PLOT DATE: 12/28/2015
PROJECT LEADER: HAW	DRAWN BY: DAS
DESIGNED BY: PR	CHECKED BY: BS
DWG. NO.: E-404	SHEET 15 OF 17

1	PHOTOVOLTAIC MODULE FRAME ATTACHMENT DETAIL
—	NO SCALE

2	CONCRETE SLAB – PLAN
–	NO SCALE

5	ALTERNATE SECTION B-B AT ROCK NEAR SURFACE
-	NO SCALE

3	SECTION B-B IN SOIL CONDITIONS
-	NO SCALE

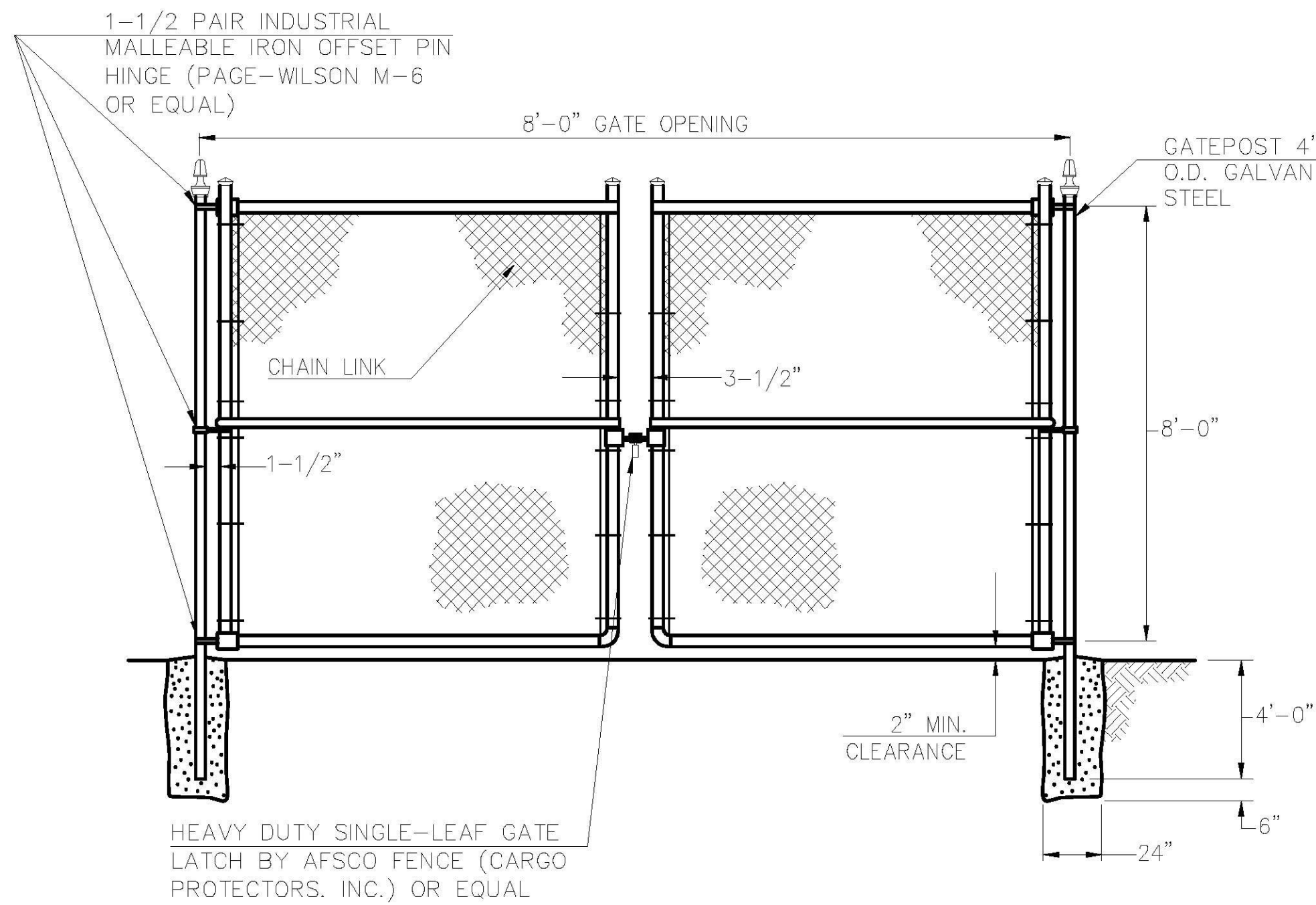
4	SECTION B-B AT ROCK >18" BELOW SURFACE
-	NO SCALE

