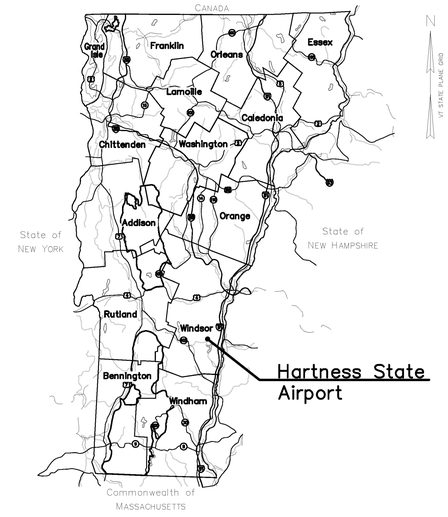
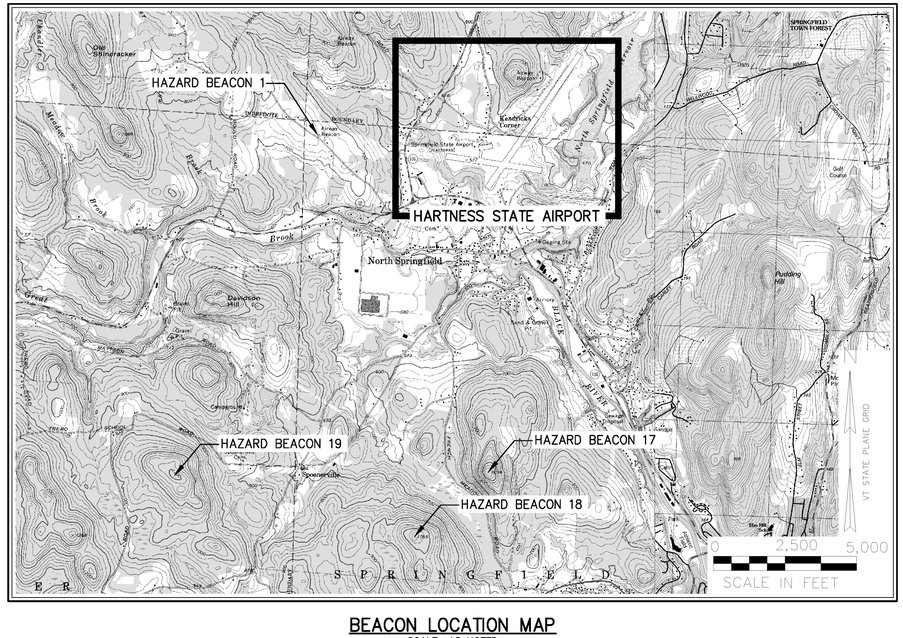
STATE OF VERMONT
AGENCY OF TRANSPORTATION

HARTNESS STATE AIRPORT
HAZARD BEACON REPLACEMENT
SPRINGFIELD, VERMONT



STATE OF VERMONT
NOT TO SCALE

INDEX OF SHEETS:



BEACON LOCATION MAP
SCALE: AS NOTED

RECORD DRAWING 01/07/13

No.	Submittal / Revision	App'd	By	Date
1	RECORD DRAWINGS	HAW	HAW	01/07/13

STATE OF VERMONT
AGENCY OF TRANSPORTATION

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Main: (518) 453-4500 · www.chacompanies.com

Designed: HAW | Drawn: HAW | Checked: TYL

HARTNESS STATE AIRPORT
HAZARD BEACON REPLACEMENT

TITLE SHEET

Issue Date: 03/18/11 | Project No.: 21674 | Scale: As Shown

C-001

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GENERAL NOTES:

1. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES, AND REGULATIONS.

2. 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.

3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND STIPULATED IN THE PROJECT SPECIFICATIONS.

4. STORAGE AREAS FOR CONTRACTOR'S EQUIPMENT AND MATERIALS SHALL BE WITHIN THE EASEMENT LIMITS ONLY.

5. THE CONTRACTOR SHALL:
   - A. VERIFY ALL CONDITIONS IN THE FIELD PRIOR TO COMMENCEMENT OF WORK AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
   - B. EXAMINE THE SITE AND INCLUDE IN HIS WORK THE EFFECT OF ALL EXISTING CONDITIONS ON THE WORK.
   - C. PROVIDE AND INSTALL ALL MATERIALS AND PERFORM ALL WORK IN ACCORDANCE WITH RECOGNIZED GOOD STANDARD PRACTICE.
   - D. HOLD THE OWNER HARMLESS AGAINST ANY AND ALL CLAIMS ARISING FROM WORK DONE BY THE CONTRACTOR ON THE SITE.

6. RUBBISH, DEBRIS, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

7. 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.

8. 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.

9. 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.

REMOVAL NOTES:

1. ALL EXISTING ITEMS REQUIRING REMOVAL SHALL BE REMOVED DOWN TO GRADE, UNLESS OTHERWISE NOTED.

2. ALL EXISTING GUY ANCHORS CAN BE CUT DOWN TO GRADE.

3. 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 INSITU SOIL.

4. ALL EXISTING STRUCTURES TO BE REMOVED SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTORS EXPENSE.

5. ALL ITEMS MARKED FOR REMOVAL AND INCIDENTAL REMOVALS NECESSARY FOR PROPOSED CONSTRUCTION, ESCEPT FOR TREES, SHALL BE DISPOSED OF OFF-SITE AT THE CONTRACTOR'S EXPENSE, INCLUDING ALL CONSTRUCTION DEBRIS.

6. THE CONTRACTOR SHALL RESTORE AREA TO ORIGINAL OR BETTER CONDITION UPON SUBSTANTIAL COMPLETION OF WORK.

RECORD DRAWING 01/07/13

No.	Submittal / Revision	App'd	By	Date
1	RECORD DRAWINGS	HAW	HAW	01/07/13

STATE OF VERMONT
AGENCY OF TRANSPORTATION

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111 Winners Circle, P.O. Box 5269 - Albany, NY 12205-0269
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Designed: HAW | Drawn: HAW | Checked: TYL

HARTNESS STATE AIRPORT
HAZARD BEACON REPLACEMENT

GENERAL NOTES

Issue Date: 03/18/11 | Project No.: 21674 | Scale: As Shown

C-002

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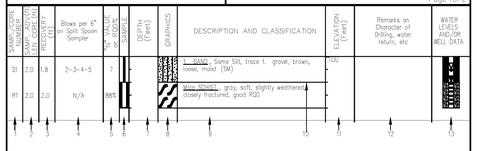
LEGEND TO SUBSURFACE LOGS

Page 1 of 2



Subsurface Logs present material classifications, test data, and observations from subsurface investigations at the subject site as reported by the inspecting geologist or engineer. In some cases, the classifications may be made based on laboratory test data when available. It should be noted that the investigation procedures only recover a small portion of the subsurface materials at the site. Therefore, actual conditions between borings and sampled intervals may differ from those presented on the Subsurface Logs. The information presented on the logs provide a basis for an evaluation of the subsurface conditions and may indicate the need for additional exploration. Any evaluation of the conditions reported on the logs must be performed by Professional Engineers or Geologists.

1. SAMP./CORE NUMBER – Samples are numbered for identification on containers, laboratory reports or in text reports.
2. SAMP.ADV/LEN.CORE – Length of sampler advance or length of coring run measured in feet.
3. RECOVERY – Amount of sample actually recovered after withdrawing sampler or core barrel from bore hole measured in feet.
4. SAMPLE BLOWS/6" – Unless otherwise noted, blow counts represent values obtained by driving a 2.0" (O.D.), 1-3/8" (I.D.) split spoon sampler into the subsurface strata with a 140 pound weight falling 30" as per ASTM D 1586. After an initial penetration of 6" to seat the sampler into undisturbed material, the sampler is then driven an additional 2 or 3 six inch increments.
5. "N" Value or RQD % – "N" VALUE – The sum of the second and third sample blow increments is generally termed the Standard Penetration Test (SPT) "N" value. CORE RQD – Core Rock Quality Designation, RQD, is defined as the summed length of all pieces of core equal to or longer than 4 inches divided by the total length of the coring run. Fresh, irregular breaks distinguishable as being caused by drilling or recovery operations are ignored and the pieces are counted as intact lengths. RQD values are valid only for cores obtained with NX size core barrels.
6. SAMPLE – Graphical presentation of sample type and advance or core run length. See Table 1.
7. DEPTH – Depth as measured from the ground surface in feet.
8. GRAPHICS – Graphical presentation of subsurface materials. See Table 4. Dual soil classification and rock graphics may vary and are not shown on Table 4.
9. DESCRIPTION AND CLASSIFICATION – SOIL – Recovered samples are visually classified in the field by the supervising geologist or engineer unless otherwise noted. Particle size and plasticity classification is based on field observations, and using the Unified Soil Classification System (USCS). See Table 4. USCS symbols are presented in parentheses following the soil description. Where necessary, dual symbols may be used for combinations of soil types. Relative proportions, by weight and/or plasticity, are described in general accordance with "Suggested Methods of Test for Identification of Soils" by D.M. Burmister, ASTM Special Publication 479, 6-1970. See Table 2. Soil density or consistency description is based on the penetration resistance. See Table 3. Soil moisture description is based on the observed wetness of the soil recovered being dry, moists, wet, or saturated. Water introduced into the boring during drilling may affect the moisture content of the materials. Other geologic terms may also be used to further describe the subsurface materials. ROCK – Rock core descriptions are based on the inspector's observations and may be examined and described in greater detail by the project engineer or geologist. Terms used in the description of rock core are presented in Table 5.
10. DIVISION LINES – Division lines between deposits are based on field observations and changes in recovered material. Solid lines depict contacts between two deposits of different geologic depositional environment. Dotted lines depict transitions of deposits within the same depositional environment, such as grain size or density.
11. ELEVATION – Elevation of strata changes in feet.
12. REMARKS – Miscellaneous observations.
13. WATER LEVELS & WELL DATA – Hollow water level symbol, if present, represents level at which first saturated sample or water level was encountered. Solid water level symbol, if present, depicts the most probable static water elevation at the time of drilling or as measured in an installed observation well at a later date. Subsurface water conditions are influenced by factors such as precipitation, stratigraphic composition, and drilling/coring methods. Conditions at other times may differ from those described on the logs. For graphical presentation of observation/monitoring well construction, see Table 6. Elevations of changes in construction are noted at the bottom of each section.

LEGEND TO SUBSURFACE LOGS

Page 2 of 2

TABLE 1
TYPICAL SAMPLE TYPES

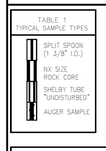


TABLE 2
SAMPLE MATERIAL PROPORTIONS

ADJECTIVE	PERCENTAGE OF SAMPLE
"and"	35% – 50%
"some"	20% – 35%
"little"	10% – 20%
"trace"	< 10%

Standard split spoon samples may not recover particles with any dimension larger than 1 3/8". Therefore, reported gravel percentages may not reflect actual conditions.

TABLE 3
DENSITY/CONSISTENCY

GRANULAR SOILS		COHESIVE SOILS	
Blows/ft.	Density	Blows/ft.	Consistency
< 5	Very Loose	< 2	Very Soft
5–10	Loose	2–4	Soft
11–30	Med. Compact	5–8	Med. Stiff
31–50	Compact	9–15	Stiff
> 50	Very Compact	16–30	Very Stiff
		> 30	Hard

TABLE 4
USCS CLASSIFICATION, PARTICLE SIZE, & GRAPHICS

MAJOR PARTICLE SIZE DIVISION	USCS SYMBOL	GRAPHIC SYMBOL	GENERAL DESCRIPTION
COARSE GRAINED SOILS – GRAVEL Coarse: 3"–3/4" Fine: 3/4"–#4	GW		Well graded gravels, gravel & sand mix.
	GP		Poorly graded gravels, gravel & sand mix.
Classification based on > 50% being gravel	GM		Gravel, sand and silt mix.
	GC		Gravel, sand and clay mix.
COARSE GRAINED SOILS – SAND Coarse: #4–#10 Med.: #10–#40 Fine: #40–#200	SW		Well graded sand, sand & gravel mix.
	SP		Poorly graded sand, sand & gravel mix.
	SM		Sand and silt mix.
Classification based on > 50% being sand	SC		Sand and clay mix.
FINE GRAINED SOILS – SILT & CLAY	ML		Inorganic silt, low plasticity.
	CL		Inorganic clay, low plasticity.
	OL		Organic silt/clay, low plasticity.
Classification based on > 50% passing #200 sieve.	MH		Inorganic silt, high plasticity.
	CH		Inorganic clay, high plasticity.
	OH		Organic silt/clay, high plasticity.
ORGANIC SOILS	PT		Peat and other highly organic soils.
FILL	FIL		Miscellaneous fill materials.