5	ALTERNATE SECTION B-B AT ROCK NEAR SURFACE
-	NO SCALE

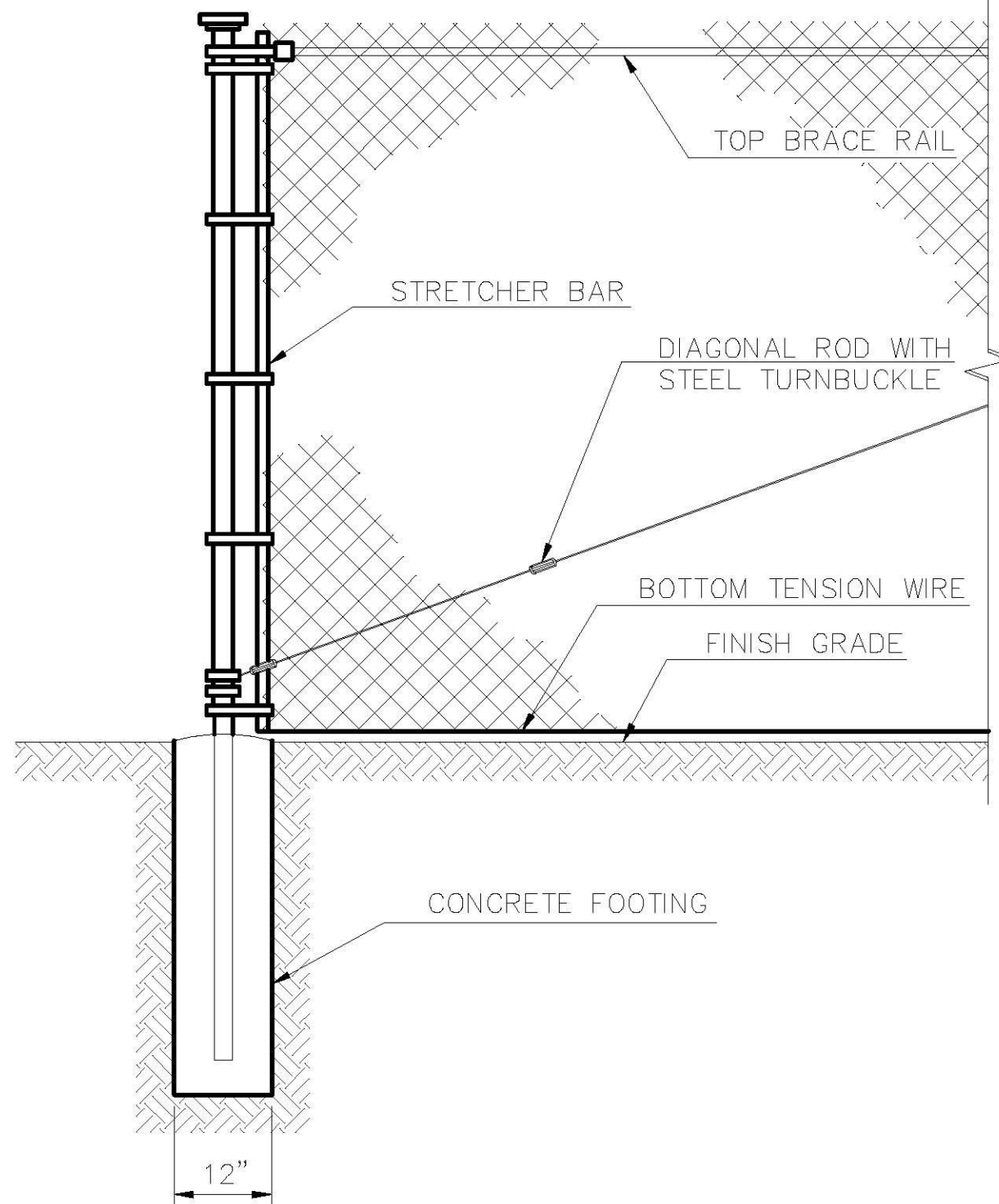
RECORD DRAWING 12/30/15

STRUCTURAL DETAILS

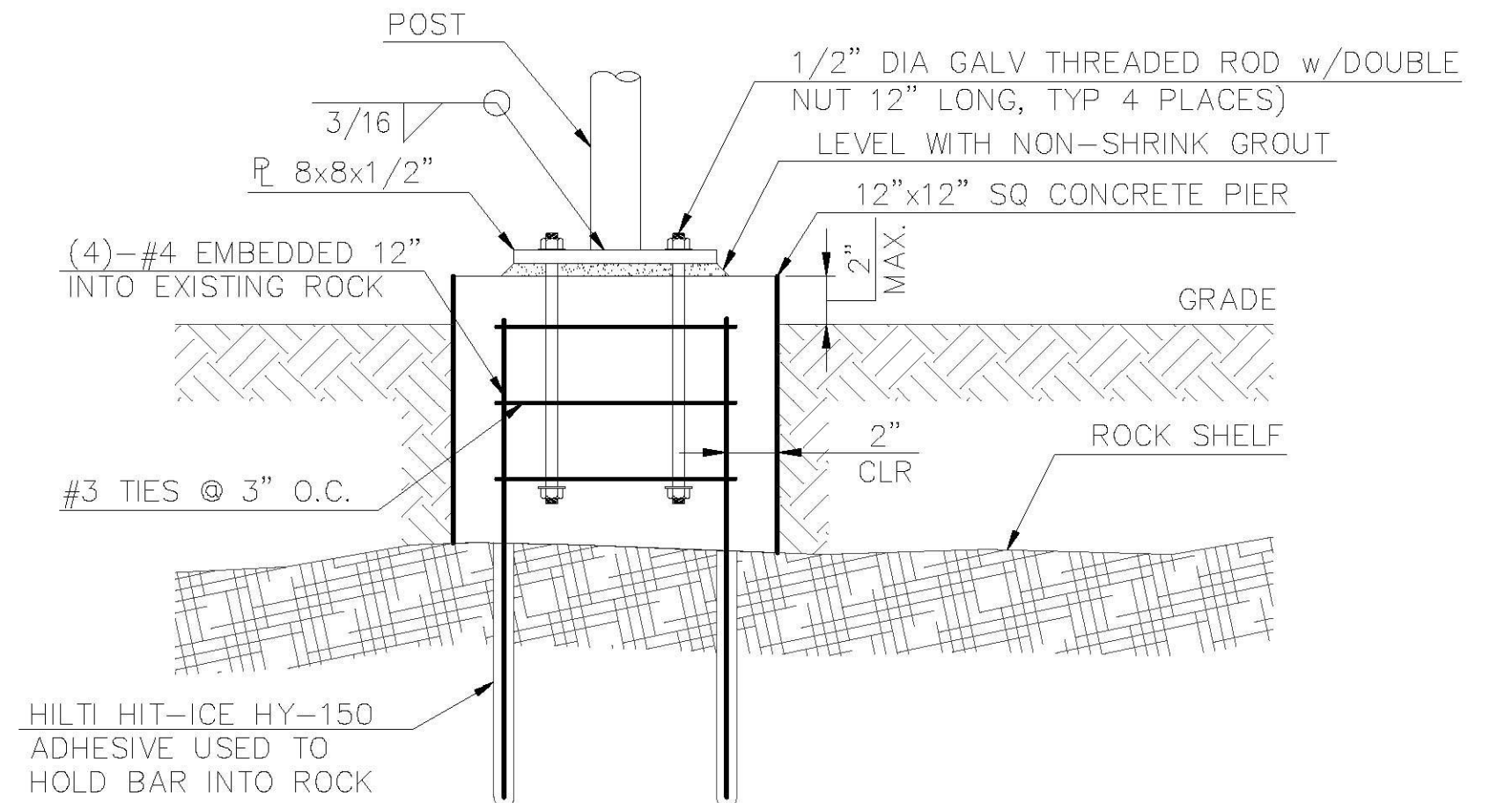