TABLE 5
ROCK CLASSIFICATION TERMS

HARDNESS:

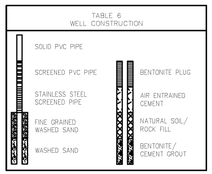
Very Soft	Carves
Soft	Grooves with knife
Med. Hard	Scratched easily with knife
Hard	Scratched with difficulty
Very Hard	Cannot be scratched with knife

WEATHERING:

Fresh	Slight or no staining of fractures, little or no discoloration, few fractures.
Slightly	Fractures stained, discoloration may extend into rock 1", some soil in fractures.
Moderately	Significant portions of rock stained and discolored, soil in fractures, loss of strength.
Highly	Entire rock discolored and dull except quartz grains, severe loss of strength.
Complete	Weathered to a residual soil.

BEDDING:	FRACTURE SPACING:	RQD:
Massive > 40"	Massive/V. Wide > 6'	Excellent > 90%
Thick 12" – 40"	Thick/Wide 2' – 6'	Good 76% – 90%
Medium 4" – 12"	Med./Med. 8" – 24"	Fair 51% – 75%
Thin < 4"	Thin/Close 2 1/2" – 8"	Poor 25% – 50%
	V. Thin/V. Close < 2 1/2"	V. Poor < 25%

TABLE 6
WELL CONSTRUCTION



Hartness Airport Hazard Beacons — SUBSURFACE LOG — HOLE NUMBER B17–1

Page 1 of 1

PROJECT NUMBER: 21674.1001.32000
LOCATION: Springfield, Vermont
CLIENT: VTrans
CONTRACTOR: Expedition Drilling, Inc.
DRILLER: L. Floyd — INSPECTOR: K. Owens
START DATE and TIME: 9/29/2010 9:45:00 AM
FINISH DATE and TIME: 9/29/2010 12:25:00 PM
SURFACE ELEV.: 1047.50 (ft; Estimated) — CHECKED BY: K. Adnams
DRILL FLUID: H20 @ 0' — DRILLING METHOD: Rollerbit

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	9–30–10	8:30 AM	24 Hours	7.6	N/A	15.8

SAMP./CORE NUMBER	SAMP. ADV. (IN) LEN. CORE (IN)	RECOVERY (IN)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD %	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
						0		TOPSOIL	1048	Groundwater observations made during drilling may not reflect static conditions. Soil strata from 0' to 2.5' determined by rollerbit cuttings. Roller bit refusal at 2.5'.	
						2		f.m.c. SAND, little silt, trace f. gravel, white/orange (COMPLETELY WEATHERED BEDROCK)			
R–1	5	4.8		84%		4		SCHIST, dark gray/light gray, banded, micaceous, medium hard, weathered, close fractured spacing, good RQD	1044		
						6			1042		
						8			1040		
R–2	5	5		98%		10		GNEISS, gray, less micaceous, hard, moderately weathered, wide fracture spacing, excellent RQD	1038		
						12			1036		
						14		GNEISS, gray, hard, moderately weathered, wide fracture spacing, excellent RQD	1034	Core barrel jammed at 14'. 2.5' of sample moved to R–2. Resume drilling to finish R–3.	
R–3	5	4.8		96%		16			1032		
						18		End of Boring at 17.5 ft	1030		
									1028		

Hartness Airport Hazard Beacons — SUBSURFACE LOG — HOLE NUMBER B17–2

Page 1 of 1

PROJECT NUMBER: 21674.1001.32000
LOCATION: Springfield, Vermont
CLIENT: VTrans
CONTRACTOR: Expedition Drilling, Inc.
DRILLER: L. Floyd — INSPECTOR: K. Owens
START DATE and TIME: 9/29/2010 12:50:00 PM
FINISH DATE and TIME: 9/29/2010 2:55:00 PM
SURFACE ELEV.: 1051.00 (ft; Estimated) — CHECKED BY: K. Adnams
DRILL FLUID: H20 @ 2.0' — DRILLING METHOD: Rollerbit

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	9–30–10	8:30 AM	24 Hours	8.5	N/A	8.5

SAMP./CORE NUMBER	SAMP. ADV. (IN) LEN. CORE (IN)	RECOVERY (IN)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD %	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
						0		TOPSOIL	1050	Groundwater observations made during drilling may not reflect static conditions. Roller bit refusal at 2.5'.	
S–1	2.5	2	2–2–3–50/6"	5		2		SILT, little f. sand, trace f. gravel, trace organics, light brown, loose, moist (COMPLETELY WEATHERED BEDROCK)			
						4		GNEISS, gray/white, gray, medium hard, white: very hard, moderately weathered, very close fracture spacing,fair RQD	1048		
R–1	5	5		72%		6			1046		
						8		GNEISS, gray, micaceous, hard, moderately weathered, close fracture spacing, excellent RQD	1044		
						10			1042		
R–2	5	5		94%		12			1040		
						14		GNEISS, gray, micaceous, hard, moderately weathered, moderate fracture spacing, excellent RQD	1038		
R–3	5	5		96%		16			1036		
						18		End of Boring at 17.5 ft	1034		
									1032		

Hartness Airport Hazard Beacons — SUBSURFACE LOG — HOLE NUMBER B17–3

Page 1 of 1

PROJECT NUMBER: 21674.1001.32000
LOCATION: Springfield, Vermont
CLIENT: VTrans
CONTRACTOR: Expedition Drilling, Inc.
DRILLER: L. Floyd — INSPECTOR: K. Owens
START DATE and TIME: 9/29/2010 3:10:00 PM
FINISH DATE and TIME: 9/29/2010 5:15:00 PM
SURFACE ELEV.: 1052.00 (ft; Estimated) — CHECKED BY: K. Adnams
DRILL FLUID: H20 @ 1.5' — DRILLING METHOD: Rollerbit

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	9–29–10	5:15 PM	Completion	None	N/A	15.5

SAMP./CORE NUMBER	SAMP. ADV. (IN) LEN. CORE (IN)	RECOVERY (IN)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD %	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
						0		TOPSOIL	1050	Groundwater observations made during drilling may not reflect static conditions. Roller bit refusal at 1.5'.	
S–1	1.3	1	2–2–50/3"	R		2		SILT, little f. sand, trace organics, light brown, very compact, moist (COMPLETELY WEATHERED BEDROCK)			
						4		GNEISS, gray, hard, slightly weathered, close fracture spacing, good RQD	1048		
R–1	5	4.2		76%		6			1046		
						8		GNEISS, gray, hard, slightly weathered, medium fracture spacing, excellent RQD	1044		
R–2	4	4		100%		10			1042		
						12		GNEISS, gray, hard, slightly weathered, close fracture spacing, good RQD	1040	Core barrel jammed at 10.5'	
R–3	5	4.7		76%		14			1038		
						16		End of Boring at 15.5 ft	1036		
						18			1034		

Hartness Airport Hazard Beacons — SUBSURFACE LOG — HOLE NUMBER B17–4

Page 1 of 1

PROJECT NUMBER: 21674.1001.32000
LOCATION: Springfield, Vermont
CLIENT: VTrans
CONTRACTOR: Expedition Drilling, Inc.
DRILLER: L. Floyd — INSPECTOR: K. Owens
START DATE and TIME: 9/30/2010 8:45:00 AM
FINISH DATE and TIME: 9/30/2010 11:15:00 AM
SURFACE ELEV.: 1055.50 (ft; Estimated) — CHECKED BY: K. Adnams
DRILL FLUID: H20 @ 0' — DRILLING METHOD: Rollerbit

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	9–30–10	11:15 AM	Completion	None	N/A	14

SAMP./CORE NUMBER	SAMP. ADV. (IN) LEN. CORE (IN)	RECOVERY (IN)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD %	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
						0		GNEISS, medium hard, slightly weathered, medium fractured, good RQD	1054	Groundwater observations made during drilling may not reflect static conditions. Bedrock at ground surface at B19–4. Boring drilled directly on bedrock.	
R–1	5	4.4		88%		2			1052		
						4			1050		
						6		GNEISS, medium hard, slightly weathered, medium fractured, excellent RQD	1048	Driller notes void at 6'–7' is preventing water recirculation.	
R–2	5	4.9		94%		8			1046		
						10			1044		
						12		GNEISS, medium hard, slightly weathered, medium fractured, good RQD	1042		
R–3	4	3.6		88%		14			1040	Boring terminated at 14' due to lack of water for coring.	
						16		End of Boring at 14 ft	1038		
						18			1036		

Hartness Airport Hazard Beacons — SUBSURFACE LOG — HOLE NUMBER B18–1

Page 1 of 1

PROJECT NUMBER: 21674.1001.32000
LOCATION: Springfield, Vermont
CLIENT: VTrans
CONTRACTOR: Expedition Drilling, Inc.
DRILLER: L. Floyd — INSPECTOR: K. Owens
START DATE and TIME: 10/4/2010 8:00:00 AM
FINISH DATE and TIME: 10/4/2010 10:35:00 AM
SURFACE ELEV.: 1052.50 (ft; Estimated) — CHECKED BY: K. Adnams
DRILL FLUID: H20 @ 1.0' — DRILLING METHOD: Rollerbit

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	10–5–10	8:15 AM	24 Hours	11.5	N/A	15

SAMP./CORE NUMBER	SAMP. ADV. (IN) LEN. CORE (IN)	RECOVERY (IN)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD %	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
						0		TOPSOIL	1052	Groundwater observations made during drilling may not reflect static conditions. Driller notes that area was bulldozed to provide level ground for drill rig. Roller bit refusal at 1.0'	
S–1	1	0.5	2–3–50/6"	R		2		f.m.c. SAND, Some f. Gravel, trace silt, brown, very compact, moist (COMPLETELY WEATHERED ROCK)			
						4		GNEISS, dark gray, hard, slightly weathered, close fracture spacing, fair RQD	1050		
R–1	4.5	3.7		58%		6			1048		
						8		GNEISS, gray, hard, freshly weathered, medium fracture spacing, fair RQD	1046		
						10			1044		
R–2	5	3.4		68%		12			1042	Possible natural fracture at 9.3' caused lack of recovery in core R–2.	
						14		GNEISS, gray, hard, freshly weathered, medium fracture spacing, excellent RQD	1040	Recovery at core R–3 was 4.4'. Likely rock cored in previous run that fell out of core barrel was recovered in core R–3.	
R–3	2.5	2.5		100%		16			1038		
						18		GNEISS, gray, hard, slightly weathered, medium fracture spacing, excellent RQD	1036		
R–4	2	2		100%		20		End of Boring at 15 ft	1034	Core barrel jammed at 14'. Likely portion of core R–2 that was not retrieved in core barrel. Driller notes basket on core barrel may need to be replaced.	