PLOT DATE: 12/28/2015
DRAWN BY: DBT
CHECKED BY: DJD
SHEET 16 OF 17



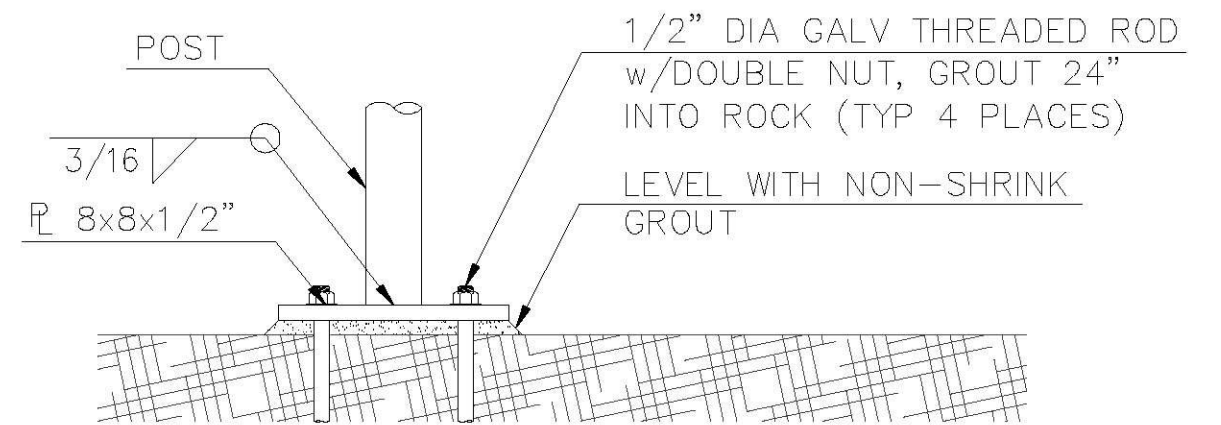
1 FENCE SWING GATE DETAIL (SOIL CONDITION)
— NO SCALE