RECORD DRAWING 01/07/13

No.	Submittal / Revision	By	Date
1	RECORD DRAWINGS	HAW	01/07/13

STATE OF VERMONT
AGENCY OF TRANSPORTATION

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Designed: HAW	Drawn: HAW	Checked: TYL

HARTNESS STATE AIRPORT
HAZARD BEACON REPLACEMENT

SUBSURFACE LOGS

Issue Date: 03/18/11	Project No.: 21674	Scale: As Shown

C-003

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Hartness Airport Hazard Beacons
SUBSURFACE LOG
HOLE NUMBER B18-2

Page 1 of 1

PROJECT NUMBER: 21674.1001.32000
LOCATION: Springfield, Vermont
CLIENT: VTrans
CONTRACTOR: Expedition Drilling, Inc.
DRILLER: L. Floyd — INSPECTOR: K. Owens
START DATE and TIME: 10/4/2010 4:30:00 PM
FINISH DATE and TIME: 10/4/2010 6:30:00 PM
SURFACE ELEV: 1051.70 (ft; Estimated) — CHECKED BY: K. Adnams

DRILL FLUID: H20 @ 2.0' — DRILLING METHOD: Rollerbit

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	10-5-10	8:15 AM	24 Hours	0.5	N/A	12.6

SAMP./CORE NUMBER	SAMP. ADV. (ft) / LEN. CORE (ft)	SAMP. CRC (ft) / RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	% Wave Form Core Sample	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
					0	CS OL	TOPSOIL		Groundwater observations made during drilling may not reflect static conditions.	
S-1	2	1.7	WH-WH-9-32				f. SAND, little clayey silt, trace organics, gray, wet, loose (SM)			
							f.m.c. SAND, little f.c. gravel, trace silt, white/orange, loose, moist (COMPLETELY WEATHERED ROCK)	1050	Rollerbit refusal at 2.0'.	
R-1	5	5		92%	2		GNEISS, dark gray, hard, moderately weathered, closely fractured, excellent RQD			
					4			1048		
					6			1046		
					8		GNEISS, gray, hard, slightly weathered, medium fracture spacing, fair RQD	1044		
R-2	5	5		72%	10			1042		
					12		SCHIST, dark gray, medium hard, highly weathered, very thinly fractured, fair RQD	1040	Natural seam in bedrock likely caused lack of recovery in core R-3.	
					14		GNEISS, gray, hard, wide fracture spacing, slightly weathered, poor RQD	1038		
R-3	5	2.4		48%	16			1036		
					18		End of Boring at 17 ft	1034		
								1032		

Hartness Airport Hazard Beacons
SUBSURFACE LOG
HOLE NUMBER B18-3

Page 1 of 1

PROJECT NUMBER: 21674.1001.32000
LOCATION: Springfield, Vermont
CLIENT: VTrans
CONTRACTOR: Expedition Drilling, Inc.
DRILLER: L. Floyd — INSPECTOR: K. Owens
START DATE and TIME: 10/5/2010 10:25:00 AM
FINISH DATE and TIME: 10/5/2010 12:05:00 PM
SURFACE ELEV: 1051.50 (ft; Estimated) — CHECKED BY: K. Adnams

DRILL FLUID: H20 @ 0' — DRILLING METHOD: Rollerbit

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	10-5-10	12:05 PM	Completion	3	N/A	16

SAMP./CORE NUMBER	SAMP. ADV. (ft) / LEN. CORE (ft)	SAMP. CRC (ft) / RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	% Wave Form Core Sample	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
					0	CS OL	TOPSOIL		Groundwater observations made during drilling may not reflect static conditions.	
							f. SAND, little silt, gray, wet (COMPLETELY WEATHERED ROCK)			
							GNEISS, gray, hard, slightly weathered, medium fracture spacing, good RQD	1050	Soil strata from 0' to 1.0' determined by rollerbit cuttings. Rollerbit refusal at 1.0'.	
R-1	5	4.4		88%	2					
					4			1048		
					6			1046		
					8		GNEISS, gray, hard, moderately weathered, close fracture spacing, good RQD	1044		
R-2	5	3.9		78%	10			1042		
					12			1040	Seam of highly weathered rock that contains rocks and soil from 10.1' to 10.5'.	
					14		GNEISS, gray, hard, slightly weathered, medium fracture spacing, good RQD	1038		
R-3	5	3.8		76%	16			1036		
					18		End of Boring at 16 ft	1034		
								1032		

Hartness Airport Hazard Beacons
SUBSURFACE LOG
HOLE NUMBER B18-4

Page 1 of 1

PROJECT NUMBER: 21674.1001.32000
LOCATION: Springfield, Vermont
CLIENT: VTrans
CONTRACTOR: Expedition Drilling, Inc.
DRILLER: L. Floyd — INSPECTOR: K. Owens
START DATE and TIME: 10/5/2010 8:00:00 AM
FINISH DATE and TIME: 10/5/2010 10:20:00 AM
SURFACE ELEV: 1056.50 (ft; Estimated) — CHECKED BY: K. Adnams

DRILL FLUID: H20 @ 0' — DRILLING METHOD: Rollerbit

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	10-5-10	12:05 PM	Completion	None	N/A	18

SAMP./CORE NUMBER	SAMP. ADV. (ft) / LEN. CORE (ft)	SAMP. CRC (ft) / RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	% Wave Form Core Sample	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
					0	CS OL	TOPSOIL		Groundwater observations made during drilling may not reflect static conditions. Soil strata from 0' to 3.5' determined from rollerbit cuttings. Rollerbit refusal at 3.5'.	
							f.m.c. SAND, Some Silt, brown, wet (SM)	1056		
					2			1054		
							GNEISS, dark gray, hard, moderately weathered, thin to very thin fracture spacing, fair RQD			
R-1	5	4.9		72%	4			1052		
					6			1050		
					8		GNEISS, dark gray, hard, moderately weathered, thin to very thin fracture spacing, good RQD	1048		
R-2	5	5		84%	10			1046		
					12			1044		
					14		GNEISS, dark gray, hard, moderately weathered, thin to very thin fracture spacing, good RQD	1042		
R-3	5	4.4		88%	16			1040		
					18		End of Boring at 18.5' ft	1038		

Hartness Airport Hazard Beacons
SUBSURFACE LOG
HOLE NUMBER B19-1

Page 1 of 1

PROJECT NUMBER: 21674.1001.32000
LOCATION: Chester, Vermont
CLIENT: VTrans
CONTRACTOR: Expedition Drilling, Inc.
DRILLER: L. Floyd — INSPECTOR: K. Owens
START DATE and TIME: 9/24/2010 10:30:00 AM
FINISH DATE and TIME: 9/24/2010 3:15:00 PM
SURFACE ELEV: 1202.50 (ft; Estimated) — CHECKED BY:

DRILL FLUID: H20 @ 0.5' — DRILLING METHOD: Rollerbit

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	9-24-10	3:15 PM	Completion	None	N/A	12

SAMP./CORE NUMBER	SAMP. ADV. (ft) / LEN. CORE (ft)	SAMP. CRC (ft) / RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	% Wave Form Core Sample	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
					0	CS OL	TOPSOIL		Groundwater observations made during drilling may not reflect static conditions. Root in shoe of spoon.	
S-1	0.5	0.2	50/6"					1202		
					2				Roller bit refusal at 2'.	
							GNEISS, gray, hard, freshly weathered, medium fractured, fair RQD	1200		
R-1	5	4.1		74%	4					
					6			1198		
					8		GNEISS, gray, hard, freshly weathered, medium fractured, fair RQD	1196		
R-2	5	3.9		72%	10			1194		
					12		End of Boring at 12' ft	1192	Hole collapsed to 3' during removal of R-2. Attempt to clean/core hole with no success. Boring abandoned at 13'.	
					14			1190		
					16			1188		
					18			1186		
								1184		

Hartness Airport Hazard Beacons
SUBSURFACE LOG
HOLE NUMBER B19-2

Page 1 of 1

PROJECT NUMBER: 21674.1001.32000
LOCATION: Chester, Vermont
CLIENT: VTrans
CONTRACTOR: Expedition Drilling, Inc.
DRILLER: L. Floyd — INSPECTOR: K. Owens
START DATE and TIME: 9/27/2010 9:50:00 AM
FINISH DATE and TIME: 9/27/2010 12:35:00 PM
SURFACE ELEV: 1203.50 (ft; Estimated) — CHECKED BY:

DRILL FLUID: H20 @ 2.0' — DRILLING METHOD: Rollerbit

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	9-28-10	8:00 AM	24 Hours	1.5	N/A	16.3

SAMP./CORE NUMBER	SAMP. ADV. (ft) / LEN. CORE (ft)	SAMP. CRC (ft) / RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	% Wave Form Core Sample	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
					0	CS OL	TOPSOIL		Groundwater observations made during drilling may not reflect static conditions.	
S-1	1.8	1.4	1-4-13-50/4"				f.m.c. SAND, little f.c. gravel, trace silt, white/orange, medium compact, (COMPLETELY WEATHERED BEDROCK)		Harder drilling at 1.9', interpreted as top of bedrock. Begin coring at casing refusal depth of 2'.	
				17	2		GNEISS, gray/white, hard, freshly weathered, moderately fractured, excellent RQD	1202		
					4				Granite seam from 4' to 4.5'.	
R-1	5	4.9		90%	6			1200		
					8			1198		
					10		GNEISS, gray/white, hard, freshly weathered, moderately fractured, excellent RQD	1196		
R-2	5	5		100%	12			1194		
					14			1192		
					16		GNEISS, gray/white, hard, freshly weathered, moderately fractured, good RQD	1190		
R-3	5	4.3		80%	18			1188	Seam of white bedrock from 14.5'-15.0'.	
							End of Boring at 17 ft	1186		
								1184		

Hartness Airport Hazard Beacons
SUBSURFACE LOG
HOLE NUMBER B19-3

Page 1 of 1

PROJECT NUMBER: 21674.1001.32000
LOCATION: Chester, Vermont
CLIENT: VTrans
CONTRACTOR: Expedition Drilling, Inc.
DRILLER: L. Floyd — INSPECTOR: K. Owens
START DATE and TIME: 9/27/2010 2:45:00 PM
FINISH DATE and TIME: 9/27/2010 4:40:00 PM
SURFACE ELEV: 1203.00 (ft; Estimated) — CHECKED BY:

DRILL FLUID: H20 @ 2.5' — DRILLING METHOD: Rollerbit

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	9-28-10	8:00 AM	24 Hours	8.8	N/A	13.9

SAMP./CORE NUMBER	SAMP. ADV. (ft) / LEN. CORE (ft)	SAMP. CRC (ft) / RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	% Wave Form Core Sample	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
					0	CS OL	TOPSOIL		Groundwater observations made during drilling may not reflect static conditions.	
S-1	2	1.7	1-2-4-18	6			SILT, little f. sand, trace f. gravel, trace organics, gray, loose, moist (COMPLETELY WEATHERED BEDROCK)			
					2		SILT, little f. sand, trace f. gravel, gray, very compact, moist (COMPLETELY WEATHERED BEDROCK)	1202		
S-2	0.9	0.9	24-60/5"	R			GNEISS, gray, hard, slightly weathered, medium fracture spacing, fair RQD	1200	Rollerbit refusal at 2.5', interpreted as top of bedrock.	
					4					
R-1	5	3.4		64%	6			1198		
					8		GNEISS, gray, hard, slightly weathered, medium fracture spacing, excellent RQD	1196		
R-2	5	5		94%	10			1194		
					12			1192		
					14		GNEISS, gray, hard, slightly weathered, medium fracture spacing, excellent RQD	1190		
R-3	5	4.7		90%	16			1188		
					18		End of Boring at 17.5 ft	1186		
								1184		

Hartness Airport Hazard Beacons
SUBSURFACE LOG
HOLE NUMBER B19-4

Page 1 of 1

PROJECT NUMBER: 21674.1001.32000
LOCATION: Chester, Vermont
CLIENT: VTrans
CONTRACTOR: Expedition Drilling, Inc.
DRILLER: L. Floyd — INSPECTOR: K. Owens
START DATE and TIME: 9/27/2010 12:50:00 PM
FINISH DATE and TIME: 9/27/2010 2:40:00 PM
SURFACE ELEV: 1206.50 (ft; Estimated) — CHECKED BY:

DRILL FLUID: H20 @ 0' — DRILLING METHOD: Rollerbit

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	9-28-10	8:00 AM	24 Hours	7.1	N/A	16.5

SAMP./CORE NUMBER	SAMP. ADV. (ft) / LEN. CORE (ft)	SAMP. CRC (ft) / RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	% Wave Form Core Sample	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
							GNEISS, gray, very hard, slightly weathered, closely fractured, excellent RQD	1206	Groundwater observations made during drilling may not reflect static conditions. Bedrock at ground surface at B19-4. Boring drilled directly on bedrock.	
R-1	5	4.8		92%	2			1204		
					4					
					6		GNEISS, gray, very hard, slightly weathered, closely fractured, good RQD	1202		
R-2	5	4.3		86%	8			1200		
					10			1198		
					12		GNEISS, gray, very hard, slightly weathered, closely fractured, good RQD	1196		
R-3	4.5	3.8		84%	14			1194		
					16		End of Boring at 14.5 ft	1192	Core barrel jammed at 14.5' during core R-3.	
					18			1190		
								1188		

RECORD DRAWING 01/07/13

No.	Submittal / Revision	App'd	By	Date
1	RECORD DRAWINGS	HAW	HAW	01/07/13

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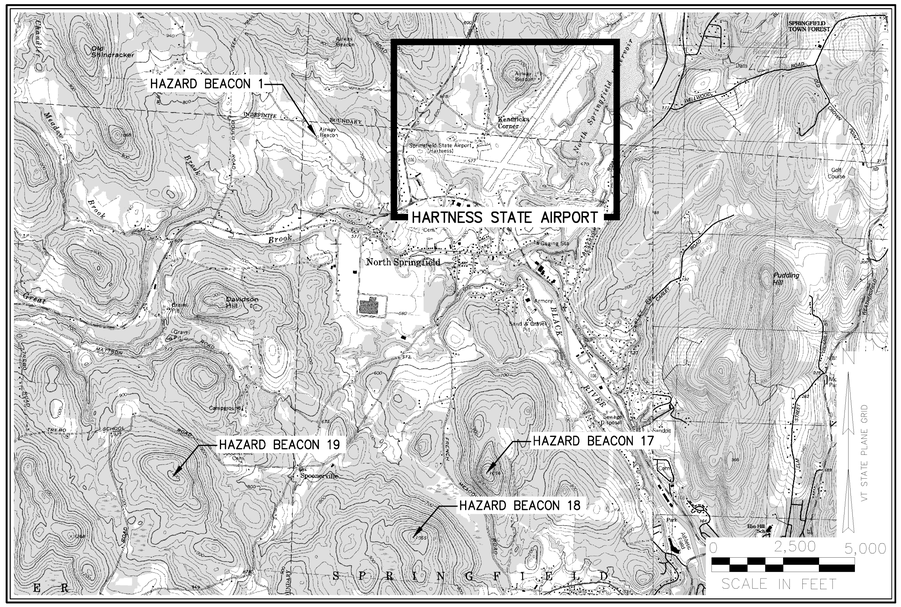
HARTNESS STATE AIRPORT
HAZARD BEACON REPLACEMENT

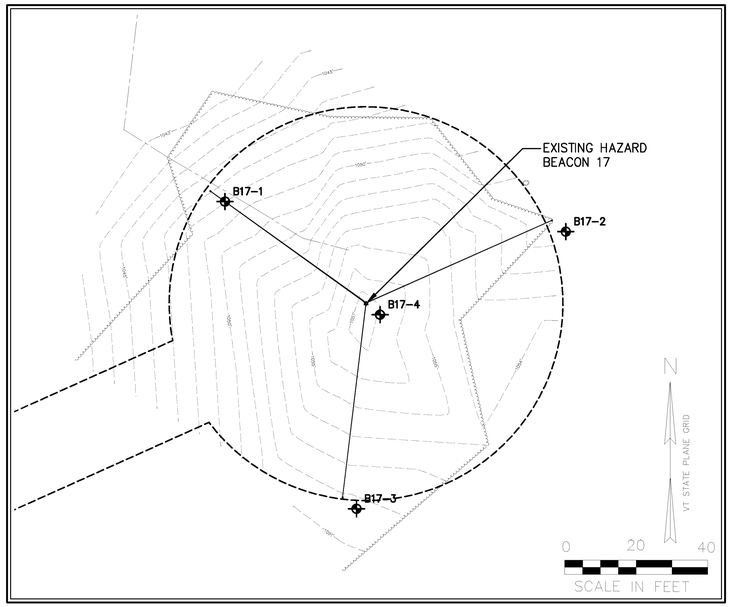
SUBSURFACE LOGS

Issue Date: 03/18/11 | Project No.: 21674 | Scale: As Shown

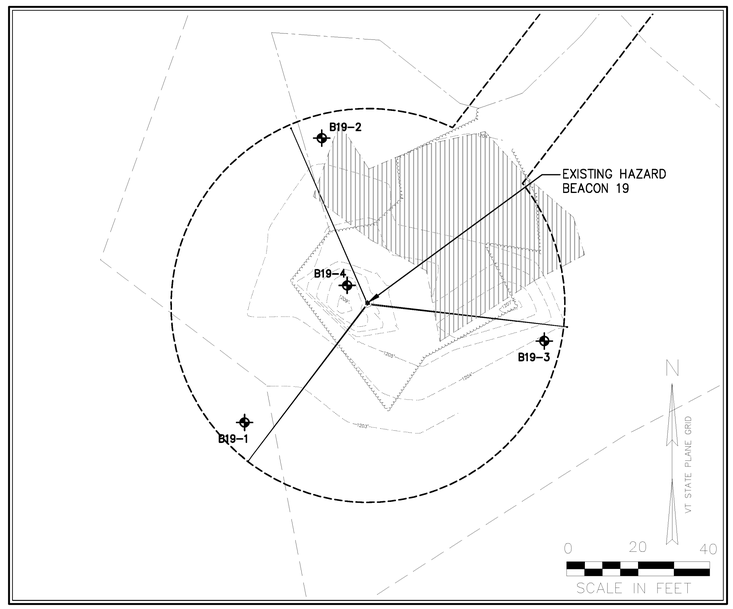
C-004



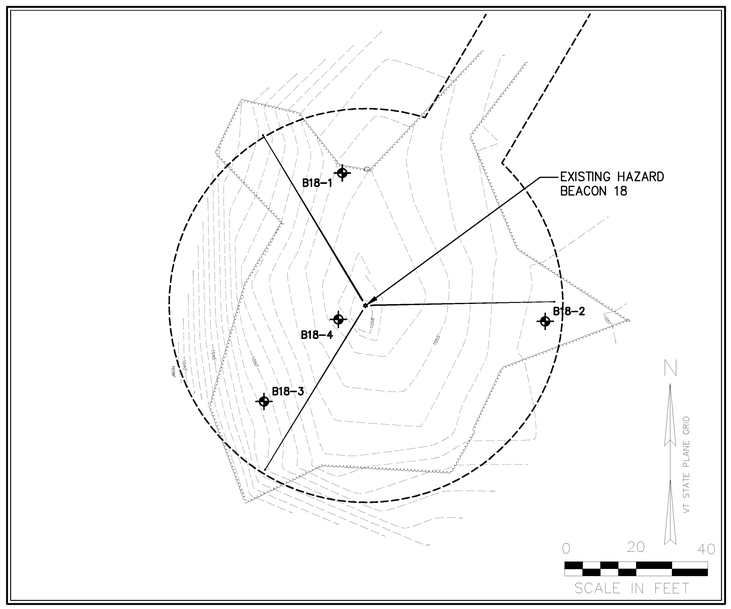
SUBSURFACE LOG LOCATION MAP
SCALE: AS NOTED



HAZARD BEACON #17 SUBSURFACE LOGS
SCALE: AS NOTED



HAZARD BEACON #19 SUBSURFACE LOGS
SCALE: AS NOTED



HAZARD BEACON #18 SUBSURFACE LOGS
SCALE: AS NOTED

LEGEND	
B17–1	APPROXIMATE BORING LOCATION

RECORD DRAWING 01/07/13

No.	Submittal / Revision	App'd	By	Date
1	RECORD DRAWINGS	HAW	HAW	01/07/13

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HARTNESS STATE AIRPORT
HAZARD BEACON REPLACEMENT

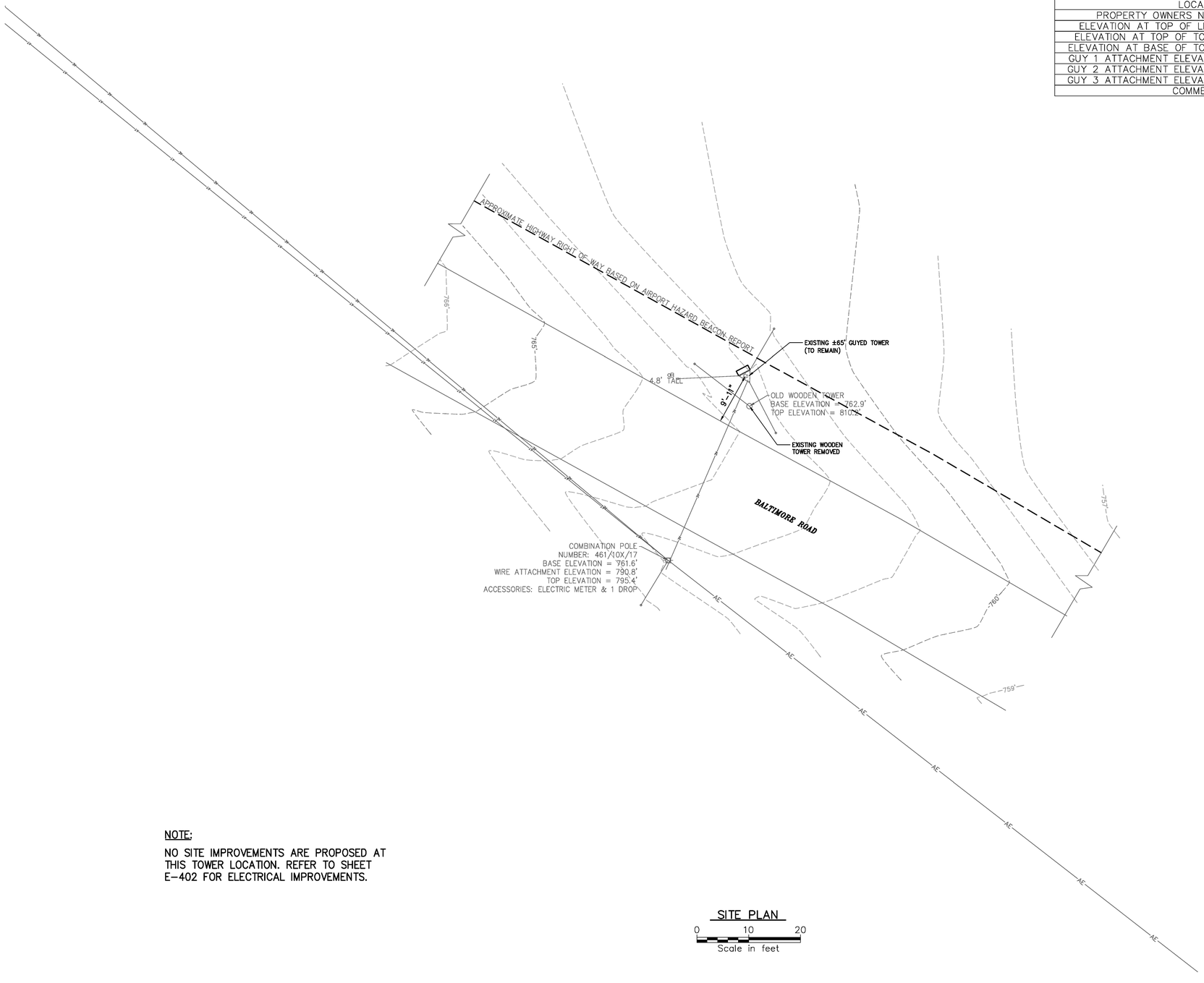
SUBSURFACE LOG PLANS

Issue Date:	Project No.:	Scale:
03/18/11	21674	As Shown

C-005

EXISTING SITE STATISTICS

BEACON #	1
LOCATION	BIBBENS
PROPERTY OWNERS NAME	TOWN HIGHWAY # 8 R.O.W.
ELEVATION AT TOP OF LIGHT	830.5'
ELEVATION AT TOP OF TOWER	827.8'
ELEVATION AT BASE OF TOWER	762.3'
GUY 1 ATTACHMENT ELEVATION	797.8'
GUY 2 ATTACHMENT ELEVATION	797.8'
GUY 3 ATTACHMENT ELEVATION	797.8'
COMMENTS	THERE ARE NO TREES NEAR THIS TOWER



SITE PLAN

0 10 20

Scale in feet

NOTE:

NO SITE IMPROVEMENTS ARE PROPOSED AT THIS TOWER LOCATION. REFER TO SHEET E-402 FOR ELECTRICAL IMPROVEMENTS.