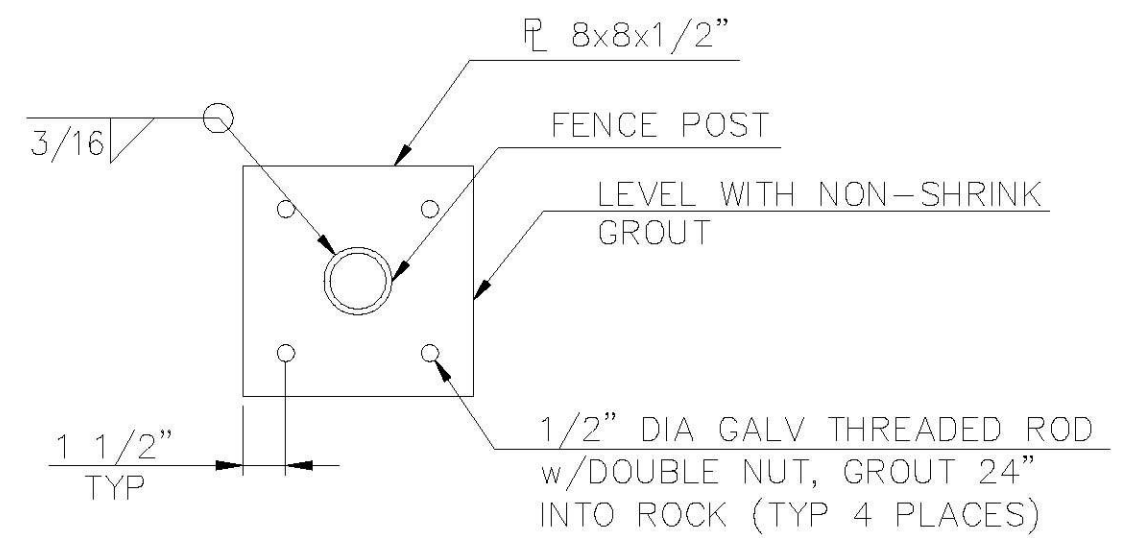
2 FENCE CORNER, GATE, END OR PULL POST (SOIL CONDITION)
— NO SCALE



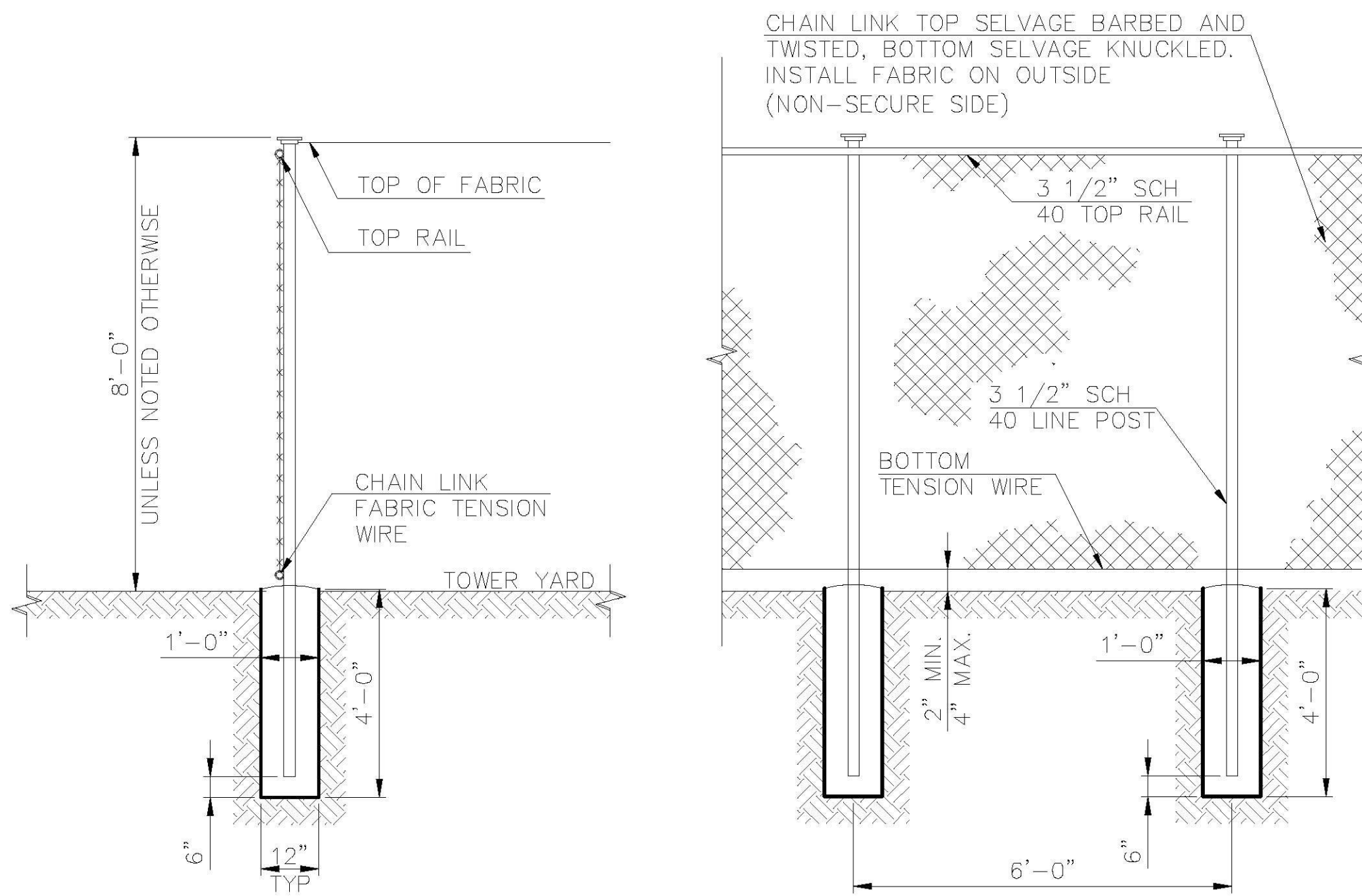
4 FENCE BASEPLATE ELEVATION TO SUBGRADE ROCK
— NO SCALE



5 FENCE BASEPLATE ELEVATION AT ROCK
— NO SCALE



6 FENCE BASEPLATE DETAIL AT ROCK
— NO SCALE



TYPICAL SECTION

TYPICAL ELEVATION

3 WOVEN WIRE FENCE DETAIL (SOIL CONDITION)
— NO SCALE

NOTE:
THE FENCE POST AND BASE PLATE SHALL BE SHOP WELDED AND HOT DIP GALVANIZED AS ONE PIECE. THE BASE PLATE SHALL HAVE A HOLE DRILLED THROUGH THE CENTER TO ALLOW THE GASES TO ESCAPE DURING THE DIPPING PROCESS. IF THE PLATE IS NOT NEEDED DURING THE INSTALLATION OF THE FENCE, THE CONTRACTOR SHALL CUT IT OFF.