RECORD DRAWING 01/07/13

No.	Submittal / Revision	App'd	By	Date
1	RECORD DRAWINGS	HAW	HAW	01/07/13

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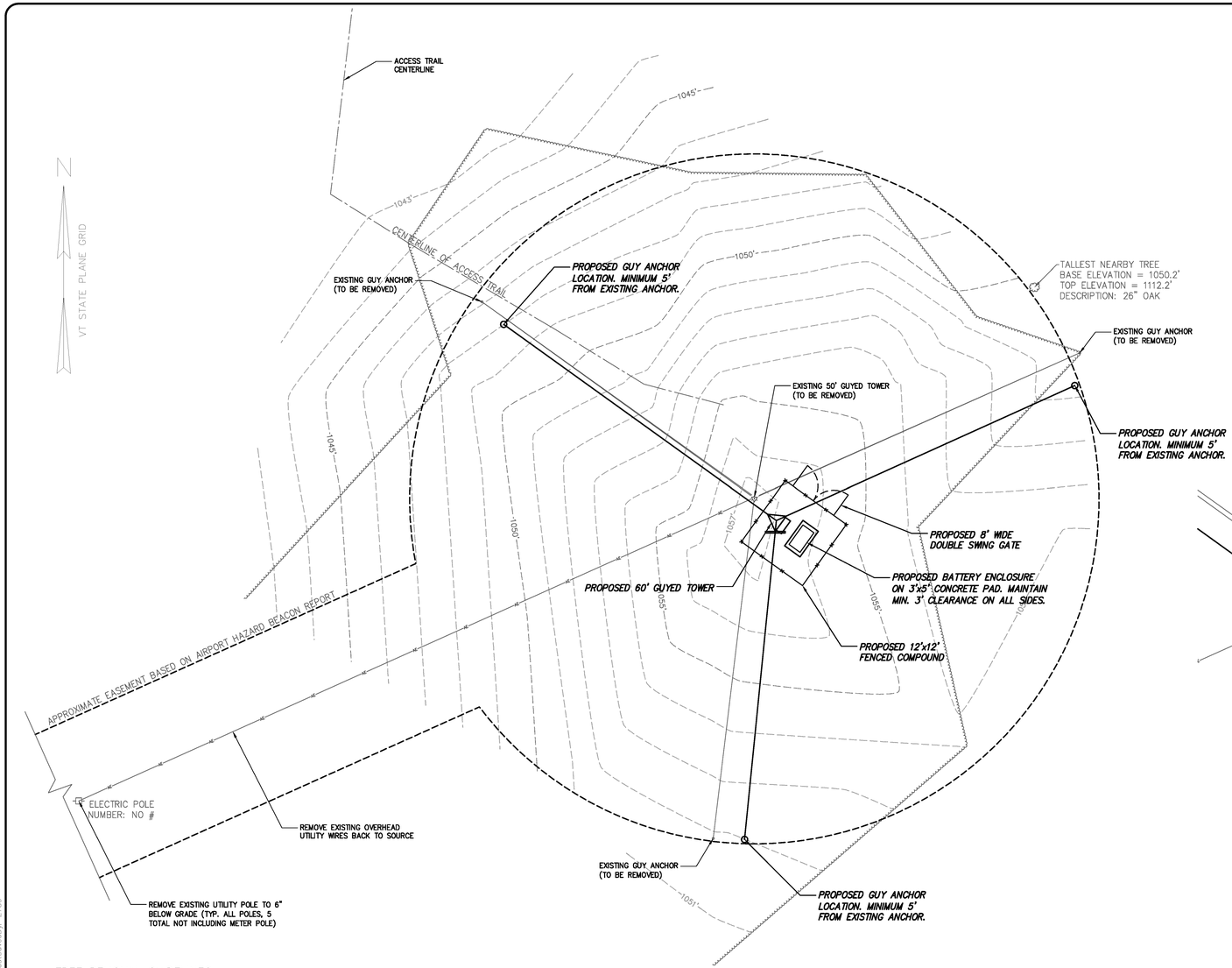
HARTNESS STATE AIRPORT
HAZARD BEACON REPLACEMENT

BEACON 1 SITE PLAN

Issue Date:	Project No.:	Scale:
03/18/11	21674	As Shown

C-101



SITE PLAN

0 10 20

Scale in feet

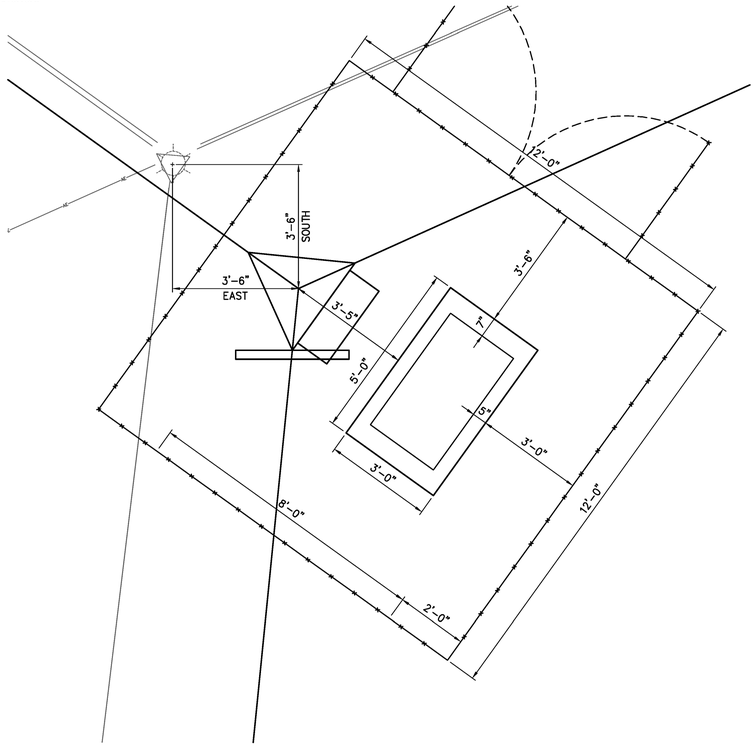
CONSTRUCTION SEQUENCE

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

TREE REMOVAL GUIDELINES:

ALL TREES WITHIN THE EASEMENT LIMITS THAT EXCEED A HEIGHT OF 32 FEET SHALL BE REMOVED. REFER TO PROJECT SPECIFICATIONS SECTION 311000 SITE CLEARING FOR TREE REMOVAL AND DISPOSAL PROCEDURES.

UTILITY REMOVAL GUIDELINES:

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.

NOTE:

PROPOSED GUY ANCHOR RADIUS TO BE DETERMINED BY TOWER MANUFACTURER. ANCHORS SHALL REMAIN WITHIN EXISTING EASEMENT, WHICH IS APPROXIMATELY 49 FEET FROM CENTERLINE OF PROPOSED TOWER.

EXISTING SITE STATISTICS

BEACON #	17
LOCATION	FRENCH MEADOW ROAD
PROPERTY OWNERS NAME	HIGHLAND CORPORATION
TOWN RECORDS BOOK & PAGE	74-278
ELEVATION AT TOP OF LIGHT	1109.1'
ELEVATION AT TOP OF TOWER	1106.5'
ELEVATION AT BASE OF TOWER	1057.5'
ELEVATION AT WIRE ATTACHMENT	1083.2'
GUY 1A ATTACHMENT ELEVATION	1081.4'
GUY 1B ATTACHMENT ELEVATION	1104.8'
GUY 2A ATTACHMENT ELEVATION	1104.6'
GUY 2B ATTACHMENT ELEVATION	1081.3'
GUY 3A ATTACHMENT ELEVATION	1104.7'
GUY 3B ATTACHMENT ELEVATION	1081.4'
COMMENTS	SOME EXPOSED LEDGE

RECORD DRAWING 01/07/13

No.	Submittal / Revision	App'd	By	Date
1	RECORD DRAWINGS	HAW	HAW	01/07/13

STATE OF VERMONT
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HARTNESS STATE AIRPORT
HAZARD BEACON REPLACEMENT

BEACON 17 SITE PLAN

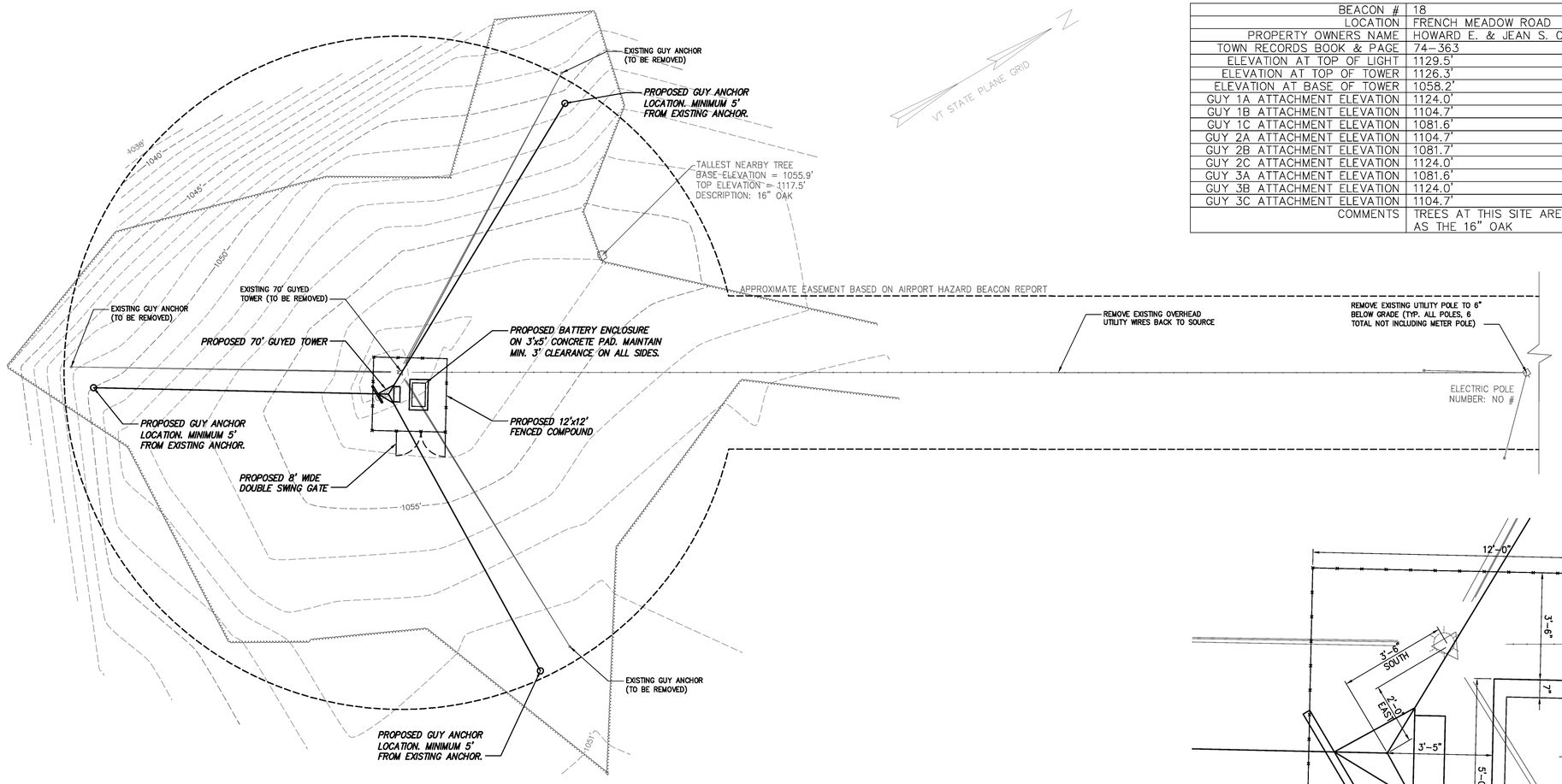
Issue Date: 03/18/11 | Project No.: 21674 | Scale: As Shown

C-102

File: V:\PROJECTS\ANY\X21674\CADD\ACAD_SHEET_FILES\C102-21674.DWG
Saved: 1/4/2013 4:16:43 PM Plotted: 1/4/2013 4:29:17 PM User: Wyld, Heather LastSavedBy: 2789

EXISTING SITE STATISTICS

BEACON #	18
LOCATION	FRENCH MEADOW ROAD
PROPERTY OWNERS NAME	HOWARD E. & JEAN S. OBERG & HARRY K. SHEPARD
TOWN RECORDS BOOK & PAGE	74–363
ELEVATION AT TOP OF LIGHT	1129.5'
ELEVATION AT TOP OF TOWER	1126.3'
ELEVATION AT BASE OF TOWER	1058.2'
GUY 1A ATTACHMENT ELEVATION	1124.0'
GUY 1B ATTACHMENT ELEVATION	1104.7'
GUY 1C ATTACHMENT ELEVATION	1081.6'
GUY 2A ATTACHMENT ELEVATION	1104.7'
GUY 2B ATTACHMENT ELEVATION	1081.7'
GUY 2C ATTACHMENT ELEVATION	1124.0'
GUY 3A ATTACHMENT ELEVATION	1081.6'
GUY 3B ATTACHMENT ELEVATION	1124.0'
GUY 3C ATTACHMENT ELEVATION	1104.7'
COMMENTS	TREES AT THIS SITE ARE ABOUT THE SAME HEIGHT AS THE 16" OAK



SITE PLAN

0 10 20

Scale in feet

TREE REMOVAL GUIDELINES:

ALL TREES WITHIN THE EASEMENT LIMITS THAT EXCEED A HEIGHT OF 42 FEET SHALL BE REMOVED. REFER TO PROJECT SPECIFICATIONS SECTION 311000 SITE CLEARING FOR TREE REMOVAL AND DISPOSAL PROCEDURES.

UTILITY REMOVAL GUIDELINES:

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.

NOTE:

PROPOSED GUY ANCHOR RADIUS TO BE DETERMINED BY TOWER MANUFACTURER. ANCHORS SHALL REMAIN WITHIN EXISTING EASEMENT, WHICH IS APPROXIMATELY 50 FEET FROM CENTERLINE OF PROPOSED TOWER.

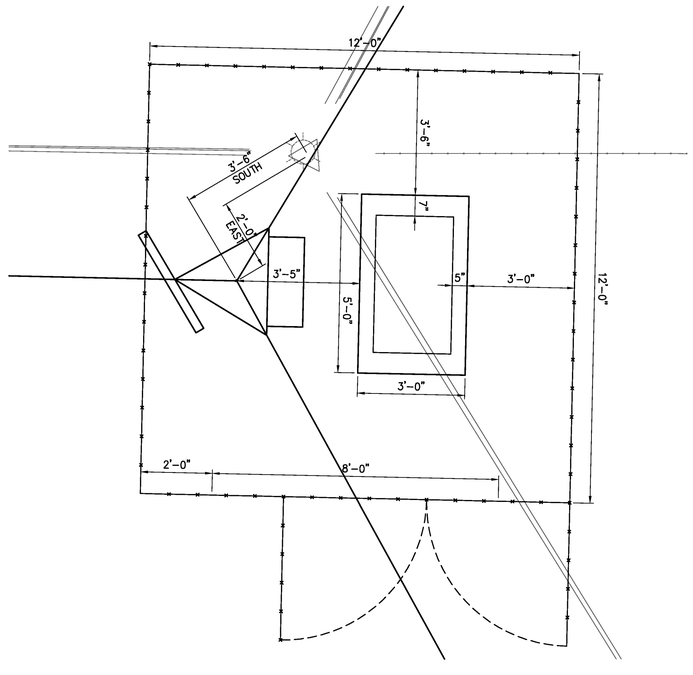
CONSTRUCTION SEQUENCE

CONSTRUCTION NOTES:

1. ASSEMBLE AND INSTALL TOWER, GUY WIRES AND GUY ANCHORS PER THE MANUFACTURER'S WRITEN 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

RECORD DRAWING 01/07/13

No.	Submittal / Revision	App'd	By	Date
1	RECORD DRAWINGS	HAW	HAW	01/07/13

STATE OF VERMONT
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Designed: HAW | Drawn: HAW | Checked: TYL

HARTNESS STATE AIRPORT
HAZARD BEACON REPLACEMENT

BEACON 18 SITE PLAN

Issue Date: 03/18/11 | Project No.: 21674 | Scale: As Shown

C-103

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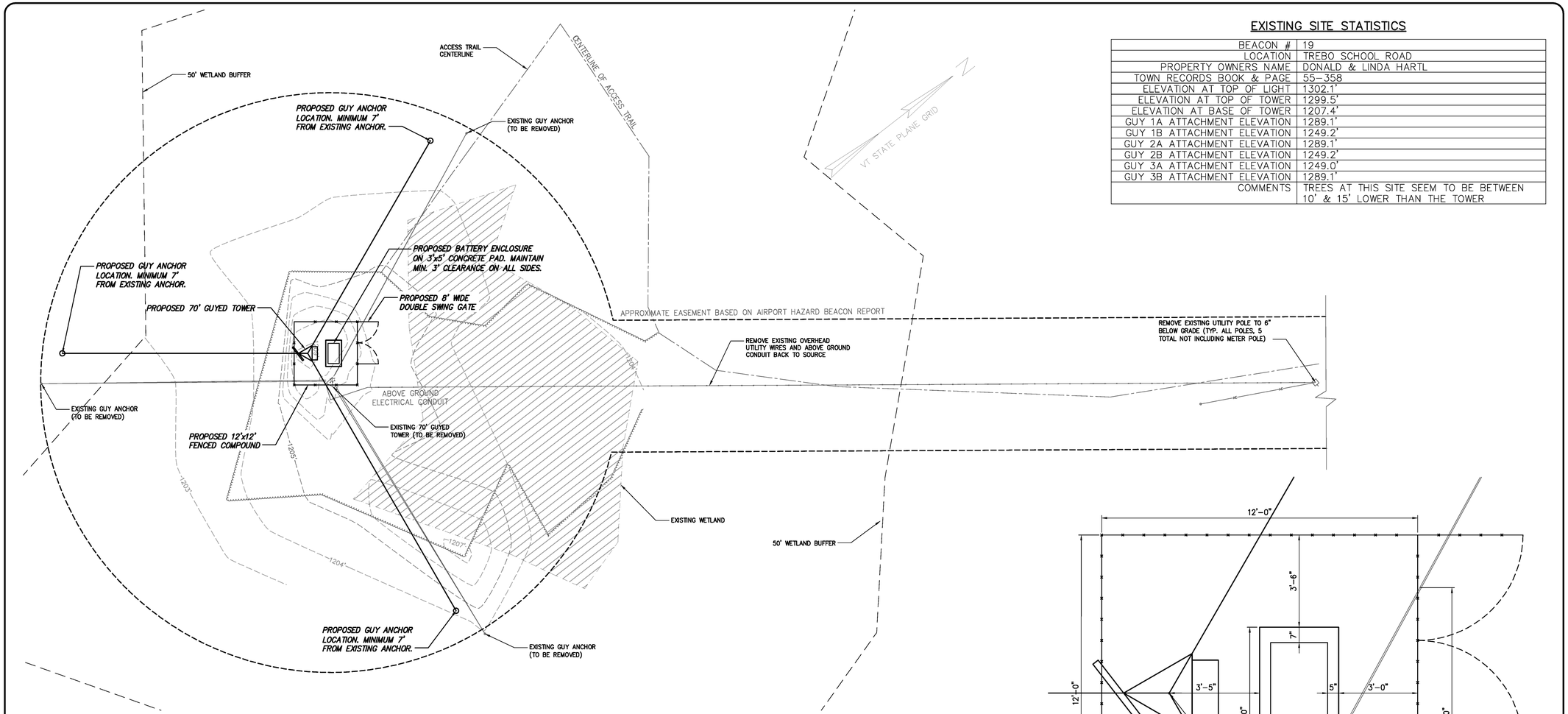


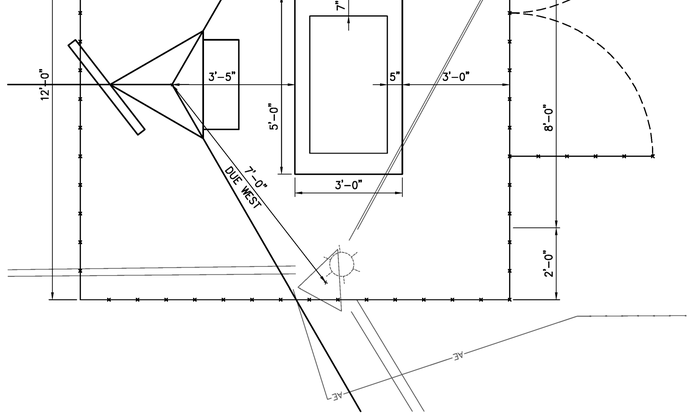
SITE PLAN

0 10 20

Scale in feet

EXISTING SITE STATISTICS

BEACON #	19
LOCATION	TREBO SCHOOL ROAD
PROPERTY OWNERS NAME	DONALD & LINDA HARTL
TOWN RECORDS BOOK & PAGE	55-358
ELEVATION AT TOP OF LIGHT	1302.1'
ELEVATION AT TOP OF TOWER	1299.5'
ELEVATION AT BASE OF TOWER	1207.4'
GUY 1A ATTACHMENT ELEVATION	1289.1'
GUY 1B ATTACHMENT ELEVATION	1249.2'
GUY 2A ATTACHMENT ELEVATION	1289.1'
GUY 2B ATTACHMENT ELEVATION	1249.2'
GUY 3A ATTACHMENT ELEVATION	1249.0'
GUY 3B ATTACHMENT ELEVATION	1289.1'
COMMENTS	TREES AT THIS SITE SEEM TO BE BETWEEN 10' & 15' LOWER THAN THE TOWER



ENLARGED SITE PLAN

0 2 4

Scale in feet

TREE REMOVAL GUIDELINES:

ALL TREES WITHIN THE EASEMENT LIMITS THAT EXCEED A HEIGHT OF 42 FEET SHALL BE REMOVED. REFER TO PROJECT SPECIFICATIONS SECTION 311000 SITE CLEARING FOR TREE REMOVAL AND DISPOSAL PROCEDURES.

UTILITY REMOVAL GUIDELINES:

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.

NOTE:

PROPOSED GUY ANCHOR RADIUS TO BE DETERMINED BY TOWER MANUFACTURER. ANCHORS SHALL REMAIN WITHIN EXISTING EASEMENT, WHICH IS APPROXIMATELY 45 FEET FROM CENTERLINE OF PROPOSED TOWER.

CONSTRUCTION SEQUENCE

CONSTRUCTION NOTES:

1. ASSEMBLE AND INSTALL TOWER, GUY WIRES AND GUY ANCHORS PER THE MANUFACTURER'S WRITEN 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 01/07/13

No.	Submittal / Revision	App'd	By	Date
1	ADDED WETLAND BUFFER	HAW	HAW	04/11/11
2	ADJUSTED WETLAND LIMITS	HAW	HAW	5/19/11
3	REVISED PROPERTY OWNER	HAW	HAW	6/10/11
4	RECORD DRAWINGS	HAW	HAW	01/07/13

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HARTNESS STATE AIRPORT
HAZARD BEACON REPLACEMENT

BEACON 19 SITE PLAN

Issue Date: 03/18/11 | Project No.: 21674 | Scale: As Shown

C-104

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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
℄	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

ABBREVIATIONS CON'T

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/Kcmil	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
ø	PHASE

ABBREVIATIONS CON'T

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

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

X / XXX DETAIL CALLOUT

GENERAL NOTES

1. REFER TO CIVIL, STRUCTURAL, ARCHITECTURAL DRAWINGS FOR SYMBOLS ASSOCIATED WITH WORK, EQUIPMENT, ETC. BY OTHER(S).
2. ALL WORK SHOWN ON THE ELECTRICAL DRAWINGS SHALL BE BY THE ELECTRICAL CONTRACT UNLESS OTHERWISE INDICATED.
3. COORDINATE WORK WITH ALL TRADES.
4. 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.
5. GENERAL NOTES APPLY TO ALL CONTRACT DRAWINGS.