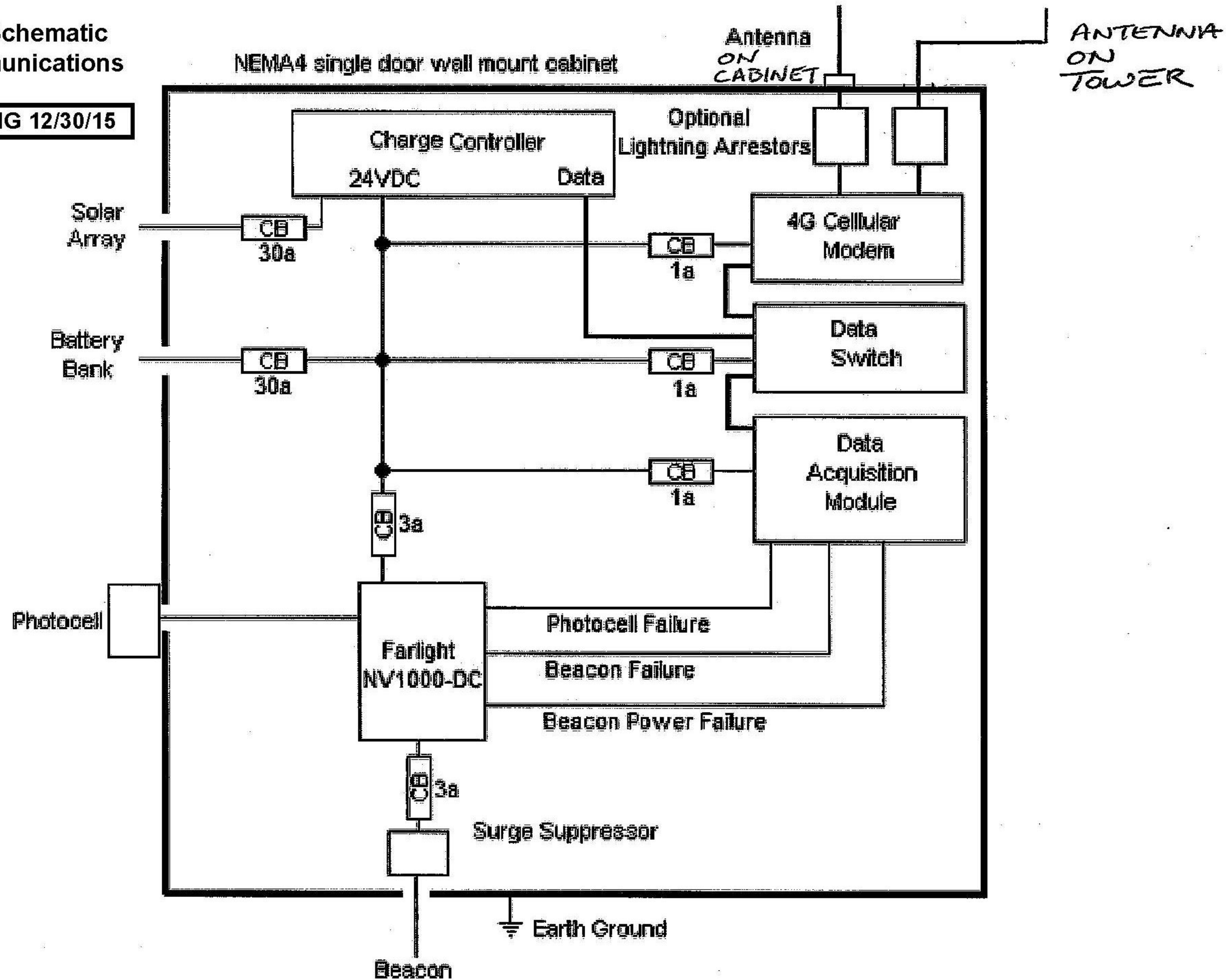
RECORD DRAWING 12/30/15

STRUCTURAL
DETAILS

PROJECT NAME: RUTLAND BEACON REPLACEMENT
PROJECT NUMBER: 23387
FILE NAME: S102_23387.DWG
PROJECT LEADER: HAW
DESIGNED BY: JJS
DWG. NO.: S-102
PLOT DATE: 12/28/2015
DRAWN BY: DBT
CHECKED BY: DJD
SHEET 17 OF 17