DEVICES AND APPURTENANCES

GROUND ROD 5/8" X 8'-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.

PC 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

RECORD DRAWING 01/07/13

No.	Submittal / Revision	App'd	By	Date
1	RECORD DRAWINGS	HAW	HAW	01/07/13

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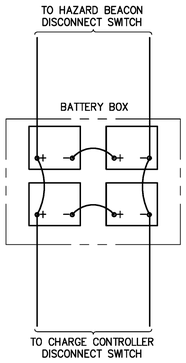
HARTNESS STATE AIRPORT
HAZARD BEACON REPLACEMENT

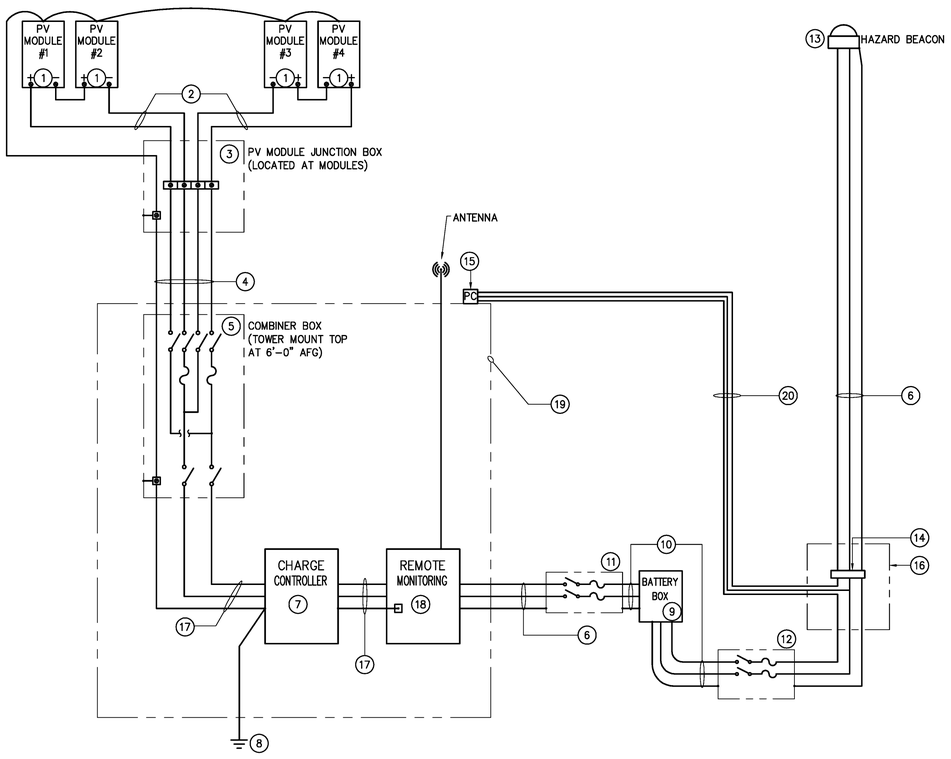
ELECTRICAL LEGEND & NOTES

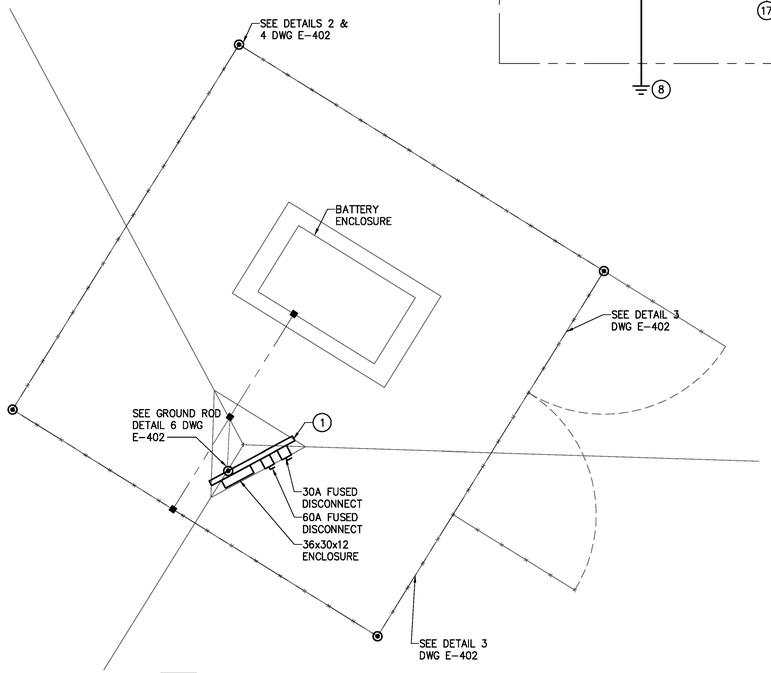
Issue Date: 03/18/11 | Project No.: 21674 | Scale: As Shown

E-001



1 BATTERY WIRING DIAGRAM
– NOT TO SCALE





3 TYPICAL ELECTRICAL PLAN VIEW
– SCALE 1/2" = 1'–0"

GENERAL NOTES

A. SEE DETAIL 5 ON DWG E–402 FOR GUYED ANCHOR AND TOWER GROUNDING,

B. WHERE ROCK IS ENCOUNTERED PROVIDE GROUNDING PLATE IN LIEU OF GROUNDING ROD.

CODED NOTES

(1) PROVIDE STEEL CHANNEL AND METAL FABRICATION BACKBOARD MOUNTING AT TOWER 6'–0" AGF TO TOP. CUTTING DRILLING AND WELDING TOWER IS PROHIBITED.

GENERAL NOTES

A. ALL EQUIPMENT SUCH AS BUT NOT LIMITED TO DISCONNECT, ALL ENCLOSURE SHALL HAVE A 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 (KYOCERA#KD205GX–LPU 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.

(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 2'–0" BELOW FINISH GRADE AND CONNECTION SHALL BE MADE BY EXOTHERMIC METHODS. WHEN ENCOUNTERED WITH BEDROCK USE GROUND PLATE. SEE DETAIL 4 ON DWG E–402.

(9) PROVIDE (1) 26"x46"x16" NON–INSULATED, VENTILATED CHEST STYLE BATTERY ENCLOSURES (POWER FAB# BB4–8GBD OR APPROVED EQUAL) SET ON APPROPRIATELY SIZED PRECAST CONCRETE PAVERS, 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) REMOVE EXISTING HAZARD BEACON AND PROVIDE FAA APPROVED LED HAZARD BEACON (FARLIGHT NV–L864LED–DM–24D–GPS–AK 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 [6390/6587C/6589C RATED FOR 24VDC NOMINAL] PHOTOCELL 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@MYTFAIRPOINT.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.

PHOTOVOLTAIC SYSTEM – 4 PANEL
2 SCHEMATIC TOWERS 17, 18, 19
– NOT TO SCALE

RECORD DRAWING 01/07/13

No.	Submittal / Revision	App'd	By	Date
1	RECORD DRAWINGS	HAW	HAW	01/07/13

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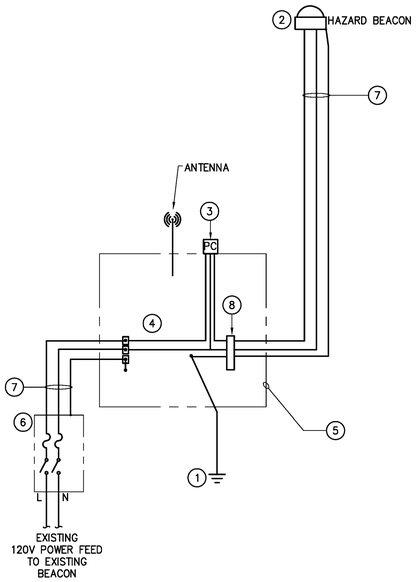
NUB	CJE	NUB

HARTNESS STATE AIRPORT
HAZARD BEACON REPLACEMENT

ELECTRICAL DETAILS

Issue Date:	Project No.:	Scale:
03/18/11	21674	As Shown

E-401



GENERAL NOTES

A. ALL EQUIPMENT SUCH AS BUT NOT LIMITED TO DISCONNECT, ENCLOSURE SHALL HAVE A LOCK–OUT/TAG–OUT OPTION.

B. USE RGS CONDUIT UNLESS OTHERWISE NOTED.

C. CUTTING, DRILLING AND WELDING TOWER IS PROHIBITED.

CODED NOTES

(1) PROVIDE GROUNDING WITH #8 THWN–2 AND (1) 5/8"x10' COPPER CLAD GROUND ROD. GROUND ROD SHALL BE DRIVEN TO A DEPTH OF 2'–0" BELOW FINISH GRADE AND CONNECTION SHALL BE MADE BY EXOTHERMIC METHODS WHEN ENCOUNTERED WITH BEDRCOK USE GROUND PLATE. SEE DETAIL 4 ON THIS DRAWNG.

(2) REMOVE EXISTING HAZARD BEACON AND PROVIDE FAA APPROVED LED HAZARD BEACON (FARLIGHT NV–L864LED–DM–120A–GPS–AK OR APPROVED EQUAL). POWER CONSUMPTION EQUAL LESS THAN 10W (AVERAGE). SET HAZARD BEACON TO OPERATE IN THE FLASHING MODE.

(3) PROVIDE LOW VOLTAGE OUTDOOR [UL LISTED WET LOCATION] RATED FAA APPROVED 6390 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.

(4) 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.

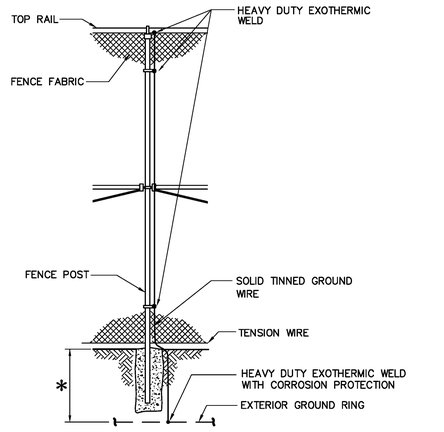
(5) PROVIDE NEMA 4X ENCLOSURE (HOFFMAN A24H2412SS6LP OR APPROVED EQUAL) WITH INTEGRAL MOUNTING PLATE (HOFFMAN A24P24SS6) AND (2) FILTERED VENTILATION LOUVERS. LOCATE LOUVERS ON BOTTOM OF ENCLOSURE ONE ON EACH SIDE(HOFFMAN AVK44 OR APPROVED EQUAL) AND (2) RAIN SHROUD (HOFFMAN SH090000SH OR APPROVED EQUAL). MOUNT ASSEMBLY ON TOWER AT 6'–0" AFG.

(6) PROVIDE 2 POLE, 30A RATED, 250V RATED,HEAVY DUTY, FUSIBLE NEMA 4X SAFETY SWITCH WITH 2A FUSE.

(7) PROVIDE (2)#8 THWN–2, (1)#8G THWN–2 IN 1" RGS CONDUIT WITH HANGERS, SUPPORTS, CLAMPS, ETC. AS REQUIRED.

(8) PROVIDE SURGE PROTECTION DEVICE MANUFACTURED BY PHOENIX CONTACT (MODEL NO. PT–2–PE/S–120AC) FOR 120V AC SYSTEM.

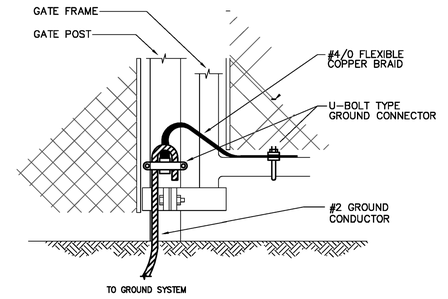
1 – LED BEACON WITH REMOTE MONITORING–TOWER 1
NOT TO SCALE



* 6" BELOW FROST LINE.