Control Cabinet Schematic
Northmark Communications

RECORD DRAWING 12/30/15

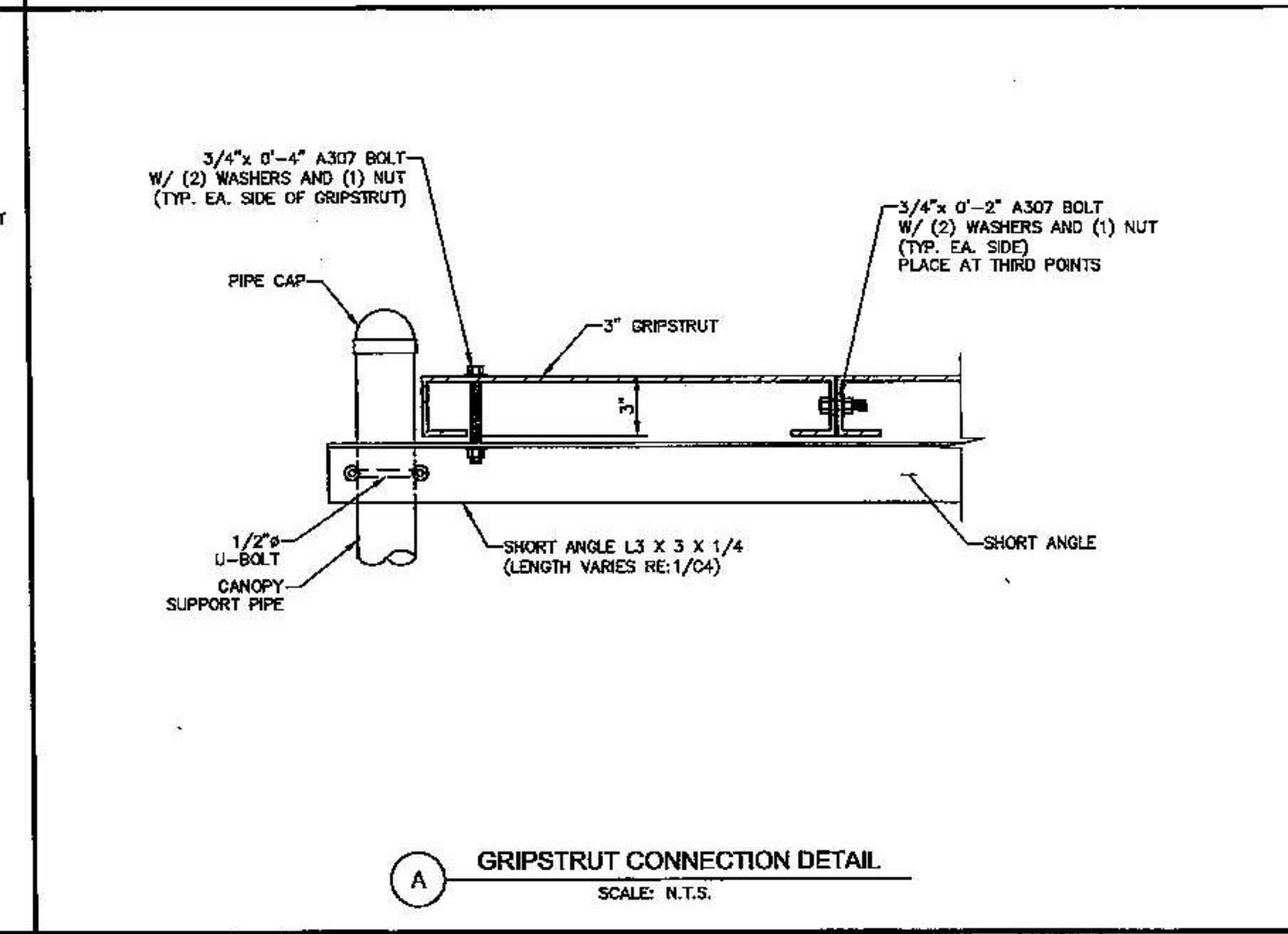
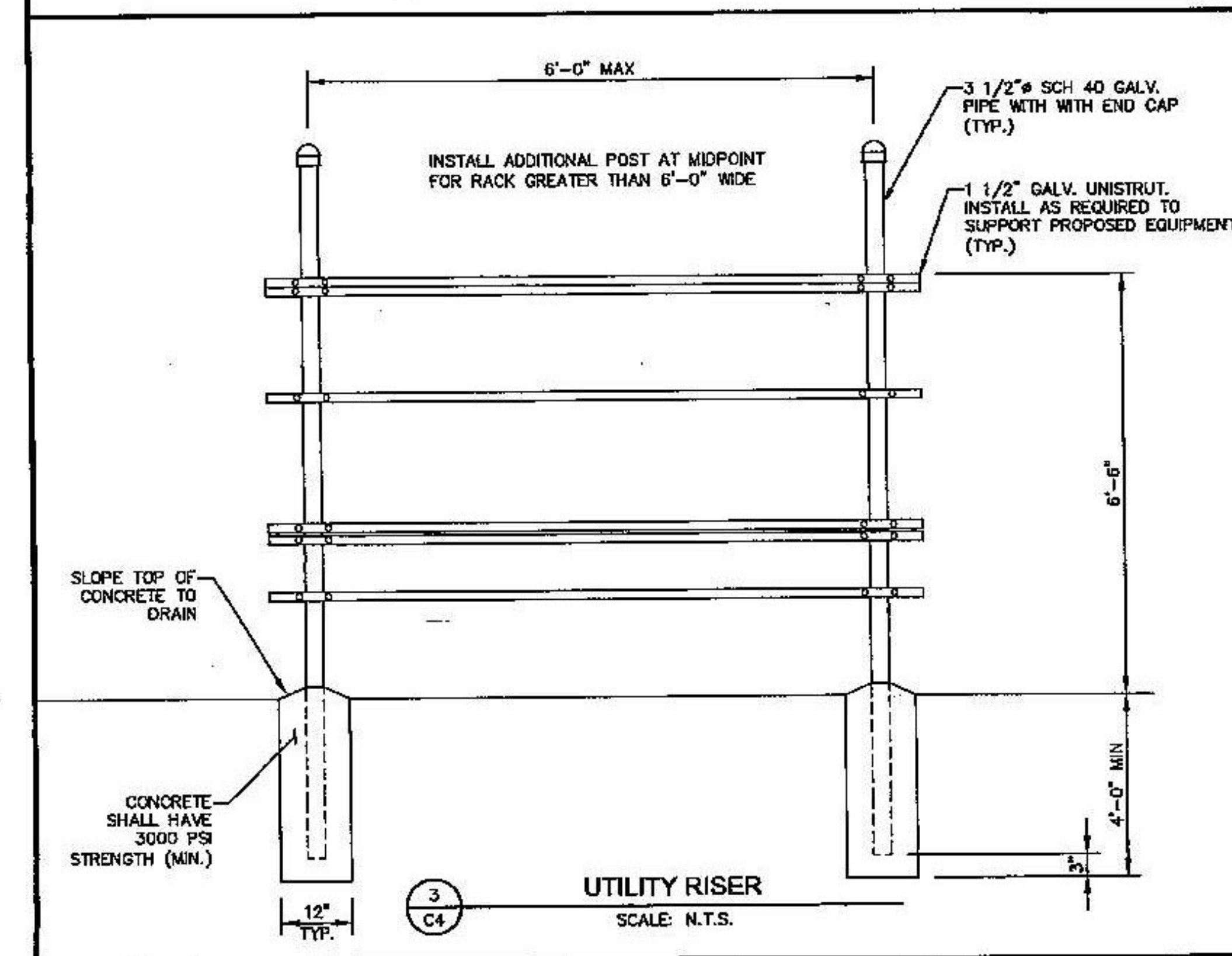