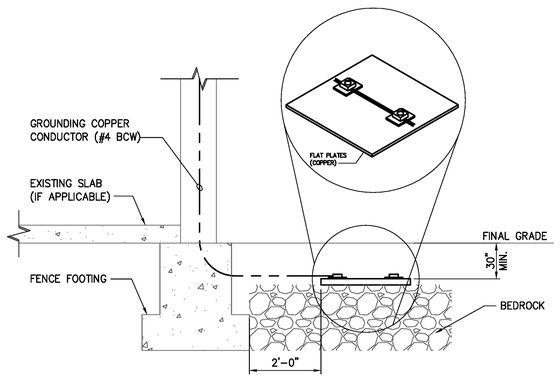
NOTE:
1. WHEN ENCOUNTERING BEDROCK, GROUND RING CONDUCTOR SHALL BE RUN AT THE BOTTOM OF THE FENCE.
2. PROVIDE GROUND PLATES AT EACH CORNER OF FENCE. TOTAL QUANTITY EQUALS 4.

2 – FENCE GROUNDING
NOT TO SCALE



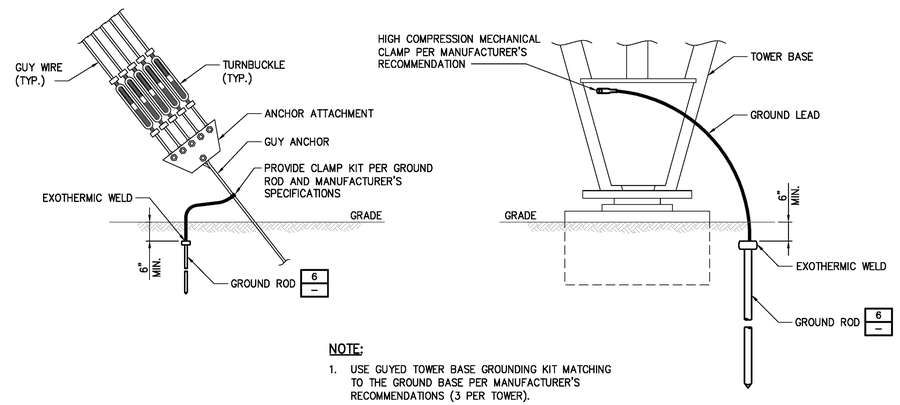
NOTE:
FENCE GROUND CONNECTIONS SHALL BE AT EACH CORNER. GATE JUMPER SHALL BE #4/0 FLEXIBLE COPPER BRIAD WITH SLEEVES ON EACH DESIGNED FOR EXOTHERMIC WELDING AND INSTALLED SO THAT JUMPER WILL NOT BE SUBJECTED TO DAMAGING STRAIN WHEN GATE IS FULLY OPENED IN EITHER DIRECTION.

3 – TYPICAL GATE – GROUNDING
NOT TO SCALE



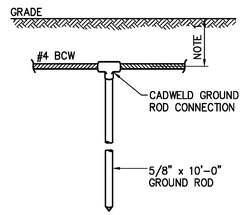
NOTE:
1. WHERE ROCK IS ENCOUNTERED.

4 – GROUNDING PLATE DETAIL
NOT TO SCALE



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

5 – GUYED ANCHOR AND TOWER GROUNDING DETAIL
NOT TO SCALE



NOTE
1. 6" BELOW FROST LINE.
2. PROVIDE GROUND PLATE IF ROCK IS ENCOUNTERED. SEE DETAIL 4 DWG E–402.

6 – GROUND ROD DETAIL
NOT TO SCALE

RECORD DRAWING 01/07/13

No.	Submittal / Revision	App'd	By	Date
1	RECORD DRAWINGS	HAW	HAW	01/07/13

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Designed: NUB | Drawn: CJE | Checked: NUB

HARTNESS STATE AIRPORT
HAZARD BEACON REPLACEMENT

ELECTRICAL DETAILS

Issue Date: 03/18/11 | Project No.: 21674 | Scale: As Shown

E-402

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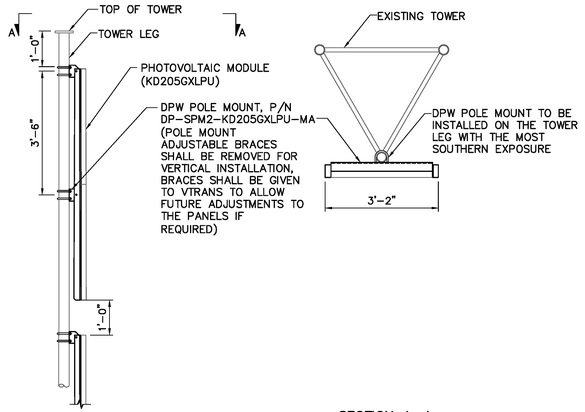
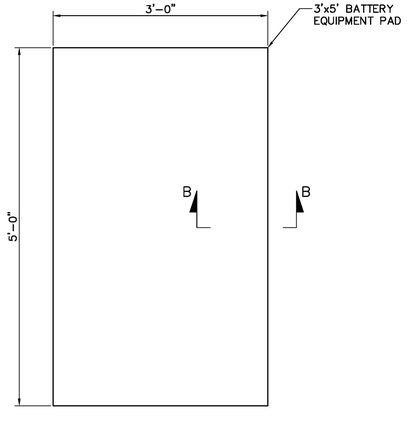


SIDE ELEVATION

SECTION A-A

PHOTOVOLTAIC MODULE FRAME ATTACHMENT DETAIL

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

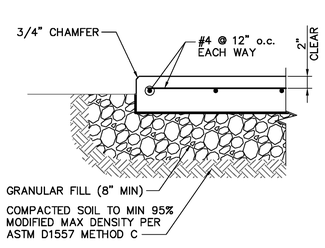


CONCRETE SLAB - PLAN

1" = 1'-0"

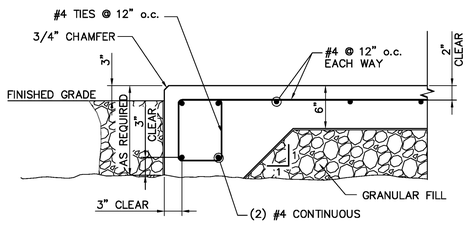
NOTE:

1. TOP OF FOUNDATION ELEVATION TOLERANCE 1/4" IN 10'-0" & 1/2" MAX OVERALL.
2. CONCRETE SHALL BE AIR-ENTRAINED AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.



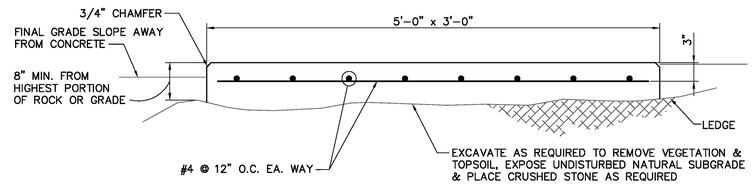
SECTION B-B IN SOIL CONDITIONS

SCALE: 1" = 1'-0"



SECTION B-B AT ROCK

SCALE: 1" = 1'-0"



ALTERNATE SECTION B-B AT ROCK

SCALE: 1" = 1'-0"

RECORD DRAWING 01/07/13

No.	Submittal / Revision	App'd	By	Date
1	RECORD DRAWINGS	HAW	HAW	01/07/13

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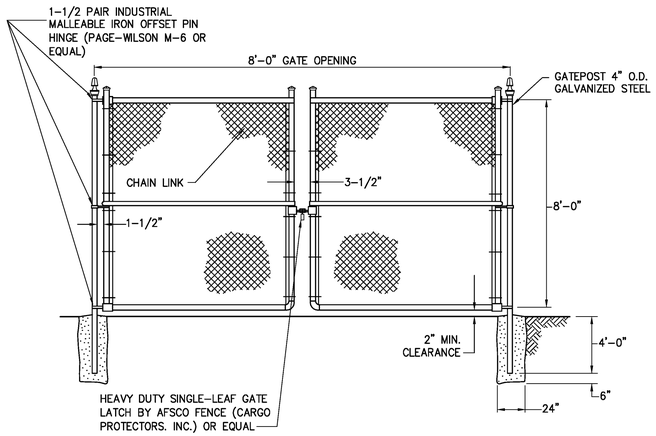
Designed: JJS | Drawn: BAS | Checked: DD

HARTNESS STATE AIRPORT
HAZARD BEACON REPLACEMENT

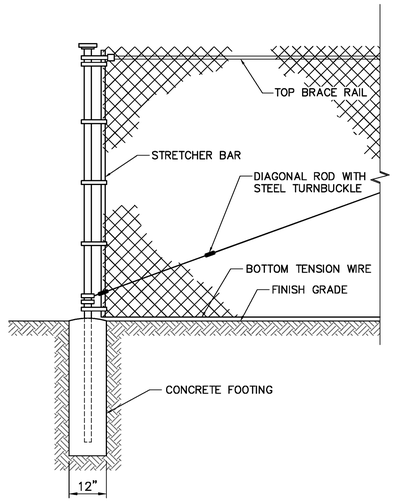
STRUCTURAL DETAILS

Issue Date: 03/18/11 | Project No.: 21674 | Scale: As Shown

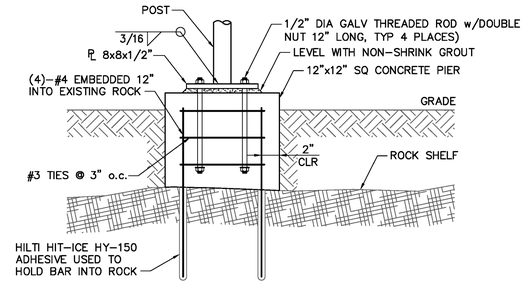
S-101



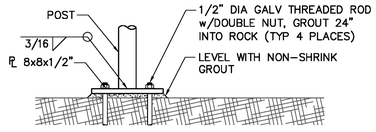
FENCE SWING GATE DETAIL (SOIL CONDITION)
SCALE: NTS



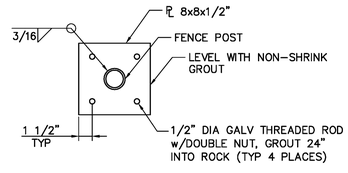
FENCE CORNER, GATE, END OR PULL POST (SOIL CONDITION)
SCALE: NTS



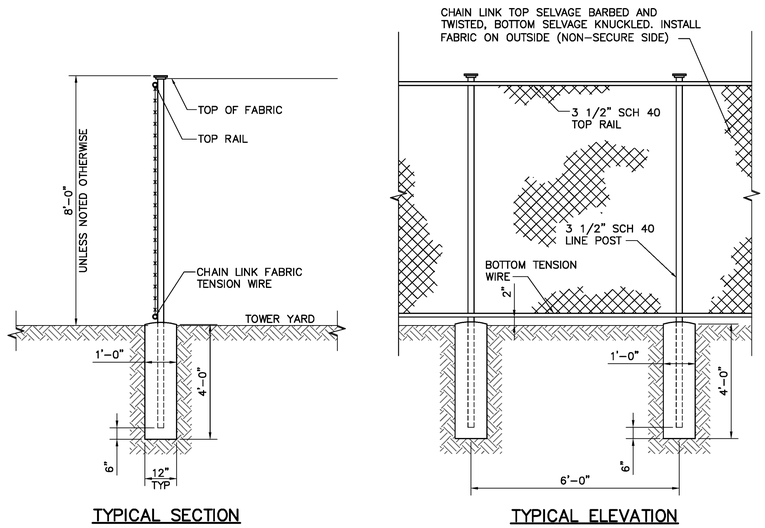
FENCE BASEPLATE ELEVATION TO SUBGRADE ROCK
NOT TO SCALE



FENCE BASEPLATE ELEVATION AT ROCK
NOT TO SCALE



FENCE BASEPLATE DETAIL AT ROCK
NOT TO SCALE



TYPICAL SECTION

TYPICAL ELEVATION

WOVEN WIRE FENCE DETAIL (SOIL CONDITION)
SCALE: NTS

RECORD DRAWING 01/07/13

No.	Submittal / Revision	App'd	By	Date
1	RECORD DRAWINGS	HAW	HAW	01/07/13

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HARTNESS STATE AIRPORT
HAZARD BEACON REPLACEMENT

STRUCTURAL DETAILS

Issue Date: 03/18/11	Project No.: 21674	Scale: As Shown

S-102