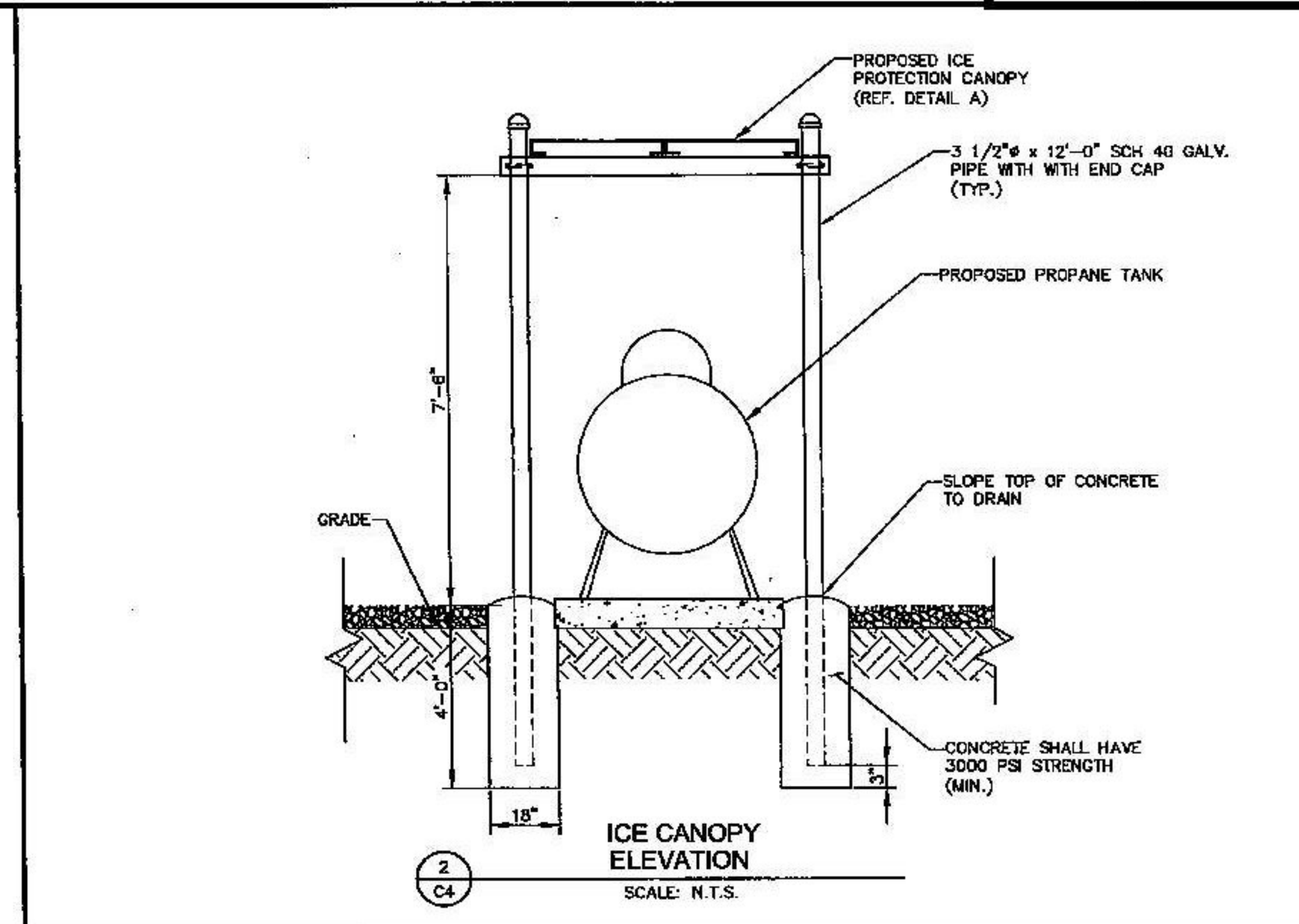
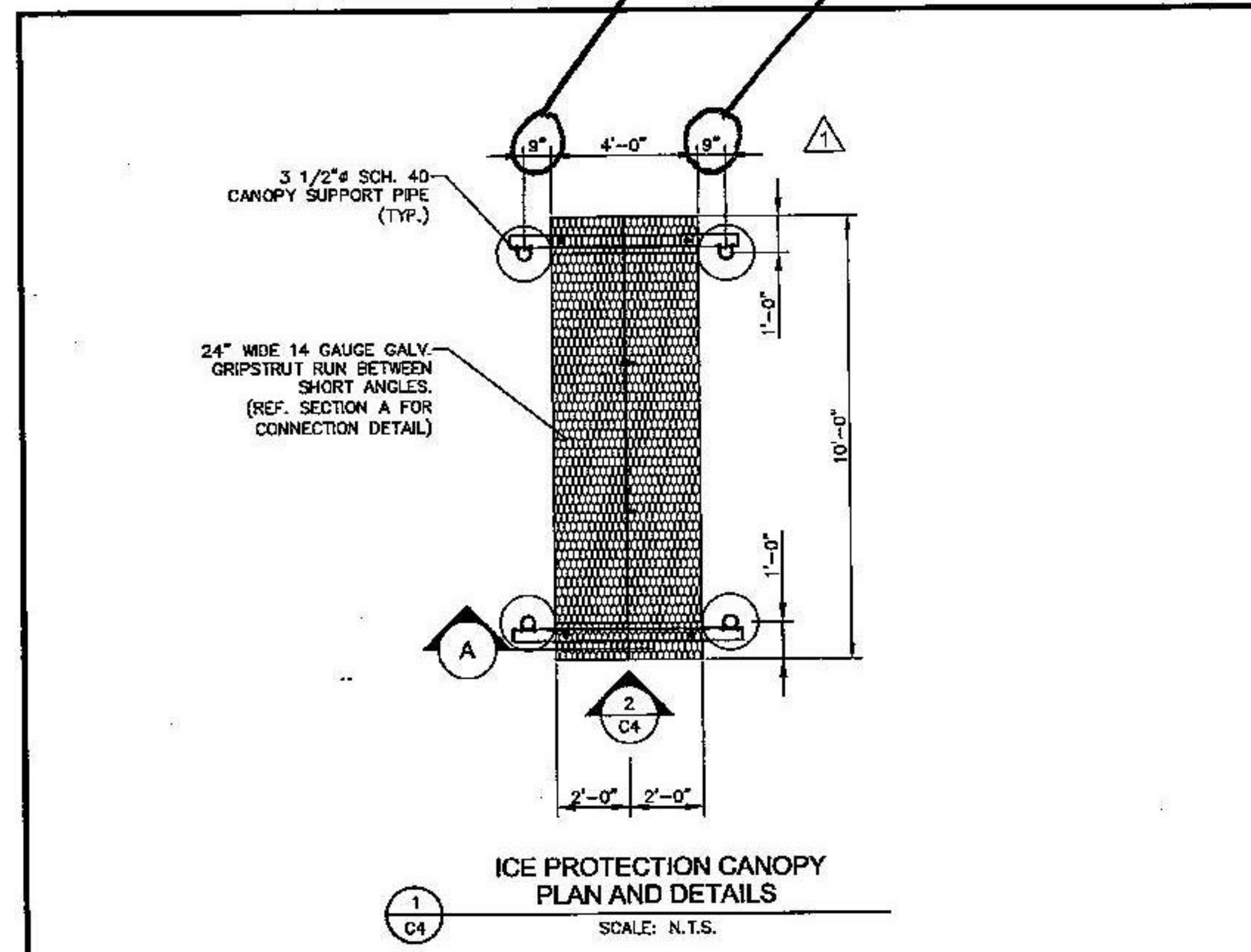


24VDC Solar FAA L-864 Beacon Controller

Northmark Communications 9-29-15 1-800-211-0038

Typical Ice Shield Canopy Northern Pride Communications

RECORD DRAWING 12/30/15



TYPICAL ICE SHIELD CANOPY